

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

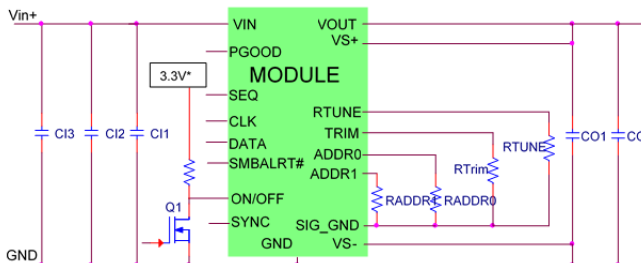
7Vdc –14Vdc input; 0.6Vdc to1.5Vdc output; 120A Output Current



**RoHS Compliant**

## Applications

- Networking equipment
- Telecommunications equipment
- Servers and storage applications
- Distributed power architectures
- Intermediate bus voltage applications
- Industrial equipment



## Description

The 120A Digital TeraDlynx™ power modules are non-isolated dc-dc converters that can deliver up to 120A of output current. These modules operate over a 7 to 14Vdc input range and provide a precisely regulated output voltage from 0.6 to 1.5Vdc. The output voltage is programmable via an external resistor and/or PMBus control. Features include a digital interface using the PMBus protocol, remote On/Off, adjustable output voltage, Power Good signal and overcurrent, overvoltage and overtemperature protection. The PMBus interface supports a range of commands to both control and monitor the module. The module also includes a real time compensation loop that allows optimizing the dynamic response of the converter to match the load with reduced amount of output capacitance leading to savings on cost and PWB area.

## Features

- Compliant to RoHS EU Directive 2002/95/EC (Z versions)
- Compliant to IPC-9592 (September 2008), Category 2
- Compatible in a Pb-free or SnPb reflow environment (Z versions)
- Compliant to REACH Directive (EC) No 1907/2006
- Wide Input voltage range (7Vdc-14 Vdc)
- Output voltage programmable from 0.6Vdc to 1.5Vdc via external resistor or PMBus™# commands
- Digital interface through the PMBus protocol
- Digital sequencing
- Fast digital loop control
- Power Good signal
- Fixed switching frequency with capability of external synchronization
- Output overcurrent protection (non-latching)
- Output overvoltage protection
- Over temperature protection
- Remote On/Off
- Ability to sink and source current
- Cost efficient open frame design
- Small size: 53.8 x 31.7 x 13.3 mm [ 2.118" x 1.248" x 0.524"]
- Wide operating temperature range [-40°C to 85°C]
- UL\* 60950-1 2<sup>nd</sup> Ed.+A1+A2 Recognized, CSA† C22.2 No. 60950-1-07+A1+A2 Certified, and VDE‡ (EN60950-1 2<sup>nd</sup> Ed.+A11+A12+A2) Licensed
- ISO\*\* 9001 and ISO 14001 certified manufacturing facilities

\* UL is a registered trademark of Underwriters Laboratories, Inc.

† CSA is a registered trademark of Canadian Standards Association.

‡ VDE is a trademark of Verband Deutscher Elektrotechniker e.V.

\*\* ISO is a registered trademark of the International Organization of Standards

# The PMBus name and logo are registered trademarks of the System Management Interface Forum (SMIF)



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7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are only absolute stress ratings, functional operation of the device is not implied at these or any other conditions in excess of those given in the operations sections of the technical requirements. Exposure to absolute maximum ratings for extended periods can adversely affect the device reliability.

| Parameter                                                             | Device | Symbol    | Min  | Max | Unit |
|-----------------------------------------------------------------------|--------|-----------|------|-----|------|
| Input Voltage - Continuous                                            | All    | $V_{IN}$  | -0.3 | 15  | V    |
| SEQ, ADDR0, ADDR1, RTUNE, RTRIM, SYNC, VS+, ON/OFF                    | All    |           | -0.3 | 3.6 | V    |
| CLK, DATA, SMBALERT#                                                  | All    |           | -0.3 | 3.6 | V    |
| Operating Ambient Temperature<br>(see Thermal Considerations section) | All    | $T_A$     | -40  | 85  | °C   |
| Storage Temperature                                                   | All    | $T_{stg}$ | -55  | 125 | °C   |

## Electrical Specifications

Unless otherwise indicated, specifications apply over all operating input voltage, resistive load, and temperature conditions.

| Parameter                                                                                                                                             | Device                                  | Symbol            | Min  | Typ | Max  | Unit             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------|------|-----|------|------------------|
| Operating Input Voltage                                                                                                                               | All                                     | $V_{IN}$          | 7    | —   | 14   | Vdc              |
| Maximum Input Current<br>( $V_{IN}=7V$ to $14V$ , $I_O=I_{O,max}$ )                                                                                   | All                                     | $I_{IN,max}$      |      |     | 29   | Adc              |
| Input No Load Current<br>( $V_{IN}=12Vdc$ , $I_O=0$ , module enabled)                                                                                 | $V_{O,set}=0.6Vdc$                      | $I_{IN,No\ load}$ |      | 160 |      | mA               |
|                                                                                                                                                       | $V_{O,set}=1.5Vdc$                      | $I_{IN1No\ load}$ |      | 200 |      | mA               |
| Input Stand-by Current<br>( $V_{IN}=12Vdc$ , module disabled)                                                                                         | All                                     | $I_{IN,stand-by}$ |      | 62  |      | mA               |
| Inrush Transient                                                                                                                                      | All                                     | $I^2t$            |      | 1   |      | A <sup>2</sup> s |
| Input Reflected Ripple Current, peak-to-peak<br>(5Hz to 20MHz, 1μH source impedance; $V_{IN}=0$ to $14V$ , $I_O=I_{O,max}$ ; See Test Configurations) | All                                     |                   |      | 5   |      | mAp-p            |
| Input Ripple Rejection (120Hz)                                                                                                                        | All                                     |                   |      | -54 |      | dB               |
| Output Voltage Set-point Tolerance over output voltage range from 0.5 to 1.5V<br><br>0 to 85°C<br>-40 to 85°C                                         | All                                     | $V_{O,set}$       | -0.7 |     | +0.7 | % $V_{O,set}$    |
|                                                                                                                                                       | All                                     | $V_{O,set}$       | -1.0 |     | +1.0 | % $V_{O,set}$    |
| Voltage Regulation <sup>1</sup>                                                                                                                       |                                         |                   |      |     |      |                  |
| Line Regulation                                                                                                                                       | ( $V_{IN}=V_{IN,min}$ to $V_{IN,max}$ ) |                   |      | 2   |      | mV               |
|                                                                                                                                                       | ( $12V_{IN}\pm 20\%$ )                  |                   |      | 1   |      | mV               |
| Load ( $I_O=I_{O,min}$ to $I_{O,max}$ ) Regulation                                                                                                    | All                                     |                   |      | 4   |      | mV               |

<sup>1</sup> Worst case Line and load regulation data, all temperatures, from design verification testing as per IPC9592.

# 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Electrical Specifications (continued)

| Parameter                                                                                                                  | Device               | Symbol                   | Min    | Typ             | Max   | Unit                |
|----------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|--------|-----------------|-------|---------------------|
| Adjustment Range (selected by an external resistor)                                                                        | All                  | $V_{OUT}$                | 0.6    |                 | 1.5   | Vdc                 |
| PMBus Adjustable Output Voltage Range                                                                                      | All                  | $V_{OUT}$                | 0.6    |                 | 1.5   | Vdc                 |
| PMBus Output Voltage Adjustment Step Size                                                                                  | All                  |                          |        | 61 <sup>2</sup> |       | μV                  |
| Remote Sense Range                                                                                                         | All                  |                          |        |                 | 0.3   | Vdc                 |
| Output Ripple and Noise on nominal output<br>( $V_{IN}=V_{IN,nom}$ and $I_O=I_{O,min}$ to $I_{O,max}$ $C_O = 1500 \mu F$ ) | All                  |                          |        |                 | 30    | mV <sub>pk-pk</sub> |
| Peak-to-Peak (Full bandwidth)                                                                                              |                      |                          |        |                 | 12    | mV <sub>rms</sub>   |
| RMS (Full bandwidth)                                                                                                       |                      |                          |        |                 |       |                     |
| External Capacitance <sup>3</sup>                                                                                          |                      |                          |        |                 |       |                     |
| Minimum output capacitance                                                                                                 | All                  | $C_{O,min}$              | 1500   | —               | —     | μF                  |
| Maximum output capacitance                                                                                                 | All                  | $C_{O,max}$              | —      | —               | 40000 | μF                  |
| Output Current (in either sink or source mode)                                                                             | All                  | $I_O$                    | 0.005* |                 | 120   | Adc                 |
| Output Current Limit Inception (Hiccup Mode)<br>(current limit does not operate in sink mode)                              | All                  | $I_{O,lim}$              |        | 110             |       | % $I_{O,max}$       |
| Output Short-Circuit Current<br>( $V_O \leq 250mV$ ) (Hiccup Mode)                                                         | All                  | $I_{O1,s/c}, I_{O1,s/c}$ |        | 40              |       | Arms                |
| Efficiency                                                                                                                 | $V_{O,set} = 0.6Vdc$ | $\eta$                   |        | 88.2            |       | %                   |
|                                                                                                                            | $V_{O,set} = 0.8Vdc$ | $\eta$                   |        | 90.9            |       | %                   |
|                                                                                                                            | $V_{O,set} = 1.0Vdc$ | $\eta$                   |        | 92.1            |       | %                   |
|                                                                                                                            | $V_{O,set} = 1.2Vdc$ | $\eta$                   |        | 93.0            |       | %                   |
|                                                                                                                            | $V_{O,set} = 1.5Vdc$ | $\eta$                   |        | 94.0            |       | %                   |
| $V_{IN} = 12Vdc, T_A = 25^\circ C$<br>$I_O = I_{O,max}, V_O = V_{O,set}$                                                   |                      |                          |        |                 |       |                     |
| Switching Frequency                                                                                                        | All                  | $f_{SW}$                 | -      | 400             | -     | kHz                 |
| Frequency Synchronization                                                                                                  | All                  |                          |        |                 |       |                     |
| Synchronization Frequency Range                                                                                            | All                  |                          | -15    |                 | +15   | %                   |
| High-Level Input Voltage                                                                                                   | All                  | $V_{IH,SYNC}$            | 2.5    |                 |       | V                   |
| Low-Level Input Voltage                                                                                                    | All                  | $V_{IL,SYNC}$            |        |                 | 1.1   | V                   |
| Minimum Pulse Width, SYNC                                                                                                  | All                  | $t_{SYNC}$               | 256    |                 |       | ns                  |

\* Minimum load on module should be 5mA

<sup>2</sup> this must be supported by an appropriate PMBus tool capable of writing at that resolution

<sup>3</sup> External capacitors may require using the new Tunable Loop™ feature to ensure that the module is stable as well as getting the best transient response. See the Tunable Loop™ section for details.

# 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## General Specifications

| Parameter                                                                                          | Device | Min | Typ        | Max | Unit    |
|----------------------------------------------------------------------------------------------------|--------|-----|------------|-----|---------|
| Calculated MTBF ( $I_o=0.8I_{o,max}$ , $T_A=40^\circ\text{C}$ ) Telecordia Issue 2 Method 1 Case 3 | All    |     | 11,556,226 |     | Hours   |
| Weight - Module with SMT Pins                                                                      |        |     | 57 (2.01)  |     | g (oz.) |
| Module with Through Hole Pins                                                                      |        |     | 59 (2.08)  |     | g (oz.) |

## Feature Specifications

Unless otherwise indicated, specifications apply over all operating input voltage, resistive load, and temperature conditions. See Feature Descriptions for additional information.

| Parameter                                                                                                                                                                                                                                                                                                                         | Device                   | Symbol                                       | Min                 | Typ              | Max                     | Unit                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------|---------------------|------------------|-------------------------|----------------------------------------------|
| On/Off Signal Interface<br>( $V_{IN}=V_{IN,min}$ to $V_{IN,max}$ ; open collector or equivalent,<br>Signal referenced to GND)                                                                                                                                                                                                     |                          |                                              |                     |                  |                         |                                              |
| Device Code with no suffix - Negative Logic (See Ordering Information)<br>(On/OFF pin is open collector/drain logic input with<br>external pull-up resistor; signal referenced to GND)<br>Logic High (Module OFF)<br>Input High Current<br>Input High Voltage<br>Logic Low (Module ON)<br>Input low Current<br>Input Low Voltage  | All<br>All<br>All<br>All | $I_{IH}$<br>$V_{IH}$<br>$I_{IL}$<br>$V_{IL}$ | —<br>2<br>—<br>-0.2 | —<br>—<br>—<br>— | 1<br>3.6*<br>10<br>0.4  | mA<br>Vdc<br>$\mu\text{A}$<br>Vdc            |
| Device Code with suffix "4" - Positive Logic (See Ordering Information)<br>(On/OFF pin is open collector/drain logic input with<br>external pull-up resistor; signal referenced to GND)<br>Logic High (Module ON)<br>Input High Current<br>Input High Voltage<br>Logic Low (Module OFF)<br>Input low Current<br>Input Low Voltage | All<br>All<br>All<br>All | $I_{IH}$<br>$V_{IH}$<br>$I_{IL}$<br>$V_{IL}$ | —<br>2<br>—<br>-0.2 | —<br>—<br>—<br>— | 10<br>3.6*<br>10<br>0.4 | $\mu\text{A}$<br>Vdc<br>$\mu\text{A}$<br>Vdc |
| Turn-On Delay and Rise Times                                                                                                                                                                                                                                                                                                      |                          |                                              |                     |                  |                         |                                              |
| ( $V_{IN}=V_{IN,nom}$ , $I_o=I_{o,max}$ , $V_o$ to within $\pm 1\%$ of steady state)<br>Case 1: On/Off input is enabled and then input power is<br>applied (delay from instant at which $V_{IN}=V_{IN,min}$ until $V_o=$<br>10% of $V_{o,set}$ )                                                                                  | All                      | Tdelay                                       | —                   | 30               | —                       | ms                                           |
| Case 2: Input power is applied for at least one second and<br>then the On/Off input is enabled (delay from instant at<br>which On/Off is enabled until $V_o=$ 10% of $V_{o,set}$ )                                                                                                                                                | All                      | Tdelay                                       | —                   | 15               | —                       | ms                                           |
| Output voltage Rise time (time for $V_o$ to rise from<br>10% of $V_{o,set}$ to 90% of $V_{o,set}$ )                                                                                                                                                                                                                               | All                      | Trise                                        | —                   | 10               | —                       | msec                                         |
| Output voltage overshoot ( $T_A=25^\circ\text{C}$<br>$V_{IN}=V_{IN,min}$ to $V_{IN,max}$ , $I_o=I_{o,min}$ to $I_{o,max}$ )<br>With or without maximum external capacitance                                                                                                                                                       |                          | Output                                       |                     |                  | 3.0                     | % $V_{o,set}$                                |
| Over Temperature Protection<br>(See Thermal Considerations section)                                                                                                                                                                                                                                                               | All                      | $T_{ref}$                                    |                     | 135              |                         | $^\circ\text{C}$                             |
| PMBus Over Temperature Warning Threshold                                                                                                                                                                                                                                                                                          | All                      | $T_{WARN}$                                   |                     | 125              |                         | $^\circ\text{C}$                             |

\*Use external resistive voltage divider to step down higher logic voltages

# 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Feature Specifications (cont.)

| Parameter                                                                                 | Device | Symbol          | Min  | Typ   | Max | Units          |
|-------------------------------------------------------------------------------------------|--------|-----------------|------|-------|-----|----------------|
| Tracking Accuracy (Power-Up: 0.5V/ms)                                                     | All    | $V_{SEQ} - V_o$ |      |       | 100 | mV             |
| (Power-Down: 0.5V/ms)                                                                     | All    | $V_{SEQ} - V_o$ |      |       | 100 | mV             |
| $(V_{IN, min} \text{ to } V_{IN, max}; I_{O, min} \text{ to } I_{O, max}; V_{SEQ} < V_o)$ |        |                 |      |       |     |                |
| Input Undervoltage Lockout                                                                |        |                 |      |       |     |                |
| Turn-on Threshold                                                                         | All    |                 |      |       | 7   | Vdc            |
| Turn-off Threshold                                                                        | All    |                 | 6.75 |       |     | Vdc            |
| Hysteresis                                                                                | All    |                 |      | 0.25  |     | Vdc            |
| PMBus Adjustable Input Under Voltage Lockout Thresholds                                   | All    |                 | 7    |       | 14  | Vdc            |
| Resolution of Adjustable Input Under Voltage Threshold                                    | All    |                 |      |       | 5.8 | mV             |
| PGOOD (Power Good) for output voltages set with Rtrim**                                   |        |                 |      |       |     |                |
| Signal Interface Open Drain, $V_{supply} \leq 5VDC$                                       |        |                 |      |       |     |                |
| Overvoltage threshold for PGOOD ON                                                        | All    |                 |      | 112.5 |     | % $V_{O, set}$ |
| Undervoltage threshold for PGOOD OFF                                                      | All    |                 |      | 87.5  |     | % $V_{O, set}$ |
| Pulldown resistance of PGOOD pin                                                          | All    |                 |      |       | 2   | $\Omega$       |
| Sink current capability into PGOOD pin                                                    | All    |                 |      |       | 50  | mA             |

\*\*If output voltage is set using VOUT COMMAND(21h) then PGOOD ON and PGOOD OFF thresholds should be manually set through PMBus commands 5E and 5F

# 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Digital Interface Specifications

Unless otherwise indicated, specifications apply over all operating input voltage, resistive load, and temperature conditions. See Feature Descriptions for additional information.

| Parameter                                                      | Conditions      | Symbol           | Min | Typ  | Max  | Unit             |
|----------------------------------------------------------------|-----------------|------------------|-----|------|------|------------------|
| <b>PMBus Signal Interface Characteristics</b>                  |                 |                  |     |      |      |                  |
| Input High Voltage (CLK, DATA)                                 |                 | $V_{IH}$         | 2.1 |      |      | V                |
| Input Low Voltage (CLK, DATA)                                  |                 | $V_{IL}$         |     |      | 1.1  | V                |
| Input high level current (CLK, DATA)                           |                 | $I_{IH}$         |     |      | 0.5  | $\mu$ A          |
| Input low level current (CLK, DATA)                            |                 | $I_{IL}$         |     |      | 4    | mA               |
| Output Low Voltage (CLK, DATA, SMBALERT#)                      | $I_{OUT}=4$ mA  | $V_{OL}$         |     |      | 0.25 | V                |
| Output high level open drain leakage current (DATA, SMBALERT#) | $V_{OUT}=3.6$ V | $I_{OH}$         | 5   |      | 55   | nA               |
| Pin capacitance                                                |                 | $C_0$            |     |      | 10   | pF               |
| PMBus Operating frequency range                                | Slave Mode      | F <sub>PMB</sub> | 10  |      | 1000 | kHz              |
| Data hold time                                                 |                 | $t_{HD:DAT}$     |     | 0    |      | ns               |
| Data setup time                                                |                 | $t_{SU:DAT}$     |     | 100  |      | ns               |
| <b>Measurement System Characteristics</b>                      |                 |                  |     |      |      |                  |
| Read delay time                                                |                 | $t_{DLY}$        |     | 110  |      | $\mu$ s          |
| Output current measurement range                               |                 | $I_{RNG}$        | 0   |      | 135  | A                |
| Output current measurement resolution                          |                 | $I_{RES}$        |     | 250  |      | mA               |
| Output current measurement accuracy                            | -40°C to +85°C  | $I_{ACC}$        |     |      | ±5   | % of $I_{O,max}$ |
| $V_{OUT}$ measurement range                                    |                 | $V_{OUT}$        | 0   |      | 2.0  | V                |
| $V_{OUT}$ measurement accuracy                                 |                 | $V_{OUT(gain)}$  |     | ±1   |      | % of $V_{O,max}$ |
| $V_{OUT}$ measurement resolution                               |                 | $V_{OUT(res)}$   |     | 0.61 |      | mV               |
| $V_{IN}$ measurement range                                     |                 | $V_{IN}$         | 0   |      | 16   | V                |
| $V_{IN}$ measurement accuracy                                  |                 | $V_{IN(gain)}$   |     | ±2   |      | %                |
| $V_{IN}$ measurement resolution                                |                 | $V_{IN(res)}$    |     | 5.8  |      | mV               |
| Temperature measurement range                                  |                 | $T_{MEAS}$       | -25 |      | 150  | °C               |
| Temperature measurement accuracy                               |                 | $T_{MEAS(gain)}$ | -8  |      | 8    | °C               |
| Temperature measurement resolution                             |                 | $T_{MEAS(res)}$  |     | 0.08 |      | °C               |

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Characteristic Curves

The following figures provide typical characteristics for the 120A Digital TeraDlynx™ at 0.6V<sub>o</sub> and 25°C.

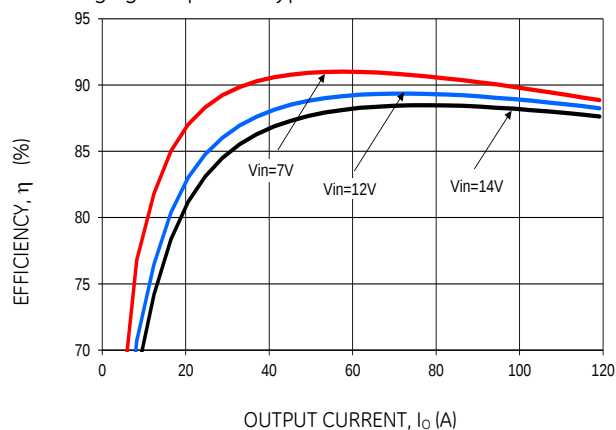


Figure 1. Converter Efficiency versus Output Current.

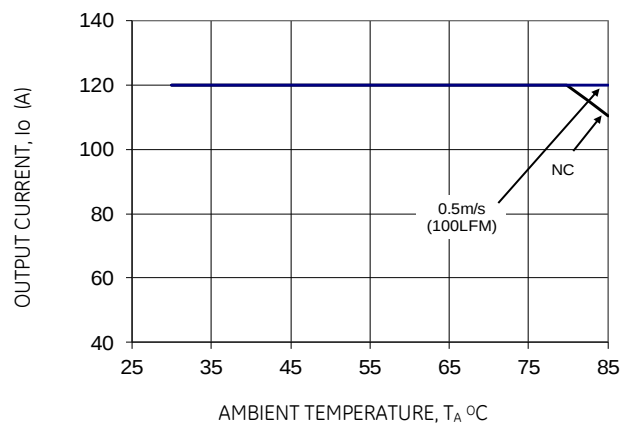


Figure 2. Derating Output Current versus Ambient Temperature and Airflow.

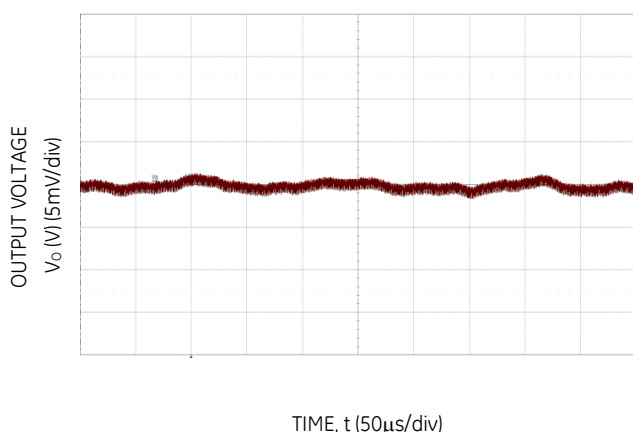


Figure 3. Typical output ripple and noise ( $C_o=12 \times 47\mu\text{F}$  ceramic +  $10 \times 470\mu\text{F}$  polymer,  $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

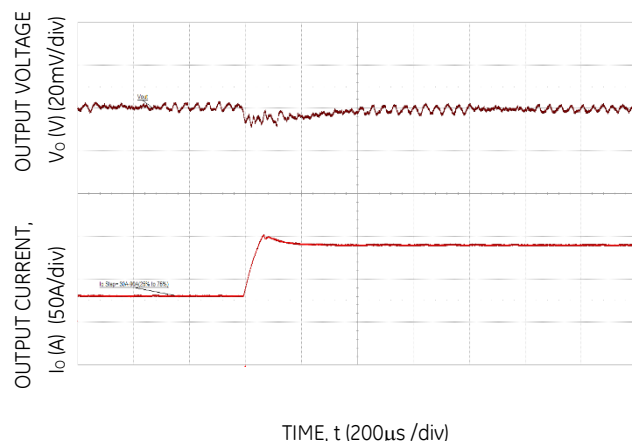


Figure 4. Transient Response to Dynamic Load Change from 25% to 75% at 12V<sub>in</sub>,  $C_o = 12 \times 47\mu\text{F} + 10 \times 1000\mu\text{F}$ ,  $R_{TUNE} = 3.01\text{k}\Omega$ .

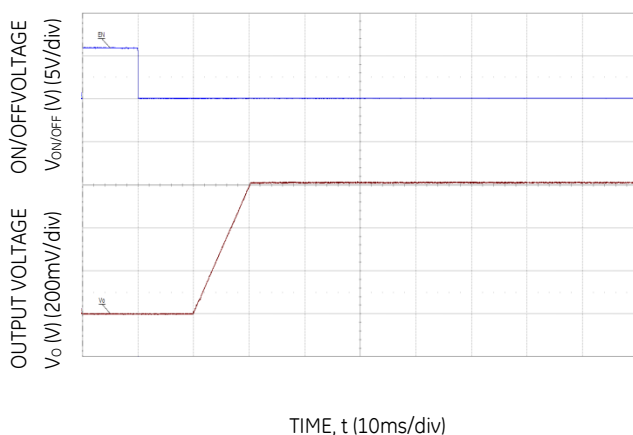


Figure 5. Typical Start-up Using On/Off Voltage ( $I_o = I_{o,max}$ ).

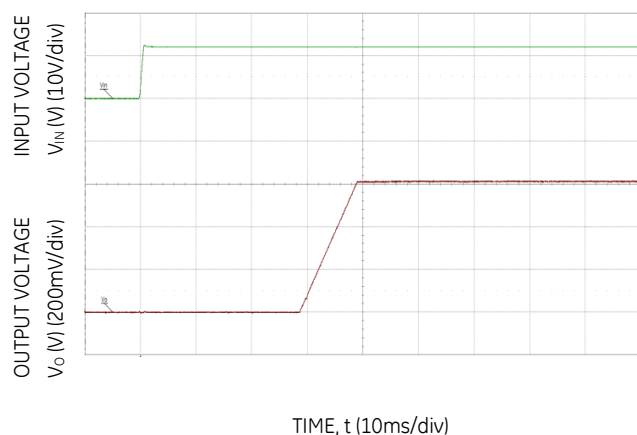


Figure 6. Typical Start-up Using Input Voltage ( $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

# 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Characteristic Curves

The following figures provide typical characteristics for the 120A TeraDLynx™ at 0.8V<sub>o</sub> and 25°C

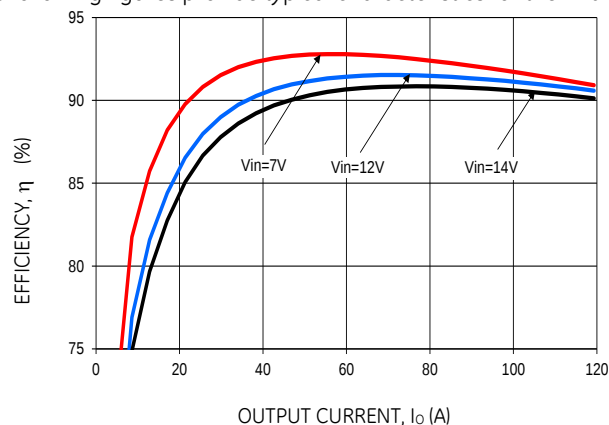


Figure 7. Converter Efficiency versus Output Current.

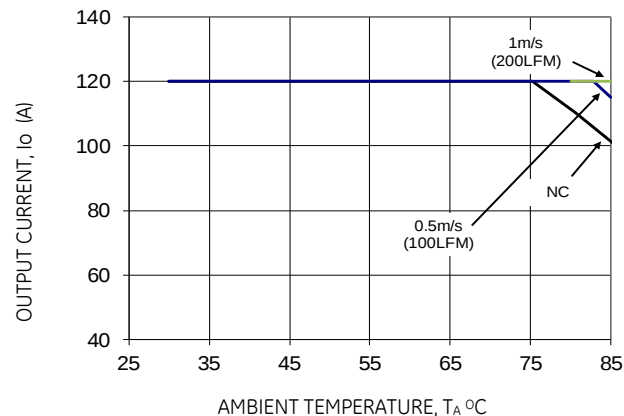


Figure 8. Derating Output Current versus Ambient Temperature and Airflow.

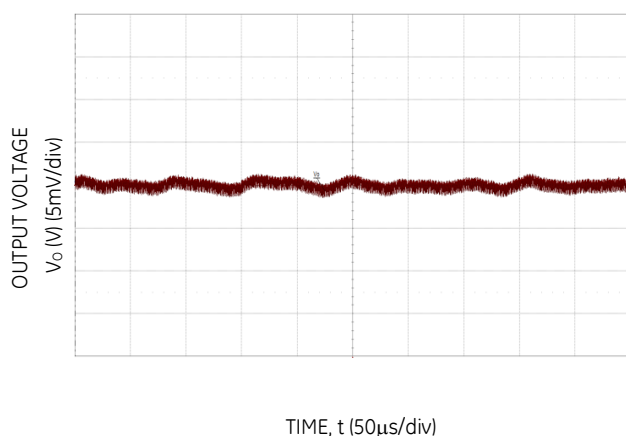


Figure 9. Typical output ripple and noise ( $C_o=12 \times 47\mu\text{F}$  ceramic +  $10 \times 470\mu\text{F}$  polymer,  $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

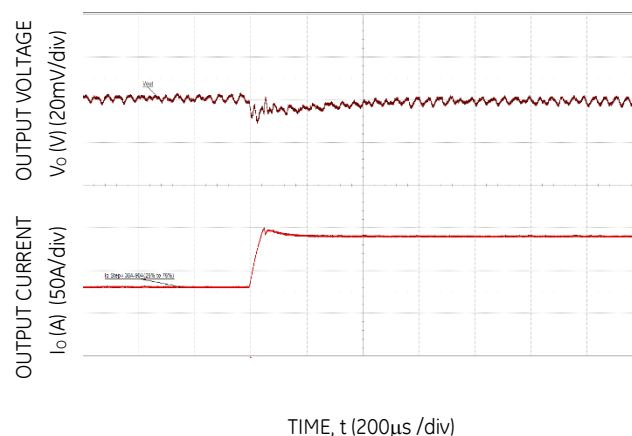


Figure 10. Transient Response to Dynamic Load Change from 25% to 75% at 12Vin,  $C_o = 12 \times 47\mu\text{F} + 10 \times 1000\mu\text{F}$ ,  $R_{TUNE} = 3.01\text{k}\Omega$ .

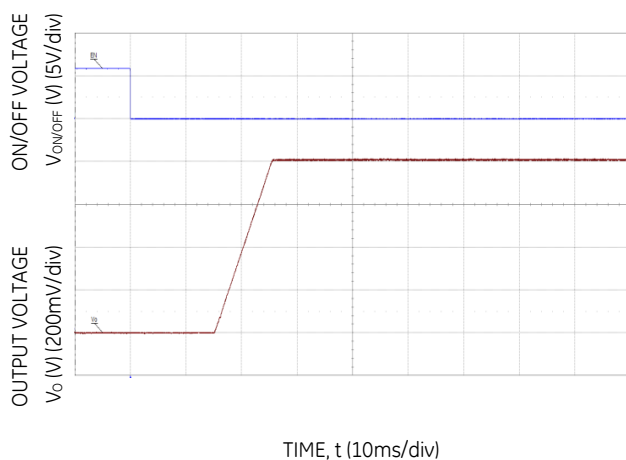


Figure 11. Typical Start-up Using On/Off Voltage ( $I_o = I_{o,max}$ ).

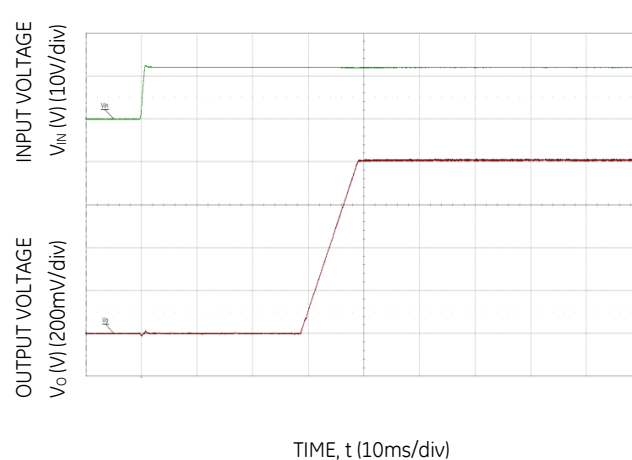


Figure 12. Typical Start-up Using Input Voltage ( $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Characteristic Curves

The following figures provide typical characteristics for the 120A Digital TeraDlynx™ at 1.0V<sub>o</sub> and 25°C.

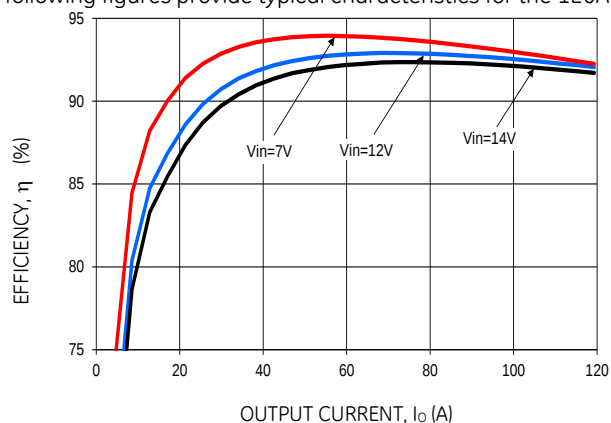


Figure 13. Converter Efficiency versus Output Current.

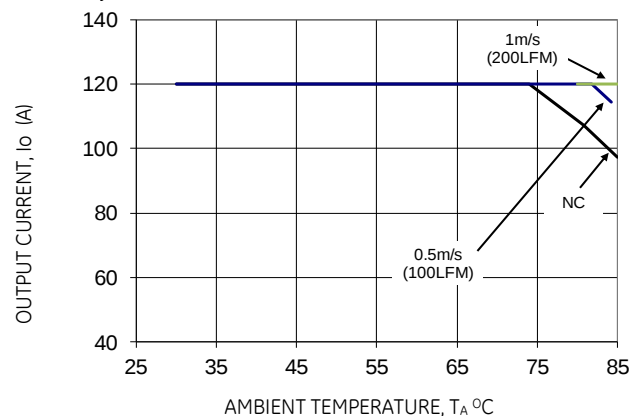


Figure 14. Derating Output Current versus Ambient Temperature and Airflow.

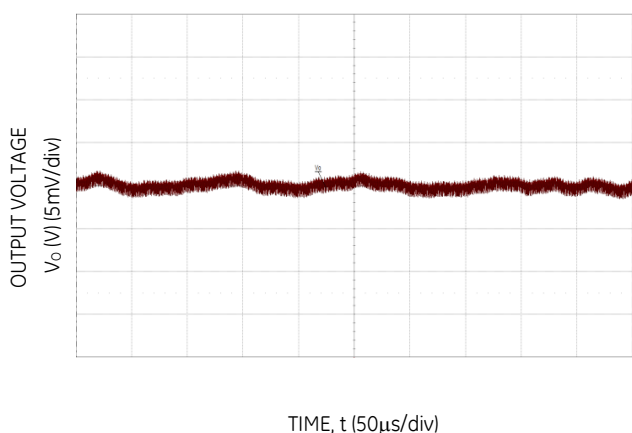


Figure 15. Typical output ripple and noise ( $C_o=12 \times 47\mu\text{F}$  ceramic +  $10 \times 470\mu\text{F}$  polymer,  $V_{in} = 12\text{V}$ ,  $I_o = I_{o,max}$ .)

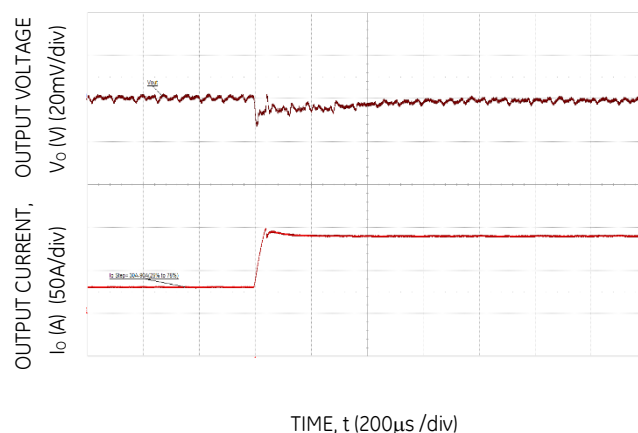


Figure 16. Transient Response to Dynamic Load Change from 25% to 75% at 12Vin,  $C_o = 12 \times 47\mu\text{F} + 10 \times 1000\mu\text{F}$ ,  $R_{TUNE} = 3.01\text{k}\Omega$ .

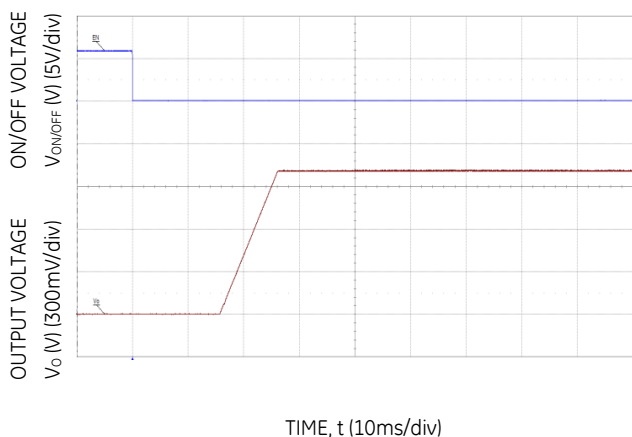


Figure 17. Typical Start-up Using On/Off Voltage ( $I_o = I_{o,max}$ ).

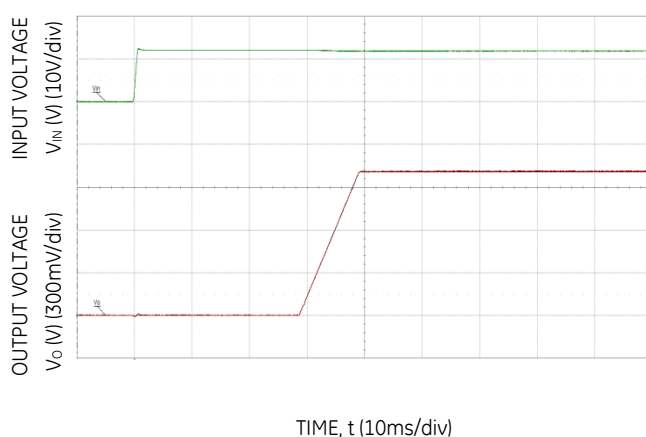


Figure 18. Typical Start-up Using Input Voltage ( $V_{in} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Characteristic Curves

The following figures provide typical characteristics for the 120A Digital TeraDlynx™ at 1.2V<sub>o</sub> and 25°C.

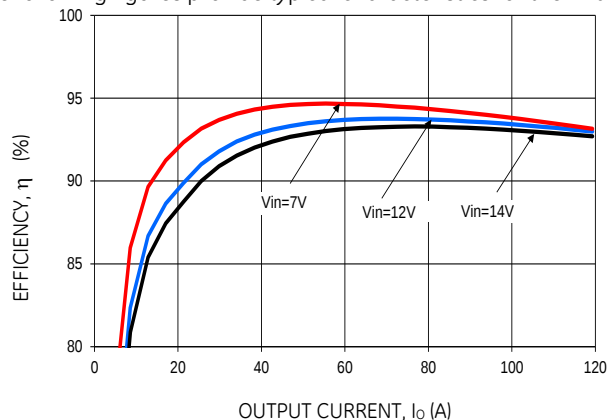


Figure 19. Converter Efficiency versus Output Current.

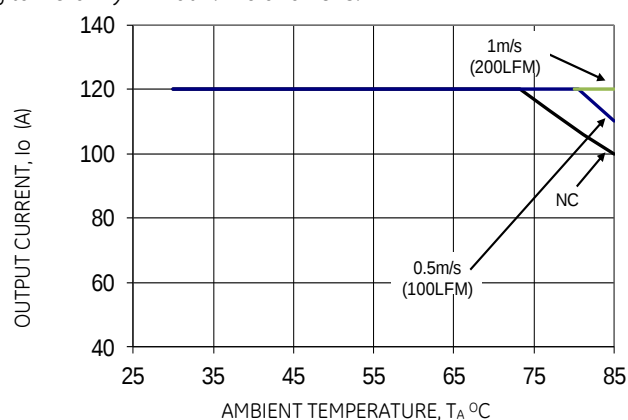


Figure 20. Derating Output Current versus Ambient Temperature and Airflow.

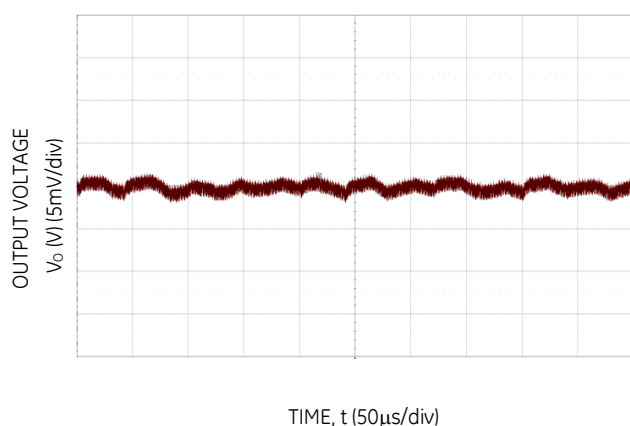


Figure 21. Typical output ripple and noise ( $C_o=12 \times 47\mu\text{F}$  ceramic +  $10 \times 470\mu\text{F}$  polymer,  $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ .)

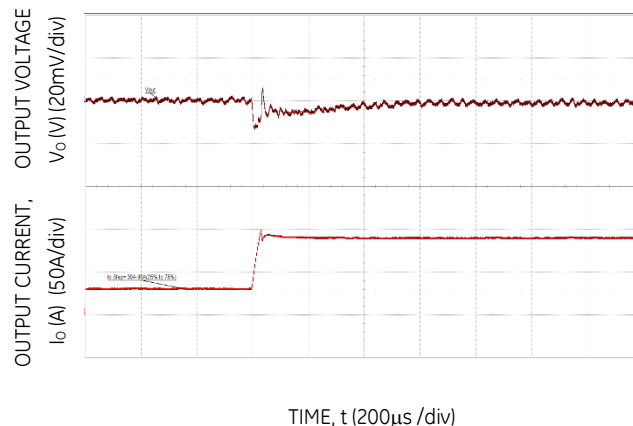


Figure 22. Transient Response to Dynamic Load Change from 25% to 75% at 12Vin,  $C_o = 12 \times 47\mu\text{F} + 10 \times 1000\mu\text{F}$ ,  $R_{TUNE} = 3.01\text{k}\Omega$ .

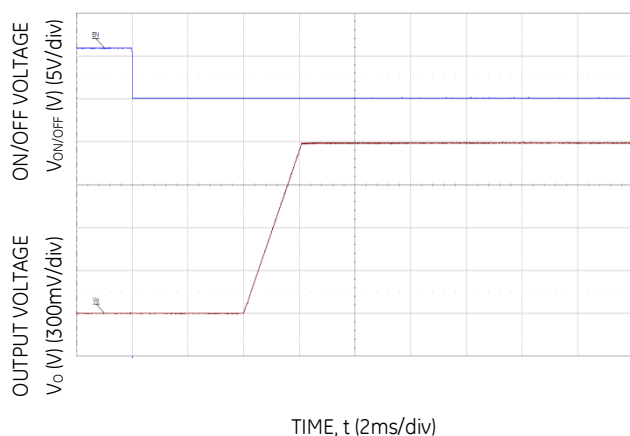


Figure 23. Typical Start-up Using On/Off Voltage ( $I_o = I_{o,max}$ ).

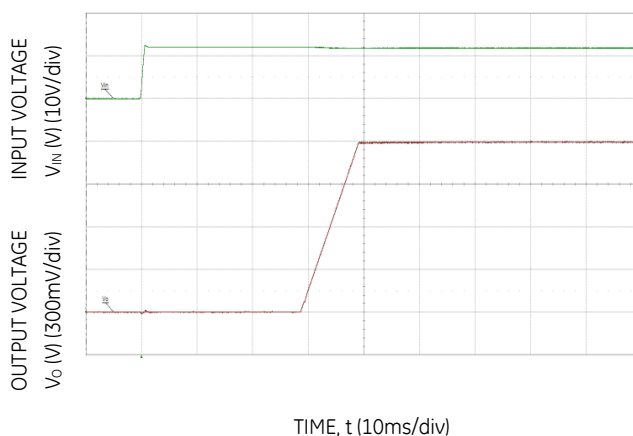


Figure 24. Typical Start-up Using Input Voltage ( $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Characteristic Curves

The following figures provide typical characteristics for the 120A Digital TeraDlynx™ at 1.5V<sub>o</sub> and 25°C.

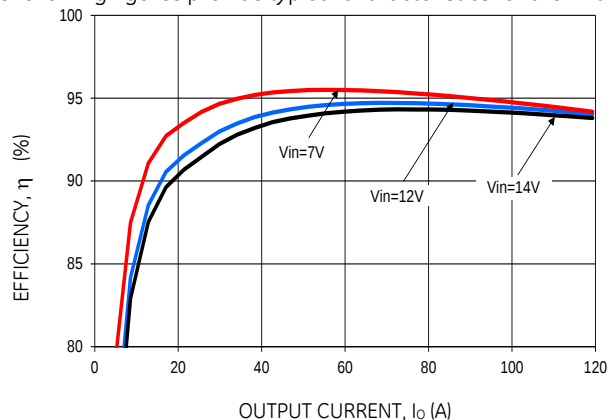


Figure 25. Converter Efficiency versus Output Current.

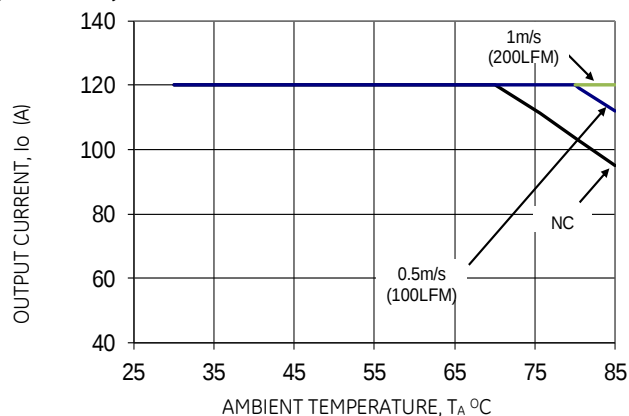


Figure 26. Derating Output Current versus Ambient Temperature and Airflow.

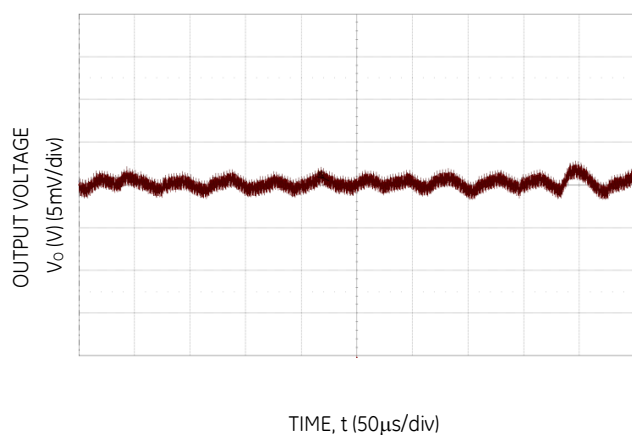


Figure 27. Typical output ripple and noise ( $C_o=12 \times 47\mu\text{F}$  ceramic +  $10 \times 470\mu\text{F}$  polymer,  $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ )

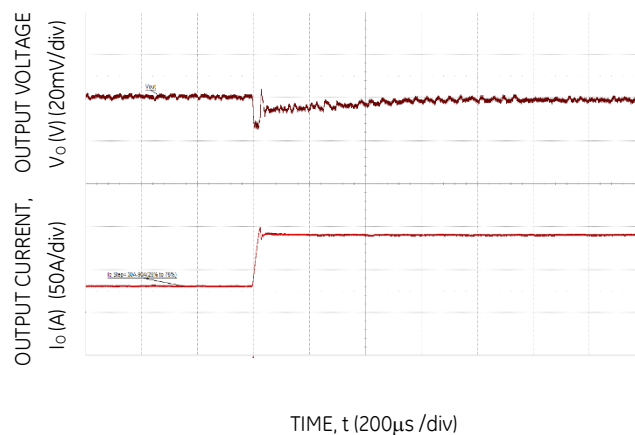


Figure 28. Transient Response to Dynamic Load Change from 25% to 75% at 12Vin,  $C_o = 12 \times 47\mu\text{F} + 10 \times 1000\mu\text{F}$ ,  $R_{TUNE} = 3.01\text{k}\Omega$ .

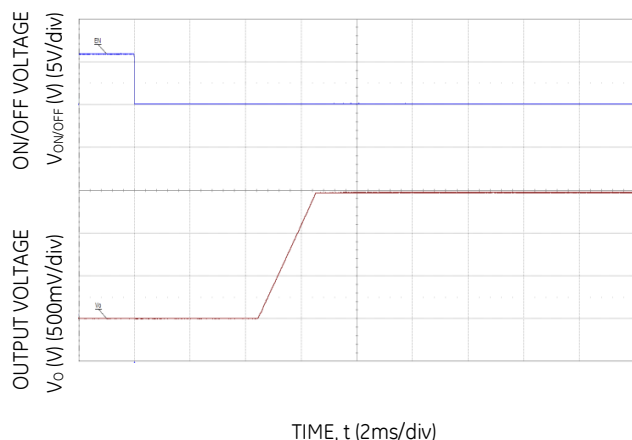


Figure 29. Typical Start-up Using On/Off Voltage ( $I_o = I_{o,max}$ ).

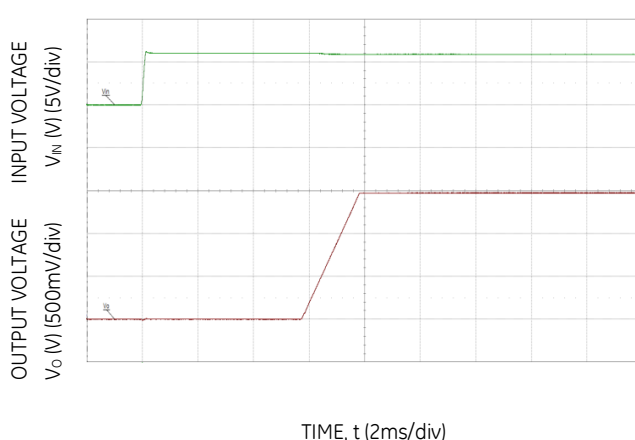


Figure 30. Typical Start-up Using Input Voltage ( $V_{IN} = 12\text{V}$ ,  $I_o = I_{o,max}$ ).

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

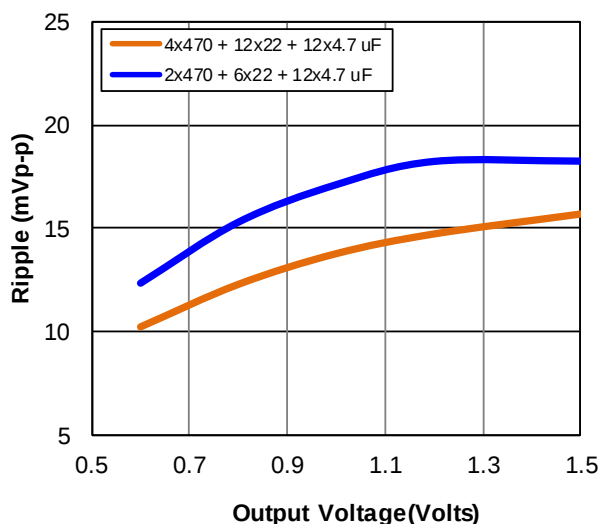
7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

### Design Considerations

#### Input Filtering

The 120A TeraDlynx™ module should be connected to a low ac-impedance source. A highly inductive source can affect the stability of the module. An input capacitance must be placed directly adjacent to the input pins of the module, to minimize input ripple voltage and ensure module stability.

To minimize input voltage ripple, ceramic capacitors are recommended at the input of the module. Figure 31 shows the input ripple voltage for various output voltages at 120A of load current with 4x470 + 12x22 + 12x4.7  $\mu$ F and 2x470 + 6x22 + 12x4.7  $\mu$ F input capacitor combinations.



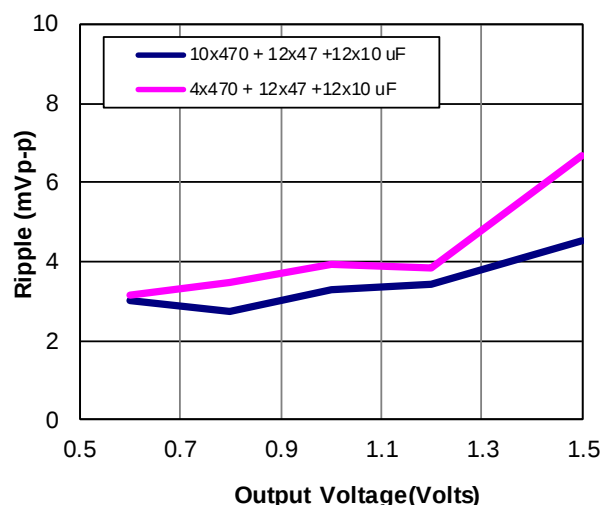
**Figure 31. Input ripple voltage for various output voltages with two input capacitor combinations at 120A load. Input voltage is 12V.**

#### Output Filtering

These modules are designed for low output ripple voltage and will meet the maximum output ripple specification with minimum of 12 x 22  $\mu$ F ceramic capacitors at the output of the module. However, additional output filtering may be required by the system designer for a number of reasons. First, there may be a need to further reduce the output ripple and noise of the module. Second, the dynamic response characteristics may need to be customized to a particular load step change.

To reduce the output ripple and improve the dynamic response to a step load change, additional capacitance at the output can be used. Low ESR polymer and ceramic capacitors are recommended to improve the dynamic response of the module. Figure 32 provides output ripple information for capacitance of ~3574 $\mu$ F (47 $\mu$ F (1210 ceramic) x 12 + 10 $\mu$ F (0805 ceramic) + 0.1 $\mu$ F (0402) x 4 + 1000 $\mu$ F (polymer) x 3) at various  $V_o$  and a full load current of 120A. For stable operation of the module, limit the capacitance to less than the maximum output capacitance as specified in the electrical specification table. Optimal

performance of the module can be achieved by using the Tunable Loop™ feature described later in this data sheet.



**Figure 32. Peak to peak output ripple voltage for various output voltages with external capacitors at the output (120A load). Input voltage is 12V.**

### Safety Considerations

For safety agency approval the power module must be installed in compliance with the spacing and separation requirements of the end-use safety agency standards, i.e., ANSI/UL 60950-1 2<sup>nd</sup> Revised October 14, 2014, CSA C22.2 No. 60950-1-07, Second Ed. + A2:2014 (MOD), DIN EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011, + A2:2013 (VDE0805 Teil 1: 2014-08)(pending).

For the converter output to be considered meeting the requirements of safety extra-low voltage (SELV), the input must meet SELV requirements. The power module has extra-low voltage (ELV) outputs when all inputs are ELV.

The input to these units is to be provided with a slow-blow fuse. When the input voltage is  $\leq 8$ V, the recommendation is to use two 25A Littelfuse 456 series or equivalent fuses in parallel. For input voltages  $> 8$ V, a single 40A Littelfuse series 456 or equivalent fuse is recommended.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Analog Feature Descriptions

### Remote On/Off

The TeraDlynx 120A module can be turned ON and OFF either by using the ON/OFF pin (Analog interface) or through the PMBus interface (Digital). The module can be configured in a number of ways through the PMBus interface to react to the ON/OFF input:

- Module ON/OFF can be controlled only through the analog interface (digital interface ON/OFF commands are ignored)
- Module ON/OFF can be controlled only through the PMBus interface (analog interface is ignored)
- Module ON/OFF can be controlled by either the analog or digital interface

The default state of the module (as shipped from the factory) is to be controlled by the analog interface only. If the digital interface is to be enabled, or the module is to be controlled only through the digital interface, this change must be made through the PMBus. These changes can be made and written to non-volatile memory on the module so that it is remembered for subsequent use.

### Analog On/Off

The 120A Digital TeraDlynx™ power modules feature an On/Off pin for remote On/Off operation. With the Negative Logic On/Off option, (see Ordering Information), the module turns OFF during logic High and ON during logic Low. The On/Off signal should be always referenced to ground. Leaving the On/Off pin disconnected will turn the module ON when input voltage is present. With the positive logic on/off option, the module turns ON during logic high and OFF during logic low.

### Digital On/Off

Please see the Digital Feature Descriptions section.

### Monotonic Start-up and Shutdown

The module has monotonic start-up and shutdown behavior on the output for any combination of rated input voltage, output current and operating temperature range.

### Startup into Pre-biased Output

The module will start into a pre biased output on output as long as the pre bias voltage is 0.5V less than the set output voltage.

### Analog Output Voltage Programming

The output voltage of the module is programmable to any voltage from 0.6 to 1.5Vdc, as shown in Table 1, by connecting a resistor between the Trim and SIG\_GND pins of the module as shown in Figure 33.

Without an external resistor between the Trim pin and SIG\_GND pins, the output of the module will be 0.1 Vdc. The value of the trim resistor,  $R_{trim}$  for a desired output voltage, should be selected as shown in Table 1.

The trim resistor is only determined during module initialization and hence cannot be used for dynamic output voltage adjustment

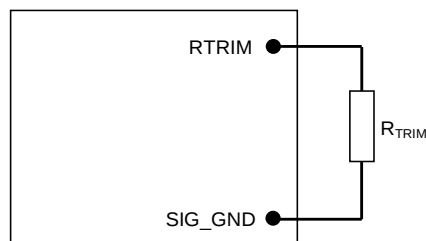


Figure 33. Circuit configuration for programming output voltage using an external resistor.

Table 1

| $V_{O, set}$<br>(V) | $R_{trim}$<br>( $\Omega$ ) | $V_{O, set}$<br>(V) | $R_{trim}$<br>( $\Omega$ ) | $V_{O, set}$<br>(V) | $R_{trim}$<br>( $\Omega$ ) |
|---------------------|----------------------------|---------------------|----------------------------|---------------------|----------------------------|
| 0.600               | 1090                       | 1.000               | 2870                       | 1.400               | 18900                      |
| 0.620               | 1140                       | 1.020               | 3050                       | 1.420               | 23200                      |
| 0.640               | 1180                       | 1.040               | 3240                       | 1.440               | 29800                      |
| 0.660               | 1230                       | 1.060               | 3480                       | 1.460               | 40200                      |
| 0.680               | 1290                       | 1.080               | 3700                       | 1.480               | 60400                      |
| 0.700               | 1330                       | 1.100               | 3920                       | 1.500               | 115000                     |
| 0.720               | 1380                       | 1.120               | 4220                       |                     |                            |
| 0.740               | 1470                       | 1.140               | 4530                       |                     |                            |
| 0.760               | 1560                       | 1.160               | 4990                       |                     |                            |
| 0.780               | 1640                       | 1.180               | 5360                       |                     |                            |
| 0.800               | 1740                       | 1.200               | 5900                       |                     |                            |
| 0.820               | 1820                       | 1.220               | 6420                       |                     |                            |
| 0.840               | 1930                       | 1.240               | 6980                       |                     |                            |
| 0.860               | 2030                       | 1.260               | 7680                       |                     |                            |
| 0.880               | 2130                       | 1.280               | 8450                       |                     |                            |
| 0.900               | 2230                       | 1.300               | 9420                       |                     |                            |
| 0.920               | 2340                       | 1.320               | 10400                      |                     |                            |
| 0.940               | 2460                       | 1.340               | 11700                      |                     |                            |
| 0.960               | 2610                       | 1.360               | 13500                      |                     |                            |
| 0.980               | 2710                       | 1.380               | 15800                      |                     |                            |

### Digital Output Voltage Adjustment

Please see the Digital Feature Descriptions section.

### Remote Sense

The power module has a differential Remote Sense feature to minimize the effects of distribution losses by regulating the voltage between the sense pins (VS+ and VS-) for the output. The voltage drop between the sense pins and the VOUT and GND pins of the module should not exceed 0.3V.

### Digital Output Voltage Margining

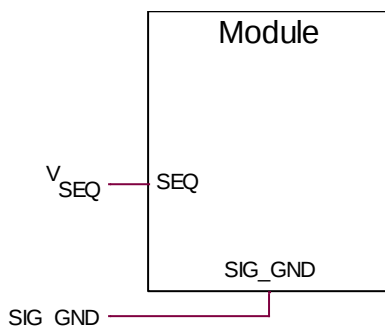
Please see the Digital Feature Descriptions section.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Output Voltage Sequencing

The power module includes a sequencing feature, EZ-SEQUENCE that enables users to implement various types of output voltage sequencing in their applications. This is accomplished via an additional sequencing pin. When not using the sequencing feature, leave it unconnected.



**Figure 34. Circuit showing connection of the sequencing signal to the SEQ pin.**

When the sequencing voltage is applied to the SEQ pin, the output voltage tracks this voltage until the output reaches the set-point voltage. The final value of the sequencing voltage must be set higher than the set-point voltage of the module. The output voltage follows the sequencing voltage on a one-to-one basis. By connecting multiple modules together, multiple modules can track their output voltages to the voltage applied on the SEQ pin.

The module's output can track the SEQ pin signal with slopes of up to 0.5V/msec during power-up or power-down. To initiate simultaneous shutdown of the modules, the SEQ pin voltage is lowered in a controlled manner. The output voltage of the modules tracks the voltages below their set-point voltages on a one-to-one basis. A valid input voltage must be maintained until the tracking and output voltages reach ground potential.

## Digital Sequencing

The module can support digital sequencing by allowing control of the turn-on delay and rise times as well as turn-off and fall times,

## Digital Output Voltage Margining

Please see the Digital Feature Descriptions section.

## Overcurrent Protection (OCP)

To provide protection in a fault (output overload) condition, the unit is equipped with internal current-limiting circuitry on output and can endure current limiting continuously. The module overcurrent response is non-latching shutdown with automatic recovery. OCP response time is programmable through manufacturer specific commands. The unit operates normally once the output current is brought back into its specified range.

## Digital Adjustable Overcurrent Warning

Please see the Digital Feature Descriptions section.

## Overtemperature Protection

To provide protection in a fault condition, the unit is equipped with a thermal shutdown circuit. The unit will shut down if the overtemperature threshold of 135 °C (typ) is exceeded at the thermal reference point  $T_{ref}$ . Once the unit goes into thermal shutdown it will then wait to cool before attempting to restart.

## Digital Adjustable Overcurrent Warning/Shutdown

Please see the Digital Feature Descriptions section.

## Digital Temperature Status via PMBus

Please see the Digital Feature Descriptions section.

## Digitally Adjustable Output Over and Under Voltage Protection

Please see the Digital Feature Descriptions section.

## Input Undervoltage Lockout

At input voltages below the input undervoltage lockout limit, module operation for the associated output is disabled. The module will begin to operate at an input voltage above the undervoltage lockout turn-on threshold.

## Digitally Adjustable Input Undervoltage Lockout

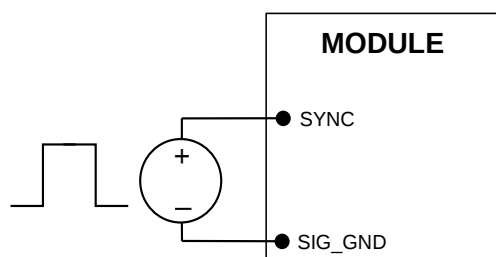
Please see the Digital Feature Descriptions section.

## Digitally Adjustable Power Good Thresholds

Please see the Digital Feature Descriptions section.

## Synchronization

The module switching frequency is capable of being synchronized to an external signal frequency within a specified range. Synchronization is done by using the external signal applied to the SYNC pin of the module as shown in Fig. 35, with the converter being synchronized by the rising edge of the external signal. The Electrical Specifications table specifies the requirements of the external SYNC signal. If the SYNC pin is not used, the module should free run at the default switching frequency.



**Figure 35. External source connections to synchronize switching frequency of the module.**

## Measuring Output Current, Output Voltage and Input Voltage

Please see the Digital Feature Descriptions section.

## Digital Compensator

The TJT120 module uses digital control to regulate the output voltage. As with all POL modules, external capacitors

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

are usually added to the output of the module for two reasons: to reduce output ripple and noise and to reduce output voltage deviations from the steady-state value in the presence of dynamic load current changes. Adding external capacitance however affects the voltage control loop of the module, typically causing the loop to slow down with sluggish response. Larger values of external capacitance could also cause the module to become unstable.

The TJT120 comes with default compensation values programmed into the non-volatile memory of the module. These digital compensation values can be adjusted externally to optimize transient response and also ensure stability for a wide range of external capacitance, as well as with different types of output capacitance. This can be done by two different methods.

1. By allowing the user to select among several pre-tuned compensation choices to select the one most suited to the transient response needs of the load. This selection is made via a resistor  $R_{TUNE}$  connected between the  $RTUNE$  and  $SIG\_GND$  pins as shown in Fig. 35. Table 2 shows various pre-tuned compensation combinations recommended for various external capacitor combinations.
2. Using PMBus to change compensation parameters in the module.

Note that during initial startup of the module, compensation values that are stored in non-volatile memory are used. If a resistor  $R_{TUNE}$  is connected to the module, then the compensation values are changed to ones that correspond to the value of  $R_{TUNE}$ . If  $RTUNE$  is open however, no change in compensation values is made. Finally, if the user chooses to do so, they can overwrite the compensation values via PMBus commands.

Recommended values of  $R_{TUNE}$  for different output capacitor combinations are given in Table 2. If no  $RTUNE$  is used, the default compensation values are used.

The TJT120 pre-tuned compensation can be divided into three different banks (COMP1, COMP2, COMP3) that are available to the user to compensate the control loop for various values and combinations of output capacitance and to obtain reliable and stable performance under different conditions. Each bank consists of 20 different sets of compensation coefficients pre-calculated for different values of output capacitance. The three banks are set up as follows:

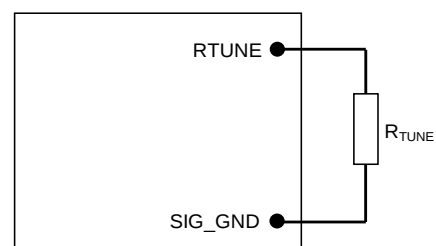
- COMP1: Recommended for the case where all of the output capacitance is composed of only ceramic

capacitors. The range of external output capacitance is from 1470  $\mu F$  to a maximum value of 17640  $\mu F$

- COMP2: For the most commonly used mix of ceramic and polymer type capacitors that have higher output capacitance in a smaller size. The range of output capacitance is from 2564  $\mu F$  to a maximum of 30564  $\mu F$ . This is the combination of output capacitance and compensation that can achieve the best transient response at lowest cost and smallest size. For example, with the maximum output capacitance of  $12 \times 47\mu F$  ceramics +  $25 \times 1000 \mu F$  polymer capacitors, and selecting  $RTUNE = 5.36k\Omega$ , transient deviation can be as low as 25 mV, for a 50% load step (0 to 85A).
- COMP3: Suitable for a mix of ceramic and higher ESR polymers or electrolytic capacitors, with output capacitance ranging from a minimum of 2204  $\mu F$  to a maximum of 30084  $\mu F$ .

Selecting  $R_{TUNE}$  according to Table 2 will ensure stable operation of the module with sufficient stability margin as well as yield optimal transient response.

In applications with tight output voltage limits in the presence of dynamic current loading, additional output capacitance will be required. Table 3 lists recommended values of  $R_{TUNE}$  in order to meet 2% output voltage deviation limits for some common output voltages in the presence of an 60A to 120A step change (50% of full load), with an input voltage of 12V. Please contact your GE technical representative to obtain more details of this feature as well as for guidelines on how to select the right value of external  $RTUNE$  to tune the module for best transient performance and stable operation for other output capacitance values. Simulation models are also available via the GE Power Module Wizard to predict stability characteristics and transient response.



**Figure 36. Circuit diagram showing connection of  $R_{TUNE}$  to tune the control loop of the module.**

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 2. Recommended R<sub>TUNE</sub> Compensation.

| Output Capacitance Type     | Number of Output Capacitors** | Total Output Capacitance (μF)** | R <sub>TUNE</sub> resistor (Ω) | R <sub>TUNE</sub> Index | KD   | KI | KP   | AP  |
|-----------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------|------|----|------|-----|
| Default Compensation Values |                               |                                 | OPEN                           |                         | 375  | 2  | 37   | 150 |
| Ceramic                     | 10 × 47μF + 10 × 100μF        | 1398                            | 29.1                           | 0                       | 375  | 2  | 37   | 150 |
| Ceramic                     | 12 × 47μF + 12 × 100μF        | 1644                            | 88.7                           | 1                       | 441  | 3  | 44   | 150 |
| Ceramic                     | 14 × 47μF + 14 × 100μF        | 1890                            | 150                            | 2                       | 506  | 3  | 51   | 150 |
| Ceramic                     | 16 × 47μF + 16 × 100μF        | 2136                            | 213                            | 3                       | 572  | 3  | 57   | 150 |
| Ceramic                     | 19 × 47μF + 19 × 100μF        | 2505                            | 280                            | 4                       | 671  | 3  | 67   | 150 |
| Ceramic                     | 22 × 47μF + 22 × 100μF        | 2874                            | 348                            | 5                       | 770  | 4  | 77   | 150 |
| Ceramic                     | 25 × 47μF + 25 × 100μF        | 3243                            | 417                            | 6                       | 869  | 4  | 87   | 150 |
| Ceramic                     | 28 × 47μF + 28 × 100μF        | 3612                            | 493                            | 7                       | 968  | 4  | 97   | 150 |
| Ceramic                     | 31 × 47μF + 31 × 100μF        | 3981                            | 569                            | 8                       | 1067 | 4  | 107  | 150 |
| Ceramic                     | 34 × 47μF + 34 × 100μF        | 4350                            | 642                            | 9                       | 1166 | 4  | 117  | 150 |
| Ceramic                     | 38 × 47μF + 38 × 100μF        | 4842                            | 723                            | 10                      | 1297 | 5  | 130  | 150 |
| Ceramic                     | 42 × 47μF + 42 × 100μF        | 5334                            | 806                            | 11                      | 1429 | 5  | 143  | 150 |
| Ceramic                     | 48 × 47μF + 48 × 100μF        | 6072                            | 898                            | 12                      | 1627 | 5  | 163  | 150 |
| Ceramic                     | 55 × 47μF + 55 × 100μF        | 6933                            | 938                            | 13                      | 1858 | 5  | 186  | 150 |
| Ceramic                     | 63 × 47μF + 63 × 100μF        | 7917                            | 1090                           | 14                      | 2121 | 6  | 212  | 150 |
| Ceramic                     | 72 × 47μF + 72 × 100μF        | 9024                            | 1180                           | 15                      | 2418 | 6  | 242  | 150 |
| Ceramic                     | 82 × 47μF + 82 × 100μF        | 10254                           | 1290                           | 16                      | 2748 | 7  | 275  | 150 |
| Ceramic                     | 93 × 47μF + 93 × 100μF        | 11607                           | 1400                           | 17                      | 3110 | 7  | 311  | 150 |
| Ceramic                     | 105 × 47μF + 105 × 100μF      | 13083                           | 1520                           | 18                      | 3506 | 7  | 351  | 150 |
| Ceramic                     | 120 × 47μF + 120 × 100μF      | 14928                           | 1640                           | 19                      | 4000 | 8  | 400  | 150 |
| Ceramic + Polymer           | 12 × 47μF + 2 × 1000μF        | 2672                            | 1760                           | 20                      | 501  | 3  | 300  | 220 |
| Ceramic + Polymer           | 12 × 47μF + 3 × 1000μF        | 3672                            | 1890                           | 21                      | 688  | 3  | 413  | 220 |
| Ceramic + Polymer           | 12 × 47μF + 4 × 1000μF        | 4672                            | 2030                           | 22                      | 876  | 3  | 525  | 220 |
| Ceramic + Polymer           | 12 × 47μF + 5 × 1000μF        | 5672                            | 2150                           | 23                      | 1063 | 4  | 638  | 220 |
| Ceramic + Polymer           | 12 × 47μF + 6 × 1000μF        | 6672                            | 2320                           | 24                      | 1250 | 4  | 750  | 220 |
| Ceramic + Polymer           | 12 × 47μF + 7 × 1000μF        | 7672                            | 2460                           | 25                      | 1438 | 4  | 860  | 220 |
| Ceramic + Polymer           | 12 × 47μF + 8 × 1000μF        | 8672                            | 2640                           | 26                      | 1625 | 5  | 975  | 220 |
| Ceramic + Polymer           | 12 × 47μF + 9 × 1000μF        | 9672                            | 2840                           | 27                      | 1813 | 5  | 1088 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 10 × 1000μF       | 10672                           | 3010                           | 28                      | 2000 | 5  | 1200 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 11 × 1000μF       | 11672                           | 3200                           | 29                      | 2187 | 5  | 1312 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 12 × 1000μF       | 12672                           | 3400                           | 30                      | 2375 | 5  | 1425 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 13 × 1000μF       | 13672                           | 3650                           | 31                      | 2562 | 6  | 1537 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 15 × 1000μF       | 15672                           | 3880                           | 32                      | 2937 | 6  | 1762 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 17 × 1000μF       | 17672                           | 4120                           | 33                      | 3312 | 6  | 1987 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 19 × 1000μF       | 19672                           | 4420                           | 34                      | 3687 | 7  | 2212 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 21 × 1000μF       | 21672                           | 4700                           | 35                      | 4061 | 7  | 2437 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 23 × 1000μF       | 23672                           | 5050                           | 36                      | 4436 | 7  | 2662 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 25 × 1000μF       | 25672                           | 5360                           | 37                      | 4811 | 8  | 2887 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 27 × 1000μF       | 27672                           | 5760                           | 38                      | 5186 | 8  | 3112 | 220 |
| Ceramic + Polymer           | 12 × 47μF + 30 × 1000μF       | 30672                           | 6120                           | 39                      | 5748 | 8  | 3449 | 220 |

\*\* Total output capacitance includes the capacitance inside the module is 4 × 47μF (3mΩ ESR). Effective capacitance of 47uF cap taken as 42uF, 100uF cap taken as 81uF. Polymers taken at rated values of 100uF and 820uF

Note: The capacitors used in the digital compensation Loop tables are 47μF/3 mΩ ESR ceramic, 100uF/3.2mΩ ceramic, 1000 μF/6mΩ ESR polymer capacitor and 820uF/19mΩ ESR Polymer capacitor.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 2 (continued).  $R_{TUNE}$  compensation table

| Output Capacitance Type | Number of Output Capacitors**      | Total Output Capacitance ( $\mu$ F)** | $R_{TUNE}$ resistor ( $\Omega$ ) | $R_{TUNE}$ Index | KD   | KI | KP   | AP  |
|-------------------------|------------------------------------|---------------------------------------|----------------------------------|------------------|------|----|------|-----|
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 2 x 820 $\mu$ F  | 2312                                  | 6570                             | 40               | 176  | 2  | 176  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 3 x 820 $\mu$ F  | 3312                                  | 7060                             | 41               | 238  | 3  | 238  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 4 x 820 $\mu$ F  | 3952                                  | 7590                             | 42               | 301  | 3  | 301  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 5 x 820 $\mu$ F  | 4772                                  | 8160                             | 43               | 363  | 3  | 363  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 6 x 820 $\mu$ F  | 5592                                  | 8870                             | 44               | 426  | 4  | 426  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 7 x 820 $\mu$ F  | 6412                                  | 9530                             | 45               | 488  | 4  | 488  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 8 x 820 $\mu$ F  | 7312                                  | 10400                            | 46               | 550  | 4  | 550  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 9 x 820 $\mu$ F  | 8052                                  | 11300                            | 47               | 613  | 4  | 613  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 10 x 820 $\mu$ F | 8872                                  | 12400                            | 48               | 675  | 5  | 675  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 11 x 820 $\mu$ F | 9692                                  | 13700                            | 49               | 738  | 5  | 738  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 12 x 820 $\mu$ F | 10512                                 | 15000                            | 50               | 800  | 5  | 800  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 14 x 820 $\mu$ F | 12152                                 | 16700                            | 51               | 925  | 5  | 925  | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 16 x 820 $\mu$ F | 13792                                 | 18700                            | 52               | 1050 | 6  | 1050 | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 18 x 820 $\mu$ F | 15432                                 | 21000                            | 53               | 1174 | 6  | 1174 | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 20 x 820 $\mu$ F | 17072                                 | 24000                            | 54               | 1299 | 6  | 1299 | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 23 x 820 $\mu$ F | 19532                                 | 28000                            | 55               | 1486 | 7  | 1486 | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 26 x 820 $\mu$ F | 21992                                 | 33000                            | 56               | 1674 | 7  | 1674 | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 29 x 820 $\mu$ F | 24452                                 | 40200                            | 57               | 1861 | 8  | 1861 | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 32 x 820 $\mu$ F | 26912                                 | 50500                            | 58               | 2048 | 8  | 2048 | 220 |
| Ceramic + Electrolytic  | 12 x 47 $\mu$ F + 36 x 820 $\mu$ F | 30192                                 | 68000                            | 59               | 2298 | 8  | 2298 | 220 |

\*\* Total output capacitance includes the capacitance inside the module is 4 x 47 $\mu$ F (3m $\Omega$  ESR). Effective capacitance of 47 $\mu$ F cap taken as 42 $\mu$ F, 100 $\mu$ F cap taken as 81 $\mu$ F. Polymers taken at rated values of 100 $\mu$ F and 820 $\mu$ F

Note: The capacitors used in the digital compensation Loop tables are 47 $\mu$ F/3 m $\Omega$  ESR ceramic, 100 $\mu$ F/3.2m $\Omega$  ceramic, 1000  $\mu$ F/6m $\Omega$  ESR polymer capacitor and 820 $\mu$ F/19m $\Omega$  ESR Electrolytic capacitor.

## Power Module Wizard

GE offers a free web based easy to use tool that helps users simulate the Tunable Loop performance of the TJT120. Go to <http://ge.transim.com/pmd/Home> and sign up for a free account and use the module selector tool. The tool also offers downloadable Simplis/Simatrix models that can be used to assess transient performance, module stability, etc.

## Bin 'a' and Bin 'b' settings using the models available through Power Module Wizard

The TJT120 module has a built-in non-linear compensation adjustment to speed up its transient response to dynamic loading conditions. When the module senses a load transition in progress, it automatically adjusts the KD, KI, KP settings to higher values and then reverts to the values set before the transient conditions. The adjustment of the PID coefficients is as follows:

| Steady State                                                |    |    | Transient Condition                                            |       |       |
|-------------------------------------------------------------|----|----|----------------------------------------------------------------|-------|-------|
| Bin 'a' – User set values based on $R_{TUNE}$ or programmed |    |    | Bin 'b' – Controller adjusted values for duration of transient |       |       |
| KD                                                          | KI | KP | KD                                                             | KI    | KP    |
| A                                                           | B  | X  | 1.5 x A                                                        | 2 x B | 2 x C |

For determining the voltage response to a current load transient, it is more accurate to use the Bin 'b' settings corresponding to the selected KD, KI, KP values. For Loop Stability Simulations, the selected PID values corresponding to Bin 'a' should be used.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Digital Feature Descriptions

### PMBus Interface Capability

The 120A TeraDlynx power modules have a PMBus interface that supports both communication and control. The PMBus Power Management Protocol Specification can be obtained from [www.pmbus.org](http://www.pmbus.org). The modules support a subset of version 1.1 of the specification (see Table 4 for a list of the specific commands supported). Most module parameters can be programmed using PMBus and stored as defaults for later use.

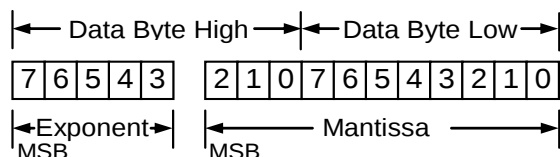
Communication over the module PMBus interface supports the Packet Error Checking (PEC) scheme. The PMBus master must generate the correct PEC byte for all transactions, and check the PEC byte returned by the module.

The module also supports the SMBALERT# response protocol whereby the module can alert the bus master if it wants to talk. For more information on the SMBus alert response protocol, see the System Management Bus (SMBus) specification.

The module has non-volatile memory that is used to store configuration settings. Not all settings programmed into the device are automatically saved into this non-volatile memory, only those specifically identified as capable of being stored can be saved (see Table 4 for which command parameters can be saved to non-volatile storage).

### PMBus Data Format

For commands that set thresholds, voltages or report such quantities, the module supports the "Linear" data format among the three data formats supported by PMBus. The Linear Data Format is a two-byte value with an 11-bit, two's complement mantissa and a 5-bit, two's complement exponent. The format of the two data bytes is shown below:



The value is of the number is then given by

$$\text{Value} = \text{Mantissa} \times 2^{\text{Exponent}}$$

### PMBus Addressing

The power module is addressed through the PMBus using a device address. The module supports 128 possible addresses (0 to 127 in decimal) which can be set using resistors connected from the ADDR0 and ADDR1 pins to SIG\_GND. Note that some of these addresses (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 40, 44, 45, 55 in decimal) are reserved according to the SMBus specification and may not be useable. The address is set in the form of two octal (0 to 7) digits, with each pin setting one digit. The ADDR1 pin sets the high order digit and ADDR0 sets the low order digit. The resistor values suggested for each digit are shown in Table 3 (E96 series resistors are recommended). Note that if either address resistor value is outside the range specified in Table 4, the module will respond to address 127.

The user must know which I<sup>2</sup>C addresses are reserved in a system for special functions and set the address of the module to avoid interfering with other system operations. Both 100kHz and 400kHz bus speeds are supported by the module. Connection for the PMBus interface should follow the High Power DC specifications given in section 3.1.3 in the SMBus specification V2.0 for the 400kHz bus speed or the

Low Power DC specifications in section 3.1.2. The complete SMBus specification is available from the SMBus web site, [smbus.org](http://smbus.org).

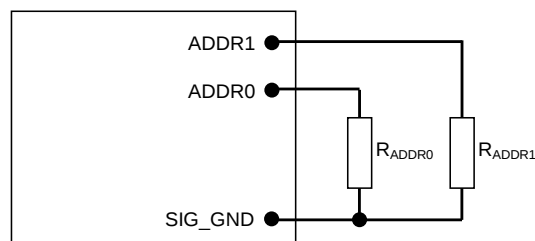


Figure 37. Circuit showing connection of resistors used to set the PMBus address of the module.

Table 3

| PMBus Address Table   |                       |       |       |       |       |       |       |      |      |      |      |
|-----------------------|-----------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| ADDR0 Resistor Values | ADDR1 Resistor Values |       |       |       |       |       |       |      |      |      |      |
|                       | 4.99K                 | 15.4k | 27.4K | 41.2K | 54.9K | 71.5K | 90.9K | 110K | 137K | 162K | 191K |
| 4.99K                 | 1                     | 13    | 25    | 37    | 49    | 61    | 73    | 85   | 97   | 109  | 121  |
| 15.4K                 | 2                     | 14    | 26    | 38    | 50    | 62    | 74    | 86   | 98   | 110  | 122  |
| 27.4K                 | 3                     | 15    | 27    | 39    | 51    | 63    | 75    | 87   | 99   | 111  | 123  |
| 41.2K                 | 4                     | 16    | 28    | 40    | 52    | 64    | 76    | 88   | 100  | 112  | 124  |
| 54.9K                 | 5                     | 17    | 29    | 41    | 53    | 65    | 77    | 89   | 101  | 113  | 125  |
| 71.5K                 | 6                     | 18    | 30    | 42    | 54    | 66    | 78    | 90   | 102  | 114  | 126  |
| 90.9K                 | 7                     | 19    | 31    | 43    | 55    | 67    | 79    | 91   | 103  | 115  | 127  |
| 110K                  | 8                     | 20    | 32    | 44    | 56    | 68    | 80    | 92   | 104  | 116  | 64   |
| 137K                  | 9                     | 21    | 33    | 45    | 57    | 69    | 81    | 93   | 105  | 117  | 64   |
| 162K                  | 10                    | 22    | 34    | 46    | 58    | 70    | 82    | 94   | 106  | 118  | 64   |
| 191K                  | 11                    | 23    | 35    | 47    | 59    | 71    | 83    | 95   | 107  | 119  | 64   |
| 232K                  | 12                    | 24    | 36    | 48    | 60    | 72    | 84    | 96   | 108  | 120  | 64   |

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Operation (01h)

This is a paged register. The OPERATION command can be used to turn the module on or off in conjunction with the ON/OFF pin input. It is also used to margin up or margin down the output voltage

### PMBus Enabled On/Off

The module can also be turned on and off via the PMBus interface. The OPERATION command is used to actually turn the module on and off via the PMBus, while the ON\_OFF\_CONFIG command configures the combination of analog ON/OFF pin input and PMBus commands needed to turn the module on and off. Bit [7] in the OPERATION command data byte enables the module, with the following functions:

- 0 : Output is disabled
- 1 : Output is enabled

This module uses the lower five bits of the ON\_OFF\_CONFIG data byte to set various ON/OFF options as follows:

| Bit Position  | 4   | 3   | 2   | 1 | 0   |
|---------------|-----|-----|-----|---|-----|
| Access        | r/w | r/w | r/w | r | r   |
| Function      | PU  | CMD | CPR | X | CPA |
| Default Value | 1   | 0   | 1   | x | 1   |

PU: Sets the default to either operate any time input power is present or for the ON/OFF to be controlled by the analog ON/OFF input and the PMBus OPERATION command. This bit is used together with the CP, CMD and ON bits to determine startup.

| Bit Value | Action                                                                                                                                                 |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0         | Module powers up any time power is present regardless of state of the analog ON/OFF pin                                                                |
| 1         | Module does not power up until commanded by the analog ON/OFF pin and the OPERATION command as programmed in bits [2:0] of the ON_OFF_CONFIG register. |

CMD: The CMD bit controls how the device responds to the OPERATION command.

| Bit Value | Action                                                 |
|-----------|--------------------------------------------------------|
| 0         | Module ignores the ON bit in the OPERATION command     |
| 1         | Module responds to the ON bit in the OPERATION command |

CPR: Sets the response of the analog ON/OFF pin. This bit is used together with the CMD, PU and ON bits to determine startup.

| Bit Value | Action                                                                                                           |
|-----------|------------------------------------------------------------------------------------------------------------------|
| 0         | Module ignores the analog ON/OFF pin, i.e. ON/OFF is only controlled through the PMBUS via the OPERATION command |
| 1         | Module requires the analog ON/OFF pin to be asserted to start the unit                                           |

CPA: Sets the action of the analog ON/OFF pin when turning the controller OFF. This bit is internally read and cannot be modified by the user

### PMBus Adjustable Soft Start Rise Time

The soft start rise time of module output is adjustable in the module via PMBus. The TON\_RISE command can set the rise time in ms, and allows choosing soft start times between 1 and 1000ms. Rise time below 10msec may cause the module to overshoot its voltage setpoint during startup

### Output Voltage Adjustment Using the PMBus

Two PMBus commands are available to change the output voltage setting. The first, VOUT\_COMMAND can set the output voltage directly. The second, VOUT\_TRIM is used to apply an offset to the commanded output voltage.

Since the output voltage can be set using an external RTrim resistor as well, an additional PMBus command MFR\_VOUT\_SET\_MODE is used to tell the module whether the VOUT\_COMMAND is used to directly set output voltage or whether RTrim is to be used. If MFR\_VOUT\_SET\_MODE is set to where bit position 7 is set at 1, then VOUT\_COMMAND is ignored and output voltage is set solely by RTrim. If bit 7 of MFR\_VOUT\_SET\_MODE is set to 0, then output voltage is set using VOUT\_COMMAND, and the value of RTrim is only used at startup to set the output voltage.

The second output voltage adjustment command VOUT\_TRIM works in either case to provide a fixed offset to the output voltage. This allows PMBus adjustment of the output voltage irrespective of how MFR\_VOUT\_SET\_MODE is set and allows digital adjustment of the output voltage setting even when RTrim is used.

For all digital commands used to set or adjust the output voltage via PMBus, the resolution is 98µV.

### Output Voltage Margining Using the PMBus

The output voltage of the module can be margined via PMBus between 0.6 and 1.5V. The margining voltage can be adjusted in 98µV steps.

### PMBus Adjustable Overcurrent Warning

The module can provide an overcurrent warning via the PMBus. The threshold for the overcurrent warning can be set using the parameter IOUT\_OC\_WARN\_LIMIT. This command uses the "Linear" data format with a two byte data word where the upper five bits [7:3] of the high byte represent the exponent and the remaining three bits of the high byte [2:0] and the eight bits in the low byte represent the mantissa. The value of the IOUT\_OC\_WARN\_LIMIT can be stored to non-volatile memory using the STORE\_DEFAULT\_ALL command.

### Temperature Status via PMBus

The module provides information related to temperature of the module through standardized PMBus commands. Commands READ\_TEMPERATURE1, READ\_TEMPERATURE\_2 are mapped to module temperature and internal temperature of the PWM controller, respectively. The temperature readings are returned in °C and in two bytes.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## PMBus Adjustable Output Over, Under Voltage Protection

The module has output over and under voltage protection capability. The PMBus command VOUT\_OV\_FAULT\_LIMIT is used to set the output over voltage threshold. The default value is configured to be 112.5% of the commanded output. The command VOUT\_UV\_FAULT\_LIMIT sets the threshold that detects an output under voltage fault. The default values are 87.5% of the commanded output voltage. Both commands use two data bytes formatted in the Linear format.

## PMBus Adjustable Input Undervoltage Lockout

The module allows adjustment of the input under voltage lockout and hysteresis. The command VIN\_ON allows setting the input voltage turn on threshold, while the VIN\_OFF command sets the input voltage turn off threshold. For the VIN\_ON command possible values are 7 to 14V and for the VIN\_OFF command, possible values are 6.75V to 14V. Both VIN\_ON and VIN\_OFF commands use the "Linear" format with two data bytes.

## Measurement of Output Current, Output Voltage and Input Voltage

The module can measure key module parameters such as output current, output voltage and input voltage and provide this information through the PMBus interface.

## Measuring Output Current Using the PMBus

The module measures output current by using a signal derived from the switching FET currents. The current gain factor is accessed using the IOUT\_CAL\_GAIN command, and consists of two bytes in the Linear data format. During manufacture, each module is calibrated by measuring and storing the current gain factor into non-volatile storage.

The current measurement accuracy is also improved by each module being calibrated during manufacture with the offset in the current reading. The IOUT\_CAL\_OFFSET command is used to store and read the current offset. The READ\_IOUT command provides module average output current information. This command only supports positive output current, i.e. current sourced from the module. If the converter is sinking current a reading of 0 is provided. The READ\_IOUT command returns two bytes of data in the Linear data format.

## Measuring Output Voltage Using the PMBus

The module provides output voltage information using the READ\_VOUT command. The command returns two bytes of data in Linear format.

## Measuring Input Voltage Using the PMBus

The module provides input voltage information using the READ\_VIN command. The command returns two bytes of data in the Linear format.

## Reading the Status of the Module using the PMBus

The module supports a number of status information commands implemented in PMBus. A 1 in the bit position indicates the fault that is flagged.

STATUS\_BYTE: Returns one byte of information with a summary of the most critical device faults.

| Bit Position | Flag                     | Default Value |
|--------------|--------------------------|---------------|
| 7            | X                        | 0             |
| 6            | OFF                      | 0             |
| 5            | VOUT Overvoltage         | 0             |
| 4            | IOUT Overcurrent         | 0             |
| 3            | VIN Undervoltage         | 0             |
| 2            | Temperature              | 0             |
| 1            | CML (Comm. Memory Fault) | 0             |
| 0            | None of the above        | 0             |

STATUS\_WORD: Returns two bytes of information with a summary of the module's fault/warning conditions.

### Low Byte

| Bit Position | Flag                     | Default Value |
|--------------|--------------------------|---------------|
| 7            | X                        | 0             |
| 6            | OFF                      | 0             |
| 5            | VOUT Overvoltage         | 0             |
| 4            | IOUT Overcurrent         | 0             |
| 3            | VIN Undervoltage         | 0             |
| 2            | Temperature              | 0             |
| 1            | CML (Comm. Memory Fault) | 0             |
| 0            | None of the above        | 0             |

### High Byte

| Bit Position | Flag                     | Default Value |
|--------------|--------------------------|---------------|
| 7            | VOUT fault or warning    | 0             |
| 6            | IOUT fault or warning    | 0             |
| 5            | X                        | 0             |
| 4            | X                        | 0             |
| 3            | POWER_GOOD# (is negated) | 0             |
| 2            | X                        | 0             |
| 1            | X                        | 0             |
| 0            | X                        | 0             |

STATUS\_VOUT: Returns one byte of information relating to the status of the module's output voltage related faults.

| Bit Position | Flag            | Default Value |
|--------------|-----------------|---------------|
| 7            | VOUT OV Fault   | 0             |
| 6            | VOUT_OV_WARNING | 0             |
| 5            | VOUT_UV_WARNING | 0             |
| 4            | VOUT UV Fault   | 0             |
| 3            | X               | 0             |
| 2            | X               | 0             |
| 1            | X               | 0             |
| 0            | X               | 0             |

STATUS\_IOUT: Returns one byte of information relating to the status of the module's output voltage related faults.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

| Bit Position | Flag            | Default Value |
|--------------|-----------------|---------------|
| 7            | IOUT OC Fault   | 0             |
| 6            | X               | 0             |
| 5            | IOUT OC Warning | 0             |
| 4            | X               | 0             |
| 3            | X               | 0             |
| 2            | X               | 0             |
| 1            | X               | 0             |
| 0            | X               | 0             |

STATUS\_TEMPERATURE: Returns one byte of information relating to the status of the module's temperature related faults.

| Bit Position | Flag       | Default Value |
|--------------|------------|---------------|
| 7            | OT Fault   | 0             |
| 6            | OT Warning | 0             |
| 5            | X          | 0             |
| 4            | X          | 0             |
| 3            | X          | 0             |
| 2            | X          | 0             |
| 1            | X          | 0             |
| 0            | X          | 0             |

STATUS\_CML: Returns one byte of information relating to the status of the module's communication related faults.

| Bit Position | Flag                        | Default Value |
|--------------|-----------------------------|---------------|
| 7            | Invalid/Unsupported Command | 0             |
| 6            | Invalid/Unsupported Data    | 0             |
| 5            | Packet Error Check Failed   | 0             |
| 4            | Memory Fault Detected       | 0             |
| 3            | X                           | 0             |
| 2            | X                           | 0             |
| 1            | Other Communication Fault   | 0             |
| 0            | X                           | 0             |

MFR\_SPECIFIC\_00: Returns information related to the type of module and revision number. Bits [7:2] in the Low Byte indicate the module type (001101 corresponds to the TJT120 series of module), while bits [7:3] in the high byte indicate the revision number of the module.

## Low Byte

| Bit Position | Flag        | Default Value |
|--------------|-------------|---------------|
| 7:2          | Module Name | 001101        |
| 1:0          | Reserved    | 10            |

## High Byte

| Bit Position | Flag                   | Default Value |
|--------------|------------------------|---------------|
| 7:3          | Module Revision Number | None          |
| 2:0          | Reserved               | 000           |

## User-Programmable Compensation Coefficients

The output voltage control compensation coefficients can be changed by the user via PMBus commands. On startup, the module uses stored values of the four compensation parameters KD, KI, KP and ALPHA. If the module detects a valid value of RTUNE connected to the module, the values of KD, KI, KP and ALPHA are then changed to the appropriate values. Beyond this, the user can use the PMBus commands listed below to overwrite the values of KD, KP, KI and ALPHA.

MFR\_SPECIFIC\_KP: Allows the user to program the value of the KP compensation coefficient. The allowed range is -32768 to 32767. The entire 16 bits are used to enter this range of integer values in two's complement binary format. For stable operation, the maximum allowed value is 10922

MFR\_SPECIFIC\_KI: Allows the user to program the value of the KI compensation coefficient. The allowed range is -32768 to 32767. The entire 16 bits are used to enter this range of integer values in two's complement binary format. For stable operation, the maximum allowed value is 10922

MFR\_SPECIFIC\_KD: Allows the user to program the value of the KD compensation coefficient. The allowed range is -32768 to 32767. The entire 16 bits are used to enter this range of integer values in two's complement binary format. For stable operation, the maximum allowed value is 10922

MFR\_SPECIFIC\_ALPHA: Allows the user to program the value of the ALPHA compensation coefficient. The allowed range is -256 to 256. The entire 16 bits are used to enter this range of integer values in two's complement binary format. For stable operation, use positive values only as suggested with the maximum allowed value being 256.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Summary of Supported PMBus Commands

Please refer to the PMBus 1.1 specification for more details of these commands. For the registers where a range is specified, any value outside the range is ignored and the module continues to use the previous value.

Table 4

| Hex Code      | Command             | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Non-Volatile Memory Storage |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
|---------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------|-----|-----|-----|-----|---|---|---|--------------|----|----|----|----|----|----|---|---|----------|------|-----|-----|-------------------------|-----|-----|-----|-----|---------------|----------|------|--------|----|-----|-----|---|-----|---------------|----------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|--|--|--|--|---------------|----------|--|--|--|--|--|--|--|-----|
| 01            | OPERATION           | Turn Module on or off. Also used to margin the output voltage<br><table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r</td><td>r</td></tr><tr><td>Function</td><td>On</td><td>X</td><td colspan="4">Margin</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>X</td><td>X</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Format                      | Unsigned Binary         |     |     |     |     |   |   |   | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access   | r/w  | r   | r/w | r/w                     | r/w | r/w | r   | r   | Function      | On       | X    | Margin |    |     |     | X | X   | Default Value | 1        | 0 | 0 | 0 | 0 | 0 | X | X | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Format        | Unsigned Binary     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Bit Position  | 7                   | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5                           | 4                       | 3   | 2   | 1   | 0   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Access        | r/w                 | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                     | r/w | r/w | r   | r   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Function      | On                  | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Margin                      |                         |     |     | X   | X   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Default Value | 1                   | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                           | 0                       | 0   | 0   | X   | X   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| 02            | ON_OFF_CONFIG       | Configures the ON/OFF functionality as a combination of analog ON/OFF pin and PMBus commands<br><table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r</td><td>r</td></tr><tr><td>Function</td><td>X</td><td>X</td><td>X</td><td>pu</td><td>cmd</td><td>cpr</td><td>X</td><td>cpa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>x</td><td>1</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Format                      | Unsigned Binary         |     |     |     |     |   |   |   | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access   | r    | r   | r   | r/w                     | r/w | r/w | r   | r   | Function      | X        | X    | X      | pu | cmd | cpr | X | cpa | Default Value | 0        | 0 | 0 | 1 | 0 | 1 | x | 1 | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Format        | Unsigned Binary     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Bit Position  | 7                   | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5                           | 4                       | 3   | 2   | 1   | 0   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Access        | r                   | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r                           | r/w                     | r/w | r/w | r   | r   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Function      | X                   | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | X                           | pu                      | cmd | cpr | X   | cpa |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Default Value | 0                   | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                           | 1                       | 0   | 1   | x   | 1   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| 03            | CLEAR_FAULTS        | Clear any fault bits that may have been set, also releases the SMBALERT# signal if the device has been asserting it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| 10            | WRITE_PROTECT       | Used to control writing to the module via PMBus. Copies the current register setting in the module whose command code matches the value in the data byte into non-volatile memory (EEPROM) on the module<br><table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td></tr><tr><td>Function</td><td>bit7</td><td>bit6</td><td>bit5</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr></table> <p>Bit5: 0 – Enables all writes as permitted in bit6 or bit7<br/>1 – Disables all writes except the WRITE_PROTECT, OPERATION and ON_OFF_CONFIG (bit 6 and bit7 must be 0)<br/>Bit 6: 0 – Enables all writes as permitted in bit5 or bit7<br/>1 – Disables all writes except for the WRITE_PROTECT and OPERATION commands (bit5 and bit7 must be 0)<br/>Bit7: 0 – Enables all writes as permitted in bit5 or bit6<br/>1 – Disables all writes except for the WRITE_PROTECT command (bit5 and bit6 must be 0)</p> | Format                      | Unsigned Binary         |     |     |     |     |   |   |   | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access   | r/w  | r/w | r/w | x                       | x   | x   | x   | x   | Function      | bit7     | bit6 | bit5   | X  | X   | X   | X | X   | Default Value | 0        | 0 | 0 | X | X | X | X | X | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Format        | Unsigned Binary     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Bit Position  | 7                   | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5                           | 4                       | 3   | 2   | 1   | 0   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Access        | r/w                 | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | r/w                         | x                       | x   | x   | x   | x   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Function      | bit7                | bit6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | bit5                        | X                       | X   | X   | X   | X   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Default Value | 0                   | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                           | X                       | X   | X   | X   | X   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| 11            | STORE_DEFAULT_ALL   | Copies all current register settings in the module into non-volatile memory (EEPROM) on the module. Takes about 50ms for the command to execute.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| 12            | RESTORE_DEFAULT_ALL | Restores all current register settings in the module from values in the module non-volatile memory (EEPROM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| 20            | VOUT_MODE           | The module has MODE set to Linear and Exponent set to -14. These values cannot be changed<br><table><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="3">Mode</td><td colspan="5">2's complement Exponent</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Bit Position                | 7                       | 6   | 5   | 4   | 3   | 2 | 1 | 0 | Access       | r  | r  | r  | r  | r  | r  | r | r | Function | Mode |     |     | 2's complement Exponent |     |     |     |     | Default Value | 0        | 0    | 0      | 1  | 0   | 0   | 1 | 0   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Bit Position  | 7                   | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5                           | 4                       | 3   | 2   | 1   | 0   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Access        | r                   | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r                           | r                       | r   | r   | r   | r   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Function      | Mode                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             | 2's complement Exponent |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Default Value | 0                   | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                           | 1                       | 0   | 0   | 1   | 0   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| 21            | VOUT_COMMAND        | Set desired output voltage. Only 16-bit unsigned mantissa – implied exponent of -14 per VOUT_MODE command. Valid range is 0.6 to 1.5V.<br><table><tr><td>Format</td><td colspan="8">Unsigned Mantissa</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                       | Format                      | Unsigned Mantissa       |     |     |     |     |   |   |   | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access   | r/w  | r/w | r/w | r/w                     | r/w | r/w | r/w | r/w | Function      | Mantissa |      |        |    |     |     |   |     | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |  |  |  |  |  |  |  | YES |
| Format        | Unsigned Mantissa   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Bit Position  | 15                  | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 13                          | 12                      | 11  | 10  | 9   | 8   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Access        | r/w                 | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | r/w                         | r/w                     | r/w | r/w | r/w | r/w |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Function      | Mantissa            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Default Value | Variable            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Bit Position  | 7                   | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5                           | 4                       | 3   | 2   | 1   | 0   |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Access        | r/w                 | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | r/w                         | r/w                     | r/w | r/w | r/w | r/w |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Function      | Mantissa            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |
| Default Value | Variable            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |                         |     |     |     |     |   |   |   |              |    |    |    |    |    |    |   |   |          |      |     |     |                         |     |     |     |     |               |          |      |        |    |     |     |   |     |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |     |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (continued)

| Hex Code      | Command                               | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Non-Volatile Memory Storage |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
|---------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|----------|-----|-----|-----|--|--|--|--------------|----|----|----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|----------|--|--|--|---------------|---------------------------------------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|--|--|--|--|---------------|---------------------------------------|---|---|---|---|---|---|---|-----|
| 22            | VOUT_TRIM                             | <p>Apply a fixed offset voltage to the set output voltage from either the RTrim resistor or the VOUT_COMMAND. Implied exponent of -14 per VOUT_MODE command. Allowed range is <math>\pm 300\text{mV}</math>.</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table> | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |          |  |  |  | Default Value | 0                                     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 0                                     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 0                                     | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 0        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 0                                     | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 0        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 23            | VOUT_CAL_OFFSET                       | <p>Applies an offset to the commanded output voltage to calibrate out errors in setting module output voltage (between -100mV and +100mV) and when output voltage is set via the PMBus command VOUT_COMMAND (21). Implied exponent of -14 per VOUT_MODE command.</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr></table>         | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r   | r   | r   | r   | r   | r   | r   | Function | Mantissa |  |  |  |          |  |  |  | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r   | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | r                           | r                               | r        | r   | r   | r   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 25            | VOUT_MARGIN_HIGH                      | <p>Sets the target voltage for margining the output high. Implied exponent of -14 per VOUT_MODE command. Allowed range is 0.6 to 1.5V</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                              | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |          |  |  |  | Default Value | Variable                              |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable                              |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 26            | VOUT_MARGIN_LOW                       | <p>Sets the target voltage for margining the output low. Implied exponent of -14 per VOUT_MODE command. Allowed range is 0.6 to 1.5V.</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                              | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |          |  |  |  | Default Value | Variable                              |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable                              |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 35            | VIN_ON                                | <p>Sets the value of input voltage at which the module turns on. Exponent is fixed at -6. Allowed range is 7 to 14V.</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>                                                                        | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |  |  |  | Mantissa |  |  |  | Default Value | 1                                     | 1 | 0 | 1 | 0 | 0 | 0 | 1 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1                                     | 1 | 0 | 0 | 0 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | r                           | r                               | r        | r   | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Exponent                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 | Mantissa |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 1                                     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 1                               | 0        | 0   | 0   | 1   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 1                                     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 0        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (continued)

| Hex Code      | Command                               | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Non-Volatile Memory Storage |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
|---------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|----------|----------|-----|-----|--|--|--|--------------|----|----|----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|---------|-------|-------|----------|---|---|---|---------------|---------------------------------------|---|---|---|---|----------|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|--|--|--|--|---------------|---------------------------------------|---|---|---|---|---|---|---|-----|
| 36            | VIN_OFF                               | <div>Sets the value of input voltage at which the module turns off. Exponent is fixed at -6. Allowed range is 6.75 to 14V.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>                                                     | Format                      | Linear, two's complement binary |          |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |         |       |       | Mantissa |   |   |   | Default Value | 1                                     | 1 | 0 | 1 | 0 | 0        | 0 | 1 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1                                     | 0 | 1 | 1 | 0 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13                          | 12                              | 11       | 10       | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | r                           | r                               | r        | r        | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Exponent                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 | Mantissa |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 1                                     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0                           | 1                               | 0        | 0        | 0   | 1   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5                           | 4                               | 3        | 2        | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | r/w                         | r/w                             | r/w      | r/w      | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 1                                     | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1                           | 1                               | 0        | 0        | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 38            | IOUT_CAL_GAIN                         | <div>Applies a gain correction to the READ_IOUT command results to calibrate out gain errors in module measurements of the output current. The number in this register is divided by 8192 to generate the correction factor. Allowed range is 6553 to 9830.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr></table> | Format                      | Linear, two's complement binary |          |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r   | r/w | Function | Integer  |         |       |       |          |   |   |   | Default Value | Variable based on factory calibration |   |   |   |   |          |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer  |  |  |  |  |  |  |  | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13                          | 12                              | 11       | 10       | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | r                           | r                               | r        | r        | r   | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Integer                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5                           | 4                               | 3        | 2        | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | r/w                         | r/w                             | r/w      | r/w      | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Integer                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 39            | IOUT_CAL_OFFSET                       | <div>Returns the value of the offset correction term used to correct the measured output current. The exponent is fixed at -2. The allowed range is -50 to +50A.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td colspan="3">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr></table>                                            | Format                      | Linear, two's complement binary |          |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r/w | r   | r   | Function | Exponent |         |       |       | Mantissa |   |   |   | Default Value | 1                                     | 1 | 1 | 1 | 0 | Variable |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r   | r   | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13                          | 12                              | 11       | 10       | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | r                           | r                               | r        | r/w      | r   | r   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Exponent                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 | Mantissa |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 1                                     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1                           | 1                               | 0        | Variable |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5                           | 4                               | 3        | 2        | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | r/w                         | r/w                             | r/w      | r/w      | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 40            | VOUT_OV_FAULT_LIMIT                   | <div>Sets the voltage level for an output overvoltage fault. Implied exponent of -14 per VOUT_MODE command. Allowed range is 0.6 to 2V. Triggers SMBALERT.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                            | Format                      | Linear, two's complement binary |          |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |         |       |       |          |   |   |   | Default Value | Variable                              |   |   |   |   |          |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable                              |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13                          | 12                              | 11       | 10       | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | r/w                         | r/w                             | r/w      | r/w      | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5                           | 4                               | 3        | 2        | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | r/w                         | r/w                             | r/w      | r/w      | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| 41            | VOUT_OV_FAULT_RESPONSE                | <div>Instructs the module on what action to take in response to an output overvoltage fault</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td>RSP [1]</td><td>RSP [0]</td><td>RS[2]</td><td>RS[1]</td><td>RS[0]</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Format                      | Unsigned Binary                 |          |          |     |     |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r   | r   | r   | Function | RSP [1]  | RSP [0] | RS[2] | RS[1] | RS[0]    | X | X | X | Default Value | 1                                     | 0 | 1 | 1 | 1 | 0        | 0 | 0 | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Format        | Unsigned Binary                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |                                 |          |          |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5                           | 4                               | 3        | 2        | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | r/w                         | r/w                             | r/w      | r        | r   | r   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | RSP [1]                               | RSP [0]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RS[2]                       | RS[1]                           | RS[0]    | X        | X   | X   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 1                                     | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1                           | 1                               | 1        | 0        | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |                                       |   |   |   |   |          |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |                                       |   |   |   |   |   |   |   |     |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (continued)

| Hex Code      | Command                | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Non-Volatile Memory Storage |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|---------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|---------------------------------|-------|-------|-------|----------|-----|-----|--|--------------|----|----|----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|---------|-------|-------|-------|----------|---|---|---------------|----------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|--|--|--|--|---------------|----------|---|---|---|---|---|---|---|
| 42            | VOUT_OV_WARN_LIMIT     | Sets the value of output voltage at which the module generates warning for over-voltage. Exponent is fixed at -14. Allowed range is 0.6 to 2V. Triggers SMBALERT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | YES                         |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                     |                             | Format                          | Linear, two's complement binary |       |       |       |          |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r/w | r/w | r/w | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                        | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13    | 12    | 11    | 10       | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | r     | r     | r     | r/w      | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |       |       |       | Mantissa |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | Variable                        |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5     | 4     | 3     | 2        | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w   | r/w   | r/w   | r/w      | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 43            | VOUT_UV_WARN_LIMIT     | Sets the value of output voltage at which the module generates warning for under-voltage. Exponent is fixed at -14. Allowed range is 0.05 to 1.5V. Triggers SMBALERT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | YES                         |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                     |                             | Format                          | Linear, two's complement binary |       |       |       |          |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r/w | r/w | r/w | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                        | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13    | 12    | 11    | 10       | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | r     | r     | r     | r/w      | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |       |       |       | Mantissa |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | Variable                        |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5     | 4     | 3     | 2        | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w   | r/w   | r/w   | r/w      | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 44            | VOUT_UV_FAULT_LIMIT    | Sets the voltage level for an output undervoltage fault. Exponent is fixed at -14. Allowed range is 0.05 to 2V. Triggers SMBALERT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | YES                         |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                     |                             | Format                          | Linear, two's complement binary |       |       |       |          |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r/w | r/w | r/w | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                        | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13    | 12    | 11    | 10       | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | r     | r     | r     | r/w      | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |       |       |       | Mantissa |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | Variable                        |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5     | 4     | 3     | 2        | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w   | r/w   | r/w   | r/w      | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 45            | VOUT_UV_FAULT_RESPONSE | Instructs the module on what action to take in response to an output undervoltage fault                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | YES                         |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td>RSP [1]</td><td>RSP [0]</td><td>RS[2]</td><td>RS[1]</td><td>RS[0]</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                               |                             | Format                          | Unsigned Binary                 |       |       |       |          |     |     |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r   | r   | r   | Function | RSP [1]  | RSP [0] | RS[2] | RS[1] | RS[0] | X        | X | X | Default Value | 1        | 0 | 1 | 1 | 1 | 0 | 0 | 0 |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Unsigned Binary                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5     | 4     | 3     | 2        | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w   | r/w   | r/w   | r        | r   | r   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | RSP [1]                         | RSP [0]                         | RS[2] | RS[1] | RS[0] | X        | X   | X   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 1                      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1                           | 1                               | 1                               | 0     | 0     | 0     |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 46            | IOUT_OC_FAULT_LIMIT    | Sets the current level for an output overcurrent fault (can only be lowered below the maximum of 140A). The exponent is fixed at -2. Triggers SMBALERT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | YES                         |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td></tr></table> |                             | Format                          | Linear, two's complement binary |       |       |       |          |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | 1        | 1 | 1 | 1 | 0 | 0 | 1 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 0        | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
|               |                        | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13    | 12    | 11    | 10       | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | r     | r     | r     | r        | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |       |       |       | Mantissa |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | 1                               | 1                               | 1     | 1     | 0     | 0        | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5     | 4     | 3     | 2        | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                        | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w   | r/w   | r/w   | r/w      | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |       |       |       |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 0                      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 1                               | 0     | 0     | 0     |          |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (continued)

| Hex Code      | Command                          | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Non-Volatile Memory Storage |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
|---------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------|-------|----------|-----|-----|--|--|--|--------------|----|----|----|------|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|---------|-------|-------|-------|----------|---|---|---------------|---|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|--|--|--|--|---------------|---|---|---|---|---|---|---|---|-----|
| 4A            | IOUT_OC_WARN_LIMIT               | <p>Sets the value of current level at which the module generates warning for overcurrent. Allowed range is 0 to 140A. The exponent is fixed at -2. Triggers SMBALERT.</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td></tr></table> | Format                      | Linear, two's complement binary  |       |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12   | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r   | r/w | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 15                               | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13                          | 12                               | 11    | 10       | 9   | 8   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r                                | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r                                | r     | r        | r   | r/w |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Exponent                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       | Mantissa |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 1                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                           | 1                                | 0     | 0        | 1   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4                                | 3     | 2        | 1   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r/w                              | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | r/w                         | r/w                              | r/w   | r/w      | r/w | r/w |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Mantissa                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 1                                | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                           | 0                                | 1     | 0        | 0   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| 4F            | OT_FAULT_LIMIT                   | <p>Sets the temperature level above which over-temperature fault occurs. Allowed range is 35 to 140°C. The exponent is fixed at 0. Triggers SMBALERT.</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr></table>                 | Format                      | Linear, two's complement binary  |       |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12   | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r/w | r   | r   | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | YES |
| Format        | Linear, two's complement binary  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 15                               | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13                          | 12                               | 11    | 10       | 9   | 8   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r                                | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r                                | r     | r/w      | r   | r   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Exponent                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       | Mantissa |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 0                                | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0                           | 0                                | 0     | 0        | 0   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4                                | 3     | 2        | 1   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r/w                              | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | r/w                         | r/w                              | r/w   | r/w      | r/w | r/w |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Mantissa                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 1                                | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0                           | 0                                | 1     | 0        | 1   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| 50            | OT_FAULT_RESPONSE                | <p>Configures the over temperature fault response</p> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td>RSP [1]</td><td>RSP [0]</td><td>RS[2]</td><td>RS[1]</td><td>RS[0]</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Format                      | Unsigned Binary                  |       |          |     |     |  |  |  | Bit Position | 7  | 6  | 5  | 4    | 3  | 2  | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r   | r   | r   | Function | RSP [1]  | RSP [0] | RS[2] | RS[1] | RS[0] | X        | X | X | Default Value | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Format        | Unsigned Binary                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4                                | 3     | 2        | 1   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r/w                              | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | r/w                         | r/w                              | r/w   | r        | r   | r   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | RSP [1]                          | RSP [0]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RS[2]                       | RS[1]                            | RS[0] | X        | X   | X   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 1                                | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                           | 1                                | 1     | 0        | 0   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| 51            | OT_WARN_LIMIT                    | <p>Sets the over temperature warning level in °C. Allowed range is 30 to 130°C. The exponent is fixed at 0. Triggers SMBALERT.</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td></tr></table>                                          | Format                      | Linear, two's complement binary  |       |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12   | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | YES |
| Format        | Linear, two's complement binary  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 15                               | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13                          | 12                               | 11    | 10       | 9   | 8   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r                                | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r                                | r     | r        | r   | r   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Exponent                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       | Mantissa |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 0                                | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0                           | 0                                | 0     | 0        | 0   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4                                | 3     | 2        | 1   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r/w                              | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | r/w                         | r/w                              | r/w   | r/w      | r/w | r/w |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Mantissa                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 0                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                           | 1                                | 1     | 1        | 0   | 1   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| 55            | VIN_OV_FAULT_LIMIT               | <p>Sets the input overvoltage fault limit. Exponent is fixed at -6. Allowed range is 6.75 to 15V. Triggers SMBALERT</p> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary.</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12tr</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>                                              | Format                      | Linear, two's complement binary. |       |          |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12tr | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |         |       |       |       | Mantissa |   |   | Default Value | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 15                               | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13                          | 12tr                             | 11    | 10       | 9   | 8   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r                                | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r                                | r     | r        | r/w | r/w |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Exponent                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       | Mantissa |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 1                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0                           | 1                                | 0     | 0        | 1   | 1   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4                                | 3     | 2        | 1   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Access        | r/w                              | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | r/w                         | r/w                              | r/w   | r/w      | r/w | r/w |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Function      | Mantissa                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                                  |       |          |     |     |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |
| Default Value | 1                                | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                           | 0                                | 0     | 0        | 0   | 0   |  |  |  |              |    |    |    |      |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |       |          |   |   |               |   |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |   |   |   |   |   |   |   |   |     |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (continued)

| Hex Code      | Command                         | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Non-Volatile Memory Storage |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
|---------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|----------|-----|-----|-----|--|--|--|--------------|----|----|----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|---------|-------|-------|----------|---|---|---|---------------|----------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|--|--|--|--|---------------|----------|---|---|---|---|---|---|---|-----|
| 56            | VIN_OV_FAULT_RESPONSE           | <div>Configures the VIN overvoltage fault response.</div> <table><tr><th>Format</th><td colspan="8">Unsigned Binary</td></tr><tr><th>Bit Position</th><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><th>Access</th><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r</td><td>r</td><td>r</td></tr><tr><th>Function</th><td>RSP [1]</td><td>RSP [0]</td><td>RS[2]</td><td>RS[1]</td><td>RS[0]</td><td>X</td><td>X</td><td>X</td></tr><tr><th>Default Value</th><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Format                      | Unsigned Binary                 |          |     |     |     |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r   | r   | r   | Function | RSP [1]  | RSP [0] | RS[2] | RS[1] | RS[0]    | X | X | X | Default Value | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Format        | Unsigned Binary                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r/w                         | r/w                             | r/w      | r   | r   | r   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | RSP [1]                         | RSP [0]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RS[2]                       | RS[1]                           | RS[0]    | X   | X   | X   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0                           | 0                               | 0        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| 57            | VIN_OV_WARN_LIMIT               | <div>Sets the value of the input voltage that causes input voltage low warning. Exponent fixed at -6. Allowed range is 6.75 to 15V. Triggers SMBALERT</div> <table><tr><th>Format</th><td colspan="8">Linear, two's complement binary</td></tr><tr><th>Bit Position</th><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><th>Access</th><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><th>Default Value</th><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><th>Bit Position</th><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><th>Access</th><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="8">Mantissa</td></tr><tr><th>Default Value</th><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table> | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |         |       |       | Mantissa |   |   |   | Default Value | 1        | 1 | 0 | 1 | 0 | 0 | 1 | 1 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | r                           | r                               | r        | r   | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Exponent                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 | Mantissa |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0                           | 1                               | 0        | 0   | 1   | 1   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0                           | 0                               | 0        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| 58            | VIN_UV_WARN_LIMIT               | <div>Sets the value of the input voltage that causes input voltage low warning. Exponent fixed at -6. Allowed range is 5 to 14V. Triggers SMBALERT</div> <table><tr><th>Format</th><td colspan="8">Linear, two's complement binary</td></tr><tr><th>Bit Position</th><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><th>Access</th><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><th>Default Value</th><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><th>Bit Position</th><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><th>Access</th><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="8">Mantissa</td></tr><tr><th>Default Value</th><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>    | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |         |       |       | Mantissa |   |   |   | Default Value | 1        | 1 | 0 | 1 | 0 | 0 | 0 | 1 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1        | 0 | 1 | 0 | 0 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | r                           | r                               | r        | r   | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Exponent                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 | Mantissa |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0                           | 1                               | 0        | 0   | 0   | 1   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                           | 0                               | 0        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| 59            | VIN_UV_FAULT_LIMIT              | <div>Sets the value of the input voltage that causes an input undervoltage fault. Exponent fixed at -6. Allowed range is 5 to 14V. Triggers SMBALERT</div> <table><tr><th>Format</th><td colspan="8">Linear, two's complement binary</td></tr><tr><th>Bit Position</th><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><th>Access</th><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><th>Default Value</th><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><th>Bit Position</th><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><th>Access</th><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="8">Mantissa</td></tr><tr><th>Default Value</th><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>        | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r   | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |         |       |       | Mantissa |   |   |   | Default Value | 1        | 1 | 0 | 1 | 0 | 0 | 0 | 1 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 1        | 0 | 1 | 0 | 0 | 0 | 0 | 0 | YES |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | r                           | r                               | r        | r   | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Exponent                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 | Mantissa |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0                           | 1                               | 0        | 0   | 0   | 1   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                           | 0                               | 0        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| 5A            | VIN_UV_FAULT_RESPONSE           | <div>Instructs the module on what action to take in response to an input undervoltage fault.</div> <table><tr><th>Format</th><td colspan="8">Unsigned Binary</td></tr><tr><th>Bit Position</th><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><th>Access</th><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r</td><td>r</td><td>r</td></tr><tr><th>Function</th><td>RSP [1]</td><td>RSP [0]</td><td>RS[2]</td><td>RS[1]</td><td>RS[0]</td><td>X</td><td>X</td><td>X</td></tr><tr><th>Default Value</th><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                        | Format                      | Unsigned Binary                 |          |     |     |     |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r   | r   | r   | Function | RSP [1]  | RSP [0] | RS[2] | RS[1] | RS[0]    | X | X | X | Default Value | 1        | 0 | 1 | 1 | 1 | 0 | 0 | 0 | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Format        | Unsigned Binary                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r/w                         | r/w                             | r/w      | r   | r   | r   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | RSP [1]                         | RSP [0]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RS[2]                       | RS[1]                           | RS[0]    | X   | X   | X   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | 1                               | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                           | 1                               | 1        | 0   | 0   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| 5E            | POWER_GOOD_ON                   | <div>Sets the output voltage level at which the PGOOD pin is asserted high. Implied exponent of -14 per VOUT_MODE command. Allowed range is 0.26 to 1.65V.</div> <table><tr><th>Format</th><td colspan="8">Linear, two's complement binary</td></tr><tr><th>Bit Position</th><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><th>Access</th><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="8">Mantissa</td></tr><tr><th>Default Value</th><td colspan="8">Variable</td></tr><tr><th>Bit Position</th><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><th>Access</th><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><th>Function</th><td colspan="8">Mantissa</td></tr><tr><th>Default Value</th><td colspan="8">Variable</td></tr></table>                                                                                                                     | Format                      | Linear, two's complement binary |          |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |         |       |       |          |   |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 13                          | 12                              | 11       | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r                               | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                           | 4                               | 3        | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r/w                         | r/w                             | r/w      | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                 |          |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |          |         |       |       |          |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |     |

## 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (continued)

| Hex Code      | Command        | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Non-Volatile Memory Storage |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|---------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|---------------------------------|-----|-----|----------|-----|-----|-----|--|--------------|----|----|----|----|----|----|---|---|--------|---|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|----------|--|--|--|---------------|----------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|--|--|--|--|--|--|--|---------------|----------|---|---|---|---|---|---|---|
| 5F            | POWER_GOOD_OFF | Sets the output voltage level at which the PGOOD pin is de-asserted low. Implied exponent of -14 per VOUT_MODE command. Allowed range is 0.06 to 1.63V.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | YES                         |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                          |                             | Format                          | Linear, two's complement binary |     |     |          |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |          |  |  |  | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13  | 12  | 11       | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r/w                             | r/w | r/w | r/w      | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Mantissa                        |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | Variable                        |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5   | 4   | 3        | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w | r/w | r/w      | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 60            | TON_DELAY      | Sets the delay time in ms of the output voltage during startup. Allowed range is 0 to 1000ms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | YES                         |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td></tr></table> |                             | Format                          | Linear, two's complement binary |     |     |          |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r   | r   | r   | r   | r   | r/w | r/w | Function | Exponent |  |  |  | Mantissa |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
|               |                | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13  | 12  | 11       | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | r   | r   | r        | r   | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |     |     | Mantissa |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | 0                               | 0                               | 0   | 0   | 0        | 0   | 0   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5   | 4   | 3        | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w | r/w | r/w      | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 0              | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 0                               | 0   | 1   | 0        |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 61            | TON_RISE       | Sets the rise time in ms of the output voltage during startup. The exponent is fixed at 0. Allowed range is 1 to 1000ms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | YES                         |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>R</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table>       |                             | Format                          | Linear, two's complement binary |     |     |          |     |     |     |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r | r   | R   | r   | r   | r   | r/w | r/w | Function | Exponent |  |  |  | Mantissa |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
|               |                | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5   | 4   | 3        | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | R   | r   | r        | r   | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |     |     | Mantissa |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | 0                               | 0                               | 0   | 0   | 0        | 0   | 0   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5   | 4   | 3        | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w | r/w | r/w      | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 0              | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 0                               | 1   | 0   | 1        |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 64            | TOFF_DELAY     | Sets the delay time in ms of the output voltage during turn-off. The exponent is fixed at 0. Allowed range is 0 to 1000ms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | YES                         |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>R</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td></tr></table> |                             | Format                          | Linear, two's complement binary |     |     |          |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r   | R   | r   | r   | r   | r/w | r/w | Function | Exponent |  |  |  | Mantissa |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
|               |                | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13  | 12  | 11       | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | R   | r   | r        | r   | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |     |     | Mantissa |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | 0                               | 0                               | 0   | 0   | 0        | 0   | 0   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5   | 4   | 3        | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w | r/w | r/w      | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 0              | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 0                               | 0   | 1   | 0        |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 65            | TOFF_FALL      | Sets the fall time in ms of the output voltage during turn-off. Exponent is fixed at 0. Allowed range is 0 to 1000ms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | YES                         |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>R</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="4">Exponent</td><td colspan="4">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td></tr></table> |                             | Format                          | Linear, two's complement binary |     |     |          |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r   | R   | r   | r   | r   | r/w | r/w | Function | Exponent |  |  |  | Mantissa |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa |  |  |  |  |  |  |  | Default Value | 0        | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
|               |                | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | Linear, two's complement binary |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 15                              | 14                              | 13  | 12  | 11       | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r                               | r                               | R   | r   | r        | r   | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             | Exponent                        |                                 |     |     | Mantissa |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             | 0                               | 0                               | 0   | 0   | 0        | 0   | 0   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | 7                               | 6                               | 5   | 4   | 3        | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | r/w                             | r/w                             | r/w | r/w | r/w      | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Function      | Mantissa       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |                                 |                                 |     |     |          |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 0              | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0                           | 0                               | 0                               | 1   | 0   | 1        |     |     |     |  |              |    |    |    |    |    |    |   |   |        |   |     |     |     |     |     |     |     |          |          |  |  |  |          |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |          |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (Continued)

| Hex Code      | Command            | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Non-Volatile Memory Storage |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
|---------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------|--------------|------|------------------|-------|--|--|--|--------------|----|----|----|----|----|----|---|---|--------|---|---|---|---|---|---|---|---|------|-----------------|--------------|----------------|--------------|--------------|------|------------------|-------|---------------|----------|--|--|--|--|--|--|--|--------------|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|------|---|-----|---------|---------|--------|------|-----|-------|---------------|----------|--|--|--|--|--|--|--|--|
| 78            | STATUS_BYTE        | <div>Returns one byte of information with a summary of the most critical module faults</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>R</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>X</td><td>OFF</td><td>VOUT_OV</td><td>IOUT_OC</td><td>VIN_UV</td><td>TEMP</td><td>CML</td><td>OTHER</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                       | Format                      | Unsigned Binary |              |      |                  |       |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r | r | R | r | r | r | r | r | Flag | X               | OFF          | VOUT_OV        | IOUT_OC      | VIN_UV       | TEMP | CML              | OTHER | Default Value | Variable |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Format        | Unsigned Binary    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4               | 3            | 2    | 1                | 0     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | R                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | X                  | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | VOUT_OV                     | IOUT_OC         | VIN_UV       | TEMP | CML              | OTHER |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| 79            | STATUS_WORD        | <div>Returns two bytes of information with a summary of the module's fault/warning conditions</div> <table><tr><td>Format</td><td colspan="8">Unsigned binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>R</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>VOUT</td><td>IOUT_OC</td><td>INPUT</td><td>X</td><td>PGOOD</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>R</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>X</td><td>OFF</td><td>VOUT_OV</td><td>IOUT_OC</td><td>VIN_UV</td><td>TEMP</td><td>CML</td><td>OTHER</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table> | Format                      | Unsigned binary |              |      |                  |       |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r | R | r | r | r | r | r | Flag | VOUT            | IOUT_OC      | INPUT          | X            | PGOOD        | X    | X                | X     | Default Value | Variable |  |  |  |  |  |  |  | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r | r | R | r | r | r | r | r | Flag | X | OFF | VOUT_OV | IOUT_OC | VIN_UV | TEMP | CML | OTHER | Default Value | Variable |  |  |  |  |  |  |  |  |
| Format        | Unsigned binary    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 15                 | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13                          | 12              | 11           | 10   | 9                | 8     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | R                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | VOUT               | IOUT_OC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | INPUT                       | X               | PGOOD        | X    | X                | X     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4               | 3            | 2    | 1                | 0     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | R                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | X                  | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | VOUT_OV                     | IOUT_OC         | VIN_UV       | TEMP | CML              | OTHER |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| 7A            | STATUS_VOUT        | <div>Returns one byte of information with the status of the module's output voltage related faults</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>VOUT_OV</td><td>VOUT_OV_Warn</td><td>VOUT_UV_Warn</td><td>VOUT_UV</td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                     | Format                      | Unsigned Binary |              |      |                  |       |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r | r | r | r | r | r | r | r | Flag | VOUT_OV         | VOUT_OV_Warn | VOUT_UV_Warn   | VOUT_UV      | X            | X    | X                | X     | Default Value | Variable |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Format        | Unsigned Binary    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4               | 3            | 2    | 1                | 0     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | VOUT_OV            | VOUT_OV_Warn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | VOUT_UV_Warn                | VOUT_UV         | X            | X    | X                | X     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| 7B            | STATUS_IOUT        | <div>Returns one byte of information with the status of the module's output current related faults</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>IOUT_OC</td><td>X</td><td>X</td><td>X</td><td>IOUT_OC_WARN</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                      | Format                      | Unsigned Binary |              |      |                  |       |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r | r | r | r | r | r | r | r | Flag | IOUT_OC         | X            | X              | X            | IOUT_OC_WARN | X    | X                | X     | Default Value | Variable |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Format        | Unsigned Binary    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4               | 3            | 2    | 1                | 0     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | IOUT_OC            | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | X                           | X               | IOUT_OC_WARN | X    | X                | X     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| 7C            | STATUS_INPUT       | <div>Returns one byte of information with the status of the module's input related faults</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>VIN_OV_FAULT</td><td>VIN_OV_WARN</td><td>VIN_UV_WARNING</td><td>VIN_UV_FAULT</td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                   | Format                      | Unsigned Binary |              |      |                  |       |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r | r | r | r | r | r | r | r | Flag | VIN_OV_FAULT    | VIN_OV_WARN  | VIN_UV_WARNING | VIN_UV_FAULT | X            | X    | X                | X     | Default Value | Variable |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Format        | Unsigned Binary    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4               | 3            | 2    | 1                | 0     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | VIN_OV_FAULT       | VIN_OV_WARN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | VIN_UV_WARNING              | VIN_UV_FAULT    | X            | X    | X                | X     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| 7D            | STATUS_TEMPERATURE | <div>Returns one byte of information with the status of the module's temperature related faults</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>OT_FAULT</td><td>OT_WARN</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                             | Format                      | Unsigned Binary |              |      |                  |       |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r | r | r | r | r | r | r | r | Flag | OT_FAULT        | OT_WARN      | X              | X            | X            | X    | X                | X     | Default Value | Variable |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Format        | Unsigned Binary    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4               | 3            | 2    | 1                | 0     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | OT_FAULT           | OT_WARN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | X                           | X               | X            | X    | X                | X     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| 7E            | STATUS_CML         | <div>Returns one byte of information with the status of the module's communication related faults</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Flag</td><td>Invalid Command</td><td>Invalid Data</td><td>PEC Fail</td><td>X</td><td>X</td><td>X</td><td>Other Comm Fault</td><td>X</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                         | Format                      | Unsigned Binary |              |      |                  |       |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r | r | r | r | r | r | r | r | Flag | Invalid Command | Invalid Data | PEC Fail       | X            | X            | X    | Other Comm Fault | X     | Default Value | Variable |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Format        | Unsigned Binary    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5                           | 4               | 3            | 2    | 1                | 0     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Access        | r                  | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | r                           | r               | r            | r    | r                | r     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Flag          | Invalid Command    | Invalid Data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PEC Fail                    | X               | X            | X    | Other Comm Fault | X     |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |                 |              |      |                  |       |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |      |                 |              |                |              |              |      |                  |       |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |      |   |     |         |         |        |      |     |       |               |          |  |  |  |  |  |  |  |  |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (Continued)

| Hex Code      | Command                         | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Non-Volatile Memory Storage |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
|---------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|----|----------|---|---|--|--|--|--------------|----|----|----|----|----|----|---|---|--------|---|---|---|---|---|---|---|---|----------|----------|--|--|--|--|----------|--|--|---------------|----------|--|--|--|--|--|--|--|--------------|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|----------|----------|--|--|--|--|--|--|--|---------------|----------|--|--|--|--|--|--|--|--|
| 88            | READ_VIN                        | <div>Returns the value of the input voltage applied to the module.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table> | Format                      | Linear, two's complement binary |    |          |   |   |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r | r | r | r | r | r | r | Function | Exponent |  |  |  |  | Mantissa |  |  | Default Value | Variable |  |  |  |  |  |  |  | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r | r | r | r | r | r | r | r | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |  |  |  |  |  |  |  |  |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 13                          | 12                              | 11 | 10       | 9 | 8 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Exponent                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    | Mantissa |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5                           | 4                               | 3  | 2        | 1 | 0 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| 8B            | READ_VOUT                       | <div>Returns the value of the output voltage of the module. Exponent is fixed at -14</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>            | Format                      | Linear, two's complement binary |    |          |   |   |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r | r | r | r | r | r | r | Function | Mantissa |  |  |  |  |          |  |  | Default Value | Variable |  |  |  |  |  |  |  | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r | r | r | r | r | r | r | r | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |  |  |  |  |  |  |  |  |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 13                          | 12                              | 11 | 10       | 9 | 8 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5                           | 4                               | 3  | 2        | 1 | 0 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| 8C            | READ_IOUT                       | <div>Returns the value of the output current of the module.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>        | Format                      | Linear, two's complement binary |    |          |   |   |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r | r | r | r | r | r | r | Function | Exponent |  |  |  |  | Mantissa |  |  | Default Value | Variable |  |  |  |  |  |  |  | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r | r | r | r | r | r | r | r | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |  |  |  |  |  |  |  |  |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 13                          | 12                              | 11 | 10       | 9 | 8 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Exponent                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    | Mantissa |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5                           | 4                               | 3  | 2        | 1 | 0 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| 8D            | READ_TEMPERATURE_1              | <div>Returns a module FET package temperature in °C.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>               | Format                      | Linear, two's complement binary |    |          |   |   |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r | r | r | r | r | r | r | Function | Exponent |  |  |  |  | Mantissa |  |  | Default Value | Variable |  |  |  |  |  |  |  | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r | r | r | r | r | r | r | r | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |  |  |  |  |  |  |  |  |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 13                          | 12                              | 11 | 10       | 9 | 8 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Exponent                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    | Mantissa |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5                           | 4                               | 3  | 2        | 1 | 0 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| 8E            | READ_TEMPERATURE_2              | <div>Returns the module PWM controller temperature in °C.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="5">Exponent</td><td colspan="3">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>          | Format                      | Linear, two's complement binary |    |          |   |   |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r | r | r | r | r | r | r | r | Function | Exponent |  |  |  |  | Mantissa |  |  | Default Value | Variable |  |  |  |  |  |  |  | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r | r | r | r | r | r | r | r | Function | Mantissa |  |  |  |  |  |  |  | Default Value | Variable |  |  |  |  |  |  |  |  |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 13                          | 12                              | 11 | 10       | 9 | 8 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Exponent                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    | Mantissa |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5                           | 4                               | 3  | 2        | 1 | 0 |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                           | r                               | r  | r        | r | r |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Function      | Mantissa                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             |                                 |    |          |   |   |  |  |  |              |    |    |    |    |    |    |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |          |  |  |               |          |  |  |  |  |  |  |  |              |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |          |          |  |  |  |  |  |  |  |               |          |  |  |  |  |  |  |  |  |

## 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (Continued)

| Hex Code      | Command            | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Non-Volatile Memory Storage |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|---------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|---------------------------------|-----|-----|-----|-----|-----|-----|--|--------------|----|----|----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------|---|---|---|---|---|---|---|---------------|----------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|---------|--|--|--|--|--|--|--|---------------|----------|---|---|---|---|---|---|---|
| 95            | READ_FREQUENCY     | Returns the switching Frequency of the converter. The Frequency is in Kilohertz and is read only, consisting of two bytes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table> |                             | Format                          | Linear, two's complement binary |     |     |     |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Function      | Integer |   |   |   |   |   |   |   | Default Value | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 1 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Function | Integer |  |  |  |  |  |  |  | Default Value | 1        | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
|               |                    | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | Linear, two's complement binary |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 15                              | 14                              | 13  | 12  | 11  | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r                               | r                               | r   | r   | r   | r   | r   | r   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             | 0                               | 0                               | 0   | 0   | 0   | 0   | 0   | 1   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 7                               | 6                               | 5   | 4   | 3   | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r                               | r                               | r   | r   | r   | r   | r   | r   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 1                  | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0                           | 1                               | 0                               | 0   | 0   | 0   |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| 98            | PMBUS_REVISION     | Returns one byte indicating the module is compliant to PMBus Spec. 1.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | YES                         |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             | Format                          | Unsigned Binary                 |     |     |     |     |     |     |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Default Value | 0       | 0 | 0 | 1 | 0 | 0 | 0 | 1 |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | Unsigned Binary                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 7                               | 6                               | 5   | 4   | 3   | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r                               | r                               | r   | r   | r   | r   | r   | r   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | 0                  | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0                           | 1                               | 0                               | 0   | 0   | 1   |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| B0            | MFR_SPECIFIC_KP    | Value used to program specific proportional coefficient of the PID compensation Block. Do not use value higher than 10922                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | YES                         |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                       |                             | Format                          | Linear, two's complement binary |     |     |     |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function      | Integer |   |   |   |   |   |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                    | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | Linear, two's complement binary |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 15                              | 14                              | 13  | 12  | 11  | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             | Variable                        |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 7                               | 6                               | 5   | 4   | 3   | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| B1            | MFR_SPECIFIC_KI    | Value used to program specific integral coefficient of the PID compensation Block. Do not use value higher than 10922.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | YES                         |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                       |                             | Format                          | Linear, two's complement binary |     |     |     |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function      | Integer |   |   |   |   |   |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                    | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | Linear, two's complement binary |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 15                              | 14                              | 13  | 12  | 11  | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             | Variable                        |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 7                               | 6                               | 5   | 4   | 3   | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| B2            | MFR_SPECIFIC_KD    | Value used to program specific differential coefficient of the PID compensation. Do not use value higher than 10922                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | YES                         |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                       |                             | Format                          | Linear, two's complement binary |     |     |     |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function      | Integer |   |   |   |   |   |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                    | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | Linear, two's complement binary |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 15                              | 14                              | 13  | 12  | 11  | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             | Variable                        |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 7                               | 6                               | 5   | 4   | 3   | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| B3            | MFR_SPECIFIC_ALPHA | Value used to program specific alpha value of the PID compensation block<br>Allowable range: -256 to +256. Use positive values only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | YES                         |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                       |                             | Format                          | Linear, two's complement binary |     |     |     |     |     |     |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function      | Integer |   |   |   |   |   |   |   | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |
|               |                    | Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | Linear, two's complement binary |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 15                              | 14                              | 13  | 12  | 11  | 10  | 9   | 8   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Default Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                             | Variable                        |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Bit Position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             | 7                               | 6                               | 5   | 4   | 3   | 2   | 1   | 0   |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | r/w                             | r/w                             | r/w | r/w | r/w | r/w | r/w | r/w |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
|               |                    | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             | Integer                         |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |
| Default Value | Variable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |                                 |     |     |     |     |     |     |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |               |         |   |   |   |   |   |   |   |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

Table 4 (Continued)

| Hex Code      | Command                               | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Non-Volatile Memory Storage |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
|---------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|-----|-----|----------|--------------|--|--|--|--------------|----|----|----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|---------------|---|---|---|---|---|---|--------------|---------------|---------------------------------------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|-------------|--|--|--|--|--|----------|--|---------------|---------------------------------------|---|---|---|---|---|---|---|-----|
| D0            | MFR_SPECIFIC_00                       | <div>Returns module name information (read only)</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Reserved</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="6">Module Name</td><td colspan="2">Reserved</td></tr><tr><td>Default Value</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td></tr></table>                                                                                                                                                                                                                                                        | Format                      | Unsigned Binary                 |     |     |          |              |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Function | Reserved      |   |   |   |   |   |   |              | Default Value | 0                                     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Function | Module Name |  |  |  |  |  | Reserved |  | Default Value | 0                                     | 0 | 1 | 1 | 0 | 1 | 0 | 0 | YES |
| Format        | Unsigned Binary                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13                          | 12                              | 11  | 10  | 9        | 8            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | r                           | r                               | r   | r   | r        | r            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Reserved                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 0                                     | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0                           | 0                               | 0   | 0   | 0        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5                           | 4                               | 3   | 2   | 1        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r                                     | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | r                           | r                               | r   | r   | r        | r            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Module Name                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     | Reserved |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 0                                     | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1                           | 1                               | 0   | 1   | 0        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| D4            | MFR_READ_VOUT_CAL_OFFSET              | <div>Applies an offset to the READ_VOUT command results to calibrate out offset errors in module measurements of the output voltage (between -125mV and +124mV). Exponent is fixed at -14.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr></table>                                                                                                                                          | Format                      | Linear, two's complement binary |     |     |          |              |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa      |   |   |   |   |   |   |              | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa    |  |  |  |  |  |          |  | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13                          | 12                              | 11  | 10  | 9        | 8            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                             | r/w | r/w | r/w      | r/w          |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5                           | 4                               | 3   | 2   | 1        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                             | r/w | r/w | r/w      | r/w          |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| D5            | MFR_READ_VOUT_CAL_GAIN                | <div>Applies a gain correction to the READ_VOUT command results to calibrate out gain errors in module measurements of the output voltage. The number in this register is divided by 8192 to generate the correction factor.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr></table>                                                                                                          | Format                      | Linear, two's complement binary |     |     |          |              |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer       |   |   |   |   |   |   |              | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer     |  |  |  |  |  |          |  | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13                          | 12                              | 11  | 10  | 9        | 8            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                             | r/w | r/w | r/w      | r/w          |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Integer                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5                           | 4                               | 3   | 2   | 1        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                             | r/w | r/w | r/w      | r/w          |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Integer                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| D7            | MFR_VOUT_CAL_OFFSET                   | <div>Applies an offset to the commanded output voltage to calibrate out errors in setting module output voltage (between -63mV and +62mV) when using Trim resistor. Exponent is fixed at -14.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Mantissa</td></tr><tr><td>Default Value</td><td colspan="8">Variable based on factory calibration</td></tr></table>                                                                                                                                       | Format                      | Linear, two's complement binary |     |     |          |              |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa      |   |   |   |   |   |   |              | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Mantissa    |  |  |  |  |  |          |  | Default Value | Variable based on factory calibration |   |   |   |   |   |   |   | YES |
| Format        | Linear, two's complement binary       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 15                                    | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13                          | 12                              | 11  | 10  | 9        | 8            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                             | r/w | r/w | r/w      | r/w          |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5                           | 4                               | 3   | 2   | 1        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                             | r/w | r/w | r/w      | r/w          |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Function      | Mantissa                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | Variable based on factory calibration |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| D8            | MFR_VOUT_SET_MODE                     | <div>Bit 7 used to determine whether output voltage is set using RTrim or the VOUT_COMMAND.<br/>Bit 7: 1 – Output voltage is solely set by RTrim value and can be adjusted from set value using the VOUT_TRIM command<br/>Bit 7: 0 – Output voltage is solely set by VOUT_COMMAND and can be adjusted from set value using the VOUT_TRIM command.<br/>Bit 0: Used to indicate whether changes have been made to the Vout set point, PG On/Off levels, margin levels or OV/UV fault/warning levels. A 1 in this position indicates that one or more of the values have changed from the default. If this bit is 0, then the default values are used.</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Flag</td><td>VOUT_SET_MODE</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>USER_CHANGES</td></tr><tr><td>Default Value</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table> | Format                      | Unsigned Binary                 |     |     |          |              |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Flag     | VOUT_SET_MODE | X | X | X | X | X | X | USER_CHANGES | Default Value | 1                                     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Format        | Unsigned Binary                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                                 |     |     |          |              |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Bit Position  | 7                                     | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5                           | 4                               | 3   | 2   | 1        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Access        | r/w                                   | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | r/w                         | r/w                             | r/w | r/w | r/w      | r/w          |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Flag          | VOUT_SET_MODE                         | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | X                           | X                               | X   | X   | X        | USER_CHANGES |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |
| Default Value | 1                                     | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0                           | 0                               | 0   | 0   | 0        | 0            |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |               |   |   |   |   |   |   |              |               |                                       |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |             |  |  |  |  |  |          |  |               |                                       |   |   |   |   |   |   |   |     |

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

**Table 4 (Continued)**

| Hex Code      | Command                         | Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Non-Volatile Memory Storage |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
|---------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|------|-----|-----|-----|--|--|--|--------------|----|----|----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|-------------------------|--|--|--|--|--|--|--|---------------|----------|---|---|---|---|---|---|---|--------------|---|---|---|---|---|---|---|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|----------|-------------------------|--|--|--|------|--|--|--|---------------|----------|---|---|---|---|---|---|---|-----|
| DB            | MFR_FW_REVISION                 | <div>Value used to program the firmware revision. This command is read only.</div> <table><tr><td>Format</td><td colspan="8">Linear, two's complement binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer – Major Version</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="8">Integer – Minor Version</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                              | Format                      | Linear, two's complement binary |      |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer – Major Version |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r/w | r/w | r/w | r/w | r/w | r/w | r/w | r/w | Function | Integer – Minor Version |  |  |  |      |  |  |  | Default Value | Variable |   |   |   |   |   |   |   |     |
| Format        | Linear, two's complement binary |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 13                          | 12                              | 11   | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | r/w                         | r/w                             | r/w  | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Integer – Major Version         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5                           | 4                               | 3    | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r/w                             | r/w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | r/w                         | r/w                             | r/w  | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Integer – Minor Version         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| DD            | MFR_RTUNE_INDEX                 | <div>Returns the index derived from the resistor strapped to the RTUNE pin of the module. Range is from 0 to 59.</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Integer</td></tr><tr><td>Default Value</td><td colspan="8">Variable</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Format                      | Unsigned Binary                 |      |     |     |     |  |  |  | Bit Position | 7  | 6  | 5  | 4  | 3  | 2  | 1 | 0 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Function | Integer                 |  |  |  |  |  |  |  | Default Value | Variable |   |   |   |   |   |   |   | YES          |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Format        | Unsigned Binary                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5                           | 4                               | 3    | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | r                           | r                               | r    | r   | r   | r   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Integer                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | Variable                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| DF            | MFR_WRITE_PROTECT               | <div>Gets or sets the write protection status of various PMBus commands. When a bit is set, the corresponding PMBus command is write protected and can only be read.</div> <table><tr><td>Format</td><td colspan="8">Unsigned Binary</td></tr><tr><td>Bit Position</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r</td></tr><tr><td>Function</td><td colspan="8">Reserved</td></tr><tr><td>Default Value</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td></tr><tr><td>Bit Position</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr><tr><td>Access</td><td>r</td><td>r</td><td>r</td><td>r</td><td>r/w</td><td>r/w</td><td>r/w</td><td>r/w</td></tr><tr><td>Function</td><td colspan="4">Reserved</td><td colspan="4">Used</td></tr><tr><td>Default Value</td><td>x</td><td>x</td><td>x</td><td>x</td><td>1</td><td>1</td><td>1</td><td>0</td></tr></table> <div>Bit 0: ON_OFF_CONFIG<br/>Bit 1: IOUT_OC_FAULT_LIMIT<br/>Bit 2: OT_FAULT_LIMIT<br/>Bit 3: OT_FAULT_RESP<br/>Bits 4 – 15: Reserved</div> | Format                      | Unsigned Binary                 |      |     |     |     |  |  |  | Bit Position | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | Access | r   | r   | r   | r   | r   | r   | r   | r   | Function | Reserved                |  |  |  |  |  |  |  | Default Value | x        | x | x | x | x | x | x | x | Bit Position | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Access | r   | r   | r   | r   | r/w | r/w | r/w | r/w | Function | Reserved                |  |  |  | Used |  |  |  | Default Value | x        | x | x | x | 1 | 1 | 1 | 0 | YES |
| Format        | Unsigned Binary                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 15                              | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 13                          | 12                              | 11   | 10  | 9   | 8   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | r                           | r                               | r    | r   | r   | r   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Reserved                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | x                               | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | x                           | x                               | x    | x   | x   | x   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Bit Position  | 7                               | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5                           | 4                               | 3    | 2   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Access        | r                               | r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | r                           | r                               | r/w  | r/w | r/w | r/w |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Function      | Reserved                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                 | Used |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| Default Value | x                               | x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | x                           | x                               | 1    | 1   | 1   | 0   |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |
| F0            | MFR_MODULE_DATE_LOC_SN          | <div>Read only command which returns 12 bytes with the value of YYFFWWXXXXXX, where<br/>YY : year of manufacture<br/>FF: Factory where manufactured<br/>WW: Fiscal week of the year when unit was manufactured<br/>XXXXXX: Unique number for the specific unit – corresponding to serial number on the label of the unit.</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | YES                         |                                 |      |     |     |     |  |  |  |              |    |    |    |    |    |    |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |  |  |  |  |               |          |   |   |   |   |   |   |   |              |   |   |   |   |   |   |   |   |        |     |     |     |     |     |     |     |     |          |                         |  |  |  |      |  |  |  |               |          |   |   |   |   |   |   |   |     |

SMBALERT# is also triggered:

- when an invalid/unrecognized PMBus command (write or read) is issued
- By invalid PMBus data (write)
- By PEC Failure (when used)
- By Enable OFF (when used)
- Module is out of Power Good Range

## Digital Power Insight (DPI)

GE offers a software tool that set helps users evaluate and simulate the PMBus performance of the TJT120A modules without the need to write software.

The software can be downloaded for free at <http://go.ge-energy.com/DigitalPowerInsight.html>. A GE USB to I2C adapter and associated cable set are required for proper functioning of the software suite. For first time users, the GE DPI Evaluation Kit can be purchased from leading distributors at a nominal price and can be used across the entire range of GE Digital POL Modules.

## 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

### Thermal Considerations

Power modules operate in a variety of thermal environments; however, sufficient cooling should always be provided to help ensure reliable operation.

Considerations include ambient temperature, airflow, module power dissipation, and the need for increased reliability. A reduction in the operating temperature of the module will result in an increase in reliability. The thermal data presented here is based on physical measurements taken in a wind tunnel. The test set-up is shown in Figure 37. The preferred airflow direction for the module is in Figure 38.

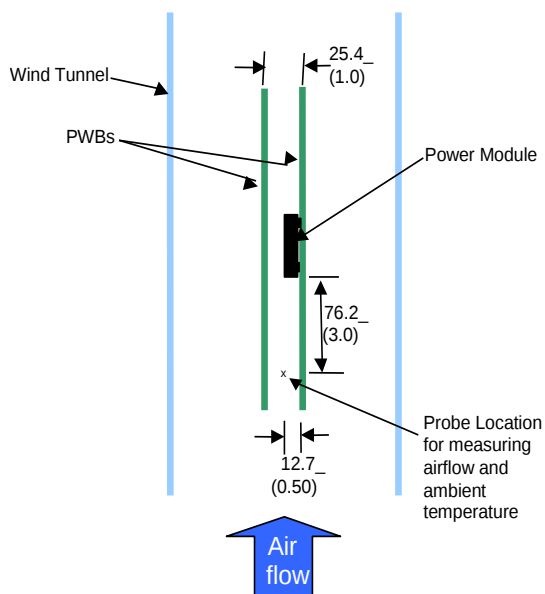


Figure 37. Thermal Test Setup.

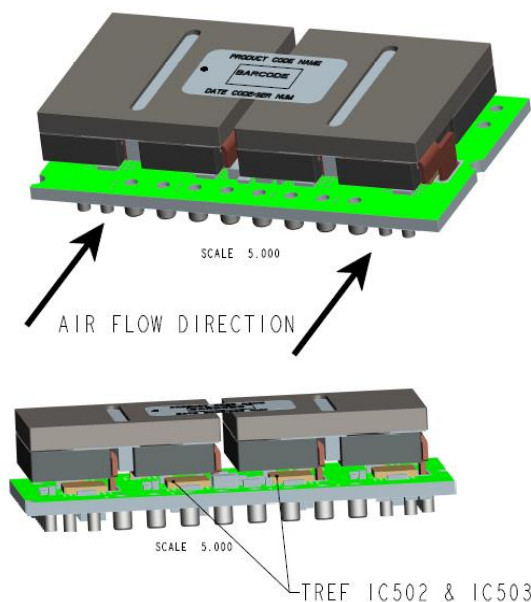


Figure 38. Preferred airflow direction and location of hot-spots of the module (Tref).

The thermal reference points,  $T_{ref}$  used in the specifications are also shown in Figure 38. For reliable operation the temperatures at these points should not exceed 120°C. The output power of the module should not exceed the rated power of the module ( $V_{o,set} \times I_{o,max}$ ).

Please refer to the Application Note "Thermal Characterization Process For Open-Frame Board-Mounted Power Modules" for a detailed discussion of thermal aspects including maximum device temperatures.

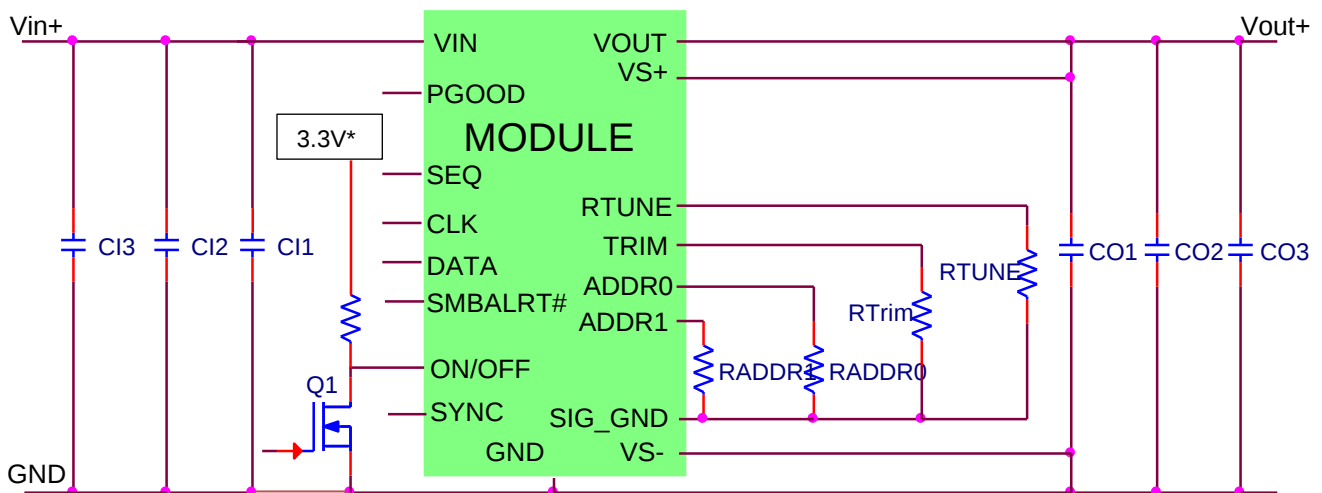
# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Example Application Circuit

### Requirements:

|             |                                                                   |
|-------------|-------------------------------------------------------------------|
| Vin:        | 12V                                                               |
| Vout:       | 1.2V                                                              |
| Iout:       | 120A max., worst case load transient is from 60A to 90A, 10A/usec |
| ΔVout:      | 25mV for worst case load transient                                |
| Vin, ripple | 2% of Vin (240mV p-p)                                             |



3.3V\* can be derived from Vin through a suitable voltage divider network

|       |                                                            |
|-------|------------------------------------------------------------|
| CI1   | 4 × 0.047 μF (high-frequency decoupling ceramic capacitor) |
| CI2   | 12 × 22 μF Ceramic                                         |
| CI3   | 4 × 470 μF (polymer or electrolytic)                       |
| CO1   | 4 × 0.047 μF (high-frequency decoupling ceramic capacitor) |
| CO2   | 12 × 47 μF, Ceramic                                        |
| CO3   | 7 × 1000 μF                                                |
| RTune | 2460Ω,                                                     |
| RTrim | 5.9KΩ                                                      |

**Note:** The DATA, CLK and SMBALRT pins do not have any pull-up resistors inside the module. Typically, the PMBus master controller will have pull-up resistors as well as provide the driving source for these signals.

If running the simulation at [ge.transim.com](http://ge.transim.com) remember to use bin 'a' parameters to determine the Loop Stability, and bin 'b' parameters to determine the transient response.

# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

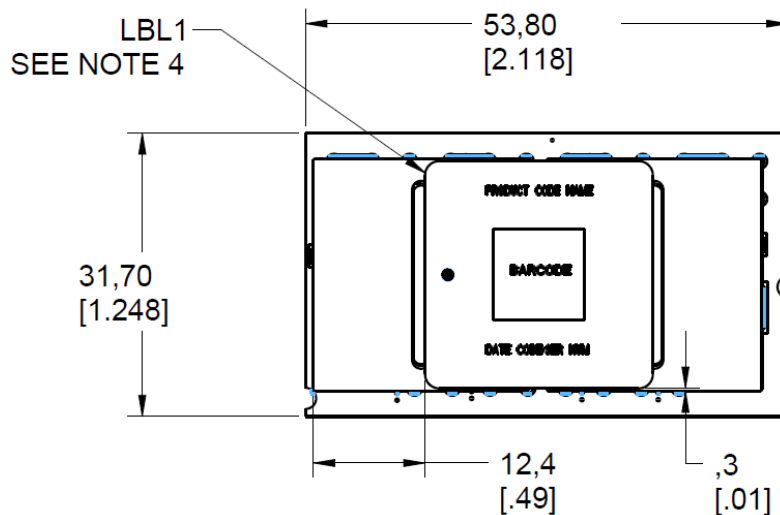
4.5Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Mechanical Outline (SMT)

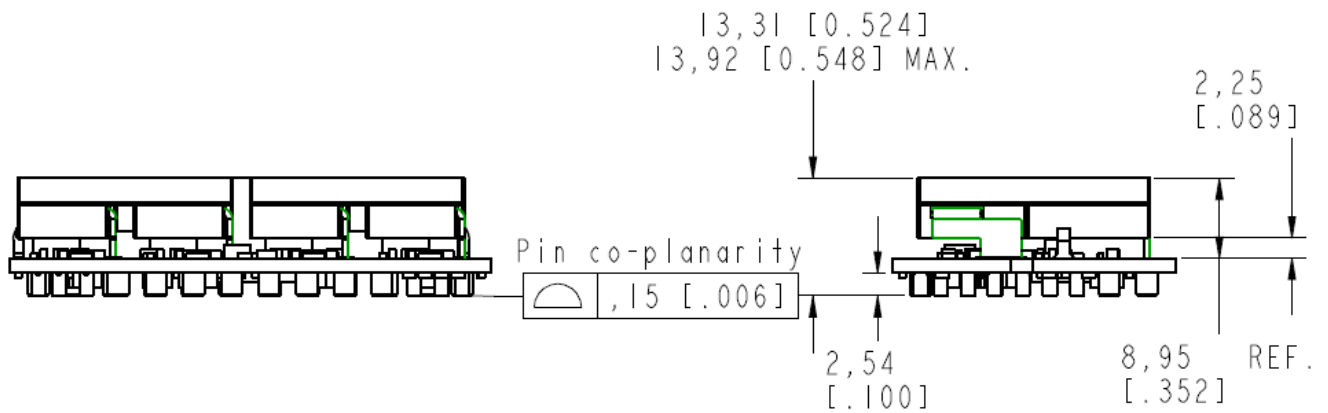
Dimensions are in millimeters and (inches).

Tolerances: x.x mm ± 0.5 mm (x.xx in. ± 0.02 in.) [unless otherwise indicated]

x.xx mm ± 0.25 mm (x.xxx in ± 0.010 in.)

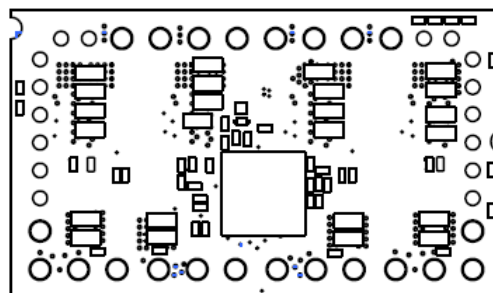


TOP VIEW



FRONT VIEW

SIDE VIEW



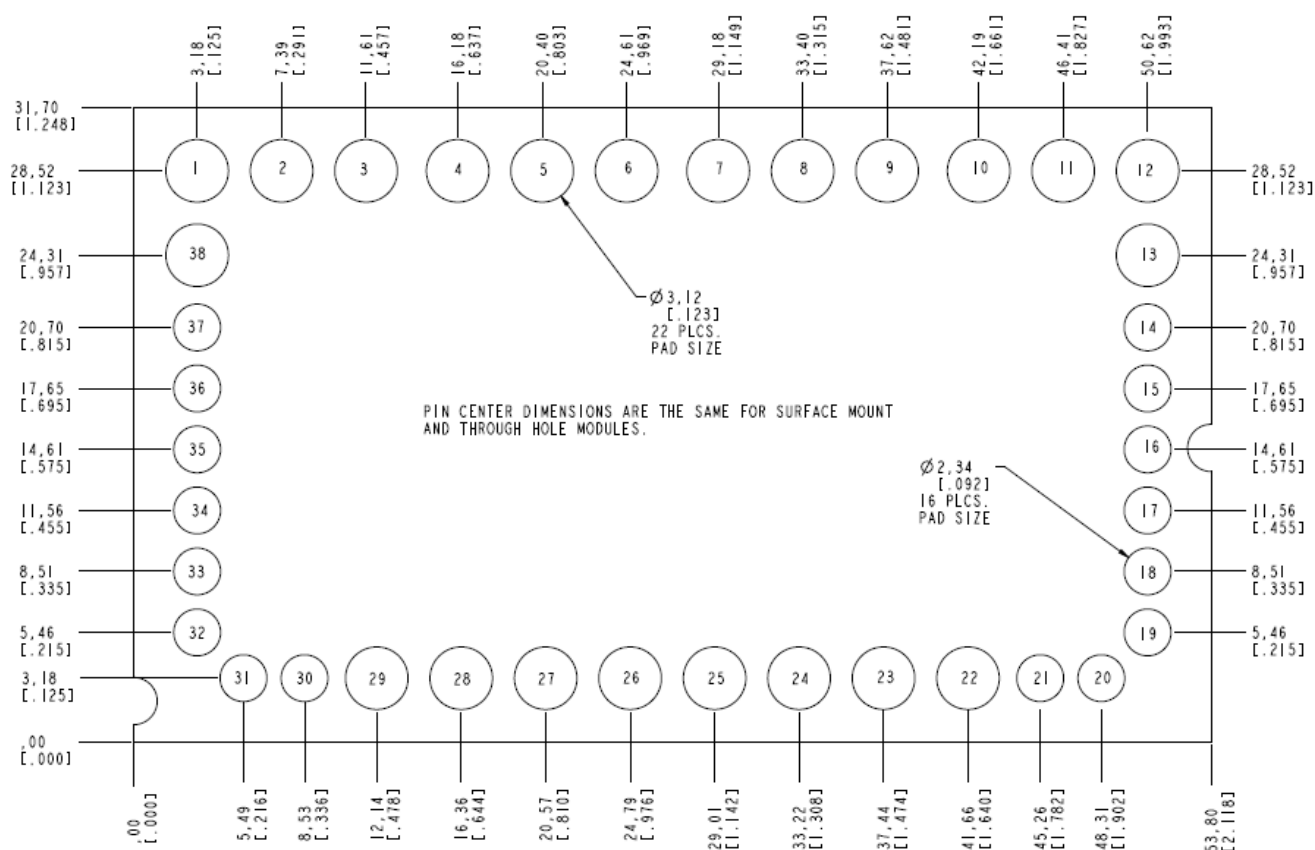
BOTTOM VIEW

# 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Recommended SMT Pad Layout

### RECOMMENDED SMT FOOTPRINT -THROUGH BOARD VIEW -



| PIN | FUNCTION | PIN | FUNCTION | PIN | FUNCTION  |
|-----|----------|-----|----------|-----|-----------|
| 1   | VOUT     | 15  | PWR_GOOD | 29  | VIN       |
| 2   | VOUT     | 16  | RTUNE    | 30  | N/A       |
| 3   | GND      | 17  | TRIM     | 31  | SHARE/NC  |
| 4   | VOUT     | 18  | SEQ      | 32  | ON/OFF    |
| 5   | VOUT     | 19  | SIG_GND  | 33  | SMBALERT# |
| 6   | GND      | 20  | VS+      | 34  | DATA      |
| 7   | VOUT     | 21  | VS-      | 35  | CLK       |
| 8   | VOUT     | 22  | GND      | 36  | ADDR0     |
| 9   | GND      | 23  | VIN      | 37  | ADDR1     |
| 10  | VOUT     | 24  | GND      | 38  | GND       |
| 11  | VOUT     | 25  | VIN      |     |           |
| 12  | GND      | 26  | GND      |     |           |
| 13  | GND      | 27  | VIN      |     |           |
| 14  | SYNC     | 28  | GND      |     |           |

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

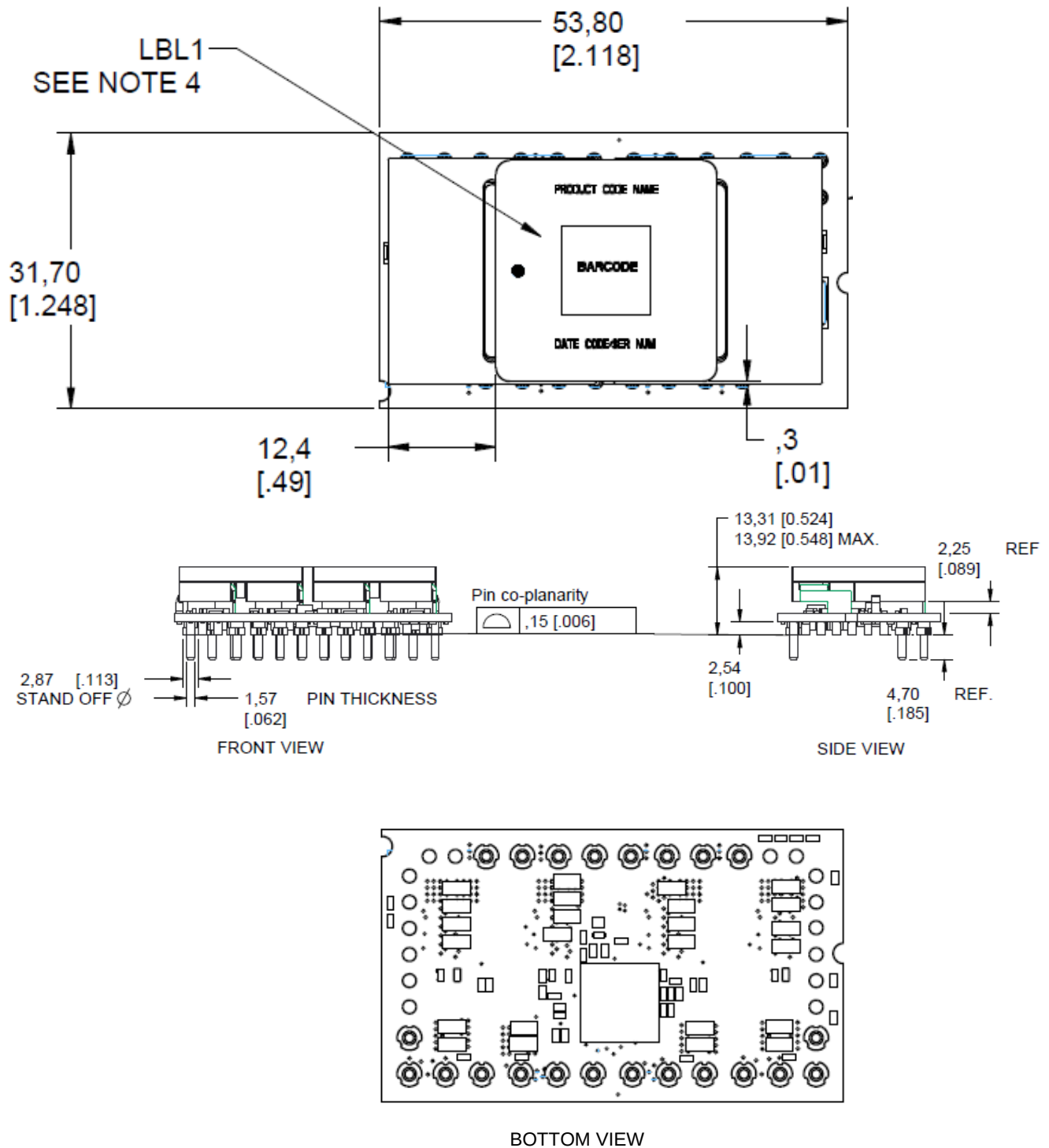
4.5Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

### Mechanical Outline (Through hole)

Dimensions are in millimeters and (inches).

Tolerances: x.x mm ± 0.5 mm (x.xx in. ± 0.02 in.) [unless otherwise indicated]

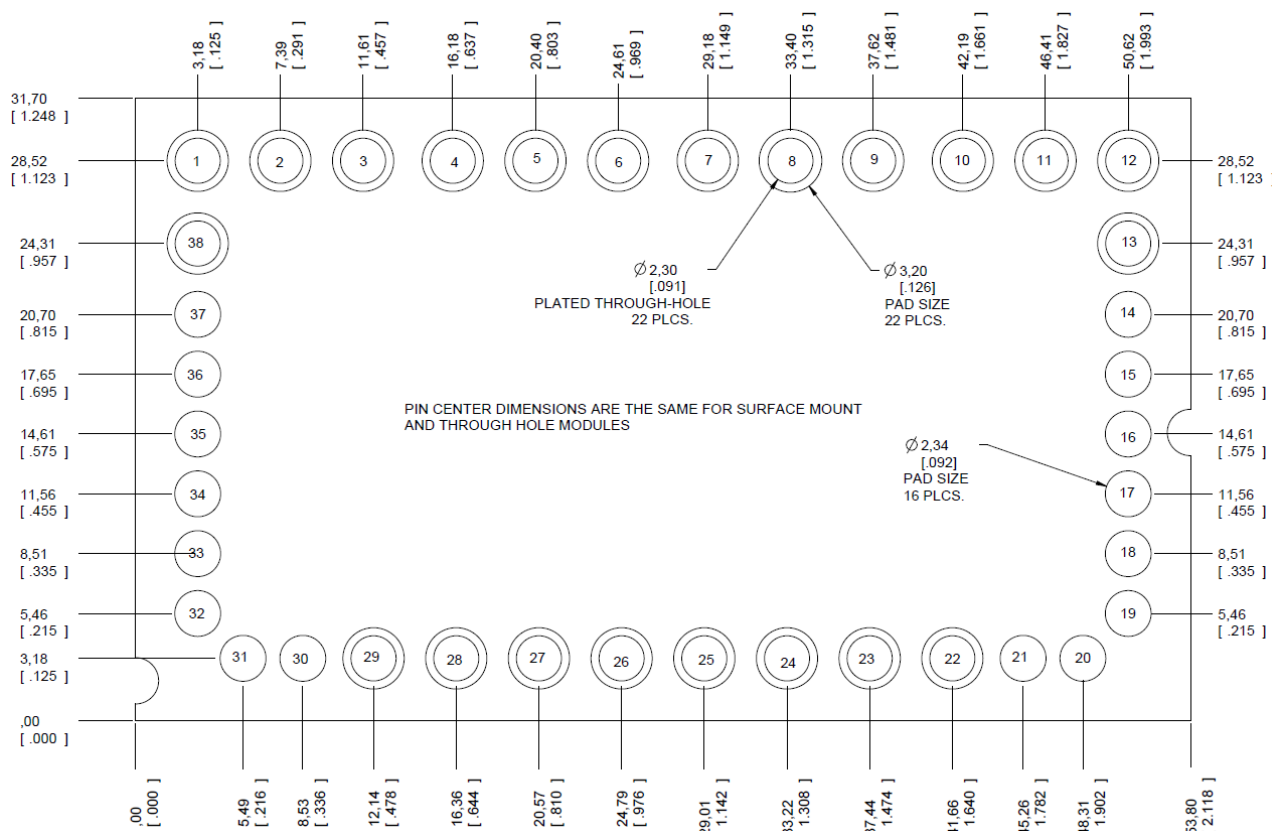
x.xx mm ± 0.25 mm (x.xxx in. ± 0.010 in.)



# 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Recommended Through-hole Layout



**Note:** In the Through-Hole version of the TJT120, pins 1-13, 22-29 and 38 are Through-Hole pins, pins 14-21, 30-37 are SMT pins. The drawing above shows the recommended layout as a combination of holes in the PWB to accommodate the Through-Hole pins and pads on the top layer to accommodate the SMT pins.

| PIN | FUNCTION | PIN | FUNCTION | PIN | FUNCTION  |
|-----|----------|-----|----------|-----|-----------|
| 1   | VOUT     | 15  | PWR_GOOD | 29  | VIN       |
| 2   | VOUT     | 16  | RTUNE    | 30  | N/A       |
| 3   | GND      | 17  | TRIM     | 31  | SHARE/NC  |
| 4   | VOUT     | 18  | SEQ      | 32  | ON/OFF    |
| 5   | VOUT     | 19  | SIG_GND* | 33  | SMBALERT# |
| 6   | GND      | 20  | VS+      | 34  | DATA      |
| 7   | VOUT     | 21  | VS-      | 35  | CLK       |
| 8   | VOUT     | 22  | GND      | 36  | ADDR0     |
| 9   | GND      | 23  | VIN      | 37  | ADDR1     |
| 10  | VOUT     | 24  | GND      | 38  | GND       |
| 11  | VOUT     | 25  | VIN      |     |           |
| 12  | GND      | 26  | GND      |     |           |
| 13  | GND      | 27  | VIN      |     |           |
| 14  | SYNC     | 28  | GND      |     |           |

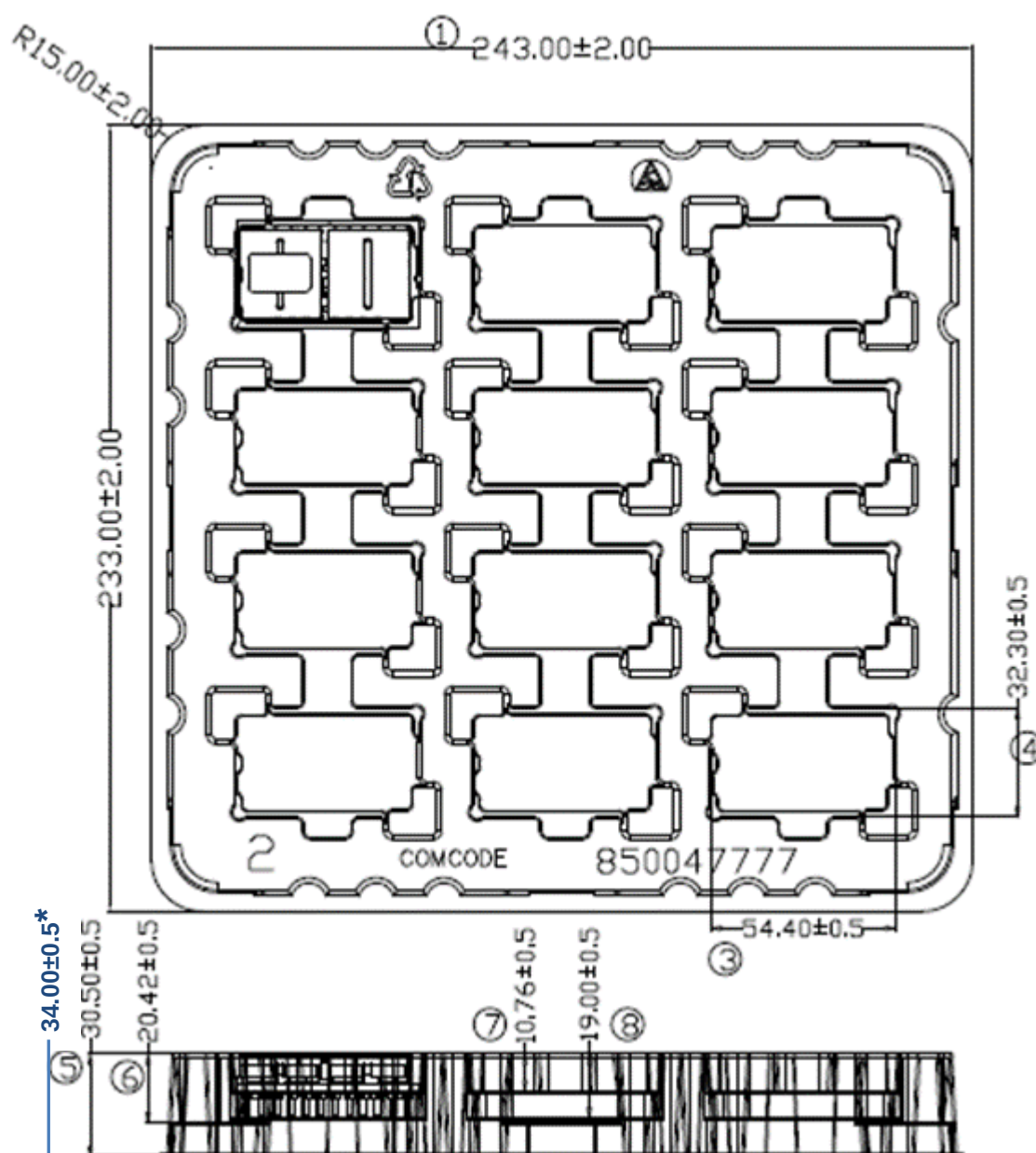
\*Do not connect SIG\_GND to any other GND paths. It needs to be kept separate from other grounds on the board external to the module

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

4.5Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

### Packaging Details

The 120A TeraDlynx™ modules are supplied in trays. Modules are shipped in quantities of 12 modules per layer, 24 per box. All Dimensions are in millimeters. All radius unspecified are R2.0mm. All angles unspecified are 5°.



\* Unit datecodes prior to 1802 will have the older taller tray with a height of 34.00±0.5 as indicated

## 120A TeraDlynx™: Non-Isolated DC-DC Power Modules

7Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

### Surface Mount Information

#### Pick and Place

The 120A TeraDlynx™ modules use an open frame construction and are designed for a fully automated assembly process. The modules are fitted with a label designed to provide a large surface area for pick and place operations. The label meets all the requirements for surface mount processing, as well as safety standards, and is able to withstand reflow temperatures of up to 300°C. The label also carries product information such as product code, serial number and the location of manufacture.

#### Nozzle Recommendations

The module weight has been kept to a minimum by using open frame construction. Variables such as nozzle size, tip style, vacuum pressure and placement speed should be considered to optimize this process. The minimum recommended inside nozzle diameter for reliable operation is 15mm. The maximum nozzle outer diameter, which will safely fit within the allowable component spacing, is 22 mm.

#### Bottom Side / First Side Assembly

This module is not recommended for assembly on the bottom side of a customer board. If such an assembly is attempted, components may fall off the module during the second reflow process.

#### Lead Free Soldering

The modules are lead-free (Pb-free) and RoHS compliant and fully compatible in a Pb-free soldering process. Failure to observe the instructions below may result in the failure of or cause damage to the modules and can adversely affect long-term reliability.

#### Pb-free Reflow Profile

Power Systems will comply with J-STD-020 Rev. C (Moisture/Reflow Sensitivity Classification for Nonhermetic Solid State Surface Mount Devices) for both Pb-free solder profiles and MSL classification procedures. This standard provides a recommended forced-air-convection reflow profile based on the volume and thickness of the package (table 4-2). The suggested Pb-free solder paste is Sn/Ag/Cu (SAC). The recommended linear reflow profile using Sn/Ag/Cu solder is shown in Fig. 40. Soldering outside of the recommended profile requires testing to verify results and performance.

#### MSL Rating

The 120A TeraDlynx™ modules have a MSL rating of 3.

#### Storage and Handling

The recommended storage environment and handling procedures for moisture-sensitive surface mount packages is detailed in J-STD-033 Rev. A (Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices). Moisture barrier bags (MBB) with desiccant are required for MSL ratings of 2 or greater. These sealed packages should not be broken until time of use. Once the original package is broken, the floor life of the product at

conditions of  $\leq 30^{\circ}\text{C}$  and 60% relative humidity varies according to the MSL rating (see J-STD-033A). The shelf life for dry packed SMT packages will be a minimum of 12 months from the bag seal date, when stored at the following conditions:  $< 40^{\circ}\text{C}$ ,  $< 90\%$  relative humidity.

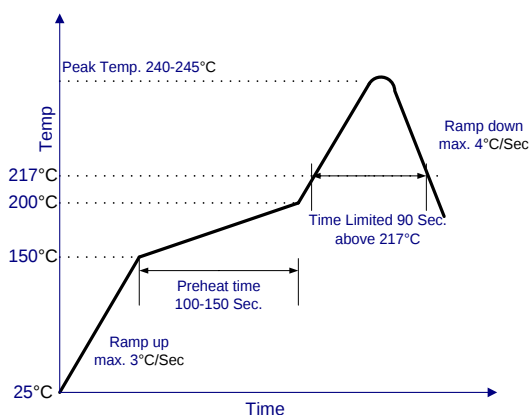


Figure 39. Recommended linear reflow profile using Sn/Ag/Cu solder.

#### Post Solder Cleaning and Drying Considerations

Post solder cleaning is usually the final circuit-board assembly process prior to electrical board testing. The result of inadequate cleaning and drying can affect both the reliability of a power module and the testability of the finished circuit-board assembly. For guidance on appropriate soldering, cleaning and drying procedures, refer to *Board Mounted Power Modules: Soldering and Cleaning* Application Note (AN04-001).

#### Through Hole Information

The 120A TeraDlynx™ modules are lead-free (Pb-free) and RoHS compliant and fully compatible in an Pb-free soldering process. For the through-hole application, it is recommended that the modules are assembled in the pin and paste reflow process, not in the wave solder process. Failure to observe the instructions below may result in the failure of or cause damage to the modules and can adversely affect long-term reliability.

# 120A TeraDLynx™: Non-Isolated DC-DC Power Modules

4.5Vdc –14Vdc input; 0.6Vdc to 1.5Vdc output; 120A Output Current

## Ordering Information

Please contact your GE Sales Representative for pricing, availability and optional features.

**Table 5. Device Codes**

| Device Code    | Input Voltage Range | Output Voltage | Output Current | On/Off Logic | Interconnect | Comcodes  |
|----------------|---------------------|----------------|----------------|--------------|--------------|-----------|
| TJT120A0X3Z    | 7 – 14Vdc           | 0.6 – 1.5 Vdc  | 120A           | Negative     | TH           | 150043982 |
| TJT120A0X43Z   | 7 – 14Vdc           | 0.6 – 1.5 Vdc  | 120A           | Positive     | TH           | 150049601 |
| TJT120A0X3-SZ  | 7 – 14Vdc           | 0.6 – 1.5 Vdc  | 120A           | Negative     | SMT          | 150041745 |
| TJT120A0X43-SZ | 7 – 14Vdc           | 0.6 – 1.5 Vdc  | 120A           | Positive     | SMT          | 150049603 |

-Z refers to RoHS compliant parts

**Table 6. Coding Scheme**

| Package Identifier                              | Family          | Sequencing Option                                    | Output current | Output voltage                    | On/Off logic                                  | Remote Sense           | Options                                                                          |                      | ROHS Compliance |
|-------------------------------------------------|-----------------|------------------------------------------------------|----------------|-----------------------------------|-----------------------------------------------|------------------------|----------------------------------------------------------------------------------|----------------------|-----------------|
| <b>T</b>                                        | <b>J</b>        | <b>T</b>                                             | <b>120A0</b>   | <b>X</b>                          |                                               | <b>3</b>               | <b>-SR</b>                                                                       | <b>-H</b>            | <b>Z</b>        |
| P=Pico<br>U=Micro<br>M=Mega<br>G=Giga<br>T=Tera | J =<br>DLynx II | T=with EZ<br>Sequence<br><br>X=without<br>sequencing | 120A           | X =<br>programm<br>able<br>output | 4 =<br>positive<br><br>No entry =<br>negative | 3 =<br>Remote<br>Sense | S = Surface<br>Mount<br><br>R = Tape &<br>Reel<br><br>No entry =<br>Through hole | Extra Ground<br>Pins | Z = ROHS6       |

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