

SPC5-UDESTK JTAG debugger for SPC5 MCUs

Data brief



Features

SPC5-UDESTK Starter kit version based on Universal Debug Engine[®] software from PLS

- Supports SPC56 and SPC57 automotive product family
- UDE Eclipse plug-in
- Symbol browser
- Program window
- Watch/locals window
- Core register window
- Message window
- SFR window
- Memory window
- Call stack window
- Graphical display
- FLASH programming
- eTPU debugging
- Support and maintenance service provided through STMicroelectronics[®] first line support

Description

SPC5-UDESTK is the JTAG debugger for SPC56 and SPC57 microcontrollers, compliant with IEEE1149.1 specification.

There are two versions available: SPC-UDESTK-FULL is a kit bundle including a JTAG USB adapter and a fully-featured, unlimited code-size

PLS software debugger license; SPC-UDESTK-EVAL is a kit bundle including a fully-featured, but code-limited (128 KB) PLS software debugger license. No matter which kit version you choose, a full non-code-limited 1-year license renewal (SPC5-UDEDEBG-TL) can be ordered directly from ST or ST franchised distributors and activated at URL: www.pls-mc.com/spc5-udestk. After 1 year the user is eligible to purchase a 2-year renewal license (SPC6-UDEDEBG-T2).

The SPC5-UDESTK is available for free download at the following URL: www.pls-mc.com/spc5-udestk.

The SPC5-UDESTK debugger is accessible via ST's integrated development environment and is fully compatible with SPC5-Studio, which can be downloaded at URL: www.st.com/spc5studio.

For additional support, an E2E Community is available on ST WEB at URL: my.st.com/public/STe2ecomunities.

SPC5-UDESTK is part of a wider SPC5 automotive 32-bit microprocessor toolchain, which also includes a dedicated compiler and a set of evaluation boards.

Table 1: Device summary

Order code	Reference
SPC5-UDESTK-EVAL	PLS USB/JTAG adapter and time unlimited software license up to 128 KB code
SPC5-UDESTK-FULL	Include PLS USB/JTAG adapter and 1-year license with full memory access
SPC5-UDEDEBG-TL	1-year license with full memory access
SPC5-UDEDEBG-T2	2-year renewal license full memory access

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1 Details

1.1 SPC5-UDESTK starter kit details

With SPC5-UDESTK you can organize your projects, it supports you while building applications and you can run and test your software in a convenient and cost-efficient way. SPC5-UDESTK stands quintessentially for new debugger architecture and tool concept based on a customizable set of standard components and core specific add-ons.

It offers a collection of tools including source file management, project building and powerful HLL debugger with high-speed communication paths to the customer's hardware target system with target monitor. All components work together in an optimized manner.

SPC5-UDESTK Eclipse plug-in:

- Eclipse perspective for cross-debugging.
- Standard Eclipse installation/update mechanism.
- Debugging framework highly configurable in
 - Views and View placement
 - Fonts and Colors
- Compatible with Eclipse versions 3.4 (Ganymede), 3.5 (Galileo), 3.6 (Helios), 3.7 (Indigo).
- Settings will stored and restored from workspace files
- Recent workspace list.
- Customizable toolbars.
- Print support.

Symbol browser:

- Optimized support for compilers and the ELF, DWARF2.0, and DWARF3.0 format: GNU C/C++ Compiler (HighTec), eTPU Compiler (ByteCraft, JDP).
- Source files.
- Functions in Source files, Functions, Sections.
- Code breakpoints: set, clear, enable, disable.

Program window:

- Code syntax highlighting.
- Mixed mode (C/C++ and instructions).
- Optionally line number display.
- Code breakpoints: set, clear, enable, disable.
- Run to cursor.
- Quick watch in tooltip.
- Add to watch window function.

Watch/ locals window:

- Display of variables: Name, Value, Address, Type, Scope, Min/Max value.
- Display mode for integral types: decimal, hexadecimal, binary, ASCII for float types: compact, exponential, hexadecimal.
- Change coloring.
- Export function.
- Configurable column layout.
- Watch Expressions: C variables and constants, linked in C syntax, to a self-calculating expression; Expression clipboard
- Locals: Automatically display of locals in current or selected scope.

Core register window:

- Display of Core Registers and Flags: Name, Value.
- Change coloring.
- Input history function.

Message window:

- Diagnostic output for debugging and customer support.
- Configurable detail level.

SFR window:

- Display of Special Function Registers: Name, Value, Address, Description, Reset Value, Bit fields.
- Display mode decimal, hexadecimal, binary.
- Change coloring.
- Export function.
- Configurable column layout.

Memory window:

- Display of target memory: Byte, Word, DWord, Double, ASCII.
- In-place editor, Auto size mode.
- Find and Fill function, Export function.

Call stack window:

- Display of call hierarchy including function parameter names/ values.
- Context switch function.

Graphical Display:

- Scientific Array Chart (Values at address range): Multiple curves in one diagram, Separate x- and y-axis for each curve, Legend, Cursor, Zoom, Pan, and Axis markers.
- Flexible calculation of curve data points from target program data with UDE expressions/ Expression clipboard.

FLASH programming:

- FLASH programming of on-chip FLASH of the SPC5 Evaluation Boards
- Erase / Program / Verify

eTPU Debugging:

- Standalone and multi-core eTPU debugger
- Source and mixed mode debugging
- Support of special 24-bit data types
- Manual start of eTPU channel possible

1.2 PLS USB/JTAG Adapter for SPC5x details

The PLS USB/JTAG Adapter for SPC5 for Power Architecture family represents an interface between the host development system and the embedded microcontroller on an evaluation board for debugging purposes.

The PLS USB/JTAG Adapter for SPC5 converts debug information, which are transferred via the host USB interface to the target JTAG interface of the target microcontroller, corresponding to IEEE1149.1. It allows the access from SPC5-UDESTK to an embedded microcontroller.

Status LED:

- Green LED indicates the target's IO voltage on the target connector.
- Yellow LED indicates the target connect state.
- Red LED indicates the target running state.

2 Revision history

Table 2: Document revision history

Date	Revision	Changes
22-May-2013	1	Initial release.
10-Jun-2013	2	Updated <i>Features</i> list <i>Section 1.1: "SPC5-UDESTK starter kit details":</i> <ul style="list-style-type: none">Removed GTM debugging

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