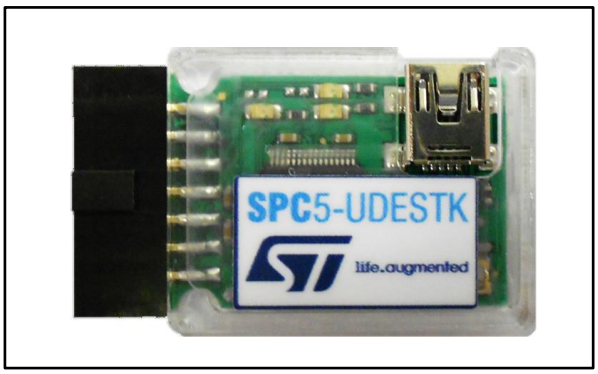
SPC5-PLS

SPC5-UDESTK starter kit version and PLS USB/JTAG Adapter 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
  - GTM debugging
  - Support and maintenance service provided through STMicroelectronics® first line support
- PLS USB/JTAG Adapter for SPC5
  - Supports SPC56 automotive product family
  - Host USB interface to target microcontroller JTAG interface connection according to IEEE1149.1

Description

The Debugger SPC5-UDESTK is a building block of the ST automotive 32-bit microprocessor tool chain that includes a dedicated compiler and an evaluation boards set.

It comes with a dedicated hardware interface, PLS USB/JTAG Adapter for SPC5, supporting the communication between host USB port and target JTAG port.

SPC5-UDEDEBG-TL is downloadable at URL: *www.pls-mc.com/spc5-udestk*

A license full feature, code size limited to 128 KB is included for free trial.

One year license can be ordered directly from ST or ST franchised distributors.

The UDE is accessible in the ST integrated development environment SPC5 Studio that can be downloaded at URL: *www.st.com/spc5studio*.

An E2E Community is available on ST WEB at URL: *my.st.com/public/STe2ecommunities*.

Table 1: Device summary

Order code	Reference
SPC5-PLS	SPC5-UDESTK starter kit and PLS USB/JTAG Adapter for SPC5, annual license.
SPC5-UDESTK	PLS USB/JTAG Adapter for SPC5
SPC5-UDEDEBG-TL	SPC5-UDESTK Starter kit, annual license

Contents

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

GTM Debugging:

- Standalone and multi-core GTM debugger.

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
02-May-2013	1	Initial release.

Please Read Carefully

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

ST PRODUCTS ARE NOT AUTHORIZED FOR USE IN WEAPONS. NOR ARE ST PRODUCTS DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE ST PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER'S SOLE RISK, EVEN IF ST HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY ST AS BEING INTENDED FOR "AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL" INDUSTRY DOMAINS ACCORDING TO ST PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com