

ST-LINK/V2 in-circuit debugger/programmer for STM8 and STM32 microcontrollers



ST-LINK/V2 (left) and ST-LINK/V2-ISOL (right). Pictures are not contractual.

Features

- 5 V power supplied by a USB connector
- USB 2.0 full-speed compatible interface
- USB Type-A to Mini-B cable provided
- SWIM specific features:
 - 1.65 V to 5.5 V application voltage support on the SWIM interface
 - SWIM low-speed and high-speed modes support
 - SWIM programming speed rates: 9.7 kbyte/s in low-speed, 12.8 kbyte/s in high-speed
 - SWIM cable for connection to an application with an ERNI standard connector
 - Vertical connector reference: 284697 or 214017
 - Horizontal connector reference: 214012
 - SWIM cable for connection to an application with pin headers or 2.54 mm pitch connector
- JTAG/serial wire debug (SWD) specific features:
 - 1.65 V to 3.6 V application voltage support on the JTAG/SWD interface and 5 V tolerant inputs
 - JTAG cable for connection to a standard JTAG 20-pin 2.54 mm pitch connector
 - JTAG support
 - SWD and serial wire viewer (SWV) communication support
- Direct firmware update support (DFU)
- Status LED blinking during the communication with the PC
- Operating temperature from 0 °C to 50 °C
- 1000 V_{rms} high isolation voltage (ST-LINK/V2-ISOL only)

Product status link

[ST-LINK/V2](#)

Description

The ST-LINK/V2 is an in-circuit debugger and programmer for the STM8 and STM32 microcontrollers. The single-wire interface module (SWIM) and JTAG/serial wire debugging (SWD) interfaces are used to communicate with any STM8 or STM32 microcontroller located on an application board. In addition to providing the same functionalities as the ST-LINK/V2, the ST-LINK/V2-ISOL features digital isolation between the PC and the target application board. It also withstands voltages of up to 1000 V_{rms}.

STM8 applications use the USB full-speed interface to communicate with the ST Visual Develop ([STVD-STM8](#)) or ST Visual Programmer ([STVP-STM8](#)) software, or with integrated development environments from third-parties.

STM32 applications use the USB full-speed interface to communicate with the [STM32CubeIDE](#) software tool or with integrated development environments from third-parties.

1 Ordering information

To order the [ST-LINK/V2](#) in-circuit debugger and programmer, refer to [Table 1](#). For a detailed description, refer to its user manual on the product web page.

Table 1. List of available products

Order code	User manual	ST-LINK description
ST-LINK/V2	UM1075	In-circuit debugger/programmer
ST-LINK/V2-ISOL		In-circuit debugger/programmer with 1000 V _{rms} digital isolation

2 Development environment

The ST-LINK/V2 implementations embed an STM32 32-bit microcontroller based on the Arm® Cortex®-M processor.

Note: *Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.*



2.1 System requirements

- Windows® OS (7, 8 and 10), Linux® 64-bit, or macOS®
- USB Type-A to Mini-B cable (provided)

Note: *macOS® is a trademark of Apple Inc. registered in the U.S. and other countries.*

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2.2 Development toolchains

STM8 microcontrollers

- IAR Systems - IAR Embedded Workbench®⁽¹⁾
- STMicroelectronics - STVD-STM8⁽¹⁾
- STMicroelectronics - STVP-STM8⁽¹⁾

STM32 microcontrollers

- IAR Systems - IAR Embedded Workbench®⁽¹⁾
- Keil® - MDK-ARM⁽¹⁾
- STMicroelectronics - STM32CubelIDE

1. *On Windows® only.*

2.3 Related software

- ST-LINK firmware upgrade ([STSW-LINK007](#))
- ST-LINK USB driver ([STSW-LINK009](#))

Revision history

Table 2. Document revision history

Date	Version	Changes
21-Apr-2011	1	Initial release.
7-May-2012	2	Added SWD to JTAG connection features.
14-Sep-2012	3	Added ST-LINK/V2-ISOL.
24-Mar-2016	4	Updated V_{rms} value in <i>Features and Description</i> .
27-Apr-2020	5	Updated document title, and IDEs for STM8 and STM32 microcontrollers in <i>Description</i> . Added <i>Ordering information</i> and <i>Development environment</i> .

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