

ST Emulator Interface Description



Article Overview

ST emulators, such as ST-LINK/V2 and ST7-EMU3, provide in-circuit debugging and programming for STM8, STM32, and ST7 microcontrollers using interfaces like SWIM, SWD, and JTAG.

ST-LINK/V2 Interface

The ST-LINK/V2 is an in-circuit debugger and programmer for STM8 and STM32 microcontrollers. It communicates with target microcontrollers using:

- SWIM (Single Wire Interface Module) for STM8 devices
 - SWD (Serial Wire Debug) and JTAG for STM32 devices
- The device connects to a PC via USB full-speed interface and integrates with development environments such as STM32CubeIDE, ST Visual Develop (STVD-STM8), or ST Visual Programmer (STVP-STM8). The ST-LINK/V2-ISOL variant adds digital isolation, protecting the PC and target board from voltages up to 1000 V rms, which is useful for sensitive or high-voltage applications. The debugger can communicate with targets operating below 3.3 V, generating output signals at this voltage level, and is compatible with both official ST boards and third-party development boards .

Connection Details

- SWD 4-pin header: Ground, +3.3V, clock, and data pins. This is the simplest connection for most development boards .
- 20-pin JTAG header: Used when a full JTAG interface is required.
- On Nucleo or Discovery boards, the ST-LINK/V2 is built-in and can be used directly...

Article Content

Mar 25, 2026

ST-LINK/V2 STM8 programmer debugger emulator

Description The ST-LINK/V2 is an in-circuit debugger and programmer for the STM8 and STM32 microcontroller families. The single

Sep 08, 2025

Guide: Connecting your debugger

The official ST-LINK/V2 is a debugger manufactured by ST Microelectronics and can be bought at any major electronics distributor.

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STM32 ST-LINK utility software description

The STM32 ST-LINK utility software facilitates fast in-system programming of the STM32 microcontrollers during development via the

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I2S protocol emulation on STM32L0 Series microcontrollers using a ...

I2S peripheral emulation principle When the I2S feature (included in the SPI peripheral) is not available or is already used (full-duplex

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Data brief

Description The ST-LINK/V2 is an in-circuit debugger and programmer for the STM8 and STM32 microcontrollers. The single-wire

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STMod+ interface specification

STMod+ electrical interface description As the STMod+ connector provides alternate signals on same pins, electrical AC interface

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Simulators

ST provides both online and downloadable simulators. The online simulators are integrated into the e-design suite and accessible via

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

Introduction The ST-LINK is an in-circuit debugger and programmer for the STM8 and STM32 microcontroller families. The SWIM

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REAL TIME EMULATOR DATASHEET FOR ST6 FAMILY

The debugger provides the same interface for both simulator and emulator, allowing easy transition from the software simulation

Jul 14, 2026

ST7-EMU3 series emulator

The ST7-EMU3 emulator gives you start-to-finish control of application development by providing you with emulation and in-circuit

Feb 27, 2026

ST-LINK V2 Emulator and Debugger

The ST-LINK/V2 is an in-circuit debugger and programmer for the STM8 and STM32 microcontroller families. The single wire

Nov 02, 2025

ST-Link V2 STM32 Emulator, Aideepen ST Link V2 Stm32 ...

The ST-Link V2 Programming Unit Emulator Downloader, supporting downloading and debugging of the full range of STM32 SWD

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ST ST7-EMU3 SERIES USER MANUAL Pdf Download | ManualsLib

ST7-EMU3 series emulator ST Micro Connect box The ST Micro Connect box is a common hardware target interface for a range of

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ST Emulator Explained: Is the ST-Link V2 with ...

The article explains the role of an ST emulator, focusing on the ST-Link V2 paired with the STM32F103C8T6 board, highlighting its

Oct 24, 2025

STLINK-V3SET debugger/programmer for STM8 and STM32

Introduction The STLINK-V3SET is a standalone modular debugging and programming probe for the STM8 and STM32

Feb 14, 2026

ST7-EMU3 Emulator User Manual | Manualzz

The ST Micro Connect box is your common hardware interface for emulation and in-circuit debugging and programming. In the

Jun 30, 2026

LukeSmithxyz/st | DeepWiki

This document provides an overview of st (simple terminal), a minimalist terminal emulator following the suckless philosophy,

Apr 06, 2026

ST Emulator Explained: Is the ST-Link V2 with ...

An ST emulator, specifically the ST-Link V2 programming unit paired with the STM32F103C8T6 minimum system board, is a

Mar 30, 2026

Full-featured cost-effective emulation system for ST microcontrollers

In addition to emulation, the STice provides in-circuit debugging and programming capability for ST microcontrollers via the ST single

May 23, 2026

ST-Link Emulator: A Comprehensive Review and Guide for

An ST-Link Emulator is a debug and programming interface that connects to a microcontroller via a USB port and allows users to

Jul 27, 2026

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

Introduction The ST-LINK/V2 is an in-circuit debugger/programmer for the STM8 and STM32 microcontroller families. The single wire

May 20, 2026

Youmile ST-LINK V2 Emulator Downloader Owner's Manual

The ST-LINK V2 is a programming and debugging tool for STM8 and STM32 microcontrollers. It is designed to

Jan 03, 2026

STM8 SWIM communication protocol and debug module

Debug system overview The STM8 MCUs debug system interface allows a debugging or programming tool to be connected to the

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