

## STSW-FSM01 software expansion package for the STEVAL-FSM01M1 evaluation board

Application	Programmable and interactive interface for board control
Hardware Abstraction	STM32Cube Hardware Abstraction Layer (HAL)
Hardware	STEVAL-FSM01M1 expansion board
	NUCLEO-F401RE development board

### Features

- Software package enabling communication, control and programming of the dual channel digital I/O board [STEVAL-FSM01M1](#)
- Compatible with STM32 Nucleo board [NUCLEO-F401RE](#)
- Includes native interactive UART communication protocol to control the board from PC over USB without any programming
- Includes programmable interface (API) allowing control and monitoring of all onboard functions to support quick prototyping of custom applications
- Includes ready to use program features for evaluating capabilities of expansion board and its components
- Automated self-integrity function test during program initialization
- Based on the STM32CubeHAL (Hardware Abstraction Layer) for the STM32 microcontrollers
- Easy portability across different STM32 microcontroller families thanks to STM32Cube framework
- Project files available for [STM32CubeIDE](#), IAR Embedded Workbench and MDK-ARM (Keil  $\mu$ Vision)

Product summary	
Software expansion package for STEVAL-FSM01M1 evaluation board	<a href="#">STSW-FSM01</a>
Advanced dual channel digital I/O module for safe automation	<a href="#">STEVAL-FSM01M1</a>
STM32 Dynamic Efficiency MCU, Arm Cortex-M4 core with DSP and FPU, up to 512 Kbytes of Flash memory, 84 MHz CPU, Art Accelerator	<a href="#">STM32F401RE</a>
Applications	<a href="#">Programmable Logic Controllers</a> , <a href="#">Safe automation</a>

### Description

The [STSW-FSM01](#) software package for STM32 Nucleo is based on [STM32Cube](#) and it includes the complete board support package for [STEVAL-FSM01M1](#) dual channel digital I/O expansion board. It is implemented as a reusable set of source code files.

The package includes programmable and interactive UART interface allowing control and monitoring of onboard components and measurement of the key system point voltages. Interactive feature of this package is a simple and easy-to-use console application that facilitates communication through serial virtual COM port provided by ST-LINK over USB. This allows users to test and evaluate functions of the board without the need of programming and installing heavy development toolchains.

This software is compatible with [STEVAL-FSM01M1](#) expansion board in combination with [NUCLEO-F401RE](#) development board. The included software can be used in three integrated development environments (IDEs): [STM32CubeIDE](#), IAR Embedded Workbench and MDK-ARM from Keil®.

Please refer to the user manual [UM3176](#) for all information about this software package, its configuration and usage.

## Revision history

**Table 1. Document revision history**

Date	Version	Changes
23-May-2023	1	Initial release.

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