



Standard I²C and SPI EEPROM software expansion for STM32Cube

Application	Examples
Hardware Abstraction	STM32Cube Hardware Abstraction Layer (HAL)
Hardware	STM32 Nucleo expansion boards X-NUCLEO-EEPROMA2/ X-NUCLEO-PGEEZ1/ X-NUCLEO-EEICA1 STM32 Nucleo development board



Features

- Complete software to build applications using M24256E-F I²C, M24M01E-F I²C, M24XX I²C, M95XX SPI standard EEPROM or M95P32 SPI page EEPROM
- Sample implementation available on the [X-NUCLEO-EEICA1](#), [X-NUCLEO-EEPROMA2](#), and [X-NUCLEO-PGEEZ1](#) expansion boards plugged to a [NUCLEO-F401RE](#), [NUCLEO-G474RE](#), [NUCLEO-L053R8](#), or [NUCLEO-H753ZI](#) (only for [X-NUCLEO-EEICA1](#) and [X-NUCLEO-PGEEZ1](#)) development board
- Easy portability across different MCU families thanks to [STM32Cube](#)
- Free user-friendly license terms
- Package compatible with [STM32CubeMX](#), can be downloaded from and directly installed into [STM32CubeMX](#)

Description

Product summary	
Standard I ² C and SPI EEPROM software expansion for STM32Cube	X-CUBE-EEPROMA1
Standard I ² C EEPROM memory expansion board based on M24256E-F & M24M01E-F series for STM32 Nucleo	X-NUCLEO-EEICA1
Standard I ² C and SPI EEPROM memory expansion board based on M24xx and M95xx series for STM32 Nucleo	X-NUCLEO-EEPROMA2
Standard SPI page EEPROM memory expansion board based on M95P32 series for STM32 Nucleo	X-NUCLEO-PGEEZ1
STM32 Nucleo-64 development board with STM32F401RE/ STM32L053R8/ STM32G474RE MCUs	NUCLEO-F401RE/ NUCLEO-L053R8/ NUCLEO-G474RE

The [X-CUBE-EEPROMA1](#) software expansion for [STM32Cube](#) provides an evaluation software example for M24256E-F I²C, M24M01E-F I²C, M24XX I²C, M95XX SPI standard EEPROM or M95P32 SPI page EEPROM.

The package is built on [STM32Cube](#) software technology to ease portability across different STM32 microcontrollers.

The software comes with sample implementations of the drivers running on the [X-NUCLEO-EEICA1](#), [X-NUCLEO-EEPROMA2](#), and [X-NUCLEO-PGEEZ1](#) expansion boards connected to the featured development boards.

Product summary	
STM32 Nucleo-144 development board with STM32H753ZI MCU, supports Arduino, ST Zio and morpho connectivity	NUCLEO-H753ZI
Applications	Industrial Sensors

1 Detailed description

1.1 What is STM32Cube?

STM32Cube is a combination of a full set of PC software tools and embedded software blocks running on STM32 microcontrollers and microprocessors:

- **STM32CubeMX** configuration tool for any STM32 device; it generates initialization C code for Cortex-M cores and the Linux device tree source for Cortex-A cores
- **STM32CubeIDE** integrated development environment based on open-source solutions like Eclipse or the GNU C/C++ toolchain, including compilation reporting features and advanced debug features
- **STM32CubeProgrammer** programming tool that provides an easy-to-use and efficient environment for reading, writing and verifying devices and external memories via a wide variety of available communication media (JTAG, SWD, UART, USB DFU, I2C, SPI, CAN, etc.)
- **STM32CubeMonitor** family of tools (**STM32CubeMonRF**, **STM32CubeMonUCPD**, **STM32CubeMonPwr**) to help developers customize their applications in real-time
- **STM32Cube MCU and MPU packages** specific to each STM32 series with drivers (HAL, low-layer, etc.), middleware, and lots of example code used in a wide variety of real-world use cases
- **STM32Cube expansion packages** for application-oriented solutions.

1.2 How does this software complement STM32Cube?

The proposed software is based on the STM32CubeHAL, the hardware abstraction layer for the STM32 microcontroller.

The package extends **STM32Cube** by providing a Board Support Package (BSP) for the **X-NUCLEO-EEICA1**, **X-NUCLEO-EEPRMA2** and **X-NUCLEO-PGEEZ1** expansion boards for serial communication with a PC.

The package also includes samples to start experimenting with the code:

- standard initialization of the I²C and SPI EEPROM
- use of read-only protection feature
- write the complete memory and read the information received
- configurable device address, software write protect, device type identifier features

Revision history

Table 1. Document revision history

Date	Version	Changes
02-Oct-2018	1	Initial release.
07-Apr-2020	2	Updated all content to add X-NUCLEO-EEPRMA2 expansion board and NUCLEO-G474RE development board compatibility information.
13-Oct-2020	3	Updated cover page features.
17-Nov-2022	4	Added reference to X-NUCLEO-PGEEZ1.
14-Dec-2023	5	Updated cover image, features, description, product summary table and Section 1.2 How does this software complement STM32Cube? Added reference to X-NUCLEO-EEICA1.
10-Jul-2025	6	Updated Features and Product summary. Replaced NUCLEO-H743ZI with NUCLEO-H753ZI.

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