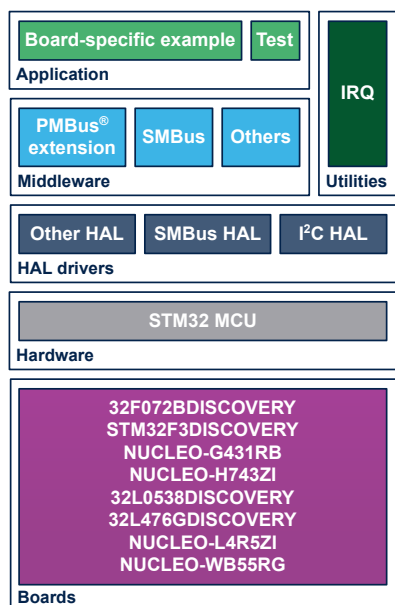




STM32 SMBus/PMBus® software expansion for STM32Cube



Features

- SMBus 3.1 transfers:
 - Quick command
 - Read/write byte/word
 - Block transfers
 - Process call
 - Zone commands
- PMBus® 1.3.1 support:
 - Group command
 - Extended command
- Notable features:
 - Alert signal and response
 - Address resolution protocol
 - Packet error checking
 - Host notification protocol
 - Speed tested up to 1 MHz

Description

The **X-CUBE-SMBUS** Expansion Package contains the SMBus/PMBus® stack implementation for **STM32Cube**.

The SMBus stack is built on STM32Cube HAL drivers to implement the transport layer. The middleware also includes the template for further expansion and personalization of PMBus® support.

The strict usage of **STM32Cube** ensures high portability across STM32 microcontrollers.

X-CUBE-SMBUS is provided with example and basic functionality tests for the following boards: **NUCLEO-G431RB**, **NUCLEO-H743ZI**, **NUCLEO-L4R5ZI**, **NUCLEO-WB55RG**, **32F072BDISCOVERY**, **STM32F3DISCOVERY**, **32L0538DISCOVERY**, and **32L476GDISCOVERY**.

Product status link

[X-CUBE-SMBUS](#)



1 General information

The X-CUBE-SMBUS Expansion Package runs on STM32 microcontrollers based on Arm® cores.

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



1.1 Ordering information

X-CUBE-SMBUS is available for free download from the www.st.com website.

1.2 What is STM32Cube?

STM32Cube is an STMicroelectronics original initiative to improve designer productivity significantly by reducing development effort, time, and cost. STM32Cube covers the whole STM32 portfolio.

STM32Cube includes:

- A set of user-friendly software development tools to cover project development from conception to realization, among which are:
 - STM32CubeMX, a graphical software configuration tool that allows the automatic generation of C initialization code using graphical wizards
 - STM32CubeIDE, an all-in-one development tool with peripheral configuration, code generation, code compilation, and debug features
 - STM32CubeCLT, an all-in-one command-line development toolset with code compilation, board programming, and debug features
 - STM32CubeProgrammer (STM32CubeProg), a programming tool available in graphical and command-line versions
 - STM32CubeMonitor (STM32CubeMonitor, STM32CubeMonPwr, STM32CubeMonRF, STM32CubeMonUCPD), powerful monitoring tools to fine-tune the behavior and performance of STM32 applications in real time
- STM32Cube MCU and MPU Packages, comprehensive embedded-software platforms specific to each microcontroller and microprocessor series (such as STM32CubeL4 for the STM32L4 series), which include:
 - STM32Cube hardware abstraction layer (HAL), ensuring maximized portability across the STM32 portfolio
 - STM32Cube low-layer APIs, ensuring the best performance and footprints with a high degree of user control over hardware
 - A consistent set of middleware components such as RTOS, USB Host and Device, FAT file system, touch library, and graphics
 - All embedded software utilities with full sets of peripheral and applicative examples
- STM32Cube Expansion Packages, which contain embedded software components that complement the functionalities of the STM32Cube MCU and MPU Packages with:
 - Middleware extensions and applicative layers
 - Examples running on some specific STMicroelectronics development boards

1.3 How does X-CUBE-SMBUS complement STM32Cube?

The X-CUBE-SMBUS Expansion Package extends STM32CubeMX by providing an interface to configure the middleware stack. It ties it to the I²C configuration that is automatically integrated in the user's final project. The project is automatically set up; It is ready for compilation and execution on the STM32 microcontroller.

The generated code is restricted to initialization only. For the functional part, the user can use examples from the package as a basis for further development.



2 License

X-CUBE-SMBUS is delivered under the [SLA0048](#) software license agreement and its Additional License Terms.

Revision history

Table 1. Document revision history

Date	Revision	Changes
25-Feb-2015	1	Initial release.
24-May-2017	2	<p>Updated <i>Features</i>:</p> <ul style="list-style-type: none"> • SMBus version • Added <i>Zone commands</i> feature for SMBus • PMBus version • Speed tested updated <p>Updated <i>Description</i>:</p> <ul style="list-style-type: none"> • Discovery boards included in the package
04-Jun-2019	3	<p>Expanded applicable boards to P-NUCLEO-WB55, NUCLEO-G431RB, NUCLEO-H743ZI, and NUCLEO-L4R5ZI.</p> <p>Updated the entire document:</p> <ul style="list-style-type: none"> • Updated the cover page • Updated <i>Features</i> and <i>Description</i> • Added <i>What is STM32Cube?</i> and <i>License</i>
08-Jan-2025	4	<p>Updated the SMBus version to 3.1 and STM32WB Nucleo board reference to NUCLEO-WB55RG:</p> <ul style="list-style-type: none"> • Updated the cover image • Updated Features and Description <p>Updated the document title and added a reference to the Additional License Terms in License.</p> <p>Updated What is STM32Cube? and added How does X-CUBE-SMBUS complement STM32Cube?</p>

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