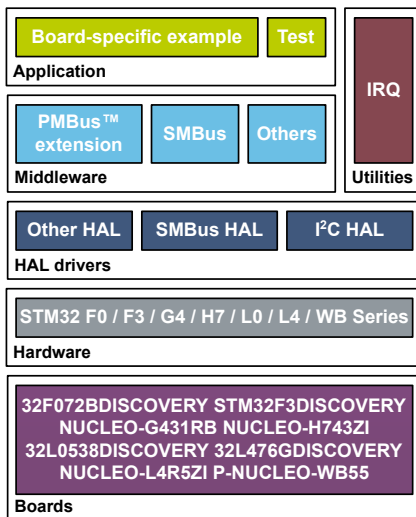


## STM32 SMBus/PMBus™ software expansion for STM32Cube



### Features

- SMBus 3.0 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
  - Up to 1 MHz speed tested

### 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. 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 main board in the [P-NUCLEO-WB55](#) pack, and for boards [NUCLEO-G431RB](#), [NUCLEO-H743ZI](#), [NUCLEO-L4R5ZI](#), [32F072BDISCOVERY](#), [32L0538DISCOVERY](#), [32L476GDISCOVERY](#), and [STM32F3DISCOVERY](#).

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](http://www.st.com) website.

### 1.2 What is STM32Cube?

STM32Cube is an STMicroelectronics original initiative to significantly improve designer's productivity 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 the conception to the realization, among which:
  - [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 IP configuration, code generation, code compilation, and debug features
  - STM32CubeProgrammer ([STM32CubeProg](#)), a programming tool available in graphical and command-line versions
  - STM32CubeMonitor-Power ([STM32CubeMonPwr](#)), a monitoring tool to measure and help in the optimization of the power consumption of the MCU
- [STM32Cube MCU & 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 the HW
  - A consistent set of middleware components such as FAT file system, RTOS, USB Host and Device, TCP/IP, 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 & MPU Packages with:
  - Middleware extensions and applicative layers
  - Examples running on some specific STMicroelectronics development boards

## 2 License

X-CUBE-SMBUS is delivered under the *Mix Ultimate Liberty+OSS+3rd-party V1* software license agreement (SLA0048).

The software components provided in this package come with different license schemes as shown in [Table 1](#).

**Table 1. Software component license agreements**

Software component	Owner	License
Board Support Package (BSP)	STMicroelectronics	<a href="#">BSD-3-Clause</a>
Cortex <sup>®</sup> -M CMSIS	Arm <sup>®</sup>	<a href="#">BSD-3-Clause</a>
HAL STM32F0, STM32F3, STM32G4, STM32L0, STM32L4, STM32H7, STM32WB	STMicroelectronics	<a href="#">BSD-3-Clause</a>
SMBus/PMBus <sup>™</sup> stack	STMicroelectronics	<a href="#">Ultimate Liberty (source release)</a>
Project examples	STMicroelectronics	<a href="#">Ultimate Liberty (source release)</a>

## Revision history

**Table 2. Document revision history**

Date	Version	Changes
25-Feb-2015	1	Initial release.
24-May-2017	2	Updated <i>Features</i> : <ul style="list-style-type: none"> <li>• SMBus version</li> <li>• Added <i>Zone commands</i> feature for SMBus</li> <li>• PMBus version</li> <li>• Speed tested updated</li> </ul> Updated <i>Description</i> : <ul style="list-style-type: none"> <li>• Discovery boards included in the package</li> </ul>
4-Jun-2019	3	Expanded applicable boards to <a href="#">P-NUCLEO-WB55</a> , <a href="#">NUCLEO-G431RB</a> , <a href="#">NUCLEO-H743ZI</a> , and <a href="#">NUCLEO-L4R5ZI</a> . Updated the entire document: <ul style="list-style-type: none"> <li>• Updated the cover page</li> <li>• Updated <a href="#">Features</a> and <a href="#">Description</a></li> <li>• Added <a href="#">What is STM32Cube?</a> and <a href="#">License</a></li> </ul>

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