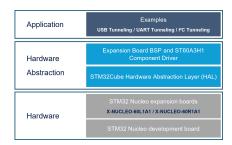


60 GHz V-band contactless connectivity transceiver software expansion for STM32Cube





Product summary		
60 GHz V-band contactless connectivity transceiver software expansion for STM32Cube	X-CUBE-ST60	
60 GHz V-band contactless connectivity transceiver expansion board kit based on the ST60A3H1 for STM32 Nucleo	X-NUCLEO-60K1A1	
60 GHz V-band contactless connectivity transceiver with linear-polarization integrated antenna, and tunneling eUSB2, UART, GPIO or I ² C	ST60A3H1C1CCEPY3	

Features

- Complete software to build applications using a pair of ST60A3H1 60 GHz Vband transceivers for short range contactless connectivity
- Sample applications to transfer eUSB2, UART, GPIO, or I²C data through an RF link
- Sample implementations available for the X-NUCLEO-60L1A1 expansion board plugged onto a NUCLEO-L476RG development board
- Package compatible with the STM32CubeMX, can be downloaded from, and installed directly into STM32CubeMX
- Easy portability across different MCU families, thanks to STM32Cube
- · Free, user-friendly license terms

Description

The X-CUBE-ST60 software expansion for STM32Cube provides a board support package (BSP) for STM32 and the component driver to build applications using a pair of ST60A3H1 transceivers for short range contactless connectivity up to 480 Mbit/s.

The expansion is built on top of STM32Cube software technology to ease portability across different STM32 microcontrollers.

The software comes with sample implementations of the drivers running on the X-NUCLEO-60L1A1 expansion board plugged on top of a NUCLEO-L476RG development board. The other X-NUCLEO-60R1A1 expansion board, which is part of the X-NUCLEO-60K1A1 kit, is used in standalone. Any ST60A3H1 configuration is done from the X-NUCLEO-60L1A1 side.

The ST60A3H1 is a full RF transceiver with a dual-linear-polarization integrated antenna, operating in half-duplex mode. It provides an optimized solution for a high-speed, low-power, short-range point to point 60 GHz RF link.



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 X-CUBE-ST60 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-60L1A1 expansion board for STM32 Nucleo, and the component driver for ST60A3H1 applications.

The drivers abstract the hardware low-level details and allow the applications to access the ST60A3H1 in a hardware-independent manner.

The package also includes sample applications that developers can use to start experimenting with the code. These applications have been developed to demonstrate contactless data transfer through a pair of ST60A3H1 devices, and compliant with the following protocols:

- eUSB2 data transfer up to 480 Mbit/s
- UART / GPIO data transfer up to 6 Mbit/s
- I²C data transfer up to 1 Mbit/s

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Revision history

Table 1. Document revision history

Date	Revision	Changes
08-Nov-2024	1	Initial release.
13-Feb-2025	2	Updated cover image, Section Features, Section Description and Section 1.2: How does this software complement STM32Cube?.

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