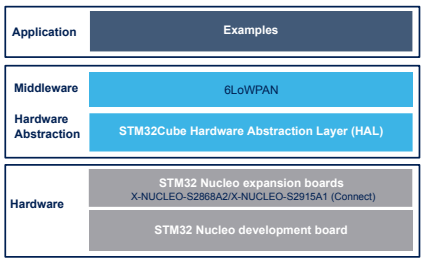
X-CUBE-SUBG2

Data brief

Sub-1 GHz RF communication software expansion for STM32Cube based on S2-LP



Features

- Firmware package to start developing using S2-LP expansion boards
- Point-to-point communication sample application for simple buffer transmission and acknowledgment implementation
- CLI example to be used with S2-LP DK GUI to configure the S2-LP radio
- Multi-GPIOs usage demonstration in FIFO TX/RX examples
- Contiki-NG based applications for 6LoWPAN connectivity
- Low-power optimizations for the STM32 MCU family
- Easy portability across different MCU families thanks to STM32Cube
- Package compatible with STM32CubeMX; it can be downloaded from and installed directly into STM32CubeMX
- Free user-friendly license terms
- Sample implementation available on the X-NUCLEO-S2868A1, X-NUCLEO-S2868A2 or X-NUCLEO-S2915A1 expansion boards when connected to a NUCLEO-F401RE, NUCLEO-L053R8, or NUCLEO-L152RE development board

Description

X-CUBE-SUBG2 is an expansion software package for STM32Cube. The software runs on the STM32 and includes drivers that recognize the Sub-1 GHz RF communication for S2-LP.

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

The software comes with sample applications of P2P, CLI, FIFO TX/RX, and 6LoWPAN communication protocols, running on an X-NUCLEO-S2868A2 or X-NUCLEO-S2915A1 expansion board when connected to a compatible STM32 Nucleo development board.

The software is also available on GitHub, where the users can signal bugs and propose new ideas through [**Issues**] and [**Pull requests**] tabs.

Product summary	
Sub-1 GHz RF communication software expansion for STM32Cube based on S2-LP	X-CUBE-SUBG2
Sub-1 GHz 868/915 MHz RF expansion board based on S2-LP radio for STM32 Nucleo	X-NUCLEO-S2868A2/X-NUCLEO-S2915A1
Ultra-low power, high performance, sub-1 GHz transceiver	S2-LP
Applications	Building Safety and Security Electricity Metering Factory Automation Industrial Tools ISM Radio SubGHz Sigfox

Product summary	
	Smart City

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?

This 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-S2868A2 or X-NUCLEO-S2915A1 expansion board for point-to-point (P2P).

The drivers abstract low-level details of the hardware and allow the applications to access the S2-LP RF functions in a hardware-independent manner. The package also includes sample applications (that the developer can use to start experimenting with the code) for point-to-point simple communication between two or more nodes.

Revision history

Table 1. Document revision history

Date	Version	Changes
09-Dec-2019	1	Initial release.
10-Feb-2020	2	Added X-NUCLEO-S2868A2 and X-NUCLEO-S2915A1 expansion board compatibility information.
20-Nov-2020	3	Updated all content to reflect new firmware release (v3.0).
11-Jan-2022	4	Added link to GitHub in the description.
10-May-2022	5	Added information about CLI and FIFO TX/RX examples.