

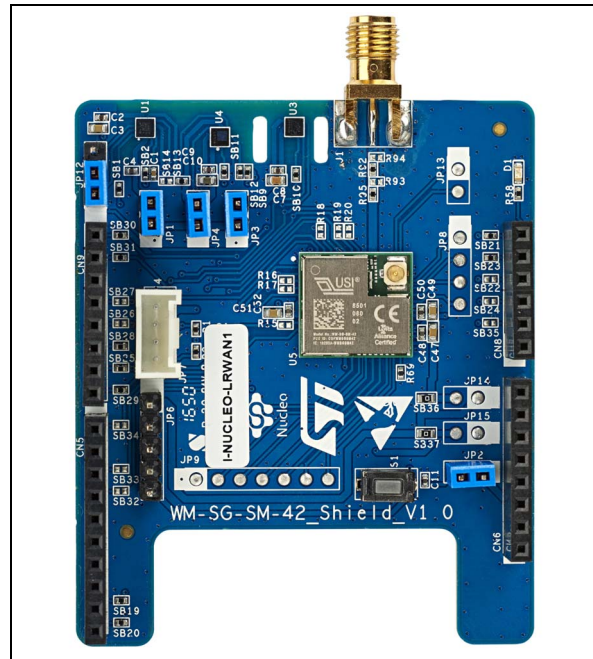
Features

- USI[®] low-cost, LPWAN module supporting LoRa[®] technology:
 - ST ultra-low-power STM32L052T8Y6 MCU, Cortex[®]-M0+ based with 64 Kbytes of Flash memory, 8 Kbytes of RAM, 2 Kbytes of EEPROM, T-RNG
 - Semtech SX1272 radio transceiver supporting LoRa[®], FSK, GFSK, MSK, GMSK and OOK modulation
 - High sensitivity down to -137 dBm
 - 860 to 1020 MHz frequency range
 - 14 to 20 dBm output power
 - 2.0 to 3.6 V voltage range
 - -40°C to +85°C temperature range
 - Embedded 32 KHz and 32 MHz crystals
 - USART communication interface
- ST accelerometer and magnetometer sensor (LSM303AGR)
- ST relative humidity and temperature sensor (HTS221)
- ST pressure sensor (LPS22HB)
- Arduino[™] connectors
- SMA connector (antenna included in the kit)

Description

USI[®] in partnership with STMicroelectronics developed the LoRa[®] expansion board for STM32 Nucleo (I-NUCLEO-LRWAN1). This board is an integrated solution allowing anyone to learn and develop solutions using LoRa[®] and/or FSK/OOK technologies.

The I-NUCLEO-LRWAN1 features the USI[®] LoRaWAN[™] technology module, addressing low-cost and low-power wide area network (LPWAN) which comes with embedded AT-commands stack pre-loaded.



1. Picture is not contractual.

The I-NUCLEO-LRWAN1 can be controlled from an external host such as NUCLEO-L053 boards, running the I-CUBE-LRWAN embedded software. This software provides the means to set up a complete LoRaWAN[™] node.

The I-NUCLEO-LRWAN1 is LoRaWAN[™] class A certified and sustains the class C.

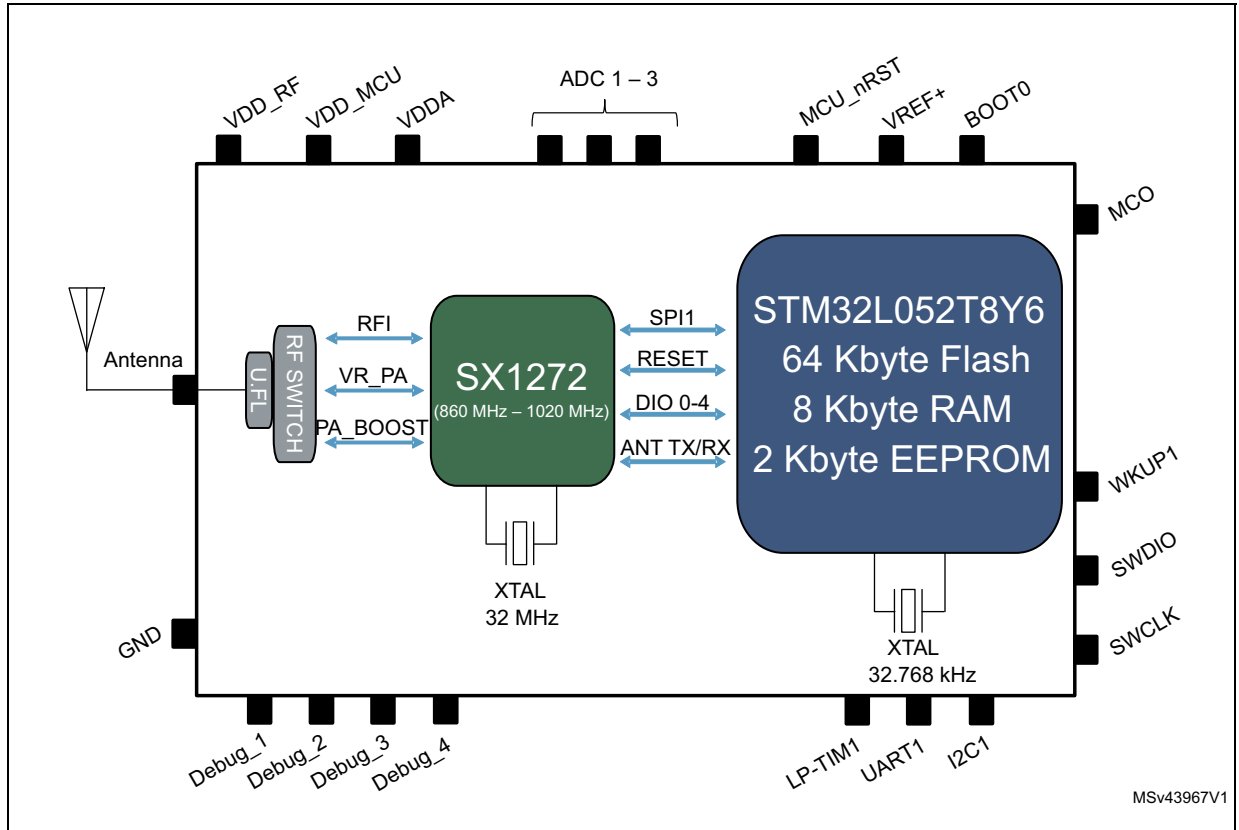
The I-NUCLEO-LRWAN1 includes the USI[®] LoRaWAN[™] module, Arduino[™] connectors, a SMA connector, a 50 Ω antenna and three ST environmental sensors.

For more details about all the components of the LoRa[®]-Middleware library, refer to the *STM32 LoRa[®] software expansion for STM32Cube* user manual (UM2073).

The I-NUCLEO-LRWAN1 is supplied by a third party not affiliated to ST. For complete and latest information, refer to the third party GitHub page https://github.com/USILoRaModule/USI_I-NUCLEO-LRWAN1.

System architecture

Figure 1. I-NUCLEO-LRWAN1 architecture



Revision history

Table 1. Document revision history

Date	Revision	Changes
6-Feb-2017	1	Initial release.
14-Feb-2017	2	Updated title and description. Ordering information removed.
9-Aug-2017	3	Updated description.

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