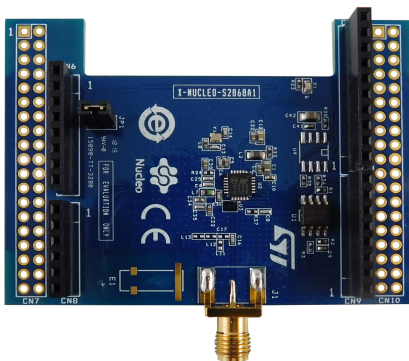


Sub-1 GHz 868 MHz RF expansion board based on S2-LP radio for STM32 Nucleo



Features

- Based on [S2-LP](#) radio
- S2-LP narrow band ultra-low power sub-1 GHz transceiver tuned for 860 - 940 MHz frequency band
- Programmable RF output power up to +16 dBm
- Modulation schemes: 2-FSK, 2-GFSK, 4-FSK, 4-GFSK, OOK and ASK
- Air data rate from 0.1 to 500 kbps
- Ultra-low power consumption: 7 mA RX and 10 mA TX at +10 dBm
- IEEE 802.15.4g hardware packet support with whitening, FEC, CRC and dual SYNC word detection
- RX and TX 128 byte FIFO buffers
- Support to wireless M-Bus
- Excellent performance of receiver sensitivity (up to -130 dBm)
- Automatic acknowledgement, retransmission and timeout protocol engine
- Compatible with [STM32 Nucleo](#) boards
- Compatible with Arduino UNO R3 connectors
- Support to SMD and SMA antennas
- [BALF-SPI2-01D3](#) IPD balun for matching network and harmonics filter
- Sigfox compatible
- Sample firmware for P2P communication
- 6LoWPAN compatible thanks to [STM32Cube](#)
- RoHS compliant

Product summary	
Sub-1 GHz RF expansion board based on S2-LP radio for STM32 Nucleo	X-NUCLEO-S2868A1
Ultra-low power, high performance, sub-1 GHz transceiver	S2-LP
50 Ω nominal input/conjugate match balun to S2-LP, 868-930 MHz with integrated harmonics filter	BALF-SPI2-01D3

Description

The [X-NUCLEO-S2868A1](#) expansion board is based on the [S2-LP](#) radio and operates in the 868 MHz ISM frequency band.

The expansion board is compatible with ST morpho and Arduino UNO R3 connectors.

The X-NUCLEO-S2868A1 interfaces with the [STM32 Nucleo](#) microcontroller via SPI connections and GPIO pins. You can change some of the GPIOs by mounting or removing the resistors.

1 X-NUCLEO-S2868A1 schematic diagram

Figure 1. X-NUCLEO-S2868A1 circuit schematic

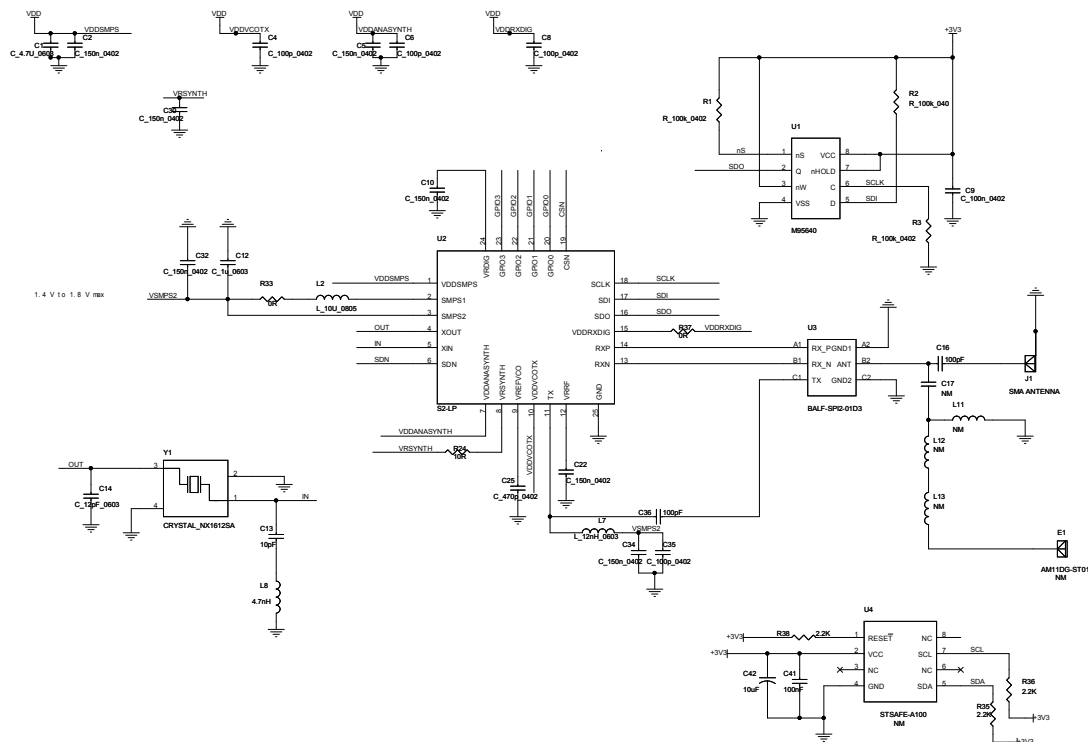


Figure 2. X-NUCLEO-S2868A1 circuit schematic - Arduino connectors

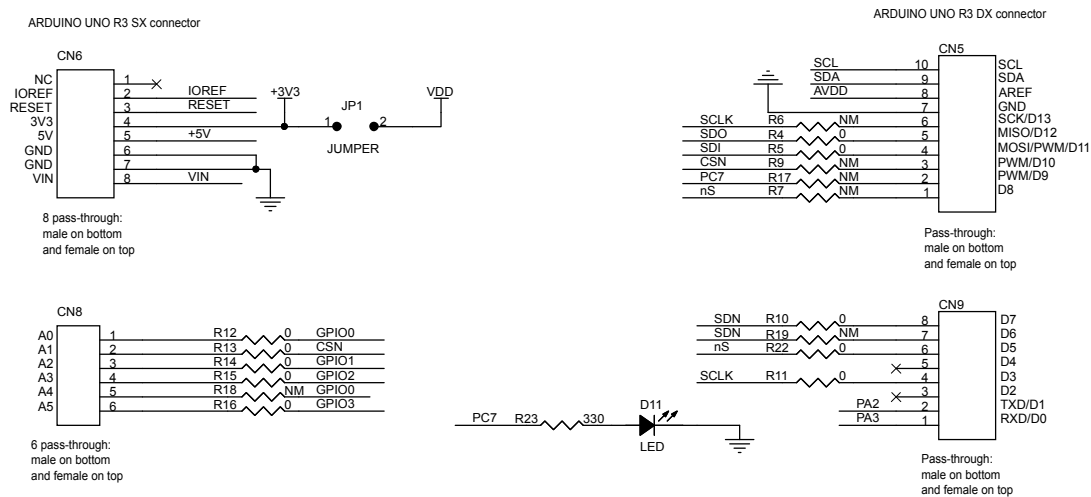
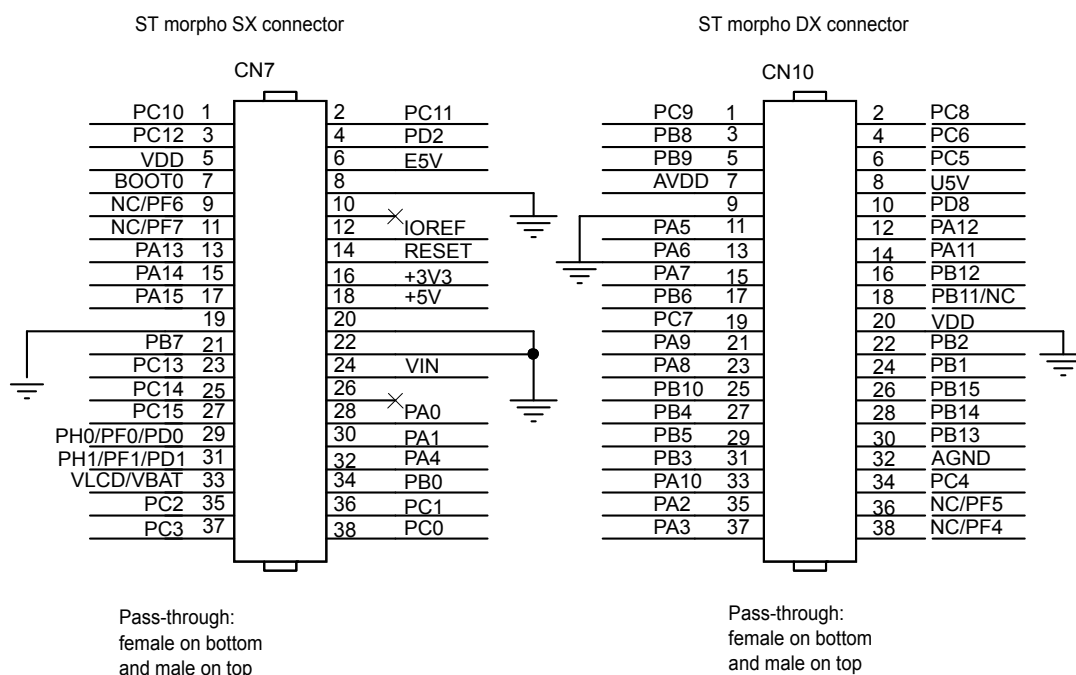


Figure 3. X-NUCLEO-S2868A1 circuit schematic - morpho connectors



Revision history

Table 1. Document revision history

Date	Version	Changes
11-May-2018	1	Initial release.

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