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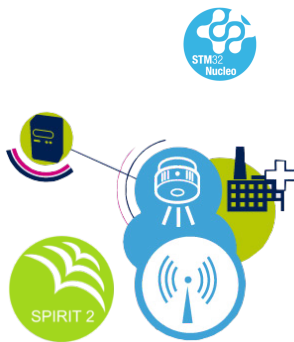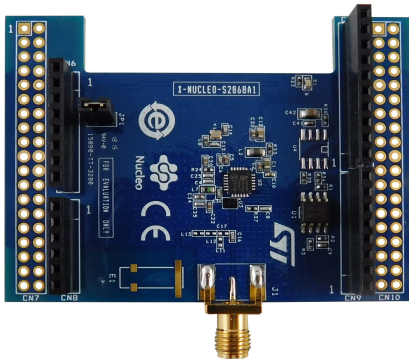

Features

- 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

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.

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

DB3602 - Rev 1 - May 2018
For further information contact your local STMicroelectronics sales office.

www.st.com

1 X-NUCLEO-S2868A1 schematic diagram

Figure 1. X-NUCLEO-S2868A1 circuit schematic

Figure 2. X-NUCLEO-S2868A1 circuit schematic - Arduino connectors
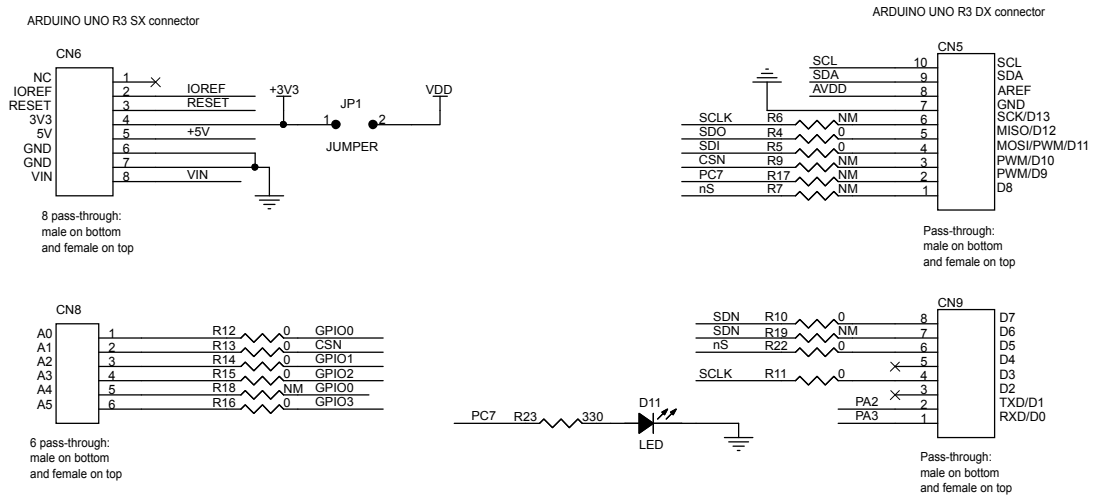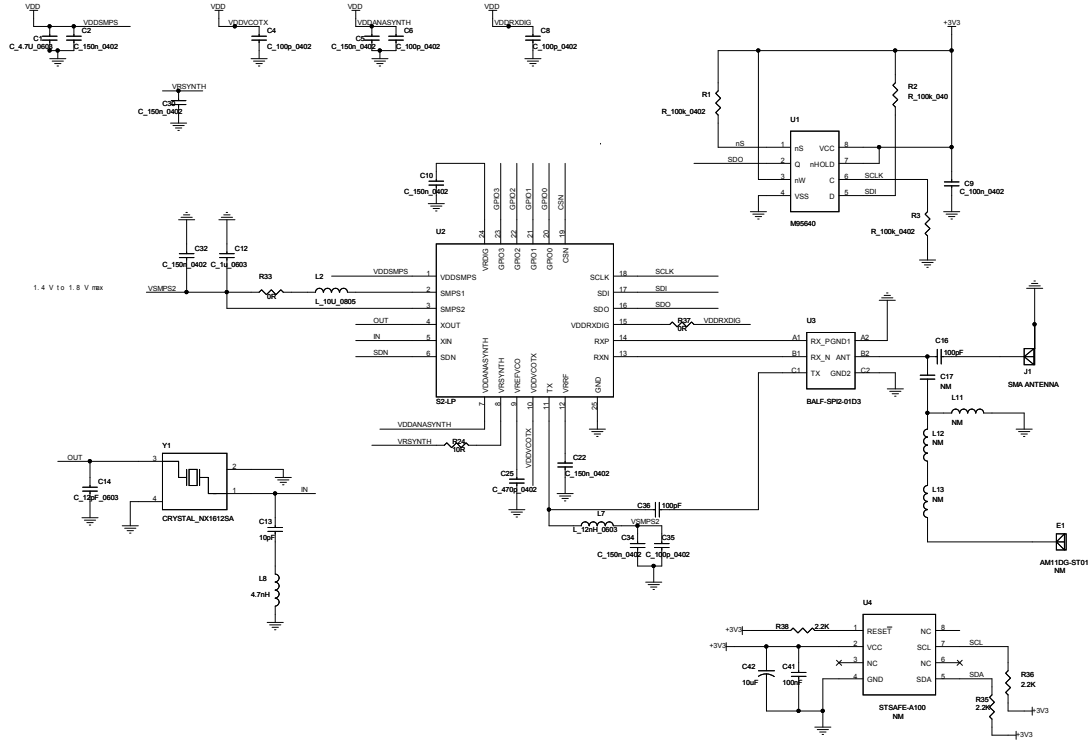
Figure 3. X-NUCLEO-S2868A1 circuit schematic - morpho connectors

ST morpho SX connector

ST morpho DX connector

CN7

PC10	1		2	PC11
PC12	3		4	PD2
VDD	5		6	E5V
BOOT0	7		8	
NC/PF6	9		10	
NC/PF7	11		12	IOREF
PA13	13		14	RESET
PA14	15		16	+3V3
PA15	17		18	+5V
	19		20	
PB7	21		22	
PC13	23		24	VIN
PC14	25		26	
PC15	27		28	PA0
PH0/PF0/PD0	29		30	PA1
PH1/PF1/PD1	31		32	PA4
VLCD/VBAT	33		34	PB0
PC2	35		36	PC1
PC3	37		38	PC0

Pass-through:
female on bottom
and male on top

CN10

PC9	1		2	PC8
PB8	3		4	PC6
PB9	5		6	PC5
AVDD	7		8	U5V
	9		10	PD8
PA5	11		12	PA12
PA6	13		14	PA11
PA7	15		16	PB12
PB6	17		18	PB11/NC
PC7	19		20	VDD
PA9	21		22	PB2
PA8	23		24	PB1
PB10	25		26	PB15
PB4	27		28	PB14
PB5	29		30	PB13
PB3	31		32	AGND
PA10	33		34	PC4
PA2	35		36	NC/PF5
PA3	37		38	NC/PF4

Pass-through:
female on bottom
and male on top

Revision history

Table 1. Document revision history

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

IMPORTANT NOTICE – PLEASE READ CAREFULLY

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Sub-GHz Development Tools *category:*

Click to view products by STMicroelectronics *manufacturer:*

Other Similar products are found below :

EVAL-ADF7021DBJZ EVAL-ADF7021-NDBZ2 EVAL-ADF7021-VDB3Z EVAL-ADF7023DB3Z MICRF219A-433 EV MICRF220-433 EV AD6679-500EBZ EVAL-ADF7901EBZ EVAL-ADF790XEBZ 110976-HMC453QS16G STEVAL-IKR002V7D MAX2602EVKIT+ MAX1472EVKIT-315 MAX1479EVKIT-315 STEVAL-IKR002V3D MAX7042EVKIT-315+ MAX2902EVKIT# MAX9947EVKIT+ MAX1470EVKIT-315 SKY66188-11-EK1 SKY66013-11-EVB EVAL-ADF7023DB5Z DRF1200/CLASS-E 1096 1098 MDEV-900-PRO DVK-SFUS-1-GEVK DVK-SFUS-API-1-GEVK US-SIGFOX-GEVB STEVAL-IKR002V2D 107755-HMC454ST89 DM182017-2 110961-HMC453ST89 DM182017-1 SX1272MB2DAS 3179 DC689A DC1513B-AB 3229 3230 3231 3232 DC1250A-AA DC1513B-AC DC1513B-AD DC1513B-AA TEL0075 131903-HMC921LP4E EU-SIGFOX-GEVB 856512-EVB