Sub-1 GHz 915 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 +27 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
• Sigfox compatible
• Sample firmware for P2P communication
• 6LoWPAN compatible thanks to STM32Cube
• FCC ID: S9NS2915A
• IC ID: 8976C-S2915A1
• RoHS and WEEE compliant

Description

The X-NUCLEO-S2915A1 expansion board is based on the S2-LP radio and operates in the 915 MHz ISM frequency band.
The expansion board is compatible with ST morpho and Arduino UNO R3 connectors.
The X-NUCLEO-S2915A1 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.
Figure 1. X-NUCLEO-S2915A1 circuit schematic
Figure 2. X-NUCLEO-S2915A1 circuit schematic - Arduino connectors

Figure 3. X-NUCLEO-S2915A1 circuit schematic - ST morpho connectors
## Revision history

<table>
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<tr>
<th>Date</th>
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<tbody>
<tr>
<td>18-Nov-2019</td>
<td>1</td>
<td>Initial release.</td>
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*Table 1. Document revision history*