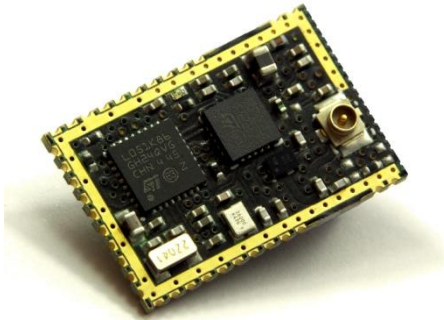


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## Ultra-low power sub-1GHz RF module with integrated microcontroller & U.FL connector

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### FACT SHEET



#### FEATURES

- 868 MHz SRD & 915 ISM bands
- Up to 500 kbps data rate
- U.FL connector for external antenna
- Ultra-low power STM32L0 microcontroller
- Simple control with AT command set
- SWD interface for custom firmware development by the user
- USART, I<sup>2</sup>C, SPI and USB interfaces, up to 16 GPIO pins and up to 6 analog pins (ADC) are available for extended operations
- Real-time clock (RTC)
- CE (R&TTE) certified
- RoHS compliant

#### KEY SPECIFICATIONS

- Compact design: 14 x 21 x 2.45 mm
- 1.8 – 3.6V single supply
- Power consumption: 22 mA (Tx @ +11 dBm), 8 mA (Tx @ -7 dBm), 11 mA (Rx)
- 32-MHz Cortex-M0+ microcontroller with 64 kB Flash memory (STM32L0 series)

#### APPLICATIONS

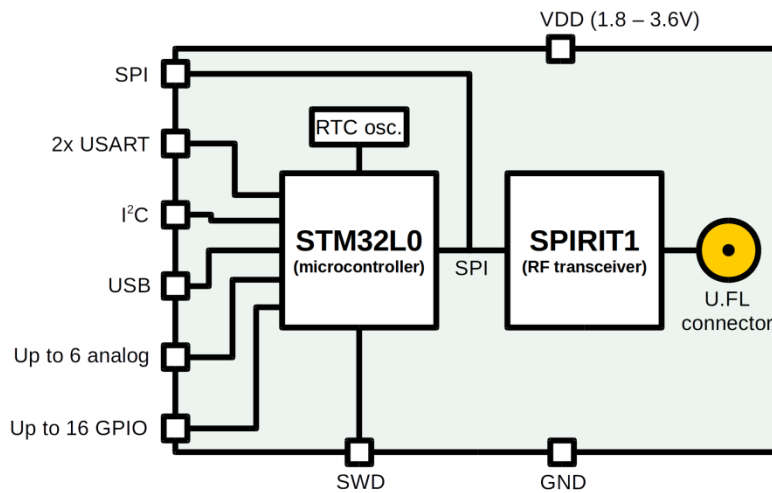
- Wireless sensors network
- Battery-powered wireless devices
- Point-to-point serial data link
- Home automation
- Industrial monitoring and control
- Alarm systems
- Wireless metering, Wireless M-Bus

#### DESCRIPTION

The XLN-RF-C module is an ultra-low power RF module operating in the 868 MHz SRD band. Thanks to its small footprint, its U.FL connector and its easy-to-use interface, integration of RF connectivity into your design is quick and seamless, reducing time-to-market of RF-enabled products.

The module includes a STM32L0 microcontroller clocked at up to 32 MHz coupled with a SPIRIT1 RF transceiver, with a standard firmware allowing easy RF configuration, transmission and reception through the USART interface. In addition, the microcontroller's standard Serial Wire Debug (SWD) interface is also made available to the user, so that custom applications can also be programmed. The microcontroller's USART, I<sup>2</sup>C, SPI and USB interfaces are also available to the user, as well as several GPIO and analog input pins to control peripherals, acquire data and communicate with other systems, so that no additional microcontroller is needed in most designs.

The XLN-RF-C module is already CE (R&TTE) certified, so that no costly RF certification is required from the user.



XLN-RF-C module block diagram

## SPECIFICATIONS

RF band	868 MHz (SRD860), 915 MHz ISM
RF modulations	ASK, 2-FSK, GFSK, GMSK, MSK, OOK
Data rate	1 to 500 kb/s
Rx sensitivity	-118 dBm (2-FSK at 1.2 kb/s), -95 dBm (MSK at 250 kb/s)
Tx output power	-30 to +11 dBm
RF connector	U.FL connector for remote antenna
Encryption	128-bit AES (hardware accelerated)
Power consumption	Sleep: 2 $\mu$ A Tx: 8 mA @ -7 dBm, 22 mA @ +11 dBm Rx: 11 mA
Supply voltage	1.8 – 3.6V (single supply)
RF transceiver	SPIRIT1 (ST Microelectronics)
Microcontroller	STM32L052 (ST Microelectronics) Cortex-M0+, up to 32 MHz, 64 kB Flash, 8 kB RAM
Included functionalities	Real-time clock (20 ppm accuracy)
Interfaces	1x I <sup>2</sup> C, 1x SPI, 2x USART, 1x USB 2.0, 1x SWD Up to 16 GPIO pins Up to 6 analog pins (ADC)
RF standards compatibility	EN13757-4 (Wireless M-BUS)
Dimensions	14 x 21 x 2.45 mm
Operating temperature	-30 to +85 °C
Certifications	CE (R&TTE, EN 300 220), 868 MHz SRD only
Environmental compliance	RoHS

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