



Introduction

The F8L10C-02 LoRa module is an ultra-compact, ultra-low-power wireless data transmission module based on an ST LoRa SoC integrating RF and a 32-bit Arm Cortex-M4 CPU. It supports LoRaWAN and proprietary protocols, enabling stable, long-range communication. Ideal for IoT M2M applications such as smart grid, metering, industrial automation, smart cities, environmental monitoring, agriculture, and remote data acquisition across diverse industries.



Industrial-grade Design

- ▶ Industrial SoC; supports LoRaWAN 1.0.4, proprietary protocol
- ▶ ESD protection, meets Level 4 standard
- ▶ Built-in 32 MHz temperature-compensated crystal
- ▶ 1.27 mm stamp-hole compact package
- ▶ Multiple baud rates and RF data rates



High Performance

- ▶ Supports 150–960 MHz ISM bands
- ▶ Ultra-low power, sleep $<2 \mu\text{A}$
- ▶ Max TX power 22 dBm, adjustable
- ▶ High sensitivity: -137 dBm
- ▶ Power input: DC 1.8–3.6V
- ▶ Supports SF5 to SF12 spreading factors
- ▶ Supports UART and OTA upgrades
- ▶ Data rate: 0.3–62.5 kbps
- ▶ Supports I_{pex} and pin RF output
- ▶ Supports hardware reset

LoRa Module F8L10C-02



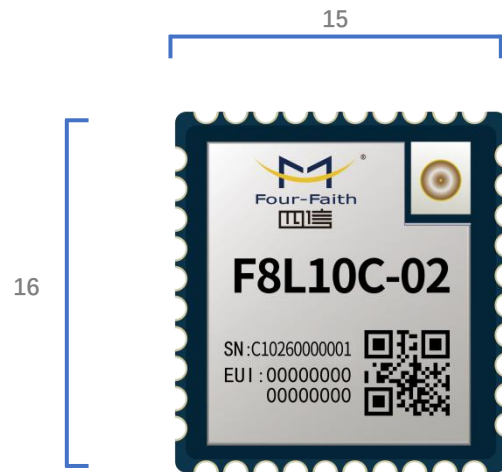
Product Specification

Characteristics	
Model	F8L10C-02
Items	Contents
Band	410–510 MHz and 863–928 MHz
Theoretical Maximum Transmitting Power	22dBm
Receive Sensitivity	125kHz Bandwidth, -124dBm@125KHz,SF7, CR1 125kHz Bandwidth, -130dBm@125KHz,SF10, CR1 125kHz Bandwidth, -137dBm@125KHz,SF12, CR1
Outdoor Communication Range	10km
Wall-penetration Range	Penetrates up to 10 floors
Maximum UART Buffer	4K Bytes
Power Supply	
Items	Contents
Standard	DC3.3V > 300mA
Power Consumption	
Items	Contents
Operating Voltage	DC 3.3 V
Receiving Current	<10mA@3.3V DC
Transmitting Current	Pout=+22dBm <100mA@3.3V@410-510MHZ Pout=+22dBm <120mA@3.3V@863-928MHZ Pout=+20dBm <90mA@3.3V@410-510MHZ Pout=+20dBm <110mA@3.3V@863-928MHZ
Timely Wake-up	<2uA@3.3V DC
Deep Sleep	<2uA@3.3V DC
Physical Properties	
Items	Contents
Dimensions	15x16x2.5mm
Weight	2g
Others	
Items	Contents
Operating Temperature	-40~+85°C (-104~+185°F)
Storage Temperature	-40~+125°C (-104~+257°F)
Relative Humidity	95% (non-condensing)

LoRa Module F8L10C-02



Dimension (mm)



Order Information

Products	Frequency	PA	Package	Antenna Interface
F8L10C-02LU	410-510 MHz	Without PA	Stamp-hole	U.FL connector
F8L10C-02LN	410-510 MHz	Without PA	Stamp-hole	Pin output
F8L10C-02HU	863-928 MHz	Without PA	Stamp-hole	U.FL connector
F8L10C-02HN	863-928 MHz	Without PA	Stamp-hole	Pin output

Note: The dash “-” followed by “02” is a number, indicating a different hardware version.