



Introduction

The F8L10C-03 LoRa module is an ultra-compact, low-power embedded wireless data transmitter using a domestic MCU and SX1262 RF chip. Supporting LoRaWAN and Four-Faith private protocols, it enables long-range LoRa communication for IoT M2M applications. Its small size and low power consumption make it ideal for diverse industries, including smart grids, industrial automation, intelligent metering, transportation, building management, environmental monitoring, public safety, agriculture, forestry, water utilities, mining, petrochemical, digital healthcare, remote sensing, and military or space exploration scenarios.

- ▶ Industrial-grade chip; supports Four-Faith private protocol and LoRaWAN 1.0.4.
- ▶ RF chip covers 150–960MHz; module supports 410–510MHz and 863–928MHz bands.
- ▶ ESD protection meets national level 4 electrostatic standards.
- ▶ Built-in 32MHz industrial high-precision temperature-compensated crystal oscillator.
- ▶ Low-power design; sleep/wake modes; minimum current under 2 μ A.
- ▶ Max transmit power 22dBm, adjustable 5–22dBm; default 20dBm.
- ▶ High receive sensitivity: –137dBm @125KHz, SF12, CR1.
- ▶ Power input: DC 1.8–3.6V.
- ▶ Supports serial software upgrade and remote OTA.
- ▶ Miniature 1.27mm \times 10-pin stamped package.
- ▶ Supports multiple baud rates and RF data rates.
- ▶ Spreading factors SF5–SF12 supported.
- ▶ LoRa™ mode data rates 0.3–62.5kbps.
- ▶ RF output via IPEX connector or pin headers.



Industrial-grade Design

LoRa Module F8L10C-03



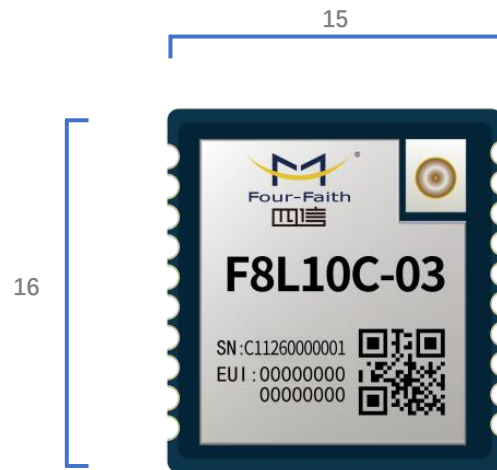
Product Specification

Characteristics	
Model	F8L10C-03
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 (-40~+185°F)
Storage Temperature	-40~+125°C (-40~+257°F)
Relative Humidity	95% (non-condensing)

LoRa Module F8L10C-03



Dimension (mm)



Order Information

Products	Frequency	PA	Package	Antenna Interface
F8L10C-03LU	410-510 MHz	Without PA	Stamp-hole	U.FL connector
F8L10C-03LN	410-510 MHz	Without PA	Stamp-hole	Pin output
F8L10C-03HU	863-928 MHz	Without PA	Stamp-hole	U.FL connector
F8L10C-03HN	863-928 MHz	Without PA	Stamp-hole	Pin output

Note: The dash “-” followed by “04” is a number, indicating a different hardware version.