Introduction

F8L10C-10 and **F8L10C-10E** LoRa modules are embedded wireless data transmission modules based on LoRa spread spectrum technology. It supports Four-Faith private protocol, LoRaWAN®, CLAA, LinkWAN, and other protocols, and provides wireless data transmission function for users by using the LoRa network. The product uses an ultra-low power LoRa integrated chip. The chip adopts ASR advanced low-power RF chip and 32-bit Cortex-M0+ low-power MCU. The module supports LinkWAN, LoRaWAN®, proprietary, CLAA, and other protocols.

Industrial-grade Design

▶ High-performance industrial-grade CPU and wireless module
▶ Low power consumption
▶ Supports all ISM bands ranging from 150MHz to 960MHz
▶ DC: 3.3 ~ 5V
▶ High reception sensitivity: -139dBm@SF12

High Performance

▶ Support OTA upgrade
▶ Support Four-Faith private, LoRaWAN® 1.0.2, LinkWAN, CLAA protocols
▶ Flexible transmission power setting (F8L10C-10:5~22dBm output adjustable, F8L10C-10E:30dBm output is not adjustable)
▶ Supports a wide range of baud rates, a variety of radio frequency rate
▶ Support air wake up function

LoRaWAN® Module F8L10C

Standard & Convenience

▶ Support installation and mounting, and can be flexibly used according to users' requirements

▶ Support a variety of antenna connection modes, U.F.L interface /SMA interface

▶ Intelligent data module, power on to enter the data transmission state

▶ Easy to use and flexible, can choose a variety of modes such as transparent transmission, AT, API, Modbus and, etc

▶ Output standard 3.3V TTL level

▶ Convenient interface for system configuration and maintenance

▶ Support serial port software upgrade

Stability & Reliability

▶ Built-in LDO ensures stable power supply to the module

▶ Multi - data automatic subcontracting transmission, to ensure the integrity of the packet is not lost

▶ Support LORA, FSK * two kinds of modulation mode

Product Specification

Characteristics		
Product	**F8L10C-10**	**F8L10C-10E**
Items	**Contents**	
Bandwidth	433/470/868/915 MHz	433/470 MHz
Protocol	Private, LoRaWAN, CLAA, LinkWAN	Private
Indoor/urban Theoretical Communication distance	1Km	2Km
Outdoor/line-of-sight Theoretical Communication Distance	3.5Km	11.5Km
Theoretical Maximum Transmitted Power	20dBm(100mW)	30dBm(100mW)
Receive Sensitivity	-139dBm@SF12	

LoRaWAN® Module F8L10C

Characteristics		
Product	F8L10C-10	F8L10C-10E
Items	Contents	
Theoretical Communication Bandwidth	6 Levels adjustable (0.3, 0.6, 1.0, 1.8, 3.1, 5.5Kbps)	
Maximum Serial Port Cache	1K Bytes	

Interfaces		
Product	F8L10C-10	F8L10C-10E
Items	Contents	
Serial Port	Standard TTL level Data bits: 8 Stop bit: 1, 2 Calibrations: no check, odd check, even check Baud rate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps	
Antenna	SMA female /Antenna pad/ u.L, characteristic impedance 50 ohms	
Encapsulated Interface	Dual-row 2.0mm pins or single-row 2.54mm pins or SMT half-holes are supported	

Note: Accessories and interfaces of different models may be different. The details are subject to the actual

Power Consumption		
Product	F8L10C-10	F8L10C-10E
Items	Contents	
Recommend Voltage	DC 3.3V/0.5A	DC 5V/500mA
Operation Voltage	DC 3.3~5V	

Power Supply		
Product	F8L10C-10	F8L10C-10E
Items	Contents	
Receive Data	<11mA@3.3VDC	<11mA@5VDC
Sending Data	<120mA@3.3VDC	<11mA@5VDC
Deep Sleep	<3.0uA@3.3VDC	<3.0uA@5VDC

LoRaWAN® Module F8L10C

Others		
Product	**F8L10C-10**	**F8L10C-10E**
Items	**Contents**	
Dimension	24.4x37.5x4.2mm (Excluding antenna and connector)	24.4x45.0x4.2 mm (Excluding antenna and connector)
Weight	5g	8g
Operation Temperature	-40~+85ºC (-40~+185℉)	
Storage Temperature	-40~+125ºC (-40~+257℉)	
Humidity	95% (No condensation)	

Order Information

Products	PA	Frequency	Packaging	Antenna Interface
F8L10C-10L1U	Without PA	410-510 MHz	Patch	U.FL port
F8L10C-10L2S	Without PA	410-510 MHz	Contact pin	SMA port
F8L10C-10L2U	Without PA	410-510 MHz	Contact pin	U.FL port
F8L10C-10H1U	Without PA	850-935 MHz	Patch	U.FL port
F8L10C-10H2S	Without PA	850-935 MHz	Contact pin	SMA port
F8L10C-10H2U	Without PA	850-935 MHz	Contact pin	U.FL port
F8L10C-10E1U	With PA	410-510 MHz	Patch	U.FL port
F8L10C-10E2S	With PA	410-510 MHz	Contact pin	SMA port
F8L10C-10E2U	With PA	410-510 MHz	Contact pin	U.FL port