

## ACTIVE RFID READER F2413



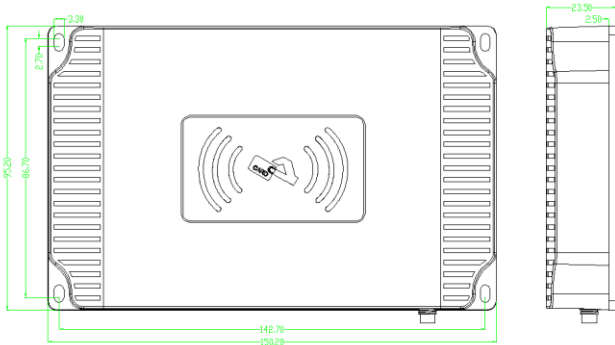
The F2413 omnidirectional reader is an active RFID reader that works in the 2.45GHz frequency band. It can realize omnidirectional/directional reading and writing functions when paired with omnidirectional/directional antennas. This product uses an external antenna installation method and can be flexibly configured with various omnidirectional and directional antennas. It has the characteristics of wide recognition range, high recognition rate, powerful functions, high reliability, strong scalability, etc. Its reading distance can reach 5~300m.

The F2413 long-distance reader is equipped with a new generation of 2.4G high-frequency transceiver chip developed by Nordic. The main control chip uses a new generation of high-performance ARM-CORTEX-M3 processor. It has functions such as multi-device communication, watchdog, heartbeat packet and real-time monitoring of device status information, and integrates communication interfaces such as RS232 and 100M network port.

The F2413 reader/writer adopts a metal shell design, with a simple and beautiful appearance, compact and light, durable, and full of technological and modern sense. The device is equipped with various communication interfaces for quick and easy connection with the host. The product adopts software fault tolerance and hardware anti-interference design, and can work continuously and stably for a long time in harsh working environments.

The F2413 reader/writer has a wide range of applications and can be used for personnel regional positioning in hospitals, nursing homes, schools, enterprises, institutions, scientific research institutions, prisons and other units, as well as confidential information, valuables, storage items, circulation asset management and other applications.

### Product Size



## Product Features

The reader supports RS232, RS485 and 100M Ethernet ports and other communication interfaces;

The reader supports active reading, command triggering, timing triggering, etc. to meet different user needs;

It adopts multi-reader device technology to support multi-reader dense environment working mode;

The reader antenna adopts external installation method, which can flexibly configure various omnidirectional and directional antennas to meet the needs of various application scenarios;

The reading distance can be debugged by software to achieve perimeter application;

It provides a powerful API user interface, which can be quickly integrated and connected with the user's existing information system

The communication protocol is independently developed by Xinyuan and can be customized and expanded according to special user needs

## Product Technical Parameters

Parameter	
working frequency	2.40 ~ 2.483G
Receiving sensitivity	-95dbm
Communication speed rate	1Mbit/s
Identification Angle	Omnidirectional/directional (depending on whether it is equipped with a directional antenna or an omnidirectional antenna)
Polarization mode	Vertical polarization
Communication Interface	
Communication Interface	standard: USB、RS-232、Network port、RS-485; option: Wi-Fi、4G
I/Ointerface	Two input interfaces, four output interfaces
Firmware Upgrade	Support serial port upgrade
Application software platform	Provide software development kit (SDK) and API
Tag Operations	
Wireless working mode	Simplex mode
Read distance	5 ~ 300m (Depends on antenna and tag output power)
Mechanical and electrical properties	
Size	150mm×95.5mm×23.8mm
stand-by current	< 130mA
Working current	≤1A
Operating temperature	-20°C ~ +65°C
Storage temperature	-20°C ~ +85°C
Working humidity	5%RH-95%RH (No condensation)

## Simple fault description and troubleshooting

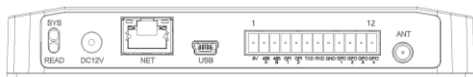
Running indicator light flashes:

- 1) Startup, 800ms on, 700ms off;
- 2) Wired network/Wi-Fi connection is successful, 160ms on, 140ms off;
- 3) Entering MQTT connection state, the flashing speed increases 5 times based on the successful network connection.

### Buzzer prompt:

- 1) When Wi-Fi/wired network connection is successful, the buzzer will sound 3 times in a row, with an interval of about 50ms;
- 2) When MQTT connection is successful, the buzzer will sound 3 times in a row, with an interval of about 20ms;
- 3) After the wired network connection is successful, an abnormal disconnection occurs, and the buzzer will sound for a long time, with an interval of 500ms;
- 4) When the parameters are set successfully, the buzzer will sound 2 times in a row, with an interval of about 50ms;
- 5) After restoring the system settings, the buzzer will sound 3 times in a row, with an interval of about 80ms;
- 6) When the power-on module self-test fails, it will sound 2 times in a row, with an interval of 800ms;
- 7) When the power-on module self-test succeeds, the buzzer will sound once, with a duration of 200ms.

## Terminal Block Definition



PIN	Name	Describe
1	5V	5V/500mA Power Output
2	RS-485-A	RS-485 Communication Interface
3	RS-485-B	RS-485 Communication Interface
4	GPIO_IN1	GPIO port input, default low level
5	GPIO_IN2	GPIO port input, default low level
6	TXD	RS-232 communication port, reader data transmission
7	RXD	RS-232 communication port, reader data receiving
8	GND	Signal Ground
9	GPIO_OUT1	GPIO port output (configurable Wiegand DATA0 output)
10	GPIO_OUT2	GPIO port output (configurable Wiegand DATA0 output)
11	GPIO_OUT3	GPIO port output terminal, high and low level output can be controlled by program. The output high level is 5V, and the low level is 0V. The maximum sink current is 20mA, and the maximum source current is 500uA. (The default output is low level 0V)
12	GPIO_OUT4	GPIO port output terminal, high and low level output can be controlled by program. The output high level is 5V, and the low level is 0V. The maximum sink current is 20mA, and the maximum source current is 500uA. (The default output is low level 0V)
x	USB	Mini USB interface, USB Device
x	NET	RJ45 standard interface, 10M/100M (adaptive)
x	DC12V	Power input interface, DC 9V~26V
x	SYS	Red light: Running indicator light
x	READ	Green light: Read tag indicator