

SIXTEEN PORT RFID READER F5816-S



The high-performance sixteen channel F5816-S is an industrial grade ultra-high frequency RFID reader/writer suitable for working in complex working conditions and harsh environments. The F5816-S has powerful RF capabilities, with 16 antennas for high-speed polling. It can be individually configured for power and time to meet different coverage requirements. The maximum output power is 33dBm, the sensitivity is -82dBm, and it fully supports the EPC global UHF Class1 GEN2/ISO 18000-6C air interface protocol. It has stable read-write performance and strong anti-interference capability. The distance between the common tag reading and writing configured with 8dBi antenna is 0~20m, and the multi tag reading can reach more than 800tags/s. Its working area can cover China, Taiwan, the United States, Europe, South Korea, Japan, etc.

F5816-S is based on the new generation ARM-COTEXM3 processor, adopting industrial grade design and adding external watchdog circuit, heartbeat packet, real-time monitoring device status and other related functions, with good stability. At the same time, based on 10 years of experience in the RFID hardware industry, a large number of project application requirements are pre implemented within the reader/writer, reducing the development workload of customer application software and making project implementation convenient and fast.

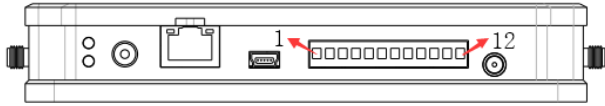
The reader is equipped with multiple tag reading modes such as master-slave mode, automatic mode, and channel door mode, which are optimized for environments such as automated assembly lines, accessible RFID channels, warehouses, and automatic inventory cabinets. At the same time, the environment for simultaneous application of more than 100 readers and writers has been optimized, supporting a large number of readers and writers to work simultaneously and run stably.

The F5816-S reader/writer adopts an all-aluminum alloy shell design, which has extremely strong anti-interference ability and can work continuously and stably for a long time in harsh environments. The product reader is mainly aimed at the IoT industry that requires high performance and stability, including warehouse logistics management, clothing industry, personnel access management, etc.

Product Technical Parameters

Name	parameter
Sensor	ARM-COTEXM3
Air Interface Protocol	EPC global UHF Class 1 Gen 2/ISO 18000-6C
Working frequency	840 ~ 960MHz (Default frequency 920 ~ 925MHz)
Support Area	China, Europe, the United States, South Korea, Japan
working voltage	DC12V
Working current	< 2.5A
Standby current	< 50mA
output power	Software adjustable: Step interval of 1.0dB,+5dBm~33dBm (adjustable separately for each channel)
Maximum receiving sensitivity	-82dBm
Working Temperature	-25°C ~ +65°C
Working humidity	≤95% (+25°C)
storage temperature	-30°C ~ +70°C
DRM mode	Support
RSSI	Support
High temperature automatic protection	Support
External watchdog	Support
Network disconnection alarm	Support
Disconnect and reconnect from the internet	Support
GPIO port	Input IO port: 2 channels Output IO port: 4 channels
buzzer	Support
LED indicator light	Power indicator light: 1 LED (red) Status indicator light: 1 LED (green)
communication function	Mini USB interface, Ethernet port, RS-485 WIFI (optional), Bluetooth (customizable)
antenna interface	16 PCS SMA
Dimension	165*135*27mm

Definition of wiring terminal interface



PIN	Name	Description
1	5V	5V power output
2	RS-485-A	RS-485 communication interface
3	RS-485-B	RS-485 communication interface
4	GPIO_IN1	IO input control interface
5	GPIO_IN2	IO input control interface
6	TXD	RS-232 communication port
7	RXD	RS-232 communication port
8	GND	grounds
9	GPIO_OUT1	GPIO port output terminal (configurable Wigan DATA0 output)
10	GPIO_OUT2	GPIO port output terminal (configurable Wigan DATA0 output)
11	GPIO_OUT3	GPIO port output terminal, which can be controlled by program to output high and low levels. The output high level is 5V and the low level is 0V. The maximum output current is 100mA. (Default output level is low level 0V)
12	GPIO_OUT4	GPIO port output terminal, which can be controlled by program to output high and low levels. The output high level is 5V and the low level is 0V. The maximum output current is 100mA. (Default output level is low level 0V)

Simple fault explanation and troubleshooting

Running light flashing prompt:

Start running for 800ms, light on, 700ms off;

The wired network connection is successful (or the WIFI network connection is successful, or the 4G network connection is successful), it lights up at 160ms and goes off at 140ms;

The flashing speed of MQTT connection status increases by 5 times on the basis of successful network connection.

Buzzer prompt:

WIFI/4G/wired network connection successful, buzzer sounds continuously for 3 times, with a time interval of approximately 50ms;

MQTT connection successful, buzzer sounds continuously for 3 times, with a time interval of approximately 20ms;

After a successful wired network connection, an abnormal disconnection occurs and the buzzer beeps continuously for 500ms intervals;

Parameter setting successful, buzzer beeps twice in a row with a time interval of approximately 50ms;

After restoring the system settings, the buzzer beeps continuously for 3 times, with a time interval of approximately 80ms;

Power on module self-test failed, with 2 consecutive sounds and a time interval of 800ms;

The self check of the power on module is successful, and the buzzer sounds once for 200ms;