

F5816-H



The F5816-H is an 16-port UHF RFID reader developed by the technical team at sanray , based on the next-generation Impinj E710 RFID chip.

It is a high-performance and cost-effective UHF RFID reader module. The output power is configurable from 5dBm to 33dBm, with a tag reading distance of over 12meters (depending on antenna gain and tag size), and it offers excellent multi-tag inventory performance.

The SIMx400 module is stable and reliable, featuring advanced multi-tag identification algorithms that enable fast tag reading whether the tags are stationary or in motion. Its superior anti-interference design and carrier cancellation functionality ensure consistent operation in various environments. With multiple configuration modes, it is widely applicable in scenarios such as warehousing, logistics, production lines, and inspection systems.

Product advantages

- ☐ ARMv7-M architecture 32bit Cortex-M4 CPU, integrated FPU, MPU, DSP, the highest work main frequency is 200MHz, 512KByte Flash
- ☐ Support ISO 18000-6C/UHF EPC Class1 Gen2&Gen2X
- ☐ Provide Windows , Linux and Android SDK, and API based on C, C#/.NET, JAVA
- ☐ Support inventory of temperature tags, the output parameters include the RSSI and phase value of the tag return signal
- ☐ Maximum 33dBm power output
- ☐ Excellent anti-collision algorithm and high sensitivity. The fastest speed of inventory tags is greater than 1000tag/s
- ☐ Multiple inventory modes suitable for most applications.
- ☐ The UART serial communication baud rate can be set from 9600bp to 921600bps
- ☐ 2 inputs 2 outputs GPIO
- ☐ Max power 33dBm, power consumption 15W

Product Technical Parameters

NO	Name	Parameter
1	Size	263 x 146 x 30mm
2	Weight	248g
3	Connector material	Brass gold plated
4	PCB	FR\$ gold plated
5	Shield Material	Aluminum Alloy
6	Chip	Impinj E710
7	Air Protocol	EPC global UHF Class 1 Gen 2 (ISO 18000-6C)&Gen2X
8	Frequency	NA: 902 ~ 928MHz EU: 865 ~ 868MHz CN: 920 ~ 925MHz OPEN:860 ~ 960MHz
9	Sensitivity	-84dBm@10%BER
10	RF power	-82dBm
11	Antenna interface	Non-standard RF output port
12	RF Power	5dBm ~ 30 or 33dBm (±1dB)
13	Working Mode	Fixed / Hop frequency
14	Temp. detect	Support
15	Ant. detect	Support
16	Inventory peak speed	>1000 tags/s
17	read range	>13m (8dBi antenna)
18	tag cache	1000pcs, @96 bit EPC
19	Hardware interface	UART serial port (power, TTL,GPIO) 9600~921600bps,@115200bps
20	GPIO	2 GPI, 2 GPO (3.3V TTL)
21	Communication	15pin connector Uart3.3V (TTL)
22	Voltage	DC 5V±5%
23	Consumption	15W (peak) , 3A@5V 1.05W (standby) ,0.21A@5V 0.1W (Low power mode standby) ,0.02A@5V
24	Work Temp.	-25°C ~ +65°C
25	Storage Temp.	-40°C ~ +85°C

Product Technical Parameters

NO	Name	Parameter
26	Humidity	5 ~ 95%, Non-condensing (+25° C)
27	Electrostatic Protection	Contact discharge: 6KV (antennaport) Contact discharge: 6KV (IO port)
28	Heat dissipation	External heat sink air cooling
29	API support	C, C#/NET, Java

Federal Communications Commission (FCC) Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modifications made to this device not expressly approved by may void the FCC authorization to operate this device.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

RF exposure statement:

The transmitter must not be colocated or operated in conjunction with any other antenna or transmitter. This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a Minimum distance of 20cm between the radiator and any part of your body.