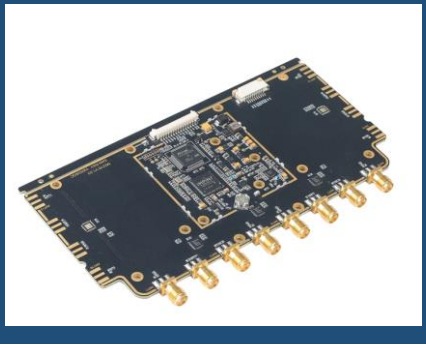
SANRAY

RFID HARDWARE/RFID SOFTWARE

UHF RFID MODULE M2208



M2208 is a high-performance ultra-high frequency read-write module that has been meticulously developed. It features 8-antenna high-speed polling and can be individually configured with power and time to meet different coverage requirements. The maximum output power of M2208 module can reach+30dBm, coupled with 8dBi gain antenna, the reading distance can reach 20m, and the tag recognition rate can be greater than 800tags/s.

M2208 is an eight channel ultra-high frequency read-write module designed based on the second-generation IMPINJ RF chip R2000. It is a UHF RFID read-write module specifically designed for high challenge application environments, with superior read-write performance.

After extensive testing and continuous operation for 180 days, M2208 has been verified to be stable and reliable, fully meeting the requirements for development and use. Equipped with eight SMA female antenna interfaces, it provides a standardized SDK development kit with rich functions, allowing users to develop according to project requirements in a short period of time.

The M2208 module is suitable for applications such as warehousing, logistics, clothing, and production line management that require high and challenging RFID intensive reading performance.

Product advantages

- Using IMPINJ R2000 RF chip, the receiving sensitivity can reach -82dBm, which is more suitable for demanding application environments than traditional readers;
- Excellent performance, with 8dBi gain antenna, the reading distance of a single tag can reach more than 20m;
- Excellent multi-tag intensive reading performance, can achieve a tag recognition rate of more than 800tags/s;
- Provide a full-featured software development kit (SDK) and interface (API), easy to integrate with software;
- Using carrier elimination technology, the tag reading accuracy is good and the range is wide;
- Providing eight-way antenna interface, users can achieve excellent performance reading effect with less equipment deployment and save costs;
- Enhanced noise suppression function for reliable data capture;
- High-precision return signal strength (RSSI);
- Using ultra-high isolation technology, perfectly solve the problem of cross-reading between ports.

Product Technical Parameters

NAME	Parameter	NOTE
Sensor	Impinj R2000	
Air interface protocol	EPC global UHF Class 1 Gen 2/ISO 18000-6C	
working frequency	840 ~ 960MHz（Default frequency band 920 ~ 925MHz）	
Supported regions	China, Europe, the United States, South Korea, Japan, Taiwan……	
Operating Voltage	DC3.0-6.0V	DC power supply
Peak operating current	1.5A	5V power supply, test at 30dBm transmit power
stand-by current	≤50mA	Test with 5V power supply
Sleep current	≤1mA	Test with 5V power supply
Maximum output power of RF port	1W(30dBm)	
Working temperature	-25℃ ~ +65℃	
Working humidity	≤95%（+25℃）	
Storage temperature	-30℃ ~ +70℃	
Maximum receiving sensitivity	-82dBm	
Antenna interface impedance	50Ω	
Serial communication parameters	Baud rate adjustable (default 115200bps), parity bit: none, data bit: 8 bits, stop bit: 1 bit	
Power output setting	5 ~ 30dBm adjustable/minimum adjustable interval is 1dBm (default 30dBm)	
DRM Mode	Support	
RSSI	Support	
High temperature automatic protection function	Support	
Power Enable	Support	
GPIO interface	Support	
Antenna interface	8 SMA female connectors	The default working antenna parameters of M2208 are antenna 1, which can be configured as follows: working antenna, working time, interval time, etc.
FPC interface	10PIN/1.0mm/upper connection	
Size	165.4*79.6*6.5MM	Aluminum alloy heat sink housing

Product interface definition

PIN	NAME	Pin
1	+5V	DC power supply, input voltage of 5.0V, maximum operating current of M2208 is 1.5A, so sufficient power supply current should be considered when designing the circuit
2	+5V	DC power supply, input voltage of 5.0V, maximum operating current of M2208 is 1.5A, so sufficient power supply current should be considered when designing the circuit
3	GND	GND
4	GND	GND
5	PEN	Module power enable, this pin defaults to high level. When an external low level (0V) is connected, the M2208 module enters sleep mode
6	GIO1	reserved
7	GIO2	reserved
8	GIO3	reserved
9	RXD	Serial interface reception, TTL level, low level is 0V, high level is 3.3V~5.0V
10	TXD	Serial interface transmission, TTL level, low level is 0V, high level is 3.3V

Note: 10PIN connector, with a spacing of 1.0mm, top up type

Product interface definition

PIN	Name	PIN1
1	GND	GND
2	GND	GND
3	+5V	DC power supply, input voltage of 5.0V, maximum operating current of M2208 is 1.5A, so sufficient power supply current should be considered when designing the circuit
4	+5V	DC power supply, input voltage of 5.0V, maximum operating current of M2208 is 1.5A, so sufficient power supply current should be considered when designing the circuit
5	GIO3	reserved
6	GIO4	reserved
7	GIO1	reserved
8	BZ	reserved
9	RXD	Serial interface reception, TTL level, low level is 0V, high level is 3.3V~5.0V
10	TXD	Serial interface transmission, TTL level, low level is 0V, high level is 3.3V
11	USB-DM	reserved
12	USB-DP	reserved
13	GIO2	reserved
14	PEN	Module power enable, this pin defaults to high level. When an external low level (0V) is connected, the M2208 module enters sleep mode
15	GIO5	reserved

Product size