SANRAY

RFID HARDWARE/RFID SOFTWARE

UHF RFID MODULE M2240

M2240 is a high-performance ultra-high frequency read-write module that has been meticulously developed. It features four antennas for high-speed polling and can be individually configured for power and time to meet different coverage requirements. The maximum output power can reach+30dBm, and with an 8dBi gain antenna, the reading distance can reach 20m. It has the advantages of industry multi label algorithm, module adaptation, and fast tag recognition. The power consumption for single tag reading is less than 700mA, and the reading speed can be stable at over 800 times per second (in specific modes).In response to customer needs, the label can be encrypted, and other readers will read it with garbled characters, increasing confidentiality. This module is a four channel ultra-high frequency read-write module designed based on the IMPINJ second-generation RF chip R2000, specifically designed for high-performance UHF RFID read-write modules in high challenge RFID application environments. This module has undergone extensive testing and continuous operation for 180 days, and its stability and reliability fully meet the requirements for its use. At the same time, M2240 is equipped with four MMCX antenna interfaces and provides a standardized SDK development package with rich functions. Users can develop high-performance reader/writer devices according to project requirements in a short period of time.

Product advantages

- Using IMPINJ R2000 RF chip, the receiving sensitivity can reach -82dBm, which is more suitable for harsh application environments than traditional readers and writers;
- Excellent performance, coupled with an 8dBi gain antenna, can read a single tag distance of over 20m;
- Excellent multi tag dense reading performance, capable of achieving tag recognition rates greater than 800 tags/s;
- Provide comprehensive software development kits (SDKs) and interfaces (APIs) that are easy to integrate with software;
- Adopting integrated RF chips, the module has stable performance and is also suitable for harsh high demand application environments;
- Using carrier cancellation technology, the accuracy and range of tag reading are good;
- Providing four antenna interfaces, users can achieve excellent reading performance with fewer device deployments, saving costs;
- Enhanced noise suppression function for reliable data capture;
- High precision return signal strength (RSSI).

Product Technical Parameters

NO.	Name	Reference
1	Working Voltage	DC 5.0V
2	Working Current	≤1.5A
3	Standby Current	≤50mA
4	Sleep Current	≤1mA
5	Working Temperature	-25 -- +65℃
6	Working Humidity	≤95%(+25℃)
7	Storage Temperature	-40 -- +80℃
8	Tag Protocol	EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C
9	Working Frequency	840 ~ 960 MHz
10	Supporting Working Areas	China 1, China 2 US, Canada and other regions following U.S. FCC Europe and other regions following ETSI EN 302 208 with & without LBT regulations Japan Korea Malaysia Taiwan
11	RF IC	Impinj R2000
12	Output Power	Software adjustable, step interval 1.0dB, maximum 30dBm
13	Output Power Flatness	±0.2 dBm
14	Receiving Sensitivity	≤-110 dBm
15	RF Port Standing Wave	≤1.5
16	Maximum Reading Distance	≥10m (With 8dBi antenna/Relate to tags type, transmitted power and application environment)
17	Multi-tag Reading	≥400 tags/s
18	Antenna Interface Amount	Four (MMCX)
19	Interface Communication Rate	115200 bps
20	Working Temprature Detection	support
21	Intensive Read/Write Mode DRM	support
22	Antenna Connection Protection	support
23	RSSI	support
24	LED	Red light (power indicator)
25	Product Cooling Way	Aluminum metal case as cooling fin for the module
26	Dimension	76.4*40.3*7.0MM

Interface Definition

Pin NO.	Name	Type	Description
1	UART_TX	I/O	TTL UART Transmit
2	UART_RX	I/O	TTL UART Receive
3	GPIO3	I/O	Output
4	GPIO2	I/O	Output
5	GPIO1	I/O	Output
6	PWREN_MODULE	I/O	When Pull Down This Pin to Ground,The Module Enter Sleeping Mode.
7	GND	Ground	Ground
8			
9	VCC	Power	DC 5V Power Input.
10			

Product Size