S-8800

8-Port UHF RFID Reader

1. Key Features

	Feature	Descriptions
1	Impinj R2000 Built-in	• Impinj Indy R2000 chip as RF transceiver.
2	Anti-collision Algorithm	• Unique I - Search multi-tag identification algorithm providing the highest efficiency.
3	Optimized Algorithm for Tags with Small Volume	• Optimized applications for small volume with better tags respond time.
4	Dual CPU Architecture	• Main CPU: tag inventory; Assistant CPU: data management. • Tag inventory and data transfer are parallel and simultaneous.
5	Fast 8-Antenna Switch Inventory	• Every antenna's inventory duration is configurable(Minimum Duration: 30 ms). • Polling from ANT 1 to ANT 4.
6	Two Modes for Inventory	• Buffer mode and Real-time mode. • Tags will be stored as buffer under buffer mode. • Tags will send data under real-time mode. This mode allows user to get tag data instantly.
7	Hardware System Halt Detection	• Hardware CPU status surveillance. • Run for 24hours X 365 days without system halt.
8	PA Health Surveillance	• PA status surveillance. • Make sure PA never works under saturated state. Protected it for long term operation.
9	18000-6B/6C Full Compatible	• It can be switched rapidly between 18000-6B and 18000-6C tag.
10	18000-6B Large Data Read/Write	• Read 216 bytes in one time taking less than 500ms. • Write 216 bytes in one time taking less than 3.5 seconds. • It can read/write data with different lengths.
11	Antenna Connection Detection	• Detect antenna connection. • Protective for RF receiver. • It can be canceled with command.
12	Temperature Sensor	• Multi-point surveillance for accurate operating system temperature.
13	Power Output Correction	• Dual modules making sure output power can be fine adjusted. • Dual modules working and keeping correction unless they are both damaged.
14	Excellent Cooling Design	• Heat dissipation and large cooling surface design. • Thermal coupling interfaces using high-thermal conductivity solid materials which ensure stable performance under high temperature.

2. Product View


S-8800 rear view

S-8800 front view

S-8800 top view

3. Electrical Parameters

| Electrical Parameters	
Dimension	S-8800 : 198(L)*198(W)*26(H)mm
Weight	S-8800 : 1.3kg
Body Material	Die-cast aluminum
Input Voltage	DC 12V ~ 18V
Standby Mode Current	<80mA
Sleep Mode Current	<100uA
Max Operating Current	700mA +/-5% @ DC 12V Input
Operating Temperature	- 20 °C ~ + 85°C
Storage Temperature	- 20 °C ~ + 85°C
Humidity	5%RH - 95%RH (non -condensing)
Interface Protocol	EPC global UHF Class 1 Gen 2 / ISO 18000-6C / ISO 18000-6B
Spectrum Range	902MHz – 928MHz, 865MHz – 868MHz Optional ✔
Supported Regions	US, Canada and other regions following U.S. FCC Europe and other regions following ETSI EN 302 208 Mainland China, Taiwan, Korea, Malaysia
Output Power	0 – 33dBm
RF Connector	TNC/RP-TNC
Output Power Precision	+/- 1dB
Output Power Flatness	+/- 0.2dB
Receive Sensitivity	< -85 dBm
Peak Inventory Speed	>700 tags/sec
Tag Buffer Capacity	1000 tags @ 96 bit EPC
Tag RSSI	Supported
Antenna Detector	Supported
Ambient Temp Monitor	Supported
Working Mode	Single/DRM
Host Communication	RS-232 or TCP/IP
GPIO	2 input optical coupling & 2 output coupling
Baud Rate	115200 bps/38400bps
Heat Dissipation	Air cooling

1. Advantages

- Unique I-Search multi-tag identification algorithm
- Based on high performance Impinj Indy R2000 chip
- 18000-6B/C compatible, flexibly switch between protocols
- Cast aluminum body, ensuring better heat dissipation
- CPU status monitored by hardware.
  Running for 24hours * 365 days without system halt
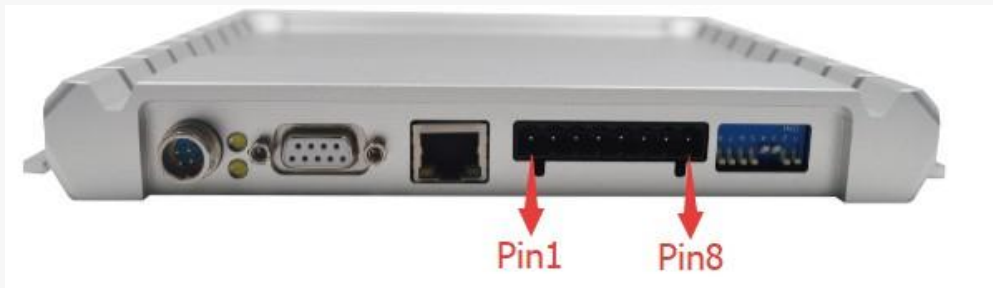
2. Anti-Collision Algorithm Comparison
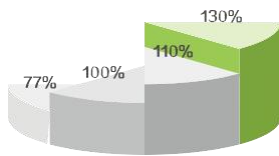
100 Tags
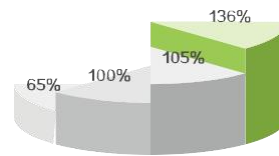
200 Tags

| Algorithm	Description
Standard fixed Q algorithm	• Standard 18000-6C algorithm.
	• The performance is reduced significantly when tag quantity gets larger.
	• The efficiency is not high when tag quantity is small.
Impinj dynamic Q algorithm	• The algorithm of Impinj.
	• It has a good efficiency for various tag quantities.
	• It sacrifices some performance for the sake of compatibility.
I–Search dynamic Q algorithm V1.0	• Based on Impinj dynamic Q algorithm.
	• The performance is optimized.
	• It's the algorithm for firmware version 6.6 or below.
I–Search dynamic Q algorithm V2.0	• Based on Impinj dynamic Q algorithm.
	• It's a brand new data structure, the performance of which is significantly improved for firmware version 6.7 or above.
	• The improvement of performance can be easily sensed after the first round of inventory especially when the tag volume increases.

5. PIN Assignments

PIN Assignments			

PIN ID	Function	Equivalent Circuit	Instructions
PIN 1	GPIO 1 Input +		• Voltage between PIN 1,2 (PIN 3,4) <=12V • Hetero polarity • LED equivalent resistance 470Ω • Response time<= 150uS
PIN 2	GPIO 1 Input -		
PIN 3	GPIO 2 Input +		
PIN 4	GPIO 2 Input -		
PIN 5	GPIO 4 Output		• Voltage between PIN 5,6 (PIN 7,8)<=12V • Non-polarity • On resistance110Ω • Response time <= 6mS
PIN 6	GPIO 4 Output		
PIN 7	GPIO 3 Output		
PIN 8	GPIO 3 Output		

6. **Product Dimensions** (unit: MM)

Any discrepancy, please defer to the real product instead.

S-8800 Side view
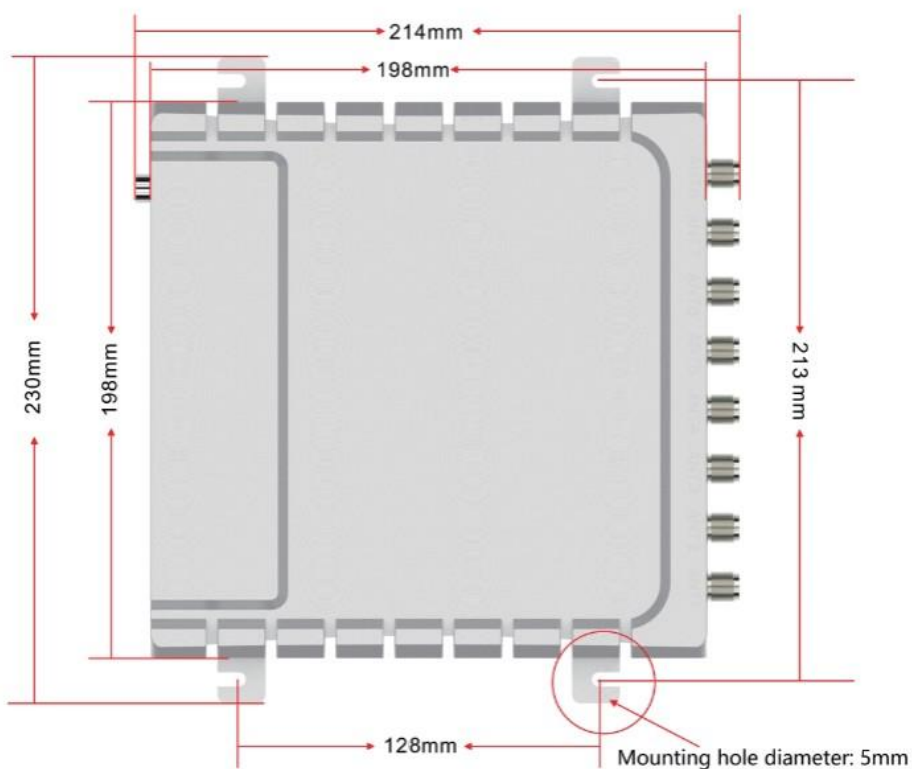
S-8800 Contour and hole location