S-8800 8-Port UHF RFID Reader

Specification V1.1

1. Key Features

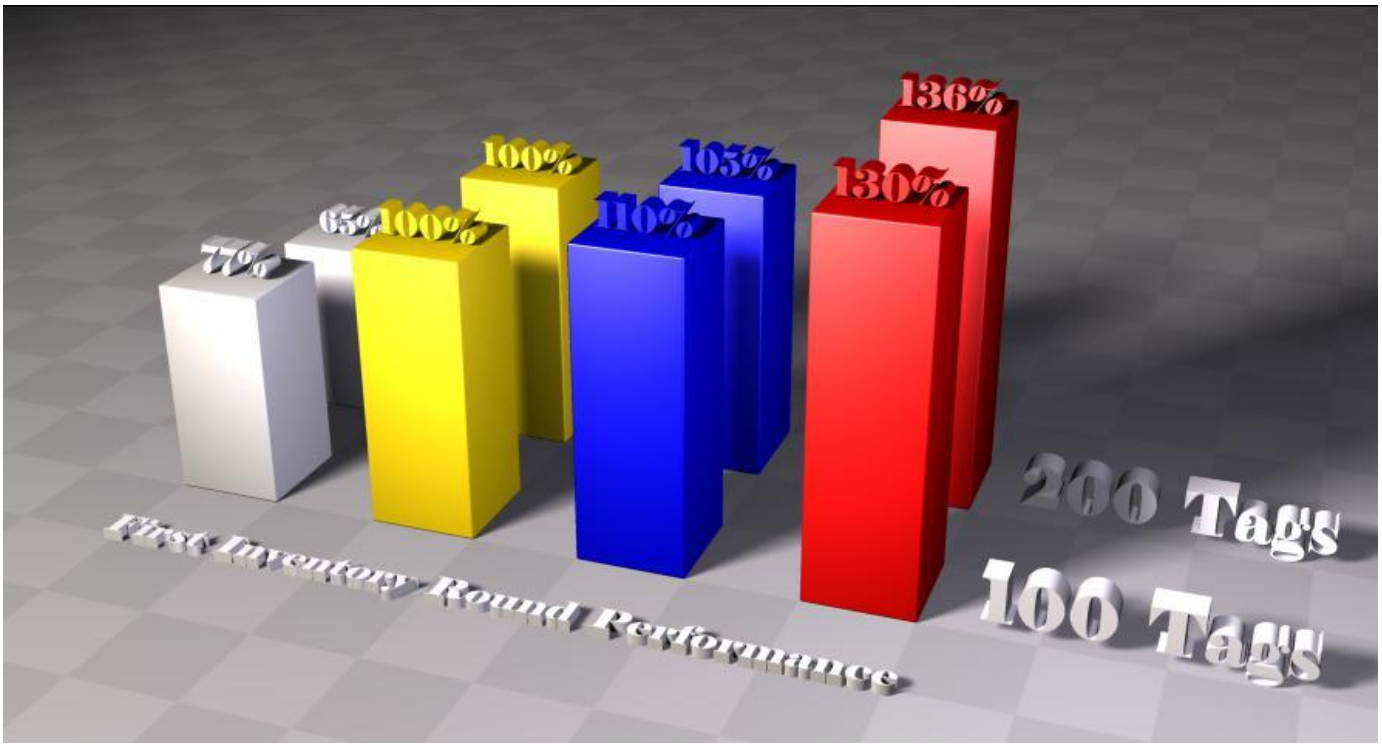
	Feature	Descriptions
1	Impinj R2000 Built-in	Impinj Indy R2000 chip as RF transceiver.
2	Anti-collision Algorithm	Unique I - Search multi-tag identification algorithm providing the highest efficiency.
3	Optimized Algorithm for Tags with Small Volume	Optimized applications for small volume with better 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

3. Electrical Characteristics

Dimension	230mm(L) x 160mm(W) x 28mm(H)
Weight	1.8 Kg
Body Material	Die-cast aluminum
Input Voltage	DC 12V ~ 18V
Standby Mode Current	<30mA
Sleep Mode Current	<100uA
Max Operating Current	600mA +/-5% @ DC 12V Input
Operating Temperature	- 20 °C ~ + 55 °C
Storage Temperature	- 20 °C ~ + 85 °C
Humidity	< 95% (+ 25 °C)
Interface Protocol	EPC global UHF Class 1 Gen 2 / ISO 18000-6C / ISO 18000-6B
Spectrum Range	860MHz – 960MHz
Supported Regions	US, Canada and other regions following U.S. FCC Europe and other regions following ETSI EN 302 208 Mainland China, Taiwan, Japan, 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
Max Baud Rate	115200 bps
Heat Dissipation	Air cooling

4. Anti-Collision Algorithm Comparison



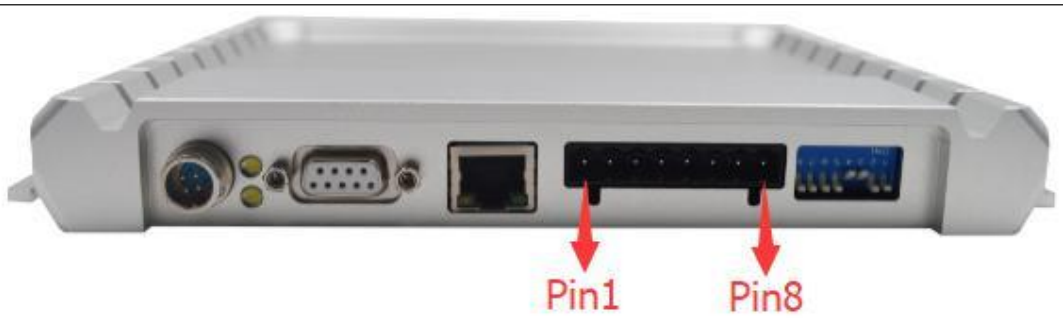
	Algorithm	Description
	Standard fixed Q algorithm	*Standard 18000-6C algorithm. *The performance is reduced significantly when tag quantity gets larger. *The efficiency is not high when tag quantity is small.
	Impinj dynamic Q algorithm	*The algorithm of Impinj. *It has a good efficiency for various 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 with the tag volume increases .

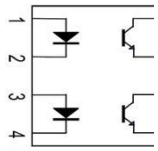
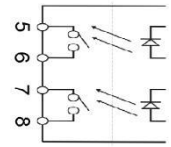
Notes:

1.) It tested on the same hardware platform in real applications（Taking Impinj dynamic Q algorithm as the reference which is marked with 100%）.

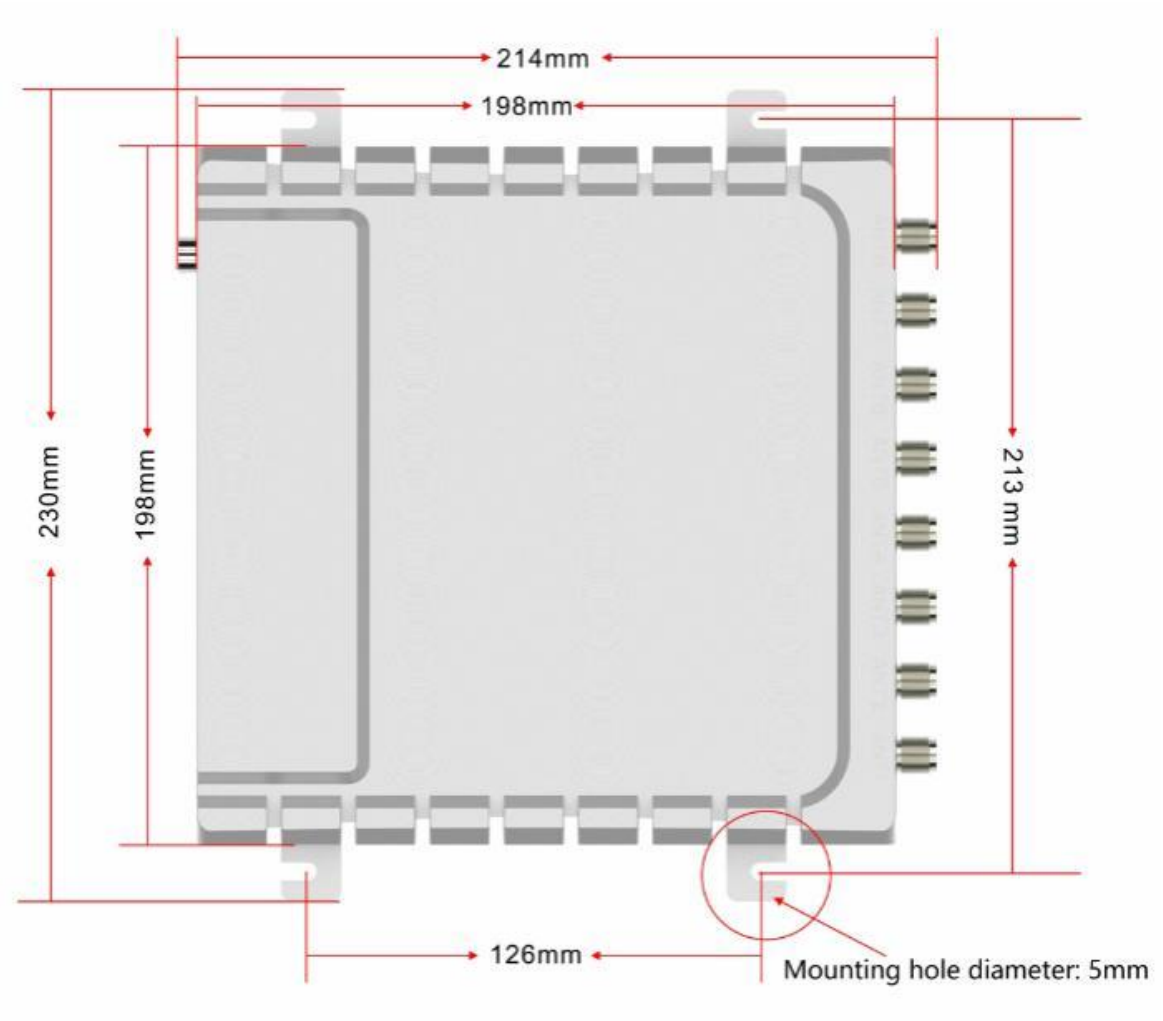
2.) The chart shows the comparison for the first round inventory performance.

5. 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



6-1: Contour and hole location

6-2: Whole Thickness

◆ Any discrepancy, please defer to the real product instead.