

## SRF-A820 UHF Radio Frequency Identification (RFID) Module User's Manual

### Overview :

As a long-range radio frequency identification (RFID) reader, the SRF-A820 is a 900MHz ( UHF band ) UHF RFID reader operable at various operating bands specified by individual countries. It also complies with all standard protocols defined in ISO18000-6C (EPC GEN2) 。

### Features :

- Small and powerful performance
- 30 dBm RF power output
- Including TTL232 communication interface can remote and back-end equipment to transfer code and control code.
- Read up 750 tags/second
- Avoid the interference of other radio frequencies with the look-up table frequency-hopping spread spectrum (FHSS)
- Pass FCC ,NCC certification
- Support external sensors and controllers
- API under Windows operating system for shorten application development time
- The complete TTL232 instruction format facilitates the expansion of device functional integrity

### Recommended uses :

- Driveway control and management / personnel access control and management of residential buildings,buildings, and communities
- Industrial relate management and control
- Elevator control and management
- Logistics related management
- Asset management
- Security monitoring
- Handheld devices and scanners



NCC

**Brand : CiaoDa**

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平台商於最終產品內含已認證過之射頻模組(組件)，應於最終產品本體明顯處標示

「本產品內含射頻模組 CC XX xx LP yyy Z z 」

### FCC

- FCC ID : 2A3LY-SRFA820

### 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.

### Federal Communications Commission (FCC) Statement

#### 15.105(b)

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.

#### 15.21

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of **20** centimeters between the radiator and your body.

## List of applicable FCC rules

This module has been tested and found to comply with the following requirements for Modular Approval.

- § 15.249 Operation within the bands 902.75-927.25 MHz.

## RF exposure considerations

In the end product, the antenna(s) used with this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operation in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures. User and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying the RF exposure compliance.

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as shown in User manual.

## Antennas

The following external antenna type have been approved for use with this radio transmitter.

Antenna Type	Freq. (MHz)	Max. Peak Antenna Gain (dBi)
Patch	902~908	7.56/10.59

## Label and compliance information

Any device incorporating this module must include an external, visible, permanent marking or label which states: “ **Contains FCC ID: 2A3LY-SRFA820** ”.

## Information on test modes and additional testing requirements

This device uses various test mode programs for test set up which operate separate from production firmware. Host integrators should contact the grantee for assistance with test modes needed for module/host compliance test requirements.

## Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

### Product specifications :

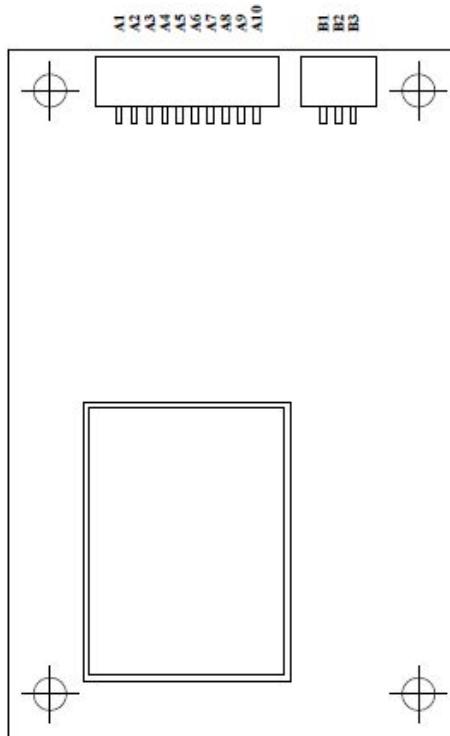
DC POWER	12 V
Current Consumption	Max. 1500mA
RFID Protocol Support	EPC Global Gen2V2(ISO 18000-63 ) with DRM
Antenna	2 Port
Antenna Connector	Ipeix 1
Antenna Setting	GPIO/Instruction
Antenna Impedance	50 ohm U.FL.
Antenna Return Loss	10dB min
Control Interface	UART/RS485
Frequency	920-928 MHz/Taiwan,902.75-927.25 MHz/FCC,865-868 MHz/CE
RF POWER	30 dBm
Max Read Rate	Over 750PCS per second with Direct Mode
Query	Static/Dynamic QUERY
Max Tag Read Distance	Over 9 meter with 7.56dBi Antenna
Receive Sensitivity	-89 dBm
Operating Temp.	-20°C ~ +60°C
Storage Temp.	-20°C ~ +85°C
Humidity	5-90%
Dimension (L*W*H)	45.7mm L x 26.2mm W x 4mm H
Weight	
SDK Support	DLL with C, Demo Software & Source Code with C#

### Pin Description :

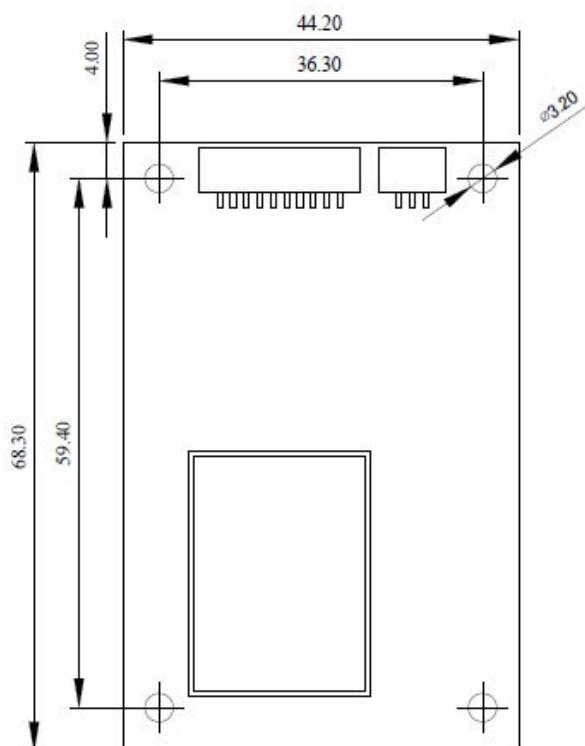
TOP VIEW

A1	DC+
A2	GND
A3	D485+
A4	D485-
A5	GND
A6	GND
A7	DATA1
A8	DATA0
A9	DI
A10	NC

B1	DATA_LED
B2	5V
B3	PWR_LED

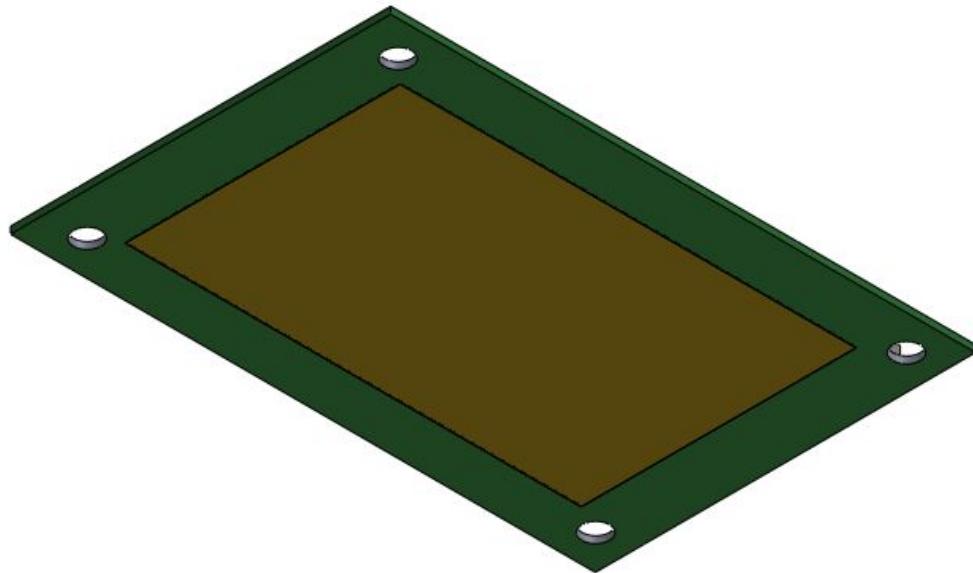


### Dimension :

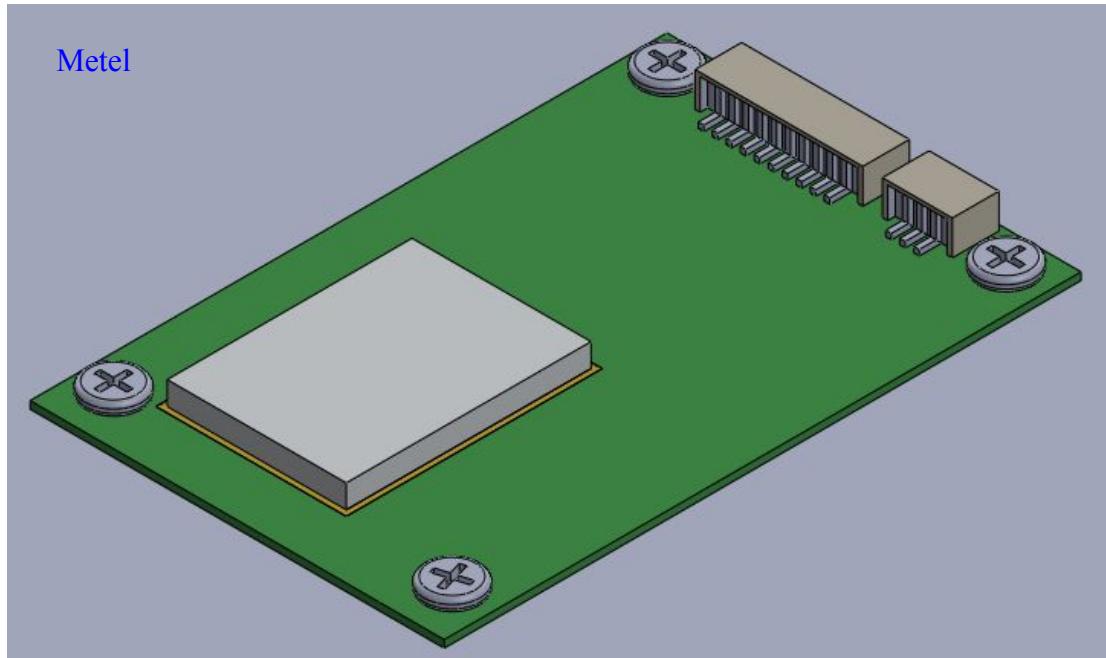


### Layout Guide

1. In the bottom of the RF module exposed copper, coated with thermal paste



2. Fix the mould board on the sheet metal with M3x5mm screws. The larger sheet metal, the better auxiliary effect for cooling.



## Warranty Coverage:

1. The product's warranty against defects in materials and workmanship under normal use for a period of ONE YEAR from the date of purchase by the original user of the Product. This warranty is non-transferable.
2. If the product prove to be defective within the warranty period, Szok will repair the product defect at no charge, using new or refurbished replacement parts to proper operating condition.

## This Warranty Does Not Apply To:

1. Damage from flood, fire, earthquake, natural disaster or other external causes.
2. If the defects are due to damage caused by accident, misuse, tampering, unauthorized modification or human negligence, such as parts lost, loose or lack of care and physical abuse to the product (e.g. scratches, dents, or cracks).
3. Damage caused by operating the product outside the permitted, intended uses described by Szok, or service(including upgrades and expansions) performed by unauthorized representative.
4. If any serial number or logo affixed has been altered, removed, duplicated or defaced from Szok Product.