

Fixed UHF RFID Reader

SIR7223

Hardware User Manual

Serial No.: 20220409001

Version: V1.0

Date: 2022/04/09



Shenzhen Sillion Technology Co., Ltd

Tel: (+86) 010-62153842/62153840

<https://en.sillion.com.cn>

Revision History

File Number	Version Number	Modified By	Modified Date	Revision Reason	Revision Contents
	V1.0		2022-04-09		None

Disclaimer

This document does not grant any intellectual property license and does not grant any intellectual property license, express or implied, or by prohibition of speaking or otherwise. Our company shall not be liable except for the liability stated in the, terms and conditions of sale of its products. Furthermore, our company makes no warranties, express or implied, with respect to the sale and / or use of this product, including the suitability of the product for a specific purpose, merchantability or tort liability for any patent, copyright or other intellectual property rights, etc. The company may make changes to the product specifications and product descriptions at any time without notice.

Contents

Revision History	2
Disclaimer	2
Chapter 1 Abstract	1
Chapter 2 Electric Parameters	2
Chapter 3 Hardware Instruction	4
3.1 Product Appearance	4
3.2 Connector Instruction	5
3.3 GPIO Cable Connection Description.....	8
3.3.1	8
3.3.2.....	9
3.4 Dimension.....	10
Chapter 4 Connection.....	11
4.1 IP Reset	11
4.2 Connection.....	11

Chapter 1 Abstract

This series of products adopts an industrial-grade design and uses a unique ARM7 control board.

It has a network port (POE function), RS232, 4-way antenna interface, 4-in and 4-out GPIO ports (one of the outputs is a relay), and has strong driving capability, and can directly drive peripherals such as indicators and alarms.

It has compact structure, easy installation and stable performance, and is suitable for various industrial applications.

Chapter 2 Electric Parameters

Air Interface Protocol	
Protocol	EPC Class 1 Gen 2 (ISO18000-6C)
RF Parameters	
Antenna Connector	4 TNC reverse-female connector
RF Output	5dbm to 33 dbm (2W) ± 1 dbm 4 antenna connectors can be adjusted independently
Frequency	FCC: 902-928MHz ETSI: 865-867MHz CN: 920-925MHz Open Band: 860-960MHz (TELECOM version, RCM version waiting for update)
Hardware Structure	
CPU	ARM7
RFID Chip	E710
Hardware Connector	
Network port	10M/100M Adaptive network port
Serial Port	RS232 Electric level
Wireless Port	WIFI / 4G 2.4GWIFI: IEEE 802.11b/g/n, OPEN/WEP/WPA/WP
Indicator Light	Power indicator, working Status indicator
GPIO	4 input 3 high drive output (300mA) 1 relay connector
Power Supply/Consumption	
Power Supply	9-24V standard adaptor 12V/3A POE power supply 802.3af or 802.3at
Power Consumption	Stand by: 1.6W Working: 10W (MAX) ; 10.8W (4G)
POE Power Supply	100 meters of Category 5e network cable, there are deviations in different models of POE switches. Use 803.af do power supply, max. Load 13.8W Use 803.at do power supply, max. Load 17.5W
RFID Performance	
Reading Speed	>900pcs/s
Reading Distance	>13meters, with 8dbi aluminum board antenna Write distance is half of the reading distance The specific value is affected by the performance of the antenna and tag.

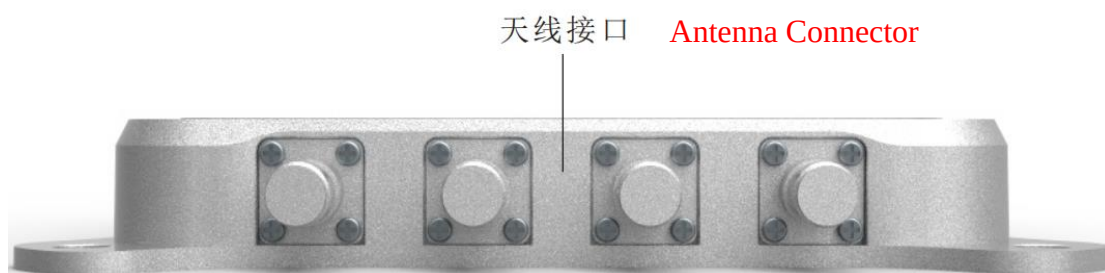
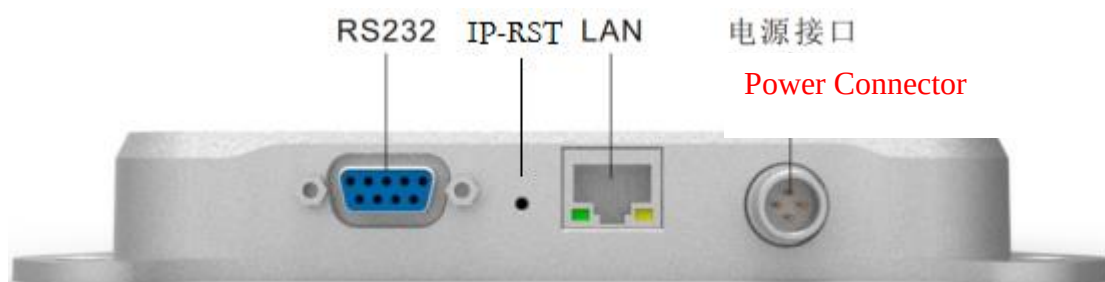
Environmental Parameters	
Working Temp.	-25°C — +65°C
Storage Temp.	-40°C — +85°C
Humidity	Relative Humidity: 5-95% non-condensing
Safety	
Adaptor	Air discharge: 8KV, touch discharge: 6KV, Surge Immunity: 4KV, EFT: 2KV
Reader	touch discharge: 6KV, EFT:2KV
Dimension	
L*W*H	183.4 mm × 174.4 mm × 25 mm

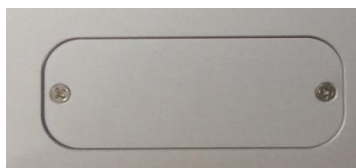
Chapter 3 Hardware Instruction

3.1 Product Appearance



3.2 Connector Instruction





SIM card/TF card slot on the bottom of the reader

GPIO Connector	Description
IN1-IN4	GPIO input, Ground is ING, Input power range: 0-24V Input power: 3.3-24V, logic electric level is 0 Demo app, GPIO control interface get GPIO status, don't tick ☐ GPI1 ☐ GPI2 ☐ GPI3 ☐ GPI4 Input Power Voltage: 0-0.7V, logic electric level is 1 (default) Demo app, GPIO control interface get GPIO status, tick ☒ GPI1 ☒ GPI2 ☒ GPI3 ☒ GPI4
ING	GPIO input refers to ground, need to connect to GND
VCC	Supply 12V power in reader internal, max. current 0.3A
GND	Ground
O2-O4	GPIO output, output voltage range: 0V-VCC, Each output IO port has an internal 3K resistor pulled down to ground. Current pulling capacity: single channel maximum 0.3A ☒ GP02 ☒ GP03 ☒ GP04 DEMO app, GPIO control interface get GPIO tick 1,output high electric level (VCC) ☐ GP02 ☐ GP03 ☐ GP04 DEMO app, GPIO control interface get GPIO untick 0,output low electric level (default)
A / B	Normally open relay contacts A and B Drive performance: 3A/50V/AC 3A/30V/DC Response time: <10ms Relay life time: 100 thousand times Set and control via DEMO app OI. DEMO app, GPIO control interface get GPIO untick, set 0 A,B disconnect (default) ☐ GP01 DEMO app, GPIO control interface get GPIO tick, set 1 ☒ GP01

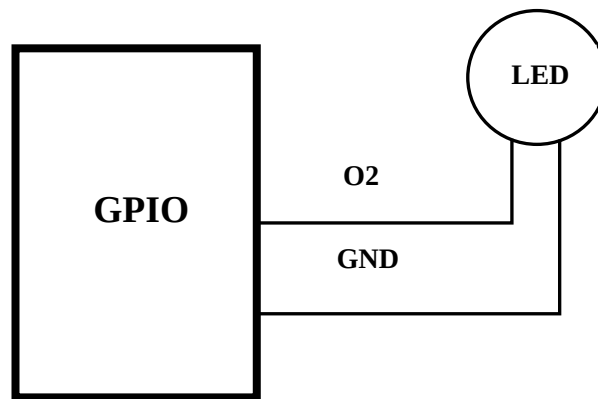
	A / B Short
ET / ER	Debug debug, RS232 electric level ET: Debug TX ER: Debug RX
SIM card TF card	Make sure power off, open the card slot SIM card: Supports the use of standard SIM cards TF card: class 4 TF, max. storage: 16GB

Other Connector	Description
IP-RST	IP reset button, Press and hold for 5 seconds.
Indicator light	P: power indicator light, Nor: light and hold S: status indicator light, Nor: light and hold, Err: flash
WIA Connector	RF Antenna Connector TNC reverse

3.3 GPIO Cable Connection Description

3.3.1

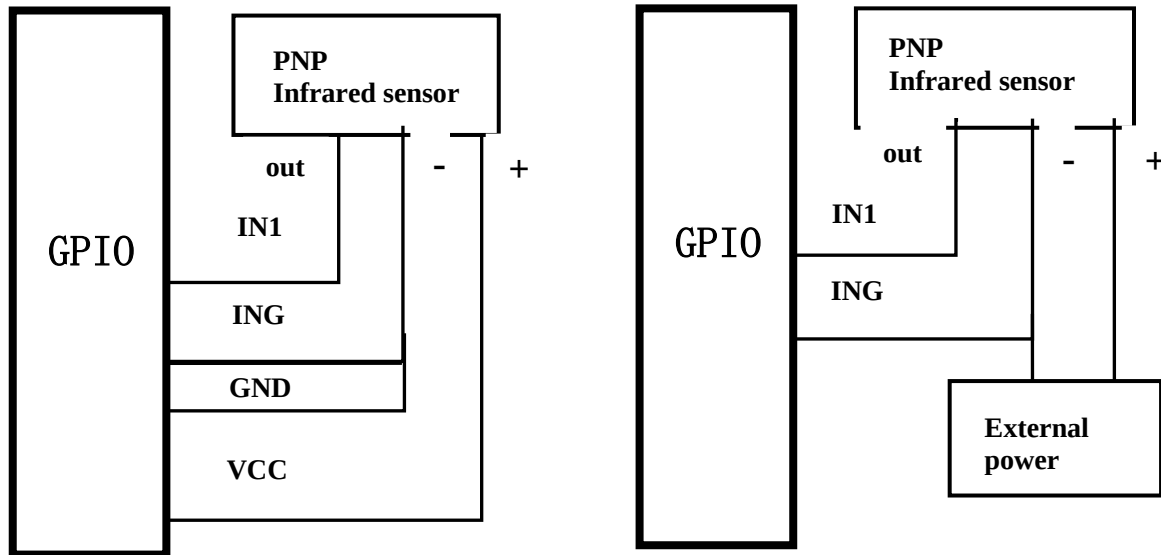
The driving capacity of the GPO port can reach 0.3A, which can directly drive relays, common cathode alarm lights, and alarms. It is recommended to use a DC 12V, no control line, common cathode alarm light.



GPO2 drive alarm light directly

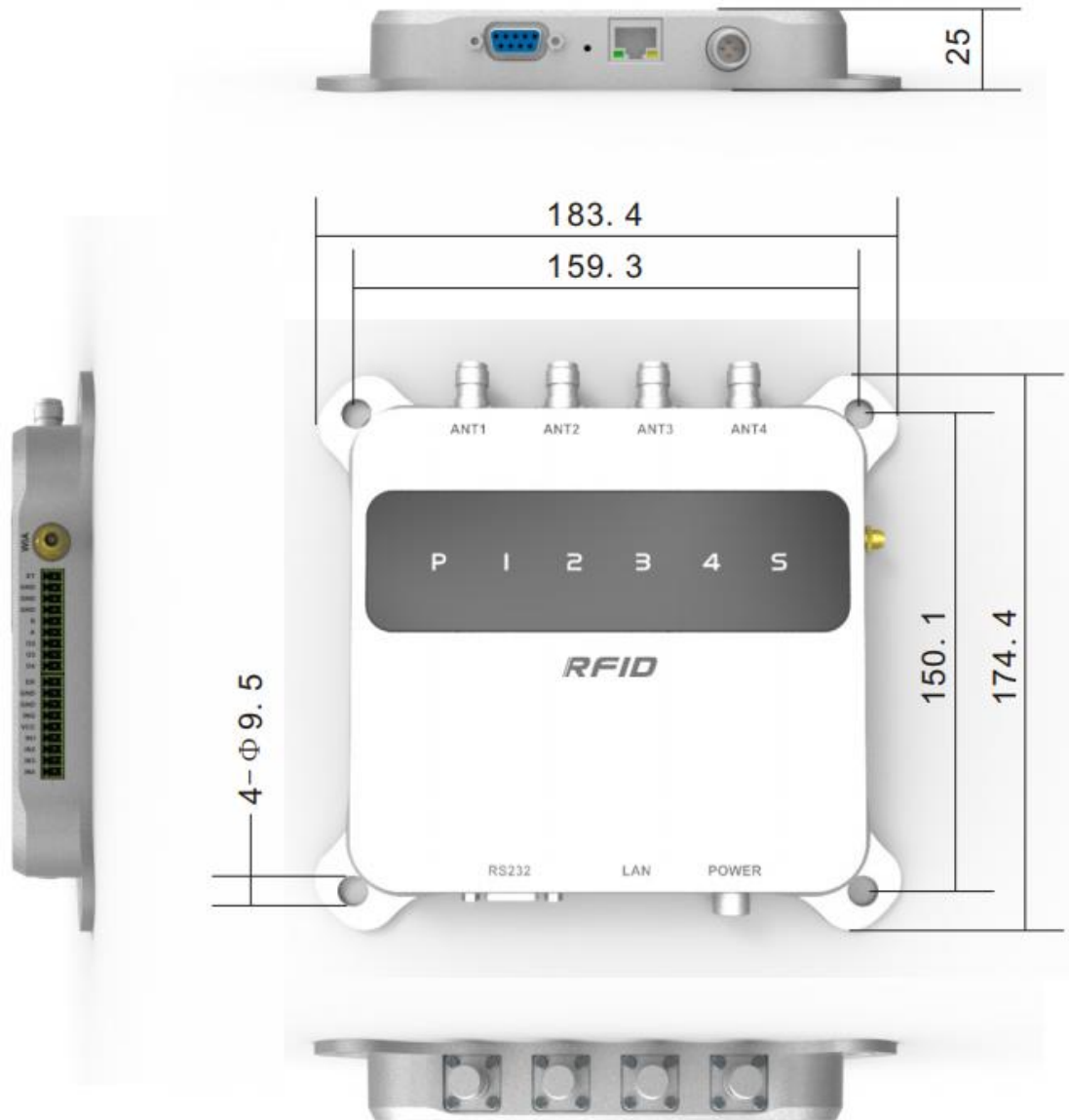
3.3.2

Infrared distance sensors are generally divided into two types: NPN and PNP. They have one output control line, two power lines, and one mode control line. If the IN port is connected to an infrared distance sensor, it is recommended to use a 12V PNP type infrared sensor.



The device power supply powers the infrared sensor.
The external power supply powers the infrared sensor.

3.4 Dimension (unit:mm)



FCC Warning:

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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 25cm between the radiator and your body.