鸿陆
Hopeland

Turn on the value of data

HZ340/380
Smart 340/380
User Manual

Welcome to become user of Hopeland RFID products.

Thank you for choosing the multi-port reader Smart 340/380,

hope to bring convenience for your work

CONTENTS

1.Technical Specifications

1.1 Features

Smart HZ340/380 is a cost-effective four-port/eight-port fixed UHF RFID reader, it supports ISO18000-6C/6B protocols. The work frequency includes China standard dual frequency 920MHz~ 925MHz and 840MHz - 845MHz, FCC 902MHz ~ 928MHz and ETSI 865MHz ~ 868MHz.

Output power from 0 ~ 30dBm optional, it has the characteristics of high recognition sensitivity, fast speed, strong anti-interference ability, high multi-antenna recognition efficiency, and structure anti-collision and shock resistance.

1.2 Main Functions and Technical Performance

1.2.1 Product Features

✧Support protocol: ISO18000-6B/C EPC C1G2

✧Rich communication interfaces: RJ-45, RS232

✧Support tag data filtering

✧RSSI support: the strength of the signal can be sensed.

✧Adjustable RF output power

✧Working mode: fixed frequency/frequency hopping optional

✧Support antenna detection function

✧Support online upgrade

✧I/O interface: 2 optocoupler inputs, 2 relay outputs (drive capacity: DC 30V/ 2A, AC 125V/0.3A)

1.2.2 Performance Parameters

✧Working frequency: GB:920MHz~925MHz,840MHz~845MHz, FCC:902MHz~928MHz , ETS:865MHz~868MHz

✧RF output power (port): 30dBm±1 　(MAX)

✧Output power adjustment: 1 dB step

✧Reading distance: 0m~8m (related to factors such as transmitting power, antenna type, tag type and application environment)

✧Channel occupied bandwidth: <200KHz

✧RS232 interface communication rate: 115200bps(default),19200 bps,9600bps

✧AC-DC power adapter: AC input 100V～240V,50Hz～60Hz DC output 24V/2.5A

1.2.3 Environmental Parameters

✧Working temperature: -20℃~+70℃

✧Working humidity: 5%~90%RH (+25℃)

2. Sketch map

2.1 Physical construction
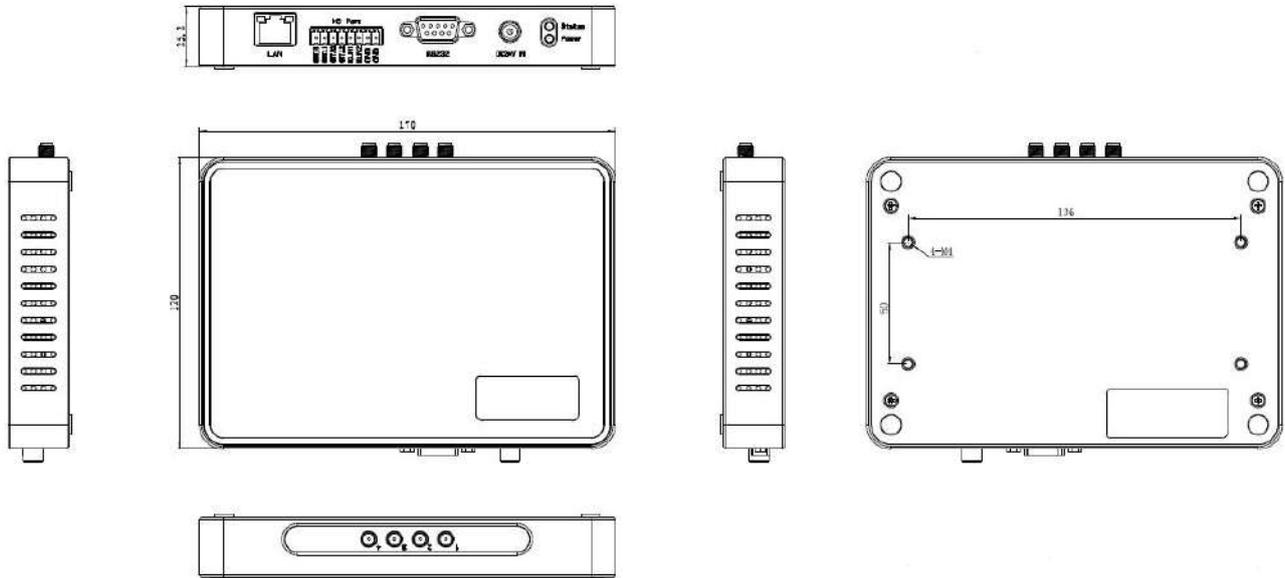
Figure 2-1 Structure diagram of Smart 340/380 reader

Smart 340/380 Reader Volume Parameter is:

170mm×120mm×25mm

2.2 Net Weight

1 Kg

2.3 Interface Diagram

2.3.1 Power, Communication and I/O Interfaces
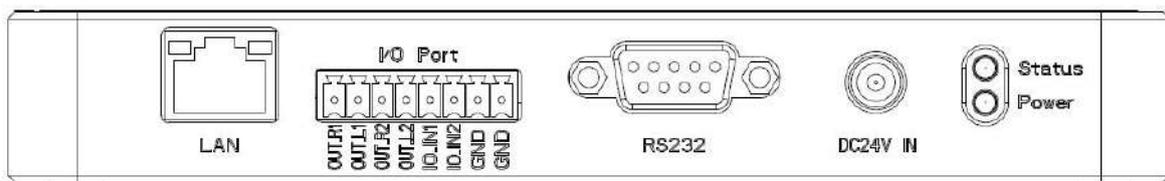
Figure 2-2 Schematic diagram of reader power, communication and I/O interfaces

Figure 2-2 is a schematic diagram of the reader and the power supply, communication and I/O interface panel. For details, see Table 2-1.

Table 2-1 Reader power supply, communication and I/O interfaces

Interface ID	Interface Name	Detailed Description
DC24V IN	Power supply interface	DC, 10~30V, power capacity not less than 20W.
LAN	Ethernet interface	10/100M Ethernet interface, reader control and communication interface.
RS232	RS232	Serial port, reader control and communication interface.
I/O Port	I/O interfaces	See 2.3.2 for detailed definition

2. 3. 2 I/O Interface Definition
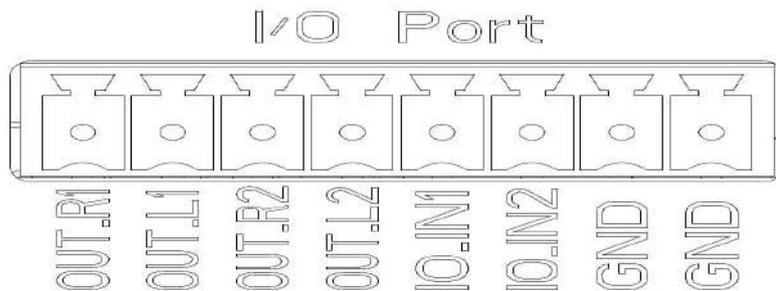
Figure 2-3 Schematic diagram of I/O interfaces

I/O control signal definitions are shown in Table 2-2:

Table 2-2 I/O control interface signal function definition

Pin ID	Pin Description
R1	Relay 1# output; DC_MAX: 30V, 2A; AC_MAX: 125V, 0.3A; logic '0' indicates open circuit, logic '1' indicates closed, default is open circuit.
L1	Relay 1# output; DC_MAX: 30V, 2A; AC_MAX: 125V, 0.3A; logic '0' indicates open circuit, logic '1' indicates closed, default is open circuit.
R2	Relay 2# output; DC_MAX: 30V, 2A; AC_MAX: 125V, 0.3A; logic '0' indicates open circuit, logic '1' indicates closed, default is open circuit.
L2	Relay 2# output; DC_MAX: 30V, 2A; AC_MAX: 125V, 0.3A; logic '0' indicates open circuit, logic '1' indicates closed, default is open circuit.
IN1	Optocoupler 1# input, DC, 0~24V, higher than 1V is high level, lower than 1V is low level
IN2	Optocoupler 2# input, DC, 0~24V, higher than 1V is high level, lower than 1V is low level
GND	Ground
GND	Ground

GPI Usage Example:

Infrared sensor type selection: Choose PNP NO type, which means that the infrared is normally low, when the object is detected, the signal line outputs a positive voltage signal.
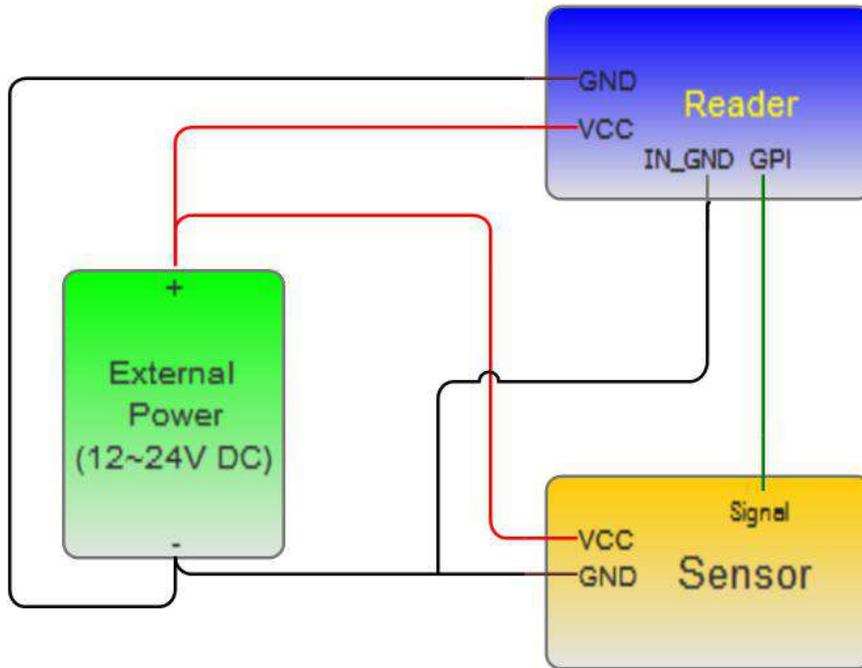
GPO Usage Example:

Relay type GPO: GPO is equivalent to a switch, logic '0' means open circuit, logic '1' means closed, default is open circuit state. You can connect the alarm light, buzzer, etc. to the GPO for use. The usage is shown in the following figure.
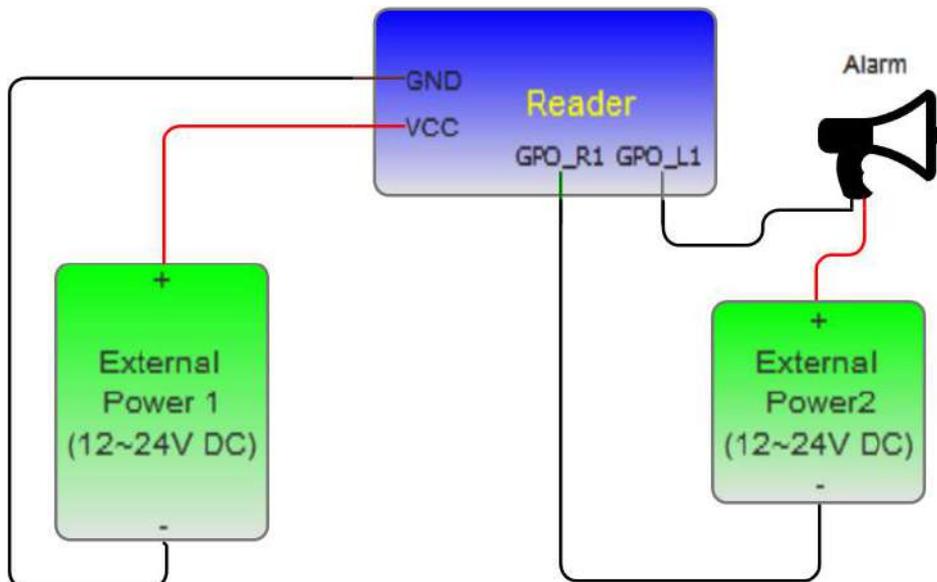
2.3.3 Coaxial RF Feeder Cable (optional)

Figure 2-4 Schematic diagram of RF cable

RF cable should use SMA (internal thread, internal needle) connector, the maximum cable length is not more than 5m, impedance is 50Ω, and the insertion loss is less than 2dB. You can also choose a high-performance cable, increase the length appropriately, and try to reduce the insertion loss as much as possible.

Note: The long RF cable or poor contact of the cable connector will cause excessive attenuation of the transmitted signal and the received echo signal and deteriorate the reading / writing performance.

2.3.4 Network Connection Diagram

The network interface is used for long-distance high-speed connection (not greater than 80 m). It can be connected to a switch or router via a network cable or it can be directly connected to a PC network interface. The specific connection is shown in Figure 2-5:
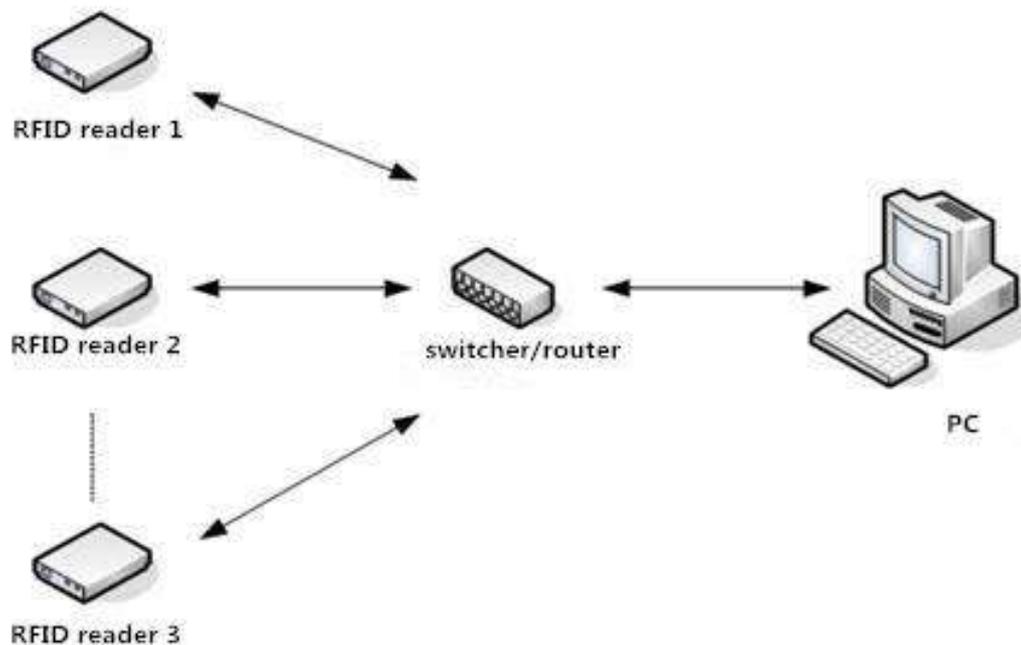
Figure 2-5 Network application connection diagram

3. Installation Instructions

3.1 Precautions

To ensure the normal and stable operation of the device and your personal property and safety, please carefully read the following notes before install HZ340/380 reader.

1. Firstly, check whether the power socket is connected to the ground, and to see whether the local power supply voltage is in accordance with the applicable voltage range of the reader;

2. Check the device and the external connection if is closely connected;

3. Pay attention to the type selection and the length limit of the network cable and the serial cable:

● Network cable connects directly, no longer than 80 meters

● Serial cable connects directly, no longer than 10 meters

4. When installing several readers, the antenna position and the antenna spacing should be appropriate to avoid interference with each other.

3.2 Installation Conditions

Before installing the reader, please check carefully whether the product is in good condition and the accessories are complete. If there are any parts missing or damage, please contact the supplier in time.

3.3 Device Connection

3.3.1 Connect Power Adapter

✧ Plug the power cord into the AC power supply outlet and then plug the other end of the power cord into the power connector of the reader and fasten it.

✧ Power on the reader, wait for about 10 seconds, and the system completes the initialization process and enters the standby state.

3.3.2 Connect External Antenna and RF Cable

The reader built with four/eight SMA coaxial cable connectors for connecting external antennas, select low consumption RF cable, connectors should be tightened (Ensure to be waterproof when install outdoors);

The reader antenna angle or tilt need to adjust to the best position through the actual test according to the specific application.

3.3.3 Connect to PC

✧The reader is supplied with different dedicated connection cables for the network, USB and power interfaces.

✧The RS232 interface is used for short-distance communication (not greater than 10m). It can be connected to the PC serial port through the DB9 connector to realize the communication between the PC and the reader.

✧The RJ45 network port is used for long-distance communication (not greater than 80m), and an extended network cable can be used to connect to a PC.

3.4 Install Reader

The reading and writing range of the reader depends on the on-site application, the tilt angle of the antenna is adjusted to achieve the best reading and writing performance.

3.5 Acceptance

The acceptance criteria are mainly given from two aspects: structure and performance.

3.5.1Structural Acceptance

✧Whether the reader is fixed firmly without looseness;
✧Whether the cables are connected firmly;
✧Whether the screws are tightened.

3.5.2 Performance Acceptance

✧Whether the reader is working normally;
✧Whether the reading range is reasonable.

4. Common Failures

4.1 Daily Maintenance

Daily maintenance of Smart 340/380 reader during use:

✧Check whether the RF connector is tightened

✧Check whether the screws fixing the reader and antenna are loose

✧Check whether the outer shielding layer is disconnected at the RF cable connector

✧Check whether the power cord of the reader is connected firmly

4.2 Common Failure Analysis and Solution

✧**Power supply system failure:：**

Check whether the power supply of the power adapter is normal and whether the AC power supply voltage is between 100V and 240V

✧**After power on, the panel indicator does not light up:：**

Confirm whether the communication is normal, if not, please contact after-sales service.

✧**The serial port cannot be connected：**

The serial port cable is not connected or not firmly connected

Whether the serial port connection baud rate of the reader is correct

Is the selected COM port correct?

✧**The network port cannot be connected：**

The default IP address of the Smart 340/380 reader is set at the factory: 192.168.1.116. Make sure that the IP address of the PC and the IP address of the reader are in the same network segment, such as "192.168.1.XXX". Connect with the reader, if you forget the IP address of the reader, you can reset the IP address of the reader through the serial port connection or pressing reset button for 10 seconds.

✧**The reader cannot read tags**

■Check if the antenna number is set correctly

■Check if the tag is damaged

■Check whether the tag placement position is within the effective reading and writing range of the reader

■Check whether there is electromagnetic interference between readers or other devices

■For problems that users cannot solve by themselves, please contact after-sales service.

5. Packaging Accessories and Storage

5.1 Package
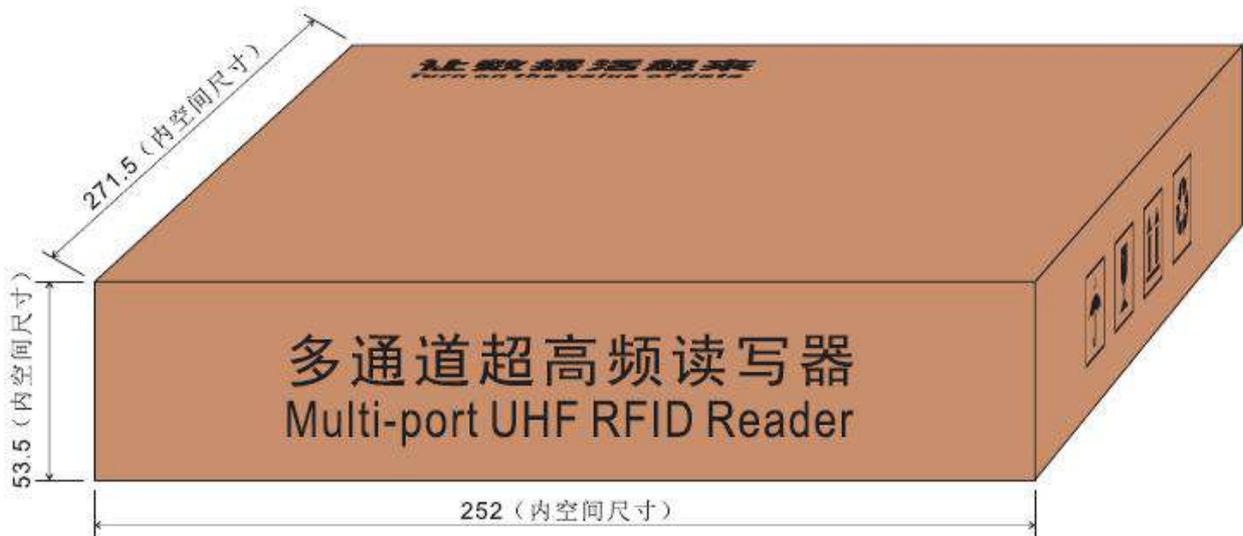
Figure 5-1 Package dimensions

Carton box size: 252mm*271.5mm*53.5mm (inner size)

5.2 Accessories

In order to facilitate future storage and transportation, after unpacking the Shine 340/380 reader, properly store the box and packaging materials. In addition to the reader, the box also includes the accessories required for the use of the product. Please confirm whether the product and accessories are complete according to the product packing list. If there is any discrepancy or damage, please contact the after-sales service in time. The specific packing list is shown in Table 5-1:

Table 5-1 Packing list

No	Name	Unit	Quantity	Remarks
1	Smart 340/380 reader	1	Set	Included
2	Power adapter 24V/2.5A	1	Pcs	Included
3	AC power cord	1	Pcs	Included
4	LAN Cable	1	Pcs	Included
5	Mounting screws M4*8 + Foot padΦ4	4	Set	Included
6	8P GPIO connector	1	Pcs	Included

7	fixed bracket	1	Pcs	Included
8	warranty card	1	Pcs	Included
9	Certificate of approval	1	Pcs	Included

5.3 Storage Requirements

Smart 340/380 reader should be stored in below conditions:

✧ Environmental temperature: -40℃～ +85℃

✧ Relative humidity: 5% RH～ 90%RH

6. After-sale Service

Letter to Customers

Since our aim is to continuously improve our products for better user experience, we may modify the product characteristics, composition and design of circuits without given notifications. Thus the real product may be not in accordance with this manual. Generally, we will provide timely amendments to this manual. If it's not provided timely, please consult our service department.

Shenzhen Hopeland Technologies Co., Ltd.

Guarantee card of Shenzhen Hopeland Technologies Co., Ltd

Product Name		Model No.	
Product Code		Level	
Description of troubles			
User's name		Postcode	
Contact Person	Contact No.		

Warranty Description

In order to offer users better service, our company provide warranty card with each device, please keep it to enjoy the service.

1. Products can replace free under conditions within one month after sale, in the precondition of normal operation without repairing.

2. Free maintenance won't be given under the following circumstance:

✧The damage of the terminal caused by high voltage of the power grid.

✧The damage caused by misuse or operated improperly.

✧The damage caused by excessive vibration when user delivering.

3. The software of this product can be upgraded freely, users can be training in our company for free.

4. Will be charge appropriately if the user doesn't have a warranty card.

5. Users will need to fill out the warranty card for repair service, and sent back to Hopeland.