cells-net

RF100Z Eight -channel UHF RFID Reader Module

Product Overview

RF100Z-8A Module is a 915 MHZ Eight-channel UHF RFID Module launched by Guangzhou Cells-Net Electronic Technology Co., Ltd., which is compatible with ISO18000-6C/EPC Gen2 protocol. The power supply voltage supports 4.8V-5V power supply, the data communication interface is TTL UART (3.3V) or RS485, and the communication rate is 115200bps. When the module transmits 26dBm power, the peak power consumption is 320mA, and the average power consumption depends on parameters such as inventory speed. The switching time of the four antennas can be set, and it can also be set to work with a single antenna

The RF100Z-4A module is suitable for fixed card readers, access doors, tunnel machines, etc.

Basic parameters   Product Picture

Output Power：	15~26dBm
Supply voltage：	4.8~5V
ANT Interface：	U.FL
Data Interface：	TTL UART or RS485
Reading Range：	10m@8dbi antenna
Power Consumption：	Working peak current 300mA, deep sleep 300uA
Turn off current:	<10uA
Operating Temp：	-40℃ to +85℃
Storage Temp：	-40℃ to +105℃
Size：	55×54mm
Channel:	4

Company Profile

Guangzhou Cellsnet Electronic Technology Co., Ltd. is a company specializing in wireless communication program design, production and service companies, the company has first-class design team, the use of advanced working methods, set wireless design experience, the company has a variety of practical modules, but also to provide customers with customized services.

Order Information

Product model	Description
RF100Z-4A	TTL Level Module
RF100Z-4A485	RS485 Level Module

Copyright Notice

Version information

Version	Updata time	Description
V1.00	2018/04/15	Create the document
V1.01	2018/05/15	Replace test
V1.02	2018/06/20	Replace picture

List

1. Hardware Introduction

1.1　RF100Z-4A module PIN definition
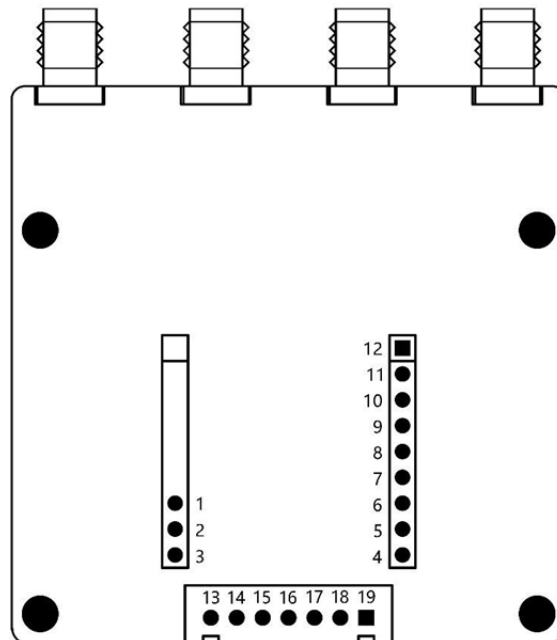
Pic 1.1 RF100Z TOP VIEW

PIN Description

PIN number	PIN Name	PIN Definition
1	NC	To be reserved or not connect
2	NC	To be reserved or not connect
3	NC	To be reserved or not connect
4	NC	To be reserved or not connect
5	EN	The module enable pin. 4.7K Ohm pull-up resistor inside the module. When the EN pin voltage is higher than 1.1V, the module starts to work.
6	485A	Only for RF100Z-485 model, RS485 communication interface A signal pin. The communication baud rate is 115200bps.
7	485B	Only for RF100Z-485 model .RS485 Communication interface B signal pin. The communication baud rate is 115200bps.

| 8	NC	Reserved, not connect.
9	TXD_TTL	Only for RF100Z model, module UART serial transmission pin, TTL 3.3V, communication baud rate of 115200bps.
10	RXD_TTL	Only for RF100Z model, module UART receiver pin, TTL 3.3V, communication baud rate of 115200bps.
11	+5v	Module power supply. Support 4.8v-5v power supply.
12	GND	Module Ground
13	NC	Reserved, not connect.
14	NC	Reserved, not connect.
15	GND	Module Ground
16	485B	Only for RF100Z-485 model, RS485 Communication interface B signal pin. The communication rate is 115200bps.
17	485A	Only for RF100Z-485 model, RS485 Communication interface A signal pin. The communication rate is 115200bps.
18	GND	Module Ground
19	+5v	Module power. 4.8v-5v DC power supply input pin.

Note: The RS485 interface does not have a built-in 120ohm terminal resistor.

Antenna interface number	RF interface name	Definition
1	ANT1	Antenna 1 interface
2	ANT2	Antenna 2 interface
3	ANT4	Antenna 4 interface
4	ANT3	Antenna 3 interface

Note: the antenna interface order is not 1~4, but 1, 2, 4, 3

1.2   Hardware Connection

The use of the RF100Z-4A module is very simple. You only need to use three TTL wires (RS485 model, connect to the RS485 bus to connect 485A, 485B) to configure the module and read the label information. Also note that before turn on the power, the antenna must be connected, otherwise will damage the module.
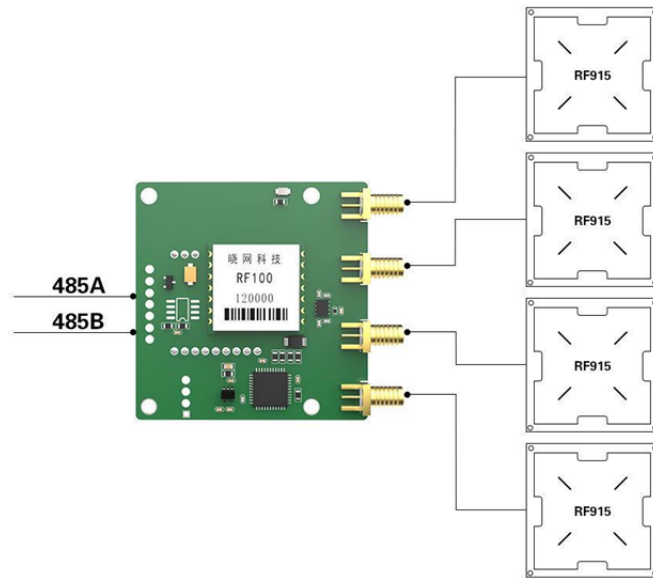
Pic 1.2 RS485 connection

RF100Z-4A-485 two-line connection, only one command can get the Tag information!
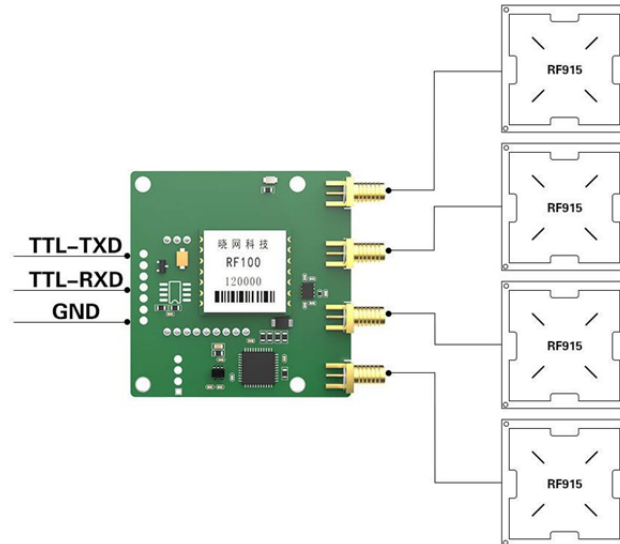
Pic 1.3 RF100Z TTL connection

RF100Z-4A three-line connection，only one command can get the Tag information!

1.3   Main indicators

➢ Protocol support:iso18000-6c/epc Gen2;

   Communication protocol: TTL serial port or RS485;

RF connector: SMAαU.FL;

Baud rate:115200bps;

Frequency range:840~928mhz;

Work Area support: US, Canada and other regions following U.S. FCC

Europe and other regions following ETSI EN 302 208

Mainland

Japan

Korea

Malaysia

Taiwan

Module size is 55mm*54mm*1.2mm (The shield thickness is not calculated).

Transmit power is 15dBm~26dBm. the software can be adjusted.

Read Card distance: The use of 45*45mm doubly-fed ceramic antenna, in open conditions, read

9662 standard white card, distance of 2 meters

Module in shutdown mode: leakage is less than 10uA.

Module is in deep sleep mode: power consumption is less than 300uA.

Module in standby mode: Power consumption is around 32mA.

Module Continuous inventory mode: power consumption for 220ma-320ma, depending on the

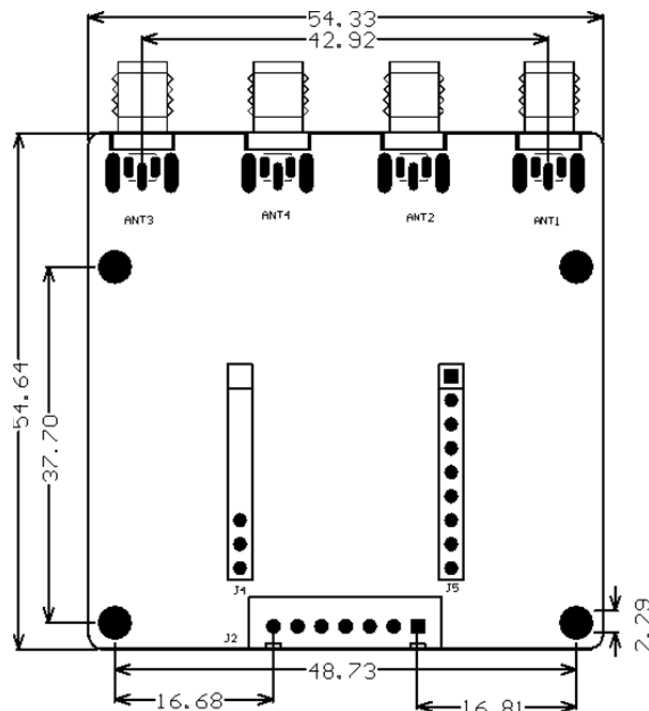number of inventory per second, Q value and the number of tags and so on.

When the module sends the continuous wave, the power consumption is about 320mA.

Multi-label read >50 / sec

Boot up to ready time <80ms

Working Humidity: within 95% (＋25 ℃)

1.4 Module Size

Pic 1.4 RF100Z-4A Size

1.5　Module Peripheral Circuit

Module uses 5V DC power supply, according to the following figure design can be detailed see the Data folder of " 11.4 backplane Hardware Design Reference "directory, a reference design schematic diagram, packaging library, PCB Board file.

Pic 1.5 RF100Z-2A schematic diagram

2. The software read and write example

2.1   Hardware connection

Users use the evaluation board, plug in the module, connect two antenna, directly using USB the line connects the evaluation board with the computer. If first used, need to install driver first (the driver is Cellsnet Electronic product CD-ROM v1.34\9. Driver and configuration software \9.1 USB driver\cp2102 Drive, if not available to Cellsnet Electronic technology sales or technical support to obtain).
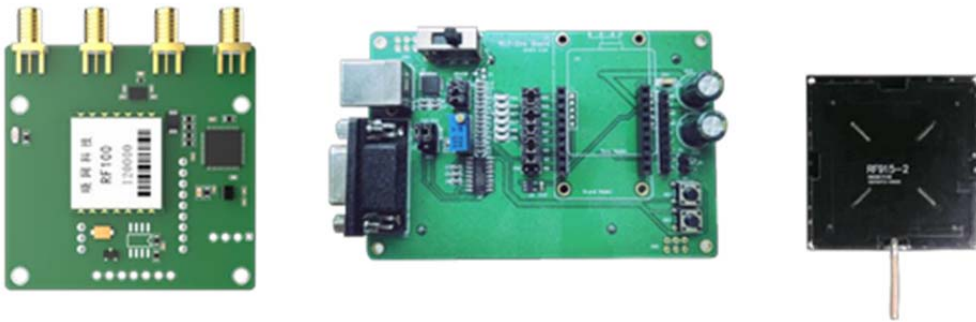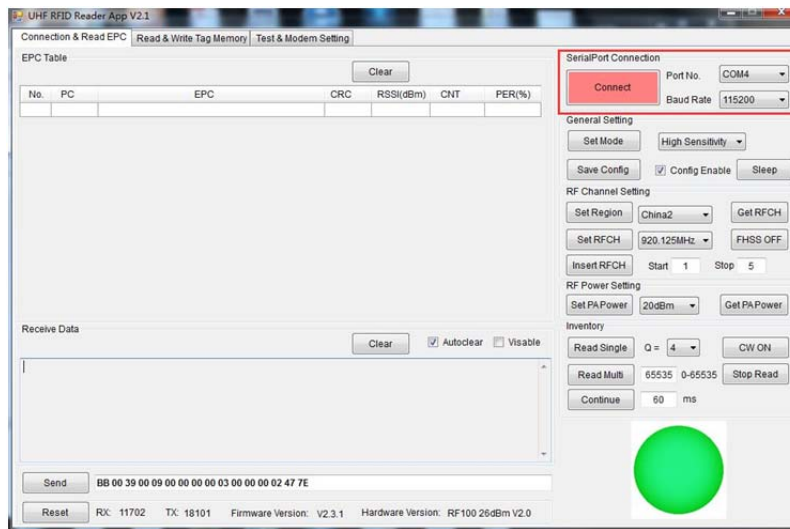

2.2   Software

Open Software rfid_reader_gui_v2.1. as shown in the following illustration:
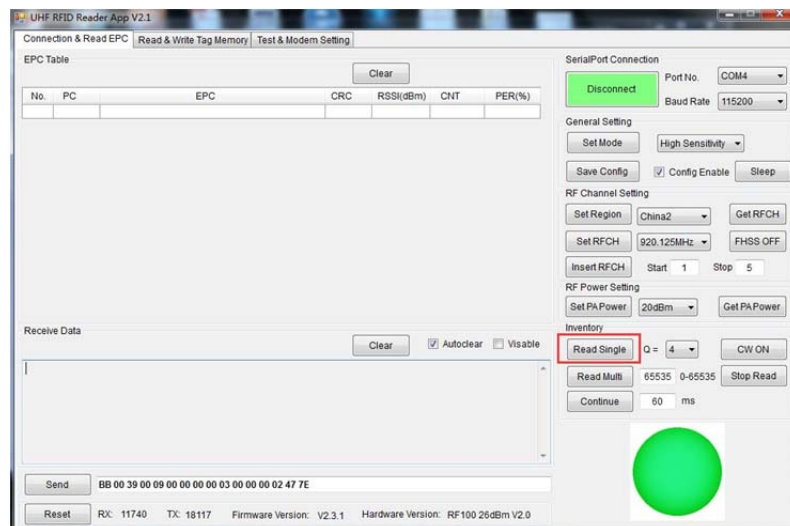

RFID_Reader_G
UI_V2.1

After choosing the right serial port, the baud rate 115200 , click Connect button, as shown in the following illustration:
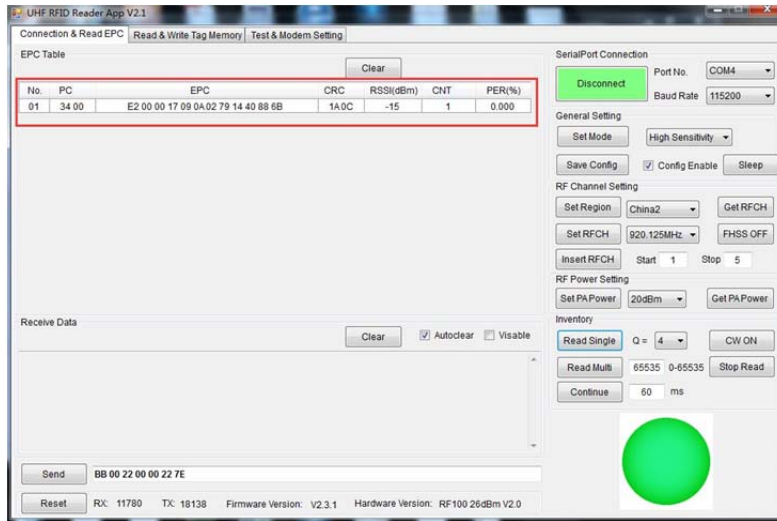
After the connection, the Connect turns green;
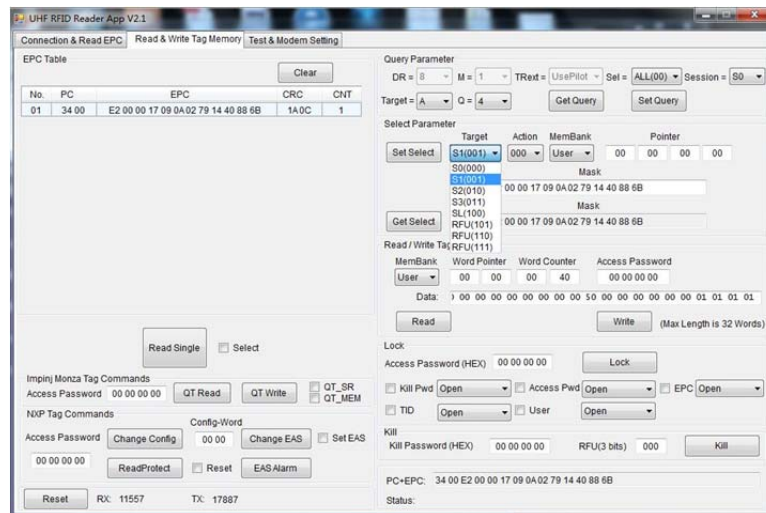
2.3　Read EPC

Click on the　Read Single button；

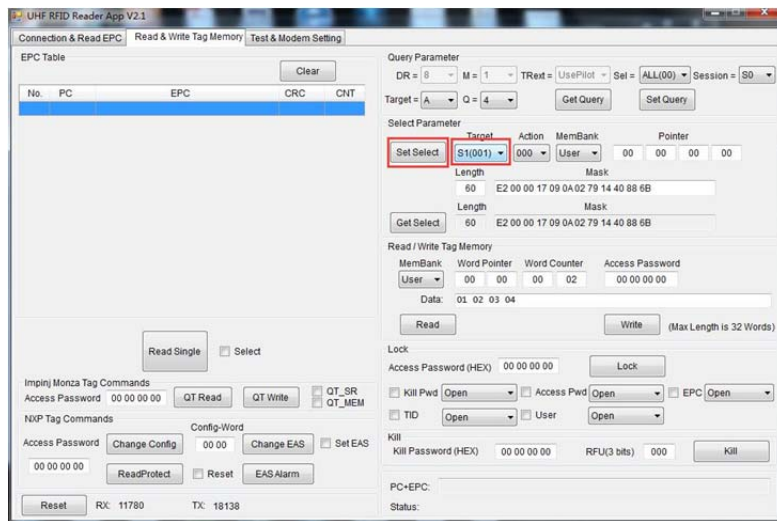The read information appears, indicating that read is normal;

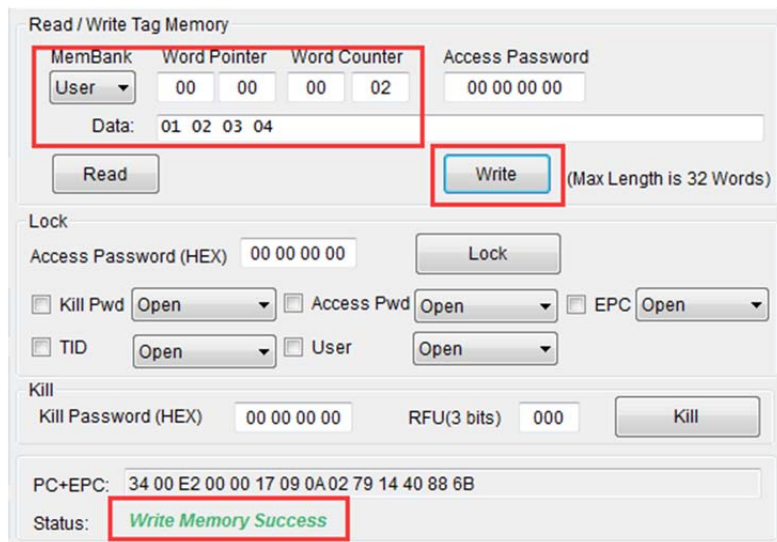

2.4   Read and write Memory test

1.   Write Test

Select Read &Write Tag Memory page，Target select S1(001);

According to the red box above, set the parameters;

Click on the Red box Write button:

If successful, the green text in the red box will appears Write memory Success.

2.   Read Test

Click the Read button, and the RF100Z module will reading the Memroy information, If successful, appears Read memory Success

3. Learn more about Cellsnet application

Cellsnet electronic technology Co., Ltd is the IoT infrastructure platform supplier, products and solutions, can achieve a variety of industrial data rapid network transmission, the following is the application of the case, click the link can enter the official website to view details.

ZigBee Wireless Street Lamp

Manufactoy Monitor System

Restaurant staff positioning System

ZigBee warehousing positioning

ZigBee Intelligent Fiszey

ZigBee 5km transmmition scheme

Public transport Communication system

ZigBee wireless serial port

unattended monitoring of substations

Intelligent Medicine Basket Solution

4. Disclaimer

The parameters and configurations described in this document are used under the conditions specified in the documentation, please note before use, please contact the sales engineer If you are not sure. Apart from the responsibilities stated in the sales terms and conditions of the product, Guangzhou Cellsnet Electronic Technology Co., Ltd. does not assume any other liability, including the product for a specific purpose of applicability, merchantability or any patent, copyright or other intellectual property rights infringement liability, etc., are not guaranteed, such as the user in the use of the product outside the conditions, caused by the interference and loss, the user must bear.

Guangzhou Cellsnet Electronic Technology Co., Ltd. may at any time the product specifications and product description to make changes, without notice.

5. After- sales Service and technical support

Before ordering the product, please contact Guangzhou Cellsnet Electronic Technology Sales office or distributor to obtain the latest specification specifications.

The documentation mentioned in this document containing the order codes and other electronic documents can be accessed through the official website of Guangzhou Cellsnet Electronic Technology Co., Ltd. www.cells-net.com obtained.

Products in the use of the problem, please first and technical personnel to determine the fault, such as the need to return to plant repair, please indicate the fault in the repair sheet clearly, and fill in the company or personal contact, and products sent back.

Technical Support Tel:　　(+86)18520396685 (Mr. Lin)

Sales Tel:　　　　　　(+86)18027119915 (JACKY)

Technical Support Email: Fae@cells-net.com

Sales Email:　　　　　Jacky@cells-net.com

Technical Support QQ : 2301079163

Sales qq:　　　　　　1582984669

Fixed line:　　　　　　(+86)20-85671130

Fax:　　　　　　　　(+86)20-82186181

Company Address: B4-1, Chuangxin Building 1, No. 63 Chuangqi Road, Panyu District, Guangzhou City, Guangdong Province , China