RFID reader

Model#: CL7206B

User Manual

RFID应用领跑者

CONTENTS

Chapter I, Technical Specifications

1.1, product features

CL7206B2 is a high performance RFID reader which ingrates reader module & antenna. It complies with ISO18000-6C/6B protocols, working frequency support international main frequency bands: 902MHz ~928MHz, 860MHz ~865MHz，Export power adjustable. This device is featured by long range, high-speed reading, & high accuracy, high sensitivity, strong anti-interference etc.

1.2．Main functions & performance

1.2.1 Main functions

- EPC protocol：support ISO18000-6C\6B & EPC C1G2 V1.1 mandatory commands.
- Built-in LINUX operation system.
- Rich communication interface（Ethernet, RS232, RS485）
  Built-in circular antenna, support one external antenna.
- Support tag data filtering.
- Support RSSI: can sense signal strength
- Support RF output power adjusting.
- working mode: FH/HH optional.
- support antenna inspection function.
- Support online & remote upgrade.
- IO interface: 2 relay input & 2 relay output, wiegand output.

1.2.2 performance parameters

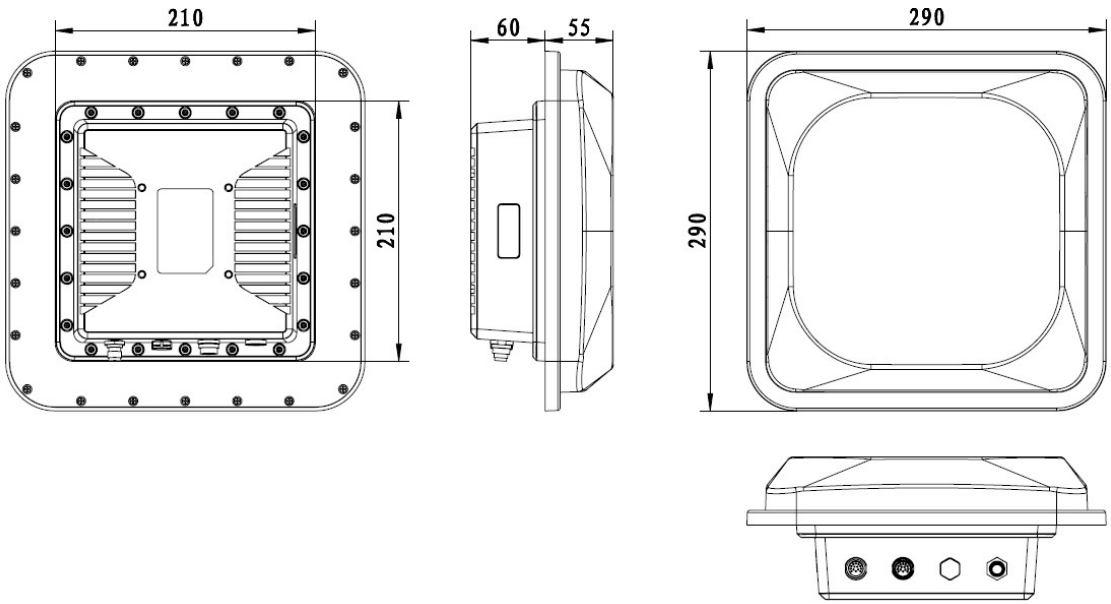
- Working frequency: 902MHz ～928MHz, 860MHz~865MHz etc.
  RF output power（port）:33dBm±1dB（MAX）
- Output power adjusting: 1 dB step
- Reading tag range 0~10meters(related with tag, antenna & using environment).
- Channel bandwidth：＜200KHz
- Integrated circular antenna VSWR：≤1.4:1
- Integrated circular antenna gain：≥8dBi
- RS232 communication rate: 115200bps（default）, 19200 bps，9600bps
- RS485 communication rate: 115200bps（default）, 19200 bps，9600bps
- Wiegand output support wiegand 66, 34 & 26 types.
- Power supply(power adapter): AC input　100-240V,50-60Hz
  DC output　24V±1.5V/2.5A

1.2.3．working environment

Working temperature scope: -20℃～+30℃
Working humidity: 5%～90%RH（+25℃）

Chapter II, Physical structure

2.1 physical structure



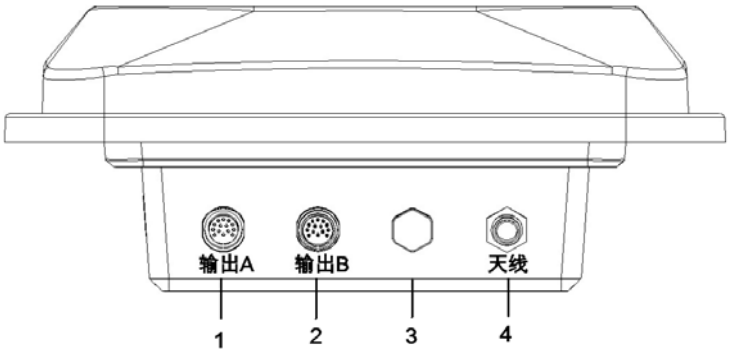
Picture 2-1　CL7206B structure chart

Physical size: 290mm×290mm×115mm(accessories not included)

2.2 Weight

2.5kg（accessories not included）

2.3　I/O interface & communication interface chart



Picture 2-2　I/O & communication interface

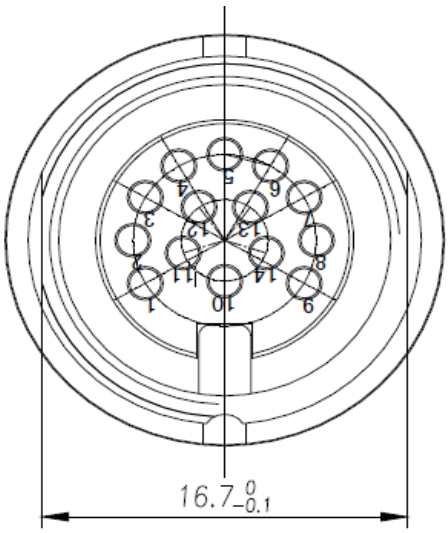
1 — power & communication port

2 — I/O control interface

3 — Ventilation valve

4 — antenna port

2.3.1 Power supply & communication interface description



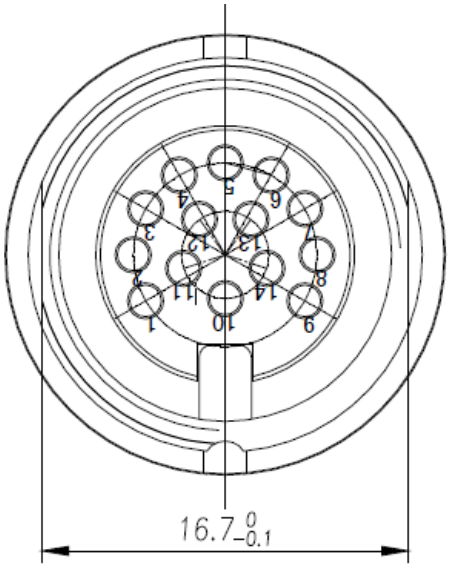
Picture 2-3 power supply & communication port aviation port number chart

Aviation plug signal definitions

Chart 2-1 Power & communication interface signal definition

PIN	Description	PIN definition
1	Power supply GND	PGND
2	Power supply GND	PGND
3	24V power positive	+24V
4	24V power negative	+24V
5	NC	NC
6	NC	NC
7	NC	NC
8	Ethernet port	TD-
9	Ethernet port	TD+
10	RS232 receiving RXD	RX
11	S	PGND
12	Ethernet port	RD-
13	Ethernet port	RD+
14	RS232 receiving RXD	TX

2.3.2 I/O aviation port chart



Picture2-4 I/O interface aviation port number chart

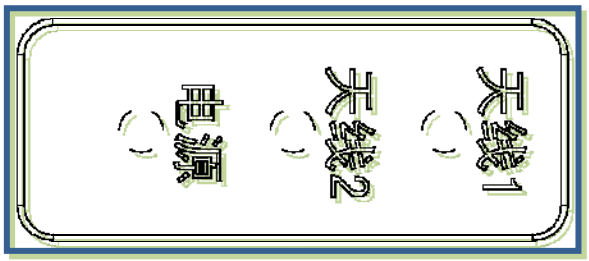
I/O aviation port definition as per in chart 2-2:

Chart 2-2 I/O port signal function definition

PIN No.	Description	PIN definition
1	Relay 1 output port	R1
2	Relay 1 output port	L1

3	Relay 2 output port	R2
4	Relay 2 output port	L2
5	Optocoupler 1 external signal input anode	IN1
6	Optocoupler 2 external signal input anode	IN2
7	Optocoupler external signal input cathode	IGND
8	Wiegand output 0	WG0
9	Wiegand output 1	WG1
10	地	AGND
11	地	AGND
12	RS485 signal	485+
13	RS485 signal	485-
14	地	AGND

2.3.3 LED panel description



Picture 2-5 LED panel chart

LED panel description as per in chart 2-3:

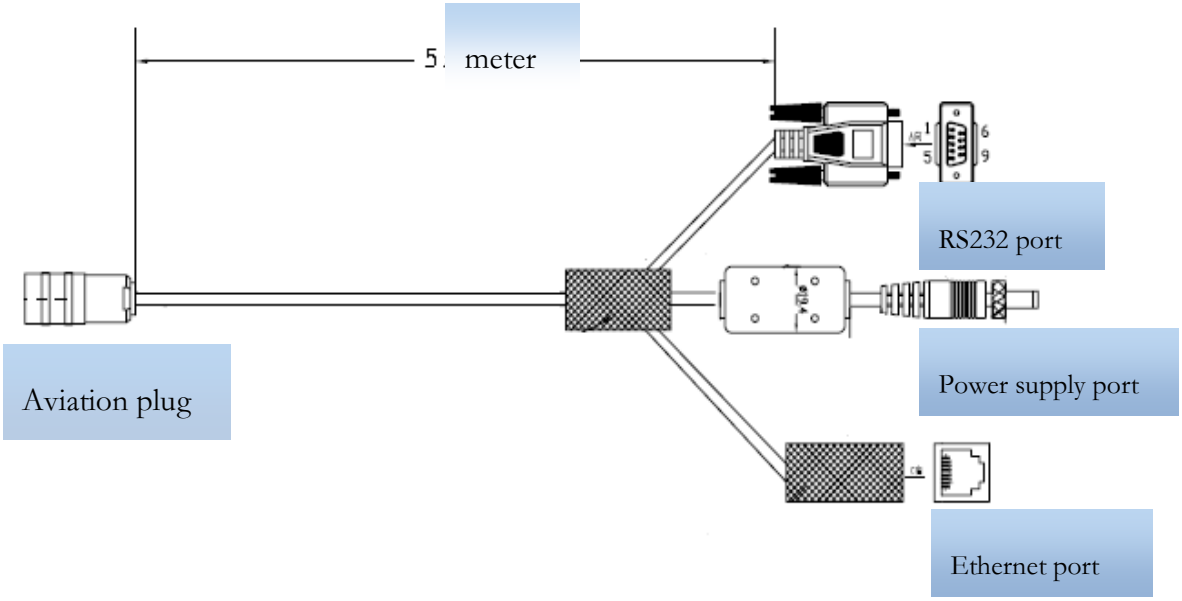
Chart 2-3 LED definition description

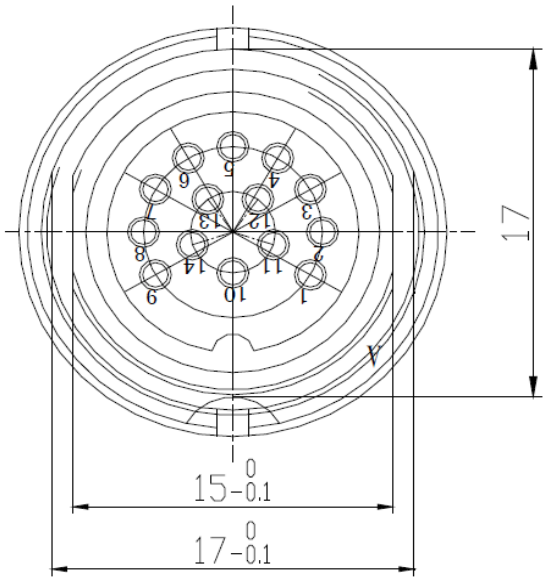
LED Mark No.	**Description**	**Status description**
ANT1	Antenna 1 LED	Means external antenna port successfully selected
ANT2	Antenna 2 LED	Means built-in antenna successfully selected
PWR	Read/write card status	Flickering means entering normal card reading status.

2.4 External cable connection description

2.4.1 power supply & communication cable description

Cable Specifications: Black insulated skin with metal screening net, 14 shares inner core, outer diameter 7.8mm, main cable length is 4m, branch cables length are 1m. As shown in below picture, the aviation plug connected with the reader "Power and communication interface," while 14 core lines are for the three different signal path, i.e. "serial cable, DC power cord and network interface cable ", mainly used for power supply and data transmission.





Picture2-7 Power supply & communication aviation plug chart

2.4.2 I/O control interface cable description

Cable Specifications: Black insulating skin with metal screening net, 14 shares inner core, outer diameter 7.8mm, the main cable length is 2.5m, "aviation plug " is connected with reader "I / O control interface", 14 core lines mainly provides two-way optical coupling input port, two-way relay control ports, two Wiegand output, two-way communication port 485. Mainly used for input trigger reading, peripherals switch control, upload card data, and communication functions, see Table 2-4 I / O control aviation seat definition table.

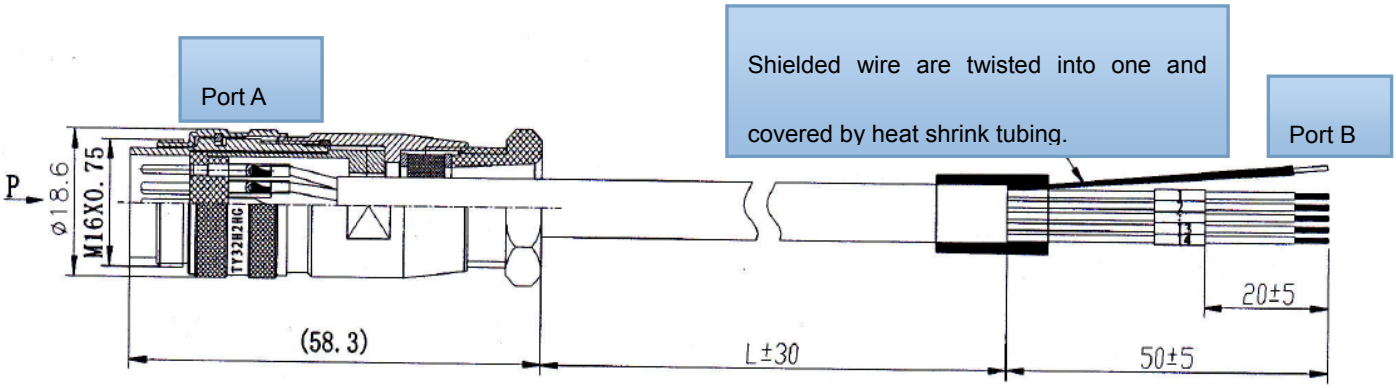


Chart 2-8 I / O control interface cable chart

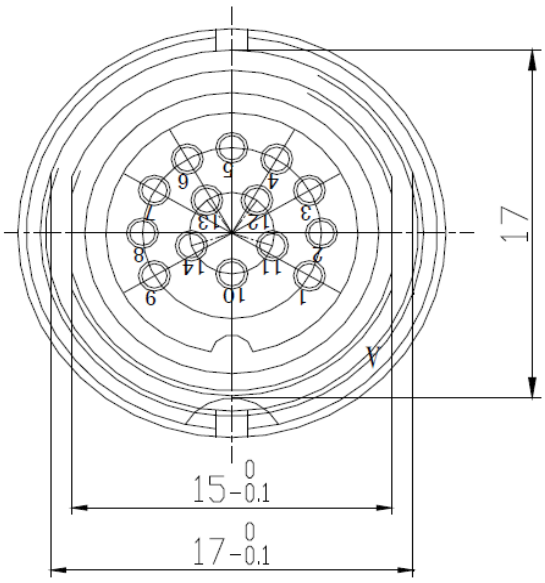


Chart 2-9 I/O control aviation seat illustration

The other end of the cable is bare and tin thread, can distinguish the functions defined by the color of the cable.

Chart 2-4 I/O control avaiation seat definition table

No.	PIN description	PIN Color	Marking number
1	Relay 1 output port	White	6
2	Relay 1 output port	Blue	8
3	Relay 2 output port	White/black	7
4	Relay 2 output port	Blue/black	9
5	Optocoupler 1 external signal input anode	Grey/black	5
6	Optocoupler 2 external signal input anode	Grey	4
7	Optocoupler external signal input cathode	purple/black	3
8	Wiegand output 0	purple	2
9	Wiegand output 1	Green/black	1
10	Ground	Green	10
11	Ground	Yellow/black	14
12	RS485 signal	Yellow	13
13	RS485 signal	Red/black	12
14	Ground	Red	11

2.4.3 External RF cable description

Picture 2-10 RF cable schematic chart

The connector between RF cable & reader is TNC male, the connector between RF cable & antenna is SMA male connector (depending on antenna connector as well). Try to keep the cable length within 5meters, impedance 50Ω, the insertion loss less than 2dB. Of course, you can choose a high-performance cable, appropriately increase the length, but keep the insertion loss less than 2dB.

Note: Too long RF cable or cable poor connection will cause high signal attenuation & poor reader performance.

2.4.4 External antenna description (optional)

This reader has a integrated circular antenna. User can also connect one more external antenna. It is recommended to use the external antenna provided by our company.

Picture 2-11 Circular antenna

Antenna performance parameters:

Work frequency: 902~928 or 860~865 MHz

Gain: 8 dBic

Maximum VSWR: 1.3:1

Polarization: L Circular Right or left

Input impedence: 50 Ohms

Weight: 2.3lbs

Mechanical size: 10.2” x 10.2” x 1.32”

Antenna Connection: coax pigtail, Rev INC Males

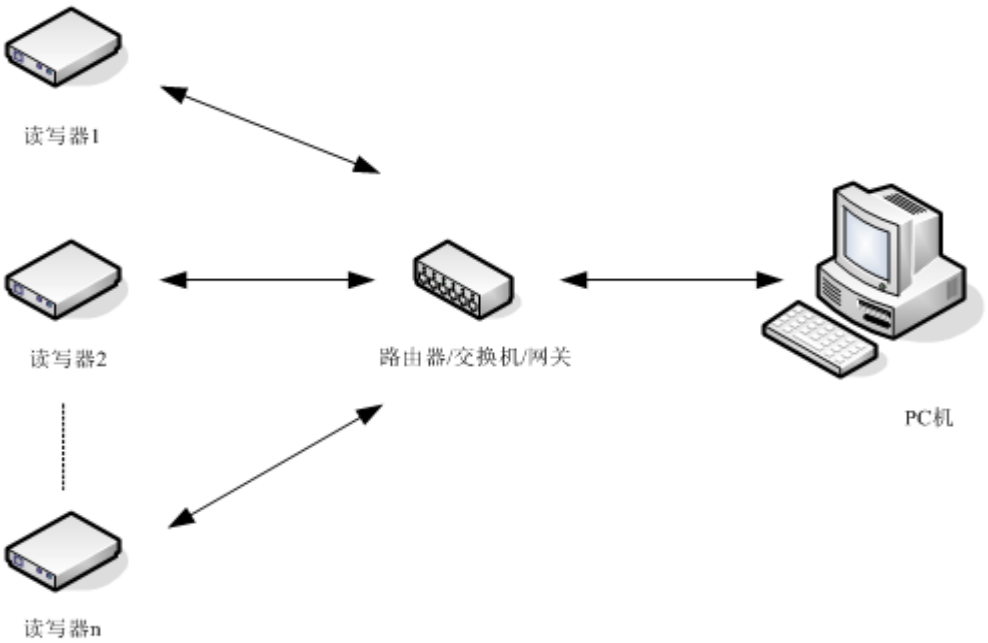
Working temperature: -20℃~30℃

Lightning protection: DC grounded

Environmental rating: IP54

2.4.5 Network connection chart

Ethernet connection is used for long range high speed connection (within 80meters). Can connect through router or exchanger or PC Ethernet port. Refer to below picture.



Picture 2-12 Ethernet connection chart

Chapter III, Installation

3.1. Precautions

In order to ensure normal and stable operation of the equipment and your personal and property safety, before installing CL7206B reader device, please carefully read the following notes.

1. First check whether the outlet is connected to earth ground, and check if the local power supply voltage meet reader voltage requirements.

2. Check if the device is connected tightly and the metal house of the device is connected with ground.

3. pay attention to the network cable and serial cable type selection and length restrictions;

4. When installing multiple readers, pay attention to reader antenna display way & the minimum distance between the antennas , avoid the situation that interference may affect the reader's performance;

5, please test & ensure the reader can work normally before using it.

3.2 Installation conditions

Before installing the reader, please check carefully whether the product is intact, the accessories are complete.

3.3 Device connection

3.3.1 Connected to power adapter

☆ Connect power adapter to AC power socket, and the other end to reader power support interface.

☆ After the circuit is connected, wait for about 20seconds, reader makes two alarming sound and enter into initialization state, after initialization is finished, reader enter into standby mode.

3.3.2 Connect an external antenna and RF cable

☆ The reader housing has a TNC-type coaxial connector for connecting an external antenna. Please use low-loss RF cable. The connection between the joints should be tightened (for outdoor installation joints please pay attention to water).

☆ reader external antenna is usually placed at outdoor. Its beam coverage is the effective reading range (try to avoid other objects occlusion).

☆ according to onsite situation, the reader antenna angle should be adjusted to the best condition till when the reading performance reaches its best after testing.

3.3.3 Connected with PC

☆ RS-232 interface is used for short-range communication (less than 10m), can be connected to a PC via the serial port connector for communication.

☆ RJ45 Ethernet port is used for longer range communications (less than 80m), can use extended network cable to connect the PC and RJ45 interface.

3.4 How to install the reader

According to field situation, preliminarily confirm the reading range. According to field read/write testing result, adjust antenna (rotation) angle, to make the reading performance reaches its best. Finally, Fixed the device and the tilt (rotation) angle.

3.5 Installation steps

3.5.1 Vertical pole installation

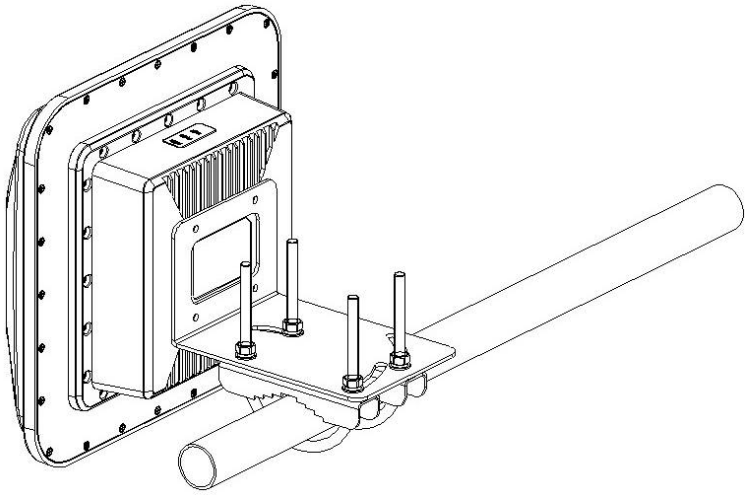
（1）Align the L-shaped mounting bracket against the holes on bottom of reader housing, use four hexagon socket head cap screws GB70-85 M5 * 12 for tightening. . Shown in picture 5-1:

Picture 0-1 wall installation

(2) Using two U-bolts and two toothed installation bracket to fix the reader on vertical rod through the L-bracket.

As per illustrated in picture 5-2.

Note: This installation method is suitable for 50mm ~ 100mm diameter vertical pole.



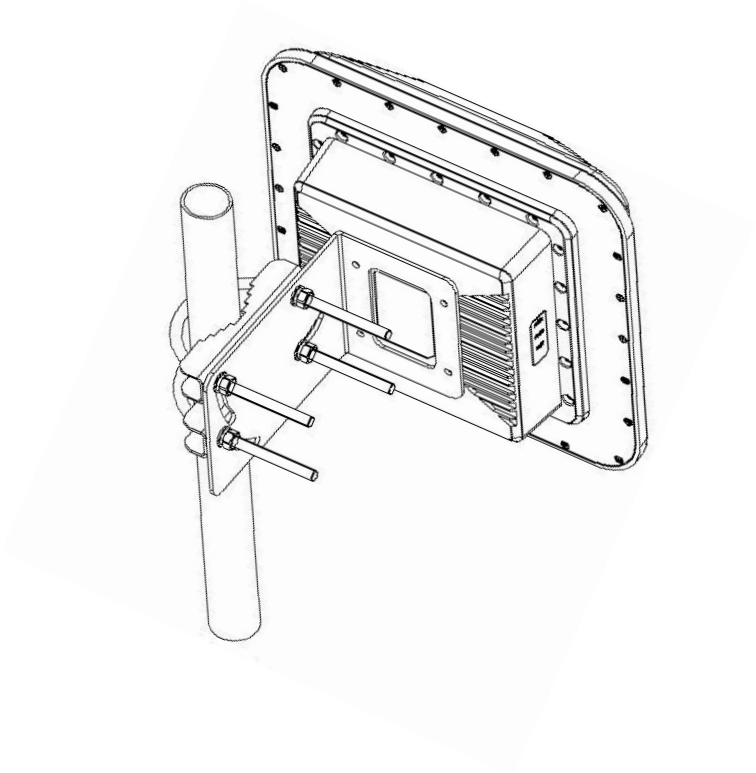
Picture 0-2 Vertical pole installation

3.5.2 Horizontal pole installation

（1）Align the Align L-shaped mounting bracket against the holes on bottom of reader housing, use four hexagon socket head cap screws GB70-85 M5 * 12 for tightening. Refer to picture in 5-3:

(2) Using two U-bolts and two toothed installation bracket to fix the reader on vertical rod through the L-bracket. As per illustrated in picture 5-3.

Note: This installation method is suitable for 50mm ~ 100mm diameter horizontal pole.



Picture 0-3 Horizontal pole installation

3.6 Acceptance

3.6.1 checking physical installation

Check & ensure the reader is fixed safely;

Check & ensure cables are connected securely.

Check & ensure screws are screwed firmly.

3.6.2 checking reader performance

☆ check & confirm the reader is working normally；

☆ check & confirm the reading range is set properly.

Chapter IV, Operation Guide

4.1 Demo software functions

The demo software is for system control, communication mode selection, parameters setting, tag reading/writing & data display etc.

4.2 Software environment

Windows 2000 Service Pack 3, Windows Server 2003, Windows XP Service Pack 2, Windows 7.

- Hardware environment

P4/1.7GHzor above，512M memory or above、40G hardware disk.

4.3 Demo software version number.

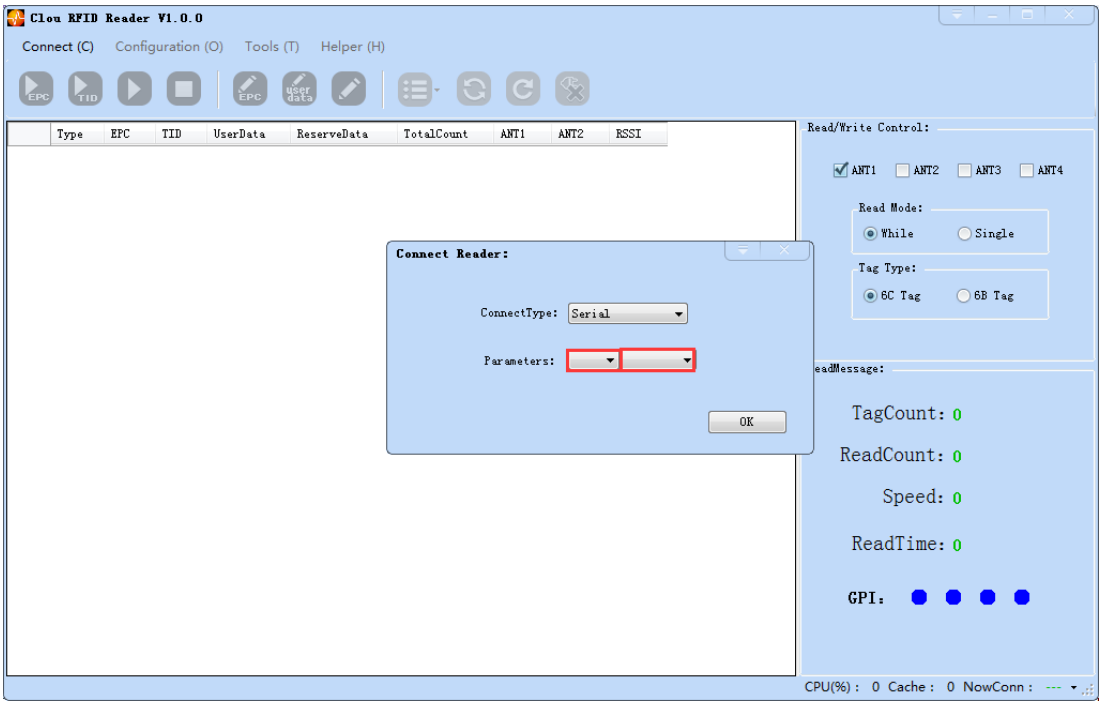
- Demo V1.0.0

4.4 Test demo operations

4.4.1 How to connect the reader

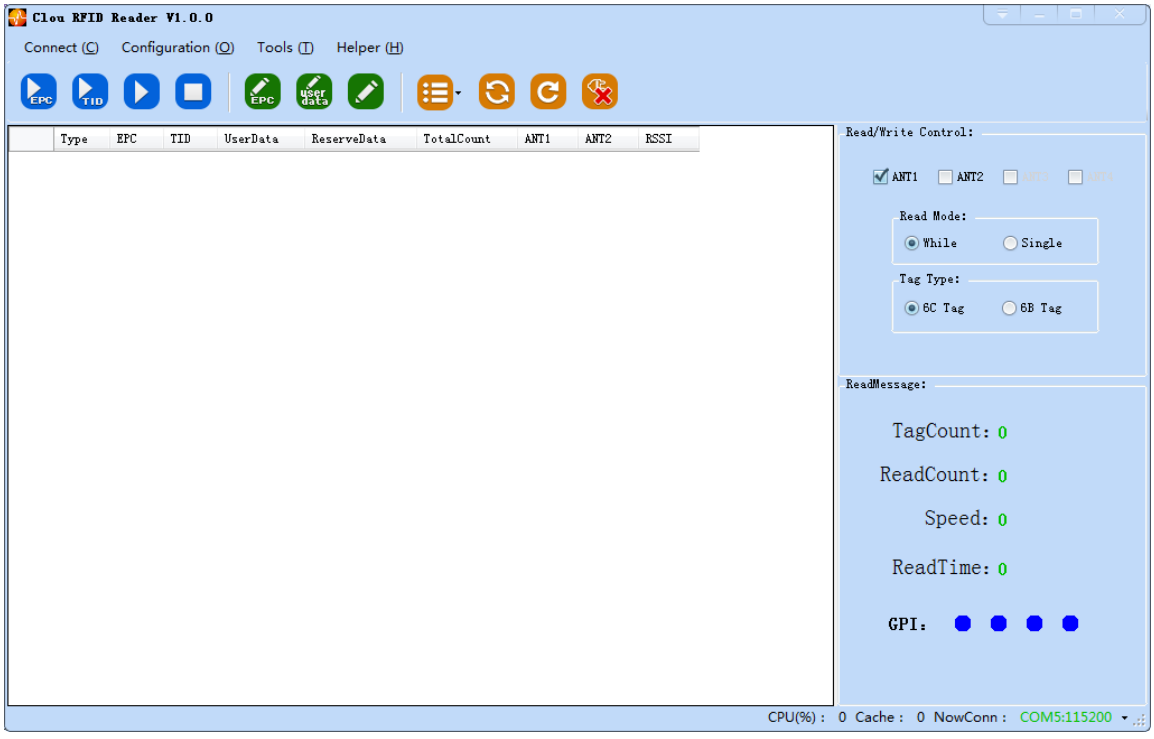
4.4.1.1 RS232 connection

After the reader power supply cable & PC communication cable are connected well, open Demo software, the icons on main UI are all in grey color, means reader is not connected. Select communication/connect mode as“RS232 connect”, & parameter as “COM?”(“?” means COM No.),communication port as “115200”（default value），click“confirm”button, as in picture 4-1.



Picture 4-1 RS232 connection

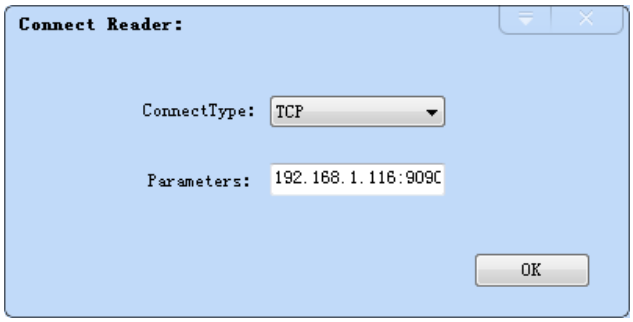
When successfully connected, all icons are light, as per in picture 4-2, means RS232 connection success.



Picture 4-2 RS232 connection successful

4.4.1.2 Ethernet port communication connection

Ethernet is used for long range connection(within 80meters), can connect with exchanger, router or PC Ethernet port directly. Choose communication/connect mode as “TCP connection”, input the reader IP (default 192.168.1.116), input communication port number (default 9090), click “confirm” button. As per in picture 4-3.

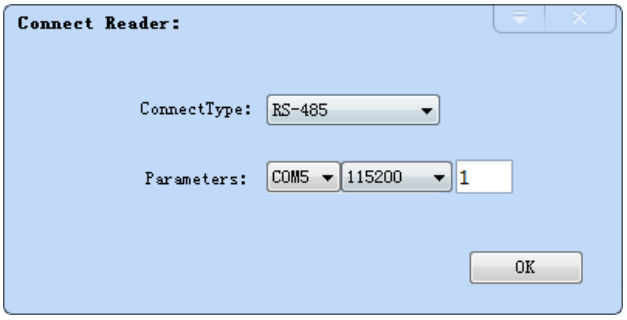


Picture4-3 Ethernet communication port

The reader default IP address is write as “192.168.1.116” before ex-factory. If you want to modify that, you can use RS232 connection to set up connection, then check the current IP address. Choose “Configurations”➔ “Senior” ➔”Reader configuration”, set IP address in the promp-out box “reader setting” under network port.

4.4.1.3 RS485 connection

Choose “485 connection (COM)” in the draw-down list of connection way, choose “COM?” (“?” stands for COM No.”), choose communicate rate as “115200”, input RS485 address and then click “confirm” button. As per in picture 4-5.



Picture4-5 485 communication connection

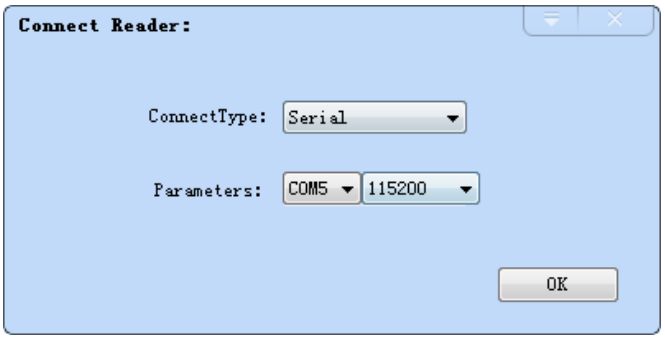
RS485 address default is 1.

RS485 address range is 1~255.

Remarks: after the configuration is changed, please click the button  **.**

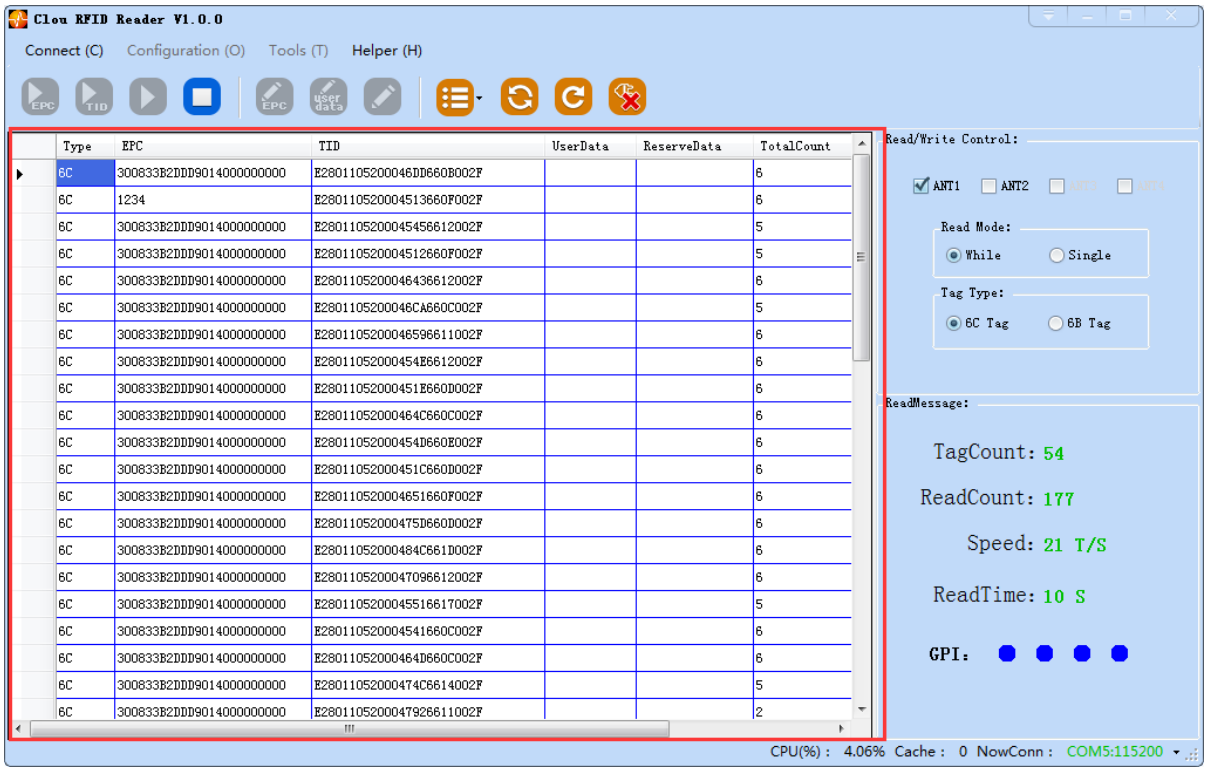
4.4.1.4 USB connection

In the pull-down menu of reader connection, choose “serial port connection” as communication way, choose “ COM?” (“?” stands for USB serial port number detected by PC), choose “115200” (default) as communication rate, click “confirm”, as per in picture 4-6.



Picture4-6 USB connection

4.4.2 Data display



Picture 4-7 data display area parameters definition

Type：Tag type 6C、6B

EPC: Tag’s EPC data, can write /read.

TID: Tag's TID data, unique number, read only.

UserData：user data area, read/write.

ReserveData：reserved data area, to store tag password etc.

TotalCount：Total tag reading cycles.

ANT1： No. 1 antenna reading cycles

ANT2： No. 2 antenna reading cycles

RSSI：signal strength

4.4.2.1 Read EPC

Click  button, data display area will show read EPC data.

EPC display as hexadecimal string, length unit is word (1 word =2 bytes = 4 hexadecimal characters). If you want to read user-defined length EPC data, please refer to 4.4.2.3 user-defined read.

4.4.2.2 Read TID

Click  button, data display area will show the existing EPC data and TID data.

TID displays as hexadecimal string, length unit is word (1 word =2 bytes = 4 hexadecimal characters). TID default length is 6 words.

If you want to read user-defined length TID data, please refer to 4.4.2.3 user-defined read.

4.4.2.3 User-defined read

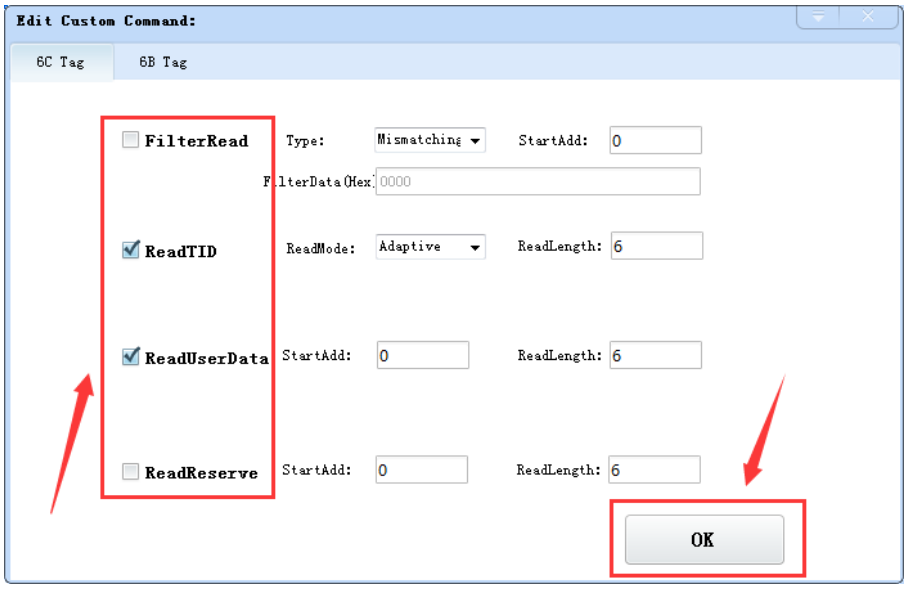
Click  button, prompt box as in picture 4-8.

Choose “6C tag configuration” for matching reading, you can read matching tags through existing EPC or TID data.

Read TID: choose tag TID data, read mode default as “self-adaptive”, reading length unit is word.

Read user area: choose tag user area data, the start address & reading length takes “word” as unit.

Read reserved area: choose tag reserved area data, the start address & reading length takes “word” as unit.



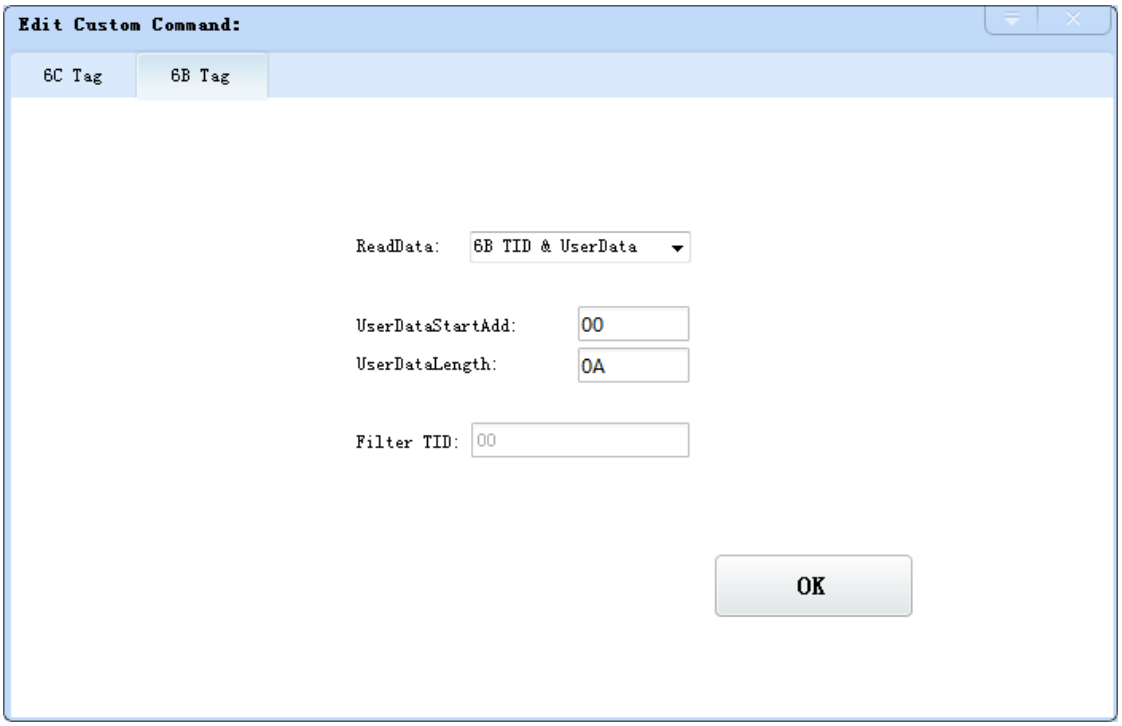
Picture 4-8 6C tag user-defined configuration

Choose “6B tag configuration”, prompt box as in picture 4-9.

Can choose TID data or user data for reading.

Can operate TID match reading.

Indications: you can ignore this function when you are not familiar with the tag protocol.



Picture 4-9 6B tag user-defined configuration

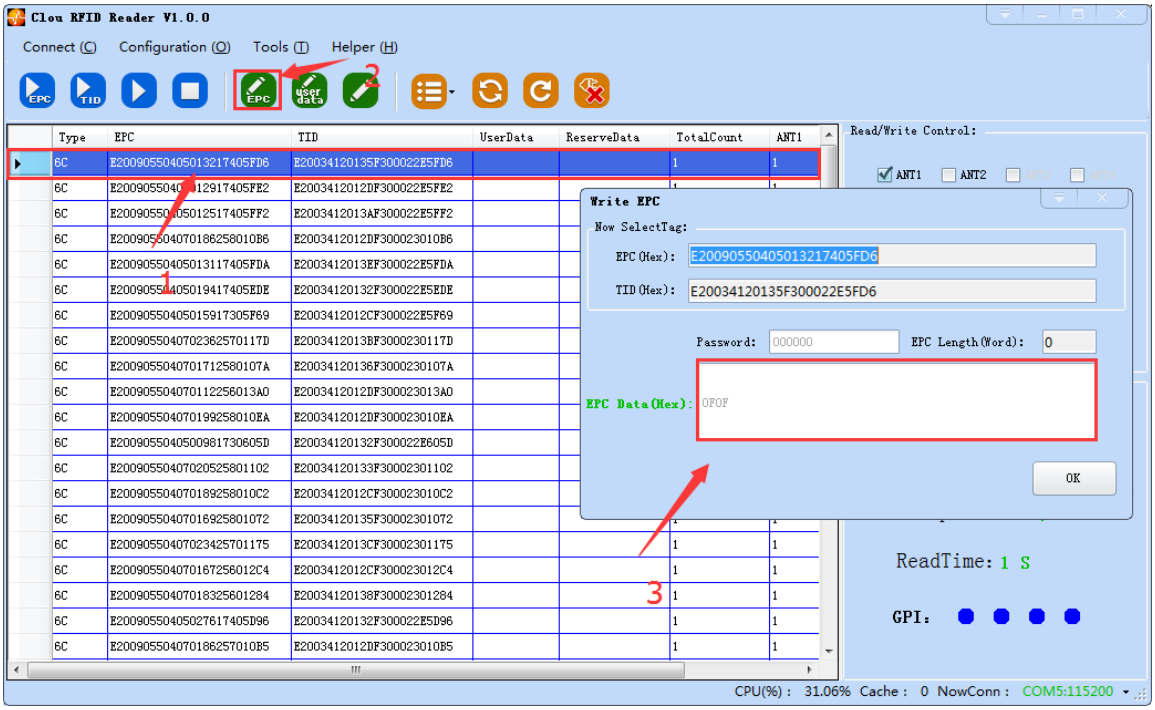
4.4.2.4 stop reading

Click  button to stop all the read/write operations.

4.4.3 Write data

4.4.3.1 write EPC data

Click  button, prompt box as in picture 4-10.

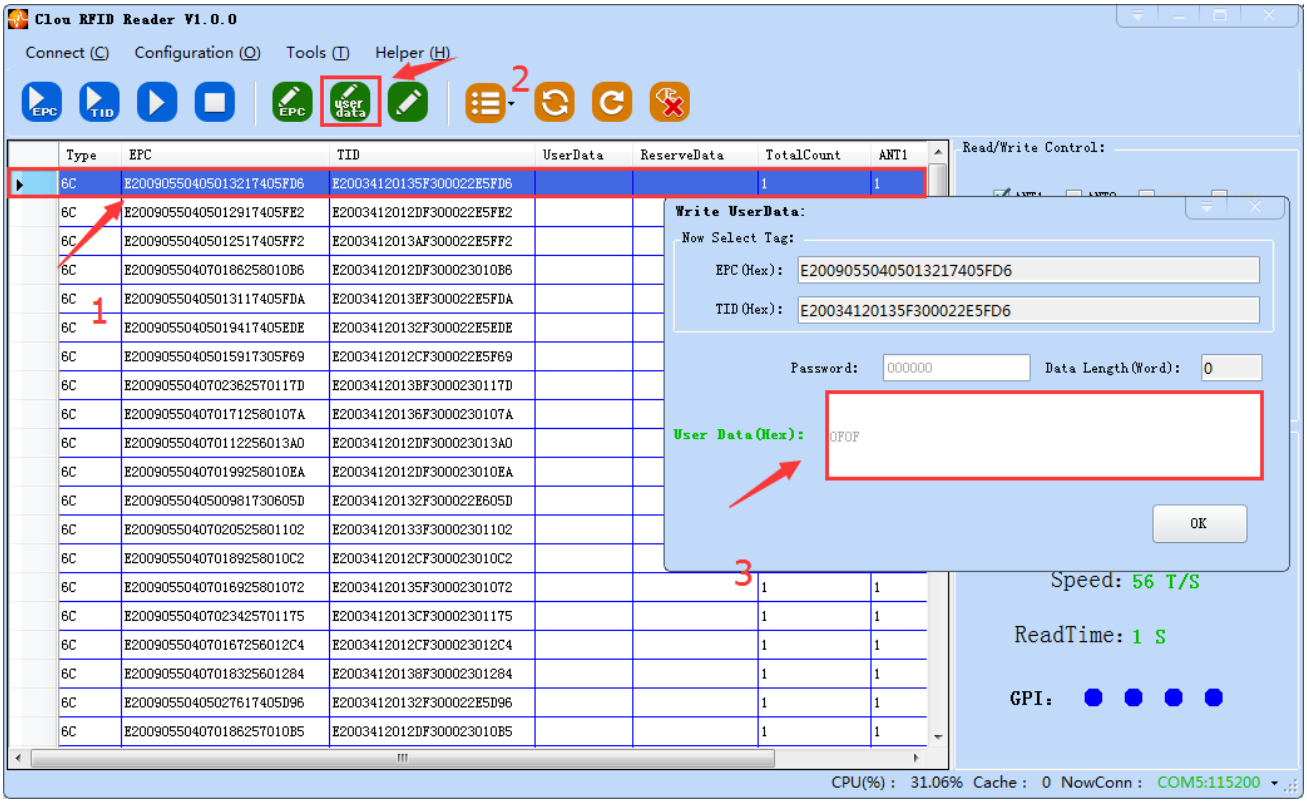


Picture 4-10 write EPC data

Choose one tag data (which includes TID information), input EPC data (Hexadecimal string), click “confirm”.

4.4.3.2 write user data

Click  button, pop up dialog box as in picture 4-11.

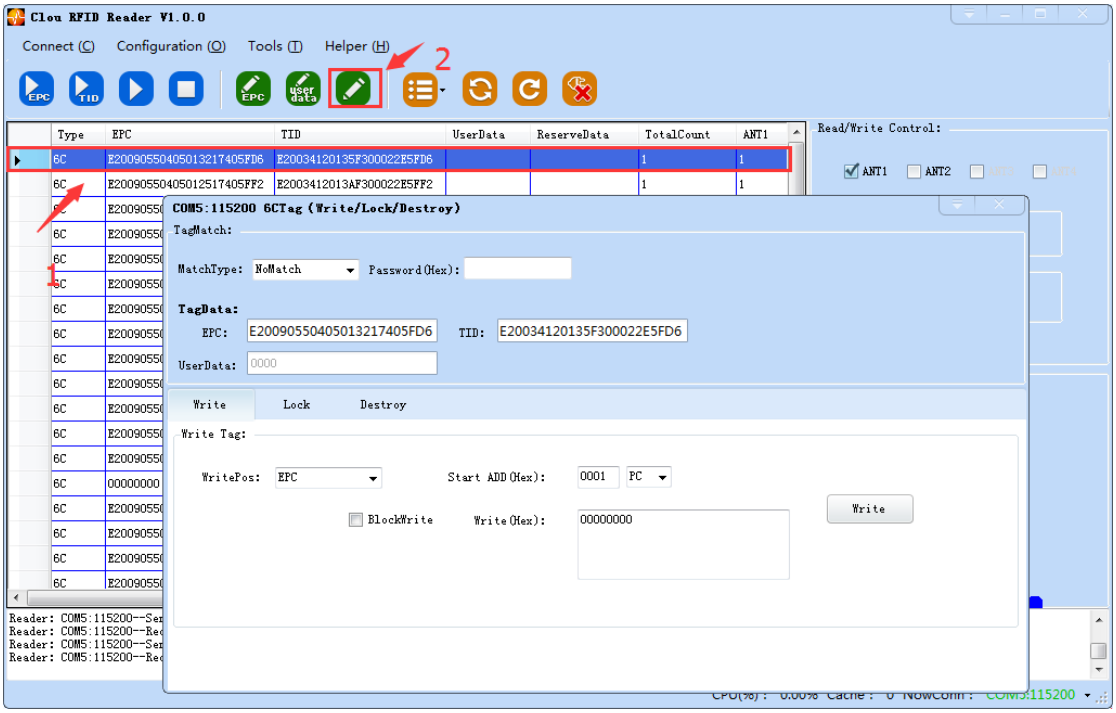


Picture 4-11 write user data

Choose one tag data (which includes TID information), input user data (Hexadecimal string), click “confirm”.

4.4.3.3 user-defined definition tag operation

Click  butto, pop up dialog box as per picture 4-12：

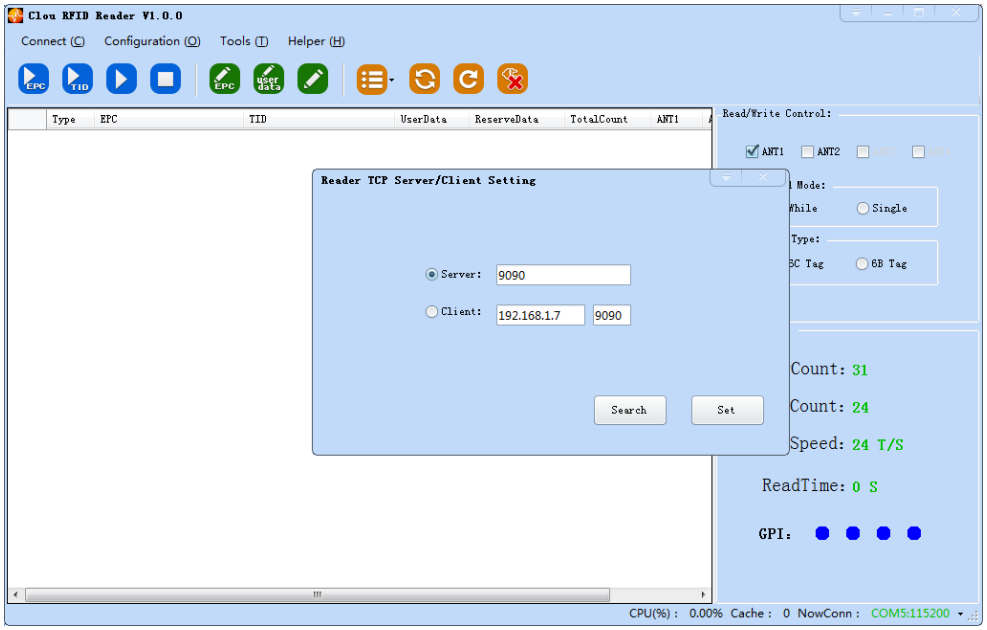


Picture 4-12 user-defined tag operation

1. choose one tag data;
2. click “user-defined” button;
3. Operate write/read/lock operations based on reader protocol.

4.4.4 TCP server /client mode

Open demo main UI, choose “configurations” ➔”reader configuration”➔ TCP server, pop up dialog box as per picture 4-13：

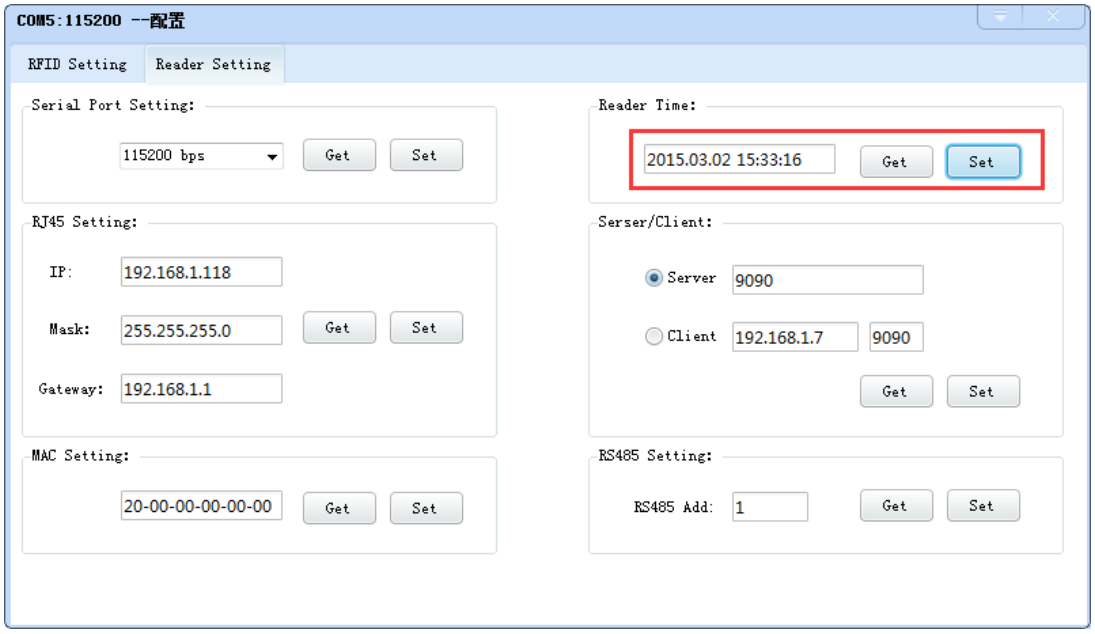


Picture 4-13 mode setting

When reader is configured as “server” mode, connection is launched by PC; when reader is configured as “client” mode, reader will connect with PC automatically.

4.4.5 Clock setting

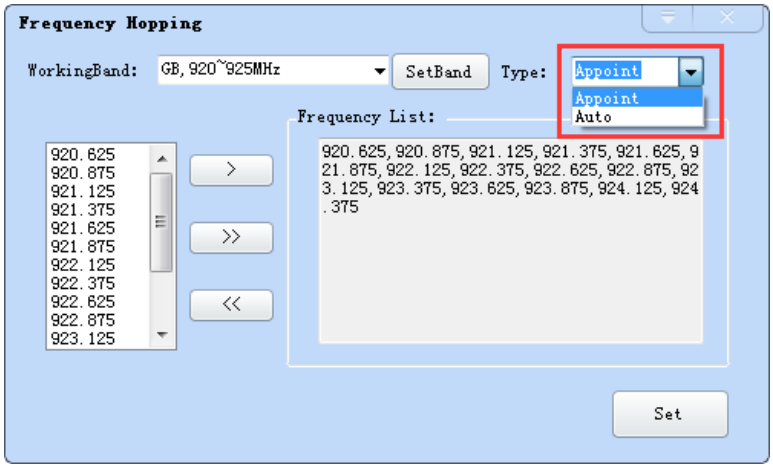
In Demo main UI, choose “ configuration”→ “Senior”→”reader setting”, pop up dialog box as per picture 4-14. In “reader time” area you can check reader current time. If you want to modify reader time, you can make modifications at first and then click “configure” for confirmation.



Picture4-14 clock display configuration

4.4.6 Hopping frequency management

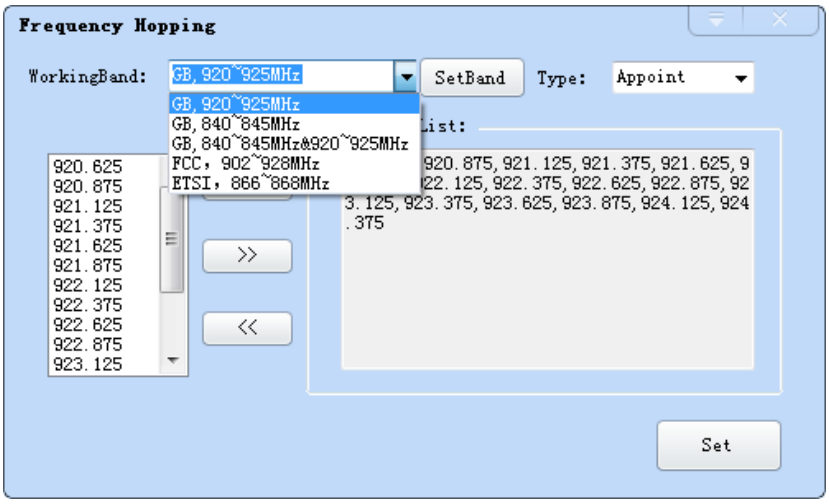
At main UI, click “configuration”➔ RFID configuration➔ Hopping frequency management, a dialog pop up as per picture 4-15.



Picture 4-15 Hopping frequency management

In pull-down list of “working frequency”, choose “GB,920-925MHz”, click “setting frequency”, choose frequency point (as per picture 4-15), click > button to import into the box on the right, click “configure”

for confirmation; If you want to choose full frenqency hopping, just click [>>]. All the frequency points will be displayed in the box, click “configure” for confirmation. If click [<<], all frenqency point in the box will be deleted.

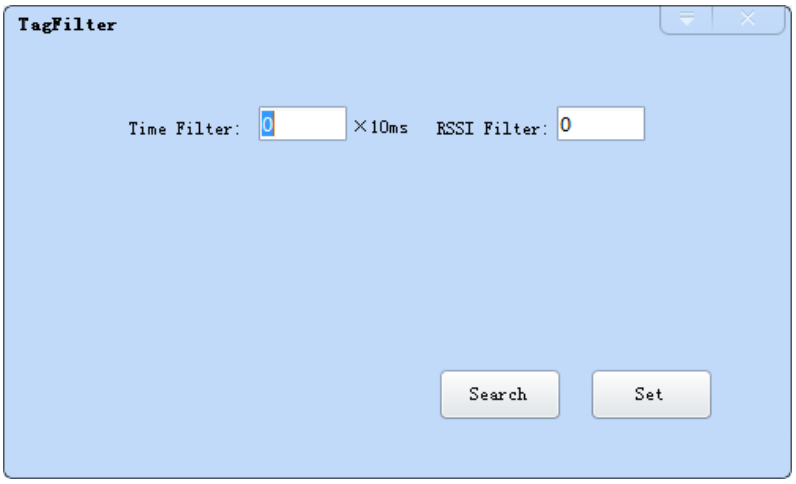


Picture4-16 FH selection

Notice: In hopping frequency management, the option “automatic” is for avoiding external signal interference, thus choosing high speed frequency hopping. Default setting is “automatic” as per indicated in picture 4-15.

4.4.7 tag filtering

Open the demo, click “configuration”→ “RFID configuration”→ “tag filtering”, dialog box pop up as per in picture 4-17.



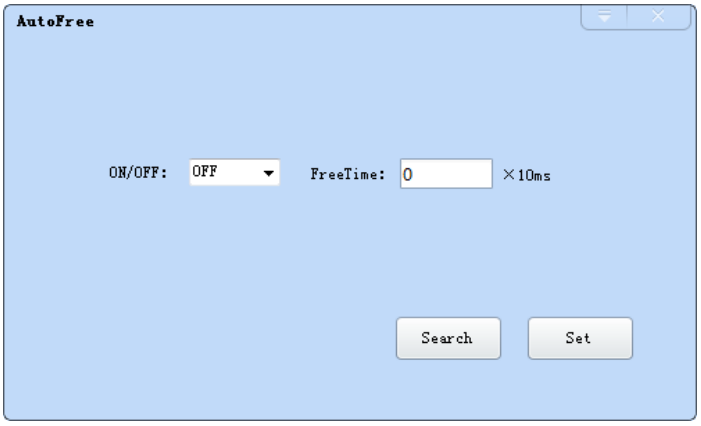
Picture4-17 tag filtering

Filtering time: means in an operation period, in designated filtering time, same tag data will be uploaded one time. 0~65535，time unit: 10ms.

RSSI threshold value: when tag RSSI lower than threshold value, tag data won't be uploaded. Will be abandoned.

4.4.8 Automatic idle configuration

In main UI, click "configuration"→"RFID configuration"→ automatic idle→, dialog box pop up as per picture 4-18.



Picture 4-18 Automatic idle configuration

Automatic idle mode means during reading tags continuously, all antennas didn't identify tags for three polls, reader will enter idle mode for a time for saving power. After idle time is finished, reader enter card reading status automatically.

4.4.9 GPI/O configuration

GPI/O control provide enquiry and setting I/O port status, controlling I/O device functions.

GPI configuration

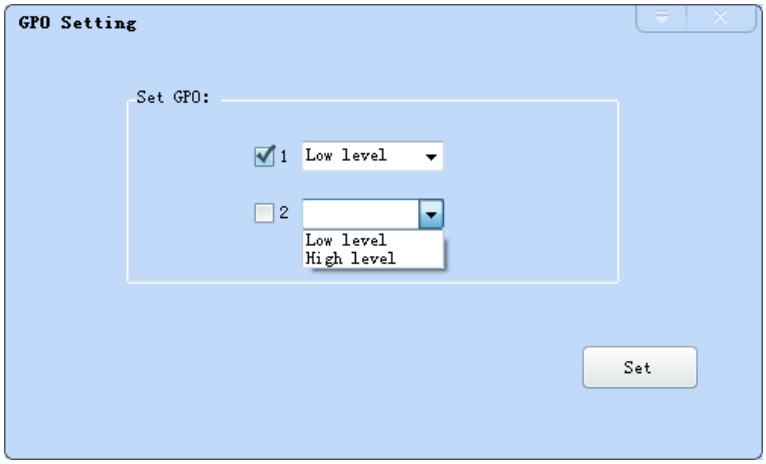
In Main UI, choose "configuration"➔GPI/O configuration→ GPI configuration", pop up dialog box as per picture 4-19. Choose triggering conditions and click "configuration" for confirmation.

Picture 4-19 GPI configuration

- Inquiry: inquiry each port triggering parameters.
- Configuration: choose the port to be set and then click "configuration" for confirmation.
- Triggering start condition: choose the mode from pull-down list.
- Triggering execution command: choose the mode from pull-down list.
- Triggering stop condition: choose the mode from pull-down list.
- Remarks: when triggering conditions are satisfied, reader will execute configured command.

GPO configuration

In main UI, choose " configuration"→ "GPI/O configuration"→ "GPO configuration", pop up dialog box as per picture 4-20.



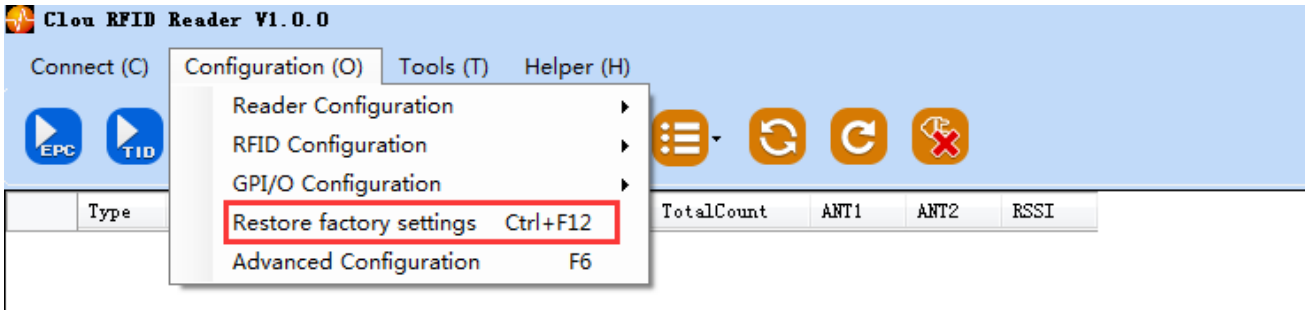
Picture 4-20 GPO configuration

CL7206C reader only support two way GPO output, that's, "1" & "2"。

After high/low power level modification(setting) is finished, click "configuration" for setting operation.

Restore ex-factory default setting

In main UI, choose "configuration"→ "restore ex-factory setting", pop up dialog box as per picture 4-22.



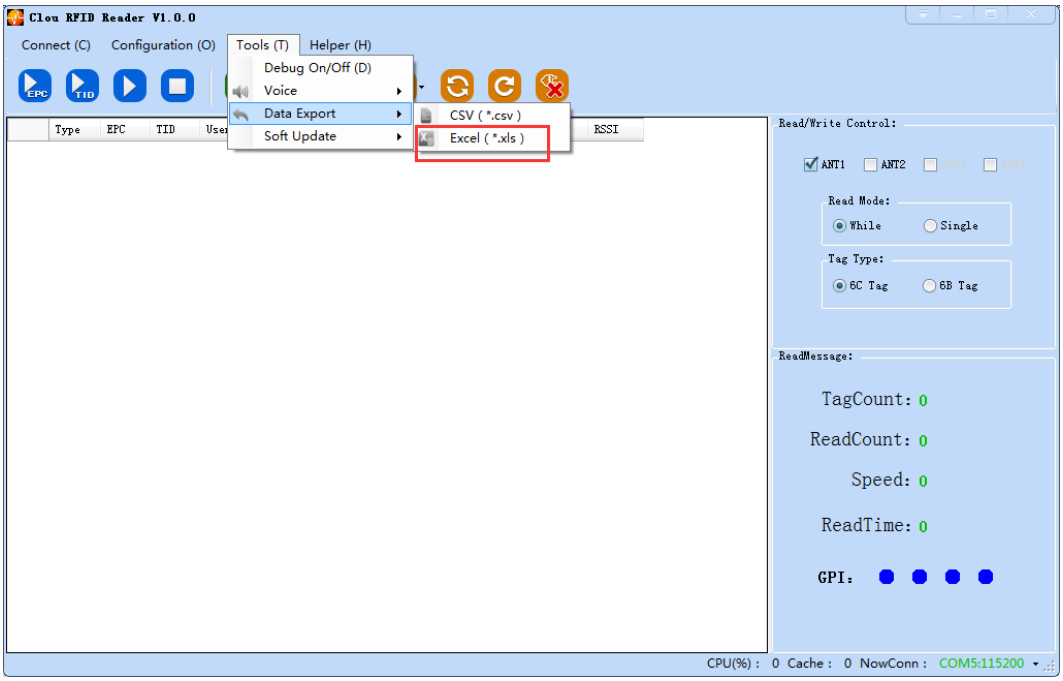
Picture 4-22 restore ex-factory setting

Whatever way the reader is connected, when you click "restore ex-factory setting" button, all settings will be restored to ex-factory setting.

4.4.10 Tool

Data export

In main UI, choose “tool”→ “data export”, the following dialog box pops up (picture 4-23), choose the format to be exported.

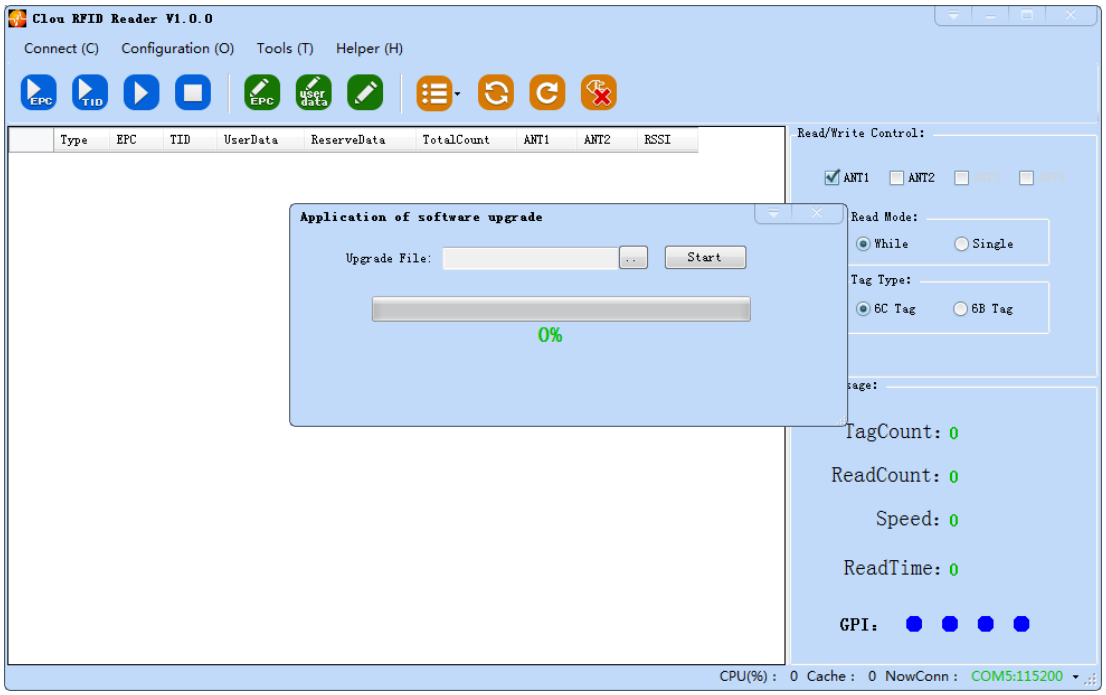


Picture 4-23 Data export

All data tag can be exported at format .csv or xls.

Software upgrade

The reader supports online upgrade. Software upgrade support Baseband Software Upgrade & application software upgrade(system application software). Choose “Tool” → “software upgrade”→ “application softweare”. Following dialog pops up (picture 4-24).



Picture 4-24 Application software upgrade

In the pull-down list of “upgrade file”, find the route of .bin upgrade file, click “start upgrade”, when the progress bar displays 100% finished, the upgrade is finished and successful. Following dialog pops up, click “confirm” for restart and enable it .

Baseband software upgrade process is same as above.

V, Common failure phenomenon

5.1 Daily maintenance

☆Check & ensure if the RF connector is fixed firmly

☆Check & ensure the screw that fixes reader & antenna is not loose.

☆Check & ensure the RF cable connection point skin is not peeling off.

☆Check & ensure if the power supply cable is connected well.

5.2 Common failure analysis & resolutions

☆Power supply abnormal

Check if the power supply is in normal status, if the AC power voltage is 100V~240V.

☆ LED not light on when power supply is connected

Check if communication is in normal status.

☆Serial port failed connection

Serial port cable is not connected or connection unstable.

Check if the serial port connection baud rate is correct.

Check if the serial port number is correct.

☆Network connection failure

The reader default IP address is: 192.168.1.116. Ensure PC IP address and reader IP address are in the same network, for example “192.168.1.XXX” can be connected with reader. If you forgot reader IP address, you can re-set it through RS232 to reader IP address.

☆ **Can not read card**

◇Check if RS232 or network cable is connected correctly. Unsecured connection may cause PC command can not be passed to reader.

◇Check & ensure if the RF connector is fixed firmly or in normal status.

◇Check & ensure the card is not damaged.

☆ **Wrong tag reading/writing**

◇check if the reader type is configured correctly.

◇check if the tag type and reader is compatible.

◇check if the tag is in effective reading range.
◇check if there is EMI between readers or between reader & other device.
◇Check if tag is damaged.

☆**Reader can not read tag.**

◇Check if antenna number is set correctly. If antenna is connected with 1# RF port, then please ensure to select 1# antenna in software interface.
◇Check if tag is damaged. If can not get ID number, you can use another reader to read this tag to judge if this tag is damaged. If can not get data area, you need to check if the tag data area is lock. Tags which are locked should be un-locked before any operations.
◇Check if tag is placed in effective reading range.
◇check if there is EMI between readers or between reader & other device.

For the problems which can not be solved locally, please contact CLOU aftersales for repairing.

5.3. Maintenance when not used for long time.

If you don't use the reader for long time, please dis-connect the power supply, remove all cables, pack the reader and accessories suitably, & store in well-ventilated conditions.

Chapter VI, Packaging, accessories, transportation & storage.

6.1 Packaging:

Packaging carton box size: 360 mm×360 mm×350mm

6.2 Accessories

Chart 6-1 Accessories list

No.	Name	Material code	unit	Qty	Remarks
1	Customized aviation cable (one for three)	20351000000552	1	unit	标配
2	Customized aviation external IO cable.	20351000000551	1	piece	标配
3	Power adapter 24V/2.5A	20109000000324	1	piece	标配
4	AC power cable	20350000000195	1	piece	标配
5	Network cable	20350000000188	1	piece	标配
6	RS232 connection cable 1800mm	20351000000478	1	piece	标配
7	hexagon socket cahead screwsGB70-85 M5*12	20400000000519	4	piece	标配
8	L shape installation bracket	20411000013135	1	piece	标配
9	hardware kits U shape bracket	20411000013136	2	piece	标配
10	9dBi antenna	20351000000035	1	unit	Optional
11	Antenna feeder line SMA-K--TNC-J 50ohm 3meters	20351000000038	1	piece	optional

6.3 Transport requirement.

☆ During transport, please ensure the device is not sustain fierce collision, rain or corrosive chemicals.

6.4 Storage requirements

Long time storage should be made in following conditions: Temperature：-40℃～+85℃；Humidity：5%～90%RH；

DECLARATION OF CONFORMITY

Hereby，Shenzhen Clou IOT Technologies Co.,Ltd. declares that this Integrated Fixed Reader product in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. A copy of the Declaration of Conformity can be found an Website: http://www.clouiotech.com/

Testing standards:

EN 60950-1:2006 + A11:2009 + A1:2010+A12:2011+A2:2013
EN 62311:2008
EN 301 489-1 V1.9.2(2011-09)
ETSI EN 301 489-3 V1.6.1(2013-08)
EN 302 208-1 V2.1.1: 2015-02 EN 302 208-2 V2.1.1: 2015-02

Manufacturer's Name: Shenzhen Clou IOT Technologies Co.,Ltd.

Integrated Fixed Reader

Trade Mark: N/A

Model number: CL7206B

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 20cm must be maintained between the user’s

body and the handset, including the antenna. Third-party belt-clips, holsters, and similar

accessories used by this device should not contain any metallic components.

Body-worn

accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.

This device in compliance with the essential requirements and other relevant provisions of

Directive 1999/5/EC. All essential radio test suites have been carried out.

1. CAUTION : RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

2. The device complies with RF specifications when the device used at 20mm form your body

Care for the environment!

Must not be discarded with household waste!

This product contains electrical or electronic components that should be recycled.

Leave the product for recycling at the designated station, e.g.

the local authority's recycling station.

CE 0700

FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

NOTE: 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.

To maintain compliance with FCC’s RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

FCC ID: 2AKAGCLOUIOTCL7206B