Manuals+

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CHAINWAY

CHAINWAY UR4P Fixed UHF Reader

Specifications

- Brand: Shenzhen Chainway Information Technology Co., Ltd
- Product: Fixed UHF Reader UR4
- Power Supply: DC 12V/5A
- Antenna Output Power Options: 6dBi, 9dBi, 12dBi
- Interfaces: SMA female port, RS232, RJ45
- Windows SDK and demo software provided

Statement

Chapter 1 Product Intro

Intro

Chainway UR4 is a high-performance four-channel fixed UHF reader. The core chip

adopts Impinj R2000 module with high integration and excellent performance. With Stable and reliable capacity, excellent anti-electromagnetic interference capability and heat dissipation performance, it meets the requirements for installation and application of various indoor and outdoor environments and can be applied in multiple industries with strict RFID application standard such as warehouse management, archives and library management, bank, clothing and footwear retail, jewelry monitoring, watch industry, laundry, production line management, medical instrument cabinet and vending machines.

Brief

UR4 has adopted DC 12V/5A power supply, it can be equipped with multiple types of antennas with different output power such as 6dBi, 9dBi and 12dBi. Also UR4 has adopted SMA female port, RS232 and RJ45 interfaces, Windows SDK and demo are provided.

Device List

1. UR4 fixed reader, 12V/5A power adaptor.
2. UHF antennas: 6dBi, 9dBi, 12dBi etc.
3. Feeder line that has adopted with SMA male port, the port on other side needs to be equipped with antenna.
4. RJ45 Ethernet cable.
5. Serial port cable.
6. Demo software, it includes 4 necessary files and UHFAPP.exe is execute program as pic. 1.

| Name	Compressed	Original	Type	Modified
..				
ipConfig.txt	28	28	Text Document	8/2/2018 11:24:19 AM
UHFAPI.dll	55,281	208,896	Application extension	11/8/2018 3:15:05 PM
UHFAPP.exe	56,234	201,216	Application	11/14/2018 5:59:32 PM
WindowsFormsControlLibrary1.dll	3,713	9,216	Application extension	7/20/2018 10:11:22 AM

Pic.1

Device installation

UR4 can be connected as Pic.2. PC can connect with device by serial port cable (communication velocity is 115200bps). Also it can be connected by Ethernet cable through RJ45 port.

(Default IP address of UR4 is 192.168.99.202, Port is 8888).

PC needs to be set with UR4 in same network segment and PC could connect with multiple UR4 devices through switchboard or similar. One UR4 can be connected with 4 antennas at maximum.
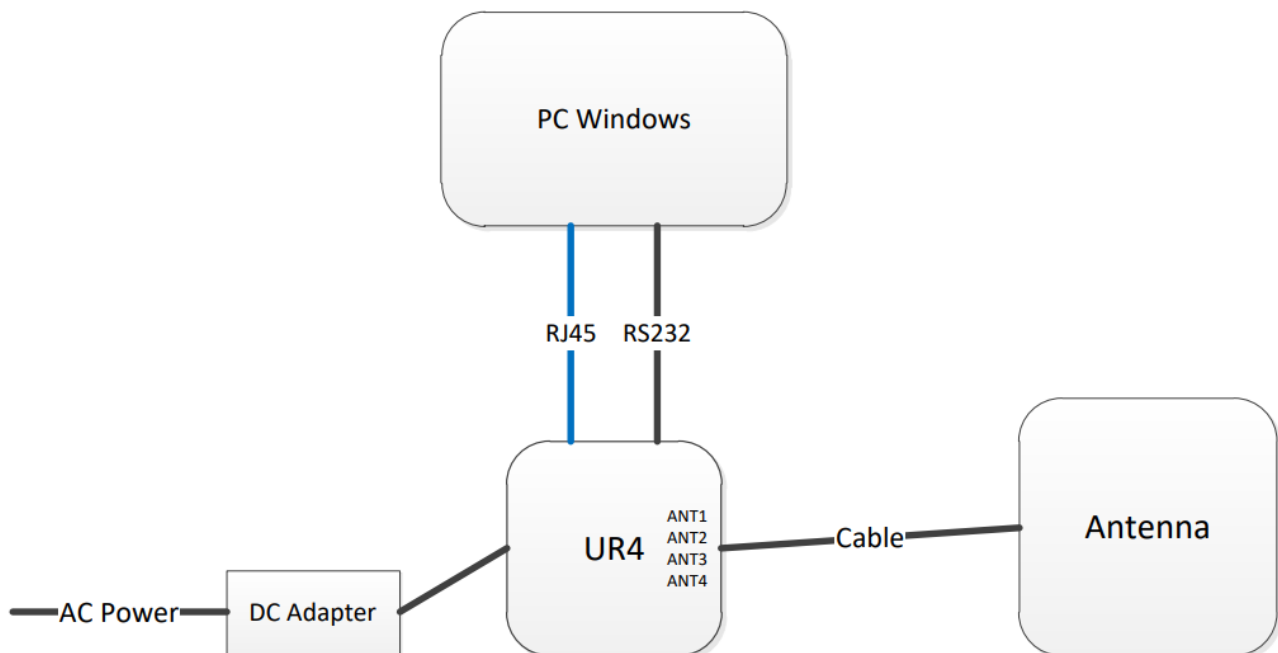
Pic.2

GPIO

1	2	3	4	5	6	7		8
NC	NC	output Relay pin 1	output Relay pin 2	input Optically coupled 1LED+	input Optically coupled 1LED-	input Optically coupled 2LED+	input Optically coupled 2LED-	

UR4 contains a GPIO interface, which is defined as follows

1. IO1-2 NC unable to connect to any electrical level
2. IO3-4 Controllable by software, maximum switching voltage of electric relay is 220Vdc 250Vac

3. IO5 Optically coupled 1 input LED+, voltage range between IO5 and IO6 is 3-5.5V, maximum current is 50mA

4. IO6 Optically coupled 1 input LED-, voltage range between IO5 and IO6 is 3- 5.5V, maximum current is 50mA

5. IO7 Optically coupled 2 input LED+, voltage range between IO7 and IO8 is 3-5.5V, maximum current is 50mA

6. IO8 Optically coupled 2 input LED-, voltage range between IO7 and IO8 is 3- 5.5V, maximum current is 50mA

## Chapter 2 Installation instructions

Appearance

Parameter Setup

Double click UHFAPP.exe to enter software, and connect with device through serial port line. Select Mode to "SerialPort", select COM to according serial port on PC. Click "Open" to connect with device, initiation page is as follows:
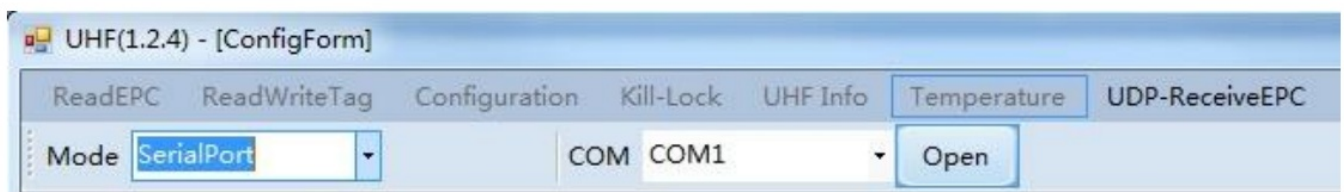
If RJ45 has been used as connection, communication Mode needs to be selected as "network" and input IP address and port number (default IP address is 192.168.99.202, Port is 8888.) Then click "Open" to connect PC and device. After PC and device have

been connected, the status page is as follows:
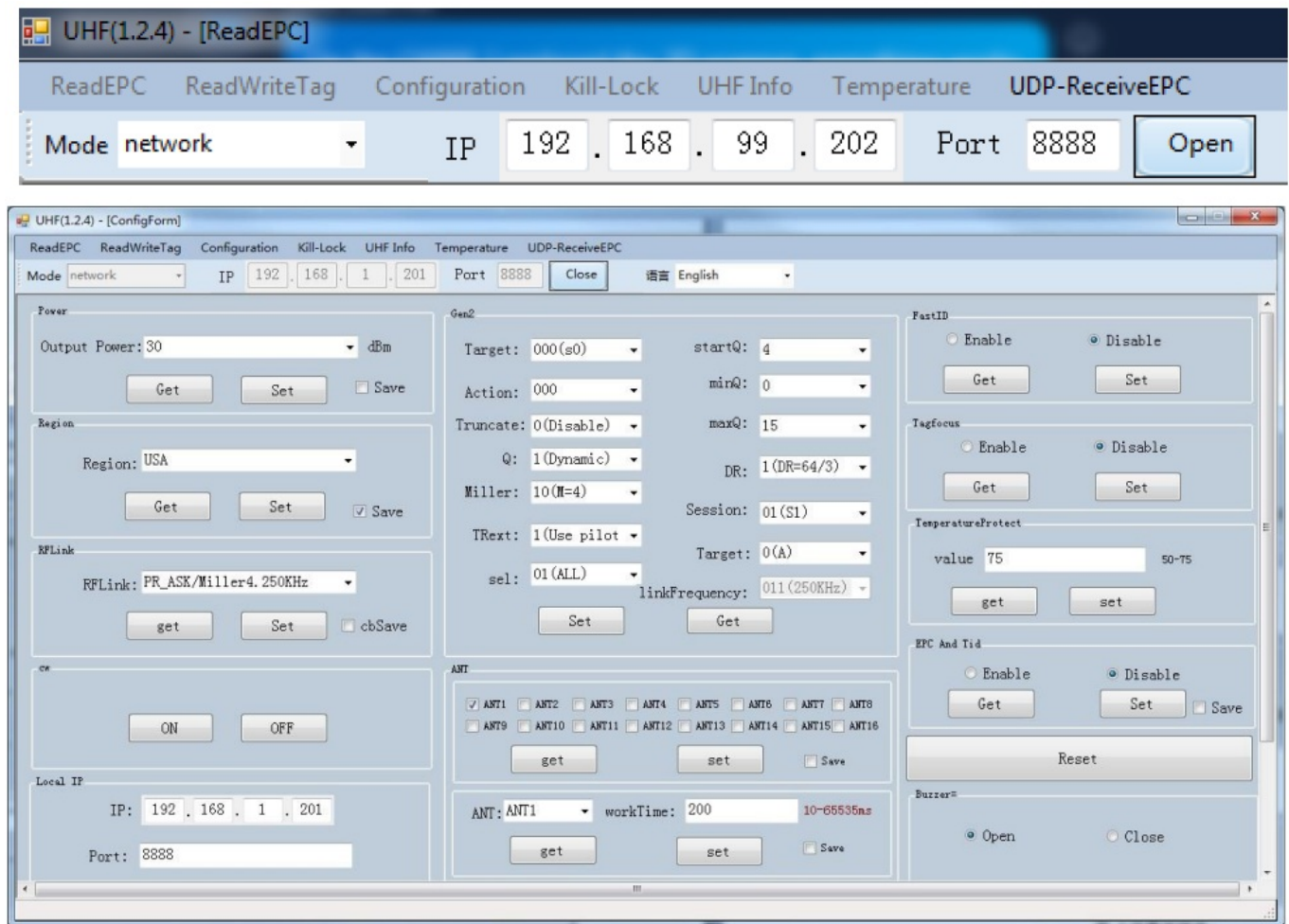
After device has connected with PC, the parameters on interface will be empty. Click "Get" on each option to collect device parameters.

Click "Set" on the page, user can adjust necessary parameters, some parameters are default values.

Output power can be set in range of 5 dBm to 30 dBm as following picture, after select value, click "Set" button. If "Save" has been selected, current parameters will be saved after power off device.

Set regions:

Set RFLink:
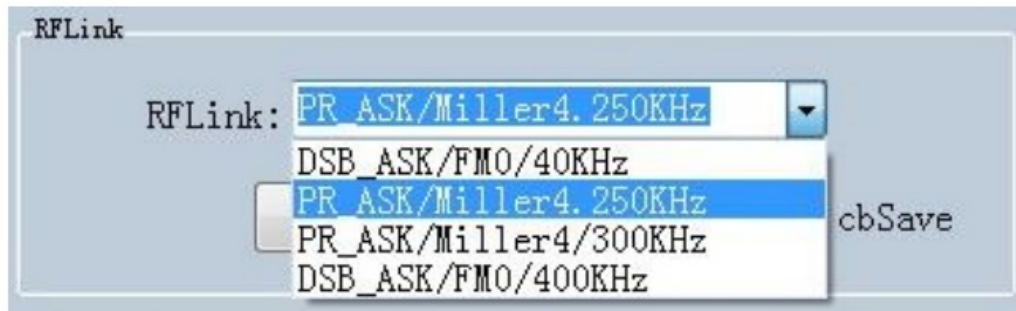
Set continuous wave:
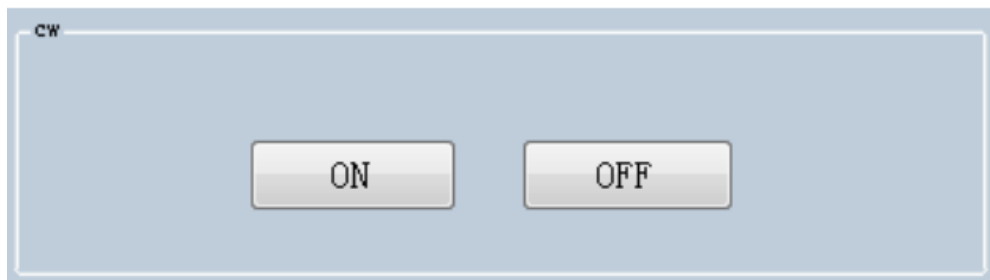
There are two work modes can be selected, "command mode" and "auto mode".

Under "command mode", user could collect tag data in "Read EPC" page, click "Start" to send command to device on PC, click "Stop" to stop collecting tag data.

Under "auto mode", user could collect tag data in "UDP-ReceiveEPC" page, click "Start" to receive data, click "Stop" to stop receiving data. After selecting "auto mode", the device needs to be restarted.
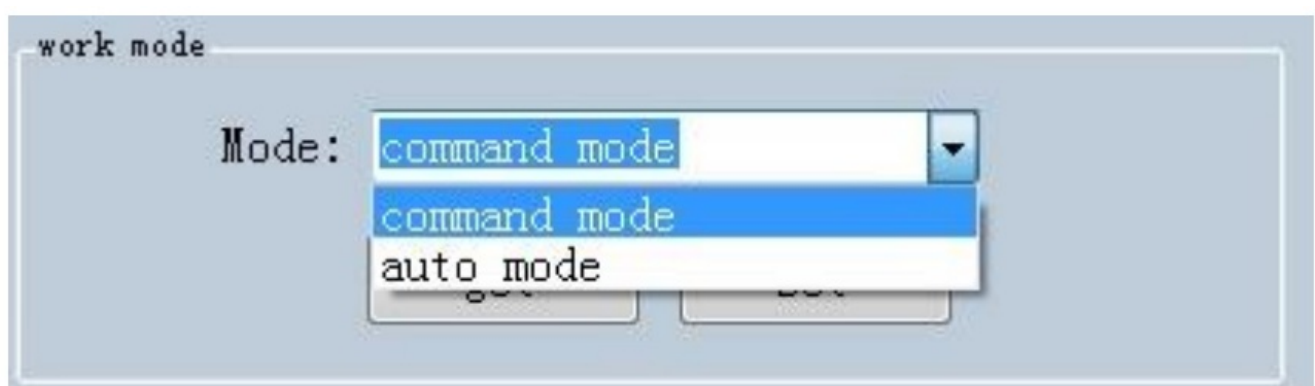
Set IP address and make sure PC and device have used in same segment. For example, if IP address of PC is 192.168.1.109, mask is 255.255.255.0, the device IP address can be set to 192.168.1.201, port number doesn't need to be changed.

Set antenna connection, there are 4 I/O ports on device and have been marked as ANT1, ANT2, ANT3, ANT4. User needs to select antenna which has been connected and click "set".

Set destination IP address and port number, destination IP address is the IP address which used for reading tag data under "auto mode".

```
Destination IP
        IP:  192 . 168 . 1 . 109

        Port: 9999

             get              set
```

Set FastID

```
FastID
          ○ Enable      ● Disable

             Get              Set
```

Set TagFocus:

```
Tagfocus
          ○ Enable      ● Disable

             Get              Set
```

Set protective temp. It means to setup highest operating temperature of UHF module:

```
TemperatureProtect

     value  75                    50-75

             get              set
```

Set EPC and TID:
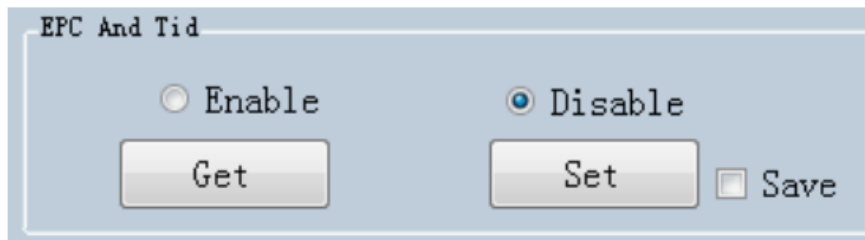
Reset, click "Reset" button to restore device to default value. After reset, user needs to click "Close" and "Open" to reconnect the device.

Set Buzzer, click "Open" to switch on buzzer function, device will play notification sound when reading tags.

Set Gen2, this parameter needs to be adjusted by actual requirements.

Chapter 3 Read and Write EPC

Read EPC

Click "ReadEPC" in menu to enter EPC page, click "Start" to read tags, click "Stop" to stop reading. The EPC, RSSI, Count number and ANT number (antenna channel) will be recorded in window as following pic:

User could enter data in "Filter" to filter EPC of special tags, the maximum filter DL is 96 bits. User needs to setup data, initial address, data length and click "Set". After filtered data has been set, the device will read and search for the tag which has been filtered. For example: enter 16 01 in "Data", initial address data length is 32(bit), length is 16(bit), select EPC in "bank", click "Set" and click

"Start" to start scanning tags which the address start at 16 01:
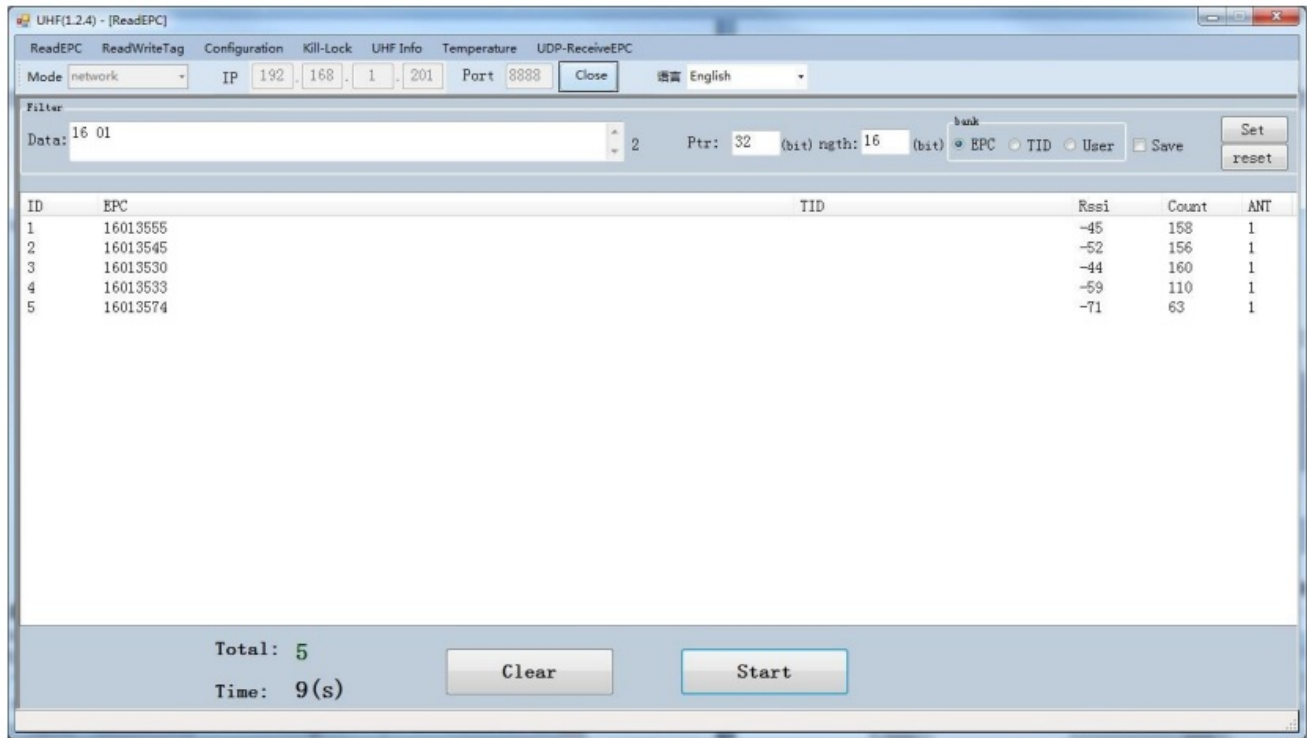
Read & Write Tags

Click "ReadWriteTag" to enter its page, TID area can be read only, RESERVED, EPC and USER areas can be read and written.

Click one option in "Read-write" window to enter tag reading mode, EPC will be automatically copied into "Data" block in filter, default option is EPC reading, click "Read" to read 12 bytes of EPC area.

For "RESERVED" area, user could read 4 words at maximum, previous 2 words are password of KILL function, last 2 words are access passwords:

Read TID area:

Read USER area:

Data could be written in EPC, RESERVED and USER areas, select according areas and input initial address, length, input data into "Data" window and click "Write" to write data into according areas.

Lock UHF Tag

Click "Kill-Lock" in main menu to enter Tag locking function. For this function, user could execute "Lock", "Kill", "Open", "Permanent Open" and "Permanent Lock", to execute

"Lock" function, password is needed. If user wants to kill UHF tag, need to enter password and tag will be wasted permanently.

UDP-ReceiveEPC

After auto mode has been selected, restart device and select UDP-ReceiveEPC, click "Open" to connect device and select IP address of PC in address column, click "Stop" to

stop receiving UHF tag data.

If user needs to escape auto work mode, "command mode" needs to be selected in work mode.
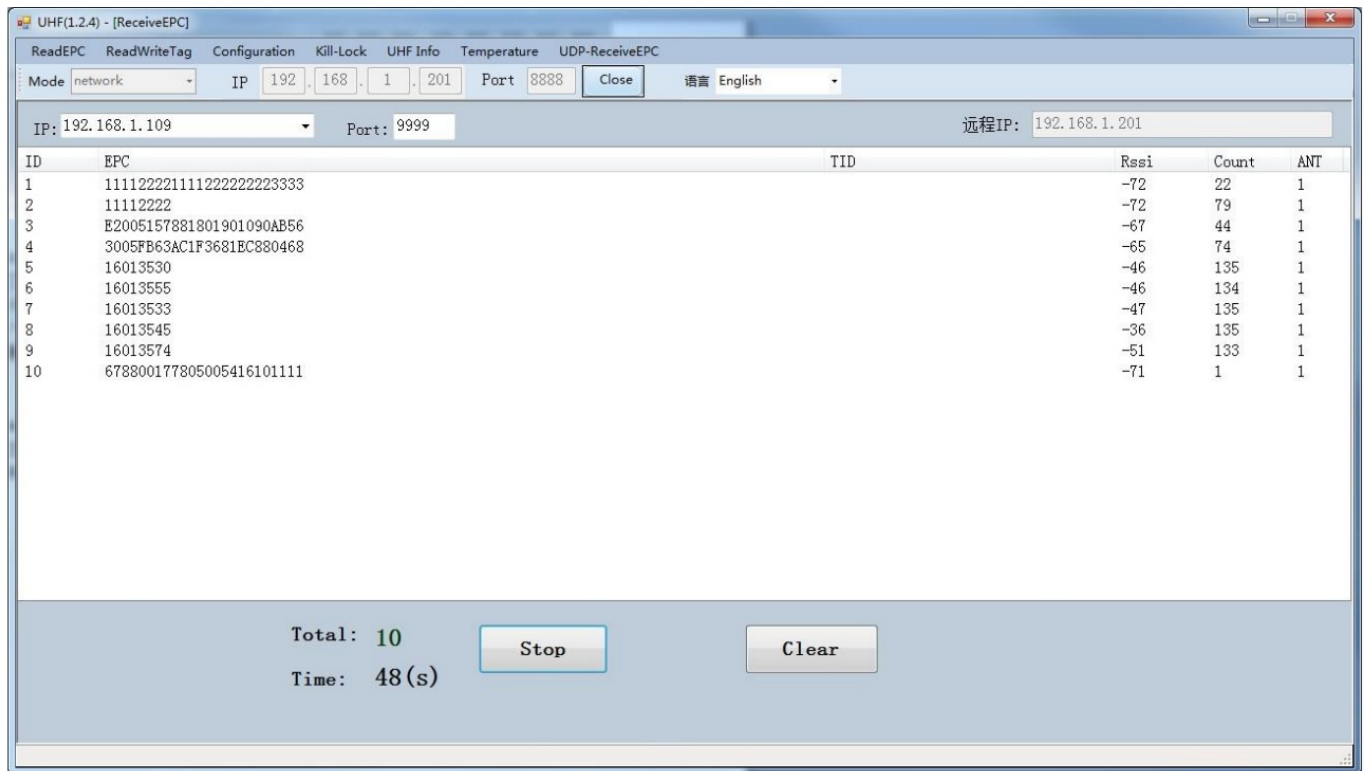
Others

Click "UHF information" in main menu to read hardware version and firmware version, click "Temperature" to read current temperature value of UHF module.

- **Frequency** Bands: 865.7~867.5 MHz
- **Modulation** Mode: FSK
- **Antenna:** External Antenna

CE Maintenance

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

The device complies with RF specifications when the device used at 20cm you're your body. Declaration of Conformity Shenzhen Chainway Information Technology Co., Ltd hereby declares that this Fixed UHF Reader is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. In accordance with Article 10(2) and Article 10(10),This product is allowed to be used in all EU member states.

FCC Caution

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.
   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.

FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Frequently Asked Questions

What is the default IP address of UR4?

The default IP address of UR4 is 192.168.99.202.

How many antennas can be connected to one UR4 device?

One UR4 device can be connected with a maximum of four antennas.

Documents / Resources

Fixed UHF Reader UR4 User Manual	[CHAINWAY UR4P Fixed UHF Reader](#) [[pdf](#)] User Manual UR4P, UR4P Fixed UHF Reader, Fixed UHF Reader, UHF Reader, Reader

References

- [User Manual](#)

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