Shenzhen Chainway Information Technology C61 UHF RFID Reader User Manual

SHENZHEN CHAINWAY INFORMATION TECHNOLOGY CO., LTD
C61 UHF
User Manual

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Statement

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Chapter 1 Product Intro

1.1 Intro

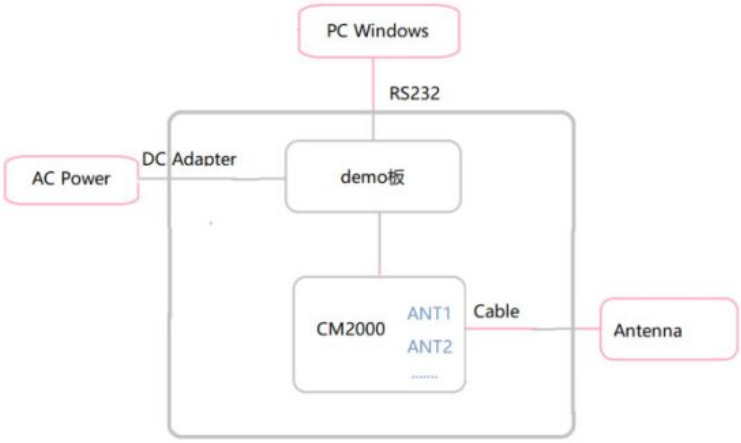
Chainway C61 UHF is a single-channel UHF RFID reader module with high performance. It can be integrated in mobile UHF RFID readers, fixed UHF RFID readers, UHF card readers, integrated RFID readers and etc. With high integration level, this reliable module is small in size, low in power consumption. It is also resistant to electromagnetic interference and good at heat dispersion. All make it to absolutely satisfy the needs of all environments. The module appeals to challenging industries like warehousing, logistics, apparel, production lines, and such.

1.2 Brief

C61 module can be adopted with multiple types of antennas with output powers as 5dBi, 9dBi, 12dBi. The port is SMA and the development board, Windows SDK, and demos are provided.

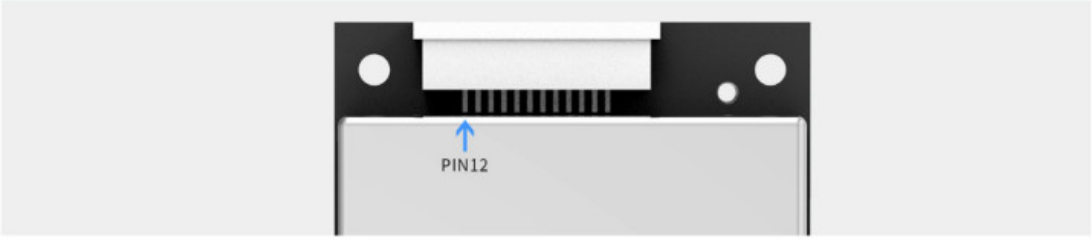
1.3 Device installation

C61 can be connected as Pic.2. PC can connect with the development board by cable. Single C61 module can connect with different amounts of antennas according to different models.



Pic.2

Chapter 2 Module Interface Definition 2.1 C61 UHF



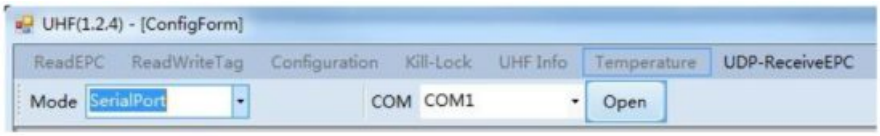
PIN#	Interface	Description
1	VIN	3.5-5.25VDC
2	VIN	
3	GND	Ground
4	GND	Ground
5	EN	High LLT level (>1.2V) boot the module Low LLT level (<0.4V) out the module
6	IO1	Reserved GPIO 3.3V TTL level
7	IO2	Reserved GPIO 3.3V TTL level
8	IO3	Reserved GPIO 3.3V TTL level
9	RXD	UART receive 3.3V TTL level
10	TXD	UART transmit 3.3V TTL level
11	USB_DP	USB_DATA(+)
12	USB_DM	USB_DATA(-)

2.2 C61 UHF

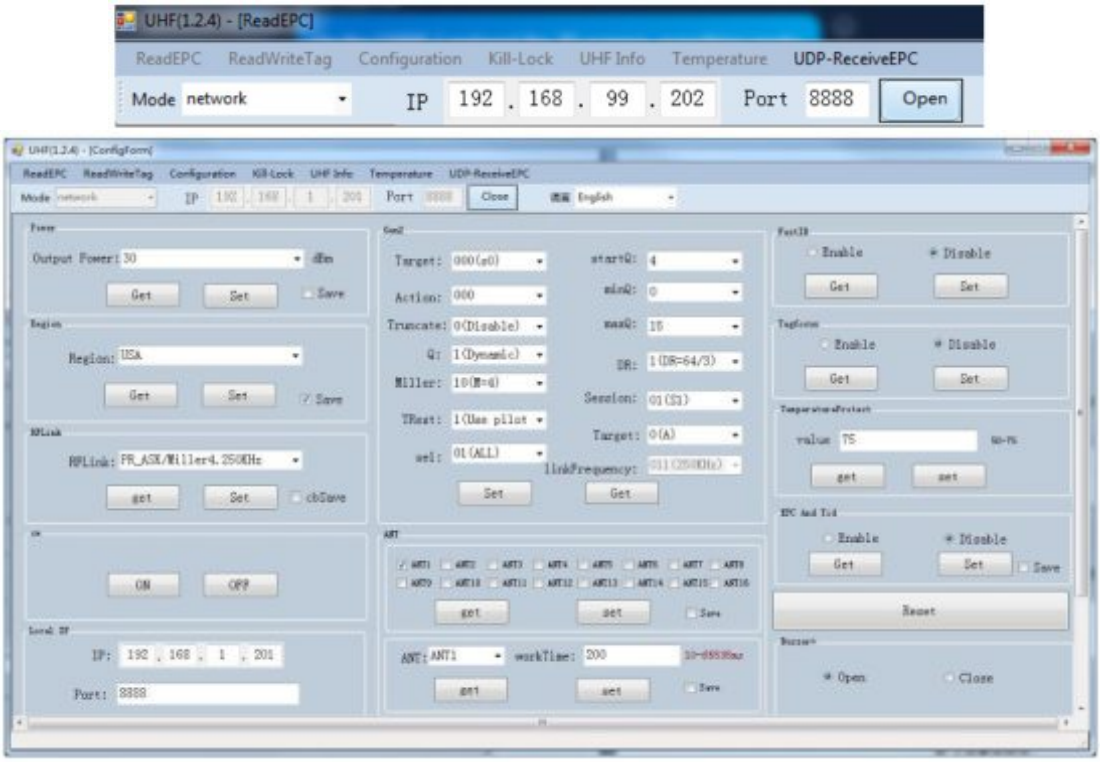
PIN	Interface	Description
1	GND	Positive
2	GND	
3	VIN	Negative Input voltage range : 3.5-5.25 VDC
4	VIN	
5	GPIO3	Reserved GPIO 3.3V TTL level
6	GPIO4	Reserved GPIO 3.3V TTL level
7	GPIOI	Reserved GPIO 3.3V TTL level
8	BUZZ	Driving 3.3V buzzer
9	UART_RXD	UART receive 3.3V TTL level
10	UART_TXD	UART send 3.3V TTL level
11	USB_DM	USB_DATA(-)
12	USB_DP	USB DATA(+)
13	GPIO2	Reserved GPIO 3.3V TTL level
14	EN	>1.25V power-on mode <1.18V standby mode
15	GPIO_5	Reserved GPIO 3.3V TTL level

2.3 Parameter Setup

Double click UHFAPP.exe to enter the software, and connect with the device through the serial port line. Select Mode to “SerialPort”, select COM to according serial port on PC. Click “Open” to connect with the device, initiation page is as follows:

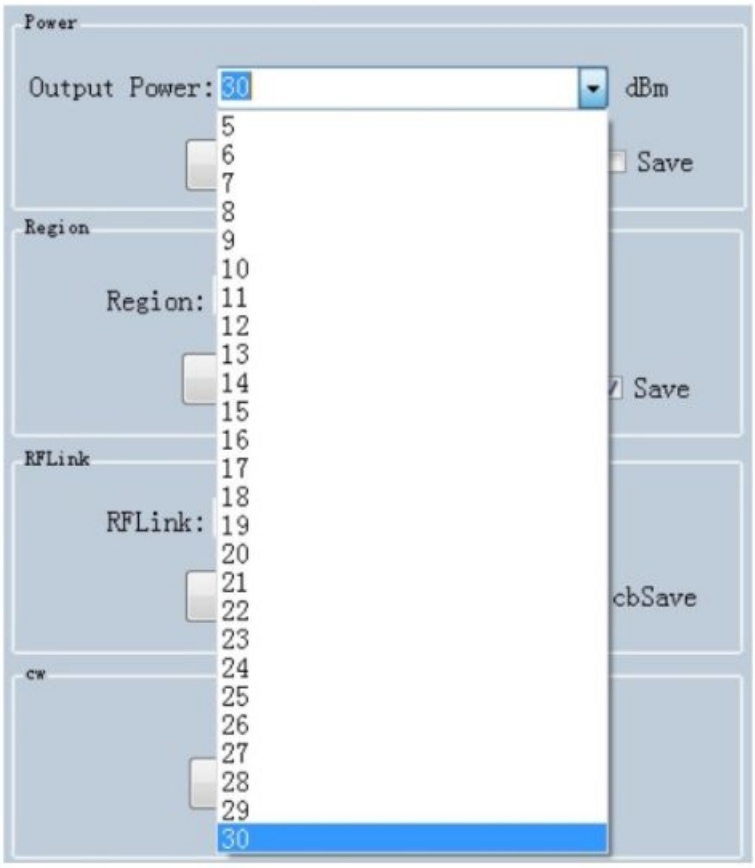


If RJ45 has been used as a connection, communication Mode needs to be selected as “network” and input IP address and port number (default IP address is 192.168.99.202, Port is 8888.) Then click “Open” to connect PC and device. After PC and device have been connected, the status page is as follows:



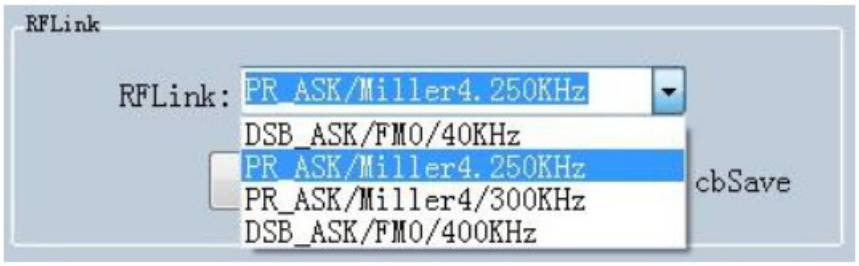
After the device has connected with the PC, the parameters on the interface will be empty. Click “Get” on each option to collect device parameters. Click “Set” on the page, user can adjust necessary parameters, some parameters are default values.

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



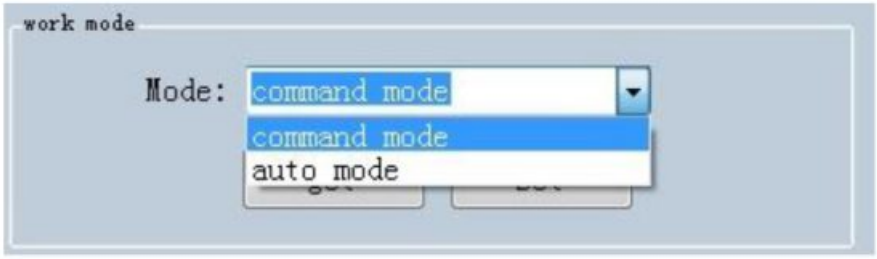
Set regions:

Set RFLink:

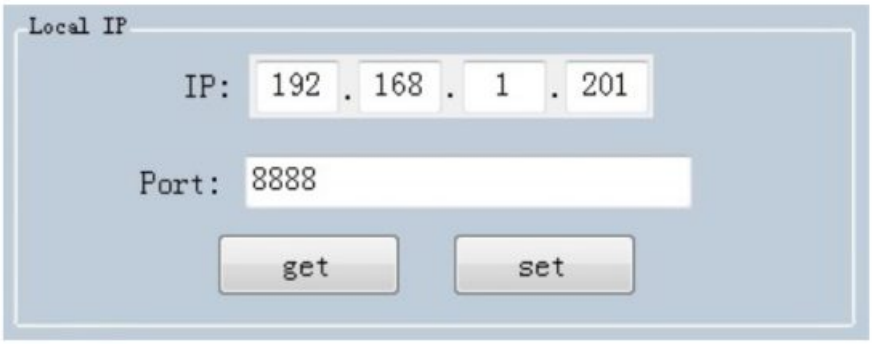


Set continuous wave:

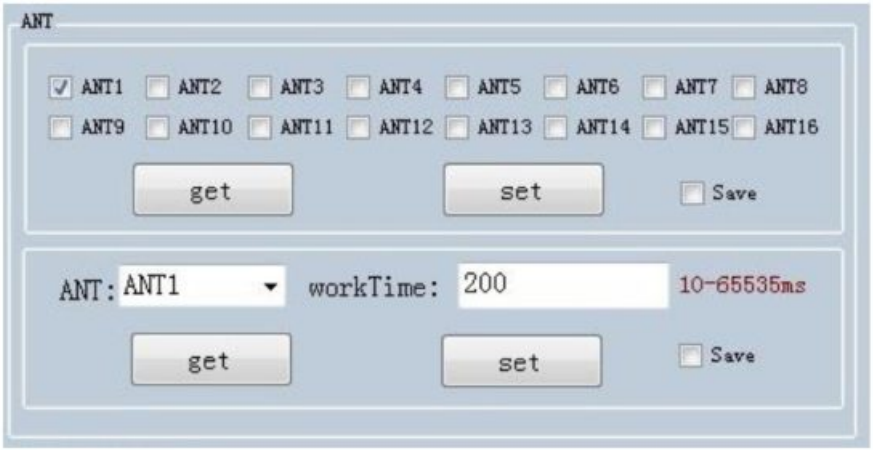
There are two work modes that can be selected, “command mode” and “auto mode”.
Under “command mode”, the user could collect tag data in the “Read EPC” page, click “Start” to send the command to the device on PC, click “Stop” to stop collecting tag data.
Under “auto mode”, the user could collect tag data in the “UDP-ReceiveEPC” page, click “Start” to receive data, click “Stop” to stop receiving data. After selecting “auto mode”, the device needs to be restarted.



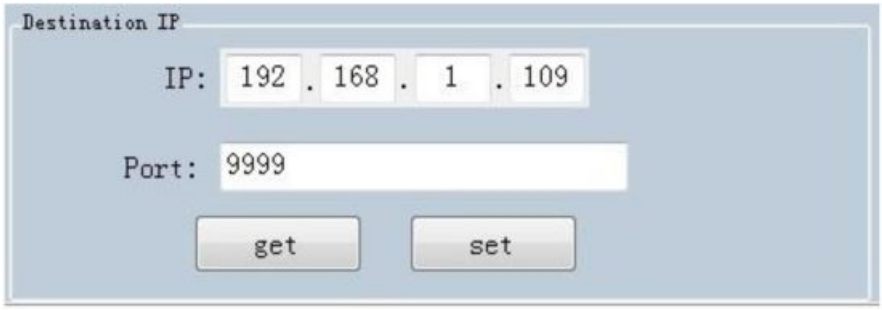
Set IP address and make sure PC and device have used in same segment. For example, if IP address of PC is 192.168.1.109, the mask is 255.255.255.0, the device’s IP address can be set to 192.168.1.201, port number doesn’t need to be changed.



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



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



Set FastID:

Set TagFocus

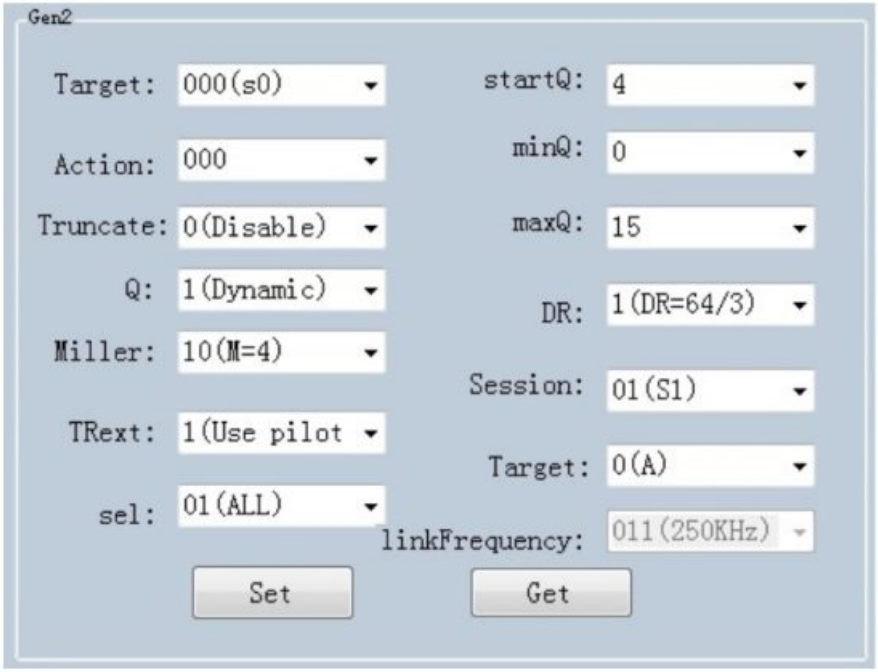
Set protective temp. It means to setup the highest operating temperature of UHF module:

Set EPC and TID:

Reset, click the “Reset” button to restore the device to the default value. After reset, the user needs to click “Close” and “Open” to reconnect the device.

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

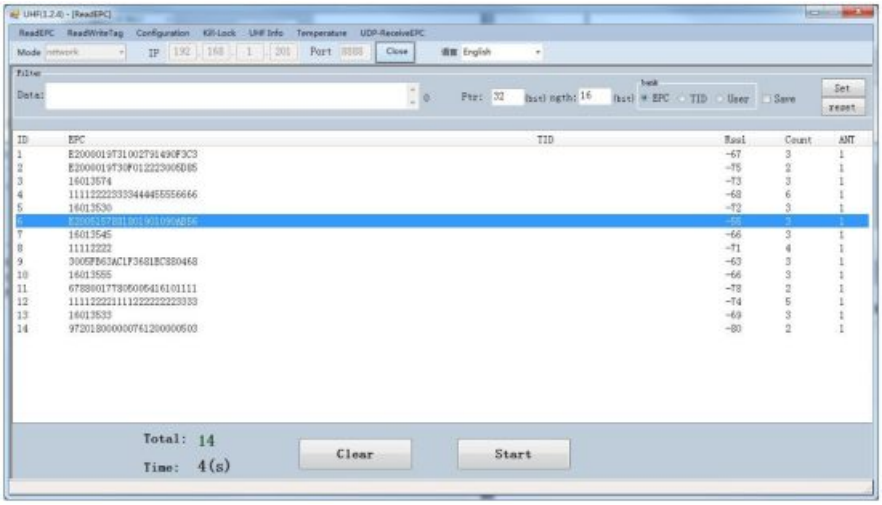
Set Gen2, this parameter needs to be adjusted by actual requirements.



Chapter 3 Read and Write EPC

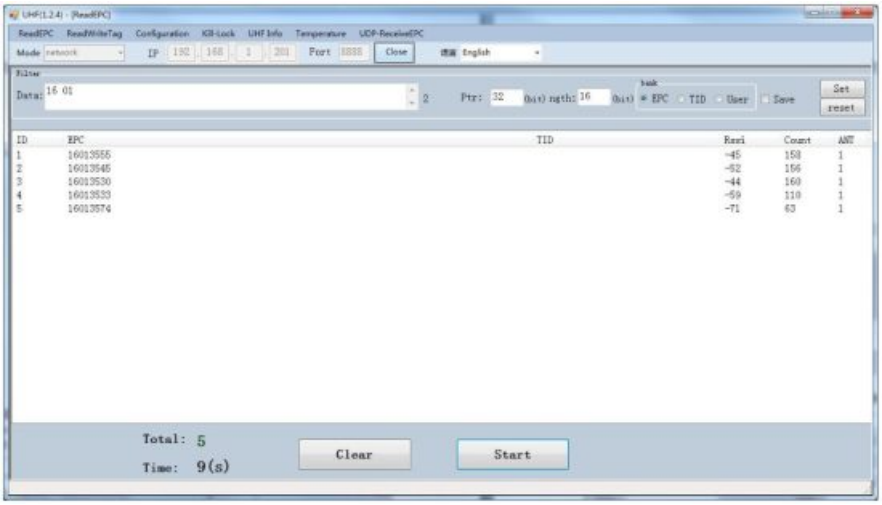
3.1 Read EPC

Click “ReadEPC” in the menu to enter the 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:



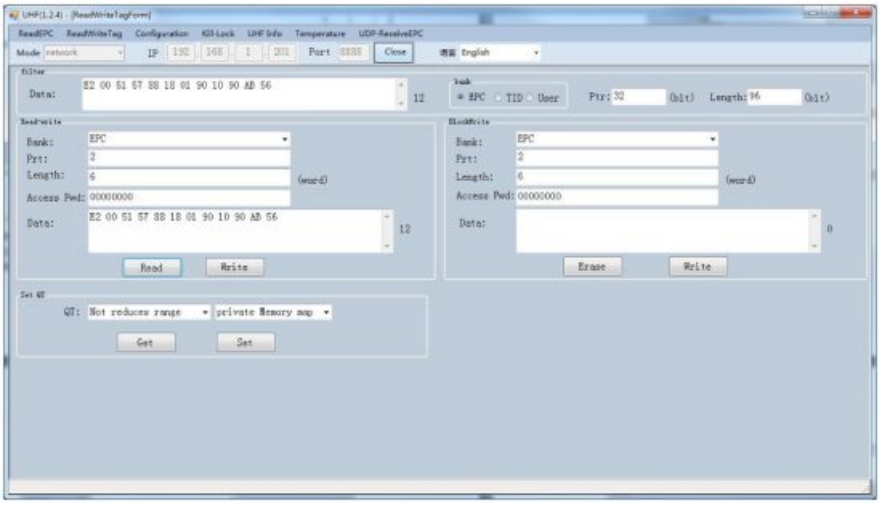
User could enter data in “Filter” to filter EPC of special tags, the maximum filter DL is 96 bits. User needs to setup data, initial address, data length and click “Set”. After filtered data has been set, the device will read and search for the tag which has been filtered.

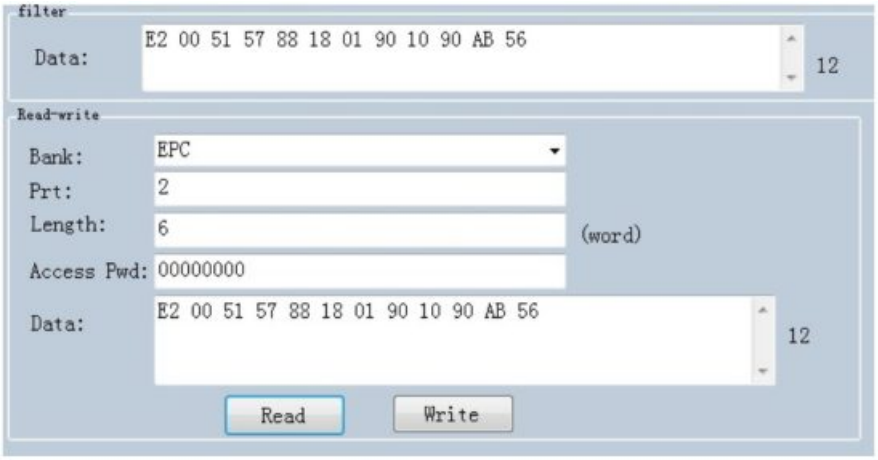
For example: enter 16 01 in “Data”, initial address data length is 32(bit), length is 16(bit), select EPC in “bank”, click “Set” and click “Start” to start scanning tags which the address start at 16 01:



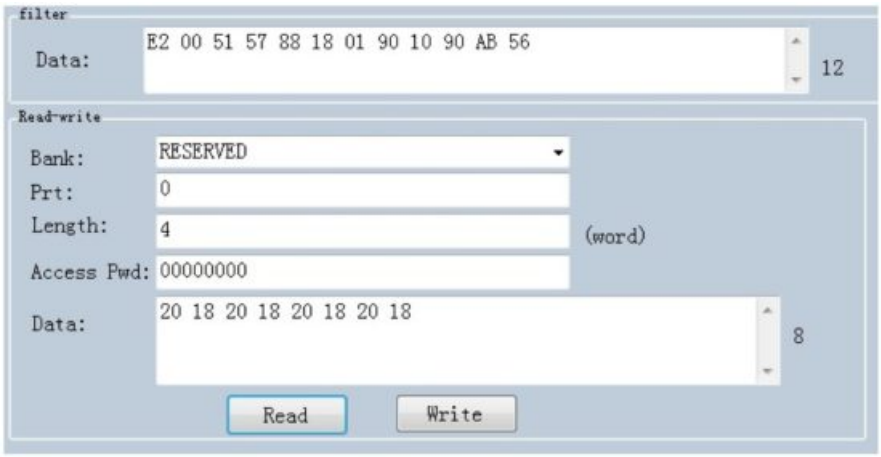
3.2 Read & Write Tags

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

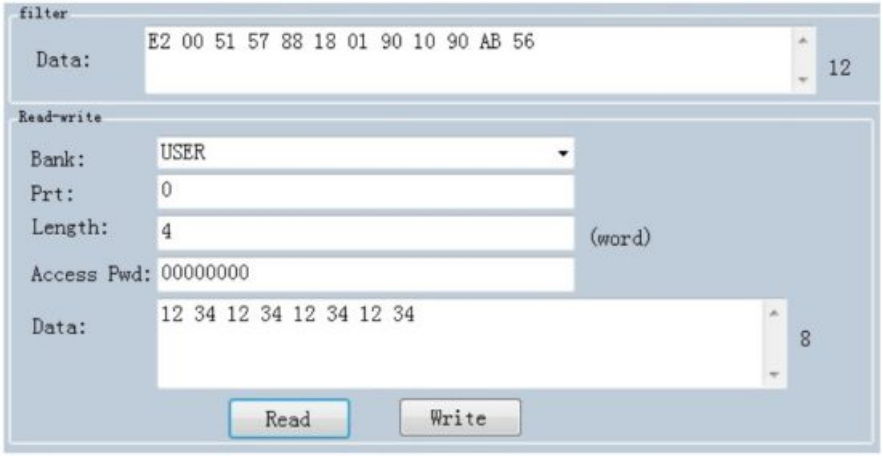




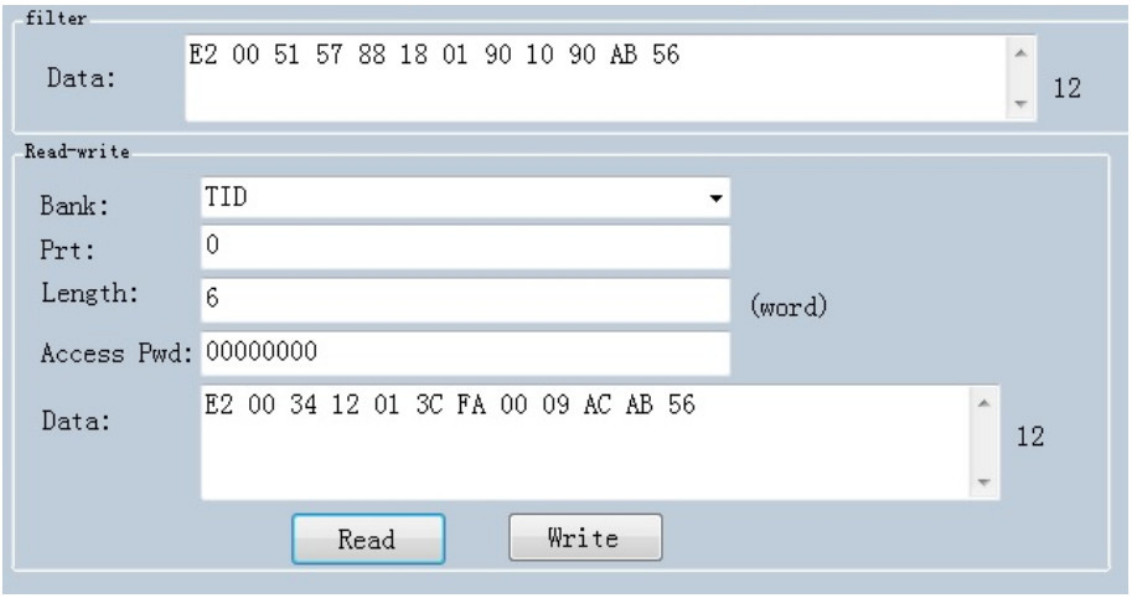
Click one option in the “Read-write” window to enter tag reading mode, EPC will be automatically copied into the “Data” block in the filter, the default option is EPC reading, click “Read” to read 12 bytes of EPC area.



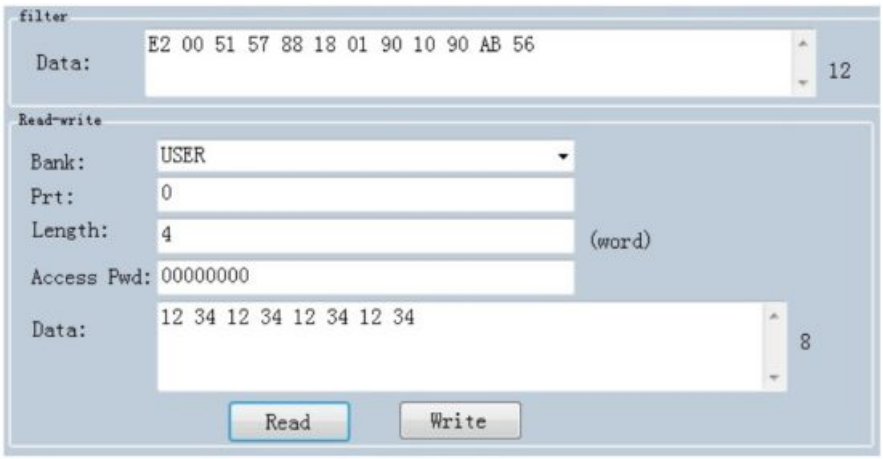
For the “RESERVED” area, the user could read 4 words at maximum, The previous 2 words are the password of KILL function, last 2 words are access passwords:



Read TID area:



Read USER area:



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

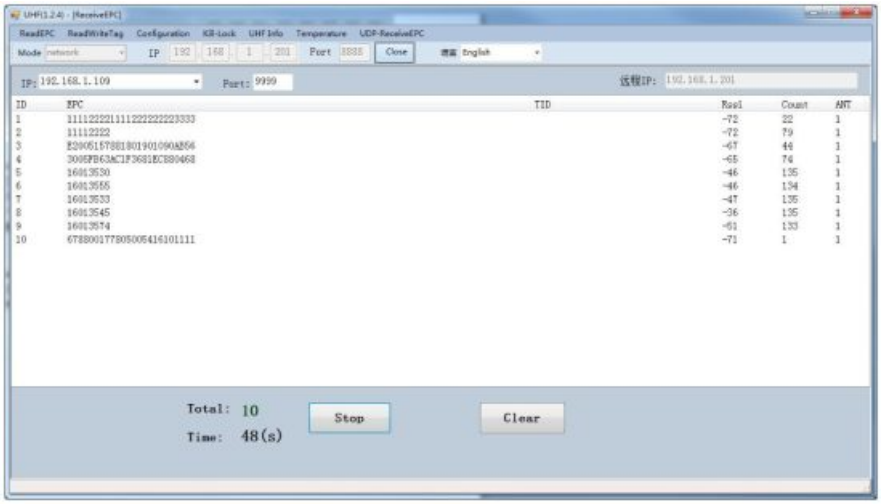
3.3 Lock UHF Tag

Click “Kill-Lock” in the main menu to enter the Tag locking function. For this function, the user could execute the “Lock”, “Kill”, “Open”, “Permanent Open” and “Permanent Lock”, to execute the “Lock” function, the password is needed. If the user wants to kill UHF tag, the need to enter the password and the tag will be wasted permanently.

3.4 UDP-ReceiveEPC

After auto mode has been selected, restart the device and select UDPReceiveEPC, click “Open” to connect the 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.



3.5 Others

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

FCC Caution.

§ 15.19 Labeling requirements.

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.

§ 15.21 Information to the user.

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

§ 15.105 Information to the user.
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.
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance 20cm between the radiator & your body.

Documents / Resources

C61 UHF User Manual	Shenzhen Chainway Information Technology C61 UHF RFID Reader [pdf] User Manual C61UHF, 2AC6AC61UHF, C61 UHF RFID Reader, RFID Reader, Reader