SHENZHEN CHAINWAY INFORMATION TECHNOLOGY CO., LTD

Fixed RFID Reader

U300 User Manual

Statement

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Chapter 1 Product Intro

1.1 Intro

Chainway U300 is a newly launched high-performance fixed RFID reader. Adopting Android 11 operating system, 2.0GHz quad-core CPU, U300 possesses powerful data processing capabilities. Based on the Impinj E710 / R2000 chip, the reader has stronger UHF performance. The reader Integrates RS232, RJ45, HDMI and other interfaces, and supports DC, POE, POE+ power supplies. U300 can meet the application needs in complex environments such as warehousing, file management, library management, production line management, medical device cabinet, unmanned retail, etc.

1.2 Interface

Pic.1-1

1.3 Necessary Parts List

1	U3000 reader, 12V power adaptor
2	UHF antenna, 6dBi, 9dBi, 12dBi etc.
3	Feeder line, SMA male side connects with device, interface on other side needs match with antenna.
4	RJ45 Ethernet cable
5	HDMI cable

1.4 Device installation

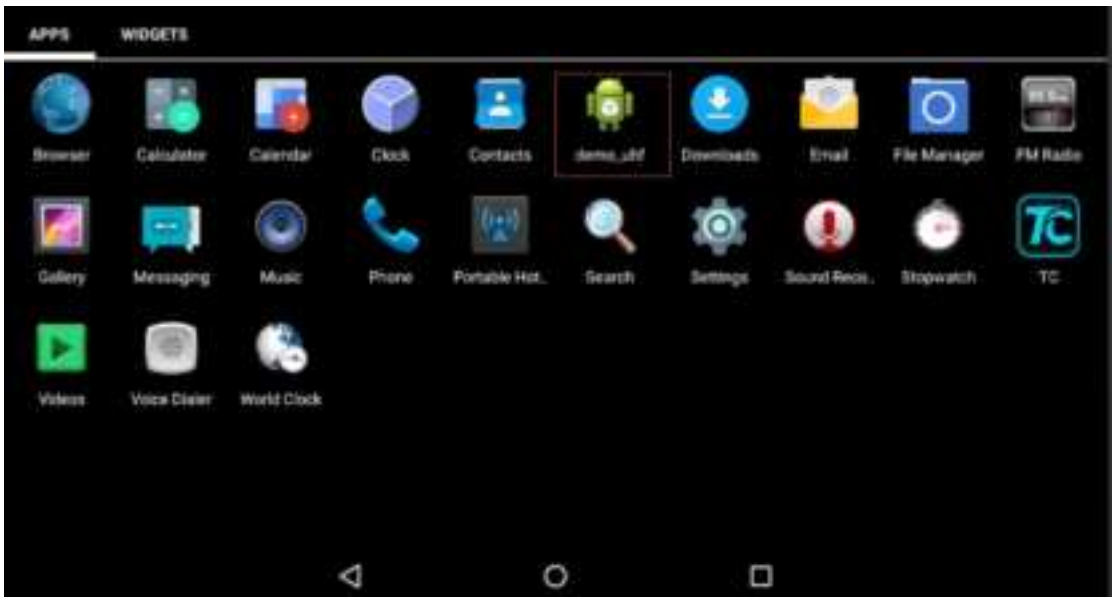
U300 reader adopts Android operating system, it can be connected with Internet through RJ45. And connect with monitor through HDMI cable.

Developer could use USB cable to connect device with PC for developing application, device could also be connected with PC through serial port cable.

U300 installed on the cabinet and Installation height less than 2m.

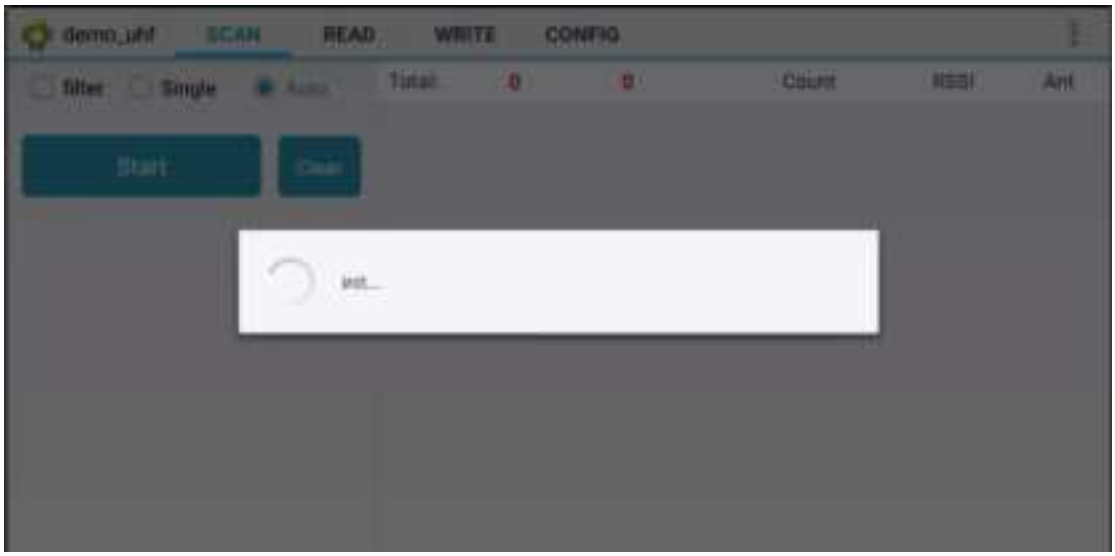
Chapter 2 UHF demo

2.1 Operating Interface



Pic.4-1

Connect monitor through HDMI cable and long-press power button for 3 seconds to switch on device. Click demo_uhf icon to enter demo as Pic.4-1, UHF module will initiate as Pic.4-2, if there is no error messages show up, then initiation process has been successfully finished. “init. fail” means UHF module failed to initiate, need to exit application and repeat operation. If initiation cannot successfully finished, need to contact tech support for further.



Pic.4-2

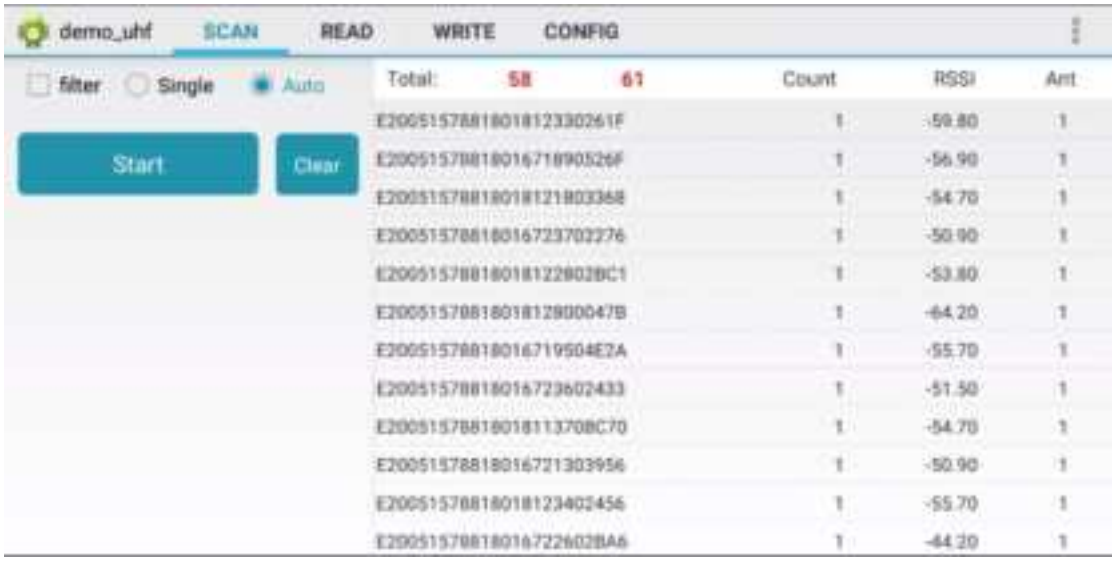
Chapter 3 UHF tag scanning

Click SCAN on top of navigation bar to enter tags reading page.

3.1 Auto Scanning

Select “Auto”, then click “Start” button to start tags scanning circularly, the information such as EPC or TID, Count, RSSI and Ant. number. As Pic.5-1.

“filter” button can be used to setup tag which has been filtered, user could setup address, data length to filter tags. EPC, TID and USER areas can be selected, setup data length to 0 and clear EPC list, then click “Setup” to confirm in Pic.5-2.



Pic.5-1

demo_uhf
SCAN
READ
WRITE
CONFIG
filter
Single
Auto
Pu : 32 (bit) Len 0 (bit)
Data :
EPC
TID
USER
R2000 module only
Setup
Start
Clear
Total: 57 57
Count
RSSI
Ant
E200515788180167243 01EE9 1 -55.70 1
E200515788180181147083 74 1 -50.30 1
E200515788180181137 08C70 1 -55.70 1
E200515788180181242 01D57 1 -52.90 1
E200515788180181228 02BC1 1 -50.90 1
E200515788180181252 01684 1 -55.70 1
E200515788180167213 03956 1 -48.70 1
E200515788180167226 02BA6 1 -39.50 1
E200515788180167189 0526F 1 -57.50 1
E200515788180167237 02276 1 -47.80 1
E200515788180181155 07A74 1 -65.00 1
E200515788180181218 03368 1 -52.90 1

Pic.5-2

3.2 Single Scanning

Select “Single” button and click “Start” to start scanning tag, EPC or TID, Count, RSSI and Ant.number will display on right side, as Pic.5-3.

Pic.5-3

3.3 Read UHF Tag

Click “READ” on top of navigation bar to enter page of tag reading.

User could read data of 4 areas, RESERVED, EPC, TID and USER, setup address and data length, default password is “00000000”, click “Read” to read tags in Pic.6-1.

Pic.6-1

Comment: user could filter tags by setup address, data length and data in EPC, TID and USER areas, select “Enable” button to switch on filter function in Pic.6-2.

Pic.6-2

3.4 Write Tag

Click “WRITE” on top of navigation bar to enter tag writing page.

User could write data in RESERVED, EPC, TID and USER areas, setup start address and data length, input access password and data(hex), click “Write Data” to write data in Pic.7-1.

Comment: user could filter tags by setup address, data length and data in EPC, TID and USER areas, select “Enable” button to switch on filter function.

Pic.7-1

3.5 Lock Tag

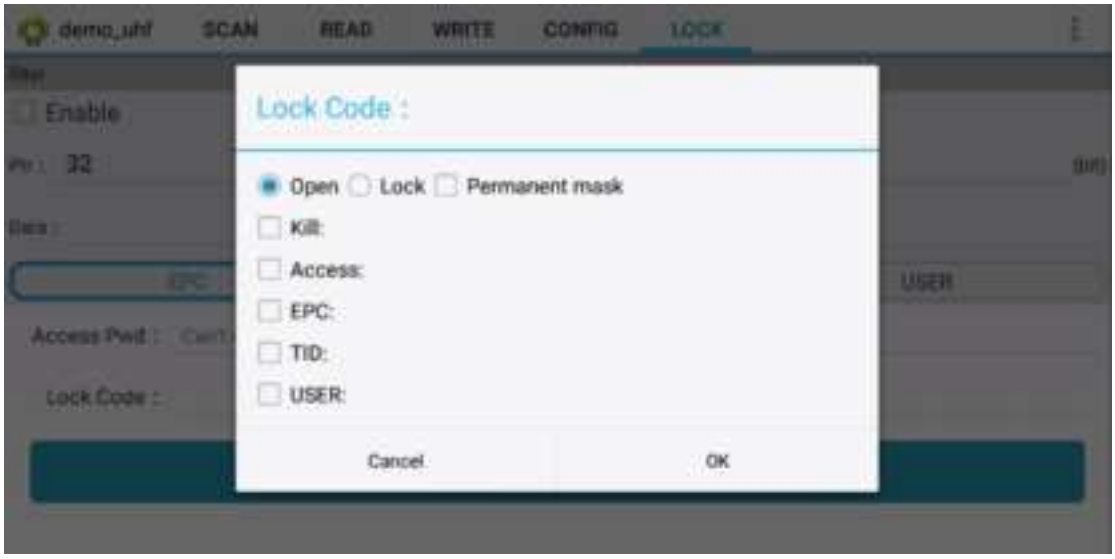
Click “LOCK” on top of navigation bar to enter tag locking page.

Input access password(DONOT input default password.), then click column of “Lock Code”, it will display window for selecting different methods of locking, click “OK” to generate lock code automatically, then click “Lock” to lock tags in Pic.8-1 and Pic.8-2.

Comment: user could filter tags by setup address, data length and data in EPC, TID and USER areas, select “Enable” button to switch on filter function.

NOTE: If permanent mask has been locked, then it cannot be unlocked. Vice versa.

Pic. 8-1


demo_uhf
SCAN
READ
WRITE
CONFIG
LOCK
Enable
Pw : 32
Data :
EPC
USER
Access Pwd :
Lock Code :
Lock Code :
Open
Lock
Permanent mask
Kill:
Access:
EPC:
TID:
USER:
Cancel
OK

Pic.8-2

3.6 Kill Tag

Click “KILL” on top of navigation bar to enter operating page.

Input access password (DONOT input default password.), click “Kill” button to destroy tags in Pic.9-1.

Comment: user could filter tag by setup address, data length and data for selecting EPC, TID or USER area.

Pic.9-1

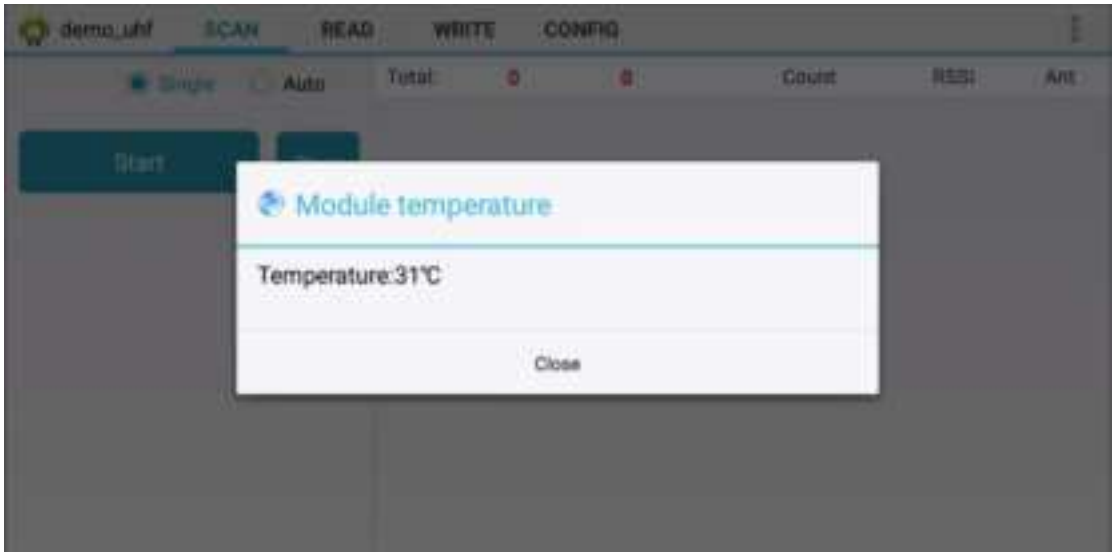
3.7 UHF Module Version

Click 3 dots on top right of application and click “About” in list to check version of UHF module in Pic.10-1.

Pic.10-1

3.8 Module Temperature

Click 3 dots on top right of application, click “Module temperature” in list to check UHF module temperature in Pic.11-1.



Pic.11-1

Chapter 4 Config

Click “CONFIG” on top of navigation bar to enter setup page.

4.1 Working mode

User could setup different frequency band for different countries, as Pic.12-1, click “Set Frequency” to confirm frequency band. Click “Get Frequency” to check current frequency band.

Pic.12-1

4.2 Output Power

User could select different output power from 5 to 30dBm in Pic.12-2, click “Set Power” to confirm setup. Click “Get Power” to get current output power.

Pic.12-2

4.3 R2000 settings

Select ANT1-ANT8 to setup antenna, selected antenna will start functioning, unselected antenna will in OFF in Pic.12-3.

Click “Set Antenna” to confirm setup, “Get Antenna” to check current antenna status.

Pic.12-3

4.4 Protocol

There are two protocols can be selected in Pic.12-4, click “Set Protocol” to confirm.

Pic.12-4

4.5 RF link

There are four parameters can be selected in this parameter, as Pic.12-5. Click “Set link parameter” to confirm, click “Get link parameters” to check current RF link parameters.

Pic.12-5

4.6 QT Tag

Select “Set QTPara” to switch ON and OFF hidden areas of QT tag, click “Get QTPara” to check current status.

Pic.12-6

4.7 Open tagFocus

Select ON/OFF of tagFocus in Pic.12-6.

4.8 Open FastID

Select ON/OFF of “Open the EPC and TID” in Pic.12-6.

4.9 Open EPC and TID

Select ON/OFF of “Open the EPC and TID” in Pic.12-6.

Chapter 5 SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Shenzhen Chainway Information Technology Co.,Ltd. declares that the radio equipment type Fixed Android UHF Reader is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:(www.chainway.net)

RF Band/ RF ERP

U300-8：

	Bands	Operation Frequency	Max. E.I.R.P /Pe.r.p.
Bluetooth	2.4GHz	2402-2480 MHz	EIRP 11.16 dBm
Wi-Fi	2.4GHz	2412-2472MHz	EIRP 8.97 dBm
RFID	0.8GHz	865.7MHz-867.5MHz	PERP 29.04 dBm

U300-4：

	Bands	Operation Frequency	Max. E.I.R.P /Pe.r.p.
Bluetooth	2.4GHz	2402-2480 MHz	EIRP 11.60 dBm
Wi-Fi	2.4GHz	2412-2472MHz	EIRP 9.24 dBm
RFID	0.8GHz	865.7MHz-867.5MHz	PERP 29.06 dBm

Chapter 6 Warning

CE:

RF exposure information: The Maximum Permissible Exposure (MPE) level has been calculated based on a distance of d=20 cm between the device and the human body. To maintain compliance with RF exposure requirement, use product that maintain a 20cm distance between the device and human body.

FCC:

Federal Communication Commission (FCC) Radiation Exposure Statement. When using the product, maintain a distance of 20cm from the body to ensure compliance with RF exposure requirements.

FCC statements:

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes 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.