SHENZHEN CHAINWAY INFORMATION TECHNOLOGY CO., LTD

Fixed Android UHF Reader

URA4 User Manual

Statement

2013 by ShenZhen Chainway Information Technology Co., Ltd. All rights reserved.

No part of this publication may be reproduced or used in any form, or by any electrical or mechanical means, without permission written from Chainway. This includes electronic or mechanical means, such as photocopying, recording, or information storage and retrieval systems. The material in this manual is subject to change without notice.The software is provided strictly on an “as is” basis. All software, including firmware, furnished to the user is on a licensed basis. Chainway grants to the user a non-transferable and non-exclusive license to use each software or firmware program delivered hereunder (licensed program). Except as noted below, such license may not be assigned, sublicensed, or otherwise transferred by the user without prior written consent of Chainway. No right to copy a licensed program in whole or in part is granted, except as permitted under copyright law. The user shall not modify, merge, or incorporate any form or portion of a licensed program with other program material, create a derivative work from a licensed program, or use a licensed program in a network without written permission from Chainway. Chainway reserves the right to make changes to any software or product to improve reliability, function, or design. Chainway does not assume any product liability arising out of, or in connection with, the application or use of any product, circuit, or application described herein.

No license is granted, either expressly or by implication, estoppel, or otherwise under any Chainway intellectual property rights. An implied license only exists for equipment, circuits, and subsystems contained in Chainway products.

Statement 1
Chapter 1 Product Intro 4
1.1 Intro 4
1.2 Interface 5
1.3 Necessary Parts List 6
1.4 Device installation 7
Chapter 2 UHF demo 8
2.1 Operating Interface 8
Chapter 3 UHF tag scanning 10
3.1 Auto Scanning 10
3.2 Single Scanning 12
3.3 Read UHF Tag 13
3.4 Write Tag 15
3.5 Lock Tag 16
3.6 Kill Tag 18
3.7 UHF Module Version 19
3.8 Module Temperature 20
Chapter 4 Config 21
4.1 Working mode 21
4.2 Output Power 22
4.3 R2000 settings 23
4.4 Protocol 24
4.5 RF link 25
4.6 QT Tag 26
4.7 Open tagFocus 27
4.8 Open FastID 27
4.9 Open EPC and TID 27

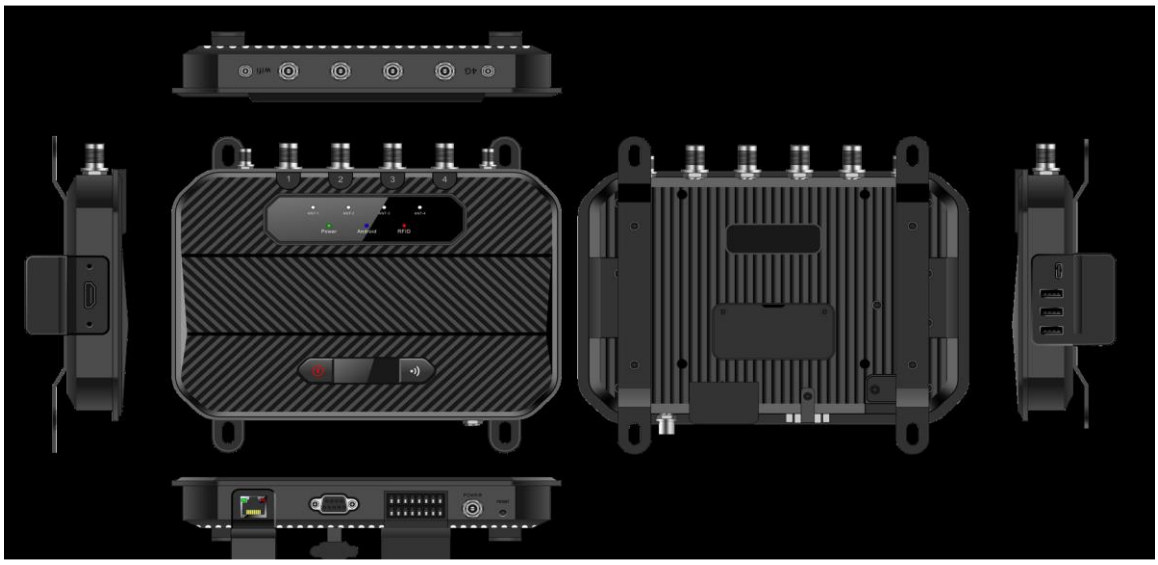
4.10 WWAN Specification..... 27
Chapter 5 SIMPLIFIED EU DECLARATION OF CONFORMITY..... 28
Chapter 6 Warning..... 29

Chapter 1 Product Intro

1.1 Intro

Chainway URA4 is a 4-channel fixed RFID reader, based on Android 9.0. Integrated with Impinj E710 / R2000 chip, it supports RS232, RJ45 and HDMI, and can be compatible with various types of antennas. With high stability and outstanding performance, URA4 can be ideally applied to 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.

1.2 Interface



Pic.1-1

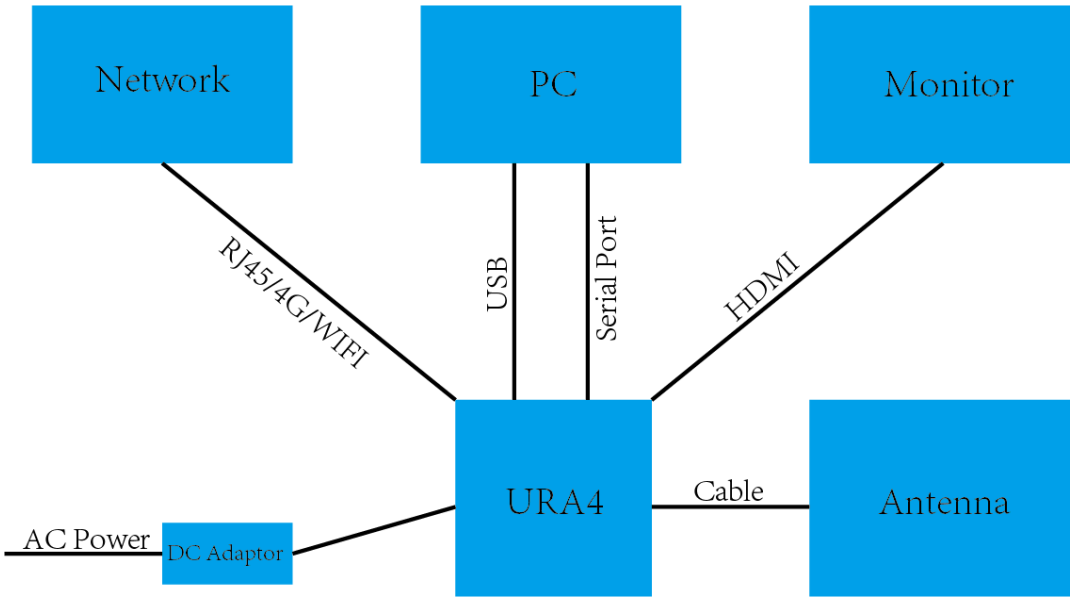
1.3 Necessary Parts List

1	URA4 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
6	4G external antenna
7	WIFI external antenna

1.4 Device installation

URA4 reader adopts Android operating system, it can be connected with Internet through RJ45, WIFI and 4G etc. And connect with monitor through HDMI cable.

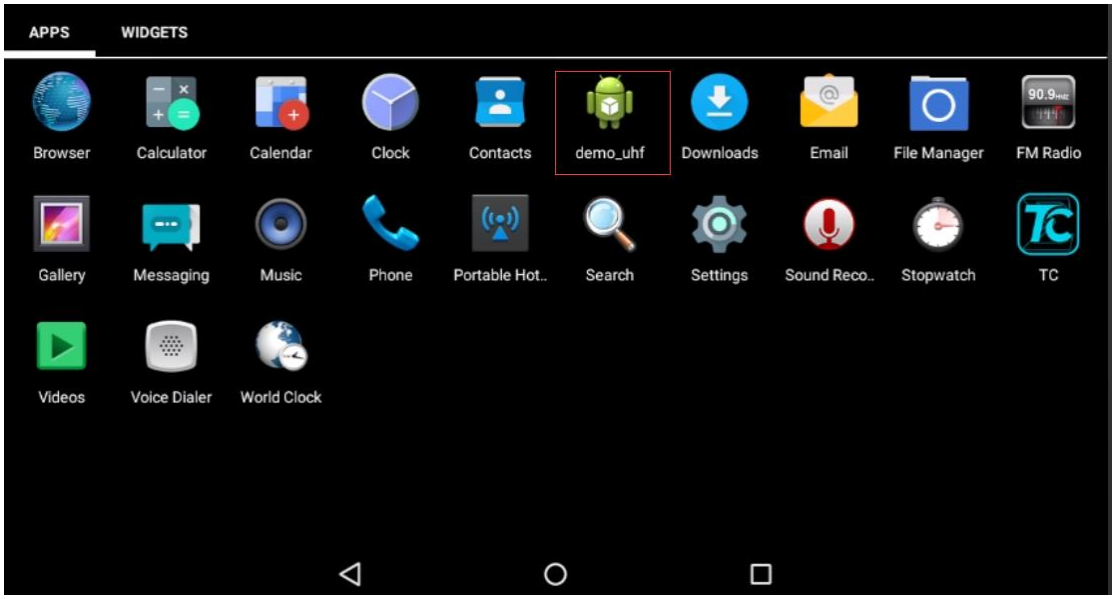
Developer could use USB cable to connect device with PC for developing application, device could also be connected with PC through serial port cable.



Pic.3-1

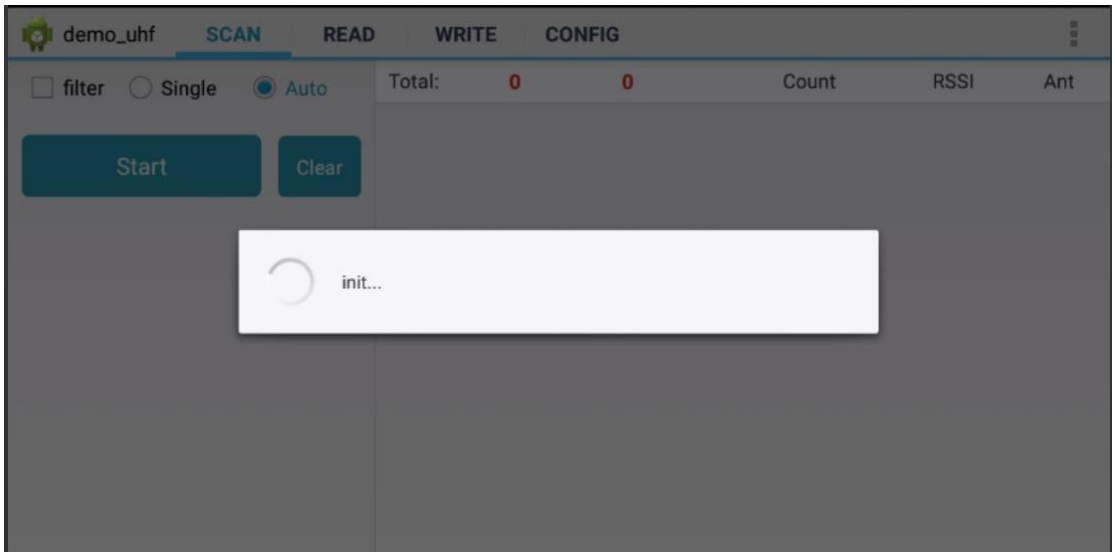
Chapter 2 UHF demo

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

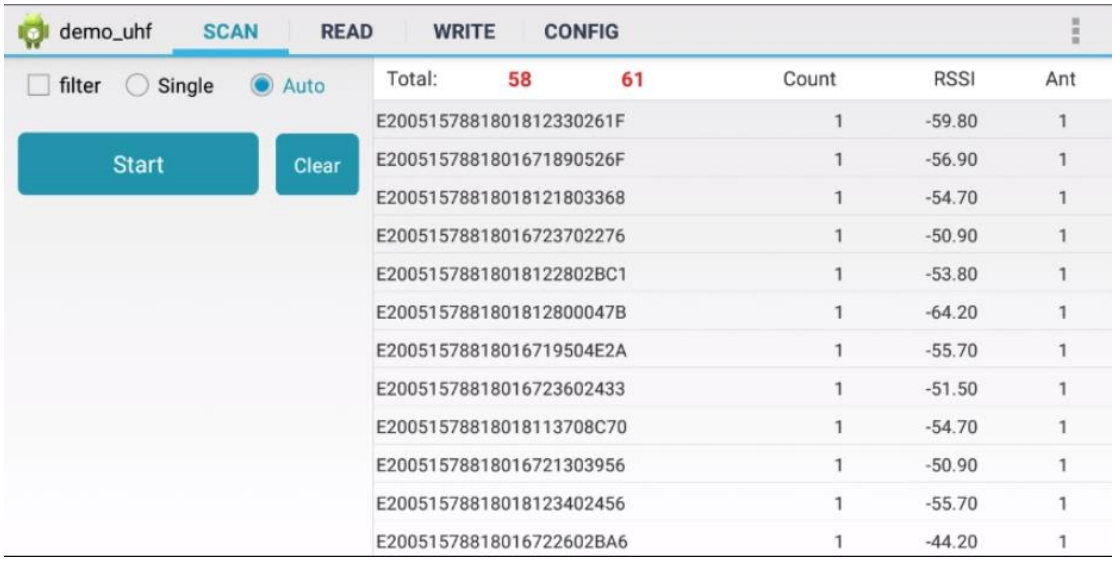
Chapter 3 UHF tag scanning

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

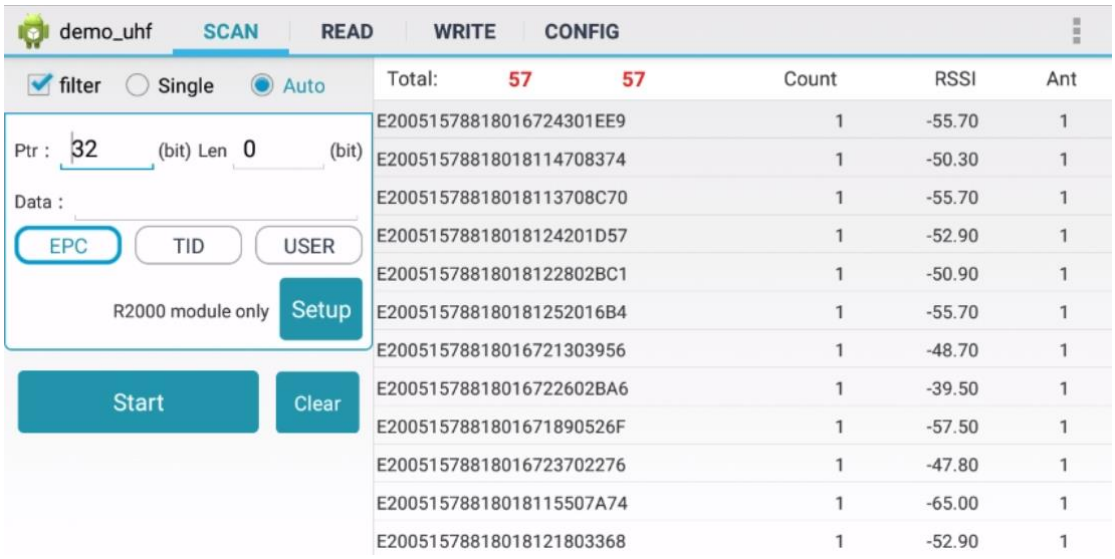
3.1 Auto Scanning

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.



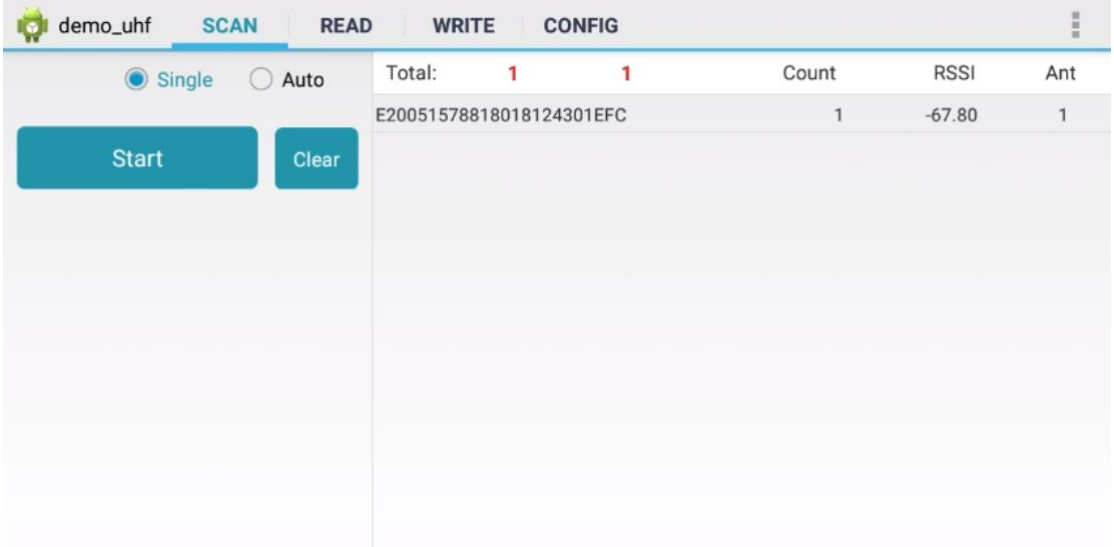
Pic.5-1


demo_uhf
SCAN
READ
WRITE
CONFIG
filter
Single
Auto
Ptr : 32 (bit) Len 0 (bit)
Data :
EPC
TID
USER
R2000 module only
Setup
Start
Clear
Total: 57 57
Count
RSSI
Ant
E200515788180167243O1EE9 1 -55.70 1
E200515788180181147083 74 1 -50.30 1
E200515788180181137O8C70 1 -55.70 1
E200515788180181242O1D57 1 -52.90 1
E200515788180181228O2BC1 1 -50.90 1
E200515788180181252016B4 1 -55.70 1
E200515788180167213039 56 1 -48.70 1
E200515788180167226O2BA6 1 -39.50 1
E200515788180167189O526F 1 -57.50 1
E200515788180167237O2276 1 -47.80 1
E200515788180181155O7A74 1 -65.00 1
E200515788180181218O3368 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.

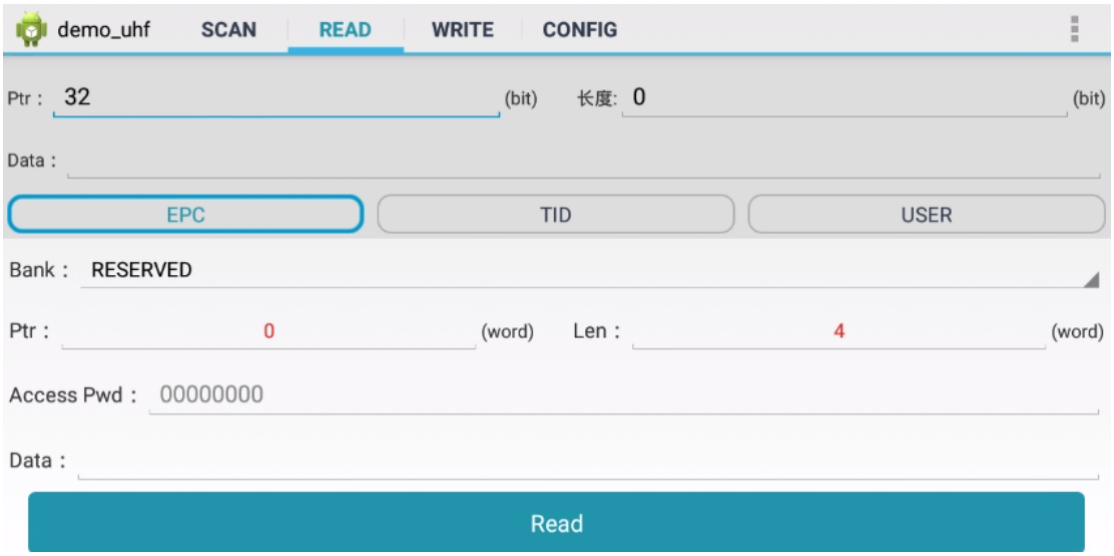


Pic.5-3

3.3 Read UHF Tag

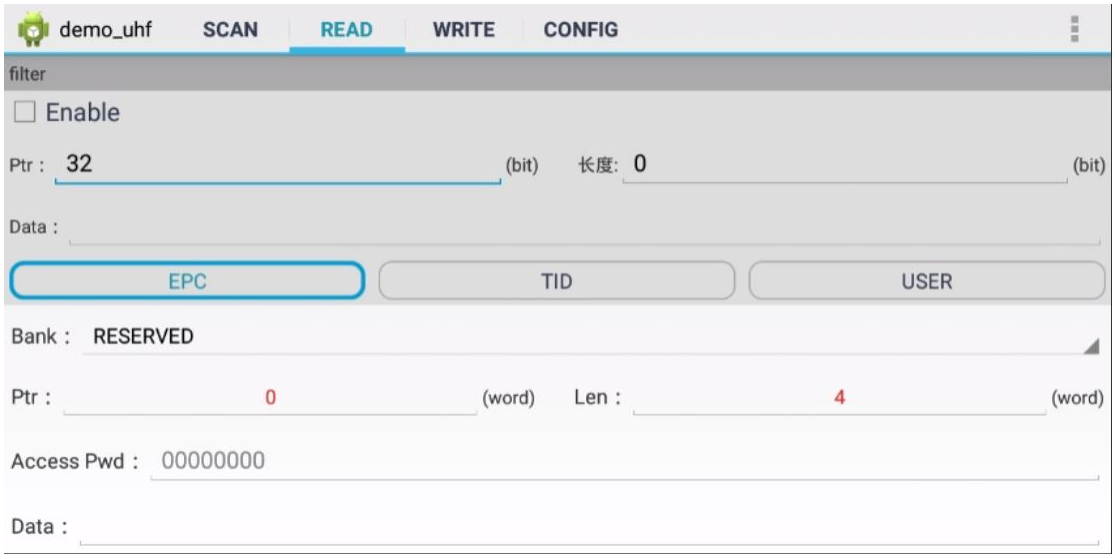
Click “READ” on top of navigation bar to enter page of tag reading.

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.



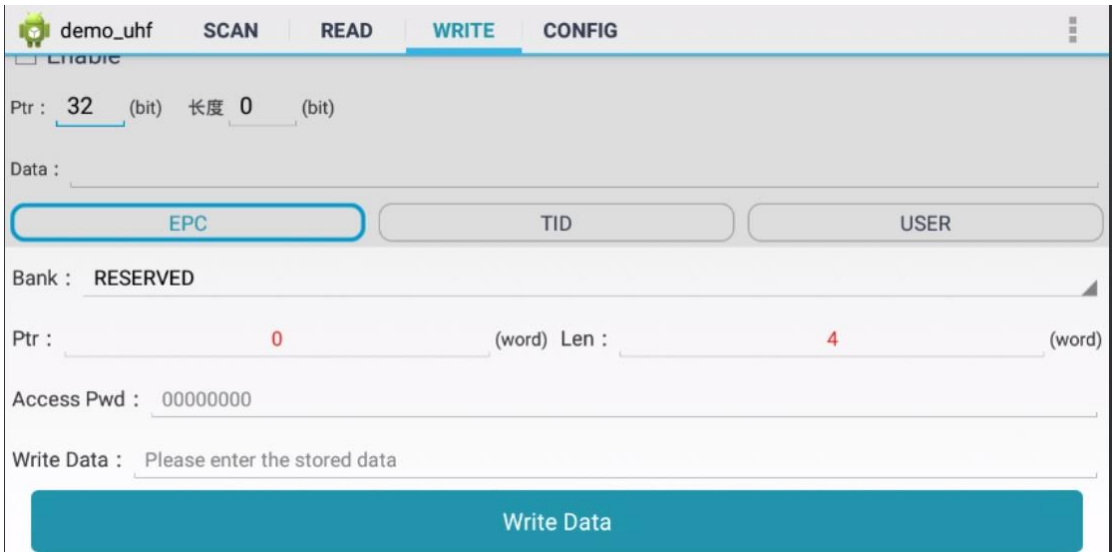
Pic.6-2

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

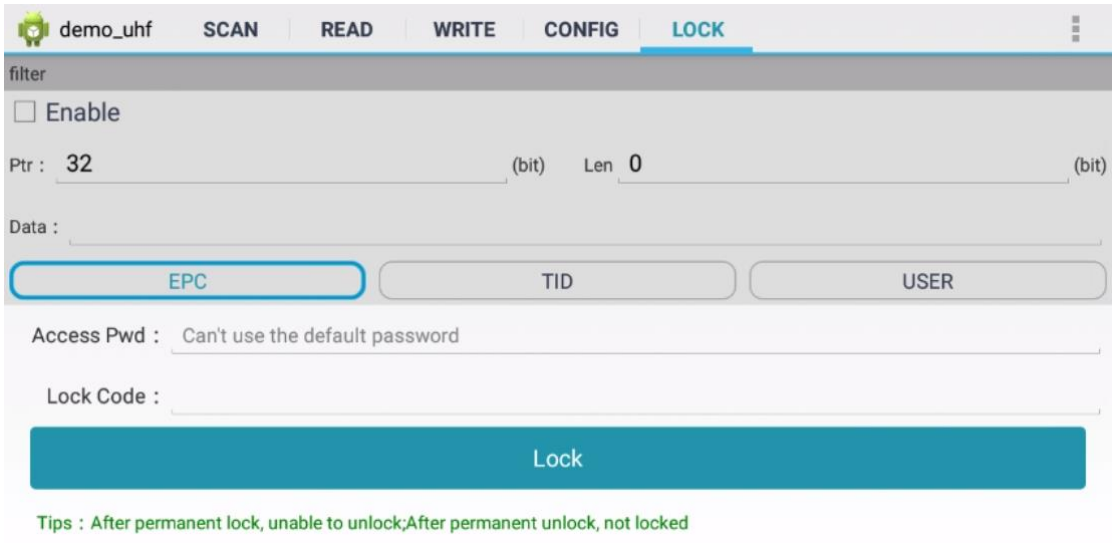
3.5 Lock Tag

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

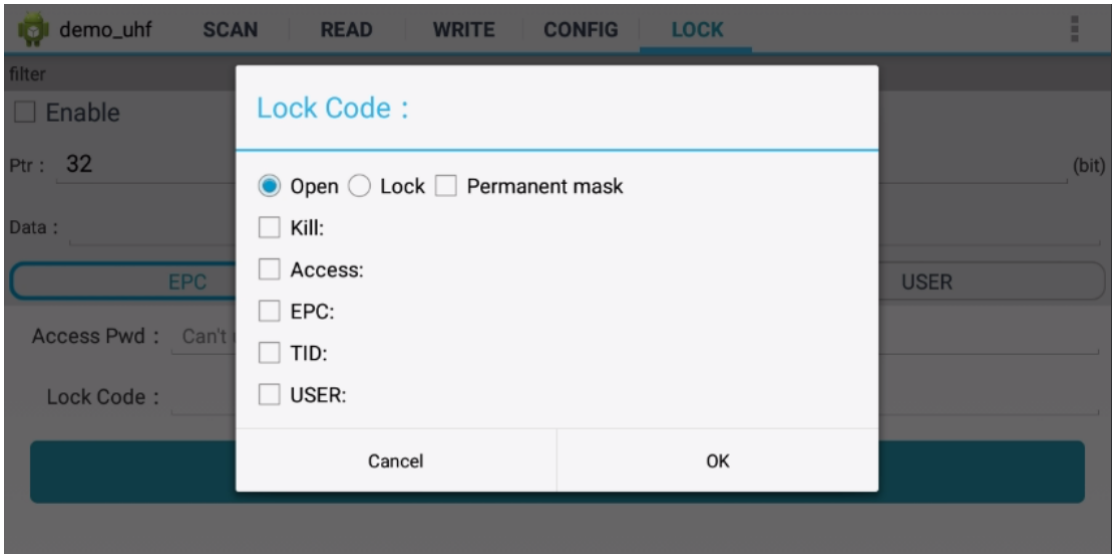
Input access password(DONOT input default password.), then click column of “Lock Code”, it will display window for selecting different methods of locking, click “OK” to generate lock code automatically, then click “Lock” to lock tags in Pic.8-1 and Pic.8-2.

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
filter
Enable
Ptr : 32
(bit)
Data :
EPC
USER
Access Pwd :
Lock Code :
Lock Code :
Open
Lock
Permanent mask
Kill:
Access:
EPC:
TID:
USER:
Cancel
OK

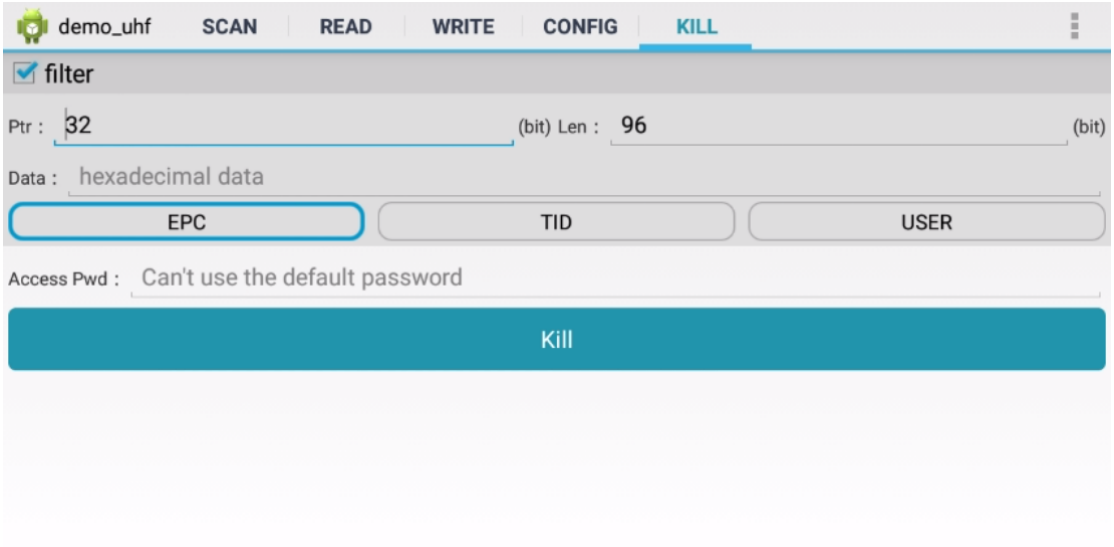
Pic.8-2

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.

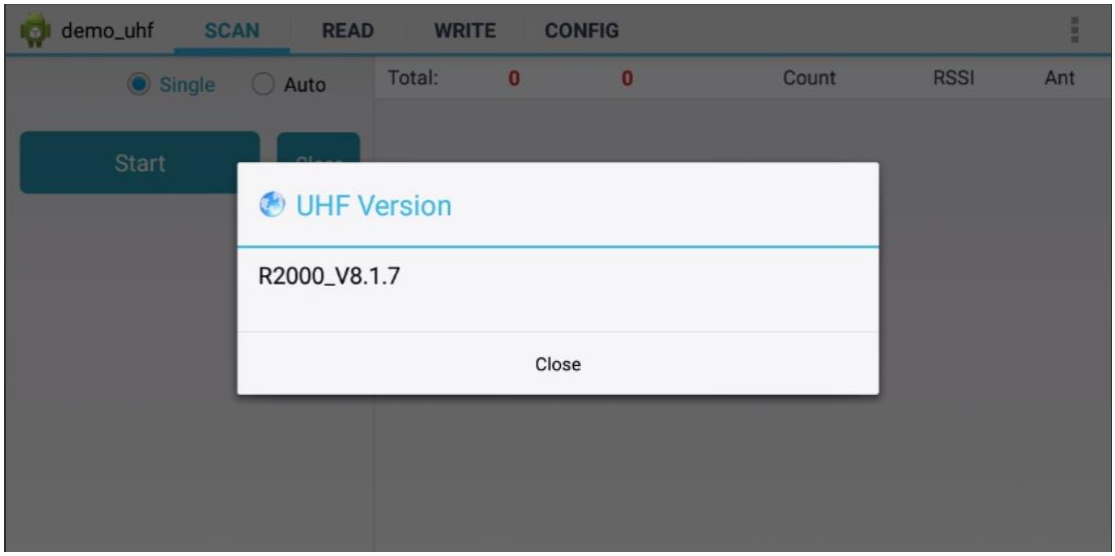
Comment: user could filter tag by setup address, data length and data for selecting EPC, TID or USER area.



Pic.9-1

3.7 UHF Module Version

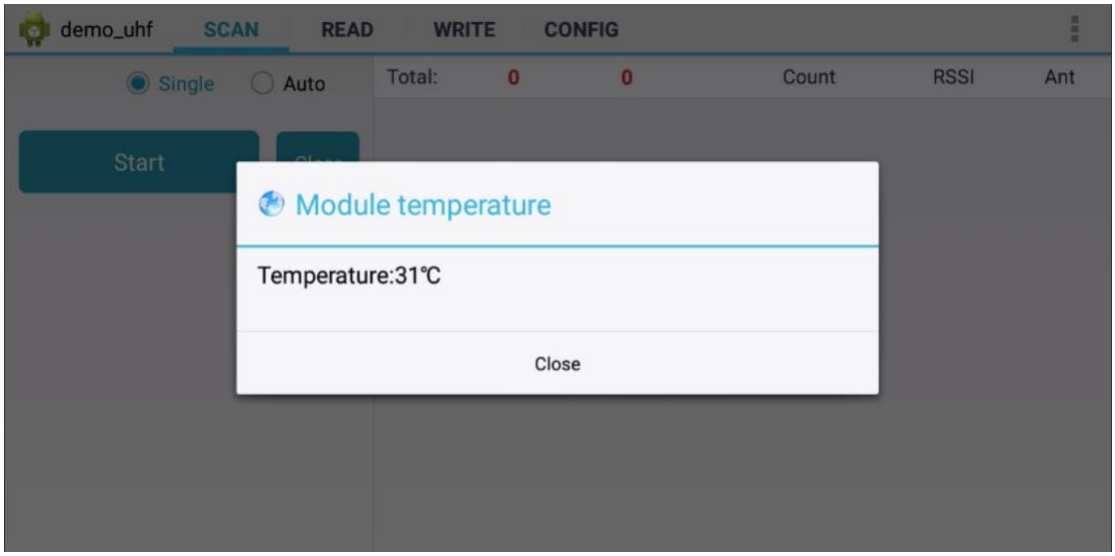
Click 3 dots on top right of application and click “About” in list to check version of UHF module in Pic.10-1.



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.



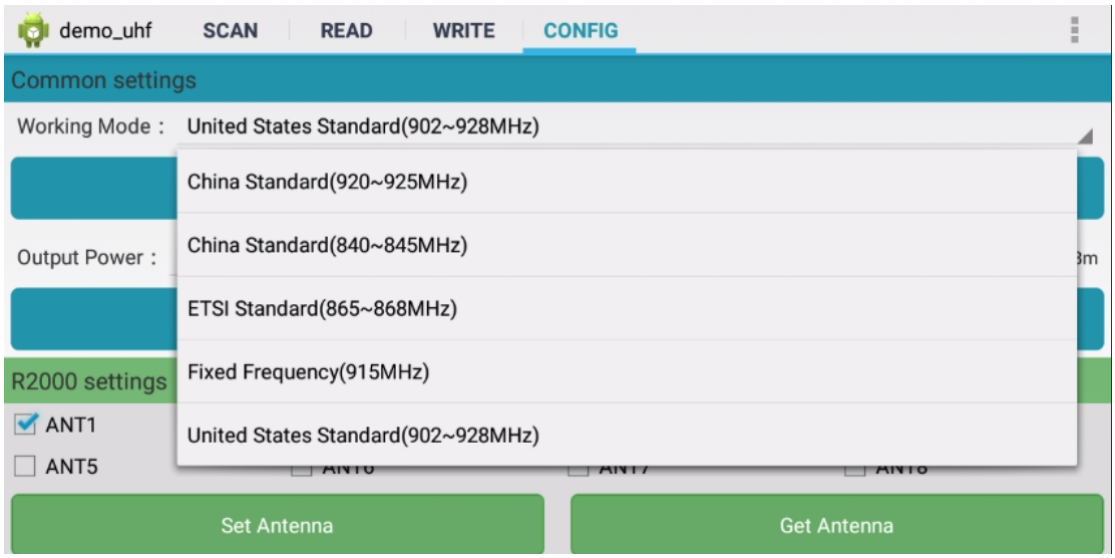
Pic.11-1

Chapter 4 Config

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

4.1 Working mode

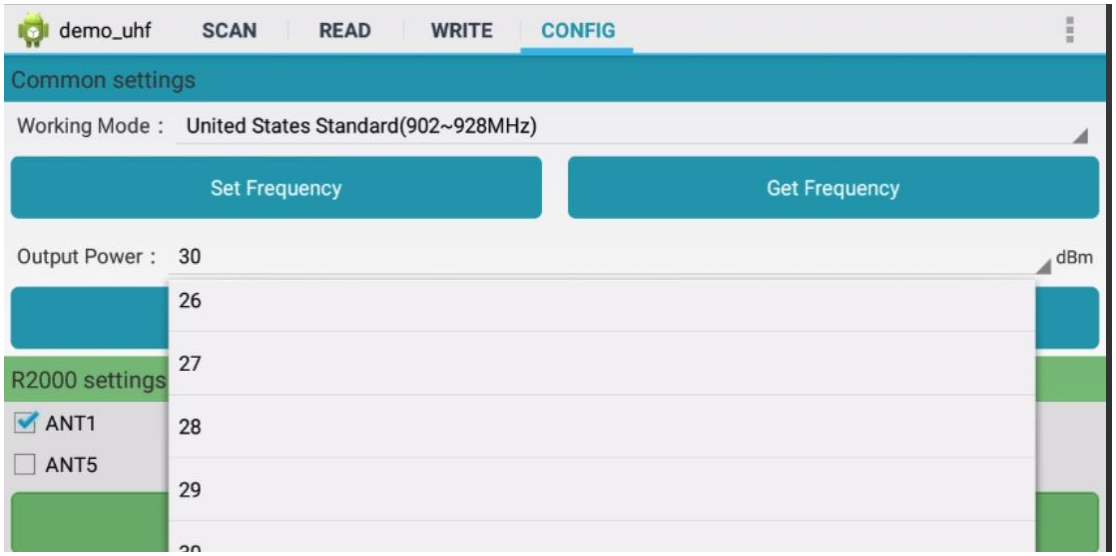
User could setup different frequency band for different countries, as Pic.12-1, click “Set Frequency” to confirm frequency band. Click “Get Frequency” to check current frequency band.



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.

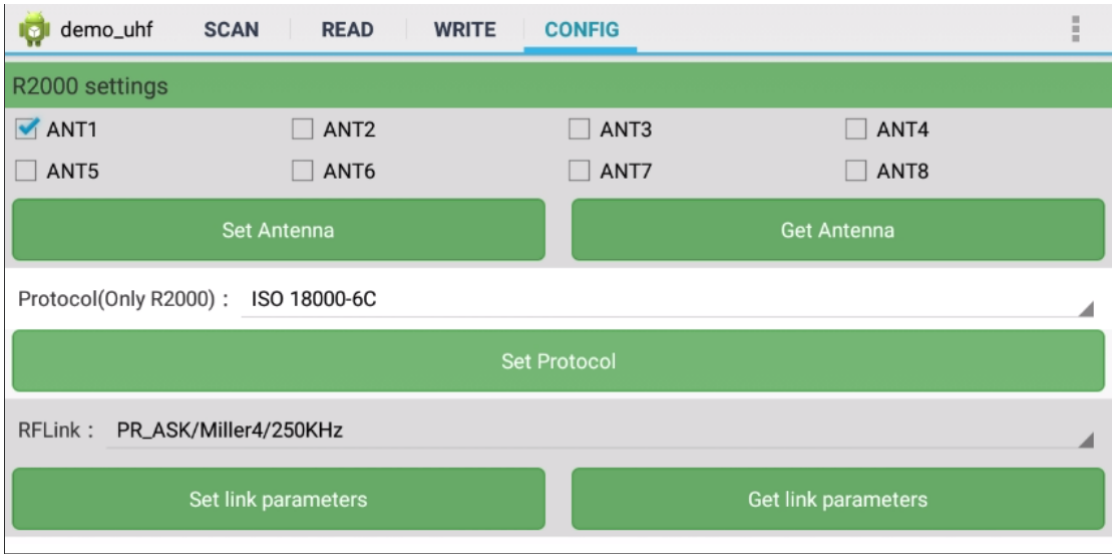


Pic.12-2

4.3 R2000 settings

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

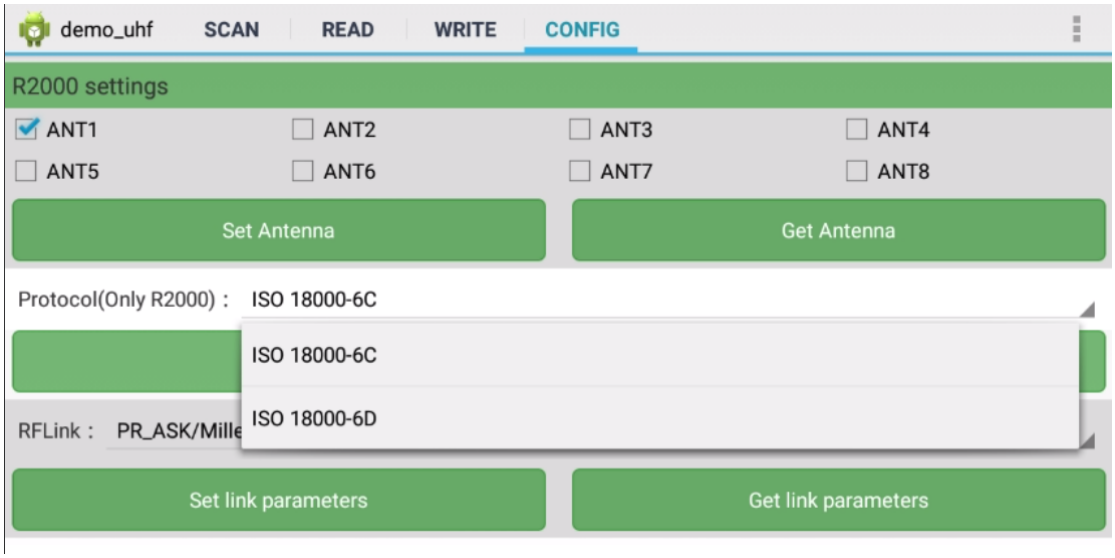
Click “Set Antenna” to confirm setup, “Get Antenna” to check current antenna status.



Pic.12-3

4.4 Protocol

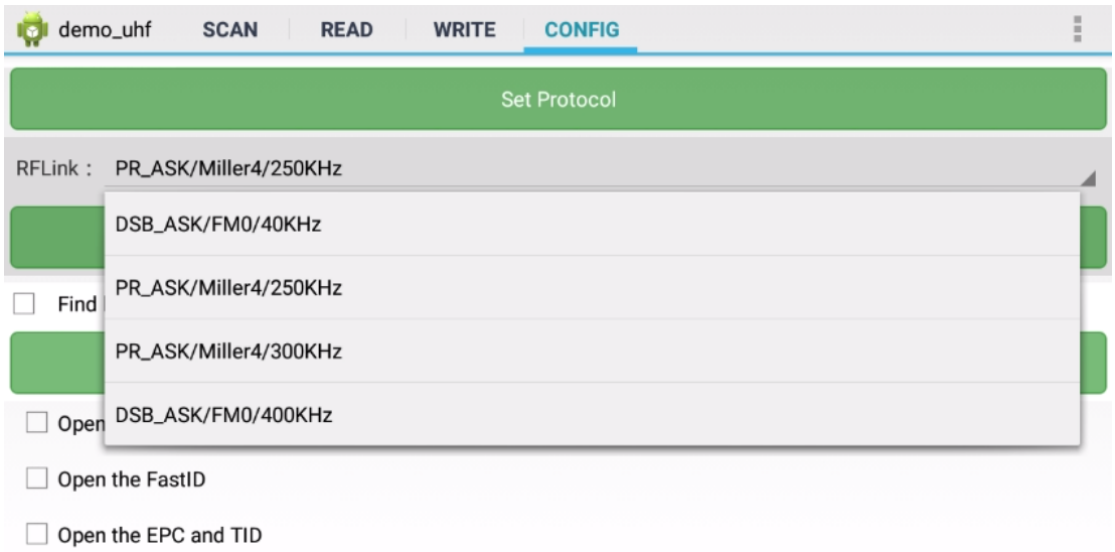
There are two protocols can be selected in Pic.12-4, click “Set Protocol” to confirm.



Pic.12-4

4.5 RF link

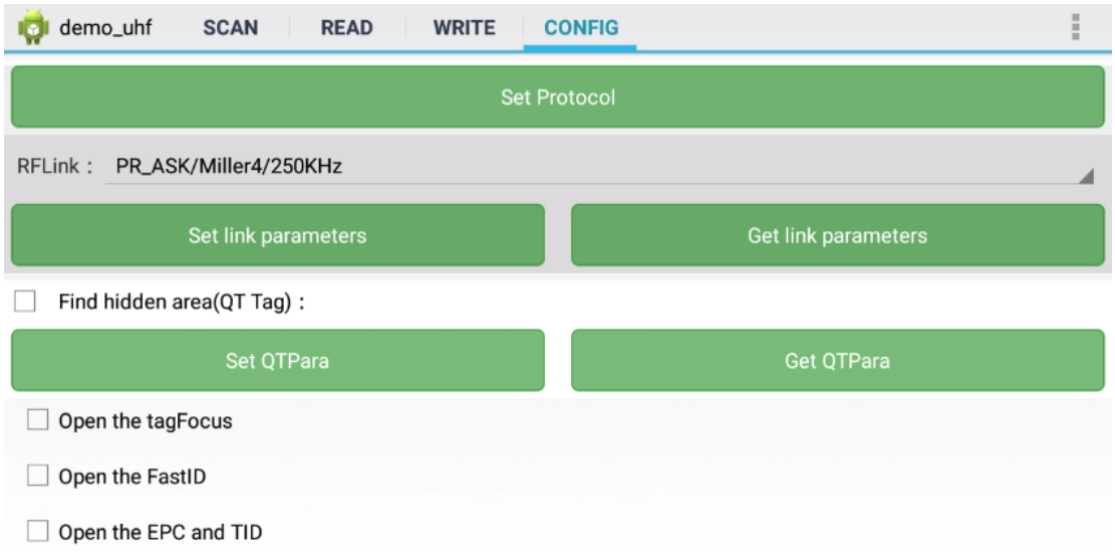
There are four parameters can be selected in this parameter, as Pic.12-5. Click “Set link parameter” to confirm, click “Get link parameters” to check current RF link parameters.



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.

4.10 WWAN Specification

WWAN		
Frequency Band		Maximum output power (dBm)
GSM 900		33
GSM 1800		32
UMTS B1/B8		22.5
FDD LTE B1/B3/B7/B8/B20		22.5
WLAN		
Standard	Frequency	EIRP Power(dBm)
802.11b	2.412GHz~2.472GHz	15.51
802.11g	2.412GHz~2.472GHz	11.68
802.11n	2.412GHz~2.472GHz	10.74
RFID		ERP Power(dBm)
865MHz~868MHz		27.65

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)

ShuRong Chen

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.