

1, start using, set up and find cards

1.1 Enter the UHF demo main page

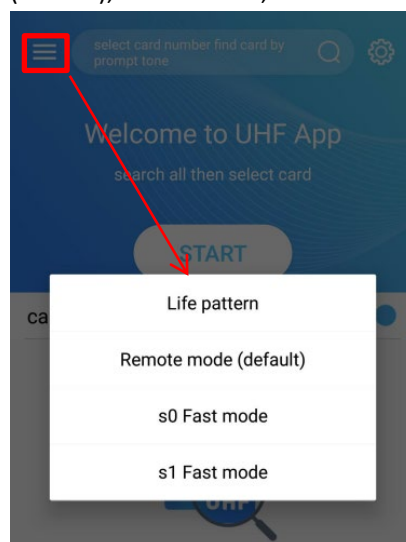


Open the “UHF” application in the application list and enter the main application interface.

(The device installs the UHF application by default. If the related application is not found, please contact technical support personnel.)

1.2 Setting the card search mode

Set the card search mode according to the actual application scenario, and select the battery life mode, long distance mode (default), S0 fast mode, and S1 fast mode.



1) Endurance mode: strong endurance and low power consumption, suitable for scenes such as patrols that do not require high reading and group reading capabilities (call item s0, inventory timeout 200ms, inventory interval 300ms, antenna power 27)

2) Remote mode (default): The farthest read distance is suitable for reading UHF tags from a long distance (call item s0, count timeout 100ms, check interval 50ms, antenna power 30)

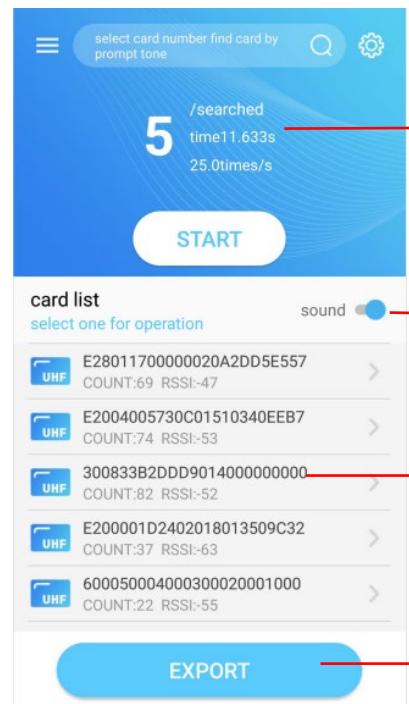
3) s0 fast mode: high power consumption, suitable for fast counting small batch labels

4) s1 fast mode: high power consumption, suitable for fast counting large quantities of labels

Note: The quick mode is only supported by the core module. It is recommended to replace the angles of various UHF devices for inventory when inventorying, to ensure that there is no problem of inventory failure due to different label angles.

1.3 Searching for cards

Click the "Card" button on the main interface to start searching for UHF tags, as shown below.



The screenshot shows the UHF application interface. At the top, there is a search bar with the text "select card number find card by prompt tone" and a search icon. Below the search bar, the number "5" is displayed, followed by "/searched time11.633s 25.0times/s". A "START" button is located below this information. Below the "START" button is a "card list" section with the text "select one for operation" and a "sound" toggle switch. The "card list" contains five entries, each with a UHF icon, an EPC number, a COUNT, and an RSSI value. An "EXPORT" button is located at the bottom of the "card list" section. Red arrows point from specific elements in the interface to explanatory text boxes on the right.

UHF	EPC	COUNT	RSSI
UHF	E28011700000020A2DD5E557	COUNT:69	RSSI:-47
UHF	E2004005730C01510340EEB7	COUNT:74	RSSI:-53
UHF	300833B2DD9014000000000	COUNT:82	RSSI:-52
UHF	E200001D2402018013509C32	COUNT:37	RSSI:-63
UHF	600050004000300020001000	COUNT:22	RSSI:-55


Number of UHF tags read, read duration, read speed

Sound on: Every time you read a tag, there will be a sound effect;
Sound off: only sounds are read when new

The read UHF tag is displayed by EPC, count indicates the number of times the tag was read, and rssi indicates the signal strength.

Save the read UHF tags to the root directory in tabular form

2, parameter settings and instructions

After entering the main interface, please click  in the upper right corner to do other settings. After modifying the parameters, you need to click "Confirm" to save.

band setting	902_928	>	CONFIRM
session	s0	>	CONFIRM
inventory timeout	50	ms	CONFIRM
counting interval	0	ms	CONFIRM
antenna power	30		CONFIRM
range 5 ~ 30			

ALGORITHM SETTINGS

2.1 Setting the fixed frequency

band setting	920_925	>	CONFIRM
--------------	---------	---	---------

This setting can be selected according to the type of UHF tag: 840–845 (China), 920–925 (China), 902–928 (open band), 865–868 (Euro), common settings: 902– 928.

2.2 call items

session	s2	>	CONFIRM
---------	----	---	---------

Setting this parameter will affect the way to read UHF tags. Users need to have certain UHF related knowledge. Optional parameters: s0 read speed is fast, suitable for reading within dozens of tags; s1 is applicable A large number of tags are counted; s2 and s3 are all used in conjunction with the algorithm. Common settings: s0 or s1.

2.3 inventory timeout, inventory interval

inventory timeout	100	ms	CONFIRM
counting interval	50	ms	CONFIRM

Counting timeout: refers to the time when the counting function returns the result. If 100ms is set, the counting function returns the result after 100 milliseconds.

Counting interval: refers to the interval between two counting points. If 50ms is set, the next counting will be performed 50 milliseconds after the counting function returns.

This parameter is controlled by software and is not controlled by the UHF module. The

longer the inventory timeout and the interval between the counts, the lower the power consumption.

Common settings: the inventory timeout is 100ms, and the inventory interval is 50ms.

2.4 antenna power



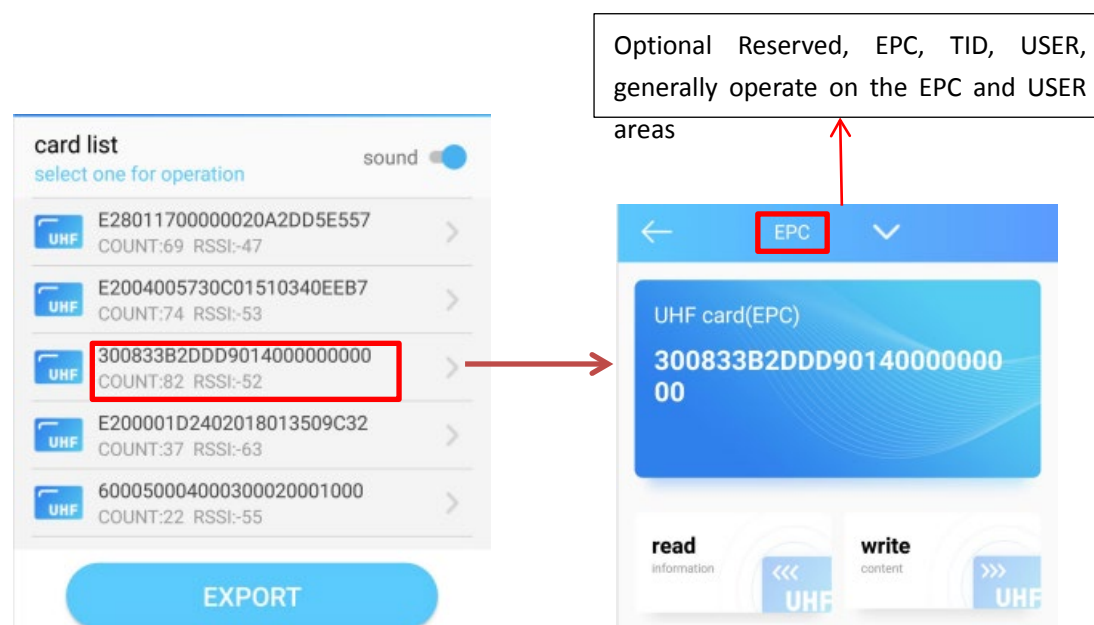
This setting can set the antenna power, the range is 5-30. The higher the power, the farther the reading distance is, the better the inventory effect is, but the power consumption is also larger.

The setting of this item needs to be based on the usage scenario, taking into account the UHF performance and working time. In scenarios where long-distance reading or fast counting is required, the performance can be improved by increasing the power to 30, but it is not recommended to use 30 power for a long time.

Common settings: 27.

3, reading and writing function

Before reading and writing the UHF card, please select a card in the “card list” and confirm the current operation area. Generally, operate the EPC and user areas.



The UHF tag is divided into four areas, namely: Reserved, EPC, TID, USER. See the explanation below for details.

name	explain
Reserved area	<p>Store the password, the length of 4 words (4 blocks).</p> <p>Address 0, 1 stores "Kill Password", which is used when executing the kill command, and can destroy the tag forever; the second and third blocks of the address store the "AccessPassword" access password.</p> <p>Note: Writing to this area is not recommended.</p>
EPC area	<p>Tag ID, global IoT unified item code, generally 8 words (8 pieces).</p> <p>Address 0 is CRC data, address 1 is PC data, the first two blocks are only readable and cannot be written.</p> <p>Address 2-7 stores the label EPC id for a total of six blocks.</p> <p>Note: It is recommended that the read and write operations start from the second block, a total of 6 blocks, that is, the address ≥ 2, which is the most commonly used block, and is recommended.</p>
Tid area	<p>The unique serial number of the factory-built label is generally factory-cured, and the manufacturer can add other information.</p> <p>Note: Cannot be modified, only read operations.</p>
User area	<p>The area dedicated to storing data for users, the length is not fixed, the different label capacities are different, and need to be confirmed with the label manufacturer.</p> <p>Note: This area can be read and written, it is recommended to use.</p>
address	Start address of read and write data
Number of blocks	<p>1 block = 1 word (word) = 2 bytes (byte) = 16 word bits (bit) = 4 hexadecimal numbers</p> <p>The length of the read or write data based on the starting address</p>
password	The access password of the area "AccessPassword", the default is 00000000, generally do not modify

The common area EPC is an example:

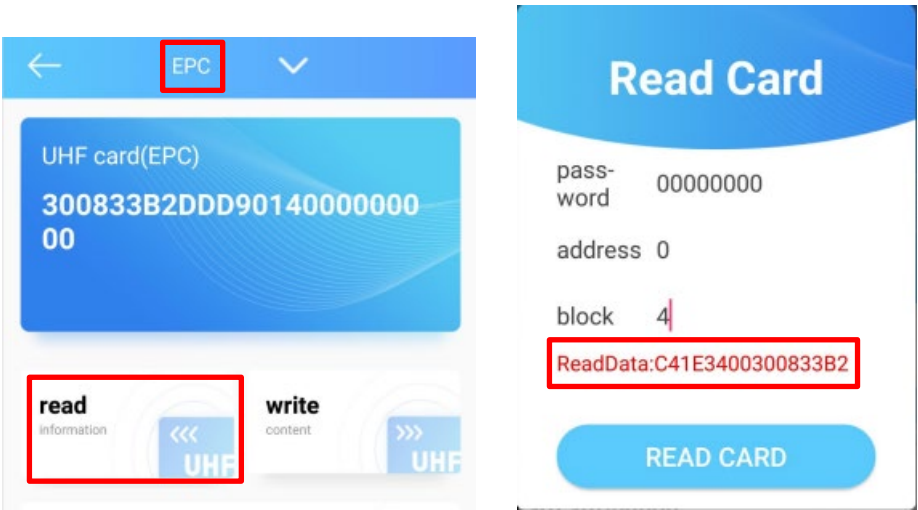


address	0	1	2	3	4	5	6	7
content	C 4 1 E	3 4 0 0	3 0 0 8	3 3 B 2	D D D 9	0 1 4 0	0 0 0 0	0 0 0 0
Explanation	CRC data	PC data	Display the label EPC id from address 2:					
			300833B2DDD9014000000000					

Addresses 0 and 1 store the CRC and PC data, not displayed, so the searched UHF tag EPC is displayed from address 2:300833B2DDD9014000000000

3.1 Reading UHF card

That is, reading an address content of a region of the UHF card



- 1) Select the area EPC and click on "Read UHF card"
 - 2) Enter the relevant parameters correctly: password, 00000000; address, 0; number of blocks, 4, click "read card"
 - 3) Read successfully, display ReadData: C41E3400300833B2
- ↓ Read from address 0, a total of 4 pieces of content, that is, 0, 1, 2, 3 pieces of content, namely C41E3400300833B2

C41E and 3400 are CRC data and PC data, not displayed, 300833B2 is display data

address	0	1	2	3	4	5	6	7
content	C 4 1 E	3 4 0 0	3 0 0 8	3 3 B 2	D D D 9	0 1 4 0	0 0 0 0	0 0 0 0
Explanation	CRC data	PC data	Display the label EPC ID from address 2: 300833B2DDD9014000000000					

If "Read failed, operation failed", then the UHF antenna needs to be aligned in parallel with the UHF card and the distance is shortened. After repeated attempts, the reading can be successful.

3.2 Write UHF card

Write information to an address in a certain area of the UHF card



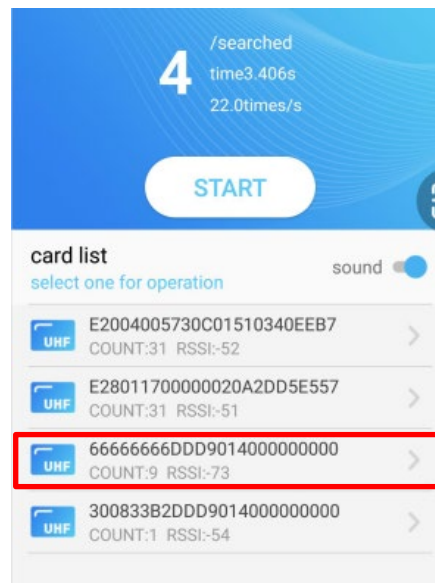
- 1) Select the area EPC and click "Write UHF card"
- 2) Enter the relevant parameters correctly: password, 00000000; address, 2; block number, 2; content, 66666666
- 3) Click on the write card and the message "Write successfully"

EPC address 0 and address 1 are CRC data and PC data, do not support write operations, can only start from address 2
Starting from address 2, write 2 pieces of content 66666666, that is, the contents of address 2 and address 3 become 66666666

address	0	1	2	3	4	5	6	7
content	C 4 1 E	3 4 0 0	6 6 6 6	6 6 6 6	D D D 9	0 1 4 0	0 0 0 0	0 0 0 0
Explanation	CRC data	PC data	Display the label EPC id from address 2: 66666666DDD9014000000000					

- 4) After searching successfully, search for the UHF tag again and find that the tag EPC is changed

to 66666666DDD9014000000000



Note: Only hexadecimal numbers can be entered in the content, and there should be no spaces, otherwise an error of "parameter error" will occur.

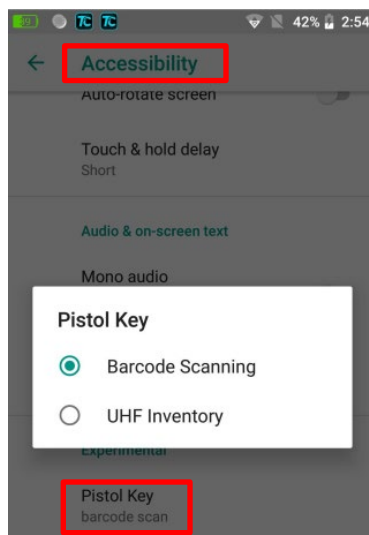
If "Read failed, operation failed", then the UHF antenna needs to be aligned in parallel with the UHF card and the distance is shortened. After repeated attempts, the card can be successfully written.

4, SD60RT related functions

4.1 Gun handle function setting (application layer)

This setting is for the setting of the grip button function when using UHF applications.

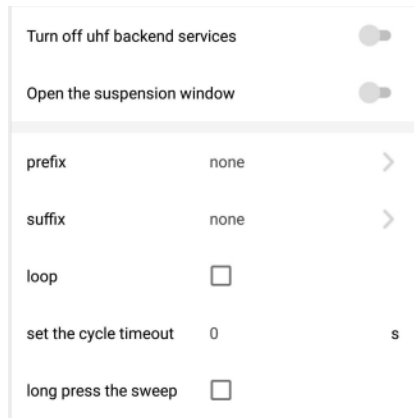
1) Settings - Accessibility - Tip Buttons - Select "Barcode Scan" or "UHF Scan".



2) If you select "Barcode Scan", press the handle button to open the scan head; if you select "UHF scan", after entering the UHF application, press the handle button to start the card search, and then release the card after release.

4.2 UHF service (service layer)

This setting is the relevant parameter for the background service settings.



1) Turn off UHF background service

By default, the service is turned on. If you exit the UHF application after turning off the service, you will not be able to use the handle button to control the UHF. You need to re-open the service in the Settings-UHF setting.

2) Open the floating window

The three modes of the grip button in the floating window control service can be tested in the text box:

Laser scanning: the handle of the gun controls the head, and the scanned barcode/QR code information is displayed at the focus.

Single UHF: short press the handle button to display the EPC of the first UHF tag obtained at the focus

Continuous UHF: short press the handle button to control open/end continuous reading of UHF tags, continuously read UHF EPC will be displayed in focus



3) Prefix and suffix settings

After setting the scan bar code/QR code or reading to the UHF tag successfully, the content is displayed at the focus of the suffix.

newline
space
CRLF
none
Cancel

Test results in the text box after selecting "Line Feed":

SF1003760543018

Select "Laser Scan", short press the handle button to scan the SF Express order number, the result is displayed

13344321DDD9014000000000
E28068900000000044EE52A3
000000000000000000003057

Select "single UHF", short press the handle button three times, each time display a read UHF tag EPC, and wrap

E2007A440CC0CDF16B9B5337
008000001865000000000000
13344321DDD9014000000000
3833343212070072D30F15B1
E280689000000001E86FA844
E2000017520800450930BB41
E28068900000000044EE52A3
658248451234567801234567
E2000019780B002814707F26
000000000000000000003057
658248451234567801234567

Select "continuous UHF", short press the handle button once, open the continuous reading of the UHF tag, continuously display the read UHF tag EPC, and wrap, short press the handle button again, stop reading UHF label.