

2.4G Active RFID Portable Base Station



1. Product overview

The portable Bluetooth base station adopts Bluetooth wireless communication technology, designed with high sensitivity and low power consumption technology, and has strong anti-interference ability and high-speed card reading ability. It can accurately obtain electronic tags and is mainly used for indoor tag data reception.

2. Parameter

Specifications	106*106*27mm
working voltage	USB/5V
Operating Frequency	Bluetooth, active 2.4GHz
Working current	≤500mA
Concurrent quantity	200 above
Recognition distance	30m
Communication interface	Rj45
Waterproof Level	IP50
Housing material	ABS
broadcast frequency	100ms~10s
Antenna orientation angle	<180°
Card reading distance	Open and undisturbed, adjustable at a distance of 30 meters
Broadcast power	-30~+4 dBm
anti-electromagnetic interference	10V/m0.1~1000MHz AM amplitude modulated electromagnetic wave

3. Use

Change the 'Remote IP Address' on the base station configuration page to 123.60.43.103 Port 2000

【2.4G RFID吸顶式一体机】配置页面

Language[语言]:

固件版本:

登录密码: 不大于8字符, 没修改不更新

设备编号: 8位十六进制字符

设备MAC地址:

设备IP地址:

子码掩码:

默认网关:

网络工作模式:

远程IP地址:

通讯端口:

Computer backend management <http://location.nn3600.com/> Account: Demo Password: 123456



Add page

Number: There is a converted number at the bottom of the card reader, fill in the ten digit number.

Name: Custom Content, Example: Guard Room, Meeting Room, etc.

Institution: Select to the last level.

新增

×

* 编号

* 名称

所属机构

演示

位置

请选择

备注

取消

保存

1. Connect the device to the same router on the computer (ensure it is on the same network segment)
2. Search for devices and change parameters through detection tools:
Open the TaggingArmCoreFrm.exe tool and click the "Search for Devices" button to display all all-in-one devices connected to the network. To modify the device IP address to be in the same network segment as the current LAN IP network,



If the device IP address is changed to 192.168.1.87, click on parameter settings to complete the modification.

3. Set detailed device parameters through a web browser:

Enter the device IP address in the browser address bar, such as 192.168.1.87 (WEB configuration displayed as follows:

基本信息

- | | | |
|----------------|--|---------------|
| ① Language[语言] | <input type="text" value="1 Chinese[中文]"/> | |
| ② 固件版本 | <input type="text" value="9.0"/> | |
| ③ 登录密码 | <input type="text" value="*****"/> | 不大于8字符，没修改不更新 |
| ④ 系统时间 | <input type="text" value="2020-12-04 15:26:50"/> | 没修改不更新 |
| ⑤ 设备编号 | <input type="text" value="1912A096"/> | 8位十六进制字符 |
| ⑥ 心跳时间 | <input type="text" value="60"/> | |

- ① Chinese English switching options
- ② The firmware version currently being used by the device
- ③ The login password entered when entering the configuration page is not available by factory default
- ④ The current time of the device
- ⑤ Each device has a unique ID number
- ⑥ Communicate at regular intervals to check if the device is online (default 60 seconds)

射频读卡参数

- | | | |
|----------|---------------------------------------|-----------------|
| ① 射频模式 | <input type="text" value="0 常规接收模式"/> | |
| ② 射频密码 | <input type="text" value="*****"/> | 没修改不更新 |
| ③ 灵敏度限制 | <input type="text" value="0"/> | 0不限制,1~15值越大越灵敏 |
| ④ 重读过滤时间 | <input type="text" value="0"/> | 秒(0为不过滤实时上报) |
| ⑤ 读卡报警时间 | <input type="text" value="0"/> | 0~3600秒 |
| ⑥ 读卡上报条件 | <input type="text" value="0 所有读卡"/> | |

- ① Switching between modes;
 - ✓ Normal receiving mode: Read 2.4g tags for use
 - ✓ Conventional response mode: used for answer sheet labels and base stations
 - ✓ Enhanced * * mode: achieve better reception status
 - ✓ Bluetooth mode: used to receive Bluetooth tags

If the modified mode cannot be used normally, the 2.4g class label will be changed back to

normal mode

- ② It is not recommended to modify the RF password, as it cannot be synchronized with the tag after modification
- ③ 2.4g distance adjustment, 0 maximum distance, but sensitivity value will not be displayed, 1 minimum 15 maximum (sensitivity value displayed)
- ④ Read the label repeatedly within the set time and upload it only once, with a default upload time of 0 seconds in real-time
- ⑤ Suitable for TD-PJ15, the light flashes once every set time, with a default value of 0 for off
- ⑥ All card reading: The tag IDs received by the base station will be uploaded

Only for matching low-frequency excitation addresses: This option allows the reader to only receive the "low-frequency number" of the "low-frequency excitation parameters"

有线网络连接参数

MAC地址	54:68:19:12:A0:96
IP地址	192.168.1.84
子码掩码	255.255.255.0
网关	192.168.1.1
有线连接时长	0

Display the current network parameters of the device

远端接口参数

① 设备网络模式	0 TCPIP客户端
② 远程IP地址	192.168.1.101
③ 通讯服务端口	2000

- ① The device is normally compatible with TCPIP and does not require modification
- ② Set the computer IP address or server IP address to which the data received by the device is uploaded
- ② The default communication port is 2000, which can be modified according to the service port used by the customer

低频激励参数

- | | | |
|----------|--------------------------------------|----------|
| ① 低频模式 | <input type="text" value="1 双字节模式"/> | |
| ② 低频编号 | <input type="text" value="0"/> | |
| ③ 低频功率 | <input type="text" value="100"/> | 0~100百分率 |
| ④ 低频载波频率 | <input type="text" value="120"/> | K赫兹 |
| ⑤ 低频数据速率 | <input type="text" value="333"/> | 微秒 |
| ⑥ 低频周期时长 | <input type="text" value="0"/> | 毫秒 |

- ① Single byte turn off low-frequency output; Double byte is suitable for regular cards; Enhanced mode is suitable for special cards; Default Double Byte Mode
- ② Low frequency numbering is used to identify 125k address codes
- ③ 125k activation distance adjustment 0 minimum 100 maximum
- ④ Manufacturer debugging options, please do not modify, default value is 120
- ⑤ Manufacturer debugging options, please do not modify, default value is 333
- ⑥ Set the interval working duration to 125k

无线网络连接参数

- | | |
|---------|-----------------------------------|
| 无线网络使能 | <input type="text" value="0 禁用"/> |
| 移动设备识别码 | <input type="text"/> |
| 手机卡识别码 | <input type="text"/> |
| 信号质量 | <input type="text" value="0"/> |
| 无线连接时长 | <input type="text" value="0"/> |

This feature is suitable for base stations that support 4G card insertion, with options for enabling and disabling, and displaying information related to IoT network cards

<input type="text" value="秒(0为不间断头上报)"/>	低频载波频率	<input type="text" value="120"/>	分辨率
<input type="text" value="0~3600秒"/>	低频数据速率	<input type="text" value="333"/>	微秒
有读卡 <input type="button" value="v"/>	低频周期时长	<input type="text" value="0"/>	毫秒

无线网络连接参数	
<input type="text" value="8:19:12:A0:96"/>	无线网络使能 <input type="button" value="0 禁用 v"/>
<input type="text" value="168.1.84"/>	移动设备识别码 <input type="text"/>
<input type="text" value="255.255.0"/>	手机卡识别码 <input type="text"/>
<input type="text" value="168.1.1"/>	信号质量 <input type="text" value="0"/>
<input type="text"/>	无线连接时长 <input type="text" value="0"/>
<div style="border: 2px solid red; padding: 5px; display: inline-block;"> <input type="button" value="保存并重启"/> </div>	

Modifying any parameter requires clicking 'Save and Restart' to take effect

Network operation instructions

Serial No.	Name	Instruction	Parameter	Describe	Example	Return value
1	Get version number	#GET_VER	No	The version number of the current device	#GET_VER	*VER: ?.*
2	get SysTime	#GET_TIME	No	Get the date and time of the device	#GET_TIME	*YYYY-MM-DD HH:MM:SS*
3	Set system time	#SET_TIME	YYYY-MM-DD HH:MM:SS	Set the date and time of the device	#SET_TIME 2015-03-15 17:00:00	*OK*
4	Retrieve historical records	#GET_HISTORY	No	Submit records of failed uploads	GET_HISTORY Y	Data packaging and return
5	factory reset	#FACTORY	No	Restore manufacturer default values	#FACTORY	*OK*

(Note: If it is an instruction with parameters, the parameter format must follow the format sequence required by the instructions)

Send data to tags (send text messages, send alarm instructions)

Data format: Character type

Length: indefinite

Instruction Name	Parameter 1	Parameter 2	Parameter 3
#SET_TAG_DA	Function 1	Function 1	Function 1
TA	0001- Tag Number	Text Content	#SET_TAG_DATA 0002-1234567890 Msg: Hello!/n
	Function 2	Function 2	Function 2
	0002- Tag Number	Alarm	1. All tags alarm for 30 seconds #SET_TAG_DATA 0002-0000000000 100030/n 2. All tags turn off alarms #SET_TAG_DATA 0002-0000000000 000000/n 3. Set the label alarm to 30 seconds #SET_TAG_DATA 0002-1234567890 100030/n 4. Specify label light alarm for 30 seconds #SET_TAG_DATA 0002-1234567890 200030/n 5. Specify label sound alarm for 30 seconds #SET_TAG_DATA 0002-1234567890 300030/n 6. Specify label alarm release #SET_TAG_DATA 0002-1234567890 000000/n

Provide examples

Example 1: The label alarm for the specified card number 1234567890 will be issued within 30 seconds# SET_TAG_DATA 0002-1234567890 100030/n

Example 2: Label alarm release for specified card number 1234567890:# SET_TAG_DATA 0002-1234567890 000000/n

Attention: If the tag number is 0000000000, operate on all tags

1. Definition of Data Packet:

40 character packet format (excluding carriage returns and line breaks at the end)

No.	Definition	Describe
1	Head logo	The content format of the lower 4 bits (H) of the checksum is hexadecimal character format The device type, device number, or site number can be modified by oneself (by entering the device management page, modifications can be made) (This data refers to the device number of the card reader, not the wristband number)
2	Equipment ID7(H)	
3	Equipment ID6(H)	
4	Equipment ID5(H)	
5	Equipment ID4(H)	
6	Equipment ID3(H)	
7	Equipment ID2(H)	
8	Equipment ID1(H)	

9	Equipment ID0(H)	
10	Annual high (D)	Content format: Decimal character format time Year Month Day Hour Minute Second
11	Annual low (D)	
12	Monthly high (D)	
13	Monthly low (D)	
14	Daily high (D)	
15	Daily low (D)	
16	Time high position (D)	
17	Time low position (D)	
18	Time low position (D)	
19	Split low (D)	
20	Second high position (D)	
21	Second low position (D)	
22	10th digit of card number (D)	Card number
23	9th digit of card number (D)	Content format: Decimal character format
24	8th digit of card number (D)	2.4G card number for wristband
25	7th digit of card number (D)	Content format: Hexadecimal character format
26	6th digit of card number (D)	Card number: Consistent with the printed number on the outer shell, 5 bytes for human card and 4 bytes for vehicle card
27	5th digit of card number (D)	
28	4th digit of card number (D)	
29	3th digit of card number (D)	
30	Second digit of card number (D)	
31	First digit of card number (D)	
32	Function indicator position(C)	Content format: Any character, uppercase symbol indicates normal battery level, lowercase symbol indicates low battery level A/A: Positioning function, tag data 1 represents the low-frequency positioning address code collected by the tag, B/B: Remove the alarm function S/S: Alarm function, label data 1 value of 01 indicates distress alarm, 02 indicates acceleration alarm H/S: Heart rate function, labeled data 1 represents the heart rate collected by the tag, and data 2 represents the blood oxygen value. T/t: Temperature function, label data 1 represents the integer value of body temperature, data 2 represents the decimal value of body temperature, and data 3 represents the ambient temperature.
33	Label Data 1	
34		
35	Label Data 2	
36		
37	Label Data 3	RSSI signal strength value, with high half bytes 0-F indicating signal strength, ultra small values indicating strong signals, and low half bytes 1-4 indicating corresponding channel numbers
38		
39	The high 4 digits of the checksum (H)	Content format: Hexadecimal character format Check the sum byte, add up the hexadecimal values of the first 38 characters, and add the checksum value here. The merged sum byte value is zero
40	The lower 4 bits of the checksum (H)	

2. Detailed introduction of data packet: checksum example: Example:

#0000000011504180808090022046518E9900007D

Serial No.	Character	Hexadecimal	Calculation method
01	#	23	<p>#</p> <p>Checksum calculation: the sum of all hexadecimal values, with zero value for non bytes</p> <p>23+30+30+30+30+30+30+30+30+31+31+35+30+34+31+38+30+38+30+38+30+39+30+30+32+32+30+34+36+35+31+38+45+39+39+30+30+30+30+7D=800</p> <p>(The final byte of the merged value is 0)</p>
02	0	30	
03	0	30	
04	0	30	
05	0	30	
06	0	30	
07	0	30	
08	0	30	
09	1	31	
10	1	31	
11	5	35	
12	0	30	
13	4	34	
14	1	31	
15	8	38	
16	0	30	
17	8	38	
18	0	30	
19	8	38	
20	0	30	

21	9	39
22	0	30
23	0	30
24	2	32
25	2	32
26	0	30
27	4	34
28	6	36
29	5	35
30	1	31
31	8	38
32	E	45
33	9	39
34	9	39
35	0	30
36	0	30
37	0	30
38	0	30
39	7	7D
40	D	

Network heartbeat packet mechanism

In order to ensure the reliability of the connection and check whether the device is online in real

time, the device will send heartbeat packet data to the server at regular intervals (default is 60 seconds).

1. Data format for sending heartbeat packets on the device side (40 characters):

The data format of the heartbeat packet is consistent with the card reading packet above, and the card number content in its packet is 0000000000.

For example: # 0331DF00160227162357000000000000000092

2. The data format for the confirmation packet sent by the server (24 characters):

In order to maintain consistency between the system time on the device side and the server side, as well as to automatically restart the device and reconnect to the network in case of system network abnormalities (if the device automatic restart function is enabled), the server should respond to the heartbeat packet sent by the device by returning data in the following format:

Name	Head logo	Command code	Equipment date	Device time
describe	#	ACK	10 date characters	8-bit time character
For example: # ACK 2015-05-09 08:14:08				

Correction parameter format

UUID	Function	Format						Return value
0xffe3	set time	Byte1		Byte2		Byte3		Hour*256+
		Hour		minute		second		minute
0xffe5	set temperature	Byte1		Byte2				Integer *256+
		Temperature integer part		Temperature decimal part *100				Decimal
0xffe7	Set ID	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	ID1*256+ ID2
		ID1	ID2	ID3	ID4	ID5	ID6	
0xffe8	Correct temperature	Please refer to the temperature correction parameter table below for details						length *256+ function

Temperature correction parameter table

Byte number	Describe		
1	length, 13		
2	Function selection	0x01	The following data represents the hand temperature coefficients, namely a1, b1, and c1
		0x02	The following data represents the ambient temperature coefficients, namely a2, b2, and c2
3	Quadratic coefficient (a1/a2)	high position	
4		high position	
5		Next lowest	
6		Low position	
7	Primary coefficient (b1/b2)	high position	
8		Secondary high	
9		Next lowest	

10		Low position
11	constant coefficient (c1/c2)	high position
12		Secondary high
13		Next lowest
14		Low position

Temperature correction curve formula: $(a1 + (\text{hand temperature} * 10 * S - 300) / b1) + (\text{INT}(\text{hand temperature} * 10 * S / 350) * (\text{hand temperature} * 10 * S / 350) - 10000) / c2$

Among them: $S = (10000 - \text{ambient temperature} * 10 * 40 * (\text{ambient temperature} * 10 - 250) / c1)$

Factory default value:

a1 = 360

b1 = 60000

c1 = 2896

a2 = 0

b2 = 0

c2 = 50

Example:

Time: 22:10:55, represented as: 0x160A37

Temperature: 34.5 is represented as 0x2232

Temperature correction:

Negative numbers are represented by complement: -485449 is represented as 0xFF897B7

Attention: Hand temperature coefficient needs to be transmitted first

Common test exception handling

1. The detection tool cannot find the device: The detection tool can search for devices across network segments, which can eliminate the problem of improper device parameter settings. First, observe whether the green indicator light of the device is always on. If it is not on, it means that the device is not working or there is a power failure. Observe whether the network port indicator light is always on again, and solve the problem of network cable and connection abnormalities.

2. The detection tool can search for the device, but the web browser does not respond when entering the device IP: first use the detection tool to check if the device's IP address is in the same LAN segment. The server's LAN IP address can be viewed through network connection properties. Choose different browsers for testing.

3. TCP/IP testing software cannot read electronic tags: First check if the device server IP address settings and port numbers are consistent. Re check if the system firewall has restricted the corresponding ports, and you can turn off the firewall and firewall software before testing again.

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