

# VDB1609SK规格书 /Datasheet

## 蓝牙工卡/Bluetooth card

### 文档信息/Document Information

标题/Title	VDB1609SK 蓝牙工卡规格书/VDB1609SK Bluetooth card Datasheet	
文档类型/Document Type	规格书/Datasheet	
文档编号/Document No.	WN-22030067	
版本日期/Version & Date	V1.01	26-May -2022
秘密等级/Classification	公开/Open	

## 历史版本/Reversion History

版本号/Version	更新内容/Remark	制作人/Maker	日期
V1.01	初始版本/Initial version	Sherman	20220526

## 设备清单/Product List

名称/Item	型号/Model Number	数量/Number	备注/Remark
蓝牙工卡/Bluetooth card	VDB1609SK	1pcs	
吸合式充电线/ Suction charging cable	USB 接口输入/USB port input	1pcs	

95Power 保留本文档及本文档所包含的信息的所有权利。95Power 拥有本文档所述的产品、名称、标识和设计的全部知识产权。严禁没有征得 95Power 的许可的情况下复制、使用、修改或向第三方披露本文档的全部或部分内容。

95Power 对本文档所包含的信息的使用不承担任何责任。没有明示或暗示的保证，包括但不限于关于信息的准确性、正确性、可靠性和适用性。95PowerB 可以随时修订这个文档。可以访问 [www.95power.com.cn](http://www.95power.com.cn) 获得最新的文件。

Copyright © 2022, 深圳市微能信息科技有限公司。

95Power® 是深圳市微能信息科技有限公司在中国的注册商标。

95Power reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of 95Power is strictly prohibited.

The information contained herein is provided “as is” and 95Power assumes no liability for the use of the information. No warranty, either express or implied, is given, including but not limited, with respect to the accuracy, correctness, reliability and fitness for a particular purpose of the information. This document may be revised by 95Power at any time. For most recent documents, visit [www.95power.com.cn](http://www.95power.com.cn).

Copyright © 2022, 95Power95Power Information Technology Co., Ltd.

95Power® is a registered trademark of 95Power Information Technology Co., Ltd. in China

## 目录/Contents

1. 产品介绍/Product introduction .....	4
1.1 特性/Features .....	5
1.2 应用/Application .....	5
2. 硬件参数/Hardware parameters .....	5
3. 软件使用说明/Software Application Guide .....	6
3.1 下载 APP/ Download APP .....	6
3.2 扫描蓝牙信标/Scan Bluetooth Beacon .....	6
3.3 连接蓝牙信标/Connect Bluetooth Beacon .....	7
3.4 配置介绍/Configuration Introduction .....	8
3.5 修改蓝牙信标名称/Modify Bluetooth Beacon Name .....	9
3.6 修改 UUID/Modify UUID .....	10
3.7 修改 User service data/Modify User service data .....	11
3.8 修改 Major、Minor/Modify Major/Minor .....	12
3.9 修改 Measured Power/ Modify Measured Power .....	13
3.10 修改发射功率/Modify Transmitting Power .....	14
3.11 修改广播间隔/Modify Advertise Interval .....	21
3.12 修改密码/Modify Password .....	22
4. 联系方式/Contact information .....	23

## 1. 产品介绍/Product introduction

VDB1609SK 是一款 BLE(蓝牙低功耗)4.2 卡。它可以广播其所有者的个人信息,如姓名和 UUID。可作为室内定位卡使用,可通过 BLE 网关或其他 BLE 定位基站进行定位。

VDB1609SK is a BLE(Bluetooth Low Energy) 4.2 card. It can broadcast its owner's personal identification information like name and UUID. And it can be used as indoor positioning card, which can be located by BLE gateway or other BLE locating base-station.

VDB1609SK 有一个可充电的 500mAh 锂电池。它可以通过一个磁性 USB 连接器线充电。请按照磁吸方向,使卡与连接器紧密结合。不要让电池耗尽太长时间,这可能会损坏电池,并使其难以充电。

VDB1609SK has a rechargeable 500mAh Li-Battery. It can be charged by a magnetic USB connector line. Please follow the magnetic draw direction which will combine the card and connector tightly. Do not let the battery run out for too long, which may damage the battery, and make it difficult to recharge.

VDB1609SK 有一个电源键,也可以作为 SOS 键使用。开机模式下长按可激活 SOS 信号。关机模式下长按开机,开机模式下快速短按 3 次,再长按 3s,即可关机。

The VDB1609SK has a power button that can also be used as an SOS button. Hold down in boot mode to activate the SOS signal. In shutdown mode, long press to power on. In startup mode, short press three times quickly and long press for 3s to power off.

VDB1609SK 有两个 LED。当电池充电时,红灯亮。按下按钮,蓝灯亮。

VDB1609SK has two LED. The red one will be on when the battery is charging. The blue one will be on when pressing the button.



图 1 VDB1609SK 产品图/Product picture

## 1.1 特性/Features

- ◆ 低功耗/Low power consumption
- ◆ IP66 级防尘防水/ IP grade: IP66 (water resistance)
- ◆ 最大广播距离可达 70m/ Maximum broadcast distance up to 70m
- ◆ 支持二维码, NFC 定制内容/Support TWO-DIMENSIONAL code, NFC customized content
- ◆ 应用灵活/Application of flexible
- ◆ 携带便捷/Convenient to carry
- ◆ 符合 RoHS, FCC, CE 标准

## 1.2 应用/Application

- ◆ 室内定位/Indoor positioning
- ◆ 信息推送/Information push
- ◆ 身份识别/Identification

## 2. 硬件参数/Hardware parameters

基本工作参数/Basic parameter	
默认刷新频率 Refreshing frequency by default	2Hz
数据速率/Data rate	1Mbps(Bluetooth ® 4.2)
传输功率/Transmission power	-20~+4dBm (2dB 递增/Increasing)
灵敏度/Sensitivity	-94dBm at 1Mbps BLE
一次充电使用时间 General using time when fully charged	2 month@1Hz (@0dBm 2Hz)
广播距离/Broadcasting distance	70m(Max TX power)
电池容量/Battery capacity	500mAh
温度/ Temperature	Operational: -20°C~70°C Charging: 0~45°C Storage: -20~40°C(<3month)
产品尺寸/Dimension	85mm*54mm*7.5mm(± 1mm)
调制技术/Modulation technique	GFSK
工作模式/Work mode	iBeacon

蓝牙参数/Bluetooth parameters	
频率范围/Frequency	2400MHz---2483.5MHz
协议标准/Protocol	Bluetooth @4.2
吸合式充电线/Suction charging cable	
输出/Output	DC 5V /1A

### 3. 软件使用说明/Software Application Guide

#### 3.1 下载 APP/ Download APP

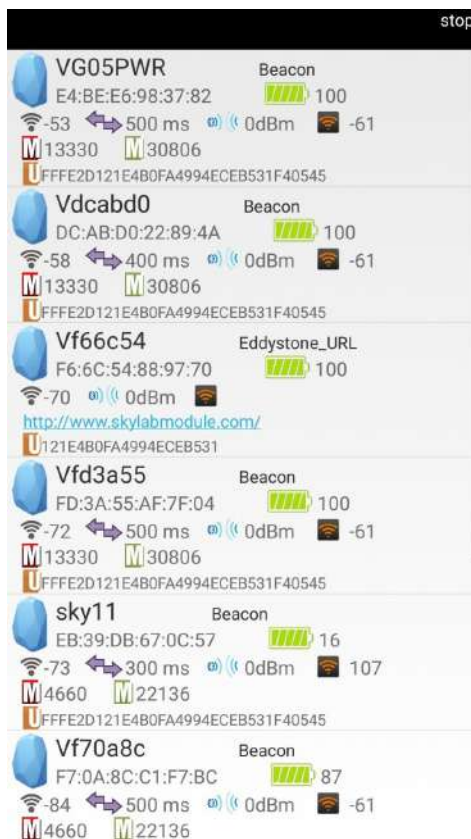
Skylab\_xbeacon 还没有投入市场。 最新的 APP 请联系我们的销售。

Skylab\_xbeacon hasn't been put into the market yet. Please contact our sales for the latest APP.

#### 3.2 扫描蓝牙信标/Scan Bluetooth Beacon

打开 APP，如果手机提示打开蓝牙，请允许，手机自动开始扫描周围的蓝牙信标。

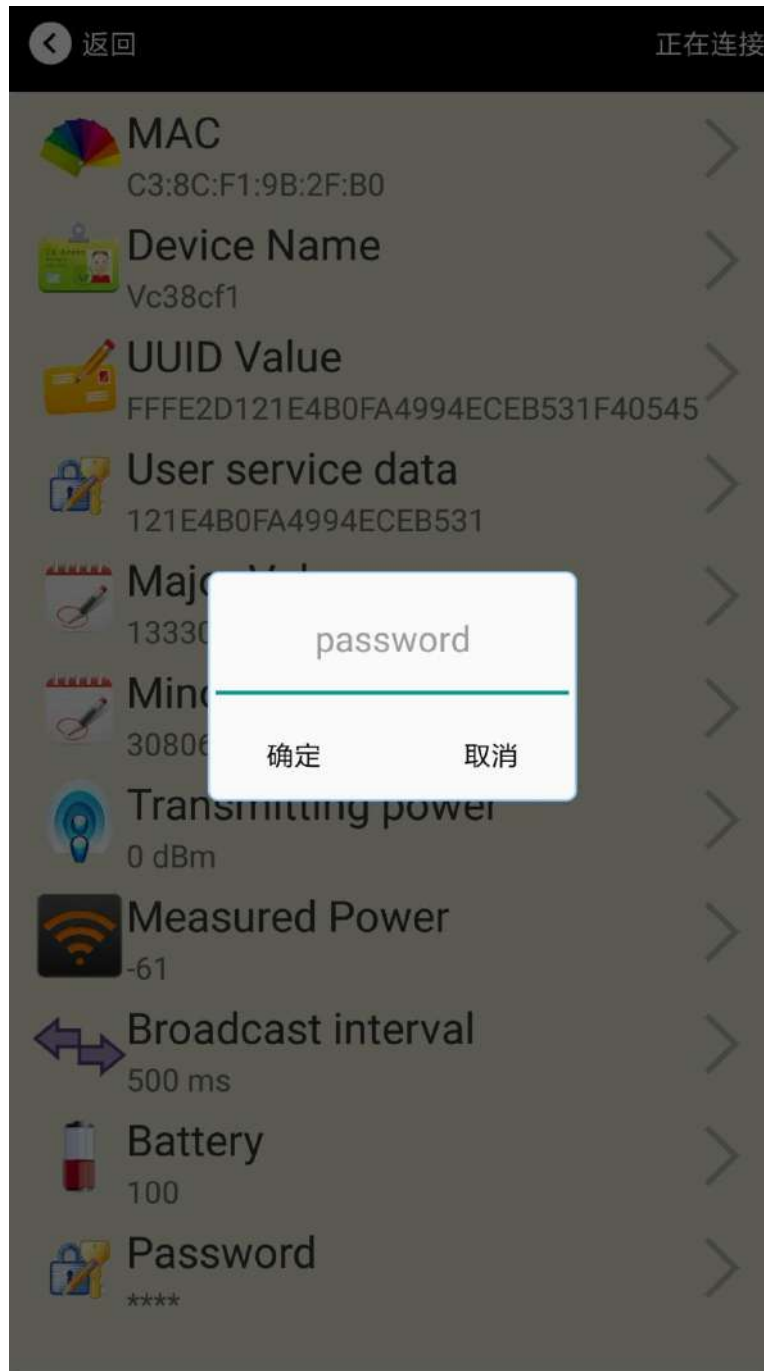
Open the APP, if cell phone ask for permission to open bluetooth, please select yes. Then it will begin to scan the surrounding Bluetooth Beacons.



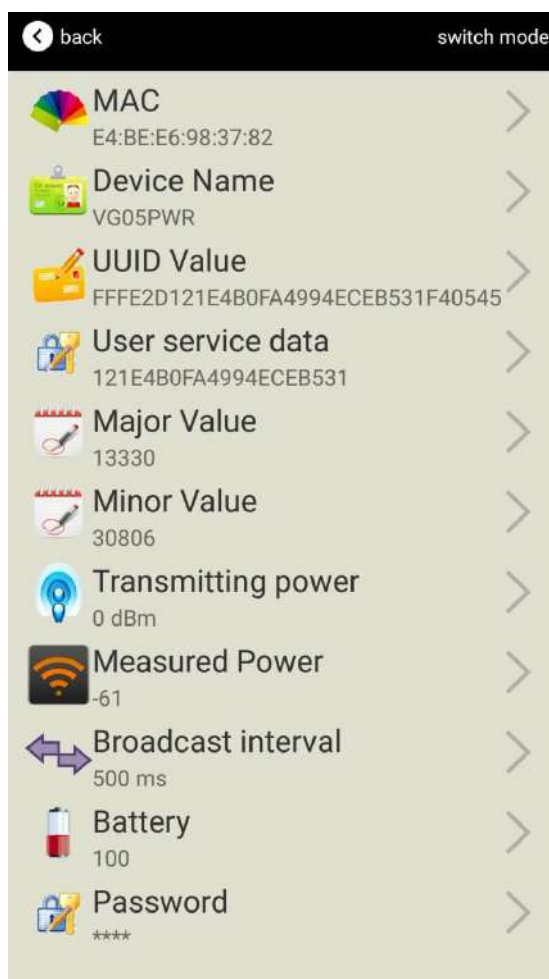
### 3.3 连接蓝牙信标/Connect Bluetooth Beacon

点击要连接的蓝牙信标，30 秒内输入密码，即可获得操作权限。(出厂密码:1234)

Click the Bluetooth Beacon to be connected, enter the password within 30 seconds, in order to obtain operating privileges .(Factory Password:1234)



### 3.4 配置介绍/Configuration Introduction



介绍/Introductions:

MAC: MAC 地址/MAC address

Name: 所选蓝牙信标的名称。/The name of the Bluetooth Beacon which is selected.

UUID: 按照 ISO/IEC11578:1996 标准的 128 位标识符(16 字节)/128-bit identifier according to ISO/IEC11578:1996 standard (32 hexadecimal digits)

User service data:用户数据, 24 个 16 进制数字/User data, 24 hexadecimal numbers

Major: 16 位标识符(0-65535)/Set 16-bit identifier (0-65535)

Minor: 16 位标识符(0-65535)/Set 16-bit identifier (0-65535)

Measured Power: 距离 1 米时的参考信号强度/Signal strength at 1 meter

Transmit Power: 发射功率/Transmit power

Advertise Interval: 广播间隔/ advertise interval

Battery Level: 电池电量/ Battery Capacity



Password: 密码（默认 1234）/Connection password

配置好信息后，蓝牙连接断开，配置将生效。

After the information is configured ,the configuration will take effect after the bluetooth connection is disconnected.

### 3.5 修改蓝牙信标名称/Modify Bluetooth Beacon Name

点击“Device Name”，出现以下 UI，然后在“输入一个名称”框中输入长度小于 12 位的英文字符名称，也可以在“或者选一个”里选一个名称。然后点击“确认修改”。

Click the “Device Name”, the following UI will be opened. Then enter a length of less than 12-bit English characters as VDB1609 device name in the following “Enter a Name” box. Then click “confirm to modify”.



### 3.6 修改 UUID/Modify UUID

点击“UUID”，出现以下 UI，然后在“输入一个 UUID 值”框中输满 16 个字节（32 个十六进制字符）作为 Beacon 的 UUID。然后点击“确认修改”。

Click the “UUID”, the following UI will be opened. Then and then enter a 32-byte string of sixteen as the UUID of VDB1609 in the following “Enter an UUID” box. Then click “confirm to modify”.



### 3.7 修改 User service data/Modify User service data

点击“User service data”，出现如下界面，在“输入用户数据”中输入 24 个 16 进制字符。然后点击“确认修改”。

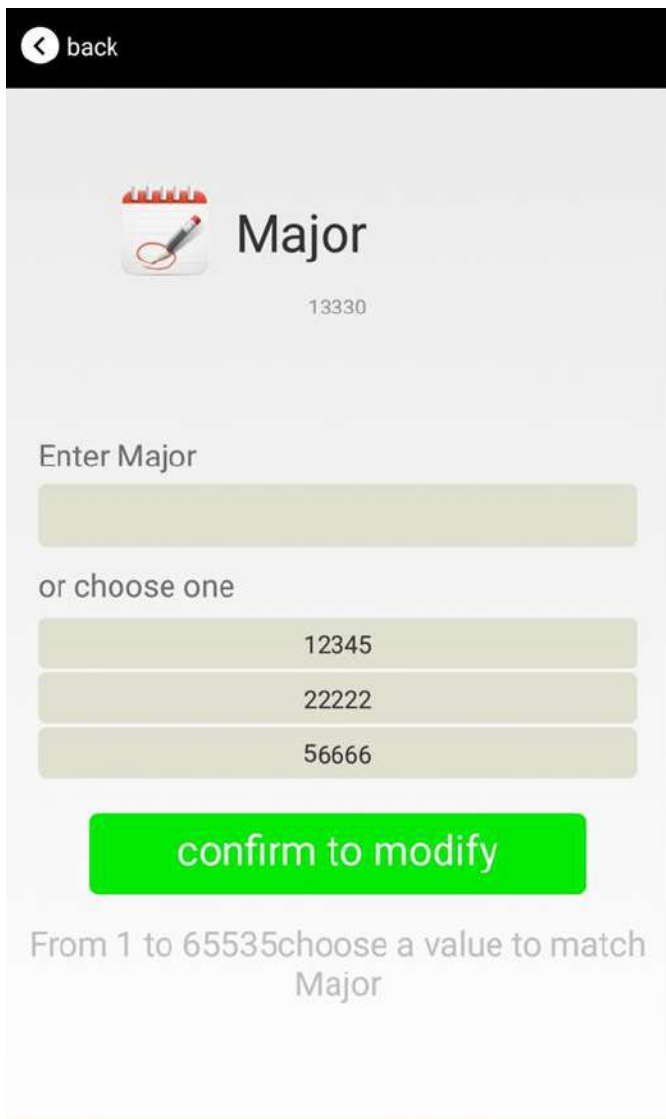
Click the " User service data ", the following interface will be opened. Then enter a Hexadecimal string of 24 word . Then click “confirm to modify”.



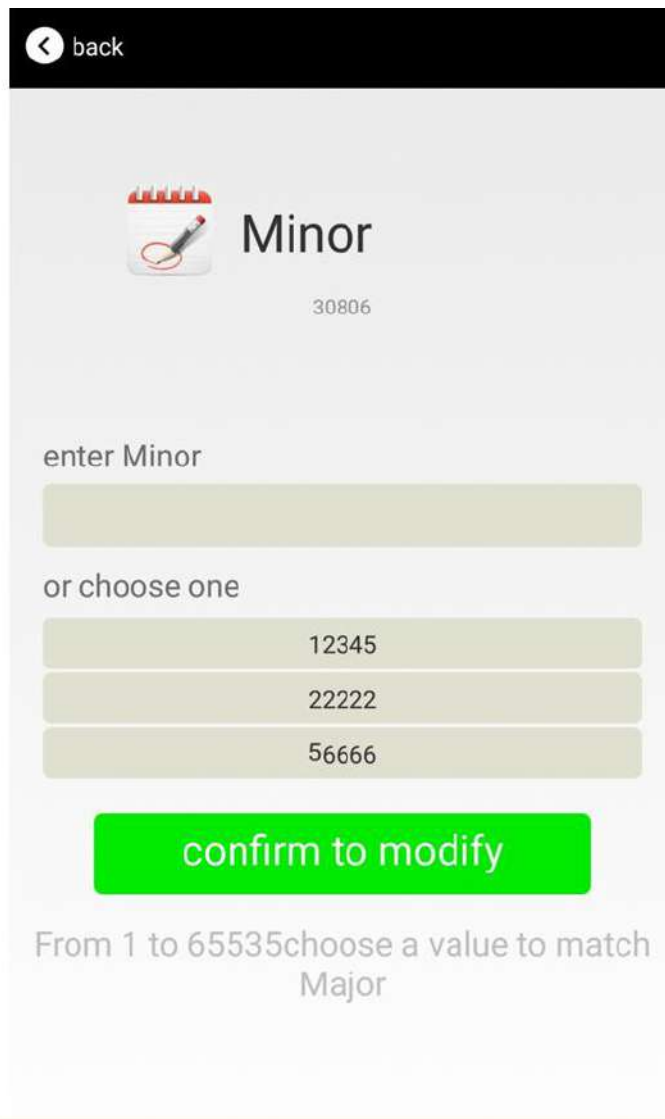
### 3.8 修改 Major、Minor/Modify Major/Minor

点击“Major”，出现如下界面，设置 0~65535 为设备的 Major 值。然后点击“确认修改”。

Click the "Major"/"Minor" ,the following UI will be opened. Then set a value between 0~65535 as the Major/Minor value of the device. Then click “confirm to modify”.



The screenshot shows a mobile application interface for modifying the Major value. At the top, there is a black header with a white back arrow and the text "back". Below the header, there is a white card with a red and white notepad icon and the word "Major" in bold. Underneath, the current value "13330" is displayed. A section titled "Enter Major" contains a light green input field. Below this, the text "or choose one" is followed by three light green buttons with the values "12345", "22222", and "56666". At the bottom of the card is a large green button with the text "confirm to modify". Below the card, the text "From 1 to 65535 choose a value to match Major" is displayed.



The screenshot shows a mobile application interface for modifying the Minor value. At the top, there is a black header with a white back arrow and the text "back". Below the header, there is a white card with a red and white notepad icon and the word "Minor" in bold. Underneath, the current value "30806" is displayed. A section titled "enter Minor" contains a light green input field. Below this, the text "or choose one" is followed by three light green buttons with the values "12345", "22222", and "56666". At the bottom of the card is a large green button with the text "confirm to modify". Below the card, the text "From 1 to 65535 choose a value to match Major" is displayed.

### 3.9 修改 Measured Power/ Modify Measured Power

点击“Measured Power”，出现如下 UI，在距离 Beacon 1 米远处，设置测量功率，可调范围 -100dBm~-30dBm，默认为-61dBm。然后点击“确认修改”。

Click the “Measured Power”, ,the following UI will be opened. Then select a measured power range from -100dBm to -30dBm. The default is -61dBm. Then click “confirm to modify”.

Measured Power 含义为，当接收设备接收到的信号强度为-61dBm 时，可认为该设备距离 Beacon 约为 1 米。

Measured Power means, when a phone's RSSI is -61dBm, it is about 1 meter from VDB1609SK.



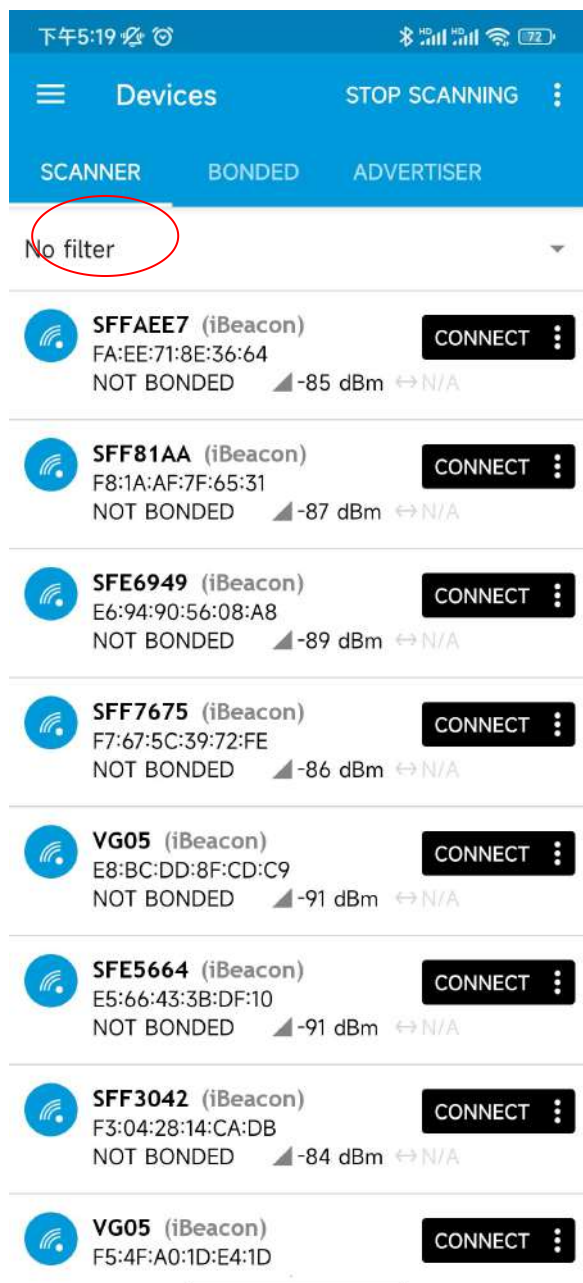
### 3.10 修改发射功率/Modify Transmitting Power

发射功率的修改需要用到另一个 APP——nRF Connect。

Another APP, nRF Connect, is used to modify the transmitting power.

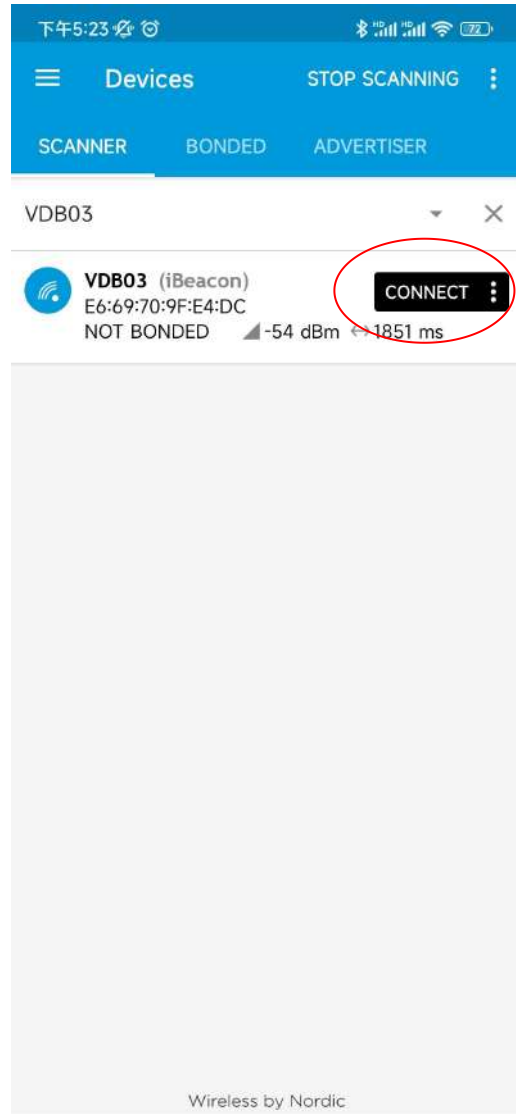
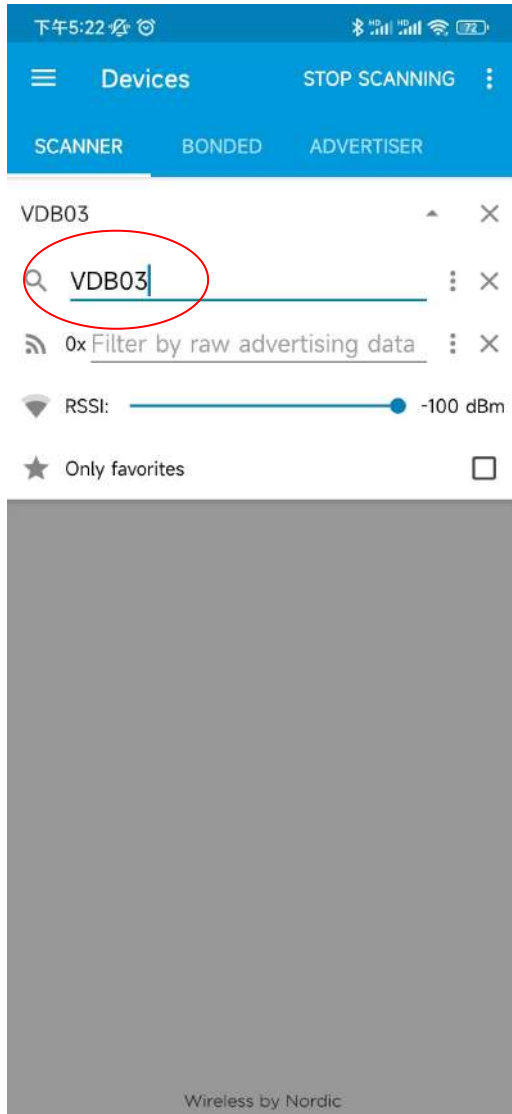
1、打开 nRF Connect，下拉界面刷新后就开始扫描周围的蓝牙信标；

1、Open nRF Connect and scan bluetooth beacons around after the drop-down screen is refreshed.

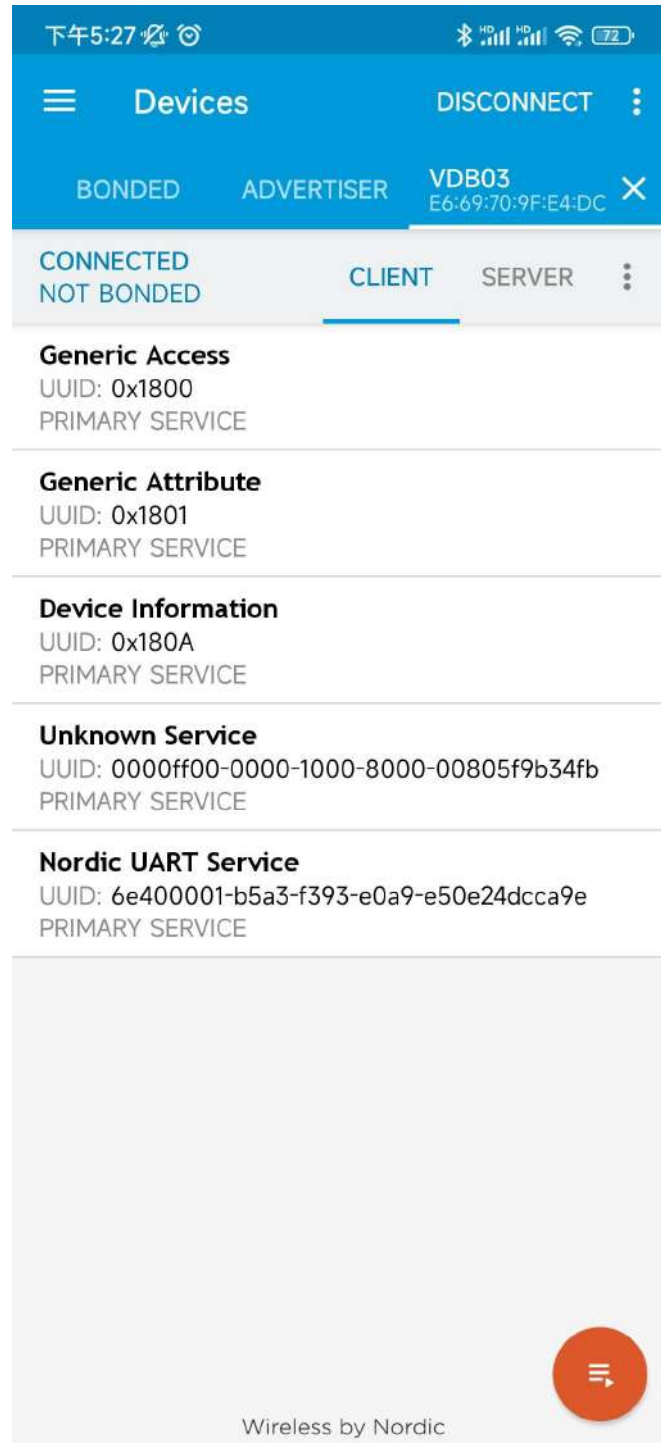


2、为了方便寻找到目标信标，可以点击“**No filter**”后，在第一栏中输入 VDB03；

2、To find the target beacon conveniently, click "No Filter" and enter VDB03 in the first column.



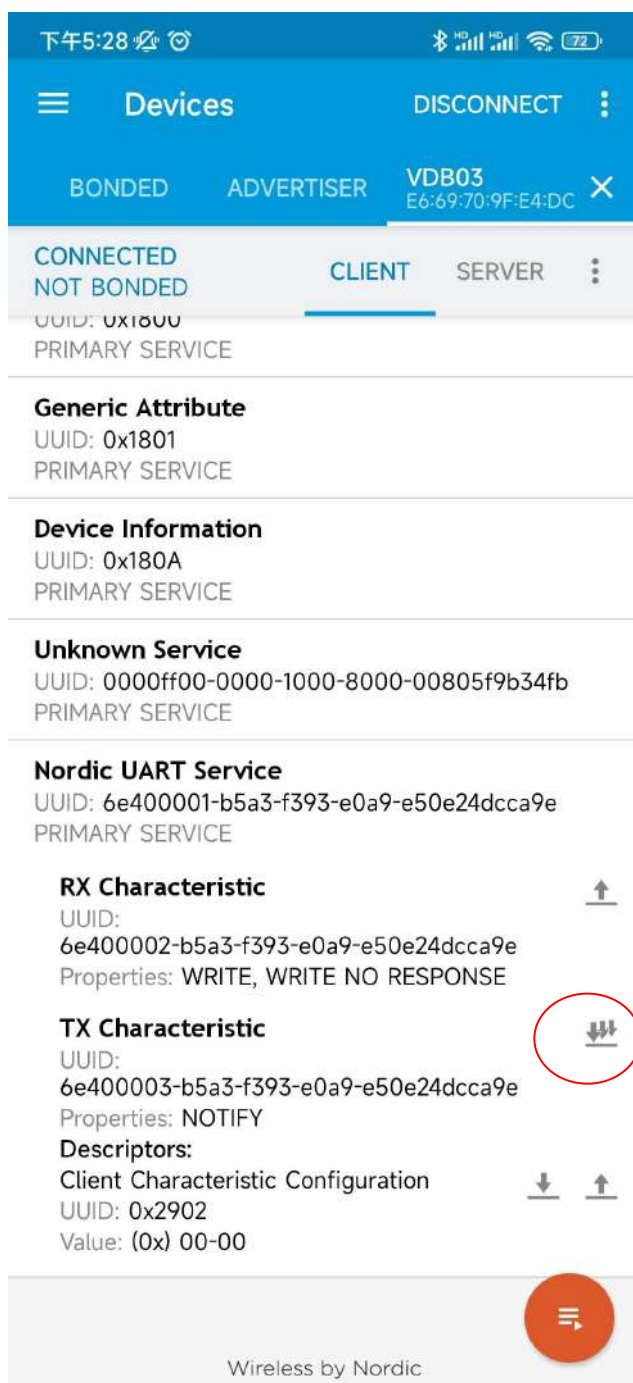
- 3、点击右边的“CONNECT”后进入如下左图界面，然后点击最下面一栏的“Nordic UART Service”；
- 3、Click "CONNECT" on the right to enter the interface in the left picture below, and then click "Nordic UART Service" in the bottom column;





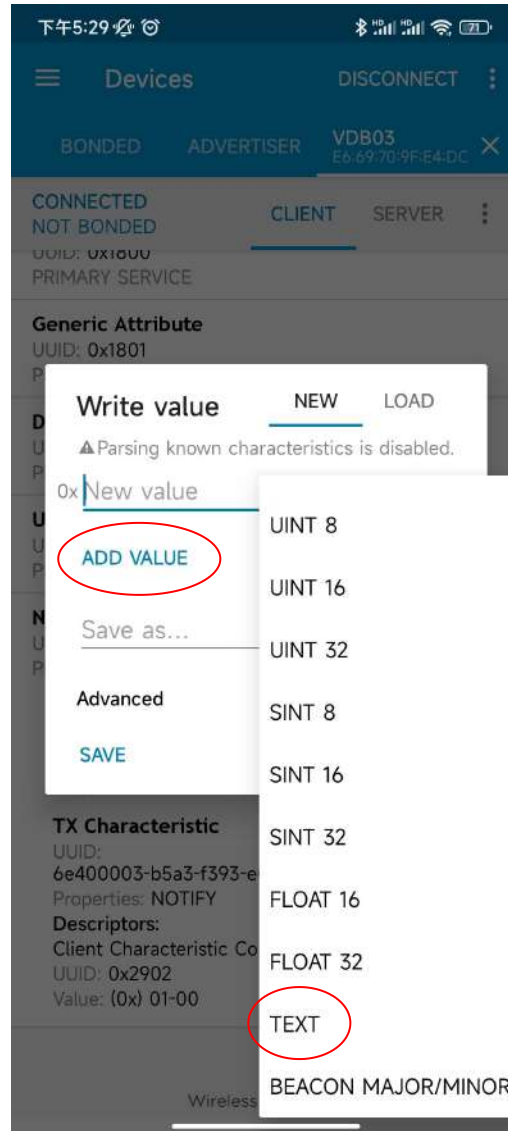
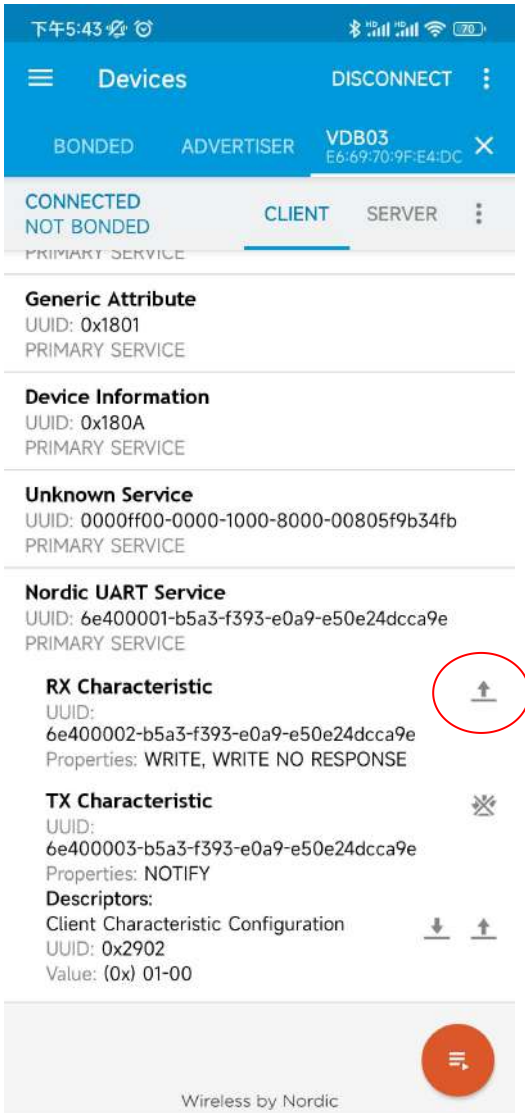
4、点击“TX Characteristic”右边的三个指向下方的箭头符号进行连接；

4、Click the three arrow symbols pointing down to the right of "TX Characteristic" to connect;



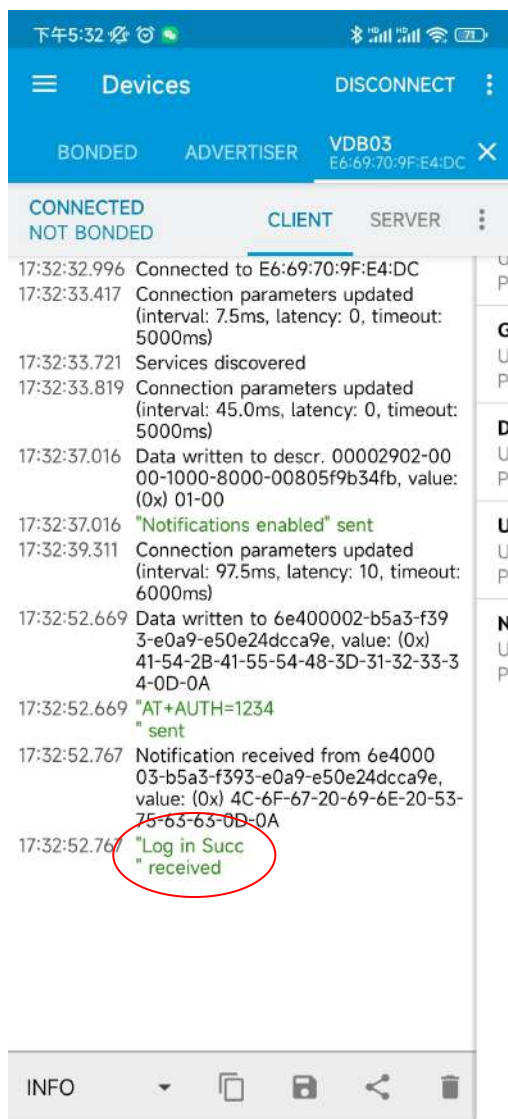
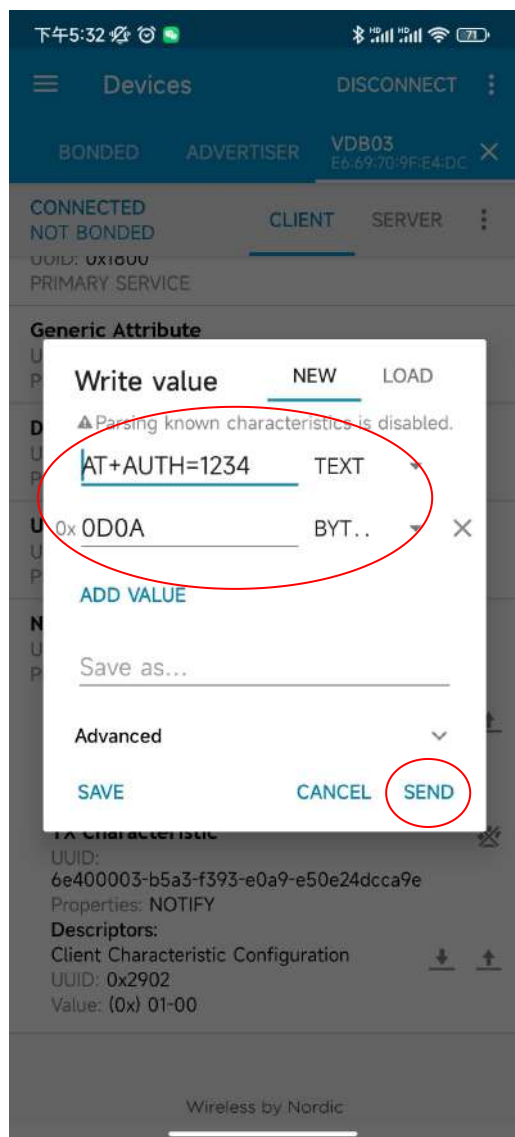
5、点击“RX Characteristic” 右边的一个指向上方的箭头符号，在弹出的界面中进行设置；

5、Click the arrow symbol pointing upwards on the right of "RX Characteristic" and set it in the popup interface;



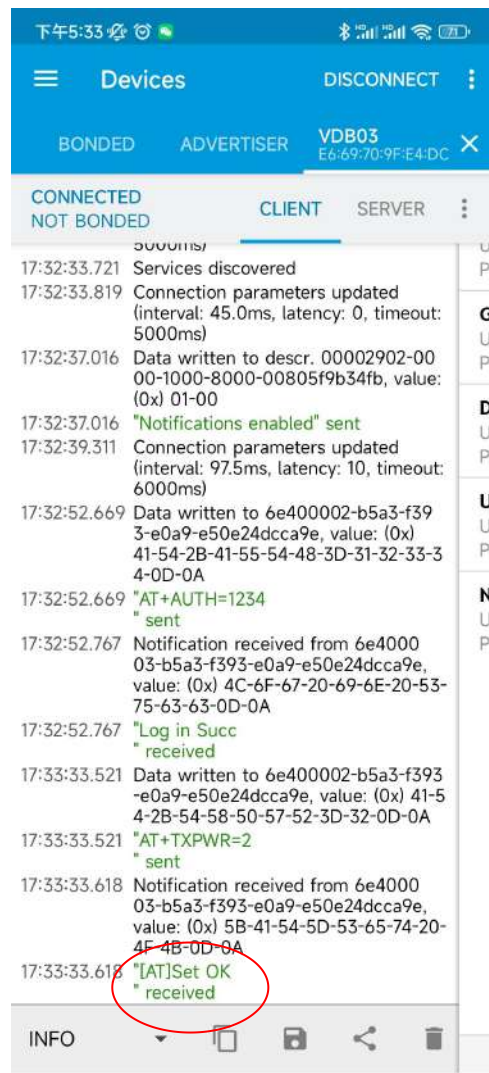
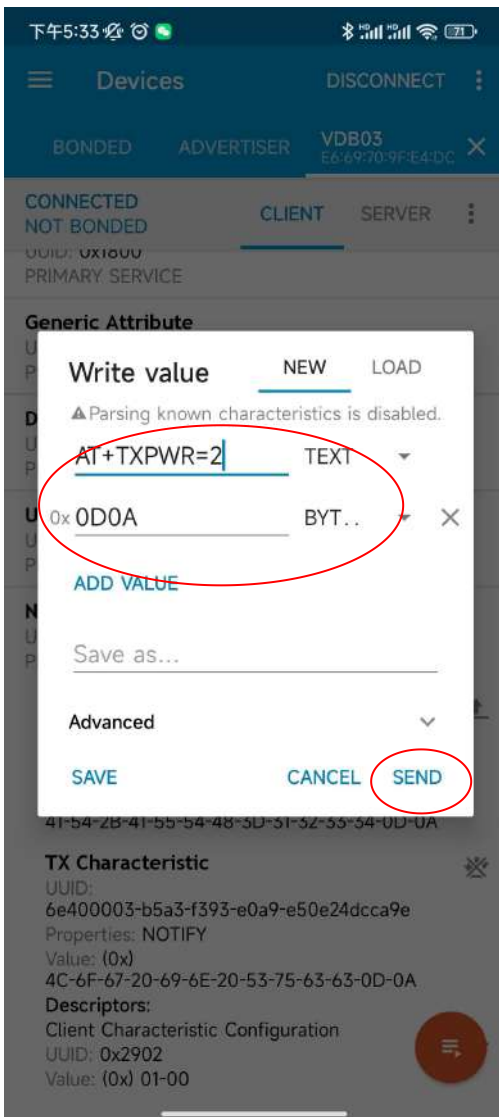
6、输入如下图的指令后，点击“SEND”，然后将界面拉到右边，可以看到“Log in Succ ” received;

6、After entering the following command, click "SEND" and then pull the interface to the right, you can see "Log in Succ "received;



7、返回原来的界面，点击“RX Characteristic” 右边的箭头符号，输入如下图的指令后，点击“SEND”，然后将界面拉到右边，可以看到 “[AT]Set OK ” received，表示发射功率修改成功；

7、Return to the original interface, click the arrow symbol on the right of "RX Characteristic", input the following instructions, click "SEND", and then pull the interface to the right, you can see "[AT]Set OK" received, indicating that the transmitting power is modified successfully;



功率可设置为: -19dBm, -13dBm, -8dBm, -3dBm, 0dBm, 2dBm。默认是 0dBm。

The power can be set to: -19dbm, -13dbm, -8dbm, -3dbm, 0dBm, 2dBm. The default is 0dBm.

### 3.11 修改广播间隔/Modify Advertise Interval

点击“广播间隔”出现如下 UI，设置广播间隔，广播间隔可以设置为 100ms、200ms、300ms、400ms、500ms、600ms、700ms、800ms、900ms 和 1000ms。默认为 500ms。然后点击“确认修改”。

Click the "Advertise Interval" ,the following UI will be opened. Then set a advertise interval. Broadcasting interval can be set to 100ms, 200ms, 300ms, 400ms, 500ms, 600ms ,700ms, 800ms, 900ms and 1000ms. The default is 500ms. Then click “confirm to modify”.



### 3.12 修改密码/Modify Password

点击“Password”，出现如下 UI，然后在“Password”框中输入 4 个字符作为连接密码，默认为 1234。然后点击“确认修改”。

Click the “Password”, the following UI will be opened. Then and then enter the 4 characters as a connection password in the “Password” box, the default is 1234. Then click “confirm to modify”.



**注意：**请提前保存好您的密码，一旦修改新密码，原密码将失效，必须用新密码才能登陆。

Note: Please save your password in advance, once you change the new password, the old password will be invalid, you must use the new password to log in.

## 4. 联系方式/Contact information

### **95Power Information Technology Co., Ltd**

深圳市微能信息科技有限公司

地址：深圳市龙华区工业东路利金城工业园 9 栋 6 楼

Address: 6 Floor, Building 9, Lijincheng Scientific & Technical Park, Gongye East Road, Longhua District,  
Shenzhen

Tel: 86-755 23779409

Fax: 86-755 23779409

E-mail: [sales@95power.com.cn](mailto:sales@95power.com.cn)

Website: [www.95power.com.cn](http://www.95power.com.cn)