

# VDB07蓝牙信标使用手册

## VDB07 Bluetooth Beacon User Manual

### 文档信息/Document information

标题/ Title	VDB07 蓝牙信标使用手册 VDB07 Bluetooth Beacon User Manual
文档类型/ Document type	使用手册/User Manual
文档编号/ Document number	WN-24030083
版本日期/ Revision and date	V1.01 2023-10-30
秘密等级/ Disclosure restriction	公开/Public

## 修订历史/Revision History

修订/ Revision	描述/Description	修改人/Modifier	日期/Date
V1.01	初始版本/initial release	谢晓博/Sherman	2023-10-30
V1.02	更新了 APP 图片 /Updated the app image	Lena	2024-3-8

## 设备清单/Product List

设备名称/Device Name	型号/Device No.	数量/Number	备注/Remark
蓝牙信标/Bluetooth Beacon	VDB07	1 个/1 pcs	

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## 1. 产品介绍/Product Introduction

VDB07 是一款支持 POE 级联供电的蓝牙信标设备。该设备支持 802.3af 标准 POE 供电，可以把其中一个网口接到 POE 交换机或者其他支持 POE 供电的 AP 设备的 PSE 口上，并通过另一个网口接到下一个信标的网口上，依次类推，实现不低于 15 级信标，网线总长不超过 200m 的级联。该信标的两个网口都可以作为 POE 输入或者输出，方便部署，而且支持 LED 状态指示灯，便于排查部署问题。

VDB07 is a Bluetooth Beacon device. This device supports 802.3af standard POE power supply, and can connect one of the network ports to the PSE port of the POE switch or other AP devices that support POE power supply, and then connect to the network port of the next beacon through another network port, and so on, to achieve a cascade of no less than 15 level beacons and a total network cable length of no more than 200m. Both the two network ports of the beacon can be used as POE inputs or outputs for easy deployment, and support LED status indicators for easy troubleshooting of deployment issues.

VDB07 蓝牙信标使用 BLE 低功耗蓝牙广播的方法，利用其支持的通用属性配置文件在第 37、38、39 三个信道上连续发送无定向性的广播包。其广播内容可由我司研发团队开发的 APP“95POWER\_xbeacon”读取，包括 UUID、Major、Minor、RSSI 等信息。

VDB07 beacon uses a broadcasting protocol which is based on BLE (Bluetooth Low Energy). VDB07 broadcasts its general configure parameters like UUID, Major, Minor, RSSI etc. to surroundings over 37, 38 and 39 BLE channels continuously and non-directionally. The broadcasting information can be read by “95POWER\_xbeacon” APP, which is designed by 95POWER R&D Team.

VDB07 基于蓝牙 5.0 模组，支持硬件看门狗提升持续运行可靠性，并预留了温湿度传感器（默认不贴）。VDB07 is based on Bluetooth 5.0 module. It support hardware watchdog to enhance the reliability of long time running. It reserves a temperature & humidity sensor (not mounted by default).



Figure 1:VDB07 正视图/Top View

## 1.1 VDB07 特性/features

- ◆ 低功耗/ Low Power Consumption
- ◆ 体积小、重量轻、造型美观/ Small,Lightweight,Beautiful appearance
- ◆ APP 可灵活配置参数/ Flexible Application
- ◆ 安装方便(旋转卡扣安装) / Easy to Install(Rotary buckle installation)
- ◆ 广播范围最大可达 70 米 / Advertise Range up to 70 Meters
- ◆ 符合 RoHS (无铅)/ RoHS compliance (Lead-free)
- ◆ 符合 FCC, CE / FCC,CE compliance

## 1.2 VDB07 应用/application

- ◆ 室内定位/ Indoor Positioning
- ◆ 信息推送/ Information Push
- ◆ 身份识别/ Identification
- ◆ 微信摇一摇/ WeChat Shake

## 2. 硬件参数/Hardware parameters

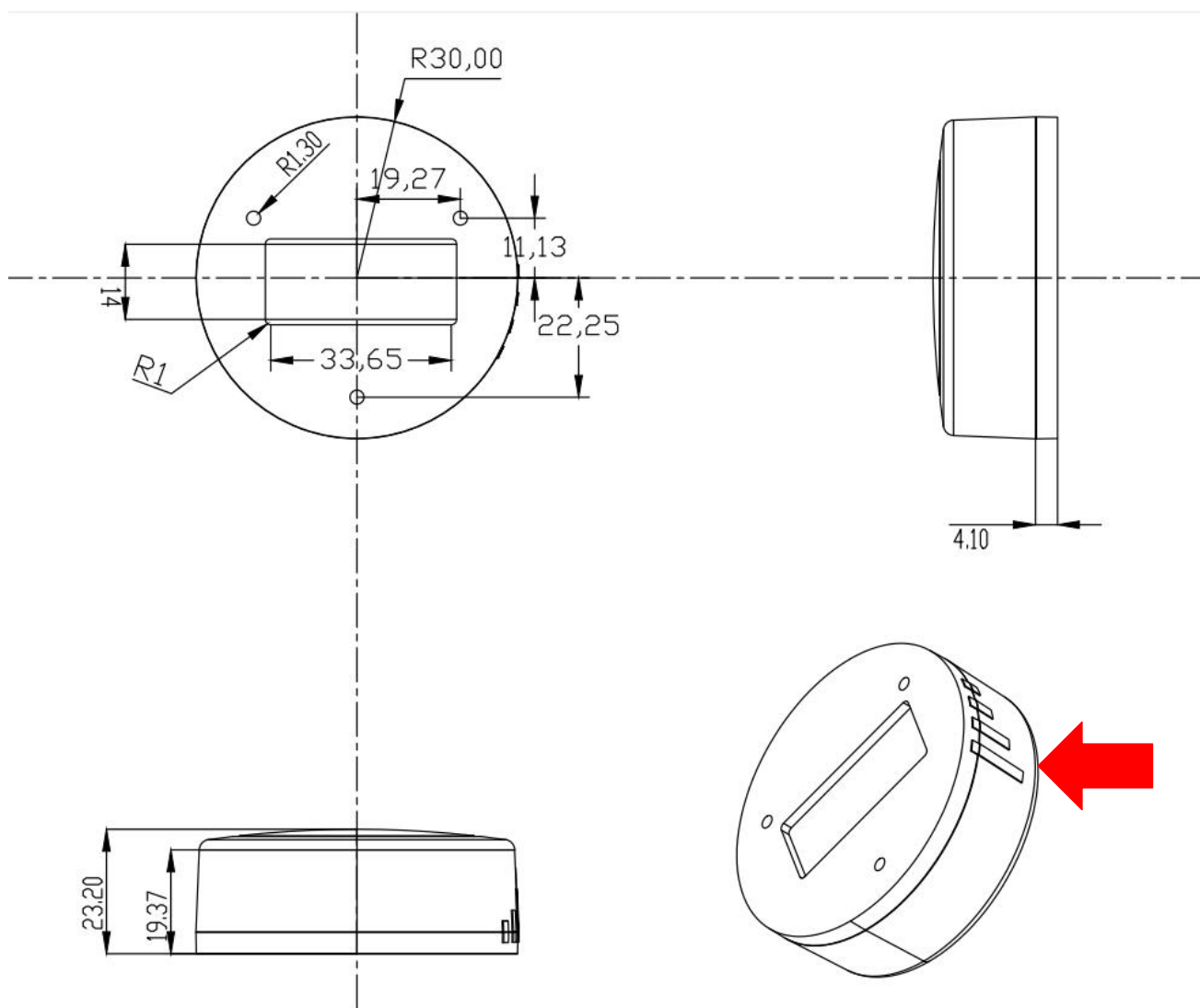
### 2.1 产品参数/Product Parameter

硬件特性/Hardware Features	
型号/ Model	VDB07
天线类型/ Antenna Type	PCB 天线 PCB Antenna
电压/ Voltage	36~58 V @802.3af POE
尺寸(D×H)/ Dimension(D×H)	60.0 * 22.0(±0.3)mm
无线功能/ Wireless Features	
无线标准/ Wireless Standards	蓝牙®5.0 Bluetooth ®5.0
频率范围/ Frequency Range	2400MHz——2483.5MHz
数据速率/ Data Rates	1Mbps/2Mbps
调制技术/ Modulation Technique	GFSK
无线安全/ Wireless Security	AES
传输功率/ Transmit Power	-20~+4dBm 可调, 步长 4 dB Tx Power -20 to +4dBm in 4 dB Steps
灵敏度/ Sensitivity	-97dBm @1Mbps BLE
工作模式/ Work Mode	从机/ Peripheral
其他/ Others	
环境参数/ Environment	工作温度:-40℃~ 85℃ Operating Temperature: -40℃~85℃
	储存温度:-40℃~ 85℃ Storage Temperature: -40℃~85℃
	工作湿度:10%~90%不凝结 Operating Humidity: 10%~90% Non-condensing
	储存湿度:5%~90%不凝结 Storage Humidity: 5%~90% Non-condensing

### 2.2 结构参数 structural parameters

天线方向指 PCB 板载天线信号强度最强的方向,如下箭头所示:

Antenna direction refers to the direction where the signal strength of the PCB board mounted antenna is the strongest, as the arrow shows blow:



### 3. 硬件使用说明/Hardware Instructions

#### 3.1 VDB07 安装/ install

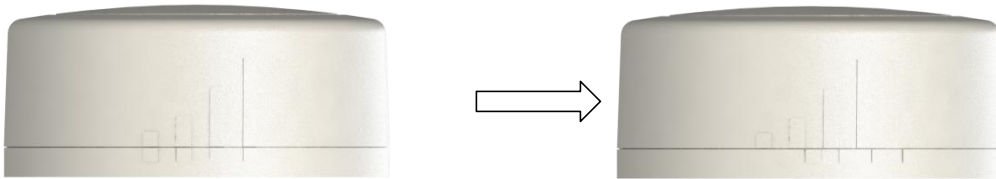
VDB07 插入 POE 网线后就会自动开机。级联安装时，建议最后连接 POE 信标到 AP 或者 POE 交换机的网线，或者连好网线后，再给 AP 或者交换机上电，这样可以保证信标错峰上电。

VDB07 will start automatically after the POE net cable is installed. When installing in a cascade, it is recommended to finally connect the POE beacon to the network cable of the AP or POE switch, or connect the network cable before powering up the AP or switch. This can ensure that the beacon is powered up in a staggered manner

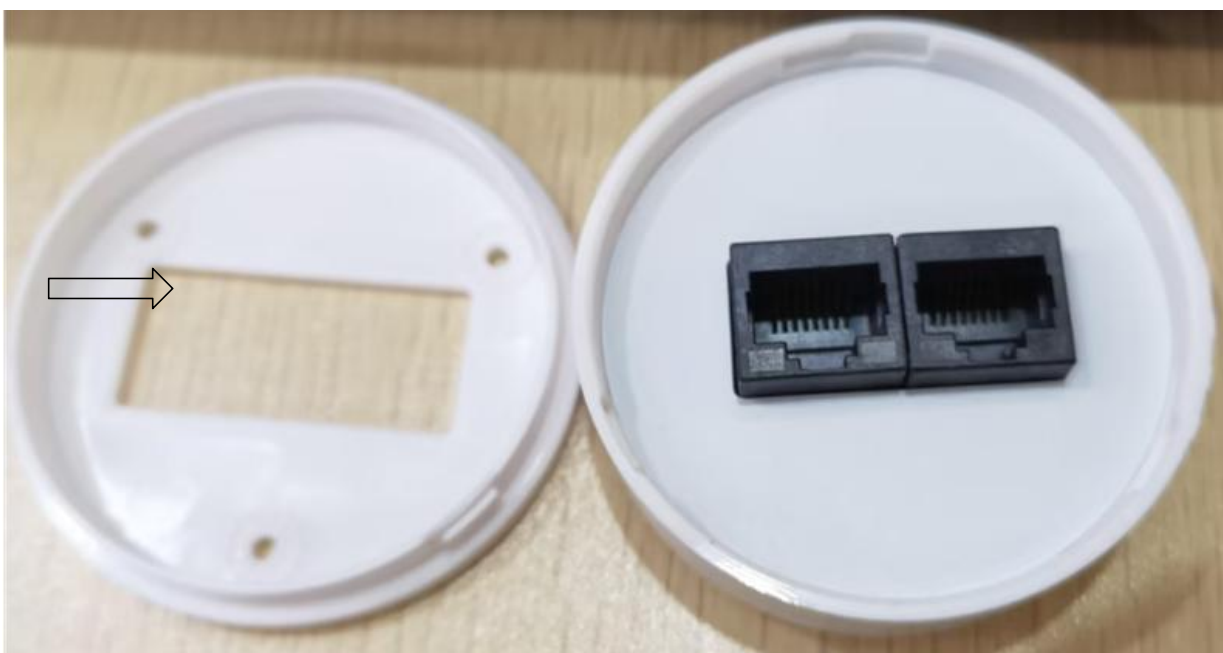
安装说明 Install instruction:

a. 一只手固定面壳，另一只手顺时针旋转后盖，取下后盖。

Holding the shell in place with one hand, remove the back cover by rotating it clockwise with the other hand.



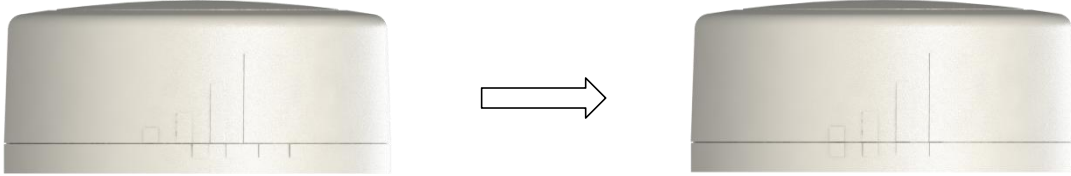
b. 把后盖用自攻螺丝或者膨胀螺丝装在天花板或者墙面上，网口位置提前开孔出网线。





c.把网线插入 POE 信标，并把后盖和面壳上有天线信号标志的方向对齐。

Plug in the net cable and install face cover by rotating it anticlockwise. Align the direction of the antenna signal mark on the rear cover and the face cover.



## 4. 软件使用说明/Software Instructions

95POWER\_xbeacon 是 95POWER 研发团队开发的一款蓝牙 Beacon 软件，支持 iBeacon 和 Eddystone 两种模式，可灵活配置常用参数。

95POWER\_xbeacon is a Bluetooth Beacon software developed by 95POWER research and development team. It supports iBeacon and Eddystone modes and can flexibly configure common parameters

### 4.1 下载应用程序/Download APP

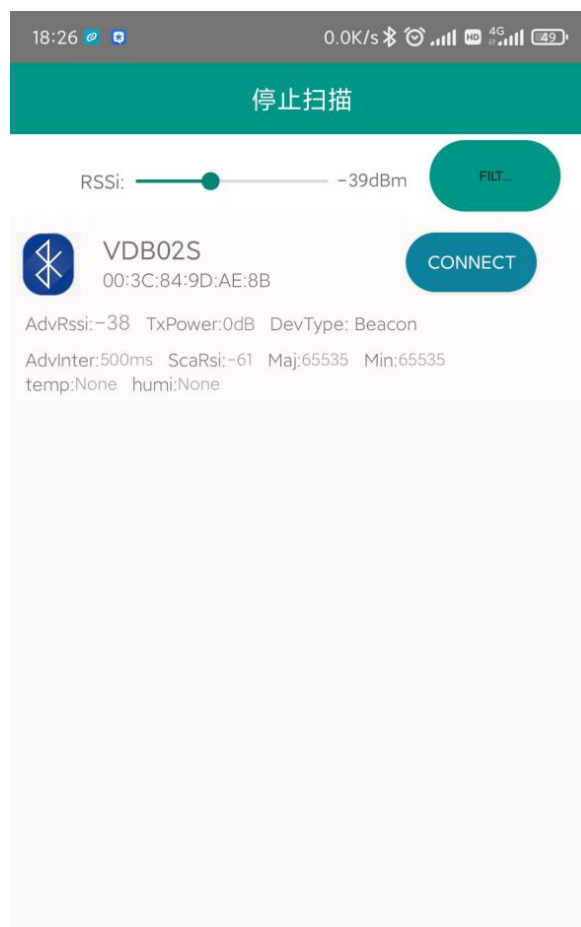
目前 APP 尚未上架，请联系销售人员提供，APP 名称 95POWER\_xbeacon。

95power\_xbeacon hasn't been put into the market yet. Please contact our sales team for this APP.

### 4.2 扫描蓝牙信标/Scan Bluetooth beacons

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，如下图。

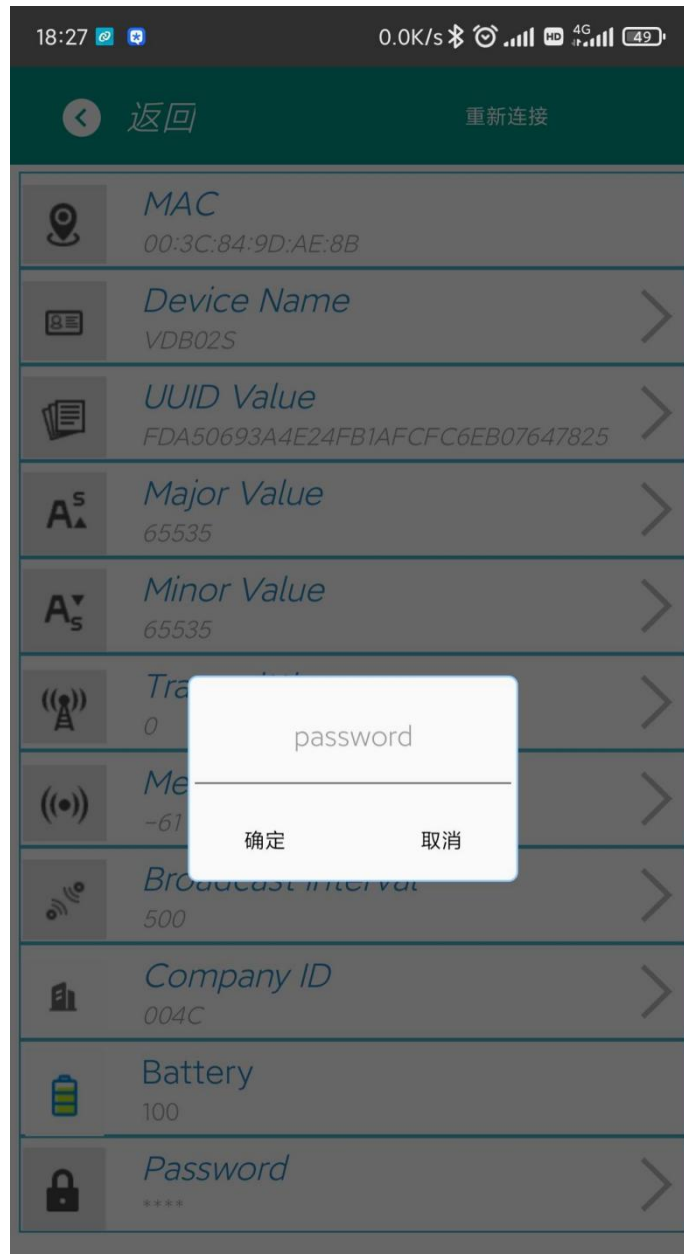
Open the APP, if cell phone ask for permission to open bluetooth please select yes. Then it will begin to scan the surrounding Bluetooth 4.2 Beacons, like below.



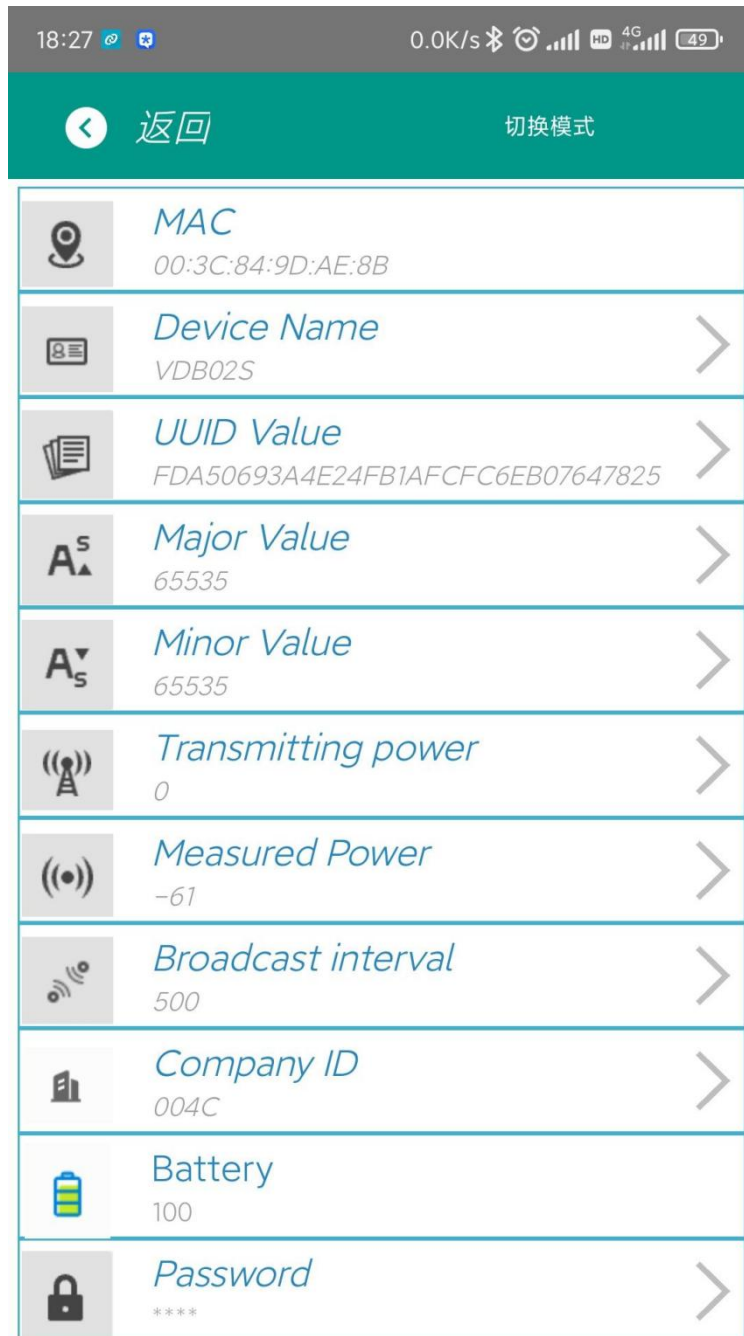
### 4.3 连接蓝牙信标/Connect Bluetooth 4.2 Beacon

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 Beacon you want to connect, and enter the password within 30 seconds, in order to obtain operating privileges .(Factory Password:1234)



## 4.4 配置介绍/Configuration Introduction



### 介绍/Introductions:

**MAC:** MAC 地址/Chip MAC address

**Name:** 所选蓝牙信标的名称/The name of the Bluetooth 4.2 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 digits

**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 (VDB07 transmission power is 0dBm)

**Transmit Power:** VDB07 发射功率/VDB07 transmit power

**Advertise Interval:** VDB07 广播间隔/VDB07 advertise interval

**Battery Level:** VDB07 电池电量/VDB07 battery Capacity

**Password:** VDB07 密码 (默认 1234) /VDB07 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.

## 4.5 修改蓝牙信标名称/Modify Bluetooth 4.2 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 VDB07 device name in the following “Enter a Name” box. Then click “confirm to modify”.



## 4.6 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 VDB07 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 VDB07 in the following “Enter an UUID” box. Then click “confirm to modify”.



## 4.7 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”。Minor 类似，点击 Minor 进入修改即可。

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”. Minor is similar, click Minor to enter modify.



18:29 0.0K/s 4G 48

<

A<sup>s</sup> Major  
major:65535

请输入一个值:

或者选择一个:

1000

12345

65535

确定

从0到65535中选取一个值作为Major

## 4.8 修改 Measured Power/Modify Measured Power

点击“Measured Power”，出现如下 UI，在距离 VDB07 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 VDB07 约为 1 米。

Measured Power means, when a phone's RSSI is -61dBm, it is about 1 meter from VDB07.





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

点击“Transmission Power”出现如下 UI，设置 VDB07 的发射功率。功率可设置为:-30dBm， -20dBm， -16dBm， -12dBm， -8dBm， -4dBm, 0dBm, 4dBm。默认是 0dBm。然后点击“确认修改”。

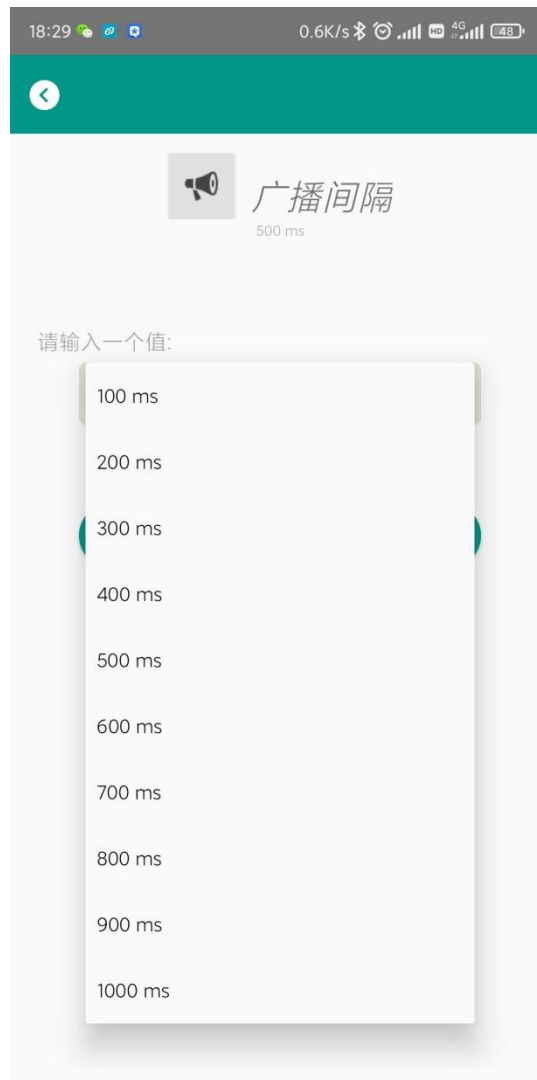
Click the "Transmitting Power", the following UI will be opened. Then set a transmitting power, which can be set to: -30dBm, -20dBm, -16dBm, -12dBm, -8dBm, -4dBm, 0dBm, 4dBm and 8dBm. Default Power is 0dBm. Then click "confirm to modify".



## 4.10 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”.



## 4.11 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”.



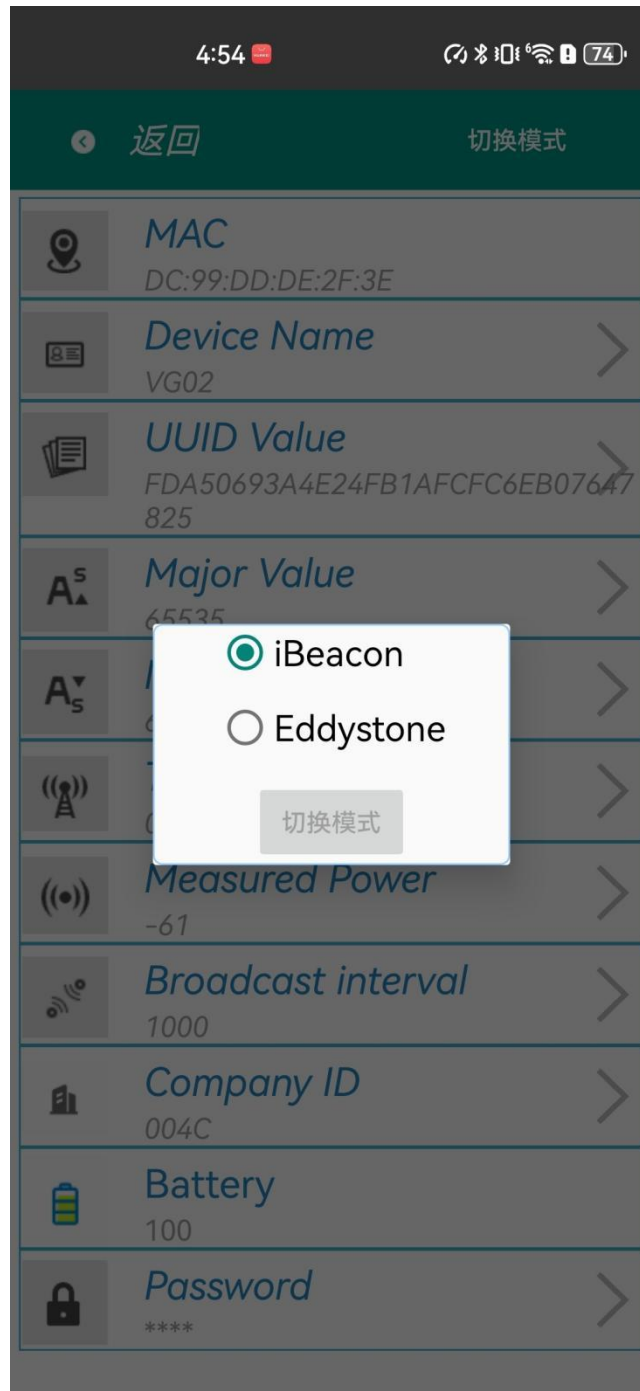
**注意：**请提前保存好您的密码，一旦修改新密码，原密码将失效，必须用新密码才能登陆。

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

## 4.12 切换模式/Switch mode

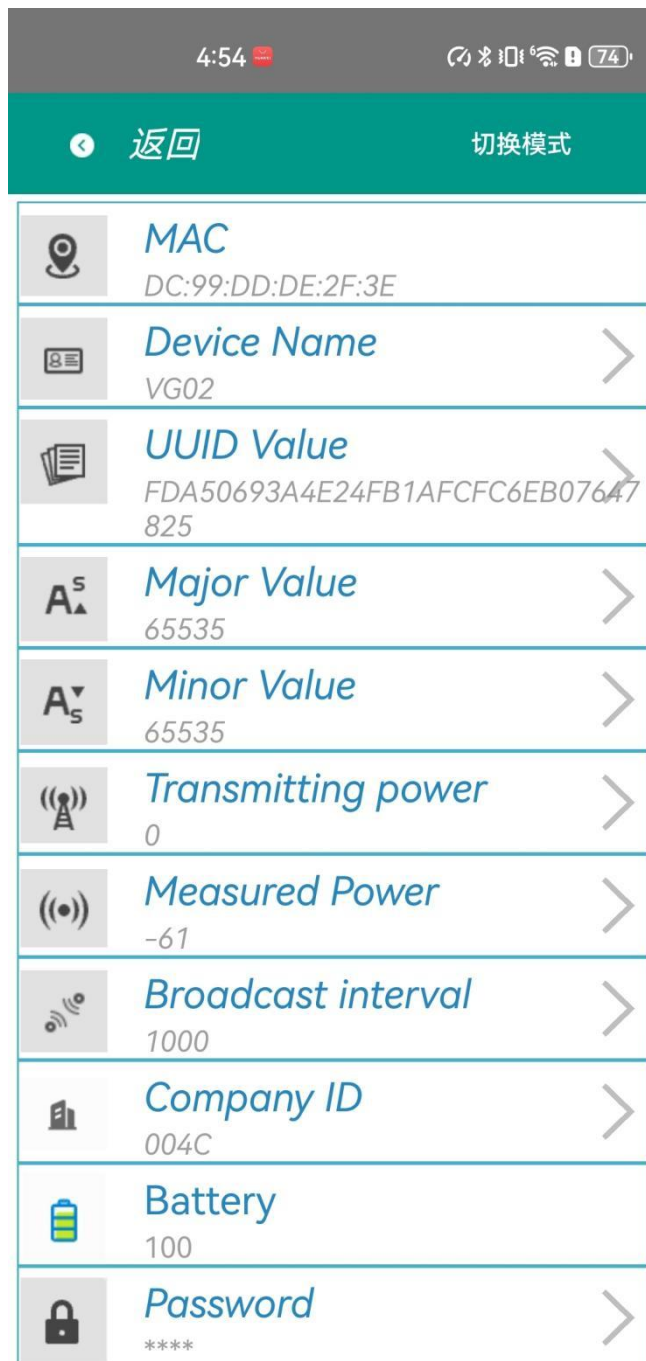
点击右上角切换模式文字，出现模式选择窗口，点选 Eddystone。

Click “ switch mode” on the upper right corner, the mode selection window will be opened. Then you can choose iBeacon or Eddystone mode. Default mode is iBeacon.



## 4.13 Eddystone 配置页面简介/Eddystone configuration page

### Introduction



#### 介绍/Introductions:

**MAC:** MAC 地址/ Eddystone configuration page Introduction

**Name:** 蓝牙信标的名称，配置方式同 iBeacon 模式。/The name of the Bluetooth 4.2 Beacon which is selected.

**User service data:** 用户自定义的数据，配置方式同 iBeacon 模式。/User-defined data in broadcasting

**Transmit Power:** VDB07 发射功率，配置方式同 iBeacon 模式。/VDB07 transmit power

**Advertise Interval:** VDB07 广播间隔，配置方式同 iBeacon 模式。/VDB07 advertise interval

**Battery Level:** VDB07 电池电量。/VDB07 battery Capacity

**Password:** VDB07 连接密码，配置方式同 iBeacon 模式。/VDB07 connection password

**URL:** 修改 Eddystone 字段信息。默认格式是 URL。

modify the Frame field information in Eddystone. The default format is URL. Other Formats can be selected by other setting

**Other Setting:** 用于选择 Eddystone 其他字段信息。

Format selection of Frame field information in Eddystone.

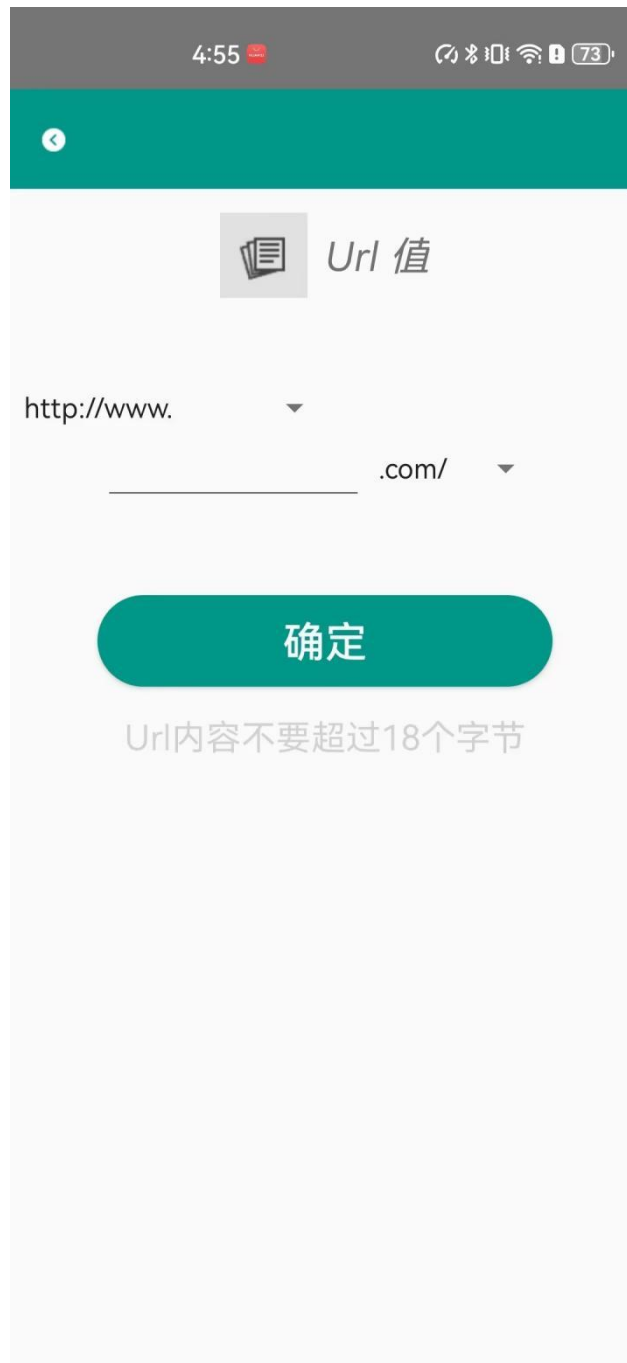
配置好信息后，蓝牙连接断开，配置将生效。

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

## 4.14 修改 URL /Modify URL

点击“URL”，出现如下 UI，然后在“url”下划线上输入最多 16 字节的字符串，即可广播 URL。

Click "URL", the following UI appears, and then enter a string of up to 16 bytes on the "URL" underscore, you can broadcast the URL.



## 4.15 修改 Other Setting/Modify Other Setting

### a.选择并设置 UID 信息/Select and set the UID information:

分别设置 NameSpace(10 字节)和 Instance(6 字节)。

Set NameSpace(10 bytes) and Instance(6 bytes) respectively



### b.选择并设置 EID 信息/Select and set the EID information:

设置 EID 信息，最多 8 个字节。



Set the EID information to a maximum of 8 bytes.



## 5.联系信息/Content

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