

VDB2609 规格书

4G户外型大功率蓝牙网关/ VDB2609 Datasheet

4G LTE Outdoor High Power BLE Gateway

文档信息/Document Information

标题/Title	VDB2609 规格书 4G 户外型大功率蓝牙网关/ VDB2609 Datasheet 4G LTE Outdoor High Power BLE Gateway	
文档类型/Document Type	规格书/Datasheet	
文档编号/Document No.	WN-20040031	
版本日期/Version & Date	V1.04	20-May-2021
秘密等级/Classification	公开/Opened	

历史版本/Reversion History

版本号/Version	备注/Remark	制作人/Maker	日期/Date
V1.01	初始文档/Initial Release	谢晓博/Sherman	20200415
V1.02	新增安装说明/Add installation method	谢晓博/Sherman	20200418
V1.03	更新 POE 供电部分描述修 Update Poe power supply part description	钟海珊/Susan	20210125
V1.04	更正输入电压范围/upset input voltage range	谢晓博/Sherman	20210520

设备清单/Product List

名称/Item	型号/Model Number	数量/Number	备注/Remark
蓝牙网关/BLE Gateway	VDB2609	1 pcs	
5V 适配器/5V Power Adapter	BSF-008	1 pcs	
抱杆安装套装/Tighten-to-rod installation set	2*U 型螺杆, 2*L 型角铁 /2*U-bolt,2*L-shaped steel	2 pcs	

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 获得最新的文件。

Copyright © 2020, 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.

Copyright © 2020, 95Power95Power Information Technology Co., Ltd.

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

目录/Content

目录/Content.....	4
1. 产品介绍/Product Induction.....	5
1.2 特性/Features.....	6
1.3 接口/interface.....	7
1.3.1 网口/WAN/LAN Port.....	7
1.3.2 DC 电源接口/DC plug in.....	8
1.3.3 复位按键(默认内置, 如需外置需要定制)/Reset key(Default internal placed, outside placed needs customization).....	8
1.3.4 电源指示灯 (按键内置灯圈) /Power LED (LED ring inside key)	9
1.3.5 BLE & 4G 天线/BLE & 4G Antenna.....	9
1.4 应用/Application.....	9
2. 硬件参数/Hardware Specification.....	10
3. 安装方法/Installation method.....	12
4. 配置参数/Configuration.....	13
4.1 有线连接/Ethernet connection (AP client mode)	13
4.2 无线连接/Wireless connection (AP mode).....	16
4.3 4G LTE 连接/4G LTE connection.....	17
4. 联系方式/Contact.....	18

1. 产品介绍/Product Induction

VDB2609 是一个支持 4G 的户外型大功率蓝牙网关。可用于远程控制蓝牙设备，或者接收蓝牙设备的信号并上传到后台服务器。其射频部分额外增加了 FEM (PA+LNA+Switch), 提高了蓝牙部分的发射功率和接收灵敏度，与此同时，也采用外置高增益柱状天线，使蓝牙的覆盖半径可以超过 200m。

VDB2609 is a high power bluetooth gateway with 4G Modem. It is designed for outdoor scenes. It can be used in various scenarios flexibly. For example, it can remote control BLE devices, and receives data sent by BLE devices then relay it to server. With high BLE transmit power and receive sensitivity enhanced by external RF PA and LNA, and a high gain cylindrical antenna, its BLE covering distance can reach more than 200 meters radius.



Figure1:VDB2609

1.1 应用框图/Application Diagram

VDB2609 内置 4G、WiFi、网口和蓝牙多种通信方式。WiFi 与蓝牙之间通过串口通信，4G 与 WiFi 之间通过 USB 通信。VDB2609 支持 POE 供电和 5V 电源供电两种供电方式。

VDB2609 contains 4G LTE, WiFi, Ethernet, BLE multiple communicating system. BLE is connected to WiFi by UART, and 4G modem is connected to WiFi by USB. VDB2609 support both POE and 5V power adapter 2 ways of power supply.

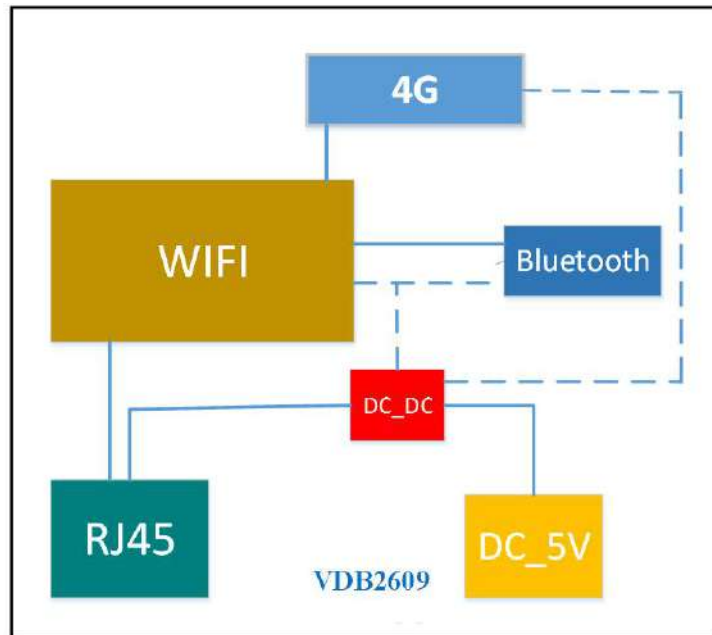


Figure 1.1 系统框架图/Application Diagram

1.2 特性/Features

- ◆ 支持 POE 供电和 DC 5V 供电 / Supports POE power supply and 5V DC power supply
- ◆ 4G 全网通 / 4G modem support All Netcom
- ◆ WiFi 协议 / protocol: IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
- ◆ Bluetooth ® 4.2/5.0(不支持 long-range / Long-range not included)/
- ◆ 蓝牙发射功率最大可达+21dBm / BLE Max Transmission Power is +21dBm
- ◆ 体积小，易安装 / Small and easy to apply
- ◆ WAN/LAN 自适应网口 / Self-adjust WAN/LAN port
- ◆ 符合 RoHS, FCC, CE 标准 / Fit RoHS, FCC, CE standard

1.3 接口/interface

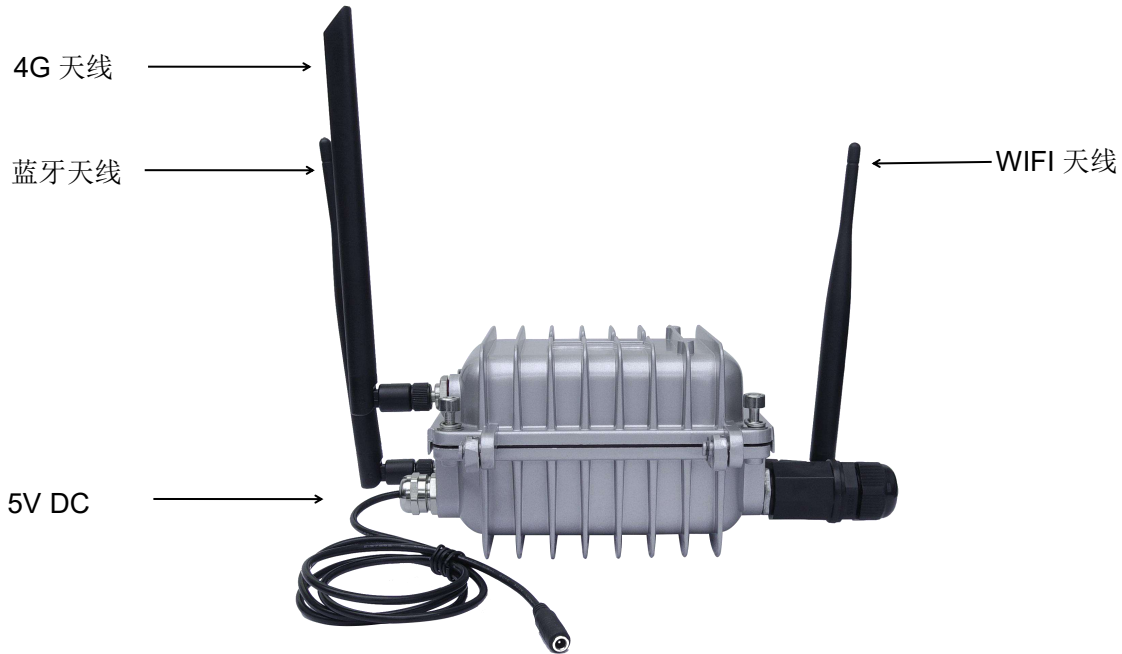


Figure 1.3 VDB2609 interface

1.3.1 网口/WAN/LAN Port

VDB2609 网口支持五类线和超五类线，可传输数据同时也能支持 POE 供电（由 POE 交换机供电称为 POE 供电，电压范围 44~57V，默认支持网线线序 1,2,3,6 如下图）。网口为 WAN/LAN 可变网口。

The VDB2609's RJ45 port supports type V of lines and super type V of net-cable, which can transmit data and also support POE power supply (The voltage range is 44~57V. The net-cable use 1,2,3,6 as power line, as the figure below). The RJ45 port is a WAN/LAN variable.

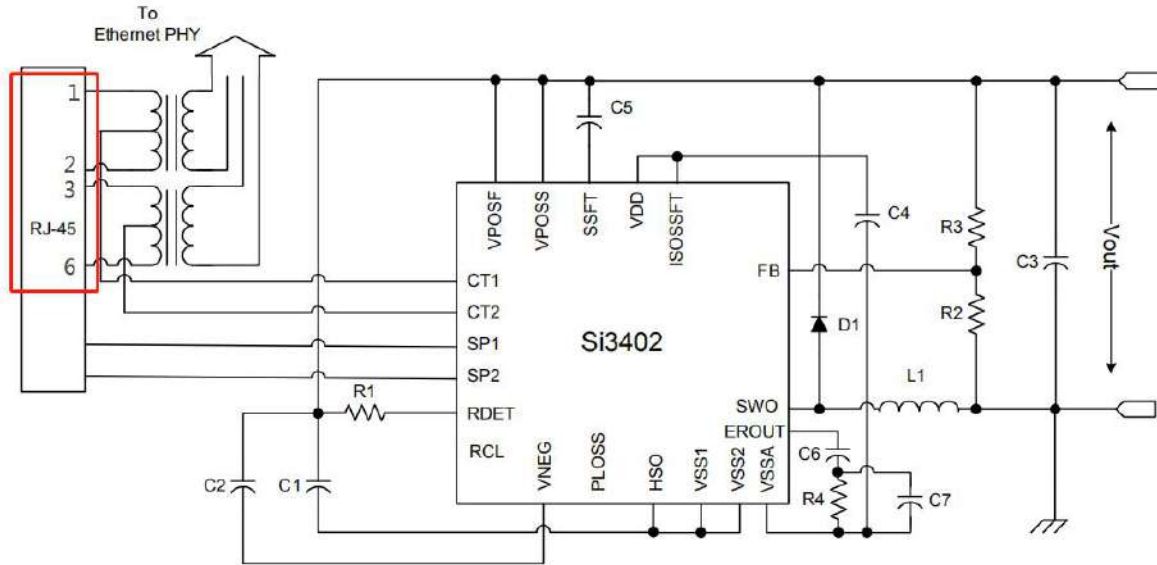


图 1.3.1/ Figure 1.3.1: VDB2609 POE 网口接线图

工作模式/Working mode	网口/net gape
AP Client	LAN
Getway	WAN

表 1.3.1 以太网端口工作模式/ Table 1.3.1 Ethernet port woking mode

1.3.2 DC 电源接口/DC plug in

VDB2609 的电源接口支持 DC 输入，输入电压范围 4.5v~5.5v，电流大于 1000mA，接口采用 DC 电源插座，电源座孔径 3.5mm,针径为 1.35mm，针头为正极。

VDB2609 support DC power input, and the voltage range is 4.5v~5.5v. The interface is a 3.5mm female DC-plug-in.

说明: 出厂配备的 5V 电源适配器输入电压为 AC 100-240V,50/60Hz 输出电压为 5V 2A。电源接头为外负内正。

Attention: The attached 5V power adapter's output voltage and current is 5V/2A, and AC input is 100~240V, 100mA.

1.3.3 复位按键(默认内置，如需外置需要定制)/Reset key(Default internal placed, outside placed needs customization)

短按复位，长按 VDB2609 的复位按钮 5 秒钟以上，VDB2609 内部的 WiFi 会恢复出厂设置。

Short press for reset . Long press Reset key for 5 more seconds, then VDB26009 will recover to factory mode.

1.3.4 电源指示灯（按键内置灯圈）/Power LED（LED ring inside key）

上电 LED 灯常亮/ LED ring will be always on when DC power or POE power is applied

1.3.5 BLE 、WIFI 和 4G 天线/BLE、WIFI 4G Antenna

蓝牙、WiFi 及 4G 柱状全向高增益天线，必须安装才可以收发无线信号。

BLE, WiFi and 4G antenna must be applied in order to send or receive wireless signals.

1.4 应用/Application

应用场景：室内定位/Scene: Indoor positioning

室内定位网关：

1) VDB2609 里蓝牙模块收集附近 Beacon 的信息，包括 RSSI，MAC 等，一秒一次。

VDB2609 Bluetooth module collects information about Beacon nearby, including RSSI, MAC, etc., once per second.

2) 蓝牙模块将收到 Beacon 信息，通过 UART 串口发给 TD05A 里面的 WIFI 模块，一秒一次。

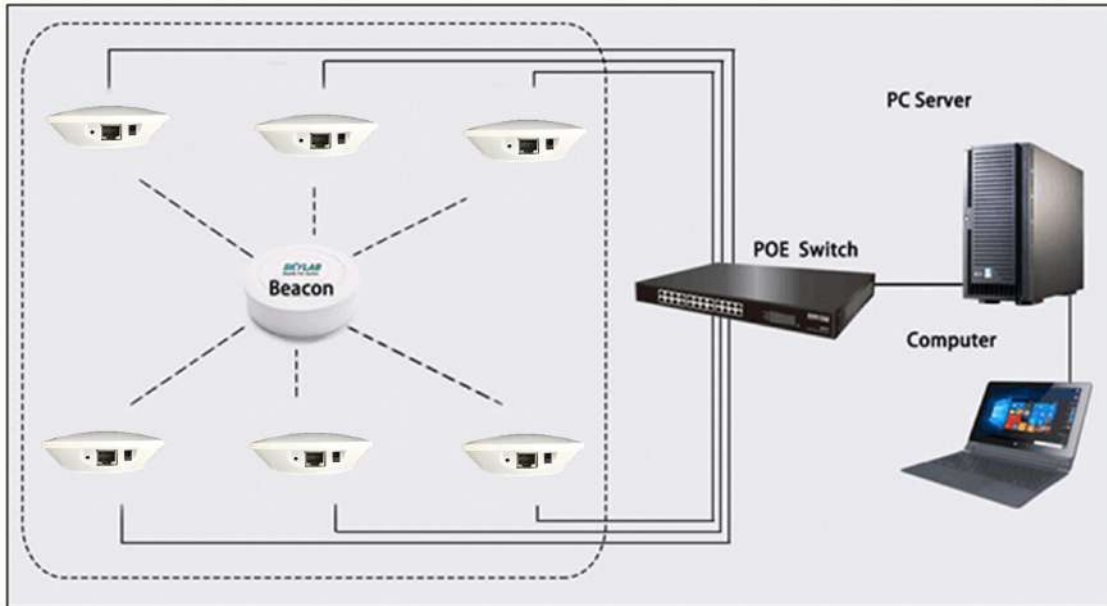
Bluetooth module send the Beacon information to WiFi module through UART serial port, once per second.

3) WIFI 模块通过串口接收到蓝牙模块传过来的信息，并通过 WiFi、网线或者 4G 模块联网，传输到指定的 UDP 服务器，并能接受服务器返回的信息。

WiFi module transfers the Beacon information (received from BLE module by UART) to the specified UDP server through WiFi, Ethernet or 4G module, and accepts the information returned by the server.

4) UDP 服务器收到来自某个 IP 的探针数据后，通过解析数据和计算，得到 Beacon 的位置信息，可以显示在前端页面，并能下发命令到 WIFI 模块，WIFI 模块透传到蓝牙模块，定制性的工能开发（比如：结合灯具使灯亮起来、触发门铃等）。

Beacon locations can be displayed on the front page after the UDP server after analyzing and calculating the beacon information. UDP server can also delivered orders to the WiFi module, then sent it to the bluetooth module to develop different functions (such as lighting lamps, ringing door bell etc.).



说明：VDB2609 可通过网线实现以太网联网，也可以使通过 WiFi 连接无线路由实现联网。

Remark: TD05A can be connected to the Internet via the POE switch or the wireless router.

2. 硬件参数/Hardware Specification

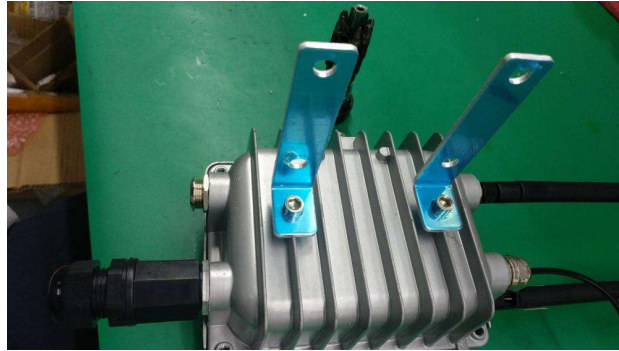
General parameter	
尺寸 Dimension	L153mm*W137mm*H97mm
供电方式 Power supply	DC 5V or POE
平均电流 Average current (no 4G)	200mA@5V
工作温度 OP. Temp	-20°C~70°C
物理接口 Physical	Ethernet port *1、DC port *1
WiFi	
Wifi 协议/Protocol	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
传输速率 Data rate	IEEE 802.11 b Standard Mode: 1,2,5.5,11Mbps
	IEEE 802.11g Standard Mode: 6,9,12,18,24,36,48,54Mbps
	IEEE 802.11n : 72Mbps @ HT20 150Mbps @ HT40

接收灵敏度 Rx Sensitivity	HT40 MCS7 : -70dBm@10% PER(MCS7)
	HT20 MCS7 : -73dBm@10% PER(MCS7)
	54M: -77dBm@10% PER
	11M: -89dBm@ 8% PER
发射功率 Tx Power	IEEE 802.11n: 14dBm @HT40 MCS7 15dBm@HT20 MCS7
	IEEE 802.11g: 15dBm
	IEEE 802.11b: 18dBm
无线安全 Wireless security	WPA/WPA2, WEP, TKIP, and AES
工作模式 Workig mode	Bridge、Gateway、AP Client
BLE	
蓝牙协议 BLE Protocol	Bluetooth ®4.2/5.0(Not support long range)
传输速率 Data rate	Uncoded:1Mbps/2Mbps,Coded:125kbps(S=8)/500kbps(S=2)
无线安全 Wireless security	AES HW Encryption
发射功率 Tx Power	默认/Default 20dBm±1.5dBm (Can be adjusted from 0 to 20dBm in 4dBm step)
接收灵敏度 RX Sensitivity	<-94dBm
覆盖范围	>200m
4G	
模块型号 Module Number	Longshang U9300C
频段配置 Band support	<ul style="list-style-type: none"> • LTE-TDD Band 38/39/40/41 • LTE-FDD Band 1/3/5/8 • TD-SCDMA Band 34/39 • UMTS Band 1/8 • EVDO BC0 • CDMA1x BC0 • GSM Band 3/5/8

3. 安装方法/Installation method

3.1 使用内六角螺丝，把两个 L 型角铁按照下图方向固定在 VDB2609 外壳上。

Fix the 2 L-shape steel on VDB2609 using 2 hexagon screw, like below.



3.2 把 U 型螺丝及配套卡扣卡在安装杆上，上下各一个 U 型卡扣，然后把 L 型角铁长边插入 U 型螺丝，拧上螺丝固定，如下图。

Put the U-bolts and its matching zigzag-arc buckle on the rod , then put it into the hole of the long side of the L shaped steel and then tighten the nuts to fix it on the rod



4. 配置参数/Configuration

4.1 有线连接/Ethernet connection (AP client mode)

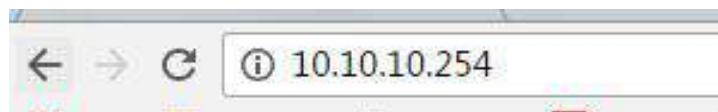
4.1.1 使用网线连接 PC 和 VDB2609，并设置本地连接为自动获取 IP 地址。

Use Ethernet cable to connect PC and VDB2609. Configure local connection to auto-acquire IP address.

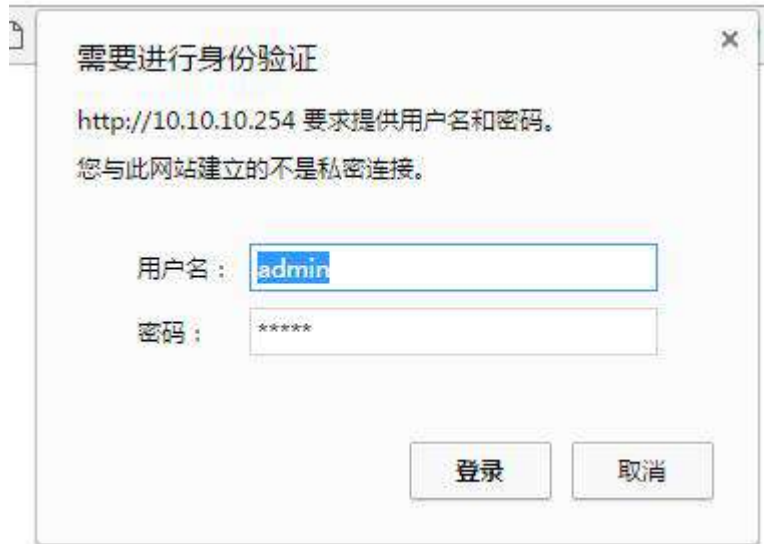


4.1.2 浏览器打开 10.10.10.254

Open your web browser and type 10.10.10.254



4.1.3.输入账号密码/Type user and password : admin/admin



4.1.4 选择语言/Select language



4.1.5 设置运作模式，默认选择 Gateway。Gateway 模式网口做 LAN，可以连接到电脑;AP Client 模式网口做 WAN，需要连接到 PC 所连接的路由器的其他 LAN 口才能配置。

Set working mode, default Gateway. In gateway mode the Ethernet port act as LAN, it can be connected to PC directly; In AP client mode, the Ethernet port act as WAN, it can't be connected to PC and has to connect to another LAN of the same router that PC is connected.



4.1.6 设置 UDP 服务器地址，端口固定是：3333

Set UDP server address. Default port is 3333.



4.1.7 查看网络连接状态/Check network state.



4.2 无线连接/Wireless connection (AP mode)

4.2.1 打开 PC WiFi 开关，搜索网关标贴上的 SSID（默认 SSID 格式为 SKYLAB_12 位 16 进制的 MAC 地址，如 SKYLAB_30EB1F071C32）。默认无 WiFi 密码。登录账号密码 admin/admin。

Turn on the WiFi switch of PC, and search the SSID printed on the tag. Default SSID begins with "SKYLAB_" and follows 12 bit hexagon MAC address, e.g. SKYLAB_30EB1F071C32. Default no WiFi password.

And web login user and password is admin/admin.



4.2.2 设置 WiFi SSID 及密码/Set WiFi SSID and password

AP Client Feature

You could configure AP Client parameters here:

AP Client Parameters	
SSID:	SKYLAB91 WiFi名称
MAC Address (Optional):	
Security Mode:	WPA2PSK 加密方式
Encryption Type:	TKIP
Pass Phrase:	SKYLAB91 密码

Apply Cancel SCAN

Site Survey							
Ch	SSID	BSSID	Security	Signal(%)	W-Moe	ExtCh	NT
1	ChinaNet-5gA1	40:14:20:95:a1:ba	WPA1PSK/WPA2PSK/TKIP/AES	23	11b/g/h	NONE	In
11	skylab03	88:25:93:5c:27:83	WPA1PSK/WPA2PSK/AES	63	11b/g/h	BELOW	In

4.3 4G LTE 连接/4G LTE connection

4.3.1 网络设置-广域网络设置中广域网络选择 3G/4G/U9300C, 即可使用 4G 上网(需要确认已插 SIM 卡)。

Internet Setting--WAN-WAN Connection Type: Select 3G/4G/U9300C, then you can use 4G to connect to internet(Make sure SIM card is inserted).

Wide Area Network (WAN) Settings

You may choose different connection type suitable for your environment. Besides, you may also configure parameters according to the selected connection type.

WAN Connection Type: 3G

4G Mode	
APN	
PIN	
Dial Number	
Username	
Password	
USB 4G modem	AutoDetect

MAC Clone

Enabled: Disable

Apply Cancel

4.3.2 同 4.1.6, 设置端口为 3333/ Set port to 3333 as 4.1.6.

4.3.3 同 4.1.7, 查看网络连接状态/Check network state as 4.1.7.

4. 联系方式/Contact

95Power Information Technology Co., Ltd

深圳市微能信息科技有限公司

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

Website: www.95power.com.cn