# OUTDOOR ROUTER

SKU: WRT4 E/U

3G/4G OUTDOOR ROUTER
Instruction Manual

1. Introduction

With an integrated mobile modem and Wi-Fi amplifier, the WRT4E outdoor router can receive 3G/4G mobile phone signals and establish a Wi-Fi hotspot to connect your smartphone, computer, tablet, camera, TV box to the internet.

After inserting SIM card into build-in SIM card slot and connect the outdoor router to PoE injector, a Wi-Fi hotspot is instantly established. The Wi-Fi output power is adjustable between 20/27/30dBm. WPA/WPA2 encryption standards ensure your wireless connection is safe from intruders.
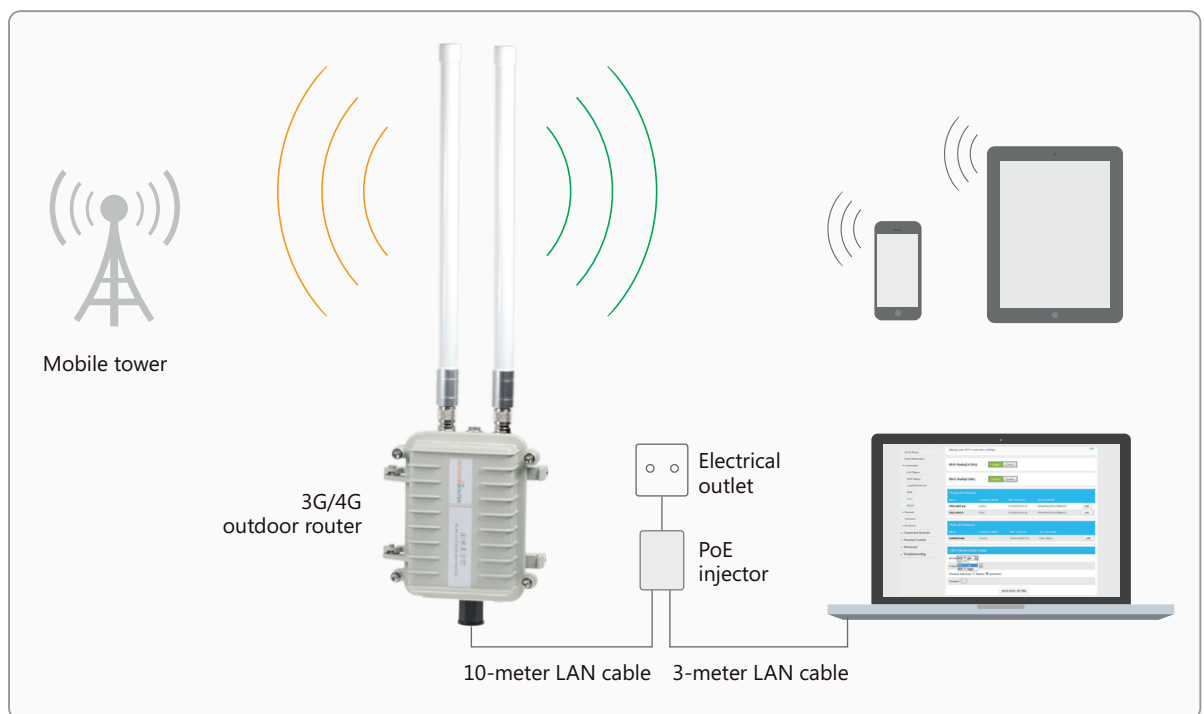
Mobile tower

3G/4G
outdoor router

Electrical
outlet

PoE
injector

10-meter LAN cable   3-meter LAN cable

2. Hardware overview

2.1 Package contents

• 1 x 3G/4G outdoor router
• 2 x Fiber reinforced plastic aerial
• 1 x 10-Meter LAN cable

• 1 x 3-Meter LAN cable
• 1 x PoE injector
• 1 x Cable gland

• 1 x Mounting set and tool

| Outdoor Router | Aerials | LAN Cables | PoE Injector | Cable Gland |

Mounting Set & Tool

| 2 x Bracket | 2 x Holder | 2 x U-bolt | 4 x Spring washer | 4 x Washer | 4 x Bolts | 1 x Hex wrench |

2.2 Port, switch and indicator

Left N-female connector to 3G/4G mobile aerial

Right N-female connector to 2.4G Wi-Fi aerial

Mobile signal indicator (Left)
Wi-Fi signal indicator (Right)

Micro SIM card slot
Reset button

RJ45 socket to PoE injector via LAN cable

PoE power indicator
Router power indicator

Router power switch
Wi-Fi amplifier indicator
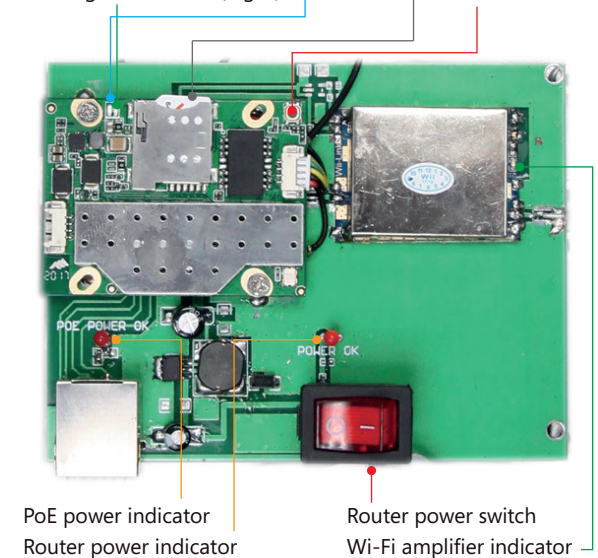
2.3 Indicator description

Indicator	Status	Description
PoE power	Red Off	System is up and ready No input PoE power
Router power	Red Off	PoE module and Wi-Fi module are turn on Router is power off
Mobile signal	Blue Blue flash slowly Blue flash quickly Off	Received 3G/4G signal, but cannot connect due to no SIM card or no money in SIM card. Received 3G/4G signal, but no data transmission. Received 3G/4G signal, transmitting data via the mobile network. The 3G/4G signal has not been acquired.
Wi-Fi signal	Green Green flashing Off	Wi-Fi hotspot is working, no user connection. Wi-Fi hotspot is working, and the user has connected. Wi-Fi function has been closed.
Wi-Fi amplifier	Blue flashing Off	Wi-Fi amplifier is working with 30dBm output power. Wi-Fi function is off, or Wi-Fi output power is 17dBm or 20dBm.

3. Installation

3.1 Choose the outdoor location

3G/4G Signal reception
Using your mobile phone, walk around and look for a location that gets a good signal. The suggested signal strength is at least 3 bars (-90dBm).

If you have a weak signal reception, please upgrade the mobile aerial with higher gain and directional logarithm aerial.

Distance to PoE injector
A 10-meter LAN cable is included. Make sure outdoor router is no more than 10 meters away from the indoor PoE injector.

The 15V 1A PoE injector supports maximum 10-meter LAN cable. If you want to extend to up to 50~100 meters, please contact us to upgrade the PoE injector to 24V~48V.
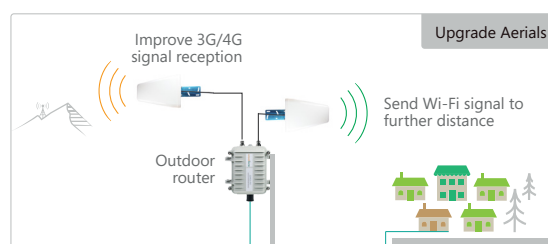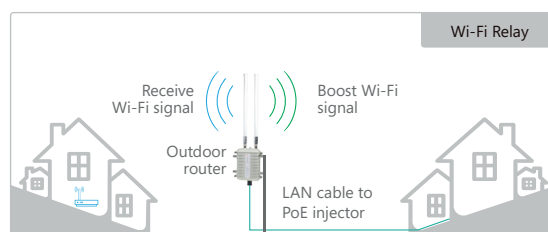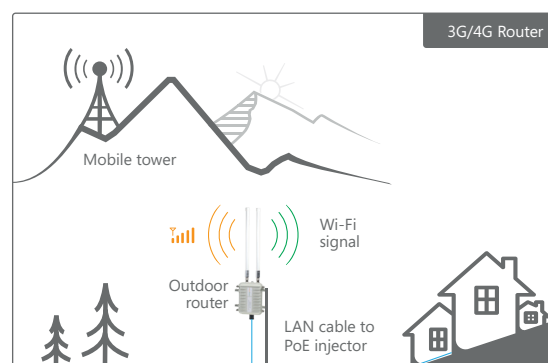
Directional Wi-Fi coverage
The default Wi-Fi antenna transmit Wi-Fi signals to all the directions, if you want to send the Wi-Fi signal to a defined area, and send the Wi-Fi signal to a further distance, please upgrade the Wi-Fi aerial to higher gain and directional logarithm aerial.

Wi-Fi AP mode
In the Wi-Fi AP mode, outdoor router could replay and boost the Wi-Fi signal received from another router or access point (AP). Make sure in the location of outdoor router could receive at least 2 bars of the Wi-Fi signals.

3G/4G Router

Mobile tower

Wi-Fi signal

Outdoor router

LAN cable to PoE injector

Wi-Fi Relay

Receive Wi-Fi signal

Boost Wi-Fi signal

Outdoor router

LAN cable to PoE injector

Upgrade Aerials

Improve 3G/4G signal reception

Send Wi-Fi signal to further distance

Outdoor router

3. Installation

3.2 Insert the micro SIM card

Use the hex wrench to lose 4pcs of hexagon bolts and open the case.
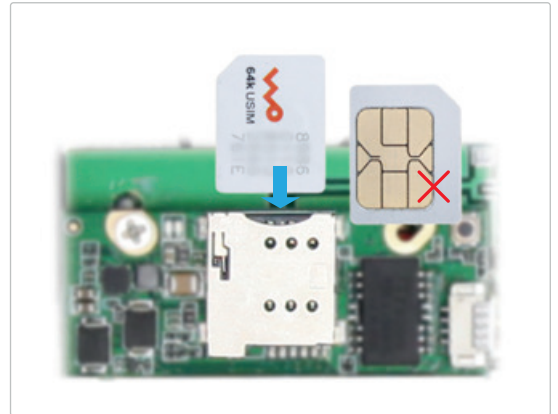
Insert micro SIM/USIM card (12x15mm) into the SIM card slot. See chapter 2.2 where is the "SIM card slot".

Turn on router power switch. See chapter 2.2 where is the "router power switch".

Close the case and screw down the hexagon bolts with the hex wrench.

⚠️ The micro SIM card is not included in the package.

3.3 Install the aerials

The outdoor router uses 2pcs fiber reinforced plastic (FRP) aerials. Install mobile phone aerial on the left N-female base connector, and install another Wi-Fi aerial on the right base connector.

Twist the connector on aerial in clockwise direction to fix them on the router.
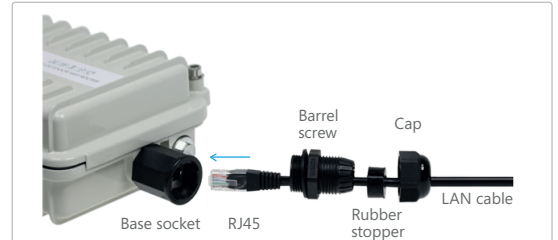

3.4 Connect LAN cable to router

i. Take apart the cable gland, and through the LAN cable.
ii. Plug the RJ45 connector into RJ45 port in the base socket.
iii. Screw on the barrel screw on the base socket.
v. Insert rubber stopper into barrel screw, and crew down the cap.

✍️ Take off the cap then unscrew the barrel screw before disconnect the LAN cable with the router.


3.5 Mounting set installation

3.5.1 L-shape bracket

i. Use the hex wrench to take off the clamp from the router.
ii. Install the L-shape brackets between the router and clamps.
iii. Use the hex wrench to tighten the hex bolts.
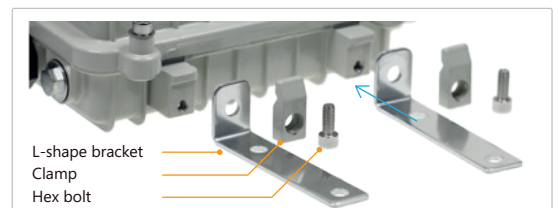
3.5.2 Install on a pole

i. Clasp the pole with U-bolts and holders.
ii. Attach the L-shape brackets (installed on the router) on the holders.
iii. Put spring washers, washers, and bolts on U-bolts then tighten the bolts with a spanner (not included).
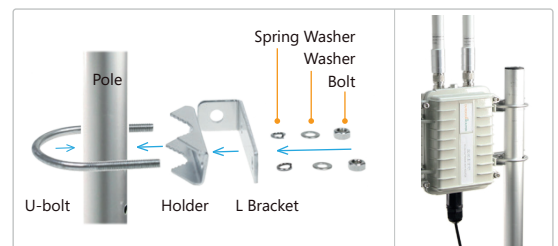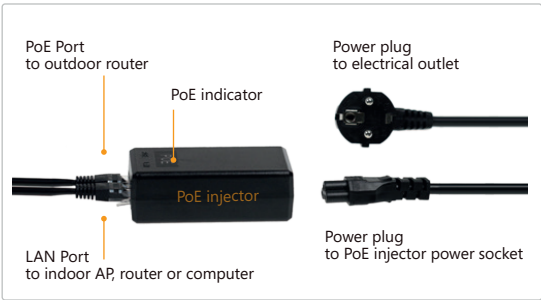
3. Installation

3.6 PoE injector

Connect another RJ45 connector on the 10-meter LAN cable to PoE port on the PoE injector.

Not required Connect indoor router or computer to Lan port on the PoE injector. A 3-meter LAN cable is included.

Use the power cord to connect PoE injector to the electrical outlet. The green indicator on PoE injector will turn on after connected to electrical outlet.

PoE Port
to outdoor router

PoE indicator

Power plug
to electrical outlet

PoE injector

LAN Port
to indoor AP, router or computer

Power plug
to PoE injector power socket

4. Configuration

4.1 Connect to outdoor router

4.1.1 Wi-Fi / Ethernet connection

After connected to the electrical outlet, a Wi-Fi hotspot named "**MIFI_xxxx**" will be created within 20 seconds. The default encryption type is "**WPA2(AES)-PSK**", and the default Wi-Fi password is "**1234567890**".

Connect to this hotspot on a computer, laptop or smartphone. You can also connect the router to your indoor Wi-Fi router or computer via the 5-meter LAN cable.

4.1.2 TCP/IP setting

Configure TCP/IP on your connected devices, make sure IP address is within 192.168.100.101~200. The subnet mask should be **255.255.255.0**. The router address should be **192.168.100.1**.
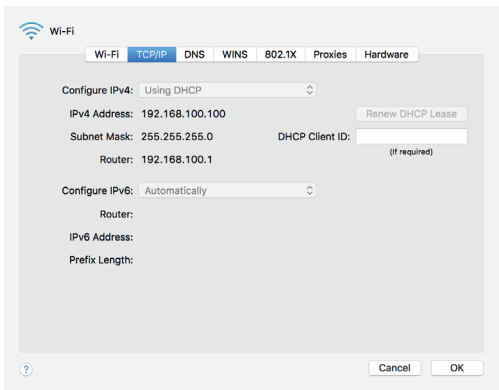
If DHCP function is activated on your device, it will setup automatically. Otherwise, you need to configure IP manually.

On iPhone: Goes to Settings / Wi-Fi / Advanced
On Android phone: Goes to Settings / WLAN / Advanced

On Mac: Goes to System preferences / Network / Wi-Fi / Advanced / TCP/IP


On Windows: Goes to Start / Control panel / Network and internet / Change adapter setting (on left window panel) / Local area connection / Properties (right click) / TCP/IPv4 (Internet protocol version 4) / Properties / General
Choose "Obtain an IP address automatically" and "Obtain DNS server address automatically"
Click "OK" to exit setting. Click "OK" again in the "Local area connection properties" to apply the new configuration.

4. Configuration

4.2 Login your outdoor router

The default IP address of the outdoor router is **192.168.100.1** with subnet 255.255.255.0. Make sure your smartphone or computer is connected to the router via Wi-Fi or LAN cable. Open a web browser and type **http://192.168.100.1** in the URL address bar. Use default password **admin** to login.
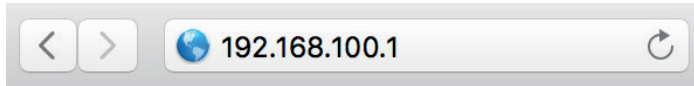
4.3 Interface overview

4.3.1 Status bar

From left to right, there are:
Network type, Operator, Signal strength, Wireless broadband connection, Cable broadband connection, SIM card, Number of users
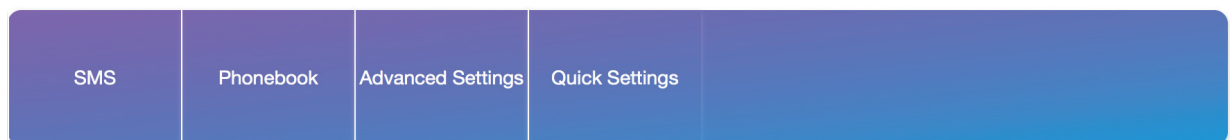

4.3.2 Manu bar

SMS: Check received SMS messages, and send SMS message to other mobile phone numbers.
Phonebook: Check saved contacts, and add new phone numbers.
Advanced settings: See chapter 4.4.
Quick settings: The wizard will show you how to set up basic parameters of gateway safely.

4.4 Advanced settings

4.4.1 Power-save
Choose Wi-Fi output powers from 10dbm, 20dBm and 30dBm.

4.4.2 Router
Setup IP address, Subnet mask, DHCP server, IP pool, and DHCP lease time of the outdoor router.

4.4.3 Firewall
Setup Port, filtering, Port mapping, Port forwarding, UPnP, and DMZ of the outdoor router.

4.4.4 Update
Upload and update the firmware of the outdoor router.

4.4.5 USSD
USSD is short of Unstructured Supplementary Service Data.

4.4.5 DDNS
DDNS is short of Dynamic Domain Name Server.

4.4.5 Others
Restart and reset the outdoor router.

4. Configuration

4.5 Network connections and status

There are six blocks below the menu bar on the front page.

4.5.1 3G/4G connect status

On the left upper corner, you can quickly turn on / off the 3G/4G mobile network connection and check the connection status including upload speed, download speed, and working time.

4.5.2 Connected devices

Number of the devices connected to outdoor router, click the block and check device name and MAC address.
You can block the unauthorized devices.

4.5.3 Data management

Help you to control the 3G/4G data usage wisely.
Click the orange color block and customize your data management by time or by data.

4.5.4 Status information

On the right down corner, you can find the details of the router, including IMEI number, IMSI number, Wi-Fi signal strength, and network name (SSID).

Click "Detail information" to view more information about the router.
The Wi-Fi encryption, SSID, and password are included in the bottom QR code.
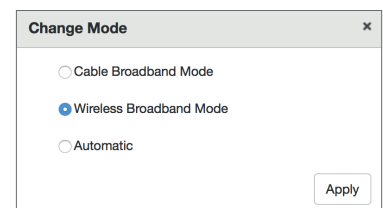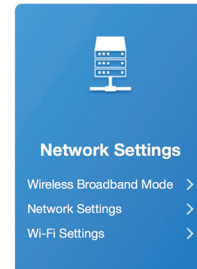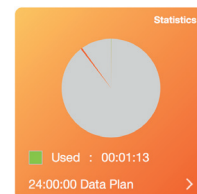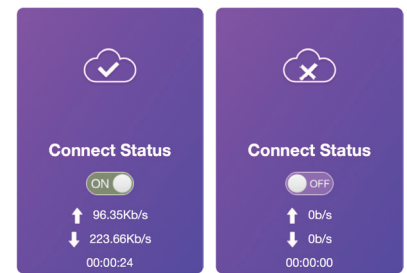
4.6 Network settings

4.6.1 Wireless broadband mode

Click "Wireless broadband mode" you can choose the broadband modes from cable broadband, wireless broadband or automatic.
Click "Apply", the outdoor router will apply new setting and rebot.

Suggest keeping the broadband mode stay in default "Wireless broadband mode" or use "Automatic".

4.6.2 Connection settings
Click "Network settings" to setup connection type.
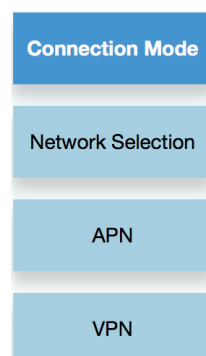
Connection Mode
Connection mode
Turn on/off auto connect to network function.

Network Selection
Network selection
Turn on/off auto search available network function.

APN
Access point name (APN)
If your service provider provides a fixed APN, select Manual APN. Otherwise, please select Auto APN.

VPN
Virtual private network (VPN)
Connect to the VPN network with PPTP type.

4. Configuration

4.6 Network settings

4.6.3 Wi-Fi settings

Click "Wi-Fi settings" to access the Wi-Fi configuration page.

SSID

Wi-Fi network name (SSID)
Setup SSID, hide SSID, wireless encryption type, Wi-Fi password, and max connection number.

WPS

Wi-Fi protected setup (WPS)
Enhance your Wi-Fi security with WPS by adding a PIN or push button configuration (PBC).

Internet Wi-Fi

Internet Wi-Fi
Connect the outdoor router to Wi-Fi network.

The 3G/4G connection will turn off after connected. Default setting is connected to Wi-Fi if added a Wi-Fi Hotspot. You can change preferred network to "WWAN" if want to connect to 3G/4G at the priority.

Add Wi-Fi Hotspot

Click "Add" below "Wi-Fi Hotspot" will start to search available Wi-Fi networks.

Select from available Wi-Fi network list, input Wi-Fi password, click "Apply".

You can disconnect it from the "Wi-Fi hotspot" list.

Internet Wi-Fi

Internet Wi-Fi Switch	⦿ Enable	◯ Disable
Preferred Network	⦿ Wi-Fi	◯ WWAN
Current Status	Wi-Fi connected	

Add Wi-Fi Hotspot

Network Name(SSID) *	Indoor Router Wi-Fi
Security Mode	WPA2-PSK
WPA Algorithms	◯ TKIP ⦿ AES ◯ AUTO
Pass Phrase *	
	☐ Display Password

Refresh Apply Back

Advanced Settings

Advanced settings
Setup network standard, bandwidth, reign code, and frequency. The default is locked.

WLAN MAC Filter

WLAN MAC Filter
Filter the MAC address by whitelist and blacklist to control the connected devices.

4.7 SMS control

You can control the outdoor router remotely by sending SMS messages to the phone number of inserted micro SIM/USIM card.

SMS message	Function
*#01#	Turn on 3G/4G connection
*#02#	Turn off 3G/4G connection
*#03#	Turn on Wi-Fi hotspot
*#04#	Turn off Wi-Fi hotspot
*#05#	Reboot outdoor router
*#06#	Reset outdoor router to factory settings
*#07#,dialpref	3G/4G connection at the first priority
*#07#,wifipref	Wi-Fi replay at the first priority
*#08#,WRT4E,outdoorrouter,add	Connect to another Wi-Fi hotspot SSID "WRT4E" with password of "outdoorrouter"
*#08#WRT4E,outdoorrouter,delete	Disconnect to Wi-Fi hotspot SSID "WRT4E" with password of "outdoorrouter"

4.8 Reset factory settings

When the router is turned on, click and hold "Reset" button for 5 seconds until the router reboot. Or use the above SMS code *#06#.

5. Troubleshooting

5.1 Can't find Wi-Fi hotspot

Check the PoE injector

Make sure PoE injector is connected to the electrical outlet, the green indicator on PoE injector will turn on after connected to the electrical outlet. The PoE power indicator on the outdoor router will turn on Red after have PoE power input to the router. If PoE power indicator is off, check and ensure RJ45 connector on LAN cable connected to "PoE" port on the PoE injector.

Check the outdoor router

Make sure router power switch is in "ON" position. Router power indicator will turn on Red after turned on router power. Check if Wi-Fi indicator is turned on. The Wi-Fi indicator will turn on Green after turned on the Wi-Fi function.

Remote control

Send SMS message *#03# to the phone number of inserted micro SIM/USIM card to turn on Wi-Fi function.

5.2 Forgotten password

Reset router login password

Default login password is "admin". If you changed login password and forgotten it, please use one o below methods to reset the outdoor router to factory settings.
i. Open the outdoor router case, click and hold the "Reset" button for 5 seconds until the router reboot.
ii. Send SMS message *#06# to the phone number of inserted micro SIM/USIM card.

Reset Wi-Fi password

You can set a new Wi-Fi password after login the outdoor router control panel. See chapter 4.6.3.

5.3 No internet connection

In 3G/4G router mode

Login router control panel, check the mobile connection.
i. Make sure 3G/4G wireless connection is turned on. Refer to chapter 4.5.1.
ii. Check if the cellular signal reception is good. Refer to chapter 4.3.1.
iii. Check if the inserted SIM card has money.

In Wi-Fi relay mode

Check the internet connections ability of the relayed Wi-Fi network.
Make sure the IP address of Wi-Fi hotspot is not involved in the IP address pool of the outdoor router.
The default IP pool of router is 192.168.100.101~200. Check chapter 4.4.2 to change IP pool.

6. Contacts

If you have any question or suggestion about the outdoor router, please contact us.

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