

**ZTE MF612**

**3.5G Wireless Router**

**User Manual**

## WELCOME

Thank you for choosing the ZTE MF612 3.5G Wireless Router (hereinafter referred to as "unit" or "router"). To get the most from your router and to keep it in the best condition please read this manual carefully.

The pictures, symbols and contents in this manual are for reference only. They might not be completely identical with your router. ZTE operates a policy of continuous development. We reserve the right to update the technical specifications in this document at any time without prior notice.

***For technical support call \*320 or 052-9986935***

## Glossary

- AC: Alternating Current
- APN: Access Point Name
- DC: Direct Current
- DHCP: Dynamic Host Control Protocol
- DNS: Domain Name System (or Service or Server)
- DoS: Denial of Service
- EDGE: Enhanced Data GSM Evolution
- ESSID: Expanded Service Set Identifier
- Ethernet: A frame-based computer networking technology for local area networks (LANs)
- GSM: Global System for Mobile Communications
- GPRS: General Packet Radio Service
- HSDPA: High Speed Downlink Packet Access
- HSUPA: High Speed Uplink Packet Access
- IP: Internet Protocol
- LAN: Local Area Network
- LED: Light - emitting Diode
- MHz: Megahertz
- MTU: Maximum Transmission Unit
- PDP: Packet Data Protocol
- PIN: Personal Identification Number
- PPP: Point to Point Protocol
- PSTN: Public Switched Telephony Network
- PUK: PIN Unlocking Key
- RSSI: Radio Signal Strength Indicator
- RF: Radio Frequency
- SIP: Session Initiated Protocol
- UPnP: Universal Plug and Play
- USIM: UMTS Subscriber Identification Module
- VOIP: Voice over Internet Protocol
- WCDMA: Wideband CDMA (Code-Division Multiple Access)
- WEP: Wired Equivalent Privacy
- WLAN: Wireless LAN
- WPA-PSK: Wi-Fi Protected Access–PreShared Key

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# 1 General Information

## 1.1 Safety Precautions

- Some electronic devices may be susceptible to electromagnetic interference. Locate the router away from TV set, radio and other electronic equipment to avoid electromagnetic interference.
- The router may interfere with medical devices like hearing aids and pacemakers. Consult a physician or the manufacturer of the medical device before using the router.
- Please keep yourself at least 20 centimeters away from router.
- Do not use your router in dangerous environments such as oil terminals or chemical factories where there are explosive gases or explosive products being processed.
- Please use original accessories or accessories that are authorized by ZTE. Unauthorized accessories may affect the router performance, damage the router or cause danger to you.
- Do not attempt to dismantle the router. There are no user serviceable parts.
- Do not allow the router or accessories to come into contact with liquid or moisture at any time. Do not immerse the router in any liquid.
- Do not place objects on top of the router. This may lead to overheating of the device.
- The device must be placed in ventilation environment for use.
- Do not expose the router to direct sunlight or store it in hot areas. High temperature can shorten the life of electronic devices.
- Do not allow children to play with the router or charger.
- Keep the length of the cable between the router and the phone less than 10 meters.
- The router is for indoor use only. Do not use the router outside. Do not connect telephone extensions which run outside of the building. These can result in lightning damage to your unit.

## 1.2 Declaration

We, ZTE Corporation, declared that:

- The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to

operate the equipment.

- This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

- This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/ TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### 1.3 Cleaning and Maintaining

- Use an antistatic cloth to clean the router. Do not use chemical or abrasive cleanser as these could damage the plastic case. Turn off your router before you clean it.
- Use the router within the temperature range of  $-10^{\circ}\text{C}$  ~  $+55^{\circ}\text{C}$ , and the storage temperature range is  $-20^{\circ}\text{C}$  ~  $+65^{\circ}\text{C}$ . The humidity range is 5%~95%.

- Do not use your router during a thunderstorm. Remove the mains power pack from the wall socket.
- Do not take out your USIM card unnecessarily. The USIM card may be easily lost or it can be damaged by static electricity.

#### **1.4 Limited Warranty and Liability**

- This warranty does not apply to defects or errors in the Product caused by:
  - (a) Reasonable Router Appearance Disfiguration.
  - (b) End User's failure to follow ZTE's installation, operation or maintenance instructions or procedures.
  - (c) End User's mishandling, misuse, negligence, or improper installation, disassemble, storage, servicing or operation of the Product.
  - (d) Modifications or repairs not made by ZTE or a ZTE-certified individual.
  - (e) Power failures, surges, fire, flood, accident, actions of third parties or other events outside ZTE's reasonable control.
  - (f) Usage of products of third Parties, or usage in conjunction with third party products provided that such defects is due to the combined usage.
  - (g) Any other cause beyond the range of normal usage for Products. End User shall have no right to reject, return, or receive a refund for any Product from ZTE under the above-mentioned situations.
- This warranty is end user's sole remedy and ZTE's sole liability for defective or nonconforming items, and is in lieu of all other warranties, expressed, implied or statutory, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, unless otherwise required under the mandatory provisions of the law.
- ZTE shall not be liable for any loss of profits or indirect, special, incidental or consequential damages resulting from or arising out of or in connection with using of this product, whether or not ZTE had been advised, knew or should have known of the possibility of such damages, including, but not limited to lost profits,



interruption of business, cost of capital, cost of substitute facilities or product, or any downtime cost.

## **1.5 Emergency Call**

Do not rely on the 3.5G Wireless Router to provide emergency call in all situations.

Your 3.5G Wireless Router only supports emergency dialing when there is power and connection to the mobile network. If the power fails, the router cannot work. If you have no network coverage you will not be able to make emergency calls. The 3.5G Wireless Router does not include a lifeline facility (wired access to the PSTN).

## **1.6 Safety Instructions for Power Supply**

- Verify that the power supply, electric cord and plug received in the box are all intact.
- Do not plug or unplug any electrical device with bare feet.
- Do not open or dismantle the power supply, there are no user serviceable elements in it.
- Make sure the power supply is disconnected from the wall outlet before cleaning it.
- The power supply is intended for internal use. Do not use the power supply in a humid environment or near any fluids.
- If you hear any noise or feel a strange smell – disconnect the power supply immediately and call the service center.
- Do not bend, cut or break the electric cord.
- Do not replace the original power cord or plug.
- Do not put any heavy items on the electric cord and do not let it overheat, it may cause damage, short-circuit or explosion.
- If you need to use an electric cord extension, make sure it has a ground wire.

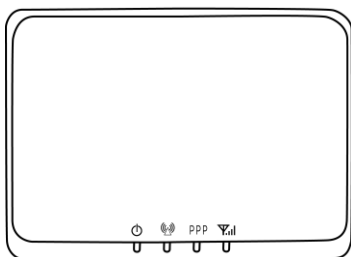
## 2 Getting started

The router operates on the HSUPA/HSDPA/UMTS networks and GSM/GPRS/ EDGE networks and supports voice and data service.

### 2.1 Parts Supplied

Parts	Quantity
3G Wireless Router	1
External power supply	1
User manual	1
RJ45 (Ethernet) cable	1
RJ11 (phone) cable	1

### 2.2 Router Appearance

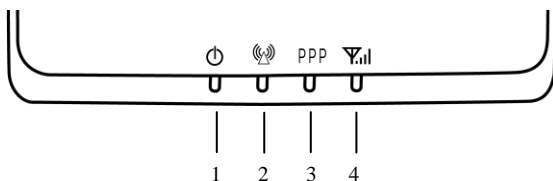


Top View



Left View

#### 2.2.1 LED Indicator



## LED Indicators

Indicator	State	Description
1. PWR	ON	External power supply works normally.
	OFF	External power supply is disconnected or power off.
2. Wi-Fi	ON	Wi-Fi works normally.
	Blinking	Data transmission.
	OFF	Wi-Fi works abnormally, or is disconnected.
3. PPP	ON	Internet connected.
	Blinking	The router attempts to connect Internet.
	OFF	Internet disconnected and not attempt to connect.
4. RSSI	ON	RF signal is normal. Different color indicates different network. Red: GSM/GPRS/EDGE. Green: HSDPA/HSUPA/UMTS.
	Blinking	RF signal is poor.
	OFF	RF signal is not available.

**Note:** The indicators (including PPP and RSSI) are all blinking in green when:

- The USIM card has not been installed.
- The PIN code or PUK code is required.
- The router cannot work normally.

## 2.2.2 Power Switch

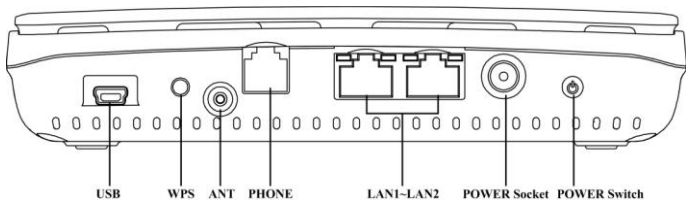
Turn the router **On** or **Off** by pressing the power switch at the rear of the router.



**Power Switch**

## 2.3 Interface and Installation

### 2.3.1 Interface Description



**Rear View of Router**

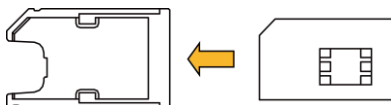
- (1) **USB:** Test and diagnostic interface for factory use only.
- (2) **WPS:** WPS button is used to start Wi-Fi Protected Setup authentication process.
- (3) **ANT:** External antenna connector. If external antenna is connected, the internal antenna is of no effect.
- (4) **PHONE:** Standard RJ11 connector for Telephone.
- (5) **LAN 1~ LAN 2:** Ethernet connections to computer.
- (6) **POWER Socket:** Connection to the external power supply.
- (7) **POWER Switch:** Turn the router ON or OFF.

### 2.3.2 Installation

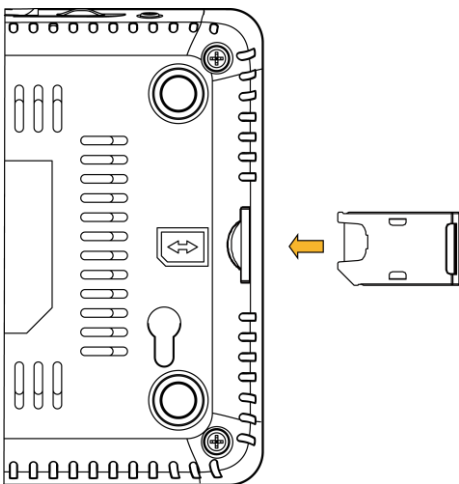
1. Insert the USIM card into the USIM card holder from the side of the router.

a) Pull the plastic holder out.

b) Insert the USIM card with the metal contact area facing upwards into the holder.



c) Insert the plastic holder into the router. You can hear a click when the USIM card locks in place.




**Warning:** Please power off the router and remove the external power adapter before removing or inserting the USIM card, if not, the router or USIM card may be damaged.

2. Connect the telephone to the **PHONE** interface using phone cable (RJ11).

3. Connect your computer to the **LAN** interface using the Ethernet cable (RJ45).

**Note:** The router will adapt the Ethernet cable style (crossover or straight) automatically.

4. Connect the external power adaptor to a standard power outlet. Insert the plug into the socket at the rear of the router.

5. Turn the power switch  on to get started. Make sure that the phone is on hook before power on.

**Note:** Do not put anything on the top of router. Do not lay routers to overlap each other when using.

6. Wait 1~2 minutes after turning the router on before you use the service. The RSSI & PWR indicator should be lit on.

**Note:** When the router is turned off, an incoming caller will hear the prompt like "The number you have dialed is currently unavailable."

If the RSSI (Radio Signal Strength Indicator) LED is blinking constantly then try moving the router to another location. The router takes 1~2 minutes to initialize, attach to the network and obtain an IP address.

## 2.4 Power Supply

For normal operation connect the router to the external power supply.

In case of power failure or when there is no available external power supply, the router cannot work.

## **2.5 About the USIM Card**

Avoid handling the USIM card unnecessarily. Hold the card by the edges to prevent static damage. Keep the USIM card away from electrical and magnetic appliances.

### **If you cannot get service, make sure that:**

You are in an area which has network coverage.

You are using the correct USIM card.

## 3 Voice

### 3.1 Making a Call

Before making a call, make sure:

- The USIM card is installed.
- The telephone cable (RJ11) is connected properly.
- The PWR and RSSI lights are on.

Pick up the handset.

1. Key in the telephone number.
2. You should wait 4~8 seconds for the call to be connected automatically.

**Note:** If there is no RSSI indication, the RF signal is unavailable. Change the location of the router and make sure nothing is blocking it.

#### 3.1.1 Making a Call

If you are making a call, add the area code as normal.

**E.g. 03 9612 3456**

#### 3.1.2 Making an International Call

If you are making an international call, key in the international access code followed by the country code, area code and number.

**E.g. 00 11 64 12 345678**

### 3.2 Answering a Call

When the phone rings, pick up the handset to answer or press the **Hands-free** button (if available). Press the **Hands-free** button again to end the call.

When answering a **Call Waiting**, press the Flash button (if available) or press the phone's cradle.



## 4 Internet Access

The router does not require any drivers, and it supports all operating systems with Ethernet LAN capability, such as Windows 2000, XP, Vista , MAC OS X and Linux. The router supports two computers surfing on internet using Ethernet cable at the same time, and also supports Wireless LAN connection.

**Note:** All the parameter settings in this chapter are just for your reference. Please contact your service provider for details.

**Do not change any configuration or settings without explicit instructions from your service provider.**

### 4.1 Preparation

Before using the data service, make sure:

- The USIM card is installed.
- The Ethernet cable is connected properly.
- The PWR light is on.
- The RSSI light is on.
- The PPP light is on.

#### **Web browser requirement:**

It is suggested that you use one of these web browsers to connect to the internet.

- IE 6.0 or above
- Firefox 2.0
- Netscape version 9.0

## 4.2 Settings

Do not change any settings unless instructed by your service provider. To make changes to your settings you need to disconnect the router from the network. After making changes reboot your router by turn off and on again.

### 4.2.1 Login

The router can be connected by RJ45 or by Wi-Fi (the SSID is "Cellcom Router"). By either connection mode, you should set to obtain an IP address automatically in the attribution setting of Internet protocol(TCP/IP).

After your computer gets the IP address (like 192.168.0.101) from the router, open a web browser and type "http://192.168.1.1" in the address bar, and then input the username and password.

**User name:** admin

**Password:** admin



**Note:** some screens may be different from those shown here.

Click **Login** to log in the router.

**Note:** If you check **Save** after you give user name and password ,the router will save them, next time when you want to log in the router with

the same user name and password, what you need to do is click **Login**.

When you successfully login, the following screen appears:

**ZTE**  
3G Wireless Router  
webGUI Configuration

Router State

- Quick Setup
- WAN Connection
- 3G Settings
- Router
- Wi-Fi Setting
- Firewall
- Advanced
- Logout

Home

HSPA China Mobile P.C Disconnected

3G Information	
Network Provider	China Mobile
Network Type	HSPA
Roam	OFF
Domain	CS_PS

WAN Information	
PPP Status	Disconnected
IP Address	0.0.0.0
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0

WLAN Current Status	
SSID	Calcom_Router
Channel	6
Security Level	Disable

LAN and WLAN Information	
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1

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The whole interface is divided into two parts. Related functions can be executed by operation in the related areas.

- **Index area:** Show configuration list for your router.
- **Content area:** Show the detail configuration.

#### 4.2.2 Quick Setup

**Step1.** Read the guide carefully, and then click **Next**.

##### Quick Setup

•The wizard will show you how to set up your gateway in the safe way: Click "Next" to continue, click "Back" and "Next" to navigate, and click "Apply" to save the settings.

##### Notes:

Basic parameters can be set in this wizard. For advanced parameters, you need to set them in other menus.

Next

## Step2. Set PPP Profile Configuration in the following figure:

### Quick Setup-->PPP Profile Configuration

- Profile Name: The default profile that you used currently.
- APN: If a fixed APN(Access Point Name) is given by your ISP, select "Manual APN"; otherwise, select "Auto APN", the gateway automatically obtains it.
- Dial No.:This parameter is provided by your ISP, Dial No. is used for data service connections.

#### Profile

Profile Name	Cellcom Internet
--------------	------------------

#### APN

APN Setting	<input type="radio"/> Auto APN <input checked="" type="radio"/> Manual APN
APN	internetg

#### Dial Setting

Dial No.	*99#
----------	------

Back Next

Set **APN** for PPP profile, if you obtain a fixed APN from your service provider, please select **Manual APN**, otherwise select **Auto APN**, and then type the APN string. **Dial No.** is provided by your service provider.

## Step3. Set the PPP Authentication in the following figure:

### Quick Setup-->PPP Authentication

#### •PPP Authentication

The authentication mode is provided by your Internet Service Provider(ISP).

Password Authentication Protocol(PAP): It provides a simple method without encryption for the peer to establish its identity using a 2-way handshake.

Challenge-Handshake Authentication Protocol(CHAP): It is used to periodically verify the identity of the peer PPP User Name and PPP Password are provided by your ISP and used to obtain authentication from the ISP when the connection is established.

#### PPP Authentication

Authentication	<input type="radio"/> CHAP <input checked="" type="radio"/> PAP
----------------	---

PPP User Name	<input type="text"/>
PPP Password	<input type="text"/>

Back Next

Choose PPP authentication mode CHAP or PAP, and then give PPP user name and password to the corresponding authentication mode.

## Step4. Set SSID Configuration in the following figure:

### Quick Setup -->SSID Configuration

•Name SSID(Service Set Identifier): Enter a character string up to 32 characters as the name for your wireless local area network (WLAN).

•SSID Broadcast

Enabled: The gateway broadcasts the SSID and other devices can detect and connect to it.

Disabled: The gateway disables broadcasting and hides the name of your network.

#### SSID

Name(SSID)	Cellcom_Router
<b>SSID Broadcast</b>	
SSID Broadcast	Enabled

Service Set Identifier (SSID) is used to uniquely identify your WLAN. If you enable **SSID Broadcast**, the gateway will broadcast the SSID, and other device can detect and connect with it.

## Step5. Set Security Configuration in the following figure:

### Quick Setup-->Security Configuration

•Add encryption to your wireless network to prevent unauthorized traffic monitoring and access.

No Encryption: Your wireless network is open to everyone without authentication and encryption, and this option is not recommended.

Wireless Equivalent Privacy(WEP): It is a 64-bit or 128-bit encryption method with user configurable fixed keys.

Wi-Fi Protected Access(WPA): It is a 256-bit encryption method with keys changing automatically.

WPA2: It is the securer version of WPA with implementation of the 802.11i standard.

WPA Encryption Algorithm: TKIP, AES, TKIP+AES.

WPA Pre-Shared Key: Enter the Pre-Shared key as a plain text(ASCII) pass-phrase of at least 8 characters.

Key Rotation Interval: Specify the key update interval in seconds. Enter 0 to disable the update function.(You'd better set more than 59)

Network Key: Enter 5 ASCII characters or 10 hexadecimal digits for a 64-bit key, enter 13 ASCII characters or 26 hexadecimal digits for a 128-bit key.

#### Encryption Mode

Encryption Mode	NO ENCRYPTION
-----------------	---------------

Encryption will keep your traffic from being unauthorized monitor and access, select one encryption mode from the list, and then set key and/or algorithm for it.

**Step6.** Show the Configuration in the following figure:

Quick Setup->Configuration as Follows

Profile Name:	Cellcom Internet
Dial No.:	*99#
PPP User Name:	
API Setting:	manual
API:	internetg
PPP Authentication:	pap
Name (SSID):	Cellcom_Router
SSID Broadcast:	enable
Encryption Mode:	NO ENCRYPTION

Back Apply

Make sure that all the parameters shown in the figure are correct, and then click **Apply**.

### 4.2.3 WAN Connection

Click **WAN Connection**, you can configure how to connect to the Internet in the following figure:

WAN Connection

PPP Connection Mode

<input checked="" type="radio"/>	Auto Connect
<input type="radio"/>	On Demand Connect
<input type="radio"/>	Manual Connect <input style="font-size: small; border: none; border-bottom: 1px solid black; padding: 0 5px;" type="button" value="Connect Internet"/>
PPP Connection Status	Disconnected

Apply

There are three connection mode:

1. **Auto Connect:** The router will automatically connect to WAN when it is powered on.
2. **On Demand Connect:** .The connection will be established when data transmission are required. Router will disconnect from the Internet if there is no data traffic going through it during the **Max Idle Time**.

3. **Manual Connect:** Connect to Internet manually.

Click **Apply** to confirm your configuration, and then the PPP connection status will be shown in the figure.

### 4.2.3 3G Settings

#### 1. Wireless Info

Select **3G Settings**→**Wireless Info**, the 3G wireless information is shown in the following figure:

3G Wireless Information	
Network Provider	China Mobile
Network Type	HSPA
Roam	OFF
RSSI	-86 dBm
RSCP	-96 dBm
Ec/Io	-10 dB
Cell ID	1012
LAC Code	10

Refresh

Click **Refresh** to update the wireless information.

#### 2. Network Select

Select **3G Settings**→**Network Select**, the Band Selection Mode is shown in the following figure:

Band Selection Mode	
<input checked="" type="radio"/>	Automatic
<input type="radio"/>	WCDMA Only
<input type="radio"/>	GSM Only

Apply

- **Automatic:** Router searches for valid network according to the wireless network.
- **Only WCDMA:** Router searches for WCDMA network only.
- **Only GSM:** Router searches for GSM network only.

Click **Apply** to confirm your configuration.

### 3. APN Setting

Select **3G Settings**→**APN Setting**, the APN parameters are shown in the following figure:

3G Settings-->APN Setting

•Wireless Info •Network Select •APN Setting

APN Setting

Profile Selection	Cellcom Internet ▾
Profile Name	Cellcom Internet
APN Setting	<input type="radio"/> Auto APN <input checked="" type="radio"/> Manual APN
APN	internetg
Dial No.	+999
PDP Type	<input checked="" type="radio"/> IP <input type="radio"/> PPP
PDP Setting	<input checked="" type="radio"/> Auto PDP <input type="radio"/> Manual PDP
DNS	<input checked="" type="radio"/> Auto DNS <input type="radio"/> Manual DNS
Authentication	<input type="radio"/> CHAP <input checked="" type="radio"/> PAP
User Name	
Password	

Save Set default Add Delete

- **APN Setting:** APN address mode. If a fixed APN is provided by your service provider, select **Manual APN**. Otherwise select the **Auto APN**, and the router will automatically obtain this parameter.
- **APN:** APN string.
- **Dial No.:** This dial number is used for data service connection.
- **PDP Type:** Packet Data Protocol (PDP) Type IP is recommended unless service provider instruct others.
- **PDP Setting:** PDP address mode. If a fixed IP address is given by your service provider, select **Manual PDP**. Otherwise select the **Auto PDP** and the router will automatically obtain this parameter.



- **DNS:** If a fixed IP address is given by your service provider, then choose **Manual DNS**. otherwise ,choose **Auto DNS** ,and router will automatically obtain parameters.
- **Authentication:** Password Authentication Protocol (PAP) provides a simple method without encryption for the peer to establish its identity using a 2-way handshake. Challenge-Handshake Authentication Protocol (CHAP) is used to periodically verify the identity of the peer using a 3-way handshake.
- **User Name:** User name is used to obtain authentication from the ISP when the connection is established
- **Password:** Password is used to obtain authentication from the ISP when the connection is established.

Click **Add** to define a new APN profile, and then click **Save** to save the profile. Click **Set default** to set the parameters to their default value. Select one profile and click **Delete** to delete it.

**Note:** You can not edit or delete the current default APN profile.

## 4.2.5 Router

### 1. LAN

Select **Router**→**LAN**, the LAN parameters are shown in the following figure:

Router->LAN

LAN DHCP Clients

LAN Interface Setup

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
MAC Address	00:0C:43:30:50:77
DHCP Type	Server
DHCP Start IP	192.168.1.100
DHCP End IP	192.168.1.200
DHCP Lease Time	24 hour(s) (1-65535)
UPNP	Disable
Statically Assign	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

Apply Cancel

- **IP Address:** IP address for LAN interface.
- **Subnet Mask:** Subnet mask for the IP address.
- **MAC Address:** MAC address for the LAN interface.
- **DHCP Type:** Define the DHCP type. By default, router is set as DHCP server.
- **DHCP Start IP:** Allocate start IP address for IP pool.
- **DHCP End IP:** Allocate end IP address for IP pool. The DHCP End IP address should be larger than the DHCP Start IP address.
- **DHCP Lease Time:** Define how long the leased IP address will be expired, and will relocate new IP address.
- **UPNP:** Enable Universal Plug and Play(UPNP) or not.

Click **Apply** to confirm your configuration.

## 2. DHCP Clients

Select **Router->DHCP Clients**, the DHCP clients parameters are shown in the following figure:

Router-->DHCP Clients			
• LAN		• DHCP Clients	
DHCP Clients			
Host Name	MAC Address	IP Address	Expires in

## 4.2.6 Wi-Fi Setting

### 1. Station list

Select **Wi-Fi Setting**→**Station List**, the wireless network stations are shown in the following figure:

Wi-Fi Setting-->Station List	
• Station List • Basic • Advanced • Security • WPS	
Wireless Network	
Station	MAC Address

### 2. Basic

Select **Wi-Fi Setting**→**Basic**, the wireless network basic parameters are shown in the following figure:

## Wi-Fi Setting-->Basic

•Station List •Basic •Advanced •Security •WPS

Wireless Network

Wi-Fi On/Off	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Network Mode	11b/g/n Mixed Mode ▼
Network Name(SSID)	Cellcom_Router
Broadcast Network Name (SSID)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
AP Isolation	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
BSSID	00:0C:43:30:50:E8
Frequency (Channel)	AutoSelect ▼

Wireless Distribution System(WDS)

WDS Mode	Disable ▼
----------	-----------

HT Physical Mode

Operating Mode	<input checked="" type="radio"/> Mixed Mode <input type="radio"/> Green Field
Channel Bandwidth	<input type="radio"/> 20 <input checked="" type="radio"/> 20/40
Guard Interval	<input type="radio"/> long <input checked="" type="radio"/> Auto
MCS	Auto ▼
Reverse Direction Grant(RDG)	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Aggregation MSDU(A-MSDU)	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Auto Block ACK	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Decline BA Request	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

Apply Cancel

- **Wi-Fi On/Off: Enable Wi-Fi or not.**
- **Network Mode:** If all of the wireless devices connect with this router in the same transmission mode, performance will be improved by choosing the appropriate wireless mode.
- **Network Name(SSID):** Service Set Identifier(SSID). Enter a string less than 32 characters as the name for your wireless local area network(WLAN).
- **Broadcast Network Name(SSID):** Disable or Enable(Default) this function. If **Enable** is selected, the router broadcasts the SSID, and other devices can detect and connect to it.
- **AP Isolation:** When **Enabled** is selected, each of your wireless client will not be able to communicate with each other.
- **BSSID:** MAC address of the Wi-Fi.

- **Frequency(Channel):** Choose the appropriate channel to optimize the performance and coverage of your wireless network.
- **WDS Mode:** WDS enable router to communicate with other APs, WDS connection is two-way communication, APs should know each others wireless MAC address. And make sure that all APs share the same SSID and channel.

WDS configuration is shown below:

Step	Description
1.Set the same SSID and channel for APs	Manually set the SSID and channel is strongly recommended
2.Select WDS mode: Disable, Lazy Mode, Bridge Mode or Repeater Mode	<ul style="list-style-type: none"> <li>-If you select <b>Disable</b>, WDS is disabled.</li> <li>-If you select <b>Lazy Mode</b>, WDS is enabled, and set wireless MAC address only on the peer APs.</li> <li>-If you select <b>Bridge Mode</b>, WDS is enabled, and set the peer APs wireless MAC address on router.</li> <li>-If you select <b>Repeater Mode</b>, WDS is enabled, and set the peer APs wireless MAC address on router.</li> </ul>
3.Select <b>Phy mode:</b> CCK,OFDM,HTMIX or GREENFIELD	-
4.Select <b>Encryp Type:</b> WEP, TKIP, AES	If you select <b>NONE</b> , all the data transmitted without encryption, and other station can access router.
5.Set peer AP's wireless MAC address on router	Only <b>Repeater Mode</b> and <b>Bridge Mode</b> need this.

The HT physical Mode parameters are shown below:

- **Operating Mode:** In **Mixed Mode**, packets are transmitted with a preamble compatible with the legacy 802.11a/g, the rest of the packet has a new format. In **Green Field**, high throughput packets are transmitted without a legacy compatible part.
- **Channel Bandwidth:** Set the HT physical channel bandwidth.
- **Guard Interval:** Guard interval is to introduce immunity to propagation delays, echoes and reflections, to which digital data

is normally very sensitive.

- **MCS:** The Modulation and Coding Scheme (MCS) is a value that determines the modulation, coding and number of spatial channels.
- **Reverse Direction Grant(RDG):**Enable **RDG** or not.
- **Extension Channel:** Set extension channel. Extension channel is also able to send and receive data.
- **Aggregation MSDU(A-MSDU) :**To enable Hyper Throughput TX Aggregate MAC Service Data Unit ,select **Enable**.
- **Auto Block ACK:** Select to block ACK (Acknowledge Number) or not during data transferring.
- **Decline BA Request:** Select to reject peer BA-Request or not.

Click **Apply** to confirm your configuration.

### 3. Advanced

Select **Wi-Fi Setting**→**Advanced**, the advanced wireless network parameters are shown in the following figure:

## Advanced Wireless

Beacon Interval	<input type="text" value="100"/> ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	<input type="text" value="1"/> ms (range 1 - 255, default 1)
Fragment Threshold	<input type="text" value="2346"/> (range 256 - 2346, default 2346)
RTS Threshold	<input type="text" value="2347"/> (range 1 - 2347, default 2347)
TX Power	<input type="text" value="100"/> (range 1 - 100, default 100)
Short Preamble	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Short Slot	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Tx Burst	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Pkt_Aggregate	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IEEE 802.11H Support	<input type="radio"/> Enable <input checked="" type="radio"/> Disable(only in A band)
Country Code	NONE <input type="button" value="v"/>

## Wi-Fi Multimedia

WMM Capable	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
APSD Capable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable



- **Beacon Interval:** The router broadcasts beacon message to announce that it has buffered frames to deliver. The default value is 100 (ms). Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. is recommended.
- **Data Beacon Rate(DTIM) :** A Delivery Traffic Indication Message(DTIM) informs next clients to listen to broadcast and multicast messages.
- **Fragment Threshold:** This value should remain at its default value of 2346. If you experience a high packet error rate, you may slightly increase your fragment threshold. Setting the fragment threshold too low may result in poor performance.
- **RTS Threshold:** Request To Send(RTS) threshold should be remained as the value of 2347. If you encounter inconsistent data flow, only minor modifications are recommended.
- **TX Power:** Transmit power should be remained as the value of

100.

- **Short Preamble:** The length of CRC block in the frames during the wireless communication.
- **Shot Slot:** To indicate that 802.11g is using a shot time slot because there is no legacy station(802.11b) present.
- **Tx Burst:** Tx burst allows router to deliver better throughput in the same period and environment in order to increase speed.
- **Pkt\_Aggregate:** Increase efficiency by aggregating multiple application packets data into a single transmission frame. In this way, 802.11n networks can send multiple data packets with the fixed overhead cost in just a single frame.
- **IEEE 802.11H Support:** Support IEEE 802.11H or not.

The Wi-Fi multimedia parameters are shown below:

- **WMM Capable:** When multimedia contents are transferred over wireless network, this function enhances data transfer performance.
- **APSD Capable:** Automatic Power Save Delivery(APSD), enable or disable data flow using APSD during transmitting for power saving.

Click **Apply** to confirm your configuration.

#### 4. Security

Select **Wi-Fi Setting**→**Security**, the Security parameters are shown in the following figure:

Wi-Fi Setting -> Security

•Station List •Basic •Advanced •Security •WPS

Security Policy

Security Mode	OPEN
Encrypt Type	NO ENCRYPTION

Wireless MAC Filtering

Add MAC Filtering Rule	Wireless Disable
------------------------	------------------

Apply Cancel



Unless one of these encryption modes is selected, wireless transmissions to and from your wireless network can be easily intercepted and interpreted by unauthorized users.

The security modes are described below:

- **Open:** You can authenticate successfully with a SSID, whether it is valid or empty.
- **Shared:** The WLAN clients who have the same WEP key with wireless gateway can pass the authentication and access the wireless network.
- **WEPAUTO:** Select WEP security automatically.
- **WPA-PSK:** WPA Pre-Shared Key, Enter the Pre-Shared key as a plain text (ASCII) pass-phrase of at least 8 characters.
- **WPA2-PSK:** It is the securer version of WPA with implementation of the 802.11i standard.
- **WPA-PSK/WPA2-PSK:** Apply both the WPA-PSK and WPA2-PSK scheme.

If the Authentication type is **Open, Shared, WEPAUTO**, the bottom part of the configuration page displays parameters as shown.

- **WEP Keys:** At most four keys can be set in the blank. Choose the primary key index. The primary key is the only key in use at a given time. Whatever keys you enter for an access point, you must also enter the same keys for the client adapter in the same order. In other words, WEP key 1 on the AP must match WEP key 1 on the client adapter, WEP key 2 on the AP must match

WEP key 2 on the client adapter, etc. A WEP is either 10 or 26 hexadecimal digits (0~9,a~f and A~F)based on whether you select 64 bits 128 bits in the Encryption Strength drop-down list.

If the Authentication type is **WPA-PSK** , **WPA2-PSK** or **WPA-PSK/WPA2-PSK** , the bottom part of the configuration page displays WPA parameters.

- **WPA Algorithm:** **TKIP**, **AES** or **AUTO**.
- **Pass phrase:** You can input hexadecimal digits up to 64 characters or input ASCII characters choose a length of 63 characters or less.
- **Key Renewal Interval:** Define how long the key should be renew.

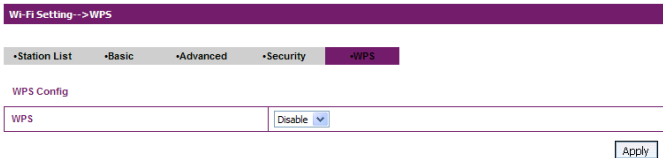
You can set **Wireless MAC Filtering**:

- **Wireless Disable:** If disabled, MAC address is not used to control network access.
- **Wireless Allow:** Set the MAC address that is allowed to access network.
- **Wireless Reject:** Set the MAC address that is not allowed to access network.

Click **Apply** to confirm your configuration.

## 5. WPS

Select **Wi-Fi Setting**→**WPS**, the WPS configuration is shown in the following figure:



- **WPS:** Enable or Disable this function. Click **Apply** to confirm your configuration.

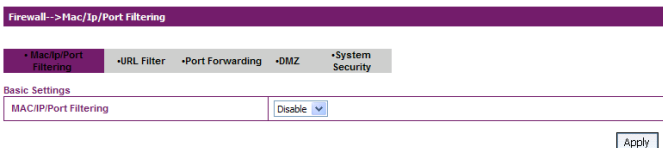
## 4.2.7 Firewall

You may setup firewall rules to protect your network from virus, worm and malicious activity on the Internet.

Note: You can set the maximum 10 filtering items for **MAC/IP/Port Filtering** and **URL Filtering**.

### 1. MAC/IP/Port Filtering

Select **Firewall**→**Mac/Ip/Port Filtering**, the Mac/IP/Port Filtering is shown in the following figure:



If you select **Enable**, the filter settings will appear:

## Firewall->Mac/Ip/Port Filtering

Mac/Ip/Port Filtering
  URL Filter
  Port Forwarding
  DMZ
  System Security

### Basic Settings

MAC/Ip/Port Filtering	<input type="button" value="Enable"/> ▼
Default Policy – The packet that doesn't match with any rules would be:	<input type="button" value="Dropped"/> ▼

### MAC/IP/Port Filtering

MAC address	<input type="text"/> (00:XX:XX:XX:XX:XX, eg.00:1E:90:FF:FF:FF)
Dest IP Address	<input type="text"/> (XXX.XXX.XXX.XXX, eg.192.168.5.101)
Source IP Address	<input type="text"/>
Protocol	<input type="button" value="None"/> ▼
Dest Port Range	<input type="text"/> - <input type="text"/> (1-65535)
Source Port Range	<input type="text"/> - <input type="text"/>
Action	<input type="button" value="Accept"/> ▼
Comment	<input type="text"/>

The maximum rule count is 10.

### Current MAC/IP/Port filtering rules in system:

No.	MAC address	Dest IP Address	Source IP Address	Protocol	Dest Port Range	Source Port Range	Action	Comment
-----	-------------	-----------------	-------------------	----------	-----------------	-------------------	--------	---------

Others would be dropped

- **Default Policy:** Set how to handle the packet if none of the rules matches.
- **MAC address:** Set the MAC address that will be filtered.
- **Dest IP Address:** Set the destination IP address that will be filtered.
- **Source IP Address:** Set the source IP address that will be filtered.
- **Protocol:** Set which protocol will be used for filtering.
- **Dest Port Range:** Set the destination port numbers that will be filtered
- **Source Port Range:** Set the source port numbers that will be filtered.
- **Action:** Set how to handle the packet if it matches with the rule.

- **Comment:** type comment for the filter settings.

**Note:** Filtering rules are matched one by one, if met this provision, it will not continue to match the rules listed below.

Click **Apply** to confirm your configuration. Click **Delete** to delete the rule which you selected. Click **Reset** to clear what you select or input. To add a new rule:

- a) Select **Enable** and click **Apply** in the **Basic Settings** area.
- b) Input the detail information in the **Mac/Ip/Port Filtering** area.
- c) Click **Apply** in the **Mac/Ip/Port Filtering** area.

## 2. URL Filtering

You can setup content filter to restrict the improper content access. Select **Firewall**→**URL Filtering**, the URL Filtering is shown in the following figure:

Firewall->URL Filter

• Mac/Ip/Port Filtering • **URL Filter** • Port Forwarding • DMZ • System Security

Current URL Filter:

No.	URL
-----	-----

Delete Reset

Add a URL filter:

URL:  ( eg: www.zte.com)

The maximum rule count is 10.

Add Reset

Type URL address, and then click **Add** to add the URL address into the filtering list. The new URL filtering item will be shown in the **Current Webs URL Filters:** field.

## 3. Port Forwarding

You can setup virtual servers to provide services on the Internet.

Select **Firewall**→**Port Forwarding**, the virtual server settings is shown in the following figure:

Firewall->Port Forwarding

MacIp/Port Filtering
  URL Filter
  Port Forwarding
  DMZ
  System Security

Virtual Server Settings

Virtual Server Settings Disable ▾

Apply

If you select **Enable**, the Virtual Server Settings will appear:

Firewall->Port Forwarding

MacIp/Port Filtering
  URL Filter
  Port Forwarding
  DMZ
  System Security

Virtual Server Settings

Virtual Server Settings Enable ▾

IP Address  (XXX.XXX.XXX.XXX, eg:192.168.5.101)

Port Range  -  (1-65535)

Protocol TCP/UDP ▾

Comment

The maximum rule count is 10.

Apply

Current Virtual Servers in system:

No.	IP Address	Port Range	Protocol	Comment

Delete Reset

- **IP Address:** Set IP address for the virtual server.
- **Port Range:** Set port numbers for the virtual server.
- **Protocol:** Set protocol for the virtual server.
- **Comment:** Type comment for the virtual server settings.

Select **Enable**, and input the detail information in the **Virtual Server Settings** area, and then click **Apply** to add a new rule. Click **Delete** to delete the rule which you selected. Click **Reset** to clear what you select or input.

#### 4. DMZ

You can setup a De-militarized Zone(DMZ) to separate internal network with the Internet. Select **Firewall→DMZ**, the DMZ setting is shown in the following figure:

The screenshot shows the 'Firewall->DMZ' configuration page. At the top, there is a navigation bar with five tabs: 'MacIp/Port Filtering', 'URL Filter', 'Port Forwarding', 'DMZ', and 'System Security'. The 'DMZ' tab is selected and highlighted. Below the navigation bar, the 'DMZ Settings' section contains a single dropdown menu labeled 'DMZ Settings' which is currently set to 'Disable'. An 'Apply' button is located at the bottom right of the form.

If you select **Enable**, set the DMZ IP address, and then click **Apply** to confirm your configuration.

This screenshot shows the 'Firewall->DMZ' configuration page with the 'DMZ' tab selected. The 'DMZ Settings' dropdown is now set to 'Enable'. Below it, there is a text input field for 'DMZ IP Address' with a placeholder text: 'xxxx.xxx.xxx.xxx, eg:192.168.5.101'. An 'Apply' button is positioned at the bottom right.

## 5. System Security

You can configure system firewall to protect AP or router from being attacking. Select **Firewall→System Security**, the system security setting is shown in the following figure:

The screenshot displays the 'Firewall->System Security' configuration page. The navigation bar at the top has five tabs: 'MacIp/Port Filtering', 'URL Filter', 'Port Forwarding', 'DMZ', and 'System Security'. The 'System Security' tab is selected. The 'Remote management' section has a dropdown for 'Remote management (via WAN)' set to 'Deny'. The 'Ping from WAN' section has a dropdown for 'Ping from WAN' set to 'Disable'. 'Apply' and 'Reset' buttons are located at the bottom right.

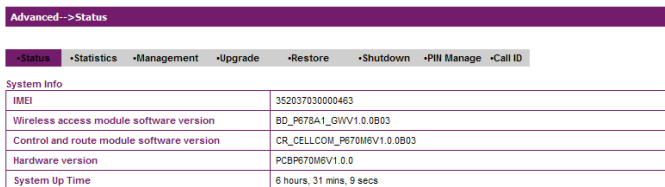
**Allow** or **Deny** the remote management function and **Enable** or

**Disable** ping from WAN filter on requirement, and then click **Apply**.

## 4.2.8 Advanced

### 1. Status

Select **Advanced** → **Status**, the system information is shown in the following figure:



The screenshot shows a web interface with a purple header bar containing the text "Advanced-->Status". Below the header is a navigation menu with buttons for "Status", "Statistics", "Management", "Upgrade", "Restore", "Shutdown", "PIN Manage", and "Call ID". The "Status" button is highlighted. Below the menu is a table titled "System Info" with the following data:

System Info	
IMEI	352037030000463
Wireless access module software version	BD_P678A1_GWV1.0.0B03
Control and route module software version	CR_CELLCOM_P670M6V1.0.0B03
Hardware version	PCBP670MSV1.0.0
System Up Time	6 hours, 31 mins, 9 secs

### 2. Statistics

Select **Advanced** → **Statistics**, the system statistics information is shown in the following figure:



The screenshot shows a web interface with a purple header bar containing the text "Advanced-->Statistics". Below the header is a navigation menu with buttons for "Status", "Statistics", "Management", "Upgrade", "Restore", "Shutdown", "PIN Manage", and "Call ID". The "Statistics" button is highlighted. Below the menu is a table titled "Data" with the following data:

Data	
Data send	0Bytes
Data rcv	0Bytes

### 3. Management

Select **Advanced** → **Management**, the administrator settings information is shown in the following figure:



Advanced-->Management

•Status •Statistics •Management •Upgrade •Restore •Shutdown •PIN Manage •Call ID

Administrator Settings

Account	<input type="text" value="admin"/>
Password	<input type="password"/>
New Password	<input type="password"/>
Confirm New Password	<input type="password"/>

User Setting

Account	<input type="text" value="user"/>
Password	<input type="password"/>
New Account	<input type="text"/>
New Password	<input type="password"/>
Confirm New Password	<input type="password"/>

You can change the password for administrator only. You can change the account and password for user. Click **Apply** to confirm your configuration.

#### 4. Upgrade

Select **Advanced**→**Upgrade** to upgrade the software version of the router.

Advanced-->Upgrade

•Status •Statistics •Management •Upgrade •Restore •Shutdown •PIN Manage •Call ID

Update Firmware

Location:	<input type="text"/>	<input type="button" value="Browse..."/>	<input type="button" value="Upgrade"/>
-----------	----------------------	--	--

Click **Browse...**, locate the latest software version, and then click **Upgrade**.

**Note:** Do not upgrade software unless necessary. Wrongly upgrade action may cause router malfunction or even stop it from operation.

## 5. Restore

Select **Advanced**→**Restore**, click **Restore** to set all the settings to their factory default values, and the device will be turned off.

The screenshot shows the 'Advanced-->Restore' page. At the top, there is a navigation bar with the following items: Status, Statistics, Management, Upgrade, Restore (highlighted), Shutdown, PIN Manage, and Call ID. Below the navigation bar, the page title is 'Load Factory Defaults'. There is a 'Load Default Button' label and a 'Restore' button.

## 6.Shutdown

Select **Advanced**→**Shutdown**, click **Shutdown** to turn the router off.

The screenshot shows the 'Advanced-->Shutdown' page. At the top, there is a navigation bar with the following items: Status, Statistics, Management, Upgrade, Restore, Shutdown (highlighted), PIN Manage, and Call ID. Below the navigation bar, the page title is 'Shutdown Home Gateway'. There is a 'Shutdown' label and a 'Shutdown' button.

**Note:** Router is powered off only when the PWR indicator is off. And do not press the power switch during the shutdown process.

## 7. PIN Manage

Select **Advanced**→**PIN Manage**, the PIN manage is shown in the following figure:

The screenshot shows the 'Advanced-->PIN Manage' page. At the top, there is a navigation bar with the following items: Status, Statistics, Management, Upgrade, Restore, Shutdown, PIN Manage (highlighted), and Call ID. Below the navigation bar, the page title is 'PIN Manage'. There is a table with the following content:

PIN Status	Disable
Action	Enable <input type="button" value="v"/>
PIN	<input type="text"/>
3 attempts remaining for your PIN!	

At the bottom right of the page, there is an 'Apply' button.

If you select **Modify**, the modification parameters are shown in the following figure:

Advanced-->PIN Manage

•Status •Statistics •Management •Upgrade •Restore •Shutdown **PIN Manage** •Call ID

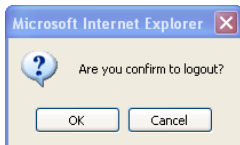
PIN Manage	
PIN Status	Disable
Action	Modify ▾
PIN	<input type="text"/>
New PIN	<input type="text"/>
Confirm New PIN	<input type="text"/>
3 attempts remaining for your PIN	

Type the old PIN code, and then type two times the new PIN code. Click **Apply** to confirm your configuration.

**Note:** Three time consecutive wrong PIN code entries will lock the USIM card.

### 4.3 Logout

Select **Logout**, a pop-up windows will appear as shown in the following figure :



Click **OK** to logout the router.

### 4.4 Disconnecting from the Internet

If you want to terminate your Internet connection, you can select **Disconnect Internet** from **WAN Connection** page, and click **Submit**. Turn off the router can also terminate Internet connection.

## 5 Troubleshooting

- 1) Make sure that the router is turned on and all the cables are connected correctly.
- 2) Check the RSSI, PPP and PWR LED's are lit and NOT in a blinking state or off.

### A) Voice Related Problems

Symptoms	Possible Problems/ Solutions
No Dial Tone.	Please wait for 1~2 minutes after the router is turned on. If RSSI is blinking, you have no good RF reception. Change the location of the router.
There is a prompt/ phone alert/ announcement as soon as I lift the phone off the hook.	Make sure your USIM card is inserted correctly and the PIN number has been entered. If the PIN number has been entered incorrectly then you will need to enter the PUK code when prompted.
The line is noisy/ distorted when I lift the phone off the hook.	Remove any electrical appliance which is too close to the phone or router. The cable or phone set might be faulty.
I hear a rapid engaged tone as soon as I lift the phone off the hook.	Put the phone on hook and try again. If you are connected to the internet using the 2G (GSM) network, please disconnect this first.

<b>Symptoms</b>	<b>Possible Problems/ Solutions</b>
After dialing the last digit I hear nothing /silence.	When you have finished dialing wait 4-8 seconds to connect the call.
I can't make or receive a call when I am surfing on the net.	If you are connected using the 2G (GSM) network then you cannot surf the net and make a phone call simultaneously. Please disconnect the internet and wait 30 seconds to 1 minute before making a call.

## **B) Internet Related Problems**

<b>Symptoms</b>	<b>Possible Problems/ Solutions</b>
I cannot access the internet at all.	Please check your configuration settings. Please wait 1~ 2 minutes for the router to initialize. Check your service indicator LED's.
The download or upload speeds are very slow.	The speed is dependent on signal strength. Check your signal strength and network type.

## **C) Others**

<b>Symptoms</b>	<b>Possible Problems/ Solutions</b>
The RSSI signal indicator is always blinking or does not light.	This indicates poor reception. Try moving the router to another location near the window.

## 6 Technical Parameters

- **Network & Frequency Band:**
  - EDGE/GPRS/GSM: 850/900/1800/1900MHz
  - HSUPA/HSDPA/UMTS: 850/1900/2100MHz
  - Wi-Fi 802.11 b/g
- **LED Display:**
  - a. Power Indicator
  - b. Wi-Fi Indicator
  - c. PPP Indicator
  - d. Radio Signal Strength Indicator
- **External Interface:**
  - a. External Power Socket
  - b. Phone Interface (PHONE)
  - c. Data Interface (LAN)
  - d. Test Interface (Mini-USB)
- **Power Adapter:**
  - Input: 100V~240V (AC), 50/60Hz
  - Output: +12V (DC), 1.5A Max
- **Data Service:**
  - HSUPA 2Mbps UL
  - HSDPA 7.2Mbps DL
- **Dimensions (W×H×D):** 160mm×112mm×32mm
- **Weight:** About 250g

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