

# **MF25A**

## User Manual

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# Chapter 1

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## Welcome

Thank you for choosing ZTE MF25A 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 your 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 manual at any time without prior notice.

## General Information

### *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.

### *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  $-10^{\circ}\text{C} \sim +55^{\circ}\text{C}$ , and the storage temperature range is  $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$ . 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 (U)SIM card unnecessarily. The (U)SIM card may be easily lost or it can be damaged by static electricity.

## National Restrictions

2400.0-2483.5 MHz

This equipment may be operated in:

AT	BE	CY	CZ	DK	EE
FI	FR	DE	GR	HU	IE
IT	LV	LT	LU	MT	NL
PL	PT	SK	SI	ES	SE
GB	IS	LI	NO	CH	BG
RO	TR				

Country	Restriction	Reason/remark
Bulgaria		General authorization required for outdoor use and public service
France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012
Italy		If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply (not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Alesund
Russian Federation		Only for indoor applications

**Note: Please don't use the product outdoors in France.**

## FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**Caution:** Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

**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.

## ***Radio Frequency (RF) Energy***

This device meets the government's requirements for exposure to radio waves.

This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

● This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC ID: Q78-ZTEMF25A

## ***CE Warning***

The device is tested for typical body worn operation. The minimum distance between the user and/or any bystander and the radiating structure of the transmitter is 20cm.

The adapter shall be installed near the equipment and shall be easily accessible.

Only can use adapter as below: Adapter mfg: ZTE Corp.

Adapter model: STC-A2O120150C55-A

I/P:100-240V,50/60Hz,0.8A,O/P 12V,1.5A

The plug considered as disconnect device of adapter

## ***Limited Warranty***

- This warranty does not apply to defects or errors in the Product caused by:
  - i. Reasonable Router Appearance Disfiguration.
  - ii. End User's failure to follow ZTE's installation, operation or maintenance instructions or procedures.
  - iii. End User's mishandling, misuse, negligence, or improper installation, disassemble, storage, servicing or operation of the Product.
  - iv. Modifications or repairs not made by ZTE or a ZTE-certified individual.
  - v. Power failures, surges, fire, flood, accident, actions of third parties or other events outside ZTE's reasonable control.
  - vi. Usage of products of third Parties, or usage in conjunction with third party products provided that such defects is due to the combined usage.
  - vii. 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.

## ***Limitation of Liability***

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.

### ***Emergency Call***

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

Your Router only supports emergency dialing when there is power and connection to the mobile network. If the power fails, the router can not work. If you have no network coverage you will not be able to make emergency calls. The 3G Wireless Router does not include a lifeline facility (wired access to the PSTN).



# Chapter 2

## Getting started

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

## Appearance

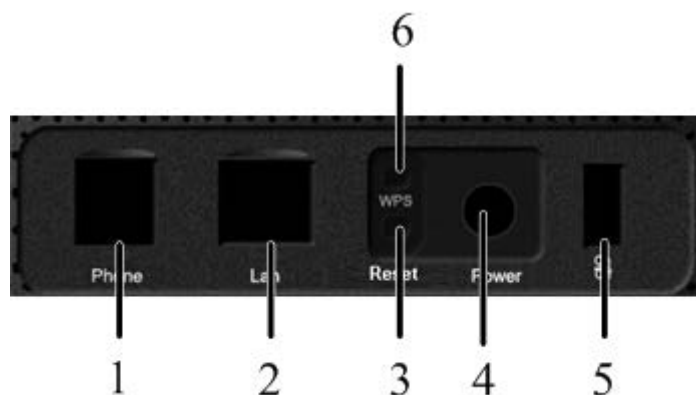


## LED Indicator

Indicator	State	Description
POWER	ON	External power supply works normally.
	OFF	External power supply is disconnected or power off.
WIFI	ON	WLAN works normally with no data transmission..
	Blinking	WLAN works normally with data transmission.
	OFF	WLAN works abnormally, or this WLAN function is disabled.
PHONE	Off	Not in use.
	Blinking	On Dialing, or there is an incoming call, the phone is ringing.
	On	In calling.
PPP	ON	WAN connection established (PDP activated)
	Blinking	WAN connection establishing (PDP activating)

Indicator	State	Description
	OFF	WAN connection not established (PDP not activated)
2G/3G	ON	RF signal is normal (RSSI $\geq$ -90dBm). Different color indicates different network. Red: GSM/GPRS/EDGE. Green: HSDPA/HSUPA/UMTS.
	Blinking	RF signal is poor (-100dBm $\leq$ RSSI $<$ -90dBm).
	OFF	RF signal is not available (RSSI $<$ -100dBm).
LAN	ON	The corresponding LAN port is connected
	Blinking	The corresponding LAN port is connected with data transmission.
	Off	No network cable connected.

## Interface Description



1. **Phone:** Standard RJ11 connector for Telephone.
2. **LAN:** Ethernet connections to computer.
3. **Reset:** To restore factory default configurations after pressing for 5 seconds.
4. **POWER:** Connection to the external power supply.
5. **On/Off:** Turn the router On or Off.
6. **WPS:** WPS button is used to start Wi-Fi Protected Setup authentication process.

## Installation

### Inserting (U)SIM Card

Insert the (U)SIM card into the (U)SIM port on the left side of the router.



#### Notes:

Please power off the router and remove the external power adapter before removing or inserting the (U)SIM card. If not, the router or (U)SIM card may be damaged.

#### About (U)SIM Card

Avoid handling the (U)SIM card unnecessarily. Hold the card by the edges to prevent static damage. Keep the (U)SIM 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 (U)SIM card.

#### Connecting to Phone

Connect the telephone to the **PHONE** interface with a phone cable(RJ11).

#### Connecting to Computer

Connect your computer to the **LAN** interface with an Ethernet cable (RJ45).



#### Notes:

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

#### Connecting with External Power

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

#### Switching on Your Device

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



#### Notes:

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

2. Wait 1~2 minutes after turning the router on before you use the service. The 3G & POWER indicator should be lit on.



Notes:

When the router is turned off, an incoming caller will hear the prompt like “The number you have dialed is currently unavailable.”

If the 2G/3G LED is blinking constantly, try to move the router to another location. The router takes 1~2 minutes to initialize, attach to the network and obtain an IP address.

## ***Power Supply***

For normal operation, connect the router to the external power adapter. In case of power failure or when there is no available external power supply, the router will not work.

# Chapter 3

## Voice

### ***Making a Call***

You have two ways to make a call:

- Through (U)SIM card.

To make a call:

1. Pick up the handset.
2. Key in the telephone number.
3. You can either press # key on the telephone to send the call, or wait 4~8 seconds for the call to be connected automatically.
4. Call will be connected.



Notes:

If there is no 3G indication, the RF signal is unavailable. Change the location of the router and make sure nothing is blocking it.

### **Making a Trunk Call**

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

**E.g. 03 9612 3456**

### **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**

### ***Answering a Call***

When the phone rings, pick up the handset to answer it. If the telephone has hands-free function you also can answer the call by pressing the **Hands-free** button. Press the **Hands-free** button again to end the call.

# Chapter 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.

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

### *Preparation*

#### *Establishing a connection between your device and the client*

##### **Via RJ45 Ethernet cable**

1. Connect your device and the client with the RJ45 Ethernet cable.
2. Power on your device.

The connection between your device and the client will be established successfully a moment later.

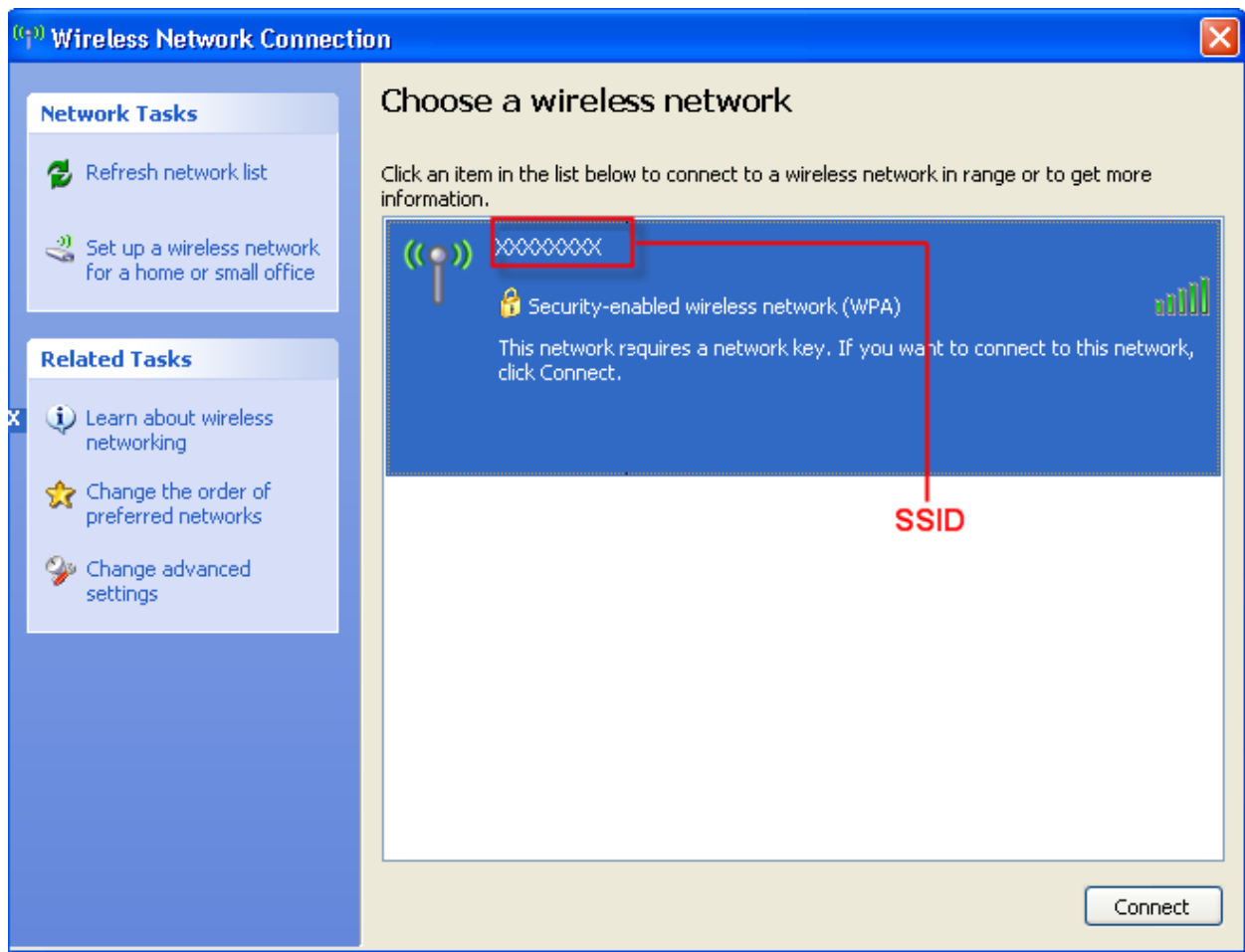
##### **Via Wi-Fi**

1. Power on your device directly. It will take 1~2 minutes to initialize, and then Wi-Fi LED is blinking.
2. Use your normal Wi-Fi application on the client to search the available wireless network.



Notes: You need to check your Wireless Network Connection. Set the client to obtain an IP address automatically in the Internet protocol (TCP/IP) properties, and the client will get an IP address like "192.168.0.100".

3. Select the SSID of your device, and then click **Connect**.



**NOTE** Notes:

There will be a pop-up window to require the password. There may require the password for Wi-Fi connection, please check the label on your device to get the default.

4. Wait a moment, the connection between your device and the client will be established successfully.

## ***Accessing the Internet***

Before accessing the internet, make sure;

1. Switch on the device.
2. Establish a connection between your device and the client.

## **Accessing the Internet by Bridge Mode**

1. Login the WebGUI and set the **Operation Mode** as **Bridge** mode.
2. Connect the device with LAN.

## **Accessing the Internet by Cable Broadband**

1. Login the WebGUI and set the **Operation Mode** as **Cable Broadband**.
2. Connect the device with LAN.

3. Set **WAN Connection** in WebGUI.

## Accessing the Internet by 3G Gateway

Note: Please make sure that you have install (U)SIM card before you switch on the device.

1. Login the WebGUI and set the **Operation Mode** as **3G Gateway**.
2. Set **WAN Connection** in WebGUI.

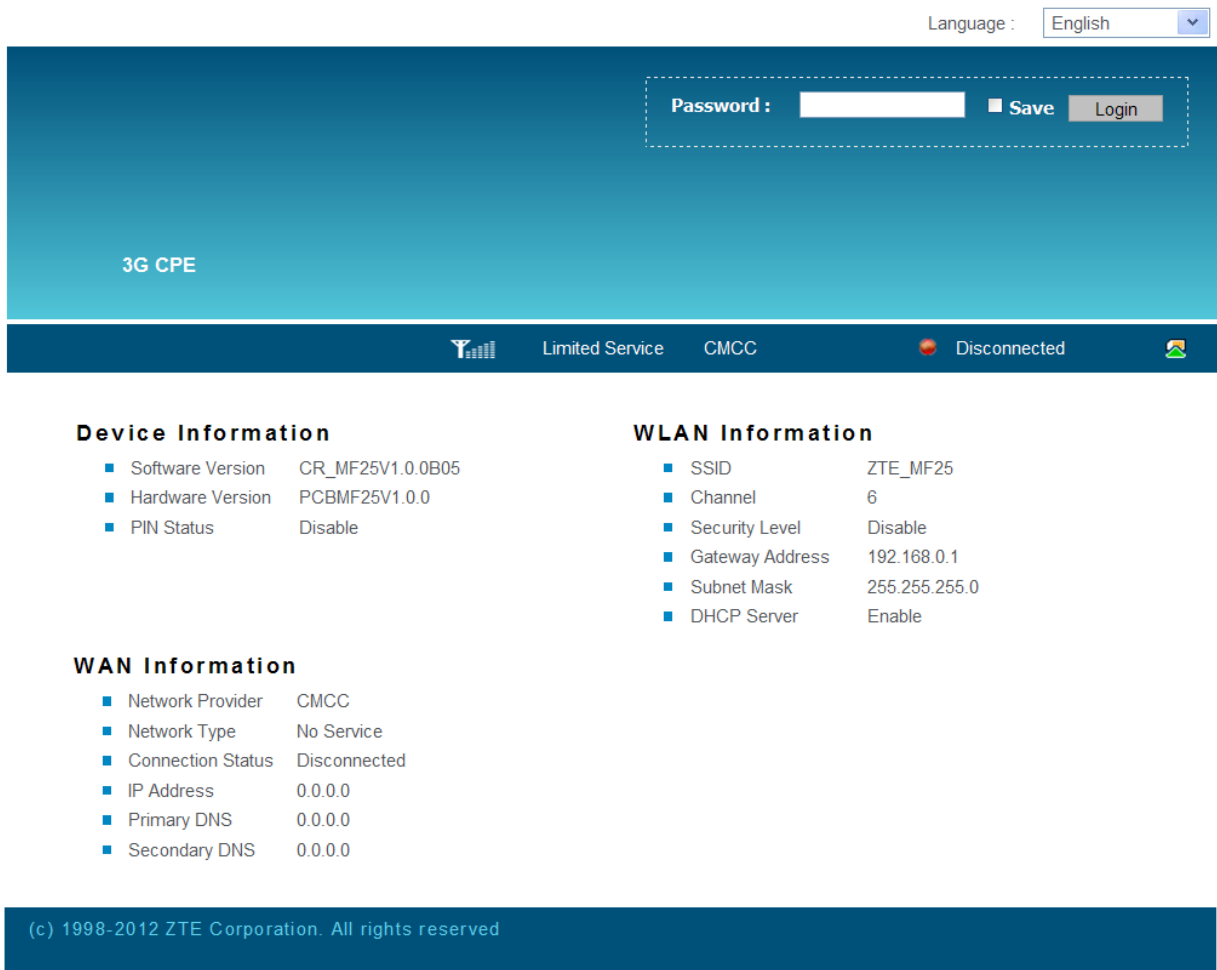
## Accessing the WebGUI Configuration Page

1. Make sure the connection between your device and the client is correct.
2. Launch the internet browser and enter <http://192.168.0.1> in the address bar.

 Notes:

It is recommended that you use IE (7.0 or later), Firefox (3.0 or later), Opera (10.0 or later), Safari (4.0 or later) or Chrome (10.0 or later).

3. The login page appears as follows.



Language : English

3G CPE

Password :  Save Login

Limited Service CMCC Disconnected

### Device Information

- Software Version CR\_MF25V1.0.0B05
- Hardware Version PCBMF25V1.0.0
- PIN Status Disable

### WAN Information

- Network Provider CMCC
- Network Type No Service
- Connection Status Disconnected
- IP Address 0.0.0.0
- Primary DNS 0.0.0.0
- Secondary DNS 0.0.0.0

### WLAN Information

- SSID ZTE\_MF25
- Channel 6
- Security Level Disable
- Gateway Address 192.168.0.1
- Subnet Mask 255.255.255.0
- DHCP Server Enable

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## Login

In the WebGUI Configuration page, select the desired language and input the password (the default **Password** is admin).

Language : English

Password :  Save Login

3G CPE

**Device Information**

- Software Version CR\_MF25V1.0.0B05
- Hardware Version PCBMF25V1.0.0

**WLAN Information**

- SSID ZTE\_MF25
- Channel 6
- Security Level Disable
- Gateway Address 192.168.0.1
- Subnet Mask 255.255.255.0
- DHCP Server Enable

**WAN Information**

- Connection Status Disconnected
- IP Address 0.0.0.0

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



Notes:

If you check **Save** after type in password, the device will save it. Next time when you want to login the device with the same password, what you need to do is click **Login**.

When you login, the following interface appears.

3G CPE Home | Logout

Limited Service CMCC  Disconnected

Operation Mode

WAN Connection

SMS

Settings

Home

WAN Information

Network Provider	CMCC
Network Type	Limited Service
Roam	ON
Domain	---
Connection Status	Disconnected
IP Address	0.0.0.0
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0

WLAN Information

SSID	ZTE_MF25
Channel	6
Security Level	Disable
IP Address	192.168.0.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
DHCP Server	Enable

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

- **Index area:** Show the configuration list for your device.
- **Content area:** Show the detailed configuration.
- **System Information Area:** Show the system status and different kinds of tips.

## Operation Mode

When you **first** login the webGUI, you need to choose the operation mode to make the correct setting.

Operation Mode

You may configure the operation mode suitable for you environment.

<input type="radio"/>	Bridge
<input type="radio"/>	Cable Broadband
<input checked="" type="radio"/>	3G Gateway

There are three operation **modes**:

- **Bridge**: Connect to Internet by Dial-up program on computer.
- **Cable Broadband**: Connect to Internet by WAN.
- **3G Gateway**: Connect to Internet by (U)SIM.

Please choose the correct operation mode according to your actual network condition. For detailed information, please contact network operator. Click **Apply** to finish the setting.

## WAN Connection

### In Cable Broadband mode

Click **WAN Connection**, you can configure how to connect to the Internet.

The following table, just for your reference, shows you how to confirm which method you need use to go to Internet.

WAN Mode	Description
PPPoE	Your service provider gives you the User Name and Password
Static	Your service provider gives you the static address information
DHCP	Your service provider does not give you any parameters

- Please select **PPPoE**, and input them.

WAN Connection

WAN Setting

WAN Mode	PPPoE ▼
----------	---------

PPPoE

User Name	poeuser
Password	●●●●●●●●
<input type="radio"/>	Auto Connect
<input type="radio"/>	Manual Connect <span style="margin-left: 20px;">Connect Internet ▼</span>
WAN Connection Status	Disconnected

- Please select **Static** and input all the parameters.

## WAN Connection

### WAN Setting

WAN Mode	Static ▾
----------	----------

### Static

IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Primary DNS Server	0.0.0.0
Secondary DNS Server	0.0.0.0

Apply

► Please select **DHCP**.

## WAN Connection

### WAN Setting

WAN Mode	DHCP ▾
----------	--------

Apply

## In 3G Gateway mode

Click **WAN Connection**, you can configure how to connect to the Internet.

## WAN Connection

### WAN Connection Mode

<input type="radio"/>	Auto Connect
<input type="radio"/>	On Demand Connect
<input checked="" type="radio"/>	Manual Connect <span>Connect Internet ▾</span>
<b>WAN Connection Status</b>	Disconnected

Apply

There are three connection modes:

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

Click **Apply** to confirm your configuration, and then the figure will show in the wan connection status.

## SMS

This function allows you to send or receive short messages. And you can use this function only in 3G Gateway mode.

### Sending new SMS

1. Select **SMS > New Message** to access the following figure:

SMS->NEW Message

NEW Message

TO

Content (0/160)

Send Save Reset

2. Enter the recipient's phone number.
3. Enter a message.
4. Click **Send** to send the message.

### Operating Messages in native

You can check the messages saved in your device.

### Inbox

Select **SMS > Inbox** to access the following figure:

SMS->Inbox

NEW Message Inbox Outbox Drafts

Inbox SMS Storage Status58/60

No	PhoneNumber	Date/Time	Status	Operations
1	+8613572583633	2011-03-30 04:55:39	Unread	🔍
2	10658169	2011-03-11 10:06:45	Unread	🗑️

View Reply Forward Delete Delete All

All the received messages saved in your device will be displayed here.

- Click **View** to view the selected message.
- Click **Reply** to reply to the selected message sender.

- Click **Forward** to forward message to other person.
- Click **Delete** to delete the selected message.
- Click **Delete All** to delete all the messages.

## Outbox

Select **SMS > Outbox** to access the following figure:

No	PhoneNumber	Content	Operations
1	1360000000	Hello	⊞

All the sent messages in your device will be displayed here.

## Drafts

Select **SMS > Drafts** to access the following figure:

No	PhoneNumber	Content	Operations
1	130000000	Hello	⊞

All the drafts saved in your device will be displayed here.

- Click **View** to access the edited interface of selected message, then click **Send** to send it.

## Settings

- Do not modify any settings unless instructed by your service provider.
- Please disconnect the device from the network before change the settings.

## 3G Settings

### Wireless Info

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

## 3G Wireless Information

Network Provider	CMCC
Network Type	Limited Service
Roam	ON
RSSI	-73 dBm
RSCP	-81 dBm
Ec/fo	-7.5 dB

Refresh

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

## Network Select

Select **Settings > 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:** Device searches for available network.
- **WCDMA Only:** Device searches for WCDMA network only.
- **GSM Only:** Device searches for GSM network only.

Click **Apply** to confirm your configuration.

## APN Setting

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

•Wireless Info •Network Select •APN Setting	
Profile Selection	ZTE ▾
Profile Name	ZTE
APN	cmwap
Dial No.	*99#
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	PAP ▾
User Name	
Password	

- **Profile Selection:** Choose the desired profile name.
- **APN:** Access Point Name.
- **Dial No.:** This dial number is used for data service connections.
- **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 device 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 **Set default** to set this profile as the default profile.

## Wi-Fi Settings

### Station list

Select **Settings > 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

### Basic



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

•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)	ZTE_MF25				
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	68:1A:B2:C9:C4:22				
Frequency (Channel)	2437MHz (Channel 6)				
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				
Extension Channel	2457MHz (Channel 10)				
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 clients 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 other's 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. When you set <b>Bridge Mode</b>, your PC can not search SSID of AP after connected.</li> <li>·If you select <b>Repeater Mode</b>, WDS is enabled, and set the peer APs wireless MAC address on router. When you set <b>Repeater Mode</b>, your PC can search SSID of AP after connected.</li> </ul>
3.Select <b>Phy mode</b> : CCK,OFDM, HTMIX or GREENFIELD	<b>CCK</b> : 802.11b <b>OFDM</b> : 802.11g <b>HTMIX</b> : 802.11b/g/n Mixed Mode <b>GREENFIELD</b> : 802.11b/g/n Mixed Mode
4.Select <b>Encrypt 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.

### Advanced

Select **Wi-Fi Setting > Advanced**

- **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.

Click **Apply** to confirm your configuration.

## 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. Select **Hex** if use 10 or 26 hexadecimal numbers (0~9, a~f or A~F). Select **ASCII** if use 5 or 13 ASCII characters (case-sensitive).

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.

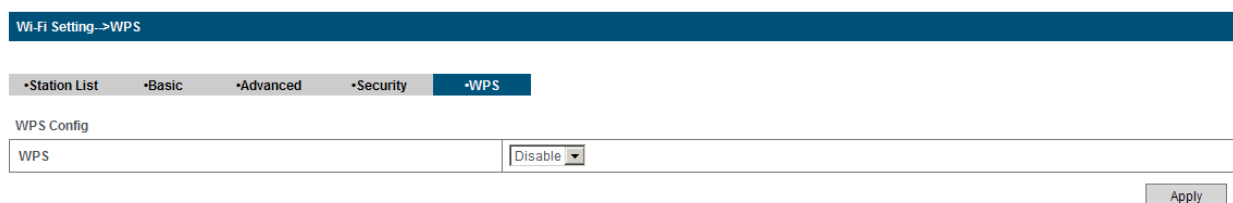
You can set **Wireless MAC Filtering**:

- **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.

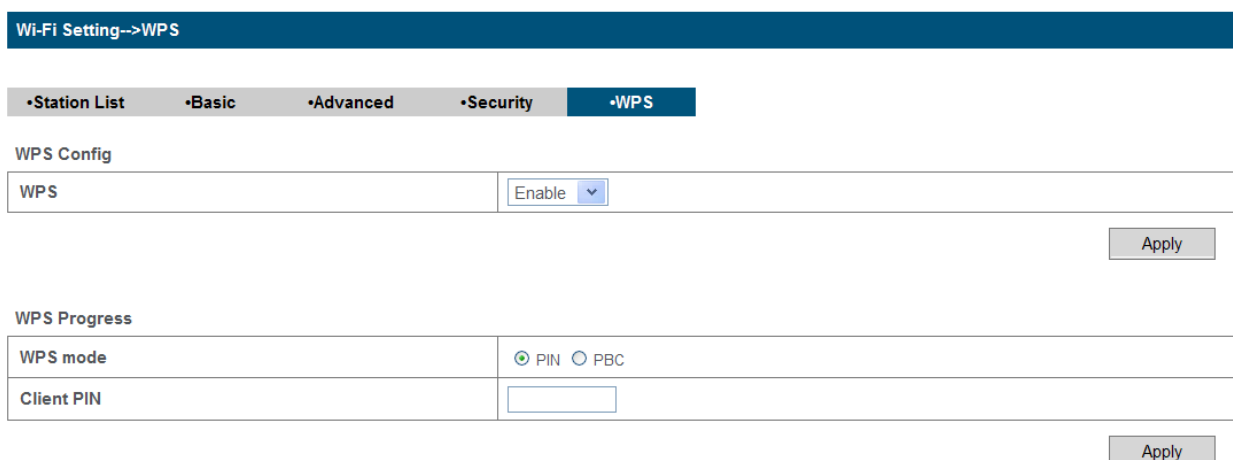
## WPS

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



The screenshot shows the 'Wi-Fi Setting->WPS' configuration page. At the top, there are tabs for 'Station List', 'Basic', 'Advanced', 'Security', and 'WPS'. The 'WPS' tab is selected. Below the tabs, there is a 'WPS Config' section with a dropdown menu set to 'Disable' and an 'Apply' button.

Select **Enable**, click **Apply** ,the WPS settings are shown in the following figure:



The screenshot shows the 'Wi-Fi Setting->WPS' configuration page with 'WPS' set to 'Enable'. Below the 'WPS Config' section, there is a 'WPS Progress' section with 'WPS mode' set to 'PIN' (selected) and 'PBC' (unselected), and a 'Client PIN' field. An 'Apply' button is visible at the bottom right.

WPS Summary, WPS Progress and WPS Status are all shown in the figure.

To set WPS, select WPS mode, the two modes are described below:

- **PIN:** There are two ways to use PIN mode, one is set PIN code on the client's wireless adapter(you can find the PIN code in **AP PIN** field of **WPS Summary**), the other way is set the client's PIN code in **Client PIN** field.
- **PBC:** Press the WPS button of the router or select PBC, and then click **Apply**. Press WPS button on the client wireless adapter within two minutes, and the negotiation process will be established.

## Firewall

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



Notes:

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

### MAC/IP/Port Filtering

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

Firewall->MAC/IP/Port Filtering

•MAC/IP/Port Filtering •URL Filtering •Port Forwarding •DMZ •System Security

Basic Settings

MAC/IP/Port Filtering

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

Firewall->MAC/IP/Port Filtering

•MAC/IP/Port Filtering •URL Filtering •Port Forwarding •DMZ •System Security

Basic Settings

MAC/IP/Port Filtering

Default Policy -- The packet that doesn't match with any rules would be

MAC/IP/Port Filter Settings

MAC address	<input type="text"/> (XXXXXXXXXX, 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="text" value="None"/>
Dest Port Range	<input type="text"/> - <input type="text"/> (1-65535)
Source Port Range	<input type="text"/> - <input type="text"/> (1-65535)
Action	<input type="text" 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
<input type="button" value="Delete"/> <input type="button" value="Reset"/>								

- **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.



**Notes:**

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 Selected** to delete the rule which you selected.

Click **Reset** to clear what you select or input.

To add a new rule:

1. Select **Enable** in the **Basic Settings** area.
2. Click **Apply**.
3. Input the detail information in the **Mac/IP/Port Filtering** area.
4. Click **Apply** in the **Mac/IP/Port Filtering** area.

### 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:

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.

### 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

•MAC/IP/Port Filtering •URL Filtering •Port Forwarding •DMZ •System Security

Virtual Server Settings

Virtual Server Settings

Apply

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

Firewall->Port Forwarding

•MAC/IP/Port Filtering •URL Filtering •Port Forwarding •DMZ •System Security

Virtual Server Settings

Virtual Server Settings

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

Port Range  -  (1-65535)

Protocol

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.

Click **Apply** to confirm your configuration.

## 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:

Firewall->DMZ

•MAC/IP/Port Filtering •URL Filtering •Port Forwarding •DMZ •System Security

DMZ Settings

DMZ Settings

Apply

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

Firewall->DMZ

•MAC/IP/Port Filtering •URL Filtering •Port Forwarding •DMZ •System Security

DMZ Settings

DMZ Settings

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

Apply

## 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:

Firewall-->System Security

•MAC/IP/Port Filtering   •URL Filtering   •Port Forwarding   •DMZ   •System Security

Remote management

Remote management (via WAN)

Ping from WAN Filter

Ping from WAN Filter

**Allow** or **Deny** the remote management function, **Allow** or **Deny** ping from WAN filter on requirement, and then click **Apply**.

## Advanced

### Status

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

Advanced-->Status

•Status   •Management   •Restore   •PIN Manage   •Router   •Upgrade Firmware   •Time

System Info

Wireless access module software version	BD_P678A1V1.0.2B09
Control and route module software version	CR_MF25V1.0.0B05
Hardware version	PCBMF25V1.0.0
IMEI	352545040230045
System Up Time	20 mins, 46 secs

### Management

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

Advanced-->Management

•Status   •Management   •Restore   •PIN Manage   •Router   •Upgrade Firmware   •Time

Administrator Settings

Current Password	<input type="text"/>
New Password	<input type="text"/>
Verify Password	<input type="text"/>



You can change the administrator's password. Click **Apply** to confirm your configuration.

## Restore

Select **Settings > Advanced > Restore**, click **Restore** to set all the settings to their factory default values, and then the device will restart automatically.

Advanced-->Restore

•Status •Management •Restore •PIN Manage •Router •Upgrade Firmware •Time

Load Factory Defaults

Load Default Button	Restore
---------------------	---------

## PIN Manage

Note: Pin Manage can be used in 3G Gateway mode.

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

Advanced-->PIN Manage

•Status •Management •Restore •PIN Manage •Router •Upgrade Firmware •Time

PIN Manage

PIN Status	Disable
Action	Enable ▾
PIN	<input type="text"/>
	Remaining times: 3

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

Advanced-->PIN Manage

•Status •Management •Restore •PIN Manage •Router •Upgrade Firmware •Time

PIN Manage

PIN Status	Enable
Action	Modify ▾
	Successful!
PIN	<input type="text"/>
New PIN	<input type="text"/>
Confirm New PIN	<input type="text"/>
	Remaining times: 3

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

configuration.



Notes:

Three times consecutive wrong PIN code entries will block the SIM card.

## Router

Note: Router can be used in 3G Gateway mode and Cable Broadband mode.

Select **Settings > Advanced > Router**, the router information is shown in the following figure:

Advanced-->Router

•Status •Management •Restore •PIN Manage •Router •Upgrade Firmware •Time

LAN Interface Setup

IP Address	<input type="text" value="192.168.0.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
MAC Address	68:1A:B2:C9:C4:22
DHCP Server	<input type="button" value="Enable"/> ▾
DHCP IP Pool	<input type="text" value="192.168.0.100"/> - <input type="text" value="192.168.0.200"/>
DHCP Lease Time	<input type="text" value="24"/> hour(s)
UPNP	<input type="button" value="Disable"/> ▾

Notice: You maybe need reconnect the wireless network after committing this page.

- **IP Address:** IP address for LAN interface.
- **Subnet Mask:** Subnet mask for the IP address.
- **MAC Address:** MAC address for the LAN interface.
- **DHCP Server:** Enable or disable DHCP Server function.
- **DHCP IP Pool:** Allocate begin and end IP address for IP pool.
- **DHCP Lease Time:** Define how long the leased IP address will be expired, and will relocate new IP address.

Click **Apply** to confirm your configuration.

## Upgrade Firmware

Select **Settings > Advanced > Upgrade Firmware** to upgrade the software version of the router.

Advanced-->Upgrade Firmware

•Status •Management •Restore •PIN Manage •Router •Upgrade Firmware •Time

Upgrade Firmware

Location:

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

## Time

Select **Settings > Advanced > Time** to set the time of the router.

Advanced-->Time

•Status •Management •Restore •PIN Manage •Router •Upgrade Firmware •Time

Time settings

Current Local Time	2000-01-01 00:26:35 Saturday
Time Set Mode	Manual Set Time
Manual Set Time	Year 2000 Month 1 Day 1 Hour 0 Minute 0

Apply

## Usage of WPS

If your client device supports WPS, you need not to input the password manually after WPS has been available. Please do the following:

1. Start up your device.
2. Launch the client device connected to your device.
3. Enable the WPS function of your device.
4. Enable the WPS function of the client.

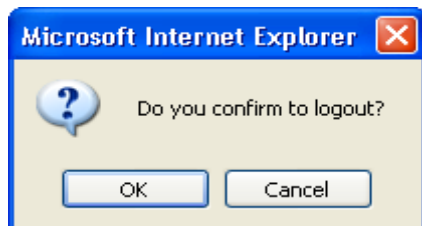


### Notes:

[For the detailed operations about the client, please refer to the client's instruction.](#)

## Logout

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



Click **OK** to logout the web page.

# Chapter 4

## Troubleshooting

### Voice Related Problems

Symptoms	Possible Problems/ Solutions
No Dial Tone.	Please wait for 1~2 minutes after the router is turned on. If 3G LED light 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 (U)SIM 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.
After dialing the last digit I hear nothing /silence.	When you have finished dialing you can press the # key or 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.

### Internet Related Problems

Symptoms	Possible Problems/ Solutions
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.

### Others

Symptoms	Possible Problems/ Solutions
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.

# Chapter 5

## **Technical Parameters**

### **Technical Parameters**

#### **Network & Frequency Band**

EDGE/GPRS/GSM: 850/900/1800/1900MHz

HSUPA/HSDPA/UMTS: 850/900/1900/2100MHz

#### **Power Adapter**

Input: 100V~240V(AC), 50/60Hz

Output: +12V (DC), 1.5A

#### **Data Service**

HSPA+ 5.76Mbps UL

**HSDPA 21Mbps DL**

#### **Dimensions (W×H×D)**

150mm×120mm×25mm

#### **Weight**

About 300g

# Chapter 6

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## 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
- (U)SIM: Subscriber Identification Module
- WCDMA: Wideband CDMA (Code-Division Multiple Access)
- WEP: Wired Equivalent Privacy
- WLAN: Wireless LAN
- WPA-PSK: Wi-Fi Protected Access–PreShared Key