

**MERCUSYS®**

# **User Guide**

AC1200 Wireless Dual Band Gigabit Router

AC12G

REV1.1.0  
1910080059

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## CE Mark Warning



This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

## OPERATING FREQUENCY(the maximum transmitted power)

2400 MHz -2483.5 MHz(20dBm)

5150 MHz -5250 MHz(23dBm)

## EU declaration of conformity

MERCUSYS hereby declares that the device is in compliance with the essential requirements and other relevant provisions of directives 2014/53/EU, 2009/125/EC, 2011/65/EU and (EU)2015/863.

The original EU declaration of conformity may be found at <http://www.mercusys.com/en/ce>

## RF Exposure Information

This device meets the EU requirements (2014/53/EU Article 3.1a) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

The device complies with RF specifications when the device used at 20 cm from your body.

## National restrictions

Attention: This device may only be used indoors in all EU member states and EFTA countries.

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

## Canadian Compliance Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1) L'appareil ne doit pas produire de brouillage;

2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## **Radiation Exposure Statement**

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

## **Déclaration d'exposition aux radiations**

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

## **Industry Canada Statement**

CAN ICES-3 (B)/NMB-3(B)

## **Korea Warning Statements**

당해 무선설비는 운용중 전파혼신 가능성이 있음.

## **NCC Notice**

注意！

依據低功率電波輻射性電機管理辦法

LP0002 低功率射頻器材技術規範\_章節 3.8.2

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前述合法通信，指依電信管理法規定作業之無線電通信。

低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

5.7.9.1 應避免影響附近雷達系統之操作。

5.7.9.2 高增益指向性天線只得應用於固定式點對點系統。

## BSMI Notice

### 安全諮詢及注意事項

- 請按照本產品注明的電源類型使用本產品。
- 清潔本產品之前請先切斷電源。請勿使用液體、噴霧清潔劑或濕布進行清潔。
- 注意防潮，請勿將水或其他液體潑灑到本產品上。
- 插槽與開口供通風使用，以確保本產品的操作可靠並防止過熱，請勿堵塞或覆蓋開口。
- 請勿將本產品置放於靠近熱源的地方。除非有正常的通風，否則不可放在密閉位置中。
- 請不要私自拆開機殼或自行維修，如產品有故障請與原廠或代理商聯繫。

### 限用物質含有情況標示聲明書

設備名稱：AC1200 Wireless Dual Band Gigabit Router Equipment name		型號（型式）：AC12G Type designation (Type)				
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr+6)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
PCB	○	○	○	○	○	○
外殼	○	○	○	○	○	○
電源供應器	—	○	○	○	○	○
其他及其配件	—	○	○	○	○	○

備考1. "超出0.1wt%"及"超出0.01wt%"系指限用物質之百分比含量超出百分比含量基準值。

備考2. "○"系指該項限用物質之百分比含量未超出百分比含量基準值。

備考3. "—" 系指該項限用物質為排除項目。







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## Safety Information

- Keep the device away from water, fire, humidity or hot environments.
- Do not attempt to disassemble, repair, or modify the device. If you need service, please contact us.
- Do not use damaged charger or USB cable to charge the device.
- Do not use any other chargers than those recommended.
- Do not use the device where wireless devices are not allowed.
- Adapter shall be installed near the equipment and shall be easily accessible.
- Use only power supplies which are provided by manufacturer and in the original packing of this product. If you have any questions, please don't hesitate to contact us.

## Explanation of the symbols on the product label

Symbol	Explanation
	Class II equipment
	DC voltage
	Polarity of d.c. power connector
	For indoor use only

	Energy efficiency Marking
	Caution
	Operator's manual
	<p><b>RECYCLING</b></p> <p>This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment.</p> <p>User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.</p>

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## Conventions

The router or AC12G, or device mentioned in this User Guide stands for AC1200 Wireless Dual Band Gigabit Router without any explanations.

Parameters provided in the pictures are just references for setting up the product, which may differ from the actual situation.

You can set the parameters according to your demand.

### More Info

Specifications and the latest software can be found at the product page at the official website <http://www.mercusys.com>.

The Quick Installation Guide can be found where you find this guide or inside the package of the router.

\*Maximum wireless signal rates are the physical rates derived from IEEE Standard 802.11 specifications. Actual wireless data throughput and wireless coverage are not guaranteed and will vary as a result of 1) environmental factors, including building materials, physical objects, and obstacles, 2) network conditions, including local interference, volume and density of traffic, product location, network complexity, and network overhead, and 3) client limitations, including rated performance, location, connection, quality, and client condition.

## Chapter 1. Introduction

### 1.1 Product Overview

The router integrates 4-port Switch, Firewall, NAT-Router and Wireless AP. Powered by 2x2 MIMO technology, the router delivers exceptional range and speed, which can fully meet the need of Small Office/Home Office (SOHO) networks and the users demanding higher networking performance.

### 1.2 Product Appearance

#### 1.2.1 The Front Panel



The router's LEDs are located on the front panel (View from left to right).

Name	Status	Indication
SYS	Off	Power is off or the router is not working properly.
	On	The router is working properly.
WI-FI	Off	The wireless function is disabled.
	On	The wireless function is working properly.
WAN	Off	The WAN port is not connected.
	On	The WAN port is connected.
	Flashing	The WAN port is transmitting/receiving data.
LAN	Off	None of LAN ports are connected.
	On	At least one LAN port is connected.

## 1.2.2 The Rear Panel



The following parts are located on the rear panel (View from left to right).

Item	Description
<b>1-3(LAN)</b>	These ports connect the router to the local devices.
<b>WAN</b>	This port is where you will connect the DSL/cable Modem, or Ethernet.
<b>Power</b>	The power socket is where you will connect the power adapter. Please use the power adapter provided with this router.
<b>WPS/Reset</b>	Press this button for 1 second to use WPS function. Press and hold this button for more than 5 seconds to reset the router.
<b>Wireless antenna</b>	To receive and transmit the wireless data.

## Chapter 2. Connecting the Router

### 2.1 System Requirements

- Broadband Internet Access Service (DSL/Cable/Ethernet)
- One DSL/Cable Modem that has an RJ45 connector (which is not necessary if the router is connected directly to the Ethernet.)
- PCs with a working Ethernet Adapter and an Ethernet cable with RJ45 connectors
- TCP/IP protocol on each PC
- Web browser, such as Microsoft Internet Explorer, Mozilla Firefox or Apple Safari

### 2.2 Installation Environment Requirements

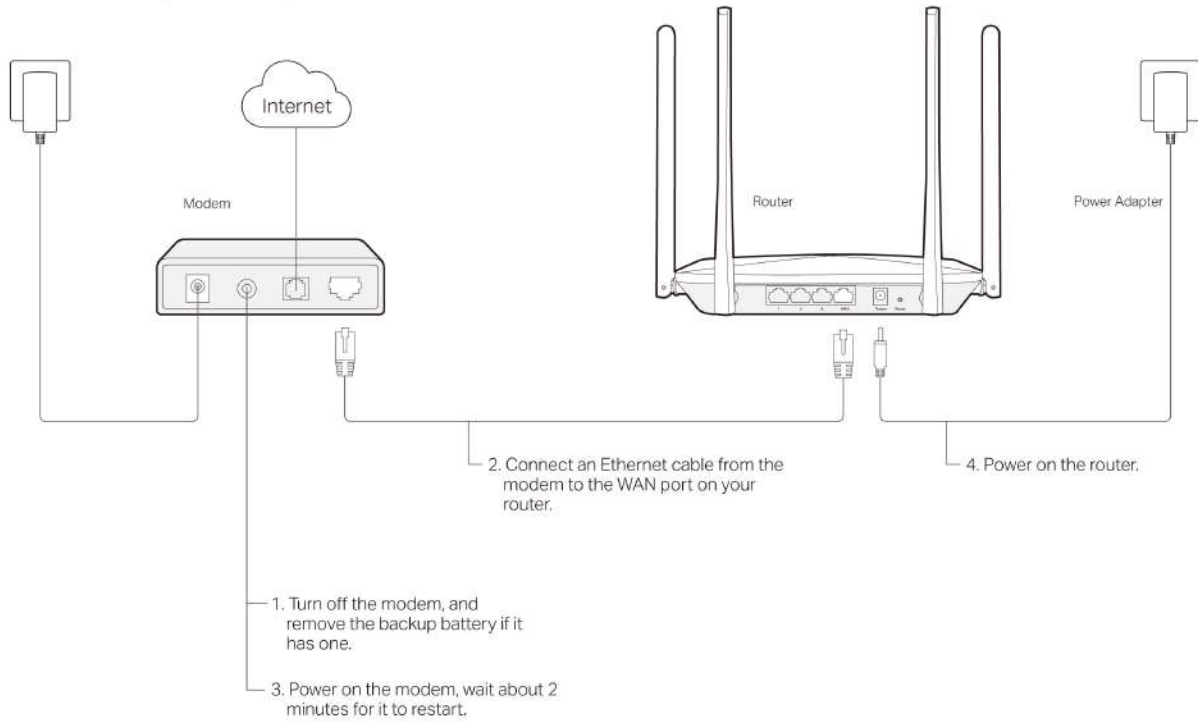
- Place the router in a well-ventilated place far from any heater or heating vent
- Avoid direct irradiation of any strong light (such as sunlight)
- Keep at least 2 inches (5 cm) of clear space around the router
- Operating Temperature: 0°C~40°C (32°F~104°F)
- Operating Humidity: 10%~90%RH, Non-condensing

### 2.3 Connecting the Router

If your Internet connection is through an Ethernet cable from the wall instead of through a DSL/Cable/Satellite modem, connect the Ethernet cable directly to the router's Internet port, then follow steps 4 and 5 to complete the hardware connection.

1. Turn off the modem and remove the backup battery if it has one.
2. Connect the modem to the WAN port on your router with an Ethernet cable.
3. Turn on the modem, and then wait about 2 minutes for it to restart.
4. Turn on the router.

Note: If your Internet connection is through an Ethernet cable from the wall instead of through a DSL/Cable/Satellite modem, connect the Ethernet cable directly to the router's WAN port.



5. Verify that the hardware connection is correct before continuing.

## Chapter 3. Quick Installation Guide


This chapter will show you how to configure the basic functions of your router using **Quick Setup Wizard** within minutes.

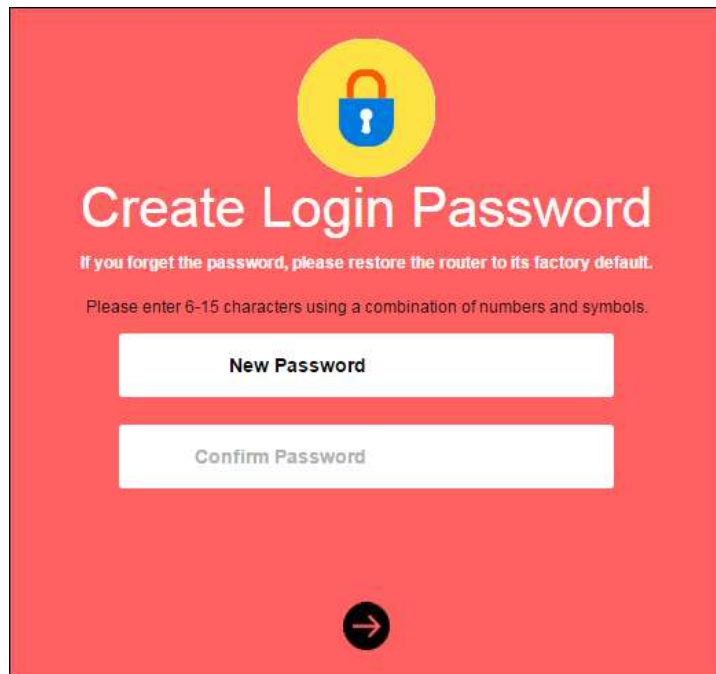
**NOTE:**


Before configuring the router, you need to set up the TCP/IP Protocol in **Obtain an IP address automatically** mode on your PC. For detailed instructions, please refer to [Appendix B: Configuring the PC](#).

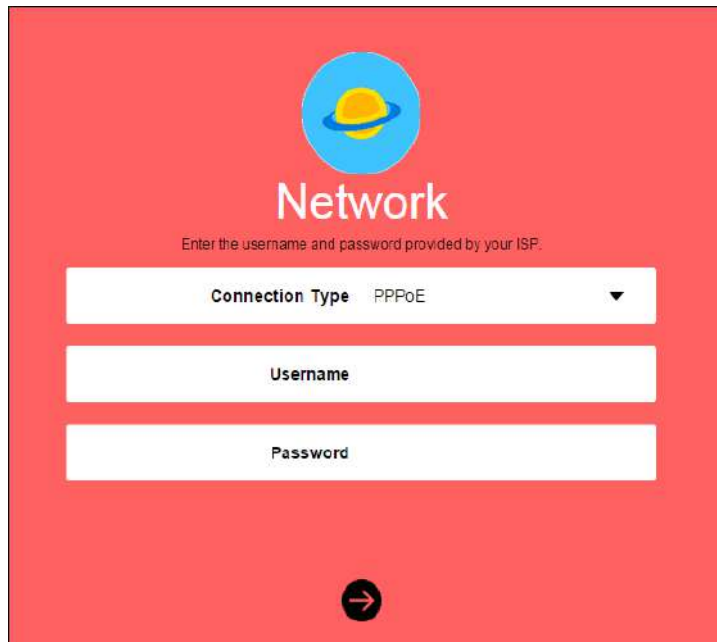
1. To access the web management page, open a web browser and enter the default domain name <http://mwlogin.net> in the address field.




2. A login window will appear. Create a login password when prompted. Then click . For subsequent login, use the password you have set.

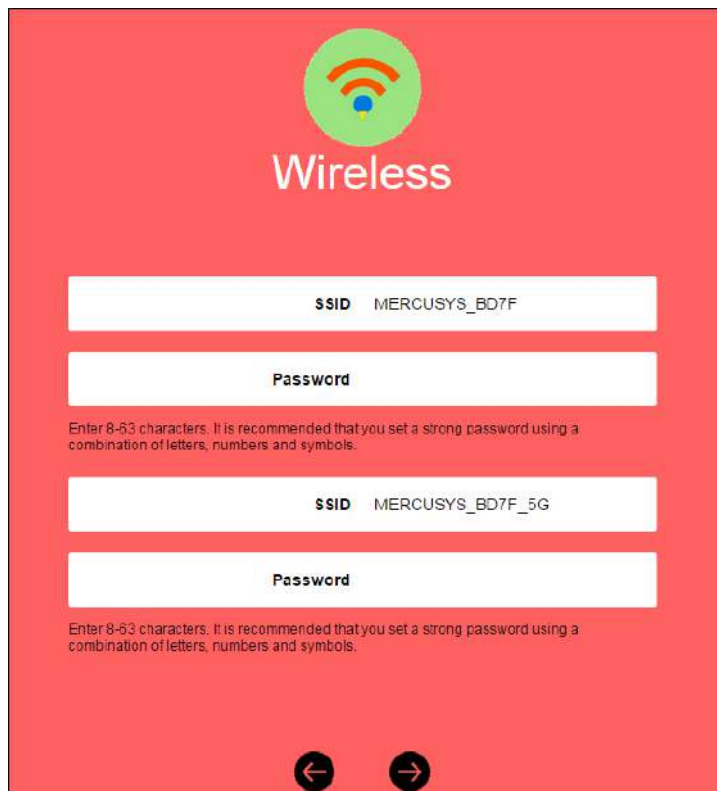
A screenshot of a web page titled "Create Login Password". The page has a red background. At the top center is a yellow circle containing a blue padlock icon. Below the icon, the text "Create Login Password" is displayed in large white font. Underneath, in smaller white text, it says "If you forget the password, please restore the router to its factory default." and "Please enter 6-15 characters using a combination of numbers and symbols." There are two white input fields: the first is labeled "New Password" and the second is labeled "Confirm Password". At the bottom center of the page is a black circle containing a white right-pointing arrow.

3. Select your Internet connection type and enter the corresponding parameters with the information provided by your ISP and click .



The image shows a red-themed web interface for network configuration. At the top center is a logo featuring a blue circle with a yellow sun and a blue ring. Below the logo is the word "Network" in white. Underneath, it says "Enter the username and password provided by your ISP." There are three white input fields: the first is a dropdown menu labeled "Connection Type" with "PPPoE" selected; the second is labeled "Username"; and the third is labeled "Password". At the bottom center is a black circular button with a white right-pointing arrow.

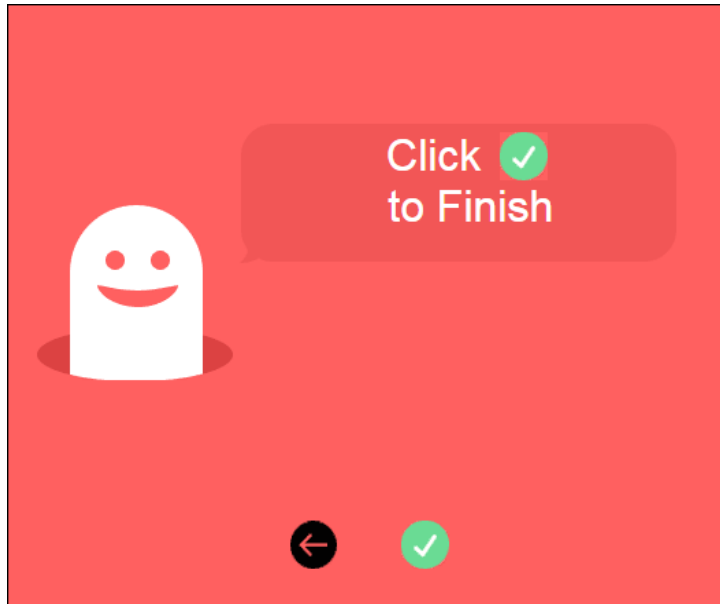
4. Customize the 2.4GHz and 5GHz wireless network name and password, or leave them as default. It is recommended that you set a strong password using a combination of letters, numbers and symbols. Then click .



The image shows a red-themed web interface for wireless configuration. At the top center is a logo featuring a green circle with a white Wi-Fi symbol. Below the logo is the word "Wireless" in white. There are two sets of white input fields. The first set has a field labeled "SSID" with the value "MERCUSYS\_BD7F" and a field labeled "Password". Below this set is a note: "Enter 8-63 characters. It is recommended that you set a strong password using a combination of letters, numbers and symbols." The second set has a field labeled "SSID" with the value "MERCUSYS\_BD7F\_5G" and a field labeled "Password". Below this set is another note: "Enter 8-63 characters. It is recommended that you set a strong password using a combination of letters, numbers and symbols." At the bottom center are two black circular buttons with white left and right arrows.

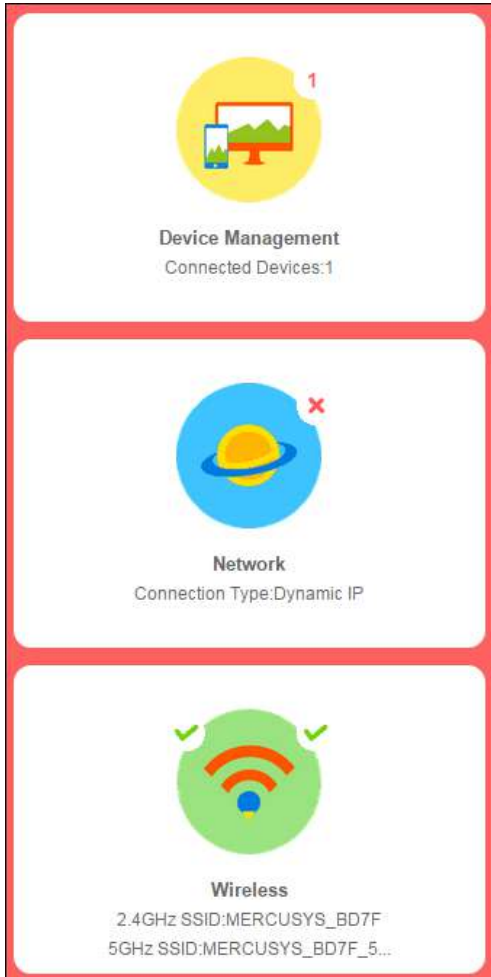


5. Click  to complete the Quick Setup.



## Chapter 4. Basic Configuration

After your successful login, you will see the basic configuration page. The main menus are on the left of the page. On the right you can configure the corresponding function.



There are three functions on the **Basic** page: **Device Management**, **Network** and **Wireless**. The detailed explanations for each function are listed below.

### 4.1 Device Management

Choose **Device Management**, you can view and manage the connected or blocked devices on the page.

### 1. Connected Devices

Connected Devices <span style="color: red;">4</span>		Blocked Devices <span style="color: red;">0</span>		
Device Name	Rate	Upstream	Downstream	Block
Unknown IP 192.168.1.200	Wired ↑ 0B/s ↓ 0B/s			Host
Unknown IP 192.168.1.18	Wired ↑ 0B/s ↓ 0B/s			
Unknown IP 192.168.1.19	Wired ↑ 0B/s ↓ 0B/s			
Unknown IP 192.168.1.60	Wired ↑ 0B/s ↓ 0B/s			

- **Device Name**- Displays the name and IP address of the device. You can click to edit the device name.
- **Rate** - Displays the current upstream and downstream speed of the device.
- **Upstream/Downstream** - You can click the button or in the column to limit the upstream or downstream speed for the device.
- **Block** - Click to remove the device from the list.

### 2. Blocked Devices

Connected Devices <span style="color: red;">5</span>		Blocked Devices <span style="color: red;">1</span>	
Device Name	Allow		
Unknown MAC 40-16-9F-BF-50-F2			

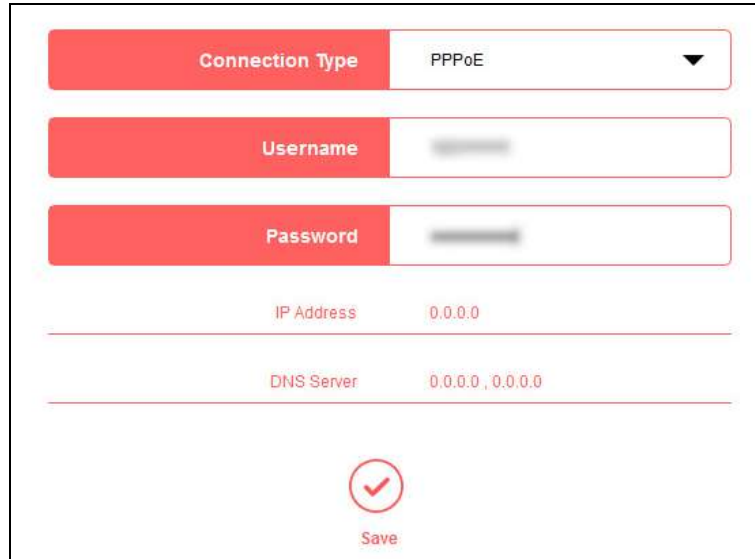
- **Device Name**- Displays the name and MAC address of the blocked device. You can click to edit the device name.
- **Allow** - Click to allow the device to connect to the router.

## 4.2 Network

Choose **Network**, you can view and customize the basic Internet settings on the page.

### 1. PPPoE

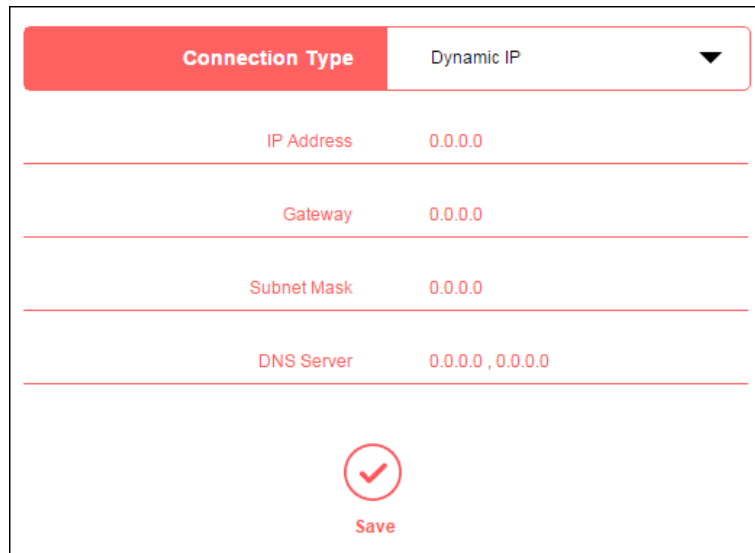
Select this type if you use DSL (Digital Subscriber Line) service and are provided with a username and password by the ISP.



The screenshot shows the PPPoE configuration page. At the top, there is a red header with the text "Connection Type" and a dropdown menu set to "PPPoE". Below this are three input fields: "Username" and "Password", both containing masked text. Underneath are two rows of text: "IP Address" with the value "0.0.0.0" and "DNS Server" with the value "0.0.0.0, 0.0.0.0". At the bottom center, there is a red circular icon with a white checkmark and the word "Save" below it.

### 2. Dynamic IP

Select this type if your ISP provides the DHCP service, and the router will automatically get IP parameters from your ISP.




The screenshot shows the Dynamic IP configuration page. At the top, there is a red header with the text "Connection Type" and a dropdown menu set to "Dynamic IP". Below this are four rows of text: "IP Address" with the value "0.0.0.0", "Gateway" with the value "0.0.0.0", "Subnet Mask" with the value "0.0.0.0", and "DNS Server" with the value "0.0.0.0, 0.0.0.0". At the bottom center, there is a red circular icon with a white checkmark and the word "Save" below it.

### 3. Static IP

Select this type if your ISP provides a static IP address, subnet mask, gateway and DNS settings.

Connection Type	Static IP ▼
IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Gateway	0.0.0.0
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0

  
 Save

#### 4. L2TP

Select this type if you connect to an L2TP VPN Server and are provided with a username, password, and IP address/domain name of the server by the ISP.

**WAN Settings** ?

Connection Type	L2TP ▼
Username	
Password	
Server IP/Domain Name	

---

Internet IP      0.0.0.0

---

Internet DNS      0.0.0.0 , 0.0.0.0

---

Dynamic IP       Static IP

IP Address      0.0.0.0

---

Subnet Mask      0.0.0.0



---

Gateway      0.0.0.0

---

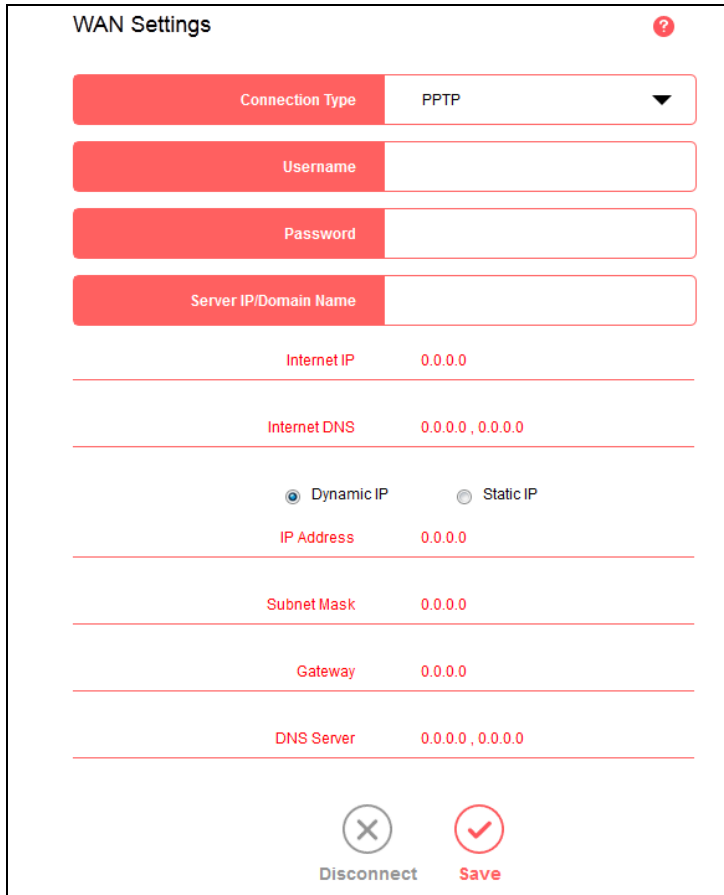
DNS Server      0.0.0.0 , 0.0.0.0

---

        
 Disconnect      Save

## 5. PPTP

Select this type if you connect to a PPTP VPN Server and are provided with a username, password, and IP address/domain name of the server by the ISP.



The screenshot shows the WAN Settings interface for a PPTP connection. The title is "WAN Settings" with a help icon. The "Connection Type" is set to "PPTP". Below this are four input fields: "Username", "Password", and "Server IP/Domain Name". The "Internet IP" is set to "0.0.0.0". The "Internet DNS" is set to "0.0.0.0, 0.0.0.0". There are two radio buttons for "Dynamic IP" (selected) and "Static IP". Below these are fields for "IP Address" (0.0.0.0), "Subnet Mask" (0.0.0.0), "Gateway" (0.0.0.0), and "DNS Server" (0.0.0.0, 0.0.0.0). At the bottom, there are two buttons: "Disconnect" (with a red X icon) and "Save" (with a red checkmark icon).

## 4.3 Wireless

Choose **Wireless**, and you can change the SSID (network name) and password on the page.

2.4GHz Wireless  ON


SSID MERCUSYS\_BD7F

Password

5GHz Wireless  ON

SSID MERCUSYS\_BD7F\_5G

Password

  
Save

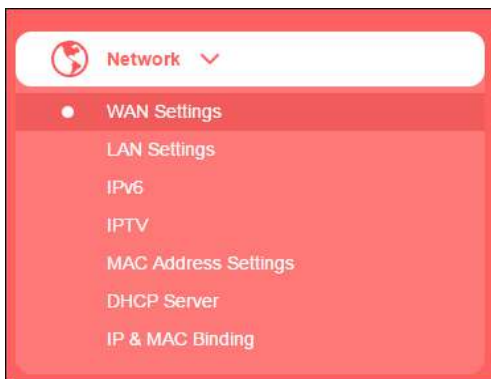
- **SSID** - Enter a value of up to 32 characters. The default SSID is MERCUSYS\_XXXX for 2.4GHz and MERCUSYS\_XXXX\_5G for 5GHz (XXXX indicates the last unique four numbers of each router's MAC address). This field is case-sensitive.
- **Password** - Enter 8-63 characters using a combination of numbers, letters and symbols. The security version is WPA2-PSK/WPA-PSK, which supports AES encryption that provides a good level of security.

## Chapter 5. Advanced Configuration

To know more about the router's key functions, you can go to **Advanced** page. This chapter will show the configuration details of each function.



### 5.1 Network



There are seven submenus under the Network menu: **WAN Settings**, **LAN Settings**, **IPv6**, **IPTV**, **MAC Address Settings**, **DHCP Server** and **IP&MAC Binding**. Click any of them, and you can configure the corresponding function.

#### 5.1.1 WAN Settings

Go to **Network**→**WAN Settings**, you can configure the IP parameters of the WAN.

##### 1. PPPoE

Select this type if you use DSL (Digital Subscriber Line) service and are provided with a username and password by the ISP.

- **WAN Settings**



WAN Settings

Connection Type: PPPoE

Username:

Password:

IP Address: 0.0.0.0

DNS Server: 0.0.0.0

Disconnect Save

- **Username/Password** - Enter the username and password provided by your ISP. These fields are case-sensitive.

Click **Save** to make your settings effective.

- **Secondary Connection**

Secondary Connection

None  Dynamic IP  Static IP

IP Address:

Subnet Mask:

Save

- **None** - Select if your ISP does not provides a secondary connection.
- **Dynamic IP** - Select if the IP address and subnet mask are assigned automatically as the secondary connection by the ISP.
- **Static IP** - Select if the IP address and subnet mask are provided as the secondary connection by the ISP, and enter IP Address/Subnet Mask into the corresponding fields.

Click **Save** to make your settings effective.

- **Connection Type**

Connection Type

Connect On Demand

Max Idle Time: 15 Minute

0 means that connection is always on.

Save

- **Connect Automatically** - The connection can be re-established automatically when it is down.
- **Connect On Demand** - In this mode, the Internet connection can be terminated automatically after a specified inactivity period (**Max Idle Time**) and be re-established when you attempt to access the Internet again. If you want your Internet connection keeps active all the time, please enter **0** in the **Max Idle Time** field. Otherwise, enter the number of minutes you want to have elapsed before your Internet access disconnects.
- **Connect Manually** - This mode also supports the **Max Idle Time** function as **Connect on Demand** mode. The Internet connection can be disconnected automatically after a specified inactivity period.

Click **Save** to make the settings effective.

- **PPPoE Advanced Settings**

PPPoE Advanced settings

MTU Size (in bytes): 1480

The default value is 1480. Do NOT change unless necessary.

WAN Rate Settings: Auto Negotiation

Service Name:

Server Name:

Use ISP Specified IP Address

ISP Specified IP Address: 0.0.0.0

Manually set DNS server

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0

Optional

Save

- **MTU Size** - The default MTU size is 1480 bytes. It is NOT recommended that you change

the default **MTU Size** unless required by your ISP.

- **WAN Rate Settings** - Select the rate(10Mbps/100Mbps) and duplex mode(Full Duplex/Half Duplex) for the WAN port. It is recommended to keep the default auto mode.
- **Service Name/Server Name** - The service name and server name should not be configured unless it is necessary for your ISP. In most cases, leaving these fields blank will work.
- **ISP Specified IP Address** - If your ISP does not automatically assign IP addresses to the router during login, please select **Use ISP Specified IP Address** and enter the IP address provided by your ISP in dotted-decimal notation.
- **Primary DNS/Secondary DNS** - If your ISP does not automatically assign DNS addresses to the router during login, please select **Manually Set DNS Server** and enter the IP address in dotted-decimal notation of your ISP's primary DNS server. If a secondary DNS server address is available, enter it as well.

Click **Save** to make the settings effective.

## 2. Dynamic IP

Select this type if your ISP provides the DHCP service, and the router will automatically get IP parameters from your ISP.

WAN Settings ✖ WAN port is disconnected

Connection Type: Dynamic IP

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Gateway: 0.0.0.0

DNS Server: 0.0.0.0, 0.0.0.0

Renew Release

MTU Size (in bytes): 1500 The default value is 1500. Do NOT change unless necessary.

Manually set DNS server

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0 Optional

Host Name: AC12G

Get IP with Unicast DHCP Do NOT select unless necessary

WAN Rate Settings: Auto Negotiation

Save

- **Renew** - Click to renew the IP parameters from your ISP.
- **Release** - Click to release the IP parameters.
- **MTU Size** - The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 bytes. Do not change the default MTU Size unless required by your ISP.
- **Manually set DNS server** - If your ISP gives you one or two DNS addresses, select this option and enter the primary and secondary addresses into the corresponding fields. Otherwise, the DNS servers will be assigned dynamically from your ISP.
- **Host Name** - This option specifies the host name of the router.
- **Get IP with Unicast DHCP** - A few ISPs' DHCP servers do not support the broadcast applications. If you cannot get the IP Address normally, you can choose this option. (It is rarely required.)

Click **Save** to make the settings effective.

### 3. Static IP

Select this type if your ISP provides a static IP address, subnet mask, gateway and DNS

settings.

WAN Settings

Connection Type: Static IP

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Gateway: 0.0.0.0

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0 Optional

MTU Size (in bytes): 1500 The default value is 1500. Do NOT change unless necessary.

WAN Rate Settings: Auto Negotiation

Save

- **IP Address** - Enter the IP address in dotted-decimal notation provided by your ISP.
- **Subnet Mask** - Enter the subnet mask in dotted-decimal notation provided by your ISP, usually is 255.255.255.0.
- **Gateway** - Enter the gateway IP address in dotted-decimal notation provided by your ISP.
- **Primary/Secondary DNS** - Enter one or two DNS addresses in dotted-decimal notation provided by your ISP.
- **MTU Size** - The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. Do not change the default MTU Size unless required by your ISP.
- **WAN Rate Settings** - Select the rate(10Mbps/100Mbps) and duplex mode(Full Duplex/Half Duplex) for the WAN port. It is recommended to keep the default auto mode.

Click **Save** to make the settings effective.

#### 4. L2TP

Select this type if you connect to an L2TP VPN Server and are provided with a username, password, and IP address/domain name of the server by the ISP.

The screenshot shows the WAN Settings interface for L2TP configuration. The 'Connection Type' is set to L2TP. There are input fields for Username, Password, and Server IP/Domain Name. Below these are fields for Internet IP (0.0.0.0), Internet DNS (0.0.0.0, 0.0.0.0), Dynamic IP (selected) and Static IP (unselected) options, IP Address (0.0.0.0), Subnet Mask (0.0.0.0), Gateway (0.0.0.0), and DNS Server (0.0.0.0, 0.0.0.0). At the bottom are Disconnect and Save buttons.

- **Username/Password** - Enter the username and password provided by your ISP. These fields are case-sensitive.
- **Server IP/Domain Name** - Enter the VPN server's IP address or domain name provided by your ISP.
- **Internet IP/Internet DNS** – Displays the internet IP address/DNS server address assigned by your L2TP server.
- **Dynamic IP/Static IP** - Select Dynamic IP the IP address and subnet mask are assigned automatically by the ISP. Select if the IP address, subnet mask, gateway, and DNS addresses are provided by the ISP, and enter these information into the corresponding fields.

Click **Save** to make the settings effective.

- **Connection Type**

Connection Type

Connect On Demand

Max Idle Time: 15 Minute

0 means that connection is always on.

Save

- **Connect Automatically** - The connection can be re-established automatically when it is down.
- **Connect On Demand** - In this mode, the Internet connection can be terminated automatically after a specified inactivity period (**Max Idle Time**) and be re-established when you attempt to access the Internet again. If you want your Internet connection keeps active all the time, please enter **0** in the **Max Idle Time** field. Otherwise, enter the number of minutes you want to have elapsed before your Internet access disconnects.
- **Connect Manually** - This mode also supports the **Max Idle Time** function as **Connect on Demand** mode. The Internet connection can be disconnected automatically after a specified inactivity period.

Click **Save** to make the settings effective.

- **L2TP Advanced settings**

L2TP Advanced settings

MTU Size (in bytes): 1400

The default is 1460, do not change unless necessary.

WAN Rate Settings: Auto Negotiation

Save

- **MTU Size (in bytes)** - The default MTU size is 1480 bytes. It is NOT recommended that you change the default MTU size unless required by your ISP.
- **WAN Rate Settings** - Select the rate and duplex mode for the WAN port. It is recommended to keep the default auto mode.

Click **Save** to make the settings effective.

## 5. PPTP

Select this type if you connect to a PPTP VPN Server and are provided with a username, password, and IP address/domain name of the server by the ISP.

**WAN Settings** ?

Connection Type PPTP ▼

Username

Password

Server IP/Domain Name

---

Internet IP 0.0.0.0

---

Internet DNS 0.0.0.0, 0.0.0.0

---

Dynamic IP     Static IP

IP Address 0.0.0.0

---

Subnet Mask 0.0.0.0

---

Gateway 0.0.0.0

---

DNS Server 0.0.0.0, 0.0.0.0

---

✕
✓

Disconnect
Save

- **Username/Password** - Enter the username and password provided by your ISP. These fields are case-sensitive.
- **Server IP/Domain Name** - Enter the VPN server's IP address or domain name provided by your ISP.
- **Internet IP/Internet DNS** – Displays the internet IP address/DNS server address assigned by your L2TP server.
- **Dynamic IP/Static IP** –Select Dynamic IP the IP address and subnet mask are assigned automatically by the ISP. Select if the IP address, subnet mask, gateway, and DNS addresses are provided by the ISP, and enter these information into the corresponding fields.

Click **Save** to make the settings effective.

- **Connection Type**



Connection Type

Connect On Demand

Max Idle Time: 15 Minute

0 means that connection is always on.

Save

- **Connect Automatically** - The connection can be re-established automatically when it is down.
- **Connect On Demand** - In this mode, the Internet connection can be terminated automatically after a specified inactivity period (**Max Idle Time**) and be re-established when you attempt to access the Internet again. If you want your Internet connection keeps active all the time, please enter **0** in the **Max Idle Time** field. Otherwise, enter the number of minutes you want to have elapsed before your Internet access disconnects.
- **Connect Manually** - This mode also supports the **Max Idle Time** function as **Connect on Demand** mode. The Internet connection can be disconnected automatically after a specified inactivity period.

Click **Save** to make the settings effective.

- **PPTP Advanced settings**

PPTP Advanced settings

MTU Size (in bytes): 1420

The default is 1420, do not change unless necessary.

WAN Rate Settings: Auto Negotiation

Save

- **MTU Size (in bytes)** - The default MTU size is 1480 bytes. It is NOT recommended that you change the default MTU size unless required by your ISP.
- **WAN Rate Settings** - Select the rate and duplex mode for the WAN port. It is recommended to keep the default auto mode.

Click **Save** to make the settings effective.

### 5.1.2 LAN Settings

Go to **Network**→**LAN Settings**, you can configure the IP parameters of the LAN on the screen as below.

- **MAC Address** - The physical address of the router, as seen from the LAN. The value can't be changed.
- **LAN IP Settings** - Select Auto or Manual. In Auto mode, the router will automatically detect the LAN-WAN IP address confliction.
- **IP Address** - Enter the IP address of your router.
- **Subnet Mask** - An address code that determines the size of the network. Normally use 255.255.255.0 as the subnet mask.

#### NOTE:

- 1) If you change the LAN IP address, you must use the new IP address to log in to the router.
- 2) If the new LAN IP address you set is not in the same subnet with the previous one, the IP Address Pool in the DHCP server will be configured automatically, but the Virtual Server and DMZ Host will not take effect until they are re-configured.

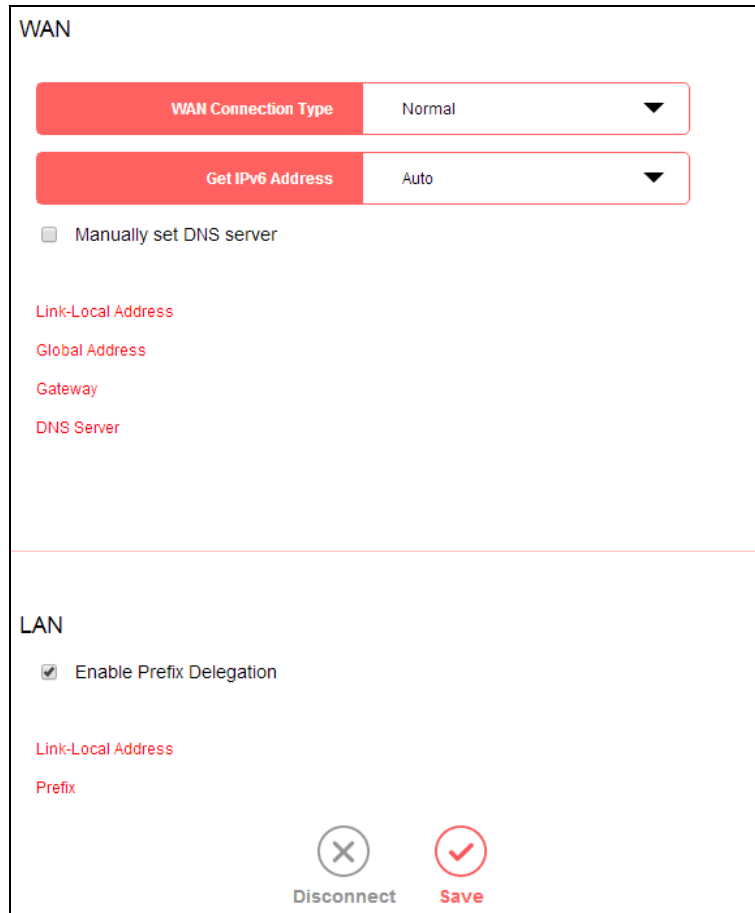
### 5.1.3 IPv6

Go to **Network**→**IPv6**, you can configure IPv6 settings of your router.

Select a working mode according to your ISP network topology.

If your ISP uses **Pass-Through (Bridge)** network deployment, select Pass-Through (Bridge). No configuration is required for this type of connection.

For other connection types, select **Router** and complete the IPv6 configuration.



WAN

WAN Connection Type Normal

Get IPv6 Address Auto

Manually set DNS server

Link-Local Address

Global Address

Gateway

DNS Server

---

LAN

Enable Prefix Delegation

Link-Local Address

Prefix

Disconnect Save

- **WAN Connection Type** - Select an appropriate WAN connection type according to the information provided by your ISP.
  - **Normal** - Select this type for normal IPv6 internet connection.
  - **PPPoE** - Select this type if your ISP uses PPPoEv6 for assigning address, and provides a username and password.
  - **Tunnel 6to4** - Select this type if your ISP uses 6to4 deployment for assigning address.
- **Get IPv6 Address** - Select Auto or Static according to the information provided by your ISP.
  - **Address** - The IPv6 address of the router's WAN interface.
  - **Prefix Length** - The IPv6 prefix length of the router's WAN interface.

- **Gateway** - The default IPv6 gateway for the router's WAN interface.
- **Manually set DNS server** - The DNS addresses will be automatically assigned to the router. You can also set manually according to your needs.
- **Primary/Secondary DNS** - Enter the primary/Secondary IPv6 DNS server address provided by your ISP.
- **Enable Prefix Delegation** - Select to get a prefix delegation by DHCPv6 server from the ISP. Clients in LAN will generate an IPv6 address with this prefix.

Click **Save** to make the settings effective.

#### 5.1.4 IPTV

Go to **Network**→**IPTV**, you can configure IPTV setup to enable IPTV service provided by your ISP.

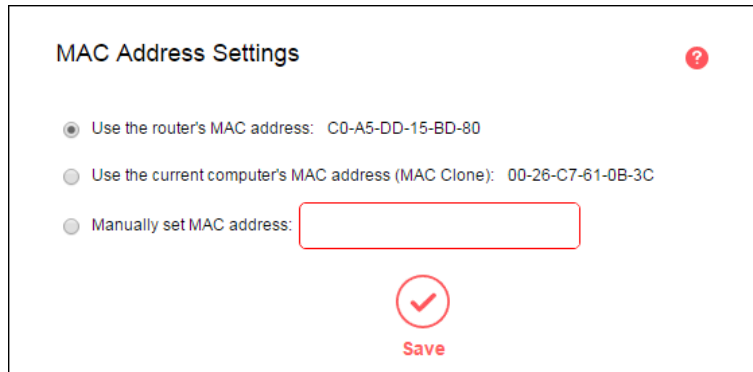


To configure IPTV, follow the steps below.

1. Select the appropriate mode according to your ISP.
  - Select **Bridge** if your ISP is not listed and no other parameters are required.
  - Select **Custom** if your ISP is not listed but provides necessary parameters.
2. After you have selected a mode, the necessary parameters, including the LAN port for IPTV connection, are predetermined.
3. Click **Save**.
4. Connect the set-top box to the corresponding LAN port which is predetermined or you have specified.

### 5.1.5 MAC Address Settings

Go to **Network**→**MAC Address Settings**, you can configure the MAC address of the WAN on the page.




MAC Address Settings

Use the router's MAC address: C0-A5-DD-15-BD-80

Use the current computer's MAC address (MAC Clone): 00-26-C7-61-0B-3C

Manually set MAC address:

  
Save

Some ISPs require that you register the MAC address of your adapter. Changes are rarely needed here.

- **Use the router's MAC address** - By default, this option is selected.
- **Use the current computer's MAC address (MAC Clone)** - Some ISPs will register the MAC address of your computer when you access the Internet for the first time through their cable modem. If you add a router into your network to share your Internet connection, the ISP will not accept it as the MAC address is changed. In this case, you need to clone your computer's MAC address to the router.
- **Manually set MAC address** - If your ISP requires you to register the MAC address, please enter the correct MAC address into this field in XX-XX-XX-XX-XX-XX format (X is any hexadecimal digit).

Click **Save** to make the settings effective.

**NOTE:**

Only the PC on your LAN can use the MAC Clone function.

### 5.1.6 DHCP Server

Go to **Network**→**DHCP Server**, you can configure the DHCP Server settings on the page. The router is set up by default as a DHCP (Dynamic Host Configuration Protocol) server, which provides the TCP/IP configuration for all the PCs that are connected to the router on the LAN.

DHCP Server  ON

Start IP Address: 192.168.1.100

End IP Address: 192.168.1.199

Address Lease Time: 120 minutes (1-2880, the default value is 120)

Gateway: 0.0.0.0

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0

Save

DHCP Equipment

Host	MAC Address	IP Address	Effective Time
Refresh			

- **DHCP Server** - Click the button to enable or disable the DHCP server. If you disable the server, you must have another DHCP server within your network or else you must configure the computer manually.
- **Start IP Address** - Specify an IP address for the DHCP Server to start with when assigning IP addresses. 192.168.1.100 is the default start address.
- **End IP Address** - Specify an IP address for the DHCP Server to end with when assigning IP addresses. 192.168.1.199 is the default end address.
- **Address Lease Time** - The **Address Lease Time** is the amount of time a network user will be allowed connection to the router with their current dynamic IP Address. Enter the amount of time in minutes and the user will be leased this dynamic IP Address. After the time is up, the user will be automatically assigned a new dynamic IP address. The range of the time is 1 ~ 2880 minutes. The default value is 120 minutes.
- **Gateway** - (Optional.) It is recommended to enter the IP address of the LAN port of the router. The default value is 192.168.1.1.

- **Primary DNS** - (Optional.) Enter the DNS IP address provided by your ISP or consult your ISP.
- **Secondary DNS** - (Optional.) Enter the IP address of another DNS server if your ISP provides two DNS servers.

Click **Save** to make the settings effective.

**NOTE:**

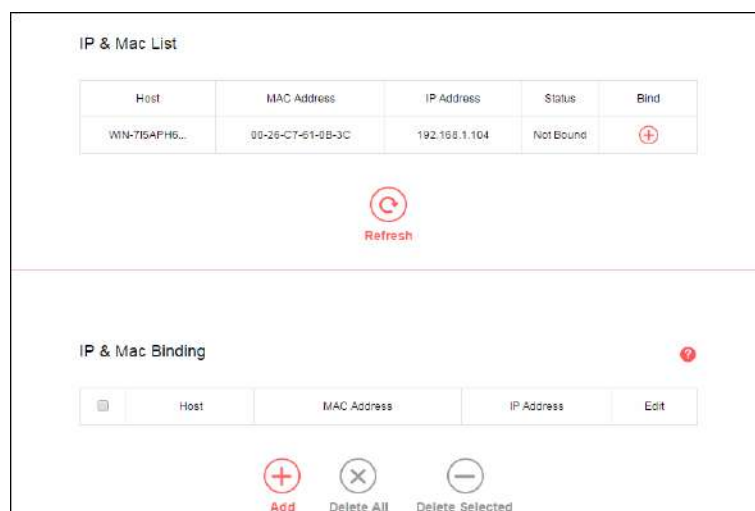
To use the DHCP server function of the router, you must configure all computers on the LAN as Obtain an IP Address automatically.

- **Host** - The name of the DHCP Equipment
- **MAC Address** - The MAC address of the DHCP client
- **IP Address** - The IP address that the router has allocated to the DHCP client
- **Effective Time** - The time of the DHCP client leased. After the dynamic IP address has expired, a new dynamic IP address will be automatically assigned to the user.


Click **Refresh** to show the current attached devices.

### 5.1.7 IP & MAC Binding

Go to **Network→IP & MAC Binding**, you can control access of a specific computer in the LAN by binding the IP address and the MAC address of the device together.



- **Host** - The name of the computer in the LAN.
- **MAC Address** - The MAC address of the computer in the LAN.
- **IP Address** - The assigned IP address of the computer in the LAN.
- **Status** - Displays whether the MAC and IP address are bound or not.

- **Bind** - Click  to add an entry to the IP & Mac binding list.

Click **Refresh** to refresh all items.


**To add an IP & MAC Binding entry, follow the steps below.**

1. Click **Add**.

<input type="checkbox"/>	Host	MAC Address	IP Address	Edit
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Cancel"/> <input type="button" value="Save"/>

2. Enter the **Host** name.
3. Enter the **MAC Address** of the device.
4. Enter the **IP Address** that you want to bind to the MAC address.
5. Click **Save**.

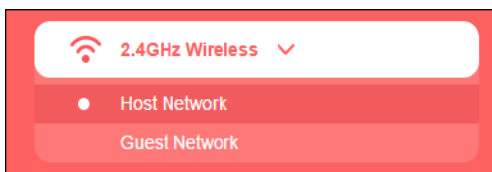
**To edit an existing entry, follow the steps below.**

1. Find the entry in the table.
2. Click  in the **Edit** column.
3. Enter the parameters as you desire, then click **Save**.

**To delete existing entries**, select the entries in the table, then click **Delete Selected**.

**To delete all entries**, click **Delete All**.

## 5.2 2.4GHz Wireless



There are two submenus under the Wireless menu: **Host Network** and **Guest Network**. Click any of them, and you will be able to configure the corresponding function.

### 5.2.1 Host Network

Go to **2.4GHz Wireless**→**Host Network**, you can configure the settings for the 2.4GHz wireless host network on this page.



Host Network ON ?

SSID	MERCUSYS_BD7F	<input checked="" type="checkbox"/> Enable SSID Broadcast
Password		<input checked="" type="checkbox"/> No Security
Channel	Auto	
Mode	11bgn mixed	
Channel Width	Auto	
Transmit Power	High	

AP Isolation

✓  
Save

- **SSID** - Enter a value of up to 32 characters. The default SSID is MERCUSYS\_XXXX (XXXX indicates the last unique four numbers of each router's MAC address). This field is case-sensitive.
- **Password** - Enter 8-63 characters using a combination of numbers, letters and symbols. The security version is WPA2-PSK/WPA-PSK, which supports AES encryption that provides a good level of security. If you select No Security, the field will be left blank.
- **Channel** - This field determines which operating frequency will be used. The default channel is set to **Auto**, so the router will choose the best channel automatically. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.

**NOTE:**

If **11bg mixed**, **11g only** or **11b only** is selected in the **Mode** field, the **Channel Width** selecting field will turn grey and the value will become 20M, which is unable to be changed.

- **Mode** - Select the desired mode.  
 Select the desired wireless mode. It is strongly recommended to select **11bng mixed**, and all of 802.11b, 802.11g and 802.11n wireless stations can connect to the router.
  - 11bgn mixed** - Select if you are using a mix of 802.11b, 11g, and 11n wireless clients.
  - 11bg mixed** - Select if you are using both 802.11b and 802.11g wireless clients.
  - 11n only** - Select if you are using only 11n wireless clients.
  - 11g only** - Select if you are using only 11g wireless clients.
  - 11b only** - Select if you are using only 11b wireless clients.

- **Channel width** - Select the channel width from the drop-down list. The default setting is **Auto**, which can adjust the channel width for your clients automatically.
- **Transmit Power** - Select either High, Middle, or Low to specify the data transmit power. The default and recommended setting is High.
- **Enable SSID Broadcast** - If you select the Enable SSID Broadcast checkbox, the wireless router will broadcast its name (SSID) on the air.
- **AP Isolation** - Select this checkbox to enable the AP Isolation feature that allows you to confine and restrict all wireless devices on your network from interacting with each other, but still able to access the Internet. AP isolation is disabled by default.

Click **Save** to make the settings effective.

## 5.2.2 Guest Network

Go to **2.4GHz Wireless**→**Guest Network**, you can configure the settings for the wireless guest network on this page.

Guest Network  OFF

Upstream Bandwidth/Downstream Bandwidth cannot be configured when *NAT Boost* is enabled.

SSID: MEGuest\_BC7F

Password:   No Security

Access my local network: No

Upstream Bandwidth: 0 KB/s  0 means no limit.

Downstream Bandwidth: 0 KB/s  0 means no limit.

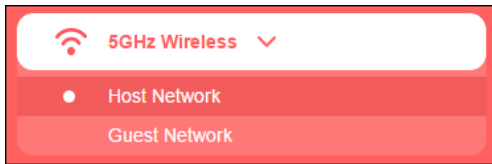
Set Guest Access Time: No

Save

- **Guest Network** - Click to enable or disable the Guest Network function here.
- **SSID/Password** - Set the network name and password for Guest Network. Password may contain 8-63 characters. It is recommended you use a combination of numbers, letters and symbols.
- **Access my local network** - If Yes is selected, the wireless devices on the guest network are able to access your local network. The default value is No.
- **Upstream Bandwidth** - The upload speed through the WAN port for Guest Network.
- **Downstream Bandwidth** - The download speed through the WAN port for Guest Network.
- **Set Guest Access Time** - During this time the wireless stations could access the AP.

Click **Save** to make the settings effective.

## 5.3 5GHz Wireless



There are two submenus under the 5GHz Wireless menu: **Host Network** and **Guest Network**. Click any of them, and you will be able to configure the corresponding function.

### 5.3.1 Host Network

Go to **5GHz Wireless**→**Host Network**, you can configure the settings for the 5GHz wireless host network on this page.

 A screenshot of the 'Host Network' configuration page. The page title is 'Host Network' with a green 'ON' indicator and a red question mark icon. The configuration fields are:
 

- SSID:** MERCUSYS\_BD7F\_5G. To the right is a checkbox for 'Enable SSID Broadcast' which is checked.
- Password:** (empty field). To the right is a checkbox for 'No Security' which is checked.
- Channel:** Auto (dropdown menu).
- Mode:** 11a/n/ac mixed (dropdown menu).
- Channel Width:** Auto (dropdown menu).
- Transmit Power:** High (dropdown menu).

 At the bottom left, there is an unchecked checkbox for 'AP Isolation'. At the bottom center, there is a red 'Save' button with a checkmark icon.

- **SSID** - Enter a value of up to 32 characters. The default SSID is MERCUSYS\_XXXX\_5G (XXXX indicates the last unique four numbers of each router's MAC address).
- **Password** - Enter 8-63 characters using a combination of numbers, letters and symbols. The security version is WPA2-PSK/WPA-PSK, which supports AES encryption that provides a good level of security. If you select No Security, the field will be left blank.
- **Channel** - This field determines which operating frequency will be used. The default channel is set to **Auto**, so the router will choose the best channel automatically. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.
- **Mode** - Select the desired mode.

Select the desired wireless mode. It is recommended to select **11a/n/ac mixed**, and all of 802.11a, 802.11n and 802.11ac wireless clients can connect to the router.

**11 a/n/ac mixed** - Select if you are using a mix of 802.11a, 802.11n and 802.11ac wireless clients.

**11 a/n mixed** - Select if you are using both 802.11a and 802.11n wireless clients.

- **Channel Width** - Select the channel width from the drop-down list. The default setting is **Auto**, which can adjust the channel width for your clients automatically.
- **Transmit Power** - Select either High, Middle, or Low to specify the data transmit power. The default and recommended setting is High.
- **Enable SSID Broadcast** - If you select the Enable SSID Broadcast checkbox, the wireless router will broadcast its name (SSID) on the air.
- **AP Isolation** - Select this checkbox to enable the AP Isolation feature that allows you to confine and restrict all wireless devices on your network from interacting with each other, but still able to access the Internet. AP isolation is disabled by default.

### 5.3.2 Guest Network

Go to **5GHz Wireless**→**Guest Network**, you can configure the settings for the wireless guest network on this page.

Guest Network **OFF** ?

Upstream Bandwidth/Downstream Bandwidth cannot be configured when *NAT Boost* is enabled.

SSID	MEGuest_BD7F_5G
Password	<input type="password"/> <input checked="" type="checkbox"/> No Security
Access my local network	No ▼
Upstream Bandwidth	0 KB/s <span>0 means no limit.</span>
Downstream Bandwidth	0 KB/s <span>0 means no limit.</span>
Set Guest Access Time	No ▼

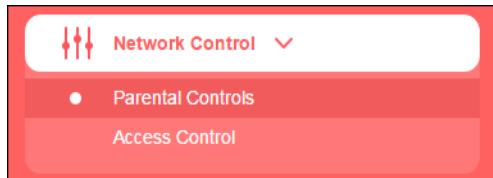
✓  
Save

- **Guest Network** - Click to enable or disable the Guest Network function here.
- **SSID/Password** - Set the network name and password for Guest Network. Password may contain 8-63 characters. It is recommended you use a combination of numbers, letters and symbols.
- **Access my local network** - If Yes is selected, the wireless devices on the guest network are able to access your local network. The default value is No.
- **Upstream Bandwidth** - The upload speed through the WAN port for Guest Network.

- **Downstream Bandwidth** - The download speed through the WAN port for Guest Network.
- **Set Guest Access Time** - During this time the wireless stations could access the AP.

Click **Save** to make the settings effective.

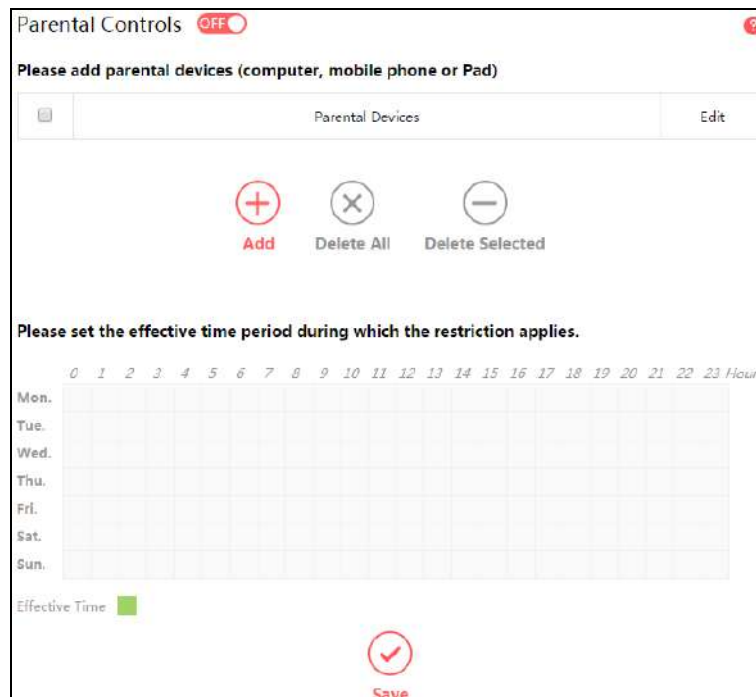
## 5.4 Network Control



There are two submenus under the Network Control menu: **Parental Controls** and **Access Control**. Click any of them, and you will be able to configure the corresponding function.

### 5.4.1 Parental Controls

Go to **Network Control**→**Parental Controls**, and then you can configure the parental controls in the screen. The Parental Controls function can be used to control the internet activities of the child, limit the child to access certain websites and restrict the time of surfing.



- **Parental Controls** - Click to enable or disable this function.
- **Parental Devices** - Displays the MAC address of the controlling PC.
- **Edit** - Here you can edit an existing entry.
- **Add** - Click to add a new device.
- **Delete All** - Click to delete all devices in the table.

- **Delete Selected** - Click to delete selected devices in the table.
- **Effective Time** - All devices except the parental devices will be restricted. Click and drag across the cells to set the restriction time periods.

To add a new entry, follow the steps below.

1. Click **Add**.

2. Select a device from the drop-down list.
3. Click **Save**.

To set the effective time, follow the steps below.

1. Click and drag across the cells to set the restriction time periods.
2. Click **Save**.

## 5.4.2 Access Control

Go to **Network Control**→**Access Control**, and then you can configure the access control in the screen.

- **Access Control** - Click the button to enable or disable Access Control.
- **White List** - Select to **allow** only the Internet activities specified in the table.

- **Black List** - Select to **block** only the Internet activities specified in the table
- **Description** - Displays the name of the rule and this name is unique.
- **Hosts Under Control** - Displays the host selected in the corresponding rule.
- **Target** - Displays the target selected in the corresponding rule.
- **Schedule** - Displays the schedule selected in the corresponding rule.
- **Edit** - Here you can edit an existing rule.
- **Add** - Click to add a new rule entry.
- **Delete All** - Click to delete all the entries in the table.
- **Delete Selected** - Click to delete selected entries in the table.

To add a new rule, follow the steps below.

1. Toggle on to enable Access Control.

<input type="checkbox"/>	Description	Hosts Under Control	Target	Schedule	Edit
	<input type="text"/>	<input type="button" value="Configure"/>	<input type="button" value="Configure"/>	<input type="button" value="Configure"/>	<input type="button" value="Cancel"/> <input type="button" value="Save"/>

2. Select Whitelist or Blacklist.
3. Click **Add** and enter a brief description for the rule.
4. Click **Configure** in the **Hosts Under Control** column to add a host, then click **Apply**.

- **Host Description** - In this field, create a unique description for the host.
- **Mode** - Here are two options, **IP Address** and **MAC Address**. You can select either of them from the drop-down list.

If the **IP Address** is selected, you can see the following item:

- **IP Address Range** - Enter the IP address or address range of the host in dotted-decimal format (e.g. 192.168.0.23).

If the MAC Address is selected, you can see the following item:

- **MAC Address** - Enter the MAC address of the host in XX-XX-XX-XX-XX-XX format (e.g. 00-11-22-33-44-AA).

5. Click **Configure** in the **Target** column, you can select **Any Target**, or select **Add** to add a new target. Then click **Apply**.

The screenshot shows a 'Target' configuration window with the following elements:

- Radio Buttons:**
  - Any Target
  - Add
- Description:** A text input field.
- Mode:** A dropdown menu currently set to 'IP Address'.
- IP Address Range:** A text input field.
- Common Service:** A dropdown menu currently set to 'Select'.
- Port:** A text input field.
- Protocol:** A dropdown menu currently set to 'ALL'.
- Buttons:** 'Save' and 'Apply' buttons at the bottom.

- **Description** - In this field, create a description for the target. Note that this description should be unique.
- **Mode** - Here are two options, IP Address and Website Domain. You can choose either of them from the drop-down list.

If the **IP Address** is selected, you will see the following items:

- **IP Address Range** - Enter the IP address (or address range) of the target (targets) in dotted-decimal format.



- **Common Service** - Here lists some common service ports. Select one from the drop-down list, and the corresponding port number will be filled in the Port field automatically. For example, if you select **HTTP**, **80** will be filled in the Port field automatically.
- **Port** - Specify the port or port range for the target. For some common service ports, you can make use of the Common Service item above.
- **Protocol** - Here are three options, All, TCP and UDP. Select one of them from the drop-down list for the target.

If the **Website Domain** is selected, you will see the following items:

- **Domain Name** - Here you can enter 4 domain names, either the full name or the keywords (for example, Mercusys). Any domain name with keywords in it (www.mercusys.com) will be blocked or allowed.

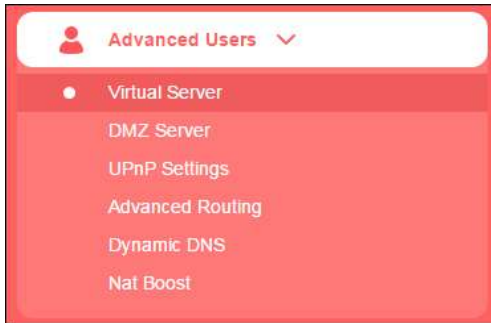
6. Click **Configure** in the **Schedule** column, you can select **Any Time**, or select **Add** to add a new schedule. Then click **Apply**.

- **Description** - In this field, create a description for the schedule. Note that this description should be unique.
- **Time** - Click and drag across the cells to set the effective time periods.

7. Click **Save** to complete the settings.

<input type="checkbox"/>	Description	Hosts Under Control	Target	Schedule	Edit
	Rule_1	Host_1	Target_1	Schedule_1	Cancel Save

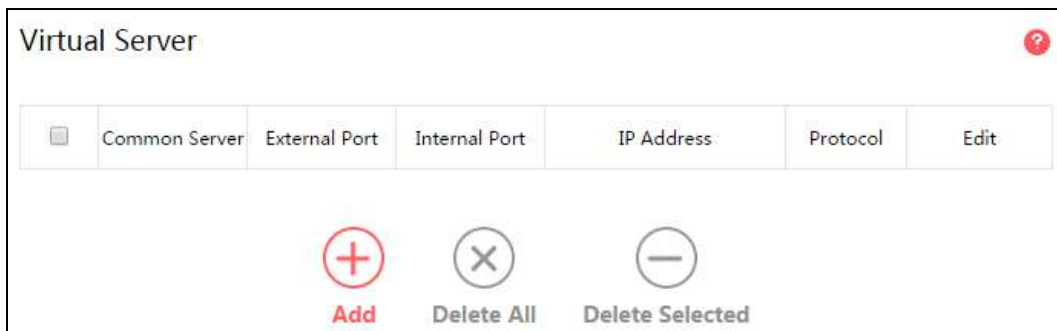
## 5.5 Advanced Users



There are six submenus under the Forwarding menu: **Virtual Server**, **DMZ Server**, **UPnP Settings**, **Advanced Routing**, **Dynamic DNS** and **NAT Boost**. Click any of them, and you will be able to configure the corresponding function.

### 5.5.1 Virtual Server

Go to **Advanced Users**→**Virtual Server**, and then you can view and add virtual server on the page. Virtual server can be used for setting up public services on your LAN.



- **Common Server** - Some common services already exist in the drop-down list.
- **External Port** - The numbers of External Service Ports. You can enter a service port or a range of service ports (the format is XXX - YYY; XXX is the Start port and YYY is the End port).
- **Internal Port** - The Internal Service Port number of the PC running the service application. You can leave it blank if the **Internal Port** is the same as the **External Port**, or enter a specific port number when **External Port** is a single one.
- **IP Address** - The IP address of the PC running the service application.
- **Protocol** - The protocol used for this application, either **All** (all protocols supported by the router), **TCP** or **UDP**.
- **Edit** - Here you can edit an existing entry.
- **Add** - Click to add a new rule entry.

- **Delete All** - Click to delete all the entries in the table.
- **Delete Selected** - Click to delete selected entries in the table.

**To set up a virtual server entry:**

1. Click **Add**.


<input type="checkbox"/>	Common Server	External Port	Internal Port	IP Address	Protocol	Edit
	Select ▼	<input type="text"/>	<input type="text"/>	<input type="text"/>	ALL ▼	Cancel Save

2. Select a service from drop-down list to automatically populate the appropriate port number in the **External Port** field. If the service that you want to use is not listed, enter the number of the service port or service port range in the **External Port** field.
3. Leave the **Internal Port** blank if it is the same as the External Port, or enter a specific port number if the External Port is a single port.
4. Enter the IP address of the computer running the service application in the **IP Address** field.
5. Select the protocol used for this application in the **Protocol** drop-down list, either **TCP**, **UDP**, or **All** (All protocols supported by the router).
6. Click **Save**.

**NOTE:**

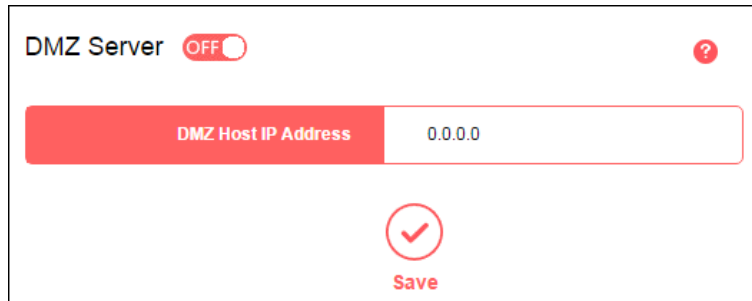
Please make sure the external port is different from the port used for local and remote management, or the virtual server may not be working properly.

**To modify an existing entry:**

1. Find the desired entry in the table.
2. Click  in the **Edit** column.
3. Click **Save** to make the settings effective.

## 5.5.2 DMZ Server

Go to **Advanced Users**→**DMZ Server**, and then you can view and configure DMZ host on the page. The DMZ host feature allows one local host to be exposed to the Internet for a special-purpose service such as Internet gaming or video conferencing.



DMZ Server  OFF

DMZ Host IP Address: 0.0.0.0

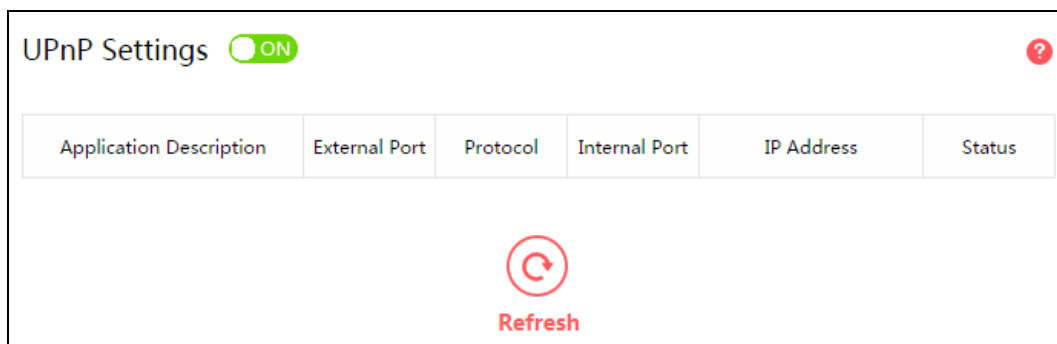
Save

**To assign a computer or server to be a DMZ server:**

1. Enter the IP address of a local PC that is set to be DMZ host in the **DMZ Host IP Address** field.
2. Click **Save**.
3. Toggle **On** to enable DMZ Server.

## 5.5.3 UPnP Settings

Go to **Advanced Users**→**UPnP Settings**, and then you can view the information about **UPnP**. The Universal Plug and Play (UPnP) feature allows the devices, such as Internet computers, to access the local host resources or devices as needed. UPnP devices can be automatically discovered by the UPnP service application on the LAN.



UPnP Settings  ON

Application Description	External Port	Protocol	Internal Port	IP Address	Status
Refresh					

- **Application Description** - The description about the application which initiates the UPnP request.
- **External Port** - The port which the router opened for the application.
- **Protocol** - The type of protocol which is opened.
- **Internal Port** - The port which the router opened for local host.
- **IP Address** - The IP address of the local host which initiates the UPnP request.
- **Status** - Displays the port is active or not.

- **Refresh** - Click to update the current UPnP settings list.

### 5.5.4 Advanced Routing

Go to **Advanced Users**→**Advanced Routing**, and then you can configure the static routing and view system routing list. Advanced routing is used to predetermine a fixed route for the network information packets to reach a specific host or network.

- **Static Routing**

<input type="checkbox"/>	Destination Address	Subnet Mask	Next Hop	Edit
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Cancel"/> <input type="button" value="Save"/>

**Add**    
  **Delete All**    
  **Delete Selected**

- **Destination Address** - The address of the network or host that you want to assign to a static route.
- **Subnet Mask** - The **Subnet Mask** determines which portion of an IP Address is the network portion, and which portion is the host portion.
- **Next Hop** - The IP Address of the gateway device that allows for contact between the router and the network or host.
- **Edit** - Here you can edit an existing entry.
- **Add** - Click to add a new rule entry.
- **Delete All** - Click to delete all the entries in the table.
- **Delete Selected** - Click to delete selected entries in the table.

**To add a static routing entry:**


1. Click **Add**.

<input type="checkbox"/>	Destination Address	Subnet Mask	Next Hop	Edit
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Cancel"/> <input type="button" value="Save"/>

2. Enter the parameters in the corresponding fields.
3. Click **Save** to make the settings effective.

- **System Routing List**

System Routing List			
Destination Address	Subnet Mask	Next Hop	Port
192.168.1.0	255.255.255.0	192.168.1.16	LAN/WLAN

  
 Refresh


- **Destination Address** - The address of the network or host to which the static route is assigned.
- **Subnet Mask** - The subnet mask determines which portion of an IP address is the network portion, and which portion is the host portion.
- **Next Hop** - The IP address of the gateway device that allows for contact between the router and the network or host.
- **Port** - Displays either the Destination IP Address is on the LAN/WLAN or on the WAN.

### 5.5.5 Dynamic DNS

Go to **Advanced Users**→**Dynamic DNS**, and you can configure the Dynamic DNS function.

Dynamic DNS ✖ Not launching ?

Service Provider	NO-IP ▼	<a href="#">Go to register...</a>
Dynamic DNS Client	Enable ▼	
Username	<input type="text"/>	
Password	<input type="password"/>	
Domain Name	<input type="text"/>	

  
 Save

- **Service Provider** - The Dynamic DNS service provider.
- **Dynamic DNS Client** – Select to enable or disable dynamic DNS client.
- **Username/Password** - Enter the username and password of your DDNS account.
- **Domain Name** - Enter the domain name provided by the DDNS service provider.

**To set up for Dynamic DNS, follow these steps:**

1. Select your service provider from the drop-down list.
2. Enable the Dynamic DNS client.
3. Enter the username and password of your DDNS account. If you do not have an account, click **Go to register...** to register an account.
4. Enter domain name you registered with the Dynamic DNS service provider.
5. Click **Save**.

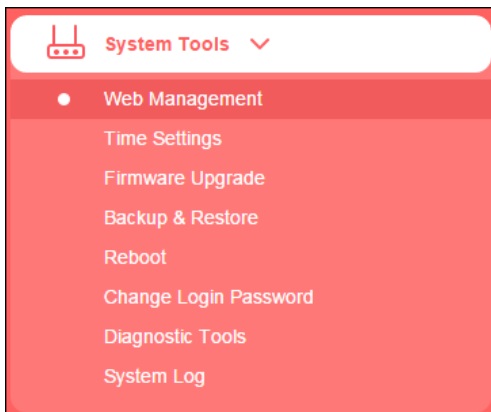
### 5.5.6 NAT Boost

Go to **Advanced Users**→**NAT Boost**, and you can configure the NAT Boost function.



**NAT Boost** - Click to enable or disable this function. It is recommended to enable NAT Boost to ensure that your router has the best throughput.

## 5.6 System Tools



There are eight submenus under the System Tools menu: **Web Management**, **Time Settings**, **Firmware Upgrade**, **Backup & Restore**, **Reboot**, **Change Login Password**, **Diagnostic Tools** and **System Log**. Click any of them to configure the corresponding function.

### 5.6.1 Web Management

Go to **System Tools**→**Web Management**, and then you can configure the management rule on the page.


The screenshot shows two sections: 'Local Management' and 'Remote Management'. In the 'Local Management' section, a dropdown menu is set to 'Allow all local devices.' Below it is a 'Save' button with a checkmark icon. In the 'Remote Management' section, a dropdown menu is set to 'Disable'. Below it is a 'Save' button with a checkmark icon.

- **Local Management**

To allow specific devices to access and manage the router locally, follow these steps:

1. Select **Allow specified local devices**.

The screenshot shows the 'Local Management' section with the dropdown set to 'Allow specified local devices.'. Below this are four input fields for MAC addresses, each containing '00-00-00-00-00-00'. At the bottom, there is a field for 'Current Computer's MAC Address' with the value '00-26-C7-61-0B-3C' and a '+' button. A 'Save' button with a checkmark icon is at the bottom.

2. Enter each MAC address in a separate field. You can click  to add your current PC's MAC address to the list above.
3. Click **Save**.

- **Remote Management**

To allow all devices to access and manage the router remotely, follow the steps below:

1. Select **Allow all remote devices**.



Remote Management

Remote Management: Allow all remote devices.

Port: 8888

Save

2. Enter the port number to be used to access the router between 1024 and 65535. The default value is 8888.

3. Click **Save**.

**To allow specified devices to access and manage the router remotely, follow the steps below:**

1. Select **Allow specified remote devices**.

Remote Management

Remote Management: Allow specified remote devices.

IP Address: 0.0.0.0

Port: 8888

Save

2. Enter the **IP Address** you will use when accessing your router from the Internet.

3. Enter the port number to be used to access the router between 1024 and 65535. The default value is 8888.

4. Click **Save**.

**NOTE:**

1. To access the router, you should type your router's WAN IP address into your browser's address field, followed by a colon and the custom port number (e.g. `http://202.96.12.8:8080`). After entering the correct password, you will be able to access the router's web management page.
2. Be sure to set a very secure password for the router.

## 5.6.2 Time Settings

Go to **System Tools**→**Time Settings**, and then you can Select the way in which the router gets its time on the following page: **Get from Internet, Get from Managing Device, Manually**.

**NOTE:**

Time Settings page is upgraded with the firmware **AC12G(EU)\_V1\_201012(Multi-language)**. It is available at <https://www.mercusys.com/en/download/ac12g#Firmware>.

**Get from Internet**

The screenshot shows the 'Time Settings' interface. At the top, the date is set to 2020-10-22 and the time is 15:13:22. Below this, there are four rows of settings:

- Set Time:** A dropdown menu with 'Get from Internet' selected.
- Time Zone:** A dropdown menu with '(GMT-08:00) Beijing, Chongqing, Urumchi, Ho...' selected.
- NTP Server I:** A text input field containing 'time.nist.gov'.
- NTP Server II:** A text input field containing 'time-nw.nist.gov'. To the right of this field is a small grey button labeled 'Optional'.

At the bottom center, there is a red circular icon with a white checkmark and the word 'Save' below it.

- **Time Zone** - Select your local time zone from this drop-down list.
- **NTP Server I** - In the NTP Server I field, enter the IP address or domain name of your desired NTP Server.
- **NTP Server II** - (Optional) In the NTP Server II field, enter the IP address or domain name of the second NTP Server

**Save** the settings.

**Get from Managing Device**

The screenshot shows the 'Time Settings' interface. At the top, the date is set to 2020-10-22 and the time is 15:14:02. Below this, there is one row of settings:

- Set Time:** A dropdown menu with 'Get from Managing Device' selected.

At the bottom center, there is a red circular icon with a white checkmark and the word 'Save' below it.

- **Date/Time** - The router automatically obtains Date and Time from the managing device.

**Save** the settings.

### Manually

Time Settings

Date 2020-10-22

Time 15:14:35

Set Time Manually

Date 2020-10-22

Time 15 : 13 : 16

Save

- **Date/Time** - Set the current **Date** (In YYYY-MM-DD format). Set the current Time (In HH/MM/SS format).

**Save** the settings.

#### **NOTE:**

This setting will be used for some time-based functions such as Parental Controls and Access Control. Please specify your time zone before you configure these functions.

### 5.6.3 Firmware Upgrade

Go to **System Tools**→**Firmware Upgrade**, and then you can update the latest version of firmware for the router on the page.

Firmware Upgrade

Select your upgrade file, then click Upgrade.

Hardware Version :

Firmware Version :

- **Hardware Version** - Displays the current hardware version. The version of the upgrade file must accord with the router's current hardware version.
- **Firmware Version** - Displays the current firmware version.

**To upgrade the router's firmware, follow the steps below:**

1. Download the latest firmware upgrade file from our website ([www.mercusys.com](http://www.mercusys.com)).
2. Click **Browse** to locate and select the downloaded firmware file.
3. Click **Upgrade**.
4. The router will reboot automatically after the upgrade.

**NOTE:**

To avoid any damage, it is important to keep router powered on during the entire process.

### 5.6.4 Backup & Restore

Go to **System Tools**→**Backup & Restore**, and then you can save the current configuration of the router as a backup file and restore the configuration via a backup.

Backup

Click to save a copy of your current settings.

Click **Backup** to save all configuration settings as a backup file to your local computer.

### Restore

Select a configuration file and click Restore.

**To upgrade the router's configuration, follow the steps below.**

1. Click **Browse** to locate and select the configuration file which you want to restore.
2. Click **Restore** to update the configuration with the file you have selected.

**NOTE:**

1. All current configurations will be lost once the router is restored.
2. To avoid any damage, keep the device powered on during the process
3. After the upgrade process is complete (about 20 seconds), the device will reboot automatically.

### Factory Default Restore

Click the button to restore all the settings to their default values.

**To restore the configurations of the router to factory defaults, follow the steps below.**

Click **Restore** to reset all configuration settings to their default values.

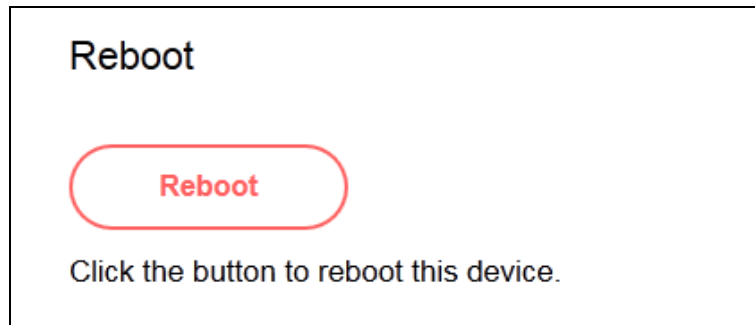
- The default **IP address**: 192.168.1.1
- The default **Subnet Mask**: 255.255.255.0

**NOTE:**

All your custom settings will be lost when defaults are restored.

### 5.6.5 Reboot

Go to **System Tools**→**Reboot**, and then you can click the **Reboot** button to reboot the router on the page.



Some settings of the router will take effect only after rebooting, which include:

- Upgrade the firmware of the router (system will reboot automatically).
- Restore the router's settings to factory defaults (system will reboot automatically).
- Update the configuration with the file (system will reboot automatically).

### 5.6.6 Change Login Password

Go to **System Tools**→**Change Login Password**, and then you can change the login username and password of the router on the page.

**To change the router's login password, follow the steps below.**

1. Enter the **Old Password** of the router.
2. Enter the **New Password**.
3. Enter the new password in the **Confirm New Password** field.
4. Click **Save**.

For subsequent logins, use the new password you have set.

### 5.6.7 Diagnostic Tools

Go to **System Tools**→**Diagnostic Tools**, and then you can test the Internet connection of your network via Ping or Tracert on the page.

### Diagnostic Tools

On this page, you can test the Internet connection of your network via Ping or Tracert.

Parameters Settings

Select  Ping  Tracert

IP Address/ Domain Name		
Ping Packet Number	4	(1-50)
Ping Packet Size	64	(4-1472 bytes)
Ping Timeout	800	(100-2000 milliseconds)
Tracert Max Hops	20	(1-30)

Diagnostic Results

The router is ready.

Start

- **Ping** - This diagnostic tool troubleshoots connectivity, reachability, and name resolution to a given host or gateway.
- **Tracert** - This diagnostic tool tests the performance of a connection.

**NOTE:**

You can use ping/tracert to test numeric IP address or domain name. If pinging/tracerting the IP address is successful, but pinging/tracerouting the domain name is not, you might have a name resolution problem. In this case, ensure that the specified domain name can be resolved by using Domain Name System (DNS) queries.

- **IP Address/Domain Name** - Enter the IP address or domain name of the PC whose connection you wish to diagnose.
- **Pings Packet Number** - Specifies the number of Echo Request messages sent. The default is 4.
- **Ping Packet Size** - Specifies the number of data bytes to be sent. The default is 64.
- **Ping Timeout** - Time to wait for a response, in milliseconds. The default is 800.
- **Tracert Max Hops** - Set the maximum number of hops (max TTL to be reached) in the path

to search for the target (destination). The default is 20.

Click **Start** to check the connectivity of the Internet.

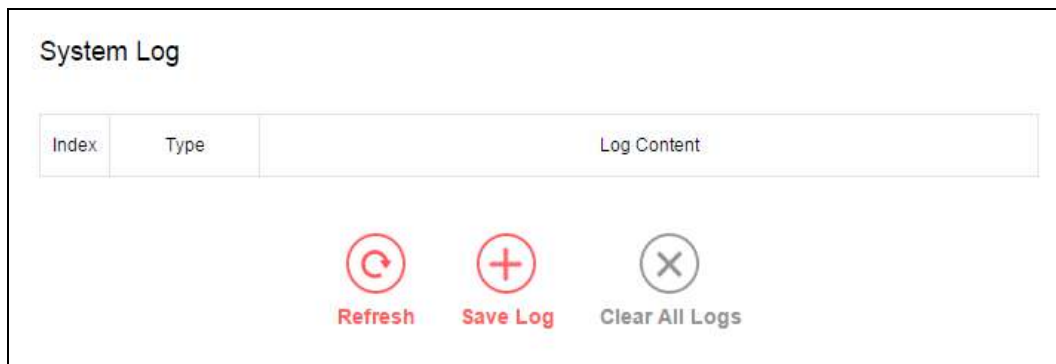
The **Diagnostic Results** page displays the result of diagnosis.

**NOTE:**

1. Only one user can use the diagnostic tools at one time.
2. Ping Packet Number, Ping Packet Size and Ping Timeout are Ping Parameters, and Tracert Max Hop is Tracert Parameter.

### 5.6.8 System Log

Go to **System Tools**→**System Log**, and then you can view the logs of the router.



- **Refresh** - Refresh the page to show the latest log list.
- **Save Log**- Click to save all the logs in a txt file.
- **Clear All Logs** - All the logs will be deleted from the router permanently, not just from the page.



## Chapter 6. Agile Config

Mercusys provides ISPs with Agile Config Tools to customize the default settings of devices one at a time or in batches. The flexible settings include adding a logo, WAN connection type, SSID, password, time zone, language, and more.

Agile Config consists of four major modules: **General Config**, **Specific Config**, **Logo Config** and **Favicon Config**. **General Config** upgrades the common settings of devices with the same HW&SW version to the default settings according to your requirements. **Specific Config** sets specific settings for each device according to its MAC address. **Logo Config** and **Favicon Config** can change the ISP logo and Favicon as you want.

Once the config process is completed, the settings will become the "new default." Even if you press the reset button, devices will return to the settings you configured. This allows Service Providers to quickly create a custom product and permanently save the settings on the device.

To learn more about Agile Config and download the tool, please visit <https://www.mercusys.com/en/support/isp>.

## Appendix A: Troubleshooting

### T1. What can I do if I forget my password?

- 1) For wireless password: By default, the wireless network has no password. If you have set password for the network, log in to the router's web management page, go to **Basic**→**Wireless** to obtain or reset your password.
- 2) For the web management page password: Refer to T2 to restore the router to its factory default settings and then create a new password when prompted.

### T2. How do I restore my router's configuration to its factory default settings?

There are two ways to reset the router.

Method one: With the router powered on, With the router powered on, press and hold the **RESET** button for at least 5 seconds until the LED starts blinking quickly, then release the button and wait the router to reboot to its factory default settings.

Method two: Visit <http://mwlogin.net>, go to **Advanced**→**System Tools**→**Backup & Restore**→**Factory Default Restore** to restore the router to its default settings.

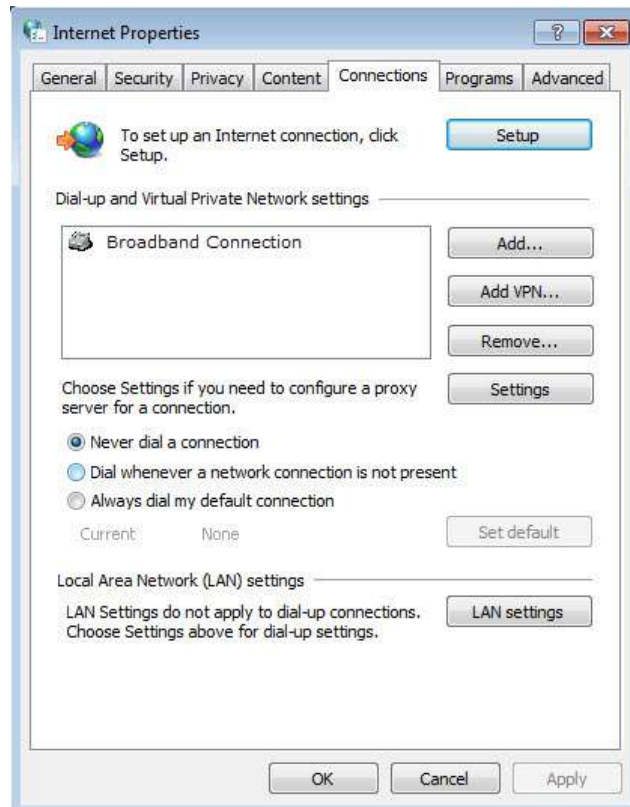
**NOTE:**

Once the router is reset, the current configuration settings will be lost and you will need to re-configure the router.

### T3. What can I do if I cannot log in to the router's web management page?

This can happen for a variety of reasons, please try the methods below.

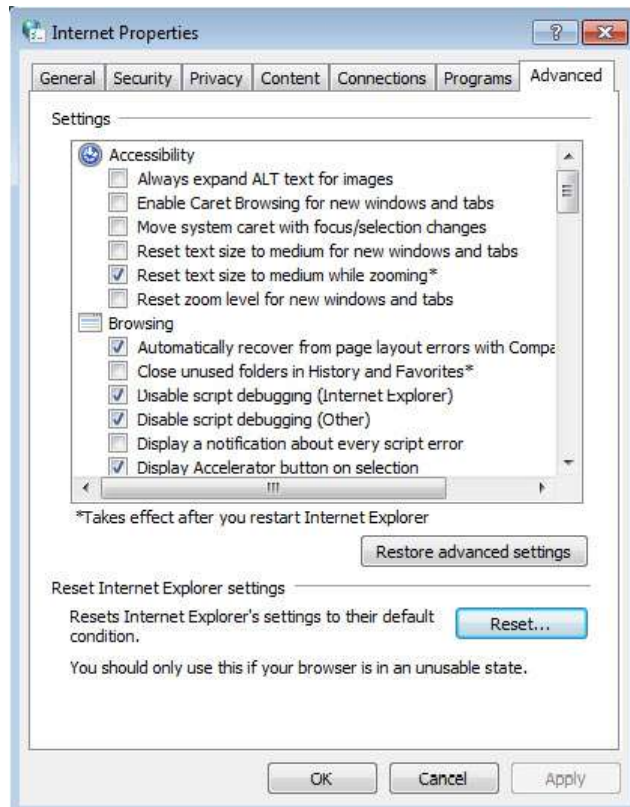
- Make sure the router connects to the computer correctly and the corresponding LED indicator(s) light up.
- Make sure the IP address of your computer is configured as Obtain an IP address automatically and Obtain DNS server address automatically.
- Make sure <http://mwlogin.net> is correctly entered.
- Check your computer's settings:
  - 1) Go to **Start**→**Control Panel**→**Network and Internet**, and click **View network status and tasks**;
  - 2) Click **Internet Options** on the bottom left;
  - 3) Click **Connections**, and select **Never dial a connection**;



4) Click **LAN settings**, deselect the following three options and click **OK**;



5) Go to **Advanced**→**Restore advanced settings**, and click **OK** to save the settings.



- Change a web browser or computer and log in again.
- Reset the router to factory default settings.

Note: You'll need to reconfigure the router to surf the Internet once the router is reset.

#### T4. What can I do if I cannot access the Internet?

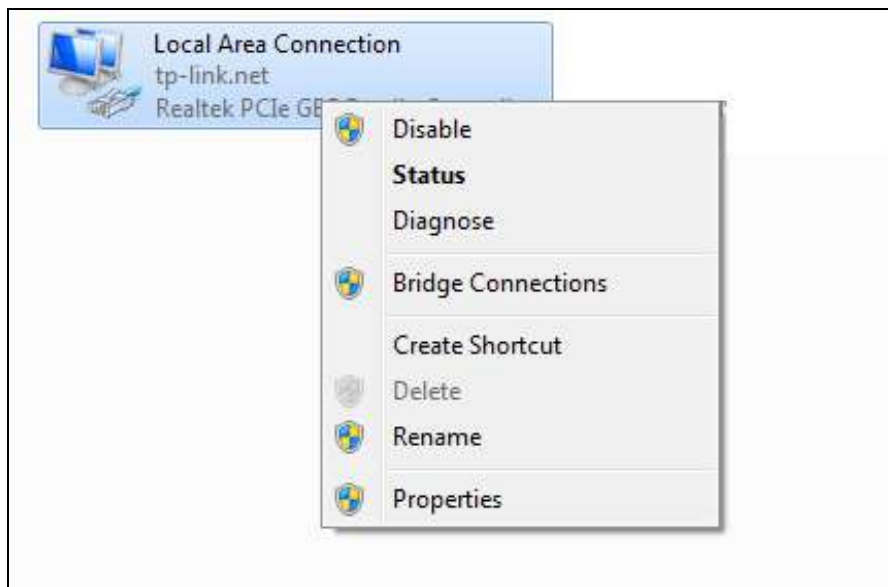
- 1) Make sure the router connects to the computer correctly and the corresponding LED indicator(s) light up.
- 2) Check to see if you can log in to the web management page of the router. If you can, try the following steps. If you cannot, please set your computer by referring to **T3** and then try to see if you can access the Internet. If the problem persists, please go to the next step.
- 3) Make sure you have selected the proper WAN Connection Type and entered the parameters correctly.
- 4) Go to **Advanced**→**Network**→**MAC Address Settings** to clone the MAC address.
- 5) If you still cannot access the Internet, please restore your router to its factory default settings and reconfigure your router by following the instructions in [Chapter 3 Quick Installation Guide](#).
- 6) Please feel free to contact our [Technical Support](#) if the problem still exists.

## Appendix B: Configuring the PC

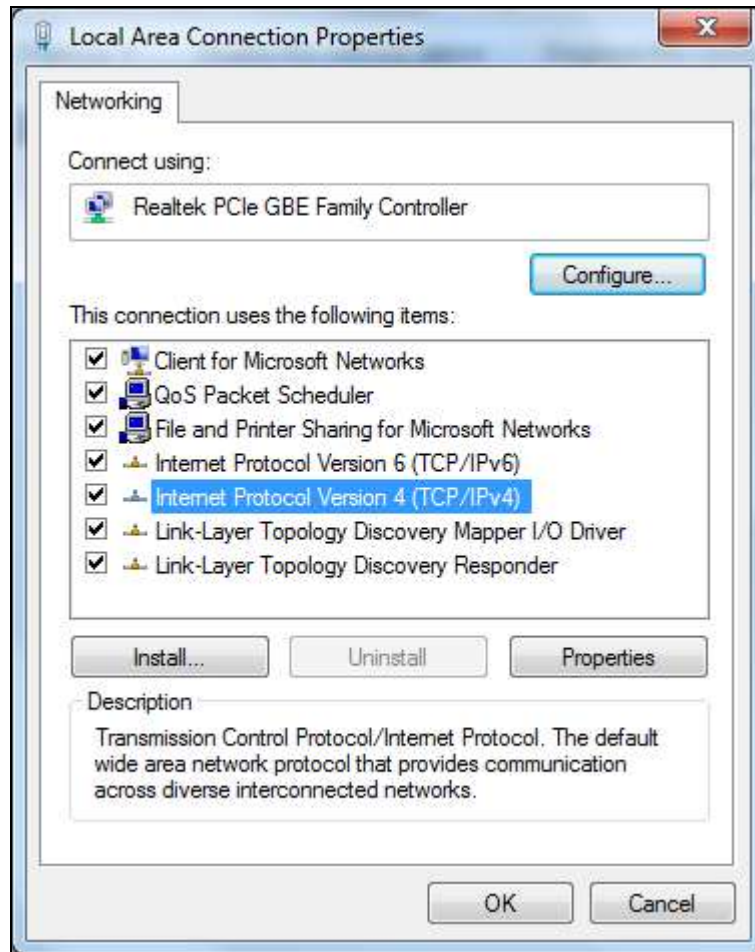
In this section, we'll introduce how to install and configure the TCP/IP correctly in Windows 7. First make sure your Ethernet Adapter is working, refer to the adapter's manual if needed.

### 1. Install TCP/IP component

- 1) On the Windows taskbar, click **Start** button, and then click **Control Panel**.
- 2) Click the **Network and Internet**, and click the **Network and Sharing Center**, then click **Change adapter settings**.
- 3) Right click the icon that showed below, select **Properties** on the prompt page.



- 4) In the prompt page that showed below, double click on the **Internet Protocol Version 4 (TCP/IPv4)**.

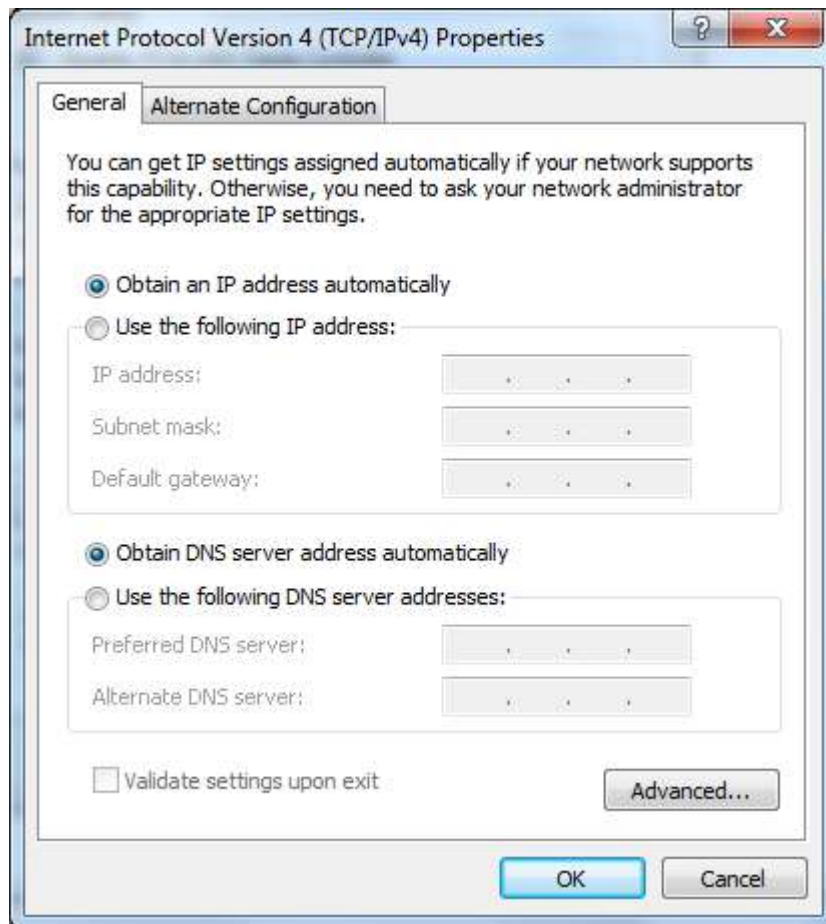


- 5) The following **TCP/IP Properties** window will display and the **IP Address** tab is open on this window by default.

Now you have two ways to configure the **TCP/IP** protocol below:

- **Setting IP address automatically**

Select **Obtain an IP address automatically**, Choose **Obtain DNS server automatically**, as shown in the Figure below:



- **Setting IP address manually**

- 1 Select **Use the following IP address** radio button. And the following items available
- 2 If the router's LAN IP address is 192.168.1.1, specify the IP address as 192.168.1.x (x is from 2 to 254), and **Subnet mask** is 255.255.255.0.
- 3 Enter the router's LAN IP address (the default IP is 192.168.1.1) in the **Default gateway** field.
- 4 Select **Use the following DNS server addresses** radio button. In the **Preferred DNS Server** field you can type the DNS server IP address, which has been provided by your ISP

