

300Mbps Wireless Broadband Router

BR-6428nS User Manual

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CHAPTER I: PRODUCT INFORMATION

1-1 Introduction and Safety Information

Thank you for purchasing the Edimax BR-6428nS Wireless Broadband Router! This router is the ideal choice for anyone who wants high performance at a very affordable price. With the Edimax BR-6428nS Wireless Broadband Router, all your computers and network devices can share a single, high-speed xDSL/cable Internet connection. Its easy installation procedure also allows any computer user to set up a network environment in a matter of minutes.

With built-in IEEE 802.11b/g/n wireless network capability, all your computers and wireless-enabled network devices (PDAs, cell phones, game consoles, etc.) can be connected to this broadband router without additional cabling. Its IEEE 802.11n capability also allows you to enjoy the fastest wireless experience ever! With a compatible wireless card installed, your PC can transfer files at up to 300Mbps!

The Edimax BR-6428nS Wireless Broadband Router makes setting up wireless security a breeze. With the WPS (Wi-Fi Protected Setup) function, you can set up wireless security in just seconds! Just press the WPS button on WPS-compatible wireless devices and you will have a secure wireless connection in no time.

Other features:

- High throughput Internet access
- Supports up to 253 users
- 4 LAN ports (10/100M) and 1 WAN port (10/100M)
- IEEE 802.11b/g/n WLAN capable
- Supports WISP mode
- Supports DHCP (server/client) for easy client IP-address setup
- Advanced network and security features like DMZ, virtual servers, access control, firewall, and other special applications
- Allows you to monitor the DHCP client log, system log, security log, and device/connection status
- Easy-to-use, web-based GUI for network configuration and management
- Remote management
- Auto-MDI/MDI-X function

1-2 Safety Information

Please follow the following safety instructions to ensure your safety:

1. This router is designed for indoor use only. DO NOT place this router outdoors.
2. DO NOT put this router in or near hot or humid places like the kitchen, bathroom, or a car parked in the sun.
3. Disconnect any connected cables from the router before pulling the router with force.
4. If you want to hang this router on the wall or place it somewhere high, please make sure it is firmly secured. Edimax's warranty does not cover damages caused by misuse.
5. Please keep this router and its accessories out of the reach of children.
6. DO NOT put this router on paper, cloth, or other flammable materials.
7. DO NOT disassemble this router. Disassembling this router will invalidate the warranty. Please contact your dealer if you experience any problems.
8. If this router gets wet or falls into water when it is powered, DO NOT touch it with your bare hands. Disconnect the power plug from the wall socket immediately, or contact an experienced technician for help.
9. Should your router or power supply overheat and burn out, switch the electrical power off or disconnect the power plug from the wall socket immediately, and call your dealer for help.

1-3 System Requirements

- Internet connection via an xDSL or cable modem with an RJ-45 Ethernet port
- Computer or network devices with a wired or wireless network interface card
- Web browser (Microsoft Internet Explorer, Mozilla Firefox, Opera, or Safari)
- An available AC power socket (100-240V, 50/60Hz)

1-4 Package Contents


Before you start using this router, please check if there is anything missing in the package, and contact your dealer to claim the missing item(s):

- BR-6428nS broadband router (1 pcs)
- Quick installation guide (1 pcs)
- CDROM with multi-language setup wizard, multi-language quick installation guide, and user manual (1pcs)
- 5V 1A power adapter (1 pcs)
- Ethernet cable (1 pcs)

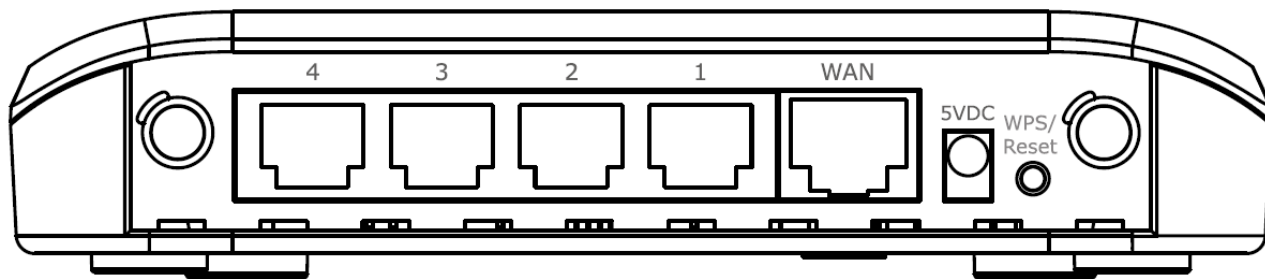
1-5 Getting familiar with your new wireless broadband router

Front Panel



LED Name	Light Status	Description
PWR 	On	Router switched on and correctly powered
	Off	Router not powered (or not correctly powered)
WLAN	On	Wireless connectivity activated
	Off	Wireless connectivity not activated
	Flashing	Wireless LAN activity (transferring data) or WPS mode activated (LED flashes once every second)
WAN	On	WAN port connected
	Off	WAN port not connected
	Flashing	WAN activity (transferring data)
1-4 (LAN)	On	LAN port connected
	Off	LAN port not connected
	Flashing	LAN activity (transferring data)

Back Panel



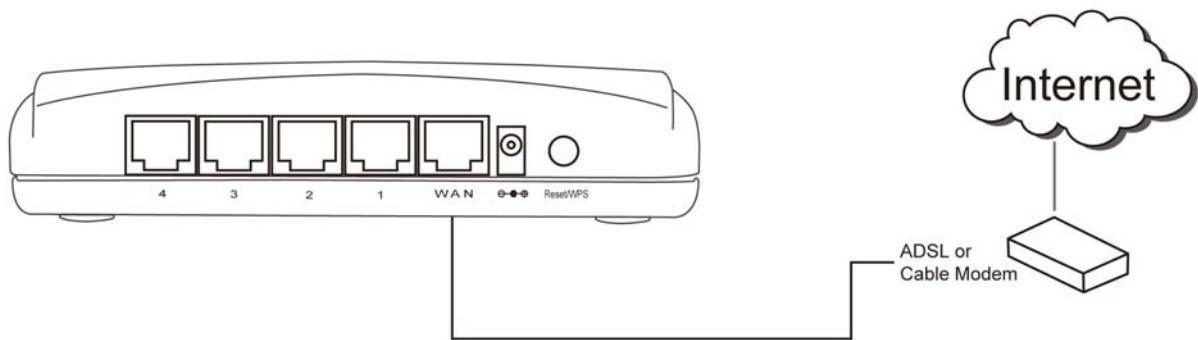
Item Name	Description
Antenna	Wireless antenna
1-4 (Yellow)	Local Area Network (LAN) ports 1 to 4
WAN (Blue)	Wide Area Network (WAN/Internet) port
5VDC	Power connector (connects to power adapter)
WPS/Reset	Resets the router to factory default settings or starts WPS function (press this button and hold for 20 seconds to clear all settings or press this button for 2~5 seconds to activate WPS function)

CHAPTER II: SYSTEM AND NETWORK SETUP

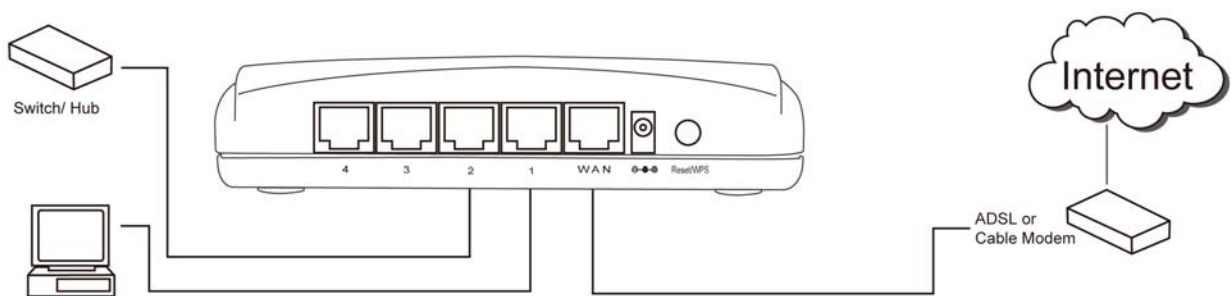
2-1 Establishing a network connection

Please follow the following instructions to build a network connection between your new broadband router, computers, and other network devices:

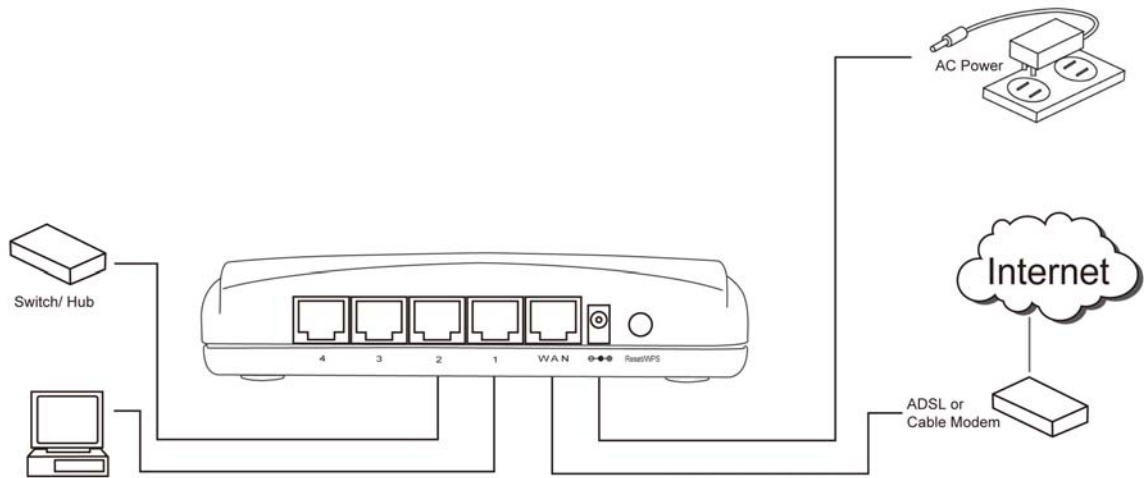
1. Connect your xDSL or cable modem to the “WAN” port with an Ethernet cable.



2. Connect all your computers and network devices (network-enabled consumer devices like game consoles or switches/hubs) to the “LAN” ports (1 to 4).



3. Connect the power adapter to the wall socket, and then to the “5VDC” socket on the back panel of the router.



4. Please check all the LEDs on the front panel. The “PWR” and “WAN” LEDs should be on. The “LAN” LEDs should be on if the computer or network device is connected and correctly powered. If you encounter any problems, please make sure that all your devices are connected and powered correctly.
5. For a better wireless signal, please arrange the antennas so that they are perpendicular to the ground and place the wireless router in an open space. Please also keep the antennas appropriately apart, for signal interference will cause a degradation of wireless performance when the antennas are placed too close to each other.

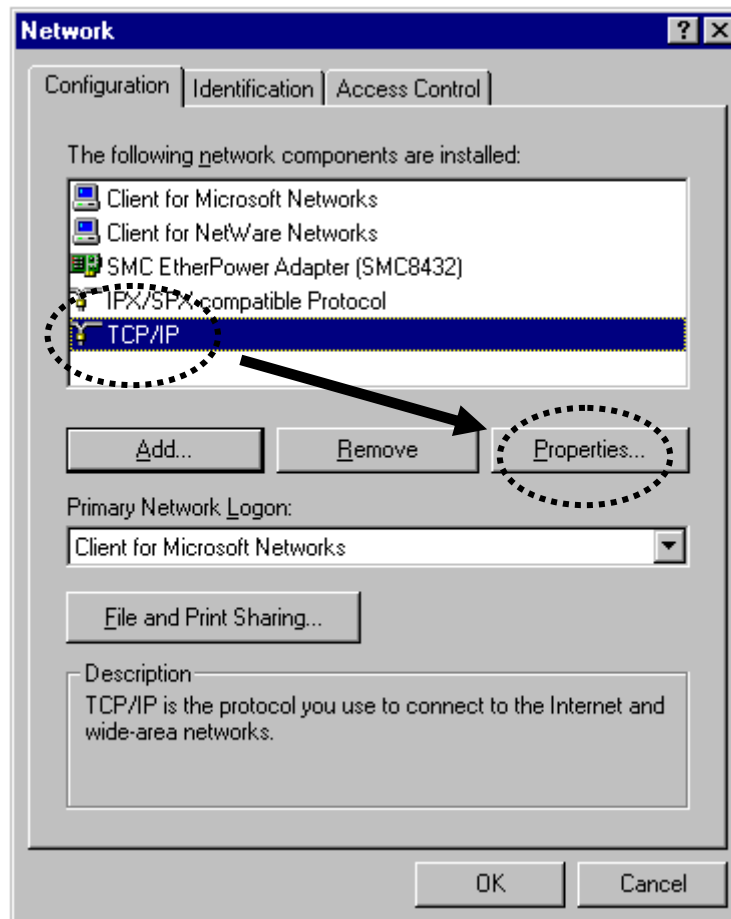
2-2 Setting client computers to obtain IP addresses automatically

Before you start configuration procedures, your computer must be able to get an IP address automatically (set to use dynamic IP addresses). If your computer is set to use a static IP address, or if you are unsure, please follow the following instructions to configure your computer to use dynamic IP addresses:

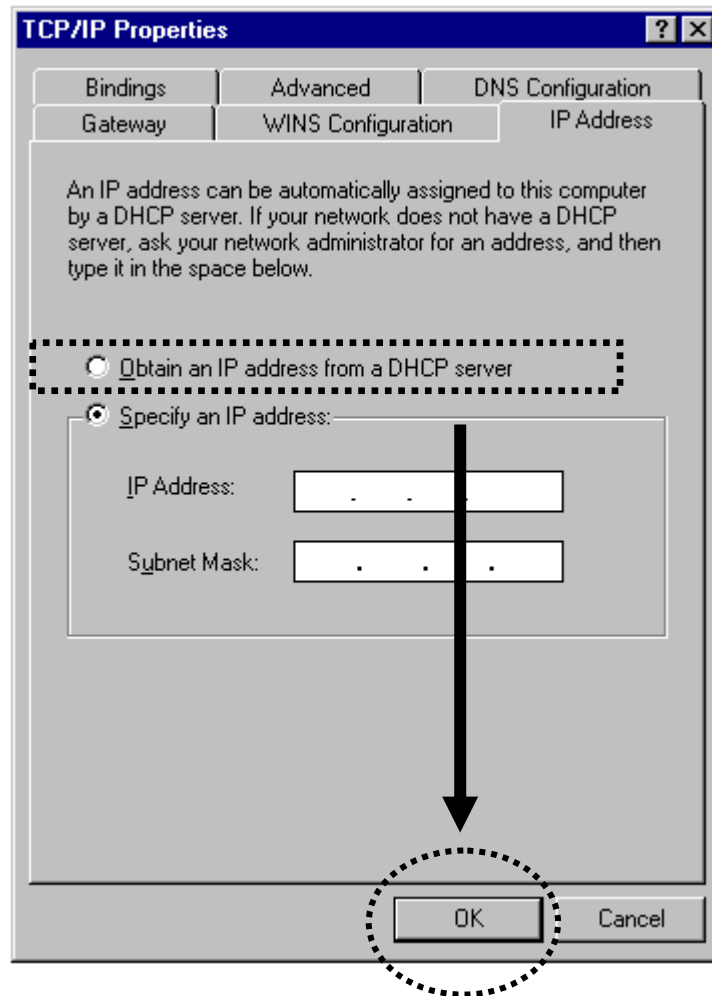
- Windows 95/98/Me (see section 2-2-1)
- Windows 2000 (see section 2-2-2)
- Windows XP (see section 2-2-3)
- Windows Vista (see section 2-2-4)

2-2-1 Windows 95/98/Me IP address setup

1. Click the “Start” button (it should be located at the lower-left corner of your screen), then click “Control Panel”. Double-click the “Network” icon, and the “Network” window will appear. Select “TCP/IP”, and then click “Properties”.

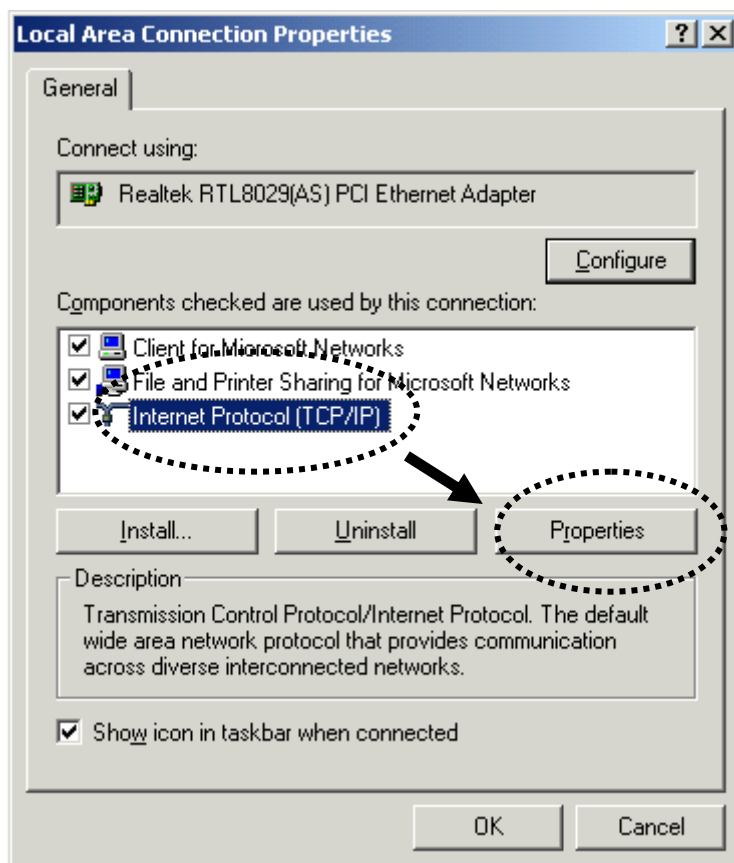


2. Select “Obtain an IP address from a DHCP server”, then click “OK”.

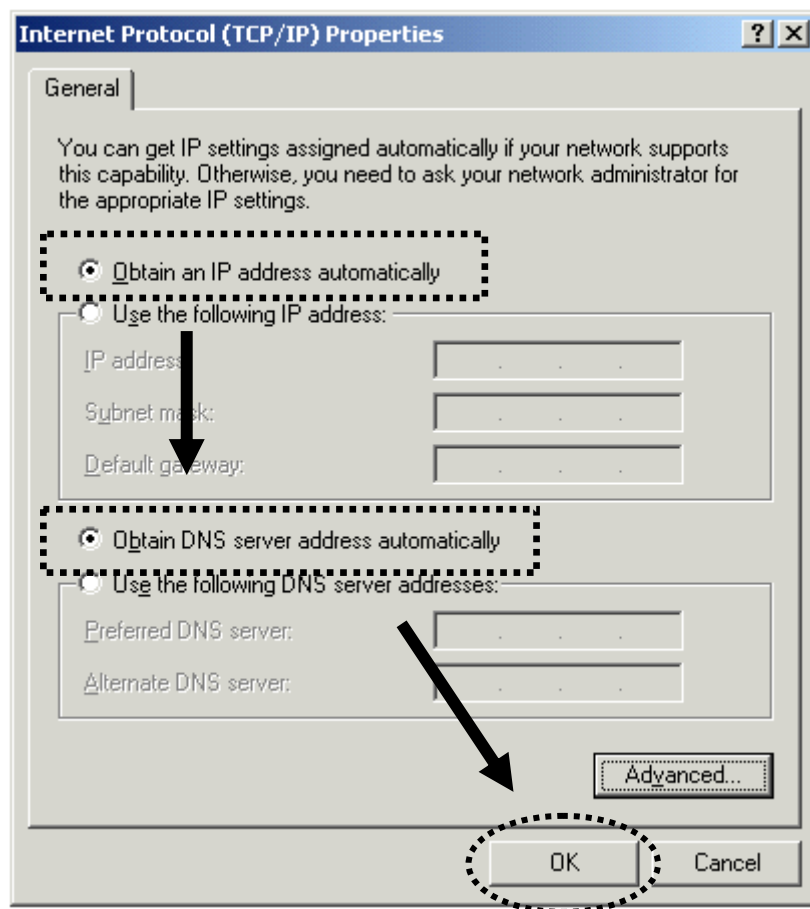


2-2-2 Windows 2000 IP address setup

1. Click the “Start” button (it should be located at the lower-left corner of your screen), then click “Control Panel”. Double-click the “Network and Dial-up Connections” icon, and then double-click “Local Area Connection”. When the “Local Area Connection Properties” window appears, select “Internet Protocol (TCP/IP)”, and then click “Properties”.

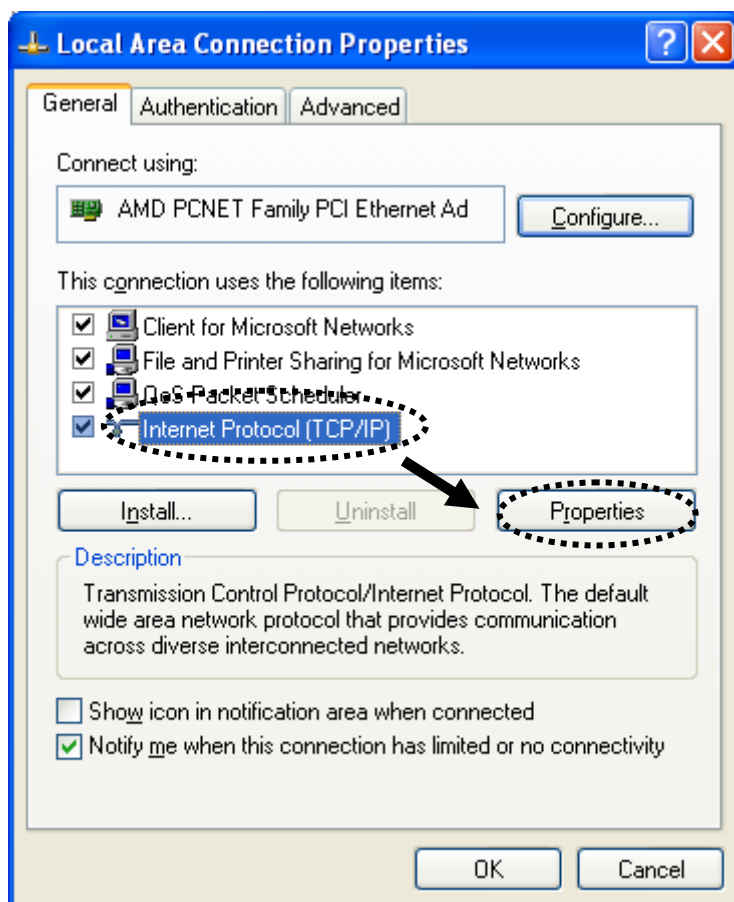


2. Select “Obtain an IP address automatically” and “Obtain DNS server address automatically”, then click “OK”.

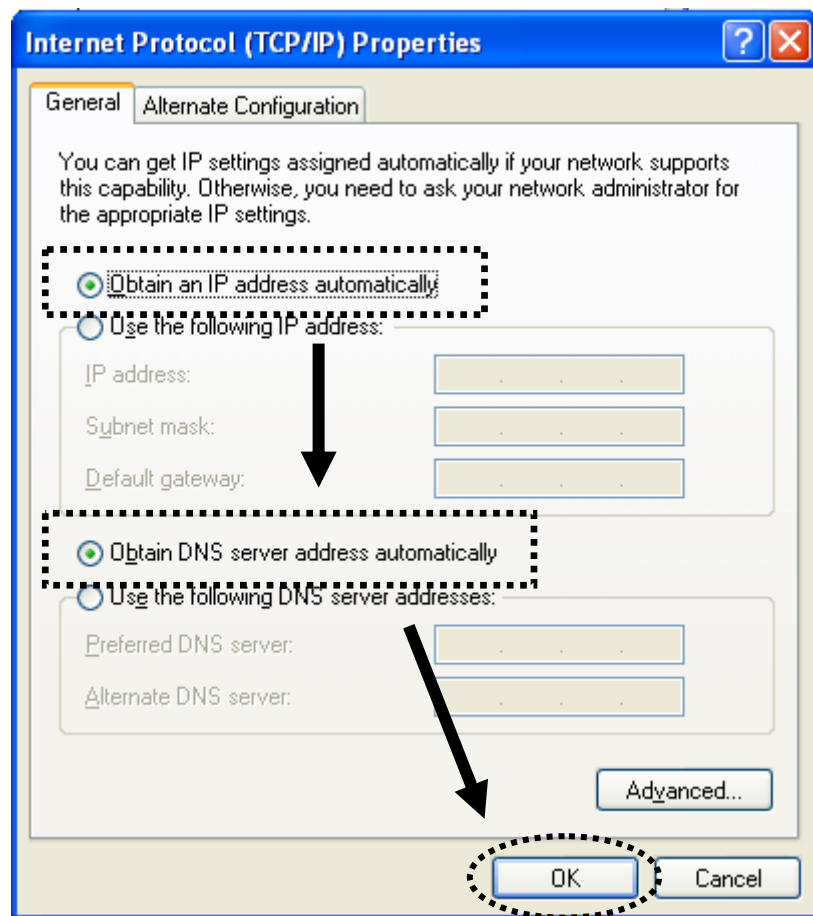


2-2-3 Windows XP IP address setup

1. Click the “Start” button (it should be located at the lower-left corner of your screen), then click “Control Panel”. Double-click the “Network and Internet Connections” icon, click “Network Connections”, then double-click “Local Area Connection”. When the “Local Area Connection Properties” window appears, click “Properties”.

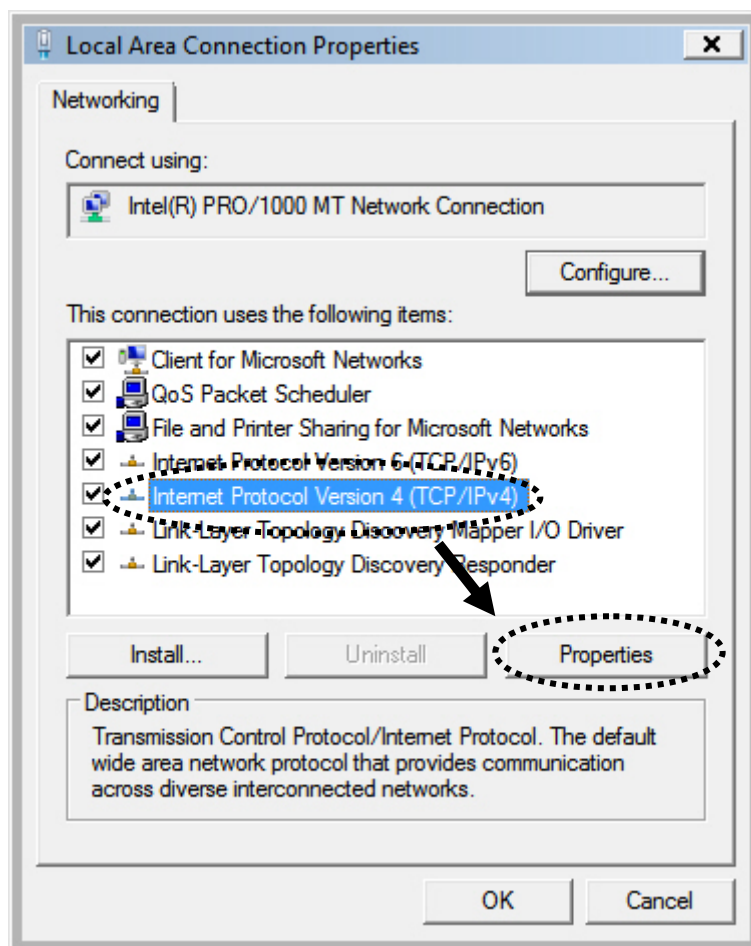


2. Select “Obtain an IP address automatically” and “Obtain DNS server address automatically”, then click “OK”.

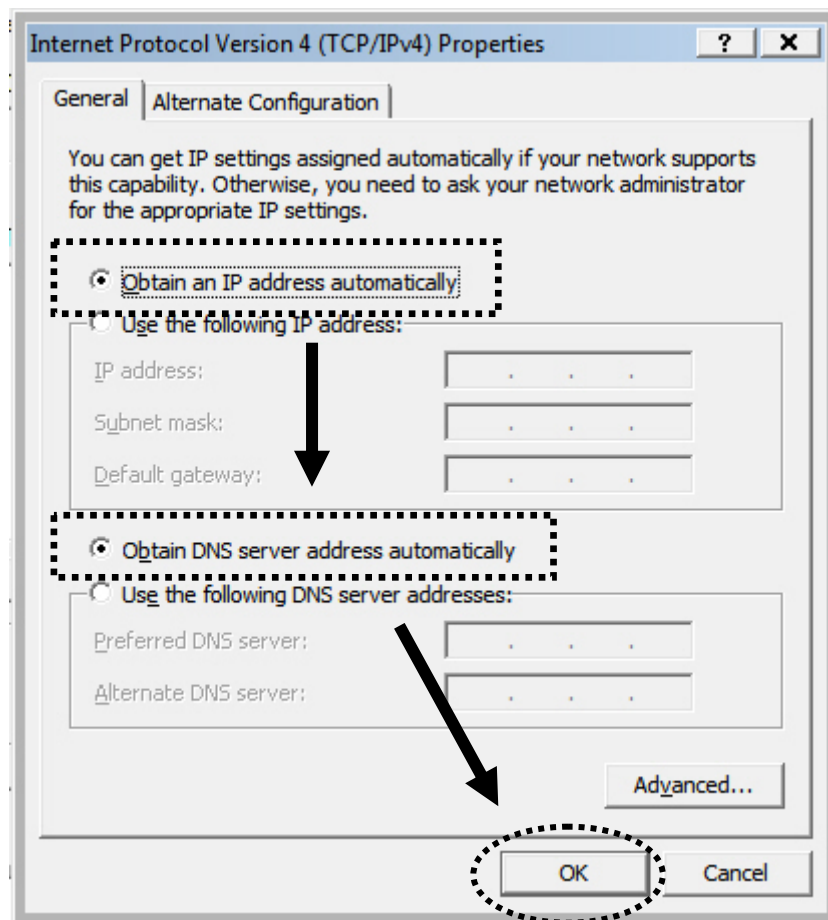


2-2-4 Windows Vista IP address setup

1. Click the “Start” button (it should be located at the lower-left corner of your screen), then click “Control Panel”. Click “View Network Status and Tasks”, and then click “Manage Network Connections”. Right-click “Local Area Network”, then select “Properties”. When the “Local Area Connection Properties” window appears, select “Internet Protocol Version 4 (TCP/IPv4)” and then click “Properties”.



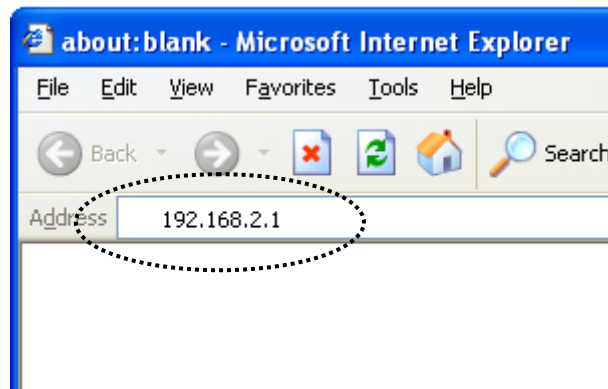
2. Select “Obtain an IP address automatically” and “Obtain DNS server address automatically”, then click “OK”.



2-3 Connecting to broadband router via web browser

You can access the broadband router's web-based configuration interface via any connected computer with a web browser (Internet Explorer 5.x or above, Firefox, Opera, or Safari).

1. Please input "192.168.2.1" in the web browser's address bar and press "Enter".



2. You should see the following authentication window.



NOTE: If you cannot access the broadband router's web-based configuration interface, the IP address you have inputted may be incorrect. If you have previously changed the router's IP address, please input the one you have designated.

3. Please input "admin" in the "User name" field and "1234" in the "Password" field. Click the "OK" button to enter the web configuration interface.
4. The first page you see after logging in is "Home".

- **Quick Setup**

- **General Setup**

- **Status**

- **Tools**

Quick Setup

The Quick Setup provides only the necessary configurations to connect your Wireless Router to your Internet Service Provider (ISP) through an external cable or a DSL modem.

General Setup

The Wireless Router supports advanced functions like Virtual Server, Access Control, Hacker Attack Detection and DMZ. We highly recommend you keep the default settings.

Status

The Wireless Router's status information provides the following information about your Wireless Router: Hardware/Firmware version, Serial Number, and its current operating status.

Tools

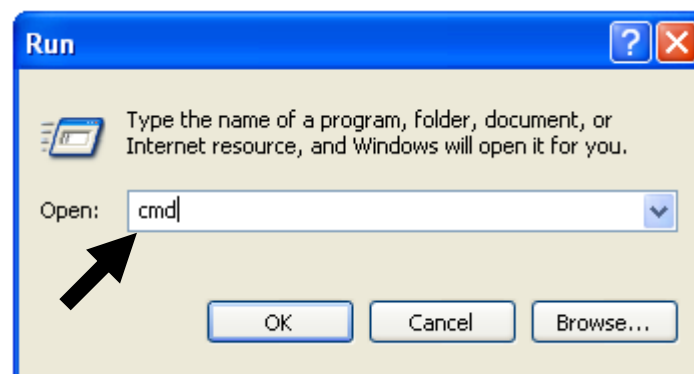
Wireless Router Tools - Tools include Configuration tools, Firmware upgrade and Reset. Configuration tools allow you to Backup, Restore, or Restore to Factory Default setting for your Wireless Router. The Firmware upgrade tool allows you to upgrade your Wireless Router's firmware. The RESET tool allows you to reset your Wireless Router.

If this router's DHCP server function is enabled, please follow the following instructions to find this router's IP address:

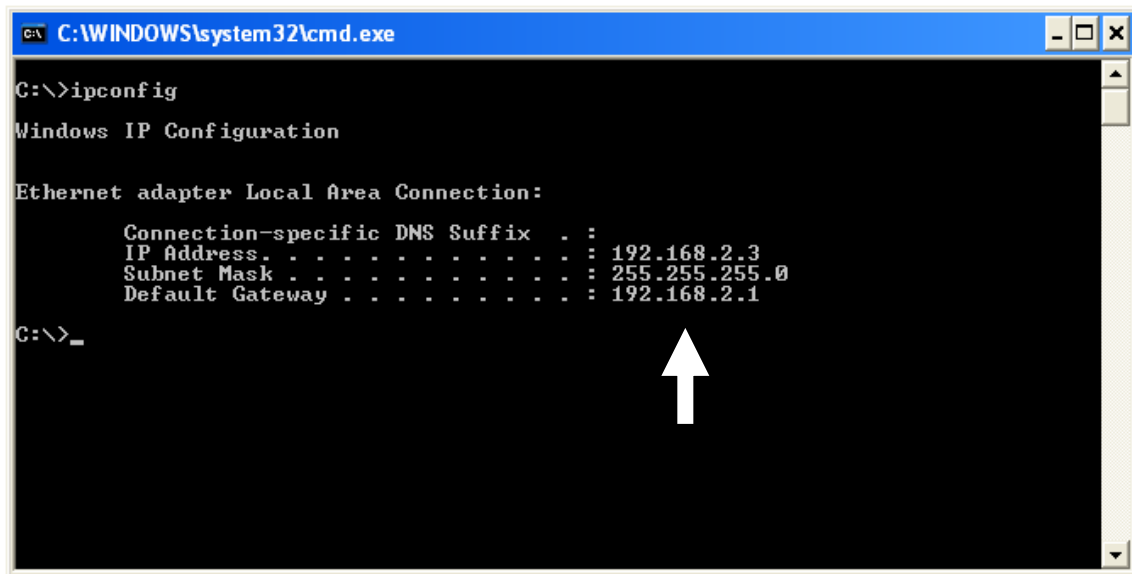
1. Click the "Start" button, and then click "Run".



2. Input "cmd", and then click "OK".



3. Input "ipconfig", and then press "Enter". Use the IP address following "Default Gateway" to access this router's web-based configuration interface. Please note that the IP address you find may be different from this illustrated example.



```
C:\WINDOWS\system32\cmd.exe
C:\>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.2.3
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.2.1

C:\>_
```

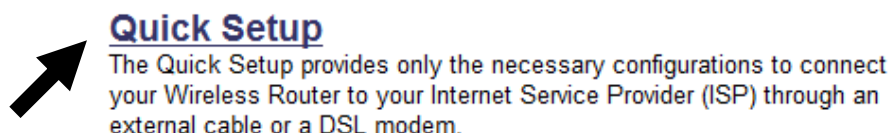
NOTE: If there is no IP address following "Default Gateway", or if the address following "IP Address" begins with "169", please try the following procedures:

- Recheck the cable connection between the computer and the router.
- Go to the beginning of this chapter and recheck every step of the setup procedure.
- If both of the above fails, reset the broadband router.

2-4 Using “Quick Setup”

This broadband router’s “Quick Setup” allows you to set up basic parameters in a few simple steps. The following instructions illustrate how to use the “Quick Setup” menu:

1. Click “Quick Setup” after logging in.



2. Configure automatic time synchronization settings, and then click “Next”.

Time Zone

Set the time zone of the Wireless Router. This information is used for log entries and firewall settings.

Time Zone :	(GMT+00:00)Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London ▾
Time Server Address :	192.43.244.18
Daylight Savings :	<input type="checkbox"/> Enable Time From January ▾ 1 ▾ To January ▾ 1 ▾

NEXT

Item Name	Description
Set Time Zone	Please select the time zone of your country or region. If you cannot find your country/region, please select another country/region whose time zone is the same as yours.
Time Server Address	This router supports NTP (Network Time Protocol) for automatic time and date setup. Input the host name or IP address of the NTP server here. If you do not know the host name, please ask the network administrator or use “pool.ntp.org”.
Daylight Saving	If your country/region uses daylight saving time, please check the “Enable Function” box, and select the start and end date.

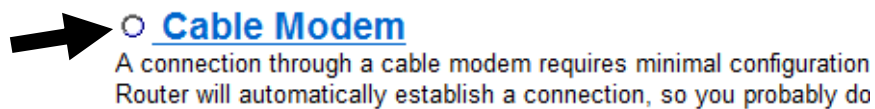
3. Choose your Internet connection type. Refer to the following list for further instructions:

- Cable Modem (See section 2-4-1)
- Fixed-IP xDSL (See section 2-4-2)
- PPPoE xDSL (See section 2-4-3)
- PPTP xDSL (See section 2-4-4)
- L2TP xDSL (See section 2-4-5)
- Telstra Big Pond (See section 2-4-6)

NOTE: If you are not sure which your Internet connection type is, please contact your Internet service provider.

2-4-1 Using “Cable Modem” as broadband connection type

1. If your ISP is providing you Internet access via a cable modem, select “Cable Modem”.



Item Name	Description
Host Name	Input the host name of your computer here. This is optional and only required if your ISP asks you to do so.
MAC Address	If your ISP only permits computers with certain MAC addresses to access the Internet, input your computer's MAC address here. Press “Clone Mac address” to fill the MAC address field with your computer's MAC address automatically.

2. Click “OK” to complete setup.
3. When the following message appears, click “Apply” to save the changes and restart the broadband router. The router will take about 30 seconds to restart.

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

2-4-2 Using “Fixed-IP xDSL” as broadband connection type

1. If your ISP is providing you Internet access via a fixed IP address, select “Fixed-IP xDSL”. Generally, your ISP will provide you with such information as IP address, subnet mask, gateway address, and DNS address.



Fixed-IP xDSL

Some xDSL Internet Service Providers may assign a Fixed IP , and enter the assigned IP Address, Subnet Mask, Gateway IP

Item Name	Description
IP Address	Input the IP address assigned by your ISP here.
Subnet Mask	Input the subnet mask assigned by your ISP here.
DNS Address	Input the DNS address assigned by your ISP here.
Default Gateway	Input the default gateway assigned by your ISP here. Some ISPs may call this “Default Route”.

NOTE: You must use the addresses provided by your ISP. Inputting incorrect values will cause malfunction.

2. Click “OK” to complete setup.
3. When the following message appears, click “Apply” to save the changes and restart the broadband router. The router will take about 30 seconds to restart.

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

2-4-3 Using “PPPoE xDSL” as broadband connection type

1. If your ISP is providing you Internet access via PPPoE (Point-to-Point Protocol over Ethernet), select “PPPoE xDSL”.



☒ **PPPoE xDSL**

If you connect to the Internet using an xDSL Modem and your ISP provides PPPoE connection. You must choose this option and enter the required information.

Item Name	Description
User Name	Input the user name assigned by your ISP here.
Password	Input the password assigned by your ISP here.
Service Name	Give this Internet service a name (optional).
MTU	Input the MTU value of your network connection here. If you do not know, use the default value.
Connection Type	Please specify a connection type here. There are 3 options: 1. “Continuous” keeps the Internet connection alive all the time. 2. “Connect on Demand” only connects to the Internet when you initiate Internet connection. 3. “Manual” connects to the Internet only when the “Connect” button on this page is clicked, and disconnects when the “Disconnect” button is clicked.
Idle Time Out	Specify the amount of time the router waits before shutting down an idle connection. This option is only available when “Connect on Demand” is selected.

2. Click “OK” to complete setup.
3. When the following message appears, click “Apply” to save the changes and restart the broadband router. The router will take about 30 seconds to restart.

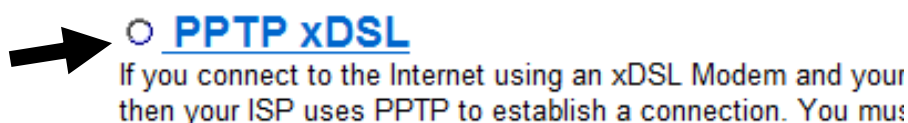
Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

2-4-4 Using “PPTP xDSL” as broadband connection type

1. Select “PPTP xDSL” if your ISP is providing you Internet access via PPTP (Point-to-Point Tunneling Protocol).



2. If your ISP is providing you dynamic IP addresses, select “Obtain an IP address automatically” (refer to 2-4-1 for setup details). If your ISP is providing you a static IP address, select “Use the following IP address” (refer to 2-4-2 for setup details).

• **WAN Interface Settings**

☒ Obtain an IP Address Automatically

Host Name :	
MAC Address :	000000000000 <input type="button" value="Clone MAC"/>

☐ Use The Following IP Address

IP Address :	0.0.0.0
Subnet Mask :	0.0.0.0
Default Gateway :	0.0.0.0

NOTE: These settings must be configured according to your Internet service. Please contact your Internet service provider if you are not sure what to select.

3. Configure the “PPTP Settings” section.

• **PPTP Settings**

User Name :	
Password :	
PPTP Gateway :	0.0.0.0
Connection ID :	(Optional)
MTU :	1392 (512<=MTU<=1492)
BEZEQ-ISRAEL :	<input type="checkbox"/> Enable (For BEZEQ network in ISRAEL use only)
Connection Type :	Continuous <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	10 (1-1000 Minute)

Item Name	Description
User Name	Input the user name assigned by your ISP here.
Password	Input the password assigned by your ISP here.
PPTP Gateway	Input the PPTP gateway assigned by your ISP here.
Connection ID	Give this connection a name (optional).
MTU	Input the MTU value of your network connection here. If you do not know, use the default value.
BEZEQ-ISRAEL	Check the "Enable" box if you are in Israel and using BEZEQ network services.
Connection Type	<p>Please specify a connection type here. There are 3 options:</p> <ol style="list-style-type: none"> 1. "Continuous" keeps the Internet connection alive all the time. 2. "Connect on Demand" only connects to the Internet when you initiate Internet connection. 3. "Manual" connects to the Internet only when the "Connect" button on this page is clicked, and disconnects when the "Disconnect" button is clicked.
Idle Time Out	Specify the amount of time the router waits before shutting down an idle connection. This option is only available when "Connect on Demand" is selected.

4. Click "OK" to complete setup.
5. When the following message appears, click "Apply" to save the changes and restart the broadband router. The router will take about 30 seconds to restart.

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

2-4-5 Using “L2TP xDSL” as broadband connection type

1. Select “L2TP xDSL” if your ISP is providing you Internet access via L2TP (Layer-2 Tunneling Protocol).



☒ **L2TP xDSL**

Layer Two Tunneling Protocol is a common connection method used in xDSL connections.

2. If your ISP is providing you dynamic IP addresses, select “Obtain an IP address automatically” (refer to 2-4-1 for setup details). If your ISP is providing you a static IP address, select “Use the following IP address” (refer to 2-4-2 for setup details).

• WAN Interface Settings

☒ Obtain an IP Address Automatically

Host Name :	<input type="text"/>
MAC Address :	<input type="text" value="000000000000"/> <input type="button" value="Clone MAC"/>

☐ Use The Following IP Address

IP Address :	<input type="text" value="0.0.0.0"/>
Subnet Mask :	<input type="text" value="0.0.0.0"/>
Default Gateway :	<input type="text" value="0.0.0.0"/>

NOTE: These settings must be configured according to your Internet service. Please contact your Internet service provider if you are not sure what to select.

3. Configure the “L2TP Settings” section.

• L2TP Settings

User Name :	<input type="text"/>
Password :	<input type="password"/>
L2TP Gateway :	<input type="text"/>
MTU :	<input type="text" value="1392"/> (512<=MTU<=1492)
Connection Type :	<input type="text" value="Continuous"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000 Minute)

Item Name	Description
User Name	Input the user name assigned by your ISP here.
Password	Input the password assigned by your ISP here.
L2TP Gateway	Input the L2TP gateway assigned by your ISP here.
MTU	Input the MTU value of your network connection here. If you do not know, use the default value.
Connection Type	<p>Please specify a connection type here. There are 3 options:</p> <ol style="list-style-type: none"> 1. "Continuous" keeps the Internet connection alive all the time. 2. "Connect on Demand" only connects to the Internet when you initiate Internet connection. 3. "Manual" connects to the Internet only when the "Connect" button on this page is clicked, and disconnects when the "Disconnect" button is clicked.
Idle Time Out	Specify the amount of time the router waits before shutting down an idle connection. This option is only available when "Connect on Demand" is selected.

4. Click "OK" to complete setup.
5. When the following message appears, click "Apply" to save the changes and restart the broadband router. The router will take about 30 seconds to restart.

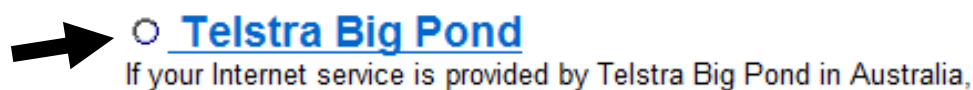
Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

2-4-6 Using “Telstra Big Pond” as broadband connection type

1. If you are using the Telstra Big Pond service in Australia, select “Telstra Big Pond”.

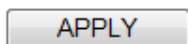


Item Name	Description
User Name	Please input the user name assigned by Telstra here.
Password	Please input the password assigned by Telstra here.
Assign login server manually	Check this box to assign a login server.
Login Server	Please input the IP address of the login server here.

2. Click “OK” to complete setup.
3. When the following message appears, click “Apply” to save the changes and restart the broadband router. The router will take about 30 seconds to restart.

Save settings successfully!

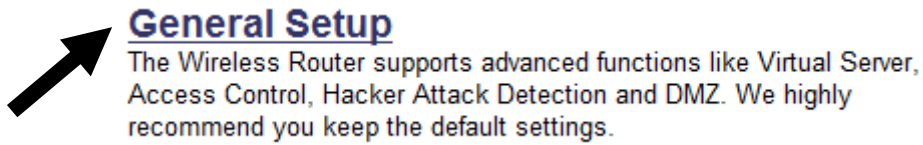
Please press APPLY button to restart the system to make the changes take effect.



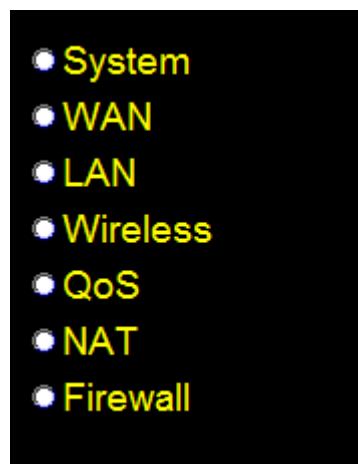
CHAPTER III: GENERAL SETUP

You can perform advanced configuration of this broadband router in “General Setup”.

1. Click “General Setup” after logging in.



2. All the setup items will appear under the “General Setup” tab.



3. Refer to the following list for further instructions:

- System (See section 3-1)
- WAN (See section 3-2)
- LAN (See section 3-3)
- Wireless (See section 3-4)
- QoS (See section 3-5)
- NAT (See section 3-6)
- Firewall (See section 3-7)

3-1 System

Basic system settings can be configured in the “System” menu.

3-1-1 Time Zone

Time Zone

Set the time zone of the Wireless Router. This information is used for log entries and firewall settings.

Time Zone :	(GMT+08:00)Taipei
Time Server Address :	192.43.244.18
Daylight Savings :	<input type="checkbox"/> Enable Time From January 1 To January 1

Item Name	Description
Time Zone	Please select the time zone of your country or region. If you cannot find your country/region, please select another country/region whose time zone is the same as yours.
Time Server Address	This router supports NTP (Network Time Protocol) for automatic time and date setup. Input the host name or IP address of the NTP server here. If you do not know the host name, please ask the network administrator or use “pool.ntp.org”.
Daylight Saving	If your country/region uses daylight saving time, please check the “Enable Function” box, and select the start and end date.

3-1-2 Password Settings

You can change the user interface password here. If you use the default password ("1234"), other people might be able to access the configuration interface without your permission.

Password Settings

You can change the password required while logging into the wireless router's web-based management interface. Change the password to the Administrator as soon as possible, and store it in a safe place. Passwords c:

Current Password :	<input type="password"/>	
New Password :	<input type="password"/>	
Confirm Password :	<input type="password"/>	

Item Name	Description
Current Password	Please input the current password here.
New Password	Please input the new password here.
Confirmed Password	Please input the new password again for confirmation.

Click "Apply" to save the changes, or click "Cancel" to keep the current password. If you change the password, you need to use the new password the next time you log in.

3-1-3 Remote Management

If you need to manage this broadband router outside of your local area network, you can assign a remote IP address, so you can access this broadband router's user interface from the Internet. You can also disable this function to improve security.

Remote Management

The remote management function allows you to designate a host in the Internet to have man
Enter the designated host IP Address in the Host IP Address field.

Host Address	Port	Enable
<input type="text" value="0.0.0.0"/>	<input type="text" value="8080"/>	<input type="checkbox"/>

Apply

Cancel

Item Name	Description
Host address	Designate an IP address as the host for remote access here.
Port	You can define the port number here. You can use the default port setting "8080", or any number between 1 and 65534.
Enabled	Check this box to enable the remote management function.

Click "Apply" to save the changes on this page, or click "Cancel" to discard all the changes. After you click "Apply", you will see the following message:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Click "Apply" to restart the broadband router. this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later. To setup other items now and restart broadband router later, click 'Continue'.

3-2 WAN

You can setup WAN (Wide Area Network, i.e. Internet) connections of this broadband router in 'WAN' menu:

WAN

The Wireless Router can connect to your Internet Service Provider with the following methods.

- | | |
|--|--|
| <input checked="" type="radio"/> Dynamic IP | Obtains an IP Address automatically from your Service Provider. |
| <input type="radio"/> Static IP | Uses a Static IP Address. Your Service Provider gives a Static IP Address to access Internet services. |
| <input type="radio"/> PPPoE | PPP over Ethernet is a common connection method used in xDSL connections. |
| <input type="radio"/> PPTP | Point-to-Point Tunneling Protocol is a common connection method used in xDSL connections. |
| <input type="radio"/> L2TP | Layer Two Tunneling Protocol is a common connection method used in xDSL connections. |
| <input type="radio"/> Telstra Big Pond | Telstra Big Pond is a Internet service is provided in Australia. |

[More Configuration](#)

Please select the WAN connection type you wish to use to setup Internet connection, and click 'Apply' to save changes you made.

If you're not sure which connection type you should use, please contact your ISP's service hotline and ask for help. You'll not be able to connect to Internet with wrong connection type.

3-2-1 Dynamic IP

Dynamic IP means your ISP will assign an IP address to you automatically by 'DHCP' (Dynamic Host Configuration Protocol). Dynamic IP is often used by cable modem Internet connection.

Dynamic IP

The Host Name is optional, but may be required by some Service Providers. The default MAC Address is set to the WAN physical interface on the Wireless Router. If required by your Service Provider, you can use the 'Clone MAC Address' button to copy the MAC Address of the Network Interface Card installed in your PC and replace the WAN MAC Address with this MAC Address.

Host Name :	<input type="text"/>	
MAC Address :	<input type="text" value="000000000000"/>	<input type="button" value="Clone MAC"/>

Item Name	Description
Host Name	Input the host name of your computer here. This is optional and only required if your ISP asks you to do so.
MAC Address	If your ISP only permits computers with certain MAC addresses to access the Internet, input your computer's MAC address here. Press "Clone Mac address" to fill the MAC address field with your computer's MAC address automatically.

If you wish to select another connection type as broadband connection type, click 'Back'; or you can click 'OK' to finish with quick setup. You'll see the following messages:

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-2-2 Static IP

Some ISP will give you a fixed IP address, and ask you to use this IP address to establish Internet connection. In this case, you have to select this connection type to establish connection with your ISP.

Please note that if your ISP is assigning a fixed IP address to you by DHCP or PPPoE, do not select this connection type. Please contact your ISP's service hotline to make sure you really need to use static IP as connection type.

Static IP

If your Service Provider has assigned a Fixed IP address; enter the assigned IP Address, Subnet Mask and the Gateway IP Address provided.

IP Address :	<input type="text" value="172.1.1.1"/>
Subnet Mask :	<input type="text" value="255.255.0.0"/>
Default Gateway :	<input type="text" value="172.1.1.254"/>

Item Name	Description
IP Address	Input the IP address assigned by your ISP here.
Subnet Mask	Input the subnet mask assigned by your ISP here.
Default Gateway	Input the default gateway assigned by your ISP here. Some ISPs may call this "Default Route".

NOTE: You must use the addresses provided by your ISP. Inputting incorrect values will cause malfunction.

If you wish to select another connection type as broadband connection type, click 'Back'; or you can click 'OK' to finish with quick setup. You'll see the following messages:

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-2-3 PPPoE

If your ISP requires you to establish Internet connection by PPPoE (Point-to-Point Protocol over Ethernet), you can use this connection type to establish Internet connection.

PPPoE

Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some Service Providers. Enter a Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, then the connection will be dropped. You can enable the Connect on Demand option to automatically re-establish the connection as soon as you attempt to access the Internet again. If your Internet Service Provider requires the use of PPPoE, enter the information below.

User Name :	<input type="text"/>	
Password :	<input type="password"/>	
Service Name :	<input type="text"/>	
MTU :	<input type="text" value="1392"/>	(512<=MTU<=1492)
Connection Type :	<input type="text" value="Continuous"/>	<input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/>	(1-1000 Minute)

Item Name	Description
User Name	Input the user name assigned by your ISP here.
Password	Input the password assigned by your ISP here.
Service Name	Give this Internet service a name (optional).
MTU	Input the MTU value of your network connection here. If you do not know, use the default value.
Connection Type	Please specify a connection type here. There are 3 options: 4. "Continuous" keeps the Internet connection alive all the time. 5. "Connect on Demand" only connects to the Internet when you initiate Internet connection. 6. "Manual" connects to the Internet only when the "Connect" button on this page is clicked, and disconnects when the "Disconnect" button is clicked.
Idle Time Out	Specify the amount of time the router waits before shutting down an idle connection. This option is only available when "Connect on Demand" is selected.

If you wish to select another connection type as broadband connection type, click 'Back'; or you can click 'OK' to finish with quick setup. You'll see the following messages:

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-2-4 PPTP

If your ISP requires you to use PPTP (Point-to-Point Tunneling Protocol) to establish connection, you can select this connection type to establish Internet connection.

PPTP requires two kinds of setting: WAN interface setting (setup IP address) and PPTP setting (PPTP user name and password). Here we start from WAN interface setting first:

• **WAN Interface Settings**

☒ Obtain an IP Address Automatically

Host Name :	<input type="text"/>
MAC Address :	<input type="text" value="000000000000"/> <input type="button" value="Clone MAC"/>

☐ Use The Following IP Address

IP Address :	<input type="text" value="0.0.0.0"/>
Subnet Mask :	<input type="text" value="0.0.0.0"/>
Default Gateway :	<input type="text" value="0.0.0.0"/>

Select the type of how you obtain IP address from your service provider here. You can choose 'Obtain an IP address automatically' (equal to DHCP, please refer to 'Cable Modem' section above), or 'Use the following IP address' (i.e. static IP address).

WAN interface settings must be correctly set, or the Internet connection will fail even those settings of PPTP settings are correct. Please contact your Internet service provider if you don't know what you should fill in these fields.

Now please go to PPTP settings section:

• **PPTP Settings**

User Name :	<input type="text"/>
Password :	<input type="password"/>
PPTP Gateway :	<input type="text" value="0.0.0.0"/>
Connection ID :	<input type="text"/> (Optional)
MTU :	<input type="text" value="1392"/> (512<=MTU<=1492)
BEZEQ-ISRAEL :	<input type="checkbox"/> Enable (For BEZEQ network in ISRAEL use only)
Connection Type :	<input type="text" value="Continuous"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000 Minute)

Item Name	Description
User Name	Input the user name assigned by your ISP here.
Password	Input the password assigned by your ISP here.
PPTP Gateway	Input the PPTP gateway assigned by your ISP here.
Connection ID	Give this connection a name (optional).
MTU	Input the MTU value of your network connection here. If you do not know, use the default value.
BEZEQ-ISRAEL	Check the "Enable" box if you are in Israel and using BEZEQ network services.
Connection Type	<p>Please specify a connection type here. There are 3 options:</p> <ol style="list-style-type: none"> 4. "Continuous" keeps the Internet connection alive all the time. 5. "Connect on Demand" only connects to the Internet when you initiate Internet connection. 6. "Manual" connects to the Internet only when the "Connect" button on this page is clicked, and disconnects when the "Disconnect" button is clicked.
Idle Time Out	Specify the amount of time the router waits before shutting down an idle connection. This option is only available when "Connect on Demand" is selected.

If you wish to select another connection type as broadband connection type, click 'Back'; or you can click 'OK' to finish with quick setup. You'll see the following messages:

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-2-5 L2TP

If your ISP requires you to use L2TP (Layer-2 Tunneling Protocol) to establish connection, you can select this connection type to establish Internet connection. L2TP is another popular connection method for xDSL and other Internet connection types, and all required setting items are the same with PPTP connection.

Like PPTP, there are two kinds of required setting, we'll start from 'WAN Interface Settings':

• **WAN Interface Settings**

☒ Obtain an IP Address Automatically

Host Name :	<input type="text"/>
MAC Address :	<input type="text" value="000000000000"/> <input type="button" value="Clone MAC"/>

☐ Use The Following IP Address

IP Address :	<input type="text" value="0.0.0.0"/>
Subnet Mask :	<input type="text" value="0.0.0.0"/>
Default Gateway :	<input type="text" value="0.0.0.0"/>

Please select the type of how you obtain IP address from your service provider here. You can choose 'Obtain an IP address automatically' (equal to DHCP, please refer to 'Dynamic IP' section above), or 'Use the following IP address' (equal to static IP address, please refer to 'PPPoE' section above).

WAN interface settings must be correctly set, or the Internet connection will fail even those settings of L2TP settings are correct. Please contact your Internet service provider if you don't know what you should fill in these fields.

Now please go to L2TP settings section:

• **L2TP Settings**

User Name :	<input type="text"/>
Password :	<input type="password"/>
L2TP Gateway :	<input type="text"/>
MTU :	<input type="text" value="1392"/> (512<=MTU<=1492)
Connection Type :	<input type="text" value="Continuous"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000 Minute)

Item Name	Description
User Name	Input the user name assigned by your ISP here.
Password	Input the password assigned by your ISP here.
L2TP Gateway	Input the L2TP gateway assigned by your ISP here.
MTU	Input the MTU value of your network connection here. If you do not know, use the default value.
Connection Type	<p>Please specify a connection type here. There are 3 options:</p> <ol style="list-style-type: none"> 4. "Continuous" keeps the Internet connection alive all the time. 5. "Connect on Demand" only connects to the Internet when you initiate Internet connection. 6. "Manual" connects to the Internet only when the "Connect" button on this page is clicked, and disconnects when the "Disconnect" button is clicked.
Idle Time Out	Specify the amount of time the router waits before shutting down an idle connection. This option is only available when "Connect on Demand" is selected.

If you wish to select another connection type as broadband connection type, click 'Back'; or you can click 'OK' to finish with quick setup. You'll see the following messages:

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-2-6 Telstra Big Pond

1. If you are using the Telstra Big Pond service in Australia, select “Telstra Big Pond”.

Telstra Big Pond

If your Internet service is provided by Telstra Big Pond in Australia, you will need to enter your information below. This information is provided by Telstra BigPond.

User Name :	<input type="text"/>
Password :	<input type="password"/>
<input type="checkbox"/> Assign login server manually	
Server IP Address :	<input type="text" value="0.0.0.0"/>

Apply

Cancel

Item Name	Description
User Name	Please input the user name assigned by Telstra here.
Password	Please input the password assigned by Telstra here.
Assign login server manually	Check this box to assign a login server.
Login Server	Please input the IP address of the login server here.

2. Click “OK” to complete setup.
3. When the following message appears, click “Apply” to save the changes and restart the broadband router. The router will take about 30 seconds to restart.

Save settings successfully!

Please press APPLY button to restart the system to make the changes take effect.

APPLY

3-2-7 DNS

If you select '*Dynamic IP*' or '*PPPoE*' as Internet connection method, at least one DNS server's IP address should be assigned automatically. However, if you have preferred DNS server, or your service provider didn't assign the IP address of DNS server because of any reason, you can input the IP address of DNS server here.

DNS

A DNS (Domain Name System) server is like an index of IP Addresses and Web Addresses. If you type a Web address into your browser, such as www.broadbandrouter.com, a DNS server will find that name in its index and find the matching IP address. Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect you to the Internet through dynamic IP settings, it is likely that the DNS server IP Address is also provided dynamically. However, if there is a DNS server that you would rather use, you need to specify the IP Address of that DNS server. The primary DNS will be used for domain name access first, in case the primary DNS access failures, the secondary DNS will be used.

Primary DNS :	<input type="text" value="3"/>
Secondary DNS :	<input type="text"/>

Item Name	Description
Primary DNS	Please input the IP address of DNS server provided by your service provider.
Secondary DNS	Please input the IP address of another DNS server provided by your service provider, this is optional.

NOTE: Only IP address can be entered here (only numeric characters and dots are accepted).

After you finish with all settings, please click 'Apply' (3) button and the following message will be displayed on your web browser:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

3-2-8 DDNS

DDNS (Dynamic DNS) is an IP-to-Hostname mapping service for those Internet users who don't have a static (fixed) IP address. It will be a problem when such user wants to provide services to other users on Internet, because their IP address will vary every time when connected to Internet, and other user will not be able to know the IP address they're using at a certain time.

This router supports DDNS service of following service providers:

3322 (<http://www.3322.org/>)
DHS (<http://www.dhs.org>)
DynDNS (<http://www.dyndns.org/>)
ODS (<http://ods.org>)
TZO (<http://www.tzo.com/>)
GnuDIP (<http://gnudip2.sourceforge.net/>)
DyNS (<http://www.dyns.cx/>)
ZoneEdit (<http://www.zoneedit.com>)
DHIS (<http://www.dhis.org/>)
CyberGate (<http://cybergate.planex.co.jp/ddns/>)

Please go to one of DDNS service provider's webpage listed above, and get a free DDNS account by the instructions given on their webpage. After that, you can use the DDNS page to setup DDNS parameters to use DDNS service:

DDNS

DDNS (DynamicDNS) allows users to map the static domain name to a dynamic IP address. You must get a account, password and your static domain name from the DDNS service providers. Our products have DDNS support for www.dyndns.org and www.tzo.com now.

Dynamic DNS :	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Provider :	<div>DynDNS ▾</div>
Domain Name :	<input type="text"/>
Account :	<input type="text"/>
Password / Key :	<input type="password"/>

Apply

Cancel

Item Name	Description
Dynamic DNS	If you want to enable DDNS function, please select 'Enabled'; otherwise please select 'Disabled'
Provider	Select your DDNS service provider here.
Domain Name	Input the domain name you've obtained from DDNS service provider.
Account / E-Mail	Input account or email of DDNS registration.
Password / Key	Input DDNS service password or key.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press **CONTINUE** button to continue configuring other settings or press **APPLY** button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-2-9 WISP

If your network service provided by your service provider is through wireless network, please select this mode. After you have connected the router to the access point of service provider wirelessly, please setup the WAN connection type in WAN page.

WISP

In this mode, all ethernet ports are bridged together and the wireless client will connect to ISP access point. The NAT is enabled and PCs in ethernet ports share the same IP to ISP through wireless LAN. You must set the wireless to client mode first and connect to the ISP AP in Site-Survey page. The connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client or static IP.

☐ Disable ☒ Enable ☐ staEnable

- **Basic Settings**

SSID :	<input type="text"/>
Channel Number :	1 ▾
Site Survey :	<input type="button" value="Site Survey"/>
- **Security Settings**

Encryption :	Disable ▾
--------------	-----------

Item Name	Description
Disable	Disables this function.
Enable	Enables this function and the router can connect to the access points installed by your wireless service provider. Any clients associated to the router can access the Internet service through the wireless network. (If you are informed by your wireless ISP that the wireless settings of the access point is changed, please configure the router in this page for match the settings.)
staEnable	Enable this function and the router can only allow to be connected through wired Ethernet cable for WAN access service.
SSID	This is the name of wireless network. Input the SSID name that your wirelesses ISP provide to you.
Channel Number	This is the radio frequency used to transmit and receive the wireless signal. The wireless devices in the same network should follow the same setting. Select

	the channel designated by your wireless ISP.
Site Survey	Click 'Select Site Survey' button, then a "Wireless Site Survey Table" will pop up. It will list all available access points nearby. Select the access point designated by your wireless ISP in the table and the router will join wireless network through this access point.
Security Settings	If the access point enables wireless security, you have to follow the same settings in order to access the access point. Click to set security settings for this connection (Please go to section '2-7-3 Wireless Security' for detailed instructions).

After you finish with all settings, please click 'Apply' (6) button and the following message will be displayed on your web browser:

Save settings successfully!

You may press **CONTINUE** button to continue configuring other settings or press **APPLY** button to restart the system to make the changes take effect.



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

3-3 LAN (Wired)

You can setup Wired LAN (Local Area Network) connections of this broadband router in 'LAN' menu. This broadband router has 4 LAN ports and they'll all use the same LAN IP address settings. Please also note that both wired and wireless LAN uses the same LAN IP address settings, too.

LAN settings split into 3 sections: LAN IP, DHCP Server, and Static DHCP leases. Please refer to corresponding sections below for detailed setup instructions.

3-3-1 Before you start: Suggestions for deciding an IP address

Before all computers using wired Ethernet connection (i.e. those computers connect to this router's LAN port 1 to 4 by Ethernet cable) or wireless connection can communicate with each other and access internet, they must have a valid IP address.

There are two ways to assign IP addresses to computers: static IP address (set the IP address for every computer manually), and dynamic IP address (IP address of computers will be assigned by router automatically. It's recommended for most of computers to use dynamic IP address, it will save a lot of time on setting IP addresses for every computer, especially when there are a lot of computers in your network; for servers and network devices which will provide services to other computer and users that come from Internet, static IP address should be used, so other computers can locate the server.

This broadband router has a built-in DHCP (Dynamic Host Configuration Protocol) server, and can help you to assign IP addresses to your client computers. Almost all network computers / devices manufactured after year 1995 are compatible with DHCP, and you can let this broadband router to assign the IP address to client computers / devices for you.

Suggestions on IP address numbering plan:

If you have no idea on how to define an IP address plan for your network, here are some suggestions.

1. A valid IP address has 4 fields: a.b.c.d, for most of home and company users, it's suggested to use 192.168.c.d, where c is an integer between 0 and 254, and d is an integer between 1 and 254. This router is capable to work with up to 253 clients, so you can set 'd' field of IP address of router as 1 or 254 (or any number between 1 and 254), and pick a number between 0 and 254 for field 'c'.

2. In most cases, you should use '255.255.255.0' as subnet mask, which allows up to 253 clients (this also meets router's capability of working with up to 253 clients).
3. For all servers and network devices which will provide services to other people (like Internet service, print service, and file service), they should use static IP address. Give each of them a unique number between 1 and 253, and maintain a list, so everyone can locate those servers easily.
4. For computers which are not dedicated to provide specific service to others, they should use dynamic IP address.

If you don't really understand the descriptions listed above, don't worry! We will provide recommended setup values below.

3-3-2 LAN IP

- LAN IP

IP Address :	<input type="text" value="192.168.2.1"/>
Subnet Mask :	<input type="text" value="255.255.255.0"/>
802.1d Spanning Tree :	<input type="button" value="Disable"/> ▼
DHCP Server :	<input type="button" value="Enable"/> ▼

Item Name	Description
IP address	Please input the IP address of this router.
Subnet Mask	Please input subnet mask for this network.
802.1d Spanning Tree	If you wish to activate 802.1d spanning tree function, select 'Enabled' for setup item '802.1d Spanning Tree', or set it to 'Disabled'.
DHCP Server	If you want to activate DHCP server function of this router, select 'Enabled', or set it to 'Disabled'.

Recommended Value if you don't know what to fill:

IP Address: 192.168.2.1

Subnet Mask: 255.255.255.0

802.1d Spanning Tree: Disabled

DHCP Server: Enabled

3-3-3 DHCP Server

You can use this setting to decide the range of IP address leases.

• DHCP Server

Lease Time :	Forever
DHCP Client Start IP :	192.168.2.100
DHCP Client End IP :	192.168.2.200
Domain Name :	

Apply Cancel

These settings are only available when 'DHCP Server' in 'LAN IP'.

Item Name	Description
Lease Time	Please choose a lease time (the duration that every computer can keep a specific IP address) of every IP address assigned by this router from dropdown menu.
Start IP	Please input the start IP address of the IP range.
End IP	Please input the end IP address of the IP range.
Domain Name	If you wish, you can also optionally input the domain name for your network. This is optional.

Recommended Value if you don't know what to fill:

Lease Time: Two Weeks (or 'Forever', if you have less than 20 computers)
Start IP: 192.168.1.1
End IP: 192.168.1.200
Domain Name: (leave it blank)

NOTE:

1. The number of the last field (mentioned 'd' field) of 'End IP' must be greater than 'Start IP', and can not the same with router's IP address.
2. The former three fields of IP address of 'Start IP', 'End IP', and 'IP Address of 'LAN IP' section (mentioned 'a', 'b', and 'c' field) should be the same.
3. These settings will affect wireless clients, too.

3-3-4 Static DHCP Leases

If you wish to assign a fixed IP address to certain computers / devices by DHCP, you can use this function to establish a MAC-to-IP address table here, so you can assign a specific IP address to a specific computer / network device by its MAC address.

- **Static DHCP Lease Table**

It allows 16 entries only.

NO.	MAC Address	IP Address	Select
-----	-------------	------------	--------

Delete

Delete All

☐ **Enable Static DHCP Leases**

MAC Address	IP Address
<input type="text"/>	<input type="text"/>

Add

Clear

Here are descriptions of every setup items:

Item Name	Description
Enable Static DHCP Leases	Check this box to enable this function, otherwise uncheck it to disable this function.
MAC Address	Input the MAC address of the computer or network device (total 12 characters, with character from 0 to 9, and from a to f, like '001122aabbcc').
IP address	Input the IP address you want to assign to this computer or network device.
Add	After you inputted MAC address and IP address pair, click this button to add the pair to static DHCP leases table.
Clear	Click this button to remove texts in MAC address and IP address field.

All MAC-to-IP address entries will be listed in this page, and this broadband router supports up to 16 static DHCP leases:

To delete one or more entries listed here, please check the box of the mapping entry (under 'Select'), and click 'Delete Selected' button.

If you wish to delete all mapping entries, click 'Delete All' button. To deselect all checked boxes, click 'Reset' button.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-4 Wireless

You can setup Wireless LAN connection parameters of this broadband router in 'Wireless' menu.

3-4-1 Basic Settings

You can set basic settings of wireless LAN here.

Mode :	Access Point ▼
Band :	2.4 GHz (B+G+N) ▼
SSID :	default
Channel Number :	11 ▼
Associated Clients :	Show Active Clients

ApplyCancel

Please select the working mode of this broadband router from 'Mode' dropdown list first:

- AP: Standard wireless AP (access point).
- Station-Infrastructure: This broadband router acts as both wireless communication client and server - connects to another wireless access point as client, and serves other wireless clients as server.
- AP Bridge-Point to Point: Connect this router with another broadband router, to expand the scope of network.
- AP Bridge-Point to Multi-Point: Connect this router with up to four other broadband routers, to expand the scope of network.
- AP Bridge-WDS: Connect this router with up to four WDS-capable broadband routers, to expand the scope of network.
- Universal Repeater: This broadband router will repeat other wireless access point's signal to extend its wireless signal coverage, and also acts as a wireless access point to serve other wireless clients.

3-4-1-1 AP Mode

In AP mode, the following settings will appear:

Mode :	Access Point
Band :	2.4 GHz (B+G+N)
SSID :	default
Channel Number :	11
Associated Clients :	Show Active Clients

Apply Cancel

Here are descriptions of every setup items:

Item Name	Description
Band	<p>Please select the radio band from one of following options:</p> <p>2.4 GHz (B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 300Mbps).</p> <p>2.4 GHz (B+G): 2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).</p> <p>2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (B+G+N): 2.4GHz Band, Allows 802.11b, 802.11g, and 802.11N wireless clients. It's recommends to select this band to maximize compatibility.</p>

ESSID	This is the name of broadband router. You can type any alphanumerical characters here, maximum 32 characters. ESSID is used to identify your own broadband router from others when there are other broadband routers in the same area. Default SSID is 'default', it's recommended to change default ESSID value to the one which is meaningful to you, like myhome, office_room1, etc.
Channel Number	Please select a channel from the dropdown list of 'Channel Number', available channel numbers are 1 to 13. You can choose any channel number you want to use, and almost all wireless clients can locate the channel you're using automatically without any problem. However, it's still useful to remember the channel number you use, some wireless client supports manual channel number select, and this would help in certain scenario when there is some radio communication problem.
Associated Clients	<p>Click 'Show Active Clients' button to show the list of all connected wireless clients. You can click 'Refresh' in new window to get latest list again, or click 'Close' to close the window.</p> <p>Please note that if you have pop-up blocker installed, you may have to disable it or tell your pop-up blocker to allow the popup window, or you will not be able to see the wireless client list window.</p>

TIPS: You can try to change channel number to another one if you think the data transfer rate is too slow, or keep having problem while transferring the file over wireless network. There could be some other broadband routers using the same channel, which will disturb the radio communication between wireless client and the broadband router.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

You can click 'Continue' to continue on other settings without restart the broadband router, however, the changes you made will not take effect before you restart the broadband router.

3-4-1-2 Station-Infrastructure

In Station-Infrastructure mode, you can select a wireless access point to become its wireless client, and also acts as wireless access point to serve other wireless clients. If you have the access privilege of other wireless access point nearby, and you wish to use that access point to access Internet, you can use this connection type:

Mode :	Station (Infrastructure) ▼
Band :	2.4 GHz (B+G+N) ▼
SSID :	default
Site Survey :	<input type="button" value="Site Survey"/>

Here are descriptions of every setup items:

Item Name	Description
Band	<p>Please select the radio band from one of following options (must be the same with the wireless access point you wish to connect):</p> <p>2.4 GHz (B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 300Mbps).</p> <p>2.4 GHz (B+G): 2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).</p> <p>2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (B+G+N): 2.4GHz Band, Allows</p>

	802.11b, 802.11g, and 802.11N wireless clients. It's recommended to select this band to maximize compatibility.
ESSID	This is the name of broadband router. You can type any alphanumerical characters here, maximum 32 characters. ESSID is used to identify your own broadband router from others when there are other broadband routers in the same area. Default SSID is 'default', it's recommended to change default ESSID value to the one which is meaningful to you, like myhome, office_room1, etc.
Site Survey	<p>Click 'Select Site Survey' and a popup window will appear. All reachable wireless access points will be shown in the window. Select the wireless access point you wish to connect from the list, and click 'Done'. If the wireless access point you wish to connect is not listed, you can click 'Refresh' to rescan.</p> <p>If you still can't find the wireless access point you wish to connect, please move the broadband router to the place nearer to the access point you wish to connect.</p>

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

You can click 'Continue' to continue on other settings without restart the broadband router, however, the changes you made will not take effect before you restart the broadband router.

3-4-1-3 AP Bridge: Point to Point

In this mode, you can use this broadband router as a wireless network bridge and let all computers connected to the LAN ports of both wireless access points to communicate with each other. **This mode supports only one wireless access point peer.**

Please note that when you select this mode, this broadband router will act as wireless bridge only, and will not accept other wireless clients.

Also, you can connect to the wireless access point with the same functionality only. If you wish to connect to the wireless access points made by other manufacturer, please select 'AP Bridge-WDS' mode if the wireless access point you wish to connect supports WDS.

Mode :	AP Bridge (Point to Point) ▼
Band :	2.4 GHz (B+G+N) ▼
Channel Number :	11 ▼
MAC Address 1 :	000000000000
Security Settings :	Security Settings

Apply Cancel

Here are descriptions of every setup items:

Item Name	Description
Band	<p>Please select the radio band from one of following options (must be the same with the wireless access point you wish to connect):</p> <p>2.4 GHz (B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 300Mbps).</p> <p>2.4 GHz (B+G): 2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum</p>

	<p>54Mbps for 802.11g clients).</p> <p>2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (B+G+N): 2.4GHz Band, Allows 802.11b, 802.11g, and 802.11N wireless clients. It's recommends to select this band to maximize compatibility.</p>
Channel Number	Select the channel number you wish to use; both access points must use the same channel.
MAC address 1	Input the MAC address of another wireless access point (the one you wish to connect).
Set Security	Click 'Set Security' button to set security functions of this wireless connection to improve security. Please refer to chapter 3-2-1-7 for detailed instructions.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press **CONTINUE** button to continue configuring other settings or press **APPLY** button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

You can click 'Continue' to continue on other settings without restart the broadband router, however, the changes you made will not take effect before you restart the broadband router.

3-4-1-4 AP Bridge: Point to Multi-Point

In this mode, you can use this broadband router as a wireless network bridge and let all computers connected to the LAN ports of all wireless access points to communicate with each other. **This mode supports up to four wireless access point peers.**

Mode :	AP Bridge (Point to Multi-Point) ▼
Band :	2.4 GHz (B+G+N) ▼
Channel Number :	11 ▼
MAC Address 1 :	000000000000
MAC Address 2 :	000000000000
MAC Address 3 :	000000000000
MAC Address 4 :	000000000000
Security Settings :	Security Settings

Please note that when you select this mode, this broadband router will act as wireless bridge only, and will not accept other wireless clients.

Also, you can connect to the wireless access point with the same functionality only. If you wish to connect to the wireless access points made by other manufacturer, please select 'AP Bridge-WDS' mode if the wireless access point you wish to connect supports WDS.

Here are descriptions of every setup items:

Item Name	Description
Band	<p>Please select the radio band from one of following options (must be the same with the wireless access point you wish to connect):</p> <p>2.4 GHz (B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 300Mbps).</p> <p>2.4 GHz (B+G): 2.4GHz band, only allows</p>

	<p>802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).</p> <p>2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (B+G+N): 2.4GHz Band, Allows 802.11b, 802.11g, and 802.11N wireless clients. It's recommends to select this band to maximize compatibility.</p>
Channel Number	Select the channel number you wish to use; all access points must use the same channel.
MAC address 1 to 4	Input the MAC address of other wireless access points (the access points you wish to connect).
Set Security	Click 'Set Security' button to set security functions of this wireless connection to improve security. Please refer to chapter 3-2-1-7 for detailed instructions.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press **CONTINUE** button to continue configuring other settings or press **APPLY** button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

You can click 'Continue' to continue on other settings without restart the broadband router, however, the changes you made will not take effect before you restart the broadband router.

3-4-1-5 AP Bridge: WDS

In this mode, this broadband router acts as both wireless communication bridge and wireless access point. This broadband router can establish communication with up to four WDS-compatible wireless access points, and let all computers connected to the LAN ports of every wireless access points communicate with each other. The broadband router is able to serve other wireless clients and acts as a wireless access point at the same time.

Mode :	AP Bridge (WDS) ▼
Band :	2.4 GHz (B+G+N) ▼
SSID :	default
Channel Number :	11 ▼
Associated Clients :	Show Active Clients
MAC Address 1 :	000000000000
MAC Address 2 :	000000000000
MAC Address 3 :	000000000000
MAC Address 4 :	000000000000
Security Settings :	Security Settings

Apply Cancel

Here are descriptions of every setup items:

Item Name	Description
Band	<p>Please select the radio band from one of following options (must be the same with the wireless access point you wish to connect):</p> <p>2.4 GHz (B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 300Mbps).</p> <p>2.4 GHz (B+G): 2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate</p>

	<p>11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).</p> <p>2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (B+G+N): 2.4GHz Band, Allows 802.11b, 802.11g, and 802.11N wireless clients. It's recommends to select this band to maximize compatibility.</p>
ESSID	<p>This is the name of broadband router. You can type any alphanumerical characters here, maximum 32 characters. ESSID is used to identify your own broadband router from others when there are other broadband routers in the same area. Default SSID is 'default', it's recommended to change default ESSID value to the one which is meaningful to you, like myhome, office_room1, etc.</p>
Channel Number	<p>Select the channel number you wish to use; all access points must use the same channel.</p>
Associated Clients	<p>Click 'Show Active Clients' button to show the list of all connected wireless clients. You can click 'Refresh' in new window to get latest list again, or click 'Close' to close the window.</p> <p>Please note that if you have pop-up blocker installed, you may have to disable it or tell your pop-up blocker to allow the popup window, or you will not be able to see the wireless client list window.</p>
MAC address 1 to 4	<p>Input the MAC address of other wireless access points (the access points you wish to connect).</p>
Set Security	<p>Click 'Set Security' button to set security functions of this wireless connection to improve security. Please refer to chapter 3-2-1-7 for detailed instructions.</p>

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

You can click 'Continue' to continue on other settings without restart the broadband router, however, the changes you made will not take effect before you restart the broadband router.

3-4-1-6 Universal Repeater

In this mode, this broadband router acts as a wireless repeater. It will repeat the signal of the wireless access point you specified, to extend its wireless coverage. The broadband router will still accept wireless clients when in this mode.

Mode :	Universal Repeater ▼
Band :	2.4 GHz (B+G+N) ▼
SSID :	default
Channel Number :	11 ▼
Associated Clients :	Show Active Clients
Root AP SSID :	
Site Survey :	Site Survey

Apply Cancel

Here are descriptions of every setup items:

Item Name	Description
Band	<p>Please select the radio band from one of following options (must be the same with the wireless access point you wish to connect):</p> <p>2.4 GHz (B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).</p> <p>2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 300Mbps).</p> <p>2.4 GHz (B+G): 2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).</p> <p>2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps).</p>

	2.4 GHz (B+G+N): 2.4GHz Band, Allows 802.11b, 802.11g, and 802.11N wireless clients. It's recommends to select this band to maximize compatibility.
ESSID	This is the name of broadband router. You can type any alphanumerical characters here, maximum 32 characters. ESSID is used to identify your own broadband router from others when there are other broadband routers in the same area. Default SSID is 'default', it's recommended to change default ESSID value to the one which is meaningful to you, like myhome, office_room1, etc.
Channel Number	Select the channel number you wish to use; all access points must use the same channel.
Associated Clients	<p>Click 'Show Active Clients' button to show the list of all connected wireless clients. You can click 'Refresh' in new window to get latest list again, or click 'Close' to close the window.</p> <p>Please note that if you have pop-up blocker installed, you may have to disable it or tell your pop-up blocker to allow the popup window, or you will not be able to see the wireless client list window.</p>
Root AP SSID	Please input the SSID of the wireless access point you wish to extend signal coverage.
Site Survey	<p>Click 'Select Site Survey' and a popup window will appear. All reachable wireless access points will be shown in the window. Select the wireless access point you wish to connect from the list, and click 'Done'. If the wireless access point you wish to connect is not listed, you can click 'Refresh' to rescan.</p> <p>If you still can't find the wireless access point you wish to connect, please move the broadband router to the place nearer to the access point you wish to connect.</p>

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

You can click 'Continue' to continue on other settings without restart the broadband router, however, the changes you made will not take effect before you restart the broadband router.

3-4-2 Advanced Settings

This router provides some advanced control of wireless parameters, if you want to configure these settings, please click 'Wireless' menu on the left of web management interface, then click 'Advanced Settings', and the following message will be displayed on your web browser:

Advanced Settings

Set the time zone of the Wireless Router. This information is used for log entries and firewall settings.

Fragment Threshold :	<input type="text" value="2346"/>	(256-2346)
RTS Threshold :	<input type="text" value="2347"/>	(0-2347)
Beacon Interval :	<input type="text" value="100"/>	(20-1024 ms)
DTIM Period :	<input type="text" value="3"/>	(1-10)
Data Rate :	<input type="button" value="Auto"/>	
N Data Rate :	<input type="button" value="MCS 0"/>	
Channel Width :	<input checked="" type="radio"/> Auto 20/40 MHZ <input type="radio"/> 20 MHZ	
Preamble Type :	<input checked="" type="radio"/> Short Preamble <input type="radio"/> Long Preamble	
Broadcast ESSID :	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
CTS Protect :	<input type="radio"/> Auto <input type="radio"/> Always <input checked="" type="radio"/> None	
WMM:	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	

Item Name	Description
Fragment Threshold	Set the Fragment threshold of wireless radio. Do not modify default value if you don't know what it is, default value is 2346.
RTS Threshold	Set the RTS threshold of wireless radio. Do not modify default value if you don't know what it is, default value is 2347.
Beacon Interval	Set the beacon interval of wireless radio. Do not modify default value if you don't know what it is, default value is 100.
DTIM Period	Set the DTIM period of wireless radio. Do not modify default value if you don't know what it is, default value is 3.
Data Rate	Set the wireless data transfer rate to a certain

	value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, it's not necessary to change this value unless you know what will happen after modification.
N Data Rate	Same as above, but only for 802.11n clients.
Channel Width	Set channel width of wireless radio. Do not modify default value if you don't know what it is, default setting is 'Auto 20/40 MHz'.
Preamble Type	Set the type of preamble, do not modify default value if you don't know what it is, default setting is 'Short Preamble'.
Broadcast ESSID	Decide if the wireless router will broadcast its own ESSID or not. You can hide the ESSID of your wireless router (set the option to 'Disable'), so only people those who know the ESSID of your wireless router can get connected.
CTS Protect	Enabling this setting will reduce the chance of radio signal collisions between 802.11b and 802.11g/n wireless access points. It's recommended to set this option to 'Auto' or 'Always'. However, if you set to 'None', your wireless router should be able to work fine, too.
WMM	The short of Wi-Fi MultiMedia, it will enhance the data transfer performance of multimedia contents when they're being transferred over wireless network. If you don't know what it is / not sure if you need it, it's safe to set this option to 'Enable', however, default value is 'Disable'.

After you finish these wireless settings, please click 'Apply' button , button, and the following message will be displayed on your web browser:

Save settings successfully!

You may press **CONTINUE** button to continue configuring other settings or press **APPLY** button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Continue' to back to previous setup menu; to continue on router setup, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

3-4-3 Security Settings

In certain AP working modes, you can enable encryption to improve security level.

When you click 'Set Security' button, the following window will appear:

Security Settings

This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Encryption :	Disable	▼
<input type="checkbox"/> Enable 802.1x Authentication		
		<input type="button" value="Apply"/> <input type="button" value="Cancel"/>

Please select an encryption method from 'Encryption' dropdown menu, and corresponding setting will appear:

Disabled

Encryption is disabled. It's **not recommended** to disable encryption because other people may use certain wireless scanner to copy the data transferred over air.

WEP

Select WEP to enable WEP (Wired Equivalent Privacy) encryption:

Encryption :	WEP ▼
Key Length :	64-bit ▼
Key Format :	Hex (10 Characters) ▼
Default Tx Key :	Key 1 ▼
Encryption Key 1 :	*****

☐ Enable 802.1x Authentication

Apply Cancel

Here are descriptions of every setup items:

Item Name	Description
Key Length	There are two types of WEP key length: 64-bit and 128-bit. Using '128-bit' is safer than '64-bit', but will reduce some data transfer performance.
Key Format	There are two types of key format: ASCII and Hex. When you select a key format, the number of characters of key will be displayed. For example, if you select '64-bit' as key length, and 'Hex' as key format, you'll see the message at the right of 'Key Format' is 'Hex (10 characters)', which means the length of WEP key is 10 characters.
Default Tx Key	You can set up to four sets of WEP key, and you can decide which key is being used by default here. If you don't know which one you should use, select 'Key 1'.
Encryption Key	Input WEP key characters here, the number of characters must be the same as the number displayed at 'Key Format' field. You can use any alphanumerical characters (0-9, a-z, and A-Z) if you select 'ASCII' key format, and if you select 'Hex' as key format, you can use characters 0-9, a-f, and A-F.
Enable 802.1x Authentication	Check this box to enable 802.1x authentication function. You need a Radius authentication

	server to perform 802.1x authentication.
Server IP address	Input Radius authentication server's IP address here.
RADIUS Server Port	Input Radius authentication server's service port here. Generally it's 1812.
RADIUS Server Password	Input the password of Radius server here.

Please click 'Apply' to save changes, or click 'Reset' to clear the texts in all fields. If you click 'Apply', the following messages will appear:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



You can click 'Continue' to back to previous page and continue setting, or click 'Apply' to restart the broadband router so the changes will take effect.

WPA pre-shared key

WPA (Wi-Fi Protected Access) is also an encryption method and is safer than WEP. It's recommended to use WPA instead of WEP when you need to use encryption to protect your data security.

Encryption :	WPA pre-shared key ▼
WPA Unicast Cipher Suite :	<input checked="" type="radio"/> WPA(TKIP) <input type="radio"/> WPA2(AES) <input type="radio"/> WPA2 Mixed
Pre-shared Key Format :	Passphrase ▼
Pre-shared Key :	<input type="text"/>

Here are descriptions of every setup items:

Item Name	Description
WPA Unicast Cipher Suite	Please select a type of WPA cipher suite. Available options are: WPA (TKIP), WPA2 (AES), and WPA2 Mixed. You can select one of them, but you have to make sure your wireless client support the cipher you selected.
Pre-shared Key Format	Select the type of pre-shared key, you can select Passphrase (8 or more alphanumerical characters, up to 63), or Hex (64 characters of 0-9, and a-f).
Pre-shared Key	Please input the WPA passphrase here. It's not recommended to use a word that can be found in a dictionary due to security reason.

Please click 'Apply' to save changes, or click 'Reset' to clear the texts in all fields. If you click 'Apply', the following messages will appear:

You can click 'Continue' to back to previous page and continue setting, or click 'Apply' to restart the broadband router so the changes will take effect.

WPA RADIUS

If you have RADIUS authentication server on your local network, you can authenticate the wireless clients by RADIUS server's user database. Only authenticated clients can establish wireless connection with this broadband router.

Encryption :	WPA RADIUS ▼
WPA Unicast Cipher Suite :	<input checked="" type="radio"/> WPA(TKIP) <input type="radio"/> WPA2(AES) <input type="radio"/> WPA2 Mixed
RADIUS Server IP Address :	<input type="text"/>
RADIUS Server Port :	1812
RADIUS Server Password :	<input type="password"/>

Here are descriptions of every setup items:

Item Name	Description
WPA Unicast Cipher Suite	Please select a type of WPA cipher suite. Available options are: WPA (TKIP), WPA2 (AES), and WPA2 Mixed. You can select one of them, but you have to make sure your wireless client support the cipher you selected.
RADIUS Server IP address	Input the IP address of RADIUS authentication server here.
RADIUS Server Port	Input the port number of RADIUS authentication server here. Most of RADIUS server will use port number 1812 and you can keep using default value.
RADIUS Server Password	Input the password of RADIUS authentication server here.

Please click 'Apply' to save changes, or click 'Reset' to clear the texts in all fields. If you click 'Apply', the following messages will appear:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



You can click 'Continue' to back to previous page and continue setting, or click 'Apply' to restart the broadband router so the changes will take effect.

3-4-4 Access Control

This function will help you to prevent unauthorized users from connecting to your wireless router; only those wireless devices who have the MAC address you assigned here can gain access to your wireless router. You can use this function with other security measures described in previous section, to create a safer wireless environment.

Up to 20 MAC addresses can be assigned by using this function. Please click 'Wireless' menu on the left of web management interface, then click 'Access Control', and the following message will be displayed on your web browser:

Access Control

For security reason, the Wireless Router features MAC Address Filtering that only allows authorized MAC Addresses associating to the Wireless Router.

- **MAC Address Filtering Table**

It allows 20 entries only.

NO.	MAC Address	Comment	Select
<div style="text-align: right;"><input type="button" value="Delete"/> <input type="button" value="Delete All"/></div>			
<input type="checkbox"/> Enable Access Control			
<input type="text"/>		<input type="text"/>	<input type="button" value="Add"/> <input type="button" value="Clear"/>
<div style="text-align: right;"><input type="button" value="Apply"/> <input type="button" value="Cancel"/></div>			

Item Name	Description
Delete Selected	If you want to delete a specific MAC address entry, check the 'select' box of the MAC address you want to delete, then click 'Delete Selected' button. (You can select more than one MAC addresses).
Delete All	If you want to delete all MAC addresses listed here, please click 'Delete All' button.
Enable Access Control	To enforce MAC address filtering, you have to check 'Enable Wireless Access Control'. When this item is unchecked, wireless router will not enforce MAC address filtering of wireless clients.
MAC Address	Input the MAC address of your wireless devices here, dash (-) or colon (:) are not required. (i.e. If the MAC address label of your wireless device indicates 'aa-bb-cc-dd-ee-ff' or 'aa:bb:cc:dd:ee:ff', just input 'aabbccddeeff'.
Comment	You can input any text here as the comment of this

	MAC address, like 'ROOM 2A Computer' or anything. You can input up to 16 alphanumerical characters here. This is optional and you can leave it blank, however, it's recommended to use this field to write a comment for every MAC addresses as a memory aid.
Add	Click 'Add' button to add the MAC address and associated comment to the MAC address filtering table.
Clear	Click 'Clear' to remove the value you inputted in MAC address and comment field.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

3-4-5 WPS

WPS (Wi-Fi Protected Setup) provides a convenient way to establish the connection between this broadband router and wireless clients. Any WPS-compatible wireless clients can establish secure connection with this broadband router with simple push-button type configuration or PinCode type configuration.

WPS

This page allows you to change the setting for WPS (Wi-Fi Protected Setup). WPS can help your wireless client automatically connect to the Wireless Router.

☒ **Enable WPS**

• WPS Information

WPS Status :	Unconfigured
PinCode Self :	44438760
SSID :	default
Authentication Mode :	Disable
Passphrase Key :	

• Device Configure

Config Mode :	Registrar ▼
Configure by Push Button :	<input type="button" value="Start PBC"/>
Configure by Client PinCode :	<input type="text"/> <input type="button" value="Start PIN"/>

Here are descriptions of every setup items:

Item Name	Description
Enable WPS	Check this box to enable WPS function, uncheck it to disable WPS.
WPS Status	If the wireless security (encryption) function of this wireless router is properly set, you'll see 'Configured' message here. If wireless security function has not been set, you'll see 'unConfigured'.
Self PIN code	This is the WPS PIN code of this wireless router. This code is useful when you need to build wireless connection by WPS with other WPS-enabled wireless devices.
SSID	The SSID of this wireless router will be displayed here.

Authentication Mode	The wireless security authentication mode of this wireless router will be displayed here.
Passphrase Key	The WPA passphrase will be displayed as asterisk here.
Config Mode	<p>Select the WPS configuration role of this broadband router.</p> <p>Registrar: This broadband router will act as WPS registrar and wait for wireless clients to send WPS configuration request.</p> <p>Enrollee: This broadband router will act as WPS enrollee and send WPS configuration request to other WPS registrar.</p>
Configure via Push Button	<p>Click 'Start PBC' to start Push-Button type WPS configuration (PBC). Please push the WPS push-button on other WPS-compatible network devices to begin WPS configuration.</p> <p>You can also push the 'WPS / Reset' button located at the back of this broadband router to start PBC without using web configuration interface.</p>
Configure via Client PinCode	Please input the PinCode displayed at the configuration software of WPS-enabled wireless client, and click 'Start PIN' to establish connection with the wireless client.

3-5 QoS

Quality of service provides an efficient way for computers on the network to share the internet bandwidth with a promised quality of internet service. Without QoS, all computers and devices on the network will compete with each other to get internet bandwidth, and some applications which require guaranteed bandwidth (like video streaming and network telephone) will be affected, therefore an unpleasing result will occur, like the interruption of video / audio transfer.

With this function, you can limit the maximum bandwidth or give a guaranteed bandwidth for a specific computer, to avoid said unpleasing result from happening.

3-5-1 Basic QoS Settings

Please follow the following instructions to set QoS parameters:

Please click 'Qos' menu on the left of web management interface and the following message will be displayed on your web browser:

QoS

QoS (Quality of Service) refers to the capability of a network to provide better service to selected network traffic. The primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency (required by some real-time and interactive traffic), and improved loss characteristics. Also important is making sure that providing priority for one or more flows does not make other flows fail.

☐ Enable QoS

Total Download Bandwidth :	---Select---	>>	0	kbits
Total Upload Bandwidth :	---Select---	>>	0	kbits

Current QoS Table

Priority	Rule Name	Upload Bandwidth	Download Bandwidth	Select
----------	-----------	------------------	--------------------	--------

Add	Edit	Delete	Delete All	Move Up	Move Down
-----	------	--------	------------	---------	-----------

Apply	Cancel
-------	--------

Item Name	Description
Enable QoS	Check this box to enable QoS function, uncheck it to disable QoS.
Total Download Bandwidth	You can set the limit of total download bandwidth in kbits. To disable download bandwidth limitation, input '0' here.
Total Upload Bandwidth	You can set the limit of total upload bandwidth in kbits. To disable upload bandwidth limitation, input '0' here.
Current QoS Table	All existing QoS rules will be displayed here.
Add	Click 'add' button to add a new QoS rule (detailed instructions will be given below).
Edit	If you want to modify the content of a specific rule, please check the 'select' box of the rule you want to edit, then click 'Edit' button. Only one rule should be selected a time!
Delete	You can delete selected rules by clicking this button. You can select one or more rules to delete by check the 'select' the box of the rule(s) you want to delete a time. If the QoS table is empty, this button will be grayed out and cannot be clicked.
Delete All	By clicking this button, you can delete all rules currently listed in the QoS table. If the QoS table is empty, this button will be grayed out and cannot be clicked.
Move Up	Move selected rule up. First QoS rule will be proceed first, so you can move higher priority rules up.
Move Down	Move selected rule down.

After you finish with all settings, please click 'Apply' (11) button and the following message will be displayed on your web browser:

Save settings successfully!

You may press **CONTINUE** button to continue configuring other settings or press **APPLY** button to restart the system to make the changes take effect.

CONTINUE **APPLY**

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

3-5-2 Add a new QoS rule

After you click 'Add' button in QoS menu, the following message will appear:

Rule Name :	<input type="text"/>		
Bandwidth :	Download ▼	<input type="text"/>	Kbps Guarantee ▼
Local IP Address :	<input type="text"/> - <input type="text"/>		
Local Port Range :	<input type="text"/>		
Remote IP Address :	<input type="text"/> - <input type="text"/>		
Remote Port Range :	<input type="text"/>		
Traffic Type :	None ▼		
Protocol :	TCP ▼		

Item Name	Description
Rule Name	Please give a name to this QoS rule (up to 15 alphanumerical characters)
Bandwidth	Set the bandwidth limitation of this QoS rule. You have to select the data direction of this rule (Upload or Download), and the speed of bandwidth limitation in Kbps, then select the type of QoS: 'guarantee' (guaranteed usable bandwidth for this rule) or 'max' (set the maximum bandwidth for the application allowed by this rule).
Local IP Address	Specify the local (source) IP address that will be affected by this rule. Please input the starting IP address in the left field, and input the end IP address in the right field to define a range of IP addresses, or just input the IP address in the left field to define a single IP address.

Local Port Range	Please input the range of local (source) port number that will be affected by this rule. If you want to apply this rule on port 80 to 90, please input '80-90'; if you want to apply this rule on a single port, just input the port number, like '80'.
Remote IP Address	Specify the remote (destination) IP address that will be affected by this rule. Please input the starting IP address in the left field, and input the end IP address in the right field to define a range of IP addresses, or just input the IP address in the left field to define a single IP address.
Remote Port Range	Please input the range of remote (destination) port number that will be affected by this rule. If you want to apply this rule on port 80 to 90, please input '80-90'; if you want to apply this rule on a single port, just input the port number, like '80'. If the remote (destination) IP address and /or port number is universal, just leave it blank.
Traffic Type	Please select the traffic type of this rule, available options are None, SMTP, HTTP, POP3, and FTP. You can select a specific traffic type for this rule, if you want to make this rule as a IP address based rule (apply the limitation on all traffics from / to the specified IP address / port number), select 'None'.
Protocol	Please select the protocol type of this rule, available options are TCP and UDP. If you don't know what protocol your application uses, please try 'TCP' first, and switch to 'UDP' if this rule doesn't seems to work.

After you finish with all settings, please click 'save' button (i), you'll be brought back to previous menu, and the rule you just set will appear in current QoS table; if you did anything wrong, you'll get an error message when you click 'Save' button, please correct your input by the instructions given by the error message.

If you want to erase all values you just entered. Click 'Reset'

3-6 NAT

To enable NAT function, please select 'Enable' for 'Enable NAT module function' (1); to disable, please select 'Disable'.

NAT

NAT (Network Address Translation) allows multiple users at your local site to access the Internet through a single Public IP Address or multiple Public IP Addresses. NAT provides Firewall protection from hacker attacks and has the flexibility to allow you to map Private IP Addresses to Public IP Addresses for key services such as the Web or FTP.

NAT Module : ☒ Enable ☐ Disable

Apply

After you made the selection, please click 'Apply' button (2) and the following message will be displayed on your web browser:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

3-6-1 Port Forwarding




This function allows you to redirect a single port or consecutive ports of Internet IP address to the same port of the IP address on local network. The port number(s) of Internet IP address and private IP address (the IP address on local network) must be the same. If the port number of Internet IP address and private IP address is different, please use 'Virtual Server' function, described in next section.

Please click 'NAT' menu on the left of web management interface, then click 'Port Forwarding', and the following message will be displayed on your web browser:

Port Forwarding

Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall.

☐ **Enable Port Forwarding**

Private IP	Computer Name	Type	Port Range	Comment
<input type="text"/>	 <input type="text" value="-----Select-----"/> 	<input type="text" value="Both"/> 	<input type="text"/> <input type="text"/>	<input type="text"/>
<input type="button" value="Add"/>				<input type="button" value="Reset"/>

• Current Port Forwarding Table

NO.	Computer Name	Private IP	Type	Port Range	Comment	Select
<input type="button" value="Delete"/> <input type="button" value="Delete All"/> <input type="button" value="Reset"/>						
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>						

Item Name	Description
Enable Port Forwarding	Check this box to enable port forwarding, and uncheck this box to disable port forwarding.
Private IP	Input the IP address of the computer on local network which provides internet service.
Computer name	<p>All computer names found by this broadband router on local network will be listed here. You can select the computer name and click '<<' button to add selected computer's IP address to 'Private IP' field.</p> <p>Please note that this list may not be able to list all computers on your local network.</p>

Type	Select the type of connection, TCP or UDP. If you're not sure, please select 'Both'.
Port Range	Input the starting port number in the left field, and input the ending port number in the right field. If you only want to redirect a single port number, just fill the port number in the left field.
Comment	Please input any text to describe this mapping, up to 16 alphanumerical characters.
Add	Add the mapping to port forwarding table.
Reset	Remove all inputted values.

All existing URLs will be displayed in 'Current URL Blocking Table'.

If you want to delete a specific port forwarding entry, check the 'select' box of the port forwarding entry you want to delete, then click 'Delete Selected' button. (You can select more than one port forwarding entries). If you want to delete all port forwarding entries listed here, please click 'Delete All' button or you can also click 'Reset' button to unselect all port forwarding entries.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press **CONTINUE** button to continue configuring other settings or press **APPLY** button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.


3-6-2 Virtual Server

This function allows you to redirect a port on Internet IP address (on WAN port) to a specified port of an IP address on local network, so you can setup an Internet service on the computer on local network, without exposing it on Internet directly. You can also build many sets of port redirection, to provide many different Internet services on different local computers via a single Internet IP address.

Virtual Server

You can configure the Wireless Router as a Virtual Server so that remote users accessing services such as the Web or FTP at your local site via Public IP Addresses can be automatically redirected to local servers configured with Private IP Addresses. In other words, depending on the requested service (TCP/UDP) port number, the Wireless Router redirects the external service request to the appropriate internal server (located at one of your LAN's Private IP Address).

☐ Enable Virtual Server

Private IP	Computer Name	Private Port	Type	Public Port	Comment
<input type="text"/>	 <input type="text" value="-----Select-----"/>	<input type="text"/>	Both 	<input type="text"/>	<input type="text"/>
				<input type="button" value="Add"/>	<input type="button" value="Reset"/>

• Current Virtual Server Table

NO.	Computer Name	Private IP	Private Port	Type	Public Port	Comment	Select
				<input type="button" value="Delete"/>	<input type="button" value="Delete All"/>	<input type="button" value="Reset"/>	
				<input type="button" value="Apply"/>		<input type="button" value="Cancel"/>	

Here are descriptions of every setup items:

Item Name	Description
Enable Virtual Server	Check this box to enable virtual server, and uncheck this box to disable virtual server.
Private IP	Input the IP address of the computer which provides Internet service.
Computer name	<p>All computer names found by this broadband router on local network will be listed here. You can select the computer name and click '<<' button to add selected computer's IP address to 'Private IP' field.</p> <p>Please note that this list may not be able to list all computers on your local network.</p>
Private Port	Input the port number of the IP address which provides Internet service.
Type	Select the type of connection, TCP or UDP. If you're not sure, please select 'Both'
Public Port	Please select the port number of Internet IP address which will be redirected to the port number of local IP address defined above.
Comment	Please input any text to describe this mapping, up to 16 alphanumerical characters.
Add	Add the mapping to virtual server table.
Reset	Remove all inputted values.

All existing virtual server mappings will be displayed in this page. To delete one or more mappings, check the box of the mapping, then click 'Delete Selected' button to remove the mapping. To delete all existing mappings, click 'Delete All' button. If you want to uncheck all boxes, click 'Reset'.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-6-3 Special Applications

Some applications require more than one connection a time; these applications won't work with simple NAT rules. In order to make these applications work, you can use this function to let these applications work.

Special Applications

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, specify the port normally associated with an application in the Trigger Port field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic. Note: The range of the Trigger Port is 1 to 65535.

☐ Enable Special Applications

IP Address	Computer Name	TCP Port to Open	UDP Port to Open	Comment
0.0.0.0	<< -----Select----- >>			
Popular Applications : Select Game Add				
				Add Reset

• Current Trigger-Port Table

NO.	Computer Name	IP Address	TCP Port to Open	UDP Port to Open	Comment	Select
<div>Delete Delete All Reset</div> <div>Apply Cancel</div>						

Here are descriptions of every setup items:

Item Name	Description
Enable	Check this box to enable support for special applications, and uncheck this box to disable this support.
IP Address	Input the IP address of the computer which is going to use the special application.
Computer name	All computer names found by this broadband router on local network will be listed here. You can select the computer name and click '<<' button to add selected computer's IP address to 'IP Address' field. Please note that this list may not be able to list all computers on your local network.
TCP Port to Open	Input the TCP port number required by the special application, the port number can be a single value, or a range (like 20-50). If you

	need to input more than one port number and they're not contiguous, list all port numbers here and separate them by comma (,). If the application does not use TCP port, leave it blank.
UDP Port to Open	Input the UDP port number required by the special application, the port number can be a single value, or a range (like 20-50). If you need to input more than one port number and they're not contiguous, list all port numbers here and separate them by comma (,). If the application does not use UDP port, leave it blank.
Comment	You can input any text here to help you remember the purpose of this item. This is optional.
Select Game	<p>This router comes with a numerous port mapping settings of network games. If the game you wish to set is listed here, you can select it from dropdown menu.</p> <p>After a game is selected, click 'Add' (the one next to 'Select Game' dropdown list) to add the connection parameters to all respective fields.</p>
Add	Click this button to add a new port mapping rule to special applications table.
Reset	Click this button to remove all values in every field.

All existing special application mappings will be displayed in this page. To delete one or more mappings, check the box of the mapping, then click 'Delete Selected' button to remove the mapping. To delete all existing mappings, click 'Delete All' button. If you want to uncheck all boxes, click 'Reset'.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-6-4 UPnP Settings

BR-6428nS broadband router supports UPnP (universal plug-and-play), which allows other network devices to communicate with this broadband router to exchange information about network capability for intercommunication.

UPnP Settings

UPnP is more than just a simple extension of the Plug and Play peripheral model. It is designed to support zero-configuration, invisible networking, and automatic discovery for a breadth of device categories from a wide range of vendors. With UPnP, a device can dynamically join a network, obtain an IP address, convey its capabilities, and learn about the presence and capabilities of other devices-all automatically; truly enabling zero configuration networks. Devices can subsequently communicate with each other directly; thereby further enabling peer to peer networking.

UPnP Module : ☐ Enable ☒ Disable

Apply

Cancel

After you made your choice, please click 'Apply' button:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-6-5 ALG Settings

ALG (Application Layer Gateway) is a kind of network connection ability support for specific network applications like game and instant online chat. Without ALG support, these applications will not be able to communicate with their server when working with BR-6428nS broadband router.

ALG Settings

Below are applications that need router's special support to make them work under the NAT. You can select applications that you are using.

Enable	Name	Comment
<input checked="" type="checkbox"/>	FTP	Support for FTP.
<input checked="" type="checkbox"/>	H323	Support for H323/netmeeting.
<input checked="" type="checkbox"/>	IPsec	Support for IPsec passthrough.
<input checked="" type="checkbox"/>	PPTP	Support for PPTP passthrough.
<input checked="" type="checkbox"/>	L2TP	Support for L2TP passthrough.
<input checked="" type="checkbox"/>	SIP	Support for SIP.

Apply

Cancel

All applications that require ALG support and compatible with this broadband router is listed here. You can check all applications you will use on local computer. After you made your choice, please click 'Apply' button:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-7 Firewall

This broadband router supports several firewall functions which will help you to protect your network and computer. In this chapter, instructions for using these functions will be given, so you can utilize these functions to protect your network from hackers and malicious intruders.

3-7-1 Access Control

By using access control, you can restrict your computers from accessing improper website, or using disallowed applications. You can even only allow computers with certain MAC address to access the network, or deny the computers in the list from accessing Internet.

MAC Filtering: Deny or allow access based on MAC address of client computer

Access Control

Access Control allows users to define the traffic type permitted or not permitted in your LAN. You can control which PC client uses what services in which they can have access to these services. If both of MAC filtering and IP filtering are enabled simultaneously, the MAC filtering table will be checked first and then IP filtering table.

☐ Enable MAC Filtering ☒ Deny ☐ Allow

Client PC MAC Address	Computer Name	Comment
<input type="text"/>	<input type="button" value="←"/> <input type="text" value="-----Select-----"/> <input type="button" value="▼"/>	<input type="text"/>
		<input type="button" value="Add"/> <input type="button" value="Reset"/>

Here are descriptions of every setup items:

Item Name	Description
Enable MAC Filtering	Check this box to enable MAC address based filtering, and please select 'Deny' or 'Allow' to decide the behavior of MAC filtering table. If you select deny, all MAC addresses listed in filtering table will be denied from connecting Internet; if you select allow, only MAC addresses listed in filtering table will be able to connect to Internet.
Client PC MAC address	Please input the MAC address of computer or network device here, dash (-) or colon (:) are not required. (i.e. If the MAC address label of your wireless device indicates 'aa-bb-cc-dd-ee-ff' or 'aa:bb:cc:dd:ee:ff', just input 'aabbccddeeff')

Computer Name	<p>All computer names found by this broadband router on local network will be listed here. You can select the computer name and click '<<' button to add selected computer's IP address to 'Private IP' field.</p> <p>Please note that this list may not be able to list all computers on your local network. If you think some computer doesn't appear in the list, select 'Refresh' and this broadband router will rescan for all computers attached to LAN port again.</p>
Comment	You can input any text here as the comment of this MAC address, like 'ROOM 2A Computer' or anything. You can input up to 16 alphanumerical characters here. This is optional and you can leave it blank, however, it's recommended to use this field to write a comment for every MAC addresses as a memory aid.
Add	Click 'Add' button to add the MAC address and associated comment to the MAC address filtering table.
Reset	Remove all inputted values.

All MAC address entries will be listed in this page:

Current MAC Filtering Table

NO.	Computer Name	Client PC MAC Address	Comment	Select
<div> <input type="button" value="Delete"/> <input type="button" value="Delete All"/> <input type="button" value="Reset"/> </div>				

To delete one or more entries listed here, please check the box of the mapping entry (under 'Select'), and click 'Delete Selected' button.

If you wish to delete all mapping entries, click 'Delete All' button. To deselect all checked boxes, click 'Reset' button.

If you wish to use IP address-based filtering, please use 'IP Filtering Table' in this page:

☐ Enable IP Filtering
 ☒ Deny
 ☐ Allow

NO.	Client PC Description	Client PC IP Address	Client Service	Protocol	Port Range	Select
<div style="text-align: right;"> <input type="button" value="Add PC"/> <input type="button" value="Delete"/> <input type="button" value="Delete All"/> </div> <div style="text-align: right; margin-top: 10px;"> <input type="button" value="Apply"/> <input type="button" value="Cancel"/> </div>						

Please check 'Enable IP Filtering Table' box first, and select 'Deny' or 'Allow' to decide the behavior of IP filtering table (Deny the access of IP addresses in the list, or allow the access of IP addresses in the list). You have to click 'Add PC' button to add a new IP address to the list:

Client PC Description :	<input style="width: 60%;" type="text"/>
Client PC IP Address :	<input style="width: 30%;" type="text"/> - <input style="width: 30%;" type="text"/>

Here are descriptions of every setup items:

Item Name	Description
Client PC Description	Please input any text to describe this IP address, up to 16 alphanumerical characters.
Client PC IP address	Please input the starting IP address in the left field, and input the end IP address in the right field to define a range of IP addresses, or just input the IP address in the left field to define a single IP address.

You also have to select the type of Internet services that will be applied to this access control rule from the list:

• **Client Service :**

Service Name	Detail Description	Select
WWW	HTTP, TCP Port 80, 3128, 8000, 8080, 8081	<input type="checkbox"/>
E-mail Sending	SMTP, TCP Port 25	<input type="checkbox"/>
News Forums	NNTP, TCP Port 119	<input type="checkbox"/>
E-mail Receiving	POP3, TCP Port 110	<input type="checkbox"/>
Secure HTTP	HTTPS, TCP Port 443	<input type="checkbox"/>
File Transfer	FTP, TCP Port 21	<input type="checkbox"/>
MSN Messenger	TCP Port 1863	<input type="checkbox"/>
Telnet Service	TCP Port 23	<input type="checkbox"/>
AIM	AOL Instant Messenger, TCP Port 5190	<input type="checkbox"/>
NetMeeting	H.323, TCP Port 389,522,1503,1720,1731	<input type="checkbox"/>
DNS	UDP Port 53	<input type="checkbox"/>
SNMP	UDP Port 161, 162	<input type="checkbox"/>
VPN-PPTP	TCP Port 1723	<input type="checkbox"/>
VPN-L2TP	UDP Port 1701	<input type="checkbox"/>
TCP	All TCP Port	<input type="checkbox"/>
UDP	All UDP Port	<input type="checkbox"/>

You can select multiple services here. If you wish to deny or allow all services of certain IP address(es), please select both 'TCP' and 'UDP'.

If the service you wish to deny or allow is not listed, you can use 'User Define Service' table to add a new service of your own:

User Define Service	
Protocol :	<input type="text" value="Both"/>
Port Range :	<input type="text"/>
<input type="button" value="Add"/> <input type="button" value="Reset"/>	

Here are descriptions of every setup items:

Item Name	Description
Protocol	Please select the protocol type of this service: TCP or UDP, or 'Both'.
Port Range	Please input the port range if this service. For a single port number, just input the number of service port (like '110').

	If this service consists multiple continuous ports, you can input '110-120' for port number 110 to 120, or '110,115,120' for port number 110, 115, and 120.
--	---

Click 'Add' to add this IP address restriction rule to the list (and back to previous page), or click 'Reset' to clear all texts in every field.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-7-2 URL Blocking

If you want to prevent computers in local network from accessing certain website (like pornography, violence, or anything you want to block), you can use this function to stop computers in local network from accessing the site you defined here.

This function is useful for parents and company managers.

URL Blocking

You can block access to certain Web sites from a particular PC by entering either a full URL address or just a keyword of the Web site.

☐ **Enable URL Blocking**

URL/Keyword :

Here are descriptions of every setup items:

Item Name	Description
Enable URL Blocking	Check this box to enforce URL Blocking, uncheck it to disable URL Blocking.
URL/Keyword	Input the URL (host name or IP address of website, like http://www.blocked-site.com or http://11.22.33.44), or the keyword which is contained in URL (like pornography, cartoon, stock, or anything).
Add	Click 'Add' button to add the URL / keyword to the URL / Keyword filtering table.
Reset	Click 'Reset' to remove the value you inputted in URL/Keyword field.

All existing URLs will be displayed in 'Current URL Blocking Table':

Current URL Blocking Table

NO.	URL/Keyword	Select
-----	-------------	--------

If you want to delete a specific URL/Keyword entry, check the 'select' box of the MAC address you want to delete, then click 'Delete Selected' button. (You can select more than one URL/Keyword). If you want to delete all URL/Keyword listed here, please click 'Delete All' button, or you can also click 'Reset' button to unselect all URL/Keywords.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-7-3 DoS

Denial of Service (DoS) is a common attack measure, by transmitting a great amount of data or request to your Internet IP address and server, the Internet connection will become very slow, and server may stop responding because it is not capable to handle too much traffics.

This router has a built-in DoS attack prevention mechanism; when you activate it, the router will stop the DoS attack for you:

DoS

The Wireless Router's firewall can block common hacker attacks, including DoS, Discard Ping from WAN and Port Scan.

DoS Module

Ping of Death :	<input type="checkbox"/>
Discard Ping from WAN :	<input type="checkbox"/>
Port Scan :	<input type="checkbox"/>
Sync Flood :	<input type="checkbox"/>

[Advanced Settings](#)

[Apply](#) [Cancel](#)

Here lists four kinds of DoS attacks, please select the type of DoS attack you wish this broadband router to protect, and you can select multiple types of attacks.

The descriptions of every DoS attack is listed below:

Item Name	Description
Ping of Death	Ping of Death is a special packet, and it will cause certain computer to stop responding. Check this box and the router will filter this kind of packet out.
Discard Ping From WAN	Ping is a common and useful tool to know the connection status of a specified remote network device, but some malicious intruder will try to fill your network bandwidth with a lot of PING request data packet, to make your internet connection become very slow, even unusable. Check this box and the router will ignore all inbound PING request, but when

	you activate this function, you will not be able to ping your own router from internet, too.
Port Scan	Some malicious intruder will try to use a 'port scanner' to know how many ports of your Internet IP address are open, and they can collect a lot of valuable information by doing so. Check this box and the router will block all traffics which are trying to scan your Internet IP address.
Sync Flood	This is another kind of attack, which uses a lot of fake connection request to consume the memory of your server, and try to make your server become unusable. Check this box and the router will filter this kind of traffic out.

If you need to specify the details of every DoS attack, please click 'Advanced Settings' button, and the following settings will appear:

DoS

The Wireless Router's firewall can block common hacker attacks, including DoS, Discard Ping from WAN and Port Scan.

DoS Module

<input type="checkbox"/>	Ping of Death	5	Packet(s) per	Second	Burst	5
<input type="checkbox"/>	Discard Ping from WAN					
<input type="checkbox"/>	Port Scan	<input checked="" type="checkbox"/> NMAP FIN / URG / PSH <input checked="" type="checkbox"/> Xmas tree <input checked="" type="checkbox"/> Another Xmas tree <input checked="" type="checkbox"/> Null scan <input checked="" type="checkbox"/> SYN / RST <input checked="" type="checkbox"/> SYN / FIN <input checked="" type="checkbox"/> SYN (only unreachable port)				
<input type="checkbox"/>	Sync Flood	30	Packet(s) per	Second	Burst	30

APPLY

CANCEL

The descriptions of every setup item are listed below:

Item Name	Description
Ping of Death	Set the threshold of when this DoS prevention mechanism will be activated. Please check the box of Ping of Death, and input the frequency

	of threshold (how many packets per second, minute, or hour), you can also input the 'Burst' value, which means when this number of 'Ping of Death' packet is received in very short time, this DoS prevention mechanism will be activated.
Discard Ping From WAN	Check the box to activate this DoS prevention mechanism.
Port Scan	Many kind of port scan methods are listed here, please check one or more DoS attack methods you want to prevent.
Sync Flood	Like Ping of Death, you can set the threshold of when this DoS prevention mechanism will be activated.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.



Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

3-7-4 DMZ

Demilitarized Zone (DMZ) is a special area in your local network. This area resides in local network, and all computers in this area uses private IP address, too. But these private IP addresses are mapped to a certain Internet IP address, so other people on Internet can fully access those computers in DMZ.

The DMZ setting page looks like this:

DMZ

If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a Virtual DMZ Host.

☐ **Enable DMZ**

Public IP	Client PC IP Address	Computer Name
<input checked="" type="radio"/> Dynamic IP <input type="text" value="Session 1"/>	<input type="text"/>	<input type="button" value="←"/> <input type="text" value="----Select-----"/> <input type="button" value="↓"/>
<input type="radio"/> Static IP <input type="text"/>		

• **Current DMZ Table**

NO.	Computer Name	Public IP	Client PC IP Address	Select
-----	---------------	-----------	----------------------	--------

Here are descriptions of every setup items:

Item Name	Description
Enable DMZ	Check this box to enable DMZ function, uncheck this box to disable DMZ function.
Public IP address	You can select 'Dynamic IP' or 'Static IP' here. If you select 'Dynamic IP', you have to select an Internet connection session from dropdown menu; if you select 'Static IP', please input the IP address that you want to map to a specific private IP address.
Client PC IP address	Please input the private IP address that the

	Internet IP address will be mapped to.
Computer Name	Pull down the menu and all the computers connected to the router will be listed here. You can easily to select the computer name without checking the IP address of the computer.
Port Range	Input the starting port number in the left field, and input the ending port number in the right field. If you only want to redirect a single port number, just fill the port number in the left field.
Add	Add the mapping to port forwarding table.
Reset	Remove all inputted values.
Current DMZ Table	All existing public IP address and private IP address mapping will be displayed here.
Delete	If you want to delete a specific DMZ entry, check the 'select' box of the DMZ entry you want to delete, then click 'Delete Selected' button. (You can select more than one DMZ entries).
Delete All	If you want to delete all DMZ entries listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all DMZ entries.

NOTE: Please note that every public IP address can be mapped to a single Client PC IP address only.

All existing DMZ entries will be displayed in 'Current DMZ Table':

If you want to delete a specific DMZ entry, check the 'select' box of the DMZ entry you want to delete, then click 'Delete Selected' button. (You can select more than one DMZ entries). If you want to delete all DMZ entries listed here, please click 'Delete All' button or you can also click 'Reset' button to unselect all DMZ entries.

When you finished with the settings in this page, you can click 'Apply' button to save changes you made in this page, or you can click 'Cancel' to discard changes. After you click 'Apply' button, you'll see the following messages:

Save settings successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system to make the changes take effect.

CONTINUE

APPLY

Please click 'Apply' to save changes you made and restart the broadband router, this requires about 30 seconds and the broadband router will stop responding (this is normal and is not malfunction). You can reconnect to this broadband router and continue on other settings later.

CHAPTER IV: STATUS & TOOLS

4-1 Status

You can check how your router is currently operating under “Status”.



Status

The Wireless Router's status information provides the following information about your Wireless Router: Hardware/Firmware version, Serial Number, and its current operating status.

You will be able to see some basic system information under “System”.

System

Model :	Wireless Router
Up Time :	0day:3h:20m:44s
Hardware Version :	Rev. A
Boot Code Version :	1.0
Runtime Code Version :	1.01

4-1-1 Internet Connection

This page shows the status of your Internet connection.

Internet Connection

View the current internet connection status and related information.

Attain IP Protocol :	Dynamic IP connect
IP Address :	192.168.10.118
Subnet Mask :	255.255.255.0
Default Gateway :	192.168.10.254
MAC Address :	00:E0:4C:15:15:C9
Primary DNS :	192.168.1.12
Secondary DNS :	

4-1-2 Device Status

This page shows the current settings of your wired and wireless LAN.

Device Status

View the current setting status of this device.

Wireless Configuration

Mode :	Access Point
ESSID :	default
Channel Number :	11
Security :	Disable

LAN Configuration

IP Address :	192.168.2.1
Subnet Mask :	255.255.255.0
DHCP Server :	Enable
MAC Address :	00:E0:4C:15:15:C1

4-1-3 System Log

This page shows all logged system information. You can click “Save” to download the log file to your computer. You can also click “Clear” to remove all logs, or click “Refresh” to reload the logs.

System Log

View the system operation information. You can see the system start up time, connection process and etc., here.

```
Aug 13 00:00:00 (none) syslog.info syslogd started: BusyBox v1.11.1
Oct 18 06:11:34 (none) daemon.info in.rdiscd[365]: ----224.0.0.2 rdisc Sta
Oct 18 06:11:34 (none) daemon.info in.rdiscd[365]: 0 packets transmitted,
Oct 18 06:11:34 (none) daemon.info in.rdiscd[365]: 0 packets received,
Oct 18 06:11:34 (none) daemon.info in.rdiscd[365]:
Oct 18 14:20:55 (none) daemon.info in.rdiscd[9063]: ----224.0.0.2 rdisc St
Oct 18 14:20:55 (none) daemon.info in.rdiscd[9063]: 0 packets transmitted,
Oct 18 14:20:55 (none) daemon.info in.rdiscd[9063]: 0 packets received,
Oct 18 14:20:55 (none) daemon.info in.rdiscd[9063]:
```

4-1-4 Security Log

This page shows all logged security-related information. You can click “Save” to download the log file to your computer. You can also click “Clear” to remove all logs, or click “Refresh” to reload the logs.

Security Log

View any attempts that have been made to illegally gain access to your network.

```
[2010-08-13 00:00:11]: start Dynamic IP
[2010-08-13 00:00:15]: [SNTP]: connect to TimeServer 192.43.244.18 ...
[2010-10-18 05:17:03]: [SNTP]: connect success!
[2010-10-18 05:17:03]: [SNTP]: set time to 2010-10-18 05:17:03
[2010-10-18 05:17:03]: [Firewall]: WAN1 IP is 192.168.10.118
[2010-10-18 05:17:03]: [Firewall]: WAN2 IP is 0.0.0.0
[2010-10-18 05:17:03]: [Firewall]: WAN3 IP is 0.0.0.0
[2010-10-18 05:17:03]: [Firewall]: setting firewall...
[2010-10-18 05:48:13]: [SNTP]: connect to TimeServer 192.43.244.18 ...
```

4-1-5 Active DHCP Client

This page shows all current DHCP clients. You can click “Refresh” to reload the list.

Active DHCP Client

This table shows the assigned IP address, MAC address and time expired for each DHCP leased client.

IP Address	MAC Address	Time Expired (Second)
None	----	----

Refresh

4-1-6 Statistics

This page shows the statistical information of each network interface and the total system up time.

Statistics

This page shows the packet counters for transmission and reception regarding to networks.

Wireless LAN	Packets Sent	1830
	Packets Received	91223
Ethernet LAN	Packets Sent	8988
	Packets Received	9180
Ethernet WAN	Packets Sent	7314
	Packets Received	22814

Refresh

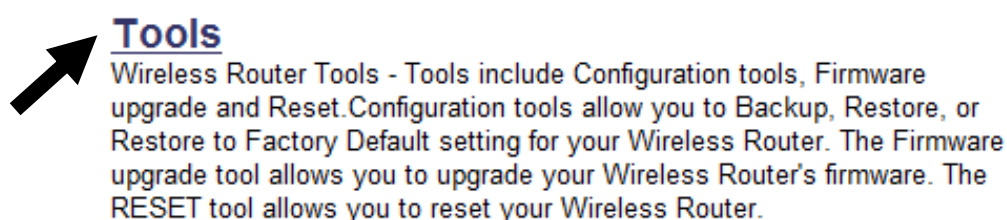
4-2 Tools

This broadband router comes with several tools that help you backup the settings, upgrade the firmware, and restart the device.

4-2-1 Configuration Tools

You can backup and restore your system configurations here. You can also reset all settings to the factory default.

1. Click the “Tools” tab.



2. Click “Configuration Tools”.

Item Name	Description
Backup Settings	Click the “Save...” button to save the current settings on your computer as a “config.bin” file.
Restore Settings	Click the “Browse...” button to select a previously saved “config.bin” file from your computer, then click “Upload” to replace the current settings with the settings in the “config.bin” file.
Restore to Factory Default	Click “Reset” to restore the settings to the factory default. A pop-up message window will appear and ask you to confirm the reset.

3. Click “Apply” to save the changes. If you wish to go back to the previous page, click “Previous”.

4-2-2 Firmware Upgrade

You can upgrade your firmware in the “Firmware Upgrade” section.

1. Download the firmware file from our company's website and save it on your computer.
2. Click "Browse..." to find the firmware file saved on your computer, then click "Apply" to start firmware upload. The broadband router will restart after the file is uploaded. All your current settings will be lost after the firmware is upgraded.

NOTE: It is recommended that you use a wired Ethernet connection and not a wireless connection to upload the firmware file. Do not switch the broadband router or computer off while performing firmware upgrade. This will cause the broadband router to malfunction.

4-2-3 Select Language

This broadband router's web-based user interface supports several languages.

1. Go to the "Select Language" section.
2. Select the "Language" dropdown menu.
3. Select the language you wish to use.

4-2-4 Reset

If your broadband router is not functioning properly or responding slowly, restarting the broadband router may solve the problem.

1. Select "Reset".
2. Click the "Apply" button to restart the broadband router.
3. When you are prompted to confirm the restart, click "OK".



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