



TRENDNET®



User's Guide

TEW-452BRP

Regulatory notes and statements

Wireless LAN, Health and Authorization for use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- Onboard airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

USA-FCC (Federal Communications Commission) statement

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of this device.

FCC Radio Frequency Exposure statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65 and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized.

When nearby persons has to be kept to ensure RF exposure compliance, in order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm.

FCC Interference Statement

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

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Export restrictions

This product or software contains encryption code that may not be exported or transferred from the US of Canada without an approved US Department of Commerce export license.

Safety Information

Your device contains a low power transmitter. When device is transmitted it sends out radio frequency (RF) signal.

CAUTION: To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

CE Mark Warning

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

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-17 and EN 55024 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328-2 has been conducted. These are considered relevant and sufficient.

CE in which Countries where the product may be used freely:

Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

France: except the channel 10 through 13, law prohibits the use of other channels.



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Note: Please run the CD-ROM and follow the steps in the Quick Installation Guide first to setup your router. If you still have problems after doing so then proceed to the following paragraphs to install the router with web-based configuration.

ABOUT THIS GUIDE

Congratulations on your purchase of this Wireless Super G Broadband Router. This integrated access device combines Internet gateway functions with wireless LAN and Fast Ethernet switch. It provides a complete solution for Internet surfing and office resource sharing, and it is easy to configure and operate for every user.

Purpose

This manual discusses how to install the Wireless Super G Broadband Router.

Terms/Usage

In this guide, the term “the WLAN Router” refers to your Wireless Super G Broadband Router.

Overview of this User’s Guide

Introduction. Describes the Wireless Super G Broadband Router and its features.

Unpacking and Setup. Helps you get started with the basic installation of the Wireless Super G Broadband Router.

Identifying External Components. Describes the front panel, rear panel and LED indicators of the Wireless Super G Broadband Router.

Connecting the WLAN Router. Tells how you can connect the Wireless Super G Broadband Router to your xDSL/Cable Modem.

Technical Specifications. Lists the technical (general, physical and environmental, performance and Routers settings) specifications of the Wireless Super G Broadband Router.

INTRODUCTION

With the explosive growth of the Internet, accessing information and services at any time, day or night has become a standard requirement for most people. The era of the standalone PC is waning. Networking technology is moving out of the exclusive domain of corporations and into homes with at least two computers.

This integrated access device combines Internet gateway functions with wireless LAN and Fast Ethernet switch. Designed for the business and home, it saves you the cost of installing a separate modem and ISP line for each computer, while providing ready connection for the users, with or without the network wires.

Broadband network access is also gaining ground. However, allowing more than two computers to access the Internet at the same time means less affordable, higher costs. Thus, there is a need to share one public IP address over a single Internet connection to link the home with the Internet.

The scarcity of IP addresses and using a shared Internet connection through an Internet sharing device can solve high network access costs. All linked computers can make full use of broadband capabilities over such a device.

This device not only comes equipped with a wide range of features, but also can be installed and configured right out of the box. This device supports a simple local area network and Internet access share, offering great cost savings.

The local area network connects home computers while also allowing any of the computers to access the Internet, share resources, or play online games—the basis of the family computing lifestyle.

Applications:

Broadband Internet access:

Several computers can share one high-speed broadband connection through wireless or wired (WLAN, LAN and WAN-Internet).

Resource sharing:

Share resources such as printers, scanners and other peripherals.

File sharing:

Exchange data, messages, and distribute files thus making good use of hard disk space.

Online gaming:

Through the local area network, online gaming and e-commerce services can be easily setup.

Firewall:

A built-in firewall function — for security and anti-hacking systems.

Supported Features:

- High speed data transfer rate
- NAT for sharing 1 IP address to all LAN/WLAN users.
- PPPoE and PPTP protocol for Dial-Up ADSL.
- 64/128 bit WEP Encryption
- WPA-PSK, WPA2-PSK, WPA, WPA2 security
- DHCP Server / Client.
- UPnP (Universal Plug and Play).
- Virtual Server mapping.
- URL filter (10 entries)
- IP filter (10 entries)
- Protocol filter (10 entries)
- Domain filter (40 entries)
- MAD address filter (50 entries)
- DNS
- Simple Firewall protection.
- Upgradeable firmware for future function.
- Simple installation using Setup Wizard.
- Easy configuration via Web Browser.

UNPACKING AND SETUP

This chapter provides unpacking and setup information for the Wireless Super G Broadband Router.

Unpacking

Open the box of the WLAN Router and carefully unpack it. The box should contain the following items:

- ◆ One Wireless Super G Broadband Router
- ◆ One dipole antenna
- ◆ One external power adapter
- ◆ One CD-ROM with this User's Guide

If any item is found missing or damaged, please contact your local reseller for replacement.

Setup

The setup of the WLAN Router can be performed properly using the following methods:

- ◆ The power outlet should be within 1.82 meters (6 feet) of the Broadband Router.
- ◆ Visually inspect the DC power jack and make sure that it is fully secured to the power adapter.
- ◆ Make sure that there is proper heat dissipation and adequate ventilation around the Broadband Router. Do not place heavy objects on the Broadband Router.
- ◆ Fix the direction of the antennas. Try to place the Wireless Router in a position that can best cover your wireless network. Normally, the higher you place the antenna, the better the performance will be. The antenna's position enhances the receiving sensitivity.

HARDWARE INSTALLATION

Front Panel

The figure below shows the front panel of the Wireless Super G Broadband Router.



Front Panel

SYSTEM

This indicator blinking green means the WLAN Router is working successfully. Otherwise, this indicator always on or off means the function of the WLAN Router has failed.

WAN (Link/ACT)

The indicators light green when the WAN port is connected to a xDSL/Cable modem successfully.

The indicators blink green while the WAN port was transmitting or receiving data from the xDSL/Cable modem.

WLAN (ACT)

This indicator lights green when there are wireless devices connected and transmitting data to the WLAN Router.

LAN (Link/ACT)

These indicators light green when the LAN ports were connected successfully. These indicators blinking green while the LAN ports were accessing data.

Rear Panel

The figure below shows the rear panel of the Wireless Super G Broadband Router.



Rear Panel

Antenna

There is one 2dBi gain antenna on the rear panel for wireless connection.

LAN (1-4)

Four RJ-45 10/100Mbps Auto-MDIX ports for connecting to either 10Mbps or 100Mbps Ethernet connections.

WAN

In the four port broadband Router, there is an RJ-45 10/100Mbps Auto-MDIX port for the WAN that connects to the xDSL/Cable modem for Internet connectivity.

POWER

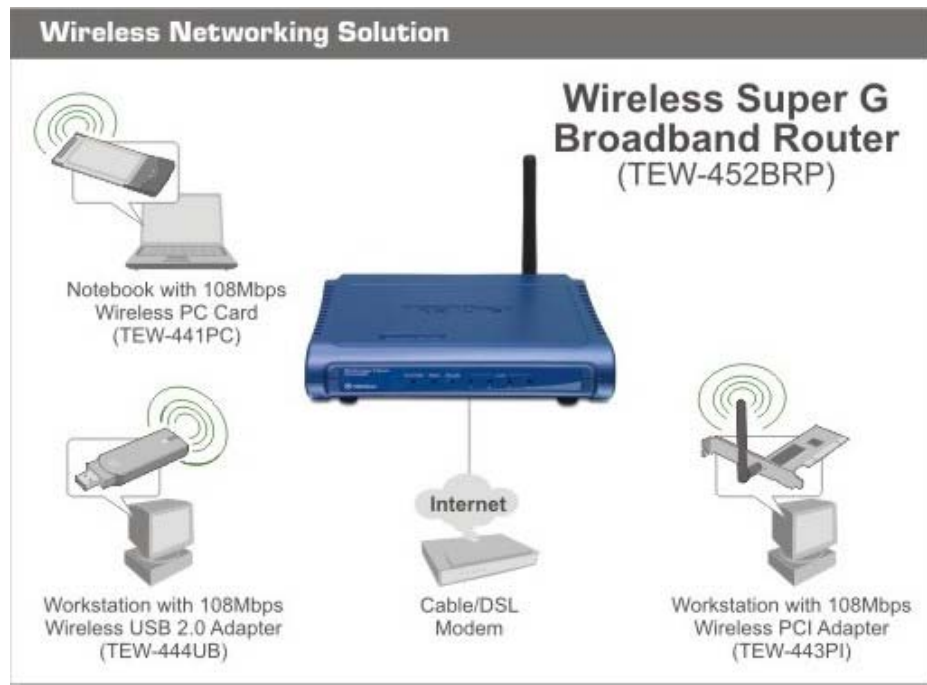
Plug the power adapter to this power jack

RESET

Use a pin-shaped item to push to reset this device to factory default settings. It will be a useful tool when the manager forgot the password to login, and needs to restore the device back to default settings.

Hardware connections

Connecting the WLAN Router



1. Plug in one end of the network cable to the WAN port of the WLAN Router.
2. Plug in the other end of the network cable to the Ethernet port of the xDSL or Cable modem.
3. Use another network cable to connect to the Ethernet card on the computer system; the other end of the cable connects to the LAN port of the WLAN Router. Since the Wireless Super G Broadband Router has four ports, you can connect up to four computers directly to the unit. Then you do not have to buy a switch to connect these computers since one WLAN Router functions both as a connection-sharing unit and as a switch.

Check the installation

The control LEDs of the WLAN Router are clearly visible and the status of the network link can be seen instantly:

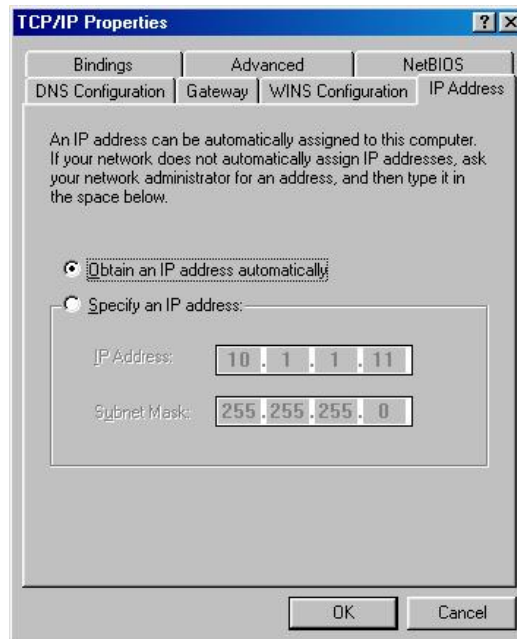
1. With the power source on, once the device is connected to the broadband modem, the Power, System, LAN, WLAN and WAN port LEDs of the WLAN Router will light up indicating a normal status.
2. When the WAN Port is connected to the ADSL/Cable modem, the WAN LED will light up.
3. When the LAN Port is connected to the computer system, the LAN LED will light up.

PC NETWORK TCP/IP SETTING

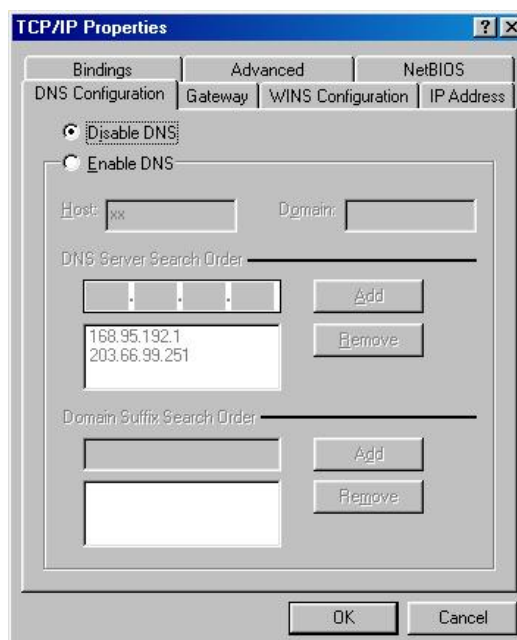
The network TCP/IP settings differ based on the computer's operating system (Win95/98/ME/NT/2000/XP) and are as follows.

Windows 95/98/ME

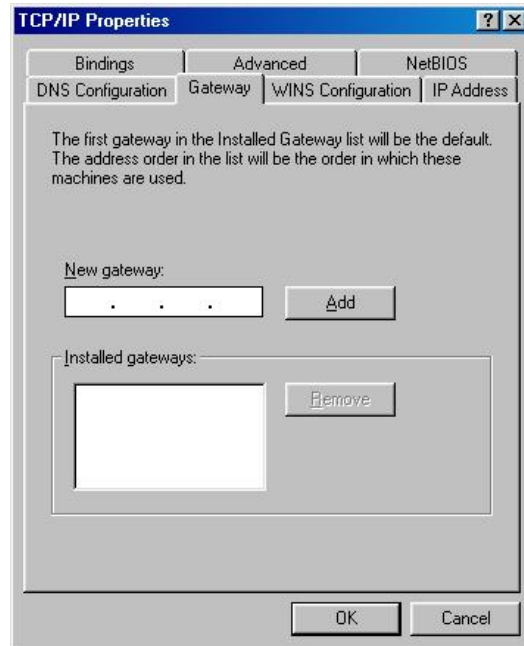
1. Click on the “**Network neighborhood**” icon found on the desktop.
2. Click the right mouse button and a context menu will be show.
3. Select “**Properties**” to enter the TCP/IP setting screen.
4. Select “**Obtain an IP address automatically**” on the “**IP address**” field.



5. Select “**Disable DNS**” in the “**DNS**” field.



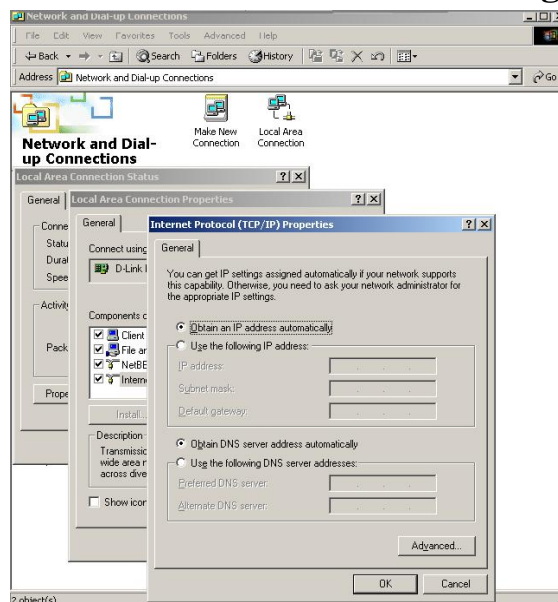
6. Select “None” for the “Gateway address” field.



Windows 2000

Double click on the “**My Computer**” icon on the desktop. When “**My Computer**” window opens, open the “**Control Panel**” and then open the “**Network dialup connection**” applet. Double click on the “**Local area network connection**” icon. Select “**Properties**” to enter the TCP/IP setting window.

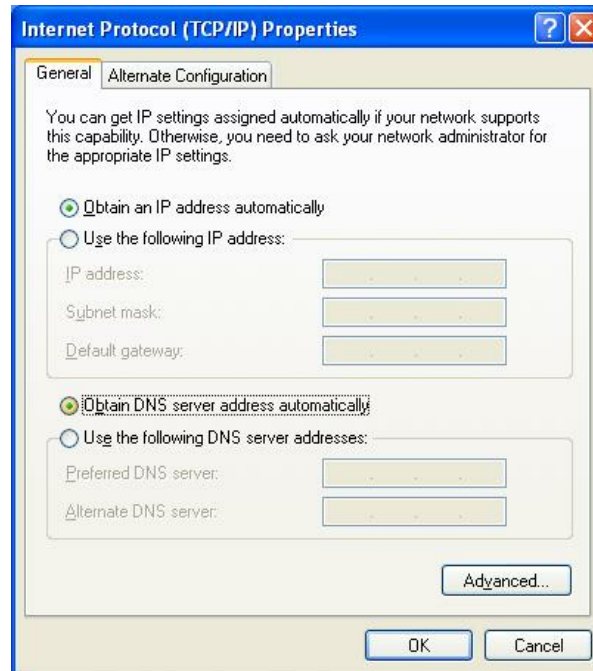
1. In the “**Local area network status**” window, click on “**Properties.**”
2. In the “**Local area network connection**” window, first select TCP/IP setting and then select “**Properties.**”
3. Set both “**IP address**” and “**DNS**” to **Automatic configuration.**



Windows XP

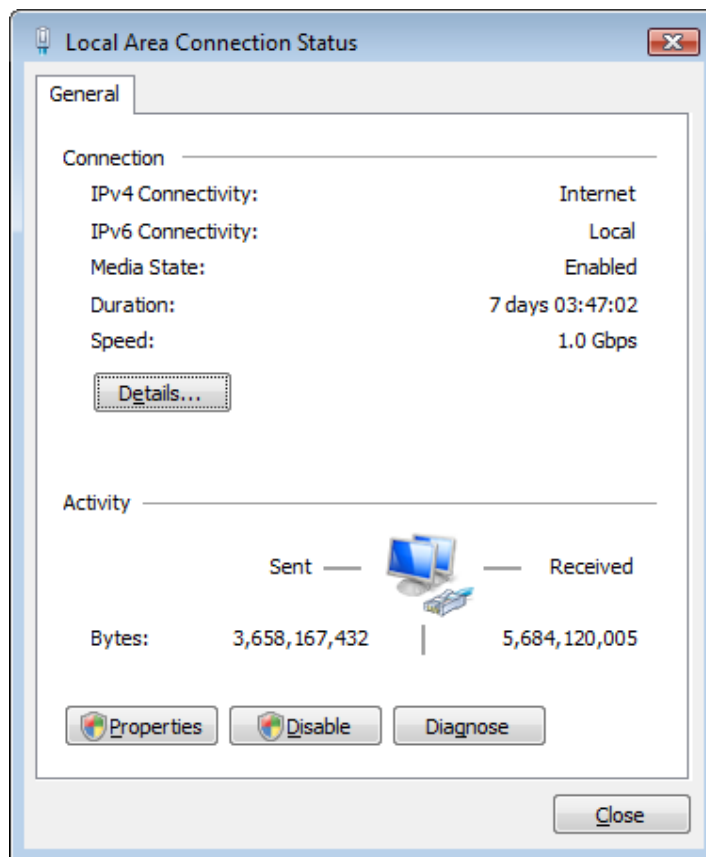
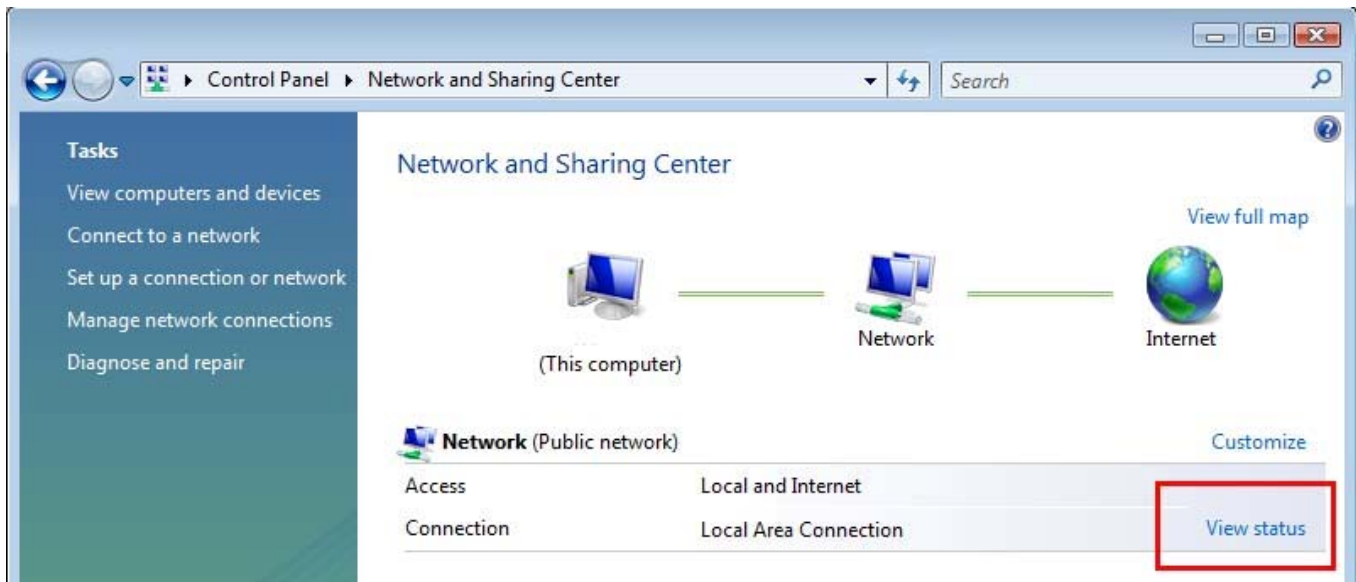
Point the cursor and click the right button on the “My Network Place” icon.
Select “properties” to enter the TCP/IP setting window.

1. Set “IP address” to “Obtain an IP address automatically.”
2. Set “DNS” to “Obtain DNS server address automatically.”

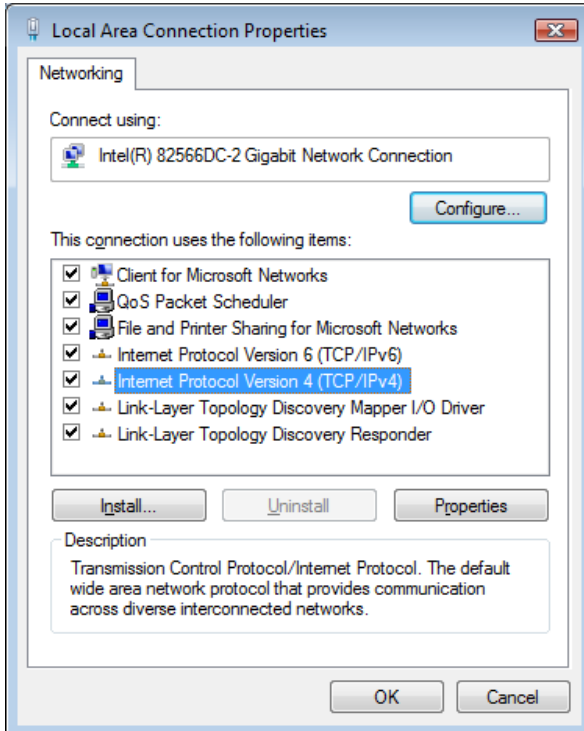


Windows Vista

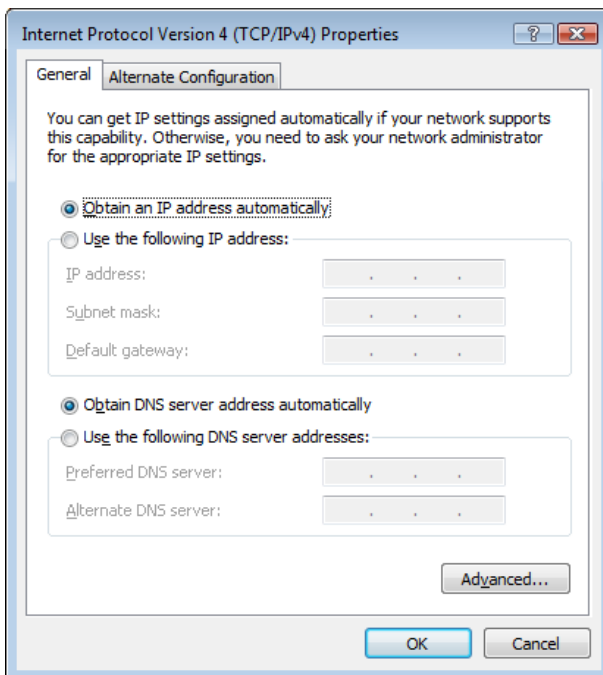
Go to **Control Panel** → **Network and Sharing Center** → click on **View Status** to get the Local Area Connection status window



Click on the **Properties** button for the property window



Click on TCP/IP settings and click on Properties, make sure it's set to **“Obtain an IP address automatically”**.



CONFIGURATION

First make sure that the network connections are functioning normally.

This WLAN Router can be configured using Internet Explorer 6.0 or newer web browser versions.

Login to the WLAN Router through Wireless LAN

Before configuring the WLAN Router through WLAN, make sure that the SSID, Channel and the WEP is set properly.

The default setting of the WLAN Router that you will use:

- ✓ SSID: TRENDnet
 - ✓ Channel: 6
 - ✓ Security: disable
-

Login to the WLAN Router

Before you configure this device, note that when the WLAN Router, make sure the host PC must be set on the **IP subnet** that can be accessed by the xDSL/Cable modem. For example, when the default network address of the xDSL/Cable modem Ethernet interface is 192.168.10.x, then the host PC should be set at 192.168.10.xxx (where xxx is a number between 2 and 254), and the default subnet mask is 255.255.255.0.

Using the Web Browser

1. Open Internet Explorer 6.0 or above Internet browser.
2. Enter IP address <http://192.168.10.1> (the factory-default IP address setting) to the URL web address location.

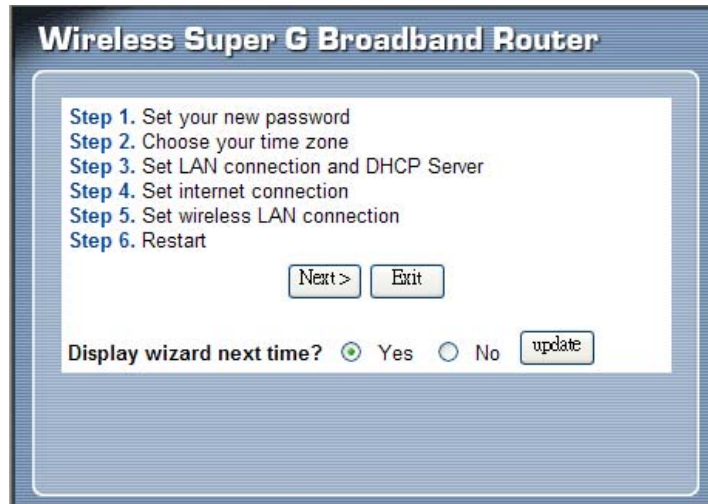


3. When the following dialog box appears, enter the user name and password to login to the main configuration window, the default username and password is "*admin*".



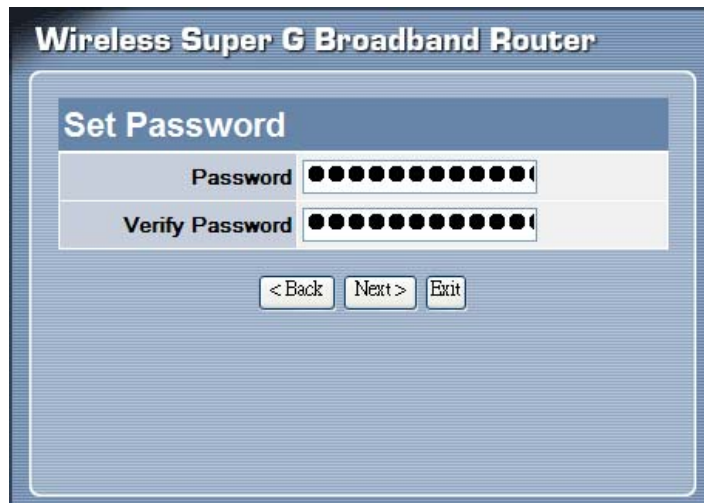
Setup Wizard

Setup wizard is provided as part of the web configuration utility. User can simply follow the step-by-step process to get the wireless Router configuration ready to run in 6 easy steps by clicking on the “Wizard” button on the function menu. The following screen will appear. Please click “Next” to continue.



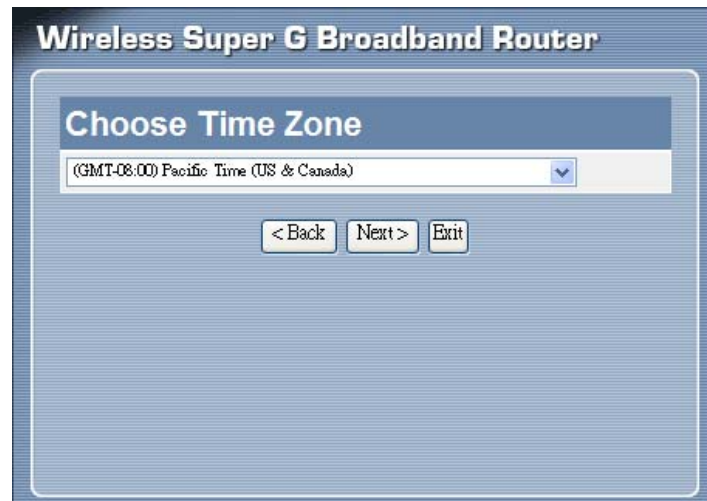
Step 1: Set up new Password

User can change the password and then click “Next” to continue.



Step 2: Choose time zone

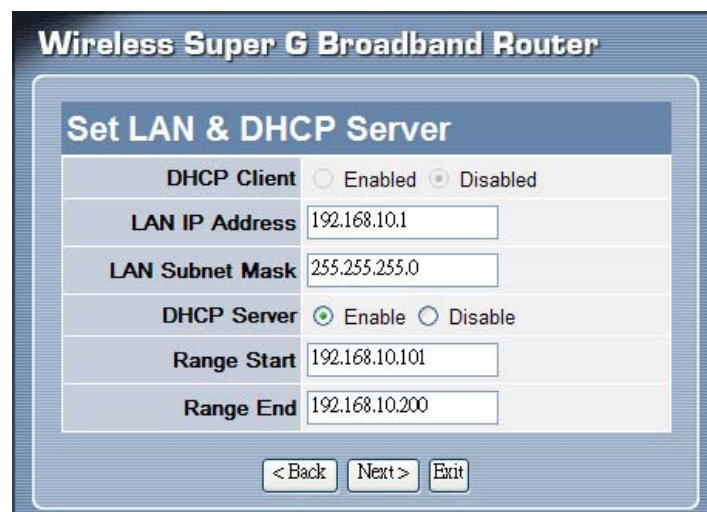
Select the time zone from the drop down list. Please click “Next” to continue.



The screenshot shows the 'Choose Time Zone' configuration page. At the top, it says 'Wireless Super G Broadband Router'. Below that is a header 'Choose Time Zone'. A dropdown menu is set to '(GMT-08:00) Pacific Time (US & Canada)'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Exit'.

Step 3: Set LAN connection and DHCP server

Set user's IP address and mask. The default IP is 192.168.1.1. If the user chooses to enable DHCP Server, please click “Enable”. DHCP Server enabled is able to automatically assign IP addresses to the LAN computers. Please assign the range of IP addresses in the fields of “Range start” and “Range end”. Please click “Next” to continue.



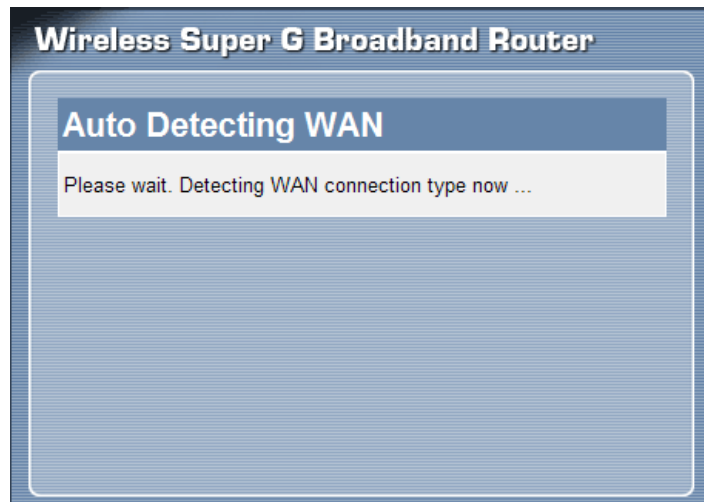
The screenshot shows the 'Set LAN & DHCP Server' configuration page. At the top, it says 'Wireless Super G Broadband Router'. Below that is a header 'Set LAN & DHCP Server'. The page contains several fields:

DHCP Client	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
LAN IP Address	192.168.10.1
LAN Subnet Mask	255.255.255.0
DHCP Server	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Range Start	192.168.10.101
Range End	192.168.10.200

At the bottom, there are three buttons: '< Back', 'Next >', and 'Exit'.

Step 4: Set Internet connection

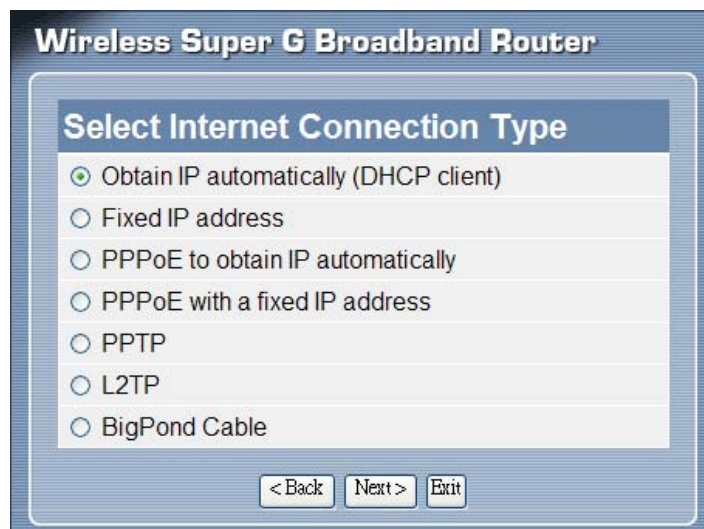
The WLAN Router will attempt to auto detect your Internet Connection.



If the WLAN Router is unable to auto detect your Internet connection, you will need to manually select the Internet connection type: PPPoE to obtain IP automatically; PPPoE with a fixed IP address; PPTP.

Obtain IP automatically (DHCP client):

If the user has enabled DHCP server, choose "Obtain IP automatically (DHCP client)" to have the WLAN Router assign IP addresses automatically.



Fixed IP Address:

The screenshot shows a configuration window for a 'Wireless Super G Broadband Router'. The title bar reads 'Wireless Super G Broadband Router'. Below the title bar is a section titled 'Select Internet Connection Type'. This section contains a list of radio button options: 'Obtain IP automatically (DHCP client)', 'Fixed IP address', 'PPPoE to obtain IP automatically', 'PPPoE with a fixed IP address', 'PPTP', 'L2TP', and 'BigPond Cable'. The 'Fixed IP address' option is selected, indicated by a green checkmark in a small box to the left of the radio button. At the bottom of the window are three buttons: '< Back', 'Next >', and 'Exit'.

If the Internet Service Provider (ISP) assigns a fixed IP address, choose this option and enter the assigned WAN IP Address, WAN Subnet Mask, WAN Gateway Address and DNS Server Addresses for the WLAN Router.

The screenshot shows a configuration window for a 'Wireless Super G Broadband Router'. The title bar reads 'Wireless Super G Broadband Router'. Below the title bar is a section titled 'Set Fixed IP Address'. This section contains a table with six rows, each representing a different network parameter. Each row has a label on the left and a text input field on the right. The values entered in the input fields are: WAN IP Address: 172.21.81.206; WAN Subnet Mask: 255.255.240.0; WAN Gateway Address: 0.0.0.0; DNS Server Address 1: 0.0.0.0; DNS Server Address 2: 0.0.0.0; and DNS Server Address 3: 0.0.0.0. At the bottom of the window are three buttons: '< Back', 'Next >', and 'Exit'.

WAN IP Address	172.21.81.206
WAN Subnet Mask	255.255.240.0
WAN Gateway Address	0.0.0.0
DNS Server Address 1	0.0.0.0
DNS Server Address 2	0.0.0.0
DNS Server Address 3	0.0.0.0

PPPoE to obtain IP automatically:

Wireless Super G Broadband Router

Select Internet Connection Type

- Obtain IP automatically (DHCP client)
- Fixed IP address
- PPPoE to obtain IP automatically
- PPPoE with a fixed IP address
- PPTP
- L2TP
- BigPond Cable

< Back Next > Exit

If connected to the Internet using a PPPoE (Dial-up xDSL) connection, and the ISP provides a User Name and Password, then choose this option and enter the required information.

Wireless Super G Broadband Router

Set PPPoE to obtain IP automatically IP

User Name	<input type="text"/>
Password	<input type="password"/>
Verify Password	<input type="password"/>

< Back Next > Exit

PPPoE with a fixed IP address:

Wireless Super G Broadband Router

Select Internet Connection Type

- Obtain IP automatically (DHCP client)
- Fixed IP address
- PPPoE to obtain IP automatically
- PPPoE with a fixed IP address
- PPTP
- L2TP
- BigPond Cable

< Back Next > Exit

If connected to the Internet using a PPPoE (Dial-up xDSL) connection, and the ISP provides a User Name, Password and a Fixed IP Address, choose this option and enter the required information.

Wireless Super G Broadband Router

Set PPPoe with a fixed IP Address

User Name	<input type="text"/>
Password	<input type="password"/>
Verify Password	<input type="password"/>
IP Address	<input type="text" value="0.0.0.0"/>

< Back Next > Exit

L2TP:

Wireless Super G Broadband Router

Select Internet Connection Type

- Obtain IP automatically (DHCP client)
- Fixed IP address
- PPPoE to obtain IP automatically
- PPPoE with a fixed IP address
- PPTP
- L2TP
- BigPond Cable

< Back Next > Exit

If connected to the Internet using a L2TP (Dial-up xDSL) connection and the ISP provides a Server IP, Account and Password information, choose this option and enter the required information.

Wireless Super G Broadband Router

Set L2TP Client

Server IP	<input type="text"/>
L2TP Account	<input type="text"/>
L2TP Password	<input type="password"/>
Retype Password	<input type="password"/>

< Back Next > Exit

Big Pond Cable(Australia):

Wireless Super G Broadband Router

Select Internet Connection Type

- Obtain IP automatically (DHCP client)
- Fixed IP address
- PPPoE to obtain IP automatically
- PPPoE with a fixed IP address
- PPTP
- L2TP
- BigPond Cable

< Back Next > Exit

If your ISP is Big Pond Cable, the ISP will provide a User Name, Password, Authentication Server and Login Server IP (Optional). Choose this option and enter the required information.

Wireless Super G Broadband Router

Set BigPond

Please set your BigPond Cable data then press Next to continue.

User Name

Password

Verify Password

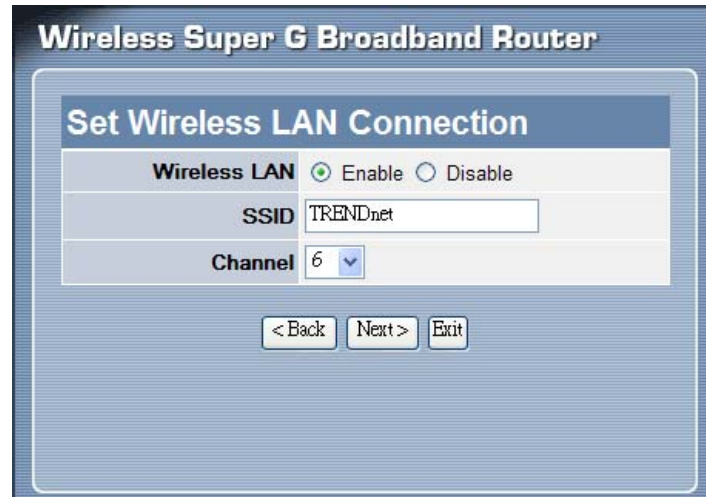
Auth Server sm-server

Login Server IP (optional)

< Back Next > Exit

Step 5: Set Wireless LAN connection

Click “Enable” to enable Wireless LAN. If user enables the Wireless LAN, type the SSID in the text box and select a communications channel. The SSID and channel must be the same as wireless devices attempting to connect to the WLAN Router.



Wireless Super G Broadband Router

Set Wireless LAN Connection

Wireless LAN Enable Disable

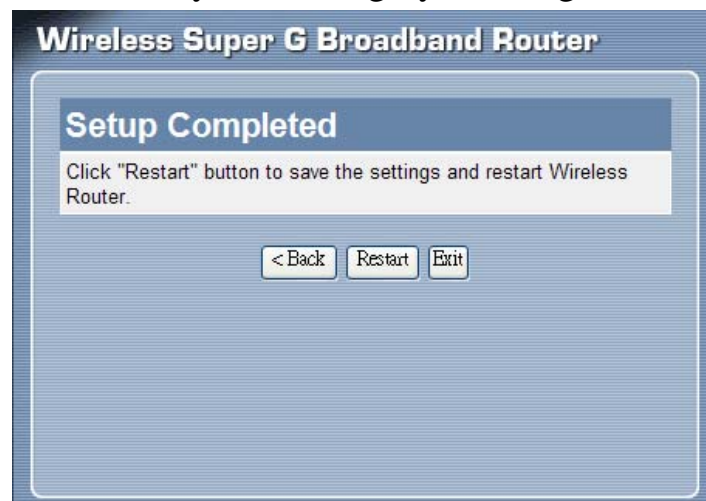
SSID

Channel

< Back Next > Exit

Step 6: Setup completed

The Setup wizard is now completed. The new settings will be effective after the WLAN Router restarts. Please click “Restart” to reboot the WLAN Router. If user does not want to make any changes, please click “Exit” to quit without any changes. User also can go back to modify the setting by clicking “Back”.



Wireless Super G Broadband Router

Setup Completed

Click "Restart" button to save the settings and restart Wireless Router.

< Back Restart Exit

Advanced configuration

Main

The screen enables users to configure the LAN & DHCP Server, set WAN parameters, create Administrator and User passwords, and set the local time, time zone, and dynamic DNS.

LAN & DHCP Server

This page allows the user to configure LAN and DHCP properties, such as the host name, IP address, subnet mask, and domain name. LAN and DHCP profiles are listed in the DHCP table at the bottom of the screen.

The screenshot shows the configuration interface for the LAN & DHCP Server. The DHCP Client is set to Enabled, and the DHCP Server is also Enabled. The Host Name is 'Trendnet', IP Address is '192.168.101', and Subnet Mask is '255.255.255.0'. The Start IP is '192.168.10.101' and the End IP is '192.168.10.200'. The Lease Time is set to '1 Week'. A table at the bottom lists the DHCP clients:

Host Name	IP Address	MAC Address
EDDY-X32	192.168.10.101	00-11-25-ce-35-8b

Host Name: Type the host name in the text box. The host name is required by some ISPs. The default host name is "AP-Router."

IP Address: This is the IP address of the WLAN Router. The default IP address is 192.168.10.1.

Subnet Mask: Type the subnet mask for the WLAN Router in the text box. The default subnet mask is 255.255.255.0.

DHCP Server: Enables the DHCP server to allow the WLAN Router to automatically assign IP addresses to devices connecting to the LAN. DHCP is enabled by default.

All DHCP client computers are listed in the table at the bottom of the screen, providing the host name, IP address, and MAC address of the client.

Start IP: Type an IP address to serve as the start of the IP range that DHCP will use to assign IP addresses to all LAN devices connected to the WLAN Router.

End IP: Type an IP address to serve as the end of the IP range that DHCP will use to assign IP addresses to all LAN devices connected to the WLAN Router.

Domain Name: Type the local domain name of the network in the text box. This item is optional.

Lease Time: The lease time specifies the amount of connection time a network user be allowed with their current dynamic IP address.

WAN

This screen enables users to set up the WLAN Router WAN connection, specify the IP address for the WAN, add DNS numbers, and enter the MAC address.



Connection Type: Select the connection type, either DHCP client, Fixed IP, PPPoE, PPTP or L2TP from the drop-down list.

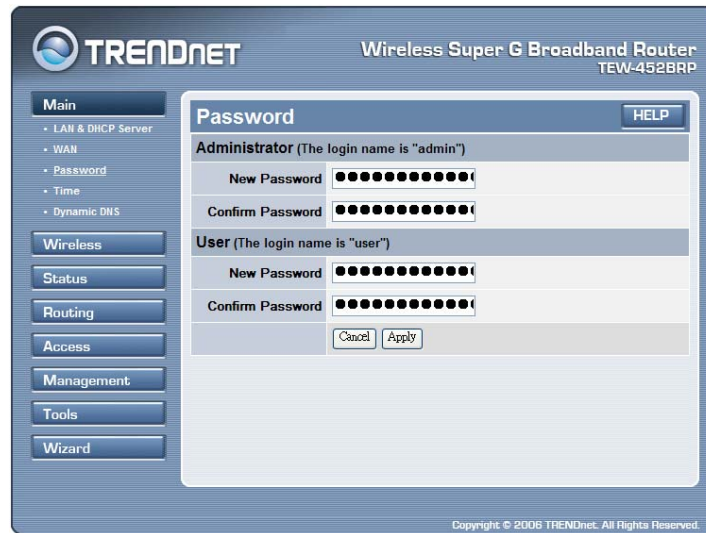
WAN IP: Select whether user wants to specify an IP address manually, or want DHCP to obtain an IP address automatically. When Specify IP is selected, type the IP address, subnet mask, and default gateway in the text boxes. User's ISP will provide with this information.

DNS 1/2/3: Type up to three DNS numbers in the text boxes. User's ISP will provide this information.

MAC Address: If required by user's ISP, type the MAC address of the WLAN Router WAN interface in this field.

Password

This screen enables users to set administrative and user passwords. These passwords are used to gain access to the WLAN Router interface.



Administrator: Type the password the Administrator will use to log into the system. The password must be typed again for confirmation. The Administrator can also authorize users the ability to configure the WLAN Router.

User: Type the password the User will use to log in to the system. The password must be typed again for confirmation.

Time

This screen enables users to set the time and date for the WLAN Router's real-time clock, select properly time zone, and enable or disable daylight saving.



Local Time: Displays the local time and date.

Time Zone: Select the time zone from the drop-down list.

Synchronize the clock with: Select the clock adjustment method from the drop-down list.

Automatic: Automatically adjust the system time from NTP Server.

Manual: Manually adjust the system time when you press the **Set Time** button.

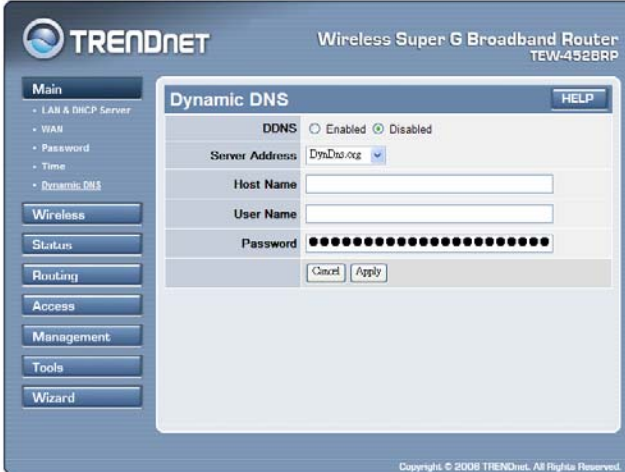
Default NTP server: The Simple Network Time Protocol (SNTP) server allows the WLAN Router to synchronize the system clock to the global Internet through the SNTP Server. Specify the NTP domain name or IP address in the text box.

Set the time: Manually setting the WLAN Router system time, press the **Set Time** button to update the system time.

Daylight Saving: Enables users to enable or disable daylight saving time. When enabled, select the start and end date for daylight saving time.

Dynamic DNS

This synchronizes the DDNS server with your current Public IP address when you are online. First, you need to register your preferred DNS with the DDNS provider. Then, please select the DDNS address in the Server Address and fill the related information in the below fields: Host Name, User Name and Password.



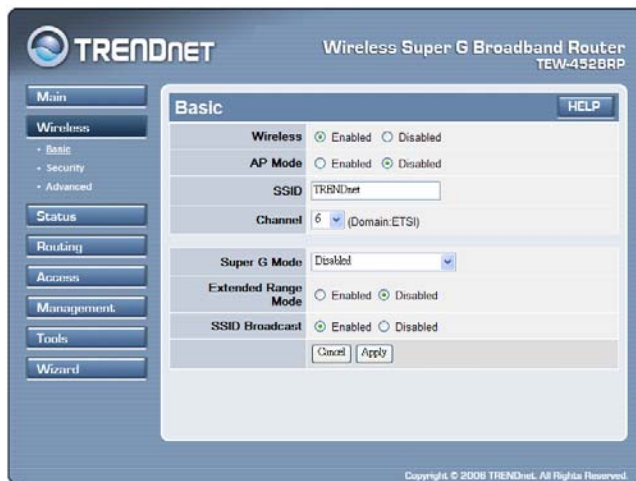
The screenshot shows the Dynamic DNS configuration interface for a TrendNet Wireless Super G Broadband Router (TEW-452BRP). The interface is titled "Dynamic DNS" and includes a "HELP" button. The "DDNS" section has two radio buttons: "Enabled" (selected) and "Disabled". Below this, the "Server Address" is set to "Dyndns.org" in a dropdown menu. There are three input fields: "Host Name", "User Name", and "Password" (masked with dots). At the bottom of the form are "Cancel" and "Apply" buttons. The left sidebar contains navigation links for "Main", "Wireless", "Status", "Routing", "Access", "Management", "Tools", and "Wizard". The footer of the page reads "Copyright © 2006 TRENDnet. All Rights Reserved."

Wireless

This section enables users to configuration the wireless communications parameters for the WLAN Router.

Basic

This page allow user to enable and disable the wireless LAN function, create a SSID, and select the channel for wireless communications.



Wireless: Enable or disable the wireless function of the WLAN Router.

AP Mode: Enable the AP mode to set this device to a wireless access point device, the WAN port will be changed to LAN port and the NAT function will be disabled.

SSID: Type an SSID in the text box. The SSID of any wireless device must match the SSID typed here in order for the wireless device to access the LAN and WAN via the WLAN Router.

Channel: Select a transmission channel for wireless communications. The channel of any wireless device must match the channel selected here in order for the wireless device to access the LAN and WAN via the WLAN Router.

Super G mode: From the drop list, there are four options: *Disabled*, *Super G without turbo*, *Super G with Dynamic turbo* and *Super G with Static turbo*. The turbo mode indicates the combination of two channels to enhance the throughput. Super G without turbo indicates that it is on Super G mode without the channel aggregation. Dynamic turbo is able to automatically detect if any '11g based' product is available. If no, the connection is normal 11g speeds. Static turbo means it will not go back to normal 11g once it's enabled.

Extended Range Mode: Enable and disable the wireless Extended Range enhancement.

SSID Broadcast: While SSID Broadcast is enabled, all wireless clients will be able to view the WLAN Router's SSID. For security purposes, users may want to disable SSID Broadcast to ensure only authorized clients have access.

Security



Authentication Type: The authentication type default is set to open system. There are four options: Disabled, WEP, WPA and WPA2.

WEP Encryption



WEP: Open System and Shared Key requires the user to set a WEP key to exchange data with other wireless clients that have the same WEP key..

Mode: Select the key type: ASCII or HEX

WEP Key: Select the level of encryption from the drop-down list. The WLAN Router supports, 64 and 128-bit encryption.

Key 1 ~ Key 4: Enables users to create up to 4 different WEP keys. Manually enter a set of values for each key. Select a key to use by clicking the radio button next to the key. Click “**Clear**” to erase key values.

WPA/WPA2 Security



If WPA or WPA2 EAP is selected, the above screen is shown. Please set the length of the encryption key and the parameters for the RADIUS server.

Lifetime: Select the Lifetime of the Encryption Key from 5 Minutes to 1 Day. As soon as the lifetime of the Encryption Key expires, the Encryption Key will be renewed by the Radius server.

Encryption Key: Select the Encryption Key Length Size ranging from 64 to 128 Bits that you would like to use.

RADIUS Server:

1. Enter the IP address, Port used and Shared Secret by the Primary Radius Server.
2. Enter the IP address, Port used and Shared Secret by the Secondary Radius Server.

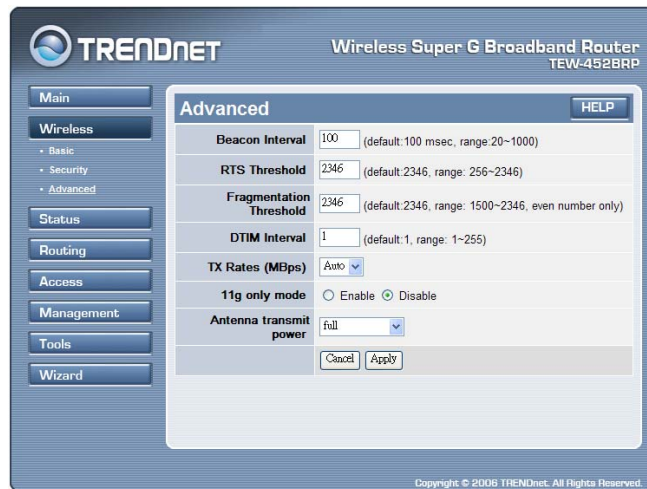
WPA-PSK/WPA2-PSK Security

If WPA-PSK or WPA2-PSK is selected, please set the PSK key in the passphrase field. The length should be 8 characters at least.



Advanced

This screen enables users to configure advanced wireless functions.



Beacon Interval: Type the beacon interval in the text box. User can specify a value from 1 to 1000. The default beacon interval is 100.

RTS Threshold: Type the RTS (Request-To-Send) threshold in the text box. This value stabilizes data flow. If data flow is irregular, choose values between 256 and 2346 until data flow is normalized.

Fragmentation Threshold: Type the fragmentation threshold in the text box. If packet transfer error rates are high, choose values between 256 and 2346 until packet transfer rates are minimized. (NOTE: set this fragmentation threshold value may diminish system performance.)

DTIM Interval: Type a DTIM (Delivery Traffic Indication Message) interval in the text box. User can specify a value between 1 and 65535. The default value is 1.

TX Rates (Mbps): Select one of the wireless communications transfer rates, measured in megabytes per second, based upon the speed of wireless adapters connected to the WLAN.

11g only mode: If Enable is selected, only 802.11g WLAN clients are allowed to communicate with the WLAN Router.

Antenna Transmit Power: Adjust the power of the antenna transmission by selecting from the drop down list: full, half (-3dB), quarter (-6dB), eighth (-9dB) or min.

Status

This selection enables users to view the status of the WLAN Router LAN, WAN and Wireless connections, and view logs and statistics pertaining to connections and packet transfers.

Device Information

This screen enables users to view the WLAN Router's LAN, Wireless and WAN configurations.



Firmware Version: Displays the latest build of the WLAN Router firmware interface. After updating the firmware in Tools - Firmware, check this to ensure that the firmware was successfully updated.

LAN: This section displays the LAN interface configuration including the MAC address, IP Address, Subnet Mask, and DHCP Server Status. Click “DHCP Table” to view a list of client stations currently connected to the WLAN Router LAN interface.

Wireless: This section displays the wireless configuration information, including the MAC address, the Connection status, SSID, Channel and Authentication type.

WAN: This section displays the WAN interface configuration including the MAC address, Connection status, DHCP client status, IP address, Subnet mask, Default gateway, and DNS.

Click “*DHCP Release*” to release all IP addresses assigned to client stations connected to the WAN via the WLAN Router. Click “*DHCP Renew*” to reassign IP addresses to client stations connected to the WAN.

Log

This screen enables users to view a running log of Router system statistics, events, and activities. The log displays up to 200 entries. Older entries are overwritten by new entries. The Log screen commands are as follows:

Click “*First Page*” to view the first page of the log

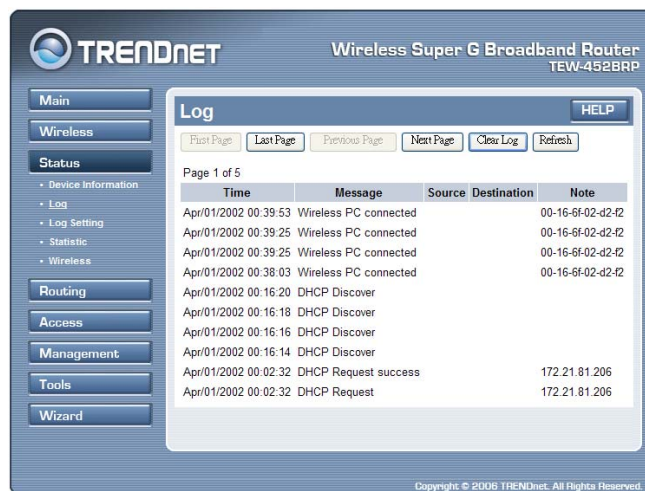
Click “*Last Page*” to view the final page of the log

Click “*Previous Page*” to view the page just before the current page

Click “*Next Page*” to view the page just after the current page

Click “*Clear Log*” to delete the contents of the log and begin a new log

Click “*Refresh*” to renew log statistics



Time: Displays the time and date that the log entry was created.

Message: Displays summary information about the log entry.

Source: Displays the data source.

Destination: Displays the data destination.

Note: Displays the IP address of the communication

Log Setting

This screen enables users to set Router Log parameters.



SMTP Server: Type your SMTP server address here.

Send to: Type an email address for the log to be sent to. Click “Email Log Now” to immediately send the current log.

SMTP Authentication: Selected the Enabled if the SMTP server need for authentication, fill in account name and password in SMTP Account field and SMTP Password field.

SMTP Account: If the SMTP Authentication enabled, fill in the SMTP account name here.

SMTP Password: If the SMTP Authentication enabled, fill in the password of the SMTP account here.

Syslog Server: Type the IP address of the Syslog Server if user wants the WLAN Router to listen and receive incoming Syslog messages.

Log Type: Enables users to select what items will be included in the log:

System Activity: Displays information related to WLAN Router operation.

Debug Information: Displays information related to errors and system malfunctions.

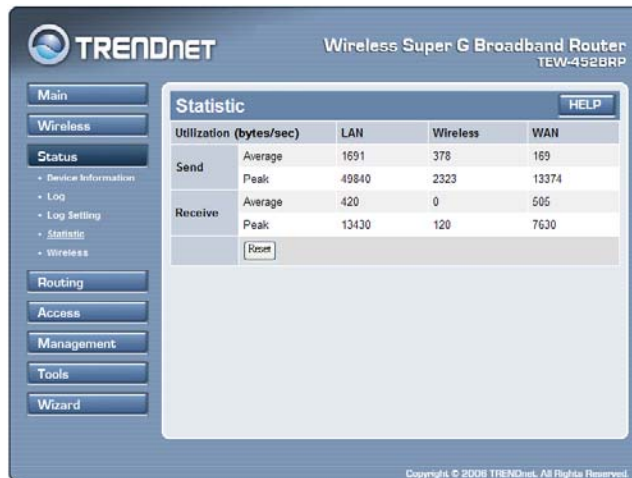
Attacks: Displays information about any malicious activity on the network.

Dropped Packets: Displays information about packets that have not been transferred successfully.

Notice: Displays important notices by the system administrator.

Statistic

This screen displays a table that shows the rate of packet transmission via the WLAN Router's LAN, Wireless and WAN ports (in bytes per second).



Utilization (bytes/sec)		LAN	Wireless	WAN
Send	Average	1691	378	169
	Peak	49840	2323	13374
Receive	Average	420	0	505
	Peak	13430	120	7630

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Click “Reset” to erase all statistics and begin logging statistics again.

Wireless

This screen enables users to view information about wireless devices that are connected to the WLAN Router.



Connected Time	MAC Address
Apr/01/2002 00:39:53	00-16-6f-02-d2-42

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Connected Time: Displays how long the wireless client has been connected to the WLAN Router.

MAC Address: Displays the wireless client's MAC address.

Routing

This selection enables users to set how the WLAN Router forwards data: Static and Dynamic. Routing Table enables users to view the information created by the WLAN Router that displays the network interconnection topology.

Static

It enables users to set parameters by which the WLAN Router forwards data to its destination if the network has a static IP address.

The screenshot shows the 'Static' configuration page for a Trendnet router. The interface includes a sidebar menu on the left with options: Main, Wireless, Status, Routing (selected), Access, Management, Tools, and Wizard. The 'Routing' menu is expanded to show 'Static', 'Dynamic', and 'Routing Table'. The main content area is titled 'Static' and contains the following fields and controls:

- Network Address:
- Network Mask:
- Gateway Address:
- Interface:
- Metric:

Below the fields are four buttons: Add, Update, Delete, and Cancel. At the bottom of the page, there is a table with the following columns: Network Address, Mask, Gateway, Interface, and Metric.

Network Address: Type the static IP address the network uses to access the Internet. Contact the ISP or network administrator for this information.

Network Mask: Type the network (subnet) mask of the network. If this field is left blank, the network mask defaults to 255.255.255.0. Contact the ISP or network administrator for this information.

Gateway Address: Type the gateway address of the network. Contact the ISP or network administrator for this information.

Interface: Select an interface, WAN or LAN, to connect to the Internet.

Metric: Select which metric that the user wants to apply to this configuration.

Add: Click to add the configuration to the static IP address table at the bottom of the page.

Update: Select one of the entries in the static IP address table at the bottom of the page, and after changing parameters, click “Update” to confirm the changes.

Delete: Select one of the entries in the static IP address table at the bottom of the page and click “Delete” to remove the entry.

New: Click “New” to clear the text boxes and add required information to create a new entry.

Dynamic

This screen enables users to set NAT parameters.



NAT: Click the radio buttons to enable or disable the NAT function.

Transmit: Click the radio buttons to set the desired transmit parameters, disabled, RIP 1, or RIP 2.

Receive: Click the radio buttons to set the desired transmit parameters, disabled, RIP 1, or RIP 2.

Routing Table

This screen enables users to view the routing table of the WLAN Router. The routing table is a database created by the WLAN Router that displays the network interconnection topology.



Network Address: Displays the network IP address of the connected node.

Network Mask: Displays the network (subnet) mask of the connected node.

Gateway Address: Displays the gateway address of the connected node.

Interface: Displays whether the node is connected via a WAN or LAN.

Metric: Displays the metric of the connected node.

Type: Displays whether the node has a static or dynamic IP address

Access

This page enables you to define access restrictions, set up protocol and IP filters, create virtual servers, define access for special applications such as games, and set firewall rules.

Filters

Using filters to deny or allow the users to access. Five types of filters to select: MAC, URL blocking, IP, Protocol filter and Domain blocking.

TRENDNET Wireless Super G Broadband Router TEW-452BRP

Filter HELP

Filters Filters are used to allow or deny LAN users from accessing the Internet.

MAC Filters Domain Blocking
 URL Blocking Protocol Filters
 IP Filters

MAC Filter Disabled
 Only allow computers with MAC address listed below to access the network
 Only deny computers with MAC address listed below to access the network

MAC Table Name:
MAC Address:

Name	MAC Address
------	-------------

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MAC Filters

TRENDNET Wireless Super G Broadband Router TEW-452BRP

Filter HELP

Filters Filters are used to allow or deny LAN users from accessing the Internet.

MAC Filters Domain Blocking
 URL Blocking Protocol Filters
 IP Filters

MAC Filter Disabled
 Only allow computers with MAC address listed below to access the network
 Only deny computers with MAC address listed below to access the network

MAC Table Name:
MAC Address:

Name	MAC Address
------	-------------

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MAC Filter: Enables you to allow or deny Internet access to users within the LAN based upon the MAC address of their network interface. Click the radio button next to Disabled to disable the MAC filter.

Disable: Disable the MAC filter function.

Allow: Only allow computers with MAC address listed in the MAC Table.

Deny: Computers in the MAC Table are denied Internet access.

MAC Table: Use this section to create a user profile which Internet access is denied or allowed. The user profiles are listed in the table at the bottom of the page. (Note: Click anywhere in the item. Once the line is selected, the fields automatically load the item's parameters, which you can edit.)

Name: Type the name of the user to be permitted/denied access.

MAC Address: Type the MAC address of the user's network interface.

Add: Click to add the user to the list at the bottom of the page.

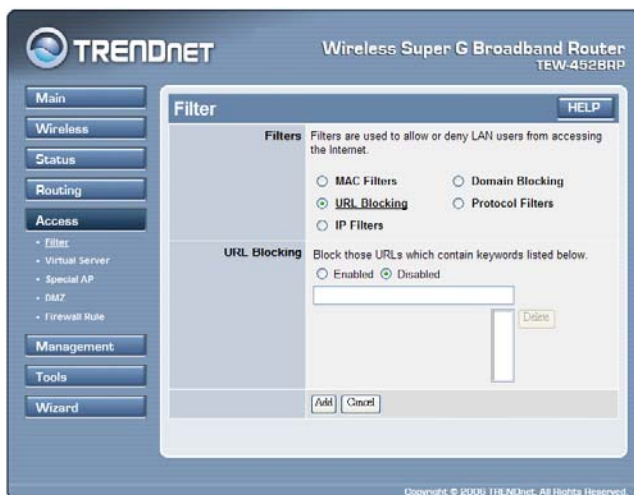
Update: Click to update information for the user, if you have changed any of the fields.

Delete: Select a user from the table at the bottom of the list and click Delete to remove the user profile.

New: Click New to erase all fields and enter new information.

URL Blocking

You could enable URL blocking to deny the users from accessing the specified URL. Add those specified URL in the text box.



Enable / Disable: Enable or Disable the URL blocking function of the WLAN Router.

Add: Add the specific URL to the URL blocking list.

Delete: Selected a URL from the blocking list then click the *Delete* button to remove the URL from the URL Blocking list.

IP Filters

This screen enables you to define a minimum and maximum IP address range filter; all IP addresses falling within the range are not allowed Internet access. The IP filter profiles are listed in the table at the bottom of the page. (Note: Click anywhere in the item. Once the line is selected, the fields automatically load the item's parameters, which you can edit.)



Enable: Click to enable or disable the IP address filter.

Range Start: Type the minimum address for the IP range. IP addresses falling between this value and the Range End are not allowed to access the Internet.

Range End: Type the minimum address for the IP range. IP addresses falling between this value and the Range Start are not allowed to access the Internet.

Add: Click to add the IP range to the table at the bottom of the screen.

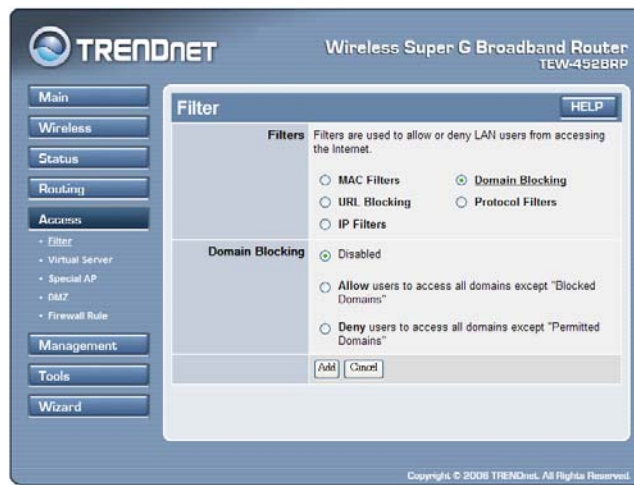
Update: Click to update information for the range if you have selected a list item and have made changes.

Delete: Select a list item and click Delete to remove the item from the list.

Clear: Click the *Clear* button to erase all fields and enter new information.

Domain Blocking

You could specify the domains that allow users to access or deny by clicking one of the two items. Also, add the specified domains in the text box.



Disable: Disable the Domain Blocking function.

Allow: Allow users to access all domains except “Blocking Domains”.

Deny: Deny users to access all domains except “Permitted Domains”.

Blocked/Permitted Domains: List domains you will Blocked or Permitted.

Add: Click to *Add* button to add domain to the Blocked/Permitted Domains list.

Delete: Select a user from the table at the bottom of the list and click Delete to remove the user profile.

Protocol Filters

This screen enables you to allow and deny access based upon a communications protocol list you create. The protocol filter profiles are listed in the table at the bottom of the page.

Note: When selecting items in the table at the bottom, click anywhere in the item. The line is selected, and the fields automatically load the item's parameters, which you can edit.

Filter HELP

Filters are used to allow or deny LAN users from accessing the Internet.

MAC Filters Domain Blocking
 URL Blocking Protocol Filters
 IP Filters

Protocol Filter
 Disable List
 Enable List : Deny to access internet from LAN when the list as below item be enable.

Edit protocol Filter in List

Enable Enable Disabled

Name:

Protocol:

Port: -

	Name	Protocol	Range
<input checked="" type="checkbox"/>	Filter FTP	TCP	20-21
<input checked="" type="checkbox"/>	Filter HTTP	TCP	80
<input checked="" type="checkbox"/>	Filter HTTPS	TCP	443
<input checked="" type="checkbox"/>	Filter DNS	UDP	53
<input checked="" type="checkbox"/>	Filter SMTP	TCP	25
<input checked="" type="checkbox"/>	Filter POP3	TCP	110
<input checked="" type="checkbox"/>	Filter Telnet	TCP	23

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Enable: Click to enable or disable the Protocol filter.

Name: Type the name of the user to be denied access.

Protocol: Select a protocol (TCP or UDP) to use for the virtual server.

Port Range: Type the port range of the protocol.

Add: Click to add the protocol filter to the table at the bottom of the screen.

Update: Click to update information for the protocol filter if user have selected a list item and have made changes.

Delete: Select a list item and click Delete to remove the item from the list.

New: Click “New” to erase all fields and enter new information.

Virtual Server

This screen enables users to create a virtual server via the WLAN Router. If the WLAN Router is set as a virtual server, remote users requesting Web or FTP services through the WAN are directed to local servers in the LAN. The WLAN Router redirects the request via the protocol and port numbers to the correct LAN server. The Virtual Server profiles are listed in the table at the bottom of the page.

Note: When selecting items in the table at the bottom, click anywhere in the item. The line is selected, and the fields automatically load the item's parameters, which user can edit.

	Name	Protocol	LAN Server
<input type="checkbox"/>	Virtual Server FTP	TCP 21/21	0.0.0.0
<input type="checkbox"/>	Virtual Server HTTP	TCP 80/80	0.0.0.0
<input type="checkbox"/>	Virtual Server HTTPS	TCP 443/443	0.0.0.0
<input type="checkbox"/>	Virtual Server DNS	UDP 53/53	0.0.0.0
<input type="checkbox"/>	Virtual Server SMTP	TCP 25/25	0.0.0.0
<input type="checkbox"/>	Virtual Server POP3	TCP 110/110	0.0.0.0
<input type="checkbox"/>	Virtual Server Telnet	TCP 23/23	0.0.0.0
<input type="checkbox"/>	IPSec	UDP 500/500	0.0.0.0
<input type="checkbox"/>	PPTP	TCP 1723/1723	0.0.0.0
<input type="checkbox"/>	NetMeeting	TCP 1720/1720	0.0.0.0

Enable: Click to enable or disable the virtual server.

Name: Type a descriptive name for the virtual server.

Protocol: Select a protocol (TCP or UDP) to use for the virtual server.

Private Port: Type the port number of the computer on the LAN that is being used to act as a virtual server.

Public Port: Type the port number on the WAN that will be used to provide access to the virtual server.

LAN Server: Type the LAN IP address that will be assigned to the virtual server.

Add: Click to add the virtual server to the table at the bottom of the screen.

Update: Click to update information for the virtual server if the user has selected a listed item and has made changes.

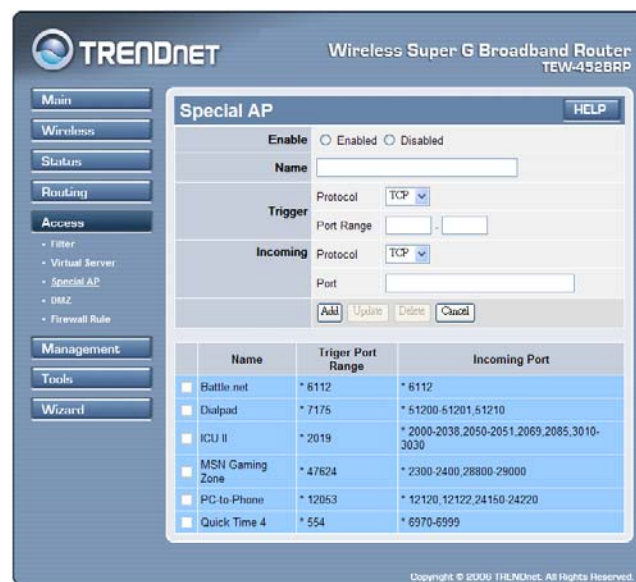
Delete: Select a listed item and click “Delete” to remove the item from the list.

New: Click “New” to erase all fields and enter new information.

Special AP

This screen enables users to specify special applications, such as games which require multiple connections that are blocked by NAT. The special applications profiles are listed in the table at the bottom of the page.

Note: When selecting items in the table at the bottom, click anywhere in the item. The line is selected, and the fields automatically load the item's parameters, which user can edit.



Enable: Click to enable or disable the application profile. When enabled, users will be able to connect to the application via the WLAN Router’s WAN connection. Click “Disabled” on a profile to prevent users from accessing the application on the WAN connection.

Name: Type a descriptive name for the application.

Trigger: Defines the outgoing communication that determines whether the user has legitimate access to the application.

- **Protocol:** Select the protocol (TCP, UDP, or ICMP) that can be used to access the application.
- **Port Range:** Type the port range that can be used to access the application in the text boxes.
- **Incoming:** Defines which incoming communications users are permitted to connect with.

- **Protocol:** Select the protocol (TCP, UDP, or ICMP) that can be used by the incoming communication.
- **Port:** Type the port number that can be used for the incoming communication.

Add: Click to add the special application profile to the table at the bottom of the screen.

Update: Click to update information for the special application if user have selected a list item and have made changes.

Delete: Select a list item and click Delete to remove the item from the list.

New: Click “New” to erase all fields and enter new information.

DMZ

This screen enables users to create a DMZ for those computers that cannot access Internet applications properly through the WLAN Router and associated security settings.

Note: Any clients added to the DMZ exposes the clients to security risks such as viruses and unauthorized access.



Enable: Click to enable or disable the DMZ.

DMZ Host IP: Type a host IP address for the DMZ. The computer with this IP address acts as a DMZ host with unlimited Internet access.

Apply: Click to save the settings.

Firewall Rule

This screen enables users to set up the firewall. The WLAN Router provides basic firewall functions, by filtering all the packets that enter the WLAN Router using a set of rules. The rules are listed in sequential order--the lower the rule number, the higher the priority the rule has.

Interface	IP Range Start	IP Range End	Protocol
Source	*		
Destination	*		

Action	Name	Source	Destination	Protocol
Allow	Allow to Ping WAN port	WAN.*	LAN, 192.168.10.1	ICMP
Deny	Default	**	LAN,*	**
Allow	Default	LAN,*	**	**

Enable: Click to enable or disable the firewall rule profile.

Name: Type a descriptive name for the firewall rule profile.

Action: Select whether to allow or deny packets that conform to the rule.

Source: Defines the source of the incoming packet that the rule is applied to.

- **Interface:** Select which interface (WAN or LAN) the rule is applied to.
- **IP Range Start:** Type the start IP address that the rule is applied to.
- **IP Range End:** Type the end IP address that the rule is applied to.

Destination: Defines the destination of the incoming packet that the rule is applied to.

- **Interface:** Select which interface (WAN or LAN) the rule is applied to.
- **IP Range Start:** Type the start IP address that the rule is applied to.
- **IP Range End:** Type the end IP address that the rule is applied to.
- **Protocol:** Select the protocol (TCP, UDP, or ICMP) of the destination.
- **Port Range:** Select the port range.

Add: Click to add the rule profile to the table at the bottom of the screen.

Update: Click to update information for the rule if the user has selected a listed item and has made changes.

Delete: Select a listed item and click “Delete” to remove the item from the list.

New: Click “New” to erase all fields and enter new information.

Priority Up: Select a rule from the list and click “**Priority Up**” to increase the priority of the rule.

Priority Down: Select a rule from the list and click “**Priority Down**” to decrease the priority of the rule.


Update Priority: After increasing or decreasing the priority of a rule, click “**Update Priority**” to save the changes.

Management

Management enables users to set up SNMP and Remote Management feature.

SNMP

This screen enables you to configure the SNMP.



Enabled/Disabled: Click to enable or disable SNMP.

System Name: A name given to the WLAN Router.

System Location: Description the location of the WLAN Router (normally, the DNS name).

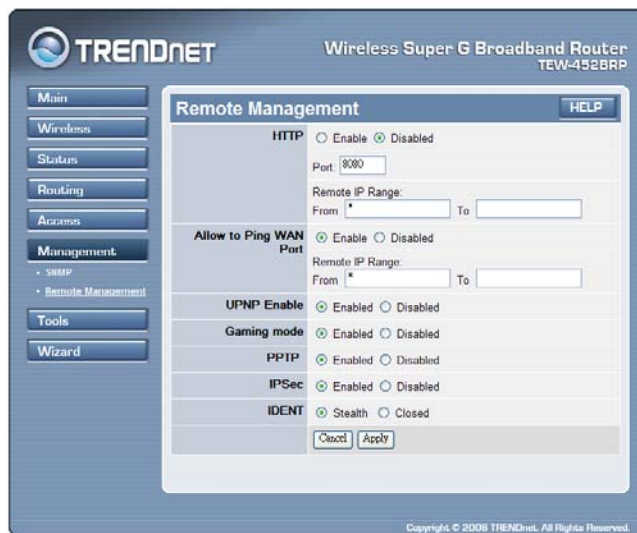
System Contact: Description the contact information for the person responsible for the WLAN Router.

Community: SNMP system name for exchanging SNMP community messages. The name can be used to limit SNMP messages passing through the network. The default name is 'public.'

Trap Receiver: Type the name of the destination PC that will receive trap messages.

Remote Management

This screen enables users to set up remote management. Using remote management, the WLAN Router can be configured through the WAN via a Web browser. A user name and password are required to perform remote management.



HTTP: Enables users to set up HTTP access for remote management.

Allow to Ping WAN Port: Type a range of Router IP addresses that can be pinged from remote locations

UPnP Enable: UPnP is short for Universal Plug and Play that is a networking architecture that provides compatibility among networking equipment, software, and peripherals. The WLAN Router is an UPnP-enabled Router and will only work with other UPnP devices/software. If user does not want to use the UPnP functionality, select “Disabled” to disable it.

Gaming mode: If user is experiencing difficulties when playing online games or even certain applications that use voice data, user may need to enable Gaming Mode for these applications to work correctly. When not playing games or using these voice applications, it is recommended that Gaming Mode be disabled.

PPTP: Enables users to set up PPTP access for remote management.

IPSec: Enables users to set up IPSec access for remote management.

IDENT: Default is stealth. This enables users to set port 113 stealth.

Tools

This page enables users to restart the system, save and load different settings as profiles, restore factory default settings, run a setup wizard to configure WLAN Router settings, upgrade the firmware, and ping remote IP addresses.

Reset

Click “Restart” to restart the system in the event the system is not performing correctly.



Settings

This screen enables users to save settings as a profile and load profiles for different circumstances. User can also load the factory default settings, and run a setup wizard to configure the WLAN Router and Router interface.



Save Settings: Click “Save” to save the current configuration as a profile that can load when necessary.

Load Settings: Click “Browse” and go to the location of a stored profile. Click “Load” to load the profile's settings.

Restore Factory Default Settings: Click “Restore” to restore the default settings. All configuration changes will be lost.

Firmware

This screen enables users to keep the WLAN Router firmware up to date.



Please follow the below instructions:

Download the latest firmware from the manufacturer's Web site, and save it to disk. Click **“Browse”** and go to the location of the downloaded firmware file. Select the file and click **“Upgrade”** to update the firmware to the latest release.

Ping Test

The ping test enables users to determine whether an IP address or host is present on the Internet. Type the host name or IP address in the text box and click Ping.



TECHNICAL SPECIFICATIONS

Standards	Wired: IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-TX), ANSI/IEEE 802.3 Auto Negotiation Wireless: IEEE 802.11b (11Mbps), IEEE 802.11g (54Mbps)
WAN	1 x 10/100Mbps Auto-MDIX Port (Internet)
LAN	4 x 10/100Mbps Auto-MDIX Port
Connection Type	Dynamic IP, Static (Fixed) IP, PPPoE, PPTP, L2TP
Supported Protocols	802.3u: 10/100Mbps Fast Ethernet, IP v4, UDP, ICMP, TCP Secure: PAP, CHAP, Network Timing Protocol, DHCP, Dynamic DNS, PPPoE, PPTP, L2TP, UPnP
LED Indicator	System, WAN, WLAN, LAN
Dual Diversity Antenna	1 x Internal Printed Antenna 1 x 2dBi External Detachable Dipole Antenna (Female Reverse SMA Connector)
Dimension (L x W x H)	155 x 110 x 30 mm (6 x 4.3 x 1.2 inches)
Weight	226g (8 oz.)
Temperature	Operation: 0°~ 55°C (32°F~ 131°F) Storage: -10°~ 70°C (14°F~ 158°F)
Humidity	Max. 95% (Non-Condensing)
Power Adapter	7.5V DC, 1A External Power Adapter
Certification	FCC & CE
Frequency	2.412 to 2.484GHz (Industrial Scientific Medical Band)
Module Technique	802.11b: CCK (11 and 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps) 802.11g: OFDM
Media Access Protocol	CSMA/CA with ACK
Security	64/128-bit WEP(ASCII/HEX), WPA/WPA2(AES/TKIP), WPA-PSK/WPA2-PSK(AES/TKIP)
Transmit Power	15 dBm ± 2dBm
Data Rate	802.11b: 11Mbps, 5.5Mbps, 2Mbps, and 1Mbps 802.11g: 54Mbps, 48Mbps, 36Mbps, 24Mbps, 18Mbps, 12Mbps, 9Mbps and 6Mbps Super G: 108Mbps
Receiving Sensitivity	11Mbps: -82 dBm @ 8% PER (typical) 54Mbps: -65 dBm @ 10% PER (typical)
Channels	11 Channels (US), 13 Channels (EU)

Limited Warranty

TRENDnet warrants its products against defects in material and workmanship, under normal use and service, for the following lengths of time from the date of purchase.

TEW-452BRP	3 years
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If a product does not operate as warranted above during the applicable warranty period, TRENDnet shall, at its option and expense, repair the defective product or deliver to customer an equivalent product to replace the defective item. All products that are replaced will become the property of TRENDnet. Replacement products may be new or reconditioned.

TRENDnet shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to TRENDnet pursuant to any warranty.

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Governing Law: This Limited Warranty shall be governed by the laws of the state of California.

Note: AC/DC Power Adapter, Cooling Fan, and Power Supply carry 1-Year Warranty



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Product Warranty Registration

Please take a moment to register your product online.

Go to TRENDnet's website at <http://www.trendnet.com/register>

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