

# **450Mbps Concurrent Dual Band Wireless N Router**

**TEW-692GR**

Rev 0.1

## **User Manual**

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

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

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

This device operating in 5150-5250MHz is restricted to indoor used.

### **IMPORTANT NOTE:**

#### **FCC Radiation Exposure Statement:**

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

## Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- **EN60950-1:2006+A11: 2009**  
Safety of Information Technology Equipment
- **EN 62311:2008**
- Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz)  
- General public
- **EN 300 328 V1.7.1: (2006-10)**
- Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- **EN 301 489-1 V1.8.1: (2008-04)**
- Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
- **EN 301 489-17 V2.1.1:( 2009-05)**
- Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for 2,4 GHz wideband transmission systems, 5 GHz high performance RLAN equipment and 5,8 GHz Broadband Data Transmitting Systems
- 

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.



[cs] Český [Czech]	[ <i>Jméno výrobce</i> ] tímto prohlašuje, že tento [ <i>typ zařízení</i> ] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
[da] Dansk [Danish]	Undertegnede [ <i>fabrikantens navn</i> ] erklærer herved, at følgende udstyr [ <i>udstyrets typebetegnelse</i> ] overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
[de] Deutsch [German]	Hiermit erkläre [ <i>Name des Herstellers</i> ], dass sich das Gerät [ <i>Gerätetyp</i> ] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
[et] Eesti [Estonian]	Käesolevaga kinnitab [ <i>tootja nimi = name of manufacturer</i> ] seadme [ <i>seadme tüüp = type of equipment</i> ] vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
[en] English	Hereby, [ <i>name of manufacturer</i> ], declares that this [ <i>type of equipment</i> ] is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
[es] Español [Spanish]	Por medio de la presente [ <i>nombre del fabricante</i> ] declara que el [ <i>clase de equipo</i> ] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
[el] Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [ <i>name of manufacturer</i> ] ΔΗΛΩΝΕΙ ΟΤΙ [ <i>type of equipment</i> ] ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.
[fr] Français [French]	Par la présente [ <i>nom du fabricant</i> ] déclare que l'appareil [ <i>type d'appareil</i> ] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
[it] Italiano [Italian]	Con la presente [ <i>nome del costruttore</i> ] dichiara che questo [ <i>tipo di apparecchio</i> ] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo [ <i>name of manufacturer / izgatavotāja nosaukums</i> ] deklarē, ka [ <i>type of equipment / iekārtas tips</i> ] atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo [ <i>manufacturer name</i> ] deklaruoja, kad šis [ <i>equipment type</i> ] atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

 Nederlands [Dutch]	Hierbij verklaart <i>[naam van de fabrikant]</i> dat het toestel <i>[type van toestel]</i> in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
 Malti [Maltese]	Hawnhekk, <i>[isem tal-manifattur]</i> , jiddikjara li dan <i>[il-mudel tal-prodott]</i> jikkonforma mal- <i>ħtiġijiet</i> essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
 Magyar [Hungarian]	Alulírott, <i>[gyártó neve]</i> nyilatkozom, hogy a <i>[... típus]</i> megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
 Polski [Polish]	Niniejszym <i>[nazwa producenta]</i> oświadcza, że <i>[nazwa wyrobu]</i> jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
 Português [Portuguese ]	<i>[Nome do fabricante]</i> declara que este <i>[tipo de equipamento]</i> está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
 Slovensko [Slovenian]	<i>[Ime proizvajalca]</i> izjavlja, da je ta <i>[tip opreme]</i> v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	<i>[Meno výrobcu]</i> týmto vyhlasuje, že <i>[typ zariadenia]</i> spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
 Suomi [Finnish]	<i>[Valmistaja = manufacturer]</i> vakuuttaa täten että <i>[type of equipment = laitteen tyyppimerkintä]</i> tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
 Svenska [Swedish]	Härmed intygar <i>[företag]</i> att denna <i>[utrustningstyp]</i> står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

### European Union Notice:

Radio products with the CE marking comply with the R&TTE Directive (1999/5/EC), the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

- EN 60950 Product Safety
- EN 300 328 Technical requirement for radio equipment
- EN 301 489-1/-17 General EMC requirements for radio equipment

### **Trademark recognition**

All product names used in this manual are the properties of their respective owners and are acknowledged.

# Getting Started with the TEW-692GR

Congratulations on purchasing the TEW-692GR! This manual provides information for setting up and configuring the TEW-692GR. This manual is intended for both home users and professionals.

The following conventions are used in this manual:



***THE NOTE SYMBOL INDICATES ADDITIONAL INFORMATION ON THE TOPIC AT HAND.***



***THE TIP SYMBOL INDICATES HELPFULL INFORMATION AND TIPS TO IMPROVE YOUR NETWORK EXPERIENCE.***



***THE CAUTION SYMBOL ALERTS YOU TO SITUATIONS THAT MAY DEGRADE YOUR NETWORKING EXPERIENCE OR COMPROMISE***



***LIKE NOTES AND TIPS, THE IMPORTANT SYMBOL INDICATES INFORMATION THAT CAN IMPROVE NETWORKING. THIS INFORMATION SHOULD NOT BE OVERLOOKED.***

## ● **Package Contents**

- TEW-692GR 450Mbps Concurrent Dual Band Wireless N Router
- CAT-5 Ethernet Cable (All the TEW-692GR's Ethernet ports are Auto-MDIX)
- Power Adapter (12V, 1A)
- CD-ROM with Software and Manual
- Quick Installation Guide



Using a power supply with a different voltage than the one included with your product will cause damage and void the warranty for this product.

## **Minimum System Requirements**

- Ethernet-Based Cable or DSL Modem
- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet adapter and CD-ROM Drive
- Internet Explorer (Version 6.0 or higher) Mozilla or Safari.

# Wireless LAN Networking

This section provides background information on wireless LAN networking technology. Consult the **Glossary** for definitions of the terminology used in this section.



THE INFORMATION IN THIS SECTION IS FOR YOUR REFERENCE. CHANGING NETWORK SETTINGS AND PARTICULARLY SECURITY SETTINGS SHOULD ONLY BE DONE BY AN AUTHORIZED ADMINISTRATOR.

## Transmission Rate (Transfer Rate)

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The TEW-692GR provides various transmission (data) rate options for you to select. In most networking scenarios, the factory default Best (automatic) setting proves the most efficient. This setting allows your TEW-692GR to operate at the maximum transmission (data) rate. When the communication quality drops below a certain level, the TEW-692GR automatically switches to a lower transmission (data) rate. Transmission at lower data speeds is usually more reliable. However, when the communication quality improves again, the TEW-692GR gradually increases the transmission (data) rate again until it reaches the highest available transmission rate.

## Types of Wireless Networks

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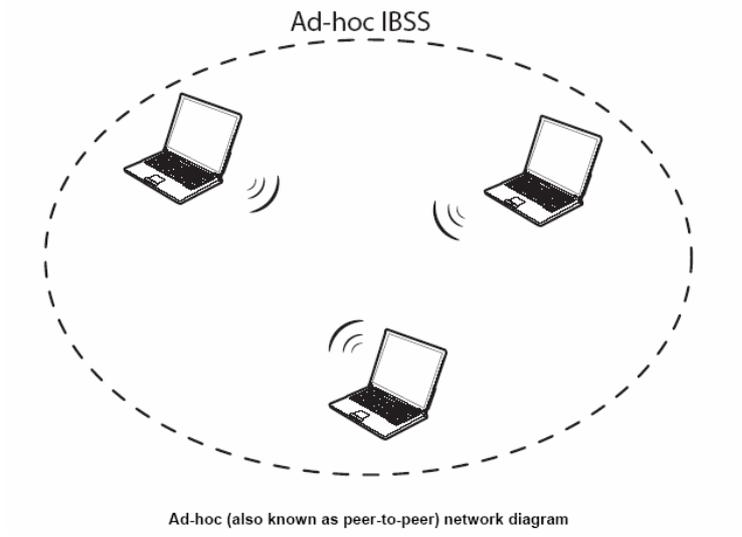
Wireless LAN networking works in either of the two modes: ad-hoc and infrastructure. In infrastructure mode, wireless devices communicate to a wired LAN via access points. Each access point and its wireless devices are known as a Basic Service Set (BSS). An Extended Service Set (ESS) is two or more BSSs in the same subnet. In ad hoc mode (also known as peer-to-peer mode), wireless devices communicate with each other directly and do not use an access point. This is an Independent BSS (IBSS).

To connect to a wired network within a coverage area using access points, set the operation mode to Infrastructure (BSS). To set up an independent wireless workgroup without an access point, use Ad-hoc (IBSS) mode.

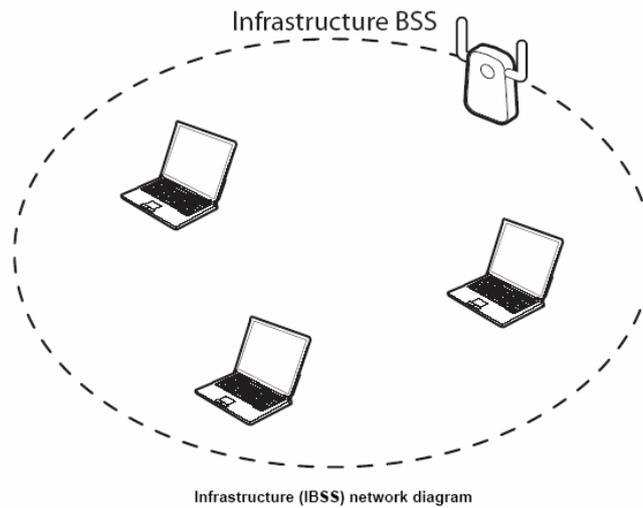
### **AD-HOC (IBSS) NETWORK**

Ad-hoc mode does not require an access point or a wired network. Two or more wireless stations communicate directly to each other. An ad-hoc network may sometimes be referred to as an Independent Basic Service Set (IBSS).

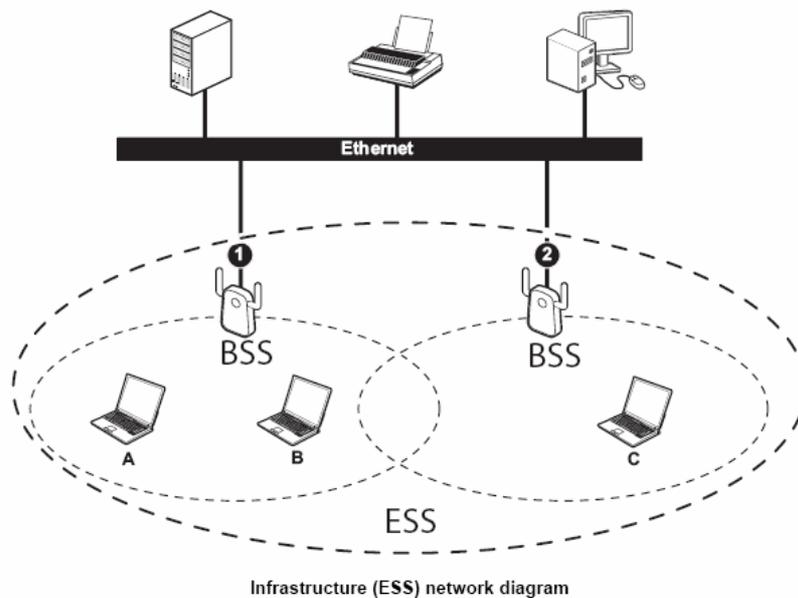
To set up an ad-hoc network, configure all the stations in ad-hoc mode. Use the same SSID and channel for each station.



When a number of wireless stations are connected using a single access point, you have a Basic Service Set (BSS).

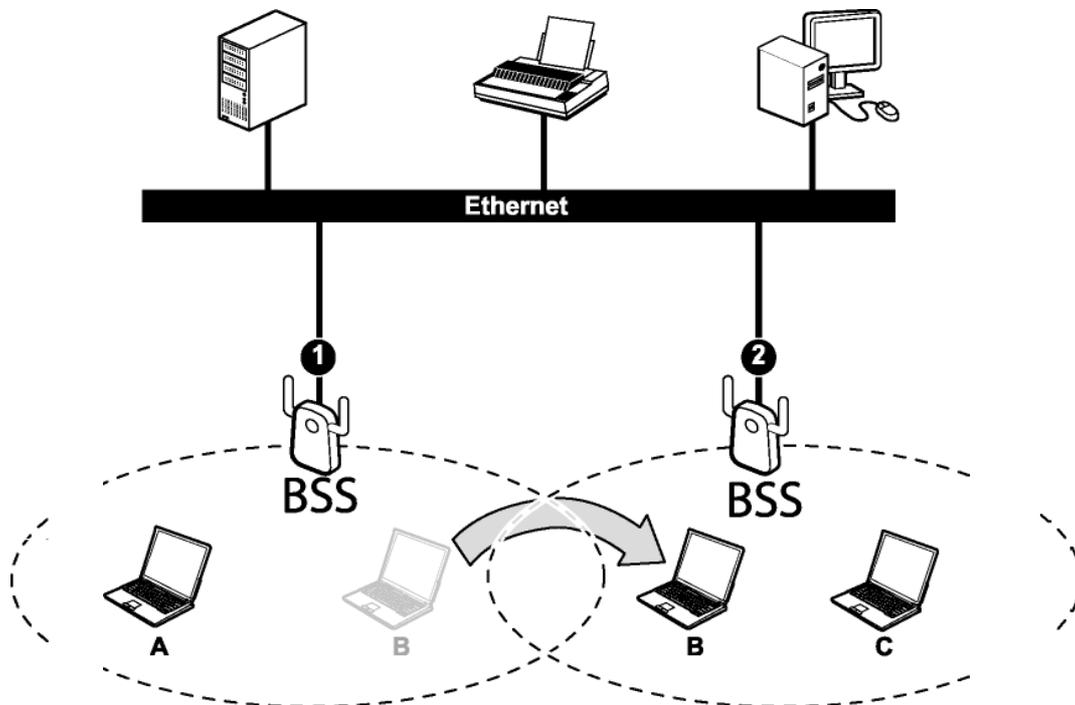


In the ESS diagram below, communication is done through the access points, which relay data packets to other wireless stations or devices connected to the wired network. Wireless stations can then access resources, such as a printer, on the wired network.



In an ESS environment, users are able to move from one access point to another without losing the

connection. In the diagram below, when the user moves from BSS (1) to BSS (2) the WLAN client devices automatically switches to the channel used in BSS (2).



Roaming in an ESS network diagram

# ***Introduction***

The TEW-692GR 450Mbps Concurrent Dual Band Wireless N Router is an high-performance, wireless router that supports high-speed wireless networking at home, at work or in public places.

Unlike most routers, the TEW-692GR provides data transfers at up to 450Mbps when using 11n connection. This router is also back compatible with 802.11g or 11b devices. This means that you do not need to change your entire network to maintain connectivity. You may sacrifice some of 11n's speed when you mix 11n and 11b/g devices, but you will not lose the ability to communicate when you incorporate the 11n standard into your 11a/b/g network. You may choose to slowly change your network by gradually replacing the 11a/b/g devices with 11n devices.

## **Features**

- 4 x 10/100/1000Mbps Auto-MDIX LAN ports
- 1 x 10/100/1000Mbps WAN port (Internet)
- 1 x Wi-Fi Protected Setup (WPS) button
- On/off power switch (EU Version)
- One touch wireless connection using the WPS button
- Compliant with IEEE 802.11n/b/g/a standards
- High-speed data rates of up to 450Mbps using an IEEE 802.11n connection
- Advanced firewall protection with Network Address Translation (NAT)
- Wi-Fi Multimedia (WMM) Quality of Service (QoS) data prioritization
- Compatible with most popular cable/DSL Internet Service Providers using Dynamic/Static IP, PPPoE, L2TP, and PPTP connection
- Internet Access Control with MAC filtering
- Virtual server and Application Level Gateway (ALG) services for special Internet applications
- Universal Plug and Play (UPnP) for auto discovery and support for device configuration of Internet applications
- Multiple pass-through sessions for popular VPN applications (IPSec, L2TP, and PPTP)
- One touch wireless security setup using the Wi-Fi Protected Setup (WPS) button
- Complete wireless security with WPA/WPA2-RADIUS, WPA /WPA2-PSK, and WEP

## ***Hardware Overview***

### **LED Indications: (from bottom to top)**

- **PWR**
- **WAN**
- **LAN1**
- **LAN2**
- **LAN3**
- **LAN4**
- **Wireless**
- **Wireless**
- **WPS**
- **Reserve**

### **Rear panel: (from bottom to top)**

- **DC-IN**
- **POWER SWITCH( EU)**
- **WAN**
- **LAN1**
- **LAN2**
- **LAN3**
- **LAN4**

## **Installation Considerations**

The TEW-692GR 450Mbps Concurrent Dual Band Wireless N Router lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

- 1 Keep the number of walls and ceilings between the TEW-692GR and other network devices to a minimum - each wall or ceiling can reduce your wireless product's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
- 2 Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
- 3 Building Materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- 4 Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate extreme RF noise.

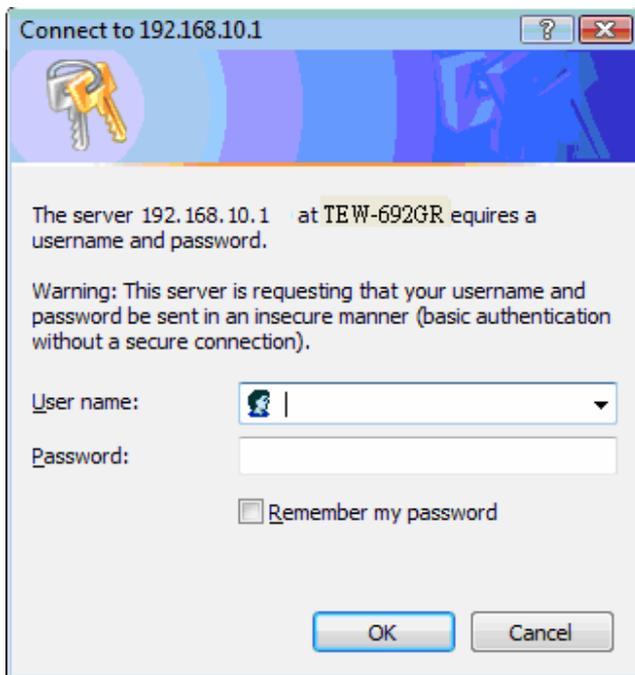
## Getting Started

For a typical wireless setup at home, please do the following:

1. You will need broadband Internet access (a Cable or DSL-subscriber line into your home or office)
2. Consult with your Cable or DSL provider for proper installation of the modem.
3. Connect the Cable or DSL modem to the TEW-692GR Router (WAN port).
4. Ethernet LAN ports of the TEW-692GR are Auto MDI/MDIX and will work with both Straight-Through and Cross-Over cable.

### Start

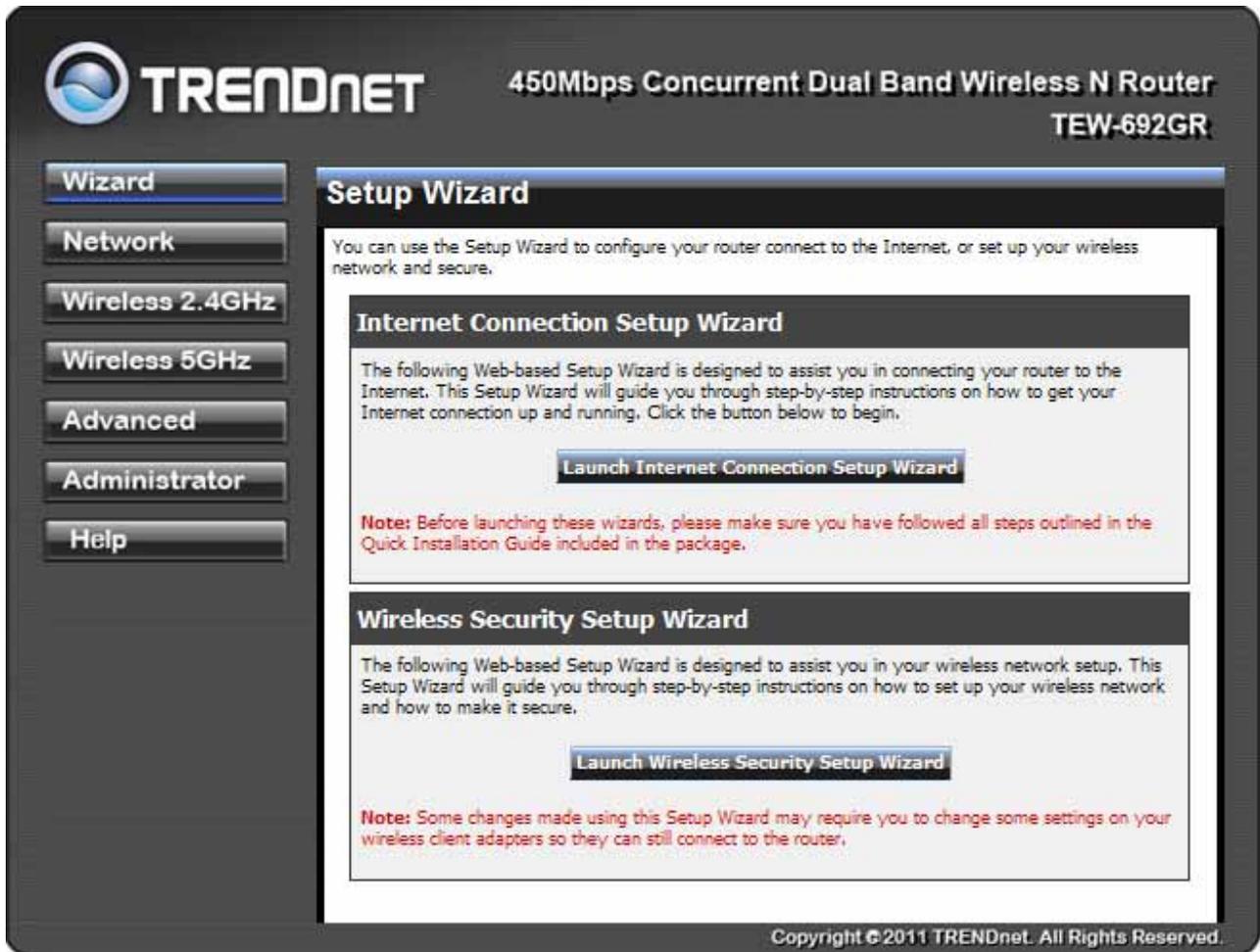
1. Plug in the power adapter and verify the Power & Ethernet LEDs are light.
3. To configure the router, open your browser, type '<http://192.168.10.1>' into the address bar and click 'Go' to get to the setup wizard page.



4. At the Password prompt, the User name is '**admin**' and password is **admin**. Enter default username and password and press "ok"

Setup Wizard is an easy way to set up the TEW-692GR step by step. The Wizard will teach user to set up the TEW-692GR just few steps.

5. You could click 'Launch Internet Connection Setup Wizard' and follow Wizard to complete your setting.



[example]:



## Welcome to the Internet Connection Setup Wizard

This wizard will guide you through a step-by-step process to configure your router and connect to the Internet.

- Step 1: Select your Internet Connection Type
- Step 2: Configure your Internet Connection
- Step 3: Save Settings and Connect

Prev

Next

Cancel

Apply

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If you choice “Static IP Address Connection” than press “Next”



## Step 1: Select your Internet Connection Type

Please select the Internet connection type below:

- Static IP Address Connection**  
Choose this option if your Internet Setup Provider provided you with IP Address information that has to be manually configured.
- DHCP Connection (Dynamic IP Address)**  
Choose this if your Internet connection automatically provides you with an IP Address. Most Cable Modems use this type of connection.
- Username / Password Connection (PPPoE)**  
Choose this option if your Internet connection requires a username and password to get online. Most DSL modems use this type of connection.
- Username / Password Connection (L2TP)**  
L2TP client.
- Username / Password Connection (PPTP)**  
PPTP client.

Prev

Next

Cancel

Apply

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### Step 2: Set Static IP Address Connection

To set up this connection you will need to have a complete list of IP information provided by your Internet Service Provider. If you have a Static IP connection and do not have this information, please contact your ISP.

IP Address :	<input type="text" value="10.4.3.180"/>
Subnet Mask :	<input type="text" value="255.255.255.0"/>
Default Gateway :	<input type="text" value="10.4.3.1"/>
Primary DNS Server :	<input type="text" value="192.95.1.1"/>
Secondary DNS Server :	<input type="text"/>

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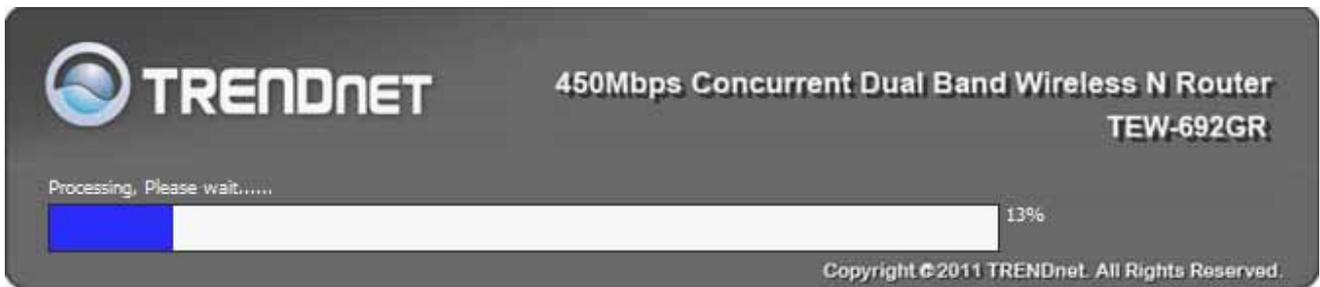
### Step 3: Setup Complete!

The Internet Connection Setup Wizard has completed. Click the Apply button to save and apply your settings.

Internet Connection Type :	Static
IP Address :	10.4.3.180
Subnet Mask :	255.255.255.0
Default Gateway :	10.4.3.1
Primary DNS :	192.95.1.1
Secondary DNS :	

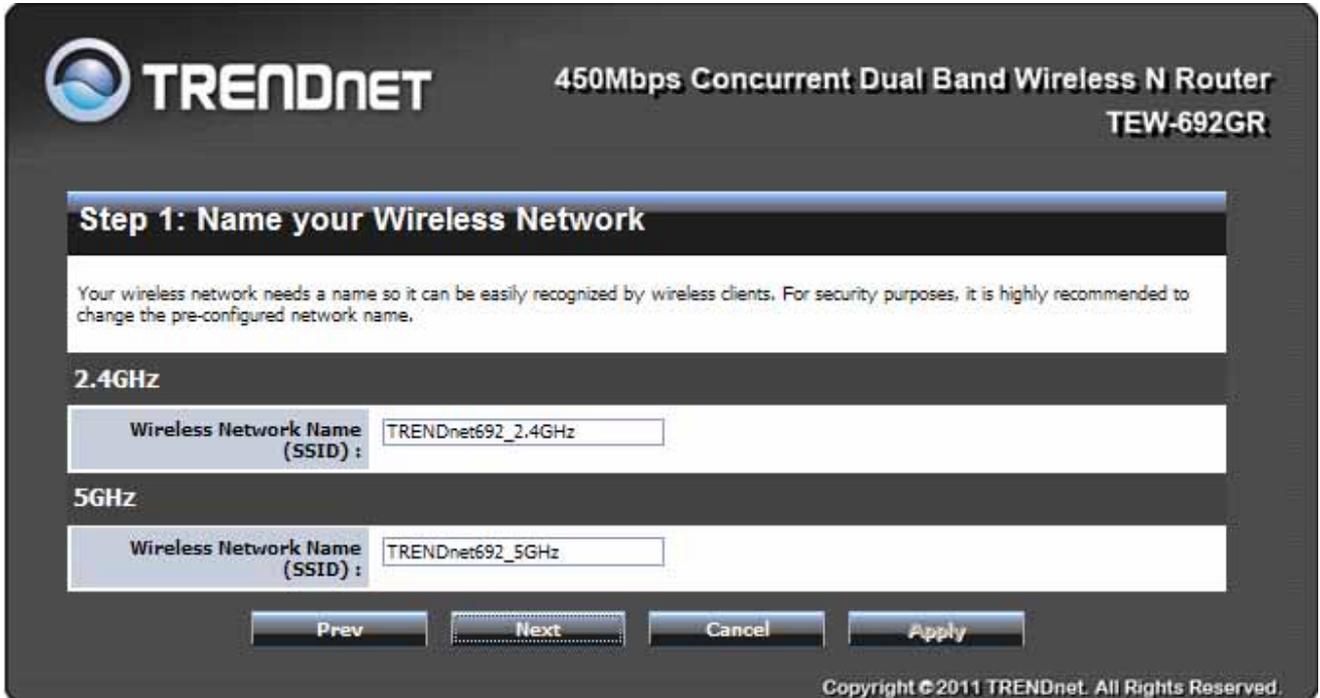
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Then press "Apply"



6. You also could click "Launch Wireless Security Setup Wizard" and follow Wizard to complete your setting

[example]:



Select the 2.4G & 5G security mode

## Step 2: Secure your Wireless Network

In order to protect your network from hackers and unauthorized users, it is highly recommended you choose one of the following wireless network security settings.

There are two levels of wireless security -Good Security and Best Security. The level you choose depends on the security features your wireless adapters support.

### 2.4GHz

BEST <input type="radio"/>	Select this option if your wireless adapters SUPPORT WPA2
BETTER <input type="radio"/>	Select this option if your wireless adapters SUPPORT WPA
GOOD <input type="radio"/>	Select this option if your wireless adapters DO NOT SUPPORT WPA
NONE <input type="radio"/>	Select this option if you do not want to activate any security features

### 5GHz

BEST <input type="radio"/>	Select this option if your wireless adapters SUPPORT WPA2
BETTER <input type="radio"/>	Select this option if your wireless adapters SUPPORT WPA
GOOD <input type="radio"/>	Select this option if your wireless adapters DO NOT SUPPORT WPA
NONE <input type="radio"/>	Select this option if you do not want to activate any security features

Prev Next Cancel Apply

Enter your password

**Step 3: Set your Wireless Security Password**

You have selected your security level - you will need to set a wireless security password.

**2.4GHz**Wireless Security  
Password :  
(8 to 64 characters)**5GHz**Wireless Security  
Password :  
(8 to 64 characters)

Prev

Next

Cancel

Apply

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Press "Apply"



### Setup Complete!

Below is a detailed summary of your wireless security settings. Please print this page out, or write the information on a piece of paper, so you can configure the correct settings on your wireless client adapters.

#### 2.4GHz

Wireless Network Name (SSID) :	TRENDnet692_2.4GHz
Wep Key Length :	64bit
Default WEP Key to Use :	1
Authentication :	Open
Wep Key :	12345

#### 5GHz

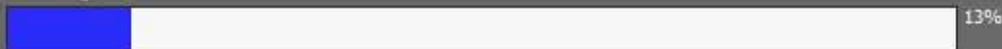
Wireless Network Name (SSID) :	TRENDnet692_5GHz
Wep Key Length :	64bit
Default WEP Key to Use :	1
Authentication :	Open
Wep Key :	12345

Prev    Next    Cancel    Apply

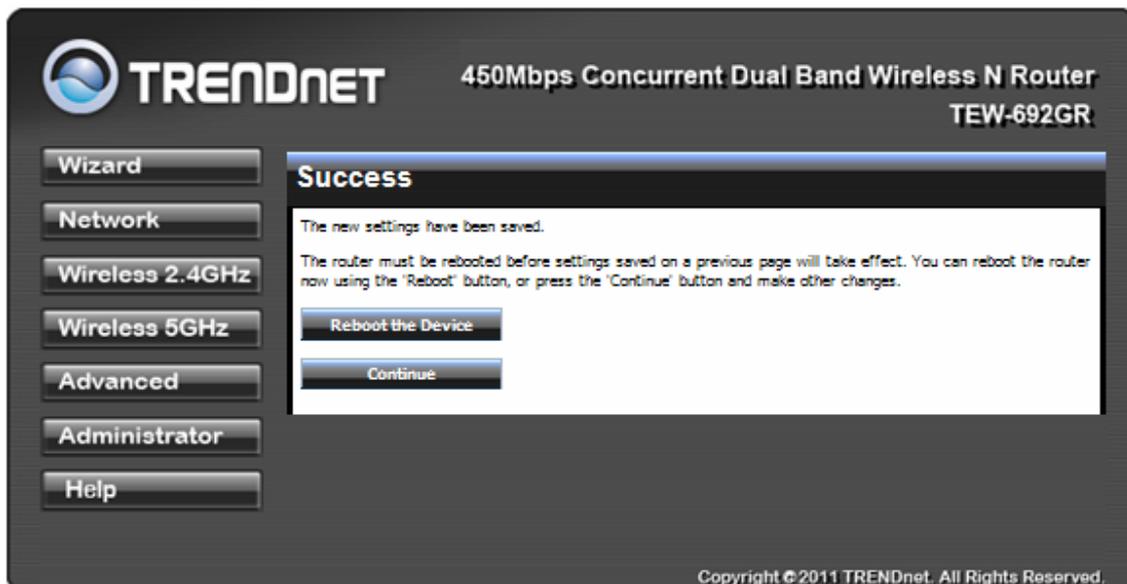
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Processing. Please wait.....



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## Network

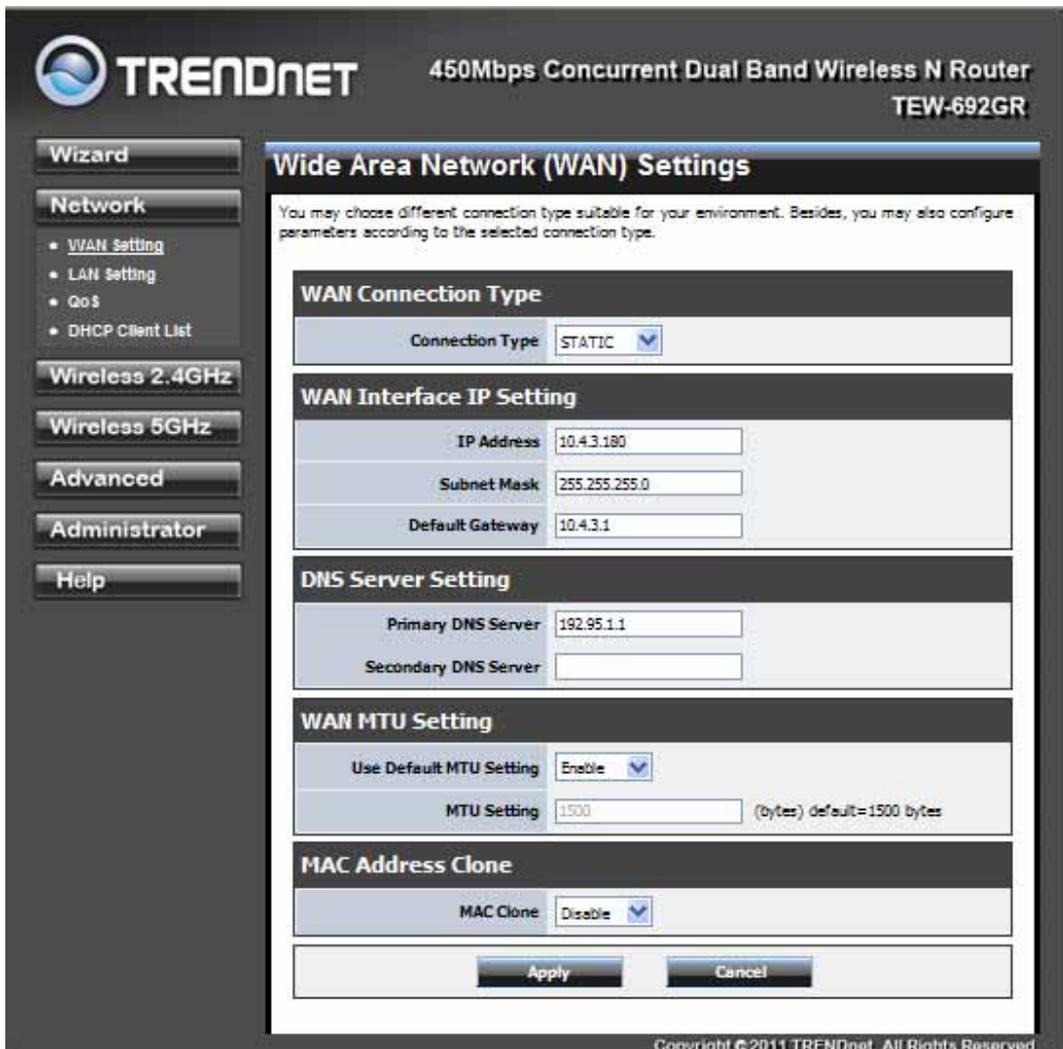
### Network: WAN Setting

#### WAN Connection Type

There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and Russia PPTP. If you are unsure of your connection method, please contact your Internet Service Provider. Static

Used when your ISP provides you a set IP address that does not change. The IP information is manually entered in your IP configuration settings. You must enter the IP address, Subnet Mask, Gateway, Primary DNS Server, and Secondary DNS Server. Your ISP provides you with all of this information.

#### DHCP



A method

of connection where the ISP assigns your IP address when your router requests one from the ISP's server.

**Host Name:** Some ISP's may check your computer's Host Name. The Host Name identifies your system to the ISP's server.

#### PPPoE

Select this option if your ISP requires you to use a PPPoE (Point to Point Protocol over Ethernet) connection. DSL providers typically use this option. This method of connection requires you to enter a **Username** and **Password** (provided by your Internet Service Provider) to gain access to the Internet.

**Reconnect Mode:** Typically PPPoE connections are not always on. The router allows you to set the reconnection mode. The settings are:

**Always on:** A connection to the Internet is always maintained.

**On demand:** A connection to the Internet is made as needed.

**Manual:** You have to open up the Web-based management interface and click the Connect button manually any time that you wish to connect to the Internet.

**Maximum Idle Time:** Time interval the machine can be idle before the PPPoE connection is disconnected. The Maximum Idle Time value is only used for the "On demand" and "Manual" reconnect modes.

## L2TP

L2TP (Layer Two Tunneling Protocol) uses a virtual private network to connect to your ISP. This method of connection requires you to enter a Username and Password (provided by your Internet Service Provider) to gain access to the Internet.

**L2TP Server IP Address:** The ISP provides this parameter, if necessary. The value may be the same as the Gateway IP Address.

**Reconnect Mode:** Typically PPPoE connections are not always on. The router allows you to set the reconnection mode. The settings are:

**Always on:** A connection to the Internet is always maintained.

**On demand:** A connection to the Internet is made as needed.

**Manual:** You have to open up the Web-based management interface and click the Connect button manually any time that you wish to connect to the Internet.

**Maximum Idle Time:** Time interval the machine can be idle before the PPPoE connection is disconnected. The Maximum Idle Time value is only used for the "On demand" and "Manual" reconnect modes.

### **WAN Interface IP Type**

**Static:** If your ISP has assigned a fixed IP address, select this option. The ISP provides the values for the following fields for **WAN Interface IP Setting: IP Address, Subnet Mask , Default Gateway.**

**Dynamic:** If the ISP's servers assign the router's IP addressing upon establishing a connection, select this option.

## PPTP

PPTP (Point to Point Tunneling Protocol) uses a virtual private network to connect to your ISP. This method of connection is primarily used in Europe. This method of connection requires you to enter a **Username** and **Password** (provided by your Internet Service Provider) to gain access to the Internet.

**PPTP Server IP Address:** The ISP provides this parameter, if necessary. The value may be the same as the Gateway IP Address.

**Reconnect Mode:** Typically PPPoE connections are not always on. The router allows you to set the reconnection mode. The settings are:

**Always on:** A connection to the Internet is always maintained.

**On demand:** A connection to the Internet is made as needed.

**Manual:** You have to open up the Web-based management interface and click the Connect button manually any time that you wish to connect to the Internet.

**Maximum Idle Time:** Time interval the machine can be idle before the PPPoE connection is disconnected. The Maximum Idle Time value is only used for the "On demand" and "Manual" reconnect modes.

#### **WAN Interface IP Type**

**Static:** If your ISP has assigned a fixed IP address, select this option. The ISP provides the values for the following fields for **WAN Interface IP Setting: IP Address, Subnet Mask , Default Gateway**, and optional for **DNS Server**

**Dynamic:** If the ISP's servers assign the router's IP addressing upon establishing a connection, select this option.

#### Russia PPTP

The Russia PPTP can configure IP address on the WAN interface and establish PPTP to get IP address, subnet mask, default gateway and DNS for ANOTHER logical IP interface on WAN port. So the physical WAN port will have 2 logical IP interfaces and can communicate with internal ISP's network resources and also communicate with Internet through PPTP tunnel. It is specified by Russia Cobrina ISP, user can configure it the same as the normal PPTP and PPTP server IP Address can use the domain name string.

#### WAN MTU Setting

The Maximum Transmission Unit (MTU) is a parameter that determines the largest packet size (in bytes) that the router will send to the WAN. If LAN devices send larger packets, the router will break them into smaller packets. Ideally, you should set this to match the MTU of the connection to your ISP. Typical values are 1500 bytes for an Ethernet connection and 1492 bytes for a PPPoE connection. If the router's MTU is set too high, packets will be fragmented downstream. If the router's MTU is set too low, the router will fragment packets unnecessarily and in extreme cases may be unable to establish some connections. In either case, network performance can suffer. t modes.

#### MAC Address Clone

Each networking device has it's own unique MAC address defined by the hardware manufacturer. Some ISP's may check your computer's MAC address. Some ISP's record the MAC address of the network adapter in the computer or router used to initially connect to their

service. The ISP will then only grant Internet access to requests from a computer or router with this particular MAC address. This router has a different MAC address than the computer or router that initially connected to the ISP. If you need to change the MAC address of the router's WAN-side Ethernet interface, either type in an alternate MAC address (for example, the MAC address of the router initially connected to the ISP) or copy the MAC address of a PC. To copy the MAC address of the computer that initially connected to the ISP, connect to the router using that computer and click the **Clone Your PC's MAC Address** button. The WAN interface will then use the MAC address of the network adapter in your computer.

## Network: LAN Setting

450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

**Wizard**  
**Network**

- WAN Setting
- LAN Setting
- QoS
- DHCP Client List

**Wireless 2.4GHz**  
**Wireless 5GHz**  
**Advanced**  
**Administrator**  
**Help**

### Local Area Network (LAN) Settings

You may choose different connection type suitable for your environment. Besides, you may also configure parameters according to the selected connection type.

**LAN Interface Setting**

IP Address	<input type="text" value="192.168.10.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
MAC Address	<input type="text" value="00:0C:43:35:93:10"/>

**DHCP Server Setting**

DHCP Server	<input type="checkbox"/> Enable
DHCP Start IP	<input type="text" value="192.168.10.100"/>
DHCP End IP	<input type="text" value="192.168.10.200"/>
DHCP Lease Time	<input type="text" value="604800"/> (seconds)

**Add DHCP Reservation**

Enable	<input type="checkbox"/>
Computer Name	<input type="text"/>
IP Address	<input type="text"/>
MAC Address	<input type="text"/> (Ex: 00:11:22:33:44:55)

**DHCP Reservations List**

Enable	Computer Name	IP Address	MAC Address	Edit	Delete
--------	---------------	------------	-------------	------	--------

**Add DHCP Reservation**

Enable

Computer Name

IP Address

MAC Address  (Ex: 00:11:22:33:44:55)

**DHCP Reservations List**

Enable	Computer Name	IP Address	MAC Address	Edit	Delete

#### IP Address

The IP address of the this device on the local area network. Assign any unused IP address in the range of IP addresses available for the LAN.

#### Subnet Mask

The subnet mask of the local area network.

#### DHCP Server Settings

DHCP stands for Dynamic Host Configuration Protocol. The DHCP section is where you configure the built-in DHCP Server to assign IP addresses to the computers and other devices on your local area network (LAN).

#### Enable DHCP Server

Once your router is properly configured and this option is enabled, the DHCP Server will manage the IP addresses and other network configuration information for computers and other devices connected to your Local Area Network. There is no need for you to do this yourself. The computers (and other devices) connected to your LAN also need to have their TCP/IP configuration set to "DHCP" or "Obtain an IP address automatically". When you set **Enable DHCP Server**, the following options are displayed.

#### DHCP IP Address Range

These two IP values (Start and End) define a range of IP addresses that the DHCP Server uses when assigning addresses to computers and devices on your Local Area Network. Any addresses that are outside of this range are not managed by the DHCP Server; these could,

therefore, be used for manually configured devices or devices that cannot use DHCP to obtain network address details automatically.

It is possible for a computer or device that is manually configured to have an address that does reside within this range. In this case the address should be reserved, so that the DHCP Server knows that this specific address can only be used by a specific computer or device.

Your router, by default, has a static IP address of 192.168.10.1. This means that addresses 192.168.10.2 to 192.168.10.254 can be made available for allocation by the DHCP Server.

#### Subnet Mask

The subnet mask of the local area network.

#### Gateway

The IP address of the router on the local area network. For example, 192.168.10.1.

#### DHCP Lease Time

The amount of time that a computer may have an IP address before it is required to renew the lease. The lease functions just as a lease on an apartment would. The initial lease designates the amount of time before the lease expires. If the tenant wishes to retain the address when the lease is expired then a new lease is established. If the lease expires and the address is no longer needed than another tenant may use the address.

#### Add/Edit DHCP Reservation

This option lets you reserve IP addresses, and assign the same IP address to the network device with the specified MAC address any time it requests an IP address. This is almost the same as when a device has a static IP address except that the device must still request an IP address from the router. The router will provide the device the same IP address every time. DHCP Reservations are helpful for server computers on the local network that are hosting applications such as Web and FTP. Servers on your network should either use a static IP address or use this option.

#### Computer Name

You can assign a name for each computer that is given a reserved IP address. This may help you keep track of which computers are assigned this way. Example: **Game Server**.

#### IP Address:

The LAN address that you want to reserve.

#### MAC Address

To input the MAC address of your system, enter it in manually or connect to the router's Web-Management interface from the system and click the **Copy Your PC's MAC Address** button.

A MAC address is usually located on a sticker on the bottom of a network device. The MAC address is comprised of twelve digits. Each pair of hexadecimal digits are usually separated by dashes or colons such as 00-0D-88-11-22-33 or 00:0D:88:11:22:33. If your network device is a computer and the network card is already located inside the computer, you can connect to the router from the computer and click the **Copy Your PC's MAC Address** button to enter the MAC address.

Clear

Re-initialize this area of the screen, discarding any changes you have made.

DHCP Reservations List

This shows clients that you have specified to reserve DHCP addresses. Click the Enable checkbox at the left to directly activate or de-activate the entry. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit DHCP Reservation" section is activated for editing.

## Network: QoS

The screenshot displays the Trendnet web management interface for a 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The interface is dark-themed with a sidebar on the left containing navigation buttons: Wizard, Network (selected), Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, and Help. The Network menu is expanded, showing sub-items: WAN Setting, LAN Setting, QoS (selected), and DHCP Client List. The main content area is titled "Quality of Service Settings" and includes a sub-section "QoS Setup". Below this, there are two configuration fields: "Quality of Service" set to "Disable" and "Upload Bandwidth" set to "User defined" with a unit of "bits/sec". An "Apply" button is located below these fields. The footer of the interface contains the text "Copyright © 2011 TRENDnet. All Rights Reserved."

**TRENDNET** 450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

Wizard

**Network**

- WAN Setting
- LAN Setting
- **QoS**
- DHCP Client List

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

Help

### Quality of Service Settings

You may setup rules to provide Quality of Service guarantees for specific applications.

#### QoS Setup

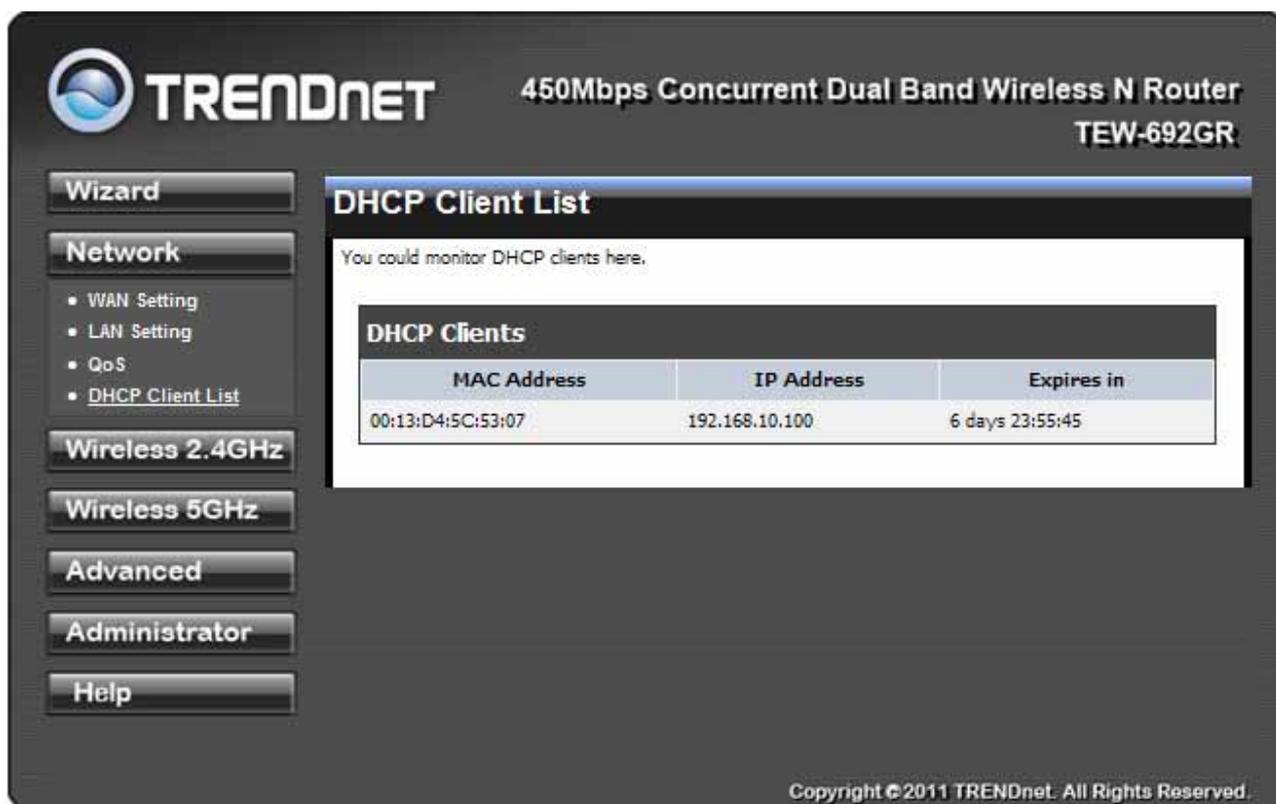
Quality of Service:	Disable
Upload Bandwidth:	User defined bits/sec

Apply

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## Network: DHCP Client List



The screenshot shows the Trendnet web interface for a 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The left sidebar contains navigation buttons for Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, and Help. The Network section is expanded, showing sub-options for WAN Setting, LAN Setting, QoS, and DHCP Client List. The main content area is titled "DHCP Client List" and contains the text "You could monitor DHCP clients here." Below this is a table titled "DHCP Clients" with the following data:

MAC Address	IP Address	Expires in
00:13:D4:5C:53:07	192.168.10.100	6 days 23:55:45

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In this section you can see the connected LAN devices are currently receiving an IP addresses.

# Wireless

## Wireless 2.4GHz: Basic

The screenshot shows the web management interface for a TRENDnet 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The interface is divided into a left sidebar and a main content area. The sidebar contains navigation buttons for Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, and Help. The Wireless 2.4GHz section is expanded, showing sub-options: Basic, Advanced, Security, WPS, and Station List. The main content area is titled "Basic Wireless Settings" and includes a sub-header "Wireless Network". Below this, there are several configuration sections: "Wireless Network" with fields for Radio On/Off (set to RADIO OFF), Wireless Mode (2.4GHz 802.11 b/g/n mixed mode), Wireless Name (SSID) (TRENDnet992\_2.4GHz), Multiple SSID1, Multiple SSID2, Multiple SSID3, Broadcast Network Name (SSID) (radio buttons for Enable and Disable), and Frequency (Channel) (AutoSelect). The "Wireless Distribution System(WDS)" section has a WDS dropdown set to Disable. The "HT Physical Mode" section includes Channel BandWidth (radio buttons for 20MHz and Auto 20/40MHz), 20/40 Coexistence (radio buttons for Disable and Enable), Guard Interval (radio buttons for long and Auto), MCS (Auto), and Extension Channel (AutoSelect). At the bottom of the configuration area are "Apply" and "Cancel" buttons. A copyright notice "Copyright ©2011 TRENDnet. All Rights Reserved." is visible at the very bottom of the interface.

## Radio On/Off

This indicates the wireless operating status. The wireless can be turned on or off by the slide switch. When the radio is on, the following parameters are in effect.

## Wireless Mode

If all of the wireless devices you want to connect with this router can connect in the same transmission mode, you can improve performance slightly by choosing the appropriate wireless mode. If you have some devices that use a different transmission mode, choose the appropriate wireless mode. The TEW-692GR supports 2.4GHz wireless networks. There are many different configuration options available to choose from. Use the drop down list to select the wireless mode.

Note: One wireless mode can be selected can select at any one time. This means that you can only select one of the operating frequency at a time.

## Wireless Mode options

**2.4GHz 802.11b/g mixed mode** - This wireless mode works in the 2.4GHz frequency range and will allow both wireless b and wireless g client to connect and access the TEW-692GR at 11Mbps for wireless b, at 54Mbps for wireless g and share access at the same time. Although the wireless b/g operates in the 2.4GHz frequency, it will allow the use of other 2.4GHz client devices (Wireless n/g @ 54Mbps) to connect and access at the same time.

**2.4GHz 802.11 n only** – This wireless mode works in the 2.4GHz frequency range and will only allow the use of wireless n client devices to connect and access the TEW-692GR up to 450Mbps\*. Although the wireless n operates in the 2.4GHz frequency, this mode will only permit wireless n client devices to work and will exclude any other wireless mode and devices that are not wireless n only.

**2.4 GHz 802.11b/g/n mixed mode** - This wireless mode works in the 2.4GHz frequency range and will only allow the use of wireless g client devices to connect and access the TEW-692GR at 11Mbps for wireless b, 54Mbps for wireless g and up to 450Mbps\* for wireless n and share access at the same time. Although the wireless b/g/n operates in the same 2.4GHz frequency, it will allow the use of other 2.4GHz client devices (Wireless b/g/n) to connect and access at the same time.

\*Maximum wireless signal rates are referenced from IEEE 802.11 theoretical specifications. Actual data throughput and coverage will vary depending on interference, network traffic, building materials and other conditions.

### Wireless Network Name (SSID)

When you are browsing for available wireless networks, this is the name that will appear in the list (unless Visibility Status is set to Invisible, see below). This name is also referred to as the SSID. For security purposes, it is highly recommended to change from the pre-configured network name. Add up to three additional SSIDs to create virtual wireless networks from one wireless Router Access Point device.

### Add Additional Wireless Network Name (SSID)

To add additional wireless Network Names simply add the name to the Multiple SSID field and click on apply at the bottom of the page. When finished, go to the Security section in this Users Guide for wireless security configuration.

### Frequency (Channel)

A wireless network uses specific channels in the wireless spectrum to handle communication between clients. Some channels in your area may have interference from other electronic devices. Choose the clearest channel to help optimize the performance and coverage of your wireless network.

### Wireless Distribution System (WDS)

When WDS is enabled, this access point functions as a wireless repeater and is able to wirelessly communicate with other APs via WDS links. A WDS link is bidirectional; so this AP must know the MAC Address (creates the WDS link) of the other AP, and the other AP must have a WDS link back to this AP. Make sure the APs are configured with same channel.

(Note that WDS security is incompatible with mixed mode, like WPAPSK+WPA2PSK mixed, WEP AUTO and 802.1x, both feature cannot be used at the same time).

### Configuring WDS with TEW-692GR

Enable the option for WDS and input the MAC Address of the wireless device that also supports WDS in to the blank fields. You can add up to four additional devices in the spaces provided.

Click on apply at the bottom of the page, to apply your setting changes.

Enable the security seeing in security page, each WDS APs need to use same security setting.

(Note: WDS supports wireless g/n modes. The use multiple Access Point will reduces the overall network throughput to ½ the TEW-692GR.

### HT Physical Mode

In HT (High Throughput) Physical mode setting allow for control of the 802.11n wireless environment.

#### **Operating Mode**

Mixed Mode

Green Field

**Mixed Mode:** In this mode packets are transmitted with a preamble compatible with the legacy 802.11a/g, the rest of the packet has a new format. In this mode the receiver shall be able to decode both the Mixed Mode packets and legacy packets.

**Green Field:** In this mode high throughput packets are transmitted without a legacy compatible part.

**Channel BandWidth:**

Set channel width of wireless radio.

20

20/40

20 Channel Width = 20 MHz

20/40 Channel Width = 20/40 MHz

**Guard Interval:**

Support Short/Long GI, the purpose of the guard interval is to introduce immunity to propagation delays, echoes and reflections, to which digital data is normally very sensitive.

Long

Auto

Long Guard Interval, 800 nsec

Short Guard Interval, 400 nsec

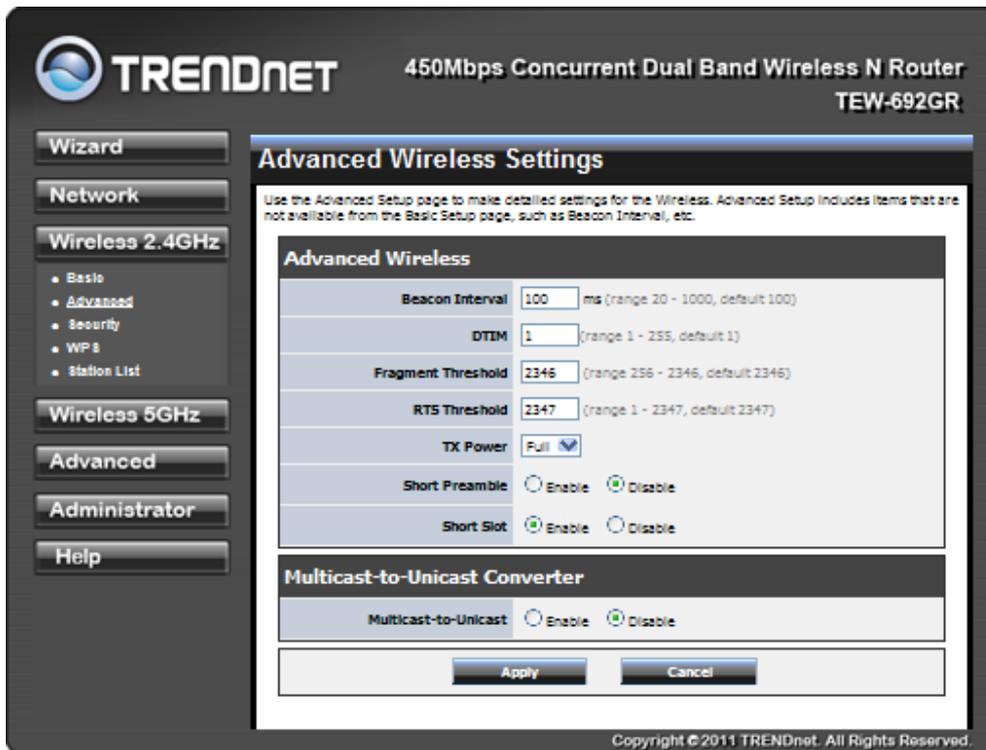
**MCS:**

Fix MCS rate for HT rate.

0-15

The Modulation and Coding Scheme (MCS) is a value that determines the modulation, coding and number of spatial channels.

## Wireless 2.4GHz: Advanced



### Beacon Interval

Beacons are packets sent by a wireless router to synchronize wireless devices. Specify a Beacon Period value between 20 and 1000. The default value is set to 100 milliseconds.

### DTIM

A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages. When the wireless router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Wireless clients detect the beacons and awaken to receive the broadcast and multicast messages. The default value is 1. Valid settings are between 1 and 255.

### Fragmentation Threshold

Wireless frames can be divided into smaller units (fragments) to improve performance in the presence of RF interference and at the limits of RF coverage. Fragmentation will occur when frame size in bytes is greater than the Fragmentation Threshold. This setting should remain at

its default value of 2346 bytes. Setting the Fragmentation value too low may result in poor performance.

#### RTS Threshold

When an excessive number of wireless packet collisions are occurring, wireless performance can be improved by using the RTS/CTS (Request to Send/Clear to Send) handshake protocol. The wireless transmitter will begin to send RTS frames (and wait for CTS) when data frame size in bytes is greater than the RTS Threshold. This setting should remain at its default value of 2346 bytes.

#### Short Preamble and Slot

Using a short (400ns) guard interval can increase throughput. However, it can also increase error rate in some installations, due to increased sensitivity to radio-frequency reflections. Select the option that works best for your installation.

#### TX Burst

Allows the wireless Router to deliver better throughput in the same period and environment in order to increase speed.

#### Pkt\_Aggregate

Increase efficiency by aggregating multiple packets of application data into a single transmission frame. In this way, 802.11n networks can send multiple data packets with the fixed overhead cost of just a single frame.

## Wireless 2.4GHz: Security

The screenshot shows the configuration interface for a TRENDnet 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The page is titled "Wireless Security Setting" and is part of the "Wireless 2.4GHz" configuration section. The interface includes a sidebar with navigation options: Wizard, Network, Wireless 2.4GHz (selected), Wireless 5GHz, Advanced, Administrator, and Help. The main content area is titled "Setting wireless security:" and contains the following sections:

- Select SSID:** A dropdown menu for "SSID choice" is set to "TRENDnet692\_2.4GHz".
- Security Policy: TRENDnet692\_2.4GHz:** A dropdown menu for "Security Mode" is set to "WEP-OPEN".
- WEP:** A section for configuring WEP keys. It includes a "Default Key" dropdown set to "Key 1", and four rows for "WEP Key 1" through "WEP Key 4". Each row has a text input field and a dropdown menu for the key format, all set to "ASCII". The first key field contains the value "12345".
- Wireless MAC Filter:** A section for configuring MAC filtering. It includes a "Filter Mode" dropdown set to "Disable" and a "MAC Address" input field with a placeholder "(Ex: 00:11:22:33:44:55)".

At the bottom of the configuration area are "Apply" and "Cancel" buttons. The footer of the page reads "Copyright © 2011 TRENDnet. All Rights Reserved."

### Security Mode

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

### WEP

A method of encrypting data for wireless communication intended to provide the same level of privacy as a wired network. WEP is not as secure as WPA encryption. To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange - alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to

HEX for use over the network. Four keys can be defined so that you can change keys easily. A default key is selected for use on the network.

#### WPA-Personal and WPA-Enterprise

Both of these options select some variant of Wi-Fi Protected Access (WPA) -- security standards published by the Wi-Fi Alliance. The WPA Mode further refines the variant that the router should employ.

**WPA Mode:** WPA is the older standard; select this option if the clients that will be used with the router only support the older standard. WPA2 is the newer implementation of the stronger IEEE 802.11i security standard. With the "WPA2" option, the router tries WPA2 first, but falls back to WPA if the client only supports WPA. With the "WPA2 Only" option, the router associates only with clients that also support WPA2 security.

**Cipher Type:** The encryption algorithm used to secure the data communication. TKIP (Temporal Key Integrity Protocol) provides per-packet key generation and is based on WEP. AES (Advanced Encryption Standard) is a very secure block based encryption. With the "TKIP and AES" option, the router negotiates the cipher type with the client, and uses AES when available.

**Group Key Update Interval:** The amount of time before the group key used for broadcast and multicast data is changed.

#### WPA-Personal

This option uses Wi-Fi Protected Access with a Pre-Shared Key (PSK).

**Pre-Shared Key:** The key is entered as a pass-phrase of up to 63 alphanumeric characters in ASCII (American Standard Code for Information Interchange) format at both ends of the wireless connection. It cannot be shorter than eight characters, although for proper security it needs to be of ample length and should not be a commonly known phrase. This phrase is used to generate session keys that are unique for each wireless client.

#### WPA-Enterprise

This option works with a RADIUS Server to authenticate wireless clients. Wireless clients should have established the necessary credentials before attempting to authenticate to the Server through this Gateway. Furthermore, it may be necessary to configure the RADIUS Server to allow this Gateway to authenticate users.

**Authentication Timeout:** Amount of time before a client will be required to re-authenticate.

**RADIUS Server IP Address:** The IP address of the authentication server.

RADIUS Server Port: The port number used to connect to the authentication server.

RADIUS Server Shared Secret: A pass-phrase that must match with the authentication server.

#### Wireless MAC Filtering

Choose the type of MAC filtering needed.

**Turn MAC Filtering Disable:** When "Disable" is selected, MAC addresses are not used to control network access.

#### Add MAC Filtering Rule

Use this section to add MAC addresses to the list below.

#### MAC Address

Enter the MAC address of a computer that you want to control with MAC filtering. Computers that have obtained an IP address from the router's DHCP server will be in the DHCP Client List. Select a device from the drop down menu.

#### The rule of thumb:

In mixed mode, multicast key has to be TKIP, but unicast key can be different per stations.

In WPA or WPA2 only mode, unicast and multicast key can be only AES for WPA2, and TKIP for WPA. (AES means the unicast and multicast key are all AES. TKIP/AES means multicast is TKIP. But unicast can be AES or TKIP, which depends on the peer.)

## Wireless 2.4GHz: WPS

**TRENDnet** 450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

**Wizard**  
**Network**  
**Wireless 2.4GHz**  
• Basic  
• Advanced  
• Security  
• WPS  
• Station List  
**Wireless 5GHz**  
**Advanced**  
**Administrator**  
**Help**

### Wi-Fi Protected Setup

You could setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup.

#### WPS Config

WPS:

#### WPS Summary

WPS Current Status	Idle
WPS Configured	Yes
WPS SSID	TRENDnet692_2.4GHz
WPS Security Mode	Open
WPS Encrypt Type	WEP
WPS Default Key Index	1
WPS Key(Hex value)	3132333435
AP PIN	37036164

#### WPS Action

Please click Wireless Client Card and Router's WPS button in 120 seconds to complete this setting.

PIN	<input type="text"/>	<input type="button" value="Configure via PIN"/>
PBC		<input type="button" value="Configure via PBC"/>

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**Enable**

Enable the WPS feature.

**Lock Wireless Security Settings**

Locking the wireless security settings prevents the settings from being changed by any new external registrar using its PIN. Devices can still be added to the wireless network using WPS.

**PIN Settings**

A PIN is a unique number that can be used to add the router to an existing network or to create a new network. The default PIN may be printed on the bottom of the router. For extra security, a new PIN can be generated. You can restore the default PIN at any time. Only the Administrator ("admin" account) can change or reset the PIN.

**Current PIN**

Shows the current value of the router's PIN.

**Reset To WPS Default**

Restore the default PIN of the router.

**Generate New PIN**

Create a random number that is a valid PIN. This becomes the router's PIN. You can then copy this PIN to the user interface of the registrar.

**PBC Settings**

The push button method can be used to allow wireless clients to connect to the router without entering/remember any encryption keys. The user can use the PBC method by pressing the WPS button on the side of the router or select the PBC option under Wireless/WPS settings page and hit Apply.

## Wireless 2.4GHz: Station List

The screenshot displays the TRENDnet web interface for a 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The interface is in a dark theme. On the left, a navigation menu includes buttons for Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, and Help. The Wireless 2.4GHz menu is expanded, showing sub-items: Basic, Advanced, Security, WPA, and Station List. The main content area is titled "Station List" and contains the text "You could monitor stations which associated to this AP here." Below this text is a table with the heading "Wireless Network". The table has four columns: MAC Address, Mode, Rate, and Signal. The table is currently empty. At the bottom right of the interface, there is a copyright notice: "Copyright © 2011 TRENDnet. All Rights Reserved."

All the wireless clients connecting to the router will be shown here, you could monitor your network and prevent any unauthorized wireless connection easily.

## Wireless 5GHz: Basic

**TRENDnet** 450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

Wizard  
Network  
Wireless 2.4GHz  
Wireless 5GHz  
• Basic  
• Advanced  
• Security  
• WPS  
• Station List  
Advanced  
Administrator  
Help

### Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

#### Wireless Network

Radio On/Off	<input type="checkbox"/> RADIO OFF
Wireless Mode	5GHz 802.11 a/n mixed mode
Wireless Name (SSID)	TRENDnet592_5GHz
Multiple SSID1	
Multiple SSID2	
Multiple SSID3	
Broadcast Network Name (SSID)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Frequency (Channel)	5180MHz (Channel 36)

#### Wireless Distribution System (WDS)

WDS	Disable
-----	---------

#### HT Physical Mode

Channel BandWidth	<input checked="" type="radio"/> 20MHz <input type="radio"/> Auto 20/40MHz
20/40 Coexistence	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Guard Interval	<input type="radio"/> long <input checked="" type="radio"/> Auto
MCS	Auto
Extension Channel	5200MHz (Channel 40)

Apply Cancel

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### Radio On/Off

This indicates the wireless operating status. The wireless can be turned on or off by the slide switch. When the radio is on, the following parameters are in effect.

## Wireless Mode

If all of the wireless devices you want to connect with this router can connect in the same transmission mode, you can improve performance slightly by choosing the appropriate wireless mode. If you have some devices that use a different transmission mode, choose the appropriate wireless mode. The TEW-692GR supports 5GHz wireless networks. There are many different configuration options available to choose from. Use the drop down list to select the wireless mode.

Note: One wireless mode can be selected can select at any one time. This means that you can only select one of the operating frequency at a time.

## Wireless Mode options

**5GHz 802.11a only mode** - This wireless mode works in the 5GHz frequency range and will allow wireless a client to connect and access the TEW-692GR 450Mbps Concurrent Wireless N Gigabit Router at 54Mbps for wireless a only mode. Although the wireless a operates in the 5GHz frequency, this mode will only permit wireless a client devices to work and will exclude any other wireless mode and devices that are not wireless a only.

**5GHz 802.11a/n mixed mode** - This wireless mode works in the 5GHz frequency range and will only allow the use of wireless a/n dual band client devices to connect and access the TEW-692GR 450Mbps Concurrent Wireless N Gigabit Router up to 450Mbps\*. Dual band wireless client devices that support both wireless a/n can connect and access the TEW-692GR 450Mbps Concurrent Wireless N Gigabit Router up to 450Mbps. Wireless a client devices can connect and access the TEW-692GR 450Mbps Concurrent Wireless N Gigabit Router but, will only connect up to 54Mbps, (this due to the legacy limitation of wireless a technology for that standard). Although the wireless a/n operate in the same 5GHz frequency, this mode will only permit wireless a/n client devices to work and will exclude any other wireless mode and devices that are not wireless a/n. (note: wireless b/g/n will not be able to connect at the same time to the TEW-692GR 450Mbps Concurrent Wireless N Gigabit Router with 5GHz wireless a/n mode enable).

## Wireless Network Name (SSID)

When you are browsing for available wireless networks, this is the name that will appear in the list (unless Visibility Status is set to Invisible, see below). This name is also referred to as the SSID. For security purposes, it is highly recommended to change from the pre-configured network name. Add up to three additional SSIDs to create virtual wireless networks from one wireless Router Access Point device.

## Add Additional Wireless Network Name (SSID)

To add additional wireless Network Names simply add the name to the Multiple SSID field and click on apply at the bottom of the page. When finished, go to the Security section in this Users Guide for wireless security configuration.

#### Frequency (Channel)

A wireless network uses specific channels in the wireless spectrum to handle communication between clients. Some channels in your area may have interference from other electronic devices. Choose the clearest channel to help optimize the performance and coverage of your wireless network.

#### Wireless Distribution System (WDS)

When WDS is enabled, this access point functions as a wireless repeater and is able to wirelessly communicate with other APs via WDS links. A WDS link is bidirectional; so this AP must know the MAC Address (creates the WDS link) of the other AP, and the other AP must have a WDS link back to this AP. Make sure the APs are configured with same channel.

(Note that WDS security is incompatible with mixed mode, like WPAPSK+WPA2PSK mixed, WEP AUTO and 802.1x, both feature cannot be used at the same time).

#### Configuring WDS with TEW-692GR

Enable the option for WDS and input the MAC Address of the wireless device that also supports WDS in to the blank fields. You can add up to four additional devices in the spaces provided. Click on apply at the bottom of the page, to apply your setting changes.

Enable the security seeing in security page, each WDS APs need to use same security setting.

(Note: WDS supports wireless g/n modes. The use multiple Access Point will reduces the overall network throughput to ½ the TEW-692GR.

#### HT Physical Mode

In HT (High Throughput) Physical mode setting allow for control of the 802.11n wireless environment.

##### **Operating Mode**

Mixed Mode

Green Field

**Mixed Mode:** In this mode packets are transmitted with a preamble compatible with the legacy 802.11a/g, the rest of the packet has a new format. In this mode the receiver shall be able to decode both the Mixed Mode packets and legacy packets.

**Green Field:** In this mode high throughput packets are transmitted without a legacy compatible part.

##### **Channel BandWidth:**

Set channel width of wireless radio.

20

20/40

20 Channel Width = 20 MHz

20/40 Channel Width = 20/40 MHz

**Guard Interval:**

Support Short/Long GI, the purpose of the guard interval is to introduce immunity to propagation delays, echoes and reflections, to which digital data is normally very sensitive.

Long

Auto

Long Guard Interval, 800 nsec

Short Guard Interval, 400 nsec

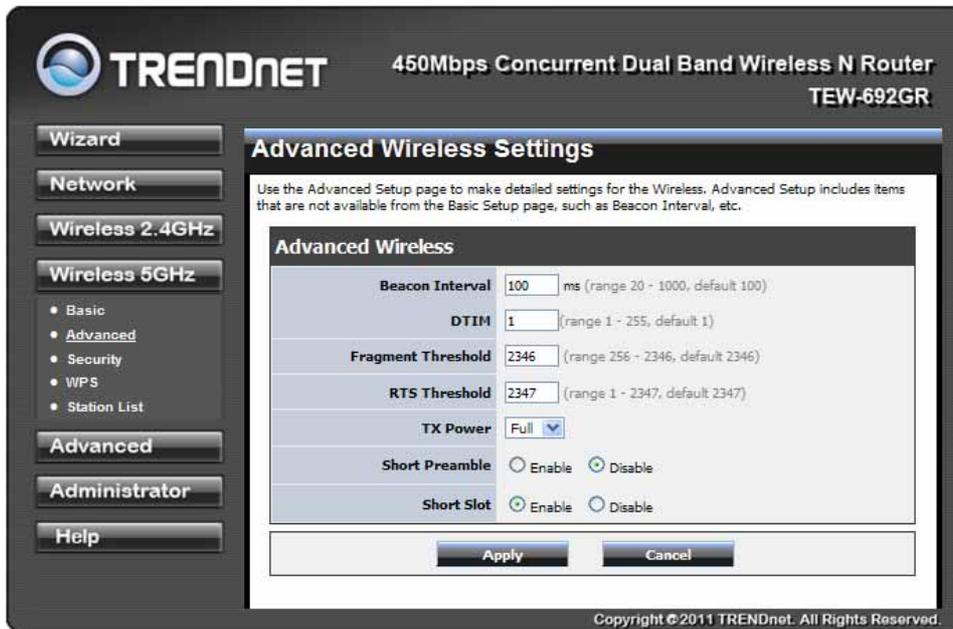
**MCS:**

Fix MCS rate for HT rate.

0-15

The Modulation and Coding Scheme (MCS) is a value that determines the modulation, coding and number of spatial channels.

## Wireless 5GHz: Advanced



### Beacon Interval

Beacons are packets sent by a wireless router to synchronize wireless devices. Specify a Beacon Period value between 20 and 1000. The default value is set to 100 milliseconds.

### DTIM

A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages. When the wireless router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Wireless clients detect the beacons and awaken to receive the broadcast and multicast messages. The default value is 1. Valid settings are between 1 and 255.

### Fragmentation Threshold

Wireless frames can be divided into smaller units (fragments) to improve performance in the presence of RF interference and at the limits of RF coverage. Fragmentation will occur when frame size in bytes is greater than the Fragmentation Threshold. This setting should remain at its default value of 2346 bytes. Setting the Fragmentation value too low may result in poor performance.

### RTS Threshold

When an excessive number of wireless packet collisions are occurring, wireless performance can be improved by using the RTS/CTS (Request to Send/Clear to Send) handshake protocol. The wireless transmitter will begin to send RTS frames (and wait for CTS) when data frame size in bytes is greater than the RTS Threshold. This setting should remain at its default value of 2346 bytes.

#### Short Preamble and Slot

Using a short (400ns) guard interval can increase throughput. However, it can also increase error rate in some installations, due to increased sensitivity to radio-frequency reflections. Select the option that works best for your installation.

#### TX Burst

Allows the wireless Router to deliver better throughput in the same period and environment in order to increase speed.

#### Pkt\_Aggregate

Increase efficiency by aggregating multiple packets of application data into a single transmission frame. In this way, 802.11n networks can send multiple data packets with the fixed overhead cost of just a single frame.

## Wireless 5GHz: Security

The screenshot shows the 'Wireless Security Setting' page for a TRENDnet 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The page is divided into several sections:

- Select SSID:** SSID choice is set to 'TRENDnet692\_5GHz'.
- Security Policy: TRENDnet692\_5GHz:** Security Mode is set to 'WEP-OPEN'.
- WEP:** Default Key is 'Key 1'. WEP Key 1 is '12345' with an ASCII dropdown set to 'ASCII'. WEP Key 2, 3, and 4 are empty, each with an ASCII dropdown set to 'ASCII'.
- Wireless MAC Filter:** Filter Mode is 'Disable'. MAC Address is empty, with an example '(Ex: 00:11:22:33:44:55)'.

At the bottom of the form are 'Apply' and 'Cancel' buttons. The footer of the page reads 'Copyright ©2011 TRENDnet. All Rights Reserved.'

### Security Mode

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

### WEP

A method of encrypting data for wireless communication intended to provide the same level of privacy as a wired network. WEP is not as secure as WPA encryption. To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by

entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange - alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily. A default key is selected for use on the network.

#### WPA-Personal and WPA-Enterprise

Both of these options select some variant of Wi-Fi Protected Access (WPA) -- security standards published by the Wi-Fi Alliance. The WPA Mode further refines the variant that the router should employ.

**WPA Mode:** WPA is the older standard; select this option if the clients that will be used with the router only support the older standard. WPA2 is the newer implementation of the stronger IEEE 802.11i security standard. With the "WPA2" option, the router tries WPA2 first, but falls back to WPA if the client only supports WPA. With the "WPA2 Only" option, the router associates only with clients that also support WPA2 security.

**Cipher Type:** The encryption algorithm used to secure the data communication. TKIP (Temporal Key Integrity Protocol) provides per-packet key generation and is based on WEP. AES (Advanced Encryption Standard) is a very secure block based encryption. With the "TKIP and AES" option, the router negotiates the cipher type with the client, and uses AES when available.

**Group Key Update Interval:** The amount of time before the group key used for broadcast and multicast data is changed.

#### WPA-Personal

This option uses Wi-Fi Protected Access with a Pre-Shared Key (PSK).

**Pre-Shared Key:** The key is entered as a pass-phrase of up to 63 alphanumeric characters in ASCII (American Standard Code for Information Interchange) format at both ends of the wireless connection. It cannot be shorter than eight characters, although for proper security it needs to be of ample length and should not be a commonly known phrase. This phrase is used to generate session keys that are unique for each wireless client.

#### WPA-Enterprise

This option works with a RADIUS Server to authenticate wireless clients. Wireless clients should have established the necessary credentials before attempting to authenticate to the Server

through this Gateway. Furthermore, it may be necessary to configure the RADIUS Server to allow this Gateway to authenticate users.

Authentication Timeout: Amount of time before a client will be required to re-authenticate.

RADIUS Server IP Address: The IP address of the authentication server.

RADIUS Server Port: The port number used to connect to the authentication server.

RADIUS Server Shared Secret: A pass-phrase that must match with the authentication server.

#### Wireless MAC Filtering

Choose the type of MAC filtering needed.

**Turn MAC Filtering Disable:** When "Disable" is selected, MAC addresses are not used to control network access.

#### Add MAC Filtering Rule

Use this section to add MAC addresses to the list below.

#### MAC Address

Enter the MAC address of a computer that you want to control with MAC filtering. Computers that have obtained an IP address from the router's DHCP server will be in the DHCP Client List. Select a device from the drop down menu.

## Wireless 5GHz: WPS

The screenshot shows the configuration interface for a TRENDnet 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The page is titled "Wi-Fi Protected Setup" and is part of the "Wireless 5GHz" configuration section. The interface includes a sidebar with navigation options: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz (selected), Advanced, Administrator, and Help. The main content area is divided into three sections: WPS Config, WPS Summary, and WPS Action.

**WPS Config**

You could setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup.

WPS:  Enable  Disable

**WPS Summary**

WPS Current Status	Idle
WPS Configured	Yes
WPS SSID	TRENDnet692_5GHz
WPS Security Mode	Open
WPS Encrypt Type	WEP
WPS Default Key Index	1
WPS Key(Hex value)	3132333435
AP PIN	35110569

**WPS Action**

Please click Wireless Client Card and Router's WPS button in 120 seconds to complete this setting.

PIN:

PBC:

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**Enable**

Enable the WPS feature.

**Lock Wireless Security Settings**

Locking the wireless security settings prevents the settings from being changed by any new external registrar using its PIN. Devices can still be added to the wireless network using WPS.

**PIN Settings**

A PIN is a unique number that can be used to add the router to an existing network or to create a new network. The default PIN may be printed on the bottom of the router. For extra security, a new PIN can be generated. You can restore the default PIN at any time. Only the Administrator ("admin" account) can change or reset the PIN.

**Current PIN**

Shows the current value of the router's PIN.

**Reset To WPS Default**

Restore the default PIN of the router.

**Generate New PIN**

Create a random number that is a valid PIN. This becomes the router's PIN. You can then copy this PIN to the user interface of the registrar.

**PBC Settings**

The push button method can be used to allow wireless clients to connect to the router without entering/remember any encryption keys. The user can use the PBC method by pressing the WPS button on the side of the router or select the PBC option under Wireless/WPS settings page and hit Apply.

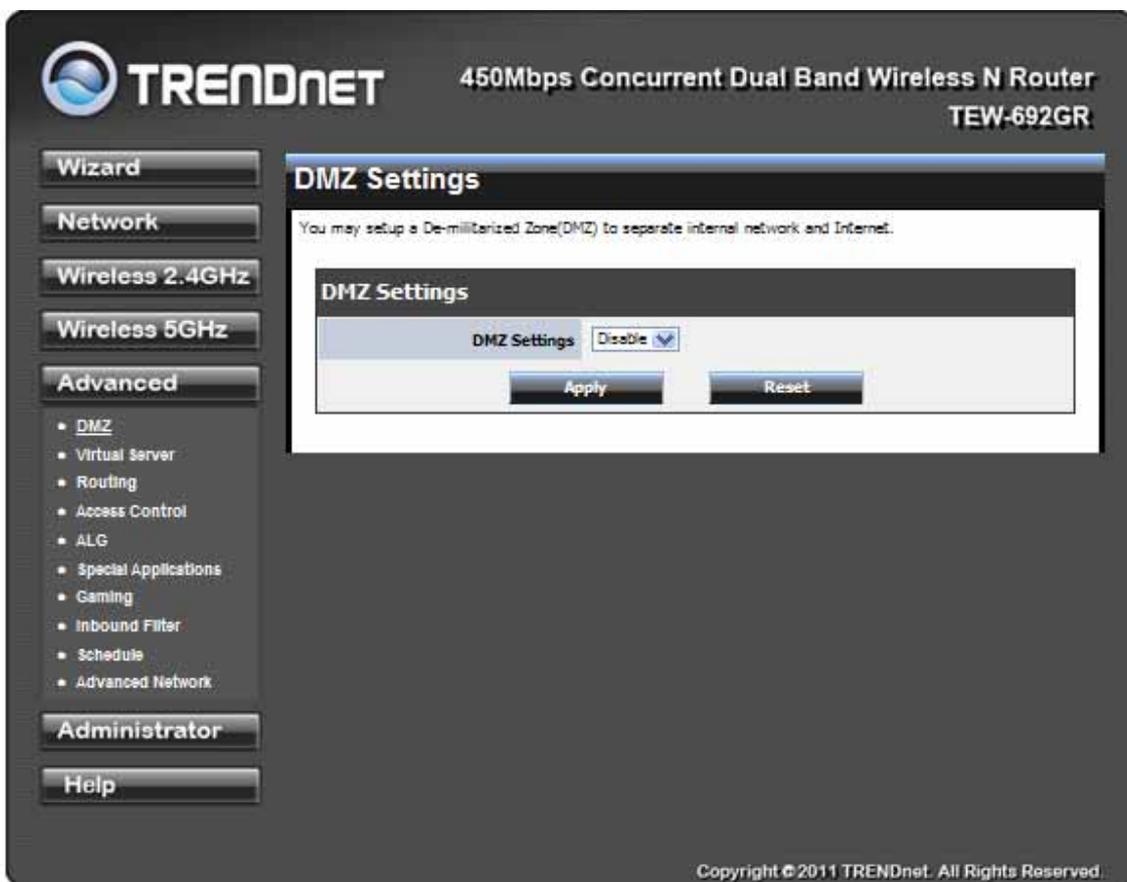
## Wireless 5GHz: Station List

The screenshot shows the TRENDnet web interface for a 450Mbps Concurrent Dual Band Wireless N Router (TEW-692GR). The interface is dark-themed with a sidebar on the left containing navigation buttons: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, and Help. The Wireless 5GHz section is expanded, showing sub-options: Basic, Advanced, Security, WPS, and Station List (which is selected). The main content area is titled "Station List" and contains the text "You could monitor stations which associated to this AP here." Below this text is a table header for "Wireless Network" with columns for "MAC Address", "Mode", "Rate", and "Signal". The table body is currently empty. At the bottom right of the interface, there is a copyright notice: "Copyright © 2011 TRENDnet. All Rights Reserved."

All the wireless clients connecting to the router will be shown here, you could monitor your network and prevent any unauthorized wireless connection easily.

## Advanced

### Advanced: DMZ



#### DMZ Setting

DMZ means "Demilitarized Zone." If an application has trouble working from behind the router, you can expose one computer to the Internet and run the application on that computer. When a LAN host is configured as a DMZ host, it becomes the destination for all incoming packets that do not match some other incoming session or rule. If any other ingress rule is in place, that will be used instead of sending packets to the DMZ host; so, an active session, virtual server, active port trigger, or port forwarding rule will take priority over sending a packet

to the DMZ host. (The DMZ policy resembles a default port forwarding rule that forwards every port that is not specifically sent anywhere else.)

The router provides only limited firewall protection for the DMZ host. The router does not forward a TCP packet that does not match an active DMZ session, unless it is a connection establishment packet (SYN). Except for this limited protection, the DMZ host is effectively "outside the firewall". Anyone considering using a DMZ host should also consider running a firewall on that DMZ host system to provide additional protection.

Packets received by the DMZ host have their IP addresses translated from the WAN-side IP address of the router to the LAN-side IP address of the DMZ host. However, port numbers are not translated; so applications on the DMZ host can depend on specific port numbers.

The DMZ capability is just one of several means for allowing incoming requests that might appear unsolicited to the NAT. In general, the DMZ host should be used only if there are no other alternatives, because it is much more exposed to cyberattacks than any other system on the LAN. Thought should be given to using other configurations instead: a virtual server, a port forwarding rule, or a port trigger. Virtual servers open one port for incoming sessions bound for a specific application (and also allow port redirection and the use of ALGs).

Port forwarding is rather like a selective DMZ, where incoming traffic targeted at one or more ports is forwarded to a specific LAN host (thereby not exposing as many ports as a DMZ host). Port triggering is a special form of port forwarding, which is activated by outgoing traffic, and for which ports are only forwarded while the trigger is active.

Few applications truly require the use of the DMZ host. Following are examples of when a

DMZ host might be required:

- A host needs to support several applications that might use overlapping ingress ports such that two port forwarding rules cannot be used because they would potentially be in conflict.
- To handle incoming connections that use a protocol other than ICMP, TCP, UDP, and IGMP (also GRE and ESP, when these protocols are enabled by the PPTP and IPSec

### Enable DMZ

Putting a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.

### DMZ IP Address

Specify the LAN IP address of the LAN computer that you want to have unrestricted Internet communication.

## Advanced: Virtual Server

**TRENDnet** 450Mbps Concurrent Dual Band Wireless N Router TEW-692GR

Wizard  
Network  
Wireless 2.4GHz  
Wireless 5GHz  
Advanced  
• DMZ  
• Virtual Server  
• Routing  
• Access Control  
• ALG  
• Special Applications  
• Gaming  
• Inbound Filter  
• Schedule  
• Advanced Network  
Administrator  
Help

### Virtual Server

The Virtual Server can define a single public port for redirection to an internal IP and port.

#### Add Virtual Server

Rule Enable	<input type="checkbox"/>
Rule Name	<input type="text"/>
IP Address	<input type="text"/>
Protocol	TCP
Public Port	<input type="text"/>
Private Port	<input type="text"/>
Inbound Filter	Allow All
Schedule	Always

Add Clear

#### Virtual Server List

Enable	Rule Name	IP Address	Protocol, Public Port/Private Port	Inbound Filter	Schedule	Edit	Delete
--------	-----------	------------	------------------------------------	----------------	----------	------	--------

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### Enable

Specifies whether the entry will be active or inactive.

### Name

Assign a meaningful name to the virtual server, for example **Web Server**. Several well-known types of virtual server are available from the "Application Name" drop-down list. Selecting one of these entries fills some of the remaining parameters with standard values for that type of server.

### IP Address

The IP address of the system on your internal network that will provide the virtual service, for example **192.168.10.50**. You can select a computer from the list of DHCP clients in the "Computer Name" drop-down menu, or you can manually enter the IP address of the server computer.

### Protocol

Select the protocol used by the service. The common choices -- UDP, TCP, and both UDP and TCP -- can be selected from the drop-down menu. To specify any other protocol, select "Other" from the list, then enter the corresponding protocol number (as assigned by the IANA) in the **Protocol** box.

Private Port

The port that will be used on your internal network.

Public Port

The port that will be accessed from the Internet.

Schedule

Select a schedule for when the service will be enabled. If you do not see the schedule you need in the list of schedules.

Clear

Re-initialize this area of the screen, discarding any changes you have made.

## Advanced: Routing

**TRENDnet** 450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

Wizard  
Network  
Wireless 2.4GHz  
Wireless 5GHz  
Advanced

- DMZ
- Virtual Server
- Routing
- Access Control
- ALG
- Special Applications
- Gaming
- Inbound Filter
- Schedule
- Advanced Network

Administrator  
Help

### Static Routing Settings

The Static Routing option allows you to define fixed routes to specific destinations.

#### Add Static Route

Destination IP Address :   
Destination IP Netmask :   
Gateway :   
Metric :   
Interface :

#### Static Route List

No.	IP	Netmask	Gateway	Metric	Interface
<input type="button" value="Delete"/>					

#### RIP

Enable RIP

#### Routing Table

IP	Netmask	Gateway	Metric	Interface
255.255.255.255	255.255.255.255	0.0.0.0	0	LAN/WLAN
239.255.255.250	255.255.255.255	0.0.0.0	0	LAN/WLAN
10.4.3.0	255.255.255.0	0.0.0.0	0	WAN
192.168.10.0	255.255.255.0	0.0.0.0	0	LAN/WLAN
239.0.0.0	255.0.0.0	0.0.0.0	0	LAN/WLAN
224.0.0.0	240.0.0.0	0.0.0.0	0	LAN/WLAN
0.0.0.0	0.0.0.0	10.4.3.1	0	WAN

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### Add/Edit Route

Adds a new route to the IP routing table or edits an existing route.

### Destination IP

The IP address of packets that will take this route.

### Gateway

Specifies the next hop to be taken if this route is used. A gateway of 0.0.0.0 implies there is no next hop, and the IP address matched is directly connected to the router on the interface specified: LAN or WAN.

### Metric

The route metric is a value from 1 to 16 that indicates the cost of using this route. A value of 1 is the lowest cost, and 15 is the highest cost. A value of 16 indicates that the route is not reachable from this router. When trying to reach a particular destination, computers on your network will select the best route, ignoring unreachable routes.

### Interface

Specifies the interface -- LAN or WAN -- that the IP packet must use to transit out of the router, when this route is used.

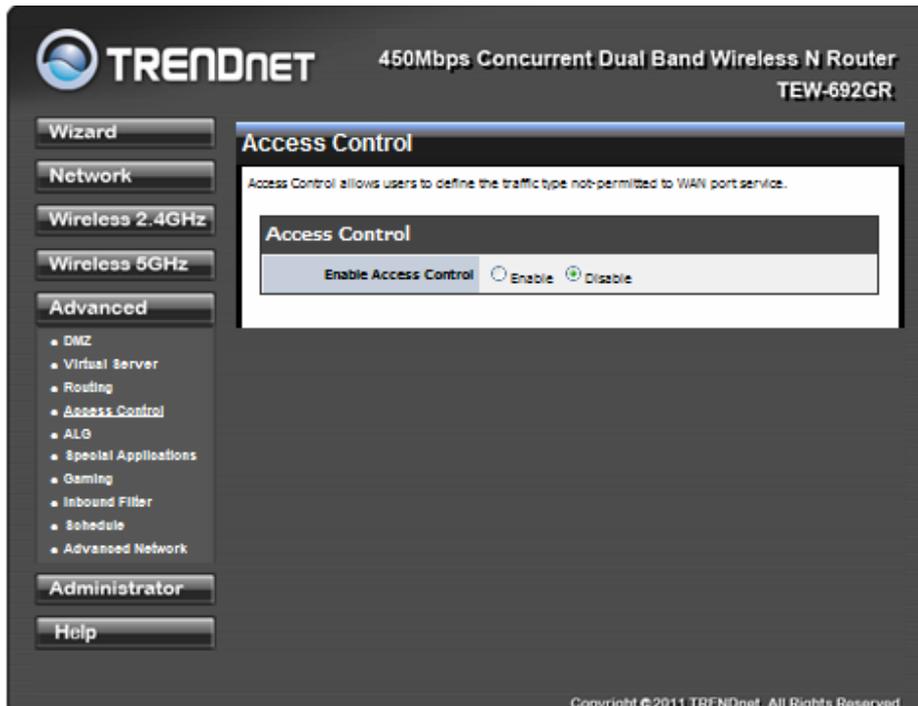
### Clear

Re-initialize this area of the screen, discarding any changes you have made.

### Routes List

The section shows the current routing table entries. Certain required routes are predefined and cannot be changed. Routes that you add can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit Route" section is activated for editing. Click the Enable checkbox at the left to directly activate or de-activate the entry.

## Advanced: Access Control

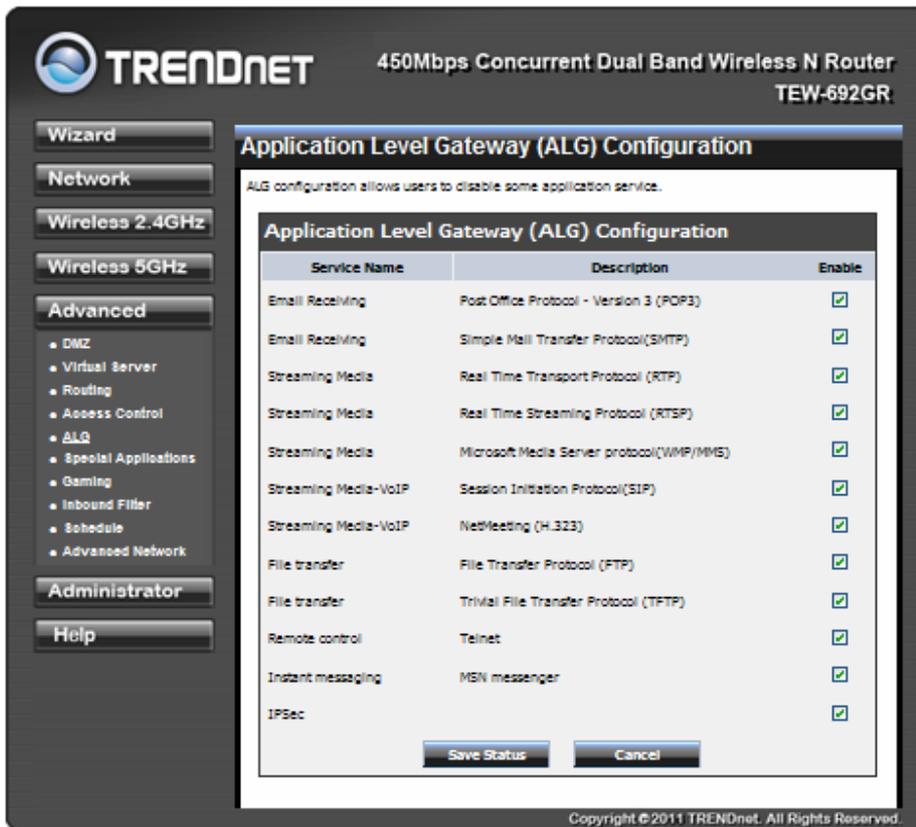


### Enable

By default, the Access Control feature is disabled. If you need Access Control, check this option.

**Note:** When Access Control is disabled, every device on the LAN has unrestricted access to the Internet. However, if you enable Access Control, Internet access is restricted for those devices that have an Access Control Policy configured for them. All other devices have unrestricted access to the Internet.

## ALG



The screenshot displays the 'Application Level Gateway (ALG) Configuration' page on a Trendnet router. The page title is 'Application Level Gateway (ALG) Configuration' and it includes a sub-header: 'ALG configuration allows users to disable some application service.' Below this is a table with three columns: 'Service Name', 'Description', and 'Enable'. All services listed have their 'Enable' checkboxes checked. At the bottom of the table are 'Save Status' and 'Cancel' buttons. The left sidebar shows the navigation menu with 'Advanced' selected and 'ALG' highlighted. The router model is identified as '450Mbps Concurrent Dual Band Wireless N Router TEW-692GR'.

Service Name	Description	Enable
Email Receiving	Post Office Protocol - Version 3 (POP3)	<input checked="" type="checkbox"/>
Email Receiving	Simple Mail Transfer Protocol(SMTP)	<input checked="" type="checkbox"/>
Streaming Media	Real Time Transport Protocol (RTP)	<input checked="" type="checkbox"/>
Streaming Media	Real Time Streaming Protocol (RTSP)	<input checked="" type="checkbox"/>
Streaming Media	Microsoft Media Server protocol(WMP/MMS)	<input checked="" type="checkbox"/>
Streaming Media-VoIP	Session Initiation Protocol(SIP)	<input checked="" type="checkbox"/>
Streaming Media-VoIP	NetMeeting (H.323)	<input checked="" type="checkbox"/>
File transfer	File Transfer Protocol (FTP)	<input checked="" type="checkbox"/>
File transfer	Trivial File Transfer Protocol (TFTP)	<input checked="" type="checkbox"/>
Remote control	Telnet	<input checked="" type="checkbox"/>
Instant messaging	MSN messenger	<input checked="" type="checkbox"/>
IPSec		<input checked="" type="checkbox"/>

### Application Level Gateway(ALG)

By default, the ALG feature is enabled. ALG configuration allows users to disable some application service.

## Advanced: Special Applications



## Add/Edit Port Trigger Rule

### Enable

Specifies whether the entry will be active or inactive.

### Name

Enter a name for the Special Application Rule, for example **Game App**, which will help you identify the rule in the future. Alternatively, you can select from the **Application** list of common applications.

### Protocol

Select the protocol used by the service. The common choices -- UDP, TCP, and both UDP and TCP -- can be selected from the drop-down menu.

### Trigger Port

Enter the outgoing port range used by your application (for example **6500-6700**).

### Schedule

Select a schedule for when this rule is in effect.

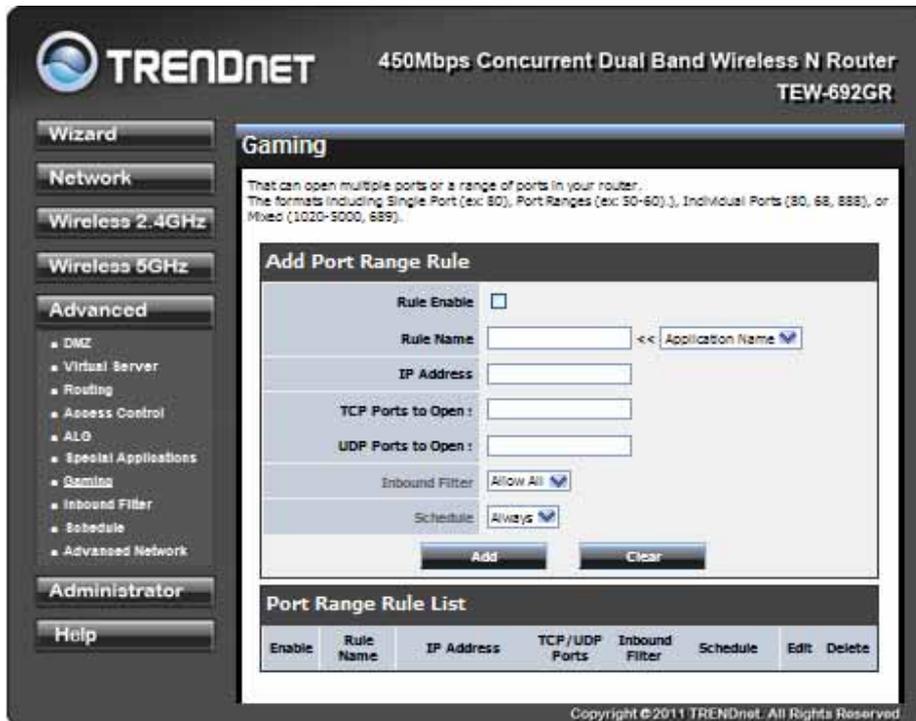
### Clear

Re-initialize this area of the screen, discarding any changes you have made.

### Port Trigger Rule List

This is a list of the defined application rules. Click the Enable checkbox at the left to directly activate or de-activate the entry. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon.

## Advanced: Gaming



### Add/Edit Port Range Rule

Use this section to add a Port Range Rule to the following list or to edit a rule already in the list.

### Rule Enable

Specifies whether the entry will be active or inactive.

### Rule Name

Give the rule a name that is meaningful to you, for example **Game Server**. You can also select from a list of popular games, and many of the remaining configuration values will be filled in accordingly. However, you should check whether the port values have changed since this list was created, and you must fill in the IP address field.

### IP Address

Enter the local network IP address of the system hosting the server, for example **192.168.10.50**. You can select a computer from the list of DHCP clients in the "Computer Name" drop-down menu, or you can manually enter the IP address of the server computer.

#### TCP Ports to Open

Enter the TCP ports to open (for example **6159-6180, 99**).

#### UDP Ports to Open

Enter the UDP ports to open (for example **6159-6180, 99**).

#### Inbound Filter

Select a filter that controls access as needed for this rule.

#### Schedule

Select a schedule for the times when this rule is in effect.

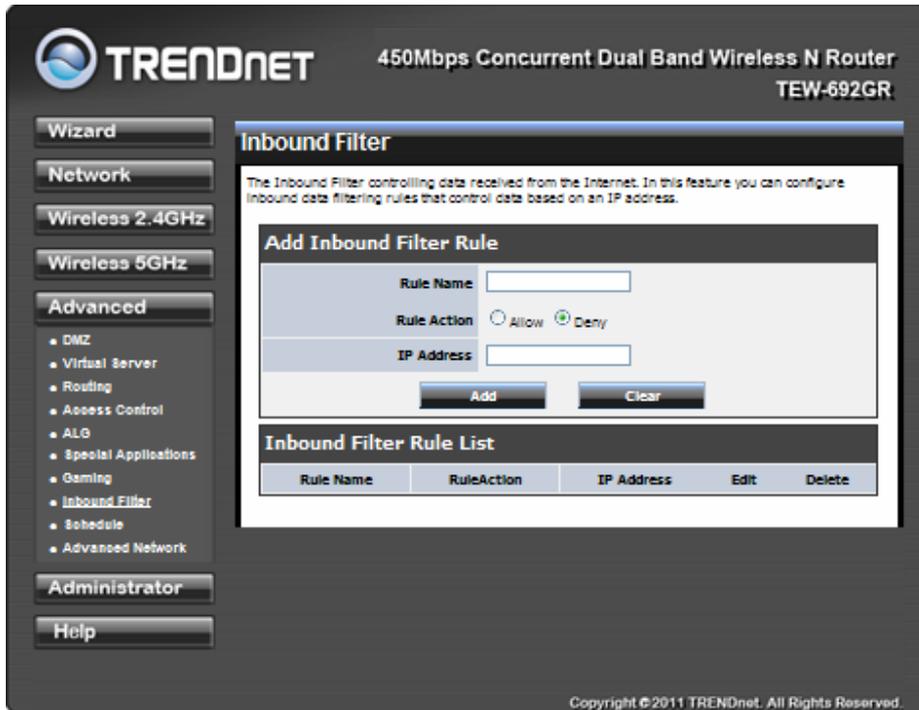
#### Clear

Re-initialize this area of the screen, discarding any changes you have made.

#### Port Range Rule List

This is a list of the defined Port Range Rules. Click the Enable checkbox at the left to directly activate or de-activate the entry. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit Port Forwarding Rule" section is activated for editing.

## Advanced: Inbound Filter



### Add/Edit Inbound Filter Rule

Here you can add entries to the Inbound Filter Rules List below, or edit existing entries.

#### Name

Enter a name for the rule that is meaningful to you.

#### Action

The rule can either Allow or Deny messages.

#### Remote IP Range

Define the ranges of Internet addresses this rule applies to. For a single IP address, enter the same address in both the **Start** and **End** boxes. Up to eight ranges can be entered. The **Enable** checkbox allows you to turn on or off specific entries in the list of ranges.

#### Clear

Re-initialize this area of the screen, discarding any changes you have made.

### Inbound Filter Rules List

The section lists the current Inbound Filter Rules. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit Inbound Filter Rule" section is activated for editing.

In addition to the filters listed here, two predefined filters are available wherever inbound filters can be applied:

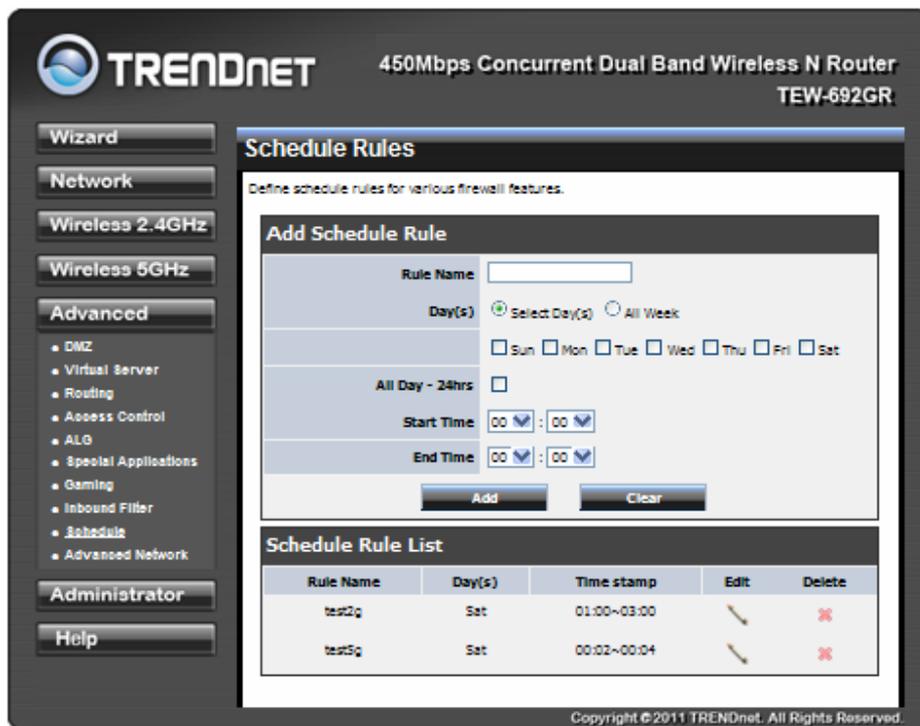
#### Allow All

Permit any WAN user to access the related capability.

#### Deny All

Prevent all WAN users from accessing the related capability. (LAN users are not affected by Inbound Filter Rules.)

## Advanced: Schedule



### Add/Edit Schedule Rule

In this section you can add entries to the Schedule Rules List below or edit existing entries.

#### Name

Give the schedule a name that is meaningful to you, such as "Weekday rule".

#### Day(s)

Place a checkmark in the boxes for the desired days or select the All Week radio button to select all seven days of the week.

#### All Day - 24 hrs

Select this option if you want this schedule in effect all day for the selected day(s).

#### Start Time

If you don't use the All Day option, then you enter the time here. The start time is entered in two fields. The first box is for the hour and the second box is for the minute. Email events are normally triggered only by the start time. End Time

The end time is entered in the same format as the start time. The hour in the first box and the minutes in the second box. The end time is used for most other rules, but is not normally used for email events.

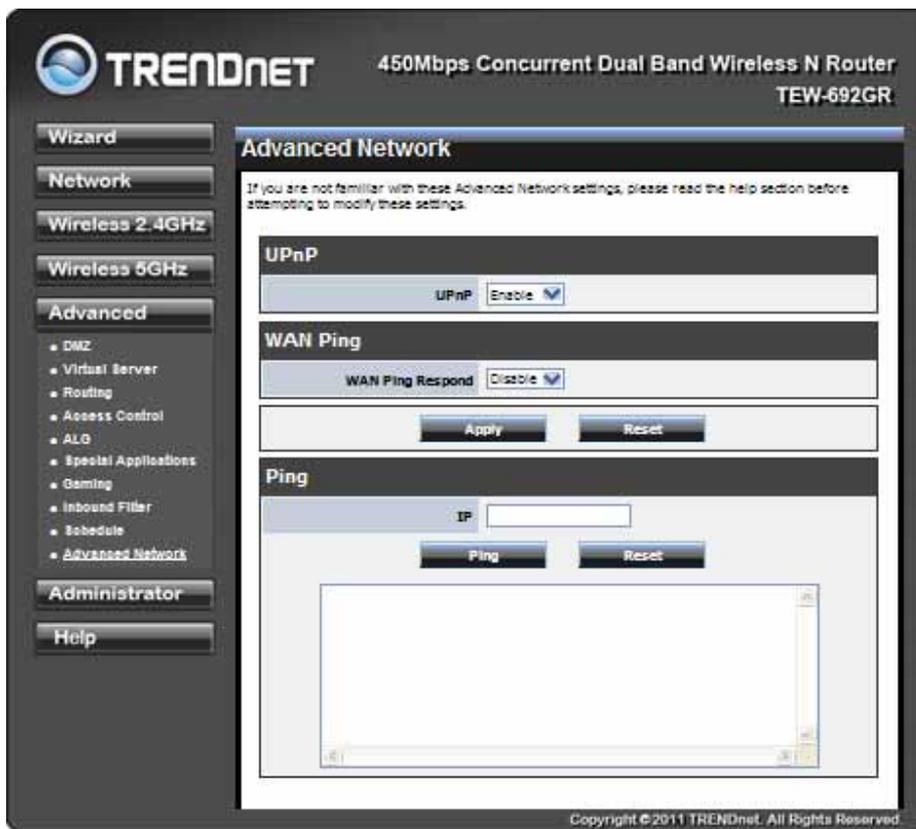
#### Clear

Re-initialize this area of the screen, discarding any changes you have made.

#### Schedule Rules List

This section shows the currently defined Schedule Rules. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit Schedule Rule" section is activated for editing.

## Advanced: Advanced Network



### UPnP

By default, the UPnP feature is enabled. Universal Plug and Play (UPnP) is a set of networking protocols for primarily residential networks without enterprise class devices that permits networked devices, such as personal computers, printers, Internet gateways, Wi-Fi access points and mobile devices to seamlessly discover each other's presence on the network and establish functional network services for data sharing, communications, and entertainment.

### WAN Ping

By default, the WAN Ping Respond feature is disabled. Enable WAN Ping Respond will reply information of router to outside network.

# Administrator

## Administrator: Management

**TRENDNET** 450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

**System Management**

You may configure administrator account and password.

**Administrator Settings**

Account:

Password:  (Max Length: 16 characters)

Idle Timeout:  (120-3600 seconds)

**Device Name Settings**

Device Name:

**Device URL Settings**

Device URL:

**DDNS Settings**

Dynamic DNS Provider:

Host Name:

Account:

Password:

**Remote Management**

Remote Control (via WAN):

Remote Port:

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### Admin Password

Enter a password for the user "admin", who will have full access to the Web-based management interface.

### Device Name

The name of the router can be changed here.

### Enable Dynamic DNS

Enable this option only if you have purchased your own domain name and registered with a dynamic DNS service provider. The following parameters are displayed when the option is enabled.

**Dynamic DNS Provider**

Select a dynamic DNS service provider from the pull-down list.

**Host Name**

Enter your host name, fully qualified; for example: **myhost.mydomain.net**.

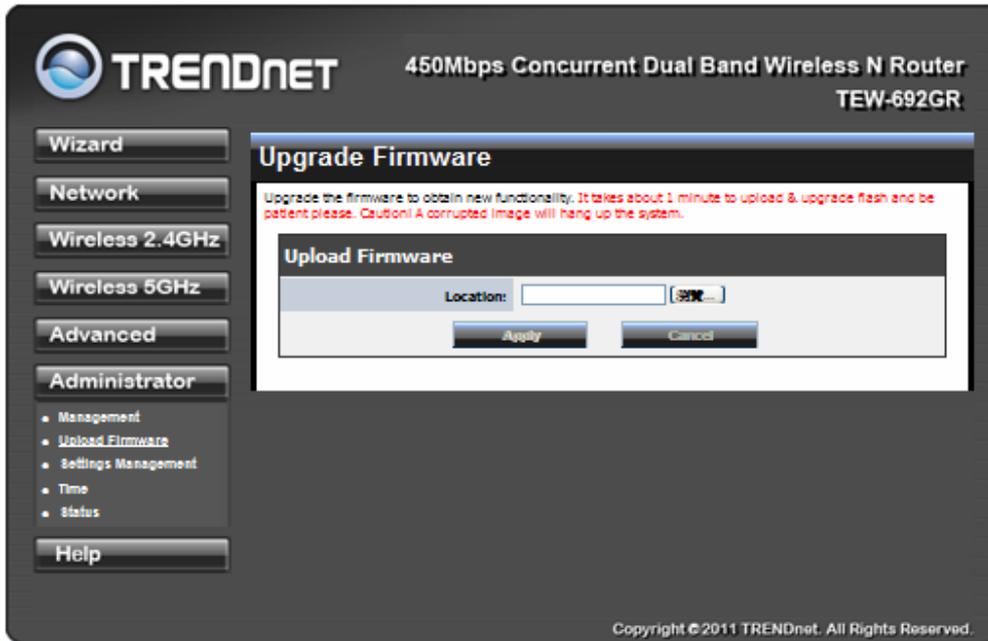
**Account**

Enter the account provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

**Password**

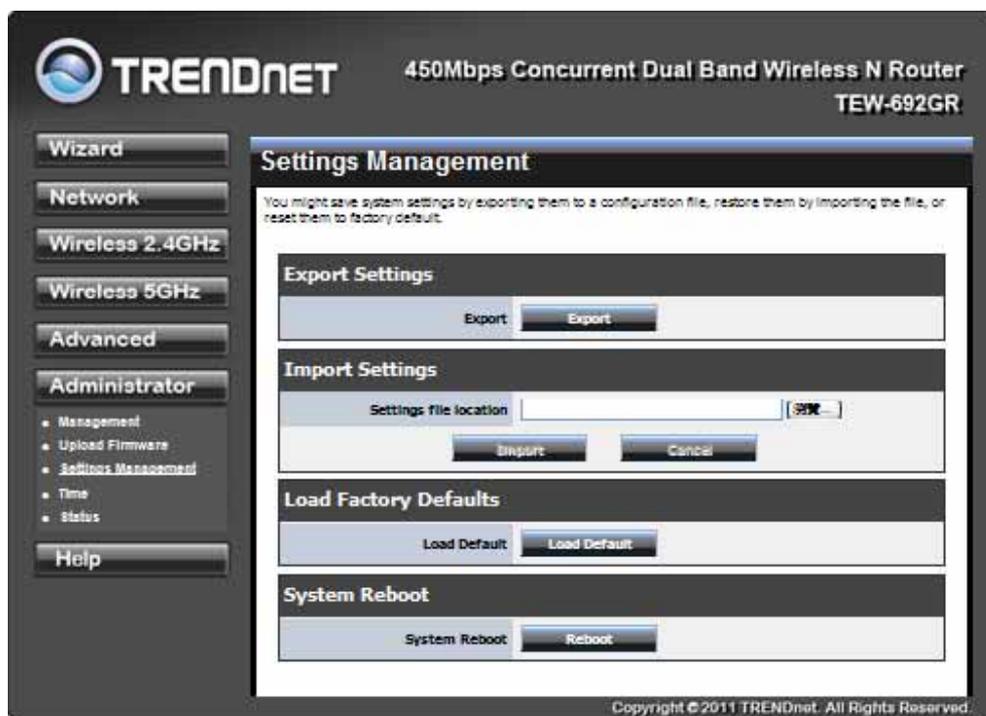
Enter the password provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

## Administrator: Upload Firmware



Once you have a firmware update on your computer, use this option to browse for the file and then upload the information into the router.

## Administrator: Setting Management



### Export Settings

This option allows you to export and then save the router's configuration to a file on your computer. Be sure to save the configuration before performing a firmware upgrade.

### Import Settings

Use this option to restore previously saved router configuration settings.

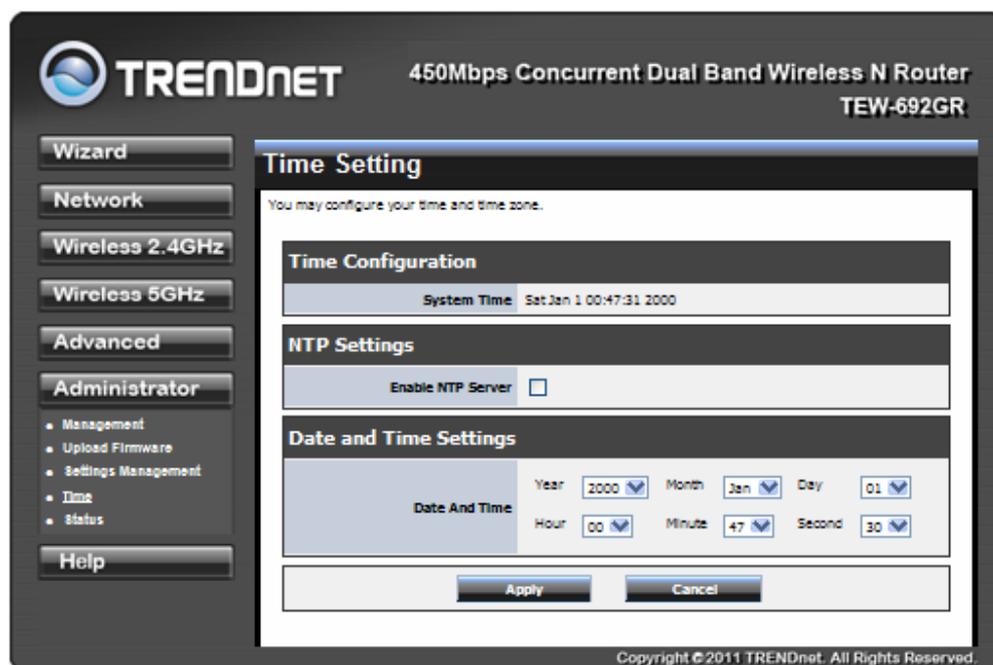
### Load Factory Defaults

This option restores all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost. If you want to save your router configuration settings, use the **Export Settings** option above.

### System Reboot

This restarts the router. It is useful for restarting when you are not near the device.

## Administrator: Time



### Time Configuration

#### Current Router Time

Displays the time currently maintained by the router. If this is not correct, use the following options to configure the time correctly.

#### Time Zone

Select your local time zone from pull down menu.

#### Automatic Time Configuration

#### Enable NTP Server

Select this option if you want to synchronize the router's clock to a Network Time Server over the Internet. If you are using schedules or logs, this is the best way to ensure that the schedules and logs are kept accurate. Note that, even when NTP Server is enabled, you must still choose a time zone and set the daylight saving parameters.

#### NTP Server Used

Select a Network Time Server for synchronization. You can type in the address of a time server or select one from the list. If you have trouble using one server, select another.

#### Set the Date and Time Manually

If you do not have the NTP Server option in effect, you can either manually set the time for your router here.

## Administrator: Status

The screenshot shows the administrator interface for a TrendNet TEW-692GR router. The page is titled "Status" and displays various system and network configurations. The left sidebar contains navigation options: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, and Help. The Administrator section is expanded, showing sub-options: Management, Upload Firmware, Settings Management, Time, Status, and Help.

**TRENDNET** 450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

### Status

The device status

#### System Info

Firmware Version	0.0.0.43, 21-Apr-2011
System Time	Sat Jan 1 00:49:09 2000
System Up Time	00:49:10

#### Internet Configurations

Connected Type	Static IP
WAN IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Primary Domain Name Server	0.0.0.0
Secondary Domain Name Server	0.0.0.0

#### LAN

MAC Address	00:0C:42:25:92:10
IP Address	192.168.10.1
Subnet Mask	255.255.255.0

#### Wireless LAN

MAC Address	00:0C:42:25:92:40
Channel	1
Network Name (SSID) / Security Mode	TRENDnet592_2_4GHz / WEP-OPN1
Multiple SSID 1 / Security Mode	
Multiple SSID 2 / Security Mode	
Multiple SSID 3 / Security Mode	

#### Wireless2 LAN

MAC Address	00:0C:42:25:92:10
Channel	36
Network Name (SSID) / Security Mode	TRENDnet592_5GHz / WEP-OPN1
Multiple SSID 1 / Security Mode	
Multiple SSID 2 / Security Mode	
Multiple SSID 3 / Security Mode	

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The device status.

# Help

**TRENDnet** 450Mbps Concurrent Dual Band Wireless N Router  
TEW-692GR

**Wizard**  
**Network**  
**Wireless 2.4GHz**  
**Wireless 5GHz**  
**Advanced**  
**Administrator**  
**Help**

- Menu
- Network
- Wireless
- Advanced
- Administrator

**Help menu**

- Network
- Wireless
- Advanced
- Administrator

**Network Help**

- WAN Setting
- LAN Setting
- QoS Setting
- DHCP Client List

[TOP](#)

**Wireless Help**

- Basic
- Advanced
- Security
- WPS
- Station List

[TOP](#)

**Advanced Help**

- DMZ
- Virtual Server
- Routing
- Access Control
- ALG
- Special Applications
- Gaming
- Inbound Filter
- Schedule
- Advanced Network

[TOP](#)

**Administrator Help**

- Management
- Upload Firmware
- Setting Management
- Time
- Status

[TOP](#)

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Help section provides web-based explanations on each configurable field.



# Glossary

## 8

### 802.11

A family of specifications for wireless local area networks (WLANs) developed by a working group of the Institute of Electrical and Electronics Engineers (IEEE).

## A

### Access Control List

ACL. This is a database of network devices that are allowed to access resources on the network.

### Access Point

AP. Device that allows wireless clients to connect to it and access the network

### ActiveX

A Microsoft specification for the interaction of software components.

### Address Resolution Protocol

ARP. Used to map MAC addresses to IP addresses so that conversions can be made in both directions.

### Ad-hoc network

Peer-to-Peer network between wireless clients

### ADSL

Asymmetric Digital Subscriber Line

### Advanced Encryption Standard

AES. Government encryption standard

### Alphanumeric

Characters A-Z and 0-9

### Antenna

Used to transmit and receive RF signals.

## **AppleTalk**

A set of Local Area Network protocols developed by Apple for their computer systems

## **AppleTalk Address Resolution Protocol**

AARP. Used to map the MAC addresses of Apple computers to their AppleTalk network addresses, so that conversions can be made in both directions.

## **Application layer**

7th Layer of the OSI model. Provides services to applications to ensure that they can communicate properly with other applications on a network.

## **ASCII**

American Standard Code for Information Interchange. This system of characters is most commonly used for text files

## **Attenuation**

The loss in strength of digital and analog signals. The loss is greater when the signal is being transmitted over long distances.

## **Authentication**

To provide credentials, like a Password, in order to verify that the person or device is really who they are claiming to be

## **Automatic Private IP Addressing**

APIPA. An IP address that that a Windows computer will assign itself when it is configured to obtain an IP address automatically but no DHCP server is available on the network

# **B**

## **Backward Compatible**

The ability for new devices to communicate and interact with older legacy devices to guarantee interoperability

## **Bandwidth**

The maximum amount of bytes or bits per second that can be transmitted to and from a network device

## **Basic Input/Output System**

BIOS. A program that the processor of a computer uses to startup the system once it is turned on

**Baud**

Data transmission speed

**Beacon**

A data frame by which one of the stations in a Wi-Fi network periodically broadcasts network control data to other wireless stations.

**Bit rate**

The amount of bits that pass in given amount of time

**Bit/sec**

Bits per second

**BOOTP**

Bootstrap Protocol. Allows for computers to be booted up and given an IP address with no user intervention

**Bottleneck**

A time during processes when something causes the process to slowdown or stop all together

**Broadband**

A wide band of frequencies available for transmitting data

**Broadcast**

Transmitting data in all directions at once

**Browser**

A program that allows you to access resources on the web and provides them to you graphically

**C**

**Cable modem**

A device that allows you to connect a computer up to a coaxial cable and receive Internet access from your Cable provider

**CardBus**

A newer version of the PC Card or PCMCIA interface. It supports a 32-bit data path, DMA, and consumes less voltage

**CAT 5**

Category 5. Used for 10/100 Mbps or 1Gbps Ethernet connections

**Client**

A program or user that requests data from a server

**Collision**

When do two devices on the same Ethernet network try and transmit data at the exact same time.

**Cookie**

Information that is stored on the hard drive of your computer that holds your preferences to the site that gave your computer the cookie

**D****Data**

Information that has been translated into binary so that it can be processed or moved to another device

**Data Encryption Standard**

Uses a randomly selected 56-bit key that must be known by both the sender and the receiver when information is exchanged

**Database**

Organizes information so that it can be managed updated, as well as easily accessed by users or applications.

**Data-Link layer**

The second layer of the OSI model. Controls the movement of data on the physical link of a network

**DB-25**

A 25 pin male connector for attaching External modems or RS-232 serial devices

**DB-9**

A 9 pin connector for RS-232 connections

**dBd**

Decibels related to dipole antenna

**dB*i***

Decibels relative to isotropic radiator

**dB*m***

Decibels relative to one milliwatt

**Decrypt**

To unscramble an encrypted message back into plain text

**Default**

A predetermined value or setting that is used by a program when no user input has been entered for this value or setting

**Demilitarized zone**

DMZ: A single computer or group of computers that can be accessed by both users on the Internet as well as users on the Local Network, but that is not protected by the same security as the Local Network.

**DHCP**

Dynamic Host Configuration Protocol: Used to automatically assign IP addresses from a predefined pool of addresses to computers or devices that request them

**Digital certificate:**

An electronic method of providing credentials to a server in order to have access to it or a network

**Direct Sequence Spread Spectrum**

DSSS: Modulation technique used by 802.11b wireless devices

**DMZ**

"Demilitarized Zone". A computer that logically sits in a "no-mans land" between the LAN and the WAN. The DMZ computer trades some of the protection of the router's security mechanisms for the convenience of being directly addressable from the Internet.

## **DNS**

Domain Name System: Translates Domain Names to IP addresses

### **Domain name**

A name that is associated with an IP address

### **Download**

To send a request from one computer to another and have the file transmitted back to the requesting computer

## **DSL**

Digital Subscriber Line. High bandwidth Internet connection over telephone lines

### **Duplex**

Sending and Receiving data transmissions at the same time

### **Dynamic DNS service**

Dynamic DNS is provided by companies to allow users with Dynamic IP addresses to obtain a Domain Name that will always be linked to their changing IP address. The IP address is updated by either client software running on a computer or by a router that supports Dynamic DNS, whenever the IP address changes

### **Dynamic IP address**

IP address that is assigned by a DHCP server and that may change. Cable Internet providers usually use this method to assign IP addresses to their customers.

## **E**

### **EAP**

Extensible Authentication Protocol

### **Email**

Electronic Mail is a computer-stored message that is transmitted over the Internet

### **Encryption**

Converting data into cyphertext so that it cannot be easily read

### **Ethernet**

The most widely used technology for Local Area Networks.

## **F**

### **Fiber optic**

A way of sending data through light impulses over glass or plastic wire or fiber

### **File server**

A computer on a network that stores data so that the other computers on the network can all access it

### **File sharing**

Allowing data from computers on a network to be accessed by other computers on the network with different levels of access rights

### **Firewall**

A device that protects resources of the Local Area Network from unauthorized users outside of the local network

### **Firmware**

Programming that is inserted into a hardware device that tells it how to function

### **Fragmentation**

Breaking up data into smaller pieces to make it easier to store

### **FTP**

File Transfer Protocol. Easiest way to transfer files between computers on the Internet

### **Full-duplex**

Sending and Receiving data at the same time

## **G**

### **Gain**

The amount an amplifier boosts the wireless signal

### **Gateway**

A device that connects your network to another, like the internet

**Gbps**

Gigabits per second

**Gigabit Ethernet**

Transmission technology that provides a data rate of 1 billion bits per second

**GUI**

Graphical user interface

**H****H.323**

A standard that provides consistency of voice and video transmissions and compatibility for videoconferencing devices

**Half-duplex**

Data cannot be transmitted and received at the same time

**Hashing**

Transforming a string of characters into a shorter string with a predefined length

**Hexadecimal**

Characters 0-9 and A-F

**Hop**

The action of data packets being transmitted from one router to another

**Host**

Computer on a network

**HTTP**

Hypertext Transfer Protocol is used to transfer files from HTTP servers (web servers) to HTTP clients (web browsers)

**HTTPS**

HTTP over SSL is used to encrypt and decrypt HTTP transmissions

**Hub**

A networking device that connects multiple devices together

## **ICMP**

Internet Control Message Protocol

## **IEEE**

Institute of Electrical and Electronics Engineers

## **IGMP**

Internet Group Management Protocol is used to make sure that computers can report their multicast group membership to adjacent routers

## **IIS**

Internet Information Server is a WEB server and FTP server provided by Microsoft

## **IKE**

Internet Key Exchange is used to ensure security for VPN connections

## **Infrastructure**

In terms of a wireless network, this is when wireless clients use an Access Point to gain access to the network

## **Internet**

A system of worldwide networks which use TCP/IP to allow for resources to be accessed from computers around the world

## **Internet Explorer**

A World Wide Web browser created and provided by Microsoft

## **Internet Protocol**

The method of transferring data from one computer to another on the Internet

## **Internet Protocol Security**

IPsec provides security at the packet processing layer of network communication

## **Internet Service Provider**

An ISP provides access to the Internet to individuals or companies

## **Intranet**

A private network

### **Intrusion Detection**

A type of security that scans a network to detect attacks coming from inside and outside of the network

### **IP**

Internet Protocol

### **IP address**

A 32-bit number, when talking about Internet Protocol Version 4, that identifies each computer that transmits data on the Internet or on an Intranet

### **IPsec**

Internet Protocol Security

### **IPX**

Internetwork Packet Exchange is a networking protocol developed by Novell to enable their Netware clients and servers to communicate

### **ISP**

Internet Service Provider

## **J**

### **Java**

A programming language used to create programs and applets for web pages

## **K**

### **Kbps**

Kilobits per second

### **Kbyte**

Kilobyte

## **L**

### **L2TP**

Layer 2 Tunneling Protocol

## **LAN**

Local Area Network

## **Latency**

The amount of time that it takes a packet to get from the one point to another on a network. Also referred to as delay

## **LED**

Light Emitting Diode

## **Legacy**

Older devices or technology

## **Local Area Network**

A group of computers in a building that usually access files from a server

## **LPR/LPD**

"Line Printer Requestor"/"Line Printer Daemon". A TCP/IP protocol for transmitting streams of printer data.

# **M**

## **MAC Address**

A unique hardware ID assigned to every Ethernet adapter by the manufacturer.

## **Mbps**

Megabits per second

## **MDI**

Medium Dependent Interface is an Ethernet port for a connection to a straight-through cable

## **MDIX**

Medium Dependent Interface Crossover, is an Ethernet port for a connection to a crossover cable

## **MIB**

Management Information Base is a set of objects that can be managed by using SNMP

**Modem**

A device that Modulates digital signals from a computer to an analog signal in order to transmit the signal over phone lines. It also Demodulates the analog signals coming from the phone lines to digital signals for your computer

**MPPE**

Microsoft Point-to-Point Encryption is used to secure data transmissions over PPTP connections

**MTU**

Maximum Transmission Unit is the largest packet that can be transmitted on a packet-based network like the Internet

**Multicast**

Sending data from one device to many devices on a network

**N****NAT**

Network Address Translation allows many private IP addresses to connect to the Internet, or another network, through one IP address

**NetBEUI**

NetBIOS Extended User Interface is a Local Area Network communication protocol. This is an updated version of NetBIOS

**NetBIOS**

Network Basic Input/Output System

**Netmask**

Determines what portion of an IP address designates the Network and which part designates the Host

**Network Interface Card**

A card installed in a computer or built onto the motherboard that allows the computer to connect to a network

**Network Layer**

The third layer of the OSI model which handles the routing of traffic on a network

### **Network Time Protocol**

Used to synchronize the time of all the computers in a network

### **NIC**

Network Interface Card

### **NTP**

Network Time Protocol

## **O**

### **OFDM**

Orthogonal Frequency-Division Multiplexing is the modulation technique for both 802.11a and 802.11g

### **OSI**

Open Systems Interconnection is the reference model for how data should travel between two devices on a network

### **OSPF**

Open Shortest Path First is a routing protocol that is used more than RIP in larger scale networks because only changes to the routing table are sent to all the other routers in the network as opposed to sending the entire routing table at a regular interval, which is how RIP functions

## **P**

### **Password**

A sequence of characters that is used to authenticate requests to resources on a network

### **Personal Area Network**

The interconnection of networking devices within a range of 10 meters

### **Physical layer**

The first layer of the OSI model. Provides the hardware means of transmitting electrical signals on a data carrier

## **Ping**

A utility program that verifies that a given Internet address exists and can receive messages. The utility sends a control packet to the given address and waits for a response.

## **PoE**

Power over Ethernet is the means of transmitting electricity over the unused pairs in a category 5 Ethernet cable

## **POP3**

Post Office Protocol 3 is used for receiving email

## **Port**

A logical channel endpoint in a network. A computer might have only one physical channel (its Ethernet channel) but can have multiple ports (logical channels) each identified by a number.

## **PPP**

Point-to-Point Protocol is used for two computers to communicate with each over a serial interface, like a phone line

## **PPPoE**

Point-to-Point Protocol over Ethernet is used to connect multiple computers to a remote server over Ethernet

## **PPTP**

Point-to-Point Tunneling Protocol is used for creating VPN tunnels over the Internet between two networks

## **Preamble**

Used to synchronize communication timing between devices on a network

## **Q**

### **QoS**

Quality of Service

## **R**

### **RADIUS**

Remote Authentication Dial-In User Service allows for remote users to dial into a central server and be authenticated in order to access resources on a network

### **Reboot**

To restart a computer and reload it's operating software or firmware from nonvolatile storage.

### **Rendezvous**

Apple's version of UPnP, which allows for devices on a network to discover each other and be connected without the need to configure any settings

### **Repeater**

Retransmits the signal of an Access Point in order to extend it's coverage

### **RIP**

Routing Information Protocol is used to synchronize the routing table of all the routers on a network

### **RJ-11**

The most commonly used connection method for telephones

### **RJ-45**

The most commonly used connection method for Ethernet

### **RS-232C**

The interface for serial communication between computers and other related devices

### **RSA**

Algorithm used for encryption and authentication

## **S**

### **Server**

A computer on a network that provides services and resources to other computers on the network

### **Session key**

An encryption and decryption key that is generated for every communication session between two computers

**Session layer**

The fifth layer of the OSI model which coordinates the connection and communication between applications on both ends

**Simple Mail Transfer Protocol**

Used for sending and receiving email

**Simple Network Management Protocol**

Governs the management and monitoring of network devices

**SIP**

Session Initiation Protocol. A standard protocol for initiating a user session that involves multimedia content, such as voice or chat.

**SMTP**

Simple Mail Transfer Protocol

**SNMP**

Simple Network Management Protocol

**SOHO**

Small Office/Home Office

**SPI**

Stateful Packet Inspection

**SSH**

Secure Shell is a command line interface that allows for secure connections to remote computers

**SSID**

Service Set Identifier is a name for a wireless network

**Stateful inspection**

A feature of a firewall that monitors outgoing and incoming traffic to make sure that only valid responses to outgoing requests are allowed to pass through the firewall

**Subnet mask**

Determines what portion of an IP address designates the Network and which part designates the Host

### **Syslog**

System Logger -- a distributed logging interface for collecting in one place the logs from different sources. Originally written for UNIX, it is now available for other operating systems, including Windows.

## **T**

### **TCP**

Transmission Control Protocol

### **TCP Raw**

A TCP/IP protocol for transmitting streams of printer data.

### **TCP/IP**

Transmission Control Protocol/Internet Protocol

### **TFTP**

Trivial File Transfer Protocol is a utility used for transferring files that is simpler to use than FTP but with less features

### **Throughput**

The amount of data that can be transferred in a given time period

### **Traceroute**

A utility displays the routes between you computer and specific destination

## **U**

### **UDP**

User Datagram Protocol

### **Unicast**

Communication between a single sender and receiver

### **Universal Plug and Play**

A standard that allows network devices to discover each other and configure themselves to be a part of the network

### **Upgrade**

To install a more recent version of a software or firmware product

### **Upload**

To send a request from one computer to another and have a file transmitted from the requesting computer to the other

### **UPnP**

Universal Plug and Play

### **URL**

Uniform Resource Locator is a unique address for files accessible on the Internet

### **USB**

Universal Serial Bus

### **UTP**

Unshielded Twisted Pair

## **V**

### **Virtual Private Network**

VPN: A secure tunnel over the Internet to connect remote offices or users to their company's network

### **VLAN**

Virtual LAN

### **Voice over IP**

Sending voice information over the Internet as opposed to the PSTN

### **VoIP**

Voice over IP

## **W**

**Wake on LAN**

Allows you to power up a computer through its Network Interface Card

**WAN**

Wide Area Network

**WCN**

Windows Connect Now. A Microsoft method for configuring and bootstrapping wireless networking hardware (access points) and wireless clients, including PCs and other devices.

**WDS**

Wireless Distribution System. A system that enables the interconnection of access points wirelessly.

**Web browser**

A utility that allows you to view content and interact with all of the information on the World Wide Web

**WEP**

Wired Equivalent Privacy is security for wireless networks that is supposed to be comparable to that of a wired network

**Wide Area Network**

The larger network that your LAN is connected to, which may be the Internet itself, or a regional or corporate network

**Wi-Fi**

Wireless Fidelity

**Wi-Fi Protected Access**

An updated version of security for wireless networks that provides authentication as well as encryption

**Wireless ISP**

A company that provides a broadband Internet connection over a wireless connection

**Wireless LAN**

Connecting to a Local Area Network over one of the 802.11 wireless standards

**WISP**

Wireless Internet Service Provider

**WLAN**

Wireless Local Area Network

**WPA**

Wi-Fi Protected Access. A Wi-Fi security enhancement that provides improved data encryption, relative to WEP.

**X****xDSL**

A generic term for the family of digital subscriber line (DSL) technologies, such as ADSL, HDSL, RADSL, and SDSL.

**Y****Yagi antenna**

A directional antenna used to concentrate wireless signals on a specific location