



TRENDNET[®]



User's Guide

TEW-647GA
2.01

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.

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.

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.

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1. Getting Started with the TEW-647GA

Congratulations on purchasing the TEW-647GA! This manual provides information for setting up and configuring the TEW-647GA. This manual is intended for both home users and professionals.

1.1. Package Contents

- TEW-647GA Wireless N Gaming Adapter
- CD-ROM (User's Guide)
- Multi-Language Quick Installation Guide
- CAT-5 Ethernet Cable
- Power Adapter (12V, 0.5A)



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.

NOTE

1.2. Minimum System Requirements

Installation Requirements

- Web Browser: Internet Explorer (6 or higher) Mozilla or Safari.
- A computer with a network adapter or wireless adapter properly installed.
- CD-ROM drive
- A router with an available network LAN port.
- A RJ-45 network cable.

2. Introduction

The TEW-647GA Wireless N Gaming Adapter is an high-performance, supports high-speed wireless networking at home, at work or in public places. This bridge 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 11b/g network. You may choose to slowly change your network by gradually replacing the 11b/g devices with 11n devices.

2.1. Features

- Wi-Fi compliant with IEEE 802.11n standard
- Backwards compatible with IEEE 802.11g and IEEE 802.11b devices
- Connects network-ready game consoles including Nintendo Wii, Xbox, Xbox 360, PlayStation 2 and PlayStation 3 to a high speed wireless n network
- Supports online gaming and head-to-head play
- Supports Multiple Input Multiple Output (MIMO) technology
- Easy setup with Wi-Fi Protected Setup (WPS) feature
- Maximum reliability, throughput and connectivity with automatic data rate switching
- Supports 64/128-bit WEP, WPA/WPA2 and WPA-PSK/WPA2-PSK
- Low interference and high susceptibility optimize performance
- Easy user setup wizard and intuitive Web browser configuration
- Coverage of up to 50 meters indoor, 100 meters outdoor *

3. Hardware Overview



3.1. LED Indications



Wireless	Blue: ON, wireless linked Blue: Blinking, wireless traffic activity
LAN	Blue: OFF, Link failed, or not linked Blue: ON, 10/100M linked Blue: Blinking, 10/100M traffic activity
PWR	Blue: ON, while power on

3.2. Rear Panel



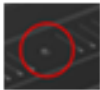
Power Jack	DC input
LAN Port	10/100Mbps

3.3 Top View



WPS Button	Trigger WPS process
------------	---------------------

3.4 Bottom View



Reset Button	Reset to factory default setting
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3.3 Installation Considerations

The TEW-647GA Gaming Adapter allows you to access your network by using a wireless connection from virtually anywhere within its operating range. Keep in mind 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-647GA 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.

3.4 Getting Start

1. Insert Setup Wizard CD into your CD-ROM drive.
2. The Welcome screen appears on your monitor. Click **Setup Wizard** button.



3. Read the License Agreement, accept the terms and click **Next** to continue the installation.



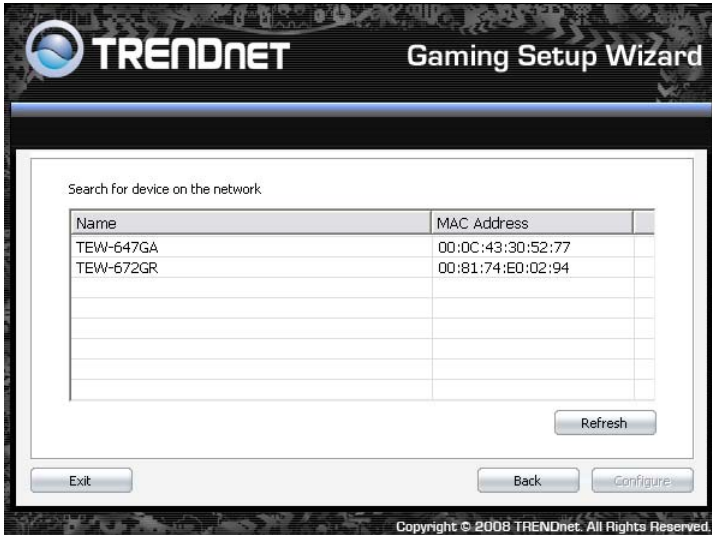
4. Connect an Ethernet cable from the LAN port on your PC to the LAN port on the TEW-647GA, click **Next** to continue.



5. Plug in the power adapter and verify the Power & Ethernet LEDs are light.



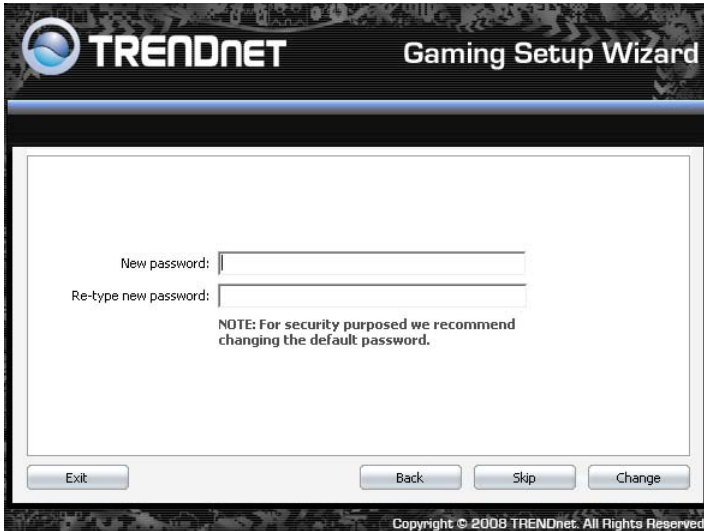
6. The search window will detect the connected TEW-647GA on our pc and display information here. Click **Configure** to continue (default TEW-647GA IP Address is 192.168.10.110).



7. Enter the password for TEW-647GA the click **Login**. The default password is "blank".



8. To change new password, please enter the new password below then click **Change**.



Note: To continue without changing the password, please click on the **Skip** button

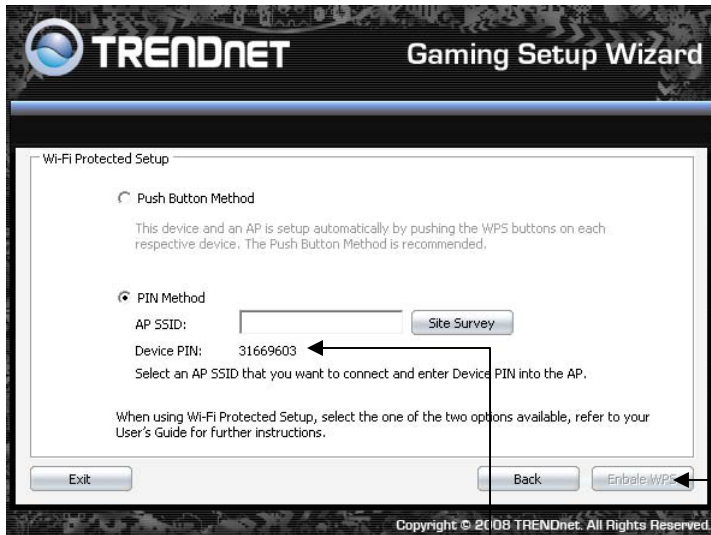
9. There are 2 options to configure this adapter, WPS (Wi-Fi Protected Setup) or Manual Setup. To setup with WPS method, continue to step 10 or to perform a Manual setup, please go to step 14.



10. You can choose to use **Push Button Method (PBC)** or **PIN Method** to connect to your existing wireless network using WPS type connection.



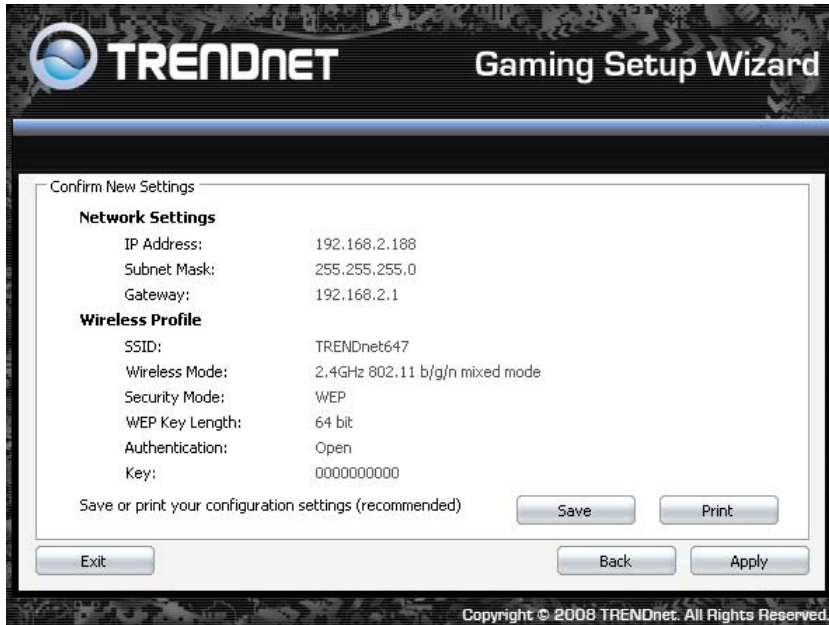
When selecting PBC method, once the **Enable WPS** is clicked, also press the WPS on your wireless router, the devices would negotiate and connection automatically.



When using the **PIN Method**, please enter the Device PIN number on your router and save it. Use **Site Survey** button to find the router you would like to connect then click **Enable WPS**, then devices would negotiate and connect.

Note: when the WPS has solid led on TEW-647GA, it means the connection has established, otherwise, please try again.

- When the connection is made, it is recommended that you save or print your wireless settings with the **Save** or **Print** buttons. Click **Apply** to continue.

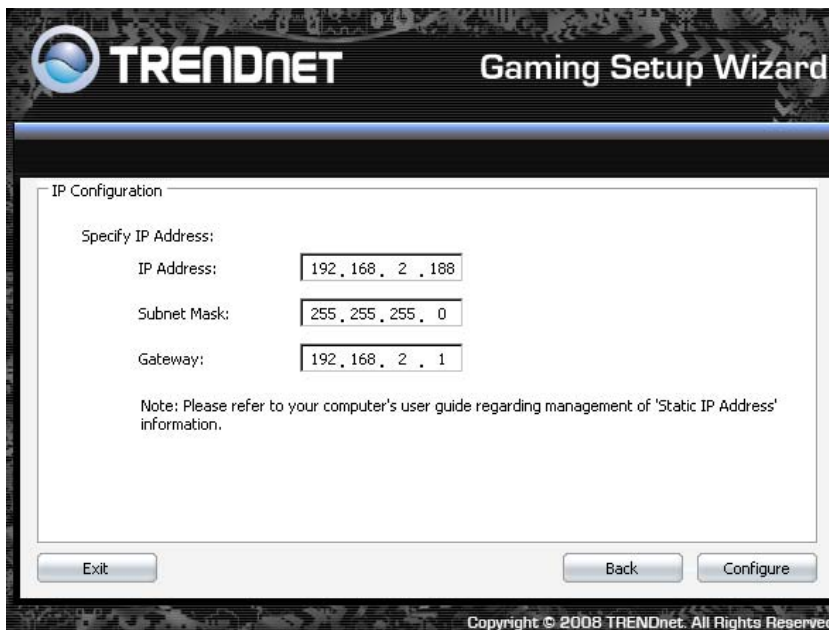


- Disconnect the Ethernet cable from your PC to the destination game console.



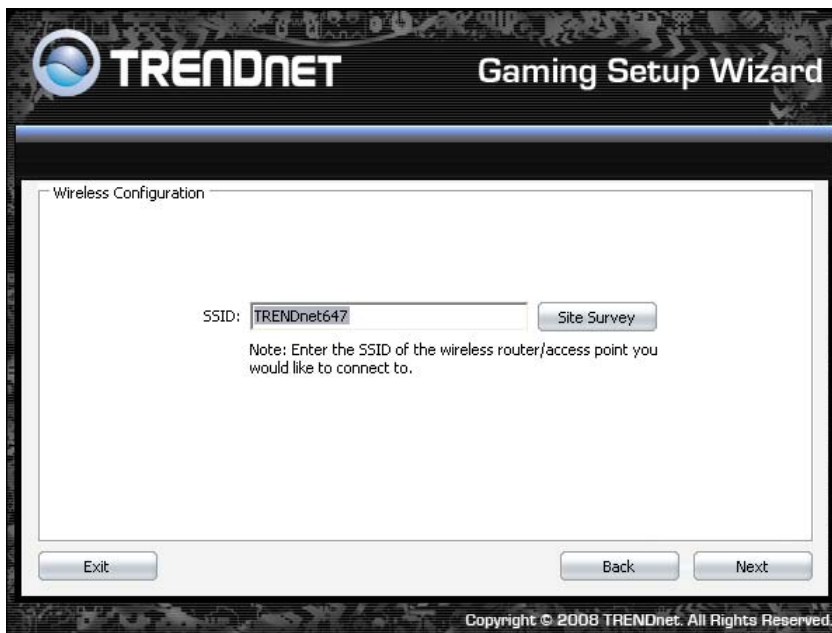
- Congratulations you have configured you TEW-647GA.

14. When using **Manual Setup**, you can select to receive an IP address dynamically from the router or to use a fixed IP address that matches your network segment on TEW-647GA. Once you made the selection, click **Next** to continue.



To use static IP, please make sure it matches your wireless network. Click **Configure** to continue.

15. Enter a **SSID** for TEW-647GA, click **Next** button.



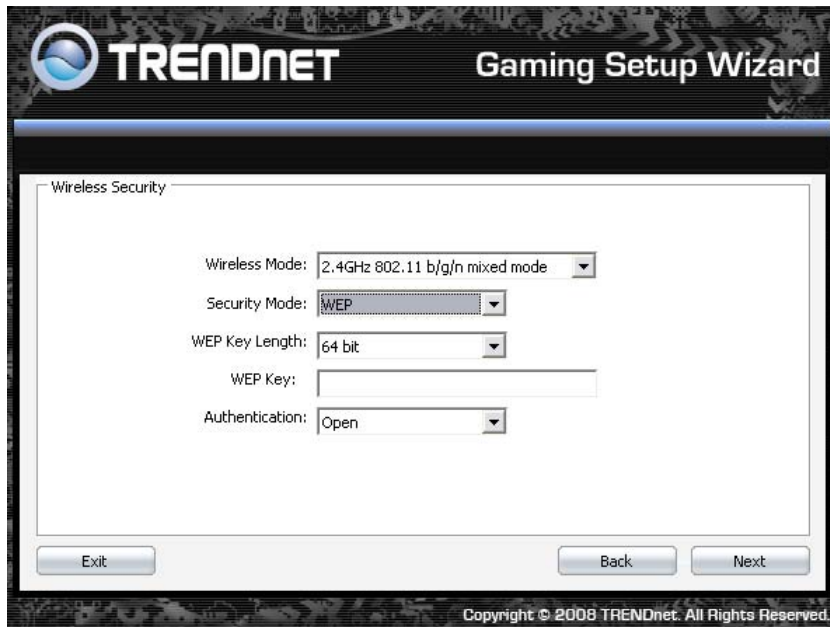
Note: Enter the SSID of the wireless router/access point you would like to connect to.



Select the wireless mode and the security mode that your current wireless network is using.

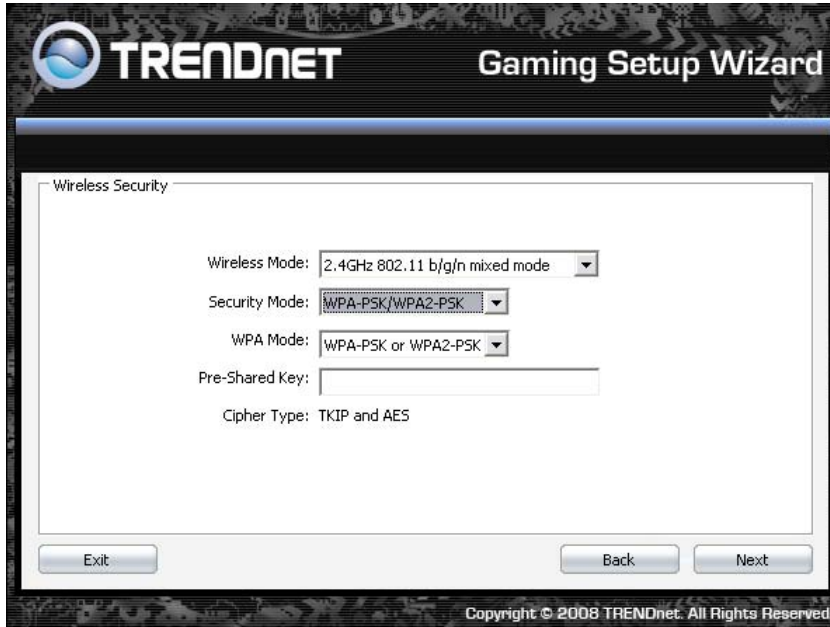
WEP Encryption

16. To use WEP security, select **WEP** and click **Next** button. Select **64-bit** or **128-bit** WEP key length, and enter your WEP key. For 64-bit encryption, enter 10 hexadecimal characters, For 128-bit encryption, enter 26 hexadecimal characters. Click **Next** to continue the setting.



WPA-PSK/WPA2-PSK

17. To use WPA or WPA2 security, select **WPA** or **WPA2** and click **Next** button. Select **WPA Mode: WPA Only, WPA2 Only, WPA or WPA2**, and set **Pre-Shared Key** by entering 8 ~ 10 characters. Click **Next** to continue the setting.



- Confirm your new settings. It is recommended that you save or print your wireless settings with the **Save** or **Print** buttons. Once finished, click **Apply** to continue.



- Disconnect the Ethernet cable from your PC to the destination game console.



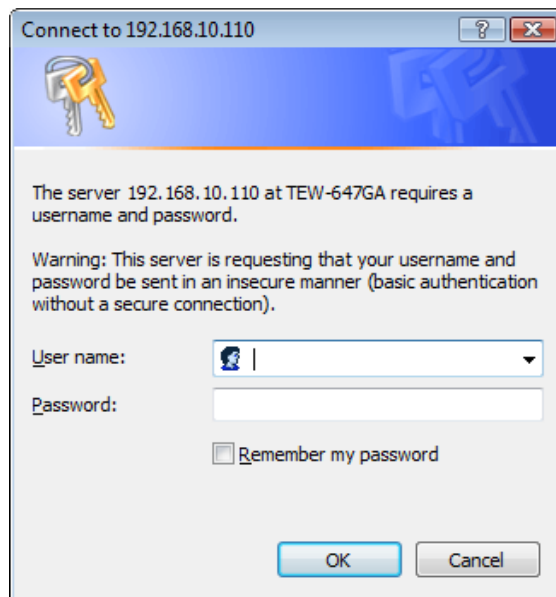
20. Congratulations you have configured you TEW-647GA.



4. Using the Configuration Menu

Whenever you want to configure your TEW-647GA, you can access the Configuration Menu through your PC by opening the Web-browser and typing in the IP Address of the TEW-647GA. The TEW-647GA's default IP Address is `http://192.168.10.110`

- Open the Web browser.
- Type in the IP Address of the Bridge (`http:// 192.168.10.110`)



If you have changed the default IP Address assigned to the TEW-647GA, make sure to enter the correct IP Address.

- Select admin in the User Name field.
- Leave the Password blank.
- Click Login In.

4.1. Network

4.1.1 LAN Setting

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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.

Mode Setting

LAN Connection Type: Static IP

Static Mode

IP Address: 192.168.10.110

Subnet Mask: 255.255.255.0

Default Gateway:

Apply Cancel

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LAN Connection Type

Choose "Static IP (fixed IP)" if your router does not support DHCP or if for any other reason you need to assign a fixed address to the AP. In this case, you must also configure the following fields.

IP Address

The IP address of this gaming adapter on the local area network. Assign any unused IP address in the range of IP addresses available from your network. For example, 192.168.10.110

Subnet Mask

The subnet mask of the local area network.

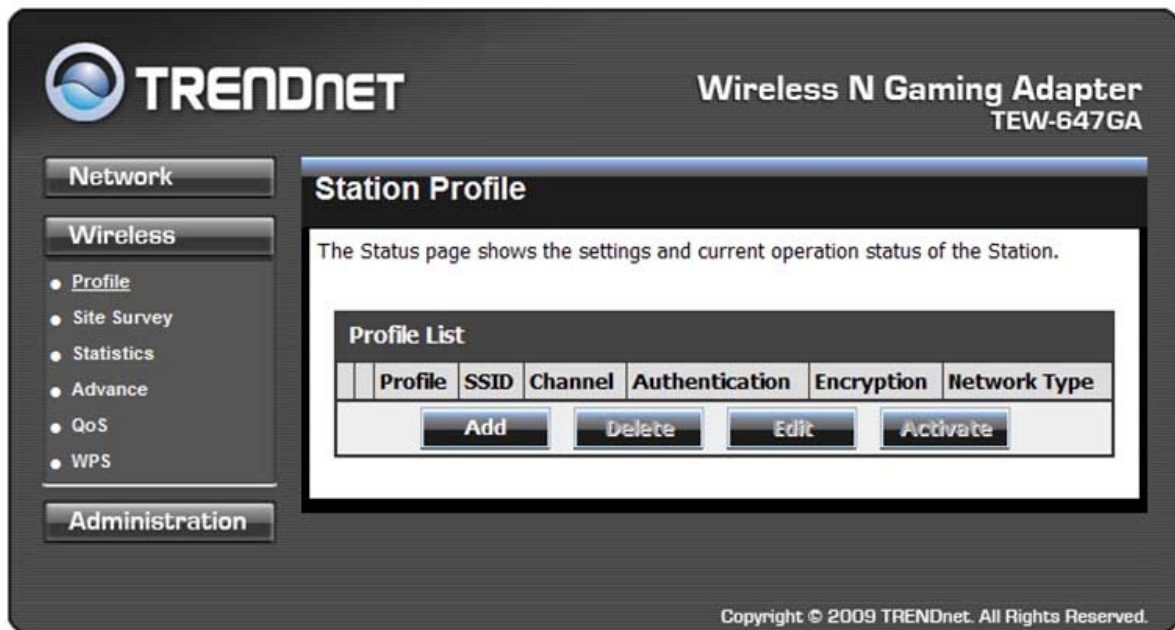
Default Gateway

The IP address of the router on the local area network.

4.2 Wireless

4.2.1 Profile

Create a custom connection to a specific wireless network. Use this option to make custom profiles and store new profile for later use.



Configure the setting to connect to a wireless network, selection option for network type, SSID, and wireless security. The profile can be edited, deleted and made active from this option. There are several ways to connect to your wireless network, go through the setup wizard, add a new profile or search using site survey feature.

When adding an Profile, please make sure your information matches your existing wireless network.

System Configuration	
Profile Name	PROF001
SSID	
Network Type	Infrastructure
Power Saving Mode	<input checked="" type="radio"/> CAM (Constantly Awake Mode) <input type="radio"/> Power Saving Mode
RTS Threshold	<input type="checkbox"/> Used <input type="text" value="2347"/> (range 1 - 2347)
Fragmentation Threshold	<input type="checkbox"/> Used <input type="text" value="2346"/> (range 256 - 2346)

Security Policy	
Security Mode	OPEN

Wire Equivalence Protection (WEP)	
WEP Key Length	64 bit (10 hex digits / 5 ascii keys)
WEP Key Entry Method	Hexadecimal
WEP Key 1 :	<input type="text"/>
WEP Key 2 :	<input type="text"/>
WEP Key 3 :	<input type="text"/>
WEP Key 4 :	<input type="text"/>
Default Key	Key 1

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.

None

No encryption.

WEP (Open or Shared)

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.

Key Length	Hex	ASCII
64-bit	10 characters	5 characters
128-bit	26 characters	13 characters

WPA-Personal or WPA2-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 (AES or TKIP type) 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.

4.2.2 Site Survey

Use the Site Survey tool to search for wireless networks around the TEW-647GA adapter. Click on the **Scan** button to search for wireless network to join. From this window, you can also add the selected network to your profile by clicking the **Add Profile** button. To connect to the desired wireless network, click on the **Connect** button to join a wireless network from this site survey window.

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Station Site Survey

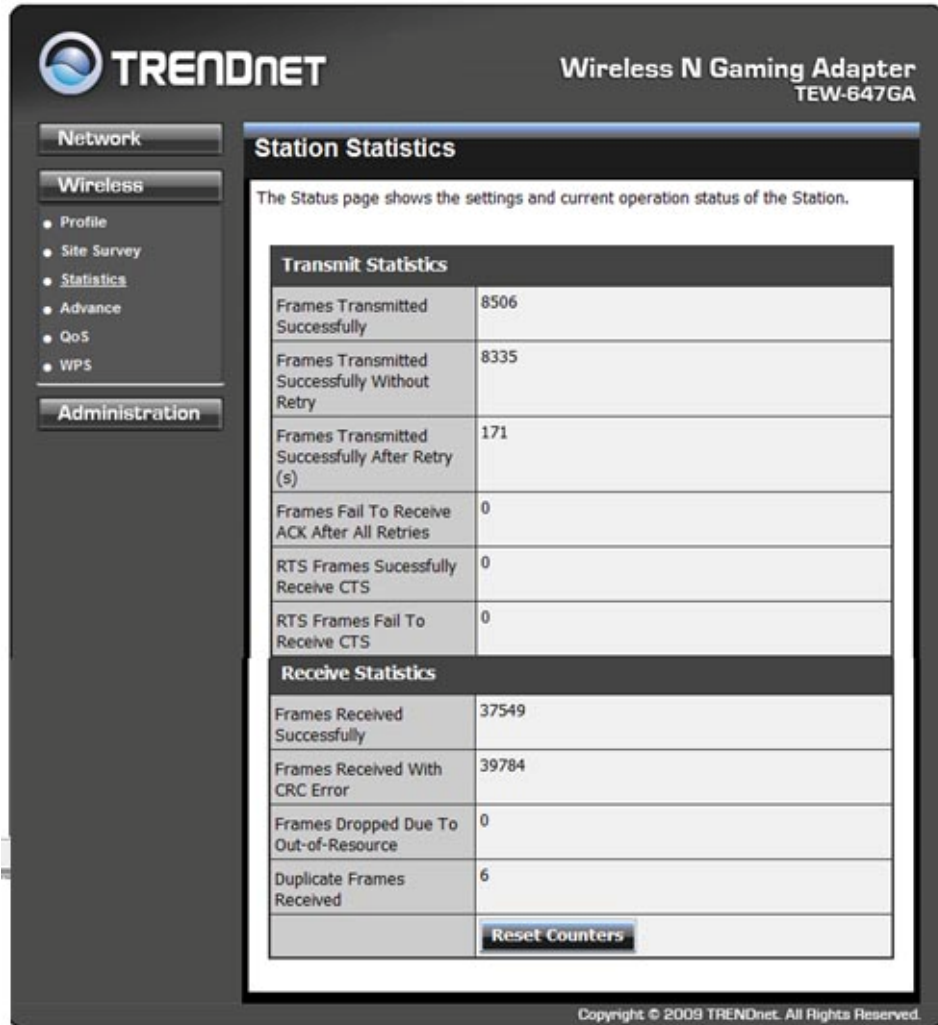
Site survey page shows information of APs nearby. You may choose one of these APs connecting or adding it to profile.

	SSID	BSSID	RSSI	Channel	Encryption	Authentication
<input type="radio"/>	trendnetsky	00-C0-02-E7-D0-F0	55%	1	WEP	Unknown
<input type="radio"/>	633_sonny	00-14-D1-C2-70-EB	76%	1	TKIP; AES	WPA-PSK
<input type="radio"/>	TRENDnet	00-14-D1-5D-27-3E	76%	6	Not Use	OPEN
<input type="radio"/>	TRENDnet	00-14-D1-5D-27-62	81%	6	Not Use	OPEN
<input type="radio"/>	TRENDnet637	00-14-D1-C4-25-97	91%	6	Not Use	OPEN
<input type="radio"/>	RMALAB(PR)	00-14-D1-C4-E9-40	100%	7	AES	WPA2-PSK
<input type="radio"/>	TrendnetSky2	00-0E-8E-7C-C3-72	100%	7	TKIP	WPA-PSK
<input type="radio"/>	trendnetsky	00-C0-02-1A-AF-C1	100%	8	WEP	Unknown
<input type="radio"/>	CAMTEST	00-C0-02-D4-B0-E2	76%	10	Not Use	OPEN
<input type="radio"/>	wireless-0	00-C0-02-0F-89-FA	65%	11	Not Use	OPEN
<input type="radio"/>	wTESTING	06-C0-02-0F-89-FA	60%	11	WEP	Unknown
<input type="radio"/>	trendnetsky	00-03-2F-39-37-10	29%	10	WEP	Unknown
<input type="radio"/>	trendnetwhg	00-0E-8E-7B-20-82	24%	11	WEP	Unknown
<input type="radio"/>	WLAN	00-30-8D-C4-7D-F2	24%	11	WEP	Unknown
<input type="radio"/>		00-14-D1-C2-D8-45	76%	11	TKIP; AES	WPA-PSK; WPA2-PSK
<input type="radio"/>	TrendnetSky2	00-14-D1-C0-64-19	55%	2	TKIP; AES	WPA-PSK

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4.2.3 Statistics

View the current operating status of the TEW-647GA, see the Transmit and Receive data.



The screenshot displays the 'Station Statistics' page for the TRENDnet Wireless N Gaming Adapter TEW-647GA. The page is divided into a left sidebar with navigation menus and a main content area. The sidebar includes 'Network', 'Wireless' (with sub-items: Profile, Site Survey, Statistics, Advance, QoS, WPS), and 'Administration'. The main content area features a 'Station Statistics' header, a descriptive paragraph, and two tables: 'Transmit Statistics' and 'Receive Statistics'. A 'Reset Counters' button is located at the bottom of the tables. The copyright notice at the bottom reads 'Copyright © 2009 TRENDnet. All Rights Reserved.'

Transmit Statistics	
Frames Transmitted Successfully	8506
Frames Transmitted Successfully Without Retry	8335
Frames Transmitted Successfully After Retry (s)	171
Frames Fail To Receive ACK After All Retries	0
RTS Frames Successfully Receive CTS	0
RTS Frames Fail To Receive CTS	0

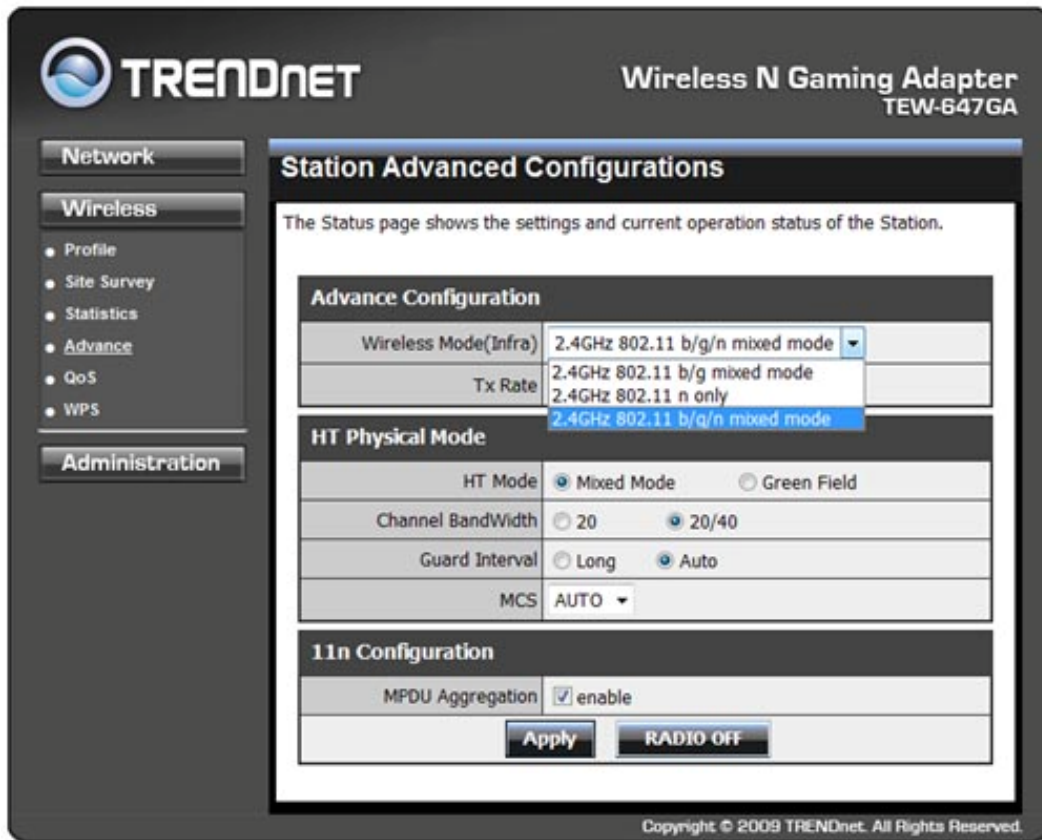
Receive Statistics	
Frames Received Successfully	37549
Frames Received With CRC Error	39784
Frames Dropped Due To Out-of-Resource	0
Duplicate Frames Received	6

[Reset Counters](#)

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4.2.4 Advance

Use this setting to adjust the wireless environment.



Wireless Modes

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-647GA 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-647GA. 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-647GA at 11Mbps for wireless b, 54Mbps for wireless g and up to 150Mbps transmitting/300Mbps receiving for wireless n and share access at the same time.

TX Rate

Select the desire transmitting rate on the adapter. For best performance, please leave the selection on Auto.

HT Mode

Mixed Mode: In this mode packets are transmitted with a preamble compatible with the legacy 802.11g/n, 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 Channel Width = 20 MHz

20/40 Channel Width = 20/40 MHz (additional channel provides better performance)

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

Using "Auto" option 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.

MCS

Fix MCS rate for HT rate. (Auto, 0~32)

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

This parameter represents transmission rate. By default (Auto) the fastest possible transmission rate will be selected. You have the option of selecting the speed if necessary.

4.2.5 QoS

The screenshot displays the TRENDnet web interface for the Wireless N Gaming Adapter (TEW-647GA). The main heading is "Station Advanced Configurations". Below this, a section titled "Qos Configuration" contains the following settings:

WMM	<input checked="" type="checkbox"/> enable
WMM Power Saving	<input type="checkbox"/> enable
PS Mode	<input type="checkbox"/> AC_BE <input type="checkbox"/> AC_BK <input type="checkbox"/> AC_VI <input type="checkbox"/> AC_VO

A "WMM Apply" button is located below the configuration options. The interface also includes a left-hand navigation menu with "Network" and "Wireless" sections, and a footer with the copyright notice: "Copyright © 2008 TRENDnet. All Rights Reserved."

WMM (Wireless Multi-Media)

use this feature allows wireless devices to take advantage of the wireless environment over other wireless devices.

WMM Power Saving

An option that allows wireless clients such as notebooks or Laptops to save battery life by sending less transmission during idle times. Add a check mark to enable this option.

PS Mode

Used for specific application when using WMM Power Saving mode is enabled, use this feature to help with Quality of Service (QoS) settings; these settings are polled by the priority given to the option in this section.

AC_BE= Best Effort

AC_BK= Background

AC_VI= Video signal

AC_VO=Voice signal

The options allow users to select which Access Category is needed to turn on while the power saving mode is enabled.

4.2.6 WPS

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

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Wi-Fi Protected Setup (STA)

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

WPS AP site survey

No.	SSID	BSSID	RSSI	Ch.	Auth.	Encrypt	Ver.	Status
<input type="radio"/>	633_sonny	0014D1C270EB	70%	1	WPA-PSK	TKIP; AES	1.0	Conf.
<input type="radio"/>	TRENDnet	0014D157C36F	81%	6	OPEN	Not Use	1.0	Unconf.
<input type="radio"/>	TRENDnet637	0014D1C42597	91%	6	OPEN	Not Use	1.0	Unconf.
<input type="radio"/>	TRENDnet	0014D15D2762	70%	6	OPEN	Not Use	1.0	Unconf.
<input type="radio"/>	TRENDnet	0014D157C385	76%	6	OPEN	Not Use	1.0	Unconf.
<input type="radio"/>	TRENDnet	0014D15D273E	76%	6	OPEN	Not Use	1.0	Unconf.
<input type="radio"/>	RMALAB (PR)	0014D1C4E940	100%	7	WPA2-PSK	AES	1.0	Conf.
<input type="radio"/>	DeLNoWAN	0014D1C3411D	91%	11	OPEN	Not Use	1.0	Conf.

Mode: Enrollee Client PIN: 52428814

WPS Status

Not used

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PIN Start or PBC Start

Enable the WPS feature.

PIN Settings

A PIN is a unique number that can be used to add to the router and use that as an authentication key to join the existing wireless network.

Client PIN

Shows the current value of the adapter.

Renew PIN

Create a random number that is a valid PIN. This becomes the adapter's PIN. You can then copy this PIN to the wireless router's WPS section.

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 **Start PBC** option here.

4.2 Administrator

4.2.1 Management

At this page, you can configure administrator account and password.

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System Management

You may configure administrator account and password.

Administrator Settings

Account	<input type="text" value="admin"/>
Password	<input type="password"/> (Max Length: 16 characters)
Password Confirm	<input type="password"/>

Device Name Settings

Device Name	<input type="text" value="TEW-647GA"/>
-------------	--

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4.2.2 Upload Firmware

By assigning firmware location, you can upload firmware at this page.



Once you have a firmware saved on your computer, use this option to browse for the file and then click **Apply** to upload the file into the adapter.

4.2.3 Setting Management

You can save system settings by exporting them to a configuration file, restore them by importing the file, or reset them to factory default.

The screenshot shows the web interface for the Trendnet Wireless N Gaming Adapter TEW-647GA. The page is titled "Settings Management" and contains a sidebar with navigation options: Network, Wireless, and Administrator. The Administrator menu is expanded, showing Management, Upload Firmware, Settings Management (selected), and Status. The main content area is divided into four sections: Export Settings, Import Settings, Load Factory Defaults, and System Reboot. Each section has a corresponding button to perform the action.

TRENDNET Wireless N Gaming Adapter
TEW-647GA

Settings Management

You might save system settings by exporting them to a configuration file, restore them by importing the file, or reset them to factory default.

Export Settings

Export

Import Settings

Settings file location

Load Factory Defaults

Load Default

System Reboot

System Reboot

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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.

4.2.4 Status

You can check system information and network configurations on this page.

The screenshot displays the web interface for a Trendnet Wireless N Gaming Adapter (TEW-647GA). The interface is divided into a left sidebar and a main content area. The sidebar contains navigation tabs for 'Network', 'Wireless', and 'Administrator'. The 'Administrator' tab is active, showing a list of options: 'Management', 'Upload Firmware', 'Settings Management', and 'Status'. The main content area is titled 'Status' and contains the following sections:

- System Info**

Firmware Version	0.0.1.7, 7-Nov-2008
System Up Time	3324
MAC Address	00:0C:43:30:52:F0
- Network Configurations**

Connected Type	Static IP
MAC Address	00:0C:43:30:52:77
IP Address	192.168.10.110
Subnet Mask	255.255.255.0
Default Gateway	
- Wireless LAN**

Wireless Radio	ON
MAC Address	00:0C:43:30:52:F0
Security Mode	Disabled
- Link Status**

Status	Disconnected
Extra Info	
Channel	
Link Quality	
Signal Strength	
Noise Level	
Channel BandWidth	
Guard Interval	
MCS	

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Glossary

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

Ad-hoc network

Peer-to-Peer network between wireless clients

Address Resolution Protocol

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

Advanced Encryption Standard

AES. Government encryption standard

Alphanumeric

Characters A-Z and 0-9

Antenna

Used to transmit and receive RF signals.

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

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

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

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-Link layer

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

dBd

Decibels related to dipole antenna

dBi

Decibels relative to isotropic radiator

dBm

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

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

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

Duplex

Sending and Receiving data transmissions at the same time

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

Encryption

Converting data into cyphertext so that it cannot be easily read

Ethernet

The most widely used technology for Local Area Networks.

F

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

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 AP 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

I

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 APs

IIS

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

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 Novel 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

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.

L2TP

Layer 2 Tunneling Protocol

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.wireless g

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 APs 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

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 APs 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/IP

Transmission Control Protocol/Internet Protocol

TCP Raw

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

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

Wi-Fi

Wireless Fidelity

Wi-Fi Protected Access

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

Wide Area Network

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

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

Z

Specifications

Hardware	
Standards	IEEE 802.11b, IEEE 802.11g and IEEE 802.11n (draft 2.0)
LED Indicator	WPS, WLAN, LAN, Power
Power Consumption	Standby mode: 160mA (max) ; Transmit mode : 210mA (max)
Supported OS (for Wizard)	Windows 2000/XP(32/64-bit)/Vista (32/64-bit)
Supported Browser	Internet Explorer 6.0 or above, Netscape 7.0 or above, Safari, Chrome
Dimensions (LxWxH)	74 x 104 x 45mm (2.91 x 4.09 x 1.77in.)
Weight	80g (2.8oz)
Temperature	Operating: 0° ~ 40° C (32° ~ 104° F); Storage: -20° ~ 60° C (-4° ~ 140° F)
Humidity	Operating: 10% ~ 85% max (non-condensing); Storage: 5% to 90% (non-condensing)
Certification	FCC, CE
Wireless	
Frequency	2.412 ~ 2.472 GHz
Antenna	Built-in 2 antennas
Data Rate (auto fallback)	802.11b: 11Mbps, 5.5Mbps, 2Mbps, and 1Mbps 802.11g: 54Mbps, 48Mbps, 36Mbps, 24Mbps, 18Mbps, 12Mbps, 9Mbps and 6Mbps 802.11n (draft 2.0): up to 300Mbps (RX)
Output Power	802.11b: 18dBm (typical) 802.11g: 15dBm (typical) 802.11n : 11dBm (typical) at HT20/HT40
Receiving Sensitivity	802.11b: -84dBm at 11Mbps 802.11g: -73dBm at 54Mbps 802.11n: -69dBm at HT20/HT40
Encryption	64/128-bit WEP (Hex & ASCII), WPA-PSK/WPA2-PSK (AES/TKIP)
Channels	1~11 (FCC), 1~13 (ETSI)

Limited Warranty

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

TEW-647GA – 3 Years Warranty

AC/DC Power Adapter, Cooling Fan, and Power Supply carry 1 year warranty.

If a product does not operate as warranted during the applicable warranty period, TRENDnet shall reserve the right, at its expense, to repair or replace the defective product or part and deliver an equivalent product or part to the customer. The repair/replacement unit's warranty continues from the original date of purchase. All products that are replaced become the property of TRENDnet. Replacement products may be new or reconditioned. TRENDnet does not issue refunds or credit. Please contact the point-of-purchase for their return policies.

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