TRENDNET®

User's Guide

TEW-640MB
1.01

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.

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**
  Safety of Information Technology Equipment

- **EN50385 : (2002-08)**
- 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 V1.3.2 (2008-04)**
- 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

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.

CE①

Česky [Czech]	*TRENDnet* tímto prohlašuje, že tento *TEW-640MB* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede *TRENDnet* erklærer herved, at følgende udstyr *TEW-640MB* overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erklärt *TRENDnet ,* dass sich das Gerät *TEW-640MB* in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab *TRENDnet* seadme *TEW-640MB* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, *TRENDnet*, declares that this TEW-640MB is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente *TRENDnet* declara que el *TEW-640MB* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *TRENDnet* ΔΗΛΩΝΕΙ ΟΤΙ *TEW-640MB* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente *TRENDnet* déclare que l'appareil *TEW-640MB* est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente *TRENDnet* dichiara che questo *TEW-640MB* è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *TRENDnet* deklarē, ka *TEW-640MB* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo *TRENDnet* deklaruoja, kad šis *TEW-640MB* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

nl Nederlands [Dutch]	Hierbij verklaart *TRENDnet* dat het toestel *TEW-640MB* in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *TRENDnet* jiddikjara li dan *TEW-640MB* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, *TRENDnet* nyilatkozom, hogy a *TEW-640MB* megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *TRENDnet* oświadcza, że *TEW-640MB* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	*TRENDnet* declara que este *TEW-640MB* está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	*TRENDnet* izjavlja, da je ta *TEW-640MB* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*TRENDnet* týmto vyhlasuje, že *TEW-640MB* spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	*TRENDnet]* vakuuttaa täten että *TEW-640MB* tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar *TRENDnet* att denna *TEW-640MB* 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.

Table of Contents

Getting Started

Congratulations on purchasing the TEW-640MB! This manual provides information for setting up and configuring the TEW-640MB. This manual is intended for both home users and professionals.

Package Contents

- TEW-640MB Wireless N Gaming Adapter
- CD-ROM (User's Guide)
- Multi-Language Quick Installation Guide
- Network cable
- Power Adapter (12V, 0.5A)

NOTE 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

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.

Introduction

The 300Mbps Wireless N 4-Port Media Bridge, model TEW-640MB, connects network enabled Blu-ray™ players, Televisions, Digital Video Recorders (DVR), receivers, and gaming consoles to the Internet.

The optimum wireless experience is provided by WMM Quality of Service (QoS) technology that prioritizes video and audio content.

Setup is simple, with no drivers to install. Simply press the Wi-Fi Protected Setup (WPS) button on the TEW-640MB and on your router to automatically connect. The latest in wireless encryption protects your digital network. Advanced Multiple Input Multiple Output (MIMO) antenna technology reduces wireless dead spots. Power Save mode conserves electricity when idle.   Connect up to four of your favorite media center devices to the Internet wirelessly at blazing fast 300Mbps wireless n speeds.

Features

- 4 x 10/100Mbps Auto-MDIX LAN ports
- 1 x WPS button
- 1 x Reset button
- Diagnostic LEDs
- High performance wireless n bridge connects wired devices to a wireless network
- Wi-Fi compliant with the IEEE 802.11n standard
- Backwards compatible   with IEEE 802.11g/b devices
- Wi-Fi Multimedia (WMM) Quality of Service (QoS) data prioritization
- Power Save mode conserves electricity
- Supports Multiple Input Multiple Output (MIMO) antenna technology
- Connects network-ready Blu-ray™ players, Televisions, Digital Video Recorders (DVR), receivers, and gaming consoles   such as Nintendo® Wii™, Xbox®, Xbox® 360™, PlayStation® 2, and PlayStation® 3 to a high speed wireless n network
- One-touch wireless security setup using the Wi-Fi Protected Setup (WPS) button when connecting to a WPS supporting device
- Maximum reliability, throughput and connectivity with automatic data rate switching
- Supports 64/128-bit WEP, WPA-PSK, and WPA2-PSK wireless security
- Easy user setup wizard and intuitive Web browser configuration
- Coverage of up to 50 meters indoor, 100 meters outdoor * 3
- 3-year limited warranty

Hardware Overview

LED Indications

Power	Blue: ON, power on
WPS	Blue: WPS, turned on authentication complete
	Blue: Blinking, WPS authentication
Wireless	Blue: ON, wireless on
	Blue: Blinking, wireless data activity
LAN 1~4	Blue: OFF, no device connected
	Blue: ON, device connected
	Blue: Blinking, data activity
Power	Blue: ON, power on

Rear Panel

WPS Button (top panel)	Trigger/Enable WPS Push Button Configuration (PBC)
LAN Ports 1~4	10/100 Mbps Auto MDIX LAN port
Power On/Off button	EU Version only
Power	DC input
Reset Button (bottom panel)	Resets device to default settings (press and hold for 15seconds)

Installation Considerations

The TEW-640MB 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-640MB and other network devices to a minimum - each wall or ceiling can reduce your wireless products 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 Start

1. Connect an Ethernet cable directly from the LAN port on your PC to the LAN port on the
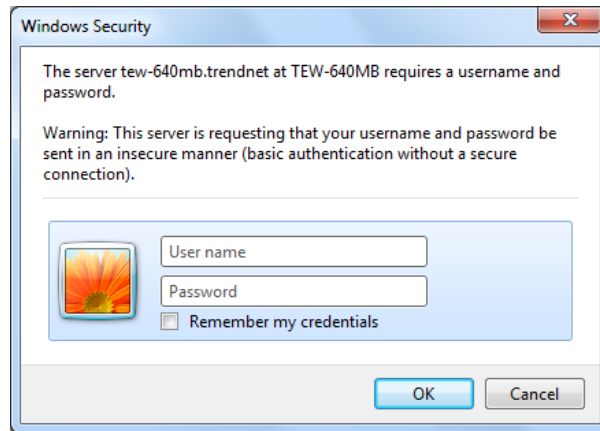   TEW-640MB .
    Note: Connect the TEW-640MB to the configuring computer. **<u>Do not</u>** connect the
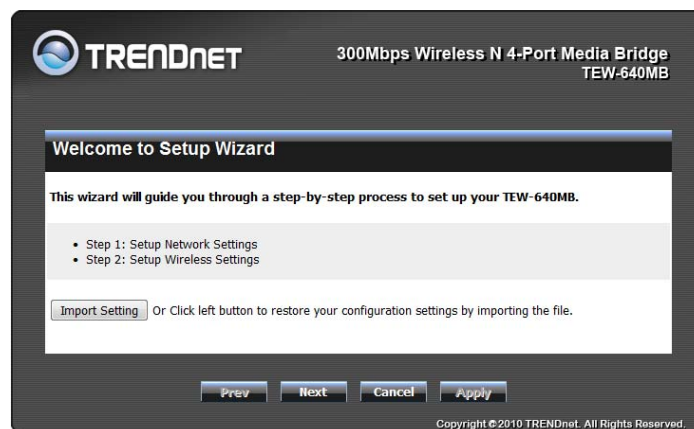   TEW-640MB to your network on the initial setup.

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

3. Open your web browser and enter http://tew-640mb.trendnet/ or http://192.168.10.110/ into the address bar.


4. Enter default username and password "admin" and press OK. The below window will appear.

5. You could click left button to restore your saved configuration setting by importing the file, or press **NEXT** and follow Wizard to complete your setting.

6. Select the LAN connection type you would like to set on the TEW-640MB and click **NEXT.**
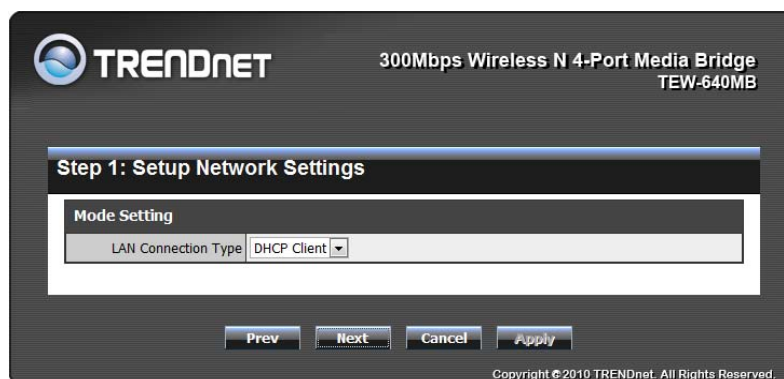
7. There are 2 options to configure the TEW-640MB, WPS (Wi-Fi Protected Setup) or Manual setup.
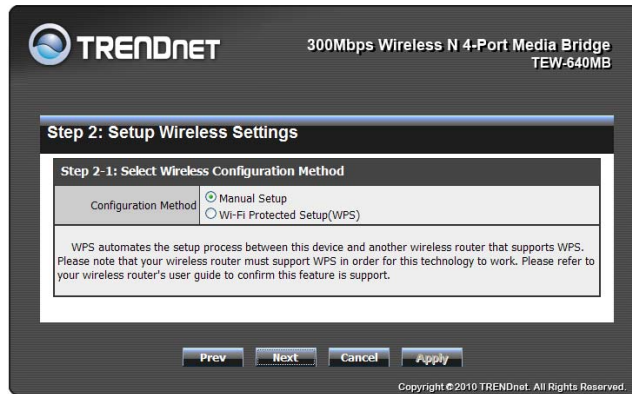
8. If you choice Manual setup, please enter SSID of   your wireless router of AP (Access Point) or press Scan to choose one.
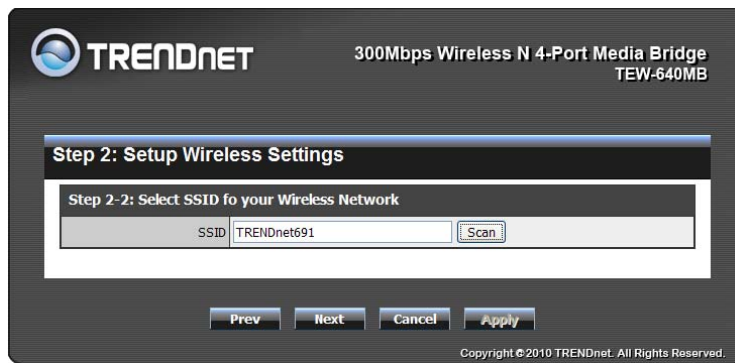
9. The TEW-640MB will automatically detect your wireless encryption type. From the pull down menu you can manually select the wireless encryption type.

10. Verify that your settings are correct and press **APPLY**.

WPS Configuration

1. To configure the TEW-640MB using WPS (Wi-Fi Protected Setup), select Wi-FI protected Setup (WPS) option and press Next.
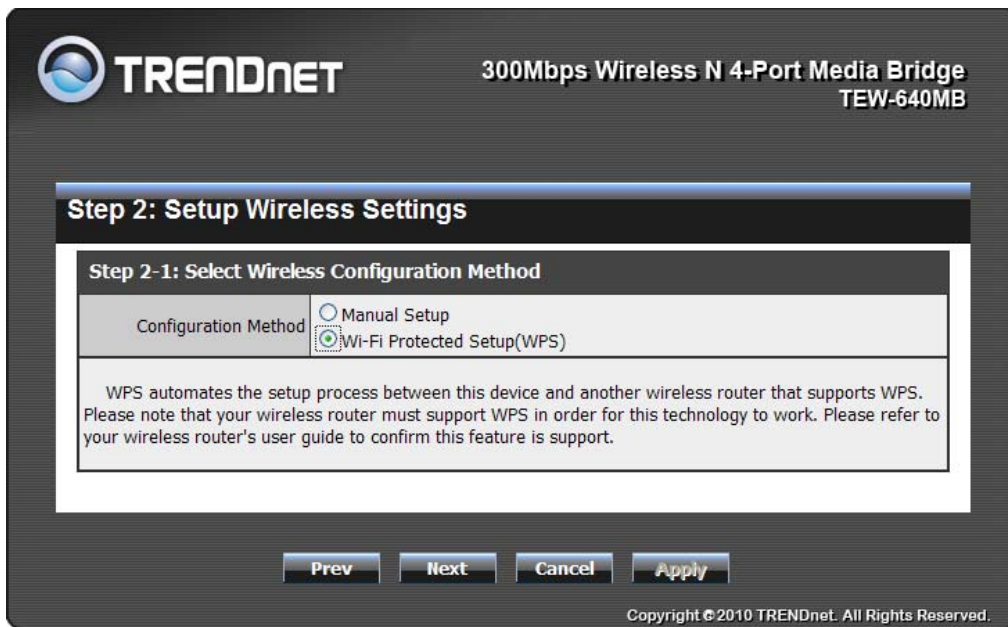
2. Select the type of WPS configuration type you would like to use. PIN configuration requires you to input the TEW-640MB PIN information into your wireless router or AP (Access Point). Click **Scan** button to select an AP SSID that you want to connect and enter Device PIN into AP.
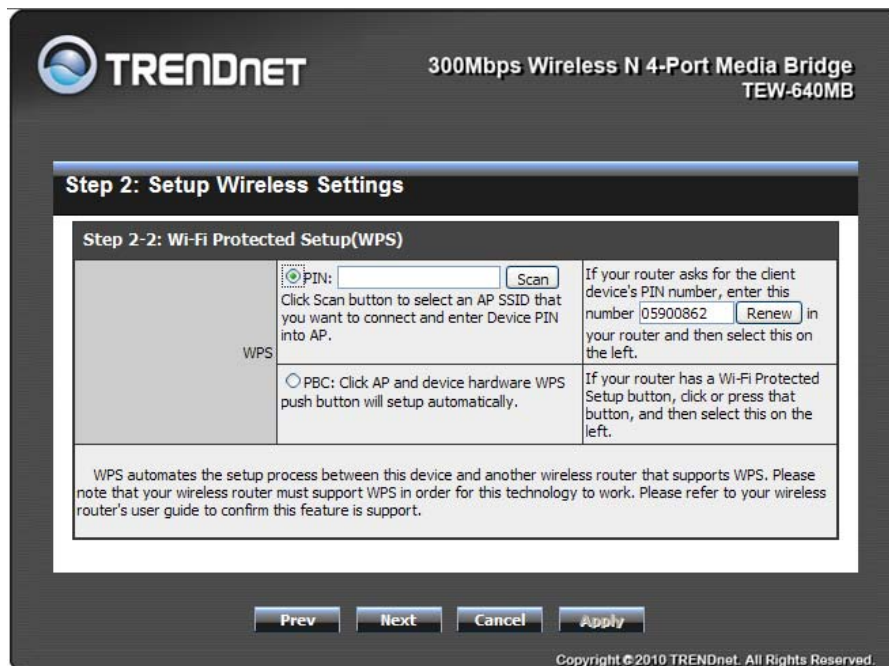
Note: Wait 120 seconds for WPS configuration to complete.

3. When selecting PBC (Push Button Configuration) method. Select PBC and press **Next**. Then press the WPS button on your wireless router.
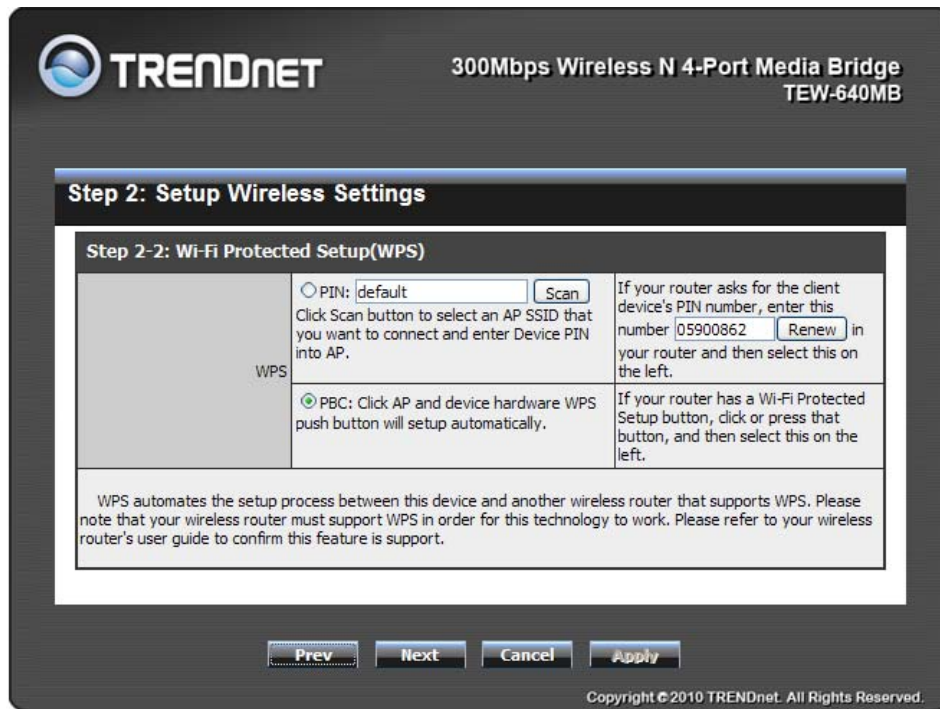
Note: Wait 120 seconds for WPS configuration to complete.

4. Verify that your settings are correct and click **Apply.**
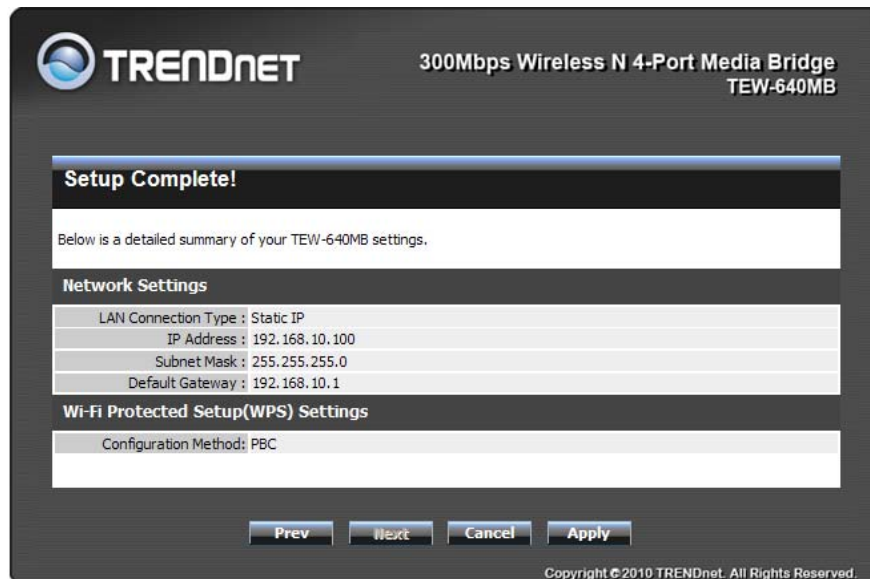
Using the Configuration Menu

Whenever you want to configure your TEW-640MB, you can access the Configuration Menu through your PC by opening the Web-browser and typing in the IP Address of the TEW-640MB . The TEW-640MB's default IP Address is http://192.168.10.110 or http://tew-640mb.trendnet/

➢ Open the Web browser.

➢ Type in the IP Address of the Bridge http://192.168.10.110 or http://tew-640mb.trendnet/
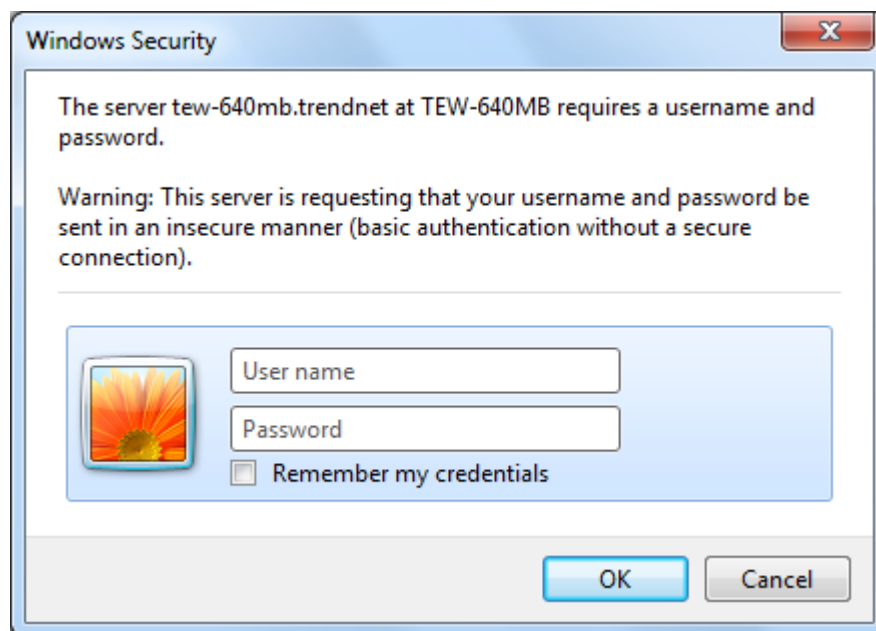
If you have changed the default IP Address assigned to the TEW-640MB, make sure
NOTE to enter the correct IP Address.

➢ Enter "admin" in the User name and Password field.

➢ Click OK.

Network

LAN Setting

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 the media bridge 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.

Wireless

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 a Profile, please make sure your information matches your existing wireless network.

System Configuration

Profile Name	PROF001
SSID	
Network Type	Infrastructure ▾
Power Saving Mode	⦿ CAM (Constantly Awake Mode) ○ Power Saving Mode
RTS Threshold	☐ Used 2347 (range 1 - 2347)
Fragement Threshold	☐ Used 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 :	
WEP Key 2 :	
WEP Key 3 :	
WEP Key 4 :	
Default Key	Key 1 ▾

[Apply]   [Cancel]

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
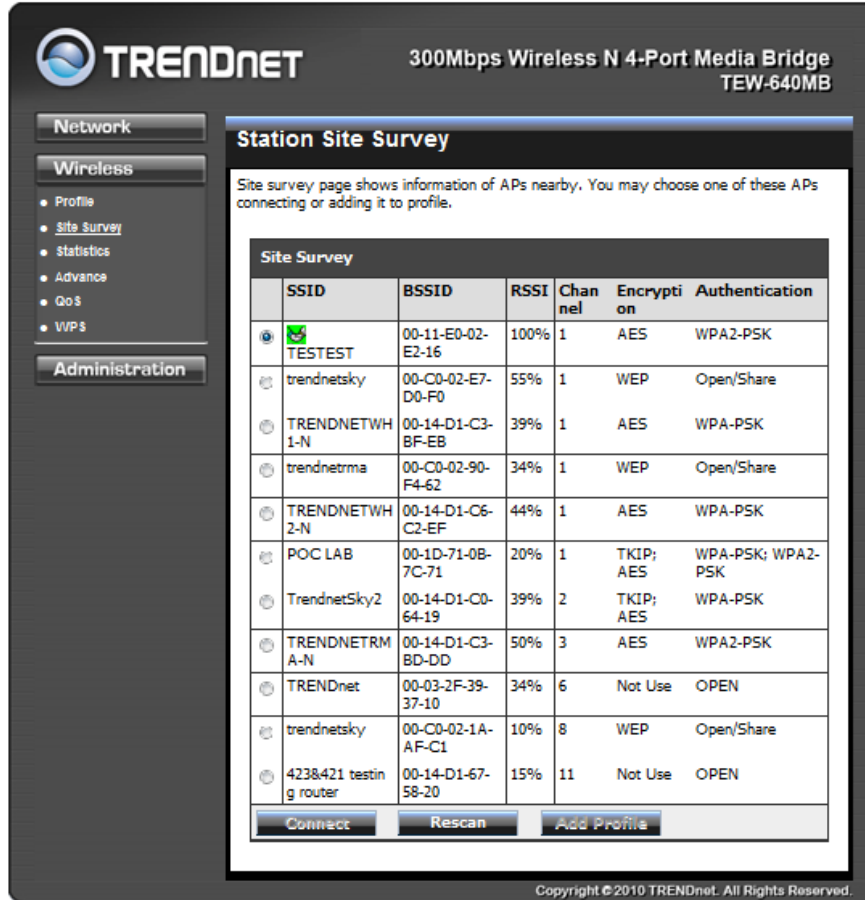
WPA-Personal or WPA2-Personal

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.

Site Survey

Use the Site Survey tool to search for wireless networks around the TEW-640MB 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 desire wireless network, click on the **Connect** button to join a wireless network from this site survey window.

Connect

Click this button once the SSID is selected to immediately connect. This option only allows immediate connection and does not save any profiles.

Rescan

Use this option to scan for available wireless networks..

Add Profile

Click this button to add the selected SSID to your wireless profile list. Your device will automatically connect to available saved profiles.

Statistics

View the current operating status of the TEW-640MB, see the Transmit and Receive data.

Reset Counter

This option clears out the current statistics.

Advance

Use this setting to adjust the wireless environment.
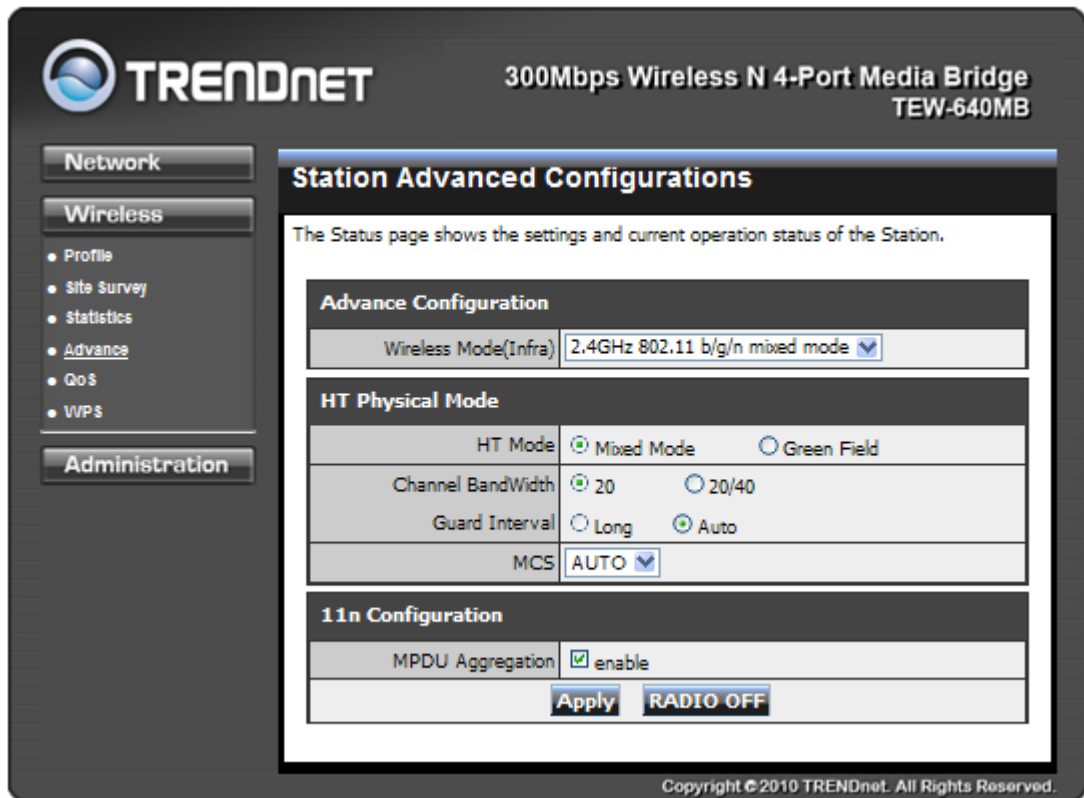
Wireless Modes

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-640MB 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-640MB. 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-640MB 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.

MPDU Aggregation

Select this option to enable MPDU aggregation

RADIO OFF

Click this button to turn off the wireless radio.

QoS
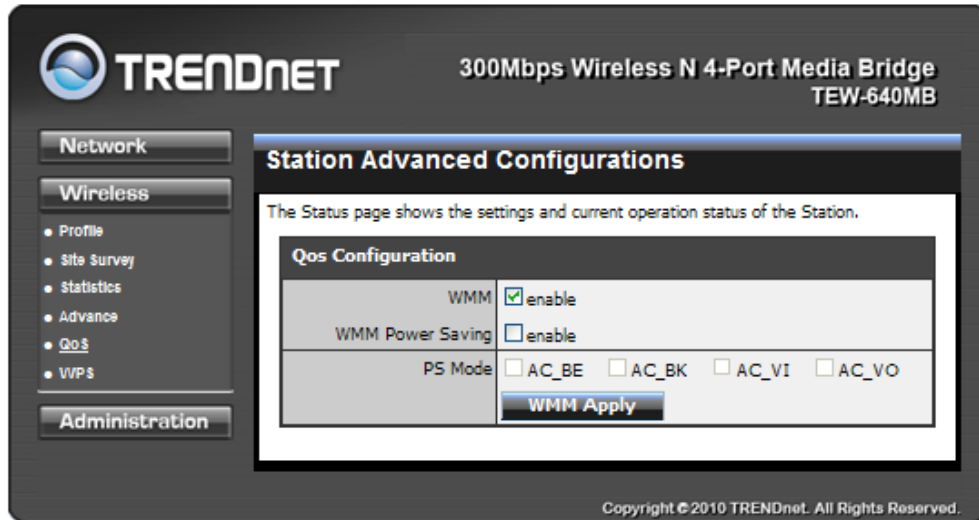
WMM (Wireless Multi-Media)

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.

WPS

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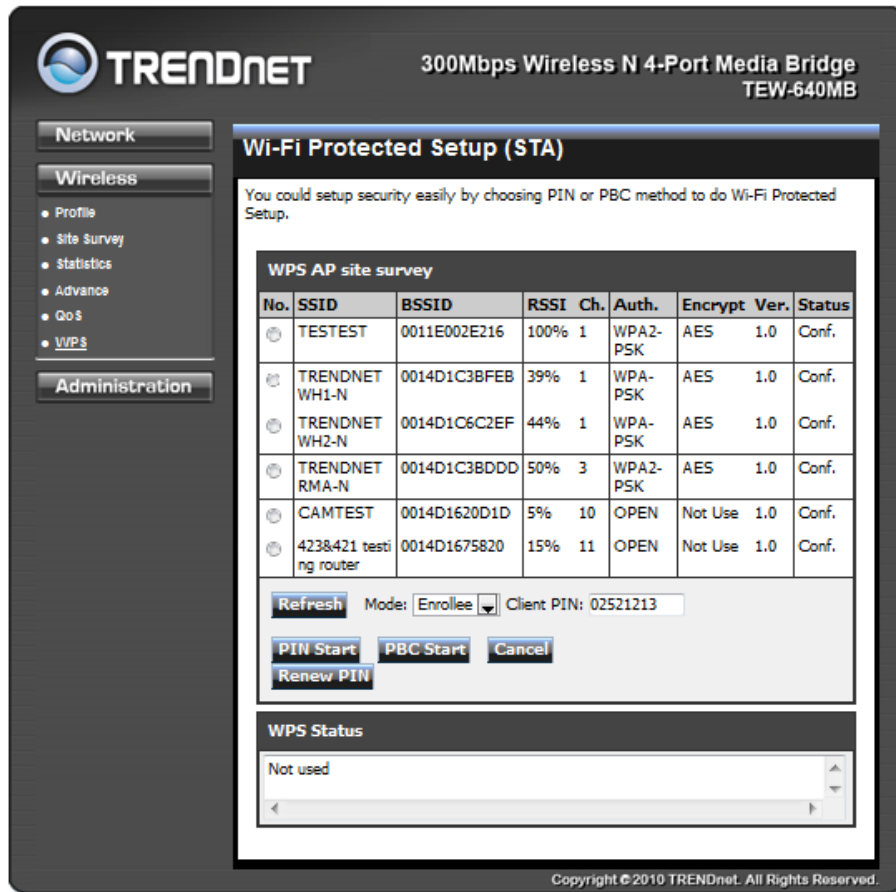
PIN Start or PBC Start

> 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.

Administrator

Wizard

You could use Wizard to help you setting TEW-640MB again.

Management

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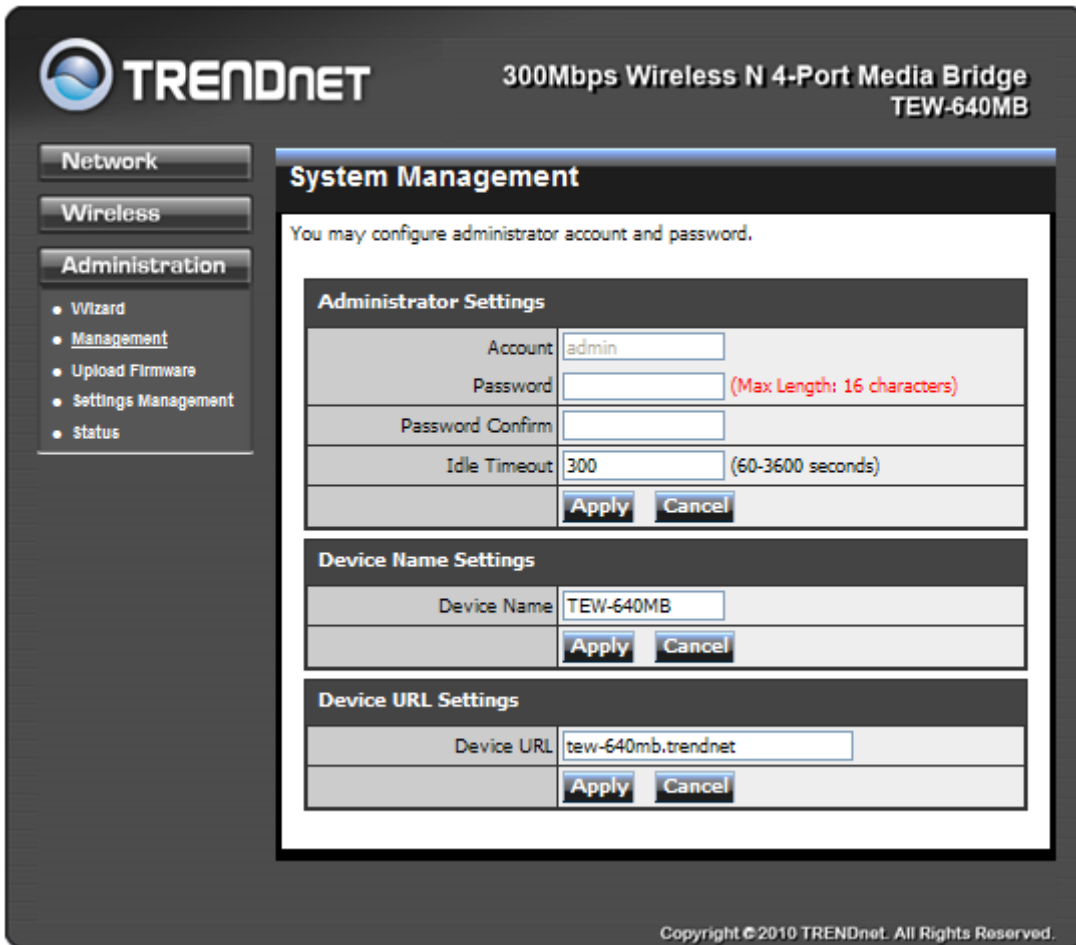
Password

This option allows you to change the login passsw

Device Name

Use this option to change the name or your device that will be used on your network.

Device URL

This option allows you to change the login URL of the device. It is advisable to only change the default URL of "tew-640MB" leaving ".trendnet"

Upload Firmware

By assigning firmware location, you can upload firmware at this page.
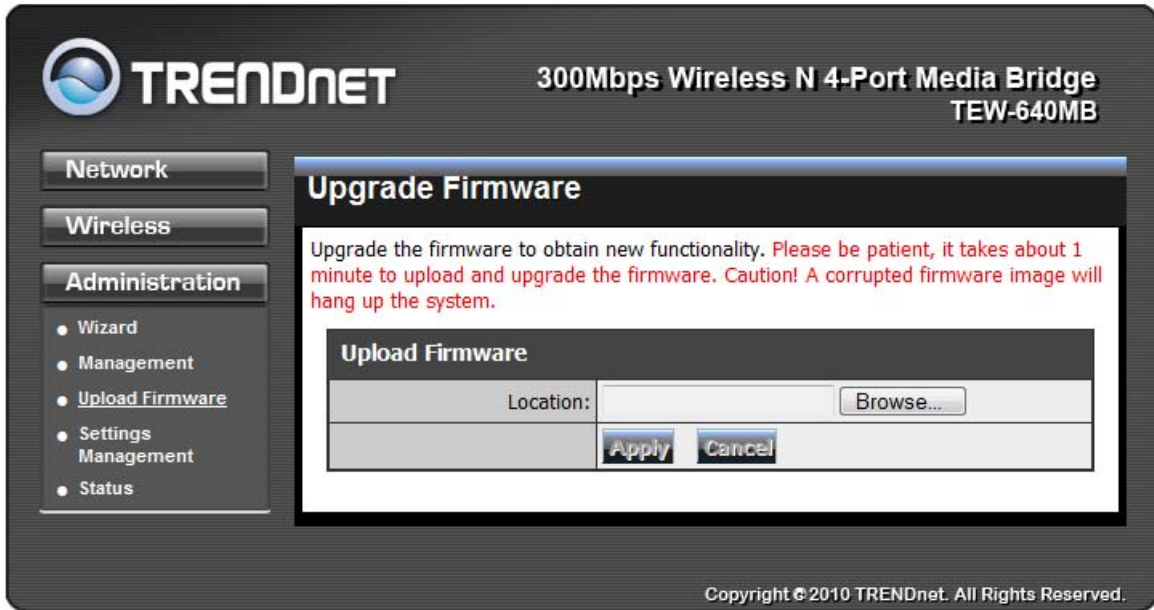
Once you have a firmware saved on your computer, use this option upload the firmware. Click on **Browse** and select the firmware file, then click **Apply** to upload the file into the adapter.

Note: Any disruption during the firware upgrade process can damage the device. It is recommended that this process is conducted on a wired computer and not wireless.

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.
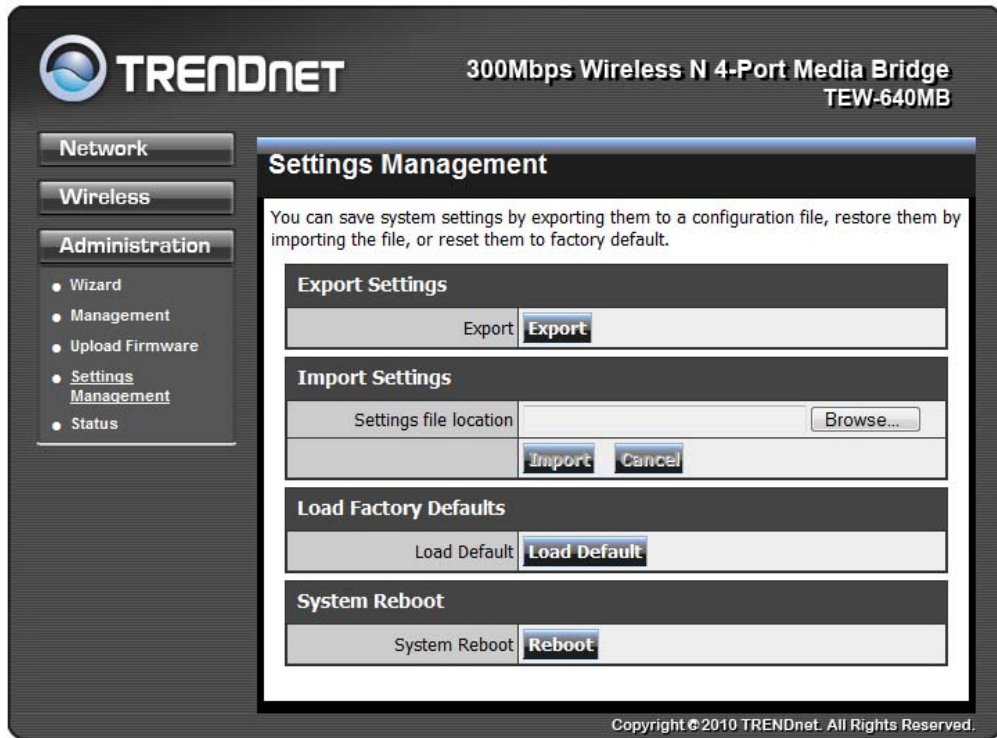
Export Settings

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.

Status

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

TRENDnet	300Mbps Wireless N 4-Port Media Bridge TEW-640MB

Network
Wireless
Administration
- Wizard
- Management
- Upload Firmware
- Settings Management
- Status

Status

The device status.

System Info

Firmware Version	0.0.0.215, 25-Oct-2010
System Up Time	0:30:0
MAC Address	00:11:E0:03:D8:D9

Local Network

Connected Type	DHCP Client
MAC Address	00:11:E0:03:D8:D9
IP Address	192.168.10.100
Subnet Mask	255.255.255.0

Wireless LAN

Wireless Radio	ON
MAC Address	00:11:E0:03:D8:D9
Security Mode	WPA2-PSK, AES

Link Status

Status	TESTEST <--> 00-11-E0-02-E2-16
Extra Info	Link is Up
Channel	1 <--> 2412000 KHz ; Central Channel: 3
Link Quality	Good 84%
Signal Strength	Good 100%
Noise Level	Strength 100%
Channel BandWidth	40
Guard Interval	long
MCS	15

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 sane 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

<u>**O**</u>

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

<u>**P**</u>

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 though 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 though it's 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
Interface	4 x 10/100Mbps Auto-MDIX LAN ports
LED Indicator	LAN 1~4, Wireless, WPS, Power
Power	12V DC 0.5A power adapter
Buttons	Reset button – restores factory default settings WPS button – enables WPS function
Power Consumption	4 Watts (max)
Dimensions (LxWxH)	60 x 118 x 135 mm (2.4 x 4.6 x 5.3 in.)
Weight	170 g (6 oz.)
Temperature	Operating: 0° ~ 40° C (32° ~ 104° F) Storage: -20° ~ 65° C (-4° ~ 149° F)
Humidity	Max. 90% (non-condensing)
Certifications	CE, FCC
Wireless	
Frequency	2.412 ~ 2.472 GHz
Antenna	2 built-in antennas
Data Rate (auto fallback)	802.11b: up to 11Mbps 802.11g:up to 54Mbps 802.11n: up to 300Mbps
Output Power	802.11b: 18dBm (typical) 802.11g: 15dBm (typical) 802.11n : 11dBm (typical)
Receiving Sensitivity	802.11b: -84dBm (typical) 802.11g: -73dBm (typical) 802.11n: -69dBm (typical)
Encryption	64/128-bit WEP , WPA/WPA2-PSK
Channels	1~11 (FCC), 1~13 (ETSI)

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