



User's Guide

TEW-690AP
1.01

Federal Communication Commission Interference Statement

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

 Český [Czech]	<i>TRENDnet</i> tímto prohlašuje, že tento <i>TEW-690AP</i> je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
 Dansk [Danish]	Undertegnede <i>TRENDnet</i> erklærer herved, at følgende udstyr <i>TEW-690AP</i> overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
 Deutsch [German]	Hiermit erklärt <i>TRENDnet</i> , dass sich das Gerät <i>TEW-690AP</i> in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
 Eesti [Estonian]	Käesolevaga kinnitab <i>TRENDnet</i> seadme <i>TEW-690AP</i> vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
 English	Hereby, <i>TRENDnet</i> , declares that this <i>TEW-690AP</i> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
 Español [Spanish]	Por medio de la presente <i>TRENDnet</i> declara que el <i>TEW-690AP</i> cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
 Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>TRENDnet</i> ΔΗΛΩΝΕΙ ΟΤΙ <i>TEW-690AP</i> ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
 Français [French]	Par la présente <i>TRENDnet</i> déclare que l'appareil <i>TEW-690AP</i> est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
 Italiano [Italian]	Con la presente <i>TRENDnet</i> dichiara che questo <i>TEW-690AP</i> è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo <i>TRENDnet</i> deklarē, ka <i>TEW-690AP</i> atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo <i>TRENDnet</i> deklaruoja, kad šis <i>TEW-690AP</i> atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

 Nederlands [Dutch]	Hierbij verklaart <i>TRENDnet</i> dat het toestel <i>TEW-690AP</i> in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
 Malti [Maltese]	Hawnhekk, <i>TRENDnet</i> jiddikjara li dan <i>TEW-690AP</i> jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.
 Magyar [Hungarian]	Alulírott, <i>TRENDnet</i> nyilatkozom, hogy a <i>TEW-690AP</i> megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
 Polski [Polish]	Niniejszym <i>TRENDnet</i> oświadcza, że <i>TEW-690AP</i> jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
 Português [Portuguese]	<i>TRENDnet</i> declara que este <i>TEW-690AP</i> está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
 Slovensko [Slovenian]	<i>TRENDnet</i> izjavlja, da je ta <i>TEW-690AP</i> v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	<i>TRENDnet</i> týmto vyhlasuje, že <i>TEW-690AP</i> spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
 Suomi [Finnish]	<i>TRENDnet</i> vakuuttaa täten että <i>TEW-690AP</i> tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
 Svenska [Swedish]	Härmed intygar <i>TRENDnet</i> att denna <i>TEW-690AP</i> står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

European Union Notice:

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

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Getting Started

Congratulations on purchasing the TEW-690AP! This manual provides information for setting up and configuring the TEW-690AP. This manual is intended for both home users and professionals.

PACKAGE CONTENTS

- TEW-690AP
- CD_ROM (Utility and User's Guide)
- Multi-Language Quick Installation Guide
- 1 x network cable (0.6m / 2ft)
- Power adapter (12V DC, 1A)



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)
- A computer with a network adapter or wireless adapter properly installed.
- A router with an available network LAN port.
- An available DHCP Server –routers usually have a built-in DHCP server.

Introduction

TRENDnet's 450Mbps Wireless N Access Point, model TEW-690AP, supports Access Point, Wireless Distribution System (WDS), and Repeater mode functionality.

Advanced Multiple Input Multiple Output (MIMO) antenna technology with three spatial streams per antenna, generates a maximum theoretical wireless throughput of 450Mbps and exceptional wireless coverage.

A Gigabit Ethernet port maintains high performance wired connections. Wi-Fi Protected Setup (WPS) integrates other WPS supported devices at the touch of a button. Advanced features include 4 SSIDs per wireless band, different encryption for each SSID, WMM Quality of Service data prioritization, WPA2-RADIUS encryption, and a convenient on/off power switch.

FEATURES

- High performance 450Mbps wireless n access point
- 1 x 10/100/1000Mbps Auto-MDIX Gigabit LAN port
- 1 x WPS button
- 1 x Reset button
- On/off power switch (EU Version)
- Diagnostic LEDs
- Wi-Fi compliant with IEEE 802.11n standard
- Backwards compatible with IEEE 802.11g/b devices
- Features Wireless Distribution System (WDS) and Repeater modes for wireless network expansion
- Supports 64/128-bit WEP, WPA/WPA2-PSK, and WPA/WPA2-RADIUS wireless security
- Mac filter feature for added security
- Wi-Fi Multimedia (WMM) Quality of Service (QoS) data prioritization
- Multiple Input Multiple Output (MIMO) antenna technology
- Define up to 3 additional SSIDs
- One touch wireless connection using the WPS button
- Maximum reliability, throughput, and connectivity with automatic data rate switching
- Easy user setup wizard and intuitive Web browser configuration
- Coverage of up to 100 meters indoor (328ft.) and 300 meters outdoor (948ft.) *
- 3-year limited warranty

HARDWARE OVERVIEW



Front View	WLAN LED A solid light indicates that the wireless segment is ready. This LED blinks green during wireless data transmission.
	WPS LED This LED blinks green during WPS function is enabled.
	LAN LED A solid light indicates a connection to a Router on the LAN port. This LED blinks green during data transmission
	POWER LED A solid green light indicates a proper connection to the power supply
	WPS Button Press the button to enable WPS function.



Rear View	<p>Auto MDI/MDIX 10/100/1000Mbps LAN Port This port automatically senses the cable type when connecting to Router.</p>
	<p>DC-IN The DC power input connector is a single jack socket to supply power to the TEW-690AP. Please use the Power Adapter provided on the TEW-690AP package.</p>
	<p>Power Switch (EU version) On/off Switch</p>



Side View	<p>Reset button Restores device to factory default settings</p>
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Installation Considerations

The TEW-690AP 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. Adjust your wireless devices so that the signal is traveling in a straight path, rather than at an angle. The more material the signal has to pass through the more signal you will lose.
2. Keep the number of obstructions to a minimum. Each obstruction can reduce the range of a wireless device. Position the wireless devices in a manner that will minimize the amount of obstructions between them.
3. Building materials can have a large impact on your wireless signal. In an indoor environment, try to position the wireless devices so that the signal passes through less dense material such as dry wall. Dense materials like metal, solid wood, glass or even furniture may block or degrade the signal.
4. Antenna orientation can also have a large impact on your wireless signal. Use the wireless adapter's site survey tool to determine the best antenna orientation for your wireless devices.
5. Interference from devices that produce RF (radio frequency) noise can also impact your signal. Position your wireless devices away from anything that generates RF noise, such as microwaves, radios and baby monitors.
6. Any device operating on the 2.4GHz frequency will cause interference. Devices such as 2.4GHz cordless phones or other wireless remotes operating on the 2.4GHz frequency can potentially drop the wireless signal. Although the phone may not be in use, the base can still transmit wireless signal. Move the phone's base station as far away as possible from your wireless devices.

If you are still experiencing low or no signal consider repositioning the wireless devices or installing additional access points. The use of higher gain antennas may also provide the necessary coverage depending on the environment.

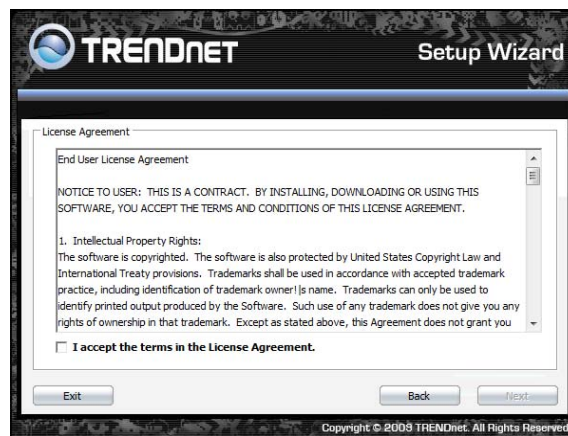
Getting Started

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

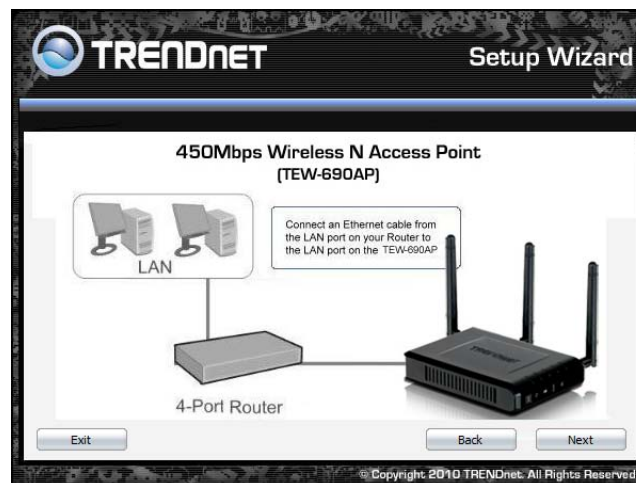
1. Insert Setup Wizard CD into your CD-ROM drive.
2. The Welcome screen appears on your monitor. Click **Setup Wizard** button.



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



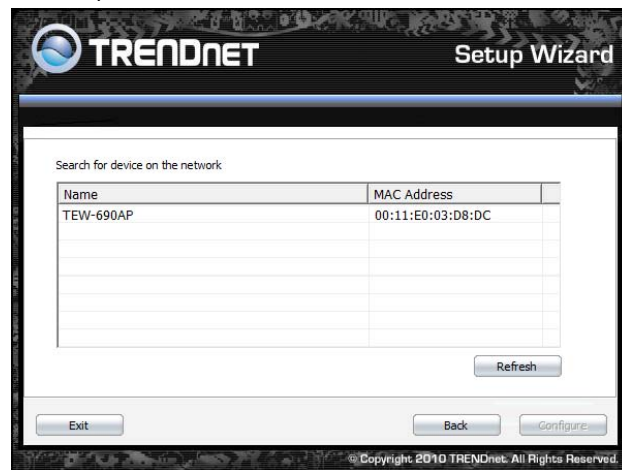
4. Connect an Ethernet cable from the LAN port on your Router to the LAN port on the TEW-690AP, click **Next button** to continue.



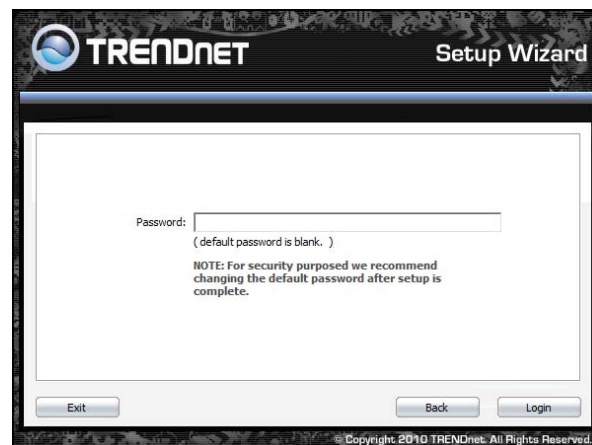
1. Plug in the power adapter of the TEW-690AP and plug in the device that you will be connecting together. Verify the Power & Ethernet LEDs are light. *EU Version please make sure the power switch is on the On position*



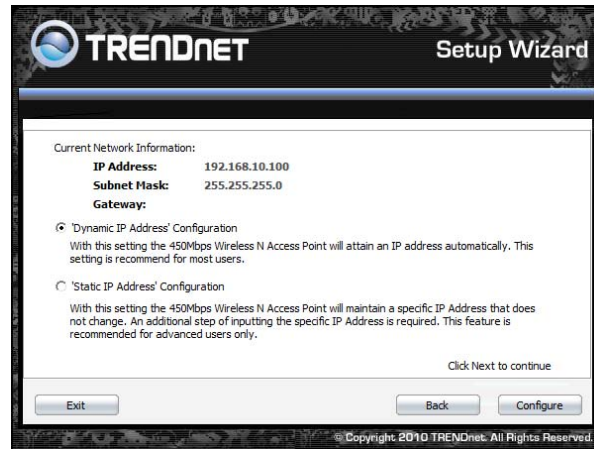
5. Your computer will detect TEW-690AP and the Device List screen appears on your monitor. Click **Configure** button to continue (default TEW-690AP IP Address is 192.168.10.100).



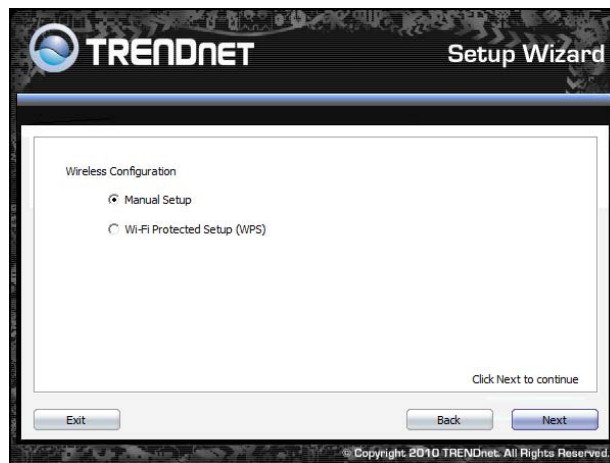
6. Enter password for the Access Point. The default password is **“admin”**. Click **Login** button to continue.



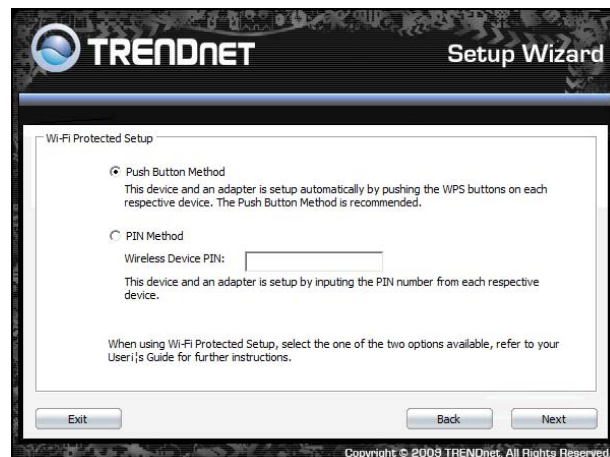
7. To attain an IP address automatically, you can select “**Dynamic IP address configuration**”; to change IP address, you can select “**Static IP address configuration**” and click **Next** button to continue.



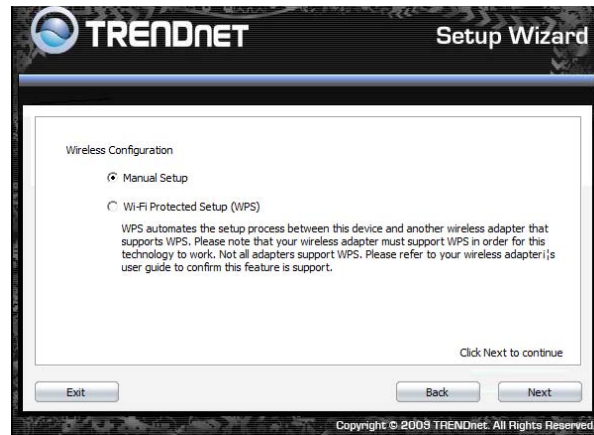
8. The default IP address is 192.168.10.100, you can choose to obtain network setting automatically, or set the IP address manually. After setting, click **Configure** to continue.



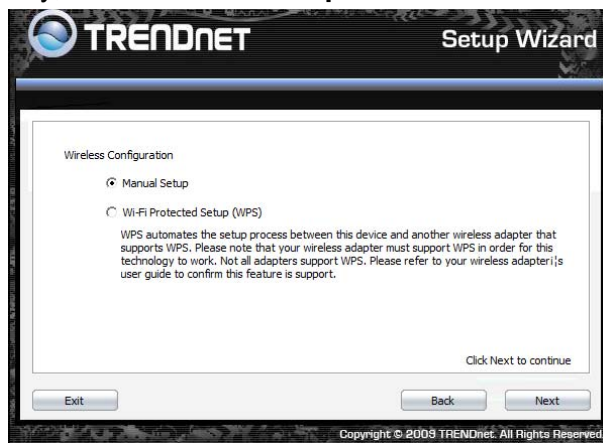
9. Use **Push Button Method**, click **Connect** button to continue. You also need to enable WPS function of the wireless client device to make connection.



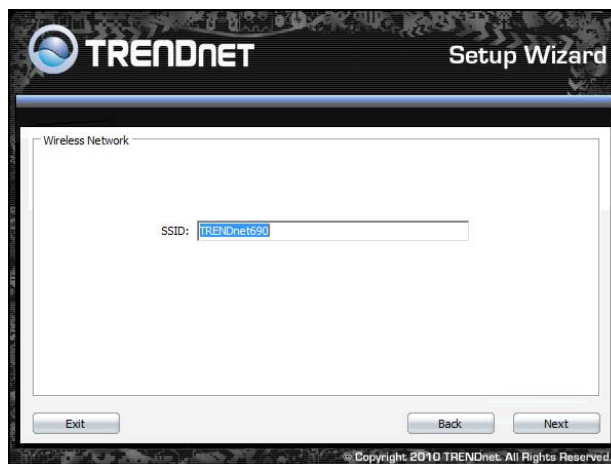
10. Use **Push Button Method**, click **Connect** button to continue. You also need to enable WPS function of the wireless client device to make connection. Use **PIN Method** and enter your wireless client PIN number on **Wireless Device PIN**, and then click **Connect** button to make wireless connection.



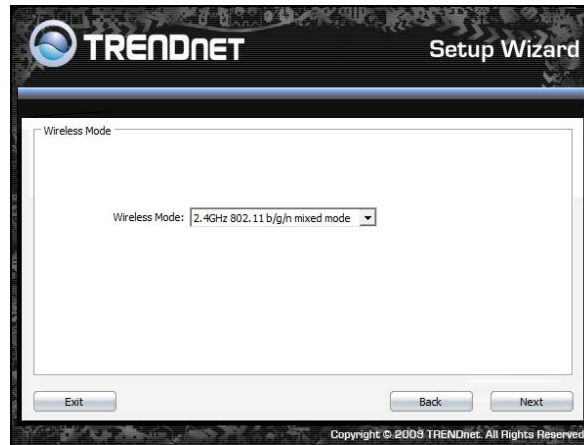
11. To set TEW-690AP security, select **Manual setup** and click **Next** button



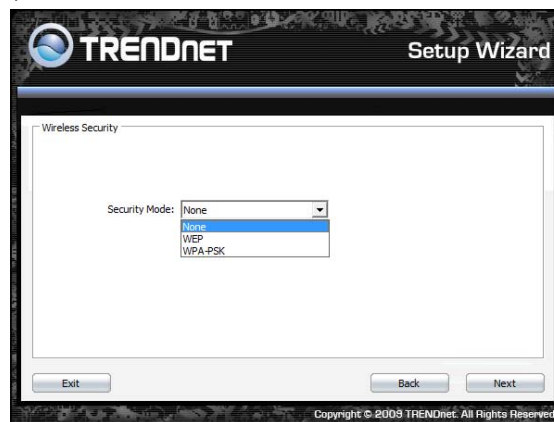
12. Enter **SSID** of TEW-690AP, click **Next** button.



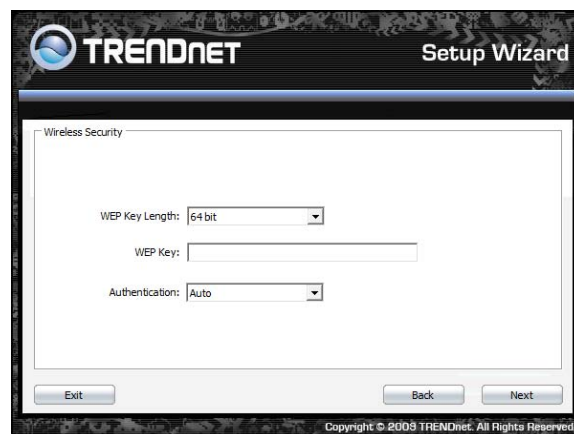
13. Choice Wireless Mode.



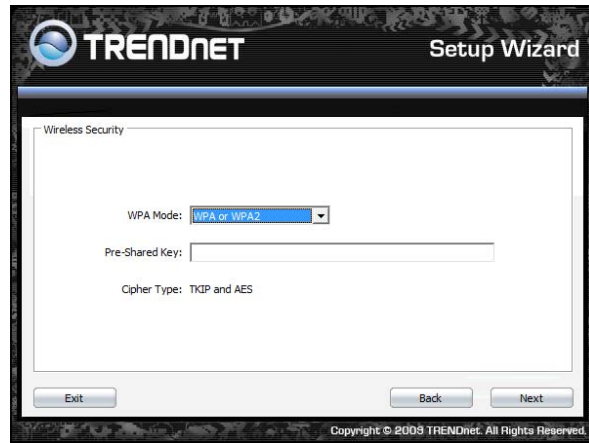
14. To disable **Security Mode**, select **None** and click **Next** button.



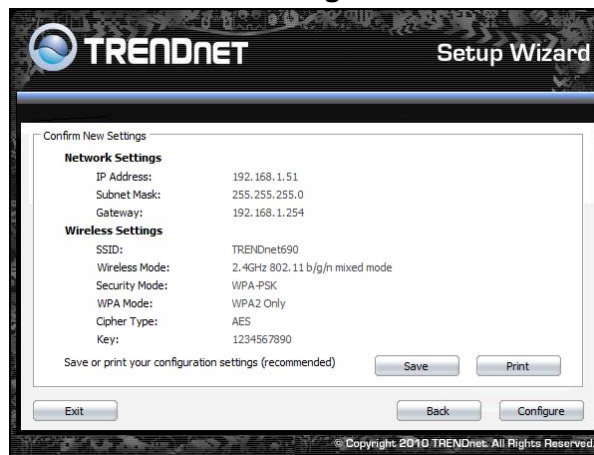
15. To use WEP security, select **WEP** and click **Next** button. Select **64-bit** or **128-bit** WEP key length, and enter your WEP key. For 64-bit encryption, enter 10 hexadecimal characters, For 128-bit encryption, enter 26 hexadecimal characters. Click **Next** to continue the setting.



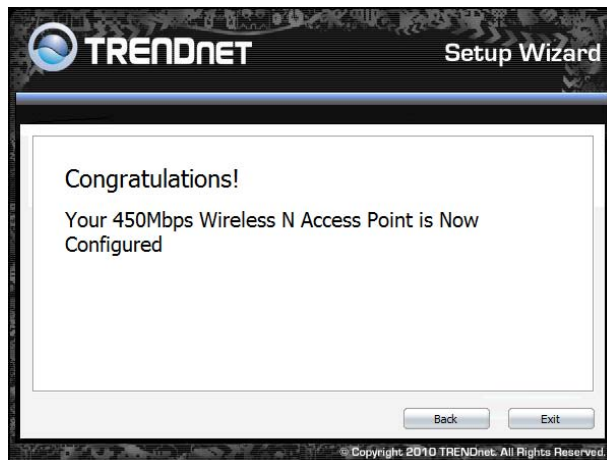
16. To use WPA or WPA2 security, select **WPA or WPA2** and click **Next** button. Select **WPA Mode: WPA Only, WPA2 Only, WPA or WPA2**, and set **Pre-Shared Key** by entering 8 ~ 63 characters. Click **Next** to continue the setting.



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



18. Congratulations you have configured you TEW-690AP.



Using the Configuration Menu

Whenever you want to configure your TEW-690AP, you can access the Configuration Menu by opening the Web-browser and typing in the IP Address of the TEW-690AP.

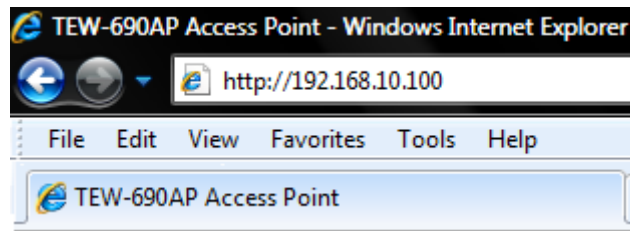
- Open the Web browser.
- Type in the current **IP Address** of the AP (i.e. <http://192.168.10.100>).



If you have changed the default IP Address assigned to the TEW-690AP (192.168.10.100), make sure to enter the correct IP Address.

NOTE

- Type **admin** in the **User Name** field.
- The **Password** is **admin**.
- Click **Login In**.



When you log into the unit the initial screen you will see is the status page that provides system information and network configurations .

TRENDnet 450Mbps Wireless N Access Point
TEW-690AP

Network
Wireless
Administrator

- Management
- Upload Firmware
- Settings Management
- **Status**

Status

The device status.

System Info

Firmware Version	0.0.0.30, 16-Aug-2010
System Up Time	0:1:2

Network Configurations

MAC Address	00:11:E0:03:D8:DC
Connected Type	Static IP
IP Address	192.168.10.100
Subnet Mask	255.255.255.0
Default Gateway	

Wireless LAN

Wireless Radio	Radio On
MAC Address	00:11:E0:03:D8:DC
Network Name (SSID)	TESTESTEST
Channel	11
Security Mode	WPA2-PSK

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Network

LAN SETTING

TRENDnet 450Mbps Wireless N Access Point
TEW-690AP

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: 192.168.10.100

Subnet Mask: 255.255.255.0

Default Gateway:

Apply Cancel

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These are the settings of the LAN (Local Area Network) interface for the Access Point. The Access Point's local network (LAN) settings are configured based on the IP Address and Subnet Mask assigned in this section. The IP address is also used to access this Web-based management interface.

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 AP on the local area network. Assign any unused IP address in the range of IP addresses available for the LAN. For example, 192.168.10.100.

Subnet Mask

The subnet mask of the local area network.

Default Gateway

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

Choose "**DHCP (Auto Config)**" if your router supports DHCP and you want the router to assign an IP address to the AP.

Wireless

The wireless section is used to configure the wireless settings for your Access Point. Note that changes made in this section may also need to be duplicated on wireless clients that you want to connect to your wireless network.

To protect your privacy, use the wireless security mode to configure the wireless security features.

The Wireless tab provides the following configuration options: Basic, Advanced, MAC Filter, Security, WPS and Station List.

ACCESS POINT

The screenshot displays the configuration interface for a TRENDNET 450Mbps Wireless N Access Point (TEW-690AP). The interface is divided into several sections:

- Network**: A sidebar menu with options for Network, Wireless, and Administrator.
- Wireless**: A sub-menu with options for Basic, Advanced, MAC Filter, Security, WPS, and Station List.
- Basic Wireless Settings**: The main configuration area, which includes:
 - Wireless Network**:
 - Repeater Mode Support: Enable, Disable
 - Repeater MAC Addr.: (Optional) (ex: 00:11:22:33:44:55)
 - Wireless Mode: 2.4GHz 802.11 n only
 - Wireless Name(SSID): TRENDnet690
 - Multiple SSID1, Multiple SSID2, Multiple SSID3:
 - Broadcast Network Name (SSID): Enable, Disable
 - BSSID: 00:11:60:03:D8:DC
 - Frequency (Channel): 2462MHz (Channel 11)
 - Wireless Distribution System(WDS)**:
 - WDS Mode: Disable
 - HT Physical Mode**:
 - Operating Mode: Mixed Mode, Green Field
 - Channel BandWidth: 20, 20/40
 - 20/40 Coexistence: Disable, Enable
 - Guard Interval: long, Auto
 - MCS: Auto
 - Reverse Direction Grant(RDG): Disable, Enable
 - Extension Channel: 2442MHz (Channel 7)
- Buttons**: Apply and Cancel buttons.
- Footer**: Copyright © 2010 TRENDnet. All Rights Reserved.

Repeater Mode Support

Repeater Mode Support allows you to “repeat” a wireless signal from an existing access point.

Select the radio button to enable or disable “Repeater Mode Support”. When enabled you have the option of defining the specific access point to repeat off of by entering in the remote access points or wireless router’s wireless MAC address into the “Repeater MAC Addr. (Optional)” field. You must also configure the TEW-690AP with the same SSID, channel and wireless encryption settings of the remote access point.

Repeater Mode Support	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Repeater MAC Addr.	<input type="text"/> (Optional) (ex: 00:11:22:33:44:55)

Repeater Mode Support



Wireless Mode

If all of the wireless devices you want to connect with this Access Point can connect in the same transmission mode, you can improve performance slightly by choosing the appropriate "Only" mode. If you have some devices that use a different transmission mode, choose the appropriate "Mixed" mode.

Wireless Mode	<input type="text" value="2.4GHz 802.11 n only"/>
Wireless Name(SSID)	<input type="text" value="2.4GHz 802.11 n only"/>

Wireless Modes

802.11b/g mixed mode (2.4GHz) - 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-690AP 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.

802.11n only (2.4GHz) - 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-690AP up to 300Mbps*. 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.

802.11b/g/n mixed mode (2.4GHz) - 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-690AP at 11Mbps for wireless b, 54Mbps for wireless g and up to 300Mbps* for wireless n and share

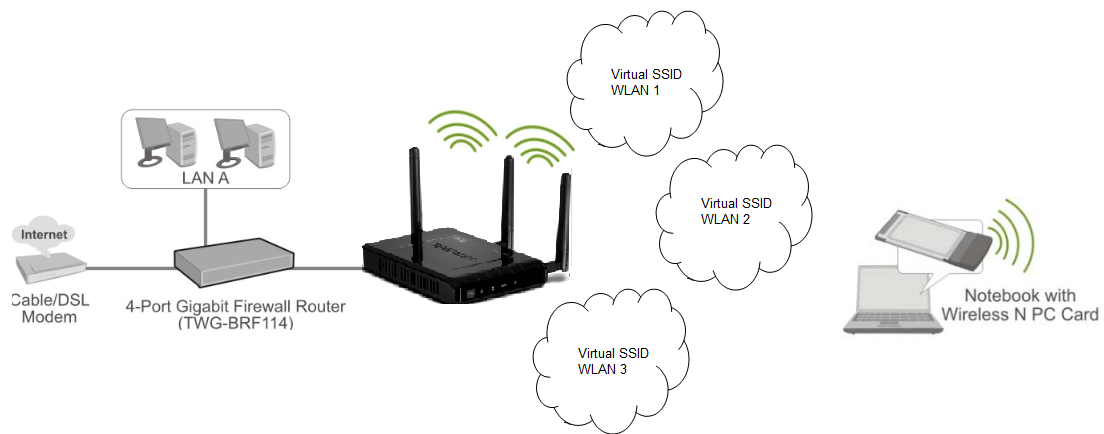
access at the same time. Although the wireless b/g/n operates in the same 2.4GHz frequency, it will allow the use of other 2.4GHz client devices (Wireless b/g/n) to connect and access at the same time.

Wireless Name (SSID)

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

Multiple SSID

This Access Point support multiple SSID function, you can assign three more SSID for the TEW-690AP. Create virtual SSID wireless networks (WLAN) with different type of wireless security for each virtual WLAN that is created. When using the wireless adapter wireless site survey tool, there will be additional wireless network to connect with once the feature is enabled.



Multiple SSID (Virtual WLANs)

Add Additional Wireless Network Name (SSID)

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

Wireless Name(SSID)	TRENDnet690
Multiple SSID1	
Multiple SSID2	
Multiple SSID3	
Broadcast Network Name (SSID)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
BSSID	00:11:E0:03:D8:DC
Frequency (Channel)	2462MHz (Channel 11) ▼

Multiple SSIDs

Broadcast Network Name (SSID)

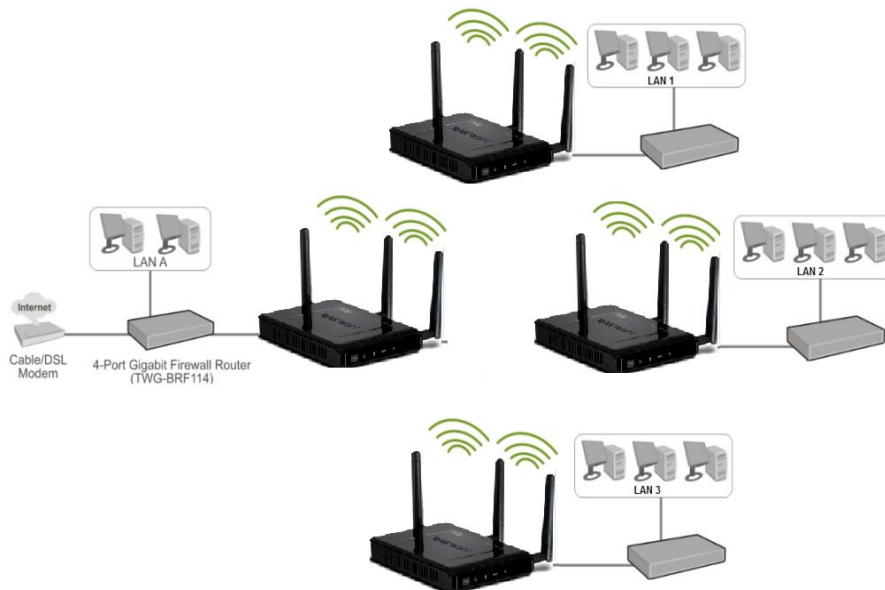
This option allows you to hide your wireless network. When this option is set to enable, your wireless network name is broadcast to anyone within the range of your signal. If you're not using encryption then they could connect to your network. When this mode is disabled, you must enter the Wireless Network Name (SSID) on the client manually to connect to the network.

Frequency (Channel)

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

WDS Mode

When WDS is enabled, this access point functions as a wireless bridge and is able to wirelessly communicate with other access points via WDS links. A WDS link is bidirectional; both end points must support WDS and each access point must know the MAC Address of the other. Each access point will be configured with the remote access point's MAC address and vice versa. Make sure all access points are configured with the same SSID, channel and wireless encryption settings.



Wireless Distribution System(WDS)	
WDS Mode	Enable ▾
AP MAC Address	<input type="text"/>
AP MAC Address	<input type="text"/>
AP MAC Address	<input type="text"/>
AP MAC Address	<input type="text"/>

WDS configuration option enabled

Operating Mode

If you have both wireless g and wireless n client devices included on your wireless network at the same time, you should choose **Mixed Mode**. And if you only have wireless n client devices on your wireless network, you can choose **Green Field** to enjoy high throughput.

Channel Bandwidth

The "20/40" MHz option is usually best. The other option is available for special circumstances.

20/40 Coexistence

When Disable is chosen, your network will operate under 20/40 mode.

Guard Interval

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

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.

Fix MCS rate for HT rate 0-15

Reserve Direction Grant (RDG)

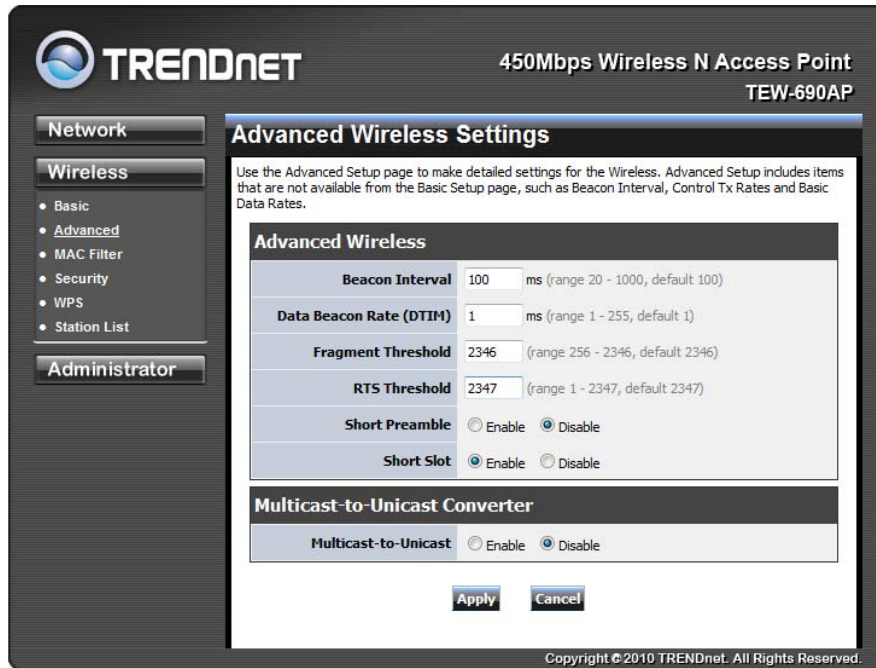
Disable or enable reserve direction grant. Default is enabled.

Extension Channel

When 20/40 channel bandwidth has been chosen, you should select extension channel to get higher throughput.

HT Physical Mode	
Operating Mode	<input checked="" type="radio"/> Mixed Mode <input type="radio"/> Green Field
Channel BandWidth	<input type="radio"/> 20 <input checked="" type="radio"/> 20/40
20/40 Coexistence	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Guard Interval	<input type="radio"/> long <input checked="" type="radio"/> Auto
MCS	Auto <input type="button" value="v"/>
Reverse Direction Grant (RDG)	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Extension Channel	2442MHz (Channel 7) <input type="button" value="v"/>

ADVANCED



Beacon Interval

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

Data Beacon Rate (DTIM)

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

Fragment Threshold

This setting should remain at its default value of 2346. Setting the Fragmentation value too low may result in poor performance.

RTS Threshold

This setting should remain at its default value of 2347. If you encounter inconsistent data flow, only minor modifications to the value are recommended.

Short Preamble

Use to synchronize communication timing between devices on a network. Disable by default.

Short Slot

Enable or disable short slot. Default is enabled.

MAC FILTER

The MAC address filter section can be used to filter network access by machines based on the unique MAC addresses of their network adapter(s). It is most useful to prevent unauthorized wireless devices from connecting to your network. A MAC address is a unique ID assigned by the manufacturer of the network adapter.



Policy

Three policies can be selected - Disable, Allow All & Reject All.

MAC Address

Add MAC Address to follow Policy setting

SECURITY



SSID choice

Choose the SSID which need to implement security.

Security Mode

You can disable security mode, or you can choose following modes to enable security – Disable, WEP-OPEN, WEP-SHARED, WEP-AUTO, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA-PSK/WPA2-PSK, WPA/WPA2

WPS

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

The screenshot shows the Trendnet web interface for a 450Mbps Wireless N Access Point (TEW-690AP). The main navigation menu on the left includes Network, Wireless, and Administrator. The Wireless section is expanded, showing options like Basic, Advanced, MAC Filter, Security, WPS, and Station List. The WPS section is selected, displaying the 'Wi-Fi Protected Setup' configuration page.

The 'Wi-Fi Protected Setup' page has a header that reads: "You could setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup." Below this, there are four main sections:

- WPS Config:** A section with a 'WPS' label and a dropdown menu set to 'Enable'. An 'Apply' button is located below the dropdown.
- WPS Summary:** A table displaying the current WPS configuration:

WPS Current Status	Idle
WPS Configured	Yes
WPS SSID	TRENDnet690
WPS Auth Mode	WPA2-PSK
WPS Encrypt Type	AES
WPS Default Key Index	2
WPS Key(ASCII)	1234567890
AP PIN	02521244
- WPS Progress:** A section with 'WPS mode' set to 'PIN' (selected) and 'PBC'. There is a 'Client PIN' input field and an 'Apply' button below it.
- WPS Status:** A section with a status indicator showing 'WSC:Idle'.

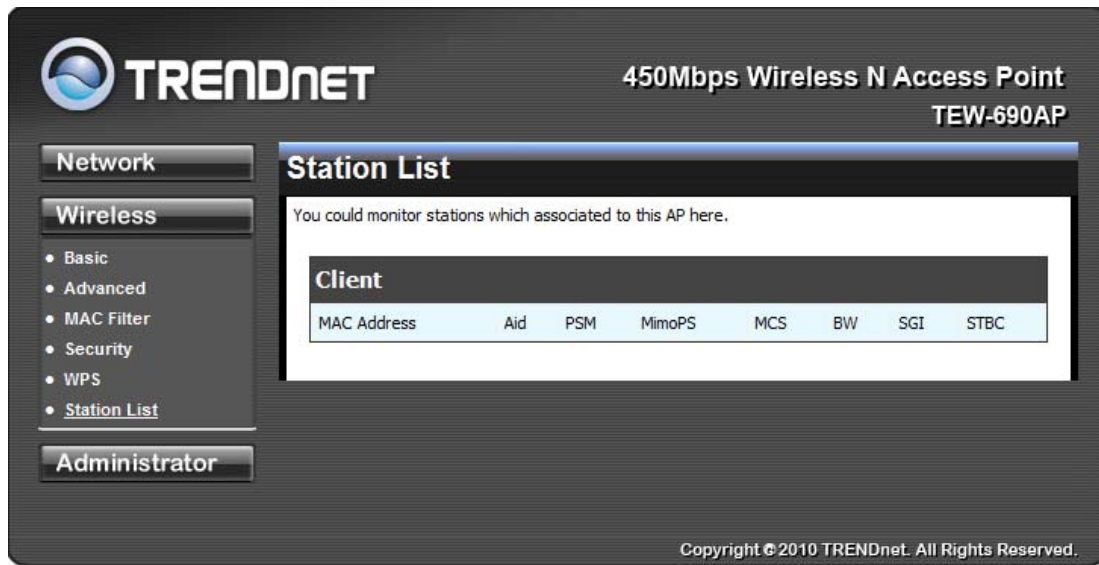
At the bottom right of the interface, there is a copyright notice: "Copyright © 2010 TRENDnet. All Rights Reserved."

WPS mode

Two WPS modes can be selected – PIN & PBC. If PIN is selected, you should enter PIN code of your wireless client device to get wireless connection with this AP.

Wireless Station List

You can monitor stations which associated to this AP.



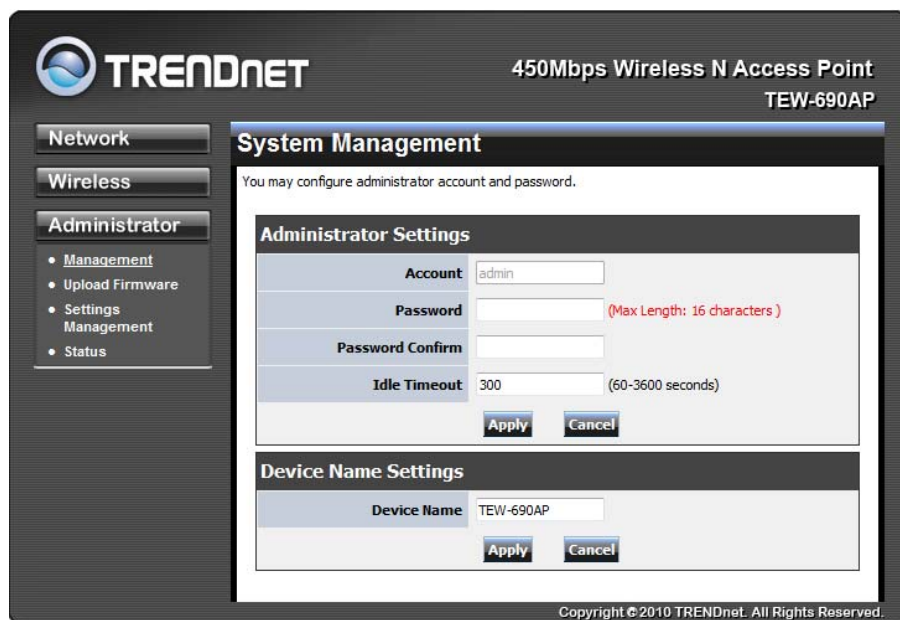
Administrator

This Administrator section is used to set password for access to the Web-based management, also provide function of firmware upgrade.

The Administrator tab provides the following configuration options: Management, Upload Firmware, settings, Management and Status.

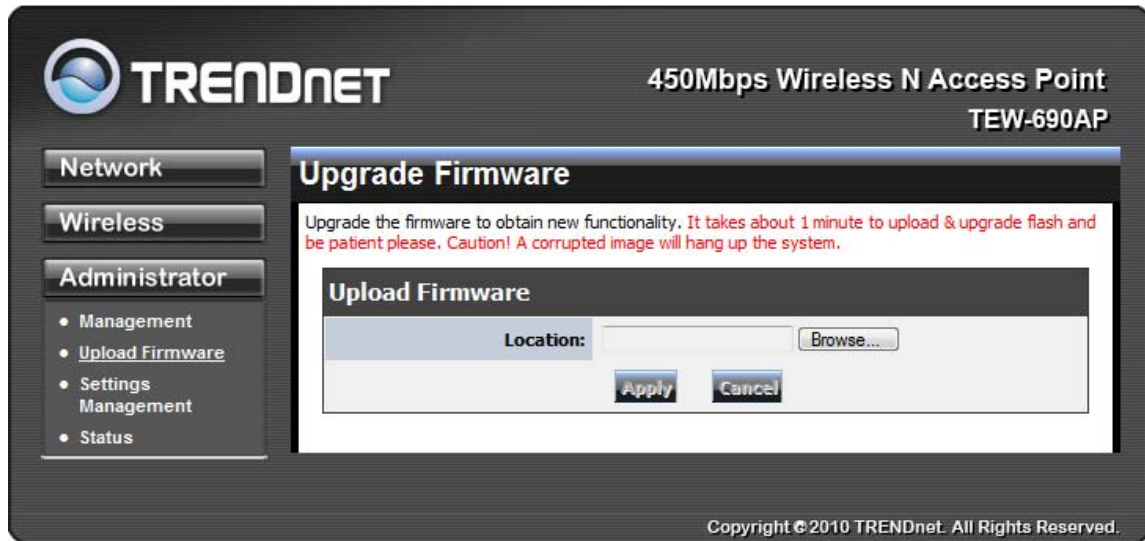
SYSTEM MANAGEMENT

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



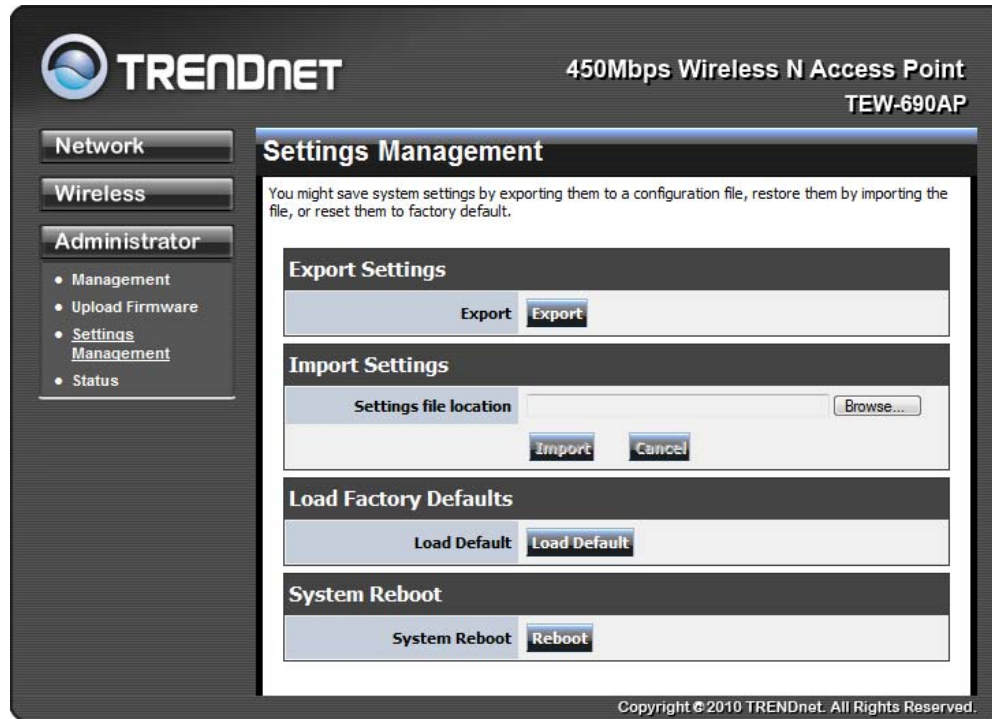
UPLOAD FIRMWARE

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



SETTINGS 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.



STATUS

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

TRENDnet 450Mbps Wireless N Access Point
TEW-690AP

Network
Wireless
Administrator

- Management
- Upload Firmware
- Settings Management
- Status

Status

The device status.

System Info

Firmware Version	0.0.0.30, 16-Aug-2010
System Up Time	0:5:11

Network Configurations

MAC Address	00:11:E0:03:D8:DC
Connected Type	Static IP
IP Address	192.168.10.100
Subnet Mask	255.255.255.0
Default Gateway	

Wireless LAN

Wireless Radio	Radio On
MAC Address	00:11:E0:03:D8:DC
Network Name (SSID)	TRENDnet690
Channel	11
Security Mode	WPA2-PSK

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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 Novell to enable their Netware clients and servers to communicate

ISP

Internet Service Provider

J

Java

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

K

Kbps

Kilobits per second

Kbyte

Kilobyte

L

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 other 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 its 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 its 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 your 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

802.11

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

Specifications

Hardware	
Standards	IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.11b, IEEE 802.11g, and IEEE 802.11n
Interface	1 x 10/100/1000Mbps Auto-MDIX Gigabit LAN port
LED Indicator	Wireless, LAN, WPS, Power
Buttons	Reset button – restores factory default settings WPS button – enables WPS function On/off power (EU version)
Power	12V DC, 1A power adapter
Power Consumption	4.5 Watts (max)
Dimensions (LxWxH)	120 x 84 x 24 mm (4.7 x 3.3 x 1.0 in.)
Weight	160 g (5.6 oz.)
Temperature	Operating: 0° ~ 40° C (32° ~ 104° F) Storage: -20° ~ 60° C (-4° ~ 140° F)
Humidity	Max. 90% (non-condensing)
Certifications	CE, FCC
Wireless	
Frequency	2.412 ~ 2.472 GHz
Antenna	3 x 2dBi detachable antennas
Data Rate (auto fallback)	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 450Mbps
Output Power	802.11b: 18dBm (typical) 802.11g: 15dBm (typical) 802.11n: 15dBm (typical)
Receiving Sensitivity	802.11b: -84dBm (typical) 802.11g: -72dBm (typical) 802.11n: -69dBm (typical)
Encryption	64/128-bit WEP, WPA/WPA2-PSK, WPA/WPA2-RADIUS
Channels	1~11 (FCC), 1~13 (ETSI)

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

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-690AP – 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.

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

There are no user serviceable parts inside the product. Do not remove or attempt to service the product by any unauthorized service center. This warranty is voided if (i) the product has been modified or repaired by any unauthorized service center, (ii) the product was subject to accident, abuse, or improper use (iii) the product was subject to conditions more severe than those specified in the manual.

Warranty service may be obtained by contacting TRENDnet within the applicable warranty period and providing a copy of the dated proof of the purchase. Upon proper submission of required documentation a Return Material Authorization (RMA) number will be issued. An RMA number is required in order to initiate warranty service support for all TRENDnet products. Products that are sent to TRENDnet for RMA service must have the RMA number marked on the outside of return packages and sent to TRENDnet prepaid, insured and packaged appropriately for safe shipment. Customers shipping from outside of the USA and Canada are responsible for return shipping fees. Customers shipping from outside of the USA are responsible for custom charges, including but not limited to, duty, tax, and other fees.

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