

TP-LINK®

User Guide

TL-WA890EA

N600 Universal Dual Band WiFi

Entertainment Adapter with 4 Ports



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FCC 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 or more 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.

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.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

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

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

"To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

CE Mark Warning



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

National Restrictions

This device is intended for home and office use in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Country	Restriction	Reason/remark
Bulgaria	None	General authorization required for outdoor use and public service
France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012
Italy	None	If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply(not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
Russian Federation	None	Only for indoor applications

Note: Please don't use the product outdoors in France.

Canadian Compliance Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes:

- (1) cet appareil ne doit pas provoquer d'interférences et
- (2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil.

Industry Canada Statement

Complies with the Canadian ICES-003 Class B specifications.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with RSS 210 of Industry Canada. This Class B device meets all the requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Korea Warning Statements

당해 무선설비는 운용중 전파혼신 가능성이 있음.

NCC Notice & BSMI Notice

注意！

依據 低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性或功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通行；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信規定作業之無線電信。低功率射頻電機需忍受合法通信或工業、科學以及醫療用電波輻射性電機設備之干擾。

於 5.25GHz 至 5.35GHz 區域內操作之無線設備的警告聲明

工作頻率 5.250~5.350GHz 該頻段限於室內使用。

安全諮詢及注意事項

- 請使用原裝電源供應器或只能按照本產品注明的電源類型使用本產品。
- 清潔本產品之前請先拔掉電源線。請勿使用液體、噴霧清潔劑或濕布進行清潔。
- 注意防潮，請勿將水或其他液體潑灑到本產品上。
- 插槽與開口供通風使用，以確保本產品的操作可靠並防止過熱，請勿堵塞或覆蓋開口。
- 請勿將本產品置放於靠近熱源的地方。除非有正常的通風，否則不可放在密閉位置中。
- 請不要私自打開機殼，不要嘗試自行維修本產品，請由授權的專業人士進行此項工作。



Продукт сертифіковано згідно с правилами системи УкрСЕПРО на відповідність вимогам нормативних документів та вимогам, що передбачені чинними законодавчими актами України.

Safety Information

- When product has power button, the power button is one of the way to shut off the product; when there is no power button, the only way to completely shut off power is to disconnect the product or the power adapter from the power source.
- Don't disassemble the product, or make repairs yourself. You run the risk of electric shock and voiding the limited warranty. If you need service, please contact us.
- Avoid water and wet locations.

This product can be used in the following countries:

AT	BG	BY	CA	CZ	DE	DK	EE
ES	FI	FR	GB	GR	HU	IE	IT
LT	LV	MT	NL	NO	PL	PT	RO
RU	SE	SK	TR	UA			

DECLARATION OF CONFORMITY

For the following equipment:

Product Description: **N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports**

Model No.: **TL-WA890EA**

Trademark: **TP-LINK**

We declare under our own responsibility that the above products satisfy all the technical regulations applicable to the product within the scope of Council Directives:

Directives 1999/5/EC, Directives 2004/108/EC, Directives 2006/95/EC, Directives 1999/519/EC, Directives 2011/65/EU

The above product is in conformity with the following standards or other normative documents

ETSI EN 300 328 V1.7.1: 2006

ETSI EN 301 489-1 V1.9.2:2011& ETSI EN 301 489-17 V2.2.1:2012

EN 55022:2010/AC:2011

EN 55024:2010

EN 61000-3-2:2006+A1:2009+A2:2009

EN 61000-3-3:2008

EN 60950-1:2006+A11: 2009+A1:2010+A12:2011

EN 62311:2008

EN 301 893

The product carries the CE Mark:

CE 1588 !

Person is responsible for marking this declaration:



Yang Hongliang

Product Manager of International Business

Date of Issue: 2013

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Package Contents

The following items should be found in your package:

- TL-WA890EA N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports
- Ethernet Cable
- USB Cable and Power Adapter
- Quick Installation Guide
- Resource CD for TL-WA890EA N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports, including only This User Guide.

 Note:

Make sure that the package contains the above items. If any of the listed items is damaged or missing, please contact your distributor.

Conventions

The Entertainment Adapter, the Device or TL-WA890EA mentioned in this User guide stands for TL-WA890EA N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports without any explanations.

Parameters provided in the pictures are just references for setting up the product, which may differ from the actual situation. You can set the parameters according to your demand.

Chapter 1 Introduction

1.1 Product Overview

The N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports TL-WA890EA can bring all of your home or office's Internet-enabled devices into the world of wireless.

By connecting them to TL-WA890EA, the entertainment devices in your home that previously required running Ethernet cables around furniture, through walls and doorways can now be connected to your network wirelessly, without the risk of degrading performance. With N600 dual band wireless speeds and four LAN ports, TL-WA890EA provides your devices with ample bandwidth for smooth HD video and music streaming and online gaming. What's more, the N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports TL-WA890EA is universally compatible with all Internet-enabled devices, so if it has an Ethernet port, you can make it wireless in a flash.

1.2 Main Features

- Gives wired-only devices (such as Smart TVs, Games Consoles, Blu-ray players, etc.) access to an existing Wi-Fi network
- Dual band performance, 300Mbps wireless speed over 5GHz or 2.4GHz
- Universally compatible - works with any device with an Ethernet port
- Works seamlessly with all 802.11a/b/g/n devices
- Easy wireless security encryption at a push of the WPS button
- CD-less installation

1.3 Appearance

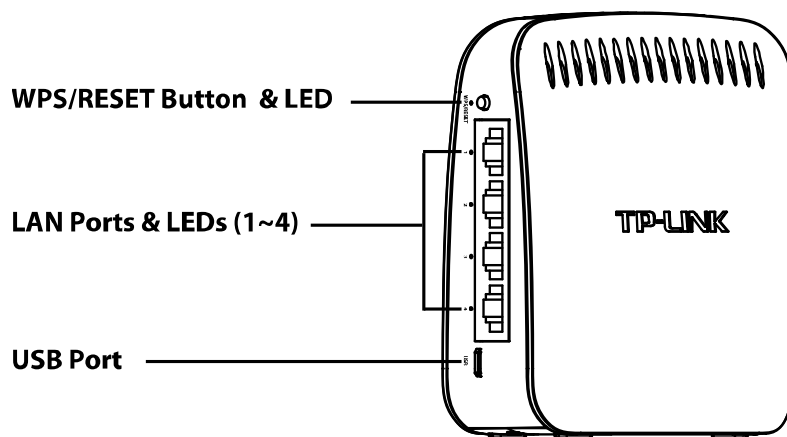


Figure 1-1

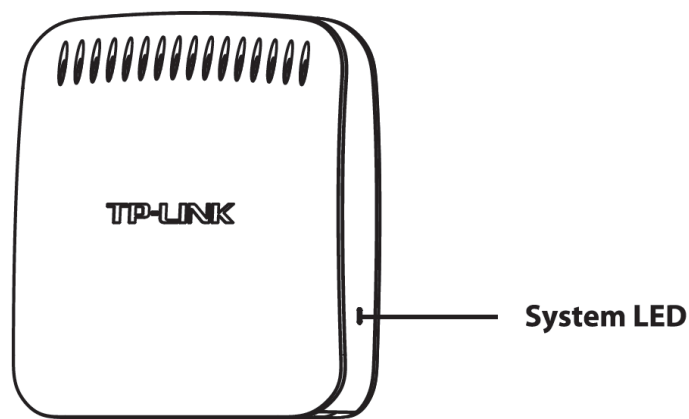


Figure 1-2

Detail Explanation:

Item	Status	Indication
WPS/RESET	Button	Press the button for 1 - 2 seconds to enable WPS function. Press the button for 5 - 8 seconds to reset TL-WA890EA.
	LED	When the WPS LED keeps blinking , TL-WA890EA is connecting to the root device; then the WPS LED will be solid for 5 minutes and then turn off , after the connection succeeds.
LAN	Ports (1-4)	To connect the client(s) to TL-WA890EA with Ethernet cable(s).
	LEDs (1-4)	The LAN LED(s) will turn on when the corresponding port(s) is connected to a client. The LAN LED(s) will keep blinking when there is data transferring. The LAN LED(s) will turn off when the corresponding port(s) is disconnected.
USB	Port	To connect TL-WA890EA to the power adapter with an USB cable.
System	LED	When the powered-on device isn't connected or fails in connection, the System LED will light orange. When the device is connected successfully, the system LED will light blue.

Table 1-1

Chapter 2 Hardware Installation

2.1 Before You Begin

- A good knowledge of the LEDs and its indication will facilitate your quick installation of the Entertainment Adapter.
- Keep the Entertainment Adapter away from any devices that might cause wireless interference, such as cordless phones, blue tooth devices, microwave ovens, etc.
- Do not place the Entertainment Adapter too far away from the main router/AP, especially when you are trying to connect them by pressing their WPS button.

2.2 Basic Requirements

- Place your Entertainment Adapter in a well-ventilated place far from direct sunlight, any heater or heating vent.
- Leave at least 2 inches (5cm) space around the device for heat dissipation.
- Turn off your Entertainment Adapter and unplug the power adapter in a lighting storm to avoid damage.
- Use Web browser, such as Microsoft Internet Explorer 5.0 or above, Netscape Navigator 6.0 or above.
- Operating temperature of the Entertainment Adapter should be 0°C~40°C (32°F~104°F).
- Operating humidity of the Entertainment Adapter should be 10%~90%RH (Non-condensing).

2.3 Connecting the Device

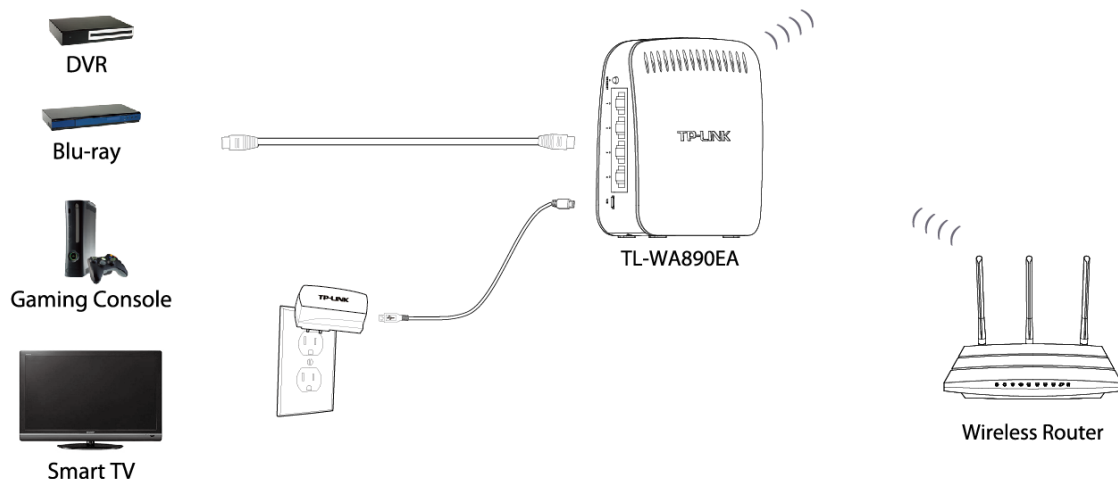


Figure 2-1 Typical connection of TL-WA890EA

Please follow the steps below to connect the devices:

- 1) Connect one end of the USB cable to the USB port of TL-WA890EA, and the other end to the power adapter; then plug the power adapter to a standard wall socket.

- 2) Connect your entertainment device(s) or other network-enabled device with Ethernet port (such as Blu-ray™ players, gaming consoles, DVRs, smart TVs, etc.) to TL-WA890EA with Ethernet cable(s).

 Note:

Please ensure your device(s) connected to TL-WA890EA is configured to “Obtain an IP address automatically”.

Chapter 3 Quick Installation Guide

This chapter will guide you to configure your PC to communicate with the Entertainment Adapter and to configure and manage the TL-WA890EA N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports easily with a Web-based utility.

With a Web-based utility, it is easy to configure and manage the TL-WA890EA N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports. The Web-based utility can be used on any Windows, Macintosh or UNIX OS with a Web browser, such as Microsoft Internet Explorer, Mozilla Firefox or Apple Safari.

1. To access the configuration utility, open a web-browser and type in the domain name <http://tplinkadapter.net> in the address field of the browser.

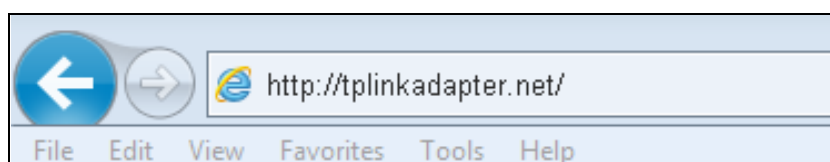


Figure 3-1 Login to the Entertainment Adapter

After a moment, a login window will appear as shown in Figure 3-2. Enter **admin** for the User Name and Password (both in lower case letters). Then click **OK** or press Enter.

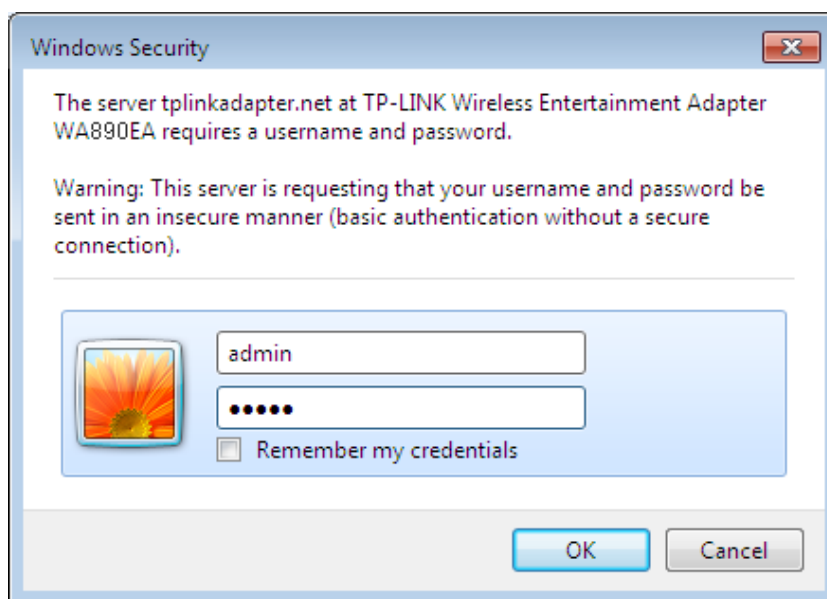


Figure 3-2 Login Windows

Note:

If the above screen does not prompt, it means that your web-browser has been set to a proxy. Go to **Tools menu>Internet Options>Connections>LAN Settings**, in the screen that appears, cancel the **Using Proxy** checkbox, and click **OK** to finish it.

2. After successful login, there will pop up the Quick Setup page. Click **Next** to get the quick setup started.

Start	Choose Region	Wireless Settings	Review Settings
Main Router/AP Wi-Fi Network Name: Connection Status: Disconnected You haven't connected to a wireless network yet. Click Next to run through the quick setup or Exit to manually configure the connection. We strongly recommend you run through the quick setup if you are logging the device for the first time. Exit Next			

Figure 3-3 Quick Setup Start

3. Figure 3-4 will appear for you to choose the region. Then click **Next** to continue.

Start	Choose Region	Wireless Settings	Review Settings
Region: Please Select Your Country/Region Please select your own region from the drop-down list to avoid illegal usage beyond the local law. Back Next			

Figure 3-4 Quick Setup – Choose Region and Mode

4. The device will detect the existing network. Please wait for a while.

Start	Choose Region	Wireless Settings	Review Settings
The device is detecting the wireless networks in your neighborhood. Please wait a few seconds. Detecting the existing wireless networks... 55%			

Figure 3-5 Quick Setup – Detect Existing Network

5. A list of available wireless network will appear. Check the box before the SSID of your desired network, and then click **Next**.

Start	Choose Region	Wireless Settings	Review Settings																																																
Available Wireless Networks: 7 Back Rescan Next <table border="1"> <thead> <tr> <th>Choose</th> <th>SSID</th> <th>Signal</th> <th>MAC</th> <th>Channel</th> <th>Security Type</th> </tr> </thead> <tbody> <tr> <td>☐</td> <td>TP-LINK_5B4E06</td> <td></td> <td>26-AA-4B-FC-1B-97</td> <td>5(2.4G)</td> <td>None</td> </tr> <tr> <td>☐</td> <td>TP-LINK</td> <td></td> <td>30-85-A9-E8-BF-70</td> <td>1(2.4G)</td> <td>WPA2-PSK</td> </tr> <tr> <td>☐</td> <td>TP-LINK_Network</td> <td></td> <td>32-85-A9-E8-BF-71</td> <td>44(5G)</td> <td>None</td> </tr> <tr> <td>☐</td> <td>TP-LINK_Guest2</td> <td></td> <td>32-85-A9-E8-BF-72</td> <td>1(2.4G)</td> <td>None</td> </tr> <tr> <td>☐</td> <td>TP-LINK_A5270C</td> <td></td> <td>32-85-A9-E8-BF-73</td> <td>1(2.4G)</td> <td>None</td> </tr> <tr> <td>☐</td> <td>TP-LINK_POCKET_3020_789C9A</td> <td></td> <td>64-70-02-78-9C-9A</td> <td>9(2.4G)</td> <td>WEP</td> </tr> <tr> <td>☐</td> <td>TP-LINK_7135CA</td> <td></td> <td>94-0C-6D-2F-3C-BE</td> <td>44(5G)</td> <td>WPA2-PSK</td> </tr> </tbody> </table> Back Rescan Next				Choose	SSID	Signal	MAC	Channel	Security Type	☐	TP-LINK_5B4E06		26-AA-4B-FC-1B-97	5(2.4G)	None	☐	TP-LINK		30-85-A9-E8-BF-70	1(2.4G)	WPA2-PSK	☐	TP-LINK_Network		32-85-A9-E8-BF-71	44(5G)	None	☐	TP-LINK_Guest2		32-85-A9-E8-BF-72	1(2.4G)	None	☐	TP-LINK_A5270C		32-85-A9-E8-BF-73	1(2.4G)	None	☐	TP-LINK_POCKET_3020_789C9A		64-70-02-78-9C-9A	9(2.4G)	WEP	☐	TP-LINK_7135CA		94-0C-6D-2F-3C-BE	44(5G)	WPA2-PSK
Choose	SSID	Signal	MAC	Channel	Security Type																																														
☐	TP-LINK_5B4E06		26-AA-4B-FC-1B-97	5(2.4G)	None																																														
☐	TP-LINK		30-85-A9-E8-BF-70	1(2.4G)	WPA2-PSK																																														
☐	TP-LINK_Network		32-85-A9-E8-BF-71	44(5G)	None																																														
☐	TP-LINK_Guest2		32-85-A9-E8-BF-72	1(2.4G)	None																																														
☐	TP-LINK_A5270C		32-85-A9-E8-BF-73	1(2.4G)	None																																														
☐	TP-LINK_POCKET_3020_789C9A		64-70-02-78-9C-9A	9(2.4G)	WEP																																														
☐	TP-LINK_7135CA		94-0C-6D-2F-3C-BE	44(5G)	WPA2-PSK																																														

Figure 3-6 Quick Setup – Available Wireless Networks

- Wireless Settings page will appear as shown in Figure 3-7. Please enter the Wireless Password of your selected target network and then click **Next** to continue.

Start	Choose Region	Wireless Settings	Review Settings
Main Router/AP Wi-Fi Network Name: TP-LINK_Network MAC Address of Main Router/AP: 94-0C-6D-2F-3C-BE Band: 5G Wireless Security Type: WPA2-PSK Encryption: AES Wireless Password:			
Back Next			

Figure 3-7 Quick Setup – Wireless Settings

- Double-check your wireless setting on the page as shown in Figure 3-8. If verified, click **Finish** to complete the Quick Setup. If there is anything wrong, click **Back** to return the previous pages and reconfigure it.

Start	Choose Region	Wireless Settings	Review Settings
The Quick Setup configuration is finished. Please double check the settings below. If anything is wrong, please click Back to re-configure it.			
Wireless Setting Main Router/AP Wi-Fi Network Name: TP-LINK_Network MAC Address of Main Router/AP: 94-0C-6D-2F-3C-BE Band: 5G Key Type: WPA2-PSK Password: 751953852			
Default Access: http://tplinkadapter.net/ Login Account: admin / admin LAN IP Address: 192.168.0.254			
Back Finish			

Figure 3-8 Quick Setup – Review Settings

Chapter 4 Configure the Device

This Chapter describes how to configure your Entertainment Adapter via the web-based management page. The TL-WA890EA N600 Universal Dual Band WiFi Entertainment Adapter with 4 Ports is easy to configure and manage with the Web-based (Internet Explorer, Firefox, Safari, Opera, Chrome, Netscape® or Navigator) management page, which can be launched on any windows, Macintosh or UNIX OS with a web browser.

After a successful login, you can configure and manage the device. There are five main menus on the leftmost column of the web-based management page: **Status**, **Quick Setup**, **WPS**, **Advanced** and **System Tools**. Submenus will be available after clicking one of the main menus. On the right of the web-based management page are the detailed explanations and instructions for the corresponding page.

4.1 Status

Selecting **Status** will enable you to view the Entertainment Adapter's current status and configuration, all of which are read-only.

Status	
Firmware Version:	3.15.1 Build 130301 Rel.52683n
Hardware Version:	WA890EA v1 00000000
Wireless	
Connection Status:	Connected
Main Router/AP Wi-Fi Network Name:	TP-LINK_Network
MAC Address of Main Router/AP:	94-0C-6D-2F-3C-BE
Channel:	4
Signal:	66
Band:	2.4GHz
MAC Address:	76-8F-2D-94-52-3E
Wired	
MAC Address:	76-8F-2D-94-52-3E
IP Address:	192.168.0.254
Subnet Mask:	255.255.255.0
System Up Time:	0 days 00:20:33
Refresh	

Figure 4-1 Status

- **Firmware Version** - This field displays the current firmware version of the Entertainment Adapter.
- **Hardware Version** - This field displays the current hardware version of the Entertainment Adapter.
- **Wireless** - These are the current settings or information for Wireless. You can configure them in the **Advanced -> Wireless Settings** page.
 - **Connection Status** - It shows whether your device has been connected to a wireless network currently.

- **Main Router/AP Wi-Fi Network Name** - It shows the name of the wireless network your device has connected to, also called SSID.
 - **MAC Address of Main Router/AP** - It shows the physical MAC address of the Main Router/AP your device has connected to, also called BSSID.
 - **Channel** - The wireless channel in current use.
 - **Signal** - It shows the strength of the root wireless network signal that the device has received.
 - **Band** - The wireless band that this device is working in.
 - **MAC Address** - The physical address of the device, as seen from the **Advanced -> LAN** page.
- **Wired** - As follows is the information of Wired LAN. You can configure them in the **Advanced -> LAN** page.
- **MAC Address** - The physical address of the device, as seen from the **Advanced -> LAN** page.
 - **IP Address** - The LAN IP address of the device.
 - **Subnet Mask** - The subnet mask associated with LAN IP address.
- **System Up Time** - The duration since the device was powered on or reset.

Click the **Refresh** button to get the latest status and settings of the device.

4.2 Quick Setup

Please refer to [Chapter 3 Quick Installation Guide](#).

4.3 WPS

WPS (Wi-Fi Protected Setup) can help you to quickly and securely connect to a network. This section will guide you to add a new wireless device to an existing network quickly by WPS function. The WPS function can be configured on the page as shown in Figure 4-2.

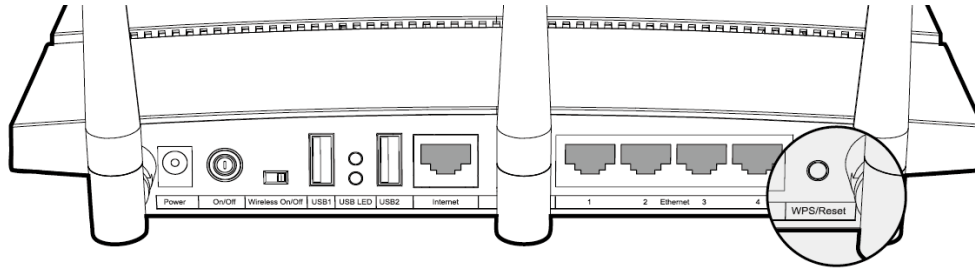
Figure 4-2 WPS

- **WPS Status** - To enable or disable the WPS function here.

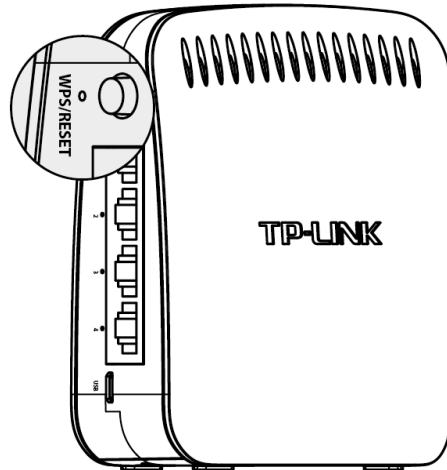
If the root device (a wireless router or an access point) supports WPS and is equipped with a WPS button, the following 3 methods are all available. While if the root device supports WPS but doesn't have a WPS button, only the 3rd one is available.

Method 1:

- 1) Push the WPS button on the root device.

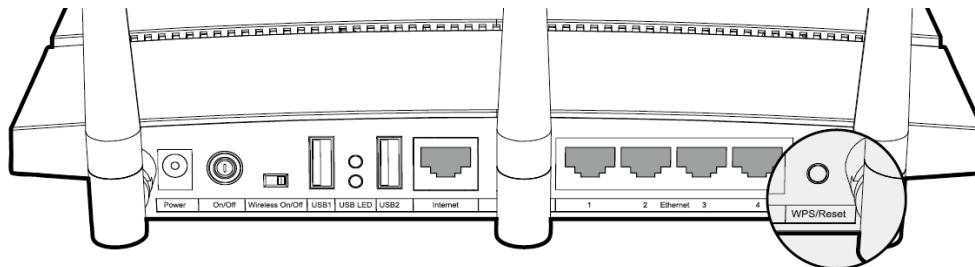


- 2) Within 2 minutes, push the WPS button on this device.



Method 2:

- 1) Push the WPS button on the root device.



- 2) Keep the WPS Status as **Enabled**, choose "Push the button on my access point or wireless router" on the WPS page, and then click **Connect**.

WPS (Wi-Fi Protected Setup)	
WPS Status:	Enabled Disable WPS
WPS Method:	☒ Push button on my access point or wireless router ☐ Enter the PIN of this device into my access point or wireless router
Connect	

Figure 4-3

Method 3:

- 1) Keep the WPS Status as **Enabled**, choose "Enter the PIN of this device to my access point or wireless router" on the WPS page, and get the Current PIN code of this device in Figure 4-4

(Each device has its unique PIN code, or you can generate a new one by clicking **Gen New PIN** button. Here we take the default PIN code 12345670 of this device for example).

WPS (Wi-Fi Protected Setup)

WPS Status: Enabled

Disable WPS

WPS Method:

☐ Push button on my access point or wireless router
 ☒ Enter the PIN of this device into my access point or wireless router

Current PIN:

12345670

Restore PIN

Gen New PIN

Connect

Figure 4-4

- 2) Enter the PIN to the main router/AP's WPS page, and then click **Connect** on it.

Add A New Device

☒ Enter the new device's PIN.

PIN:

☐ Press the button of the new device in two minutes.

Back

Connect

Figure 4-5

- 3) Click **Connect** on the device' WPS page (as shown in Figure 4-4).

4.4 Advanced

There are five submenus under the **Advanced** menu (shown as Figure 4-16): **LAN**, **Wireless Settings**, **Wireless Advanced**, **DHCP Settings** and **Profile**. Clicking any of them will enable you to configure the corresponding function. The detailed explanations for each submenu are provided below.

Advanced

- LAN

- Wireless Settings

- Wireless Advanced

- DHCP Settings

- Profile

Figure 4-6 The Advanced menu

4.4.1 LAN

Selecting **Advanced > LAN** will enable you to configure the IP parameters of Network on this page.

The screenshot shows the LAN configuration interface with a green header bar labeled 'LAN'. Below the header, the MAC Address is fixed at 76-8F-2D-94-52-3E. The 'Type' dropdown menu is set to 'Smart IP(DHCP)'. The 'IP Address' field contains '192.168.0.254' and the 'Subnet Mask' field contains '255.255.255.0'. A note below the fields states: 'Note: The IP parameters cannot be configured if you have chosen Smart IP(DHCP). (In this situation the device will automatically configure the IP parameters appropriate to your need)'. At the bottom, there is a 'Save' button.

Figure 4-7 LAN – Smart IP (DHCP)

The screenshot shows the LAN configuration interface with a green header bar labeled 'LAN'. Below the header, the MAC Address is fixed at 76-8F-2D-94-52-3E. The 'Type' dropdown menu is set to 'Static IP'. The 'IP Address' field contains '192.168.0.254' and the 'Subnet Mask' field contains '255.255.255.0'. A note below the fields states: 'Note: The IP parameters cannot be configured if you have chosen Smart IP(DHCP). (In this situation the device will automatically configure the IP parameters appropriate to your need)'. At the bottom, there is a 'Save' button.

Figure 4-8 LAN – Static IP

- **MAC Address** - The physical address of the LAN port, as seen from the LAN. The value cannot be changed.
- **Type** – Two IP types are supported: Static IP and Smart IP (DHCP), and they are explained below.
 - **Static IP** - In this type, you can configure IP Address/Gateway manually.
 - **Smart IP (DHCP)** - In this type, if your Entertainment Adapter have connected to a router, your client will dynamically get an IP Address/Gateway from the router, otherwise the client will get a IP Address/Gateway in the same network as you set below. And this type is recommended.
- **IP Address** - Enter the IP address of your Entertainment Adapter in dotted-decimal notation (factory default setting is 192.168.0.254).
- **Subnet Mask** - An address code that determines the size of the network. Normally use 255.255.255.0 as the subnet mask.

Note:

1. The IP parameters cannot be configured if you have chosen Smart IP (DHCP). In this situation the device will automatically configure the IP parameters appropriate to your need.
2. If you are not familiar with the setting items in this page, it's strongly recommended to keep the provided default values, otherwise may result in lower wireless network performance or even can't work.
3. If you choose Static IP, the domain name log in function won't work, and you have to use the IP you set to log in the Entertainment Adapter's web based utility.

4.4.2 Wireless Settings

Selecting **Advanced > Wireless Settings** will enable you to configure the basic settings for your wireless network on the screen below (Figure 4-9).

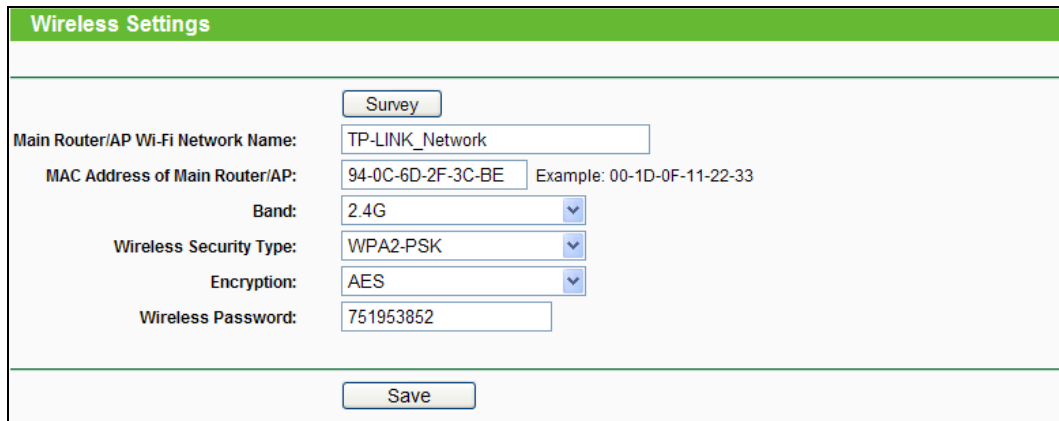


Figure 4-9 Wireless Settings

- **Main Router/AP Wi-Fi Network Name** - The name of the wireless network this device is going to connect to.
- **MAC Address of Main Router/AP** - The physical MAC address of the Main Router/AP this device is going to connect to.
- **Band** - The wireless band that the root access point or wireless router is working in.
- **Wireless Security Type** - The wireless security type of the existing wireless network.
- **Encryption** - The encryption of the existing wireless network. It is used when the wireless security type is WPA-PSK or WPA2-PSK.
- **WEP Index** - The WEP index is only used when the wireless security type is WEP (ASCII) or WEP (Hexadecimal).
- **WEP Auth Type** - The authorization type of WEP. It is only used when the wireless security type is WEP (ASCII) or WEP (Hexadecimal).
- **Wireless Password** - The wireless password of the existing wireless network. If the Wireless Security Type is WPA-PSK or WPA2-PSK, the length of this field should be between 8 and 63 characters which are case-sensitive. If the Wireless Security Type is WEP (ASCII), the length should be 5 or 13 characters. If the Wireless Security Type is WEP (Hexadecimal), the length should be 10 or 26 digits.

4.4.3 Wireless Advanced

Selecting **Advanced > Wireless Advanced** will allow you to do some advanced settings for the device in the following screen shown in Figure 4-10.

Wireless Advanced	
Transmit Power:	High v
RTS Threshold:	2346 (256-2346)
Fragmentation Threshold:	2346 (256-2346)
DTIM Interval:	1 (1-255)
	☒ Enable WMM
	☒ Enable Short GI
Save	

Figure 4-10 Wireless Advanced

- **Main Router/AP Wi-Fi Network Name** - The name of the wireless network this device is going to connect to.
- **MAC Address of Main Router/AP** - The physical MAC address of the Main Router/AP this device is going to connect to.
- **Band** - The wireless band that the root access point or wireless router is working in.
- **Wireless Security Type** - The wireless security type of the existing wireless network.
- **Encryption** - The encryption of the existing wireless network. It is used when the wireless security type is WPA-PSK or WPA2-PSK.
- **WEP Index** - The WEP index is only used when the wireless security type is WEP(ASCII) or WEP(Hexadecimal).
- **WEP Auth Type** - The authorization type of WEP. It is only used when the wireless security type is WEP (ASCII) or WEP (Hexadecimal).
- **Wireless Password** - The wireless password of the existing wireless network. If the Wireless Security Type is WPA-PSK or WPA2-PSK, the length of this field should be between 8 and 63 characters which are case-sensitive. If the Wireless Security Type is WEP (ASCII), the length should be 5 or 13 characters. If the Wireless Security Type is WEP (Hexadecimal), the length should be 10 or 26 digits.

4.4.4 DHCP Settings

This device is set up by default as a DHCP (Dynamic Host Configuration Protocol) server, which provides the TCP/IP configuration for all the clients connected to this device in the LAN. The DHCP Server can be configured on the page (shown as Figure 4-12), only when you've set the Network LAN type as Static IP in **Advanced ->LAN** page.

Note:

The DHCP Settings function cannot be configured if you have chosen Smart IP (DHCP) in **Advanced -> LAN**, in which situation the device will help you configure the DHCP automatically as you need. The DHCP Settings page will appear as Figure 4-11.

DHCP Settings	
DHCP Server:	☐ Disable ☒ Enable
Start IP Address:	192.168.0.100
End IP Address:	192.168.0.199
Address Lease Time:	120 minutes (1~2880 minutes, the default value is 120)
Default Gateway:	192.168.0.254 (Optional)
Default Domain:	(Optional)
Primary DNS:	0.0.0.0 (Optional)
Secondary DNS:	0.0.0.0 (Optional)
Note: The DHCP Settings function cannot be configured if you have chosen Smart IP(DHCP) in Advanced->LAN. (In this situation the device will configure the DHCP automatically appropriate to your need.)	
Save	

Figure 4-11 DHCP Settings – Disabled

DHCP Settings	
DHCP Server:	☐ Disable ☒ Enable
Start IP Address:	192.168.0.100
End IP Address:	192.168.0.199
Address Lease Time:	120 minutes (1~2880 minutes, the default value is 120)
Default Gateway:	192.168.0.254 (Optional)
Default Domain:	(Optional)
Primary DNS:	0.0.0.0 (Optional)
Secondary DNS:	0.0.0.0 (Optional)
Save	

Figure 4-12 DHCP Settings – Enabled

- **DHCP Server - Enable or Disable** the server. If you disable the Server, you must have another DHCP server within the LAN, or else you must configure the IP address of the clients manually.
- **Start IP Address** - This field specifies the first address in the IP Address pool. 192.168.0.100 is the default start IP address.
- **End IP Address** - This field specifies the last address in the IP Address pool. 192.168.0.199 is the default end IP address.
- **Address Lease Time** - The **Address Lease Time** is the length of time when a network user will be allowed to keep connected to this device with the current DHCP Address. Enter the amount of time (in minutes) the DHCP address will be "leased". The time range is 1~2880 minutes. The default value is 120 minutes.
- **Default Gateway** - (Optional) It's suggested to input the IP Address of the LAN port of this device. The default value is 192.168.0.254.
- **Default Domain** - (Optional) Input the domain name of your network.

- **Primary DNS** - (Optional) Input the DNS IP address provided by your ISP. Or consult your ISP.
- **Secondary DNS** - (Optional) You can input the IP Address of another DNS server if your ISP provides two DNS servers.

Click **Save** to save the changes.

 Note:

To use the DHCP server function of this device, you should configure all the clients in the LAN in "Obtain an IP Address automatically" mode. This function will take effect until this device reboots.

4.4.5 Profile

Profile function can help to remember the wireless networks you previously connected to. You can **Edit/Delete** or **Add** items in this page for your later convenient reconnection.

Profiles List						
Choose	Profile Name	SSID	MAC	Security Type	Band	Modify
Connect Add Delete All When you switch one profile to another, the wireless module will be rebooted automatically for reconnection. Please wait patiently.						

Figure 4-13 Profile

- **Choose** - You can choose the wireless network that you want to connect to.
- **Profile Name** - The alias that you have given to your wireless networks. By default it's the same as root SSID, but you can change it to any other name that you can easily remember and distinguish.
- **SSID** - The wireless network name of your root AP or wireless router.
- **MAC** - The physical address of your root AP or wireless router, also called BSSID .
- **Security Type** - The security type of your root wireless network.
- **Modify** - You can **Edit** or **Delete** the profile(s).

Click **Connect** to connect the Entertainment Adapter to the wireless network you have chosen from the profile list.

Click **Add** to add a new profile to the list.

Click **Delete All** to delete all the information in the profile list.

To add a profile:

1. Click **Add** in the Profile list page as shown in Figure 4-13.
2. Configure the required parameters (as shown in Figure 4-14), including name your profile, enter the SSID of your root device (a wireless router or AP) and its MAC address, select the band and the wireless security type of your root device and also enter the wireless password. Then click to **Save** your profile.

Figure 4-14 Add or Modify the Profile

- **Profile Name** - The alias that you have given to your wireless networks. By default it's the same as the Main Router/AP Wi-Fi Network Name(SSID), but you can change it to any other name so that you can easily remember and distinguish.
- **Main Router/AP Wi-Fi Network Name** - The wireless network name of your root device this profile will connect to, it is also called SSID.
- **MAC Address of Main Router/AP** - The MAC of your root device this profile will connect to.
- **Band** - The wireless band that the root access point or wireless router is working in.
- **Wireless Security Type** - The security type of your root wireless networks this profile refers to.
 - **Encryption** - The encryption of the existing wireless network. It is used when the wireless security type is WPA-PSK or WPA2-PSK.
 - **WEP Index** - The WEP index is only used when the wireless security type is WEP(ASCII) or WEP(Hexadecimal).
 - **WEP Auth Type** - The authorization type of WEP. It is only used when the wireless security type is WEP(ASCII) or WEP(Hexadecimal).
 - **Wireless Password** - The wireless password of the existing wireless network. If the Wireless Security Type is WPA-PSK or WPA2-PSK, the length of this field should be between 8 and 63 characters which are case-sensitive. If the Wireless Security Type is WEP(ASCII), the length should be 5 or 13 characters. If the Wireless Security Type is WEP(Hexadecimal), the length should be 10 or 26 digits.

Click **Save** to save this piece of profile in the list and go back to the **Profile List** page.

Click **Back** to go back to the **Profile List** page.

3. After you've set and saved the profile, it will return to the profile list page and display as in Figure 4-15.

Choose	Profile Name	SSID	MAC	Security Type	Band	Modify
☐	TP-LINK_Network	TP-LINK_Network	94-0C-6D-2F-3C-BE	WPA2-PSK	2.4G	Edit Delete

When you switch one profile to another, the wireless module will be rebooted automatically for reconnection. Please wait patiently.

Figure 4-15 Add or Modify the Profile

Click **Edit** to further edit the profile(s), or **Delete** to delete the profile(s).

Click **Connect** to connect the Entertainment Adapter to the wireless network that you have chosen in the profile list.

Click **Add** to add a new profile to the list.

Click **Delete All** to delete all the information in the profile list.

4.5 System Tools

System Tools option helps you to optimize the configuration of your device. You can upgrade the Entertainment Adapter to the latest version of firmware as well as backup or restore the Entertainment Adapter's configuration files. It's suggested that you change the default password to a more secure one because it controls access to the device's web-based management page. Besides, you can find out what happened to the system in System Log.

There are six submenus under the **System Tools** menu (shown as Figure 4-16): **Firmware Upgrade**, **Factory Defaults**, **Backup & Restore**, **Reboot**, **Password**, and **System Log**. Clicking any of them will enable you to configure the corresponding function. The detailed explanations for each submenu are provided below.

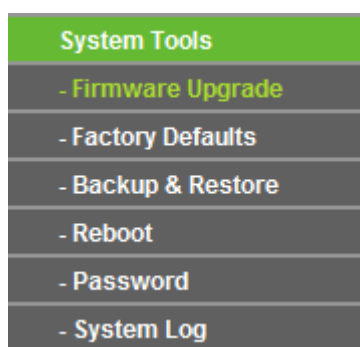


Figure 4-16 The System Tools menu

4.5.1 Firmware Upgrade

Selecting **System Tools** > **Firmware Upgrade** allows you to upgrade the latest version of firmware for the device on the screen shown in Figure 4-17.

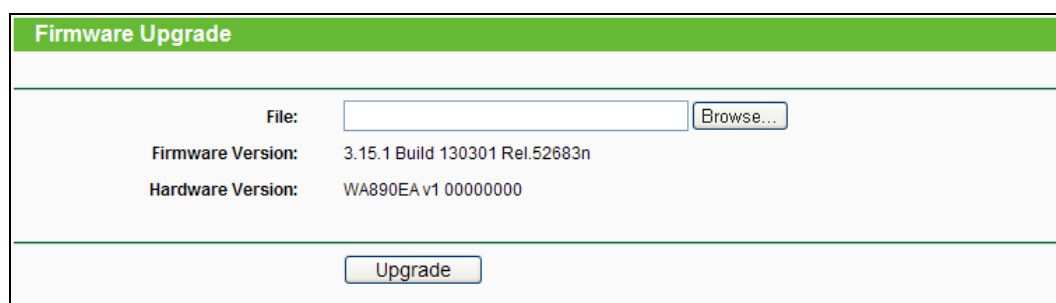


Figure 4-17 Firmware Upgrade

New firmware versions are posted at <http://www.tp-link.com> and can be downloaded for free.

- **Firmware Version** - Here displays the current firmware version.
- **Hardware Version** - Here displays the current hardware version. The hardware version of the upgrade file must accord with the current hardware version.

 Note:

1. There is no need to upgrade the firmware unless the new firmware has a new feature you want to use. However, when experiencing problems caused by the device itself, you can try to upgrade the firmware.
2. Before upgrading the device's firmware, you should write down some of your customized settings to avoid losing important configuration settings of device.

To upgrade the device's firmware, follow these instructions:

1. Download a more recent firmware upgrade file from the TP-LINK website (<http://www.tp-link.com>).
2. Enter the path name or click **Browse...** to select the downloaded file on the computer into the **File** blank.
3. Click **Upgrade**.

 Note:

Do not turn off the device or press the **Reset** button while the firmware is being upgraded. The device will reboot after the Upgrading has been finished.

4.5.2 Factory Defaults

Selecting **System Tools > Factory Default** allows you to restore the factory default settings for the device on the screen shown in Figure 4-18.

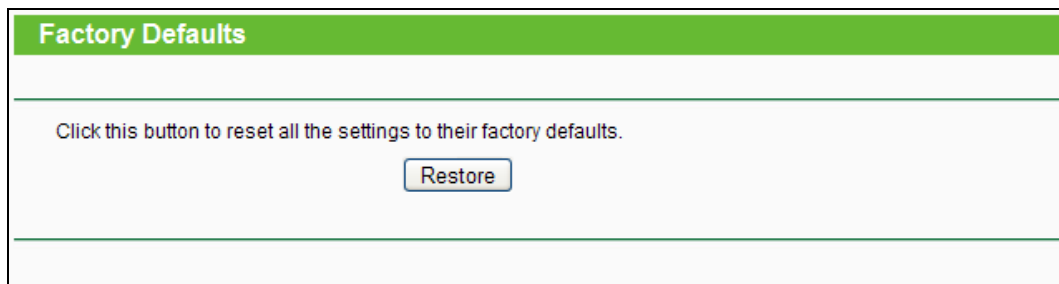


Figure 4-18 Restore Factory Defaults

Click **Restore** to reset all configuration settings to their default values.

- Default **User Name**: admin
- Default **Password**: admin
- Default **IP Address**: 192.168.0.254
- Default **Subnet Mask**: 255.255.255.0

 Note:

Any settings you have saved will be lost when the default settings are restored.

4.5.3 Backup & Restore

Selecting **System Tools > Backup & Restore** allows you to save all configuration settings to your local computer as a file or restore the device's configuration on the screen shown in Figure 4-19.

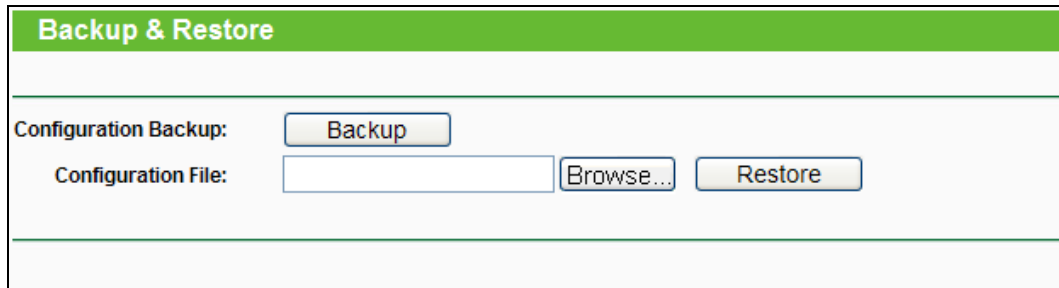


Figure 4-19 Save or Restore the Configuration

Click **Backup** to save all configuration settings to your local computer as a file.

To restore the device's configuration, follow these instructions:

- Click **Browse...** to find the configuration file which you want to restore.
- Click **Restore** to update the configuration with the file whose path is the one you have input or selected in the blank.

 Note:

The current configuration will be covered with the uploading configuration file. Wrong process will lead this device unmanaged. The restoring process lasts for 20 seconds and this device will restart automatically then. Keep the power of this device on during the process, in case of any damage.

4.5.4 Reboot

Selecting **System Tools > Reboot** allows you to reboot the device on the screen shown in Figure 4-20.

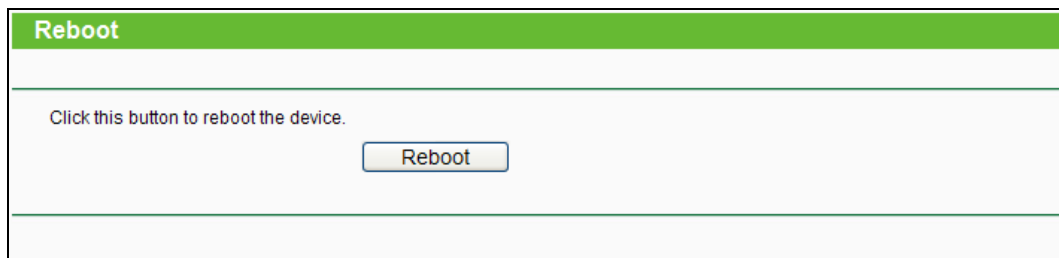


Figure 4-20 Reboot the device

Click the **Reboot** button to reboot the device.

Some settings of the device will take effect only after rebooting, which include:

- Change the LAN settings, such as LAN IP type, LAN IP, and so on (System will reboot automatically).
- Upgrade the firmware of this device (System will reboot automatically).
- Restore this device's settings to the factory defaults (System will reboot automatically).
- Update the configuration with the file (System will reboot automatically).

4.5.5 Password

Selecting **System Tools > Password** allows you to change the factory default user name and password of the device on the screen shown in Figure 4-21.

Figure 4-21 Password

It is strongly recommended that you change the factory default user name and password of the device. All users who try to access the device's web-based management page or Quick Setup will be prompted for the device's user name and password.

 Note:

The new user name and password must not exceed 14 characters in length and must not include any spaces. Enter the new Password twice to confirm it.

Click **Save** when finished.

Click **Clear All** to clear all.

4.5.6 System Log

Selecting **System Tools > System Log** allows you to query the Logs of the device on the screen shown in Figure 4-22.

Index	Time	Type	Level	Log Content
4	1st day 00:00:14	DHCP	NOTICE	DHCPs:Send ACK to 192.168.0.100
3	1st day 00:00:13	DHCP	NOTICE	DHCPs:Recv REQUEST from 50:E5:49:C7:64:4F
2	1st day 00:00:09	DHCP	NOTICE	DHCP server started
1	1st day 00:00:09	OTHER	INFO	System started

Figure 4-22 System Log

The device can keep logs of all traffic. You can query the logs to find what happened to the device.

- **Log Type** - By selecting the log type, only logs of this type will be shown.
- **Log Level** - By selecting the log level, only logs of this level will be shown.

Click the **Refresh** button to show the latest log list.

Click the **Save Log** button to save all the logs in a txt file.

Click the **Clear Log** button to delete all the logs from the system permanently, not just from the page.

Click the **Next** button to go to the next page, or click the **Previous** button return to the previous page.

Appendix A: Factory Defaults

Item	Default Value
Common Default Settings	
Username	admin
Password	admin
IP Address	192.168.0.254
Subnet Mask	255.255.255.0
Domain	http://tplinkadapter.net

Appendix B: Troubleshooting

T1. Can I power on TL-WA890EA by connecting it to a nearby device via the USB cable?

Sorry, you cannot. We strongly suggest to only use the power adapter attached in the package for power supply, as the entertainment adapter TL-WA890EA may not gain enough power supply from the other devices.

T2. What can I do if I cannot log in the web management page after I type `tplinkadapter.net` in my browser?

- 1) Please try inputting `http://tplinkadapter.net` in your browser .
- 2) Please make sure your hardware connection is OK. You can confirm this by the LAN LED on the side panel of TL-WA890EA. If the LED of the LAN port, which your Ethernet cable is connected to, is lighting blue, your hardware connection is OK; otherwise, please check your hardware connection carefully.
- 3) Make sure your wired device's IP address is set as "Obtain an IP address automatically".
- 4) If the problem still persists, please feel free to contact our technical support.

T3. What should I do if my TL-WA890EA cannot connect to the main router/AP or its performance is unsatisfactory after the successful connection?

- 1) If you use Method One to set up the connection, please make sure your main router/AP isn't using WEP as the wireless security, as the WPS 2.0 standard does not support WEP encryption.
- 2) Please try another location where the TL-WA890EA is nearer to the main router/AP.
- 3) If your main router/AP is a dual-band product, please try to select 5GHz as its frequency band.
- 4) Do not place it near any devices that might cause wireless interference, such as cordless phones, blue tooth devices, microwave ovens, etc.

Appendix C: Specifications

General	
Standards and Protocols	IEEE 802.3, 802.3u, 802.11n, 802.11b and 802.11g, TCP/IP, DHCP
Safety & Emission	CE
Ports	Four 10/100M Auto-Negotiation LAN RJ45 port
Wireless	
Frequency Band	2.4GHz, 5GHz
Radio Data Rate	11n: up to 300Mbps (2.4G), 300Mbps (5G) 11b: 11/5.5/2/1M 11a/11g: 54/48/36/24/18/12/9/6M
Frequency Expansion	DSSS (Direct Sequence Spread Spectrum)
Modulation	DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM
Security	WEP, WPA-PSK, WPA2-PSK
Sensitivity @PER	270M: -68dBm@10% PER; 108M: -68dBm@10% PER; 54M: -72dBm@10% PER; 11M: -85dBm@8% PER; 6M: -88dBm@10% PER; 1M: -90dBm@8% PER
Physical and Environment	
Working Temperature	0°C~40°C (32°F~104°F)
Working Humidity	10% ~ 90% RH, Non-condensing
Storage Temperature	-40°C~70°C(-40°F~158°F)
Storage Humidity	5% ~ 95% RH, Non-condensing

Appendix D: Glossary

- **802.11a** - Specification for wireless networking at 54 Mbps using OFDM modulation and operating in radio band at 5GHz.
- **802.11b** - The 802.11b standard specifies a wireless networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.4GHz, and WEP encryption for security. 802.11b networks are also referred to as Wi-Fi networks.
- **802.11g** - Specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology, using OFDM modulation and operating in the unlicensed radio spectrum at 2.4GHz, and backward compatibility with IEEE 802.11b devices, and WEP encryption for security.
- **802.11n** - 802.11n builds upon previous 802.11 standards by adding MIMO (multiple-input multiple-output). MIMO uses multiple transmitter and receiver antennas to allow for increased data throughput via spatial multiplexing and increased range by exploiting the spatial diversity, perhaps through coding schemes like Alamouti coding. The Enhanced Wireless Consortium (EWC) was formed to help accelerate the IEEE 802.11n development process and promote a technology specification for interoperability of next-generation wireless local area networking (WLAN) products.
- **DNS (Domain Name System)** - An Internet Service that translates the names of websites into IP addresses.
- **Domain Name** - A descriptive name for an address or group of addresses on the Internet.
- **DoS (Denial of Service)** - A hacker attack designed to prevent your computer or network from operating or communicating.
- **DSL (Digital Subscriber Line)** - A technology that allows data to be sent or received over existing traditional phone lines.
- **ISP (Internet Service Provider)** - A company that provides access to the Internet.
- **MTU (Maximum Transmission Unit)** - The size in bytes of the largest packet that can be transmitted.
- **SSID - A Service Set Identification** is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name.
- **WEP (Wired Equivalent Privacy)** - A data privacy mechanism based on a 64-bit or 128-bit or 152-bit shared key algorithm, as described in the IEEE 802.11 standard.
- **Wi-Fi** - A trademark of the Wi-Fi Alliance and the brand name for products using the IEEE 802.11 family of standards.
- **WLAN (Wireless Local Area Network)** - A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.
- **WPA (Wi-Fi Protected Access)** - WPA is a security technology for wireless networks that improves on the authentication and encryption features of WEP (Wired Equivalent Privacy). In

fact, WPA was developed by the networking industry in response to the shortcomings of WEP. One of the key technologies behind WPA is the Temporal Key Integrity Protocol (TKIP). TKIP addresses the encryption weaknesses of WEP. Another key component of WPA is built-in authentication that WEP does not offer. With this feature, WPA provides roughly comparable security to VPN tunneling with WEP, with the benefit of easier administration and use. This is similar to 802.1x support and requires a RADIUS server in order to implement. The Wi-Fi Alliance will call this, WPA-Enterprise. One variation of WPA is called WPA Pre Shared Key or WPA-Personal for short - this provides an authentication alternative to an expensive RADIUS server. WPA-Personal is a simplified but still powerful form of WPA most suitable for home Wi-Fi networking. To use WPA-Personal, a person sets a static key or "passphrase" as with WEP. But, using TKIP, WPA-Personal automatically changes the keys at a preset time interval, making it much more difficult for hackers to find and exploit them. The Wi-Fi Alliance will call this, WPA-Personal.