

User Guide

AC1750 Wireless Dual Band Gigabit Router Archer C7

REV4.2.1 1910012707

Contents

Abou	t This Guide	.1
Chap	ter 1. Get to Know About Your Router	.3
1. 1.	Product Overview	. 4
1. 2.	Appearance	. 4
	1. 2. 1.The Front Panel	. 4
	1. 2. 2. The Back Panel	. 5
Chap	ter 2. Connect the Hardware	.7
2. 1.	Position Your Router	. 8
2. 2.	Connect Your Router	. 8
Chap	ter 3. Log In to Your Router	11
Chap	ter 4. Set Up Internet Connection	13
4. 1.	Use Quick Setup Wizard	14
4. 2.	Manually Set up Your Internet Connection	
4. 3.	Set Up an IPv6 Internet Connection	
4. 4.	Configure the Router in Access Point Mode	21
Chap	ter 5. TP-Link Cloud Service	23
5. 1.	Register a TP-Link ID	24
5. 2.	Change Your TP-Link ID Information	
5. 3.	Manage the User TP-Link IDs	
	5. 3. 1.Add TP-Link ID to Manage the Router	
	5. 3. 2.Remove TP-Link ID(s) from Managing the Router	
5. 4.	Manage the Router via the TP-Link Tether App	27
Chap	ter 6. Guest Network	28
6. 1.	Create a Network for Guests	29
6. 2.	Customize Guest Network Options	30
Chap	ter 7. USB Settings	31
7.1.	Access the USB Storage Device	32
	7. 1. 1. Access the USB Device Locally	32

	7. 1. 2.Access the USB Device Remotely	. 33
	7. 1. 3.Customize the Access Settings	. 35
7.2.	Media Sharing	. 39
7.3.	Printer Sharing	. 39
7.4.	Offline Download	
Chap	ter 8. Parental Controls	45
Chap	ter 9. QoS	49
9.1.	Prioritize Internet Traffic with QoS	. 50
Chan	ter 10.Network Security	52
	Protect the Network from Cyber Attacks	
	Access Control	
	IP & MAC Binding	
10. 5.		. 55
Chap	ter 11.NAT Forwarding	57
11.1.	Share Local Resources on the Internet by Virtual Servers	. 58
11.2.	Open Ports Dynamically by Port Triggering	. 59
11.3.	Make Applications Free from Port Restriction by DMZ	. 60
11.4.	Make Xbox Online Games Run Smoothly by UPnP	. 61
Chap	ter 12.VPN Server	63
	Use OpenVPN to Access Your Home Network	
12. 1.	-	
	12. 1. 1.Step 1. Set up OpenVPN Server on Your Router	
	12. 1. 2. Step 2. Configure OpenVPN Connection on Your Remote Device	
12.2.	Use PPTP VPN to Access Your Home Network	
	12. 2. 1.Step 1. Set up PPTP VPN Server on Your Router	. 66
	12. 2. 2. Step 2. Configure PPTP VPN Connection on Your Remote Device	. 67
Chap	ter 13.Customize Your Network Settings	71
13. 1.	Change the LAN Settings	.72
13.2.	Configure to Support IPTV Service	.72
13.3.	Specify DHCP Server Settings	.74
13.4.	Set Up a Dynamic DNS Service Account	
13.5.	Create Static Routes	
13.6.	Specify Wireless Settings	.79
	Use WPS for Wireless Connection	
	13. 7. 1.Set the Router's PIN	. 80

	13. 7. 2.Use the WPS Wizard for Wi-Fi Connections			
Chap	ter 14.Manage the Router 82			
14.1.	Set Up System Time			
14.2.	Control LEDs			
14.3.	Test the Network Connectivity			
14.4.	Upgrade the Firmware			
	14. 4. 1.Online Upgrade			
	14. 4. 2.Manual Upgrade			
	14. 4. 3. Restore Interrupted Upgrade after Power Failure			
14. 5.	Backup and Restore Configuration Settings88			
14.6.	Change the Login Password90			
14.7.	Password Recovery			
14.8.	Local Management			
14.9.	Remote Management			
14. 10. System Log				
14.11.	Monitor the Internet Traffic Statistics95			
FAQ.				

About This Guide

This guide is a complement of Quick Installation Guide. The Quick Installation Guide instructs you on quick Internet setup, and this guide provides details of each function and shows you the way to configure these functions appropriate to your needs.

Note: Features available in this router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

Conventions

Convention	Description		
Underlined	Underlined words or phrases are hyperlinks. You can click to redirect to a website or a specific section.		
Teal Contents to be emphasized and texts on the web page are in teal, i menus, items, buttons, etc.			
>	The menu structures to show the path to load the corresponding page. For example, Advanced > Wireless > MAC Filtering means the MAC Filtering function page is under the Wireless menu that is located in the Advanced tab.		
Note:	Ignoring this type of note might result in a malfunction or damage to the device.		
<i>©</i> Tips:	Indicates important information that helps you make better use of your device.		
symbols on the web page	 Click to edit the corresponding entry. click to delete the corresponding entry. click to enable or disable the corresponding entry. click to view more information about items on the page. 		

In this guide the following conventions are used:

Speed/Coverage Disclaimer

*Maximum wireless signal rates are the physical rates derived from IEEE Standard 802.11 specifications. Actual wireless data throughput and wireless coverage are not guaranteed and will vary as a result of 1) environmental factors, including building materials, physical objects, and obstacles, 2) network conditions, including local interference, volume and density of traffic, product location, network complexity, and network overhead, and 3) client limitations, including rated performance, location, connection, quality, and client condition.

More Info

The latest software, management app and utility are available at Download Center at https://www.tp-link.com/support.

The Quick Installation Guide can be found where you find this guide or inside the package of the router.

Specifications can be found on the product page at <u>https://www.tp-link.com</u>.

TP-Link Community is provided for you to discuss our products and share knowledge at https://community.tp-link.com.

Our Technical Support contact information can be found at the Contact Technical Support page at <u>https://www.tp-link.com/support</u>.

Get to Know About Your Router

This chapter introduces what the router can do and shows its appearance. It contains the following sections:

- Product Overview
- Appearance

1.1. Product Overview

The TP-Link router is designed to fully meet the need of Small Office/Home Office (SOHO) networks and users demanding higher networking performance. The powerful antennas ensure continuous Wi-Fi signal to all your devices while boosting widespread coverage throughout your home, and the built-in Ethernet ports supply high-speed connection to your wired devices.

Moreover, it is simple and convenient to set up and use the TP-Link router due to its intuitive web interface and the powerful Tether app.

1.2. Appearance



The router's LEDs (view from left to right) are located on the front panel. You can check the router's working status by following the LED Explanation table.

LED Explanation

Name Status		Indication	
	On	The system has started up successfully.	
し (Power)	Flashing	The system is starting up or the firmware is being upgraded. Do not disconnect or power off your router.	
	Off	Power is off.	

Name	Status	Indication	
	On	The 2.4GHz wireless band is enabled.	
	Off	The 2.4GHz wireless band is disabled.	
	On	The 5GHz wireless band is enabled.	
奈 (5GHz Wireless)	Off	The 5GHz wireless band is disabled.	
	On	A powered-on device is connected to the router's corresponding Ethernet port.	
나 (Ethernet)	Off	No powered-on device is connected to the router's corresponding Ethernet port.	
	Green On	Internet service is available.	
Ø (Internet)	Orange On	The router's Internet port is connected, but the internet service is not available.	
	Off	The router's Internet port is unplugged.	
(WPS)	On/Off	This light remains on for 5 minutes when a WPS connection is established, then turns off.	
	Flashing	WPS connection is in progress. This may take up to 2 minutes.	

1. 2. 2. The Back Panel



The router's ports (view from left to right) are located on the rear panel.

ltem	Description		
Power Port	For connecting the router to a power socket via the provided power adapted		
On/Off Button	Press this button to power on or off the router.		
Reset Button	Press and hold this button for more than 5 seconds to reset the router to its factory default settings.		
USB1 / USB2	For connecting to a USB device or a USB printer.		
USB LED	On: The inserted USB device is ready to use. Flashing: A USB device is being identified. Off: No device is plugged into the USB port.		
Internet Port	For connecting to a DSL/Cable modem, or an Ethernet jack.		
Ethernet Ports (1/2/3/4)	For connecting your PC or other Ethernet network devices to the router.		
WPS/Wi-Fi	Press this button, and immediately press the WPS button on your device. The WPS LED of the router should change from flashing to solid on, indicating successful WPS connection.		
	Press and hold the Wi-Fi button for about 2 seconds to turn on or off the wireless function of your router.		
Antennas	Used for wireless operation and data transmit. Upright them for the best Wi-Fi performance.		

Connect the Hardware

This chapter contains the following sections:

- Position Your Router
- <u>Connect Your Router</u>

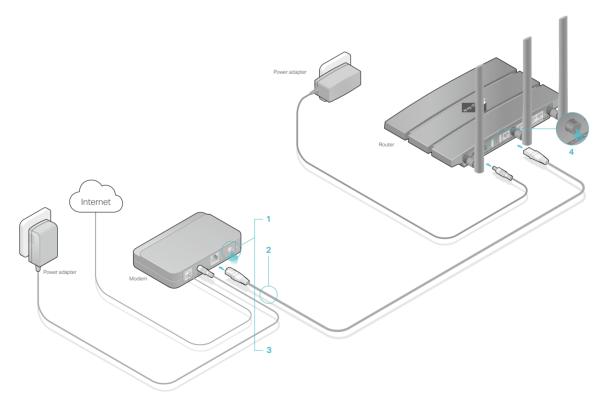
2.1. Position Your Router

- The product should not be located in a place where it will be exposed to moisture or excessive heat.
- Place the router in a location where it can be connected to multiple devices as well as to a power source.
- Make sure the cables and power cord are safely placed out of the way so they do not create a tripping hazard.
- The router can be placed on a shelf or desktop.
- Keep the router away from devices with strong electromagnetic reference, such as Bluetooth devices, cordless phones and microwaves.

2.2. Connect Your Router

Follow the steps below to connect your router.

If your internet connection is through an Ethernet cable directly from the wall instead of through a DSL / Cable / Satellite modem, connect the Ethernet cable to the router's Internet port, and then follow Step 4 and 5 to complete the hardware connection.



- 1. Turn off the modem, and remove the backup battery if it has one.
- 2. Connect the modem to your router's Internet port with an Ethernet cable.
- 3. Turn on the modem, and then wait about 2 minutes for it to restart.

- 4. Connect the power adapter to the router and turn on the router.
- 5. Verify that the following LEDs are on and solid to confirm the hardware is connected correctly.



Note:

If the 2.4G LED and 5G LED are off, press and hold the WPS/Wi-Fi button on the back for more than 2 seconds. Both the LEDs should turn solid on.

6. Connect your computer to the router.

• Method 1: Wired

Turn off the Wi-Fi on your computer and connect the devices as shown below.



• Method 2: Wirelessly

- 1) Find the SSID (Network Name) and Wireless Password printed on the label at the bottom of the router.
- 2) Click the network icon of your computer or go to Wi-Fi Settings of your smart device, and then select the SSID to join the network.

Computer

Connections are available Wireless Network Connection
TP-Link_XXXX
TP-Link_XXXX_5G
Connect
Connect < Settings Wi-Fi Wi-Fi CHOOSE A NETWORK... TP-Link_XXXX • • • • • 1 TP-Link_XXXX_5G • • • 1 Other...

Smart Device

• Method 3: Use the WPS button

Wireless devices that support WPS, including Android phones, tablets, and most USB network cards, can be connected to your router through this method.

Note:

• WPS is not supported by iOS devices.

- The WPS function cannot be configured if the wireless function of the router is disabled. Also, the WPS function will be disabled if your wireless encryption is WEP. Please make sure the wireless function is enabled and is configured with the appropriate encryption before configuring the WPS.
 - 1) Tab the WPS icon on the device's screen. Here we take an Android phone for instance.
 - 2) Within two minutes, press the Reset/WPS button on your router.



Log In to Your Router

With a web-based utility, it is easy to configure and manage the router. The web-based utility can be used on any Windows, Mac OS or UNIX OS with a Web browser, such as Microsoft Internet Explorer, Mozilla Firefox or Apple Safari.

Follow the steps below to log in to your router.

- 1. Set up the TCP/IP Protocol in Obtain an IP address automatically mode on your computer.
- 2. Visit <u>http://tplinkwifi.net</u>, and create a login password for secure management purposes. Then click Let's Get Started to log in.

$\leftrightarrow \rightarrow$ C fi http://tplinkwifi.net	
Please create an administ	rator password to manage your Wireless Router Password Low Middle High Confirm Password Ø Let's Get Started

Note:

- If the login window does not appear, please refer to the FAQ Section.
- If you have registered a TP-Link ID and bound your cloud router to it, the login password you created here will be invalid. Please log in to the cloud router using your TP-Link ID.

Set Up Internet Connection

This chapter introduces how to connect your router to the internet. The router is equipped with a web-based Quick Setup wizard. It has necessary ISP information built in, automates many of the steps and verifies that those steps have been successfully completed. Furthermore, you can also set up an IPv6 connection if your ISP provides IPv6 service.

It contains the following sections:

- Use Quick Setup Wizard
- <u>Manually Set up Your Internet Connection</u>
- <u>Set Up an IPv6 Internet Connection</u>
- <u>Configure the Router in Access Point Mode</u>

4.1. Use Quick Setup Wizard

The Quick Setup Wizard will guide you to set up your router.

Ø Tips:

If you need the IPv6 internet connection, please refer to the section of Set Up an IPv6 Internet Connection.

Follow the steps below to set up your router.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with the password you set for the router.
- 2. Click Quick Setup on the top of the page. Then follow the step-by-step instructions to connect your router to the internet.
- 3. To enjoy a more complete service from TP-Link (remote management, TP-Link DDNS, etc.), log in with your TP-Link ID or click Resigter Now to get one. Then follow the instructions to bind the cloud router to your TP-Link ID.

Wir	eless Set	tings	TP-Link Cloud Service
•		Summary	
-			ernet.
Log In			
	work setup succ ud functions, please log Email Password Log In No TP-Link ID ¹ Register No	work setup successful ud functions, please log in with y Email Password	work setup successfully. Enjoy the Internet ud functions, please log in with your TP-Link ID. (1) Email Password Password? Log In No TP-Link ID? Register Now

Note:

- To learn more about the TP-Link Cloud service, please refer to the <u>TP-Link Cloud Service</u> section.
- If you do not want to register a TP-Link ID now, you may click Log In Later to proceed.
- If you have changed the preset wireless network name (SSID) and wireless password during the Quick Setup process, all your wireless devices must use the new SSID and password to connect to the router.

4.2. Manually Set up Your Internet Connection

In this part, you can check your current internet connection settings. You can also modify the settings according to the service information provided by your ISP.

Follow the steps below to check or modify your internet connection settings.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Basic > Internet.
- 3. Select your internet connection type from the drop-down list.

Internet		
Auto Detect		
Internet Connection Type:	Dynamic IP	V

Note:

If you are unsure of what your connection type is, click Auto Detect. Since different connection types require different cables and connection information, you can also refer to the demonstrations in Step 4 to determine your connection type.

- 4. Follow the instructions on the page to continue the configuration. Parameters on the figures are just used for demonstration.
 - 1) If you choose Dynamic IP, you need to select whether to clone the MAC address. Dynamic IP users are usually equipped with a cable TV or fiber cable.

Internet				
Auto Detect				
Internet Connection Type:	Dynamic IP	▼		
Do NOT Clone MAC Address Clone Current Computer MAC A	Address			
Note: If you are not sure about which Internet Connection Type you have, use Auto Detect or contact your Internet Service Provider (ISP) for assistance.				
		Save		

2) If you choose Static IP, enter the information provided by your ISP in the corresponding fields.

Internet					
Auto Detect					
Internet Connection Type:	Static IP 💌				
IP Address:					
Subnet Mask:					
Default Gateway:					
Primary DNS:					
Secondary DNS:		(Optional)			
Note: If you are not sure about which Internet Connection Type you have, use Auto Detect or contact your Internet Service Provider (ISP) for assistance.					
		Save			

3) If you choose PPPoE, enter the username and password provided by your ISP. PPPoE users usually have DSL cable modems.

Internet		
Auto Detect		
Internet Connection Type:	PPPoE	▼
Username:		
Password:		
Note: If you are not sure about whi Internet Service Provider (ISP) for as		pe you have, use Auto Detect or contact your
		Save

4) If you choose L2TP, enter the username and password and choose the Secondary Connection provided by your ISP. Different parameters are needed according to the Secondary Connection you have chosen.

Internet					
Auto Detect					
Internet Connection Type:	L2TP	T			
Username:					
Password:					
Secondary Connection:	Oynamic IP	⊖ Static IP			
VPN Server IP/Domain Name:					
Note: If you are not sure about wh Internet Service Provider (ISP) for a		ection Type y	ou have, use Aut	o Detect or contac	t your
					Save

5) If you choose PPTP, enter the username and password, and choose the Secondary Connection provided by your ISP. Different parameters are needed according to the Secondary Connection you have chosen.

Internet				
Auto Detect				
Internet Connection Type:	РРТР	•		
Username:				
Password:				
Password:				
Secondary Connection:	Oynamic IP	⊖ Static IP)	
VPN Server IP/Domain Name:				
Note: If you are not sure about wh Internet Service Provider (ISP) for a		ection Type y	you have, use Auto Detect or contact you	r
			Save	

- 5. Click Save.
- 6. To check your internet connection, click Network Map on the left of the page. After the connection succeeds, the screen will display as follows. Here we take PPPoE as an example.

Note:

It may take 1-2 minutes to make the settings valid.

Int	ernet	Ш	중 중 2.4GHz 5GHz
Wired Clients	0	Wireless Clients	
Internet			
Internet Status:	Connected		
Connection Type:	PPPoE		
IP Address:	119.123.164.17		

Ø Tips:

- If your internet connection type is BigPond Cable, please go to Advanced > Network > Internet to set your router.
- If you use Dynamic IP and PPPoE and you are provided with any other parameters that are not required on the page, please go to Advanced > Network > Internet to complete the configuration.
- If you still cannot access the internet, refer to the <u>FAQ</u> section for further instructions.

4.3. Set Up an IPv6 Internet Connection

Your ISP provides information about one of the following IPv6 internet connection types: PPPoE, Dynamic IP(SLAAC/DHCPv6), Static IP, 6to4 tunnel, Pass-Through (Bridge).

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > IPv6.
- 3. Enable IPv6 and select the internet connection type provided by your ISP.
- Ø Tips:

If you do not know what your internet connection type is, contact your ISP or judge according to the already known information provided by your ISP.

4. Fill in information as required by different connection types. Red blanks must be filled

in.

1) Static IP: Fill in blanks and click Save.

Internet	
IPv6:	
Internet Connection Type:	Static IP 💌
IPv6 Address:	
Default Gateway:	
Primary DNS:	
Secondary DNS:	
MTU Size:	1500 bytes. (The default is 1500, do not change unless necessary.)
	Save

2) Dynamic IP(SLAAC/DHCPv6): Click Advanced to input further information if your ISP requires. Click Save and then click Renew.

Internet			
IPv6:			
Internet Connection Type:	Dynamic IP (SLAAC/DHCPv6)	•	
IPv6 Address:	::		
Primary DNS:			
Secondary DNS:	::		
Renew Release	1		
Advanced			
			Save

3) PPPoE: By default, the router uses the IPv4 account to connect to the IPv6 server. Click Advanced to input further information if your ISP requires. Click Save and then click Connect.

Note:

If your ISP provides two separate accounts for the IPv4 and IPv6 connections, please untick the Use the same session with IPv4 connection checkbox and manually enter the username and password for the IPv6 connection.

Internet		
IPv6:		
Internet Connection Type:	PPPoE	
	✓ PPPoE same session with IPv4 connection	
IPv6 Address:		
 Advanced 		
Connect Disconnect		
		Save

4) 6to4 Tunnel: An IPv4 internet connection type is a prerequisite for this connection type (Manually Set up Your Internet Connection). Click Advanced to input further information if your ISP requires. Click Save and then click Connect.

Internet		
IPv6:		
Internet Connection Type:	6to4 Tunnel	
IPv4 Address:	0.0.0.0	
IPv4 Subnet Mask:	0.0.0.0	
IPv4 Default Gateway:	0.0.0.0	
TUNNEL ADDRESS:		
O Advanced		
Connect Disconnect		
		Save

5) Pass-Through (Bridge): Click Save and skip to step 6.

Internet			
IPv6:			
Internet Connection Type:	Pass-Through (Bridge)	▼	
			Save

5. Configure LAN ports. Windows users are recommended to choose from the first two types. Fill in Address Prefix provided by your ISP, and click Save.

```
Ø Tips:
```

Find Help on the management interface to know more about items.

LAN		
Assigned Type:	○ DHCPv6	AC+RDNSS
Address Prefix:		/64
Address:	::/0	
		Save

6. Click Status to check whether you have successfully set up an IPv6 connection. The following figure is an example of a successful PPPoE configuration.

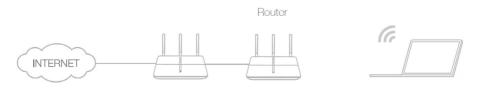
💮 Internet 📀	IPv4 IPv6
MAC Address:	00-0A-EB-AC-25-01
IP Address:	2001:c68:202:2111::120/ 64
Default Gateway:	fe80::edd0:80d2:7f5e:6be 7
Primary DNS:	2001:c68:202:2111::1
Secondary DNS:	2001:c68:202:2111::2
Connection Type:	PPPoE

Ø Tips:

Visit the FAQ section if there is no internet connection.

4.4. Configure the Router in Access Point Mode

In this mode, your router connects to a wired or wireless router via an Ethernet cable and extends the wireless coverage of your existing network. Advanced functions like NAT, Parental Controls and QoS are not supported in this mode.



1. Connect one of the router's LAN ports to the existing network using an Ethernet cable.

- 2. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 3. Go to Advanced > Operation Mode, select Access Point and click Save. Log in to the router via <u>http://tplinkwifi.net</u> after the router reboots.
- 4. Go to Quick Setup or Settings > Wireless > Wireless Settings and set the SSIDs and passwords for the wireless network.

Now, you can connect to the SSIDs and enjoy your existing network.

TP-Link Cloud Service

TP-Link Cloud service provides a better way to manage your cloud devices. Log in to your router with a TP-Link ID, and you can easily monitor and manage your home network when you are out and about via the Tether app. To ensure that your router stays new and gets better over time, the TP-Link Cloud will notify you when an important firmware upgrade is avaliable. Surely you can also manage multiple TP-Link Cloud devices with a single TP-Link ID.

This chapter introduces how to register a new TP-Link ID, bind or unbind TP-Link IDs to manage your router, and the Tether app with which you can manage your home network no matter where you may find yourself.

It contains the following sections:

- Register a TP-Link ID
- <u>Change Your TP-Link ID Information</u>
- Manage the User TP-Link IDs
- Manage the Router via the TP-Link Tether App

5.1. Register a TP-Link ID

If you have skipped the registration during the Quick Setup process, you can:

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with the password you set for the router.
- 2. Go to Basic > TP-Link Cloud.
- 3. Click Register Now and follow the instructions to register a TP-Link ID.

more TP-Link Cloud function	ons, please log in with your TP-Lir	ik ID. 🚺	
	🕹 Email		
	📌 Password	ø	Forgot password?
	Log In		

4. After activating your TP-Link ID, come back to the TP-Link Cloud page to log in. The first-time login TP-Link ID will be bound automatically to your cloud router as an Admin.

Note:

- To learn more about the Admin and User TP-Link ID, refer to Manage the User TP-Link IDs.
- Once the router is bound to your TP-Link ID, you need to log in to the router with the TP-Link ID.
- You can register another TP-Link ID via the Tether APP. Please refer to <u>Manage the Router via the TP-Link Tether App</u> to install the app and register a new one
- If you want to unbind the admin TP-Link ID from your router, please go to Basic > TP-Link Cloud, click Unbind in the Device Information section.

5.2. Change Your TP-Link ID Information

Follow the steps below to modify your TP-Link ID as needed.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID.
- 2. Go to Basic > TP-Link Cloud, and focus on the Account Information section.
- To change your email address
- 1. Click 🗹 behind the Email.
- 2. Enter the password of your TP-Link ID, then a new email address. And click Save.

Change Emai	
Password	
New Email	
Sa	ve
Note: New emai may not sync to immediately. Ple when your device	client devices ase log in again

• To change your password

- 1. Click 🗹 behind the Password.
- 2. Enter the current password, then a new password twice. And click Save.

Change Password Current Password New Password Low Middle High Confirm Password Save
New Password Low Middle High Confirm Password
Low Middle High
Confirm Password
Save
Note: New email or password may not sync to client devices immediately. Please log in again when your device is connected to the Internet to update account information.

5.3. Manage the User TP-Link IDs

The first-time login TP-Link ID will be bound automatically to your router as an Admin account. An admin account can add or remove other TP-Link IDs to the same router as Users. The admin account and User accounts both can monitor and manage the router locally or remotely, but user accounts cannot:

• Reset the router to its factory default settings either on the web management page or in the Tether app.

• Add/remove other TP-Link IDs to/from the router.

5. 3. 1. Add TP-Link ID to Manage the Router

1. Visit http://tplinkwifi.net, and log in with your TP-Link ID.

2. Go to Basic > TP-Link Cloud, and focus on the Bound Accounts section.

3. Click 🕂 Bind , enter another TP-Link ID as needed and click Save.

Note:

If you need another TP-Link ID, please refer to <u>Manage the Router via the TP-Link Tether App</u> to install the app and register a new one.

Add Account	8
🗹 Email	
Cancel	Save

4. The new TP-Link ID will be displayed in the Bound Accounts table as a User.

Bound Accounts				
				🕂 Bind 😑 Unbind
	ID	Email	Binding Date	Role
	1	Parger, redime on	16/11/2016	Admin
	2	Pargovily (1981).com	16/11/2016	User

5. 3. 2. Remove TP-Link ID(s) from Managing the Router

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID.
- 2. Go to Basic > TP-Link Cloud, and focus on the Bound Accounts section.
- 3. Tick the checkbox(es) of the TP-Link ID(s) you want to remove and click Unbind.

Bound Accounts				
				🕂 Bind 🛛 🖨 Unbind
	ID	Email	Binding Date	Role
	1	Parger, realized on	16/11/2016	Admin
•	2	shangsunfighting@143.com	16/11/2016	User

5.4. Manage the Router via the TP-Link Tether App

The Tether app runs on iOS and Android devices like smartphones and tablets.

1. Open the Apple App Store or Google Play and search the key word "TP-Link Tether" or simply scan the QR code to download and install the app.



- 2. Connect your device to the router's wireless network.
- 3. Launch the Tether app, select the model of your router and log in with your TP-Link ID or the password you set for the router.
- 4. Manage your router as needed.

Guest Network

This function allows you to provide Wi-Fi access for guests without disclosing your main network. When you have guests in your house, apartment, or workplace, you can create a guest network for them. In addition, you can customize guest network options to ensure network security and privacy.

It contains the following sections:

- <u>Create a Network for Guests</u>
- <u>Customize Guest Network Options</u>

6.1. Create a Network for Guests

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Guest Network. Locate the Wireless section.
- 3. Create a guest network as needed.
 - 1) Select 2.4GHz or 5GHz network and tick the Enable Guest Network checkbox.
 - 2) Customize the SSID. Don't select Hide SSID unless you want your guests to manually input the SSID for guest network access.
 - 3) Set Security to WPA/WPA2 Personal, keep the default Version and Encryption values, and customize your own password.

Wireless		2.4GHz 5GHz
2.4GHz Wireless:	✓ Enable Guest Network	
Network Name (SSID):	TP-Link_Guest_112B	
Security:	O No Security	
Version:	● Auto ○ WPA-PSK ○ WPA2-PSK	
Encryption:	Auto O TKIP O AES	
Password:	123456789	
		Save

4. Click Save. Now your guests can access your guest network using the SSID and password you set!

Ø Tips:

To view guest network information, go to Advanced > Status and locate the Guest Network section.

6.2. Customize Guest Network Options

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Guest Network. Locate the Settings section.
- 3. Customize guest network options according to your needs.

Settings	
□ Allow guests to see each other	
□ Allow guests to access my local network	
	Save

• Allow guests to see each other

Tick this checkbox if you want to allow the wireless clients on your guest network to communicate with each other via methods such as network neighbors and Ping.

Allow guests to access my local network

Tick this checkbox if you want to allow the wireless clients on your guest network to communicate with the devices connected to your router's LAN ports or main network via methods such as network neighbors and Ping.

4. Click Save. Now you can ensure network security and privacy!

Ø Tips:

To view guest network information, go to Advanced > Status and locate the Guest Network section.

USB Settings

This chapter describes how to use the USB ports to share files, media and a printer from the USB storage devices over your home network locally, or remotely through the internet.

The router supports USB external flash drives, hard drives and USB printers.

It contains the following sections:

- <u>Access the USB Storage Device</u>
- Media Sharing
- Printer Sharing
- Offline Download

7.1. Access the USB Storage Device

Insert your USB storage device into the router's USB port and then access files stored there locally or remotely.

```
Ø Tips:
```

- If you use USB hubs, make sure no more than 4 devices are connected to the router.
- If the USB storage device requires using bundled external power, make sure the external power has been connected.
- If you use a USB hard drive, make sure its file system is FAT32 or NTFS.
- Before you physically disconnect a USB device from the router, safely remove it to avoid data damage: Go to Advanced
 > USB Settings > Device Settings and click ^Q Safely Remove.

7. 1. 1. Access the USB Device Locally

Insert your USB storage device into the router's USB port and then refer to the following table to access files stored on your USB storage device.

	Method	1:		
	Go to Computer > Network, then click the Network Server Name (TP-SHARE by default) in the Computer section.			
	Note: Operations in different systems are similar. Here we take Windows 7 as an example.			
		🕞 🔾 🗢 📭 🕨 Network	•	
		File Edit View Tools Help		
Windows		Organize Network and Sharing Center Add a printer		
computer		🔆 Favorites	Computer (3)	
		🥽 Libraries	TP-SHARE	
		🍓 Homegroup	 Media Devices (1) 	
		👰 Computer		
		👊 Network	Network Infrastructure (1) ——	
			and a first second	

Windows computer	 Method 2: Open the Windows Explorer (or go to Computer) and type the server address \\tplinkwifi.net or ftp://tplinkwifi.net in the address bar, then press Enter.
Мас	 Select Go > Connect to Server. Type the server address smb://tplinkwifi.net. Click Connect. Click Connect. Server Address: smb://tplinkwifi.net Fevorite Servers: Remove Browse Connect When prompted, select the Guest radio box. (If you have set up a username and a password to deny anonymous access to the USB disks, you should select the Registered User radio box. To learn how to set up an account for the access, refer to To Set up Authentication for Data Security.)
Tablet	Use a third-party app for network files management.

Ø Tips:

You can also access your USB disk by using your Network/Media Server Name as the server address. Refer to <u>To</u> <u>Customize the Address of the USB Disk</u> to learn more.

7. 1. 2. Access the USB Device Remotely

You can access your USB disk outside the local area network. For example, you can:

- Share photos and other large files with your friends without logging in to (and paying for) a photo-sharing site or email system.
- Get a safe backup for the materials for a presentation.
- Remove the files on your camera's memory card from time to time during the journey.

Note:

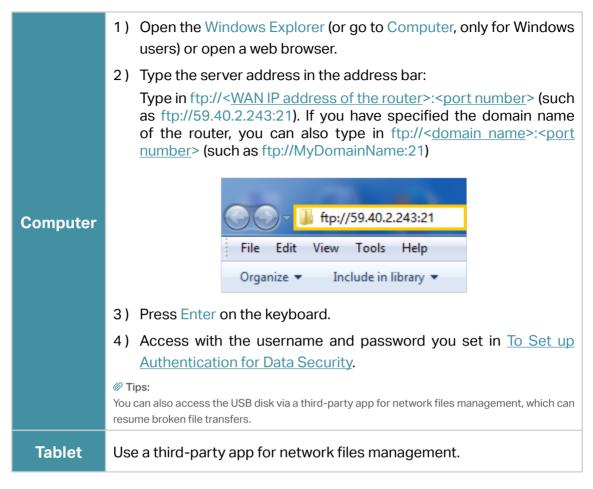
If your ISP assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), you cannot use this feature because private addresses are not routed on the Internet.

Follow the steps below to configure remote access settings.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > USB Settings > Sharing Access page.
- 3. Tick the FTP(via Internet) checkbox, and then click Save.

twork/Media S	Server Name:	TP-Share	
Enable	Access Method	Link	Port
 ✓ 	Network Neighborhood	\\TP-Share	
 ✓ 	FTP	ftp://192.168.0.99:21	21
 ✓ 	FTP (Via Internet)	ftp://0.0.0.0:21 Edit	21

4. Refer to the following table to access your USB disk remotely.



Ø Tips:

Click Set Up a Dynamic DNS Service Account to learn how to set up a domain name for you router.

7. 1. 3. Customize the Access Settings

By default, all the network clients can access all folders on your USB disk. You can customize your sharing settings by setting a sharing account, sharing specific contents and setting a new sharing address on the router's web management page.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > USB Settings > Sharing Access page.
- To Customize the Address of the USB Disk

You can customize the server name and use the name to access your USB disk.

1. On the Sharing Settings part, make sure Network Neighborhood is ticked, and enter a Network/Media Server Name as you like, such as MyShare, then click Save.

etwork/Media Server Name: MyShare						
Enable	Access Method	Link	Port			
<	Network Neighborhood	\\MyShare				
✓	FTP	ftp://192.168.0.99:21	21			
	FTP (Via Internet)	ftp://0.0.0.0:21 Edit	21			

- 2. Now you can access the USB disk by visiting \\MyShare (for Windows) or smb:// MyShare (for Mac).
- To Only Share Specific Content
- 1. Focus on the Folder Sharing section. Click the button to disable Share All, then click Add to add a new sharing folder.

Fold	er Sh	aring					
Share	e All:			n to share all files : e specified folders.	and folders or kee		
						🕂 Add	Delete
	ID	Folder Name	Folder Path	Media Sharing	Volume Name	Status	Modify
	Valu	me Name:	G:				
	voiu	me Name:	6:		•	_	
	Fold	er Path:	G:/Te	st	Browse		
	Fold	er Name:	Test				
				/ Guest Network A	ccess		
			🕑 Enat	le Authentication			
			🕑 Enat	le Write Access			
			🗌 Enat	le Media Sharing			
					Cancel	ОК	

- 2. Select the Volume Name and Folder Path, then enter a Folder Name as you like.
- 3. Decide the way you share the folder:

- Enable Authentication: Tick to enable authentication for this folder sharing, and you will be required to log in to the Sharing Account to access the USB disk. Refer to <u>To Set up Authentication for Data Security</u> to learn more.
- Enable Write Access: If you tick this checkbox, network clients can modify this folder.
- Enable Media Sharing: Tick to enable media sharing for this folder, and you can view photos, play music and watch movies stored on the USB disk directly from DLNA-supported devices. Click <u>Media Sharing</u> to learn more.

4. Click OK.

Ø Tips:

The router can share 32 volumes at most. You can click \Im on the page to detach the corresponding volume you do not need to share.

USB Storage Device					
Scan					
(ingston DataTrav	valar C2				
Ungston Data Hav	relef G2			Safely Remove	
ID	Volume Name	Capacity	Free Space	Safely Remove Active	

• To Set up Authentication for Data Security

You can set up authentication for your USB device so that network clients will be required to enter username and password when accessing the USB disk.

1. On the Sharing Accout part, Choose Use Default Account or Use New Account. The username and password are both admin for default account. If your choose Use New Account, you have to customize the username and a password.

Sharing Accour	nt	
Content sharing req	uires a sharing account. You can u	se the default account or create a new one
Account:	Ose Default Account	○ Use New Account
Username:	admin	
Password:	****	ø
		Save

Note:

For Windows users, do not set the sharing username the same as the Windows username. Otherwise, Windows credential mechanism may cause the following problems:

- If the sharing password is also the same as the Windows password, authentication will not work since the Windows will automatically use its account information for USB access.
- If the sharing password is different from the Windows password, the Windows will be unable to remember your credentials and you will always be required to enter the sharing password for USB access.
- 2. Enable Authentication to apply the account you just set.
 - If you leave Share All enabled, click the button to enable Authentication for all folders.

Folder Sharing		
Share All:		
Enable Authentication:		

• If Share All is disabled, enable Authentication for specific folders.

Fold	er Sh	aring						
Share	All:				to share all files specified folders.	and folders or kee	ep it Off to or 🕂 Add	nly
	ID	Folder Name	Folder	Path	Media Sharing	Volume Name	Status	Modify
	Volu	me Name:				•		
		er Path:				Browse		
	Fold	er Name:						
			 ✓ 	Allow	Guest Network A	ccess		
				Enabl	e Authentication			
			~	Enabl	e Write Access	_		
			~	Enabl	e Media Sharing			
								_
						Cancel	ОК	

Note:

Due to Windows credential mechanism, you might be unable to access the USB disk after changing Authentication settings. Please log out from the Windows and try to access again. Or you can change the address of the USB disk by referring to <u>To Customize the Address of the USB Disk</u>.

7.2. Media Sharing

The feature of Media Sharing allows you to view photos, play music and watch movies stored on the USB disk directly from DLNA-supported devices, such as your computer, tablet and PS2/3/4.

- 1. When your USB disk is inseted into the router, your DLNA-supported devices (such as your computer and pad) connected to the router can detect and play the media files on the USB disks.
- 2. Refer to the following table for detailed instructions.
 Go to Computer > Network, then click the Media Server Name (Model number-share by default) in the Media Devices section.

	number-share by default) in the Media Devices section.					
	Note: Here we take Wind	lows 7 as an example.				
		🕞 🕞 🗢 📭 🕨 Network				
			; Help			
Windows		Organize 🔻 Network	and Sharing Center Add a printer			
Computer		쑦 Favorites	Computer (3)			
		🥞 Libraries	ARCHER, D20			
		🍓 Homegroup	Media Devices (1)			
		🖳 Computer				
		年 Network	 Network Infrastructure (1) 			
			Andrew 2020			
Tablet	• Use a third-p	arty DLNA-supporte	ed player.			

7.3. Printer Sharing

The feature of Printer Sharing helps you share a printer with different computers connected to the router.

Note:

Printers unlisted on this page may be incompatible with the router: <u>http://www.tp-link.com/compatible/print-server/</u>.

1. Install the Driver of the Printer

Make sure you have installed the driver of the printer on each computer that needs printer service.

If you do not have the driver, contact the printer manufacturer.

2. Connect the Printer

Cable a printer to the USB port with the USB cable. Wait several seconds until the USB LED becomes solid on.

3. Install the TP-Link USB Printer Controller Utility

TP-Link USB Printer Controller Utility helps you access the shared printer. Download and Install the utility on each computer that needs printer service.

- 1) Visit <u>http://www.tp-link.com/app/usb/</u>.
- 2) Click PC Utility (for Windows users) or Mac Utility to download the installation file and uncompress it.

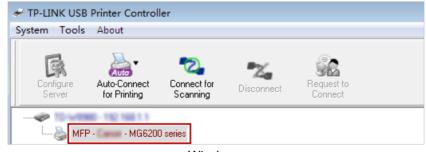


3) Open the uncompressed folder, then click TP-Link USB Printer Controller Setup (for Windows users) or TP-Link UDS Printer Controller Installer (for Mac users) to install the utility.

4. Access the Printer

You should set the shared printer as Auto-Connect Printer on every computer that needs printer service.

- 1) Double-click the icon on your desktop to launch the USB Printer Controller.
- 2) Highlight the printer you share.



Windows



3) Click the Auto-Connect for printing tab to pull down a list, then select Set Auto-Connect Printer.

tem Tools	Abbut				
R	Auto	2	Z		
Configure Server	Auto-Connect	Connect for	Disconnect for	Request to Connect	
	Set Auto-Con	nect Printer		00111000	

Windows

	TP-Link USB Printer Controller	
MFP - C	+ Set Auto-Connect Printer	
	- Delete Auto-Connect Printer	
		Close

Mac

4) Select the printer you share, then click Apply.

Add to Auto-Connect Printer List	
< Installed Printer List >	
Printer Name	
Eax MG6200 series Printer recommended	
	Cancel

Windows

0 0 0	TP-Link USB Printer Controller
🐔 🎭 🖏 🗙	÷
▼ Ø 10-W8980-182.16.	18.0.1
🚵 MFP - 🔤 - M	Add to Auto-Connect Printer List
	Installed Printer List
	10.10.180
	MG6200 series
	Stylus Photo 720-f97c12
	Deskjet 1000 J110 series
	Deskjet 1000 J110 series-1
	Apply Cancel

Mac

5) You will see the printer marked as Auto-Connect Printer. Now you can print with this printer.

😸 TP-LINK USB	Printer Control	ler			
System Tools	About				
Configure Server	Auto-Connect for Printing	Connect for Scanning	Disconnect	Request to Connect	
🍋 MFI	P - Caral - MG620) series <mark>(Auto-C</mark>	onnected Printer]		
		W	indows		
00			TP-Link USB	Printer Controlle	er
Auto	2 %	2			
🔻 🗢 👗 MFP -	- MG62	00 series [Aut	o-Connected	Printer]	
			Мас		

Ø Tips:

The Print Server also allows different clients to share the scan feature of MFPs (Multi-Function Printers). To scan with TP-Link USB Printer Controller, right-click the printer and select Network Scanner. Then, a scanning window

will pop up. Finish the scanning process by following on-screen instructions.

7.4. Offline Download

With Offline Download enabled, the router can download files without keeping your computer powered on all the time.

Follow the steps below to add offline download tasks:

1. Insert your USB storage device into the router's USB port.

- Ø Tips:
- If you use USB hubs, make sure no more than 4 devices are connected to the router.
- If the USB storage device requires using bundled external power, make sure the external power has been connected.
- If you use a USB hard drive, make sure its file system is FAT32 or NTFS.
- Before you physically disconnect a USB device from the router, safely remove it to avoid data damage: Go to Advanced
 > USB Settings > Device Settings and click ^Q Safely Remove.
- 2. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- **3.** Go to Advanced > USB Settings > Offline Download and toggle Status on to enable the Offline Download feature.

Offline Download	
Status:	
Folder Path:	G: Martine V
	G:/Offline Download Browse
Schedule:	
Keep Uploading After Task Completes:	
Maximum Number of Active Downloads:	5 (1-10)
Advanced	
	Save

4. Select a folder path to store or cache your downloads.

Note:

Don't change the folder path or unplug the USB storage device when uploading or downloading files; otherwise some fatal errors may occur.

- 5. Customize the settings as needed and click Save.
 - Schedule: Tick this checkbox and click S to specify the time period(s) to download or upload files.
 - Keep Uploading After Task Completes: Tick this checkbox to keep uploading data of the completed download(s) to others.

- Maximum Number of Active Downloads: Enter a value between 1 and 10 to set the maximum number of active downloads.
- 6. Click Add, then select the source of your download. If it is a torrent file, select its location; if it is a URL, enter it. Click OK.

Down	loads					
				4	, OB/s	† 0B/s
		🕂 Add	😑 Delete 🕕 Pause	🕞 Resume 😑 C	lear all complet	ted tasks
	File	Speed	Completed	Remaining Time	Connected Peers	Status
	Source:	Torrent file	from USB 💌			
	Volume Name:	G:	(IN) V			
	File:	G:/movie.t	orrent B	rowse		
				Cancel	Save	

Note:

If the source is a URL for aMule, click Advanced in the Offline Download section and specify the aMule server IP address and port number, and then click Save.

aMule Settings				
aMule Server:	91.200.42.46	: 1176	8	
				Save

Chapter 8

Parental Controls

This function allows you to block inappropriate, explicit and malicious websites, and control access to specified websites at specified time.

I want to: Control the times of day my children or other home network users are allowed to access the Internet and even types of websites they can visit.

For example, I want to allow my children's devices (e.g. a computer or a tablet) to access only <u>www.tp-link.com</u> and <u>Wikipedia.org</u> from 18:00 (6PM) to 22:00 (10PM) at the weekend and not other times.

How can I1. Visit http://tplinkwifi.net, and log in with your TP-Link ID ordo that?the password you set for the router.

2. Go to Advanced > Parental Controls and enable Parental Controls.

Parental Controls	
Status:	

3. Click Add. And then Click View Existing Devices, and select the access device. Or, input the Device Name and MAC Address manually.

[Devi	ices l	Inder Parenta	al Controls				
							🕂 Add	😑 Delete
		ID	Device Name	MAC Address	Internet Access Time	Description	Status	Modify
				an an				
		MAC Inte	ce Name: Address: rnet Access Time rription:	Enable This	s Entry	View Existing Dev (Optional)		
						Cancel	ОК	
		1	PC1	C0-4A-00-1A-C3-46	٩		Q	01

4. Click the S icon to set the Internet Access Time. Drag the cursor over the appropriate cell(s) and click OK.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
00:00							
01:00							
02:00							
03:00							
04:00							
05:00							
06:00							
07:00							
08:00							
09:00							
10:00							
11:00							
12:00							
13:00							
14:00							
15:00							
16:00							
17:00							
18:00							
19:00							
20:00							
21:00							
22:00							
23:00							
24:00							
	Time						

- 5. Enter a Description for the entry, tick the Enable This Entry checkbox, and then click OK.
- 6. Select Whitelist as the restriction policy.

Content Restriction		
Restriction Policy:	 Blacklist 	Whitelist
10		

- Ø Tips:
- With Blacklist selected, the controlled devices cannot access any websites containing the specified keywords during the Internet Access Time period.
- With Whitelist selected, the controlled devices can only access websites containing the specified keywords during the Internet Access Time period.
- 7. Click 🔂 Add a New Domain Name . Enter a website and click Save.

You can add up to 32 keywords for either Blacklist or Whitelist.

Below are some sample entries to allow access.

- For Whitelist: Enter a web address (e.g. wikipedia.org) to allow access only to its related websites. If you wish to block all Internet browsing access, do not add any keyword to the Whitelist.
- For Blacklist: Specify a web address (e.g. wikipedia.org), a web address keyword (e.g. wikipedia) or a domain suffix (eg. .edu or .org) to block access only to the websites containing that keyword or suffix.

Content Restriction		
Restriction Policy:	O Blacklist	
🕂 Add a New Domain Name		
wikipedia.org	•	
		Save
	•	ouve

Done!

Now you can control your children's Internet access as needed.

Chapter 9

QoS

This chapter introduces how to create a QoS (Quality of Service) rule to specify prioritization of traffic and minimize the impact caused when the connection is under heavy load.

It contains the following section:

Prioritize Internet Traffic with QoS

9.1. Prioritize Internet Traffic with QoS

Advanced
 High Priority:

Middle Priority:

Low Priority:

QoS (Quality of Service) is designed to ensure the efficient operation of the network when come across network overload or congestion.

I want to:	Specify priority levels for some devices or applications. For example, I have several devices that are connected to my wireless network. I would like to set an intermediate speed on the Internet for my phone.
How can I do that?	 Enable QoS and set bandwidth allocation. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router. Go to Advanced > QoS > Settings. Select Enable QoS. Input the maximum upload and download bandwidth provided by your Internet service provider. 1Mbps equal s to 1000Kbps. Click Advanced and drag the scroll bar to set the bandwidth priority percentage.
	6) Click Save.
	QoS: ✓ Enable QoS Upload Bandwidth: 1000 Mbps<▼

2. Add a middle priority QoS rule for the phone.

1) Select By Device and then click View Existing Devices.

60%

30%

10%

		(
QoS Rule		
Type:	By Device	
Device Name:	View Existing Devices	
MAC Address:		
	Cancel OK	

2) Choose the respective device from the list.

ID	Device Name	IP Address	MAC Address	Operation
1	Roses (Phone	192.168.0.175	1C-1A-C0-3B-28-4B	Choose
2	ADMIN-PC	192.168.0.157	C0-4A-00-1A-C3-45	Choose

3) Click OK.

QoS Rule		
Type:	By Device	
Device Name:	Roses-Whome	View Existing Devices
MAC Address:	1C-1A-C0-3B-28-4B	
		Cancel OK

Ø Note:

If you want to delete a QoS rule, click 🧵 to remove the responding rule from the list.

Done!

Now QoS is implemented to prioritize Internet traffic.

Chapter 10

Network Security

This chapter guides you on how to protect your home network from cyber attacks and unauthorized users by implementing these three network security functions. You can protect your home network against DoS (Denial of Service) attacks from flooding your network with server requests using DoS Protection, block or allow specific client devices to access your network using Access Control, or you can prevent ARP spoofing and ARP attacks using IP & MAC Binding.

It contains the following sections:

- Protect the Network from Cyber Attacks
- <u>Access Control</u>
- IP & MAC Binding

10. 1. Protect the Network from Cyber Attacks

The SPI (Stateful Packet Inspection) Firewall and DoS (Denial of Service) Protection protect the router from cyber attacks.

The SPI Firewall can prevent cyber attacks and validate the traffic that is passing through the router based on the protocol. This function is enabled by default, and it's recommended to keep the default settings.

DoS Protection can protect your home network against DoS attacks from flooding your network with server requests. Follow the steps below to configure DoS Protection.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Security > Settings.

Chapter 10

DoS Protection			
DoS Protection:			
ICMP-FLOOD Attack Filtering:	Off	V	
UDP-FLOOD Attack Filtering:	Off	-	
TCP-SYN-FLOOD Attack Filtering:	Off	-	
	🗌 Ignore Ping I	Packet From WAN Port	
	🗌 Forbid Ping P	acket From LAN Port	
			Save

- **3.** Enable DoS Protection.
- 4. Set the level (Off, Low, Middle or High) of protection for ICMP-FLOOD Attack Filtering, UDP-FIOOD Attack Filtering and TCP-SYN-FLOOD Attack Filtering.
 - ICMP-FLOOD Attack Filtering Enable to prevent the ICMP (Internet Control Message Protocol) flood attack.
 - UDP-FIOOD Attack Filtering Enable to prevent the UDP (User Datagram Protocol) flood attack.
 - TCP-SYN-FLOOD Attack Filtering Enable to prevent the TCP-SYN (Transmission Control Protocol-Synchronize) flood attack.

Ø Tips:

The level of protection is based on the number of traffic packets. The protection will be triggered immediately when the number of packets exceeds the preset threshold value (the value can be set on Advanced > System Tools > System Parameters > DoS Protection Level Settings), and the vicious host will be displayed in the Blocked DoS Host List.

Blocked DoS Host List							
Host N	umber:	0	👌 Refresh 🛛 🖨 Delete				
	ID	IP Address	MAC Address				

- 5. If you want to ignore the ping packets from the WAN port, select Ignore Ping Packet From WAN Port; if you want to ignore the ping packets form the LAN port, select Ignore Ping Packet From LAN Port.
- 6. Click Save.

10.2. Access Control

Access Control is used to block or allow specific client devices to access your network (via wired or wireless) based on a list of blocked devices (Blacklist) or a list of allowed devices (Whitelist).

l want to:	Block or allow specific client devices to access my network (via wired or wireless).						
How can I do that?	 Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router. 						
	2. Go to Advanced > Security > Access Control.						
	3. Enable Access Control.						
	Access Control						
	Access Control:						
	 Select the access mode to either block (recommended) or allow the device(s) in the list. 						
	To block specific device(s)						
	1) Select Blacklist and click Save.						
	Access Mode						
	Default Access Mode:						
	Save						

2) Select the device(s) to be blocked in the Online Devices table by ticking the box.

3) Click Block above the Online Devices table. The selected devices will be added to Devices in Blacklist automatically.

Online Devices							
					🖒 Refresh	S Block	
	ID	Device Name	IP Address	MAC Address	Connection Type	Modify	
~	1	Roses-iPhone	192.168.0.175	1C-1A-C0-3B-28-4B	Wireless	\otimes	
	2	ADMIN-PC	192.168.0.157	C0-4A-00-1A-C3-45	Wireless	\odot	

To allow specific device(s)

1) Select Whitelist and click Save.

Access Mode						
Default Access Mode:	 Blacklist 	Whitelist				
			Save			

2) Click Add in the Devices in Whitelist section. Enter the Device Name and MAC Address (You can copy and paste the information from the Online Devices list if the device is connected to your network).

Devi	ces iı	n Whitelist			
				🕒 Ad	d 😑 Delete
	ID	Device Na	me	MAC Address	Modify
		ce Name: Address:			
				Cancel Of	<



Done!

Now you can block or allow specific client devices to access your network (via wired or wireless) using the Blacklist or Whitelist.

10.3. IP & MAC Binding

IP & MAC Binding, namely, ARP (Address Resolution Protocol) Binding, is used to bind network device's IP address to its MAC address. This will prevent ARP Spoofing and other ARP attacks by denying network access to an device with matching IP address in the Binding list, but unrecognized MAC address.

Prevent ARP spoofing and ARP attacks. I want to:

How can I do that?

- 1. Visit http://tplinkwifi.net, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Security > IP & MAC Binding.
- 3. Enable ARP Binding.

Settings



4. Bind your device(s) according to your need.

To bind the connected device(s):

Click a to add the corresponding device to the Binding List.

To bind the unconnected device

1) Click Add in the Binding List section.

Bind	ing L	ist					
						•	Add 😑 Delete
	ID	MAC Address	IP Address	Desc	ription	Status	Modify
MAC Address: IP Address: Description:		ddress:			(Optional)		
		ſ	Enable This Entry		Cance		ок

- 2) Enter the MAC address and IP address that you want to bind. Enter a Description for this binding entry.
- 3) Tick the Enable This Entry checkbox and click OK.

Done!

Now you don't need to worry about ARP spoofing and ARP attacks!

Chapter 11

NAT Forwarding

The router's NAT (Network Address Translation) feature makes devices on the LAN use the same public IP address to communicate with devices on the internet, which protects the local network by hiding IP addresses of the devices. However, it also brings about the problem that an external host cannot initiatively communicate with a specified device on the local network.

With the forwarding feature the router can penetrate the isolation of NAT and allows devices on the internet to initiatively communicate with devices on the local network, thus realizing some special functions.

The TP-Link router supports four forwarding rules. If two or more rules are set, the priority of implementation from high to low is Virtual Servers, Port Triggering, UPNP and DMZ.

It contains the following sections:

- Share Local Resources on the Internet by Virtual Servers
- Open Ports Dynamically by Port Triggering
- <u>Make Applications Free from Port Restriction by DMZ</u>
- Make Xbox Online Games Run Smoothly by UPnP

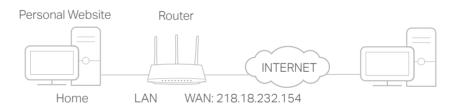
11. 1. Share Local Resources on the Internet by Virtual Servers

When you build up a server on the local network and want to share it on the internet, Virtual Servers can realize the service and provide it to internet users. At the same time Virtual Servers can keep the local network safe as other services are still invisible from the internet.

Virtual Servers can be used for setting up public services on your local network, such as HTTP, FTP, DNS, POP3/SMTP and Telnet. Different services use different service ports. Port 80 is used in HTTP service, port 21 in FTP service, port 25 in SMTP service and port 110 in POP3 service. Please verify the service port number before the configuration.

I want to: Share my personal website I've built in local network with my friends through the internet.

For example, the personal website has been built on my home PC (192.168.0.100). I hope that my friends on the internet can visit my website in some way. The PC is connected to the router with the WAN IP address 218.18.232.154.



How can I do that?

- **1.** Assign a static IP address to your PC, for example 192.168.0.100.
- 2. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 3. Go to Advanced > NAT Forwarding > Virtual Servers.
- 4. Click Add. Click View Existing Services and select HTTP. The External Port, Internal Port and Protocol will be automatically filled in. Enter the PC's IP address 192.168.0.100 in the Internal IP field.
- 5. Click OK.

								🕂 Add	😑 Delete		
	ID	Service Type	External Port	Internal IP	Internal	Port	Protocol	Status	Modify		
Service Type:			н	нттр			View Existing Services				
External Port:		80	80		(XX-XX or XX)						
	Int	ernal IP:	19	192.168.0.100							
	Int	ernal Port:	80	80		(XX or Blank ,1-65535)					
Protocol:		то	P	▼	•						
		✓ E	nable This Entry	/							
							Cancel	ОК			

🖉 Tips:

- It is recommended to keep the default settings of Internal Port and Protocol if you are not clear about which port and protocol to use.
- If the service you want to use is not in the Service Type, you can enter the corresponding parameters manually. You should verify the port number that the service needs.
- You can add multiple virtual server rules if you want to provide several services in a router. Please note that the External_Port should not be overlapped.

Done!

Users on the internet can enter http:// WAN IP (in this example:

http:// 218.18.232.154) to visit your personal website. Tips:

- The WAN IP should be a public IP address. For the WAN IP is assigned dynamically by the ISP, it is recommended to apply and register a domain name for the WAN referring to <u>Set Up a Dynamic DNS Service Account</u>. Then users on the internet can use http:// domain name to visit the website.
- If you have changed the default External Port, you should use http:// WAN IP: External Port or http:// domain name: External Port to visit the website.

11.2. Open Ports Dynamically by Port Triggering

Port Triggering can specify a triggering port and its corresponding external ports. When a host on the local network initiates a connection to the triggering port, all the external ports will be opened for subsequent connections. The router can record the IP address of the host. When the data from the internet return to the external ports, the router can forward them to the corresponding host. Port Triggering is mainly applied to online games, VoIPs, video players and common applications including MSN Gaming Zone, Dialpad and Quick Time 4 players, etc.

Follow the steps below to configure the Port Triggering rules:

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > NAT Forwarding > Port Triggering and click Add.

- 3. Click View Existing Applications, and select the desired application. The Triggering Port, External Port and Protocol will be automatically filled in. The following picture takes application MSN Gaming Zone as an example.
- 4. Click OK.

Port	Trigg	jering								
									🕂 Add	😑 Delete
	ID	Application	Triggering Port		Triggering Protocol	Extern	al Port	External Protocol	Status	Modify
						-				
	Application :			MSI	N Gaming Zone		View	Existing Appl	lications	
	Trigg	gering Port:		47624			(XX,1-65535)			
	Trigg	gering Protocol:		ALL		T	•			
	Exte	rnal Port:		2300-2400,28800-29000			(XX or XX-XX,1-65535,at most 5 pairs)			
	External Protocol:			ALL		T	,			
				🕑 En	able This Entry					
							C	Cancel	ОК	

Ø Tips:

- You can add multiple port triggering rules according to your network need.
- The triggering ports can not be overlapped.
- If the application you need is not listed in the Existing Applications list, please enter the parameters manually. You should verify the external ports the application uses first and enter them into External Port field according to the format the page displays.

11.3. Make Applications Free from Port Restriction by DMZ

When a PC is set to be a DMZ (Demilitarized Zone) host on the local network, it is totally exposed to the internet, which can realize the unlimited bidirectional communication between internal hosts and external hosts. The DMZ host becomes a virtual server with all ports opened. When you are not clear about which ports to open in some special applications, such as IP camera and database software, you can set the PC to be a DMZ host.

Note:

When DMZ is enabled, the DMZ host is totally exposed to the internet, which may bring some potential safety hazards. If DMZ is not in use, please disable it in time.

l want to:	Make the home PC join the internet online game without port restriction.						
	For example, due to some port restriction, when playing the online games, you can login normally but cannot join a team with other players. To solve this problem, set your PC as a DMZ host with all ports open.						
How can I do that?	1. Assign a static IP address to your PC, for example 192.168.0.100.						
	2. Visit <u>http://tplinkwifi.net</u> , and log in with your TP-Link ID or the password you set for the router.						
	 Go to Advanced > NAT Forwarding > DMZ and select Enable DMZ. 						
	 Enter the IP address 192.168.0.100 in the DMZ Host IP Address filed. 						
	DMZ						
	DMZ: 🕑 Enable DMZ						
	DMZ Host IP Address: 192.168.0.100						
	Save						

5. Click Save.

Done!

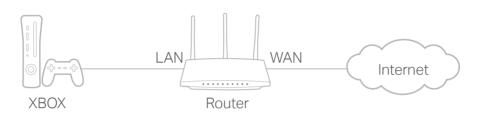
The configuration is completed. You've set your PC to a DMZ host and now you can make a team to game with other players.

11.4. Make Xbox Online Games Run Smoothly by UPnP

The UPnP (Universal Plug and Play) protocol allows applications or host devices to automatically find the front-end NAT device and send request to it to open the corresponding ports. With UPnP enabled, the applications or host devices on the local network and the internet can freely communicate with each other thus realizing the seamless connection of the network. You may need to enable the UPnP if you want to use applications for multiplayer gaming, peer-to-peer connections, real-time communication (such as VoIP or telephone conference) or remote assistance, etc.

- Tips:
- UPnP is enabled by default in this router.
- Only the application supporting UPnP protocol can use this feature.
- UPnP feature needs the support of operating system (e.g. Windows Vista/ Windows 7/ Windows 8, etc. Some of operating system need to install the UPnP components).

For example, when you connect your Xbox to the router which has connected to the internet to play online games, UPnP will send request to the router to open the corresponding ports allowing the following data penetrating the NAT to transmit. Therefore, you can play Xbox online games without a hitch.



If necessary, you can follow the steps to change the status of UPnP.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > NAT Forwarding > UPnP and toggle on or off according to your needs.

UPnP					
UPnP:		D			
UPnP S	Service List				
Total Clients: 0 O Refresh					
ID	Service Description	External Port	Protocol	Internal IP Address	Internal Port

Chapter 12

VPN Server

The VPN (Virtual Private Networking) Server allows you to access your home network in a secured way through internet when you are out of home. The router offers two ways to setup VPN connection: OpenVPN and PPTP (Point to Point Tunneling Protocol) VPN.

OpenVPN is somewhat complex but with greater security and more stable. It is suitable for restricted environment, such as campus network and company intranet.

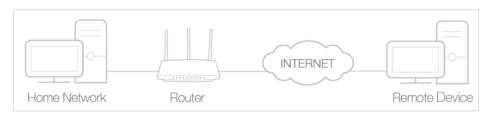
PPTP VPN is more easily used and its speed is faster, it's compatible with most operating systems and also supports mobile devices. Its security is poor and your packets may be cracked easily, and PPTP VPN connection may be prevented by some ISP.

It contains the following sections, please choose the appropriate VPN server connection type as needed.

- <u>Use OpenVPN to Access Your Home Network</u>
- <u>Use PPTP VPN to Access Your Home Network</u>

12. 1. Use OpenVPN to Access Your Home Network

In the OpenVPN connection, the home network can act as a server, and the remote device can access the server through the router which acts as an OpenVPN Server gateway. To use the VPN feature, you should enable OpenVPN Server on your router, and install and run VPN client software on the remote device. Please follow the steps below to set up an OpenVPN connection.



12. 1. 1. Step 1. Set up OpenVPN Server on Your Router

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > VPN Server > OpenVPN, and select Enable VPN Server.

OpenVPN			
Note: No certificate curre	ntly, please Generate one befo	e enabling VPN Server.	
	Enable VPN Server		
Service Type:	● UDP ○ TCP		
Service Port:	1194		
VPN Subnet/Netmask:	10.8.0.0	255.255.255.0	
Client Access:	Home Network Only) Internet and Home Network	
			Save

Note:

- Before you enable VPN Server, we recommend you configure Dynamic DNS Service (recommended) or assign a static IP address for router's WAN port and synchronize your System Time with internet.
- The first time you configure the OpenVPN Server, you may need to Generate a certificate before you enable the VPN Server.
- 3. Select the Servive Type (communication protocol) for OpenVPN Server: UDP, TCP.
- 4. Enter a VPN Service Port to which a VPN device connects, and the port number should be between 1024 and 65535.
- 5. In the VPN Subnet/Netmask fields, enter the range of IP addresses that can be leased to the device by the OpenVPN server.

- 6. Select your Client Access type. Select Home Network Only if you only want the remote device to access your home network; select Internet and Home Network if you also want the remote device to access internet through the VPN Server.
- 7. Click Save.
- 8. Click Generate to get a new certificate.

Certificate	
Generate the certificate.	Generate

Note:

If you have already generated one, please skip this step, or click Generate to update the certificate.

9. Click Export to save the OpenVPN configuration file which will be used by the remote device to access your router.

Configuration File	
Export the configuration.	Export

12.1.2. Step 2. Configure OpenVPN Connection on Your Remote Device

1. Visit <u>http://openvpn.net/index.php/download/community-downloads.html</u> to download the OpenVPN software, and install it on your device where you want to run the OpenVPN client utility.

Note:

You need to install the OpenVPN client utility on each device that you plan to apply the VPN function to access your router. Mobile devices should download a third-party app from Google Play or Apple App Store.

- 2. After the installation, copy the file exported from your router to the OpenVPN client utility's "config" folder (for example, C:\Program Files\OpenVPN\config on Windows). The path depends on where the OpenVPN client utility is installed.
- 3. Run the OpenVPN client utility and connect it to OpenVPN Server.

12.2. Use PPTP VPN to Access Your Home Network

PPTP VPN Server is used to create a VPN connection for remote device. To use the VPN feature, you should enable PPTP VPN Server on your router, and configure the PPTP connection on the remote device. Please follow the steps below to set up a PPTP VPN connection.

12.2.1. Step 1. Set up PPTP VPN Server on Your Router

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > VPN Server > PPTP VPN, and select Enable VPN Server.

PPTP VPN				
	✓ Enable VPN Server			
Client IP Address:	10.0.0.11	-10.0.0. 20	(up to 10 clients)	
Advanced				
Allow Samba (Network	Place) access:			
Allow NetBIOS passthro	ugh:			
Allow Unencrypted conr	nections:			
				Save

Note:

Before you enable VPN Server, we recommend you configure Dynamic DNS Service (recommended) or assign a static IP address for router's WAN port and synchronize your System Time with internet.

- 3. In the Client IP Address filed, enter the range of IP addresses (up to 10) that can be leased to the devices by the PPTP VPN server.
- 4. Click Advanced to set the PPTP connection permission according to your needs.
 - Select Allow Samba (Network Place) access to allow your VPN device to access your local Samba server.
 - Select Allow NetBIOS passthrough to allow your VPN device to access your Samba server using NetBIOS name.
 - Select Allow Unencrypted connections to allow unencrypted connections to your VPN server.

5. Click Save.

6. Configure the PPTP VPN connection account for the remote device, you can create up to 16 accounts.

ID Username Password Modify Username: Password:				🕂 Add 🛛 😑 Delei
Username:	ID	Username	Password	Modify
Cancel OK			Can	сel ОК

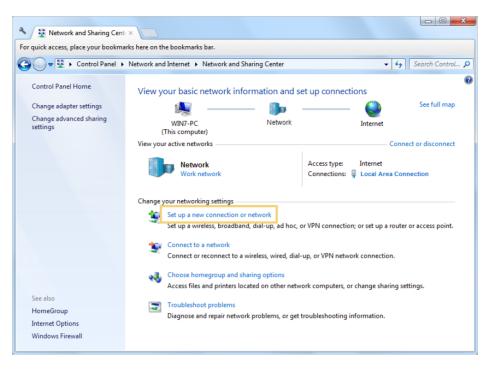
- 1) Click Add.
- 2) Enter the Username and Password to authenticate devices to the PPTP VPN Server.
- 3) Click OK.

12.2.2. Step 2. Configure PPTP VPN Connection on Your Remote Device

The remote device can use the Windows built-in PPTP software or a third-party PPTP software to connect to PPTP Server. Here we use the Windows built-in PPTP software as an example.

1. Go to Start > Control Panel > Network and Internet > Network and Sharing Center.

2. Select Set up a new connection or network.



3. Select Connect to a workplace and click Next.

		x
🥪 🙅 Set Up a Connection or Network		
Choose a connection option		
Connect to the Internet Set up a wireless, broadband, or dial-up connection to the Internet.		
Set up a new network Configure a new router or access point.		
Connect to a workplace Set up a dial-up or VPN connection to your workplace.		
Set up a dial-up connection Connect to the Internet using a dial-up connection.		
]	
	Next Cancel	

4. Select Use my Internet connection (VPN).

G 🌆 Connect to a Workplace	
How do you want to connect?	
 Use my Internet connection (VPN) Connect using a virtual private network (VPN) connection through the Internet. 	
i i i i i i i i i i i i i i i i i i i	
Dial directly Connect directly to a phone number without going through the Internet.	
ing ing ing	
What is a VPN connection?	
	Cancel

5. Enter the internet IP address of the router (for example: 218.18.1.73) in the Internet address field. Click Next.

Connect to a Workpl	ace
Type the Internet a	ddress to connect to
Your network administr	ator can give you this address.
Internet address:	218.18.1.73
Destination name:	VPN Connection
This option allow	ple to use this connection vs anyone with access to this computer to use this connection. ow; just set it up so I can connect later
	Next Cancel

6. Enter the User name and Password you have set for the PPTP VPN server on your router, and click Connect.

Connect to a Workplace		
Type your user name	and password	
User name:	admin	
Password:	•••••	
	Show characters	
Domain (optional):	Remember this password	
		Connect Cancel

7. The PPTP VPN connection is created and ready to use.

Connect	to a Workplace	
The conn	ection is ready to use	
	I	
	Connect now	
		Close

Chapter 13

Customize Your Network Settings

This chapter guides you on how to configure advanced network features.

It contains the following sections:

- <u>Change the LAN Settings</u>
- <u>Configure to Support IPTV Service</u>
- <u>Specify DHCP Server Settings</u>
- <u>Set Up a Dynamic DNS Service Account</u>
- <u>Create Static Routes</u>
- <u>Specify Wireless Settings</u>
- <u>Use WPS for Wireless Connection</u>

13. 1. Change the LAN Settings

The router is preset with a default LAN IP 192.168.0.1, which you can use to log in to its web management page. The LAN IP address together with the Subnet Mask also defines the subnet that the connected devices are on. If the IP address conflicts with another device on your local network or your network requires a specific IP subnet, you can change it.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Network > LAN.
- 3. Type in a new IP Address appropriate to your needs. And leave the Subnet Mask as the default settings.

LAN		
MAC Address:	50-C7-BF-02-EA-DC	
IP Address:	192.168.0.1	
Subnet Mask:	255.255.255.0	▼

4. Click Save.

Note:

If you have set the Virtual Server, DMZ or DHCP address reservation, and the new LAN IP address is not in the same subnet with the old one, then you should reconfigure these features.

13.2. Configure to Support IPTV Service

I want to:	Configure IPTV setup to enable Internet/IPTV/Phone service provided by my internet service provider (ISP).			
How can I do that?	1. Visit <u>http://tplinkwifi.net</u> , and log in with your TP-Link ID or the password you set for the router.			
	2. Go to Advanced > Network > IPTV.			
	3. If your ISP provides the networking service based on IGMP technology, e.g., British Telecom(BT) and Talk Talk in UK:			
	1) Tick the IGMP Proxy checkbox and select the IGMP Version, either V2 or V3, as required by your ISP.			

Done!

Settings		
IGMP Proxy:	Enable	
IGMP Version:	V2	w

- 2) Click Save.
- After configuring IGMP proxy, IPTV can work behind your router now. You can connect your set-top box to any of the router's Ethernet port.

If IGMP is not the technology your ISP applies to provide IPTV service:

- 1) Tick Enable IPTV.
- 2) Select the appropriate Mode according to your ISP.
 - Select Bridge if your ISP is not listed and no other parameters are required.
 - Select Custom if your ISP is not listed but provides necessary parameters.

IPTV:	Enable IPTV	
Mode:	Bridge	W
	Singapore-ExStream	
LAN1:	Malaysia-Unifi	
LAN2:	Malaysia-Maxis	
LAN3:	Vietnam-Viettel	
LAN4:	New Zealand-UFB	
	Australia-NBN	
	Portugal-MEO	

- 3) After you have selected a mode, the necessary parameters, including the LAN port for IPTV connection, are predetermined. If not, select the LAN type to determine which port is used to support IPTV service.
- 4) Click Save.
- 5) Connect the set-top box to the corresponding LAN port which is predetermined or you have specified in Step 3.

Qos and IPTV cannot be enabled at the same time.

13. 3. Specify DHCP Server Settings

By default, the DHCP (Dynamic Host Configuration Protocol) Server is enabled and the router acts as a DHCP server; it dynamically assigns TCP/IP parameters to client devices from the IP Address Pool. You can change the settings of the DHCP Server if necessary, and you can reserve LAN IP addresses for specified client devices.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Network > DHCP Server.
- To specify the IP address that the router assigns:

Settings			
DHCP Server:	✓ Enable DHCP Server		
IP Address Pool:	192.168.0.100	- 192.168.0.199	
Address Lease Time:	120 minutes.	(1-2880. The default value is 120.)	
Default Gateway:	192.168.0.1	(Optional)	
Primary DNS:		(Optional)	
Secondary DNS:		(Optional)	
			Save
			Save

- 1. Tick the Enable DHCP Server checkbox.
- 2. Enter the starting and ending IP addresses in the IP Address Pool.
- 3. Enter other parameters if the ISP offers. The Default Gateway is automatically filled in and is the same as the LAN IP address of the router.
- 4. Click Save.
- To reserve an IP address for a specified client device:
- 1. Click Add in the Address Reservation section.

Address Reservation										
								()	٨dd	🖨 Delete
	ID	MAC Address		Reserved IP Address	Des	scription	9	Status		Modify
	MAC Ad IP Addr									
	Descrip	tion:	EI	nable This Entry						
						Cance	el	C	ж	

- 2. Click View Exsiting Devices or enter the MAC address of the client device.
- 3. Enter the IP address to reserve for the client device.
- 4. Enter the Description for this entry.
- 5. Tick the Enable This Entry checkbox and click OK.

13.4. Set Up a Dynamic DNS Service Account

Most ISPs assign a dynamic IP address to the router and you can use this IP address to access your router remotely. However, the IP address can change from time to time and you don't know when it changes. In this case, you might apply the DDNS (Dynamic Domain Name Server) feature on the router to allow you and your friends to access your router and local servers (FTP, HTTP, etc.) using a domain name without checking and remembering the IP address.

Note:

DDNS does not work if the ISP assigns a private WAN IP address (such as 192.168.1.x) to the router.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Network > Dynamic DNS.
- 3. Select the DDNS Service Provider: TP-Link, NO-IP or DynDNS. It is recommended to select TP-Link so that you can enjoy TP-Link's superior DDNS service. Otherwise, please select NO-IP or DynDNS. If you don't have a DDNS account, you have to register first by clicking Go to register.

Dynamic DNS					
Service Provider:	• TP-Link	○ NO-IP ○ DynD	INS		
Current Domain Name:					
Domain Name List					
				🕂 Registe	er 😑 Delete
Domain	Name	Registered Date	Status	Operation	Modify

Note:

To enjoy TP-Link's DDNS service, you have to log in with a TP-Link ID. If you have not logged in with one, click Log in.

Dynamic DNS				
Service Provider:	TP-Link	O NO-IP	O DynDNS	
DDNS Unavailable				
To use our superior TP-LINK DDNS service, please Log in with your TP-LINK Cloud account, or choose another service provider.				

4. Click Register in the Domain Name List if you have selected TP-Link, and enter the Domain Name as needed.

Dynamic DNS						
Service Provider:	TP-Link	○ NO-IP ○	DynDNS			
Current Domain Name:						
Domain Name List						
Domain Name List					+ Registe	r 🖨 Dele
Domain Name List	Name	Registered E	Date	Status	Registe Operation	r 😑 Dele Modify

If you have selected NO-IP or DynDNS, enter the username, password and domain name of your account.

Dynamic DNS			
Service Provider:	○ TP-Link () NO	IP O DynDNS	Go to register
Username:			
Password:			
Domain Name:			
Update Interval:	1 hour	•	
WAN IP binding:	Disable	ble	
Login and Save Logo	out 🛛 🗙 Not launchin	-	
Login and Save Logi		J	

5. Click Login and Save.

Ø Tips:

If you want to use a new DDNS account, please click logout first, and then log in with a new account.

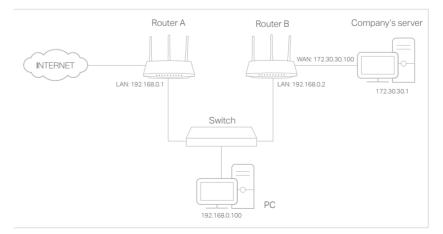
13.5. Create Static Routes

Static routing is a form of routing that is configured manually by a network administrator or a user by adding entries into a routing table. The manually-configured routing information guides the router in forwarding data packets to the specific destination.

I want to:

Visit multiple networks and servers at the same time.

For example, in a small office, my PC can surf the internet through Router A, but I also want to visit my company's network. Now I have a switch and Router B. I connect the devices as shown in the following figure so that the physical connection between my PC and my company's server is established. To surf the internet and visit my company's network at the same time, I need to configure the static routing.



How can I do that?

- **1.** Change the routers' LAN IP addresses to two different IP addresses on the same subnet. Disable Router B's DHCP function.
- 2. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for Router A.
- 3. Go to Network > Advanced Routing.
- **4.** Click Add and finish the settings according to the following explanations:

	outing					🕂 Add	😑 Delete
ID	Network Destination	Subnet Mask	Default Gateway	Interface	Description	Status	Modify
Ne	twork Destination	: 172.30.3	1.1				
Su	ibnet Mask:	255.255.	255.255				
De	efault Gateway:	192.168.	0.2				
In	terface:	LAN	T				
De	escription :	company'	s network				
		🕑 Enable T	his Entry				
					Cancel	ОК	

Network Destination: The destination IP address that you want to assign to a static route. This IP address cannot be on the same subnet with the WAN IP or LAN IP of Router A. In the example, the IP address of the company network is the destination IP address, so here enter 172.30.30.1.

Subnet Mask: Determines the destination network with the destination IP address. If the destination is a single IP address, enter 255.255.255.255; otherwise, enter the subnet mask of the corresponding network IP. In the example, the destination network is a single IP, so here enter 255.255.255.255.

Default Gateway: The IP address of the gateway device to which the data packets will be sent. This IP address must be on the same subnet with the router's IP which sends out data. In the example, the data packets will be sent to the LAN port of Router B and then to the Server, so the default gateway should be 192.168.0.2.

Interface: Determined by the port (WAN/LAN) that sends out

data packets. In the example, the data are sent to the gateway through the LAN port of Router A, so LAN should be selected.

Description: Enter a description for this static routing entry.

- 5. Click OK.
- 6. Check the System Routing Table below. If you can find the entry you've set, the static routing is set successfully.

System Routing Table						
Active Routes Number: 1						
ID	Network Destination	Subnet Mask	Gateway	Interface		
1	192.168.0.0	255.255.255.0	0.0.0	lan		

Done!

Open a web browser on your PC. Enter the company server's IP address to visit the company network.

13.6. Specify Wireless Settings

The router's wireless network name (SSID) and password, and security option are preset in the factory. The preset SSID and password can be found on the label of the router. You can customize the wireless settings according to your needs.

Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.

• To enable or disable the wireless function:

- 1. Go to Basic > Wireless.
- 2. The wireless radio is enabled by default. If you want to disable the wireless function of the router, just untick the Enable Wireless Radio checkbox. In this case, all the wireless settings will be invalid.
- To change the wireless network name (SSID) and wireless password:
- 1. Go to Basic > Wireless.
- 2. Create a new SSID in Network Name (SSID) and customize the password for the network in Password. The value is case-sensitive.

Note:

If you change the wireless settings with a wireless device, you will be disconnected when the settings are effective. Please write down the new SSID and password for future use.

• To hide SSID:

1. Go to Basic > Wireless.

- 2. Select Hide SSID, and your SSID won't display when you scan for local wireless networks on your wireless device and you need to manually join the network.
- To change the security option:
- 1. Go to Advanced > Wireless > Wireless Settings.
- 2. Select the wireless network 2.4GHz or 5GHz.
- 3. Select an option from the Security drop-down list. We recommend you don't change the default settings unless necessary. If you select other options, configure the related parameters according to the help page.

In addition

- Mode Select a transmission mode according to your wireless client devices. It is recommended to just leave it as default.
- Channel Width Select a channel width (bandwidth) for the wireless network.
- Channel Select an operating channel for the wireless network. It is recommended to leave the channel to Auto, if you are not experiencing the intermittent wireless connection issue.
- Transmit Power Select either High, Middle or Low to specify the data transmit power. The default and recommended setting is High.

13.7. Use WPS for Wireless Connection

Wi-Fi Protected Setup (WPS) provides an easier approach to set up a security-protected Wi-Fi connection.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Wireless > WPS.

13.7.1. Set the Router's PIN

Router's PIN is enabled by default to allow wireless devices to connect to the router using the PIN. You can use the default one or generate a new one.

Router's PIN		
Router's PIN:		
PIN:	35498841	Generate Default

Note:

• If you want to enable/disable the WPS feature, go to System Tools > System Parameters > WPS, tick or untick the Enable WPS checkbox.

• PIN (Personal Identification Number) is an eight-character identification number preset to each router. WPS supported devices can connect to your router with the PIN. The default PIN is printed on the label of the router.

13.7.2. Use the WPS Wizard for Wi-Fi Connections

- 1. Select a setup method:
 - **Push Button(Recommended)**: Click Connect on the screen. Within two minutes, press the WPS button on the client device.
 - **PIN**: Enter the client's PIN, and click Connect.

WPS Wizard		
Select a WPS connection method:	O Push Button (Recommended)	PIN
Enter the client's PIN:		
Connect		

2. Success will appear on the above screen and the WPS LED on the router will keep on for five minutes if the client has been successfully added to the network.

Chapter 14

Manage the Router

This chapter will show you the configuration for managing and maintaining your router. It contains the following sections:

- <u>Set Up System Time</u>
- <u>Control LEDs</u>
- <u>Test the Network Connectivity</u>
- Upgrade the Firmware
- Backup and Restore Configuration Settings
- <u>Change the Login Password</u>
- Password Recovery
- Local Management
- <u>Remote Management</u>
- <u>System Log</u>
- Monitor the Internet Traffic Statistics

14.1. Set Up System Time

System time is the time displayed while the router is running. The system time you configure here will be used for other time-based functions like Parental Controls. You can choose the way to obtain the system time as needed.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > Time Settings. It is 12-hour time by default, and you can toggle on to change to 24-hour time.
- To get time from the internet:
- 1. In the Set Time field, select Get automatically from the Internet.

Current Time:	12:06:21 AM, 01/01/2016		
24-Hour Time:			
Set Time:	Get automatically from the	e Internet O Manually	
Time Zone:	(GMT) Greenwich Mean Tin	ne, Dublin, London	•
NTP Server I:	time.nist.gov		
NTP Server II:	time-nw.nist.gov	(Optional)	

- 2. Select your local Time Zone from the drop-down list.
- 3. In the NTP Server I fileId, enter the IP address or domain name of your desired NTP Server.
- 4. (Optional) In the NTP Server II fileId, enter the IP address or domain name of the second NTP Server.
- 5. Click Obtain to get the current Internet time and click Save.

• To manually set the date and time:

1. In the Set Time field, select Manually.

Current Time:	12:10:23 AM, 01/01/2016
24-Hour Time:	
Set Time:	 Get automatically from the Internet Manually
Date:	01/01/2016 MM/DD/YYYY
	00 V: 10 V: 23 V (HH/MM/SS)

- 2. Set the current Date (In MM/DD/YYYY format).
- 3. Set the current Time (In HH/MM/SS format).
- 4. Click Save.
- To set up Daylight Saving Time:
- 1. Select Enable Daylight Saving Time.

Daylight Saving	Time									
	💌 Ena	ble Dayl	ight S	aving Tir	ne					
Start:	2016	Mar	•	2nd	▼	Sun	▼	2 AM	▼	
End:	2016	Nov	•	First	▼	Sun	•	2 AM	•	
Running Status:	Dayligh	t Saving) Time	e is on.						
										Sav
										58

- 2. Select the correct Start date and time when daylight saving time starts at your local time zone.
- 3. Select the correct End date and time when daylight saving time ends at your local time zone.
- 4. Click Save.

14.2. Control LEDs

The router's LEDs indicate router's activities and status. You can turn on or turn off the LEDs either from the web management page or by pressing the LED button.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > System Parameters.
- 3. In the LED Control section, toggle to turn on / off the LED.

4. You can enable Night Mode if needed, and set a time period, and then the LEDs will be off during this period.

LED Control	
LED Status:	
Night Mode	
Note: Before enabling Nig	t Mode, please make sure the <u>System Time</u> is correct.
Current Time:	07/07/2017 01:13:48
Night Mode: (everyday)	✓ Enable
LED Off Time:	From: 22:00 🌩
	To: 06:00 🌲 next day
	Save

5. Click Save.

14.3. Test the Network Connectivity

Diagnostics is used to test the connectivity between the router and the host or other network devices.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > Diagnostics.

Diagnostics	
Diagnostic Tool:	Ping Traceroute
IP Address/Domain Name:	
Start	

- 3. Enter the information with the help of page tips:
 - 1) Choose Ping or Traceroute as the diagnostic tool to test the connectivity;
 - Ping is used to test the connectivity between the router and the tested host, and measure the round-trip time.
 - Traceroute is used to display the route (path) your router has passed to reach the tested host, and measure transit delays of packets across an Internet Protocol network.

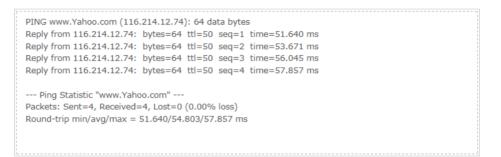
2) Enter the IP Address or Domain Name of the tested host.

4. Click Start to begin the diagnostics.

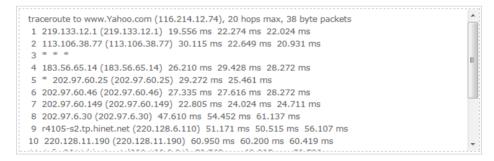
Tips:

Click_Advanced, you can modify the ping count, ping packet size or the Traceroute Max TTL. It's recommended to keep the default value.

The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Ping.



The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Traceroute.



14.4. Upgrade the Firmware

TP-Link aims at providing better network experience for users.

We will inform you throught the web management page if there's any update firmware available for your router. Also, the latest firmware will be released at the TP-Link official website <u>www.tp-link.com</u>, and you can download it from the <u>Support</u> page for free.

Note:

- Make sure you remove all attached USB devices from the router before the firmware upgrade to prevent data loss.
- Backup your router configuration before firmware upgrade.
- Do NOT turn off the router during the firmware upgrade.

14.4.1. Online Upgrade

1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.

2. When the latest firmware is available for your router, the update icon will display in the top-right corner of the page. Click the icon to go to the Firmware Upgrade page.

Alternatively, you can go to Advanced > System Tools > Firmware Upgrade, and click Check for upgrade to see whether the latest firmware is released.

Online Upgrade		
Latest Version:	1.0.0 Bull 20100624 vii.36674	
		Check for upgrade

3. Focus on the Online Upgrade section, and click Upgrade.

Online Upgrade		
Latest Version:	1.1.1 (0.11) (10.11) (0.11)	
3. test for its fair (3)		
		Upgrade

4. Wait a few minutes for the upgrade and reboot to complete.

Ø Tips:

If there's a new and important firmware update for your router, you will see the notification (similar as shown below) on your computer as long as a web browser is opened. Click Upgrade now, and log into the web management page with the username and password you set for the router. You will see the Firmware Upgrade page.

Ptp-link	Hi, a new firmware is available for your wireless router. Do you 🧿 🕺 want to upgrade now?				
	Ignore This Version	Remind Me Later	Upgrade Now		

14.4.2. Manual Upgrade

- 1. Download the latest firmware file for the router from <u>www.tp-link.com</u>.
- 2. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 3. Go to Advanced > System Tools > Firmware Upgrade.
- 4. Focus on the Device Information section. Make sure the downloaded firmware file is matched with the Hardware Version.
- 5. Focus on the Manual Upgrade section. Click Browse to locate the downloaded new firmware file, and click Upgrade.

Manual Upgrade		
New Firmware File:	Browse	
		Upgrade

6. Wait a few minutes for the upgrade and reboot to complete.

14.4.3. Restore Interrupted Upgrade after Power Failure

If your router cannot start up after an upgrade interruption due to power failure, follow the steps below to restore the interrupted upgrade. Otherwise, your router cannot work again.

- 1. Make sure you have the latest firmware file in your computer. If not, try another way to connect your computer to the Internet and download the latest firmware file from www.tp-link.com.
- 2. Connect your computer to the router with an Ethernet cable.
- 3. Visit <u>192.168.0.1</u> and you will see the following upgrade page.

System error. The router cannot start up normally. Please upgrade your router. You can download the firmware file from www.tp-link.com.					
New Firmware File:		Browse	Upgrade		

- 4. Click Browse and select the downloaded firmware file.
- 5. Click Upgrade and wait for a few minutes until the router completes the upgrading and restarts.

14.5. Backup and Restore Configuration Settings

The configuration settings are stored as a configuration file in the router. You can backup the configuration file to your computer for future use and restore the router to a previous settings from the backup file when needed. Moreover, if necessary you can erase the current settings and reset the router to the default factory settings.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > Backup & Restore.

• To backup configuration settings:

Click Backup to save a copy of the current settings to your local computer. A '.bin' file of the current settings will be stored to your computer.

Backup		
Save a copy of your current settings.		
	Bac	kup.

• To restore configuration settings:

1. Click Browse to locate the backup configuration file stored on your computer, and click Restore.

Restore		
Restore saved settings from	a file.	
File:	Bro	wse
		Restore

2. Wait a few minutes for the restoring and rebooting.

Note: During the restoring process, do not turn off or reset the router.

- To reset the router except your login password and TP-Link ID:
- 1. Click Restore under the Factory Default Restore session.

Factory Default Restore			
Restore all configuration settings to default values, except your login and cloud account information.			
	Restore		

2. Wait a few minutes for the resetting and rebooting.

Note:

- During the resetting process, do not turn off the router.
- After reset, you can still use the current login password or the TP-Link ID to log in to the web management page.

• To reset the router to factory default settings:

1. Click Factory Restore to reset the router.

Factory Restore

2. Wait a few minutes for the resetting and rebooting.

Note:

- During the resetting process, do not turn off or reset the router.
- We strongly recommend you backup the current configuration settings before resetting the router.

14.6. Change the Login Password

The account management feature allows you to change your login password of the web management page.

Note:

If you are using a TP-Link ID to log in to the web management page, the account management feature will be disabled. To manage the TP-Link ID, go to Basic > TP-Link Cloud.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with the password you set for the router.
- 2. Go to Advanced > System Tools > Administration and focus on the Account Management section.

Account Management		
Old Password:		
New Password:		
	Low Middle High	
Confirm New Password:		
		Save

- 3. Enter the old password, then a new password twice (both case-sensitive). Click Save.
- 4. Use the new password for future logins.

14.7. Password Recovery

This feature allows you to recover the login password you set for you router in case you forget it.

Note:

If you are using a TP-Link ID to log in to the web management page, the Password Recovery feature will be disabled. To manage the TP-Link ID, go to Basic > TP-Link Cloud.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with the password you set for the router.
- 2. Go to Advanced > System Tools > Administration and focus on the Password Recovery section.
- 3. Tick the Enable Password Recovery checkbox.
- 4. Specify a mailbox (From) for sending the recovery letter and enter its SMTP Server address. Specify a mailbox (To) for receiving the recovery letter. If the mailbox (From) to send the recovery letter requires encryption, select Enable Authentication and enter its username and password.
 - Tips:
 - SMTP server is available for users in most webmail systems. For example, the SMTP server address of Gmail is smtp.gmail.com. You can refer to their Help page to learn the SMTP server address.

• Generally, Enable Authentication should be selected if the login of the mailbox requires username and password.

Password Recov	ery		
	Enable Password Recovery		
From:			
To:			
SMTP Server:			
	Enable Authentication		
Username:			
Password:			
		Test Email	Save

5. Click Save.

You can click Test Email to test whether the configuration is successful.

To recover the login password, please visit <u>http://tplinkwifi.net</u>, click Forgot Password? on the login page and follow the instructions to set a new password.

14.8. Local Management

This feature allows you to limit the number of client devices on your LAN from accessing the router by using the MAC address-based authentication.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > Administration and complete the settings In Local Management section as needed.
- Allow all LAN connected devices to manage the router:

Toggle on Access for All LAN Connected Devices.

Local Management	
Access for All LAN Connected	Toggle On to enable the management for all devices on LAN or keep it Off to enable the management for a specific device.

- Allow specific devices to manage the router:
- 1. Toggle off Access for All LAN Connected Devices.
- 2. Click Add.

Local Management							
Access for All LAN Connected Toggle On to enable the management for all devices on LAN or keep it Off to enable the management for a specific device.							
						🕂 Add	😑 Delete
	ID	MAC Addre	ess	Descript	ion	Status	Modify
	AC Address				View Existi	ng Devices	
	comption		Enable Thi	s Entry			
					Cancel	ОК	
	1	C0-4A-00-1A-	C3-45	Your Po	21	Ş	Cî î

- 3. Click View Existing Devices and select the device to manage the router from the Existing Devices list, or enter the MAC address of the device manually.
- 4. Specify a Description for this entry.
- 5. Tick the Enable This Entry checkbox.
- 6. Click OK.

14.9. Remote Management

This feature allows you to control remote devices' authority to manage the router.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > Administration and complete the settings in Remote Management section as needed.

Remote Management	
	Disable Remote Management
	 Enable Remote Management for All Devices
	 Enable Remote Management for Specified Devices
Web Management Port:	
Remote Management IP Address:	
	Save

• Forbid all devices to manage the router remotely:

Select Disable Remote Management and click Save.

- Allow all devices to manage the router remotely:
- 1. Select Enable Remote Management for All Devices.
- 2. Enter Web Management Port (1024-65535 or 80).
- 3. Click Save.

Devices on the Internet can log in to <u>http://Router's WAN IP address:port number</u> (such as <u>http://113.116.60.229:1024</u>) to manage the router.

Ø Tips:

- You can find the WAN IP address of the router on Basic > Network Maps > Internet.
- The router's WAN IP is usually a dynamic IP. Please refer to <u>Set Up a Dynamic DNS Service Account</u> if you want to log in to the router through a domain name.
- Allow specific devices to manage the router remotely:
- 1. Select Enable Remote Management for Specified Devices.
- 2. Enter Web Management Port (1024-65535 or 80).
- 3. In Remote Management IP address, enter the IP address of the remote device to manage the router.
- 4. Click Save.

Devices using this WAN IP can manage the router by logging in to <u>http://Router's WAN</u> IP:port number (such as <u>http://113.116.60.229:1024</u>).

Ø Tips:

The router's WAN IP is usually a dynamic IP. Please refer to <u>Set Up a Dynamic DNS Service Account</u> if you want to log in to the router through a domain name.

14.10. System Log

When the router does not work normally, you can save the system log and send it to the technical support for troubleshooting.

- To save the system log in local:
- 1. Visit <u>http://tplinkwifi.net</u>, and log in your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > System Log.
- 3. Choose the type and level of the system logs as needed.
- 4. Click Save Log to save the system logs to local.

				💍 Refresh 🛛 🖨 Delete Al
ID	Time	Туре	Level	Log Content
1	2016-06-24 04:28:31	Local Management	NOTICE	[19000] Accessable mode change: Device in the list.
2	2016-06-24 04:25:12	Locale	INFO	[16605] Language is changed to 'en_US'
3	2016-06-24 04:25:12	Locale	DEBUG	[16605] Explorer language is 'zh_CN'
4	2016-06-24 04:25:02	Locale	INFO	[16435] Language is changed to 'en_US'
5	2016-06-24 04:25:02	Locale	DEBUG	[16435] Explorer language is 'zh_CN'
6	2016-06-24 04:24:58	Locale	INFO	[16283] Language is changed to 'en_US'
7	2016-06-24 04:24:58	Locale	DEBUG	[16283] Explorer language is 'zh_CN'

• To send the system log to a mailbox at a fixed time:

For example, I want to check my router's working status at a fixed time every day, however, it's too troublesome to log in to the web management page every time I want to go checking. It would be great if the system logs could be sent to my mailbox at 8 a.m. every day.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > System Log.
- 3. Click Mail Settings.
- 4. Enter the information required:

Mail Settings	
From:	
To:	
SMTP Server:	
	Enable Authentication
Username:	
Password:	
	C Enable Auto Mail
	● Log at 00 ▼ : 00 ▼ (HH:MM) everyday
	O Log every 24 hours
	Save

- 1) From: Enter the email address used for sending the system log.
- 2) To: Enter the recipient's email address, which can be the same as or different from the sender's email address.
- 3) SMTP Server: Enter the SMTP server address.

© Tips: SMTP server is available for users in most webmail systems. For example, the SMTP server address of Hotmail is smtp-mail.outlook.com. You can refer to their Help page to learn the SMTP server address.

4) Select Enable Authentication.

Tips: Generally, Enable Authentication should be selected if the login of the mailbox requires username and password.

- 5) Username: Enter the email address used for sending the system log.
- 6) Password: Enter the password to login the sender's email address.
- 7) Select Enable Auto Mail.

Tips: The router will send the system log to the designated email address if this option is enabled.

- 8) Set a fixed time. The recipient will receive the system log sent at this time every day.
- 5. Click Save.

14.11. Monitor the Internet Traffic Statistics

The Traffic Statistics page displays the network traffic of the LAN, WAN and WLAN sent and received packets, allowing you to monitor the volume of Internet traffic statistics.

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > System Tools > Traffic Statistics.

3. Toggle on Traffic Statistics, and then you can monitor the traffic statistics in Traffic Statistics List section.

Fraffic Statisti	CS				
Traffic Statistics:					
Traffic Statisti	cs List				
	C5 LISC				
			Ċ) Refresh 🗘 Reset	All 😑 Delete A
IP Address/MAC Address	Total Packets	Total Bytes	Current Packets) Refresh 🧳 Reset	All 😑 Delete A Modify

Click Refresh to update the statistic information on the page.

Click Reset All to reset all statistic values in the list to zero.

Click Delete All to delete all statistic information in the list.

Click 🔘 to reset the statistic information of the specific device.

Click 🔋 to delete the specific device item in the list.

FAQ

Q1. What should I do if I forget my wireless password?

The default wireless password is printed on the label of the router. If the password has been altered:

- 1. Connect your computer to the router using an Ethernet cable.
- 2. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 3. Go to Basic > Wireless to retrieve or reset your wireless password.

Q2. What should I do if I forget my web management password?

- If you are using a TP-Link ID to log in, or you have enabled the Password Recovery feature of the router, click Forgot password on the login page and then follow the instructions to reset it.
- Alternatively, press and hold the Reset button of the router until the Power LED binks to reset it, and then visit http://tplinkwifi.net to create a new login password.

Note:

Please refer to <u>Password Recovery</u> to learn how to configure Password Recovery.

• You'll need to reconfigure the router to surf the internet once the router is reset, and please mark down your new password for future use.

Q3. What should I do if I cannot log in to the router's web management page?

This can happen for a variety of reasons. Please try the methods below to log in again.

- Make sure your computer is connected to the router correctly and the corresponding LED indicator(s) light up.
- Make sure the IP address of your computer is configured as Obtain an IP address automatically and Obtain DNS server address automatically.
- Make sure http://tplinkwifi.net or http://192.168.0.1 is correctly entered.
- Check your computer's settings:
 - 1) Go to Start > Control Panel > Network and Internet, and click View network status and tasks.
 - 2) Click Internet Options on the bottom left.
 - 3) Click Connections and select Never dial a connection.

eneral Se	curity	Privacy	Content	Connections	Programs	Advanced
	o set up etup.	o an Inter	net connec	tion, click	Set	up
Dial-up and	l Virtua	Private N	Network se	ttings		
🎒 Bro	adbar	nd Conn	ection		Add	l
					Add V	PN
					Remo	ve
Choose Server for			ed to config	jure a proxy	Sett	ings
Never	dial a d	connection	n			
🔘 Dial w	heneve	r a netwo	ork connect	tion is not pres	ent	
Alway	s dial m	ny default	connection	1		
Curren		None			Set de	fault
Local Area	Netwo	rk (LAN) s	ettings -			
			to dial-up r dial-up se	connections. ettings.	LAN se	ttings

4) Click LAN settings and deselect the following three options and click OK.

	nfiguration may override manual settings. To ensure the al settings, disable automatic configuration.
Automatic	cally detect settings
Use autor	natic configuration script
Address	
Proxy server	
	xy server for your LAN (These settings will not apply to VPN connections).
	Port: 80 Advanced
Address:	

5) Go to Advanced > Restore advanced settings, click OK to save the settings.

💼 Interne	t Properti	es				? ×	
General	Security	Privacy	Content	Connections	Programs	Advanced	
Settings	Settings						
	Enable Move : Reset Reset Reset Browsing Autom Close : Disable Disable	s expand Caret Br system ca text size text size zoom leve atically re unused for e script de e script de	ret with fo to medium to medium el for new v cover fron Iders in His ebugging (I ebugging ((new windows a cus/selection d for new window while zooming* windows and ta n page layout e story and Favor nternet Explore Other)	hanges ws and tabs bs rrors with Co rites* er)		
1	Display a notification about every script error Display Accelerator button on selection TII *Takes effect after you restart Internet Explorer						
*Tak							
				Restore	advanced s	ettings	
Rese condi	tion.	Explorer'	s settings	to their default vser is in an uni	Rest		
			Ok	Ca	incel	Apply	

- Use another web browser or computer to log in again.
- Reset the router to factory default settings and try again. If login still fails, please contact the technical support.

Note: You'll need to reconfigure the router to surf the internet once the router is reset.

Q4. How do I use the WDS Bridging function to extend my wireless network?

For example, my house covers a large area. The wireless coverage of the router I'm using (the root router) is limited. I want to use an extended router to extend the wireless network of the root router.

Note:

- WDS bridging only requires configuration on the extended router.
- WDS bridging function can be enabled either in 2.4GHz frequency or 5GHz frequency for a dual-band router. We use the WDS bridging function in 2.4GHz frequency as example.
- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Configure the IP address of the router:
 - 1) Go to Advanced > Network > LAN, configure the IP address of the extended router to be in the same subnet with the root router; (For example, the IP address

of the root router is 192.168.0.1, the IP address of the extended router can be 192.168.0.2~192.168.0.254. We take 192.168.0.2 as example.)

2) Click Save.

Note: Log in to the web management page again if the IP address of the router is altered.

LAN		
MAC Address:	50-C7-BF-02-EA-DC	
IP Address:	192.168.0.2	
Subnet Mask:	255.255.255.0	

- 3. Survey the SSID to be bridged:
 - Go to Advanced > System Tools > System Parameters and focus on the 2.4GHz WDS section, click Enable WDS Bridging.
 - 2) Click Survey, locate the root router's SSID and click Choose (Here we take TP-Link_4F98 as example).
 - 3) If the root router has wireless password, you should enter the wireless password of the root router.
 - 4) Click Save.

WDS Bridging:	Enable WDS Bridging	
SSID (to be bridged):	TP-Link_4F98	Survey
MAC Address (to be bridged):	0C-4A-08-13-4F-98	Example: 00-1D-0F-11-22-33
Security:	O No Security WPA-PS	SK/WPA2-PSK O WEP
Password:	12345678	
		Save

4. Disable DHCP:

- 1) Go to Network > DHCP Server.
- 2) Deselect Enable DHCP Server and click Save.

Now you can go to Advanced > Status > Wireless to check the WDS status. When the WDS status is Run, it means WDS bridging is successfully built.

Q5. What should I do if I cannot access the internet even though the

configuration is finished?

- 1. Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2. Go to Advanced > Status to check internet status:

As the follow picture shows, if IP Address is a valid one, please try the methods below and try again:

💮 Internet 😣	IPv4 IPv6
MAC Address:	50-C7-BF-02-EA-DD
IP Address:	58.61.172.101
Subnet Mask:	255.255.255.255
Default Gateway:	58.61.172.1
Primary DNS:	202.96.134.33
Secondary DNS:	202.96.128.86
Connection Type:	PPPoE

- Your computer might not recognize any DNS server addresses. Please manually configure the DNS server.
 - 1) Go to Advanced > Network > DHCP Server.
 - 2) Enter 8.8.8.8 as Primary DNS, click Save.
 - Tips: 8.8.8 is a safe and public DNS server operated by Google.

Settings			
DHCP Server:	Enable DHCP Server		
IP Address Pool:	192.168.0.100	- 192.168.0.199	
Address Lease Time:	120 minutes. (1-2880. The default value is 120.)		
Default Gateway:	192.168.0.2	(Optional)	
Primary DNS:	8.8.8.8	(Optional)	
Secondary DNS:		(Optional)	
			Save

- Restart the modem and the router.
 - 1) Power off your modem and router, and leave them off for 1 minute.
 - 2) Power on your modem first, and wait about 2 minutes until it gets a solid cable or Internet light.
 - 3) Power on the router.
 - 4) Wait another 1 or 2 minutes and check the internet access.
- Reset the router to factory default settings and reconfigure the router.
- Upgrade the firmware of the router.
- Check the TCP/IP settings on the particular device if all other devices can get internet from the router.

As the picture below shows, if the IP Address is 0.0.0.0, please try the methods below and try again:

💮 Internet 😢	IPv4 IPv6
MAC Address:	50-C7-BF-02-EA-DD
IP Address:	0.0.0.0
Subnet Mask:	0.0.0
Default Gateway:	0.0.0.0
Primary DNS:	0.0.0
Secondary DNS:	0.0.0.0
Connection Type:	PPPoE

- Make sure the physical connection between the router and the modem is proper.
- Clone the MAC address of your computer.
 - 1) Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
 - 2) Go to Advanced > Network > Internet and focus on the MAC Clone section.
 - 3) Choose an option as needed (enter the MAC address if Use Custom MAC Address is selected), and click Save.

MAC Clone		
Use Default MAC Address		
○ Use Current Computer MAC Address		
○ Use Custom MAC Address		
		Save

Ø Tips:

- Some ISP will register the MAC address of your computer when you access the internet for the first time through their Cable modem, if you add a router into your network to share your internet connection, the ISP will not accept it as the MAC address is changed, so we need to clone your computer's MAC address to the router.
- The MAC addresses of a computer in wired connection and wireless connection are different.

• Modify the LAN IP address of the router.

Note:

Most TP-Link routers use 192.168.0.1/192.168.1.1 as their default LAN IP address, which may conflict with the IP range of your existing ADSL modem/router. If so, the router is not able to communicate with your modem and you can't access the internet. To resolve this problem, we need to change the LAN IP address of the router to avoid such conflict, for example, 192.168.2.1.

- 1) Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 2) Go to Advanced > Network > LAN.
- 3) Modify the LAN IP address as the follow picture shows. Here we take 192.168.2.1 as an example.
- 4) Click Save.

LAN		
MAC Address:	50-C7-BF-02-EA-DC	
IP Address:	192.168.2.1	
Subnet Mask:	255.255.255.0	,

- Restart the modem and the router.
 - 1) Power off your modem and router, and leave them off for 1 minute.
 - 2) Power on your modem first, and wait about 2 minutes until it get a solid cable or Internet light.
 - 3) Power on the router.
 - 4) Wait another 1 or 2 minutes and check the internet access.
- Double check the internet connection type.

- 1) Confirm your internet connection type, which can be learned from the ISP.
- 2) Visit <u>http://tplinkwifi.net</u>, and log in with your TP-Link ID or the password you set for the router.
- 3) Go to Advanced > Network > Internet.
- 4) Select your Internet Connection Type and fill in other parameters.
- 5) Click Save.

IPv4		
Internet Connection Type:	Dynamic IP	▼
IP Address:	Static IP Dynamic IP	
Subnet Mask: Default Gateway:	PPPoE BigPond Cable	
Primary DNS:	L2TP РРТР	
Secondary DNS: Renew Release O Advanced	0.0.0.0	
Advanceu		

- 6) Restart the modem and the router again.
- Please upgrade the firmware of the router.

If you've tried every method above but still cannot access the internet, please contact the technical support.

Q6. What should I do if I cannot find my wireless network or I cannot connect the wireless network?

If you fail to find any wireless network, please follow the steps below:

- Make sure the wireless function of your device is enabled if you're using a laptop with built-in wireless adapter. You can refer to the relevant document or contact the laptop manufacturer.
- Make sure the wireless adapter driver is installed successfully and the wireless adapter is enabled.
 - On Windows 7
 - 1) If you see the message No connections are available, it is usually because the wireless function is disabled or blocked somehow.

- 2) Click Troubleshoot and windows might be able to fix the problem by itself.
- On Windows XP
- 1) If you see the message Windows cannot configure this wireless connection, this is usually because windows configuration utility is disabled or you are running another wireless configuration tool to connect the wireless.
- 2) Exit the wireless configuration tool (the TP-Link Utility, for example).
- 3) Select and right click on My Computer on desktop, select Manage to open Computer Management window.
- 4) Expand Services and Applications > Services, find and locate Wireless Zero Configuration in the Services list on the right side.
- 5) Right click Wireless Zero Configuration, and then select Properties.
- 6) Change Startup type to Automatic, click on Start button and make sure the Service status is Started. And then click OK.

If you can find other wireless network except your own, please follow the steps below:

- Check the WLAN LED indicator on your wireless router/modem.
- Make sure your computer/device is still in the range of your router/modem. Move it closer if it is currently too far away.
- Go to Advanced > Wireless > Wireless Settings, and check the wireless settings. Double check your Wireless Network Name and SSID is not hided.

Wireless Settings		2.4GHz 5GHz
	✓ Enable Wireless Radio	
Network Name (SSID):	TP-LINK_EADB	
Security:	WPA/WPA2-Personal (Recommended)	
Version:	● Auto ○ WPA-PSK ○ WPA2-PSK	
Encryption:	Auto O TKIP O AES	
Password:	35498841	
Mode:	802.11b/g/n mixed 🔍	
Channel Width:	Auto	
Channel:	Auto	
Transmit Power:	🔿 Low 🔿 Middle 💿 High	
		Save

If you can find your wireless network but fail to connect, please follow the steps below:

• Authenticating problem/password mismatch:

 Sometimes you will be asked to type in a PIN number when you connect to the wireless network for the first time. This PIN number is different from the Wireless Password/Network Security Key, usually you can only find it on the label of your router.

Type the 8-	digit PIN fro it is not the			ord
		s generar i		
PIN:				
<u>Connect using</u>	a sacurity kay i	instead		
<u>connect asing</u>	a security key	in second		

- 2) If you cannot find the PIN or PIN failed, you may choose Connecting using a security key instead, and then type in the Wireless Password/Network Security Key.
- 3) If it continues to show note of Network Security Key Mismatch, it is suggested to confirm the wireless password of your wireless router.

Note: Wireless Password/Network Security Key is case sensitive.

- Windows unable to connect to XXXX / Can not join this network / Taking longer than usual to connect to this network:
 - Check the wireless signal strength of your network. If it is weak (1~3 bars), please move the router closer and try again.
 - Change the wireless Channel of the router to 1, 6 or 11 to reduce interference from other networks.
 - Re-install or update the driver for your wireless adapter of the computer.

COPYRIGHT & TRADEMARKS

Specifications are subject to change without notice. Ptp-link is a registered trademark of TP-Link Technologies Co., Ltd. Other brands and product names are trademarks or registered trademarks of their respective holders.

No part of the specifications may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from TP-Link Technologies Co., Ltd. Copyright © 2019 TP-Link Technologies Co., Ltd. All rights reserved.

FCC compliance information statement



Product Name: AC1750 Wireless Dual Band Gigabit Router Model Number: Archer C7/Archer A7

Component Name	Model
I.T.E. Power Supply	T120200-2B1

Responsible party:

TP-Link USA Corporation, d/b/a TP-Link North America, Inc. Address: 145 South State College Blvd. Suite 400, Brea, CA 92821 Website: http://www.tp-link.com/us/ Tel: +1 626 333 0234 Fax: +1 909 527 6803 E-mail: sales.usa@tp-link.com

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 colocated or operating in conjunction with any other antenna or transmitter."

We, **TP-Link USA Corporation**, has determined that the equipment shown as above has been shown to comply with the applicable technical standards, FCC part 15. There is no unauthorized change is made in the equipment and the equipment is properly maintained and operated.

FCC compliance information statement Product Name: I.T.E. Power Supply Model Number: T120200-2B1 Responsible party: TP-Link USA Corporation, d/b/a TP-Link North America, Inc. Address: 145 South State College Blvd. Suite 400, Brea, CA 92821 Website: http://www.tp-link.com/us/ Tel: +1 626 333 0234 Fax: +1 909 527 6803 E-mail: sales.usa@tp-link.com

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.

We, **TP-Link USA Corporation**, has determined that the equipment shown as above has been shown to comply with the applicable technical standards, FCC part 15. There is no unauthorized change is made in the equipment and the equipment is properly maintained and operated.

Issue Date: 2019-12-02

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.

OPERATING FREQUENCY(the maximum transmitted power)

2400 MHz -2483.5 MHz (20dBm)

5150 MHz -5250 MHz (23dBm)

EU declaration of conformity

TP-Link hereby declares that the device is in compliance with the essential requirements and other relevant provisions of directives 2014/53/EU, 2009/125/EC, 2011/65/EU and (EU)2015/863.

The original EU declaration of conformity may be found at http://www.tp-link.com/en/ce

RF Exposure Information

This device meets the EU requirements (2014/53/EU Article 3.1a) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

The device complies with RF specifications when the device used at 20 cm from your body.

National restrictions

Attention: This device may only be used indoors in all EU member states and EFTA countries.

	AT	BE	BG	СН	CY	CZ	DE	DK
	EE	EL	ES	FI	FR	HR	HU	IE
(•)//	IS	IT	LI	LT	LU	LV	MT	NL
	NO	PL	PT	RO	SE	SI	SK	UK

Canadian Compliance Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

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

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables

aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1. L'appareil ne doit pas produire de brouillage;
- 2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Caution:

1. The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

Avertissement:

1. Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

Radiation Exposure Statement:

This equipment complies with IC 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.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Industry Canada Statement

CAN ICES-3 (B)/NMB-3(B)

Korea Warning Statements:

해당 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信; 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。

4.7.9.1應避免影響附近雷達系統之操作。

4.7.9.2高增益指向性天線只得應用於固定式點對點系統。

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。

限用物質含有情況標示聲明書

	限用物質及其化學符號					
	鉛	鎘	汞	六價鉻	多溴聯苯	多溴二苯醚
產品元件名稱	Pb	Cd	Hg	CrVI	PBB	PBDE
PCB	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
外殼	\bigcirc	\bigcirc	\bigcirc	0	\bigcirc	\bigcirc
電源供應器	-	\bigcirc	\bigcirc	0	\bigcirc	\bigcirc
備考1. 超出0.1 wt %"及 "超出0.01 wt %" 系指限用物質之百分比含量超出百分						
比含量基準值。						
備考2. "〇"系指該項限用物質之百分比含量未超出百分比含量基準值。						
備考3."-"系指該項限用物質為排除項目。						



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

EHC

Safety Information

- Keep the device away from water, fire, humidity or hot environments.
- Do not attempt to disassemble, repair, or modify the device.
- Do not use damaged charger or USB cable to charge the device.
- Do not use any other chargers than those recommended
- Do not use the device where wireless devices are not allowed.
- Adapter shall be installed near the equipment and shall be easily accessible.

• II Use only power supplies which are provided by manufacturer and in the original packing of this product. If you have any questions, please don't hesitate to contact us.

Explanations of the s	wmhols on the	nroduct label
LAPIANALIONS OF LIES	yillbuls oli tile	productioner

Symbol	Explanation
	DC voltage
	Indoor use only
	RECYCLING This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/ EU in order to be recycled or dismantled to minimize its impact on the environment. User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.