



EchoLife WS311

Wireless Ethernet Adapter

User Guide

HUAWEI TECHNOLOGIES CO., LTD.



HUAWEI



EchoLife WS311

Wireless Ethernet Adapter

V100R001

User Guide

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1 Safety Precautions

Thank you for purchasing the EchoLife WS311 Wireless Ethernet Adapter (hereinafter referred to as the WS311).

For safety purposes, carefully read through these safety precautions and observe them during operation.

Basic Requirements

- Keep the device dry during storage, transportation, and operation of the device.
- Prevent collision of the device with other objects during storage, transportation, and operation of the device.
- Do not attempt to dismantle the device. In case of any fault, contact the authorized maintenance center for assistance or repair.
- Without prior written consent, no organization or individual is permitted to make any change to the structure, safety, and performance design of the device.
- While using the device, observe all applicable laws, directives and regulations, and respect the legal rights of other people.

Environmental Requirements

- Place the device in a well-ventilated place. Do not expose the device to direct sunlight.
- Keep the device clean, free of dust and stain.
- Do not place the device near a water source or in a damp area.
- Place the device on a stable surface.
- Do not place any object on the top of the device. Reserve a minimum space of 10 cm at the four sides of the device for heat dissipation.
- Do not place the device on or near inflammable materials such as foam.
- Keep the device away from heat source or fire, such as a radiator or a candle.
- Keep the device away from any household appliances with strong magnetic field or electric field, such as a microwave oven, refrigerator, or mobile phone.

Operation Requirements

- Do not allow children to play with the device or accessories. Swallowing the accessories may be fatal.

- Use the accessories such as the power adaptor provided or authorized only by the manufacturer.
- Make sure that the device does not get wet. If water gets into the device, disconnect the power supply immediately, unplug all the cables connected to the device, and then contact the appointed maintenance center.
- The power supply of the device must meet the requirements of the input voltage of the device.
- Before plugging or unplugging any cable, shut down the device and disconnect the power supply.
- While plugging or unplugging any cable, make sure that your hands are dry.
- Do not step on, pull, or stretch any cable. Otherwise, the cable may get damaged, leading to malfunction of the device.
- Do not use old or damaged cables.
- Keep the power plug clean and dry, to prevent electric shock or other dangers.
- During lightning, disconnect the device from the power supply, and unplug all the cables connected to the device, such as the power cable, to prevent lightning strike.
- If the device is not used for a long time, disconnect it from the power supply and unplug the power plug.
- If smoke, sound, or smell is emitted from the device, stop using the device immediately, disconnect the power supply, unplug the power supply and other cables, and remove the batteries. Contact the authorized maintenance center for repair.
- Make sure that no object (such as metal shavings) enters the device through the heat dissipation vent.
- Do not scratch or abrade the shell of the device. The shed painting may lead to skin allergy or malfunctions of the device. If the shed painting material drops into the host, a short circuit may occur.

Cleaning Requirements

- Before cleaning the device, stop using it and disconnect the power supply.
- Do not clean the device cover with any cleaning solution or cleanser spray. Use a piece of soft cloth to clean the device cover.

Wireless Product Usage Requirements

- Keep the device away from magnetic storage devices (such as a magnetic card or a floppy disk), to prevent loss of the stored information.

- Stop using the device or disconnect the power supply in situations where wireless device is prohibited or using of a wireless device leads to interference or danger.
- The user who uses an electronic assistant medical-treatment device needs to confirm with the service center regarding the effects of the radio wave on this device.
- Do not take the device to the operating theater, Intensive Care Unit (ICU) or the Coronary Care Unit (CCU).
- When using the device maintain distance of 3 cm between your body and the antenna of the device.
- In the area with inflammable or explosive materials, turn off your wireless device, and follow the relevant instructions given in the label, to prevent explosion or fire.
- Protect the wireless device and its accessories, and use it in a clean and dust-free environment. Make sure that the wireless device does not come in contact with flame or a cigarette that is lit.
- Make sure that the wireless device and its accessories are dry.
- Do not drop, throw or try to bend your wireless device.
- Do not place the wireless device and its accessories in high temperature areas.

Environmental Protection



This marking on the device (and any included batteries) indicates that they should not be disposed of as normal household garbage. Do not dispose of this device or batteries as unsorted municipal waste. The device (and any batteries) should be handed over to a certified collection point for recycling or proper disposal at the end of their life.

For more detailed information about the recycling of the device or batteries, please contact your local city office, the household waste disposal service or the retail store where you purchased this device.

The disposal of this device is subject to the Waste from Electrical and Electronic Equipment (WEEE) directive of the European Union. The reason for separating WEEE and batteries from other waste is to minimize the potential environmental impacts and effects on human health of any hazardous substances that may be present.

REACH Declaration

This device is in compliance with the REACH regulation (Regulation 1907/2006/EC). For more information about the device's REACH compliance, please visit www.huaweidevice.com/certification. You are recommended to visit the Web site regularly for up-to-date information.

EU Regulatory Conformance

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.

This equipment may be operated in all European countries.

France: Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz

Italy: For private use, a general authorisation is required if WAS/RLAN's are used outside own premises. For public use, a general authorisation is required

Luxembourg: General authorisation required for network and service supply

Norway: This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund

Hereby, Huawei Technologies Co., Ltd., declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

CE0678

The declaration of conformity may be consulted at www.huaweidevice.com/certification.

Federal Communications Commission (FCC) Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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.

Changes or modifications made to this equipment not expressly approved by Huawei Technologies Co., Ltd. may void the FCC authorization to operate this equipment.



After the WS311 is used for a certain period of time, the cover gets heated, which does not affect the functioning of the WS311.

2 Getting to Know the WS311

Introduction to the WS311

The WS311 functions as a slave on a wireless network. By integrating the functions of a wireless client, it can implement wireless connections for the terminals such as IP set-top boxes (STBs) and computers with an Ethernet interface. The terminals connect to the WS311 through an Ethernet, and then access a wireless network through the WS311. The following figure shows the network connection between the WS311 and other related devices.



1. WAN

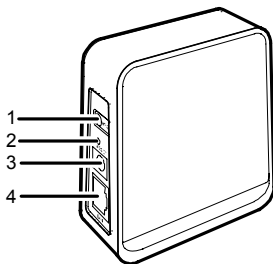
2. Wireless router

3. IP STB or computer

4. WS311

Interfaces and Buttons of the WS311

The following figure shows the positions of the interfaces and buttons on the WS311.



The following table lists the functions of the interfaces and the buttons.

| No. | Description |
|-----|--|
| 1 | <p>WPS button: used to enable the WPS function.</p> <p>Press and hold the WPS button of the WS311 for over 2s, and then release it. Then press the WPS button of the wireless router within two minutes. In this case, the WS311 can quickly and securely access the wireless network of the wireless router.</p> <p>After accessing the wireless network successfully, the WS311 ends the WPS operation automatically. Then the wireless network can exchange data normally. If the WS311 cannot access the wireless network within two minutes, the WS311 automatically ends the WPS operation as well and waits for you to set up the connection again.</p> |
| 2 | <p>RESET button: used to restore the default settings of the WS311.</p> <p>When the WS311 is powered on, press and hold the RESET button of the WS311 for over 6s, and then release it. Then the WS311 automatically restarts and the default settings are restored.</p> |
| 3 | <p>POWER interface: used to connect the power adapter to the WS311.</p> |
| 4 | <p>LAN interface: used to connect the WS311 to the Ethernet interface of an IP STB or a computer.</p> |

| No. | Description |
|-----|-------------|
|-----|-------------|

Note:

LAN = local area network

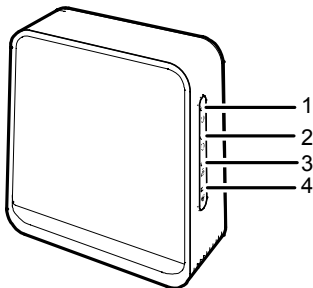
WPS = Wi-Fi Protected Setup



Wi-Fi Protected Setup, abbreviated to WPS, is a standard used for simplifying the security settings of a wireless network. Through the WPS function, wireless terminals can securely connect to a wireless network without requiring users to enter the name and password of the wireless network.

Indicators of the WS311

The following figure shows the positions of the indicators on the WS311.



The following table lists the functions of the indicators.

| No. | Name | Color | Status | Description |
|-----|-----------------|-------|--------|------------------------------|
| 1 | Power indicator | Green | On | The WS311 is powered on. |
| | | - | Off | The WS311 is not powered on. |

| No. | Name | Color | Status | Description |
|-----|----------------------------|--------|----------|---|
| 2 | Status indicator | Blue | On | The WS311 is started normally. |
| | | - | Off | The WS311 is not powered on, or the WS311 is not started. |
| 3 | Ethernet indicator | Green | On | An Ethernet connection is set up. |
| | | Green | Blinking | Data is being transmitted through the Ethernet interface. |
| | | - | Off | No Ethernet connection is set up. |
| 4 | Wireless network indicator | Green | On | The WS311 has connected to a wireless network. |
| | | Green | Blinking | The WS311 is transmitting data through a wireless network. |
| | | - | Off | The WS311 has not connected to a wireless network. |
| | | Orange | Blinking | The WS311 is trying to connect to the wireless router through the WPS function. |
| | | Orange | On | The WS311 successfully connects to the wireless router through the WPS function. This state lasts for 300s. |

3 Using the WS311

Through the Ethernet interface, you can connect the WS311 to various devices such as IP STBs and computers. After being connected, the devices can be wirelessly connected to the wireless network in your home. The following sections take an IP STB and a computer as examples to describe how to connect the devices and how to use the WS311 respectively .

Connecting an IP STB to a Wireless Network

Suppose that a wireless router supporting the WPS function has been installed in your home, and an IP STB used for watching Internet Protocol Television (IPTV) programs is newly placed. The IP STB needs to be connected to a network through the wireless router, but it is some distance from the wireless router. Therefore, the layout of the network cables used for connecting the devices will be troublesome. In this case, you can use the WS311 to connect the IP STB to the wireless router wirelessly, which eliminates the trouble of cable layout.

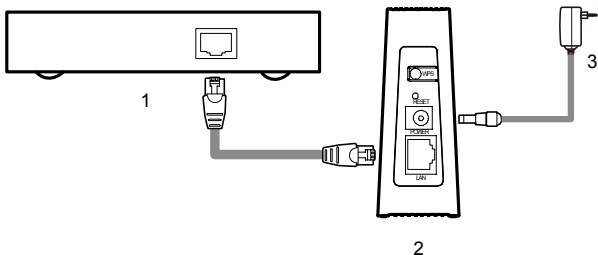
Requirements on network and IP STB configurations vary with different IPTV service providers. This section describes how to connect and configure the WS311 by supposing that the IP STB accesses the wireless network through the Point-to-Point Protocol over Ethernet (PPPoE) dial-up mode.

Step 1 Configure the wireless router: Set the wide area network (WAN) interface of the wireless router to the bridging mode, and ensure that the wireless network function and the WPS function implemented through the Push Button Configuration (PBC) method are enabled.

The method for configuring a router varies with the routers produced by different manufacturers. For details about the configuration method, see the wireless router user guide provided by the manufacturer.

Step 2 Connect the WS311 to the IP STB and the power socket as shown in the following figure.

Connect the LAN interface of the WS311 to the Ethernet interface of the IP STB by using a network cable. Connect the POWER interface of the WS311 to the power socket by using a power adapter.



1. IP STB

2. WS311

3. Power adapter



The position of the Ethernet interface on an IP STB varies with the IP STBs produced by different manufacturers. The position of the Ethernet interface on the IP STB as shown in the preceding figure is provided only for your reference.

Step 3 Power on the WS311.

After the power adapter connected to the WS311 is supplied with power, the WS311 is powered on and the power indicator on the panel turns on. Wait for a moment (less than one minute). When the status indicator turns on, it indicates that the WS311 is started normally.

Step 4 Press the WPS button of the wireless router. Within two minutes, press and hold the WPS button of the WS311 for over 2s, and then release it.

At this time, the wireless network indicator of the WS311 blinks in orange, indicating that the WS311 is trying to connect to the wireless router through the WPS function. Wait for a moment (generally about 10s and less than 120s). When the wireless network indicator of the WS311 turns solid orange, it indicates that the WS311 successfully connects to the wireless router through the wireless network.



The wireless network indicator keeps on in solid orange for 300s. After 300s, it turns green.

If the wireless network indicator turns off after blinking in orange, it indicates that the WS311 cannot connect to a wireless network. For the solution, see section 5 "FAQs."

Step 5 Set the IP STB to access the network through the PPPoE dial-up mode.

Connecting a Computer to a Wireless Network

Suppose that a wireless router supporting the WPS function has been installed in your home, and you want your computer to access the network wirelessly. In this case, you can also use the WS311 to implement the wireless connection.

This section describes how to connect and configure the WS311 by supposing that the computer accesses the wireless network by using the routing function of the wireless router.

Step 1 Configure the wireless router.

1. Set the WAN interface to access the network by using the PPPoE dial-up mode.
2. Enable the routing and Dynamic Host Configuration Protocol (DHCP) functions.
3. Enable the wireless network function and enable the WPS function implemented through the PBC method.

Step 2 Connect the WS311.

1. Connect the LAN interface of the WS311 to the Ethernet interface of the computer by using a network cable.
2. Connect the POWER interface of the WS311 to the power socket by using a power adapter.

Step 3 Power on the WS311.

Step 4 Press the WPS button of the wireless router. Within two minutes, press and hold the WPS button of the WS311 for over 2s, and then release it.

Wait for a moment. When the wireless network indicator of the WS311 turns solid orange, it indicates that the WS311 successfully connects to the wireless router through the wireless network.

Step 5 Set the computer to obtain an IP address automatically for setting up a network connection.

After the computer obtains the IP address allocated by the wireless router, you can access the Internet by using the computer.

4 Configuring the WS311

Logging In to the Web-Based Configuration Utility

By default, most parameters are preset on the WS311 for supporting the network applications in general conditions. To view the working status or to change the parameters of the WS311, you can log in to the Web-based configuration utility. To log in to the Web-based configuration utility, do as follows:

- Step 1 Connect the LAN interface of the WS311 to the Ethernet interface of the computer by using a network cable.
- Step 2 Set the IP address of the computer and ensure that the IP address is in the same network segment as the IP address of the WS311 LAN interface.

By default, the IP address of the WS311 LAN interface is **192.168.1.100** and the subnet mask is **255.255.255.0**. If the IP address is not changed, you can set the IP address to **192.168.1.101** and the subnet mask to **255.255.255.0** on the computer.

- Step 3 Launch the Internet Explorer on the computer. Enter **http://192.168.1.100** in the address bar and then press **Enter**.
- Step 4 In the displayed login dialog box, enter the user name (**admin** by default) and the password (**admin** by default), and then click **Login**.

After the password is verified, you can access the Web-based configuration utility.



If you forget the IP address of the WS311 LAN interface, user name, or password after change, you can press the RESET button of the WS311 to restore the default settings.

Changing the Administrator Password of the Web-based Configuration Utility

For security reasons or to use a password that is easy to remember, you can change the administrator password after logging in to the Web-based configuration utility. To change the administrator password of the Web-based utility, do as follows:

- Step 1 In the navigation tree, choose **Maintenance > Account** to display the system management page.
- Step 2 Select **admin** from the **User name** drop-down combo box.
- Step 3 In the **Current password** text box, enter the currently used password.

Step 4 In the **New password** and **Confirm password** text boxes, enter the new password respectively. Then click **Submit**.

Changing the IP address of the LAN Interface

The IP address of the LAN interface is the IP address entered in the address bar of the Internet Explorer when you log in to the Web-based configuration utility. You can change the IP address after logging in to the Web-based configuration utility. To change the IP address of the LAN interface, do as follows:

- Step 1 In the navigation tree, choose **Basic > LAN** to display the LAN configuration page.
- Step 2 On the right of the page, click the **DHCP** tab.
- Step 3 In the **IP address** text box, enter a new IP address .
- Step 4 In the **Subnet mask** text box, enter the subnet mask.
- Step 5 Click **Submit**.



When changing the IP address of the WS311 LAN interface, ensure that the new IP address does not conflict with the IP address of the device that is connected to Ethernet interface of the WS311.

Connecting to a Wireless Network

You can connect the WS311 to a wireless network by pressing and holding the WPS button. If the wireless router does not support the WPS function, you can manually connect the WS311 to a wireless network by using the Web-based configuration utility. To manually connect the WS311 to a wireless network, do as follows:

- Step 1 In the navigation tree, choose **Basic > LAN** to display the LAN configuration page.
- Step 2 On the right of the page, click the **WLAN AP List** tab.
The WS311 searches for wireless network signals before the **WLAN AP List** page is displayed. The search for signals will take some time. Wait patiently for the **WLAN AP List** page to be displayed completely.
- Step 3 Select the wireless network to be connected from the **WLAN AP List** list.
- Step 4 In the **Settings** area, set the encryption type and access password of the wireless network.
- Step 5 In the lower right corner, click **Connect**.

When the connection is set up successfully, **Connection Status** in the **Connection Status** area at bottom of the page is displayed as **Connected**. When powered on in the future, the WS311 automatically connects to the

selected wireless network.



The WS311 automatically saves the connection information about wireless networks to which it has successfully connected. Through the information, you can quickly connect the WS311 to a specified wireless network. To use and manage the connection information, access the **WLAN Profile** tab after logging in to the Web-based configuration utility and displaying the LAN configuration page.

Restoring Default Settings



After you restore the default settings, your customized data will be lost. Therefore, use this function with caution.

To restore the WS311 to the default settings, you can press and hold the **RESET** button of the WS311 for over 6s after the WS311 is powered on, and then release the button. After the WS311 automatically restarts, the WS311 is restored to the default settings.

You can also do as follows to restore the WS311 to the default settings after logging in to the Web-based configuration utility:

- Step 1 In the navigation tree, choose **Maintenance > Device** to display the system reboot page.
- Step 2 On the right of the page, click the **Reset** tab.
- Step 3 Click **Restore Default Settings**.

5 FAQs

How can I quickly restore the default settings of the WS311?

When the WS311 is powered on, press and hold the RESET button of the WS311 for over 6s, and then release it. Then the WS311 automatically restarts and the default settings are restored.

Does the WPS function have any special requirement on the wireless encryption settings of the wireless router?

The WPS function has no special requirement on the wireless encryption settings; however, it is recommended that you use encryption methods such as Wi-Fi Protected Access (WPA) rather than Wired Equivalent Privacy (WEP) for accessing a wireless network. The reasons are as follows: If a wireless network is not encrypted or encrypted by using the WEP, the security performance is poor. In addition, on some wireless routers, the WPS function is forcibly disabled if the WEP encryption is used for accessing a wireless network.

If several service set identifiers (SSIDs) are enabled on my wireless router, when the WS311 tries to connect to a wireless network by using the WPS function, which wireless network does the WS311 connect to?

By using the WPS function, the WS311 tries to connect to the wireless network with the SSID numbered 1.

If my router does not support the WPS function, how can I connect the WS311 to a wireless network?

You can manually connect the WS311 to a wireless network by using the Web-based configuration utility.

If the WS311 fails to connect to a wireless network after I press and hold the WPS button, what should I do?

- Step 1 Ensure that only one WS311 is trying to connect to the wireless router through the WPS function at a particular moment.
- Step 2 On the wireless router, ensure that the wireless network function and the WPS function implemented through the PBC method are enabled. Note that on some wireless routers, the WPS function is forcibly disabled if the WEP encryption is used for accessing a wireless network.
- Step 3 Check the positions of the wireless router and the WS311. Ensure that they are far from the electric appliances, such as a microwave oven, a refrigerator, or a cordless telephone, that generate strong magnetic or

electric fields.

- Step 4** It is recommended that you place the wireless router and the WS311 in an open space. Although radio signals can pass through obstacles, passing through too many obstacles such as cement or wooden walls can affect the transmission of radio signals of a wireless network.

6 Appendix

Default Settings

| Parameter | Default Value |
|---|---------------|
| IP address of the LAN interface | 192.168.1.100 |
| Subnet mask of the LAN interface | 255.255.255.0 |
| User name used to log in to the Web-based configuration utility | admin |
| Password used to log in to the Web-based configuration utility | admin |

Technical Specifications

| Item | Specification |
|-----------------------------------|--|
| Power supply for the WS311 | 5 V DC; 1 A |
| Power consumption | < 5 W |
| Ambient temperature for operation | 0°C to 40°C |
| Ambient humidity for operation | 5% to 95%, non-condensing |
| Dimensions (L × W × H) | 80.68 mm × 33.98 mm × 86.83 mm |
| Weight | About 90 g |
| Wireless network standards | 802.11b, 802.11g, and 802.11n (2.4–2.4835 GHz) |

| Item | Specification | |
|-----------------------------|-------------------------------------|--|
| Wireless transmission rates | 802.11b | 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s, and 11 Mbit/s |
| | 802.11g | 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s, 6 Mbit/s, 11 Mbit/s, 12 Mbit/s, 18 Mbit/s, 24 Mbit/s, 36 Mbit/s, 48 Mbit/s, and 54 Mbit/s |
| | 802.11n (a 1T × 1R antenna used) | 6 Mbit/s, 6.5 Mbit/s, 13.0 Mbit/s, 13.5 Mbit/s, 19.5 Mbit/s, 26.0 Mbit/s, 27.0 Mbit/s, 39.0 Mbit/s, 40.5 Mbit/s, 52.0 Mbit/s, 54.0 Mbit/s, 58.5 Mbit/s, 65.0 Mbit/s, 81.0 Mbit/s, 108.0 Mbit/s, 121.5 Mbit/s, and 135.0 Mbit/s |

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