ZTE中兴

ZXWL W822E
Wireless Access Point
User Manual

Version: V1.0

Revision History

Revision No.	Revision Date	Revision Reason
R1.0	2013-08-08	First edition

Contents

Chapter 1
Safety Precautions

Installation

- Use the power adapter attached to the ZXWL W822E. Any other power adapter may damage the device or make it fail to operate properly.
- Ensure that the power outlet and the cable can sustain the load. An overloaded outlet and damaged cable may result in an electric shock or a fire. Check the cable periodically. If it is damaged, replace it immediately.
- Ensure that the device is installed in an environment that is well ventilated, and ensure that the device vents are not blocked.
- Ensure that the device is away from a heat source or a high temperature area, and the device is not exposed to direct sunlight.
- Ensure that the device is away from a humid area.
- Place the device on a stable surface.

Usage

- When you stop using this device or need to clean it, turn off the device and remove the power cable. Note that the power adapter may be hot.
- After you power off the device, wait at least 15 seconds before you power it on again.
- If you will not use the device for a long period, remove the power cable to avoid damage caused by lightening or voltage and power surges.

Service

Do not disassemble the device or open the enclosure. Do not try to repair the device. The violation may void your warranty.

In the following cases, contact ZTE after-sale personnel:

- The power cable or plug is damaged.
- Liquid has fallen into the device.
- The device was soaked by rain or other liquids.
- The device does not operate properly when you operate it as instructed.
- The enclosure is damaged because of falling or hitting.
- The indicators do not flash normally.

Chapter 2
Product Description

Overview

The ZXWL W822E broadband wireless access product is an indoor dual-frequency fit-fat integrated AP. It can operation in 2.4 GHz and 5 GHz frequencies. The 2.4 GHz frequency is used for wireless coverage. The 5 GHz frequency is used for wireless coverage and wireless bridging.

The ZXWL W822E has two models, W822E and W822Ei. The W822E uses an external antenna and the W822Ei uses an internal antenna.

The ZXWL W822E has the following features:

- Supports 12 V DC power supply and PoE/PoE+ power supply.
- Supports MIMO 3x3. Each frequency band supports up to 450 Mbps rates.
- Provides two 10 M/100 M/1000 M auto-sensing electric Ethernet ports and supports automatic detection of network cable connections through MDI/MDI-X.
- Supports desktop, wall, and ceiling mount modes.
- Based on the Unified ZTE CSP Platform, which enables the ZXWL W822E to easily switch between fit and fat AP modes and provide a reliable and managable carrier-class WLAN network.
- Complies with the IEEE 802.11a, 802.11b, 802.11g, and 802.11n standards and uses the OFDM technology. With the high transmission rate, high receiving sensitivity, and long transmission distance features, it is suitable for deployment in WLAN hotspots to provide WLAN access for users and to offer superb wireless access solutions for basic telecom operators, ISPs and industrial enterprises.
- Supports multiple security encryption mechanisms and rights management to protect WLAN security.

Figure 1 shows the external view of the ZXWL W822E.

Figure 1 External View
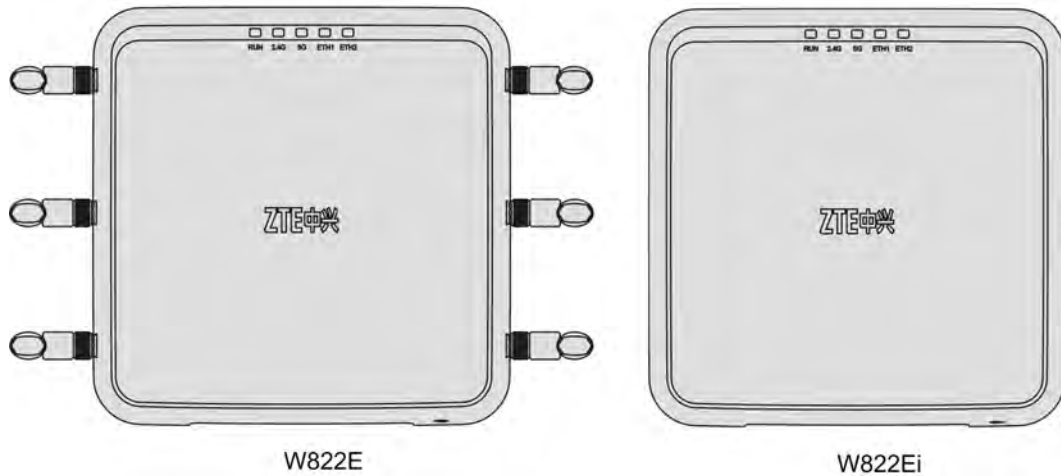
LED Indicators

The ZXWL W822E LED indicators are located on the top of the AP. For a description of the LED indicators, refer to Table 1.

Table 1 LED Indicators

Indicator	Status	Description
RUN	Flashing slowly	The device is powered on and not registered to the AC.
	Flashing fast	The device is being started or the software is being updated.
	ON	The AP is registered to the AC.
2.4 G	ON	The 2.4 G frequency WLAN function is enabled.
	Flashing	Data is being transmitted.
	OFF	The 2.4 G frequency WLAN function is disabled or faulty.
5 G	ON	The 5 G frequency WLAN function is enabled.
	Flashing	Data is being transmitted.
	OFF	The 5 G frequency WLAN function is disabled or faulty.
ETH1	ON	Ethernet port 1 is connected properly.
	Flashing	Data is being transmitted through Ethernet port 1.
	OFF	Ethernet port 1 is not used for fails to operate properly.
ETH2	ON	Ethernet port 2 is connected properly.
	Flashing	Data is being transmitted through Ethernet port 2.
	OFF	Ethernet port 2 is not used for fails to operate properly.

1.　Flashing slowly: ON for 500 ms and OFF for 500 ms
2.　Flashing quickly: ON for 100 ms and OFF for 100 ms
3.　Flashing: ON for 900 ms and OFF for 100 ms

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Interface Descriptions

Figure 2 shows the external interfaces of the ZXWL W822E.

Figure 2 External Interfaces
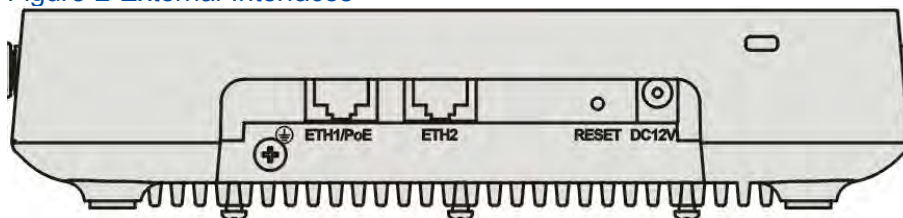
For a description of the external interfaces, refer to Table 2.

Table 2 Description of the External Interfaces

Interface	Description
ETH1/PoE	- Connected to the network port of a PC or another network device through an RJ-45 cable. - Provides 802.3at PoE+ 48 V/0.83 A power supply.
ETH2	- Connected to the network port of a PC or another network device through an RJ-45 cable. - Used to cascade multiple APs.
RESET	Press and hold this button for five seconds to restore the settings to the defaults. After the restoration, the device is restarted.
DC12V	Power port, used to connect to the power adapter. The input power must be DC +12 V/2 A.

Technical Specifications

Table 3 shows the technical specifications of the ZXWL W822E.

Table 3 Technical Specifications

| Item	Specification
Dimensions (L×W×H)	188 mm × 188 mm × 45 mm
Weight	0.75 kg
Power supply mode	802.3at PoE+ 48 V/0.83 A power supply. 12 V/2 A DC power supply.
Maximum power consumption	20 W
Operation temperature	−10℃ to 55℃
Operation humidity	5% to 95%
IP protection level	IP41

Chapter 3
Power Supply

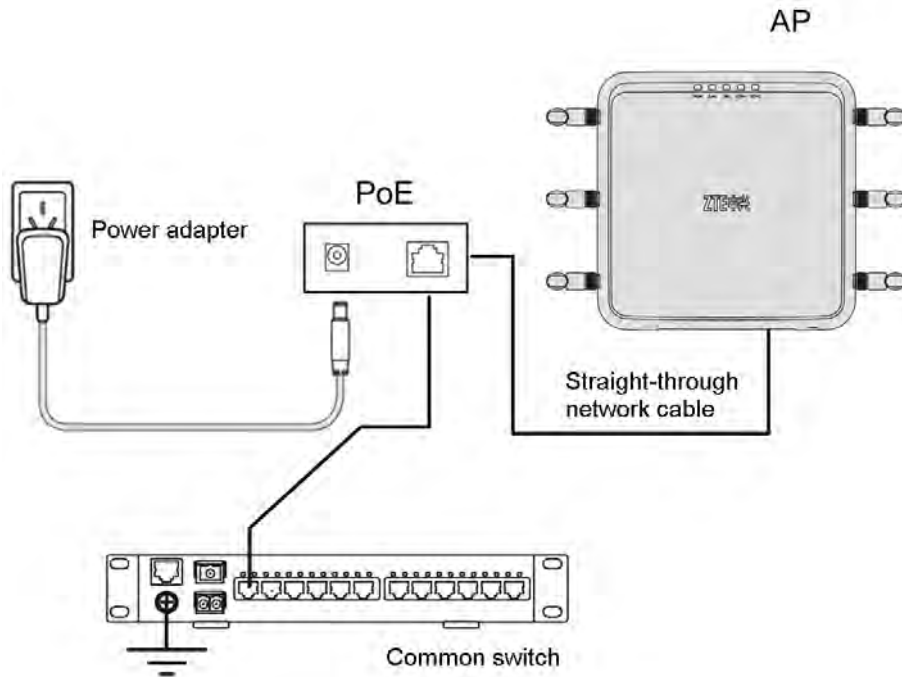The ZXWL W822E supports the following power supply methods. You can use any of the method based on your needs.

- Power the device through the attached external power adapter, see Figure 3.

Figure 3 Powering the ZXWL W822E through the Power Adapter
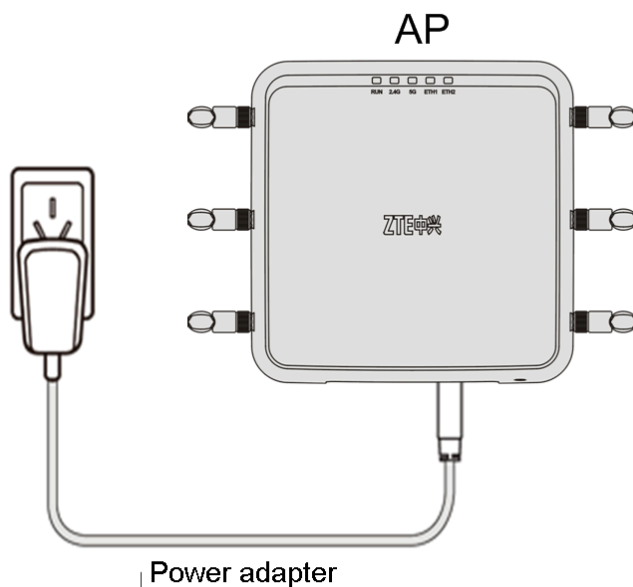
- If the switch does not support PoE power supply, the remote 48 V Ethernet power supply through the standard PoE module is used, see Figure 4.

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Figure 4 Powering the ZXWL W822E through the Standard PoE Module

- Power the device through the switch that supports the standard PoE module, see Figure 5.

Figure 5 Powering the ZXWL W822E through a PoE Switch
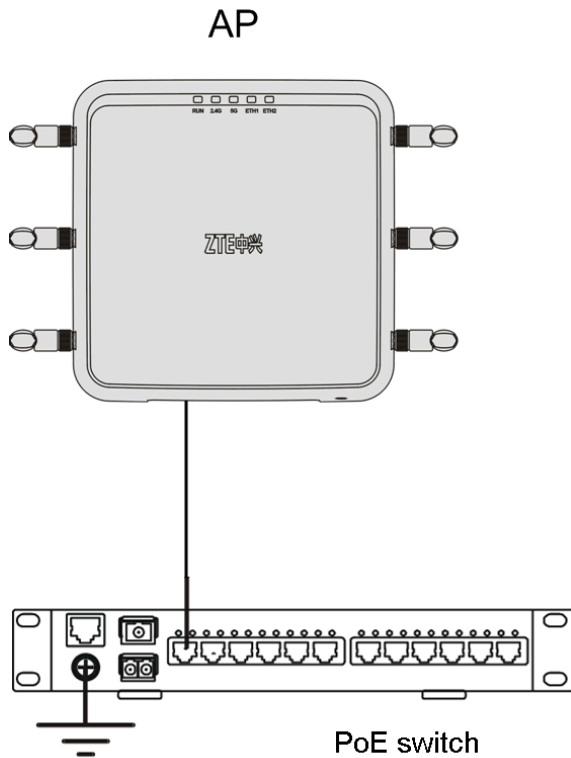
Chapter 4
Antenna Installation

To install the antenna, perform the following steps:

1. Put the antenna into the protective sheath.

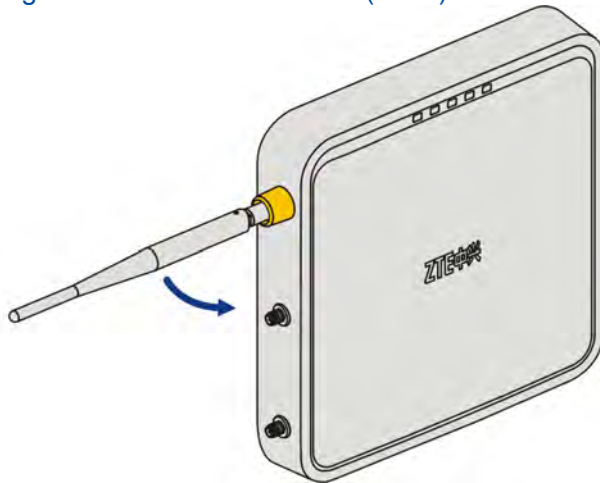   Figure 6 Antenna Installation (one)

2. Connect the antenna to the 2.5 G or 5 G antenna interface and tighten it clockwise.
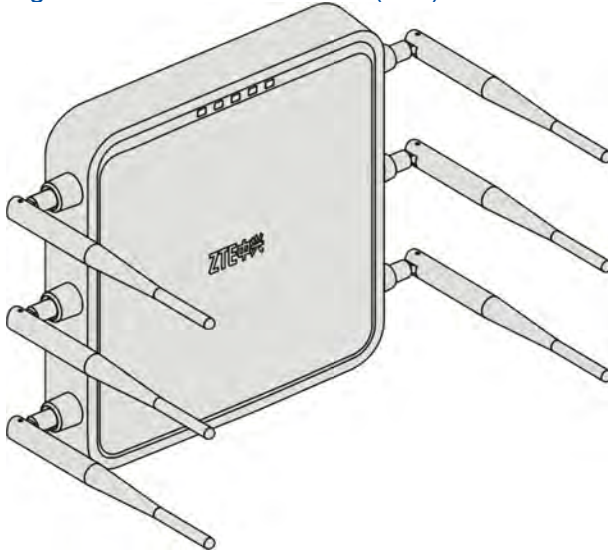
    Figure 7 Antenna Installation (two)

3. Put the protective sheath near the device shell.

Figure 8 Antenna Installation (three)

4. Installing the other antenna, the antenna is installed successfully, see Figure 9

Figure 9 Antenna Installation (four)

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Chapter 5
Installation

Abstract

The ZXWL W822E can be placed on a desk, hung on a wall, or installed to the ceiling.

Pre-requisites

- The indoor temperature and humidity do not exceed the allowed operation temperature and humidity.
- The AP is free from interference within 2-3 meters, for example, cordless phones and transformers. The AP is free from inflammable and explosive items.
- The place to install the device is determined. If the place changes, you need to apply to change the AP design.
- The distance between the Ethernet switch and the AP is less than 100 meters. At least 100 mm are left from around the device for heat dissipation.
- If the AP is installed within a room, the AP must be free from metal blocks within one meter.
- If the AP is installed in a weak electricity well, it is 1.5 to 2 meters high from the floor to ensure ventilation. In addition, the well must be free from dust.
- If the AP is installed to the ceiling, it must be near the manhole to facilitate maintenance. If the ceiling is not installed, do not install the AP above the location where the suspended ceiling will be installed. Otherwise, the AP will be blocked.

Desktop Installation

Place the device on a stable desk. Ensure that it is not easy to be moved and fall on to the floor.

Wall Installation

To install the ZXWL W822E on a wall, perform the following steps:

1. Confirm the installation position. Press the adapter to the wall and mark the installation holes on the wall.

2. Drill holes based on the marked holes with a percussive drill. The aperture is 6 mm and the depth is 40 mm. Use a cleaner to clear the dust.

Figure 10 Drilling Holes
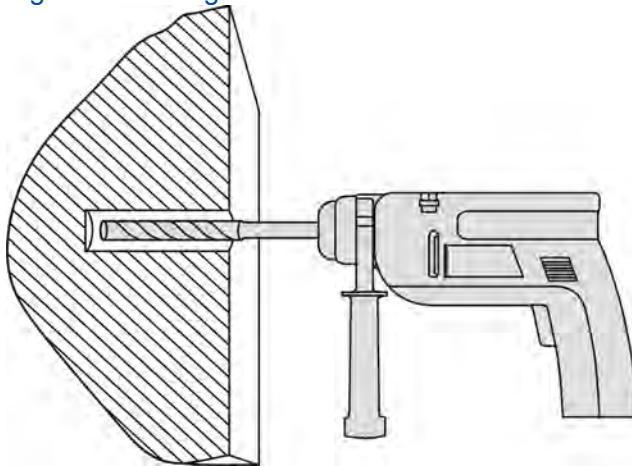
3. In the drilled holes, insert the universal anchors, and hammer the anchors into the wall completely with a rubber hammer, see Figure 11.

Figure 11 Installing the Universal Anchors
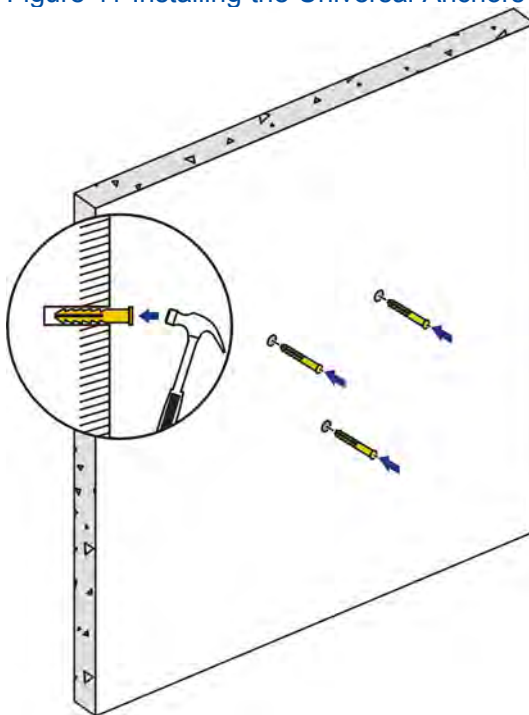
4. Secure the positioning bolts in the universal anchors.

5. Install the installation adaptor on the wall, see Figure 12.

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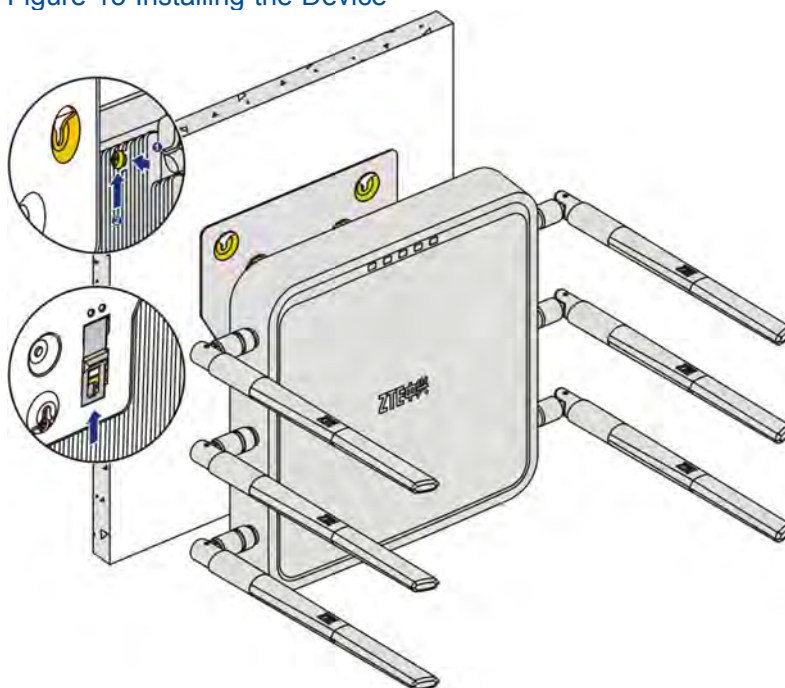Figure 12 Installing the Installation Adaptor
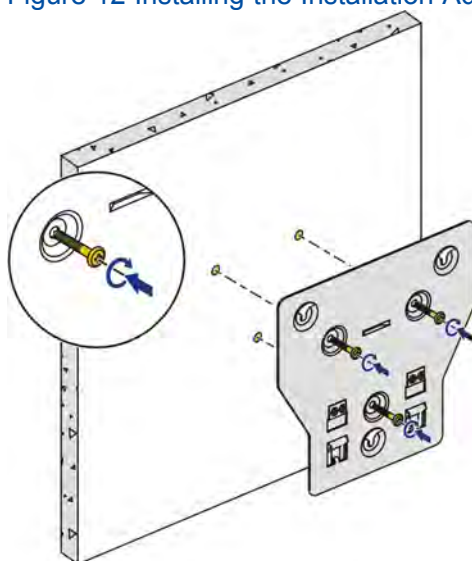
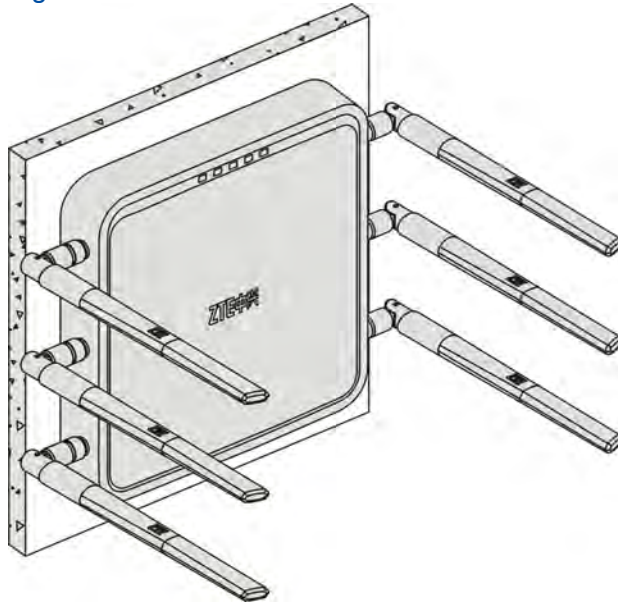6. Install the device onto the installation adaptor.

⚠️**Caution**：

The device is securely installed onto the installation adaptor when you hear a click sound, which indicates that the positioning reed is in position.

Figure 13 Installing the Device

7. The device is successfully installed on the wall, see Figure 14.

Figure 14 Device Installed on the Wall

Ceiling Installation

If you need to install the device to the ceiling, you need to buy the required installation components. The components include a mounting frame and a device adapter, see Figure 15 and Figure 16.

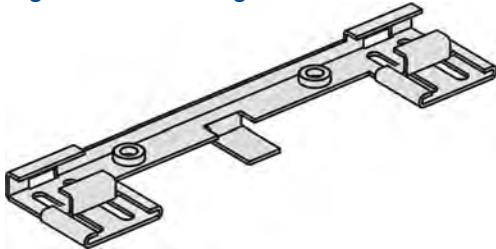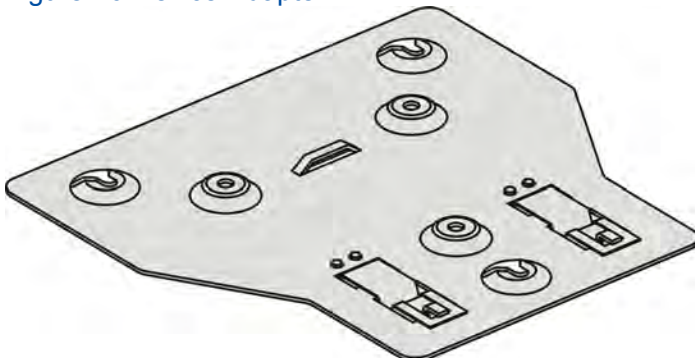Figure 15 Mounting Frame

Figure 16 Device Adapter

Based on the installation environment, the device can either be installed to the common ceiling or suspended ceiling.

Install the device to the common ceiling

The installation procedure is the same as that of wall installation.

Install the device to the suspended ceiling.

Perform the following steps to install the device to a ceiling.

1. Confirm the position to install the device. Loosen the mounting frame and install the frame to the beam of the suspended ceiling, see Figure 17.

Figure 17 Loosening the Mounting Frame
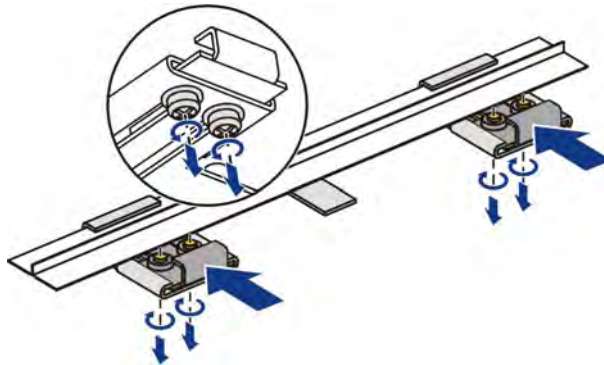
2. Lock the mounting frame to the beam and secure the screws, see Figure 18.

Figure 18 Securing the Mounting Frame to the Beam
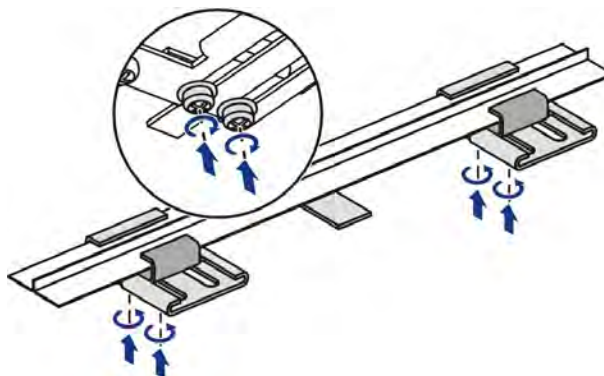
3. Install the adapter to the mounting frame, see Figure 19.

Figure 19 Installing the Adaptor to the Mounting Frame

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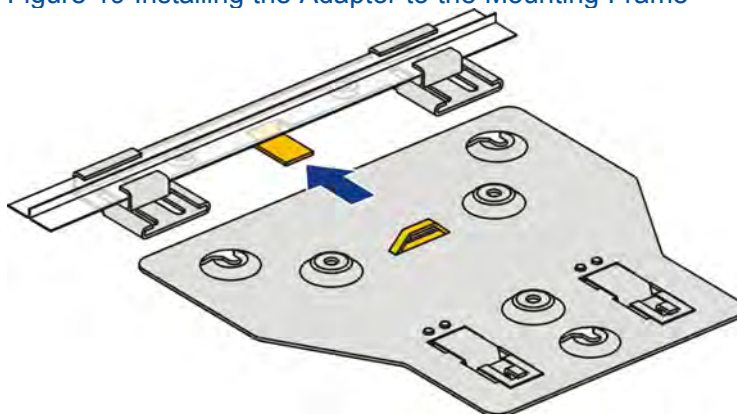
4.   Secure the screws of the adapter, see Figure 20.

Figure 20 Securing the Screws of the Adapter
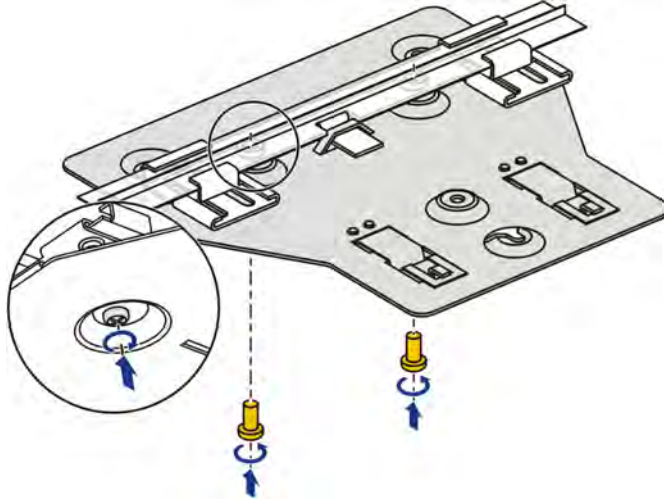
5.   Install the device to the adapter.

⚠️**Caution：**

The device is securely installed onto the installation adaptor when you hear a click sound, which indicates that the positioning reed is in position.

Figure 21 Installing the Device to the Adapter
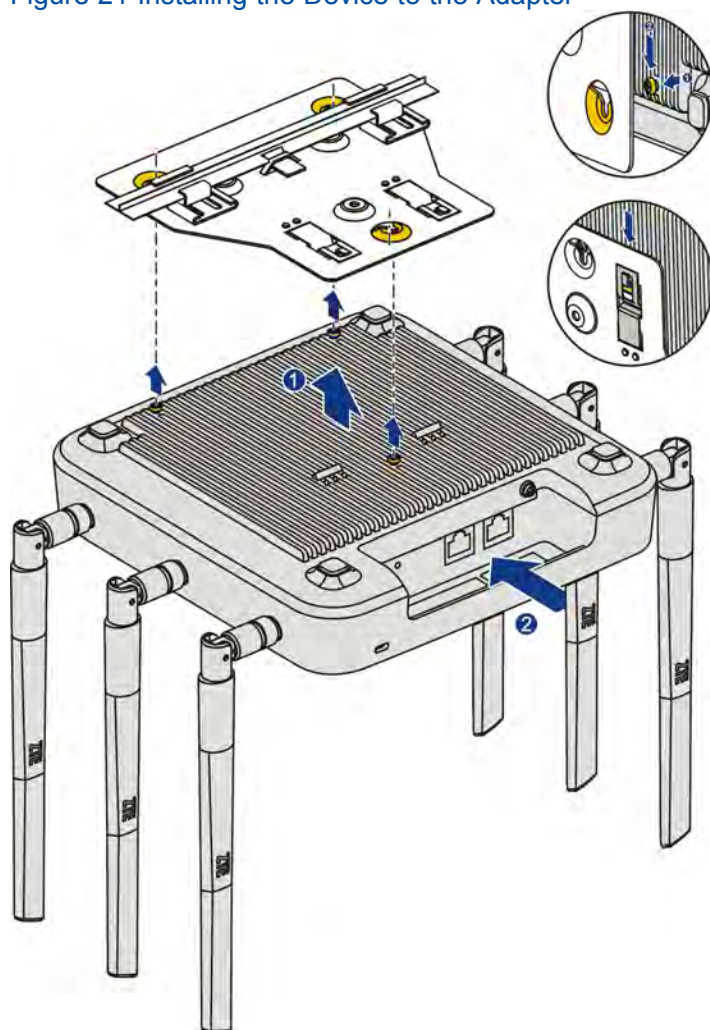
6. The device is successfully installed on the suspended ceiling, see Figure 22.

Figure 22 Device Installed on the Suspended Ceiling

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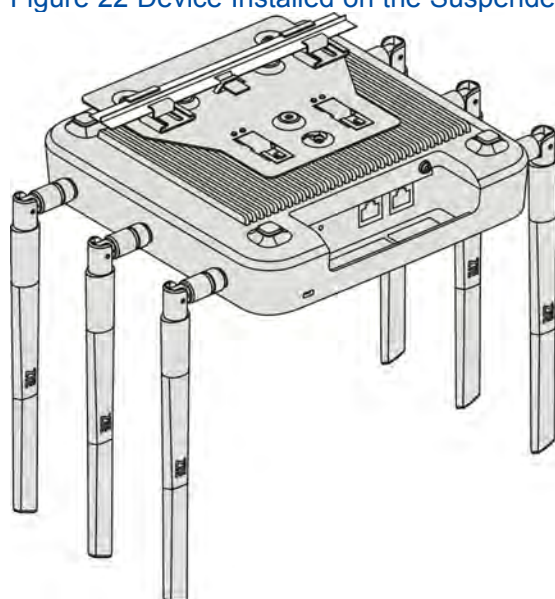
Chapter 6
Fat AP Commissioning Instruction

When the ZXWL W822E is in fat AP mode, it needs to be connected and configured.

AP Connection

Perform the following steps to connect the ZXWL W822E:

1. Power on the device by referring to the Power Supply section.

2. Connect the device to a debugging PC through a network cable, and start the debugging PC.

3. Configure the IP address of the debugging PC. Ensure that the ZXWL W822E and the PC are in the same network segment.

   Perform the following steps to configure the PC:

   a. Select **Start> Control Panel> Network Connection**. The **Network Connection** window is displayed.

   b. Right-click **Local Area Connection** and select **Properties**.   The **Local Connection Properties** dialog box is displayed.

   c. Double-click **Internet Protocol (TCP/IP)**. The **Internet Protocol (TCP/IP) Properties** dialog box is displayed, see Figure 23.

Figure 23 Internet Protocol (TCP/IP) Properties Dialog Box
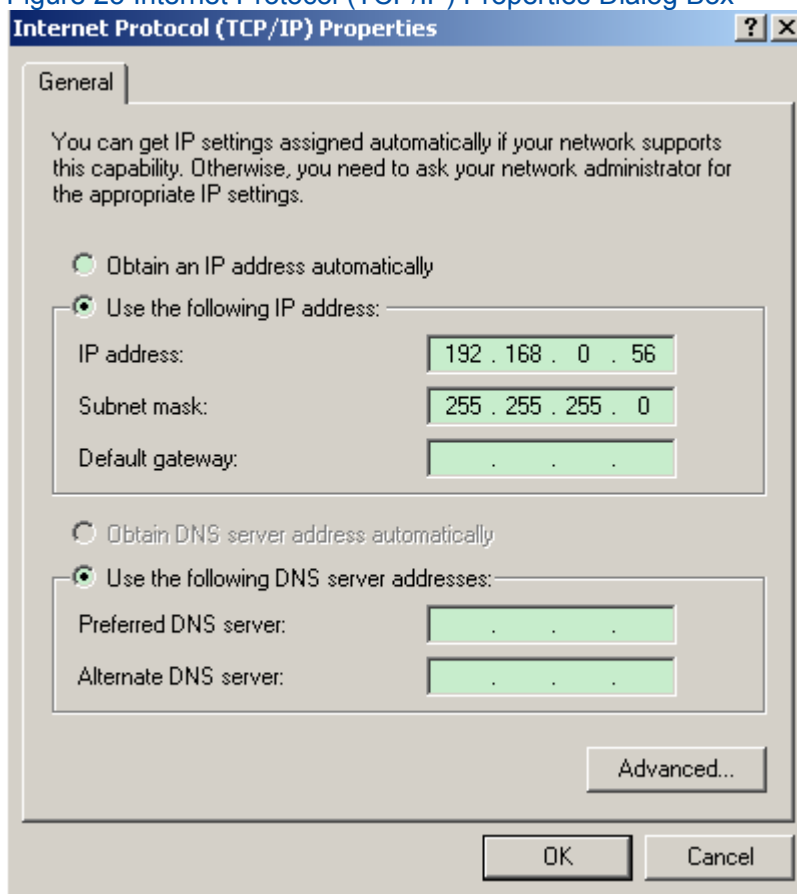
d. Set the IP address to the 192.168.0.X network segment. The subnet mask is 255.255.255.0.

Note ：
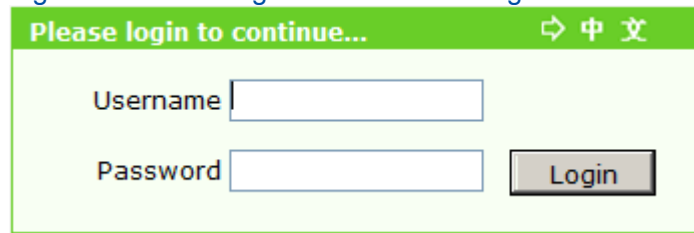
By default, the IP address of the ZXWL W822E is 192.168.0.228. The subnet mask is 255.255.255.0.

AP Configuration

To configure the AP, perform the following steps:
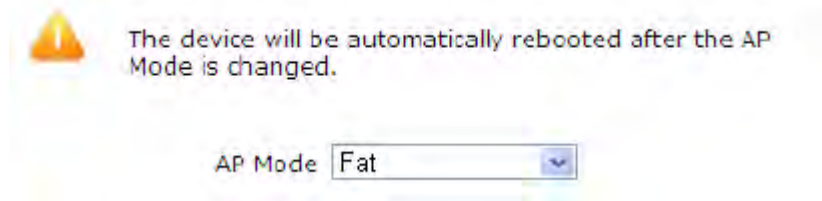
1. Log in to the AP.

    a. Open the IE browser on the debugging PC, and enter **192.168.0.228** in the address bar and press **Enter**. The **Please login to continue** dialog box is displayed, see Figure 24.

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Figure 24 Please login to continue Dialog Box

b.   Enter the default username and password (admin/admin), and click **Login**.

2.   Set the AP mode of the ZXWL W822E to **Fat**.

  a.   Select **Administration> AP Management> AP Mode**. The **AP Mode** dialog box is displayed

  b.   Set **AP Mode** to **Fat**, see Figure 25.

Figure 25 AP Mode Dialog Box

Note：

By default, the ZXWL W822E is in fit AP mode. If it is in fat mode, you do not need to modify it.

  c.   Click **Submit**. The device is restarted automatically. The AP mode is modified successfully.

3.   Set the WAN port.

  a.   Select **Network> WAN > WAN Connection**. The **WAN Connection** page is displayed, see Figure 26.

Figure 26 WAN Connection Page

The device will be automatically rebooted after the settings in this page is submitted.

IP Version IPv4
AC Discovery Mode DHCP
AC Type Adapter
AC Name
Enable CAPWAP Encryption ☐
WAN Type DHCP
Enable VLAN ☐
VLAN ID
802.1p 0
Enable DSCP ☐
DSCP
MTU 1448
ARP BaseReach Time 600 (20~1200)
ARP Retrans Time 1 (1~3)
ARP DelayProbe Time 15 (1~60)

NOTE **Note** ：

The fat AP mode includes route mode and bridge mode. Select the correct mode based on the networking solution.

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    b. Set **WAN Type** as required.

- If **WAN Type** is set to **DHCP**, the connected STA device obtains the IP address dynamically.
- If **WAN Type** is set to **static**, enter the IP address, mask default gateway, and the DNS address.
- If **WAN Type** is set to **PPPOE**, enter the corresponding username and password.

4. Set the LAN port.

    a. Select **Network> LAN> Address Management**. The **Address Management** page is displayed, see Figure 27.

Figure 27 Address Management Page

b. Set the parameters. For a description of the parameters, refer to Table 4.

Table 4 Address Management Parameters

Parameter	Description
LAN IP Address	The IP address of the AP on the LAN side.
Subnet Mask	The subnet mask of the AP on the LAN side.
DHCP Service	Set this parameter to **DHCP Server**.
DHCP Start IP Address	The start IP address allocated to a terminal.
DHCP End IP Address	The end IP address allocated to a terminal.
DNS1	DNS address.
Default Gateway	AP address.

5. Set WLAN.

   a. Select **Network> WLAN> Basic**. The **Basic** page is displayed.

   b. Set the required parameters. For a description of the parameters, refer to Table 5.

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Table 5 Basic Parameters

Parameter	Description
Network Card	Select network card 1 for the 2.4 G mode, and network card 2 for the 5 G mode.
Mode	• Both the 2.4 G and 5 G modes support multiple IEEE 802.11 operation modes. • For the 2.4 G mode, it is recommended to set the parameter to **Mixed (802.11b + 802.11g + 802.11n)**. • For the 5 G mode, it is recommended to set the parameter to **Mixed (802.11a + 802.11n)**.
Channel (2.4 G)	Select a channel based on the management environment and the anti-interference requirements. Channels 1 to 13 are available. Default: auto.
Channel (5 G)	Channels 149, 153, 157, 161, and 165 are available. When multiple APs are configured, the APs must be configured with different channels to avoid interference.
Only Select 1/6/11	If this check box is selected, only channels 1, 6, and 11 are available. These channels have a strong orthogonal frequency-division anti-interference feature.

6. Set SSID.

   a. Select **Network> WLAN> SSID setting**. The **SSID Settings** page is displayed, see Figure 28.

Figure 28 SSID Settings Page

b. Modify the SSID name, for example, **ZTE**. This name is displayed as the user and used in connection. For the other parameters, use the default setting.

7. Set encryption.

a. Select **Network> WLAN> Security**. The **Security** page is displayed.

b. The ZXWL W822E supports multiple authentication methods. To use the WPA-PSK method, set **Authentication Type** to **WPA-PSK**, see Figure 29.

Figure 29 WPA-PSK Authentication Type

c. Enter the password in the **WPA Passphrase** text box. The range is from 8 to 63 characters.

d. Click **Submit**.

8. (Optional) Set the additional information.

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- To set the system time, select **Application> Time Management**.
- To set the firewall, select **Security> Firewall**.
- To restart the device or restore to the default settings, select **Management> Device Management> System Management**.

Chapter 7
Fit AP Commissioning Instruction

By default, the ZXWL W822E is set to the fit AP mode.

In fit AP mode, only a data connection is required between the AP and the AC. Other configurations are managed through the AC.

The fit AP does not need to be configured. If it cannot be connected, verify that no configuration of the AP is modified.

1. Log in to the AP. For how to log into the AP, refer to the **Fat AP Commissioning Instruction** section.

2. Select **Administration> AP Management> AP Mode**. Check the AP. By default, it is set to **Fit**.

3. Select **Network> WAN> WAN Connection**. Check the **AC Discovery Mode**. By default, it is set to **DHCP**.

Appendix A
Q&A

The following are the frequently asked questions. You can try to handle problems by referring to the following recommendations. If you cannot handle a problem, contact the operator.

Why the STA cannot be connected to the AP?

To connect to an AP, the following steps are required: searching for an available AP, authenticating the STA, and connecting the STA to the AP. If the STA cannot be connected to the AP, the causes may be attributed to the following:

● The authentication and encryption modes of the STA and the AP are different.
● There is interference from other wireless devices.

Check whether the connection is interfered by any wireless device. Turn off the device and check whether the STA can be connected to the AP. If yes, shield or move the interference source.

● The STA and the AP are not compatible.

The STA may not comply with the 802.11 standard, so it cannot be connected to the AP.

Why the bandwidth is not as high as expected after a WLAN is established?

In most cases, this is caused by interference. In addition, aging of the device may reduce the bandwidth because the transmission power is reduced. You can try the following methods to handle the problem:

● Change the wireless channel.

Select another wireless channel. Check whether the rate is greatly improved.

● Clear the wireless interference.

Remove the device that affects the bandwidth. Turn off the device and check whether the problem is solved. If yes, shield the device or change its position.

● Check the signal strength.

Check the signal strength. If the signal is weak, the antenna may be loosed, or the transmission power is reduced because of the aging of the device.

● Check the network card.

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The power of the network card may not enough. Try to move the device closer to the AP.

Why do links fail to operate stably (increased delay and packet loss) after the WLAN operates properly for a period?

The WLAN is interfered. Try the following methods to handle the problem:

- Check whether the devices are connected properly by checking the cables and the antenna.
- Power off the device and then restart it.
- Restore the device to the default setting and configure it again.
- Check whether the devices on both the wire and wireless sides are attacked by viruses.

FCC Statement:

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

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

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and it's antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

This device is going to be operated in 5.15~5.25GHz frequency range, it is restricted in indoor environment only.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.