Tenda

Quick Installation Guide

5Km Outdoor Point to Point CPE

O4

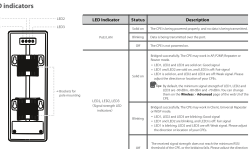
Package contents

- CPE x 2
- PoE adapter x 1
- Power cord x 1
- Mast clamp x 1
- Grounding screw x 1
- Quick Installation guide x 1

Please read through installation guide before you start. You can visit our website at http://www.tenda.com.cn for more information about the device.

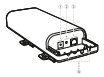
Getting to know the device

LED indicators



LED Indicator	Status	Description
PoE LAN	Solid on	The CPE is being powered properly and has data flowing through it.
	Blinking	Data is being transmitted over the port.
	Off	The CPE is not powered on.
LED1, LED2, LED3 (Signal strength LED indicators)	Solid on	Bridged wirelessly. The CPE may work in AP/CWR/Repeater or Client mode. • LED1, LED2 and LED3 are solid on: Good signal • LED1 and LED2 are solid on, LED3 is off: Fair signal • LED1 is solid on, and LED2 and LED3 are off: Weak signal. Please adjust the direction or location of your CPE.
	Blinking	Bridged successfully. The CPE may work in AP/CWR/Repeater or Client mode. • LED1, LED2 and LED3 are blinking: Good signal • LED1 and LED2 are blinking, and LED3 is off: Fair signal • LED1 is blinking, and LED2 and LED3 are off: Weak signal. Please adjust the direction or location of your CPE. Note: Wait for about 1 minute after the signal strength indicators are solid on, and then check the signal strength. Then adjust the direction or location of your CPE.
	Off	The received signal strength does not meet the minimum RSSI requirement. Please adjust the direction or location of your CPE.

Ports & button



ID	Port/Button	Description
①	GND	PoE ground Ensure the safe lightning protection. Use a grounding cord and the included grounding screw to connect the GND terminal to the earth.
②	Reset	Reset button Hold on the RESET button for about 10 seconds, and release it when the LED1, LED2 and LED3 indicators light up, then the CPE will reset to factory settings.
③	PoE LAN	PoE port It is used to supply power or transmit data. Connect the PoE port to your PoE adapter using an Ethernet cable. Use a shielded Ethernet cable is recommended, and the length should not exceed 100 meters.
④	/	Grounding cord (for PoE adapter)

Scenario 1: CCTV surveillance or point to point data transmission

1 Setting up the CPEs (AP mode + Client mode)

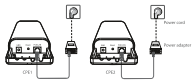
Note: At least two CPEs are required for bridging.

Option 1: Automatic bridging (recommend)

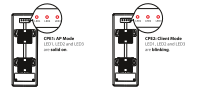
Note: • Automatic bridging is only applicable when the CPEs are in factory settings.
• Wired the CPEs as powered on using Ethernet cables. Cat5e or better Ethernet cable is recommended. Cat5e length should not exceed 100 meters.
• Ensure that there are only one powered-on CPE in factory settings when performing pairing or auto bridging. Otherwise, the pair to pair bridging may fail.
• If the bridging succeeds, the DHCP server of the bridged CPE will be disabled, and the IP address of the CPE managed client mode is changed to 192.168.2.2.

Peer-to-peer bridging (two CPEs)

Step1: Place the two CPEs in factory settings next to each other.
Step2: Connect the power cord to the PoE port of the included PoE adapter. Cat5e or better Ethernet cable is recommended to connect the **PoE/LAN** port of the CPE to the **PoE** port of the included PoE adapter.
Step3: Use the power cord to connect the power injector to a power source.
When the **PoE/LAN** LED indicator lights up, the CPE completes start-up.



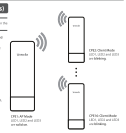
Step4: The two CPEs bridge to each other automatically. Wait until the signal LED indicators display the following status.



Peer-to-multiple peers bridging (multiple CPEs)

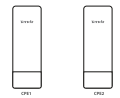
Note: To pair to multiple peers bridging, prefabricate peer to peer bridging first, and then pair to the last CPE (under Client mode) to finish the bridging. Repeat.

Step1: Choose any two CPEs, perform **Peer-to-peer bridging**, and select the CPE working in AP mode (LED1, LED2 and LED3 are **solid on**).
Step2: Wait for 1 minute after peer-to-peer bridging succeeds, put the other CPEs near the CPE working in AP mode, and power them on.
Step3: Wait for about 1 minute.
1 minute later, if the LED1, LED2, and LED3 of these CPEs are blinking, the bridging succeeds.
After the bridging is successful, the DHCP servers of the CPEs are disabled, and the IP addresses of CPEs working in Client mode are all changed to 192.168.2.2. To manage the CPEs conveniently, log in to the web UI of the bridged software and install it on your computer to change the IP addresses in batch.



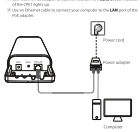
Option 2: Setting up the CPEs using the web UI

Step1: Place the two CPEs next to each other.



Step2: Connect the computer to CPE1.

① Remove the cover of CPE1.
② Use an Ethernet cable or Cat5e or better Ethernet cable is recommended to connect the **PoE/LAN** port of CPE1 to the **PoE** port of the PoE adapter.
③ Connect the PoE adapter to a power source. The **PoE/LAN** LED indicator of the CPE1 lights up.
④ Use an Ethernet cable to connect your computer to the **LAN** port of the PoE adapter.



Step3: Set CPE1 to AP Mode.

① Start a web browser on the computer, and visit **192.168.2.1**. Enter your user name and password, and click **Login**.

② Select **AP**, and click **Next**.

③ Set an SSID, which is **Tenda_123456** in this example. **Security Mode** (**WPA/WPA2-PSK**) is recommended, clear wed, set **Key**, and click **Next**.

④ Click **Save**, and wait until the CPE reboots automatically to activate the settings.

Step4: Set CPE2 to Client Mode.

① Perform **Step 2 Connect the computer to CPE1** to connect the computer to CPE2.
② Start a web browser on your computer, and visit **192.168.2.1**. Enter the login user name and password, and click **Login**.

Note: If the login page does not appear, please refer to **Q3** in **FAQ**.

③ Select **Client**, and click **Next**.

④ Select the SSID you set on CPE1, which is **Tenda_123456** in this example, and click **Next**.

⑤ Enter the WiFi password you set on CPE1 in the **Key** text box, and click **Next**.

⑥ Set the IP address to an unused IP address belonging to the network segment as that of your ISP hotspot. For example, if the IP address of CPE1 is 192.168.2.1, you can set this CPE's IP address to 192.168.2.10 ranges from 2 to 254). Then click **Next**.

⑦ Click **Save**, and wait until the CPE reboots to activate the settings.

When LED1, LED2, and LED3 of CPE1 are solid on, and LED1, LED2, and LED3 of CPE2 are blinking, the bridging succeeds. The DHCP server of CPE2 is disabled automatically. The IP address of CPE2 is changed to 192.168.2.2.
If you want to perform peer-to-multiple peers bridging, refer to **Step4: Set CPE2 to Client Mode** to set the other CPEs.

2 Installing the CPEs

- The CPE (transmitter in AP mode) with LED1, LED2 and LED3 solid on should be connected to the switch connecting to a network video recorder (NVR). See **Figure 1**.
- The CPE (receiver in Client mode) with LED1, LED2 and LED3 blinking should be connected to the switch connecting to an IP camera. See **Figure 2**.

Detailed procedures are as follows:

Step1: Place the transmitter in the elevated, open location at the point where the NVR is located. Place the receiver in the elevated, open air at the point where the IP camera is located.
Step2: Thread the two plastic straps through the slots on the bracket of the CPE, and attach it onto the selected pole. Adjust the CPEs' location and direction, and tighten the straps to fix the CPE.
Step3: Remove the cover of the CPE, and connect the **PoE/LAN** port of the CPE to the **PoE** port of the PoE adapter using an Ethernet cable (Cat5e or better Ethernet cable is recommended). The **PoE/LAN** LED indicator lights up.
When the LED1, LED2 and LED3 of the CPEs light up, the CPEs get the best connection.

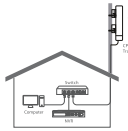


Figure 1 Monitor Center

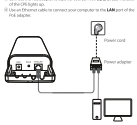
Figure 2

Scenario 2: Wireless ISP hotspot access

1 Setting up the CPE

Step1: Connect the computer to CPE.

① Remove the cover of CPE.
② Use an Ethernet cable to connect the **PoE/LAN** port of the CPE to the **PoE** port of the PoE adapter.
③ Connect the PoE adapter to a power source. The **PoE/LAN** LED indicator lights up.
④ Use an Ethernet cable to connect your computer to the **LAN** port of the PoE adapter.



Step2: Set the CPE to WISP Mode.

① Start a web browser on the computer, and visit **192.168.2.1**. Enter your user name and password, and click **Login**.

Note: If the login page does not appear, please refer to **Q1** in **FAQ**.

② Select **WISP**, and click **Next**.

③ Select the SSID of your ISP Ethernet Service Provided hotspot, which is **Tenda_123456** in this example, and click **Next**.

④ Enter the WiFi password of your ISP hotspot in the **Key** text box, and click **Next**.

⑤ Select the **Internet Connection Type** of your ISP hotspot. **PPPoE** is used for illustration here. Enter the **PPPoE** user name and password provided by your ISP, and click **Next**.

⑥ Customize the **SSID (WiFi Name)**, select a security mode (WPA2-PSK is recommended), customize a **Key**, and click **Next**.

⑦ Set the IP address to an unused IP address belonging to different network segment as that of your ISP hotspot. For example, if the IP address of your ISP hotspot is 192.168.2.1, you can set this CPE's IP address to 192.168.3.10 (range from 2 to 254 excluding 3). Then click **Next**.

⑧ Click **Save**, and wait until the CPE reboots to activate the settings.

When LED1, LED2, and LED3 of the CPE are blinking, the CPE is connected to your ISP hotspot successfully.

2 Installing the CPE

① Place the CPE over the roof.
② Thread the two plastic straps through the slots on the bracket of the CPE, and attach it onto the selected pole. Adjust the CPEs' location and direction, and tighten the straps to fix the CPE.
③ Remove the cover of the CPE, and connect the PoE/LAN port of the CPE to the PoE port of the PoE adapter. The PoE/LAN LED indicator lights up.
④ Connect the LAN port of the PoE adapter to the WAN port of your wireless router.

When the LED1, LED2 and LED3 of the CPE are blinking, the CPE gets the best connection.

Lightning and ESD protection

Connect the GND terminal of the CPE to a grounding terminal connected the earth or building to protect the CPE from overvoltage and overcurrent caused by lightning and ESD.

① Connect one side of a grounding cord to the included grounding screw.
② Connect the grounding screw to the GND terminal of the CPE, and tighten it.
③ Connect the other side of the grounding cord to the grounding terminal connected to the earth or building.

FAQ

Q1: I cannot log in to the web UI of the CPE by entering 192.168.2.1. What should I do?

A1: Try the following methods:
- Ensure the PoE adapter is properly powered connected to the power supply and the computer properly.
- Ensure that the IP address of the login computer is 192.168.2.X (X ranges from 2 to 254, which is not used by other devices).
- Reboot the CPE to factory settings.

Q2: How to reset the CPE to factory settings?

A2: Power on and wait for the CPE to start-up completely and you need to configure it again.
Method One: 1 minute after the PoE/LAN LED indicator lights up, remove the cover of the CPE, and hold down the **Reset** button for about 8 seconds. When all LED indicators light up once, the CPE is restored to factory settings.
Method Two: Log in to the web UI of the CPE, choose **Tools** > **Maintenance**, and click the **Reset** button.

Q3: How to determine whether the signal strength LED indicators are optimal when the CPEs are used for CCTV surveillance?

A3:
Option One: Observe the LED indicators of the CPE. The bridging signal is optimum when all of the LED1, LED2 and LED3 indicators are solid on or blinking.
Option Two: Log in to the web UI of one CPE, choose **Status**, and check the **Wireless Status** on the following page.

Strength signal strength (-40 is better than -70) and less background noise (-100 is better than -90) lead to better bridging signal.

Q4: The automatic bridging fails. What should I do?

A4: Try the following methods:
- If the pair to multiple bridging fails, reset the two CPEs to factory settings, and try again.
- If the pair to multiple bridging fails, ensure that the new added CPE is powered on within 1-3 minutes after the pair-to-peer bridging succeeds.
- If the problem persists, reset the all CPEs, and try again.

Q5: When the bridging succeeds, the LED1, LED2, and LED3 do not light up or only one or two of them light up. What should I do?

A5: Try the following methods:
- Ensure that the bridging distance (the distance between CPEs) does not exceed 5 Km.
- Place the CPEs in an elevated location with few obstacles nearby.
- Adjust the CPE in horizontal and vertical directions slowly. Wait for 10 to 30 seconds after you choose a direction. Observe the LED1, LED2 and LED3 indicators of the CPE when you are adjusting the CPE until all of LED1, LED2 and LED3 indicators lights up.

Q6: After the installation succeeds, the IP cameras connected to the NVR cannot display the surveillance videos. What should I do?

A6: Try the following methods:
- Ensure that all devices are working normally and connected properly.
- Refer to the following figure to find the problem. Ensure that the IP addresses of computer, NVR, and IP cameras are in the same network segment.

- If the preceding check is normal, it indicates the connections are properly. Please check if configurations of the NVR or the IP cameras are correct, a broadcast storm occurs on WLANs are assigned to your network.

Cautions

Adapter Model:ONS04-P-2024
Manufacturer: SHENZHEN YEEPEN NETWORK TECHNOLOGY CO., LTD.
Input: 100 - 240V AC, 50/60Hz 0.3A
Output: 48V DC, 0.2A
PPE DC Voltage

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used according to 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 antenna or antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which this receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.
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.

Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules.
This equipment should be installed and operated with minimum distance 20cm between the device and your body.

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 transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Operating frequency: 5.150-5.350MHz, 5725-5850MHz
NOTE: (1) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.
(2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable.

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.

Operating Temperature: -30°C -60°C
Operating Humidity: 10% - 90% RH non-condensing

For ELAN1PA, this product can be used in the following countries:

AT	BE	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IT	LT	LU

Technical Support

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