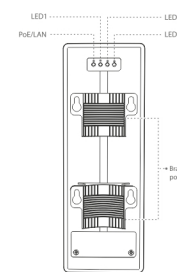


Quick Installation Guide

5Km Outdoor Point to Point CPE
O4

Getting to know the device

LED indicators



LED Indicator	Status	Description
PoE/LAN	Solid on	The CPE is being powered properly, and no data is being transmitted.
PoE/LAN	Blinking	Data is being transmitted over the port.
PoE/LAN	Off	The CPE is not powered on.
LED1, LED2, LED3 (Signal strength LED indicators)	Solid on	Bridged successfully. The CPE may work in AP/PoE Repeater or Router mode. • LED1 and LED2 are solid on: Good signal • LED1 and LED2 are solid on, and 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. Tip: By default, the minimum signal strength of LED1, LED2, and LED3 are 90 dBm, 80 dBm, and 70 dBm. You can change them on the Maintenance > Advanced page of the web UI of the CPE.
LED1, LED2, LED3	Blinking	Bridged successfully. The CPE may work in Client, Universal Repeater or WISP mode. • LED1, LED2 and LED3 are blinking: Good signal • LED1 and LED2 are blinking, and LED3 is off: Fair signal • LED1 is blinking, LED2 and LED3 are off: Weak signal. Please adjust the direction or location of your CPE.
LED1, LED2, LED3	Off	The received signal strength does not reach the minimum RSSI threshold of the CPE, or the bridging fails. Please adjust the location or position of your CPE.

Ports & button

ID	Port/Button	Description
1	GND	GND terminal. Used for ESD and lightning protection. Use a grounding cord and the included grounding screw to connect this GND terminal to the earth.
2	Reset	Reset Button. When the PoE/LAN LED indicator lights up, hold down this button for about 8 seconds. When all the LED indicators light up, then turn off the device is restored to factory settings.
3	PoE/LAN	It is used to supply power or transmit data. Use the included PoE adapter to supply power to the CPE, CAT5e or better Ethernet cable is recommended, and the length should not exceed 50 meters.
4	/	Grounding cord/Ethernet cable inlet.

Package contents

- CPE x 1
- PoE adapter x 1
- Power cord x 1
- Plastic strap x 2
- Grounding screw x 1
- Quick installation guide x 1

Please read this quick installation guide before you start. You can visit our website at <http://www.tendacn.com> for more information about the device.

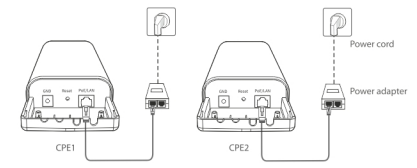
Scenario 1: CCTV surveillance or point to point data transmission

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

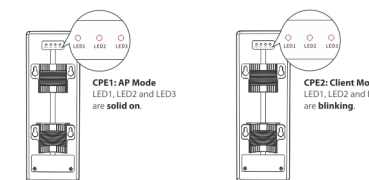
Option 1: Automatic bridging (recommend)

Peer-to-peer bridging (two CPEs)

- Place the two CPEs in factory settings next to each other.
- Remove the cover of each CPE, and use an Ethernet cable (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.
- Use the power cord to connect the power injector to a power source. When the PoE/LAN LED indicator lights up, the CPE completes startup.



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

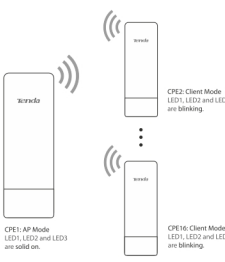


Peer-to-multiple peers bridging (multiple CPEs)

Tip: For peer-to-multiple peers bridging, perform peer-to-peer bridging first, and then power on the rest CPEs within 3 minutes. Otherwise, the bridging may fail.

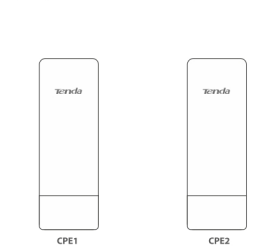
- Choose any two CPEs, perform Peer-to-peer bridging, and select the CPE working in AP mode (LED1, LED2 and LED3 are solid on).
- Within 3 minutes after peer-to-peer bridging succeeds, put the other CPEs near the CPE working in AP mode, and power them on.
- Wait for about 1 minute.

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.x. Visit www.tendacn.com to download the CPE management software and install it on your computer to change the IP addresses in batch.

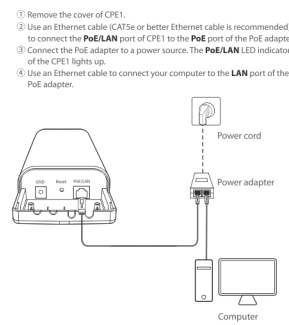


Option 2: Setting up the CPEs using the web UI

Step1: Place the two CPEs next to each other.

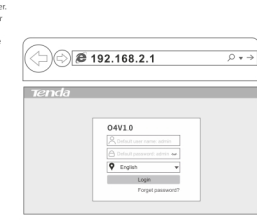


Step2: Connect the computer to CPE1.



Step3: Set CPE1 to AP Mode.

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



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

Step4: Set CPE2 to Client Mode.

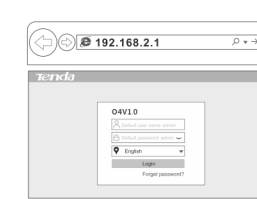
- Perform **Step 2** Connect the computer to CPE1 to connect the computer to CPE2.
- Start a web browser on your computer, and visit **192.168.2.1**. Enter the login user name and password, and click **Login**.



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

Step4: Set CPE2 to Client Mode.

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

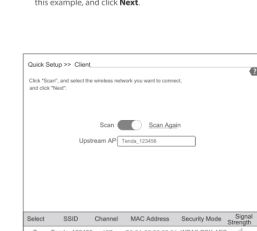


Tip: If the login page does not appear, please refer to Q1 in FAQ.

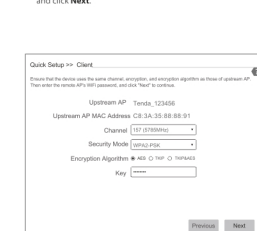
Step5: Select Client, and click Next.



Step6: Select the SSID you set on CPE1, which is Tenda_123456 in this example, and click Next.



Step7: Enter the WiFi password you set on CPE1 in the Key text box, and click Next.



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

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:

- 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.
- Thread the two plastic straps through the slots on the bracket of the CPE, and attach it onto the selected pole. Adjust the CPE's location and direction, and tighten the straps to fix the CPE.
- 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.

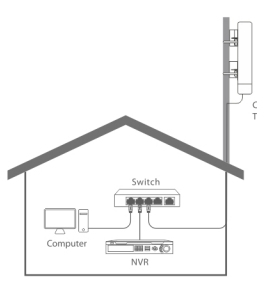


Figure 1: Monitor Center



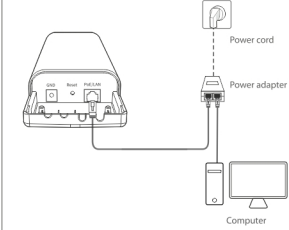
Figure 2

Scenario 2: Wireless ISP hotspot access

1 Setting up the CPE

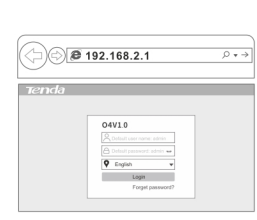
Step1: Connect the computer to CPE.

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



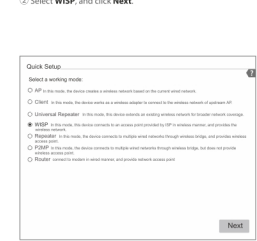
Step2: Set the CPE to WISP Mode.

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

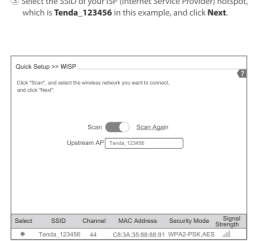


Tip: If the login page does not appear, please refer to Q1 in FAQ.

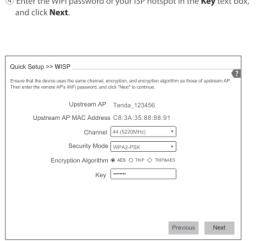
Step3: Select WISP, and click Next.



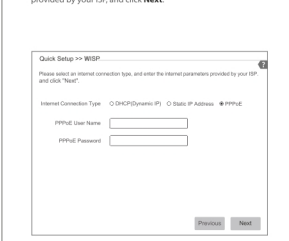
Step4: Select the SSID of your ISP (Internet Service Provider) hotspot, which is Tenda_123456 in this example, and click Next.



Step5: Enter the WiFi password of your ISP hotspot in the Key text box, and click Next.



Step6: 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.



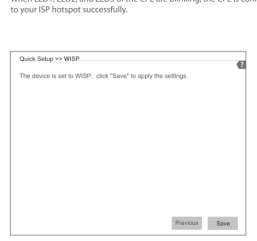
Step7: Customize the SSID (WiFi Name), select a security mode (WPA2-PSK is recommended), customize a Key, and click Next.



Step8: 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 192.168.1.x, you can set this CPE's IP address to 192.168.2.x (x ranges from 0 to 254 excluding 2).



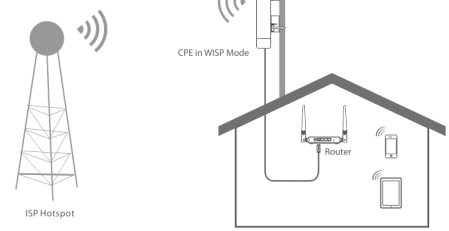
Step9: Click Save, and wait until the CPE reboots to activate the settings.



2 Installing the CPE

- Place the CPE over the roof.
- Thread the two plastic straps through the slots on the bracket of the CPE, and attach it onto the selected pole.
- Adjust the CPE's location and direction, and tighten the straps to fix the CPE.
- Remove the cover of the CPE, and connect the PoE/LAN port of the CPE to the PoE port of the PoE adapter.
- Connect the LAN port of the PoE adapter to the WAN port of your wireless router.

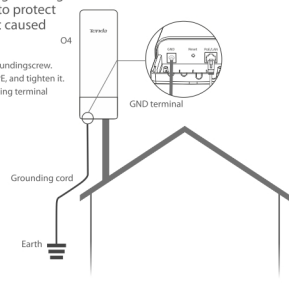
When the LED1, LED2 and LED3 of the CPE are blinking, the CPE gets the best connection.



Lighting and ESD protection

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

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

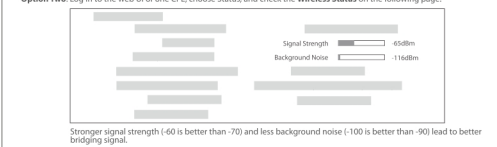


FAQ

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 that the CPE has been connected to the power supply and the computer properly.
 • Ensure that the IP address of the local computer is 192.168.2.x (x ranges from 0 to 254, which is not used by other devices).
 • Restore the CPE to factory settings.

Q2: How to reset the CPE to factory settings?
A2: Note: Resetting the CPE clears all settings, 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.

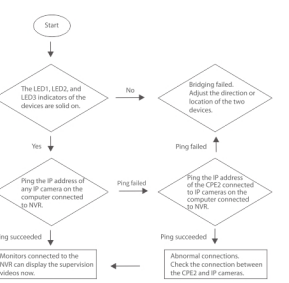
Q3: How to determine whether the signal strength LED indicators are optimal when the CPEs are used for CCTV surveillance?
A3: Observe the LED indicators of the CPEs. The bridging signal is optimum when all of the LED1, LED2, and LED3 indicators are solid on or blinking.



Q4: The automatic bridging fails. What should I do?
A4: Try the following methods:
 • If the peer-to-peer bridging fails, reset the two CPEs to factory settings, and try again.
 • If the peer-to-multiple peers bridging fails, ensure that the new added CPE is powered on within 3 minutes after the peer-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:
 • Place the CPEs in an elevated location with few obstacles nearby.
 • Adjust the CPE's horizontal and vertical directions slowly. Wait for 20 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 light 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 or VLANs are assigned in your network.



CE Mark Warning
 This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.
 Operations in the 5.15-5.25 GHz band are restricted to indoor use only.
 WARNING: The mains plug is used as disconnect device, the disconnect device shall remain readily operable.
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.

Declaration of Conformity
 Hereby, SHENZHEN TENDA TECHNOLOGY CO., LTD. declares that the radio equipment type O4 is in compliance with Directive 2014/53/EU.
 The full text of the EU declaration of conformity is available at the following internet address: <http://www.tendacn.com/en/service/download-cata-101.html>
 Operating Frequency: EU/5150-5250MHz (CH36-CH48); ERP Power (Max.): 22.36dBm
 Operating Frequency: EU/5150-5250MHz (CH100-CH140); ERP Power (Max.): 26.96dBm
 Software Version: V1.0.0.5



Caution:
 Adapter Model: BR650-P12024
 Manufacturer: SHENZHEN HEWISHUN NETWORK TECHNOLOGY CO., LTD.
 Input: 100-240V AC, 50/60Hz 0.3A
 Output: 24V DC, 0.5A
 --- 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 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.
 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: 5150-5250MHz, 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.



EAC
 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 EU/CEFTA, this product can be used in the following countries:

Technical Support
 Shenzhen Tenda Technology Co., Ltd.
 4/F Floor, Tower E1, No.1001, Zhongyuan Road, Nanshan District, Shenzhen, China, 518053
 USA hotline: 1-800-570-5802
 Canada hotline: 1-888-968-8966
 Toll-free Call: 800-818-9999 (PST)
 Hong Kong hotline: 00852-81931998
 Global hotline: +86-755-2765-7180 (China Time Zone)
 E-mail: support@tendacn.com

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