ULNA

WIRELESS BRIDGE

─── USER MANUAL ───

Model: CPE-609

Tips:

Thank you for ordering and using ULNA CPE609 Wireless Bridge, please read the manual carefully before use. If there are any problems during the use, please contact us in time.

The installation of this device requires some network knowledge. If you can't install it, please let us know or contact a professional.

Customer Service Email: support01@ulnastore.com

Contents

1. Overview

1.1 Introduce

ULNA CPE609 is a long-distance 5.8G wireless transmission device. It uses wireless communication technology to transmit network data using air as a medium to perform long-distance point-to-point or point-to-multipoint interconnection. The working data link layer realizes the interconnection of local area networks. The transmission distance can reach up to 5km.

CPE609 Video Bridge Transmission usually consists of two devices in AP and Client mode respectively. On the Client-side (Receiving side) CPE connects with IP Camera, at the AP side (Transmitting side) CPE connects with a video recorder. The AP can be receiving wireless data transmitted from multiple Clients, and it is easy and convenient for centralized management of the remote equipment.

CPE is widely used in highways, reservoir river monitoring, elevator monitoring systems, site crane monitoring systems, port terminal monitoring systems, marine aquaculture monitoring systems, and so on.

Point to point extend network WiFi range, extend the network in the house to your barn, garage, church, warehouse, and even neighbor's house through wireless bridge signal transmission. No need to install a new modem and pay for it every month, saving you money.

1.2 Highlights

1. Transmission using 5.8Ghz wireless technology；
2. 1000Mbps RJ45 LAN port, support Gigabit；
3. Built-in 16dbi high gain WiFi antenna；
4. IEEE802.11ac IEEE802.11n,IEEE802.11a ,IEEE802.3u；
5. Transmission distance up to 5km(Barrier-Free)；
6. Master bridge supports WiFi hotspot access；
7. Dialing to set the transmitter and receiver, is easy to use；
8. WDS networking mode, video network dual compatible；
9. Support point-to-point, point-to-multipoint mode；
10. Dynamic MIMO power saving mode (DMPS) and APSD；
11. Support 24V POE power supply, easy to install and deploy；
12. Support WEB GUI access management device.

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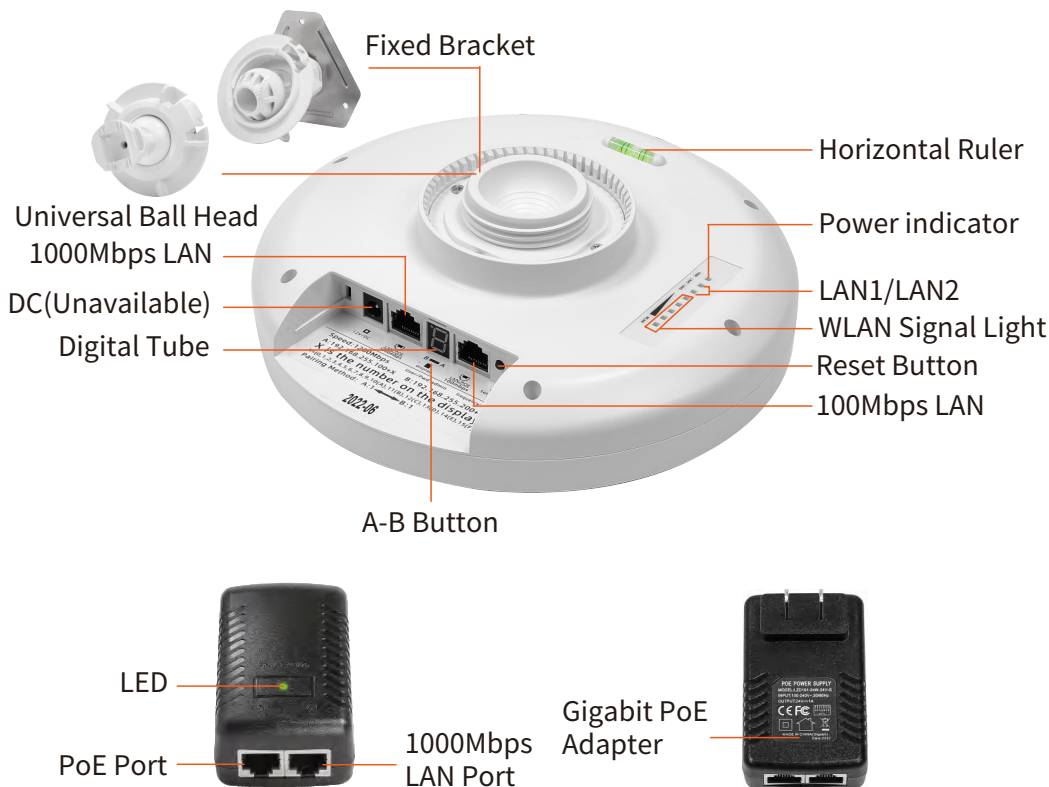
1.3 Specifications

Brand	ULNA
Model	CPE-609
CPU	MT7620A+7612E
Flash	8MByte
DRAM	DDR2 128MByte
Interface	10/100/1000Mbps LAN*1 & 10/100Mbps LAN*1
Data rate	11a:54M,48M,36M,24M,18M,12M,9M,6Mbps 11n:7.2M,14.4M,21.7M,28.9M,43.3M,57.8M,65M, 72.2M,14.4M,28.9M,43.3M,57.8M,86.7M,115.6M, 130M,144.4Mbps 433Mbps
Transfer method	Direct Sequence Spread Spectrum(DSSS)
Modulation	OFDM/BPSK/QPSK/CCK/DQPSK/DBPSK
Protocol standard	IEEE802.11ac IEEE802.11n,IEEE802.11a ,IEEE802.3u
Agreement	CSMA/CA,TCP/IP,IPX/SPX,NetBEUI,DHCP,NDIS3, NDIS4,NDIS5
Frequency Range	4900～6100MHz
Power	≤3W, POE 24V~1A/48V~0.5A
Antenna	16dBi,Horizontal 60°/Vertical 30°
WEP GUI	Support
Telnet	Support
Serial	Support
Safety	WEP 64/128bits,WPA,WPA2,802.1x
Temperature	-30～65℃
Box Size & Weight	11.8*11.5*2.7 inch & 2.2 LB

2. Package Included

2 * CPE609 Gigabit Bridge
2 * Gigabit POE Adapter (24V)
2 * Cat 5e Network Cable
2 * Metal Hoop
1* Mounting Screw Set
1 * User Manual

3. Interface Details

Fixed Bracket

Horizontal Ruler

Universal Ball Head

Power indicator

1000Mbps LAN

DC(Unavailable)

LAN1/LAN2

Digital Tube

WLAN Signal Light

Reset Button

100Mbps LAN

A-B Button

LED

Gigabit PoE Adapter

PoE Port

1000Mbps LAN Port

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3.1. Button Operation

Reset Button: Press and hold for 10S to reset the wireless bridge; in setup mode, short press once to toggle a different character to pairing.

A-B Button: Pushing the button to "A" indicates that the bridge acts as the master bridge (transmitter), and pushing the button to "B" indicates that the bridge acts as the slave bridge (receiver).

4. LED Indicator Details

LED Light	Description
Signal Lights	After the bridge is connected successfully, the WLAN light will be on, not connected the WLAN light will not be lit.
LAN1/LAN2	The data connection is successful, the LED light is on, otherwise, it is not bright.
PWR	Power indicator, the LED is on after the power is connected
Digital Tube	Digital display LED display "H" indicates manual configuration status
Digital Tube	Digital display LED display "L" and flashing indicates settings status
Digital Tube	Digital display LED flashing indicates edit the config or connecting

Digital Tube	Display that a fixed number is solid, it means that the two bridges are paired successfully and are working.
Point Light	A, B status lights, lighting is B mode, no lighting is A mode.

5. Quick Start

5.1 PoE Power Supply

The CPE609 wireless bridge adopts a PoE power supply, which is easy to install and manage while saving costs.
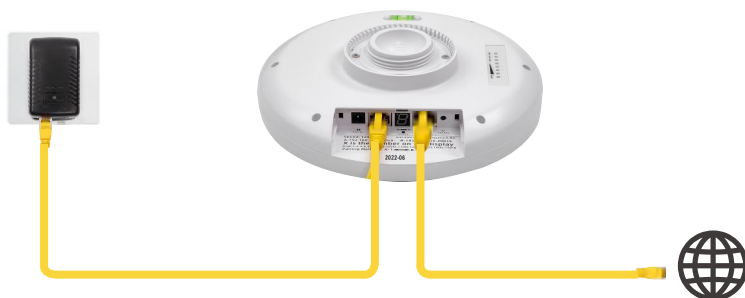
1.1. According to the requirements, prepare a long enough network cable （Recommended within 20 meters, must Cat 5e or up） to connect the wireless bridge and the PoE power supply. The PoE port of the PoE power supply is connected to the WAN port of the wireless bridge.

1.2. The LAN port of bridge is connected to the PC, router, and switch...

5.2 Point to Point Pairing Step:

1. Switch one unit to A(Master Bridge) and one unit to B(Slave Bridge)
2. Connect the POE to each unit using the Ethernet cable and plug the POE in;
3. Wait for them to power up, about 2 min;
4. Use the tiny reset button to click through until you get a channel with a letter. 1,2,3,..., A,B,C,...,F, here used C;
5. Then on the other unit do the same. Both units need to be on the same channel;
6. Wait for 2-5 minutes to complete the pairing. When the number of the digital tube is solid and the signal light on the side turns on, it means the pairing is successful;

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7. Finally connect other devices(Router, PC, Switch) and install them to the target location.
 （TIPS:Steps 1, 4 and 5 are already pre-set）

5.3 Point to Multipoint Pairing Step:

**e.g.** 1 master bridge with 3 slave bridges
1. Switch one unit to A(Master Bridge) and 3 units to B(Slave Bridge);
2. Connect the POE to each unit using the Ethernet cable and plug the POE in;
3. Wait for them to power up, about 2 min;
4. Use the tiny reset button to click through until you get a channel with a letter. 1,2,3,..., A,B,C,...,F, here used C;
5. Then on the other 3 unit do the same. 4 units need to be on the same channel;
6. Wait for 2-5 minutes to complete the pairing. When the number of the digital tube is solid and the signal light on the side turns on, it means their pairing is successful;
7. Finally connect other devices(Router, PC, Switch) and install them to the target location.
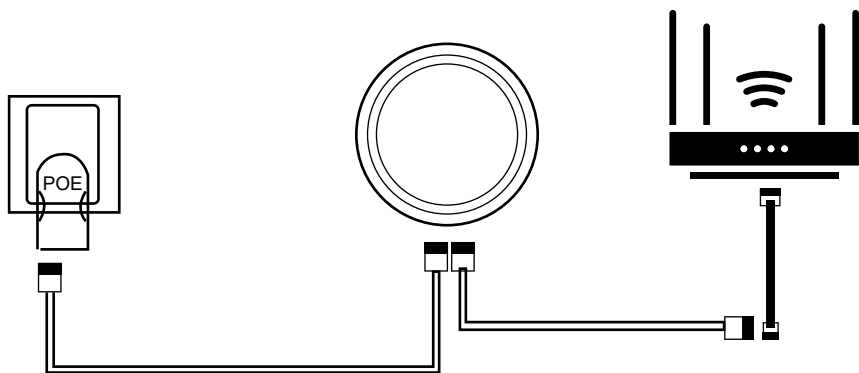
6. Installation

6.1 Pole mount
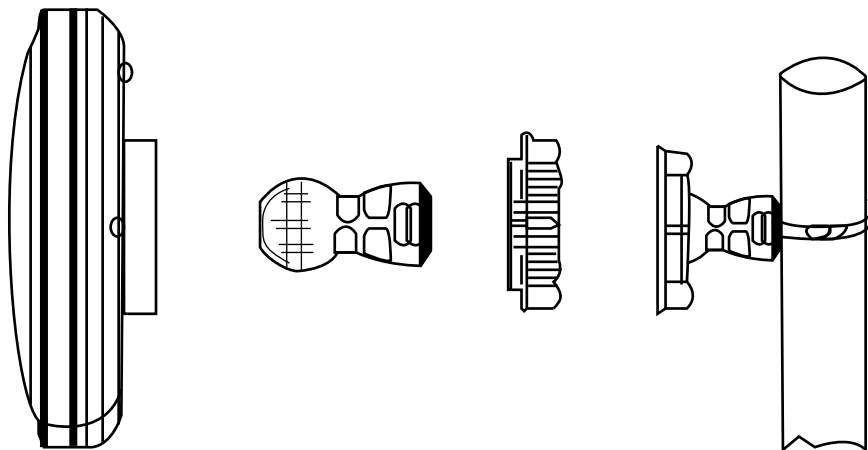
6.2 Wall-mounted
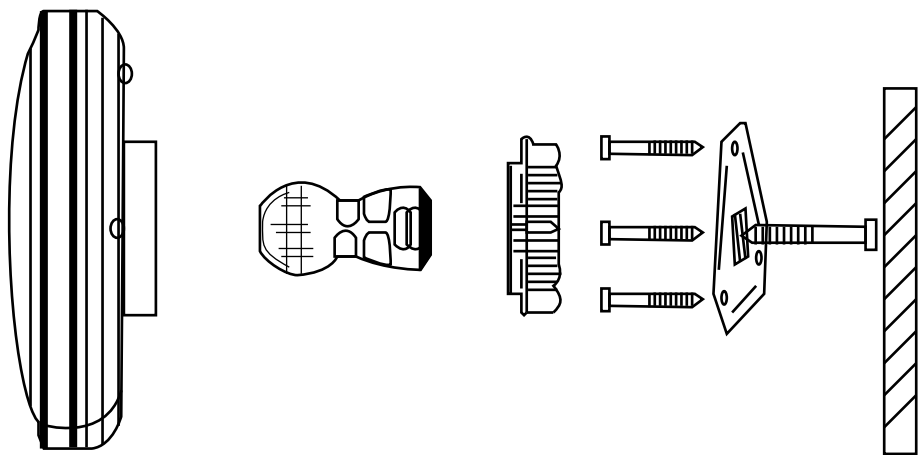
6.3 Connect to the device

1. Choose to pole mount or wall-mounted, adjust the CPE orientation, the bracket is not included in the package. Recommended ULNA Universal Bracket (ASIN: B0B5TWYHWC).

2. Please, prepare a long enough network cable to connect the PoE adapter and CPE, the network cable is connected to the LAN port of the CPE, and the other end is connected to the PoE port of the PoE adapter. Recommend to use a cat 5 (or above) shielded network cable with a ground wire.

3. Connect the PoE adapter PoE to CPE, and LAN to Camera, PC, Router or Switch based on the network topology. The role of PoE is to provide power and data transmission for CPE.

4. The master CPE's PoE adapter's LAN connection monitors the Internet, and the slave CPE's PoE adapter LAN connects cameras or routers and other equipment.

7. WiFi Function

1. The WiFi function is turned on by default for the master bridge.
WiFi SSID: CPE5G-5GXXX
WiFi PWD: zllinkcpe123456XXX
XXX represents different channels, please refer to the comparison table in the user manual.

2. You can access the wireless bridge through your computer to set the SSID and new WiFi password. Please refer to the advanced settings section.
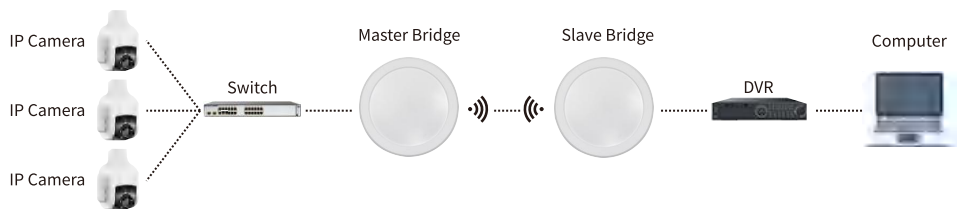
8. Application Case
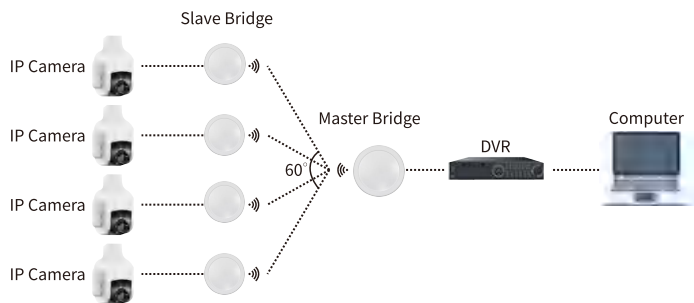
8.1 Case 1: Point-to-point extended network WiFi range
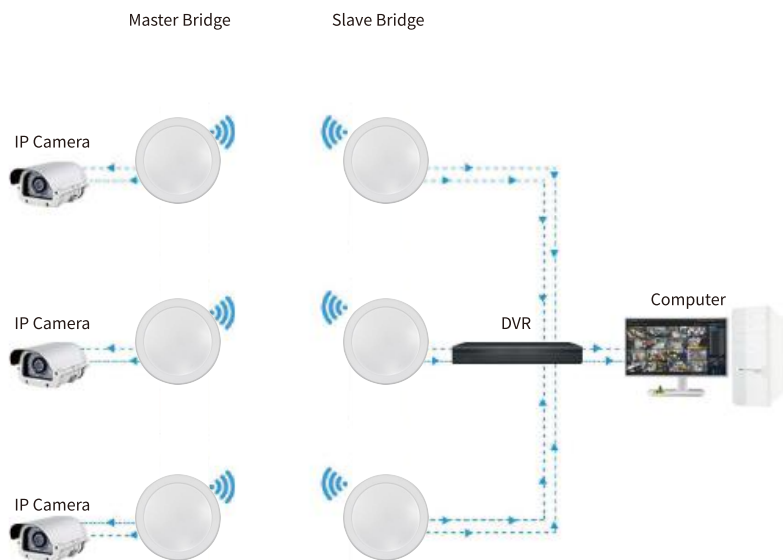suitable for extending the network to second buildings, such as garages, shops, barns,etc.

Computer | Router | Master Bridge | Slave Bridge | Router | Router device(AP mode) | POE | POE
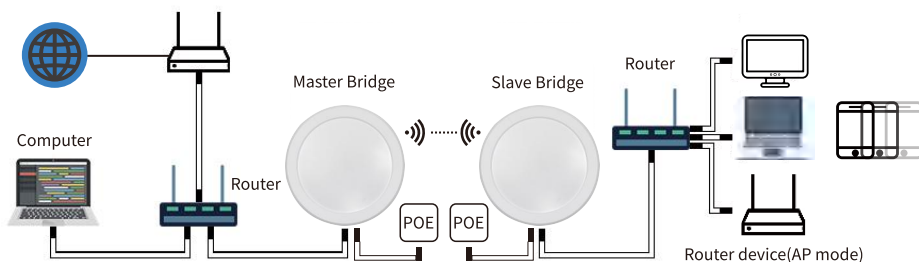
8.2 Case 2: Point-to-point extended of surveillance cameras range

IP Camera

IP Camera

IP Camera

Switch

Master Bridge

Slave Bridge

DVR

Computer

8.3 Case 3: Point-to-multiple point extended surveillance cameras range

Slave Bridge

IP Camera

IP Camera

IP Camera

IP Camera

60°

Master Bridge

DVR

Computer

8.4 Case 4: Point-to-point extended surveillance cameras range

Master Bridge

Slave Bridge

IP Camera

IP Camera

IP Camera

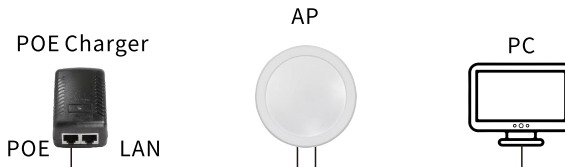DVR

Computer

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9. Advanced Settings

> **Note:**
> You can work the wireless bridge without advanced settings

1. Computer Access Wireless Bridge, connect the CPE to the computer
Refer to the figure left to connect the CPE to the computer through a PoE
adapter and an Ethernet cable.

2. Modify your computer's IP address, make your computer's IP and the bridge's
IP address be on the same network segment(LAN) so that you can access them.
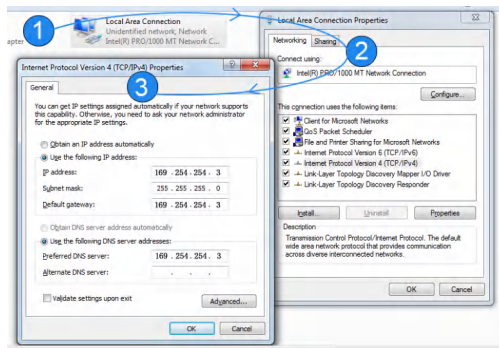
Step 1: Find and open "Open Network and Sharing Center" on your computer.
 Tips: click the network icon in the lower right corner of the computer.
Step 2: Find and open the "Change adapter settings", select "Local Area
Connection" to right-click to open the network properties. Refer to the picture
above to open.
Step 3: Find and double-click open the "Internet Protocol Version 4(TCP/IPv4)",
choose the " Use the following IP address" and enter IP address, subnet mask,
Default gateway, Preferred DDS server.

3. Change your computer's IP address to 192.168.255.xxx (192.168.255.xxx cannot be the same as the IP of the CPE), then the entry IP address is 192.168.255.xxx, the subnet mask is 255.255.255.0(Autofill), the Default gateway is 192.168.255.xxx, Preferred DDS server 192.168.255.xxx. You can use 192.168.255.105(xxx=2) in the reference picture to set.
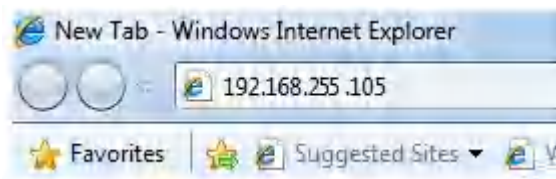

4. On the login screen, the default user name and login password of the wireless bridge is "admin", just entry password login.
Note: "admin" is not the password of the WiFi SSID, it is just the password for WEB access.

5. Login successful, go to setting.

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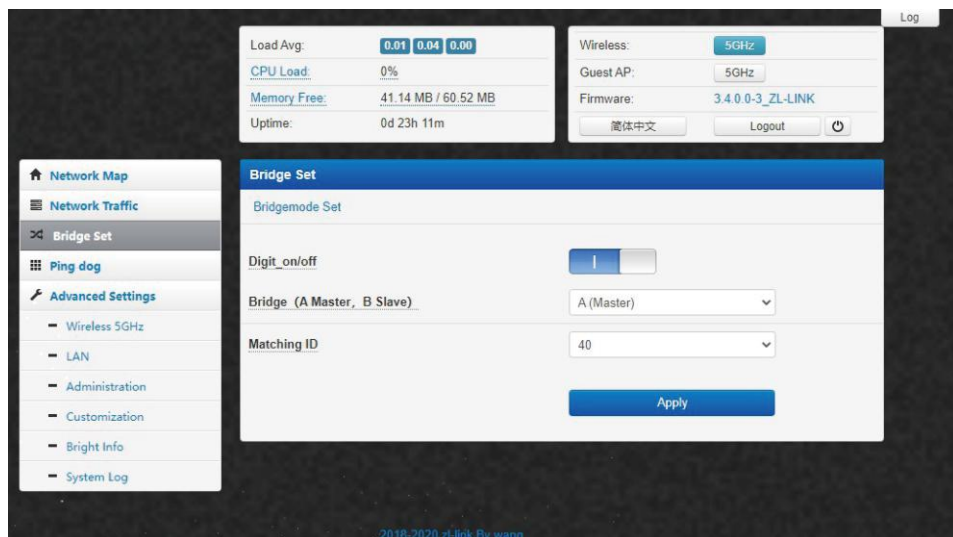
6. In the wireless settings, turn off "Hide SSID", then modify the SSID name and WiFi password, and finally click "Apply" to complete the setting.
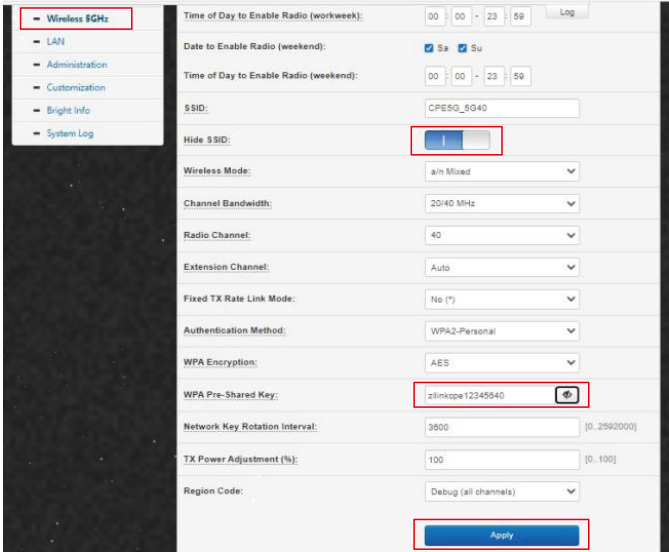
Digital & IP & WiFi Correspondence Chart
You can check the SSID and password through this chart.

LED	A IP	B IP	5.8G ID	Wifi SSID	Password
0	192.168.255.100	192.168.255.200	0	CPE5G_5G0	zllinkcpe1234560
1	192.168.255.101	192.168.255.201	36	CPE5G_5G36	zllinkcpe12345636
2	192.168.255.102	192.168.255.202	40	CPE5G_5G40	zllinkcpe12345640
3	192.168.255.103	192.168.255.203	44	CPE5G_5G44	zllinkcpe12345644
4	192.168.255.104	192.168.255.204	48	CPE5G_5G48	zllinkcpe12345648
5	192.168.255.106	192.168.255.205	120	CPE5G_5G120	zllinkcpe123456120
6	192.168.255.106	192.168.255.206	124	CPE5G_5G124	zllinkcpe123456124
7	192.168.255.107	192.168.255.207	128	CPE5G_5G128	zllinkcpe123456128
8	192.168.255.108	192.168.255.208	132	CPE5G_5G132	zllinkcpe123456132
9	192.168.255.109	192.168.255.209	136	CPE5G_5G136	zllinkcpe123456136
a	192.168.255.110	192.168.255.210	140	CPE5G_5G140	zllinkcpe123456140
b	192.168.255.111	192.168.255.211	149	CPE5G_5G149	zllinkcpe123456149
c	192.168.255.112	192.168.255.212	153	CPE5G_5G153	zllinkcpe123456153
D	192.168.255.113	192.168.255.213	157	CPE5G_5G157	zllinkcpe123456157
E	192.168.255.114	192.168.255.214	161	CPE5G_5G161	zllinkcpe123456161
F	192.168.255.115	192.168.255.215	165	CPE5G_5G165	zllinkcpe123456165

10. Troubleshooting

Trouble	Reason	Solution
Packet Latency	1. Wireless interference 2. Distance is too long, or there are some walls between them 3. CPE's angle in the wrong direction, weak signal	1. Use WiFi analysis to choose the best channel 2. CPE should be in the normal distance, and avoid the wall 3. Adjust the angle of CPE according to signal strength
Wrong Password	1. Forget the password 2. Input wrong password 3. Too much cookie 4. WiFi password is confused with the WEB access password	1. Press the "RST" button in 10s to reset the bridge, the default password is admin. 2. Re-input the password 3. Clear cookie, run arp -d to clear MAC table 4. WEB access user namer and password is "admin"
Can not login WEB	1. Local IP is not in the same network segment of CPE 2. IP is taken by other devices 3. LAN connection or ethernet cable has a problem 4. Too much cookie, MAC address haven't update	1. Ping bridge IP address to see the connection status 2. Stop other devices or change to another IP address 3. Check LAN connection and Ethernet cable 4. Clear cookie, run arp -d to clear MAC address

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System LED light off	1. PoE power supply is not working 2. Some problem in CPE's PoE port 3. Ethernet cable is loose, RJ45 port is wrong power current/voltage lower or wrong	1. Check if the PoE adapter or PoE switch work 2. Check if the PoE port of CPE is ok 3. Check if Ethernet cable is loose if Ethernet cable plugged into PoE port 4. Check if the voltage is normal, if the socket has problem if the input voltage of the PoE adapter is normal
Low transmission Rate	1. Packet Latency 2. Ethernet cable circuit 3. Network virus attack 4. Too much access users 5. Network Cables type lower than Cat 5e?	1. Adjust the distance, angle and channel to decrease latency 2. Check if port isolated to avoid network virus and broadcast storm 4. Decrease the access users. 5. Change use a Cat 5e or above network cable.
Device always dead	1. Static electricity 2. Running time too long 3. Lightning stroke	1. Make CPE or PoE adapter need a ground connection 2. Running time over 7 days,reboot it 3. After lightning, device PoE port broken or unstable better to deploy lightning conductor

11. Technical Support and Service

A. Thank you for your order and for using ULNA Wireless Bridge, please read the manual carefully before use. If there are any problems during the use, please contact us in time;

B. The installation of this device requires some network knowledge. If you can't install it, please let us know or contact a professional. (There are also many installation videos of the bridge on the YouTube that you can refer to)

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