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Highbrain CPE220

Highbrain Point to Point Wireless Bridge CPE220 User Manual

Model: CPE220 | Brand: Highbrain

1. INTRODUCTION

The Highbrain Point to Point Wireless Bridge CPE220 is a 5.8GHz outdoor wireless bridge designed for long-range WiFi extension and video surveillance transmission. This kit includes two CPE units, pre-paired for ease of use, and supports various operation modes including Access Point (AP) and Bridge modes. It is built to withstand outdoor conditions, featuring waterproof, dustproof, and lightning protection.

This manual provides detailed instructions for setting up, operating, maintaining, and troubleshooting your CPE220 wireless bridge system to ensure optimal performance and connectivity.



Figure 1.1: Highbrain Point to Point Wireless Bridge CPE220 units.

2. PRODUCT OVERVIEW

The CPE220 units are equipped with LED indicators and multiple ports for versatile connectivity. Understanding these components is crucial for proper setup and operation.

2.1 Key Features

- 5.8GHz Wireless Frequency
- Up to 1.2 Miles (2KM) Range
- 100Mbps Data Transfer Rate
- LED Display for Configuration
- Power over Ethernet (PoE) Support
- Two LAN Ports
- Waterproof, Dustproof, Lightning Protection
- Operating Temperature: -20°C to 70°C

Outdoor Wireless Bridge CPE220



5.8 GHZ BAND

1.2ML DISTANCE

300MBPS SPEED

DIGITAL DISPLAY

POE POWER

2 LAN PORT

Figure 2.1: CPE220 Unit Features.

2.2 Component Identification

Wireless Bridge Details

100Mbps | **5.8**GHz | **2000**M

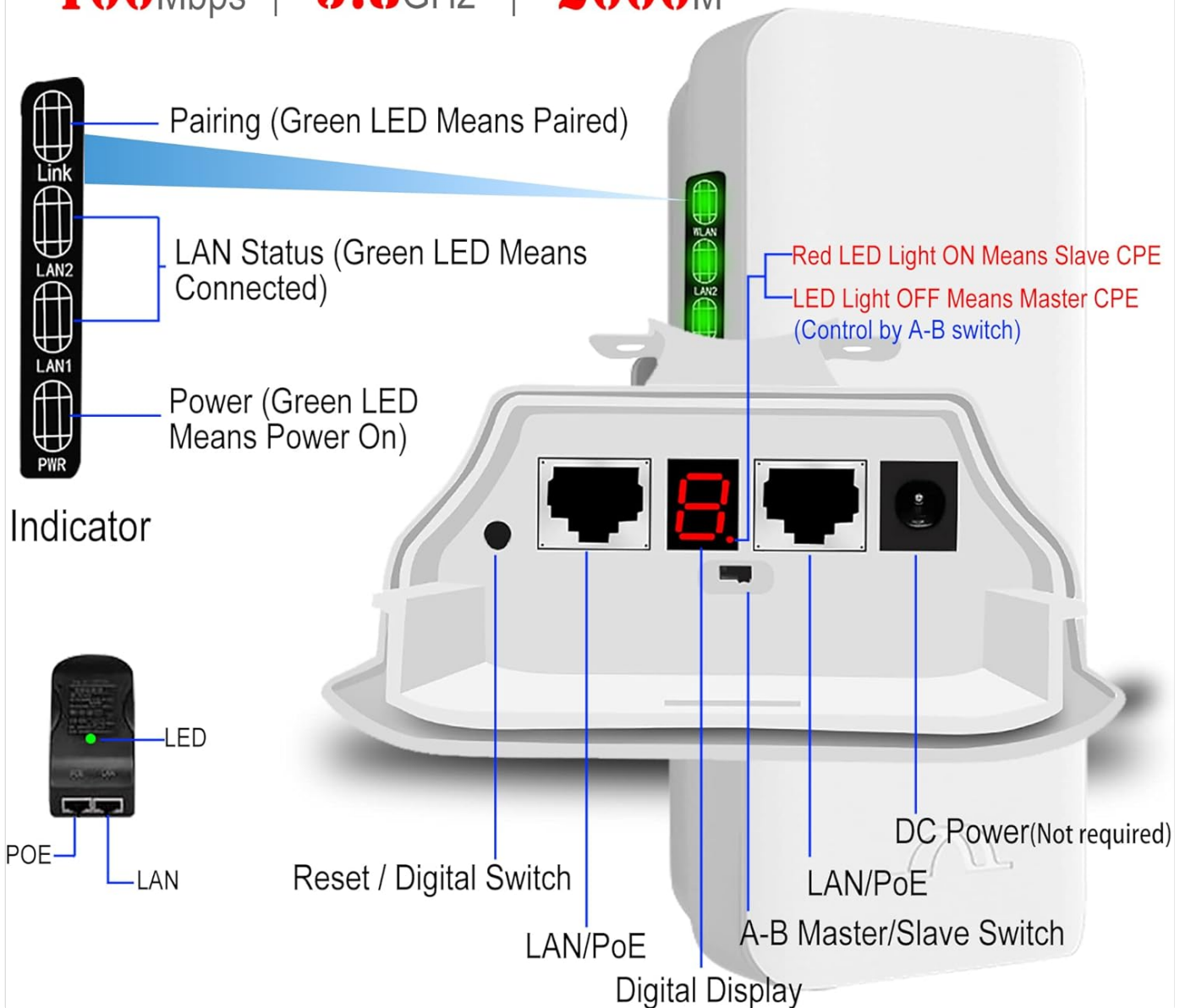


Figure 2.2: CPE220 Wireless Bridge Details and Indicators.

- **PWR LED:** Green indicates power on.
- **LAN1/LAN2 LEDs:** Green indicates a connected LAN device.
- **Link LED:** Green indicates successful pairing between units.
- **Digital Display:** Shows channel number or pairing status.
- **Reset / Digital Switch:** Used for resetting or changing digital display values.
- **LAN/PoE Port:** Connects to your network and provides power via PoE adapter.
- **A-B Master/Slave Switch:** Sets the unit as Master (A) or Slave (B).
- **DC Power Port:** Optional power input (PoE is typically used).

3. SETUP AND INSTALLATION

The CPE220 units are pre-paired from the factory, simplifying the initial setup. Follow these steps for a successful installation.

3.1 Initial Power-Up and Pre-pairing

The two wireless bridges are pre-paired. To power them on, connect the LAN port of each bridge to the PoE port of its respective PoE adapter. Wait approximately one minute for the units to auto-pair. The LED light on the status indicator will turn green, indicating successful pairing.

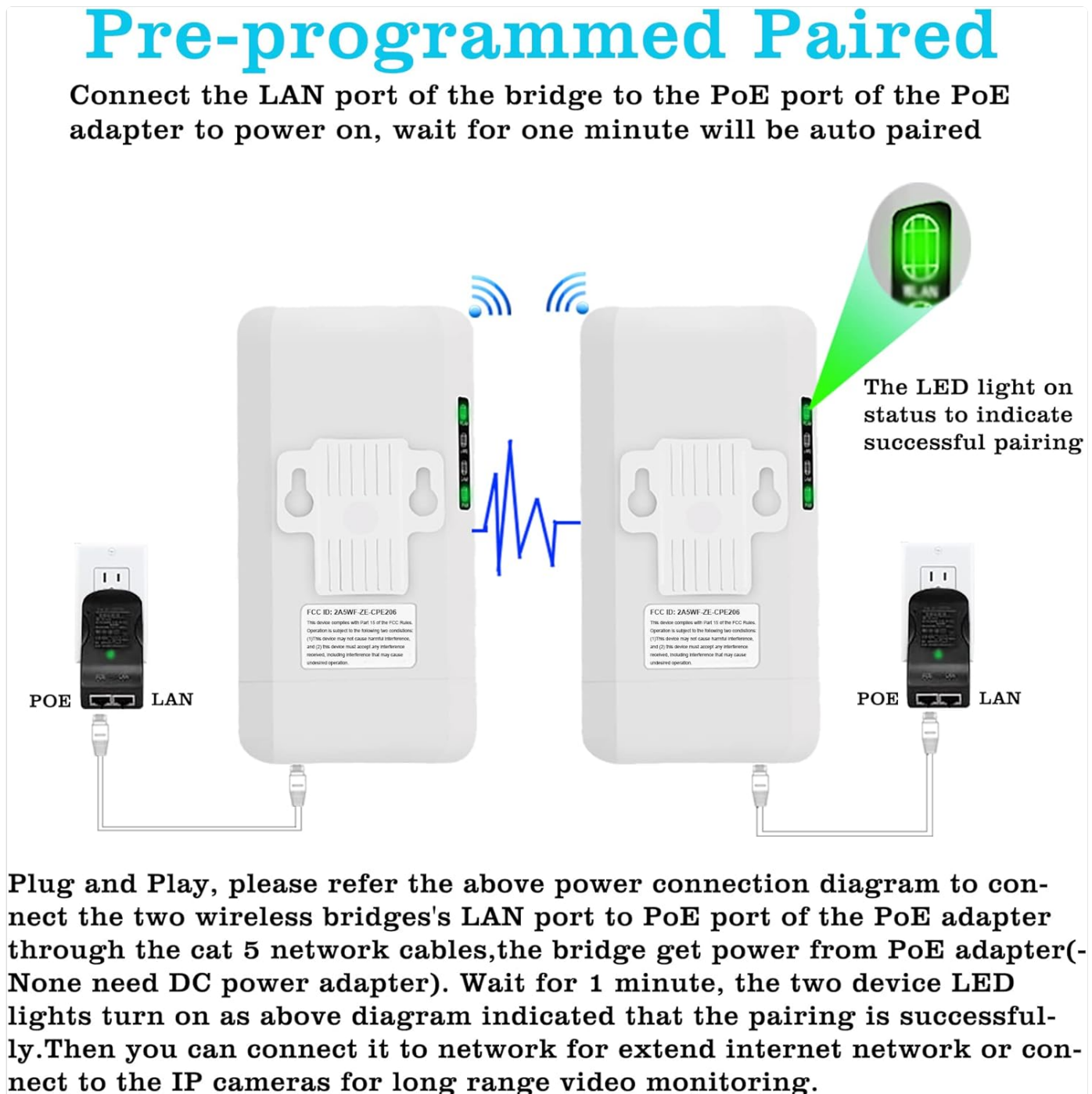


Figure 3.1: Power Connection and Pre-pairing.

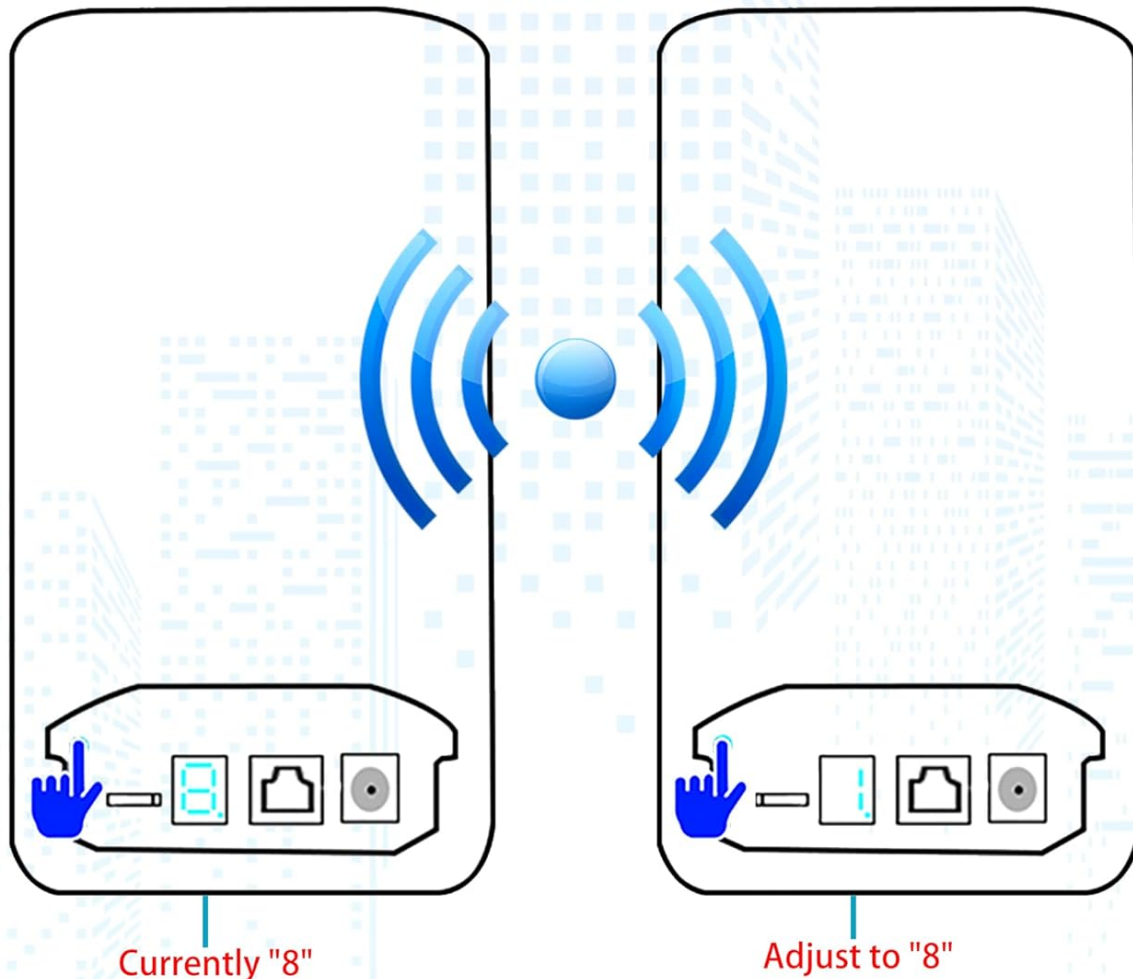
3.2 Digital Pairing (If Re-pairing is Needed)

If the units lose pairing or if you need to re-pair them, you can use the digital display and switch. For a pair of wireless bridges, adjust both the master and slave units to the same channel. Simply press the button to change the channel. No computer connection is needed for this configuration.

After both wireless bridges are set to the same channel (e.g., "8"), they will begin pairing. Wait for one minute; the digital display on both units will show "8" without flashes, indicating successful pairing.

Digital Pairing & Easy To Use

For a pair wireless bridges, to adjust the master and slaver wireless bridges to same channel, simply press the button to change the channel, NONE need to connect to computer for config



After the both wireless bridges are set to channel "8", the bridges start pairing, wait for one minutes to completed, the both indicator will display "8" without flashes. means the device paired successful

Figure 3.2: Digital Pairing Process.

3.3 Deployment Scenarios

The CPE220 supports various deployment configurations for extending networks or surveillance systems.

3.3.1 Point to Point Video Surveillance

Expand your video surveillance range up to 1.2 miles. Connect IP cameras to the Slave Wireless Bridge (Transmitter, switch to 'B' position) via a switch and PoE adapter. The Master Wireless Bridge (Receiver, switch to 'A' position) connects to your DVR and computer, allowing you to receive surveillance video wirelessly.

Point to Point Video Surveillance

Expand your video surveillance range up to 1.2 miles

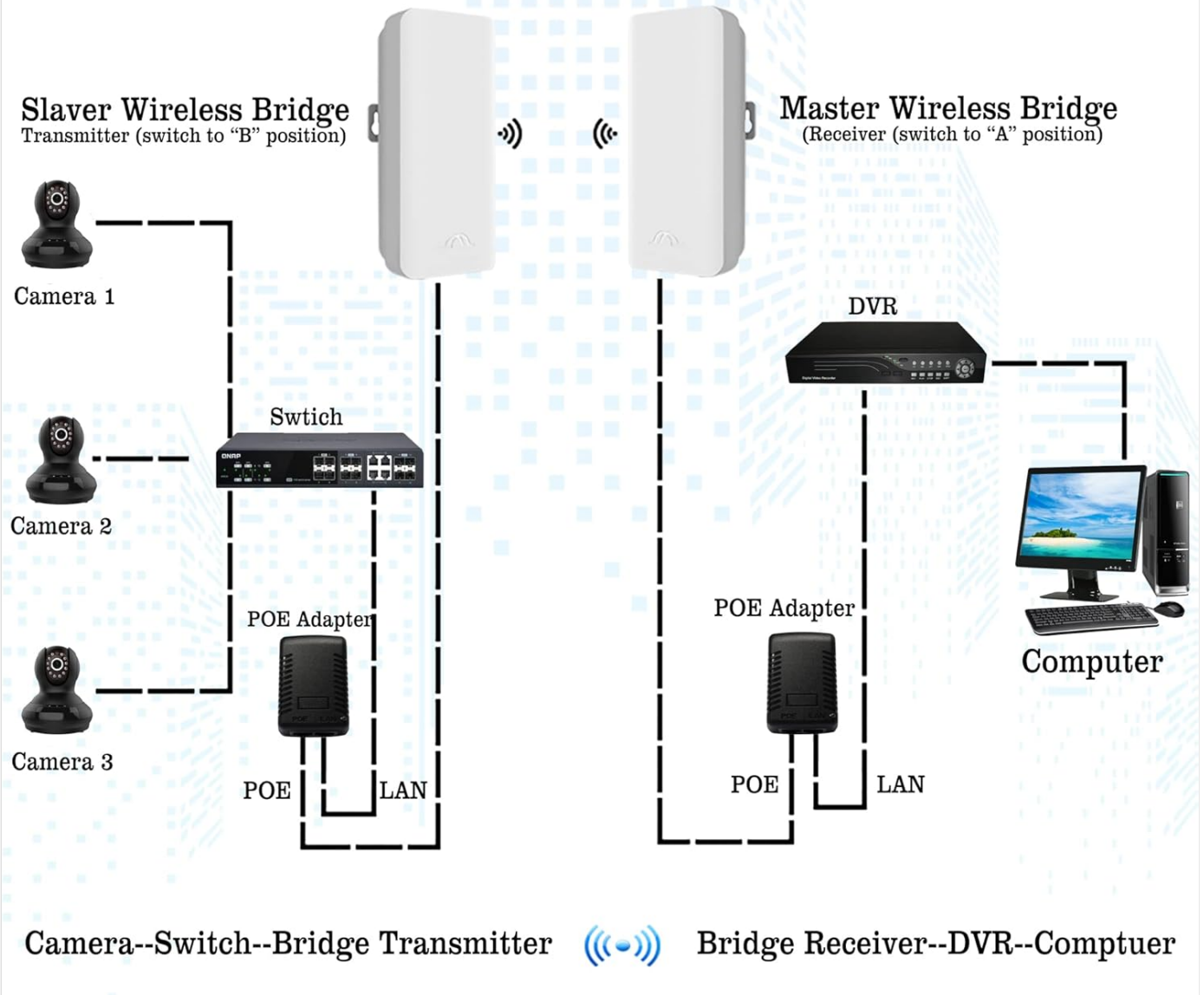


Figure 3.3: Point to Point Video Surveillance Setup.

3.3.2 Point to Point Extended Network

Easily extend your network to another location up to 1.2 miles away. The Master Wireless Bridge connects to your main router and internet source. The Slave Wireless Bridge connects to a computer or another router at the remote location, providing extended network access.

Point To Point Extended Network

Easily extend the network to another house

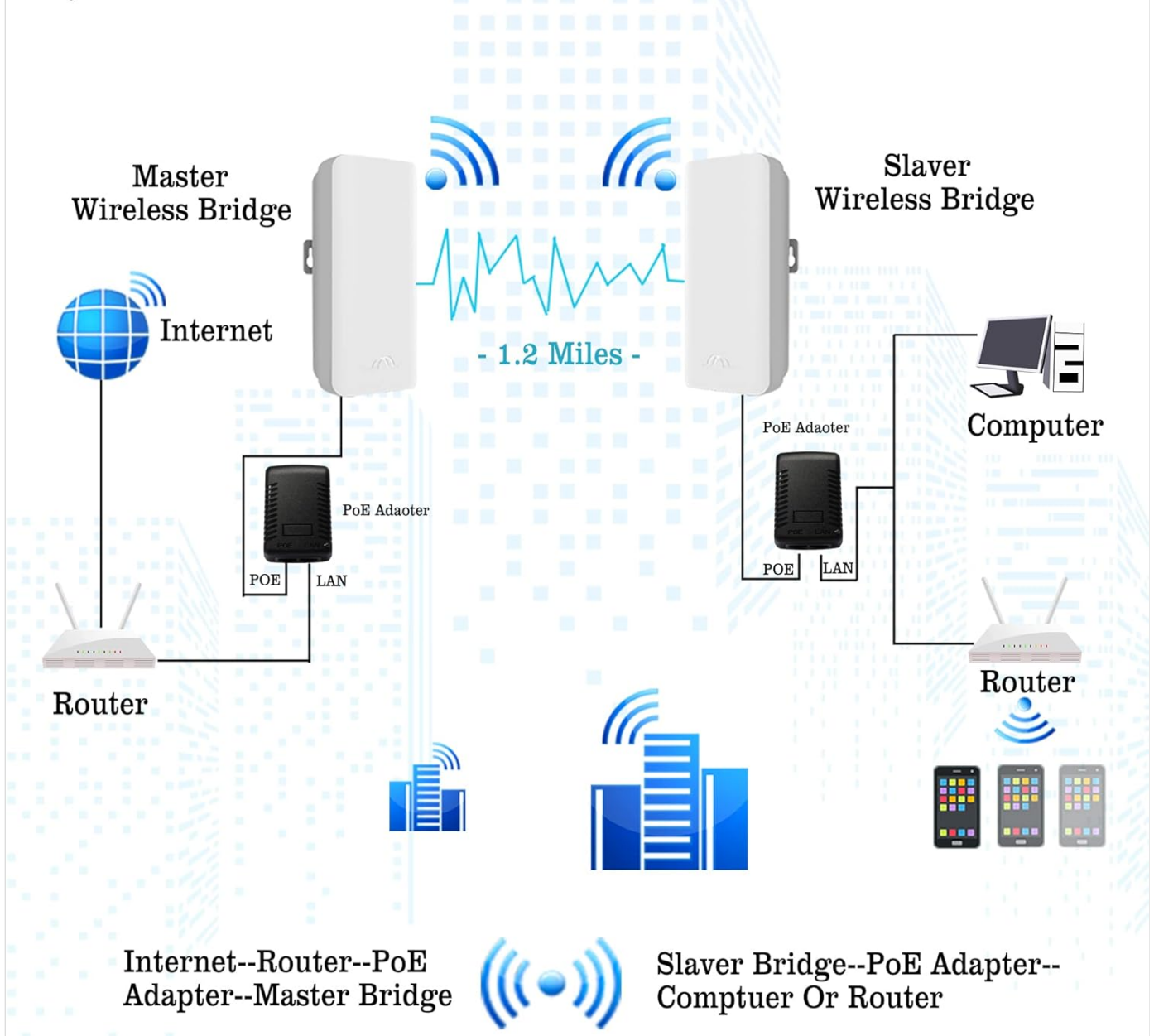


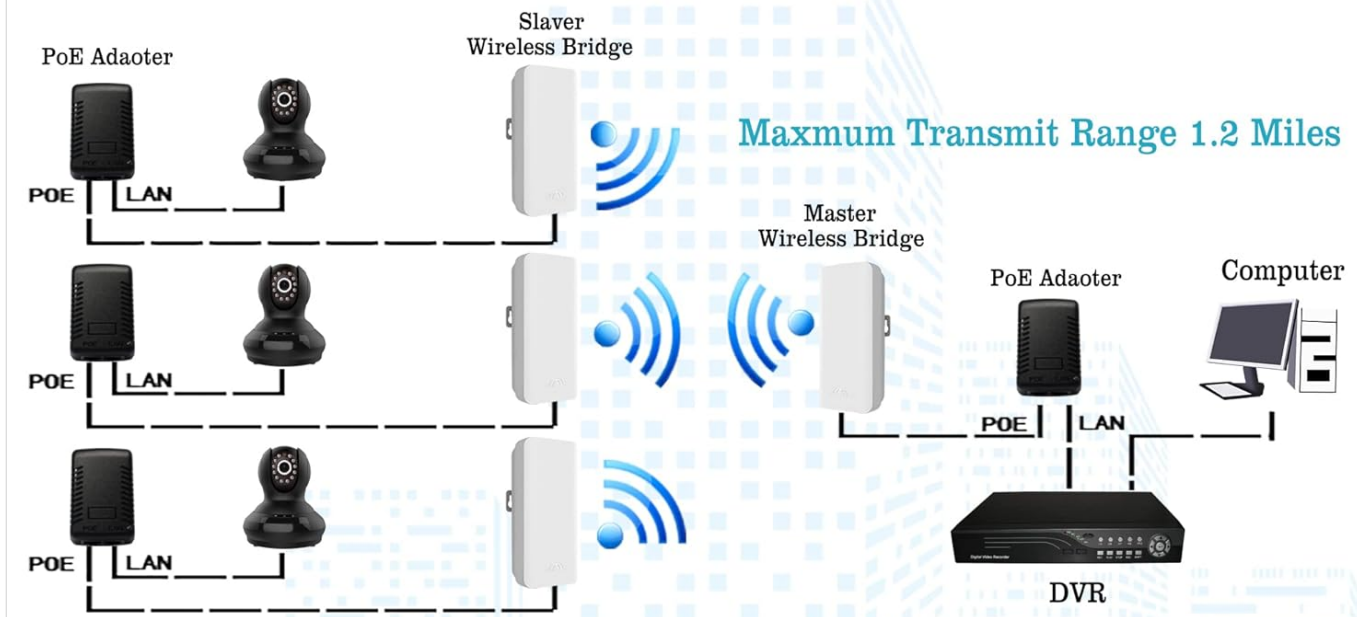
Figure 3.4: Point to Point Extended Network Setup.

3.3.3 Point to Multiple Point Extended Network

Connect multiple slave wireless bridges to a single master unit to extend your network or surveillance system to several remote points. This configuration allows for a maximum transmit range of 1.2 miles from the master to each slave.

Point To Multiple Point Extended Network

Easily connect to multiple slaver wireless bridge with computer config



Two Group Wireless Bridges Extend Network

Easily extend the transmit range up to 2.5 miles, setup it with simple step

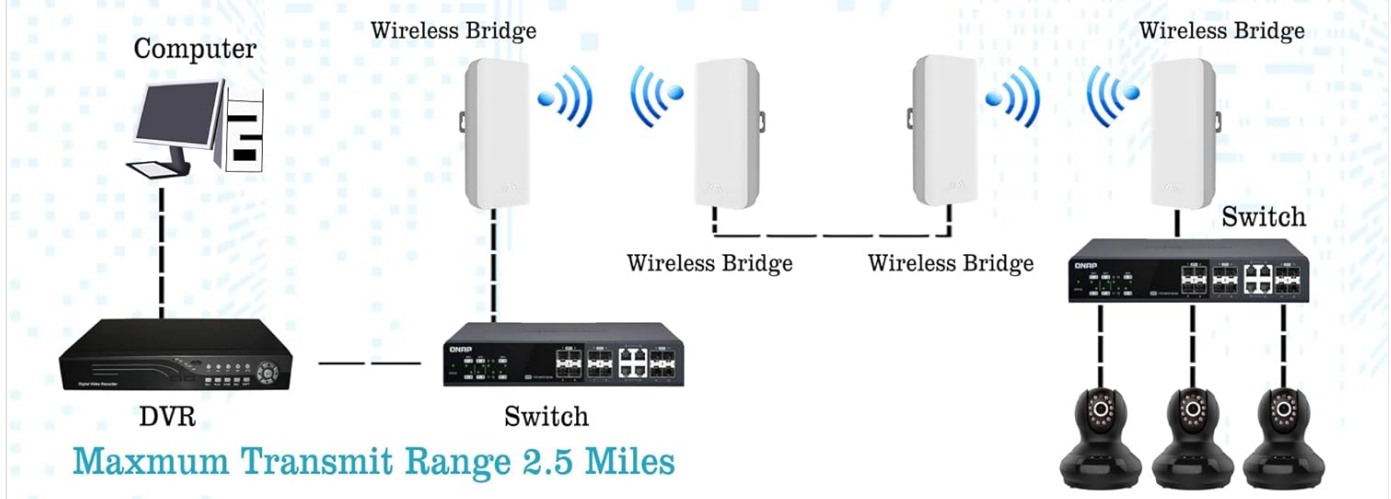


Figure 3.5: Point to Multiple Point Extended Network Setup.

3.3.4 Two Group Wireless Bridges Extend Network

For even greater distances, two groups of wireless bridges can be used to extend the transmit range up to 2.5 miles. This setup involves chaining the wireless bridges to cover longer distances, often used for extensive surveillance networks.

The 5.8G wireless bridge is ideal for extending network coverage to barns, garages, warehouses, or for extending video surveillance range without complex wiring.

Point to Point Video Surveillance

Expand your video surveillance range up to 1.2 miles

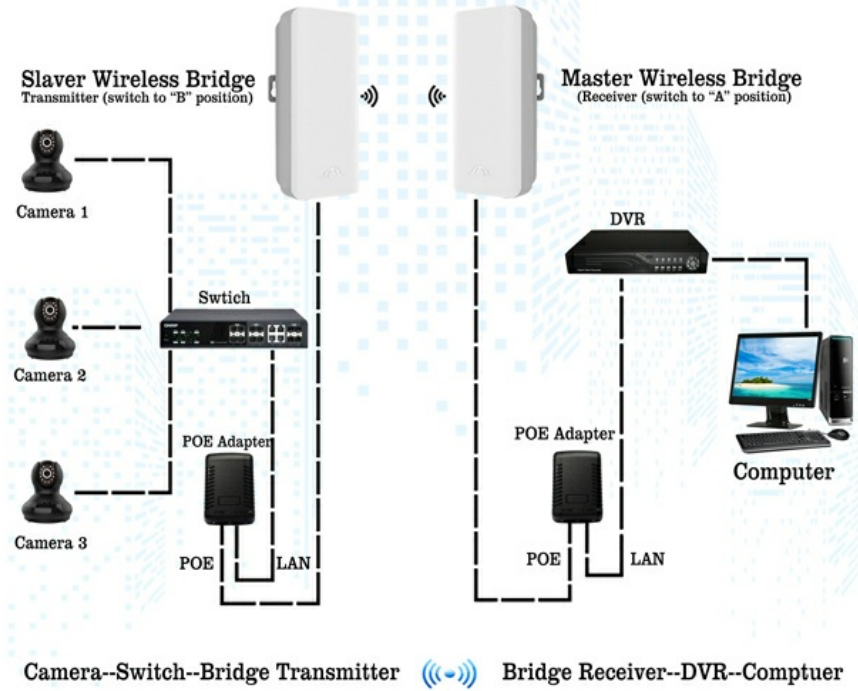


Figure 3.6: Two Group Wireless Bridges for Extended Range.

Extend Your Network

5.8G wireless bridge is very suitable to extend the home network to your barn, garage, warehouse. Extend the video surveillance range of the lane without the complicated wiring.



Figure 3.7: Application Scenarios for Network Extension.

4. OPERATING INSTRUCTIONS

Once the CPE220 units are set up and paired, they operate automatically to provide wireless connectivity. Monitor the LED indicators for status information.

4.1 LED Indicator Status

Indicator	Status	Description
PWR	Green	Device is powered on.
LAN1/LAN2	Green	Ethernet cable connected and active on the respective LAN port.
Link	Green	Wireless pairing between the Master and Slave units is successful.
Digital Display	Red LED ON	Indicates Slave CPE (when A-B switch is in 'B' position).
Digital Display	LED OFF	Indicates Master CPE (when A-B switch is in 'A' position).

5. MAINTENANCE

The Highbrain CPE220 is designed for outdoor use and requires minimal maintenance. However, periodic checks can help ensure its longevity and performance.

- **Cleaning:** Periodically wipe the exterior of the units with a soft, damp cloth to remove dust and dirt. Do not use harsh chemicals or abrasive cleaners.
- **Cable Inspection:** Regularly inspect all connected Ethernet cables for any signs of wear, damage, or corrosion, especially at the connectors.
- **Mounting Security:** Ensure the units remain securely mounted and that mounting hardware is not loose.
- **Environmental Checks:** While designed for outdoor conditions, ensure the units are not exposed to extreme physical stress or prolonged submersion in water.

6. TROUBLESHOOTING

If you encounter issues with your Highbrain CPE220 wireless bridge, refer to the following common troubleshooting steps.

6.1 Common Issues and Solutions

- **No Power (PWR LED Off):**
 - Check the power connection from the PoE adapter to the unit.
 - Ensure the PoE adapter is plugged into a working power outlet.
- **No Link (Link LED Off):**
 - Verify that both units are powered on.
 - Ensure the Master/Slave switch is correctly set (one 'A', one 'B').
 - Confirm both units are set to the same channel using the digital display.
 - Reduce the distance between units or ensure there are no major obstructions.
 - Perform a digital pairing process as described in Section 3.2.
- **No Network Connectivity (LAN LEDs Off/No Data):**
 - Check the Ethernet cables connecting the CPE units to your router, switch, or device.
 - Ensure the connected devices (router, camera, DVR) are powered on and functioning correctly.
 - Verify the Link LED is green, indicating a successful wireless bridge connection.
- **Poor Performance/Slow Speed:**
 - Ensure clear line-of-sight between the two units. Obstructions like trees or buildings can degrade signal.

- Check for potential interference from other 5.8GHz devices.
- Ensure the units are mounted securely and are not swaying.

If these steps do not resolve your issue, it is recommended to contact Highbrain customer support or seek assistance from a professional with network knowledge.

7. SPECIFICATIONS

Feature	Detail
Brand	Highbrain
Model	CPE220
Wireless Communication Standard	5.8 GHz Radio Frequency, 802.11ac
Data Transfer Rate	100 Megabits Per Second
Max Range	Up to 1.2 Miles (2 KM)
Connector Type	RJ45 (Ethernet)
Special Features	Long Range, Wireless, High Gain, Low Loss, Wall Mount, Digital Display, PoE Power
Product Dimensions	2.36 x 3.75 x 2.36 inches
Item Weight	1.98 pounds
Operating Temperature	-20°C to 70°C

8. WARRANTY AND SUPPORT

8.1 Warranty Information

For specific warranty terms and conditions, please refer to the documentation included with your purchase or contact Highbrain customer support directly. Warranty details may vary based on region and retailer.

8.2 Technical Support

If you require technical assistance or have questions not covered in this manual, please contact Highbrain customer support. You may also request the latest version of the PDF manual by contacting them.

It is recommended to have your product model number (CPE220) and purchase details ready when contacting support.

For general inquiries, you can visit the Highbrain Store on Amazon: [Highbrain Store](#)