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UBIQUITI NETWORKS PBM10 Power Bridge User Guide

Contents

UBIQUITI NETWORKS PBM10 Power Bridge

- 10 GHz Carrier Class air MAX Base Station with Dish Antenna
- **Model**: PBM10

Introduction

Thank you for purchasing the Ubiquiti Networks™ PowerBridge™M. This Quick Start Guide is designed to guide you through the installation, and show you how to access the airOS™ Configuration Interface. This Quick Start Guide also includes the warranty terms and is for use with the PowerBridgeM10, model PBM10.

Package Contents

| Radio | Dish | Feed | Mounting Bracket | Pole Clamps (Qty. 2) |

| Stabilizer Brackets (Qty. 2) | Elevation Rod | M10x150 Bolts (Qty. 4) | M10x100 Bolts (Qty. 2) |

M10x25 Bolts (Qty. 3)	O-Ring (Installed on feed)	M4x12 Screw and Washer Assembly (Qty. 4)	M4x18 Screw and Washer Assembly (Qty. 4)
M10 Hex Nuts (Qty. 9)	M16 Hex Nuts (Qty. 2)	M10 Washers (Qty. 9)	M16 Washers (Qty. 2)
M10 Washers (Qty. 9)	M16 Washers (Qty. 2)	PoE Adapter (24V, 1A)	Power Cord	Quick Start Guide

ERMS OF USE: Ubiquiti radio devices must be professionally installed. Shielded Ethernet cable and earth grounding must be used as conditions of product warranty. TOUGH Cable is designed for outdoor installations. It is the customer's responsibility to follow local country regulations, including operation within legal frequency channels, output power, and Dynamic Frequency Selection (DFS) requirements.

Installation Requirements

- Adjustable wrench or one 16 mm and one 24 mm wrench
- Phillips screwdriver
- Shielded Category 5 (or above) cabling should be used for all wired Ethernet connections and should be grounded through the AC ground of the PoE.
- We recommend that you protect your networks from the most brutal environments and devastating ESD attacks with industrial-grade shielded Ethernet cable from Ubiquiti
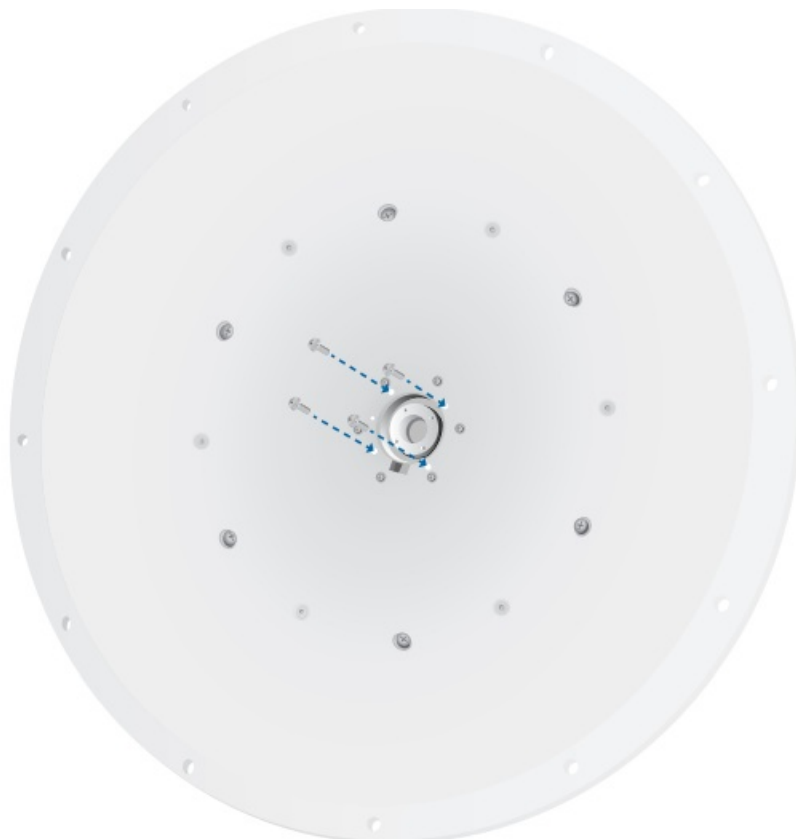- Networks. For more details, visit **www.ubnt.com/toughcable**

Hardware Installation
To install the PowerBridgeM10, perform the following steps:

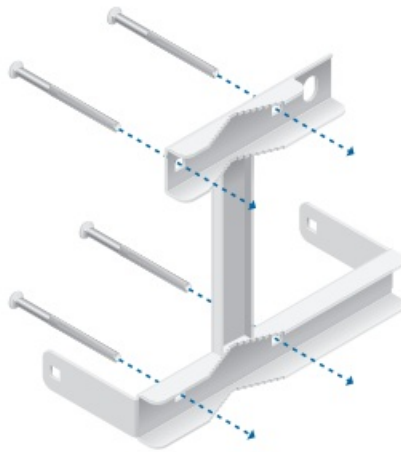1. Align the Radio to the back of the Dish.

2. On the front of the Dish, use the four M4x18 Screw and Washer Assemblies to secure the Radio to the Dish.
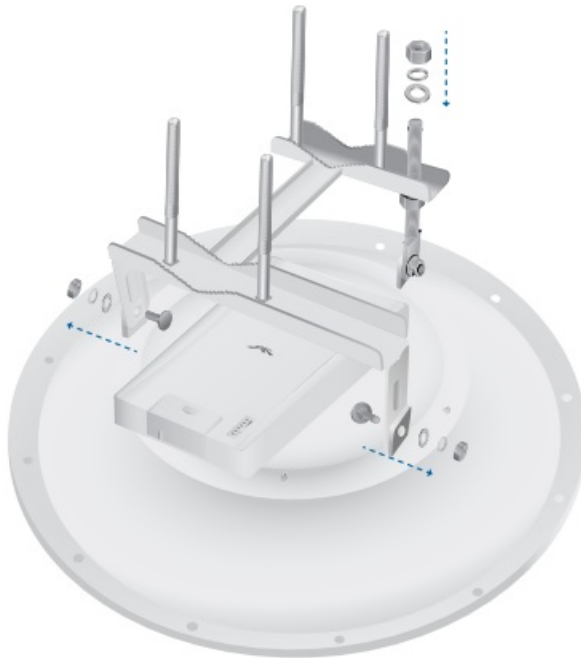

3. Connect the Elevation Rod to the back of the Dish using a M10x25 Bolt, a M10 Washer, a M10 Spring Lock Washer, and a M10 Hex Nut. Install a M16 Hex Nut about halfway down on the Elevation Rod and then install a M16 Washer on the Elevation Rod.

4. Insert the four M10x150 Carriage Bolts into the Mounting Bracket.

5. Connect the Mounting Bracket to the Dish:
    1. Insert two M10x25 Bolts through the bottom of the Mounting Bracket and through the Dish. The bolts should be on the inside facing outward.
    2. Secure each bolt using a M10 Washer, a M10 Spring Lock Washer, and a M10 Hex Nut.
    3. Slide the Mounting Bracket onto the Elevation Rod.
    4. Secure the Mounting Bracket to the Elevation Rod using a M16 Washer, a M16 Spring Lock Washer, and a M16 Hex Nut.
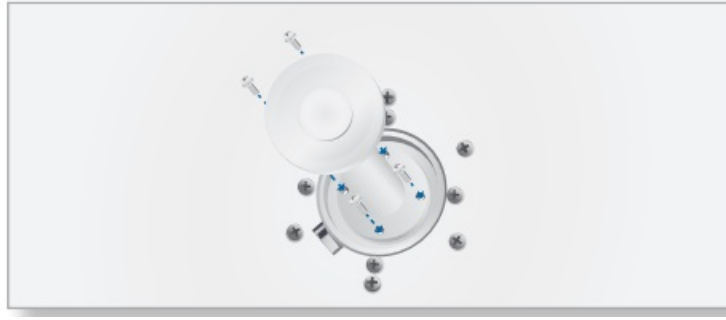
720-00062-01

6. Lift the cover on the Radio by pressing down and raising it up. Connect an Ethernet cable to the Radio and place the cover back on the Radio. There is an opening for the Ethernet cable. Slide the cover over the cable.
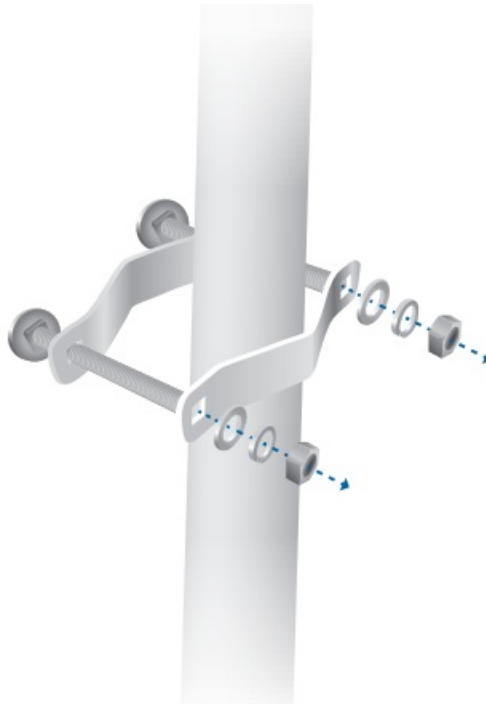

7. Make sure the O-Ring is secure on the Feed.

O-Ring

8. On the front of the Dish, connect the Feed to the Radio and Dish using the four M4x12 Screw and Washer Assemblies.
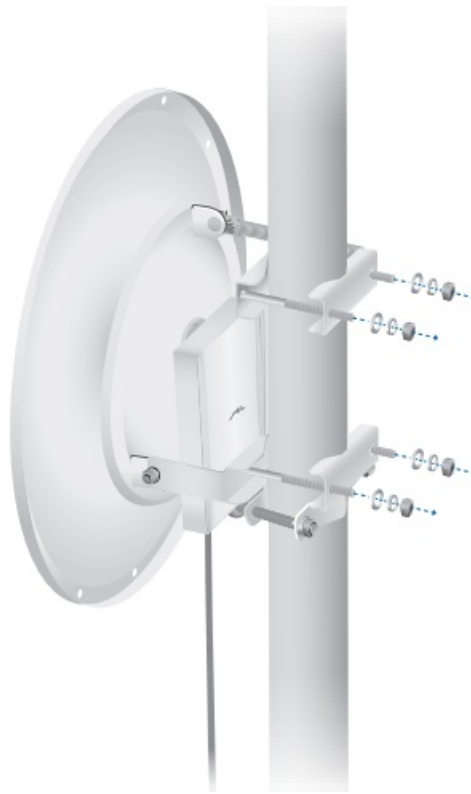
Note: DO NOT handle the assembled unit by the feed at any time, especially during installation of the Dish to the pole. Always hold the Dish or the brackets while installing the product.

9. Attach the Stabilizer Brackets to the pole just beneath the area where the Dish will be attached. Use two M10x100 Bolts, two M10 Washers, two M10 Spring Lock Washers, and two M10 Hex Nuts. Tighten the nuts to approximately 50 N-m (37 lb-ft).
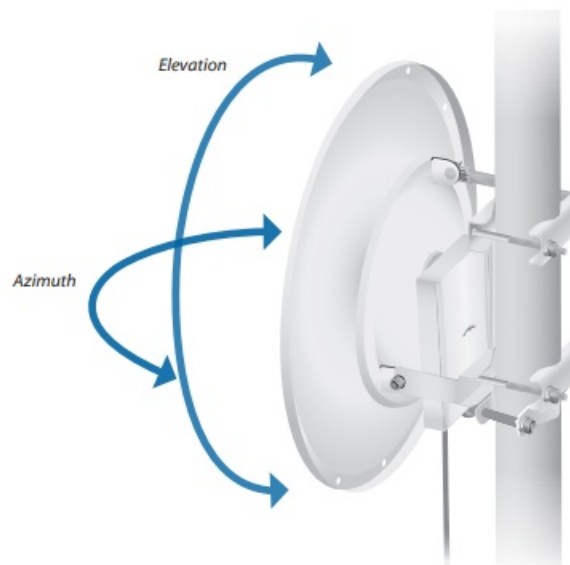

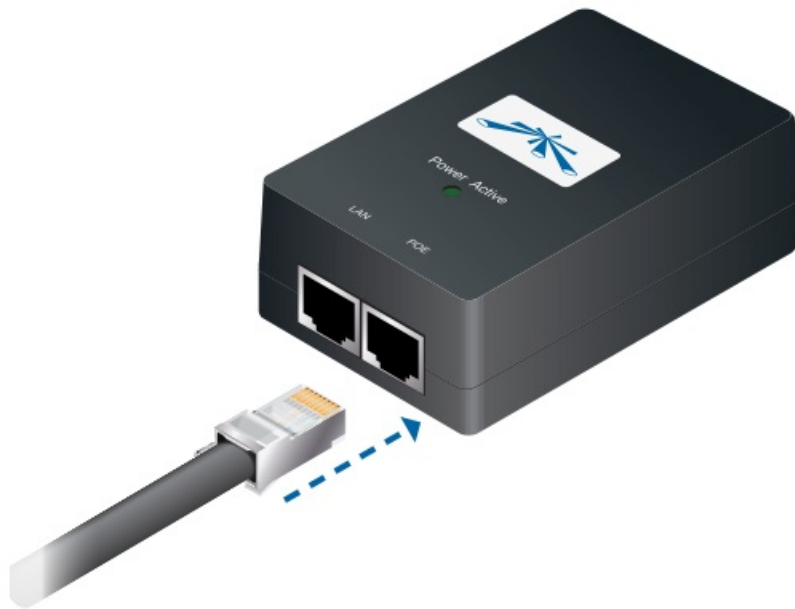**Note**: The mounting assembly can accommodate a 1.5″ – 4.0″ pole.

10. Place the Pole Clamps on the other side of the pole that the Dish will be mounted on and connect them to the Mounting Bracket using M10 Washers, M10 Spring Lock Washers, and M10 Hex Nuts.

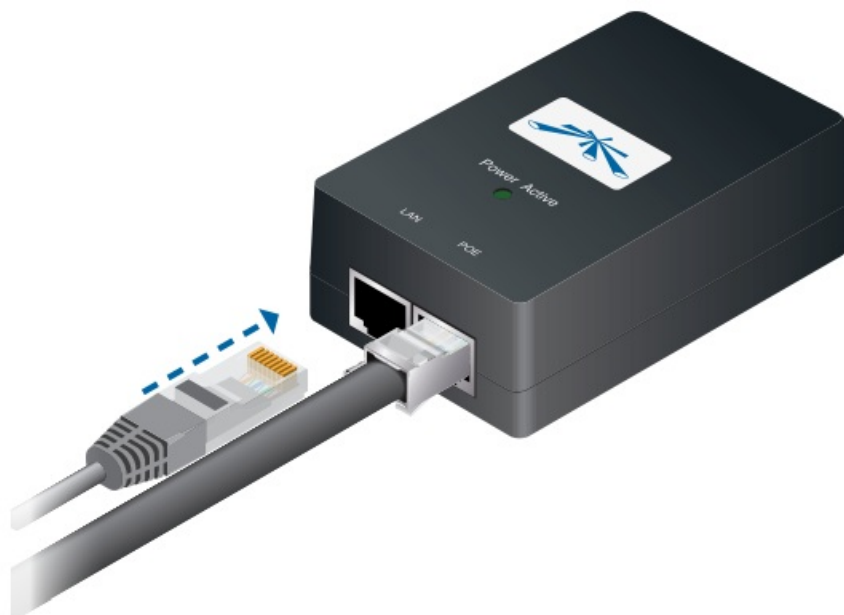11. Adjust the Azimuth and Elevation. Azimuth can be adjusted by rotating the antenna while supported by the stabilizer bracket. Elevation is adjusted by loosening the Elevation Rod. Tighten all bolts and nuts to approximately 50 N-m (37 lb-ft) or less to avoid deforming the pole.
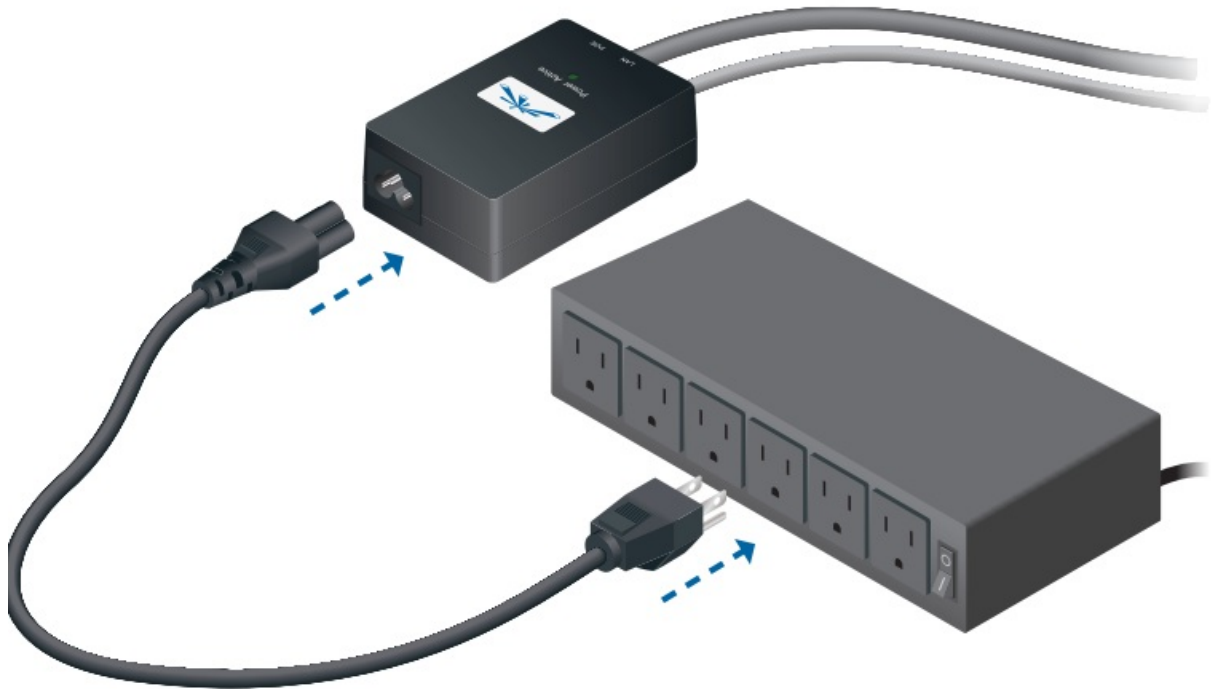

12. Connect the other end of the Ethernet cable from the Radio to the Ethernet port labeled POE on the PoE Adapter.

13. Connect an Ethernet cable from your LAN to the Ethernet port labeled LAN on the PoE Adapter.

14. Connect the power cord to the power port on the PoE Adapter. Connect the other end of the power cord to a power outlet.

Accessing airOS™
Verify connectivity in the airOS Configuration Interface.

1. Make sure that your host machine is connected to the LAN that is connected to the PowerBridgeM10.
2. Configure the Ethernet adapter on your host system with a static IP address on the 192.168.1.x subnet.
3. Launch your web browser. Type **https://192.168.1.20** in the address field and press enter (PC) or return (Mac).

1. The login screen will appear. Enter ubnt in the Username and Password fields. Select your Country and Language. You must agree to the Terms of Use to use the product. Click Login.
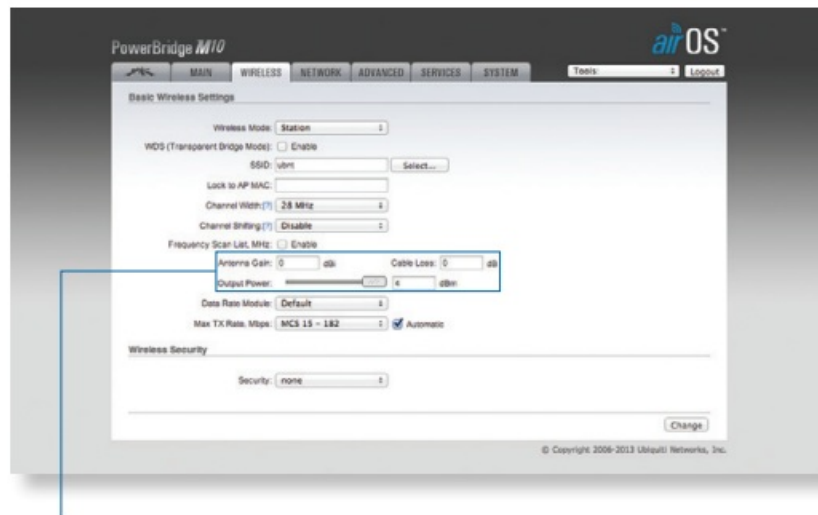   **Note**: U.S. product versions are locked to the U.S. Country Code to ensure compliance with FCC regulations.

The airOS Configuration Interface will appear, allowing you to customize your settings as needed.
For additional details on the airOS Configuration Interface, refer to the User Guide available at:
documentation.ubnt.com/airmax

Installer Compliance Responsibility

Devices must be professionally installed and it is the professional installer's responsibility to make sure the device is operated within local country regulatory requirements.

Since Ubiquiti Networks equipment can be paired with a variety of antennas and cables, the Antenna Gain, Cable Loss, and Output Power fields are provided to the professional installer to assist in meeting regulatory requirements.

Czech Republic

The content in this section is for exclusive use in the Czech Republic; you are instructed to look for clear channels and manually set the channel to be used.

Important Steps to Take before First Use

1. Search for channels that are already used in your area. For these channels, search for the pair channels. NEVER use these channels for operation of your link.

2. In the airOS Configuration Interface of the PowerBridgeM10, activate the Frequency Scan List option and click the Edit button.

3. Select the free channel and save your changes.

4. Follow the same steps (1-3) for your second PowerBridgeM10 (at the other end of the link).

5. Check the Fresnel zone; this must be free.

6. In the airOS Configuration Interface of the PowerBridgeM10, use the Speed Test application. Adjust the direction of the link for optimal performance.

7. Tighten all screws of the antenna.

8. Set TX power in accordance with VO-R/14/12.2006-38.

Specifications

PowerBridgeM10 Radio	
Dimensions	- 170 x 250 x 53 mm (without the Feed) - 170 x 250 x 272 mm (with the Feed)
Weight	- 1.15 kg (without Feed) - 1.2 kg (with Feed) 11 kg (with Feed, Dish, and Mount)
Networking Interface	(1) 10/100 Ethernet Port
Enclosure Characteristics	Die-Cast Aluminum
Mounting Kit	Pole-Mounting Kit Included
Max. Power Consumption	8 W
Power Supply	24V, 1A PoE Supply Included
Power Method	Passive Power over Ethernet (Pairs 4, 5+; 7, 8 Return)
Operating Temperature	-40 to 80° C
Operating Humidity	5 to 95% Condensing
Shock and Vibration	ETSI300-019-1.4

PowerBridgeM10 Dish Antenna Characteristics	
Dimensions	648 x 648 mm
Weight	9.8 kg
Frequency	10.322 GHz – 10.574 GHz
Gain	33.0 – 34.4 dBi
HPOL Beamwidth	3.0 – 3.7° over Band
VPOL Beamwidth	3.0 – 3.7° over Band
F/B Ratio	33 dB
Max. VSWR	1.4:1
Wind Survivability	125 mph
Wind Loading	177 lbF @ 125 mph
Polarization	Dual Linear
Cross-pol Isolation	35 dB Min.
ETSI Specification	EN 302 326 DN2
Mounting	Universal Pole Mount, PowerBridgeM10 Bracket

Safety Notices

1. Read, follow, and keep these instructions.
2. Heed all warnings.
3. Only use attachments/accessories specified by the manufacturer.

    WARNING: Do not use this product in location that can be submerged by water.

    WARNING: Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

Electrical Safety Information

1. Compliance is required with respect to voltage, frequency, and current requirements indicated on the manufacturer's label. Connection to a different power source than those specified may result in improper operation, damage to the equipment or pose a fire hazard if the limitations are not followed.
2. There are no operator serviceable parts inside this equipment. Service should be provided only by a qualified service technician.
3. This equipment is provided with a detachable power cord which has an integral safety ground wire intended for connection to a grounded safety outlet.
    1. Do not substitute the power cord with one that is not the provided approved type. Never use an adapter plug to connect to a 2-wire outlet as this will defeat the continuity of the grounding wire.
    2. The equipment requires the use of the ground wire as a part of the safety certification, modification or misuse can provide a shock hazard that can result in serious injury or death.
    3. Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment.
    4. Protective earthing is provided by Listed AC adapter. Building installation shall provide appropriate short-circuit backup protection.
    5. Protective bonding must be installed in accordance with local national wiring rules and regulations.

Limited Warranty

- UBIQUITI NETWORKS, Inc ("UBIQUITI NETWORKS") warrants that the product(s) furnished hereunder (the "Product(s)") shall be free from defects in material and workmanship for a period of one (1) year from the date of shipment by UBIQUITI NETWORKS under normal use and operation. UBIQUITI NETWORKS' sole and exclusive obligation and liability under the foregoing warranty shall be for UBIQUITI NETWORKS, at its discretion, to repair or replace any Product that fails to conform to the above warranty during the above warranty period. The expense of removal and reinstallation of any Product is not included in this warranty.
- The warranty period of any repaired or replaced Product shall not extend beyond its original term.

Warranty Conditions

The above warranty does not apply if the Product:

1. been modified and/or altered, or an addition made thereto, except by Ubiquiti Networks, or Ubiquiti Networks' authorized representatives, or as approved by Ubiquiti Networks in writing;
2. has been painted, rebranded or physically modified in any way;
3. has been damaged due to errors or defects in cabling;

4. has been subjected to misuse, abuse, negligence, abnormal physical, electromagnetic or electrical stress, including lightning strikes, or accident;

5. has been damaged or impaired as a result of using third party firmware; or

6. has no original Ubiquiti MAC label, or is missing any other original Ubiquiti label(s).

7. has not been received by Ubiquiti within 30 days of issuance of the RMA.

In addition, the above warranty shall apply only i f: the product has been properly installed and used at all times in accordance, and in all material respects, with the applicable Product documentation; all Ethernet cabling runs use CAT5 (or above), and for outdoor installations, shielded Ethernet cabling is used, and for indoor installations, indoor cabling requirements are followed.

Returns

No Products will be accepted for replacement or repair without obtaining a Return Materials Authorization (RMA) number from UBIQUITI NETWORKS during the warranty period, and the Products being received at UBIQUITI NETWORKS' facility freight prepaid in accordance with the RMA process of UBIQUITI NETWORKS. Products returned without an RMA number will not be processed and will be returned freight collect or subject to disposal. Information on the RMA process and obtaining an RMA number can be found at: **www.ubnt.com/support/warranty**.

Disclaimer

- EXCEPT FOR ANY EXPRESS WARRANTIES PROVIDED HEREIN, UBIQUITI NETWORKS, ITS AFFILIATES, AND ITS AND THEIR THIRD PARTY DATA, SERVICE, SOFTWARE AND HARDWARE PROVIDERS HEREBY DISCLAIM AND MAKE NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, REPRESENTATIONS, GUARANTEES, OR WARRANTIES OF MERCHANTABILITY, ACCURACY, QUALITY OF SERVICE OR RESULTS, AVAILABILITY, SATISFACTORY QUALITY, LACK OF VIRUSES, QUIET ENJOYMENT, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT AND ANY WARRANTIES ARISING FROM ANY COURSE OF DEALING, USAGE OR TRADE PRACTICE IN CONNECTION WITH SUCH PRODUCTS AND SERVICES. BUYER ACKNOWLEDGES THAT NEITHER UBIQUITI NETWORKS NOR

- ITS THIRD PARTY PROVIDERS CONTROL BUYER'S EQUIPMENT OR THE TRANSFER OF DATA OVER COMMUNICATIONS FACILITIES, INCLUDING THE INTERNET, AND THAT THE PRODUCTS AND SERVICES MAY BE SUBJECT TO LIMITATIONS, INTERRUPTIONS, DELAYS, CANCELLATIONS AND OTHER PROBLEMS INHERENT IN THE USE OF COMMUNICATIONS FACILITIES. UBIQUITI NETWORKS, ITS AFFILIATES AND ITS AND THEIR THIRD PARTY PROVIDERS ARE NOT RESPONSIBLE FOR ANY INTERRUPTIONS, DELAYS, CANCELLATIONS, DELIVERY FAILURES, DATA LOSS, CONTENT CORRUPTION, PACKET LOSS, OR OTHER DAMAGE RESULTING

- FROM ANY OF THE FOREGOING. In addition, UBIQUITI NETWORKS does not warrant that the operation of the Products will be error-free or that operation will be uninterrupted. In no event shall UBIQUITI NETWORKS be responsible for damages or claims of any nature or description relating to system performance, including coverage, buyer's selection of products (including the Products) for buyer's application and/or failure of products (including the Products) to meet government or regulatory requirements.

- **Limitation of Liability**
    - EXCEPT TO THE EXTENT PROHIBITED BY LOCAL LAW, IN NO EVENT WILL UBIQUITI OR ITS SUBSIDIARIES, AFFILIATES OR SUPPLIERS BE LIABLE FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES (INCLUDING LOST PROFIT, LOST DATA, OR DOWNTIME COSTS), ARISING OUT OF THE USE, INABILITY TO USE, OR THE RESULTS OF USE OF THE

PRODUCT, WHETHER BASED IN WARRANTY, CONTRACT, TORT OR OTHER LEGAL THEORY, AND WHETHER OR NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Note

- Some countries, states and provinces do not allow exclusions of implied warranties or conditions, so the above exclusion may not apply to you. You may have other rights that vary from country to country, state to state, or province to province. Some countries, states and provinces do not allow the exclusion or limitation of liability for incidental or consequential damages, so the above limitation may not apply to you.
- EXCEPT TO THE EXTENT ALLOWED BY LOCAL LAW, THESE WARRANTY TERMS DO NOT EXCLUDE, RESTRICT OR MODIFY, AND ARE IN ADDITION TO, THE MANDATORY
- STATUTORY RIGHTS APPLICABLE TO THE LICENSE OF ANY SOFTWARE (EMBEDDED IN THE PRODUCT) TO YOU. The United Nations Convention on Contracts for the
- International Sale of Goods shall not apply to any transactions regarding the sale of the Products.

Compliance

FCC

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the 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.

NOTE: 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operations of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Industry Canada

- This Class A digital apparatus complies with Canadian ICES-003.
- To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotopically radiated power (e.i.r.p.) is not more than that permitted for successful communication.
- This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

- **RF Exposure Warning**

The antennas used for this transmitter must be installed to provide a separation distance of at least 283 cm from all persons and must not be located or operating in conjunction with any other antenna or transmitter.

- **NB-IN dentification Number (if there is any)**

Notified body number is indicated if it is involved in the conformity assessment procedure.

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Please check the CE mark on the product label to find out which notified body was involved during assessment.

RoHS/WEEE Compliance Statement

- European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health.
- For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

Declaration of Conformity

- Hereby, UBIQUITI NETWORKS, declares that this UBIQUITI NETWORKS device, is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
    - Online Resources
    - Support **support.ubnt.com**
    - Wiki Page **wiki.ubnt.com**
    - Support Forum **forum.ubnt.com** Downloads **downloads.ubnt.com**
    - © 2011-2013 Ubiquiti Networks, Inc. All rights reserved.

Documents / Resources

UBIQUITI NETWORKS PBM10 Power Bridge [pdf] User Guide
PBM10 Power Bridge, PBM10, Power Bridge, Bridge

References

- **UniFi - Rethinking IT - Ubiquiti**
- **UniFi - Rethinking IT - Ubiquiti**
- **Ubiquiti - Warranty**
- **UniFi - Introduction - Ubiquiti**
- **Manual-Hub.com - Free PDF manuals!**
- **User Manual**