UBIQUITI®
NETWORKS

airFiber® 24 HD

24 GHz Full Duplex
Point-to-Point 2 Gbps Radio

Model: AF-24HD

Quick Start Guide

Introduction

Thank you for purchasing the Ubiquiti Networks® airFiber® 24 GHz Full Duplex Point-to-Point 2 Gbps Radio. This Quick Start Guide is designed to guide you through installation, show you how to access the airFiber Configuration Interface, and explain how to set up an airFiber link. This Quick Start Guide also includes the warranty terms and is for use with the model AF-24HD.

Package Contents

airFiber AF-24HD

Pole Mount Bracket

Pole Clamps (Qty. 2)

GPS Antenna Mount

Carriage Bolts (Qty. 4)

Flat Washers (Qty. 4)

Split Lock Washers (Qty. 4)

Hex Nuts (Qty. 4)

Metal Strap

External GPS Antenna

Cable Ties (Qty. 3)

Gigabit PoE Adapter (50V, 1.2A)

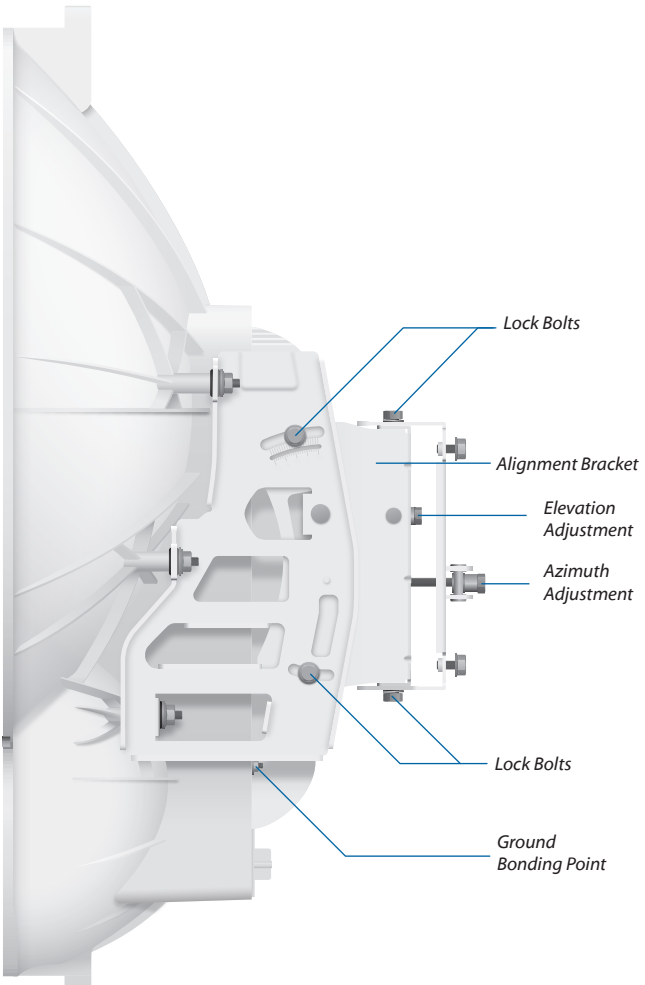
Power Cord

Quick Start Guide

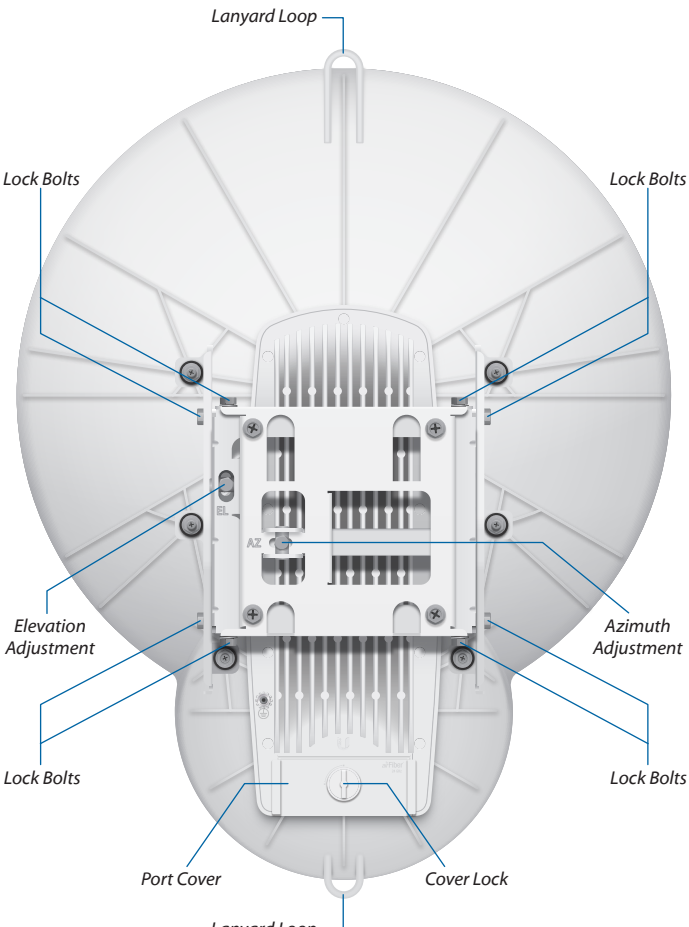
TERMS OF USE: Ubiquiti radio devices must be professionally installed. Shielded Ethernet cable and earth grounding must be used as conditions of product warranty. TOUGHCable™ is designed for outdoor installations. It is the professional installer's responsibility to follow local country regulations,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

Hardware Overview

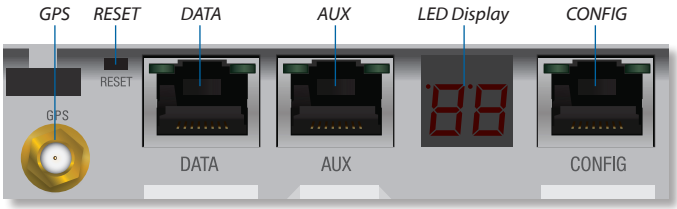
Side



Back

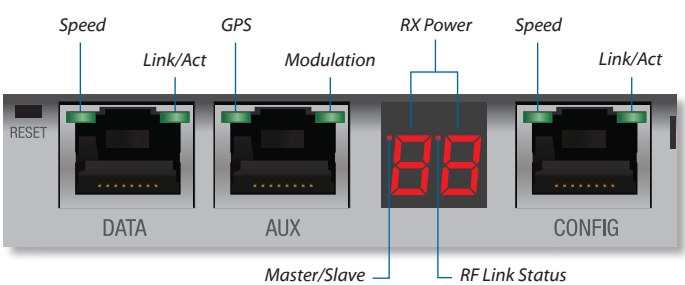

Lanyard Loop
Lock Bolts
Lock Bolts
EL
AZ
Elevation Adjustment
Azimuth Adjustment
Lock Bolts
Lock Bolts
Port Cover
Cover Lock
Lanyard Loop

Interfaces



Interface	Description
GPS	Connect the *External GPS Antenna* to this SMA connector.
RESET	To reset to factory defaults, press and hold the *Reset* button for more than five seconds while the unit is powered on.
DATA	10/100/1000 Mbps port handles all user traffic.
AUX	Port for audio tone aiming.
LED Display	Digital display used for power, status, and mode information.
CONFIG	10/100 Mbps, secured port for configuration. By default, this is the only port that can monitor, configure, and/or update firmware.

LEDs



LED		State	Status
DATA	Speed	Off	10/100 Mbps
		On	1000 Mbps
	Link/Act	Off	No Ethernet Link
		On	Ethernet Link Established
		Random Flashing	Ethernet Activity
AUX	GPS	Off	No GPS Synchronization
		On	Operational (Strong Signal)
		Normal Flash*	Operational (Weak Signal)
	Modulation	Off	¼x or 1x (QPSK SISO)
		Short Flash*	2x (QPSK MIMO)
		Normal Flash*	4x (16QAM MIMO)
		Long Flash*	6x (64QAM MIMO)
		On	8x (256QAM MIMO)
LED Display	RX Power (-dBm)	Number	Decodable RX Signal
		Flashing Number	Undecodable RX Signal
		oL	Overload Condition
	Master/ Slave	Off	Slave Mode
		On	Master Mode
	RF Link Status	Off	RF Off
		Short Flash*	Syncing
		Normal Flash*	Beaconing
		Long Flash*	Registering
		On	Operational
CONFIG	Speed	Off	10 Mbps
		On	100 Mbps
	Link/Act	Off	No Ethernet Link
		On	Ethernet Link Established
		Random Flashing	Ethernet Activity

* Short Flash (1:3 on/off cycle)
Normal Flash (1:1 on/off cycle)
Long Flash (3:1 on/off cycle)

Installation Requirements

- 17 mm wrench
- 13 mm socket wrench or driver
- Clear line of sight between airFiber radios
- Clear view of the sky for proper GPS operation
- Mounting location with < 0.5° displacement due to twist and sway under wind loading
- Mounting point:
  - At least 1 meter below the highest point on the structure
  - For tower installations, at least 3 meters below the top of the tower
- Ground wires – min. 8 AWG (10 mm^2) and max. length: 1 meter. As a safety precaution, ground the airFiber radios to grounded masts, poles, towers, or grounding bars.

  WARNING: Failure to properly ground your airFiber units will void your warranty.

- (Recommended) 2 Outdoor Gigabit PoE surge protectors – Ubiquiti® Ethernet Surge Protector, model ETH-SP.

  Note: For guidelines about grounding and lightning protection, follow your local electrical regulatory codes.

- Outdoor, shielded Category 5e (or above) cabling and shielded RJ-45 connectors should be used for all wired Ethernet connections. Category 6 is required for installations with long cable runs (up to 100 m).

  We recommend that you protect your networks from harmful outdoor environments and destructive ESD events with industrial-grade, shielded Ethernet cable from Ubiquiti Networks. For more details, visit **www.ubnt.com/toughcable**

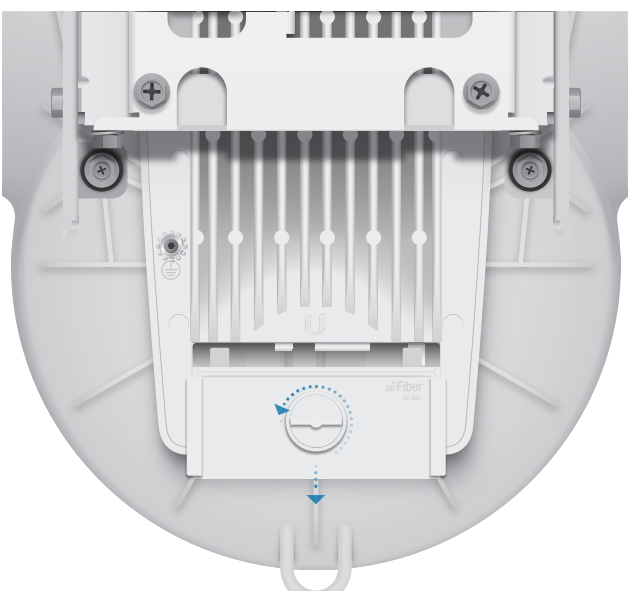
Installation Overview

We recommend that you configure your paired airFiber radios before mounting. Below is an overview of the installation with specific details on the following pages:

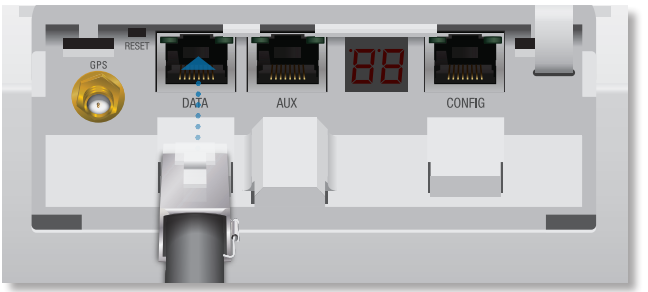
- Connect Power over Ethernet to the *DATA* port, and connect an Ethernet cable between your computer and the *CONFIG* port.
- Configure device settings in the airFiber Configuration Interface.
- Once configuration is complete, disconnect the cables to move the airFiber radios.
- Reconnect at the site.
- After you have mounted the airFiber radios, establish and optimize the RF link.

Connecting Power over Ethernet

1. Turn the *Cover Lock* to the *Unlocked* icon. Slide the *Port Cover* down to remove it.

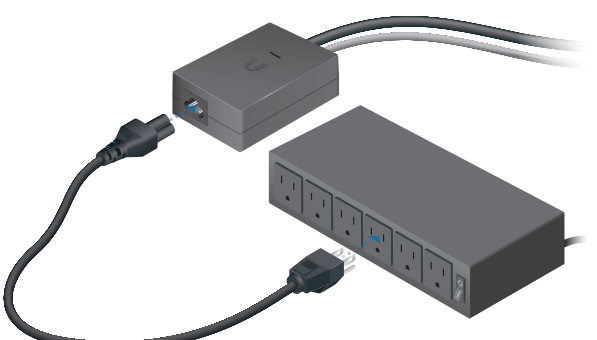


2. Connect an Ethernet cable to the *DATA* port.



3. Connect the other end of the Ethernet cable from the *DATA* port to the Ethernet port labeled **POE** on the *Gigabit PoE Adapter*.

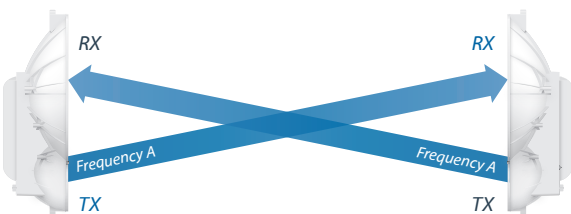
4. Connect the *Power Cord* to the power port on the *Gigabit PoE Adapter*. Connect the other end of the *Power Cord* to a power source.



airFiber Configuration

The instructions in this section explain how to access the airFiber Configuration Interface and configure the following settings:

- **Wireless Mode** Configure one airFiber AF-24HD as the *Master* and the other as the *Slave*.
- **Duplex** The airFiber AF-24HD supports both half-duplex and full-duplex operation. Half-duplex operation provides more frequency planning options at the cost of higher latency and throughput. Full-duplex operation provides the highest throughput and lowest latency; however, you have fewer frequency management options.
  - **Half Duplex (default)** The *TX* and *RX Frequencies* can be the same or different to suit local interference.



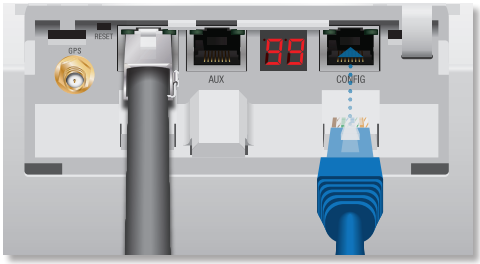
Half-Duplex Diagram

  - **Full Duplex** The *TX* and *RX Frequencies* should be different.

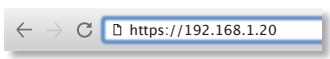
Full-Duplex Diagram

- **TX and RX Frequencies** The *TX Frequency* on the Master must match the RX *Frequency* on the Slave, and vice versa.

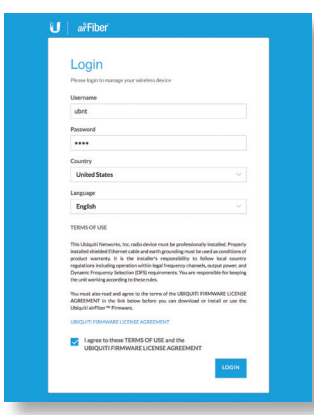
1. Connect an Ethernet cable from your computer to the *CONFIG* port on the airFiber AF-24HD.



2. Configure the Ethernet adapter on your computer with a static IP address on the 192.168.1.x subnet (for example, 192.168.1.100).
3. Launch your web browser. Type **http://192.168.1.20** in the address field and press **enter** (PC) or **return** (Mac).

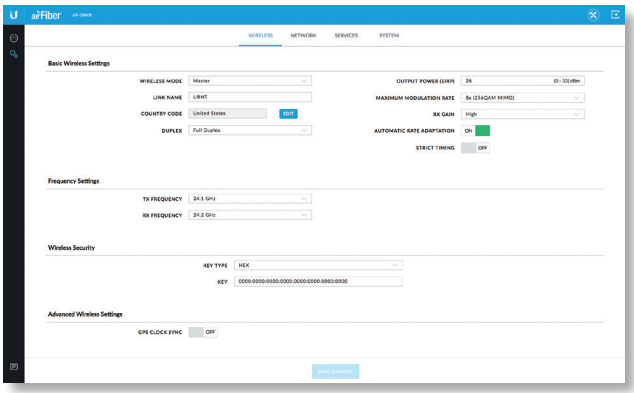


4. The login screen will appear. Enter **ubnt** in the *Username* and *Password* fields. Select your *Country* and *Language*. You must agree to the *Terms of Use* to use the product. Click **Login**.



Note: U.S. product versions are locked to the U.S. Country Code to ensure compliance with FCC regulations.

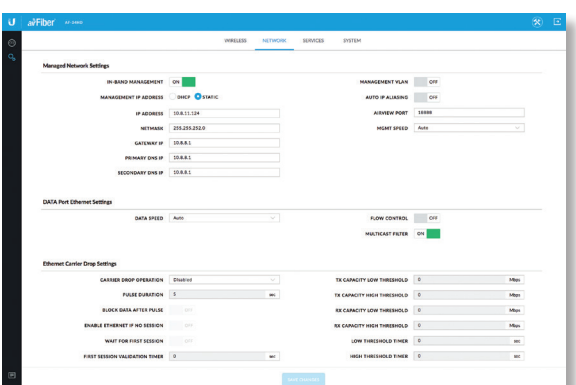
5. Click the **Wireless** tab.



6. Enter the *Basic Wireless Settings*:
   a. For one airFiber AF-24HD, select **Master** from the *Wireless Mode* drop-down. For the other airFiber AF-24HD, keep the default, *Slave*.
   b. Enter a name in the *Link Name* field. This should be the same on both the Master and the Slave.
   c. For the *Duplex* drop-down:
   - **Half Duplex** The default mode. The *TX* and *RX Frequencies* can be the same or different to suit local interference.
   - **Full Duplex** The *TX* and *RX Frequencies* should be different.
   d. Select a *TX Frequency*. This must match the *RX Frequency* of your other airFiber AF-24HD.
   e. Select a *RX Frequency.* This must match the *TX Frequency* of your other airFiber AF-24HD.
   f. If needed, change the *Output Power*, *Maximum Modulation Rate*, and/or *RX Gain* settings.

7. Configure the *Wireless Security*:
   a. Select the AES *Key Type*, **HEX** or **ASCII**.
   b. For the *Key* field:
   - **HEX** Enter 16 bytes (eight, 16-bit HEX values: 0-9, A-F, or a-f). You can omit zeroes and use colons, similar to the IPv6 format.

     Note: The airFiber Configuration Interface supports IPv6 formats excluding dotted quad and "::" (double-colon) notation.
   - **ASCII** Enter a combination of alphanumeric characters (0-9, A-Z, or a-z).
8. Click **Change** and then click **Apply**.
9. *In-Band Management* is enabled by default, so each airFiber radio must have a unique *IP Address*. (If the airFiber radios use the same *IP Address*, then you may lose access to the airFiber radios via the *DATA* ports.) To change the network settings:
   a. Click the **Network** tab.



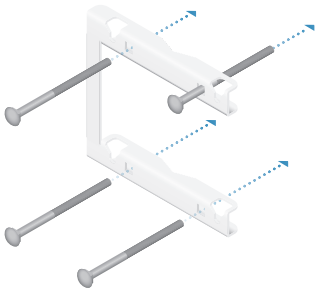
   b. Change the *IP Address*, *Netmask*, and other settings to make them compatible with your network.
   c. Click **Change** and then click **Apply**.

Repeat the instructions in the *airFiber Configuration* section on your other airFiber radio. After you have configured the airFiber radios, disconnect them and move them to your installation site.

Hardware Installation

To install the airFiber AF-24HD:

1. Insert the four *Carriage Bolts* into the *Pole Mount Bracket*.



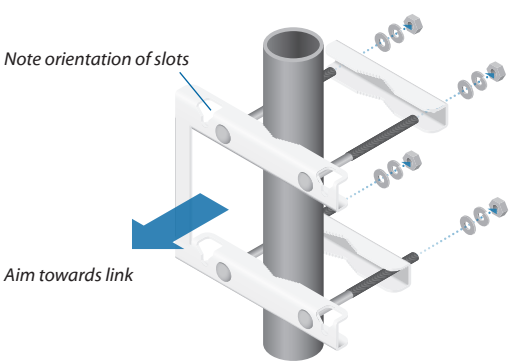
2. Attach the *Pole Mount Bracket* to a pole.

   Note: The mounting assembly can accommodate a Ø 51 - 101 mm (2.0" - 4.0") pole.

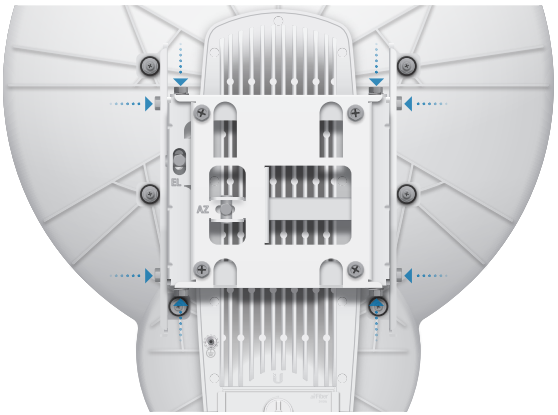
   a. Orient the *Pole Mount Bracket* around the pole so it is aimed in the direction of the other airFiber AF-24HD.

   b. Insert the *Carriage Bolts* into the *Pole Clamps*.

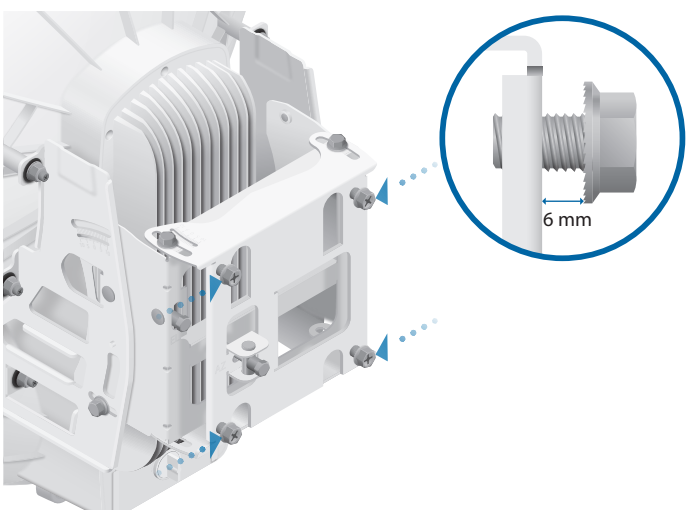
   c. Secure the clamps with the *Flat Washers, Split Lock Washers,* and *Hex Nuts.*



3. Loosen, but do NOT remove the eight *Lock Bolts* located on the *Alignment Bracket*.

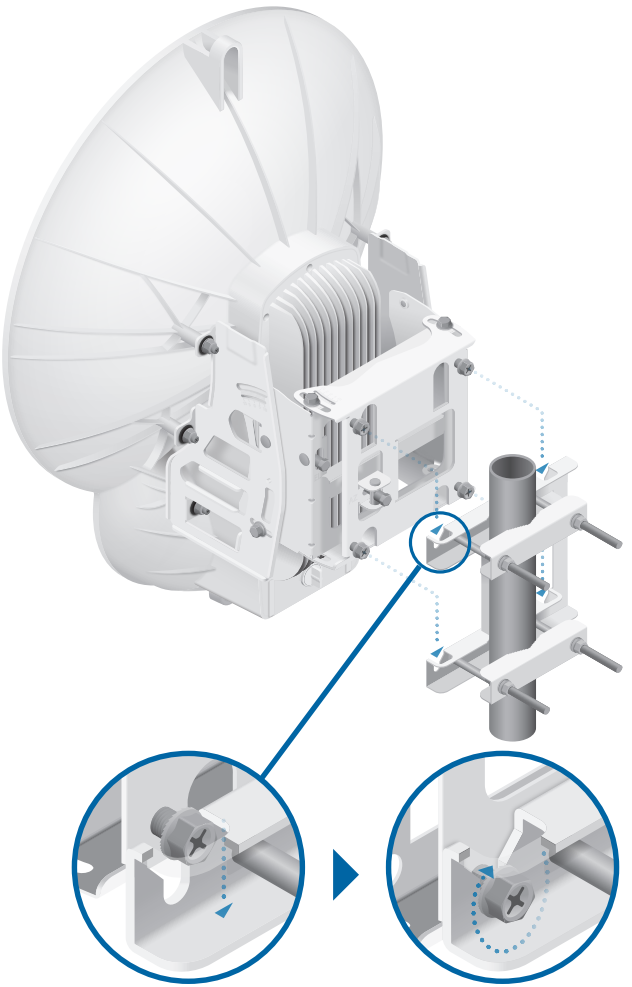


4. Ensure that there is a 6 mm gap between the head of each *M8x14 Serrated Flange Screw* and the *Alignment Bracket*.

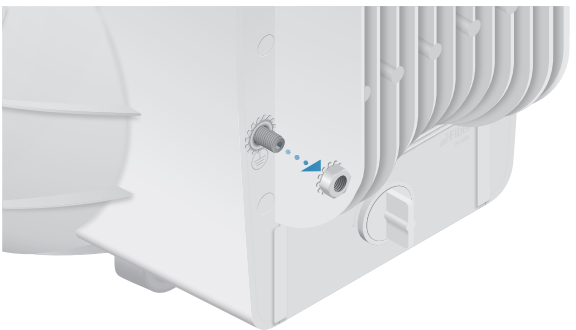


5. Lift the airFiber AF-24HD and align the four *M8x14 Serrated Flange Screws* with the slots on the *Pole Mount Bracket*. Seat the screws in the slots. Securely tighten the screws.

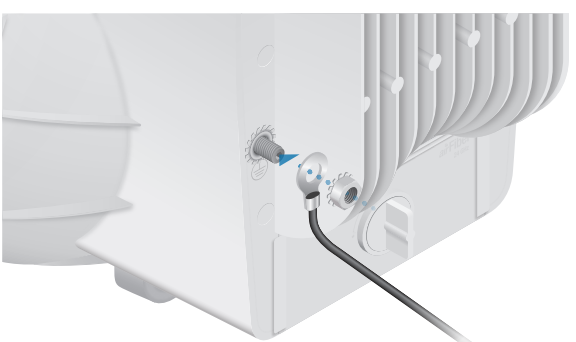
   WARNING: To prevent injury, ensure that all four screws are seated and fully tightened.



6. Attach a ground wire:
   a. Remove the nut from the *Ground Bonding Point*.



   b. Attach a ground wire (min. 8 AWG or 10 mm^2) to the lug and replace the nut to secure the wire.



   c. Secure the other end of the ground wire to a grounded mast, pole, tower, or grounding bar.

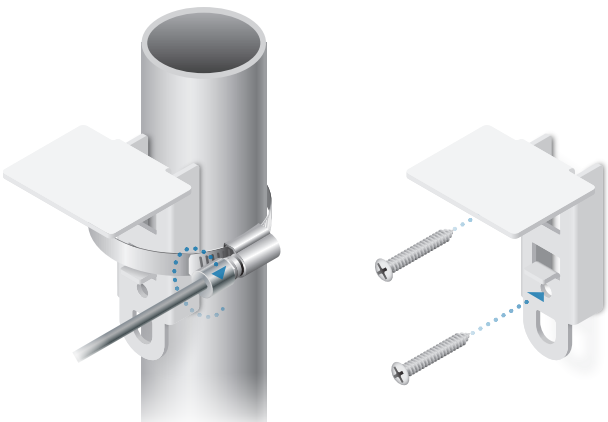
WARNING: Failure to properly ground your airFiber units will void your warranty.

Note: The ground wire should be as short as possible and no longer than one meter in length.

Connecting the GPS Antenna

Locate a mounting point for the *External GPS Antenna* that has a clear view to the sky, and is above and as far away as possible from the AF-24HD.

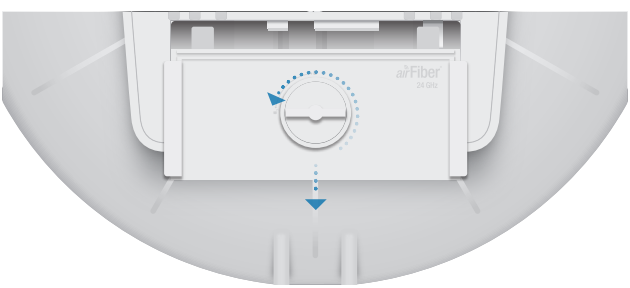
1. Attach the *GPS Antenna Mount* to a pole using the included *Metal Strap,* or attach it to a wall using the appropriate fasteners (not included).



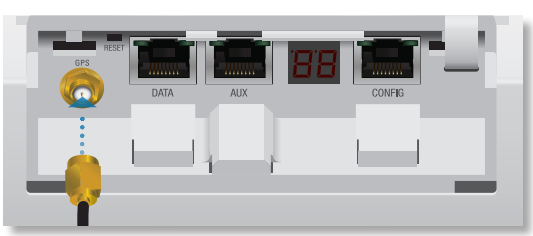
2. Place the magnetic *External GPS Antenna* on the mount.

3. Secure the cable of the *External GPS Antenna* to the mount with a *Cable Tie*.

4. Turn the *Cover Lock* counterclockwise to the *Unlocked* icon. Slide the *Port Cover* down to remove it.

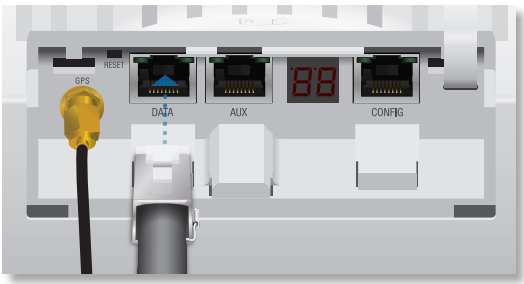


5. Connect the *External GPS Antenna* to the *GPS* SMA connector.

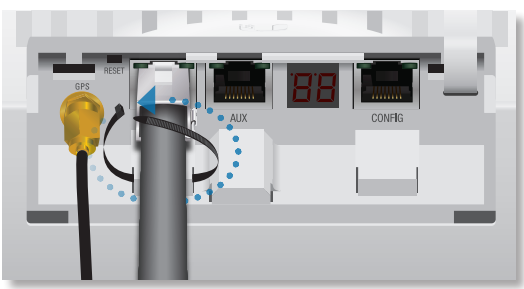


Connecting Ethernet

1. Connect a TOUGHCable or other outdoor, shielded CAT5e/6 cable to the *DATA* port.



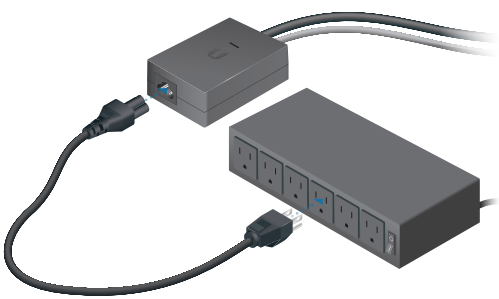
2. Create a strain relief for the Ethernet cable by feeding a *Cable Tie* through the tie slot under the cable. Then wrap the *Cable Tie* around the cable and tighten.



3. Connect the other end of the Ethernet cable from the *DATA* port to the Ethernet port labeled **POE** on the *Gigabit PoE Adapter*.

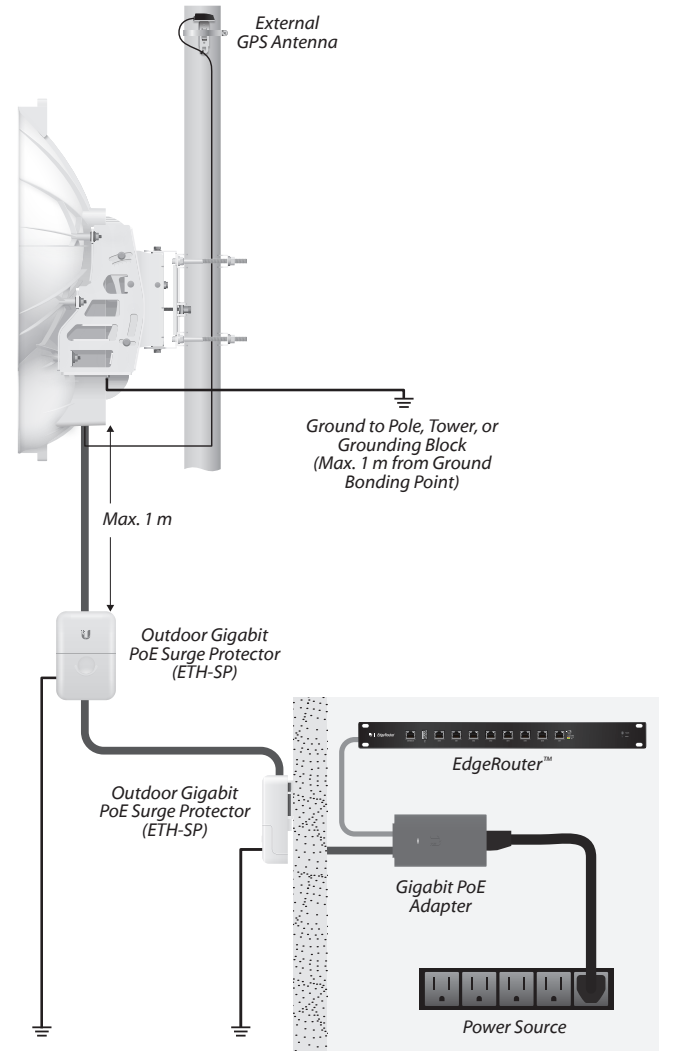
4. Connect an Ethernet cable from your network to the Ethernet port labeled **LAN** on the *Gigabit PoE Adapter*.

5. Connect the *Power Cord* to the power port on the *Gigabit PoE Adapter*. Connect the other end of the *Power Cord* to a power source.



Note: For added protection, we recommend installing two surge surpressors, such as the Ubiquiti Ethernet Surge Protector, model ETH-SP. Install the first surge protector within one meter of the airFiber *DATA* port, and install the second surge protector at the ingress point of the location housing the wired network equipment.

Below is a diagram of a finished installation with recommended surge protectors installed.



Alignment

Tips

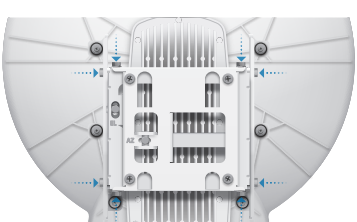
- Fine-tuning is best achieved by a pair of installers with a dedicated, two-way communication link: one installer makes adjustments on one airFiber radio while the other installer reports the received signal level at the other airFiber radio. Fine-tuning (see *Fine-Tuning the Link*) is necessary because the main lobe of the receiver is narrower than that of the transmitter, in both azimuth and elevation.
- To accurately align the airFiber radios for best performance, you MUST align only one end of the link at a time.
- For more convenient alignment, you may consider using long-range scopes (not included) temporarily attached to your airFiber radios.
- You may need to use additional hardware to compensate for issues such as the improper orientation of a mounting pole or significant elevation differences between the airFiber radios.

Establishing a Preliminary Link

Adjust the positions of the *Master* and the *Slave* to establish a preliminary link. This requires the *Master* and *Slave* to be within a few degrees of the line of sight between the airFiber radios.

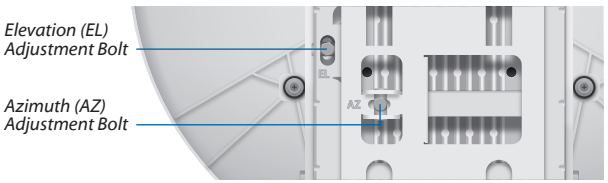
Note: The *Master* must be aimed first at the *Slave* because the *Slave* does not transmit any RF signal until it detects transmissions from the *Master*.

1. For the *Master* and *Slave*, ensure the eight *Lock Bolts* on the *Alignment Bracket* are sufficiently loose by spinning each washer by hand.

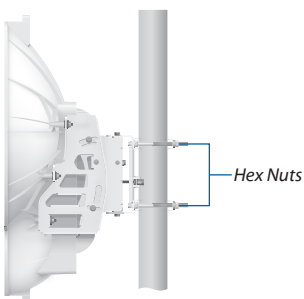


WARNING: All *Lock Bolts* MUST be loose to avoid damage to the airFiber housing.

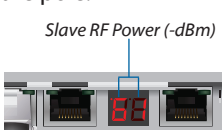
2. For the *Master* and *Slave*, ensure the *Azimuth (AZ)* and *Elevation (EL) Adjustment Bolts* are in the middle of their adjustment ranges.



3. Master Aim the *Master* at the *Slave*. If necessary, adjust the *Master*'s position on the pole:
   a. Loosen the *Hex Nuts*.
   b. Adjust the *Pole Mount Bracket* and *Pole Clamps*.
   c. Tighten the *Hex Nuts*.

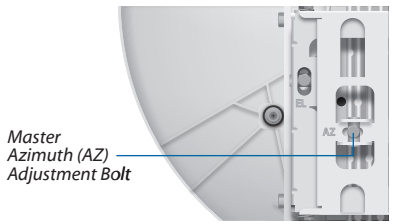


4. Slave Aim the *Slave* at the *Master* to achieve the strongest received signal level on the *Slave*'s numeric LED Display, which is located next to the *CONFIG* port. If necessary, adjust the *Slave*'s position on the pole.

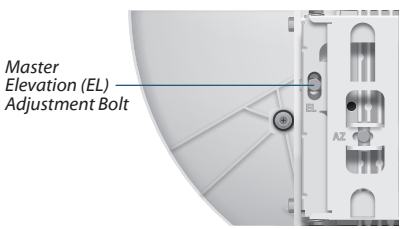


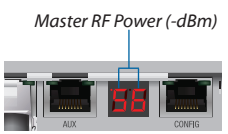
Note: Values on the LED Display are displayed in negative (-) dBm. For example, 61 represents -61 dBm, which is stronger than -72 dBm.

5. Master Adjust the azimuth and elevation of the *Master* until the strongest received signal level is displayed on the LED Display of the *Master*.
   a. Sweep the *Azimuth (AZ) Adjustment Bolt* of the *Master* through its adjustment range.



   b. Sweep the *Elevation (EL) Adjustment Bolt* of the *Master* through its adjustment range.





Note: If the LED Display indicates an overload condition , refer to the following section, *Adjusting RX Gain*.

Adjusting RX Gain

Access airOS® and click the **Wireless** tab to select the appropriate gain for your RX antenna: **High** (default) or **Low**. If the link is very short or being tested, select **Low**, so your signal does not get distorted.

Note: Minimum link distance is approximately 100 m (328 ft).

For links between 100 m (328 ft) and 800 m (2,625 ft):

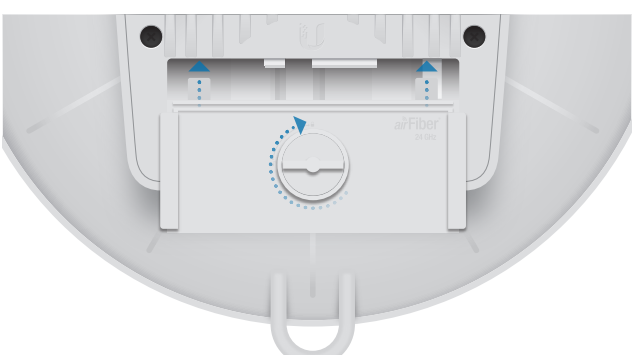
- Target -40 dBm.
- Decrease *RX Gain* to overcome overload condition (oL).
- For short ranges or strong signal conditions, adjust the power to be 3-5 dB below overload condition (oL).
- Decrease *RX Gain* first.
- Never mitigate overload condition (oL) by misaligning antennas.

Link Distance	RX Gain Setting	Approximate TX Power Setting
d > 1 km (d > 3,281 ft)	High	> 25 dBm
0.5 km < d < 1 km (1,640 ft < d < 3,281 ft)	Low	19-25 dBm
0.25 km < d < 0.5 km (820 ft < d < 1,640 ft)	Low	12-18 dBm
0.1 km < d < 0.25 km (328 ft < d < 820 ft)	Low	3-11 dBm

Fine-Tuning the Link

The *Azimuth (AZ)* and *Elevation (EL) Adjustment Bolts* of the *Alignment Bracket* adjust the azimuth and elevation within a range of ±10°. For accurate alignment, make adjustments on one end of the link while the other installer reports the received signal level at the other end of the link. Do NOT make simultaneous adjustments on the *Master* and *Slave*.

1. Slave Adjust the azimuth and elevation of the *Slave* until the other installer sees the strongest received signal level displayed on the LED Display of the *Master*.
2. Master Adjust the azimuth and elevation of the *Master* until the other installer sees the strongest received signal level displayed on the LED Display of the *Slave*.
3. Repeat steps 1 and 2 until you achieve a symmetric link, with the received signal levels within 1 dB of each other. This ensures the best possible data rate between the airFiber radios.
4. Lock the alignment on both airFiber radios by tightening all eight *Lock Bolts* on the *Alignment Bracket*.
5. Observe the LED Display of each airFiber AF-24HD to ensure that the value remains constant while tightening the *Lock Bolts*. If the LED value changes during the locking process, loosen the *Lock Bolts*, finalize the alignment of each airFiber AF-24HD again, and retighten the *Lock Bolts*.
6. For each airFiber AF-24HD, attach the *Port Cover* and turn the *Cover Lock* to the *Locked* icon.



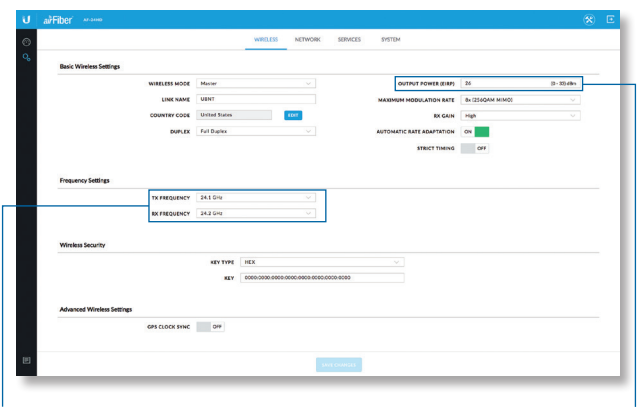
There are three methods for determining the received signal level:

- LED Display (described above)
- airFiber Configuration Interface
- Audio tone (optional equipment required)

Refer to the airFiber AF-24HD User Guide for instructions on the airFiber Configuration Interface and audio tone methods. The User Guide is available at: **www.ubnt.com/download/airfiber**

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.



The *Frequencies and Output Power* fields are provided to the professional installer to assist in meeting regulatory requirements.

Specifications

airFiber AF-24HD	
Dimensions	593 x 768 x 370 mm (23.35 x 30.24 x 14.57") Not Including Mount
Weight	17.3 kg (38.14 lb) Mount Included
Operating Frequency	24.05 – 24.25 GHz
GPS	GPS Clock Synchronization
EIRP	~33 dBm (FCC/IC), ~20 dBm (CE)
Frequency Accuracy	± 2.5 ppm without GPS Synchronization ± 0.2 ppm with GPS Synchronization
Channel Bandwidth	100 MHz
Max. Power Consumption	< 50W
Power Supply	50V, 1.2A PoE Gigabit Adapter (Included)
Power Method	Passive Power over Ethernet (42-58VDC)
Certifications	CE, FCC, IC
Mounting	Pole Mount Kit (Included)
Operating Temperature	-40 to 55° C (-40 to 131° F)
Integrated Split Antenna	
TX Gain	33 dBi
RX Gain	40 dBi
Beamwidth	< 3.5°
Front-to-Back Ratio	70 dB
Polarity	Dual-Slant Polarization
Cross-Polarity Isolation	> 28 dB
Networking Interface	
Data Port	(1) 10/100/1000 Ethernet Port
Configuration Port	(1) 10/100 Ethernet Port

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 a 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.
    a. 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.
    b. 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.
    c. Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment.
    d. Protective earthing is provided by Listed AC adapter. Building installation shall provide appropriate short-circuit backup protection.
    e. 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:

(I) has 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;

(II) has been painted, rebranded or physically modified in any way;

(III) has been damaged due to errors or defects in cabling;

(IV) has been subjected to misuse, abuse, negligence, abnormal physical, electromagnetic or electrical stress, including lightning strikes, or accident;

(V) has been damaged or impaired as a result of using third party firmware;

(VI) has no original Ubiquiti MAC label, or is missing any other original Ubiquiti label(s); or

(VII) has not been received by Ubiquiti within 30 days of issuance of the RMA.

In addition, the above warranty shall apply only if: 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.

WARNING: Failure to properly ground your airFiber units will void your warranty. (Please follow the instructions on page 16 for installation of the ground wires.)

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.

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.

This radio transmitter FCC ID: SWX-AF24 has been approved by FCC to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna Information: Dish antenna, TX Gain: 33 dBi

ISED Canada

CAN ICES-3(A)/NMB-3(A)

This device complies with ISED 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.

This radio transmitter (IC: 6545A-AF24) has been approved by ISED Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna Information: Dish antenna, TX Gain: 33 dBi

CAN ICES-3(A)/NMB-3(A)

Le présent appareil est conforme aux CNR d'ISDE Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage;
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le présent émetteur radio (IC : 6545A-AF24) a été approuvé par ISDE Canada pour l'exploitation avec l'antenne types énumérés ci-dessous avec le gain maximal admissible et requis l'impédance de l'antenne pour chaque type d'antenne indiqué. Types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits pour une utilisation avec cet appareil.

Informations d'antenne : Antenne parabolique, Gain TX : 33 dBi

RF Exposure Warning

The antennas used for this transmitter must be installed to provide a separation distance of at least 107 cm from all persons and must not be located or operating in conjunction with any other antenna or transmitter, except as listed for this product's certification.

Les antennes utilisées pour ce transmetteur doivent être installé en considérant une distance de séparation de toute personnes d'au moins 107 cm et ne doivent pas être localisé ou utilisé en conflit avec tout autre antenne ou transmetteur, excluant la liste de certification de ce produit.

Australia and New Zealand

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.

CE Marking

CE marking on this product represents the product is in compliance with all directives that are applicable to it. This equipment is intended to be accessed only by service personnel and/or trained professionals.

CE

Country List

AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SE	SI	SK	UK

BFWA (Broadband Fixed Wireless Access) members noted in blue

Note: This device meets Max. TX power limit per ETSI regulations.

The following apply to products that operate in the 5 GHz frequency range:

Note: This device is restricted to indoor use only when operating in the 5150 - 5350 MHz frequency range within all member states.

Note: All countries listed may operate at 30 dBm. BFWA member states may operate at 36 dBm.

Note: Operation in the 5.8 GHz frequency band is prohibited in BFWA member states. Other countries listed may use the 5.8 GHz frequency band.

RoHS/WEEE Compliance Statement

English

European Directive 2012/19/EU 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.

Deutsch

Die Europäische Richtlinie 2012/19/EU verlangt, dass technische Ausrüstung, die direkt am Gerät und/oder an der Verpackung mit diesem Symbol versehen ist, nicht zusammen mit unsortiertem Gemeindeabfall entsorgt werden darf. Das Symbol weist darauf hin, dass das Produkt von regulärem Haushaltmüll getrennt entsorgt werden sollte. Es liegt in Ihrer Verantwortung, dieses Gerät und andere elektrische und elektronische Geräte über die dafür zuständigen und von der Regierung oder örtlichen Behörden dazu bestimmten Sammelstellen zu entsorgen. Ordnungsgemäßes Entsorgen und Recyceln trägt dazu bei, potentielle negative Folgen für Umwelt und die menschliche Gesundheit zu vermeiden. Wenn Sie weitere Informationen zur Entsorgung Ihrer Altgeräte benötigen, wenden Sie sich bitte an die örtlichen Behörden oder städtischen Entsorgungsdienste oder an den Händler, bei dem Sie das Produkt erworben haben.

Español

La Directiva 2012/19/UE exige que los equipos que lleven este símbolo en el propio aparato y/o en su embalaje no deben eliminarse junto con otros residuos urbanos no seleccionados. El símbolo indica que el producto en cuestión debe separarse de los residuos domésticos convencionales con vistas a su eliminación. Es responsabilidad suya desechar este y cualesquiera otros aparatos eléctricos y electrónicos a través de los puntos de recogida que ponen a su disposición el gobierno y las autoridades locales. Al desechar y reciclar correctamente estos aparatos estará contribuyendo a evitar posibles consecuencias negativas para el medio ambiente y la salud de las personas. Si desea obtener información más detallada sobre la eliminación segura de su aparato usado, consulte a las autoridades locales, al servicio de recogida y eliminación de residuos de su zona o pregunte en la tienda donde adquirió el producto.

Français

La directive européenne 2012/19/UE exige que l'équipement sur lequel est apposé ce symbole sur le produit et/ou son emballage ne soit pas jeté avec les autres ordures ménagères. Ce symbole indique que le produit doit être éliminé dans un circuit distinct de celui pour les déchets des ménages. Il est de votre responsabilité de jeter ce matériel ainsi que tout autre matériel électrique ou électronique par les moyens de collecte indiqués par le gouvernement et les pouvoirs publics des collectivités territoriales. L'élimination et le recyclage en bonne et due forme ont pour but de lutter contre l'impact néfaste potentiel de ce type de produits sur l'environnement et la santé publique. Pour plus d'informations sur le mode d'élimination de votre ancien équipement, veuillez prendre contact avec les pouvoirs publics locaux, le service de traitement des déchets, ou l'endroit où vous avez acheté le produit.

Italiano

La direttiva europea 2012/19/UE richiede che le apparecchiature contrassegnate con questo simbolo sul prodotto e/o sull'imballaggio non siano smaltite insieme ai rifiuti urbani non differenziati. Il simbolo indica che questo prodotto non deve essere smaltito insieme ai normali rifiuti domestici. È responsabilità del proprietario smaltire sia questi prodotti sia le altre apparecchiature elettriche ed elettroniche mediante le specifiche strutture di raccolta indicate dal governo o dagli enti pubblici locali. Il corretto smaltimento ed il riciclaggio aiuteranno a prevenire conseguenze potenzialmente negative per l'ambiente e per la salute dell'essere umano. Per ricevere informazioni più dettagliate circa lo smaltimento delle vecchie apparecchiature in Vostro possesso, Vi invitiamo a contattare gli enti pubblici di competenza, il servizio di smaltimento rifiuti o il negozio nel quale avete acquistato il prodotto.

Declaration of Conformity

български [Bulgarian] С настоящото UBIQUITI NETWORKS декларира, че този тип радиосъоръжение AF-24HD е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: **www.ubnt.com/compliance**

Hrvatski [Croatian] UBIQUITI NETWORKS ovime izjavljuje da je radijska oprema tipa AF-24HD u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: **www.ubnt.com/compliance**

Čeština [Czech] Tímto UBIQUITI NETWORKS prohlašuje, že typ rádiového zařízení AF-24HD je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: **www.ubnt.com/compliance**

Dansk [Danish] Hermed erklærer UBIQUITI NETWORKS, at radioudstyrstypen AF-24HD er i overensstemmelse med direktiv 2014/53/EU. EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: **www.ubnt.com/compliance**

Nederlands [Dutch] Hierbij verklaar ik, UBIQUITI NETWORKS, dat het type radioapparatuur AF-24HD conform is met Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: **www.ubnt.com/compliance**

English Hereby, UBIQUITI NETWORKS declares that the radio equipment type AF-24HD is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: **www.ubnt.com/compliance**

Eesti keel [Estonian] Käesolevaga deklareerib UBIQUITI NETWORKS, et käesolev raadioseadme tüüp AF-24HD vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: **www.ubnt.com/compliance**

Suomi [Finnish] UBIQUITI NETWORKS vakuuttaa, että radiolaitetyyppi AF-24HD on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: **www.ubnt.com/compliance**

Français [French] Le soussigné, UBIQUITI NETWORKS, déclare que l'équipement radioélectrique du type AF-24HD est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: **www.ubnt.com/compliance**

Deutsch [German] Hiermit erklärt UBIQUITI NETWORKS, dass der Funkanlagentyp AF-24HD der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: **www.ubnt.com/compliance**

Ελληνικά [Greek] Με την παρούσα ο/η UBIQUITI NETWORKS, δηλώνει ότι ο ραδιοεξοπλισμός AF-24HD πληροί την οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: **www.ubnt.com/compliance**

Magyar [Hungarian] UBIQUITI NETWORKS igazolja, hogy a AF-24HD típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: **www.ubnt.com/compliance**

Íslenska [Icelandic] Hér með lýsir UBIQUITI NETWORKS yfir því að AF-24HD er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 2014/53/EU. Fullur texti ESB samræmisyfirlýsing er að finna á eftirfarandi netfangi: **www.ubnt.com/compliance**

Italiano [Italian] Il fabbricante, UBIQUITI NETWORKS, dichiara che il tipo di apparecchiatura radio AF-24HD è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: **www.ubnt.com/compliance**

Latviešu valoda [Latvian] Ar šo UBIQUITI NETWORKS deklarē, ka radioiekārta AF-24HD atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: **www.ubnt.com/compliance**

Lietuvių kalba [Lithuanian] Aš, UBIQUITI NETWORKS, patvirtinu, kad radijo įrenginių tipas AF-24HD atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: **www.ubnt.com/compliance**

Malti [Maltese] B'dan, UBIQUITI NETWORKS, niddikjara li dan it-tip ta' tagħmir tar-radju AF-24HD huwa konformi mad-Direttiva 2014/53/UE. Id-dikjarazzjoni tal-konformità tista' tiġi kkonsultata minn **www.ubnt.com/compliance**

Norsk [Norwegian] UBIQUITI NETWORKS erklærer herved at utstyret AF-24HD er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 2014/53/EU. Den fulle teksten til EU-samsvarserklæringen er tilgjengelig på følgende internettadresse: **www.ubnt.com/compliance**

Polski [Polish] UBIQUITI NETWORKS niniejszym oświadcza, że typ urządzenia radiowego AF-24HD jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: **www.ubnt.com/compliance**

Português [Portuguese] O(a) abaixo assinado(a) UBIQUITI NETWORKS declara que o presente tipo de equipamento de rádio AF-24HD está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet: **www.ubnt.com/compliance**

Română [Romanian] Prin prezenta, UBIQUITI NETWORKS declară că tipul de echipamente radio AF-24HD este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: **www.ubnt.com/compliance**

Slovenčina [Slovak] UBIQUITI NETWORKS týmto vyhlasuje, že rádiové zariadenie typu AF-24HD je v súlade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese: **www.ubnt.com/compliance**

Slovenščina [Slovenian] UBIQUITI NETWORKS potrjuje, da je tip radijske opreme AF-24HD skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: **www.ubnt.com/compliance**

Español [Spanish] Por la presente, UBIQUITI NETWORKS declara que el tipo de equipo radioeléctrico AF-24HD es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: **www.ubnt.com/compliance**

Svenska [Swedish] Härmed försäkrar UBIQUITI NETWORKS att denna typ av radioutrustning AF-24HD överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: **www.ubnt.com/compliance**

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