

# airFiber™

24 GHz Point-to-Point  
1.4+ Gbps Radio

Model: AF24

High Performance Wireless Backhaul

Long Range of 13+ km

Worldwide License-Free 24 GHz Operation





## Revolutionary Wireless Technology

Introducing airFiber, a truly revolutionary 24 GHz Point-to-Point radio from Ubiquiti Networks. Housed in a compact, highly efficient form factor, airFiber delivers revolutionary performance of 1.4+ Gbps, aggregate throughput and 13+ km in range. airFiber ushers in a new era in price-disruptive, carrier-class backhaul technology.

## Efficient by Design

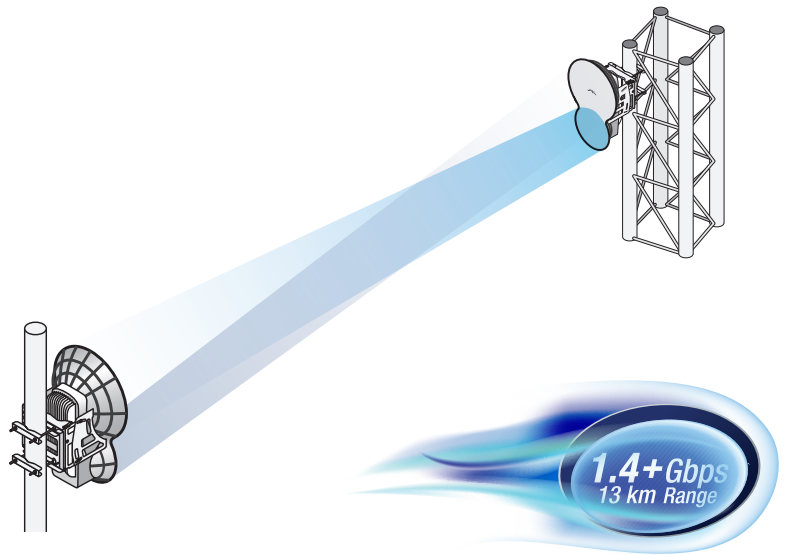
Every detail of airFiber was designed and engineered by the Ubiquiti R&D Team. From the silicon chip up to the innovative split-antenna architecture, the Ubiquiti R&D Team created airFiber to deliver superior throughput with efficiency. airFiber was purpose-built to create a high performance backhaul.

## Plug and Play Deployment

Based on Ubiquiti's innovative and intuitive airOS™, the airFiber Configuration Interface enables quick configuration and deployment. With installation efficiency in mind, the mechanical design allows easy installation by one person. A two-person installation crew can effectively install and align an airFiber link.

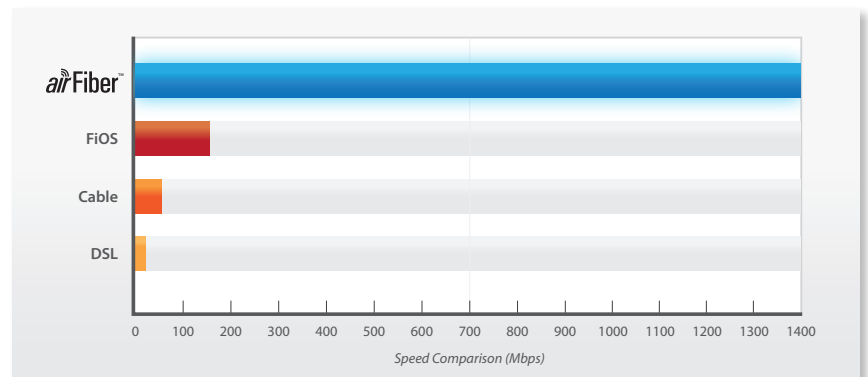
## Advanced Design

airFiber uses patent-pending technology to virtually eliminate packet transmission latency. Conventional wireless standards impose a latency by having to receive a packet before a packet is transmitted. airFiber can transmit data synchronously without any wait time.



## Designed for Freedom

airFiber operates in the worldwide, **license-free**, 24 GHz frequency. Anyone around the world can purchase and operate airFiber without any special permits, paperwork, or added licensing costs. Users are free to locate, deploy, and operate airFiber practically anywhere they choose.



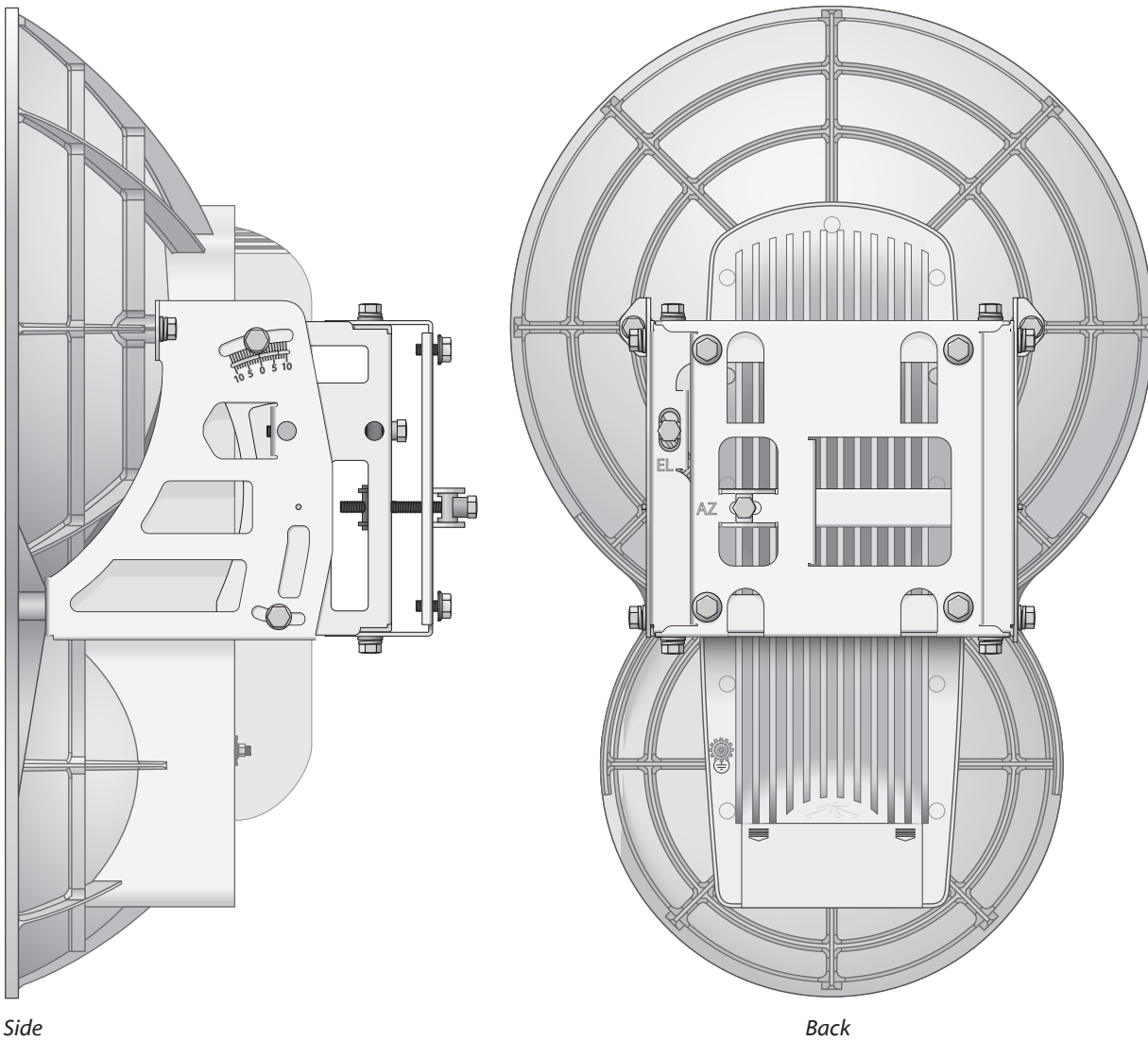
## Built for Speed

airFiber delivers 1.4+ Gbps, aggregate throughput. To put this in perspective, airFiber can transmit a 100 MB file in less than a second. Rivaling common broadband providers, airFiber download speed is up to 100x faster.

With speed and throughput surpassing conventional wired backhails, airFiber prevails over expensive and labor-intensive wired infrastructures.



airFiber backhails do not share the security risks associated with wired backhails. The long distances of wired backhails are vulnerable to copper theft, fiber optic damage, vandalism, and accidental breakage. With airFiber, only the installation points of the airFiber links need to be secured.



Side

Back

**1.4+ Gbps**  
Real Data Throughput

**24 GHz**  
License-Free

**13+ km**  
Extreme Range

**HDD**  
TDD FDD

## Innovative Proprietary Modem Technology

Ubiquiti's innovative proprietary modem technology was built from the ground up to address the specific challenges of outdoor, license-free, wireless operation. Every aspect of the radio has been carefully simulated and designed to optimize range, speed, and latency performance in the harshest RF noise environments. airFiber features traditional TDD and FDD modes of operation in addition to the innovative Hybrid Division Duplexing (HDD) mode, which provides a breakthrough in range and spectral efficiency performance.

### Receive Sensitivity Specs

Modulation	Sensitivity	FDD Capacity*	TDD Capacity*
64QAM	-66 dBm	1500 Mbps	760 Mbps
16QAM	-72 dBm	1000 Mbps	507 Mbps
QPSK MIMO	-78 dBm	500 Mbps	253 Mbps
QPSK SISO	-80 dBm	250 Mbps	127 Mbps

\* FDD = (2) 100 MHz channels and TDD = (1) 100 MHz channel



# Specifications

airFiber AF24	
Operating Frequency	24.05 – 24.25 GHz
Dimensions	649 x 426 x 303 mm
Weight	10.5 kg (Mount Included)
Max. Power Consumption	< 50W
Power Supply	50V, 1.2A PoE GigE 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)
LEDs	(8) Status LEDs: Data Port Speed Data Port Link/Activity Configuration Port Speed Configuration Port Link/Activity GPS Synchronization Modulation Mode Master/Slave RF Status (1) Two-Digit LED Display Calibrated in dBm
Interface	
Data Port	(1) 10/100/1000 Ethernet Port
Configuration Port	(1) 10/100 Ethernet Port
Auxiliary Port	(1) RJ-12, Alignment Tone Port
System	
Maximum Throughput	1.4+ Gbps
Maximum Range	13+ km
Packets per Second	> 1 Million
Encryption	128-Bit AES
Forward Error Correction	164/205
Cyclic Prefix	1/16 Fixed
Uplink/Downlink Ratio	50% Fixed
Radio Frequency	
GPS	GPS Clock Synchronization
Transceiver	
EIRP	~33 dBm
Frequency Accuracy	±2.5 ppm without GPS Synchronization ±0.2 ppm with GPS Synchronization
Channel Bandwidth	100 MHz
Operating Channels	24.1 GHz, 24.2 GHz
Modulation	64QAM MIMO 16QAM MIMO QPSK MIMO QPSK SISO
Integrated Split Antenna	
TX Gain	33 dBi
RX Gain	38 dBi
Beamwidth	< 3.5°
Front-to-Back Ratio	70 dB
Polarity	Dual-Slant Polarization
Cross-Polarity Isolation	> 28 dB



# TOUGH Cable™

## OUTDOOR CARRIER CLASS SHIELDED

Protect your networks from the most brutal environments with Ubiquiti's industrial-grade shielded Ethernet cable, TOUGH Cable.

### Increase Performance

Dramatically improve your Ethernet link states, speeds, and overall performance with Ubiquiti TOUGH Cables.

### Extreme Weatherproof

Designed for outdoor use, TOUGH Cables have been built to perform even in the harshest weather and environments.

### ESD Damage Protection

Protect your networks from devastating electrostatic discharge (ESD) attacks.

### Extended Cable Support

TOUGH Cables have been developed to increase power handling performance for extended cable run lengths.

### Bulletproof your networks

TOUGH Cable is currently available in two versions: PRO Shielding Protection and CARRIER Shielding Protection.

**TOUGH Cable PRO** is a Category 5e, outdoor, carrier-class shielded cable with an integrated ESD drain wire.

**TOUGH Cable CARRIER** is a Category 5e, outdoor, carrier-class shielded cable that features an integrated ESD drain wire, anti-crosstalk divider, and secondary shielding. It is rated to provide optimal performance on Gigabit Ethernet networks.

### Additional Information:

- 24 AWG copper conductor pairs
- 26 AWG integrated ESD drain wire to prevent ESD attacks and damage
- PE outdoor-rated, weatherproof jacket
- Multi-layered shielding
- Available in lengths of 1000 ft (304.8 m)

**TERMS 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 installer's responsibility to follow local country regulations, including operation within legal frequency channels, output power, indoor cabling requirements, and Dynamic Frequency Selection (DFS) requirements.

For further information, please visit [www.ubnt.com](http://www.ubnt.com).

All specifications in this document are subject to change without notice.

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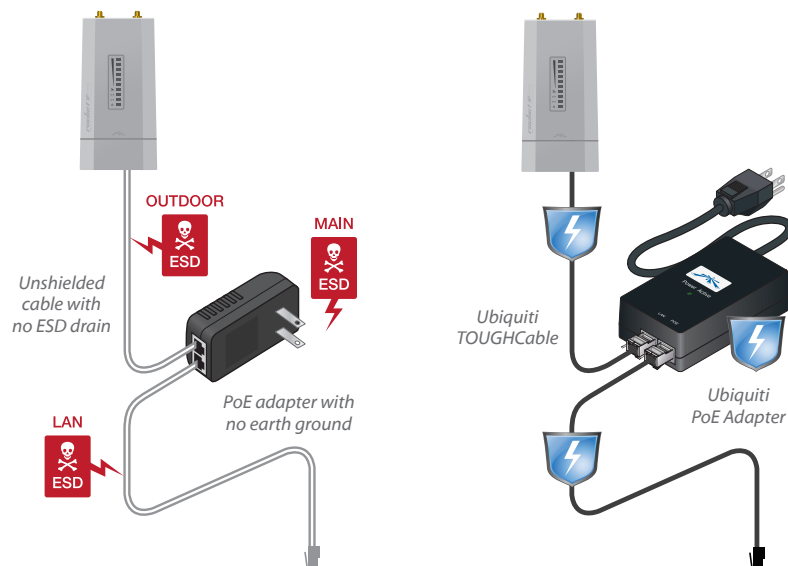


### TOUGH Cable Connectors

Specifically designed for use with Ubiquiti TOUGH Cables and available in 100-pc. bags, TOUGH Cable Connectors protect against ESD attacks and Ethernet hardware damage while allowing rapid field deployment without soldering.

ESD attacks are the leading cause for device failures. The diagram below illustrates the areas vulnerable to ESD attacks in a network.

By using a grounded Ubiquiti Power over Ethernet (PoE) Adapter along with Ubiquiti TOUGH Cable and TOUGH Cable Connectors, you can effectively protect against ESD attacks.



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NETWORKS

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