Superior 24 GHz Performance

airFiber AF-24/AF-24HD provides a breakthrough in 24 GHz backhaul performance.

Systems for millimeter-wave frequencies typically experience RF losses when part of the RF is lost in the switches and filters.

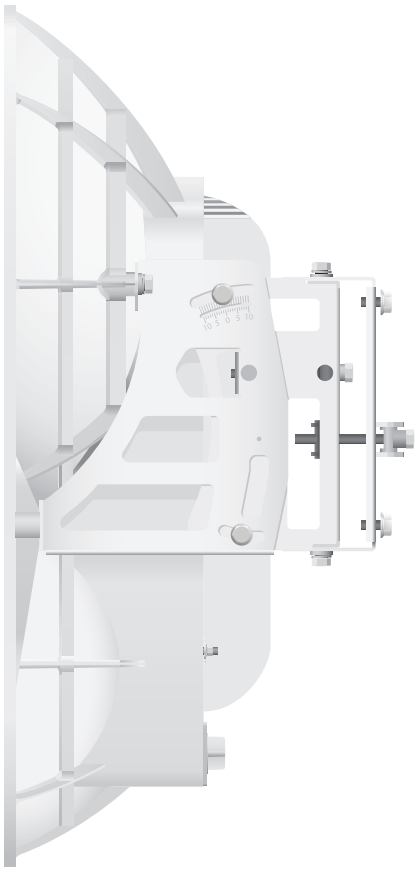
The Ubiquiti R&D team eliminated such RF losses with separate yet integrated TX and RX antennas, so the link budget is robust and the airFiber AF-24/AF-24HD has better noise figure and higher transmit power efficiency.

Two airFiber 24 GHz Models

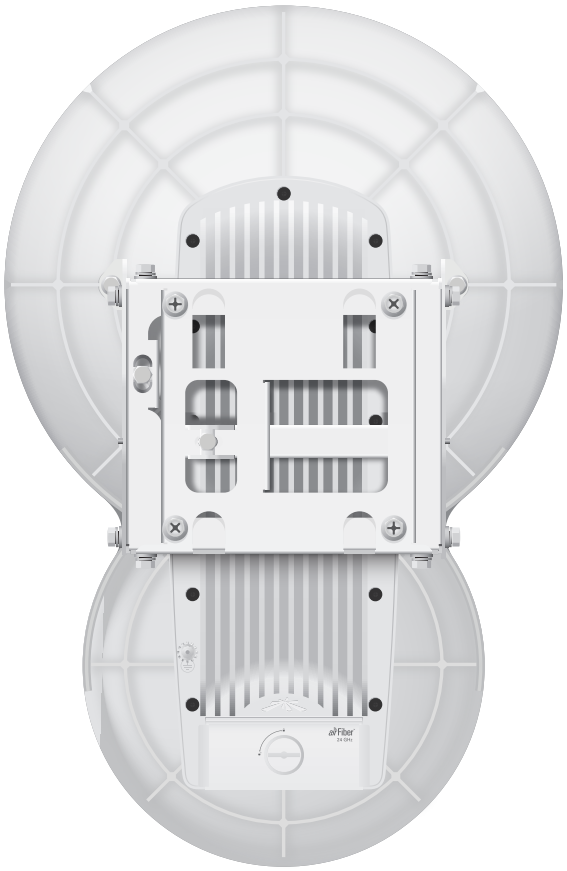
Two models deliver superior speed with spectral efficiency in the worldwide, license-free, 24 GHz radio band.

The standard model, AF-24, delivers up to 1.5+ Gbps throughput at a range of up to 13+ km.

The heavy-duty model, AF-24HD, provides more throughput at up to 2 Gbps and increased range of up to 20+ km. It also includes a more rugged exterior with a metal reflector, to protect against nature's harshest elements.



Side



Back

1.5+ Gbps
Real Data Throughput

24 GHz
License-Free

13+ km
Extreme Range

HDD
TDD FDD

Specifications

airFiber AF-24	
Operating Frequency	24.05 – 24.25 GHz*
Dimensions Radio Box	 649 x 426 x 303 mm (25.55 x 16.77 x 11.93") 725 x 520 x 410 mm (28.54 x 20.47 x 16.14")
Weight Radio (Mount Included) Box	 10.5 kg (23.15 lb) 17 kg (37.48 lb)
Max. Power Consumption	50W
Power Supply	50V, 1.2A PoE GigE Adapter (Included)
Power Method	Passive Power over Ethernet
Supported Voltage Range	+42 to +58VDC, -48VDC
Certifications	CE, FCC, IC
Wind Loading	480 N @ 200 km/hr (108 lbf @ 125 mph)
Wind Survivability	200 km/hr (125 mph)
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	1.5+ Gbps
Maximum Range	13+ km
Packets per Second	> 1 Million
Encryption	128-Bit AES
Uplink/Downlink Ratio	50% Fixed
Latency Full Duplex Mode Half Duplex Mode	 < 200 µs at Full Throughput < 2 ms at Full Throughput
MTU (Maximum Transmission Unit)	Up to 9600

* Two 100 MHz channels are available:: 24.1 GHz (24.05-24.15 GHz) and 24.2 GHz (24.15-24.25 GHz)

airFiber AF-24 Receive Sensitivity			
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
¼x QPSK SISO	-87 dBm	62.5 Mbps	31.7 Mbps

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

airFiber AF-24 Radio Frequency	
GPS	GPS Clock Synchronization
Transceiver	
EIRP	~33 dBm (FCC/IC), ~20 dBm (CE), ~40 dBm (Other Regions)
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 ¼x 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

airFiber AF-24 Capacity (Mbps)		
Rate	Modulation	100 MHz Channel Width*
6x	64 QAM MIMO	1500.0
4x	16 QAM MIMO	1000.0
2x	QPSK MIMO	500.0
1x	QPSK SISO	250.0
¼ x	¼ QPSK SISO	62.5

* Aggregated capacity in Full-Duplex mode