airMAX™ Sector | Datasheet

airMAX™

2x2 MIMO BaseStation Sector Antenna

Models: AM-9M13, AM-2G15-120, AM-2G16-90, AM-3G18-120, AM-5G16-120, AM-5G17-90, AM-5G19-120, AM-5G20-90

High Performance, Long Range

Seamlessly Integrates with RocketM

Excellent Cross-Polarization Isolation

UBiQUiTi™ NETWORKS

Overview

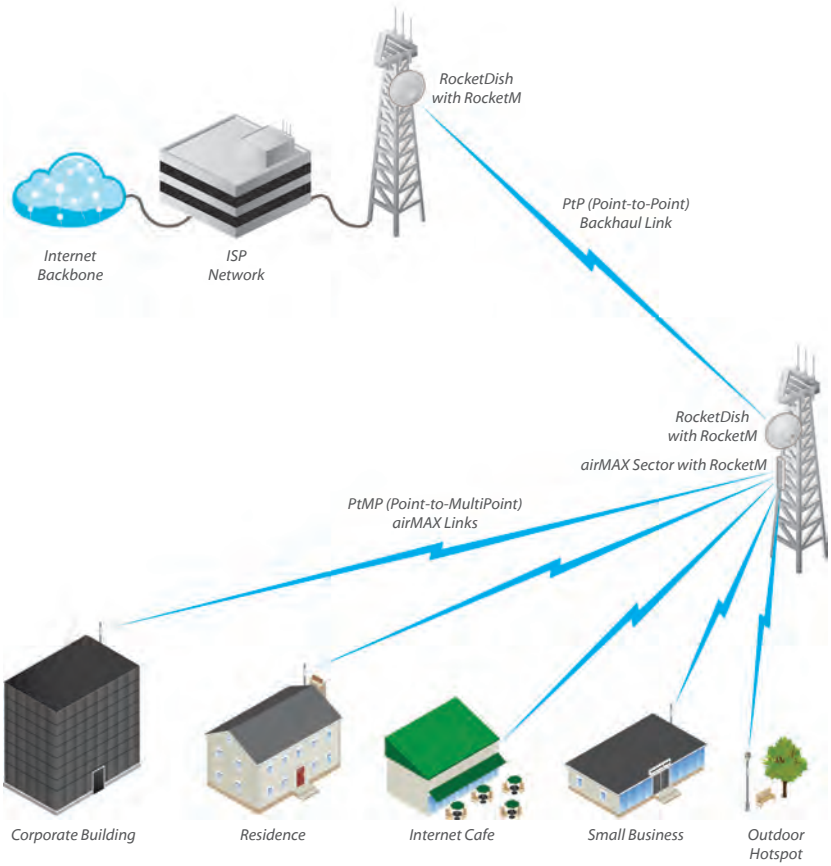
Sector Coverage

The airMAX Sector Antenna is a Carrier Class 2x2 Dual Polarity MIMO Sector Antenna that was designed to seamlessly integrate with RocketM radios (RocketM sold separately).

Pair the RocketM's radio with the airMAX Sector Antenna's reach to create a powerful basestation. This versatile combination gives network architects unparalleled flexibility and convenience.

On the right is one example of how the airMAX Sector Antenna can be deployed:

PtMP (Point to Multi-Point) Link Example



airMAX Sector Antennas provide sector-wide coverage and utilize airMAX technology to produce carrier-class performance and power.

Utilize airMAX Technology*

Unlike standard Wi-Fi protocol, Ubiquiti's Time Division Multiple Access (TDMA) airMAX protocol allows each client to send and receive data using pre-designated time slots scheduled by an intelligent AP controller.

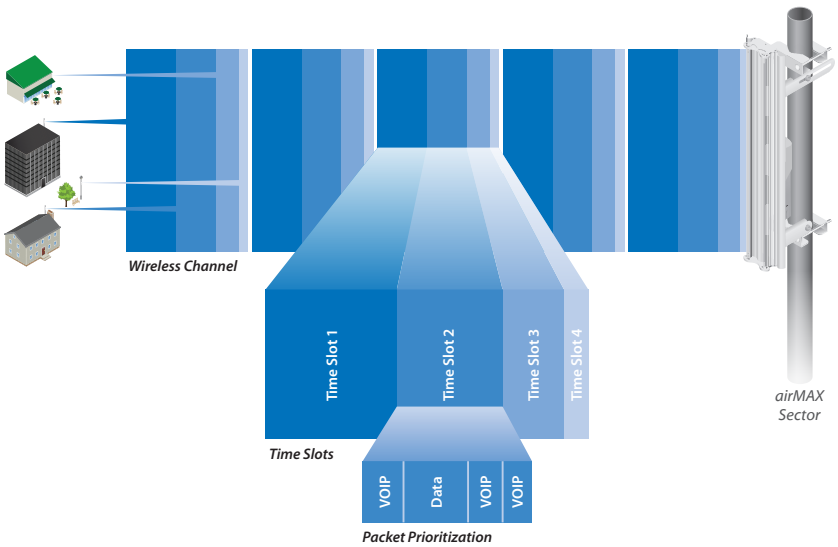
This "time slot" method eliminates hidden node collisions and maximizes airtime efficiency. It provides many magnitudes of performance improvements in latency, throughput, and scalability compared to all other outdoor systems in its class.

Intelligent QoS Priority is given to voice/video for seamless streaming.

Scalability High capacity and scalability.

Long Distance Capable of high-speed, carrier-class links.

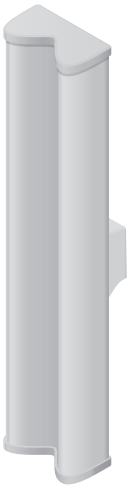
* *When airMAX Sector is paired with RocketM*



Up to 100 airMAX clients can be connected to an airMAX Sector; four airMAX clients are shown to illustrate the general concept.

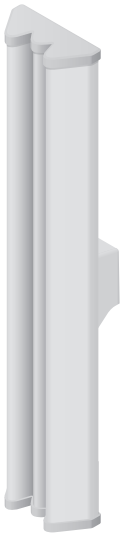
Models

AM-9M13
(900 MHz, 13 dBi)



AM-2G15-120
(2.4 GHz, 15 dBi)

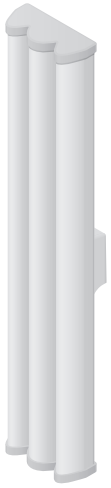
AM-2G16-90
(2.4 GHz, 16 dBi)



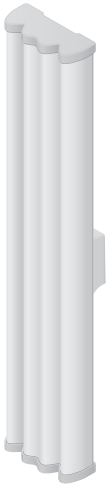
AM-3G18-120
(3 GHz, 18 dBi)

AM-5G16-120
(5 GHz, 16 dBi)

AM-5G17-90
(5 GHz, 17 dBi)



AM-5G19-120
(5 GHz, 19 dBi)



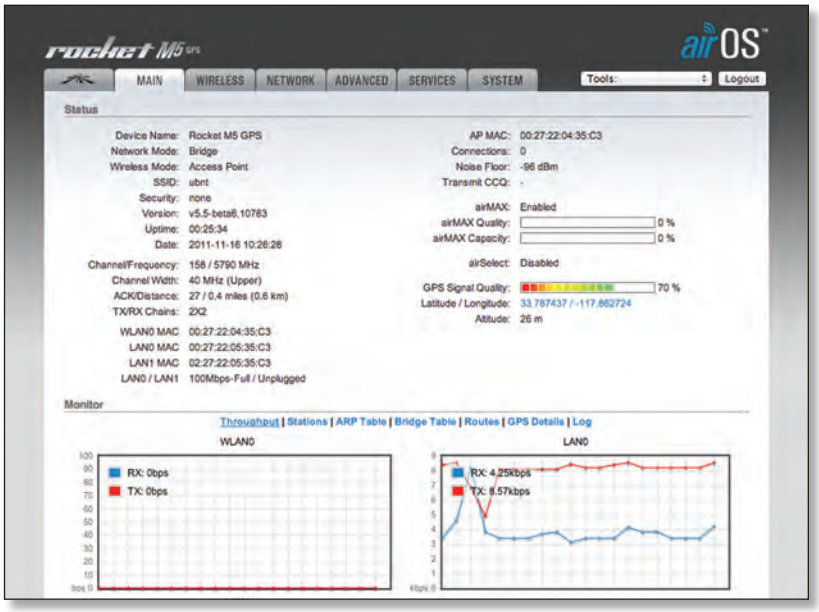
AM-5G20-90
(5 GHz, 20 dBi)

Software

airOS

airOS is an intuitive, versatile, highly developed Ubiquiti firmware technology. It is exceptionally intuitive and was designed to require no training to operate. Behind the user interface is a powerful firmware architecture, which enables high-performance, outdoor multipoint networking.

- Protocol Support
- Ubiquiti Channelization
- Spectral Width Adjustment
- ACK Auto-Timing
- AAP Technology
- Multi-Language Support



airView

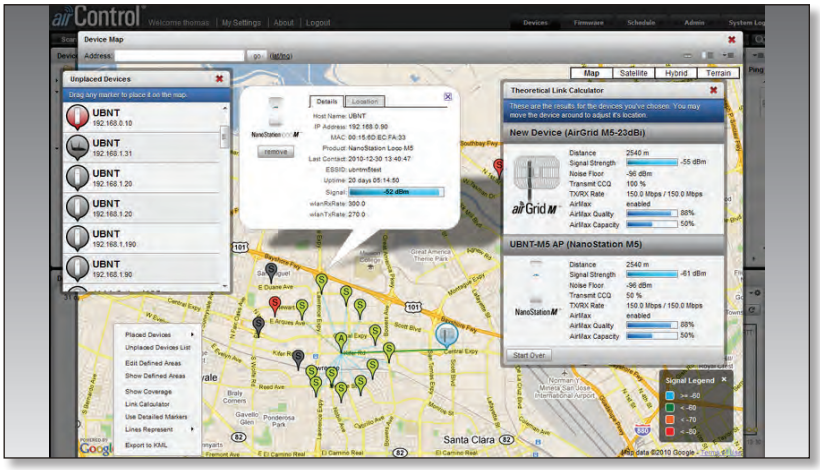
Integrated on all Ubiquiti M products, airView provides Advanced Spectrum Analyzer Functionality: Waterfall, waveform, and real-time spectral views allow operators to identify noise signatures and plan their networks to minimize noise interference.

- **Waterfall** Aggregate energy over time for each frequency.
- **Waveform** Aggregate energy collected.
- **Real-time** Energy is shown in real time as a function of frequency.
- **Recording** Automate airView to record and report results.

airControl

airControl is a powerful and intuitive, web-based server network management application, which allows operators to centrally manage entire networks of Ubiquiti devices.

- Network Map
- Monitor Device Status
- Mass Firmware Upgrade
- Web UI Access
- Manage Groups of Devices
- Task Scheduling



www.ubnt.com/airmax#airMaxAntennas

Specifications

	Antenna Characteristics			
Model	AM-9M13	AM-2G15-120	AM-2G16-90	AM-3G18-120
Dimensions* (mm)	1290 x 290 x 134	700 x 145 x 93	700 x 145 x 79	735 x 144 x 78
Weight**	12.5 kg	4.0 kg	3.9 kg	5.9 kg
Frequency Range	902 - 928 MHz	2.3 - 2.7 GHz	2.3 - 2.7 GHz	3.3 - 3.8 GHz
Gain	13.2 - 13.8 dBi	15.0 - 16.0 dBi	16.0 - 17.0 dBi	17.3 - 18.2 dBi
HPOL Beamwidth	109° (6 dB)	123° (6 dB)	91° (6 dB)	118° (6 dB)
VPOL Beamwidth	120° (6 dB)	118° (6 dB)	90° (6 dB)	121° (6 dB)
Electrical Beamwidth	15°	9°	9°	6°
Electrical Downtilt	N/A	4°	4°	3°
Max. VSWR	1.5:1	1.5:1	1.5:1	1.5:1
Wind Survivability	125 mph	125 mph	125 mph	125 mph
Wind Loading	95 lbf @ 100 mph	24 lbf @ 100 mph	19 lbf @ 100 mph	21 lbf @ 100 mph
Polarization	Dual-Linear	Dual-Linear	Dual-Linear	Dual-Linear
Cross-pol Isolation	30 dB Min.	28 dB Min.	28 dB Min.	28 dB Min.
ETSI Specification	N/A	EN 302 326 DN2	EN 302 326 DN2	EN 302 326 DN2
Mounting	Universal Pole Mount, RocketM Bracket, and Weatherproof RF Jumpers Included			

** Dimensions exclude pole mount and RocketM (RocketM sold separately)*

*** Weight includes pole mount and excludes RocketM (RocketM sold separately)*

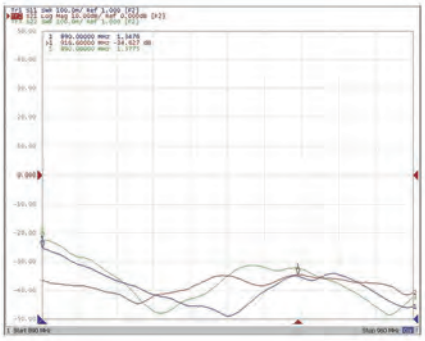
	Antenna Characteristics			
Model	AM-5G16-120	AM-5G17-90	AM-5G19-120	AM-5G20-90
Dimensions* (mm)	367 x 63 x 41	367 x 63 x 41	700 x 135 x 73	700 x 135 x 70
Weight**	1.1 kg	1.1 kg	5.9 kg	5.9 kg
Frequency Range	5.10 - 5.85 GHz	4.90 - 5.85 GHz	5.15 - 5.85 GHz	5.15 - 5.85 GHz
Gain	15.0 - 16.0 dBi	16.1 - 17.1 dBi	18.6 - 19.1 dBi	19.4 - 20.3 dBi
HPOL Beamwidth	137° (6 dB)	72° (6 dB)	123° (6 dB)	91° (6 dB)
VPOL Beamwidth	118° (6 dB)	93° (6 dB)	123° (6 dB)	85° (6 dB)
Electrical Beamwidth	8°	8°	4°	4°
Electrical Downtilt	4°	4°	2°	2°
Max. VSWR	1.5:1	1.5:1	1.5:1	1.5:1
Wind Survivability	125 mph	125 mph	125 mph	125 mph
Wind Loading	6 lbf @100 mph	6 lbf @100 mph	20 lbf @ 100 mph	26 lbf @ 100 mph
Polarization	Dual-Linear	Dual-Linear	Dual-Linear	Dual-Linear
Cross-pol Isolation	22 dB Min.	22 dB Min.	28 dB Min.	28 dB Min.
ETSI Specification	EN 302 326 DN2	EN 302 326 DN2	EN 302 326 DN2	EN 302 326 DN2
Mounting	Universal Pole Mount, RocketM Bracket, and Weatherproof RF Jumpers Included			

** Dimensions exclude pole mount and RocketM (RocketM sold separately)*

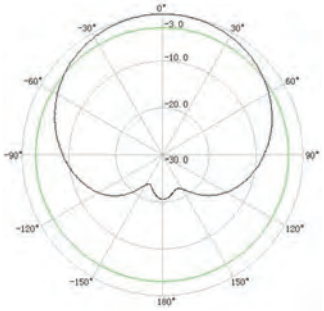
*** Weight includes pole mount and excludes RocketM (RocketM sold separately)*

AM-9M13 Antenna Information

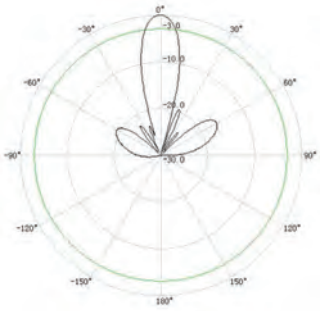
Return Loss



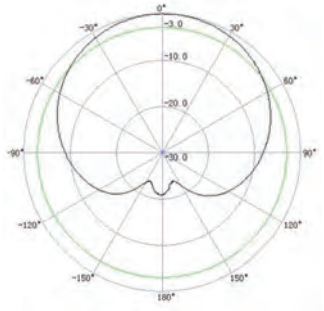
Vertical Azimuth



Vertical Elevation



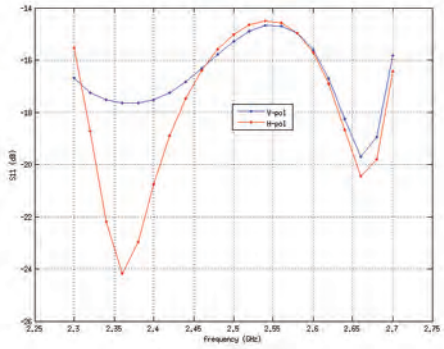
Horizontal Azimuth



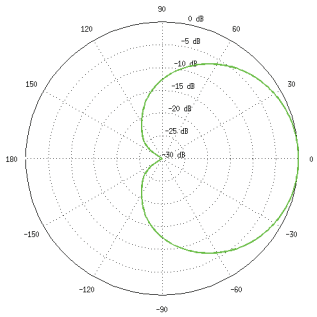
Horizontal Elevation

AM-2G15-120 Antenna Information

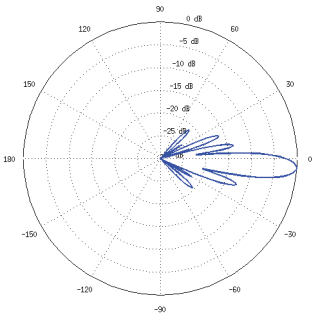
Return Loss



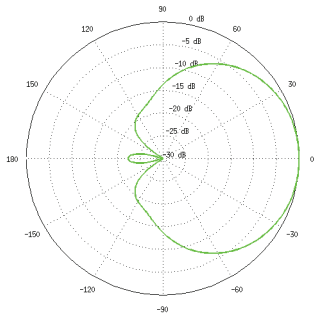
Vertical Azimuth



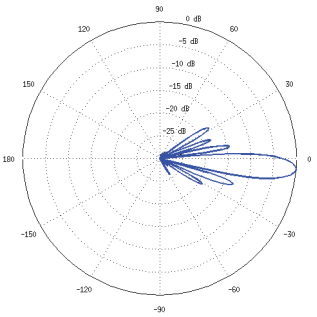
Vertical Elevation



Horizontal Azimuth

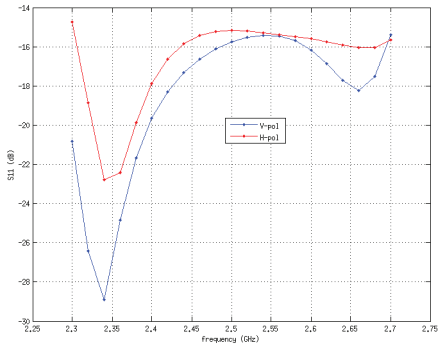


Horizontal Elevation

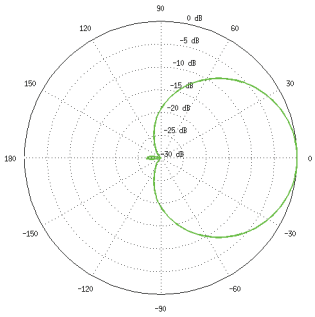


AM-2G16-90 Antenna Information

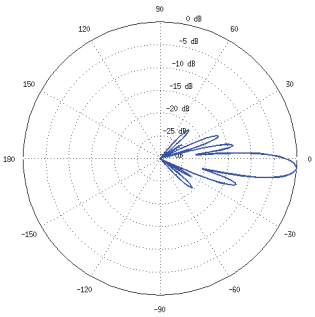
Return Loss



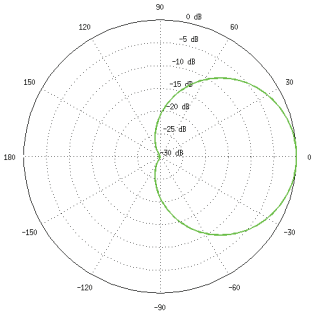
Vertical Azimuth



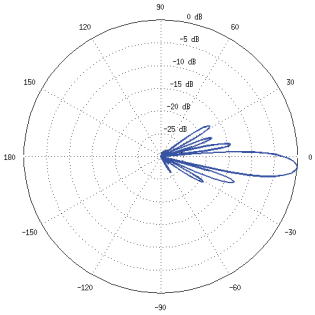
Vertical Elevation



Horizontal Azimuth

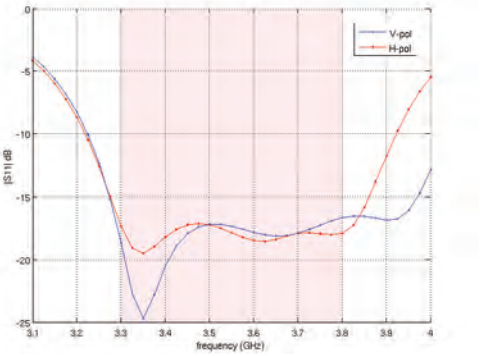


Horizontal Elevation

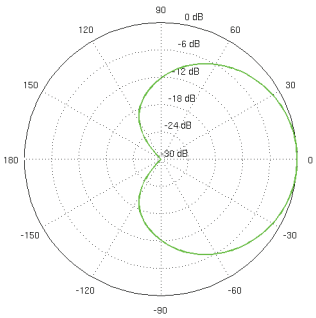


AM-3G18-120 Antenna Information

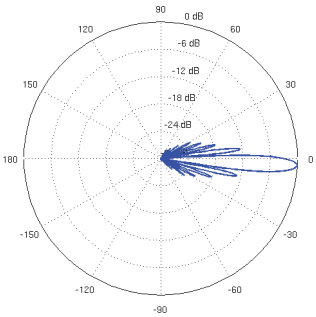
Return Loss



Vertical Azimuth



Vertical Elevation



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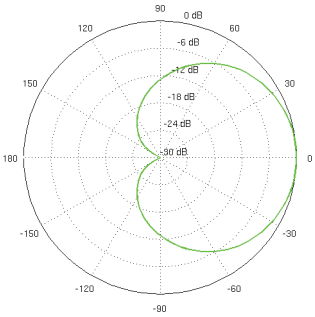
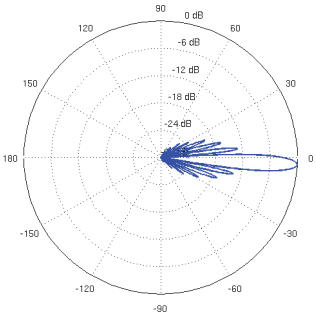
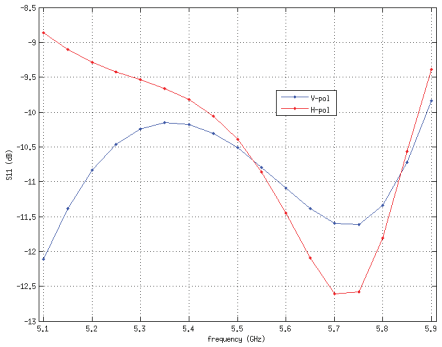


Horizontal Elevation

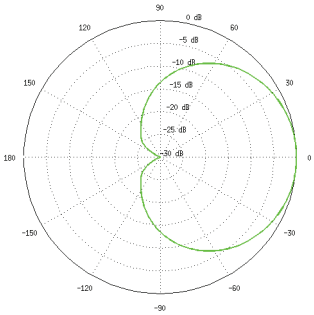


AM-5G16-120 Antenna Information

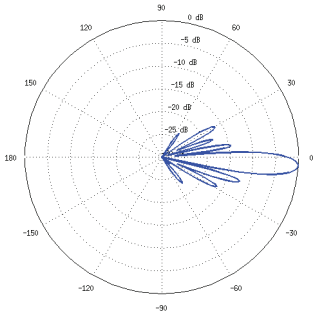
Return Loss



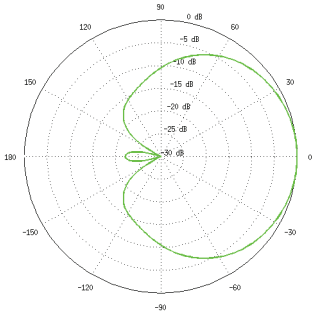
Vertical Azimuth



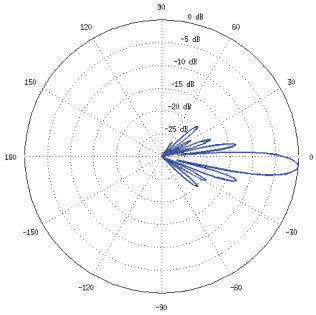
Vertical Elevation



Horizontal Azimuth

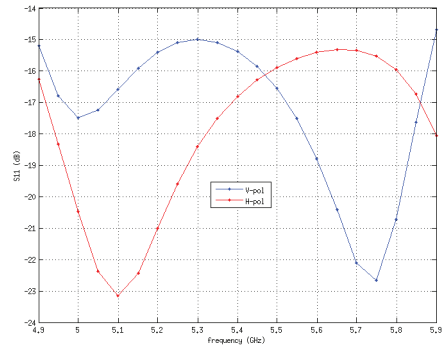


Horizontal Elevation

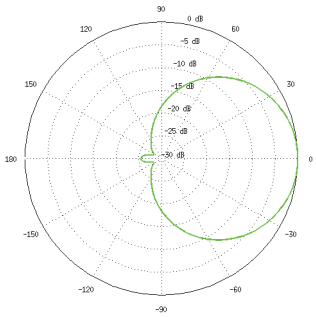


AM-5G17-90 Antenna Information

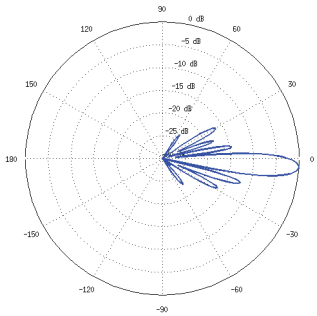
Return Loss



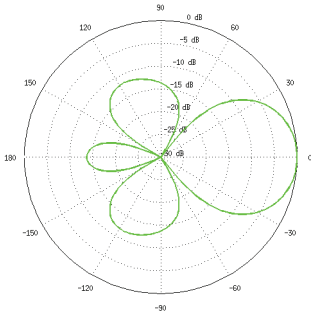
Vertical Azimuth



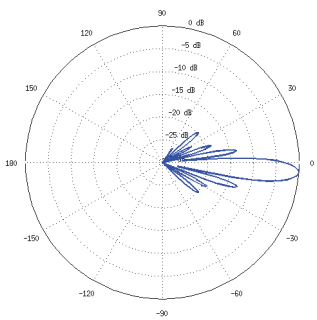
Vertical Elevation



Horizontal Azimuth

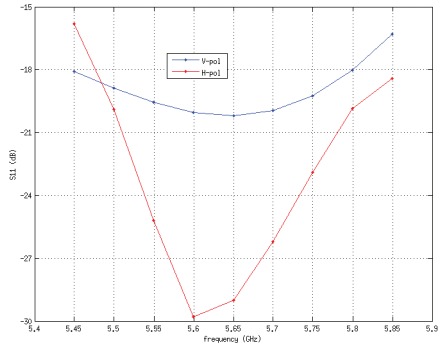


Horizontal Elevation

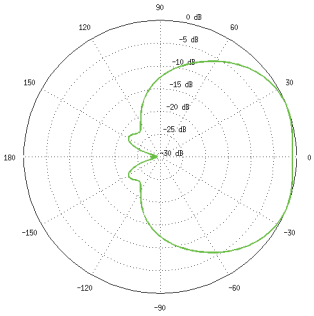


AM-5G19-120 Antenna Information

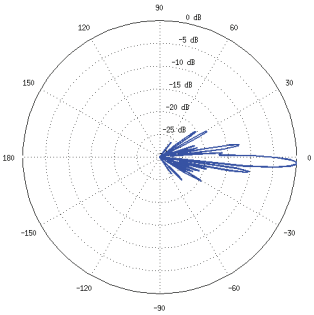
Return Loss



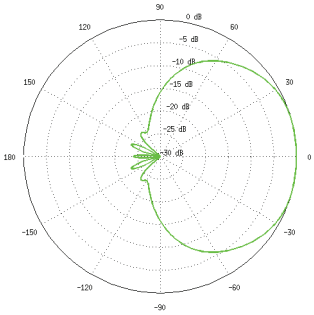
Vertical Azimuth



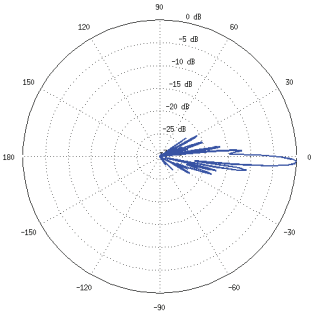
Vertical Elevation



Horizontal Azimuth

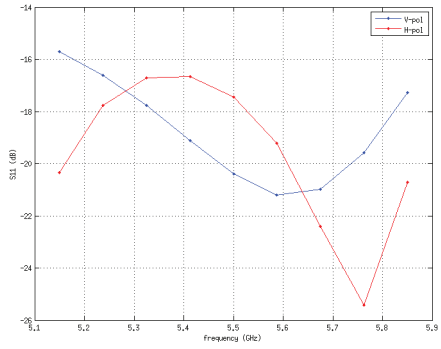


Horizontal Elevation

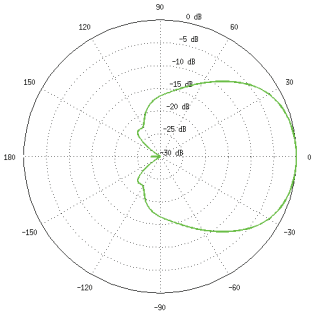


AM-5G20-90 Antenna Information

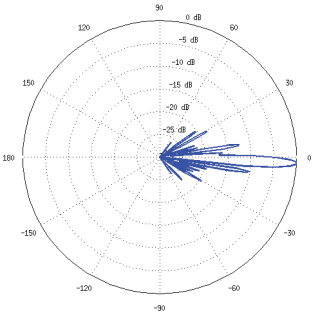
Return Loss



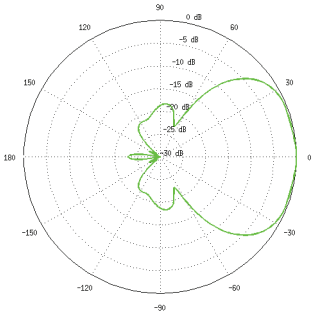
Vertical Azimuth



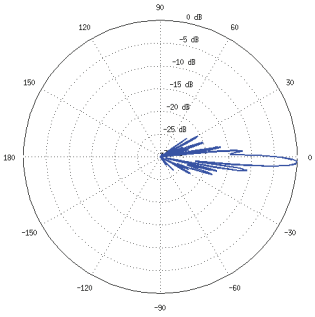
Vertical Elevation



Horizontal Azimuth



Horizontal Elevation



Datasheet

airMAX™ Sector

TOUGHCable™

OUTDOOR CARRIER CLASS SHIELDED

Protect your networks from the most brutal environments with Ubiquiti Networks' industrial-grade, shielded Ethernet cable, TOUGHCable.

Increase Performance
Dramatically improve your Ethernet link states, speeds, and overall performance with Ubiquiti TOUGHCables.

Extreme Weatherproof
Designed for outdoor use, TOUGHCables 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
TOUGHCables have been developed to increase power handling performance for extended cable run lengths.

TOUGHCable Connectors

Specifically designed for use with Ubiquiti TOUGHCables, TOUGHCable Connectors protect against ESD attacks and Ethernet hardware damage, while allowing rapid field deployment without soldering. The standard TOUGHCable Connectors are available in 100-pc. bags, while the TC-GND versions include ground wires and are available in 20-pc. bags.

Bulletproof your networks

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

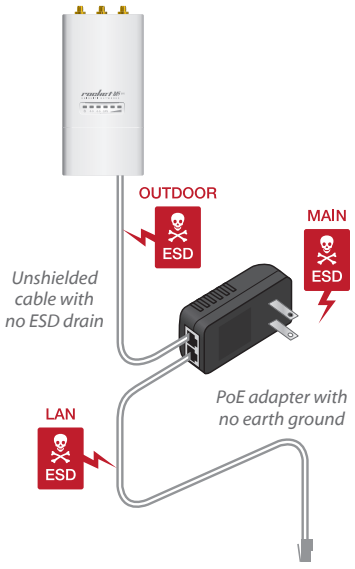
TOUGHCable PRO is a Category 5e, outdoor, carrier-class shielded cable with an integrated ESD drain wire.

TOUGHCable 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.

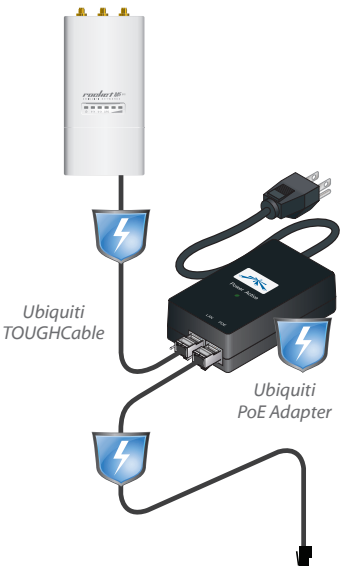
Additional Information:

- 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)

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 TOUGHCable and TOUGHCable Connectors, you can effectively protect against ESD attacks.



UBIQUITI NETWORKS

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