rocketM

Powerful 2x2 MIMO AirMax BaseStation Platforms

Models: M2, M2GPS, M3, M365, M365GPS, M5, M5GPS, M900

Ultimate in RF Performance

Seamlessly Integrates with AirMax BaseStation and Rocket Antennas

Incredible Range and Speed
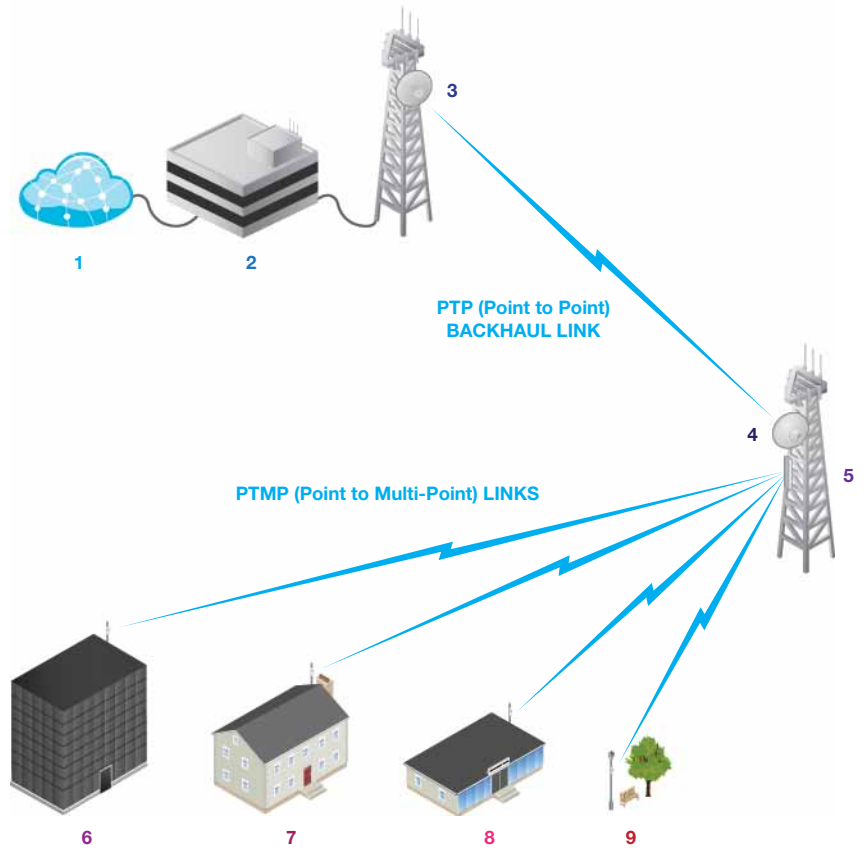
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NETWORKS

Overview

Versatile

Rocket M is a rugged, hi-power, very linear 2x2 MIMO radio with enhanced receiver performance. It features incredible range performance (50+km) and breakthrough speed (150+Mbps real TCP/IP).

Rocket M combines the "brains" in one robust unit; it can be paired with your choice of AirMax BaseStation or Rocket Antennas. This versatility gives network architects unparalleled flexibility and convenience.

On the right is one example of how Rockets can be deployed:

1 Internet Backbone
2 ISP Network
3 RocketDish with Rocket M
4 RocketDish with Rocket M
5 AirMax BaseStation with Rocket M
6 Corporate building with NanoStation M client.
7 House with NanoStation M client.
8 Small business with NanoStation M client.
9 Lightpole with NanoStation M daisy-chained to a PicoStation M to create a wireless hotspot.

PTP (Point to Point) BACKHAUL LINK

PTMP (Point to Multi-Point) LINKS

Integrated AirMax Technology

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

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

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

Scalability High capacity and scalability.

Long Distance Capable of high speed 50km+ links

Latency Multiple features dramatically reduce noise.

GPS Synchronization*

Rocket M GPS units have integrated Ubiquiti AirSync technology. AirSync enhances the hardware and software of Rocket M to utilize GPS signals for precision timing.

GPS Signal Reporting AirOS was upgraded to take full advantage of the new GPS hardware in Rocket M GPS units; easily manage/monitor GPS satellite signals.

No Co-location Interference Synchro-nized transmission among Rocket M GPS powered BaseStations effectively eliminates co-location interference.

External GPS Antenna Included weather-proof external GPS Antenna (Rocket M GPS).

Two Ethernet Ports Second Ethernet port (only Rocket M GPS) capable of providing power to a secondary device using PoE.

Channel Re-use Frequency reuse for increased scalability.

Easy Installation

Rocket M and AirMax BaseStation/ Rocket Antennas have been designed to seamlessly work together.
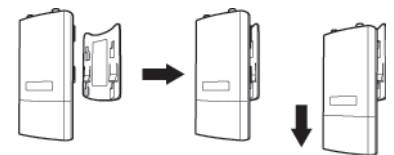
Installing Rocket M on AirMax BaseStation and Rocket Antennas requires no special tools, you simply snap it securely into place with the universal Rocket mount built into the antennas.

* Only Rocket M GPS Models

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[top - Rocket M GPS Series] **RM2-GPS** (2.4 GHz), **RM365-GPS** (3.65-3.675 GHz), **RM5-GPS** (5 GHz)
[bottom - Rocket M Series] **RM2** (2.4 GHz), **RM3** (3.4-3.7 GHz), **RM365** (3.65-3.675 GHz), **RM5** (5GHz), **RM900** (900 MHz)

Software

ᚔ OS

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 hi-performance outdoor multipoint networking.

Protocol Support

Ubiquiti Channelization

Spectral Width Adjust

ACK Auto-Timing

AAP Technology

GPS Signal Reporting*
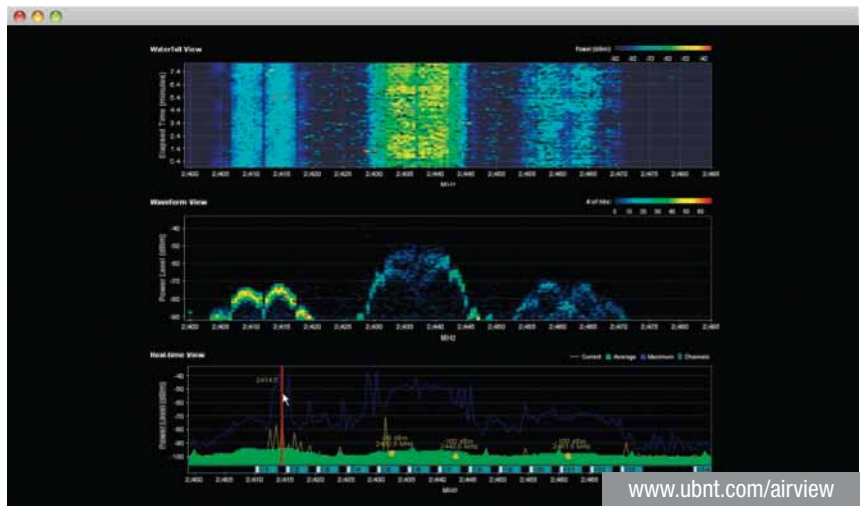

www.ubnt.com/airos

ᚔ View

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 real-time as a function of frequency.

Recording Automize AirView to record and report results.

www.ubnt.com/airview

ᚔ Control

AirControl is a powerful and intuitive web based server network management application which allows operators to centrally manage entire networks of Ubiqutii devices.

Network Map

Monitor Device Status

Mass Firmware Upgrade

Web UI Access

Manage Groups of Devices

Task Scheduling

www.ubnt.com/aircontrol

* Only Rocket M GPS Models

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Specifications

System Information	
Processor Specs	Atheros MIPS 24KC, 400MHz
Memory Information	64MB SDRAM, 8MB Flash
	M	M GPS
Networking Interface	1 X 10/100 BASE-TX (Cat. 5, RJ-45) Ethernet	2 X 10/100 BASE-TX (Cat. 5, RJ-45) Ethernet

Regulatory / Compliance Information			
	M900, M2, M5, M2 GPS, M5 GPS	M3	M365, M365 GPS
Wireless Approvals	FCC Part 15.247, IC RS210, CE	-	FCC Part 90Y
RoHS Compliance	YES		

Physical / Electrical / Environmental	
Enclosure Size	17 x 8 x 3cm (length, width, height)
Weight	0.5kg
Enclosure Characteristics	Outdoor UV Stabilized Plastic
Mounting Kit	Pole Mounting Kit included
Power Supply	24V, 1A POE Supply included
Power Method	Passive Power over Ethernet (pairs 4, 5+; 7, 8 return)
Operating Temperature	-30C to 75C
Operating Humidity	5 to 95% Condensing
Shock and Vibration	ETSI300-019-1.4
	M	M GPS
RF Connector	2x RP-SMA (Waterproof)	2x RP-SMA and 1x SMA (Waterproof)
	M (Except M5), M GPS (Except M5 GPS)	M5, M5 GPS
Max Power Consumption	6.5 Watts	8 Watts

Compatible Antennas				
M900	M2, M2 GPS	M3	M365, M365 GPS	M5, M5 GPS
AirMax Sector 900M-13-120	AirMax Sector 2G-16-90 2G-15-120	AirMax Sector 3G-18-120	AirMax Sector 3G-18-120	AirMax Sector 5G-17-90 5G-16-120 5G-20-90 5G-19-120
	Rocket Dish 2G-24	Rocket Dish 3G-26	Rocket Dish 3G-26	
				Rocket Dish 5G-30 5G-34

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Specifications (cont.)

Operating Frequency Summary (MHz)				
M900	M2, M2 GPS	M3	M365, M365 GPS	M5, M5 GPS
902-928	2412-2462	3400-3700	3650-3675	5470-5825*

Rocket M900 - Operating Frequency 902-928 MHz							
OUTPUT POWER: 28 dBm							
900 MHz TX POWER SPECIFICATIONS					900 MHz RX POWER SPECIFICATIONS		
AirMax	MCS0	28 dBm	+/- 2 dB		MCS0	-96 dBm	+/- 2 dB
	MCS1	28 dBm	+/- 2 dB		MCS1	-95 dBm	+/- 2 dB
	MCS2	28 dBm	+/- 2 dB		MCS2	-92 dBm	+/- 2 dB
	MCS3	28 dBm	+/- 2 dB		MCS3	-90 dBm	+/- 2 dB
	MCS4	28 dBm	+/- 2 dB		MCS4	-86 dBm	+/- 2 dB
	MCS5	24 dBm	+/- 2 dB		MCS5	-83 dBm	+/- 2 dB
	MCS6	22 dBm	+/- 2 dB		MCS6	-77 dBm	+/- 2 dB
	MCS7	21 dBm	+/- 2 dB		MCS7	-74 dBm	+/- 2 dB
	MCS8	28 dBm	+/- 2 dB		MCS8	-95 dBm	+/- 2 dB
	MCS9	28 dBm	+/- 2 dB		MCS9	-93 dBm	+/- 2 dB
	MCS10	28 dBm	+/- 2 dB		MCS10	-90 dBm	+/- 2 dB
	MCS11	28 dBm	+/- 2 dB		MCS11	-87 dBm	+/- 2 dB
	MCS12	28 dBm	+/- 2 dB		MCS12	-84 dBm	+/- 2 dB
	MCS13	24 dBm	+/- 2 dB		MCS13	-79 dBm	+/- 2 dB
	MCS14	22 dBm	+/- 2 dB		MCS14	-78 dBm	+/- 2 dB
	MCS15	21 dBm	+/- 2 dB		MCS15	-75 dBm	+/- 2 dB

Rocket M2 / M2 GPS - Operating Frequency 2412-2462 MHz							
OUTPUT POWER: 28 dBm							
2.4 GHz TX POWER SPECIFICATIONS					2.4 GHz RX POWER SPECIFICATIONS		
	DataRate	Avg. TX	Tolerance		DataRate	Avg. TX	Tolerance
11g	1-24 Mbps	28 dBm	+/- 2 dB	11g	1-24 Mbps	-97 dBm min	+/- 2 dB
	36 Mbps	26 dBm	+/- 2 dB		36 Mbps	-80 dBm	+/- 2 dB
	48 Mbps	25 dBm	+/- 2 dB		48 Mbps	-77 dBm	+/- 2 dB
	54 Mbps	24 dBm	+/- 2 dB		54 Mbps	-75 dBm	+/- 2 dB
11n / AirMax	MCS0	28 dBm	+/- 2 dB	11n / AirMax	MCS0	-96 dBm	+/- 2 dB
	MCS1	28 dBm	+/- 2 dB		MCS1	-95 dBm	+/- 2 dB
	MCS2	28 dBm	+/- 2 dB		MCS2	-92 dBm	+/- 2 dB
	MCS3	28 dBm	+/- 2 dB		MCS3	-90 dBm	+/- 2 dB
	MCS4	27 dBm	+/- 2 dB		MCS4	-86 dBm	+/- 2 dB
	MCS5	25 dBm	+/- 2 dB		MCS5	-83 dBm	+/- 2 dB
	MCS6	23 dBm	+/- 2 dB		MCS6	-77 dBm	+/- 2 dB
	MCS7	22 dBm	+/- 2 dB		MCS7	-74 dBm	+/- 2 dB
	MCS8	28 dBm	+/- 2 dB		MCS8	-95 dBm	+/- 2 dB
	MCS9	28 dBm	+/- 2 dB		MCS9	-93 dBm	+/- 2 dB
	MCS10	28 dBm	+/- 2 dB		MCS10	-90 dBm	+/- 2 dB
	MCS11	28 dBm	+/- 2 dB		MCS11	-87 dBm	+/- 2 dB
	MCS12	27 dBm	+/- 2 dB		MCS12	-84 dBm	+/- 2 dB
	MCS13	25 dBm	+/- 2 dB		MCS13	-79 dBm	+/- 2 dB
	MCS14	23 dBm	+/- 2 dB		MCS14	-78 dBm	+/- 2 dB
	MCS15	22 dBm	+/- 2 dB		MCS15	-75 dBm	+/- 2 dB

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* Only 5745 - 5825 MHz is supported in the USA

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Specifications (cont.)

Rocket M3 - Operating Frequency 3400-3700 MHz

OUTPUT POWER: 25 dBm

TX POWER SPECIFICATIONS				RX POWER SPECIFICATIONS		
	MCS0	25 dBm	+/- 2 dB		MCS0	-94 dBm	+/- 2 dB
	MCS1	25 dBm	+/- 2 dB		MCS1	-93 dBm	+/- 2 dB
	MCS2	25 dBm	+/- 2 dB		MCS2	-90 dBm	+/- 2 dB
	MCS3	25 dBm	+/- 2 dB		MCS3	-89 dBm	+/- 2 dB
	MCS4	24 dBm	+/- 2 dB		MCS4	-86 dBm	+/- 2 dB
	MCS5	23 dBm	+/- 2 dB		MCS5	-83 dBm	+/- 2 dB
AirMax	MCS6	22 dBm	+/- 2 dB	AirMax	MCS6	-77 dBm	+/- 2 dB
	MCS7	20 dBm	+/- 2 dB		MCS7	-74 dBm	+/- 2 dB
	MCS8	25 dBm	+/- 2 dB		MCS8	-93 dBm	+/- 2 dB
	MCS9	25 dBm	+/- 2 dB		MCS9	-91 dBm	+/- 2 dB
	MCS10	25 dBm	+/- 2 dB		MCS10	-89 dBm	+/- 2 dB
	MCS11	25 dBm	+/- 2 dB		MCS11	-87 dBm	+/- 2 dB
	MCS12	24 dBm	+/- 2 dB		MCS12	-84 dBm	+/- 2 dB
	MCS13	23 dBm	+/- 2 dB		MCS13	-79 dBm	+/- 2 dB
	MCS14	22 dBm	+/- 2 dB		MCS14	-78 dBm	+/- 2 dB
	MCS15	20 dBm	+/- 2 dB		MCS15	-75 dBm	+/- 2 dB

Rocket M365 / M365 GPS - Operating Frequency 3650-3675 MHz

OUTPUT POWER: 25 dBm

TX POWER SPECIFICATIONS				RX POWER SPECIFICATIONS		
	MCS0	25 dBm	+/- 2 dB		MCS0	-94 dBm	+/- 2 dB
	MCS1	25 dBm	+/- 2 dB		MCS1	-93 dBm	+/- 2 dB
	MCS2	25 dBm	+/- 2 dB		MCS2	-90 dBm	+/- 2 dB
	MCS3	25 dBm	+/- 2 dB		MCS3	-89 dBm	+/- 2 dB
	MCS4	24 dBm	+/- 2 dB		MCS4	-86 dBm	+/- 2 dB
	MCS5	23 dBm	+/- 2 dB		MCS5	-83 dBm	+/- 2 dB
AirMax	MCS6	22 dBm	+/- 2 dB	AirMax	MCS6	-77 dBm	+/- 2 dB
	MCS7	20 dBm	+/- 2 dB		MCS7	-74 dBm	+/- 2 dB
	MCS8	25 dBm	+/- 2 dB		MCS8	-93 dBm	+/- 2 dB
	MCS9	25 dBm	+/- 2 dB		MCS9	-91 dBm	+/- 2 dB
	MCS10	25 dBm	+/- 2 dB		MCS10	-89 dBm	+/- 2 dB
	MCS11	25 dBm	+/- 2 dB		MCS11	-87 dBm	+/- 2 dB
	MCS12	24 dBm	+/- 2 dB		MCS12	-84 dBm	+/- 2 dB
	MCS13	23 dBm	+/- 2 dB		MCS13	-79 dBm	+/- 2 dB
	MCS14	22 dBm	+/- 2 dB		MCS14	-78 dBm	+/- 2 dB
	MCS15	20 dBm	+/- 2 dB		MCS15	-75 dBm	+/- 2 dB

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Specifications (cont.)

Rocket M5 / M5 GPS - Operating Frequency 5470-5825 MHz*							
OUTPUT POWER: 27 dBm							
5 GHz TX POWER SPECIFICATIONS					**5 GHz RX POWER SPECIFICATIONS**		
	DataRate	Avg. TX	Tolerance			DataRate	Avg. TX	Tolerance
11a	6-24 Mbps	27 dBm	+/- 2 dB		11a	6-24 Mbps	-94 dBm min	+/- 2 dB
	36 Mbps	25 dBm	+/- 2 dB			36 Mbps	-80 dBm	+/- 2 dB
	48 Mbps	23 dBm	+/- 2 dB			48 Mbps	-77 dBm	+/- 2 dB
	54 Mbps	22 dBm	+/- 2 dB			54 Mbps	-75 dBm	+/- 2 dB
11n / AirMax	MCS0	27 dBm	+/- 2 dB		11n / AirMax	MCS0	-96 dBm	+/- 2 dB
	MCS1	27 dBm	+/- 2 dB			MCS1	-95 dBm	+/- 2 dB
	MCS2	27 dBm	+/- 2 dB			MCS2	-92 dBm	+/- 2 dB
	MCS3	27 dBm	+/- 2 dB			MCS3	-90 dBm	+/- 2 dB
	MCS4	26 dBm	+/- 2 dB			MCS4	-86 dBm	+/- 2 dB
	MCS5	24 dBm	+/- 2 dB			MCS5	-83 dBm	+/- 2 dB
	MCS6	22 dBm	+/- 2 dB			MCS6	-77 dBm	+/- 2 dB
	MCS7	21 dBm	+/- 2 dB			MCS7	-74 dBm	+/- 2 dB
	MCS8	27 dBm	+/- 2 dB			MCS8	-95 dBm	+/- 2 dB
	MCS9	27 dBm	+/- 2 dB			MCS9	-93 dBm	+/- 2 dB
	MCS10	27 dBm	+/- 2 dB			MCS10	-90 dBm	+/- 2 dB
	MCS11	27 dBm	+/- 2 dB			MCS11	-87 dBm	+/- 2 dB
	MCS12	26 dBm	+/- 2 dB			MCS12	-84 dBm	+/- 2 dB
	MCS13	24 dBm	+/- 2 dB			MCS13	-79 dBm	+/- 2 dB
	MCS14	22 dBm	+/- 2 dB			MCS14	-78 dBm	+/- 2 dB
	MCS15	21 dBm	+/- 2 dB			MCS15	-75 dBm	+/- 2 dB

* Only 5745 - 5825 MHz is supported in the USA
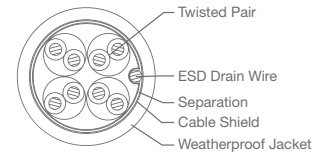
TOUGHCable

OUTDOOR CARRIER CLASS SHIELDED

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

Increase Performance Dramatically improve your ethernet link states, speeds, and overall performance with Ubiquiti TOUGHCables.
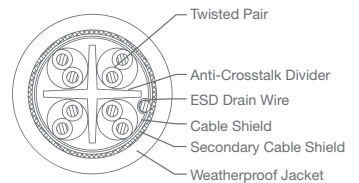
Extreme Weatherproof TOUGHCables have been built to perform even in the harshest weather and environments.

Eliminate ESD Attacks Protect your networks from devastating ESD Attacks, TOUGHCables eliminate ESD attacks and ethernet hardware damage.

Extended Cable Support TOUGHCables have been developed to have increased power handling performance for extended cable run lengths.

Twisted Pair
ESD Drain Wire
Separation
Cable Shield
Weatherproof Jacket

LEVEL1
SHIELDING PROTECTION

Twisted Pair
Anti-Crosstalk Divider
ESD Drain Wire
Cable Shield
Secondary Cable Shield
Weatherproof Jacket

LEVEL2
SHIELDING PROTECTION

Bulletproof your networks

TOUGHCable is currently available in two versions: Level 1 Shielding Protection and Level 2 Shielding Protection.

Level 1 is a Category 5e (100Mbps Ethernet Support) Outdoor Carrier Class Shielded Cable.

Level 2 is a Category 6 (1Gbps Ethernet Support) Outdoor Carrier Class Shielded Cable that is also capable of providing enhanced Category 5e performance.
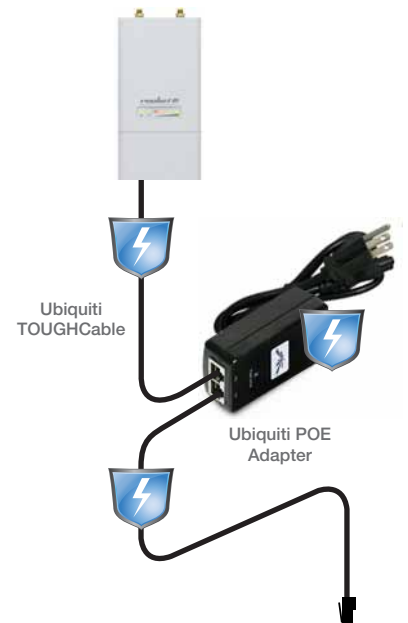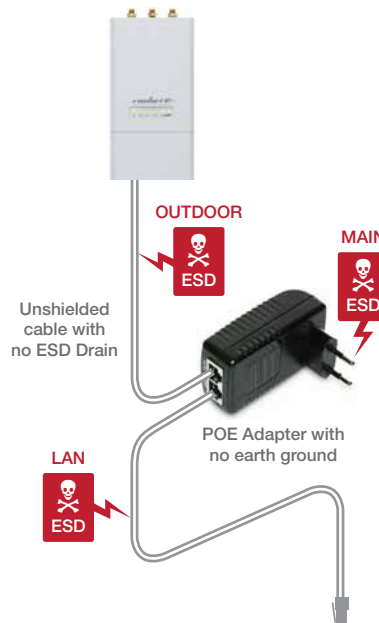
Additional Information:
• 24 AWG copper conductor pairs
• ESD Drain Wire: 26 AWG integrated ESD Drain wire to prevent ESD attacks & damage.
• PVC outdoor rated jacket
• 0.35um foil shield
• Multi-Layered Shielding
• 1000ft (304.8m) length

Learn more:
www.ubnt.com/toughcable

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

By using a grounded Ubiquiti POE adapter (included) along with Ubiquiti TOUGHCable (sold separately), you can effectively eliminate ESD Attacks.

OUTDOOR
MAIN
ESD
ESD
Unshielded cable with no ESD Drain
POE Adapter with no earth ground
LAN
ESD

Ubiquiti TOUGHCable
Ubiquiti POE Adapter

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TERMS OF USE: The Ubiquiti radio device must be professionally installed. Shielded ethernet cable and earth grounding must be used as conditions of product warranty. It is the installers responsibility to follow local country regulations including operation within legal frequency channels, output power, and Dynamic Frequency Selection (DFS) requirements.

For further information, please visit www.ubnt.com.

All specifications in this document are subject to change without notice.   RM-DS-080511