



NanoStation *M*

NanoStation loco *M*

Compact, Hi-Power, 2x2 MIMO AirMax TDMA Station

Models: NSM2, NSM3, NSM365, NSM5, LOCOM2, LOCOM5, LOCOM9

Cost Effective, Hi-Performance

Compact and Versatile Design

Powerful integrated Antenna



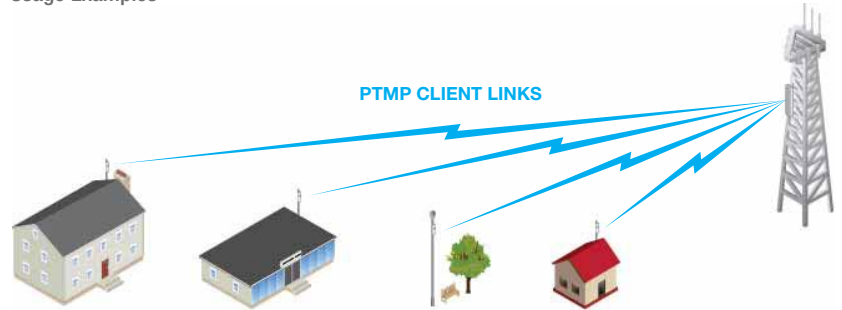
Overview

Leading Edge Industrial Design

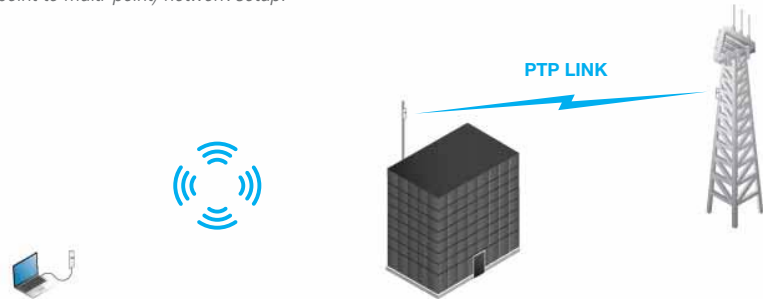
The original NanoStation set the bar for the world's first low-cost and efficiently designed outdoor broadband CPE. The new NanoStation M and NanoStation Loco M take the same concept to the future with new redesigned sleek and elegant form-factors along with integrated AirMax (MIMO TDMA Protocol) Technology.

The low cost, hi-performance, and small form factor of NanoStation M and NanoStation Loco M make them extremely versatile and ideal in several different applications (see diagrams on right for some usage examples).

Usage Examples



NanoStation M as powerful clients in an AirMax PTMP (point to multi-point) network setup.



NanoStation M as a powerful wireless client.

Use two NanoStation M to create a PTP link.

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.

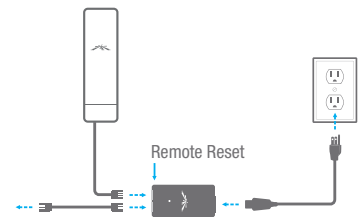
Dual Ethernet Connectivity*

The New NanoStation M provides a secondary ethernet port with software enabled POE output for seamless IP Video integration.



Intelligent POE**

Remote hardware reset circuitry of NanoStation M allows for device to be reset remotely from power supply location. In addition, any NanoStation can easily become 802.3af 48V compliant through use of Ubiquiti's Instant 802.3af adapter (sold separately).



* Only NanoStation M models.

** Remote reset is an additional option. Nanostation M comes standard as 24V without remote reset.

Models



[top] **NSM2** (2.4GHz, 10.4-11.2dBi), **NSM3** (3.4-3.7GHz, 12.2-13.7dBi), **NSM365** (3.65GHz, 12.2-13.7dBi), **NSM5** (5GHz, 14.6-16.1dBi)
[bottom left] **LOCOM9** (900MHz, 8dBi) [bottom right] **LOCOM2** (2.4GHz, 8.5dBi), **LOCOM5** (5GHz, 13dBi)

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 hi-performance outdoor multipoint networking.

Protocol Support

Ubiquiti Channelization

Spectral Width Adjust

ACK Auto-Timing

AAP Technology

Multi-Language Support



www.ubnt.com/airos

airView

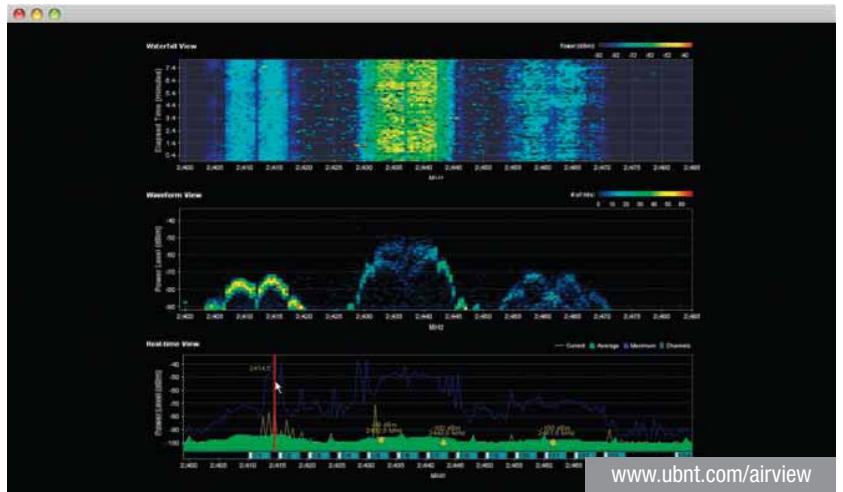
Integrated on all Ubiquiti M products, AirView provides Advanced Spectrum Analyzer Functionality: Waterfall, waveform, and real-time spectral views allow operators to identify noise signatures and plan their networks to minimize noise interference.

Waterfall Aggregate energy over time for each frequency.

Waveform Aggregate energy collected.

Real-time Energy is shown real-time as a function of frequency.

Recording Automize AirView to record and report results.



www.ubnt.com/airview

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/aircontrol

Specifications

System Information		
Processor Specs	Atheros MIPS 24KC, 400MHz	
LOCOM9		LOCOM, NSM
Memory Information	64MB SDRAM, 8MB Flash	32MB SDRAM, 8MB Flash
LOCOM		NSM
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				
	LOCOM9	M2, M5**	NSM3	NSM365
Wireless Approvals	FCC Part 15.247, IC RS210	FCC Part 15.247, IC RS210, CE	-	FCC Part 90Z
RoHS Compliance	YES			

Physical / Electrical / Environmental / Antenna			
Enclosure Characteristics	Outdoor UV Stabilized Plastic		
Mounting Kit	Pole Mounting Kit 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		
	LOCOM9	LOCOM	NSM
Dimensions	164 x 72 x 199 mm	163 x 31 x 80 mm	294 x 31 x 80 mm
Weight	0.9 kg	0.18 kg	0.4 kg 0.5 kg (M3/M365)
Power Supply (included)	24V, 1A POE	24V, 0.5A POE	24V, 0.5A POE 24V, 1A POE (M3/M365)
Max Power Consumption	6.5 Watts	5.5 Watts	8 Watts
Antenna Gain	8 dBi	8 dBi (M2) 13 dBi (M5)	11 dBi (M2) 13.7 dBi (M3/M365) 16 dBi (M5)
Polarization	Dual Linear		
RF Connector	External RP-SMA	-	-

Operating Frequency Summary (MHz)				
LOCOM9	M2**	NSM3	NSM365	M5**
902-928	2412-2462	3400-3700	3650-3675	5470-5825*

* Only 5745 - 5825 MHz is supported in the USA

** Applies to both NanoStation M and NanoStation Loco M models

Specifications (cont.) - LOCOM9

NanoStation Loco M9 - 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	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	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		

NanoStation Loco M9 - Antenna Information (for integrated 2x2 MIMO Antenna)

NanoStation Loco M9 also features a RP-SMA connector for a higher gain external antenna

Gain	7.5 dBi
Cross-pol Isolation	28 dB minimum
Max VSWR	1.3:1
Beamwidth	60 deg. (H-pol) / 60 deg (V-pol) / 60 deg (Elevation)

Return Loss

Vertical Azimuth

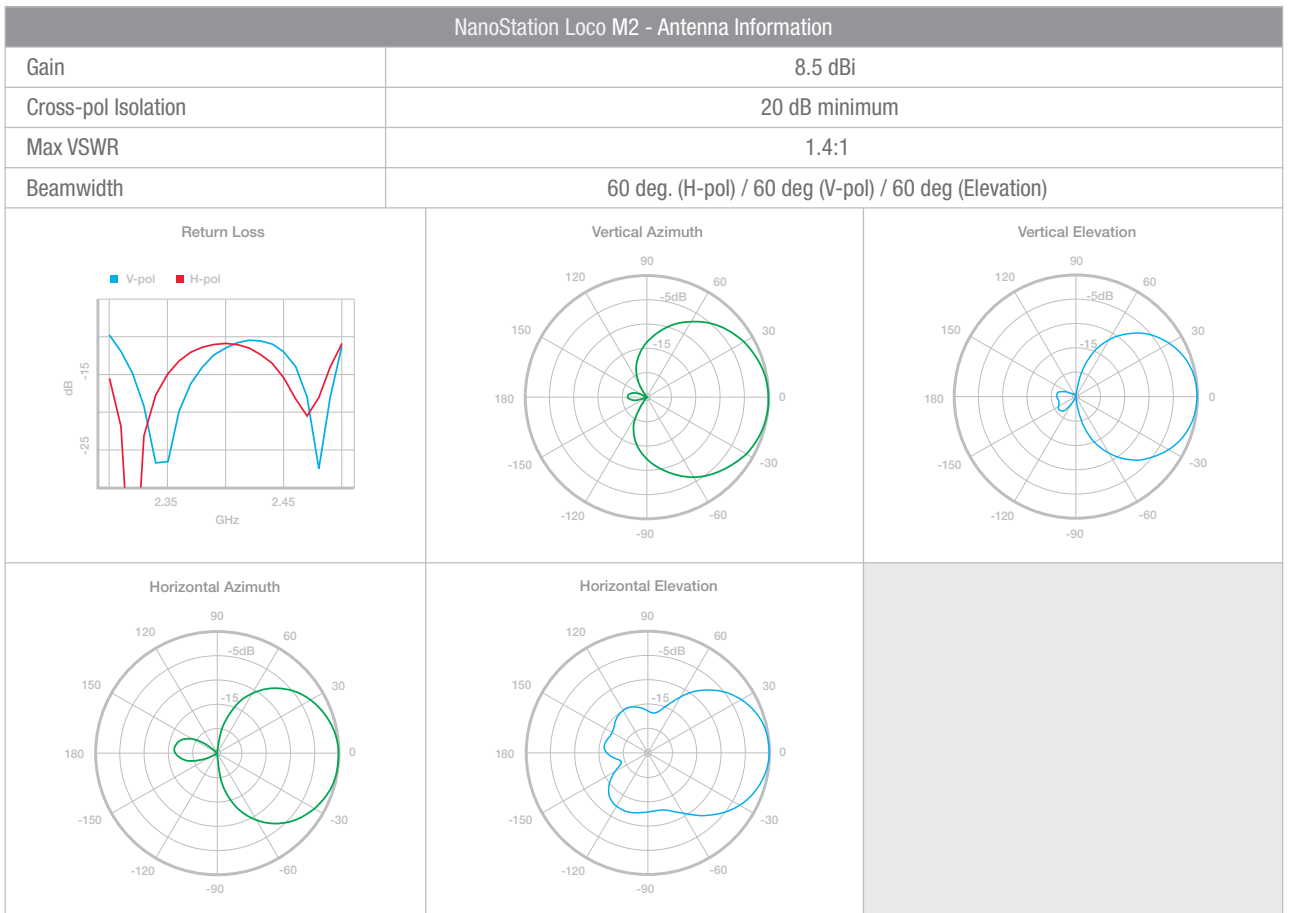
Vertical Elevation

Horizontal Azimuth

Horizontal Elevation

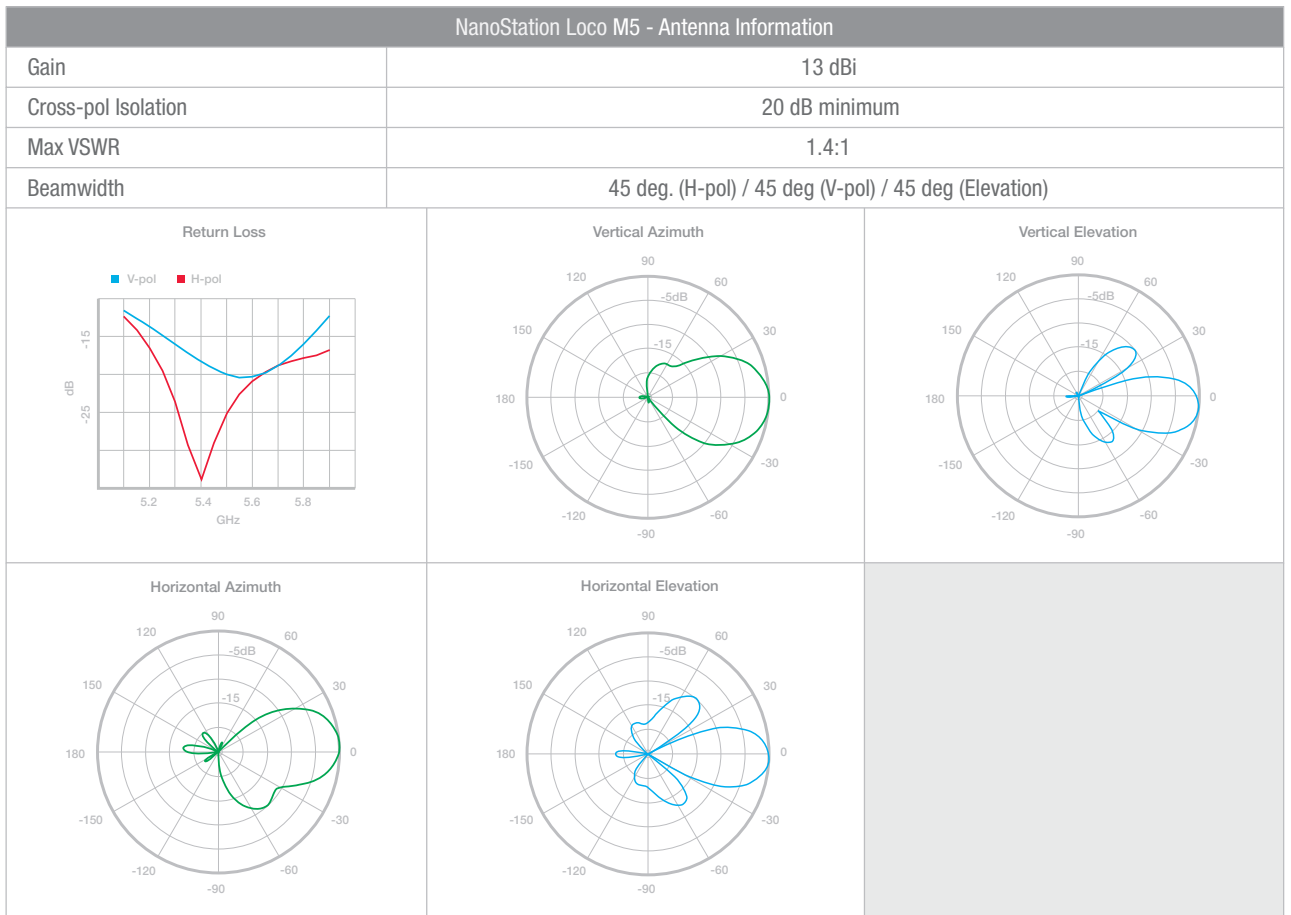
Specifications (cont.) - LOCOM2

NanoStation Loco M2 - Operating Frequency 2412-2462 MHz														
OUTPUT POWER: 23 dBm														
2.4 GHz TX POWER SPECIFICATIONS						2.4 GHz RX POWER SPECIFICATIONS								
		DataRate	Avg. TX	Tolerance			DataRate	Avg. TX	Tolerance					
11b / g		1-24 Mbps	23 dBm	+/- 2 dB	11b / g		1-24 Mbps	-83 dBm	+/- 2 dB	11b / g				
		36 Mbps	21 dBm	+/- 2 dB			36 Mbps	-80 dBm	+/- 2 dB			36 Mbps	-80 dBm	+/- 2 dB
		48 Mbps	19 dBm	+/- 2 dB			48 Mbps	-77 dBm	+/- 2 dB			48 Mbps	-77 dBm	+/- 2 dB
		54 Mbps	18 dBm	+/- 2 dB			54 Mbps	-75 dBm	+/- 2 dB			54 Mbps	-75 dBm	+/- 2 dB
11n / AirMax		MCS0	23 dBm	+/- 2 dB	11n / AirMax		MCS0	-96 dBm	+/- 2 dB	11n / AirMax				
		MCS1	23 dBm	+/- 2 dB			MCS1	-95 dBm	+/- 2 dB			MCS1	-95 dBm	+/- 2 dB
		MCS2	23 dBm	+/- 2 dB			MCS2	-92 dBm	+/- 2 dB			MCS2	-92 dBm	+/- 2 dB
		MCS3	23 dBm	+/- 2 dB			MCS3	-90 dBm	+/- 2 dB			MCS3	-90 dBm	+/- 2 dB
		MCS4	22 dBm	+/- 2 dB			MCS4	-86 dBm	+/- 2 dB			MCS4	-86 dBm	+/- 2 dB
		MCS5	20 dBm	+/- 2 dB			MCS5	-83 dBm	+/- 2 dB			MCS5	-83 dBm	+/- 2 dB
		MCS6	18 dBm	+/- 2 dB			MCS6	-77 dBm	+/- 2 dB			MCS6	-77 dBm	+/- 2 dB
		MCS7	17 dBm	+/- 2 dB			MCS7	-74 dBm	+/- 2 dB			MCS7	-74 dBm	+/- 2 dB
		MCS8	23 dBm	+/- 2 dB			MCS8	-95 dBm	+/- 2 dB			MCS8	-95 dBm	+/- 2 dB
		MCS9	23 dBm	+/- 2 dB			MCS9	-93 dBm	+/- 2 dB			MCS9	-93 dBm	+/- 2 dB
		MCS10	23 dBm	+/- 2 dB			MCS10	-90 dBm	+/- 2 dB			MCS10	-90 dBm	+/- 2 dB
		MCS11	23 dBm	+/- 2 dB			MCS11	-87 dBm	+/- 2 dB			MCS11	-87 dBm	+/- 2 dB
		MCS12	22 dBm	+/- 2 dB			MCS12	-84 dBm	+/- 2 dB			MCS12	-84 dBm	+/- 2 dB
		MCS13	20 dBm	+/- 2 dB			MCS13	-79 dBm	+/- 2 dB			MCS13	-79 dBm	+/- 2 dB
		MCS14	18 dBm	+/- 2 dB			MCS14	-78 dBm	+/- 2 dB			MCS14	-78 dBm	+/- 2 dB
	MCS15	17 dBm	+/- 2 dB		MCS15	-75 dBm	+/- 2 dB		MCS15	-75 dBm	+/- 2 dB			



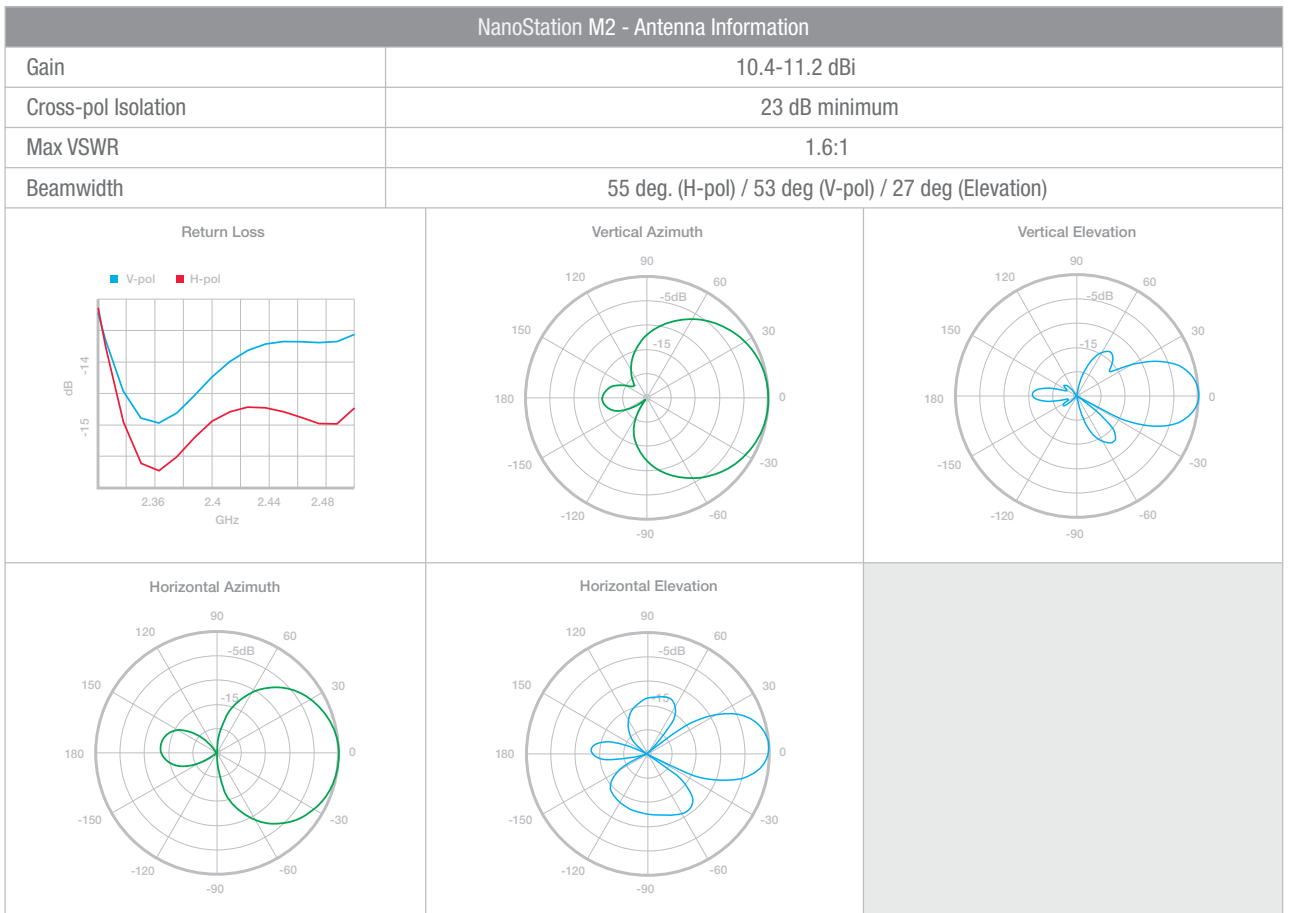
Specifications (cont.) - LOCOM5

NanoStation Loco M5 - Operating Frequency 5470-5825 MHz*							
OUTPUT POWER: 23 dBm							
5 GHz TX POWER SPECIFICATIONS				5 GHz RX POWER SPECIFICATIONS			
	DataRate	Avg. TX	Tolerance		DataRate	Avg. TX	Tolerance
11a	6-24 Mbps	23 dBm	+/- 2 dB	11a	6-24 Mbps	-83 dBm	+/- 2 dB
	36 Mbps	21 dBm	+/- 2 dB		36 Mbps	-80 dBm	+/- 2 dB
	48 Mbps	19 dBm	+/- 2 dB		48 Mbps	-77 dBm	+/- 2 dB
	54 Mbps	18 dBm	+/- 2 dB		54 Mbps	-75 dBm	+/- 2 dB
11n / AirMax	MCS0	23 dBm	+/- 2 dB	11n / AirMax	MCS0	-96 dBm	+/- 2 dB
	MCS1	23 dBm	+/- 2 dB		MCS1	-95 dBm	+/- 2 dB
	MCS2	23 dBm	+/- 2 dB		MCS2	-92 dBm	+/- 2 dB
	MCS3	23 dBm	+/- 2 dB		MCS3	-90 dBm	+/- 2 dB
	MCS4	22 dBm	+/- 2 dB		MCS4	-86 dBm	+/- 2 dB
	MCS5	20 dBm	+/- 2 dB		MCS5	-83 dBm	+/- 2 dB
	MCS6	18 dBm	+/- 2 dB		MCS6	-77 dBm	+/- 2 dB
	MCS7	17 dBm	+/- 2 dB		MCS7	-74 dBm	+/- 2 dB
	MCS8	23 dBm	+/- 2 dB		MCS8	-95 dBm	+/- 2 dB
	MCS9	23 dBm	+/- 2 dB		MCS9	-93 dBm	+/- 2 dB
	MCS10	23 dBm	+/- 2 dB		MCS10	-90 dBm	+/- 2 dB
	MCS11	23 dBm	+/- 2 dB		MCS11	-87 dBm	+/- 2 dB
	MCS12	22 dBm	+/- 2 dB		MCS12	-84 dBm	+/- 2 dB
	MCS13	20 dBm	+/- 2 dB		MCS13	-79 dBm	+/- 2 dB
	MCS14	18 dBm	+/- 2 dB		MCS14	-78 dBm	+/- 2 dB
MCS15	17 dBm	+/- 2 dB	MCS15	-75 dBm	+/- 2 dB		



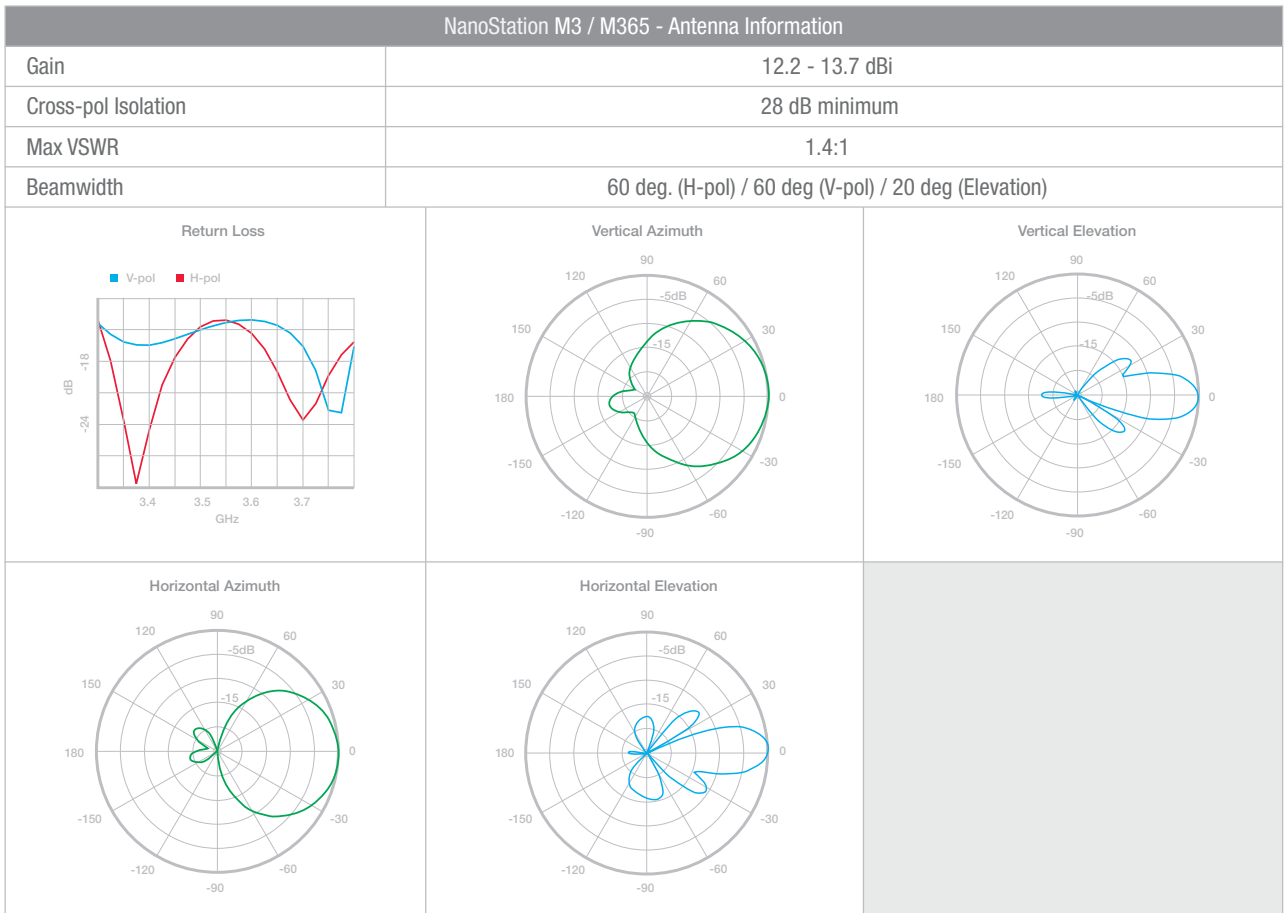
Specifications (cont.) - NSM2

NanoStation M2 - 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
11b / g	1-24 Mbps	28 dBm	+/- 2 dB	11b / g	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		



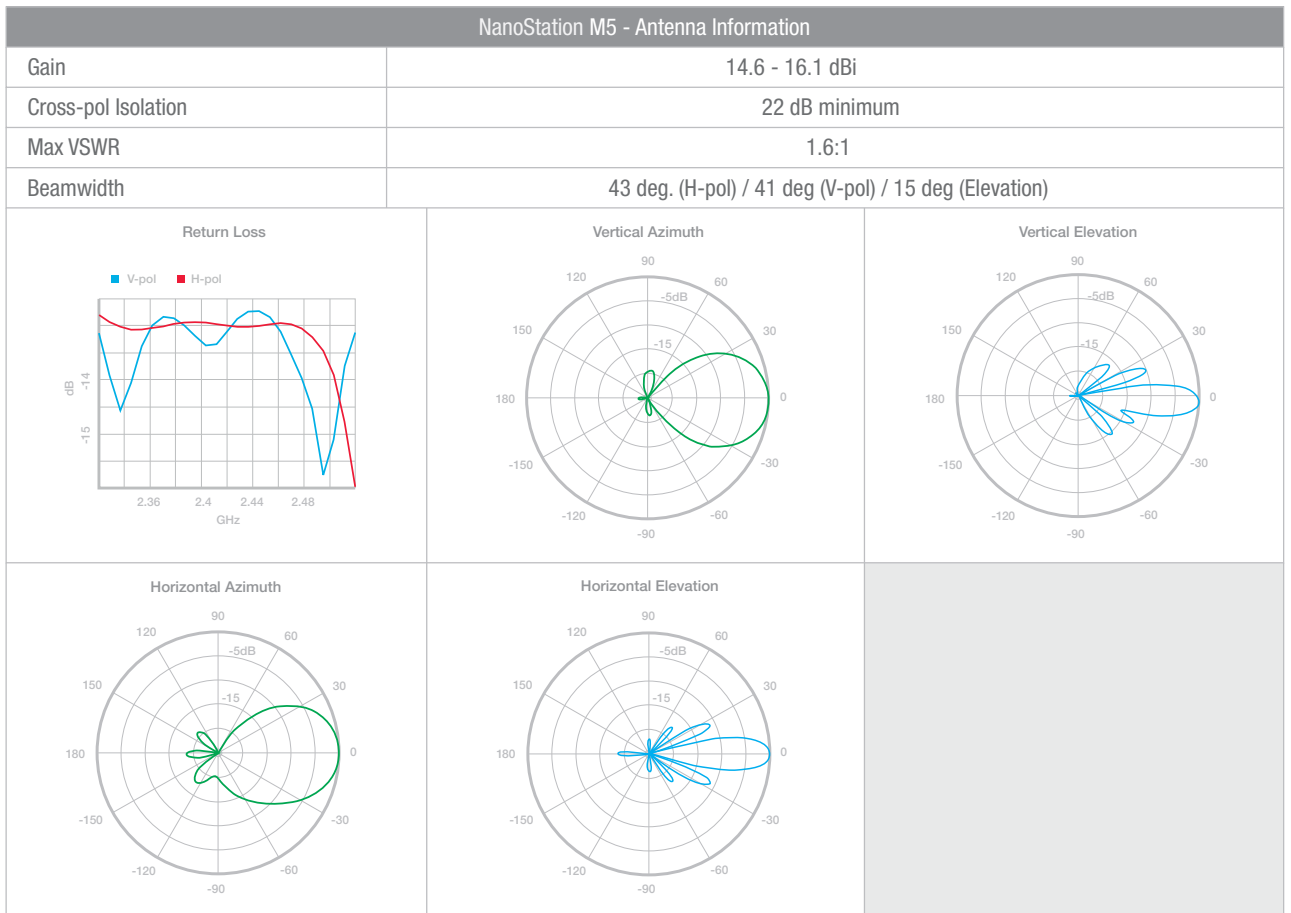
Specifications (cont.) - NSM3/NSM365

NanoStation M3 (3400-3700 MHz) / NanoStation M365 (3650-3675 MHz)							
OUTPUT POWER: 25 dBm							
TX POWER SPECIFICATIONS				RX POWER SPECIFICATIONS			
AirMax	MCS0	25 dBm	+/- 2 dB	AirMax	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
	MCS6	22 dBm	+/- 2 dB		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		



Specifications (cont.) - NSM5

NanoStation M5 - 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		



TOUGH Cable

OUTDOOR CARRIER CLASS SHIELDED

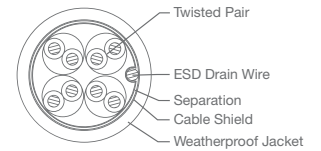
Protect your networks from the most brutal environments with Ubiquiti's industrial-grade shielded ethernet cable, TOUGH Cable.

Increase Performance Dramatically improve your ethernet link states, speeds, and overall performance with Ubiquiti TOUGH Cables.

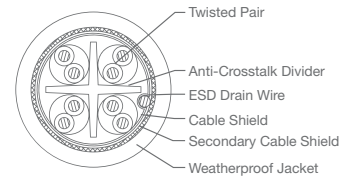
Extreme Weatherproof TOUGH Cables have been built to perform even in the harshest weather and environments.

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

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



LEVEL 1
SHIELDING PROTECTION



LEVEL 2
SHIELDING PROTECTION

Bulletproof your networks

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

Level 1 is a Category 5e (Up to 1Gbps Ethernet Support) Outdoor Carrier Class Shielded Cable.

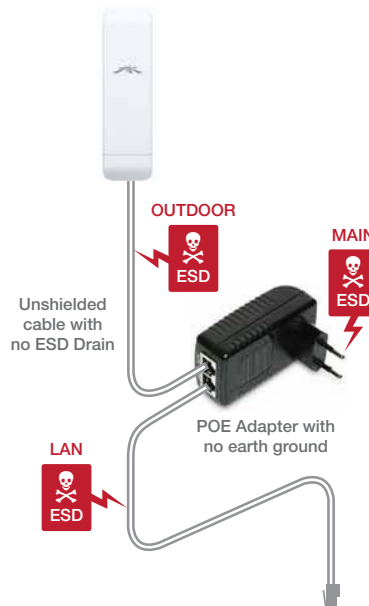
Level 2 is a Category 5e Enhanced Gigabit Performance (1Gbps Ethernet Support) Outdoor Carrier Class Shielded Cable.

Additional Information:

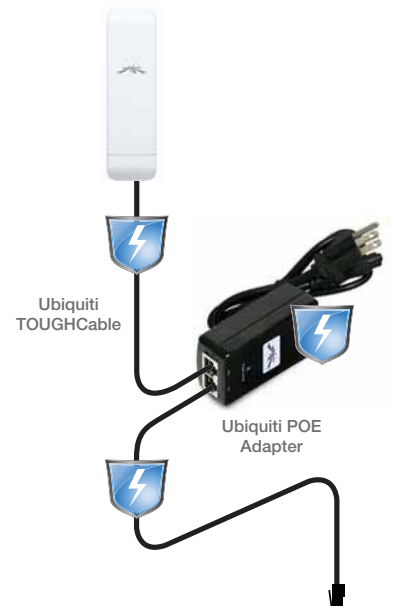
- 24 AWG copper conductor pairs
- ESD Drain Wire: 26 AWG integrated ESD Drain wire to prevent ESD attacks & damage.
- PVC outdoor rated jacket
- 0.35um foil shield
- Multi-Layered Shielding
- 1000ft (304.8m) length
- Use with TOUGH Cable Connectors (sold separately) for optimal performance

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 TOUGH Cable (sold separately), you can effectively eliminate ESD Attacks.





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.

NSM-DS-042911