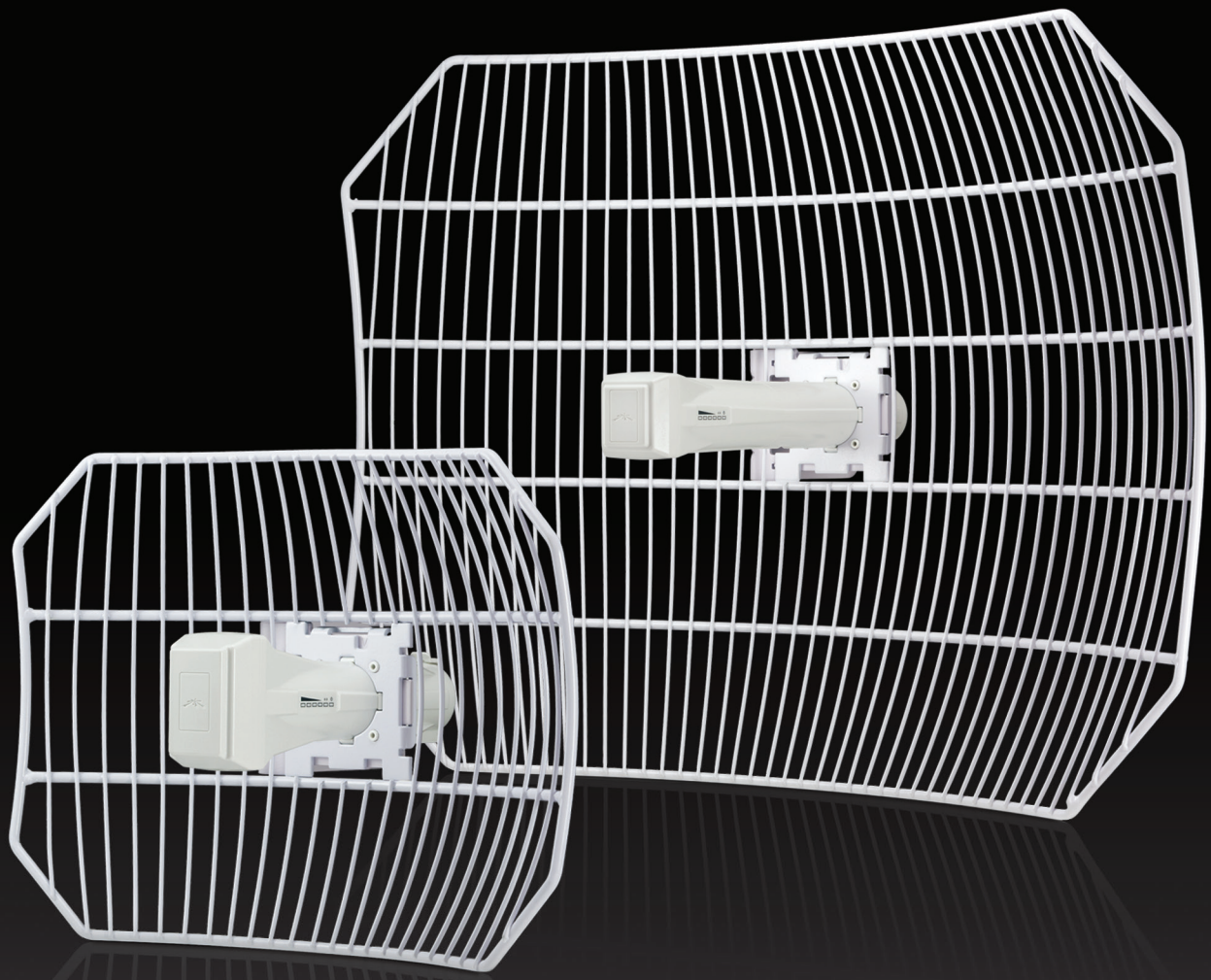
Datasheet

airGrid™ M



# airGrid™ M

## airMAX™ Wireless Broadband CPE

Models: AG-HP-2G16, AG-HP-2G20, AG-HP-5G23, AG-HP-5G27

High Performance, Long Range

Integrated InnerFeed™ CPE

Easy Assembly and Installation

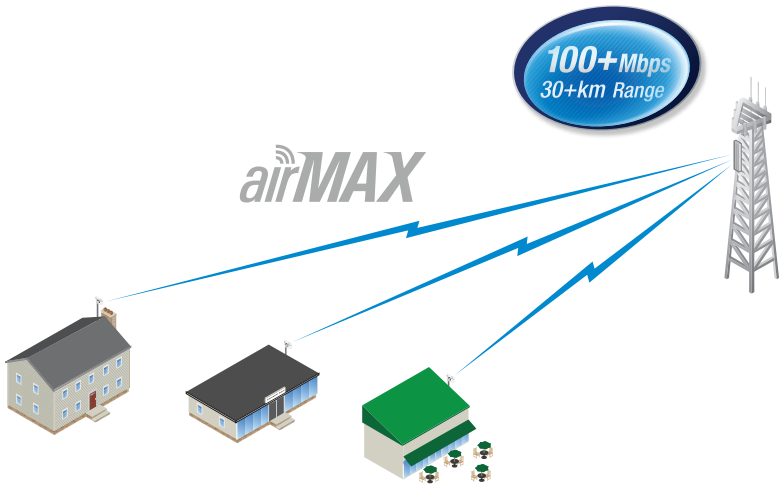
UBIQUITI™ NETWORKS

# airGrid™M

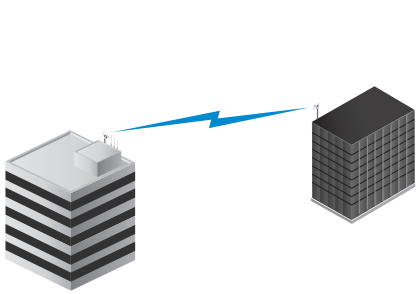
Utilizing InnerFeed™ technology, the new airGrid™M HP Series from Ubiquiti Networks™ represents the latest evolution of outdoor wireless broadband devices. The revolutionary InnerFeed technology integrates the entire radio system into the feedhorn of the antenna. airGridM combines Ubiquiti's InnerFeed and airMAX™ (TDMA protocol) technologies to create a simple, yet extremely powerful and robust wireless CPE (Customer Premises Equipment).

Complete antenna and radio system integration provides affordable cost/performance solutions to the wireless broadband industry. airGridM operates in the worldwide, license-free frequency range of either 2 GHz or 5 GHz, and features breakthrough performance up to 100+ Mbps in real outdoor throughput and incredible range up to 30+ km.

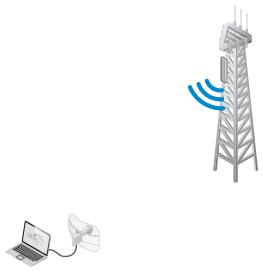
The low-cost, high-performance, robust "all-in-one" design and light weight of airGridM make it versatile and ideal in several different applications.




*airGridM as a cost-effective CPE in an airMAX Point-to-Multi-Point network.*



*Use an airGridM on each side of a Point-to-Point link to create a reliable connection.*



*airGridM as a powerful wireless client.*

## Integrated airMAX Technology

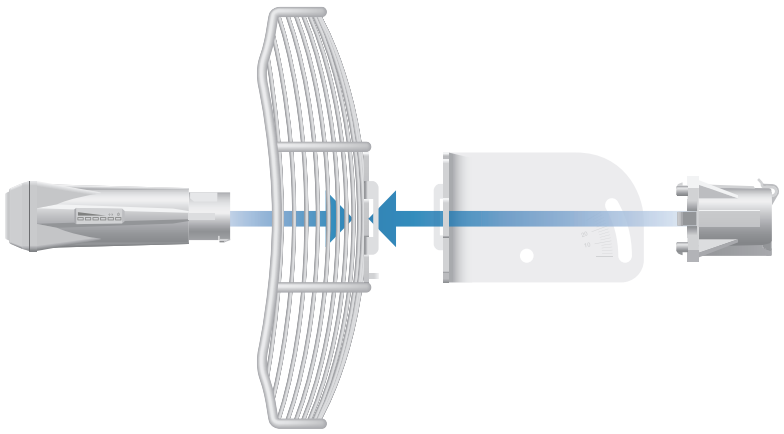
Unlike standard Wi-Fi protocol, the exclusive Ubiquiti Networks airMAX Time Division Multiple Access (TDMA) protocol allows each client to send and receive data using pre-designated time slots managed by an intelligent AP controller. This "time slot" method eliminates hidden node collisions and maximizes airtime efficiency.

Compared to other systems in its class, the airGridM delivers superior performance in reduced latency, throughput, and scalability.

- **Intelligent QoS** Priority is given to voice/video for seamless access.
- **Scalability** High capacity and scalability.
- **Long Distance** Capable of high-speed, 30+ km links.

## Easy, No Tool Assembly

The updated mechanical design makes assembling and disassembling the airGridM, literally, a snap. No tools are required.



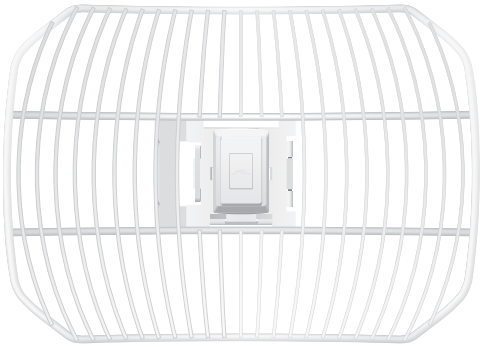
You simply snap the feed, antenna, mounting bracket and rear housing together for a secure, solid assembly.

# Models

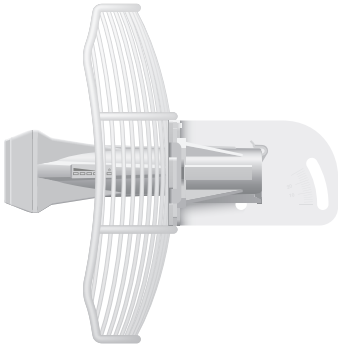
## airGrid M2 HP

**Model: AG-HP-2G16**

- 2412 - 2462 MHz
- 16 dBi
- Antenna Size: 370 x 270 mm



**Front View**

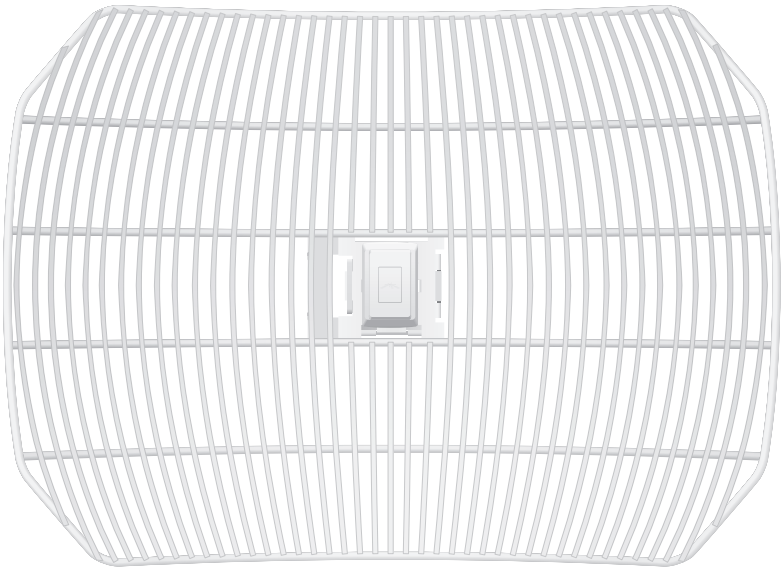


**Side View**

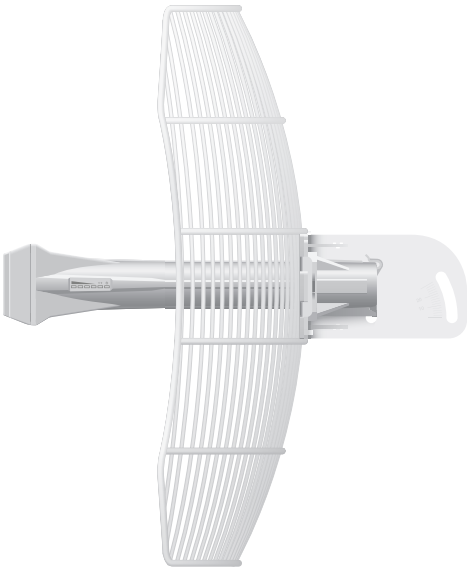
## airGrid M2 HP

**Model: AG-HP-2G20**

- 2412 - 2462 MHz
- 20 dBi
- Antenna Size: 620 x 460 mm



**Front View**



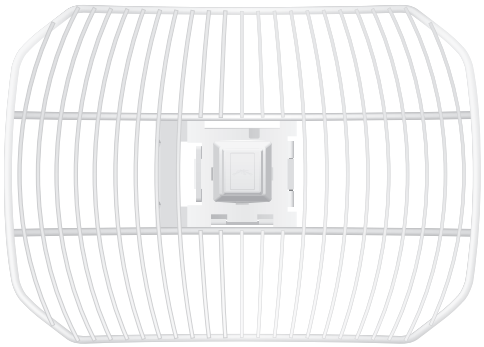
**Side View**

# Models

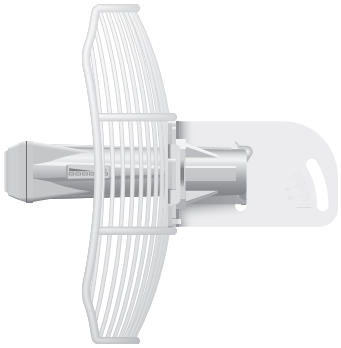
## airGrid M5 HP

**Model: AG-HP-5G23**

- Worldwide: 5170 – 5875 MHz
- India: 5825 – 5875 MHz
- USA: 5725 – 5850 MHz
- 23 dBi
- Antenna Size: 370 x 270 mm



**Front View**

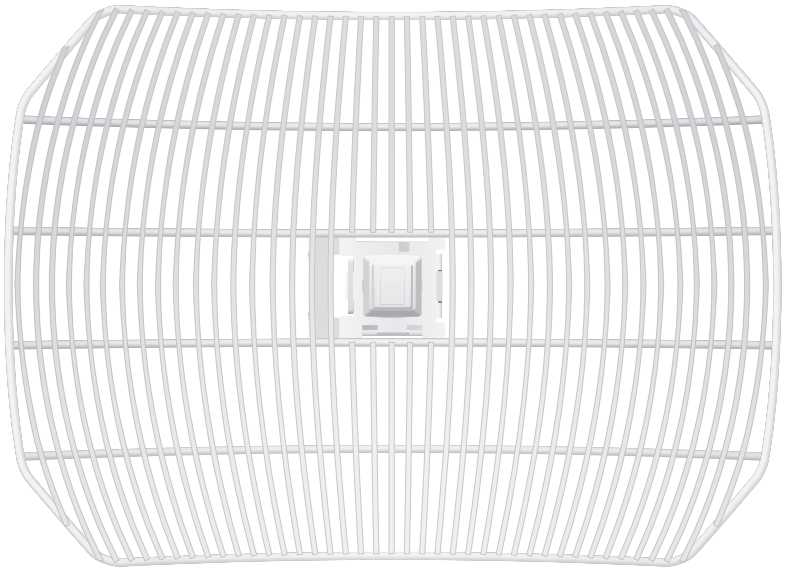


**Side View**

## airGrid M5 HP

**Model: AG-HP-5G27**

- Worldwide: 5170 – 5875 MHz
- India: 5825 – 5875 MHz
- USA: 5725 – 5850 MHz
- 27 dBi
- Antenna Size: 620 x 460 mm



**Front View**

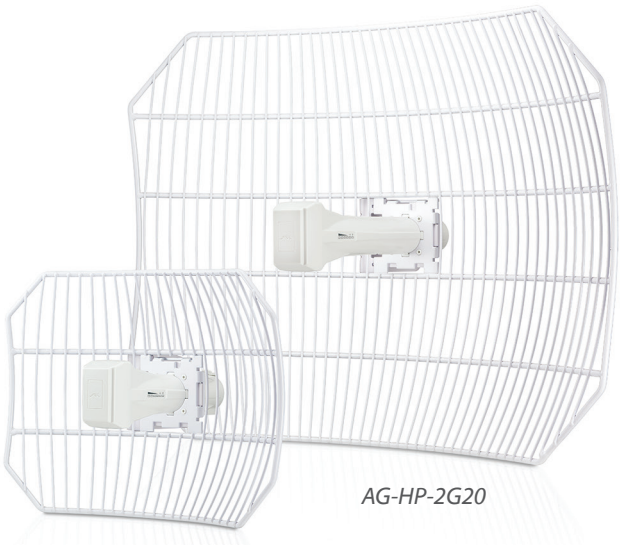
**Side View**

# Specifications

| System Information | |
|---|---|
| Processor Specs | Atheros MIPS 24KC, 400 MHz |
| Memory Information | 32 MB SDRAM, 8 MB Flash |
| Networking Interface | (1) 10/100 Ethernet Port |

| Regulatory / Compliance Information | |
|---|---|
| Wireless Approvals | FCC Part 15.247, IC RS210, CE |
| RoHS Compliance | Yes |

| Physical / Electrical / Environmental | |
|---|---|
| Enclosure Characteristics | Outdoor UV Stabilized Plastic |
| Mounting Kit | Pole Mounting Kit (Included) |
| Max. Power Consumption | 3 W |
| Power Supply | 24V, 0.5A PoE Adapter (Included) |
| Power Method | Passive Power over Ethernet (Pairs 4, 5+; 7, 8 Return) |
| Operating Temperature | -30 to 75° C |
| Operating Humidity | 5 to 95% Condensing |
| Shock and Vibration | ETSI300-019-1.4 |
| ETSI Specification | EN 302 326 DN2 |



*AG-HP-2G20*

*AG-HP-2G16*

*AG-HP-5G27*

*AG-HP-5G23*

www.ubnt.com/airgrid

# airGrid™ M2HP

**Model: AG-HP-2G16**

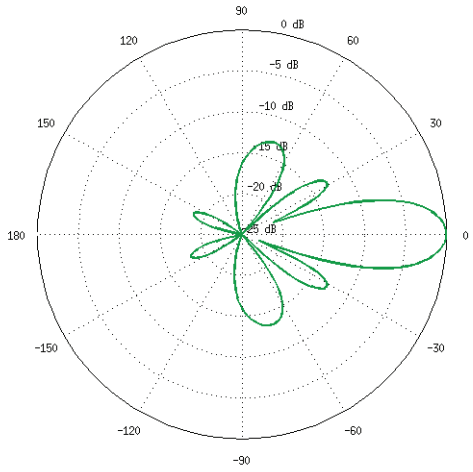
| AG-HP-2G16 Specifications | |
|---|---|
| Dimensions | 370 x 270 x 270 mm (Mount Included) |
| Weight | 1478 g (Mount Included) |
| Wind Survivability | 125 mph |
| Wind Loading | 8 lbf @ 125 mph |

| Antenna / Radio Information | |
|---|---|
| Operating Frequency | 2412 - 2462 MHz |
| Output Power | 28 dBm |
| Max. VSWR | 1.5:1 |
| Gain | 16 dBi |

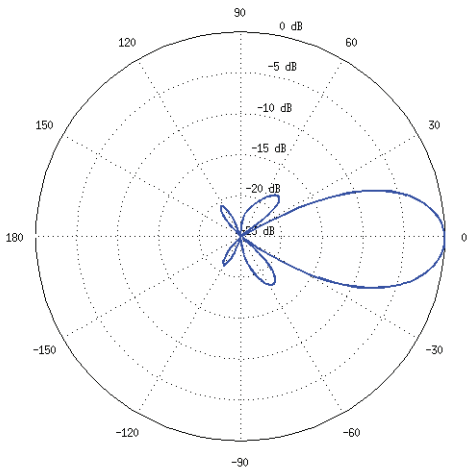
| TX Power Specifications | | | | RX Power Specifications | | | |
|---|---|---|---|---|---|---|---|
| Modulation | Data Rate | Avg. TX | Tolerance | Modulation | Data Rate | Sensitivity | Tolerance |
| 11g | 1 - 24 Mbps | 28 dBm | ± 2 dB | 11g | 1 - 24 Mbps | -97 dBm min. | ± 2 dB |
| | 36 Mbps | 26 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 |

## Antenna Polar Plots

Azimuth




Elevation



# airGrid™ M2HP

**Model: AG-HP-2G20**

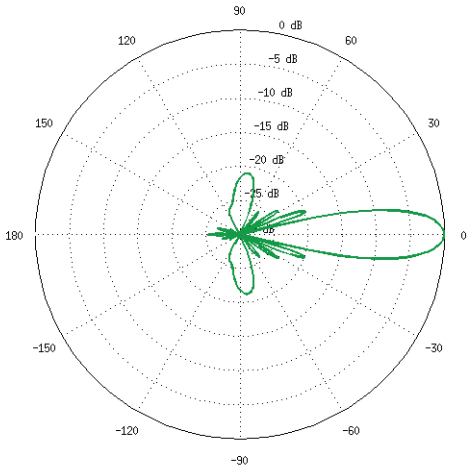
| AG-HP-2G20 Specifications | |
|---|---|
| Dimensions | 620 X 460 X 390 mm (Mount Included) |
| Weight | 2603 g (Mount Included) |
| Wind Survivability | 125 mph |
| Wind Loading | 8 lbf @ 125 mph |

| Antenna / Radio Information | |
|---|---|
| Operating Frequency | 2412 - 2462 MHz |
| Output Power | 28 dBm |
| Max. VSWR | 1.5:1 |
| Gain | 20 dBi |

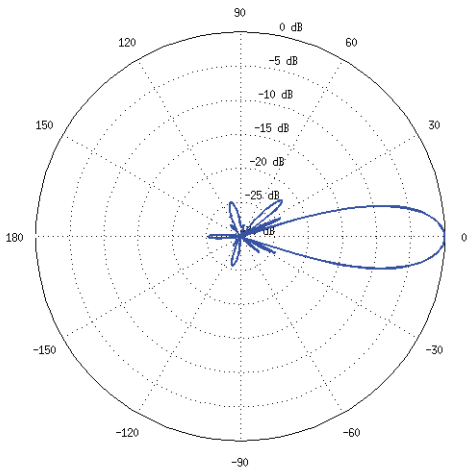
| TX Power Specifications | | | | RX Power Specifications | | | |
|---|---|---|---|---|---|---|---|
| Modulation | Data Rate | Avg. TX | Tolerance | Modulation | Data Rate | Sensitivity | Tolerance |
| 11g | 1 - 24 Mbps | 28 dBm | ± 2 dB | 11g | 1 - 24 Mbps | -97 dBm min. | ± 2 dB |
| | 36 Mbps | 26 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 |

## Antenna Polar Plots

Azimuth




Elevation



# airGrid™ M5HP

**Model: AG-HP-5G23**

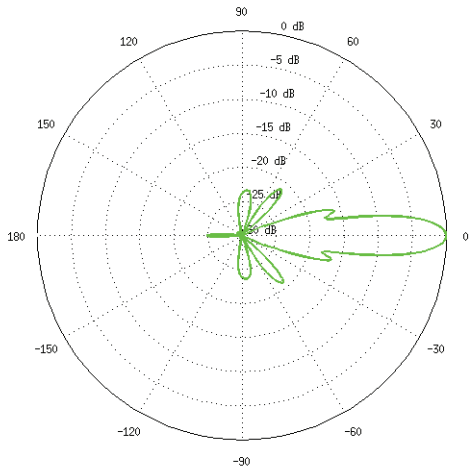
| AG-HP-5G23 Specifications | |
|---|---|
| Dimensions | 370 x 270 x 260 mm (Mount Included) |
| Weight | 1452 g (Mount Included) |
| Wind Survivability | 125 mph |
| Wind Loading | 8 lbf @ 125 mph |

| Antenna / Radio Information | |
|---|---|
| Operating Frequency | Worldwide: 5170 – 5875 MHz<br>USA: 5725 – 5850 MHz |
| Output Power | 25 dBm |
| Max. VSWR | 1.5:1 |
| Gain | 23 dBi |

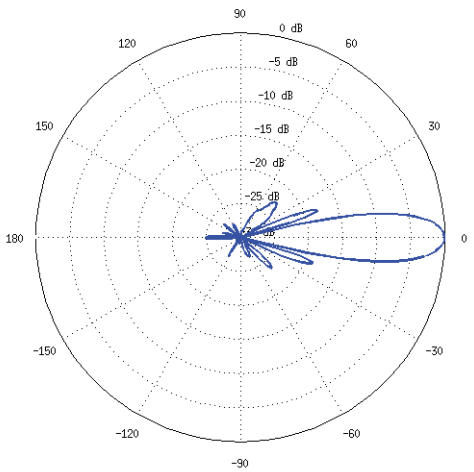
| TX Power Specifications | | | | RX Power Specifications | | | |
|---|---|---|---|---|---|---|---|
| Modulation | Data Rate | Avg. TX | Tolerance | Modulation | Data Rate | Sensitivity | Tolerance |
| 11a | 1 - 24 Mbps | 25 dBm | ± 2 dB | 11a | 1 - 24 Mbps | -97 dBm min. | ± 2 dB |
| | 36 Mbps | 24 dBm | ± 2 dB | | 36 Mbps | -90 dBm | ± 2 dB |
| | 48 Mbps | 22 dBm | ± 2 dB | | 48 Mbps | -86 dBm | ± 2 dB |
| | 54 Mbps | 21 dBm | ± 2 dB | | 54 Mbps | -84 dBm | ± 2 dB |
| | | | | | | | |
| 11n / airMAX | MCS0 | 25 dBm | ± 2 dB | 11n / airMAX | MCS0 | -97 dBm | ± 2 dB |
| | MCS1 | 25 dBm | ± 2 dB | | MCS1 | -96 dBm | ± 2 dB |
| | MCS2 | 25 dBm | ± 2 dB | | MCS2 | -93 dBm | ± 2 dB |
| | MCS3 | 24 dBm | ± 2 dB | | MCS3 | -91 dBm | ± 2 dB |
| | MCS4 | 23 dBm | ± 2 dB | | MCS4 | -87 dBm | ± 2 dB |
| | MCS5 | 22 dBm | ± 2 dB | | MCS5 | -84 dBm | ± 2 dB |
| | MCS6 | 21 dBm | ± 2 dB | | MCS6 | -78 dBm | ± 2 dB |
| | MCS7 | 19 dBm | ± 2 dB | | MCS7 | -75 dBm | ± 2 dB |

## Antenna Polar Plots

Azimuth




Elevation



# airGrid™ M5HP

**Model: AG-HP-5G27**

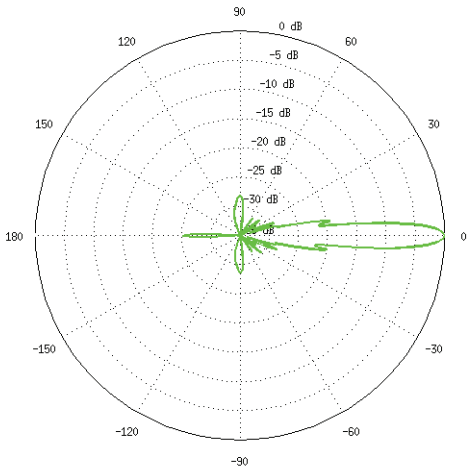
| AG-HP-5G27 Specifications | |
|---|---|
| Dimensions | 620 x 460 x 360 mm (Mount Included) |
| Weight | 2585 g (Mount Included) |
| Wind Survivability | 125 mph |
| Wind Loading | 8 lbf @ 125 mph |

| Antenna / Radio Information | |
|---|---|
| Operating Frequency | Worldwide: 5170 – 5875 MHz<br>USA: 5725 – 5850 MHz |
| Output Power | 25 dBm |
| Max. VSWR | 1.5:1 |
| Gain | 27 dBi |

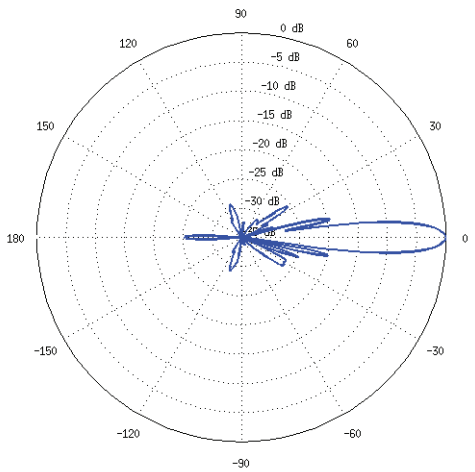
| TX Power Specifications | | | | RX Power Specifications | | | |
|---|---|---|---|---|---|---|---|
| Modulation | Data Rate | Avg. TX | Tolerance | Modulation | Data Rate | Sensitivity | Tolerance |
| 11a | 1 - 24 Mbps | 25 dBm | ± 2 dB | 11a | 1 - 24 Mbps | -97 dBm min. | ± 2 dB |
| | 36 Mbps | 24 dBm | ± 2 dB | | 36 Mbps | -90 dBm | ± 2 dB |
| | 48 Mbps | 22 dBm | ± 2 dB | | 48 Mbps | -86 dBm | ± 2 dB |
| | 54 Mbps | 21 dBm | ± 2 dB | | 54 Mbps | -84 dBm | ± 2 dB |
| | | | | | | | |
| 11n / airMAX | MCS0 | 25 dBm | ± 2 dB | 11n / airMAX | MCS0 | -97 dBm | ± 2 dB |
| | MCS1 | 25 dBm | ± 2 dB | | MCS1 | -96 dBm | ± 2 dB |
| | MCS2 | 25 dBm | ± 2 dB | | MCS2 | -93 dBm | ± 2 dB |
| | MCS3 | 24 dBm | ± 2 dB | | MCS3 | -91 dBm | ± 2 dB |
| | MCS4 | 23 dBm | ± 2 dB | | MCS4 | -87 dBm | ± 2 dB |
| | MCS5 | 22 dBm | ± 2 dB | | MCS5 | -84 dBm | ± 2 dB |
| | MCS6 | 21 dBm | ± 2 dB | | MCS6 | -78 dBm | ± 2 dB |
| | MCS7 | 19 dBm | ± 2 dB | | MCS7 | -75 dBm | ± 2 dB |

## Antenna Polar Plots

Azimuth




Elevation



# 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

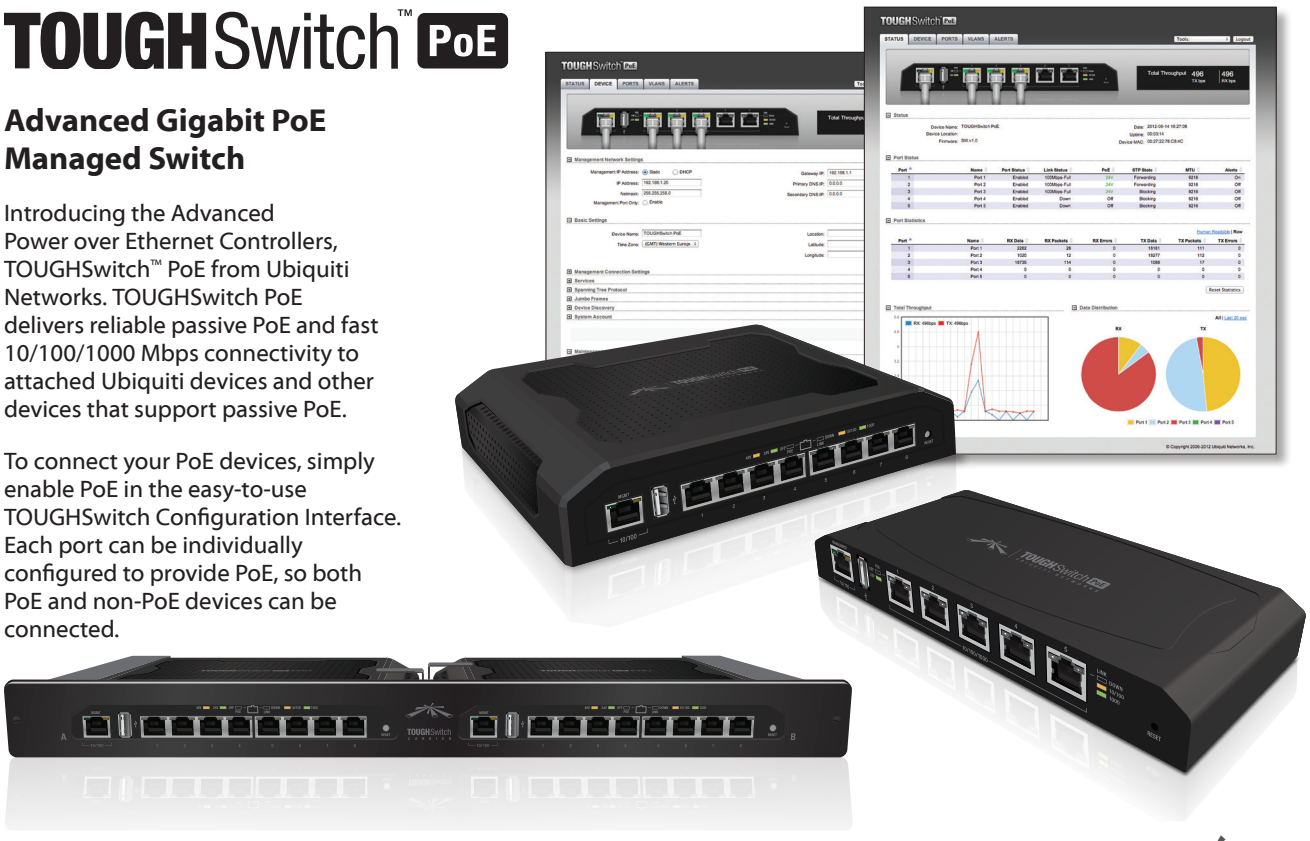
Specifically designed for use with Ubiquiti TOUGHCables, TOUGHCable Connectors protect against ESD attacks and Ethernet hardware damage, while allowing rapid field deployment without soldering. The standard TOUGHCable Connectors are available in 100-pc. bags, while the TC-GND versions include ground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

# TOUGHSwitch™ PoE

## Advanced Gigabit PoE Managed Switch

Introducing the Advanced Power over Ethernet Controllers, TOUGHSwitch™ PoE from Ubiquiti Networks. TOUGHSwitch PoE delivers reliable passive PoE and fast 10/100/1000 Mbps connectivity to attached Ubiquiti devices and other devices that support passive PoE.

To connect your PoE devices, simply enable PoE in the easy-to-use TOUGHSwitch Configuration Interface. Each port can be individually configured to provide PoE, so both PoE and non-PoE devices can be connected.




UBIQUITI NETWORKS

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