

# What Is AirMax?



AirOS 5

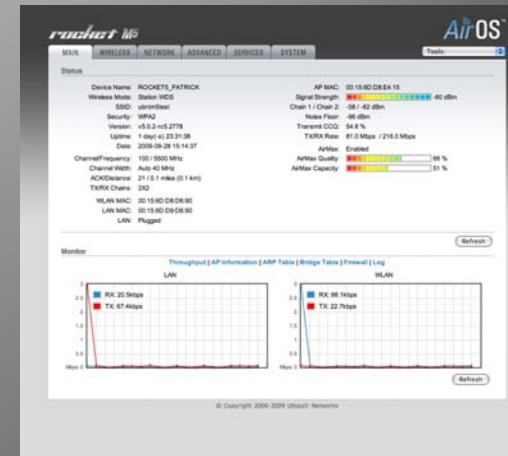
## AirMax Products



Hardware Accelerated



MIMO TDMA Protocol



## AirMax MIMO Antennas



## AirControl



# AirMax Protocol Benefits



## SCALABILITY



-802.11 protocol (based on carrier sensing) was designed for indoor networks where clients can “hear” one another. AirMax Protocol (based on TDMA) was designed for outdoors; hidden nodes are no problem.

## LATENCY



-AirMax protocol has “smart polling” which senses voice/video packets and gives them priority. It also provides priority to “active” clients over “idle” ones to optimize perceived latency on large networks.

## SPEED



-AirMax is based on latest 1x1 and 2x2 MIMO radio technology. 150Mbps+ real TCP/IP throughput in PtP mode and 100Mbps+ in PtMP

# AirMax Products



## AirMax BaseStation Platform



*rocket M5*

## AirMax Station Platform



*BULLET M5*



*NanoStation loco M5*



*NanoStation M5*



*PicoStation M5*



*aWire*

# Rocket M Base Station



- Powerful BaseStation Hardware. 400MHz MIPS 24K, 64MB RAM
- 2x2 MIMO Radio; delivers speeds more than 5x previous solutions
- Ubiquiti Radio Front-End Design; hi-power, RX sensitivity, ACR performance
- Rugged enclosure design; will survive most extreme conditions
- Easily “snaps in” to any AirMax Sector or Dish Antenna for complete base station or backhaul solution

# Bullet M Series



- No special MIMO antenna required; works with existing antennas
- Capable of 100Mbps Real TCP/IP throughput (4x 802.11a/b/g Bullet)
- Ubiquiti Radio Front-End Design; hi-power, RX sensitivity, ACR performance
- No RF cables required; can “plug in” to most grid and omni antennas
- Powerful enough to be used as a PtMP Base Station, CPE, as well as in PtP applications

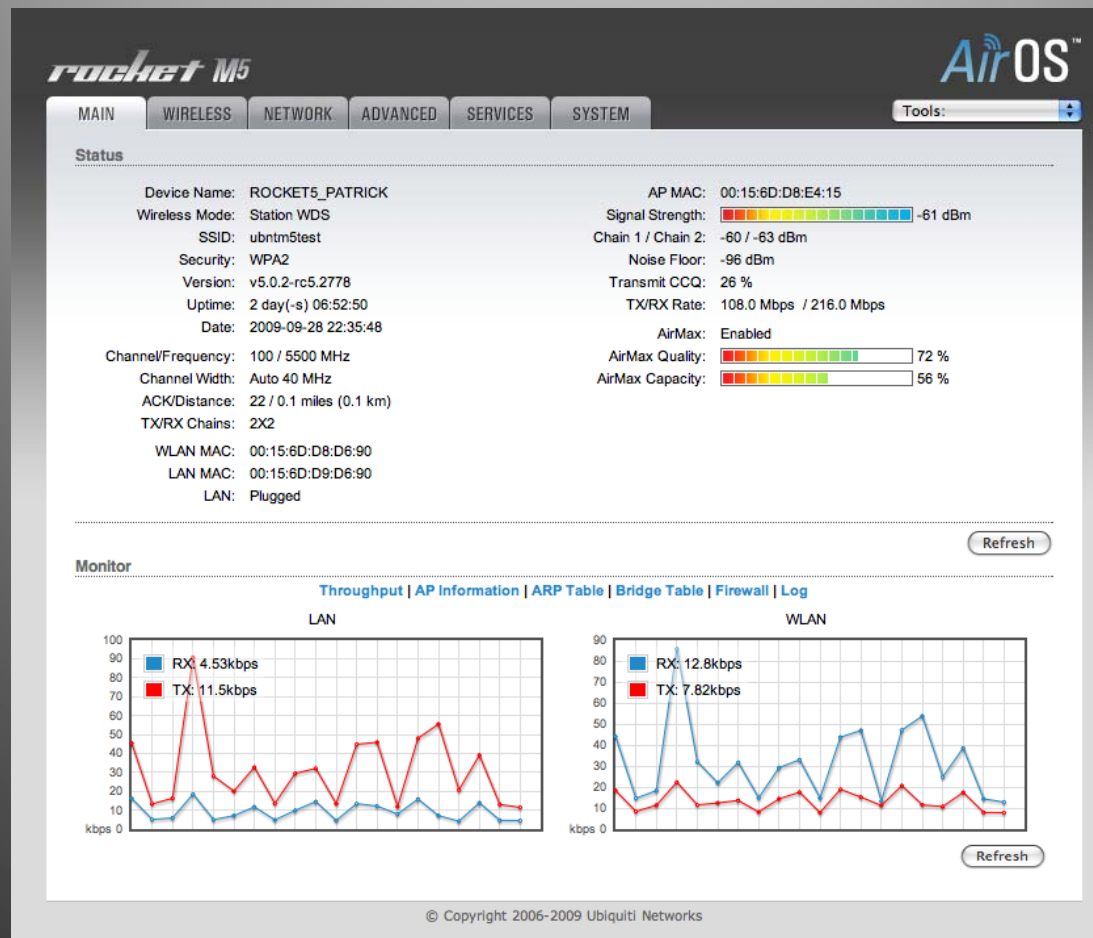
# NanoStation M



- Ubiquiti's most versatile station product. Can be used for CPE, AP, PtP bridging, or video surveillance networks
- New 16dBi MIMO Antenna Array Design
- New Secondary Ethernet port with software enabled POE output
- More than 5x faster than 802.11a/b/g NanoStation
- Ubiquiti Radio Front-End Design; hi-power, RX sensitivity, ACR performance



# Air OS V



- Air Max Capacity (AMC) and Air Max Quality (AMQ) metrics
- New UI look and feel
- 5/10/20/40MHz Channel Options
- Advanced QoS functionality (4 levels)

# Air Control



**airControl** Welcome ubnt | Settings | Logout

Devices Firmware System Log

Scan Total 41 Managed 27 UnManaged 14 Errored 2 Live Log (Field...) contains

Status	Host Name	IP Address	MAC	Product	AMC	Version	Signal
○	ROCKETS_PATRI...	192.168.1.103	00:15:6D:D8:D6:90	Rocket M5	53%	v5.0.2-rc5	-60 dBm
○	UBNT	192.168.1.101	00:15:6D:D8:E2:DD	Bullet M2	50%	v5.0.2-rc2	-96 dBm
○	UBNT	192.168.1.34	00:15:6D:D8:E2:90	Bullet M2	43%	v5.0.2-rc5	-54 dBm
○	UBNT	192.168.1.80	00:15:6D:D8:E2:6C	Bullet M5	39%	v5.0.2-rc5	-65 dBm
○	UBNT	192.168.1.72	00:15:6D:D8:E2:97	Bullet M5	39%	v5.0.2-rc5	-66 dBm
○	UBNT	192.168.1.76	00:15:6D:D8:E3:10	Bullet M5	39%	v5.0.2-rc5	-62 dBm
○	UBNT	192.168.1.62	00:15:6D:D8:E2:AE	Bullet M5	37%	v5.0.2-rc5	-64 dBm
○	UBNT-BSN-FORD	192.168.1.138	00:15:6D:D8:E3:12	Bullet M5	35%	v5.0.2-rc5	-58 dBm
○	UBNT	192.168.1.79	00:15:6D:D8:E2:94	Bullet M5	34%	v5.0.2-rc5	-65 dBm
○	UBNT Nano5NAP	192.168.1.139	00:15:6D:D8:E4:15	Nano M5	34%	v5.0.2-rc5	-69 dBm
○	UBNT	192.168.1.73	00:15:6D:D8:E2:80	Bullet M5	33%	v5.0.2-rc5	-64 dBm
○	UBNT	192.168.1.68	00:15:6D:D8:E2:9B	Bullet M5	33%	v5.0.2-rc5	-68 dBm
○	UBNT	192.168.1.63	00:15:6D:D8:E2:52	Bullet M5	33%	v5.0.2-rc5	-66 dBm
○	UBNT	192.168.1.58	00:15:6D:D8:E2:5E	Bullet M5	32%	v5.0.2-rc5	-63 dBm
○	UBNT	192.168.1.70	00:15:6D:D8:E2:9D	Bullet M5	32%	v5.0.2-rc5	-67 dBm
○	UBNT	192.168.1.74	00:15:6D:D8:E2:6E	Bullet M5	31%	v5.0.2-rc5	-68 dBm
○	UBNT	192.168.1.66	00:15:6D:D8:E2:66	Bullet M5	31%	v5.0.2-rc5	-65 dBm

AP-Groups: UBNT M2TEST Office 1, ubntmTest, usb-poll, ubnt, Office NS2 1, Unknown, In-progress, Firmware: 5.0.2-rc5, 5.0.2, 5.0.2-rc2, 3.4, 5.1-devel, 3.4-rc

Device(s) Selected: 1

Device Details: Host Name: ROCKETS\_PATRICK, IP Address: 192.168.1.103, MAC: 00:15:6D:D8:D6:90, Product: Rocket M5, Description: ROCKETS\_PATRICK, Last Contact: 2009-09-28 21:16:37.421, ESSID: ubntmTest, Uptime: 2 days 08:18:19, wlanTxRate: 162.0, wlanRxRate: 216.0, wlanTxErrors: 1, wlanRxErrors: 0

Recent Events: 2009-09-29 02:47:03 Device operation failed: Failed to convert value of type [java...]

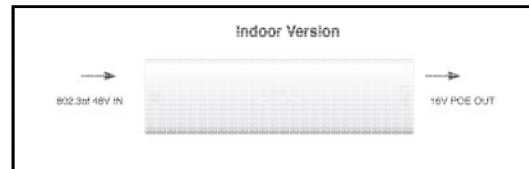
- Manage 100's of Ubiquiti Devices
- Access your network from anywhere; only need a web browser
- Customize "groups" including SSID and FW version
- Mass firmware upgrade capability



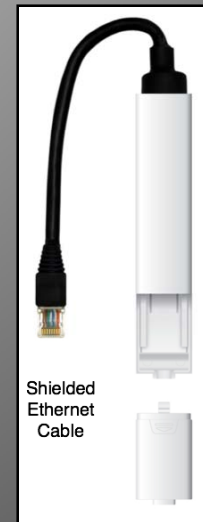
# Instant802.3af Adapter



**802.3af 48V Switch**



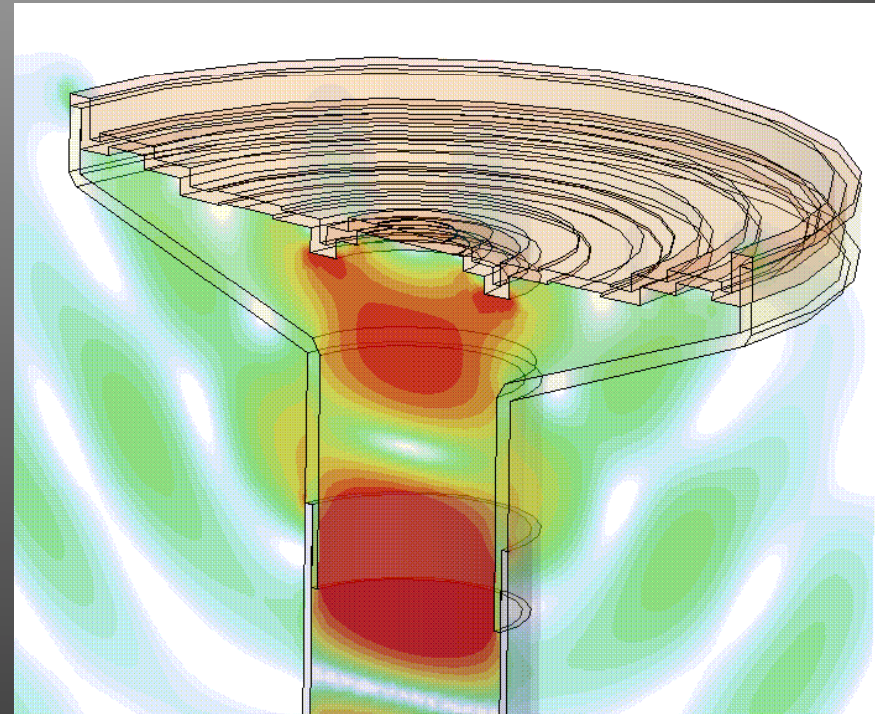
**Outdoor Version**



- Standard compliant 802.3af 48V input
- 18V / 0.7A passive POE output
- Compatible with all Ubiquiti products and most 3<sup>rd</sup> party products
- Enables use of professional 802.3af 48V Switches with Ubiquiti products
- Ideal for long cable run lengths as higher voltage / lower current will have less power loss

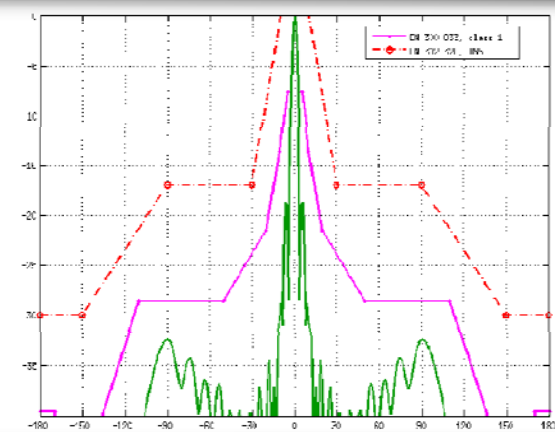
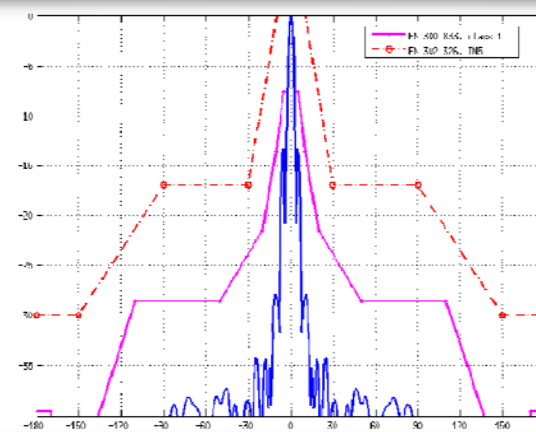
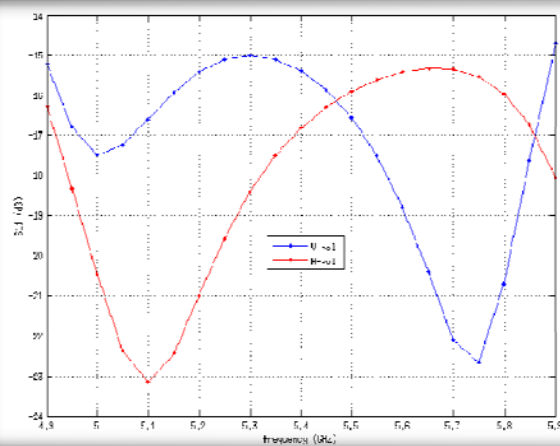
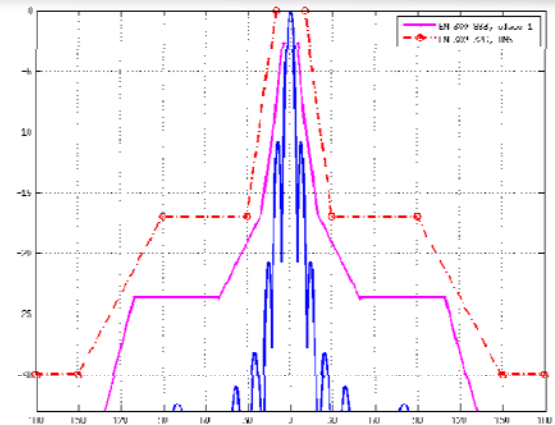
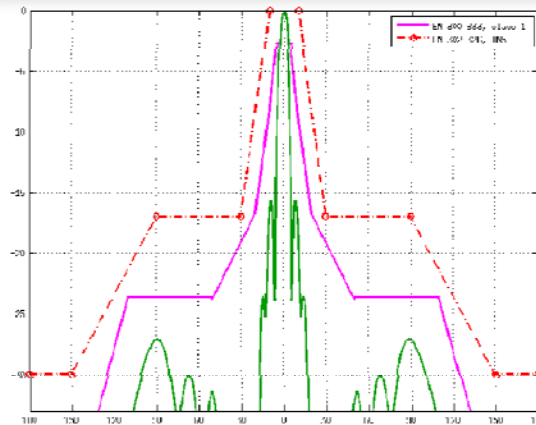
# Reflector Antennas

- Ubiquiti has an expanding line of dual polarized antennas that mate to the Rocket radio



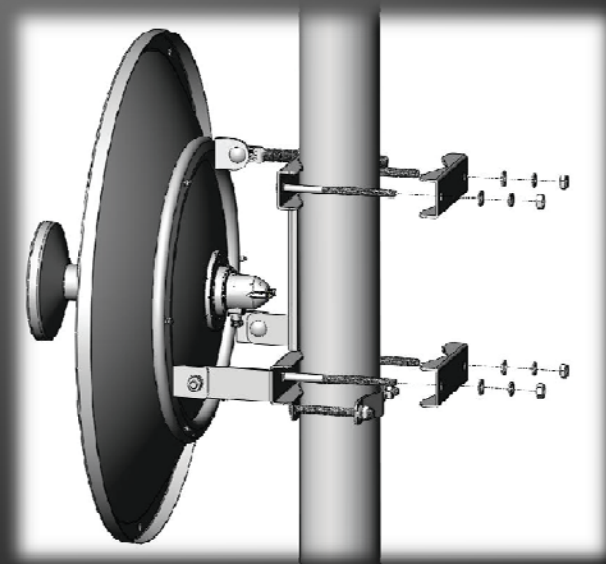
# Reflector Antennas

- Product Range
  - 5.1-5.9GHz
    - 2ft Dish (30dBi)



# Reflector Antennas

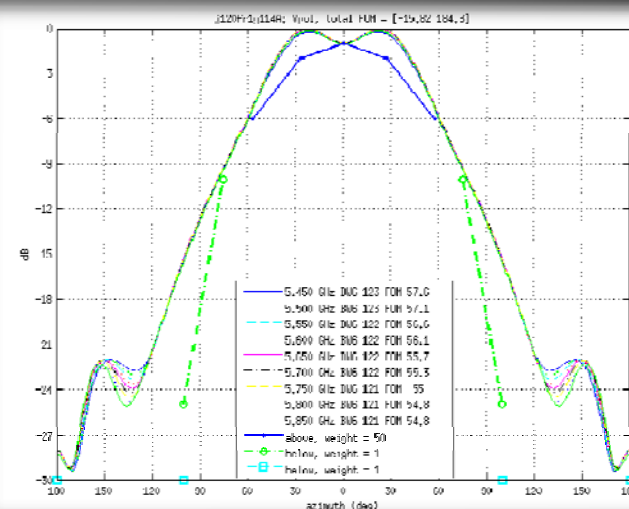
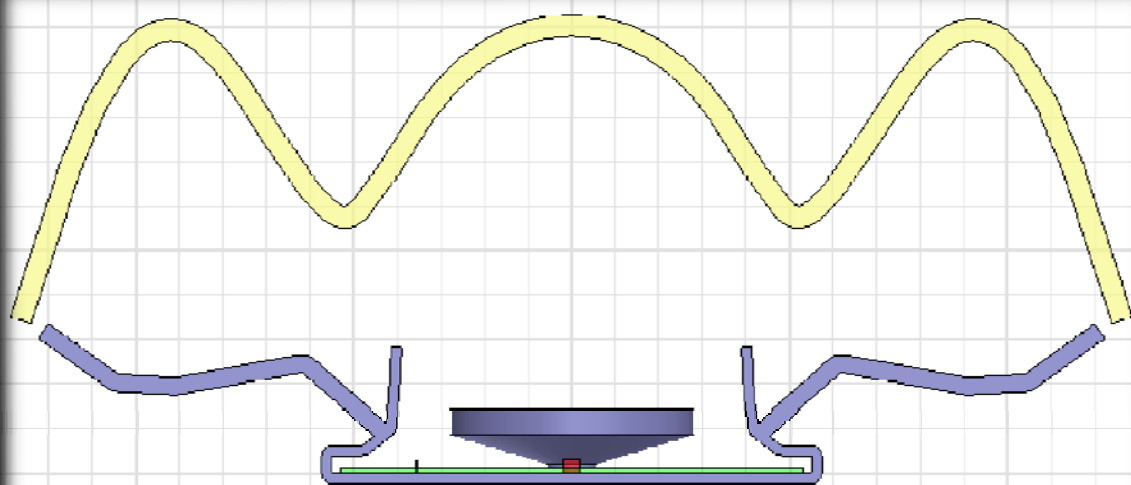
- Key Features
  - “Brick Wall” high pass filter
    - Everything below 3.7GHz is filtered out for the 5GHz versions
  - 70% Aperture Efficiency
  - EN300 and EN302 Specification compliant for backhaul applications
  - Integrated Rocket Mount
  - Fine Adjust Mounting Bracket
  - Optional Radome



# MIMO Sector Antennas

- Patent Pending Beam Shaping Technology
  - Uses the radome and a shaped ground plane in conjunction to provide equal beamwidths and low sidelobes for both polarizations

120 degree Sector



# MIMO Sector Antennas

- Plastic radome and metal shape combine to shape the beam
- Alternating element feed orientation maximizes cross pol isolation and minimizes pattern asymmetries.



# MIMO Sector Antennas

- Patent Pending Dual Pol Technology
  - Parallel Feed
  - Low loss substrate

Wide band

High efficiency

High gain

No beam scanning with frequency

# MIMO Sector Antennas

- Key Features
  - Equal Beamwidths for V and H polarizations
  - Low Sidelobes
  - Electrical Down tilt
  - Wide Band
    - 4.9-5.9GHz including Ultra High Gain Option
    - 2.3-2.7GHz
  - 90 and 120 sector options
  - Rugged Construction



# Sector Antennas

- Product Range

- 5.1-5.9GHz

- High Gain

- 90 Deg
      - 120 Deg

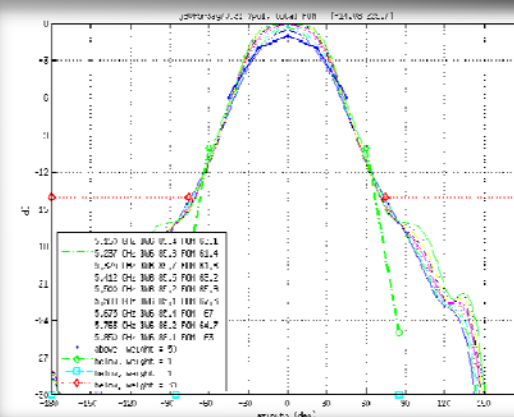
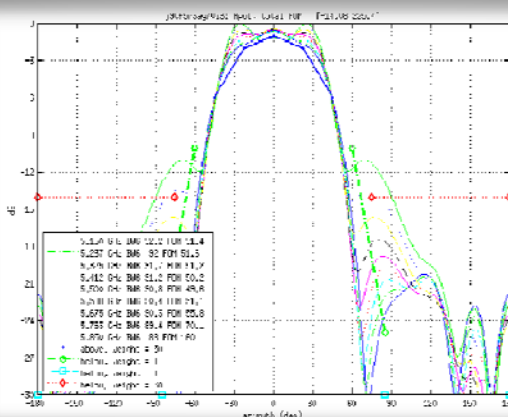
- Mid gain

- 90 Deg
    - 120 Deg

- 2.3-2.7GHz

- Mid gain

- 90 Deg
    - 120 Deg



90 degree 5GHz High Gain example

