



LOW PROFILE 450MHz PANEL ANTENNA

SPEC SHEET



MiMOMax Low Profile 450MHz Panel Antenna is a high-gain, rugged, compact, wide-band antenna suitable for radio sites that encounter ice, snow and strong wind loading.

Like all MiMOMax antennas the Low Profile 450MHz Panel Antenna provides independent horizontal and vertical polarisations making it suitable for a wide range of radio applications including MiMO. This pattern-type diversity solution provides increased signal quality and path resilience in very challenging environments

The low-profile antenna comes with fully enclosed radome making it a good fit for harsh weather conditions.

With a typical 9dBi antenna gain and a maximum input power of 200W the MiMOMax Low Profile 450MHz Panel Antenna is a highly versatile base station antenna.



The Voice of Critical Infrastructure Communications

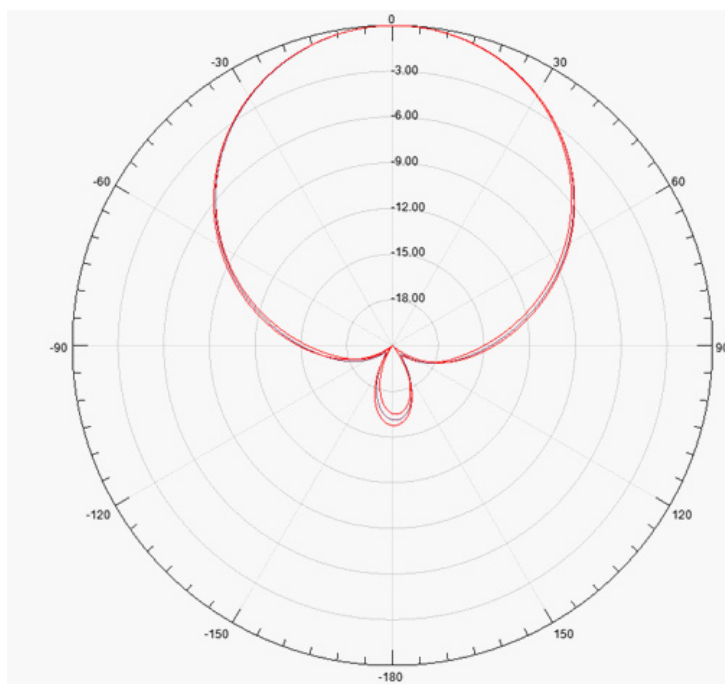
Product Award 2010
Best Wireless Equipment

LOW PROFILE PANEL ANTENNA SPECIFICATIONS

Frequency Range	440-470MHz
VSWR	≤ 1.5
Polarisation	Horizontal and Vertical (with Separate Feeds)
Antenna Gain	9dBi Typical
Beam Width	62° E Plane 72° M Plane
Front-to-Back Ratio	≥ 15 dB
Rated Power	200W
Input Impedance	50 Ω
Lightning Protection	Direct Ground
Connector Type	2 X N-Female
Dimensions	450 X 450x38 (mm) Excluding Mounting Brackets and Connectors
Mounting (pole)	Twin vertically spaced clamps for attachment to 25 - 55 mm mounting pipe
Rated Wind Velocity	200Km/hr

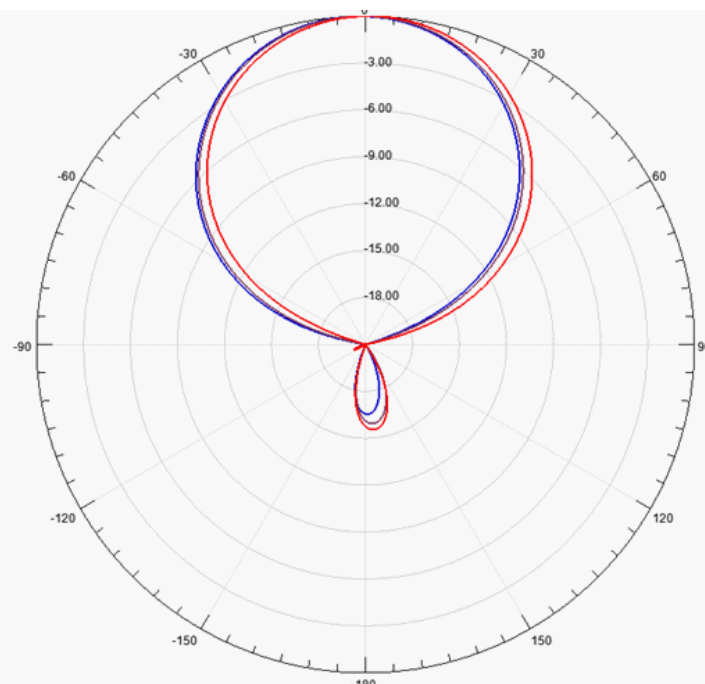
* Additional frequencies available on request

PANEL ANTENNA POLAR DIAGRAMS



Radiation pattern M Plane 440MHz, 455MHz & 470MHz

3dB beam width 72 degrees



Radiation pattern E Plane 440MHz, 455MHz & 470MHz

3dB beam width 62 degrees



DUAL POLARISED LOOP YAGI ANTENNA

DATA SHEET



The Dual Polarised Loop Yagi Antenna is a light-weight antenna that is compatible with all MiMOMax radios and can be installed as a Single, Dual or Quad-Array Antenna depending on system requirements.

The Dual Polarised Loop Yagi Antenna transmits both vertically and horizontally polarized signals from each link-end in a bi-quadrature diversity format. This pattern-type diversity solution enables a single receiver pair to produce high performance and pattern diverse MiMO paths and increases the signal quality and path resilience.

The Loop Yagi Antennas enable long range communications (over 100 kms from high sites). The optional addition of a second MiMO antenna and receiver operating in a 2x4 configuration can provide spatial diversity and further link robustness.



MULTI-ELEMENT DUAL POLARISED MIMO ANTENNA

The light-weight Loop Yagi Antenna has the following variants:

- Single **Loop Yagi**
- Multi-element, high-gain **Dual Array**
 - Horizontally stacked
 - Vertically stacked
- Very high-gain **Quad Array**

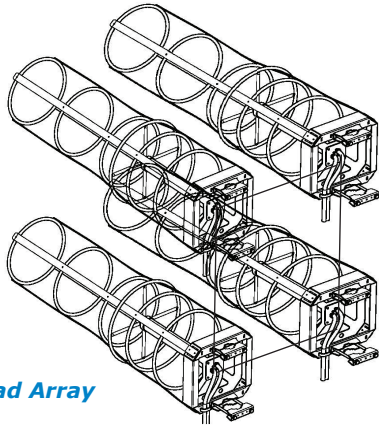


VERY HIGH-GAIN QUAD ARRAY

~ 4 x Dual Polarised Loop Yagi Antennas¹

~ Approx 6dB more signal gain² at each link-end

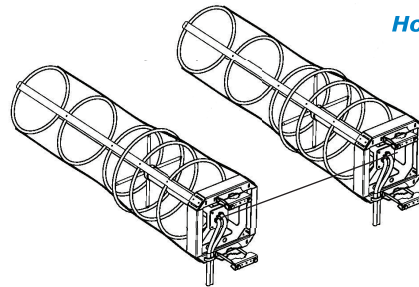
~ Approx 12dB total improvement in path gain³



Quad Array

The higher-gain variants can increase the radio path by up to 2-3 times (depending on path characteristics) to enable more reliable paths over

Like all MiMOMax Antennas, the Dual Array and the Quad Array transmit both vertically and horizontally polarised signals from each link-end in a bi-quadrature diversity format. This enables a single receiver pair to produce high performance pattern diverse MiMO paths. It also increases the signal quality and path resilience.



Horizontally Stack Dual Array

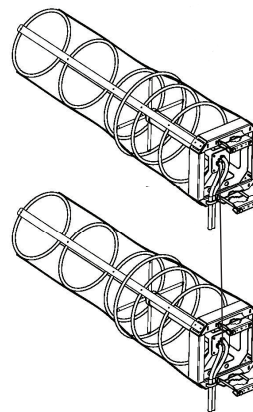
HIGH-GAIN DUAL ARRAY

~ 2 x Dual Polarised Loop Yagi Antennas²

~ Approx 3dB more signal gain³ at each link-end

~ Approx 6dB total improvement in path gain⁴

~ Standard Dual Array requires only a single point of fixture to the pole



Vertically Stack Dual Array

¹ 4 x vertically spaced clamps for attachment to 25 - 55 mm mounting pipe, on a two-by-two array common frame. Multiple elements are connected via supplied matching harnesses

² Elements are designed to be vertically spaced on a common pole and possess twin vertically spaced clamps for attachment to 25 - 55 mm mounting pipe. Antennas are connected via a supplied matching harness.

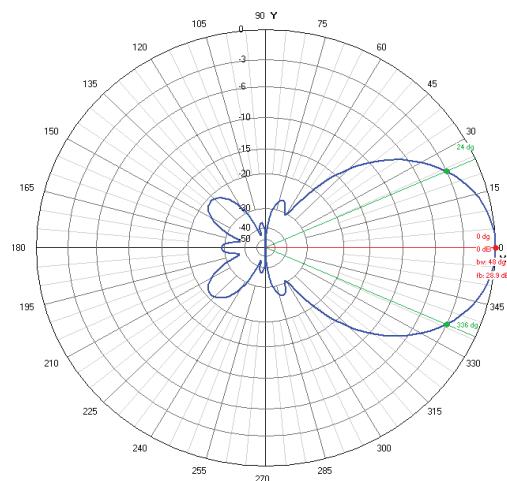
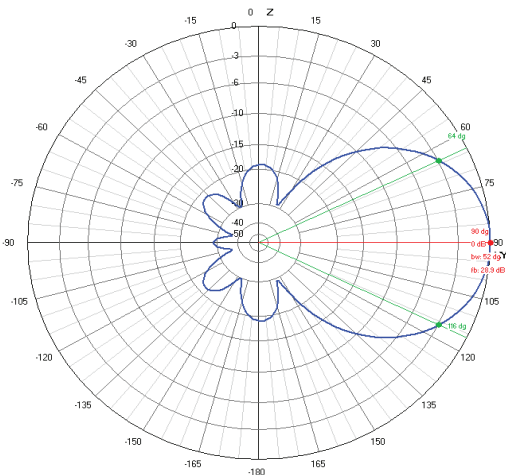
³ In comparison to a single Loop Yagi Antenna

⁴ In comparison to two Loop Yagi Antennas, one at each link-end

LOOP YAGI ANTENNA SPECIFICATIONS

	Single Loop Yagi Antenna	Dual Array		Quad Array	
Frequency Ranges	370-390MHz 420-435MHz 435-455MHz 450-470MHz				
Polarisation	Horizontal and vertical with separate feeds				
Antenna Gain	Typ	11 dBi	14 dBi		17 dBi
	Min	10 dBi	13 dBi		16 dBi
Beam Width, -3dB	Horizontal (nominal)	48°	Horizontally Stack	Vertically Stack	24°
			24°	48°	
	Vertical (nominal)	52°	48°	24°	24°
Front-to-Back Ratio	>15 dB		>20dB		>20dB
Frequency Bandwidth (15dB return loss)	20 MHz		20MHz		20MHz
Wind Loading	220 N @ 160 km/h		450 N @ 160 km/h		920 N @ 160 km/h
Connection	2 x Type N Male connectors RG213 cable		2 x Female Type N connectors RG213 cable		2 x Female Type N connectors RG213 cable
Mounting (Pole)	Twin vertically spaced clamps for attachment to 25 - 55 mm mounting pipe		Twin vertically spaced clamps for attachment to 25 - 55 mm mounting pipe		4 vertically spaced clamps for attachment to 25 - 55 mm mounting pipe

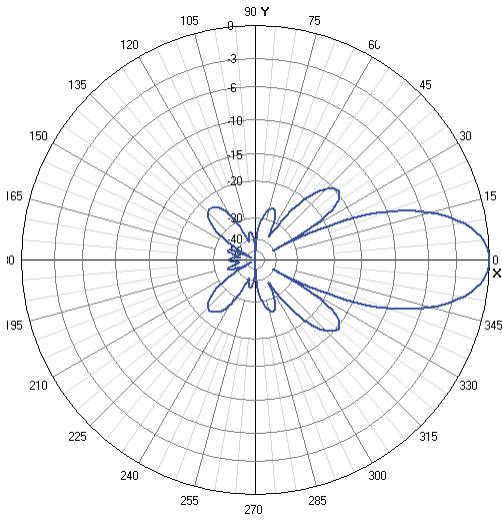
SINGLE LOOP YAGI POLAR DIAGRAMS



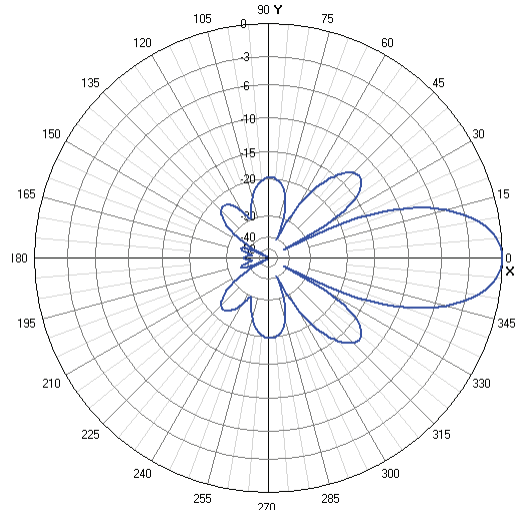
Vertical Plane / Vertical Polarisation OR Horizontal Plane / Horizontal Polarisation

Horizontal Plane / Vertical Polarisation OR Vertical Plane / Horizontal Polarisation

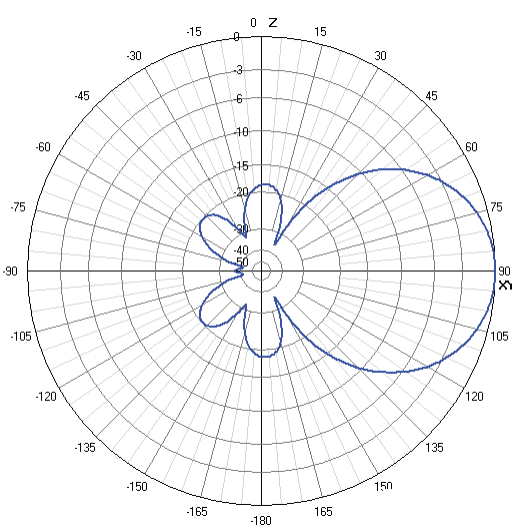
MULTI ELEMENT DUAL ARRAY POLAR DIAGRAMS (HORIZONTALLY STACK)



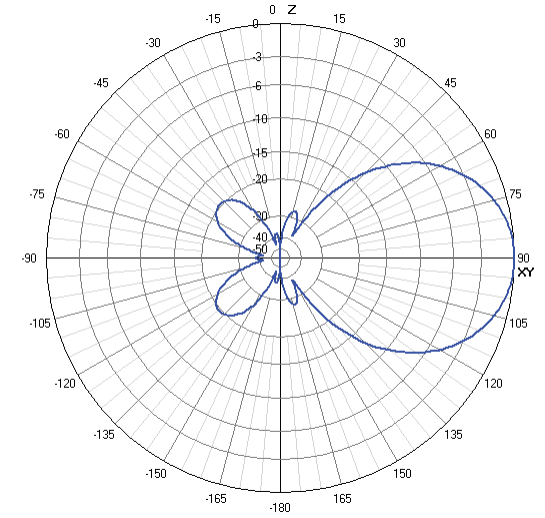
Horizontal Plane/Horizontal Polarization



Horizontal Plane/Vertical Polarization

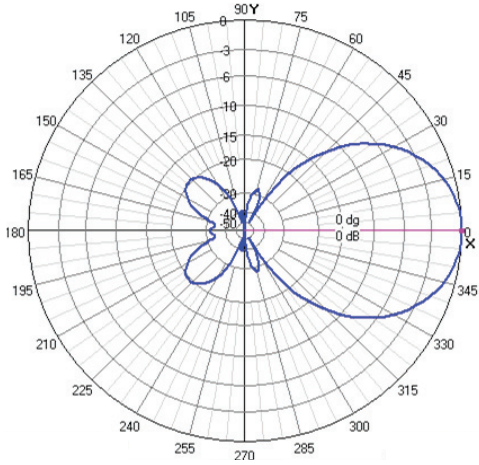


Vertical Plane/Horizontal Polarization

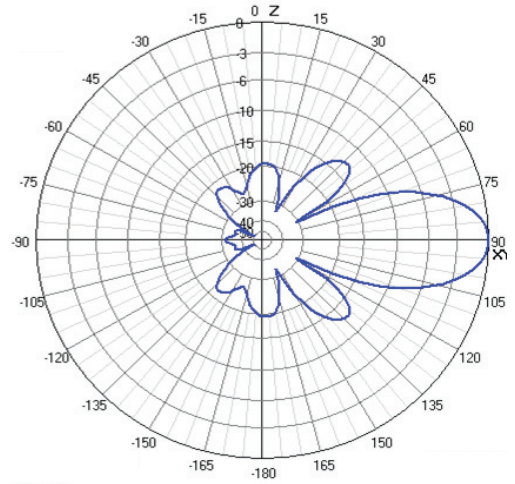


Vertical Plane/Vertical Polarization

DUAL ARRAY POLAR DIAGRAMS (VERTICALLY STACK)

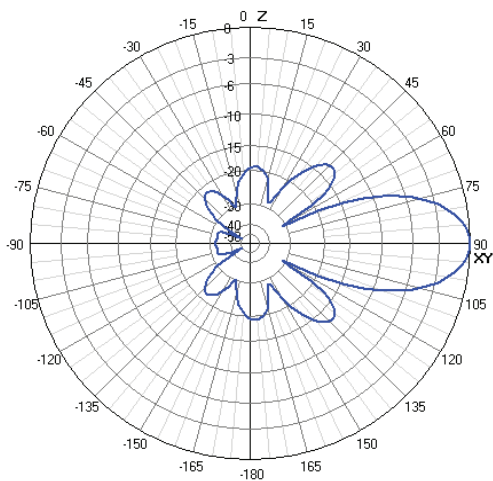


Horizontal Plane / Vertical Polarisation OR Vertical Plane / Horizontal Polarisation

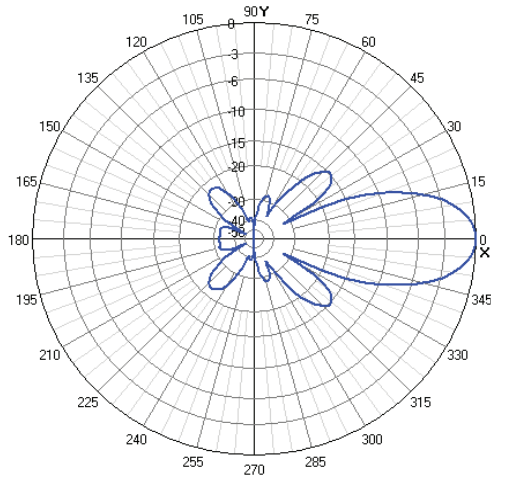


Vertical Plane / Vertical Polarisation OR Horizontal Plane / Horizontal Polarisation

QUAD ARRAY POLAR DIAGRAMS



Horizontal Plane / Vertical Polarisation OR Vertical Plane / Horizontal Polarisation



Vertical Plane / Vertical Polarisation OR Horizontal Plane / Horizontal Polarisation