

MAXRAD 2.4 GHz ISM All Terrain Sectorized Omnidirectional Antenna

The new MAXRAD XtremeWave™ terrain adjustable omnidirectional antenna allows sector adjustments of up to +/- 15 degrees, permitting installers to contour their coverage area according to the specific geographic conditions of their territory. For applications with more specific coverage demands this antenna offers various azimuth (horizontal plane beamwidth) pattern options optimized to address differing coverage, cost control and tower space limitation challenges. As the subscriber base grows, the MSO24014PTNF can accommodate increased throughput capacity without the need to replace the antenna.

General Specifications:

2.4 GHz ISM sectorized omnidirectional antenna

Radome Material:

ASA-ABS, UV resistant

Termination:

N, female connector (at power divider input)

Polarization:

Vertical

Lightning Protection:

DC grounded

Mounting Method:

Center pipe mount (1.25" OD Pipe Included)

Direct tower leg mount

Other mounting options possible

Pattern Shaping Kits:

Standard omnidirectional (pattern #4). Power divider is included.

Other options are available***. Consult the factory for details.

Nominal Impedance:

50 Ohms

Electrical Specifications

Model #	Frequency Range	Nominal Gain	E-Plane Beamwidth	VSWR	Maximum Power	Power Divider
MSO24014PTNF	2400-2500 MHz	14 dBi*	16°	< 1.5:1	50 Watts**	3-way equal split

Mechanical Specifications

Model #	Wind Survival	Temperature Range	Dimensions	Weight	Cable
MSO24014PTNF	125 mph 200 km/h	43.6°F to 167°F -42°C to +75°C	19.75" L x 5" OD 501 mm L x 127 mm OD	8.0 lbs 3.6 kg	18" LMR195

* Antenna gain specified when sectors are fed individually

** Power limitation of power divider 10 watts

*** Optional patterns require use of one radio



The MSO24014PTNF's patented mount design allows mast or tower leg mounting for greater flexibility when tower space availability is limited.



The XtremeWave™ MSO24014PTNF outperforms standard omnidirectional antennas by providing these unique benefits:

Increased System Capacity

As the subscriber base increases, this antenna provides the flexibility to increase capacity. The sectors may be fed individually to achieve higher gain, enhancing the system's throughput. This is not possible with standard omnidirectional antennas.

Superior Isolation

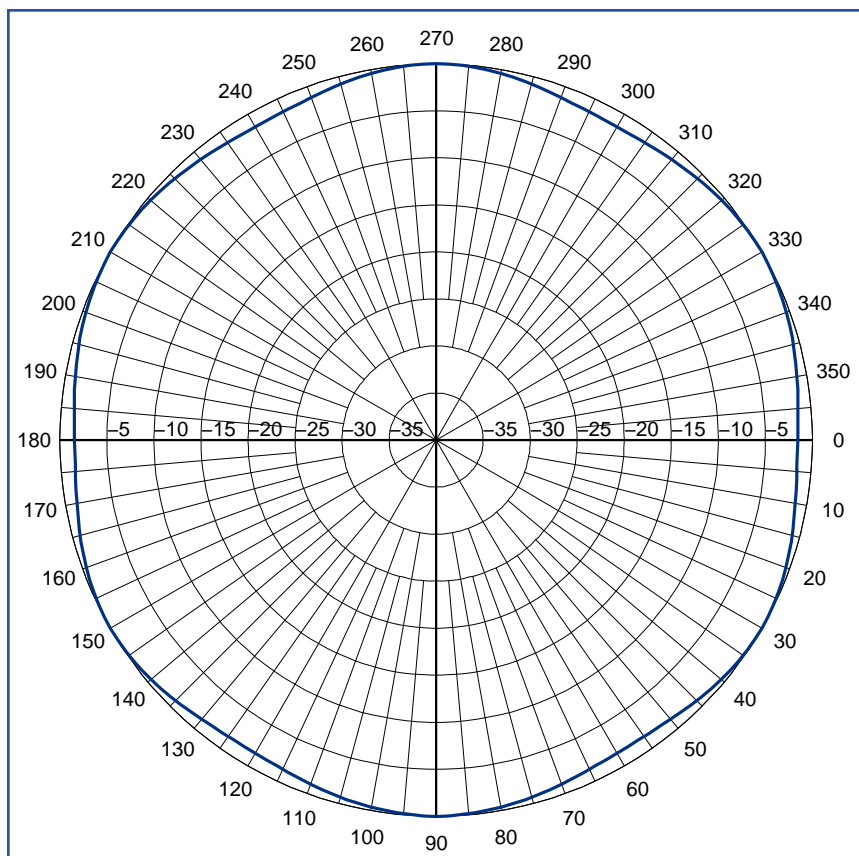
When each sector of the all terrain omnidirectional antenna is fed individually, superior isolation is achieved - typically -40 dB. This minimizes interference issues with adjacent antennas and provides better quality links.

Electrical and Mechanical Beamtilt Adjustments

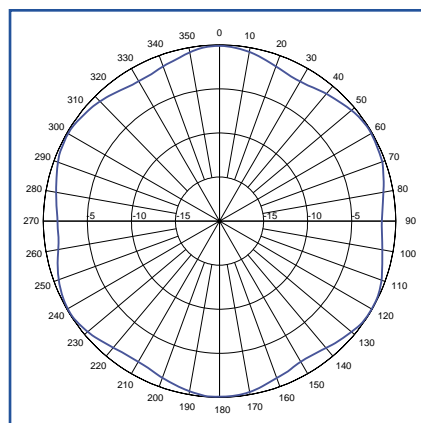
Typically, omnidirectional antennas offering more than 7 degrees of electrical beamtilt produce patterns with high

side lobe levels. As a result, these antennas are susceptible to interference issues that may affect gain and reduce overall system performance. When mechanical beamtilt options are used, pattern coverage could be affected when the radiated beam is focused down and the opposite angle is pointed upwards and away from the customer base. This results in wasted energy and inefficient system performance.

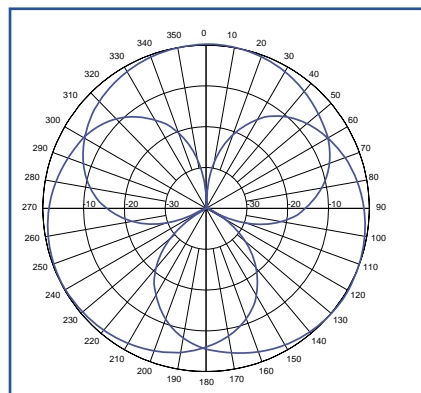
The Maxrad All Terrain Sectorized Omni can be mechanically adjusted up to 15 degrees of uptilt or downtilt per sector. This results in lower sidelobe levels and minimizes the system's susceptibility to interference issues. By offering the flexibility to adjust the antenna radiation pattern to the surrounding terrain this antenna allows installers to maximize pattern performance for optimal customer base coverage.



Azimuth Beamwidth



3 Sectors Equally Fed



3 Sectors Individually Fed

Pattern Selectivity

Standard omnidirectional antennas are limited to one azimuth pattern: 360 degrees. The XtremeWave™ all terrain sectorized omni can be optimized to the system planner's unique needs by offering various premium pattern options designed to address differing coverage, cost control and tower space limitation challenges.

Mounting Flexibility

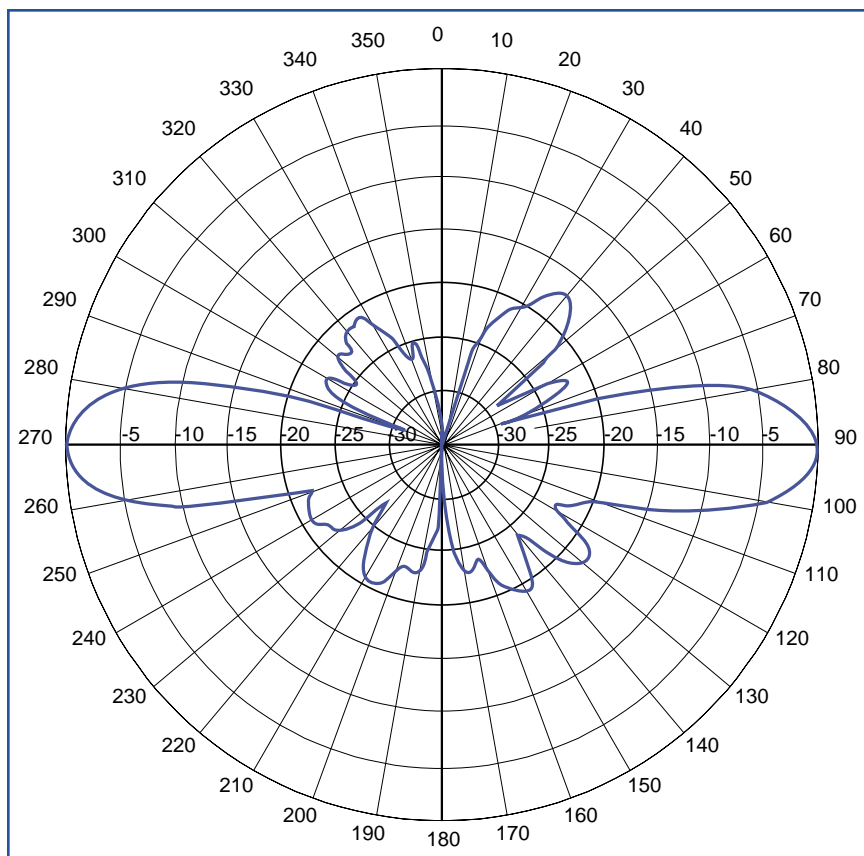
Tower space limitations and the need to minimize interference issues are the reasons many standard omnidirectional antennas need to be mounted on supporting arms several feet away from the tower structure. As a result, these antennas are vulnerable to wind sway that could negatively affect the quality of the transmitted signal.

The MSO24014PTNF's mount design permits installation

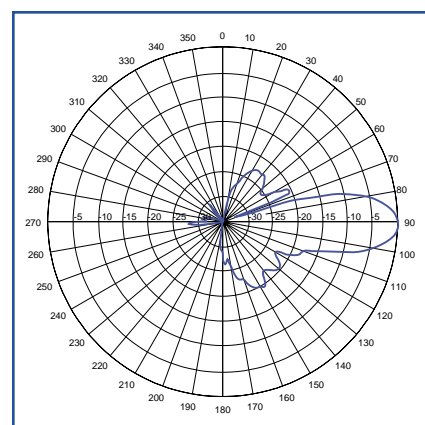
directly around the tower leg (1.25" to 3.25 od). This unique design minimizes windloading on the tower and adds mounting flexibility where space allocation is a challenge.

Downtime Reduction

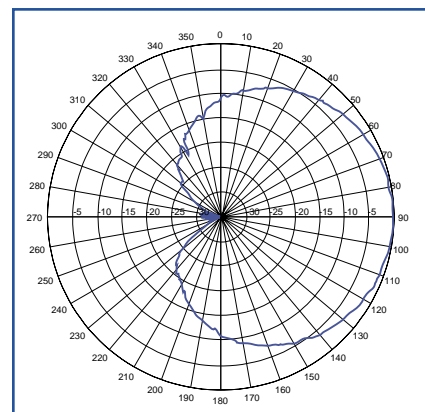
Antenna damage could cause costly downtime periods with up to 100% system failure. The modular design of the new XtremeWave™ all terrain sectorized omni minimizes downtime periods by maintaining links of the undamaged, individually-fed sectors. This Maxrad antenna solution could increase system survivability by up to 66%!



Elevation Beamwidth

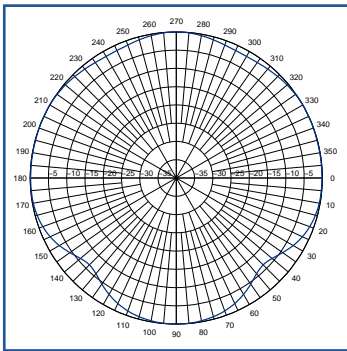


One Sector Elevation

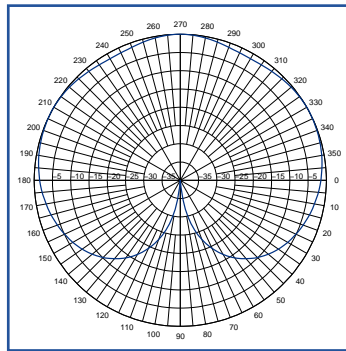


One Sector Azimuth

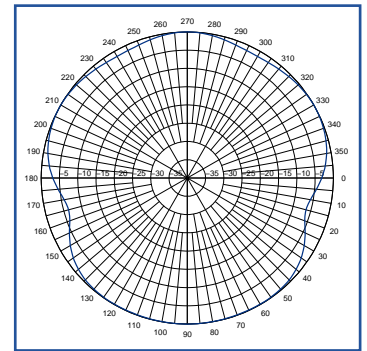
Azimuth Pattern Options



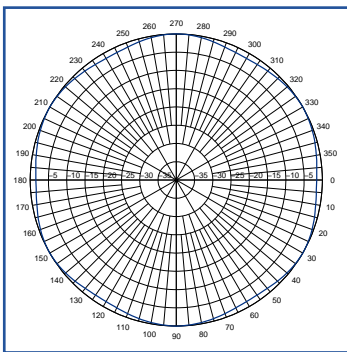
Pattern #1



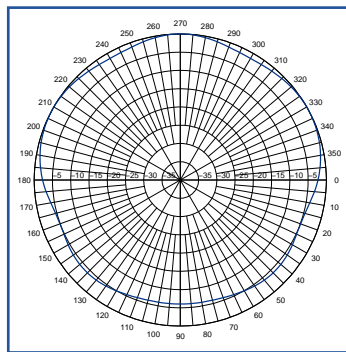
Pattern #2



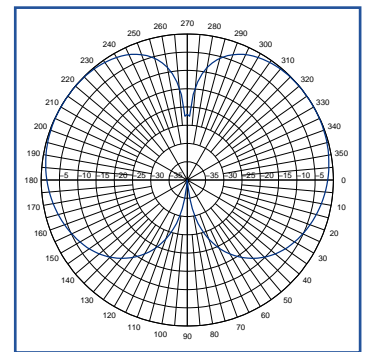
Pattern #3



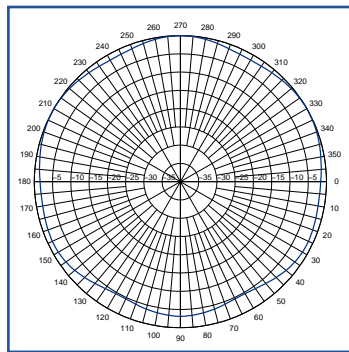
Pattern #4 (standard)



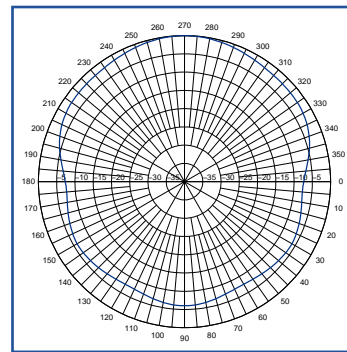
Pattern #5



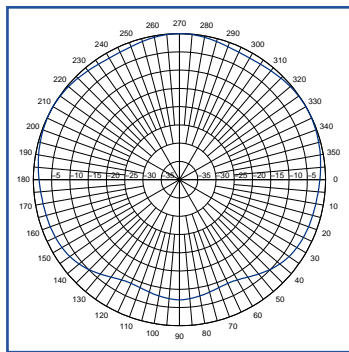
Pattern #6



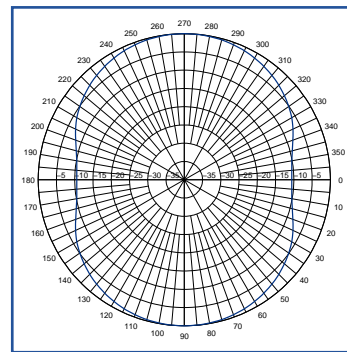
Pattern #7



Pattern #9



Pattern #10



Pattern #11