

Satellite IoT D2D Ready

TN & NTN Dual-Mode Antenna Satellite IoT Direct to Device Ready

Ground Plane Independent Antenna

Covering Wideband 4G/5G/Satellite Band 25

The L001255-01 direct to device (D2D) antenna offers 4G/5G/satellite band 25 cellular coverage through a wideband 617-7125 MHz frequency range for global cellular communications.

L001255-01 antennas deliver global cellular coverage, even for regions where the lower 600 MHz band is required.

They offer high levels of average efficiency, over 80% up to 4200 MHz, and gain up to 6.0 dBi in an IP67-rated, compact form factor. A direct-mount, threaded stud, with superior quality and integrated N-female connector provides tamper resistant installation. The direct coaxial connection ensures performance remains consistent, even at the higher frequencies, avoiding the performance losses of other mounting methods.

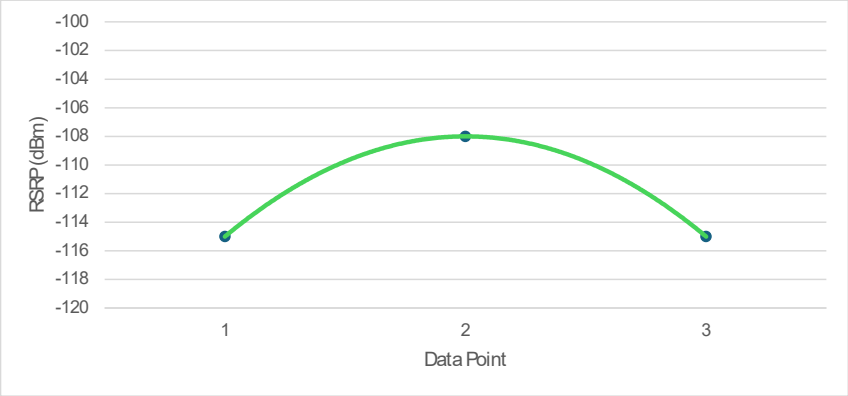
SATELLITE IOT D2D COMMUNICATIONS

Low Earth Orbit (LEO) satellites, positioned a few hundred km's above Earth, orbit rapidly and are ideal for IoT networks. A LEO satellite constellation can now support low data rate communications through specific LTE frequencies.

- Dual-mode capable - Supporting Terrestrial Networks (TN) and Non-Terrestrial Networks (NTN) from a single antenna
  - 617-7125 MHz terrestrial cellular coverage
  - Band 25 (1900 MHz) cellular satellite coverage
    - Testing available for other/future cellular satellite D2D frequency bands used by various network providers
- Enabling dual-mode communications via IoT devices
  - Prioritizing terrestrial networks but capable of automatically switching to satellite when the signal is weak or unavailable

REFERENCE SIGNAL RECEIVED POWER (RSRP) VALUES

The L001255-01 antenna was live-tested for receive signal strength. Data encompasses multiple satellite pass-overs, showing signal strength variation; exceeding the -120 dBm minimum for IoT devices.



An RSRP value of -120 dBm is generally the recognized minimum requirement suitable for SMS connectivity.

RSRP can be susceptible to fluctuations for a variety of reasons. These can include: satellite elevation angle: antenna radiation patterns; solar flares; atmospheric conditions, and more.

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FEATURES AND BENEFITS

- Validated for use on satcom D2D networks
- Dual-Mode TN and NTN capable
- Based on our popular Phantom series
- Global cellular coverage
- Optimal gain directed at just above the horizon for superior connectivity with exceptional efficiency levels
- Minimum gain ripple
- Connectivity where you need it – Uniform azimuth patterns reduce the chance of signal drop outs
- Tamper-resistant and highly durable with IP67-rated enclosure and UL 94 flammability rating

APPLICATIONS

- Non-Terrestrial and Terrestrial Networks
- Satellite IoT D2D (Direct to Device) applications
- Worldwide 5G/4G/3G/2G
- Cellular IoT: LTE-M (Cat-M1) and NB-IoT
- Remote control, monitoring and sensing
- Internet of Things (IoT) devices

SPECIFICATIONS

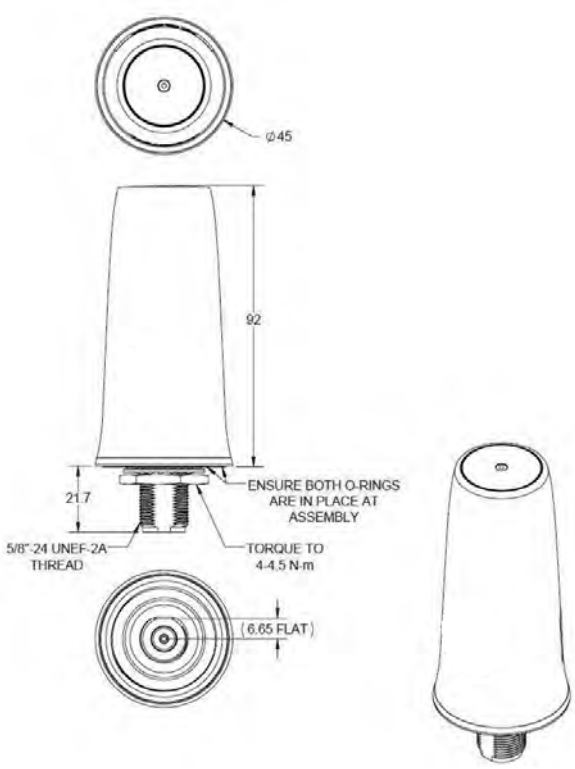
ELECTRICAL SPECIFICATION								
Model Name	L001255-01							
Operating Frequency (MHz)	617-698	698-960	1427-1695	1695-2700	3300-4200	4400-6000	6000-6500	6500-7125
VSWR (Max)	<2.5:1	<2.0:1	<4.0:1	<2.0:1	<2.0:1	<2.5:1	<3.0:1	
Peak Gain (Average), dBi	4.5	4.5	5.0	5.5	6.0	6.0	6.5	7.5
Ave. Gain at Theta 80 deg. (10 deg above Horiz.); dBi	0.3	0.5	-	1.5	1.0	.7	-	-
Efficiency (%), Avg	>70	>80	> 50	>80	>80	>80	-	-
Polarization	Vertical							
Azimuth (Horizontal) Beamwidth	360˚							
Nominal Impedance (Ohms)	50							
Max Power @ Ambient 25˚C (W)	100		20					

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MECHANICAL SPECIFICATION	
Dimensions – H x D Bottom-D Top – mm (inches)	92 x 45 (3.62 x 1.77)
Weight – kg (lbs.)	0.145 (0.32)
Radome Material	Polycarbonate
Connector Type	Type N (female)

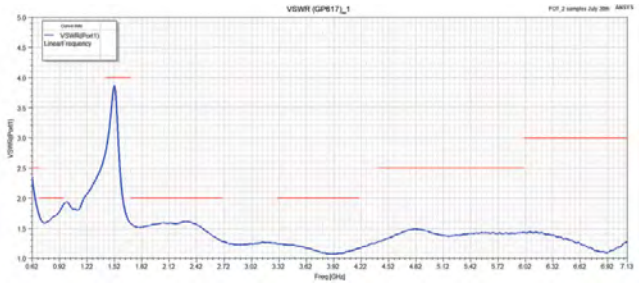
ENVIRONMENTAL SPECIFICATION	
Operating Environment (Indoor or Outdoor)	Outdoor
Operating Temperature – °C (°F)	-55 to +85°C (-67 to +185°F)
Storage Temperature – °C (°F)	-55 to +85°C (-67 to +185°F)
Ingress Protection Rating	IP67
Flammability Rating	UL94 V0
Material Substance Compliance	RoHS

MECHANICAL DRAWING

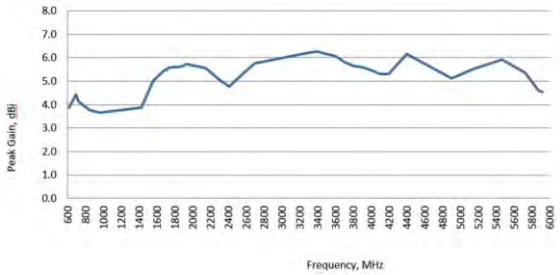


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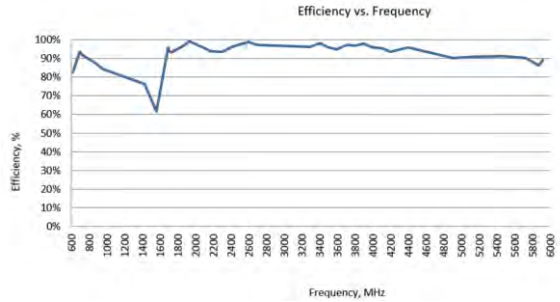
VSWR VS FREQUENCY



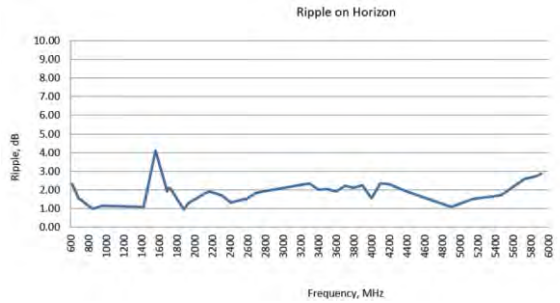
PEAK GAIN VS FREQUENCY



RADIATED EFFICIENCY VS FREQUENCY



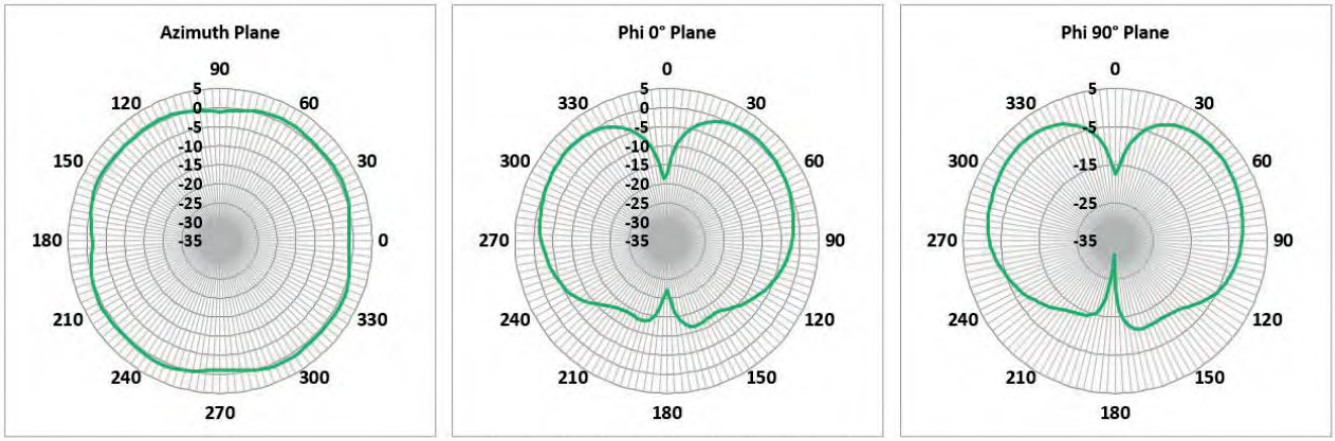
GAIN RIPPLE VS FREQUENCY



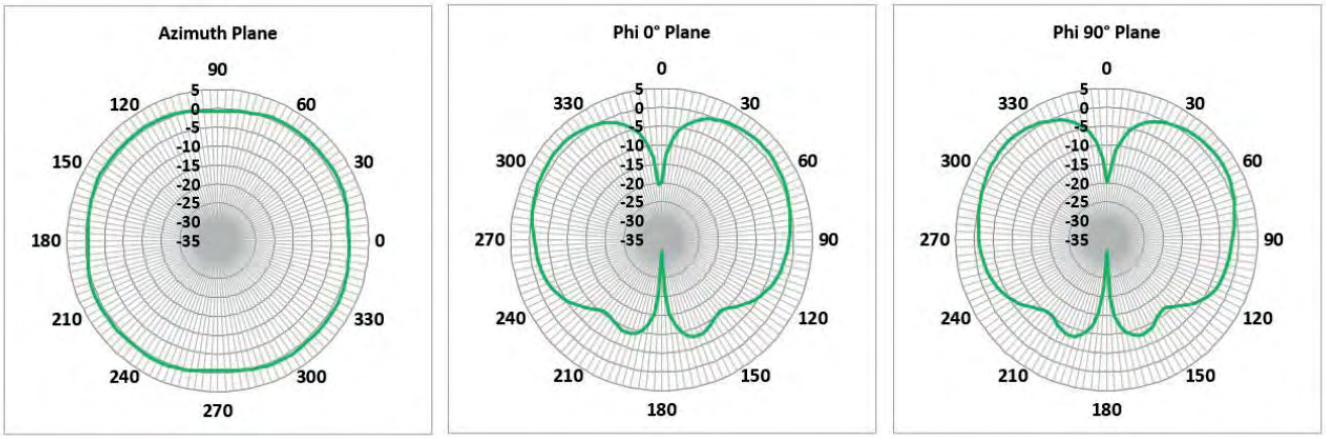
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RADIATION PATTERNS

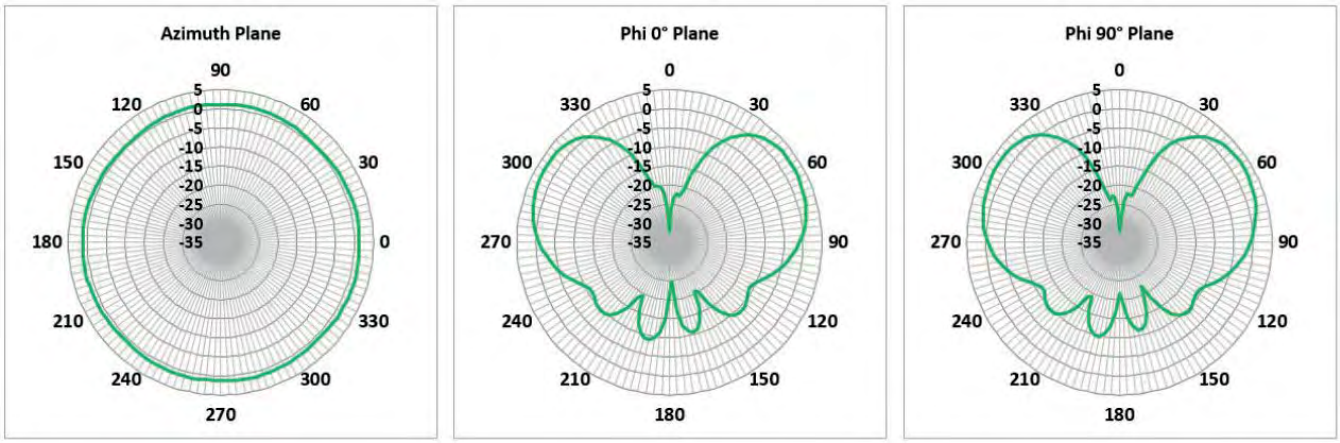
617 MHz



698 MHz

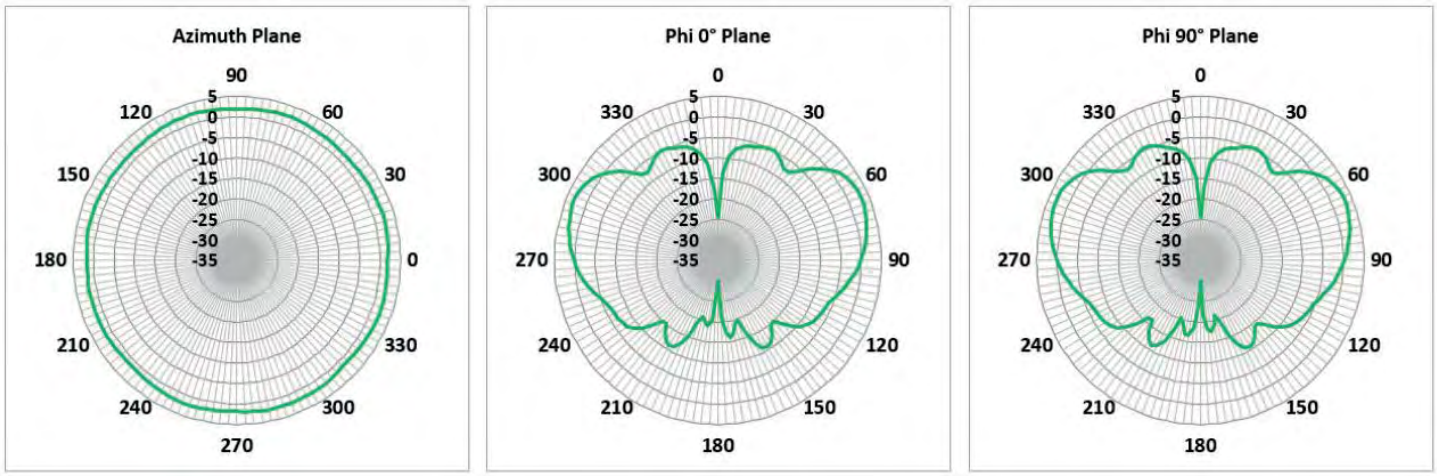


960 MHz

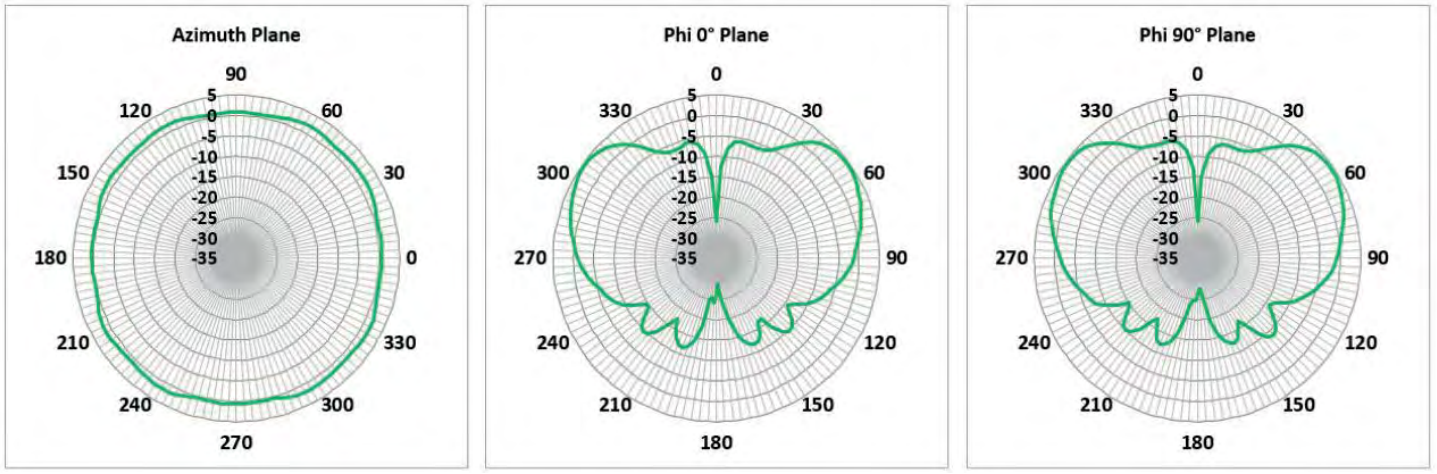


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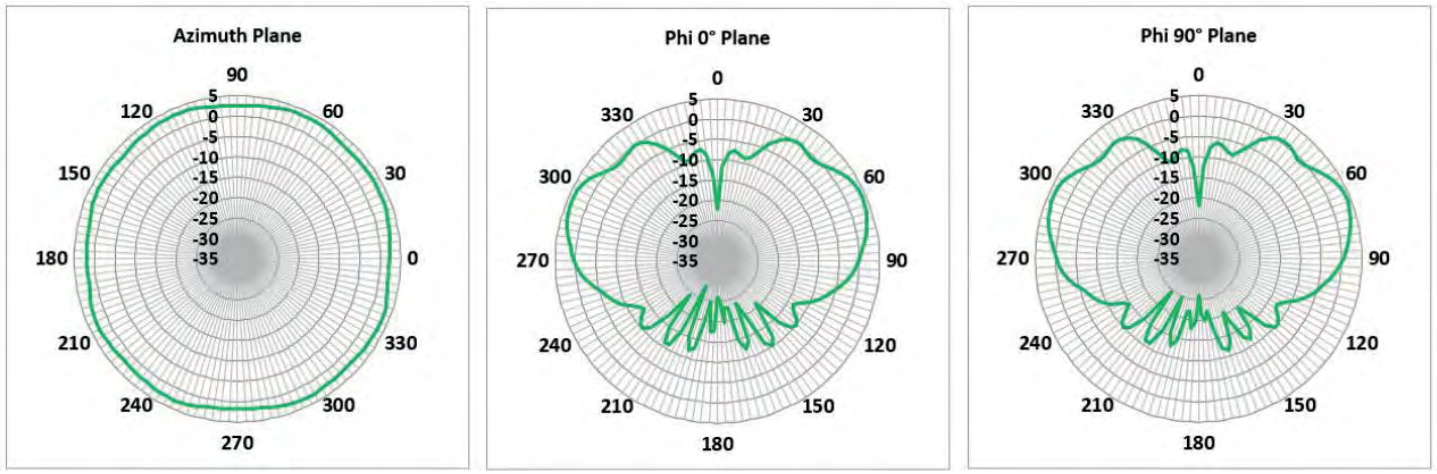
1427 MHz



1695 MHz

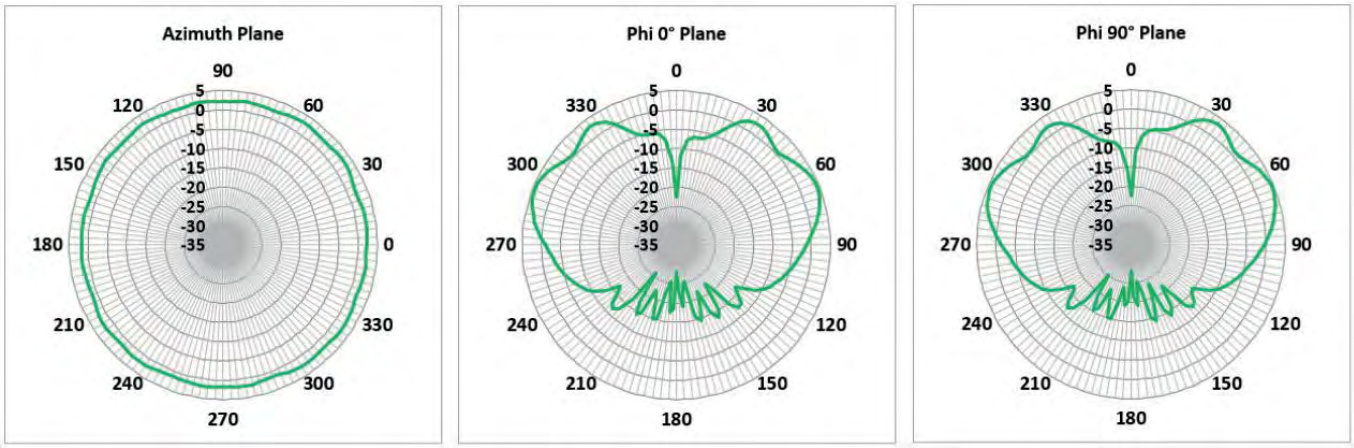


2170 MHz

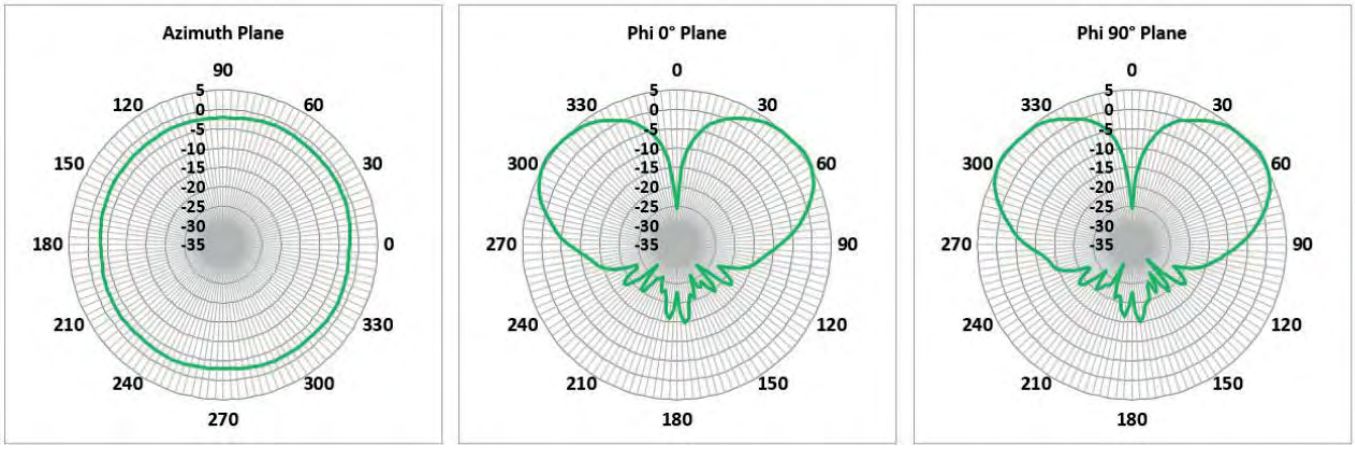


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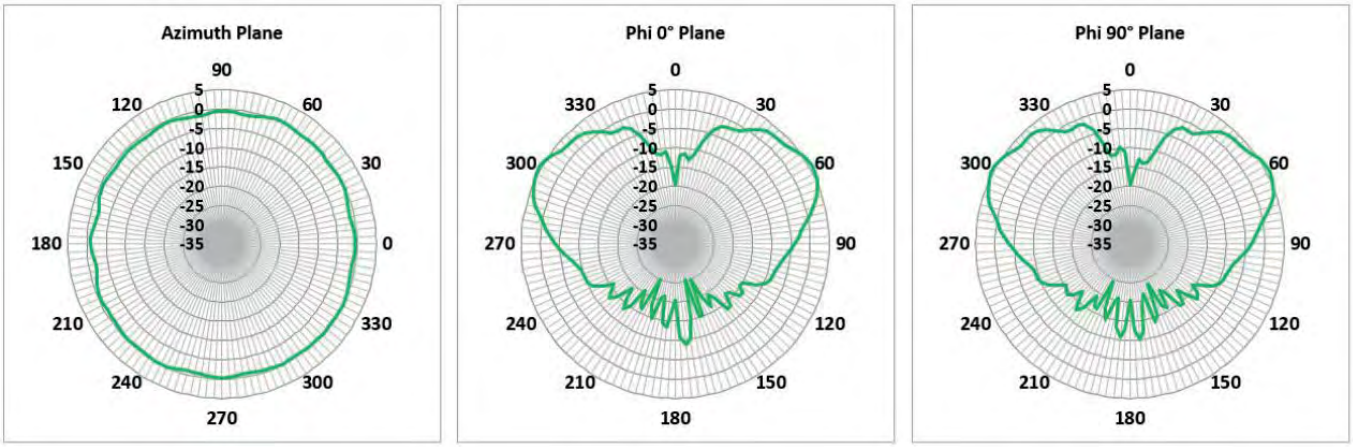
2310 MHz



2700 MHz

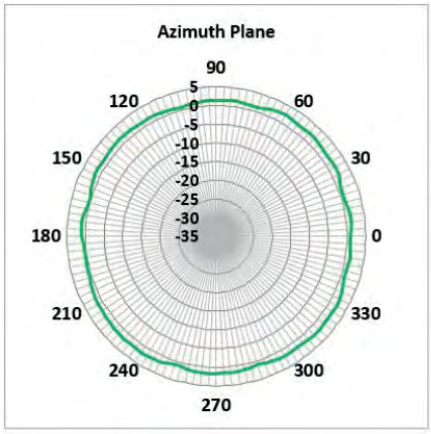


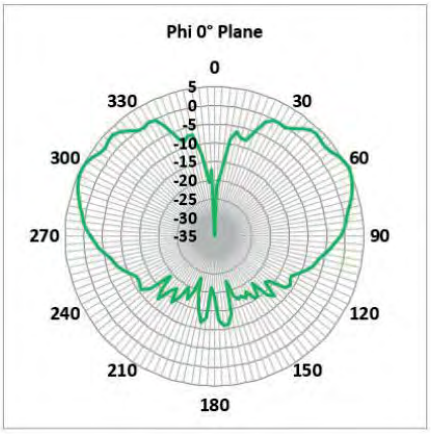
3300 MHz

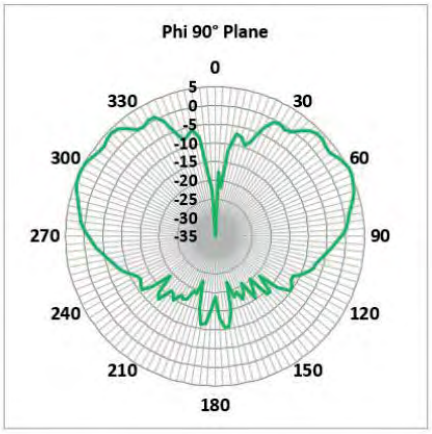


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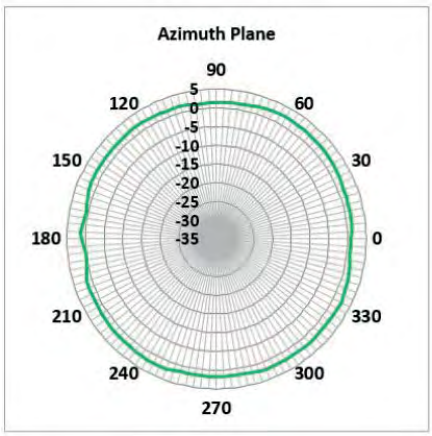
3800 MHz

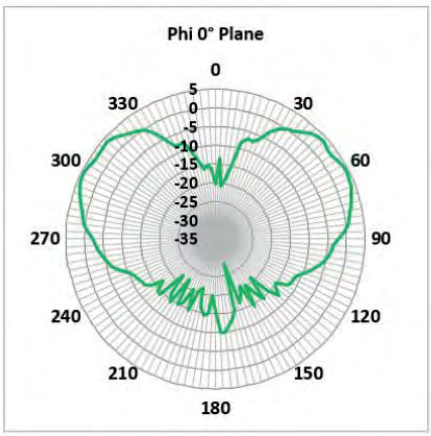


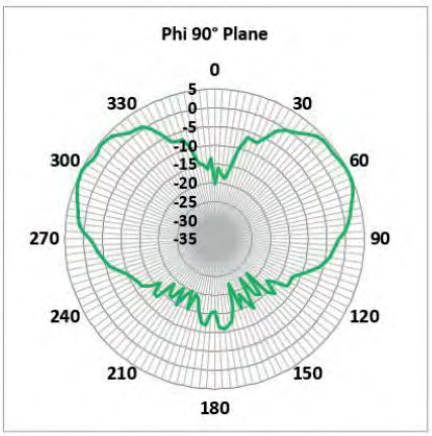




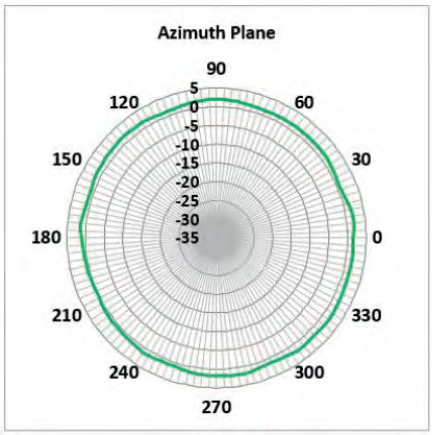
4200 MHz

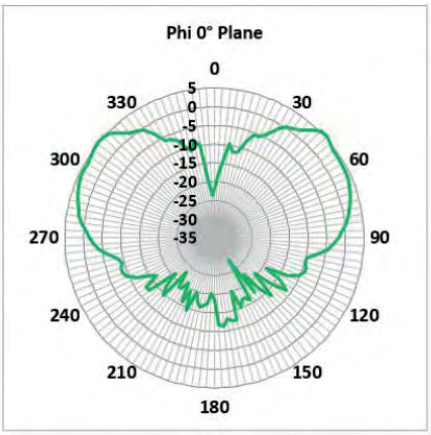


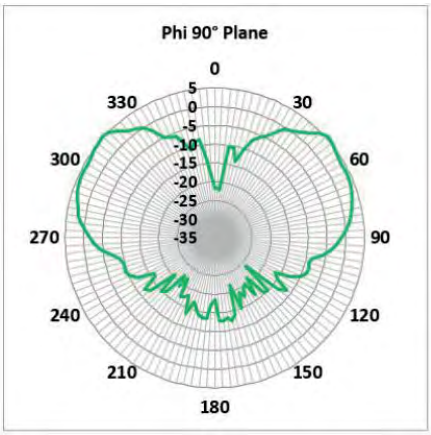




4400 MHz

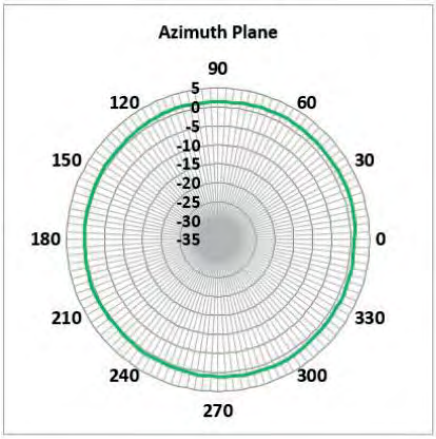


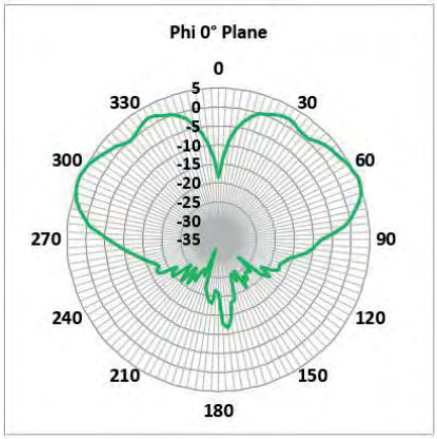


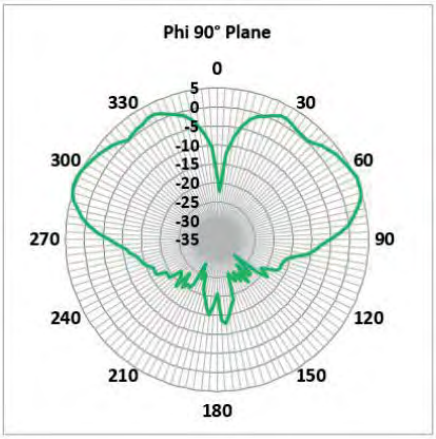


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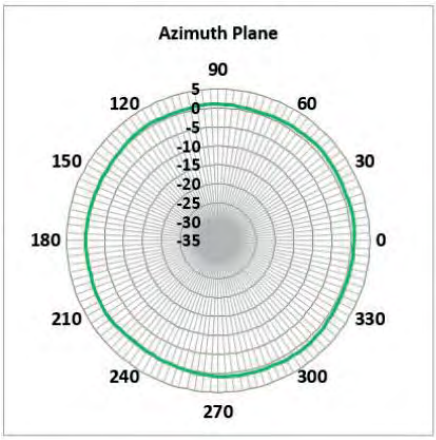
5150 MHz

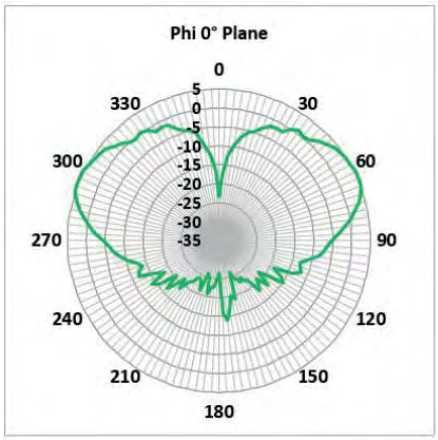


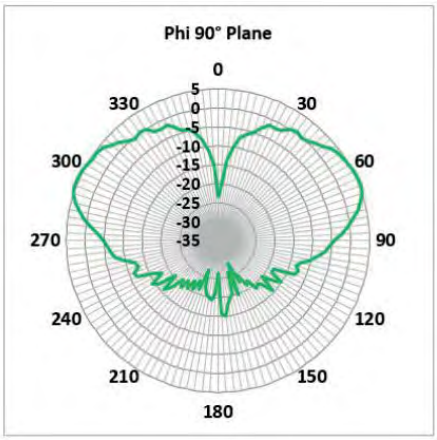




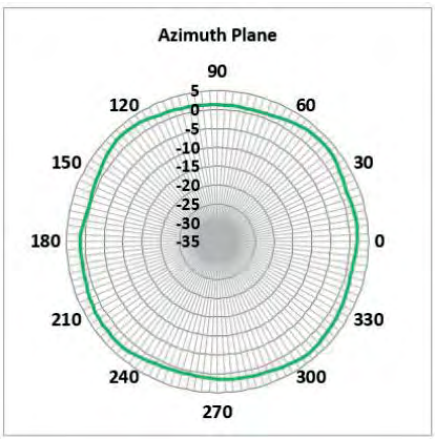
5470 MHz

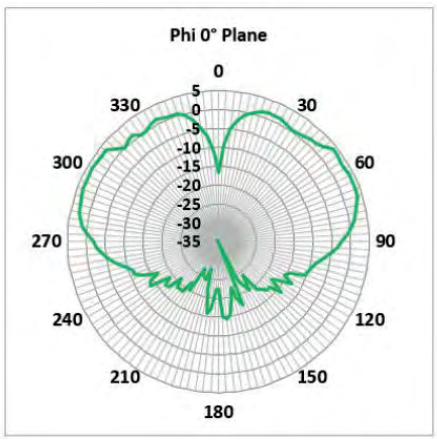


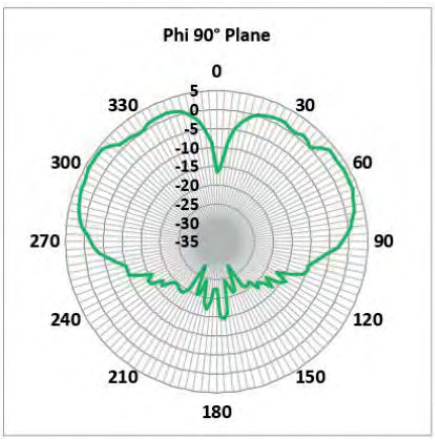




5925 MHz







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