Satellite IoT D2D Ready

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

Multi-Port MIMO Antenna

Covering 4G/5G/Satellite Band 25

The 3-port L001256-01 direct to device (D2D) antenna offers multi-protocol to support multiple applications with one antenna. They support high quality 2G, 3G, 4G, 5G, Band 25 Cellular.

They are engineered for high reliability and they support 2x2 MIMO for better throughput. The L001256-01 antenna is an excellent addition to new designs, or as a replacement for existing SISO phantom antennas suitable for both metallic and nonmetallic surfaces.

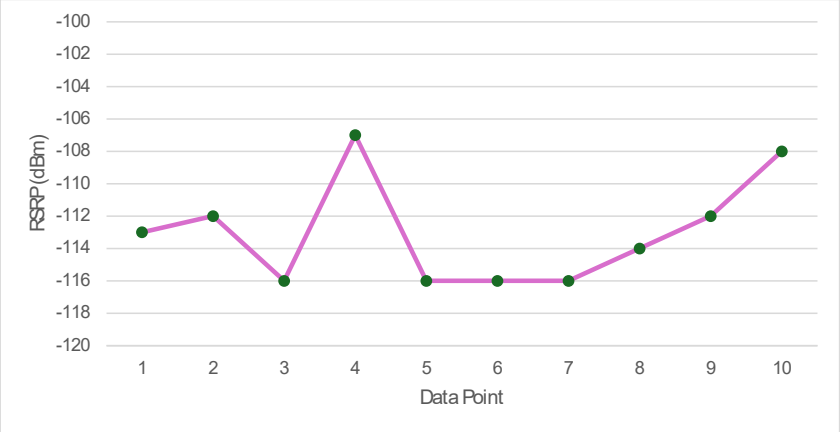
SATELLITE IOT D2D COMMUNICATIONS

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
  - 698-3800 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 L001256-01 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 the data rates of SMS, CAT-1, CAT-1 Bis 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.

FEATURES AND BENEFITS

- Covers 617-960 MHz and 1350-2700 MHz
- 2G, 3G, 4G, 5G, Cellular
- High gain patterns
- Rugged IP67 for vehicle and fixed installations

APPLICATIONS

- IoT and M2M
- Smart metering and AMI
- Remote monitoring and control
- Industrial and energy
- Automation, robotics, and AI

CONFIGURATION

PART NUMBER	CABLE TYPE	CABLE LENGTH	CONNECTOR	COLOR
L001256-01	LMR®-195 or equivalent	610 mm (24 in.)	SMA- male	Black

ELECTRICAL SPECIFICATIONS										
Antenna Model	L001256-01									
Number of Ports	2									
Operating Frequency (MHz)	617-698	698-824	824-894	880-960	1350-1550	1690-1880	1850-1990	1910-2180	2300-2500	2500-2700
Peak Gain – Average (dBi)*	2.4	3.1	2.8	2.7	2.7	3.6	3.9	3.5	3.6	2.9
Peak Gain – Max (dBi)*	3.2	4.0	4.0	3.4	4.7	4.1	4.1	4.2	4.0	3.4
Peak Gain- Max, No Ground Plane (dBi)	3.6	3.9	5.1	5.1	2.5	3.1	2.9	2.8	2.6	2.8
VSWR – Max*	2.5									
VSWR – Max, No Ground Plane	3.0									
VSWR Average*, Port 1	1.4	1.8	1.9	1.9	1.5	1.3	1.4	1.8	1.8	1.9
VSWR Average*, Port 2	1.4	1.8	1.9	1.9	1.5	1.3	1.4	1.8	1.8	1.8
Port-to-Port Isolation* (dB)	-8	-10	-10	-10	-15	-17	-18	-18	-18	-25
Port-to-Port Isolation, No Ground Plane (dB)	-7	-7	-8	-8	-15	-23	-22	-21	-24	-30
Nominal Impedance (Ohms)	50									
Polarization	Linear vertical									
Azimuth Beamwidth (°)	360, Omnidirectional									
Max Power - Ambient 25°C (W)	50									

* - Measured on a one-foot ground plane.

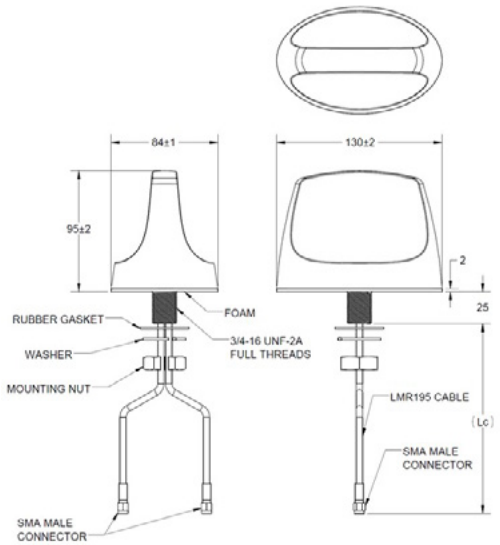
MECHANICAL SPECIFICATIONS	
Dimensions – L x W x H – mm (inches)	130 x 84 x 95 (5.12 x 3.31 x 3.74)
Weight – g (oz.)	343 (12.1)
Radome/Baseplate Material	PC, UL94 V0 Rating, UV Stable

ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature – °C (°F)	-30 to +70°C (-22 to +158°F)
Storage Temperature – °C (°F)	-40 to +85°C (-40 to +185°F)
Material Substance Compliance	RoHS
Ingress Protection	IP67 (when installed on a hard, flat surface)

PACKAGING INFORMATION

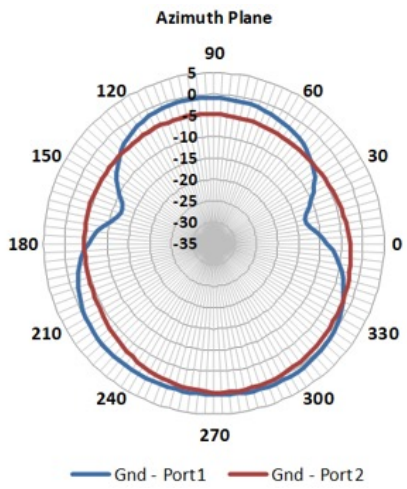
PACKAGED DIMENSIONS	MASTER CARTON	AIR PALLET	OCEAN PALLET
Number of Antennas	20	480	600
Height – cm (in.)	30.0 (11.8)	135 (53.2)	165 (65.0)
Length – cm (in.)	52.5 (20.7)	105 (41.3)	105 (41.3)
Width – cm (in.)	26.5 (10.4)	79.5 (31.3)	79.5 (31.3)
Shipping Weight – kg (lbs.)	7.36 (16.2)	190 (419)	230 (507)

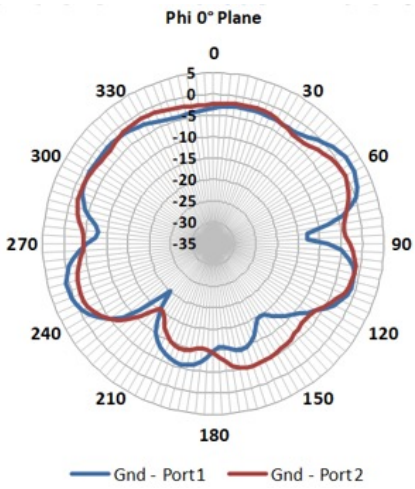
MECHANICAL DRAWING

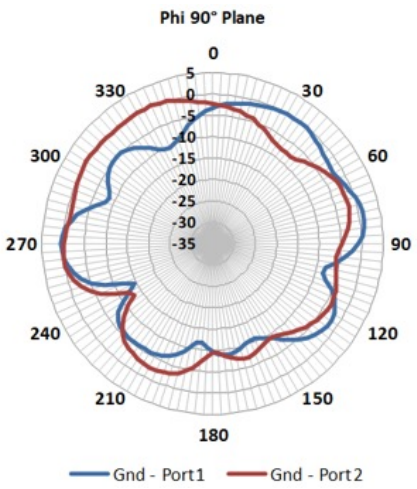


RADIATION PATTERNS- ON GROUND PLANE

633 MHZ







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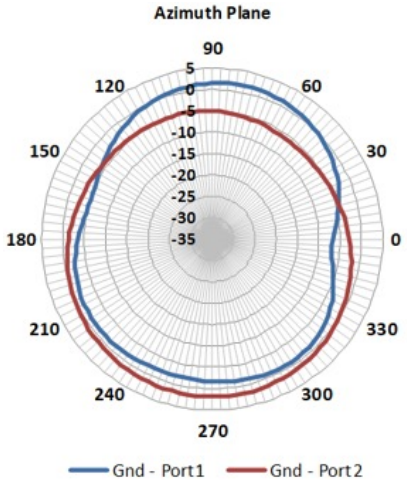

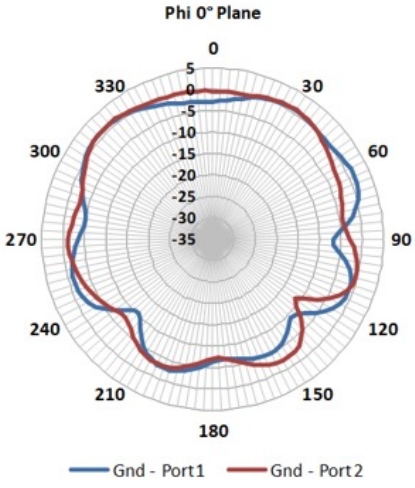

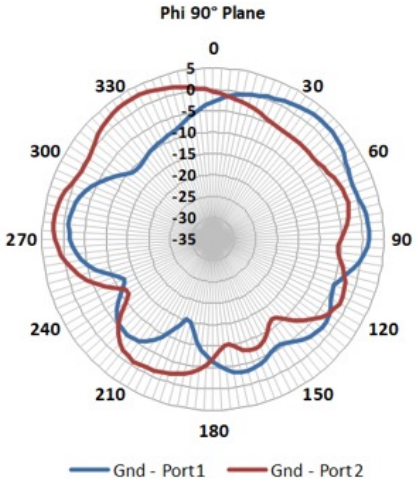

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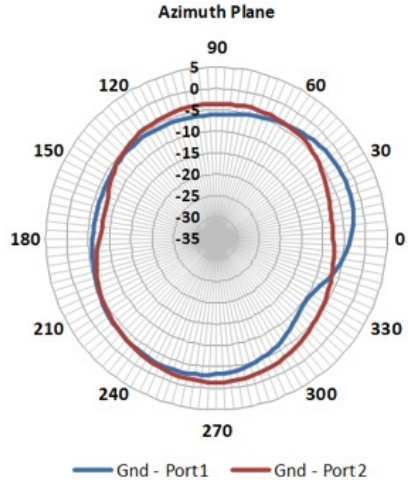

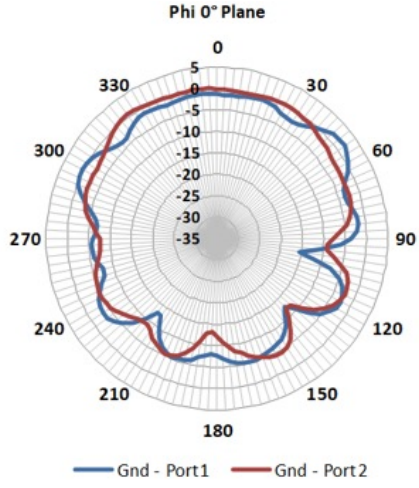

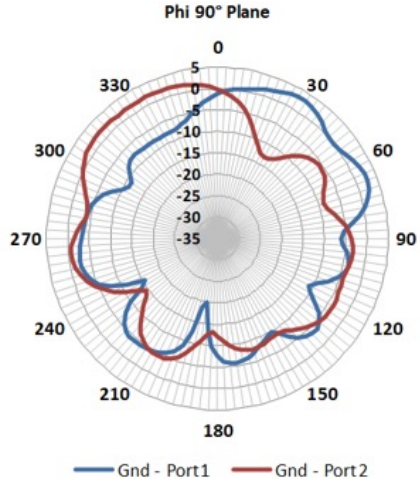

RADIATION PATTERNS- ON GROUND PLANE

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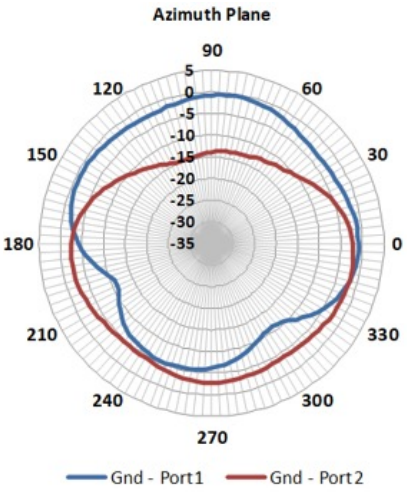

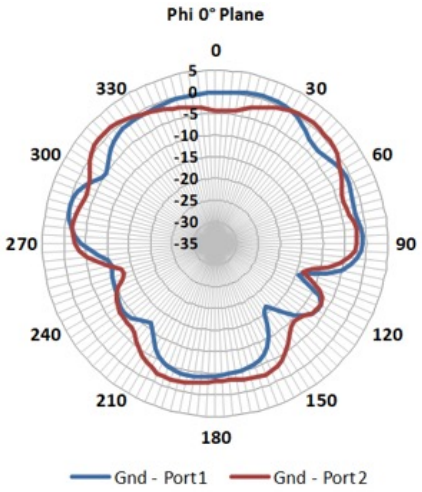

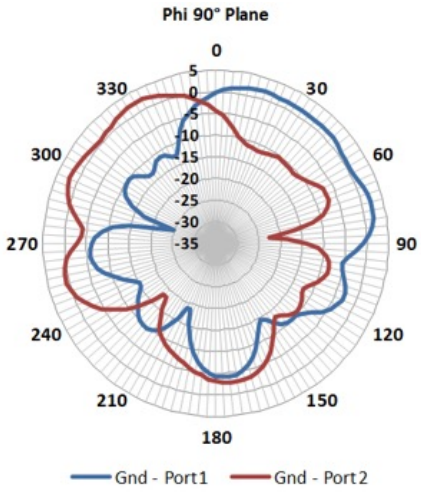

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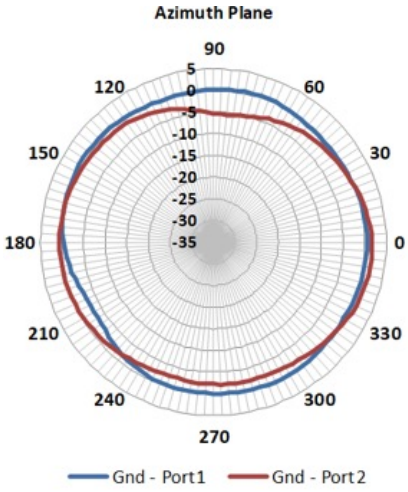

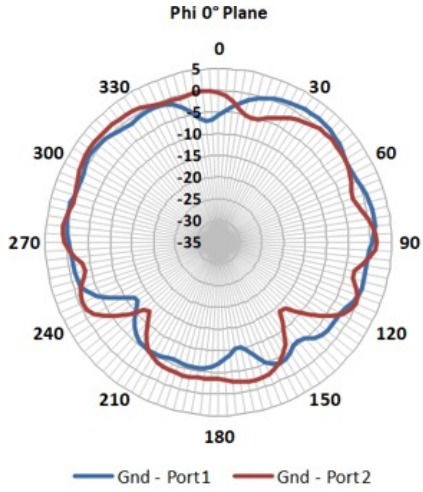

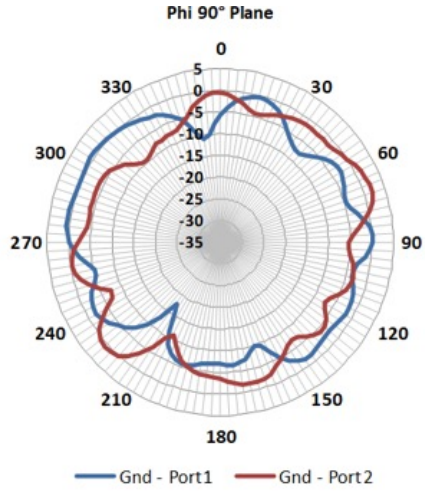

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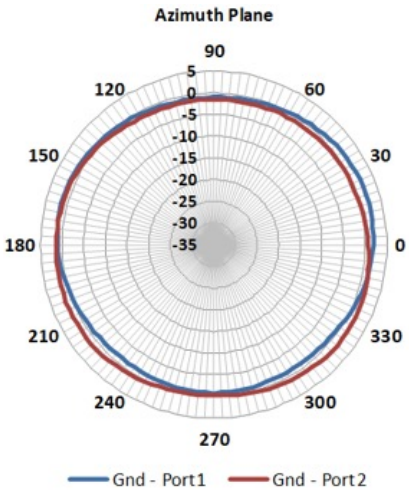

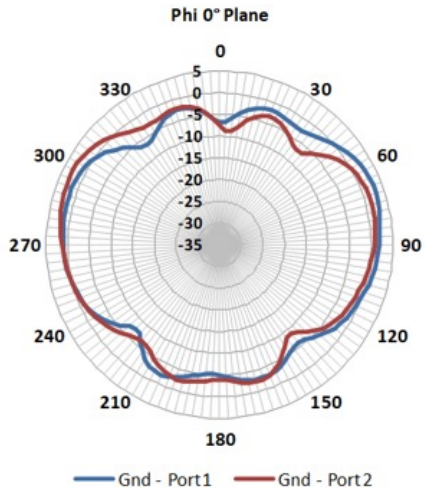

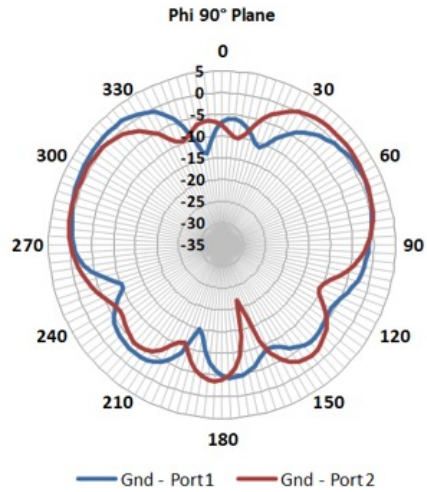

RADIATION PATTERNS- ON GROUND PLANE

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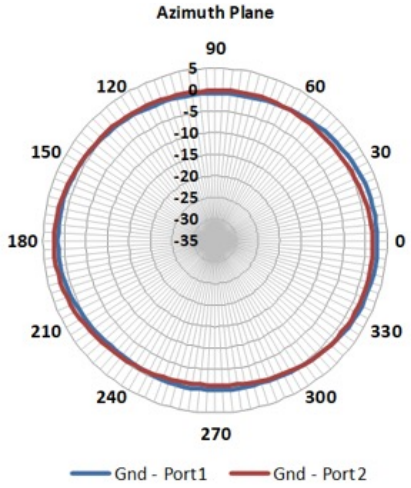

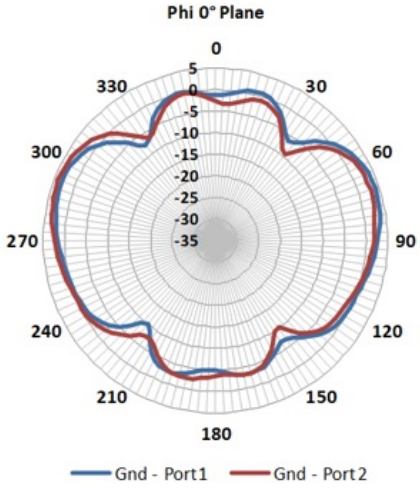

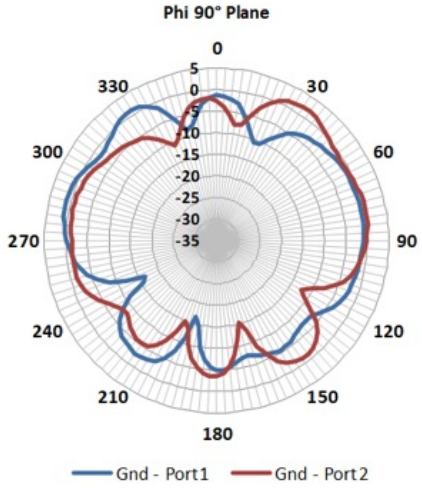

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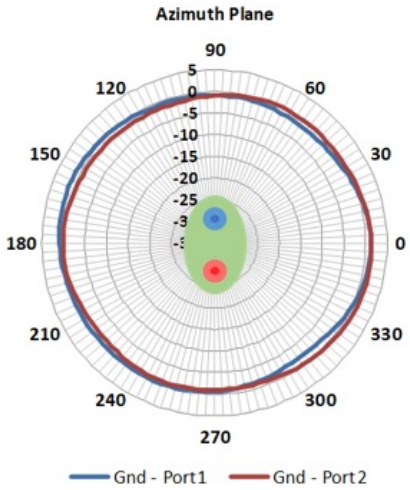

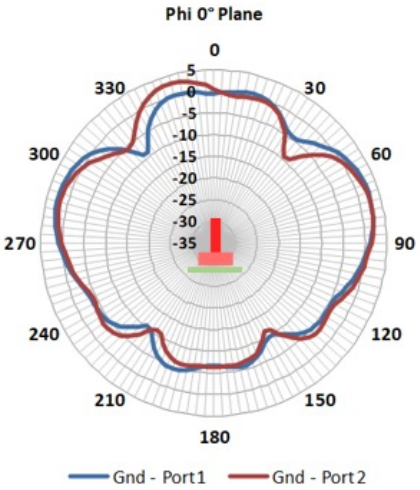

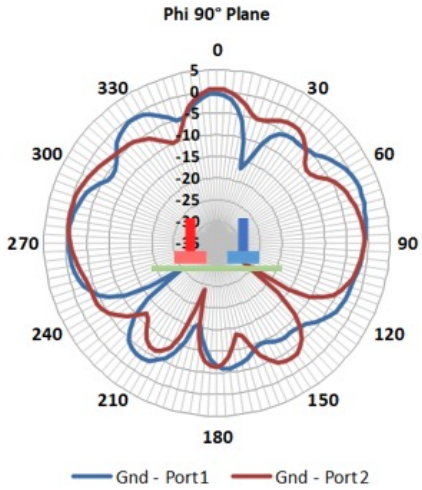

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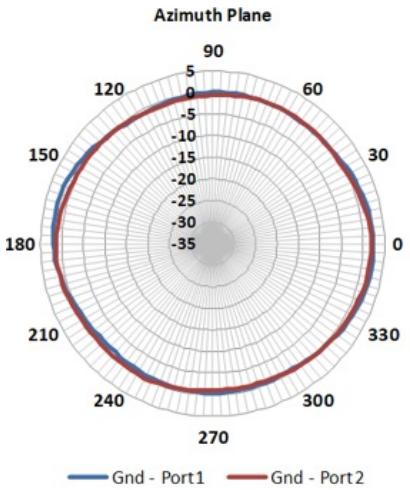

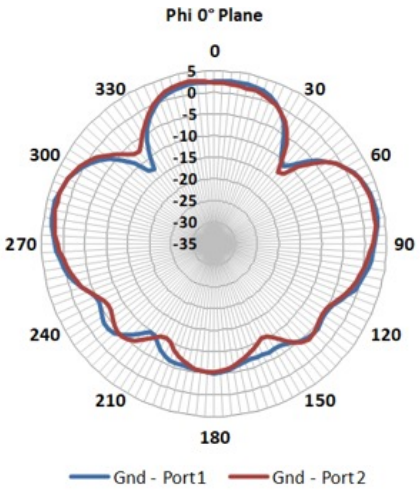

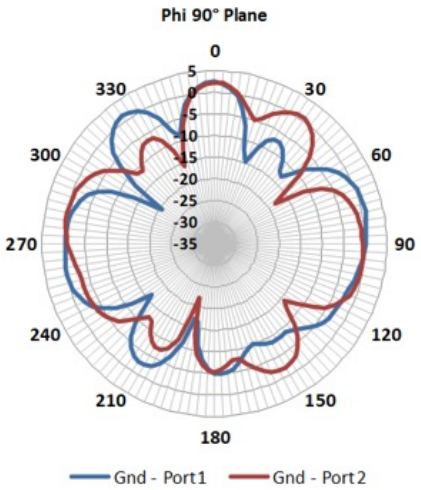

RADIATION PATTERNS- ON GROUND PLANE

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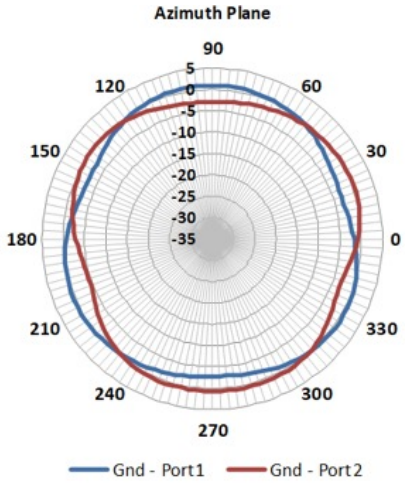

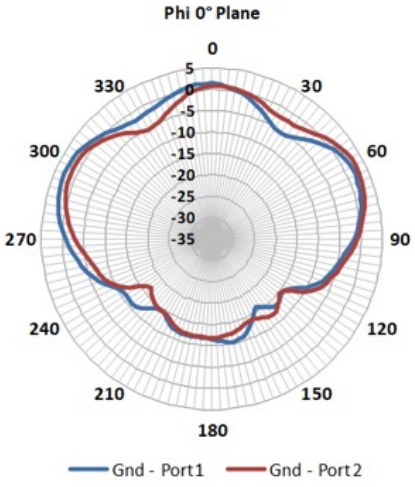

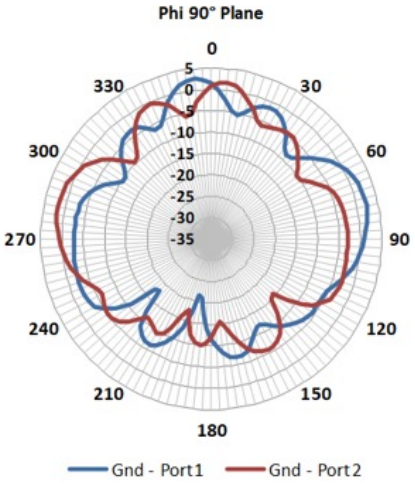

RADIATION PATTERNS- NO GROUND PLANE

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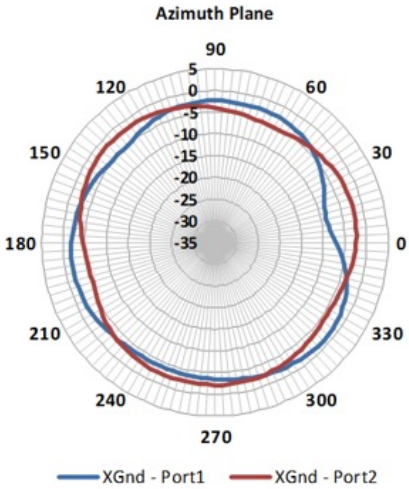

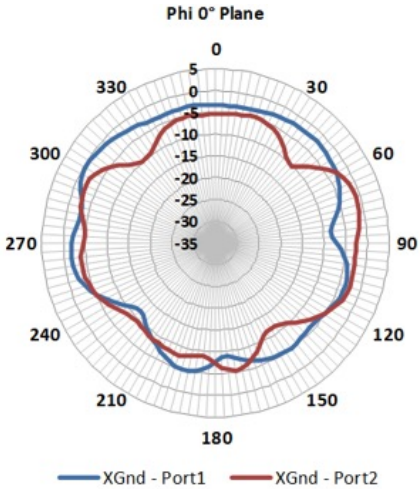

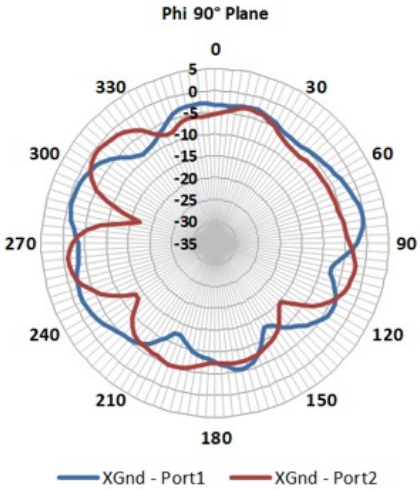

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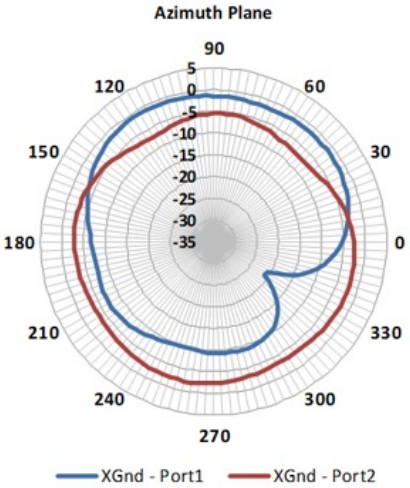

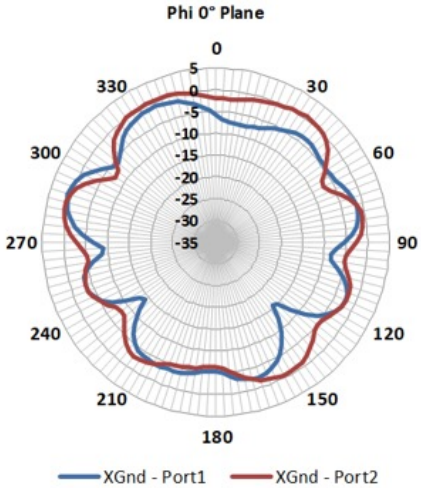

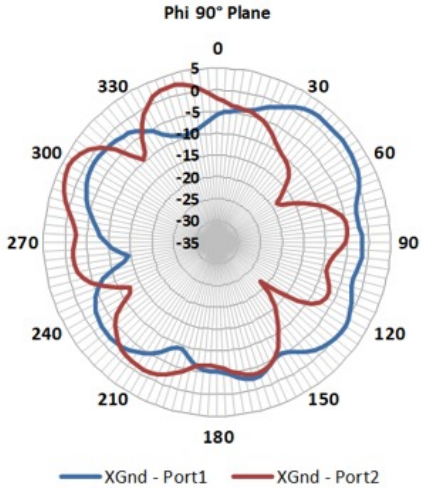

RADIATION PATTERNS- NO GROUND PLANE

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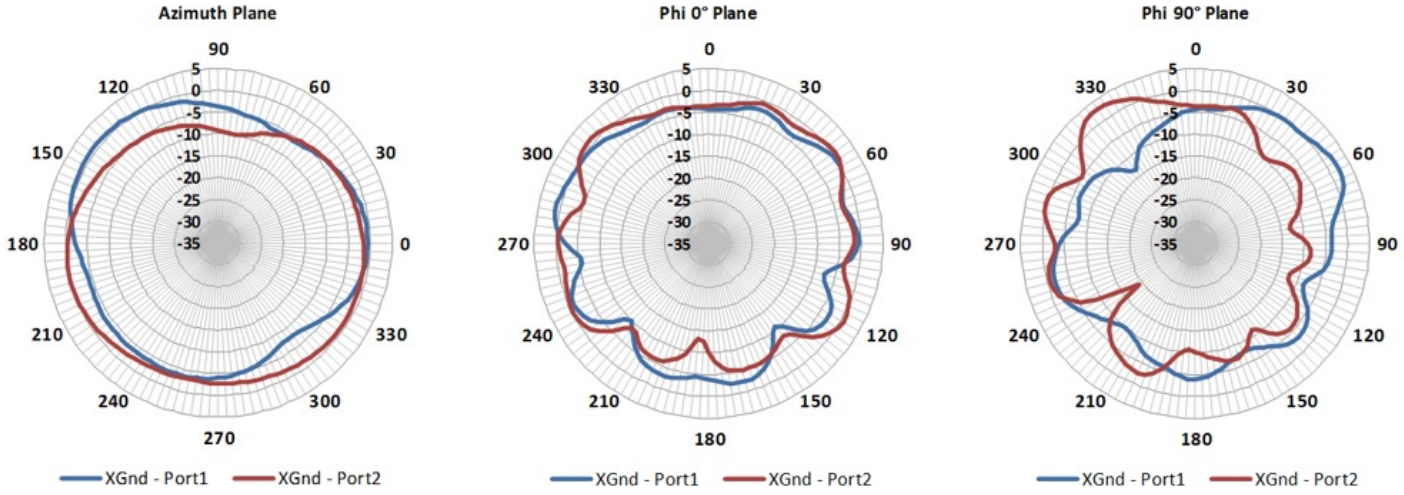

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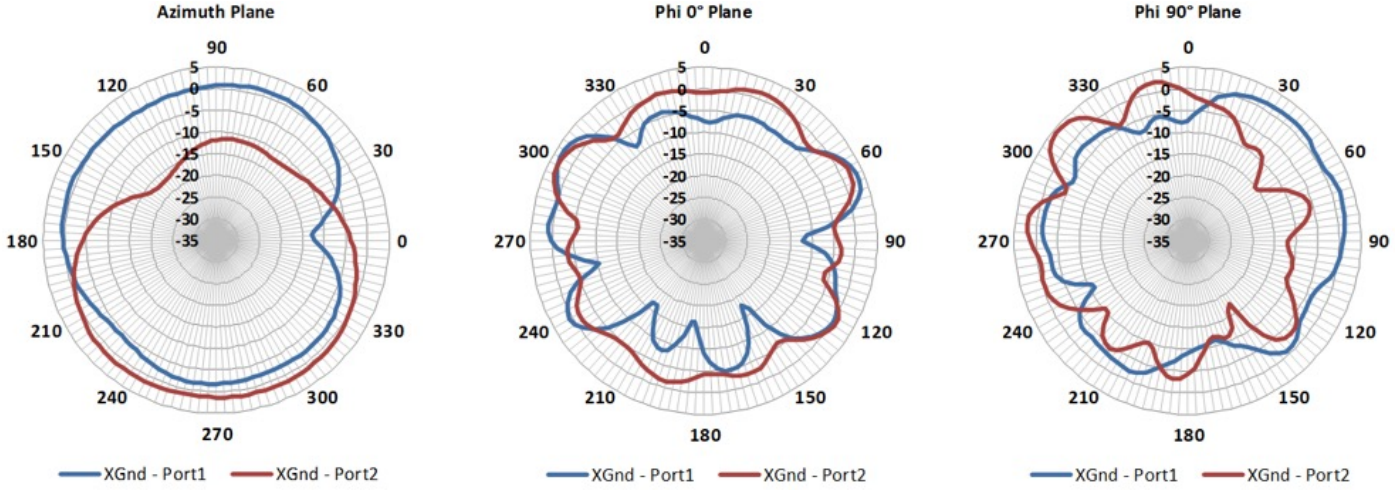

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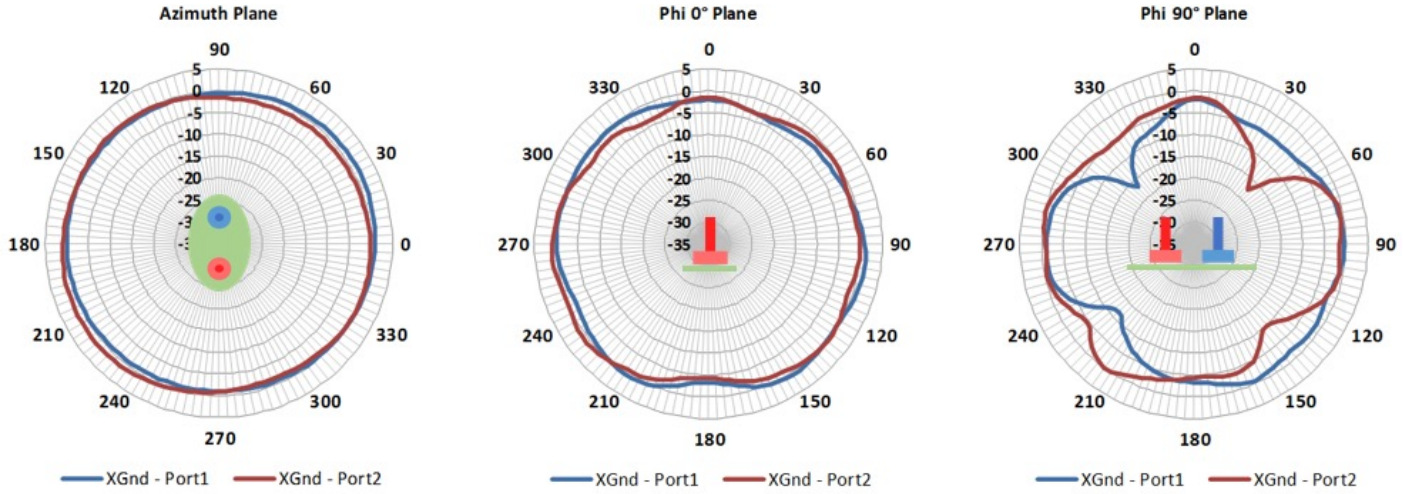

RADIATION PATTERNS- NO GROUND PLANE

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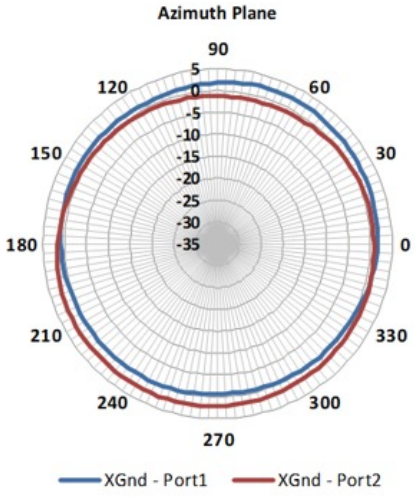

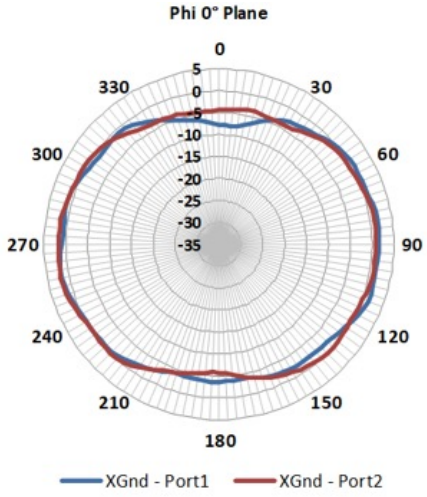

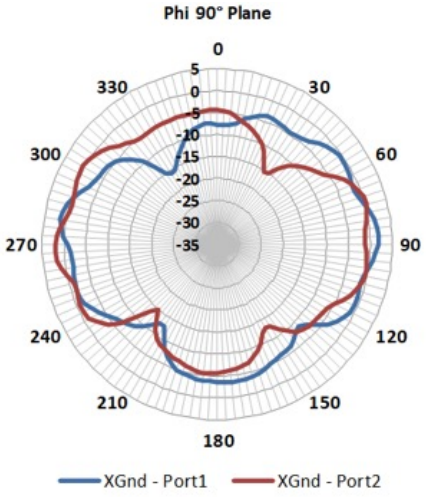

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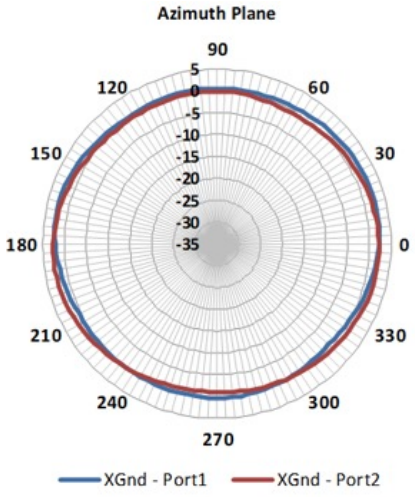

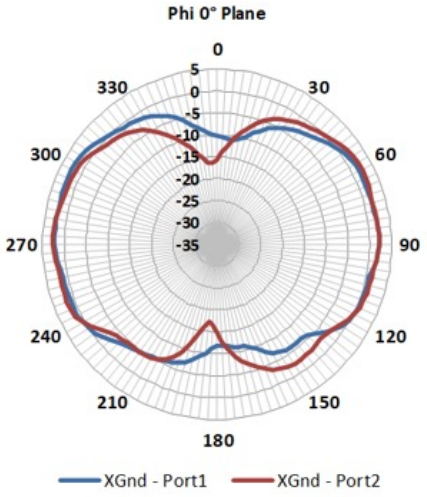

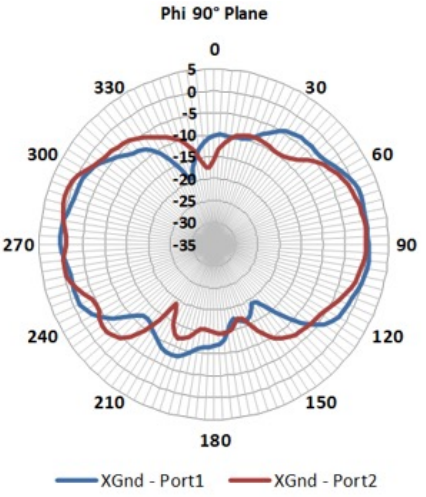

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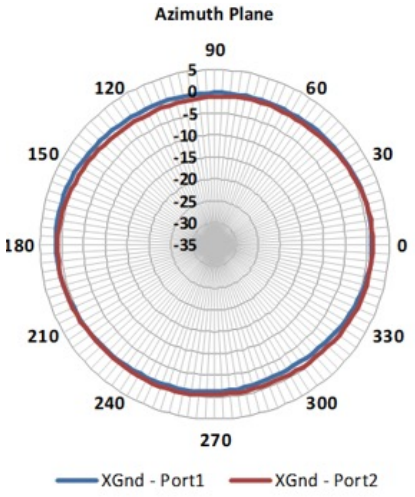
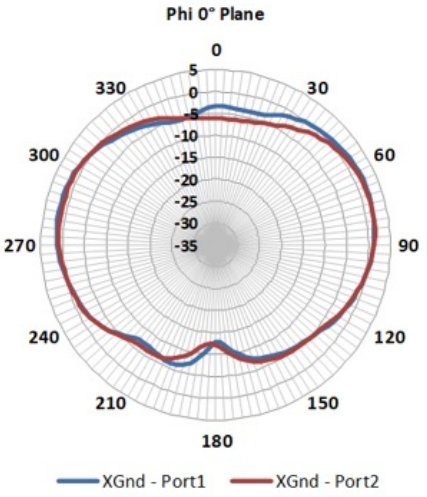
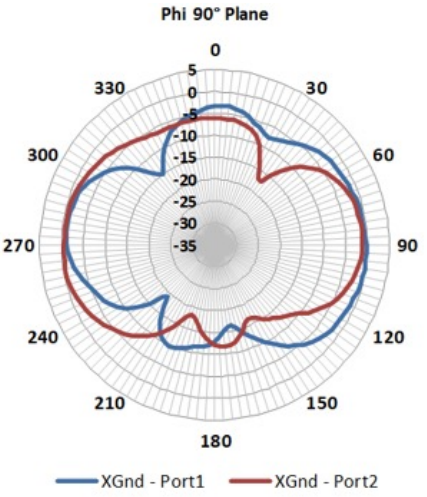
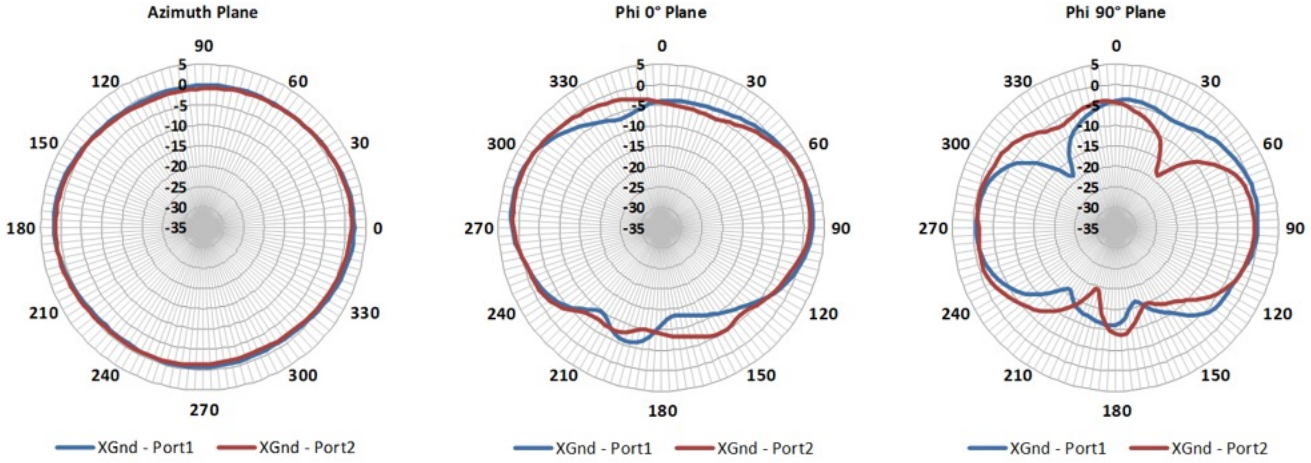




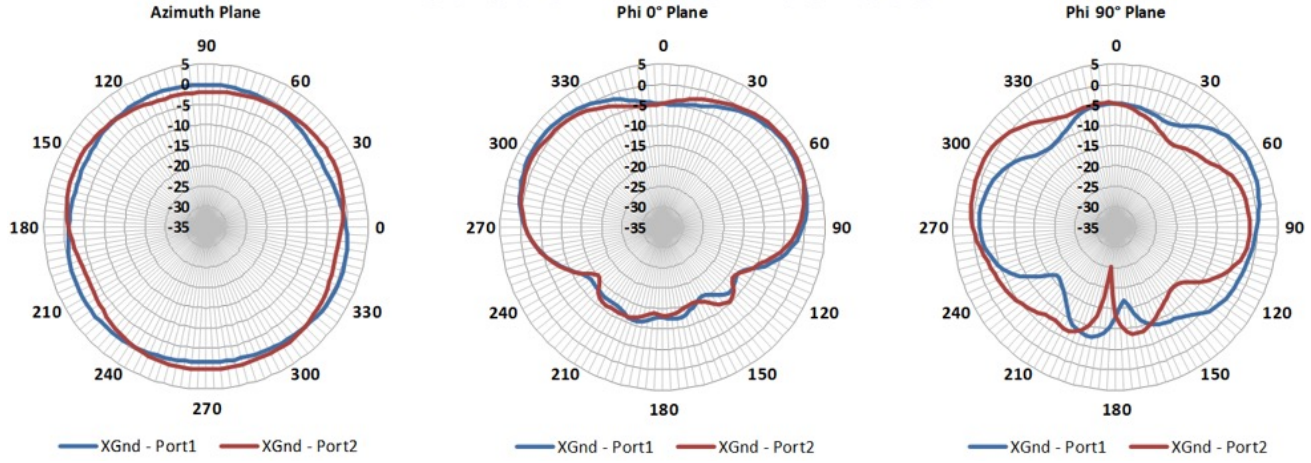


RADIATION PATTERNS- NO GROUND PLANE

2300 MHZ



2595 MHZ



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