



Gar VFQ69383x21JN

4-Port Vehicular MIMO Antenna
698-960/1690-3800 MHz and 2400-2500/4900-6000 MHz

The Gar VFQ69383x21JN multiport/multiband antenna provides an excellent solution for public safety, transportation, and aftermarket fleet applications. Configured for two-port operation over the 3G/4G/5G/ISM/CBRS bands and one-port operation over the low/high frequency Wi-Fi bands. An additional fourth port provides an active antenna for enabling GNSS global navigation services.

FEATURES AND BENEFITS

- One single-hole mount/fixing reduces vehicle damage and the cost of installation
- Attractive IP67 low profile aerodynamic housing
- Multiband/multiport operation with GNSS navigation
- Operates well on a ground plane and without a ground plane.

APPLICATIONS

- FirstNet/Public safety
- Transportation
- Aftermarket fleet
- 5G-ready
- Rugged LTE gateways
- Others

ELECTRICAL SPECIFICATIONS

Antenna Model	VFQ69383x21JN					
Number of Ports	4					
Port Configuration	2x- 3G/4G/5G/ISM/CBRS				1x- Wi-Fi	
Operating Frequency (MHz)	698-806	824-894	880-960	1690-3800	2400-2500	4900-6000
Avg. Peak Gain* (dBi) – Gnd. Plane [No Gnd. Plane]	0.2 [1.3]	0.6 [2.0]	1.1 [2.4]	3.8 [1.7]	2.4 [-0.5]	6.4 [3.7]
Max Peak Gain* (dBi) – Gnd. Plane [No Gnd. Plane]	1.2 [2.4]	1.1 [2.4]	1.8 [2.8]	7.4 [4.7]	3.1 [-0.4]	7.0 [4.8]
VSWR** – Avg, Gnd. Plane [No Gnd. Plane]	1.7 [2.0]	1.7 [1.7]	1.7 [1.8]	1.4 [1.5]	1.6 [1.5]	1.2 [1.2]
VSWR** – Max, Gnd. Plane [No Gnd. Plane]	2.5 [2.5]	2.1 [2.5]	2.2 [2.5]	2.1 [2.1]	2.0 [2.0]	2.0 [2.0]
Isolation** (dB)– Gnd. Plane [No Gnd. Plane]						

LTE1 to LTE2	-10 [-12]	-12 [-12]	-15 [-14]	-18 [-16]	-23 [-25]	-37 [-37]
LTE1 to WiFi	-38 [-32]	-37 [-32]	-37 [-32]	-14 [-14]	-14 [-14]	-35 [-33]
LTE2 to WiFi	-43 [-45]	-45 [-43]	-45 [-42]	-49 [-26]	-60 [-26]	-47 [-42]
WiFi to GNSS	-68 [-65]	-72 [-70]	-66 [-64]	-54 [-50]	-60 [-55]	-54 [-50]
LTE1 to GNSS	-43 [-40]	-42 [-40]	-39 [-35]	-28 [-25]	-28 [-25]	-39 [-35]
LTE2 to GNSS	-39 [-35]	-44 [-41]	-46 [-43]	-50 [-48]	-59 [-55]	-54 [-50]
Azimuth Plane 3 dB Beamwidth	360°, Omnidirectional					
Nominal Impedance (Ohms)	50					
Polarization	Linear Vertical					
Max Power - Ambient 25°C (W)	30 (LTE/CELL); 10 (Wi-Fi)					

Notes: (*) – This parameter is based on a 30cm (1ft) cable length. For the ground plane measurement, a 30cm (1ft) ground plane was used

()** – This parameter is based on a 518cm (17ft) cable length. For the ground plane measurement, a 30cm (1ft) ground plane was used.

Antenna specifications are subject to change according to the ground plane size.

MECHANICAL SPECIFICATIONS

Dimensions – L x W x H – mm (inches)	179 x 63 x 48 (7.04 x 2.48 x 1.69)
Weight – kg (lbs.)	0.93 kg (2.1 lbs)
Cable Type	LMR 100, Black
Mounting	P-Mount
Color	Black or White
Radome Material	PC, UL94-V0
Baseplate Material	Aluminum

ENVIRONMENTAL SPECIFICATIONS

Operating Environment	Outdoor Vehicle
Operating Temperature – °C (°F)	-30 to +70°C (-22 to +158°F)
Storage Temperature – °C (°F)	-40 to +85°C (-40 to +185°F)
Ingress Protection Rating	IP67
Rail Compliance Standards	EN61373 (Shock and Vibration), EN50155 (Temperature)
Material Substance Compliance	RoHS

GNSS ANTENNA SPECIFICATIONS			
Frequency of Operation (MHz)	1559 - 1606		
Band	BEIDOU	GPS	GLONASS
Frequency Band (MHz)	1561.098 ±2.046	1575.42 ±1.023	1602 ±5
Absolute Gain (dBi) – Gnd. Plane [No Gnd. Plane]	3.3 [3.4]	4.6 [4.9]	4.8 [4.7]
LNA Gain, Typ. @ room temp. (dBi)	28 ±3		
Noise Figure @ room temp., Max (dB)	≤ 2.5 @ 1575 MHz		
Max VSWR @ room temp.	≤ 2.0		
Polarization	RHCP		
Nominal Impedance (Ohms)	50		
DC Voltage (Vdc)	3.3		
Operating Supply Voltage (Vdc)	2.5 - 7.0		
Current Consumption, Max @ room temp mA)	20		
Out-of-band Signal Rejection Min @ room temp (dBc)	80 (@ 698- 960 MHz)	80 @ (1710- 2700 MHz)	
	80 (@ 1428- 1511 MHz)	70 (@ 4900- 5800 MHz)	
	50 @ (1627- 1638 MHz)		
Input Max Power (dBm)	-10		
Cable Type	RG174		

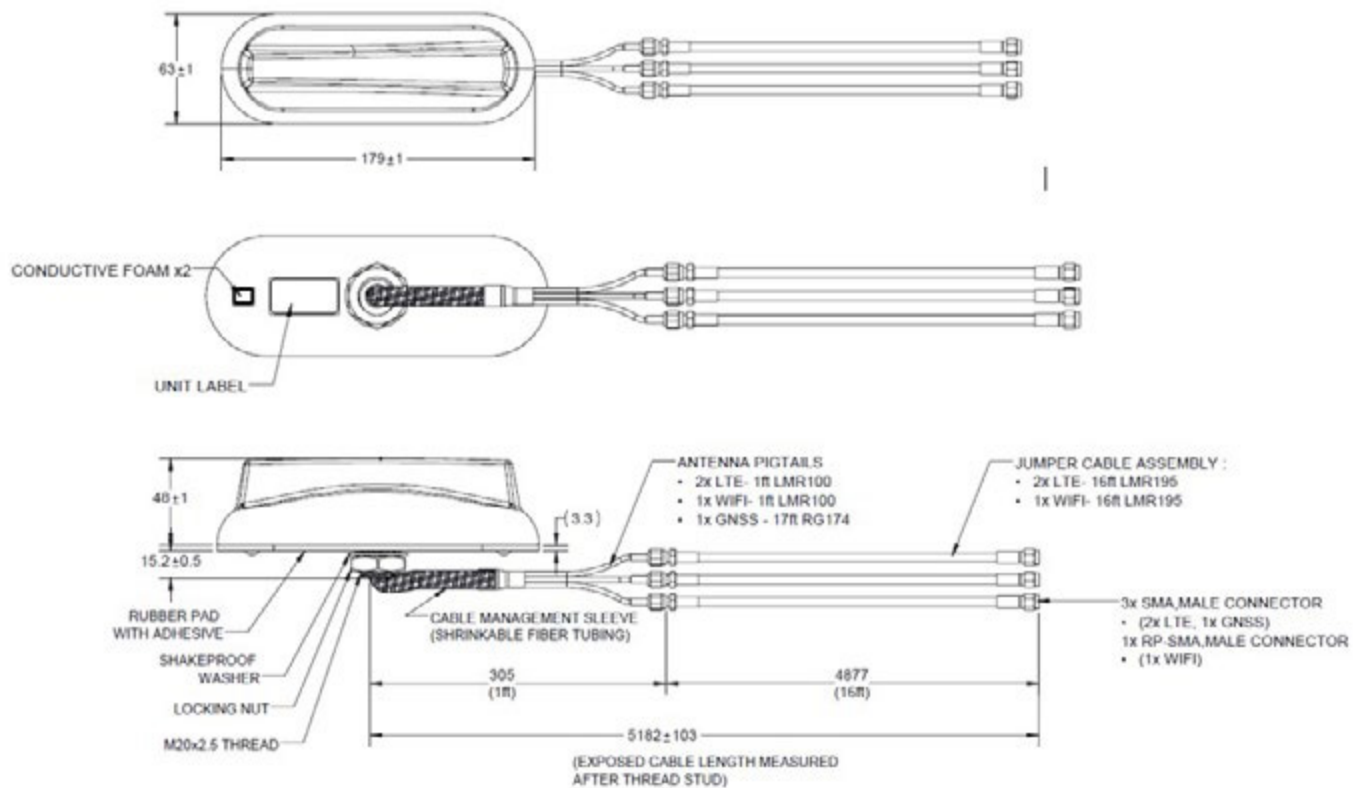
CONFIGURATION

PART NUMBER	CABLE LENGTH		CONNECTORS			COLOR
	PIGTAIL	JUMPER	LTE/CELL	WIFI	GNSS	
VFQ69383B21JN-518L	0.3 m (1 ft.)	4.9 m (16 ft.)	SMA-male	RPSMA-male	SMA-male	Black
VFQ69383W21JN-518L	0.3 m (1 ft.)	4.9 m (16 ft.)	SMA-male	RPSMA-male	SMA-male	White

PACKAGING INFORMATION

PACKAGED DIMENSIONS	CARTON	MASTER CARTON	AIR PALLET	OCEAN PALLET
Number of Antennas	1	4	140	196
Height – mm (in.)	130 (5.12)	235 (9.25)	1335 (52.56)	1813 (71.38)
Length – mm (in.)	222 (8.74)	543 (21.38)	1200 (47.24)	1200 (47.24)
Width – mm (in.)	222 (8.74)	232 (9.13)	800 (31.5)	800 (31.5)
Shipping Weight – kg (lb.)	1.16 (2.56)	5.17 (11.4)	194 (428)	267 (589)

MECHANICAL DRAWINGS

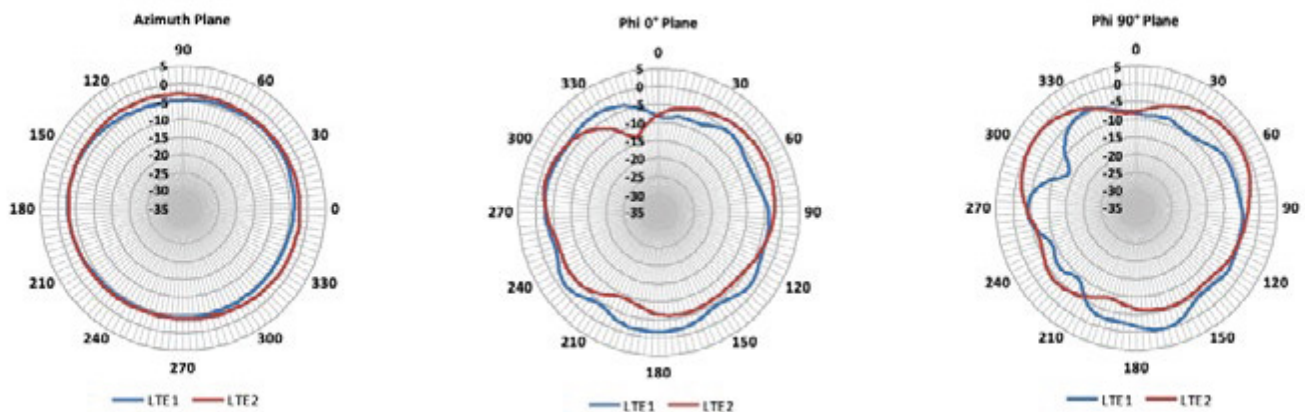


The Gar antenna can create an IP67 water-tight seal when installed on vehicles. Certain vehicles such as a Ford Explorer Interceptor have more narrow roof ridges that are tightly spaced together. For this type, vehicle special adapters are available.

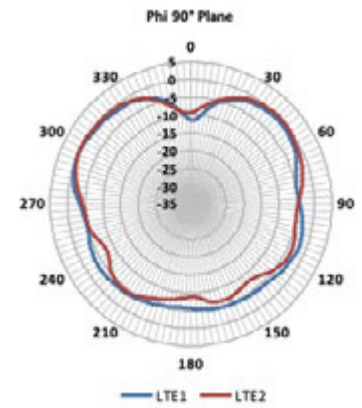
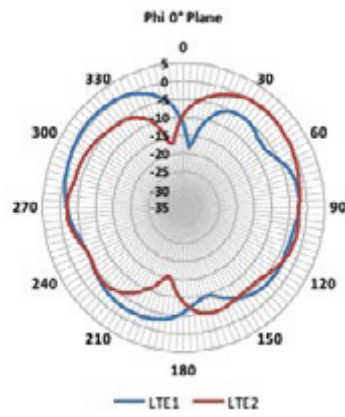
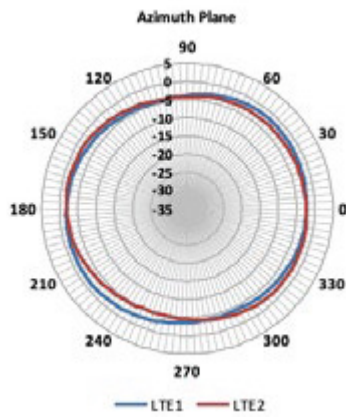
See parts [BKIT-VFX69383-001](#) (between ridges installation) and [BKIT-VFX69383-003](#) (atop ridge installation) for product details.

RADIATION PATTERNS WITH GROUND PLANE - LTE ANTENNAS

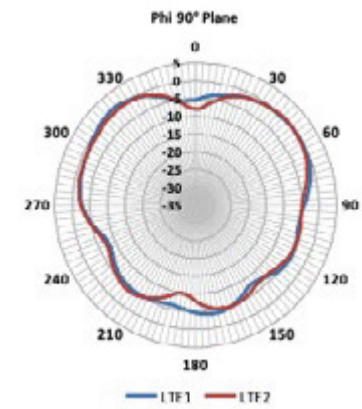
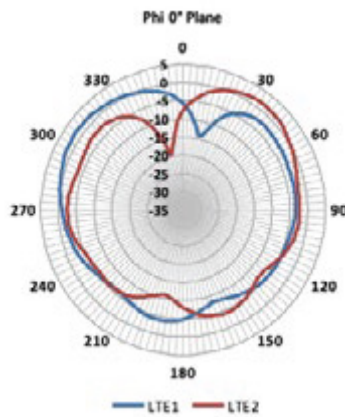
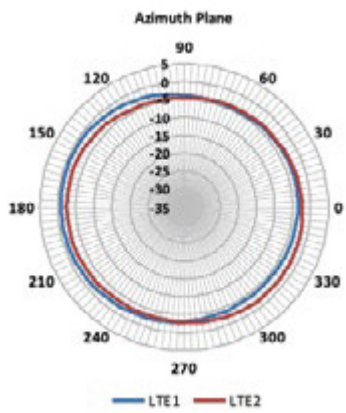
698 MHz



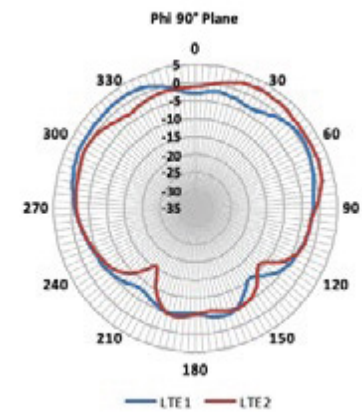
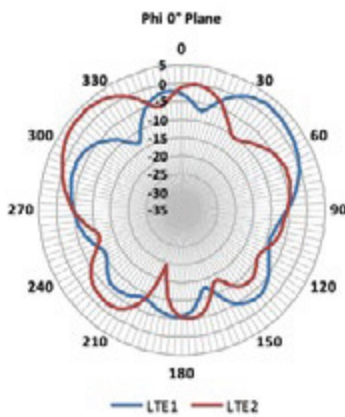
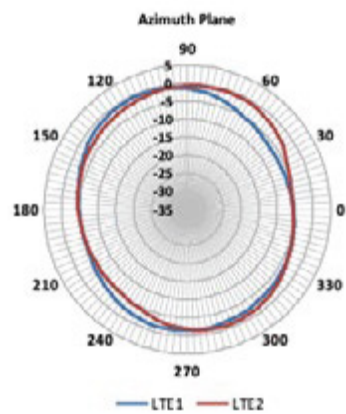
880 MHz



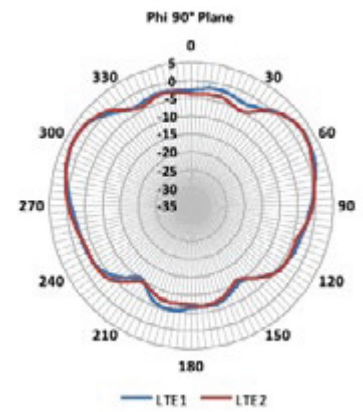
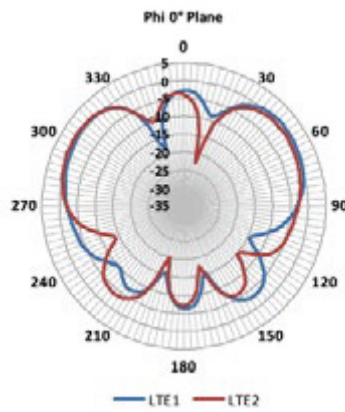
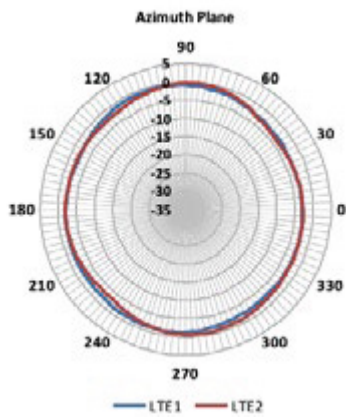
960 MHz



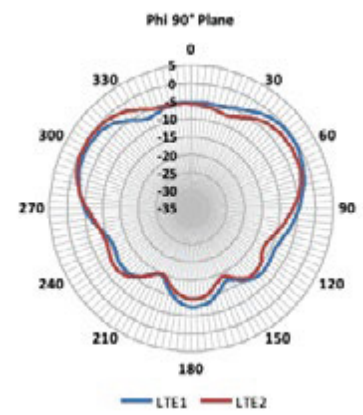
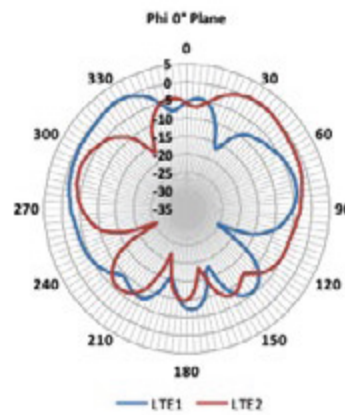
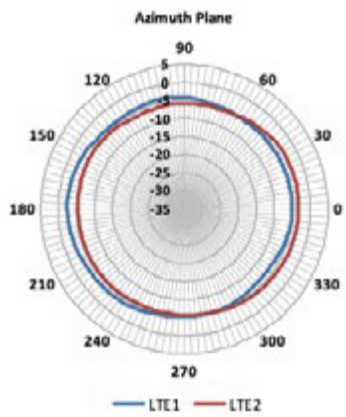
1690 MHz



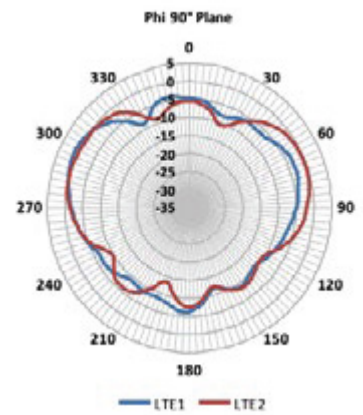
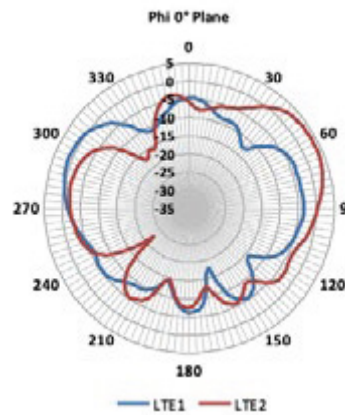
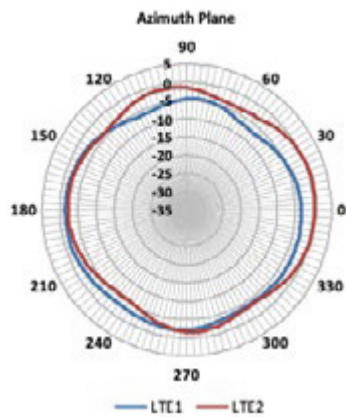
1920 MHz



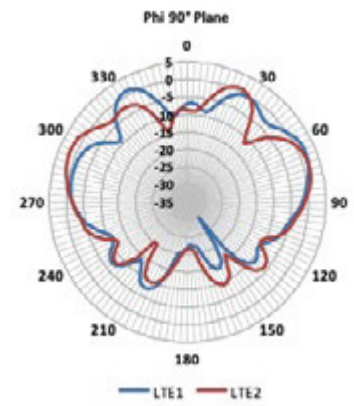
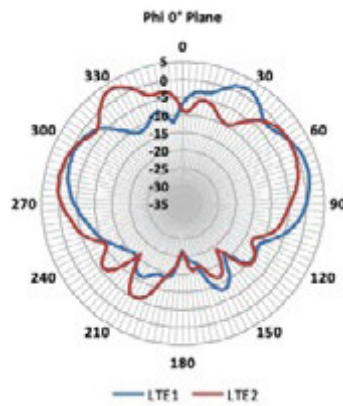
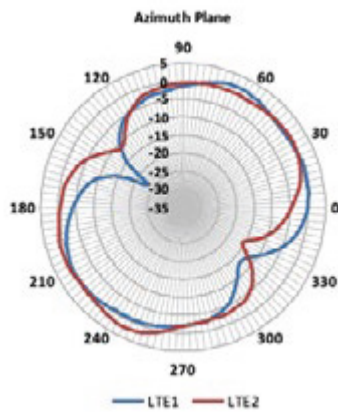
2110 MHz



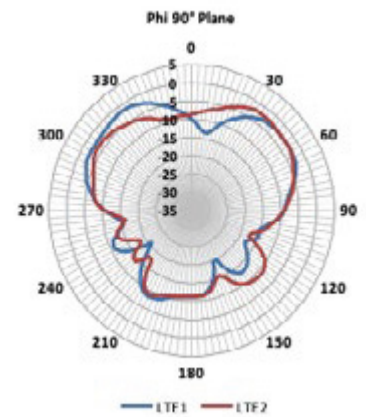
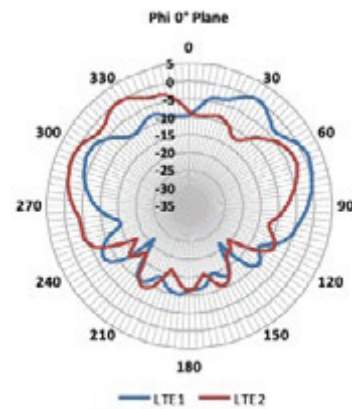
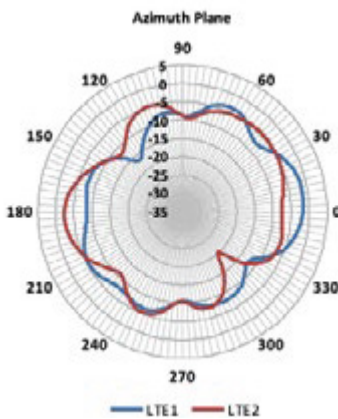
2400 MHz



3500 MHz

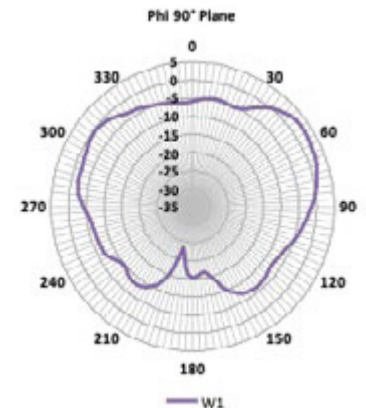
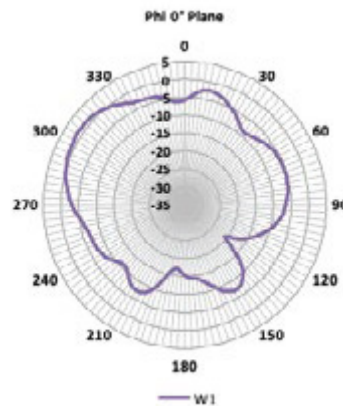
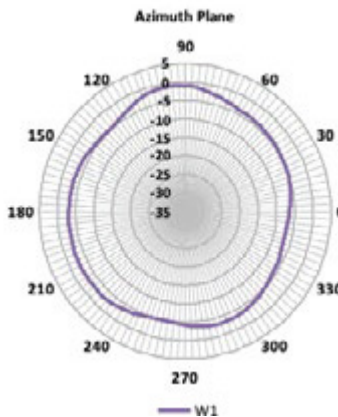


3800 MHz

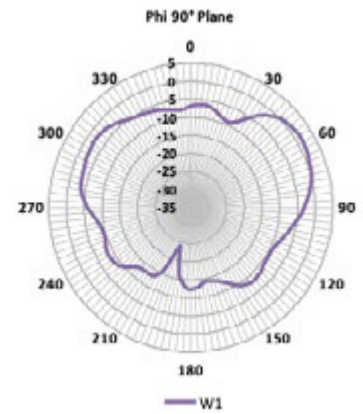
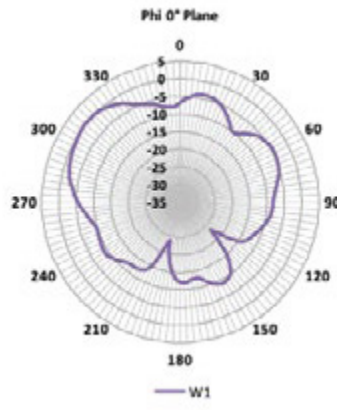
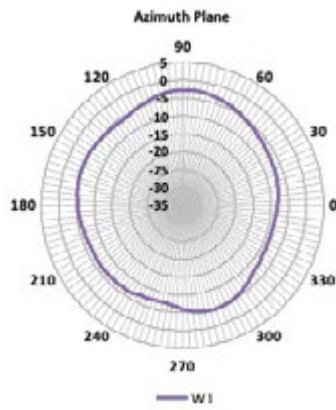


RADIATION PATTERNS *WITH GROUND PLANE* - WI-FI ANTENNAS

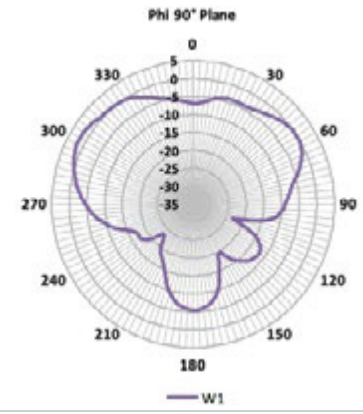
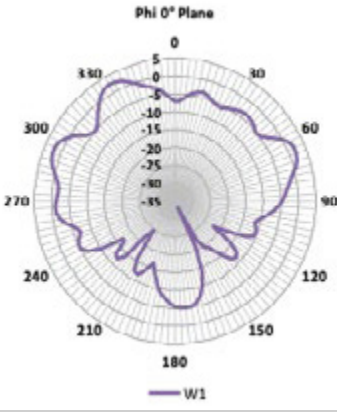
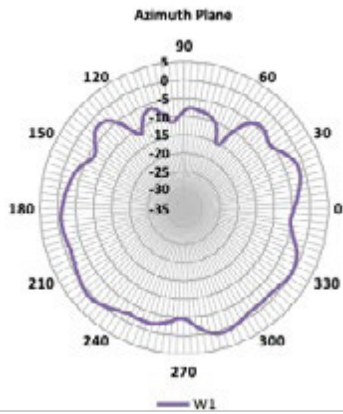
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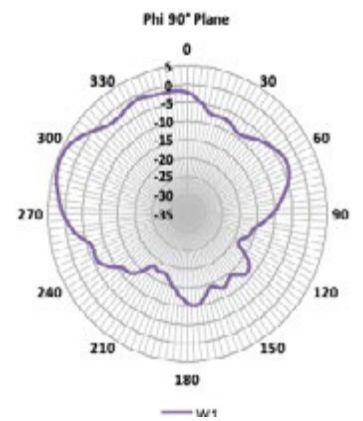
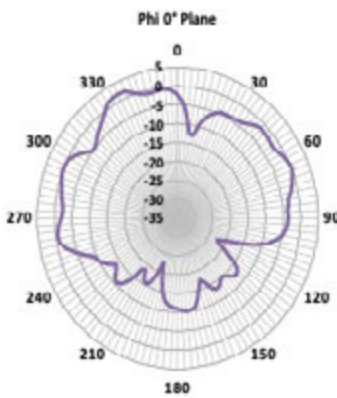
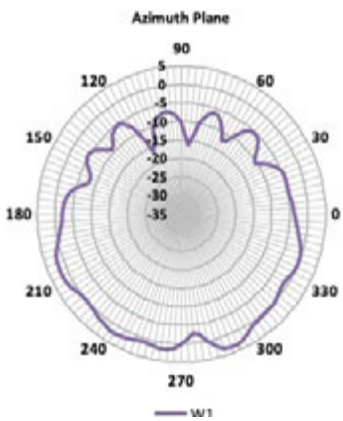
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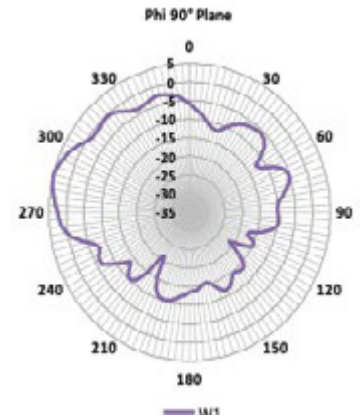
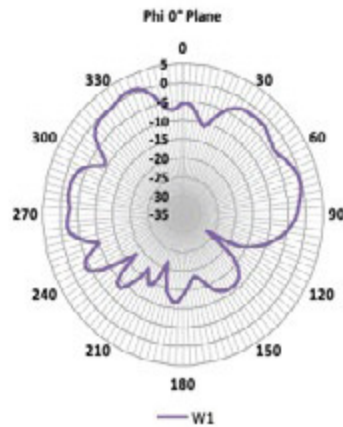
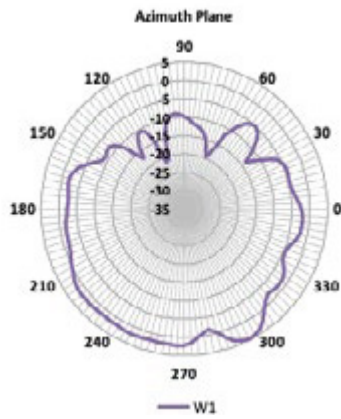
4900 MHz



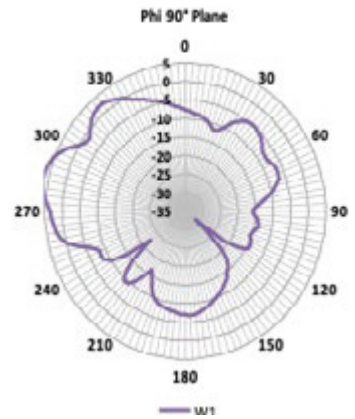
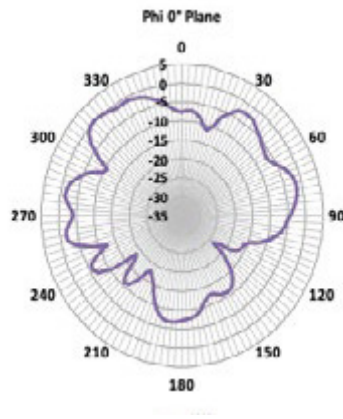
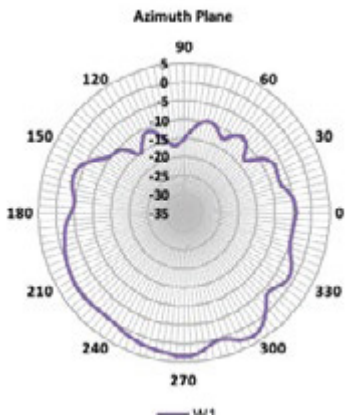
5350 MHz



5750 MHz

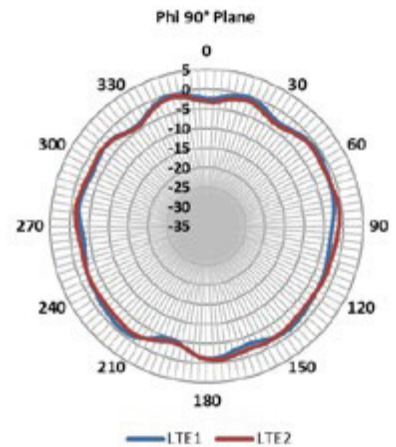
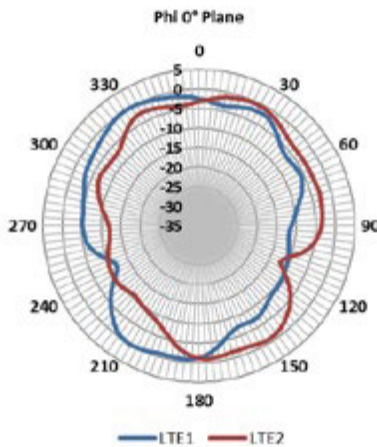
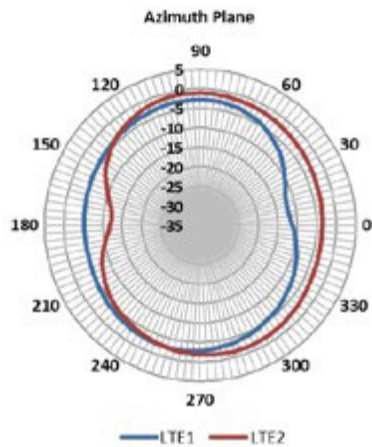


6000 MHz

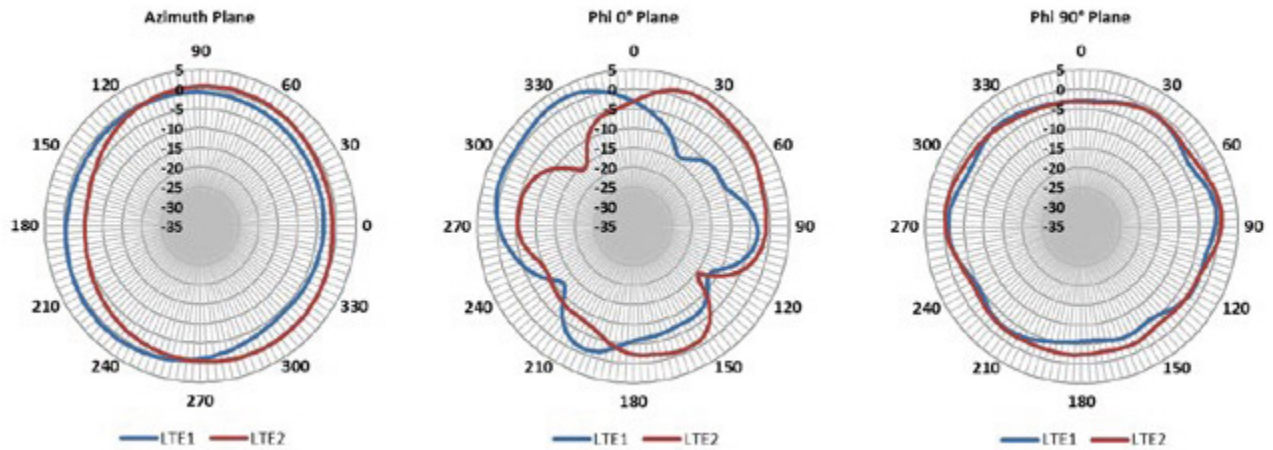


RADIATION PATTERNS *WITHOUT GROUND PLANE* - LTE ANTENNAS

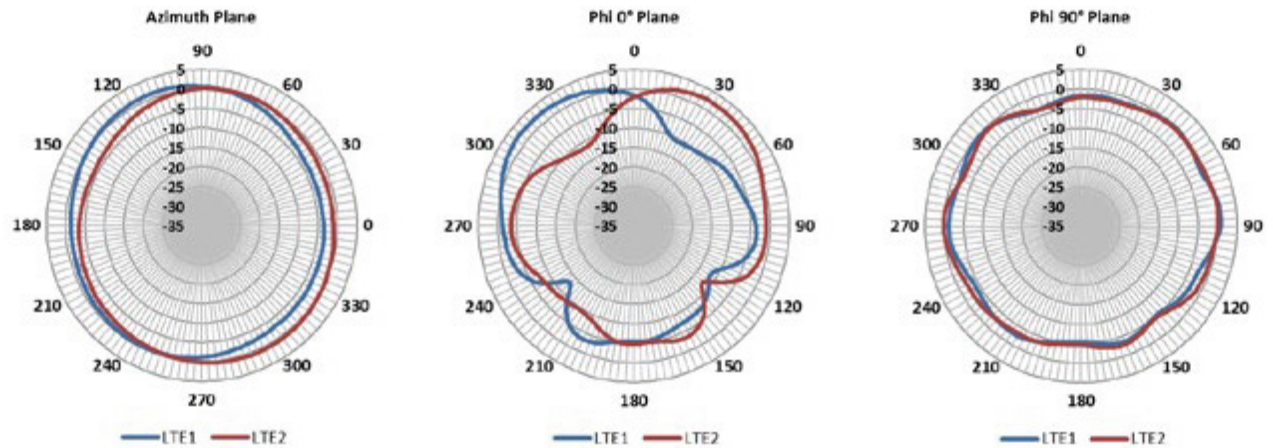
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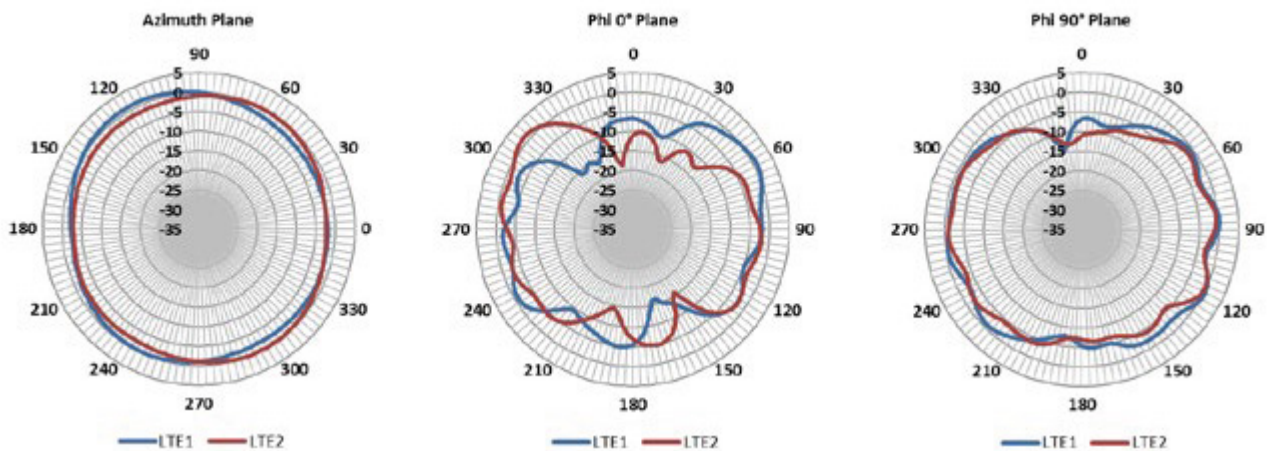


960 MHz

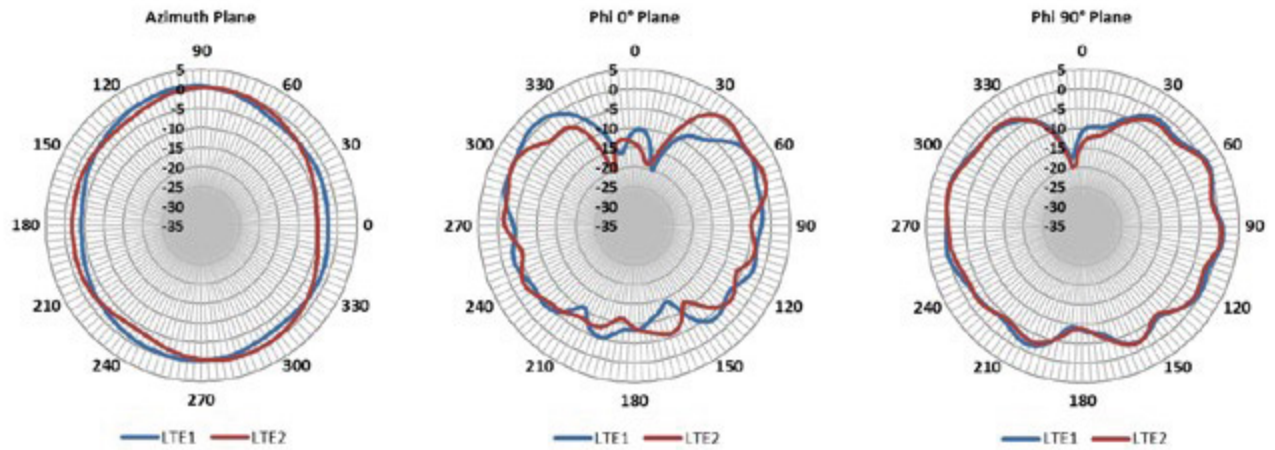


1690 MHz

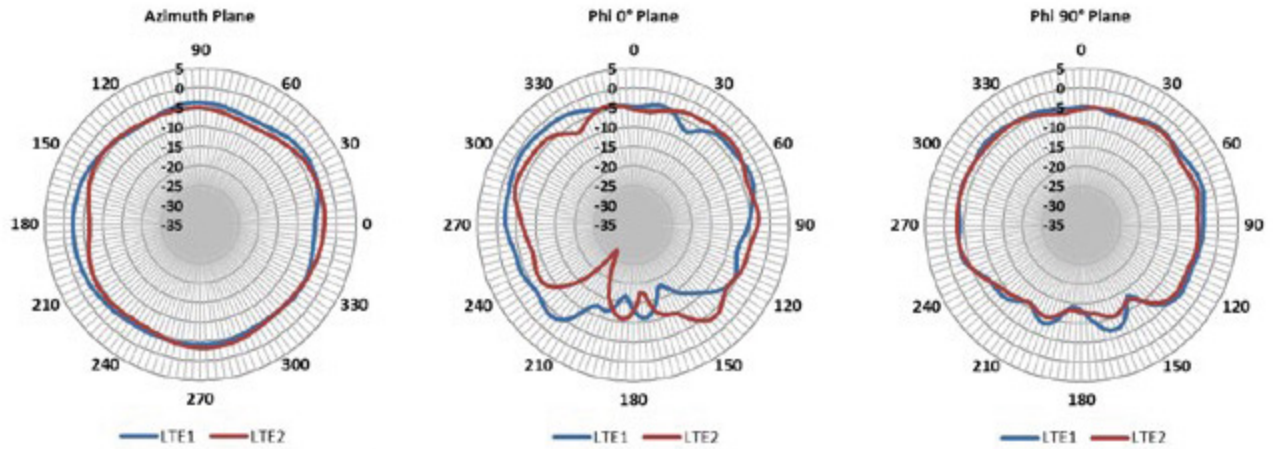
RADIATION PATTERNS *WITHOUT* GROUND PLANE - LTE ANTENNAS



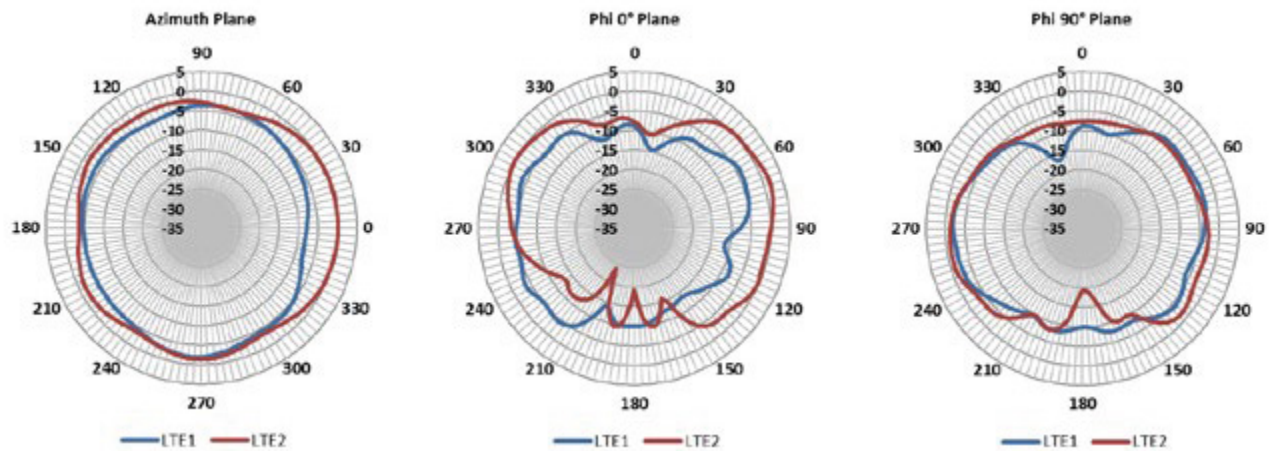
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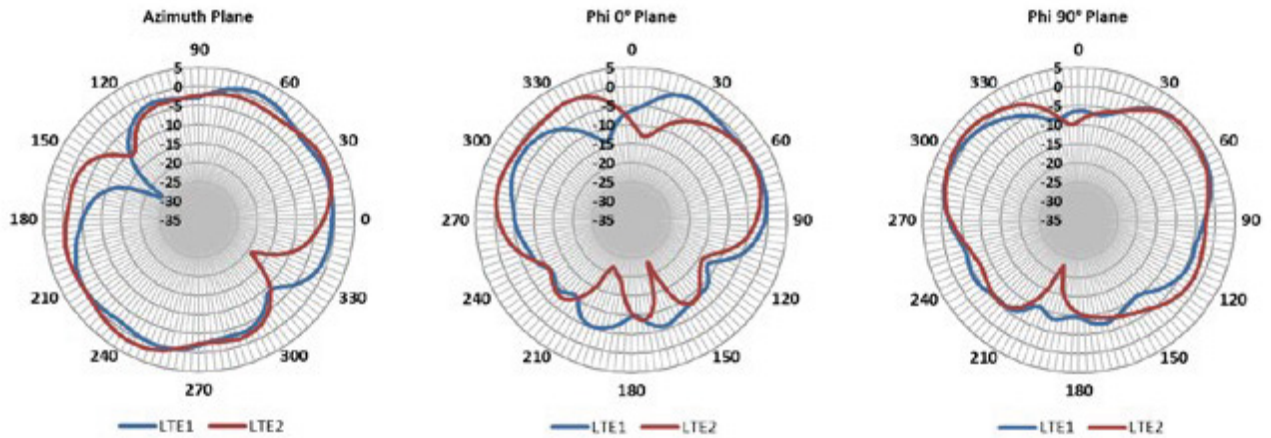
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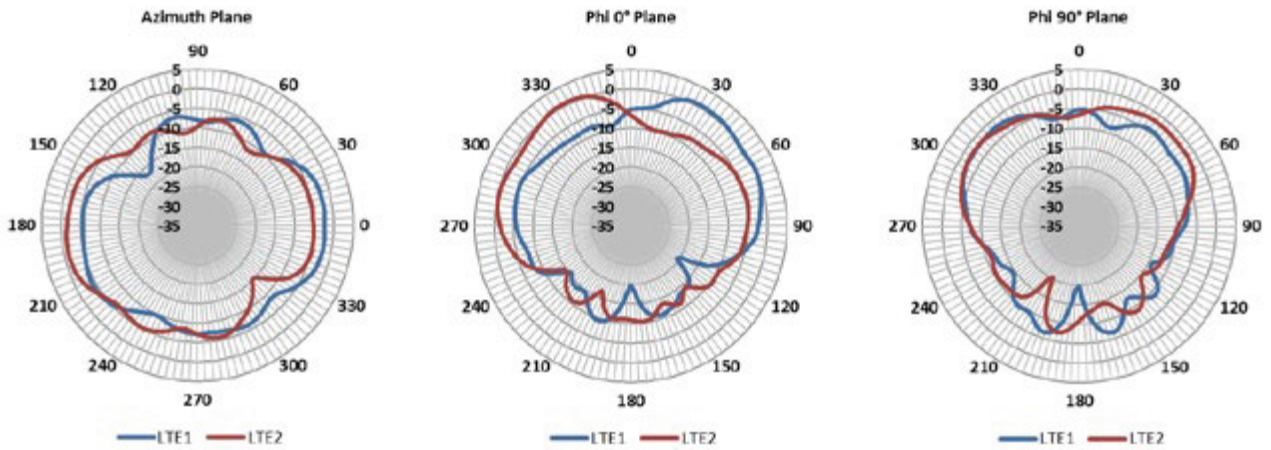
2400 MHz



3500 MHz

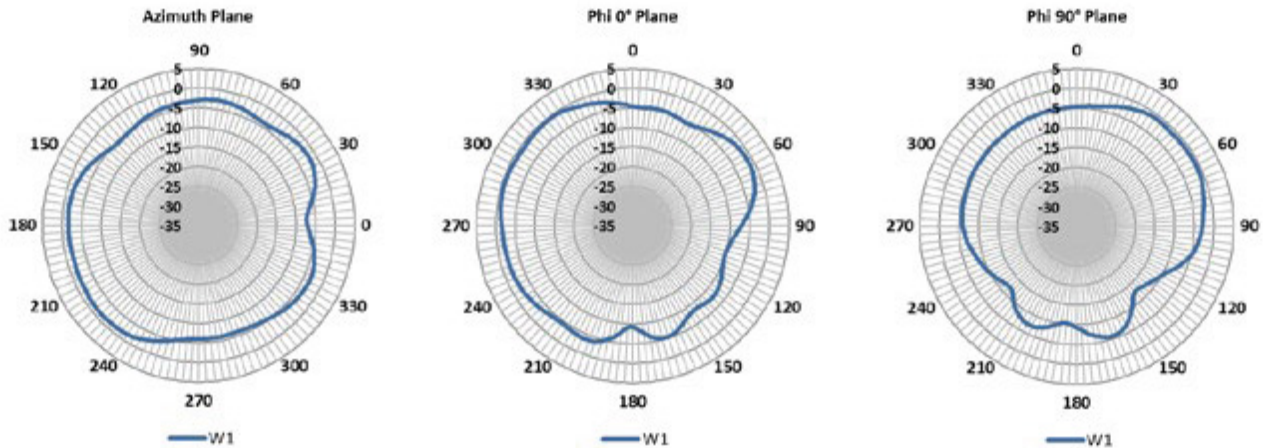


3800 MHz

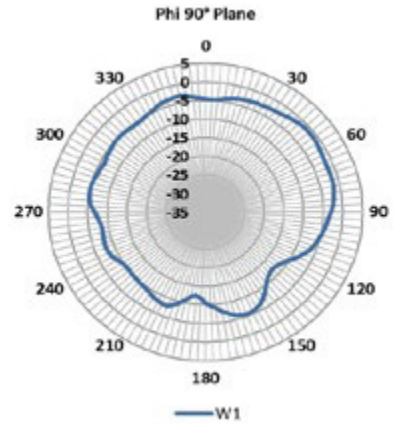
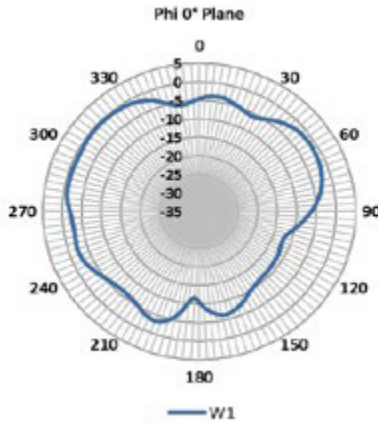
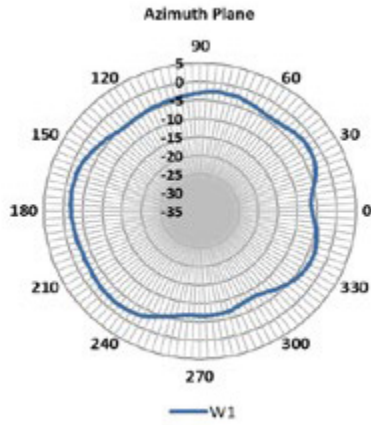


RADIATION PATTERNS *WITHOUT GROUND PLANE* - WI-FI ANTENNAS

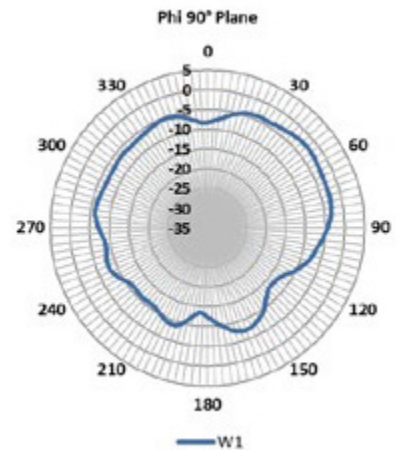
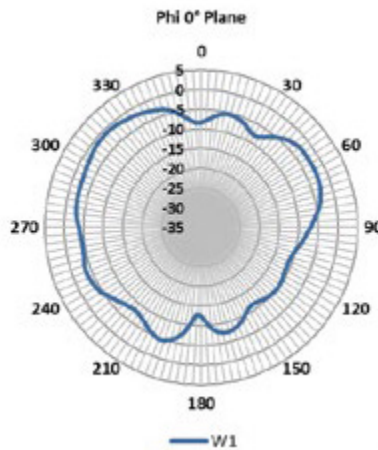
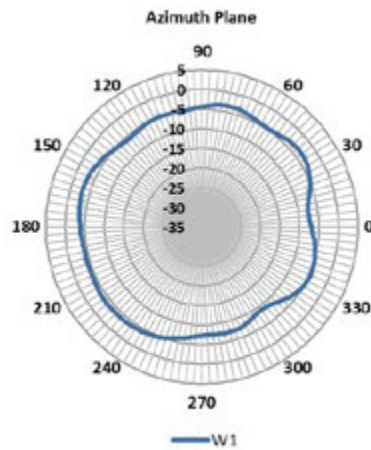
2400 MHz



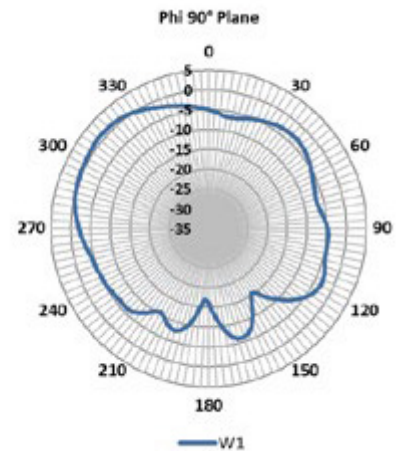
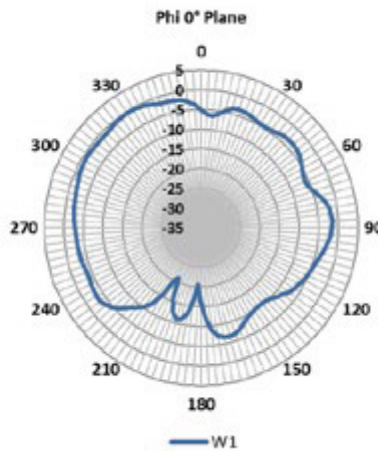
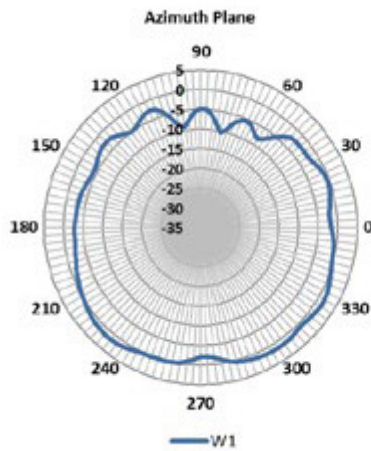
2450 MHz



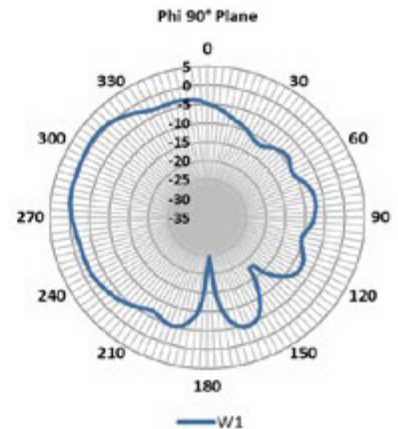
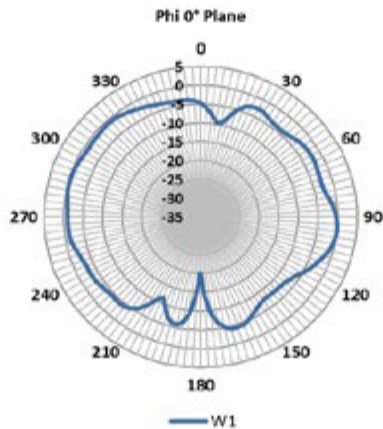
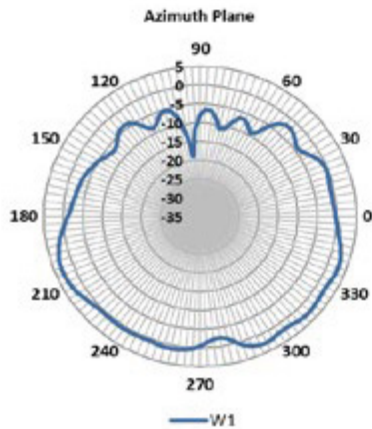
2500 MHz



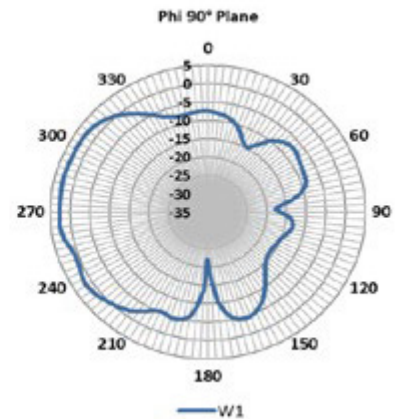
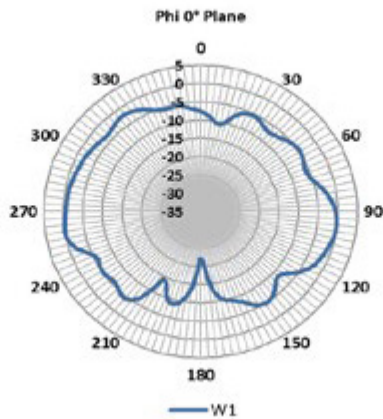
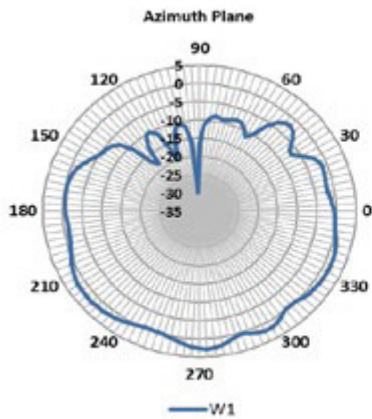
4900 MHz



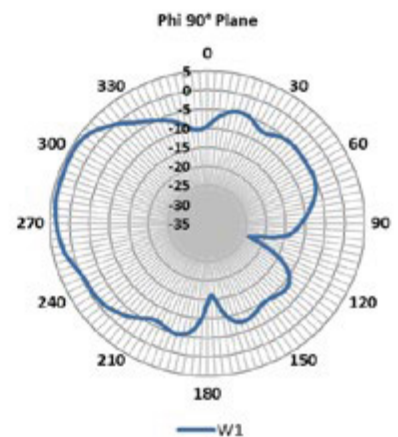
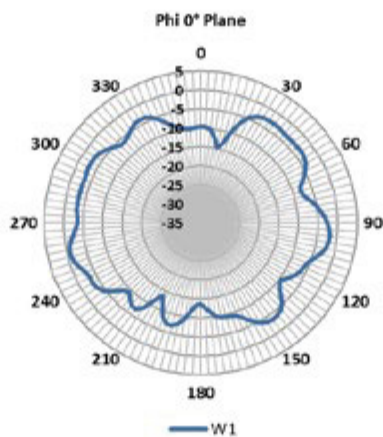
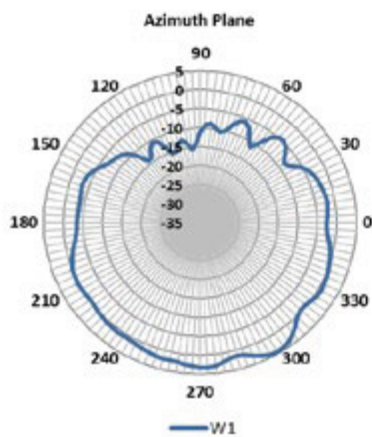
5350 MHz



5750 MHz



6000 MHz



TE TECHNICAL SUPPORT CENTER

USA:	+1 (800) 522-6752
Canada:	+1 (905) 475-6222
Mexico:	+52 (0) 55-1106-0800
Latin/S. America:	+54 (0) 11-4733-2200
Germany:	+49 (0) 6251-133-1999
UK:	+44 (0) 800-267666
France:	+33 (0) 1-3420-8686
Netherlands:	+31 (0) 73-6246-999
China:	+86 (0) 400-820-6015

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