

GAR VFD69383X1NJN

2-PORT VEHICULAR ANTENNA 698-960/1690-3800 MHz

The Gar VFD69383x1NJN multi-port/multi-band antenna provides an excellent solution for public safety, transportation, and aftermarket fleet applications. Configured for one-port operation over the 3G/4G/5G/ ISM/CBRS bands and a second port providing 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 low profile aerodynamic housing
- IP67 and IP69K rated for water ingress, dust, high pressure and high temperature water protection
- Multi-band/Multi-port operation LTE/GNSS navigation
- Operates well on a ground plane and without a ground plane

Applications

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

ELECTRICAL SPECIFICATIONS

Antenna Model	VFD69383x1NJN								
Number of Ports	2 (1x – LTE, 1x – GNSS)								
Port Configuration	1x – 3G/4G/5G/ISM/CBRS (LTE/CELL)								
Operating Frequency (MHz)	698-806	824-894	880-960	1690-1880	1850-1990	1910-2180	2300-2500	2500-2700	3300-3800
Avg. Peak Gain* (dBi) – Gnd. Plane [No Gnd. Plane]	0.9 [0.8]	1.7 [1.0]	1.9 [0.9]	3.9 [1.2]	3.5 [1.3]	2.9 [1.2]	3.9 [1.3]	5.2 [1.5]	5.3 [1.6]
Max Peak Gain* (dBi) – Gnd. Plane [No Gnd. Plane]	1.3 [2.3]	2.0 [2.0]	2.0 [1.7]	4.3 [1.6]	3.8 [2.2]	3.8 [2.2]	5.1 [2.8]	5.5 [3.0]	7.0 [3.4]
VSWR** – Avg, Gnd. Plane [No Gnd. Plane]	1.7 [1.7]	1.6 [1.8]	1.6 [1.8]	1.5 [1.7]	1.4 [1.5]	1.5 [1.5]	1.6 [1.6]	1.5 [1.5]	1.3 [1.3]
VSWR** – Max, Gnd. Plane [No Gnd. Plane]	2.5 [2.5]	2.0 [2.5]	2.0 [2.5]	2.0 [2.1]	2.0 [2.1]	2.1 [2.1]	2.0 [2.1]	2.0 [2.1]	2.0 [2.1]
Isolation**(dB) – LTE1 to GNSS Gnd. Plane [No Gnd. Plane]	-41 [-40]	-43 [-40]	-42 [-41]	-46 [-43]	-53 [-50]	-53 [-50]	-57 [-56]	-53 [-51]	-39 [-36]
Azimuth Plane 3 dB Beamwidth	360°, Omnidirectional								
Nominal Impedance (Ohms)	50								
Polarization	Linear Vertical								
Max Power - Ambient 25°C (W)	30 (LTE/CELL)								

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.)	0.54 kg (1.2 lbs.)
Mounting	P-Mount
Cable Type	LMR 100- pigtails, LMR 195- jumper cables, Black
Color	Black or White
Radome Material	PC, UL94-V0
Baseplate Material	Aluminum

ENVIRONMENTAL SPECIFICATIONS	
Operating Environment	Outdoor Vehicle
Operating Temperature – °C (°F)	-40 to +85°C (-40 to +185°F)
Storage Temperature – °C (°F)	-40 to +85°C (-40 to +185°F)
Ingress Protection Rating	IP67, IP69K
Rail Compliance Standards	EN61373 (Shock & Vibration), EN50155 (Temperature)

CONFIGURATIONS

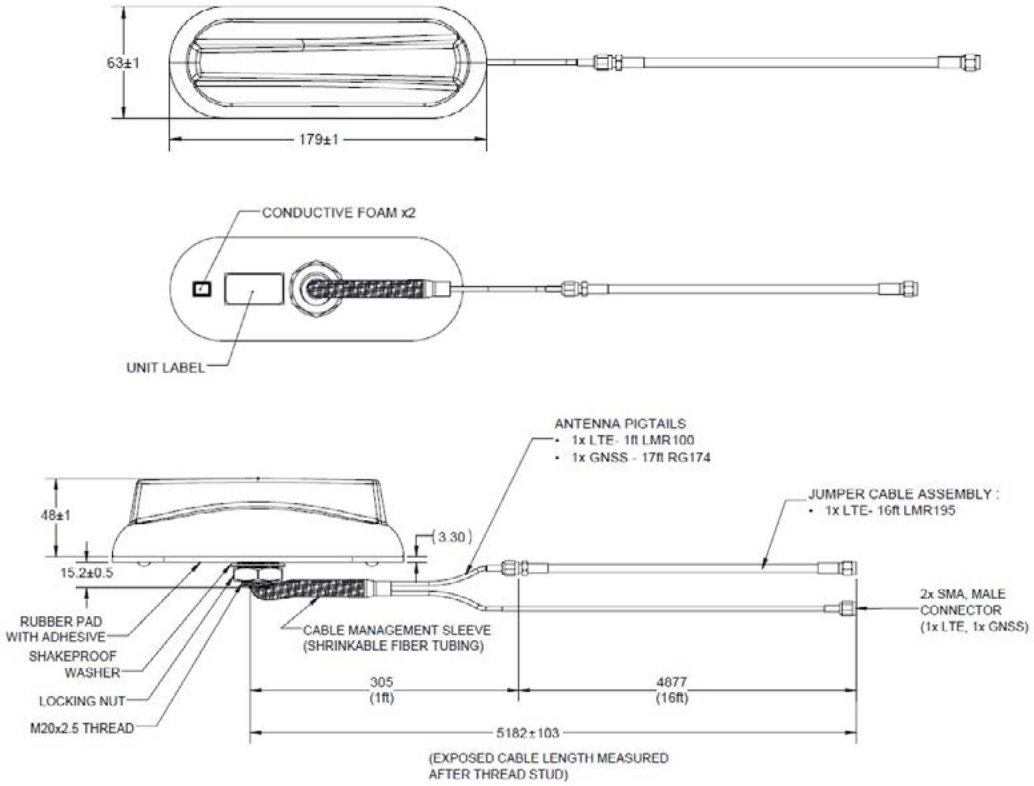
PART NUMBER	CABLE LENGTH		CONNECTORS		COLOR
	PIGTAIL	JUMPER	LTE/CELL	GNSS	
VFD69383B1NJN-518Q	0.3 m (1 ft.)	4.9 m (16 ft)	SMA-male	SMA-male	Black
VFD69383W1NJN-518Q	0.3 m (1 ft.)	4.9 m (16 ft)	SMA-male	SMA-male	White

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]	3.7 [3.9]	4.7 [5.2]	5.6 [4.7]
LNA Gain, Typ. @ room temp. (dBi)	28 ±3		
Noise Figure @ room temp., Max (dB)	≤ 2.5 @ 1575 MHz		
Max VSWR @ room temp.	2.0:1		
Polarization	RHCP		
Nominal Impedance	50 Ω		
DC Voltage (Vdc)	3.3		
Operating Supply Voltage (Vdc)	2.5 - 7.0		
Current Consumption, Max @ room temp mA)	8.5 ± 3 @ 3.0V		
Out-of-band Signal Rejection Min @ room temp (dBc)	80 (@ 698- 960 MHz) 80 (@ 1428- 1511 MHz) 50 @ (1627- 1638 MHz)	80 @ (1710- 2700 MHz) 70 (@ 4900- 5800 MHz)	
Input Max Power (dBm)	-10		
Cable Type	RG174, Black		

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.)	0.77 (1.7)	3.62 (7.98)	140 (309)	190 (419)

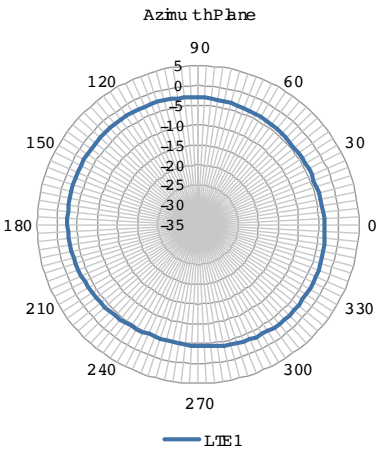
MECHANICAL DRAWINGS

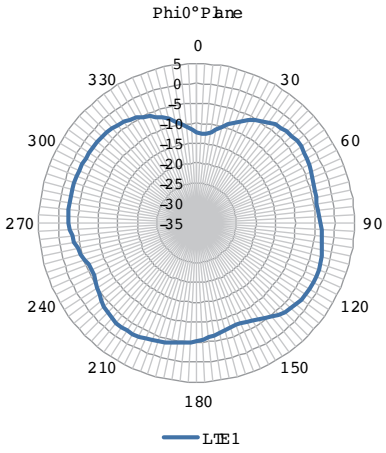


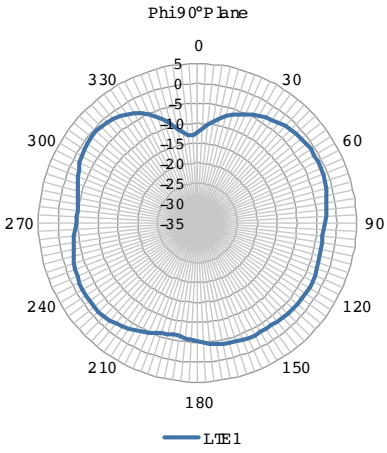
The Gar antenna can create an IP67 water-tight seal when installed on vehicles. Certain vehicles such as a Ford Explorer Interceptor have more narrow roof ridges that are tightly spaced together. For this type, vehicle special adapters are available.
See parts BKIT-VFX69383-001 (between ridges installation) and BKIT-VFX69383-003 (atop ridge installation) for product details.

RADIATION PATTERNS WITH GROUND PLANE – LTE ANTENNAS

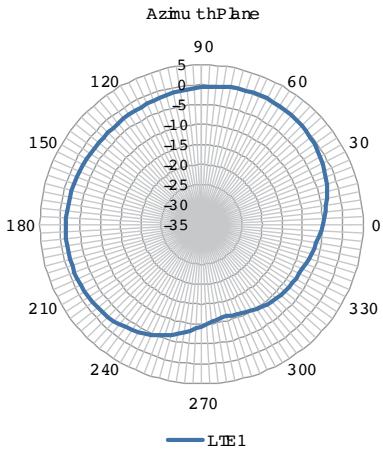
698 MHz

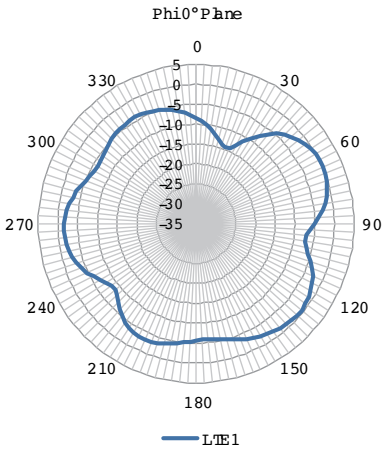


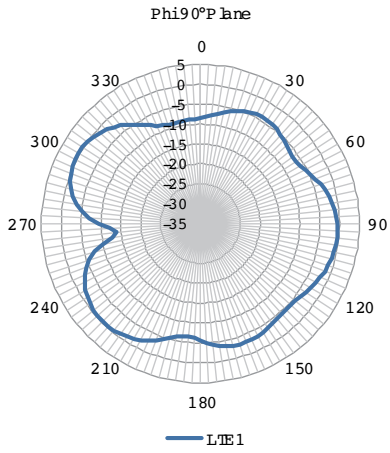




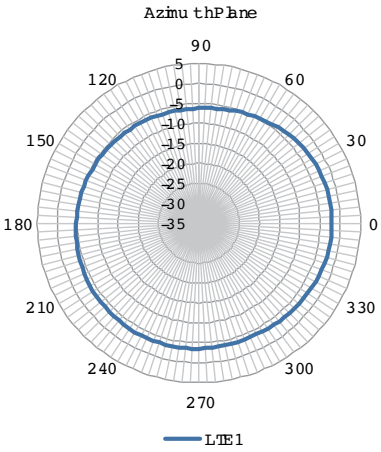
725 MHz

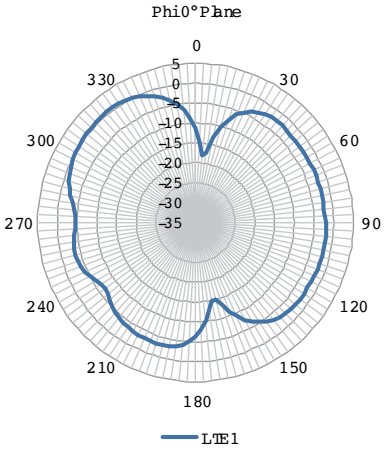


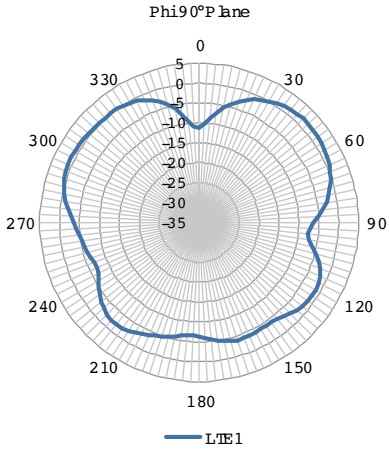




880 MHz

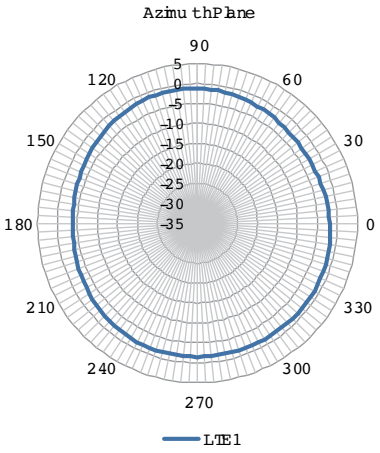


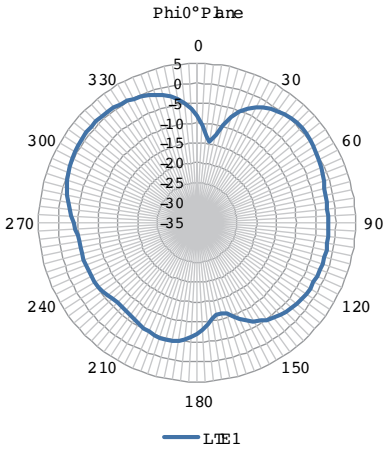


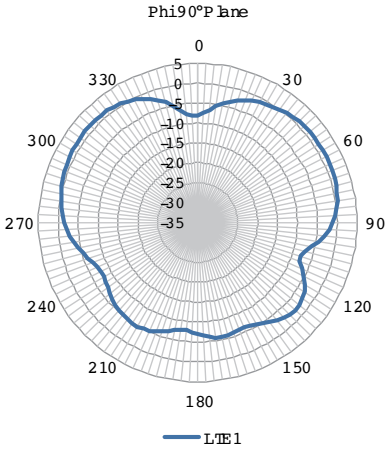


RADIATION PATTERNS WITH GROUND PLANE – LTE ANTENNAS

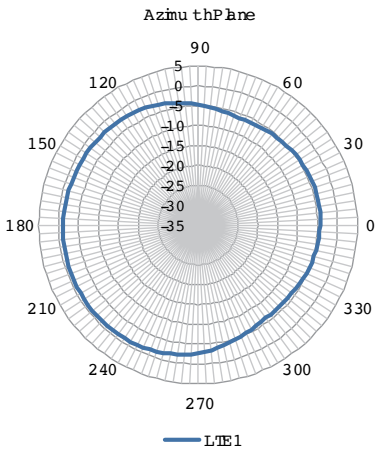
960 MHz

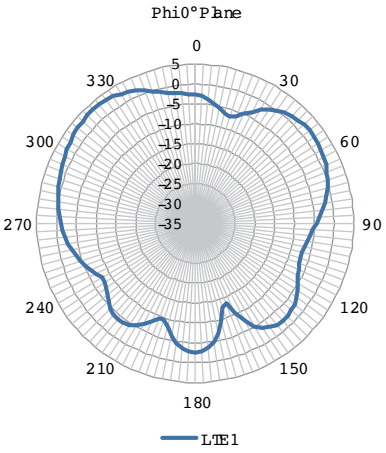


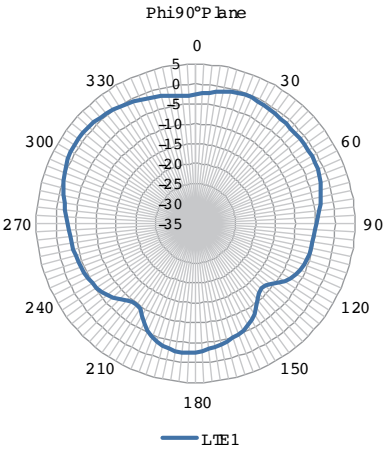




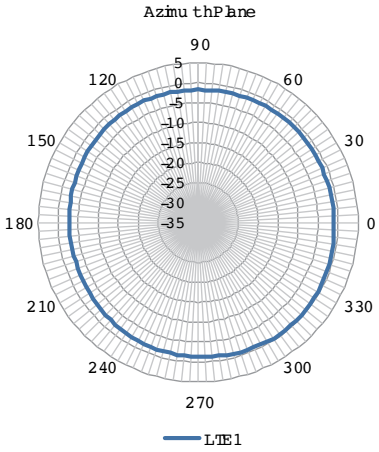
1690 MHz

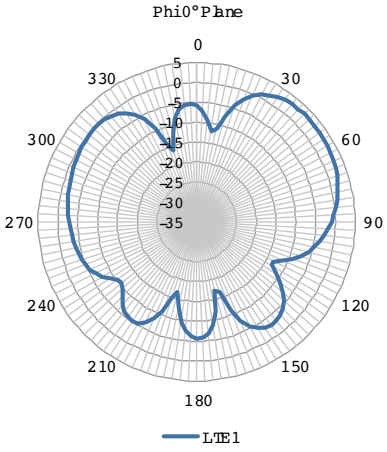


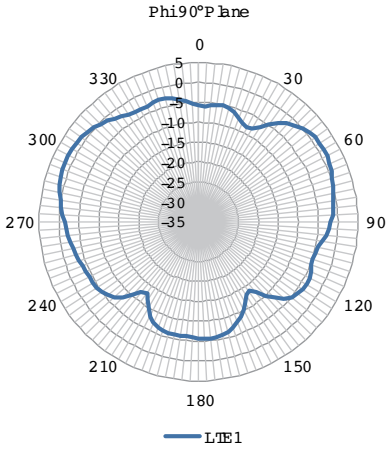




1920 MHz

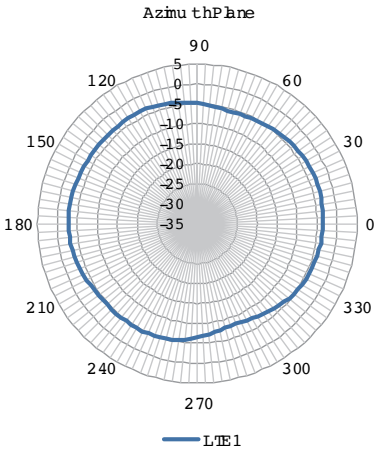


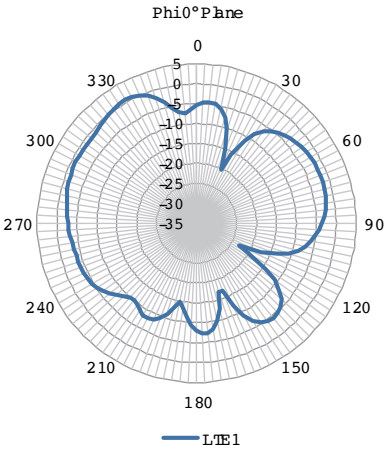


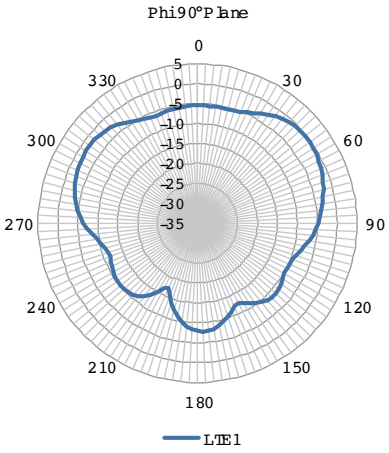


RADIATION PATTERNS WITH GROUND PLANE – LTE ANTENNAS

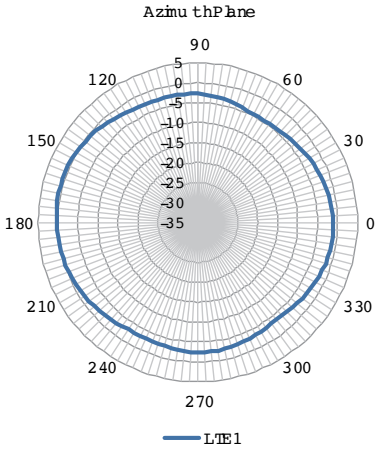
2110 MHz

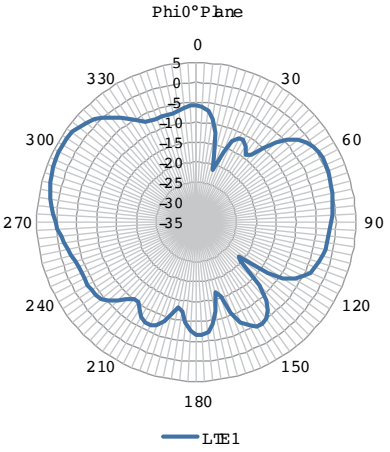


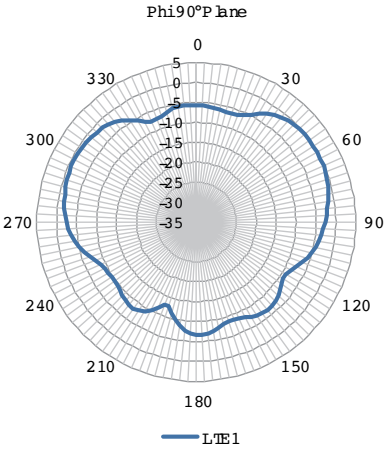




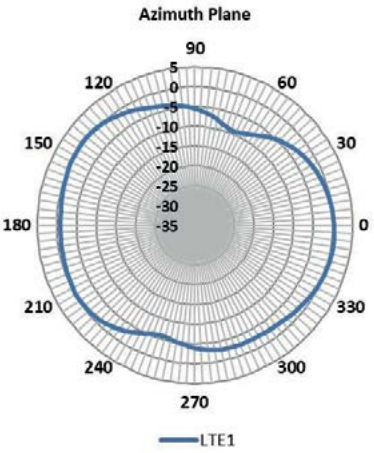
2400 MHz

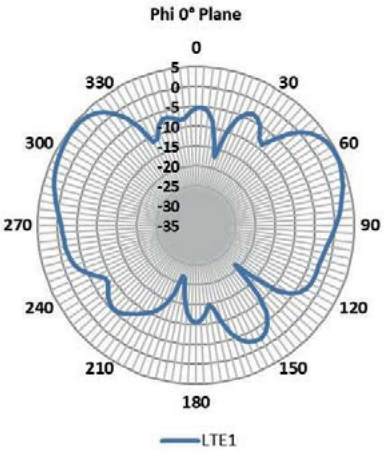


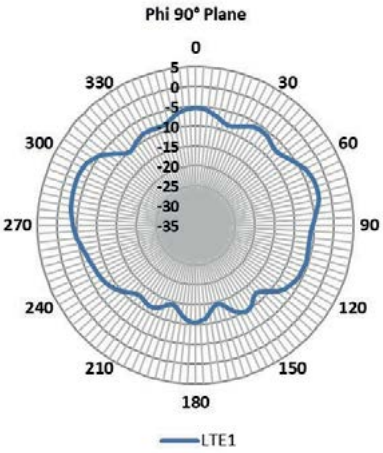




2700 MHz

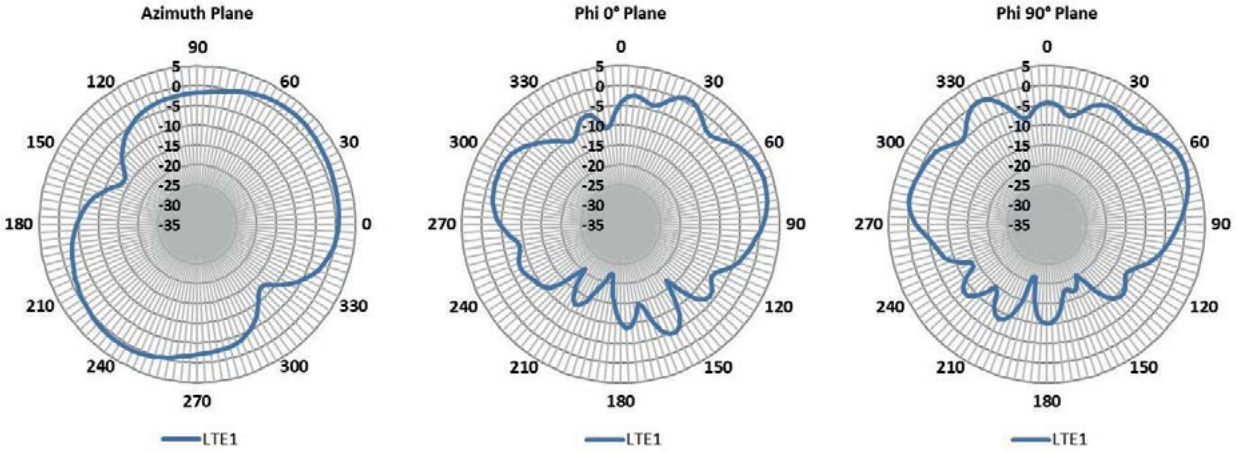




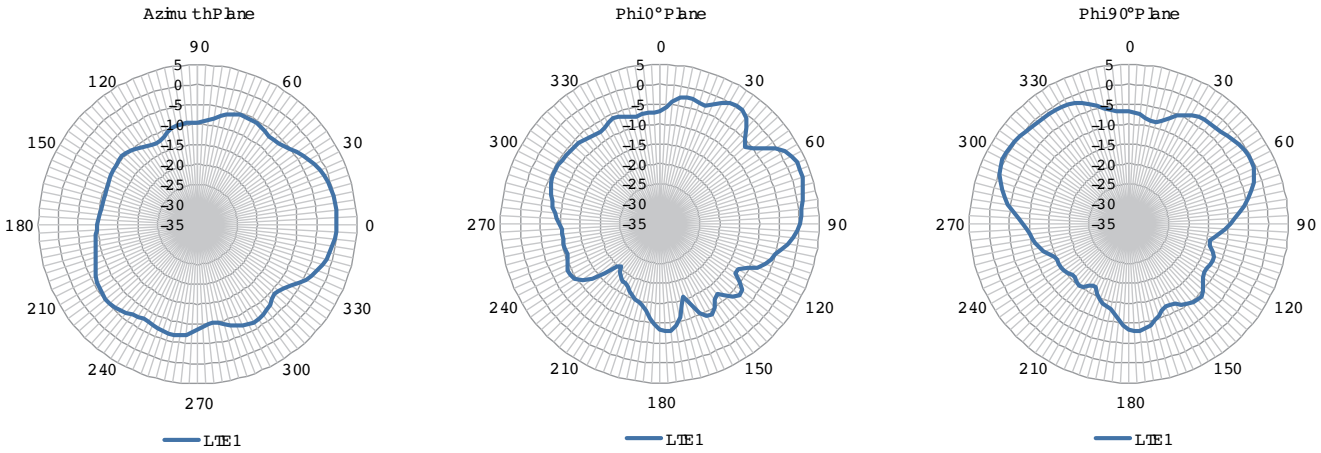


RADIATION PATTERNS WITH GROUND PLANE – LTE ANTENNAS

3400 MHz

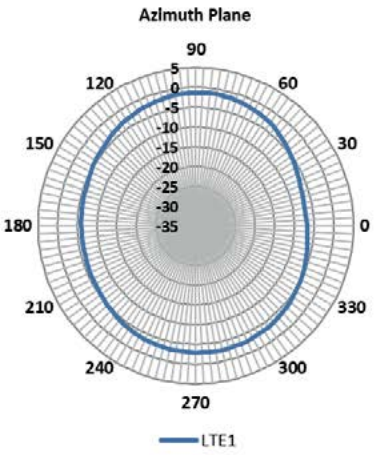


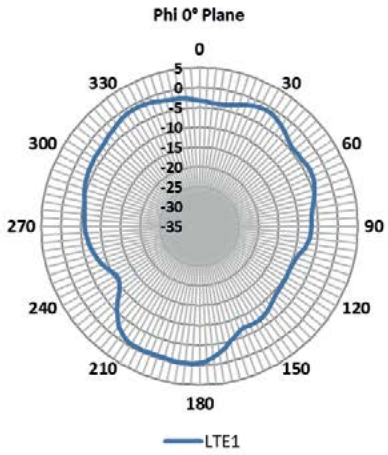
3800 MHz

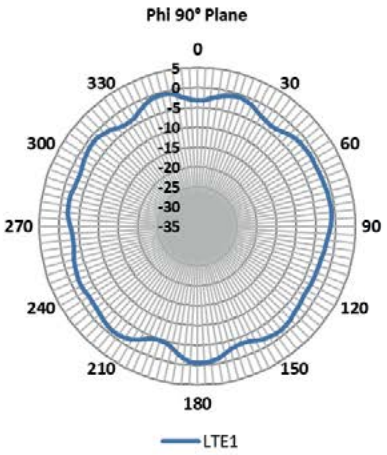


RADIATION PATTERNS WITHOUT GROUND PLANE – LTE ANTENNAS

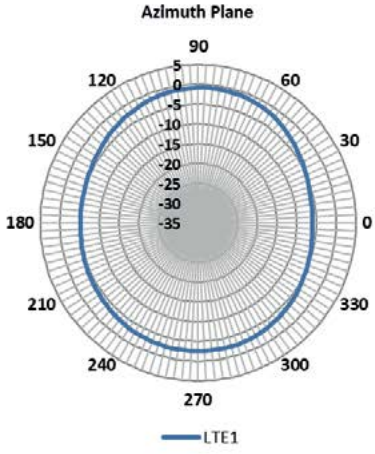
698 MHz

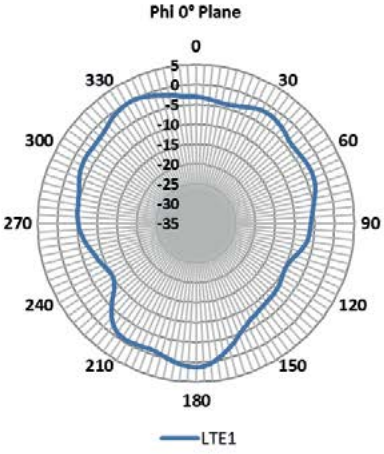


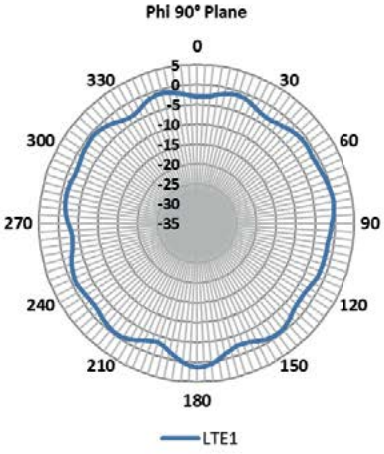




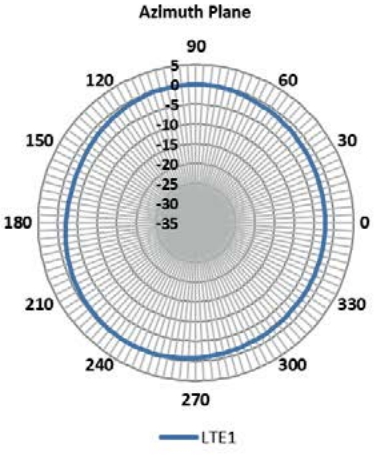
725 MHz

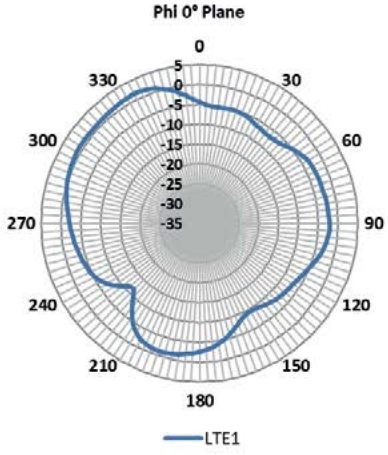


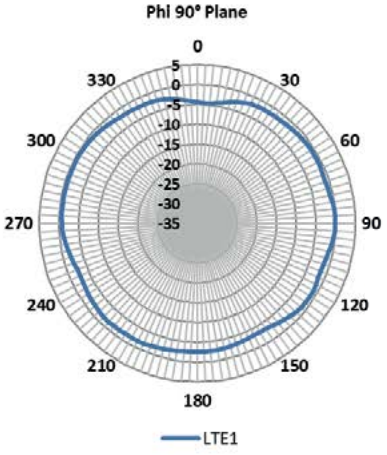




880 MHz

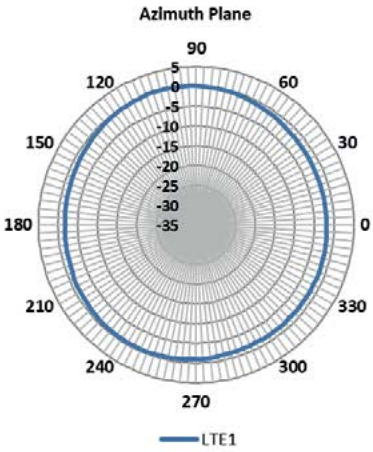


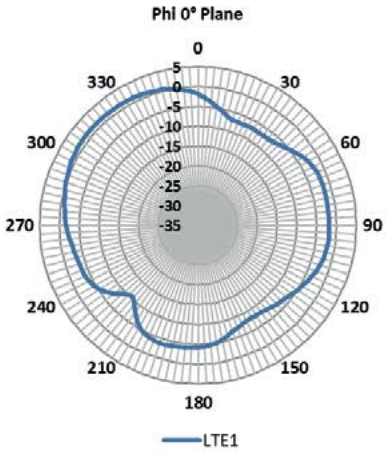


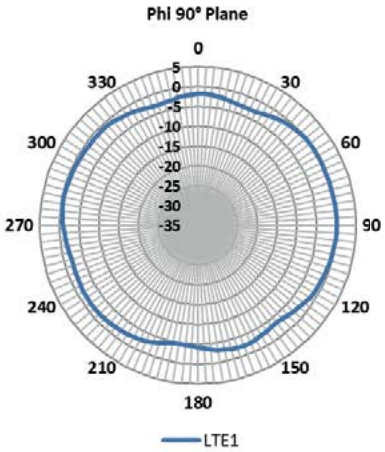


RADIATION PATTERNS WITHOUT GROUND PLANE – LTE ANTENNAS

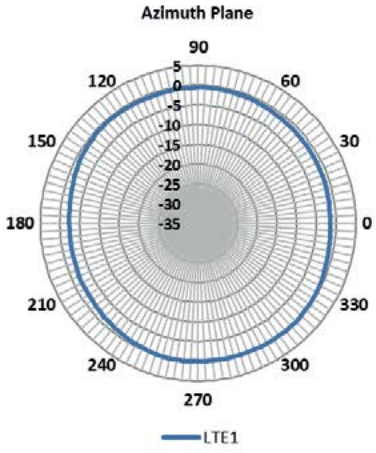
960 MHz

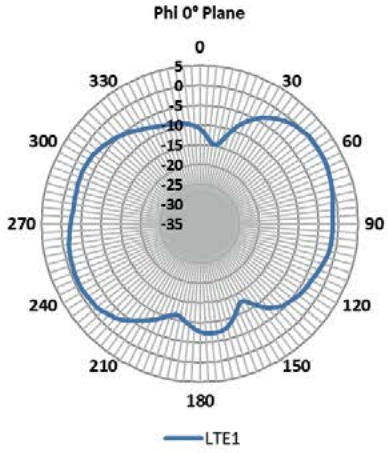


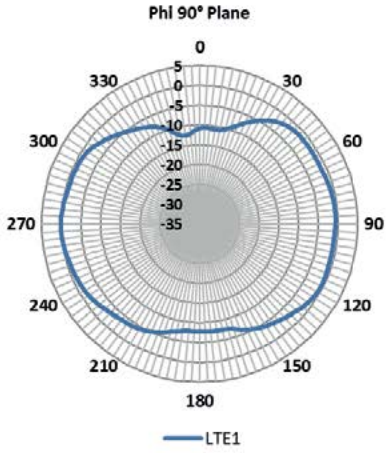




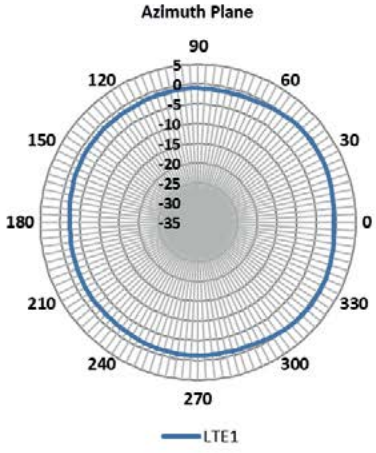
1690 MHz

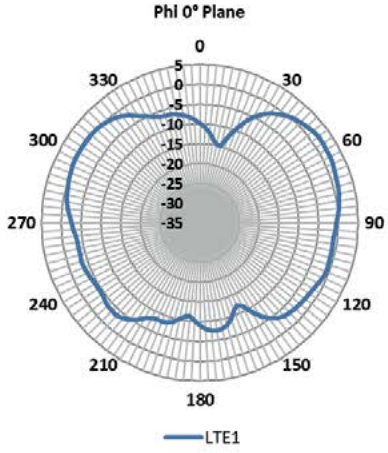


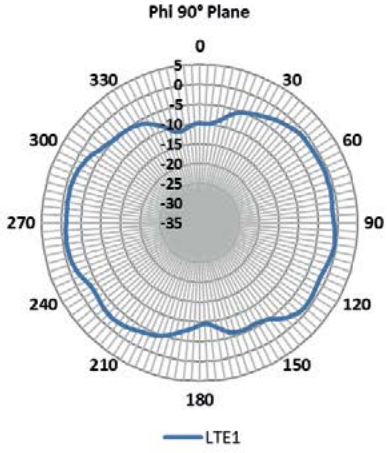




1920 MHz

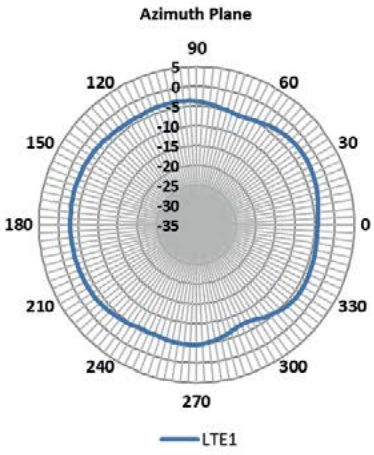


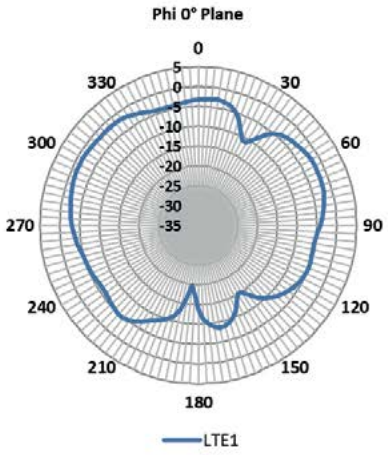


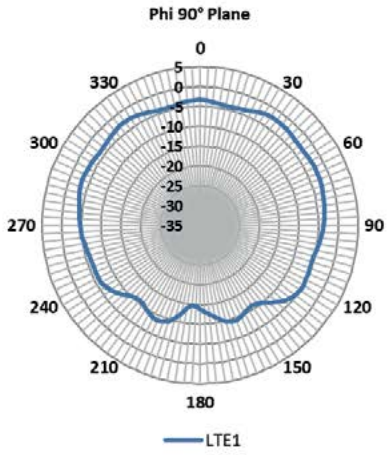


RADIATION PATTERNS WITHOUT GROUND PLANE – LTE ANTENNAS

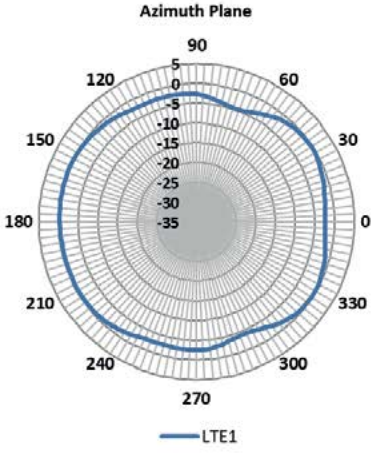
2110 MHz

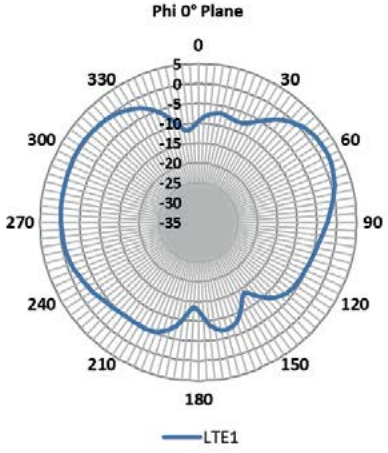


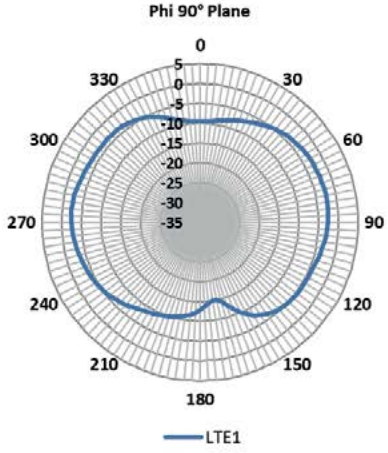




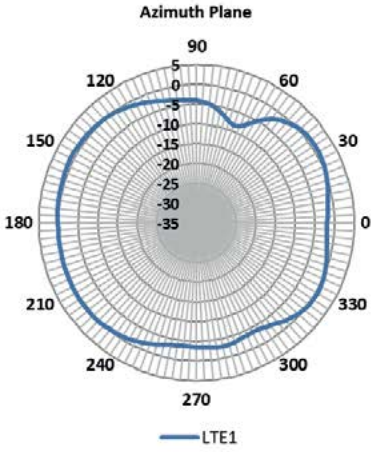
2400 MHz

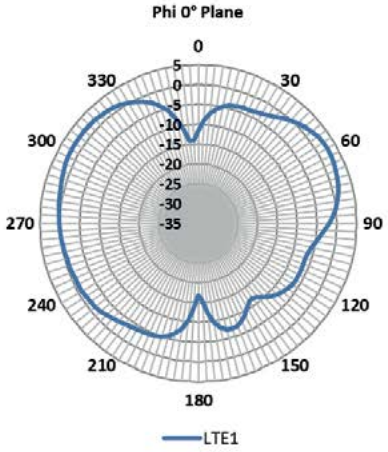


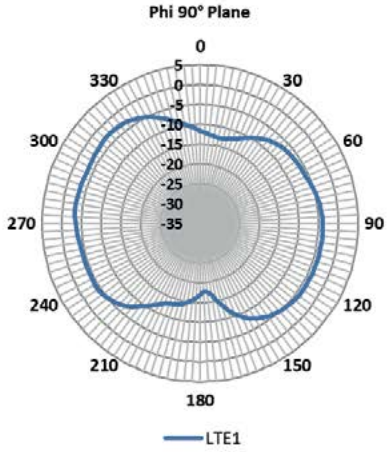




2700 MHz

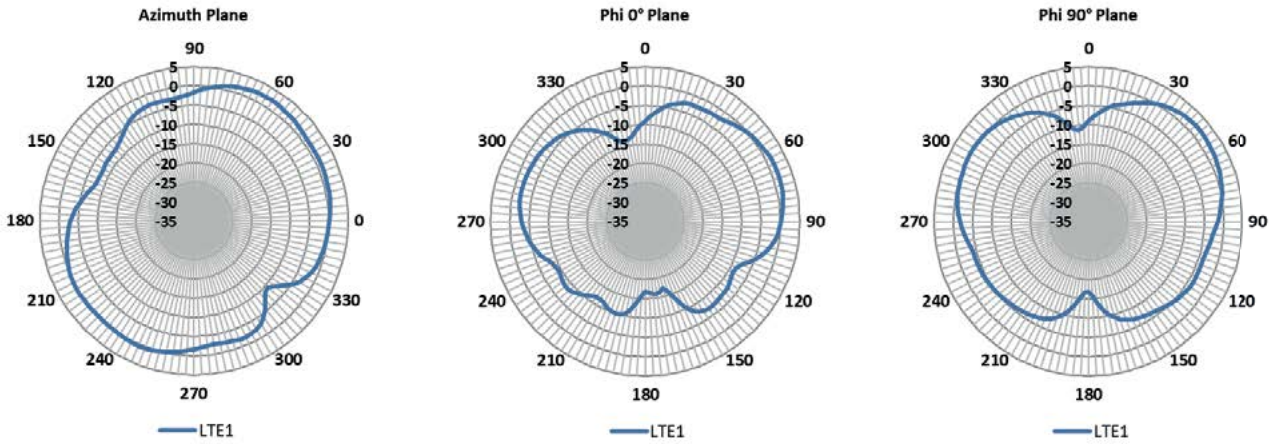




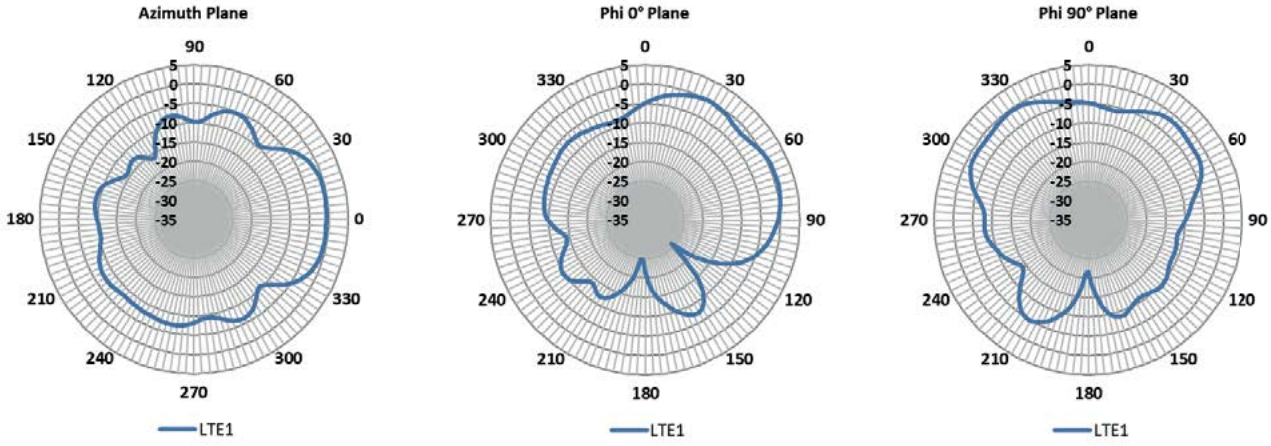


RADIATION PATTERNS WITHOUT GROUND PLANE – LTE ANTENNAS

3400 MHz



3800 MHz



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