GAR VFT69383X2NJN

3-Port Vehicular MIMO Antenna 698-960/1690-3800 MHz

The Gar VFT69383x2NJN 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 an additional 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 IP67 low profile aerodynamic housing
- Multiband/Multiport operation LTE/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	VFT69383x2NJN								
Number of Ports	3								
Port Configuration	2X – 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]	0.7 [1.1]	0.5 [1.6]	0.2 [2.1]	3.7 [1.2]	3.0 [1.3]	2.5 [1.2]	3.7 [1.2]	4.6 [1.5]	5.5 [2.2]
Max Peak Gain* (dBi) – Gnd. Plane [No Gnd. Plane]	2.0 [2.1]	1.3 [3.2]	2.2 [3.7]	4.7 [1.1]	3.6 [1.6]	3.4 [1.6]	5.1 [1.6]	5.1 [2.4]	7.5 [3.8]
VSWR** – Avg, Gnd. Plane [No Gnd. Plane]	1.8 [1.9]	1.8 [1.8]	1.4 [1.7]	1.6 [1.7]	1.6 [1.5]	1.5 [1.5]	1.4 [1.6]	1.4 [1.5]	1.5 [1.3]
VSWR** – Max, Gnd. Plane [No Gnd. Plane]	2.5 [2.5]	2.2 [2.5]	2.2 [2.5]	2.0 [2.1]	2.0 [2.1]	2.2 [2.1]	2.1 [2.1]	2.0 [2.1]	2.0 [2.1]
Isolation** (dB)– Gnd. Plane [No Gnd. Plane]									
LTE1 to LTE2	-10 [-12]	-12 [-14]	-14 [-14]	-17 [-16]	-18 [-16]	-18 [-16]	-22 [-22]	-21 [-23]	-25 [-26]
LTE1 to GNSS	-41 [-40]	-45 [-42]	-45 [-42]	-41 [-39]	-49 [-45]	-50 [-48]	-60 [-55]	-56 [-53]	-47 [-45]
LTE2 to GNSS	-42 [-39]	-38 [-38]	-38 [-37]	-44 [-42]	-49 [-46]	-49 [-45]	-41 [-38]	-55 [-50]	-44 [-40]

ELECTRICAL SPECIFICATIONS	
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.)	0.74 kg (1.6 lbs)
Cable Type	LMR 100- pigtails, LMR 195- jumper cables
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)	-40 to +85°C (-40 to +185°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

CONFIGURATION

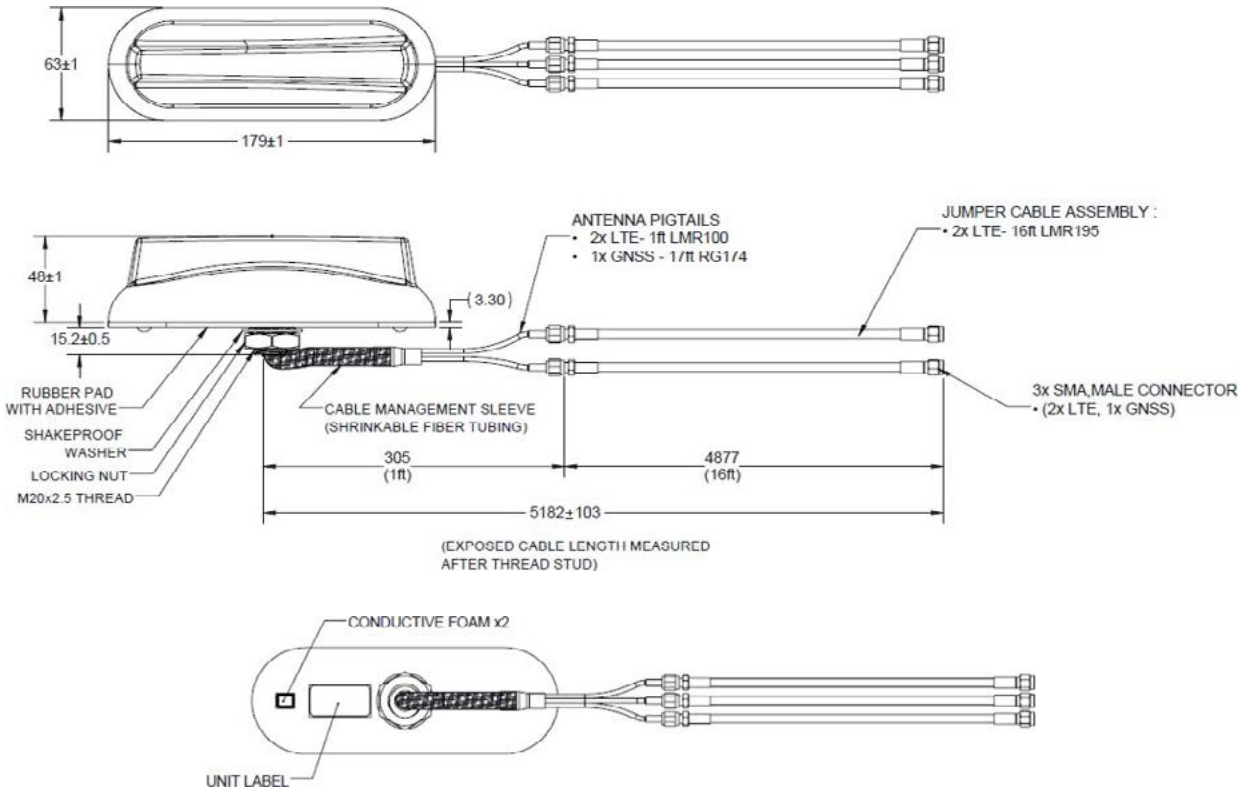
PART NUMBER	CABLE LENGTH		CONNECTORS		COLOR
	PIGTAIL	JUMPER	LTE/CELL	GNSS	
VFT69383B2NJN-518Q	0.3 m (1 ft.)	4.9 m (16 ft)	SMA-male	SMA-male	Black
VFT69383W2NJN-518Q	0.3 m (1 ft.)	4.9 m (16 ft)	SMA-male	SMA-male	White

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]	3.4 [3.5]	4.9 [5.1]	5.4 [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)	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.)	0.97(2.1)	4.41 (9.72)	167 (368)	229 (504)

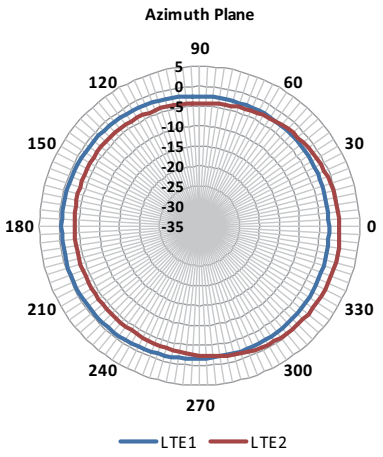
MECHANICAL DRAWINGS

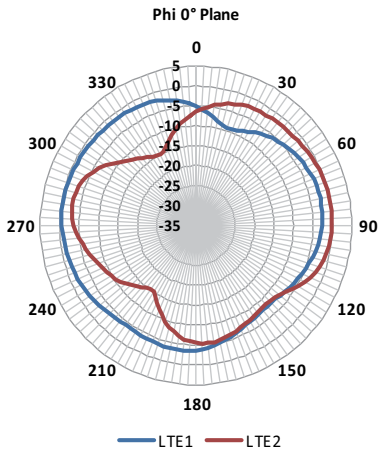


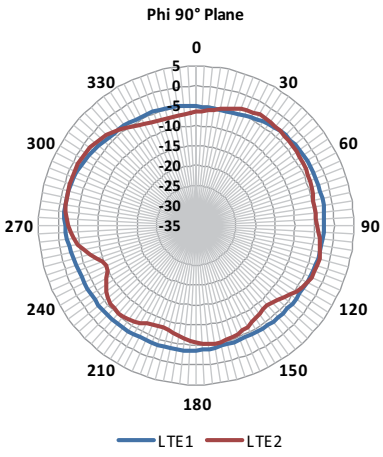
The Gar antenna can create an IP67 water-tight seal when installed on vehicles. Certain vehicles such as a Ford Explorer Interceptor have more narrow roof ridges that are tightly spaced together. For this type, vehicle special adapters are available.
See parts BKIT-VFX69383-001 (between ridges installation)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

RADIATION PATTERNS WITH GROUND PLANE - LTE ANTENNAS

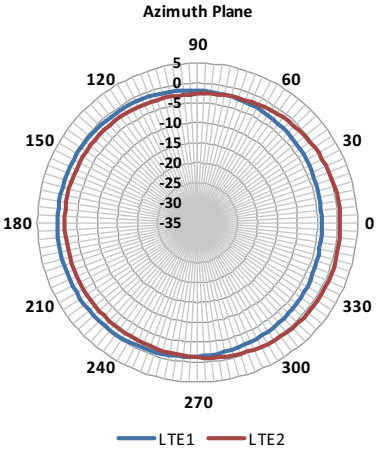
698 MHz

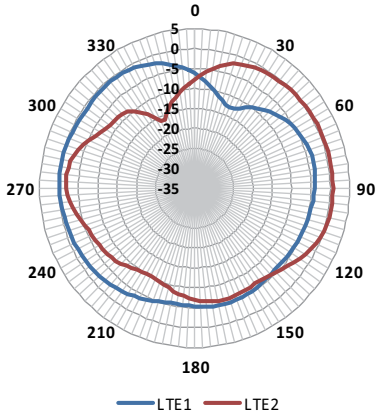


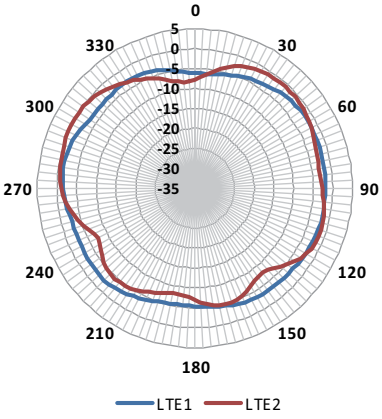




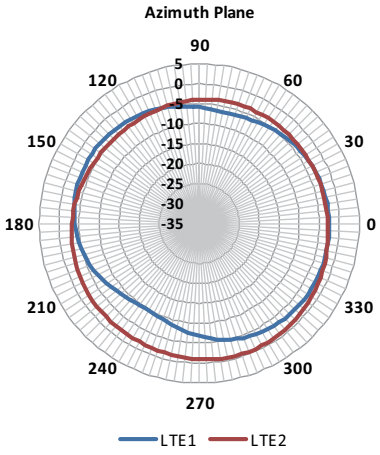
725 MHz

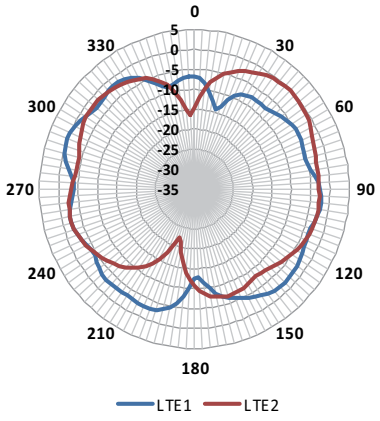


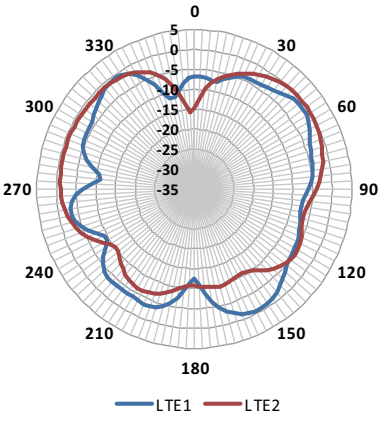




880 MHz

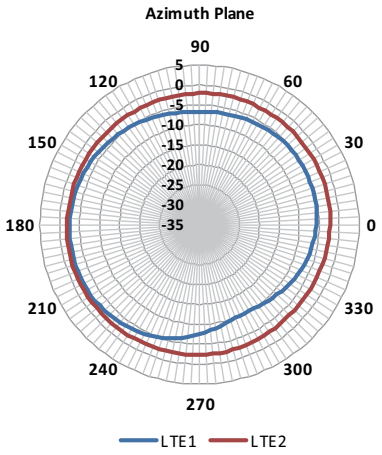


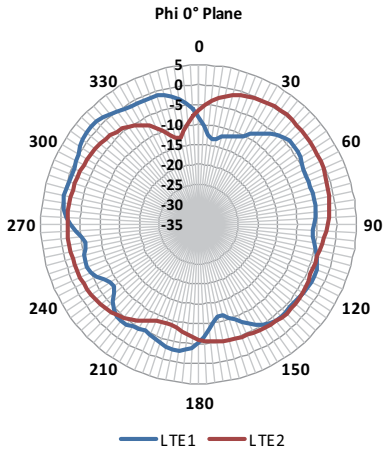


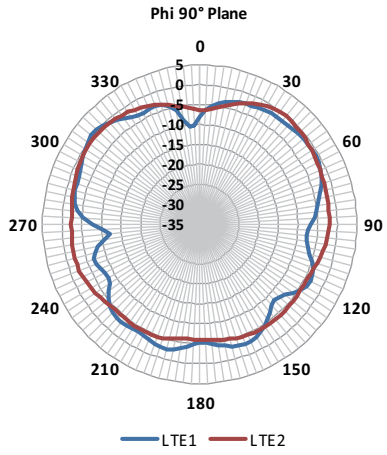


RADIATION PATTERNS WITH GROUND PLANE - LTE ANTENNAS

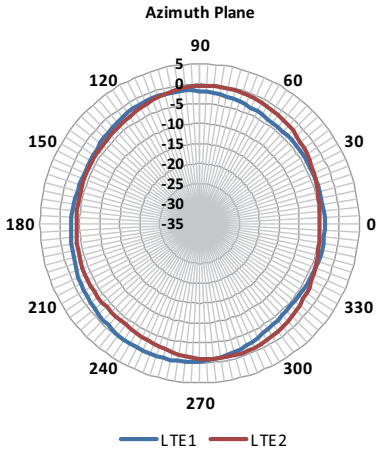
960 MHz

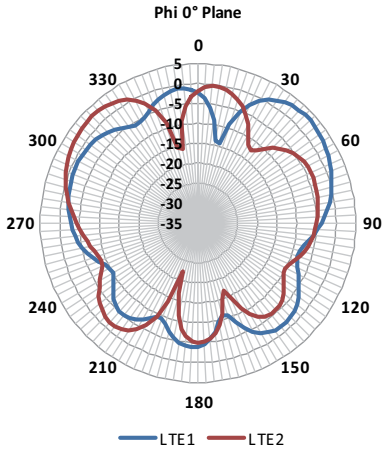


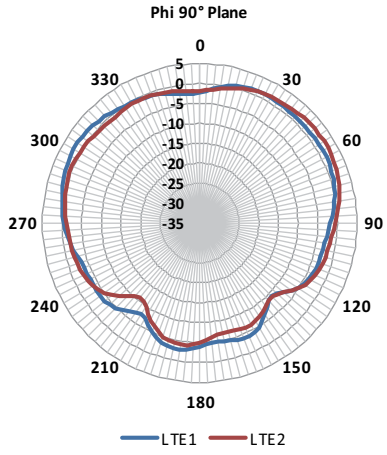




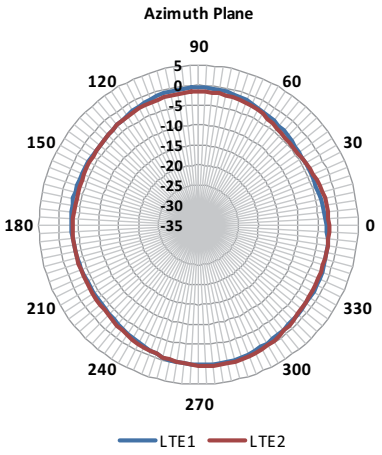
1690 MHz

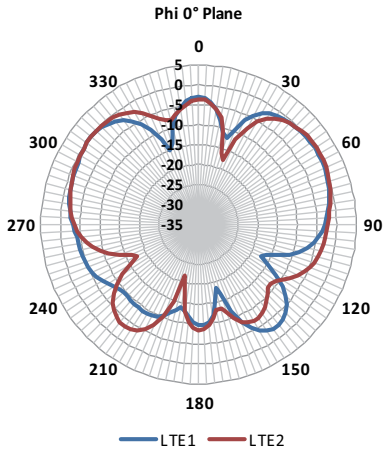


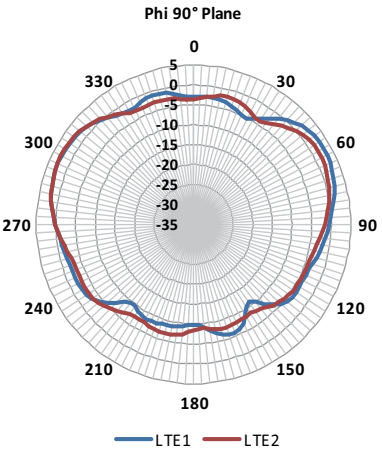




1920 MHz

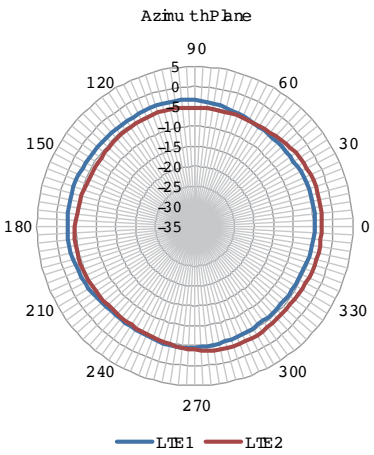


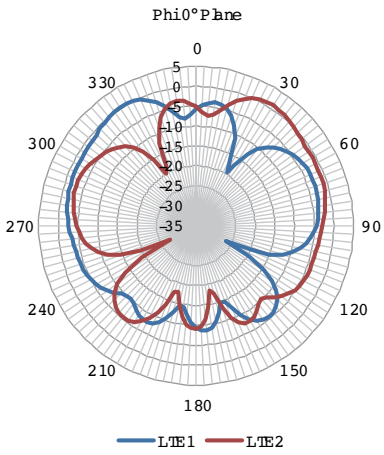


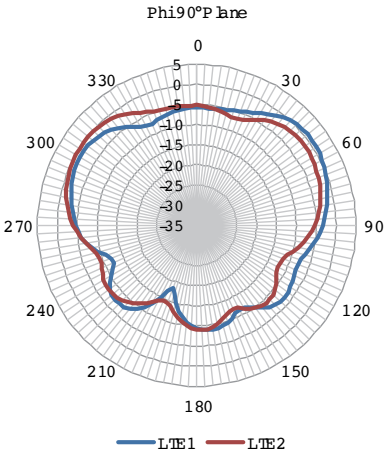


RADIATION PATTERNS WITH GROUND PLANE - LTE ANTENNAS

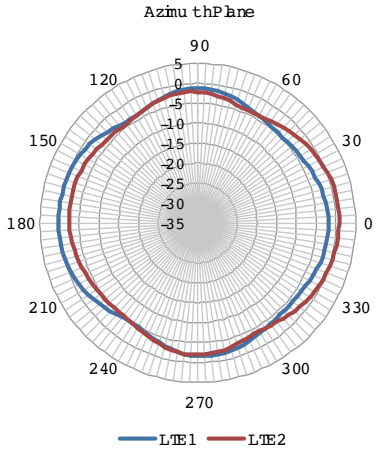
2110 MHz

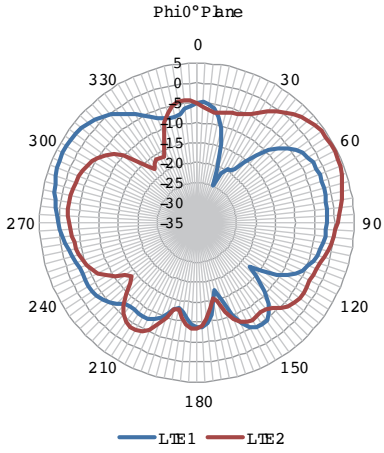


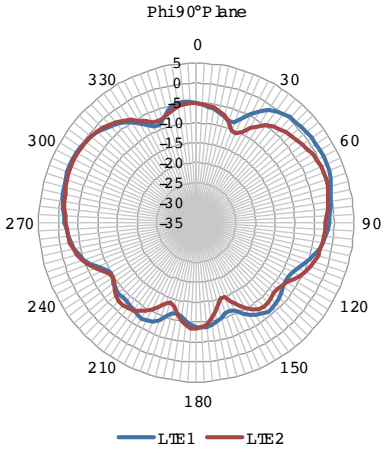




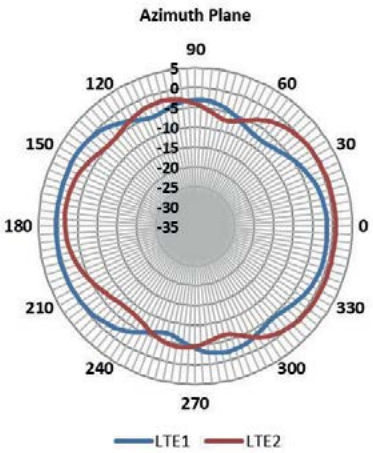
2400 MHz

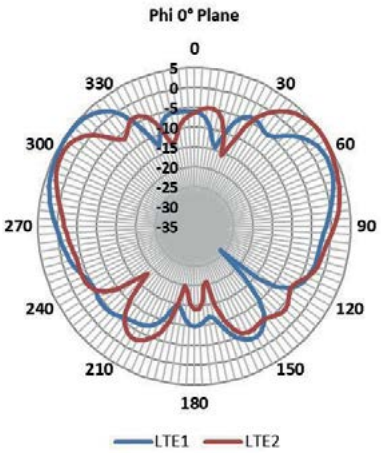


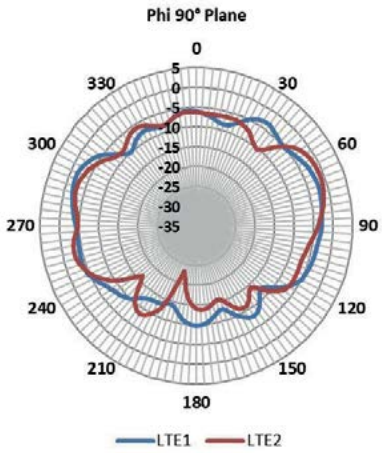




2700 MHz

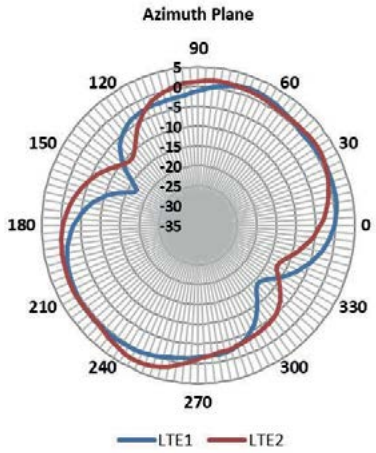


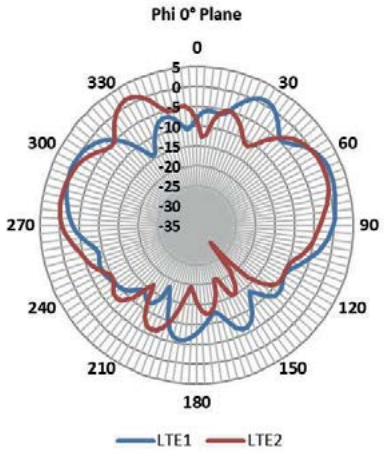


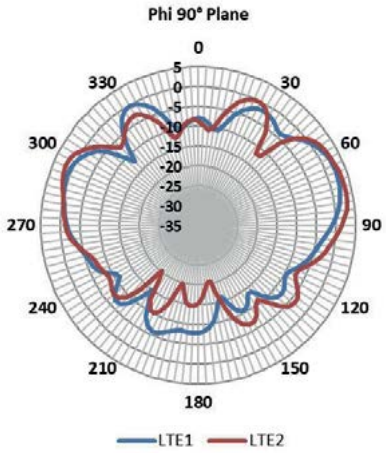


RADIATION PATTERNS WITH GROUND PLANE - LTE ANTENNAS

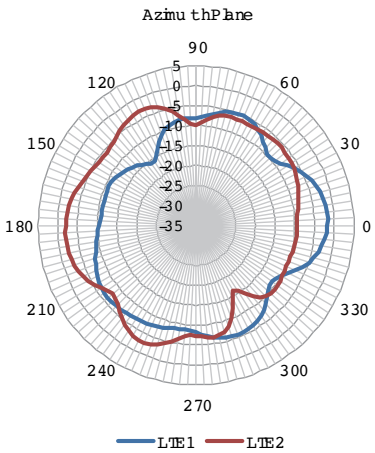
3400 MHz

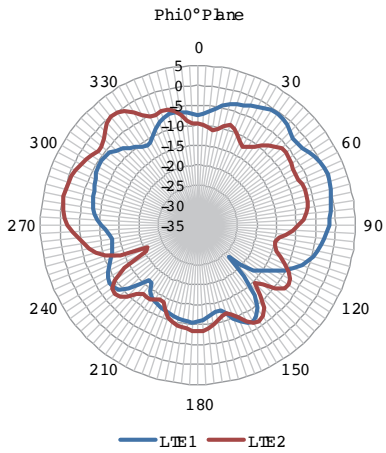


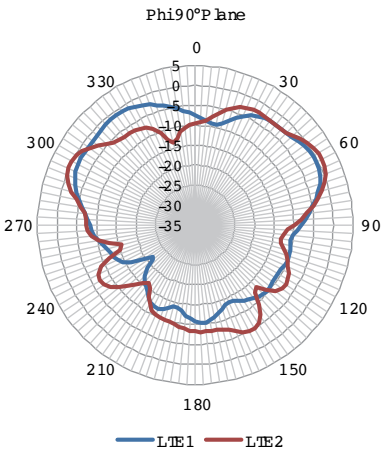




3800 MHz

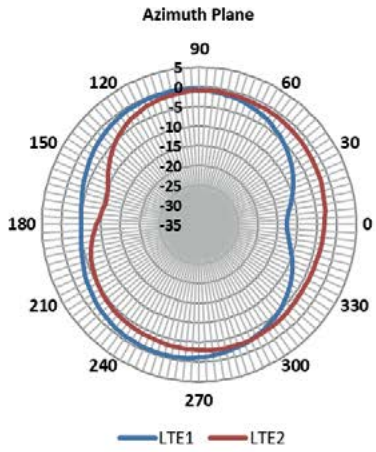


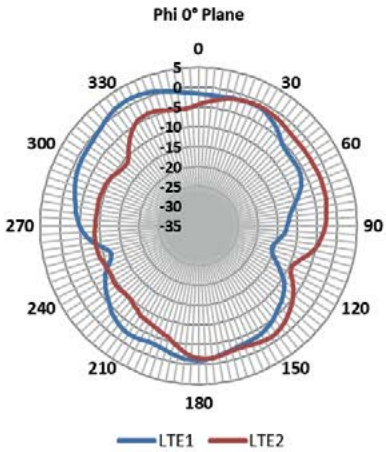


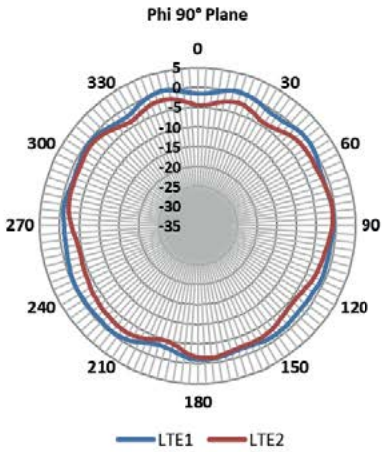


RADIATION PATTERNS WITHOUT GROUND PLANE - LTE ANTENNAS

698 MHz

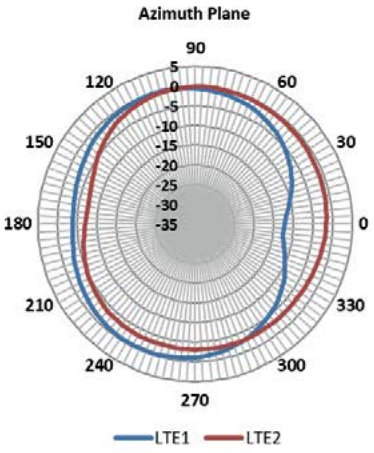


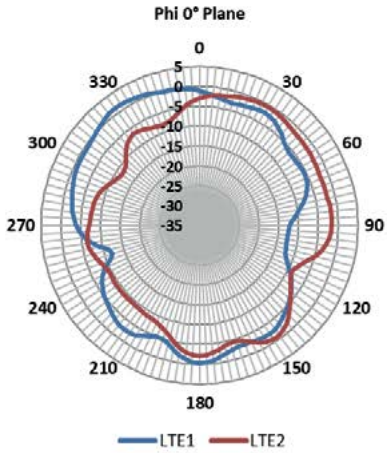


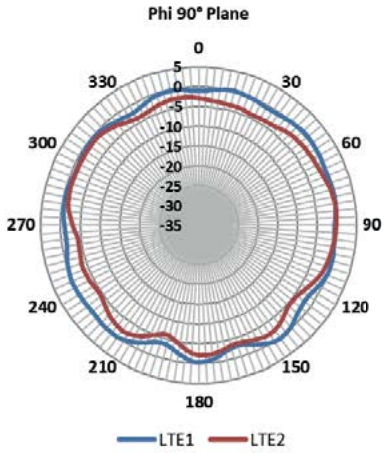


RADIATION PATTERNS WITHOUT GROUND PLANE - LTE ANTENNAS

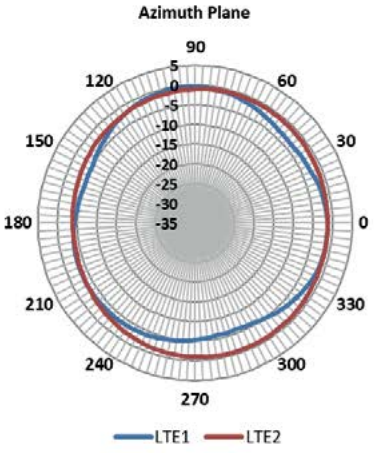
725 MHz

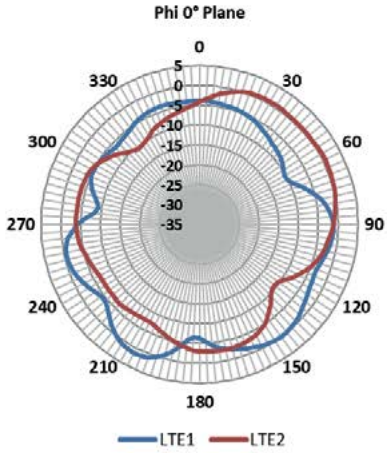


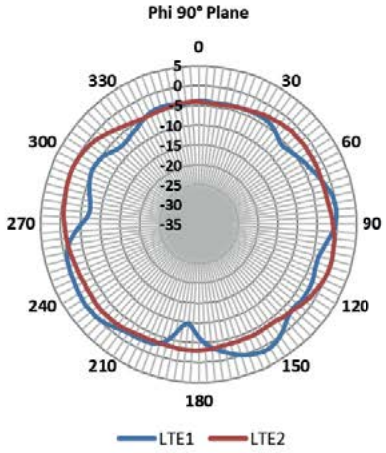




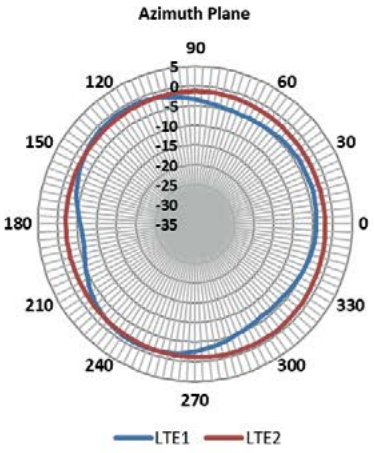
880 MHz

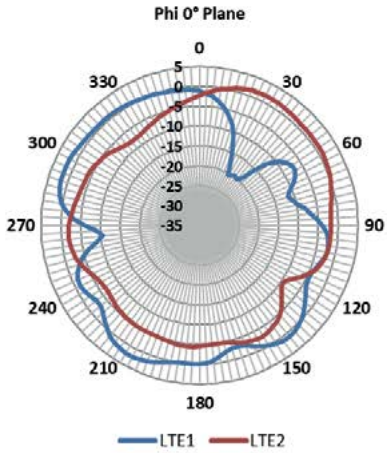


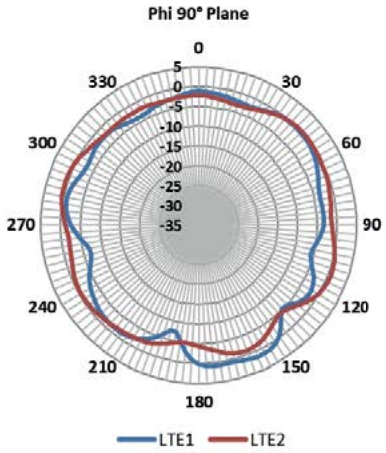




960 MHz

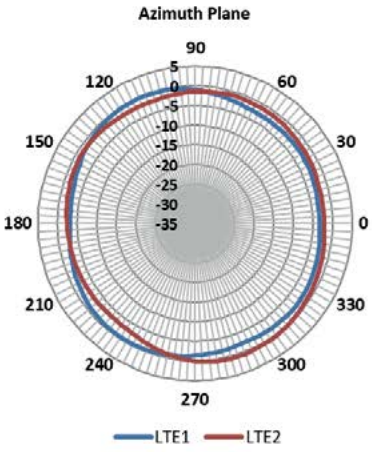


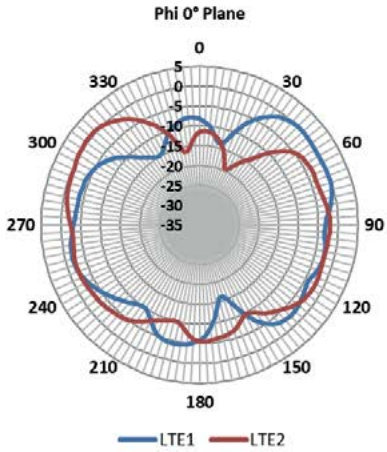


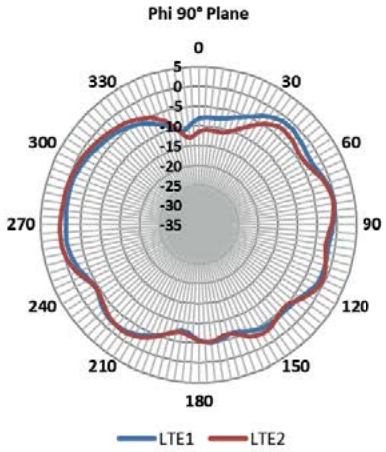


RADIATION PATTERNS WITHOUT GROUND PLANE - LTE ANTENNAS

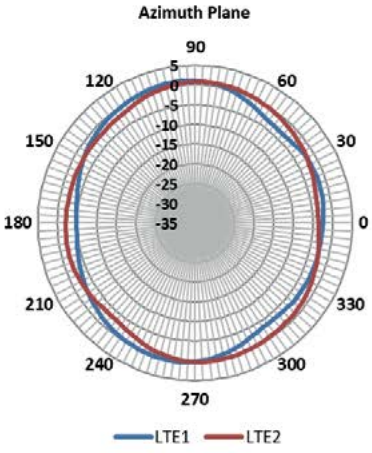
1690 MHz

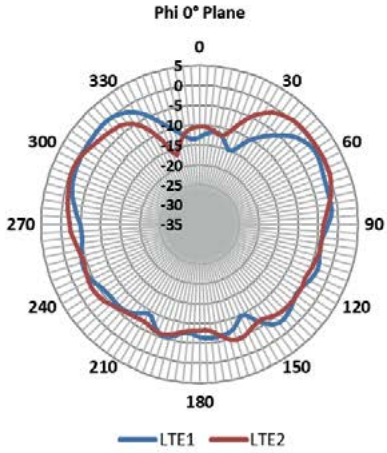


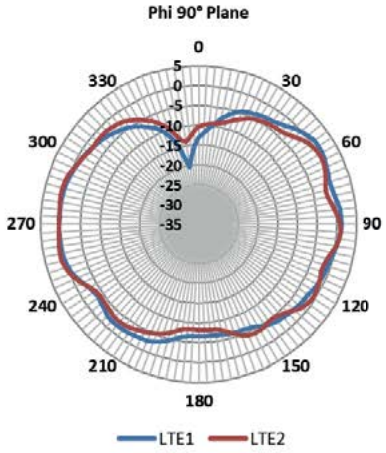




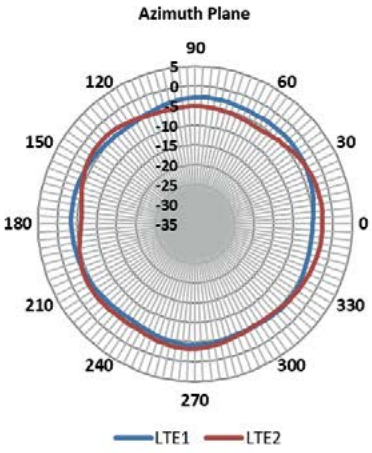
1920 MHz

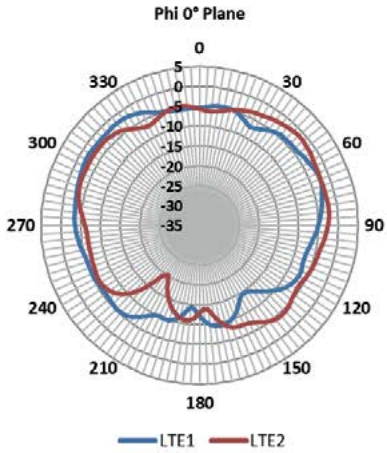


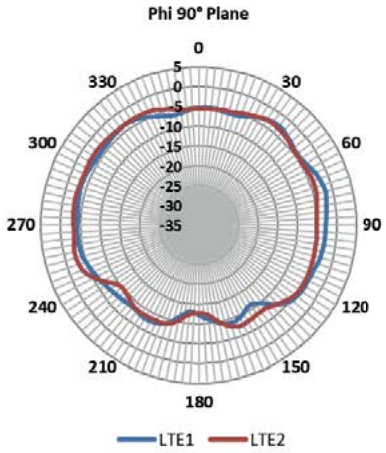




2110 MHz

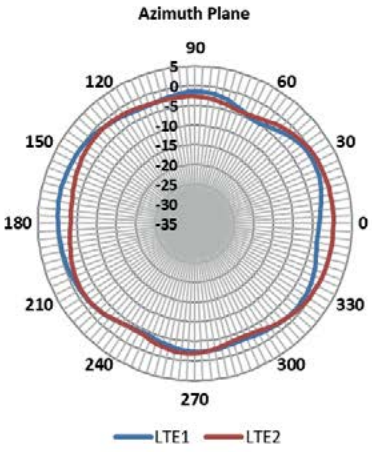


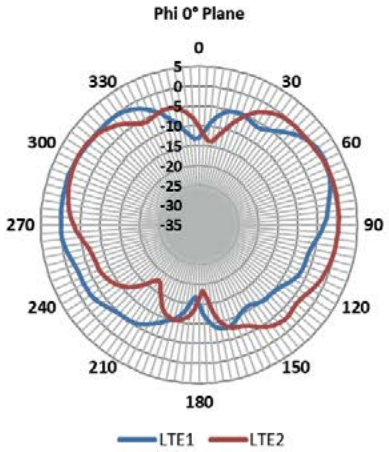


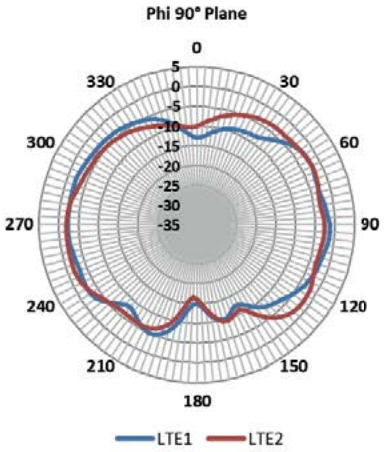


RADIATION PATTERNS WITHOUT GROUND PLANE - LTE ANTENNAS

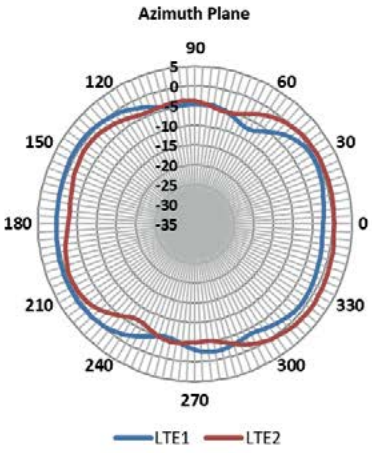
2400 MHz

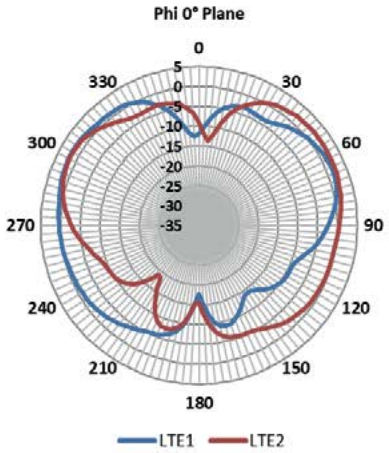


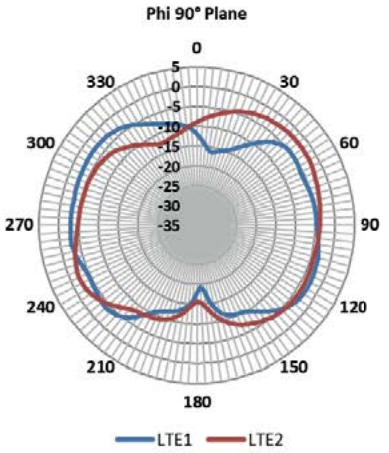




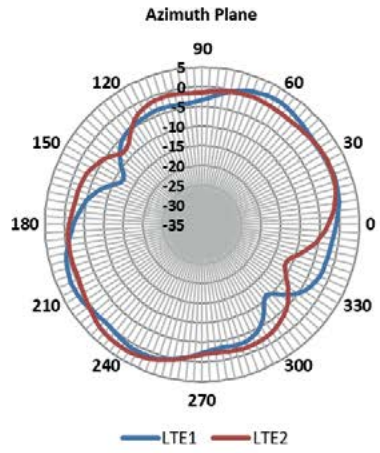
2700 MHz

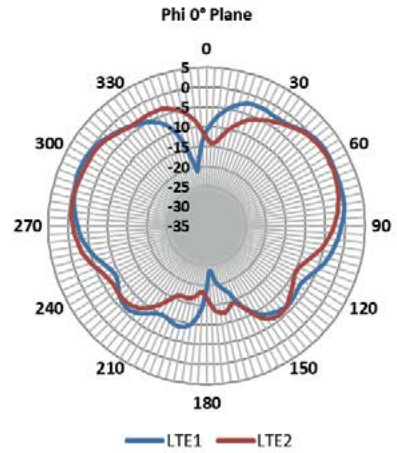


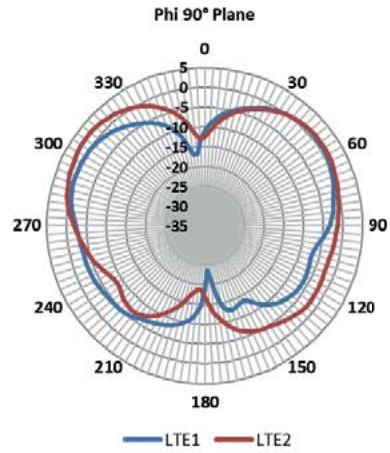




3400 MHz

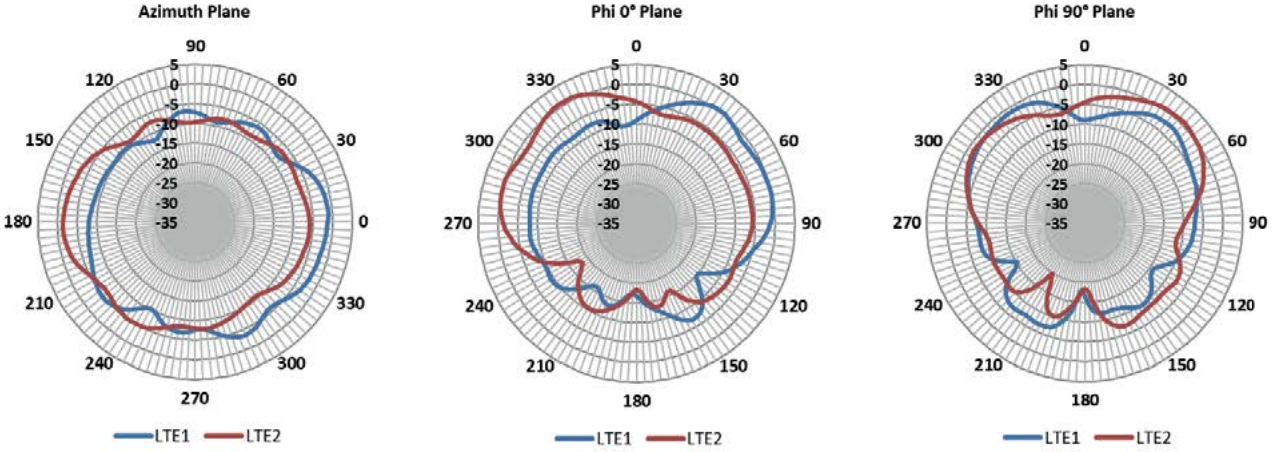






RADIATION PATTERNS WITHOUT GROUND PLANE - LTE ANTENNAS

3800 MHz



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