



## VFP69383B22JN

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

The Gar VFP69383B22JN multiport/multiband antenna provides an excellent solution for Public Safety, Transportation and Aftermarket Fleet applications. Configured for 2-port MIMO operation over the 3G/4G/5G/ISM/CBRS bands and 2-port MIMO operation over the low//high frequency Wi-Fi bands. An additional 5th port provides an active antenna for enabling GNSS global navigation services.

### FEATURES & BENEFITS

- One single-hole mount/fixing- reduces vehicle damage and the cost of installation
- Attractive IP67 low profile aerodynamic housing
- Multi-band/MIMO operation
- Operates well on a ground plane and without a ground plane.

### APPLICATIONS

- FirstNet/Public Safety
- Transportation
- Aftermarket fleet
- 5G ready
- Rugged LTE Gateways

### ELECTRICAL SPECIFICATIONS

Antenna Model	VFP69383B22JN-518J					
Number of Ports	5					
Port Configuration	2x- 3G/4G/5G/ISM/CBRS (LTE/CELL)				2x- Wi-Fi (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]	0.4 [1.5]	0.8 [2.1]	1.2 [1.7]	4.0 [1.8]	2.6 [0.4]	6.6 [3.8]
Max Peak Gain* (dBi) - Gnd. Plane [No Gnd. Plane]	1.6 [2.5]	1.4 [2.8]	1.5 [2.0]	7.2 [4.8]	3.1 [1.7]	7.5 [4.9]
VSWR** - Avg, Gnd. Plane [No Gnd. Plane]	1.7 [1.8]	1.8 [1.8]	1.9 [1.8]	1.5 [1.5]	1.5 [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]	

## ELECTRICAL SPECIFICATIONS

Isolation (dB)- Gnd. Plane [No Gnd. Plane]

LTE1 to LTE2	-11 [-11]	-13 [-13]	-14 [-14]	-18 [-18]	-24 [-24]	-33 [-33]
LTE1 to WIFI	-36 [-30]	-37 [-31]	-39 [-32]	-14 [-14]	-14 [-14]	-32 [-32]
LTE1 to WIFI 2	-39 [-40]	-38 [-40]	-38 [-40]	-14 [-25]	-14 [-25]	-35 [-35]
LTE2 to WiFi 1	-39 [-40]	-42 [-42]	-40 [-42]	-14 [-25]	-14 [-25]	-32 [-35]
LTE2 to WIFI 2	-34 [-32]	-36 [-32]	-38 [-32]	-14 [-14]	-14 [-14]	-33 [-31]
WIFI 1 to WIFI 2	-74 [-70]	-75 [-75]	-71 [-71]	-30 [-28]	-30 [-28]	-38 [-40]
GNSS to LTE 1	-68 [-68]	-69 [-69]	-71 [-71]	-52 [-52]	-55 [-55]	-52 [-52]
GNSS to LTE 2	-43 [-43]	-41 [-41]	-41 [-41]	-46 [-46]	-51 [-51]	-54 [-54]
GNSS to WIFI 1	-65 [-62]	-68 [-66]	-71 [-69]	-47 [-45]	-47 [-45]	-52 [-49]
GNSS to WIFI 2	-68 [-66]	-69 [-66]	-71 [-69]	-52 [-50]	-55 [-50]	-52 [-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)					

## GNSS ANTENNA SPECIFICATIONS

Frequency of Operation (MHz)	1559 - 1606		
Band	BEIDOU	GPS	GLONASS
Frequency Band (MHz)	1559.052 - 1563.144	1574.42 - 1576.42	1598.0625 - 1605.89
Absolute Gain (dBi) - Gnd. Plane [No Gnd. Plane]	2 [3.2]	2 [5.0]	2 [5.3]
LNA Gain, Typ. @ room temp. (dBi)	28 3 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)	2.5- 7.0		
Current Consumption, Max @ room temp mA	8.5 3 3 @ 3.0V		
Out-of-band Signal Rejection Min @ room temp (dBc)	80 (@698-960MHz)	80 (@1428-2700 MHz)	70 (@4900-5800 MHz)
Input Max Power (dBm)	-10		
Cable Type	RG174		

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.)	1.1 kg (2.42 lbs)
Cable Type	LMR 100- pigtails, LMR 195- jumper cables
Mounting	P-Mount
Radome Material	PC, UL94-VO
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 & Vibration), EN50155 (Temperature)
Material Substance Compliance	RoHS

**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.

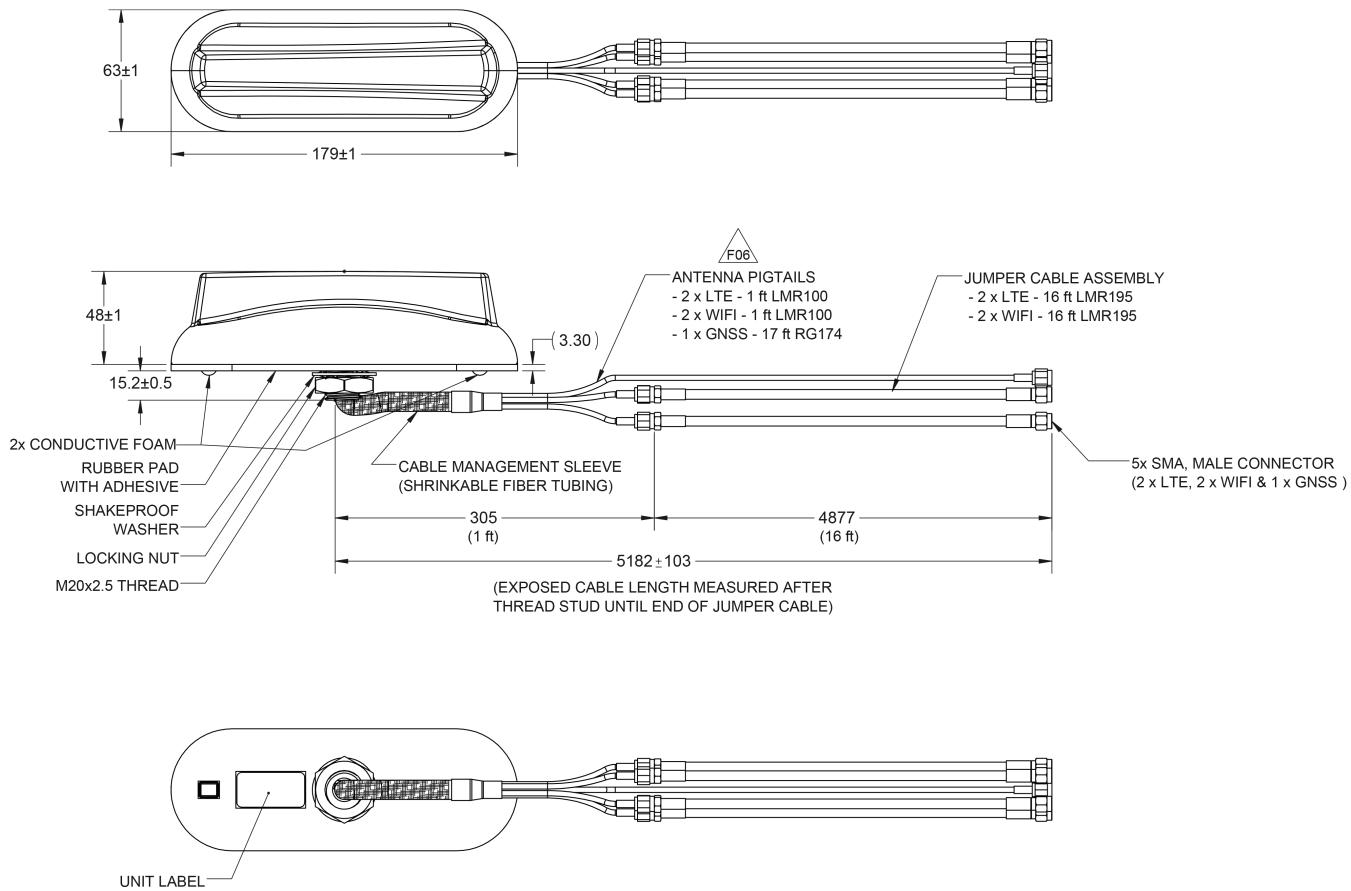
## CONFIGURATION

PART NUMBER	CABLE LENGTH		CONNECTORS			COLOR
	PIGTAIL	JUMPER	LTE/CELL	WIFI	GNSS	
VFP69383B22JN-518J	0.3 m (1 ft)	4.9 m (16 ft)	2 x SMA-male	2 x SMA-male	1 x SMA-male	Black
VFP69383B22JN-91L	0.91 m (3 ft)	-	2 x SMA-male	2 x RP SMA-male	1 x SMA-male	Black
L000151-01	0.3 m (1 ft)	1.83 m (6ft)	2 x QMA-male	2 x QMA-male	1 x QMA-male	Black
L000151-02	0.3 m (1 ft)	4.9 m (16 ft)	2 x QMA-male	2 x QMA-male	1 x QMA-male	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.)	1.35 (2.98)	5.85 (12.89)	217 (478.4)	299 (659.18)

## MECHANICAL DRAWINGS



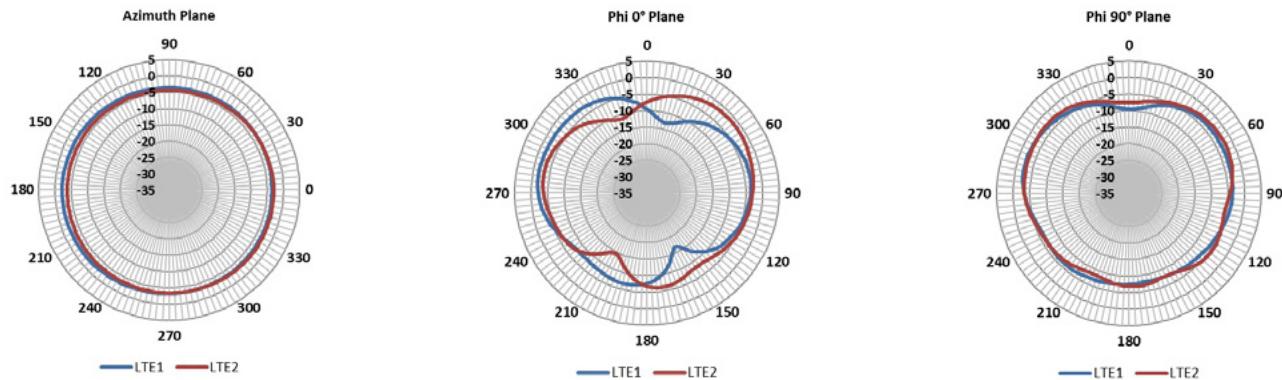
The Gar antenna can create an IP67 water-tight seal when installed on vehicles. Certain vehicles such as a Ford Explorer Interceptor have more narrow roof ridges that are tightly spaced together. For this type, vehicle special adapters are available.

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

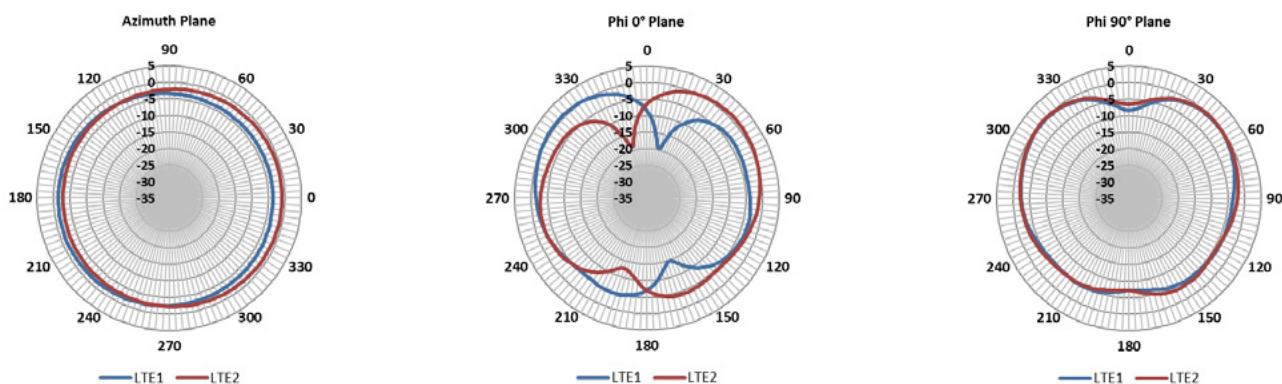
---

## RADIATION PATTERNS WITH GROUND PLANE - LTE ANTENNAS

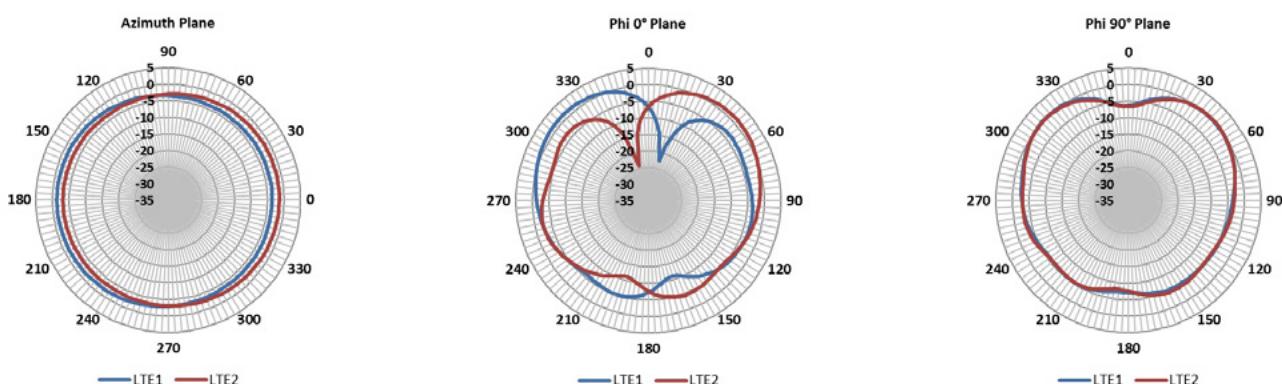
### 698 MHz



### 880 MHz



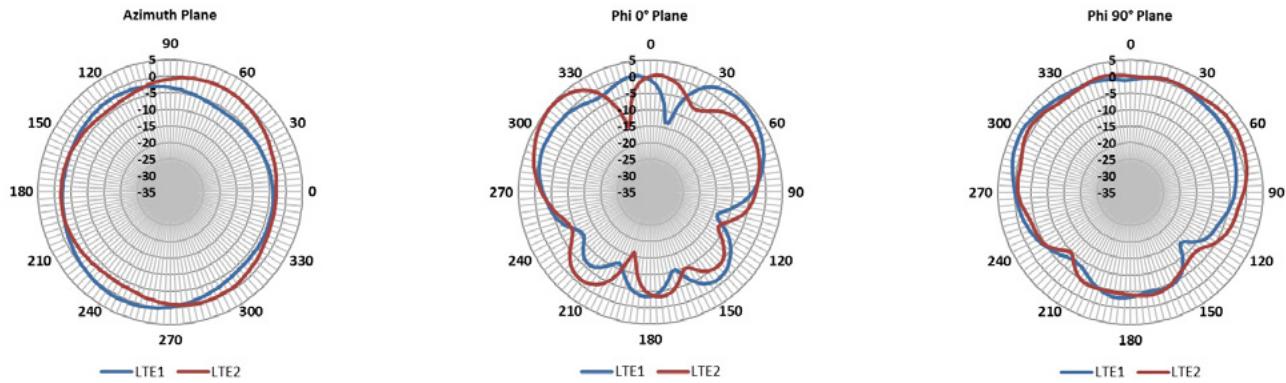
### 960 MHz



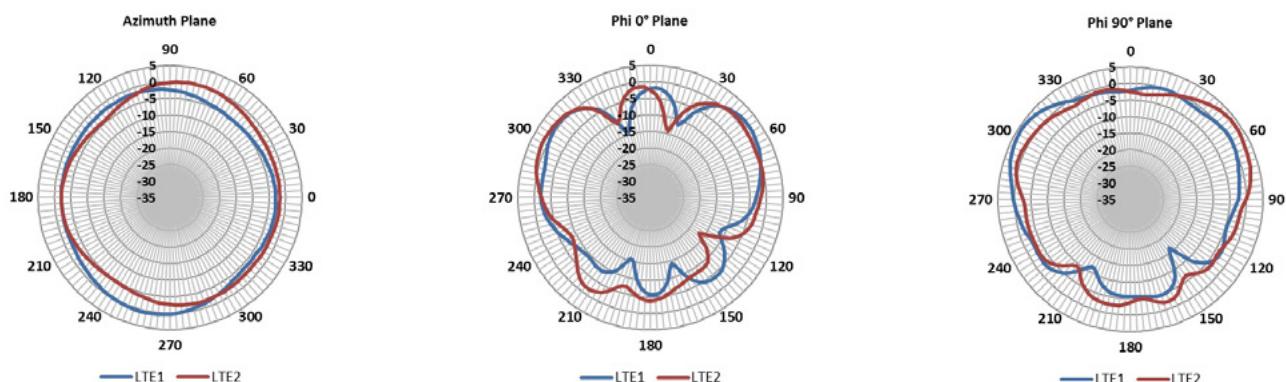
---

## RADIATION PATTERNS WITH GROUND PLANE – LTE ANTENNAS

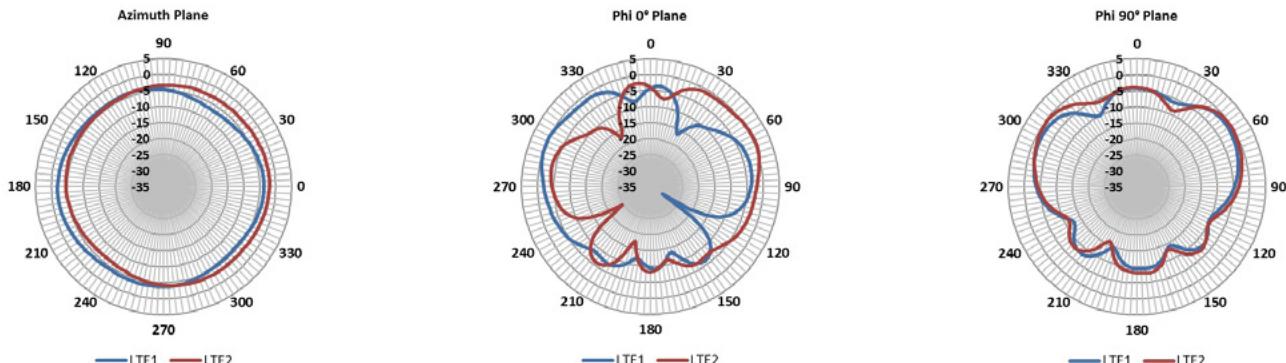
1690 MHz



1850 MHz



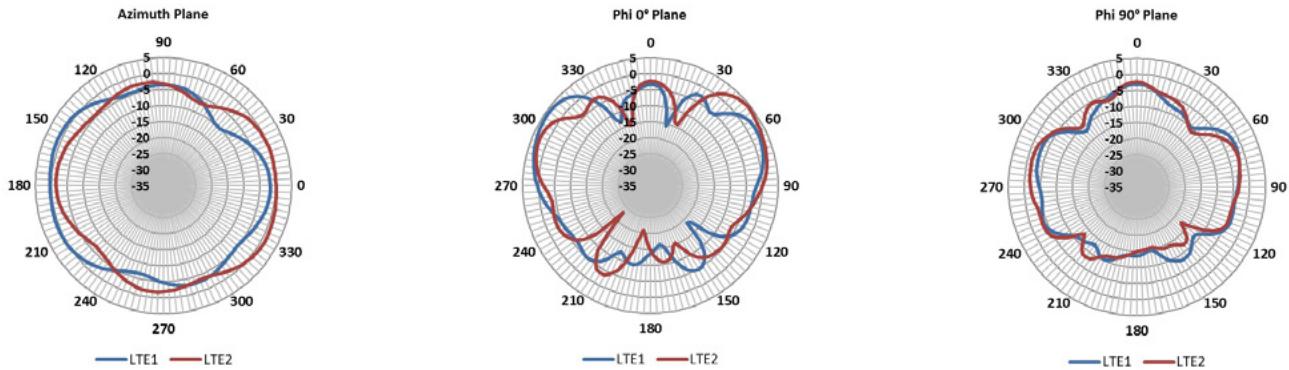
2170 MHz



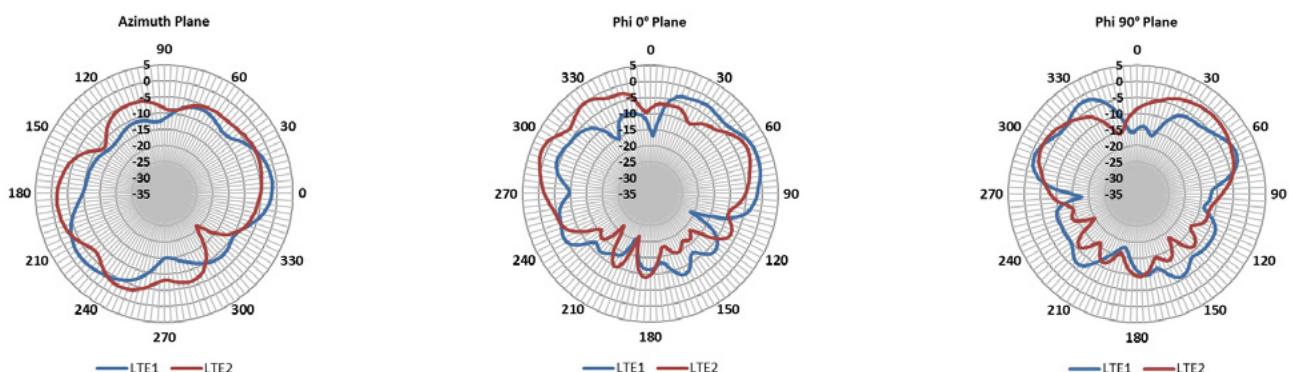
---

## RADIATION PATTERNS WITH GROUND PLANE – LTE ANTENNAS

2700 MHz

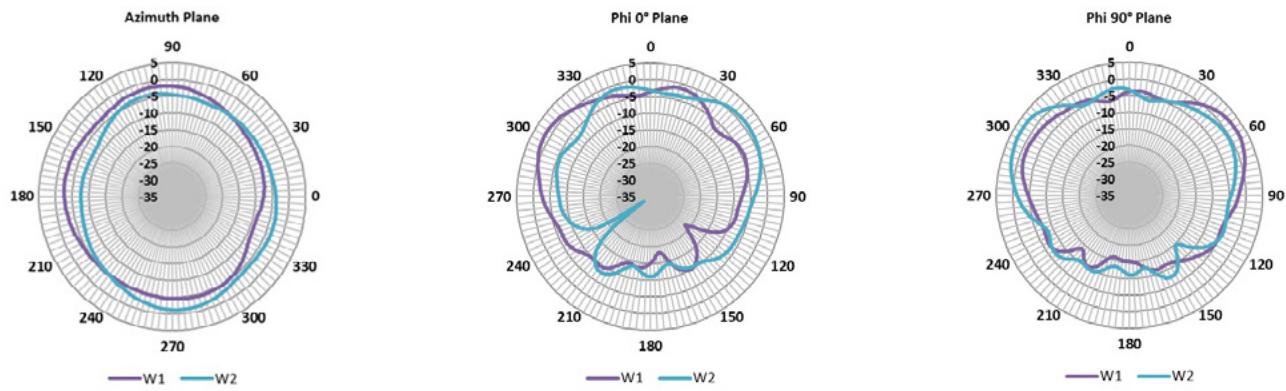


3800 MHz

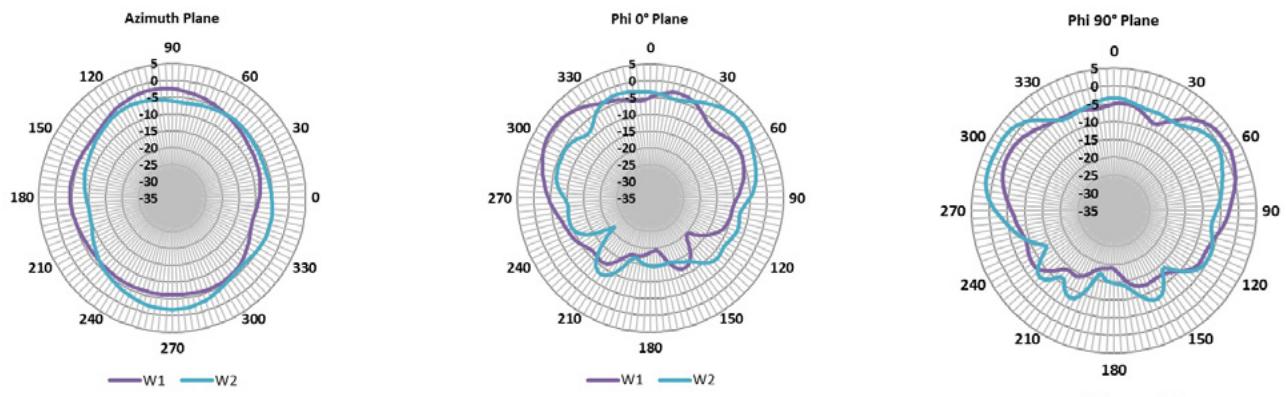


## RADIATION PATTERNS with Ground Plane – WiFi ANTENNAS

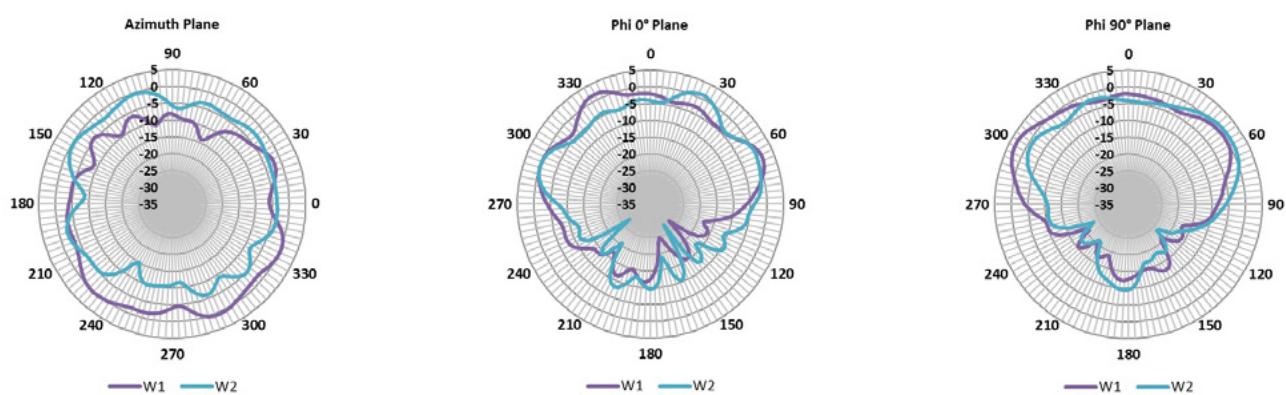
2400 MHz



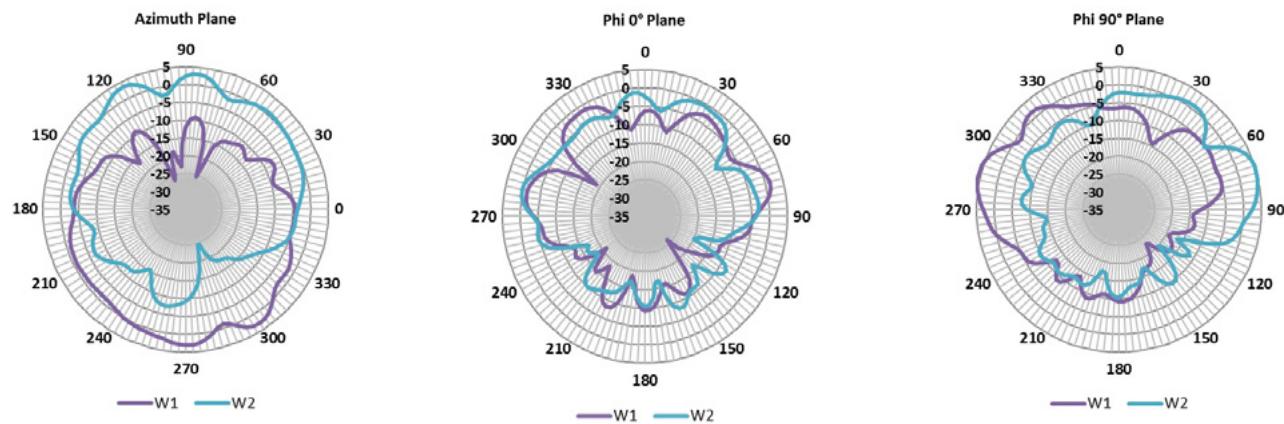
2500 MHz



4900 MHz

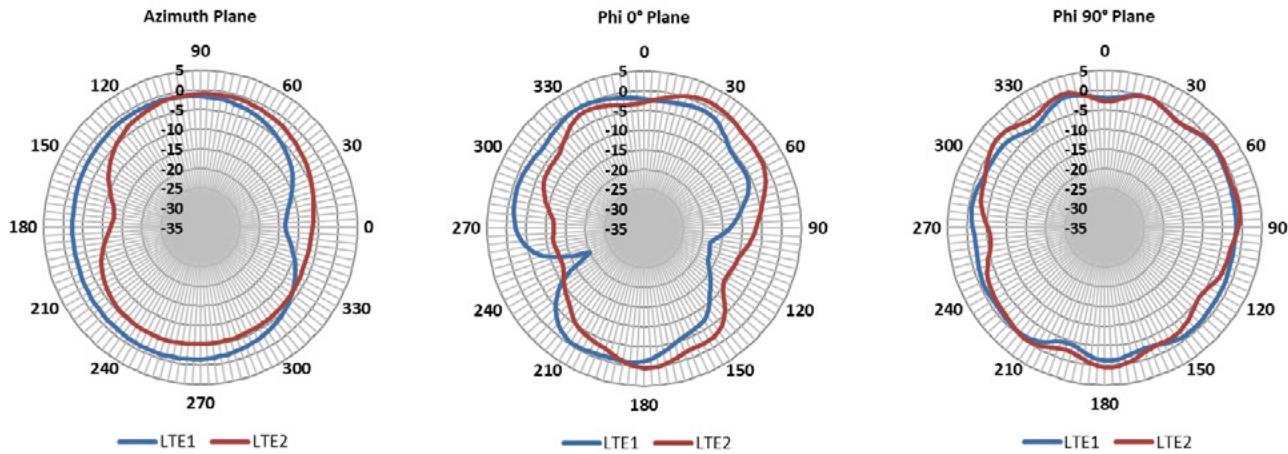


## 5900 MHz

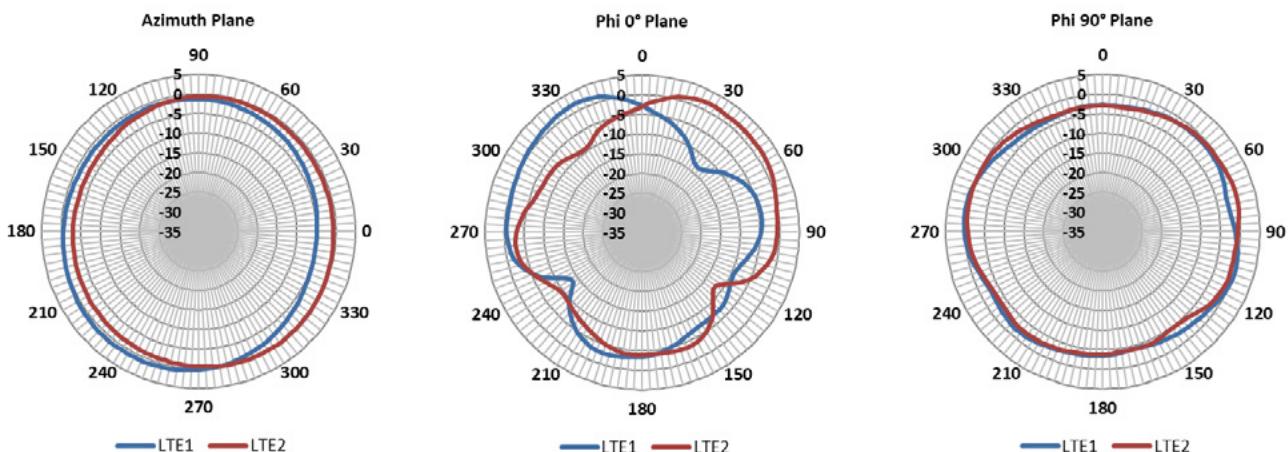


## RADIATION PATTERNS *without Ground Plane* - LTE ANTENNAS

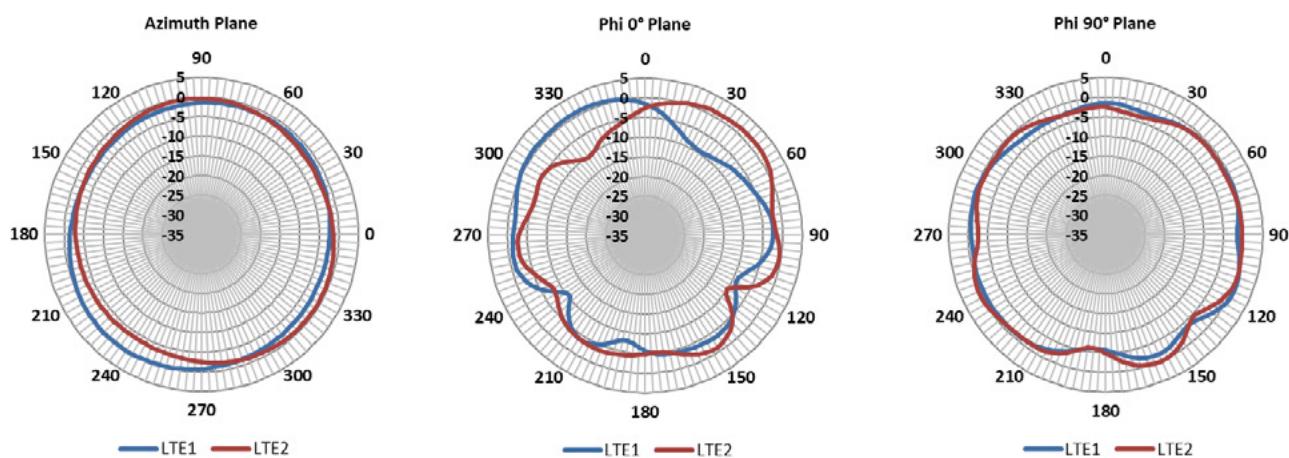
### 698 MHz



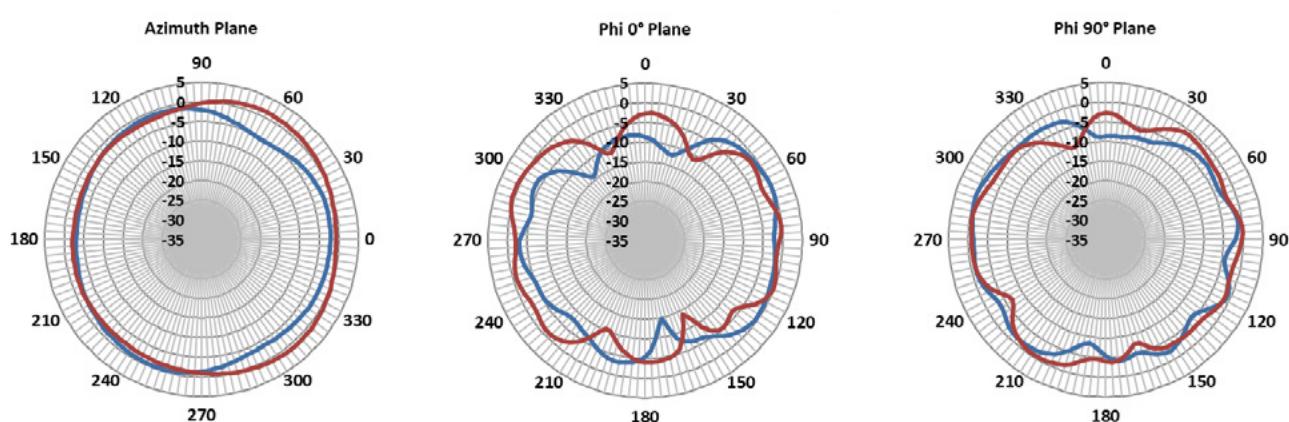
### 880 MHz



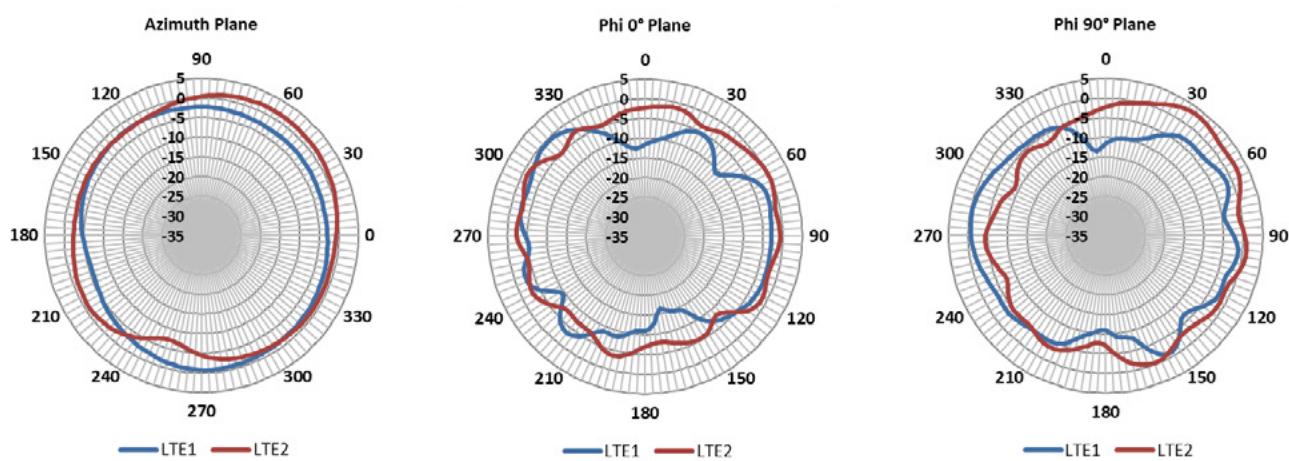
## 960 MHz



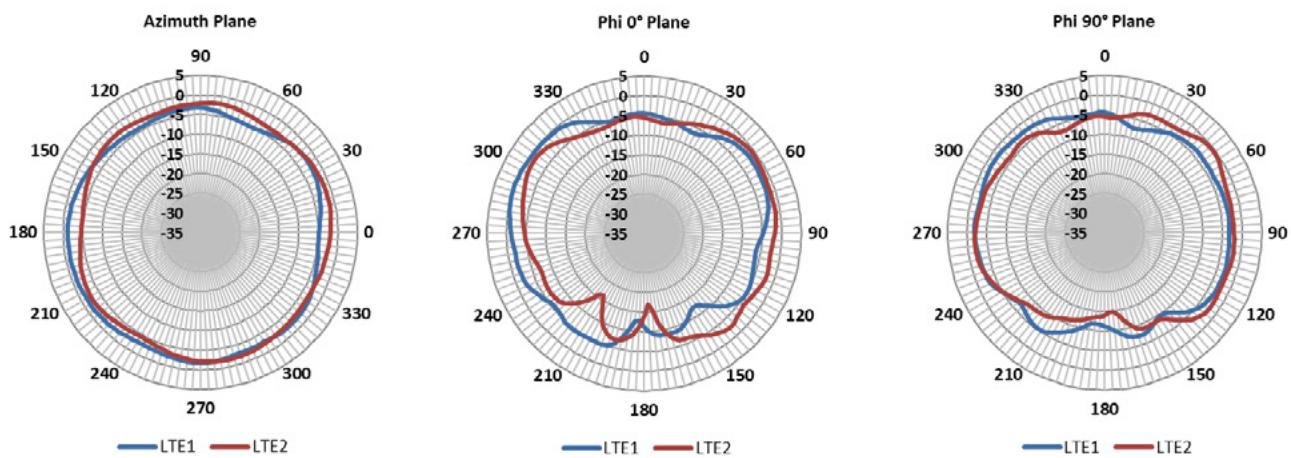
## 1690 MHz



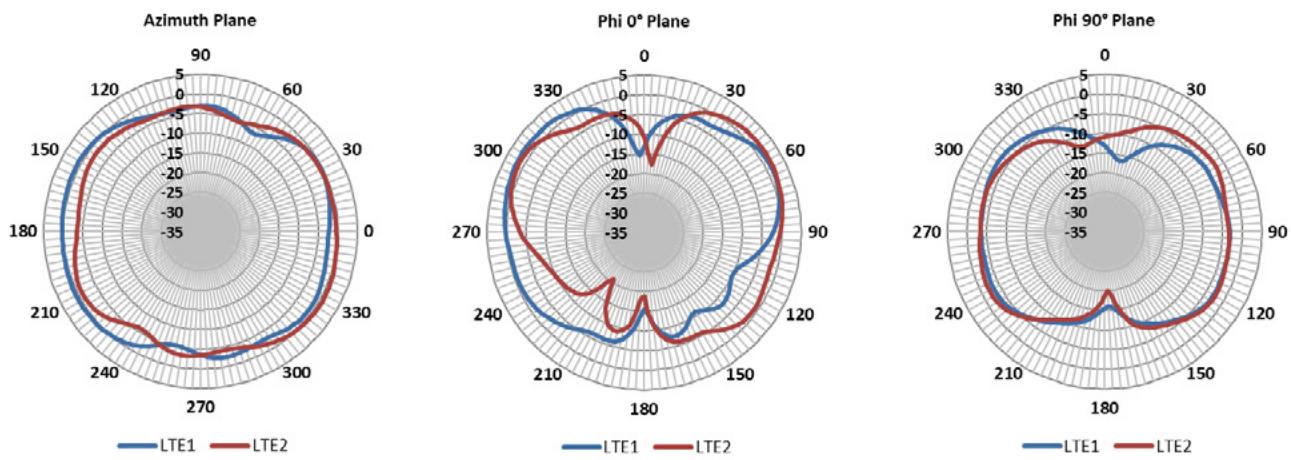
## 1850 MHz



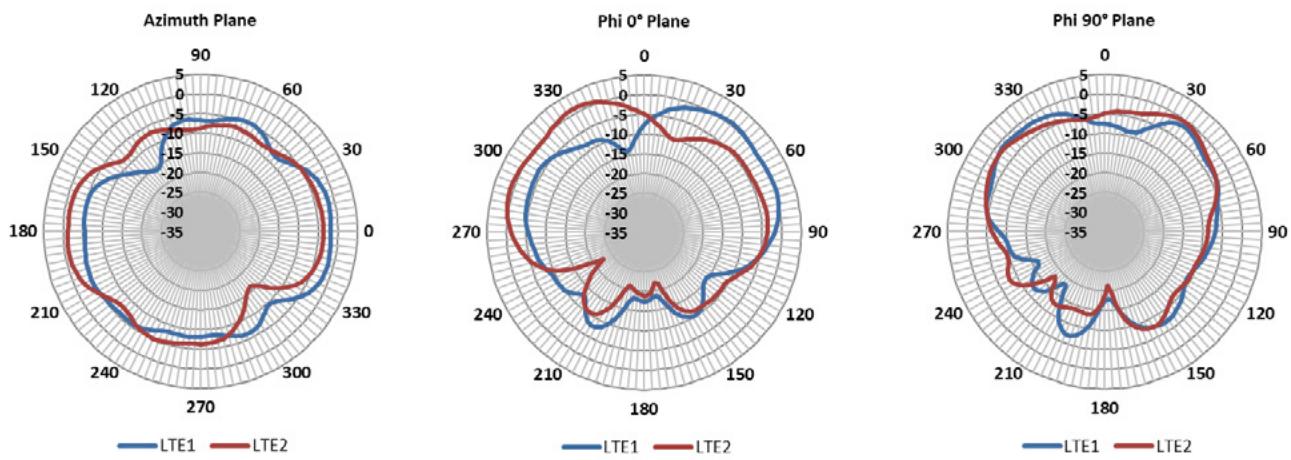
## 2170 MHz



## 2700 MHz

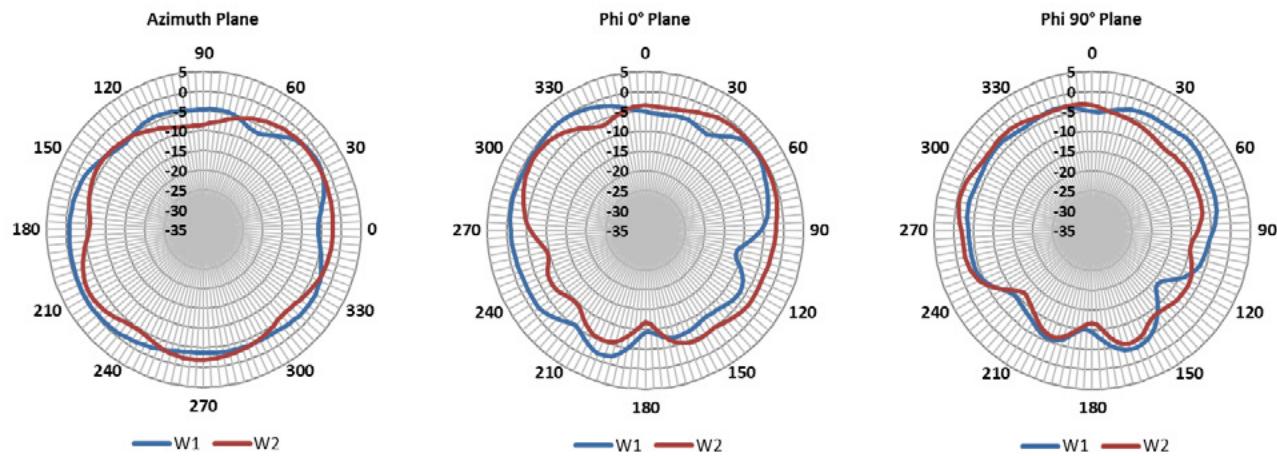


## 3800 MHz

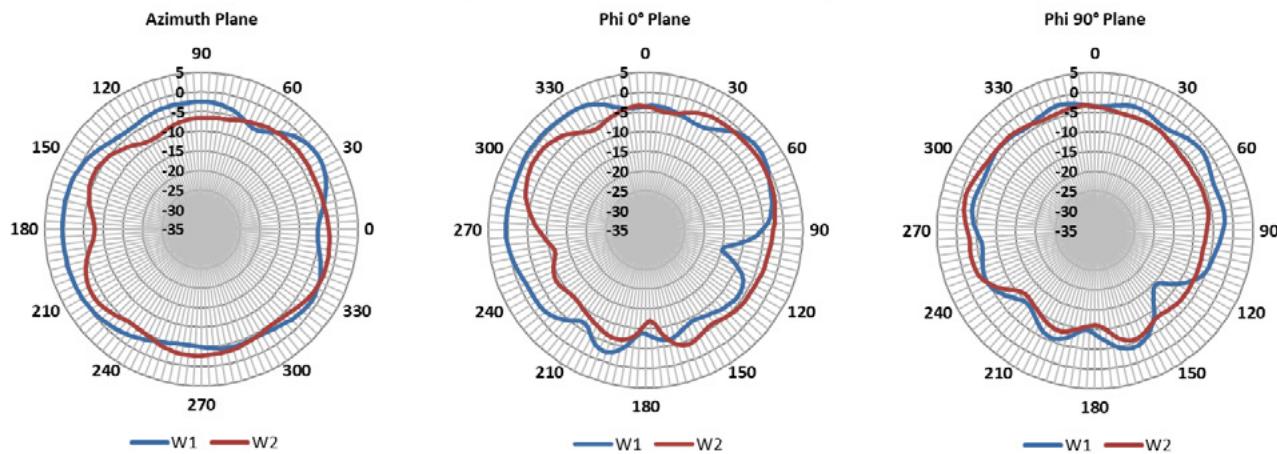


## RADIATION PATTERNS *without Ground Plane - LTE ANTENNAS*

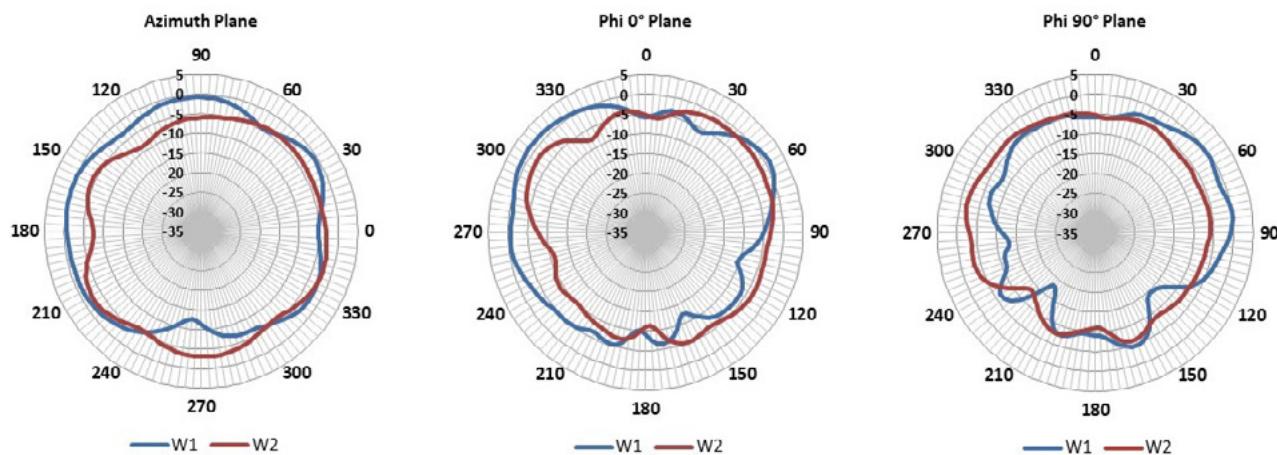
**2400 MHz**



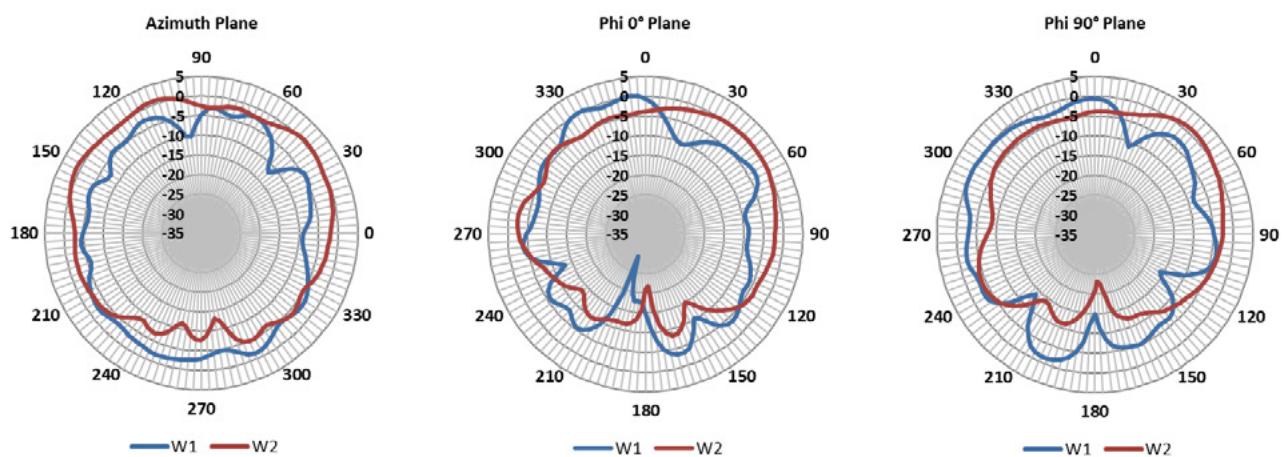
**2450 MHz**



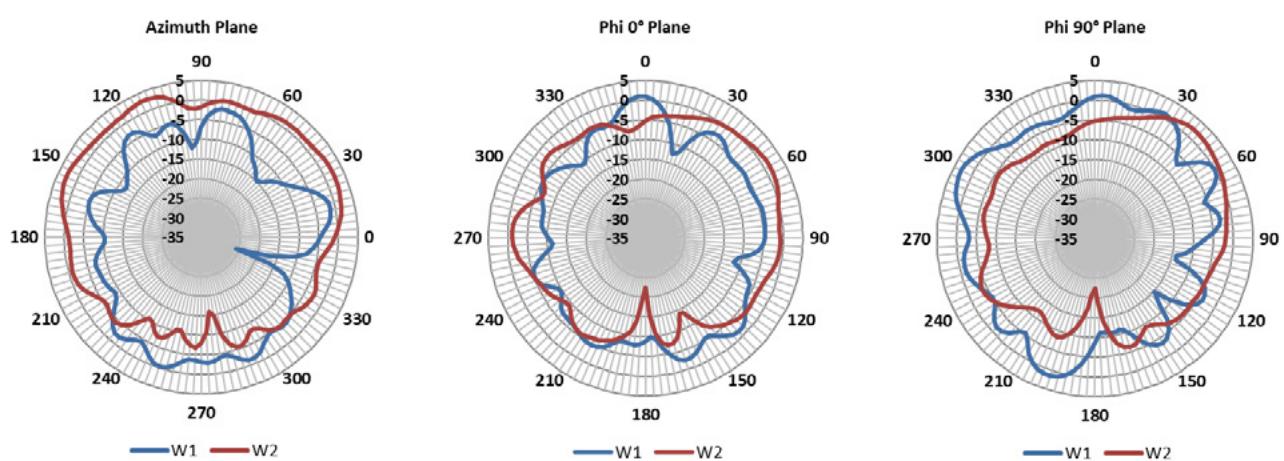
**2500 MHz**



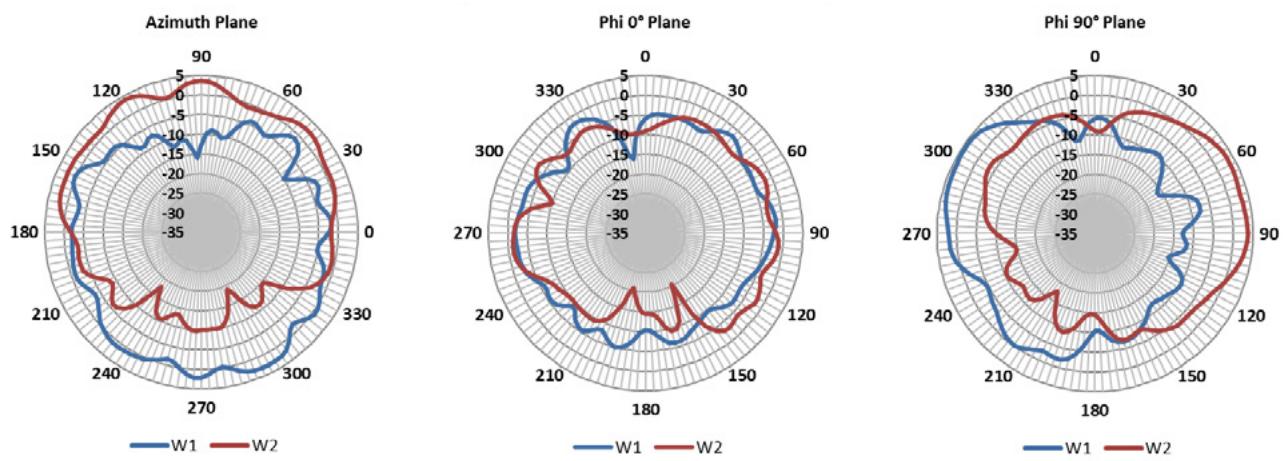
## 4900 MHz



## 5250 MHz



## 5950 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

**te.com**

TE, and TE connectivity (logo) are trademarks owned or licensed by the TE Connectivity Ltd. family of companies. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

TE Connectivity warrants to the original end user customer of its products that its products are free from defects in material and workmanship. Subject to conditions and limitations TE Connectivity will, at its option, either repair or replace any part of its products that prove defective because of improper workmanship or materials. This limited warranty is in force for the useful lifetime of the original end product into which the TE Connectivity product is installed. Useful lifetime of the original end product may vary but is not warranted to exceed one (1) year from the original date of the end product purchase.

©2023 TE Connectivity. All Rights Reserved.

09/23      Original

---

DATA AND DEVICES / VFP69383B22JN

**Laird**  
External Antennas  
is now part of

**TE**  
connectivity