

## 2J4A50PCFa

2 × 4G LTE/3G/2G MIMO, 2 × 2.4/5.0 GHz ISM MIMO and GNSS  
Adhesive Mount

### Key Features

#### Cable 1 and 2: 4G LTE/3G/2G

- 698-960 MHz
- 1710-2170 MHz
- 2500-2700 MHz

#### Cable 3 and 4: 2.4/5.0 GHz ISM

- 2410-2490 MHz
- 4920-5925 MHz

#### Cable 5: GPS/GLONASS/BeiDou/QZSS/Galileo

- 1561-1606 MHz

Adhesive Mount

High Performance

Ground Plane Independent

Customizable Cable and Connector

Dimensions: 61.8 x 155.6 x 17.0 mm

Certificates: IP67, IP69, CE, Vibration



## 1. Antenna Description

### 2J4A50PCFa “The Condor Series”

#### A stellar performance in a compact system

With a size reduction of up to 50% in comparison with other antennas in the market and the highest performance for a 5-in-1 antenna solution, single package the Condor 2J4A50PCFa antenna is the most competitive solution on the market. Users can opt for other configurations in the same enclosure such as 2-in-1, 3-in-1 or 4-in-1 antenna as per their needs, please check our website or contact our sales team for questions and details.

If you are looking for an antenna that is sleek in design and makes no compromises on efficiency and performance, then 2J4A50PCFa is the best option. Engineered according to the latest technological advancements, this antenna provides LTE-MIMO (2x), 2.4/5.0GHz-MIMO (2x) and GNSS (1x) applications delivering very high-efficiency uninterrupted data transfers at maximum speed, achieved by the low Envelope Correlation Coefficient at the LTE-MIMO and WiFi-MIMO Antennas.

#### Worldwide solution

The key feature here is that 2J4A50PCFa is compatible with all LTE, 4G, 3G or 2G network ecosystems. With countless applications and customer-centric benefits, high-precision, low noise and low power consumption GNSS active ceramic antenna stands out among its competition, compatible for GPS, Glonass, BeiDou, Galileo and QZSS geolocation technologies. Dual high gain WiFi antennas are included in the package for all channels and standards in the 2.4 and 5.0GHz bands.

#### Typical applications

- Infotainment systems
- WiFi hotspot
- HD video transmission
- Dash cameras
- Connected cars
- Self-driving cars
- Fleet management
- Gateways
- Routers
- Public transportation
- Logistics
- And others

#### Compatibility Standards

##### LTE Cables

- CAT 1 2 3 4 5 6 7 8 9 10 11 12
- NB-IoT, LTE-NB1, CAT-M1, CAT-M2WCDMA, UMTS, HSPA,
- EDGE GRPS, GSM, CDMA

##### 2.4/5.0 Cables

- WiFi, Bluetooth, BLE, ISM
- DSRC, V2V, V2X
- Sigfox, LoRa, ZigBee, RPMA, LPWAN

##### GPS/GLO/BEI Cable

- GPS, GLONASS, BeiDou
- Galileo, QZSS, L1, E1, B1

#### Installation and Durability

The 2J4A50PCFa can be easily installed or hidden in any part of your environment and application; on the top or bottom surfaces including windshields, dash, plastic, etc., as it comes equipped with a separate double adhesive pad that secures it safely. This product includes a low loss double shielded cable with fully customized length and connector that provides maximum antenna performance and reliability, avoiding drop connections, higher speed data, higher gain, etc. 5-in-1 feature allows for a quick handling in places where other solutions fail to implement and eliminates the need for the extensive labor involved in the installation of the product, saving time and resources.

Not only does this technology assure smooth performance, but it also comes bearing safety guarantee. With IP67 and IP69K ingress rating, our product provides maximum protection against dust and water and allows high pressure and steam cleaning. Passing drop test and vibration provides extra robustness ensuring longevity of the product, making it a cost-effective solution. Certificates for independent lab test are available under NDA.

The UV coating allows maximum protection against extensive outdoor use in extreme environments and temperatures.

## 2. Antenna and electrical specifications

Cable 1

Parameters	4G LTE/3G/2G Antenna		
<b>Standards</b>	2G, 3G, 4G LTE, Cat-X, Cat-M, Cat-NB (NB-IoT)		
<b>Band (MHz)</b>	700/850/900	1700/1800/1900/2100	2600
<b>Frequency (MHz)</b>	698-960	1710-2170	2500-2700
<b>Return Loss (dB)</b>	~-11.7	~-18.0	~-9.7
<b>VSWR</b>	~1.8:1	~1.3:1	~2.0:1
<b>Efficiency (%)</b>	~49.6	~52.6	~39.1
<b>Peak Gain (dBi)</b>	~2.0	~2.7	~2.0
<b>Average Gain (dB)</b>	~-3.1	~-2.8	~-4.1
<b>Impedance (Ohm)</b>	50		
<b>Polarisation</b>	Linear		
<b>Radiation Pattern</b>	Omni-Directional		
<b>Max. Input Power (W)</b>	25		
<b>Connector Type</b>	SMA-Male Standard (Other Connectors Available)		
<b>Cable Length</b>	300 cm Standard (Any Cable Length Available)		
<b>Cable Type</b>	LMR195 (Other Cables Available)		

Cable 2

Parameters	4G LTE/3G/2G Antenna		
<b>Standards</b>	2G, 3G, 4G LTE, Cat-X, Cat-M, Cat-NB (NB-IoT)		
<b>Band (MHz)</b>	700/850/900	1700/1800/1900/2100	2600
<b>Frequency (MHz)</b>	698-960	1710-2170	2500-2700
<b>Return Loss (dB)</b>	~-11.1	~-14.5	~-18.5
<b>VSWR</b>	~2.0:1	~1.5:1	~1.3:1
<b>Efficiency (%)</b>	~47.4	~50.4	~41.2
<b>Peak Gain (dBi)</b>	~1.7	~4.0	~3.1
<b>Average Gain (dB)</b>	~-3.2	~-3.0	~-3.9
<b>Impedance (Ohm)</b>	50		
<b>Polarisation</b>	Linear		
<b>Radiation Pattern</b>	Omni-Directional		
<b>Max. Input Power (W)</b>	25		
<b>Connector Type</b>	SMA-Male Standard (Other Connectors Available)		
<b>Cable Length</b>	300 cm Standard (Any Cable Length Available)		
<b>Cable Type</b>	LMR195 (Other Cables Available)		

**Antenna Measurement Conditions:**

Mounted on Plastic Plate of 30 x 30 cm

200 cm of Cable LMR195

Measured in Certified CTIA 3D Anechoic Chamber

**Cable 3**

Parameters	2.4/5.0 GHz ISM Antenna	
<b>Standards</b>	WiFi, BT, ZigBee, ISM	
<b>Band (MHz)</b>	2.4 GHz	5.0 GHz
<b>Frequency (MHz)</b>	2410-2490	4920-5925
<b>Return Loss (dB)</b>	~-24.0	~-14.0
<b>VSWR</b>	~1.1:1	~1.6:1
<b>Efficiency (%)</b>	~45.3	~40.2
<b>Peak Gain (dBi)</b>	~3.0	~3.5
<b>Average Gain (dB)</b>	~-3.4	~-4.0
<b>Impedance (Ohm)</b>	50	
<b>Polarisation</b>	Linear	
<b>Radiation Pattern</b>	Omni-Directional	
<b>Max. Input Power (W)</b>	25	
<b>Connector Type</b>	RP-SMA-Male Standard (Other Connectors Available)	
<b>Cable Length</b>	300 cm Standard (Any Cable Length Available)	
<b>Cable Type</b>	LMR195 Standard (Other Cables Available)	

**Cable 4**

Parameters	2.4/5.0 GHz ISM Antenna	
<b>Standards</b>	WiFi, BT, ZigBee, ISM	
<b>Band (MHz)</b>	2.4 GHz	5.0 GHz
<b>Frequency (MHz)</b>	2410-2490	4920-5925
<b>Return Loss (dB)</b>	~-22.2	~-14.6
<b>VSWR</b>	~1.2:1	~1.5:1
<b>Efficiency (%)</b>	~46.6	~44.5
<b>Peak Gain (dBi)</b>	~3.7	~3.6
<b>Average Gain (dB)</b>	~-3.3	~-3.5
<b>Impedance (Ohm)</b>	50	
<b>Polarisation</b>	Linear	
<b>Radiation Pattern</b>	Omni-Directional	
<b>Max. Input Power (W)</b>	25	
<b>Connector Type</b>	RP-SMA-Male Standard (Other Connectors Available)	
<b>Cable Length</b>	300 cm Standard (Any Cable Length Available)	
<b>Cable Type</b>	LMR195 Standard (Other Cables Available)	

**Antenna Measurement Conditions:**

Mounted on Plastic Plate of 30 x 30 cm

200 cm of Cable LMR195

Measured in Certified CTIA 3D Anechoic Chamber

Cable 5

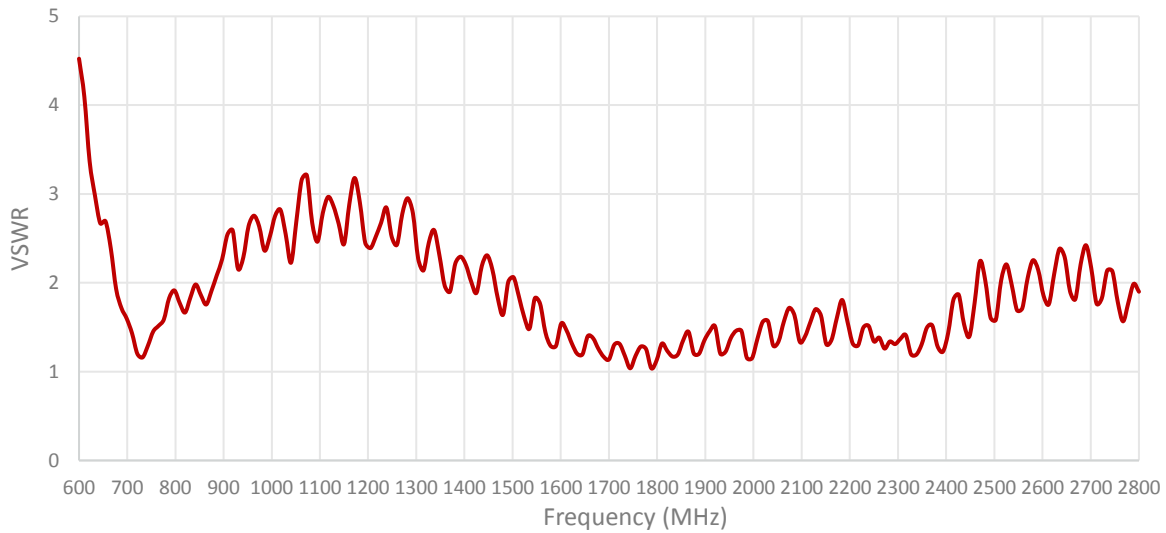
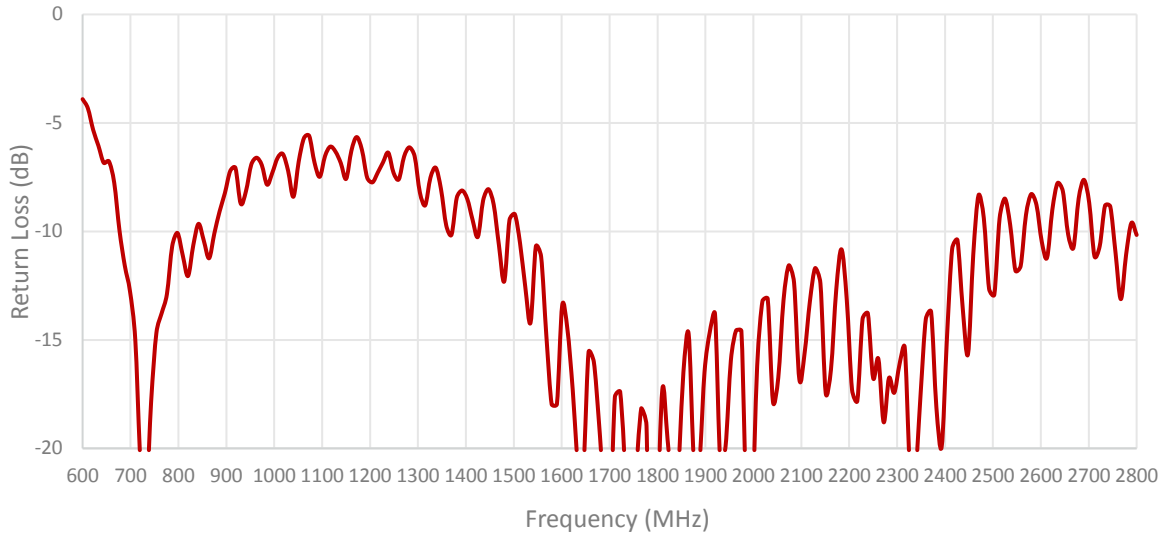
Parameters	GPS/GLONASS/BeiDou Antenna		
	BeiDou	GPS/QZSS/Galileo	GLONASS
<b>Standards</b>			
<b>Band (MHz)</b>	1561	1575	1602
<b>Frequency(MHz)</b>	1561.098	1575.42	1598-1610
<b>Patch Size (mm)</b>		25 x 25 x 4	
<b>Return Loss (dB)</b>		<=-15.0 dB	
<b>VSWR</b>		<=1.4:1 dB	
<b>Impedance</b>		50	
<b>Radiation Pattern</b>		Hemispherical	
<b>Polarization</b>		RHCP	
<b>Saw Filter</b>		Pre-filter	
<b>Active Gain (dB)</b>		28 @ 2.7 V	
<b>Noise Figure (dB)</b>		1.5 Typ	
<b>Voltage (V)</b>		1.5 – 3.6	
<b>Current Consumption (mA)</b>		9 Typ	
<b>Power Consumption (mW)</b>		24.3 Typ	
<b>ESD Protection (kV)</b>		2kV	
<b>Connector Type</b>	SMA-Male Standard (Other Connectors Available)		
<b>Cable Length</b>	300 cm Standard (Any Cable Length Available)		
<b>Cable Type</b>	LMR100 Standard (Other Cables Available)		

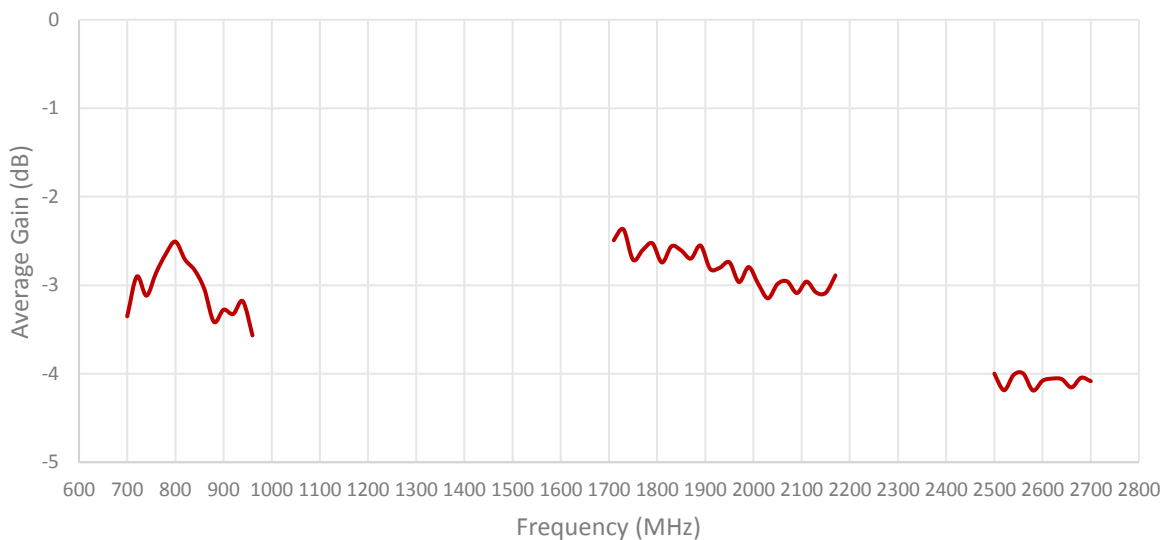
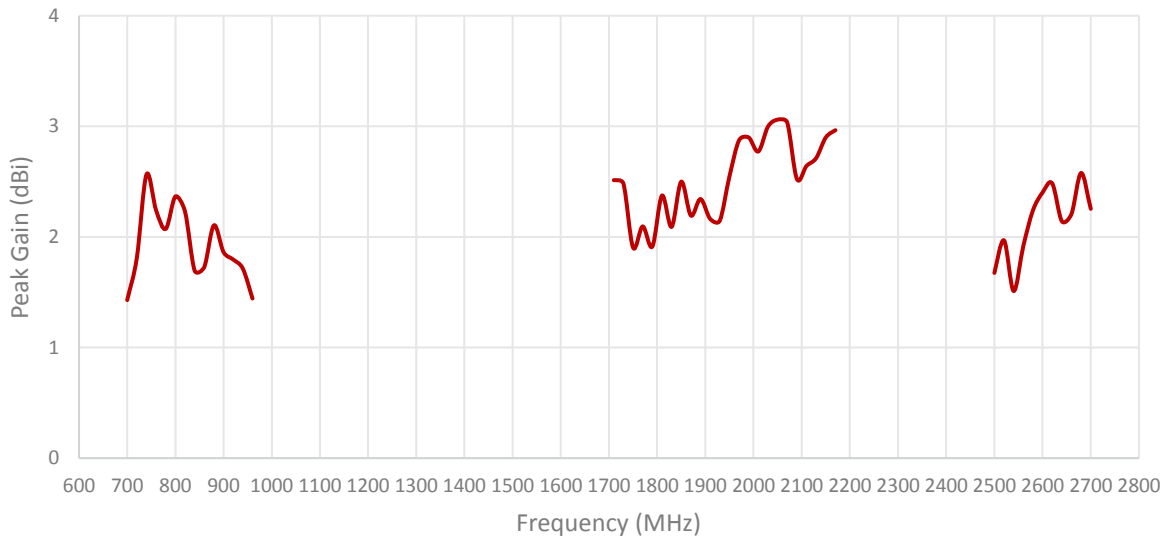
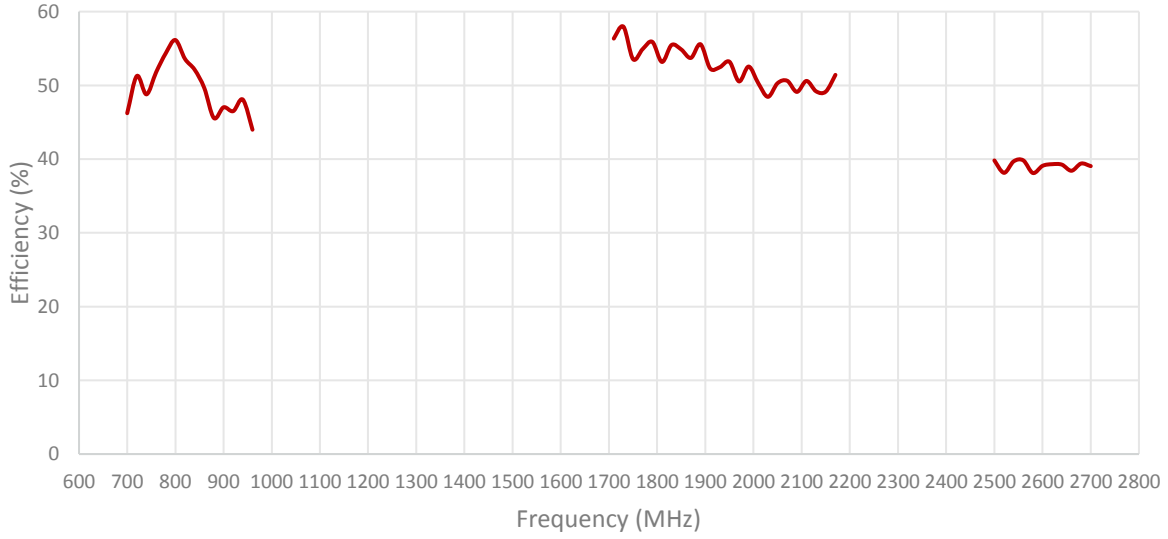
### 3. Mechanical and environmental specifications

Specifications	2J4A50PCFa
<b>Mounting Type</b>	Adhesive Mount
<b>Dimensions (mm)</b>	61.8 x 155.6 x 17.0
<b>Radome Type</b>	ABS UV Stable
<b>Radome color</b>	Black
<b>Operating Temperature (C)</b>	-40 to +85
<b>Storage Temperature (C)</b>	-40 to +85
<b>Substance Compliance</b>	RoHS
<b>Certificates</b>	IP67, IP69, CE, Vibration

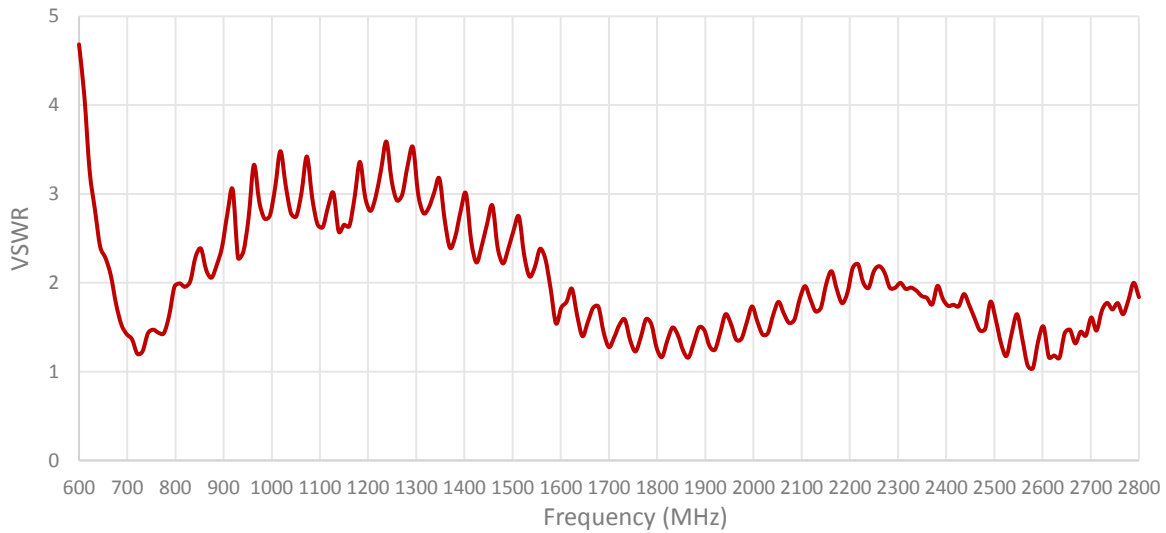
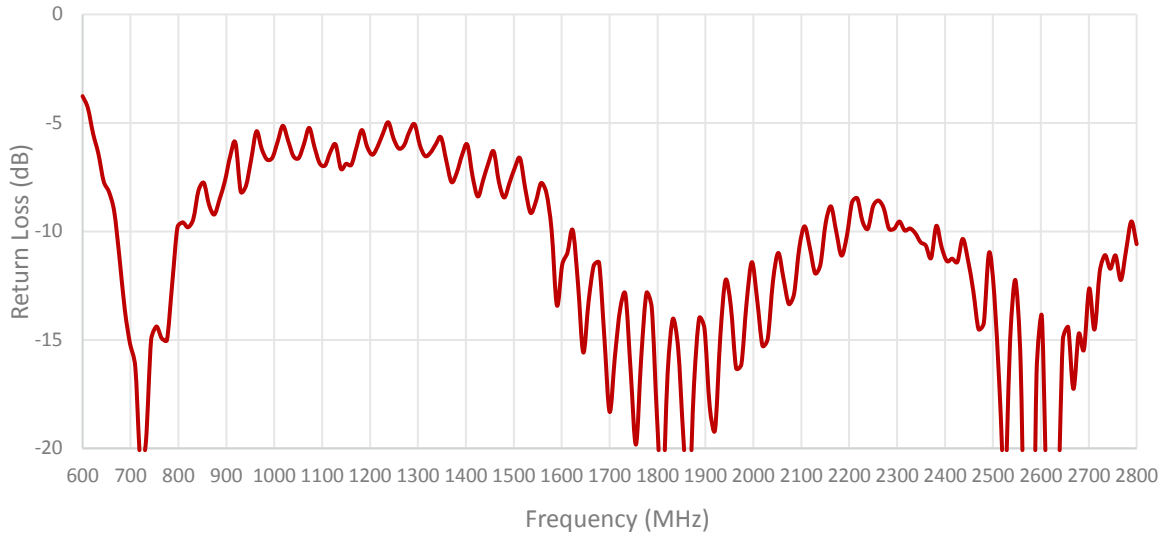
## 4. Antenna parameters

**Table 1: 4G LTE/3G/2G**

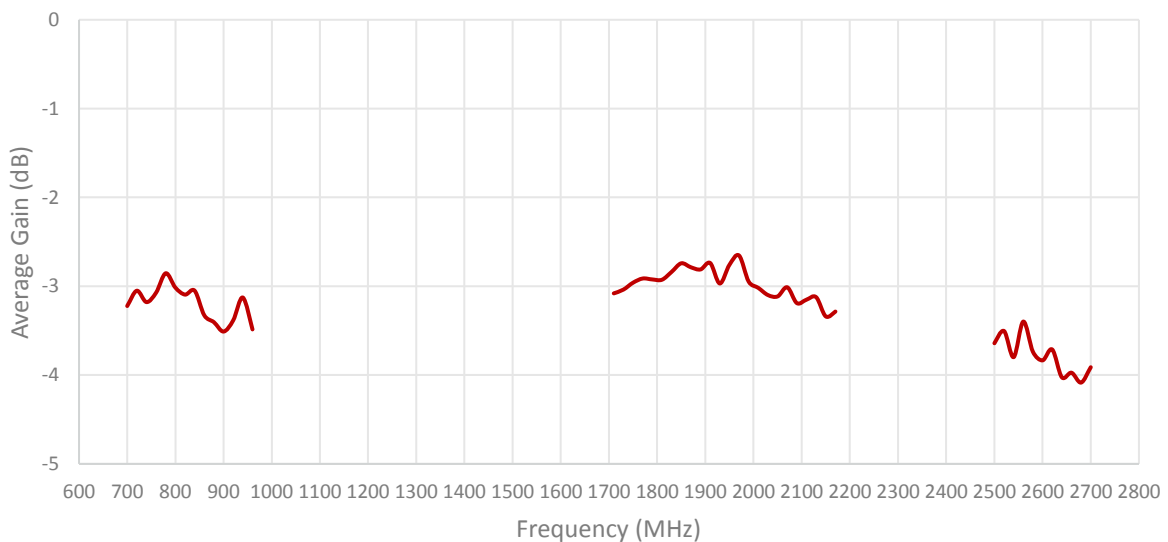
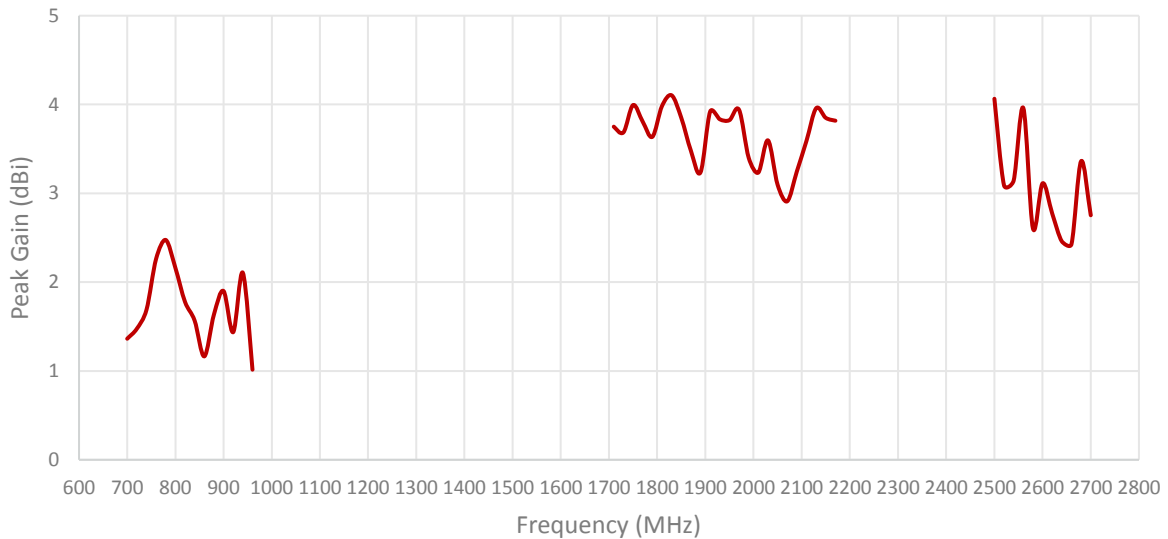
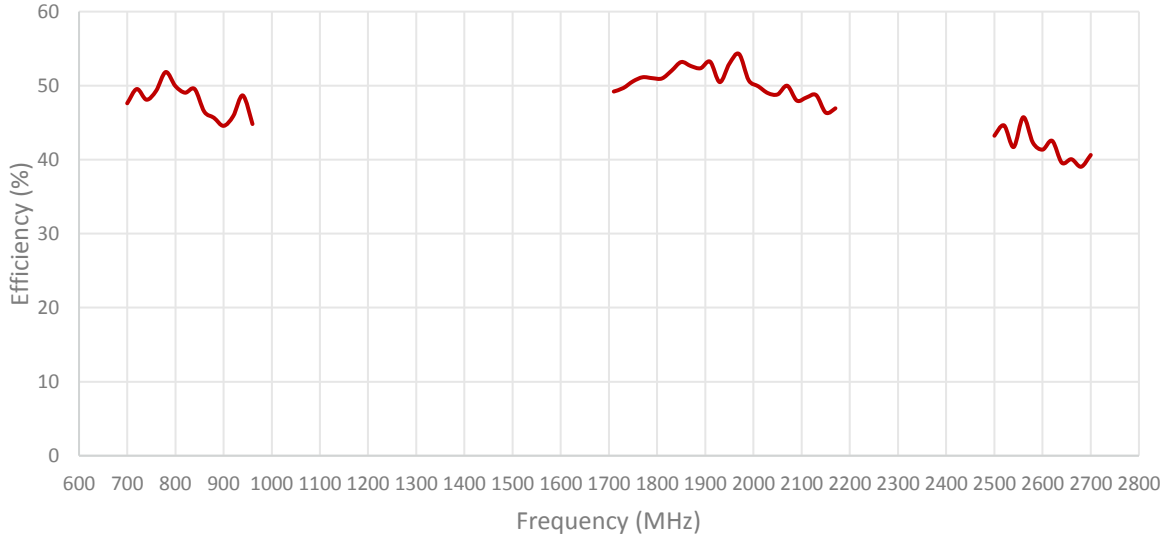




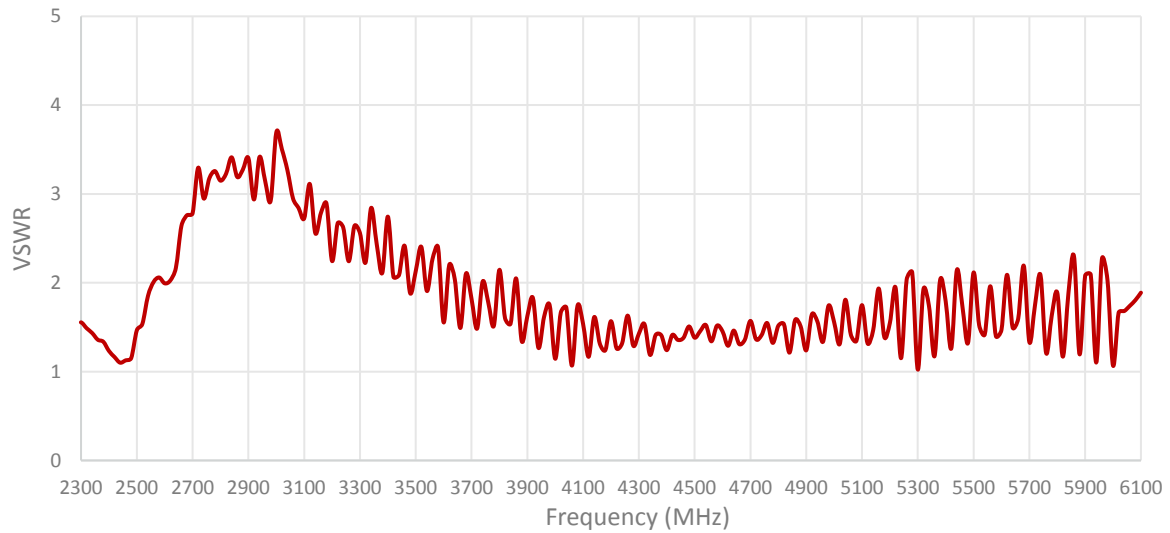
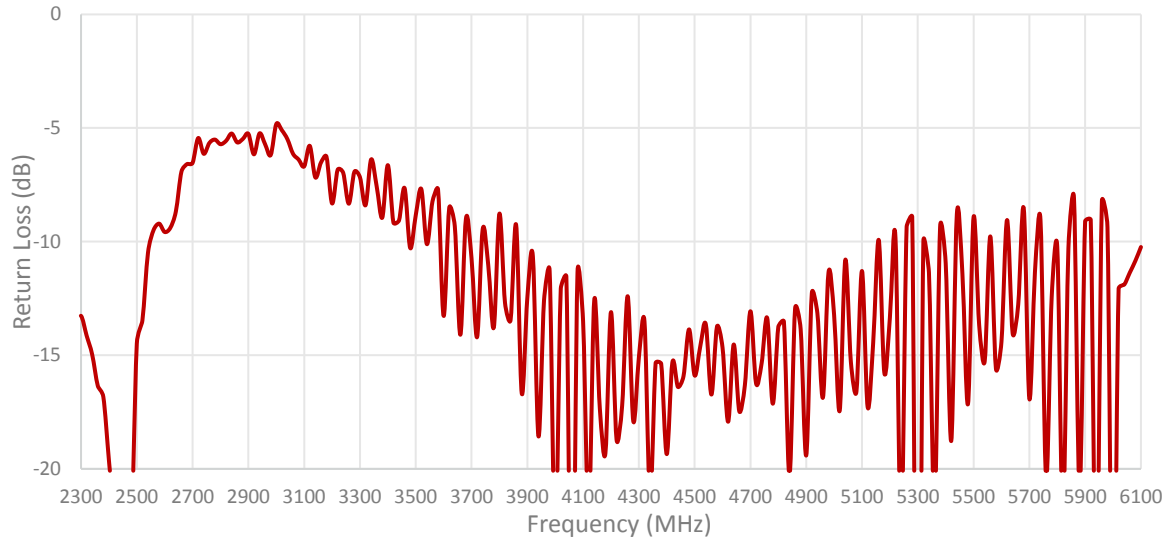
**Cable 2: 4G LTE/3G/2G**

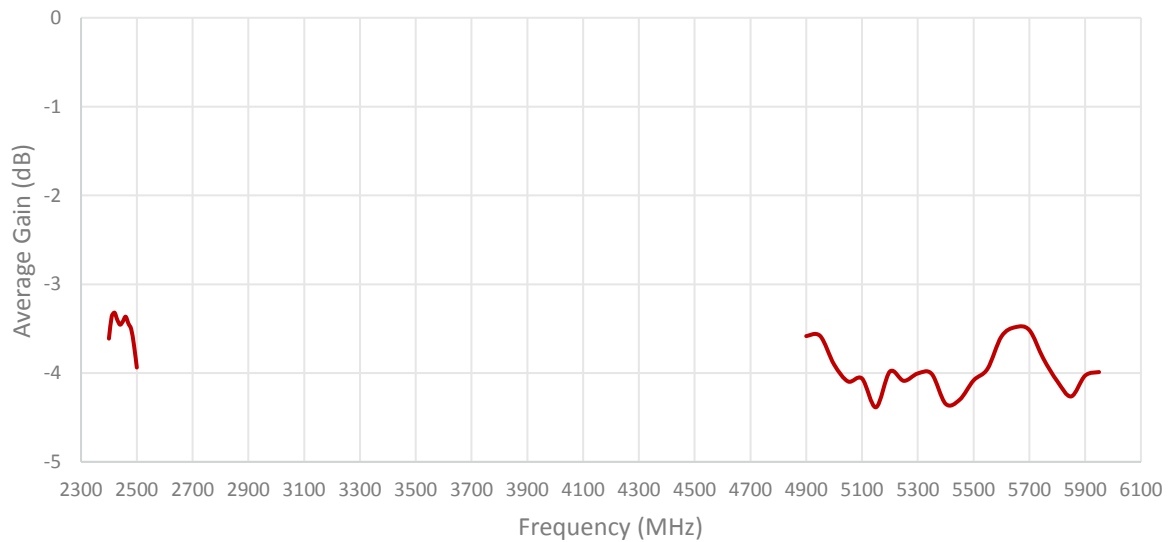
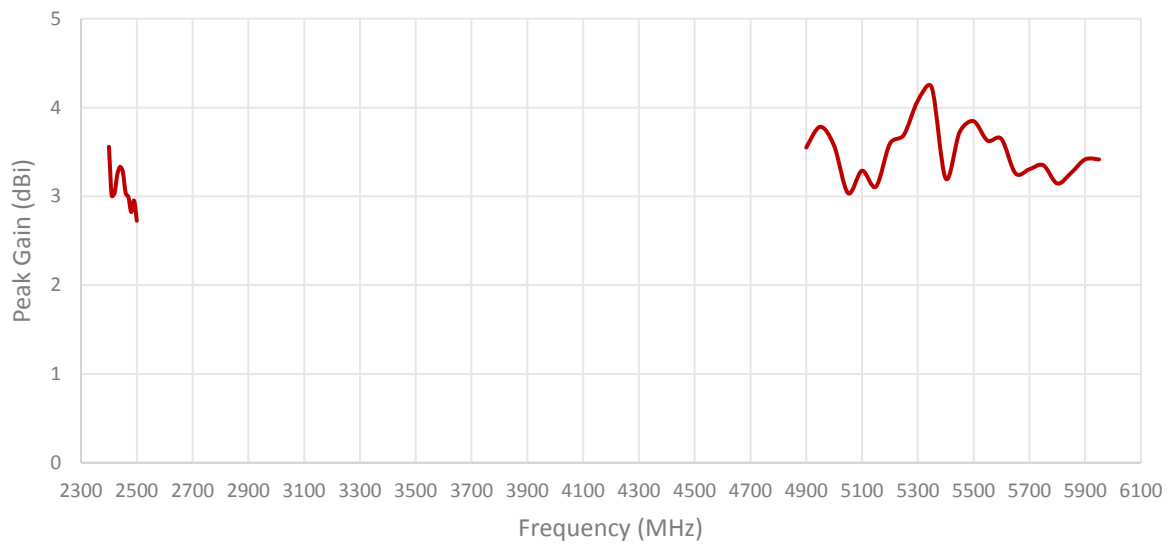
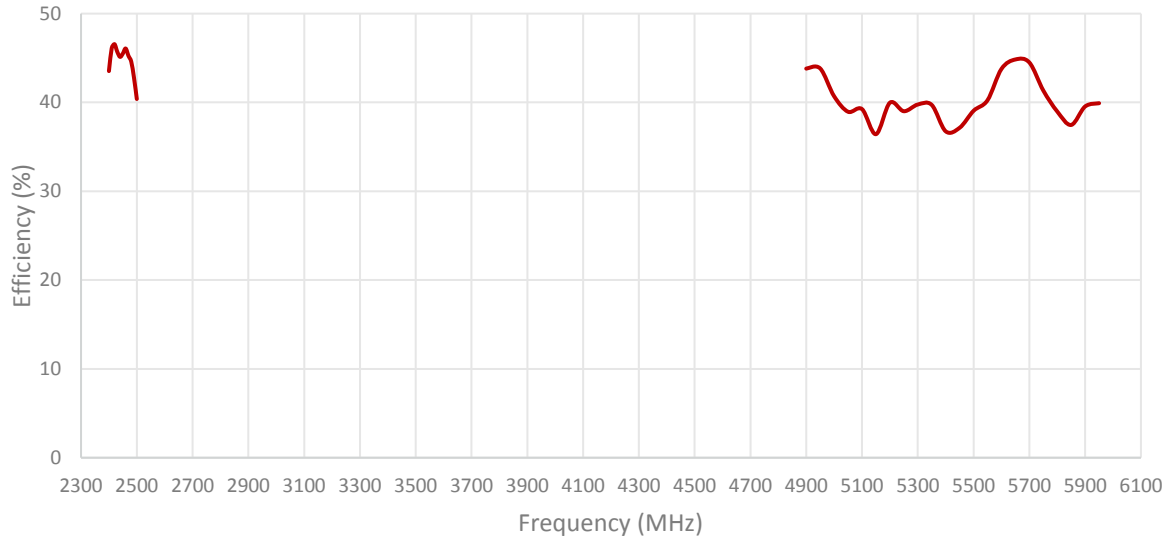




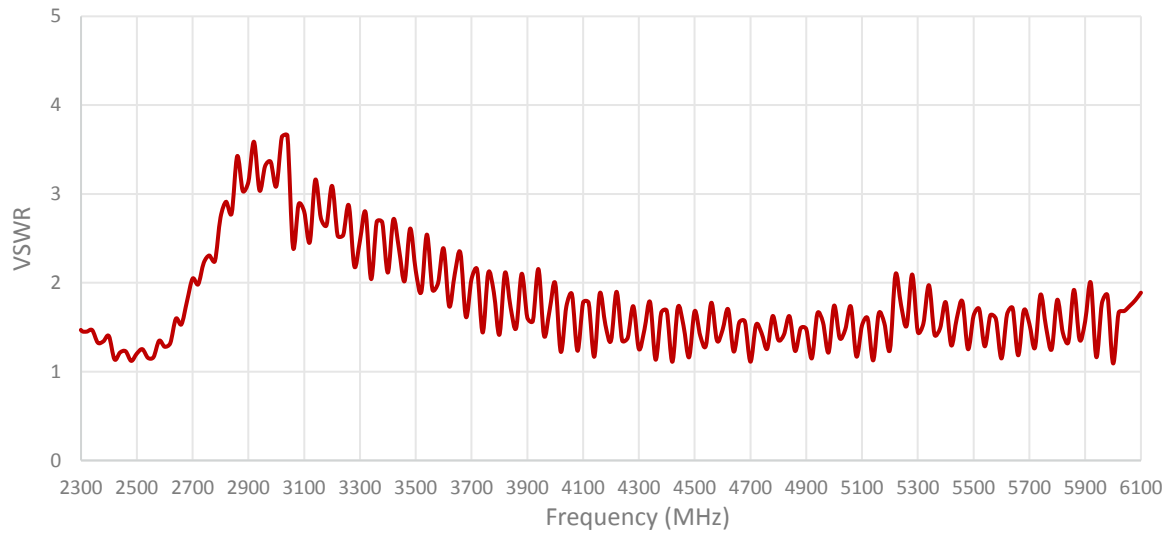
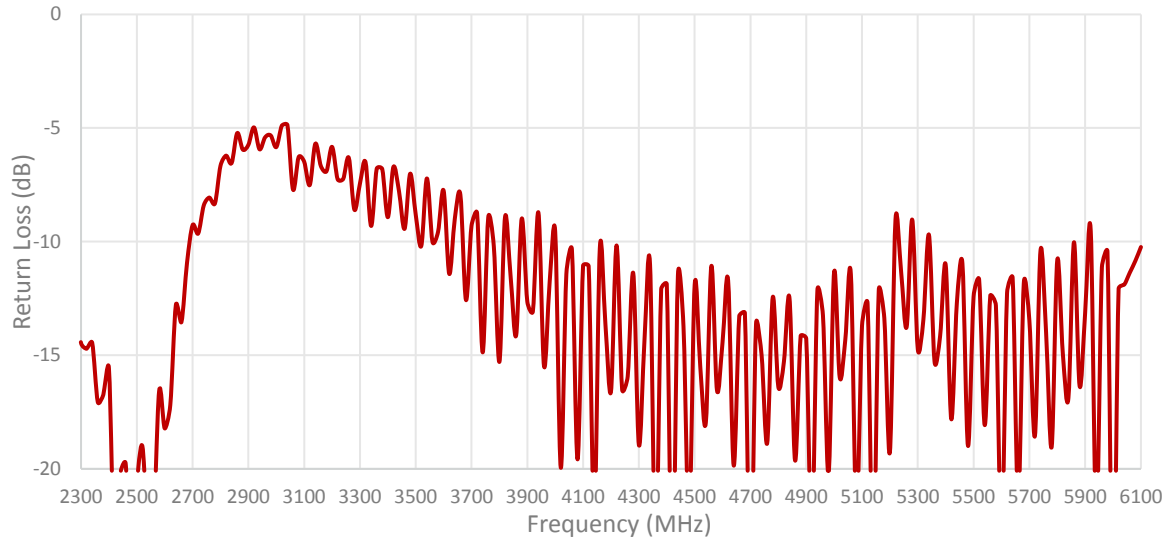


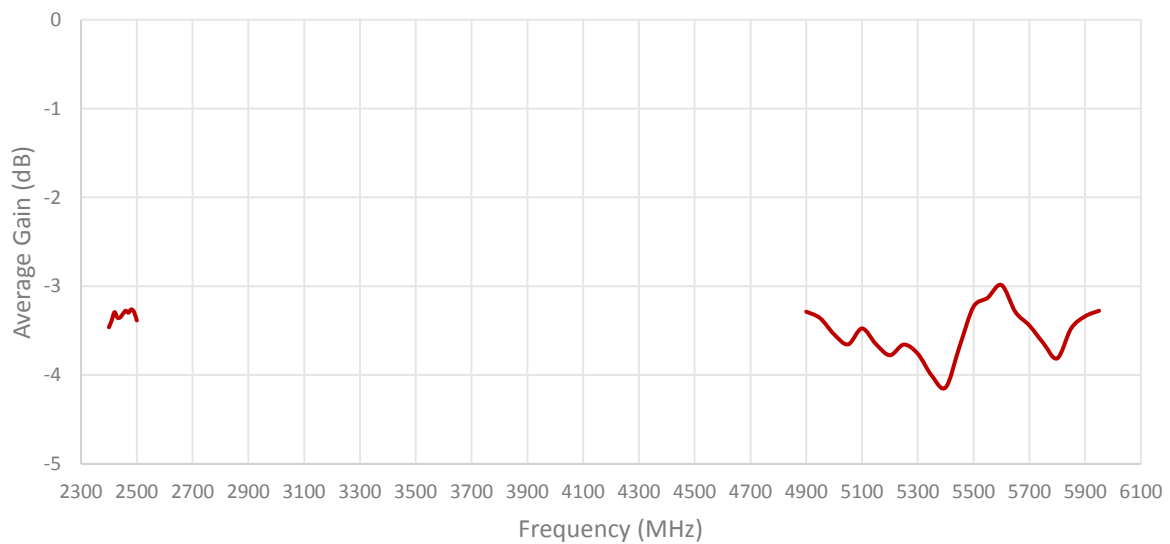
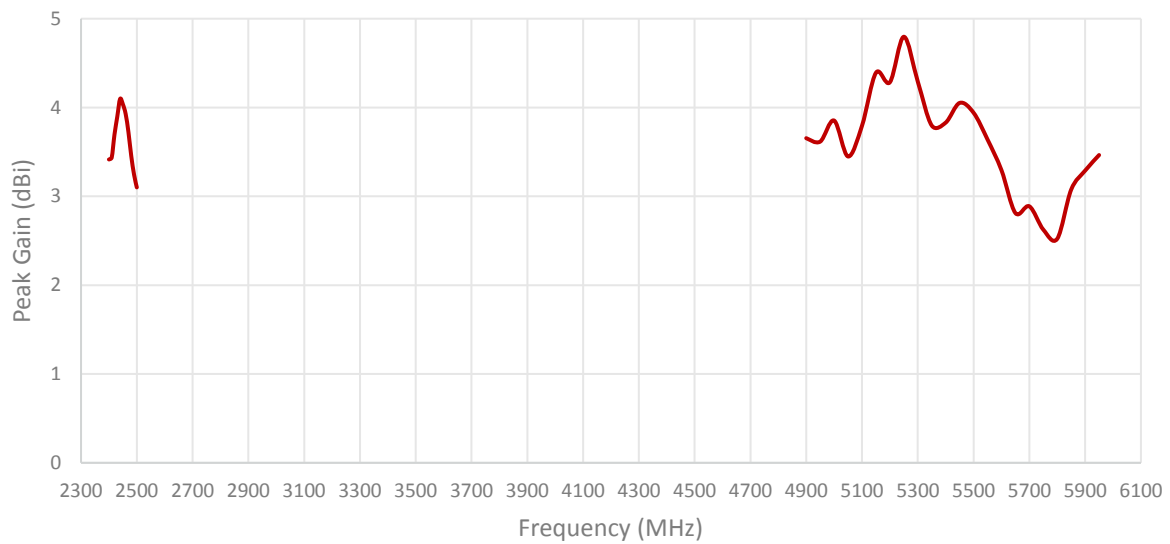
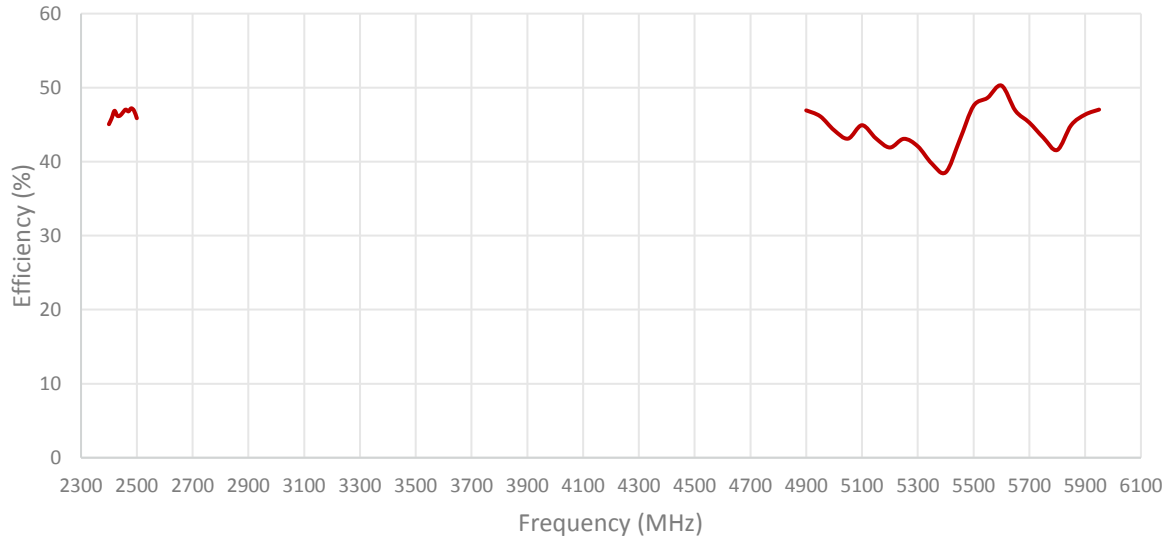
**Cable 3: 2.4/5.0 GHz ISM**



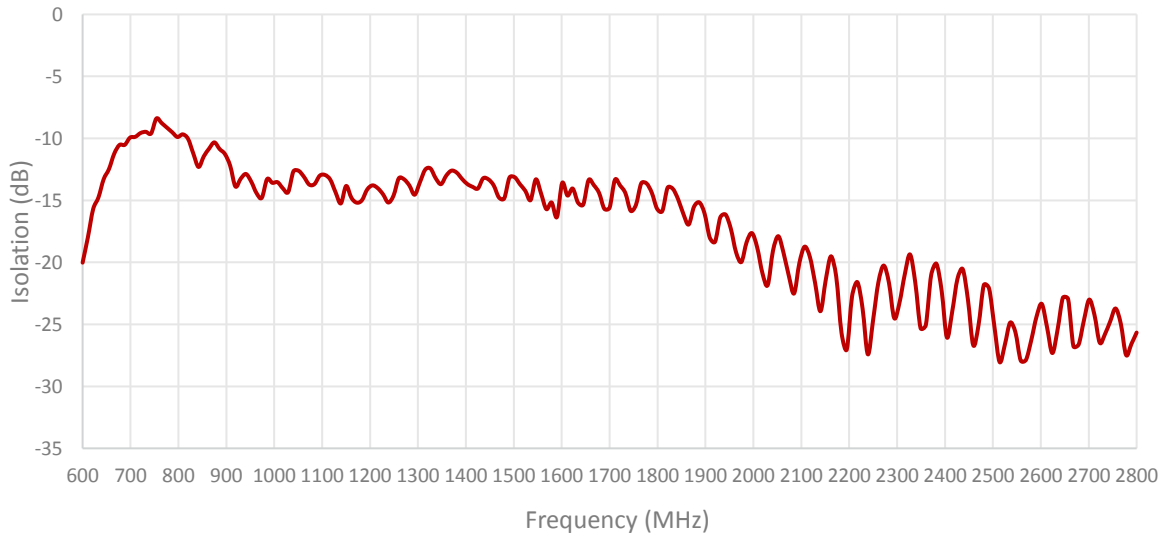


**Cable 4: 2.4/5.0 GHz ISM**

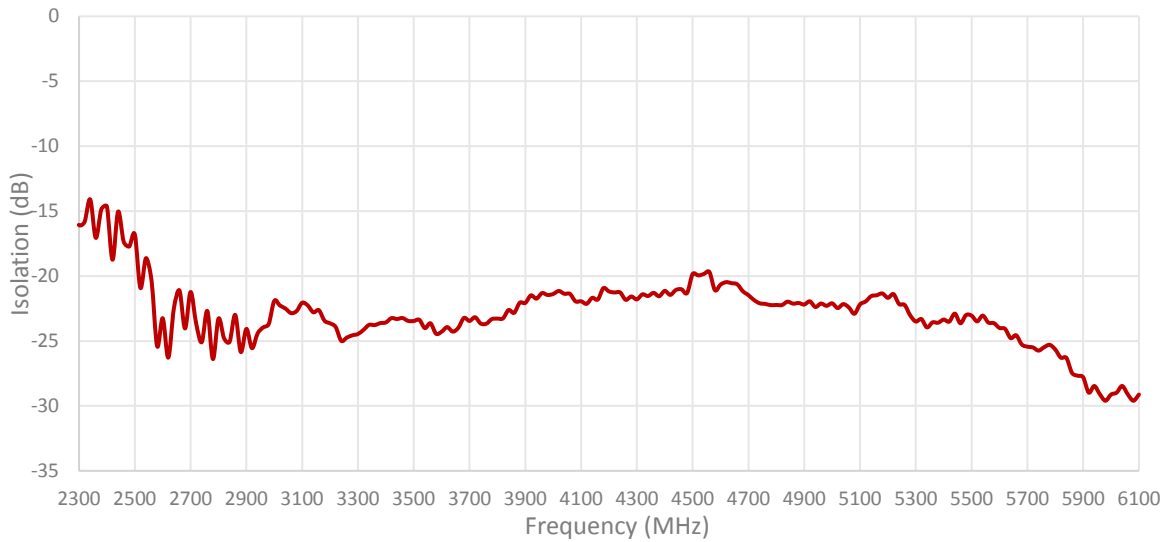




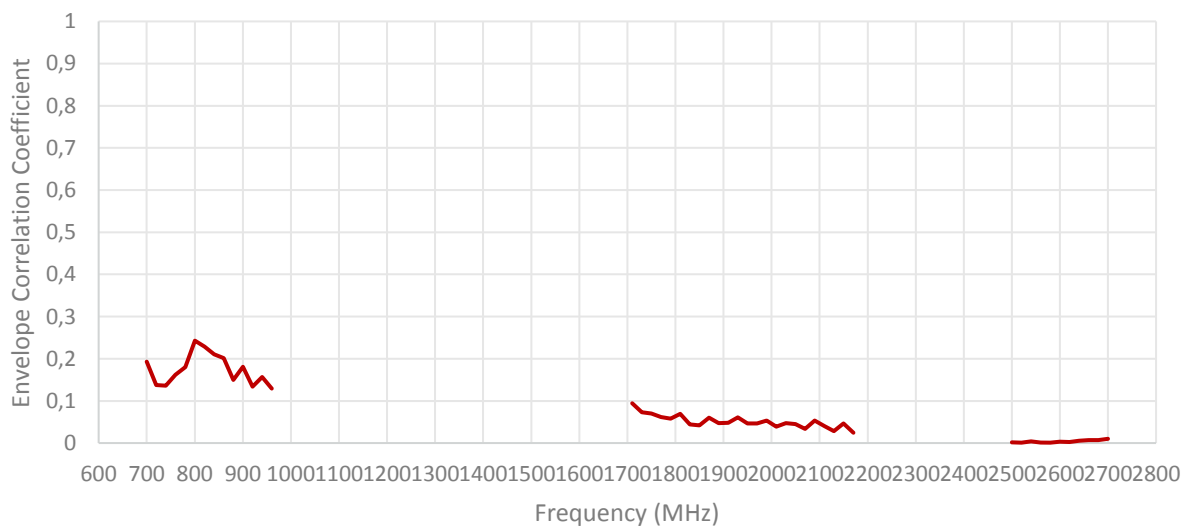
**ISOLATION FOR CABLES 1 AND 2 (4G LTE/3G/2G)**



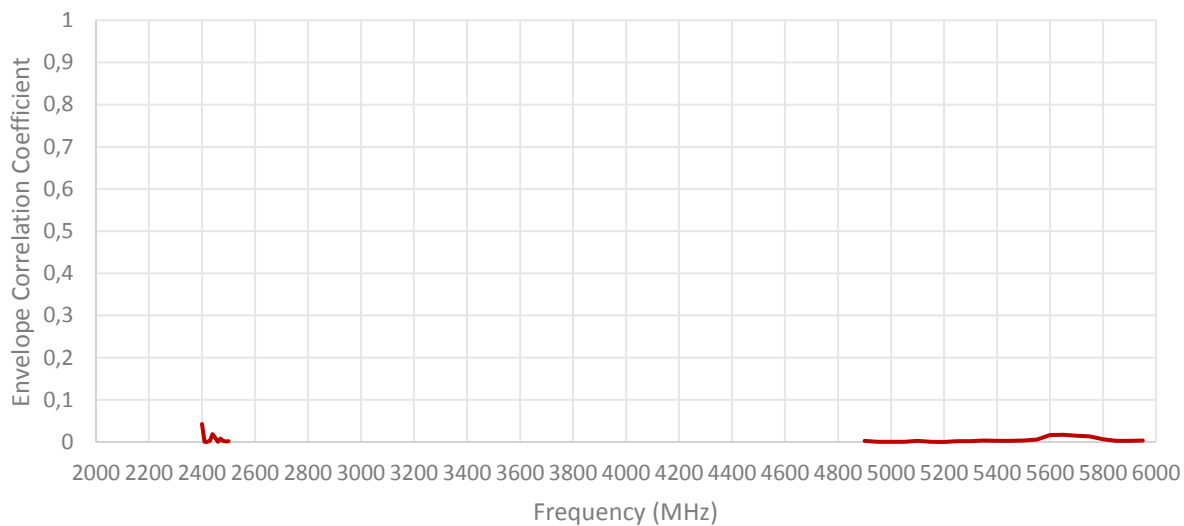
**ISOLATION FOR CABLES 3 AND 4 (2.4/5.0 GHz ISM)**

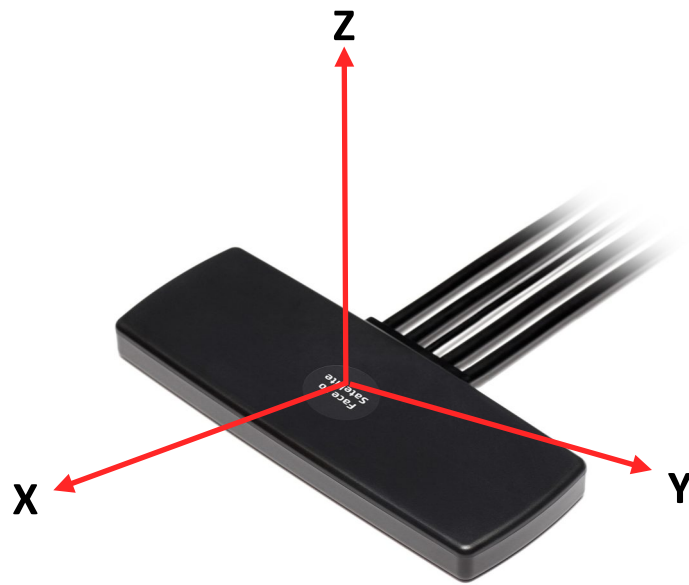


**ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 2 (4G LTE/3G/2G)**



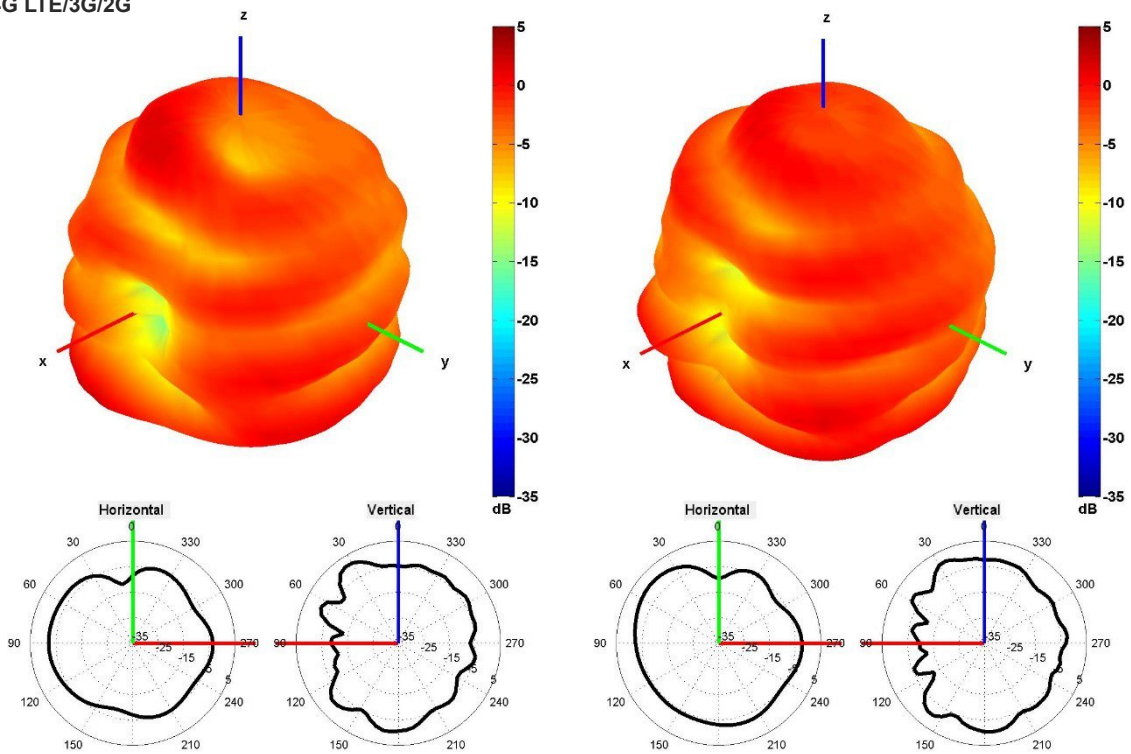
**ENVELOPE CORRELATION COEFFICIENT FOR CABLES 3 AND 4 (2.4/5.0 GHz ISM)**





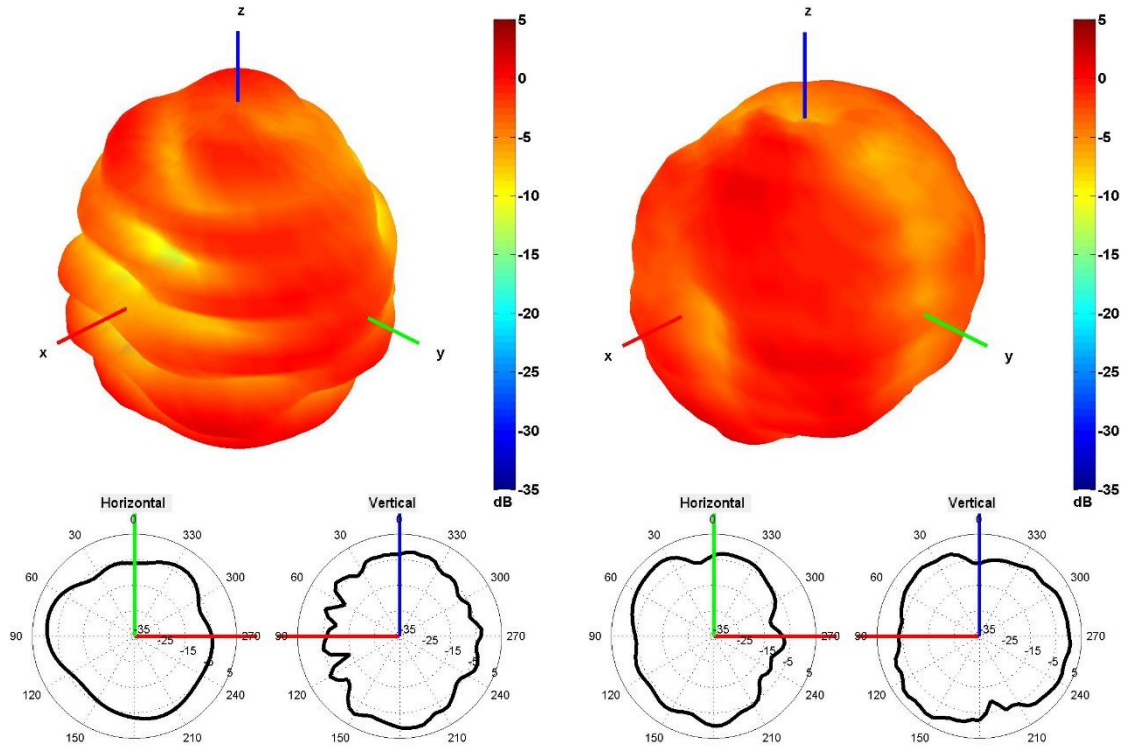
Radiation pattern reference

Cable 1: 4G LTE/3G/2G

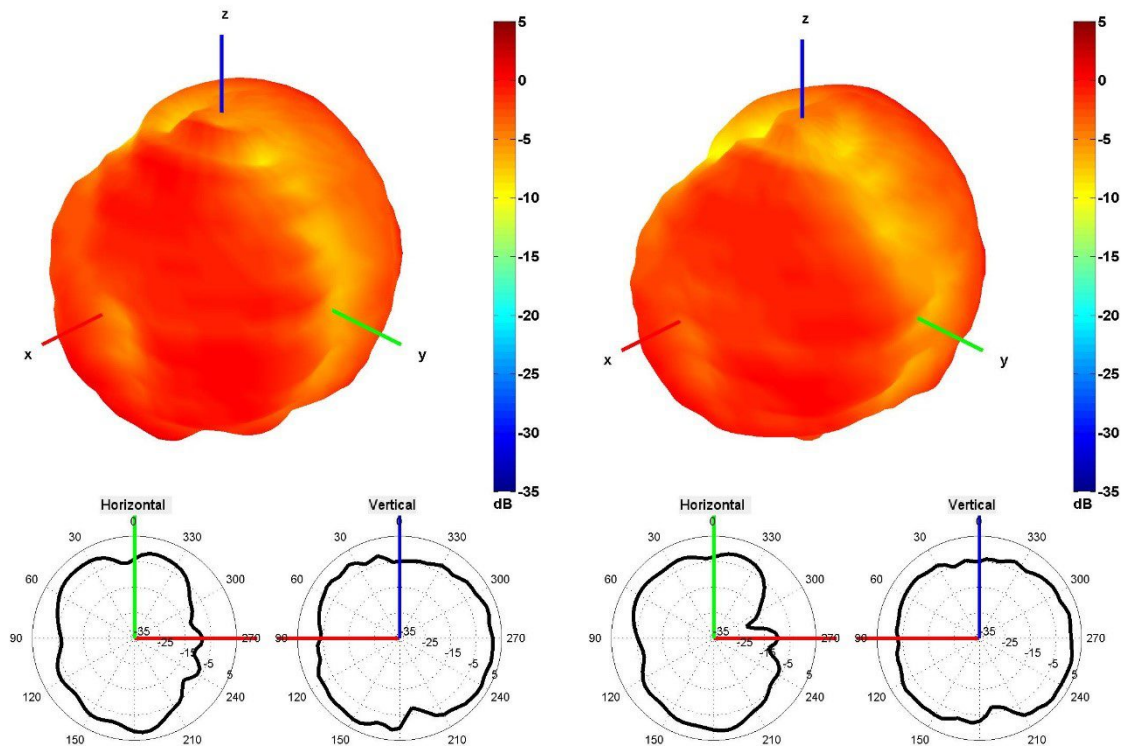


750 and 850 MHz Radiation pattern

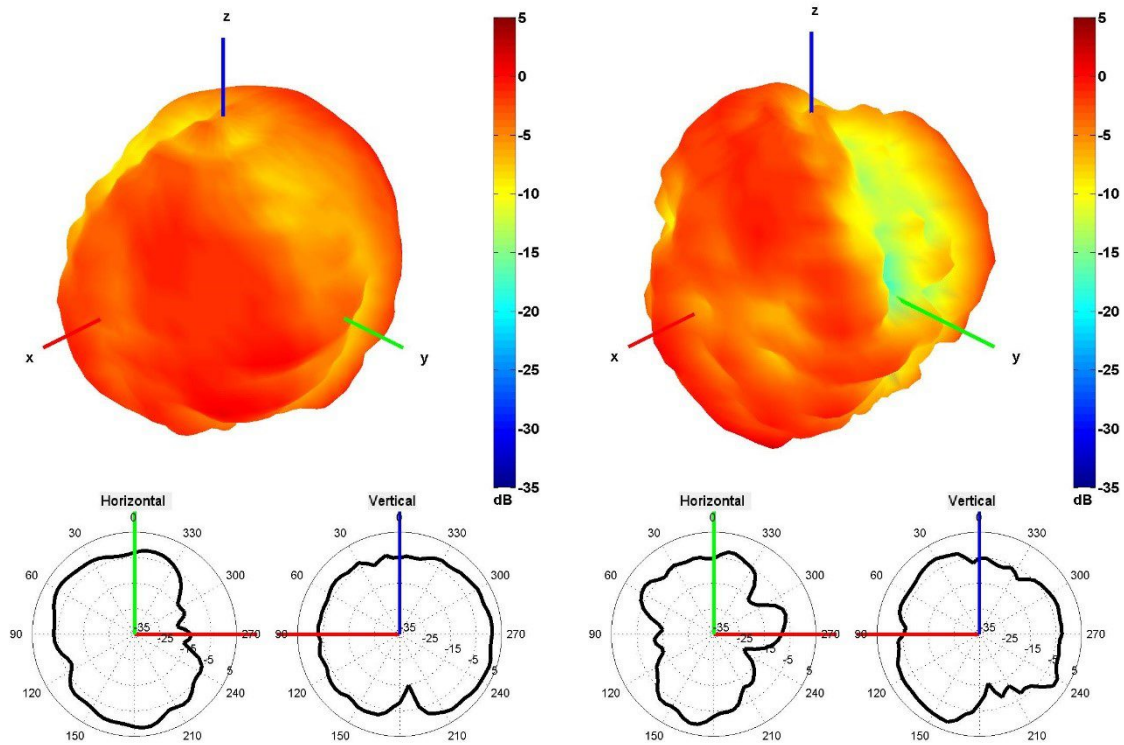




940 and 1750 MHz Radiation pattern

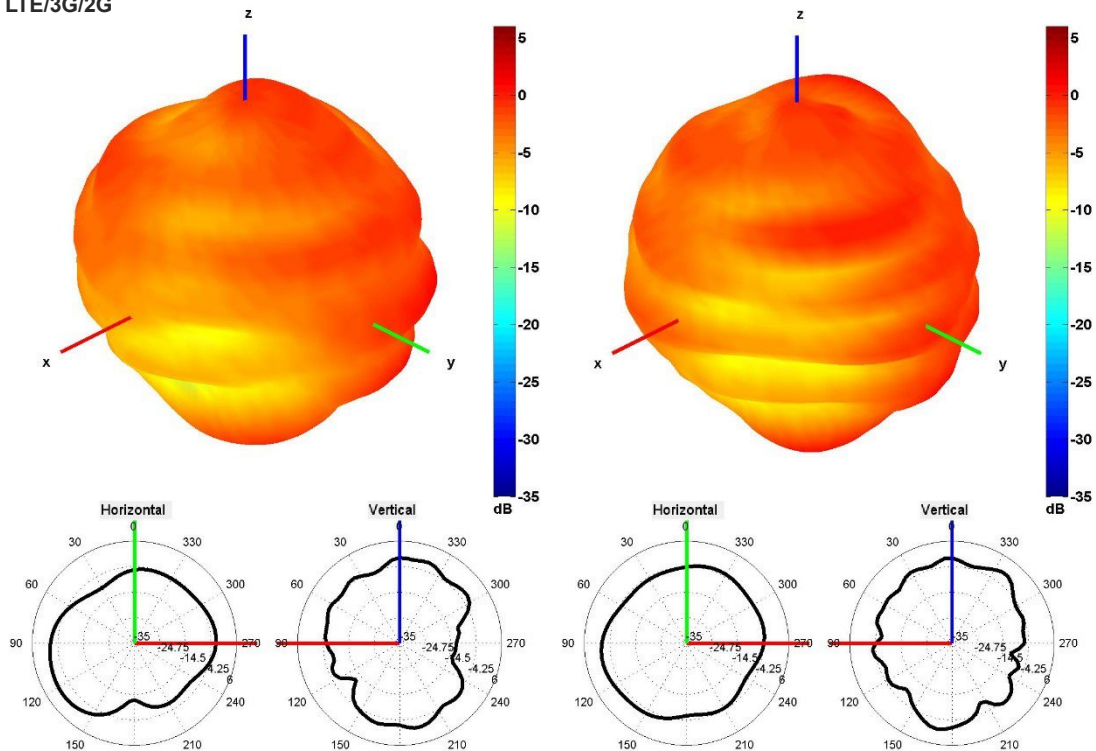


1850 and 1950 MHz Radiation pattern

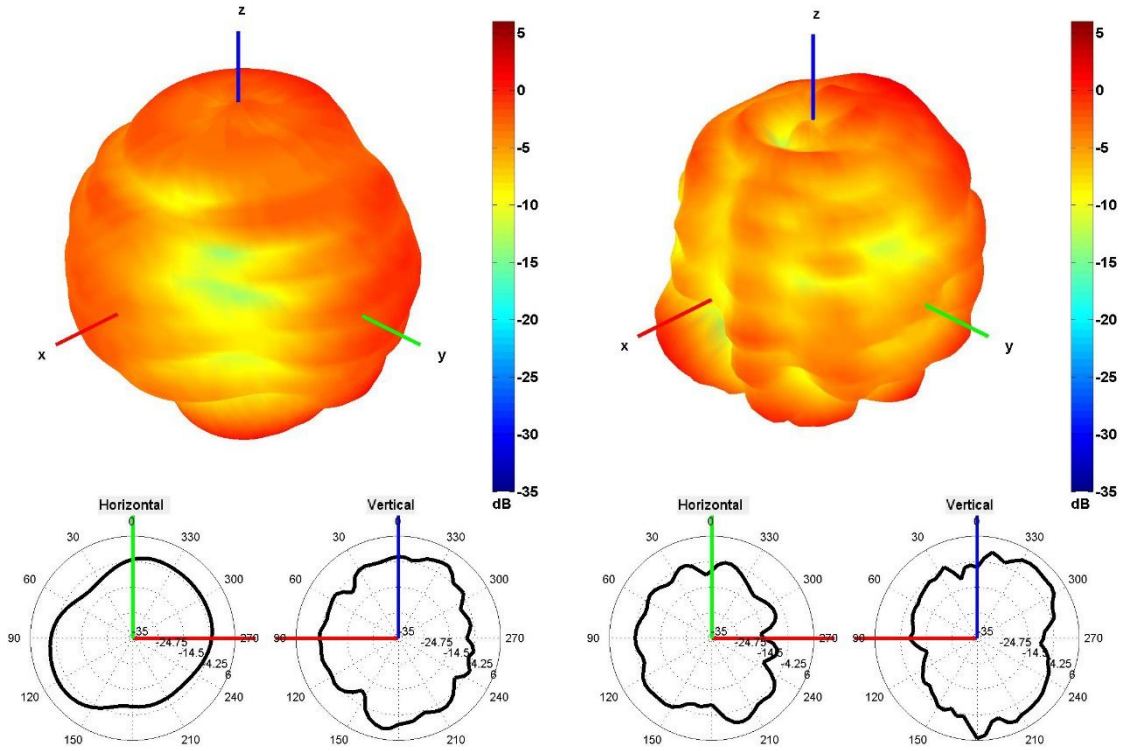


2100 and 2600 MHz Radiation pattern

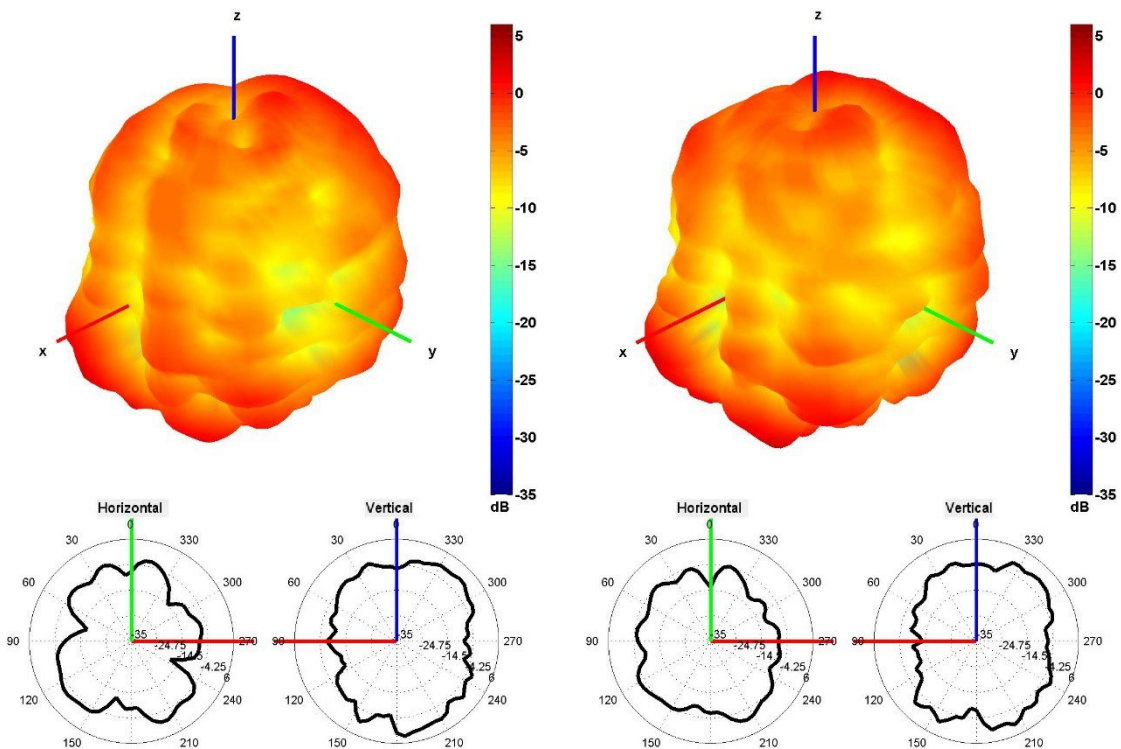
Cable 2: 4G LTE/3G/2G



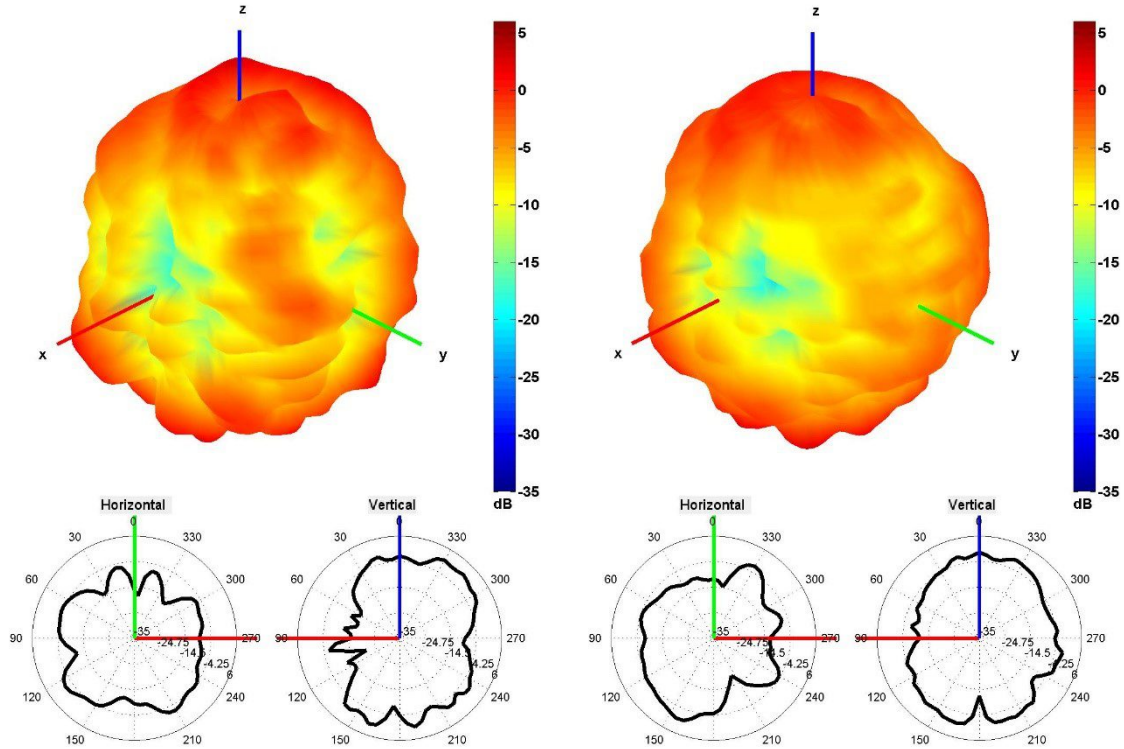
750 and 850 MHz Radiation pattern



940 and 1750 MHz Radiation pattern

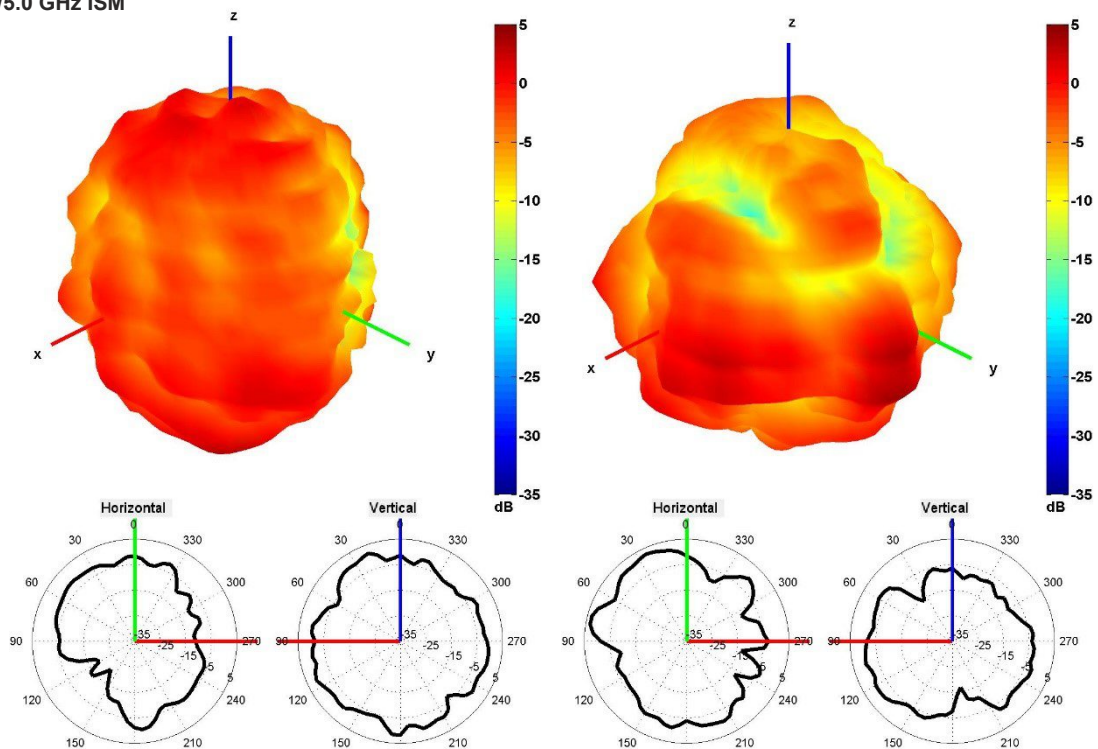


1850 and 1950 MHz Radiation pattern



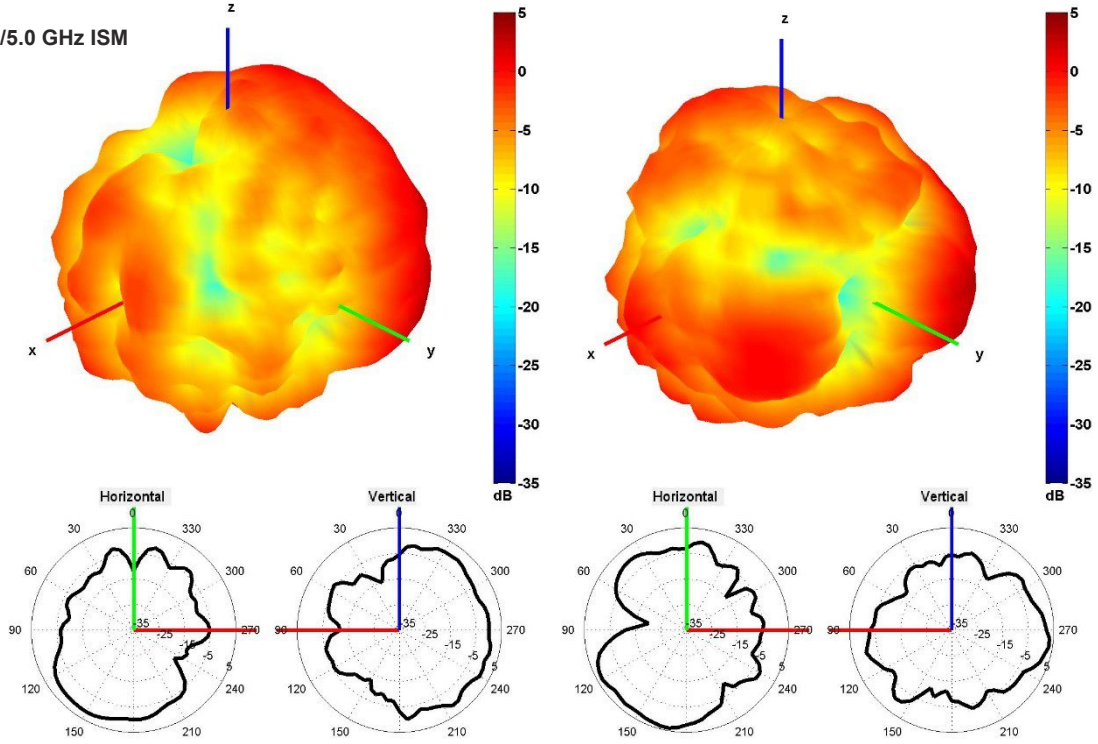
2100 and 2600 MHz Radiation pattern

Cable 3: 2.4/5.0 GHz ISM



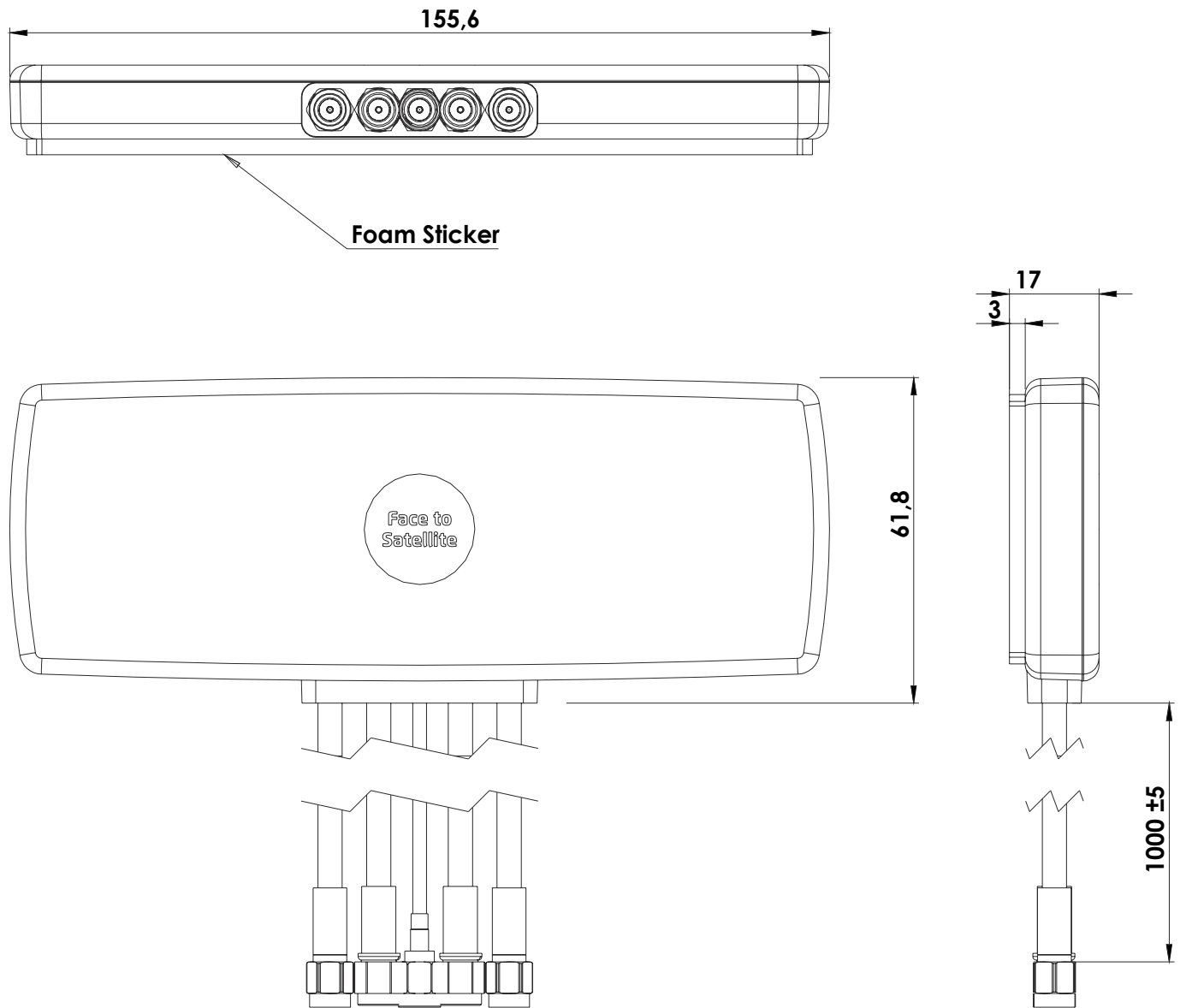
2450 and 5500 MHz Radiation pattern

Cable 4: 2.4/5.0 GHz ISM



2450 and 5500 MHz Radiation pattern

## 5. Antenna drawings



## 6. Antenna Images

