Unictron

Product Name: 3 in 1 External Antenna

Part Number:

Features:

- Supporting: LTE & GPS & WIFI
- Stable and reliable in performances
- Low temperature coefficient of frequency
- RoHS 2.0 Compliant

Applications:

- Automotive telematics
- Fleet management
- Teleportation

3 in 1 External Antenna

MODEL:

Version: Preliminary

I. Specifications:

Items	Specifications		
Navigation	LTE		
Center Frequency (MHz)	698~960	1710~2170	2490~2690
Return loss (dB)	<-2	<-5	<-5
Efficiency (%)	~ 50	~ 49	~ 45
Average Gain (dB)	~ -3.1	~ -3.2	~ -3.5
Peak Gain (dBi)	~ 1.3	~ 4.2	~ 4.4
Polarization	Linear Polarization		
Impedance (Ω)	50		

Items	Specifications	
Navigation	GPS	WIFI
Center Frequency (MHz)	1575.42	2400~2484
Return loss (dB)	<-10 Typ.	<-10 Typ.
Efficiency (%)	42 Typ.	38 Typ.
Average Gain (dB)	-3.7 Typ.	-4.2 Typ.
Peak Gain (dBi)	5.5 Typ.	5.9 Typ.
Polarization	RHCP	Linear Polarization
Impedance (Ω)	50	

5F., No. 83, Kewang Rd., Longtan Dist., Taoyuan City 32556, Taiwan (R.O.C.)
Tel: 886-3-4072728 | Fax: 886-3-4072738 | service@unictron.com

II. Low noise amplifier Specifications:

Items	Specifications
Navigation	GPS
Center Frequency (MHz)	1575.42
Gain (dB)	19.1 Typ.
Noise Figure (dB)	2.5 Typ.
Output VSWR	3.0 Max. Typ.
Input Voltage (V)	DC = 3.3 ± 0.5
Current (mA)	8.0 Typ. (at DC 3.3V)
Impedance (Ω)	50

Environmental Conditions	
Operation & Storage Temperature (° C)	-40 ~ +85
Storage Temperature (° C) **(Antenna with packing sealed)**	-5 ~ +40
Relative Humidity	10 ~ 70 %

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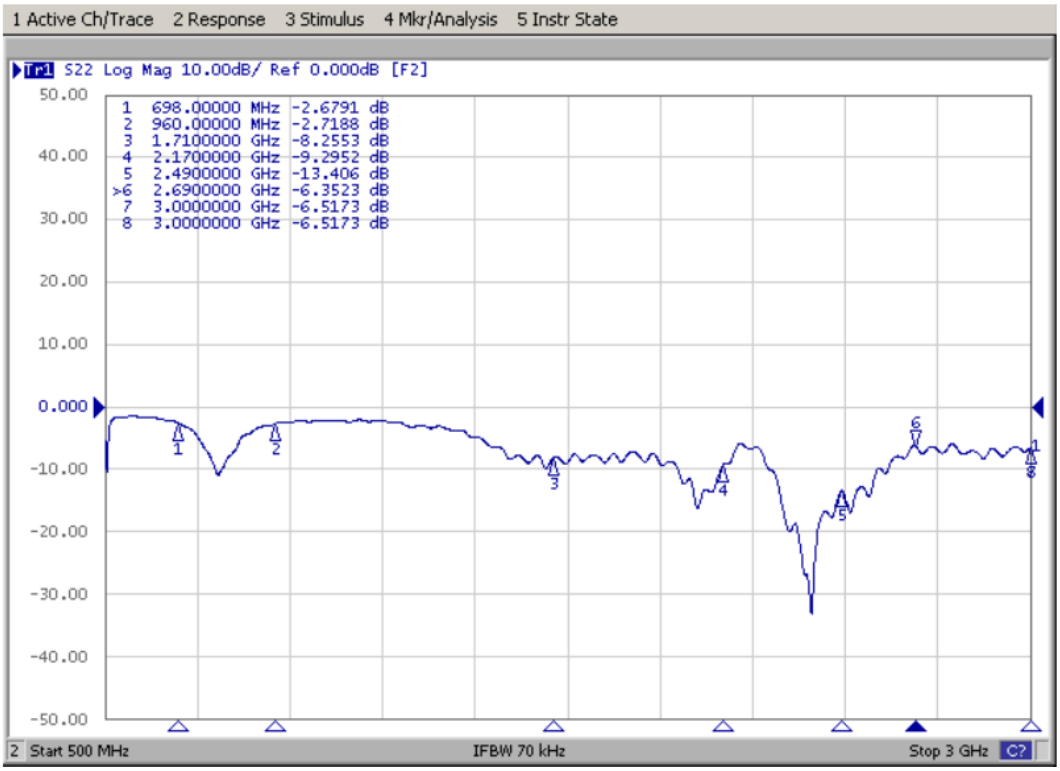
III. Properties:

a) Return loss (dB)

LTE:



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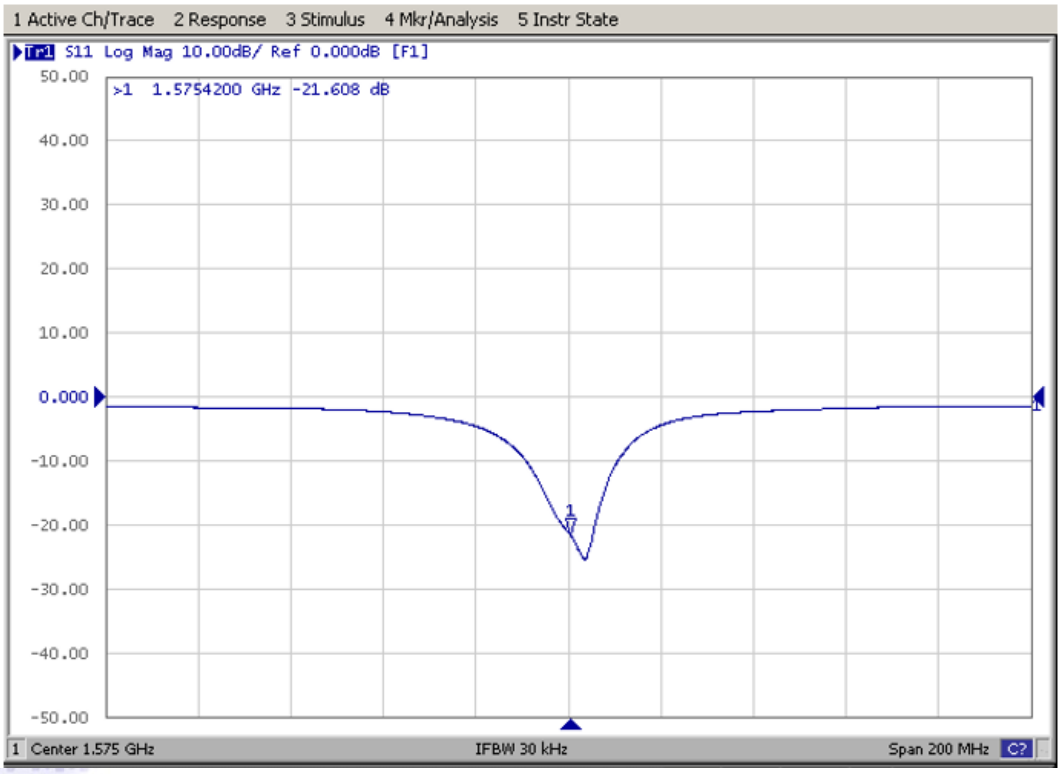
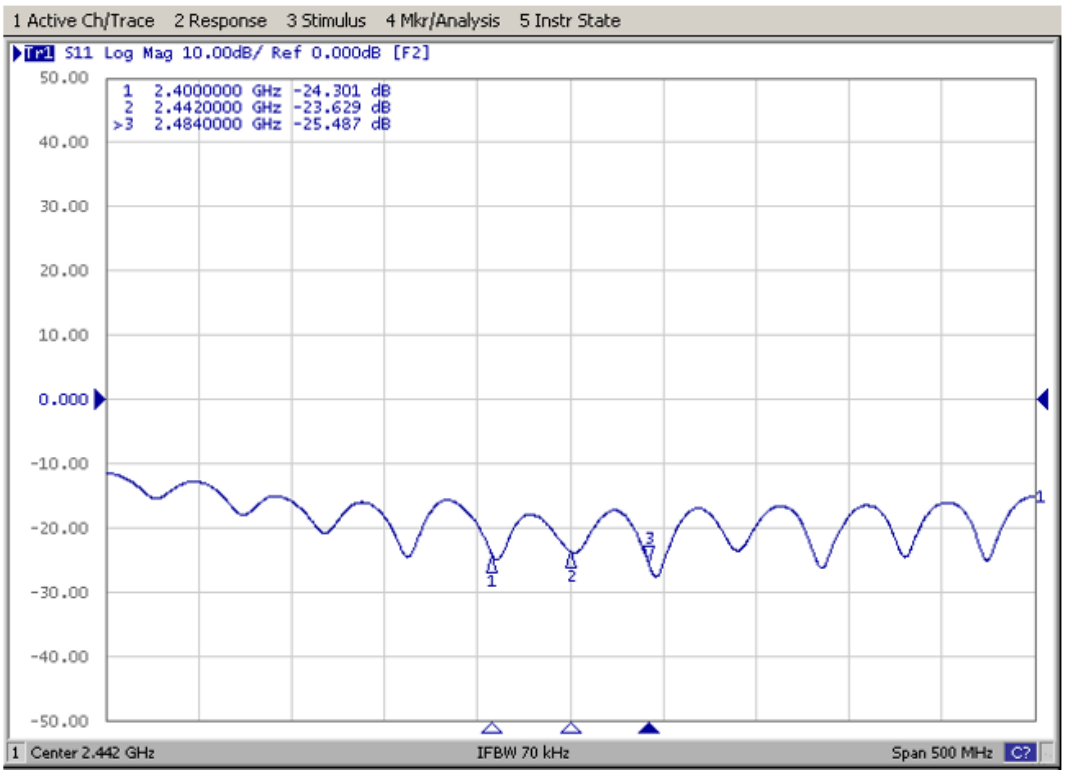
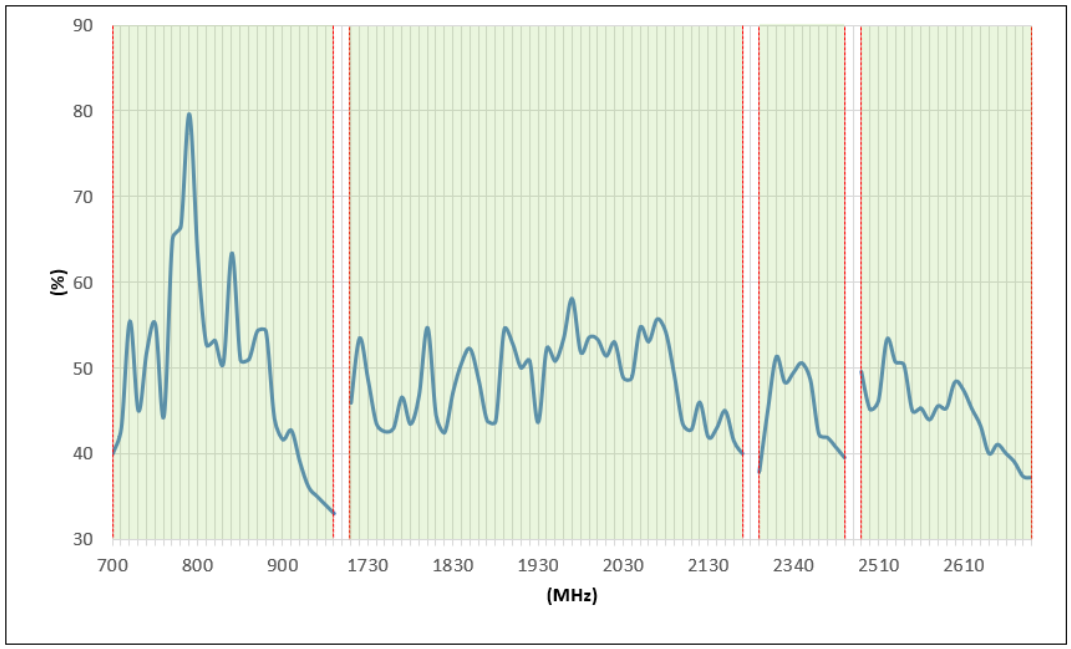


WIFI:



b) Efficiency (%)

LTE:



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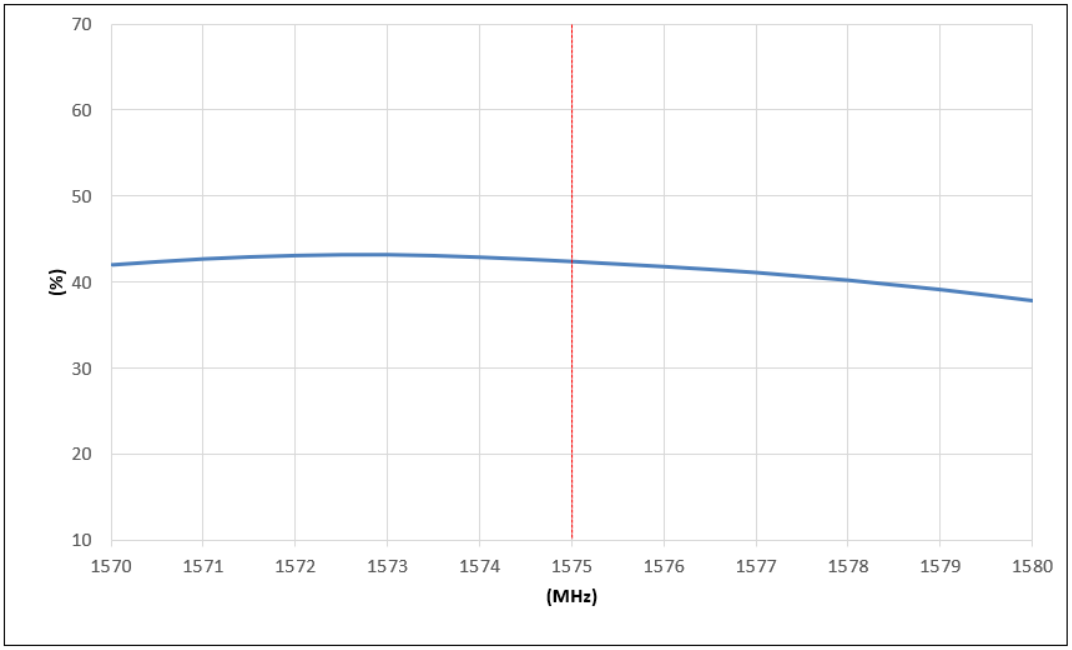
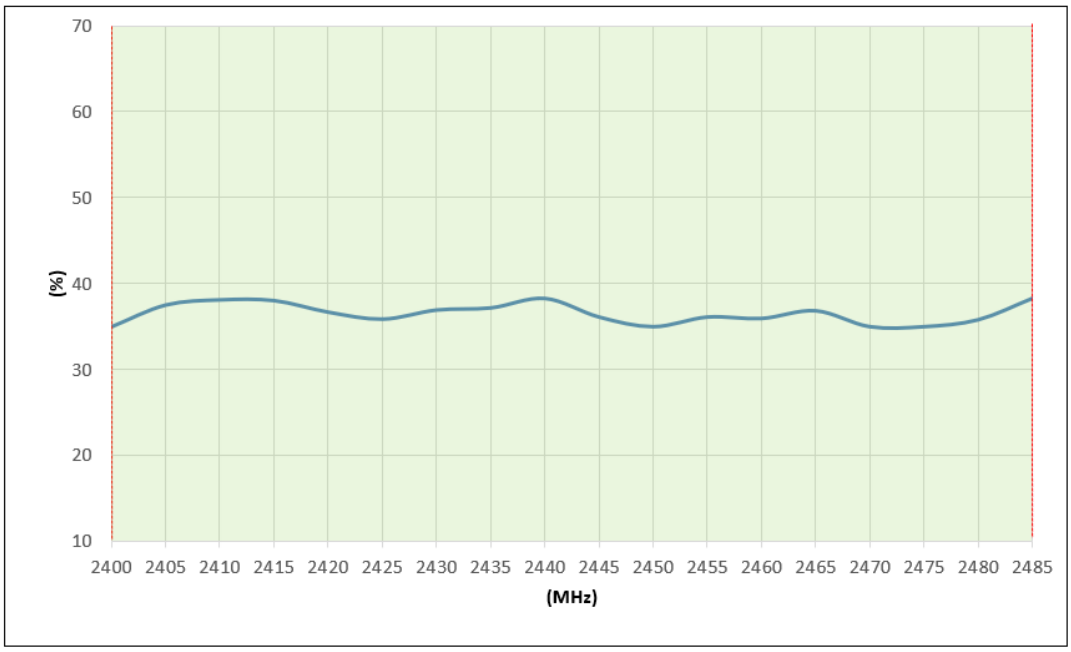
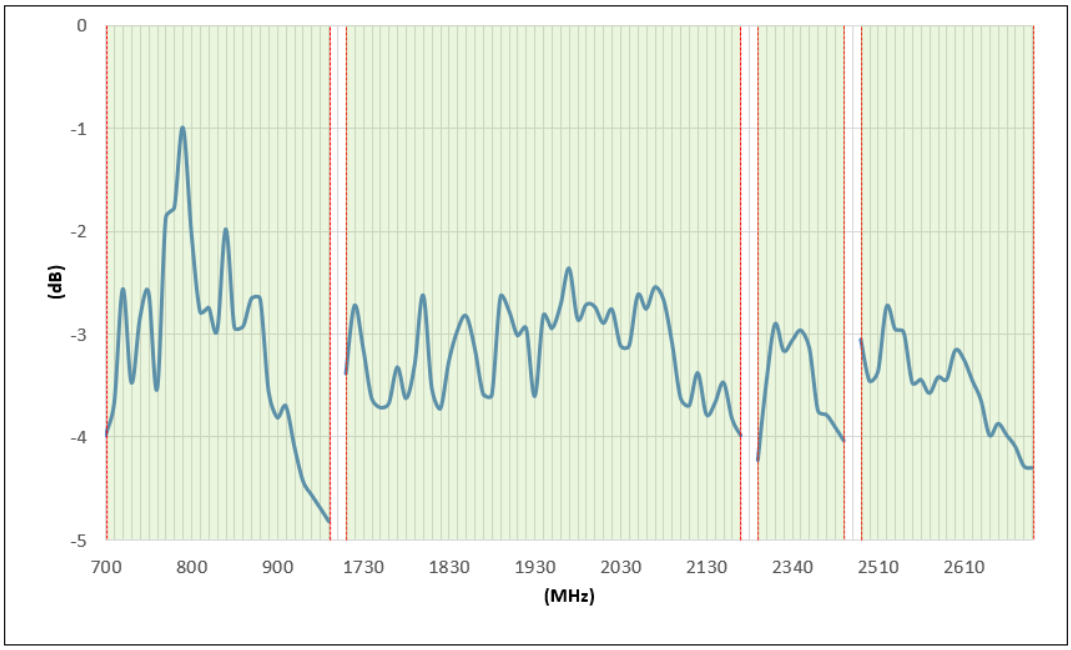


WIFI:



c) Average Gain (dB)

LTE:



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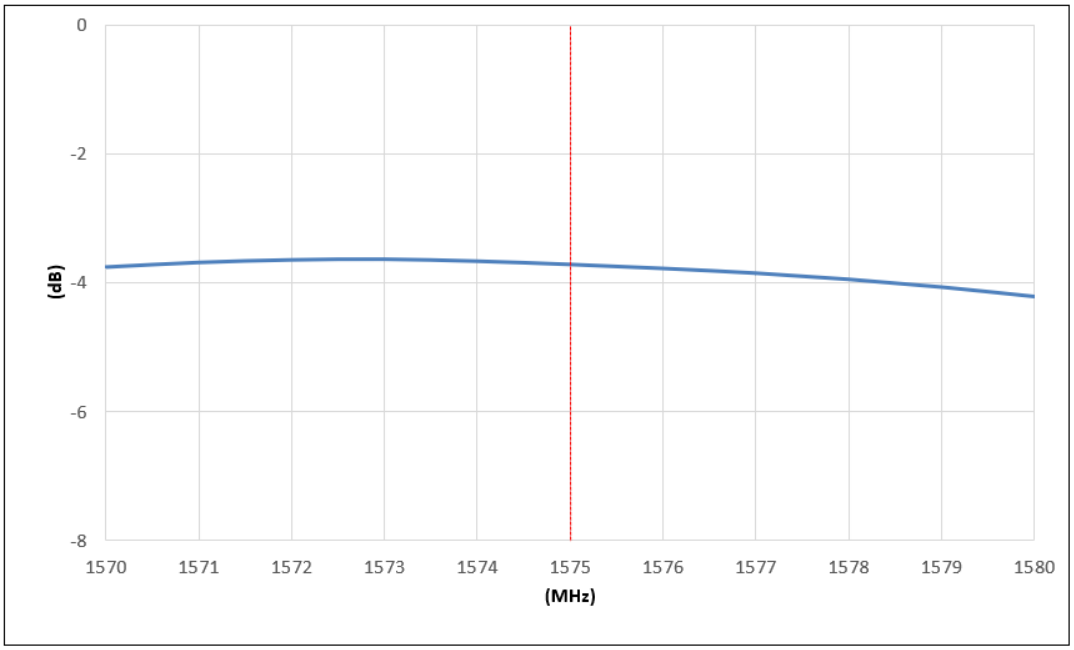

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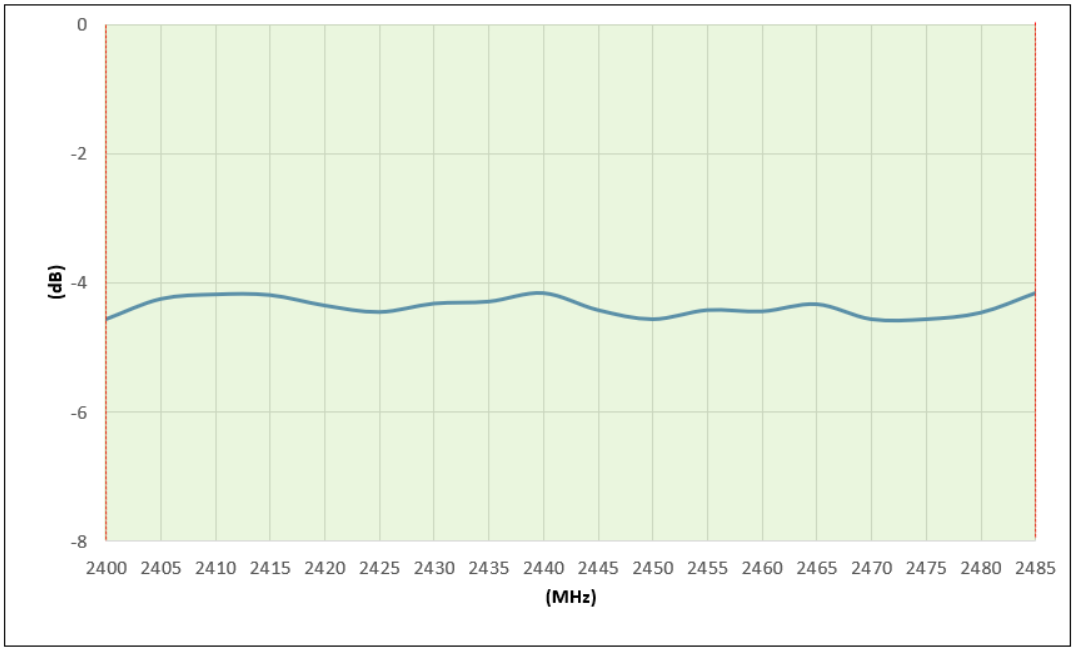
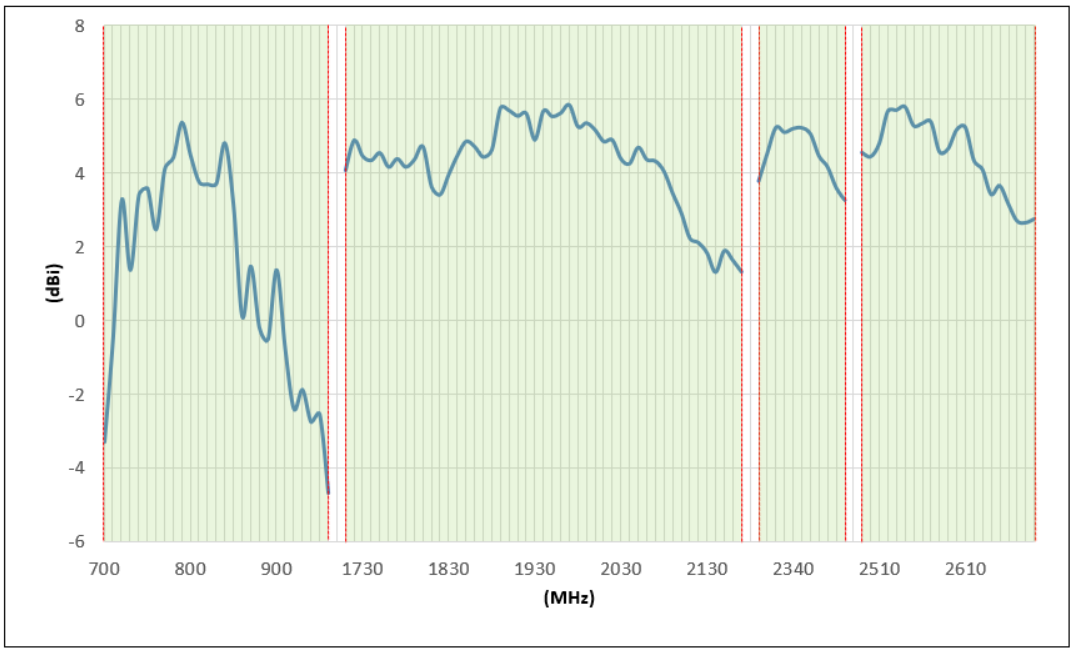


d) Peak Gain (dBi)

LTE:



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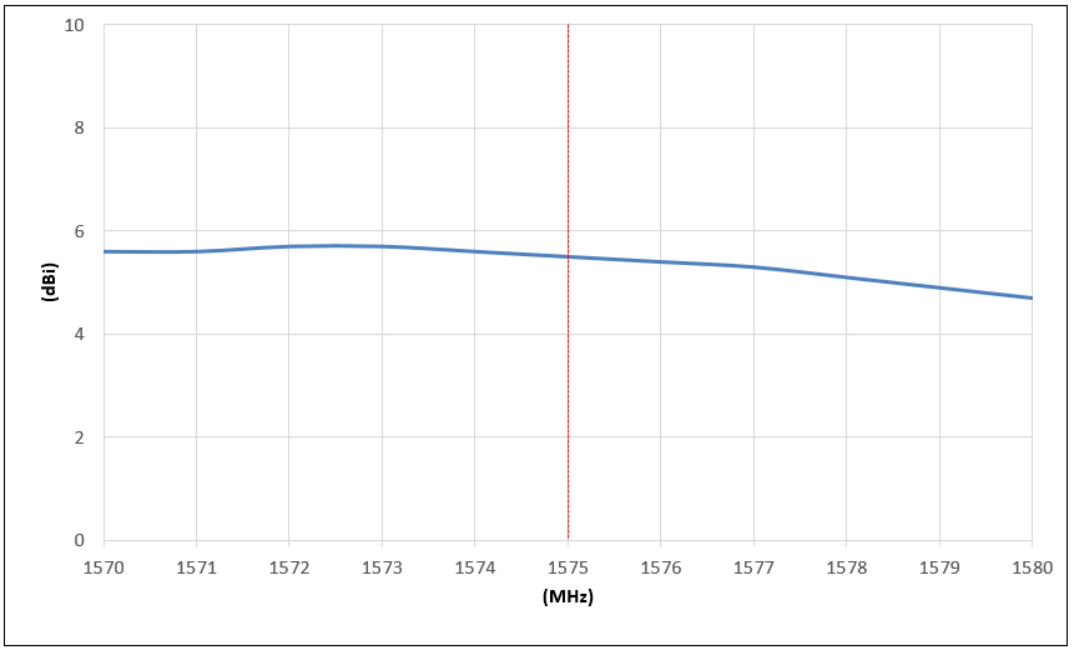

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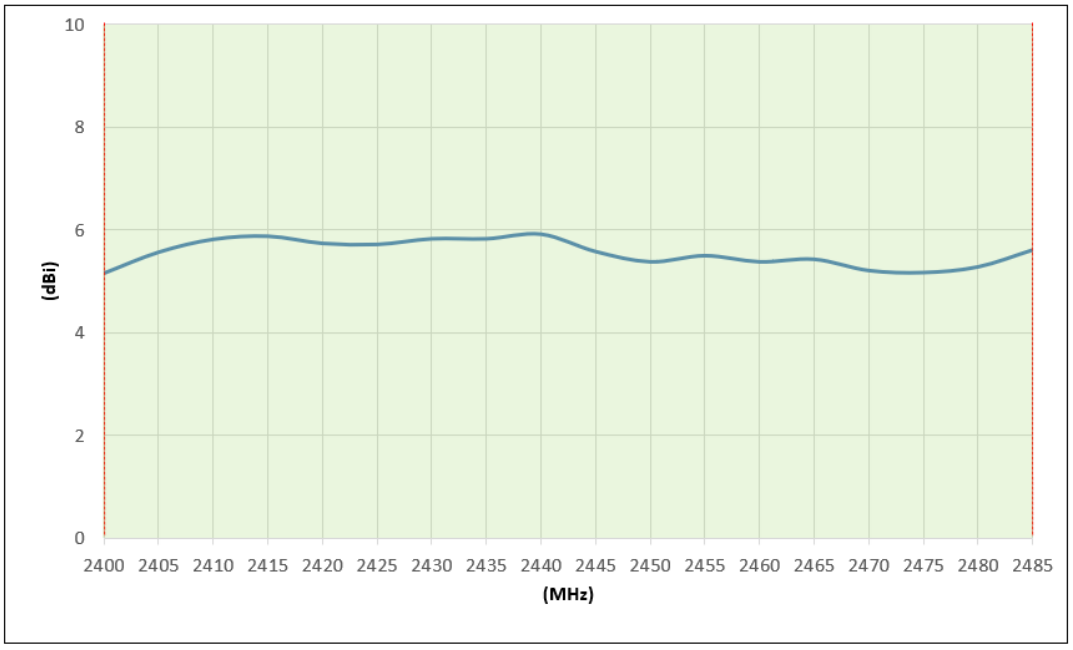

IV. Antenna Radiation Pattern Measurement:

The antenna radiation patterns are measured in Unictron's 3D Anechoic Chamber.

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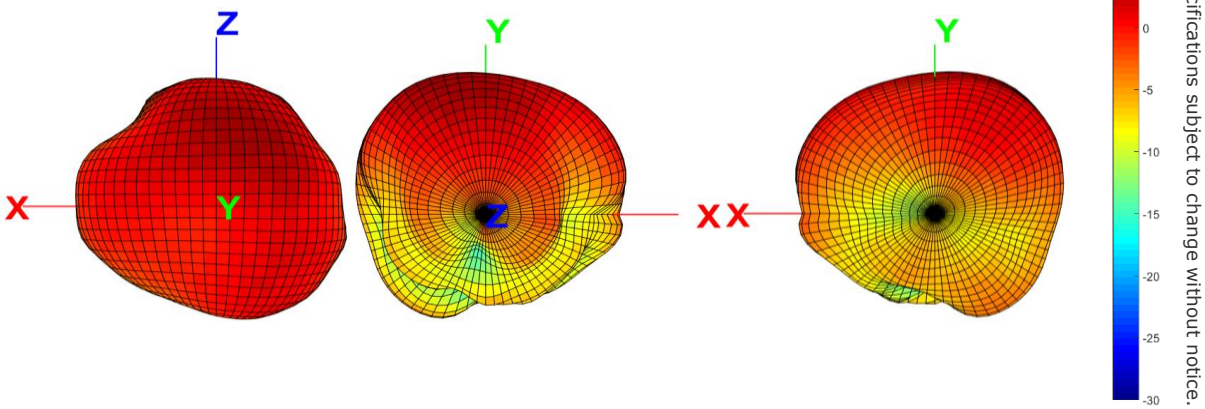
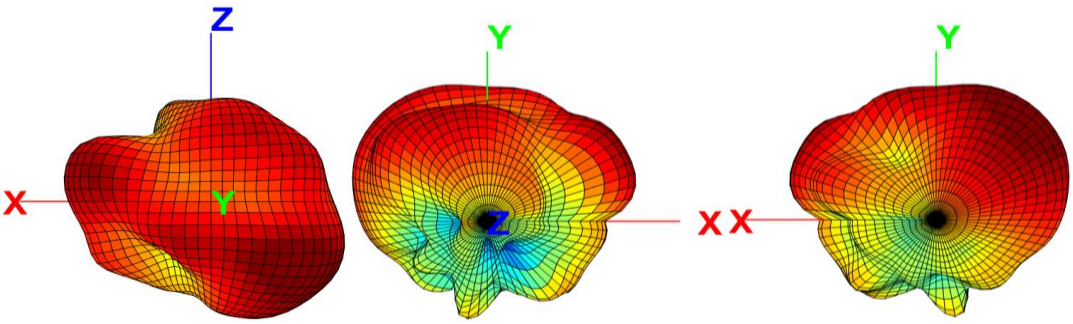
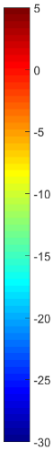
LTE:

a) 830 MHz (unit: dBi)

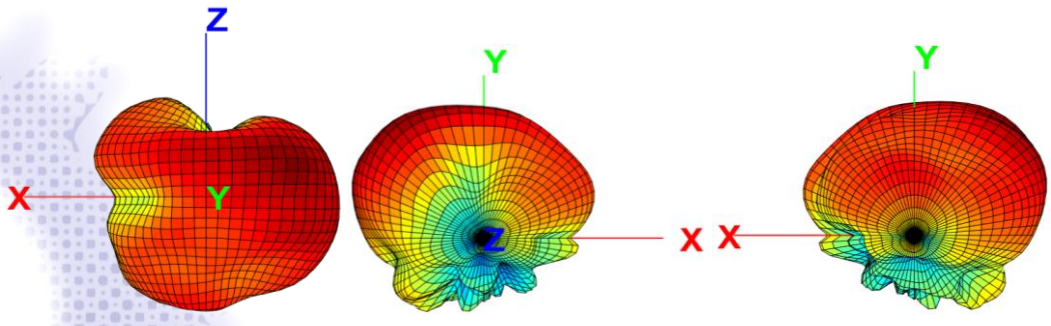


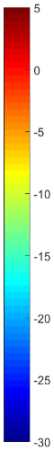
b) 1940 MHz (unit: dBi)





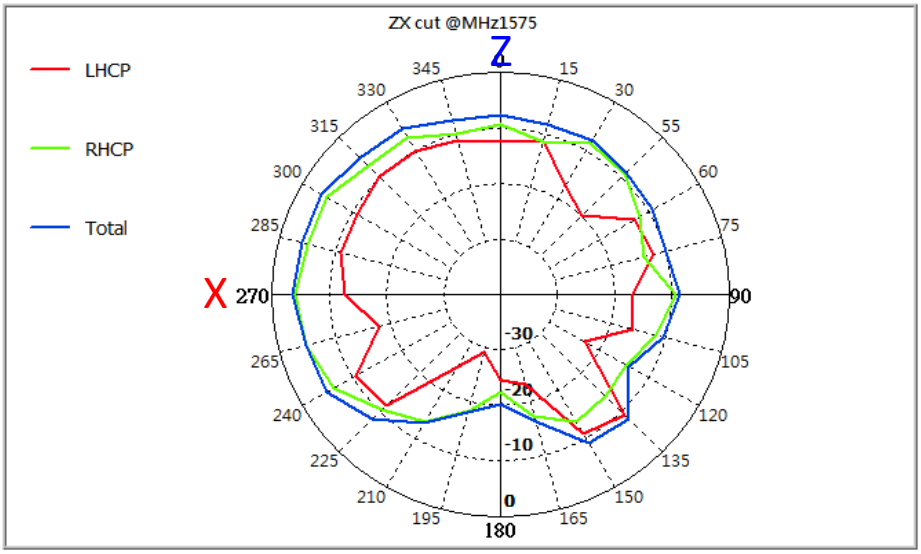
c) 2590 MHz (unit: dBi)

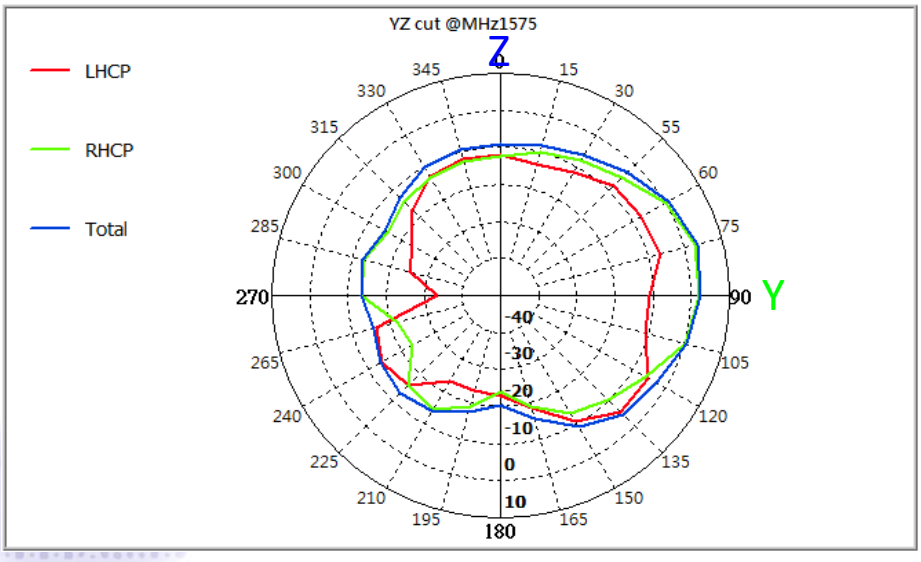




GPS:

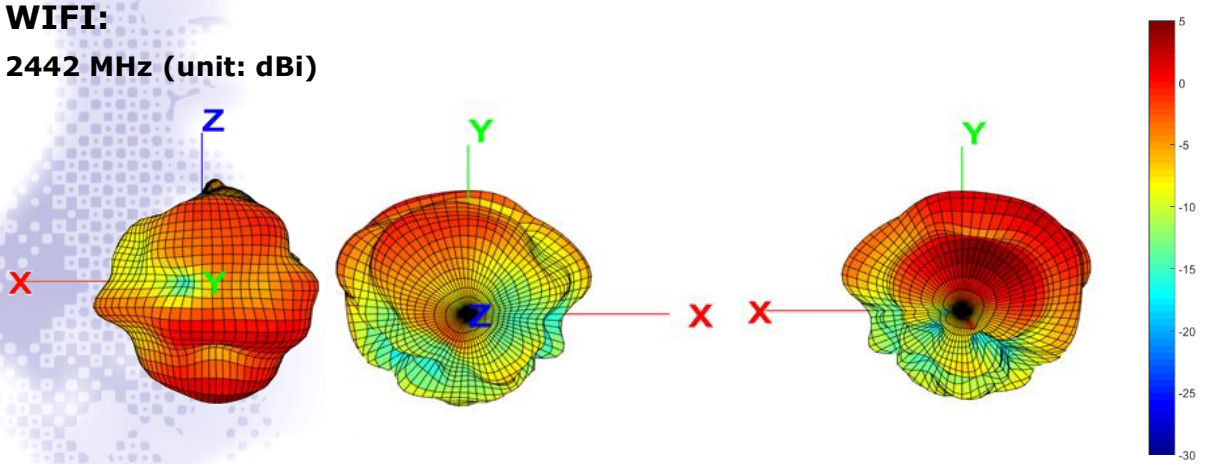
1575 MHz (unit: dBi)





WIFI:

2442 MHz (unit: dBi)



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antenna conceptor

Product Datasheet

2J6950BGF

CELLULAR/LTE, 2.4/5.0 GHz ISM and GNSS Screw Mount

Key Features

Cable 1: CELLULAR / LTE
- 698-960 MHz
- 1710-2170 MHz
- 2500-2700 MHz

Cable 2: 2.4/5.0 GHz ISM
- 2410-2490 MHz
- 4920-5925 MHz

Cable 3: GPS/GLONASS/QZSS/Galileo
- 1575-1606 MHz

Screw Mount
Anti-Rotation Mechanism
Ground Plane Independent
Customizable Cable and Connector
Dimensions 80 × 74 × 25.6 mm
Certificates: IP67, IP69

1. Antenna and electrical specifications

Cable 1

Parameters	CELLULAR / LTE Antenna		
Standards	2G,3G and 4G		
Band (MHz)	700/850/900	1700/1800/1900/2100	2600
Frequency (MHz)	698-960	1710-2170	2500-2700
Return Loss (dB)	~-9.3	~-6.8	~-19.9
VSWR	~2.1:1	~2.7:1	~1.3:1
Efficiency (%)	~45.9	~50.3	~64.1
Peak Gain (dBi)	~2.7	~5.1	~5.3
Average Gain (dB)	~-3.8	~-3.2	~-1.9
Impendance (Ohm)	50		
Polarisation	Linear		
Radiation Pattern	Omni-Directional		
Max. Input Power (W)	25		
Connector Type	SMA-Male Standard (Other Connectors Available)		
Cable Length	300 cm Standard (Any Cable Length Available)		
Cable Type	D302 Standard (Other Cables Available)		

Cable 2

Parameters	2.4/5.0 GHz ISM Antenna	
Standards	WiFi, BT, ZigBee, ISM	
Band (MHz)	2.4 GHz	5.0 GHz
Frequency (MHz)	2410-2490	4920-5925
Return Loss (dB)	~-13.5	~-12.8
VSWR	~1.6:1	~1.8:1
Efficiency (%)	~35.4	~26.4
Peak Gain (dBi)	~3.4	~3.2
Average Gain (dB)	~-4.5	~-5.8
Impendance (Ohm)	50	
Polarisation	Linear	
Radiation Pattern	Omni-Directional	
Max. Input Power (W)	25	
Connector Type	RP-SMA-Male Standard (Other Connectors Available)	
Cable Length	300 cm Standard (Any Cable Length Available)	
Cable Type	D302 Standard (Other Cables Available)	

Antenna Measurement Conditions:

Mounted on Metal Plate of 30 x 30 cm

200 cm of Cable D302

Measured in Certified CTIA 3D Anechoic Chamber

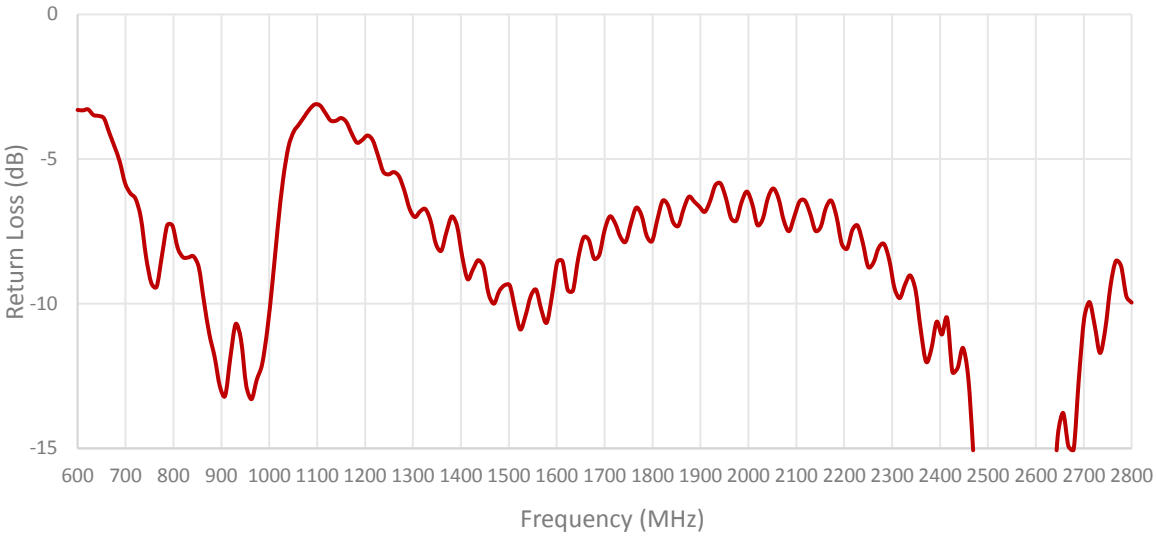
Cable 3		
Parameters	**GPS/GLONASS Antenna**	
Standard	GPS/QZSS/Galileo	GLONASS
Band (MHz)	1575	1602
Frequency(MHz)	1575.42	1598-1606
Patch Size (mm)	25 x 25 x 4	
Return Loss (dB)	<=-15.0 dB	
VSWR	<=1.4:1 dB	
Impedance	50	
Radiation Pattern	Hemispherical	
Polarization	RHCP	
Saw Filter	Pre-filter	
Active Gain (dB)	28 @ 2.7 V	
Noise Figure (dB)	1.5 Typ	
Voltage (V)	1.5 – 3.6	
Current (mA)	9 Typ	
Power Consumption (mW)	24.3 Typ	
ESD Protection (kV)	2kV	
Connector Type	SMA-Male Standard (Other Connectors Available)	
Cable Length	300 cm Standard (Any Cable Length Available)	
Cable Type	D100 Standard (Other Cables Available)	

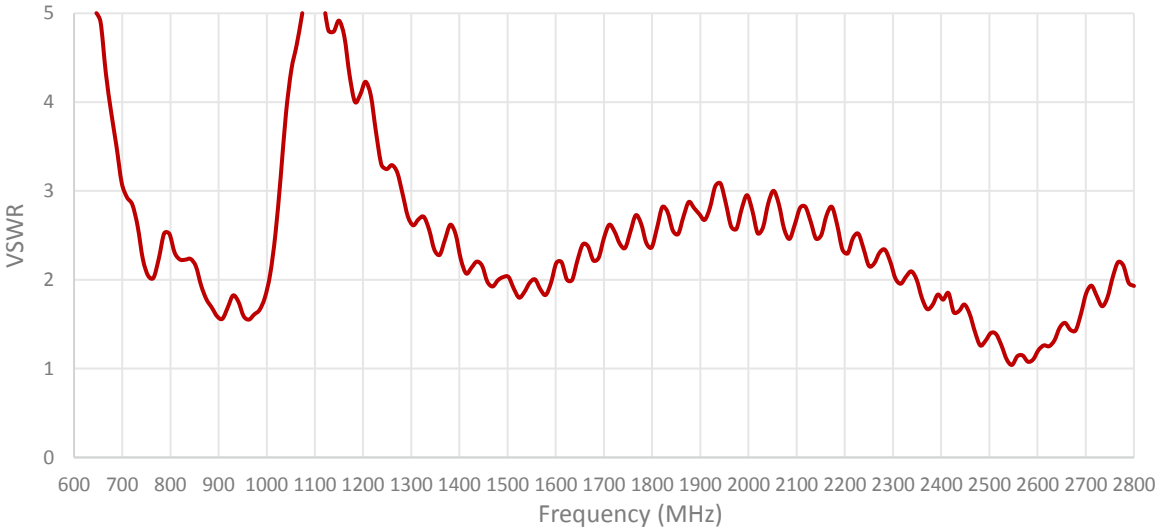
2. Mechanical and environmental specifications

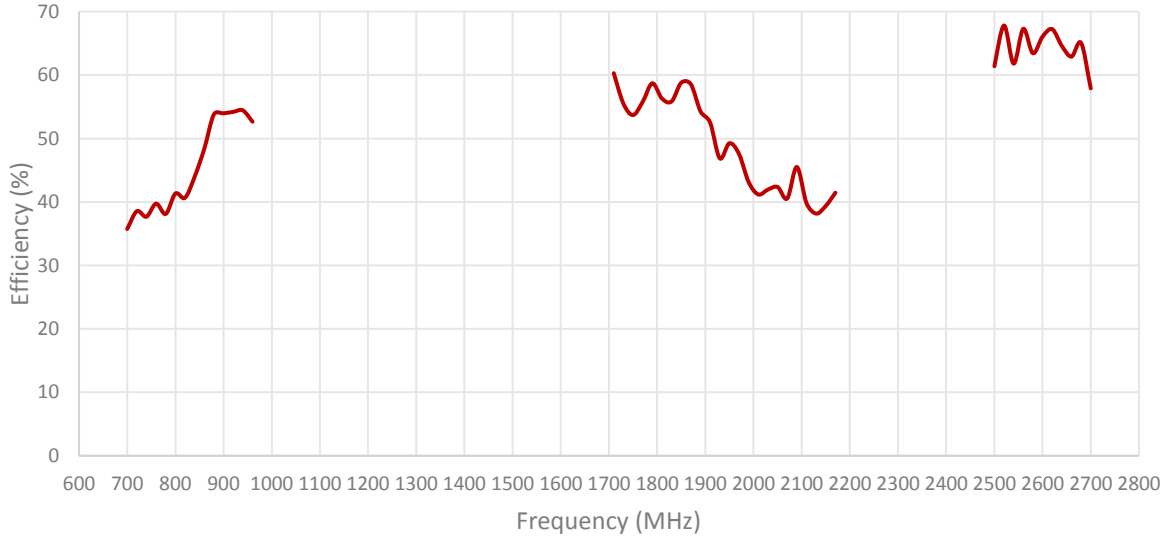
Specifications	**2J6950BGF**
Mounting Type	Screw Mount
Dimensions (mm)	80 × 74 × 25.6
Max. Tighten Torque (Nm)	5 Nm
Radome Type	ASA UV Stable
Radome Color	Black, White
Operating Temperature (C)	-40 to +85
Storage Temperature (C)	-40 to +85
Substance Compliance	RoHS
Certificates	IP67, IP69

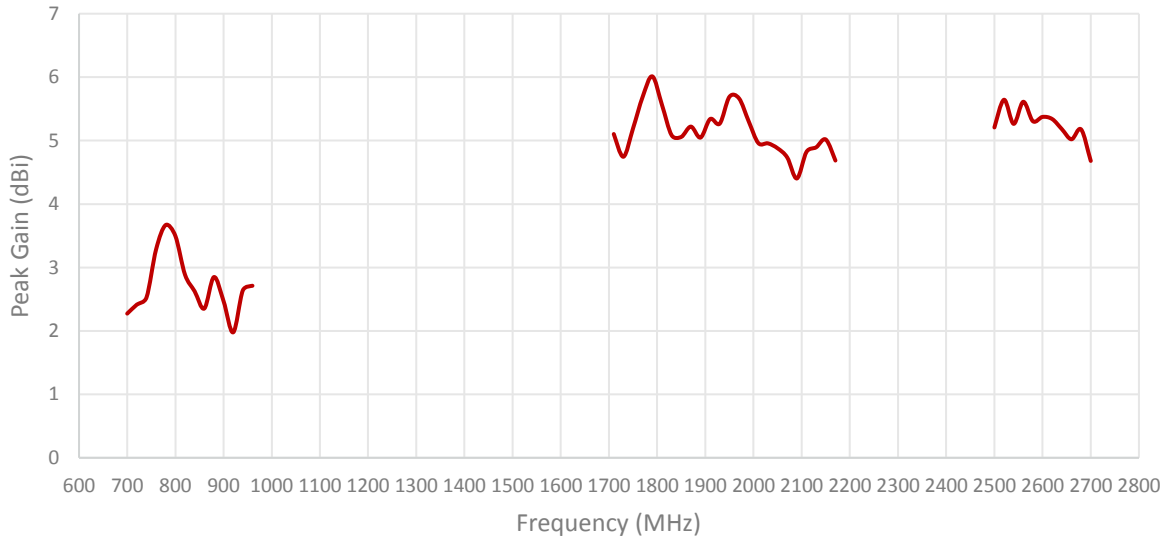
3. Antenna parameters

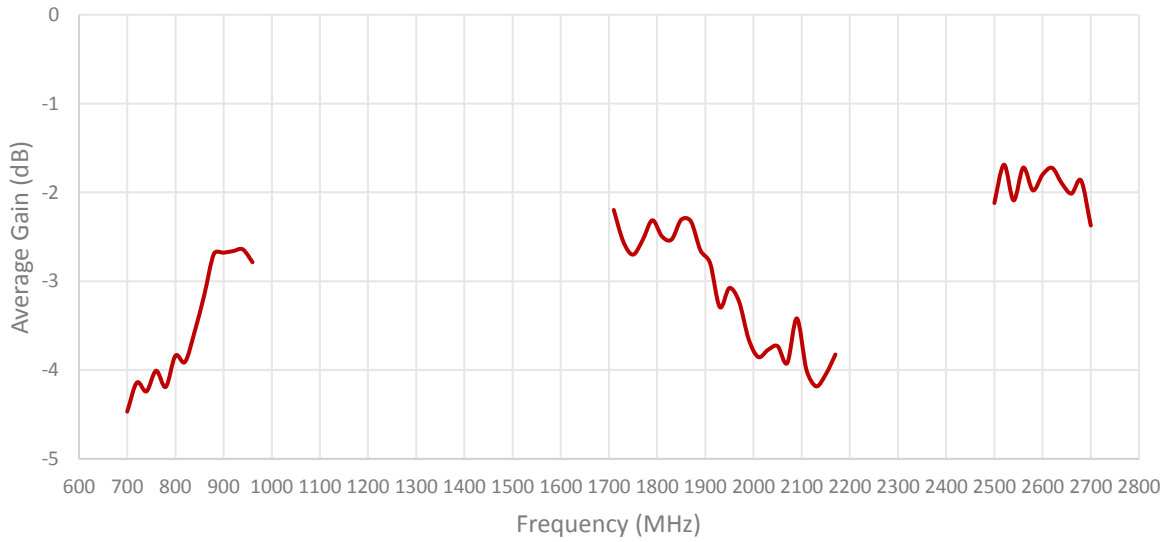
Cable 1: CELLULAR/LTE



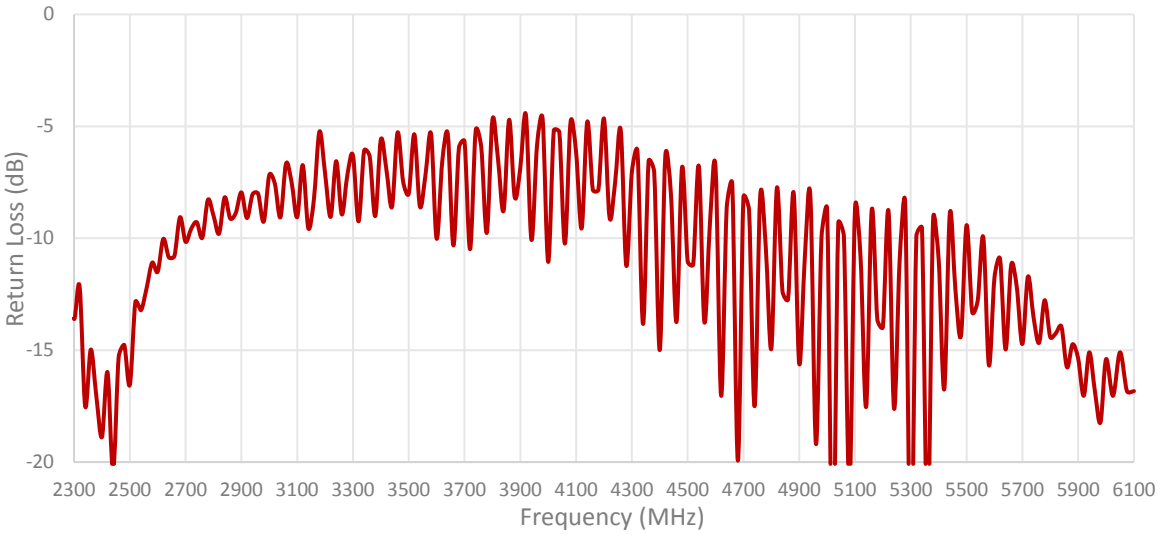


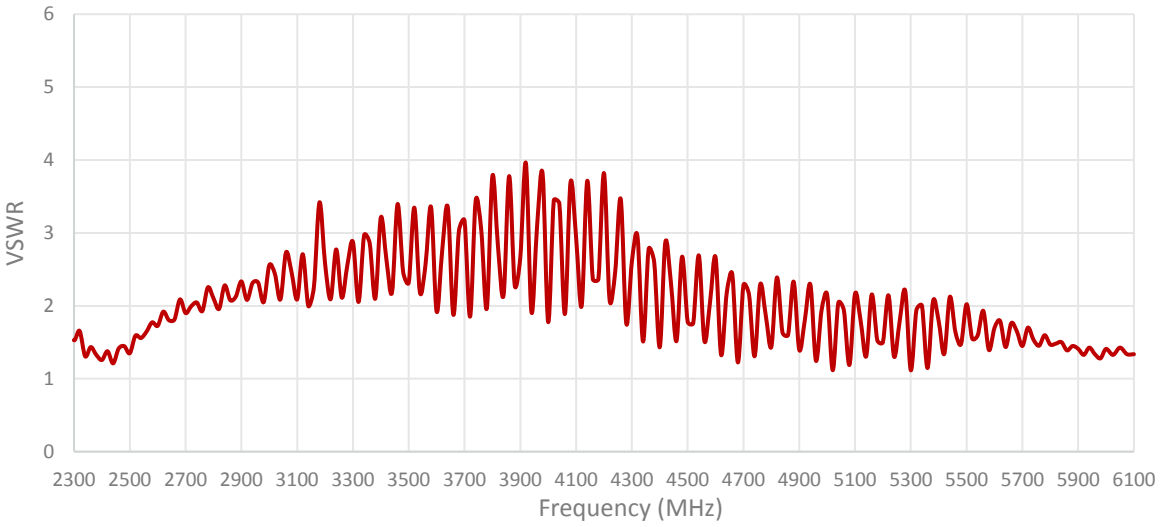

Efficiency (%)
70
60
50
40
30
20
10
0
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Frequency (MHz)

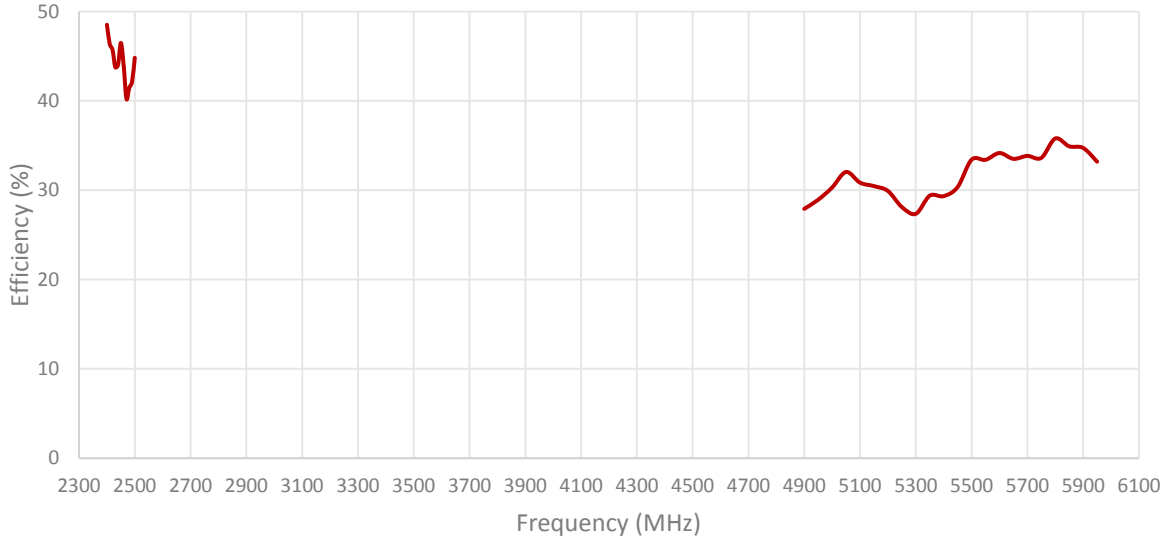

Peak Gain (dBi)
7
6
5
4
3
2
1
0
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Frequency (MHz)

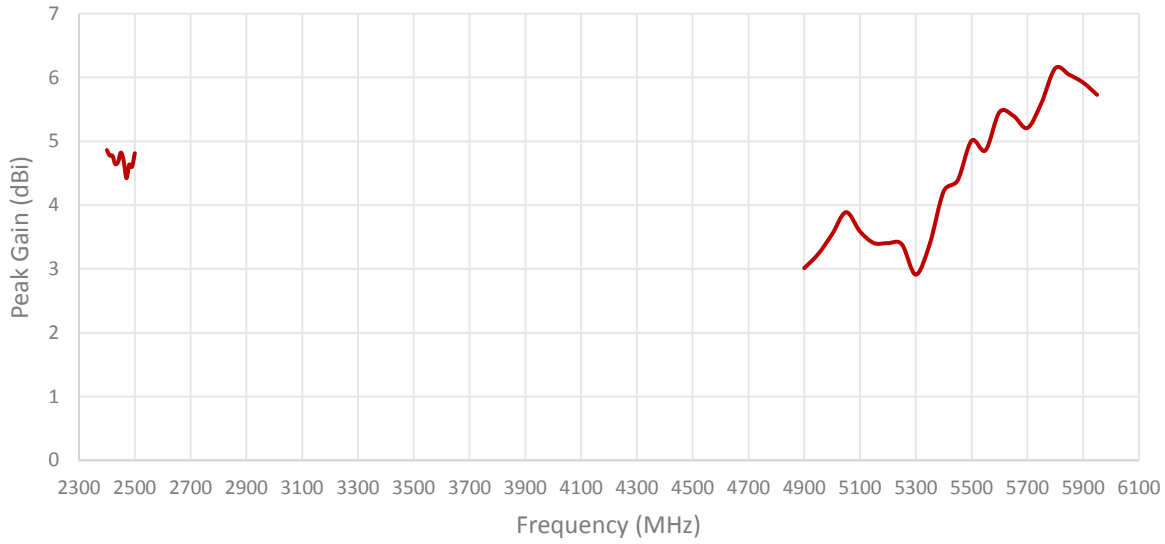

Average Gain (dB)
0
-1
-2
-3
-4
-5
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Frequency (MHz)

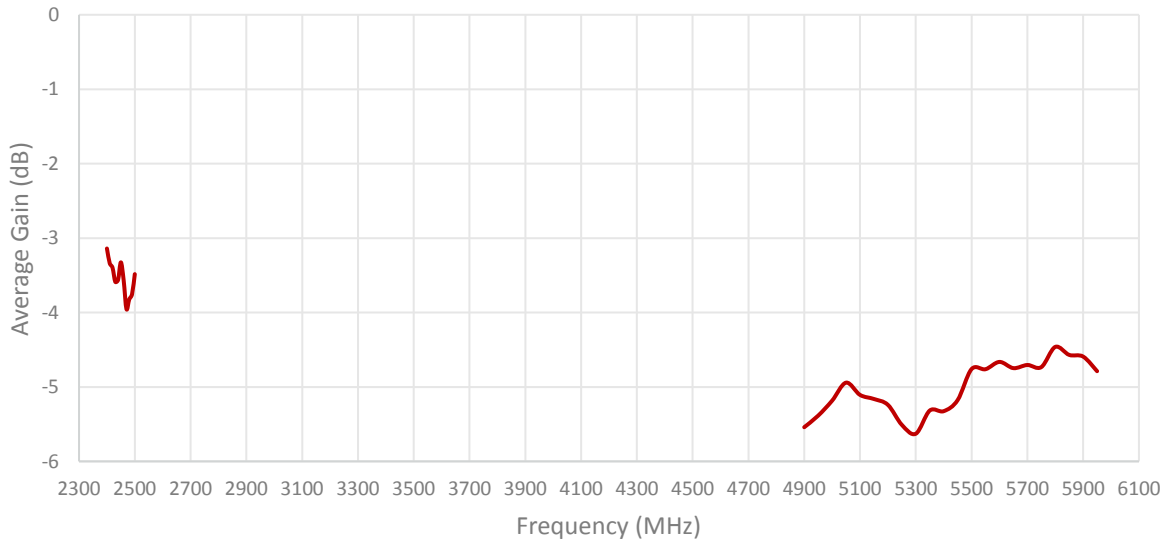
Cable 2: 2.4/5.0 GHz ISM



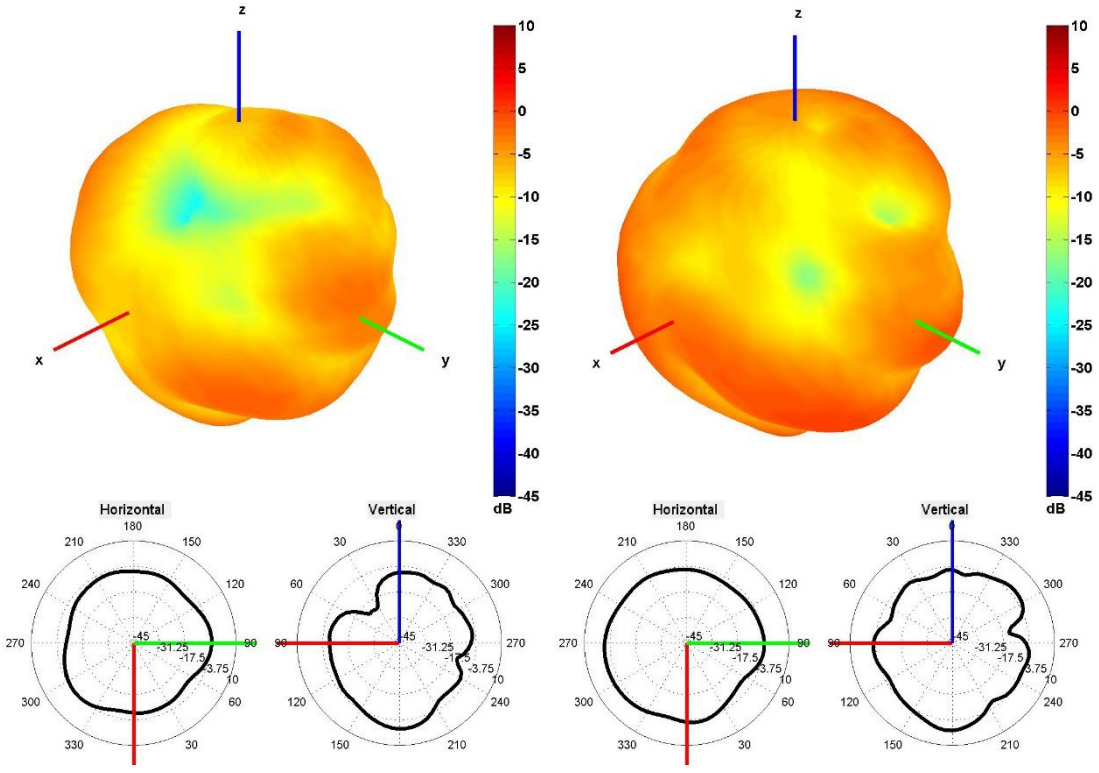



Efficiency (%)
50
40
30
20
10
0
2300 2500 2700 2900 3100 3300 3500 3700 3900 4100 4300 4500 4700 4900 5100 5300 5500 5700 5900 6100
Frequency (MHz)

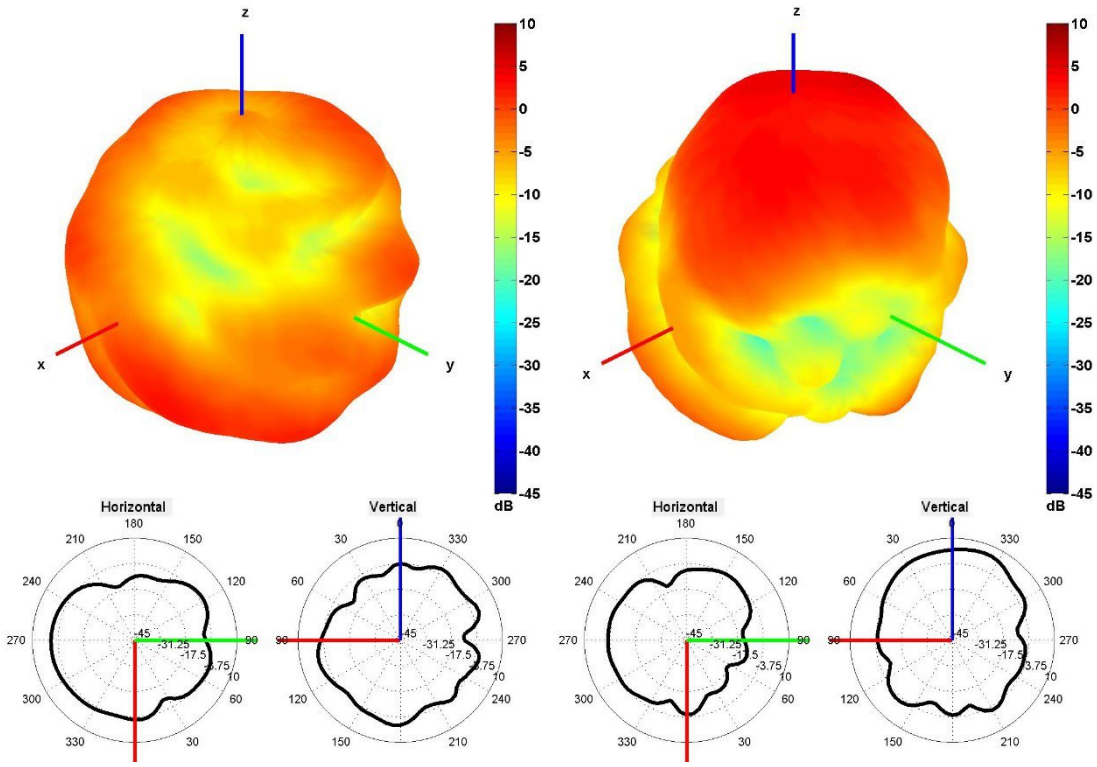

Peak Gain (dBi)
7
6
5
4
3
2
1
0
2300 2500 2700 2900 3100 3300 3500 3700 3900 4100 4300 4500 4700 4900 5100 5300 5500 5700 5900 6100
Frequency (MHz)


Average Gain (dB)
0
-1
-2
-3
-4
-5
-6
2300 2500 2700 2900 3100 3300 3500 3700 3900 4100 4300 4500 4700 4900 5100 5300 5500 5700 5900 6100
Frequency (MHz)

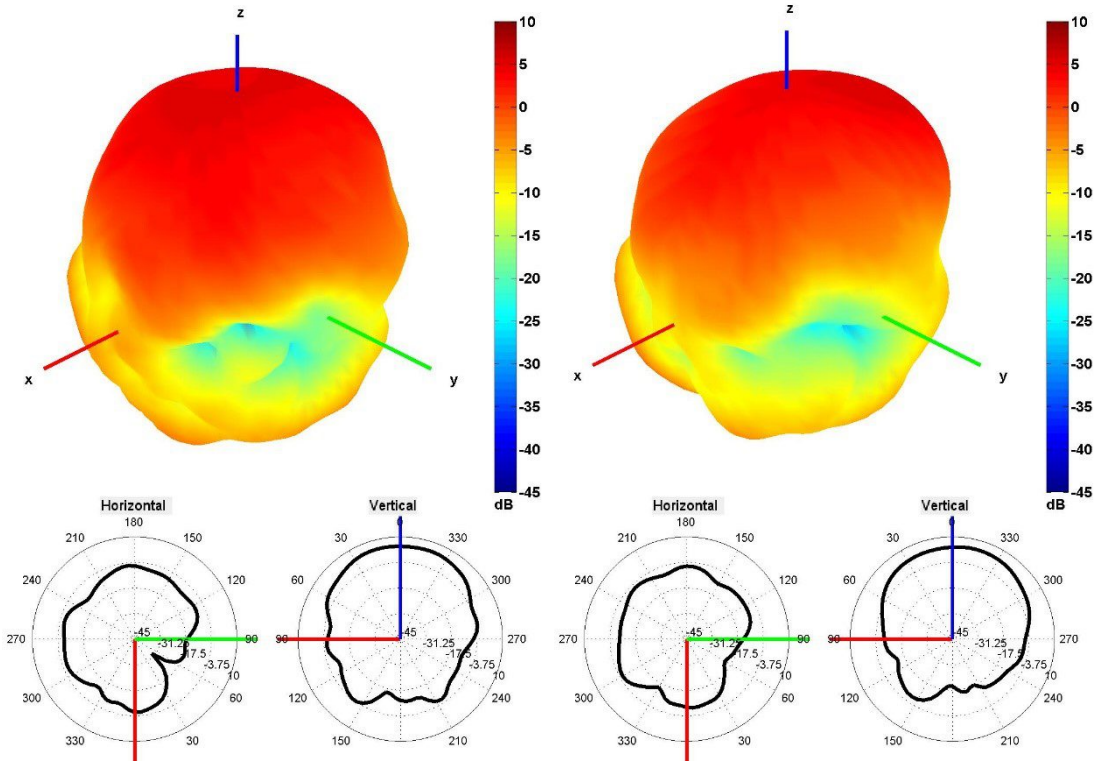
Cable 1: CELLULAR/LTE



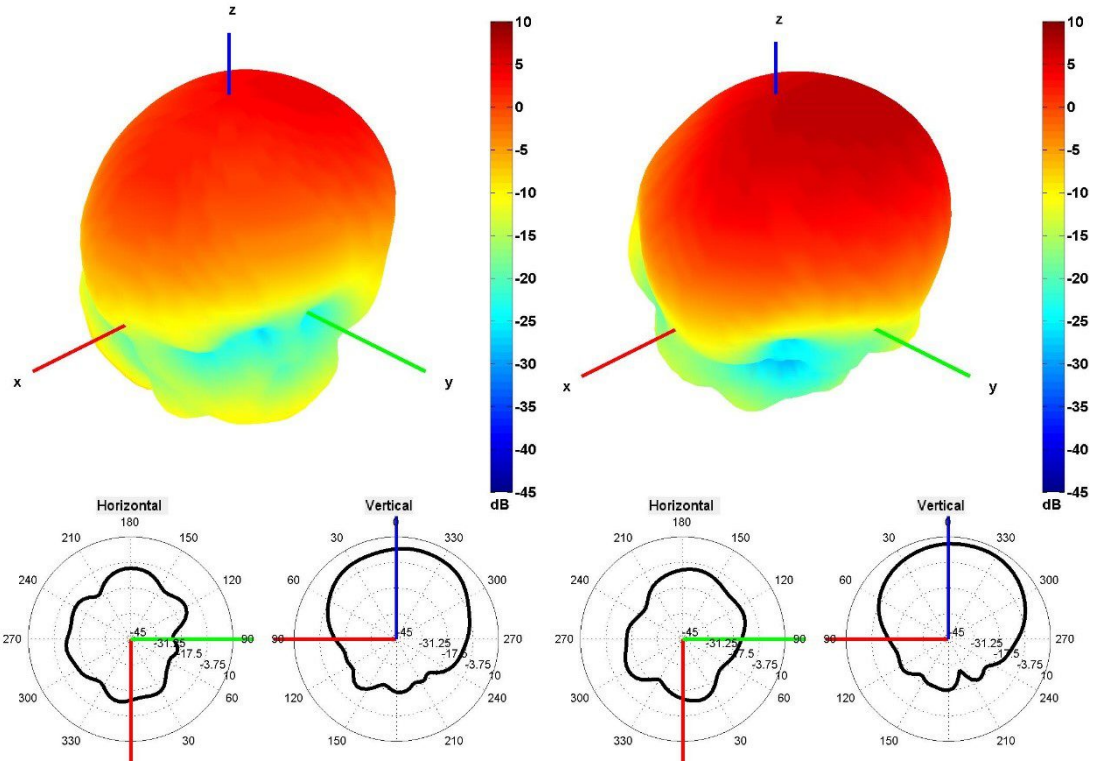
750 and 850 MHz Radiation pattern



940 and 1750 MHz Radiation pattern

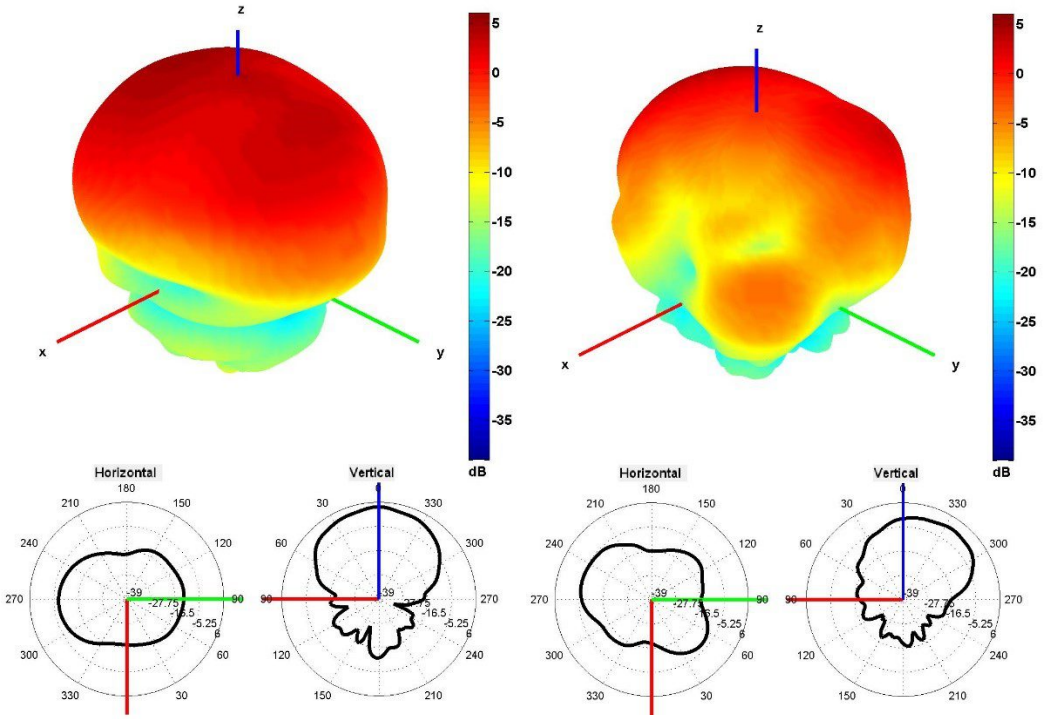


1850 and 1950 MHz Radiation pattern



2100 and 2600 MHz Radiation pattern

Cable 2: 2.4/5.0 GHz ISM



2450 and 5500 MHz Radiation pattern