

# OPT1-ANT-5GSSW-30

5G NR MIMO / 4G / 3G / 2G and 2.4 / 5.0 / 6.0 GHz  
ISM Screw Mount Antenna

## Key Features

### Cable 1 - 2 : 5GNR

- 617-960 MHz
- 1427-2690 MHz
- 3300-5000 MHz
- 5150-5925 MHz

### Cable 3: 2.4/5.0/6.0 GHz ISM

- 2410-2490 MHz
- 4920-5925 MHz
- 5925-7125 MHz

Screw Mount

Anti-Rotation Mounting

Ground Plane Independent

Customizable Cable and Connector

Dimensions 80 × 74 × 25.6 mm

Certificates: IP67, IP69



## 1. Antenna and electrical specifications

Cable 1

Parameters	5G NR Antenna			
Technologies	5G, 4G, 3G and 2G			
Standards	5G NR/4GLTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G			
Frequency (MHz)	617-960	1427-2690	3300-5000	5150-5925
Band (MHz)	600, 700, 850, 900	1500, 1600, 1700, 1800, 1900, 2000, 2100, 2300, 2500, 2600	3300, 3500, 3600, 3700, 4500	5200, 5500, 5800
5G NR Bands	n5, n8, 12, n20, n28, n71, n81, n82, n83,	n1, n2, n3, n7, n25, n34, n38, n39, n40, n41, n50, n51, n66, n70, n74, n75, n76, n80, n84, n86	n77, n78, n79	
4GLTE Bands	B5, B6, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68, B71, B85	B1, B2, B3, B4, B7, B9, B10, B11, B21, B23, B24, B25, B30, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B45, B50, B51, B65, B66, B69, B70, B74, B75, B76	B22, B42, B43, B48, B49, B52	B46, B47, B252, B255
3GCELL Bands	B5, B6, B8, B12, B13, B14, B19, B20, B26	B1, B2, B3, B4, B7, B9, B10, B11, B21, B25, B32, B33, B34, B35, B36, B37, B38, B39, B40	B22	
2GCELL Bands	710, 750, 810T, 850, 900P, 900E, 900R	1800DCS, 1900PCS		
CDMA CELL Bands	BC0, BC2, BC3, BC7, BC9, BC10, BC12, BC18, BC19	BC1, BC4, BC6, BC8, BC13, BC14, BC15, BC16, BC20, BC21		
Return Loss (dB)	~-15.5	~-12.1	~-12.3	~-13.0
VSWR	~1.5:1	~1.8:1	~1.9:1	~1.7:1
Efficiency (%)	~35.3	~27.1	~23.6	~22.3
Peak Gain (dBi)	~3.1	~2.7	~0.9	~0.4
Average Gain (dB)	~-4.6	~-5.4	~-6.5	~-6.5
Impedance (Ohm)	50			
Polarisation	Linear			
Radiation Pattern	Omni-Directional			
Max. Input Power (W)	25			
Connector Type	SMA-Male Standard			
Cable Length	300 cm Standard			
Cable Type	D302 Standard			

**Cable 2**

Parameters	5G NR Antenna			
Technologies	5G, 4G, 3G and 2G			
Standards	5G NR/4GLTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G			
Frequency (MHz)	617-960	1427-2690	3300-5000	5150-5925
Band (MHz)	600, 700, 850, 900	1500, 1600, 1700, 1800, 1900, 2000, 2100, 2300, 2500, 2600	3300, 3500, 3600, 3700, 4500	5200, 5500, 5800
5G NR Bands	n5, n8, 12, n20, n28, n71, n81, n82, n83,	n1, n2, n3, n7, n25, n34, n38, n39, n40, n41, n50, n51, n66, n70, n74, n75, n76, n80, n84, n86	n77, n78, n79	
4GLTE Bands	B5, B6, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68, B71, B85	B1, B2, B3, B4, B7, B9, B10, B11, B21, B23, B24, B25, B30, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B45, B50, B51, B65, B66, B69, B70, B74, B75, B76	B22, B42, B43, B48, B49, B52	B46, B47, B252, B255
3GCELL Bands	B5, B6, B8, B12, B13, B14, B19, B20, B26	B1, B2, B3, B4, B7, B9, B10, B11, B21, B25, B32, B33, B34, B35, B36, B37, B38, B39, B40	B22	
2GCELL Bands	710, 750, 810T, 850, 900P, 900E, 900R	1800DCS, 1900PCS		
CDMA CELL Bands	BC0, BC2, BC3, BC7, BC9, BC10, BC12, BC18, BC19	BC1, BC4, BC6, BC8, BC13, BC14, BC15, BC16, BC20, BC21		
Return Loss (dB)	~-16.8	~-12.8	~-13.4	~-13.1
VSWR	~1.4:1	~1.7:1	~1.7:1	~1.7:1
Efficiency (%)	~34.1	~27.3	~20.0	~22.0
Peak Gain (dBi)	~3.2	~2.9	~1.2	~0.4
Average Gain (dB)	~-4.8	~-5.7	~-7.3	~-6.6
Impedance (Ohm)	50			
Polarisation	Linear			
Radiation Pattern	Omni-Directional			
Max. Input Power (W)	25			
Connector Type	SMA-Male Standard			
Cable Length	300 cm Standard			
Cable Type	D302 Standard			

**Antenna Measurement Conditions:**

Mounted on Metal Plate of 30 x 30 cm

100 cm of Cable D302

Measured in Certified CTIA 3D Anechoic Chamber

Cable 3

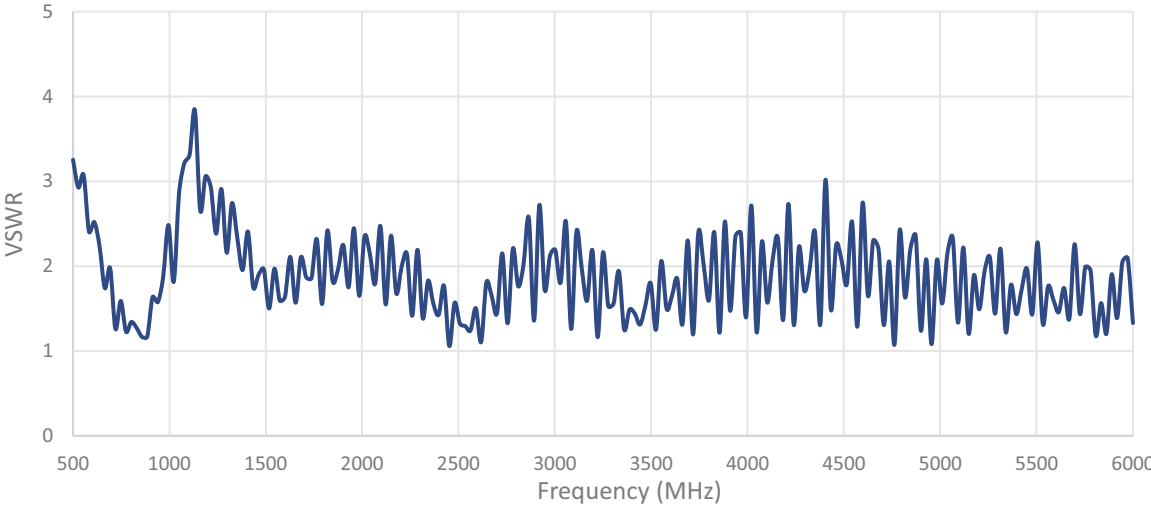
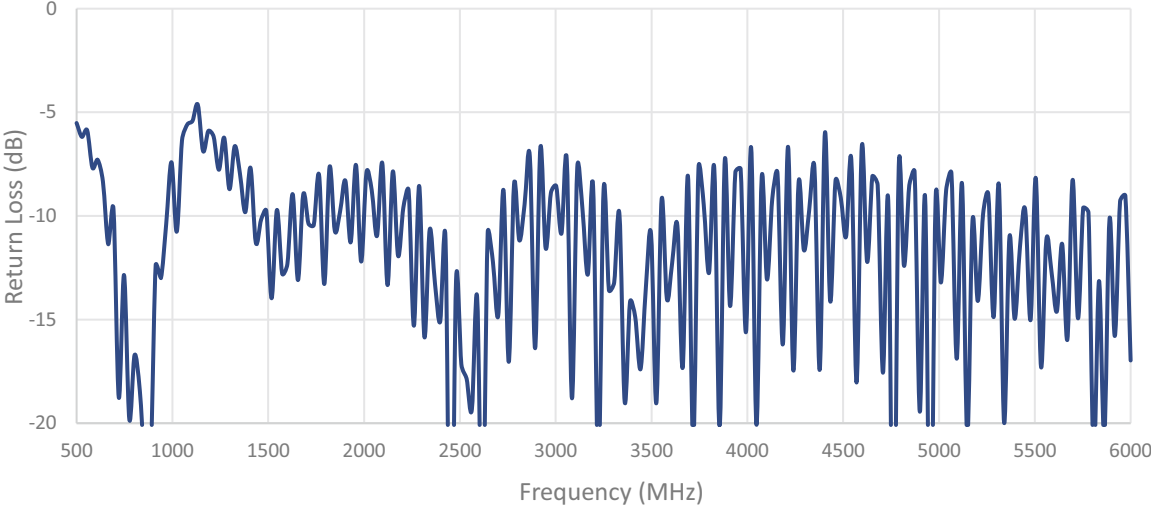
Parameters	2.4/5.0/6.0 GHz ISM Antenna		
Standards	WiFi, BT, ZigBee, ISM		
Band (MHz)	2.4 GHz	5.0 GHz	6.0 GHz
Frequency (MHz)	2410-2490	4920-5925	5925-7125
Return Loss (dB)	~-11.4	~-18.0	~-18.5
VSWR	~2.0:1	~1.3:1	~1.3:1
Efficiency (%)	~24.7	~27.4	~25.4
Peak Gain (dBi)	~-0.2	~1.7	~1.6
Average Gain (dB)	~-6.1	~-5.6	~-5.8
Impedance (Ohm)	50		
Polarisation	Linear		
Radiation Pattern	Omni-Directional		
Max. Input Power (W)	25		
Connector Type	SMA-Female Standard		
Cable Length	300 cm Standard		
Cable Type	D302 Standard		

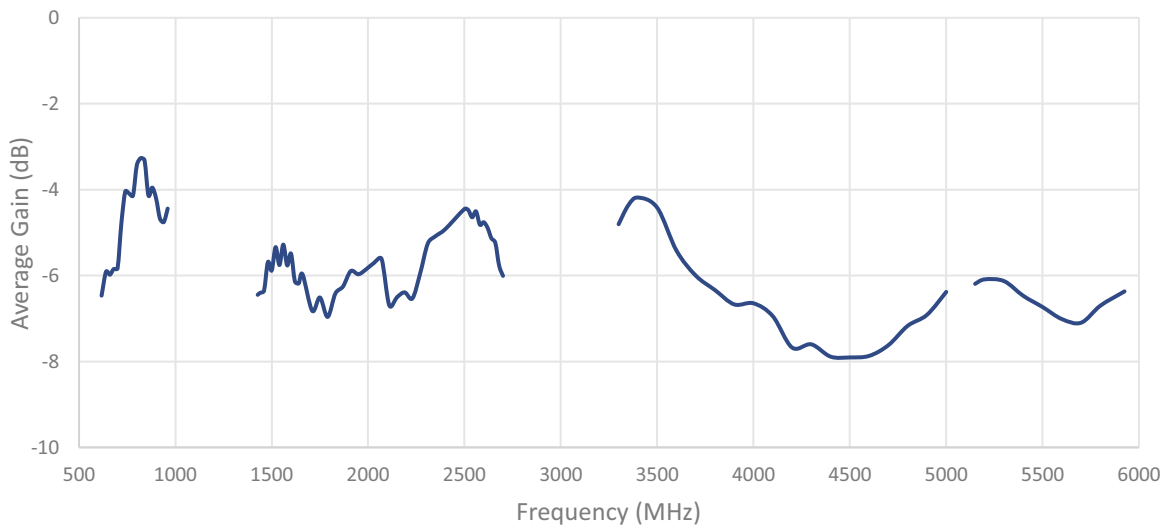
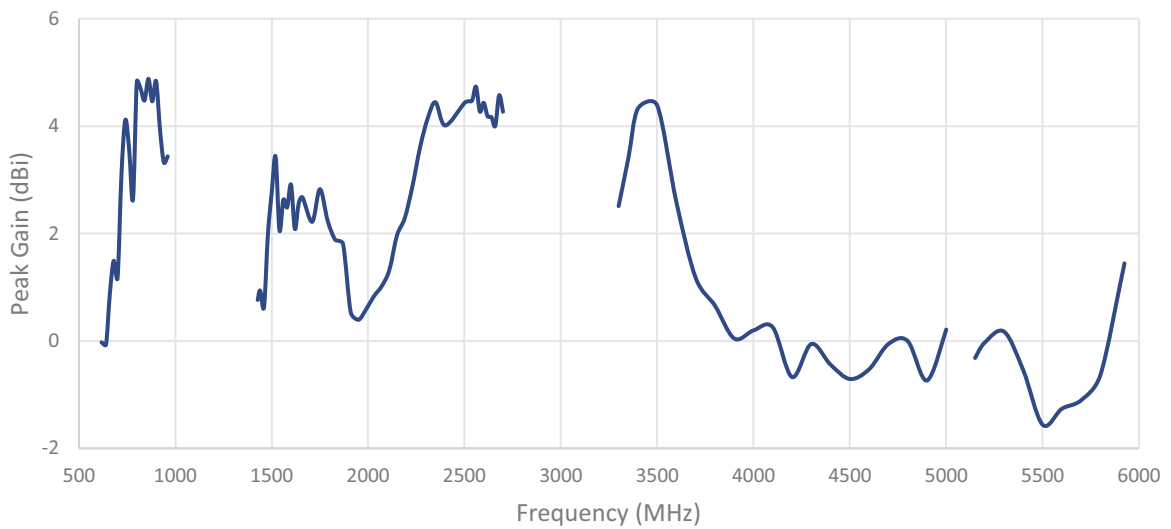
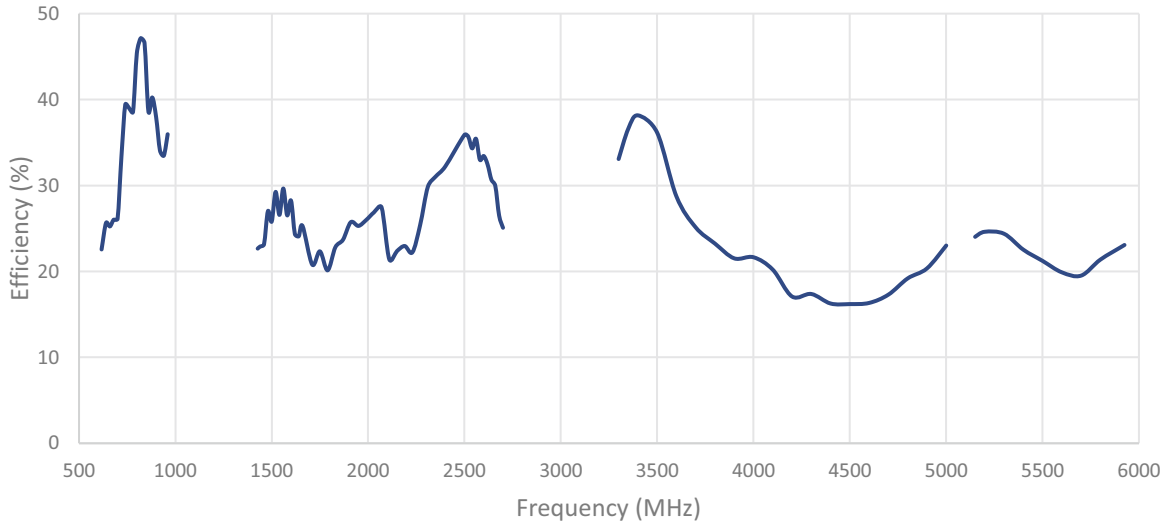
## 2. Mechanical and environmental specifications

Specifications	OPT1-ANT-5GSSW-30
Mounting Type	Screw Mount
Dimensions (mm)	80 × 74 × 25.6
Max. Tighten Torque (Nm)	5 Nm
Radome Type	PC+ASA
Radome Color	Black, White
Operating Temperature (C)	-40 to +85
Storage Temperature (C)	-40 to +85
Substance Compliance	RoHS
Certificates	IP67, IP69

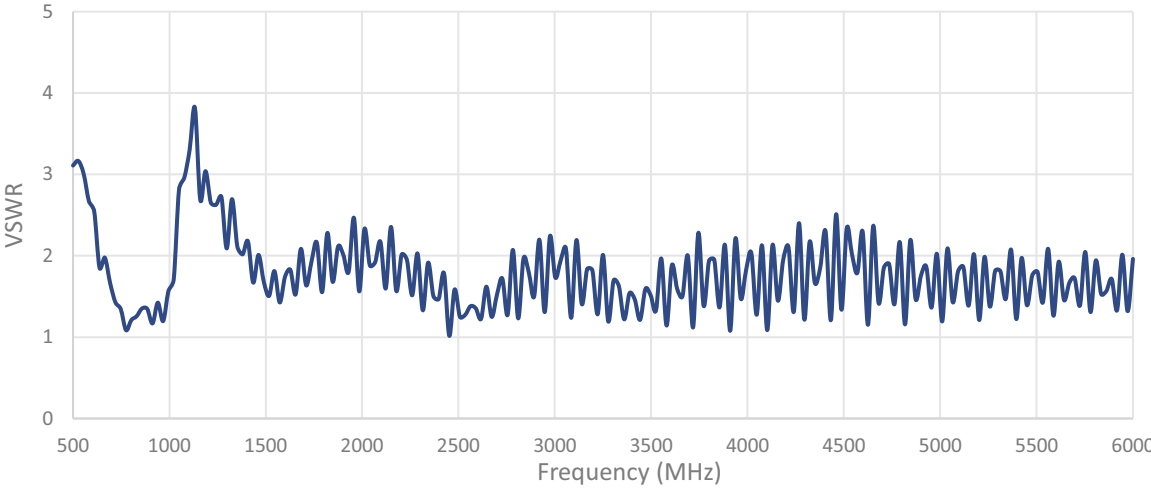
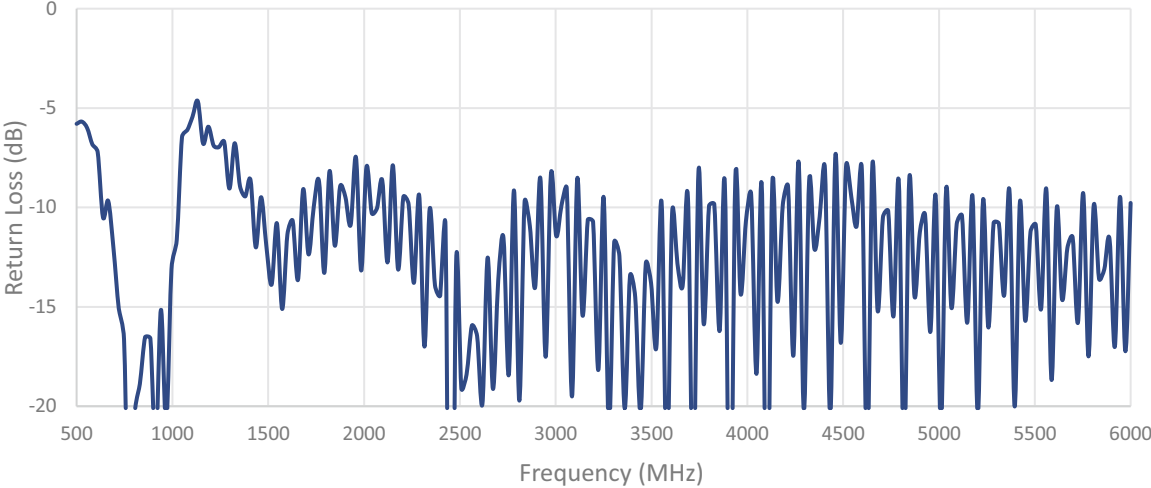
## 3. Antenna parameters

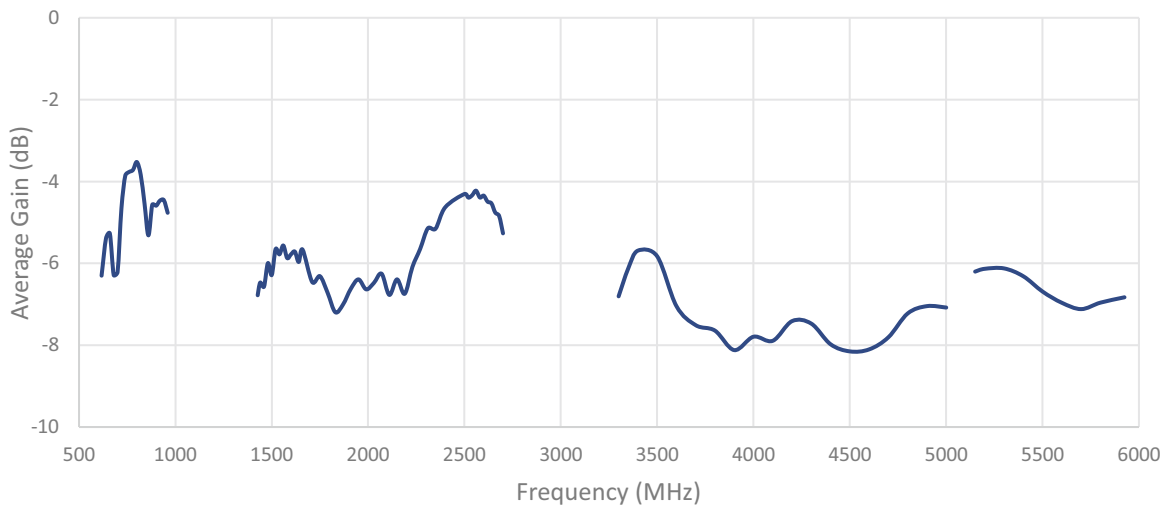
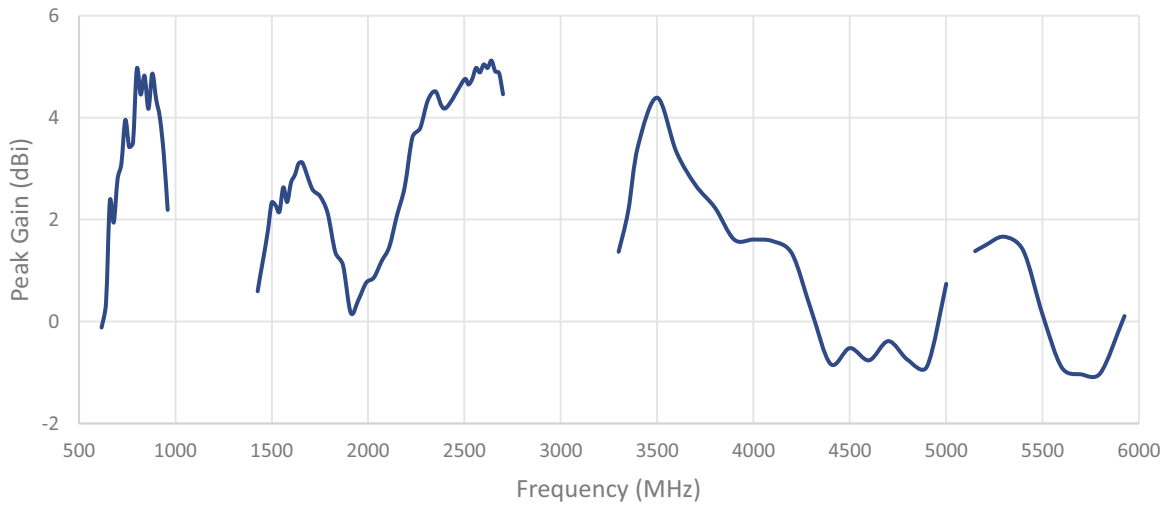
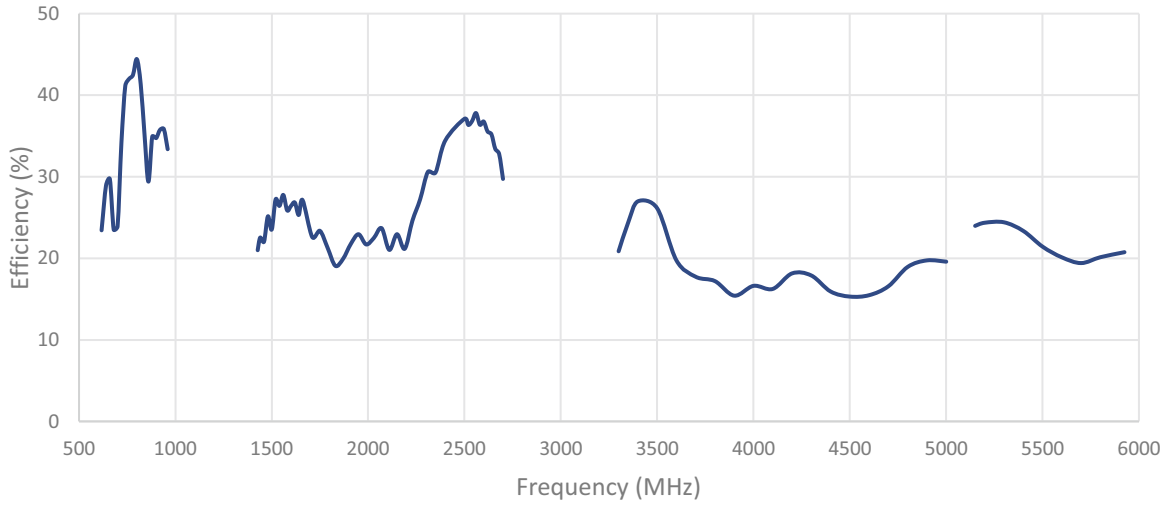
Cable 1: 5GNR





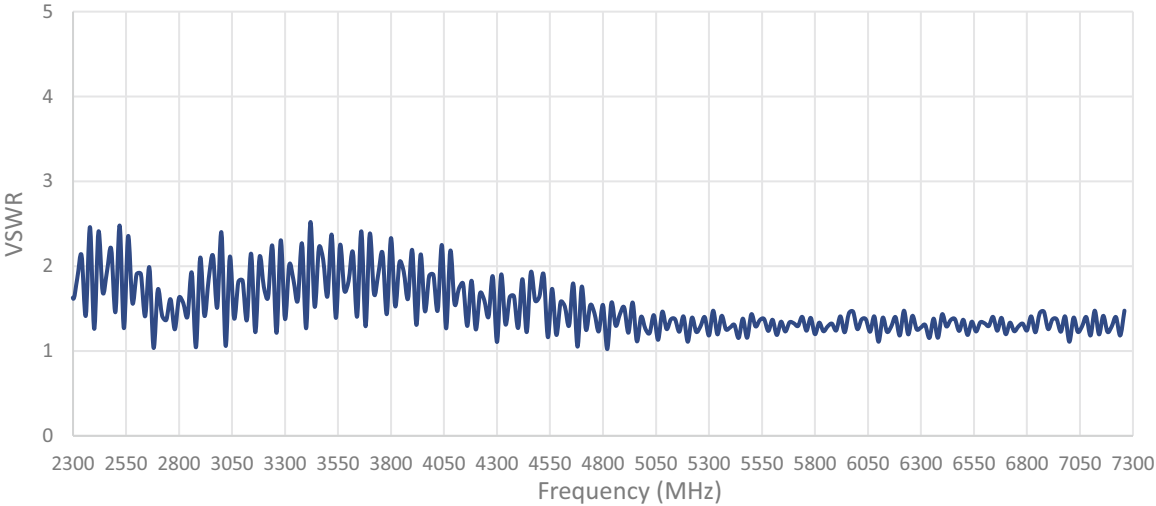
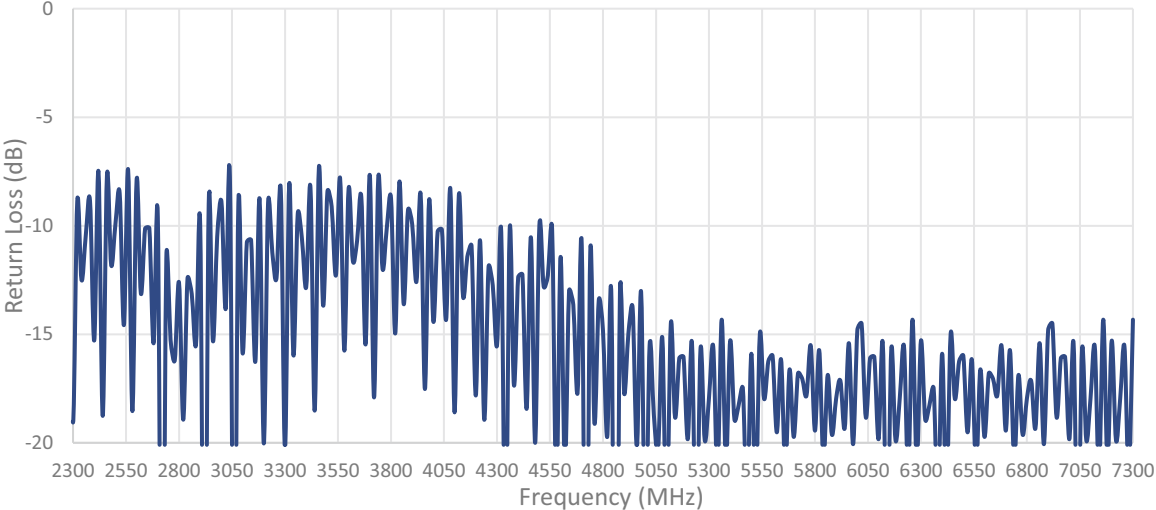
Cable 2: 5GNR

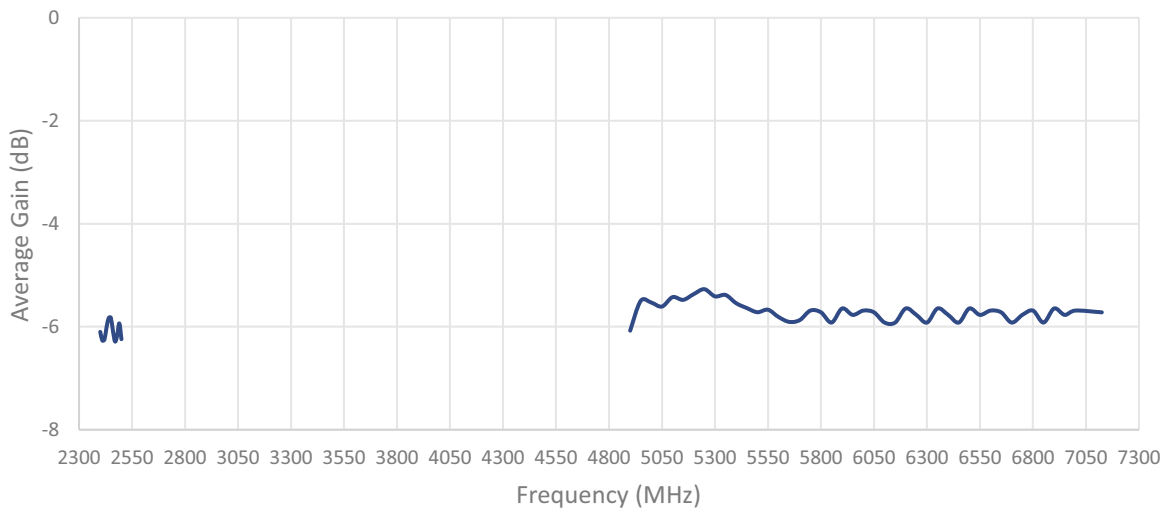
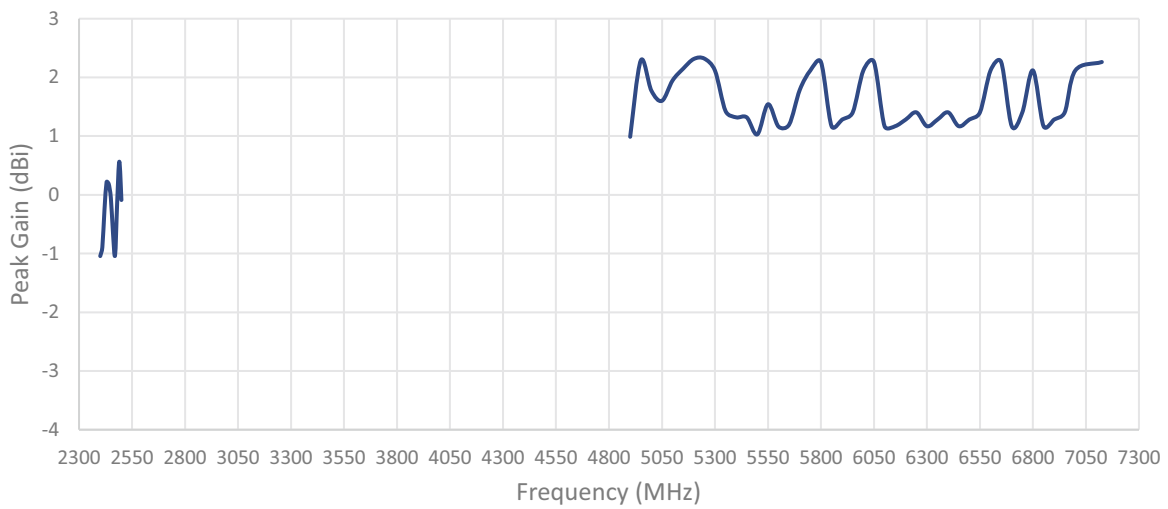
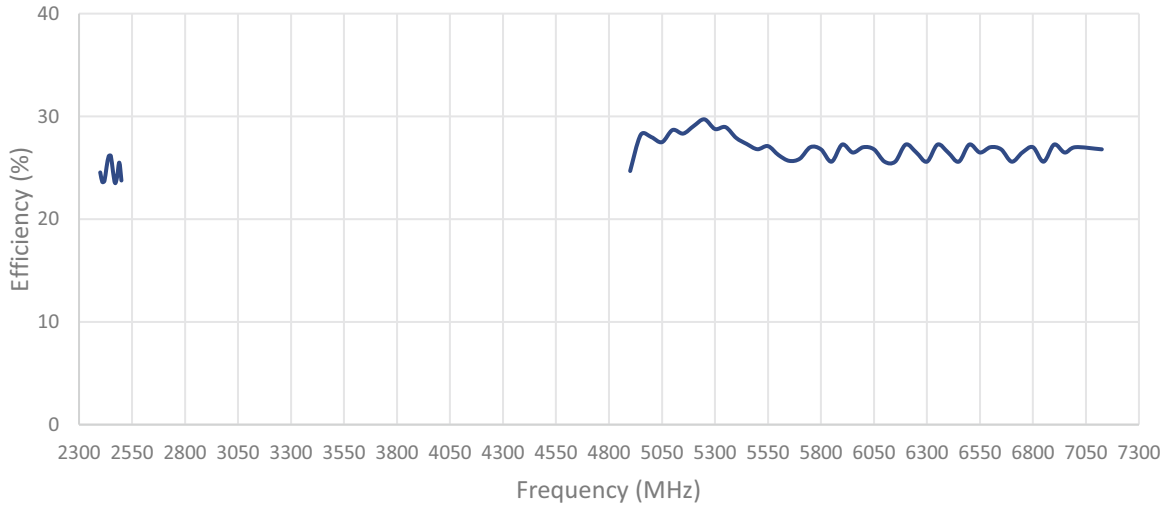




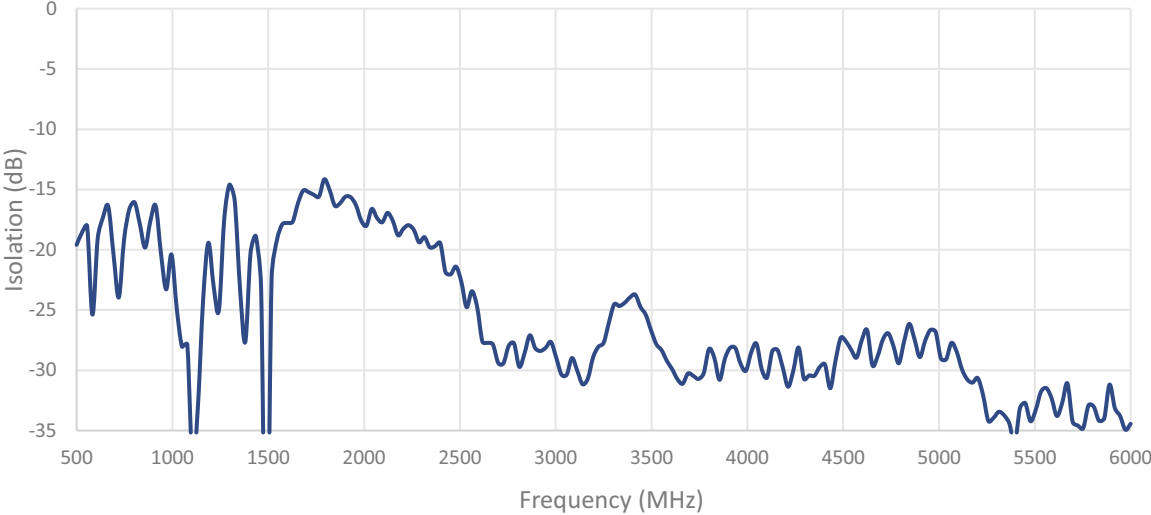


Cable 3: WIFI-6-6E

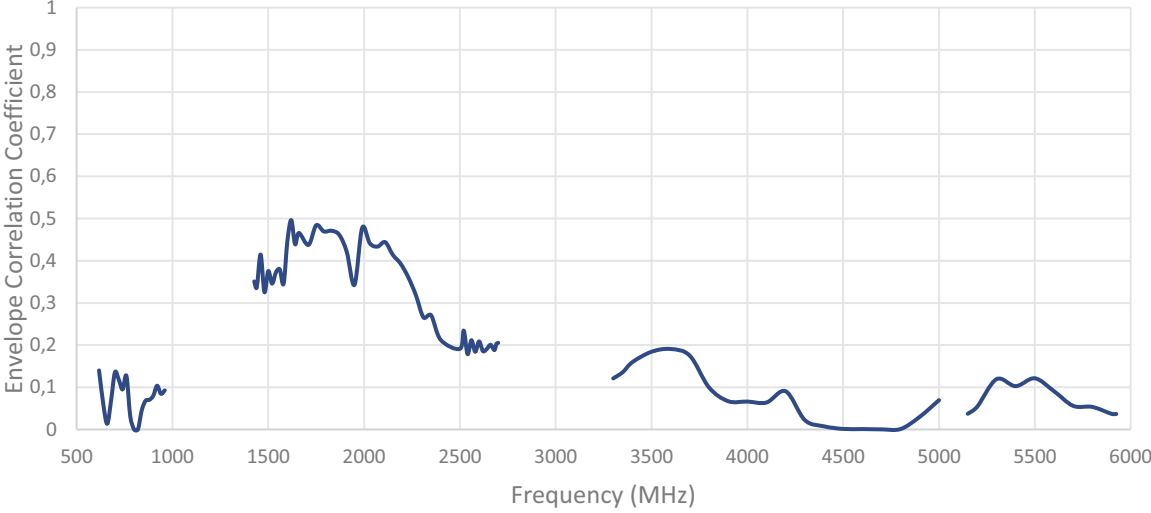


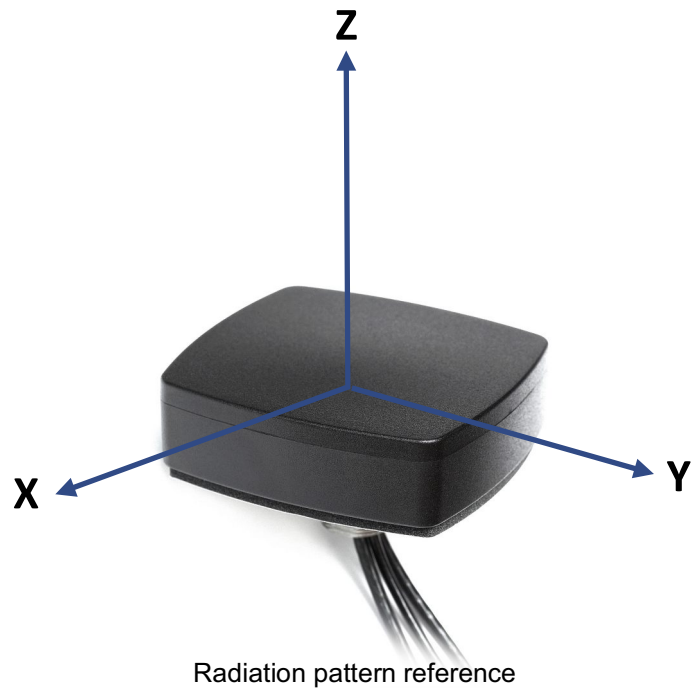


### ISOLATION FOR CABLES 1 AND 2

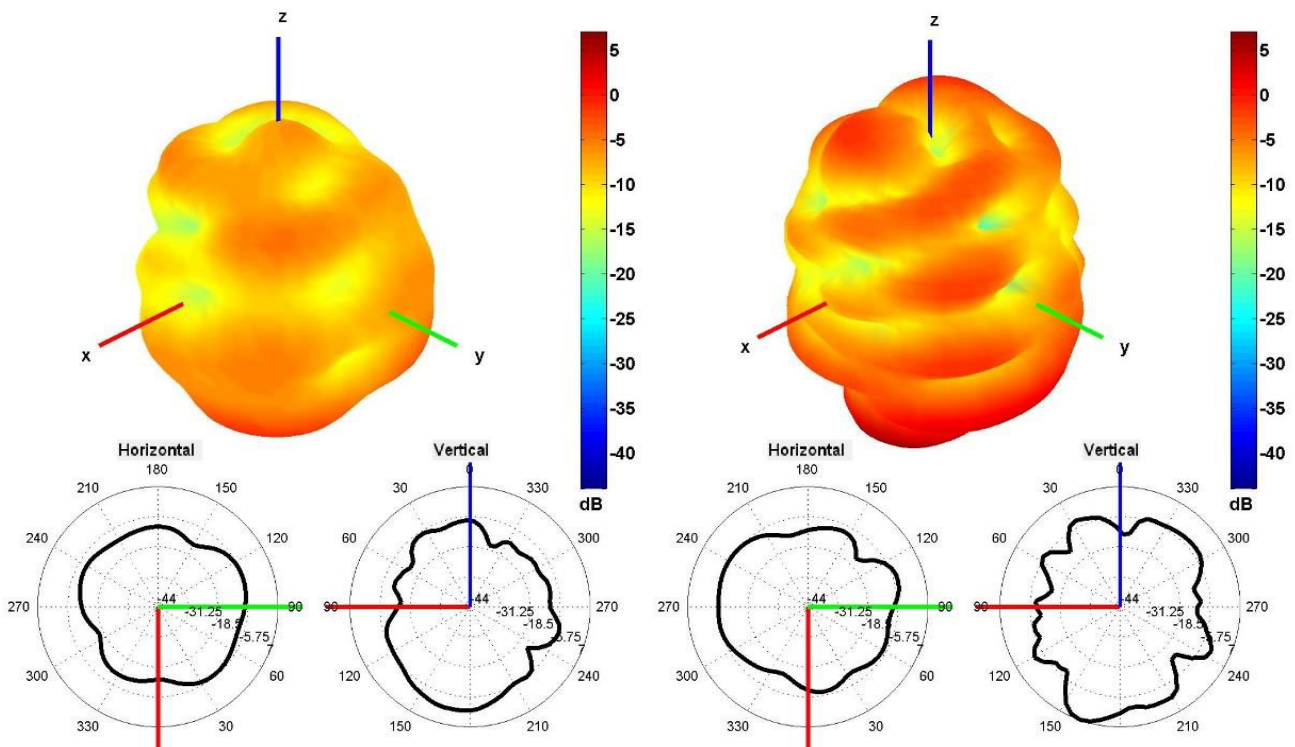


### ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 2

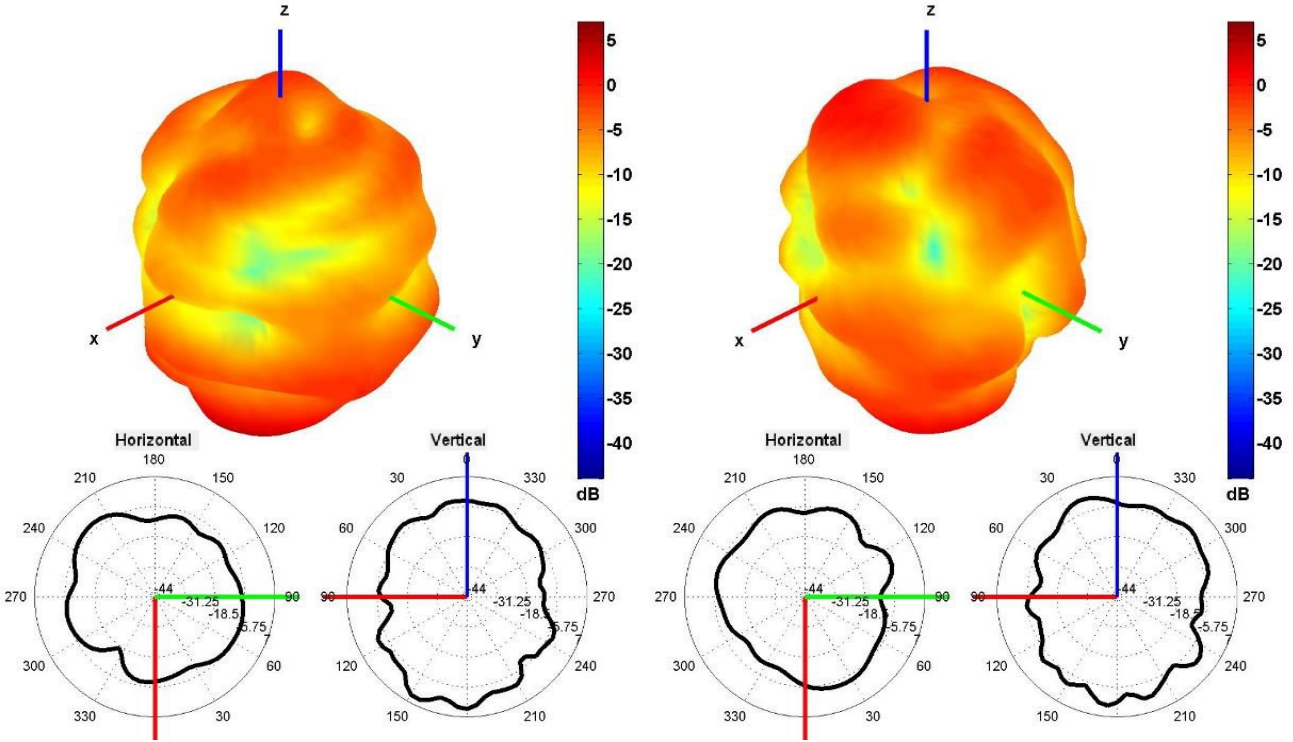




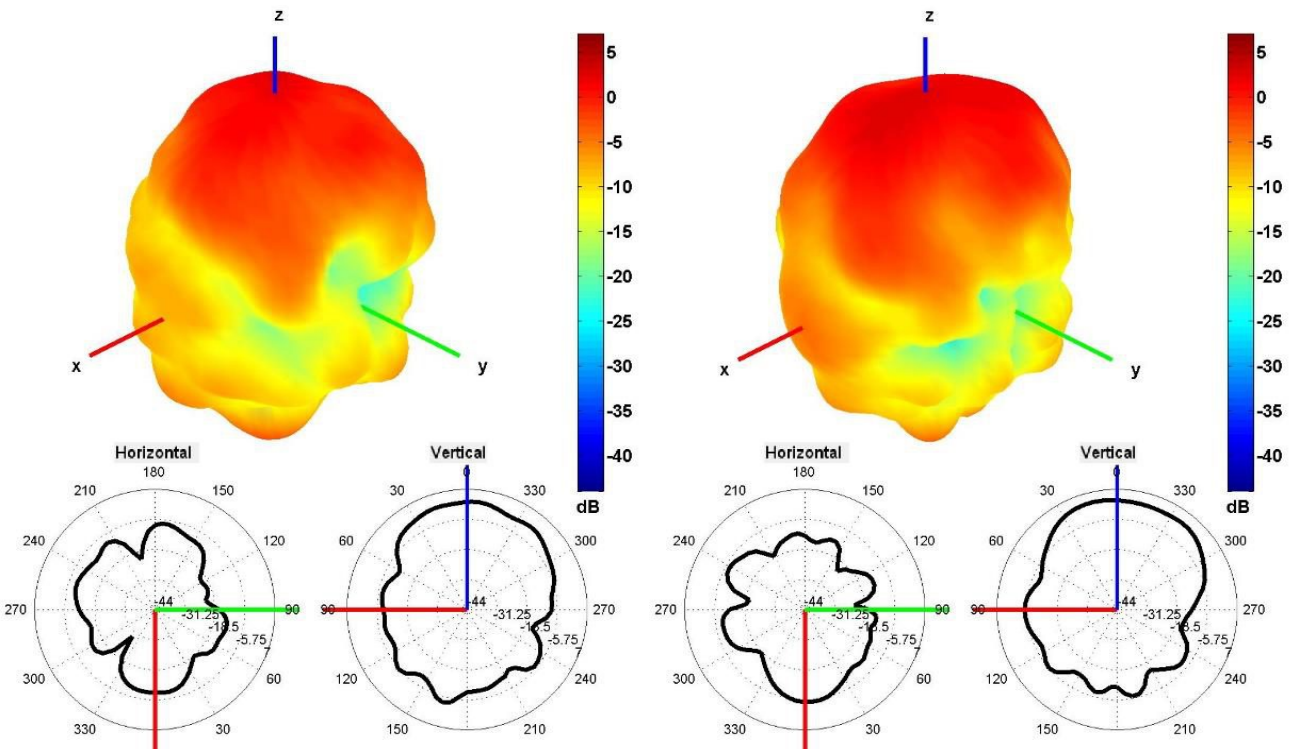
Cable 1: 5GNR



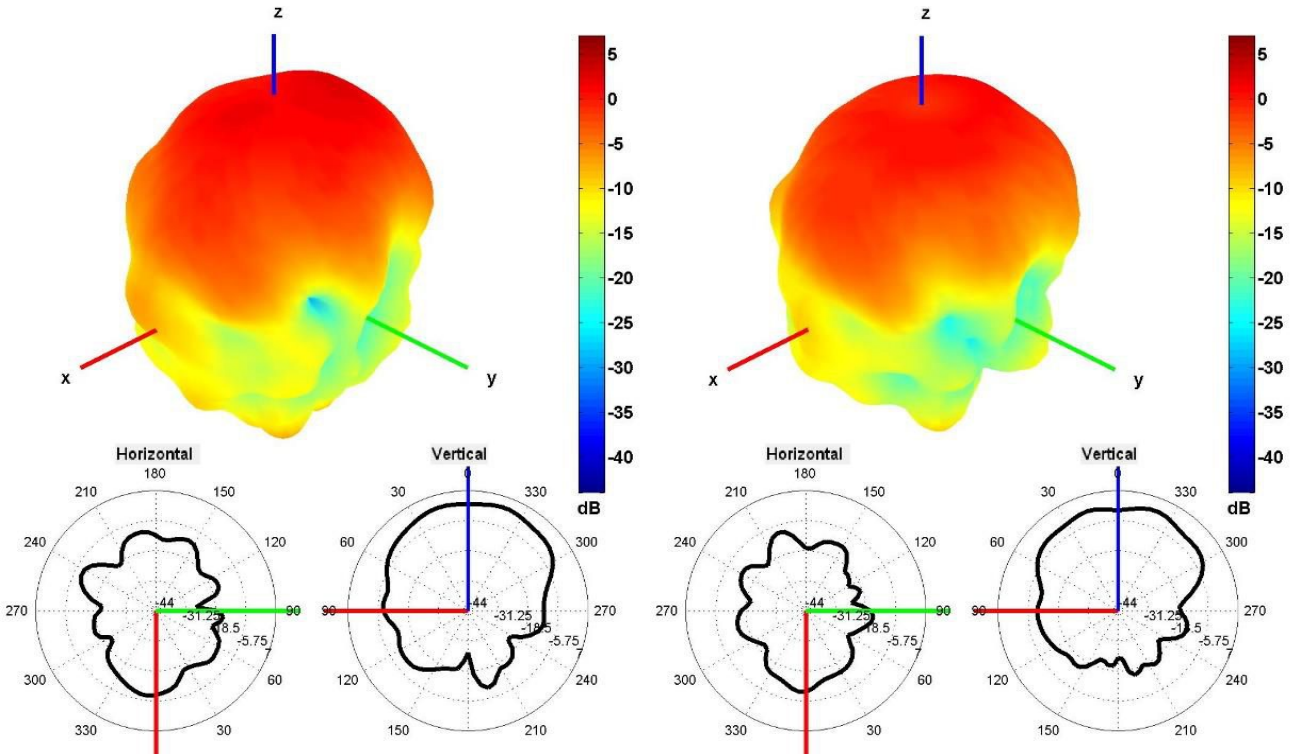
640 and 740 MHz Radiation pattern



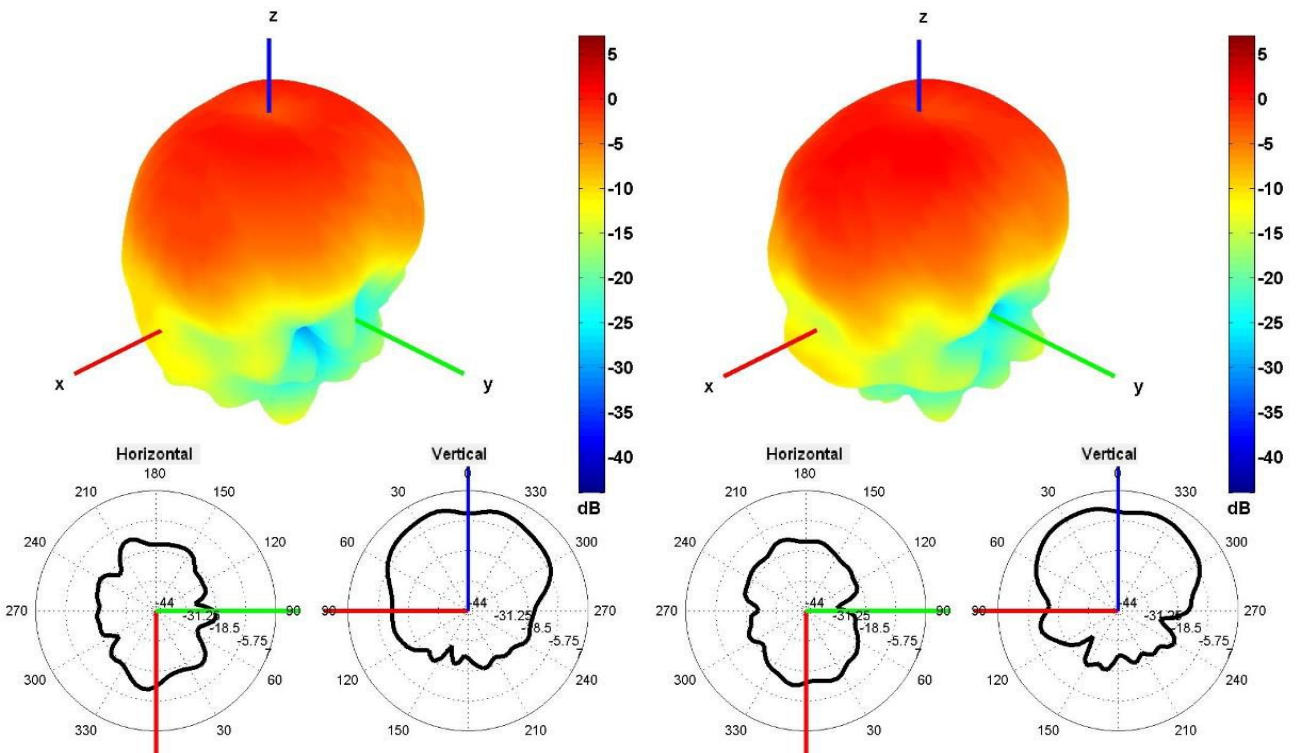
850 and 940 MHz Radiation pattern



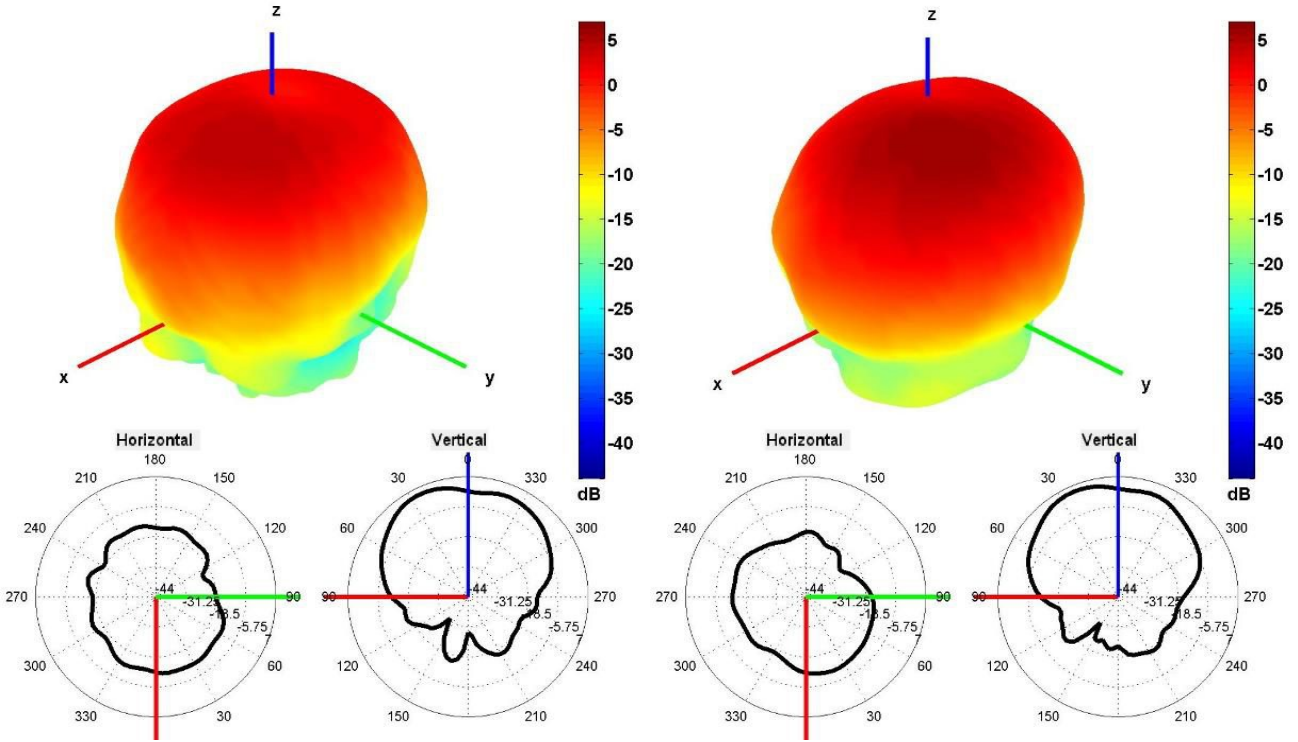
1500 and 1600 MHz Radiation pattern



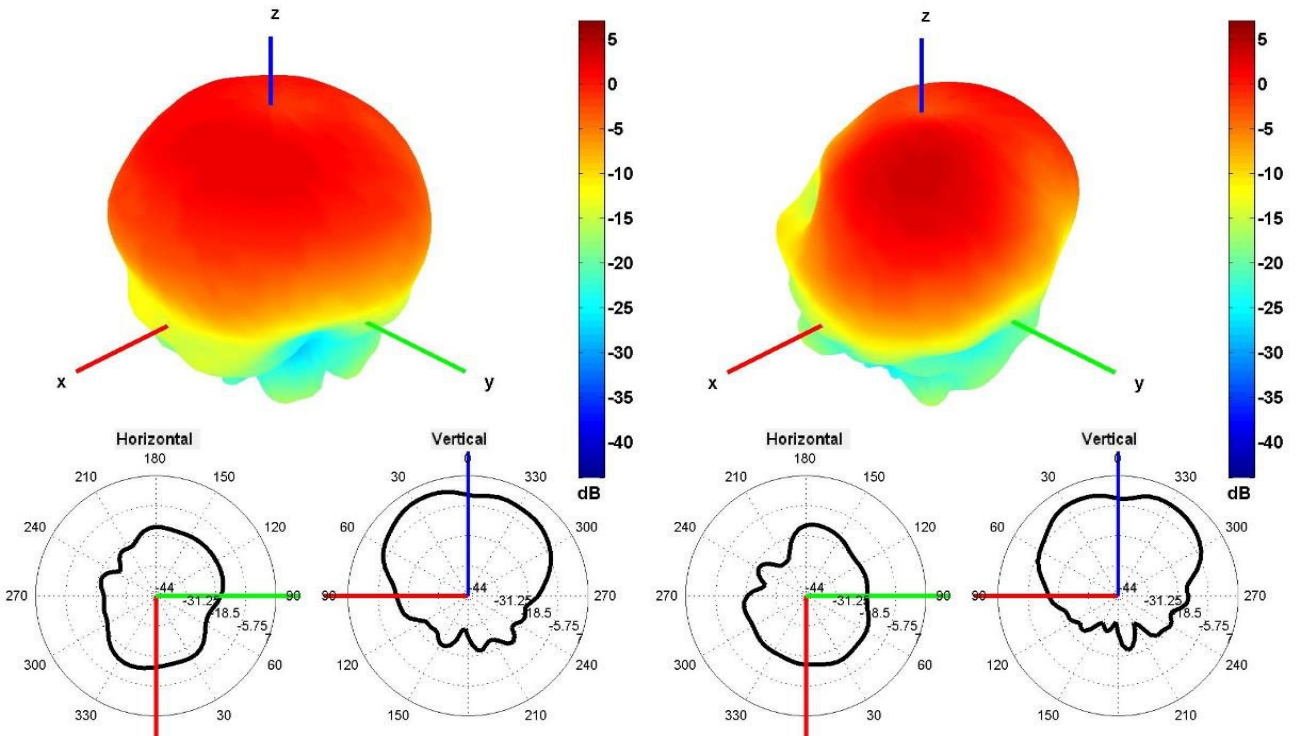
1750 and 1850 MHz Radiation pattern



1950 and 2100 MHz Radiation pattern

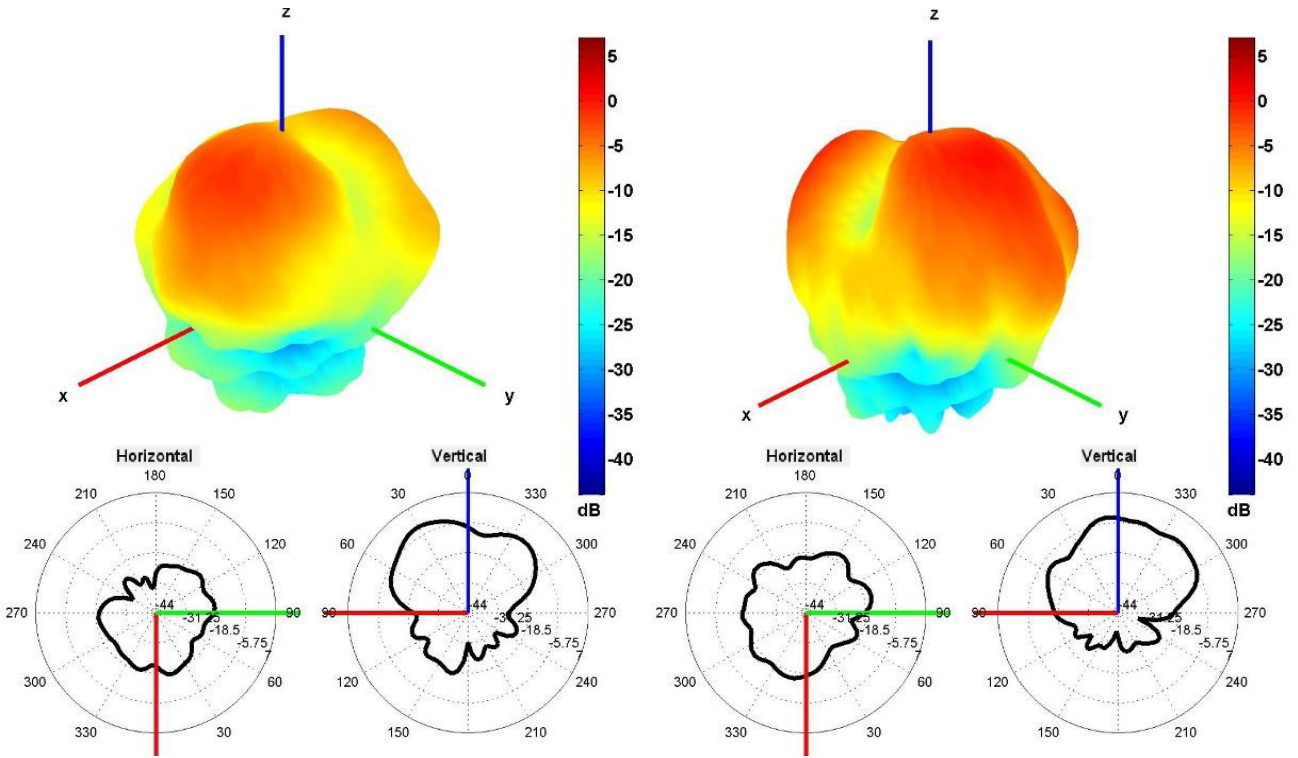


2350 and 2600 MHz Radiation pattern



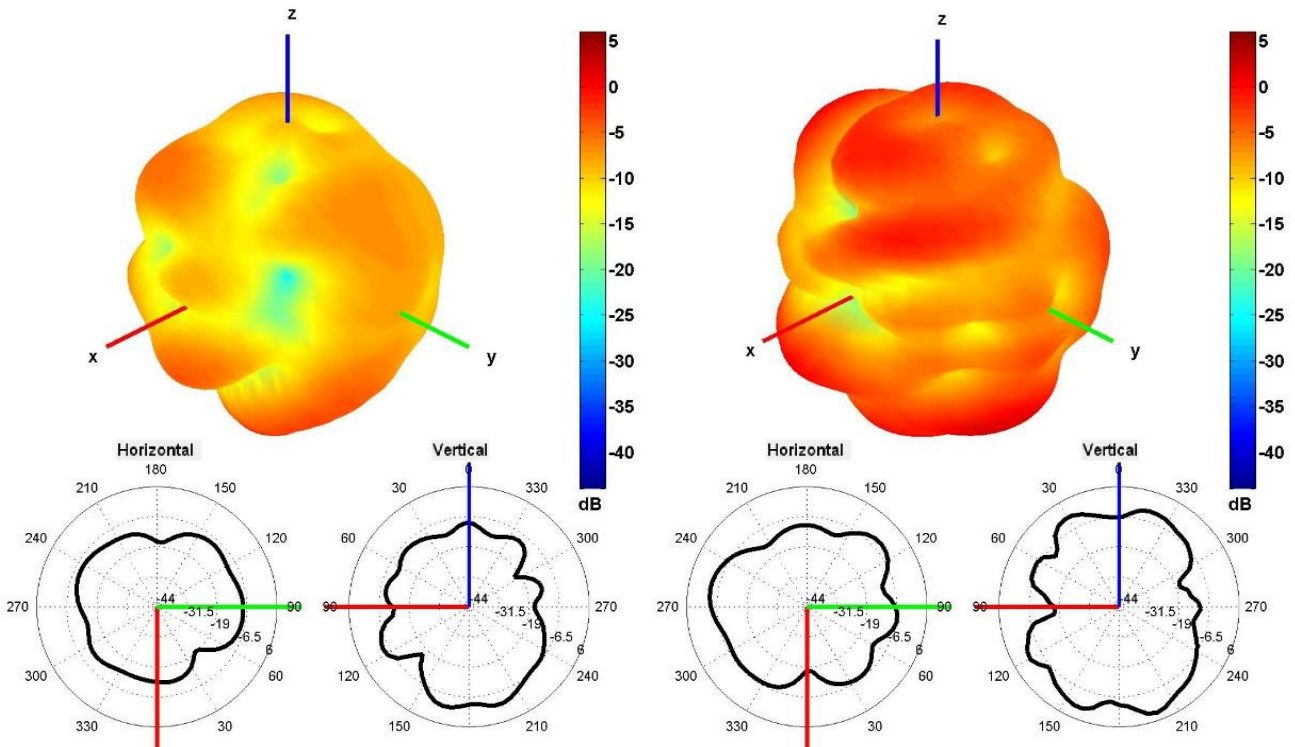
3350 and 3600 MHz Radiation pattern





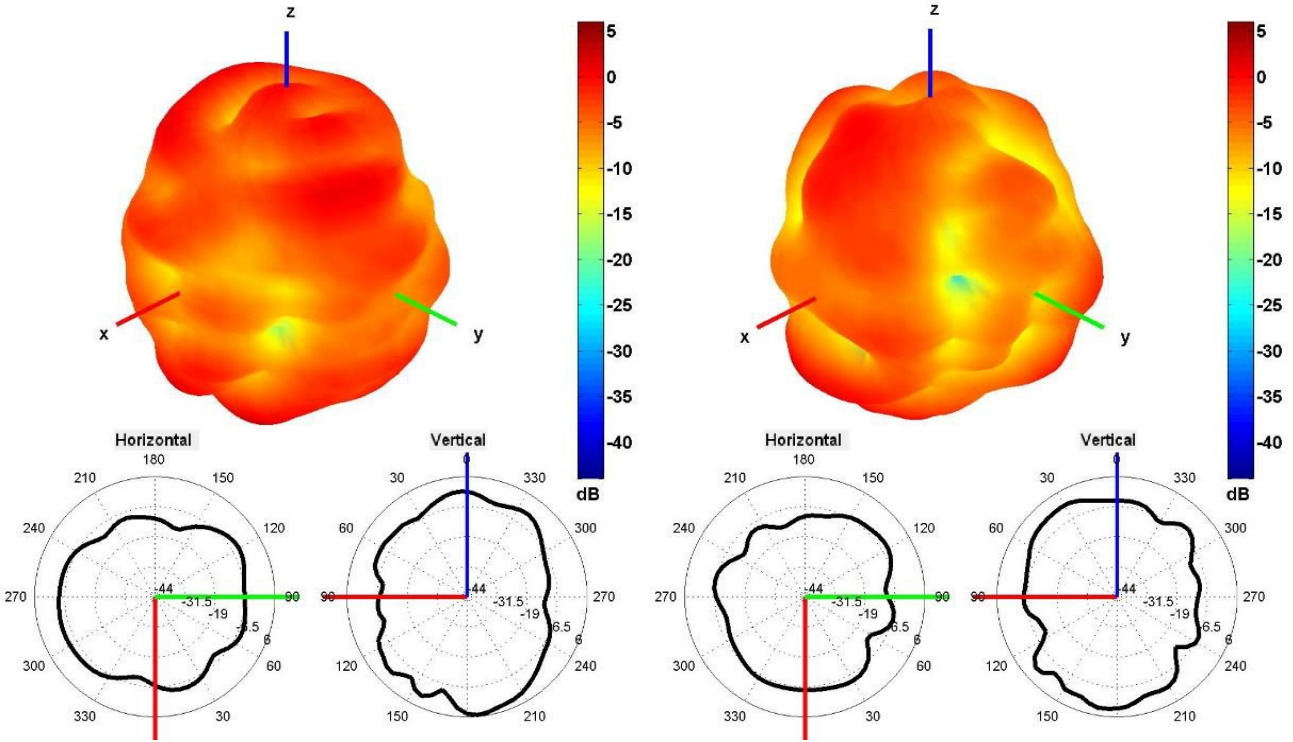
4500 and 5500 MHz Radiation pattern

Cable 2: 5GNR

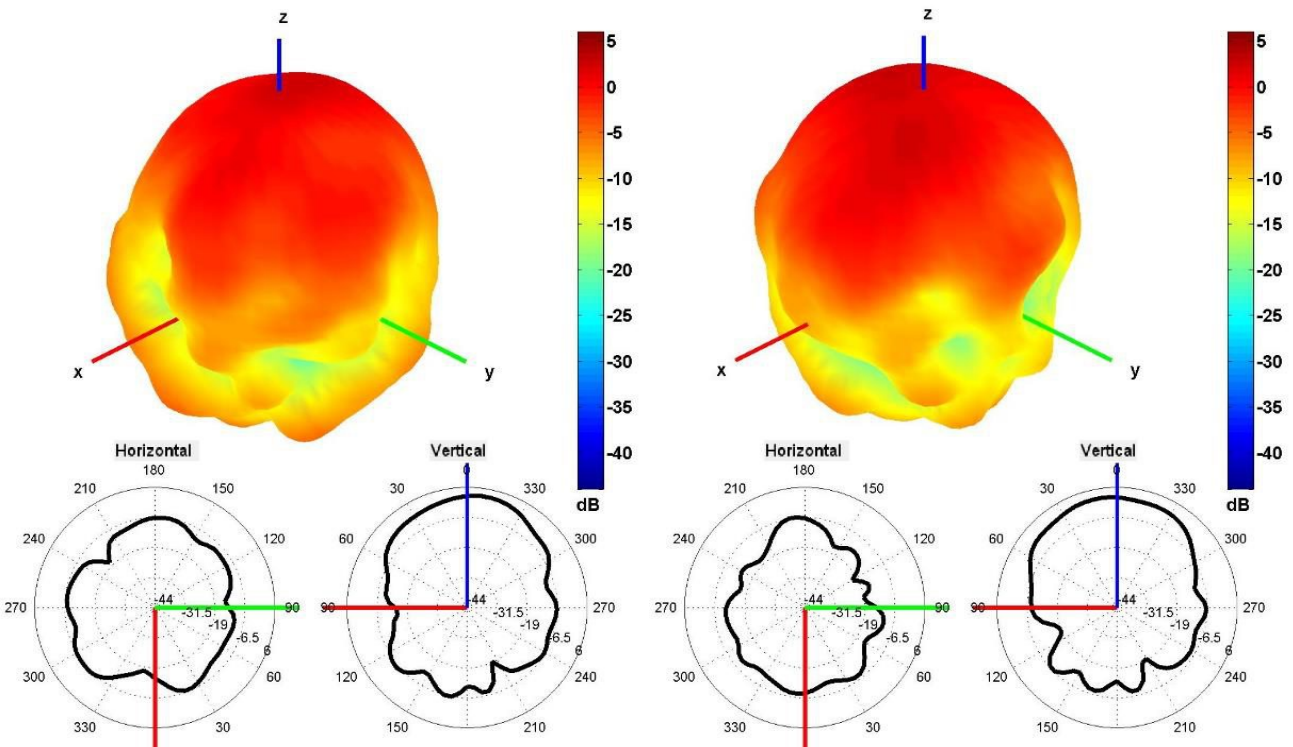


640 and 740 MHz Radiation pattern

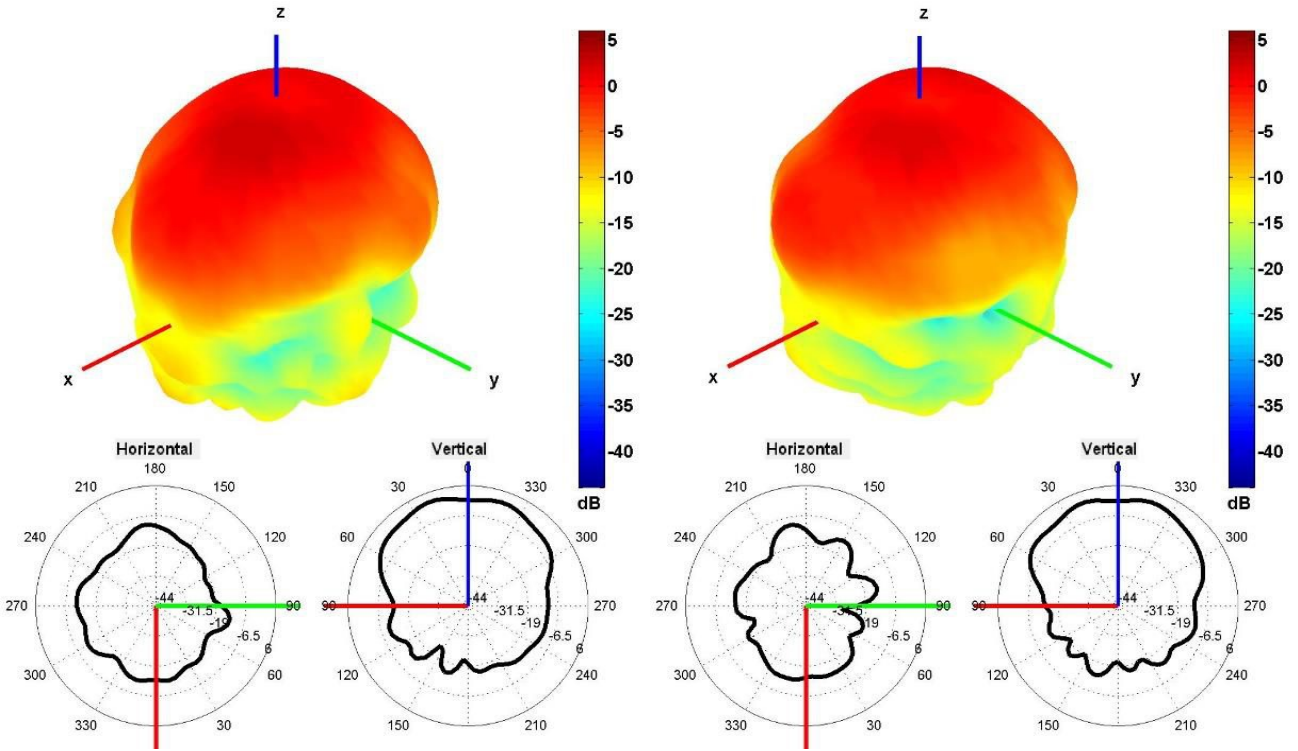




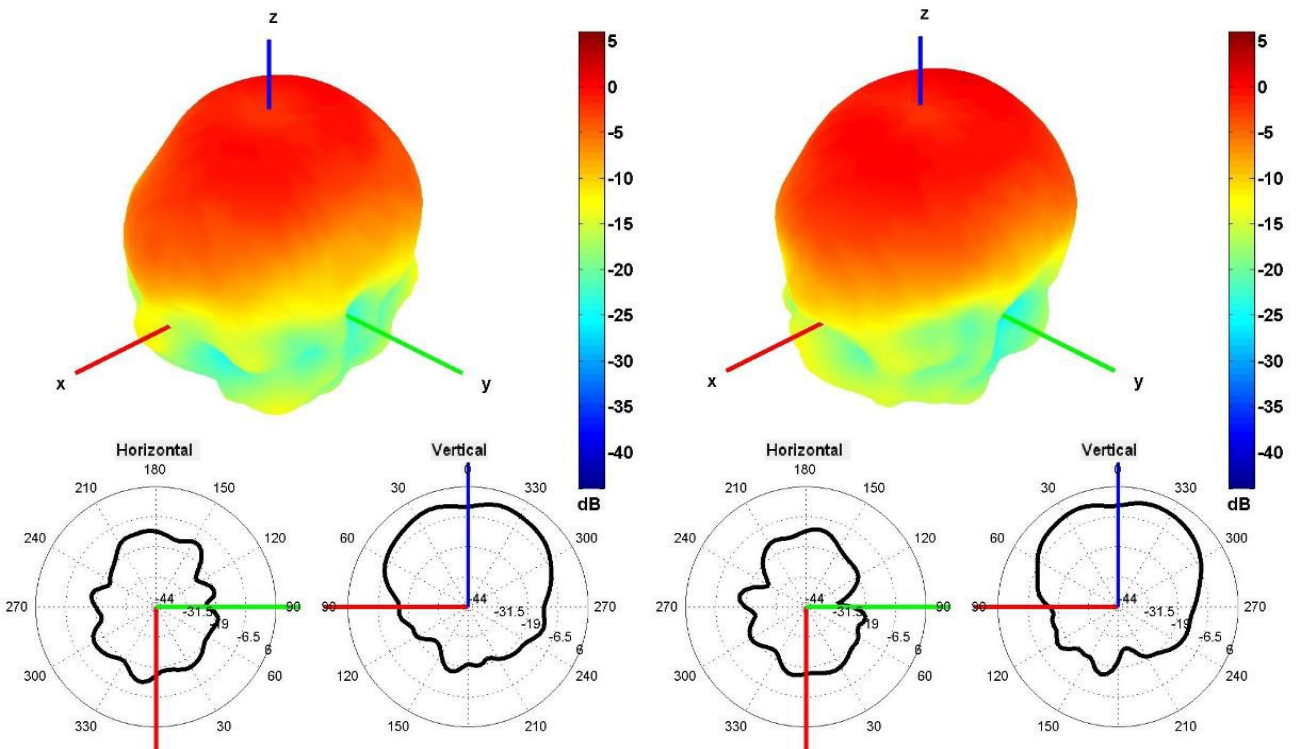
850 and 940 MHz Radiation pattern



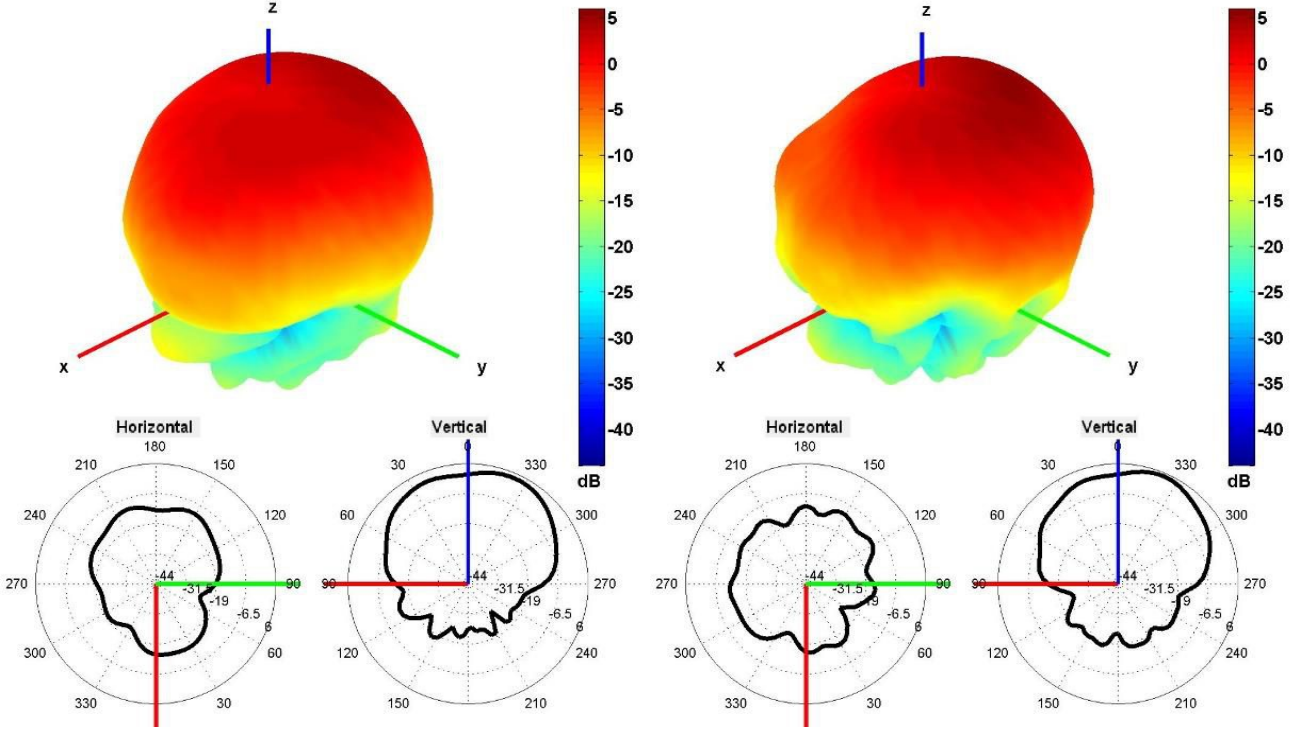
1500 and 1600 MHz Radiation pattern



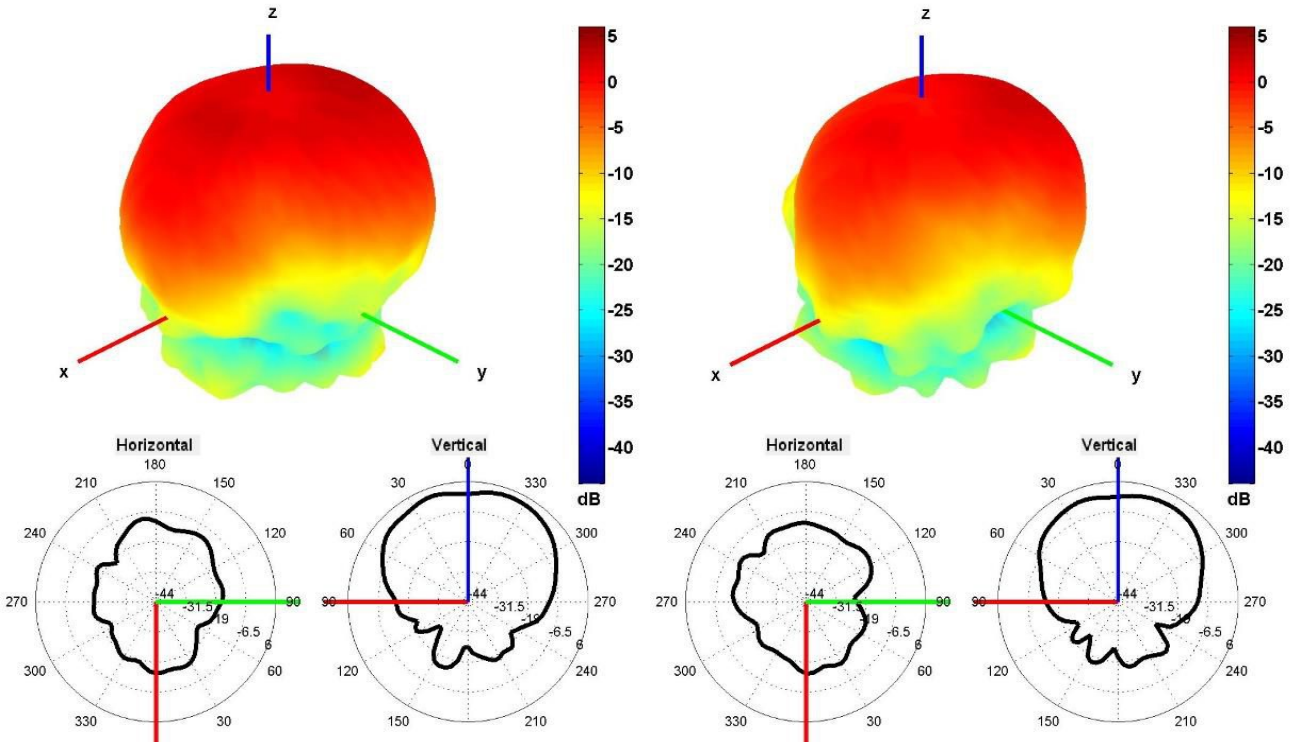
1750 and 1850 MHz Radiation pattern



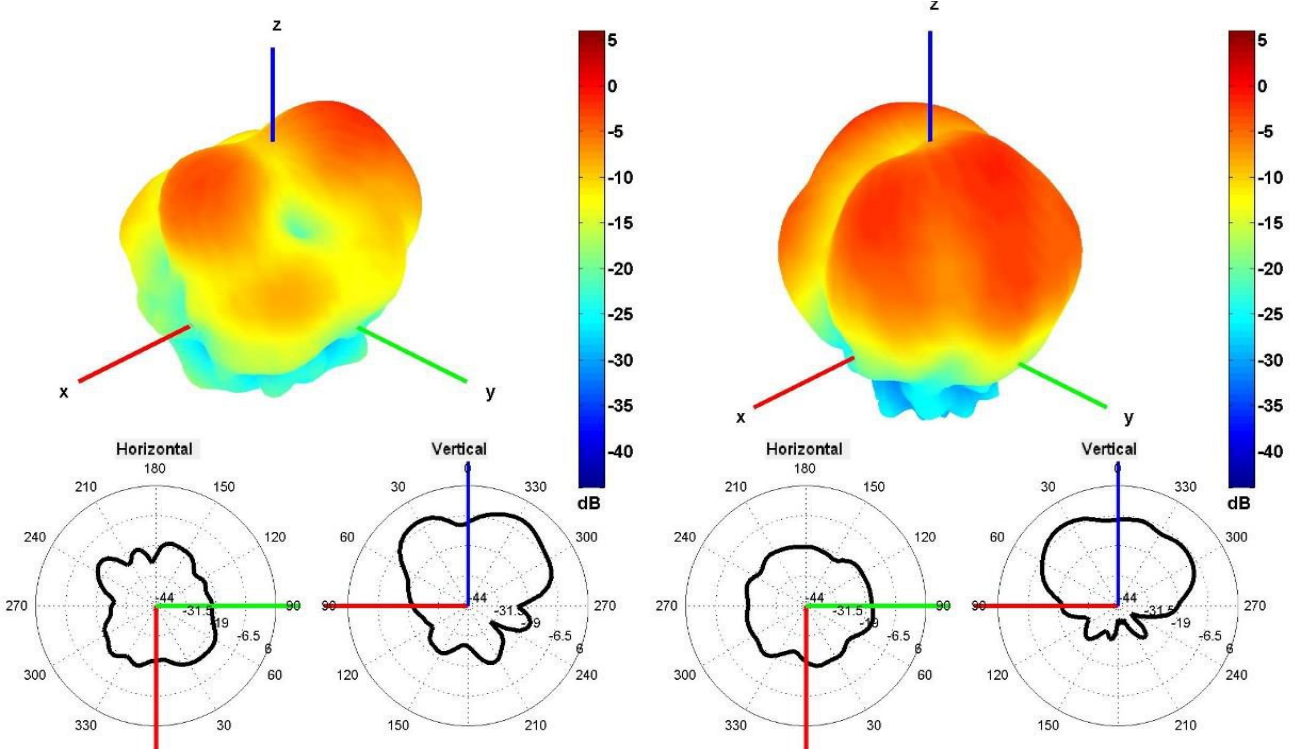
1950 and 2100 MHz Radiation pattern



2350 and 2600 MHz Radiation pattern

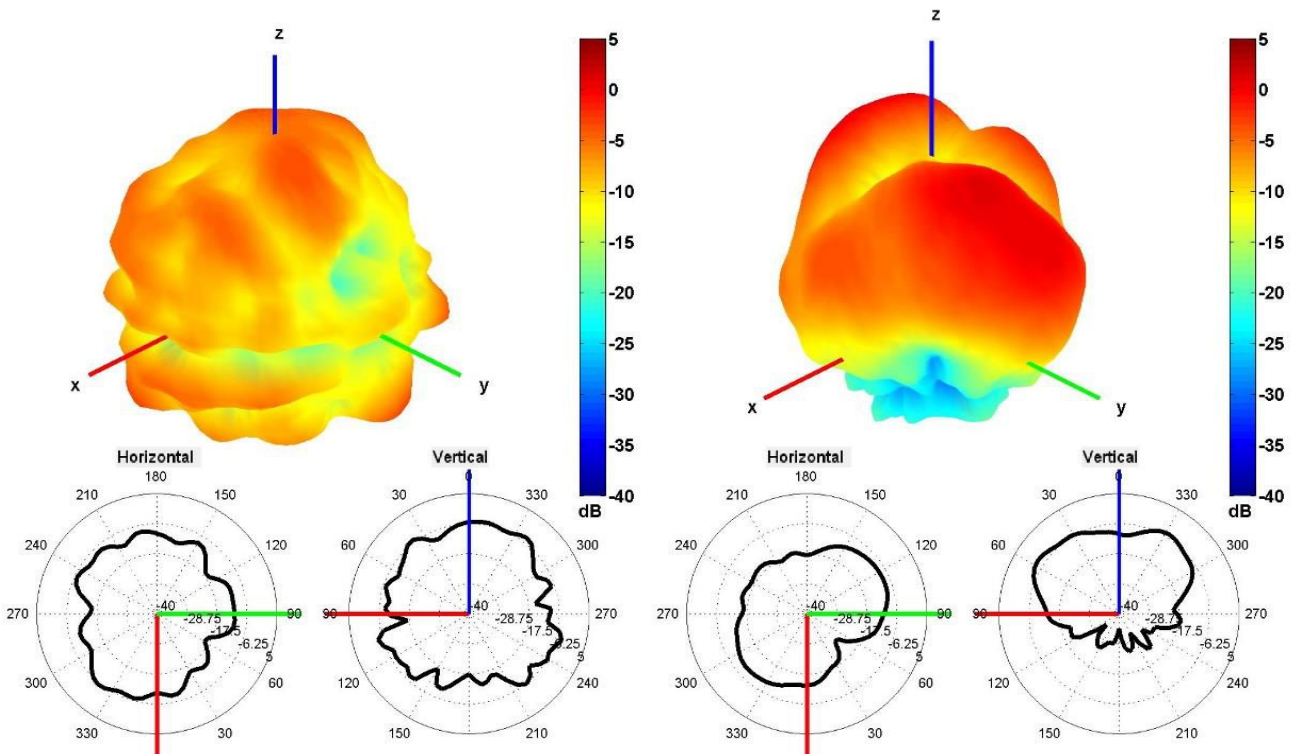


3350 and 3600 MHz Radiation pattern



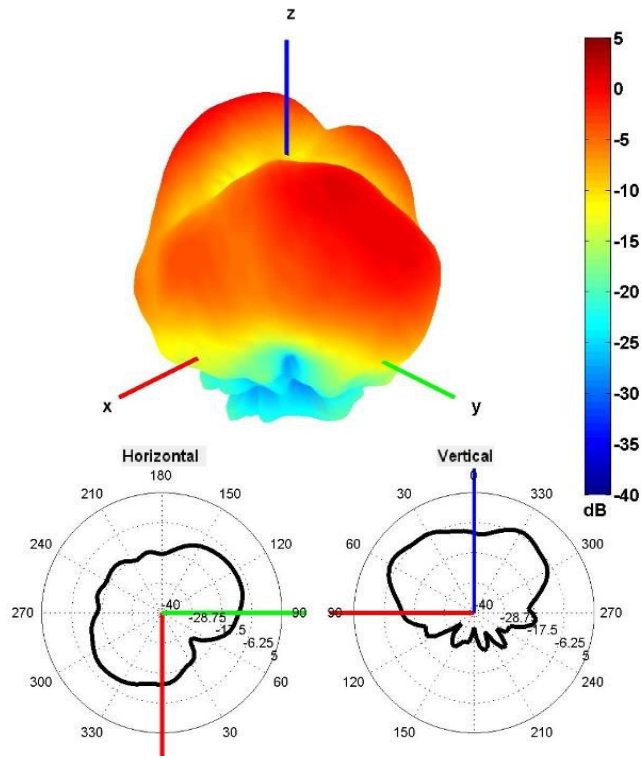
4500 and 5500 MHz Radiation pattern

Cable 3: WIFI-6-6E



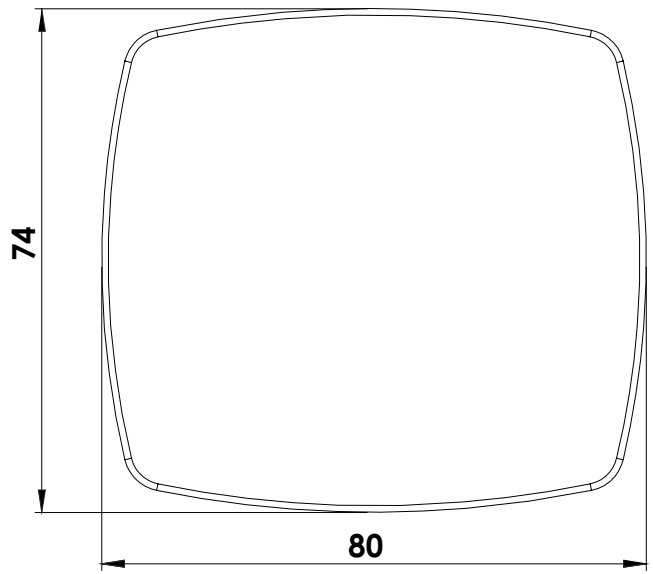
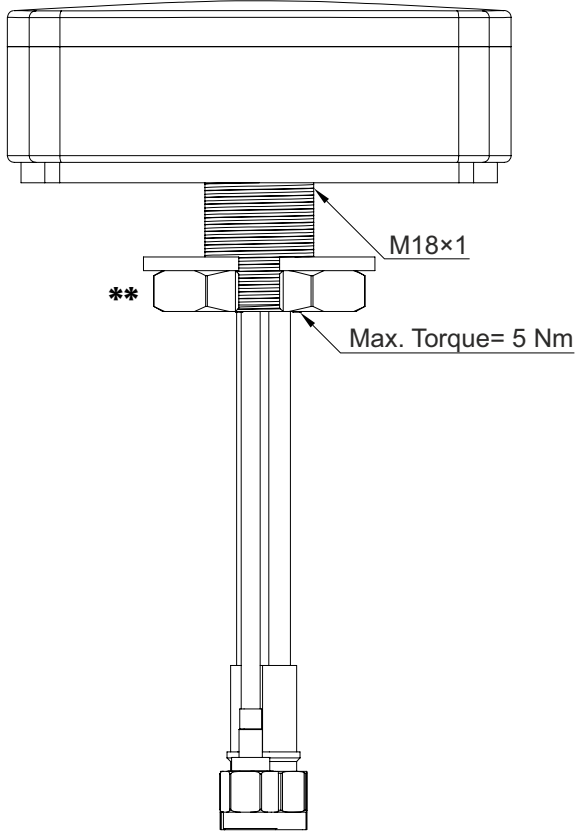
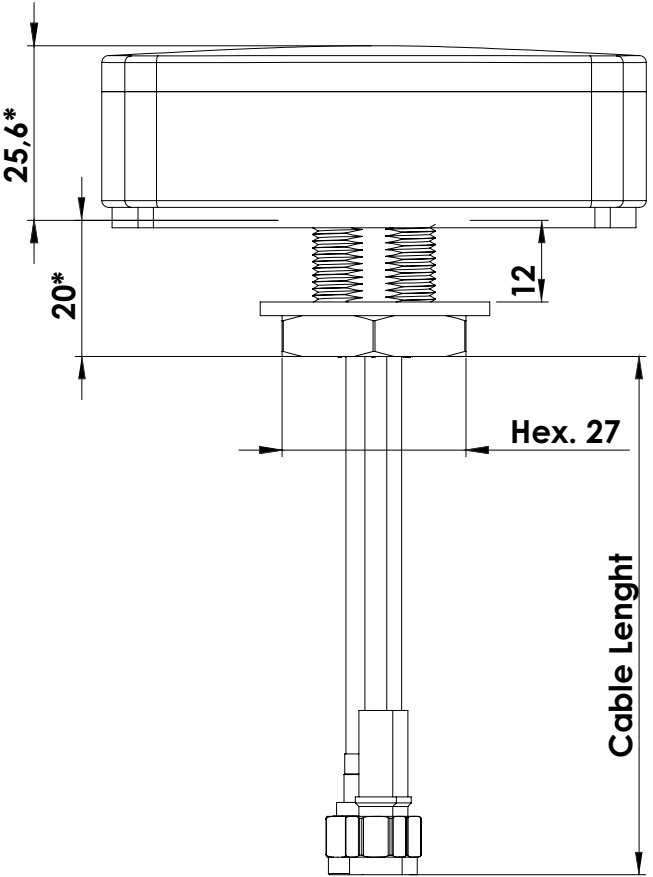
2450 and 5500 MHz Radiation pattern



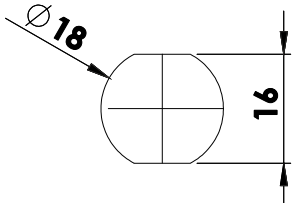


6500 MHz Radiation pattern

## 4. Antenna drawings



Mounting hole



Max. mounting thickness 12mm  
 Note: Dimensions are in millimeters  
 \*Dimensions are after mounting  
 \*\*Max. Torque= 5 Nm

5. Antenna Images

