

## 2J8741BGF

### CELLULAR/LTE and GNSS Screw Mount

#### Key Features

##### Cable 1: CELLULAR / LTE

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

##### Cable 2: GPS/GLONASS/QZSS/Galileo

- 1575-1606 MHz

Screw Mount

Anti-Rotation Mechanism

Ground Plane Dependent

Customizable Cable and Connector

Dimensions: 102 x 63 x 63 mm

Certificates: IP67, IP69, IK09



## 1. Antenna Description

### 2J8741BGF “The Mako Series”

#### The Next Generation 2-in-1 Antenna Reaching Global Connectivity With Excellence

The Cellular/LTE and GNSS Screw Mount Antenna (2J8741BGF) is a 2-in-1 'Shark Fin', high-performance antenna ideal for powerful global connection on the move. The 2J8741BGF outperforms any competitor by offering 4G, LTE, 2G, 3G, GPS, QZSS, Galileo and GLONASS standards. The 2J8741BGF is highly reliable while maintaining constant global connectivity across a multitude of terrains. This makes it ideal for tracking/mapping devices, automobile navigation, commercial transportation, M2M and worldwide voice/data communications.

The Cellular/LTE (Cable 1) is designed within 4G LTE, 3G and 2G standards. Designed with an omni-directional radiation pattern and operates within 698MHz-960MHz, 1710MHz-2170MHz and 2500MHz-2700MHz frequencies. The 2J8741BGF is tuned and calibrated to improve signal strength and allow for uninterrupted connectivity, better signal quality, and reliability while providing increased long- and short-range cellular data and video bandwidth throughput.

The GPS/GLONASS Antenna (Cable 2) is designed for reliable navigational connectivity within GPS, QZSS, Galileo and GLONASS standards. With a hemispherical radiation pattern, the 2J8741BGF navigation antenna operates within 1575.42MHz and 1598MHz-1606MHz frequencies. This high-quality antenna offers access to multiple satellites improving accuracy, redundancy and availability uninterrupted ideal for global automotive navigation/geolocation while moving through busy urban areas where obstructions pose a threat to connectivity and signal degradation.

#### Installation / Environmental

For external applications, the production material used is ABS UV stable, protecting the antenna from temperatures between -40C and +80C. With a shark fin design, anti-rotation mechanism and ground plane independence, this screw mount antenna is easy to install with maximum durability. All two cables on the 2J8741BGF antenna have a SMA-Male standard connector, 300cm standard cable length and are fully customizable by offering additional connector types, cable lengths and cable types. 2J8741BGF is RoHS compliant with complete IP67, IP69 and IK09 certification.

#### Typical applications

- Automotive connectivity
- Multimedia
- Navigation and telematics systems
- Fleet management
- HD video and audio streaming
- Emergency communication

#### Compatibility Standards

##### LTE Cables

- CAT 1 2 3 4 5 6 7 8 9 10 11 12
- NB-IoT, LTE-NB1, CAT-M1, CAT-M2
- WCDMA, UMTS, HSPA, EDGE GRPS, GSM, CDMA

##### GPS/GLO Cable

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

## 2. Antenna and electrical specifications

**Cable 1**

Parameters	CELLULAR / LTE Antenna		
<b>Standards</b>	2G,3G and 4G		
<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>	~-11.4	~-12.5	~-16.6
<b>VSWR</b>	~1.9:1	~1.7:1	~1.4:1
<b>Efficiency (%)</b>	~52.3	~40.7	~46.7
<b>Peak Gain (dBi)</b>	~1.2	~2.0	~3.1
<b>Average Gain (dB)</b>	~-2.9	~-3.9	~-3.3
<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>	D302 Standard (Other Cables Available)		

**Cable 2**

Parameters	GPS/GLONASS Antenna	
<b>Standard</b>	GPS/QZSS/Galileo	GLONASS
<b>Band (MHz)</b>	1575	1602
<b>Frequency(MHz)</b>	1575.42	1598-1606
<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 (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>	LL100 Standard (Other Cables Available)	

**Antenna Measurement Conditions:**

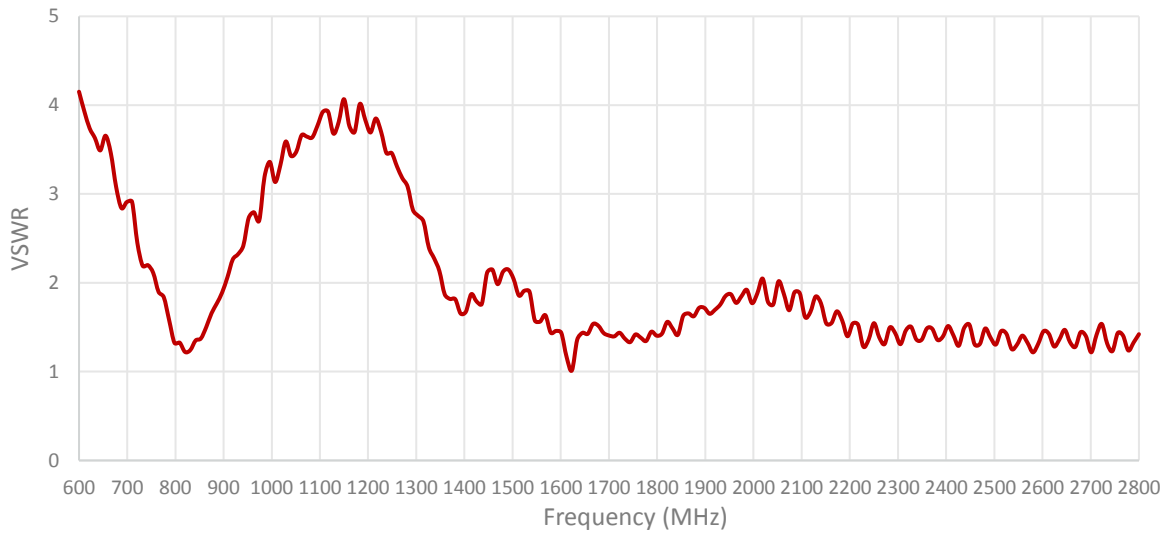
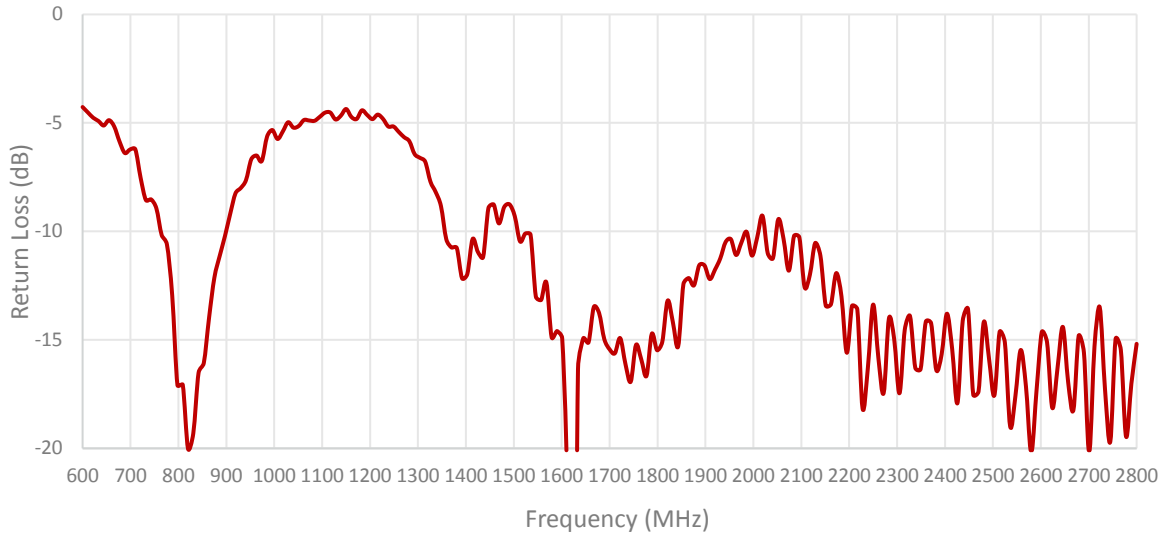
Mounted on 30 x 30 cm Ground Plane  
 D302 200 cm Cable Length  
 Measured in Certified CTIA 3D Anechoic Chamber

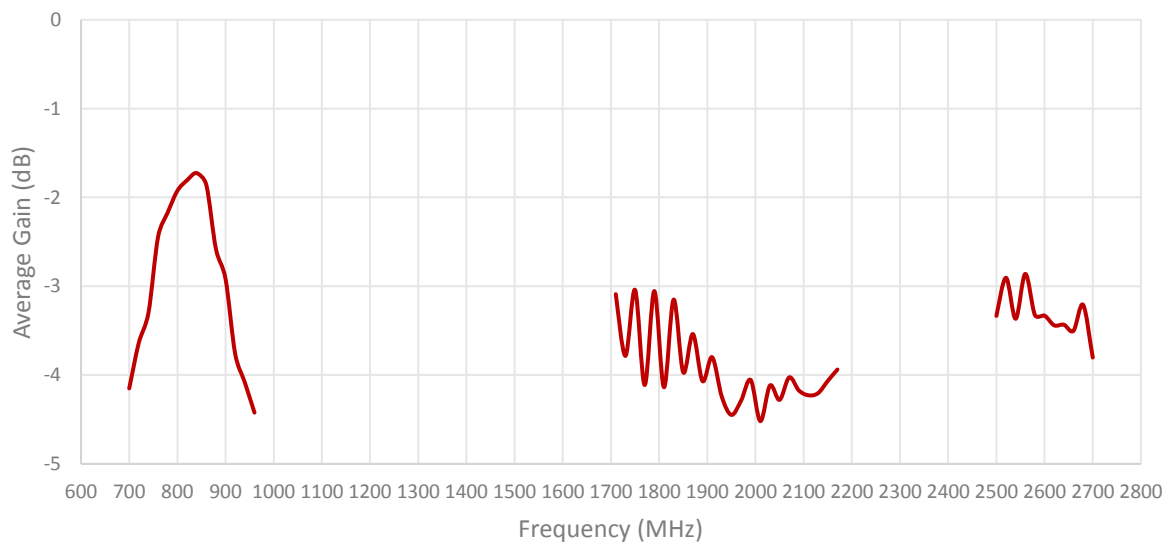
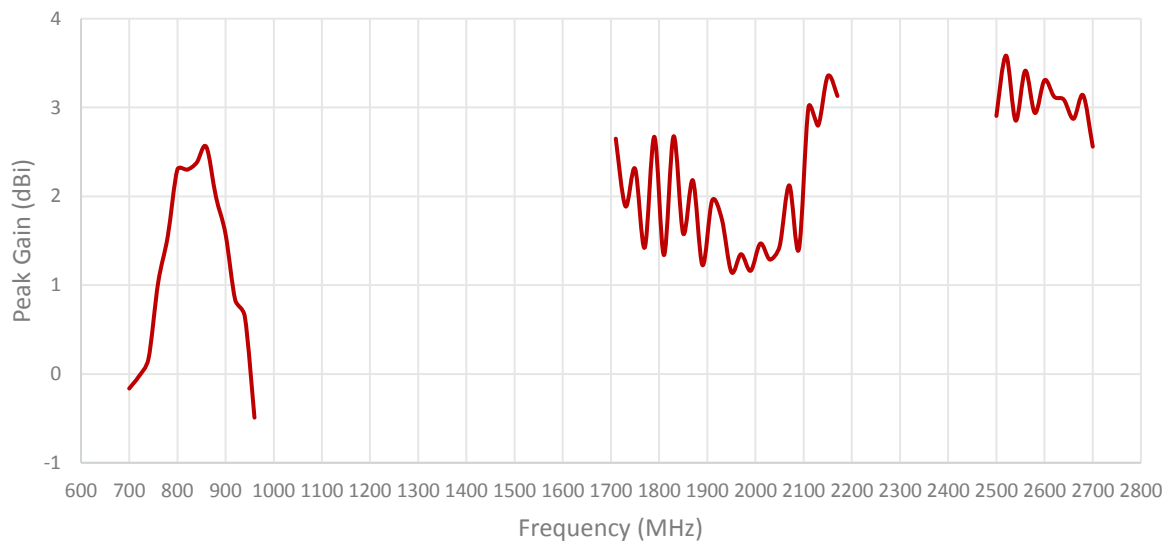
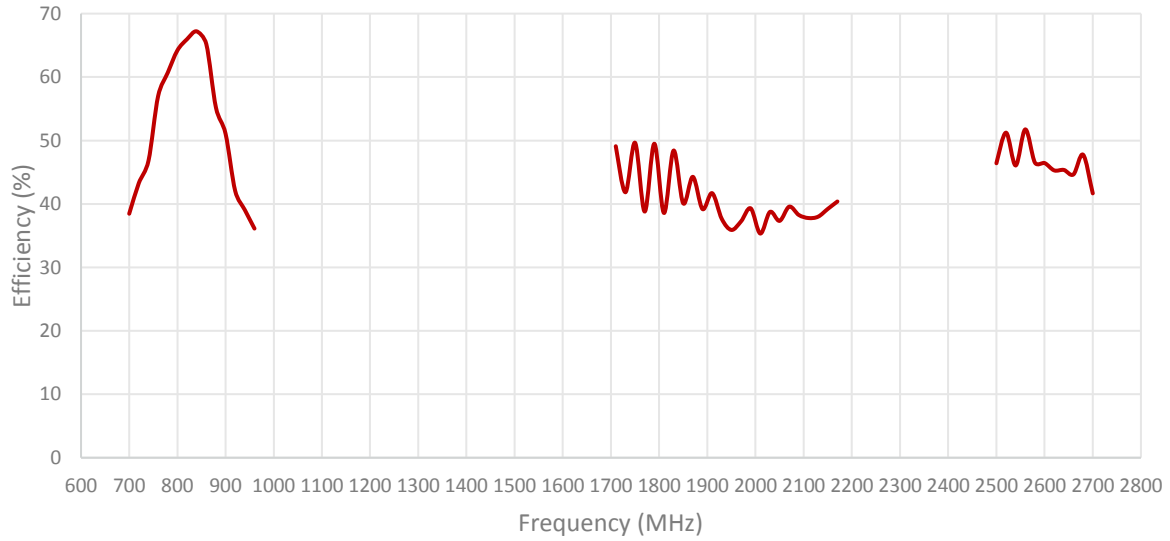
### 3. Mechanical and environmental specifications

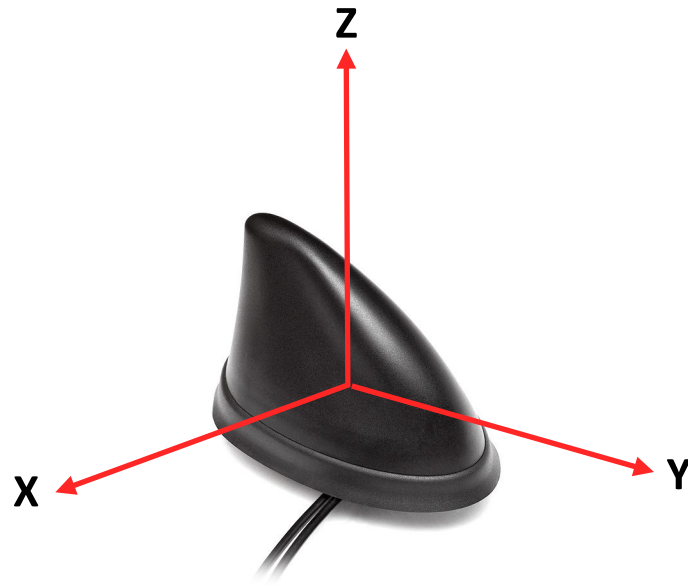
Specifications	2J8741BGF
<b>Mounting Type</b>	Screw Mount
<b>Dimensions (mm)</b>	102 x 63 x 63
<b>Radome Type</b>	PC/ABS UV Stable
<b>Radome Color</b>	Black
<b>Antenna Base</b>	Zamak
<b>Gasket</b>	TPE
<b>Operating Temperature (C)</b>	-40 to +85
<b>Storage Temperature (C)</b>	-40 to +85
<b>Substance Compliance</b>	RoHS
<b>Certificates</b>	IP67, IP69, IK09

## 4. Antenna parameters

**Table 1: CELLULAR/LTE**

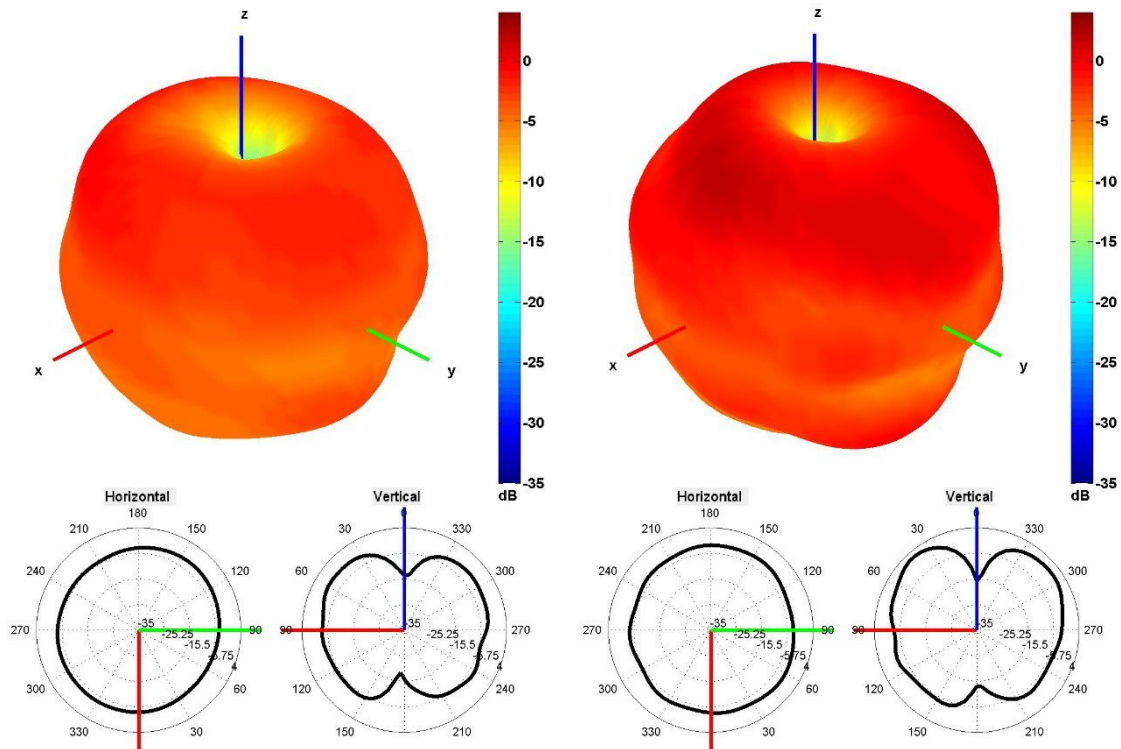




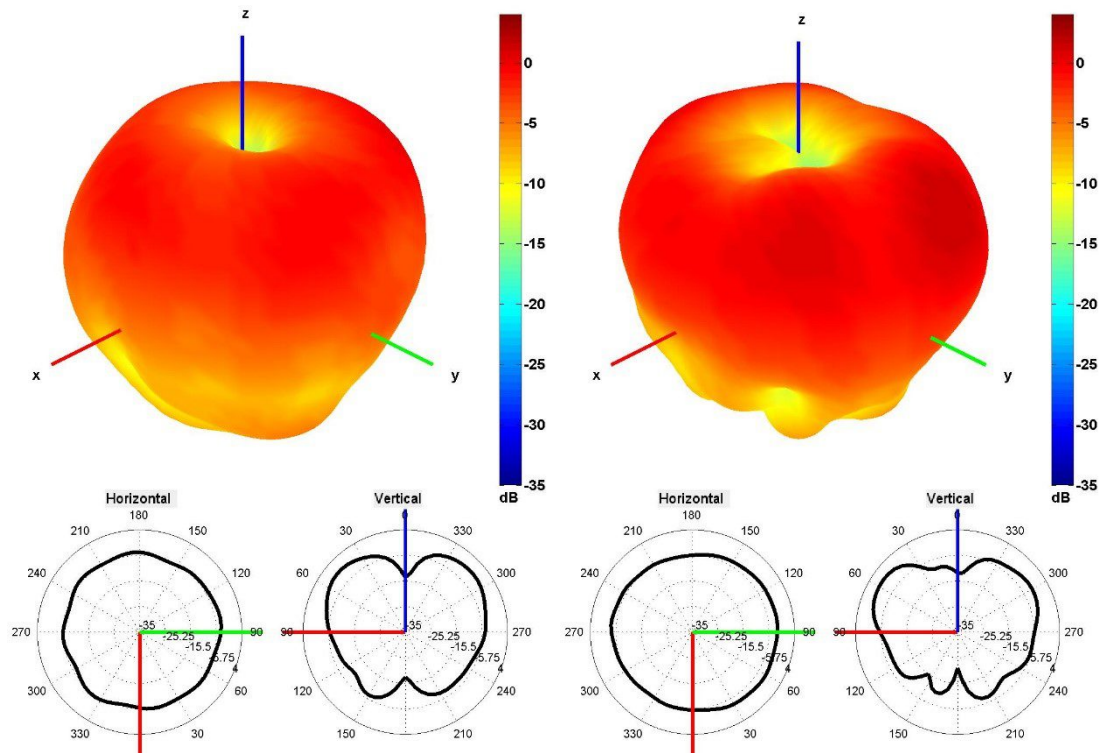


Radiation pattern reference

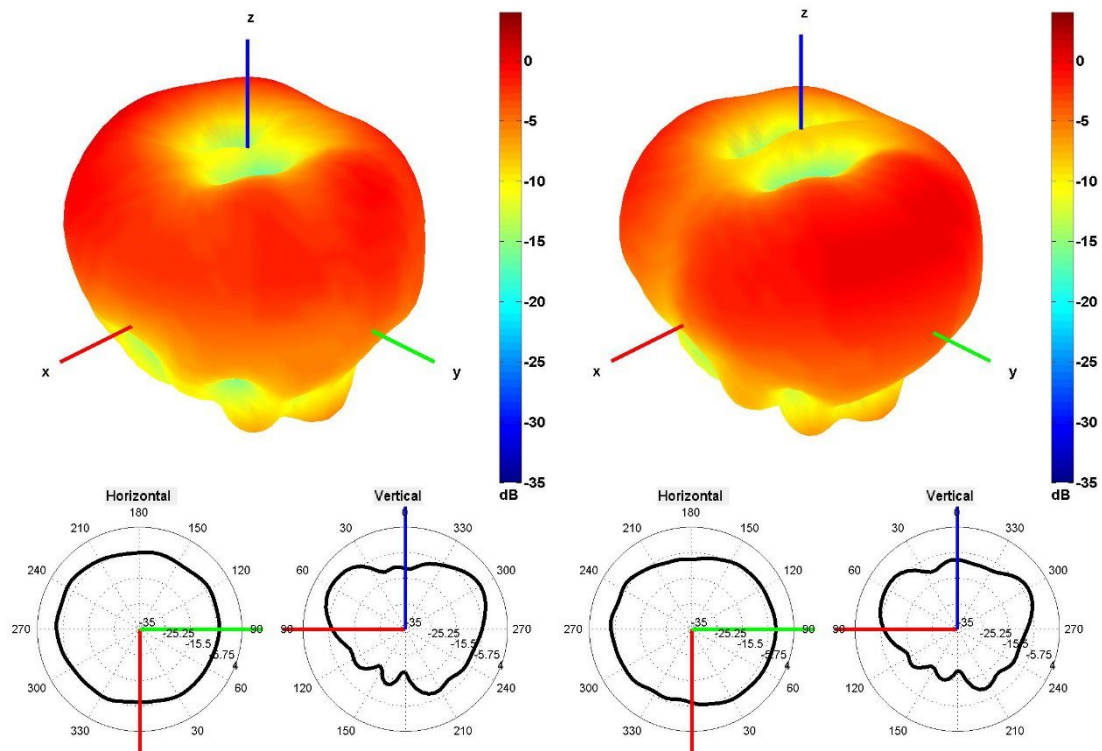
Cable 1: CELLULAR/LTE



750 and 850 MHz Radiation pattern

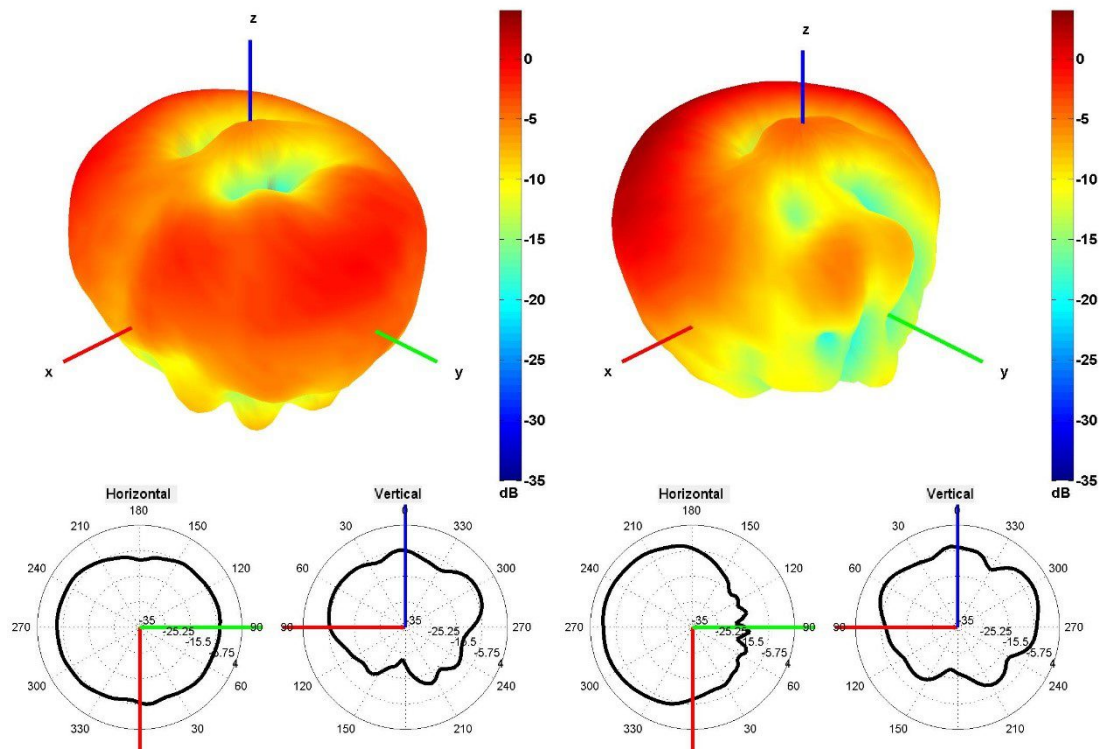


940 and 1750 MHz Radiation pattern



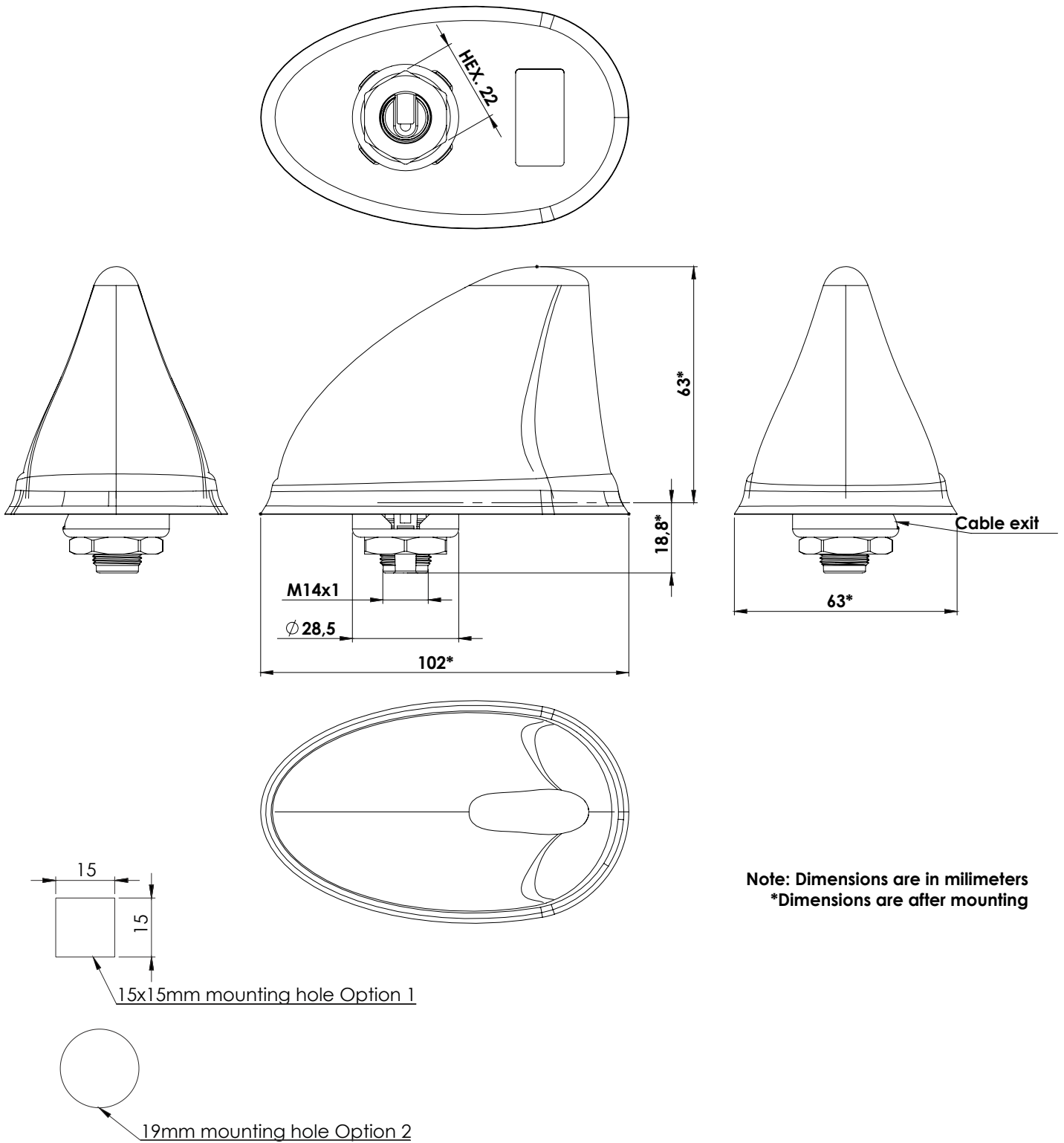
1850 and 1950 MHz Radiation pattern





2100 and 2600 MHz Radiation pattern

## 5. Antenna drawings



## 6. Antenna Images

