antenna conceptor

Product Datasheet

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 × 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		
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)	~-11.4	~-12.5	~-16.6
VSWR	~1.9:1	~1.7:1	~1.4:1
Efficiency (%)	~52.3	~40.7	~46.7
Peak Gain (dBi)	~1.2	~2.0	~3.1
Average Gain (dB)	~-2.9	~-3.9	~-3.3
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	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	LL100 Standard (Other Cables Available)	

Antenna Measurement Conditions:

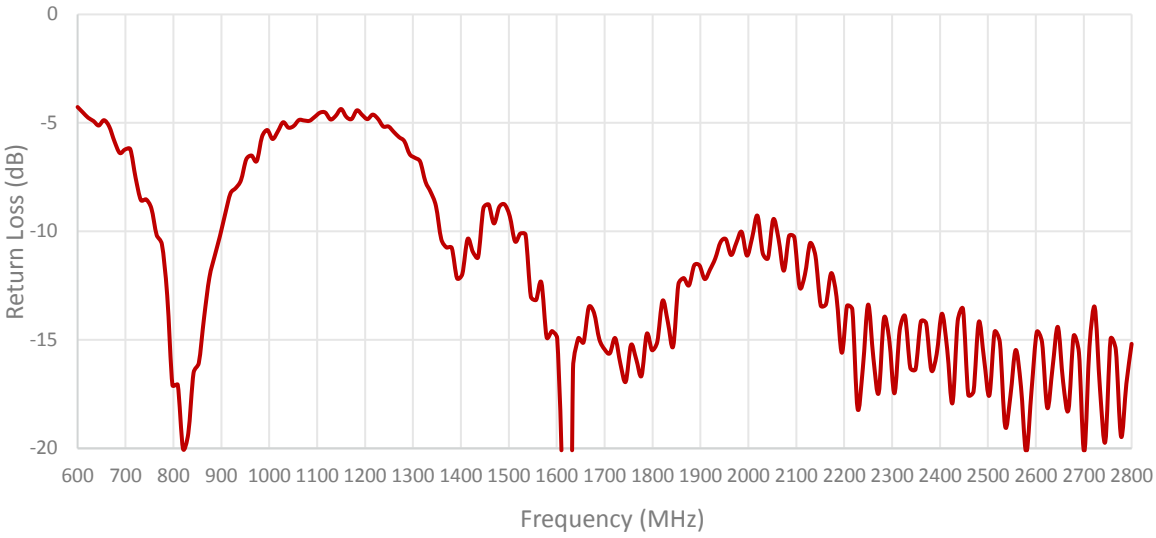
Mounted on 30 x 30 cm Ground Plane
D302 200 cm Cable Length
Measured in Certified CTIA 3D Anechoic Chamber

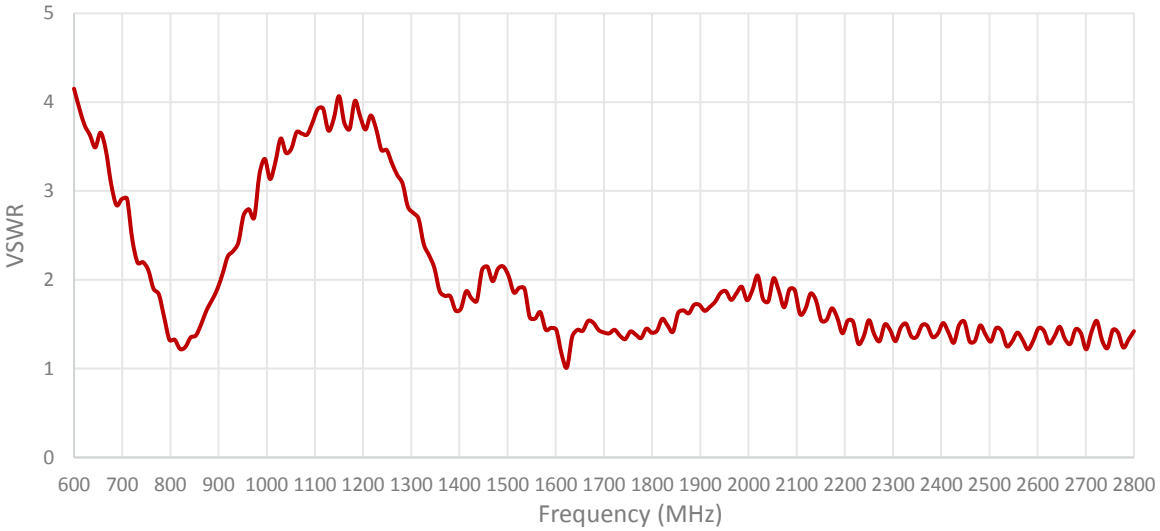
3. Mechanical and environmental specifications

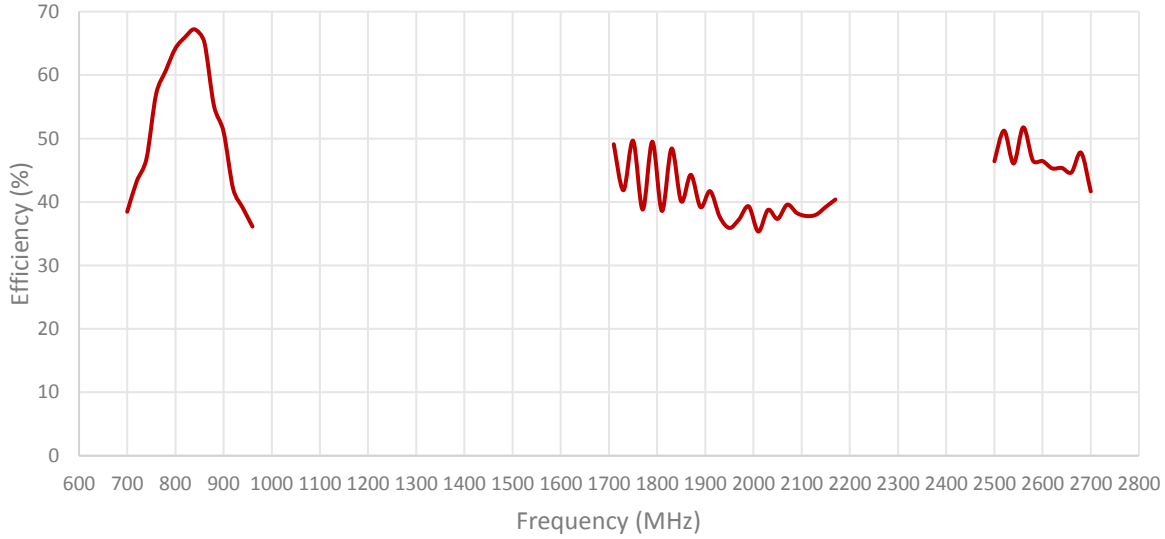
Specifications	2J8741BGF
Mounting Type	Screw Mount
Dimensions (mm)	102 x 63 × 63
Max. Tighten Torque (Nm)	6 Nm
Radome Type	PC/ABS UV Stable
Radome Color	Black
Antenna Base	Zamak
Gasket	TPE
Operating Temperature (C)	-40 to +85
Storage Temperature (C)	-40 to +85
Substance Compliance	RoHS
Certificates	IP67, IP69, IK09

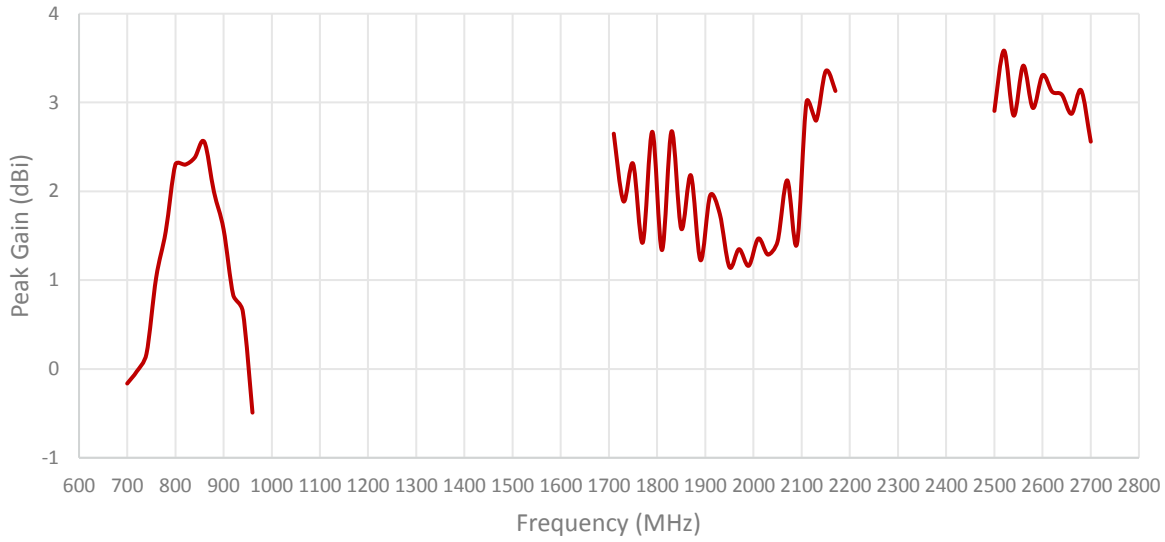
4. Antenna parameters

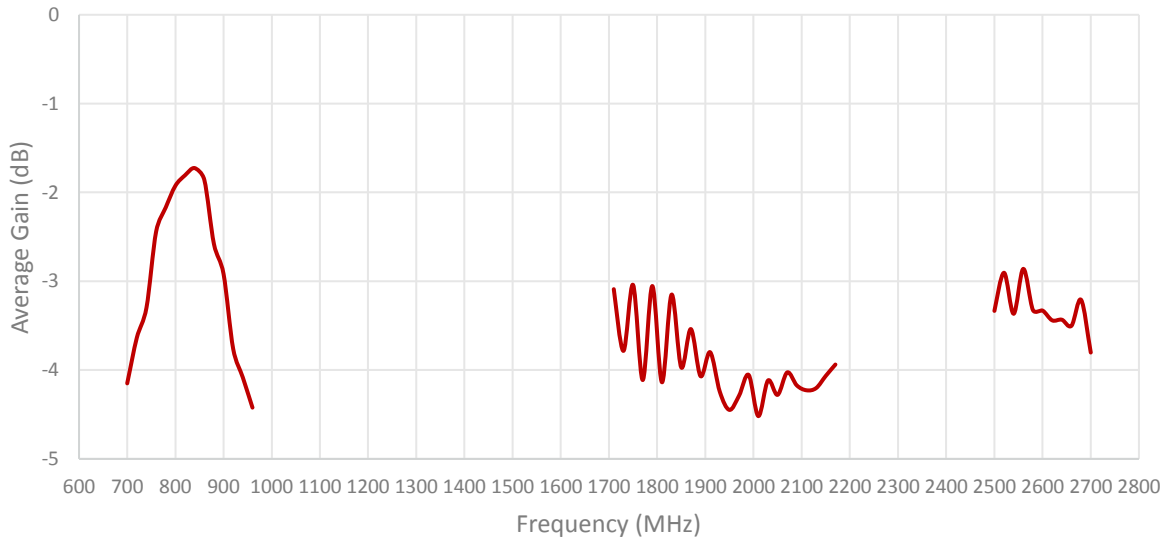
Cable 1: CELLULAR/LTE

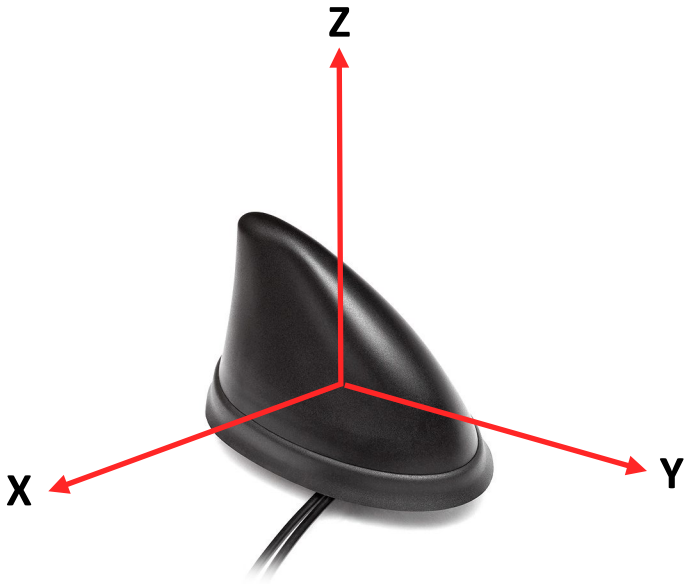





Efficiency (%)
70
60
50
40
30
20
10
0
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Frequency (MHz)

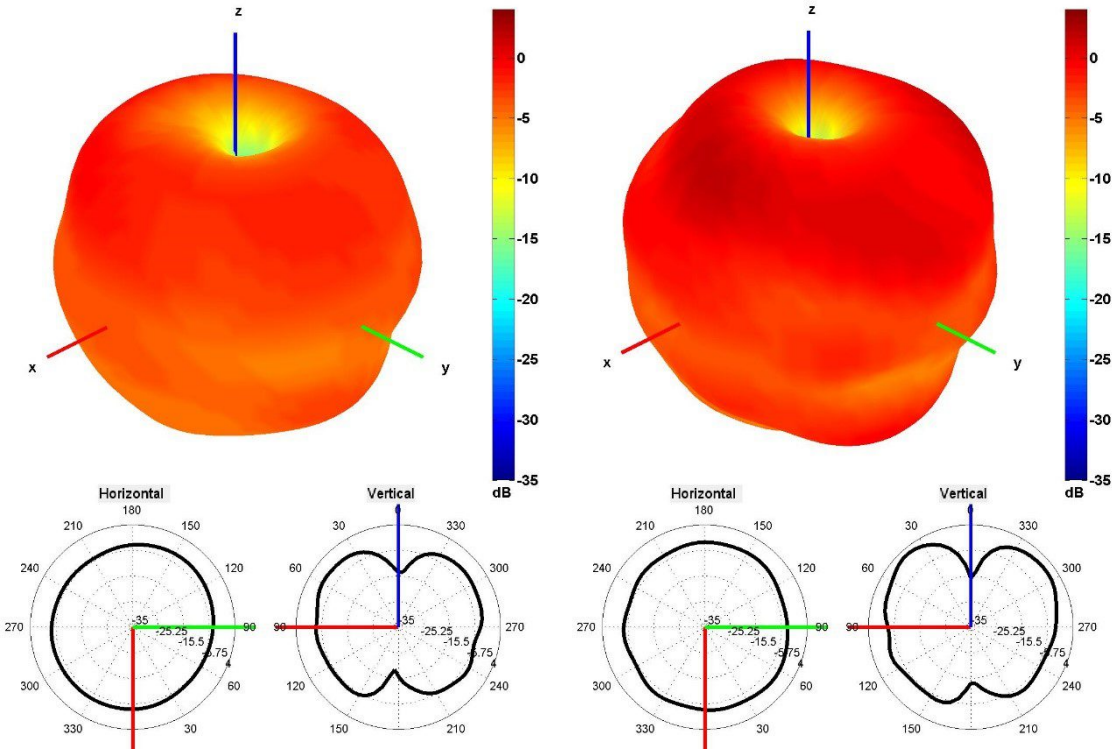

Peak Gain (dBi)
4
3
2
1
0
-1
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Frequency (MHz)


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)

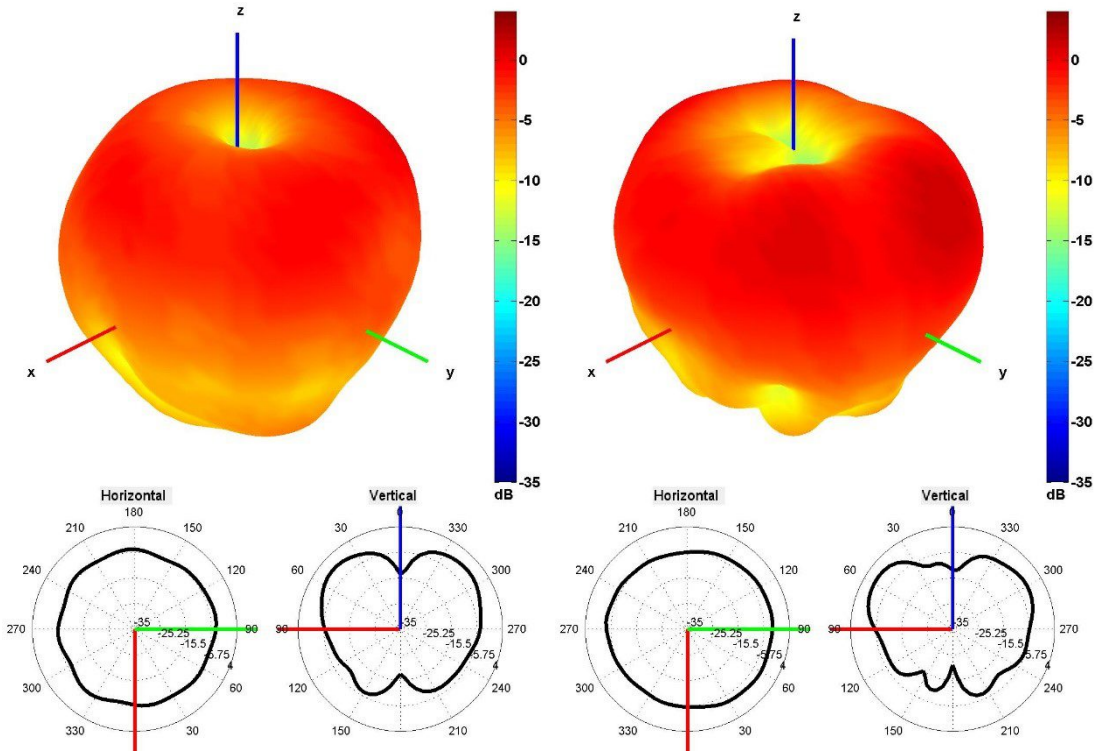


Radiation pattern reference

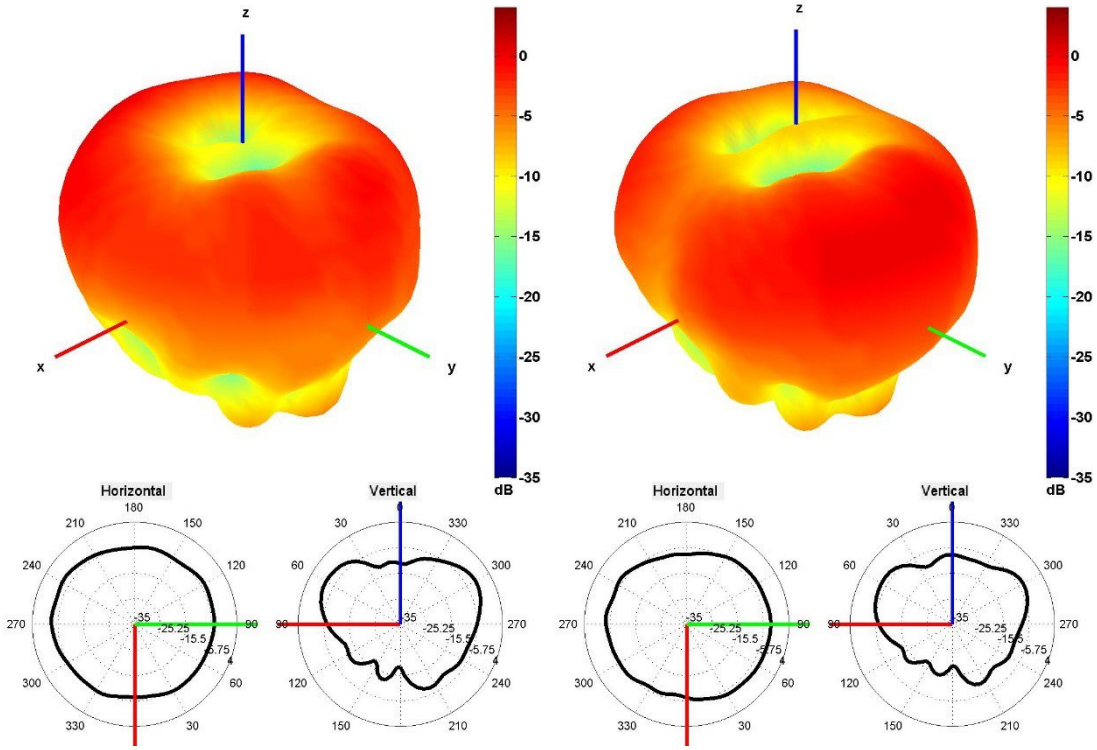
Cable 1: CELLULAR/LTE



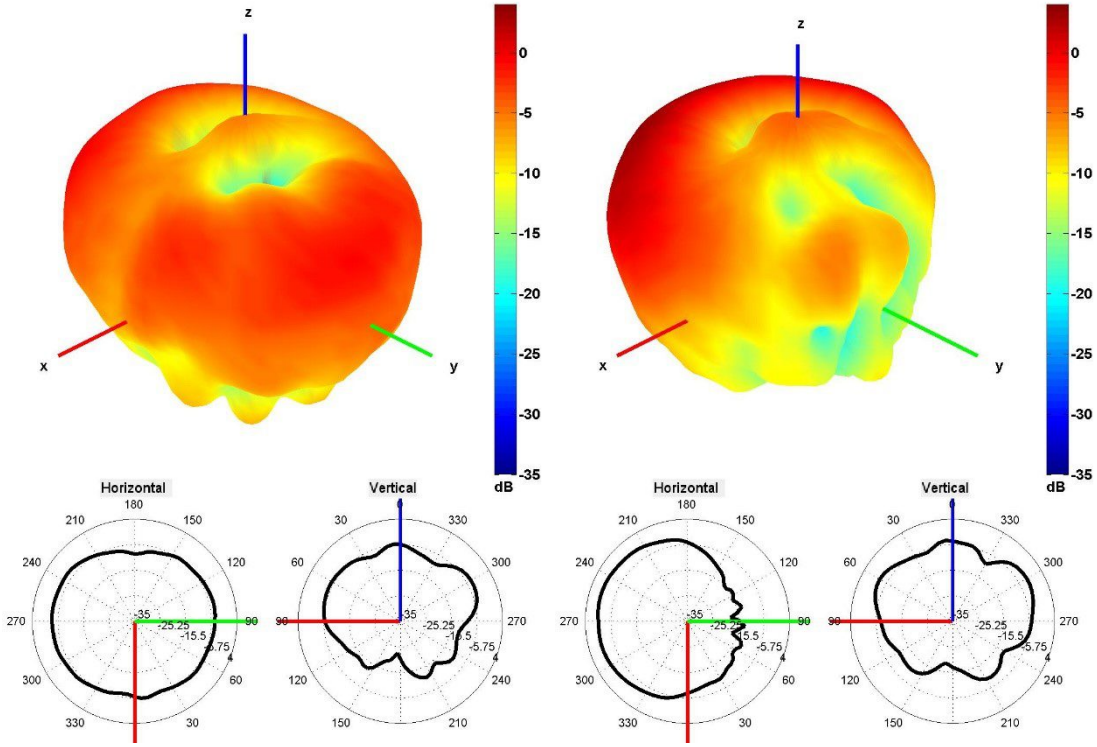
750 and 850 MHz Radiation pattern



940 and 1750 MHz Radiation pattern

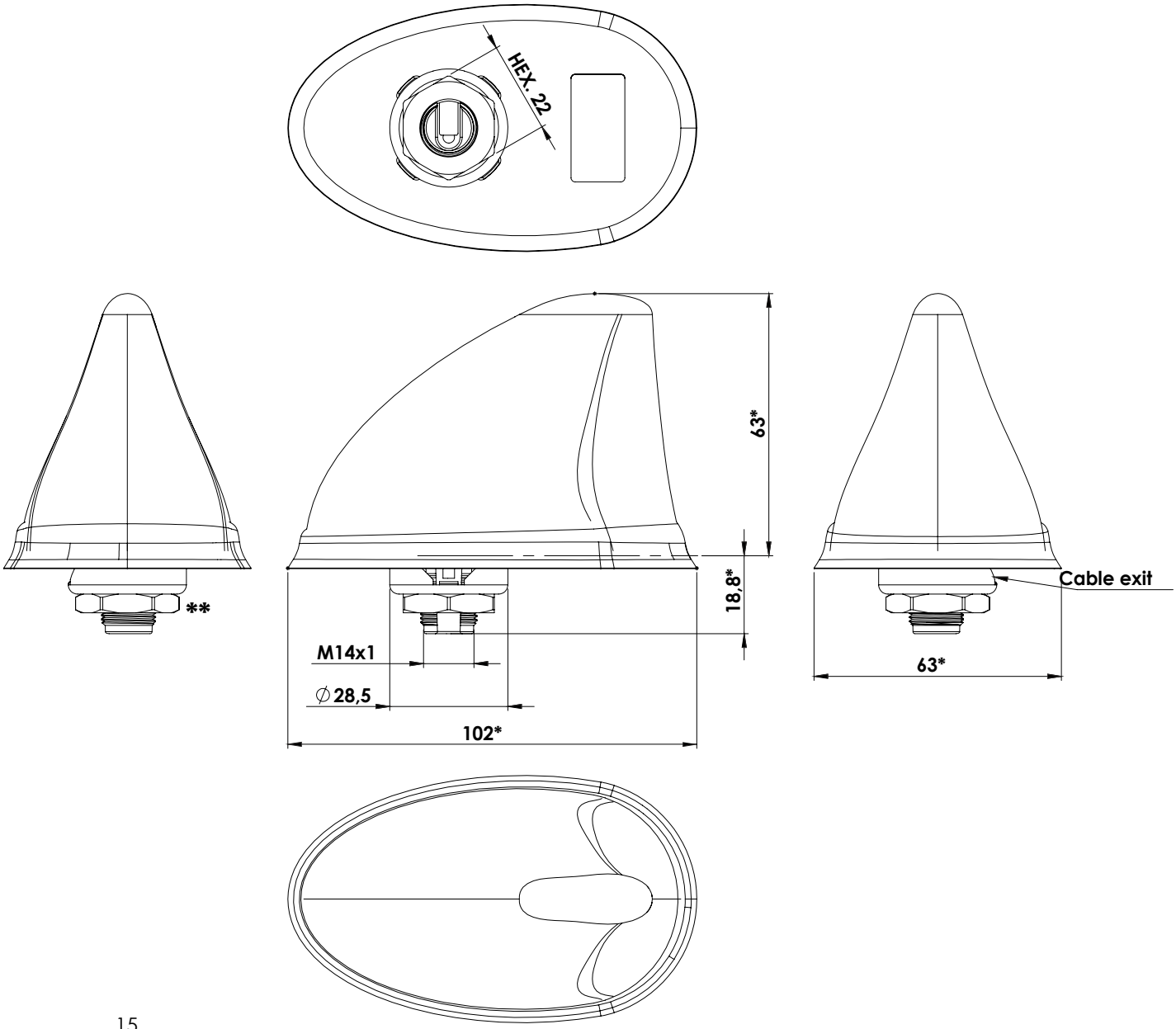


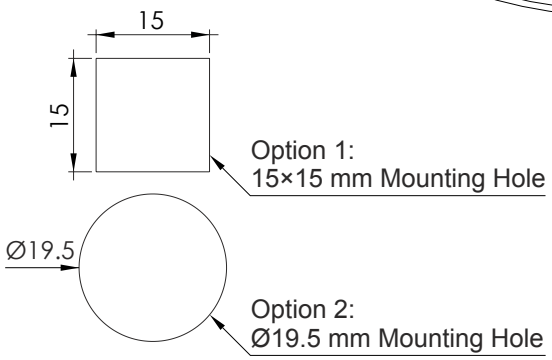
1850 and 1950 MHz Radiation pattern



2100 and 2600 MHz Radiation pattern

5. Antenna drawings





Note: Dimensions are in milimeters
***Dimensions are after mounting**
****Max. Torque= 6 Nm**

6. Antenna Images









