

## 2J7068BGFa-868

CELLULAR/LTE MIMO, 2.4/5.0 GHz ISM, 868 MHz ISM and GNSS

### Key Features

**Cable 1 and 2: CELLULAR / LTE**

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

**Cable 4: 868 MHz ISM**

**Cable 5: GPS/GLONASS/QZSS/Galileo**

Screw Mount

Heavy Duty antenna

High Performance

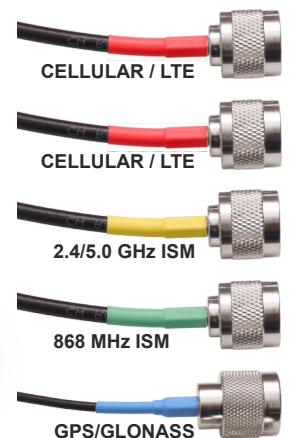
Ground Plane Independent

Anti-Rotation Mounting

Customizable Cable and Connector

Dimensions: Ø 96 x H 90 mm

Certificates: IP67, IP69, IK09



### Description

Compact heavy duty antenna designed for 4G LTE, 2.4/5.0 GHz ISM, 868 MHz ISM and GNSS suitable for wide range of applications within industry. Antenna is made with specific anti-rotation mounting system. Housing of the antenna is certified for standards of IP67 for water resistance, IK09 for high impact resistance and IP69K standard for high pressure and hot water ingress.



## 1. 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>	~-6.5	~-10.9	~-21.3
<b>VSWR</b>	~2.9:1	~1.9:1	~1.3:1
<b>Efficiency (%)</b>	~36	~41	~53
<b>Peak Gain (dBi)</b>	~-0.2	~3.8	~6.0
<b>Average Gain (dB)</b>	~-4.4	~-3.9	~-2.7
<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 Standard (Other Cables Available)		

Cable 2

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>	~-6.6	~-10.0	~-15.4
<b>VSWR</b>	~2.8:1	~2.1:1	~1.4:1
<b>Efficiency (%)</b>	~35	~42	~53
<b>Peak Gain (dBi)</b>	~-0.1	~3.2	~5.6
<b>Average Gain (dB)</b>	~-4.5	~-3.8	~-2.7
<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 Standard (Other Cables Available)		

**Antenna Measurement Conditions:**

Mounted on Metal Plate of 30 x 30 cm  
 200 cm of LMR195 Cable  
 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>	~-10.4	~-13.6
<b>VSWR</b>	~1.9:1	~1.6:1
<b>Efficiency (%)</b>	~58	~64
<b>Peak Gain (dBi)</b>	~5.6	~5.5
<b>Average Gain (dB)</b>	~-2.3	~-1.9
<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>	Most RF Connectors (SMA-Male Standard)	
<b>Cable Length</b>	Any Cable Length (300 cm Standard)	
<b>Cable Type</b>	Other Cables Available (LMR195 Standard)	

**Cable 4**

Parameters	868 MHz ISM Antenna	
<b>Standards</b>	ZigBee, ISM, SIGFOX, LoRa	
<b>Band (MHz)</b>	868 MHz	
<b>Frequency (MHz)</b>	863-870	
<b>Return Loss (dB)</b>	~-8.1	
<b>VSWR</b>	~2.3:1	
<b>Efficiency (%)</b>	~37	
<b>Peak Gain (dBi)</b>	~0.51	
<b>Average Gain (dB)</b>	~-4.4	
<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>	Most RF Connectors (SMA-Male Standard)	
<b>Cable Length</b>	Any Cable Length (300 cm Standard)	
<b>Cable Type</b>	Other Cables Available (LMR195 Standard)	

**Antenna Measurement Conditions:**

Mounted on Metal Plate of 30 x 30 cm  
 200 cm of LMR195 Cable  
 Measured in Certified CTIA 3D Anechoic Chamber

Cable 5

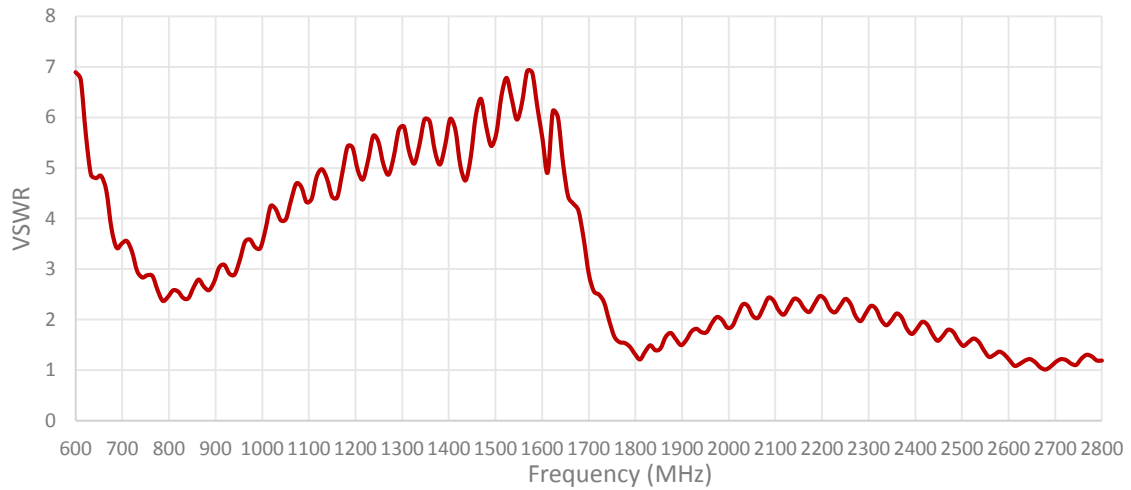
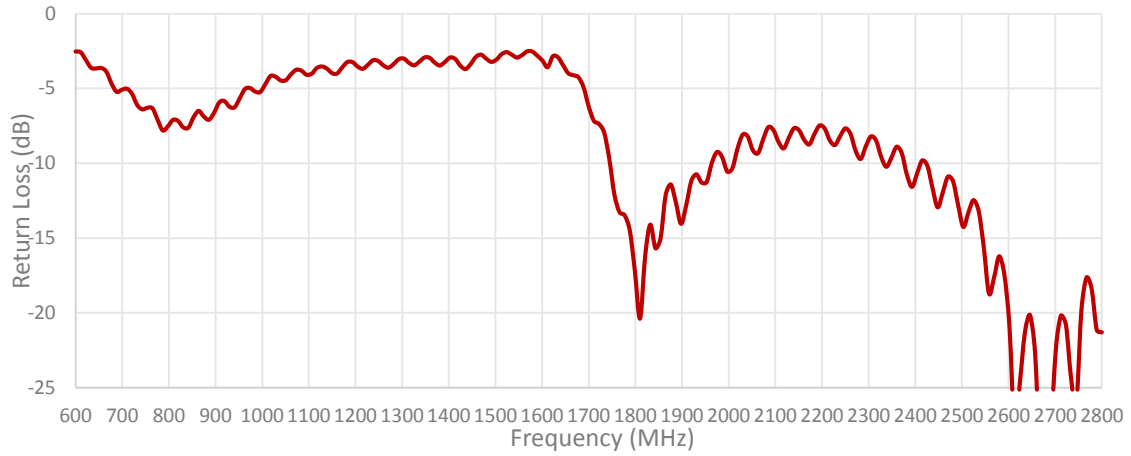
Parameters	GPS/GLONASS Antenna	
	GPS/QZSS/Galileo	GLONASS
<b>Standard</b>		
<b>Band (MHz)</b>	1575	1602
<b>Frequency(MHz)</b>	1575.42	1598-1610
<b>Return Loss (dB)</b>	<=-14	
<b>VSWR</b>	<=1.5:1	
<b>Impedance</b>	50	
<b>Radiation Pattern</b>	Hemispherical	
<b>Polarization</b>	RHCP	
<b>Saw Filter</b>	Post-Filter	
<b>Active Gain (dB)</b>	23 @ 3 V, 24 @ 5 V	
<b>Noise Figure (dB)</b>	1.2	
<b>Voltage (V)</b>	2.7 - 5.5	
<b>Current Consumption (mA)</b>	15 - 25	
<b>Power Consumption (mW)</b>	40.5 - 137.5	
<b>Out of Band Rejection (dBc)</b>	~32	
<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)	

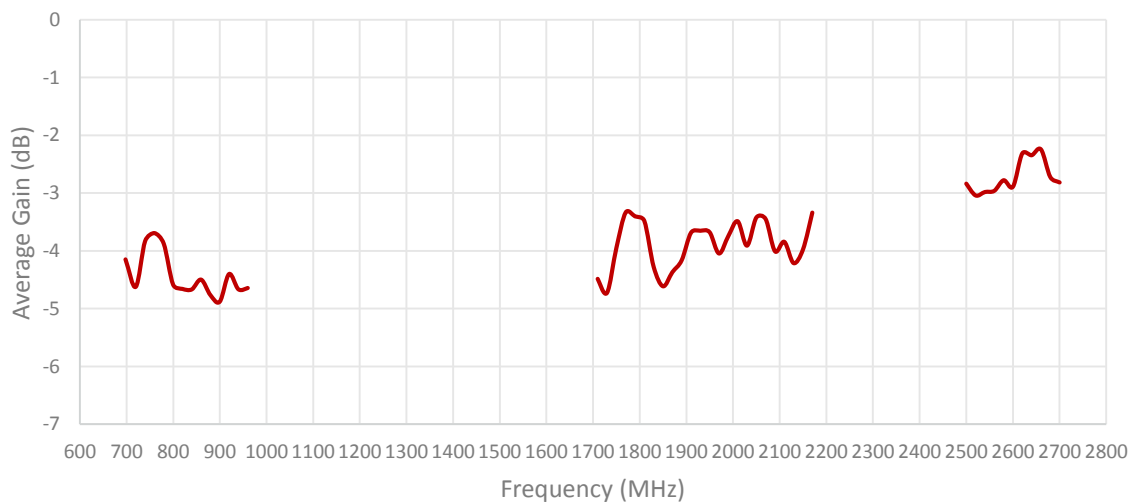
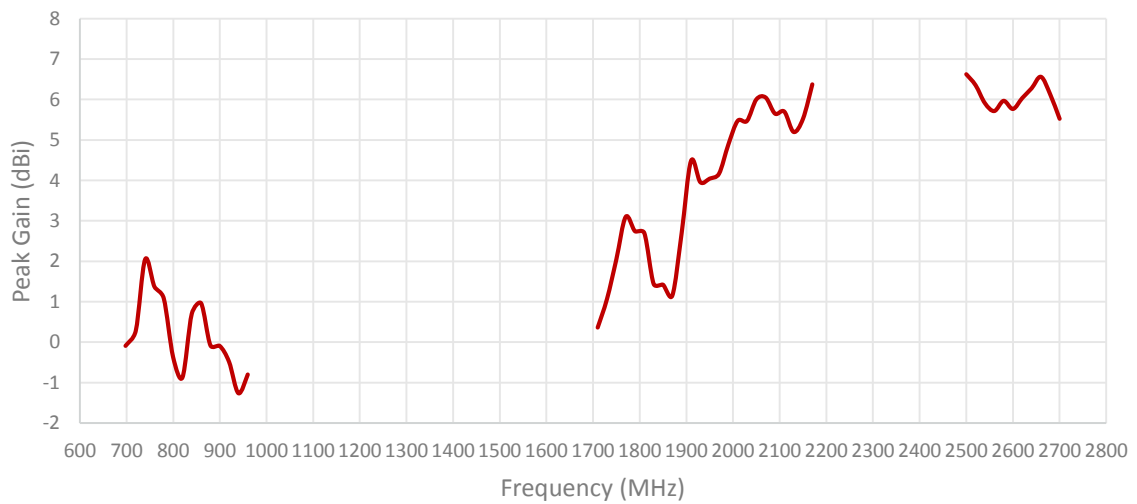
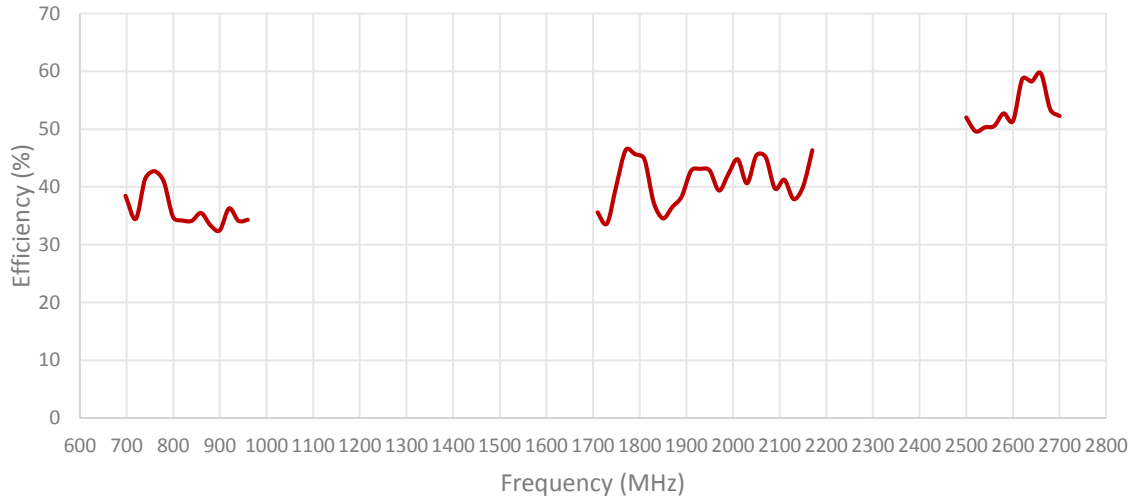
## 2. Mechanical and environmental specifications

Specifications	2J7068BGFa-868
<b>Mounting Type</b>	Screw Mount
<b>Dimensions (mm)</b>	Ø 96 x H 90
<b>Max. Tighten Torque (Nm)</b>	15 Nm
<b>Radome</b>	ASA UV Stable
<b>Radome color</b>	White, Black
<b>Antenna Base</b>	Alluminium alloy
<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

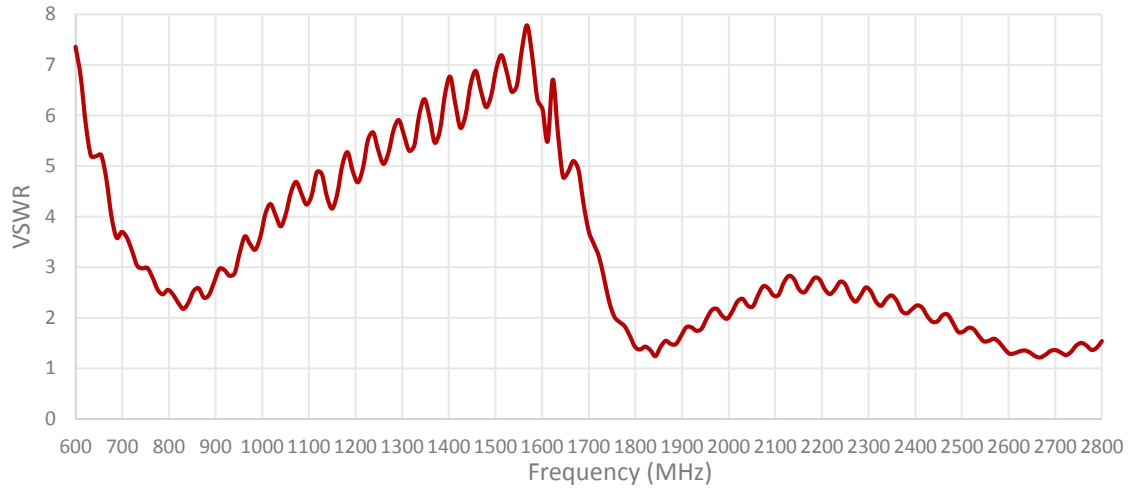
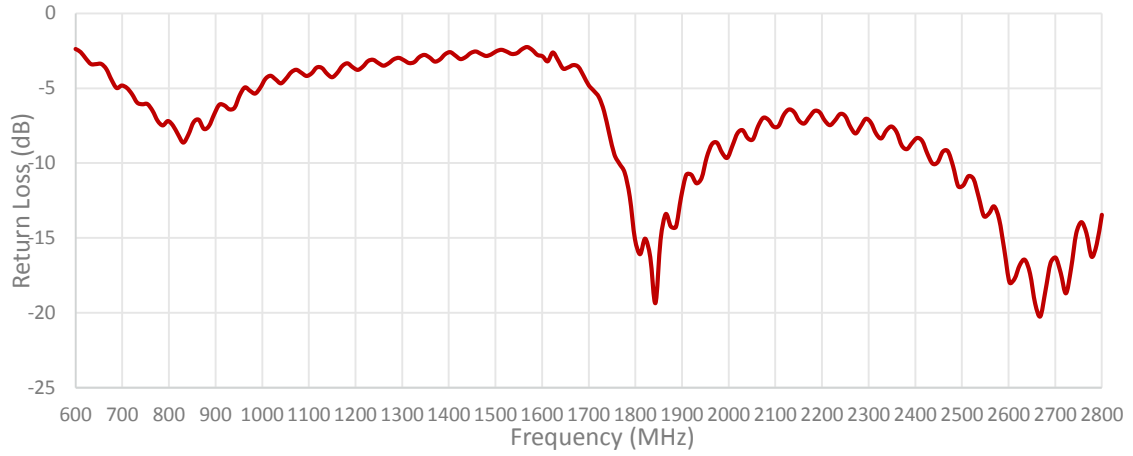
### 3. Antenna parameters

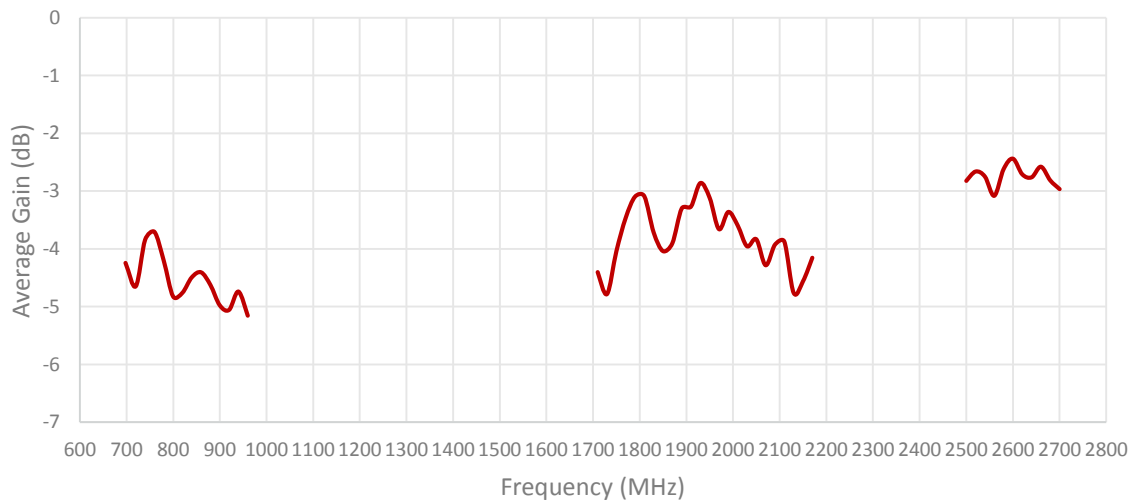
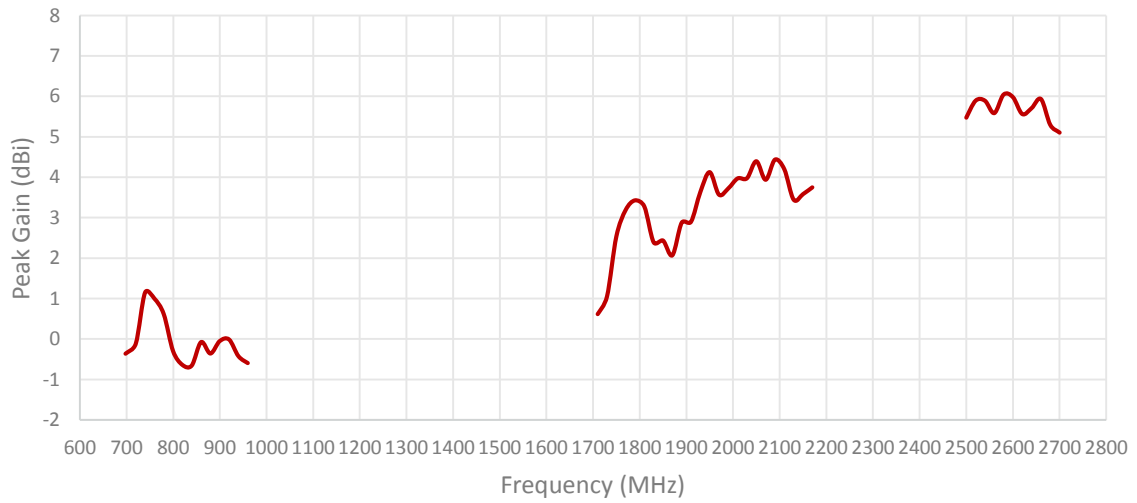
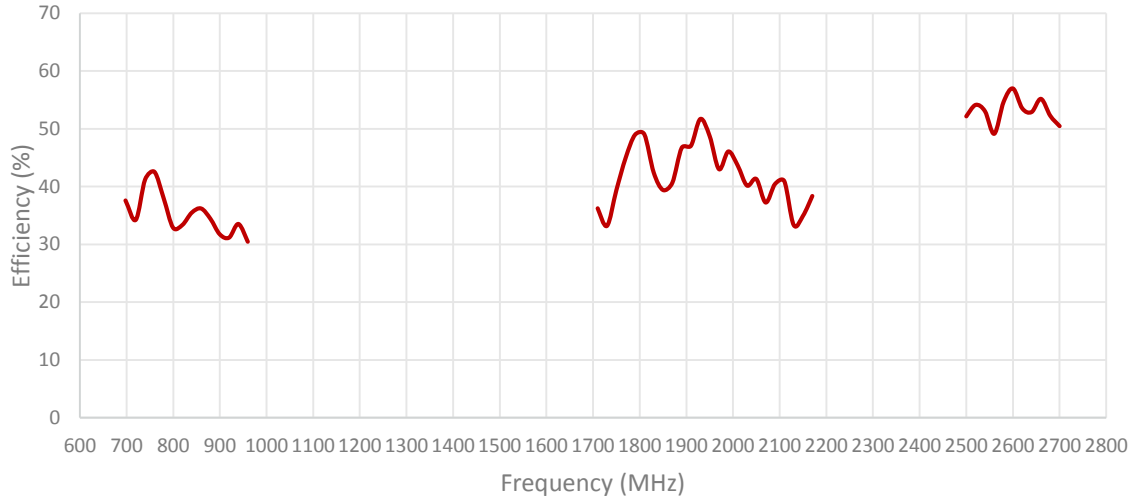
Cable 1: CELLULAR/LTE





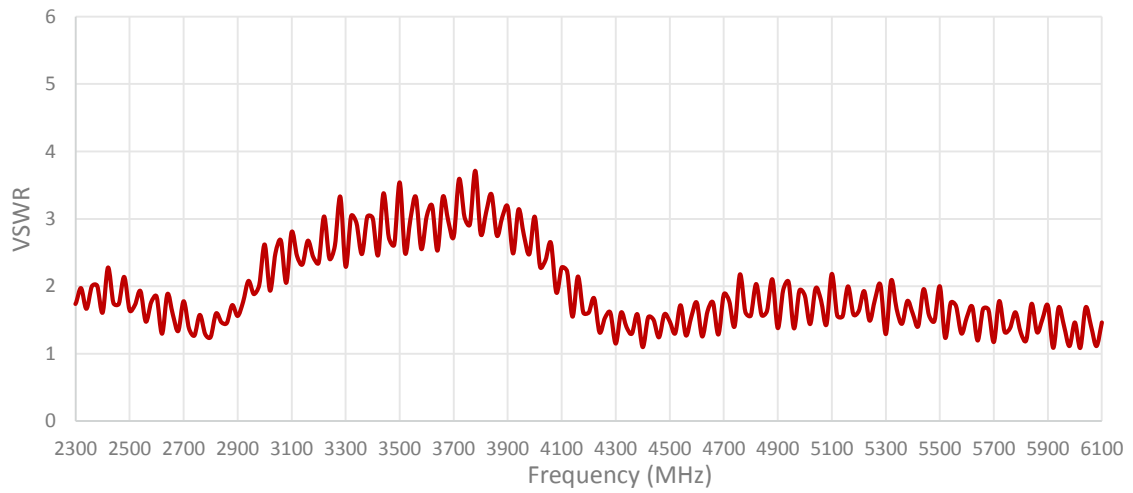
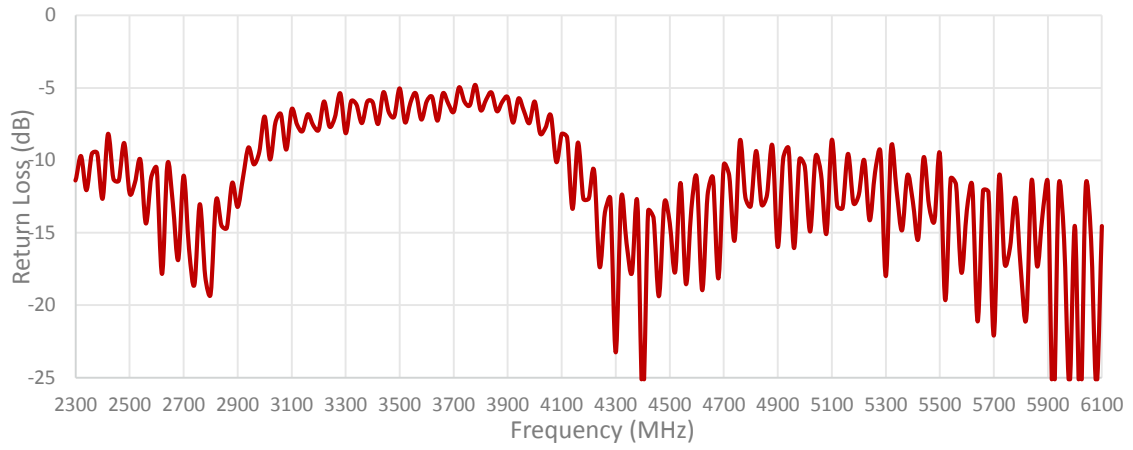
**Table 2: CELLULAR/LTE**

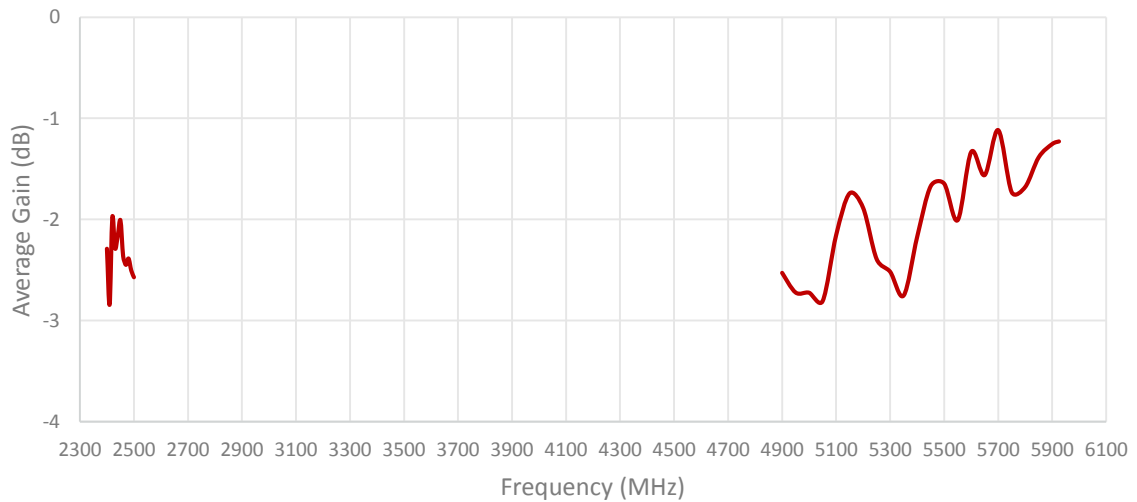
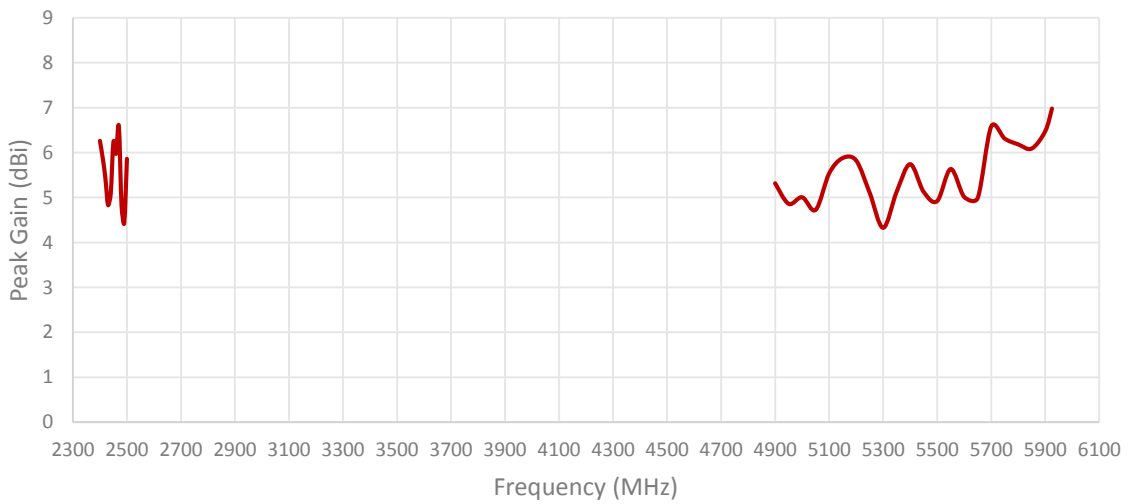
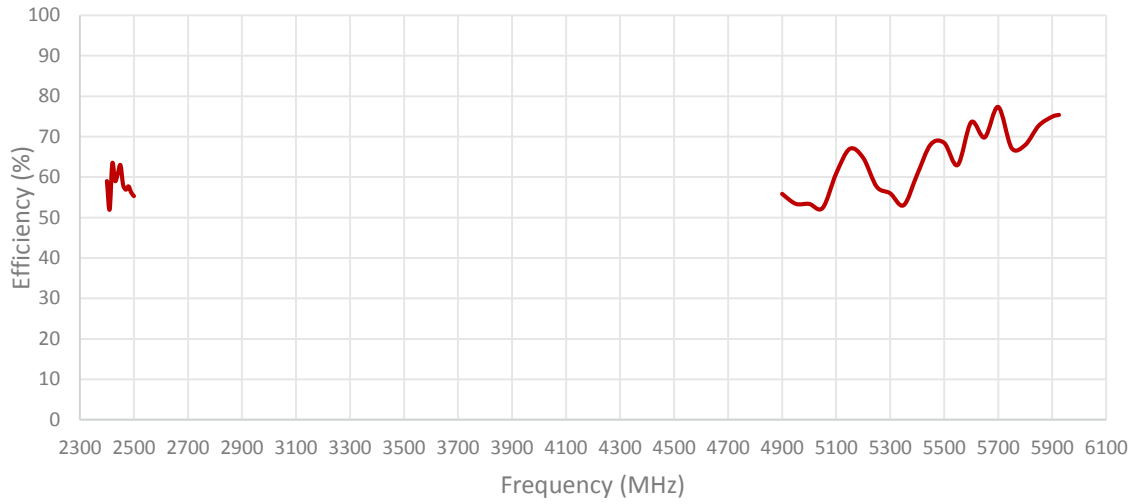




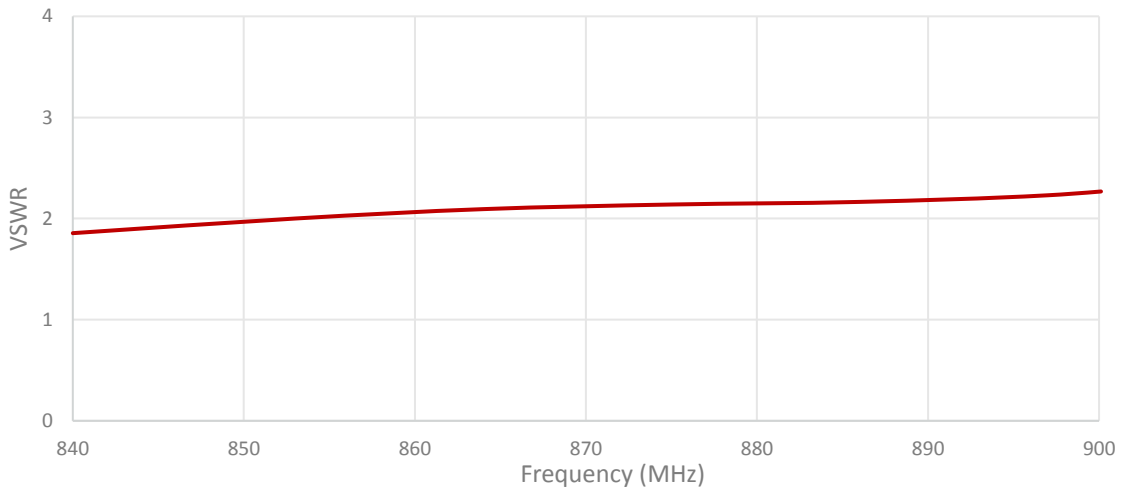
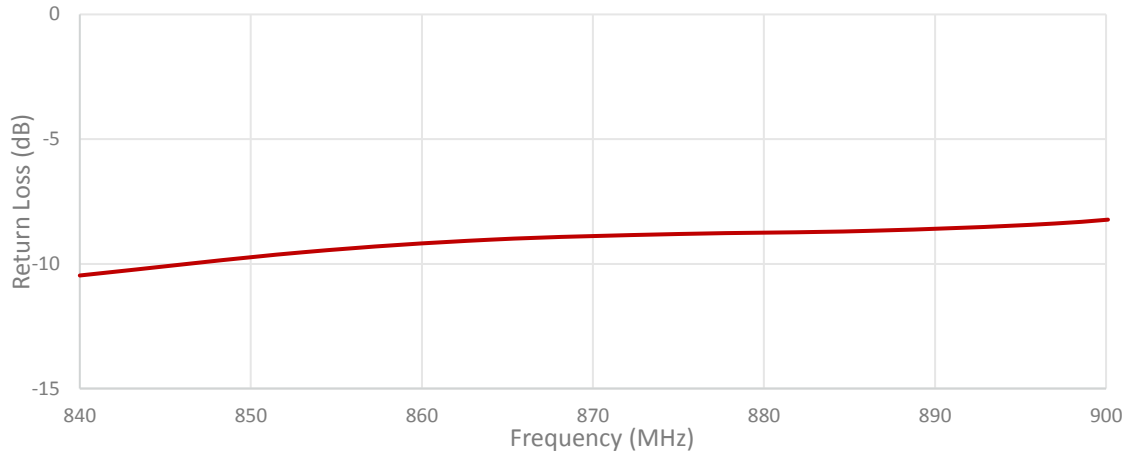


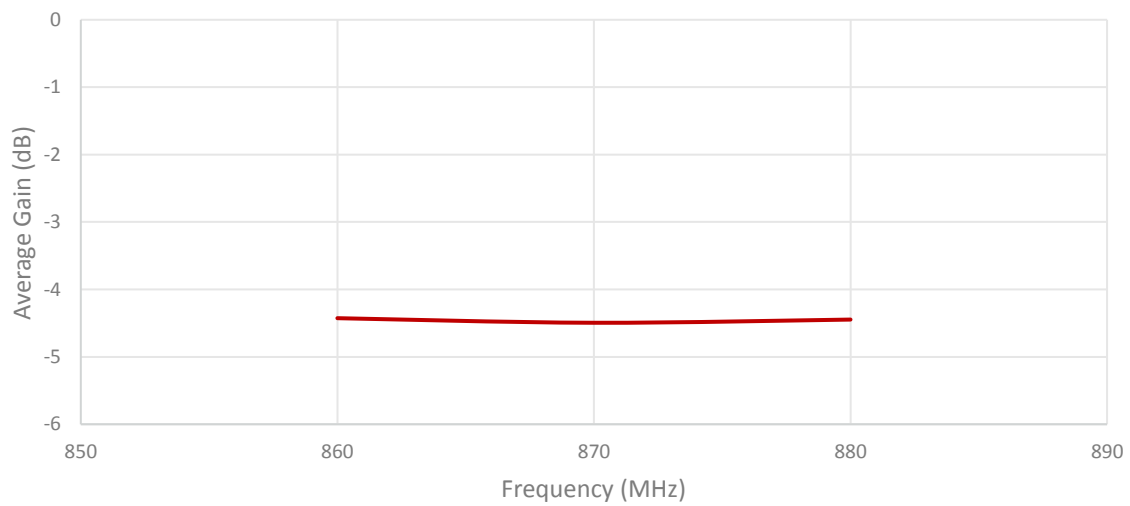
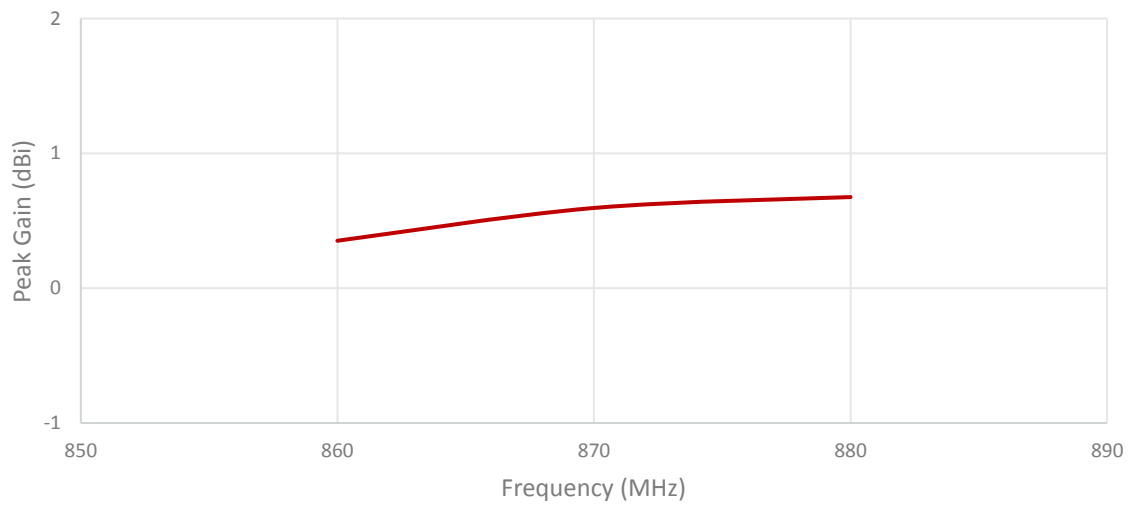
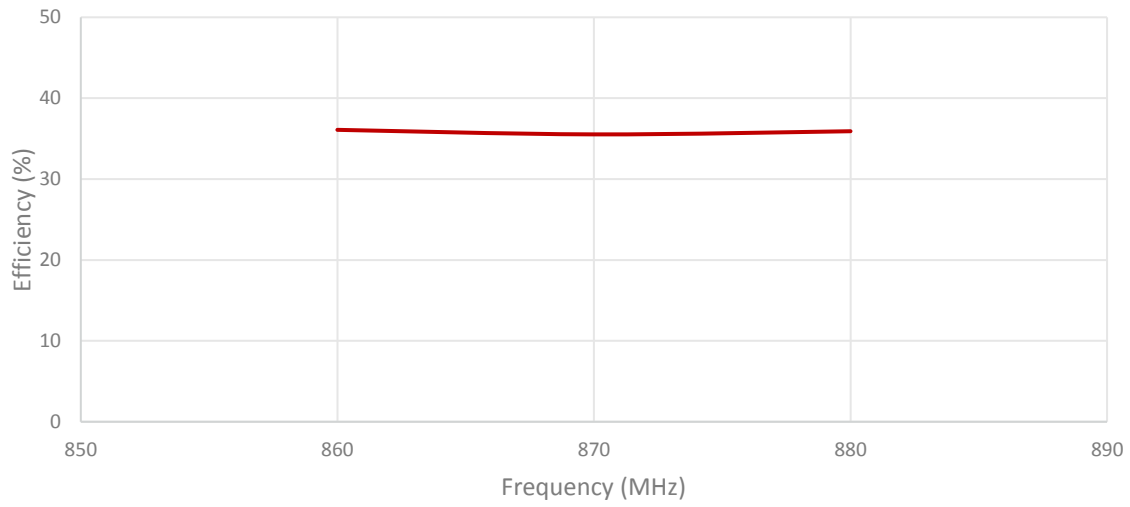
**Cable 3: 2.4/5.0 GHz ISM**



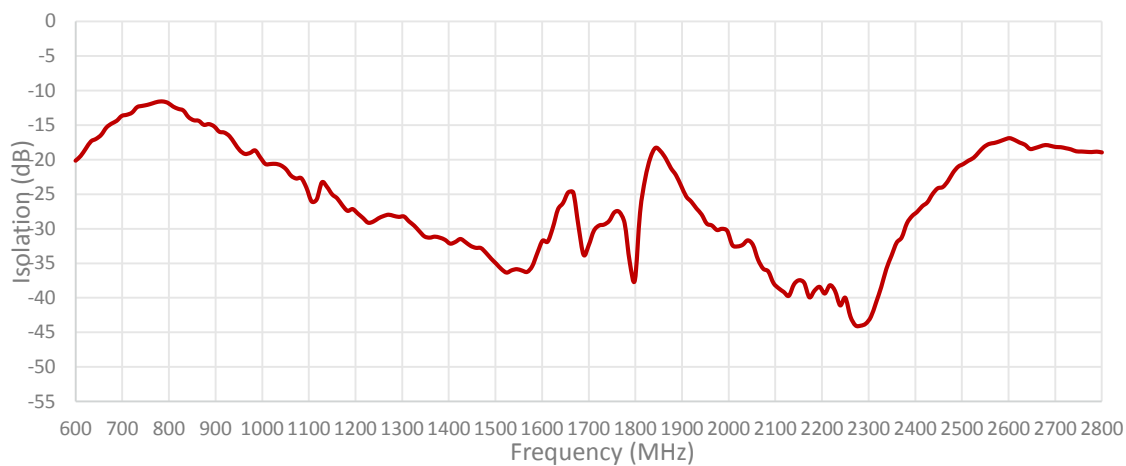


**Cable 4: 868 MHz ISM**

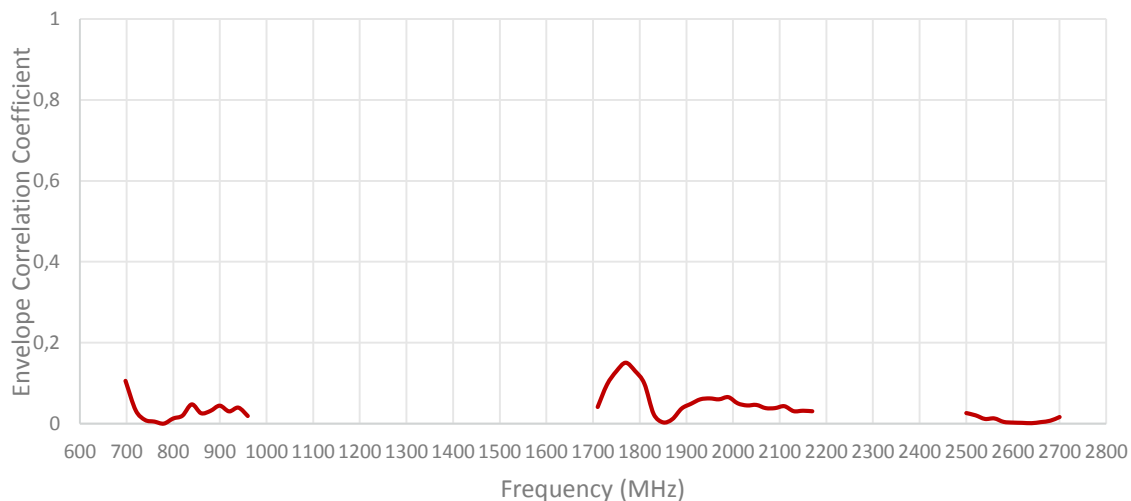


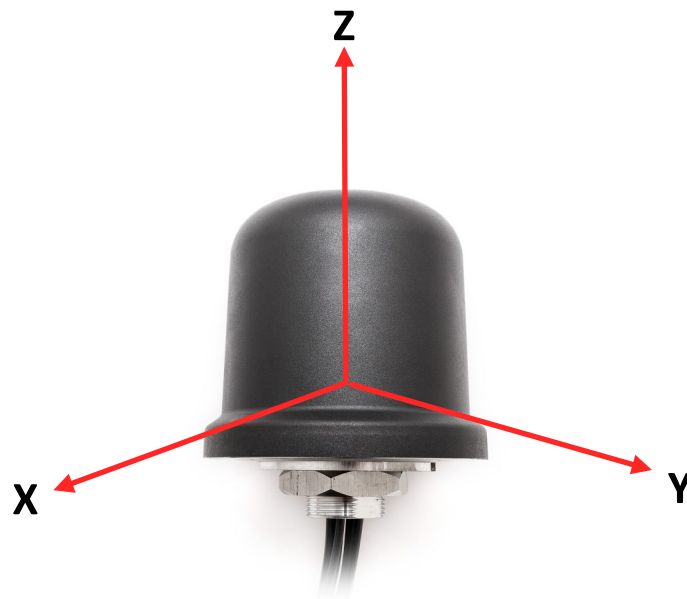


**ISOLATION FOR CABLES 1 AND 2**



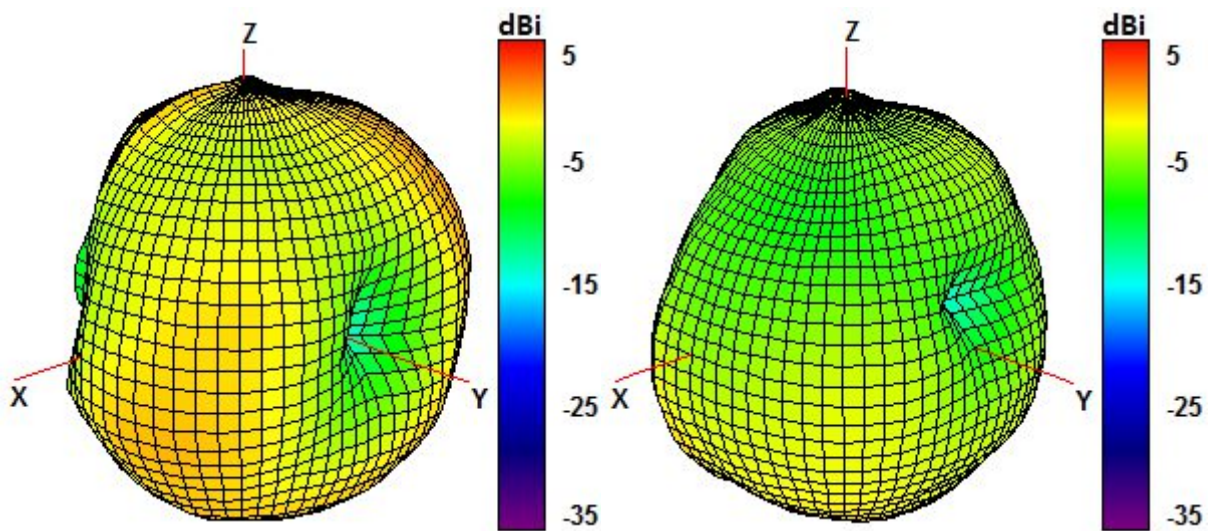
**ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 2**



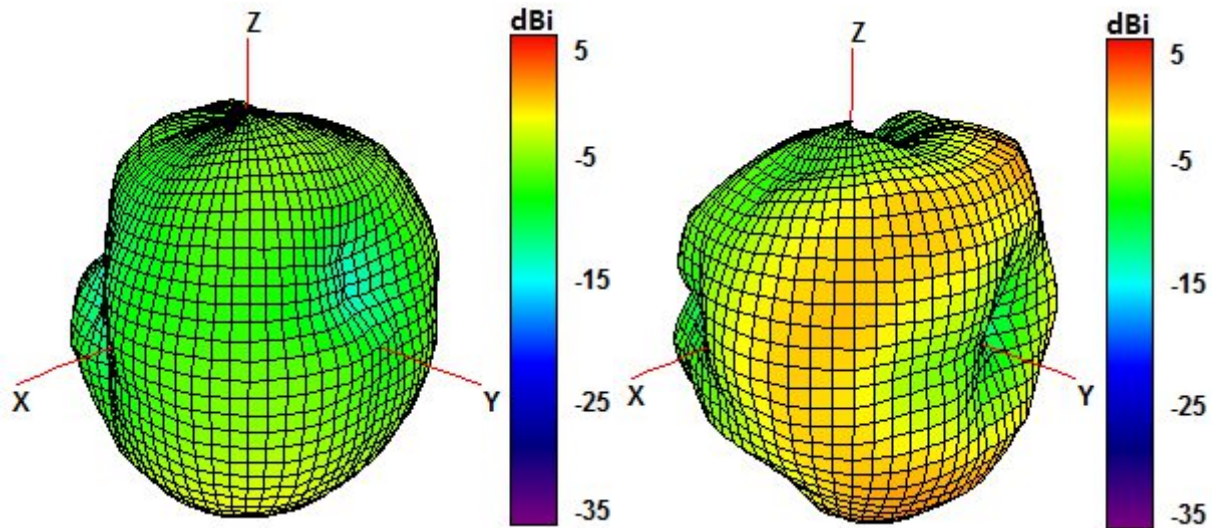


Radiation pattern reference

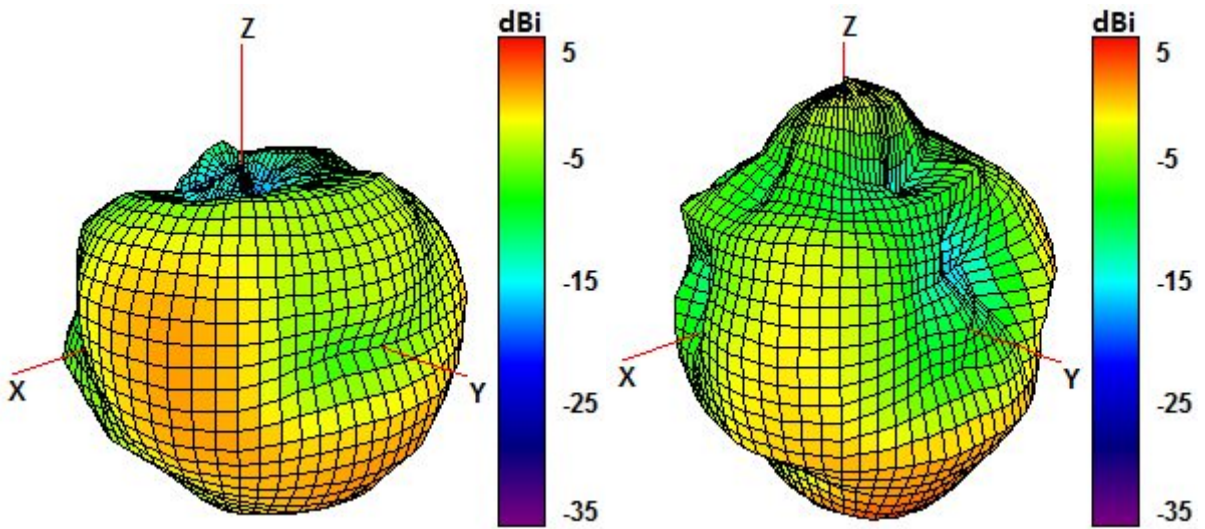
Cable 1: CELLULAR/LTE



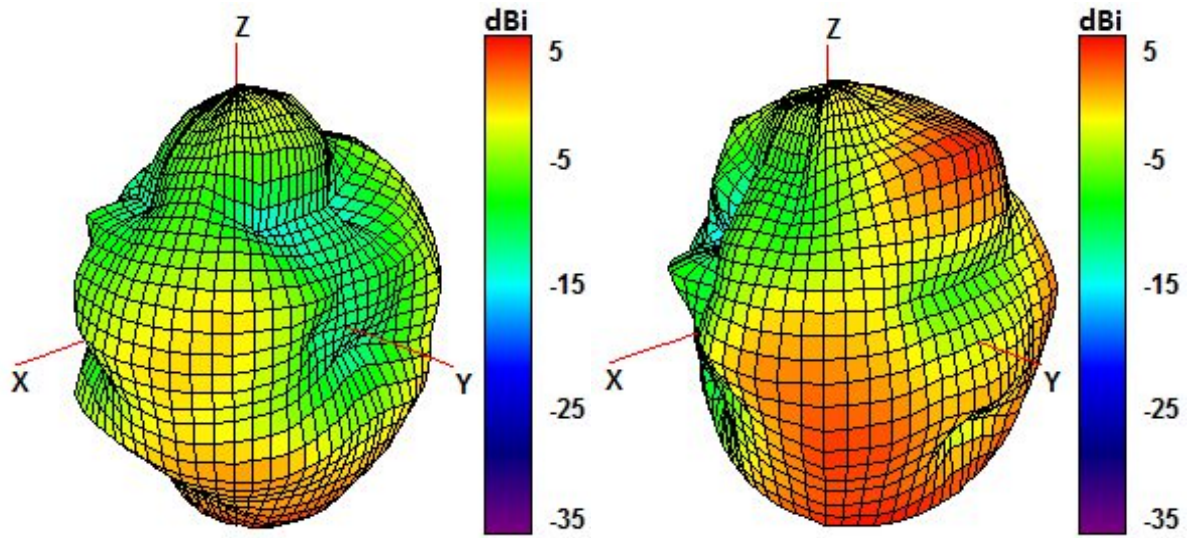
750 and 850 MHz Radiation pattern



940 and 1750 MHz Radiation pattern

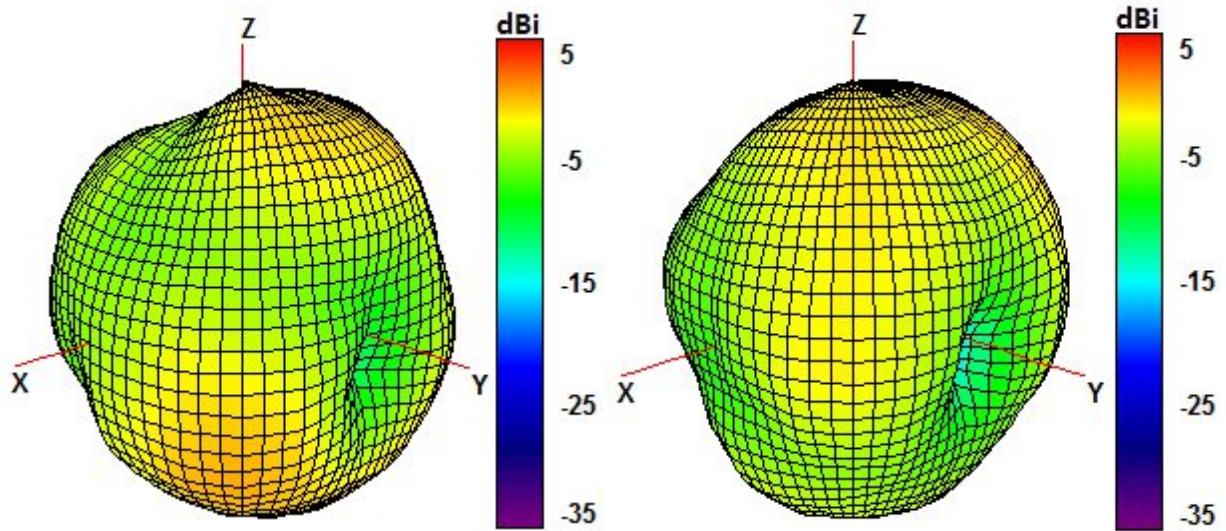


1850 and 1950 MHz Radiation pattern



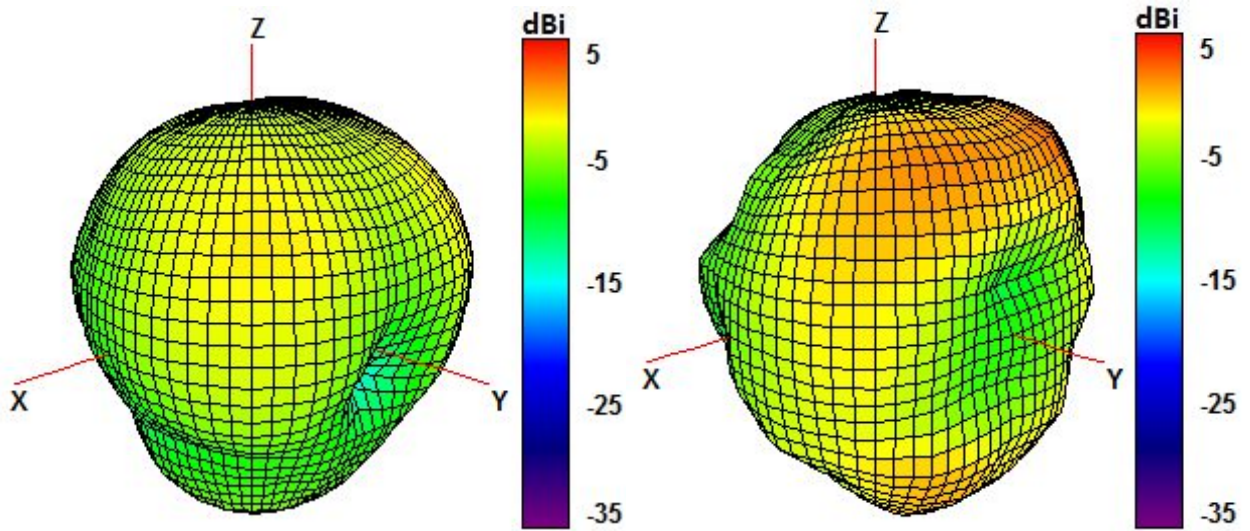
2100 and 2600 MHz Radiation pattern

Table 2: CELLULAR/LTE

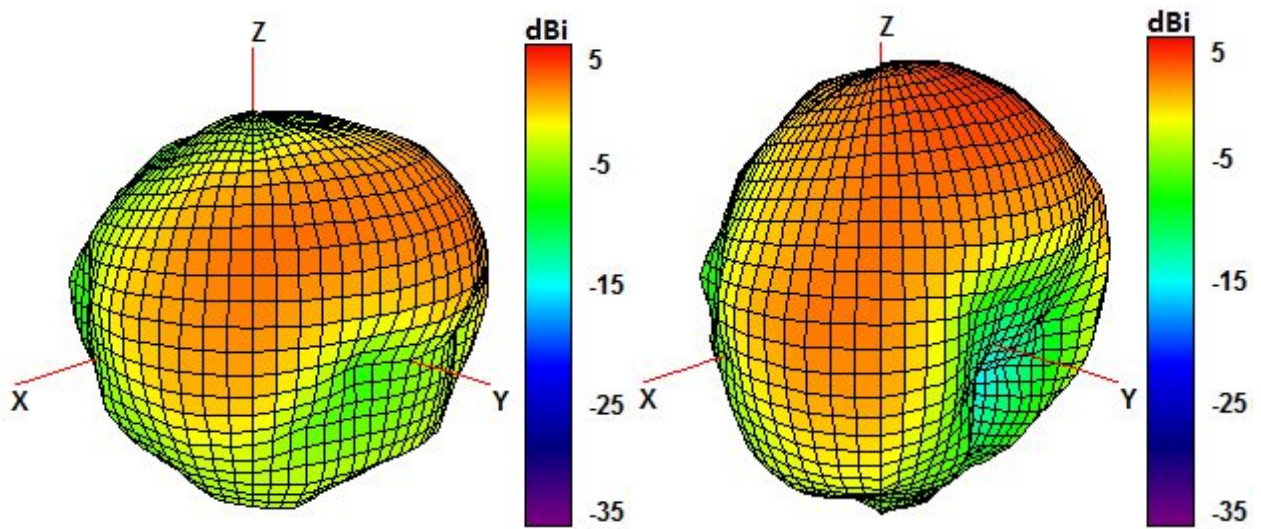


750 and 850 MHz Radiation pattern

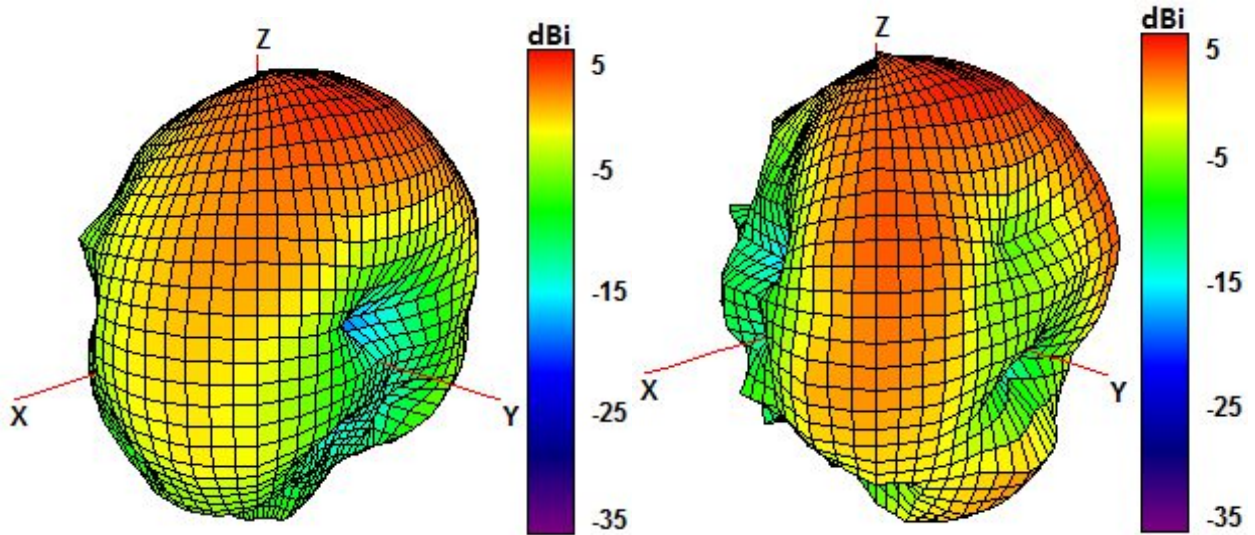




940 and 1750 MHz Radiation pattern

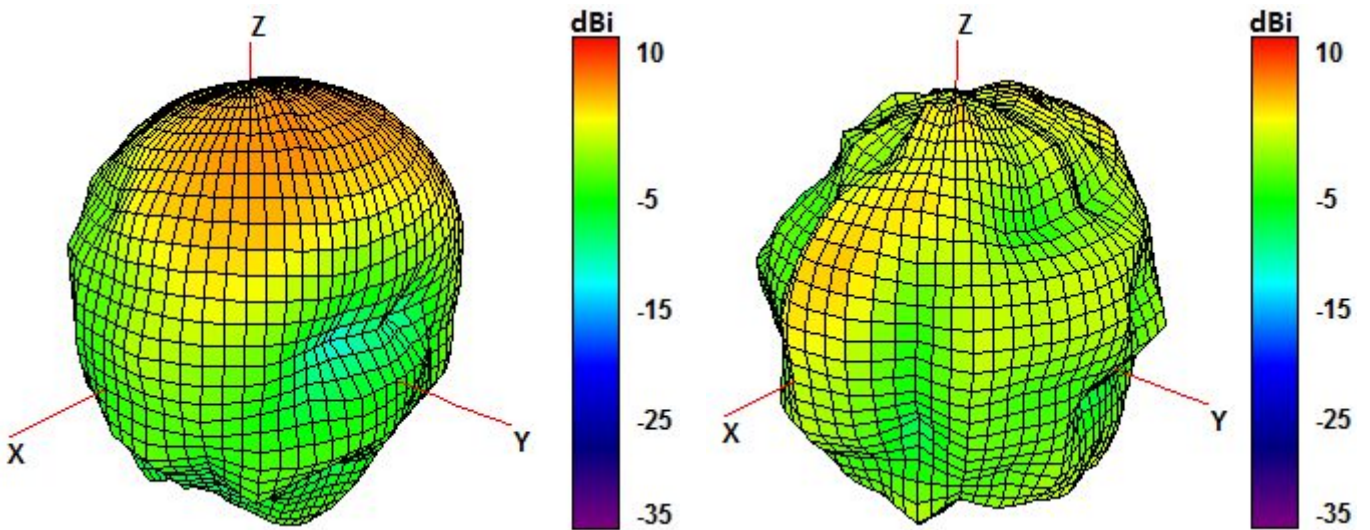


1850 and 1950 MHz Radiation pattern



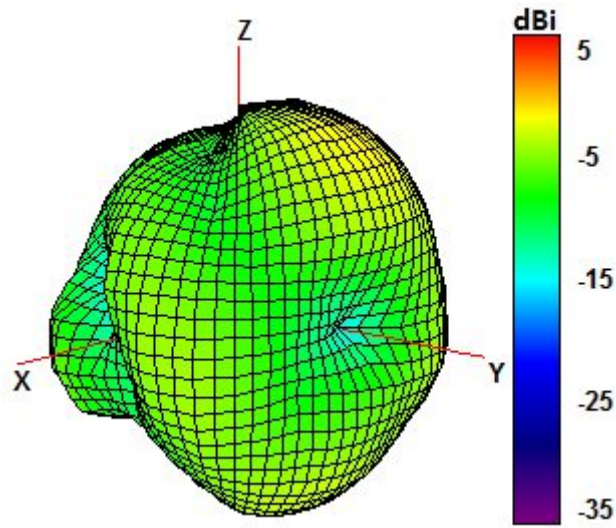
2100 and 2600 MHz Radiation pattern

Cable 3: 2.4/5.0 GHz ISM



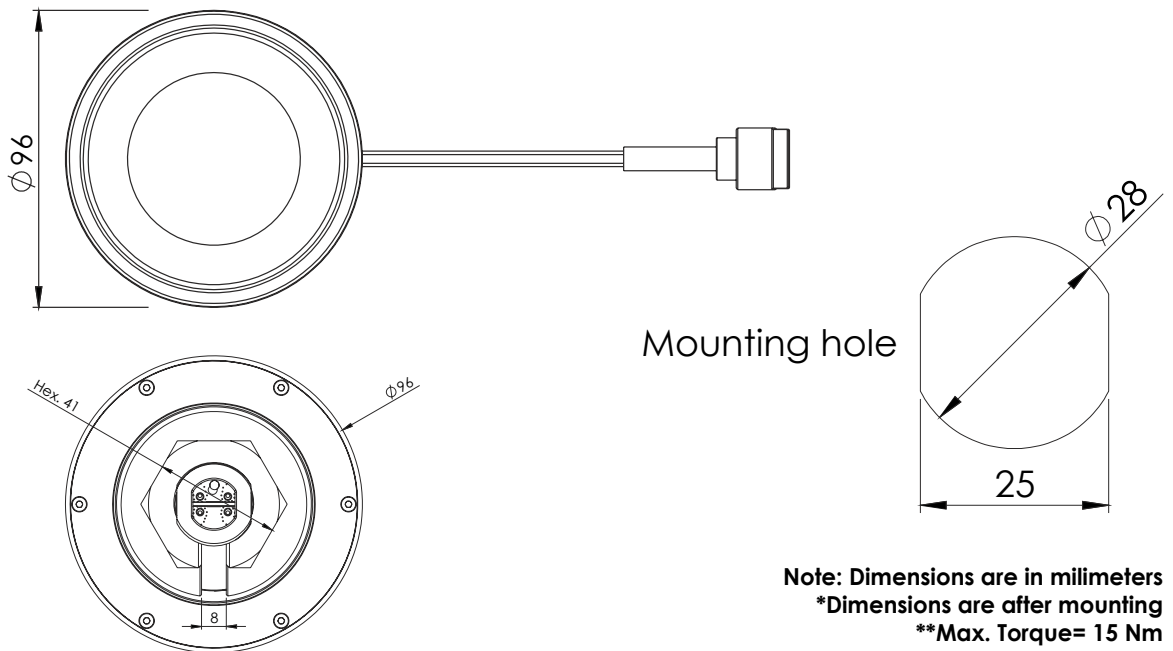
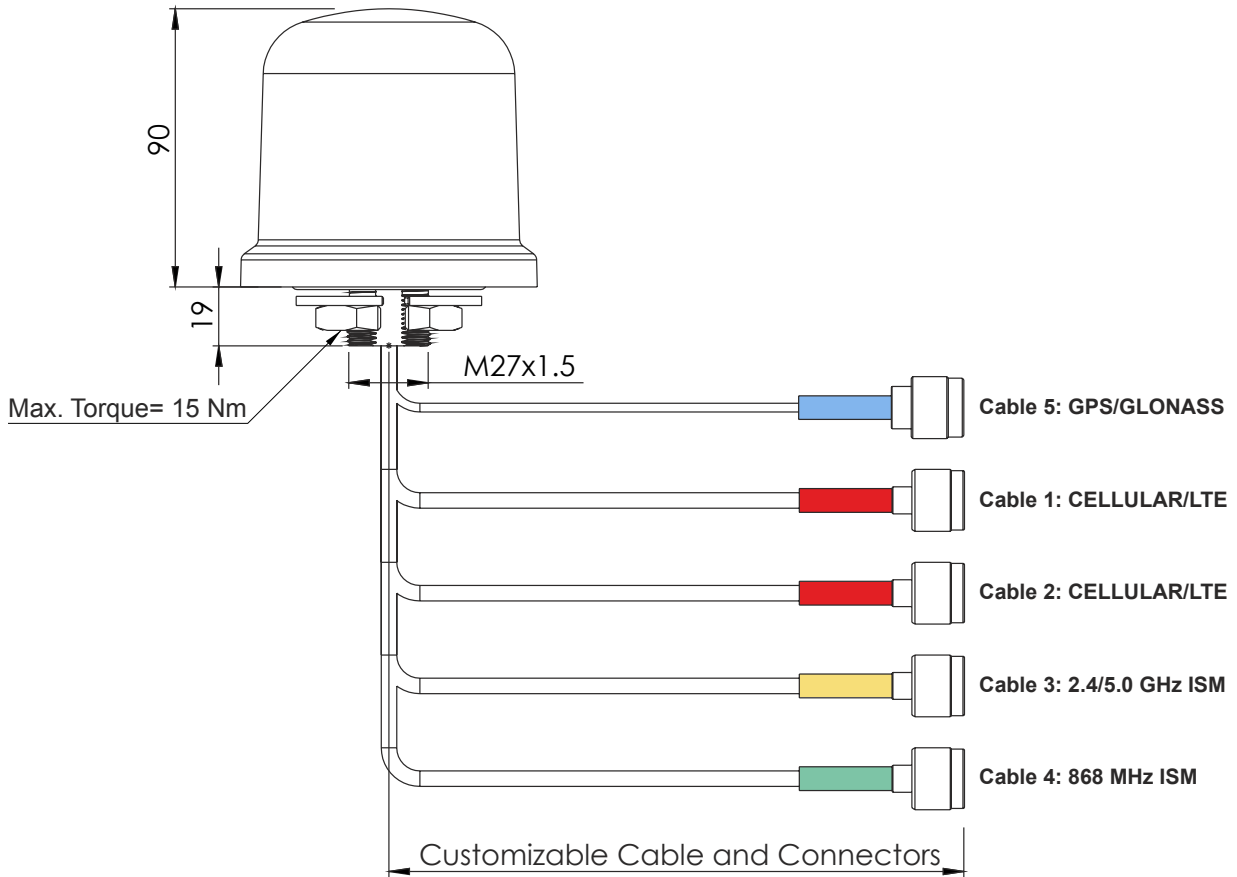
2450 and 5500 MHz Radiation pattern

Cable 4: 868 MHz ISM

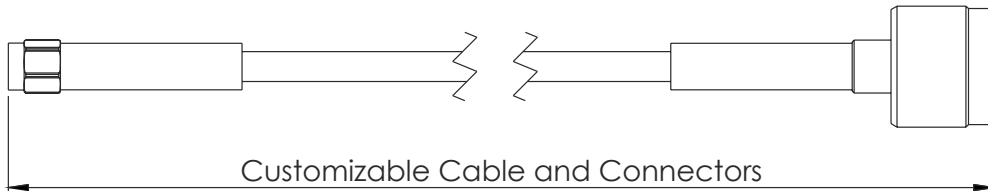


868 MHz Radiation pattern

## 4. Antenna drawings

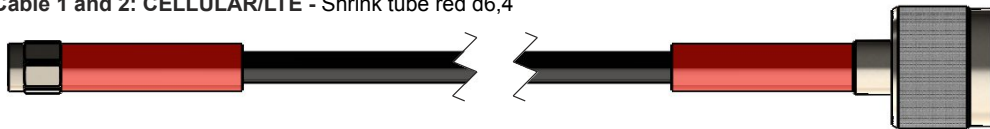


## 5. Jumper cables drawings - Optional



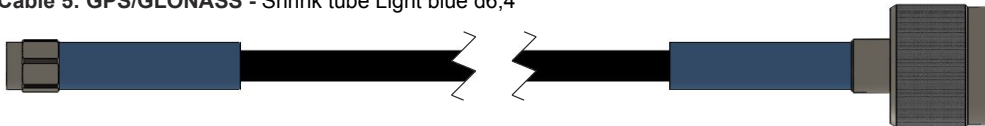
### C318N-LMR195-C91N OST - 2x

Cable 1 and 2: CELLULAR/LTE - Shrink tube red d6,4



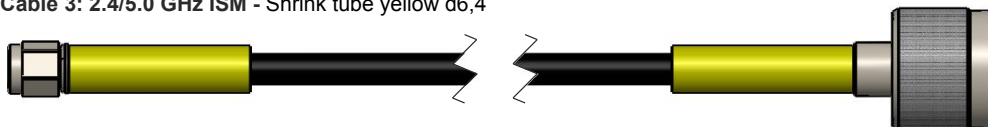
### C318N-LMR195-C91N BST

Cable 5: GPS/GLONASS - Shrink tube Light blue d6,4



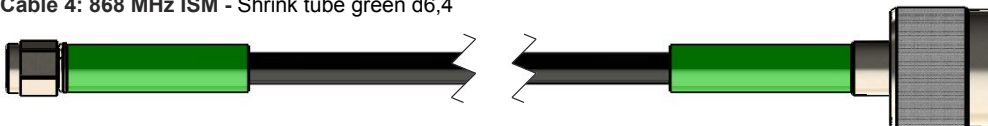
### C318N-LMR195-C151N GST

Cable 3: 2.4/5.0 GHz ISM - Shrink tube yellow d6,4



### C318N-LMR195-C151N YST

Cable 4: 868 MHz ISM - Shrink tube green d6,4



## 5. Antenna Images





## Макро Групп – это:

- дистрибьютор электронных компонентов с 1994 года
- контрактный производитель электроники с 2007 года с собственным производством в Санкт-Петербурге (компания Макро EMC, входит в ГК Макро Групп)
- поставщик полупроводниковых материалов
- комплексный поставщик электронных компонентов
- моделирование и производство полупроводниковых эпитаксиальных гетероструктур для задач оптоэлектроники

Головной офис расположен в Санкт-Петербурге. Собственные представительства в крупных промышленных городах России и стран СНГ.

## Преимущества для наших заказчиков:

- работа по тендерам с 2012 года
- оформление банковских гарантий
- отсрочки платежей
- поставка электронных компонентов по проектным ценам
- инженерная поддержка проектов заказчиков
- сертификат системы менеджмента качества ISO 9001-2015
- необходимые сертификаты и лицензии

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