



AEACBK189085-MLWFGL5



189.0 x 182.0 x 85.0 mm  
 RoHS/RoHS II Compliant  
 MSL = Not Applicable

**Features**

- 5 cabled combo antenna
- 2 x 4G/LTE
- WiFi 2.4/5 GHz
- AM/FM
- Active GPS L1+L5
- Active GPS with LNA gain of 28 dB
- RHCP for GNSS
- Linear polarized LTE and WiFi and AM/FM
- IP67 rated
- Screw mount

**Applications**

- 4G/LTE/3G/2G/GSM applications
- GNSS/GPS L1/L5 applications
- Gateways and routers
- WiFi 2.4/5 GHz
- Telematics
- M2M
- IoT and Industrial IoT
- Geolocation and tracking
- Transportation and agriculture
- Smart city

**Electrical Specifications**

**GPS Antenna**

Parameters	Min.	Typ.	Max.	Units	Notes
Operating Frequency Range		L1: 1575.42		MHz	
		L5: 1176.00			
VSWR			2		
Polarization	RHCP				
Impedance		50		Ω	
LNA Gain	26	28	30	dB	
LNA Noise Figure			1.5	dB	
Supply Voltage	3		5	V	DC
Current Consumption			15	mA	

**LTE MIMO Antenna**

Parameters	Min.	Typ.	Max.	Units	Notes
Operating Frequency Range	698		960	MHz	
	1710		2690		
	2900		3800		
VSWR			3		
Gain		4		dBi	
Polarization	Linear				
Impedance		50		Ω	



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**Electrical Specifications Cont.**

**WiFi Antenna**

Parameters	Min.	Typ.	Max.	Units	Notes
Operating Frequency Range	2400		2483.5	MHz	
	4900		5925		
VSWR			2.5		
Gain		4		dBi	
Polarization	Linear				
Impedance		50		$\Omega$	

**AM/FM Antenna**

Parameters	Min.	Typ.	Max.	Units	Notes
Operating Frequency Range	520		1629	kHz	
	76		108	MHz	
VSWR			2.5		
Gain	AM	1 ± 3		dBi	
	FM	8 ± 3			
Polarization	Linear				
Impedance		50		$\Omega$	
Supply Voltage	9		16	V	DC

**Mechanical Specification**

Parameters	Description	Notes
Cable Type	RG-174	
Cable Length	3M	
Connector	SMA + DIN	
Material	PC / ABS	
Mounting Method	Screw	



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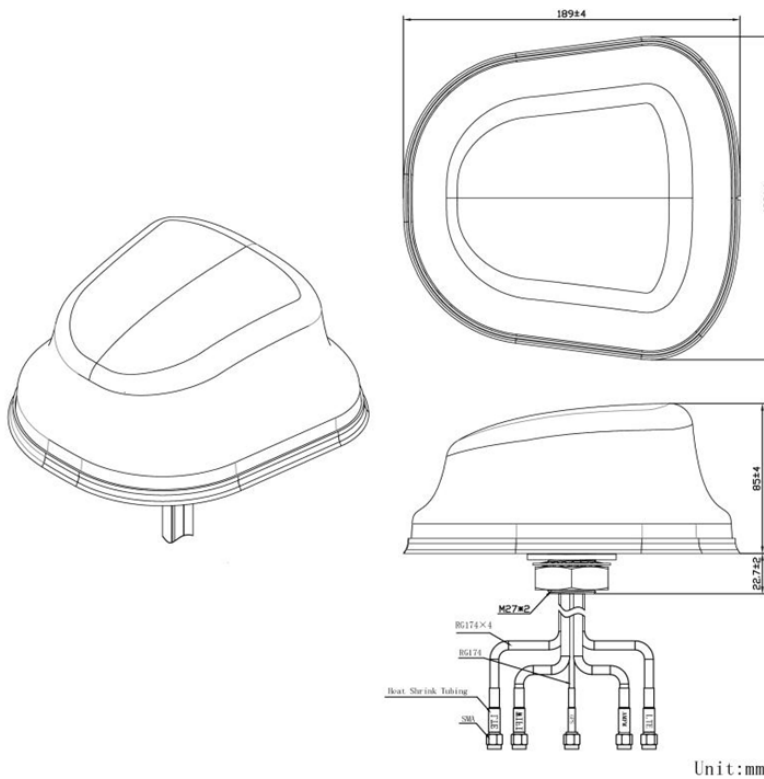


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**Environmental Specification**

Parameters	Description
Operating Temperature	-40°C to +85°C
Relative Humidity	Up to 95 %
Ingress Protection	IP67 (excluding cable outlet)
Vibration	10 ~ 55 Hz with 1.5 mm amplitude 2 hours

**Product Dimension**





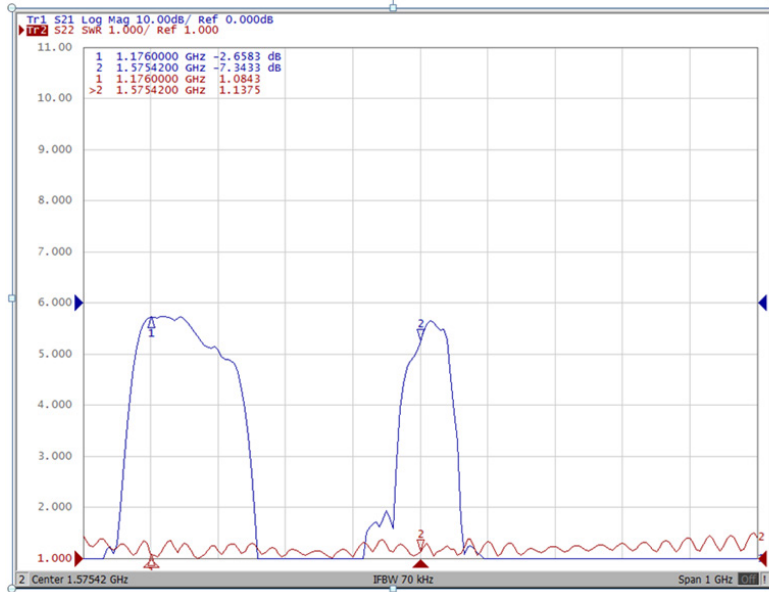
AEACBK189085-MLWFGL5



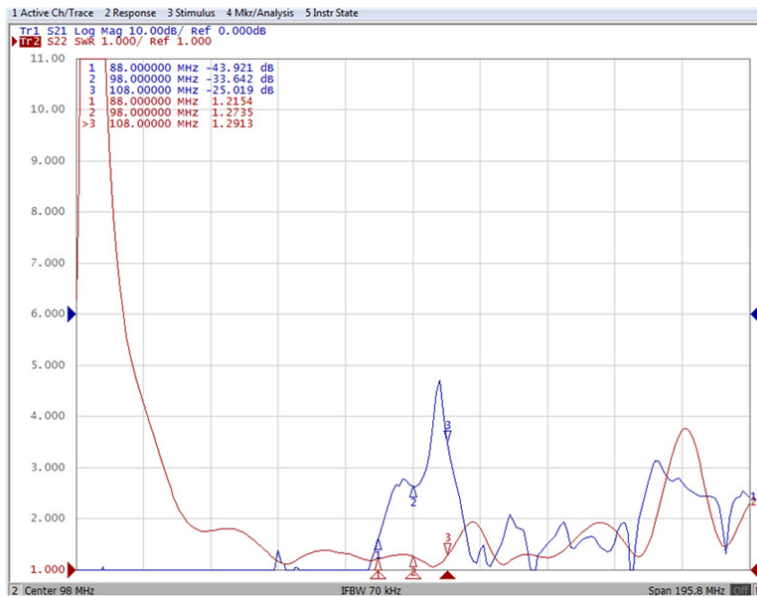
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VSWR

GPS Antenna



FM Antenna





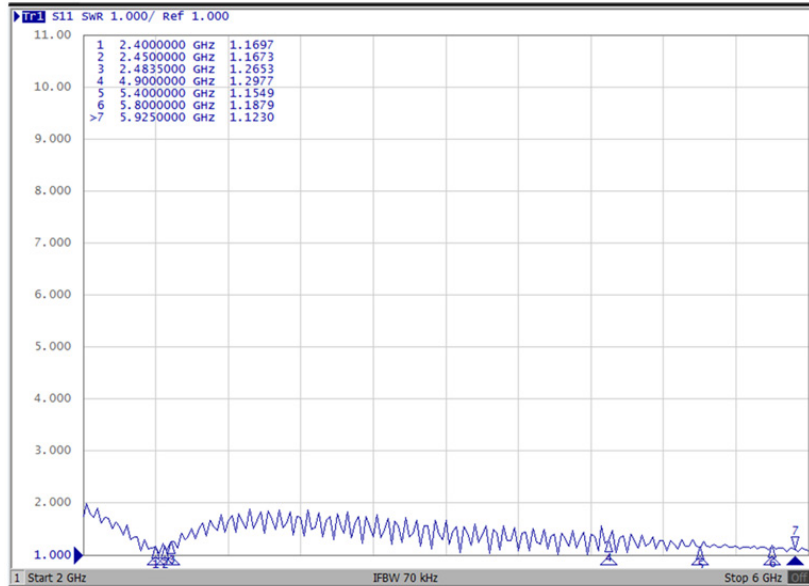
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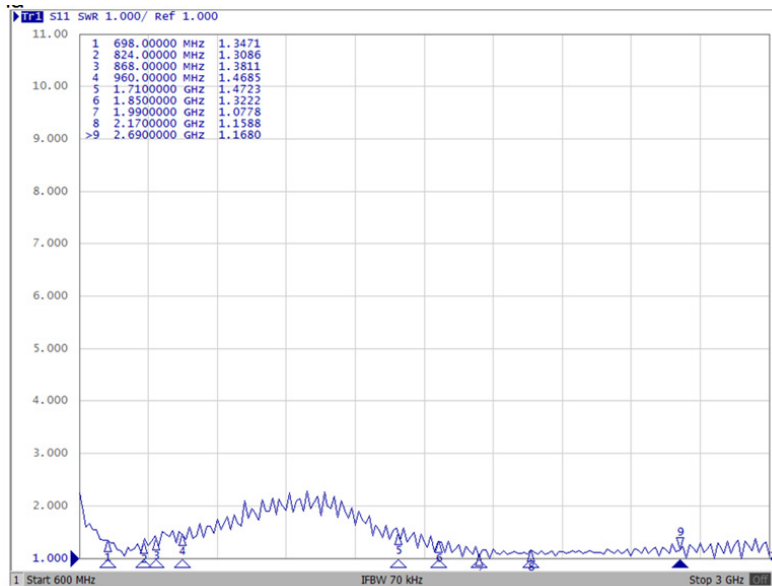
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VSWR

WiFi Antenna



LTE MIMO Antenna





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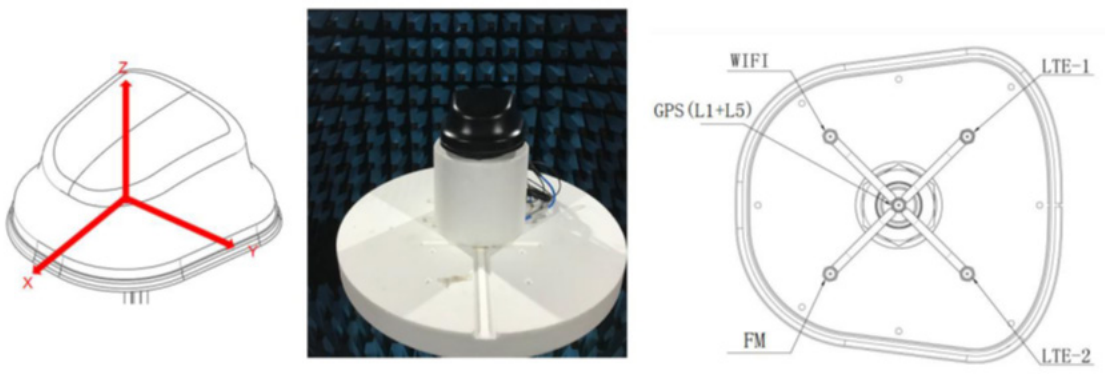


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Gain & Efficiency

Frequency	Efficiency	Gain (dBi)
<b>WiFi</b>		
2400	0.59	3.4
2450	0.63	3.79
2483.5	0.61	3.97
4900	0.58	-0.83
5400	0.61	-1.13
5800	0.57	-0.75
5925	0.57	-1.11
<b>LTE</b>		
698	0.62	3.35
824	0.64	2.95
868	0.66	4.05
960	0.59	2.45
1710	0.62	1.39
1850	0.57	1.43
1990	0.57	2.71
2170	0.63	1.24
2690	0.56	0.27

Radiation Pattern





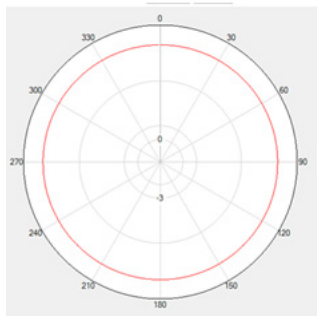
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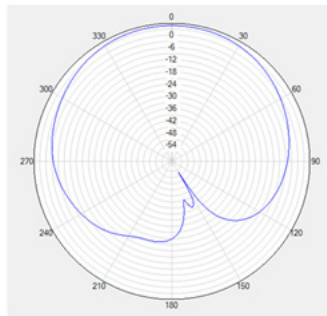
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**Radiation Pattern**

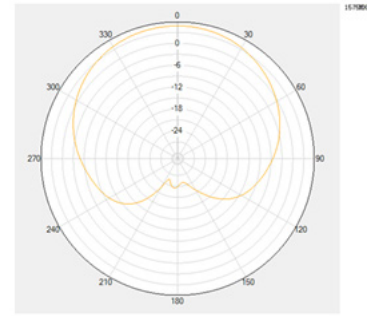
**GPS L1 Antenna (1575 MHz)**



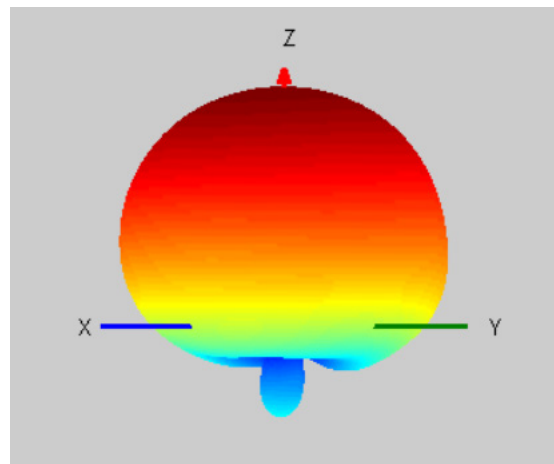
XY-PLANE



XZ-PLANE



YZ-PLANE





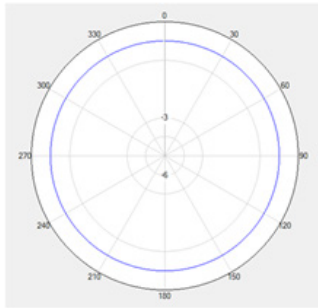
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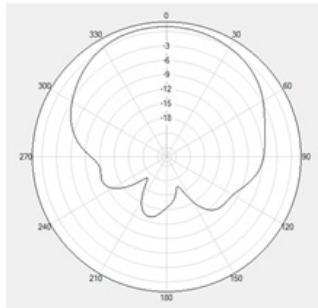
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**Radiation Pattern**

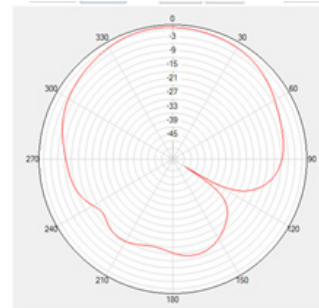
**GPS L5 Antenna (1176 MHz)**



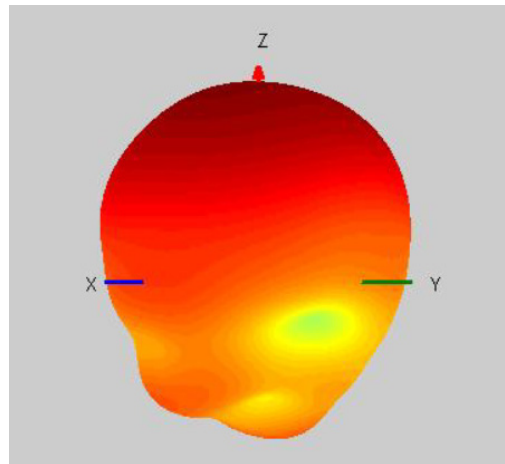
XY-PLANE



XZ-PLANE



YZ-PLANE







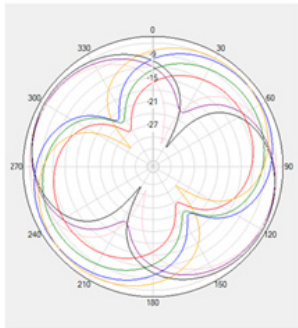
AEACBK189085-MLWFL5



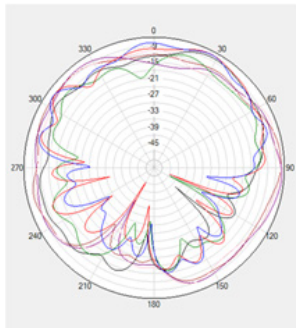
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Radiation Pattern

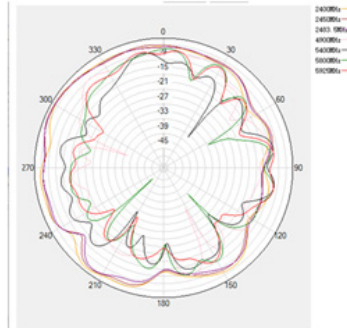
WiFi Antenna



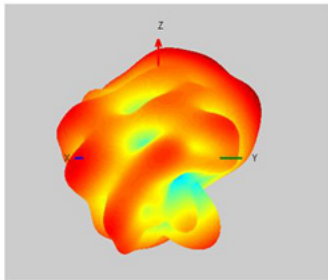
XY-PLANE



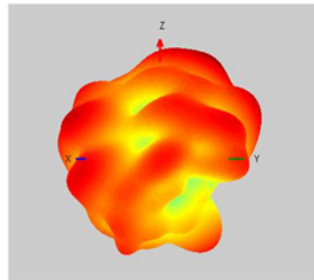
XZ-PLANE



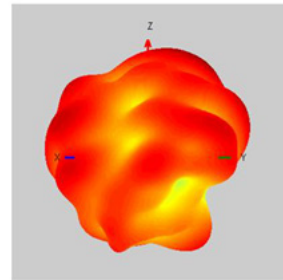
YZ-PLANE



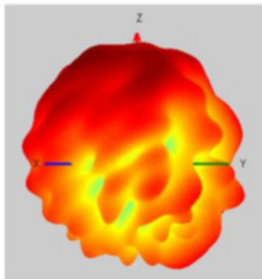
2400MHz



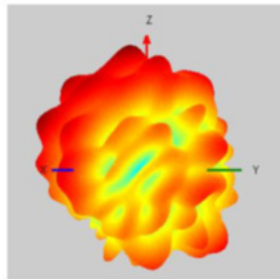
2450MHz



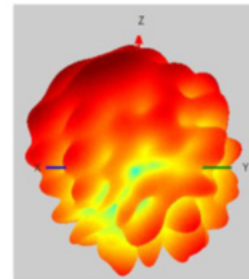
2483.5MHz



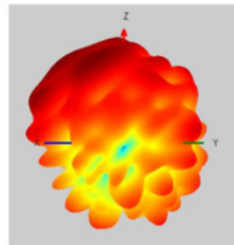
4900MHz



5400MHz



5800MHz



5925MHz



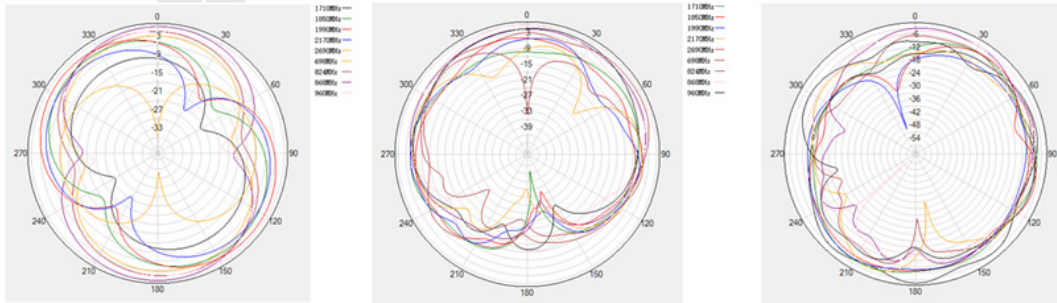
AEACBK189085-MLWFLG15



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Radiation Pattern

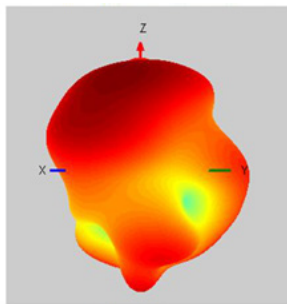
LTE MIMO Antenna



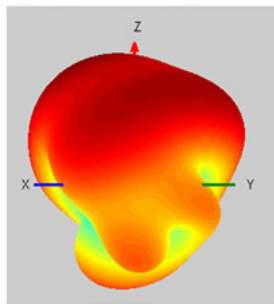
XY-PLANE

XZ-PLANE

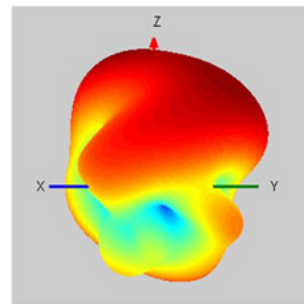
YZ-PLANE



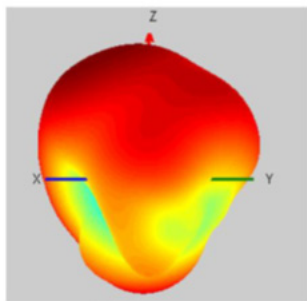
698MHz



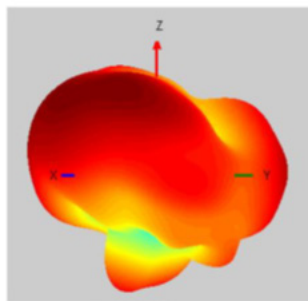
824MHz



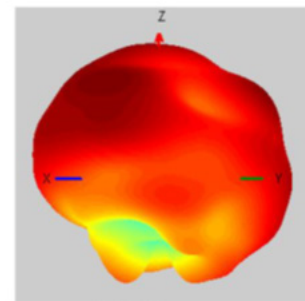
868MHz



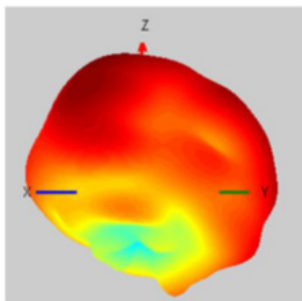
960MHz



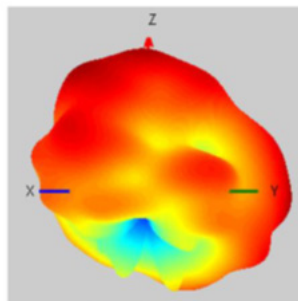
1710MHz



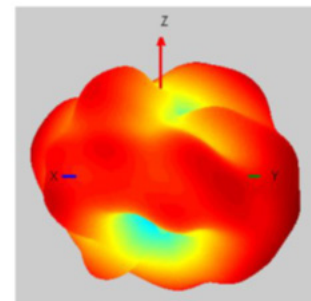
1850MHz



1990MHz



2170MHz



2690MHz