

Automotive Grade LTE + Wi-Fi + GNSS External Combo Antenna



AECS1806C03Z

Request Samples



Check Inventory



181.7 x 68.9 x 69.1 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- 3 Cabled Combo Antenna
 - 1x 4G/LTE Antenna
 - 1x 2.4/5GHz Wi-Fi Antenna
 - 1x Active GNSS/GPS/GLONASS/BeiDou/QZSS
- Manufactured in Automotive Certified lines
 - IATF 16949 certified
- PPAP available upon request
- IP67 rated
- Easy installation using Screw
- Fully customizable cable and connection options for RF connection

Applications

- IoT
- M2M
- Smart City
- Gateways and routers
- Telematics
- Transportation
- Smart Agriculture
- Geolocation and Tracking

Product Image



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Part Number Builder

AECS1806C03Z -

Color / UV Coating	
Code	Description
S (Standard)	Black without UV coating
A	Black with UV Coating
B	White without UV Coating
C	White with UV Coating

Cable length in 'mm'	
Code	Description
3000 (Standard)	3000 mm
Other Examples :	
0200	200 mm
2000	2000 mm

Cable Type & Connector Type				
Code	Cable Type	Connector Type		
		LTE	GNSS	Wi-Fi
S (Standard)	RG-174	SMA (M)	SMA (M)	-
	LMR-100	-	-	SMA (M)
A	LMR-100	SMA (M)	SMA (M)	SMA (M)
B		SMA (M)	FAKRA C (F)	SMA (M)
C		FAKRA D (F)	SMA (M)	SMA (M)
D		FAKRA D (F)	FAKRA C (F)	SMA (M)
E	RG-174	SMA (M)	FAKRA C (F)	-
	LMR-100	-	-	SMA (M)
F	RG-174	FAKRA D (F)	SMA (M)	-
	LMR-100	-	-	SMA (M)
G	RG-174	FAKRA D (F)	FAKRA C (F)	-
	LMR-100	-	-	SMA (M)

Example Configurations :

Part Number	UV Protection Coating / Color	Cable length	Cable Type / Connector Type
AECS1806C03Z S-3000S	Yes / Black	3000 mm	2xRG-174 with 1xSMA (M) for LTE + 1xSMA (M) for GNSS + 1xLMR-100 with 1xSMA (M) for Wi-Fi (Standard)
AECS1806C03Z A-1000A	Yes / Black	1000 mm	3xLMR-100 with 1xSMA (M) for LTE + 1xSMA (M) for Wi-Fi and 1xSMA (M) for GNSS
AECS1806C03Z B-5000G	No / White	5000 mm	2xRG-174 with 1xFAKRA D (F) for LTE + 1xFAKRA C (F) for GNSS + 1xLMR-100 with 1xSMA (M) for Wi-Fi

Note :

- For the standard part number (AECS1806C03Z **S-3000S**), please refer to the packaging at the end of the document.
- For additional configuration (AECS1806C03Z -), MOQs, pricing and packaging changes may be applicable.

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Electrical Specification

Parameter	Specification			Unit
	Min	Typ	Max	
GNSS Antenna				
Frequency	1561		1602	MHz
Gain (Zenith)			2.5	dBic
VSWR			1.5	
Impedance		50		Ω
Polarization	RHCP			
LNA				
Noise Figure			2.0	dB
Gain	26	28	30	dB
VSWR			2.0	
Supply Voltage	3.0		5.0	V
Current Consumption			12.0	mA
LTE Antenna				
Frequency	698		960	MHz
	1710		2690	
VSWR			3.0	
Gain (Zenith)			3.5	dB
Impedance		50		Ω
Polarization	Linear			
Wi-Fi Antenna				
Frequency	2400		2483.5	MHz
	4900		5825	
VSWR			2.0	
Gain (Zenith)			2.0	dB
Impedance		50		Ω
Polarization	Linear			

Mechanical Specification

Parameter	Specification
Antenna Dimension	181.7 x 68.9 x 69.1 mm
Mounting Type	Screw
RF Connector	3x SMA Male
RF Cable	2x RG174 (LTE,GNSS) + 1xLMR-100 (Wi-Fi)
Cable Length	3 m



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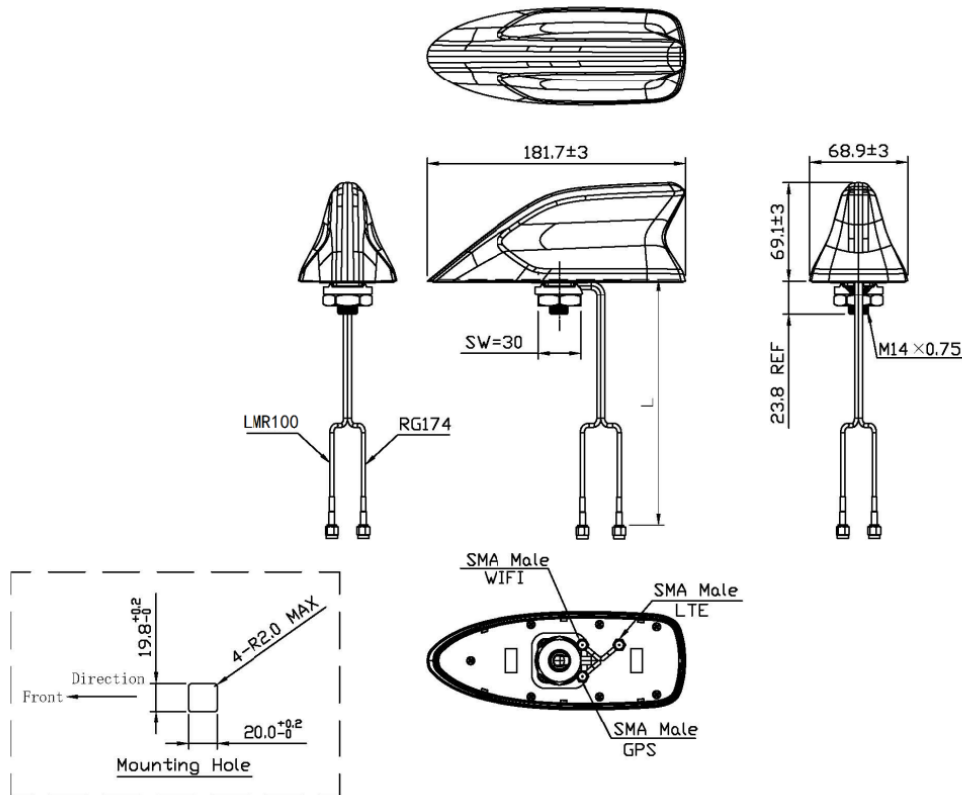


181.7 x 68.9 x 69.1 mm
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Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Relative Humidity	Up to 95%
RoHS Compliance	Yes
PB Free	Yes
MSL	1
ESD Sensitive	Yes
Vibration	10 to 1000 Hz G = 28.7 m/s ²
UL rating	UL-94 HB
Ingress Protection	IP67 (excluding cable outlet)

Product Dimension



Unit: mm



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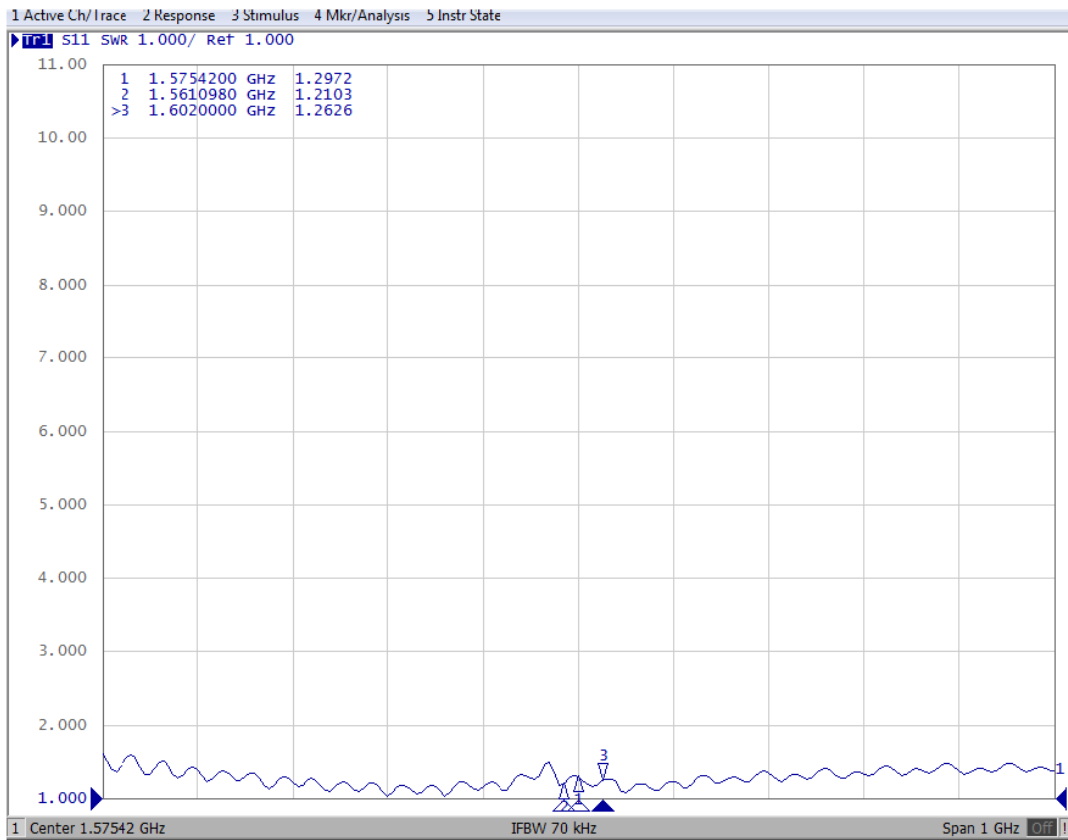
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Test Measurements - VSWR

GNSS



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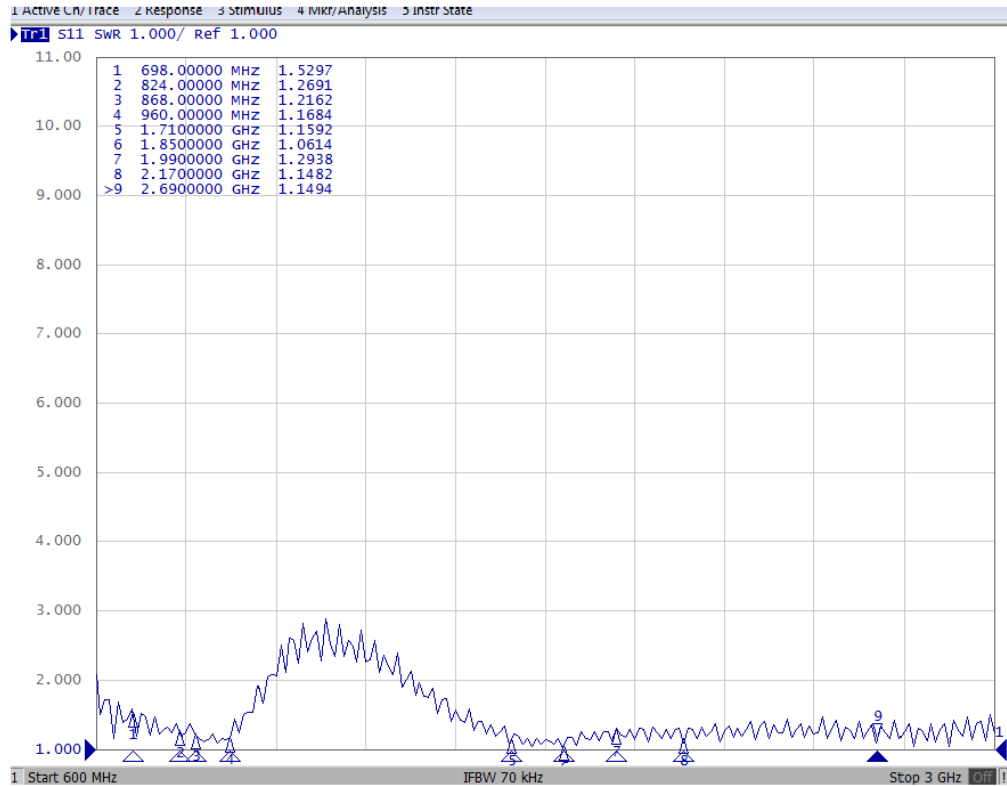


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LTE



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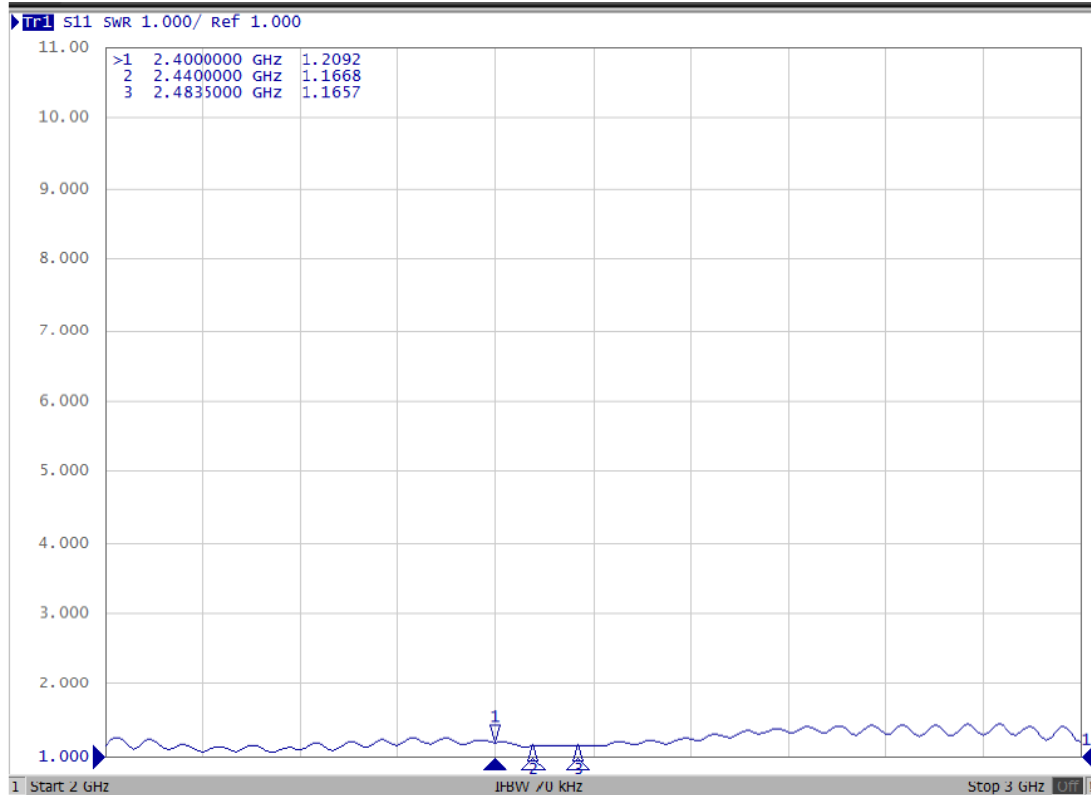


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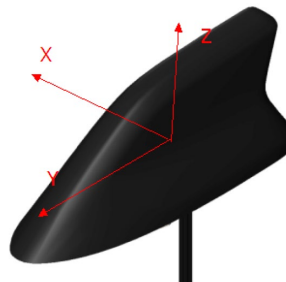


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Wi-Fi



Radiation Characteristics



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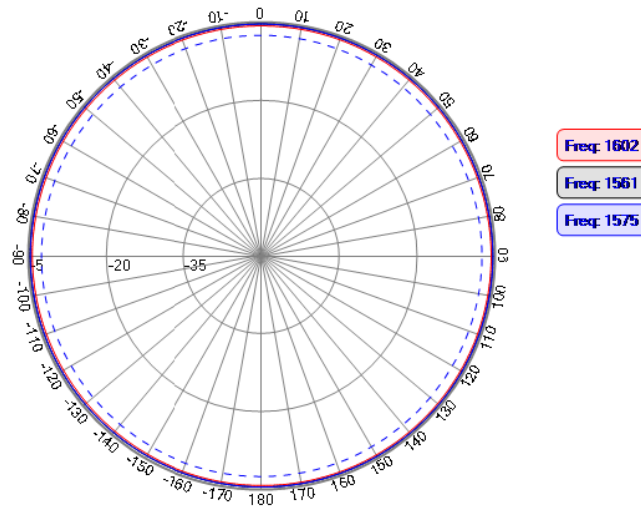


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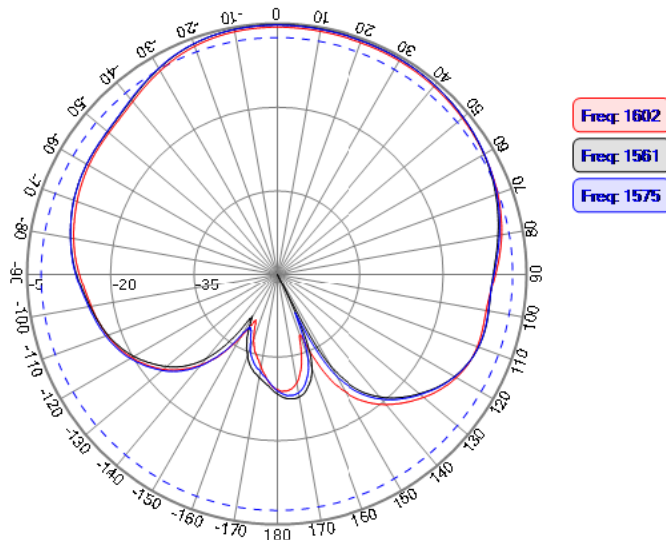
2D Pattern

GNSS

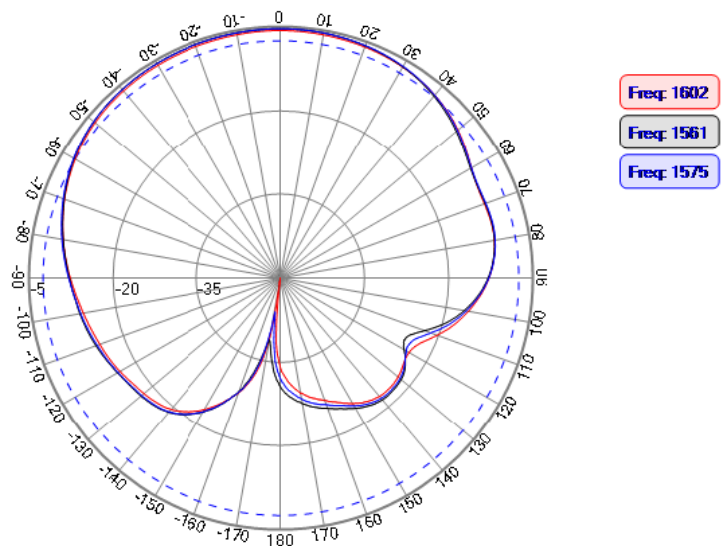
XY - Plane



XZ - Plane



YZ - Plane



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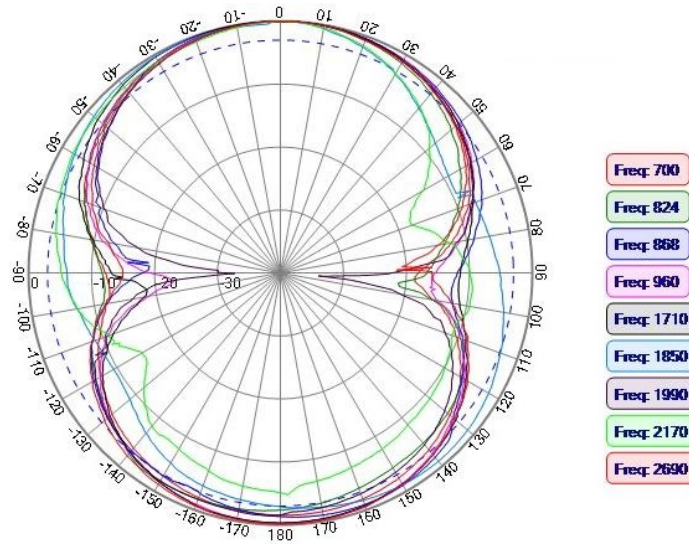
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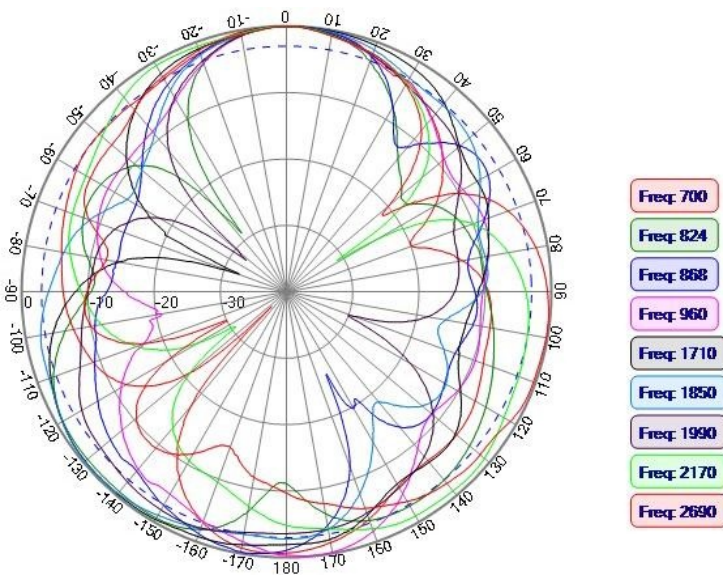
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LTE

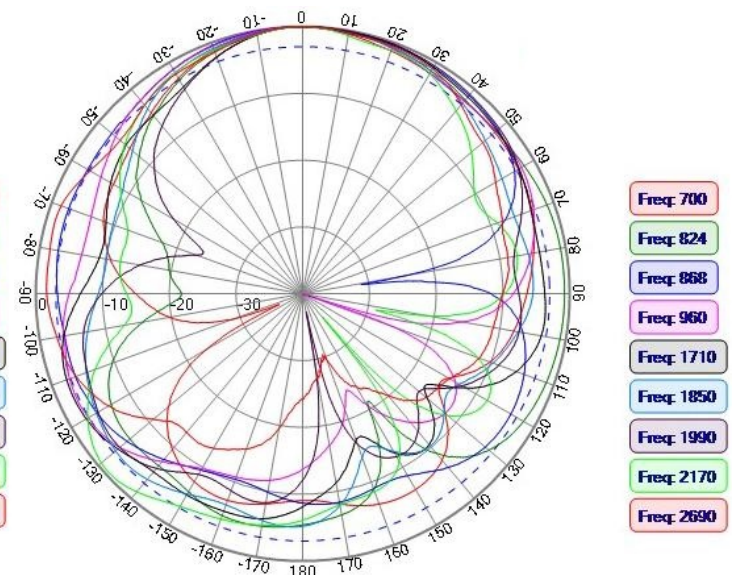
XY - Plane



XZ - Plane



YZ - Plane



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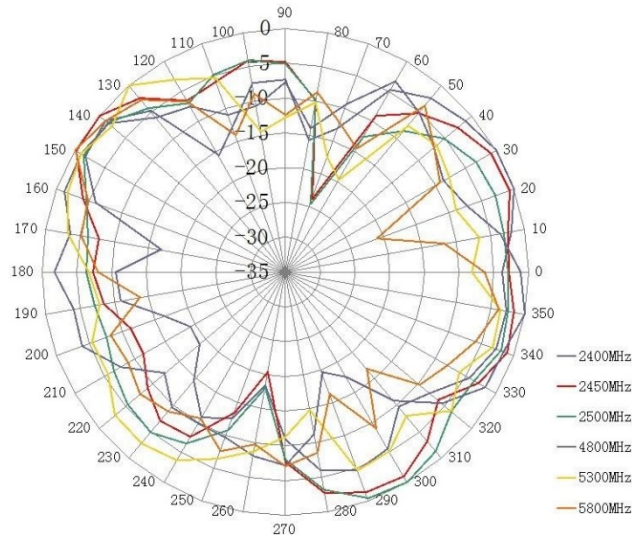
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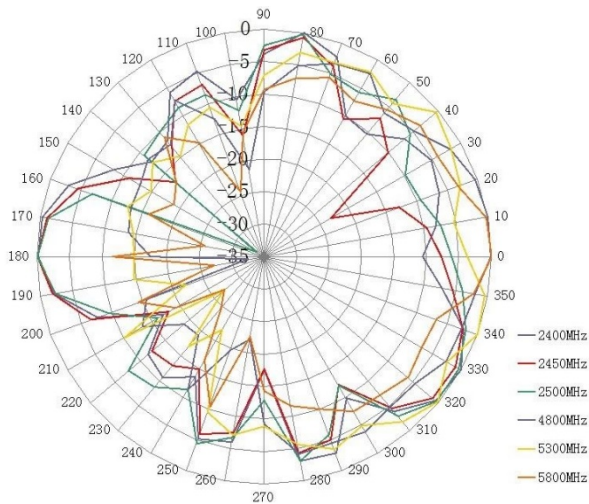
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MSL Level = 1

Wi-Fi

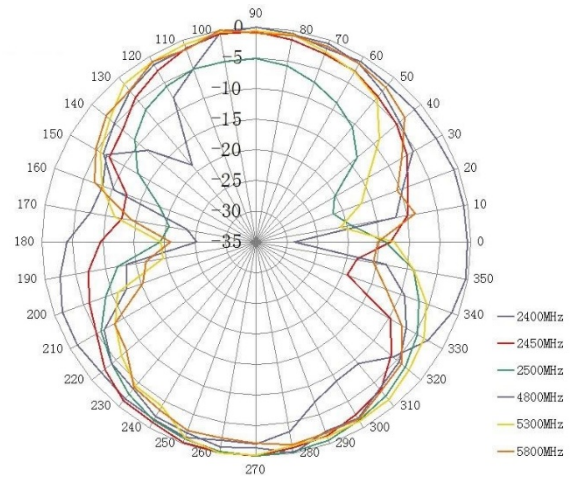
XY - Plane



XZ - Plane



YZ - Plane



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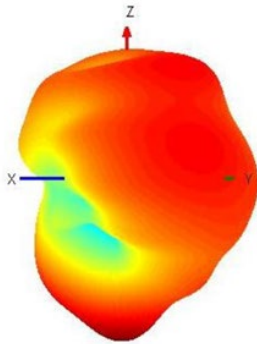


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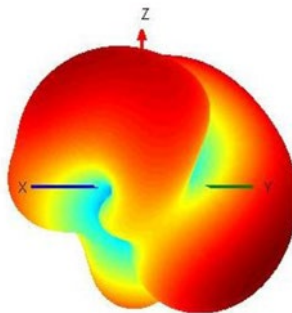
3D Pattern

LTE

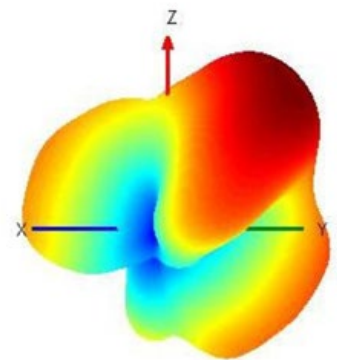
698 MHz



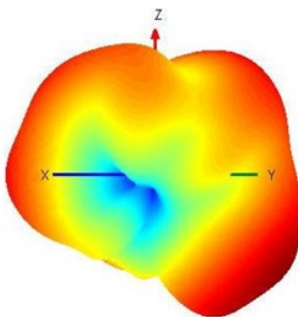
824 MHz



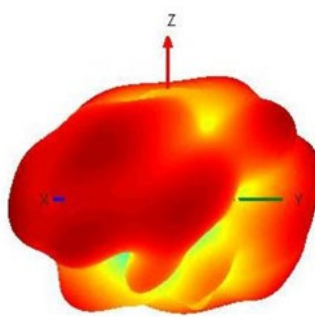
868 MHz



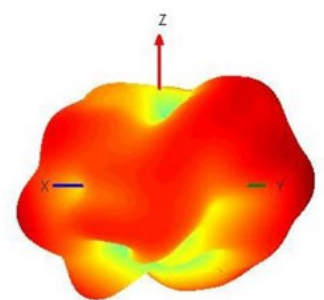
960 MHz



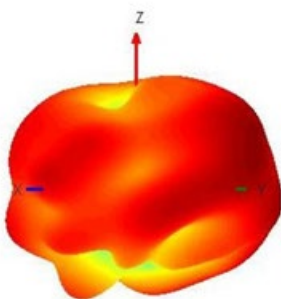
1710 MHz



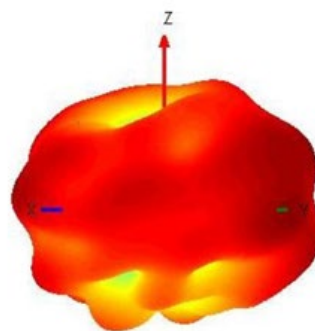
1850 MHz



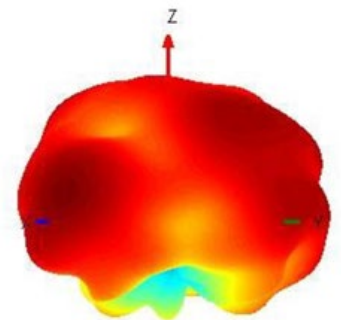
1990 MHz



2170 MHz



2690 MHz



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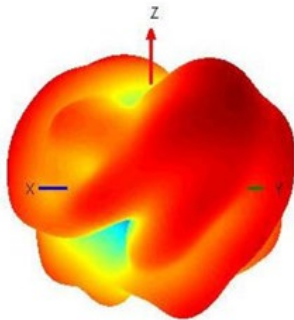
Check Inventory



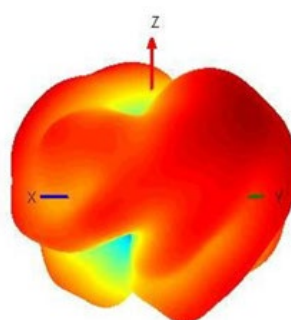
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Wi-Fi

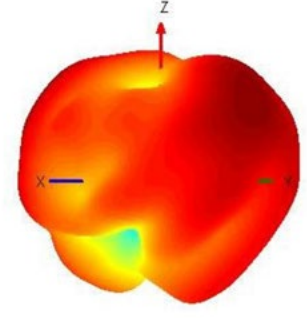
2400 MHz



2440 MHz



2483 MHz



Gain and Efficiency

Frequency (MHz)	Gain (dBi)	Efficiency
LTE		
698	3.57	0.69
824	2.28	0.61
868	2.32	0.56
960	2.1	0.57
1710	1.11	0.57
1850	0.32	0.52
1990	0.75	0.57
2170	1.97	0.59
2690	0.94	0.58
Wi-Fi		
2400	2.07	0.56
2440	1.49	0.58
2483	1.85	0.54

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Packaging Information

Number of Antenna/ Carton : 12 pcs
Weight of 1 pc of the antenna : 470 g
Dimension of the Carton : 495 x 220 x 270 mm
Weight of the carton : 6 kg

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