

#### TECHNICAL DATA SHEET

**Description**: 2xLTE, WiFi, GNSS Multiband

Vehicular Antenna

PART NUMBER: GPSLPMB401



### Features:

- 2xMiMo 698-960/1710-2690MHz
- WiFi 2400-2500/4900-5900MHz
- Active GNSS:
  - GPS, Galileo, Glonass, Beidou
  - LNA Gain 30dB
- Size 145x135x25mm
- Adhesive mount on plastic and glass fiber surfaces
- Mounting accessory for metallic surfaces

## **Applications:**

- Vehicle mount multiband antenna
- · High Speed LTE data and WiFi
- · Tracking, Navigation
- Fleet management
- Utility Vans (Gas, Water, Electricity)

All dimensions are in mm / inches

Issue: 1720

In the effort to improve our products, we reserve the right to make changes judged to be necessary. CONFIDENTIAL AND PROPRIETARY INFORMATION

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## **ELECTRICAL SPECIFICATIONS**

LTE		
Frequency	698-960/1710-2690	
Nominal Impedance	I Impedance 50	
VSWR	2.2	
Average Efficiency(698-960MHz)	-960MHz) 72	
Average Efficiency(1710-2690MHz)	68	%
Peak Gain (698-960MHz)	4.4	dBi
Peak Gain (1710-2690MHz)	5.4	dBi
WIFI		
Fraguenay	0.400 0500/4000 5000	
Frequency	2400-2500/4900-5900	MHz
Nominal Impedance	2400-2500/4900-5900 50	MHz Ω
Nominal Impedance	50	Ω
Nominal Impedance VSWR @2400-2500MHz	50 4	Ω Max
Nominal Impedance VSWR @2400-2500MHz VSWR @4900-5900MHz	50 4 3	Ω Max Max
Nominal Impedance VSWR @2400-2500MHz VSWR @4900-5900MHz Average Efficiency(2400-2500MHz)	50 4 3 46	Ω Max Max %

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### **ELECTRICAL SPECIFICATIONS**

**GPS** 

Frequency 1561.098±2.046/1575.42±1.023/1602.5625±4 MHz

Nominal Impedance 50  $\Omega$ 

VSWR 2:1

Gain (Radiating element) 1 dBic +/- 1 dB

Gain (LNA gain) 30 dB +/- 2 dB

Polarization RHCP

Out of Band Rejection

698 MHz >70 dB

960MHz >65 dB

1710MHz >60 dB

2170MHz >65 dB

2400MHz >65 dB

Noise Figure <2.4 dB

Operating Voltage 3.3-5 Vdc±0.5V

Current Consumption <11 mA





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## **ELECTRICAL SPECIFICATIONS**

## Cable and Connector type

Item	GPSLPMB403 RF Cables	Cable Type	Cable Length	Connector
1	LTE-1	LMR195	3 meters [ 118.11" ]	SMA Male
2	WiFi	LMR195		RP-SMA Male
3	GPS	LMR100		SMA Male
4	LTE-2	LMR195		SMA Male







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## **MECHANICAL SPECIFICATIONS**

Plastic radome SABIC PC943

Color Black

Ingress Protection IP67

Weight 400 g

Cable retention: Pull off 30N mini

Fixing system 3M VHB4959 (T=3mm)

### **ENVIRONMENTAL SPECIFICATIONS**

Operating temperature

-40 ~ +85 ° C





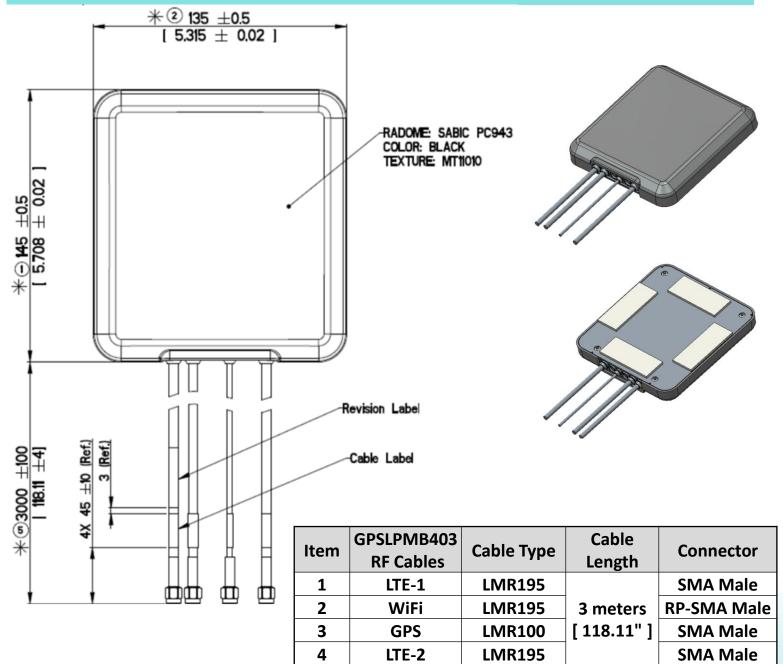
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## **MECHANICAL DRAWING**









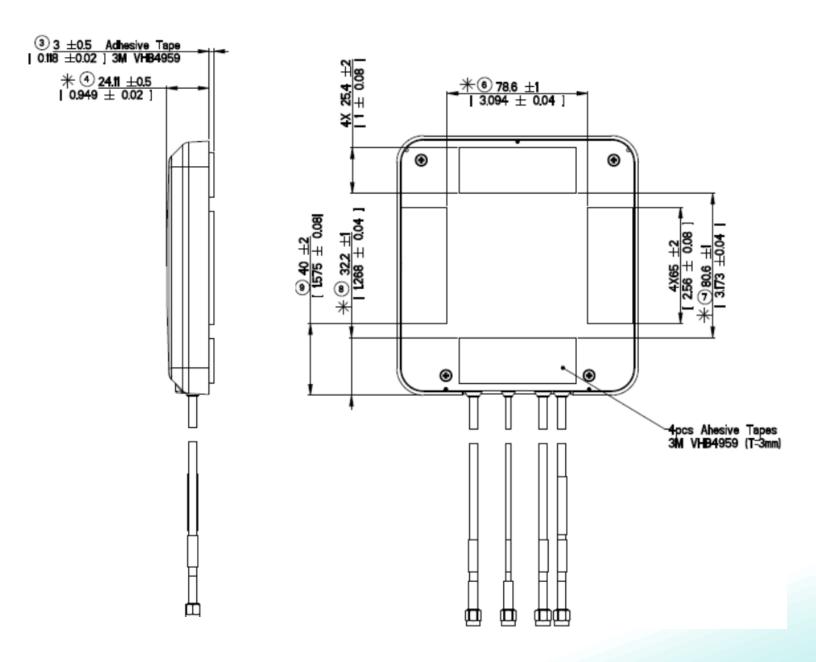
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## **MECHANICAL DRAWING**









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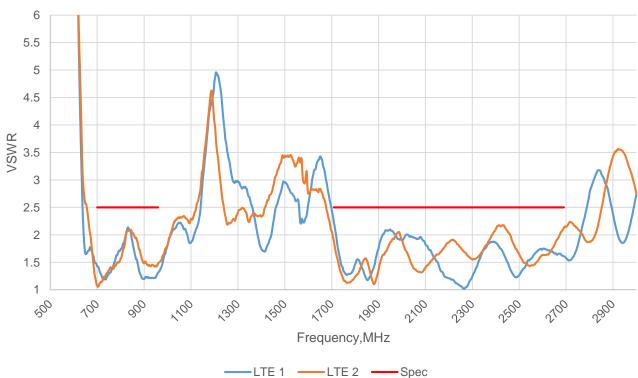
Vehicular Antenna

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## **CHARTS**

# LTE 1 and LTE2 VSWR

## VSWR VS Frequency measured in free space









#### **TECHNICAL DATA SHEET**

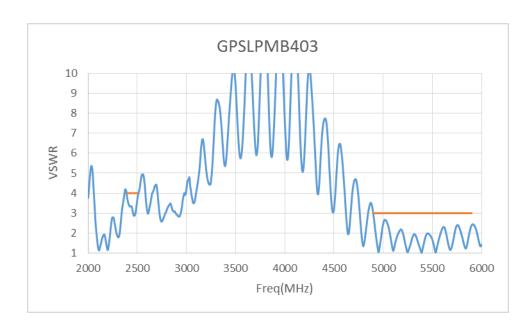
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## **CHARTS**

## WiFi VSWR\*





<sup>\*</sup> Test on bracket and diameter is 500mm ground plane



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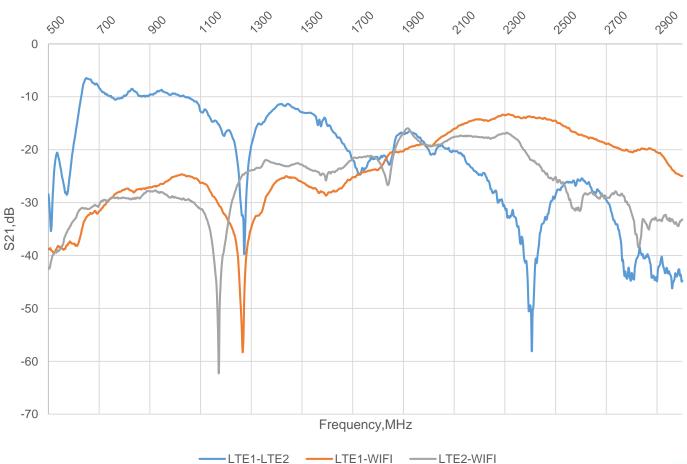
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## **CHARTS**

## Isolation

Isolation vs Frequency measured in free space









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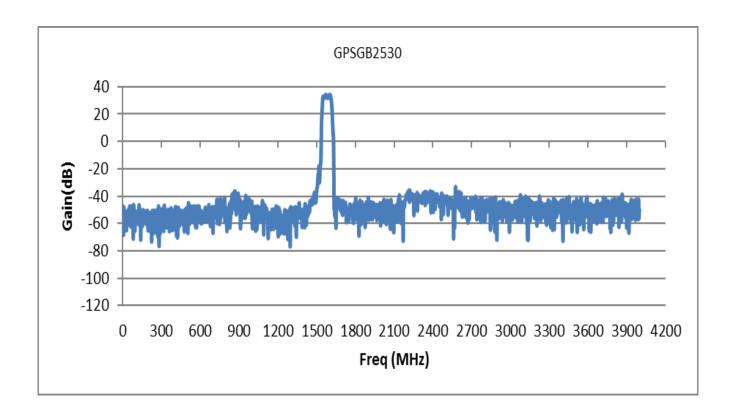
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## **CHARTS**

# GPS LNA Gain and out-of-band rejection





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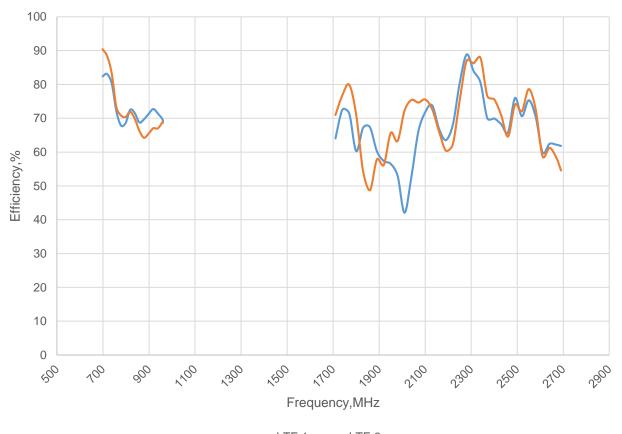
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## **CHARTS**

# LTE 1 and LTE2 Efficiency

Efficiency vs Frequency measured in free space



—\_\_\_LTE 1 —\_\_LTE 2





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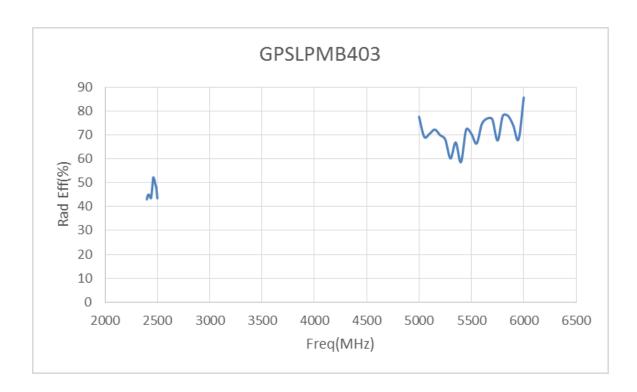
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## **CHARTS**

# WiFi Efficiency\*





<sup>\*</sup> Test on bracket and diameter is 500mm ground plane



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## **CHARTS**

## LTE1 and LTE2 Peak Gain

Peak Gain vs Frequency measured in free space







#### **TECHNICAL DATA SHEET**

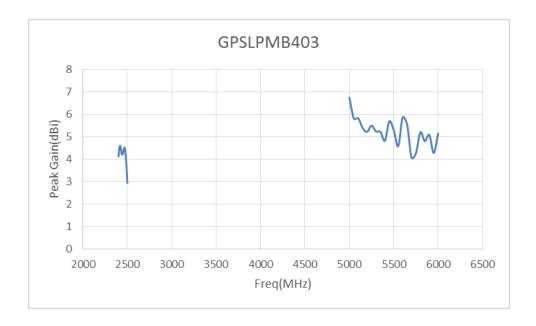
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## **CHARTS**

## WiFi Peak Gain\*





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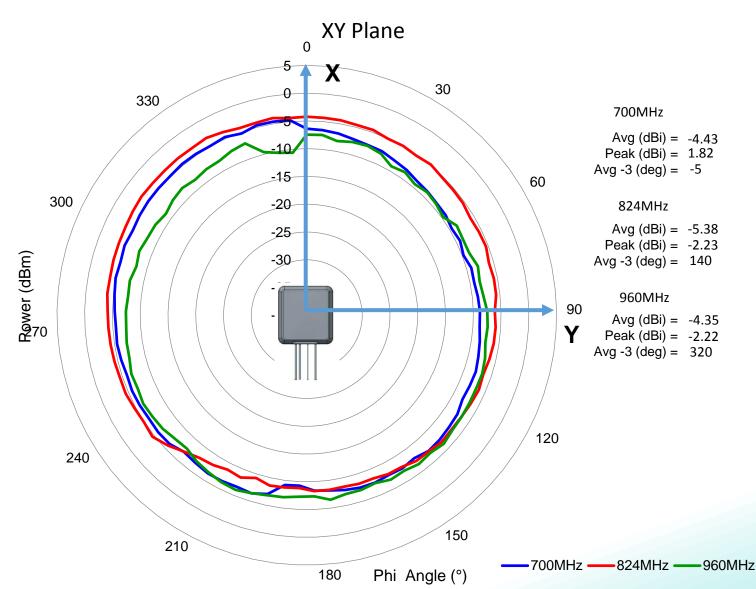
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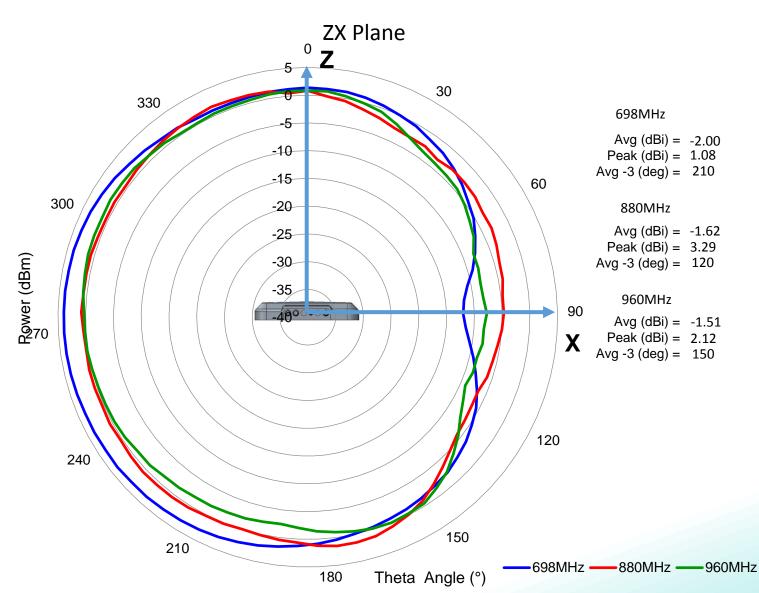
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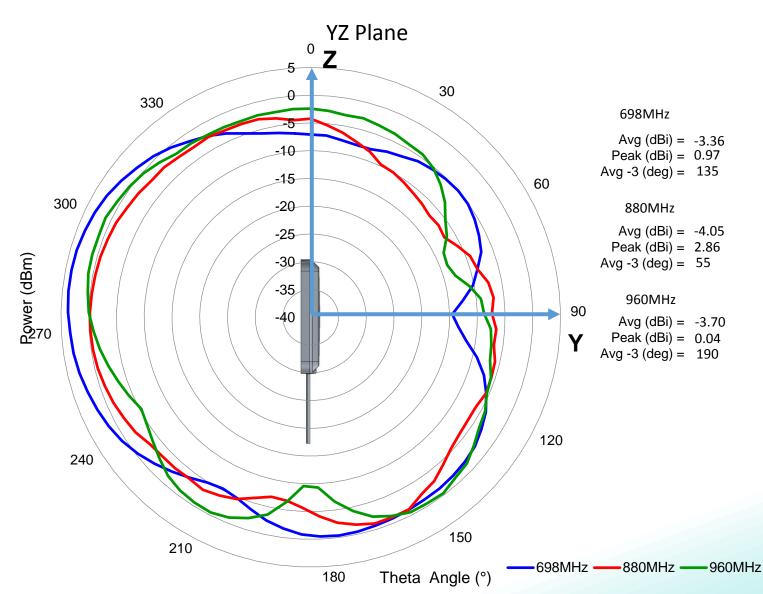
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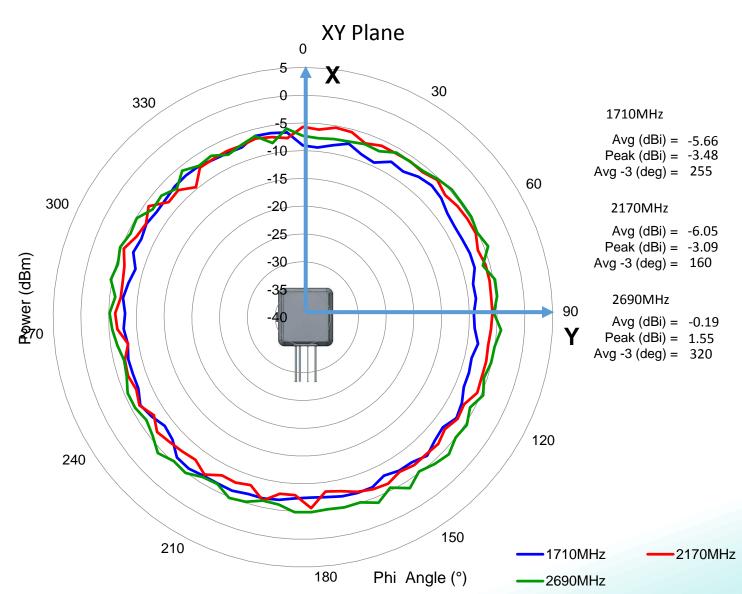
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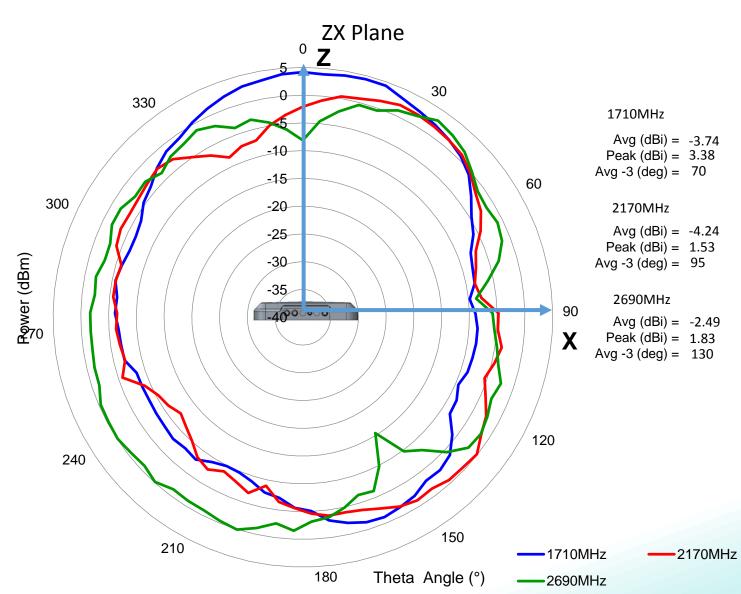
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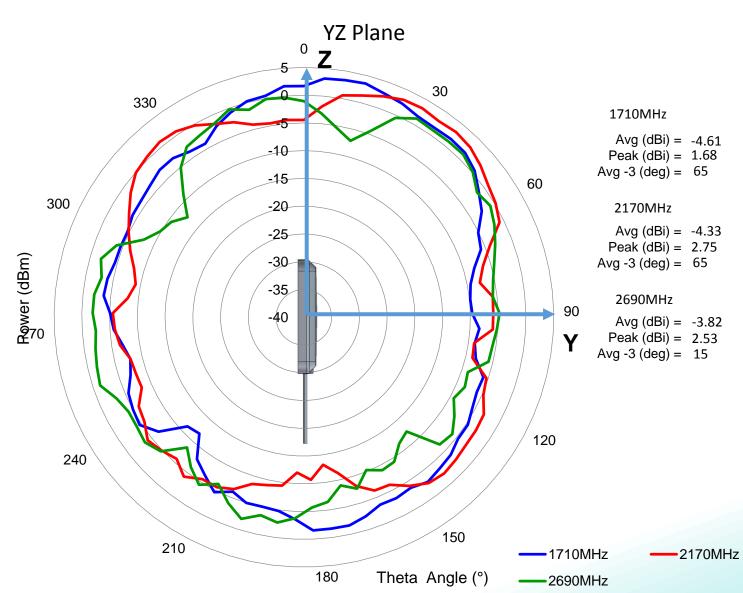
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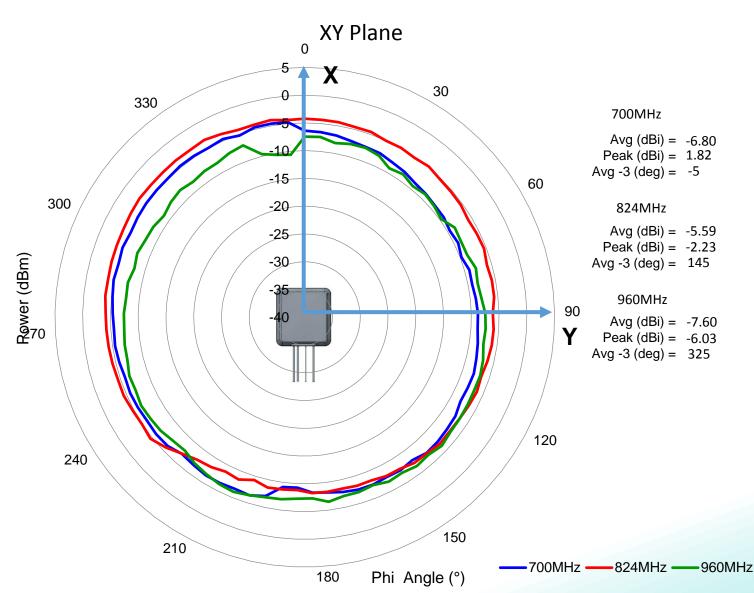
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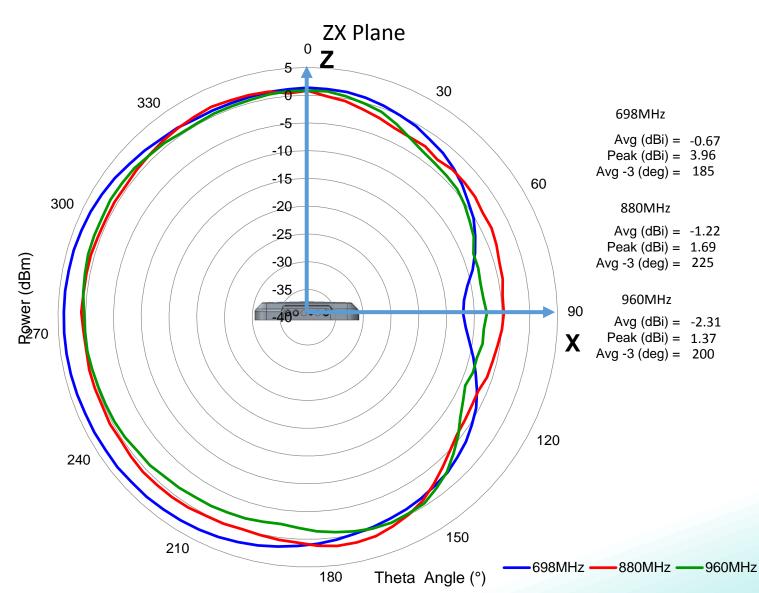
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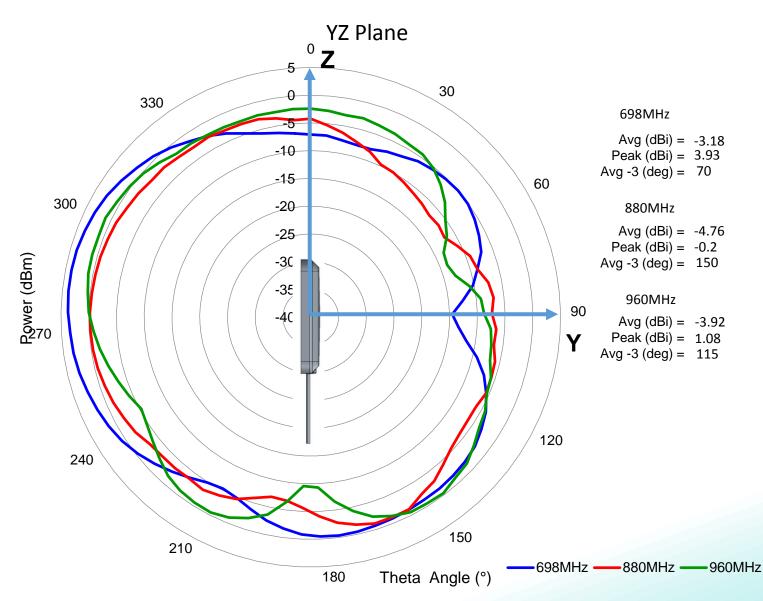
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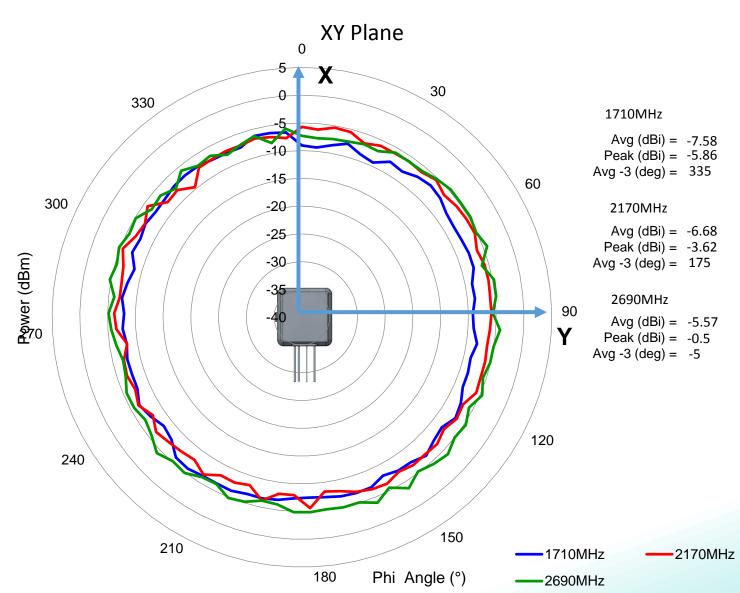
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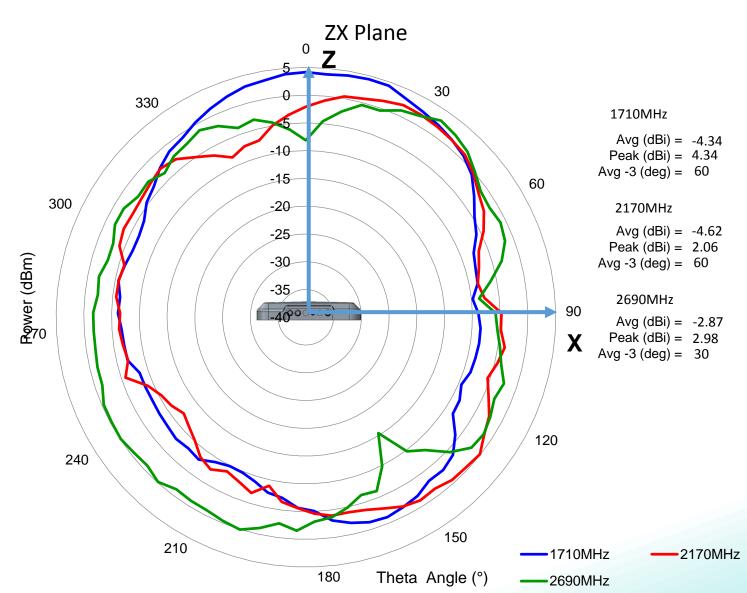
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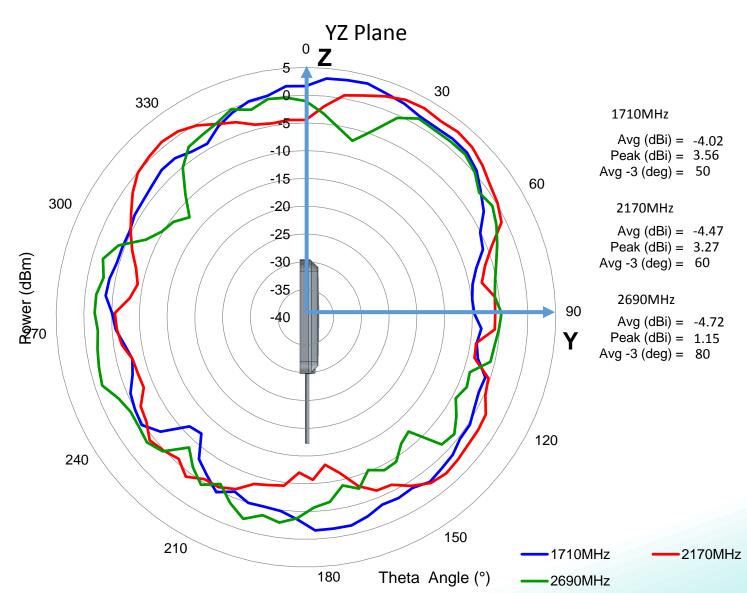
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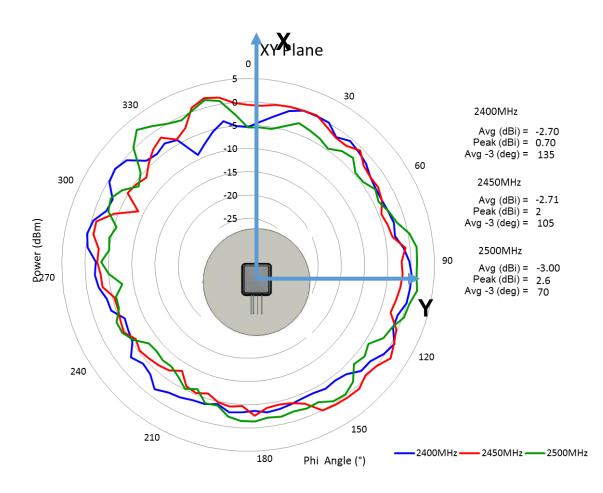
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<sup>\*</sup> Test on bracket and diameter is 500mm ground plane





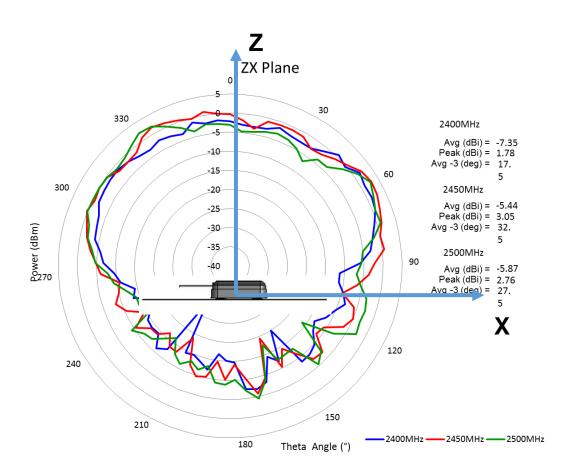
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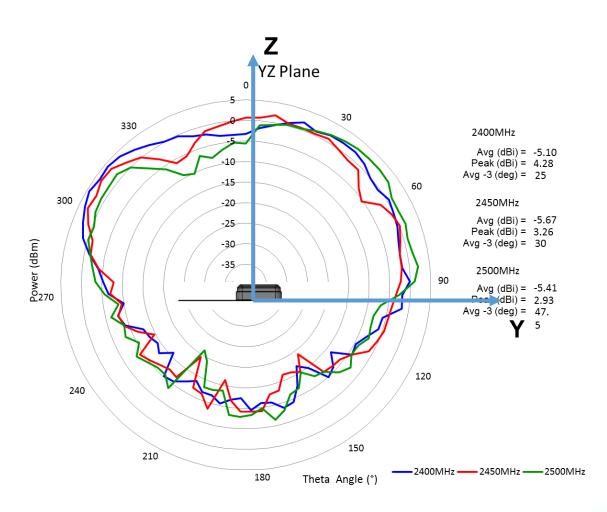
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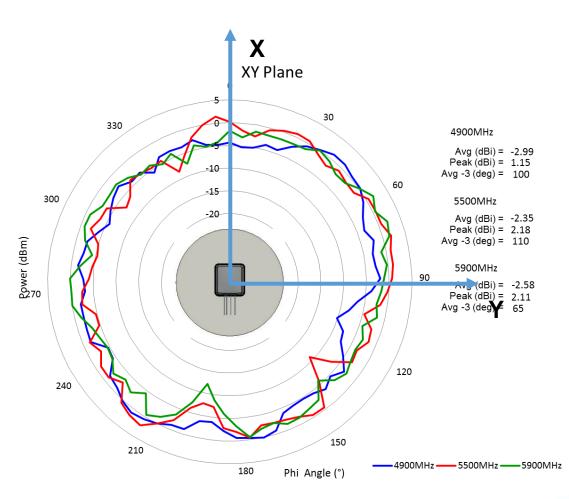
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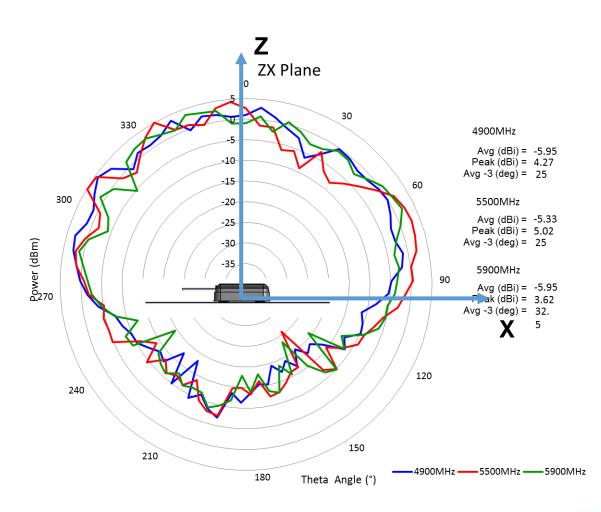
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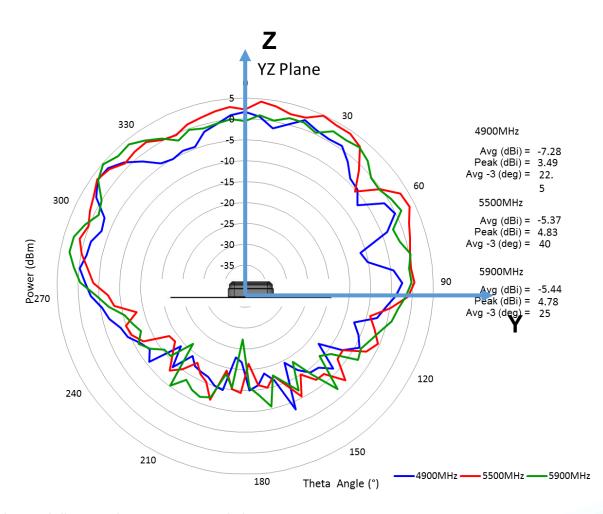
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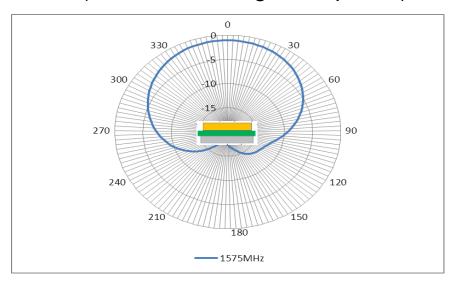
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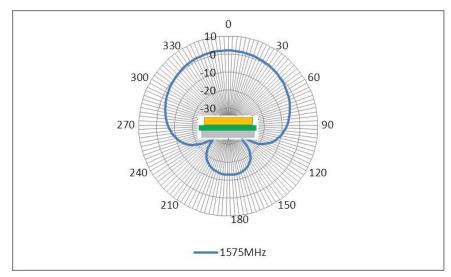
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### **CHARTS**

# Radiation Pattern (70mm x 70mm ground plane ) GPS & Galileo



25 X 25 X 4mm Ceramic Antenna



25 X 25 X 4mm Ceramic Antenna





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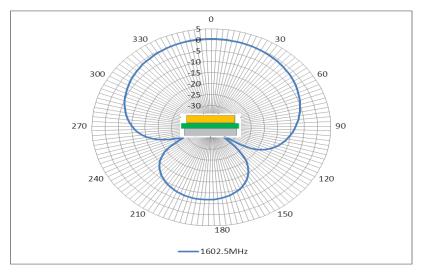
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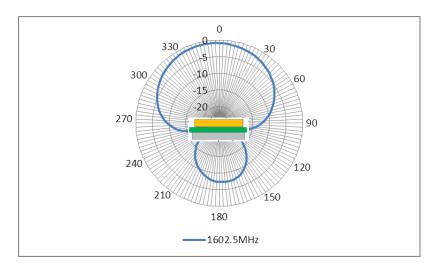
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### **CHARTS**

# Radiation Pattern (70mm x 70mm ground plane ) GLONASS



25 X 25 X 4mm Ceramic Antenna



25 X 25 X 4mm Ceramic Antenna





#### **TECHNICAL DATA SHEET**

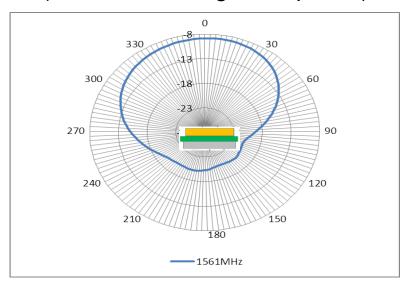
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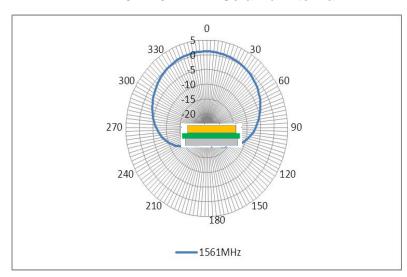
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### **CHARTS**

# Radiation Pattern (70mm x 70mm ground plane ) BD2



25 X 25 X 4mm Ceramic Antenna



25 X 25 X 4mm Ceramic Antenna





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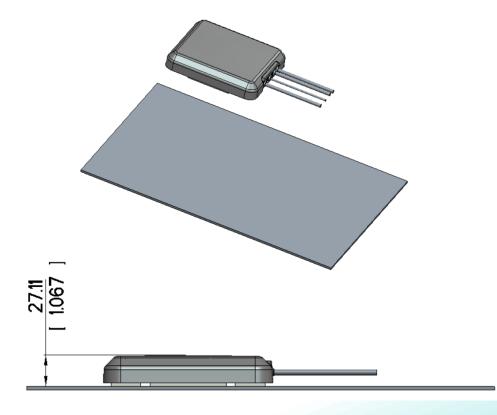
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### **PACKAGING**

- Each antenna packed in a plastic bag
- 12 bags of antennas packed in a cardboard box.
- 1 label on each box with qty, part number, date code.

### **ASSEMBLY**

When this antenna is applied to a non-metallic surface, like glass fiber or plastic material, it could be adhered on the surface directly.





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### **ASSEMBLY**

**Mounting with a plastic bracket**: When this antenna applied to the metal surface, a plastic bracket is needed to elevate the antenna 1" for the optimum RF performance.

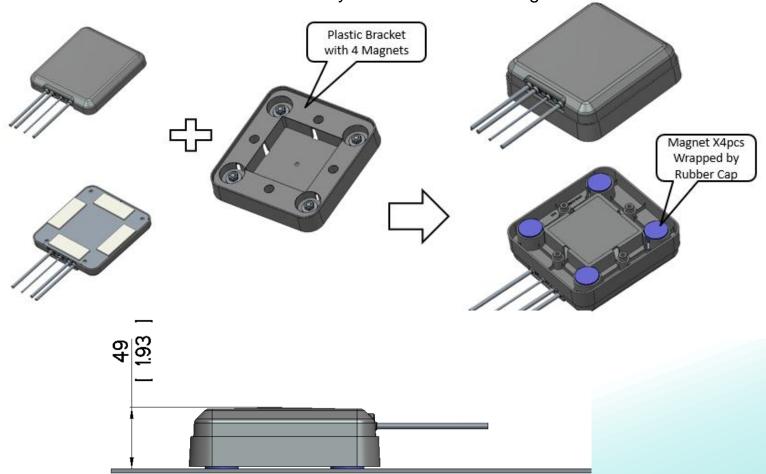
# Option 1, LPMB4BRACKETMM Magnetic Mount

----Removable Mounting (No Surface damage)

The mounting surface is made of steel or iron.

Firstly, The antenna adhered on the plastic bracket with magnets by the adhesive tape.

Then the whole assemble could be attached on the iron metals by magnets, and also could be removed from the metal surface easily without surface damage.



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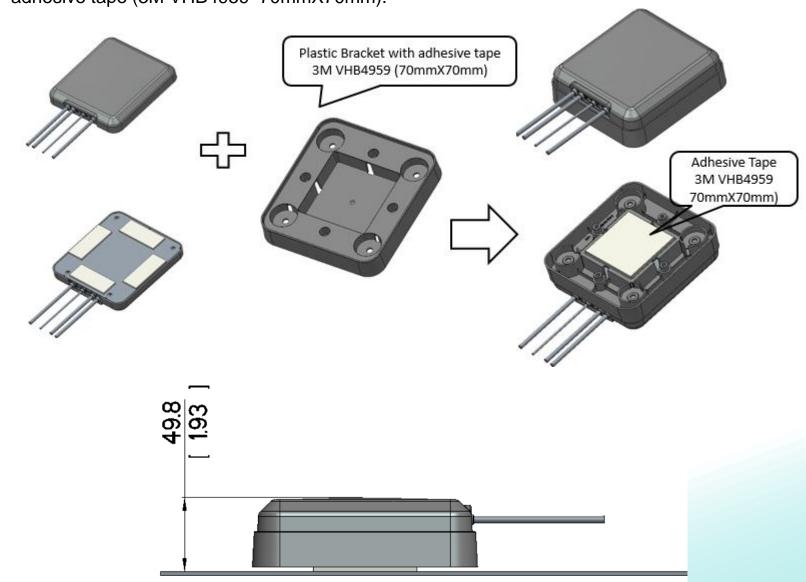
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### **ASSEMBLY**

# Option 2, LPMB4BRACKETAM Adhesive Mount -- Permanent Mount

Especially when the mounting surface is made of non-ferrum metals, like aluminum, Firstly, the antenna adhered on the plastic bracket by the adhesive tape,

Then the whole assemble could adhere on the mounting surface by the 3MVHB adhesive tape (3M VHB4959 70mmX70mm).



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