

**Description:** 2X LTE, 2XWiFi Vehicular Antenna

**Series:** Low Profile MB

**PART NUMBER:** LPMB40X



**Features:**

- 2xMiMo 698-960/1710-2690MHz
- WiFi 2400-2500/4900-5900MHz
- 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
- Fleet management
- Utility Vans (Gas, Water, Electricity)

All dimensions are in mm / inches

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Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998



**Description:** 2X LTE, 2XWiFi Vehicular  
Antenna

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## ELECTRICAL SPECIFICATIONS

### LTE Antenna

Frequency	698-960/1710-2690 MHz
Nominal Impedance	50 $\Omega$
VSWR(*)	2.5 Max
Average Efficiency(698-960MHz)(**)	64 %
Average Efficiency(1710-2690MHz) (**)	57 %
Peak Gain(698-960MHz) (**)	2.0 dBi
Peak Gain(1710-2690MHz) (**)	4.4 dBi

### WIFI Antenna

Frequency	2400-2500/4900-5900 MHz
Nominal Impedance	50 $\Omega$
VSWR (*)	2 Max
Average Efficiency(2400-2500MHz) (**)	63 %
Average Efficiency(4900-5900MHz) (**)	73 %
Peak Gain(2400-2500MHz) (**)	3.5 dBi
Peak Gain(4900-5900MHz) (**)	4.7 dBi

\* Measured on 500mm ground plane with LMR195 3m cable

\*\* Measured on 500mm ground plane with LMR195 320mm cable

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## MECHANICAL SPECIFICATIONS

Antenna P/N	Antenna Color / Material	Weight	Cable and Connector type		Cable length	Mounting System
LPMB401	SABIC PC943, Black	607g	LTE-1	LMR195* SMA Male	3Meters / 118.11Inchs	Adhesive Tape 3mmThick 3M VHB 4959
LTE-2			LMR195* SMA Male			
WiFi-1			LMR195* RP-SMA Male			
WiFi-2			LMR195* RP-SMA Male			
LPMB405		492g	LTE-1	LMR195* SMA Male	2Meters / 78.74Inchs	
			LTE-2	LMR195* SMA Male		
			WiFi-1	LMR195* RP-SMA Male		
			WiFi-2	LMR195* RP-SMA Male		

\* Or Equivalent

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature

-40 ~ +85° C

Ingress Protection

IP67

RoHS Compliant

Yes

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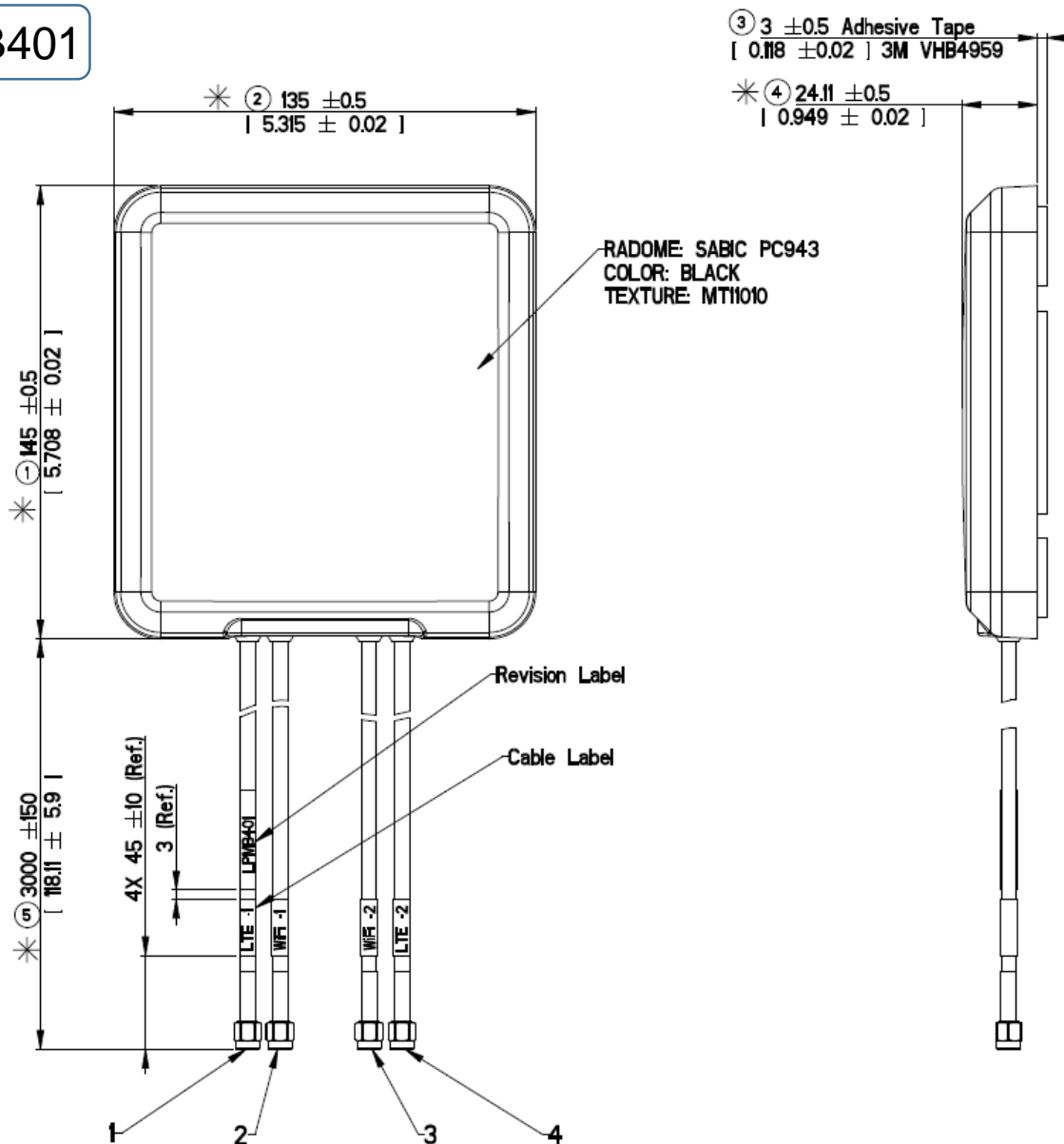
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**MECHANICAL DRAWING**

**LPMB401**



LPMB401	P/N	CABLE	CABLE LENGTH	CONNECTOR
1. LTE-1 Cable Assy	125-01188.001	LMR-195	3 Meters 9.84FT/118.11"	SMA Male
2. WiFi-1 Cable Assy	125-01190.001			RP-SMA Male
3. WiFi-2 Cable Assy	125-01191.001			RP-SMA Male
4. LTE-2 Cable Assy	125-01189.001			SMA Male

• OR EQUIVALENT

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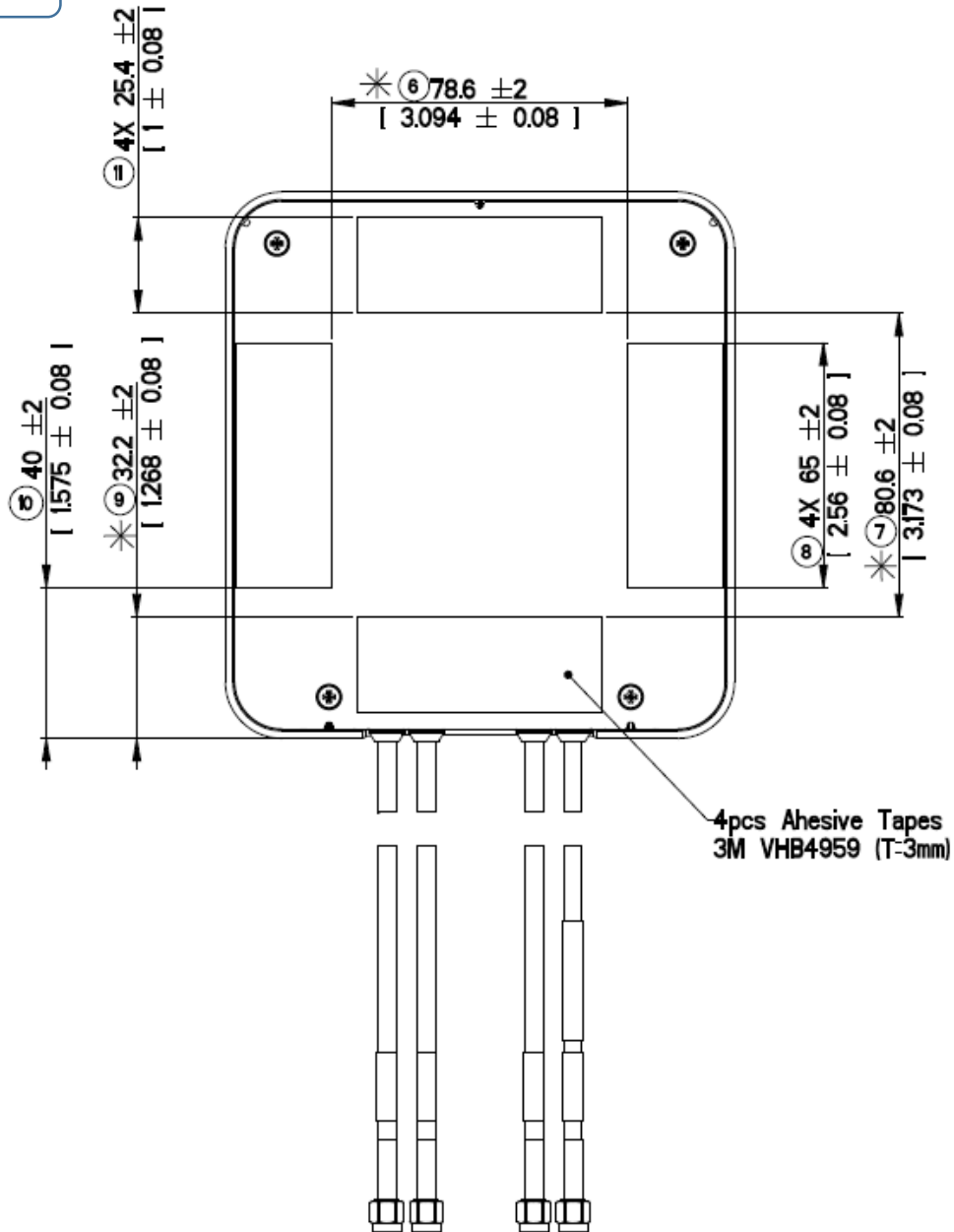
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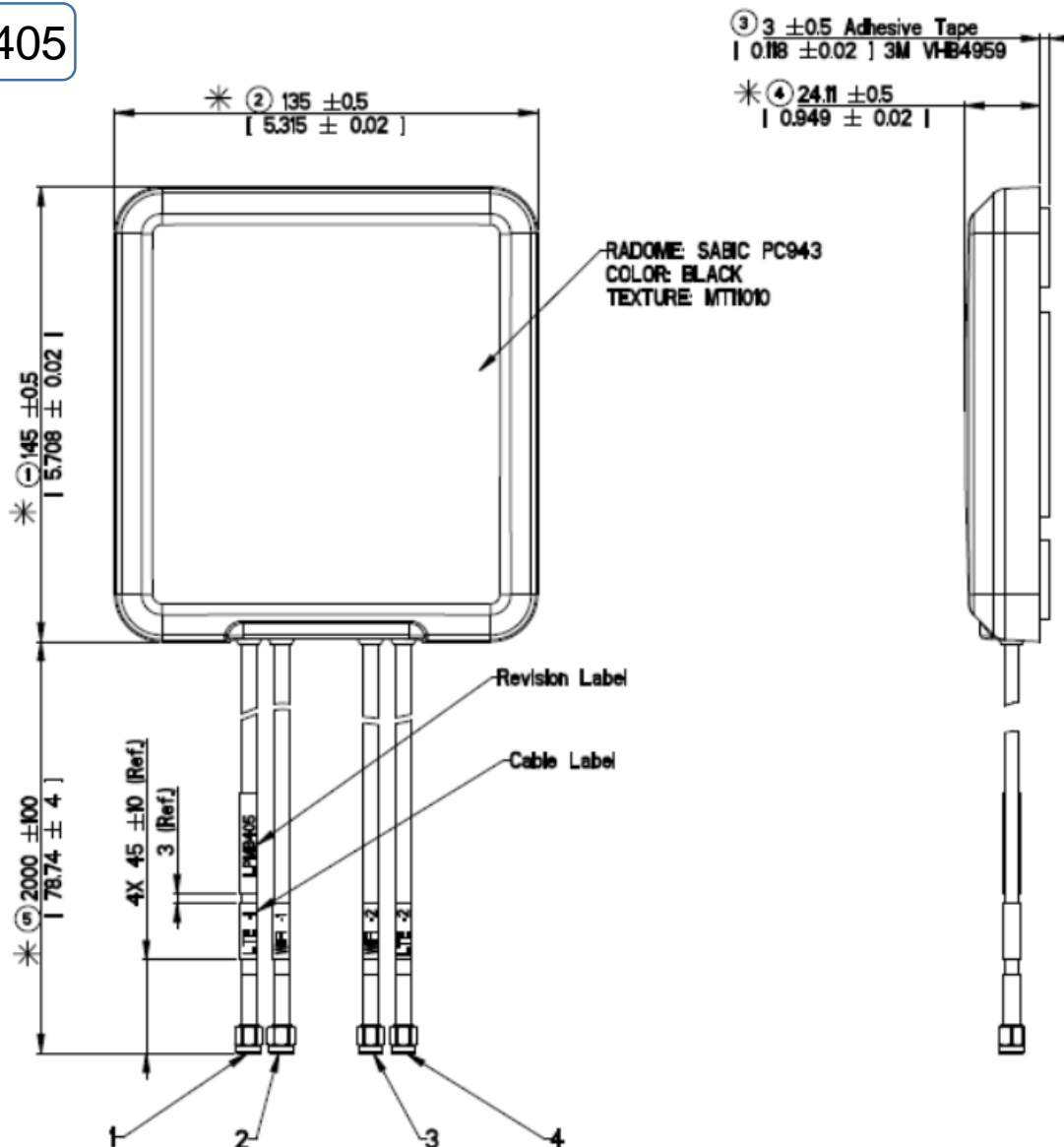
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**MECHANICAL DRAWING**

LPMB405



LPMB405	P.N.	CABLE	CABLE LENGTH	CONNECTOR
1. LTE-1 Cable Assy	125-00436.001	LMR-195	2 Meters [78.74']	SMA Male
2. WiFi-1 Cable Assy	125-00438.001			RP-SMA Male
3. WiFi-2 Cable Assy	125-00439.001			RP-SMA Male
4. LTE-2 Cable Assy	125-00437.001			SMA Male

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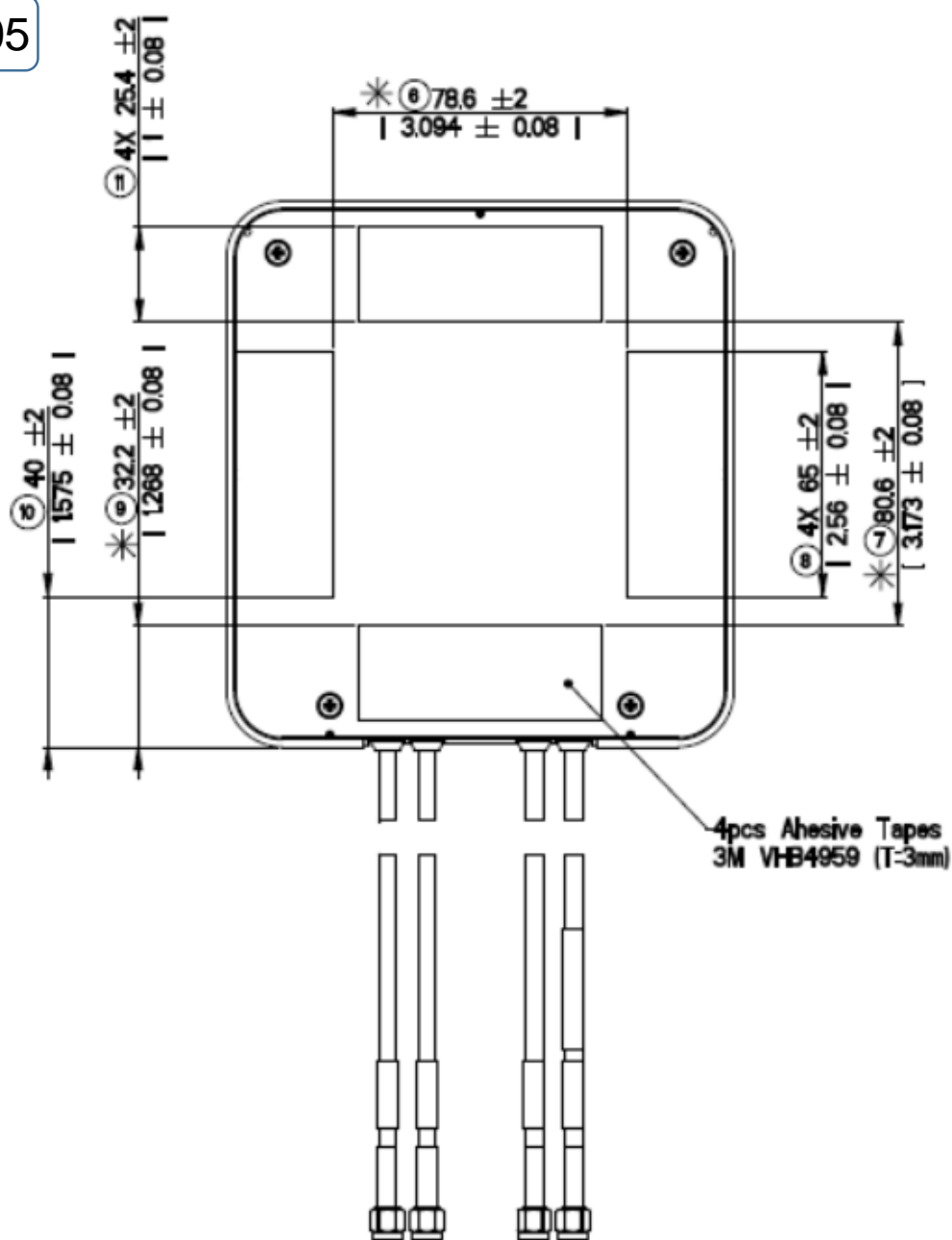
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# MECHANICAL DRAWING

**LPMB405**



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## TEST SETUP

Below performance test in two situation

Situation 1 . Test in free space .

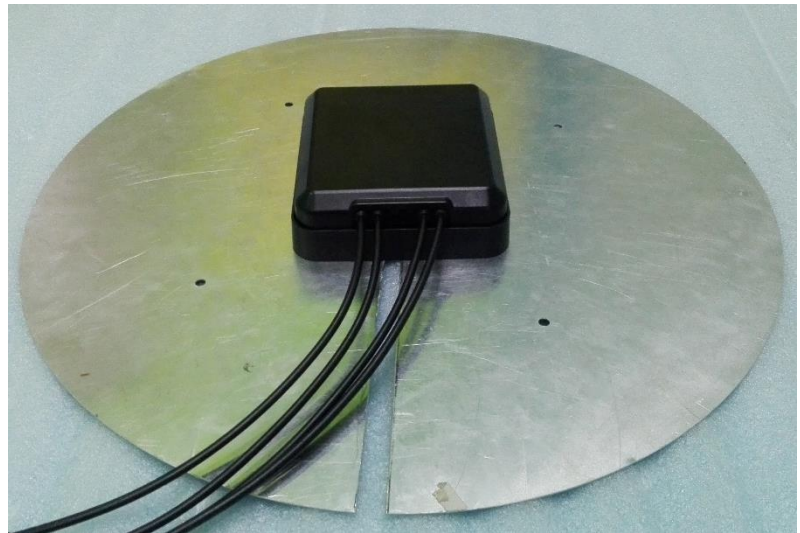
Situation 2. Test on 1 inch bracket with  $\phi 500\text{mm}$  (19.7inch) ground.

Situation 1



Free space

Situation 2



**Ground plane  $\phi = 500\text{mm}$  (19.7inch)**  
Bracket height=1inch



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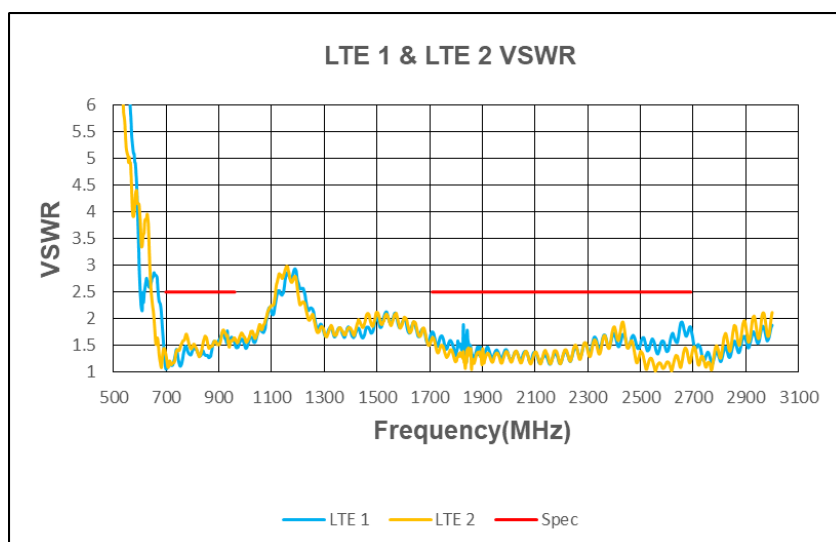
**PART NUMBER:** LPMB40X

## CHARTS

### Situation 1: Performance in free space



### LTE 1 & LTE 2 VSWR



**Note : Measured with 3m cable**

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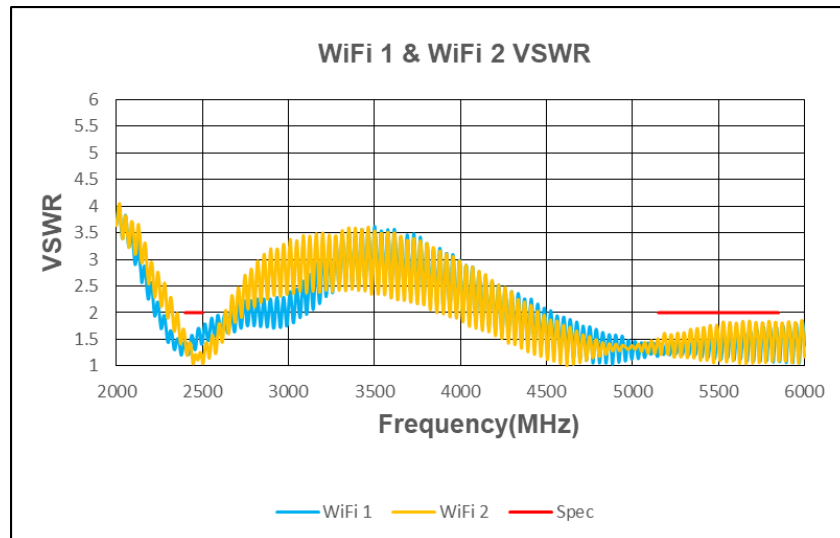
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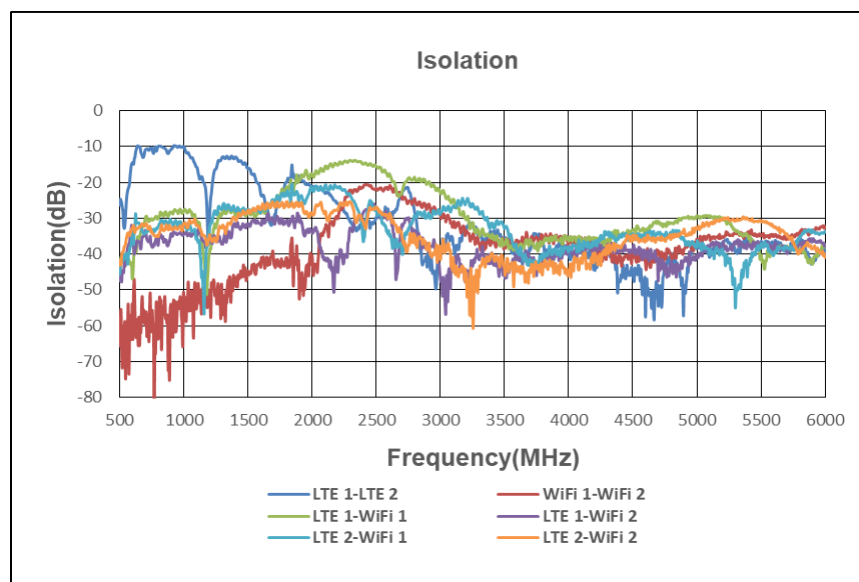
**PART NUMBER:** LPMB40X

## CHARTS

### WiFi1 & WiFi2 VSWR



### Isolation



**Note :** Measured with 3m cable

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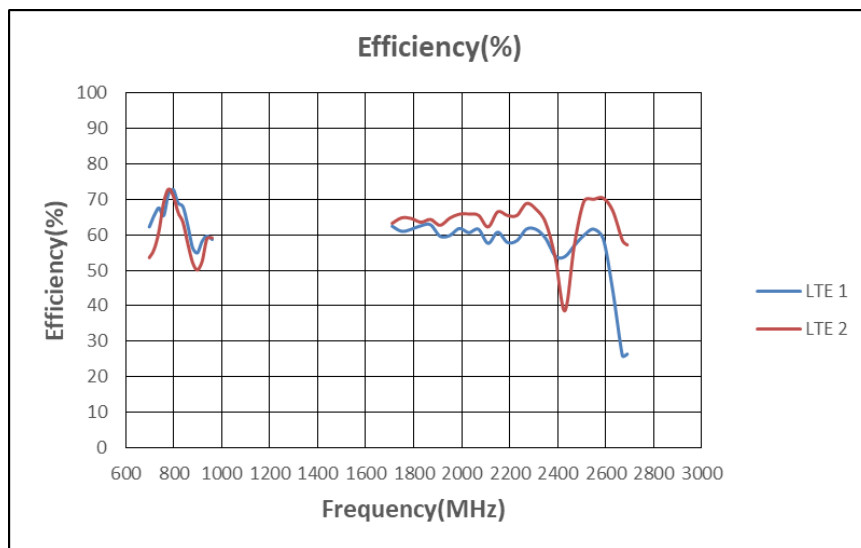
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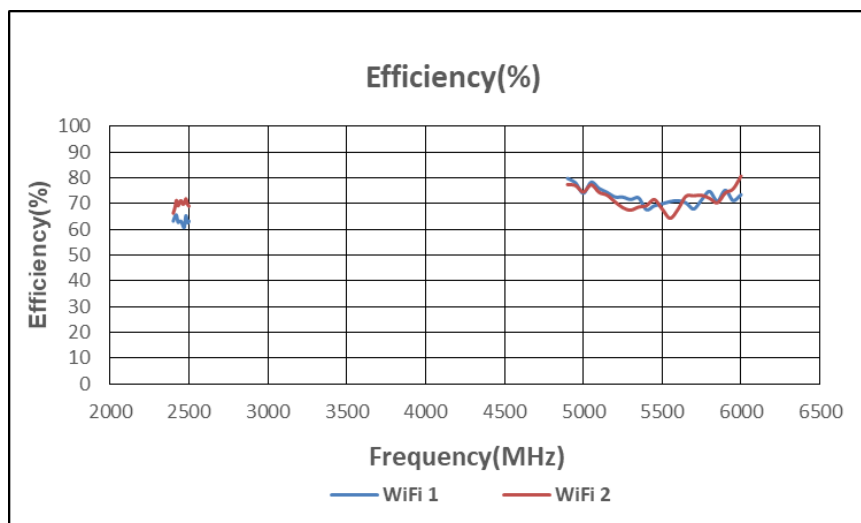
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## CHARTS

### LTE 1 and LTE2 Efficiency



### WiFi 1 and WiFi 2 Efficiency



**Note :** Measured with 320mm cable

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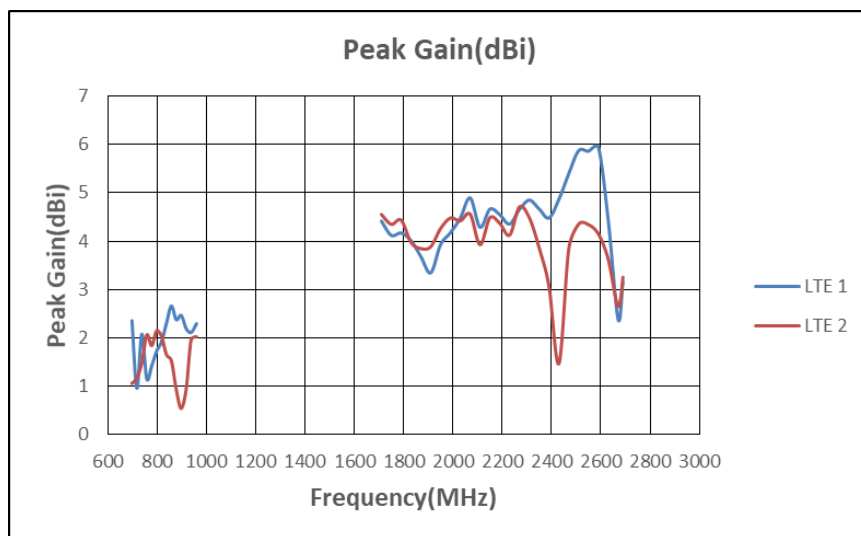
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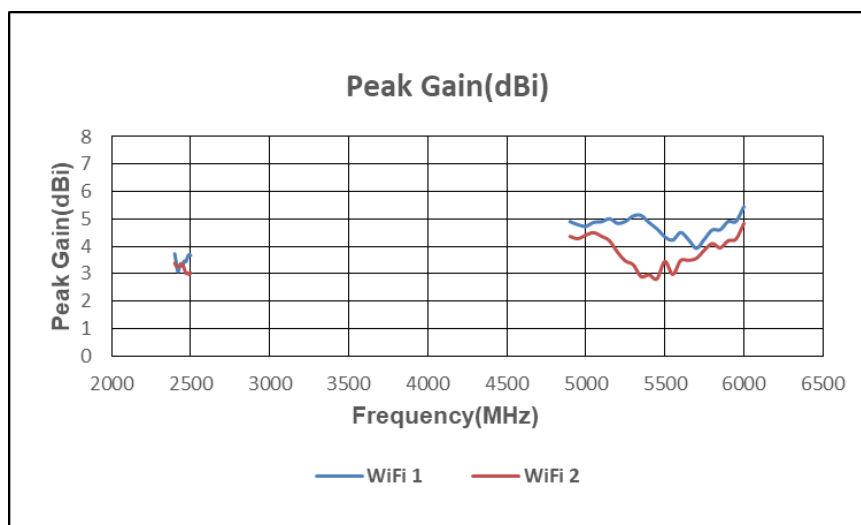
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## CHARTS

### LTE 1 and LTE2 Peak Gain



### WiFi 1 and WiFi 2 Peak Gain



**Note : Measured with 320mm cable**

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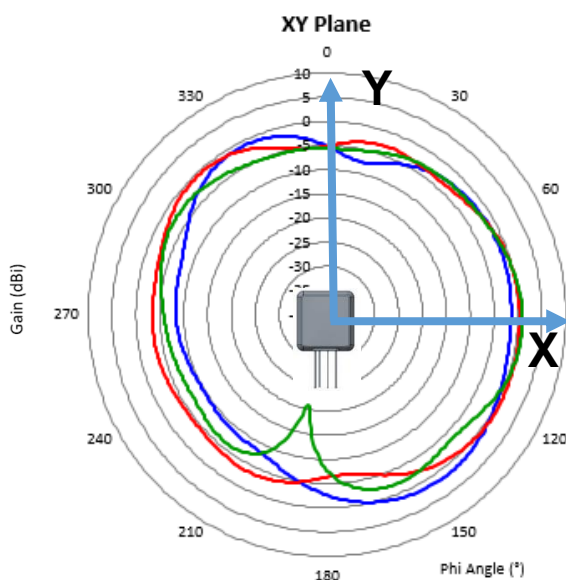
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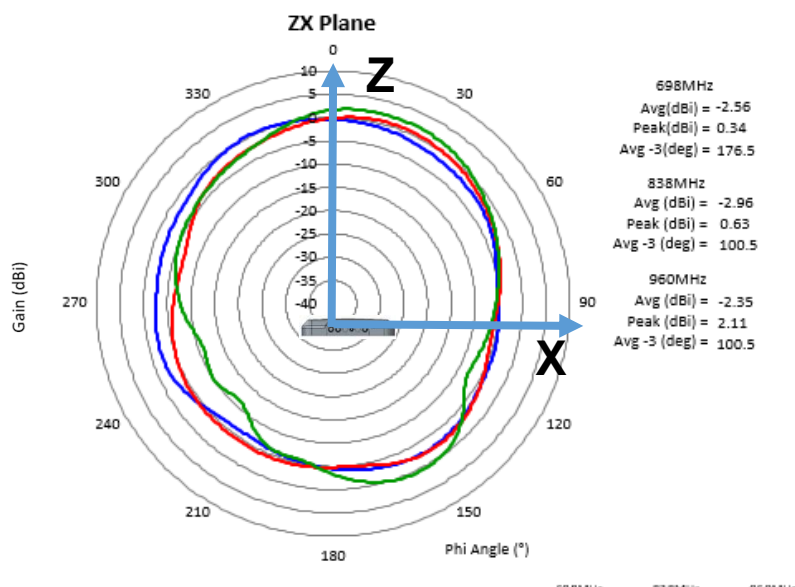
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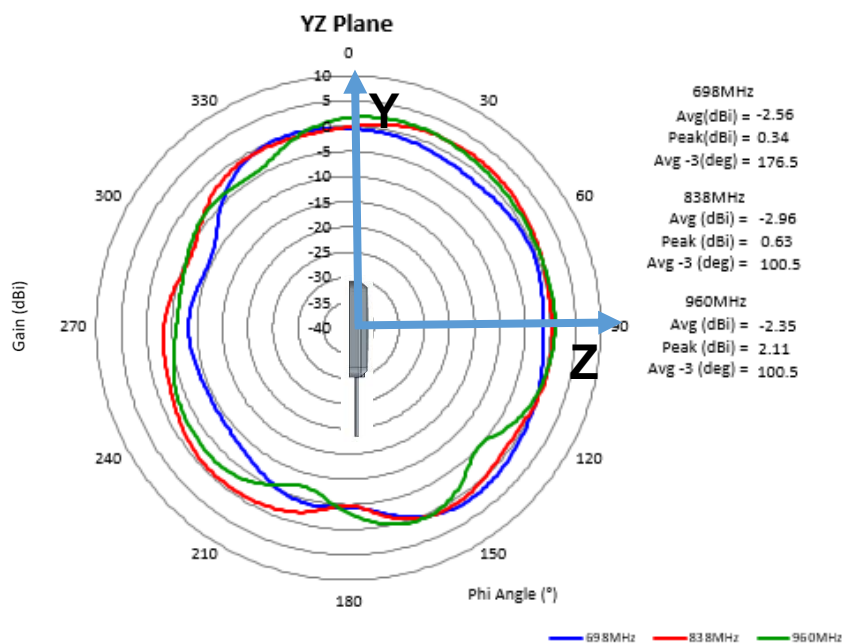
**CHARTS**



**Gain Plots LTE 1**



**Gain Plots LTE 1**



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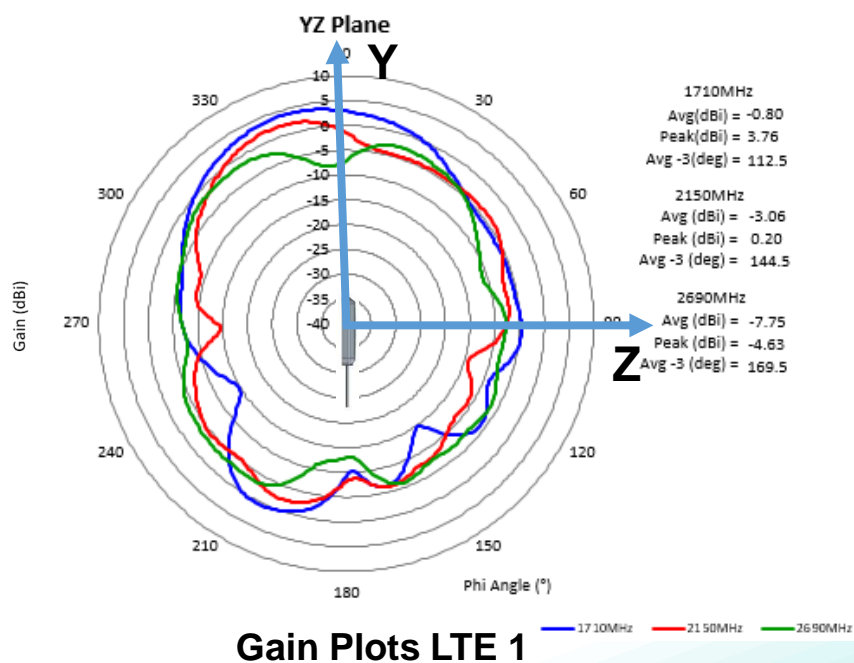
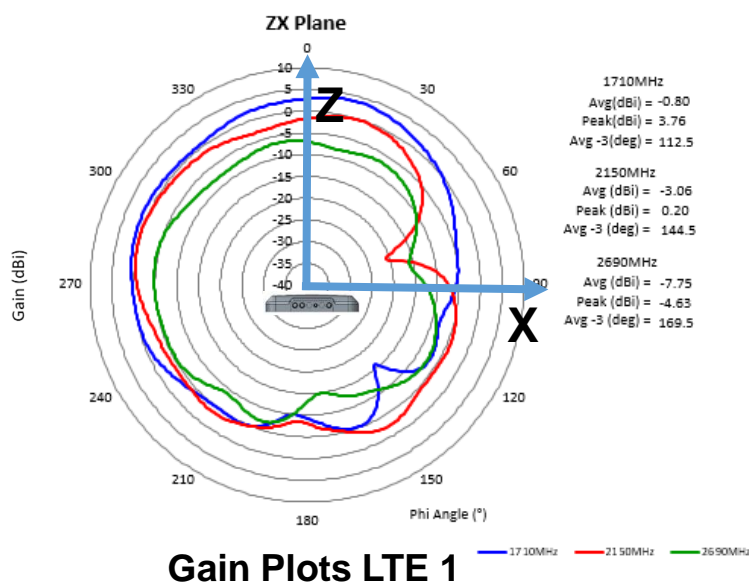
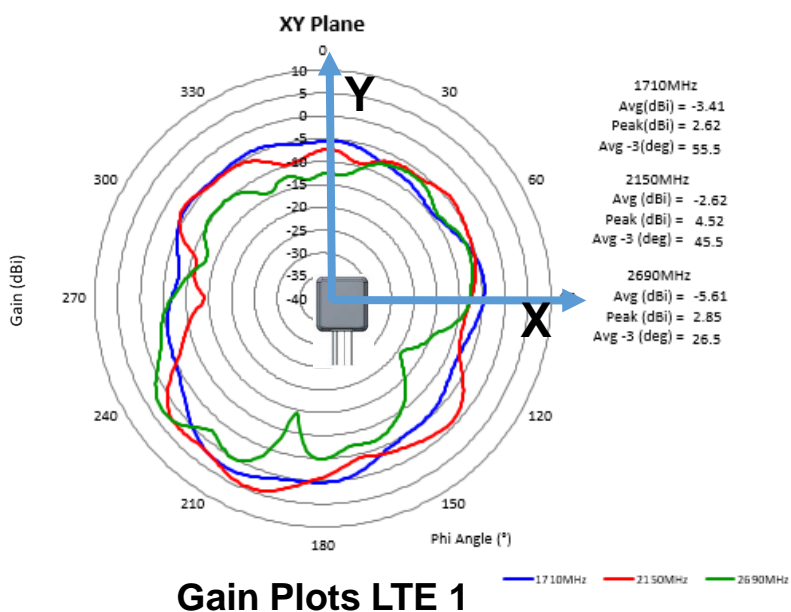
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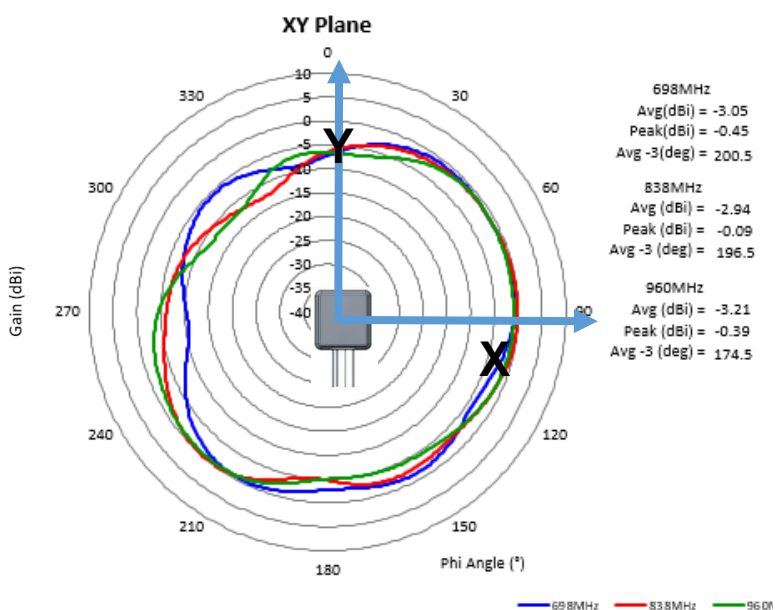


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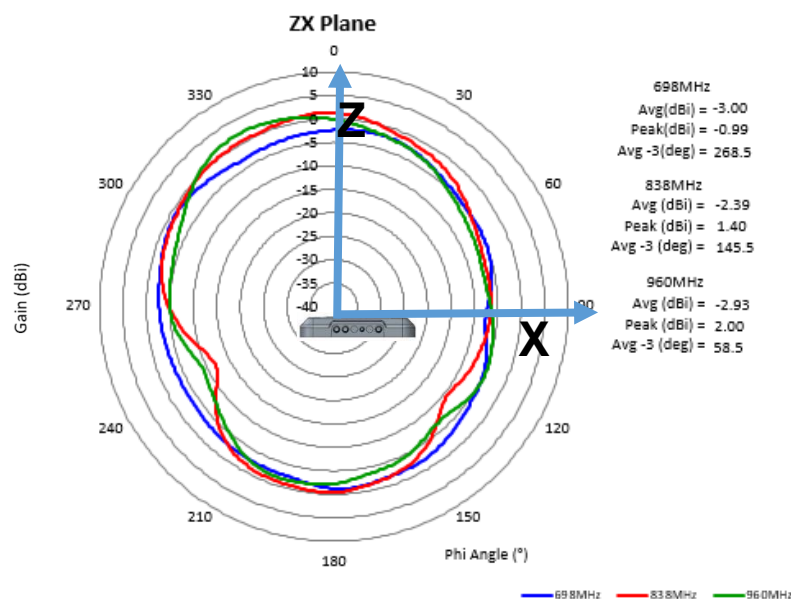
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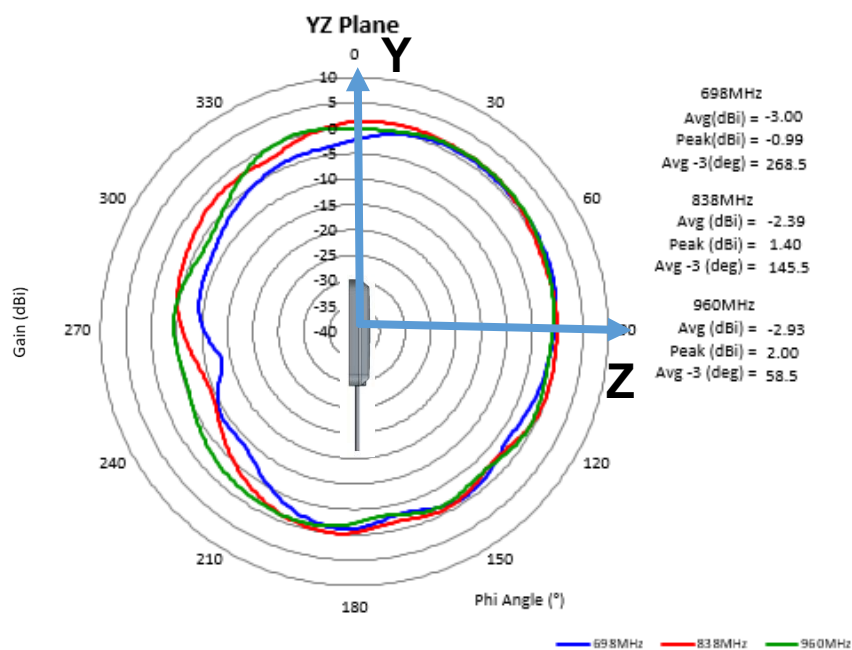
**CHARTS**



**Gain Plots LTE 2**



**Gain Plots LTE 2**



**Gain Plots LTE 2**

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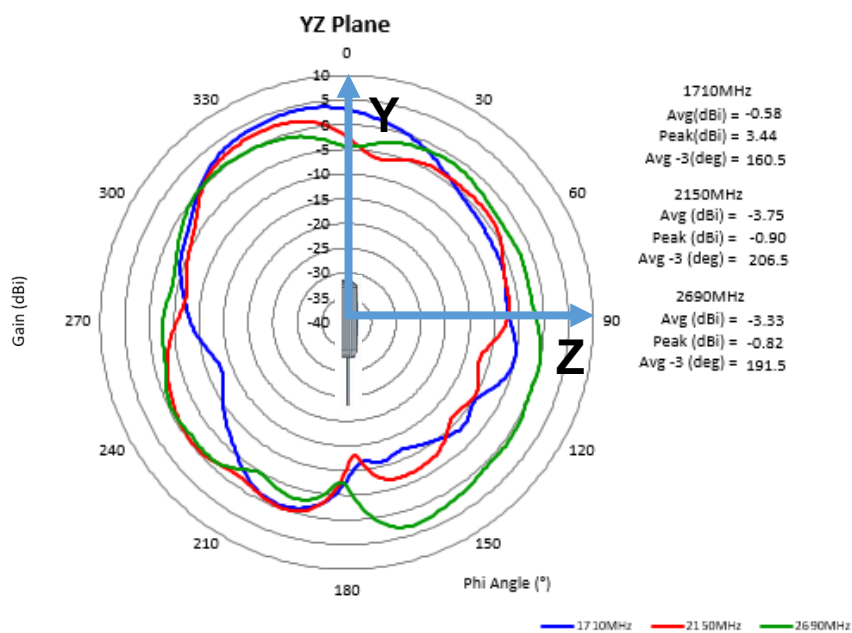
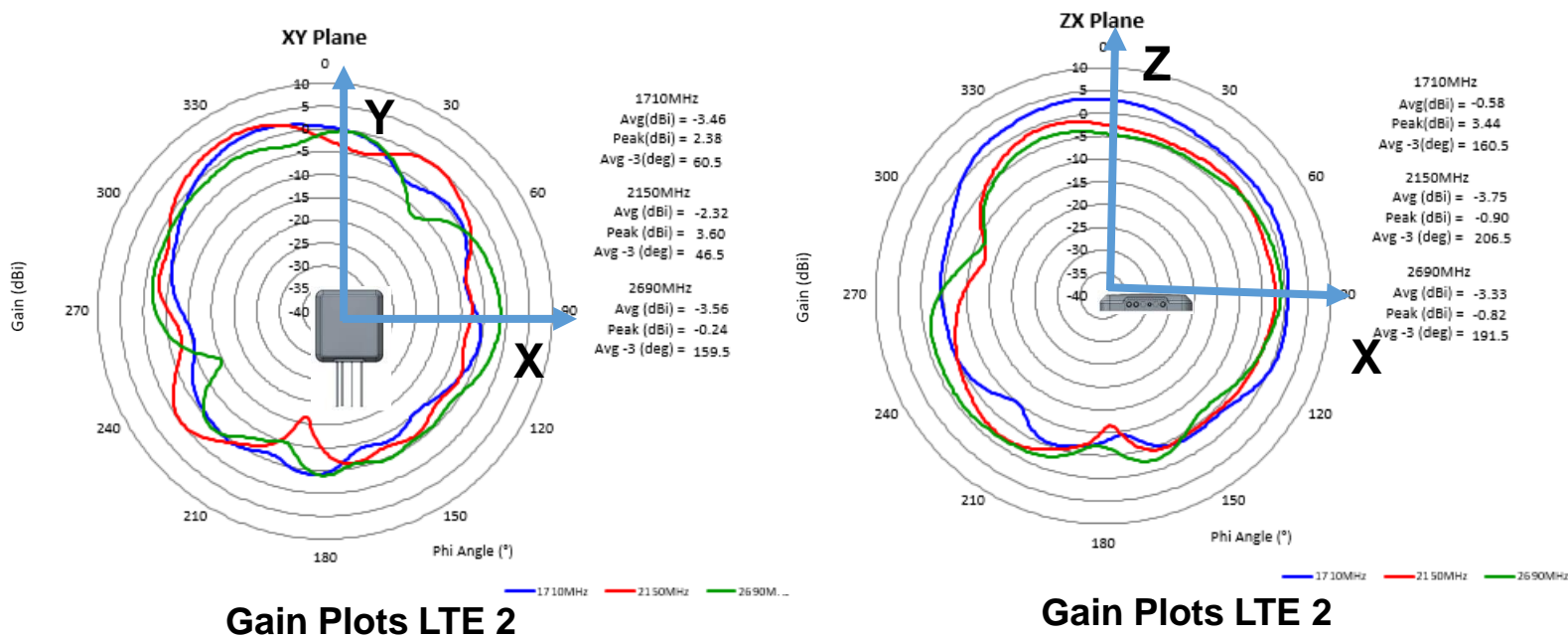
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**CHARTS**



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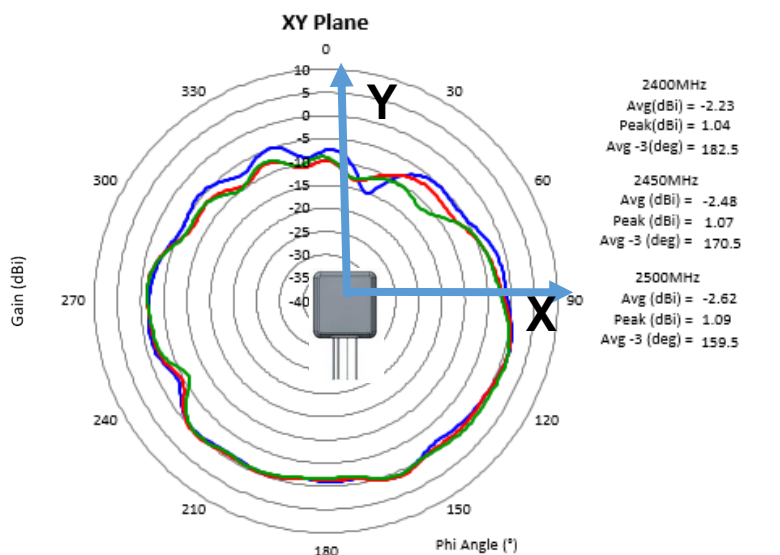
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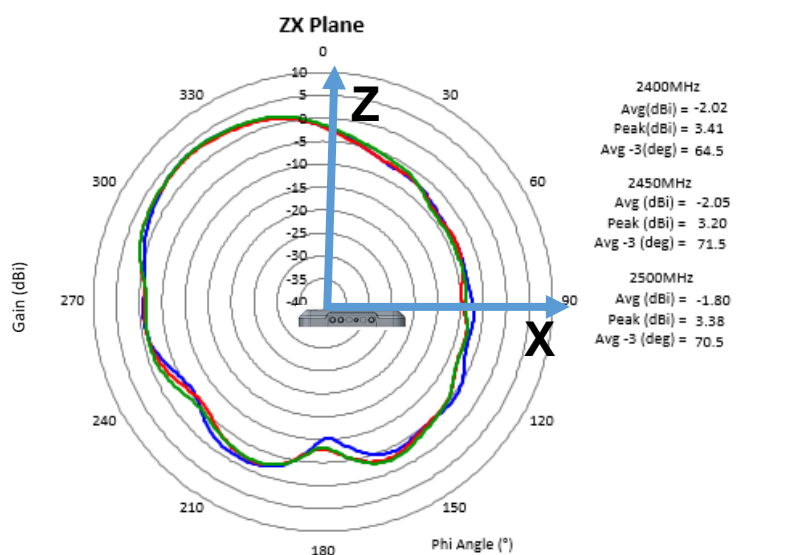
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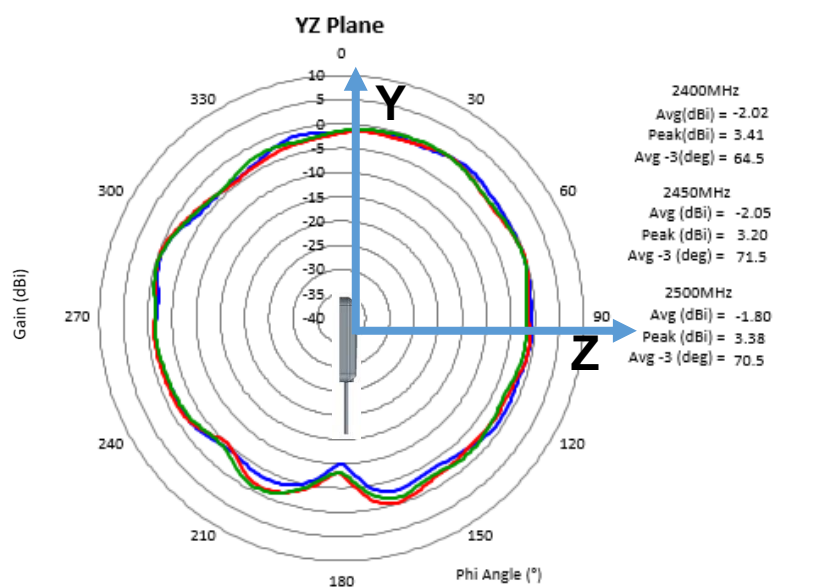
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**Gain Plots WiFi 1**



**Gain Plots WiFi 1**



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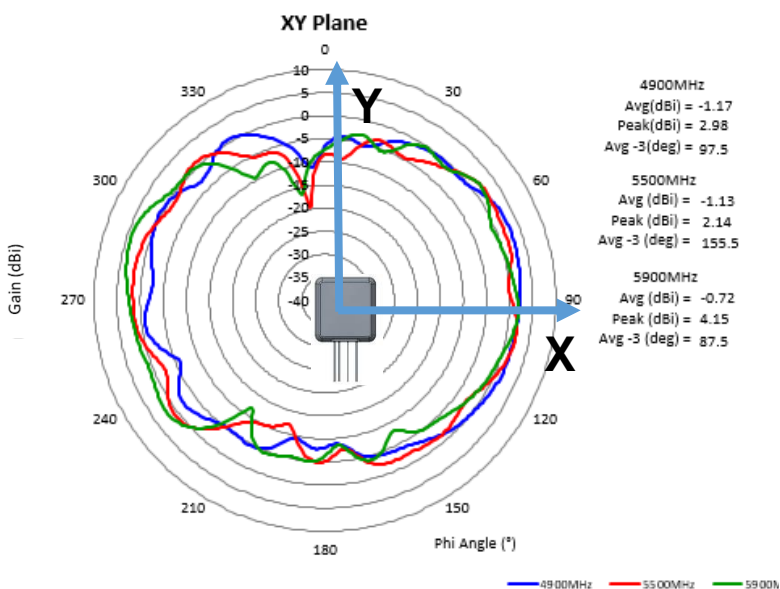
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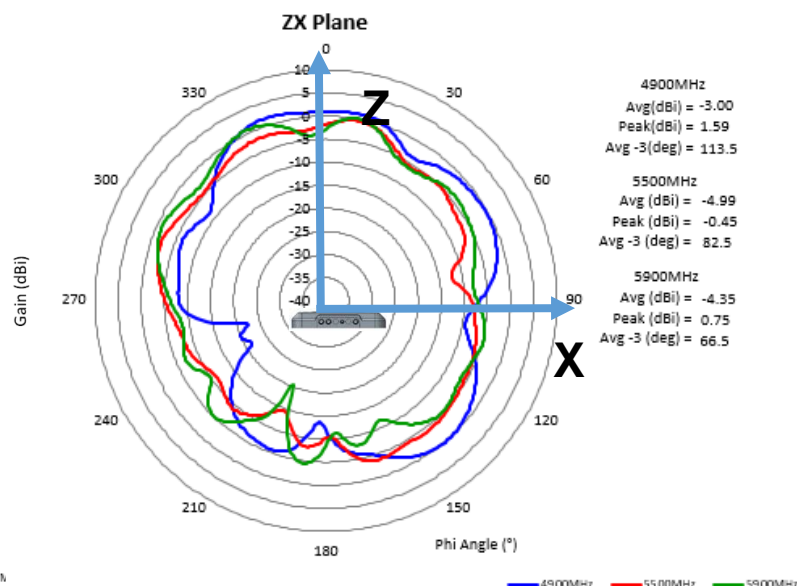
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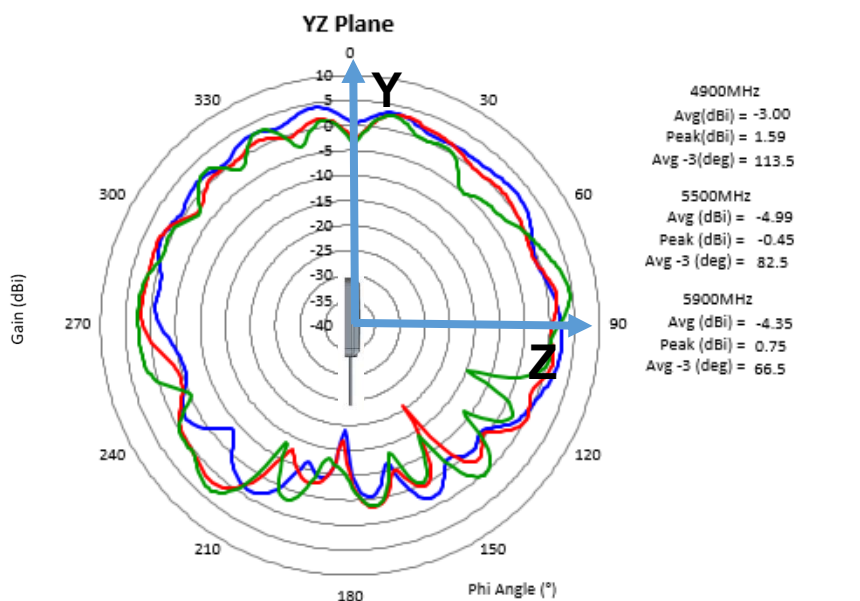
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**Gain Plots WiFi 1**



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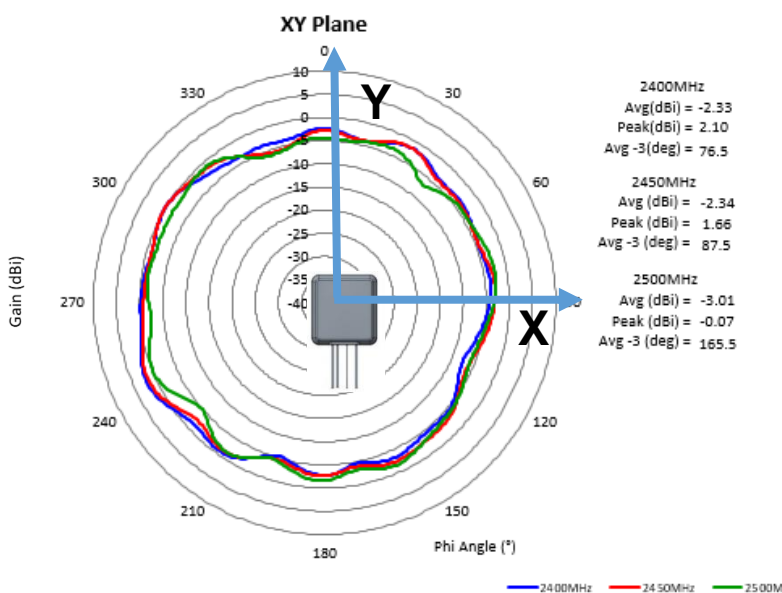


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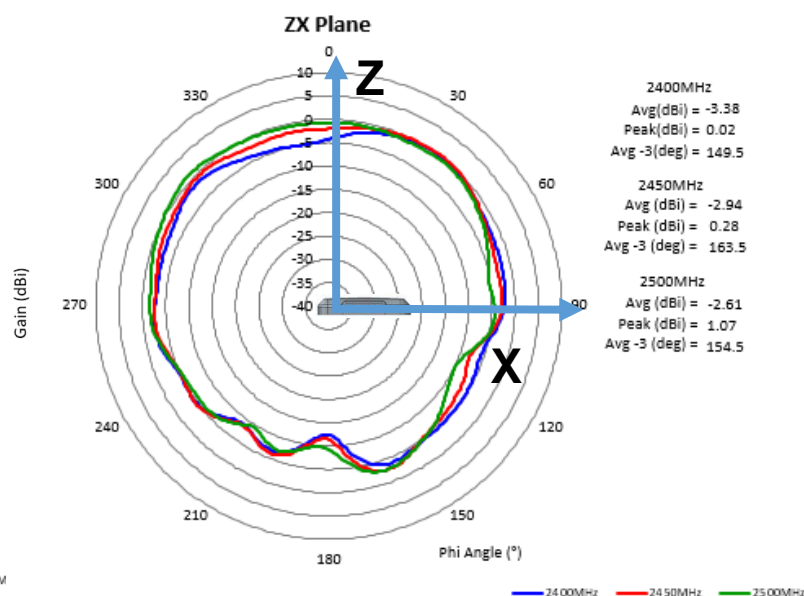
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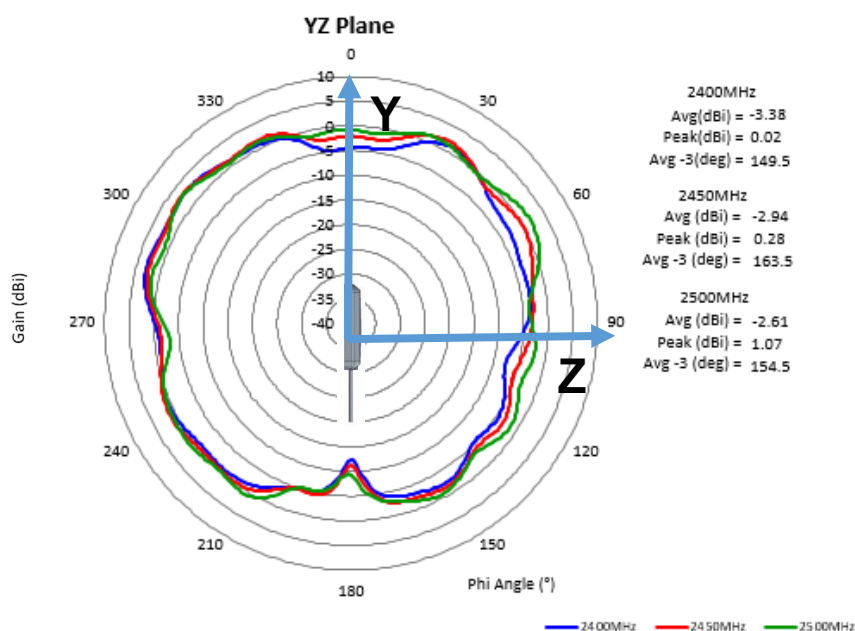
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**Gain Plots WiFi 2**



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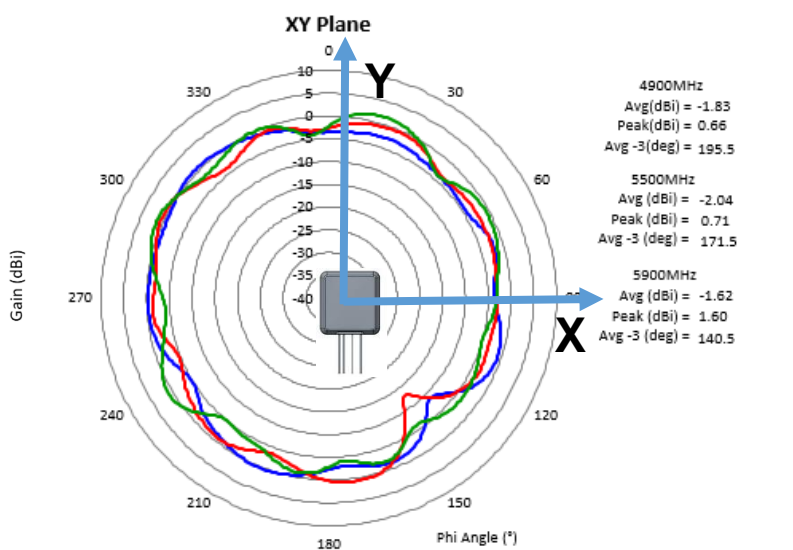
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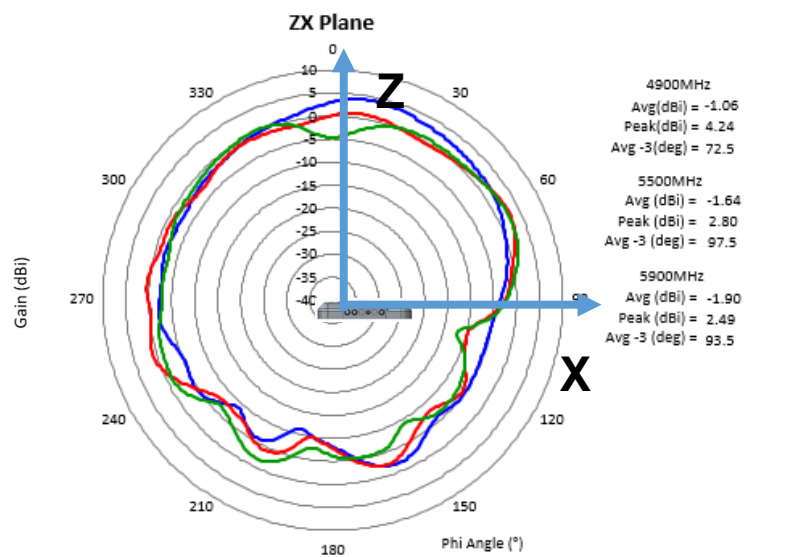
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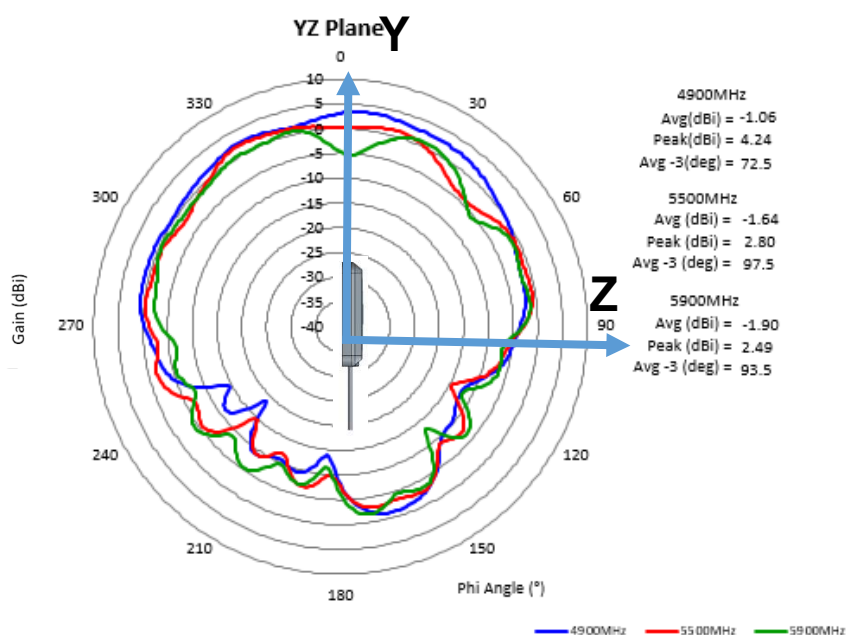
**CHARTS**



**Gain Plots WiFi 2**



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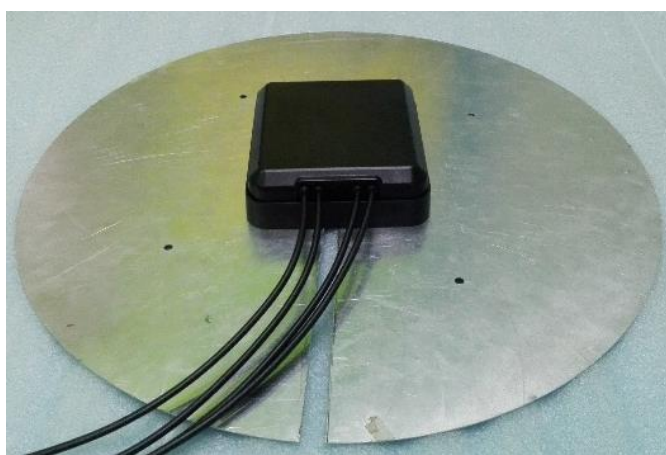
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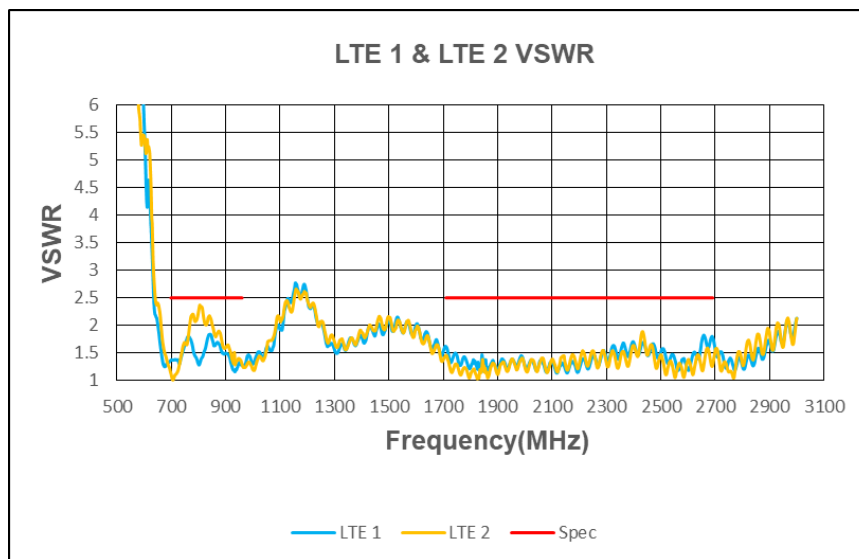
**PART NUMBER:** LPMB40X

## CHARTS

### Situation 2: Performance on 1 inch bracket with $\phi 500\text{mm}(19.7\text{inch})$ ground



### LTE 1 & LTE 2 VSWR



**Note :** Measured on 500mm ground plane with 3m cable

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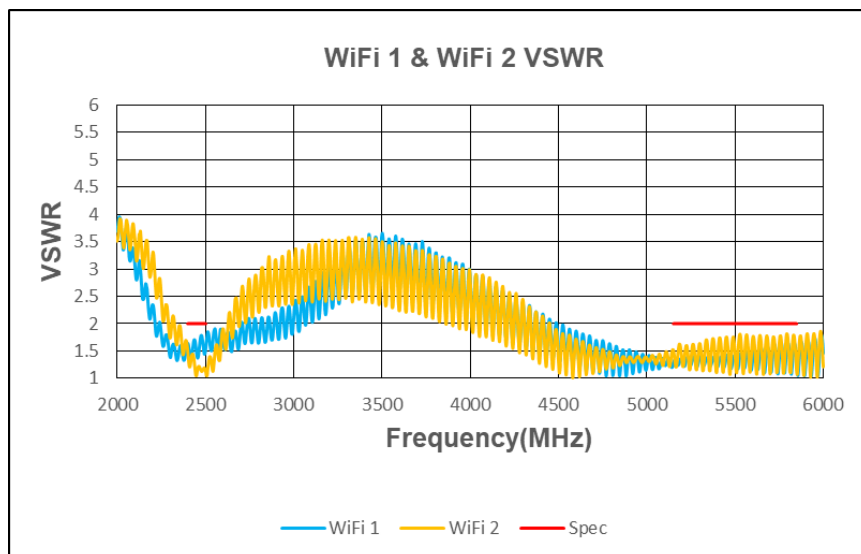
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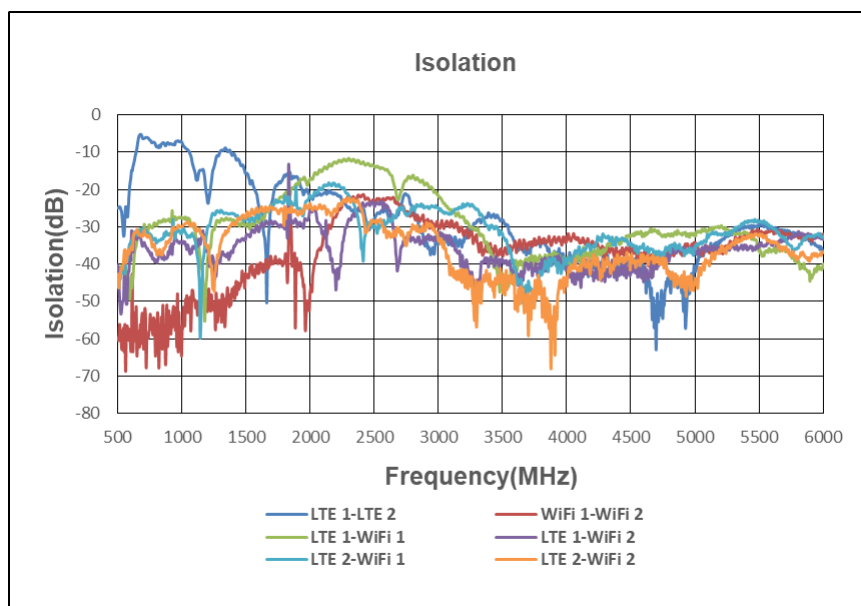
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## CHARTS

### WiFi 1& WiFi 2 VSWR



### Isolation



**Note :** Measured on 500mm ground plane with 3m cable

Issue: 1922

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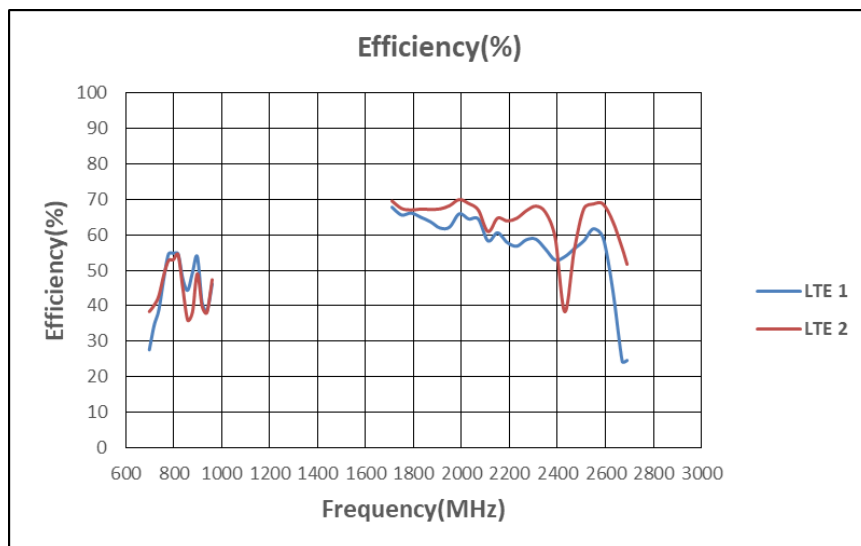
**Description:** 2X LTE, 2XWiFi Vehicular Antenna

**Series:** Low Profile MB

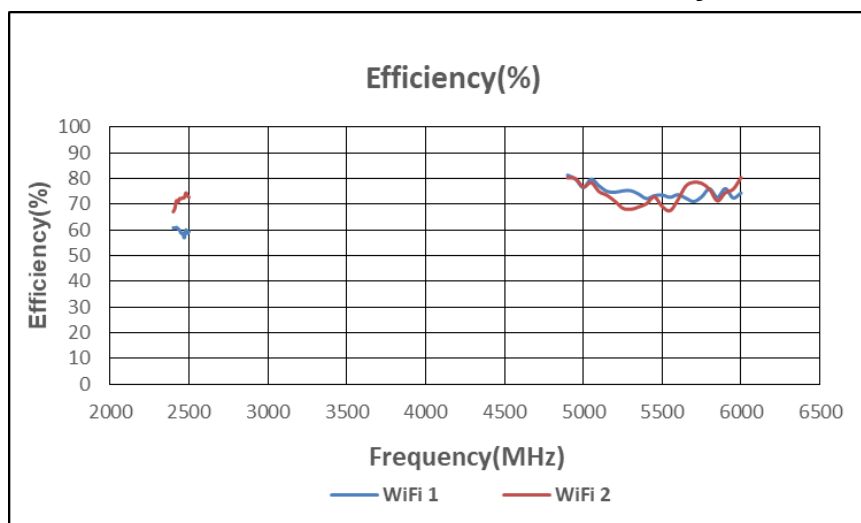
**PART NUMBER:** LPMB40X

## CHARTS

### LTE 1 and LTE2 Efficiency



### WiFi 1 and WiFi 2 Efficiency



**Note :** Measured on 500mm ground plane with 322mm cable

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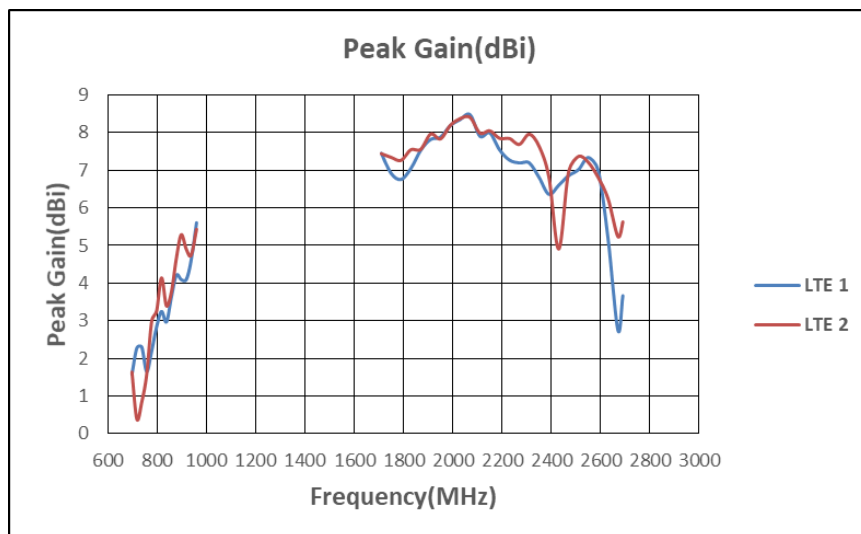
**Description:** 2X LTE, 2XWiFi Vehicular Antenna

**Series:** Low Profile MB

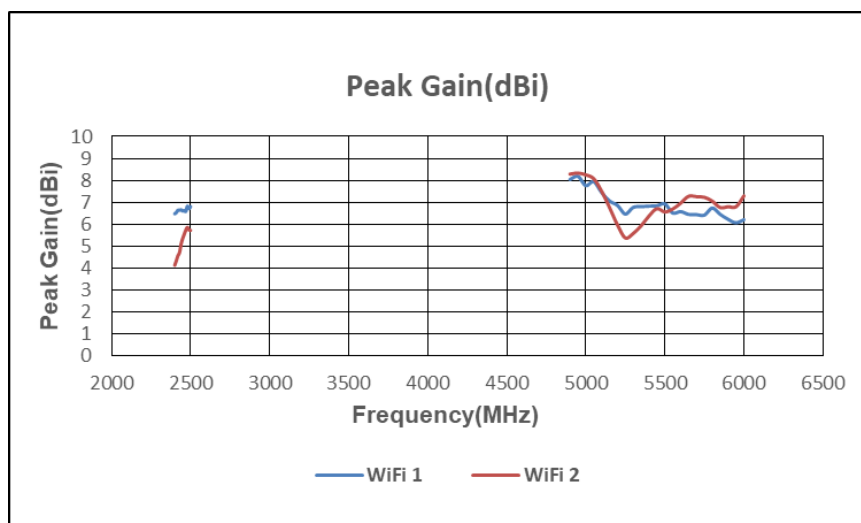
**PART NUMBER:** LPMB40X

## CHARTS

### LTE 1 and LTE2 Peak Gain



### WiFi 1 and WiFi 2 Peak Gain



**Note :** Measured on 500mm ground plane with 322mm cable

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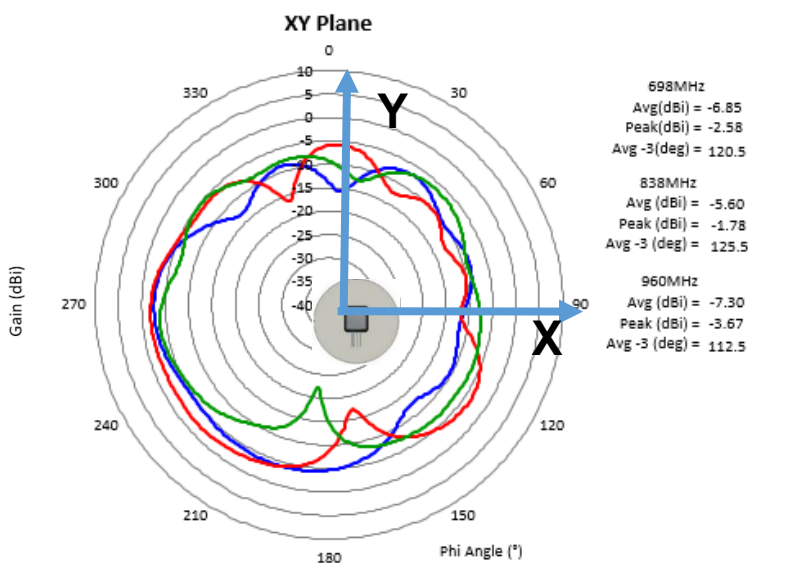
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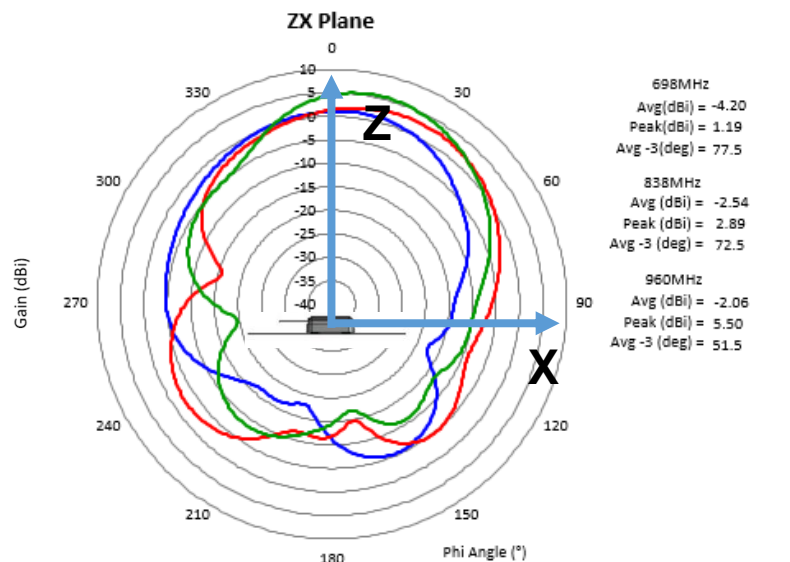
**Series:** Low Profile MB

**PART NUMBER:** LPMB40X

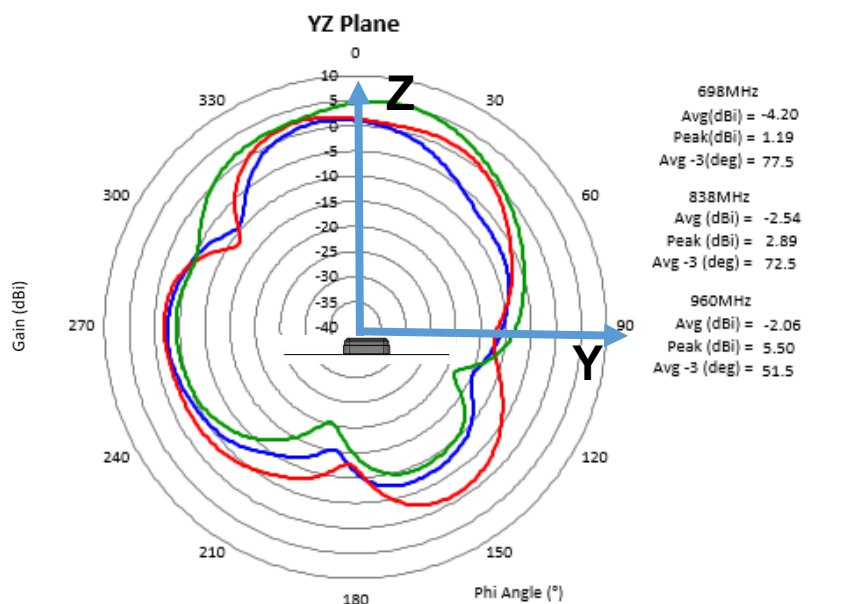
**CHARTS**



**Gain Plots LTE 1**



**Gain Plots LTE 1**



**Gain Plots LTE 1**

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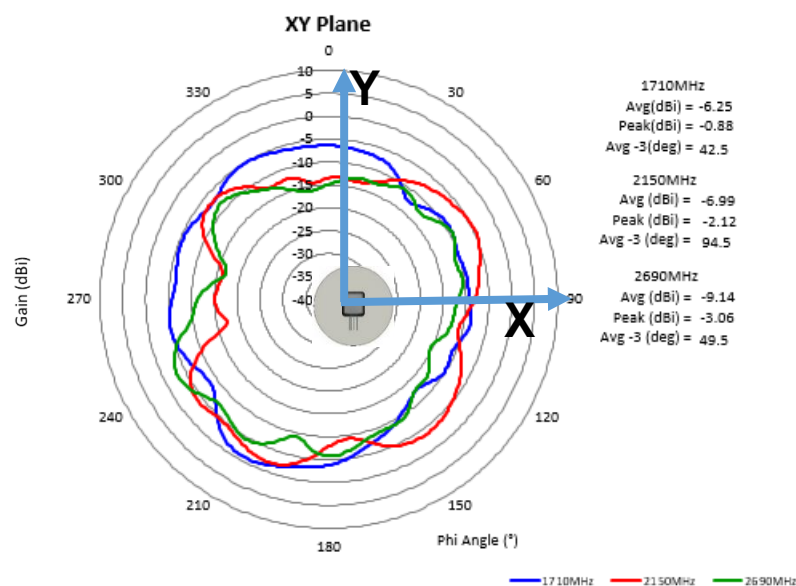
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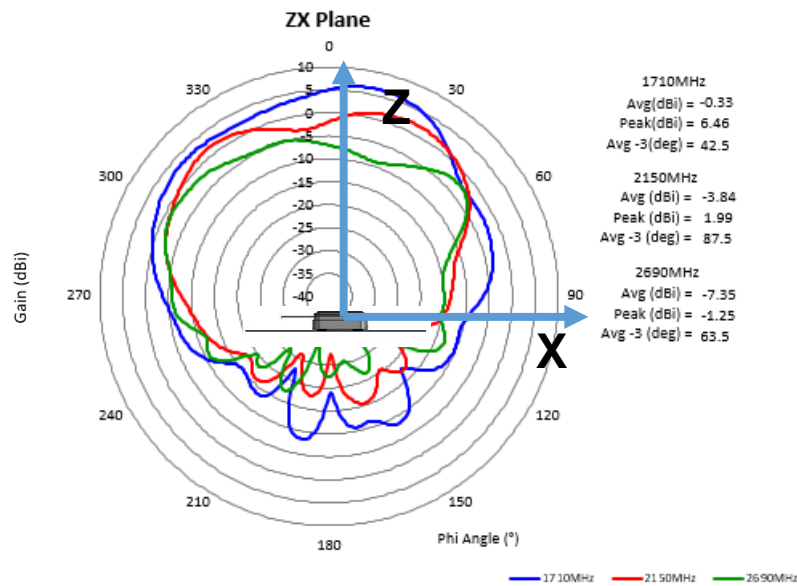
**Series: Low Profile MB**

**PART NUMBER: LPMB40X**

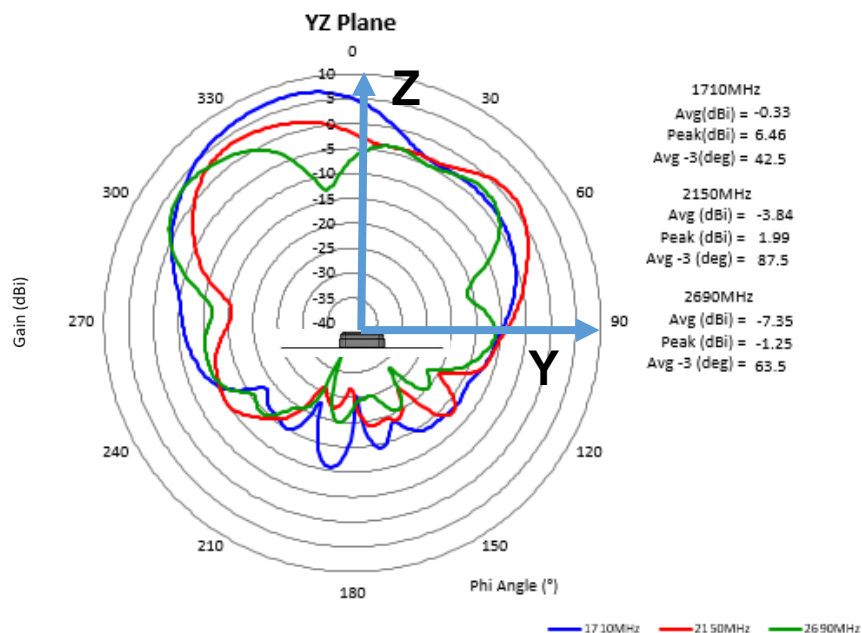
**CHARTS**



**Gain Plots LTE 1**



**Gain Plots LTE 1**



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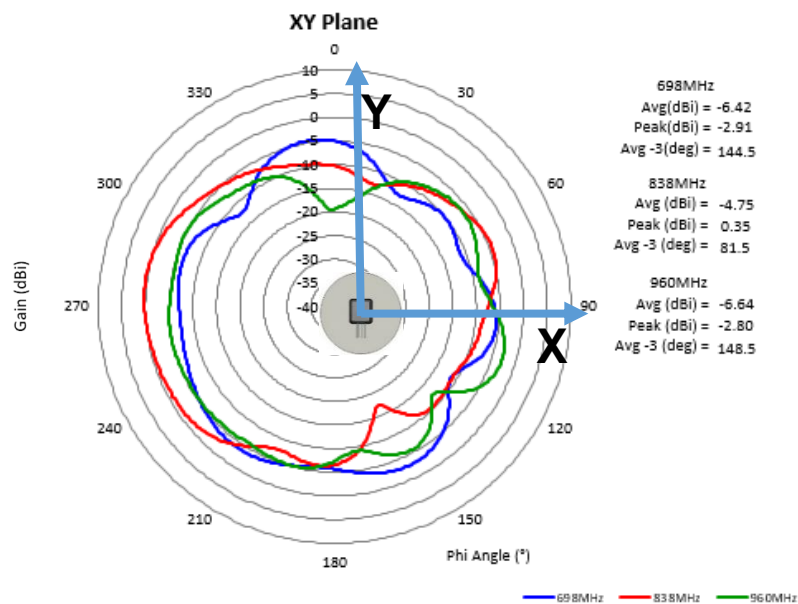


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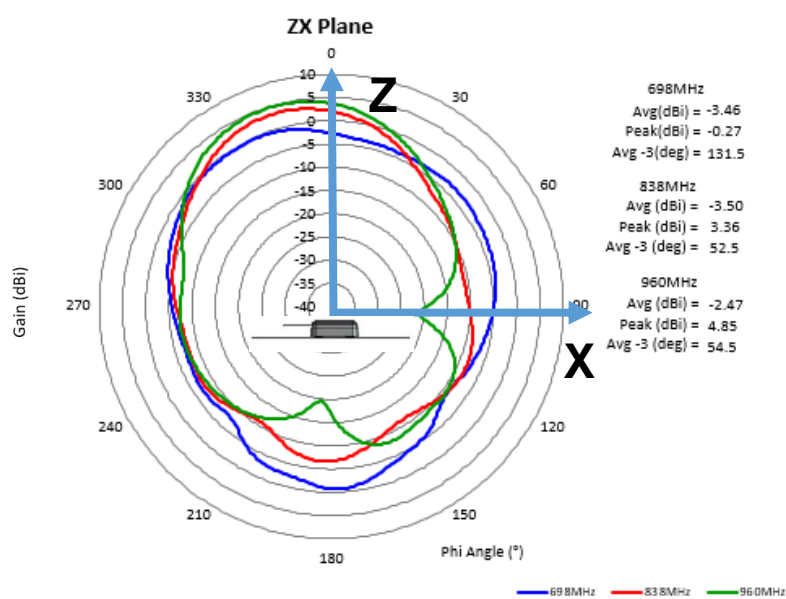
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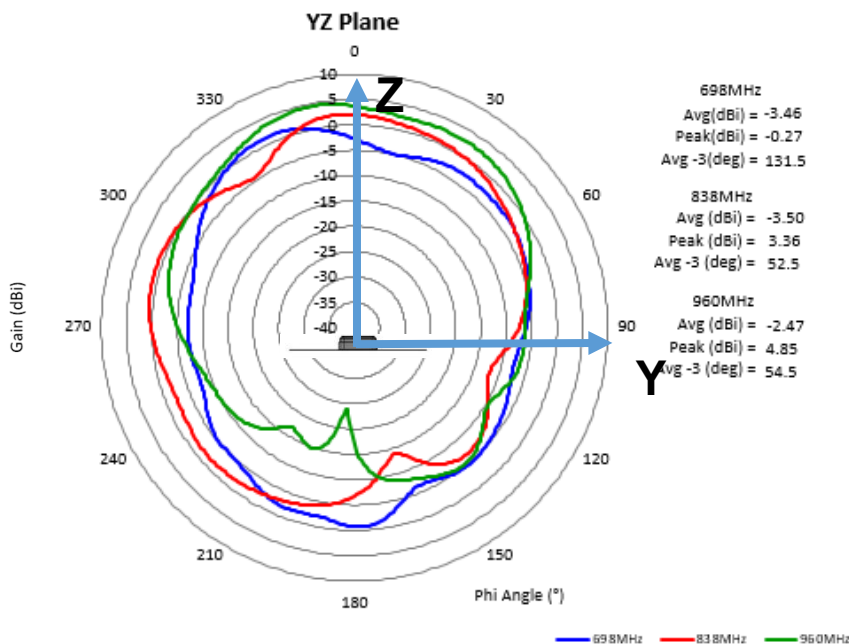
**CHARTS**



**Gain Plots LTE 2**



**Gain Plots LTE 2**



**Gain Plots LTE 2**

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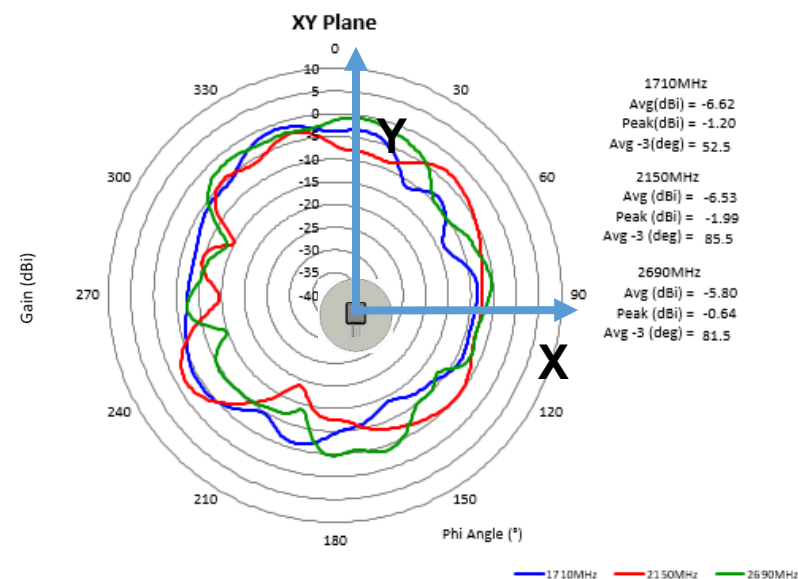
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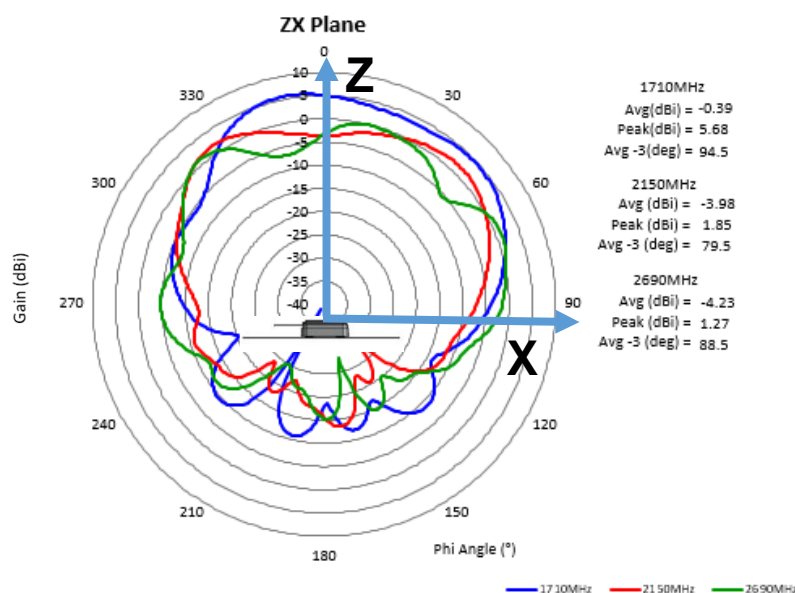
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**PART NUMBER:** LPMB40X

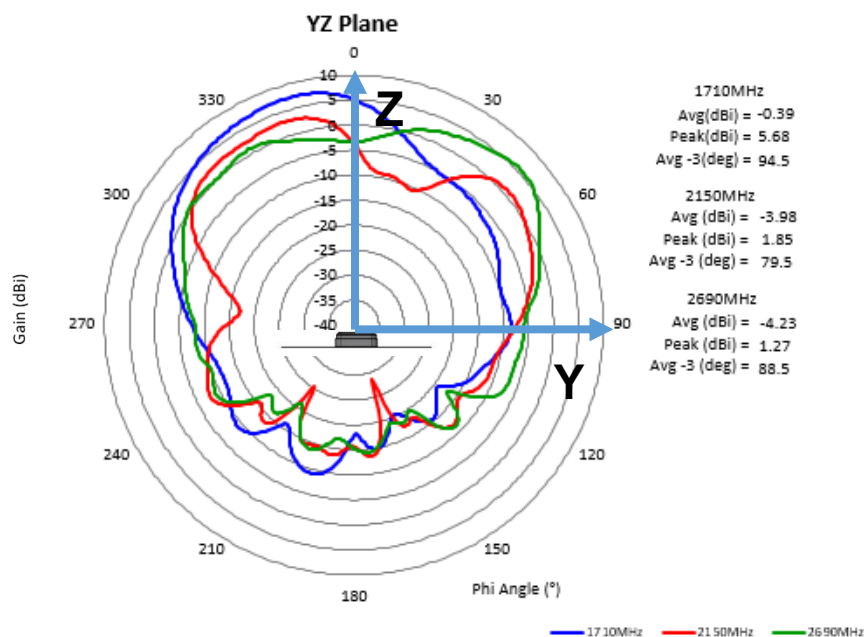
**CHARTS**



**Gain Plots LTE 2**



**Gain Plots LTE 2**



**Gain Plots LTE 2**

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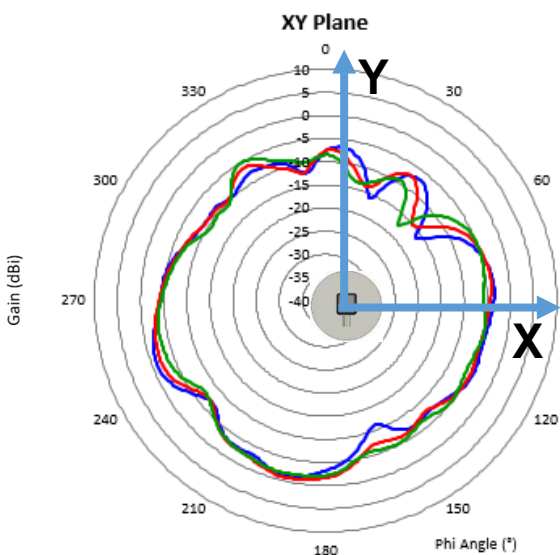
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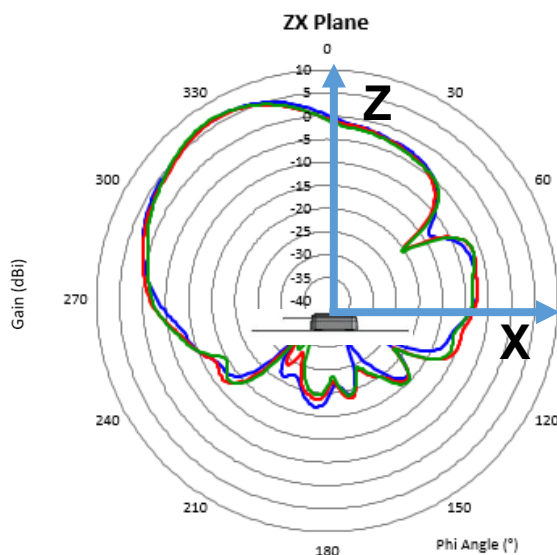


2400MHz  
Avg(dBi) = -5.41  
Peak(dBi) = -0.98  
Avg -3(deg) = 89.5

2450MHz  
Avg(dBi) = -5.29  
Peak(dBi) = -0.77  
Avg -3(deg) = 74.5

2500MHz  
Avg(dBi) = -5.63  
Peak(dBi) = -1.73  
Avg -3(deg) = 82.5

**Gain Plots WiFi 1**

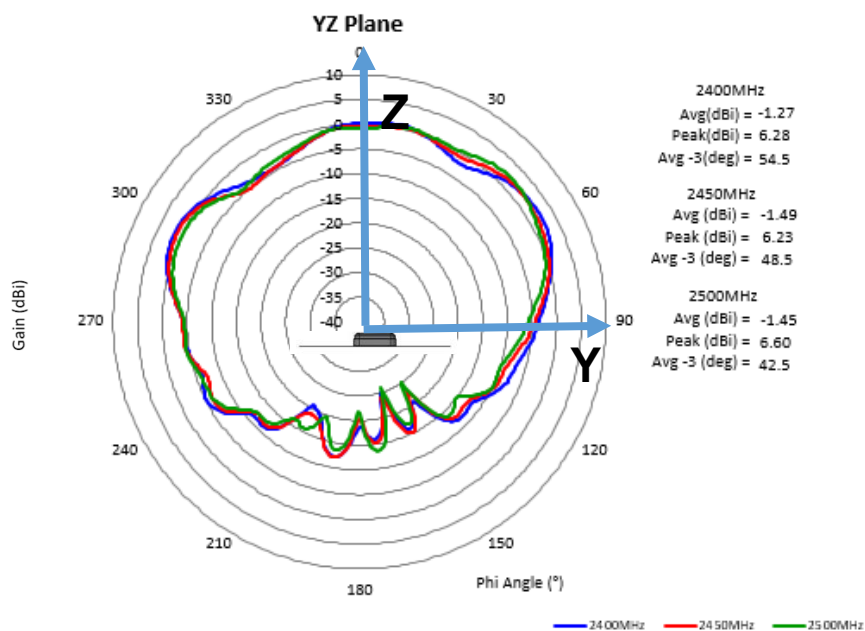


2400MHz  
Avg(dBi) = -1.27  
Peak(dBi) = 6.28  
Avg -3(deg) = 54.5

2450MHz  
Avg(dBi) = -1.49  
Peak(dBi) = 6.23  
Avg -3(deg) = 48.5

2500MHz  
Avg(dBi) = -1.45  
Peak(dBi) = 6.60  
Avg -3(deg) = 42.5

**Gain Plots WiFi 1**



2400MHz  
Avg(dBi) = -1.27  
Peak(dBi) = 6.28  
Avg -3(deg) = 54.5

2450MHz  
Avg(dBi) = -1.49  
Peak(dBi) = 6.23  
Avg -3(deg) = 48.5

2500MHz  
Avg(dBi) = -1.45  
Peak(dBi) = 6.60  
Avg -3(deg) = 42.5

**Gain Plots WiFi 1**

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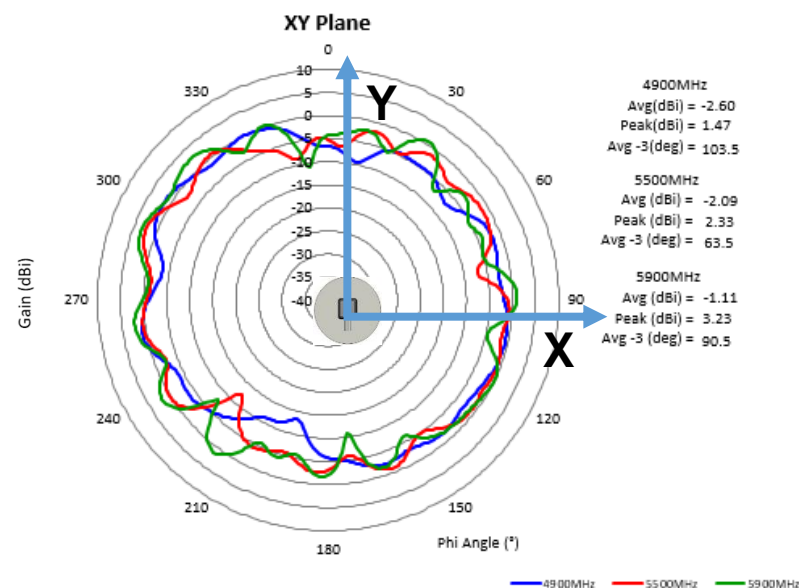
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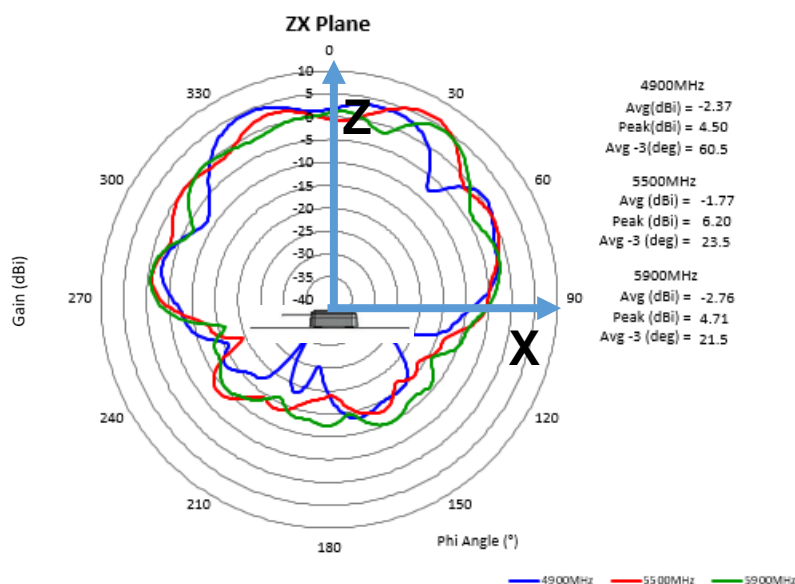
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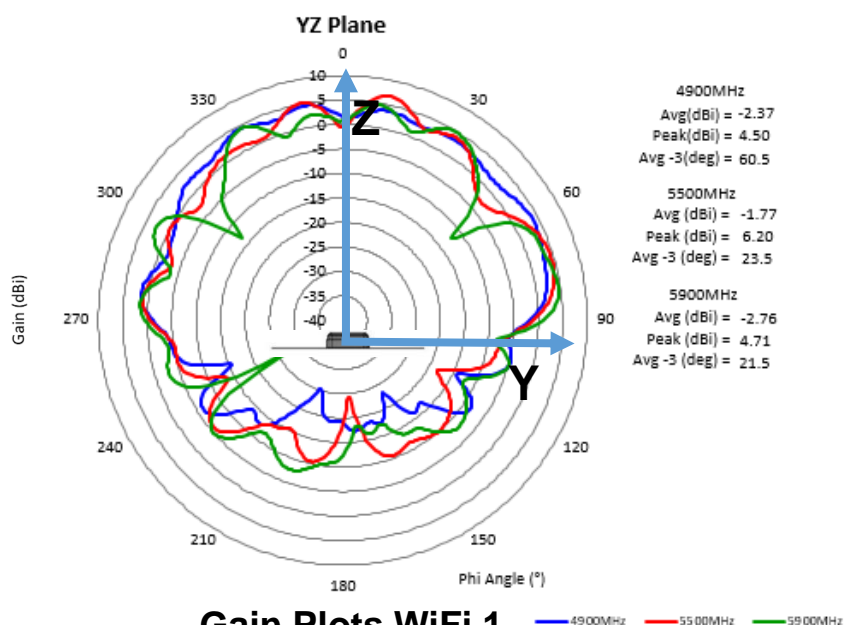
**CHARTS**



**Gain Plots WiFi 1**



**Gain Plots WiFi 1**



**Gain Plots WiFi 1**

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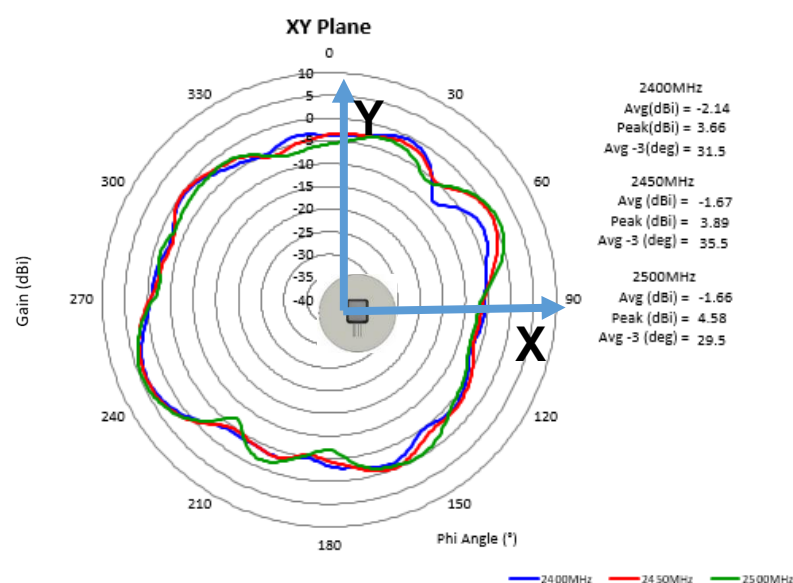


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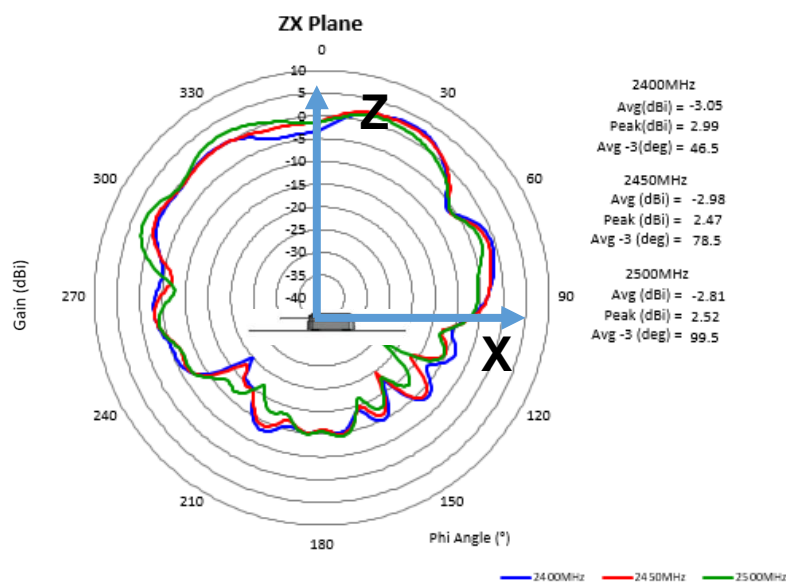
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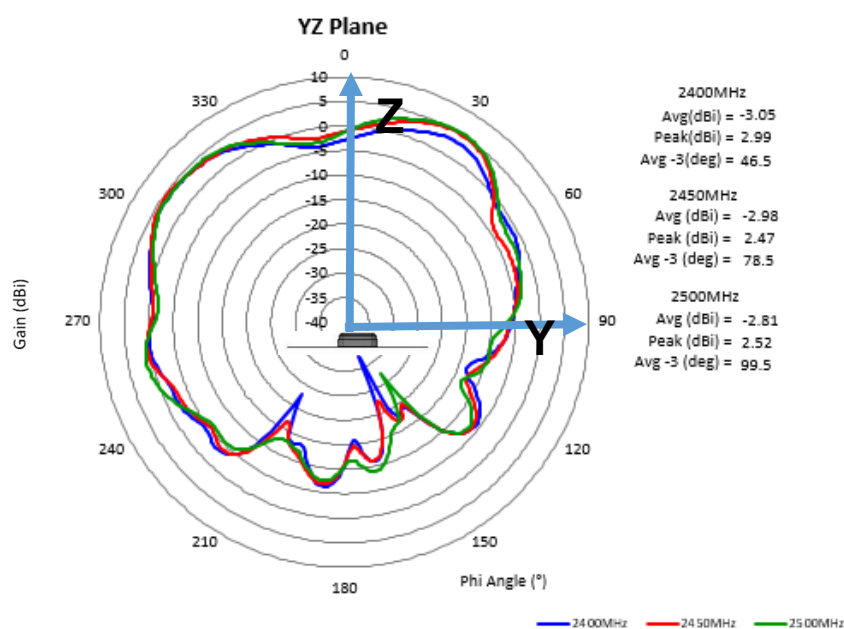
**CHARTS**



**Gain Plots WiFi 2**



**Gain Plots WiFi 2**



**Gain Plots WiFi 2**

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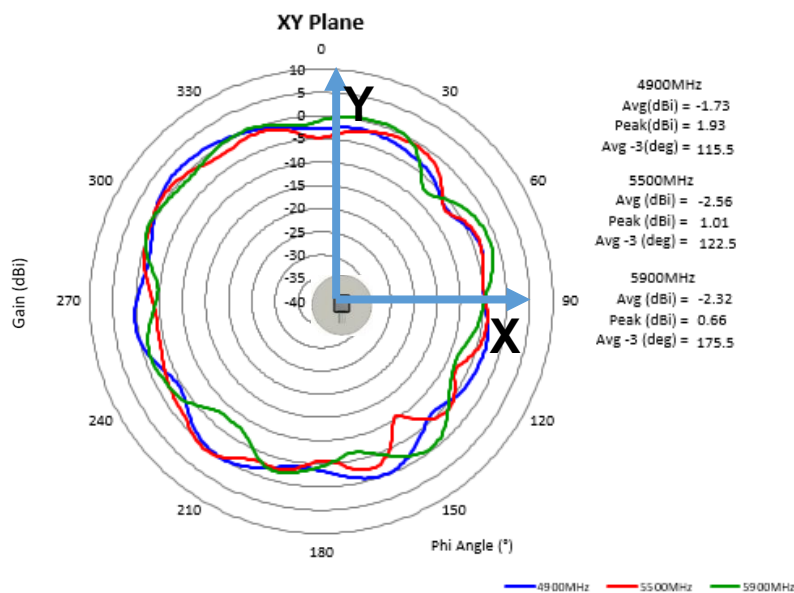
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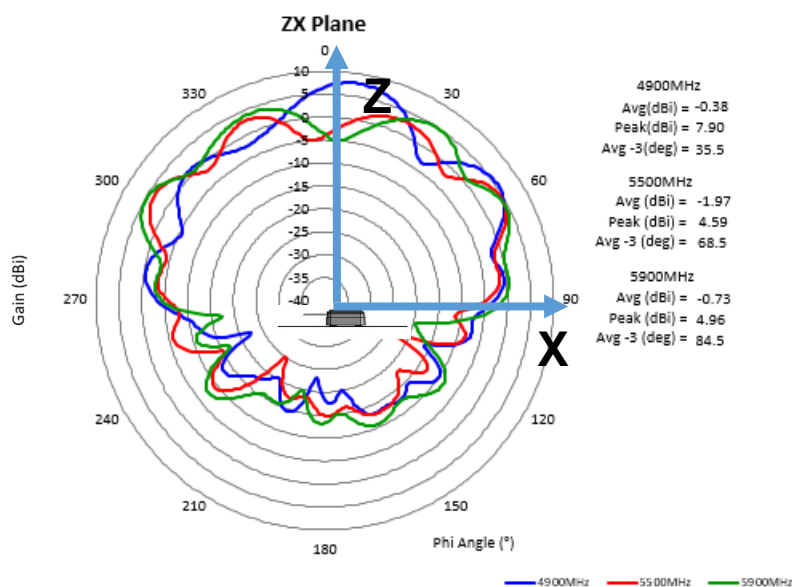
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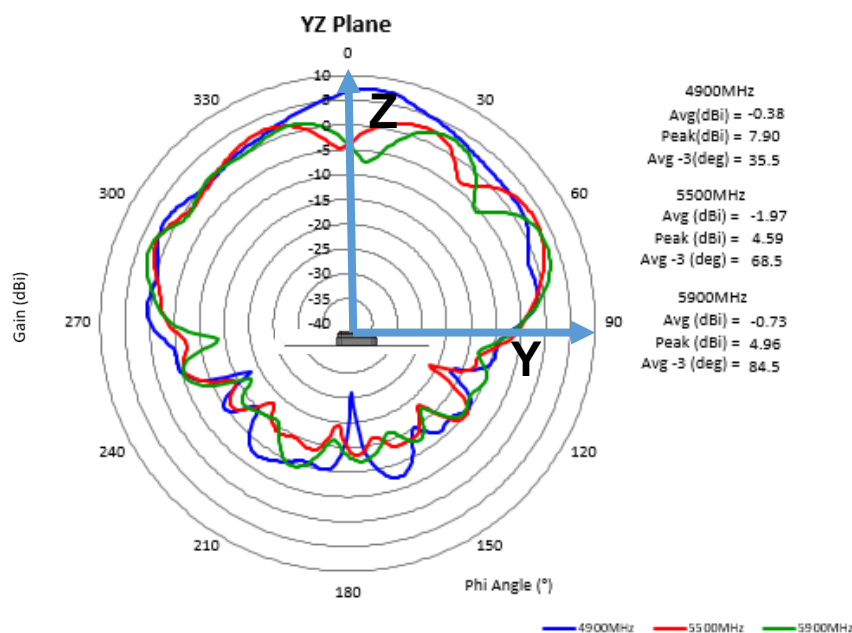
**CHARTS**



**Gain Plots WiFi 2**



**Gain Plots WiFi 2**



**Gain Plots WiFi 2**

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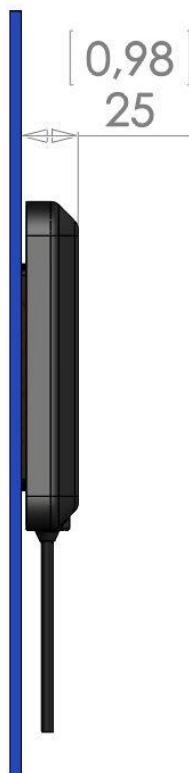
**PART NUMBER:** LPMB40X

## PACKAGING

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

## ASSEMBLY

Option 1, Apply to the surface of the glass fiber or plastic material, the antenna could be adhered on the surface directly.



**Description:** 2X LTE, 2XWiFi Vehicular Antenna

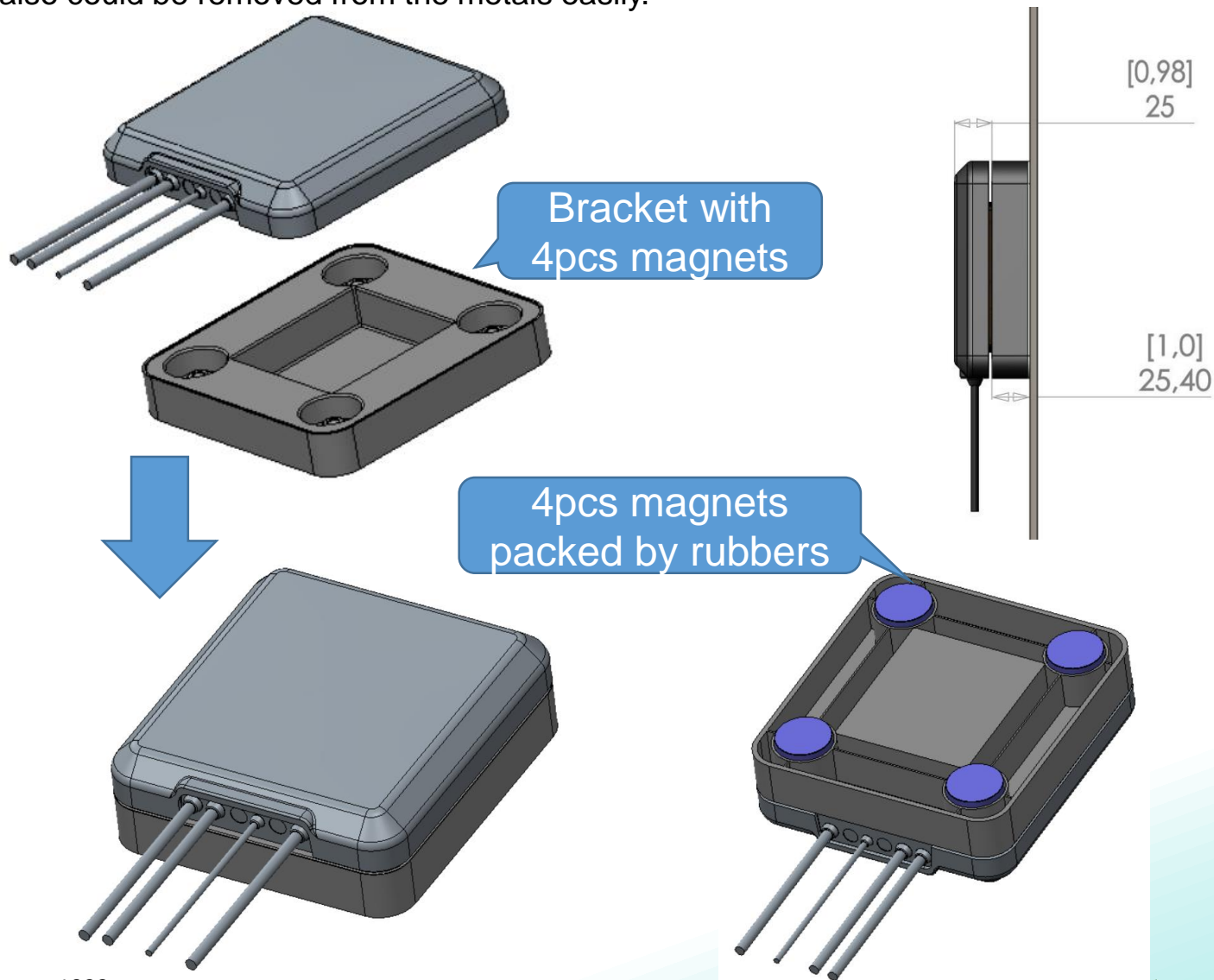
**Series:** Low Profile MB

**PART NUMBER:** LPMB40X

## ASSEMBLY

Option 2, Apply to the surface of the Iron metals like normal steel/iron, a bracket(GPSLPMM) is needed to elevate the antenna 1" for the optimum RF performance

Firstly, The antenna adhered on a magnetic bracket by the adhesive tape, then the whole assemble could "stick" on the magnetic metals by magnets, and also could be removed from the metals easily.



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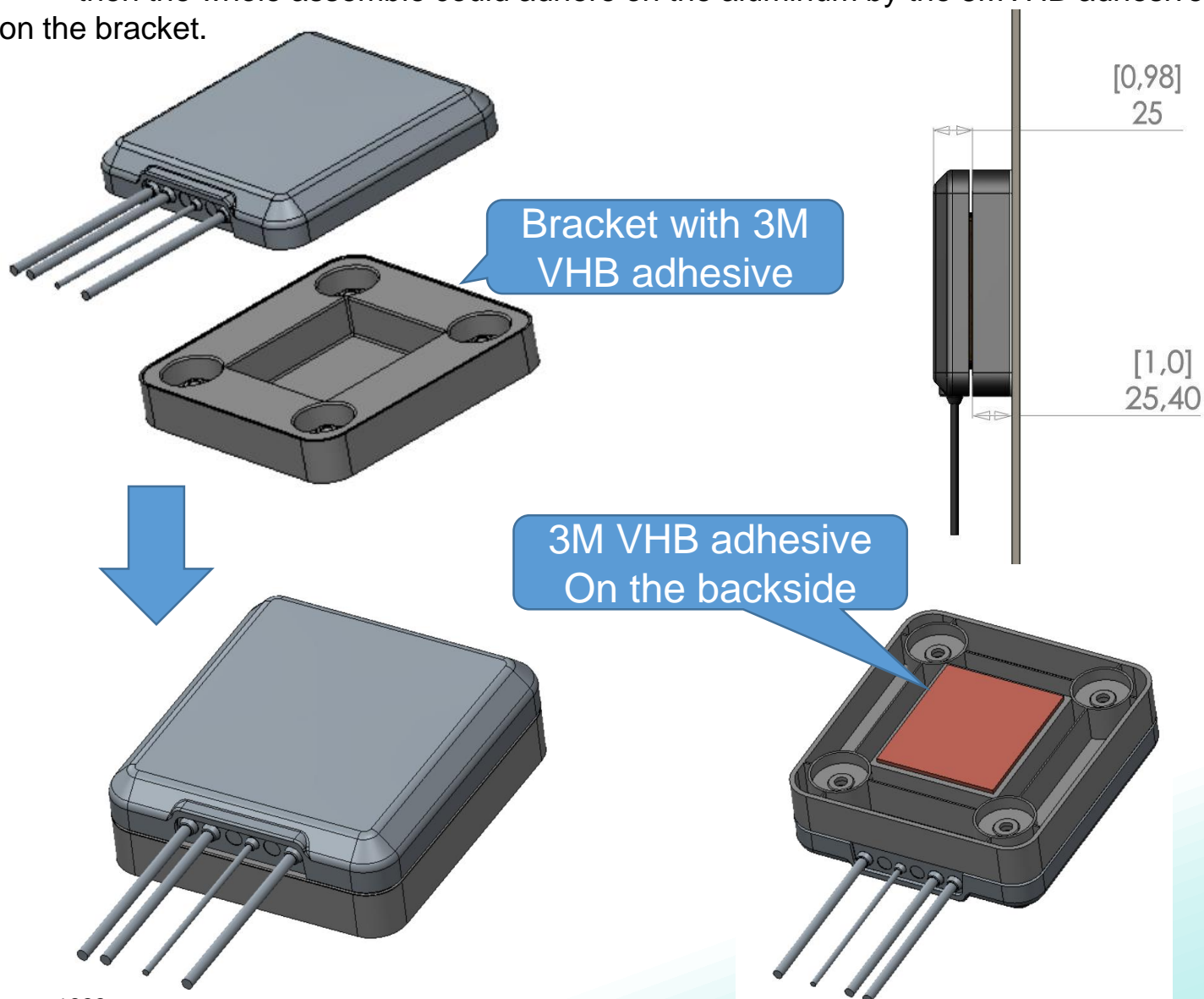
**Series:** Low Profile MB

**PART NUMBER:** LPMB40X

## ASSEMBLY

Option 3, Apply to the surface of the non-iron metals like aluminum, a bracket(GPSLPAM) is needed to elevate the antenna 1" for the optimum RF performance

Firstly, the antenna adhered on a bracket by the adhesive tape, then the whole assemble could adhere on the aluminum by the 3MVHB adhesive tape on the bracket.



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