

**Description:** Vehicular Multiband Antenna with Magnetic Mount

**PART NUMBER:** ARMXXXXXMM



## Features:

- Low profile, only 1.8" tall
- Up to 6-lead Configuration
  - LTE(2x) MIMO
  - WiFi(3x) MIMO-|2.4/5.x GHz
  - GPS/GNSS (1x)
- Frequency of Operation:
  - 698-960MHz, 1710-2690MHz
  - 2400-2500MHz, 5150-5925MHz
  - 1559-1606MHz

## Applications:

- Telematics, Navigation
- First Responders(Police, Fire, Ambulance/EMS)
- Energy, Utility, Construction
- Fleet Management
- DSRC(Dedicated Short Range Communications)
- Available Configurations:
  - Black, White
  - Magnetic mount
  - For direct mount seep/N: ARMXXXXXDM

Issue: 1842

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Series: ARMADILLO

**Description:** Vehicular Multiband Antenna with Magnetic Mount

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This document covers all product variants of the following product family

Product	Total Cable Leads	LTE Cable Leads	WiFi Cable Leads	GPS Cable Leads	Housing Color	Mounting
ARM62311MM	6	2	3	1	Black	Magnetic Mount; Pull force: 100N, 22lbf min. (Tested on 3mm thick steel plate.)
ARM62312MM	6	2	3	1	White	
ARM52211MM	5	2	2	1	Black	
ARM52212MM	5	2	2	1	White	
ARM42111MM	4	2	1	1	Black	
ARM42112MM	4	2	1	1	White	

## Product Numbering

Vehicular Multiband Antenna with Direct Mount

(Part Number)

ARM X X X X X MM  
1 2 3 4 5 6 7

1	Product ID: ARMADILLO
2	Total Number of Cable leads
3	Total Number of LTE Cable Leads
4	Total Number of WiFi Cable Leads
5	Total Number of GPS Cable Leads
6	The Color of the Plastic Housing 1=Black; 2= White
7	Mounting: Magnetic Mount

ARMXXXXXMM		CABLE	CABLE LENGTH	CONNECTOR
1	LTE-1 Cable Assy	LMR-195 *	5181 mm / 204" / 17 FT	SMA Male
2	WiFi-1 Cable Assy			RP-SMA Male
3	WiFi-3 Cable Assy			RP-SMA Male
4	WiFi-2 Cable Assy			RP-SMA Male
5	GPS Cable Assy	LMR-100 *		SMA Male
6	LTE-2 Cable Assy	LMR-195 *		SMA Male

\* or equivalent

Issue: 1.0-4

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Series: ARMADILLO

**Description:** Vehicular Multiband Antenna with  
Magnetic Mount**PART NUMBER:** ARMXXXXXMM**ELECTRICAL SPECIFICATIONS**

Frequency	698-960MHz, 1710-2690MHz 2400-2500MHz, 5150-5925MHz
Nominal Impedance	50 $\Omega$
VSWR*	
698-960MHz	<2.5
1710-2690MHz	<2.5
2400-2500MHz	<2.5
5150-5925MHz	<2.5
Isolation*	
698-960MHz, 1710-2690MHz	-8dB
2400-2500MHz, 5150-5925MHz	-12dB
Radiation Pattern	Omni
Average Peak Gain**	
698-960MHz	4.6dBi
1710-2690MHz	5dBi
2400-2500MHz	4.1dBi
5150-5925MHz	6.3dBi
Polarization	Vertical

\*Test on 500mm ground plane with 17ft(5.2m) LMR195 cable

\*\*Test on 500mm ground plane with 1ft(304.8) LMR195 cable

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## ELECTRICAL SPECIFICATIONS

GPS Antenna	
Frequency	1561.098±2.046MHz/ 1575.42±1.023MHz/ 1602.5625±4MHz
Nominal Impedance	50 Ω
VSWR	<2
Gain (Radiating Element)	1 dBic±1 dB
Gain (LNA Gain)	30 dB± 2 dB
Polarization	RHCP
Out of Band Rejection	
698 MHz	>70 dB
960 MHz	>65 dB
1710 MHz	>60 dB
2170 MHz	>65 dB
2400 MHz	>65 dB
2700 MHz	>65 dB
Noise Figure	<2.4 dB
Operating Voltage	3.3 – 5 Vdc
Current Consumption	<15mA

## MECHANICAL SPECIFICATIONS

Overall Length	202.3mm X 88.5mm X 45mm
Weight	1.1 Kg
Antenna Color / Material	Black or White
Connector type	Refer to Page 2
Cable type	Refer to Page 2
Cable length	Refer to Page 2

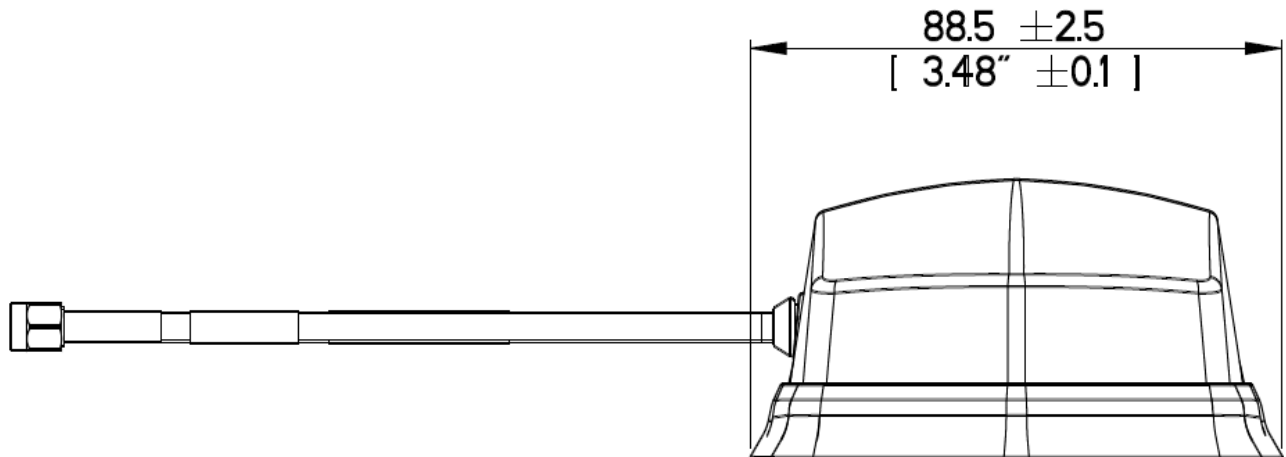
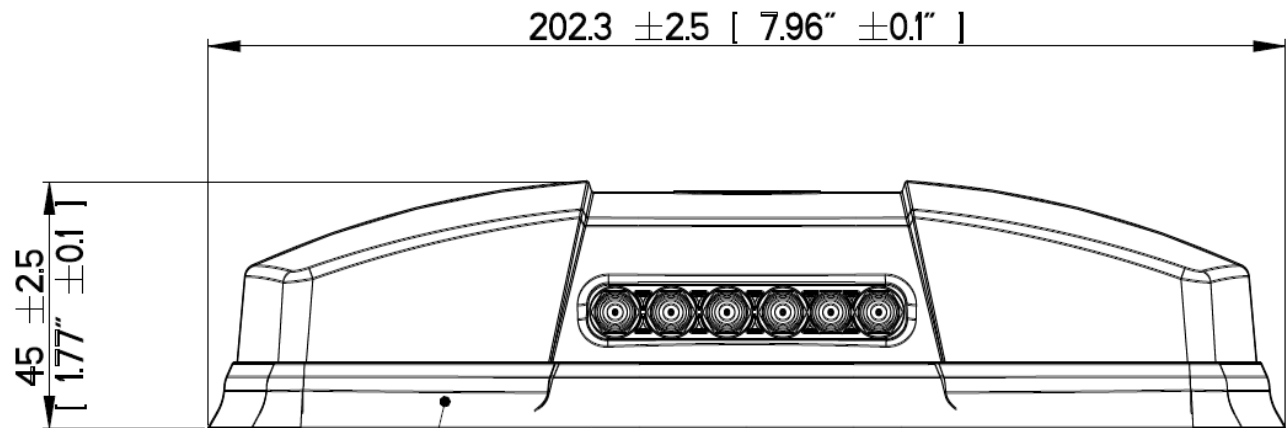
## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 ~ +85° C
Storage Temperature	-40 ~ +85° C
Ingress Protection	IP67
RoHS Compliant	Yes

## OTHER SPECIFICATIONS

Total cable assembly loss for 5.2m (17') LMR-195 @850MHz	2.1dB
Total cable assembly loss for 5.2m (17') LMR-100 @1575MHz	5.9dB
Total cable assembly loss for 5.2m (17') LMR-195 @1930MHz	3.2dB
Total cable assembly loss for 5.2m (17') LMR-195 @2450MHz	3.6dB
Total cable assembly loss for 5.2m (17') LMR-195 @2500MHz	3.7dB
Total cable assembly loss for 5.2m (17') LMR-195 @5350MHz	5.5dB

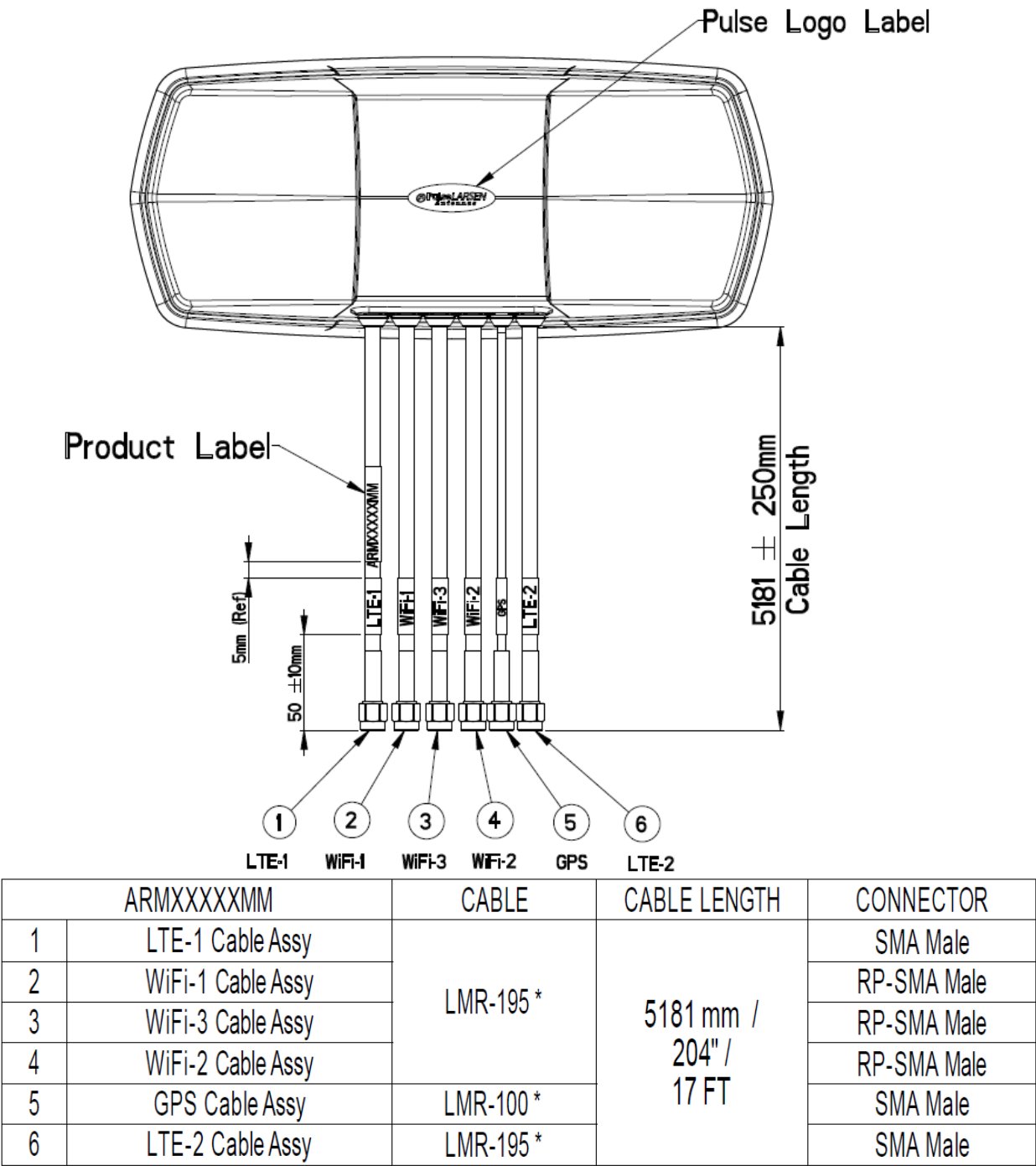
MECHANICAL DRAWING



**Description:** Vehicular Multiband Antenna with Magnetic Mount

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MECHANICAL DRAWING



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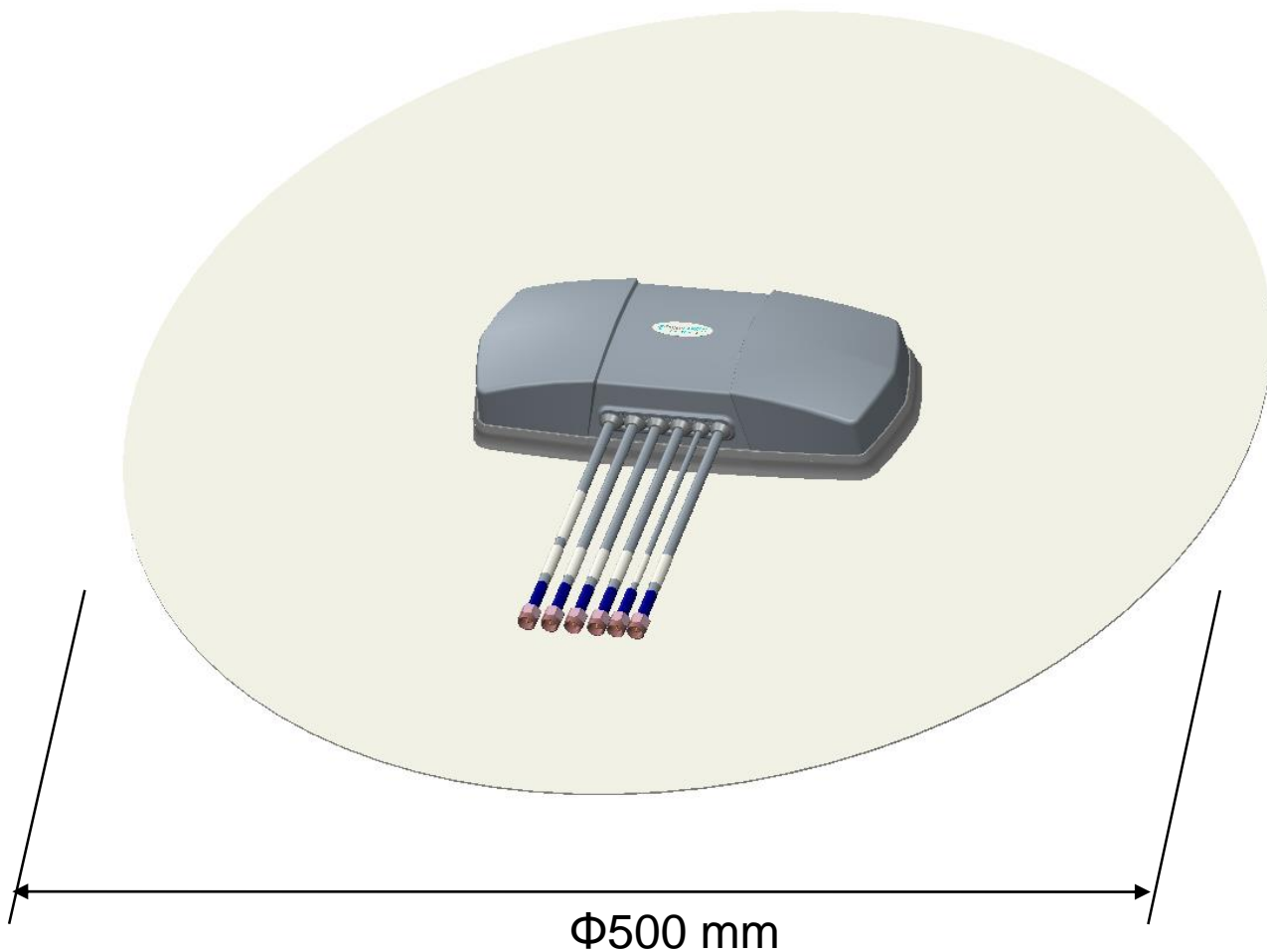
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## TEST SETUP

Antenna tested on a  $\Phi 500\text{mm}$  ground plane.



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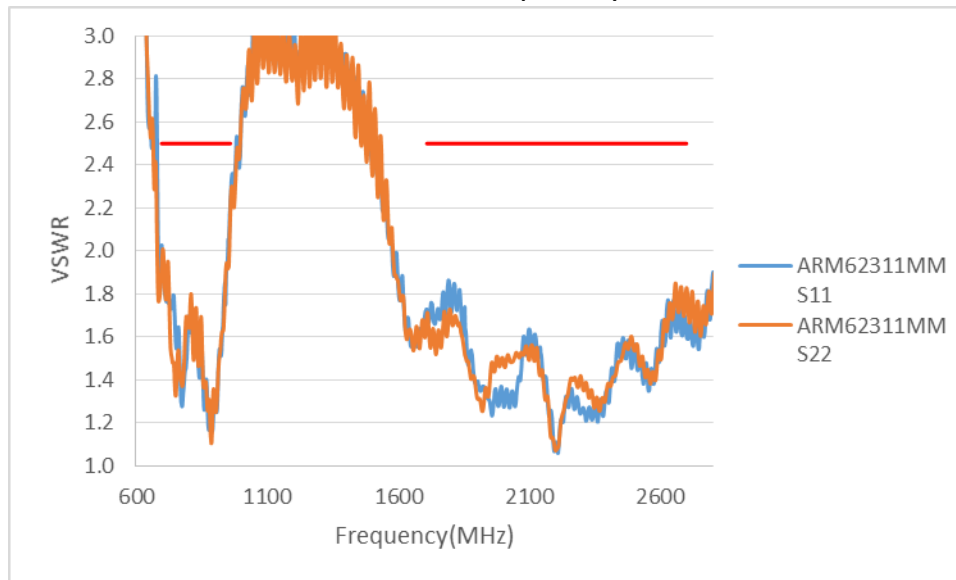
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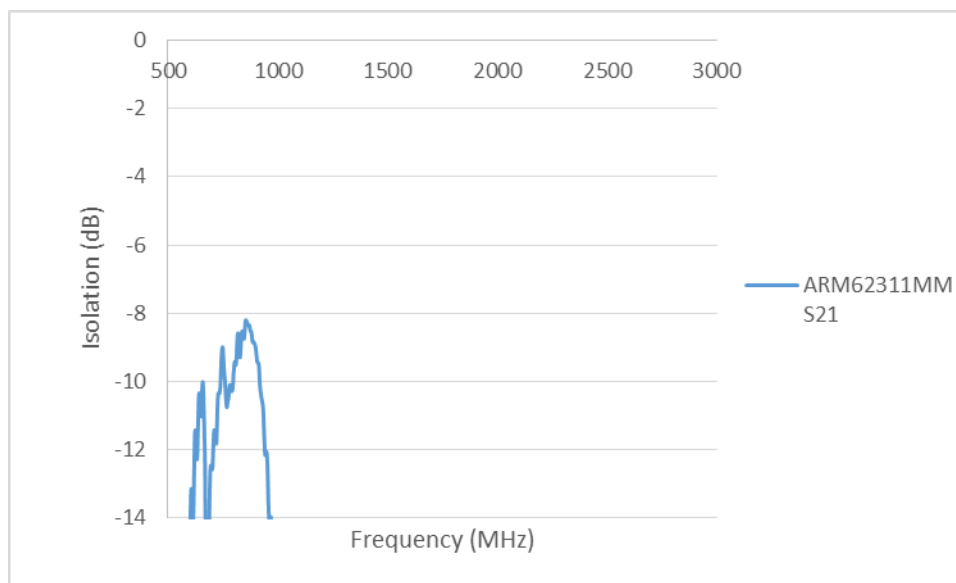
**PART NUMBER:** ARMXXXXXMM

## CHARTS

### VSWR (LTE)



### Isolation (LTE)



Note : Antenna tested with 5m cable on 500mm (dia) ground plane

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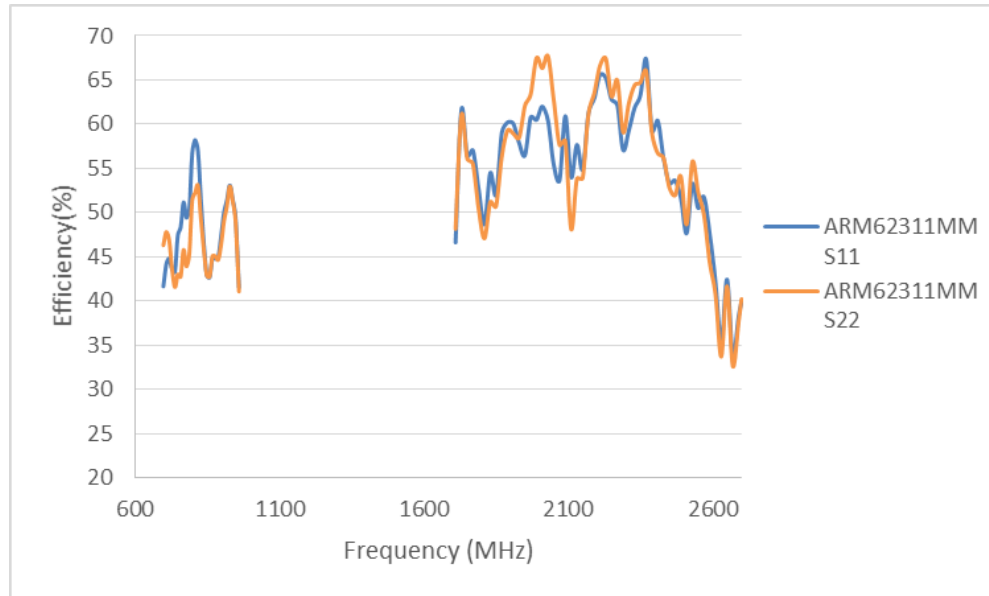
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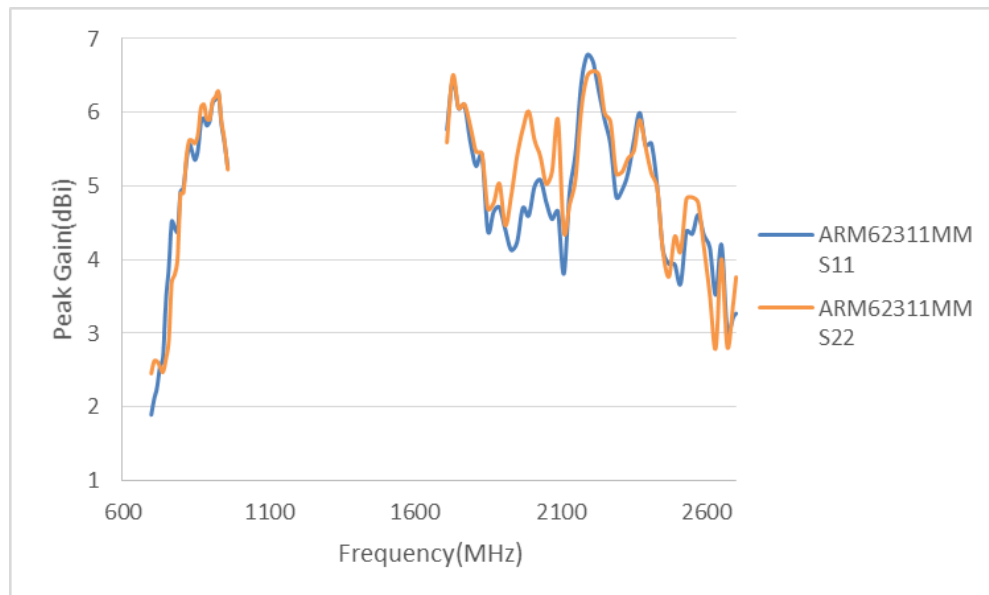
**PART NUMBER:** ARMXXXXXMM

## CHARTS

### Radiation Efficiency (LTE)



### Peak Gain (LTE)



Note : Antenna tested with 1ft(304.8mm) cable on 500mm (dia) ground plane

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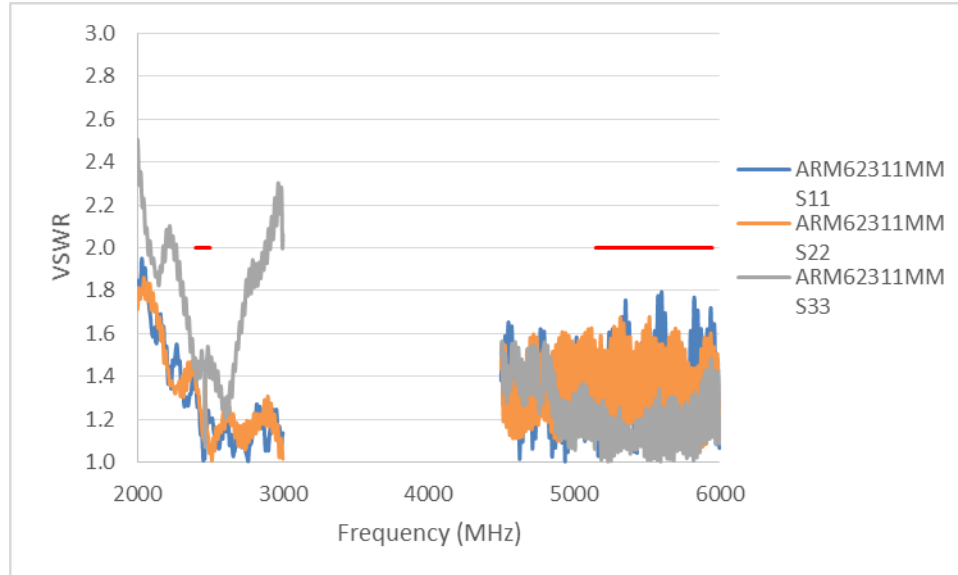
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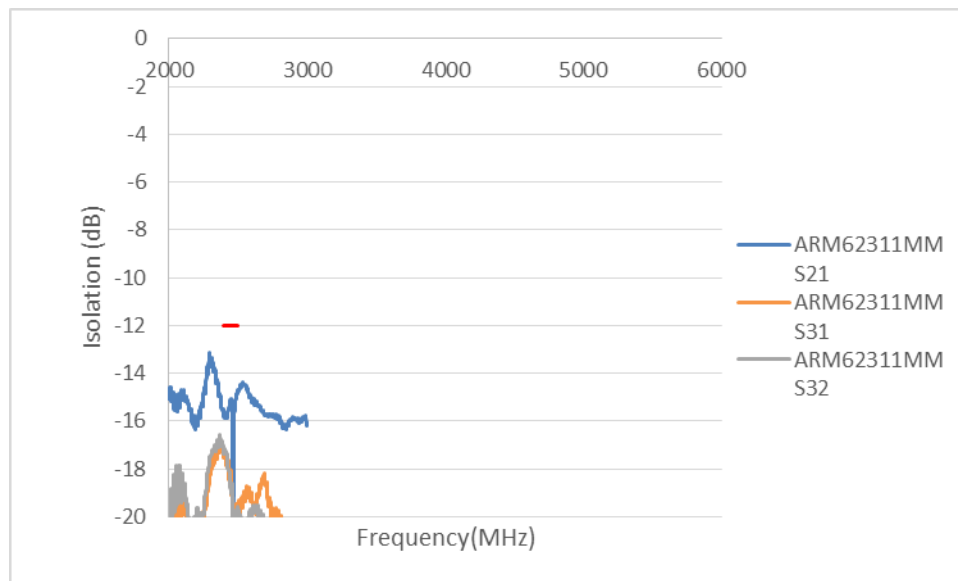
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## CHARTS

### VSWR (WIFI)



### Isolation (WIFI)



Note : Antenna tested with 5m cable on 500mm (dia) ground plane

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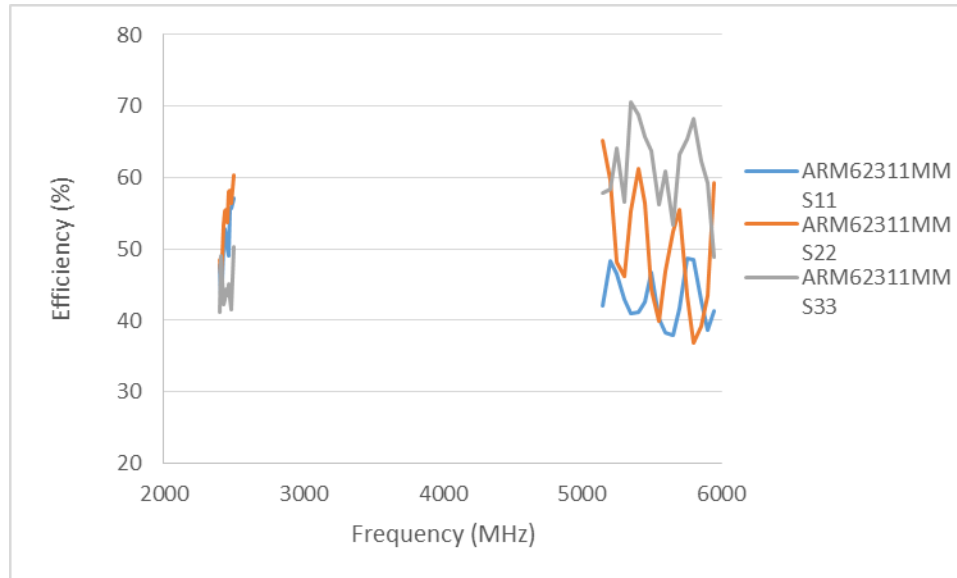
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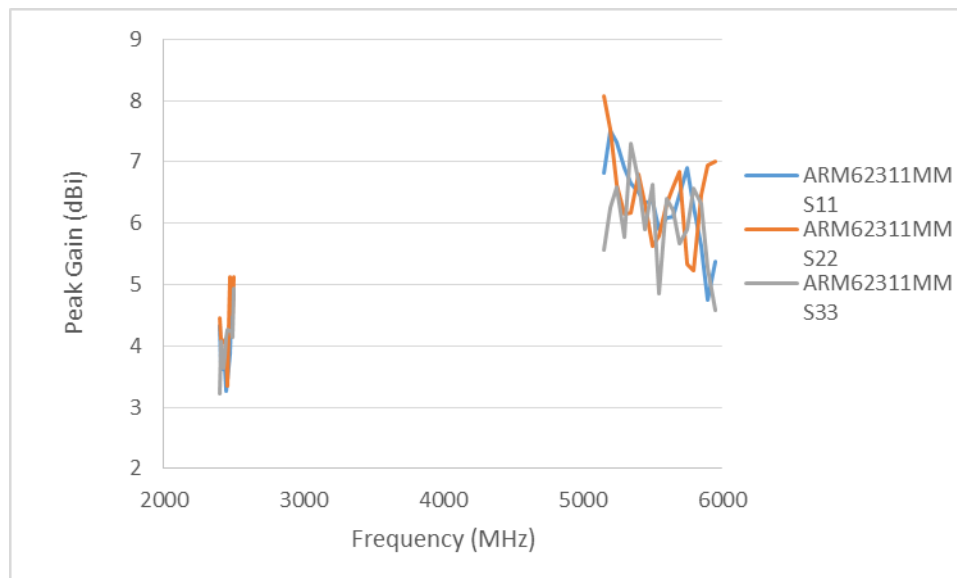
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## CHARTS

### Radiation Efficiency (WIFI)



### Peak Gain (WIFI)



Note : Antenna tested with 1ft(304.8mm) cable on 500mm (dia) ground plane

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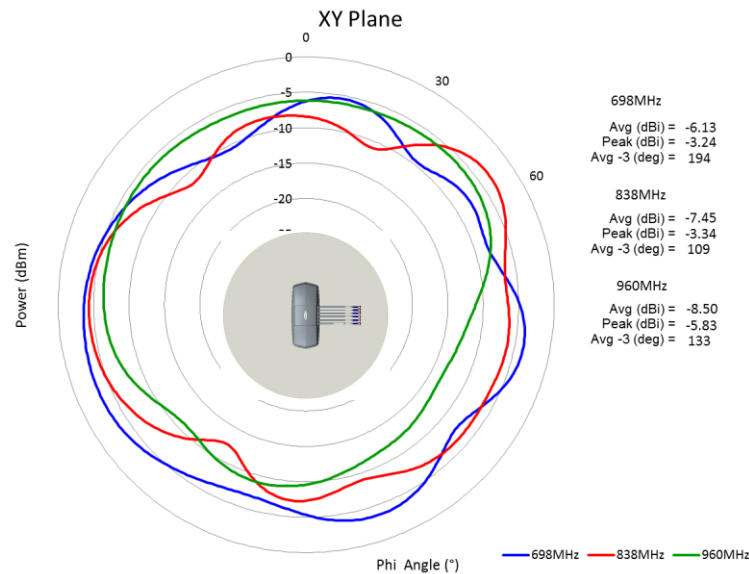
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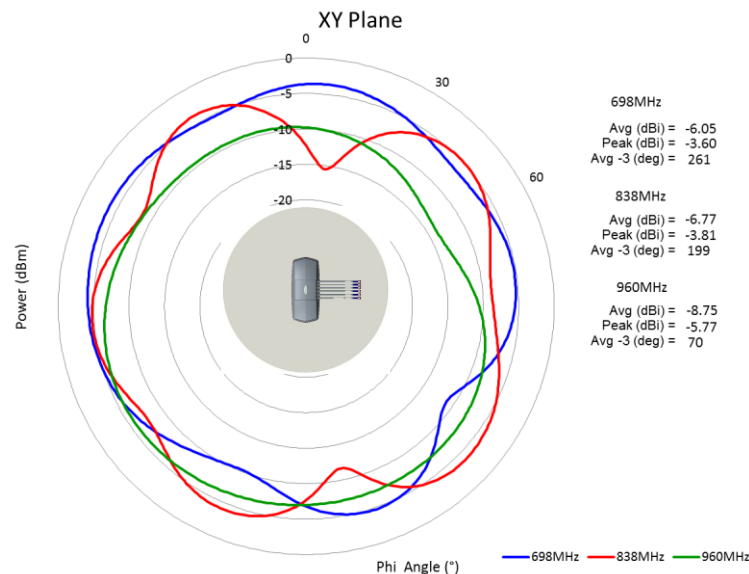
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## CHARTS



LTE1 XY plane radiation pattern



LTE2 XY plane radiation pattern

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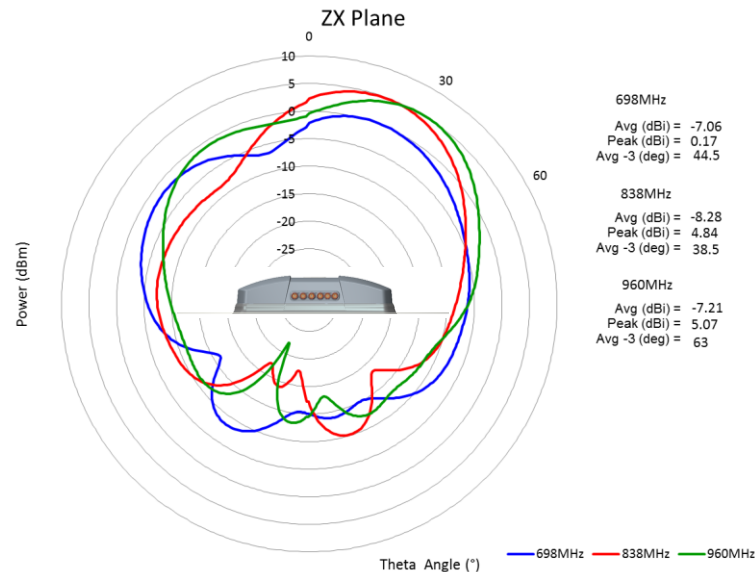
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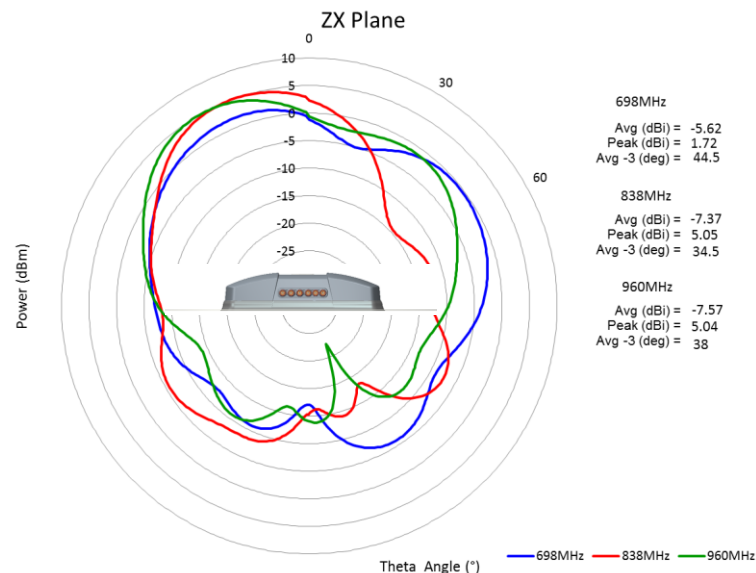
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## CHARTS



LTE1 ZX plane radiation pattern



LTE2 ZX plane radiation pattern

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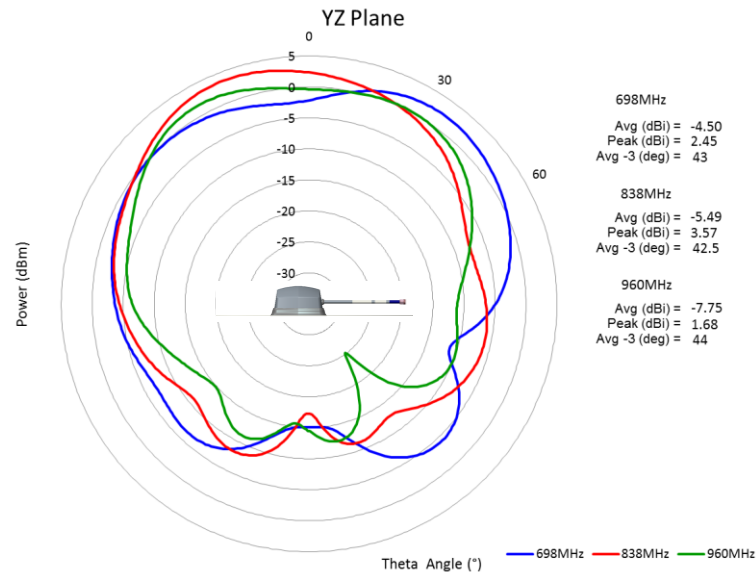
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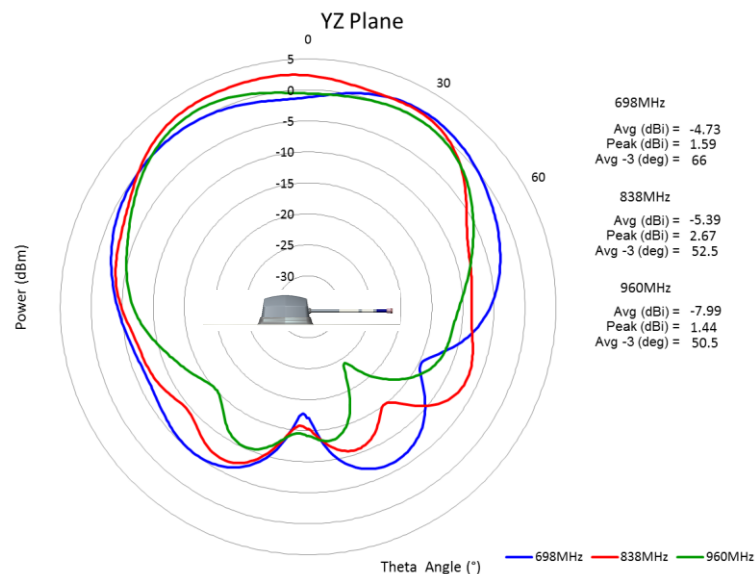
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## CHARTS



LTE1 YZ plane radiation pattern



LTE2 YZ plane radiation pattern

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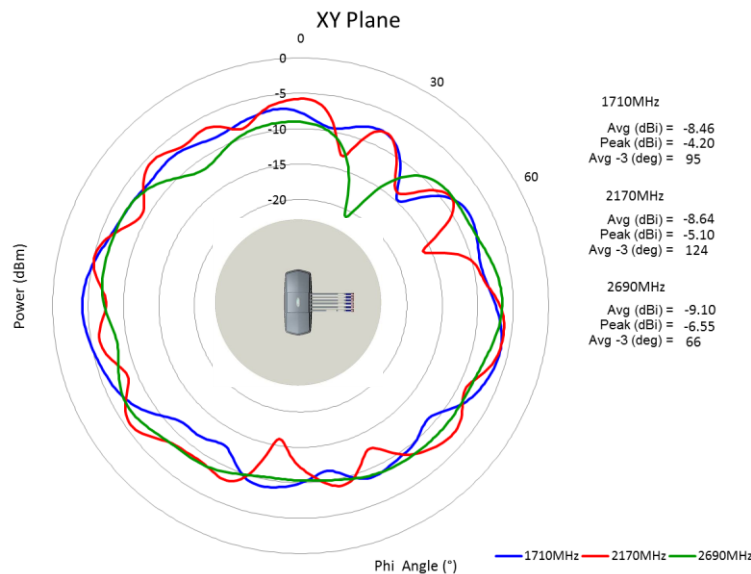
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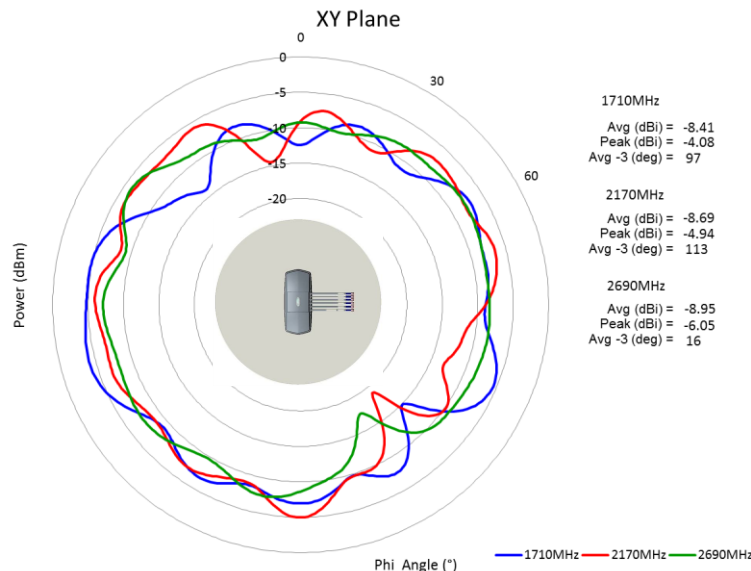
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LTE1 XY plane radiation pattern



LTE2 XY plane radiation pattern

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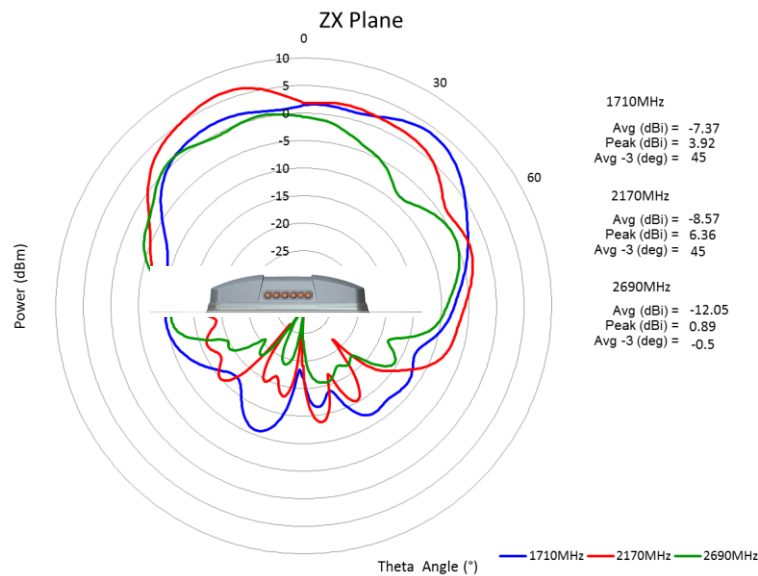
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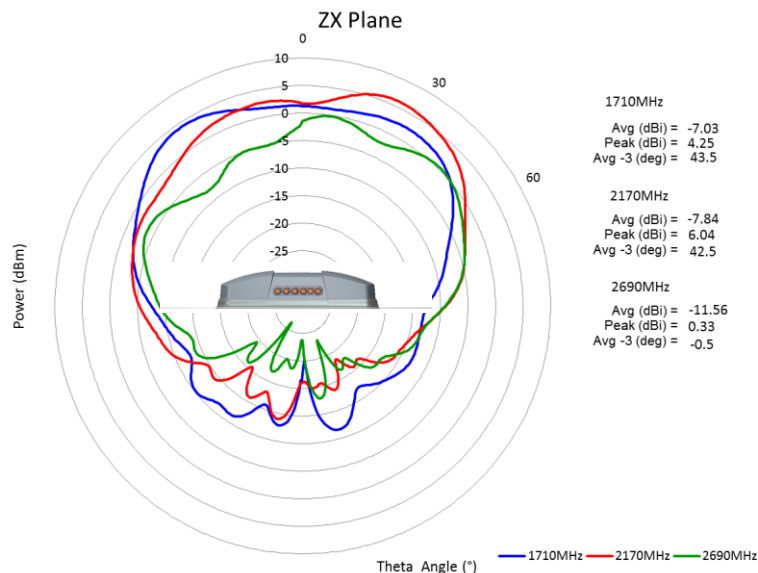
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## CHARTS



LTE1 ZX plane radiation pattern



LTE2 ZX plane radiation pattern

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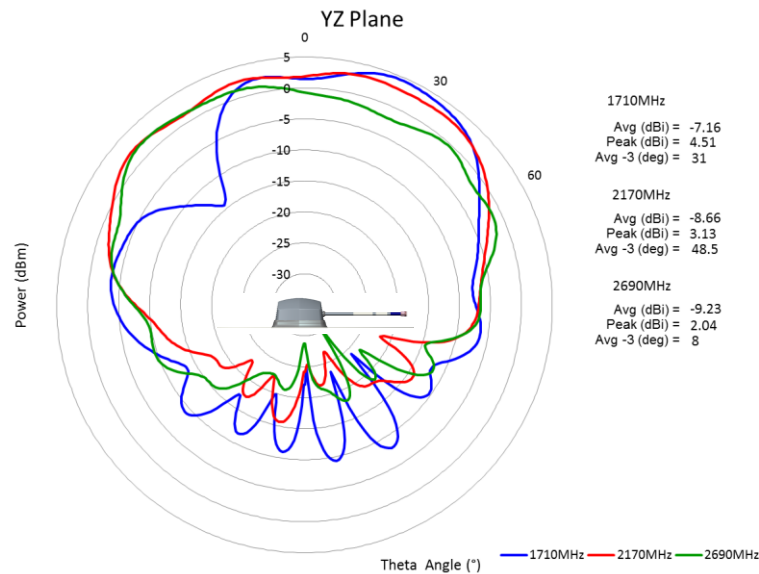
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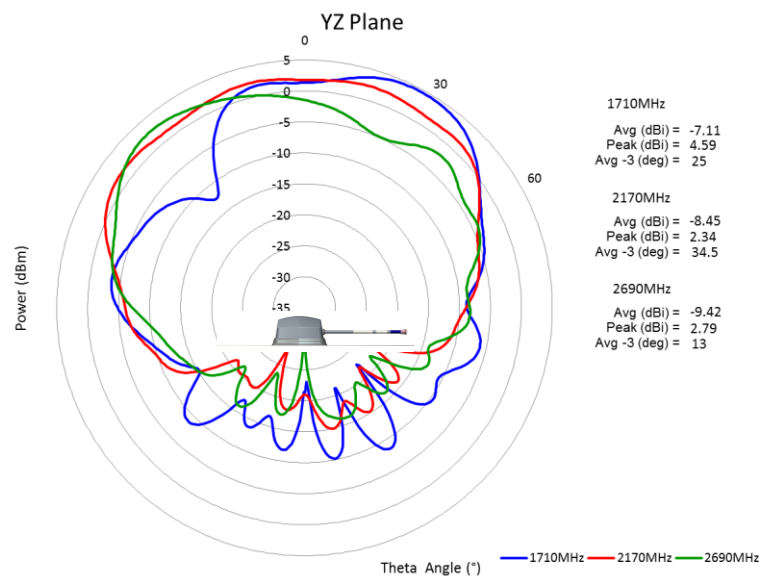
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LTE1 YZ plane radiation pattern



LTE2 YZ plane radiation pattern

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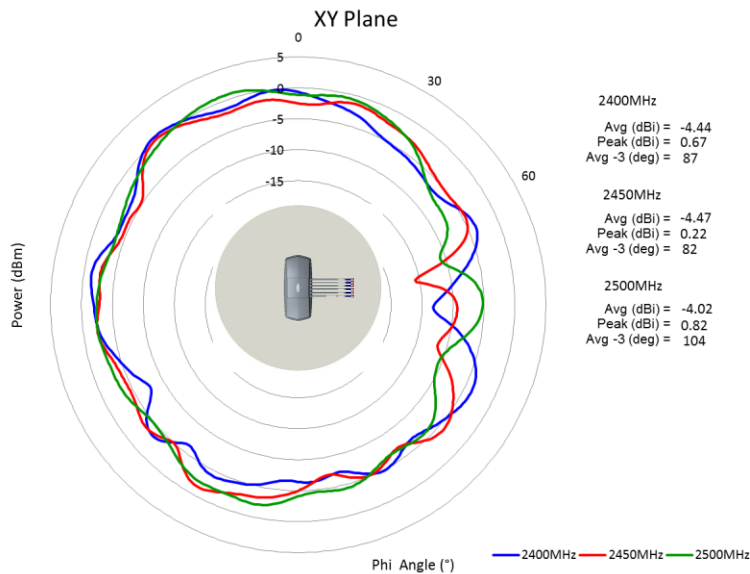
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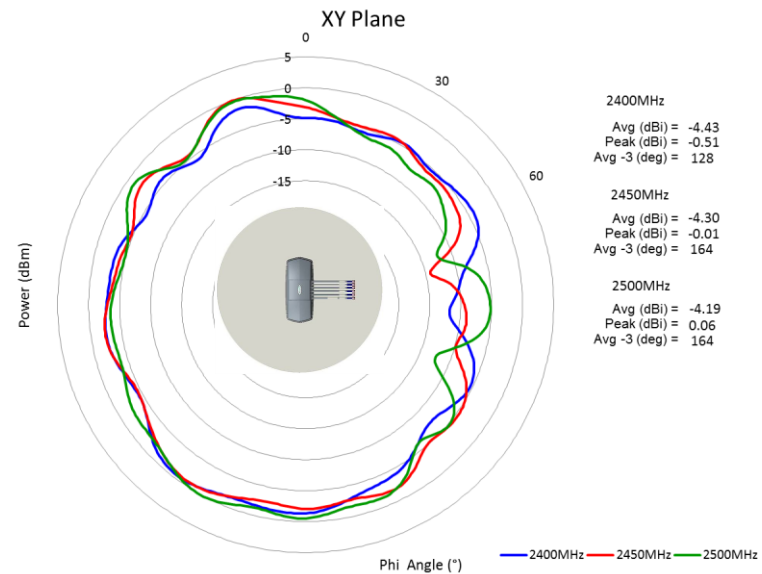
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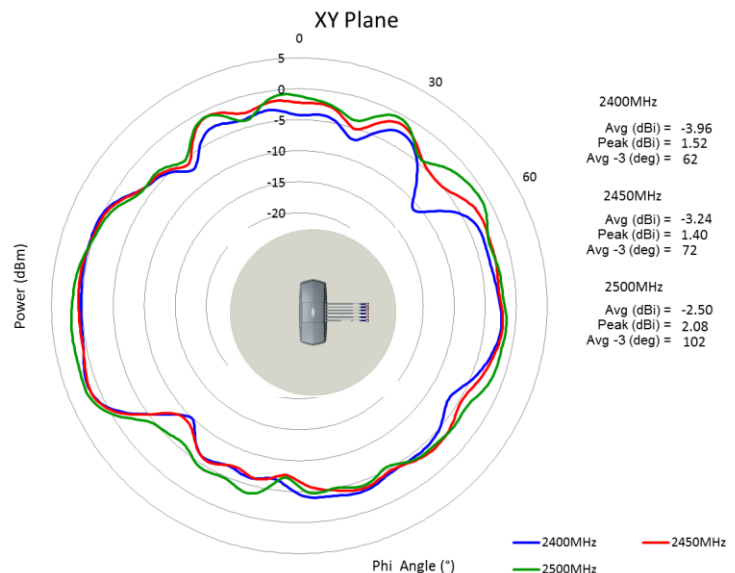
## CHARTS



WiFi1 XY plane radiation pattern



WiFi2 XY plane radiation pattern



WiFi3 XY plane radiation pattern

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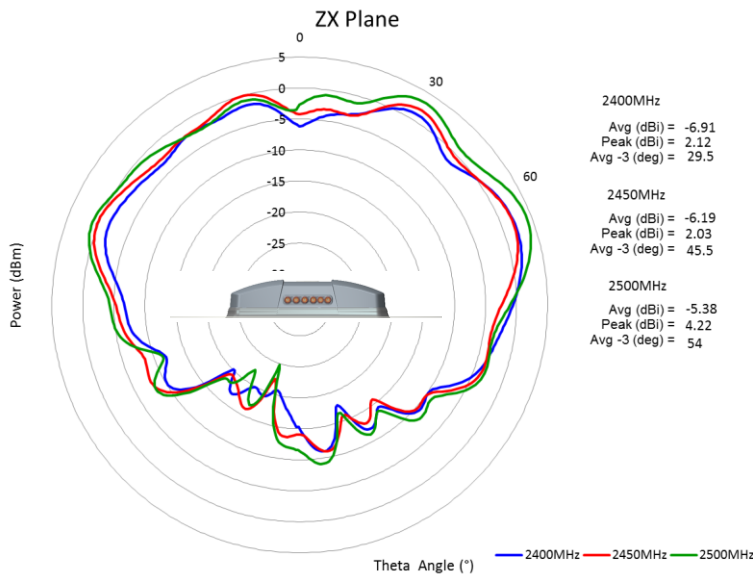
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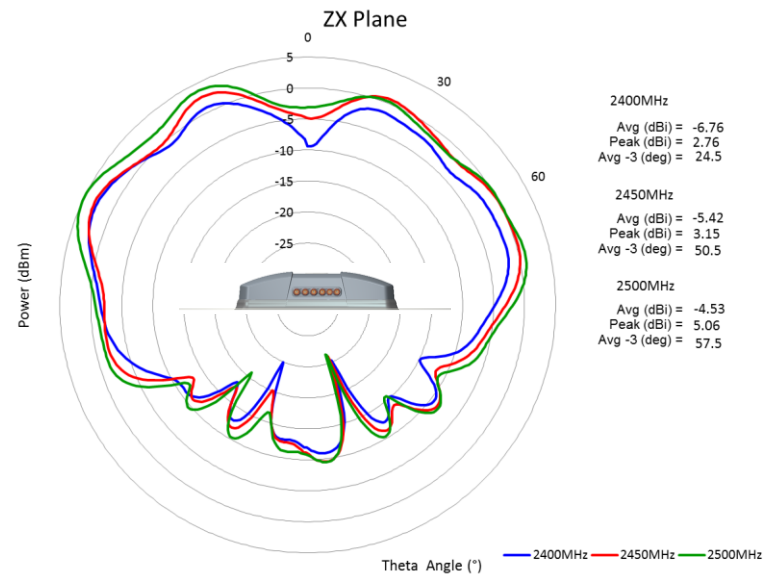
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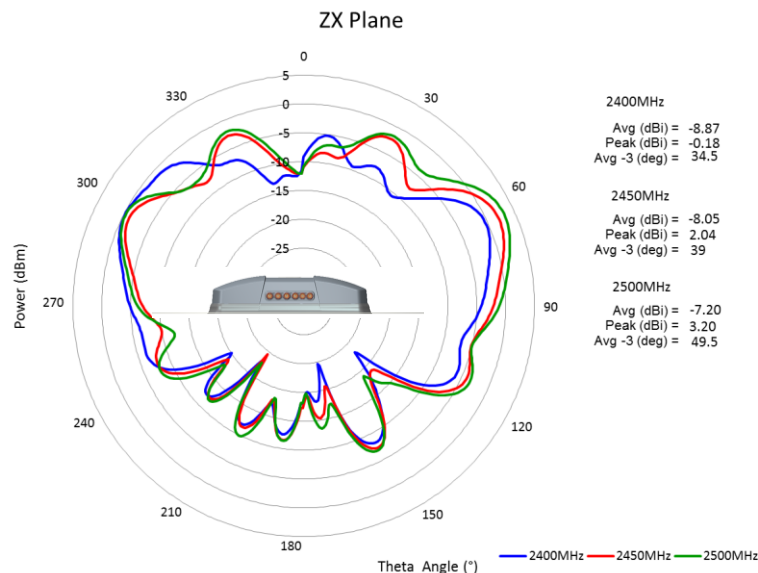
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WiFi1 ZX plane radiation pattern



WiFi2 ZX plane radiation pattern



WiFi3 ZX plane radiation pattern

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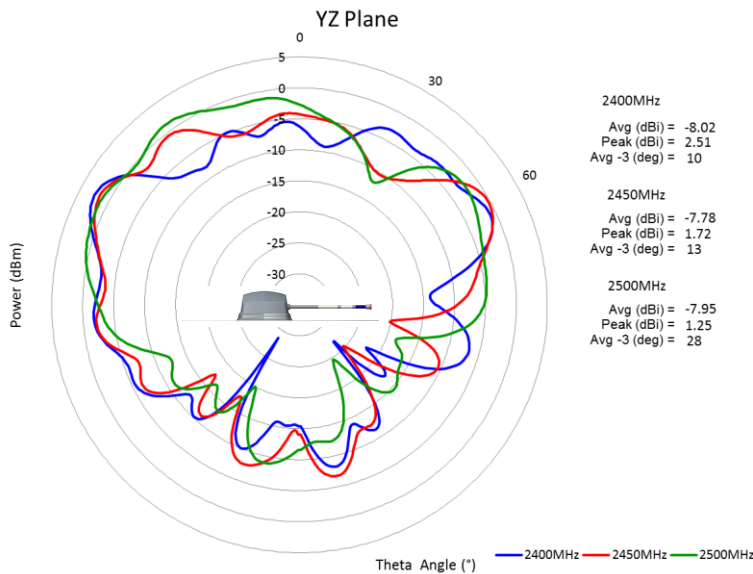
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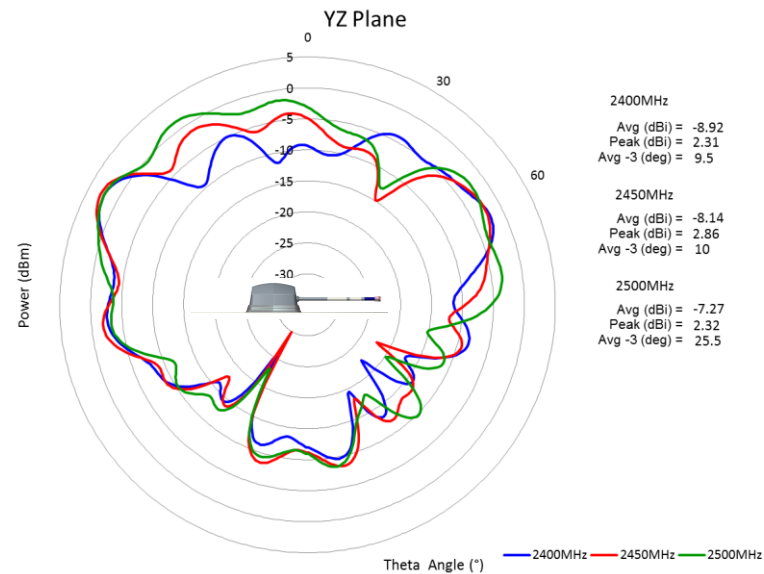
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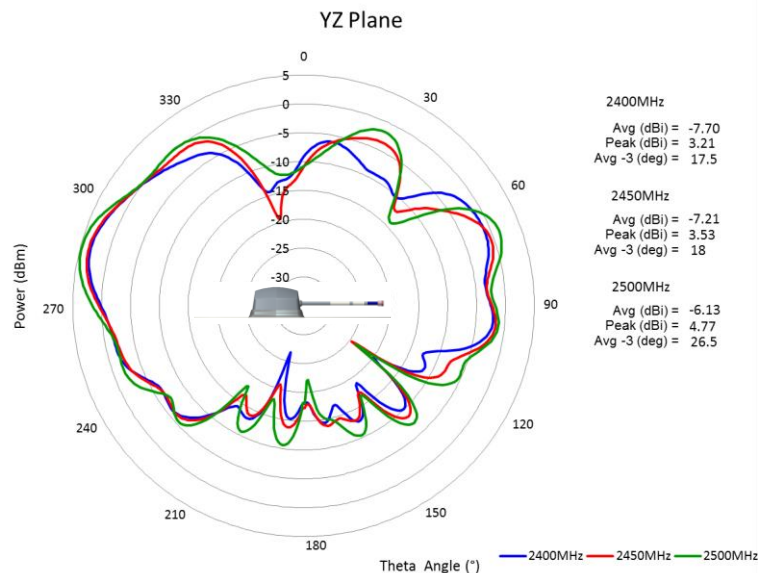
## CHARTS



WiFi1 YZ plane radiation pattern



WiFi2 YZ plane radiation pattern



WiFi3 YZ plane radiation pattern

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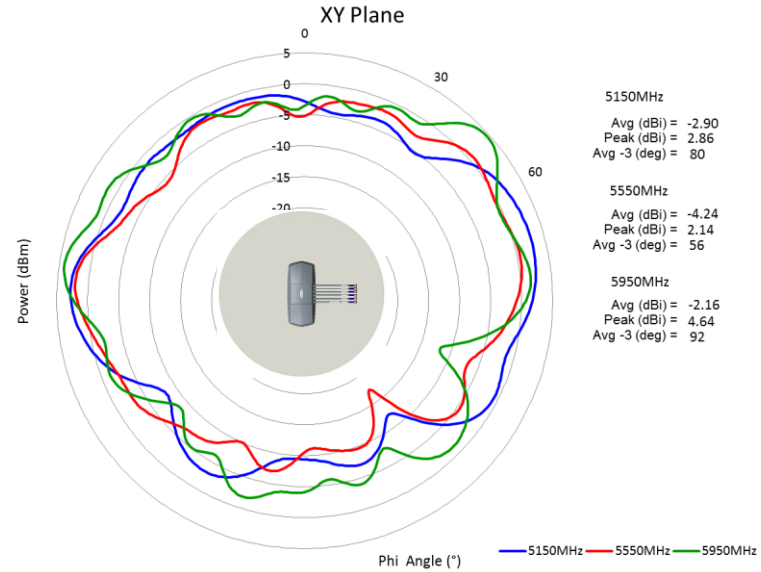
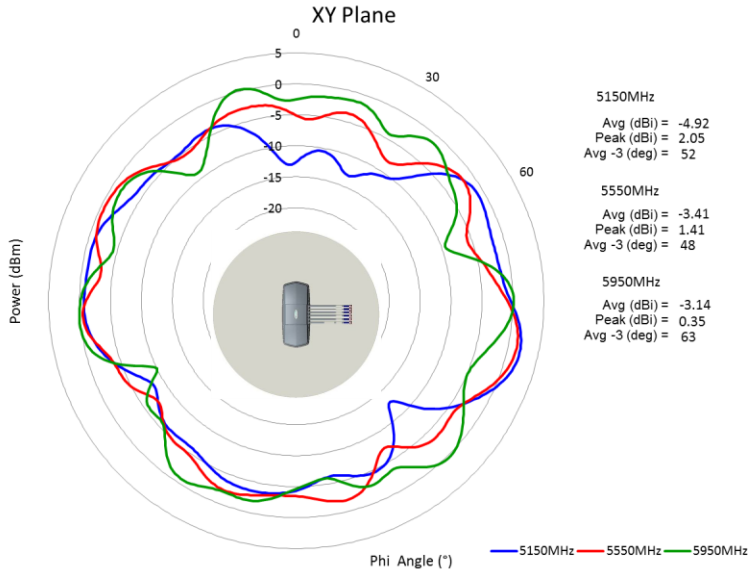
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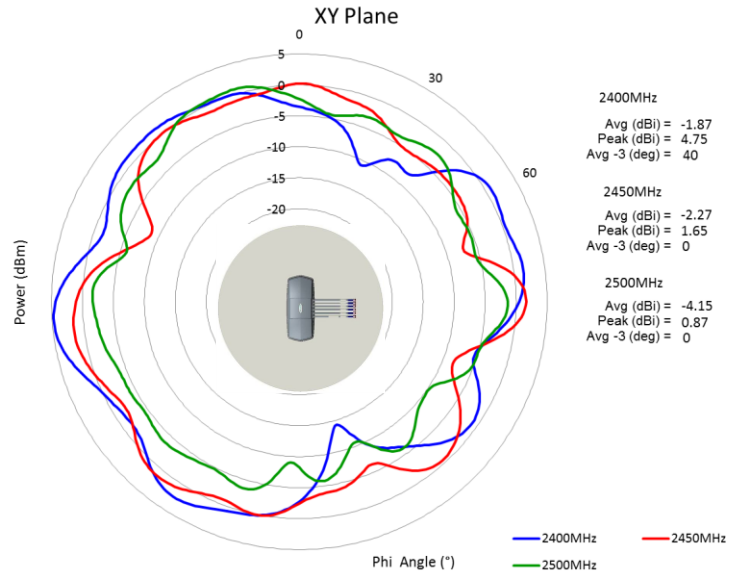
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## CHARTS



WiFi1 XY plane radiation pattern

WiFi2 XY plane radiation pattern



WiFi3 XY plane radiation pattern

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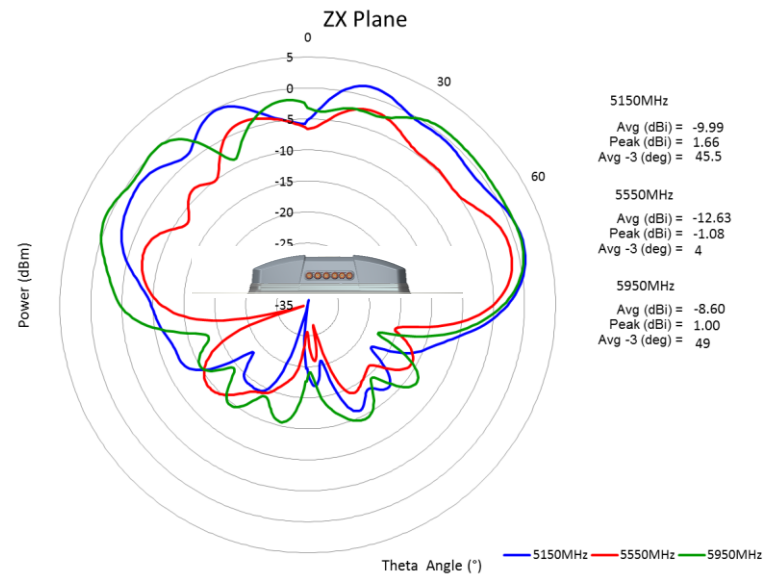
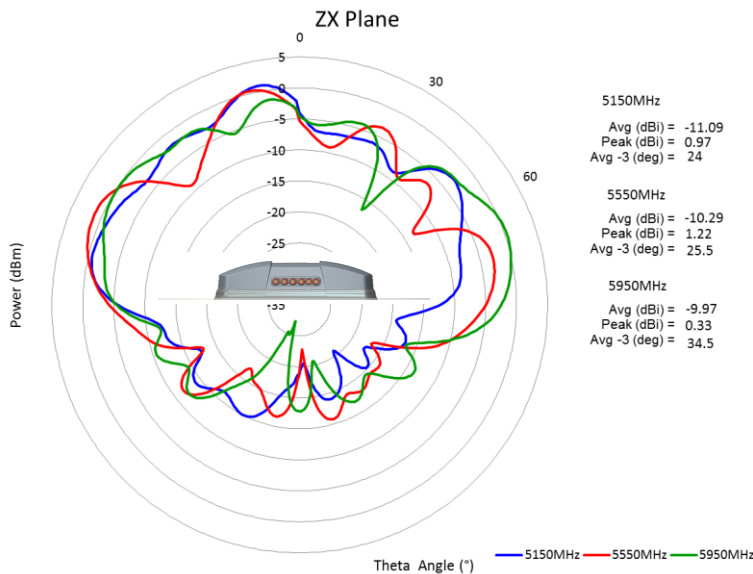
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Series: ARMADILLO

Description: Vehicular Multiband Antenna with Magnetic Mount

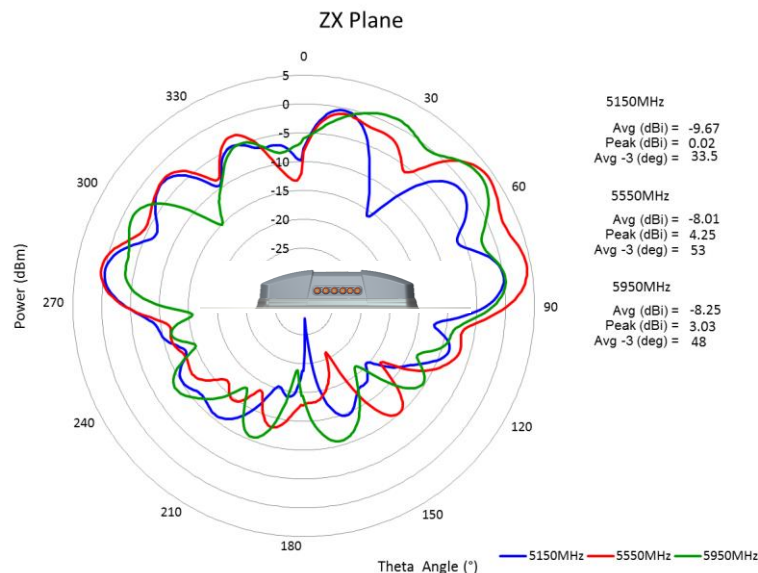
PART NUMBER: ARMXXXXXMM

## CHARTS



WiFi1 ZX plane radiation pattern

WiFi2 ZX plane radiation pattern



WiFi3 ZX plane radiation pattern

Issue: 1842

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

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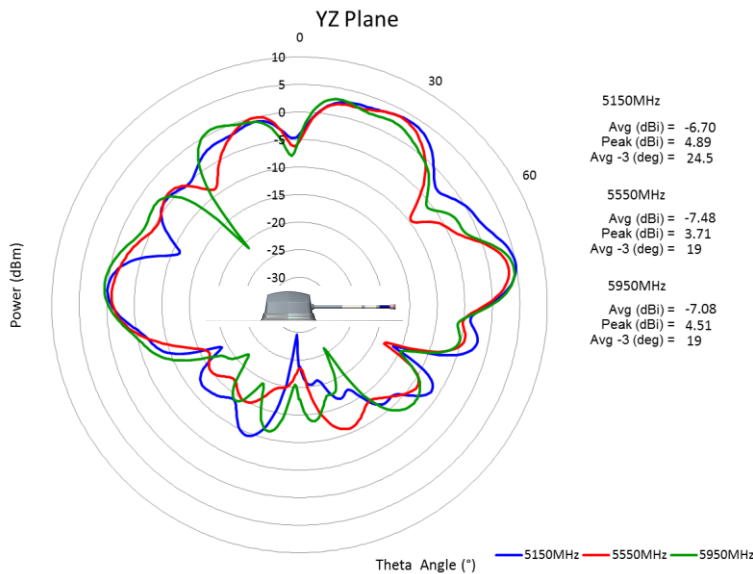
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Series: ARMADILLO

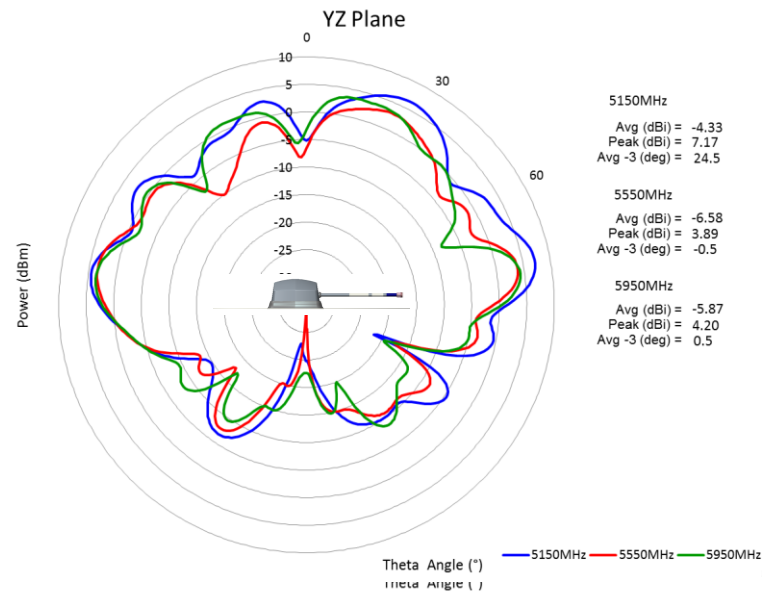
**Description:** Vehicular Multiband Antenna with Magnetic Mount

**PART NUMBER:** ARMXXXXXMM

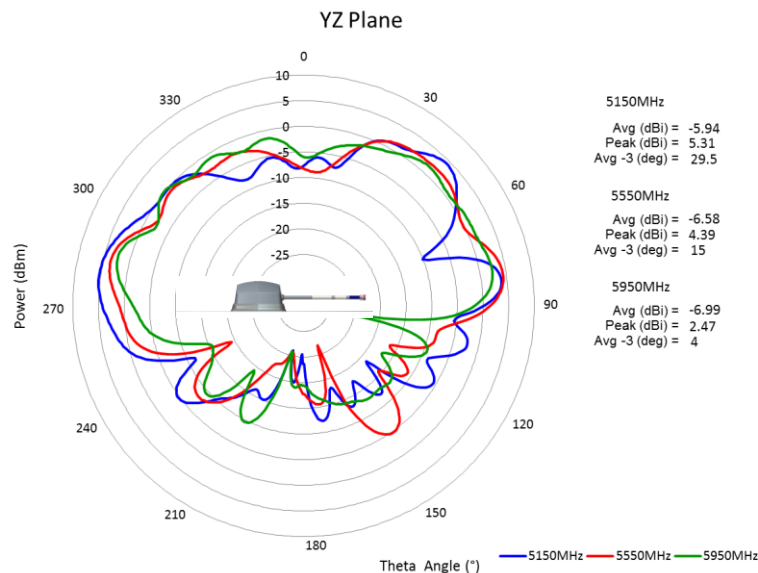
## CHARTS



WiFi1 YZ plane radiation pattern



WiFi2 YZ plane radiation pattern



WiFi3 YZ plane radiation pattern

Issue: 1842

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

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**Series: ARMADILLO**

**Description:** Vehicular Multiband Antenna with  
Magnetic Mount

**PART NUMBER: ARMXXXXXMM**

## PACKAGING

Each antennas packed in Bubble Bag

6 bags of antennas (Total 6pcs) packed in a cardboard box

1 label on each box with quantity, part number, date code.