

Series: ARMADILLO

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

### PART NUMBER: ARMXXXXXAM





### **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
  - Direct, Magnetic, Adhes.Mount

#### Issue: 1901

For more information:

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**Description**: Vehicular Multiband Antenna with Adhesive 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	Cable Length	Mounting
ARM62311AM	6	2 (with SMA Male)	3 (with RP-SMA Male)	1 (with SMA Male)	Black	17 FT or 5181mm	3M VHB4959
ARM62312AM	6	2 (with SMA Male)	3 (with RP-SMA Male)	1 (with SMA Male)	White		
ARM52211AM	5	2 (with SMA Male)	2 (with RP-SMA Male)	1 (with SMA Male)	Black		
ARM52212AM	5	2 (with SMA Male)	2 (with RP-SMA Male)	1 (with SMA Male)	White		
ARM42111AM	4	2 (with SMA Male)	1 (with RP-SMA Male)	1 (with SMA Male)	Black		
ARM42112AM	4	2 (with SMA Male)	1 (with RP-SMA Male)	1 (with SMA Male)	White		
ARM32011AM	3	2 (with SMA Male)	0	1 (with SMA Male)	Black		
ARM32012AM	3	2 (with SMA Male)	0	1 (with SMA Male)	White		
ARM21011AMTT	2	1 (with TNC Male)	0	1 (with TNC Male)	Black		

### Product Numbering Vehicular Multiband Antenna with Direct Mount

(Part Number)

nber)		X	AM •
۲	Product ID: ARMADILLO		
۲	Total Number of Cable leads		
۲	Total Number of LTE Cable Leads		
۲	Total Number of WiFi Cable Leads		
۲	Total Number of GPS Cable Leads		
۲	The Color of the Plastic Housing 1=Black; 2= White		
-	Mounting: Adhesive Mount		

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ELECTRICAL SPECIFICATIONS					
Frequency	698-960MHz, 1710-2690MHz				
	2400-2500MHz, 5150-5925MHz				
Nominal Impedance	50 Ω				
VSWR*					
698-960MHz	<2.5				
1710-2690MHz	<2.5				
2400-2500MHz	<2				
5150-5925MHz	<2				
Isolation*					
698-960MHz, 1710-2690MHz	-8dB				
2400-2500MHz, 5150-5925MHz	-12dB				
Average Peak Gain**					
698-960MHz;	4.6dBi				
1710-2690MHz	5.1dBi				
2400-2500MHz	4.9dBi				
5150-5925MHz	7.9dBi				
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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**Description**: Vehicular Multiband Antenna with Adhesive Mount

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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

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Series: ARMADILLO

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### **MECHANICAL SPECIFICATIONS**

Overall Length
Weight
Antenna Color / Material
Connector type
Cable type
Cable length

202.3mm X 88.5mm X 45mm 1 Kg Black or White Refer to Page 2 Refer to Page 2 Refer to Page 2

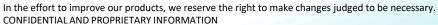
#### **ENVIRONMENTAL SPECIFICATIONS**

Operating Temperature
Storage Temperature
Ingress Protection
RoHS Compliant

-40 ~ +85° C -40 ~ +85° C IP67 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



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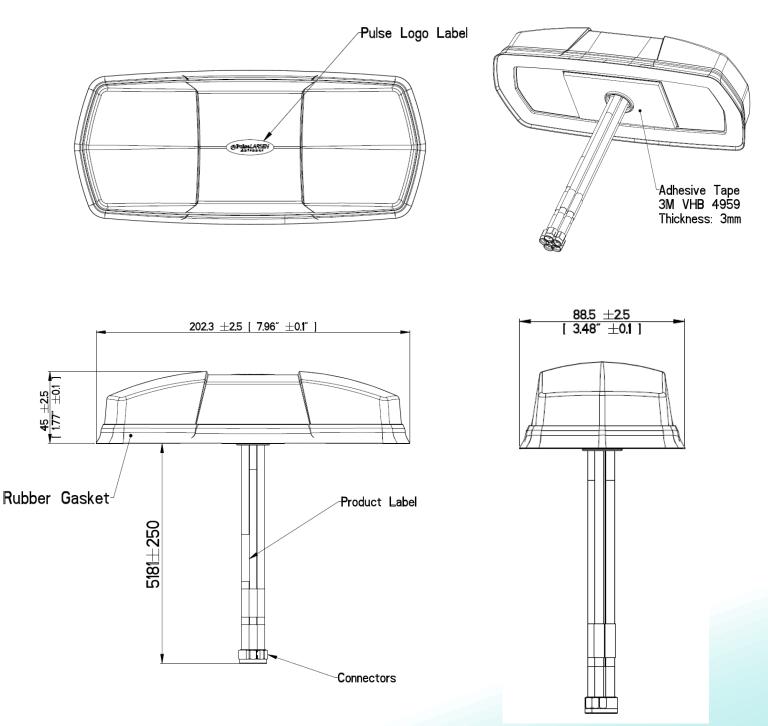


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### **MECHANICAL DRAWING**



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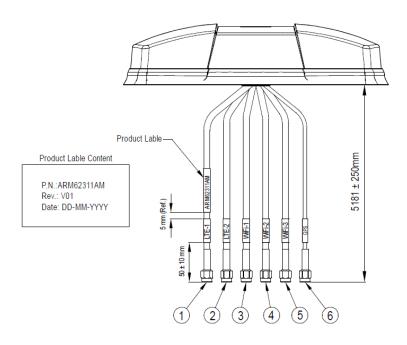


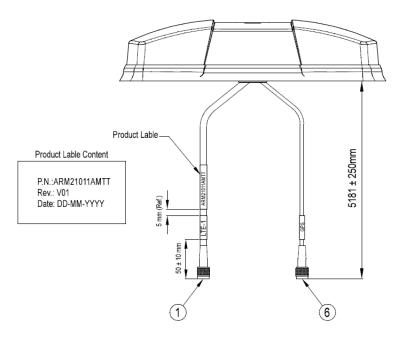
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### **MECHANICAL DRAWING**





ARM62311AM		CABLE	CABLE LENGTH	CONNECTOR
1	LTE-1 Cable Assy			OMA Mala
2	LTE-2 Cable Assy	LMR-195*		SMA Male
3	WiFi-1 Cable Assy		5181 mm /	
4	WiFi-2 Cable Assy	LMR-195*	204" /	RP-SMA Male
5	WiFi-3 Cable Assy		17 FT	
6	GPS Cable Assy	LMR-100*		SMA Male

\* or equivalent

ARM21011AMTT		CABLE	CABLE LENGTH	CONNECTOR
1	LTE-1 Cable Assy	LMR-195*		TNC Male
2				
			5181 mm /	
			204" /	
			17 FT	
6	GPS Cable Assy	LMR-100*		TNC Male

\* or equivalent



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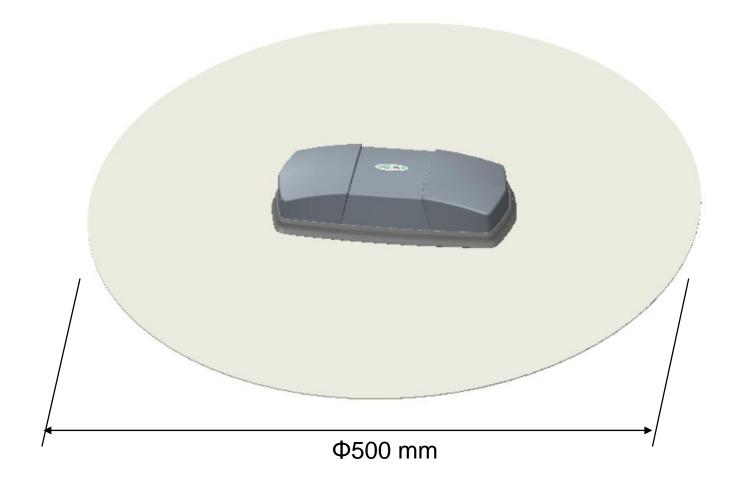
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## **TEST SETUP**

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



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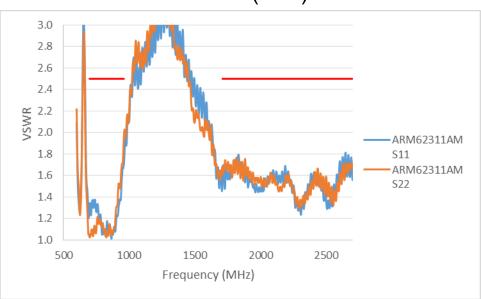


**Description**: Vehicular Multiband Antenna with Adhesive Mount

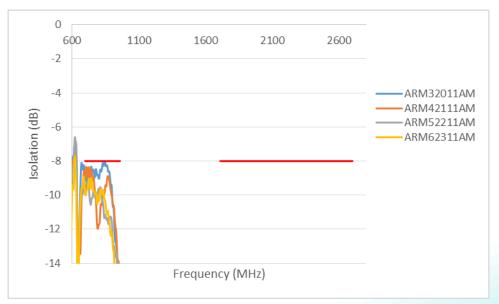
## Series: ARMADILLO

PART NUMBER: ARMXXXXAM

# <mark>CHARTS</mark> VSWR (LTE)



# Isolation (LTE)



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

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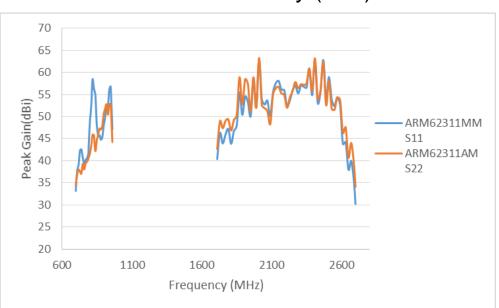


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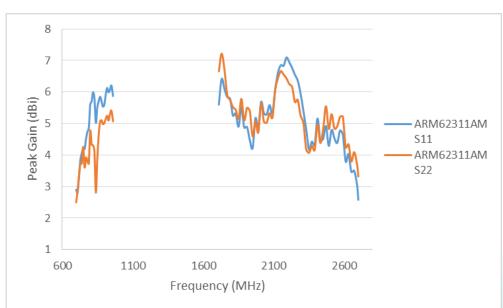
## Series: ARMADILLO

PART NUMBER: ARMXXXXXAM

## CHARTS Radiation Efficiency (LTE)



# Peak Gain (LTE)



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

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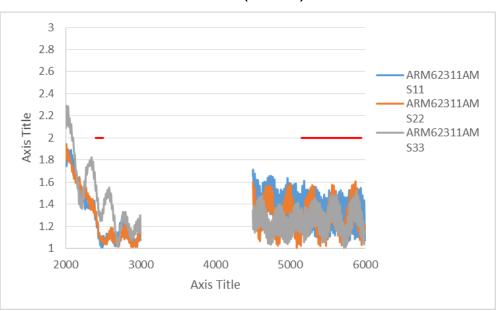


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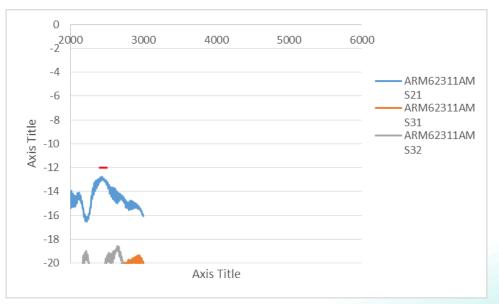
## Series: ARMADILLO

PART NUMBER: ARMXXXXAM

## CHARTS VSWR (WIFI)



# Isolation (WIFI)



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

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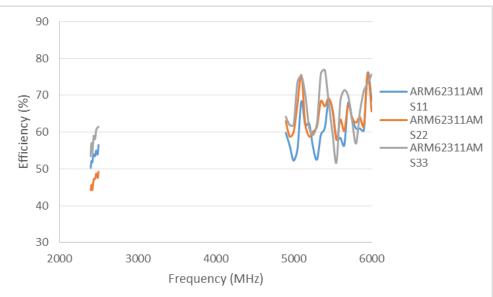
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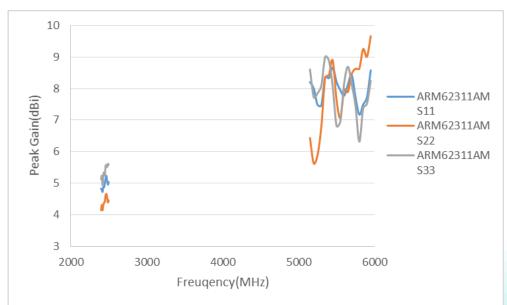
PART NUMBER: ARMXXXXXAM

### CHARTS





Peak Gain (WIFI)



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

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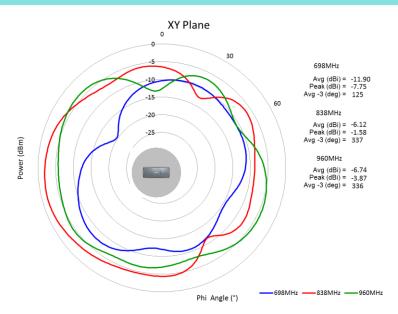


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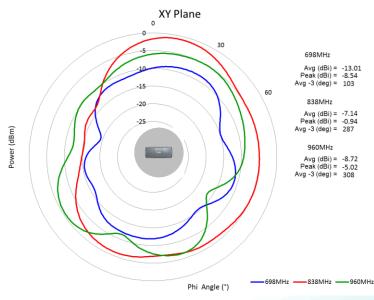
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PART NUMBER: ARMXXXXAM

### CHARTS



# LTE1 XY plane radiation pattern



# LTE2 XY plane radiation pattern

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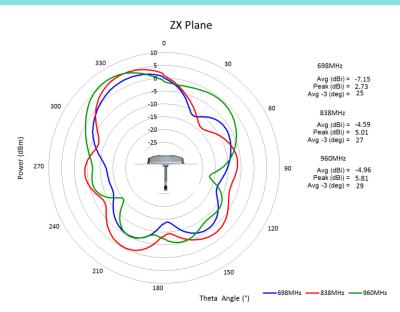


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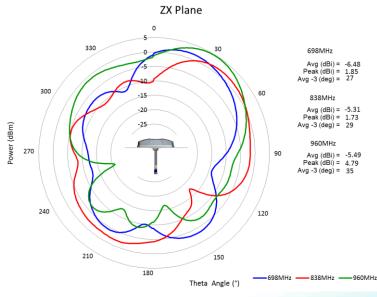
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PART NUMBER: ARMXXXXXAM

### **CHARTS**



# LTE1 ZX plane radiation pattern



# LTE2 ZX plane radiation pattern

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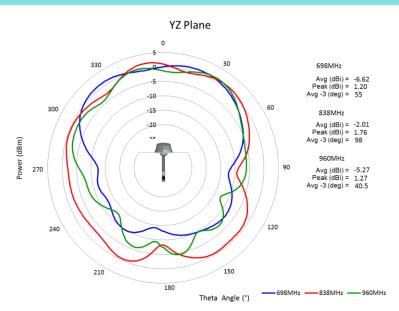


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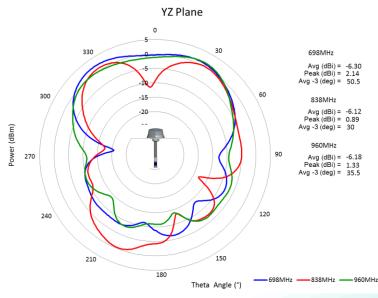
## Series: ARMADILLO

PART NUMBER: ARMXXXXAM

### **CHARTS**



# LTE1 YZ plane radiation pattern



# LTE2 YZ plane radiation pattern

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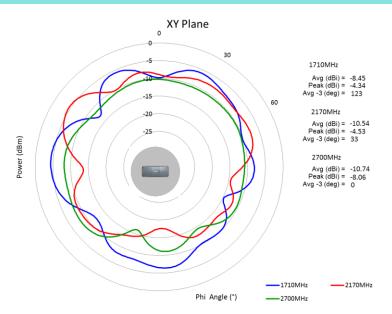


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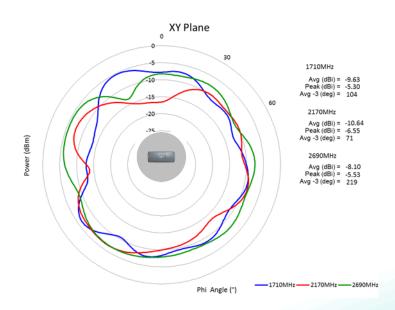
### Series: ARMADILLO

PART NUMBER: ARMXXXXXAM

### CHARTS



# LTE1 XY plane radiation pattern



# LTE2 XY plane radiation pattern

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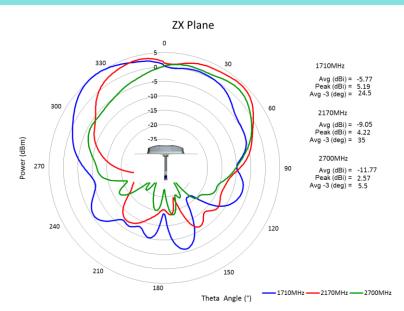


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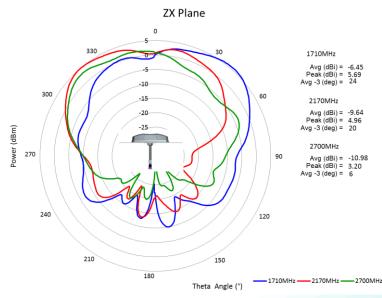
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PART NUMBER: ARMXXXXXAM

### **CHARTS**



# LTE1 ZX plane radiation pattern



# LTE2 ZX plane radiation pattern

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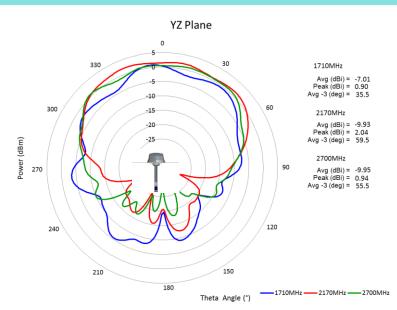


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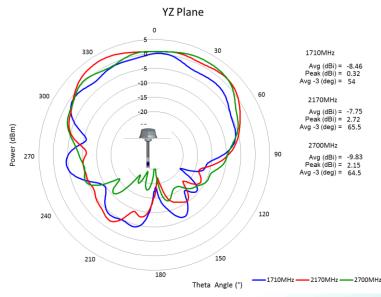
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PART NUMBER: ARMXXXXXAM

### **CHARTS**



# LTE1 YZ plane radiation pattern



# LTE2 YZ plane radiation pattern

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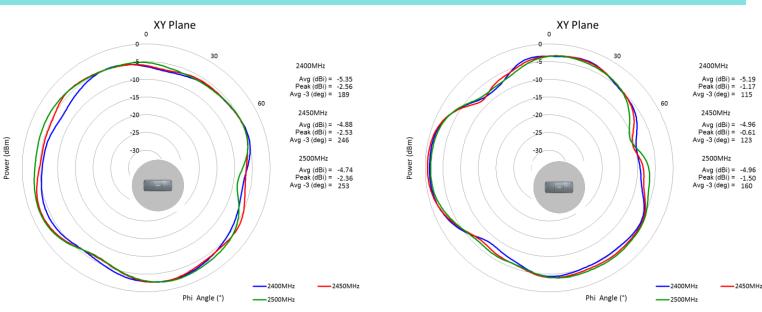


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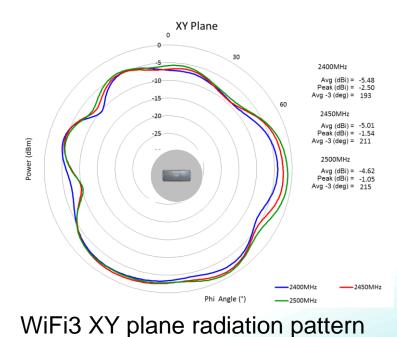
PART NUMBER: ARMXXXXXAM

**CHARTS** 



WiFi1 XY plane radiation pattern

WiFi2 XY plane radiation pattern



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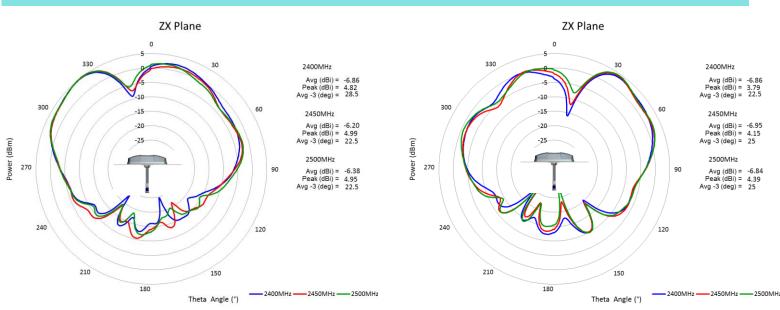


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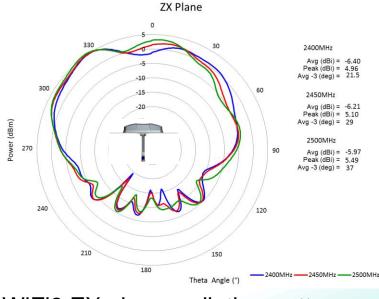
PART NUMBER: ARMXXXXXAM

**CHARTS** 



WiFi1 ZX plane radiation pattern

WiFi2 ZX plane radiation pattern



# WiFi3 ZX plane radiation pattern

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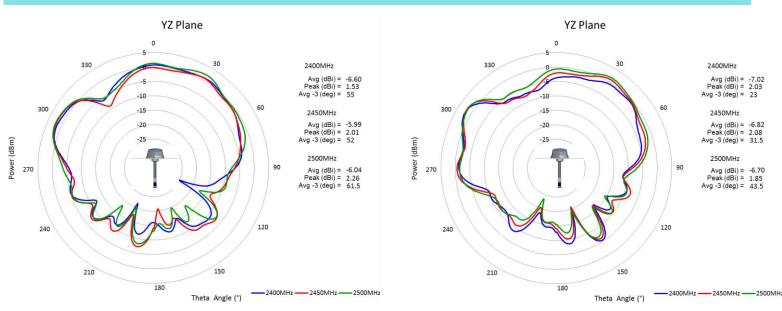


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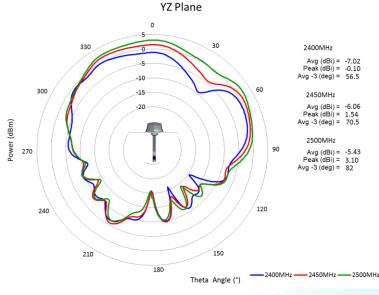
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**CHARTS** 



WiFi1 YZ plane radiation pattern

WiFi2 YZ plane radiation pattern



# WiFi3 YZ plane radiation pattern

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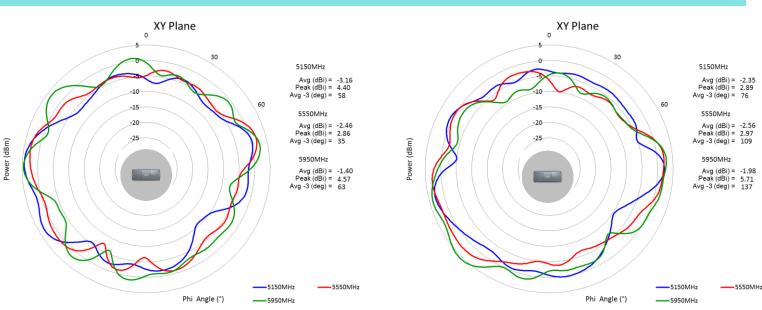


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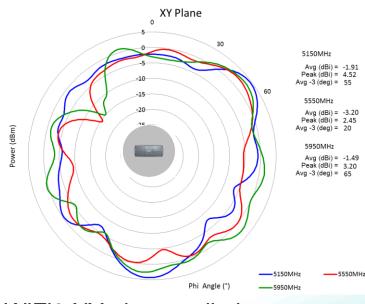
PART NUMBER: ARMXXXXXAM

**CHARTS** 



WiFi1 XY plane radiation pattern

WiFi2 XY plane radiation pattern



# WiFi3 XY plane radiation pattern

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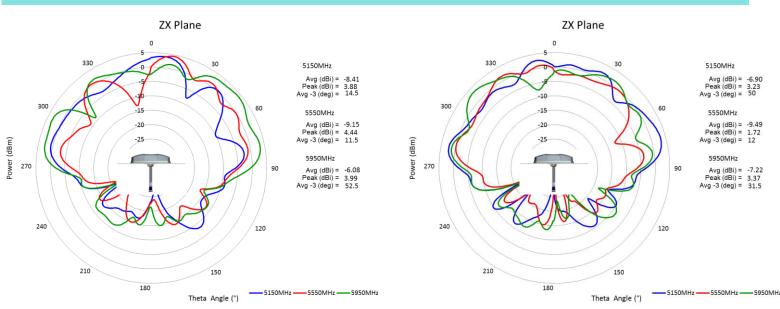


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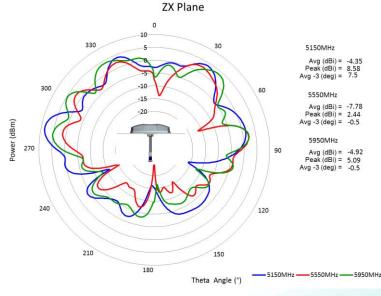
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**CHARTS** 



WiFi1 ZX plane radiation pattern

WiFi2 ZX plane radiation pattern



# WiFi3 ZX plane radiation pattern

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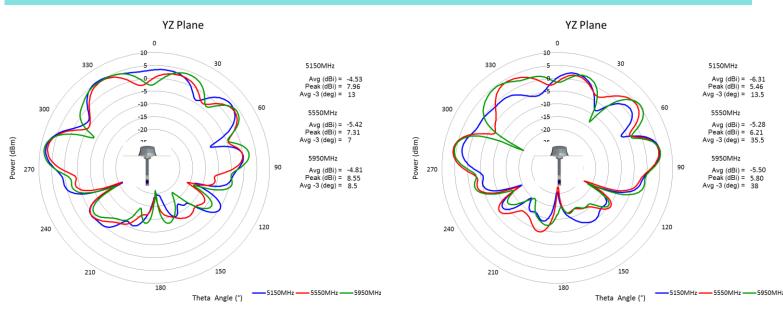


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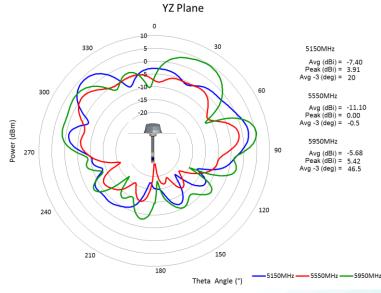
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**CHARTS** 



WiFi1 YZ plane radiation pattern

WiFi2 YZ plane radiation pattern



# WiFi3 YZ plane radiation pattern

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### 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.

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