



**G24.A.W.305111**

## Specification

<b>Part No.</b>	<b>G24.A.W.305111</b>
<b>Product Name</b>	<b>Ultima</b> G24 Ultima Series – Super Low Profile Penta Band Cellular 800~960/1710~220MHz Antenna Screw Mount GSM/GPRS/CDMA/HSPA (Permanent mount)
<b>Feature</b>	Height 19.6mm (0.77") Diameter 55mm (2.16") Heavy duty Screw Mount UV and vandal resistant ABS housing and thread IP67 compliant Standard is 3 meter low loss cable CFD200 SMA(M) White Housing Cables and Connectors Customizable ROHS Compliant

# 1. Introduction

G24.W Ultima Series Cellular Antenna is an extremely low profile 2G/3G 800MHz to 2200MHz cellular antenna solution for professional telematics applications. Suitable for GSM/GPRS/CDMA applications worldwide, at only 19.6mm (0.77") in height it is the lowest profile antenna in the market, with a diameter of only 55 mm (2.16"). It works well when mounted on both metal and non-metal. In other words it does not need a metal ground-plane to attach to,

to radiate, something that competitor antennas all need.

Durable UV ABS housing, thread and nut is resistant to vandalism and direct attack.

The IP67 waterproof robust plastic body makes it extremely light, economical for shipping and minimum weight impact on vehicles. This also makes it ideal for use in humid environments such as water pits or

marine applications as there are no metal parts to corrode. The closed cell foam with double-sided adhesive provides a permanent waterproof seal and can adjust to different curvatures, stopping water from leaking under the antenna into the mounting hole. Lowest loss PTFE cable is used for maximum gain and reduced noise entry through the cable.

Also available in Black.

# 2. Specification

## Cellular

Frequency (MHz)	824 ~ 896	880 ~ 960	1710 ~ 1880	1850 ~ 1990	1710 ~ 2170
<b>Peak Gain (dBi)</b>					
Free Space	2.0	1.8	3.9	3.9	3.9
10x10cm ground plane	-0.6	0.7	-0.2	1.7	1.7
20x20cm ground plane	1.8	1.8	3.1	3.1	3.1
30x30cm ground plane	0.0	0.0	1.7	1.7	2.0
<b>Average Gain (dBi)</b>					
Free Space	-4.1	-4.0	-2.7	-2.8	-2.7
10x10cm ground plane	-4.8	-3.3	-4.9	-4.0	-4.0
20x20cm ground plane	-4.3	-4.3	-4.2	-4.0	-4.0
30x30cm ground plane	-6.3	-6.6	-4.4	-4.4	-4.4
<b>Efficiency (%)</b>					
Free Space	39.1	39.3	53.4	52.5	53.4
10x10cm ground plane	33.8	46.2	32.1	40.0	40.0
20x20cm ground plane	36.9	36.9	37.8	39.3	39.3
30x30cm ground plane	23.4	23.4	36.0	36.0	36.0

## 2. Specification

### Cellular

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<b>Impedance</b>	50Ω
<b>Polarization</b>	Linear
<b>Radiation Pattern</b>	Omni

### Mechanical

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<b>Dimensions</b>	Ø 55±2mm , Height 30±2 mm, Profile 19.6mm Ø 2.16"; Height 1.18"; Profile 0.77"
<b>Cable Type</b>	CFD200
<b>Cable Length</b>	3000±30mm (9' 10 1/8" ±1.18")
<b>Casing</b>	ABS
<b>Connector</b>	SMA Male

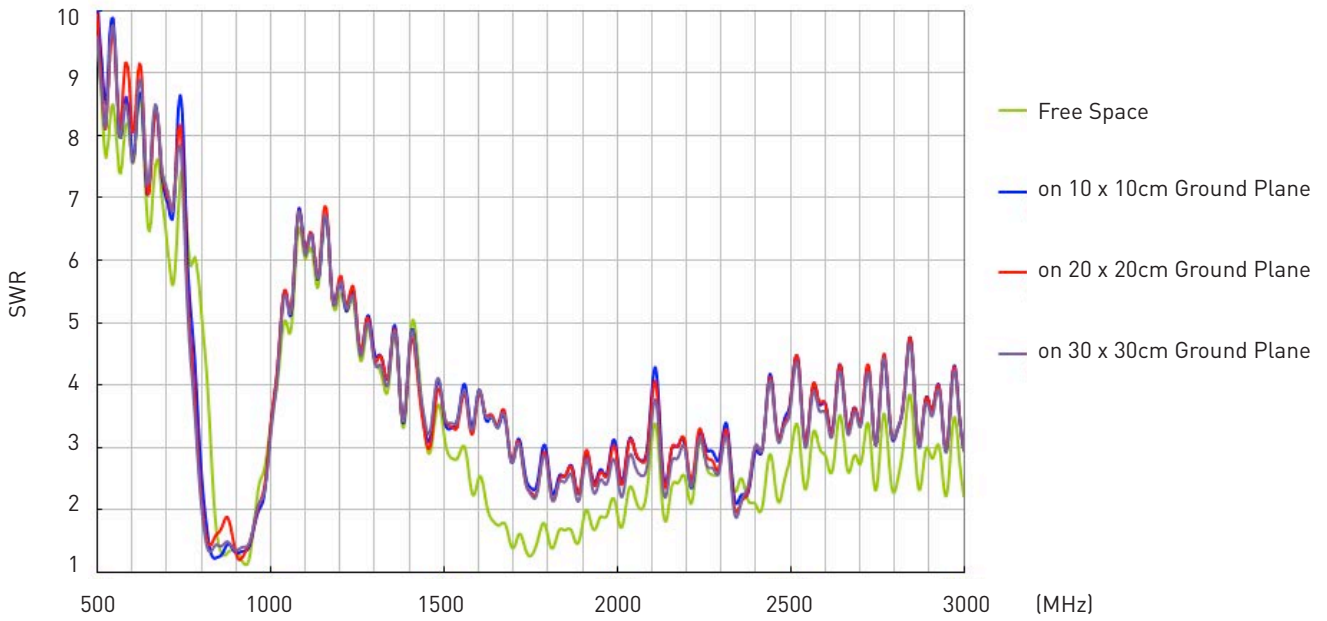
### Environmental

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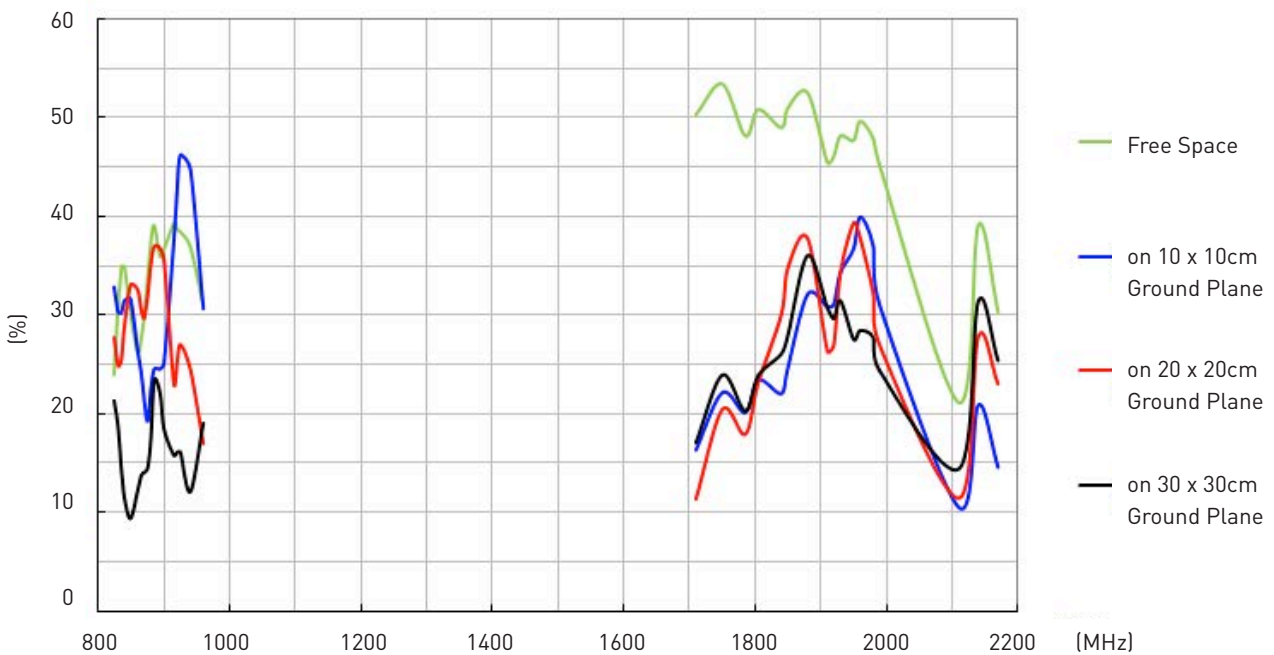
<b>Temperature Range</b>	-40°C to 85°C
<b>Waterproof</b>	IP-67
<b>Thermal Shock</b>	100 cycles -40°C to +80°C
<b>Shock (drop test)</b>	1m drop on concrete 6 axes
<b>Humidity</b>	Non-condensing 65°C 95% RH

### 3. Antenna Characteristics

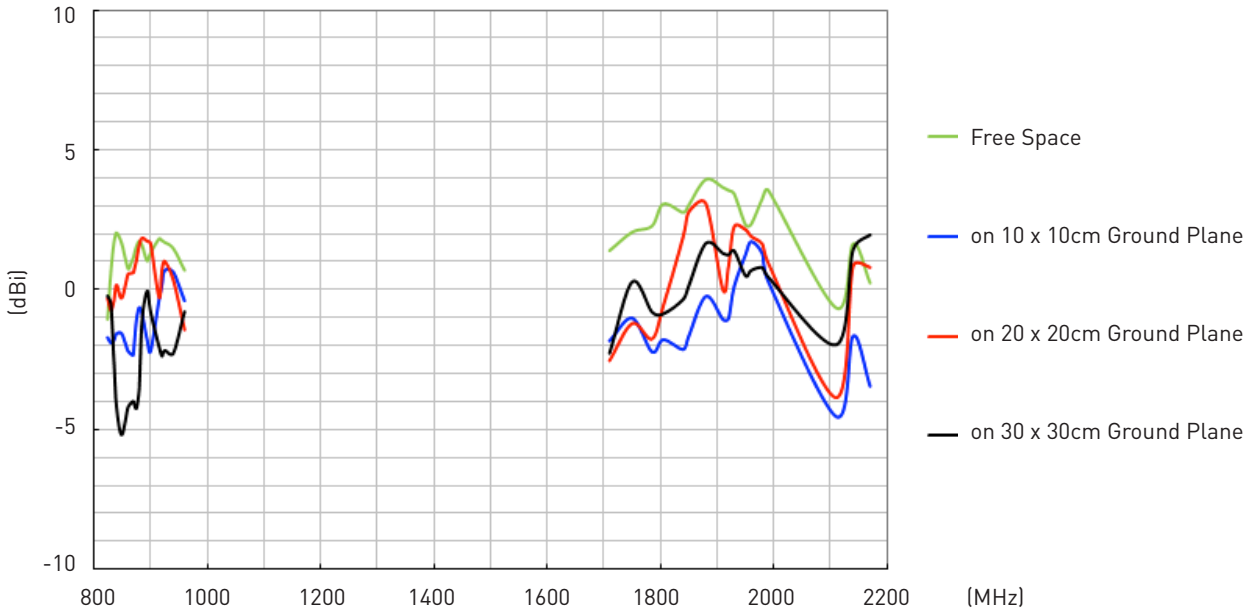
#### 3.1 Cellular Antenna SWR



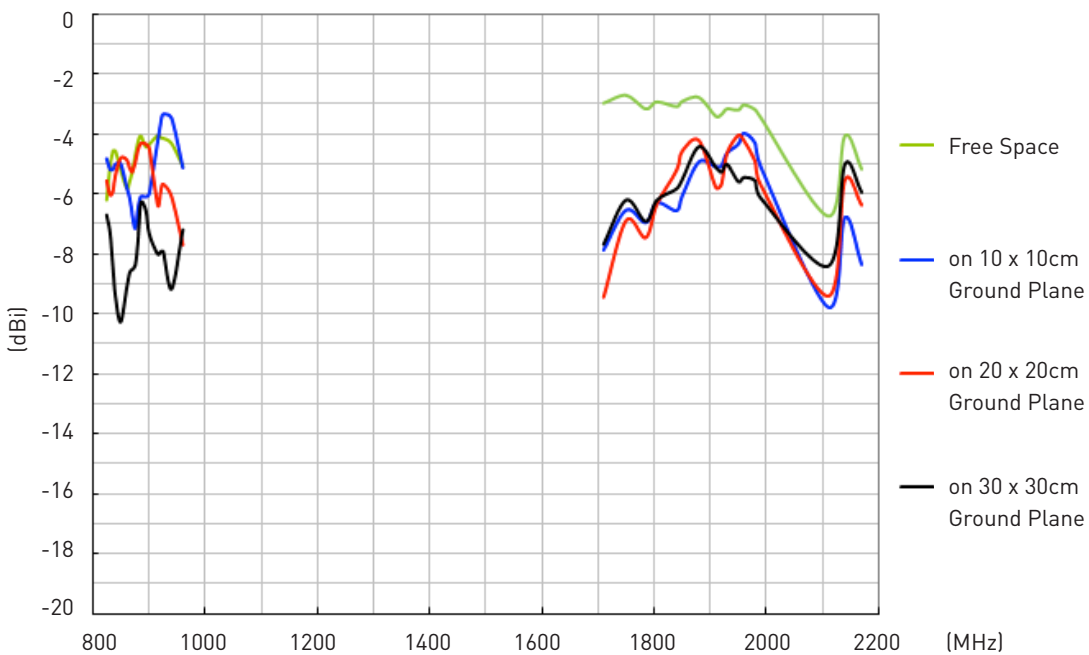
#### 3.2 Antenna Efficiency



### 3.3 Peak Gain



### 3.4 Antenna Gain



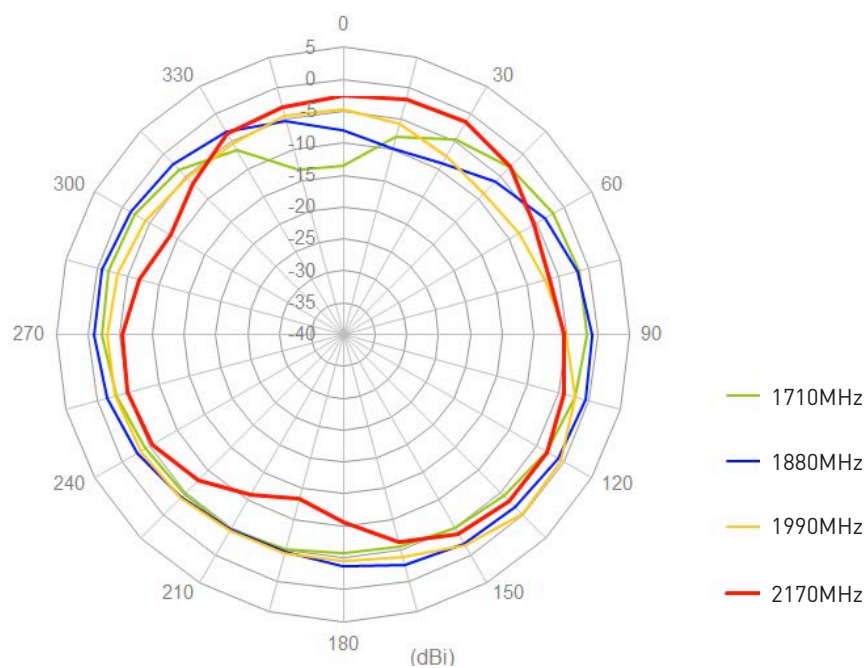
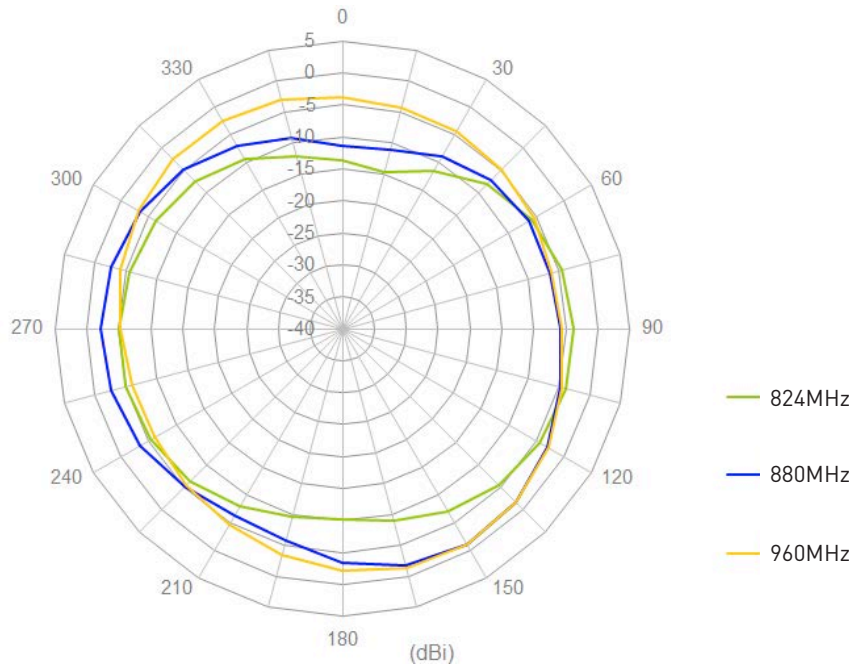
## 4. Antenna Radiation Pattern (Free Space)

### 4.1 Antenna Setup (Free Space)



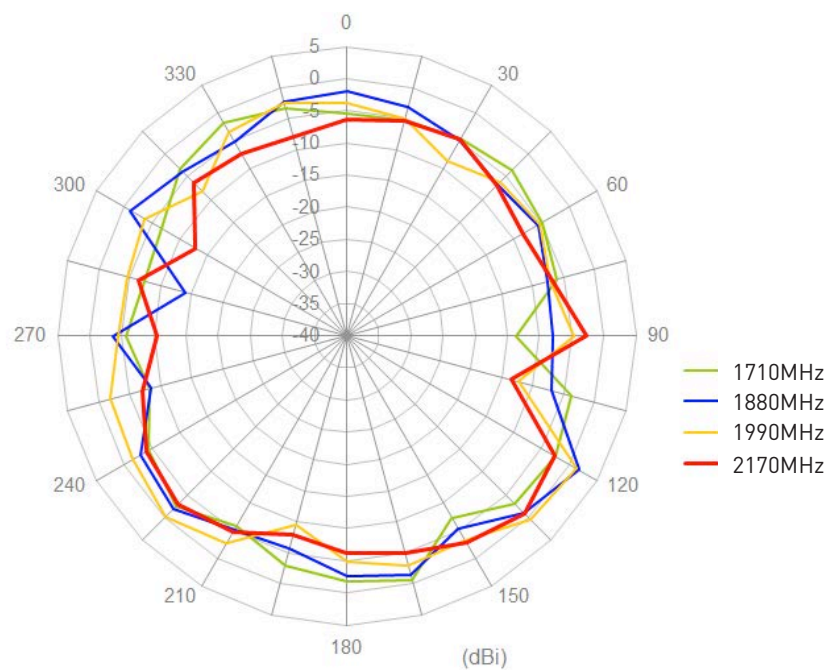
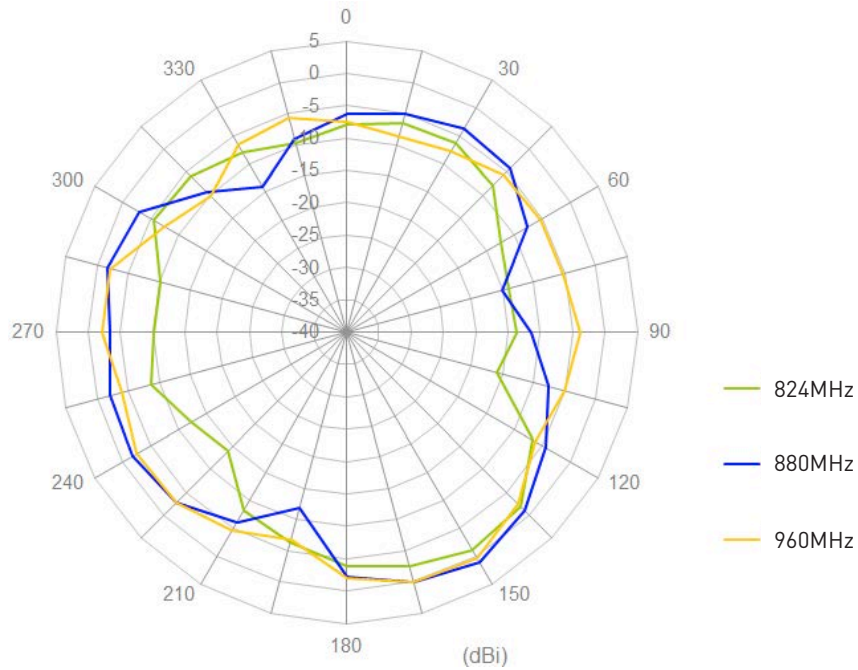
## 4.2 Radiation Pattern (Free Space)

### 4.2.1 X-Z plane (dBi) (Free Space)



## 4.2 Radiation Pattern (Free Space)

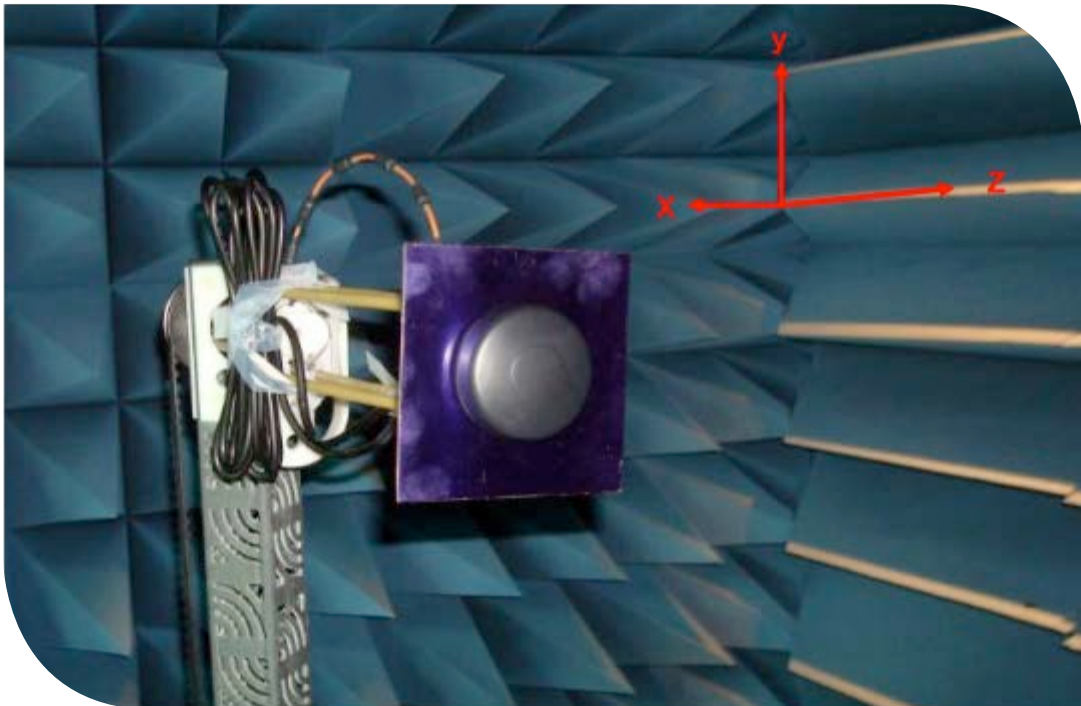
### 4.2.2 X-Z plane (dBi) (Free Space)





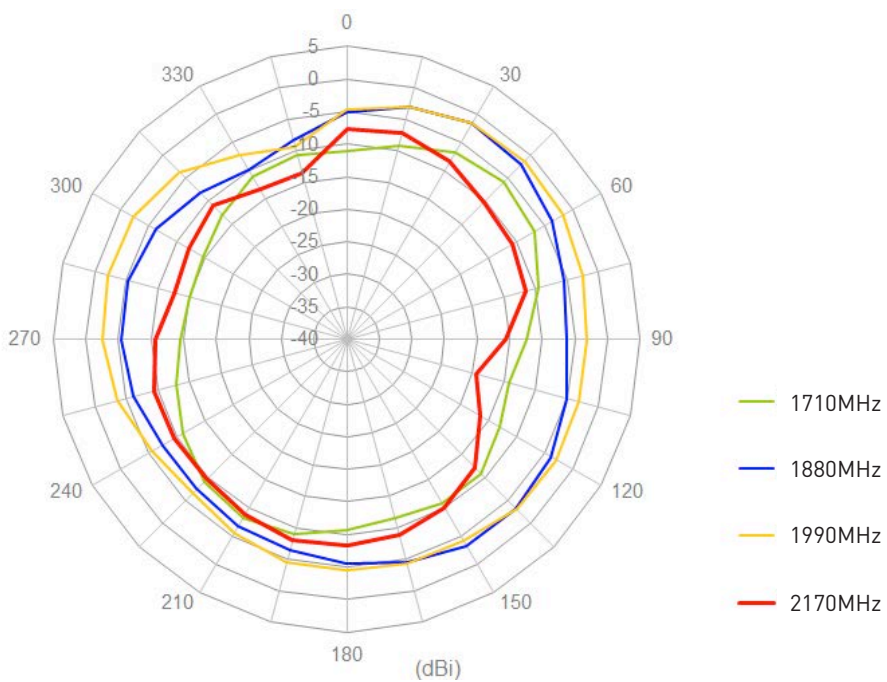
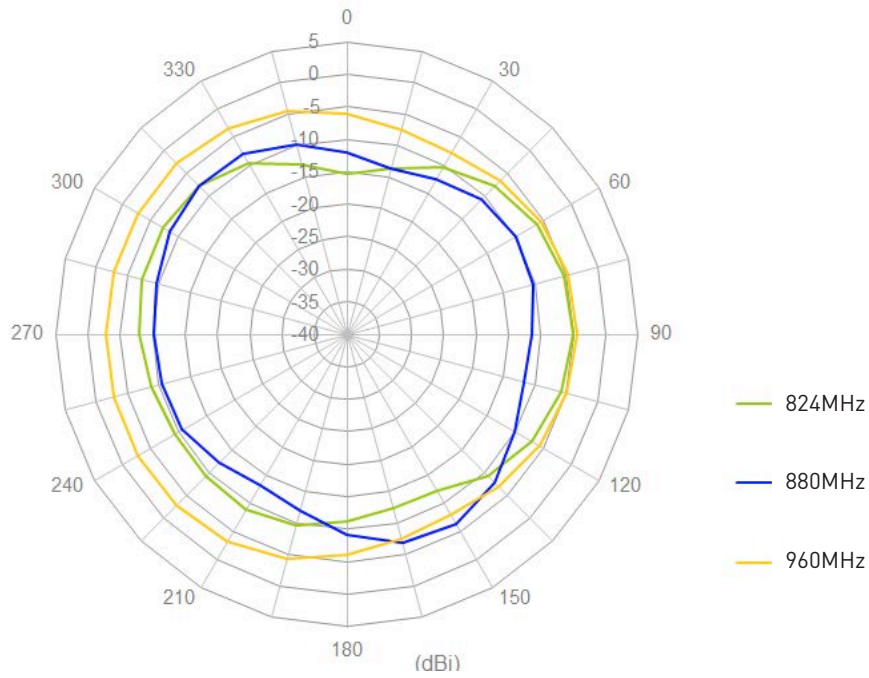
## 5. Antenna Radiation Pattern (10\*10mm)

### 5.1 Antenna Setup (10\*10mm Ground Plane)

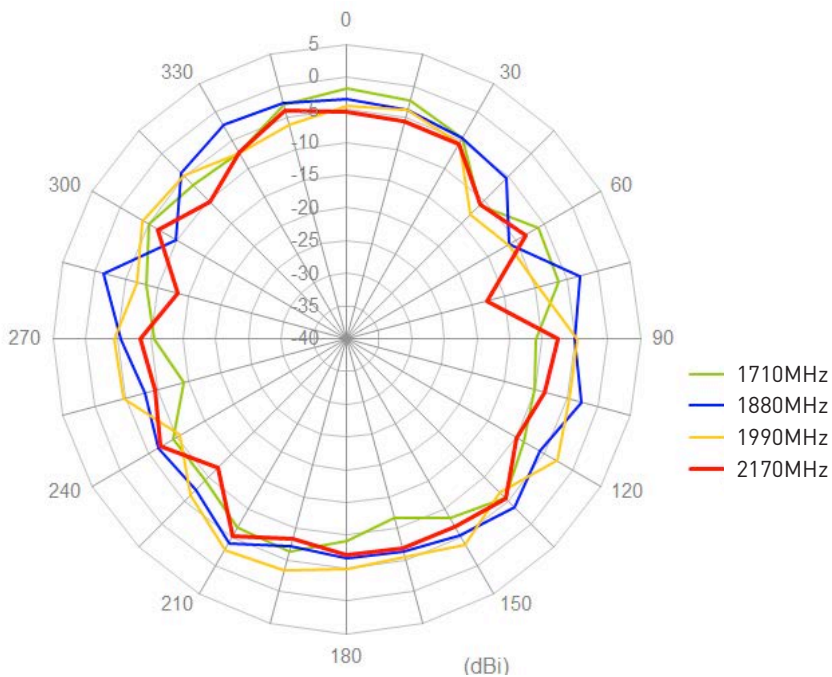
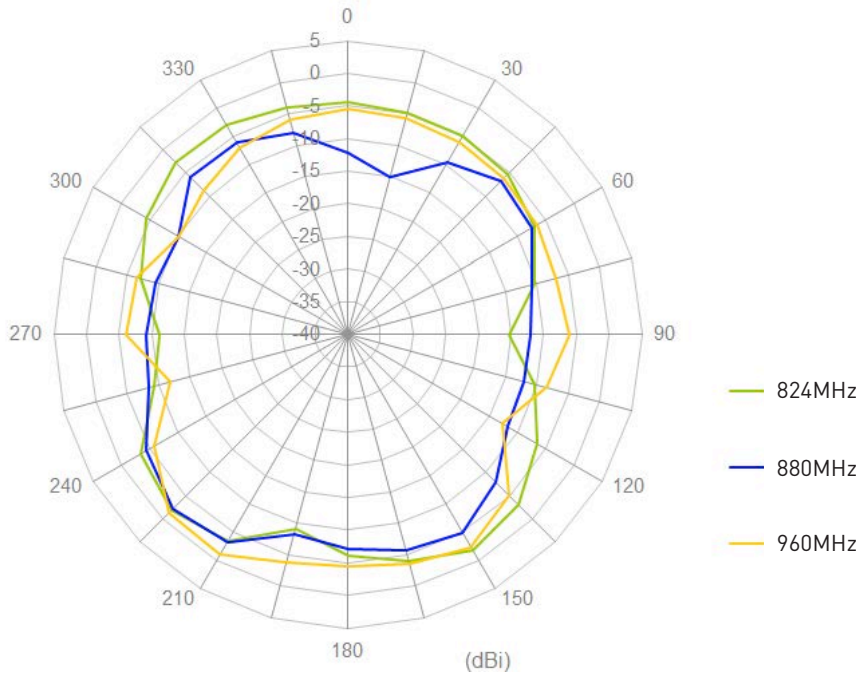


## 5.2 Radiation Pattern (10\*10mm Ground Plane)

### 5.2.1 X-Y plane (dBi) (10\*10mm Ground Plane)

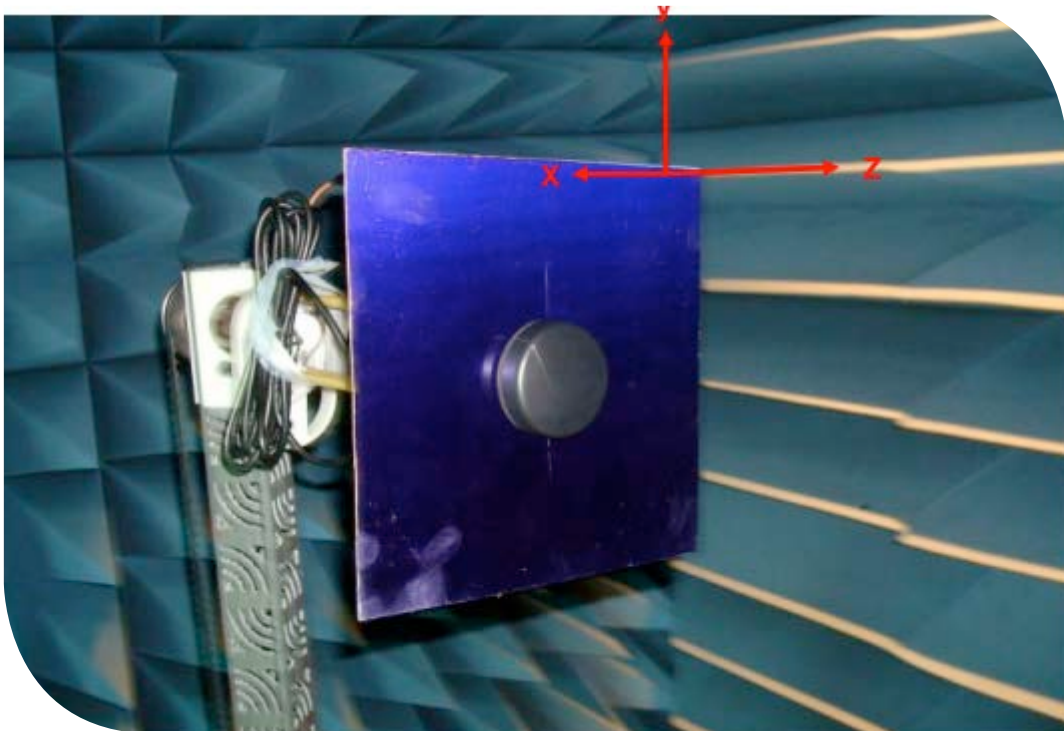


### 5.2.2 X-Z plane (dBi) (10\*10mm Ground Plane)



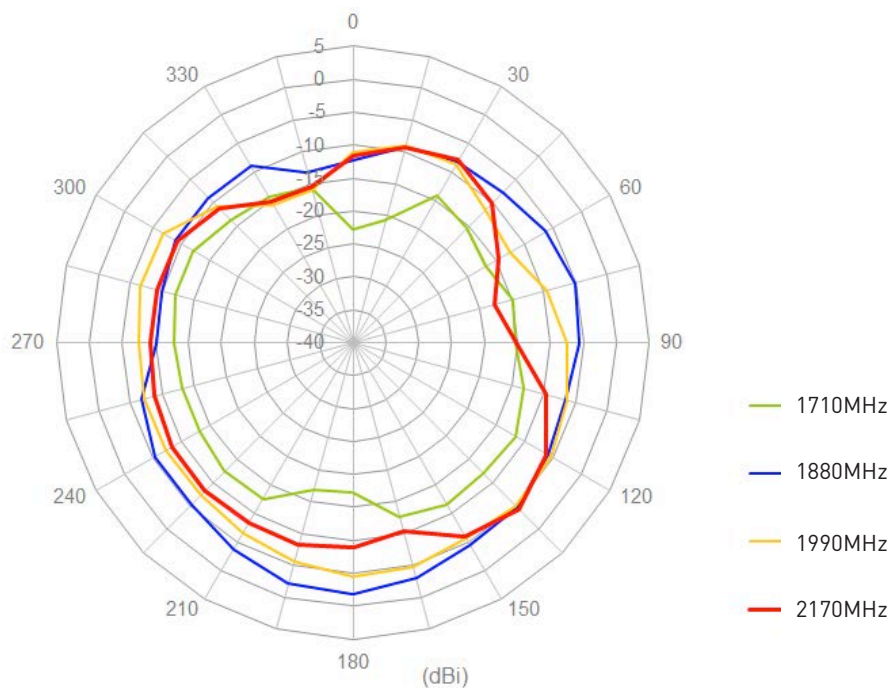
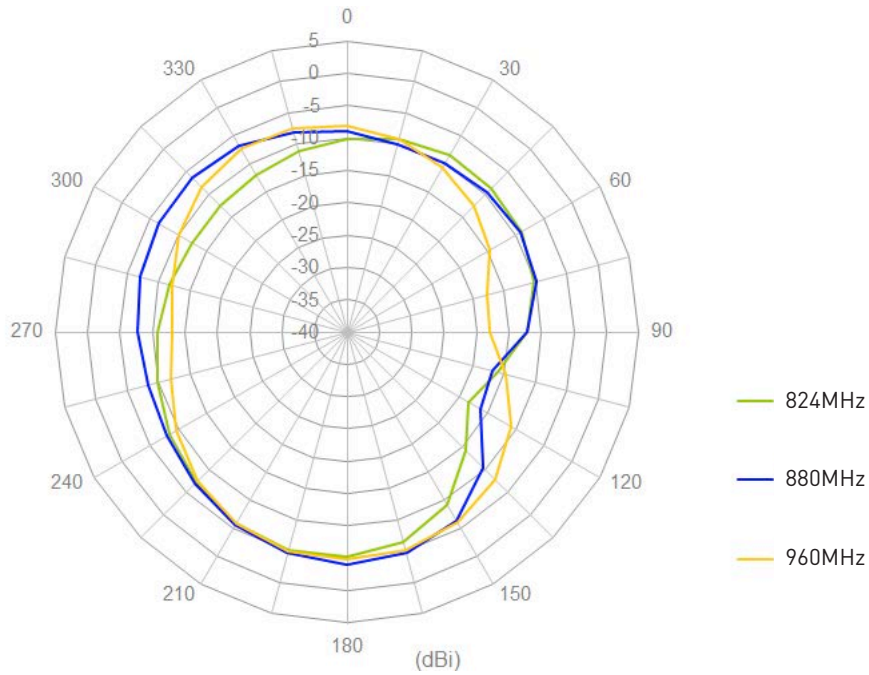
## 6. Antenna Radiation Pattern – (20\*20mm Ground Plane)

### 6.1 Antenna Setup (20\*20mm Ground Plane)

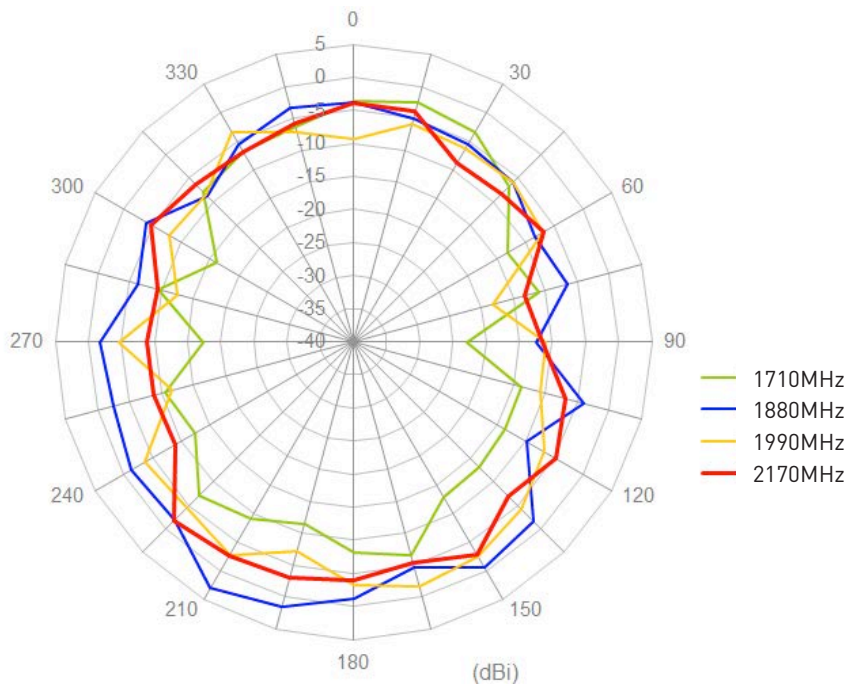
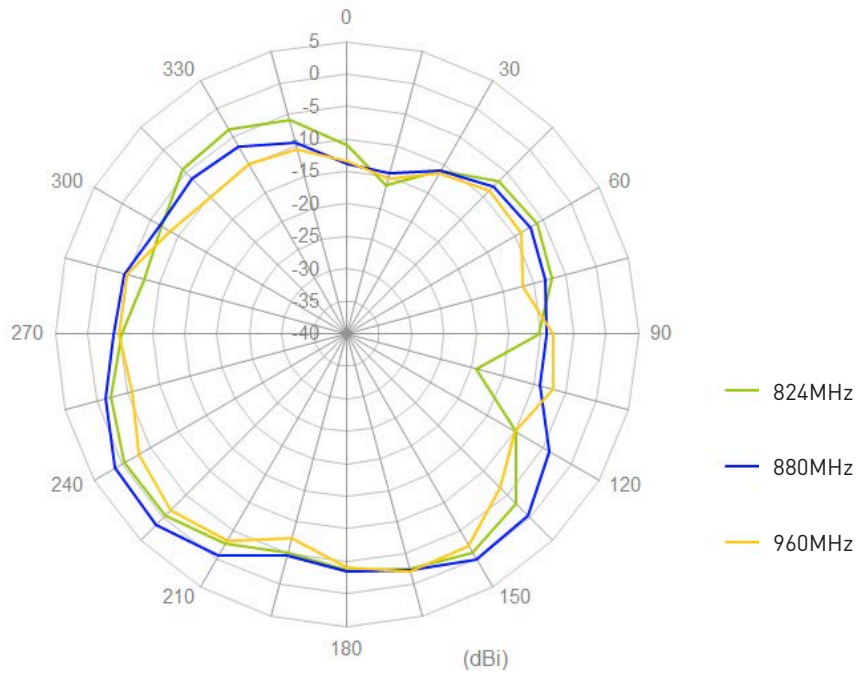


## 6.2 Radiation Pattern (20\*20mm Ground Plane)

### 6.2.1 X-Y plane (dBi) (20\*20mm Ground Plane)

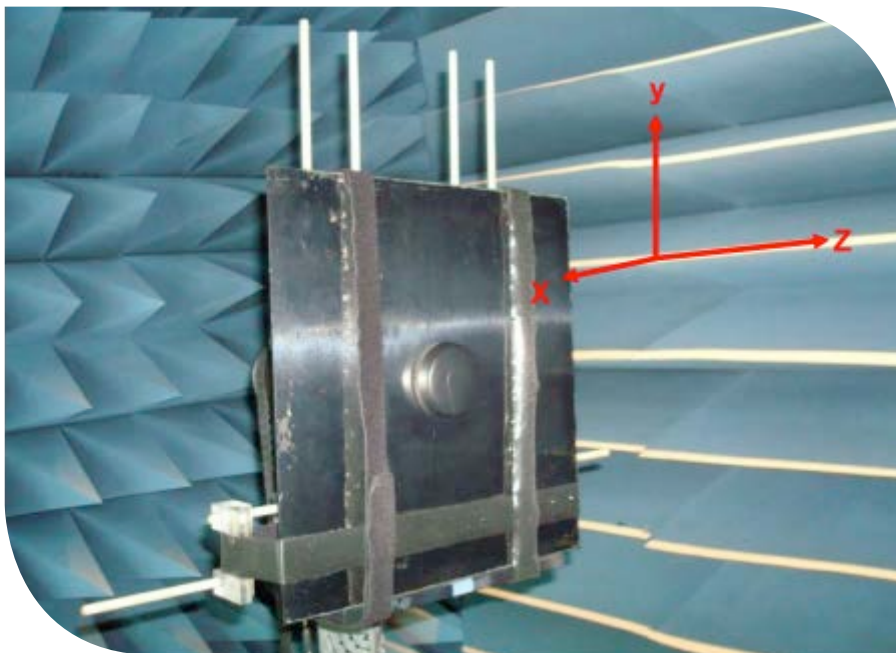


### 6.2.2 X-Z plane (dBi) (20\*20mm Ground Plane)



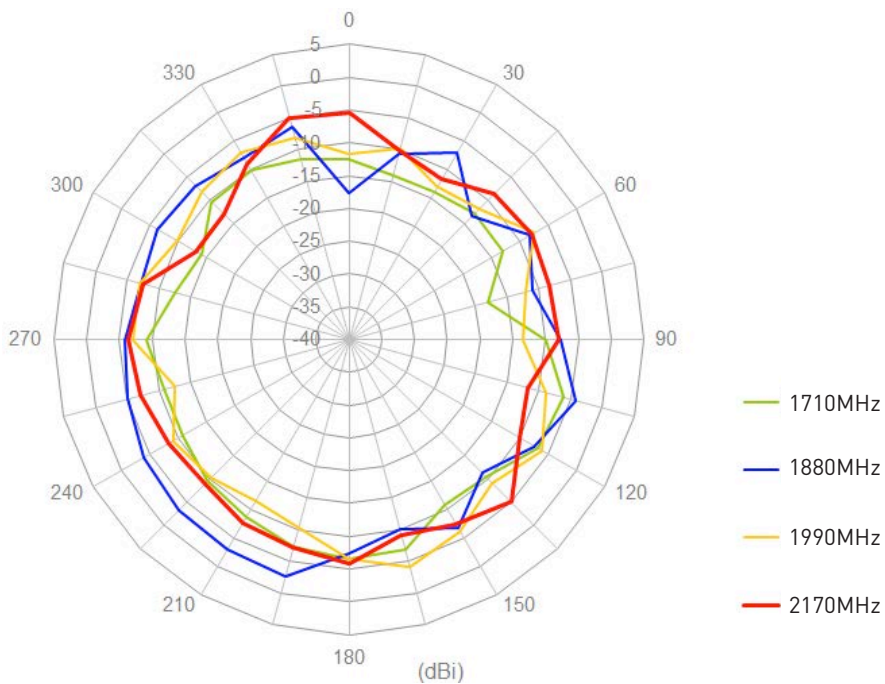
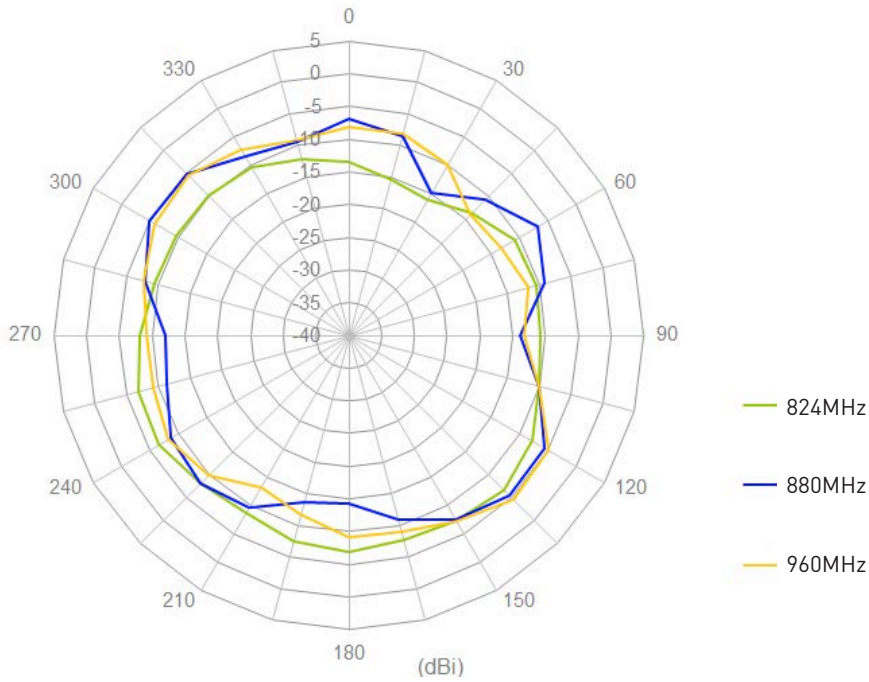
## 7. Antenna Radiation Pattern – (30\*30mm Ground Plane)

### 7.1 Antenna Setup (30\*30mm Ground Plane)



## 7.2 Radiation Pattern (20\*20mm Ground Plane)

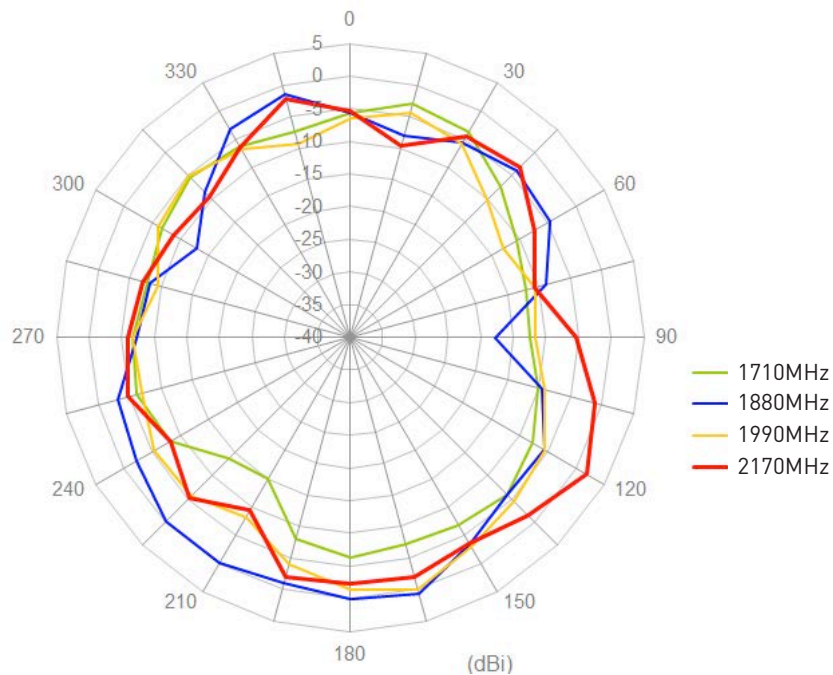
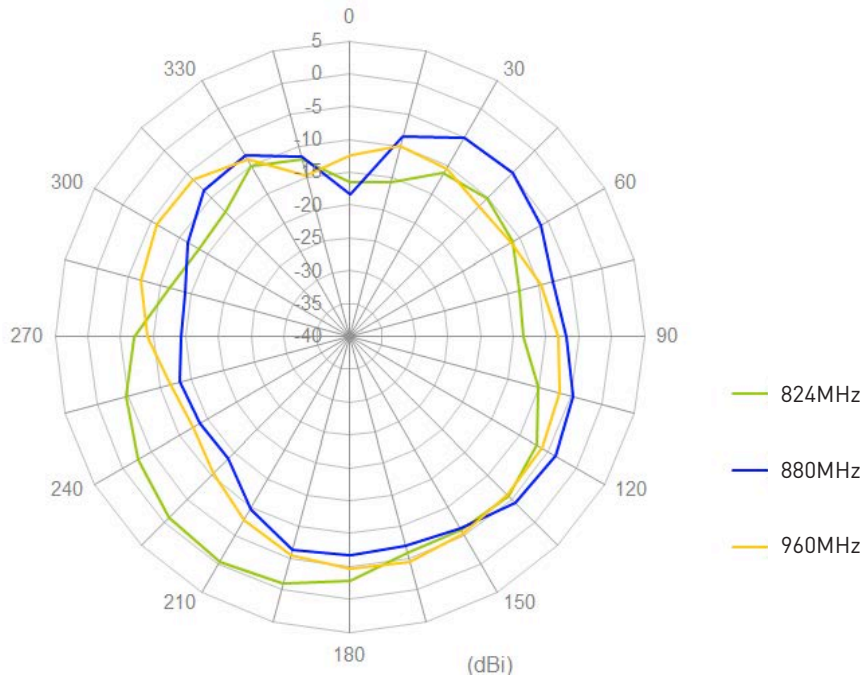
### 7.2.1 X-Y plane (dBi) (20\*20mm Ground Plane)



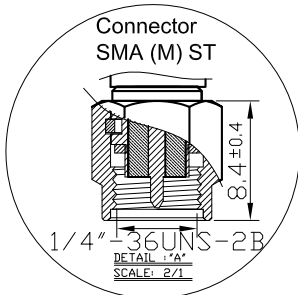


## 7.2 Radiation Pattern (20\*20mm Ground Plane)

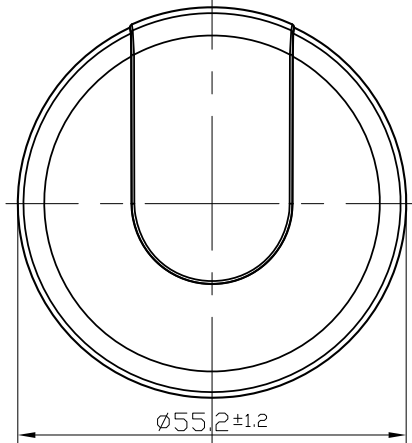
### 7.2.2 X-Z plane (dBi) (20\*20mm Ground Plane)



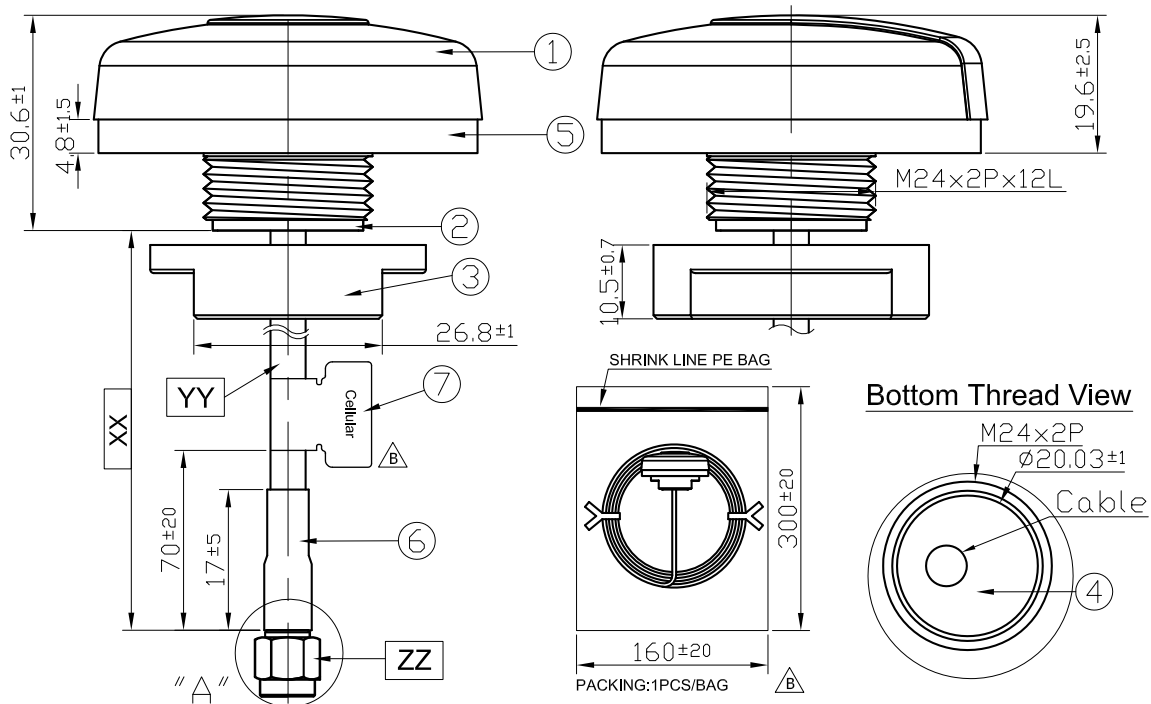
## 8. Drawing



Top View



Front View



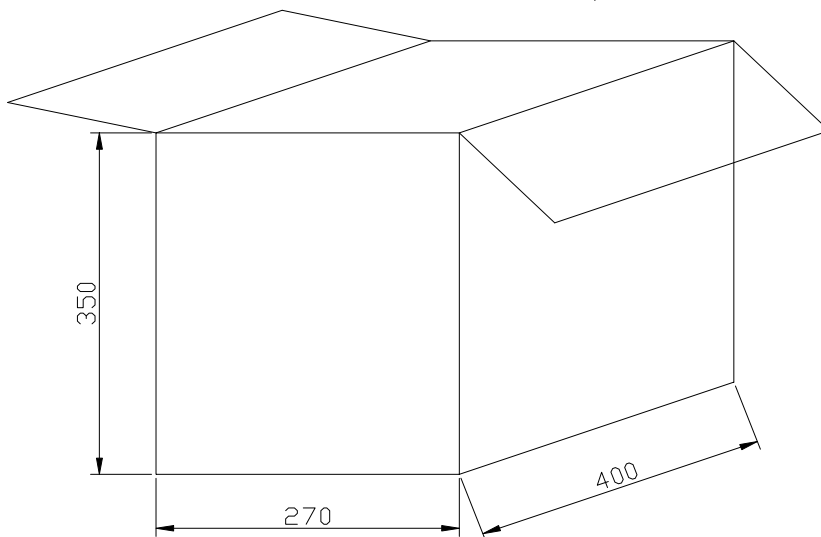
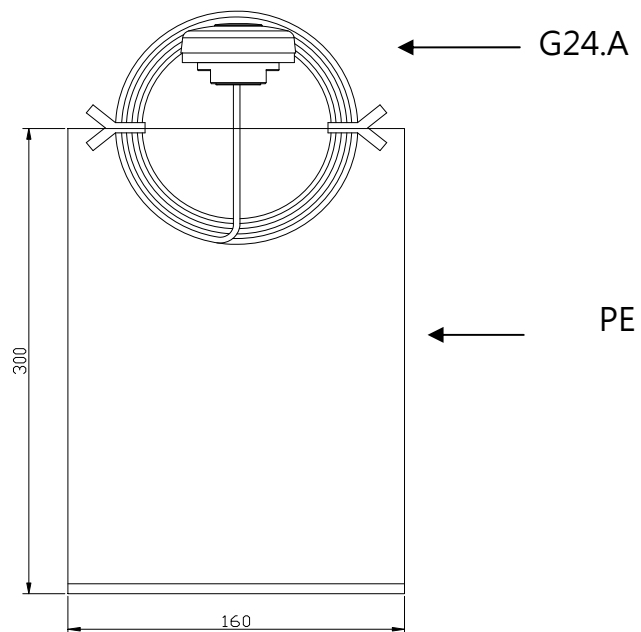
	Name	Material	Finish	QTY
1	Housing Top	ABS	White	1
2	Housing bottom	ABS	White	1
3	M20 Nut	ABS	White	1
4	Silicon Rubber	Silicon Rubber	Black	1
5	Foam	DP3060+3M9448	White	1
6	Heat Shrink Tube	PE	Black	1
7	Cellular Label	Coated Paper	Blue	1

	Name	Spec	Finish	QTY
XX	Cable Length	3000 ± 60mm		1
YY	Cable Type	CFD 200	Black	1
ZZ	Connector Type	SMA(M)	Gold	1

## 9. Packaging

1pcs antenna per small PE bag

40 small PE bags per box



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