

# SPECIFICATION

- Part No.** : **TD.10.5113**
- Description** : Triton 5dBi DSRC 5.9GHz Dipole Terminal Antenna SMA(M) Hinged Connector
- Feature** : 5850-5925MHz DSRC band  
For V2V and V2X Applications  
Dipole Terminal Antenna  
SMA(M) Hinged Connector  
Length 169\*18\*13mm,  $\Phi$ 13mm  
**RoHS Compliant**





## 1. Introduction

The Triton TD.10 dipole terminal antenna is a high performance, compact 5 dBi omnidirectional antenna designed to operate between 5850-5925MHz for DSRC systems.

DSRC (Dedicated Short Range Communications) is the communications media of choice for active safety V2V (Vehicle to Vehicle) and V2X (Vehicle to Other) systems, primarily allocated for vehicle safety applications. DSRC supports high speed, low latency, and short-range V2V/V2X wireless communications. The TD.10 does not require a ground-plane to connect to and has market leading efficiency of 70%.

Connection is made via SMA(M) connector. The TD.10 hinge can be oriented straight, 45°, or at a right angle to best fit your needs. For further optimization to customer specific devices, contact your regional Taoglas office for service and support.

## 2. Specification

<b>ELECTRICAL</b>	
<b>In Free Space</b>	
Frequency	5850~5925MHz
<b>Efficiency (%)</b>	
Straight Pose	73.48
Bent Pose	64.58
<b>Average Gain (dBi)</b>	
Straight Pose	-1.34
Bent Pose	-1.9
<b>Peak Gain (dBi)</b>	
Straight Pose	5.88
Bent Pose	5.67
<b>With 15*9cm Ground Plane</b>	
Frequency	5850~5925MHz
<b>Efficiency (%)</b>	
Straight Pose	49.00
Bent Pose	46.77
<b>Average Gain (dBi)</b>	
Straight Pose	-3.10
Bent Pose	-3.30
<b>Peak Gain (dBi)</b>	
Straight Pose	3.07
Bent Pose	4.01
<b>On 30*30cm Ground Plane Edge</b>	
Frequency	5850~5925MHz
<b>Efficiency (%)</b>	
Straight Pose	58.49
Bent Pose	55.84
<b>Average Gain (dBi)</b>	
Straight Pose	-2.33
Bent Pose	-2.53
<b>Peak Gain (dBi)</b>	
Straight Pose	3.64
Bent Pose	5.39

<b>On 30*30cm Ground Plane Center</b>	
Frequency	5850~5925MHz
<b>Efficiency (%)</b>	
Straight Pose	65.24
Bent Pose	62.49
<b>Average Gain (dBi)</b>	
Straight Pose	-1.86
Bent Pose	-2.04
<b>Peak Gain (dBi)</b>	
Straight Pose	5.19
Bent Pose	10.41
Operation Band	DSRC 5.9GHz
Return Loss	< -10dB
VSWR	< 2:1
Polarization	Linear
Impedance	50 Ω

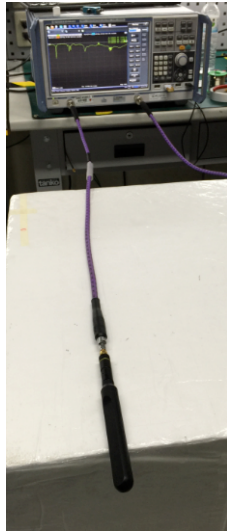
<b>MECHANICAL</b>	
Dimensions	Length 169mm, Φ18mm
Casing	PC+ABS
Connector	Hinged SMA Male
Weight	21.75 g
Recommended Torque for Mounting	0.9 N·m
Max Torque for Mounting	1.176 N·m

<b>ENVIRONMENTAL</b>	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

### 3. Antenna Characteristics

#### 3.1 Testing setup

##### In Free Space

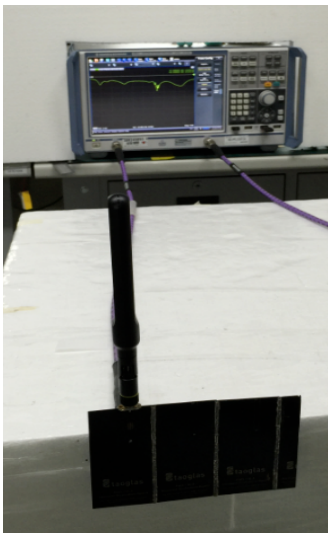


Antenna Straight

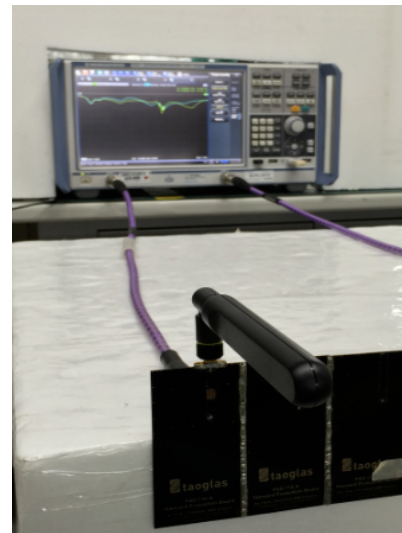


Antenna Bent

##### On 15\*9cm Ground Plane

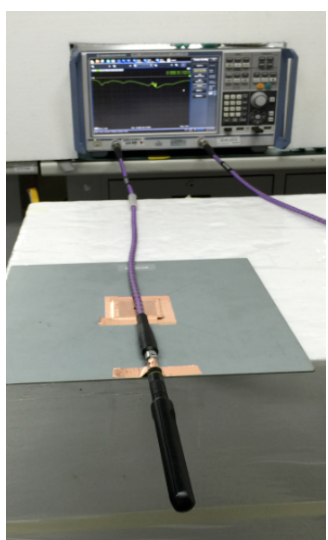


Antenna Straight

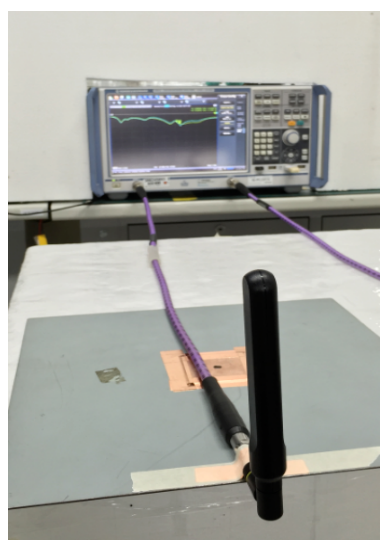


Antenna Bent

**On 30\*30cm Ground Plane Edge**

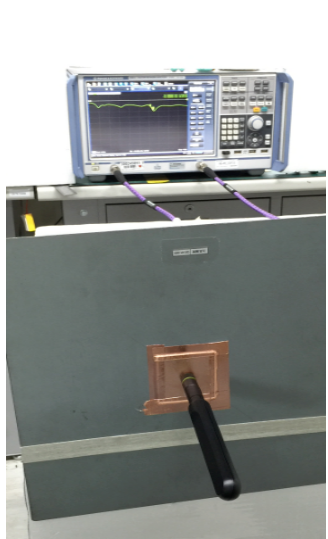


Antenna Straight

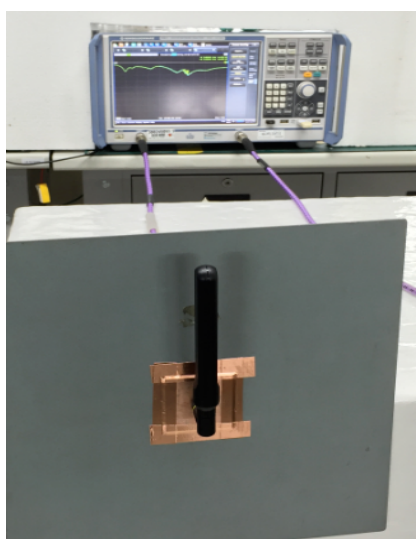


Antenna Bent

**On 30\*30cm Ground Plane Center**

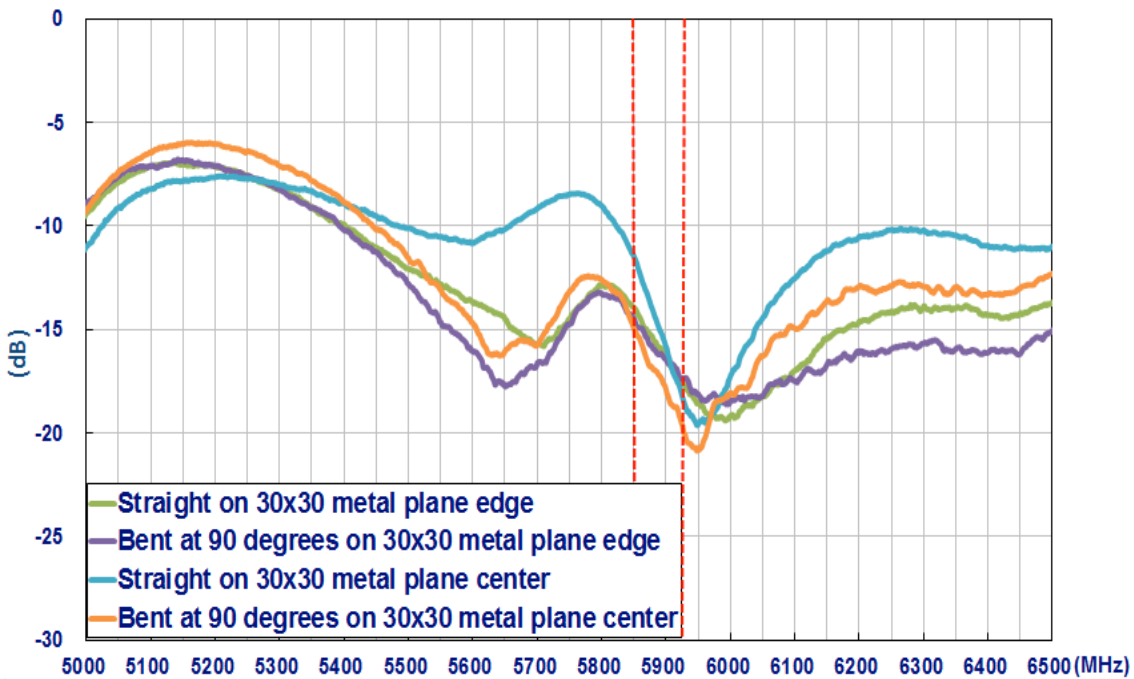
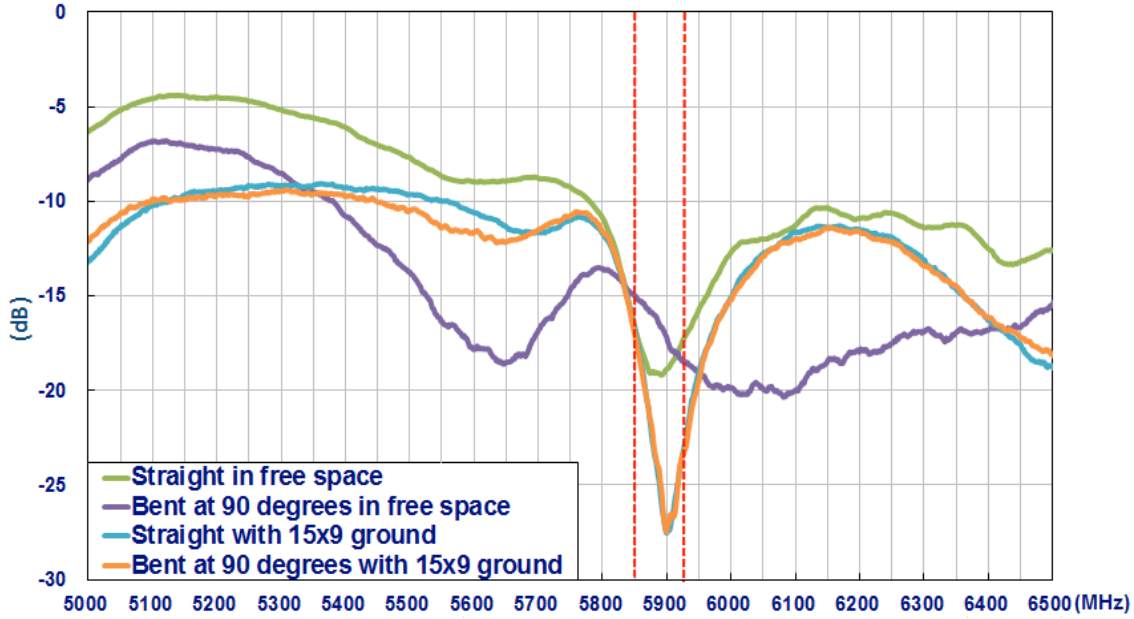


Antenna Straight

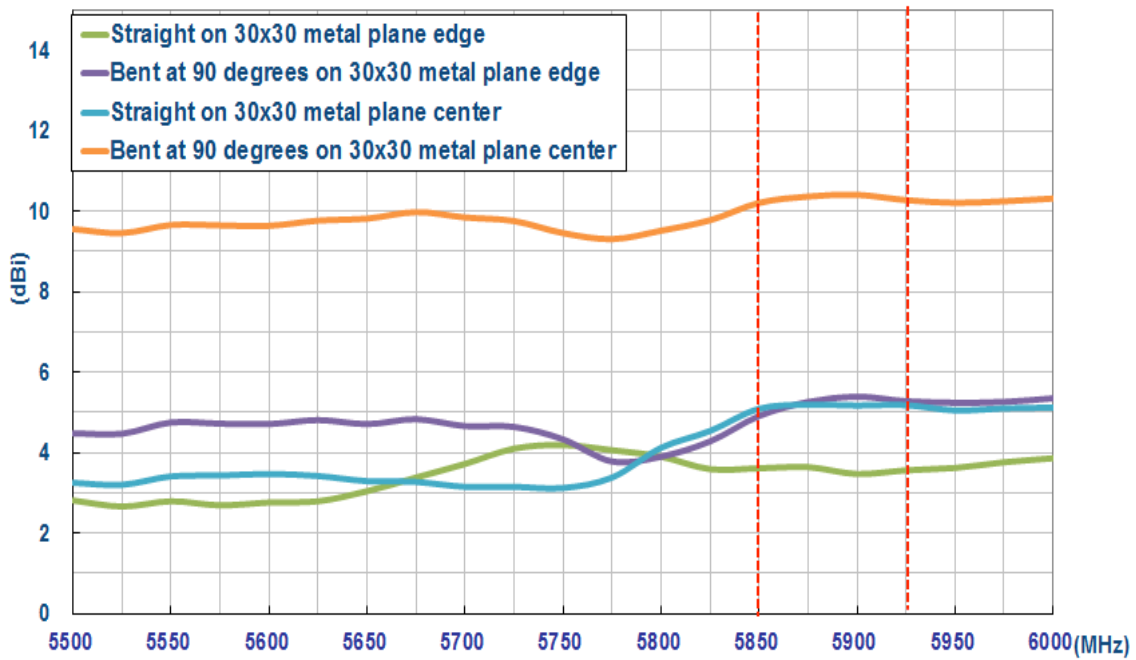
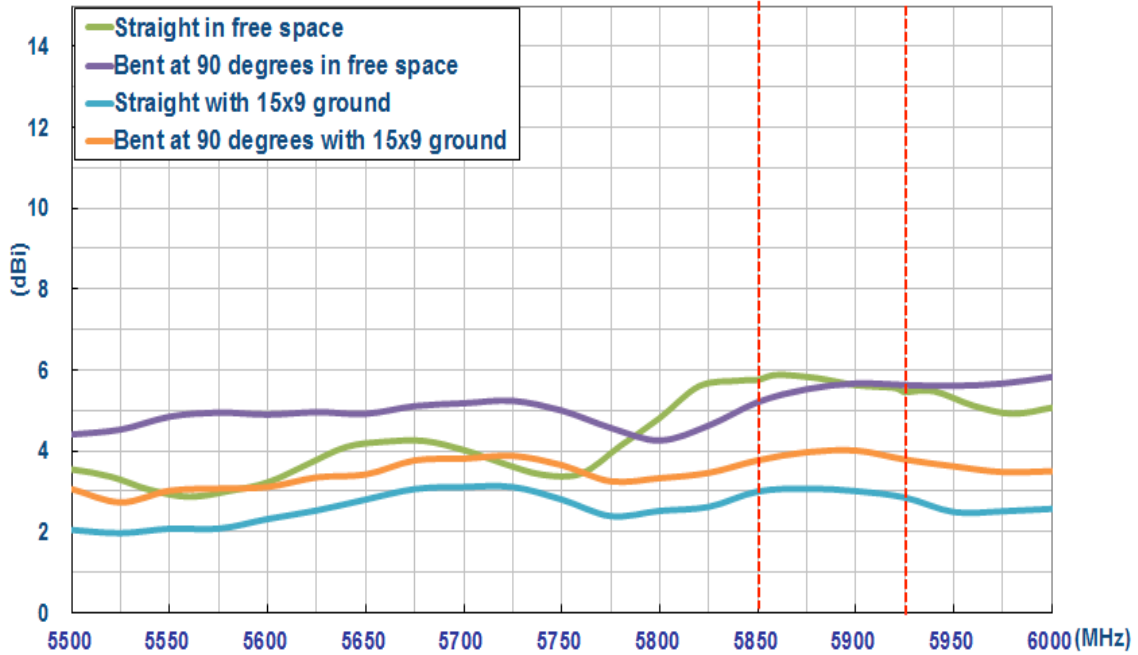


Antenna Bent

### 3.2 Return Loss

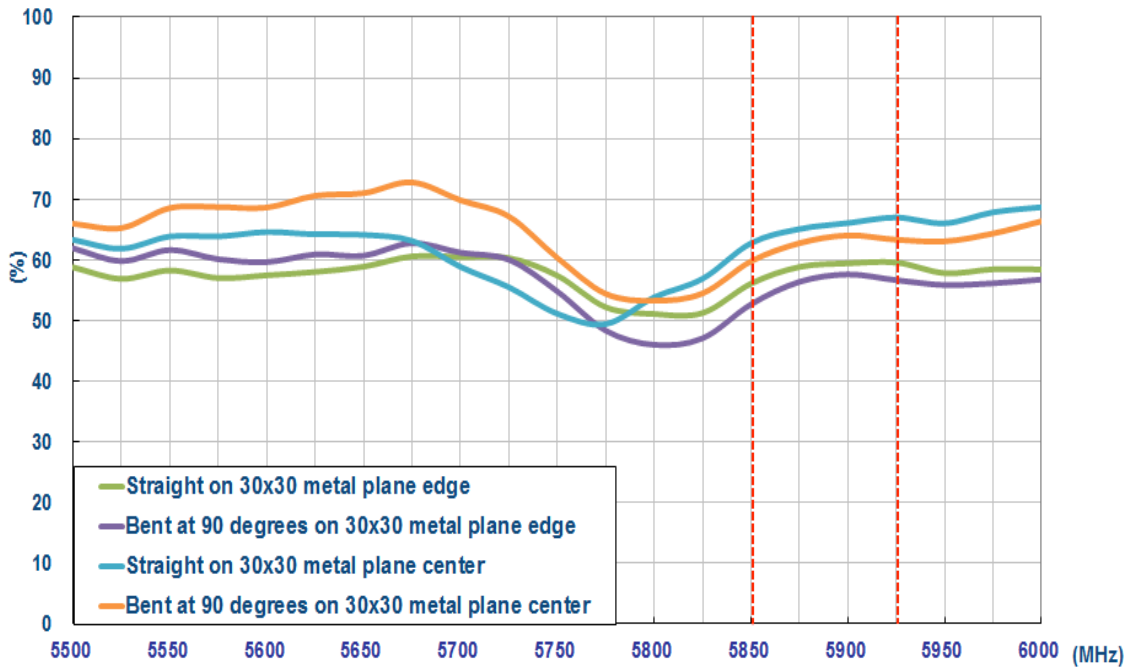
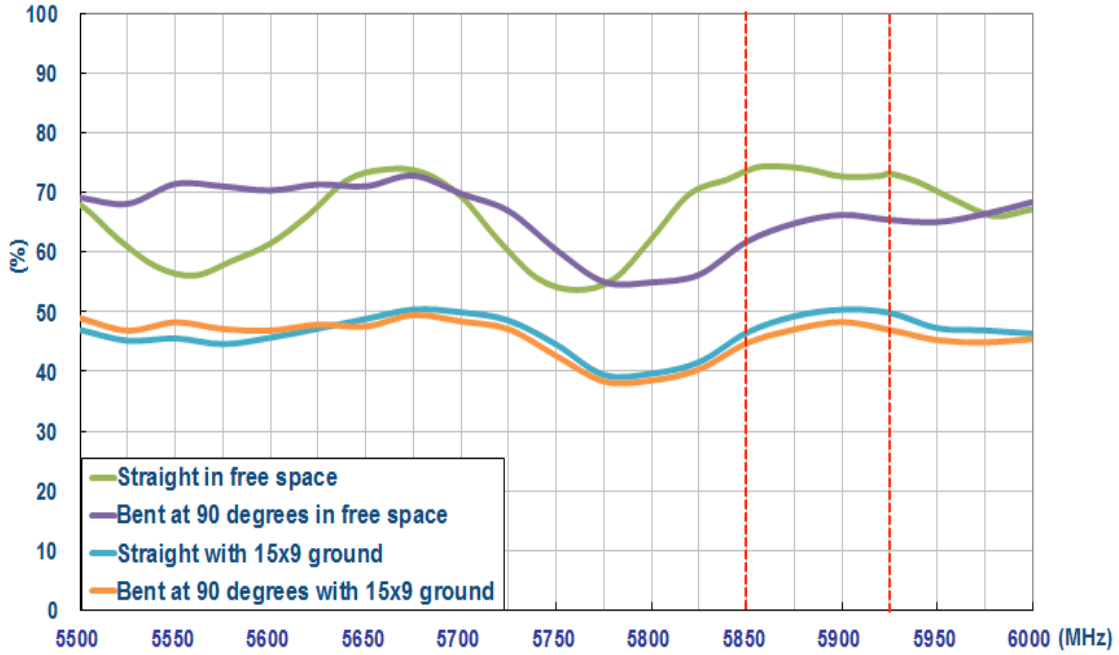


### 3.3. Peak Gain

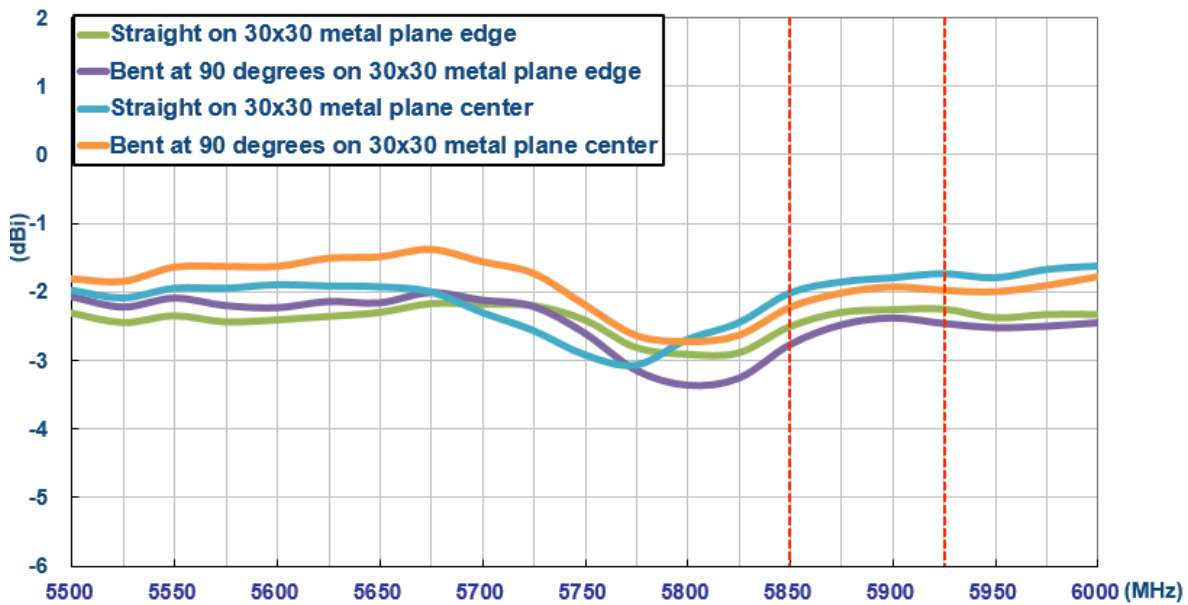
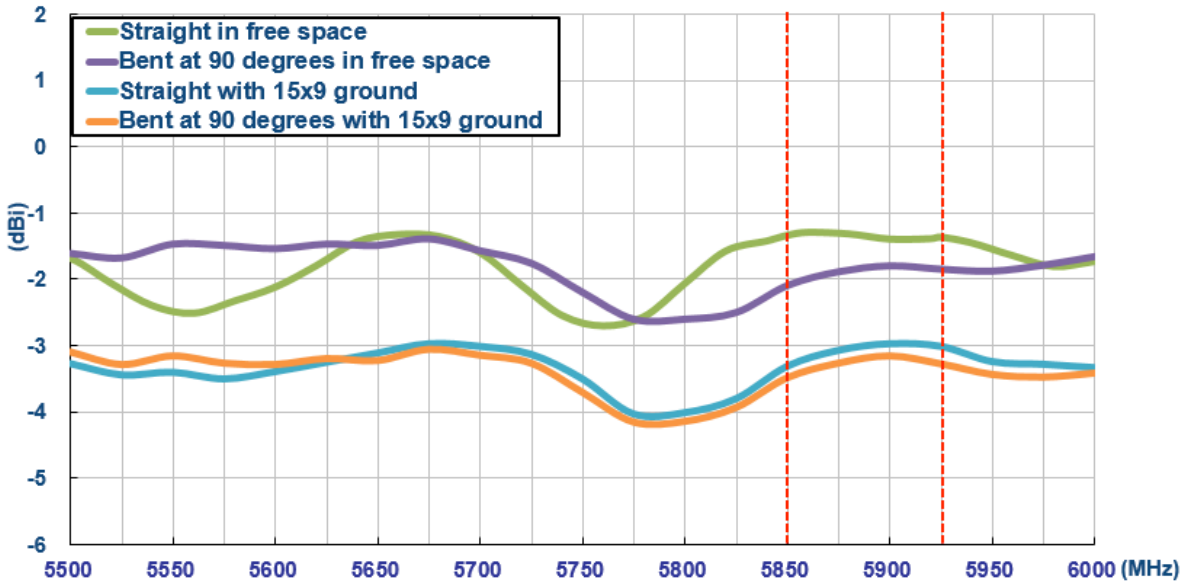




### 3.4 Efficiency

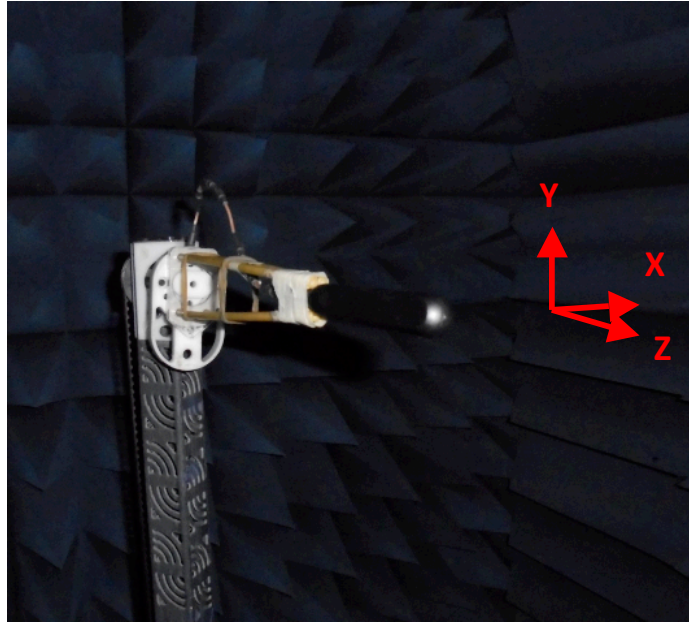


### 3.5 Average Gain



## 4. Antenna Radiation Pattern

### 4.1. Straight in Free Space

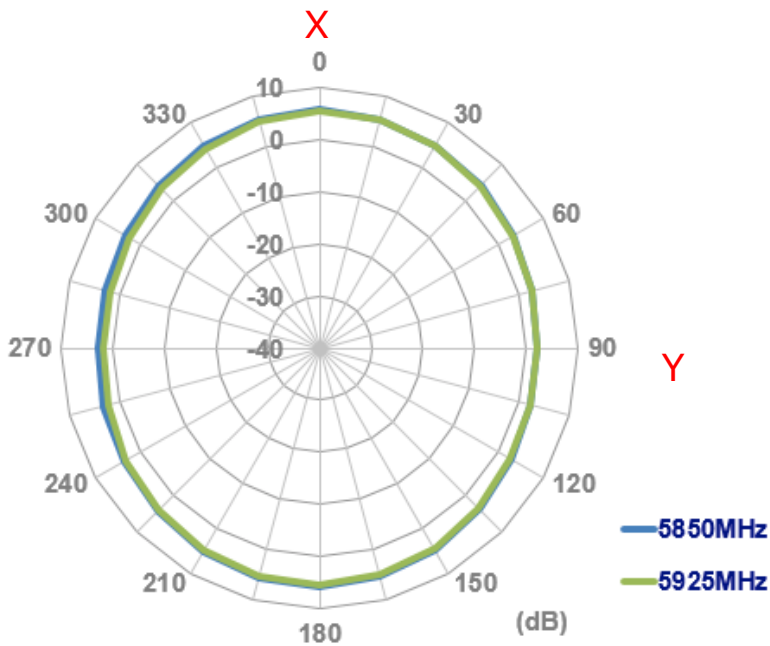


Antenna straight in free space

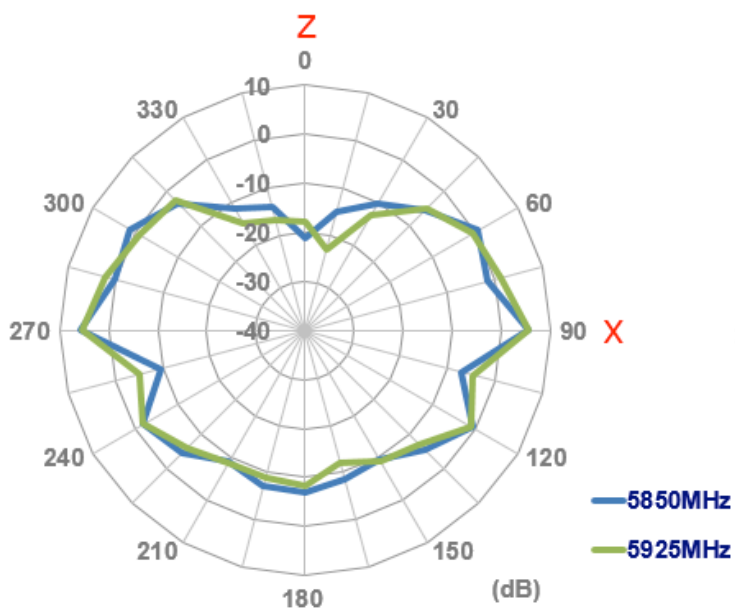


### 4.1.1. 2D Antenna Radiation Patterns

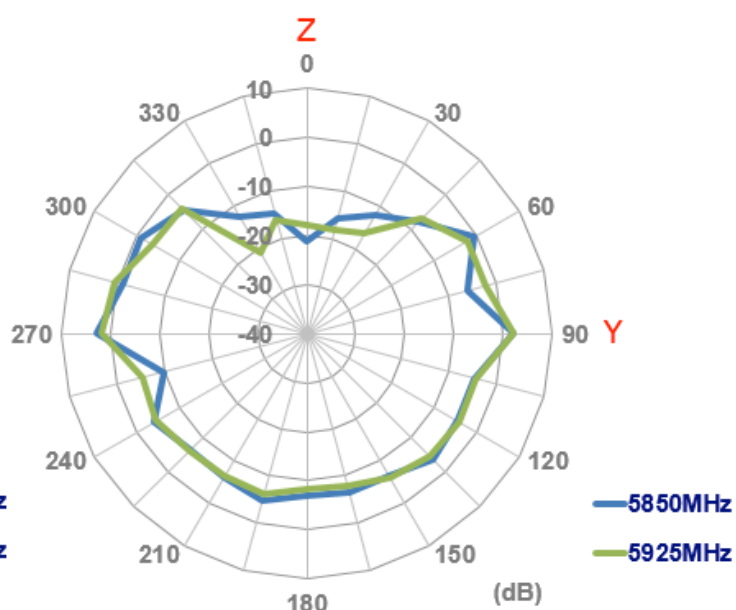
XY Plane



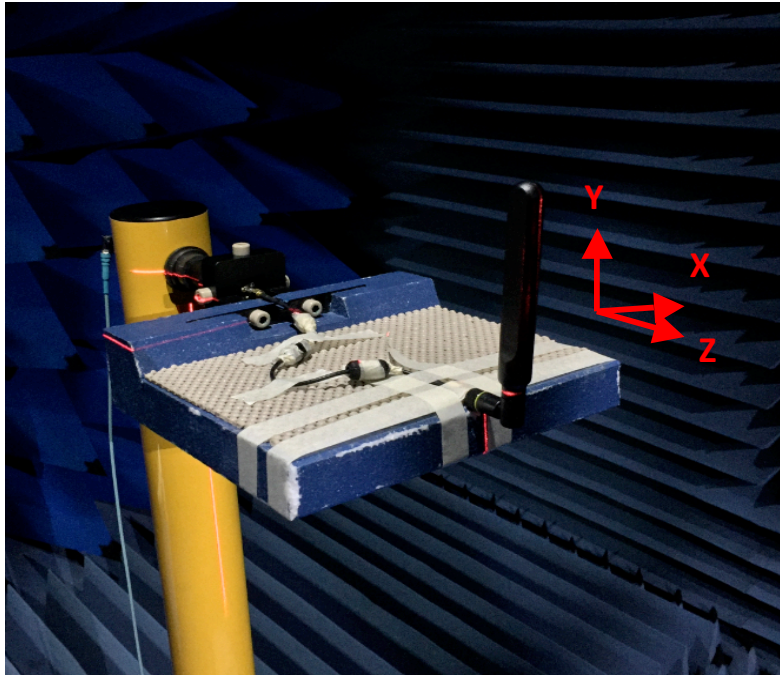
XZ Plane



YZ Plane



## 4.2 Bent at 90 Degrees in Free Space

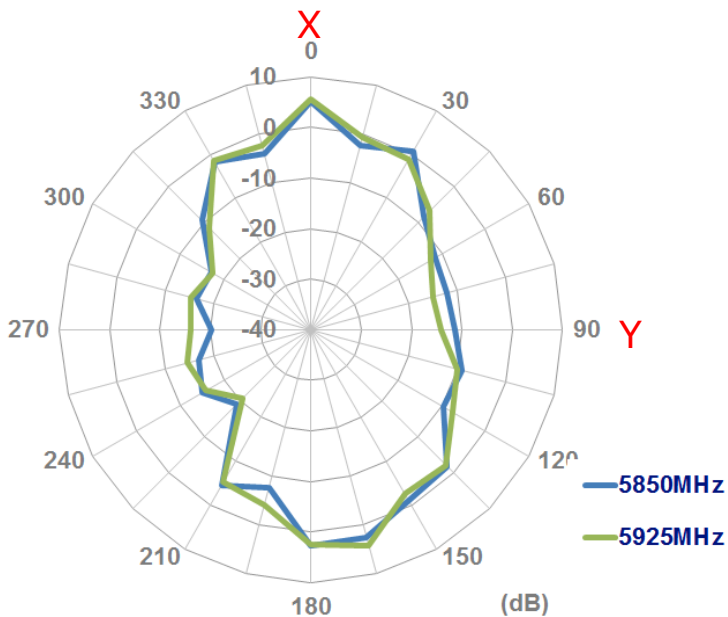


Antenna Bent 90° in free space

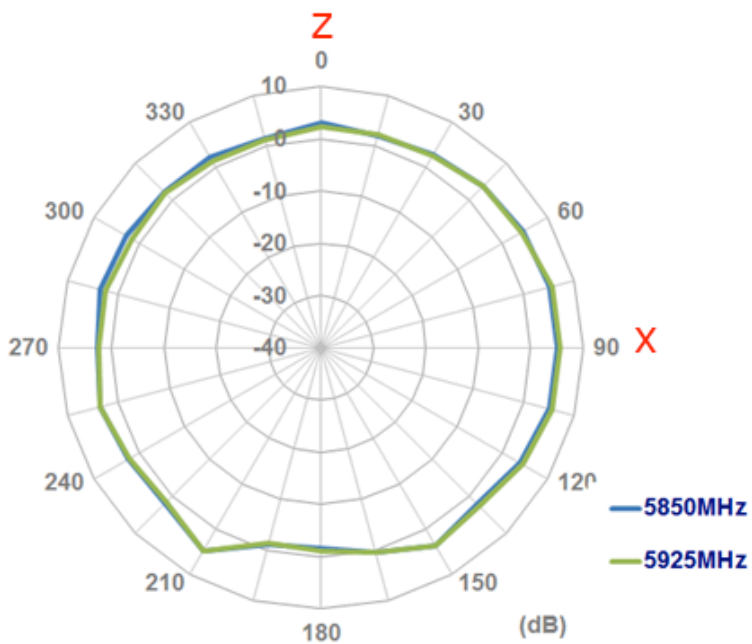


### 4.2.1 2D Antenna Radiation Patterns

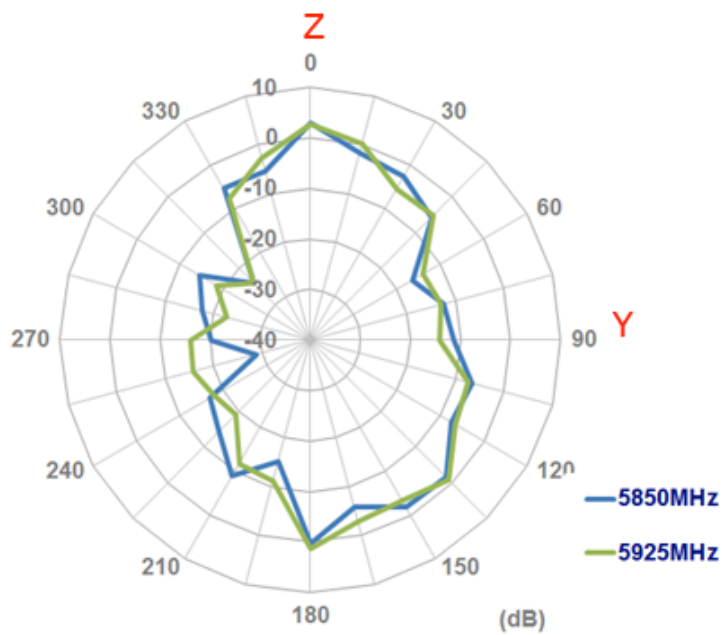
XY Plane



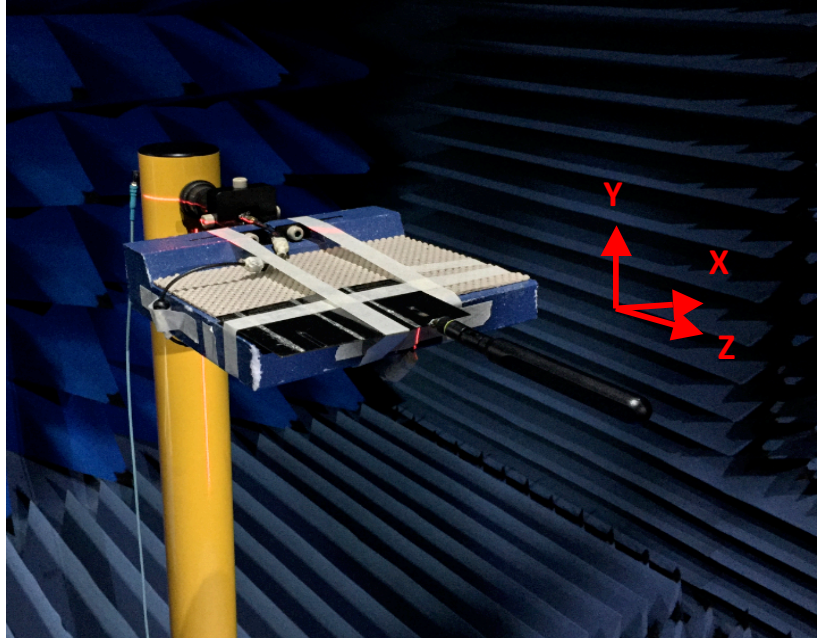
XZ Plane



YZ Plane



### 4.3 Straight with 15\*9cm Ground Plane

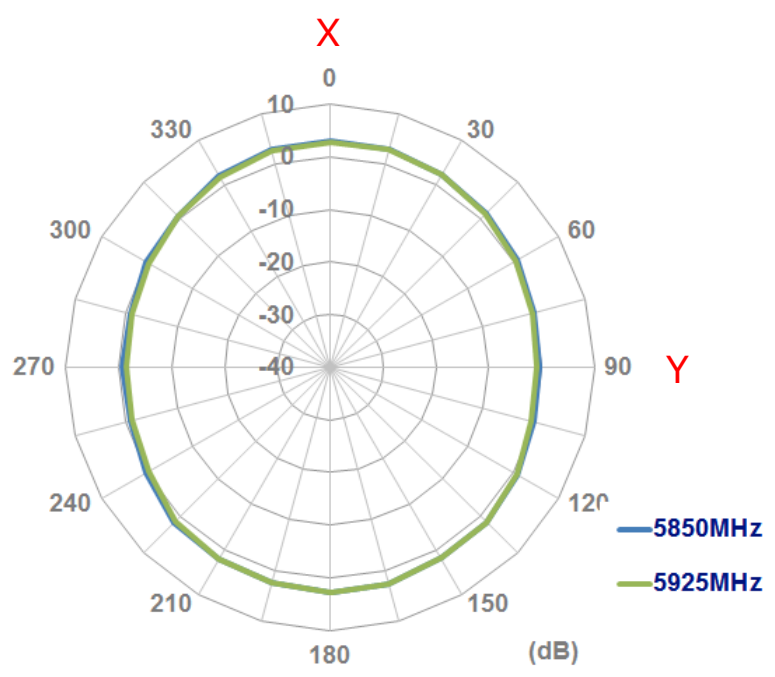


Antenna straight with 15\*9cm ground plane

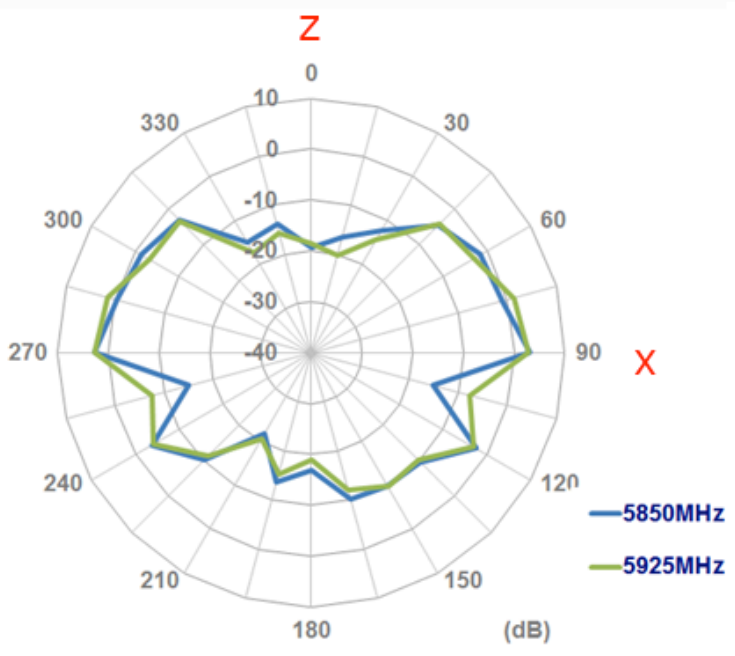


### 4.3.1 2D Antenna Radiation Patterns

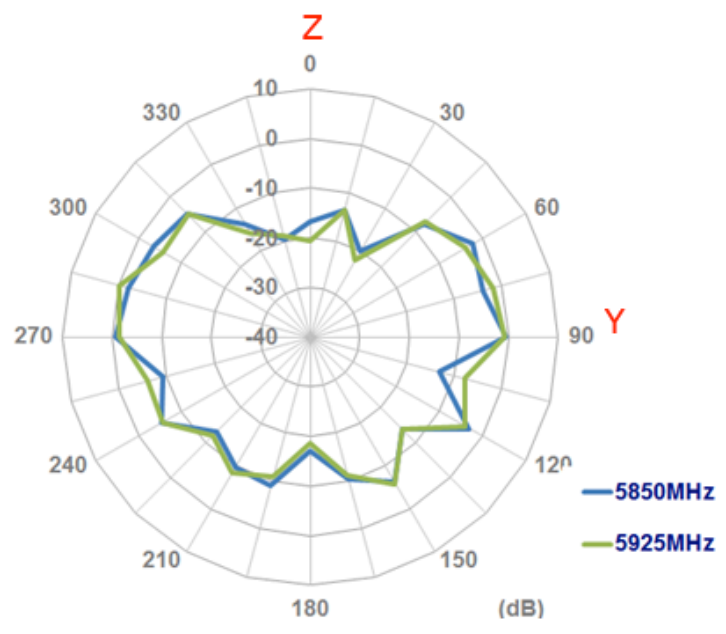
XY Plane



XZ Plane

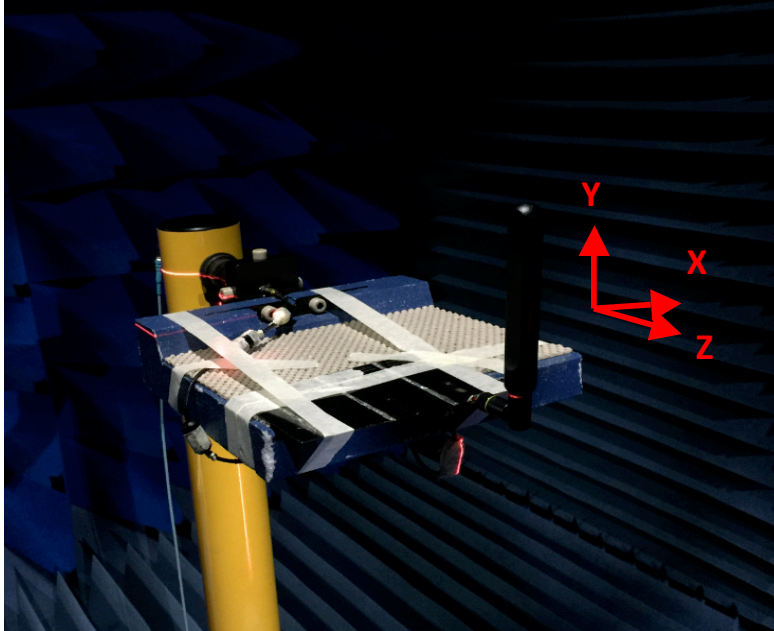


YZ Plane





#### 4.4 Bent at 90 Degrees with 15\*9cm Ground Plane

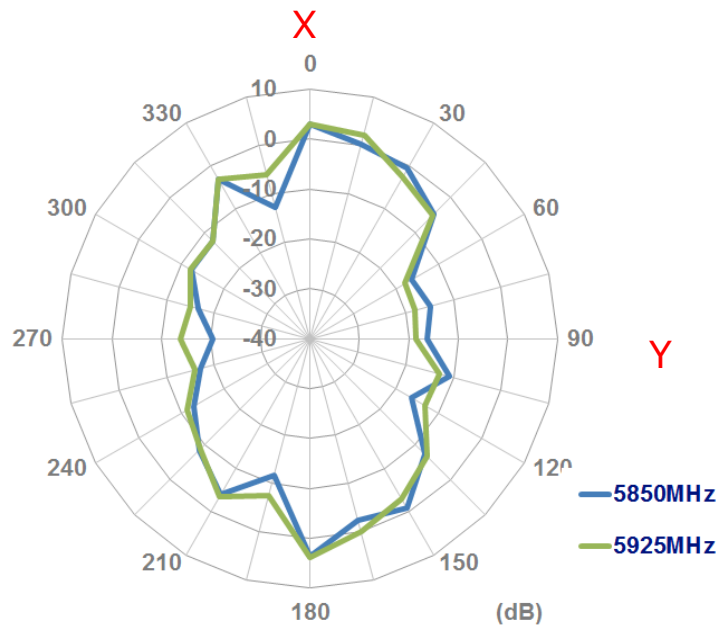


Antenna Bent 90° in 15\*9cm Ground Plane

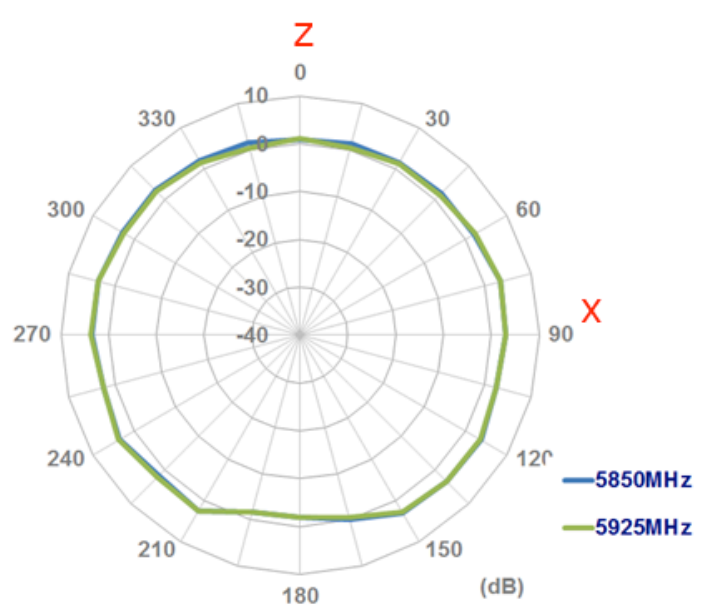


### 4.4.1 2D Antenna Radiation Patterns

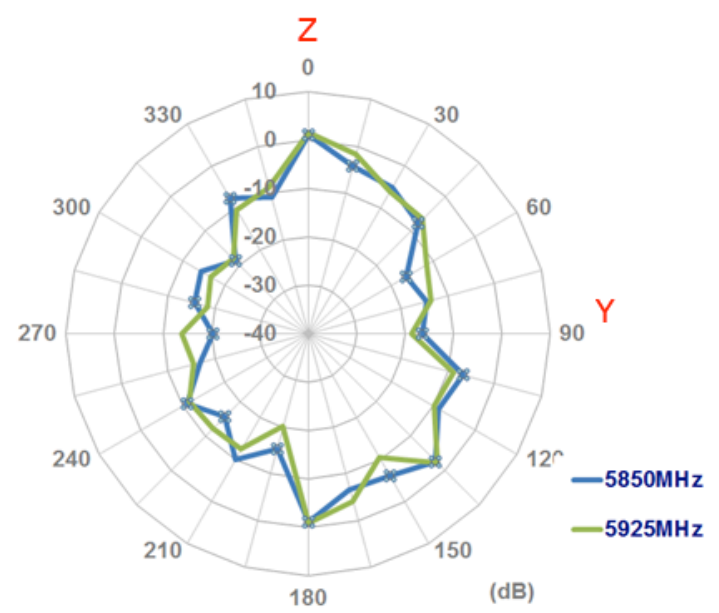
XY Plane



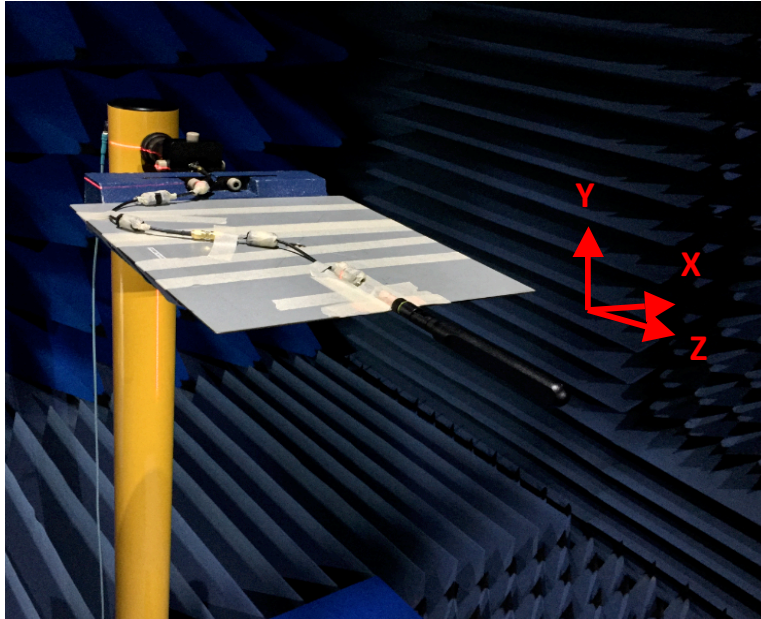
XZ Plane



YZ Plane



## 4.5 Straight with 30\*30cm Ground Plane edge

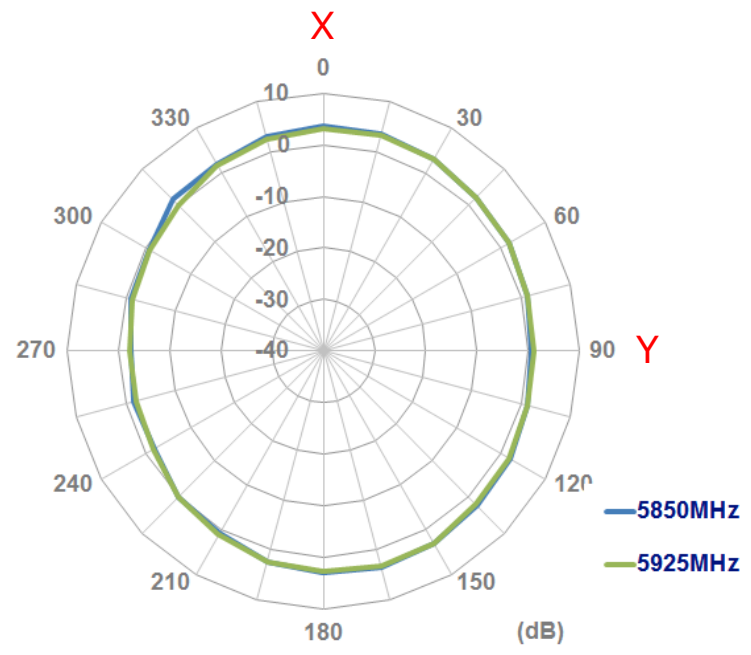


Antenna Straight with 30\*30cm Ground Plane edge

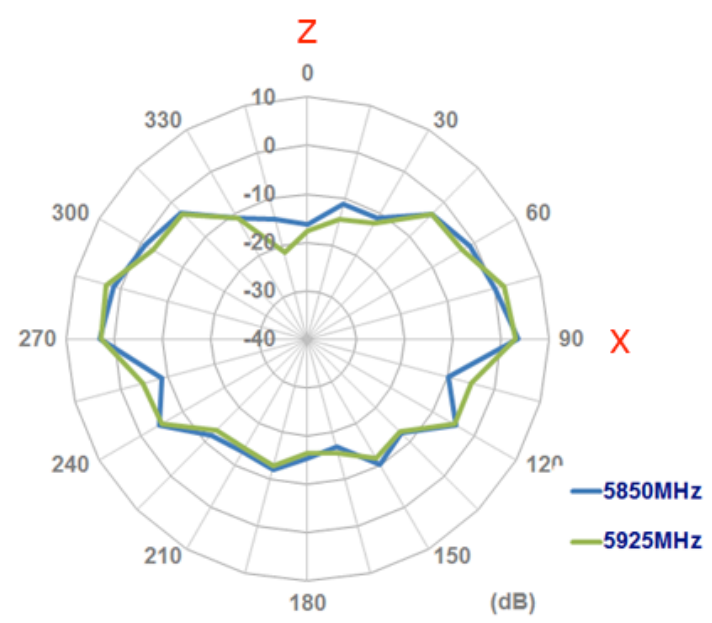


### 4.5.1 2D Antenna Radiation Patterns

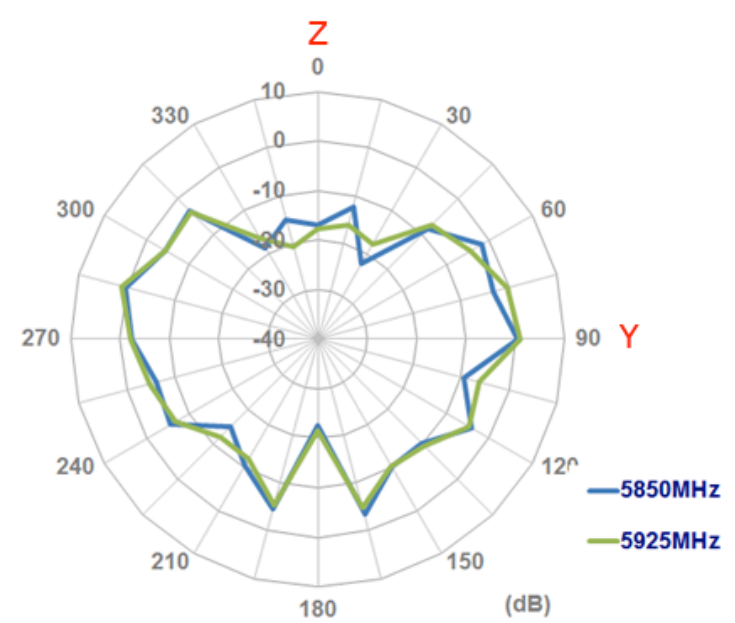
XY Plane



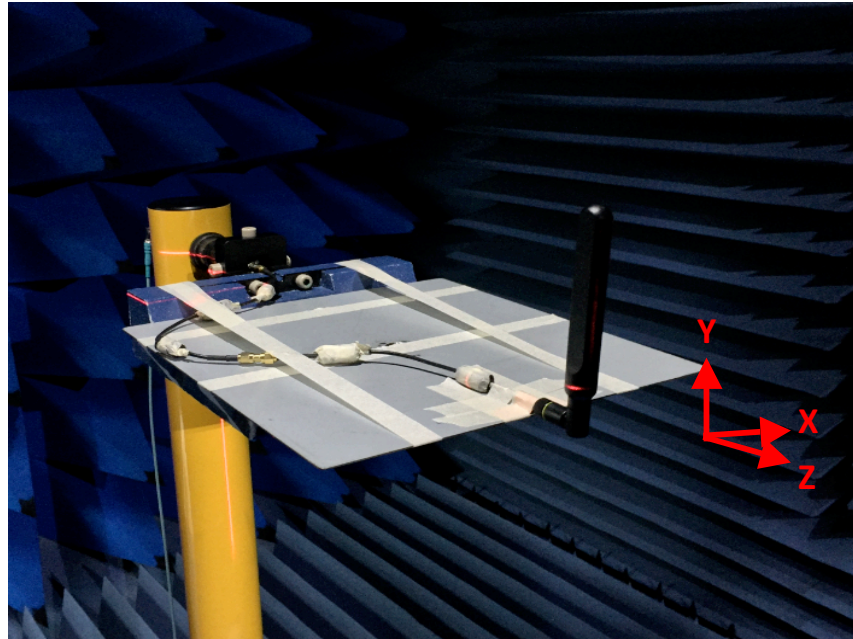
XZ Plane



YZ Plane



#### 4.6 Bent at 90 Degree with 30\*30cm Ground Plane edge

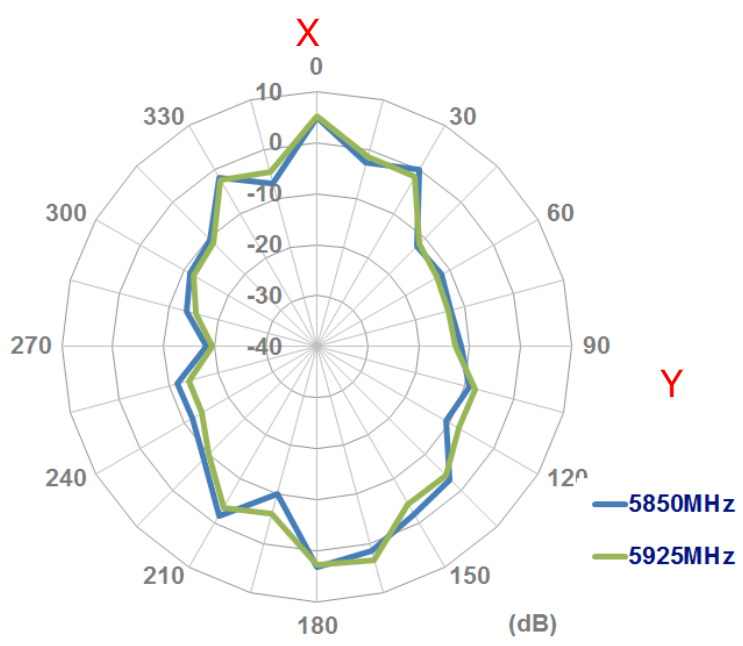


Antenna Bent 90° at 30\*30cm Ground Plane edge

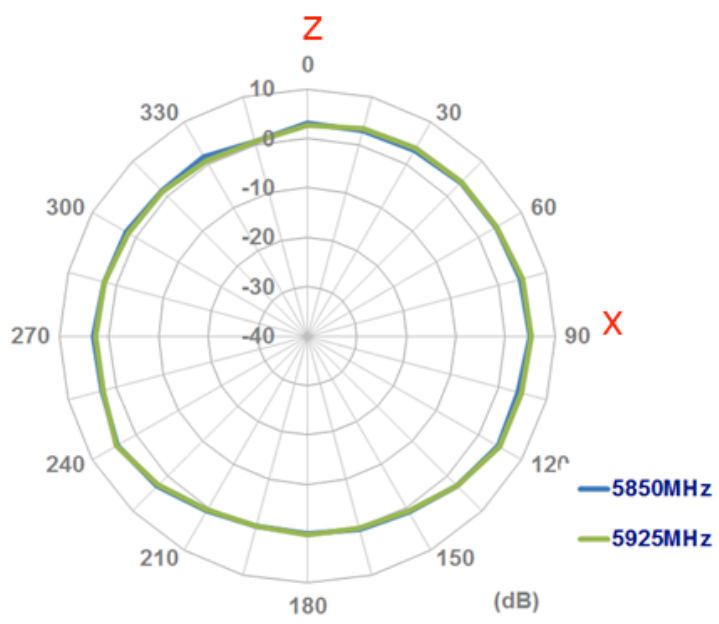


### 4.6.1 2D Antenna Radiation Patterns

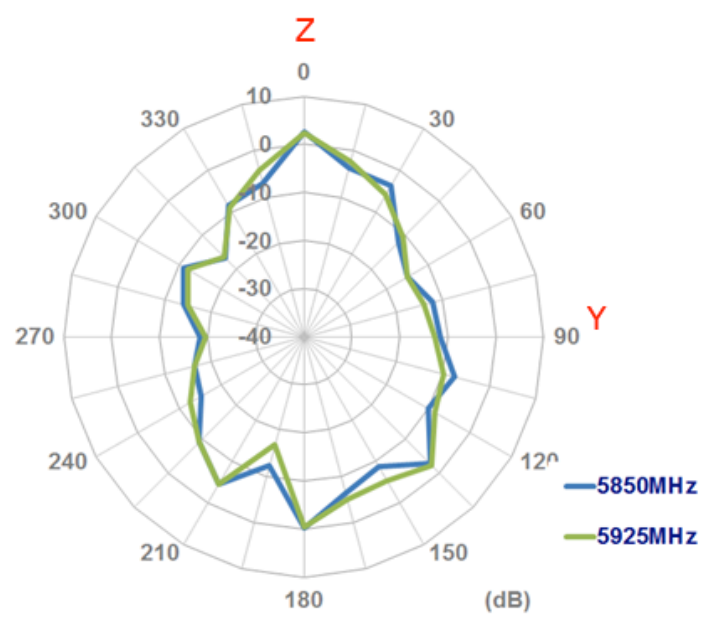
XY Plane



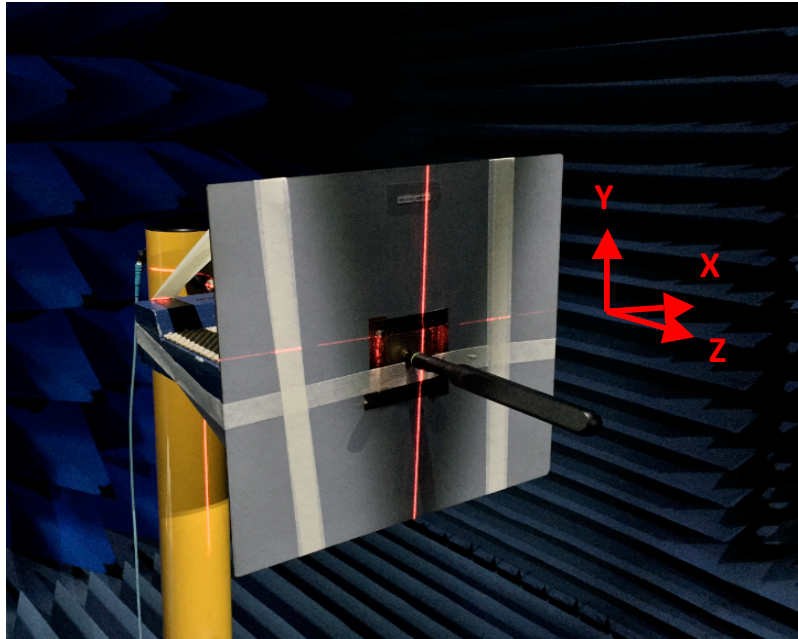
XZ Plane



YZ Plane



## 4.7 Straight with 30\*30cm Ground Plane Center

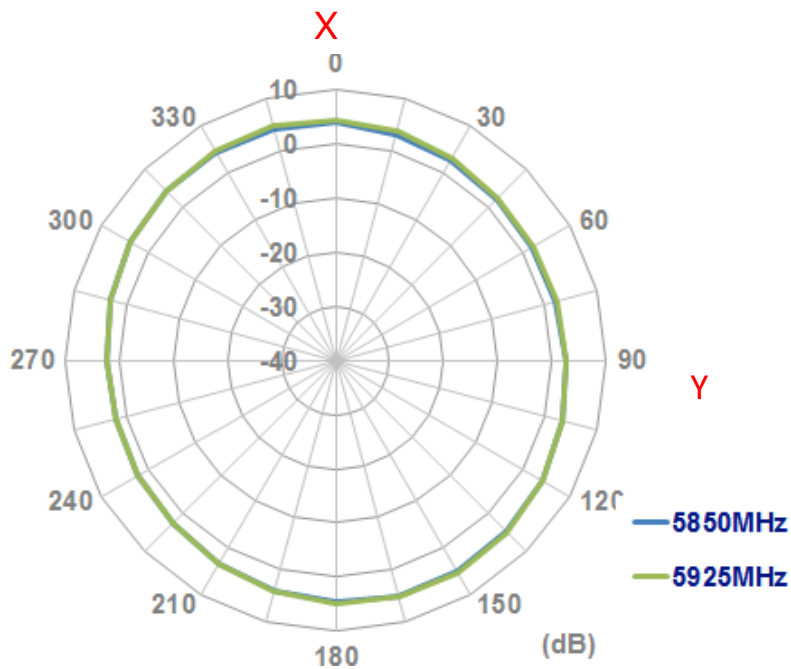


Antenna Straight with 30\*30cm Ground Plane Center

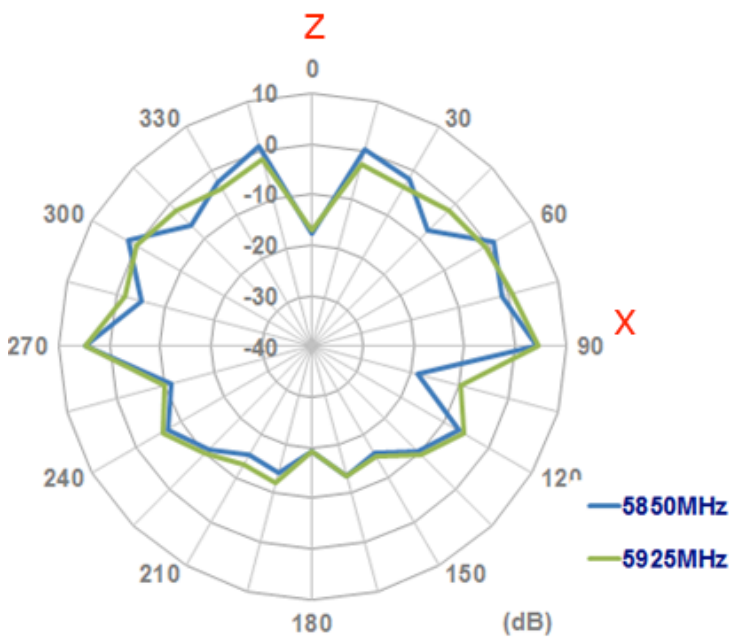


### 4.7.1 2D Antenna Radiation Patterns

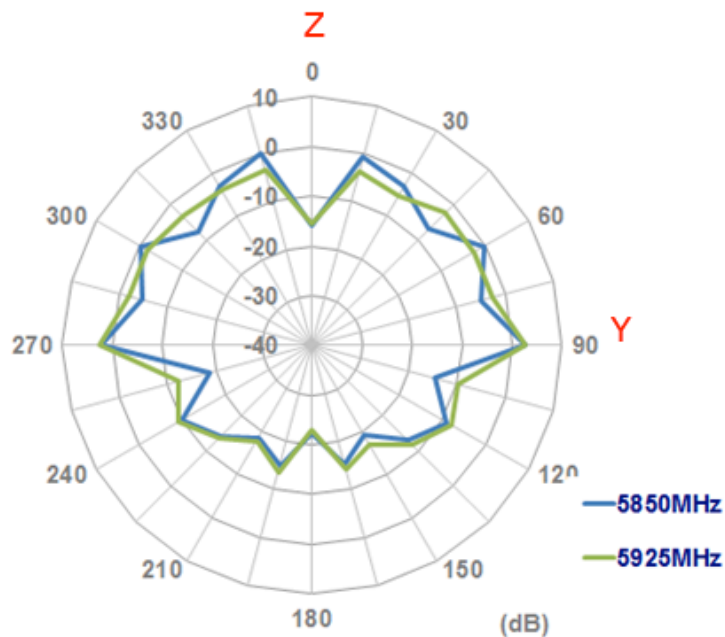
XY Plane



XZ Plane



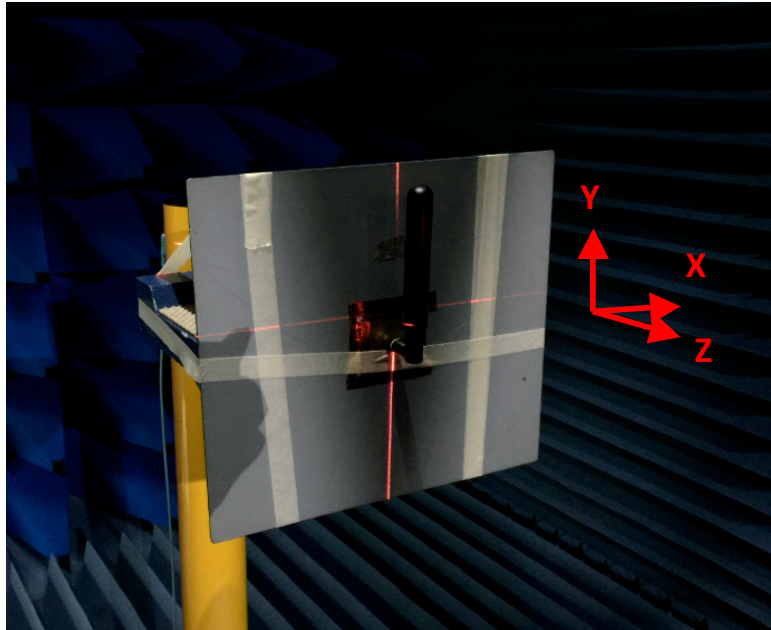
YZ Plane







**Bent at 90 Degree with 30\*30cm Ground Plane Center**

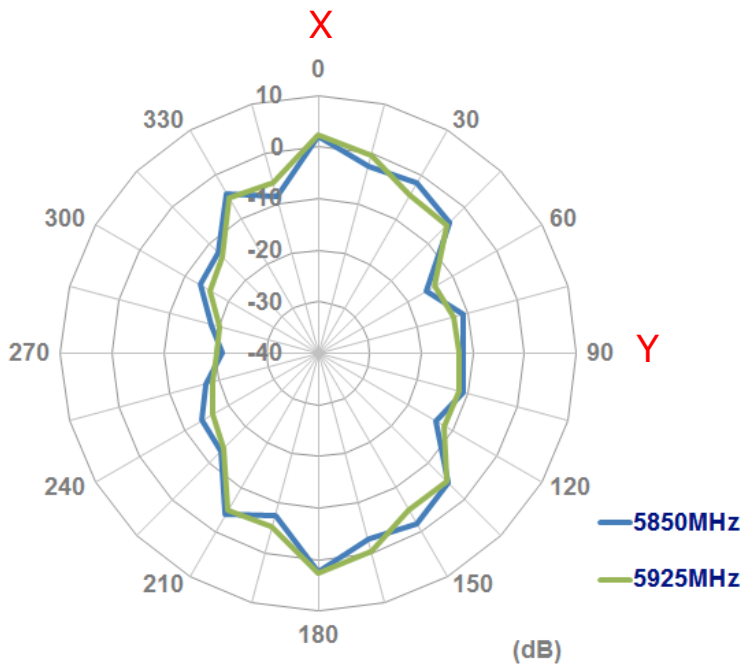


Antenna Bent at 90° with 30\*30cm Ground Plane edge

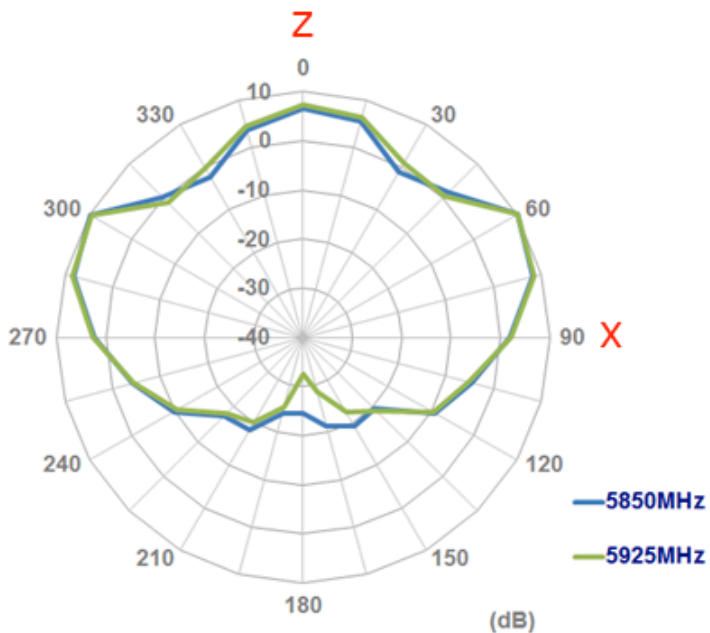


### 4.8.1 2D Antenna Radiation Patterns

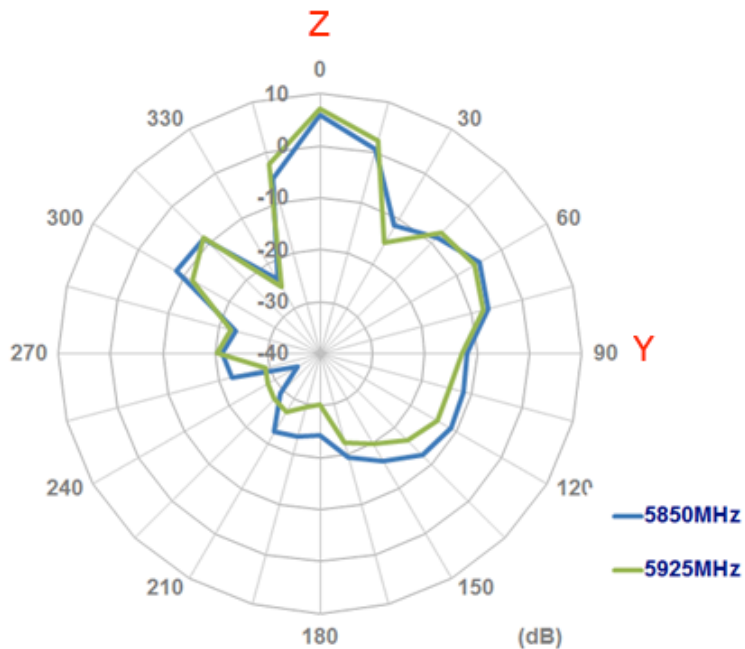
XY Plane



XZ Plane

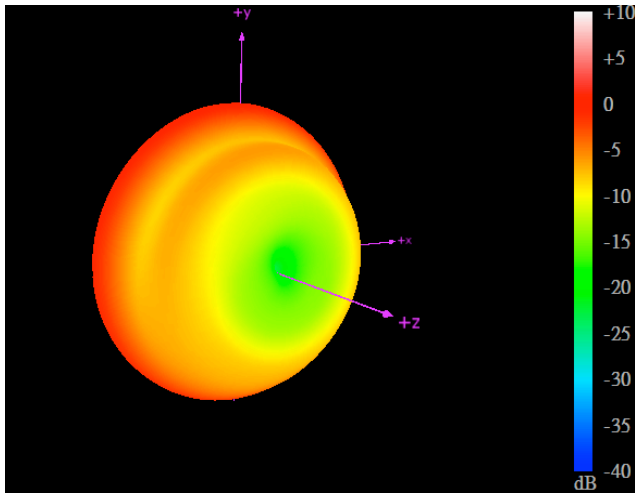


YZ Plane

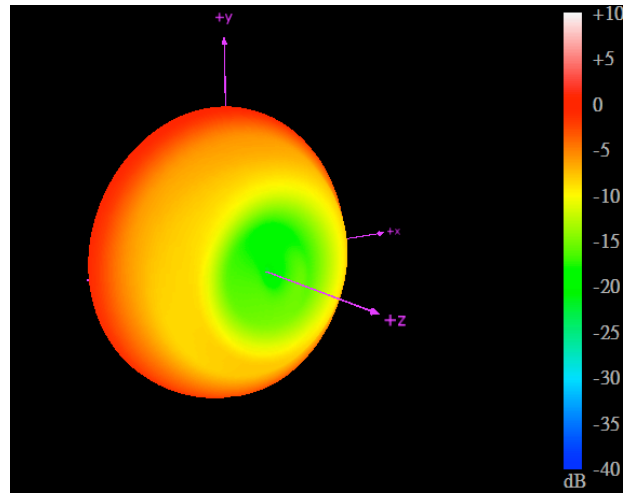


## 5. 3D Radiation Pattern

### 5.1 Straight in Free Space

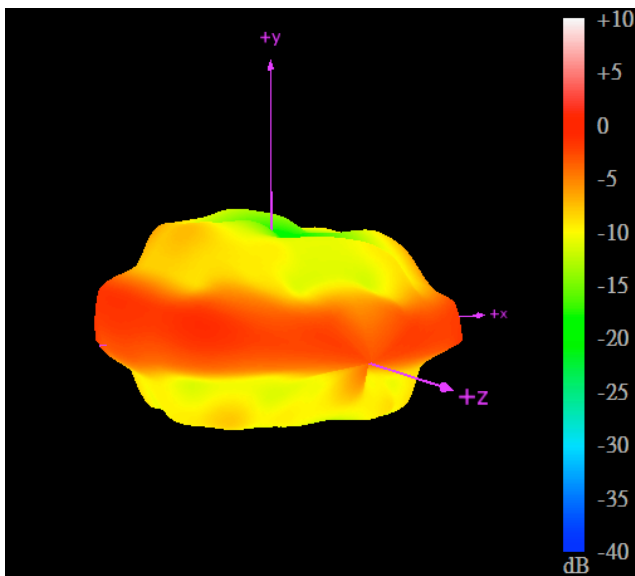


5850MHz

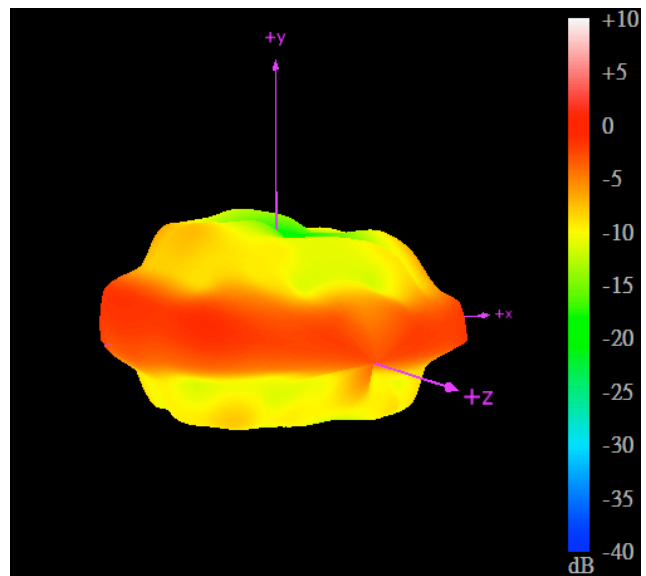


5925MHz

### 5.2 Bent at 90 Degrees in Free Space

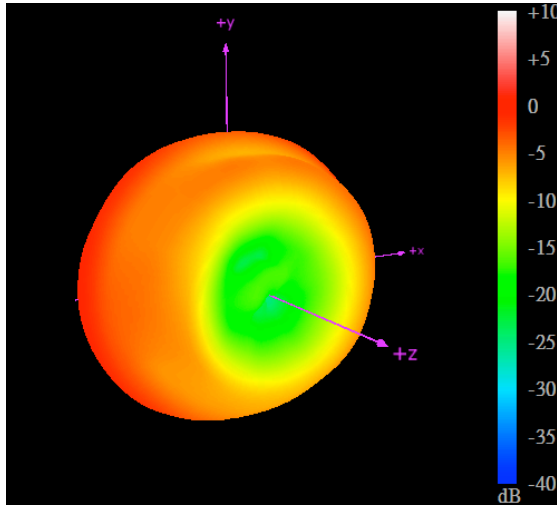


5850MHz

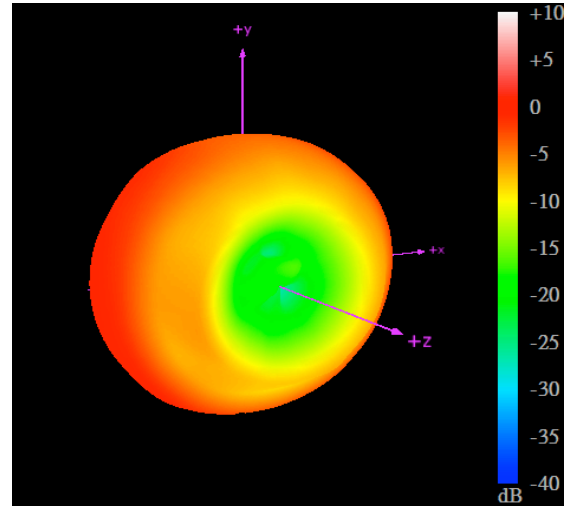


5920MHz

### 5.3 Straight with 15\*9cm Ground Plane

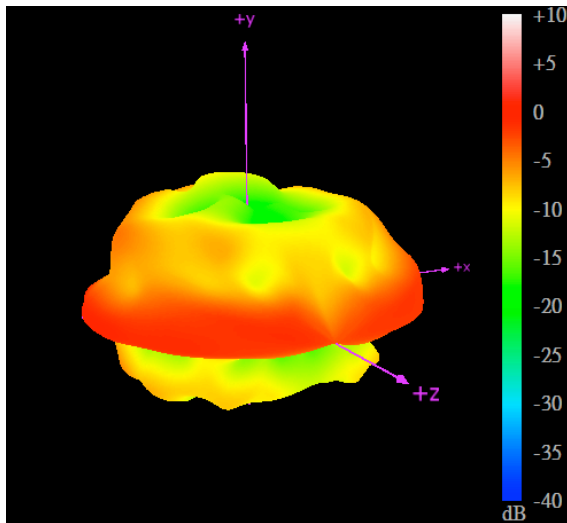


5850MHz

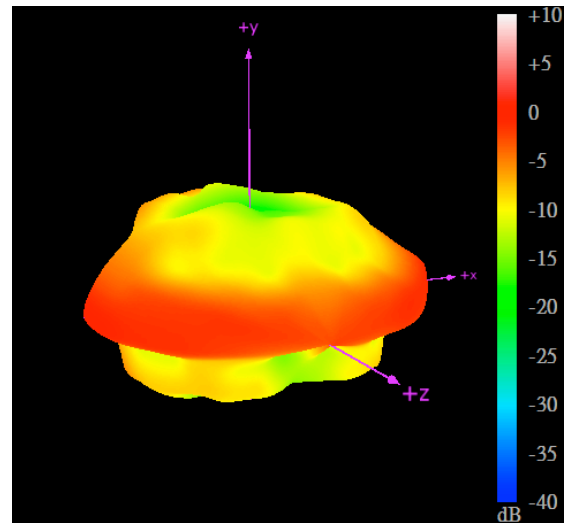


5925MHz

### 5.4 Bent at 90 Degrees with 15\*9cm Ground Plane

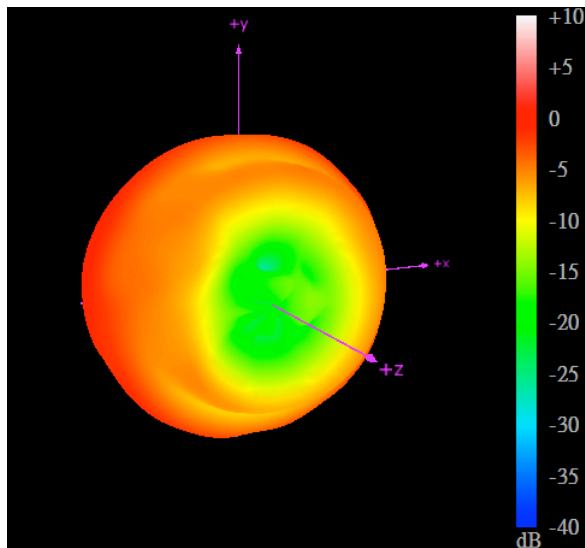


5850MHz

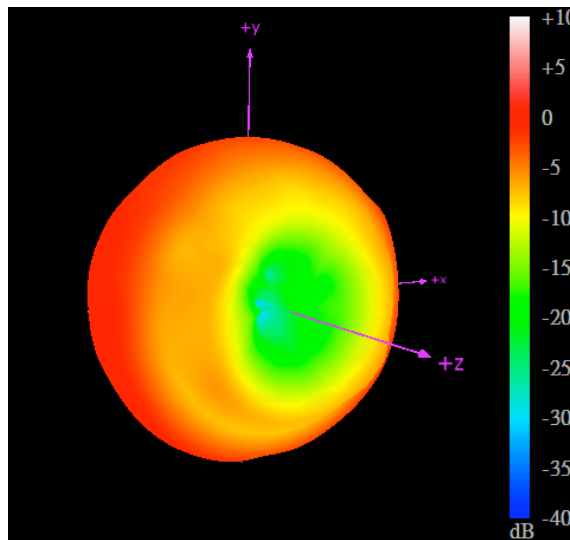


5925MHz

### 5.5 Straight with 30\*30cm Ground Plane edge

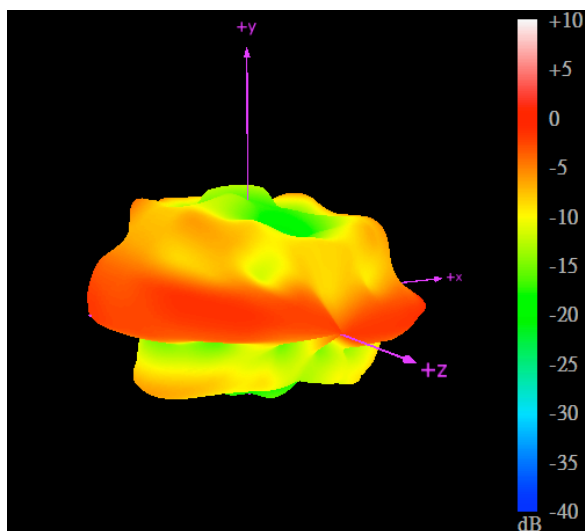


5850MHz

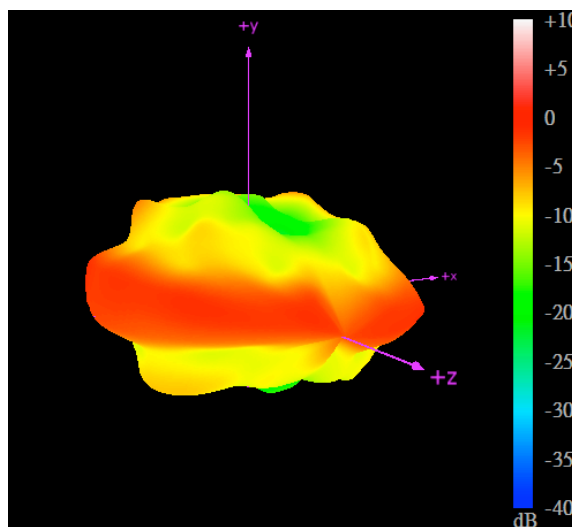


5925MHz

### 5.6 Bent at 90 Degree with 30\*30cm Ground Plane edge

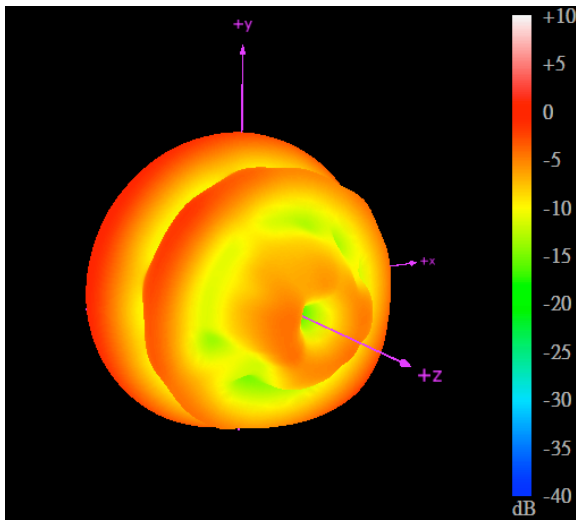


5850MHz

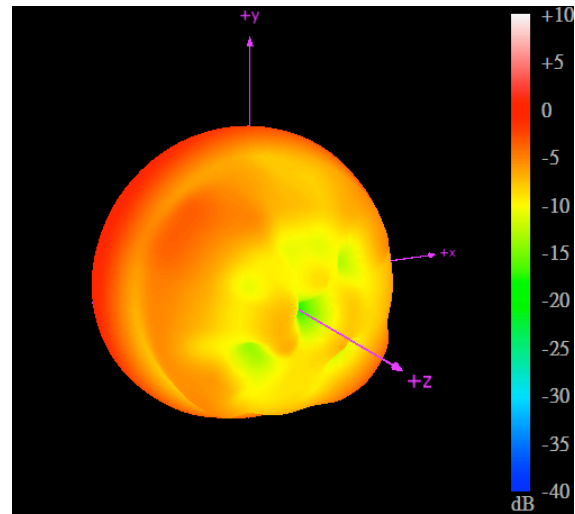


5925MHz

### 5.7 Straight with 30\*30cm Ground Plane Center

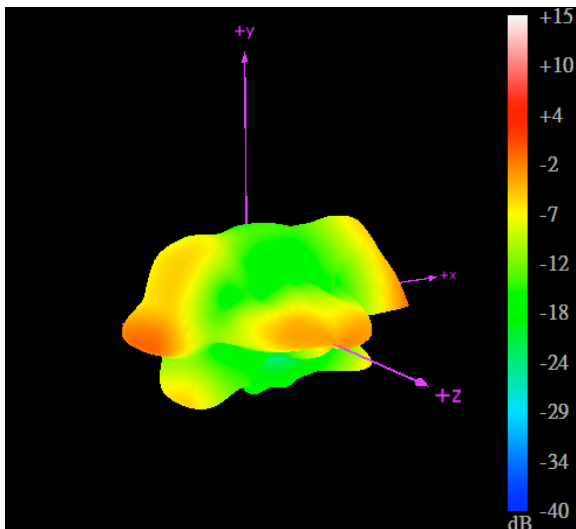


5850MHz

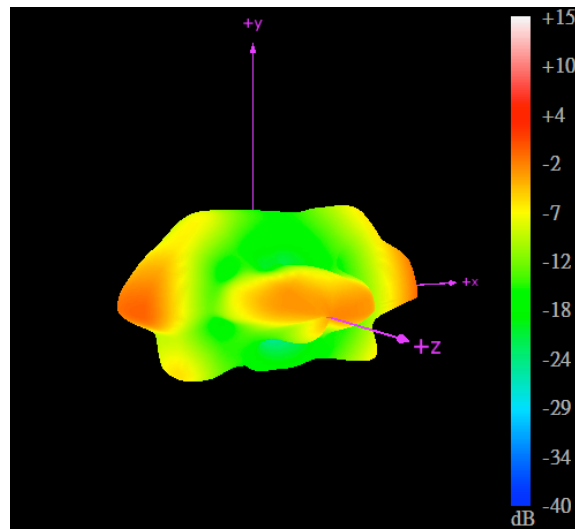


5925MHz

### 5.8 Bent at 90 Degree with 30\*30cm Ground Plane Center



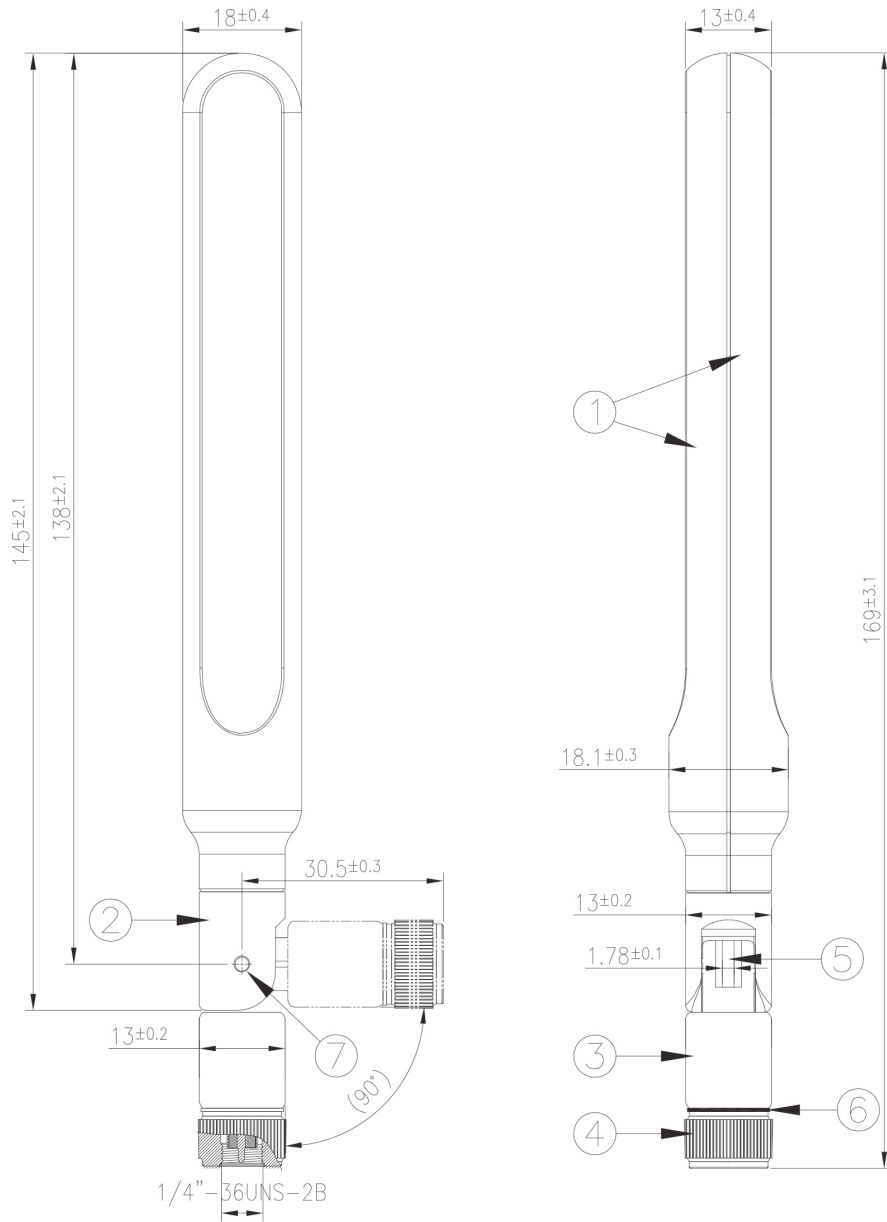
5850MHz



5925MHz



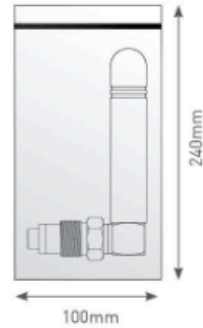
## 6. Drawing (Unit: mm)



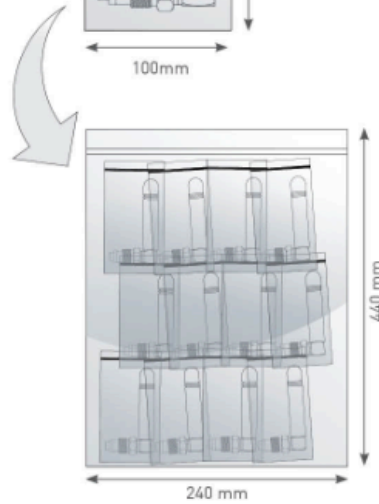
	Name	Material	Finish	QTY
1	Antenna Housing	PC+ABS	Black	2
2	Antenna Base1	PC+ABS	Black	1
3	Antenna Base2	PBT	Black	1
4	SMA(M)	PBT	Black	1
5	RG178 Coaxial Cable	FEP	Brown	1
6	Washer	PP	Yellow	1
7	Rivet	POM	Black	1

## 7. Packaging

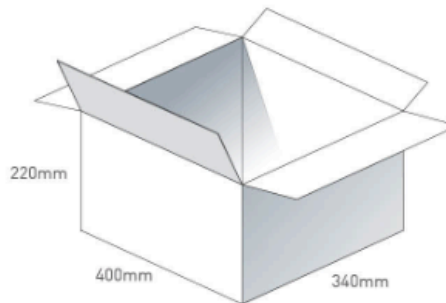
1 pc TD.10.5113 per PE bag  
 PE Bag Dimensions - 240\*100mm  
 Weight - 200g



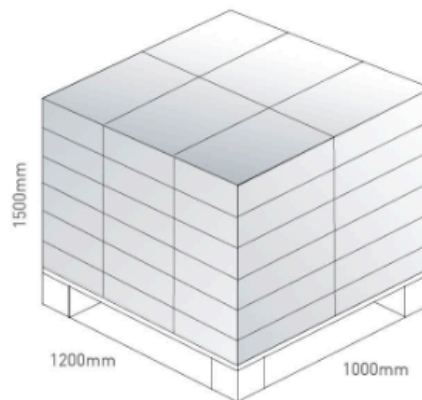
50 pcs TD.10.5113 per Large PE bag  
 PE Bag Dimensions - 440\*240mm  
 Weight - 1.1kg



300 pcs TD.10.5113 per carton  
 Carton Dimensions - 400\*340\*220mm  
 Weight - 7.7kg



Pallet Dimensions 1200\*1000\*1500mm  
 54 Cartons per Pallet  
 6 Cartons per layer  
 9 Layers







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