

## SPECIFICATION

- Part No. : **FW.24.SMA.M**
- Description : Meteor 2.4GHz Flexible Whip  
Monopole Antenna
- Features : External 2.4GHz Monopole Antenna  
Rugged Design for Outdoor Use  
Over 70% Efficiency\*  
Over 4dBi Peak Gain\*  
Robust Inner Steel Core  
Antenna height 316mm  
SMA(M) Straight Connector  
IP67 dust and water-resistant  
\*Tested on 30\*30cm Ground Plane  
RoHS Compliant ✓



## 1. Introduction

The FW.24 is a flexible 2.4GHz whip antenna with a SMA(M) connector for outdoor use. It features excellent efficiency (>75%) and high peak gain (>4 dBi) between 2400-2500MHz on a 30\*30cm ground plane.

The antenna was specifically developed for applications such as weather monitoring systems, motion/vibration sensors, pollution monitoring, and border guard monitoring systems.

The FW.24 works in the 2.4 GHz Wi-Fi/Bluetooth/ISM band with high efficiency, meaning that it allows your radio to consume less power than with a lower efficiency antenna when transferring data. The antenna performs at its best while attached to a ground plane with dimensions of at least 30\*30cm.

The whip is made of a flexible inner steel core covered by PE so it is extremely resistant to abrasion and maintains its original shape and RF performance. This rugged design and IP67 rating has been tested by customers to withstand environmental stress and moderate physical shock in the field.

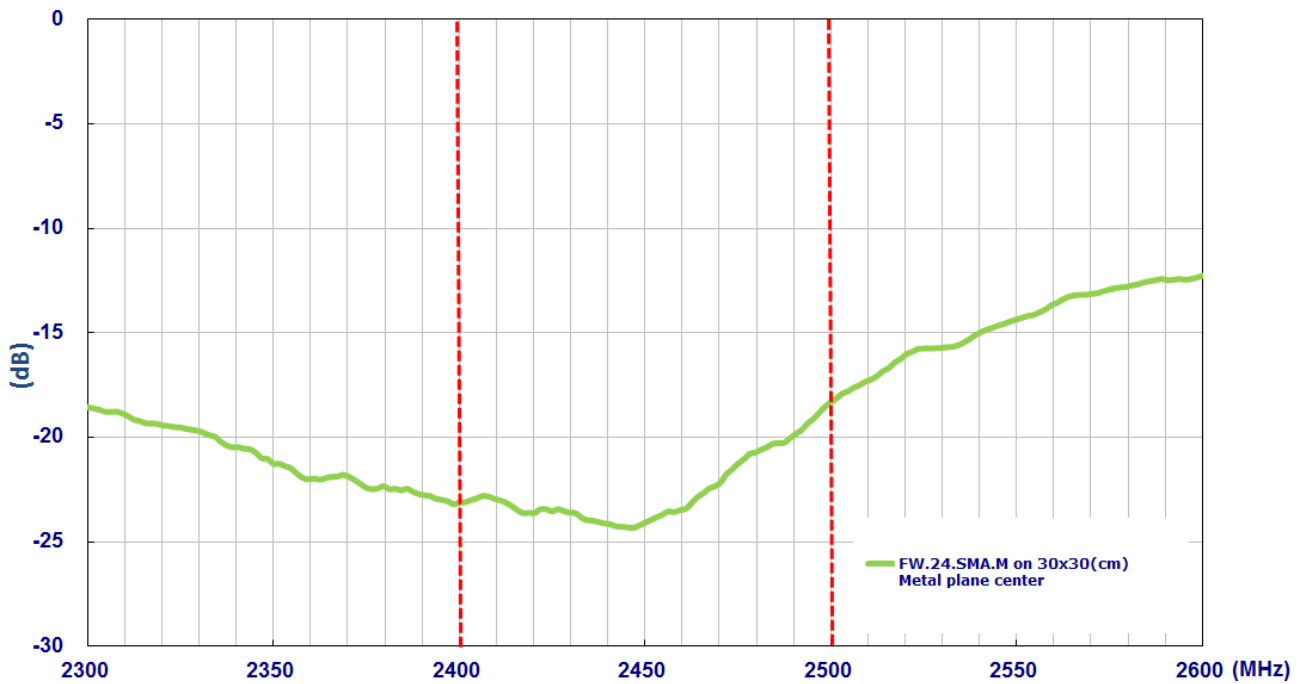
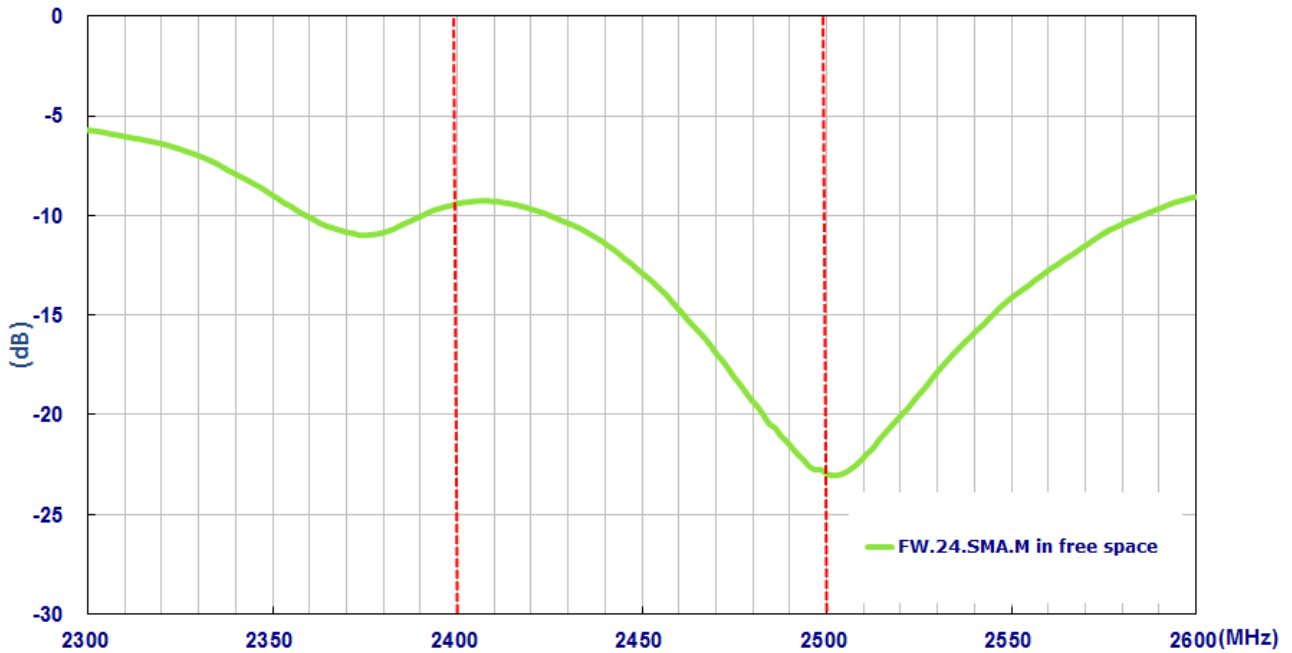
The FW.24.SMA.M 2.4GHz antenna provides a simple solution to any outdoor devices where the FW.24 antenna's rugged design and high efficiency can provide the best value to the application.

## 2. Specification

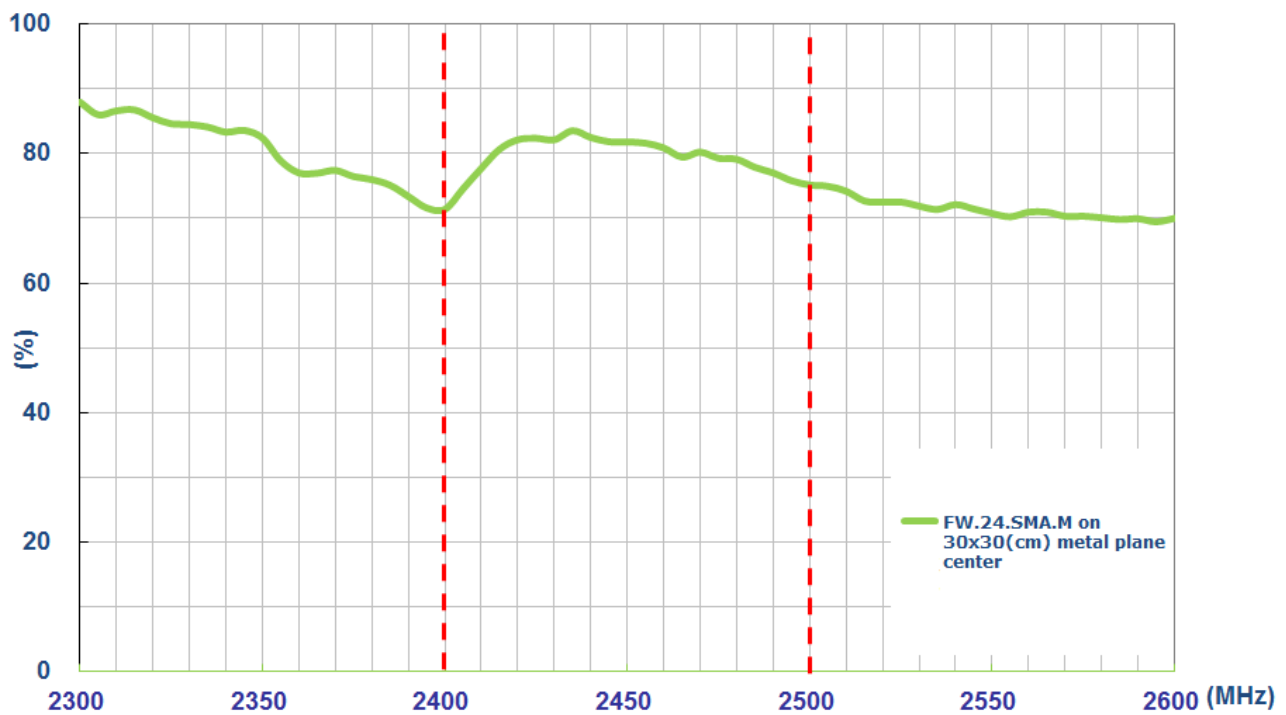
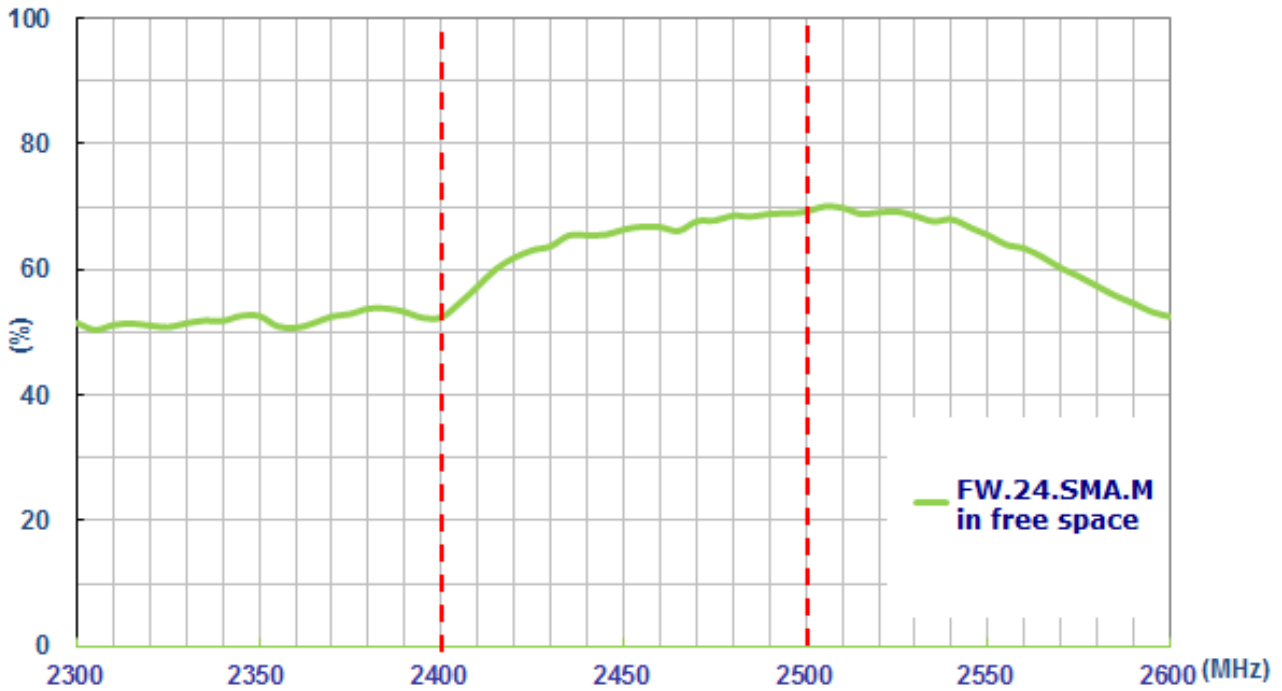
2.4GHz Wi-Fi	
Frequency	2400~2500MHz
	In free space      On 30*30cm ground
Efficiency	64.5%      79.3%
Peak Gain	4.26dBi      4.48dBi
Return loss	< -6dB      < -10dB
VSWR	≤ 3:1      ≤ 2:1
Impedance	50Ω
Polarization	Linear
Radiation Pattern	Omnidirectional
Input Power	2W
MECHANICAL	
Height	307 ± 6mm
Base Diameter	16 ± 0.8mm
Whip Diameter	6.2 ± 0.8mm
Casing	ABS
Connector	SMA Male Straight
Weight	46.6g
Dust and Water Resistance	IP67
ENVIRONMENTAL	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

### 3. Antenna Characteristics

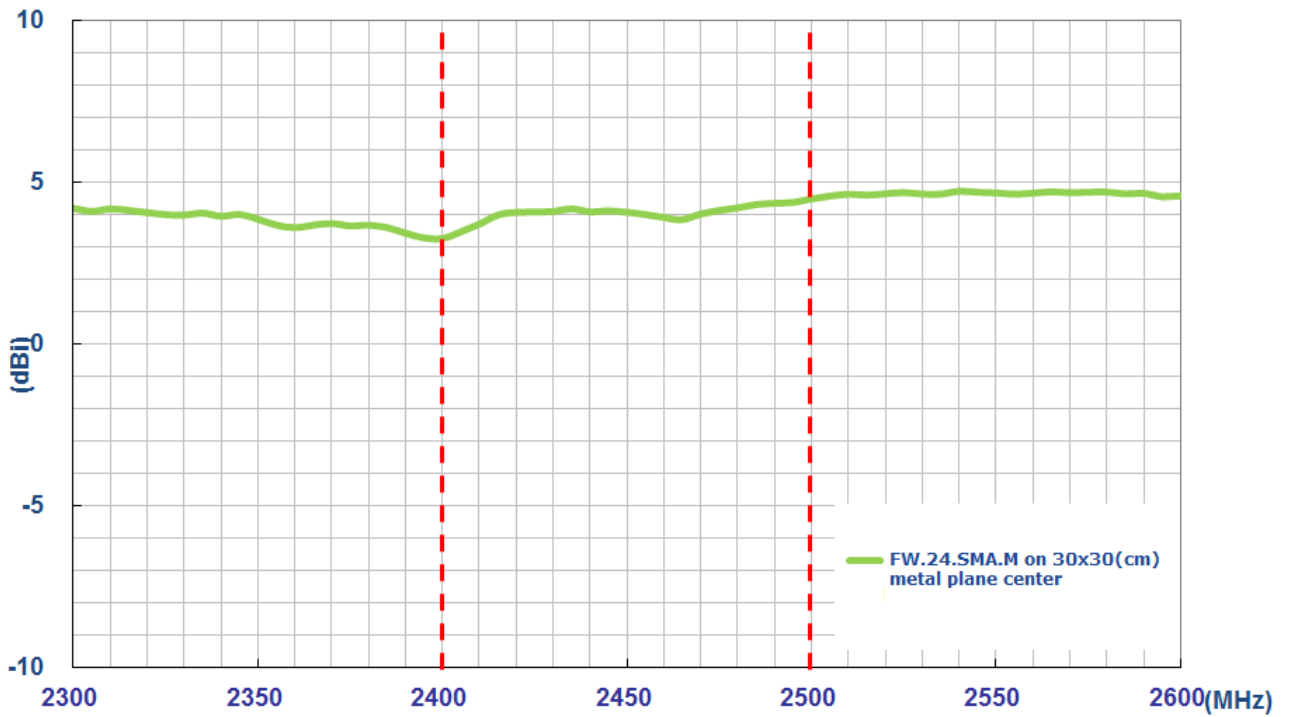
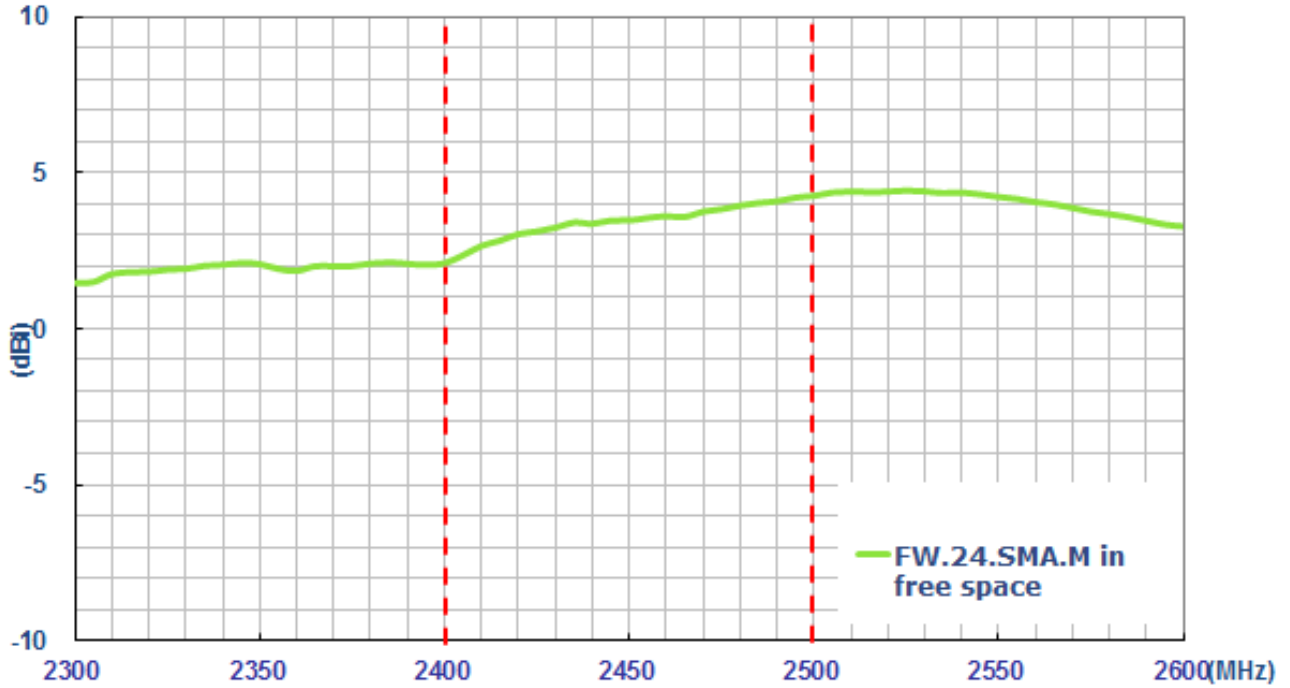
#### 3.1. Return Loss



### 3.2. Antenna Efficiency

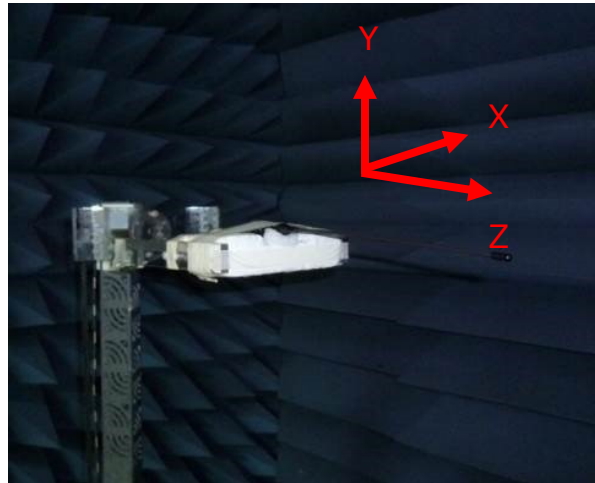


### 3.3. Peak Gain

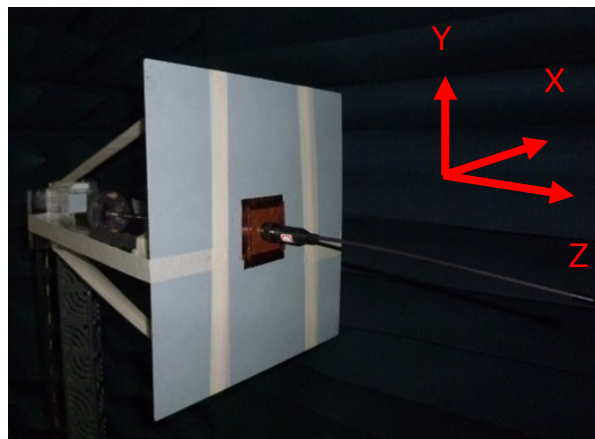


## 4. Antenna Radiation Pattern

### 4.1. Antenna Setup



Free Space

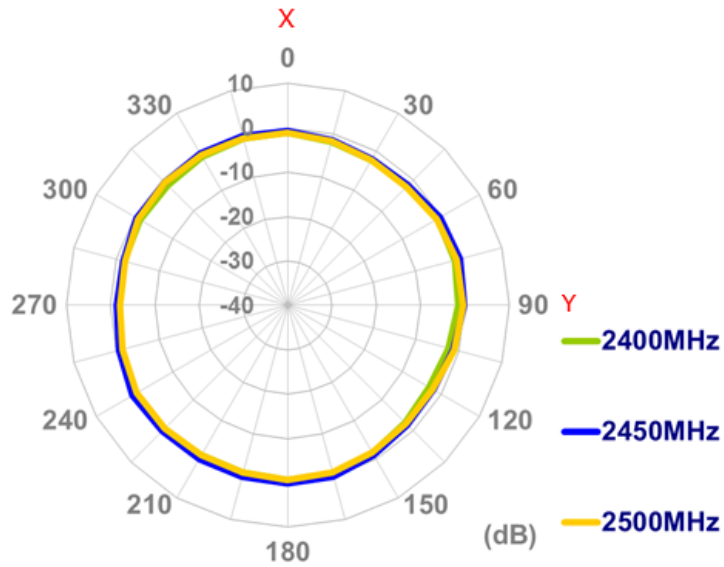


On 30\*30cm ground plane

## 4.2. 2D Radiation Pattern

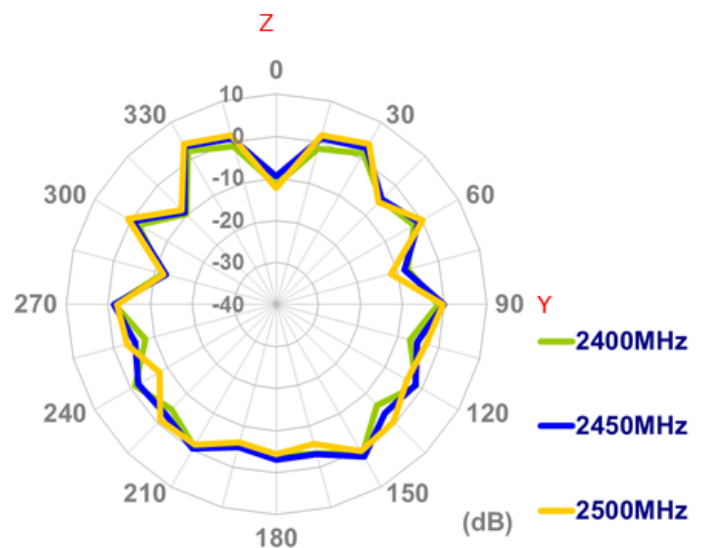
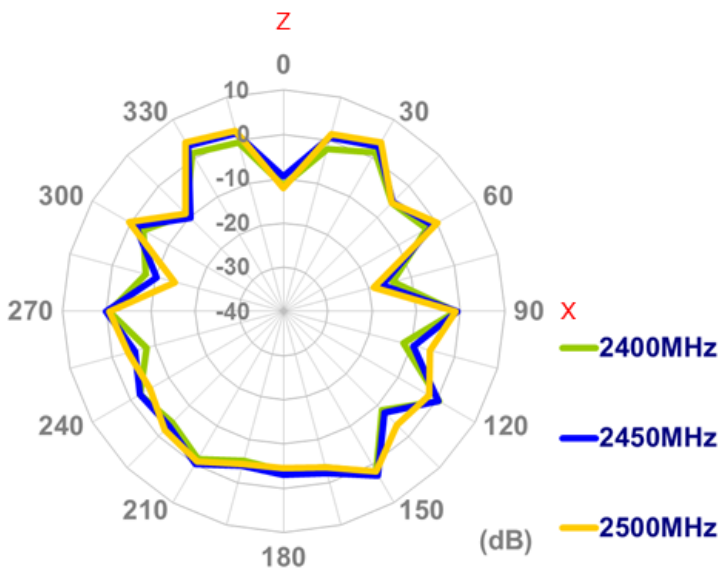
### In Free Space

XY Plane



XZ Plane

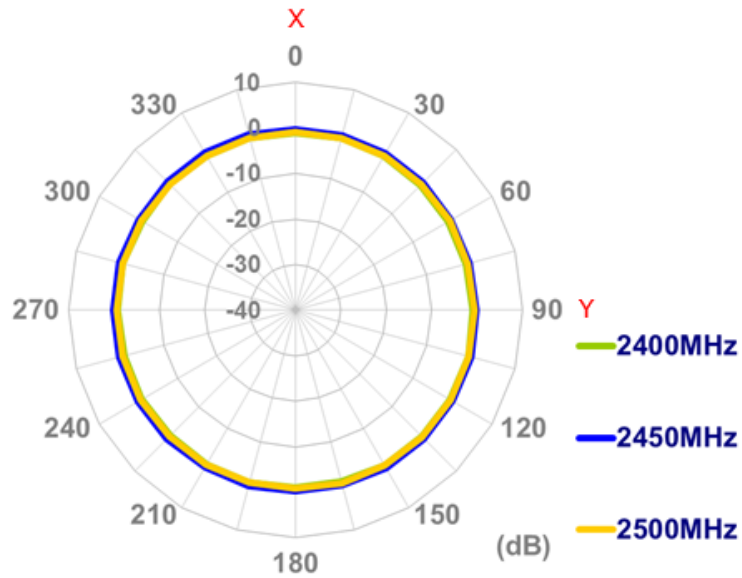
YZ Plane



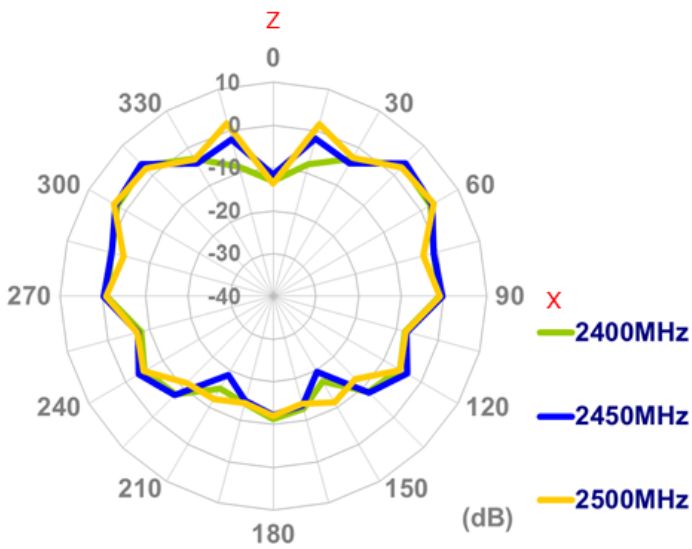


**On 30\*30cm Ground Plane**

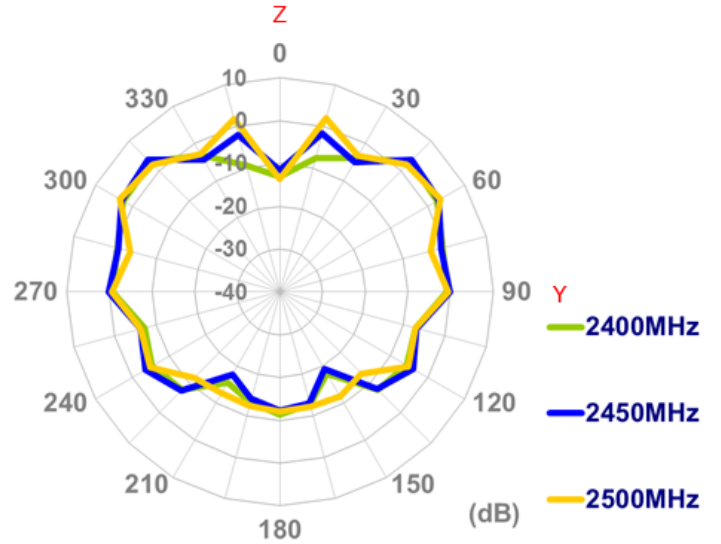
XY Plane



XZ Plane

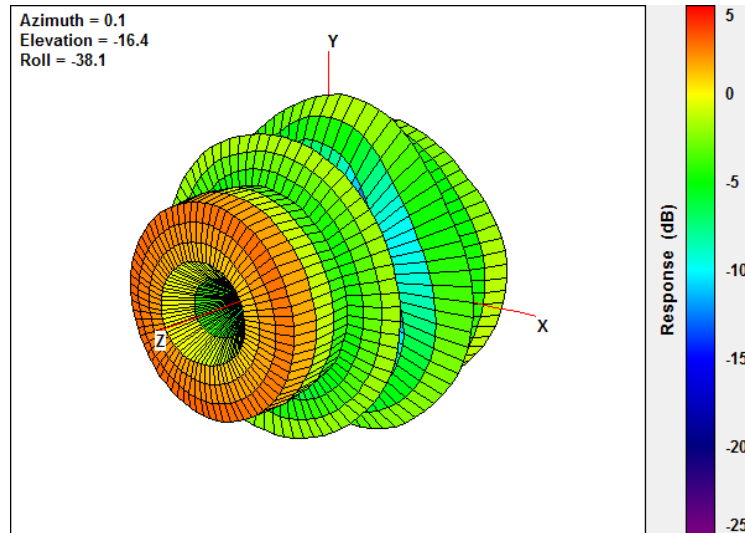


YZ Plane



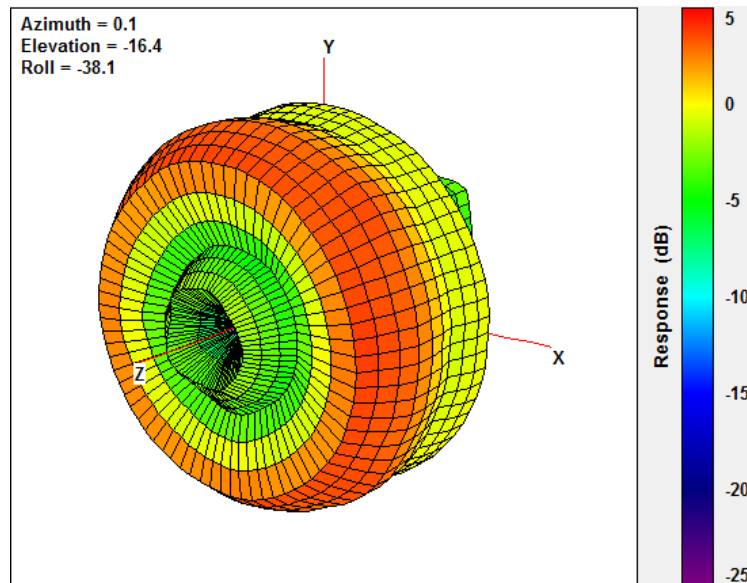
### 4.3. 3D Radiation Pattern

In free space



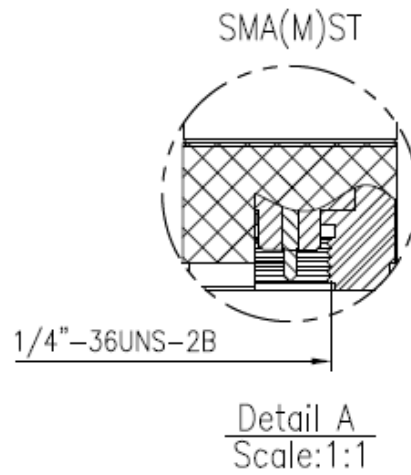
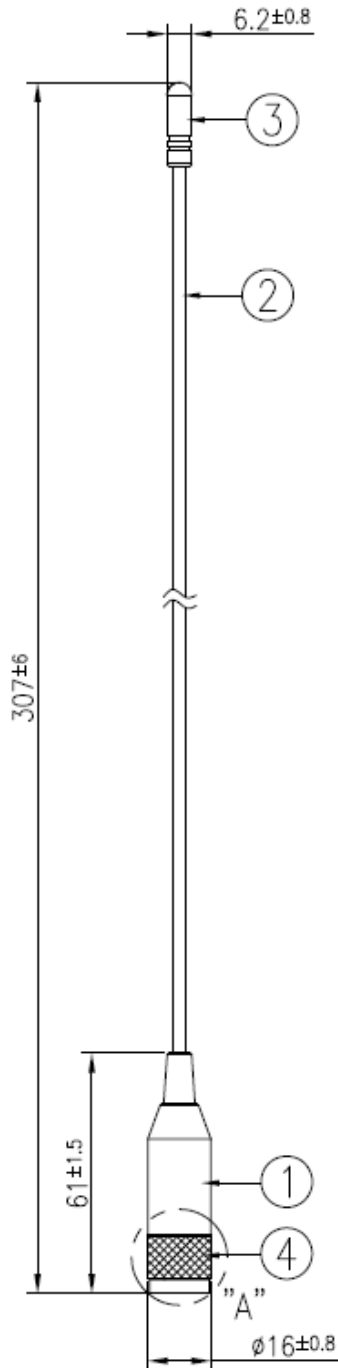
@2450MHz

On 30\*30cm Ground Plane



@2450MHz

## 5. Antenna Drawing (Unit: mm)



	Name	P/N	Material	Finish	QTY
1	Housing	000116J060000A	ABS	Black	1
2	Flexible Whip	001116J000000A	Steel+PE Jacket	Black	1
3	Cap	000716J000000A	POM	Black	1
4	SMA(M)ST	210216J000002A	Brass	Black	1



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