



ANTENNA DATASHEET

2.4G Rubber Antenna

Model No:

BW2.4JWX105-7KJ

Description:

2400-2500MHz Rubber Antenna with SMA Male Connector

Features:

2400-2500MHz

SMA Male connector

Foldable

Structure: 360° Omnidirectional Radiation

Connector Type : SMA Male (Customizable)

Dimension: 105mm x 7mm

RoHS & REACH Complaint



CONTENTS

1.	Description	3
2.	Specifications	4
3.	Product Picture	5
4.	Mechanical Drawing	6
5.	Test Equipment	7-8
6.	Performance Data	9-10
6.1	VSWR	9
6.2	Return Loss	9
6.3	Gain	10
6.4	Efficiency	10
6.5	Gain & Efficiency	10
7.	Radiation Patterns	11-12
7.1	2D Radiation Patterns	11
7.2	3D Radiation Patterns	12



BW2.4JWX105-7KJ

Part Number Description

BW	Company	Bat Wireless
2.4	Frequency	2400-2500MHz
J	Name	Rubber Antenna
W	Type	External
X	Constant	X
105-7	Approximate Dimensions	105-7mm
K	Feature	Foldable
J	Connector	SMA Male

1. Description

Bat Wireless BW2.4JWX105-7KJ is a high-performance omnidirectional antenna. This antenna combines high performance with portability and is designed for devices that require frequent movement or temporary networking. It features a high-quality plastic shell, is foldable, and has excellent signal reception and transmission capabilities, providing stable and reliable support for device connections. Its compact and lightweight rod design makes it easy to install and transport.

Classic application scenarios:

Industry 4.0: Real-time monitoring of CNC machine tools

Smart healthcare: Surgical robot control

Smart transportation: Rail contact network monitoring

Energy IOT: Substation inspection robots

Bat Wireless provides customized services to optimize your device, we have a mature R&D team that can respond quickly to meet your needs. If you have any requirements, please contact our sales and FAE.



2. Specification

Parameters	Typ.	Unites	Notes
Electrical Characteristics			
Antenna Type	Rubber Antenna		
Frequency Range	2400-2500	MHz	
Input Impedence	50	Ω	
V.S.W.R	<1.5		
Gain	1.9	dBi	
Polarization Type	Vertical		
Power Capacity	50	W	
Lightning Protection	-		
DC Voltage	-	V	
Radiator	-		
Mechanical Characteristics			
Dimensions	105 x 7	mm	
Connector Type	SMA Male (Customizable)		
Cable Type	/		
Cable Length	/	mm	
Mount way	SMA Connection		
Color	Black		
Material	ABS		
Weight	6.5	g	
Environmental Characteristics			
Waterproof Rating	-		
ROHS Compliant	Conform		
Operating Temperature	-45~ +85	$^{\circ}\text{C}$	
Storage Temperature	-45~ +85	$^{\circ}\text{C}$	

*Note: The above data is for reference only. Since the antenna function is relatively sensitive, please inform us for evaluation if there are any changes to the structural components around the main body of the antenna.



3. Product Picture



* Product images are for reference only.



4. Mechanical Drawing

PARTS DRAWING		ROHS Compliant		REV	PRODUCT NO.	DATE	NAME	DESCRIPTION

Requirements:

- The wire jacket shall be free from cuts or damage.
- 100% continuity testing shall be performed, and all products must pass.
- 100% full inspection is required, and all products must meet specifications.
- Eco-friendly manufacturing processes shall be adopted, and finished products must comply with ROHS requirements.
- Unless otherwise specified, general tolerances shall apply.

NO	Code	Name	Description	QTY
1		Wire	RG178 Double-Shield Wire Brown	1
2		SMA	Male Black Titanium Alloy	1
3		Down Braid	9.9*11.5MM Black	1
4		Up Side	9.5*20MM Black	1
5		Rubber Shell	67*210MM Black	1
6		Brass Tube	23*4.4*1.5MM Brass	1

Frequency	2400-2500MHz	ANGLE PROJECTION	
Gain	1.9DBI		
VSWR	<1.5		
Polarization	Vertical		
Impedance	50Ω		
Operating Temperature:	-45°C~85°C		
Storage Temperature:	-45°C~85°C		

PRODUCT NAME			
Rubber Antenna-2400-2500MHz-SMA Male-L=105MM			
UNIT	MM	SIZE	1:3
PAGE	1 OF 1	FORM/MT	A4



5. Test Equipment



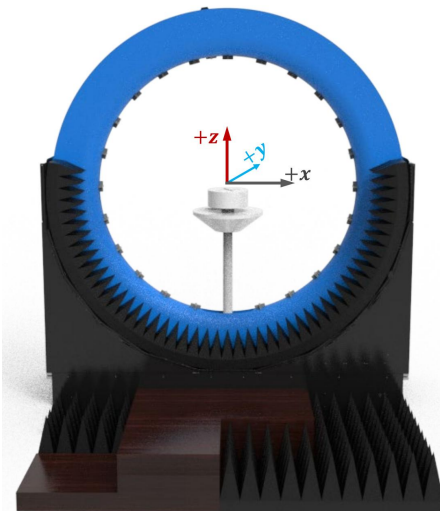
Keysight/E5071C Network Analyzer



R&S/CMW500 Comprehensive test equipment



R&S/SMBV100B Signal Source



DT-3500 Datasheet

Specification:

Specification:	Description
Test Frequency	400MHz-8.5GHz
System Size	L*W*H=4*3.5*3.5m
Number of Probes	23 (Probe) + 1 (link)
Interval Angle	15°
Sampling Diameter	2200mm
Carring Capacity	≤40kg

Testing Capability

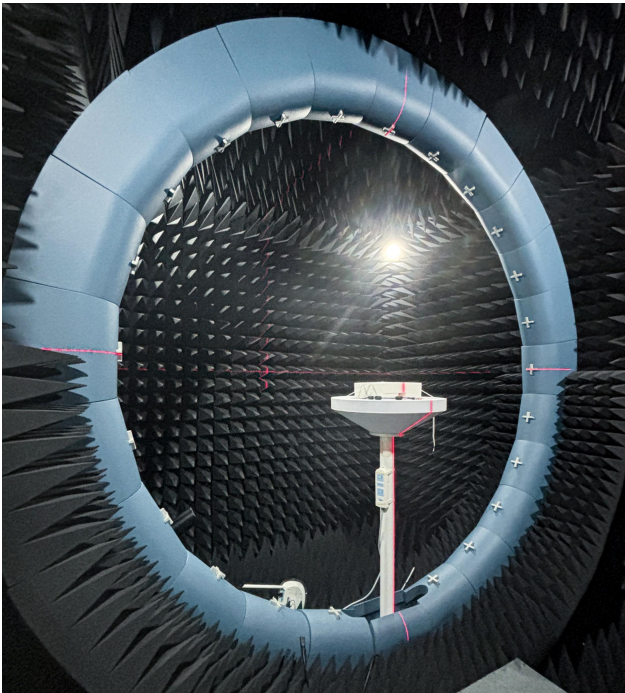
Description

Active measurement

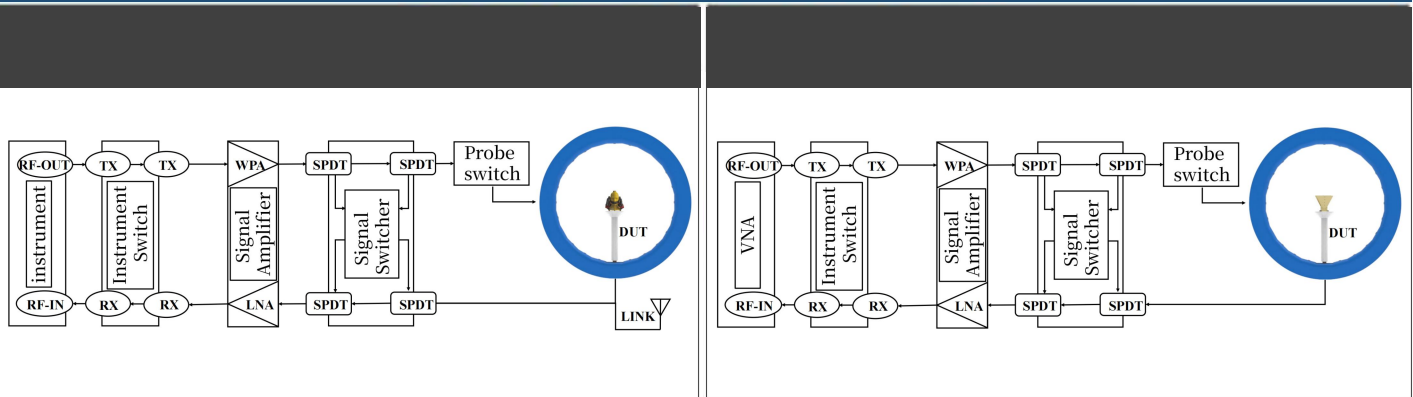
Capability : TRP、TIS、EIRP、EIS,. etc
Mode : 2G/3G/4G/5G、Wi-Fi b/g/n/a/ac/ax、BT、NB-IOT、Cat-M (eMTC)、GPS/BEIDOU/GLONASS、ZigBee、LoRa(Non-Signaling),.etc

Passive measurement

Test category : Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio、ECC,Phase center,. etc
Polarization : Circular polarization, linear polarization, elliptical polarization

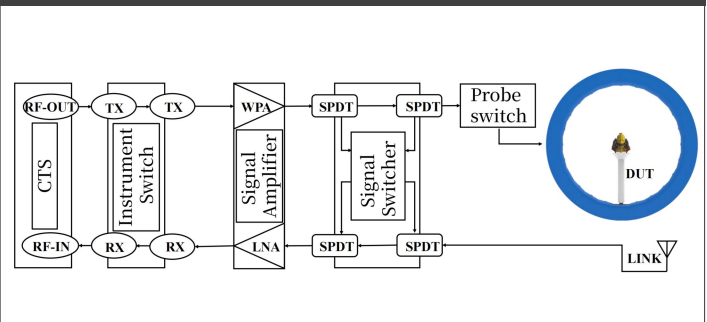
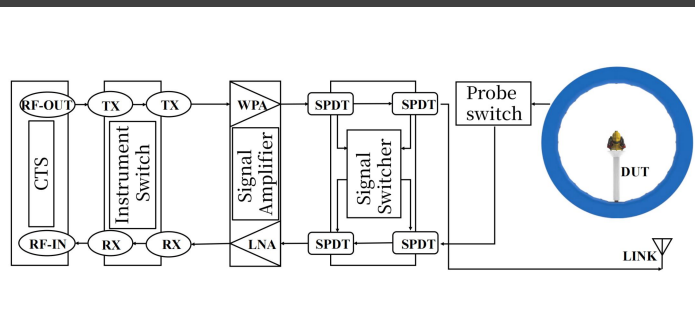


RF Link diaram of multi probe spherical near-field testing system



RF Link Overview

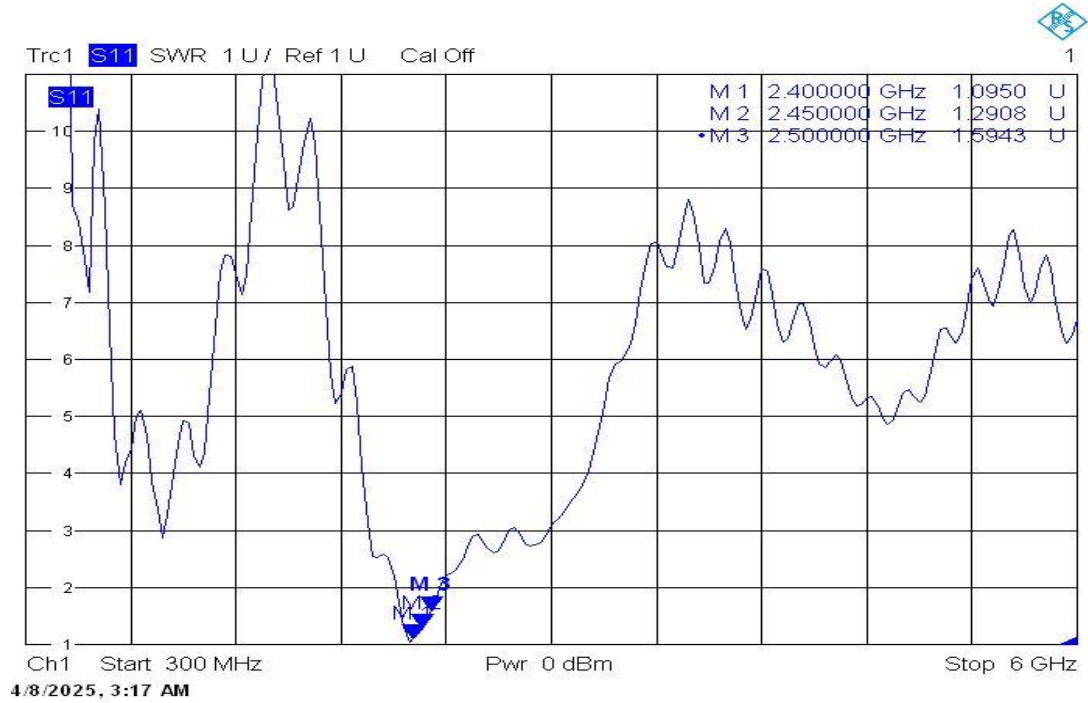
RF Link of Passive measurement



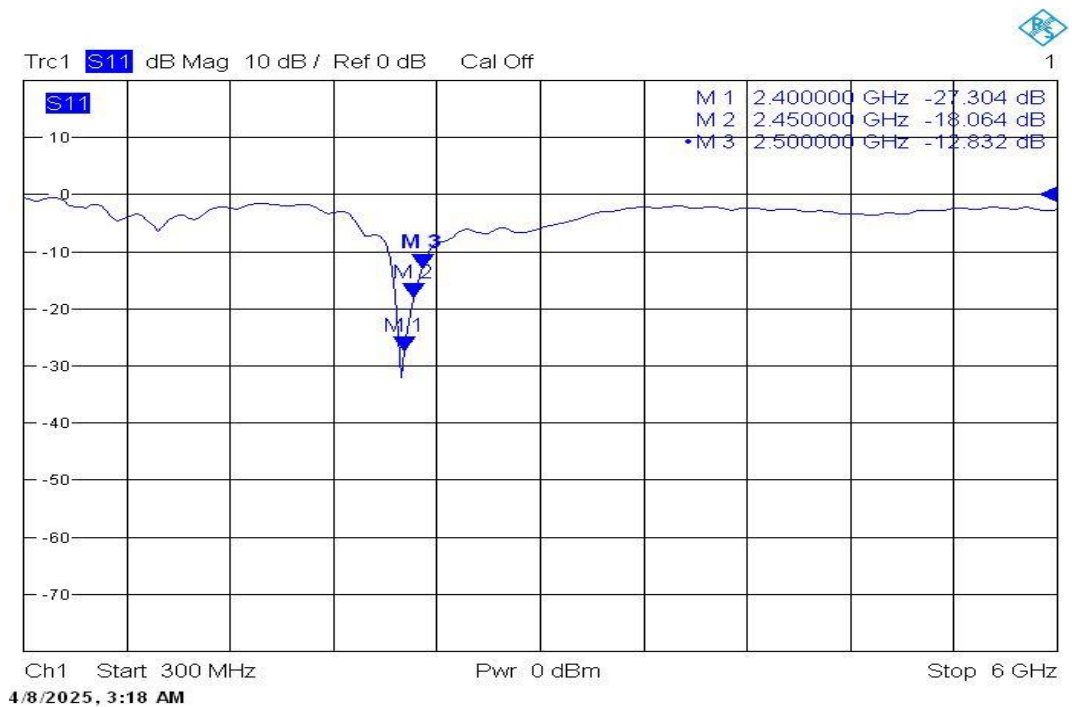


6. Performance Data

6.1 VSWR



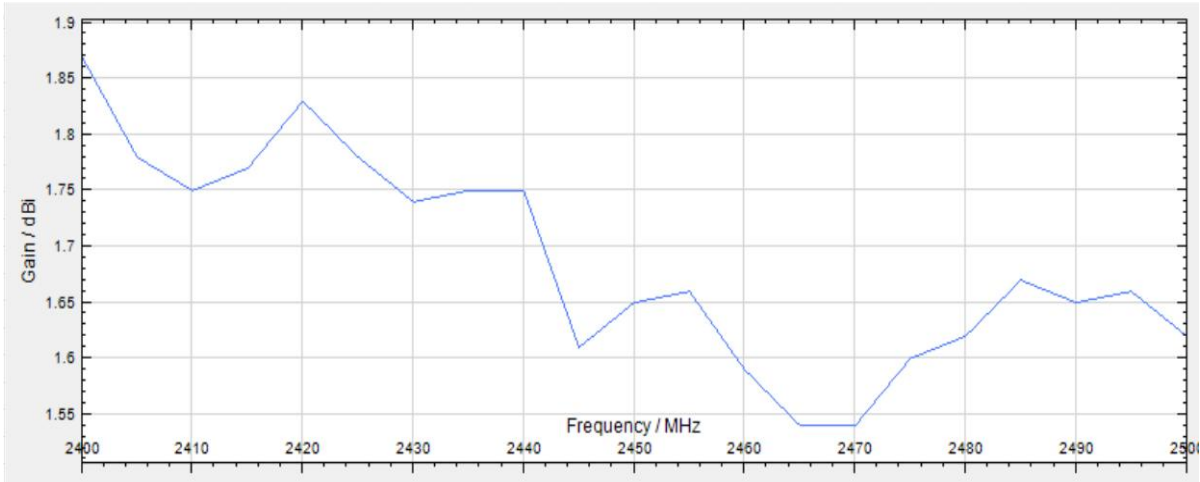
6.2 Return Loss



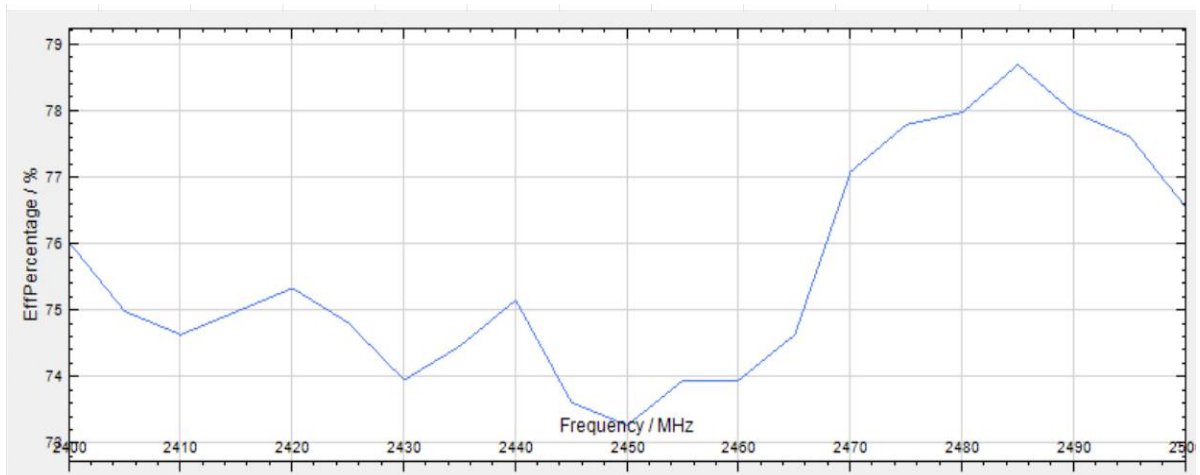


6. Performance Data

6.3 Gain



6.4 Efficiency



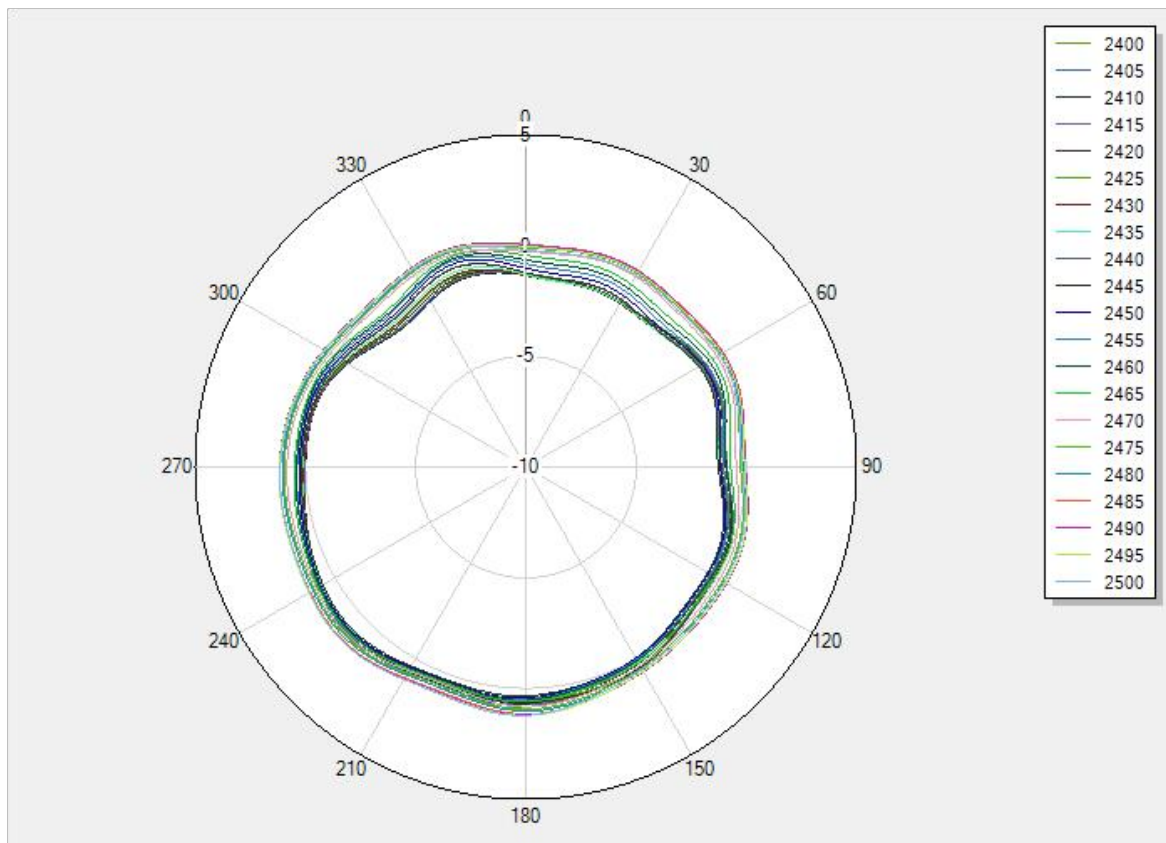
6.5 Antenna Gain & Efficiency

Frequency(MHz)	2400	2425	2450	2475	2500
Gain(dBi)	1.87	1.78	1.65	1.6	1.62
Efficiency(%)	76.03	74.82	73.28	77.8	76.56



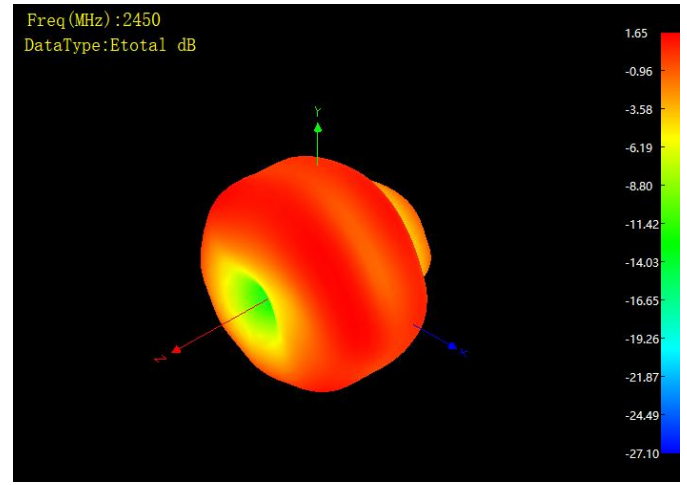
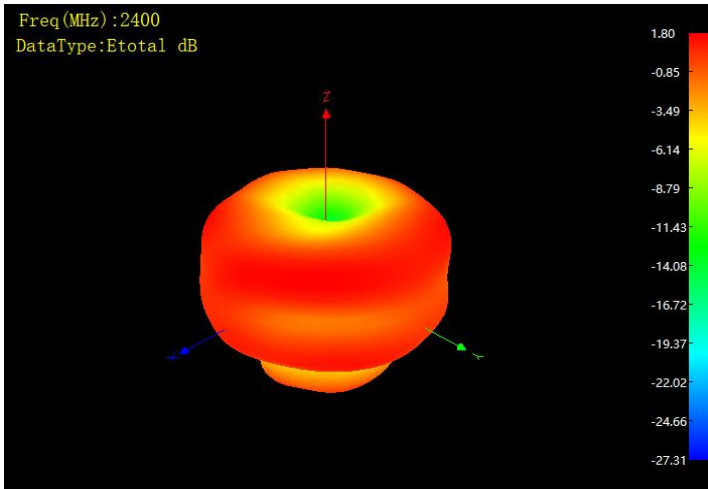
7. Radiation Patterns

7.1 2D Radiation Patterns

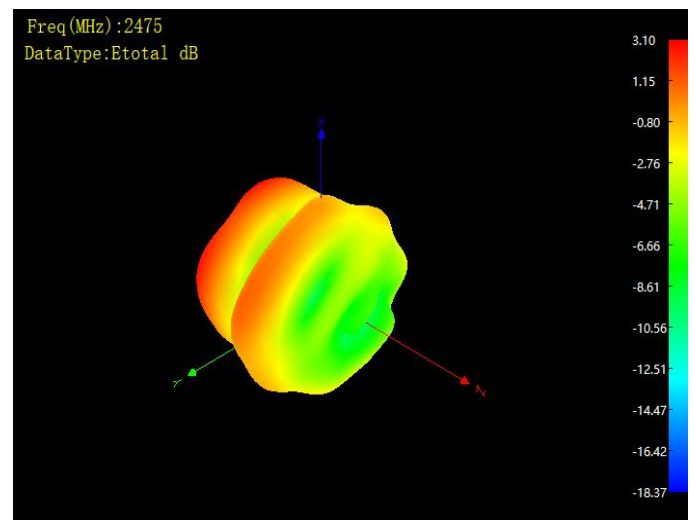
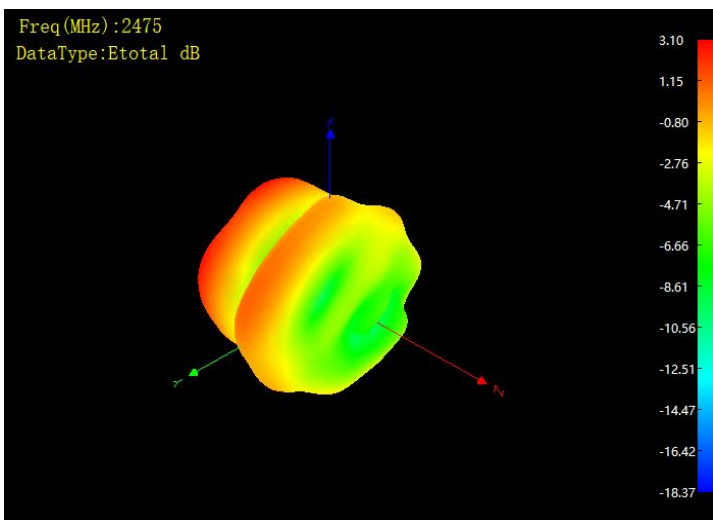




7.2 3D Radiation Patterns—2400MHz、 2450MHz



7.2 3D Radiation Patterns—2475MHz、 2500MHz





DECLARATION:

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