



天线规格书

Antenna Datasheet

2.4G弹簧天线

型号:

BW2.4SNX12-3Z9

描述:

2.4G 弹簧天线

特性:

2400-2500MHz频率范围

结构: 360°全向辐射

尺寸: 12mm x Ø 3mm x 9mm

符合 RoHS & REACH 规定



目录

1. 产品描述	3
2. 产品规格	4
3. 实物图	5
4. 尺寸图	6
5. 测试设备	7-8
6. 性能数据	9-10
6.1 电压驻波比	9
6.2 回波损耗	9
6.3 增益	10
6.4 效率	10
6.5 天线增益与效率	10
7. 辐射模式图	11-12
7.1 2D辐射模式图	11
7.2 3D辐射模式图	12

本着为用户提供更好服务的原则，深圳市蝙蝠无线技术有限公司（下称“蝙蝠无线”）在本手册中将尽可能地向用户呈现详实、准确的产品信息。但鉴于本手册的内容具有一定的时效性，蝙蝠无线不能完全保证该文档在任何时段的时效性与适用性。蝙蝠无线有权在没有通知的情况下对本手册上的内容进行更新，恕不另行通知。为了得到最新版本的信息，请尊敬的用户定时访问蝙蝠无线官方网站或者与蝙蝠无线工作人员联系。感谢您的包容与支持！

BW2.4SNX12-3Z9

零件编号说明

BW	公司 / Company	蝙蝠无线 / Bat Wireless
2.4	频段 / Frequency	2400-2500MHz / 2400-2500MHz
S	名称 / Name	弹簧天线 / Spring Antenna
N	类型 / Type	内置 / Internal
X	常数 / Constant	X / X
12-3	尺寸 / Dimensions	12-3mm / 12-3mm
Z	特点 / Feature	直脚 / Straight
9	脚长 / Length	9 / 9

1. 产品描述 / Description

蝙蝠无线BW2.4SNX12-3Z9是一款是一种专为2.4GHz频段无线通信设计的紧凑型天线，采用弹簧状螺旋结构，兼具机械柔韧性与电气性能，抗震动、耐弯折，适合车载或移动设备。体积小，重量轻，支持PCB焊接，便于嵌入智能家居设备、无线模块。螺旋结构可降低多径干扰，增强复杂环境下的信号稳定性。

经典应用场景：

车载与移动设备：ETC终端、车载Wi-Fi、物流追踪器

物联网终端：智能家居传感器、工业无线模块

智能交通：轨道接触网监测

蝙蝠无线提供定制化服务以优化您的设备，我们拥有成熟的研发团队，能够迅速响应以满足您的需求。如果您有任何要求，请联系我们的销售和 FAE。



2. 产品规格 / Specification

参数 / Parameters	典型值 / Typ.	单位 / Unites	备注 / Notes
电气特性 / Electrical Characteristics			
类型 / Antenna Type	弹簧天线 / Spring Antenna		
频率 / Frequency Range	2400-2500	MHz	
输入阻抗 / Input Impedence	50	Ω	
驻波比 / V.S.W.R	<3		
增益 / Gain	1.7	dBi	
极化方式 / Polarization Type	垂直 / Vertical		
功率容量 / Power Capacity	50	W	
雷电保护 / Lightning Protection	-		
工作电压 / DC Voltage	-	V	
辐射体 / Radiator	-		
机械特性 / Mechanical Characteristics			
尺寸 / Dimensions	12 x $\varnothing$ 3 x 9	mm	
接口形式 / Connector Type	-		
电缆型号 / Cable Type	-		
电缆长度 / Cable Length	-	mm	
安装方式 / Mount way	-		
颜色 / Color	金黄色		
材料 / Meterial	磷铜镀金		
重量 / Weight	0.17	g	
环境特性 / Environmental Characteristics			
防护等级 / Waterproof Rating	-		
ROHS标准 / ROHS Complaint	符合		
工作温度 / Operating Temperature	-45~ +85	$^{\circ}\text{C}$	
存储温度 / Storage Temperature	-45~ +85	$^{\circ}\text{C}$	

3. 实物图 / Dimensions



4. 尺寸图 / Mechanical Drawing

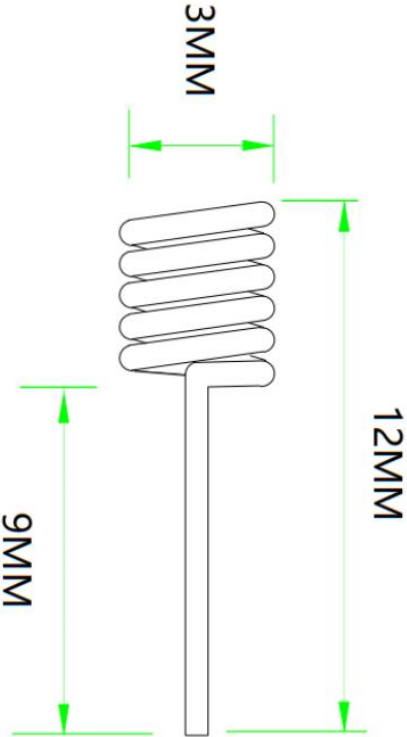
PARTS DRAWING

ROHS Compliant

REV	PRODUCT NO.	DATE	NAME	DESCRIPTION

Requirements:

- 1. The wire jacket shall be free from cuts or damage.
- 2. 100% continuity testing shall be performed, and all products must pass.
- 3. 100% full inspection is required, and all products must meet specifications.
- 4. Eco-friendly manufacturing processes shall be adopted, and finished products must comply with ROHS requirements.
- 5. Unless otherwise specified, general tolerances shall apply.



NO	Code	Name	Description	Qty
3		N	ST±0.125T	1
2		Spring Outer Ring	30±0.1	1
1		Wire	0.5 Phosphor Bronze Gold-plated	1

Frequency	2400-2500MHz
Gain	1.7DBi
VSWR	<3
Polarization	Vertical
Impedance	50Ω
Operating Temperature	-45°C~85°C
Storage Temperature	-45°C~85°C

ANGLE PROJECTION



GENERAL TOLERANCE

100~200 :	± 3.00
50~100 :	± 2.00
25~50 :	± 0.20
10~25 :	± 0.15
1~10 :	± 0.10

PRODUCT NAME				
Spring Antenna-2400-2500MHz-L=12MM				
UNIT	MM	SIZE	1:3	
PAGE	1 OF 1	FORNMT	A4	

5. 测试设备 / Test Equipment



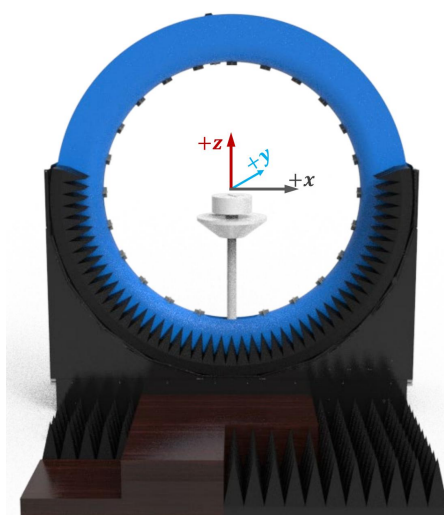
Keysight/E5071C 网络分析仪



R&S/CMW500 综测仪



R&S/SMBV100B 信号源



DT-3500 Datasheet / 系统规格

Specification:	Description
Test Frequency /测试频域:	400MHz-8.5GMHz
System Size /系统尺寸:	L*W*H=4*3.5*3.5m
Number of Probes /探头数目:	23 (Probe) + 1 (link)
Interval Angle /采样夹脚:	15°
Sampling Diameter /采样直径:	2200mm
Carring Capacity /承载能力:	≤40kg

Testing Capability / 测试能力

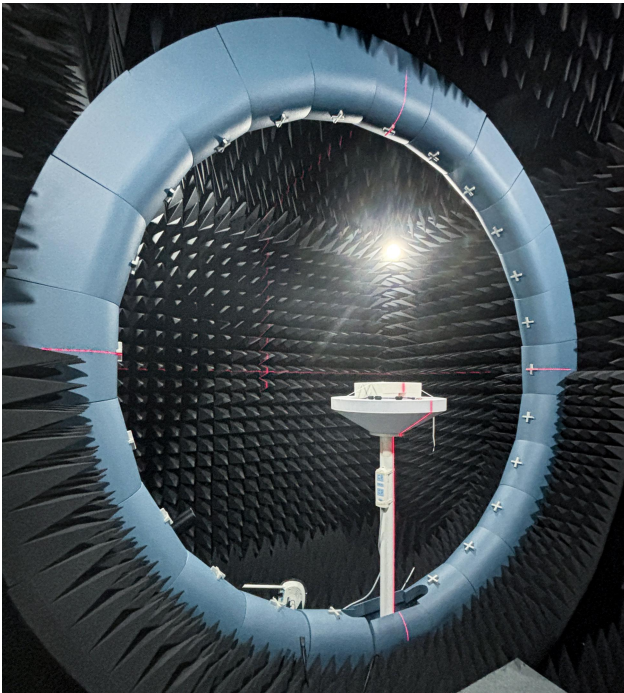
Description / 能力描述

Active measurement
有源测试

Capability /测试指标: TRP、TIS、EIRP、EIS,. etc
Mode /测试制式: 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

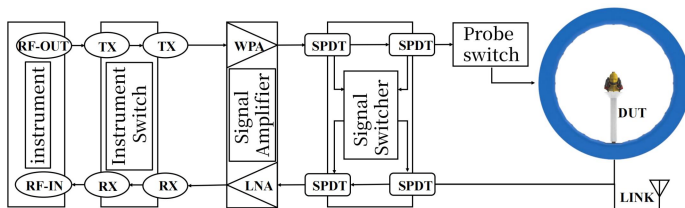
Passive measurement
无源测试

Test category /测试类型: Gain、Efficiency、2D pattern、3D pattern、Pattern roundness、Axial Ratio、ECC、Phase center,. etc
Polarization /极化方式: Circular polarization, linear polarization, elliptical polarization

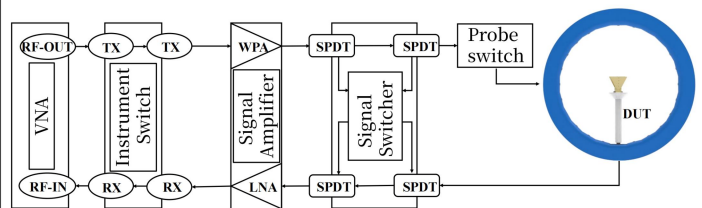


RF Link diagram of multi probe spherical near-field testing system 多探头球面近场测试系统射频链路图

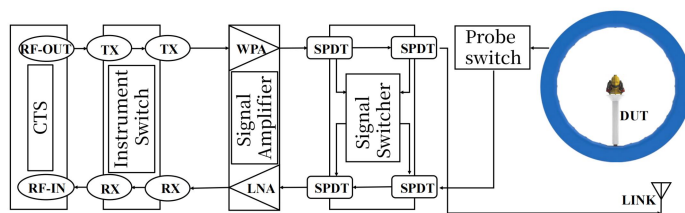
RF Link Overview
总射频链路图



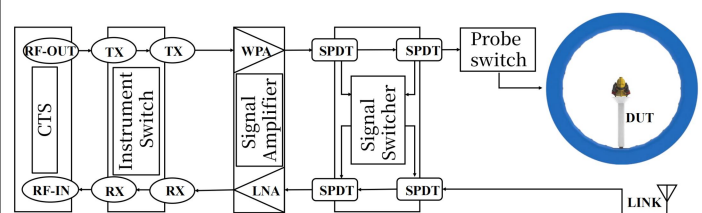
RF Link of Passive measurement
无源测试链路图



RF Link Overview
总射频链路图



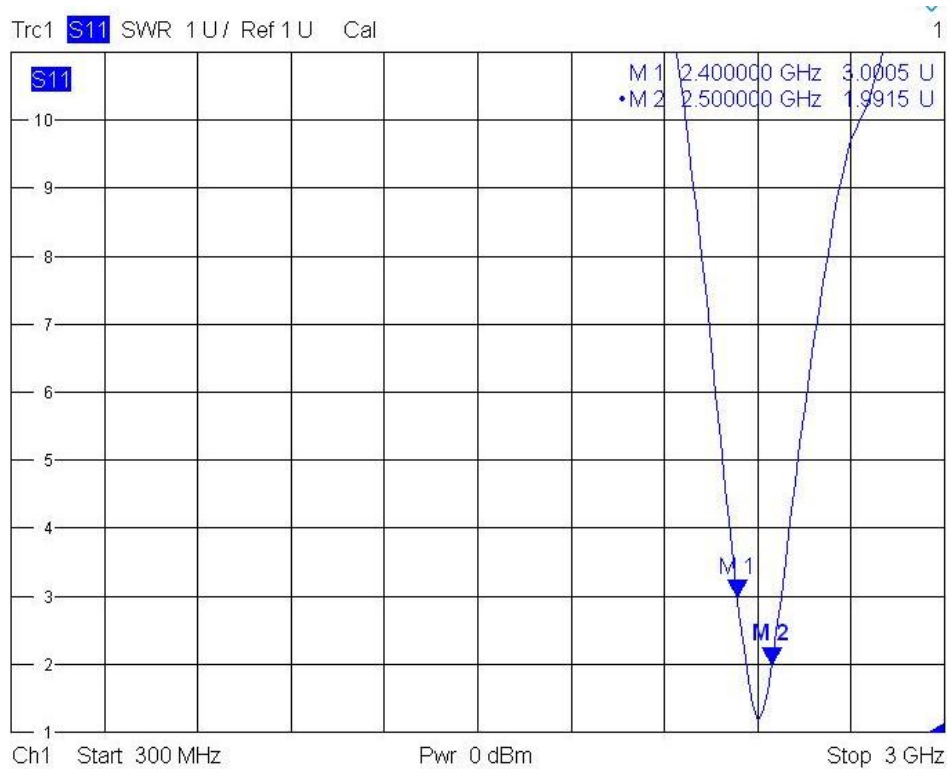
RF Link of Passive measurement
无源测试链路图



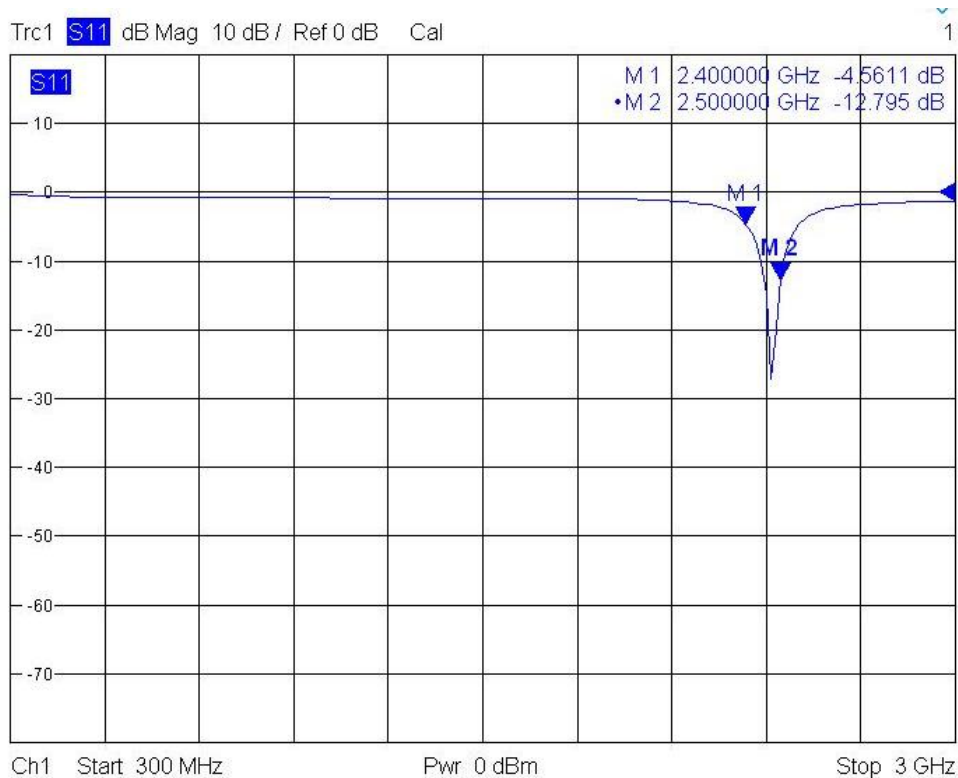


6. 性能数据 / Performance Data

6.1 电压驻波比 / VSWR

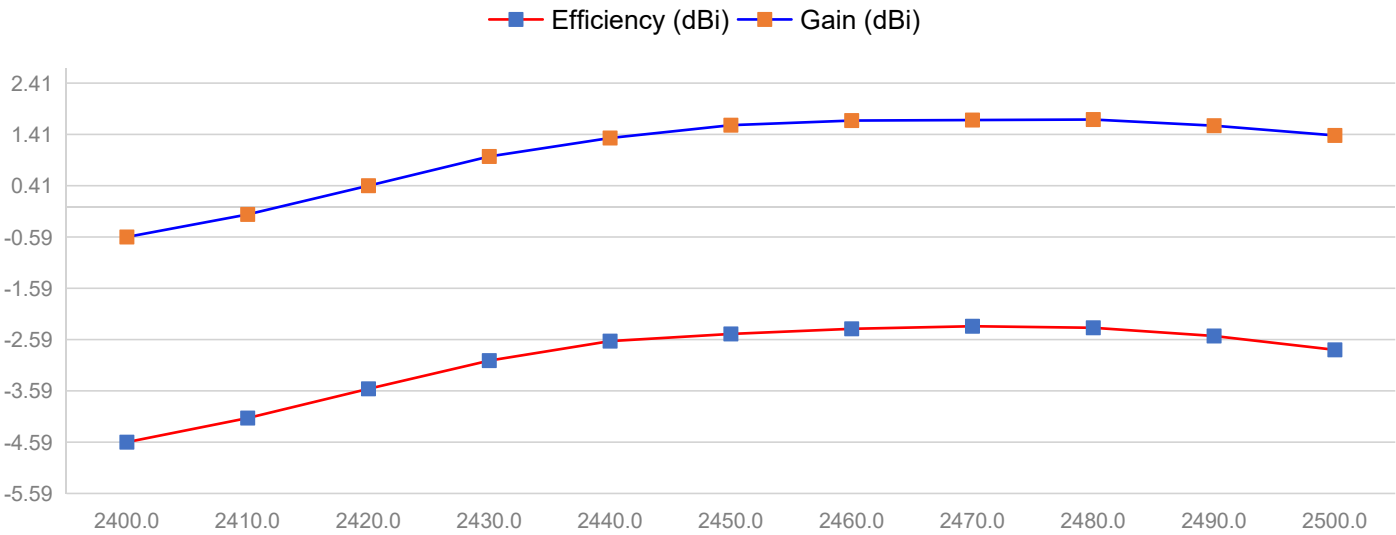


6.2 回波损耗 / Return Loss

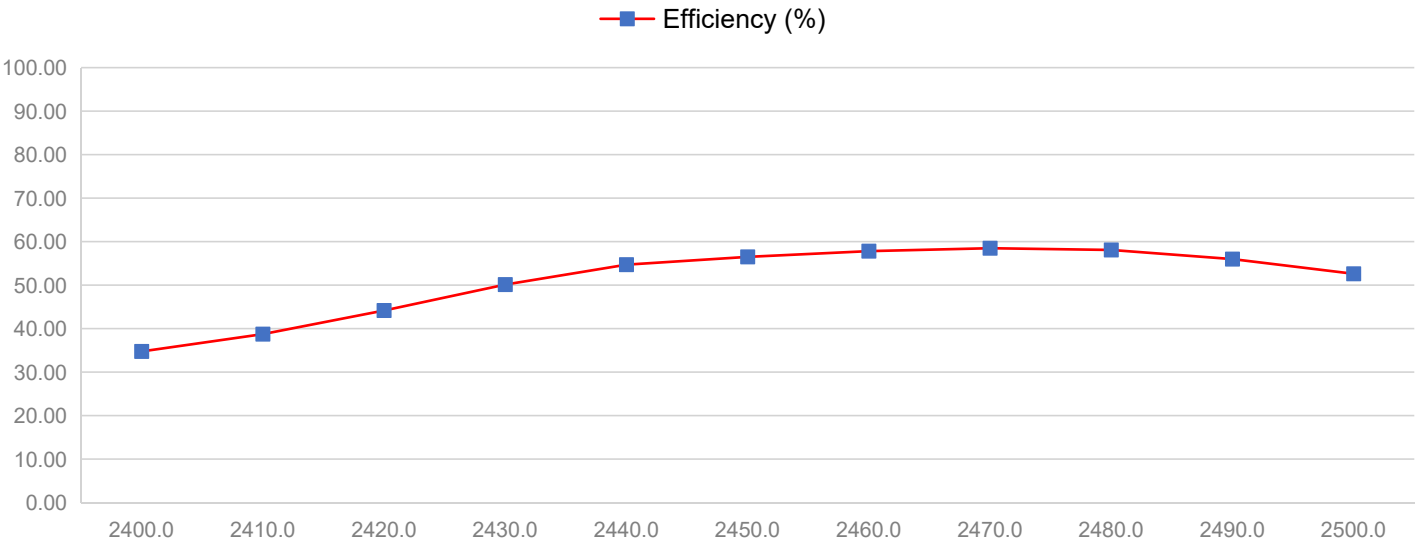


6.性能数据 / Performance Data

6.3 增益 / Gain



6.4 效率 / Efficiency



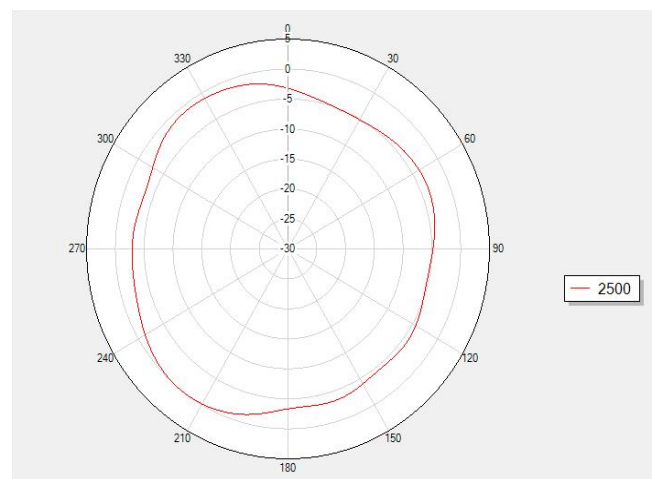
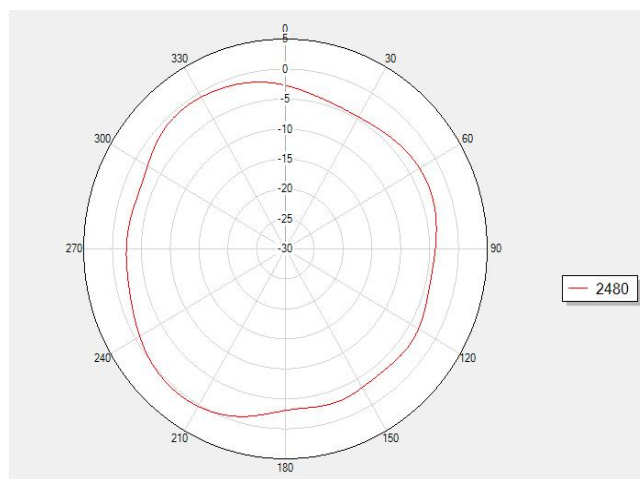
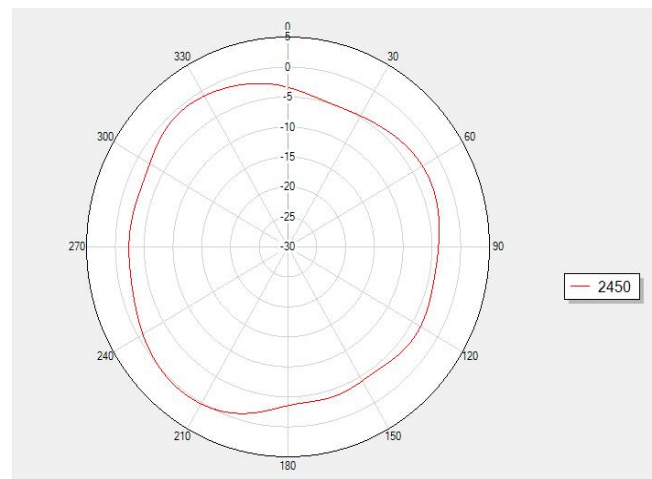
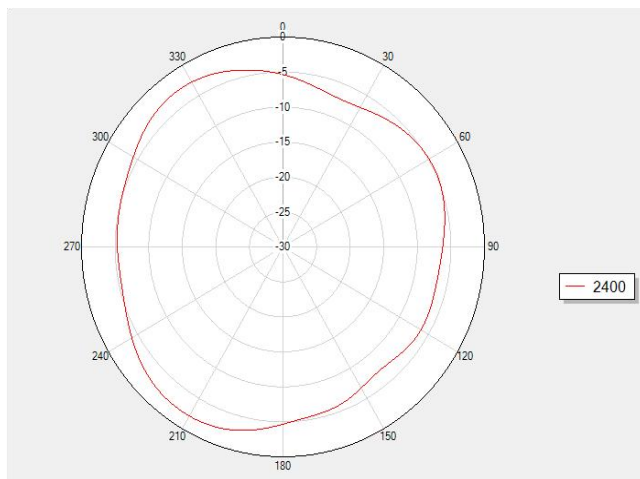
6.5 天线增益与效率

频率 / Frequency (MHz)	2400	2450	2500
最大增益 / Gain (dBi)	-0.59	1.59	1.39
效率 / Efficiency (%)	34.75	56.49	52.6



7. 辐射模式 / Radiation Patterns

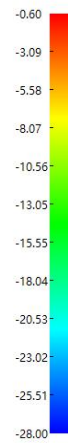
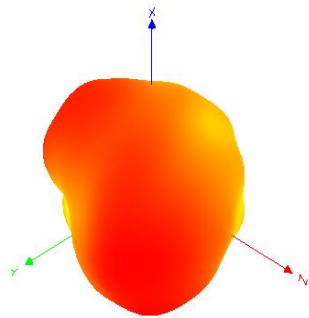
7.1 2D 辐射模式图 / Radiation Patterns



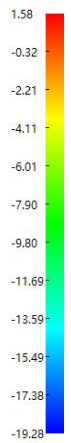
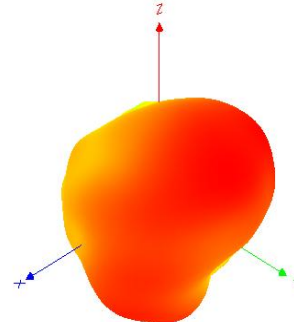


7.2 3D辐射模式图 / 3D Radiation Patterns

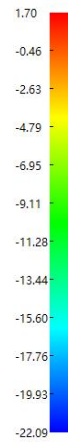
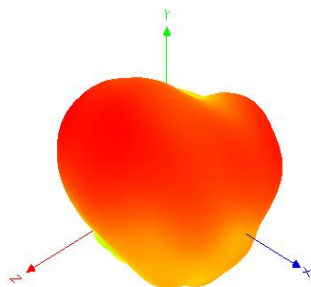
Frequency (MHz) : 2400



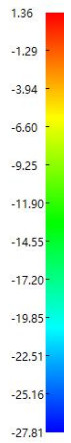
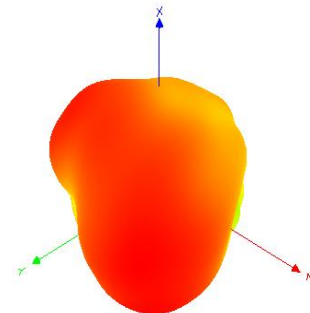
Frequency (MHz) : 2450



Frequency (MHz) : 2480



Frequency (MHz) : 2500



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