

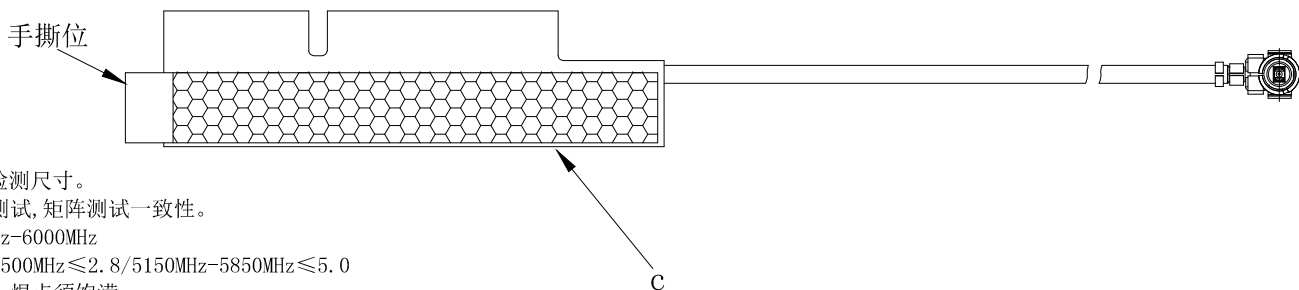
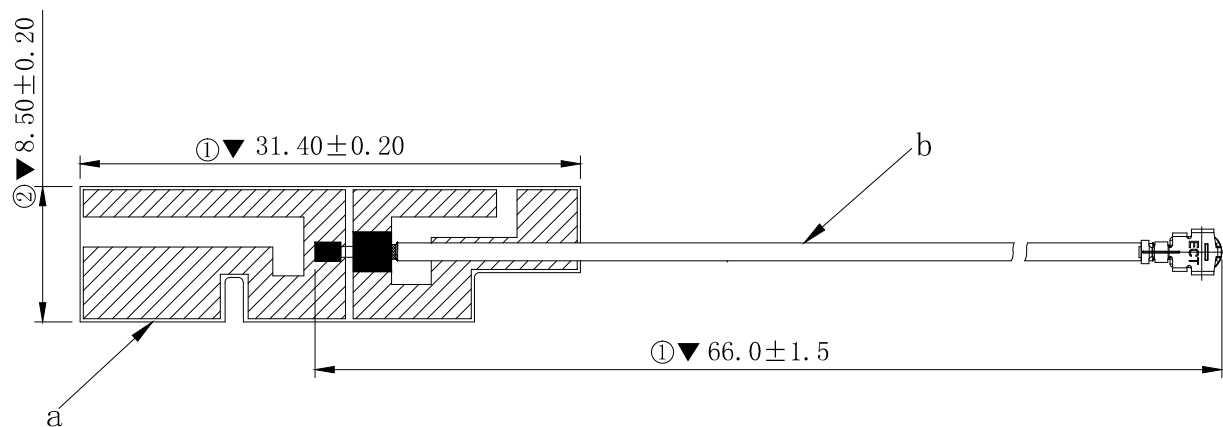
**1. Antenna Specification/天线标准**

Antenna Specification/天线技术参数			
Electrical Specification/电气特性			
Item/目录	Specification/规格		Comment/备注
Freq. Range/频段范围	2400MHz-2500MHz/5150MHz-5850MHz		
Impedance/阻抗	50 ( $\Omega$ )		
VSWR/驻波比	$\leq 2.8$	$\leq 5.0$	
Directional/辐射方向	Omni directional/全向辐射		
Polarization/极化形式	Vertical polarization/垂直极化		
Peak Gain/峰值增益	3.68dBi	4.67dBi	
Test condition/测试条件	passive test (无源测试)		
Total Efficiency/无源效率	$\geq 25\%$	$\geq 30\%$	
Mechanical Specification/机械指标			
Antenna type/天线类型	内置天线		
Connector Type/连接器类型	USS RF-I		
RF Cable Type/射频线型号	113 黑色线		
Connector Torque Test/连接器扭力	N/A		
Connector Pull Test/连接器拉力	N/A		
Salt Spray/盐雾测试	48 (H)		
Environmental Specification /环境指标			
Operating temp/工作温度	-40°C ~ +80°C		
Storage temp/存储温度	-40°C ~ +80°C		

**2. Antenna Picture/天线图片**



REV.	ECN NUMBER	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
X1	ECN23****	FIRST RELEASE	09/27' 23	刘晓峰	丁第斌	牛宝星



注:

1. 标有“▼”为QC重点检测尺寸。
2. 测试要求: 全检VSWR测试, 矩阵测试一致性。  
网分带宽设置: 100MHz-6000MHz  
驻波范围: 2400MHz-2500MHz ≤ 2.8 / 5150MHz-5850MHz ≤ 5.0
3. 焊接不能虚焊、假焊, 焊点须饱满。
4. 符合RoHS指令。

NOTE:

1. MARKED WITH "▼" FOR QC KEY SIZE DETECTION.
2. TEST REQUIREMENTS: ALL INSPECTION VSWR TEST, MATRIX CONSISTENCY TEST.  
NETWORK BANDWIDTH IS SET: 100MHz-6000MHz  
STANDING WAVE RANGE: 2400MHz-2500MHz ≤ 2.8 / 5150MHz-5850MHz ≤ 5.0
3. THE WELDING CAN'T VIRTUAL WELDING, WELDING, SOLDER JOINTS MUST BE FULL.
4. COMPLY WITH THE ROHS DIRECTIVE.

ITEM	PART NAME	Q'TY	MATERIAL / FINISH
c	背胶	1	EVA+双面3M9888T, T=0.6mm, 30.4*4.4mm
b	USS RF CABLE	1	USS RF CABLE, G1, SG, 113BK
a	PCB	1	PCB_FR4_31.4*8.5*0.6mm无卤_黑油



GENERAL TOLERANCE

.XXX ± 0.10	
.XX ± 0.20	
.X ± 0.3	

SCALE:

1:1

UNIT:

mm

SIZE:

A4



DRAWN:

刘晓峰

DATE:

09/27' 23

CHECK:

DATE:

APPROVE:

DATE:

DWG. NO:

TITLE:

600-V602-01

PARTS NO. (INTENDED USE):

81800V602

ANT\_IN\_2450\_TO\_USS-I\_OD113\_BK\_L66MM  
Customer Chart

REV.

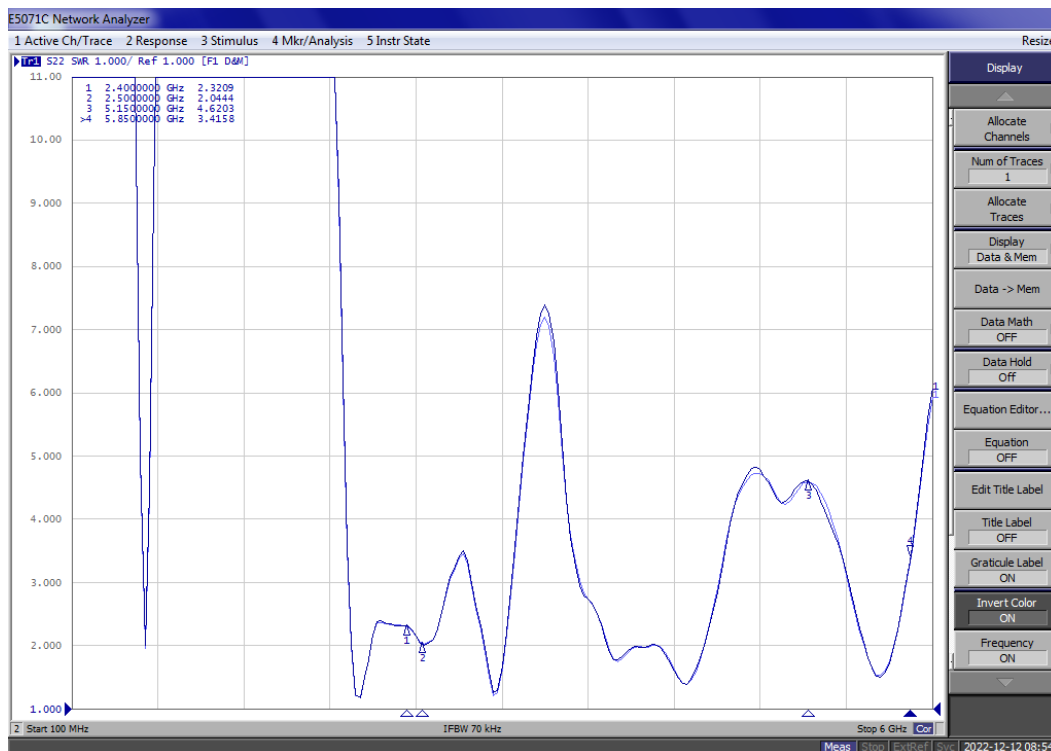
X1

SHEET:

1/1

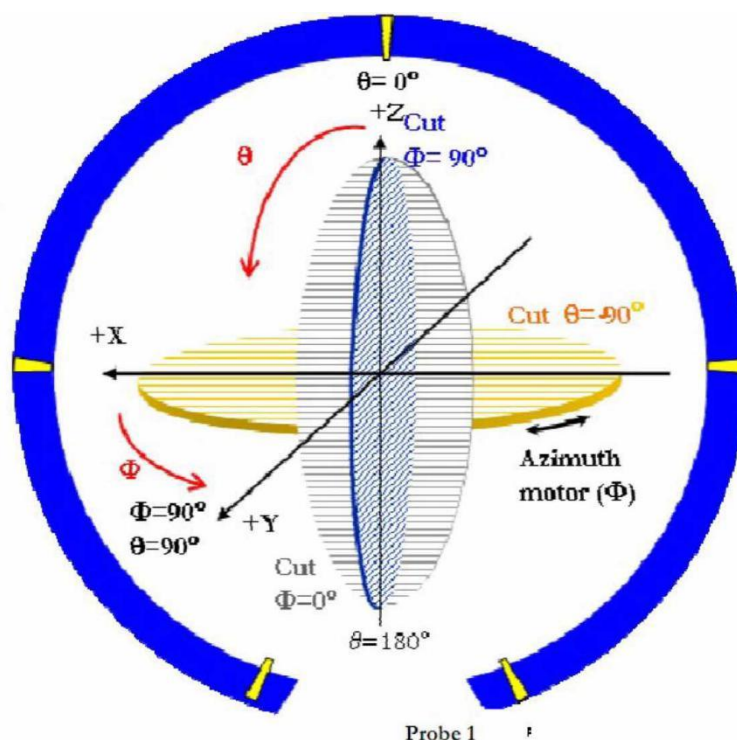
## 4. Antenna test result/测试结果

### 4.1 Return loss/Smith chart/VSWR/回波损耗/史密斯图/驻波比

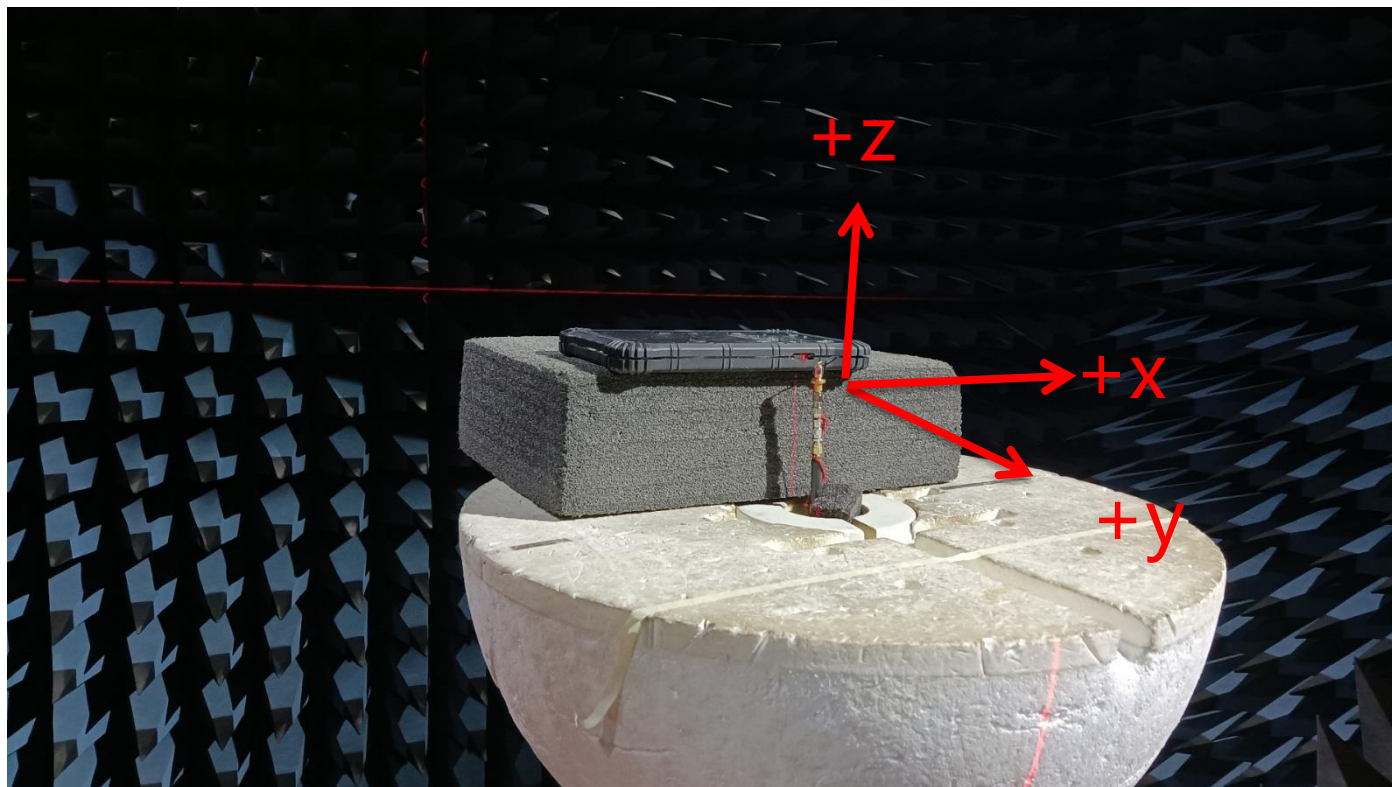


### 4.2 The gain and total efficiency test/增益和效率测试

#### 4.2.1 The definition of coordinate system/坐标系定义-Satimo SG24



The coordinate system of Chamber/暗室坐标系



The production test position/天线测试放置位置

**4.2.2 The test result of total efficiency and total gain/天线效率及增益测试结果**
**2400MHz-2500MHz**

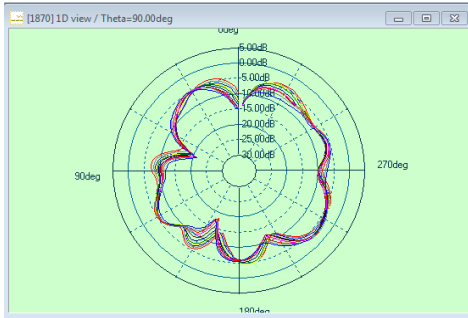
Frequency	Efficiency(%)	Gain (dBi)
2400MHz	31%	3.68
2410MHz	29%	3.32
2420MHz	28%	3.11
2430MHz	29%	3.08
2440MHz	29%	3.16
2450MHz	28%	3.32
2460MHz	26%	3.06
2470MHz	27%	3.06
2480MHz	29%	3.33
2490MHz	30%	3.57
2500MHz	30%	3.43
AVG	29%	3.28

**5150MHz-5850MHz**

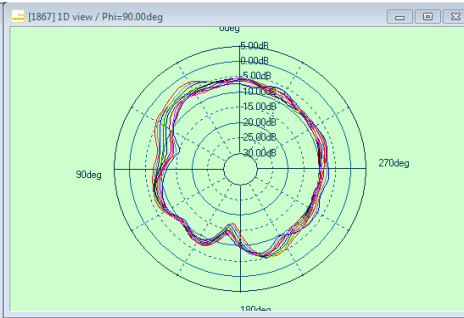
Frequency	Efficiency(%)	Gain (dBi)
5150MHz	36%	2.13
5200MHz	36%	2.25
5250MHz	30%	1.55
5300MHz	36%	2.27
5350MHz	33%	2.27
5400MHz	39%	2.80
5450MHz	52%	4.35
5500MHz	50%	3.96
5550MHz	60%	4.67
5600MHz	59%	4.42
5650MHz	57%	4.35
5700MHz	55%	3.88
5750MHz	51%	3.97
5800MHz	38%	2.86
5850MHz	36%	2.91
AVG	44%	3.24

## 4.2.3 The antenna radiation pattern(2D)/天线辐射方向图 ( 2D )

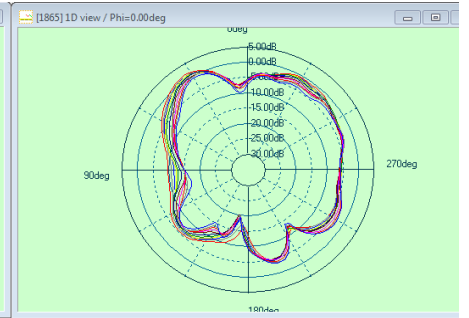
### 2400MHz -2500MHz



XOY

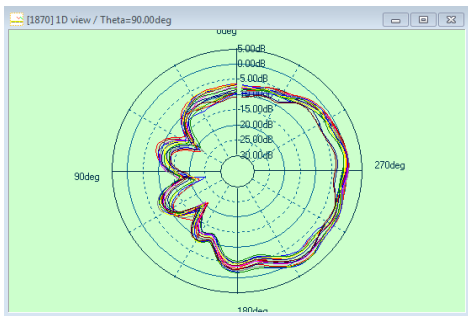


YOZ

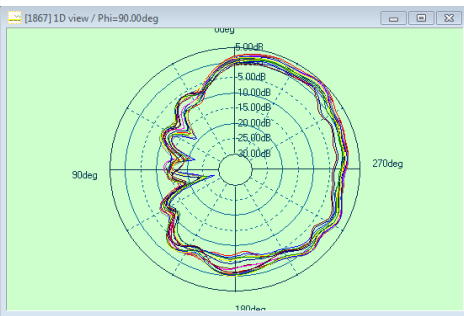


XOZ

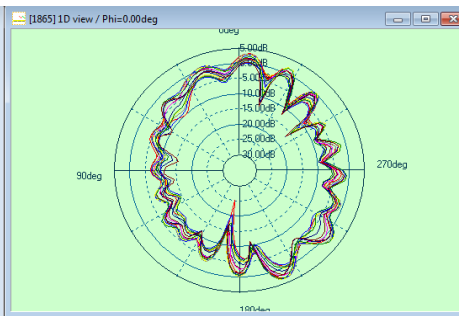
### 5150MHz -5850MHz



XOY



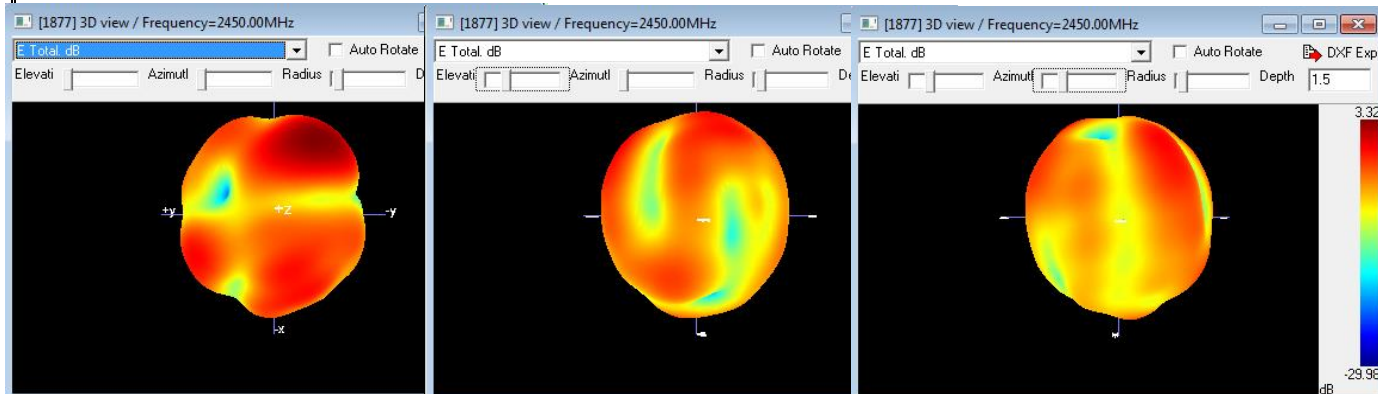
YOZ



XOZ

## 4.2.4 The antenna radiation pattern(3D)/天线辐射方向图 ( 3D )

Frequency/频点 2450MHz

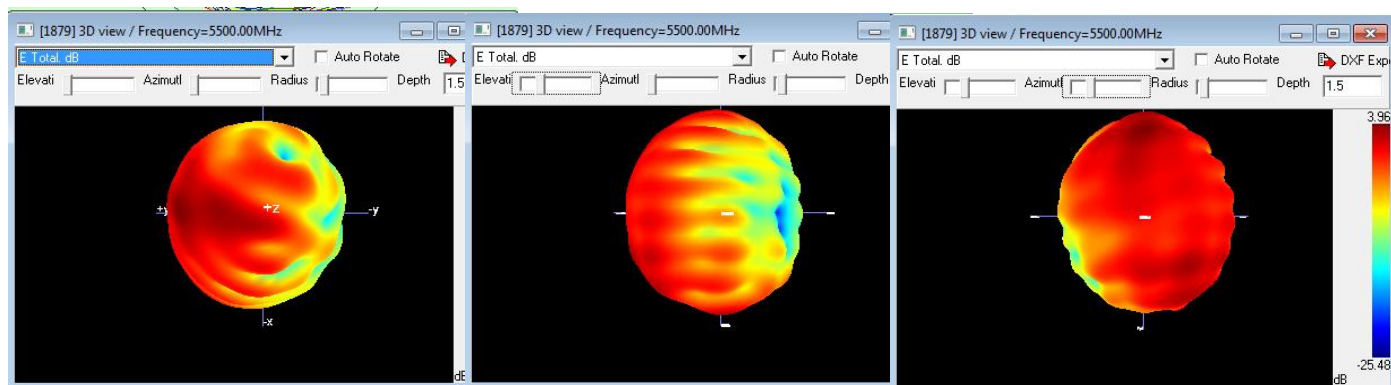


XOY

YOZ

XOZ

Frequency/频点 5500MHz



XOY

YOZ

XOZ