

**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	2400~2500MHz 5150~5850MHz	
Impedance/阻抗	50 ( $\Omega$ )	
VSWR/驻波比	2400-2500 MHz < 2.0 5150-5850 MHz < 2.0	
Directional/辐射方向	Omni directional	
Polarization/极化形式	Vertical	
Peak Gain/峰值增益	2400MHz-2500MHz: 1.78(dBi) 5150MHz-5850MHz: 4.03(dBi)	
Test condition/测试条件	passive test ( 无源测试 )	
Total Efficiency/无源效率	2400MHz~2500MHz $\geq$ 65% 5150MHz~5850MHz > 55%	

**Mechanical Specification/机械指标**

Antenna type/天线类型	胶棒天线	
Connector Type/连接器类型	RP-SMA-J	
RF Cable Type/射频线型号	RG178	
Connector Torque Test/连接器扭力	N/A	
Connector Pull Test/连接器拉力	$\geq$ 3.0Kgf	
Salt Spray/盐雾测试	48 (H)	

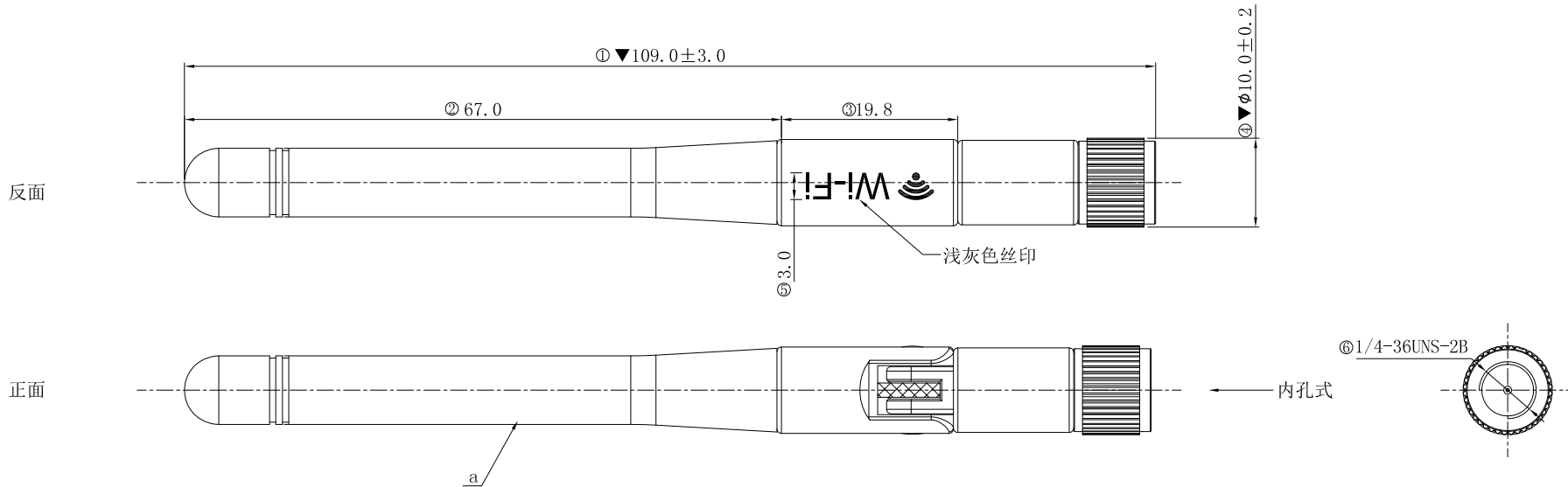
**Environmental Specification /环境指标**

Operating temp/工作温度	-40°C ~ +75°C	
Storage temp/存储温度	-40°C ~ +75°C	

## 2. Antenna Picture/天线图片



REV.	ECN NUMBER	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
A	ECN192067	正式发行	03/30'20	梁兑泉	丁第斌	张英杰
	ECN214691	*2内部结构和供应商变更	12/28'21	梁兑泉	丁第斌	牛宝星



说明:

- 各部件装配完后不得有油污、划痕、变形等外观不良。
- 各部件装配完成后无明显色差。
- 丝印要求: 字体Arial、H=3.00mm;  
丝印颜色: PMS Cool Gray 4C/浅灰色。
- 本体与连接轴的装配后保持力: 3KG MIN;  
连接器扭力为: 0.2~0.6 Kg-cm。
- 标有“▼”为QC重点检测尺寸。
- 频率范围: 2400-2500 MHz & 5150-5850 MHz, ≤2.0;  
测试要求: VSWR测试全检, 矩阵测试。
- 有害物质须符合ECT《QE-Q-19-001-环境有害物质管理基准》管控标准。

NOTES:

- After the assembly of different parts can not have bad appearance of greasy dirt, scratches, deformation, etc.
- The assembly after the completion of the various components without clear off color.
- The printing requirement: Arial font, H = 3.00mm;  
Screen printing color: PMS Cool Gray 4 c/light grey.
- The ontology and the connecting shaft assembly after retention: 3KG MIN;  
Connector torque is: 0.2 ~ 0.6 Kg - cm.
- Marked with "▼" key size detection for QC.
- Frequency range: 2400-2500 MHz & 5150-5850 MHz, 2.0 or less.  
Pattern test requirements: the VSWR test all inspection, test matrix
- HSF shall conform to the standard QE-Q-19-001 Environmental Hazardous Substances Management.

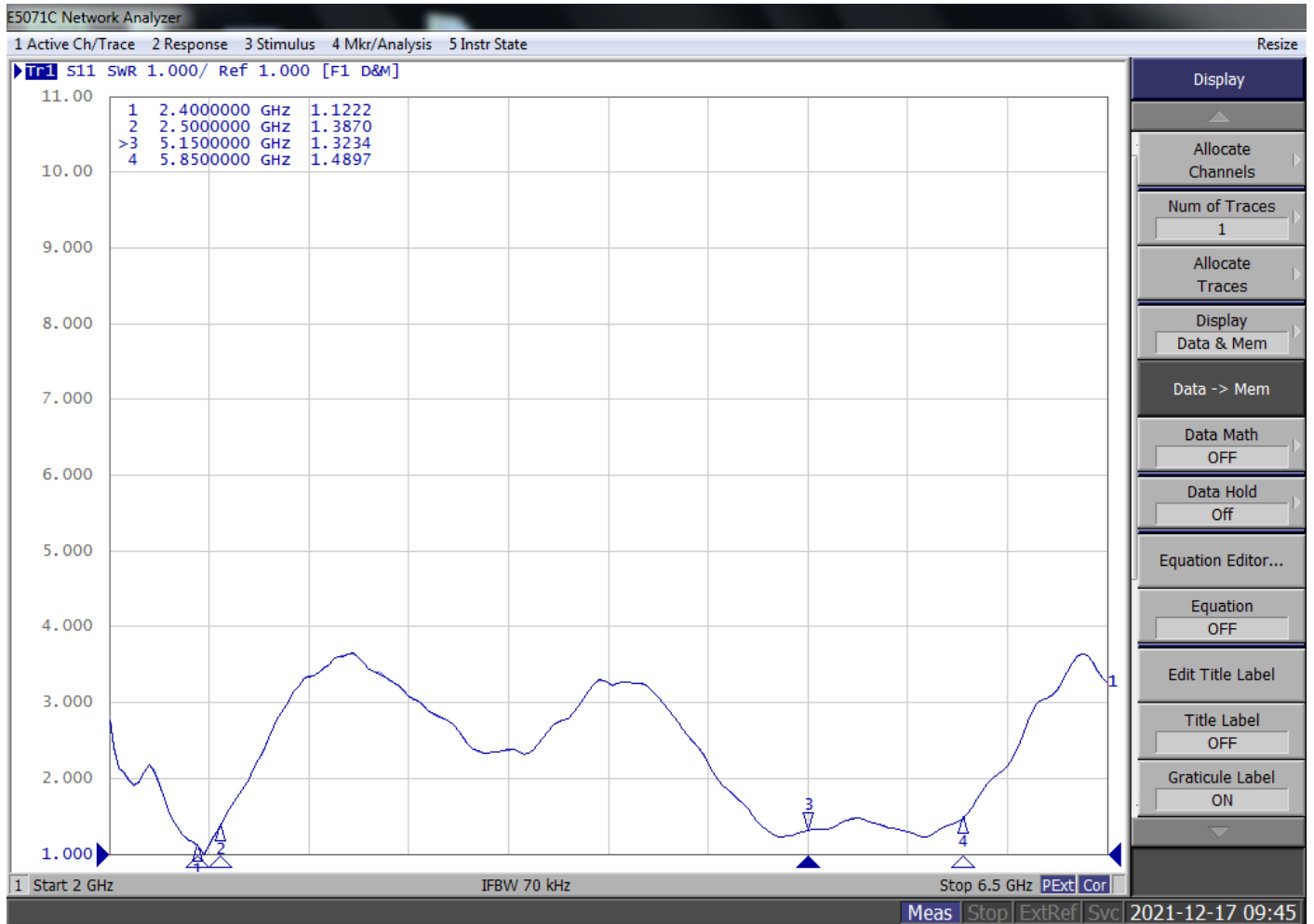
a	胶杆天线	1	外置天线2.4/5.8G 110*10黑色胶杆公头母针
ITEM	PART NAME	Q' TY	MATERIAL / FINISH



GENERAL TOLERANCE		SCALE: 1:1	DRAWN: 梁兑泉	DATE: 12/28'21	DWG. NO: 600-U330-01	TITLE: ANT_EX_2.4/5.8G_110*10_BK PR RP SMA-J	REV. B
XX. ± 2.00	XX. ° ± 3°	UNIT: mm	CHECK:	DATE:	PARTS NO. (INTENDED USE): 81800U330		SHEET: 1/1
X. ± 1.00	X. ° ± 2°	SIZE: A4	APPROVE:	DATE:			
.X ± 0.50	.X ° ± 1°						

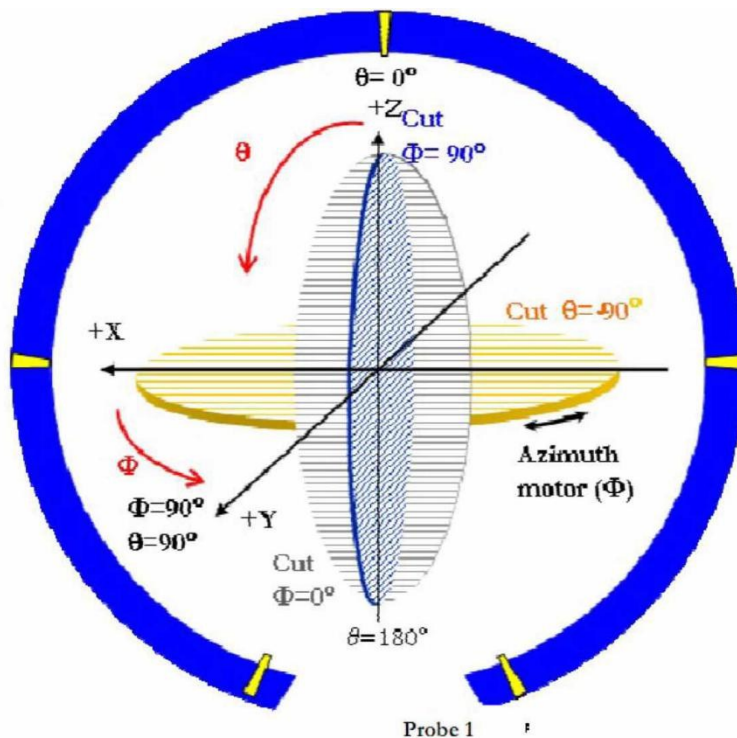
## 4. Antenna test result/测试结果

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

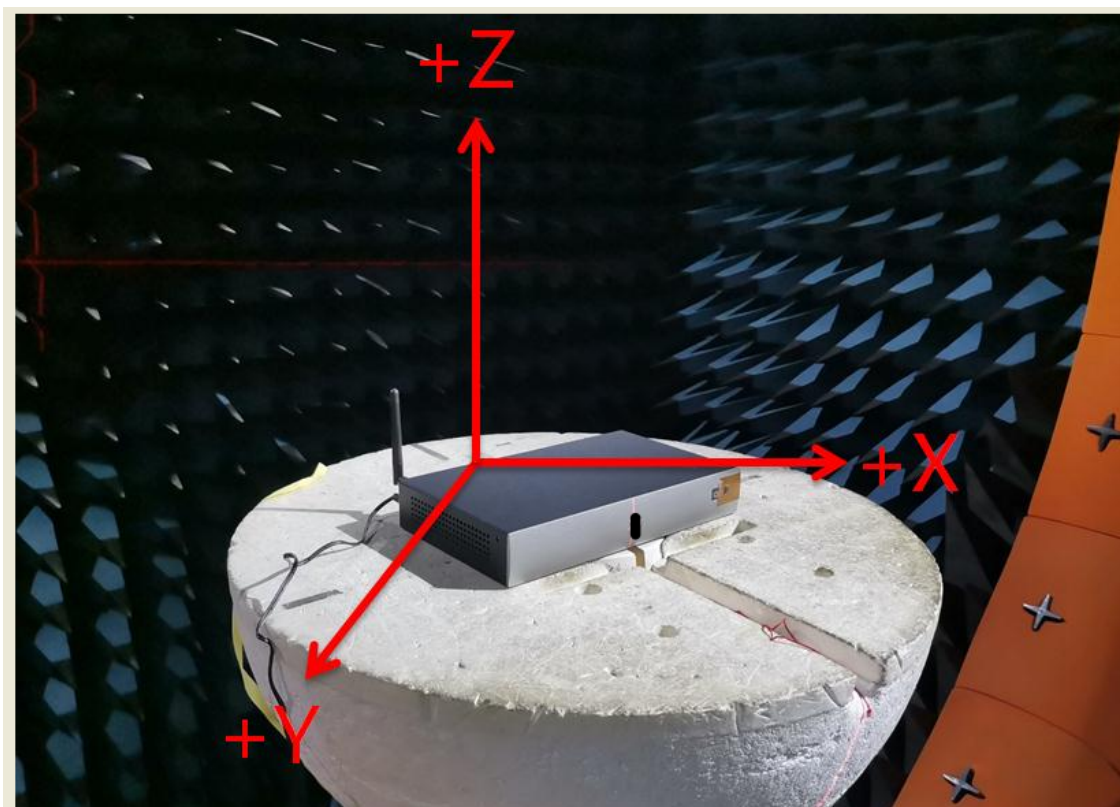


**4.2 The gain and total efficiency test/增益和效率测试**

**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

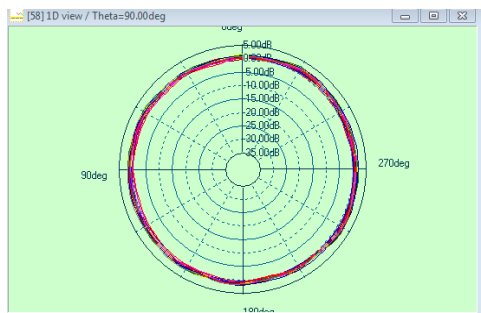
Frequency	Efficiency(%)	Gain (dBi)
2400MHz	66%	0.91
2410MHz	65%	1.07
2420MHz	66%	0.99
2430MHz	68%	1.08
2440MHz	70%	1.31
2450MHz	69%	1.23
2460MHz	70%	1.27
2470MHz	73%	1.57
2480MHz	76%	1.76
2490MHz	75%	1.78
2500MHz	72%	1.59
AVG	70%	1.32

### 5150MHz-5850MHz

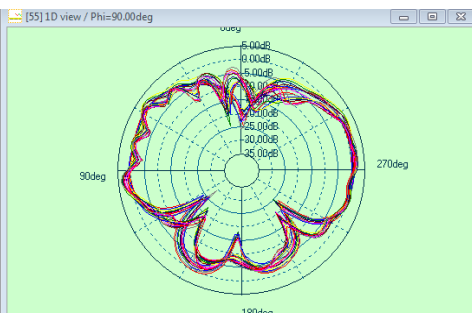
Frequency	Efficiency(%)	Gain (dBi)
5150MHz	78%	3.12
5200MHz	76%	3.00
5250MHz	73%	2.67
5300MHz	78%	2.96
5350MHz	63%	2.28
5400MHz	57%	1.94
5450MHz	68%	2.67
5500MHz	71%	3.35
5550MHz	72%	3.70
5600MHz	71%	3.86
5650MHz	71%	3.56
5700MHz	63%	2.90
5750MHz	62%	2.72
5800MHz	65%	3.26
5850MHz	75%	4.03
AVG	70%	3.07

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

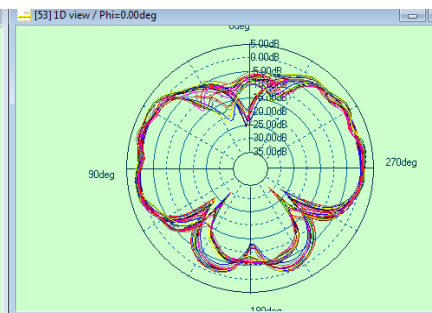
2400-2500MHz/5150-5850MHz



XOY



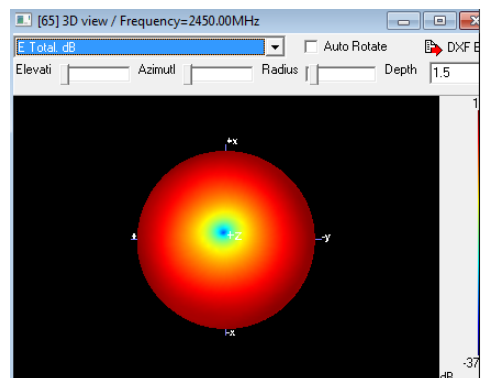
YOZ



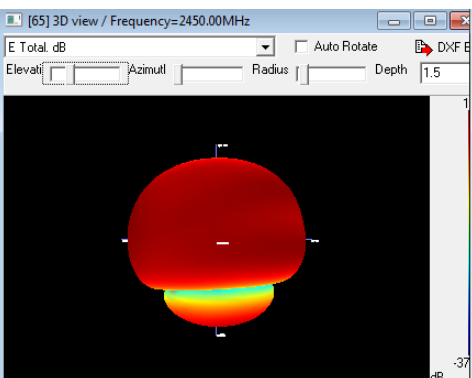
XOZ

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

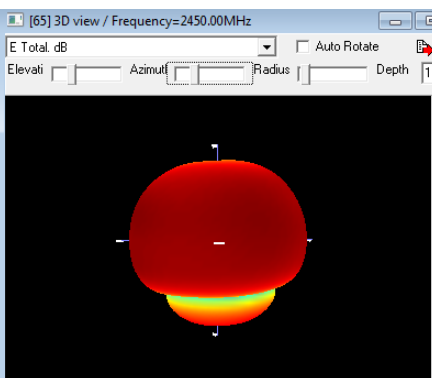
Frequency/频点 2450MHz



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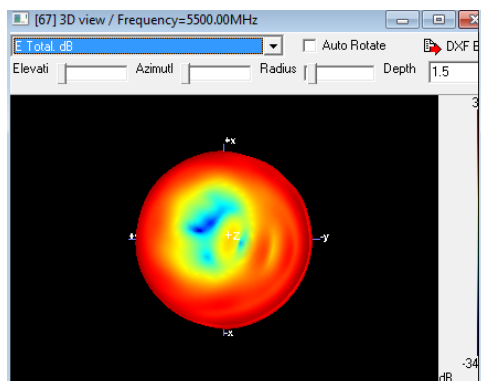


YOZ

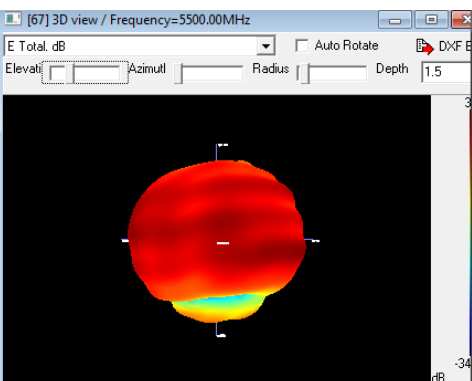


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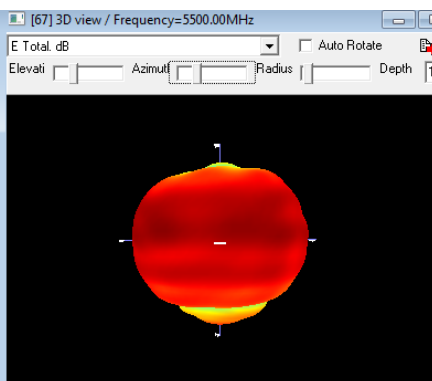
Frequency/频点 5500MHz



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