

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 (Ω)		
VSWR/驻波比	≤ 3	≤ 3	
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	-1.14dBi	-3.48dBi	
Test condition/测试条件	passive test (无源测试)		
Total Efficiency/无源效率	$\geq 62\%$	$\geq 28\%$	

Mechanical Specification/机械指标

Antenna type/天线类型	FPC 天线	
Connector Type/连接器类型	IPEX-1	
RF Cable Type/射频线型号	1.13 黑色线 L150mm	
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

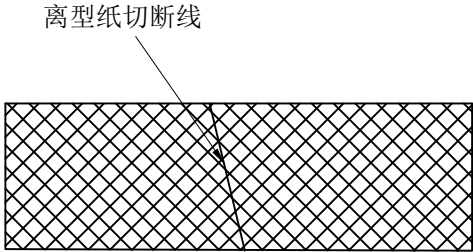
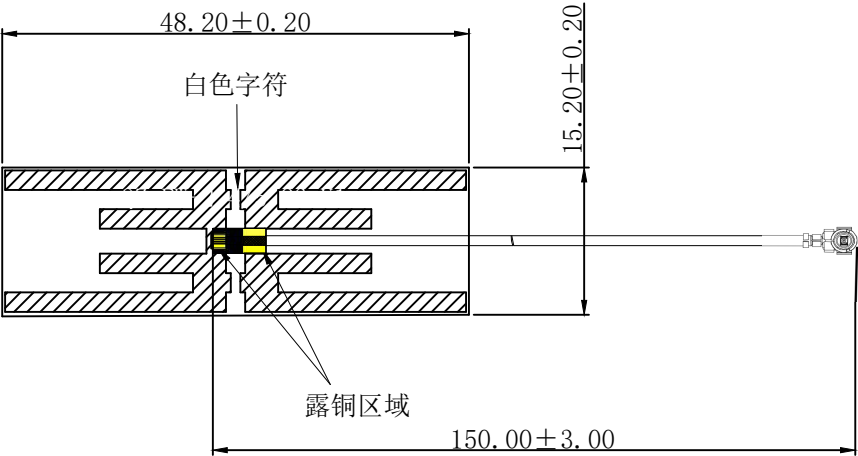
Operating temp/工作温度	-40°C ~ +60°C	
Storage temp/存储温度	-40°C ~ +60°C	

Address: 1-3/F, Area A, Building 8, Jinxiu Industrial Park, Xitian Community, Gongming Street, Guangming District, Shenzhen, Guangdong Province, China

2. Antenna Picture/天线图片



REV.	ECN NUMBER	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
X1	ECN25****	FIRST RELEASE	11/23' 25	刘晓峰	丁第斌	黄颖



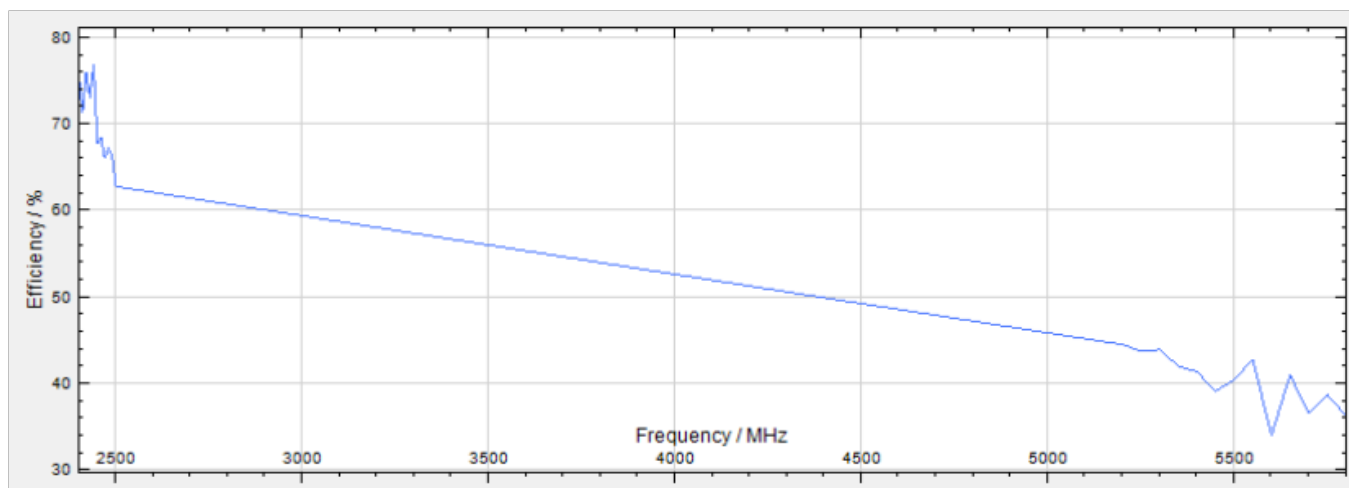
- 注:
- 图中  为线路区域,  为焊盘区域,  为背胶区域, 外形轮廓为基材区域。
 - 材料: FPC, 总厚度 $0.10 \pm 0.03\text{mm}$ (不含离型纸), 表面处理: 黑油。
 - 丝印字符要求: 白色。
 - FPC按照 整版 来料。
 - 标有“Q”为QC重点检测尺寸, 未注尺寸按照公差表要求。
 - 有害物质须符合ECT《QE-Q-19-001环境有害物质管理基准》管控标准。
- NOTE:
- DIAGRAM  FOR THE LINE AREA,  FOR NICKEL PLATING AREA,  FOR THE BACK GLUE AREA, THE OUTLINE FOR BASE MATERIAL AREA.
 - MATERIAL: FPC, THE TOTAL THICKNESS OF $0.10 \pm 0.03\text{MM}$ (EXCLUDING FROM TYPE PAPER), SURFACE TREATMENT: BLACK OIL.
 - THE PRINTING CHARACTER REQUIREMENTS: WHITE.
 - FPC ACCORDING TO THE SHEET OF THE MATERIAL.
 - MARKED WITH "Q" KEY SIZE DETECTION FOR QC, NOT NOTE SIZE ACCORDING TO THE TOLERANCE TABLE.
 - HSF SHALL CONFORM TO THE STANDARD QE-Q-19-001 ENVIRONMENTAL HAZARDOUS SUBSTANCES MANAGEMENT

USS RF CABLE	USS RF CABLE,G1,SG,1.13mm			
焊盘	OSP			
油墨	T=10 μ m			黑色 LPI SOLDER MASK
FPC	18ED Cu+20.0AD+25.0PI 单面电解铜			
双面胶	T=0.05mm		3M467	
各层材质	规格	品牌	型号	颜色或其它

	GENERAL TOLERANCE		SCALE: 1:1	DRAWN: 刘晓峰	DATE: 11/23' 25	DWG. NO:	TITLE: 8180HY007-2.4/5.8G	REV. X1
	天线图形 ±0.05mm	孔与外形 ±0.10mm						
	模切外形 ±0.2mm	孔与孔位置 ±0.05mm	UNIT: mm	CHECK:	DATE:	PARTS NO. (INTENDED USE):		SHEET: 1/1
	孔径公差 ±0.05mm	天线图形到外形 ±0.15mm						
		金手指油墨位置 ±0.30mm	SIZE: A4	APPROVE:	DATE:			

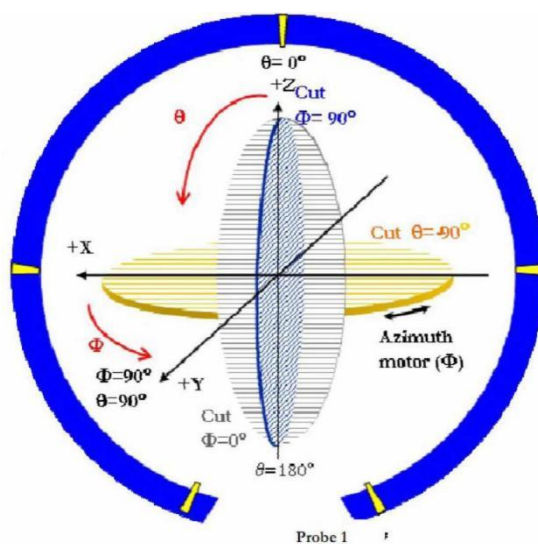
4.1 Return loss/Smith chart/VSWR/回波损耗/史密斯图/驻波比

WIFI



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

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

WiFi

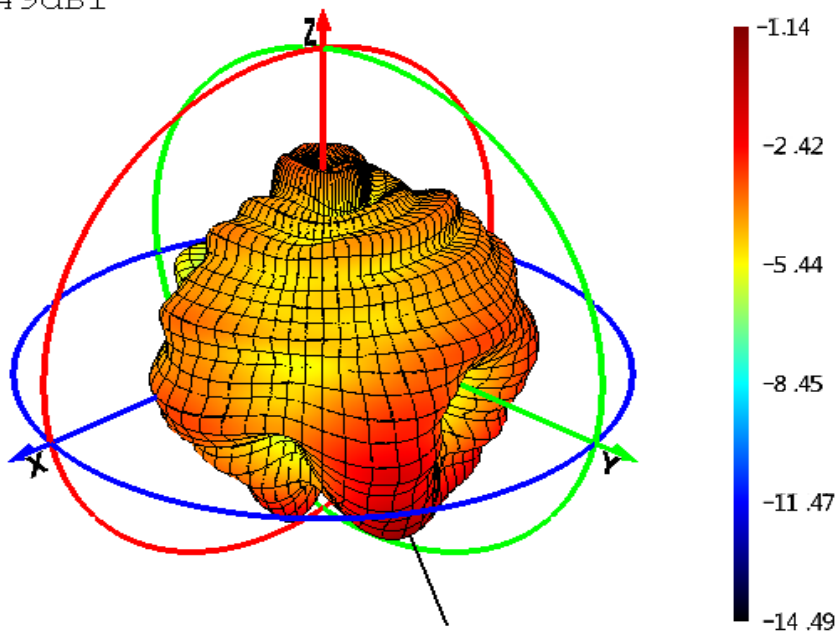
2400MHz-2500MHz/5150MHz-5850MHz

Frequency/Mhz	Gain / dBi	Efficiency / %
2400	-1.19	76.03
2410	-1.47	71.29
2420	-1.19	76.03
2430	-1.36	73.11
2440	-1.14	76.91
2450	-1.69	67.76
2460	-1.64	68.55
2470	-1.8	66.07
2480	-1.72	67.3
2490	-1.79	66.22
2500	-2.02	62.81
5150	-3.48	44.87
5200	-3.51	44.57
5250	-3.59	43.75
5300	-3.57	43.95
5350	-3.76	42.07
5400	-3.83	41.4
5450	-4.07	39.17
5500	-3.93	40.46
5550	-3.68	42.85
5600	-4.68	34.04
5650	-3.87	41.02
5700	-4.37	36.56
5750	-4.12	38.73
5800	-4.4	36.31

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

WIFI
2440MHz

MAX: -1.14dBi
MIN: -14.49dBi



WIFI
5150MHz

MAX: -3.48dBi
MIN: -23.45dBi

