

零件承認書

Approval Sheet

客戶名稱 Customer Name: **SYKJ**

產品料號 Product part number: **B.RC7.020**

產品名稱 Product name: **2.4GHz Omnidirectional Antenna**

全向天线 SMA Male Black, 黑色 L=189MM

供應商確認 Supplier confirmation		
審核 Checker	制作人 Producer	日期 Date
張禮波	楊興凱	2024.09.20

客戶簽署 Customer signature		
品保 QE	工程 RD	採購 Buyer

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1. Revision History

Revision	Date	Change Notification	Description
1.0	2024.09.24	First edition	Origin Version(初版)

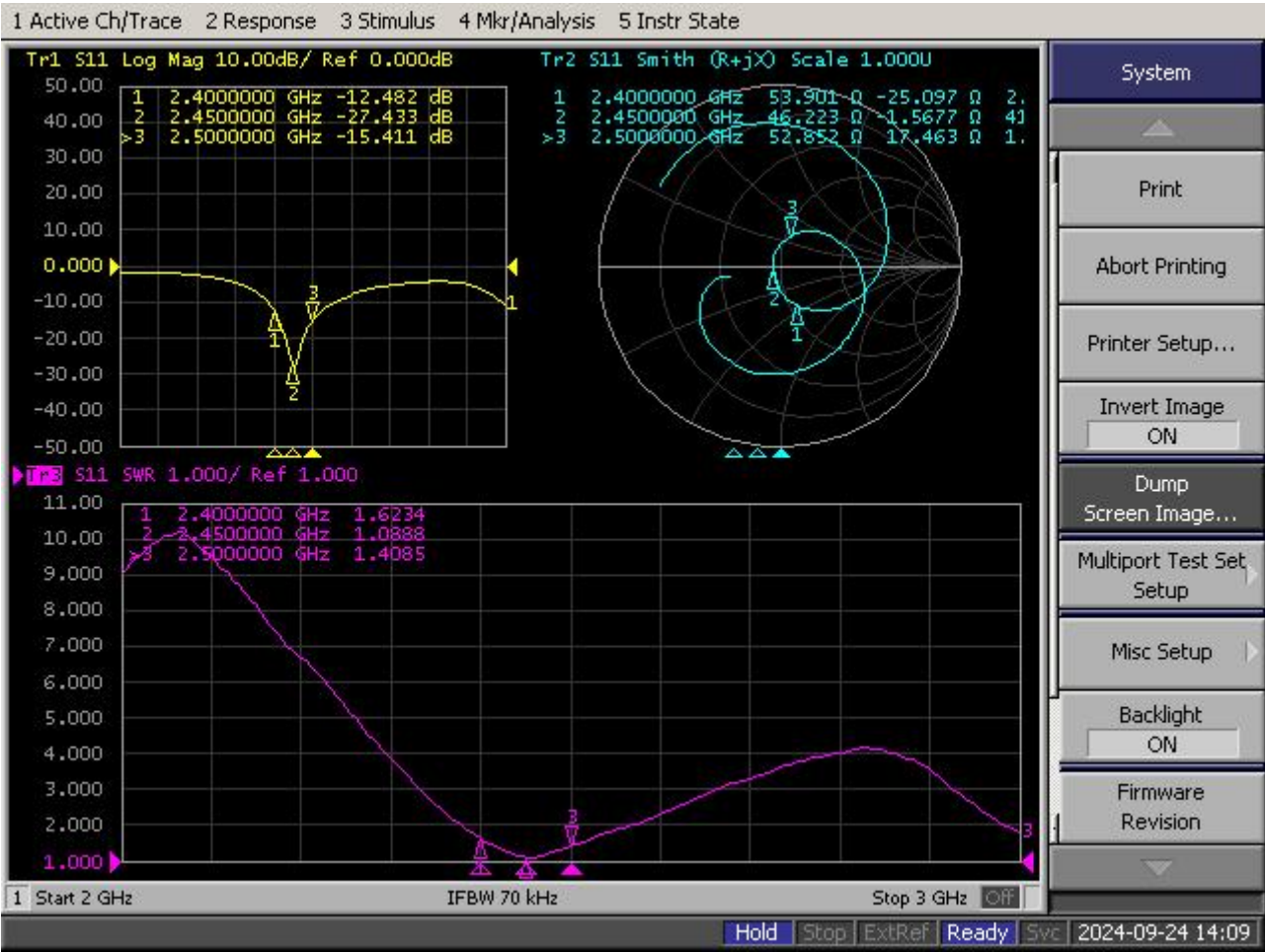
2. Specification

Sample Photo 样品图片	
	
A. Electrical Characteristics 电气特性	
Frequency 频率	2400 ~ 2500 MHz
S.W.R. 驻波比	2.45GHz ≤ 2.0
Antenna Gain 增益	4.0 ± 0.5 dBi @
Efficiency(%) 效率	65 ± 5 % @
Radiation Pattern 辐射方向图	Omni Directional 全向
Max Input Power 最大输入功率	≥ 2 W
Polarization 极化	Linear 线性
Impedance 阻抗	50 Ohm
B. Material & Mechanical Characteristics 材料和机械特性	
Material of Radiator 辐射材料	CU+PCB
Connector Type 连接器类型	SMA MALE 内螺内针
Material of Plastic 塑胶材料	Body1: PP Black 黑色 Body2/3/4: PC+PBT Black 黑色
Cable Type 线缆类型	RG-178
Pull Test of SMA 连接器拉力	≥ 3kg
C. Environmental 环境	
Operation Temperature 使用温度	- 40 °C ~ + 65 °C
Storage Temperature 储存温度	- 40 °C ~ + 80 °C
Antenna Color Storage life 天线颜色寿命	< 2 year

3. Characteristics and Reliability Test

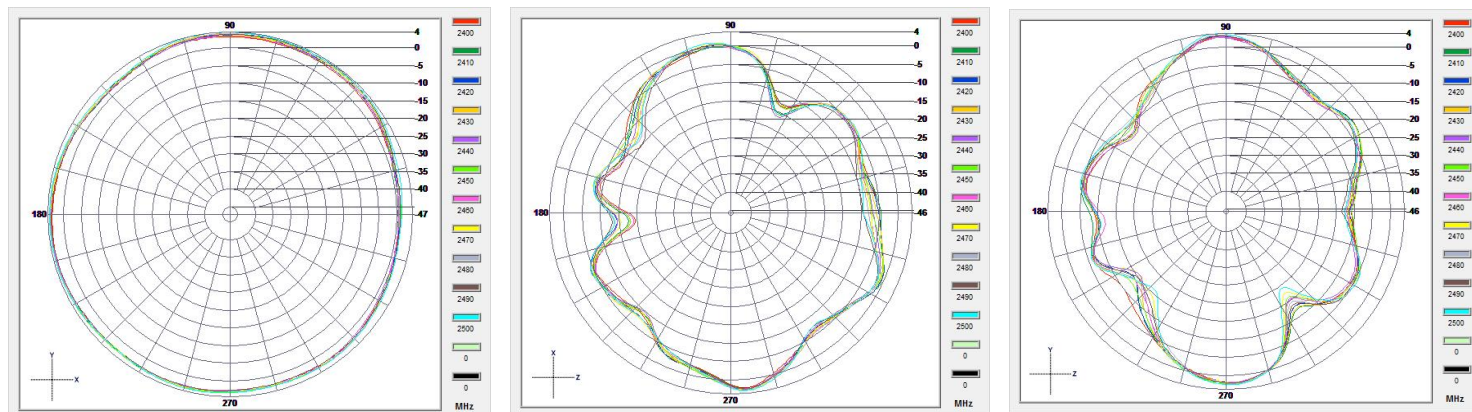
Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
E1	Salt Spray	GB / T 2423 . 17- 93 Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E2	Humidity	GB / T 2423 . 4 - 93 Temp: 80°C / 12 H; -40°C / 12H RH: >= 90%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E3	Thermal Shock	GB / T 2423 . 22 - 87 1 Cycle: - 40°C (30 minutes) to + 80°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E4	Life (High Temp.)	GB / T 2423 . 2 - 89 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2011/65/EU
R2	PFOS	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC
R3	PFOA	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC

4. Antenna - S Parameter Test Data

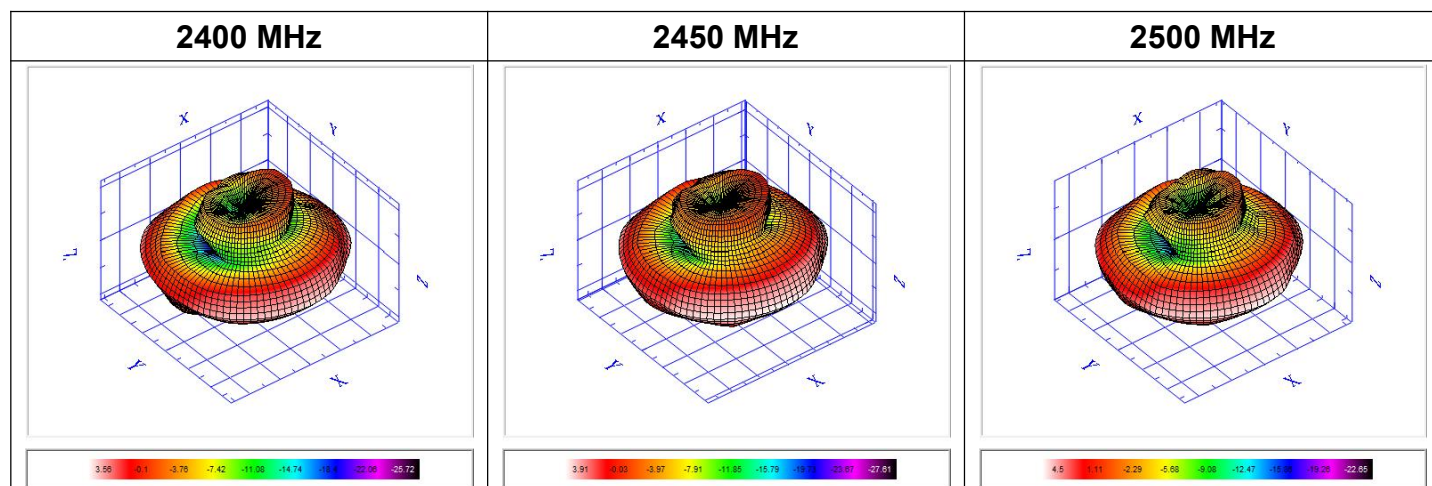


5. Antenna - Radiation Pattern Test Data

2D



3D



Gain & Efficiency

Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
TRP (dBm)	-2.23	-2.06	-1.98	-1.89	-2.36	-1.91	-2.17	-1.98	-1.95	-2.17	-1.7
Peak EIRP (dBm)	3.56	3.6	3.76	4.07	3.53	3.91	3.66	3.86	4	4.11	4.5
NHPRP +/- 45 (degree)	-2.72	-2.55	-2.46	-2.35	-2.81	-2.36	-2.62	-2.43	-2.39	-2.59	-2.11
NHPRP +/- 30 (degree)	-3	-2.84	-2.74	-2.61	-3.05	-2.59	-2.87	-2.68	-2.66	-2.86	-2.39
E-Theta Peak Gain (dBi)	-8.53	-7.62	-8.72	-9.86	-10.47	-10.6	-10.76	-10.94	-12.09	-12.63	-11.1
E-Phi Peak Gain (dBi)	3.53	3.58	3.72	4.05	3.47	3.88	3.63	3.84	4	4.11	4.49
E-Total Peak Gain (dBi)	3.56	3.6	3.76	4.07	3.53	3.91	3.66	3.86	4	4.11	4.5
Directivity (dBi)	5.79	5.66	5.74	5.96	5.89	5.82	5.83	5.84	5.95	6.29	6.2
Efficiency (%)	59.8	62.23	63.38	64.75	58.04	64.46	60.63	63.38	63.89	60.62	67.66

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RoHS Compatible					<table><tr><td>SIGN</td><td>DATE</td><td>DESCRIPTION</td><td>APPROVER</td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr></table>			SIGN	DATE	DESCRIPTION	APPROVER	△				△				△																													
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Note: 1.Take" * "is the important dimension.带 “ ” 为重点尺寸； 2.Tolerance:Unmarked tolerance refer to the standard tolerance please. 未标记的公差请参考标准公差。																																																	
<table><tr><td>6</td><td>R-RG178</td><td>CABLE,线缆</td><td>RG178双银线</td><td>Red,L=52MM,红</td><td>1</td></tr><tr><td>5</td><td>Body-4</td><td>转轴</td><td>PC+PBT</td><td>Black,黑色</td><td>2</td></tr><tr><td>4</td><td>SMA-MC-14168BSM</td><td>SMA Male 内螺内针</td><td>CU</td><td>CuNiPlated 铜镀镍</td><td>1</td></tr><tr><td>3</td><td>Body-3</td><td>Bottom Solid, 下固</td><td>PC+PBT</td><td>Black,黑色</td><td>1</td></tr><tr><td>2</td><td>Body-2</td><td>Up solid, 上固</td><td>PC+PBT</td><td>Black,黑色</td><td>1</td></tr><tr><td>1</td><td>Body-1</td><td>Antenna pole cover天线杆套</td><td>PP</td><td>Black,黑色</td><td>1</td></tr><tr><td>No.</td><td>Part Number 零件编号</td><td>Description 描述</td><td>Material 材料</td><td>Specifications 规格</td><td>Q'ty 数量</td></tr></table>								6	R-RG178	CABLE,线缆	RG178双银线	Red,L=52MM,红	1	5	Body-4	转轴	PC+PBT	Black,黑色	2	4	SMA-MC-14168BSM	SMA Male 内螺内针	CU	CuNiPlated 铜镀镍	1	3	Body-3	Bottom Solid, 下固	PC+PBT	Black,黑色	1	2	Body-2	Up solid, 上固	PC+PBT	Black,黑色	1	1	Body-1	Antenna pole cover天线杆套	PP	Black,黑色	1	No.	Part Number 零件编号	Description 描述	Material 材料	Specifications 规格	Q'ty 数量
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东莞市翊龙电子科技有限公司 Dongguan Yilong Electronic Technology Co., Ltd TITLE: 2.4GHz Antenna / 2.4G 外置天线 PART NO.: YL-AN2400-15D01BSM CUSTOMER P/N: B.RC7.020 APP BY CHK BY RF BY DES BY Tolerance/公差 X.X ±0.3 X.XX ±0.2 X° ±1 ZLB 2024.09.24 UNITS: mm SCALE: 1/1 REVISION: A																																																	
1	2	3	4	5	6	7	8																																										



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Dongguan Yilong Electronic Technology Co., Ltd

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PART NO.: YL-AN2400-15D01BSM				CUSTOMER P/N: B.RC7.020	
APP BY	CHK BY	RF BY	DES BY		Tolerance/公差
			ZLB	UNITS: mm	X.X ±0.3
			2024.09.24	SCALE: 1/1	X.XX ±0.2
				REVISION: A	X° ±1