

东莞市乔木电子科技有限公司

Dongguan Qiaomu Electronics Co., Ltd.

规格书

SPECIFICATION FOR APPROVAL

客户名称: 讯曼

客户项目名称: 超声波天线 (WiFi 2.4GHZ天线)

客户料号:

物料名称: WIFI 2.4GHZ天线 黑色1.13线 线材外露尺寸: 120mm

乔木料号:

日期: 2024.4.28

版别: X1

	MANUFACTURE SIGNATURE	CUSTOMER SIGNATURE
CHECKED BAY:	 周文彬	
AUDITOR BAY:		
APPROVED BAY	谭文锋	
DATE:	2024-04-28	

公司地址: 东莞市大朗镇富民南路52号新辉大厦2楼

电话: 手机: 15014105881

Email: 1931648562@qq.com

Product Number: DF5DBI82564/5-40

Product Name: Antenna

1. Revision History

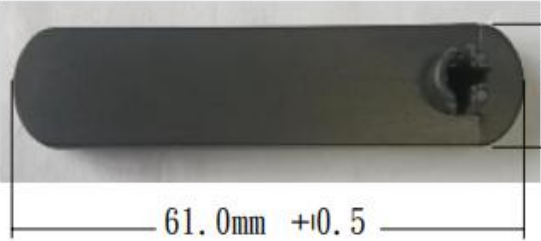
Revision	Date	Change Notification	Description
1.0	2024.4.28	初版	

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2. Specification

REV	DATE	DESCRIPTION
A	04/26-2024	新制作



61.0mm ±0.5

14.0mm ±0.2



120mm ±13

Specification:
Frequency Rang:2.4GHz~2.5GHz;

NO	DESCRIPTION	QTY	REMARK
4	连接器 RF03MM	1	
3	Cable Φ1.13mm Cable,黑色,50(7)	1	
2	Antenna Base ABS,Color:	1	
1	Antenna Base ABS,Color:	1	

	XXL ±5	APPROVED	CUSTOMER:
CUSTOMER'S SIGNATURE	X ±3.0	CHECKED	PART NO :
	.X ±1.0		PART NAME:
	.XX ±0.5	DRAWING	Q. NO P/NO :
	.XXX ±0.1		REV UNIT FILE :
	⊕	A	m/m SHEET : 1/1

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Sample Photo	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
Antenna Gain	2.89dBi@ 2400 MHz
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	

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Material of Radiator	
Material of Plastic	Body: ABS Hinge: ABS Base: PC+PBT
Cable Type	1.13mm 黑色
Connector Type	I-pex
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C
Antenna Color Storage life	< 2 year

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3. Characteristics and Reliability Test

Test Items 測試項目		Test Condition and Procedure 測試方法	Requirements 要求	Result 結果
C1	V.S.W.R. 電壓駐波比	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	PASS
C2	Insertion Loss 插入損失	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	N/A
C3	Antenna Gain 天線增益	Set DUT on Antenna Chamber; make individual calibration to test 設置天線暗室參數進行測試	Directive DUT specification 符合待測物規範	PASS
C4	Voltage Breakdown 耐電壓	Test voltage should be applied between insulated portions, or between ground as specified. 在绝缘部分测试电压,或指定接地面之间	Max Voltage \geq 500 V or directive material specification 最大電壓 \geq 500V 或符合材料規範	N/A
C5	Insulation Resistance 绝缘阻抗	Set Voltage: 500 \pm 50V; between the insulated portions, or between ground as specified. 設置電壓 500 \pm 50V,在绝缘部份測試或指定接地面之间	Resistance \geq 500 M ohm or directive material specification 阻抗 \geq 500M ohm 或符合材料規範	N/A
C6	Contact Resistance 接觸阻抗	Air Temp: 26°C; measured with test equipment 室溫 26°C, 指定量測設備	Directive material specification 符合材料規範	N/A
M1	Vibration 震動	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction 振幅 1.5mm ; 頻率 20~80~20Hz ; 3 個方向各 2H	1. No Visual Damage 2. Frequency Tol. \leq 5% 無明顯外觀不良; 頻率偏移 \leq 5%	PASS
M2	Random Drop 跌落	GB / T2423.8-1995 Single : Height: 1.0 Meter; 3 directions; 1 time for each direction 單支天線, 高 1m ; 3 個方向各 1 次	1. No parts separated 、fracture 2. Frequency Tol. \leq 5% 產品無脫落、斷裂; 頻率偏移 \leq 5%	PASS
		Packing : Height: 0.76 Meter; 1 corner, 3 edges, 6 surface 包裝 : 高 0.76m , 一角、三棱、六面各一次		PASS
		Antenna+Machine: Height: 0.76 Meter; 1 corner, 3 edges, 6 surface. 整機 : 高 0.76m , 一角、三棱、六面各一次		N/A
M3	Solderability	GB / T2423.28-2005	Tin evenly on full	N/A

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	可焊性	Temp: 260±5°C;Duration: 5 seconds 溫度 260±5°C;持續 5 秒	上錫均勻飽滿	
M4	Pull Test 拉力	Holding with individual specification; force applied to axis of terminal .單獨定義產品端子拉力	Directive DUT specification Frequency Tol.≤5% 符合待測物規範;頻率偏移≤5%	PASS
M5	To rque Test 扭力	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal 單獨定義產品端子之順時針及逆時針扭力	Directive DUT specification Frequency Tol.≤ 5% 符合待測物規範;頻率偏移≤5%	N/A
M6	Dimension 尺寸	Inspection of dimension, color, material, package, surface process.检查尺寸,顏色,材料,包裝,表面處理	Directive DUT specification 符合待測物規範	PASS
E1	Waterproof 防水	With Reference to IEC 60529 // IP Code Definition 參考 IEC60529 IP 定義	Directive DUT specification 符合待測物規範	N/A
E2	Salt Spray 鹽霧	GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 24H 溫度 35°C; 濕度≥95%;鹽水濃度≥5%; 測試 24H	No Visual Damage Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	PASS
E3	Temperature and Humidity Chamber 恒溫恒濕	GB / T 2423.3-2006 Temp: 80°C / 12 H; -40°C / 12H RH: ≥ 90 %; Time: 24H 溫度 80°C 測試 12H 轉-40°C 測試 12H; 濕度≥ 90 %; 時間 24H	After 2 Hours Recovery No Visual Damage Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	PASS
E4	Termal Shock 冷熱衝擊	GB / T 2423.22 - 2008 40°C (30 minutes) to + 80°C (30 minutes); Cycles: 24 40°C 測試 30 分轉 80°C 測試 30 分為一個週期; 共 24 週期	After 2 Hours Recovery No Visual Damage Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	PASS
E5	Aging test 老化	GB / T 2423.2 - 2008 Temp: 80°C; Time: 24 hours 溫度 80°C, 測試 24H	After 2 Hours Recovery No Visual Damage Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	PASS
E6	High Temp. 高溫	Temp. 270±10°C; Times: 120 seconds 溫度 270±10°C, 測試時間 120 秒	No Visual Damage 無明顯外觀不良	N/A
R1	RoHS	With Reference to IEC 62321:2008 with flow chart 參考 IEC 62321 測試流程	Directive RoHS 2011/65/EU 符合 RoHS 2011/65/EU 標準	PASS
R2	PFOS	With Reference to USA EPA 3550C:1996 by LC/MS 參考 USA EPA 3550C 測試流程	Directive RoHS 2006/122/EC 符合 RoHS 2011/65/EU 標準	PASS

Test Equipment & Conditions

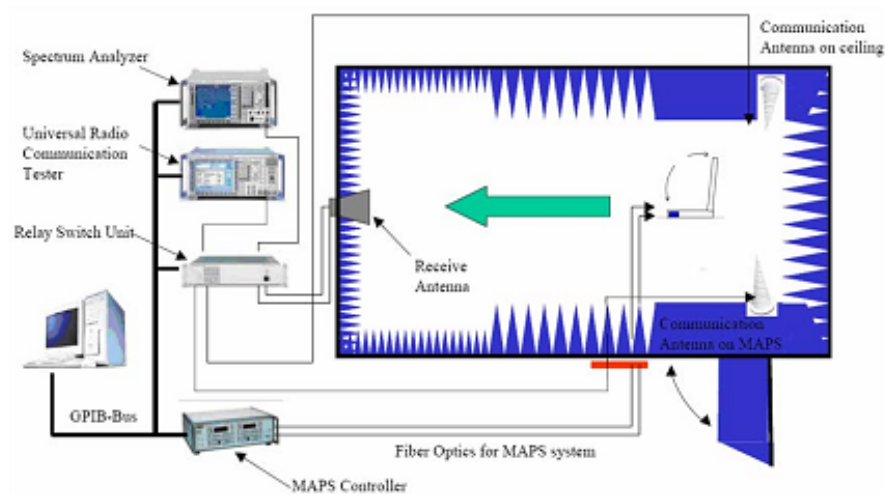
1. Network Analyzers :

Agilent 8753D 5071C

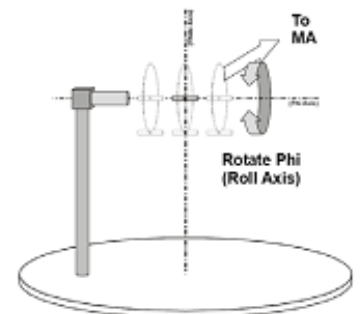
2. Communications Test Set:

Agilent 8960 CMW500

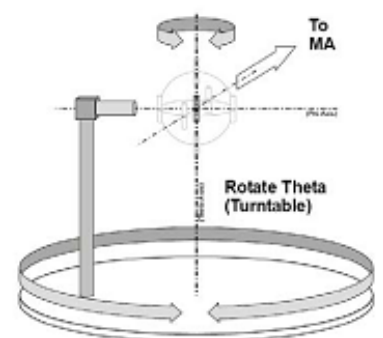
3. 3D Chamber Test System



(Testing by 3D anechoic chamber)



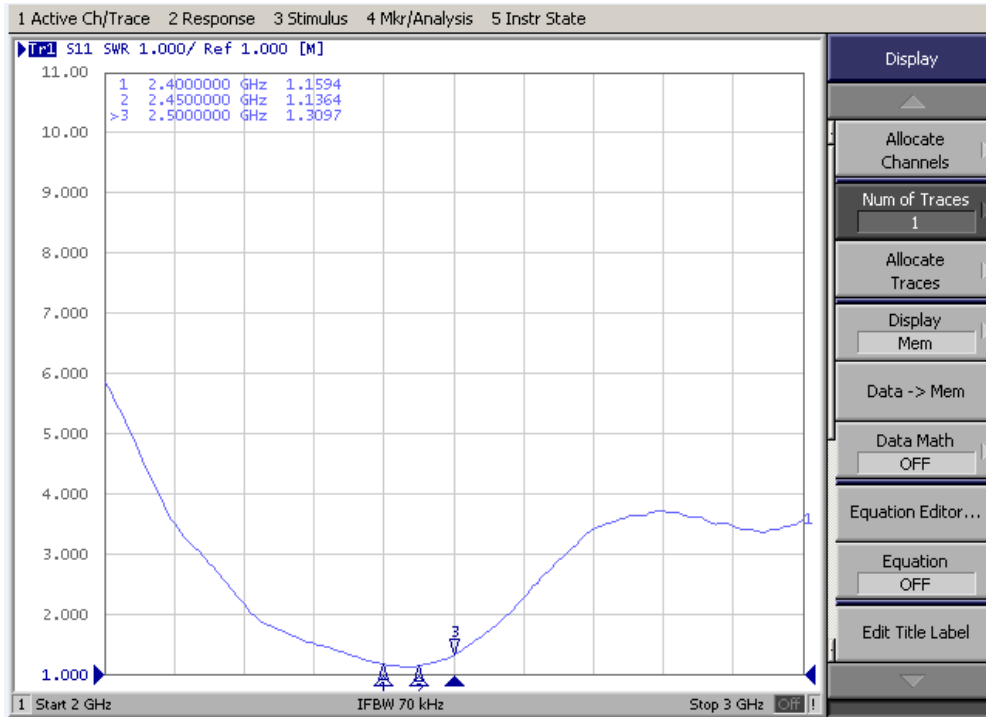
Phi axis test



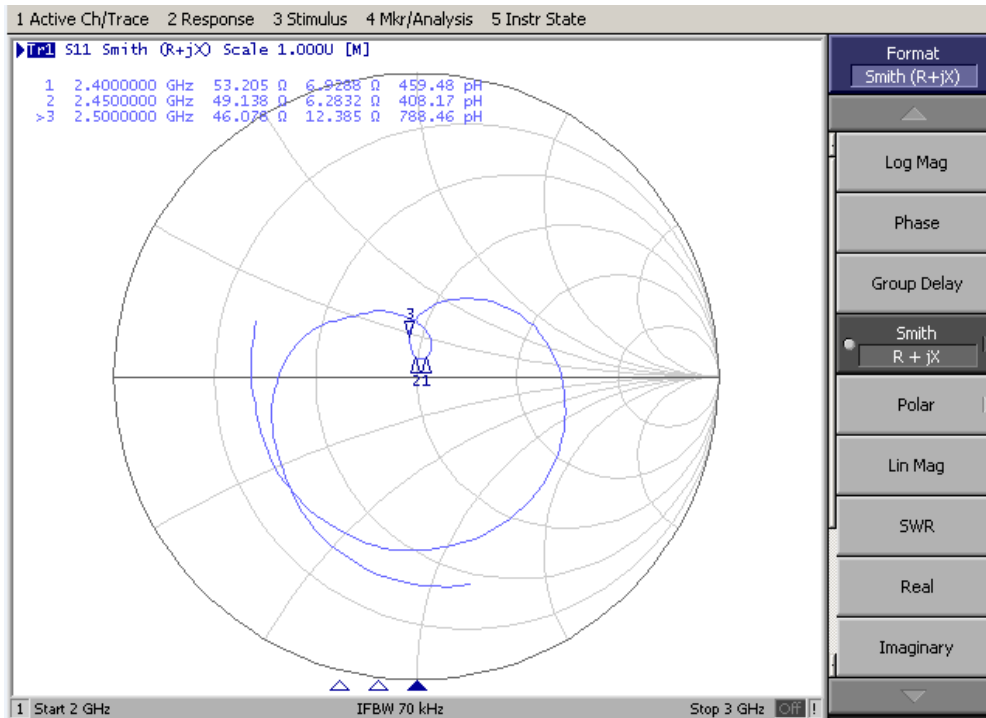
Theta axis test

测试数据

SWR



Smith



效率&增益:
Efficency&Gain

Freq (MHz)	Effi (%)	Gain (dBi)
2400	78.11	2.89
2410	72.92	2.42
2420	70.83	2.26
2430	70.92	2.13
2440	74.66	2.50
2450	73.87	2.62
2460	73.71	2.59
2470	78.62	2.46
2480	79.16	2.52
2490	73.55	2.03
2500	71.22	2.03

方向图(2D图)

Patten

