Dongguan Qiaomu Electronic Technology Co., LTD

规　格　书

SPECIFICATION FOR APPROVAL

Client Name：

Item Name：　FPC Antenna

Material Number：　WIFI 2.4/5.8G antenna, gray 1.13 wire L: 240MM-300MM+I-pex

P/N:

date：　2023-06-1

Edition：　A

	MANUFACTURE SIGNATURE	CUSTOMER SIGNATURE
CHECKED BAY:	Xiong Jiangqing	
AUDITOR BAY:	Wu Yafeng	
APPROVED BAY	Tan Wenfeng	
DATE:	2023-06-1	

Company Address: 2nd Floor, Xin Hui Building, No. 52, Fumin South Road, Dalang Town, Dongguan City
Tel：15014105881　　Phone：15014105881
Email:　1931648562@qq.com

Product Number: DF5DBI82564/5-40
Product Name: FPC Antenna

Index:

1. Revision History / Page 3

2. Specification / Page 4

3. Characteristics and Reliability Test / Page 5 ~ 6

4. Antenna - S Parameter Test Data / Page 7

5. Antenna - Radiation Pattern Test Data / Page 8

6. Mechanical and Packing Drawing / Page 9 ~ 10

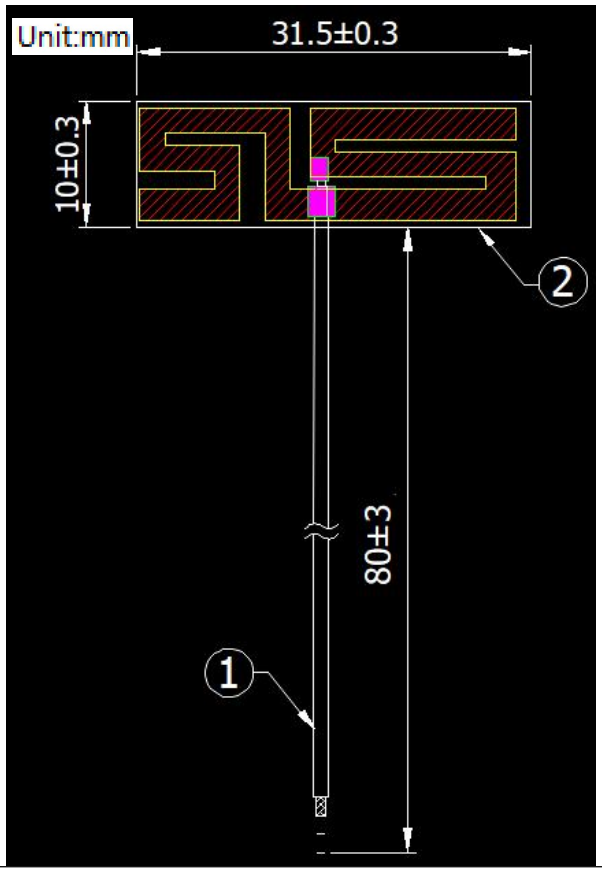
Product Number: DF5DBI82564/5-40
Product Name: Antenna

1. Revision History

Revision	Date	Change Notification	Description
1.0	2023-06-1	first edition	

Product Number: DF5DBI82564/5-40
Product Name: Antenna

2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	**2400 ~ 2500/5150~5850 MHz**
S.W.R.	**<= 2.0**
Antenna Gain	**3.0dBi@ 2450 MHz 3.0dBi@ 5850 MHz**
Polarization	**Linear**
Impedance	**50 Ohm**
B. Material & Mechanical Characteristics	
Material of Radiator	
Material of Plastic	**Body:** **Hinge:** **Base:**
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

Product Number: DF5DBI82564/5-40
Product Name: Antenna

3. Characteristics and Reliability Test

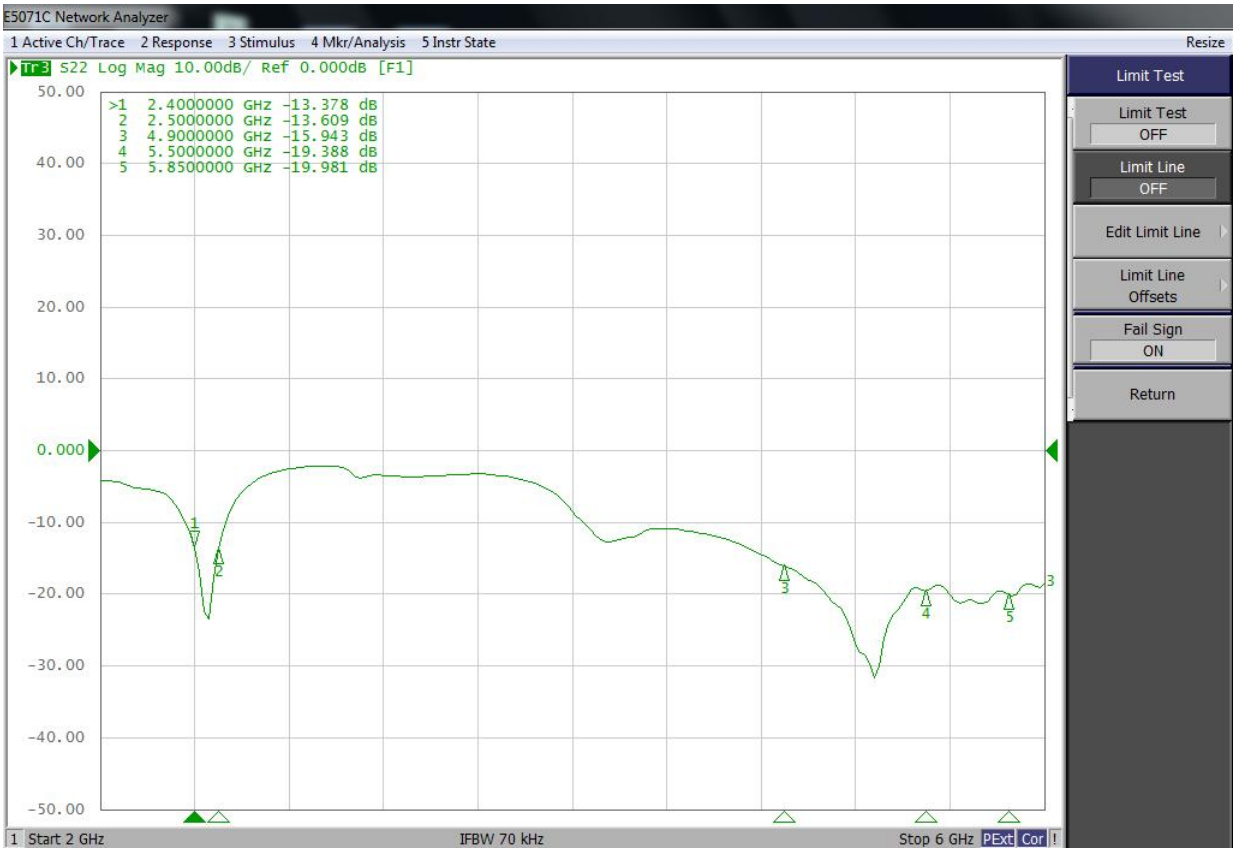
Test Items 測試項目	Test Condition and Procedure 測試方法	Requirements 要求	Result 結果
C1 V.S.W.R. 電壓駐波比	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	PASS
C2 Insertion Loss 插入損失	Set DUT on Network Analyzer; make individual calibration to test 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≥ 500 V or directive material specification 最大電壓≥500V 或符合材料規範	N/A
C5 Insulation Resistance 絕緣阻抗	Set Voltage: 500 ± 50V; between the insulated portions, or between ground as specified. 設置電壓 500 ± 50V,在绝缘部份測試或指定接地面之间	Resistance≥500 M ohm or directive material specification 阻抗≥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.≤5% 無明顯外觀不良;頻率偏移≤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.≤5% 產品無脫落、斷裂;頻率偏移≤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**

M4 P	**ull 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 T	**o 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 D	**imension** 尺寸	**Inspection of dimension, color, material, package, surface process.检查尺寸,颜色,材料,包装,表面處理**	**Directive DUT specification** 符合待測物規範	**PASS**
E1 W	**aterproof** 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 T	**emperature 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 T	**ermal 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 A	**ging 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 H	**igh Temp.** 高溫	**Temp. 270±10°C；Times：120 seconds** 溫度 **27 0±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**

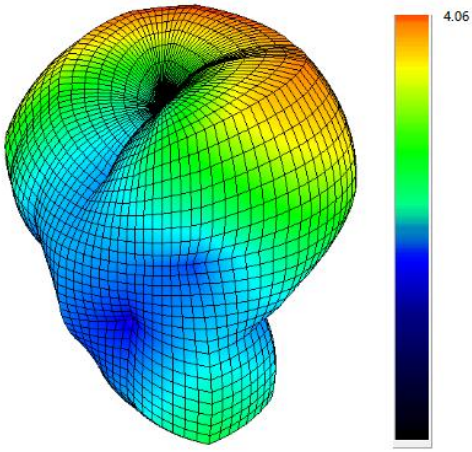
Product Number: DF5DBI82564/5-40
Product Name: Antenna

4. Antenna - S Parameter Test Data

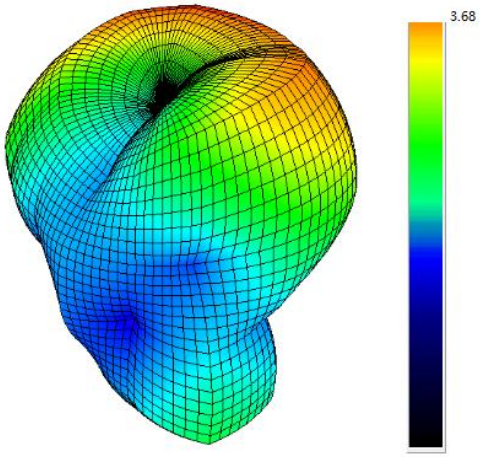


5. Antenna - Radiation Pattern Test Data

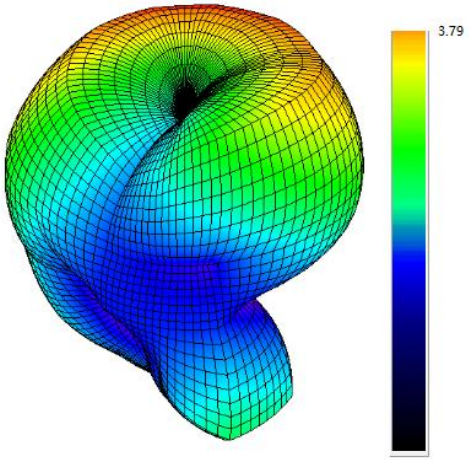
2.4G



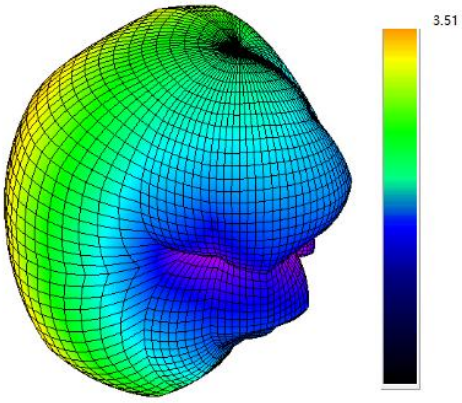
2.45G



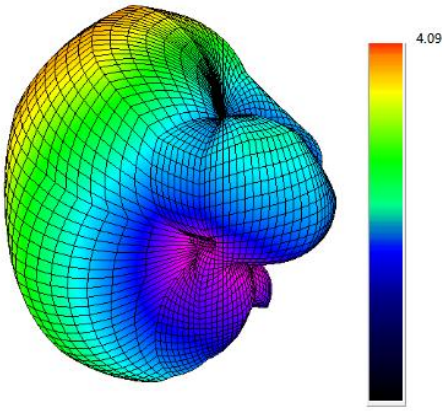
2.5G



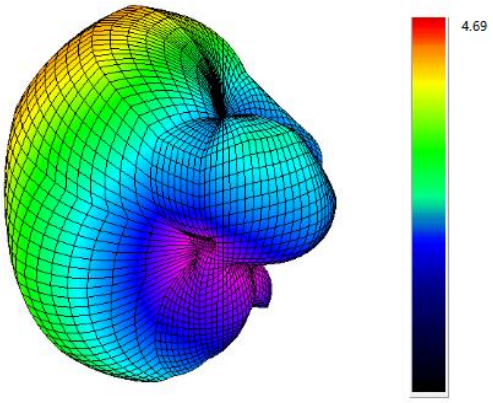
5.15G



5.5G



5.85G



6. Antenna - Radiation Pattern Test Data

VSWR (Criterion: 2.0:1 Max)

Frequency (GHz)	VSWR
	Ant
2.4	1.78
2.5	1.84
5.15	1.44
5.5	1.32
5.85	1.45

Frequency (GHz)	Ant	
	Peek Gain (dBi)	Efficiency
2400	4.06	66.38
2500	3.79	64.47
5.15	3.51	61.64
5.5	4.09	65.7
5.85	4.69	64.53