



产品规格书

Product Specification

客户名称 Customer Name: _____

项目名称 Project Name: _____

客户料号 Customer P/N: _____

规格描述 Product Spec: 2.4~5.8G Rod antenna with IPEX connector, Black

供方料号 Supplier P/N: **AN2450B-50BGG-1**

版 本 REV: 1.0

日 期 Date: 2024-04-20

制 作 drawing	审 核 check	批 准 approved
黄浩	朱齐亮	冯伟刚

客户承认 Customer Approve:

客户确认/日期

Product Number: AN2450B-50BGG-1
Product Name: Antenna

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1. Specification

A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz 5150 ~ 5850 MHz
V.S.W.R.	<= 2.0 @ 2400 ~ 2500 MHz <= 2.0 @ 5150 ~ 5850 MHz The data is tested with 1M cable
Antenna Gain	2.52dBi @ 2400 MHz 1.92dBi @ 2450 MHz 2.23dBi @ 2500 MHz 3.40dBi @ 5150 MHz 2.88dBi @ 5400 MHz 3.67dBi @ 5700 MHz 2.88dBi @ 5850 MHz
Efficiency	70 % @ 2400 ~ 2500 MHz 85 % @ 5150 ~ 5850 MHz
Polarization	Linear
Impedance	50 Ohm
Connector	IPEX type RF connector
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	TPE / ABS
Cable Length	50mm
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C

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2. 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 ≥ 500 V 或符合材料規範	N/A
C5	Insulation Resistance 絕緣阻抗	Set Voltage: 500 ± 50 V; between the insulated portions, or between ground as specified. 設置電壓 500 ± 50 V, 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 ≥ 500 M ohm 或符合材料規範	N/A
C6	Contact Resistance	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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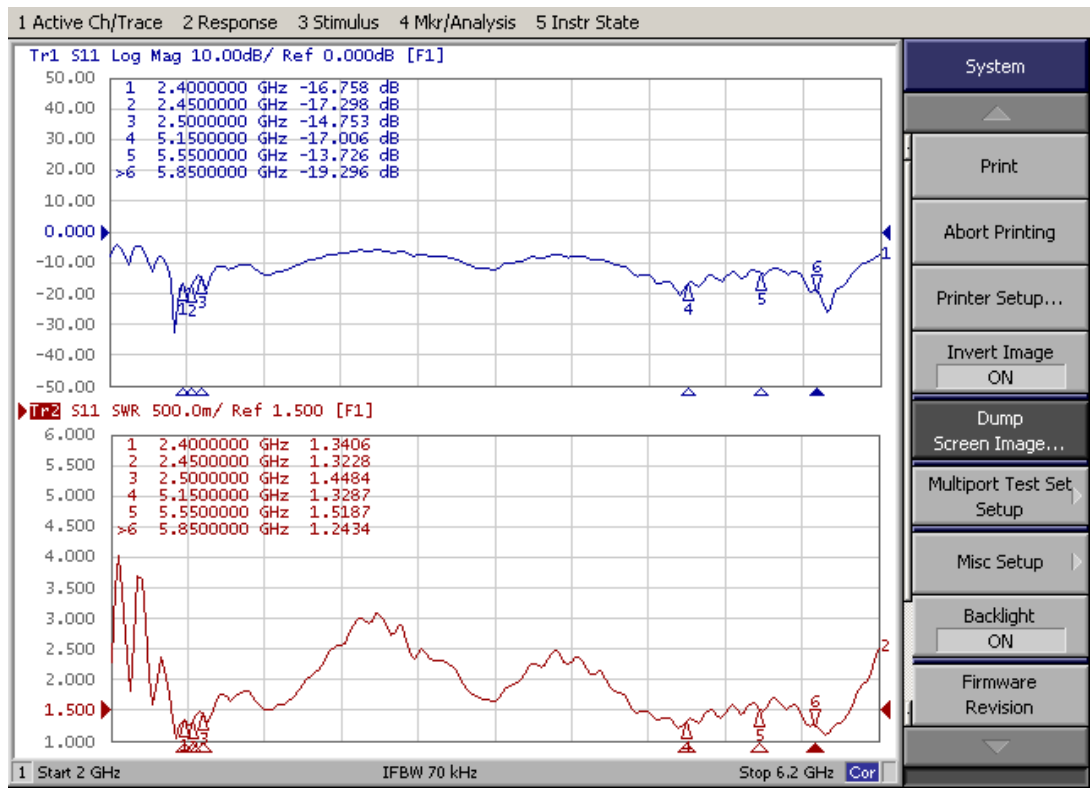
	可焊性	Temp: 260±5° C;Duration: 5 seconds 溫度 260±5° C;持續 5 秒	上錫均勻飽滿	
M4	Pull Test 拉力	Holding with individual specification; force applied to axis of terminal .單獨定義產品端子拉力	1. Directive DUT specification 2. Frequency Tol.≤5% 符合待測物規範;頻率偏移≤5%	PASS
M5	Torque Test 扭力	Holding with individual specification; applied 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	1. Directive DUT specification 2. Frequency Tol.≤ 5% 符合待測物規範;頻率偏移≤5%	PASS
M6	Dimension 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	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	1. No Visual Damage 2. 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 1. No Visual Damage 2. Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	PASS
E4	Thermal 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 1. No Visual Damage 2. Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	N/A
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 1. No Visual Damage 2. 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

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3. Antenna - S Parameter Test Data

Part Number	AN2450B-50BGG-1	Item	Spec	Result Judge
Part Name	Rod antenna with IPEX connector	Characteristic impedance	50Ω	/
Test Equipment	Network analyzer E5071C Calibration date: 2023/01/22 Due date: 2025/01/21	2400-2500MHz VSWR	2.0 Max	Pass
Quantity	5 pcs	5150-5850MHz VSWR	2.0 Max	Pass
Test Date	2024/03/10	Test Engineer		

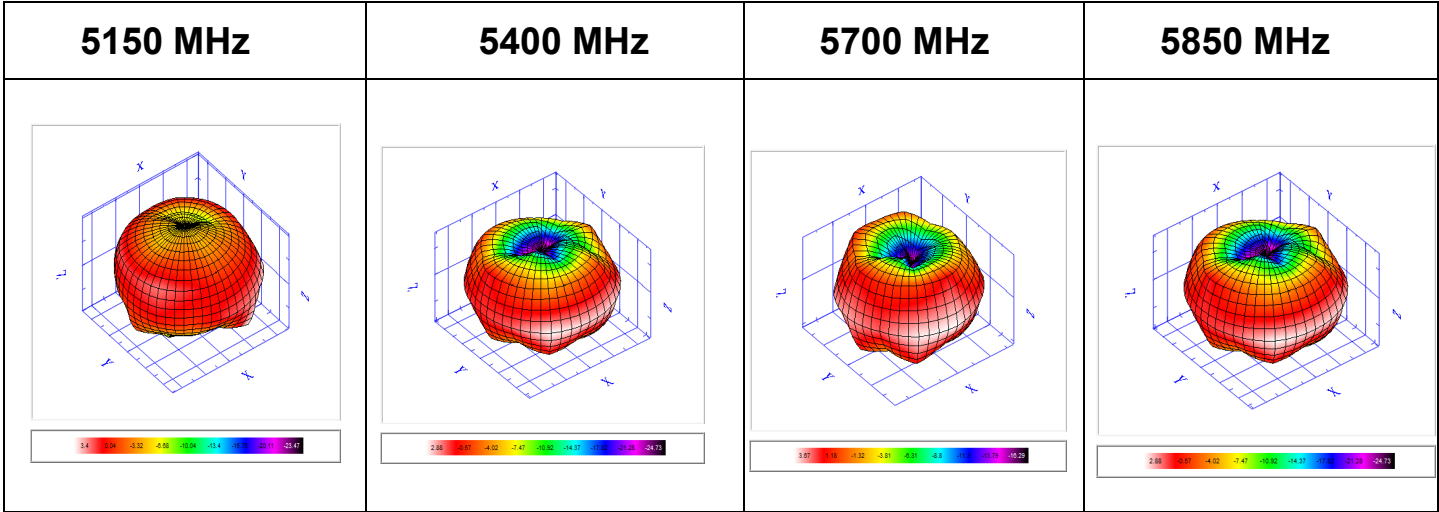
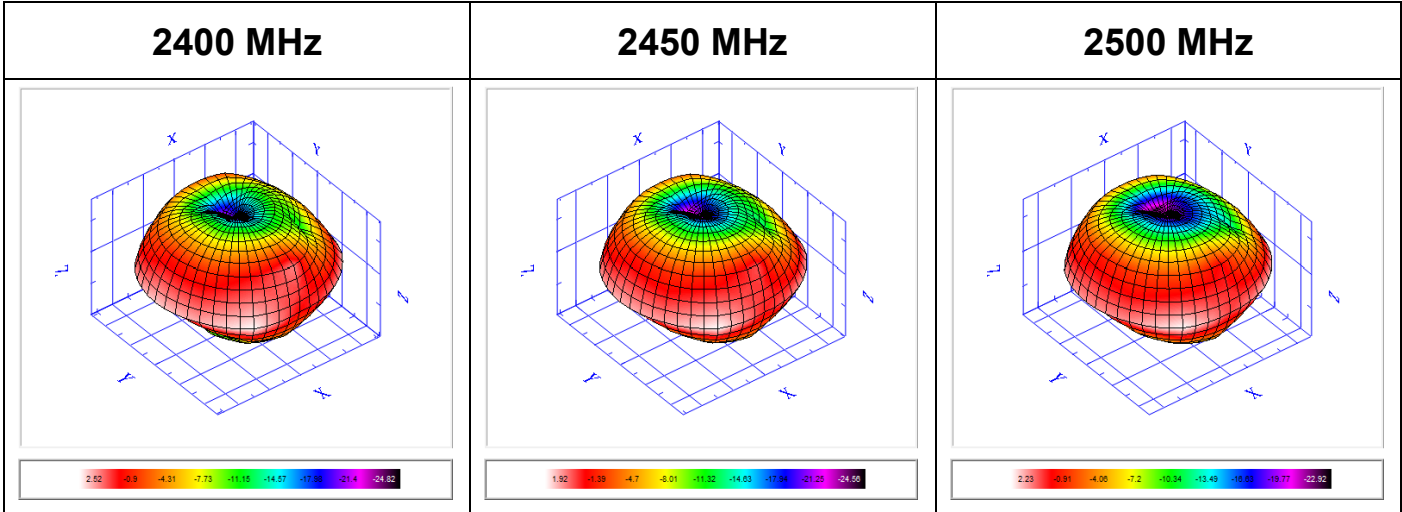


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4. Antenna - Radiation Pattern Test Data

Part Number	AN2450B-50BGG-1	Item	Spec	Result Judge
Part Name	Rod antenna with IPEX connector	Characteristic impedance	50Ω	/
Test Equipment	Shielded room Calibration date: 2023/05/18 Due date: 2025/05/17	Gain @2400-2500MHz		Pass
Quantity	5 pcs	Gain @5150-2850MHz		Pass
Test Date	2024/03/12	Test Engineer		



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Frequency	2400	2450	2500	5150	5400	5700	5850
TRP (dBm)	-1.53	-1.94	-1.41	-0.01	-1.03	-0.4	-1.61
Peak EIRP (dBm)	2.52	1.92	2.23	3.4	2.88	3.67	2.88
NHPRP +/- 45 (degree)	-1.78	-2.18	-1.65	-0.53	-1.49	-0.61	-1.83
NHPRP +/- 30 (degree)	-2.05	-2.42	-1.86	-0.55	-1.45	-0.62	-1.83
E-Theta Peak Gain (dBi)	-8.89	-10.29	-10.79	-9.25	-9.01	-7.78	-10.51
E-Phi Peak Gain (dBi)	2.5	1.9	2.2	3.36	2.88	3.62	2.88
E-Total Peak Gain (dBi)	2.52	1.92	2.23	3.4	2.88	3.67	2.88
Directivity (dBi)	4.05	3.86	3.63	3.41	3.91	4.07	4.49
Efficiency (%)	70.33	64.02	72.34	99.8	78.94	91.22	69.08