深圳市华曦达科技股份有限公司
SHEN ZHEN SDMC Technology Co.，LTD

样品承认规格书

PART SHEET FOR APPROVAL

产品名称： **Part Description:**	**PCB WIFI双频天线** **PCB WIFI dual-band antenna**
规格型号: **Model No:**	**P48496-T11339BG**
物料编码： **Cust P/N:**	**360100252**
日期： **Issued Date：**	**2021.08.26**

备注：签名表明提交样品获得承认，图纸规格已经受控。Note：Signature indicates that the submitted sample is approved and the drawing/specification is now the controlling document.

地址：深圳市南山区高新科技园科技南十二路 18 号长虹科技大厦 19 层
Address: 19/F, Changhong Science & Technology Mansion, No.18, Keji South 12th Road, High-tech Industrial Park, Nanshan District, Shenzhen, China

Index:

1. Revision History

Revision	Date	Change Notification	Description
1.0	2021.08.24	初版(First Edition)	

Product Number: P48496-T11339BG

Product Name:WIFI dual-band antenna

2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	**2400~ 2500MHz** **5150~5850MHz**
V.S.W.R.	**<= 2.0 @ 2400-2500 MHz** **<= 2.0 @ 5150-5850MHz**
Polarization	**Linear**
Impedance	**50 Ohm**
B. Material & Mechanical Characteristics	
Material of Radiator	**PCB**
Material of Plastic	
Cable Type	1.13 Black wire
Connector Type	First generation terminal
Radiation Efficiency	20-60%
Operation Temperature	**- 40 ˚C ~ + 75 ˚C**
Storage Temperature	**- 40 ˚C ~ + 85 ˚C**

天线安装位置图

Product Number: P48496-T11339BG

Product Name:WIFI dual-band antenna

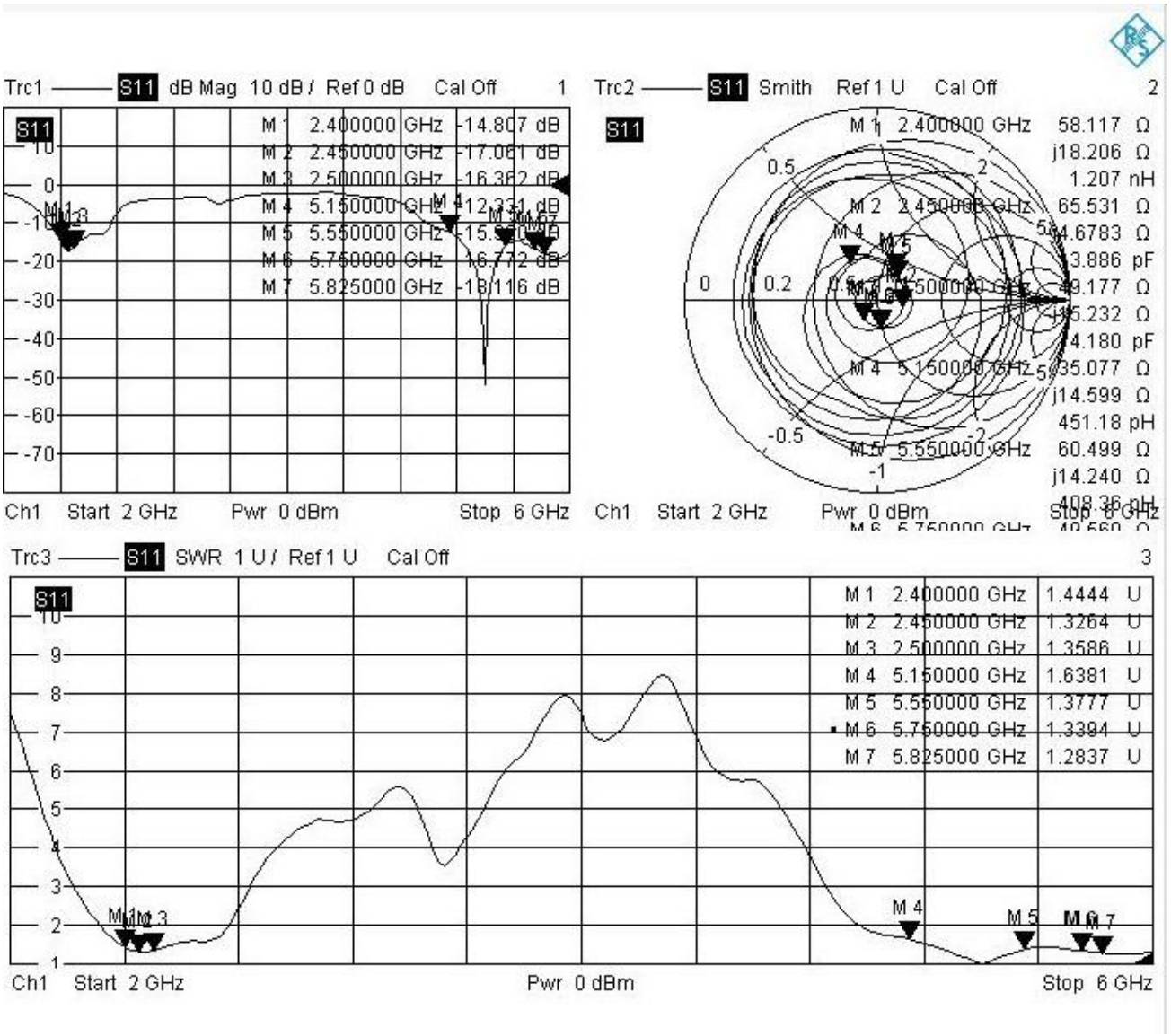
3. Characteristics and Reliability Test

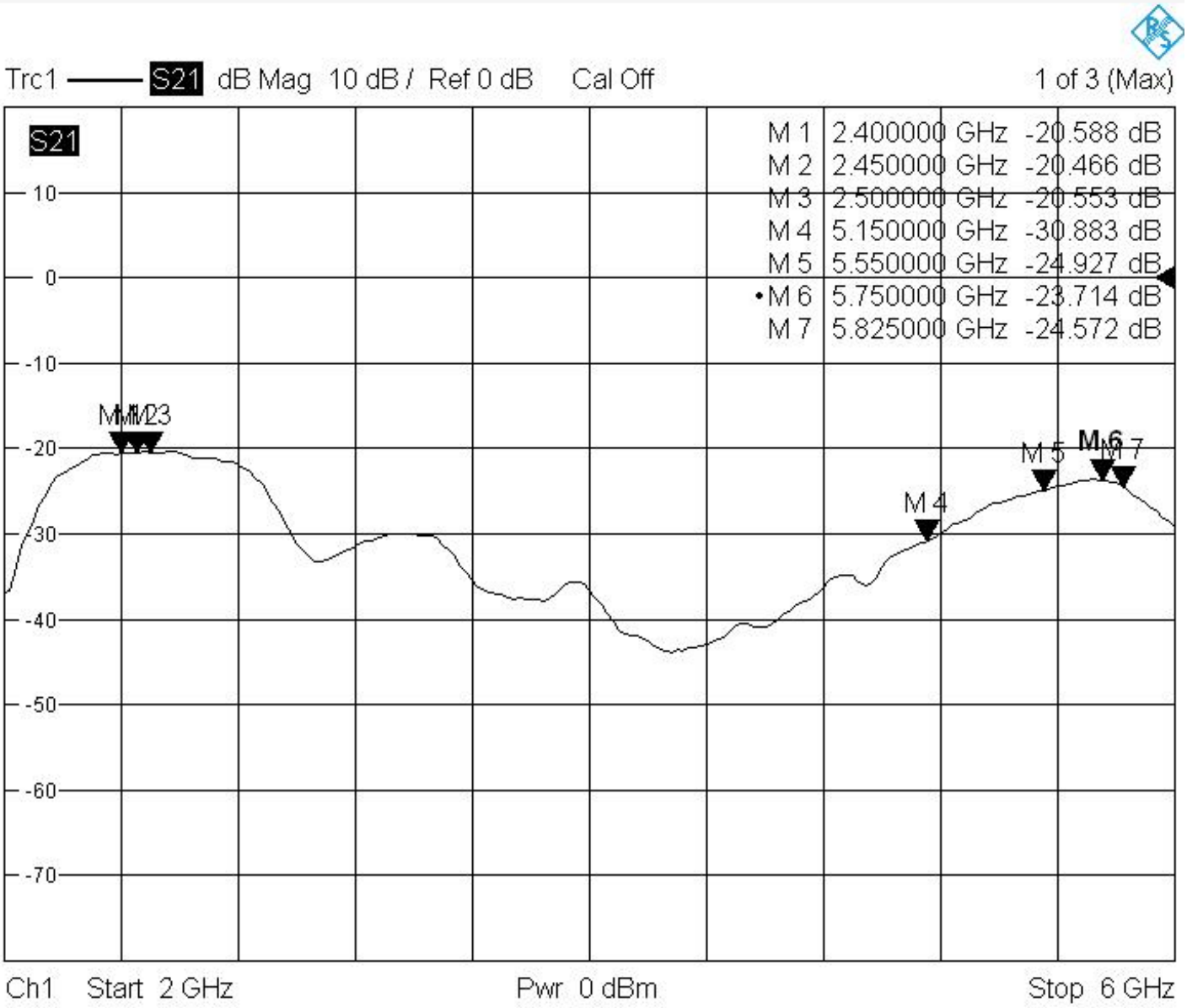
Test Items 測試項目		Test Condition and Procedure 測試方法	Requirements 要求	Result 結果
C1	V.S.W.R. 電壓駐波比	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	PASS
C3	Antenna Gain 天線增益	Set DUT on Antenna Chamber; make individual calibration to test 設置天線暗室參數進行測試	Directive DUT specification 符合待測物規範	PASS
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
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
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
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%	PASS
E5	Aging test 老化	GB /T 2423.2 - 2008 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage	PASS
		溫度 80°C， 測試 24H	2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	
R1	RoHS	With Reference to IEC 62321:2008 with flow chart 參考 IEC 62321 測試流程	Directive RoHS 2015/863/EU 符合 RoHS 2015/863/EU 標準	PASS

Product Number: P48496-T11339BG

Product Name:WIFI dual-band antenna

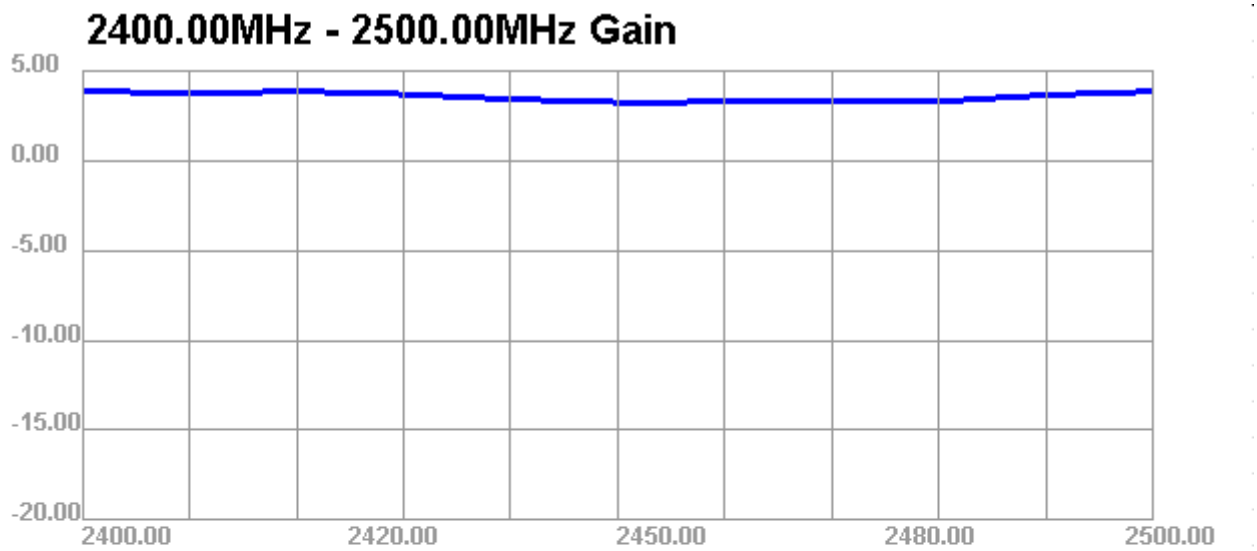
4. Antenna - S Parameter Test Data

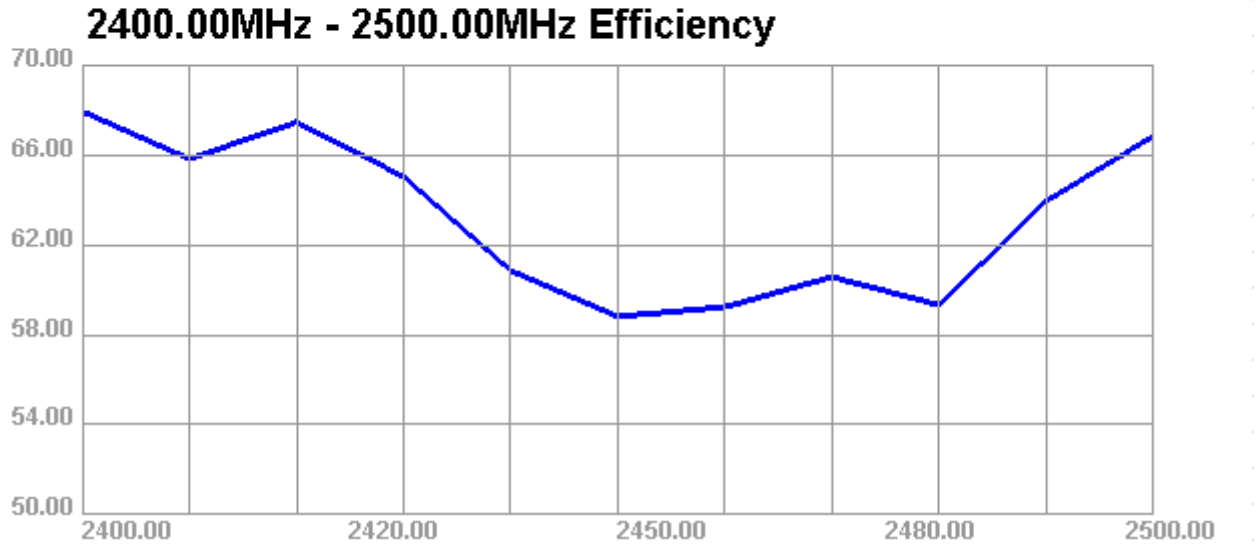



Trc1 S21 dB Mag 10 dB / Ref 0 dB Cal Off
1 of 3 (Max)
S21
M 1 2.400000 GHz -20.588 dB
M 2 2.450000 GHz -20.466 dB
M 3 2.500000 GHz -20.553 dB
M 4 5.150000 GHz -30.883 dB
M 5 5.550000 GHz -24.927 dB
•M 6 5.750000 GHz -23.714 dB
M 7 5.825000 GHz -24.572 dB
10
0
-10
-20
-30
-40
-50
-60
-70
M1
M2
M3
M4
M5
M6
M7
Ch1 Start 2 GHz
Pwr 0 dBm
Stop 6 GHz

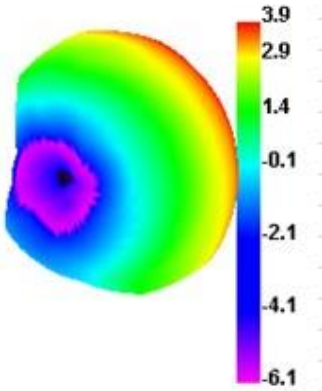
Efficiency and Gain Test Data

Passive Test For WIFI2400										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)
2400	67.94	-1.68	3.88	1.73	32.87	35.067	3.88	-16.22	5.56	60
2410	65.83	-1.82	3.72	1.57	31.847	33.979	3.72	-15.33	5.53	60
2420	67.46	-1.71	3.85	1.7	32.598	34.863	3.85	-14.26	5.56	60
2430	65.04	-1.87	3.69	1.54	31.332	33.704	3.69	-14.52	5.56	60
2440	60.86	-2.16	3.41	1.26	29.262	31.603	3.41	-15.78	5.57	60
2450	58.82	-2.3	3.25	1.1	28.271	30.549	3.25	-17.46	5.55	60
2460	59.24	-2.27	3.26	1.11	28.504	30.735	3.26	-19.49	5.53	60
2470	60.58	-2.18	3.35	1.2	29.23	31.348	3.35	-21.59	5.52	60
2480	59.33	-2.27	3.29	1.14	28.736	30.595	3.29	-22.87	5.55	60
2490	63.95	-1.94	3.64	1.49	31.097	32.848	3.64	-20.92	5.59	60
2500	66.84	-1.75	3.84	1.69	32.609	34.23	3.84	-18.72	5.59	60

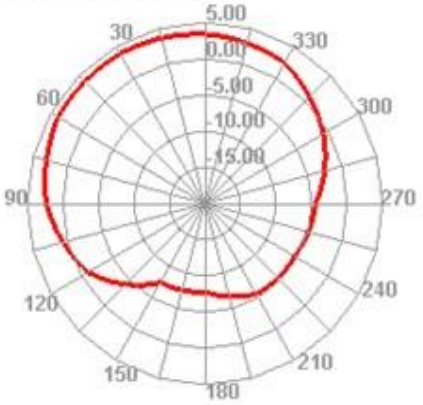




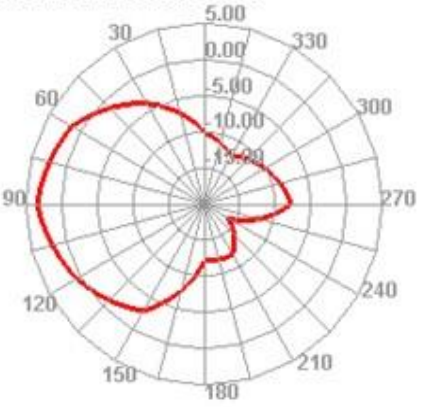
2400.000MHz



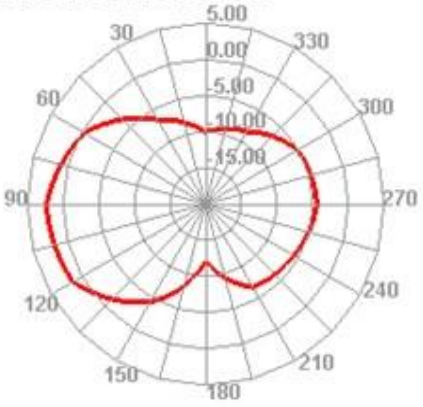
2400.000MHz H



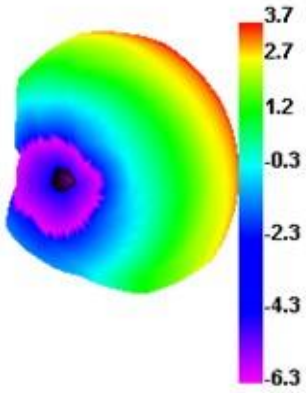
2400.000MHz E1



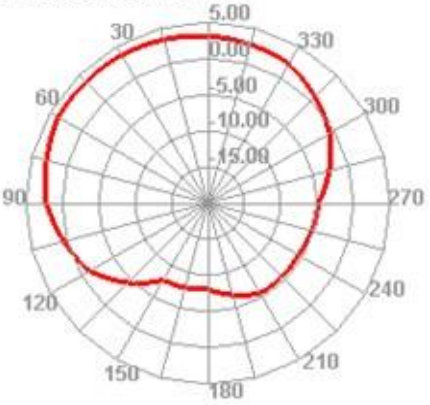
2400.000MHz E2



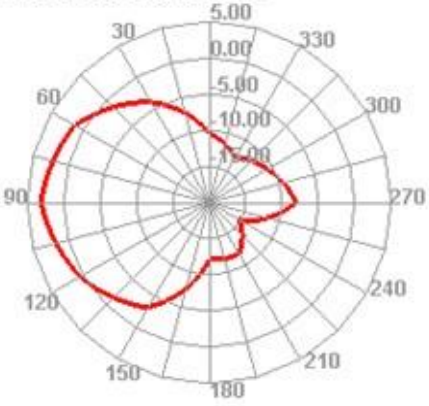
2410.000MHz



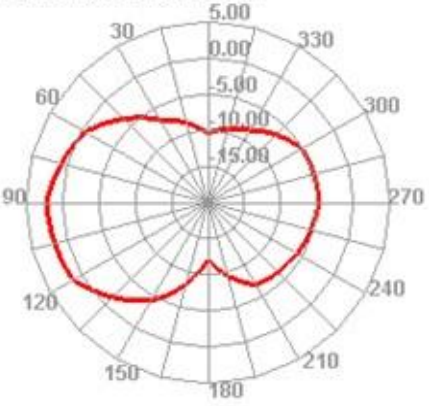
2410.000MHz H



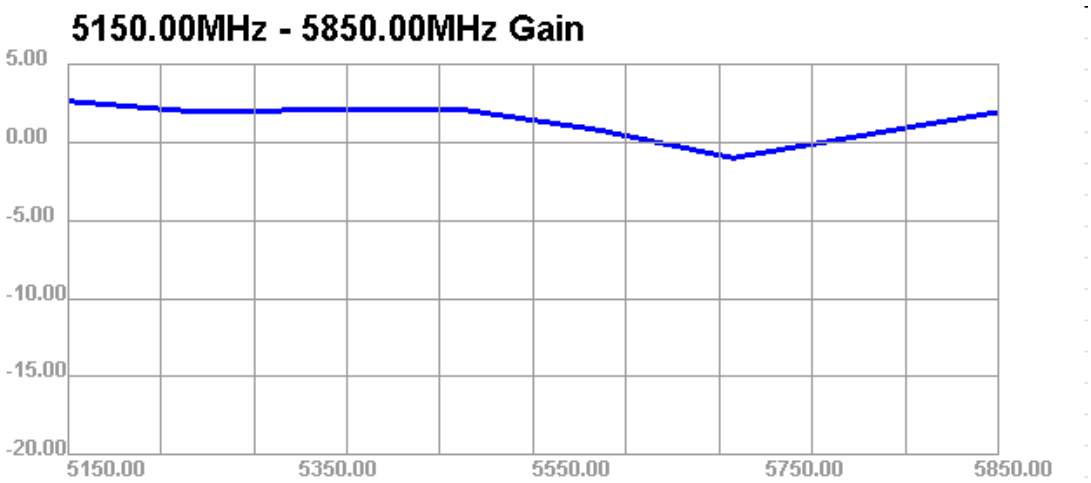
2410.000MHz E1

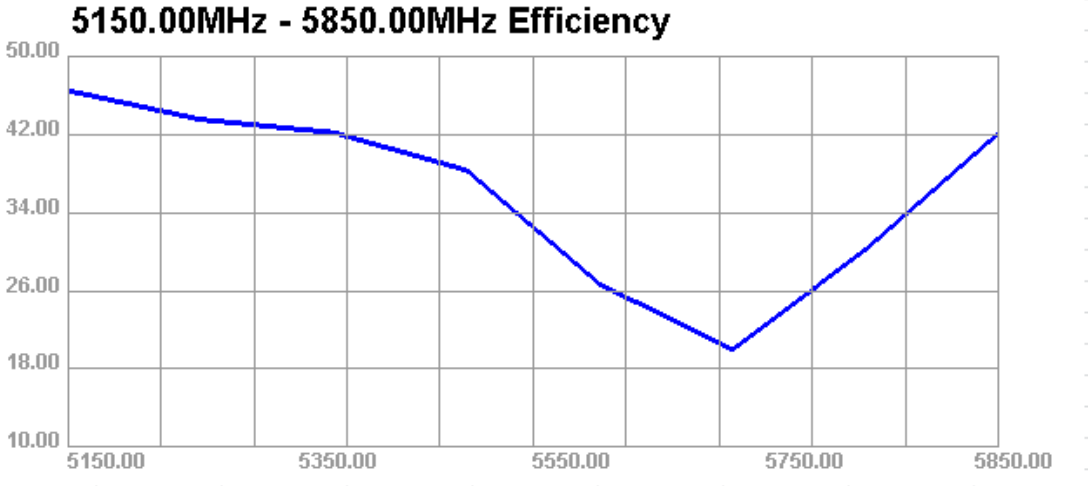


2410.000MHz E2

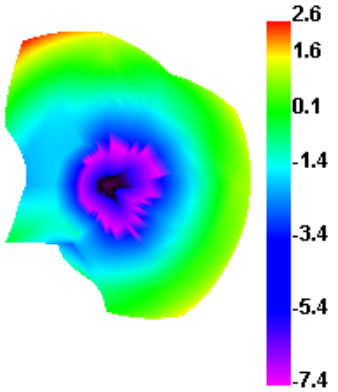


Passive Test For WIFI-5G										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)
5150	46.48	-3.33	2.62	0.47	23.497	22.983	2.62	-17.09	5.95	30
5250	43.53	-3.61	1.92	-0.23	21.604	21.921	1.92	-18.46	5.53	30
5350	42.18	-3.75	2.1	-0.05	20.274	21.908	2.1	-16.48	5.85	30
5450	38.34	-4.16	2.05	-0.1	18.755	19.59	2.05	-17.3	6.21	30
5550	26.7	-5.74	0.77	-1.38	12.36	14.336	0.77	-18.66	6.5	0
5650	19.99	-6.99	-1.01	-3.16	9.208	10.781	-1.01	-16.65	5.98	0
5750	30.23	-5.2	0.46	-1.69	13.932	16.294	0.46	-17.09	5.66	0
5850	42.11	-3.76	1.94	-0.21	19.446	22.665	1.94	-16.88	5.69	30

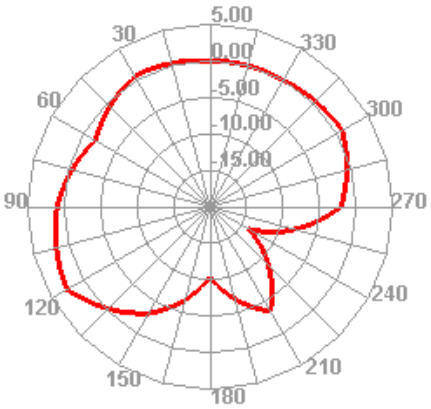




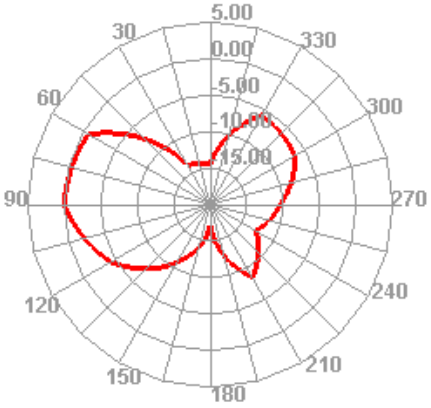
5150.000MHz



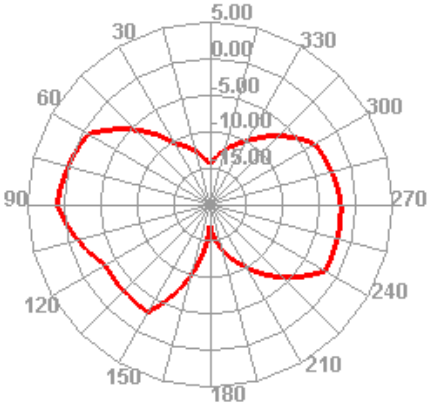
5150.000MHz H



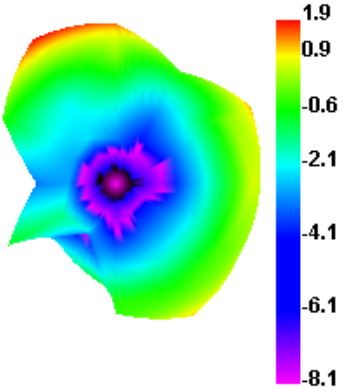
5150.000MHz E1



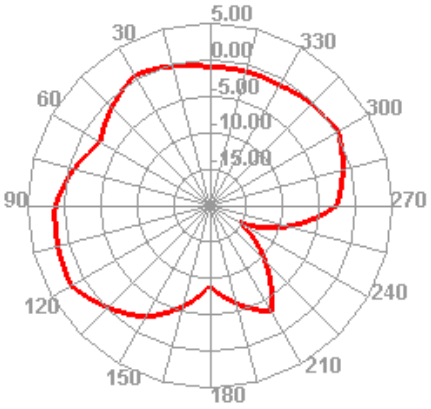
5150.000MHz E2



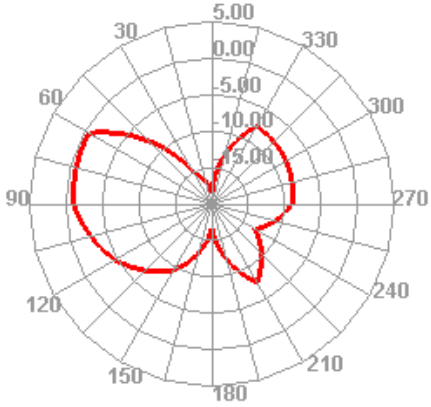
5250.000MHz



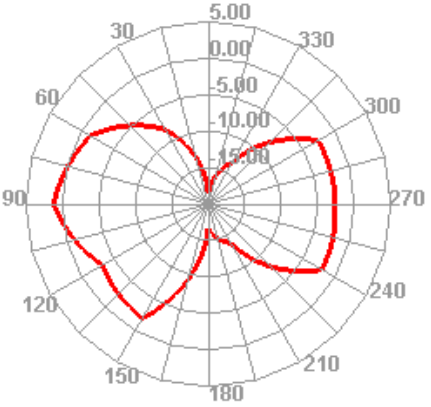
5250.000MHz H



5250.000MHz E1

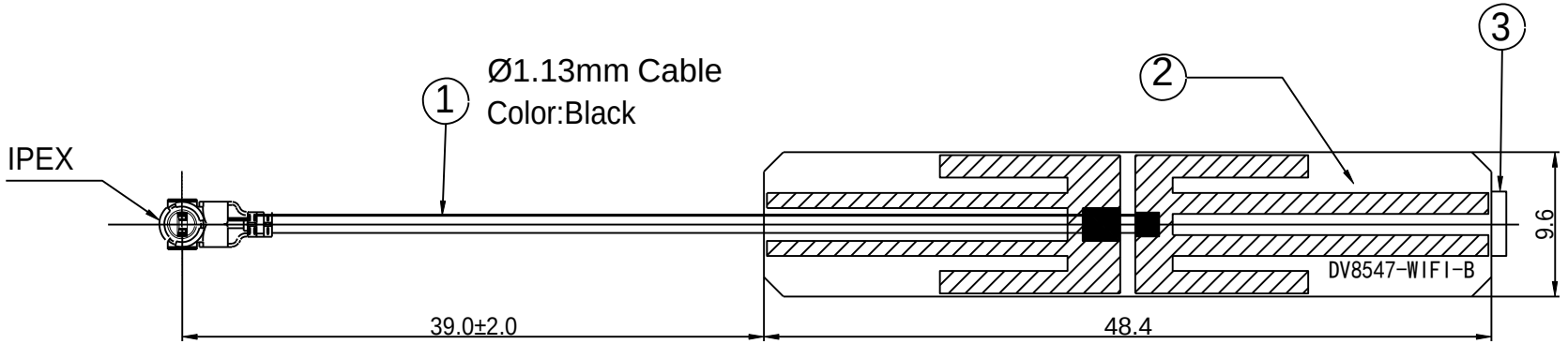


5250.000MHz E2



HF	☐
RoHS	■
REACH	☐
CONFIDENTIAL	

SIGN	DATE	DESCRIPTION	APPROVER
B			
C			
D			



Note:

1. The wire is RF1.13 black wire, the characteristic impedance is 50 Ohm
Network test: Test frequency band: WIFI dual-band VSWR: 2.0MAX
2. * is the key inspection size
3. The PCB must not be damaged, exposed copper, etc.

Serial number	name	Part No	Item Description	unit	quantity
3	Adhesive	BJ-48092-01MA	Adhesive L48*W9.2mm Material model: 3M 9448A	PC	1
2	PCB	P-48496-06FB	L48.4*W9.6mm Material FR4 Black lower right corner printing DV8547-WIFI-B	PC	1
1	Wire	X-113B-65-30	1.13 Black wire is 65mm long, one end is tinned and the other end is terminal.	PC	1

PART NO.: P48496-T11339BG

APP BY

City 2021/10/12

0.03
0.05
0.05

东莞市信博联电子科技有限公司
Dongguan Sinbolin Electronic Technology Co.LTD

TITLE: WIFI dual-band antenna

CUSTOMER P/N: /

Standard Tolerance

X.X	±0.5	○	0.02
X.XX	±0.3	◎	0.03
X°	±1	▱	0.05

CHK BY	RF BY	DES BY
Yixin 2021/10/12		YJH 2021/10/12

请输入以下报告正确资料及检查码以便查核
1.报告编码
2.报告日期（YYYY/MM/DD）
3.产品名称（输入前10个字不含空白）
4.图示检查码(依指示画面）

序号	物料型号	成名称	物料的材质	Cd	Pb	Hg	Cr(VI)			检测报告编号	测试日期	测试名称
1	PCB	PCB	FR-4	N.D.	9	N.D.	N.D.	N.D.	N.D.		.06.28	SGS
2	CABLE-113BS		FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		.01.27	SGS
			镀锡铜	N.D.	2	N.D.	N.D.	N.D.	N.D.		2021.03.31	CTI
3	CI-113	Mini	PBT黑色	N.D.	3.3	N.D.	N.D.	N.D.	N.D.		.08.21	SGS
			铜	N.D.	5	N.D.	N.D.	/	/		.02.25	SGS
			镀金层	N.D.	N.D.	N.D.	N.D.	/	/		0.26	CTI