



SPECIFICATION FOR APPROVAL

客户 Customer: Suteng

品牌 Brand: Qiyuan

品名 Description: 2.4G FPC Antenna

规格/型号

Specification

/part no: Internal Antenna/50 Ω /2400-2500MHz
/2.0dBi@2400-2500MHz/RG0.81 Black
Cable L=60mm/IPEX Type 2 Connector
/2.4G Internal FPC Antenna

日期Date: 2026.09.17

备注 Remark: 承认签章后请回复一份（或复印件）给我司，其余由贵公司留作存档。如果在签章的承认书（或复印件）回复给我司之前，下了有关此规格产品的订单且又无特别说明，那么我司就确定贵司已完全承认了。Please return one specification or one copy of it with your chop and signature of approval and retain the others for your record. In the event of an order being placed for this part number before the chop and signed with specification (or copy) is returned and without special explanation, it will be assumed that full approval have been given.

客户签字盖章：

拟制/日期 CHECKED/DATE	审核/日期 AUDITOR/DATE	批准/日期 APPROVED/DATE



Product Specification

客户料号

Customer P/N:

规格描述

Specification: Internal Antenna/50 Ω /2400-2500MHz/
2.0dBi@2400-2500MHz/RG0.81 Black C
able L=60mm/IPEX Type 2 Connector/
2.4G Internal FPC Antenna

品名 Description: 2.4G FPC Antenna

供应商 Supplier: Qiyuan

生产商 Producer: Qiyuan

备注 Remark:

承认签章后请回复一份（或复印件）给我司，其余由贵公司留作存档。如果在签章的承认书（或复印件）回复给我司之前，下了有关此规格产品的订单且又无特别说明，那么我司就确定贵司已完全承认了。Please return one specification or one copy of it with your chop and signature of approval and retain the others for your record. In the event of an order being placed for this part number before the chop and signed with specification (or copy) is returned and without special explanation, it will be assumed that full approval have been given.

拟制/日期 CHECKED/DATE	审核/日期 AUDITOR/DATE	批准/日期 APPROVED/DATE
Zhang Bingxiang 2026.09.17	Wu Qianjin 2026.09.17	Luo Daxun 2026.09.17



规格书目录(Directory)

电气参数 (Electrical parameters).....	5
机械参数(Mechanical parameters).....	5
工作/储存温度 (Operating/ Storage Temperature)	5
结构图纸 (Structural drawings).....	6
环境与可靠性试验(Environmental and reliability testing).....	7.8
测试设备(Test equipment).....	9
测试参数(Testing Parameters).....	10.11



Resume					
Revision number	Revise chapters	modify pages	effective date	Changes	Change Recorder
V1.1					



Electrical parameters:

Frequency 频率范围	2400~2500MHz
Impedance 特性阻抗	50Ω
S.W.R. 电压驻波比	≤2.0
Antenna Gain 增益	2.0±0.5dBi
Admitted Power 功率	50W
Radiation 辐射方向	Omnidirectional
Polarization 极化形式	Vertical + Horizontal Polarization
Return Loss 回波损耗	-9.2dB MAX

Mechanical parameters:

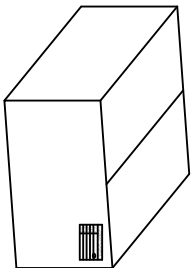
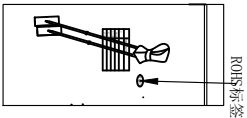
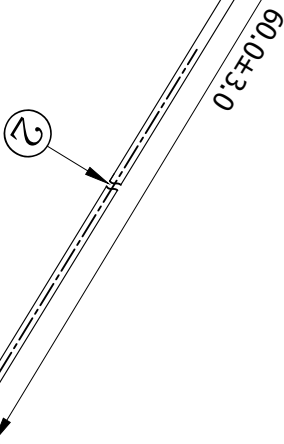
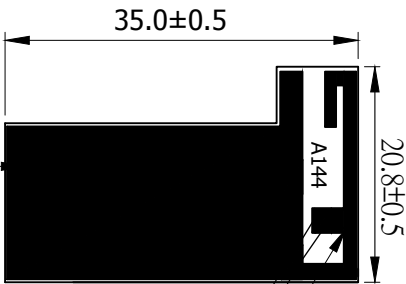
Antenna Colour 天线颜色	Black
RF Cable Model 射频线型号	RG0.81, Black
Connect Type 接口方式	IPEX II

Operating/ Storage Temperature:

Operating Temperature 工作温度	-40~85℃
Storage Temperature 储存温度	-40~85℃

成品图

REV		DATE	DESCRIPTION
A		2026.09.17	New Issue



1. 纸箱需贴上1pcs/ROHS环保
标签至成品标签上;
2. 纸箱须贴上1pcs外箱标签至
纸箱右上角。

Specification:
Frequency Range : 2.4-2.5GHz
Return loss: -9.2dB or less
VSWR: 1.92:1max
Gain(Peak): 2.0dBi

XXX.	±5.0	APPROVED	CUSTOMER				
XX.	±2.0		PART NO				
X.	±0.5	CHECKED	PART NAME	2.4G内置FPC天线			
X	±0.2		QY P/NO				
.XX	±0.1	DRAWING	REV	UNIT	SCALE	SIZE	SHEET
⊙			A	mm	1/1	A 4	1 OF 1



Dongguanshi Qiyuan
Electronic Technology Co., Ltd.
东莞市启元电子科技有限公司

ENGINEERING DRAWING



Environmental and reliability testing:

Environmental test

High and low temperature humidity test report						
Experimen tal project	High temperature, low temperature and constant humidity test					
Test sample Name plate	FPC Antenna		Test date		2026. 08. 25	
Quimente	Constant temperature and humidity test chamber network analyzer		Quantity		5PCS	
Inspecti on standd	1. 1. The metal surface coating has no peeling, cracking, wrinkling and other defects;The non-metal part should not be discolored, broken, deformed, degummed and other defects. 2 .Electrical test meets the design requirements; The voltage standing wave ratio test is qualified.					
Test name	experimental project	require	experiment al method	Actual test data	result	
					sample	decide
High temperatu e test	Temperature (℃)	+85±3	In accordance withGB2423.1-89 9 chapter To be carried out in the prescribed manner	+85 1. 2 2. 3 1	1	qualified
	Temperature stabilization time of test sample (h)	12			2	qualified
	Duration of test (h)	1			3	qualified
	Recovery time (h)	1			4	qualified
						5
Low temperatu e test	Temperature (℃)	-40±3	n accordance withGB2423.1-89 Section 8 chapter Regulation of the methods	-40 1. 2 2. 4 1. 1	1	qualified
	Temperature stabilization time of test sample (h)	1			2	qualified
	Duration of test (h)	2			3	qualified
	Recovery time (h)	1			4	qualified
						5



Salt spray test; salt fog test

Salt spray test report				
Experimental project	salt spray test; salt fog test			
Test sample Name plate	FPC Antenna	Test date	2026. 08. 25	
Quimente	salt spray corrosion test chamber	Quantity	5PCS	
Inspection standard	Put the test sample into the prepared salt solution test chamber and salt spray corrosion chamber for continuous spray test			
Salt solution concentration	52g/L	The pH of the salt solution: 6.5-7.2	test cycle: 24h	
Actual test data	55g/L	The pH of the salt solution: 6.8	test cycle: 26h	
Test standard; test criteria	According to GB/T10125 "artificial atmosphere corrosion test, salt spray test" test;Results according to the GB/T6461-2002 "Metal and other inorganic coating on metal substrate after corrosion test is the grade of samples and test pieces" rating.			
test results				
NO.	Corrosion rating	Actual test data	Evaluation of the results	备注
1	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	
2	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	
3	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	
4	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	
5	Rp/Ra=10/10vsB	Rp/Ra=10/10vsB	qualified	



Test equipment:



Agilent 5071C Network Analyzer

安捷伦 E5071C 网络分析仪

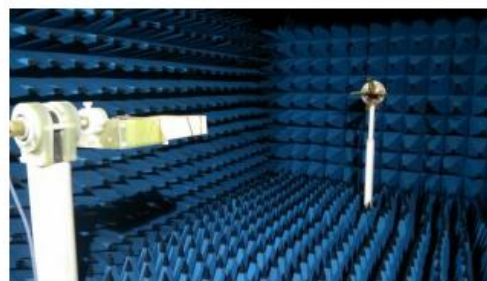


HP8594E Spectrum analyzer

HP 8594E 频谱分析仪



CMW-500



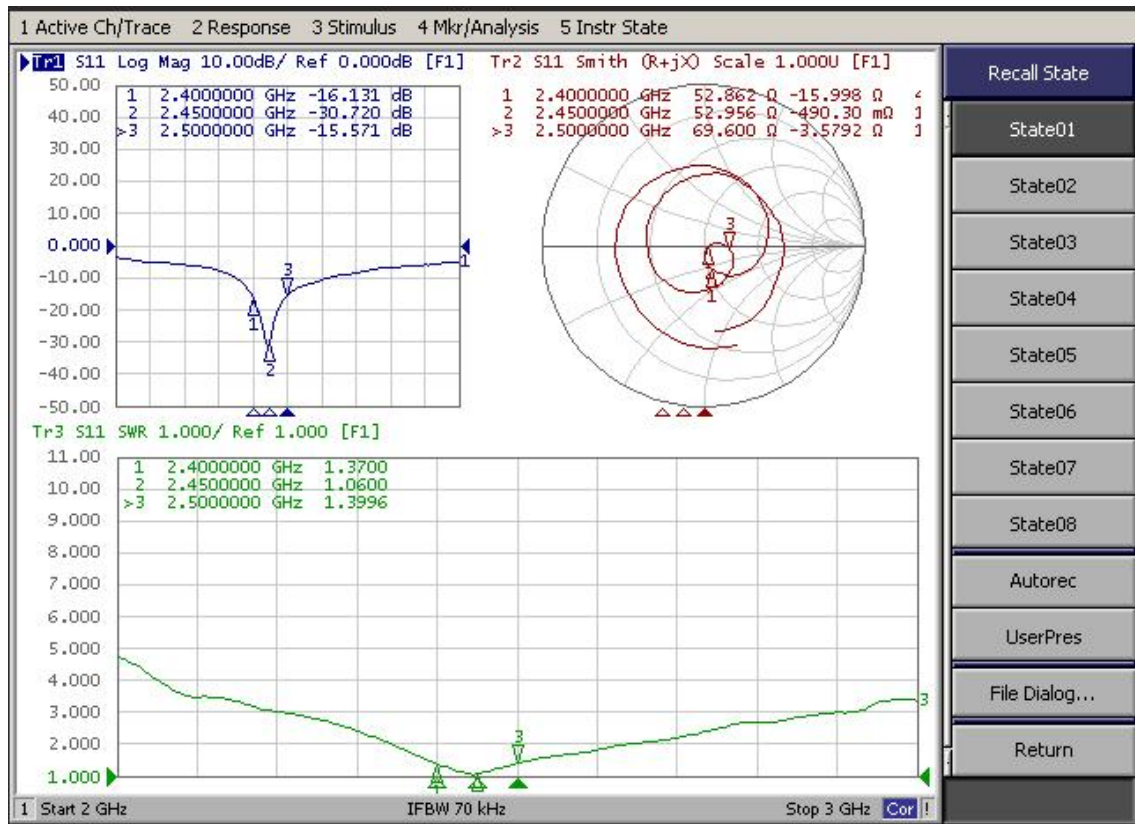
微波暗室

Anechoic chamber



Testing Parameters

V.S.W.R&Return Loss



Gain&Efficiency

东莞市启元电子科技有限公司											
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-1.87	-1.90	-1.74	-1.67	-1.61	-1.65	-1.78	-1.94	-2.17	-2.21	-2.21
Gain (dBi)	2.07	1.82	1.93	1.87	1.98	1.90	1.89	1.78	1.85	1.91	1.97
Efficiency (%)	65.06	64.61	67.00	68.07	69.09	68.45	66.33	64.01	60.71	60.14	60.18



2D、3D Radiation Patter

