承 认 书

SPECIFICATION FOR APPROVAL

Customer: Kandao

Brand: Jiutian

Description: WIFI Antenna

Specification

/part no: 3dBi@2.4GHz , 3dBi@5.8GHz Internal antenna, RG1.13 black Cable L=205mm, IPEX first generation terminal, black FPC antenna

Date: 2023.04.19

Remark: Pleasereturnonespecificationoronecopyofitwithyourchopandsignatureofapprovalandretain 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.

Customer signature and seal:

CHECKED/DATE	AUDITOR/DATE	APPROVED/DATE

Specifications

Customer P/N： /

Specification： Antenna,3dBi@2.4GHz ,3dBi@5.8GHz Internal antenna, RG1.13 blackCable L=205mm, IPEX first generation terminal, black FPC antenna

Description： WIFI Antenna

Supplier： Jiutian

Producer： Jiutian

Remark： Pleasereturnonespecificationoronecopyofitwithyourchopandsignatureofapprovalandretain the others for your record. Inthe 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.

CHECKED/DATE	AUDITOR/DATE	APPROVED/DATE
Zhang Bingxiang 2023.04.19	Wu Qianjin 2023.04.19	Luo Daxun 2023.04.19

Resume

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Specification list

Antenna Picture―――――――――――――――――――――――― 5

Electrical parameter―――――――――――――――― ―――― 5

Mechanical parameters―――――――――――――――――――― 5

Operating/ Storage Temperature――――――― ――――――――5

Structural drawings―――― ―――――――――――――――― 6

Environmental and reliability testing―――――――――― 7.8

Measuring parameter―――――――――――――――――――― 9

Picture：

Electrical parameters：

Frequency 频率范围	2.4~2.5GHz&5.15~5.85GHz
Impedance 特性阻抗	50Ω
S.W.R. 电压驻波比	≤2.0
Antenna Gain 增益	3dBi±0.5@2.4GHz，3dBi±0.5@5.85GHz
Polarization 极化形式	vertical polarization
Return Loss 回波损耗	-9.2dB MAX

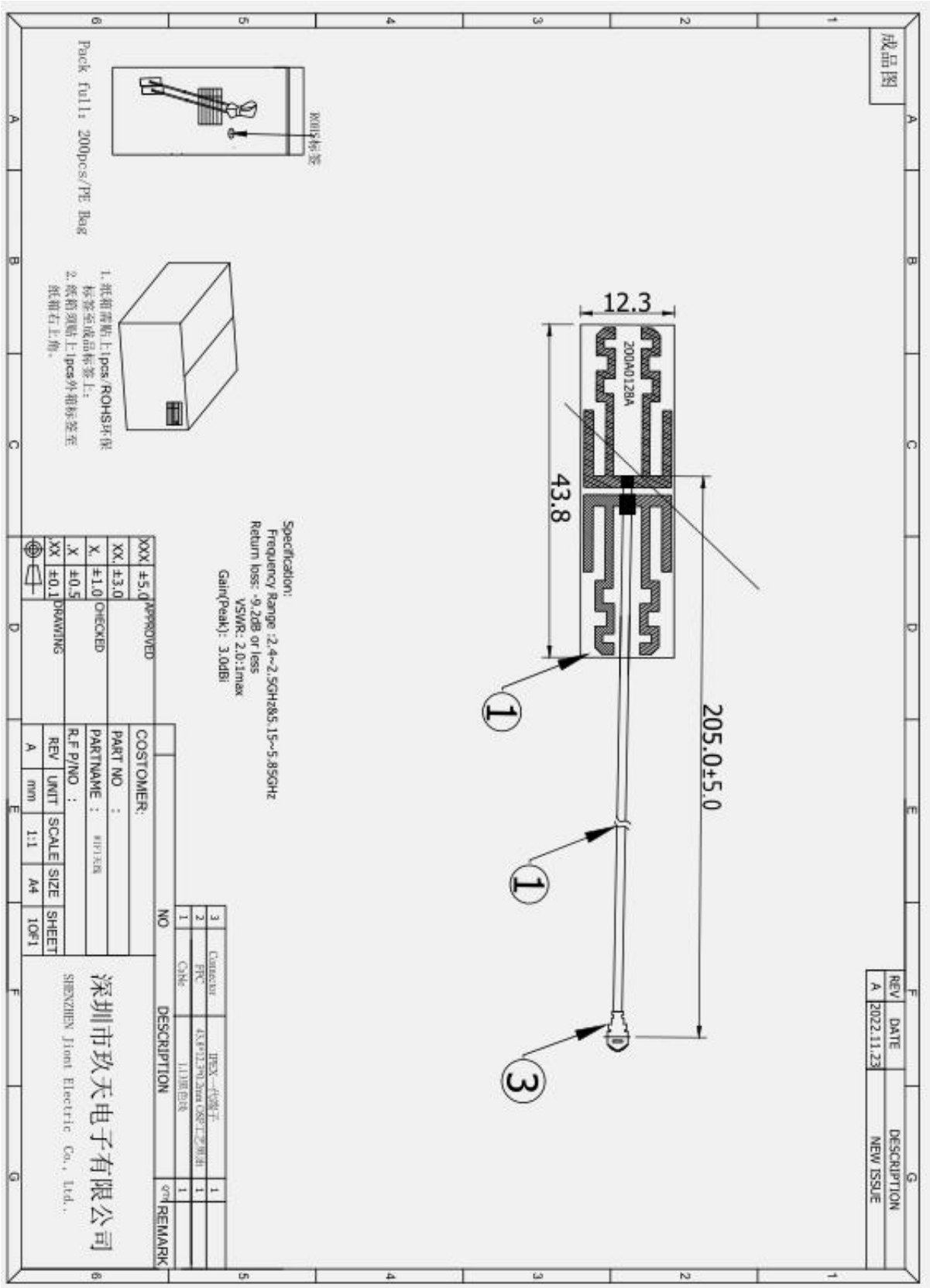
Mechanical parameters

Antenna Colour 天线颜色	Black
RF Cable Model 射频线型号	RG113，Black
Connect Type 接口方式	I-PEX Ⅰ

Operating/ Storage Temperature：

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

Structural drawings：



Environmental and reliability testing:

Environmental test

High and low temperature humidity test report						
experimental project	High temperature, low temperature and constant humidity test					
Test sample Name plate	FPC Antenna		Test date	2023.03.15		
quimente	Constant temperature and humidity test chamber network analyzer		quantity	5PCS		
inspection 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.					
nameThe	experimental project	require	experimental method	Actual test data	result	
					sample	decide
high temperatue test	Temperature (℃) Temperature stabilization time of test sample (h) Duration of test (h) Recovery time (h)	+85±3 1 1 1	In accordance withGB2423.1-89 9 chapter To be carried out in the prescribed manner	+85 1.2 2.3 1	1	qualified
					2	qualified
					3	qualified
					4	qualified
					5	qualified
low temperatue test	Temperature (℃) Temperature stabilization time of test sample (h) Duration of test (h) Recovery time (h)	-40±3 1 2 1	n accordance withGB2423.1-89 Section 8 chapter Regulation of the methods	-40 1.2 2.4 1.1	1	qualified
					2	qualified
					3	qualified
					4	qualified
					5	qualified
steady-state damp heat test	Temperature (℃) Relative Humidity (%) Duration of test (h) Recovery time (h)	+40±2 90-95 21 1	According to GB2423.3-93 section 5 chapter Stipulated by the parties the parties	+42 92 22 1.1	1	qualified
					2	qualified
					3	qualified
					4	qualified
					5	qualified

Salt spray test; salt fog test

Salt spray test report

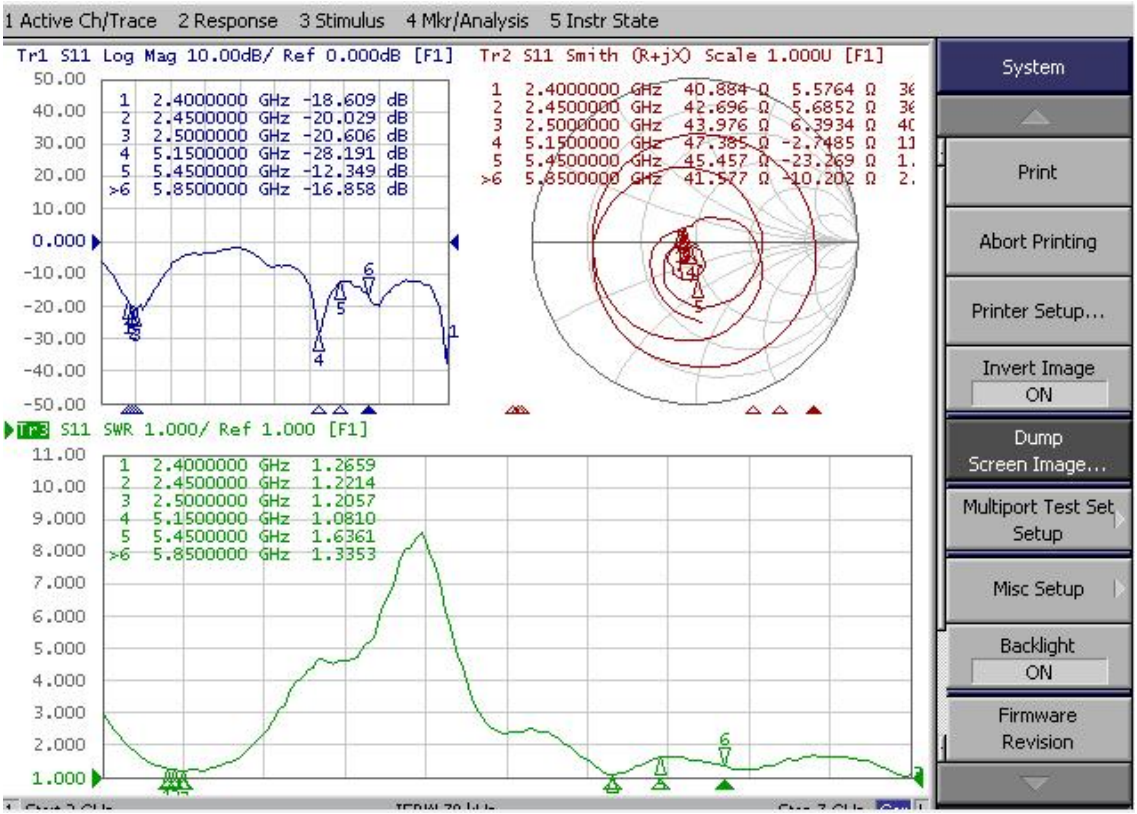
experimental project	salt spray test; salt fog test		
Test sample Name plate	FPC Antenna	Test date	2023.03.15
quimente	salt spray corrosion test chamber	quantity	5PCS
inspection sta ndd	Put the test sample into the prepared salt solution test chamber and salt spray corrosion chamber for continuous spray 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	

Measuring parameter

V.S.W.R&Ruturn Loss

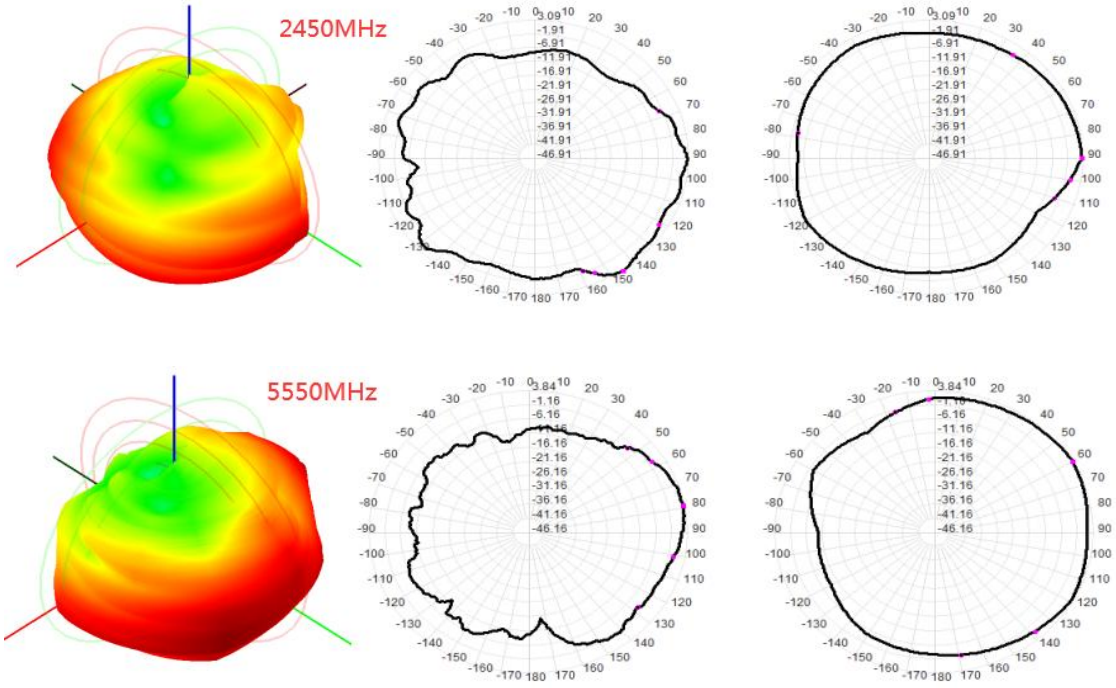


Gain&Efficiency

FEITUKEJI

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
Gain (dBi)	3.01	2.88	3.14	3.35	3.65	3.65	3.59	3.12	2.43	2.23	2.19
Efficiency (%)	44.01	44.86	45.75	45.25	46.63	45.57	48.94	48.57	44.76	42.74	43.09

FEITUKEJI

Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Frequency (MHz)	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
Gain (dBi)	3.02	3.03	3.88	3.36	3.29	3.11	3.56	3.07	3.61	3.11	3.12	3.66	3.11	3.13	2.70
Efficiency (%)	55.08	53.82	54.89	51.06	50.85	53.04	49.33	53.69	47.87	43.89	49.17	48.29	45.43	44.29	44.92

2D、3D Radiation Patter