



SPECIFICATION FOR APPROVAL

Component information:

客户 (Customer)	Ganzhou DHD Technology Co., Ltd
部 品 名 称 (Material Description)	3138C-BT 2.4G Antenna
客户料号 (Customer's Part number)	/
部 品 规 格 (Specifications)	A3138C-BT 2.4G Built-In FPC Antenna RG1.13, Black, 160mm Length, 3.0dBi $\pm$ 0.5@2.4-2.5G, With RF IPEX Gen 1 Connector. Efficiency: 50%. Standing Wave Ratio: Less Than 2.0. Coaxial Line With Shock-absorbing Foam Insulation, L = 75mm. Environmentally Friendly.
供应商料号 (Supplier's Part number)	/
送样日期 (Date)	2025/10/22

Supplier Approval:

拟 制 Prepared By	审 核 Checked By	批 准 Approved By
Zhang Bingxiang	Wu Qianjin	Luo Daxun

Customer approval:

承 认 Accepted By	审 核 Checked By	批 准 Approved By

Recognizing the outcome:

- ☐完全接受 (Full Approval)
☐条件接受 (Conditional Approval)
☐不合格 (Unqualified)
☐其它 (Others) :



SPECIFICATION FOR APPROVAL

客户 Customer: DHD

品牌 Brand: Qiyuan

品名 Description: BT Antenna

规格/型号

Specification

/part no: A3138C-BT 2.4G Built-In FPC Antenna RG1.1
3, Black 160mm Length 3.0dBi $\pm$ 0.5@2.4-2.
5G With RF IPEX Gen 1 Connector. Efficiency:
50%. Standing Wave Ratio: Less Than 2.0.
Coaxial Line With Shock-absorbing Foam Insul
ation, L = 75mm. Environmentally Friendly

日期 Date: 2025.10.22

备注 Remark:

承认签章后请回复一份（或复印件）给我司，其余由贵公司留存存档。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



SPECIFICATIONS

客户料号

Customer P/N: /

规格描述

Specification: A3138C-BT 2.4G Built-In FPC Antenna RG1.13,
Black 160mm Length 3.0dBi $\pm$ 0.5@2.4-2.5G
With RF IPEX Gen 1 Connector. Efficiency: 5
0%. Standing Wave Ratio: Less Than 2.0. Coa
xial Line With Shock-absorbing Foam Insulation,
L = 75mm. Environmentally Friendly

品名 Description: BT Antenna

供应商 Supplier: Qiyuan

生产商 Producer: Qiyuan

备注 Remark:

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拟制/日期 CHECKED/DATE	审核/日期 AUDITOR/DATE	批准/日期 APPROVED/DATE
Zhang Bingxiang 2025.10.22	Wu Qianjin 2025.10.22	Luo Daxun 2025.10.22

[illegible]



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天线照片 (Picture) :



(The image samples are for reference only, and the drawings shall prevail)

电气参数 (Electrical parameters) :

Frequency 频率范围	2.4~2.5GHz
Impedance 特性阻抗	50Ω
S.W.R. 电压驻波比	≤2.0
Antenna Gain 增益	3.24dBi
Polarization 极化形式	Vertical Polarization/horizontal Polarization
Return Loss 回波损耗	-9.2dB MAX

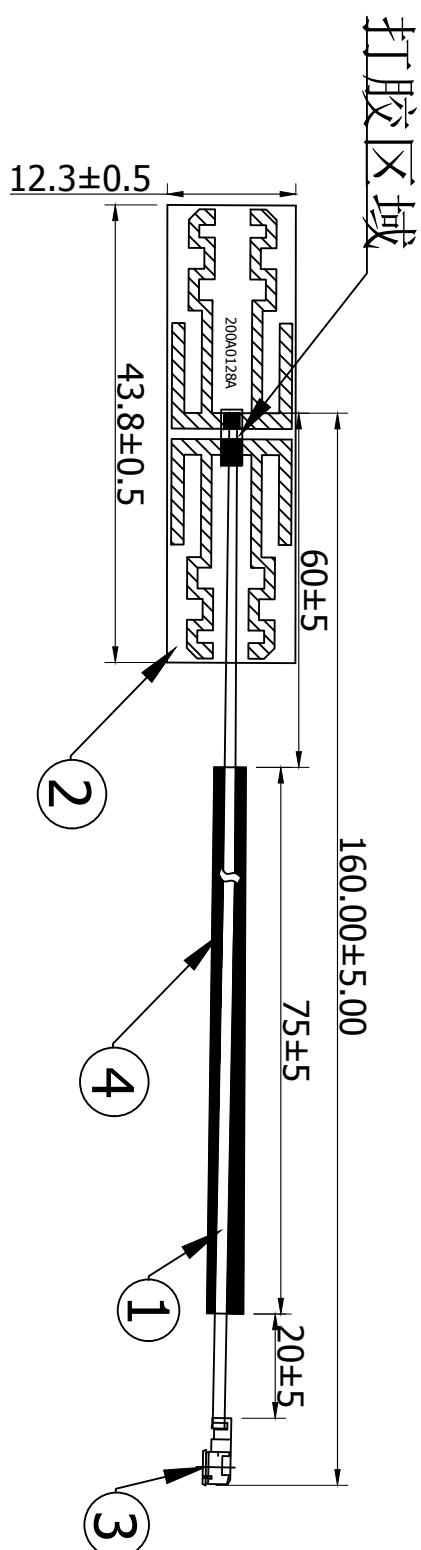
机械参数(Mechanical parameters):

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

工作/储存温度 (Operating/ Storage Temperature) :

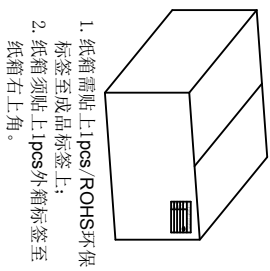
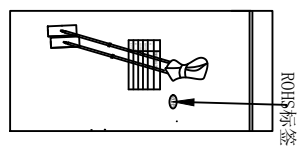
Operating Temperature 工作温度	-40~85℃
Storage Temperature 储存温度	-40~85℃

REV		DATE	DESCRIPTION
A		2025.07.11	NEW ISSUE



Specification:
Frequency Range :2.4~2.5GHz
Return loss: -9.2dB or less
VSWR: 1.92:1max
Gain(Peak): 3.0dBi

4	Foam	75*14*20.EVA	1	
3	Connector	IPEX一代端子	1	
2	FPC	43.8*12.3*0.2mm OSP工艺黑油	1	
1	Cable	RG-113 RF Cable 50R.Color:Black	1	



XXX ±5.0		APPROVED		CUSTOMER:		NO		DESCRIPTION		QTY		REMARK	
XX ±3.0		CHECKED		PART NO :		PARTNAME :		BT-2.4G天线					
X ±1.0				R.F P/NO :		REV		UNIT		SCALE		SIZE	
.X ±0.5		DRAWING		A		mm		1:1		A4		SHEET	
XX ±0.1												10F1	

东莞市启元电子科技有限公司
Dongguan Shi Qiyuan Electric Technology Co., Ltd.

Pack full: 200pcs/PE Bag



环境与可靠性试验(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		2025. 09. 20	
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	qualified
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	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	2025. 09. 20	
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	



测试设备(Test equipment)



Agilent 5071C Network Analyzer

安捷伦 E5071C 网络分析仪

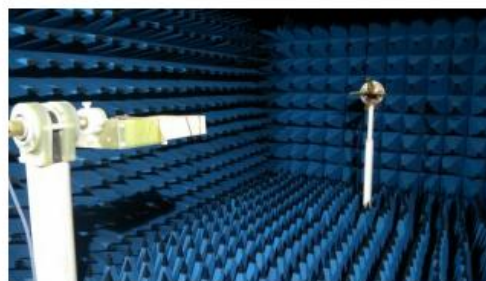


HP8594E Spectrum analyzer

HP 8594E 频谱分析仪



CMW-500



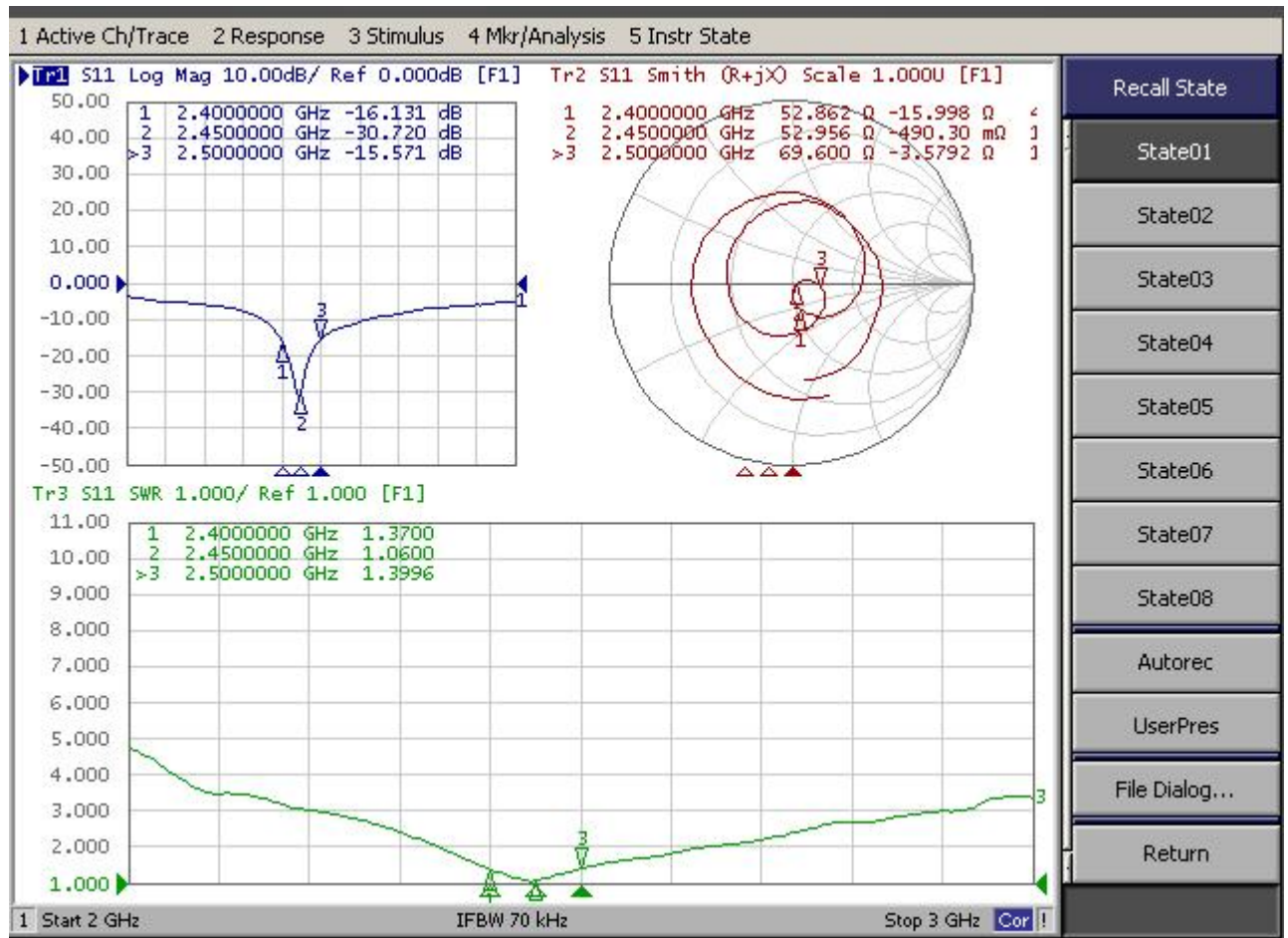
微波暗室

Anechoic chamber



测试参数(Measuring parameter)

V.S.W.R&Return Loss



增益&效率(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
Efficiency (dBi)	-2.43	-2.35	-2.23	-2.26	-2.21	-2.12	-2.29	-2.28	-2.20	-2.31	-2.15
Gain (dBi)	2.90	2.97	3.15	3.09	3.17	3.24	3.05	3.15	3.24	3.04	3.23
Efficiency (%)	52.05	52.16	51.96	53.74	52.46	53.62	51.34	50.31	52.72	51.54	51.49



2D、3D Radiation Patter

