



SPECIFICATION FOR APPROVAL

Component information:

客户 (Customer)	Ganzhou DHD Technology Co., Ltd
部品名称 (Material Description)	BT Antenna
客户料号 (Customer's Part number)	FVA51/ANT.0100014502001
部品规格 (Specifications)	FVA51-BT_ built-in black FPC antenna/50 Ω/2400-2500MHz/2dBi/ RG1.13 black double tin wire L=145mm/IPEX first generation terminal with shock-absorbing foam
供应商料号 (Supplier's Part number)	QY023-11C0036A
送样日期 (Date)	2024/3/5

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: FVA51 Bluetooth Antenna/50Ω/2400-2500MHz/
2.0±0.5dBi@2.4-2.5GHz/RG113 Black Double
Tin Wire L=145mm/I-PEX First Generation Ter
minal/Black FPC Built-In BT Antenna

日期 Date: 2024.03.05

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。如果在签章的承诺书（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



客户料号

Customer P/N: ANT.0100014502001

规格描述

Specification: FVA51 Bluetooth Antenna/50Ω/2400-2500MHz/2.0±0.5dBi@2.4-2.5GHz/RG113 Black Double Tin Wire L=145mm/I-PEX First Generation Terminal/Black FPC Built-In BT Antenna

品名 Description: BT 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 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 2024.03.05	Wu Qianjin 2024.03.05	Luo Daxun 2024.03.05



Specification list

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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	2.0dBi±0.5
Polarization 极化形式	Vertical polarization
Return Loss 回波损耗	-9.2dB MAX

机械参数(Mechanical parameters):

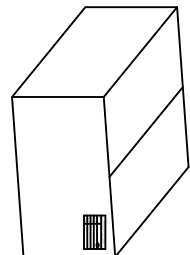
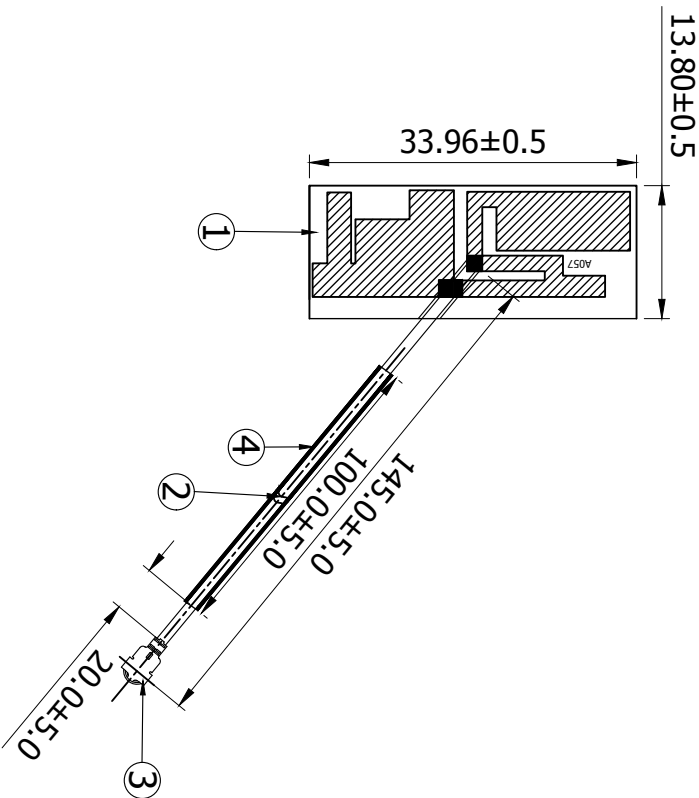
Antenna Colour 天线颜色	Black
RF Cable Model 射频线型号	RG113, Black
Connect Type 接口方式	I-PEX

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℃

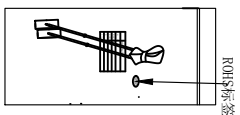
成品图

REV	DATE	DESCRIPTION
A	2023.10.21	New Issue



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

1. The cardboard box needs to be labeled with Ipscs/ROHSenvironmentally friendly label
 Label onto the finished product label:
 2. The cardboard box must be labeled with 1 outer box label
 The upper right corner of the cardboard box.



Pack full: 200pcs/PE Bag

XXX	±5.0	APPROVED
XX	±2.0	CHECKED
X	±0.5	DRAWING
.X	±0.2	
.XX	±0.1	

4	Foam	EVA,100*14*2.0mm, Color:Black	1	
3	Connector	L-PEX 1	1	
2	Cable	RG-113 RF Cable 50Ω,Black	1	
1	Antenna Body	FPC: 33.96*13.80*0.2mm, OSP,Black	1	
NO	PART NAME	DESCRIPTION	Q'TY	REMARK
	CUSTOMER	QY023		
	PART NO	FVA51		
	PART NAME	BT-2.4G内置FPC天线		
	QY P/NO	QY023-11C0034A		
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



环境与可靠性试验(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	2024.02.25			
Quimente	Constant temperature and humidity test chamber network analyzer		Quantity	5PCS		
Inspection standard	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 temperature test	Temperature (°C)	+85±3	In accordance withGB2423.1-89 9 chapter To be carried out in the prescribed manner	+85	1	qualified
	Temperature stabilization time of test sample (h)	12		1.2	2	qualified
	Duration of test (h)	1		2.3	3	qualified
	Recovery time (h)	1		1	4	qualified
					5	qualified
Low temperature test	Temperature (°C)	-40±3	n accordance withGB2423.1-89 Section 8 chapter Regulation of the methods	-40	1	qualified
	Temperature stabilization time of test sample (h)	1		1.2	2	qualified
	Duration of test (h)	2		2.4	3	qualified
	Recovery time (h)	1		1.1	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	2024. 02. 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	



测试设备(Test equipment)



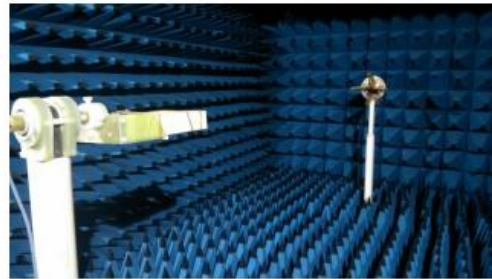
Agilent 5071C Network Analyzer
安捷伦 E5071C 网络分析仪



HP8594E Spectrum analyzer
HP 8594E 频谱分析仪



CMW-500



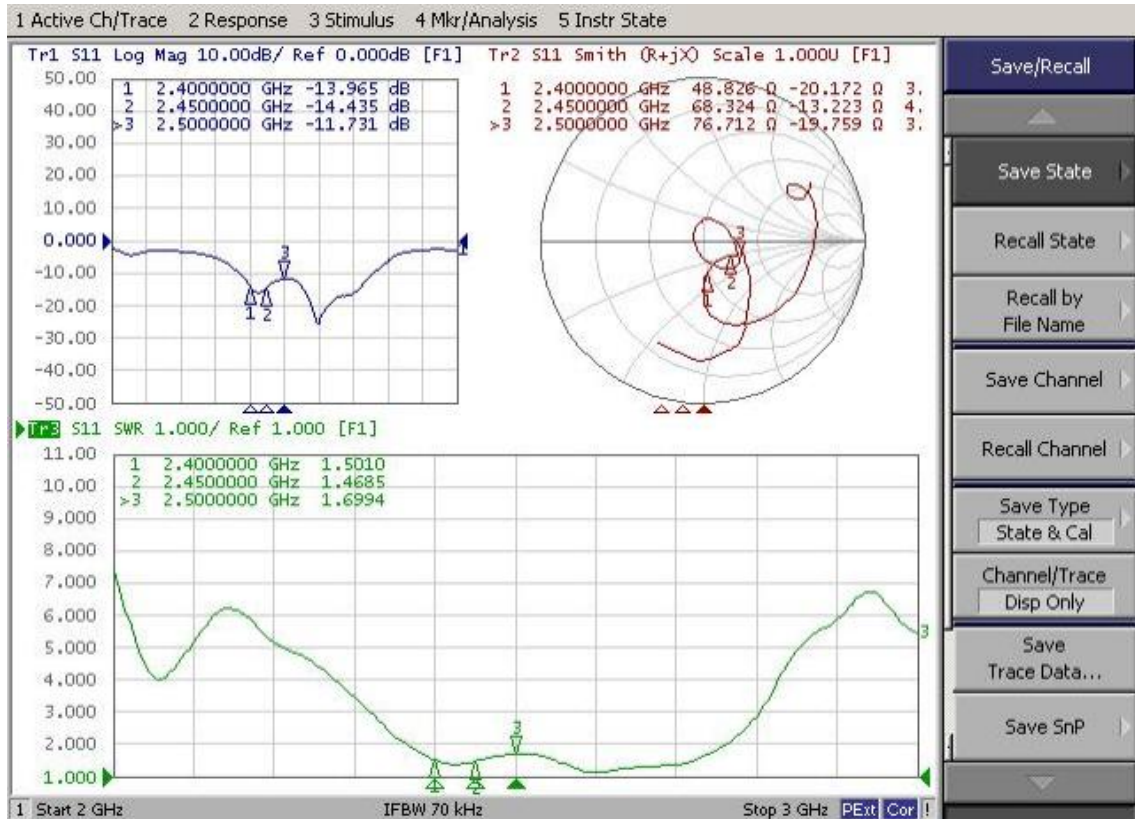
微波暗室

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
Gain (dBi)	1.67	1.56	2.05	2.33	1.59	2.29	1.84	2.05	1.70	1.54	1.53
Efficiency (%)	38.93	40.96	42.00	44.95	41.09	42.31	40.93	43.23	39.44	38.17	37.32

2D、3D Radiation Patter

