SPECIFICATION FOR APPROVAL

（CUSTOMER）	Guangdong nine United Technology Co., LTD
（MODEL NO）	RT2X29V013WLF00
（PART NO）	
（MODEL NO）	2.4G black PCB internal antenna 1.37 Black line L=145MM
（PART NO）	YJC-6N145-B22
(MPQ)	100PCS
(BRAND)	YJC
（DATE）	2024-07-04
（QUANTITY）	15PCS

APPROVED SIGNATURES			APPROVED SIGNATURES		
PREPARED BY	CHECKED BY	APPROVED BY	TESTED BY	CHECKED BY	APPROVED BY

Note: The sample shall be delivered in one copy, which shall be signed by the supplier manually and stamped with the company's official seal. The specification shall provide one paper file and one electronic file.

Add: Building C, Guangming Valley, Hongyu, No. 11, Shiwei Community, Ma Tian Ban, Guangming District, Shenzhen

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telephone: +86-0755-27810060/23192199; fax: +86-0755-27810057

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APPROVAL SHEET

CUSTOMER NAME	Guangdong nine United Technology Co., LTD
CUSTOMER P/N	
PART NAME	2.4G black PCB internal antenna 1.37 Black line L=145MM
P/ N	YJC-6N145-B22
APPROVAL REV.	A2
DELIVERY DATE	August 26, 2024
PREPARED BY	Yin Feijie
CHECKED BY	Fang Wenfeng
APPROVED BY	Fang Wenfeng

Customer Approved		
Prepared By	Checked By	Approved By

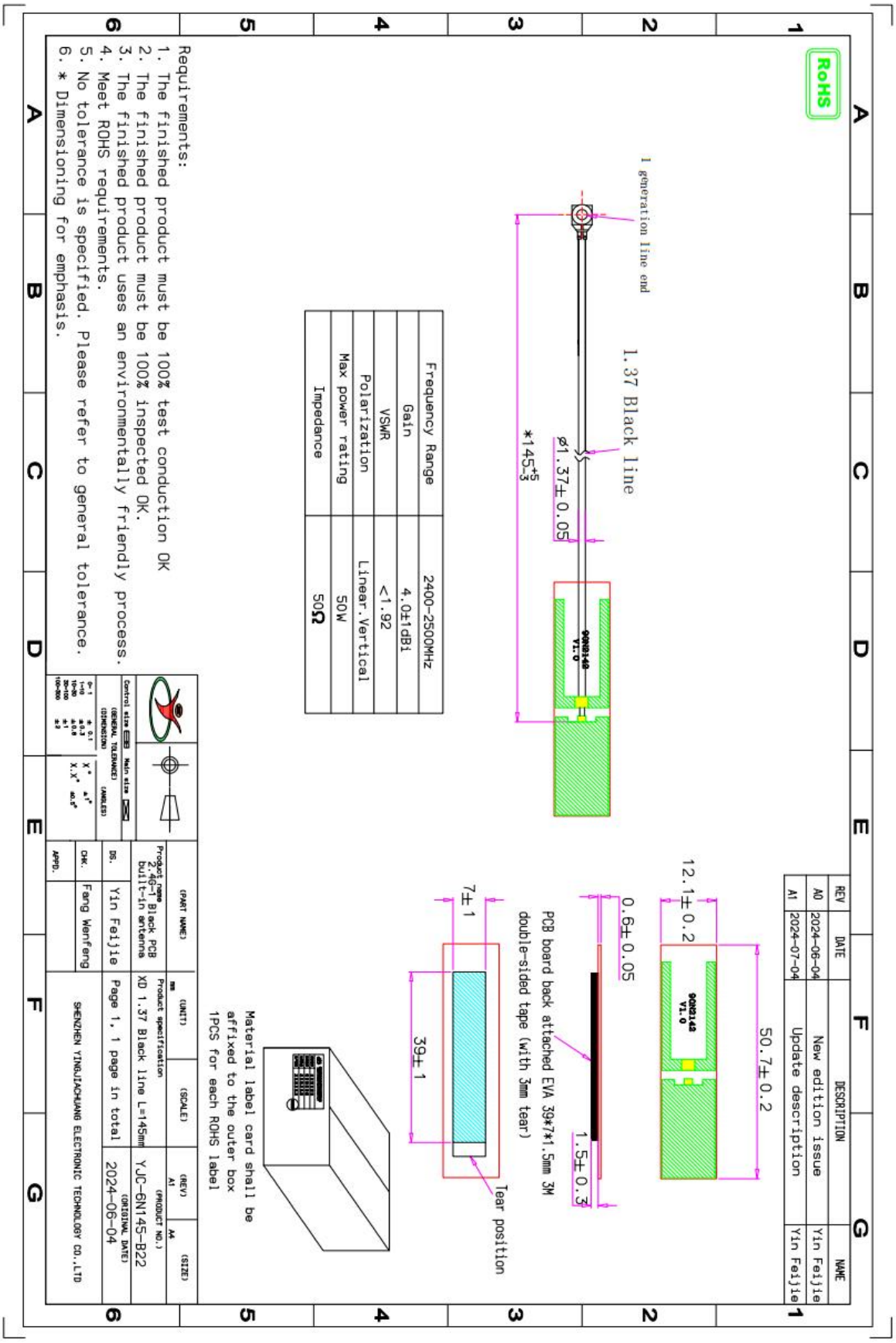
Address: Building C, Hongyu Guangming Valley, No. 11, Youma Gang Road, Ma Tian Street, Guangming District, ShenzhenDongguan Branch: Yingjiachuang Industrial Park, No. 2 Yinhe 3rd Road, Shishuikou, Qiaotou Town, Dongguan CityHangzhou Office: 212, Building B, Dahua Jianghong International Innovation Park, 369 Internet of Things Street, Binjiang District, HangzhouMianyang Office: No. 4F-34 Wanxiang High-tech International, No. 35 Mianxing East Road, Mianyang High-tech Zone, Sichuan Provincetelephone: 0755-27810060 fax: 0755-27810057 website: http://www.szsyjc.com

catalogue

resume：

edition	Content of change and reasons for change	date	release
A/0	Initial release	June 04, 2024	
A/1	Update description and add reports	July 04, 2024	
A/2	Adding OTA data	August 26, 2024	

Antenna plan：



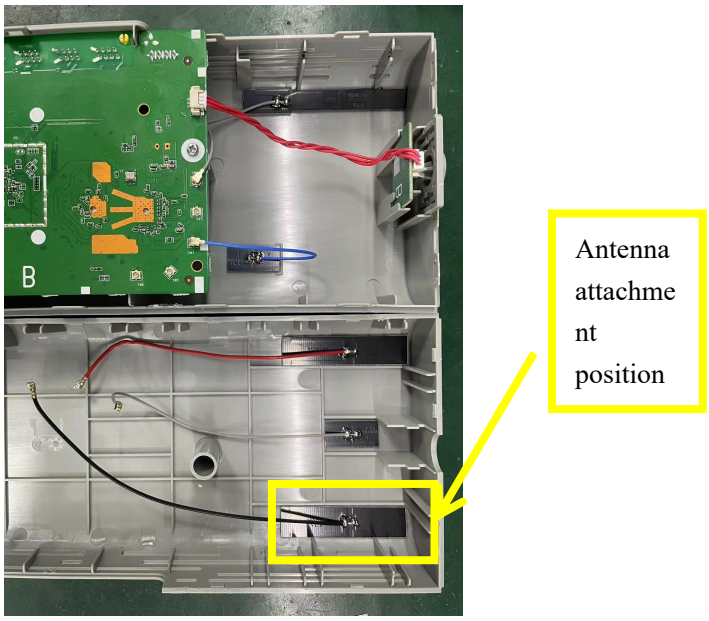
Antenna technical parameters and environmental testing:

Electrical technical parameter			
Electrical Specifications		Mechanical Specifications	
Frequency Range	2400-2500MHz	Cable Color	Black
VSWR	＜1.92	Input connector	XD
Input Impedance	50 Ω	Cable length	145mm
Direction	All	Working Temperature	-20℃~+70℃
Gain	4.0±1dBi	Working Humidity	20%~80%
		Return loss	≤-10dB

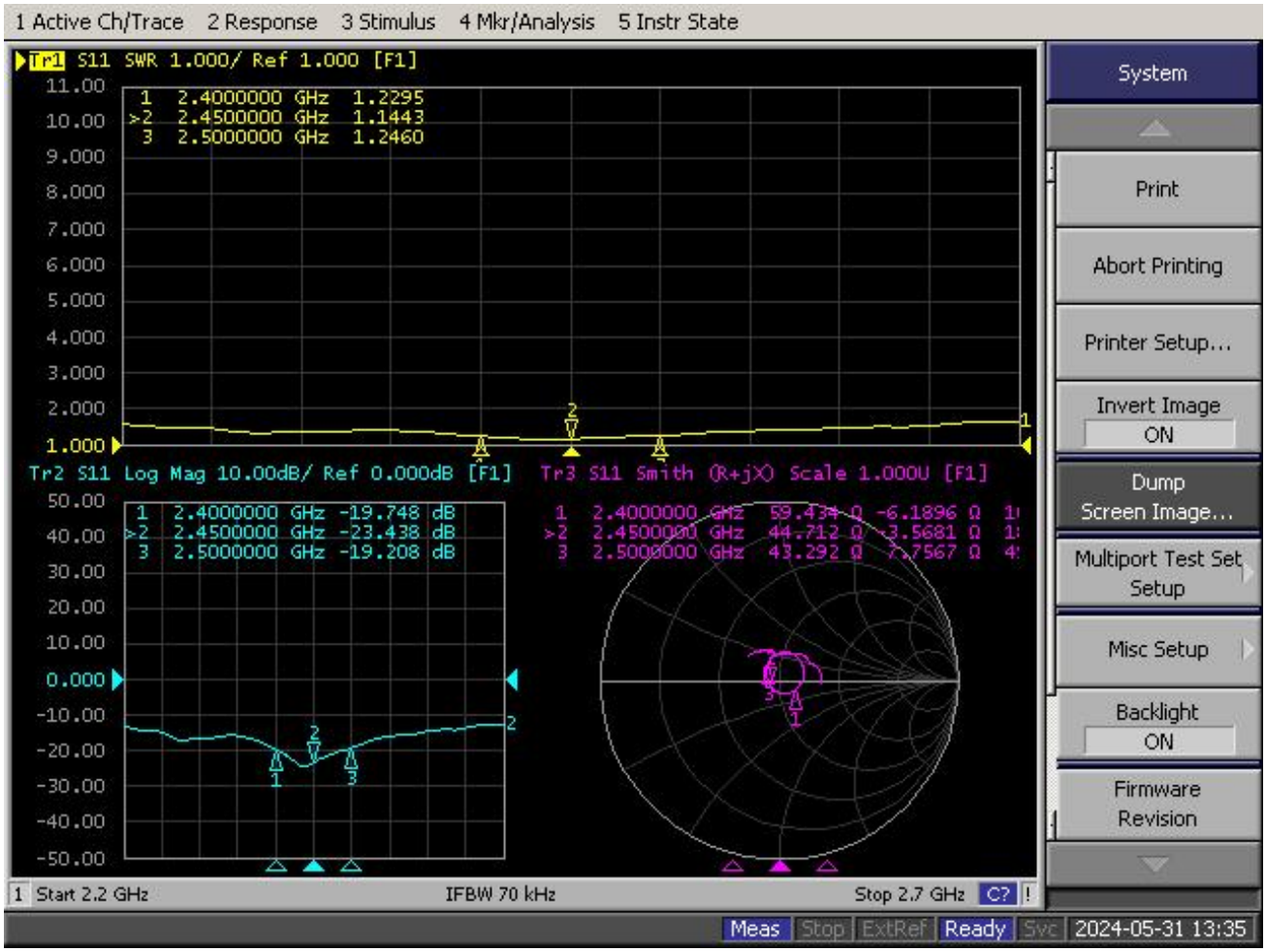
Environmental performance test:

Project	Test condition	Standard
Storage Conditions	In the absence of specified test temperature, humidity, air pressure is as follows:: 1. Temperature is - 30 ℃ ~ + 80 ℃ 2. Relative humidity of 45% to 45% 3. Air pressure is 86 kpa to 106 kpa	Electrical and mechanical performace is normal
High and low temperature test	Between 70 ℃ and -20 ℃ for 5 loops, then 1-2 h under normal conditions, check the appearance quality.	Size should meet the requirements and meet the performance of mechinery and electric.
Constant damp and hot resistance test	95 + / - 3% relative humidity, temperature test: 40 ℃. Lasts 2 h after, try to take out the determination of electrical properties, within 5 min after try 1-2 h under article normal thing, check the appearance quality	Size should meet the requirements and meet the performance of mechinery and electric.
vibration test	10-55 hz, vibration frequency range of displacement amplitude: 0.35 MM, acceleration amplitude: 50.0 M/S, sweep cycles: 30 times	Electrical and mechanical performace is normal
Fall down test	1 m high altitude in accordance with the perpendicular axis free drop 3 times	Electrical and mechanical performace is normal

Antenna physical diagram and attached location diagram：



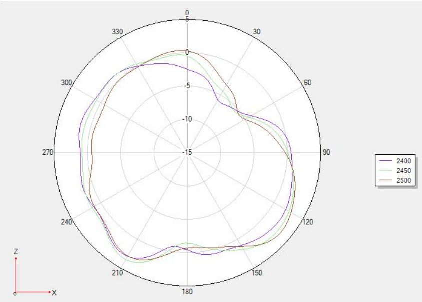
Antenna performance test diagram:



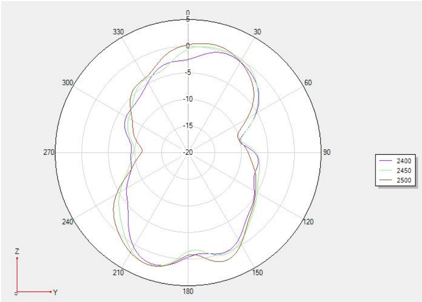
2D and 3D test data (2.4G):

Frequency	Efficiency (%)	Gain.(dBi)
2400MHz	61.45	3.25
2410MHz	66.91	3.54
2420MHz	65.27	3.90
2430MHz	68.70	4.15
2440MHz	66.91	4.18
2450MHz	70.03	4.27
2460MHz	68.99	4.18
2470MHz	66.74	4.12
2480MHz	64.47	3.93
2490MHz	64.64	3.89
2500MHz	62.11	3.88

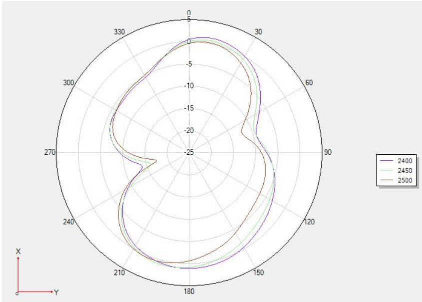
Phi 0 2D



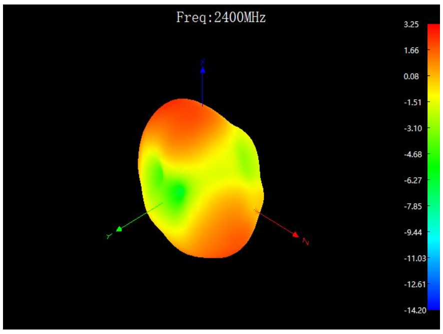
Phi 90 2D

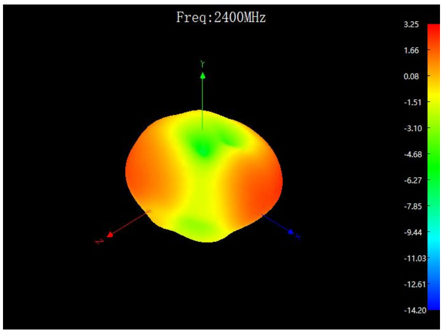


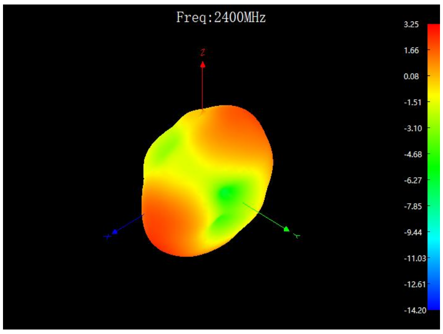
Theta 90 2D



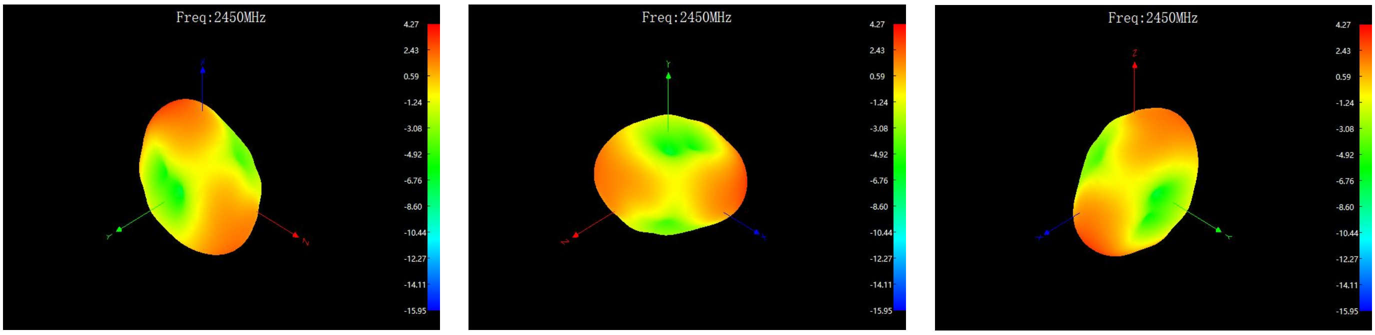
3D 2400:



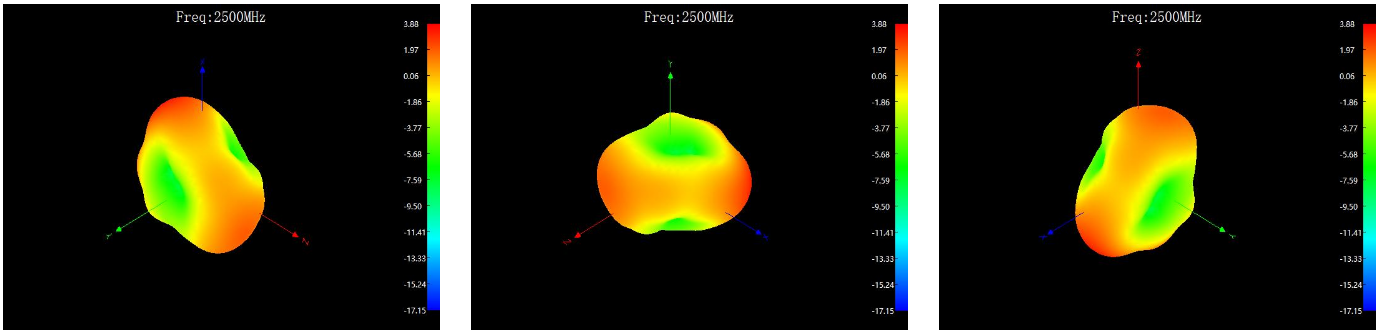




3D 2450：



3D 2500：



OTA active test data statistics：

Item	Measurement	Band	Channel	Frequency	Total
1	TRP	WIFI_B (11M)	1	2412	20.02
2	TRP	WIFI_B (11M)	6	2437	19.68
3	TRP	WIFI_B (11M)	11	2462	19.57
4	TIS(EIRP)	WIFI_B (11M)	1	2412	-86.07
5	TIS(EIRP)	WIFI_B (11M)	6	2437	-86.62
6	TIS(EIRP)	WIFI_B (11M)	11	2462	-85.12
7	TRP	WIFI_G (54M)	1	2412	19.15
8	TRP	WIFI_G (54M)	6	2437	18.78
9	TRP	WIFI_G (54M)	11	2462	18.49
10	TIS(EIRP)	WIFI_G (54M)	1	2412	-73.92
11	TIS(EIRP)	WIFI_G (54M)	6	2437	-74.13
12	TIS(EIRP)	WIFI_G (54M)	11	2462	-73.74
13	TRP	WIFI_N_ISM (65M)	1	2412	19.13
14	TRP	WIFI_N_ISM (65M)	6	2437	19.07
15	TRP	WIFI_N_ISM (65M)	11	2462	19.15
16	TIS(EIRP)	WIFI_N_ISM (65M)	1	2412	-70.58
17	TIS(EIRP)	WIFI_N_ISM (65M)	6	2437	-71.71
18	TIS(EIRP)	WIFI_N_ISM (65M)	11	2462	-71.63

产品规格 Product Type	RF137/50 双锡线
结构图 Structure Drawing	

结构特性 Structure Characteristics

结构 Structure	项目 Item	标准值 Standard Value
内导体 Inner Conductor	材质 Material	镀锡铜线 Tinned Copper Wire
	结构 Construction(mm)	7/0.102
	标称外径 Nom.Dia(mm)	0.306±0.02
绝缘层 Insulation	材质 Material	聚全氟乙丙烯 FEP
	标称外径 Nom.Dia(mm)	0.90±0.03
外导体 Outer Conductor	材质 Material	镀锡铜线 Tinned Copper Wire 16*5/0.05
	标称外径 Nom.Dia(mm)	1.13±0.05
	编织覆盖率 Coverage Ratio(%)	90±5
护套 Jacket	材质 Material	聚全氟乙丙烯 FEP
	标称外径 Nom.Dia(mm)	1.37±0.05

电气性能 Electrical Characteristics

项目 Item	标准值 Standard Value	项目 Item	频率 Frequency	标准值 Standard Value
阻抗 Impedanc（Ω）	50±2	衰减 Attenuation@20℃ (dB/m)	1GHz	1.70
电容 Capacitance(pF/m)	96		2GHz	2.50
速率 Velocity(%)	70		3GHz	3.00
驻波比 VSWR	≤1.30@DC-6GHz		4GHz	3.50
最大工作电压 Max.Operating Voltage(V)	1000		5GHz	4.00
最大工作频率 Max.Operating Frequency(GHz)	6		6GHz	4.50

可靠性 Dependability

最小弯曲半径(单次)Min.Bending Radius/Single	mm	5
最小弯曲半径（重复）Min.Bending Radius/Repeated	mm	20
工作温度范围 Operating Temperature	℃	-55-+200

包装 Packing

包装方式 Packing Mode	纸盘 Papery Reel
包装长度 The Length of Each Reel(m)	500
每盘段数 The Joints of Each Reel	≤3
最小段长 Min. Segment Length(m)	≥10

使用提示 Trips for Use

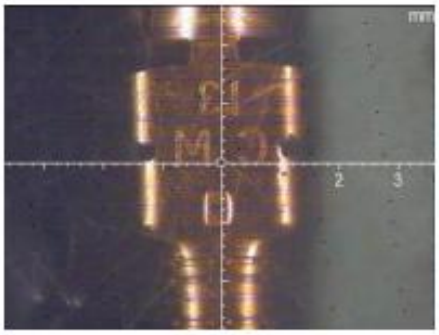
存储环境 Storage Environment	温度：30℃以下，湿度：20-65%
最佳保存周期 The Best Save Cycle	2 个月，2 个月以上上锡效果变差，但电性能不受影响，夏季高温高湿环境开剥后需尽快流转
加工温度 Processing Temperature	可短时承受 260℃的高温，300℃以上易发生分解，400℃以上发生显著的热分解
铁氟龙收缩 Teflon Shrink	材料的固有属性，绝缘 0.2mm 以下，护套 0.3mm 以下
护套窜动 Jacket Taaverse	加工长度（护套残留长度）低于 5CM 时易发生

Terminal film thickness report:

爱迪升电镀科技有限公司
Adscendent Plating Science & Technology Co. ,Ltd

膜厚测试报告
Coating thickness Test Report

Fischerscope? XRAY XULM
Product: 61 / Au/Ni/CuSn Dir.: Fischer Block: 234
Application: 61 / Au/Ni/CuSn



调校标准：61

n =	1	Au =	0.61μ"	Ni =	64.6 μ"
n =	2	Au =	0.66 μ"	Ni =	57.5 μ"
n =	3	Au =	0.59 μ"	Ni =	56.5 μ"
n =	4	Au =	0.64 μ"	Ni =	54.3 μ"
n =	5	Au =	0.57 μ"	Ni =	54.9 μ"

平均值Mean	0.61 μ"	57.56 μ"
标准偏差Standard deviation	0.125 μ"	8.569 μ"
变动率C.O.V.	10.51 %	17.28 %
读数数量Number of readings	5	
最小读数Min. reading	0.57 μ"	54.3 μ"
最大读数Max. reading	0.66 μ"	64.6 μ"
测量时间Measuring time	10 sec	

操作员Operator:

Material RoHS conformity declaration form

This is to certify that the delivery to your company's components, raw materials, auxiliary materials used and the additives in the production engineering are accord with RoHS environmental requirements of the restrictions on the use of hazardous substances directive (RoHS directive 2011/65 / EU)

About components used raw materials, packaging materials, auxiliary materials and additives used in the production process such as composition of the report is as follows:

Component /Part Name	Material Composition	ICP report #	Test Org.	Test Date	Content of harmful substances (ppm)						PASS?
					Cd	Pb	Hg	Cr $^{6+}$	PBB	PBDE	PASS
PCB	PCB	SHAEC23017333402	SGS	23/10/31	ND	12	ND	ND	ND	ND	PASS
Wire rod	Coaxial cable	CANEC24002746206	SGS	24/02/23	ND	ND	ND	ND	ND	ND	PASS
Eco-friendly tin wire	Eco-friendly tin wire	SHAEC24006459102	SGS	24/04/10	ND	78	ND	ND	ND	ND	PASS
terminal	Rubber core	CANEC24000977302	SGS	24/01/22	ND	6	ND	ND	ND	ND	PASS
	Orichalcum	A2240410234101001E	CTI	24/07/16	ND	ND	ND	ND	ND	ND	PASS
	Gold coating	A2240126395101003E	CTI	24/03/16	ND	ND	ND	ND	ND	ND	PASS
EVA	EVA	CANEC24000276902	SGS	24/01/12	ND	ND	ND	ND	ND	ND	PASS