



深圳市英佳创电子科技有限公司

Shenzhen Yingjia Chuang electronic technology Co., LTD

<http://www.szsyjc.com>

APPROVAL SHEET

承认书

CUSTOMER NAME 客户名称	九洲电器	
CUSTOMER P/N 客户料号		
PART NAME 品名	2.4G 黑色 PCB 内置天线, 1.37灰色线 L=360MM 2.4G black PCB built-in antenna, 1.37 gray line L=360MM	
P/ N 料号	YJC-6N360-G01	
APPROVAL REV. 版次	A0	
DELIVERY DATE 送样日期	March 29, 2024	
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APPROVED BY 核准	肖汉 Chauhan	
Customer Approved 客户承认		
Prepared By 承办	Checked By 审核	Approved By 核准

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天线平面图 Antenna plan:

A	B	C	D	E	F	G													
1						1													
2	<p>1. 3.77 灰色 双锡线</p> <p>1.37 Grey double tin wire</p> <p>*360₋₃⁺⁵</p> <p>1代线端</p> <p>1 generation line end</p>					2													
3	<p>0.8±0.1</p> <p>手撕位</p> <p>Tear position</p> <p>PCB板背面粘附17.0±0.9, 5±0.5, 3±0.0mm 3M双面胶(带3mm切口)</p> <p>PCB board back foam 17.0±0.9, 5±0.5, 3±0.0mm 3M double-sided tape (with 3mm tear)</p>					3													
4	<p>要求:</p> <ol style="list-style-type: none"> 1. 成品须100%测试导通OK 2. 成品须100%全检OK. 3. 采用环保制程, 成品符合ROHS要求. 4. 符合ROHS要求. 5. 未注公差请以一般公差为准. 6. *为重点标注尺寸. 					4													
5	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>频率范围(Frequency Range)</td> <td>2400-2500MHz</td> </tr> <tr> <td>增益(Gain)</td> <td>4.0±1DBI</td> </tr> <tr> <td>电压驻波比(VSWR)</td> <td><1.92</td> </tr> <tr> <td>极化(Polarization)</td> <td>Linear, Vertical</td> </tr> <tr> <td>最大功率(Max power rating)</td> <td>50W</td> </tr> <tr> <td>特征阻抗(Impedance)</td> <td>50Ω</td> </tr> </table> <p>1. 成品须100%测试导通OK</p> <p>2. 成品须100%全检OK.</p> <p>3. 采用环保制程, 成品符合ROHS要求.</p> <p>4. 符合ROHS要求.</p> <p>5. 未注公差请以一般公差为准.</p> <p>6. *为重点标注尺寸.</p>					频率范围(Frequency Range)	2400-2500MHz	增益(Gain)	4.0±1DBI	电压驻波比(VSWR)	<1.92	极化(Polarization)	Linear, Vertical	最大功率(Max power rating)	50W	特征阻抗(Impedance)	50Ω	5	
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6	<p>Requirements:</p> <ol style="list-style-type: none"> 1. The finished product must be 100% test conduction OK 2. The finished product must be 100% inspected OK. 3. Environmentally friendly process. Finished product 4. Meet ROHS requirements. 5. No tolerance is specified. Please refer to general tolerance. 6. * Dimensioning for emphasis. 					6													
A	B	C	D	E	F	G													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">REV</td> <td style="width: 10%; text-align: center;">DATE</td> <td style="width: 40%; text-align: center;">DESCRIPTION</td> <td style="width: 10%; text-align: center;">NAME</td> </tr> <tr> <td style="text-align: center;">A0</td> <td style="text-align: center;">2024-03-29</td> <td style="text-align: center;">新版发行New edition issue</td> <td style="text-align: center;">Yin Feijie</td> </tr> <tr> <td style="text-align: center;">A1</td> <td></td> <td></td> <td></td> </tr> </table>						REV	DATE	DESCRIPTION	NAME	A0	2024-03-29	新版发行New edition issue	Yin Feijie	A1					
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<p>深圳市英佳创电子科技有限公司</p> <p>SHENZHEN YINGJIA CHUANG ELECTRONIC CO., LTD</p>																			



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天线技术参数及环境测试 Antenna technical parameters and environmental testing:

电气技术参数 Electrical technical parameter			
电性能指标		Electrical Specifications	
频率范围	2400-2500MHz	Frequency Range	2400-2500MHz
电压驻波比	<1.92	VSWR	<1.92
输入阻抗	50 Ω	Input Impedance	50 Ω
方向	全向	Direction	All
增益	4.0±1dBi	Gain	4.0±1dBi
机械指标		Mechanical Specifications	
线材颜色	灰色	Wire Color	gray
接口形式	XD	Input connector	XD
线材长度	360MM	Wire Length	360MM
工作温度	-20℃~+70℃	Working Temperature	-20℃~+70℃
工作湿度	20%~80%	Working Humidity	20%~80%



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环境性能测试 Environmental performance test:

项目 (Project)	测试条件 (Test condition)	规格 (Specification)
储存环境 Storage Conditions	In the absence of specified test temperature, humidity, air pressure is as follows: 在没有指定的情况下测试温度、湿度、气压如下: 1. Temperature is $-45^{\circ}\text{C} \sim +85^{\circ}\text{C}$ 1. 温度为 $-45^{\circ}\text{C} \sim +85^{\circ}\text{C}$ 2. Relative humidity of $20 \sim 80\%$ 2. 相对湿度为 $20 \sim 80\%$ 3. Air pressure is 86 kpa to 106 kpa 3. 气压为 $86\text{kpa} \sim 106\text{kpa}$	Electrical and mechanical properties is normal 电气机械性能正常
高低温试验 high and low temperature test	Between 85°C and -45°C for 5 loops, then 1-2 h under normal conditions, check the appearance quality. 在 85°C 与 -45°C 之间进行5次循环, 然后在正常条件下1-2H, 检查外观质量。	Size should meet the requirements and should satisfy the content with the electrical and mechanical properties 尺寸应满足规定并应满足于机械、电气性能
耐恒定 湿热试验 Constant damp and hot resistance test	$80 \pm 3\%$ relative humidity, temperature test: 40°C . 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 相对湿度 $80 \pm 3\%$, 试验温度: 40°C . 持续2H作用后, 试品取出后5min之内测定电气性能, 试品在正常条件下1-2H, 检查外观质量	Size should meet the requirements and should satisfy the content with the electrical and mechanical properties 尺寸应满足规定并应满足于机械、电气性能
振动试验 vibration test	10-55 hz, vibration frequency range of displacement amplitude: 0.35 MM, acceleration amplitude: 50.0 M/S, sweep cycles: 30 times 振频范围 $10 \sim 55\text{HZ}$, 位移幅值: 0.35MM, 加速度幅值: 50.0M/S, 扫频循环次数: 30次	Electrical and mechanical properties is normal 电气机械性能正常
跌落试验 fall down test	1 m high altitude in accordance with the perpendicular axis free drop 3 times 1M高空按照互相垂直的轴方向自由跌落3次	Electrical and mechanical properties is normal 电气机械性能正常

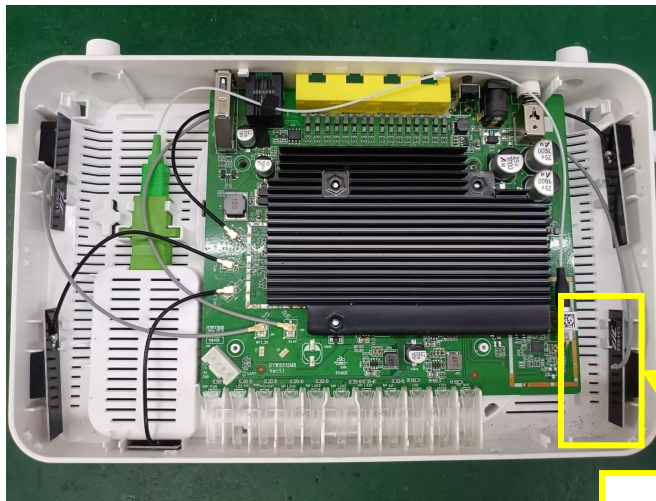


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天线实物图与天线贴附位置图 Antenna physical diagram and antenna attached location diagram:



天线贴附位置图
Antenna attached location man

天线性能测试图 Antenna performance test diagram:





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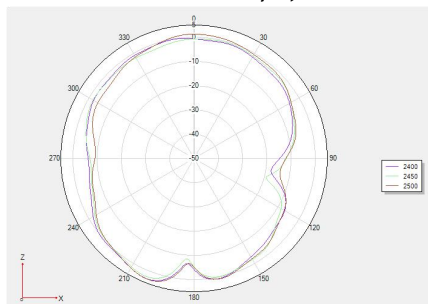
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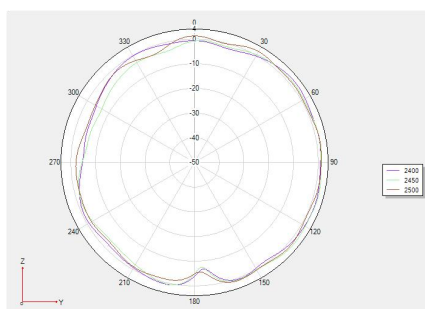
2D、3D 测试数据(2.4G)2D and 3D test data (2.4G):

Frequency	Efficiency (%)	Gain. (dBi)
2400MHz	69.82	4.04
2410MHz	69.98	3.74
2420MHz	67.61	3.91
2430MHz	68.55	4.09
2440MHz	67.76	3.67
2450MHz	67.76	3.71
2460MHz	67.14	3.80
2470MHz	65.31	3.88
2480MHz	66.07	3.83
2490MHz	63.83	3.95
2500MHz	64.71	3.89

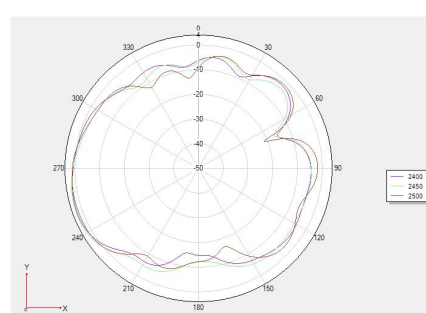
Phi 0 2D 图:



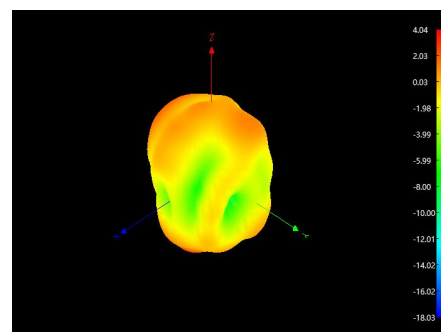
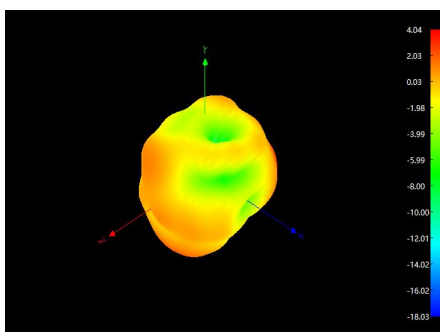
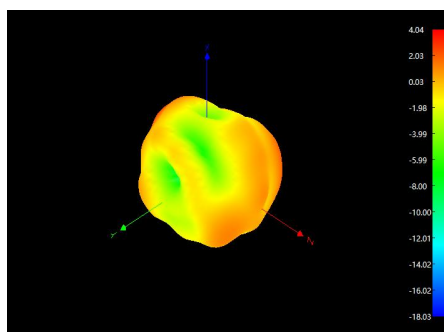
Phi 90 2D 图



Theta 90 2D 图



3D 2400:



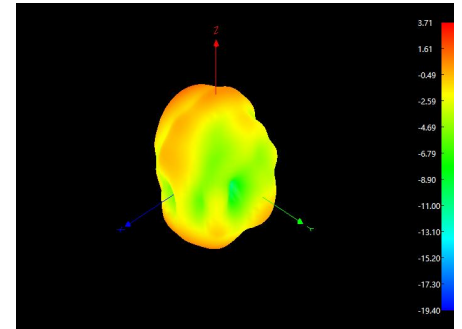
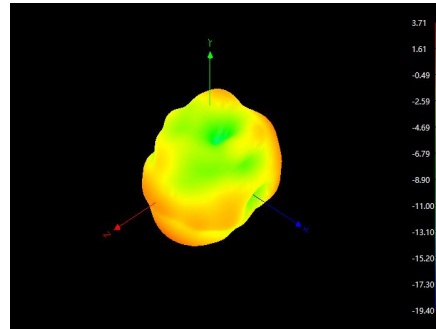
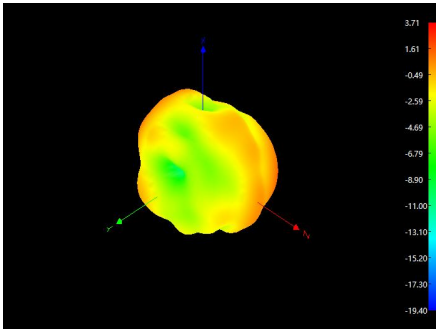


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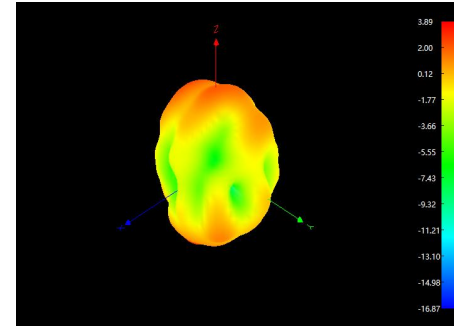
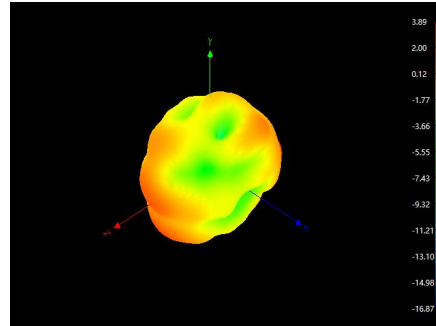
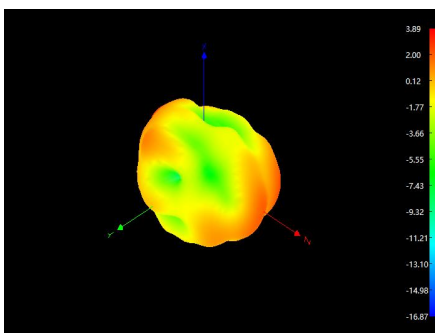
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3D 2450:



3D 2500:





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ROHS 物料控制报告 (ROHS Material control report)

兹证明向贵司交货的零组件、辅助材料所使用的原材料、以及生产工程中的添加剂等均符合 RoHS 限制使用有害物质指令的环保要求 (RoHS 指令 2011/65/EC)

This is to certify that the components delivered to your company, the raw materials used for auxiliary materials, and the additives used in the production project all meet the environmental requirements of the RoHS directive on limiting the use of hazardous substances. (RoHS 指令 2011/65/EC)

关于零组件、辅助材料所使用的原材料、包装材料以及和生产过程中使用的添加剂等的构成成份报告如下:

The report on the composition of raw materials, packaging materials, and additives used in the manufacturing process for component auxiliary materials is as follows

组成物料名称 Component /Part Name	组成材料 Material Composition	ICP 报告编号 ICP report #	测试机构 Test Org.	测试时间 Test Date	有害物质含量(ppm)						是否合格? PASS?
					Cd	Pb	Hg	Cr ⁶⁺	PBB	PBDE	PASS
线材(wire rod)	铁氟龙同轴 线缆 Teflon coaxial	CANEC24002746206	SGS	24/02/23	ND	ND	ND	ND	ND	ND	PASS
锡条 (tin rod)	环保锡丝 Green solder	TAOEC2302260502	SGS	23/04/12	ND	17	ND	ND	ND	ND	PASS
端子	铜 cuprum	CANEC24000977302	SGS	24/01/22	ND	6	ND	ND	ND	ND	PASS
	金镀层 gold plate	A2230400553101001E	CTI	23/08/12	ND	ND	ND	ND	ND	ND	PASS
	胶芯 rubber core	A2230400553101001E	CTI	23/08/12	ND	ND	ND	ND	ND	ND	PASS
EVA	EVA	ETR23705931	SGS	23/08/04	ND	ND	ND	ND	ND	ND	PASS
PCB	PCB	TAOEC2302260502	SGS	23/04/12	ND	17	ND	ND	ND	ND	PASS