

承認書
APPROVAL SHEET

客 户
:

Puro Sound Labs LLC

品 名 规 格
DESCRIPTION:

XLL5168-2.4G-1.13-L70MM-IPEX 一代

料 号
PART NO.:

客 户 料 号
CUS PART NO.:

日 期
D A T E:

2024.6.13

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	业 务 SALES DEPARTMENT
吴淑仪 Wu Shu Yi	刘丽 Liu Li	银帅 Yin Shuai

客户承认签章

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	采 购 PURCHASING DEPARTMENT

TEL.: 0755 23073599

※ 承认书一式三份，惠蒙贵司承认签章

※ Approval in duplicate, please signed by your company.

Shenzhen Yunding Communication Electronics Co., Ltd.
深圳市云顶通讯电子有限公司

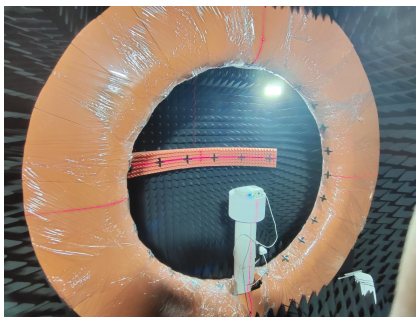
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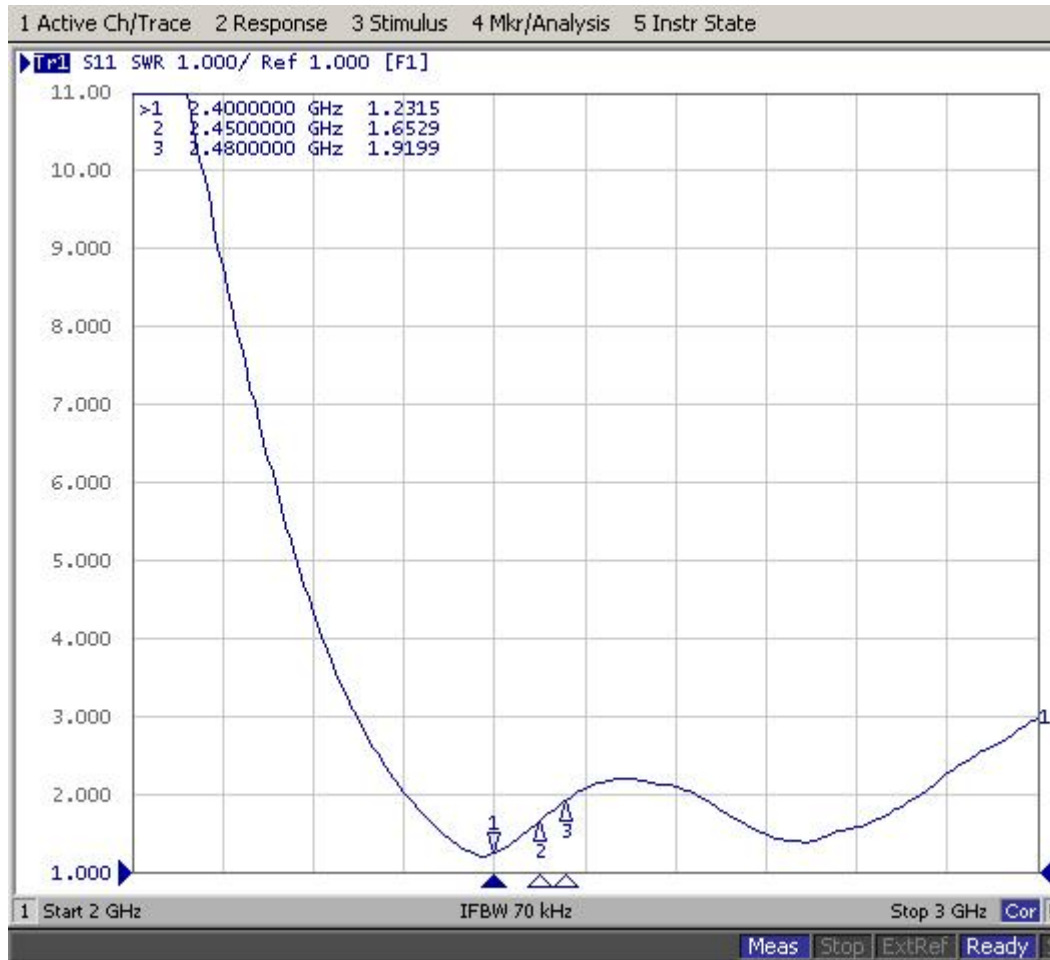
1. Testing items and equipment

	test item	equipment
1. S11 参数 (S-parameter)	1. 回波损耗 (Return Loss) 2. 电压驻波比 (VSWR)	网络分析仪: Agilent E5071B HP 8753D
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS)	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 综合测试仪: Agilent 8960 E5515B x2 StarPoint SP6011 Cmw500
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 网络分析仪: Agilent E5071B HP 8753D



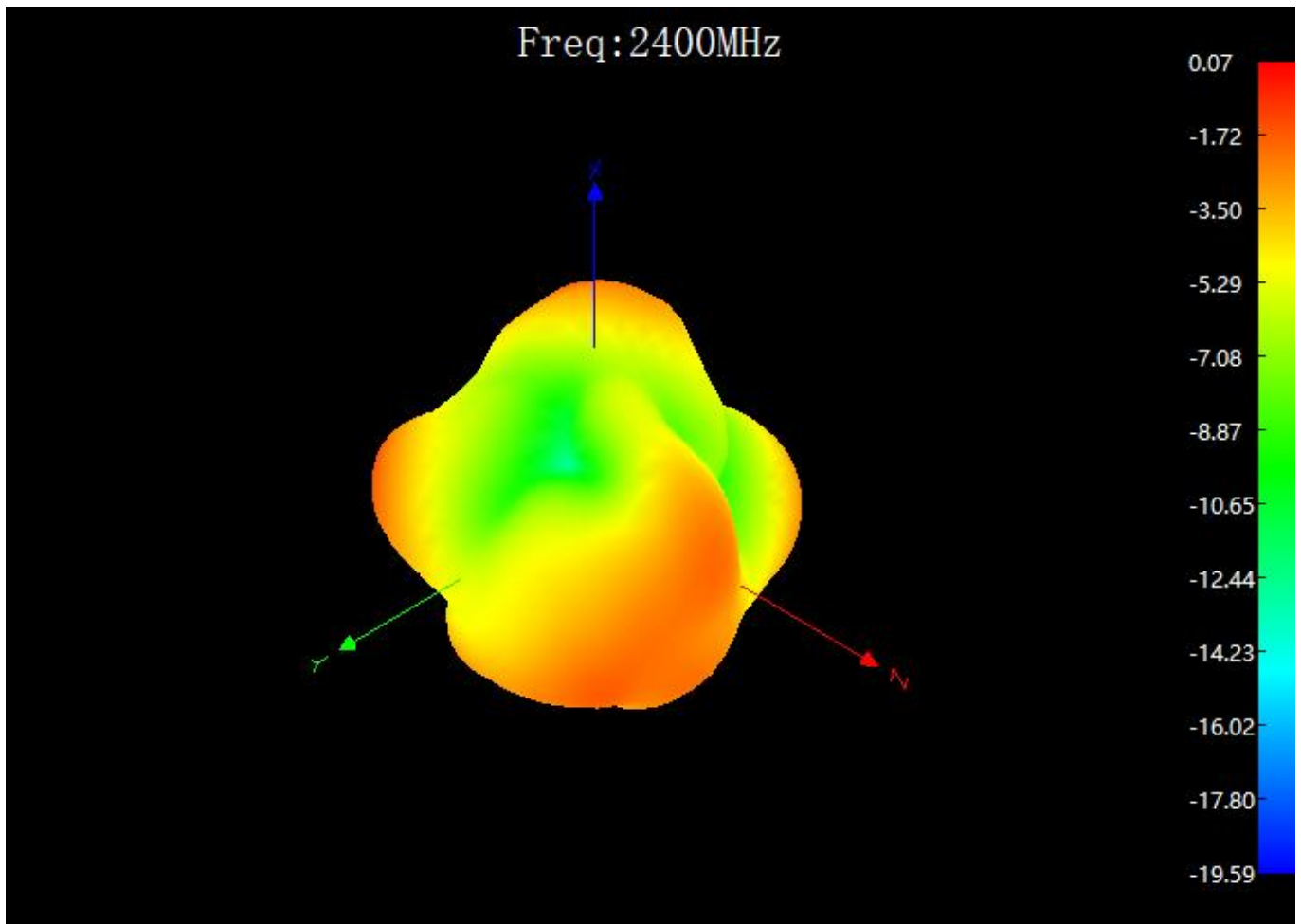
2. Antenna performance

SWR

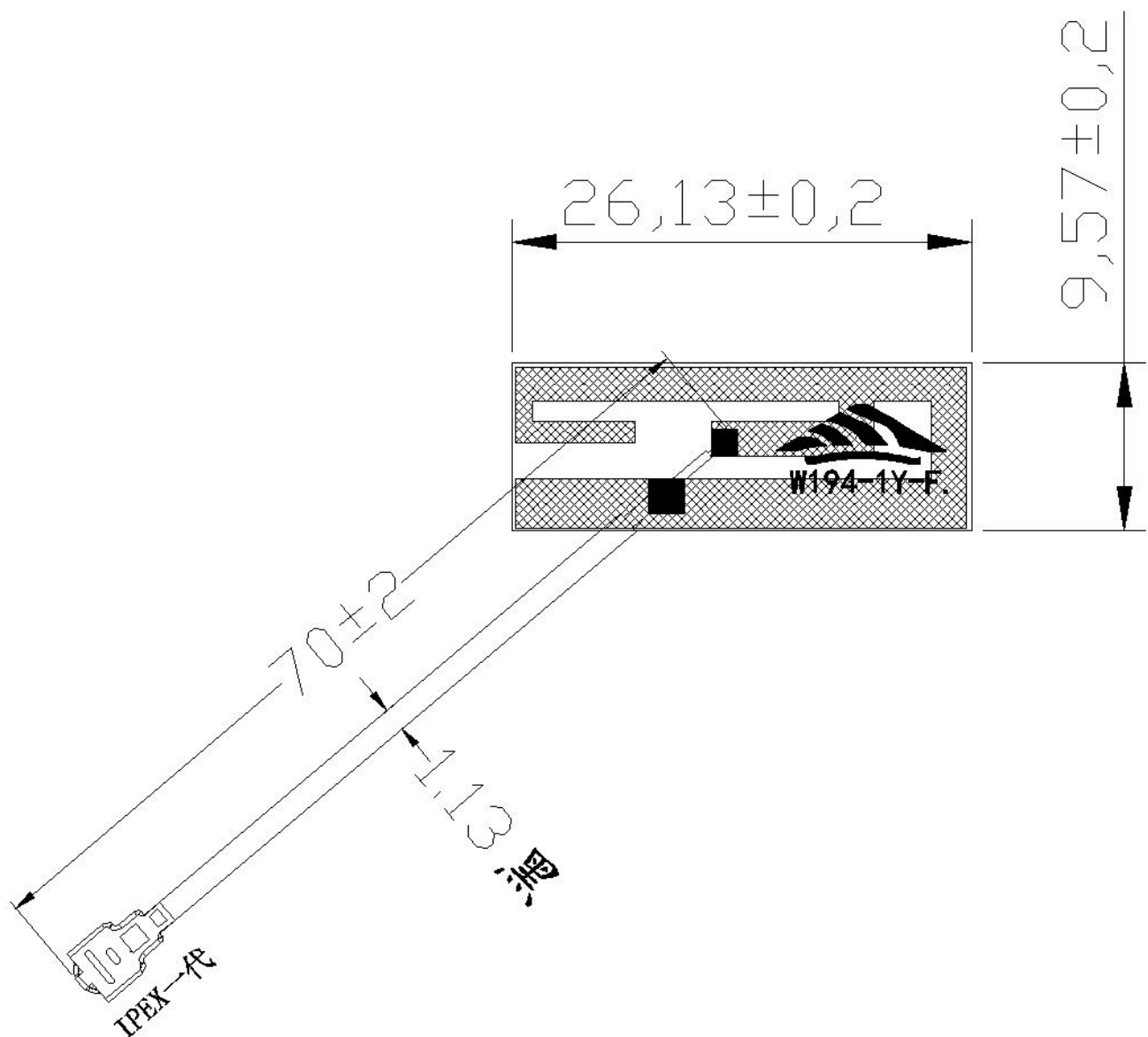


3. Antenna efficiency and gain

Frequency	MaxGain/dBi	Efficiency / %
2400	0.07	29.58
2410	0.39	29.79
2420	0.13	29.24
2430	0.05	29.79
2440	-0.38	29.99
2450	-0.62	29.79
2460	-0.79	29.85
2470	-0.73	31.55
2480	-0.84	31.41
2490	-0.8	31.84
2500	-0.64	32.96



4. Antenna structure diagram:



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Electrical technical parameters

电 性 能 指 标		Electrical Specifications	
频率范围	2400~2500MHz	Frequency Range	2400~2500MHz
电压驻波比	≤2.0	VSWR	≤2.0
输入阻抗	50 Ω	Input Impedance	50 Ω
增益	1 DBI	Gain	1 DBI
机 械 指 标		Mechanical Specifications	
线材颜色	黑色	Wire color	Black
接口形式	IPEX 一代	Input connector	IPEX 1
天线线长	70mm	Cable length	70mm
工作温度	-40℃~+85℃	Working Temperature	-40℃~+85℃
工作湿度	20~80%	Working Humidity	20~80%

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环境性能测试（Environment performance test）：

项目	测试条件	测试结果
储存环境	在没有指定的情况下测试温度、湿度、气压如下： 1. 温度为-30℃~+80℃ 2. 相对湿度为45%-85% 3. 气压为86kpa-106kpa	电气机械性能正常
高低温试验	在70℃与-40℃之间进行5次循环，然后在正常条件下1-2H，检查外观质量。	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	相对湿度95±3%，试验温度：40℃.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	尺寸应满足规定并应满足于机械、电气性能
振动试验	振频范围10-55HZ，位移幅值：0.35MM，加速度幅值：50.0M/S，扫频循环次数：30次	电气机械性能正常
跌落试验	1M高空按照互相垂直的轴方向自由跌落3次	电气机械性能正常

Project	Test condition	Test results
Storage environment	Test temperature, humidity, pressure without stated condition as follwings:1.Temperature: -30℃ ~ +80℃ ;2.Relative humidity: 45%-85%;3,Pressure: 86kpa-106kpa	Electrical and mechanical performance normal
High and low temperature test	Having 5 times cycle between -40℃ to 70℃,Then in common condition 1-2 hours test exterior quality.	Measurement satisfied with electrical and mechanical performance normal.
Resistance constant hot and humid test	Relative humidity:95±3%,Test temperature: 40℃,last 2 hours ,put it after 5 min test the electrical function .Test products during common condition 1-2 hours ,Then test exterior quality.	Measurement satisfied with electrical and mechanical performance normal.
Vibration test	Vibrate Frequency:10-55HZ; Distance :0.35mm;Acceleration :50.0m/s;Sweep frequency cycle:30 times	Electrical and mechanical performance normal
Fall test	From 1m height fall down 3 times freely (vertical direction)	Electrical and mechanical performance normal