

# 深圳市云顶通讯电子有限公司

Shenzhen Yunding Communication Electronics Co., Ltd.

TEL: +86 0755-23073599

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E-mail:wht0809@163.com

## 承認書

## APPROVAL SHEET

客 户

拥响科技

:

品 名 规 格

2.4-5GHz-Ver1.0-1.13-L90MM-IPEX 一代

DESCRIPTION:

料 号

PART NO.:

客 户 料 号

CUS PART NO.:

日 期

2025-4-16

D A T E:

### 云顶呈样签章

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	业 务 SALES DEPARTMENT

### 客户承认签章

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

联系电话: 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.

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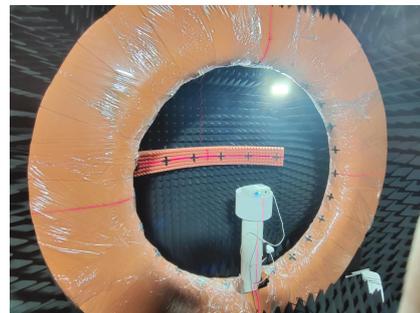
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### 1. 测试项目与设备

	测试项目	设备
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 ×2 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



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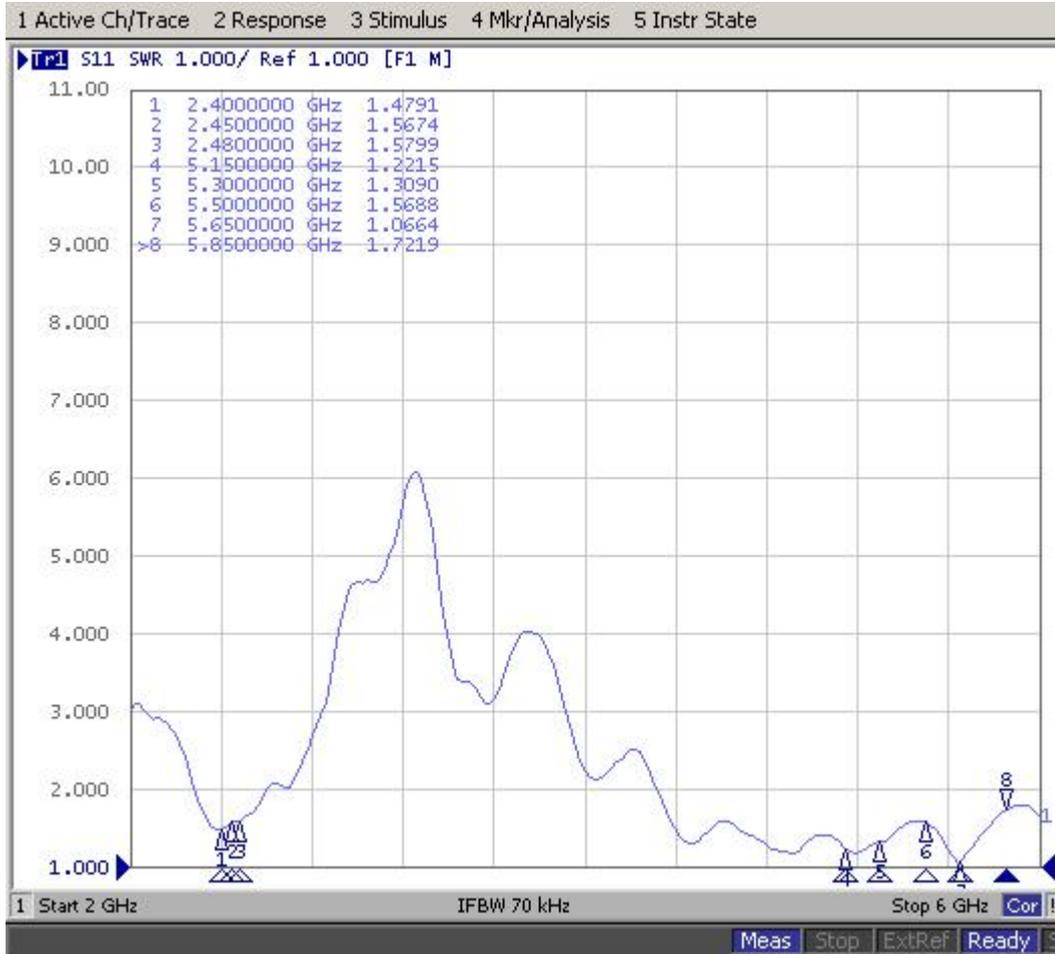
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### 2. 天线性能

#### SWR



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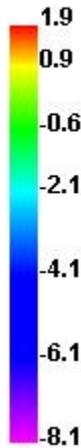
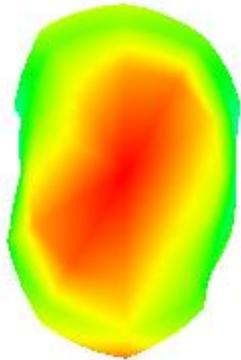
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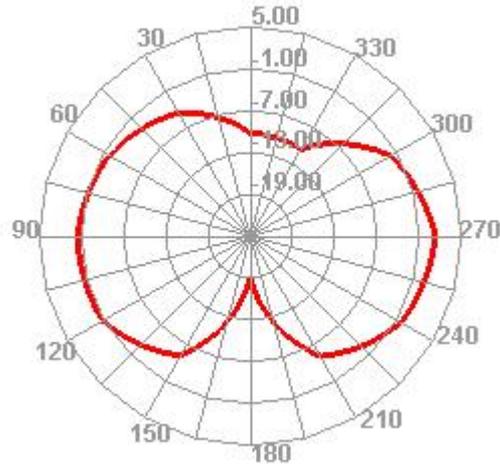
## 3. 天线效率与增益

Passive Test For WIFI2.4		
Freq (MHz)	Effi (%)	Gain (dBi)
2400	52.79	0.91
2410	53.94	0.96
2420	52.11	0.9
2430	53.01	0.99
2440	57.67	1.43
2450	63.29	1.92
2460	62.3	1.88
2470	65.18	2
2480	68.5	2.1
2490	73.41	2.55
2500	71.9	2.51

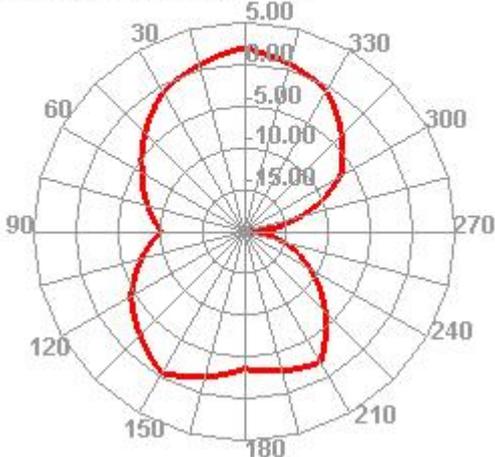
2450.000MHz



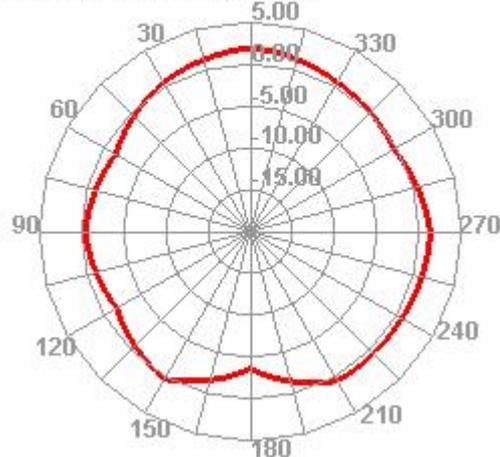
2450.000MHz H



2450.000MHz E1



2450.000MHz E2



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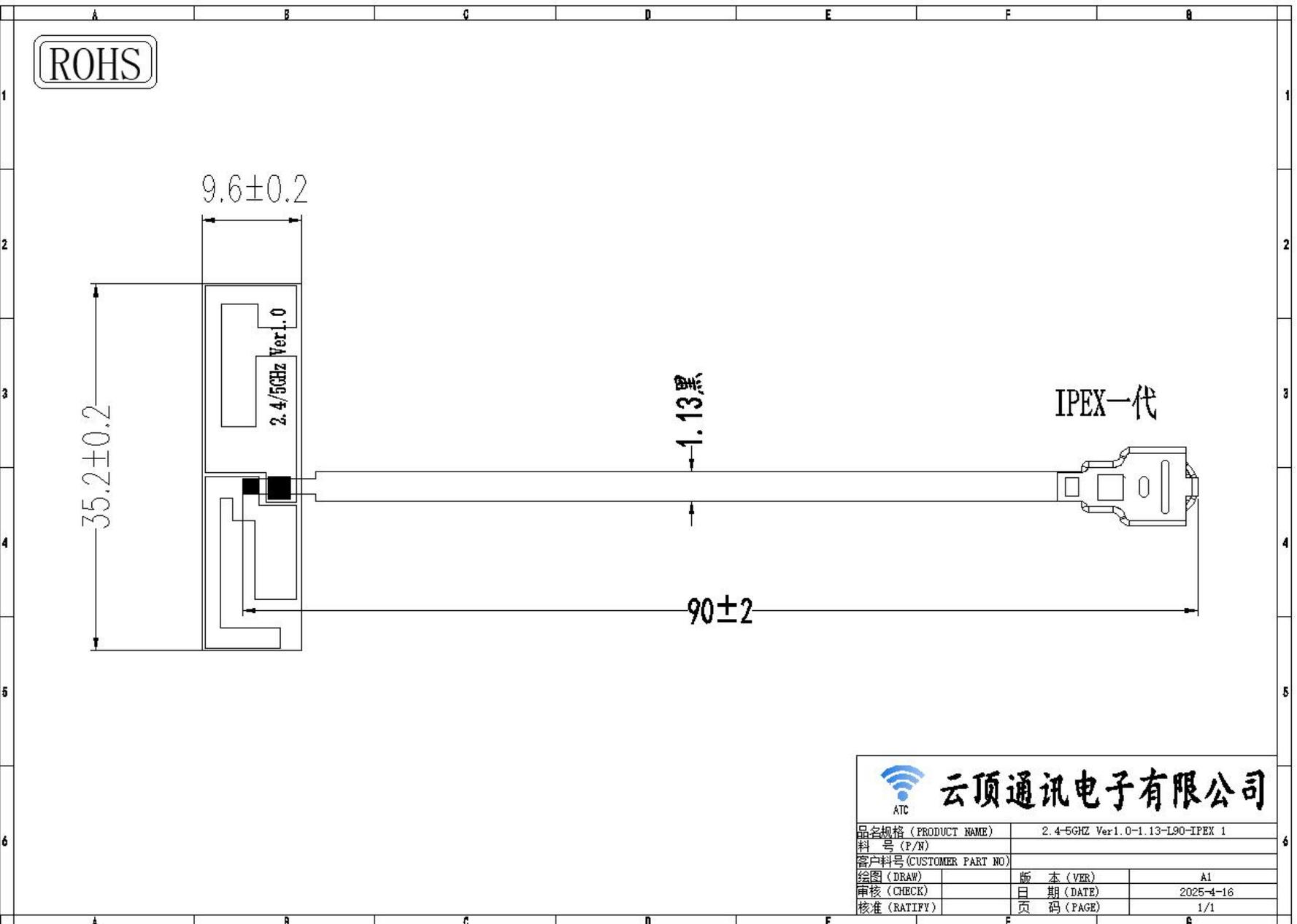
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## 4. 天线结构图:



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## 电器技术参数

电性能指标		Electrical Specifications	
频率范围	2400~2500MHz	Frequency Range	2400~2500 MHz
电压驻波比	≤2.0	VSWR	≤2.0
输入阻抗	50 Ω	Input Impedance	50 Ω
增益	3 DBI	Gain	2.55DBI
机械指标		Mechanical Specifications	
天线颜色	黑色	Antenna Color	Black
接口形式	IPEX 一代	Input connector	IPEX 1
天线线长	90mm	Cable length	90mm
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 °C ~ +80 °C ;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°C to 70°C,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°C,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