

承認書
APPROVAL

客 户
:

品 名 规 格
DESCRIPTION:

料 号
PART NO.:

客 户 料 号
CUS PART NO.:

日 期
D A T E: 2021. 10. 13

深超呈样签章

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:
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※ Approval in duplicate, please signed by your company.
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1.测试项目与设备Testing items and equipment

	测试项目Testing items	设备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 ×2 StarPoint SP6011
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



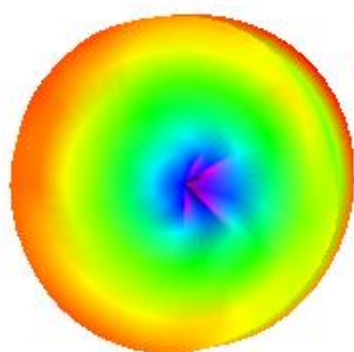
2. WiFi 天线性能 WiFi Antenna Performance



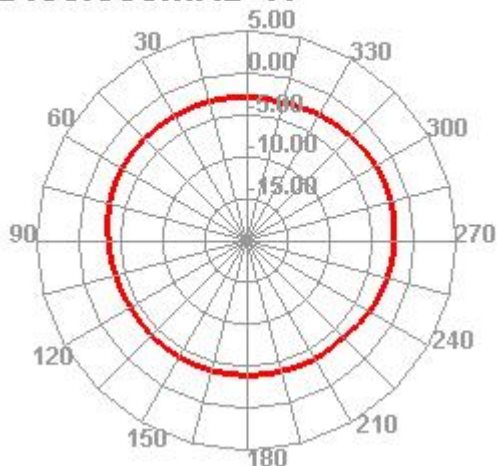
3. WiFi 天线增益与效率 Antenna Gain and Efficiency

Passive Test For WIFI										
Freq (MHz)	Eff1 (%)	Eff1 (dB)	Gain (dBi)	Gain (dBd)	OHIS (%)	DHIS (%)	Vax (dB)	Min (dB)	Attenuat Hor	Attenuat Ver
2400	52.5	-2.8	0.9	-0.38	33.79	18.711	1.77	-16.22	48.09	47.94
2410	52.19	-2.82	1.65	-0.5	33.644	18.548	1.65	-15.92	48.07	47.87
2420	51.69	-2.87	1.5	-0.65	33.325	18.362	1.5	-15.32	48.18	48
2430	50.49	-2.97	1.33	-0.82	32.605	17.886	1.33	-15.32	48.17	47.99
2440	52.25	-2.82	1.49	-0.66	33.893	18.354	1.49	-15.44	48.33	48.11
2450	54.16	-2.66	1.4	-0.51	35.564	18.592	1.64	-15.72	48.44	48.14
2460	53.18	-2.74	1.53	-0.62	35.419	17.761	1.53	-16.88	48.41	48.06
2470	53.35	-2.73	1.51	-0.64	35.958	17.389	1.51	-17.44	48.49	48.11
2480	54.2	-2.66	1.5	-0.65	36.806	17.391	1.5	-16.88	48.63	48.18
2490	54.75	-2.62	1.43	-0.72	37.292	17.459	1.43	-16.87	48.76	48.29
2500	51.65	-2.87	2.2	-1.15	35.18	16.467	1	-17.68	48.69	48.16

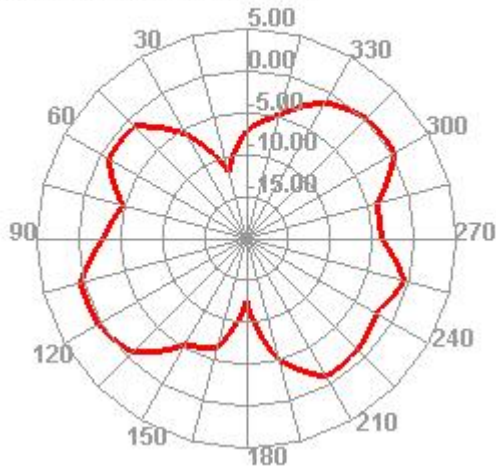
2400.000MHz



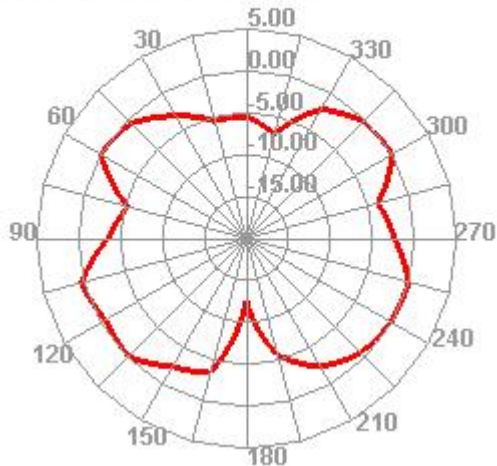
2400.000MHz H



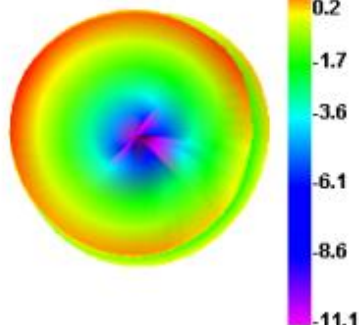
2400.000MHz E1



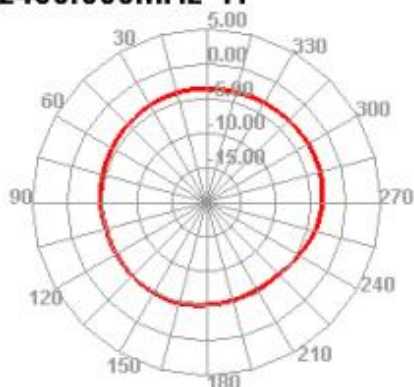
2400.000MHz E2



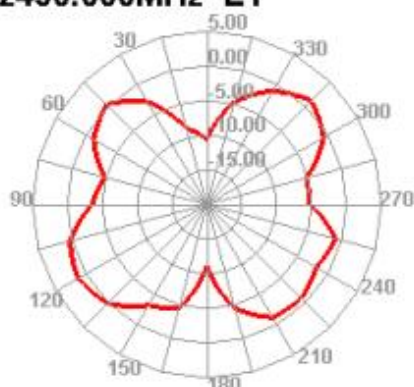
2450.000MHz



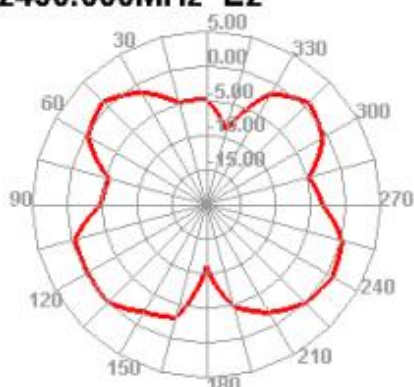
2450.000MHz H



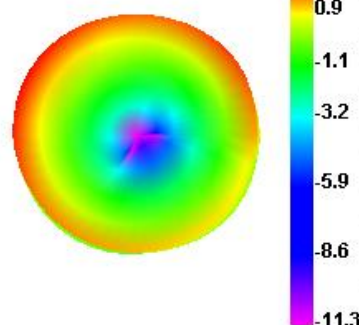
2450.000MHz E1



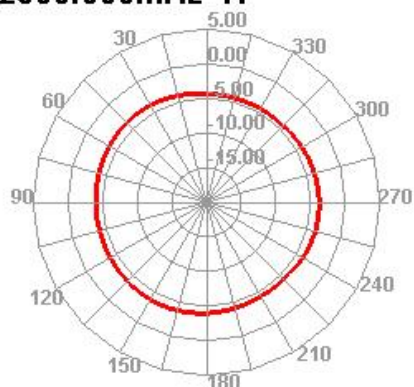
2450.000MHz E2



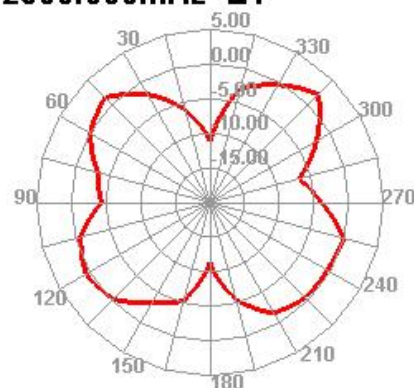
2500.000MHz



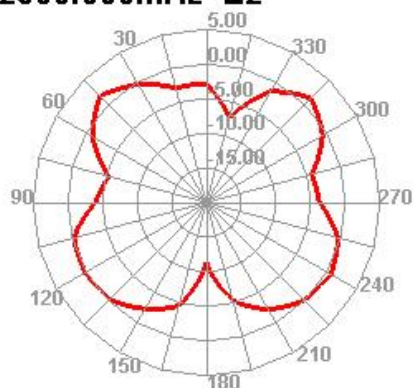
2500.000MHz H



2500.000MHz E1



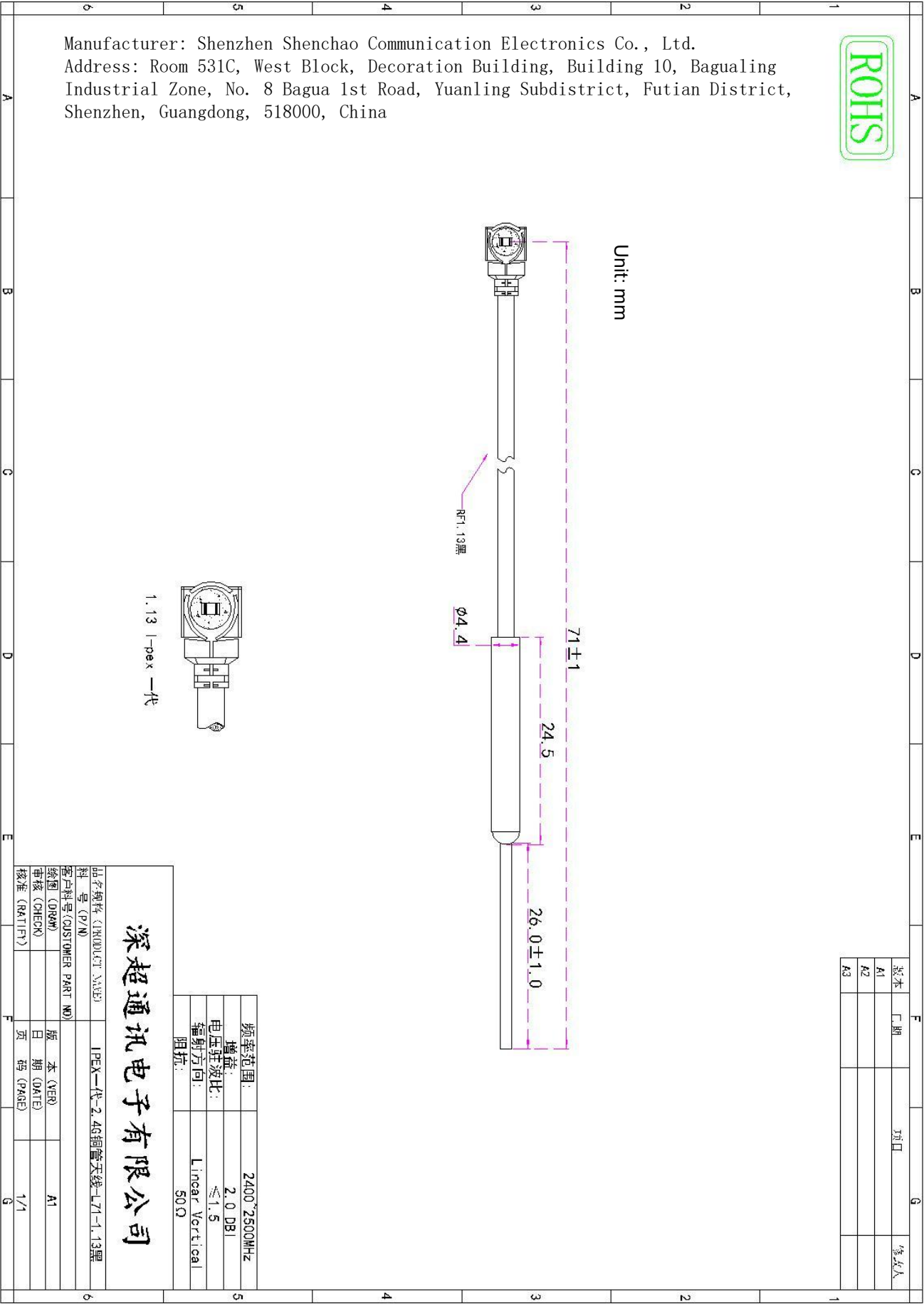
2500.000MHz E2



4. WiFi 天线暗室有源数据WiFi antenna Active data:

Test Result	Wifi 2G TRP		
	1	6	11
Frequency (MHz)	2412	2437	2462
Txp Ave(dBm)	13.28	13.15	13.49
NHPRP(dBm)	NULL	NULL	NULL
MAX(dBm)	15.53	15.62	15.99
EIRP peak	15.53	15.62	15.99
Min(dBm)	8.8	9.54	10.98
Attenuation Horiz	14.38	14.18	15.19
Attenuation Vertic	14.28	14.09	14.82
Test Result	Wifi 2G TIS		
	11		
Frequency (MHz)	2462		
Sens Ave(dBm)	-84.3		
NHPIS(dBm)	NULL		
RSSIAve	13.95		
MaxPosRSSI	14.58		
MaxPosSens	-84.93		
MAX(dBm)	16.45		
EIS peak	16.45		
Min(dBm)	11.46		
Attenuation Horiz	15.63		
Attenuation Vertic	15.32		

5.天线结构图Antenna structure diagram:



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	3DB	Gain	3DB
辐射方向	全向	Radiation direction	omnidirectional
机 械 指 标		Mechanical Specifications	
线材颜色	黑色	Antenna Color	Black
接口形式	IPEX	Input connector	IPEX
天线线长	71mm	Cable length	71mm
工作温度	-40℃~+85℃	Working Temperature	-40℃~+85℃
工作湿度	20~80%	Working Humidity	20~80%

RF113 Spec.

1. 适用范围
- 本规格书制定了电线的结构和电气特性

同轴线
AWG 32

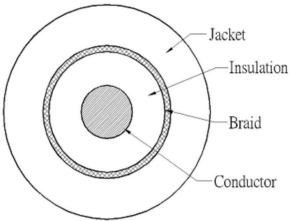
2. 结构/Construction

项目/Item		单位/Unit	详细资料/Details
Conductor 导体	材料/Material	-	绞合镀银铜丝 Silver-coated copper wire
	构成/Composition	(No./mm)	7/0.08
	外径/OD.	mm	0.24
	绞向/Orientation	-	S
Insulation 绝缘层	材料/Material	-	FEP(进口料)
	绝缘颜色/Insulation color	-	本色/Natural
	标称绝缘厚度/ Nom. Thickness	mm	0.22
	绝缘线径/OD.	mm	0.69
Braid Shield 编织	材料/Material	-	镀锡铜丝 Tinned copper wire
	构成/Composition	(No./mm)	16/4/0.05
	编织密度/Coverage	(%)	≥90
Jacket 外被	材料/Material	-	FEP
	标称绝缘厚度/ Nom. Thickness	mm	0.12
	外径/OD.	mm	1.13±0.10

3. Electrical Properties (at 20℃) /电气特性(20℃时)

项目/Item	单位/Unit	详细资料/Details
导体电阻/Conductor Resistance	Ω/km	571 (Max.)
绝缘电阻/Insulation Resistance	MΩ • km	100 (Min.)
耐压强度(AC)/Dielectric Strength(AC)	V/ 1 Min	500
特性阻抗/Impedance	Ω	50±3
耐温等级/ Temperature	℃	200
额定电压/rated voltage	V	30

4. 电线截面图示如下：



1. Scope
- This specification covers the construction and the electrical properties of wire.

Coaxial Wire
AWG 32

单位/Unit: mm