

承認書

APPROVAL

客 户
:

品 名 规 格
DESCRIPTION: 铜管天线-2.4G -1.13 黑-L130-IPEX

料 号
PART NO.:

客 户 料 号
CUS PART NO.:

日 期
D A T E: 2022. 7. 4

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:

※ 承认书一式三份，惠蒙贵司承认签章

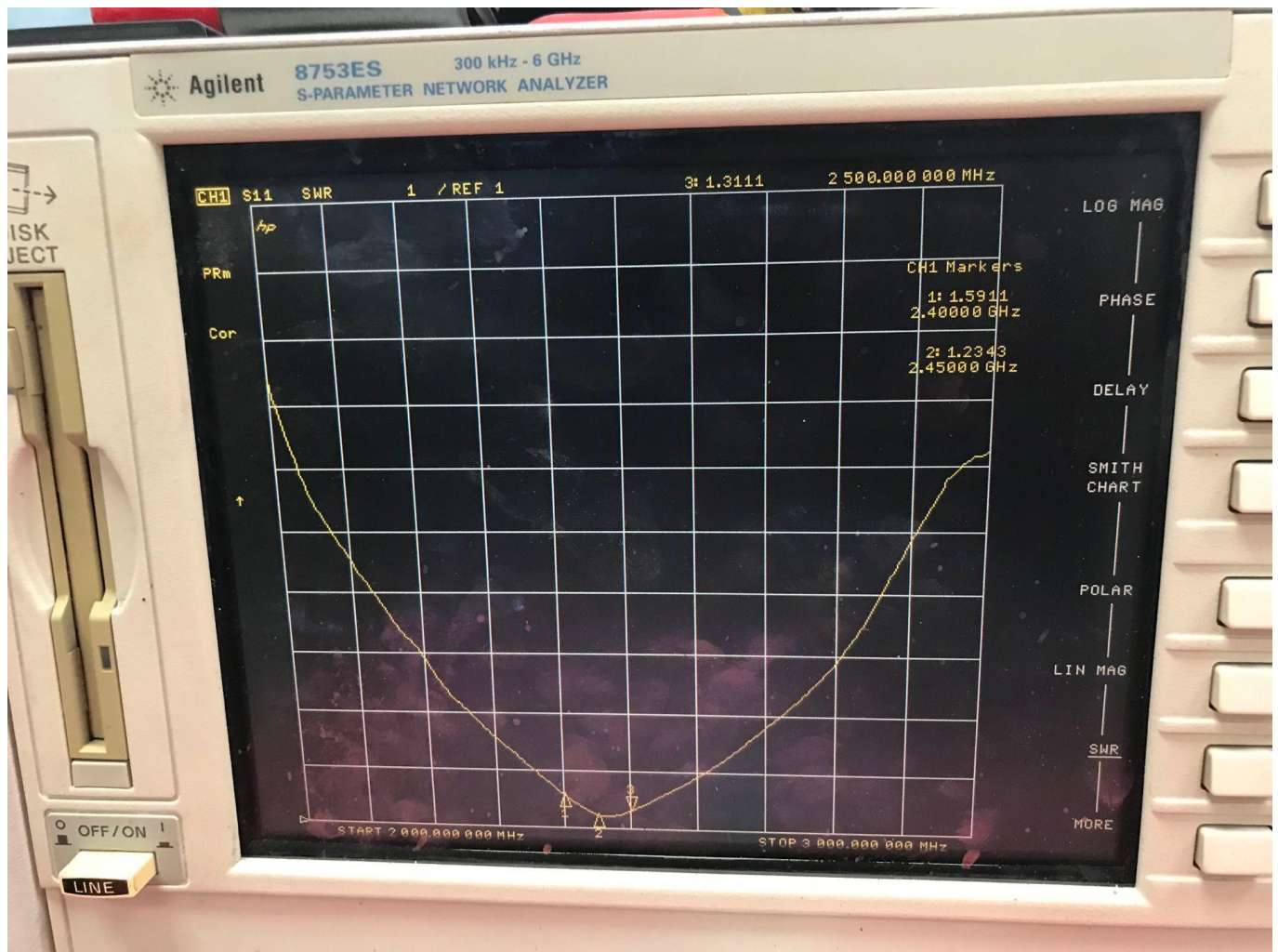
※ Approval in duplicate, please signed by your company.

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 x2 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.天线性能



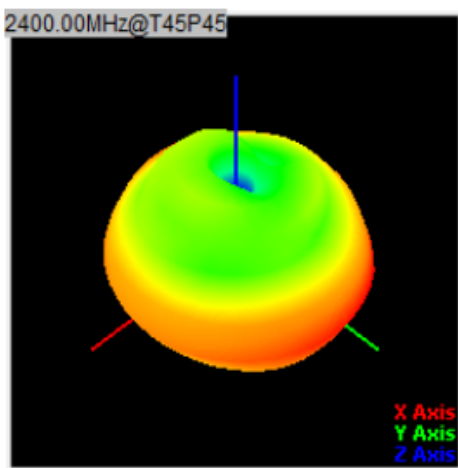
3.暗室无源数据:

Passive Test For WIFI										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	52.5	-2.8	1.77	-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	1.64	-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	1	-1.15	35.18	16.467	1	-17.68	48.69	48.16



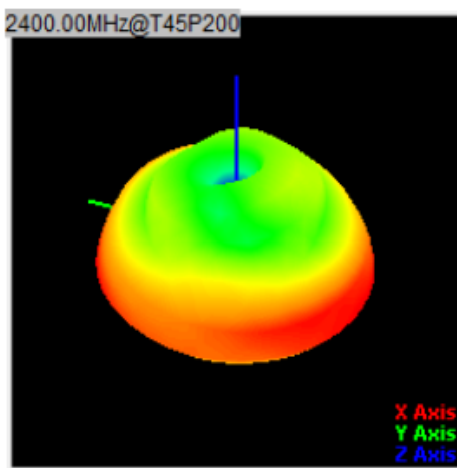
2.22
-3.56
-9.33
-15.11
-20.89
-26.67
-32.44
-38.22
-44
-49.77
-55.55
-61.33
-67.1
-72.88
-78.66
-84.44
-90.21
-95.99

2400.00MHz@T45P45



X Axis
Y Axis
Z Axis

2400.00MHz@T45P200

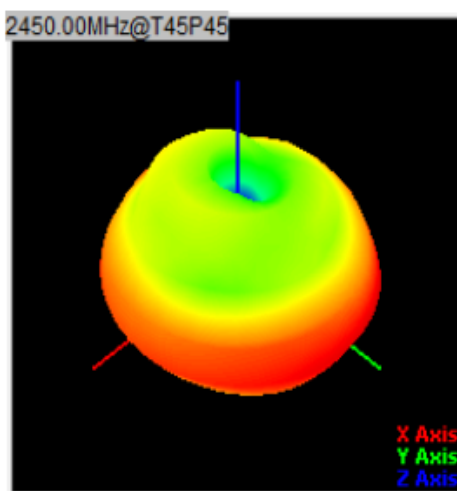


X Axis
Y Axis
Z Axis



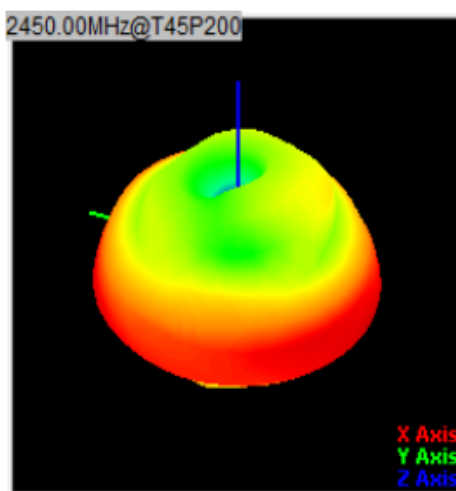
3.12
-2.71
-8.54
-14.37
-20.2
-26.03
-31.86
-37.69
-43.52
-49.35
-55.18
-61.01
-66.84
-72.67
-78.5
-84.33
-90.16
-95.99

2450.00MHz@T45P45



X Axis
Y Axis
Z Axis

2450.00MHz@T45P200

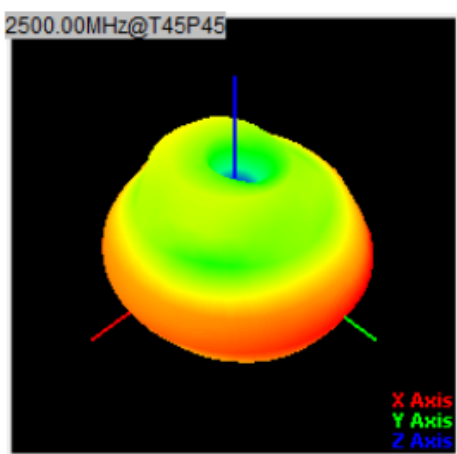


X Axis
Y Axis
Z Axis



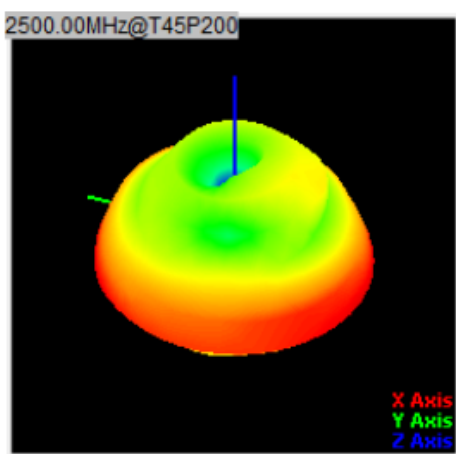
2.67
-3.13
-8.94
-14.74
-20.54
-26.35
-32.15
-37.95
-43.76
-49.56
-55.36
-61.17
-66.97
-72.78
-78.58
-84.38
-90.19
-95.99

2500.00MHz@T45P45



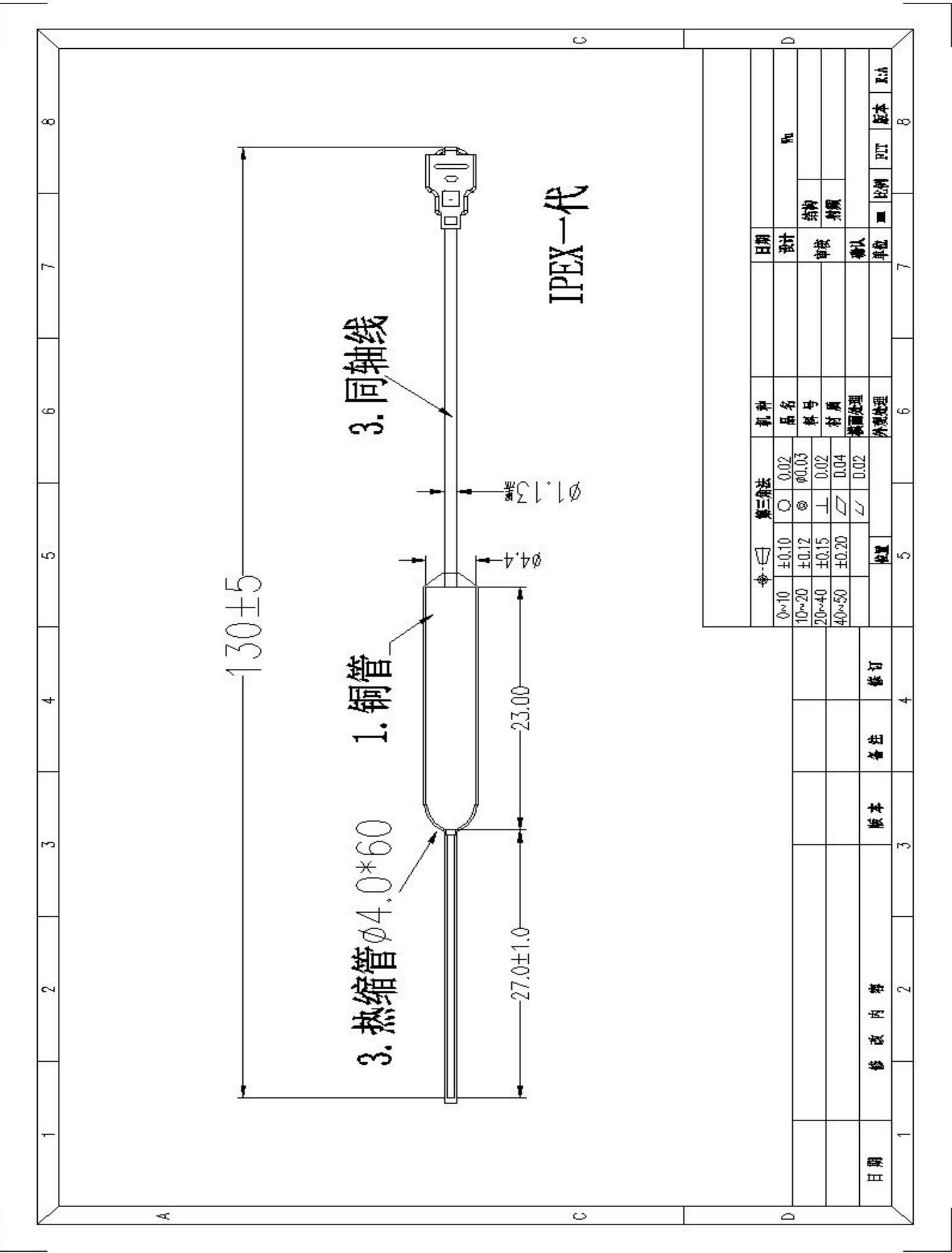
X Axis
Y Axis
Z Axis

2500.00MHz@T45P200



X Axis
Y Axis
Z Axis

4.天线结构图：



电器技术参数

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	1.77DBI	Gain	1.77DBI
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	130mm	Cable length	130mm
工作温度	-40℃~+85℃	Working Temperature	-40℃~+85℃
工作湿度	20~80%	Working Humidity	20~80%

RF113 规格

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

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

Coaxial Wire
AWG 32

2. 结构/Construction
- 单位/Unit: mm

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：

