

承認書
APPROVAL

客 户 : 天 星

品 名 规 格
DESCRIPTION: MXQ-2.4/5.8-FPC Antenna-1.13 Black-L100-IPEX

料 号
PART NO.:

客 户 料 号
CUS PART NO.:

日 期
D A T E: 2023-8-18

云顶呈样签章

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	业 务 SALES DEPARTMENT
吴淑仪	刘丽	王洪涛

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 15017941162

※ 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 Commumication Electronics Co., Ltd.

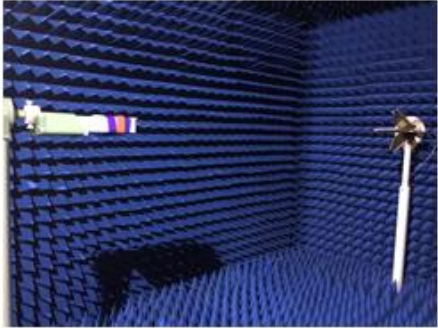
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1.Test items and equipment

	Test items	Device
1. S11 参数 (S-parameter)	1. 回波损耗 (Return Loss) 2. 电压驻波比 (VSWR)	Network analyzer: Agilent E5071B HP 8753D
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS)	1. Darkroom: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2.Comprehensive test instrument: 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. Darkroom: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. Network analyzer: Agilent E5071B HP 8753D



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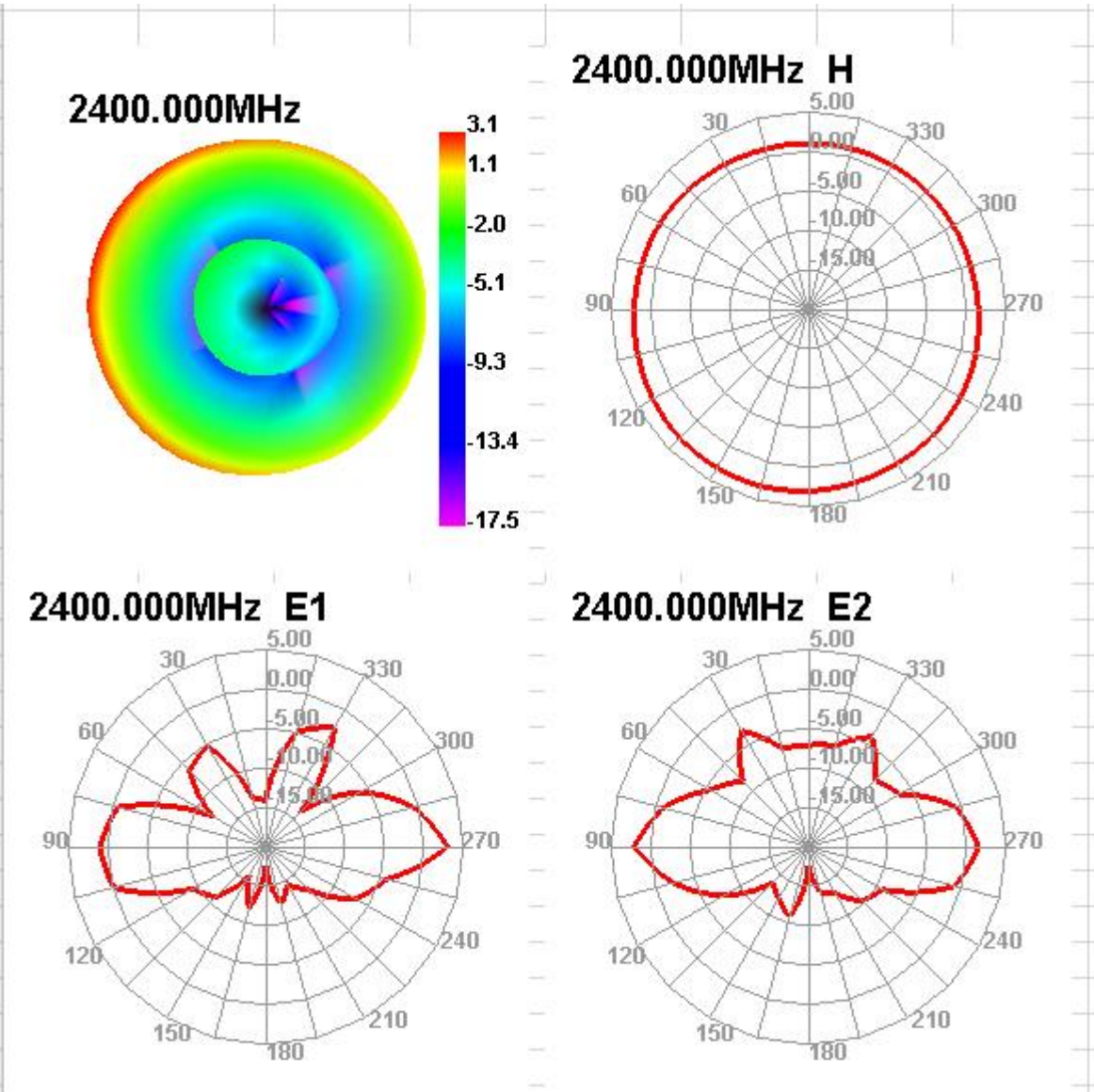
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2.Antenna performance



3.Antenna efficiency and gain

Passive Test For WIFI										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	49.99	-3.01	3.15	1	28.1	21.889	3.15	-17.52	48.09	47.94
2410	49.7	-3.04	2.99	0.84	28.206	21.492	2.99	-18.39	48.07	47.87
2420	51.67	-2.87	3.02	0.87	29.744	21.931	3.02	-19.28	48.18	48
2430	55.06	-2.59	3.21	1.06	32.142	22.917	3.21	-20.05	48.17	47.99
2440	58.14	-2.36	3.36	1.21	34.271	23.871	3.36	-20.11	48.33	48.11
2450	60.89	-2.15	3.52	1.37	35.944	24.949	3.52	-19.87	48.44	48.14
2460	61.77	-2.09	3.49	1.34	36.309	25.456	3.49	-19.4	48.41	48.06
2470	62.93	-2.01	3.44	1.29	36.857	26.07	3.44	-19.67	48.49	48.11
2480	64.62	-1.9	3.44	1.29	37.927	26.694	3.44	-20.29	48.63	48.18
2490	66.97	-1.74	3.51	1.36	39.669	27.3	3.51	-19.97	48.76	48.29
2500	65.97	-1.81	3.35	1.2	39.596	26.374	3.35	-18.77	48.69	48.16



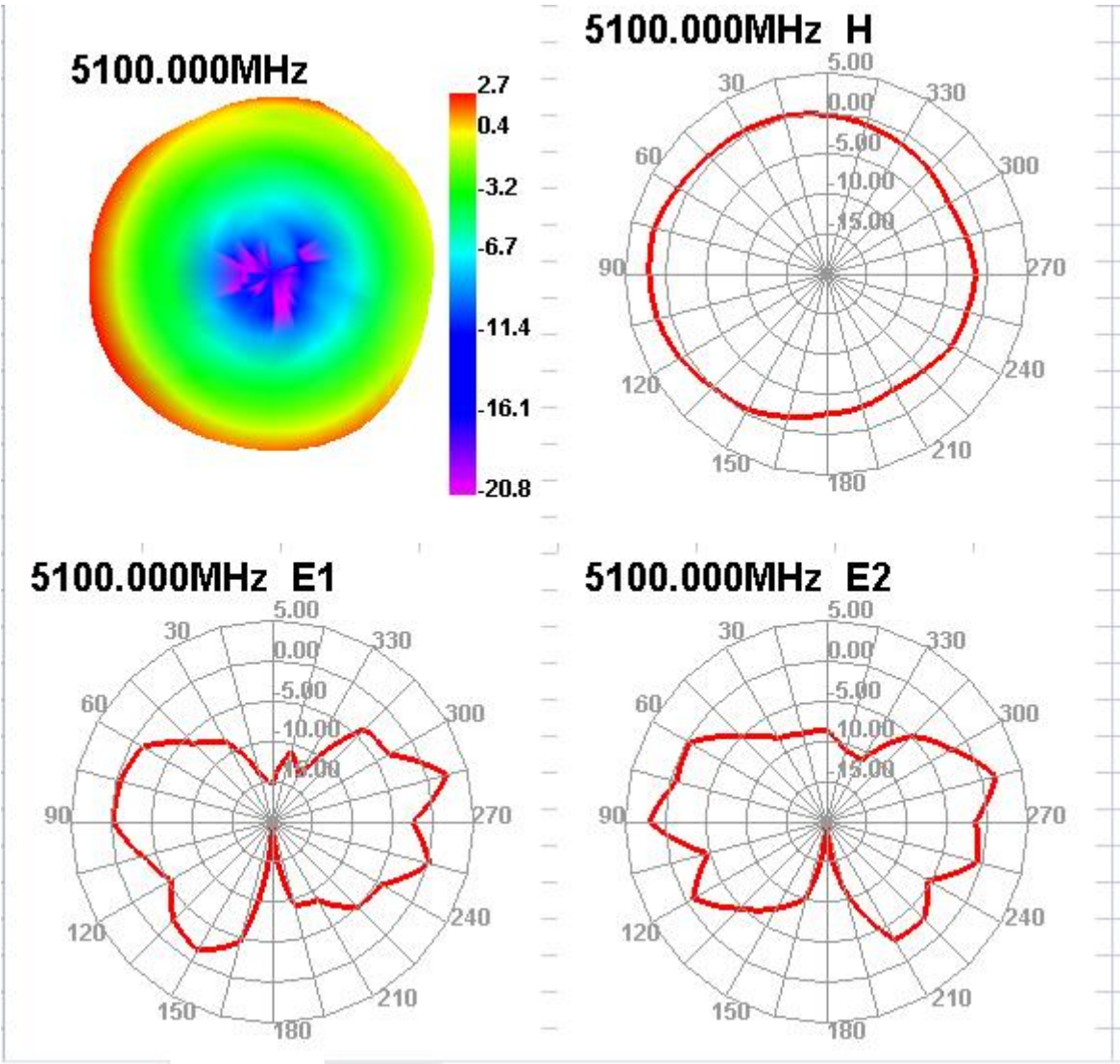
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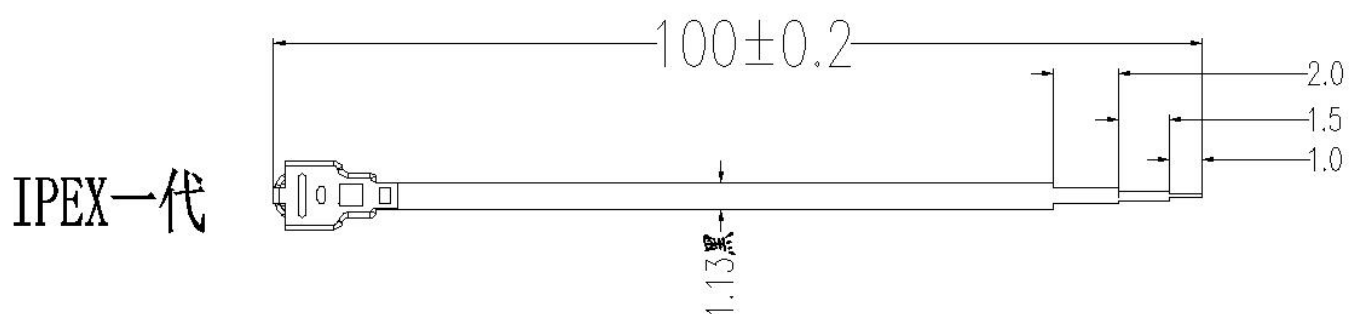
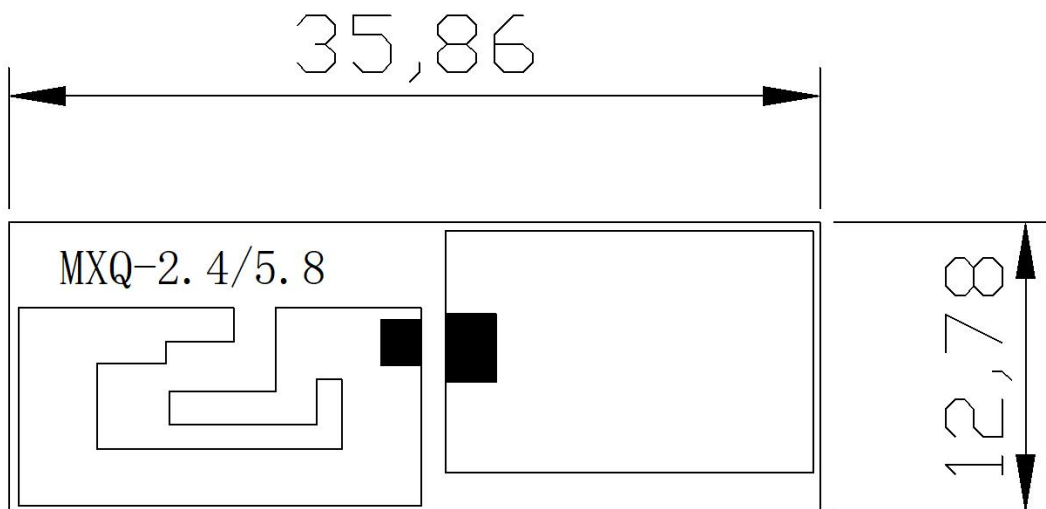
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Passive Test For WIFI-5G										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
5100	61.02	-2.15	2.72	0.57	33.984	27.04	2.72	-20.76	57.95	57.06
5200	61.19	-2.13	2.43	0.28	36.99	24.203	2.43	-21.21	57.55	56.83
5300	71.53	-2.71	2.41	0.26	33.692	19.835	2.41	-21.69	57.16	56.32
5400	66.76	-2.46	3.01	0.73	36.868	19.895	3.01	-21.21	58.32	57.48
5500	64.11	-2.67	2.99	0.04	34.499	19.615	2.99	-15.44	58.91	57.66
5600	62.53	-2.8	2.49	0.34	32.491	20.034	2.49	-21.14	59.51	58.82
5700	64.93	-2.6	2.94	0.79	32.568	22.365	2.94	-24.93	60.54	59.93
5800	58.62	-3.7	2.28	0.13	25.474	17.151	2.28	-23.04	61.14	60.57



4. Antenna structure diagram:



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1.13 Line loss test report				
Test date:	2022-10-21		Test model:	MXQ-2.4/5.8-1.13-L100-IPEX
Number of tests:	5pcs			
Test equipment, methods, and standards.				
1. Test instrument: Network analyzer 5071B				
2. Testing method:	Connect the RF coaxial line to the port 1 and port 2 interfaces of the			
	network analyzer, and test the S12 return loss			
3. Testing standards:				
S12(2.4G)	≥-0.3dB			
S12(5.8G)	≥-0.5dB			
4. Test results				
Serial number	2.4G	5.8G	Judgment results	
1	-0.22	-0.43	OK	
2	-0.23	-0.42	OK	
3	-0.23	-0.42	OK	
4	-0.2	-0.41	OK	
5	-0.22	-0.40	OK	

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Electrical technical parameters			
电 性 能 指 标		Electrical Specifications	
频率范围	2400~2500/5100~5800MHz	Frequency Range	2400~2500/5100~5800MHz
电压驻波比	≤2.0	VSWR	≤2.0
输入阻抗	50 Ω	Input Impedance	50 Ω
增益(最大)	3DB	Gain(Max)	3DB
最大输入功率	50W	Maximum Input Power	50W
机 械 指 标		Mechanical Specifications	
天线颜色	黑色	Antenna Color	BLACK
接口形式	IPEX	Input connector	IPEX
天线长度	100mm	Cable length	100mm
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

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

同轴线
AWG 32

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:

