



产品规格书

Product Specification

客户名称 Customer Name:

项目名称 Project Name: 868MHz 胶棒天线 Rubber rod antenna

规格描述 Product Spec: ZK-868MHz-SMAJ-195MM

版 本 REV: V1.0

日 期 Date: 2024.8.22

制 作 drawing	审 核 check	批 准 approved
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客户承认 Customer Approve

审 核 check	批 准 approved	承 认 approval

目录

Index

一、封面 Cover	-----1
二、目录 Index	-----2
三、电性能指标 Electrical Performance Index	-----3
四、测试报告 Test report	-----4/5
五、测试设备及原理 Testing Equipment&Principle	-----6
六、工程图纸 Product Drawing	-----7
七、可靠性测试报告 Reliability test report	-----8
八、产品包装规范 Code for product packaging	-----9

修改记录 amendant record

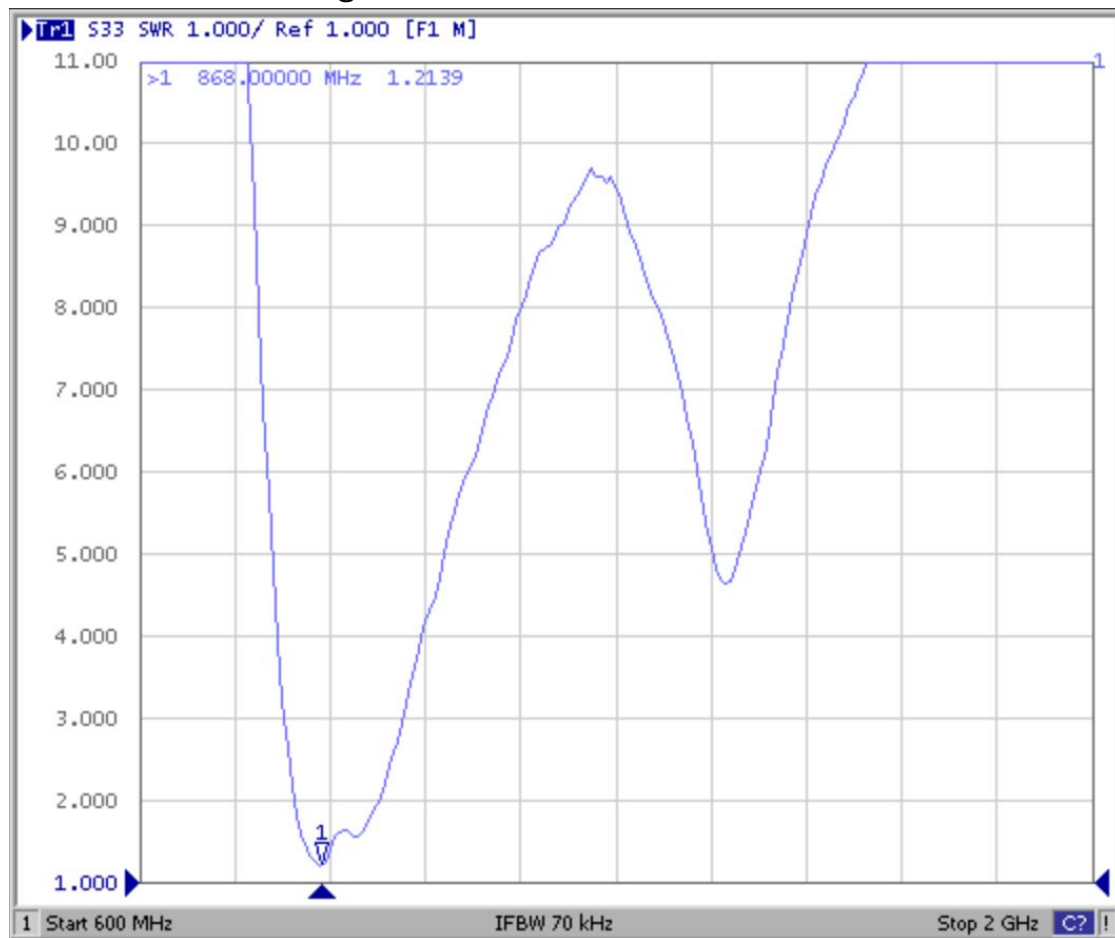
日期 date	工程师 engineer	修 改 内 容 revise content
2024. 08. 22	黄勇军 Huang Yongjun	

电性能指标 Electrical Performance Index

电 器 性 能 指 标		Electrical Specifications	
频率范围 frequency range		860-930MHz	
电压驻波比	≤ 2.0	VSWR	≤ 2.0
增益	$\leq 1.83\text{DBI}$	GAIN	$\leq 1.83\text{DBI}$
辐射方式	全向	Radiation	OMNI
极化方式	线极化	Polarizatin	LINEAR
输入阻抗	50 Ω	Input Impedance	50 Ω
机 械 性 能 指 标		Mechanical Specifications	
接口形式	SMA. J	Input connector	SMA. J
天线材质	铜管	Antenna materia	copper tubing
工作温度	-30℃~+80℃	Working Temperature	-30℃~+80℃
工作湿度	40~85%	Working Humidity	40~85%

测试报告 Test report

1. Antenna in wave diagram



2. antenna effeciency

Passive Test For 868-915										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
860	59.15	-1.6	1.68	-0.47	17.965	31.19	1.68	-9.35	40.12	39.6
861	59.53	-1.58	1.65	-0.5	18.115	31.417	1.65	-9.18	40.12	39.61
862	60.56	-1.51	1.75	-0.4	18.61	31.955	1.75	-9.13	40.13	39.62
863	61.54	-1.45	1.77	-0.38	18.996	32.549	1.77	-9.07	40.13	39.63
864	61.92	-1.43	1.83	-0.32	19.178	32.739	1.83	-8.98	40.13	39.64
865	61.15	-1.48	1.82	-0.33	18.877	32.277	1.82	-8.87	40.14	39.65
866	59.26	-1.6	1.73	-0.42	18.185	31.075	1.73	-9.35	40.14	39.66
867	56.83	-1.75	1.57	-0.58	17.207	29.624	1.57	-9.44	40.14	39.67
868	54.34	-1.92	1.42	-0.73	16.258	28.08	1.42	-9.75	40.14	39.68
869	52.29	-2.06	1.26	-0.89	15.456	26.83	1.26	-9.95	40.15	39.69
870	51.14	-2.14	1.15	-1	15.053	26.09	1.15	-10.21	40.15	39.7
900	48.74	-3.12	1.62	-0.53	20.979	27.762	1.62	-11.54	39.76	39.62
901	47.22	-3.26	1.51	-0.64	20.384	26.833	1.51	-11.57	39.76	39.62
902	44.82	-3.48	1.34	-0.81	19.326	25.498	1.34	-12.07	39.77	39.63
903	42.14	-3.75	0.96	-1.19	18.147	23.997	0.96	-12.27	39.77	39.63
904	40.04	-3.97	0.83	-1.32	17.208	22.835	0.83	-12.08	39.78	39.64
905	38.63	-4.13	0.69	-1.46	16.579	22.055	0.69	-12.41	39.78	39.64
906	38.23	-4.18	0.54	-1.61	16.374	21.859	0.54	-12.26	39.78	39.64
907	38.68	-4.12	0.71	-1.44	16.512	22.172	0.71	-12.28	39.79	39.65
908	40.02	-3.98	0.92	-1.23	17.052	22.969	0.92	-11.92	39.79	39.65
909	41.81	-3.79	1.09	-1.06	17.781	24.032	1.09	-11.58	39.8	39.66

研发地址：深圳市龙华区大浪金瑞中核工业园A栋1楼 Development address: 1st floor, Building A, Jinrui China Nuclear Industrial Park, Dalang, Longhua District, Shenzhen

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表单编号 Form Number: ZK-ED-011 版本 edition : A/0 保存期限 storage life : 3 年

测试设备及原理 Testing Equipment and Principle

1. 测试设备 instrumentation :

网络分析仪 Network Analyzers :

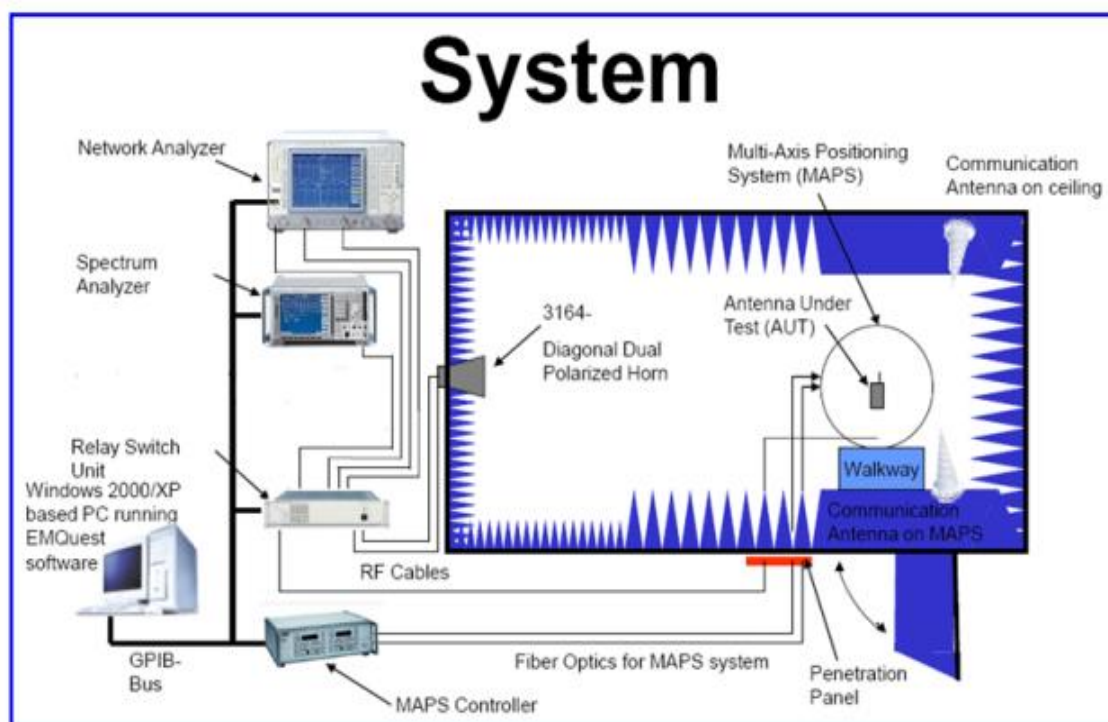
Agilent 8753D 5071B

综合测试仪 Communications Test Set:

Agilent E5515C

3D 暗室测试系统 3D Chamber Test System:

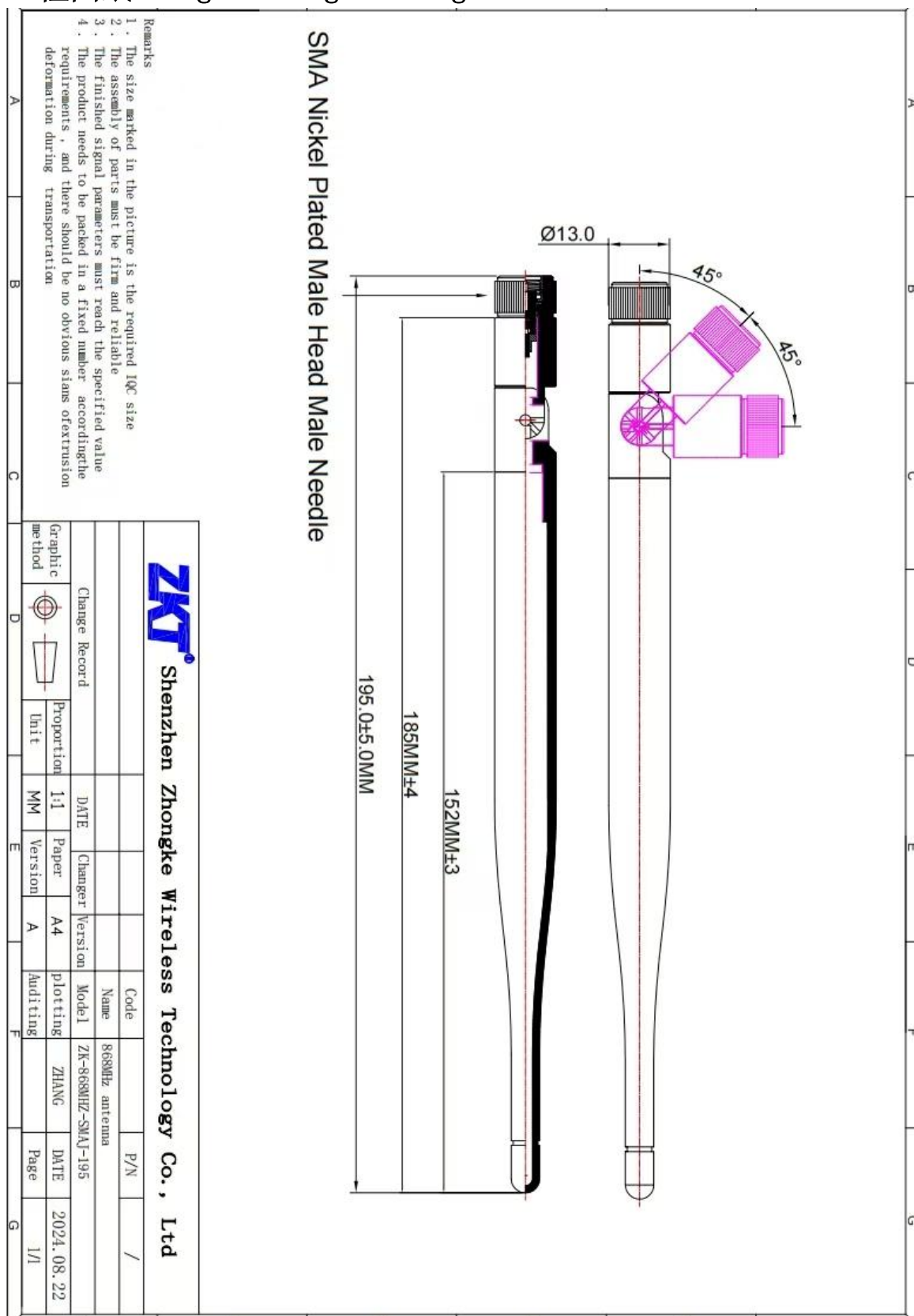
2. 测试原理 The test principle:



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工程图纸: engineering drawing



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可靠性测试报告 Reliability test report

测试项目		测试方法	要求	结果
C1	V. S. W. R. 电性驻波比	设计网路分析仪参数进行测试	符合待测物规范	pass
M1	天线增益	设计天线暗室参数进行测试	符合待测物规范	pass
M2	Vibration 震动	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80to 20 Hz3 directions; 2 hours for each direction 振幅 1.5mm; 频率 20~80~20Hz; 3 个方向各 2H	1. No Visual Damage 2. Frequency Tol. ≤5% 无明显外观不良; 频率偏移 ≤5%	pass
M6	Random Drop 跌落	GB / T2423.8-1995 Single: Height: 1.0 Meter; 3 directions; 1 time for each direction 单支天线, 高 1m; 3 个方向各 1 次	1. No parts separated、fracture 2. Frequency Tol. ≤5% 产品无脱落、断裂; 频率偏移 ≤5%	pass
E3	Dimension 尺寸	Inspection of dimension, color, material, package, surface process. 检查尺寸, 颜色, 材料, 包装, 表面处理	Directive DUT specification 符合待测物规范	pass
E4	Temperature and Humidity Chamber 恒温恒湿	GB / T 2423.3-2006 Temp: 80° C / 12 H; -40° C / 12H RH: ≥ 90%; Time: 24H 温度 80° C 测试 12H 转 -40° C 测试 12H; 湿度 ≥ 90%; 时间 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol. ≤5% 恢复 2H 后, 无明显外观不良; 频率偏移 ≤5%	pass
E5	Thermal Shock 冷热冲击	GB / T 2423.22 - 2008 - 40° C (30 minutes) to + 80° C (30 minutes); Cycles: 24 - 40° C 测试 30 分转 80° C 测试 30 分为一个周期; 共 24 周期	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol. ≤5% 恢复 2H 后, 无明显外观不良; 频率偏移 ≤5%	pass
R1	Aging test 老化	GB / T 2423.2 - 2008 Temp: 80° C; Time: 24 hours 温度 80° C, 测试 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol. ≤5% 無明顯外觀不良; 频率偏移 ≤5%	pass
M1	RoHS	With Reference to IEC 62321:2008 with flow chart 参考 IEC 62321 测试流程	Directive RoHS 2015/863/EU 符合 RoHS 2015/863/EU 标准	pass

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表单编号 Form Number: ZK-ED-011 版本 edition : A/0 保存期限 storage life : 3 年

产品名称/包装规范: Product name / Packaging specification

一、标签要求 labeling requirement

采购单号 Purchase order number	*****
物料编码 material code	*****
品名规格 Product name specification	*****
数量/单位 Quantity / unit	*****
备注 remarks	*****

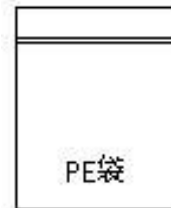
采购单号 Purchase order number	*****
物料编码 material code	*****
品名规格 Product name specification	*****
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备注 remarks	*****

二、装箱要求 The packing requirements

作业说明: job description

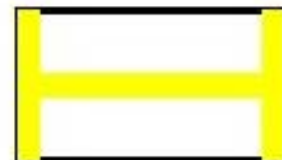
1. 内包装: inner packing

产品 50 PCS 一小袋: Small bag of product 50 PCS

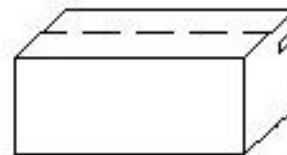


2. 外包装: external packing:

500 个/箱: 500 Boxes / box



纸箱



注意事项: matters need attention:

1. 是否要增设隔板、珍珠棉;

Whether to add a partition board, pearl cotton;

2. 标签的贴附, 如 ROHS 等; Labbel, such as ROHS;