

规格承认书

Specification For Approval

客户名称: 杭州海兴
Customer Hangzhou Haixing

规格描述: N(ZK)-902~928MHz 玻璃钢天线-L285MM
Part name

飞宇信料号: 3.05.4410007902
Part No

客户料号: 214010324001
Customer Part No

客户确认 Customer confirmation		
确认 Confirmation	核实 check	批准 Approver

制造厂商承认 Manufacturer recognition			
销售代表 Sales	拟制 Drafters	核实 check	批准 Approver
何超	李毅	王文才	周锡华

感谢给予敝公司送样承认之机会. 如惠蒙承认通过, 烦请将此表签回敝公司.

Thank you for giving us the chance to approve samples. If you agree to pass it, please kindly send it back to us.

Shenzhen Feiyuxin Electronics Co., Ltd.

Address: No. 76, Baotong South Road, Xikeng Industrial Zone, Henggang Town,

Longgang District, Shenzhen City, China

Telephone: 0755-89737230 Fax: 0755-89737181

<http://www.fyxdz.com>

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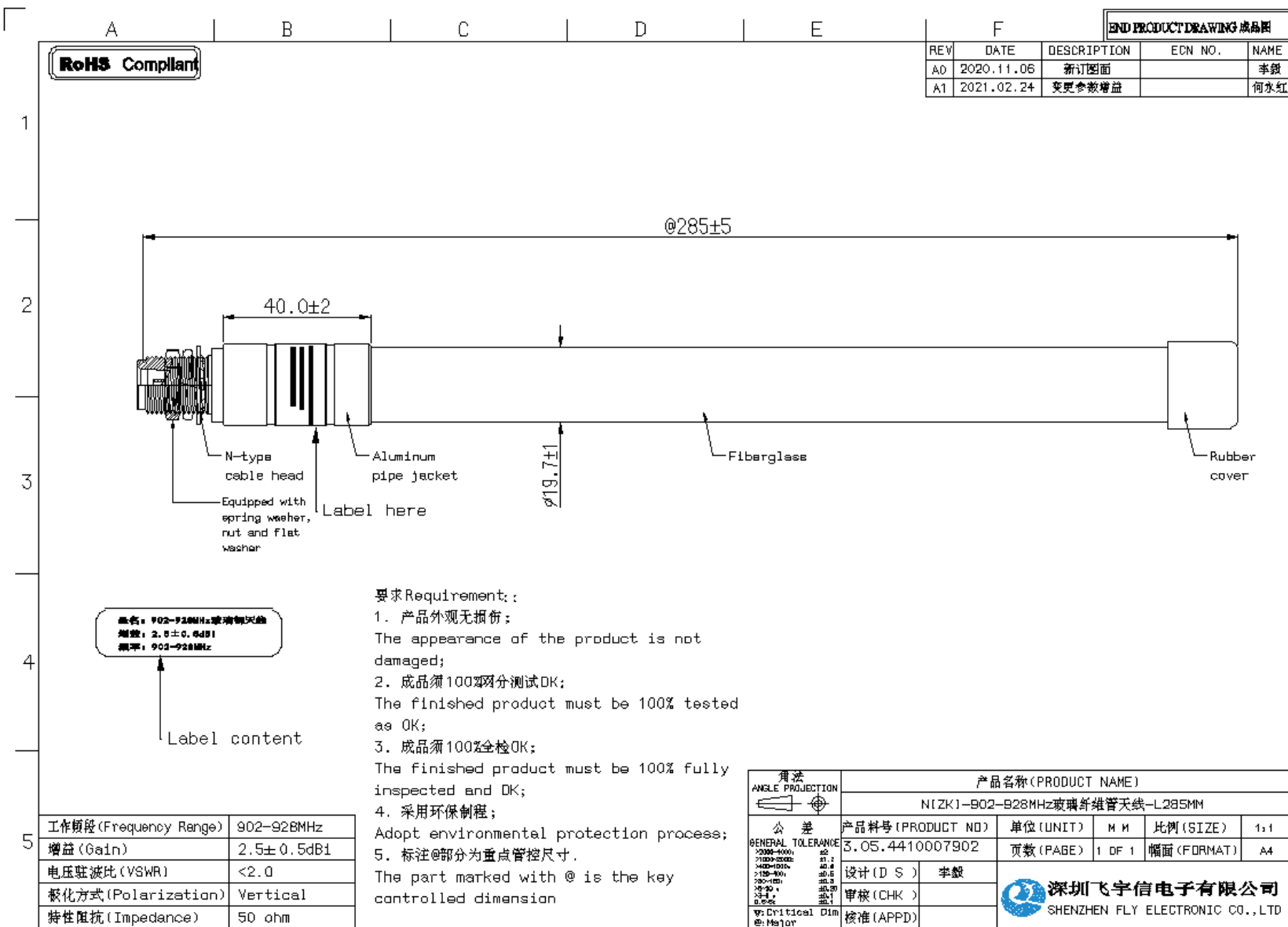
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修改记录

版本	日期	工程师	修 改 内 容
A0	2020. 04. 25	李毅	新建
A1	2020. 11. 09	李毅	增加 BOMM 清单
A2	2021. 2-24	何永红	变更增益

1. 产品尺寸图 dimension drawing



表单编号: FYX/E-QR-14A 版本: 第二版

2. 产品外观 Product appearance

外型尺寸 Size	Ø22*285MM	固定方式 Fixed mode	螺旋固定 Screw fixation
重量 Weight	/	连接器型号 Connector	N 型母头 N-type female head
外壳颜色 colour	灰 grey	电缆 Cable	/

3. 天线性能参数 performance parameters

项目 (Items)	特性 (Specifications)	单位 (unit)
频率范围 Center Frequency (MHz)	902~928	MHz
输出阻抗 Output impedance	50	Ω
驻波比 V. S. W. R	<2.0:1	——
增益 Gain	2.5±0.5	dBi
极化方式 Polarization mode	垂直极化 Vertical polarization	
辐射方向 Radiation direction	全向 omnidirectional	
最大输入功率 Maximum input power	10	W
工作温度 working temperature	-45~+80	°C
储存温度 Storage temperature	-45~+85	°C

4. 电缆头规格 Cable head specification

材料及镀层 Material and coating

序号 Serial number	零件名称 Part name	材质 Texture of material	镀层 Coating	备注 Remarks
1	内导体 Inner conductor	黄铜 brass	镀金 gilding	
2	绝缘体 insulator	聚四氟乙烯 PTFE		
3	壳体 Outer conductor	黄铜 brass	镀镍 NickelPlatedp	

电气性能 Electrical performance

序号 Serial number	检测项目 Test items	技术指标 Technical index	备注 Remarks
1	特性阻抗 impedance	50 Ω	
2	温度范 Operating temperature	-55~+155℃	
3	频率范围 FreqRange	0~3GHZ	
4	介质耐压 Medium pressure	1000V(rms)	
5	接触电阻 Contact resistance	内导体 Inner conductor ≤ 3m Ω 外导体 Outer conductor ≤ 2m Ω	
6	绝缘电阻 Insulation resistance	≥ 5000M Ω	
7	电压驻波比 Voltage standing wave ratio	≤ 1.25	

5. 环境实验 Environmental experiment
环境试验报告
Environmental test report
5.1 高低温恒湿试验 High and low temperature and humidity test

料号 Part No		品名规格 Product Specifications	
试验项目 Pilot projects	高温、低温、恒湿试验 High temperature, low temperature and constant humidity test		
检测设备 Testing Equipment	恒温恒湿试验箱 Constant temperature and humidity test chamber	测试数量 testing amount	
检验标准 Inspection standards	1. 金属表面镀层无脱落、裂痕、起皱等不良；非金属部分不能有变色、裂痕、变形、脱胶等现象。The metal surface coating has no defects such as shedding, cracks, wrinkles, etc.; non-metallic parts must not have discoloration, cracks, deformation, degumming, etc.		
试验名称 Test name	试验项目 Pilot projects	要求 Claim	试验方法 experiment method 结果判定 Result judgment
高温试验	温度 (℃)	85±3	试验步骤: 合格

High temperature test	试验样品温度时间 (h) 试验持续时间 (h) 恢复时间 (h) Temperature (°C) Test sample temperature time (h) Test duration (h) Recovery time (h)	1 2 1	a) 将被测件放入试验箱, 再将高温箱温度调到 $85^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 监控时间。 b) 试验后放置常温 1 小时, 进行常规检验。 experiment procedure: a) Put the test piece into the test box, and then adjust the temperature of the high temperature box to $85^{\circ}\text{C} \pm 3^{\circ}\text{C}$, and monitor the time. b) After the test, leave it at room temperature for 1 hour for routine inspection.	OK
低温试验 Low temperature test	温度 (°C) 试验样品温度时间 (h) 试验持续时间 (h) 恢复时间 (h) Temperature (°C) Test sample temperature time (h) Test duration (h) Recovery time (h)	-45 ± 3 1 2 1	试验步骤: a) 将被测件放入试验箱, 再将低温箱温度调到 $-45^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 监控时间。 b) 试验后放置常温 1 小时, 进行常规检验。 experiment procedure: a) Put the test piece into the test box, and then adjust the temperature of the low temperature box to $-45^{\circ}\text{C} \pm 3^{\circ}\text{C}$, and monitor the time. b) After the test, leave it at room temperature for 1 hour for routine inspection.	合格 OK
恒定湿热试验 Constant damp heat test	温度 (°C) 相对湿度 (%) 试验持续时间 (h) 恢复时间 (h) Temperature (°C) Relative humidity (%) Test duration (h) Recovery time (h)	$+40 \pm 3$ 90-95 21 1	a) 将被测件放入试验箱, 再将试验箱温度调到 $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 湿度为90-95%, 监控时间。 b) 试验后放置常温 1 小时, 进行常规检验。 a) Put the test piece into the test box, then adjust the temperature of the test box to $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, the humidity is 90-95%, and monitor the time. b) After the test, leave it at room temperature for 1 hour for routine inspection.	合格 OK
检验员 Inspectors: 陆晓君 审核 Audit: 李苏梅 批准 Approve: 刘佰通				

5.2 自由跌落测试 Free fall test

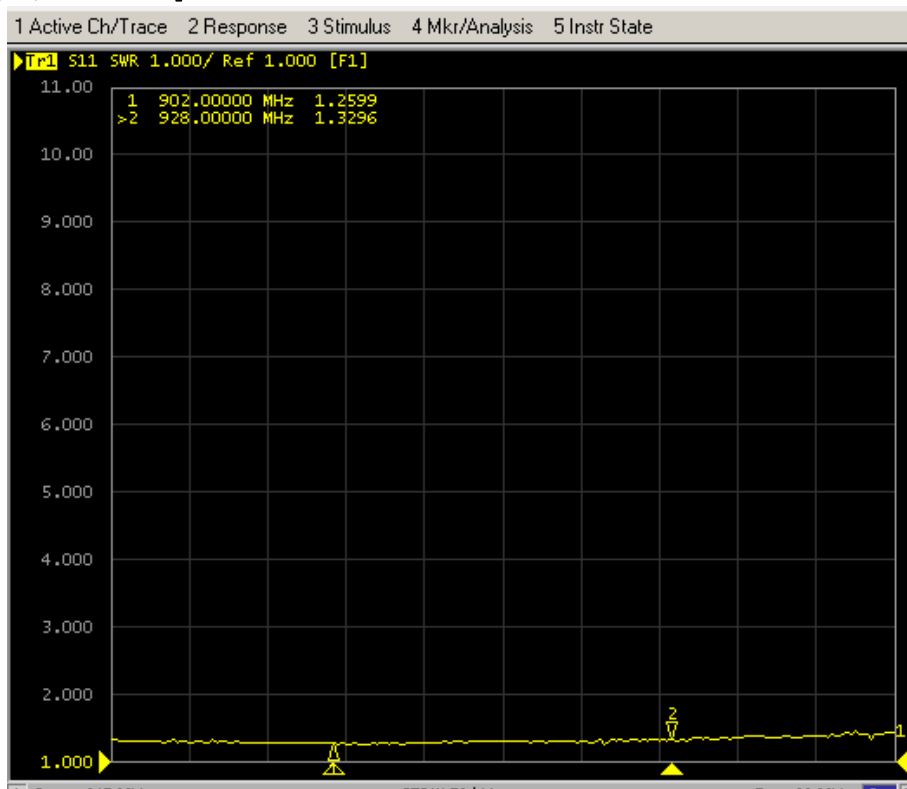
料号 Part No		品名规格 Product Specifications		
试验项目 Pilot projects	自由跌落测试 Free fall test			
检测设备 Testing Equipment	1 米高桌面 1 meter high desktop	测试数量 testing amount		
检验标准 Inspection standards	1. 在 1 米高跌落，产品无脱落、裂痕、等不良，外观无变形等现象。 1. Drop at a height of 1 meter, the product has no shedding, cracks, and other defects, and the appearance is not deformed.			
试验名称 Test name	试验项目 Pilot projects	要求 Claim	试验方法 experiment method	结果判定 Result judgment
自由跌落 测试 Free fall test	跌落高度 1000mm Drop height 1000mm	2 drops on both sides	试验步骤： a) 将被测件在1000mm高度 跌落，试验后进行常规检验。 experiment procedure: a) Drop the test piece at a height of 1000mm, and conduct routine inspection after the test.	合格 OK
检验员 Inspectors: 陆晓君 审核 Audit: 李苏梅 批准 Approve: 刘佰通				

5.3 盐雾试验

料号 Part No			品名规格 Product Specifications		
试验项目 Pilot projects	盐雾试验				
检测设备 Testing Equipment	盐雾测试机		测试数量 testing amount		
检验标准 Inspection standards	1. 金属表面镀层无脱落；外观无生锈、腐蚀、氧化等不良现象。				
试验名称 Test name	试验项目 Pilot projects	要求 Claim	试验方法 experiment method	结果判定 Result judgment	
盐雾试验 Salt spray test	1. NaCl 浓度： 2. 空气压力： 3. PH 值： 4. 喷雾量：	40-60g/1kg 1.0±0.01kgf m² 6.5-7.2 1.0-2.0ml/80c/h。	试验步骤： a) 将盐雾试验机，调制到相关测试条件。 b) 将被测件放入盐雾	合格 OK	

	5. 盐水测试温度设定 a. 试验室温度: b. 压力桶温度: 6. 测试时间: 1. NaCl concentration: 2. Air pressure: 3. PH value: 4. Spray volume: 5. Salt water test temperature setting a. Laboratory temperature: b. Pressure barrel temperature: 6. Test time:	$35 \pm 1^{\circ}\text{C}$ $47 \pm 1^{\circ}\text{C}$ 24H	试验机, 放置 24 小时。试验后用清水冲洗, 目测被测件外观, 进行常规检验。 experiment procedure: a) Adjust the salt spray test machine to relevant test conditions. b) Put the test piece into the salt spray test machine and leave it for 24 hours. After the test, rinse with clean water, visually inspect the appearance of the test piece, and conduct routine inspection.	
检验员 Inspectors: 陆晓君	审核 Audit: 李苏梅	批准 Approve: 刘佰通		

6. 天线性能测试 Antenna performance test



测试记录表 Test record form

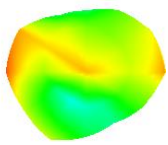
频率 (MHz)	902	928	标准参照值 Standard reference value
驻波比 SWR	1.26	1.32	≤ 1.8

7. 产品实拍图 Product real shot

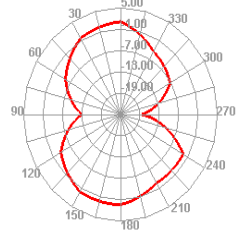
Annex Antenna Physical Assembly Picture

Passive Test For 915		
Freq (MHz)	Effi (%)	Gain (dBi)
900	75.78	4.5
901	75.53	4.46
902	75.01	4.39
903	74.86	4.33
904	74.44	4.27
905	74.39	4.21
906	74.22	4.16
907	74.03	4.1
908	74.25	4.06
909	74.06	4.03
910	73.89	3.99
911	73.81	3.94
912	73.75	3.91
913	73.71	3.9
914	73.69	3.9
915	73.57	3.9
916	73.95	3.92
917	73.22	3.93
918	73.22	3.92
919	72.92	3.89
920	72.82	3.86
921	72.79	3.83
922	72.81	3.81
923	72.67	3.79
924	72.72	3.78
925	72.68	3.76
926	72.61	3.74
927	72.15	3.7
928	71.98	3.64
929	71.82	3.57
930	71.62	3.49

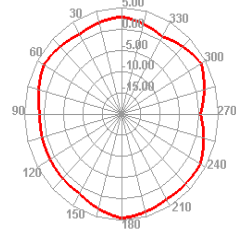
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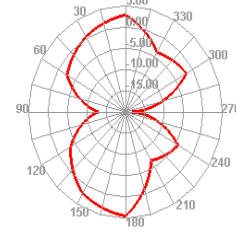
900.000MHz H



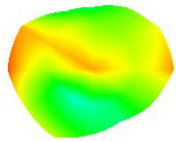
900.000MHz E1



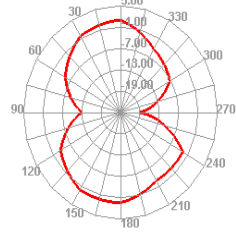
900.000MHz E2



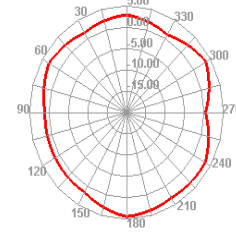
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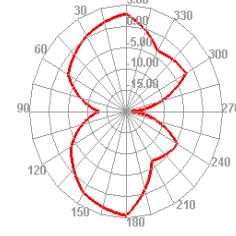
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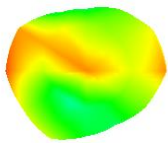
902.000MHz E1



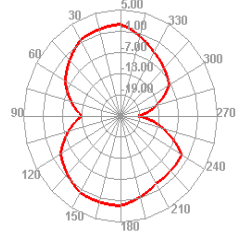
902.000MHz E2



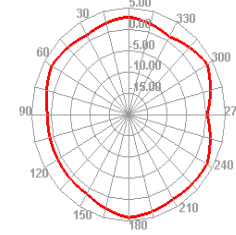
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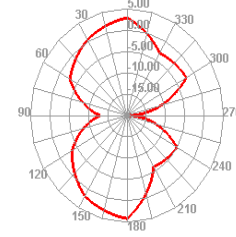
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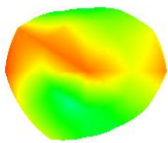
906.000MHz E1



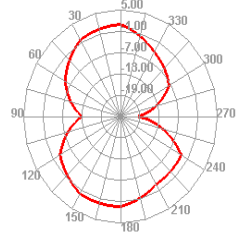
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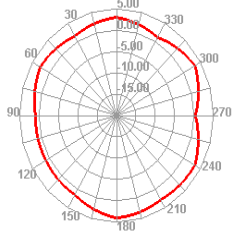
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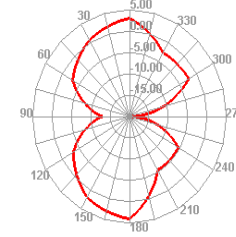
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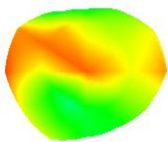
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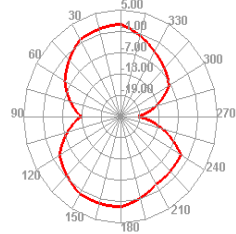
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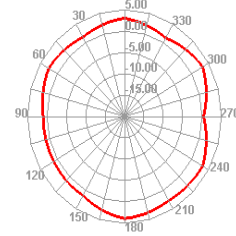
914.000MHz



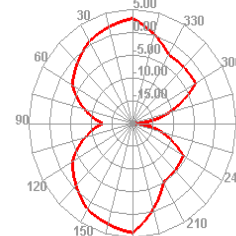
914.000MHz H



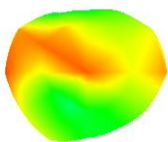
914.000MHz E1



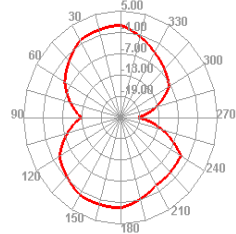
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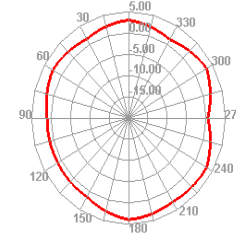
915.000MHz



915.000MHz H



915.000MHz E1



915.000MHz E2

