

产品承认书

产品料号: AG-041733-2314

产品规格: 470MHz 内置天线 (FPC 26×20+弹簧) -黑色 1.13 线-端子, L=130mm

出厂签章:

| | | |
|-----|-----|-----|
| 编 写 | 审 核 | 批 准 |
| 黄飞辉 | 刘立华 | 关宁 |

客户承认签章:

| | | |
|-----|-----|-----|
| 检 查 | 审 核 | 批 准 |
| | | |

安信可联系方式:

| |
|--|
| 公司地址: 深圳 OFFICE:深圳市宝安区西乡华丰智慧创新港 C 座 408 电话: 0755-29162996 电话: 180 2203 6575 网站: http://www.ai-thinker.com |
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目录

| | |
|-------------------|-------|
| 1、封面····· | 1 |
| 2、目录····· | 3 |
| 3、产品图面····· | 4 |
| 4、性能参数表····· | 5 |
| 5、电气性能测试报告····· | 6-7 |
| 6、材料成份及有害物质表····· | 8 |
| 7、包装规范····· | 9 |
| 8、天线示意图····· | 10 |
| 9、原材料可靠性测试报告····· | 11-20 |

3、产品图面

| 版次 | 修改日期 | 修订内容 |
|----|----------|-----------|
| A0 | 21-09-06 | |
| A1 | 21-10-20 | 更改线长 |
| A2 | 22-03-22 | 更改FPC丝印内容 |

正视图

技术要求

- 1: 天线焊接部位牢固, 线缆尺寸准确 (端子维持力 $\geq 1\text{Kg}$).
- 2: 丝印颜色为亮白色, 字体清晰不易脱落.
- 3: "*"为IQC重点检验尺寸.
- 4: 包装以及品质标准分别参考博安通包装规范和博安通品质标准.
- 5: 材料符合ROHS2.0要求.
- 6: 端子杯口不对朝向.

| 序号 | 零件名称 | 材质/工艺 | 备注 |
|----|--------|-------------|----|
| ① | 1代RF端子 | 磷青铜 (镀金) | |
| ② | 同轴线 | 双锡/FEP/黑色 | |
| ③ | FPC | 一对一基材、OSP处理 | |
| ④ | 弹簧 | 镀锌线 | |

| 名称 | 客户料号 | 文件编号 | 项目编号 | 料号 |
|--|------|--------------------|---------------|----------------|
| 470MHz内置天线 (FPC 26×20+弹簧) -黑色1.13线-端子, L=130mm | | B&T-WI-C-PE-5563-1 | Y202109010269 | AG-041733-2314 |

第 1 张 共 1 张

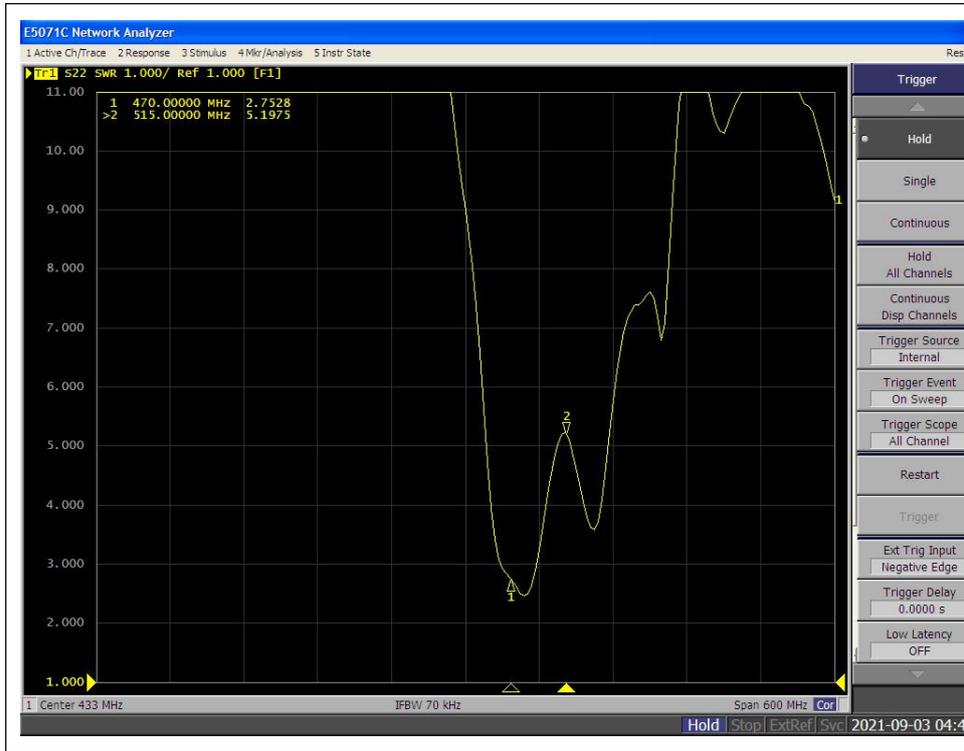
中山市博安通通信技术有限公司

4、性能参数

| 电气参数 | |
|-------|------------|
| 频率范围 | 470~515MHz |
| 输入阻抗 | 50 Ω |
| 驻波比 | 对照工程封样 |
| 功率容量 | <10w |
| 极化方式 | 线极化 |
| 辐射方向 | 全向 |
| 接头型号 | 端子 |
| 机械参数 | |
| 线长 | 130 ± 3mm |
| 端子维持力 | ≥1kgf |
| 同轴电缆 | 黑色1.13锡锡线 |
| 盐雾测试 | / |
| 环境参数 | |
| 工作温度 | -30℃~65℃ |

5、电气性能测试报告（整机）

S11 Parameter



S11 测试数据

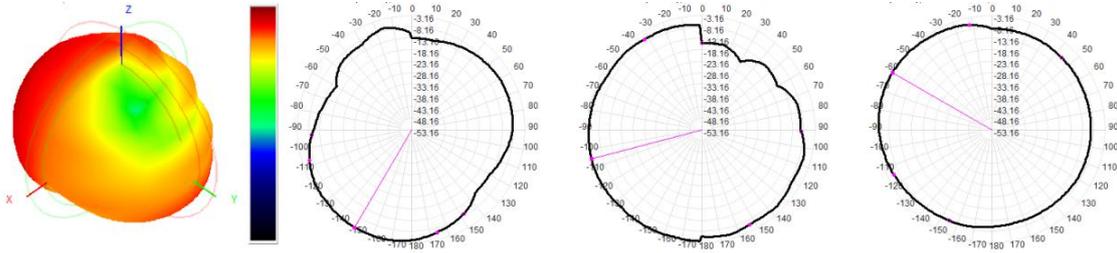
| | | |
|-----------|--------|--------|
| Freq(MHz) | 470MHz | 515MHz |
| VSWR | 2.75 | 5.19 |

➤ 暗室测试数据

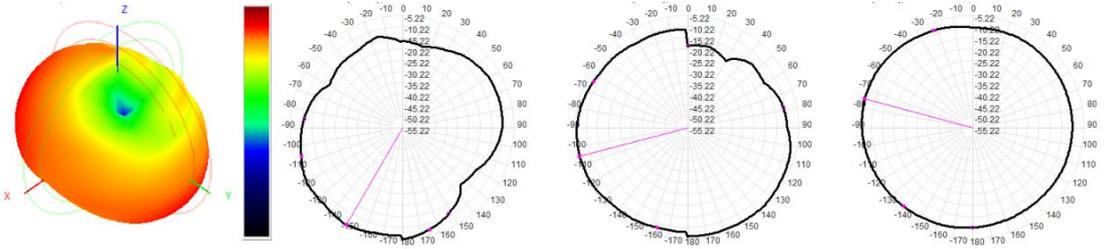
| Frequency (MHz) | Gain (dBi) | Efficiency (%) |
|-----------------|------------|----------------|
| 460.0 | -2.01 | 26.69 |
| 465.0 | -2.11 | 25.74 |
| 470.0 | -3.16 | 20.04 |
| 475.0 | -5.51 | 11.78 |
| 480.0 | -7.72 | 6.87 |
| 485.0 | -4.93 | 12.16 |
| 490.0 | -4.06 | 14.07 |
| 495.0 | -4.21 | 13.49 |
| 500.0 | -4.49 | 12.87 |
| 505.0 | -4.77 | 12.44 |
| 510.0 | -5.10 | 12.02 |
| 515.0 | -5.17 | 11.71 |
| 520.0 | -5.16 | 11.63 |

➤ 天线方向图

470M 3D-E1-E2-H



515M 3D-E1-E2-H



6、材料成分及有害物质表

| 项次 | 规格 | 材质 | RoHS 检验结果 (PPM) | | | | | | ICP 检测编号 | 检测时间 |
|----|----------|--------|-----------------|----|----|------|-----|------|-------------------|------------|
| | | | Cd | Pb | Hg | Cr+6 | PBB | PBDE | | |
| 1 | 1.13 线 | FEP | ND | ND | ND | ND | ND | ND | NGBML2100232102 | 2021.01.27 |
| | | 黑色母 | ND | ND | ND | ND | ND | ND | ED210625086C002 | 2021.07.01 |
| | | 镀锡铜线 | ND | ND | ND | ND | ND | ND | CANEC2113747201 | 2021.07.30 |
| 2 | 1代 RF 端子 | PBT | ND | ND | ND | ND | ND | ND | A2200464116101002 | 2020.12.25 |
| | | 磷青铜 | ND | 5 | ND | ND | ND | ND | CANEC2102353601 | 2021.02.25 |
| | | 镀金 | ND | 34 | ND | ND | ND | ND | CANEC2017345601 | 2020.10.14 |
| 3 | FPC | PI | ND | ND | ND | ND | ND | ND | SHAEC2103249004 | 2021.03.03 |
| | | OSP | ND | ND | ND | ND | ND | ND | SZXEC2002972401 | 2020.12.04 |
| | | 黑油墨 | ND | ND | ND | ND | ND | ND | CE_2020_93185 | 2020.09.28 |
| | | 3M9471 | ND | ND | ND | ND | ND | ND | SHAEC2100467601 | 2021.01.13 |
| 4 | 弹簧 | 镀镍线 | ND | ND | ND | ND | / | / | SZXEC2101384001 | 2021.05.17 |

产品包装规范

PACKING CRITERION

产品料号：AG-041733-2314

产品规格：470MHz 内置天线（FPC 26×20+弹簧）-黑色 1.13 线-端子，L=130mm

一、标签要求（根据客户名称参考对应的成品标签制作要求，无要求即按普通标签要求）

内标签 长 10cm 宽 6cm 左右

| | | | |
|-------|----------------|-----|----------|
| 需方 | ***** | | |
| 供方 | 中山市博安通通信技术有限公司 | | |
| 物料编码 | ***** | | |
| 生产单号 | ***** | | |
| 品名规格 | ***** | 检验员 | ** |
| 数量/单位 | ***** | 日期 | ****.*** |
| 追溯码 | ***** | 流水号 | ** |

外标签 长 10cm 宽 6cm 左右

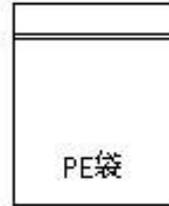
| | | | |
|-------|----------------|-----|----------|
| 需方 | ***** | | |
| 供方 | 中山市博安通通信技术有限公司 | | |
| 物料编码 | ***** | | |
| 生产单号 | ***** | | |
| 品名规格 | ***** | 检验员 | ** |
| 数量/单位 | ***** | 日期 | ****.*** |
| 追溯码 | ***** | 流水号 | ** |

二、装箱要求

作业说明：

1. 内包装：

产品 50 PCS 装小袋，
200 PCS 装大袋。



2. 外包装：

根据实际包装定数量 / 箱



纸箱

注意事项：

1. 是否要增设隔板、珍珠棉；
2. 标签的贴附，如 ROHS 等；



9、原材料可靠性测试报告

油墨百格测试报告

报告单编号: 20210725002

| | | | |
|------|--|-----|---|
| 客户名称 | 博安通 | 产品 | FPC 成品天线, 基材: PI, 正表面油墨, 背胶 3M9471/3M300LSE |
| 产品料号 | 59.7X32.1(LT61S)-A1 | 抽样数 | 5PCS |
| 检验日期 | 2021-7-25 | | |
| 检验工具 | 1.百格刀 2.毛刷 3. 3M600 胶纸 4.橡皮擦 | | |
| 检验方法 | 1. 用百格刀在测试样本表面划 10×10 个 (100 个) 1mm×1mm 小网格, 每一条划线应深及镀层的底层。 2. 用毛刷把测试区域的碎片刷干净。 3. 用 3M600 号胶纸或等效力的胶纸牢牢粘住被测试小网格, 并用橡皮擦用力擦拭胶带, 以加大胶带与被测试区域的接触面积和力度。 4. 用手抓住胶带一端, 在垂直方向 (90 度) 迅速扯下胶纸, 同一位置进行 2 次相同试验。 5. 观察镀层破损面积情况, 进行判定。 | | |
| 判定方法 | 镀层或涂层损坏 (脱落) 面积 ≤ 5% 为合格, 如 > 5% 为不合格 | | |
| 样品编号 | 观察现象描述 | | |
| 1 | 外表镀层无脱落现象, 涂层无不良现象 | | |
| 2 | 外观镀层无不良现象, 涂层无不良现象 | | |
| 3 | 外观镀层无损坏现象, 涂层无不良现象 | | |
| 4 | 外观镀层无脱落现象, 涂层无不良现象 | | |
| 5 | 外观镀层无脱落损坏, 涂层无不良现象 | | |
| 结论: | <input checked="" type="checkbox"/> 合格 <input type="checkbox"/> 不合格 | | |

测试员 丁允广

审核 何邦义

3M™ Adhesive Transfer Tapes with Adhesive 300LSE

8132LE • 8153LE • 9453LE • 9471LE • 9472LE • 9653LE • 9671LE • 9672LE

Typical Physical Properties and Performance Characteristics (continued)

Typical Adhesion Properties **Note:** The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

The properties defined are based on the attachment of impervious faceplate materials (such as aluminum) to a stainless steel test surface.

Bond Build-up: The bond strength of 3M™ Adhesive 300LSE increased as a function of time and temperature, and has very high initial adhesion.

Humidity Resistance: High humidity has a minimal effect on adhesive performance. No significant reduction in bond strength is observed after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

U.V. Resistance: When properly applied, nameplates and decorative trim parts are not adversely affected by exposure.

Water Resistance: Immersion in water has no appreciable effect on the bond strength. After 100 hours at room temperature, the high bond strength is maintained.

Temperature Cycling Resistance: High bond strength is maintained after cycling four times through:

- 4 hours at 158°F (70°C)
- 4 hours at -20°F (-29°C)
- 4 hours at 73°F (22°C)

Chemical Resistance: When properly applied, nameplates and decorative trim parts will hold securely after exposure to numerous chemicals including oil, mild acids and alkalis.

Temperature Resistance: 3M™ Adhesive 300LSE is usable for short periods (minutes, hours) at temperatures up to 300°F (148°C) and for intermittent longer periods of time (days, weeks) up to 200°F (93°C).

Lower Service Temperature: -40°F (-40°C).

| Available Sizes | Width and Length (subject to minimum order requirements): | |
|----------------------------|---|--|
| | 3M™ Adhesive Transfer Tapes 8132LE, 8153LE* | 3M™ Adhesive Transfer Tapes 9453LE, 9471LE, 9472LE, 9653LE, 9671LE, 9672LE |
| Standard Sheet Size: | 24 in. x 36 in. | — |
| Limitations: | Maximum 360 yards | 1/2 in. to 63/64 in.: Maximum 180 yards 1 in. to 54 in.: Maximum 360 yards |
| Minimum Slit Width: | 12 in. | 1/2 in. |
| Maximum Slit Width: | 48 in. | 54 in. |
| Normal Slitting Tolerance: | ± 1/32 in. | ± 1/32 in. |
| Core | 6.0 in. | 3.0 in. |

*Custom sheets are available.

3M™ Adhesive Transfer Tapes with Adhesive 300LSE

8132LE • 8153LE • 9453LE • 9471LE • 9472LE • 9653LE • 9671LE • 9672LE • 9698LE

| | |
|-----------------|---|
| Features | <ul style="list-style-type: none"> • 3M™ Adhesive 300LSE is a hi-strength acrylic adhesive that provides a very high bond strength to most surfaces. • Excellent bond to low surface energy plastics such as, polypropylene and powder coatings. • Excellent adhesion to lightly oiled surfaces typical of machine parts. • Thickness range of 2.0 mils, 3.5 mils, 5.0 mils and 8.5 mils for use on smooth, or rough surfaces. • Extremely smooth adhesive for excellent graphics appearance. • Double lined for selective die-cutting. • Polycoated kraft liner for die-cutting end tabs and waste removed nameplates on a common carrier. • 3M™ Adhesive Transfer Tapes 8132LE and 8153LE are double lined for selective die-cutting. |
|-----------------|---|

| | |
|-------------------------------|--|
| Application Techniques | <p>For maximum bond strength, the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Carefully read and follow manufacturer's precautions and directions for use when using cleaning solvents.</p> <p>Bond strength can also be improved with firm application pressure and moderate heat, from 100°F (38°C) to 130°F (54°C), causing the adhesive to develop intimate contact with the bonding surface.</p> <p>Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended for most pressure-sensitive adhesives because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.</p> |
|-------------------------------|--|

| | |
|----------------------------|---|
| General Information | <ul style="list-style-type: none"> • Plastic nameplates or graphic overlays for use on low surface energy plastics. • Waste removed nameplates on a common sheet for ease of application. • Attaching membrane switch assemblies to powder coated surfaces and low surface energy plastics. • Graphic overlays with end tabs for easy liner removal. • Graphic application to surfaces such as wood, fabric, plastic, where very high bond strength is required. • Attaching identification material to lightly oily surfaces typical of machine parts. |
|----------------------------|---|

| | |
|--------------------------|---|
| Application Ideas | <p>Processing:</p> <p>Slitting and die-cutting: This adhesive is very aggressive and may be difficult to convert depending on your application requirements. Chilling the adhesive between 35°F and 50°F will improve the processability. In addition, dies can be lubricated with Laminoleum evaporative stamping oil, which is available from Metal Lubricants Company (708-333-8900), or with Lubri-Blade 907 from Ceramic Technologies Inc. (800-258-8495). You may also refer to our Technical Bulletin on 3M™ Adhesive 300LSE converting. (70-0707-6205-2)</p> <p>Roll Laminating: A combination of metal and rubber rollers with moderate pressure is recommended.</p> <p>Note: Please refer to the Technical Bulletin on slitting. (70-0709-3905-6)</p> |
|--------------------------|---|

3M™ Adhesive Transfer Tapes with Adhesive 300LSE

8132LE • 8153LE • 9453LE • 9471LE • 9472LE • 9653LE • 9671LE • 9672LE

| | |
|---|---|
| Storage | Store at room temperature conditions of 70°F (21°C) and 50% relative humidity. |
| Shelf Life | If stored properly, product retains its performance and properties for 18 months from date of shipment. |
| Recognition/ Certification | <p>TSCA: These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.</p> <p>MSDS: These products are not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, the products should not present a health and safety hazard. However, use or processing of the products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.</p> <p>Note: One of 3M's core values is to respect our social and physical environment. 3M is committed to comply with ever-changing, global, regulatory and consumer environmental, health, and safety (EHS) requirements. As a service to our customers, 3M is providing information on the regulatory status of many 3M products. Further regulation information including that for OSHA, USCPSP, FDA, California Proposition 65, REACH and RoHS, can be found at 3M.com/regs.</p> |
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This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.



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www.3M.com/converter



Recycled Paper
40% pre-consumer
10% post-consumer

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同轴电缆成品试验报告

| 试样品名规格 | RF113-T11/B 双锡 | 试验时间 | 2020/7/16 | |
|--|----------------|----------------------------|-----------|----|
| 样品批号 | 21071551420 | 检验数量 | 2M | |
| 试验类型： <input type="checkbox"/> 新品开发试验 <input type="checkbox"/> 来料抽样试验 <input type="checkbox"/> 设计变更验证 <input checked="" type="checkbox"/> 量产追踪试验 <input type="checkbox"/> 其他需求试验 | | 设备名称/型号：拉力试验机、锡炉、千分尺、网络分析仪 | | |
| 试验结果 | | | | |
| 试验项目 | 标准要求 | 测试数据 | 判定 | |
| 上锡性能 | 导体 | 上锡饱满、均匀 | OK | 合格 |
| | 编织 | 上锡饱满、均匀，无锡孔 | OK | 合格 |
| 缩水性能 | 绝缘 | ≦0.2mm | 0.1 | 合格 |
| | 护套 | ≦0.2mm | 0.2 | 合格 |
| 附着力 | 绝缘层 | 5~12N | 6 | 合格 |
| | 护套层 | 6~10N | 6 | 合格 |
| 传输性能 | 特性阻抗 | 50±2 Ω | 49 | 合格 |
| | 衰减 | ≦5.40@DC-6GHz | 5.26 | 合格 |
| | 驻波比 | ≦1.30@DC-6GHz (dB/m) | 1.15 | 合格 |
| 性能测试图： | | | | |
| | | | | |

批准：黄炜

审核：黄炜

测试员：林伟

表单编号：WBT-FR-QA-062 版本A/0 保存有效期：三年

样品料号: 送测日
 期: 报告编号:

 006-01-00039
 2021/06/16 KR D-
 2021002

RF1.13线端产品性能测试报告

测试项目: 接触电阻 判定: 合格 实验员 曹进
 测试条件: 公母端连接器配合后使用最大20mV开路电压, 以最大10mA 电流进行测试。
 判定标准: 中心导体: 20mΩ MAX, 外部导体: 10mΩ MAX. 单位: mΩ

| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 初始值 | 中心导体 | 8.95 | 9.94 | 8.24 | 9.67 | 8.89 | 9.28 | 8.92 | 9.54 | 9.35 | 8.92 | 9.21 | 9.32 |
| | 外部导体 | 5.48 | 5.39 | 4.63 | 5.12 | 5.44 | 4.42 | 5.22 | 5.41 | 4.58 | 5.42 | 5.23 | 5.24 |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
| 初始值 | 中心导体 | 9.23 | 9.82 | 9.61 | 9.52 | 9.45 | 9.32 | 9.12 | 8.92 | 9.24 | 9.51 | 9.32 | 9.46 |
| | 外部导体 | 5.21 | 5.56 | 4.85 | 4.75 | 5.52 | 5.21 | 5.34 | 5.36 | 4.82 | 5.32 | 4.85 | 4.91 |

测试项目: 耐电压 判定: 合格 实验员 曹进
 测试条件: 使用交流200V, 保持1分钟, 测试端子与外壳之间耐电压, 判定标准: 不能有电火花产生, 漏电流不能超过2mA.

| | | | | | | | | | | | | |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 绝缘阻抗 判定: 合格 实验员 曹进
 测试条件: 使用直流100V, 保持1分钟, 测试端子与外壳之间绝缘阻抗。
 判定标准: 最小500MΩ. 单位: MΩ

| | | | | | | | | | | | | |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 拔出力 判定: 合格 实验员 曹进
 测试条件: 沿着插入相反方向, 以每分钟25+/-3mm的速度将样品(公头)从母座中拔出, 初始: 综合拔出力最小5N, 中心导体最小0.15N;

判定标准: 30次后: 综合拔出力最小3N, 中心导体最小0.10N. 单位: 牛顿

| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 初始值 | 综合 | 12.94 | 13.24 | 12.67 | 14.89 | 13.28 | 13.42 | 12.86 | 13.46 | 14.72 | 13.32 | 13.56 |
| | 中心导体 | 1.22 | 0.98 | 0.85 | 1.09 | 0.92 | 1.23 | 0.98 | 1.15 | 1.06 | 0.95 | 1.13 |
| 30次后 | 综合 | 9.20 | 9.62 | 7.89 | 10.12 | 9.45 | 8.95 | 9.06 | 8.97 | 9.72 | 9.62 | 9.43 |
| | 中心导体 | 0.62 | 0.51 | 0.42 | 0.74 | 0.45 | 0.58 | 0.62 | 0.68 | 0.58 | 0.67 | 0.72 |
| 样品编号 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | |
| 初始值 | 综合 | 13.24 | 13.52 | 14.51 | 13.28 | 12.73 | 13.25 | 13.41 | 13.35 | 14.65 | 13.45 | 14.32 |
| | 中心导体 | 1.23 | 1.02 | 0.95 | 1.05 | 1.12 | 1.05 | 1.08 | 1.18 | 1.16 | 1.08 | 1.13 |
| 30次后 | 综合 | 10.05 | 9.85 | 9.72 | 10.08 | 8.90 | 8.43 | 8.58 | 9.43 | 9.52 | 8.86 | 9.32 |
| | 中心导体 | 0.58 | 0.62 | 0.67 | 0.49 | 0.71 | 0.62 | 0.59 | 0.72 | 0.68 | 0.60 | 0.52 |

测试项目: 耐久性 判定: 合格 实验员 曹进
 测试项目: 驻波比 判定: 合格 实验员 曹进
 测试条件: 板端: 频率: DC0.1~6 GHz.
 判定标准: 板端: (0.1~3) GHz: 最大1.3; (3~6) GHz: 最大1.5. 单位: GHz

| | | | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | 1.246 | 1.21 | 1.212 | 1.213 | 1.216 | 1.225 | 1.233 | 1.231 | 1.228 | 1.23 | 1.224 | 1.232 |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | 1.246 | 1.235 | 1.208 | 1.225 | 1.216 | 1.237 | 1.233 | 1.231 | 1.228 | 1.215 | 1.224 | 1.223 |

测试条件: 将母座焊接在板上, 用公座以每分钟25±/~3mm的速度插拔30次。
初始值: 中心导体: 20mΩ MAX, 外部导体: 10mΩ MAX ;

判定标 30次后: 中心导体: 25mΩ MAX, 外部导体: 15mΩ MAX 。 单
准: 位: mΩ

| 样品编号 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 初始值 | 中心导体 | 9.40 | 8.42 | 7.69 | 8.85 | 7.28 | 7.52 | 8.50 | 9.12 | 7.80 | 8.35 | 8.40 |
| | 外部导体 | 4.39 | 4.53 | 5.51 | 5.22 | 4.12 | 4.25 | 5.23 | 4.68 | 5.46 | 5.12 | 4.68 |
| 30次后 | 中心导体 | 11.23 | 10.27 | 9.25 | 10.36 | 11.17 | 11.08 | 10.52 | 11.02 | 11.12 | 9.82 | 9.45 |
| | 外部导体 | 5.66 | 6.12 | 7.10 | 6.54 | 7.52 | 6.05 | 6.34 | 6.58 | 5.98 | 6.43 | 6.24 |
| 样品编号 | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 初始值 | 中心导体 | 9.40 | 8.42 | 7.69 | 8.85 | 7.28 | 8.65 | 7.93 | 8.21 | 8.35 | 7.92 | 8.61 |
| | 外部导体 | 4.39 | 4.53 | 5.51 | 5.22 | 4.12 | 4.18 | 5.20 | 4.68 | 4.95 | 5.32 | 5.18 |
| 30次后 | 中心导体 | 11.23 | 10.27 | 9.25 | 10.36 | 11.17 | 9.85 | 10.23 | 9.46 | 9.83 | 10.15 | 10.38 |
| | 外部导体 | 5.66 | 6.12 | 7.10 | 6.54 | 7.52 | 5.86 | 6.25 | 5.93 | 6.45 | 6.82 | 7.21 |

测试项目: 引张强度 判定: 合格 实验员 曹进
测试条件: 以每分钟25±/~3mm的速度拉线材部分。
判定标准: 最小25N。 单位: 牛顿

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|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | 29.71 | 28.1 | 28.6 | 27.6 | 29.22 | 28.95 | 28.65 | 28.43 | 27.15 | 28.35 | 29.2 | 29.41 |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | 28.35 | 28.75 | 29.14 | 28.32 | 28.75 | 29.31 | 28.35 | 28.42 | 27.95 | 27.62 | 28.64 | 27.98 |

测试项目: 线材保持力 判定: 合格 实验员 曹进
测试条件: 施力于3个方向, 测试期间工作电流100mA DC, 检查瞬间电流中断。
判定标准: 瞬断时间小于1微秒。

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|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 振动 判定: 合格 实验员 曹进
测试条件: 配对连接器固定在振动仪上, 15分钟内振动频率为10-100-10Hz, 振幅1.5mm, 3个相互垂直的方向进行振动, 各方向振动5次共2小时。
判定标准: 瞬断时间小于1微秒。

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|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 机械冲击 判定: 合格 实验员 曹进
测试条件: 配对连接器固定在冲击试验机上, 以75gn 的加速度, 半正弦冲击波的波形和11毫秒的冲击时间进行测试。冲击次数: 正反三个相互垂直方向各冲击3次, 共18次。
判定标准: 瞬断时间小于1微秒。

| | | | | | | | | | | | | |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 热冲击 判定: 合格 实验员 曹进
测试条件: 配对连接器暴露在以下条件测试100个循环, 一个循环条件如下: 1, -40℃测试30分钟; 2, +5~+35℃最大测试5分钟; 3, +90℃测试30分钟; 4, +5~+35℃最大测试5分钟。

判定标准: 无损坏。

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|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 温度寿命 判定: 合格 实验员 曹进
 测试条件: 配对的连接器暴露在温度为 90°C+/-2°C 的条件下测试96小时。
 判定标准: 无损坏。

| | | | | | | | | | | | | |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 低温测试 判定: 合格 实验员 曹进
 测试条件: 配对的连接器放入低温为-40°C的条件下测试96小时。
 判定标准: 无损坏。

| | | | | | | | | | | | | |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 耐湿性 判定: 合格 实验员 曹进
 测试条件: 配对的连接器暴露在温度为 40°C+/-2°C, 相对湿度为90~95%的条件下测试96小时。
 判定标准: 无损坏。

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|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 测试结果 | OK |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 测试结果 | OK |

测试项目: 盐水喷雾 判定: 合格 实验员 曹进
 配对的连接器暴露在以下条件测试48小时。条件如下: 1. 温度: 35+/-2°C, 2. 盐水浓度: 5+/-1%
 测试条件:

镀金区域无明显腐蚀。
 判定标准: 初始值: 中心导体: 20mΩ MAX, 外部导体: 10mΩ MAX ;
 30次后: 中心导体: 25mΩ MAX, 外部导体: 15mΩ MAX。
 Ω

单位: m

| | | | | | | | | | | | | | |
|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 外观 | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
| 外观 | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | |
| 样品编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 初始值 | 中心导体 | 8.34 | 9.65 | 8.89 | 7.59 | 8.28 | 7.49 | 8.52 | 8.67 | 9.21 | 9.35 | 8.76 | 9.13 |
| | 外部导体 | 4.35 | 4.22 | 4.39 | 5.18 | 5.29 | 4.18 | 4.25 | 5.06 | 4.68 | 5.06 | 4.65 | 4.83 |
| 实验后 | 中心导体 | 13.24 | 13.54 | 12.48 | 11.58 | 14.25 | 13.02 | 13.35 | 12.85 | 12.67 | 13.48 | 13.58 | 14.10 |
| | 外部导体 | 8.35 | 7.56 | 8.12 | 9.12 | 8.22 | 7.98 | 7.86 | 7.92 | 9.13 | 8.53 | 8.35 | 8.42 |
| 样品编号 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
| 初始值 | 中心导体 | 8.92 | 9.65 | 8.89 | 7.59 | 8.28 | 7.49 | 8.62 | 8.23 | 9.13 | 8.43 | 7.62 | 8.32 |
| | 外部导体 | 4.67 | 4.22 | 4.39 | 5.18 | 5.29 | 4.18 | 5.06 | 4.65 | 5.12 | 4.65 | 4.83 | 4.58 |
| 实验后 | 中心导体 | 11.98 | 13.54 | 12.48 | 11.58 | 14.25 | 13.02 | 12.38 | 12.95 | 12.65 | 13.21 | 13.08 | 13.25 |
| | 外部导体 | 8.16 | 7.56 | 8.12 | 9.12 | 8.22 | 7.98 | 9.06 | 7.95 | 7.83 | 8.65 | 8.34 | 9.06 |

| | | | |
|---------|---|---|---|
| 测试前后对比图 | 测试前 | 测试中 | 测试后 |
| |  |  |  |
| | | | |

核准: 黄贤林

审核 /

制表: 卜正玲