

规格书

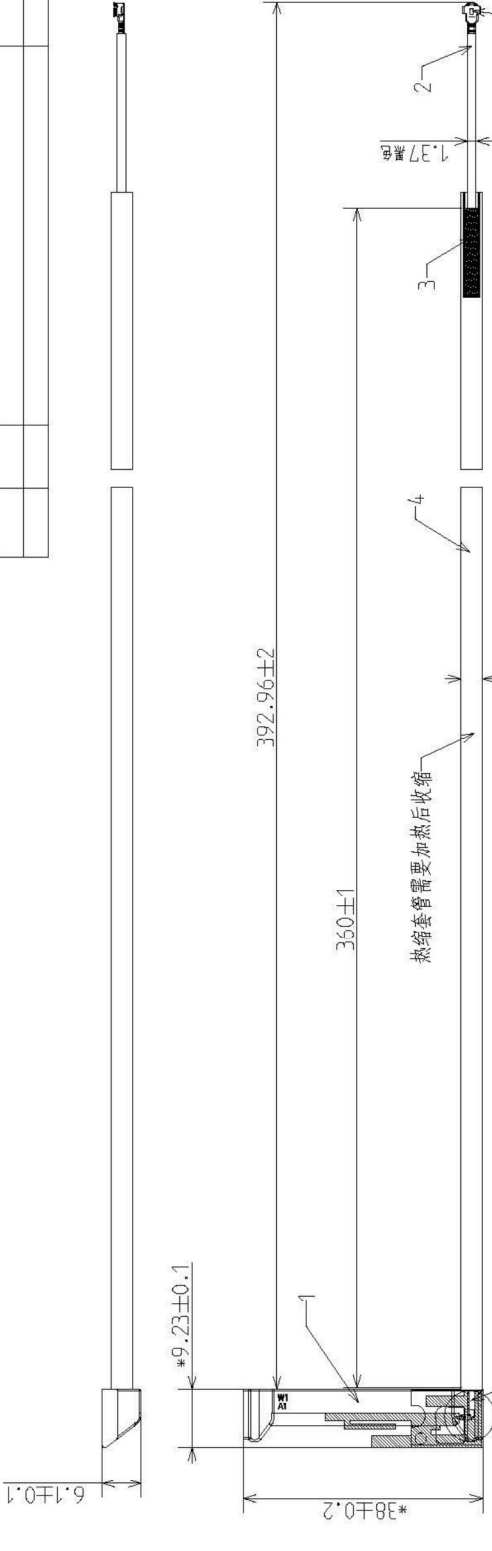
Specifications

| | |
|---|---|
| 项目名称 Project name | SH1309 |
| 物料名称 Name of material | SH1309_WIFI1_LDS_ASM |
| 奕瑞料号 Eery material number | 02090062 |
| 封样版本 Version | V1.0 |
| 规格型号 Specifications and models | B. 1. 03. Y. 0086 |
| 供应商名称（中文全称） Name of supplier (Chinese full name) | 浙江海通通讯电子股份有限公司 Zhejiang Haitong Communication Electronic Co., Ltd. |
| 供货地址 Supply address | |

| 供货方 Supplier | | | 收货方 Consignee | | | |
|---------------------|---------------------|------------|------------------|---------------------|------------|--|
| 编制 Establishment | 需填名字 , 或盖电子 章 | 日期 Date | | 编制 Establishment | 日期 Date | |
| 批准 Approved | | 日期 Date | | 批准 Approved | 日期 Date | |

ROHS/HF

| REVISION | ECO# | REVISION NOTE | AUTHOR | DATE |
|----------|------|---------------|--------|----------|
| A | | | GZO | 20210910 |
| | | | | |
| | | | | |



套管需要加热后收缩
 屏蔽层焊接处要点UV胶固定
 UV胶不能超出支架边缘

IPEX 1代端子, 端口朝下, 加保护套

同轴线焊接示意图



细节 A 比例 2.000

- 注
1. 组件应当符合所附3d数据;
 2. 零件 参考爆炸图;
 3. 包装后无明显外观不良;
 4. 需通过HAITONG品质部门要求的所有测试;
 5. 零件标记 按指定位置;
 6. 尺寸要求:
 - 6.1. ST尺寸, 测量最小量为500中选取的任意35个产品的尺寸平均值PK分析;
 - 6.2. * 尺寸为最高管控尺寸
 7. 首批样品, 随机抽取5PCS做全尺寸测量, 报告及样品需转交HAITONG品质部;
 8. 任何用料上的修改必须通知HT工程部门, 由工程部门书面同意;
 9. 产品必须符合(RoHS/HF/REACH)的要求;

| GENERAL TOLERANCE TABLE | |
|-------------------------|------------------------------|
| L INER | ANGULAR |
| DIVISION | TOLERANCE DIVISION TOLERANCE |
| 0-10 | ±0.05 0-5° ±0.5° |
| 10-50 | ±0.10 5-20° ±1° |
| 50-80 | ±0.15 20-90° ±1.5° |
| >80 | ±0.2 |

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| ITEM | PART NAME | DESCRIPTION | Q'TY | REMARK |
|------|-----------------------|-------------------------|------|--------|
| 4 | SHI309_WIF11-CAB_RSTG | 透明屏蔽套材料 3.0mm, 壁厚0.2mm | 1 | |
| 3 | SHI309_WIF11-CAB_TG | 屏蔽套管, 内径1.5mm, 外径3.0mm | 1 | |
| 2 | SHI309_WIF12-CAB | 同轴屏蔽套 1.37mm, 端子 IPEX一代 | 1 | |
| 1 | SHI309_WIF11-LDS | 微带板 | 1 | |

PART NAME: SHI309_WIF11-LDS-ASM
 PART NUMBER: B.1.03.L.0087
 CLEANLE NUMBER: SEE NOTE
 APPD: SEE NOTE
 RF CHG: A4
 NUMBER: GZO
 TITLE: I013_WIF11-LDS系统组件

NHAIIT 乐清海通讯电子有限公司
 Yueqing Hai Communication Electronics Co., Ltd.

DIMENSION TEXT REPORT (尺寸测试报告)

| | | | | | | | | |
|-------------------------|----------------------|----|---------------------------|---------------------|--------|--------------------|----------------------|------------|
| 产品名称: (Part name) | SH1309_WIF11_LDS_ASM | | 产品料号: (DWG.No.) | B. 1. 03. Y. 0086 | | 类别: (TYPE) | LDS | |
| 数量: (Quantity) | | | 客户料号: (Client DWG.No.) | 02090062 | | 机器编号: (Machine) | 14 | |
| 图面版本: (Drawing Rev.) | A1 | | 供应商/客户: (Dept/Vendor) | 海通 HT/奕瑞 IRAY | | 页数: (Page) | 1 of 1 | |
| 环境: (Environment) | 温度(Temp.) | 22 | °C | 相对湿度: (Humidity) | 55 %RH | | 测试日期: (Test date) | 2020.10.13 |

评估项目 (Subject to be evaluated) : **全尺寸 (full dimension)**

级别 (Item class) : SC = Significant Char. (重要特征)
KCC = Key Control Char. (重点控制特征)
KC = Key Control Item (重点控制项目)
NOR = Reference Item (参考项目)

| No. | Spec. | Control tolerance | | 级别 Class | 量具 Instr. | 1# | 2# | 3# | 4# | 5# | 判定 (Result) | 备注 (Remark) | 工程意见 (Engineering Comments) |
|-----|-------|-------------------|-------|-------------|--------------|-------|----|----|----|----|-------------|----------------|-----------------------------------|
| | | upper | lower | | | | | | | | OK/NG | | |
| 1 | 0.20 | 0.05 | 0.05 | NOR | C | 0.21 | | | | | OK | | |
| 2 | 2.77 | 0.05 | 0.05 | NOR | C | 2.75 | | | | | OK | | |
| 3 | 3.52 | 0.05 | 0.05 | NOR | C | 3.52 | | | | | OK | | |
| 4 | 6.60 | 0.05 | 0.05 | NOR | C | 6.55 | | | | | OK | | |
| 5 | 8.00 | 0.05 | 0.05 | NOR | C | 8.01 | | | | | OK | | |
| 6 | 8.80 | 0.05 | 0.05 | NOR | C | 8.79 | | | | | OK | | |
| 7 | 11.20 | 0.05 | 0.05 | NOR | C | 11.19 | | | | | OK | | |
| 8 | 13.70 | 0.05 | 0.05 | NOR | C | 13.68 | | | | | OK | | |
| 9 | 17.40 | 0.05 | 0.05 | NOR | C | 17.43 | | | | | OK | | |
| 10 | 20.80 | 0.05 | 0.05 | NOR | C | 20.80 | | | | | OK | | |
| 11 | 21.80 | 0.05 | 0.05 | NOR | C | 21.78 | | | | | OK | | |
| 12 | 24.80 | 0.05 | 0.05 | NOR | C | 24.81 | | | | | OK | | |
| 13 | 5.50 | 0.05 | 0.05 | NOR | C | 5.50 | | | | | OK | | |
| 14 | 3.20 | 0.05 | 0.05 | NOR | C | 3.21 | | | | | OK | | |
| 15 | 0.30 | 0.05 | 0.05 | NOR | C | 0.30 | | | | | OK | | |
| 16 | 0.80 | 0.05 | 0.05 | NOR | C | 0.82 | | | | | OK | | |
| 17 | 2.50 | 0.05 | 0.05 | NOR | C | 2.50 | | | | | OK | | |
| 18 | 3.50 | 0.05 | 0.05 | NOR | C | 3.51 | | | | | OK | | |
| 19 | 5.47 | 0.05 | 0.05 | NOR | C | 5.42 | | | | | OK | | |
| 20 | 6.19 | 0.05 | 0.05 | NOR | C | 6.20 | | | | | OK | | |
| 21 | 6.97 | 0.05 | 0.05 | NOR | C | 7.00 | | | | | OK | | |
| 22 | 4.68 | 0.05 | 0.05 | NOR | C | 4.70 | | | | | OK | | |
| 23 | 5.27 | 0.05 | 0.05 | NOR | C | 5.22 | | | | | OK | | |
| 24 | 6.03 | 0.05 | 0.05 | NOR | C | 6.05 | | | | | OK | | |
| 25 | 6.03 | 0.05 | 0.05 | NOR | C | 6.05 | | | | | OK | | |
| 26 | 7.00 | 0.05 | 0.05 | NOR | C | 7.00 | | | | | OK | | |
| 27 | 8.85 | 0.05 | 0.05 | NOR | C | 8.85 | | | | | OK | | |
| 28 | 0.20 | 0.05 | 0.05 | NOR | C | 0.19 | | | | | OK | | |
| 29 | 0.20 | 0.05 | 0.05 | NOR | C | 0.18 | | | | | OK | | |
| 30 | 11.20 | 0.05 | 0.05 | NOR | C | 11.22 | | | | | OK | | |
| 31 | R1.55 | 0.05 | 0.05 | NOR | C | R1.56 | | | | | OK | | |

外观 (Appearance) : 1. 塑胶件 (Plastic): 无外观缩水、气纹、熔接痕、划伤、变形、无飞边等缺陷 (No defects);
2. FPC: 无外观杂质、异色点、划伤、压伤、折痕、金手指氧化、表面破损等缺陷 (No defects);
3. LDS: 无漏雕、针孔、镗雕断裂、镗雕变形、划伤、油污等缺陷 (No defects);
4. 电镀类 (Plating): 无漏镀、溢镀、划伤、压伤、变形等缺陷 (No defects).

OK

检测工具 (Instruments) : C

A: 表卡 (Handy push-pull gauge) B: 数显卡尺 (Digimatic caliper) C: 影像量测仪 (Video measuring system) D: 盐雾试验装置 (Salt spray tester)

E: 恒温恒湿 (Temperature and humidity) F: 放大镜 (Toolmaker's microscope) G: 网络分析仪 (Network analyzer) H: 厚薄规 (Pin gauge)

I: 美工刀 (Knife Tool) J: 平台 (Flat plate) K: 焊锡测试 (Soldering spot)

制表 (Tabulator): 杨都 批准 (Approver): 侯立军

CPK Report

表单编号 (Form number): HZHT-FM-PZ051 版本号 (Version): A/1

| | | | | | |
|------------------------------|-----------------------|-----------------------|-----------------------|--|--|
| 产品名称 Product name | SH1309_WIFI1_LDS_ASM | | 供应商 Suppliers | 浙江海通通讯电子股份有限公司 Zhejiang Haitong Communication Electronic Co., Ltd. | |
| 料号 Material number | B. 1. 03. Y. 0086 | | 确认者 Confirmer | 谭礼青 | |
| 客户料号 Customer data | / | | 英寸/毫米 In/mm | mm | |
| 模号/穴号 Module/point number | / | | 材质名称 Material name | / | |
| 版本 Version | A | | 日期 Date | 2020.10.26 | |
| 尺寸序号 Size serial number | 1 | 2 | | | |
| 公称尺寸 Nominal size | 9.23 | 38.00 | | | |
| 正公差 Positive tolerance | 0.10 | 0.20 | | | |
| 负公差 Negative tolerance | -0.10 | -0.20 | | | |
| 规格上限 High limit | 9.33 | 38.20 | | | |
| 规格下限 lower limit | 9.13 | 37.80 | | | |
| 1 | 9.20 | 38.06 | | | |
| 2 | 9.18 | 38.06 | | | |
| 3 | 9.19 | 38.05 | | | |
| 4 | 9.21 | 38.04 | | | |
| 5 | 9.20 | 38.05 | | | |
| 6 | 9.23 | 38.06 | | | |
| 7 | 9.19 | 38.04 | | | |
| 8 | 9.23 | 38.05 | | | |
| 9 | 9.22 | 38.06 | | | |
| 10 | 9.20 | 38.05 | | | |
| 11 | 9.19 | 38.07 | | | |
| 12 | 9.18 | 38.04 | | | |
| 13 | 9.21 | 38.03 | | | |
| 14 | 9.22 | 38.14 | | | |
| 15 | 9.19 | 38.04 | | | |
| 16 | 9.21 | 38.05 | | | |
| 17 | 9.20 | 38.06 | | | |
| 18 | 9.23 | 38.03 | | | |
| 19 | 9.19 | 38.02 | | | |
| 20 | 9.23 | 37.92 | | | |
| 21 | 9.22 | 37.99 | | | |
| 22 | 9.19 | 38.03 | | | |
| 23 | 9.21 | 38.04 | | | |
| 24 | 9.17 | 38.04 | | | |
| 25 | 9.23 | 38.05 | | | |
| 26 | 9.19 | 38.06 | | | |
| 27 | 9.23 | 38.04 | | | |
| 28 | 9.22 | 38.05 | | | |
| 29 | 9.20 | 38.06 | | | |
| 30 | 9.19 | 38.05 | | | |
| 31 | 9.18 | 38.07 | | | |
| 32 | 9.21 | 38.04 | | | |
| 33 | 9.22 | 38.03 | | | |
| 34 | 9.18 | 38.00 | | | |
| 35 | 9.20 | 38.02 | | | |
| MAX. | 9.23 | 38.14 | | | |
| MIN. | 9.17 | 37.92 | | | |
| AVERAGE | 9.20 | 38.04 | | | |
| STDEV | 0.02 | 0.03 | | | |
| CP | 1.88 | 2.08 | | | |
| Cpk | 1.39 | 1.64 | | | |
| 测量工具 Measuring tools | 二次元 Two dimensions | 二次元 Two dimensions | | | |

审核 (Audit): 谭礼青

制表 (Establishment): 杨都

天线性能测试报告

Antenna performance test report

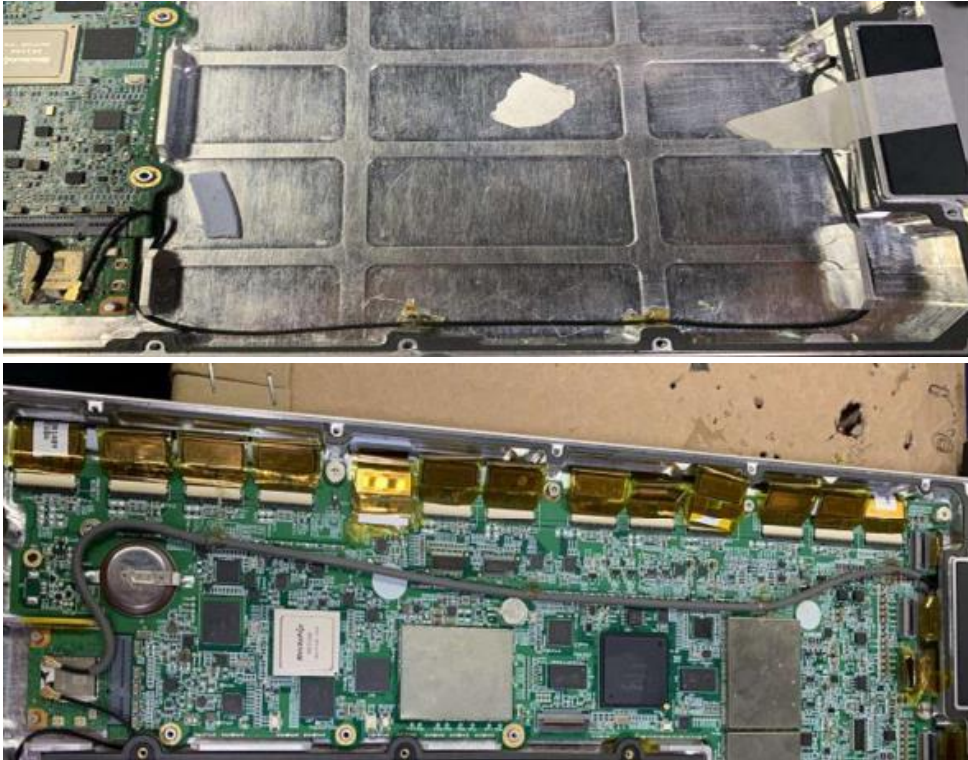
项目概况 (Project profile)

| | |
|---|-----------------------------|
| 客户 (Customers) | 奕瑞IRAY |
| 项目名称 (Project name) | Mars1013X |
| 天线类别 (Type of antenna) | WIFI |
| 天线工作频率 (Operating frequency of the antenna) | 2400-2500MHz , 5150-5850MHz |
| 天线工程师 (Antenna engineer) | 于超群 |

天线测试设备 (Antenna test equipment)

| | |
|------------|-------------|
| S11 | E5071C |
| Efficiency | Satimo SG24 |
| OTA | Satimo SG24 |

天线状态图 (Antenna status diagram)



测试数据

Test data

Efficiency

short cable WIFI2

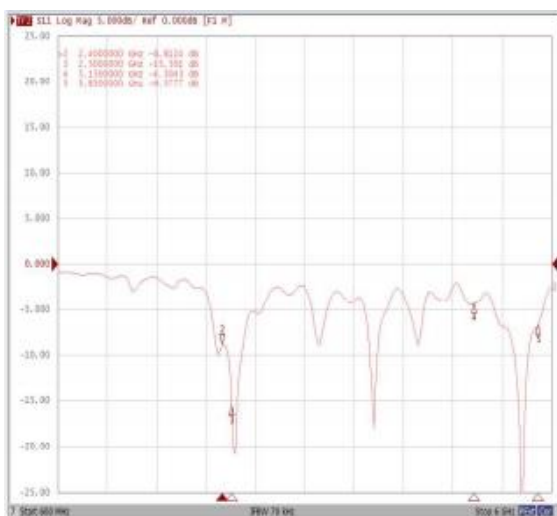
| Fre | Effi | Effi (dB) | Peak Gain |
|------|------|-----------|-----------|
| 2400 | 28% | -5.56 | 2.67 |
| 2410 | 30% | -5.26 | 3.08 |
| 2420 | 32% | -4.89 | 3.47 |
| 2430 | 36% | -4.48 | 4.05 |
| 2440 | 38% | -4.19 | 4.42 |
| 2450 | 38% | -4.15 | 4.28 |
| 2460 | 38% | -4.20 | 4.17 |
| 2470 | 37% | -4.33 | 3.87 |
| 2480 | 35% | -4.52 | 3.69 |
| 2490 | 33% | -4.86 | 3.42 |
| 2500 | 29% | -5.31 | 3.01 |
| 5150 | 16% | -7.84 | 1.42 |
| 5200 | 15% | -8.28 | 0.83 |
| 5250 | 18% | -7.42 | 1.19 |
| 5300 | 18% | -7.43 | 1.68 |
| 5350 | 20% | -6.96 | 1.36 |
| 5400 | 21% | -6.80 | 1.81 |
| 5450 | 20% | -6.94 | 1.61 |
| 5500 | 23% | -6.30 | 2.19 |
| 5550 | 25% | -5.94 | 2.70 |
| 5600 | 30% | -5.29 | 2.87 |
| 5650 | 26% | -5.89 | 2.33 |
| 5700 | 28% | -5.58 | 2.16 |
| 5750 | 28% | -5.46 | 2.61 |
| 5800 | 32% | -4.89 | 2.66 |
| 5850 | 35% | -4.57 | 3.04 |

long cable WIFI1

| Fre | Effi | Effi (dB) | Peak Gain |
|------|------|-----------|-----------|
| 2400 | 15% | -8.24 | -2.36 |
| 2410 | 20% | -7.08 | -1.51 |
| 2420 | 25% | -6.10 | -0.77 |
| 2430 | 30% | -5.29 | -0.27 |
| 2440 | 34% | -4.71 | -0.36 |
| 2450 | 37% | -4.34 | -0.93 |
| 2460 | 38% | -4.24 | -1.20 |
| 2470 | 36% | -4.44 | -1.66 |
| 2480 | 33% | -4.83 | -2.38 |
| 2490 | 29% | -5.44 | -3.16 |
| 2500 | 24% | -6.28 | -3.63 |
| 5150 | 26% | -5.90 | 2.78 |
| 5200 | 25% | -5.99 | 2.15 |
| 5250 | 22% | -6.65 | 1.65 |
| 5300 | 20% | -7.01 | 0.94 |
| 5350 | 18% | -7.42 | 1.17 |
| 5400 | 17% | -7.82 | 1.70 |
| 5450 | 14% | -8.47 | 1.12 |
| 5500 | 14% | -8.41 | 0.77 |
| 5550 | 14% | -8.57 | 0.38 |
| 5600 | 14% | -8.69 | 0.59 |
| 5650 | 13% | -8.91 | -0.10 |
| 5700 | 14% | -8.45 | 0.01 |
| 5750 | 14% | -8.43 | -0.45 |
| 5800 | 15% | -8.33 | -0.30 |
| 5850 | 15% | -8.10 | -0.57 |

SWR

short cable WIFI2



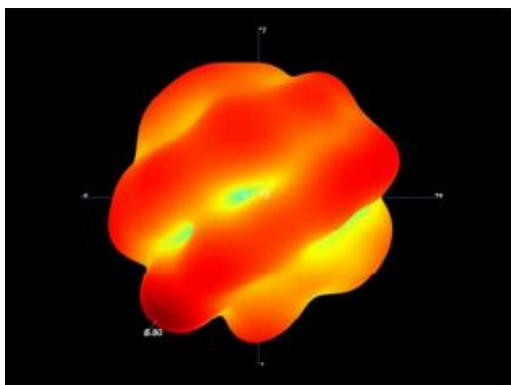
long cable WIFI1



3D热点图 (3D heat map)

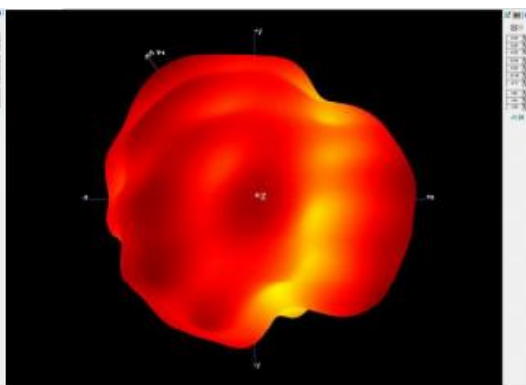
short cable WIFI2

2.4G

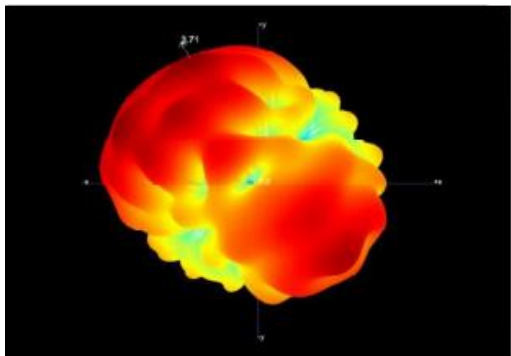


long cable WIFI1

2.4G



5G



5G

