

A letter of recognition

DESCRIBE: JENESIS (SHEN ZHEN) CO., LTD
 (VUEVO Microphones)

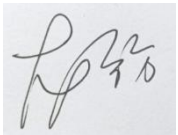
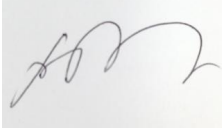
Customer NO: _____

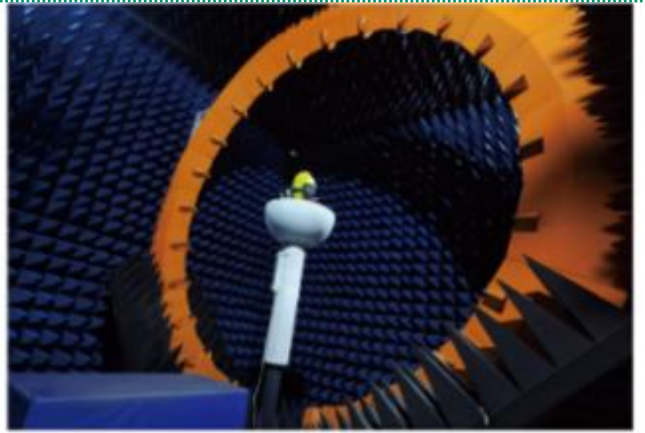
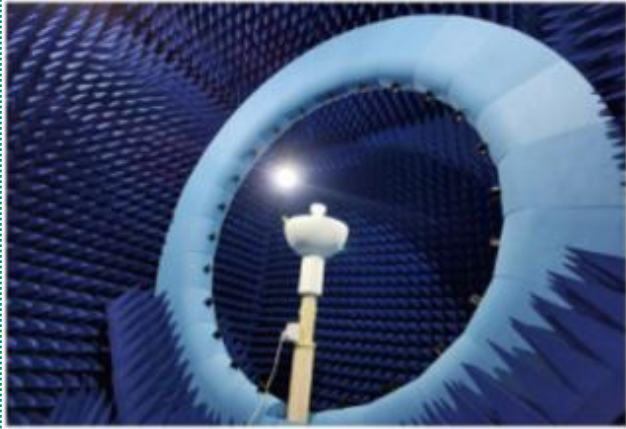
PART NO: ATC1358-CS003B70RB

Antenna type: WIFI/BT ANT ASM

DATE: 2023.09.21

PROVIDER: AT&C TECHNOLOGIES(SHENZHEN) CO. LTD

| | | ID Department | Test department | Structure section | Quality department |
|----------------|---------|---|-----------------|-------------------|---|
| Customer Admit | confirm | | | | |
| Supplier Admit | confirm | confirm | Proofreading | To examine | Approval |
| | |  | Zhangwanshe | Xuliying |  |



We have RF equipments as below

Anechoic Chambe

- Satimo 1ea
- SY24 1ea
- SAR 1ea
- KSS 2ea

Measurement

- 2G, 3G, 4G
- GPS
- Wifi
- Bluetooth(3.0) OTA
- NFC & WPC



Ant

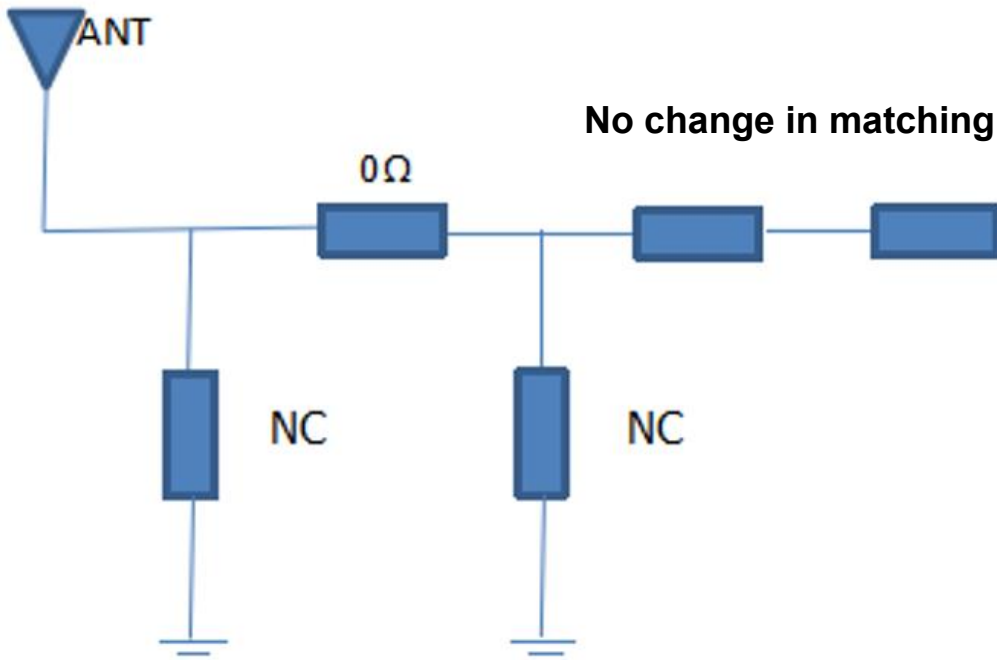
BOM

| | | | | | |
|--------------------|--------------------|--------------------|-------------|----------------------|-------------------|
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| part Number | ATC1358-CS003B70RB | Revised By | SHIN | Revised Date | 2023.09.21 |
| Description | WIFI/BT ANT | Approved By | HJ | Approved Date | 2023.09.21 |

| Customer number | ATC number | Part name |
|-----------------|--------------------|-----------------------|
| | ATC1358-CS003B70RB | FPC +CABLE 55mm-MHF-2 |

Matching circuit

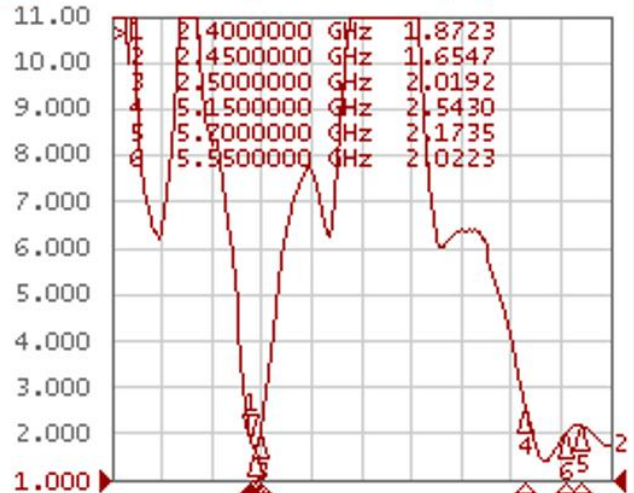
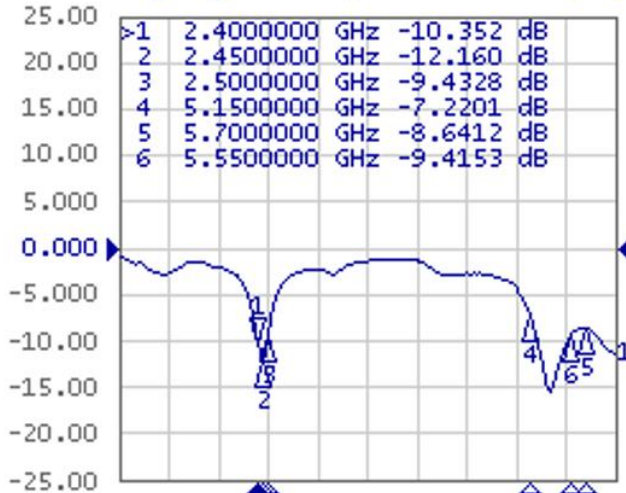
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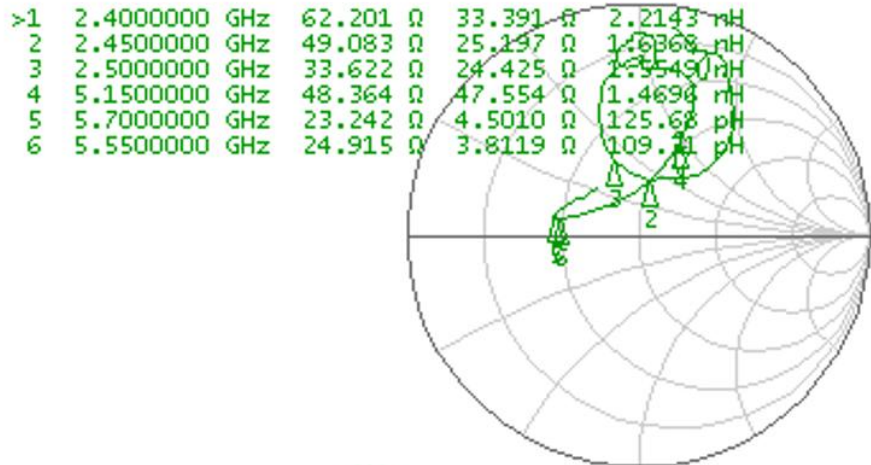
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1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F1] ▶ Tr2 S11 SWR 1.000/ Ref 1.000 [F1]



Tr3 S11 Smith (R+jX) Scale 1.000U [F1]





Antenna *Efficiency

| | | | | | |
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| Frequency/Mhz | Efficiency / % | MaxGain/dBi | Frequency/Mhz | Efficiency / % | MaxGain/dBi |
|---------------|----------------|-------------|---------------|----------------|-------------|
| 2400 | 52.35 | 3.53 | 5150 | 53.58 | 4.47 |
| 2410 | 54.98 | 3.20 | 5200 | 56.62 | 4.62 |
| 2420 | 53.75 | 3.47 | 5250 | 56.89 | 4.09 |
| 2430 | 52.17 | 3.09 | 5300 | 53.09 | 4.14 |
| 2440 | 52.36 | 2.75 | 5350 | 53.97 | 4.46 |
| 2450 | 53.41 | 2.42 | 5400 | 52.52 | 4.28 |
| 2460 | 53.26 | 2.68 | 5450 | 54.71 | 4.62 |
| 2470 | 51.19 | 2.37 | 5500 | 52.95 | 4.84 |
| 2480 | 52.99 | 2.38 | 5550 | 53.26 | 4.49 |
| 2490 | 51.08 | 2.22 | 5600 | 53.02 | 4.5 |
| 2500 | 51.58 | 2.14 | 5650 | 52.1 | 4.66 |
| AVG | 52.65 | 2.75 | 5700 | 53.46 | 4.44 |
| | | | AVG | 53.85 | 4.47 |



Antenna OTA TEST

| | | | | | |
|--------------------|--------------------|--------------------|-------------|----------------------|-------------------|
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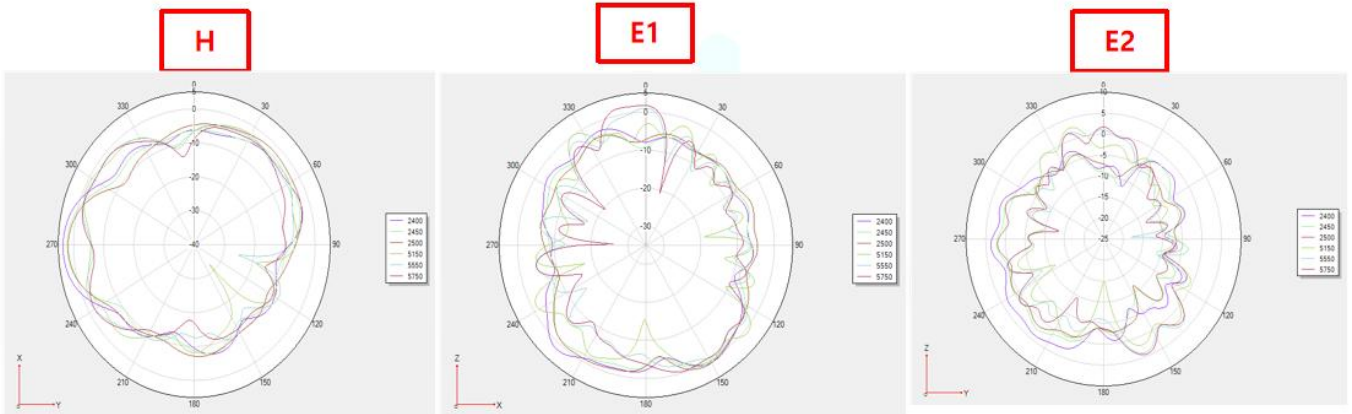
| Tester | Band | Channel | TRP | TIS |
|--------|--------------|---------|-------|--------|
| Cmw500 | WIFI_B (11M) | 1 | 12.83 | -70.12 |
| Cmw500 | WIFI_B (11M) | 6 | 12.96 | -70.35 |
| Cmw500 | WIFI_B (11M) | 11 | 12.78 | -70.13 |

| | | | | |
|--------|--------------|-----|-------|--------|
| Cmw500 | WIFI_A (54M) | 36 | 13.22 | -70.76 |
| Cmw500 | WIFI_A (54M) | 100 | 12.82 | -71.89 |
| Cmw500 | WIFI_A (54M) | 140 | 13.58 | -71.98 |

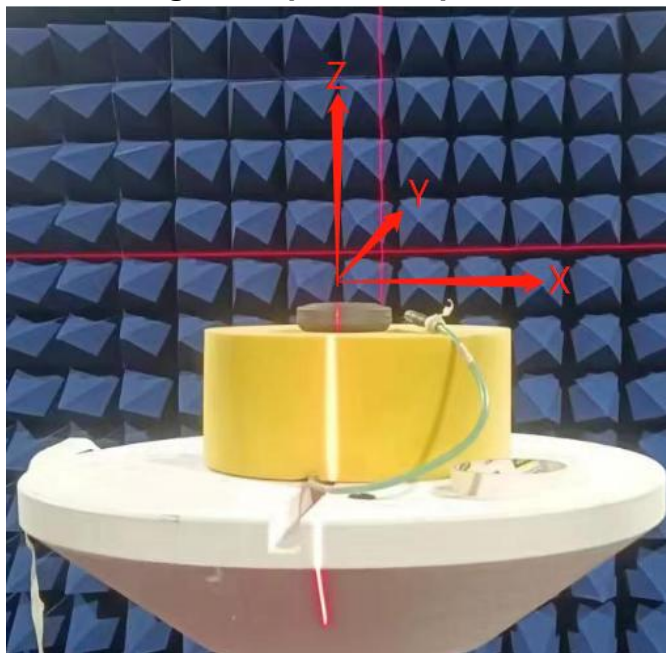
| | | | | |
|--------|----|----|------|--------|
| Cmw500 | BT | 0 | 2.56 | -73.29 |
| Cmw500 | BT | 39 | 2.63 | -73.37 |
| Cmw500 | BT | 78 | 2.52 | -73.43 |

Directional pattern TEST

| | | | | | |
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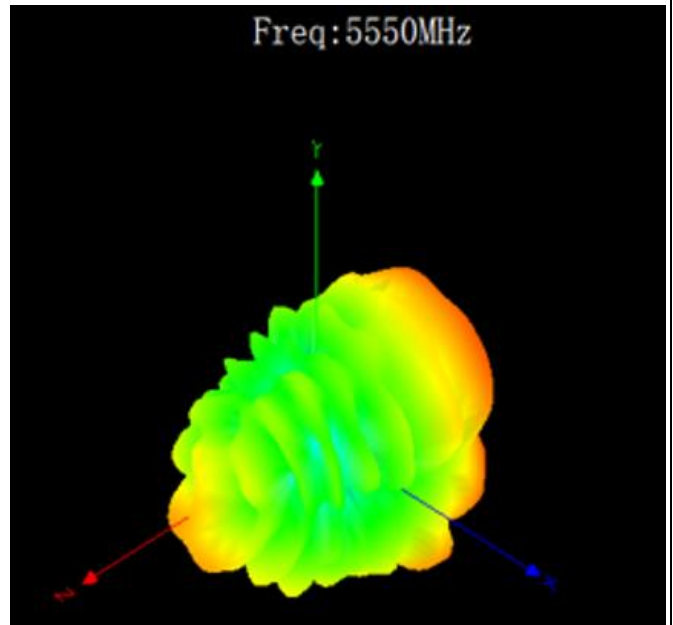
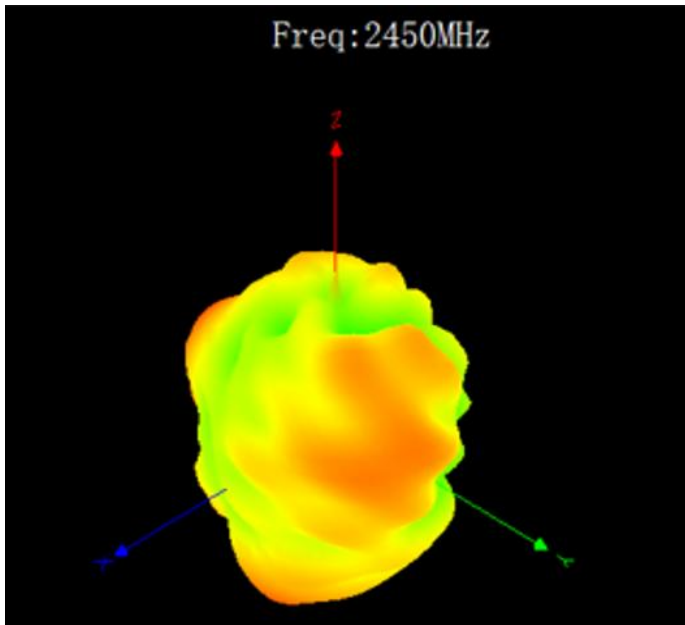


1. Azimuth Pattern H-Plane (: “H”, X-Y plane
2. Elevation Pattern E1, E2-Plane: “E1”, “E2”, X-Z plane(E1), Y-Z plane(E2)
3. It is a structure that supplements the distortion of the horizontal plane in the vertical plane and has a gentle sphere shape in three dimensions.

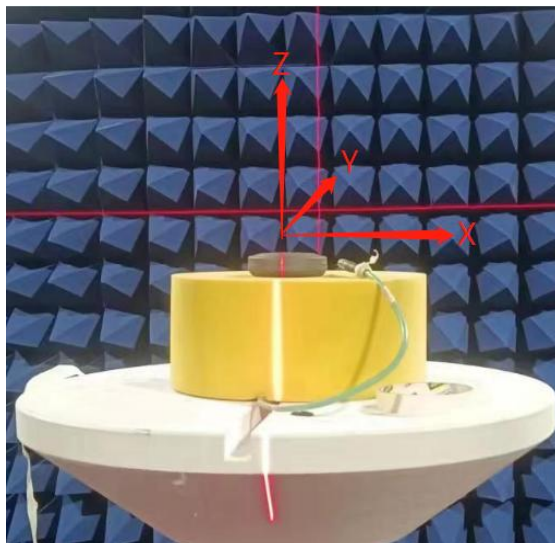


Active 3D diagram

| | | | | | |
|-------------|--------------------|-------------|------|---------------|------------|
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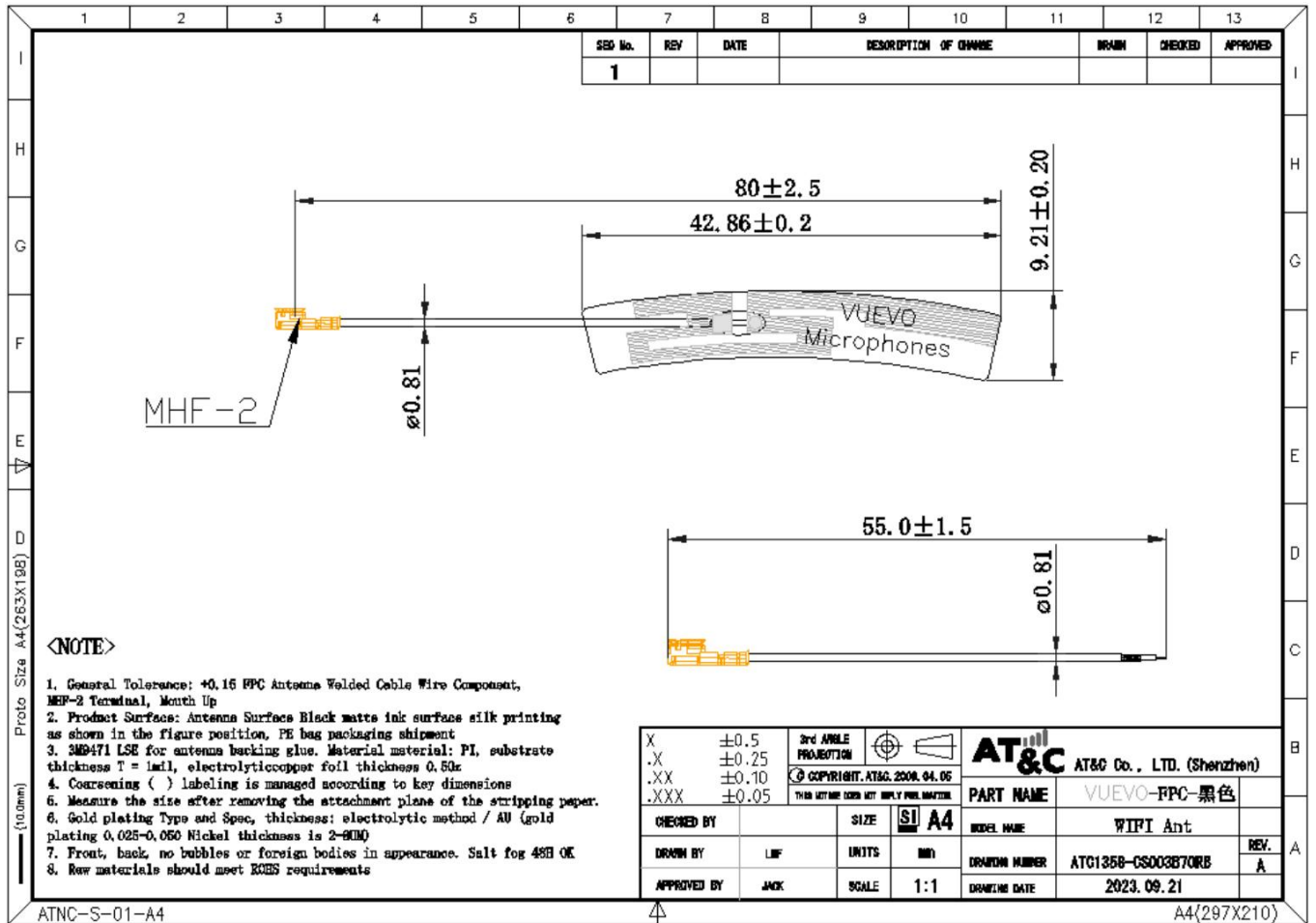


- 1: This 3D Radiation Pattern shows the response of each angle antenna gain on the sphere.
- 2: The objects corresponding to the X-Y-Z axes are shown in the left picture.



BT Antenna Draw

| | | | | | |
|-------------|--------------------|-------------|------|---------------|------------|
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Antenna DrawDimension report

| | | | | | |
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| Size information | | | | | Measuring sample | | | % Tolerance | | Handling opinions | | | Measuring tool |
|------------------|--------------------|-----------|-----------------|-----------------|------------------|-------|-------|-------------|-------|-------------------|--------------------------|--------------------------|----------------|
| number | Dimension property | Dimension | Lower tolerance | Upper tolerance | 1 | 2 | 3 | Upper | Lower | determine | Supplier review comments | Customer review comments | |
| 1 | key point | 80.0 | -2.5 | 2.5 | 81.1 | 80.7 | 80.5 | | | PASS | | | PJ |
| 2 | key point | 42.86 | -0.20 | 0.20 | 42.75 | 42.79 | 42.73 | | | PASS | | | PJ |
| 3 | key point | 9.21 | -0.15 | 0.15 | 9.18 | 9.19 | 9.25 | | | PASS | | | PJ |
| 4 | key point | 0.81 | -0.05 | 0.05 | 0.81 | 0.81 | 0.81 | | | PASS | | | PJ |

Production process

Production process flow chart

Product Name: antenna assembly

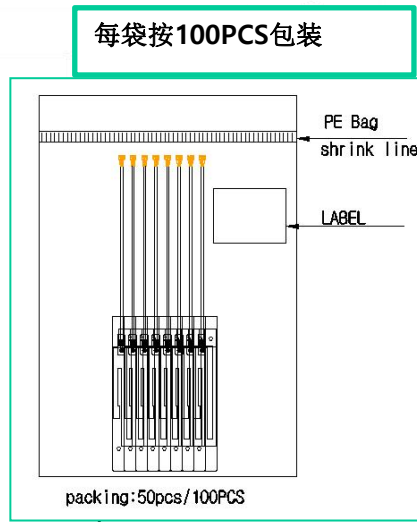
| No | Process name | Use of equipment, fixture and tooling | Inspection items | Control factor | Reference standard | Inspection frequency |
|----|--|--|--|--------------------------------|---|---|
| 1 | FPC incoming | Quadratic element or caliper | Key dimensions | | Reference drawings | 1 |
| | | | Common appearance defects of FPC components | | Refer to relevant inspection specifications | AQL0.65 |
| | | | Black oil stripping | | ≥5Kg/f | 2 |
| | | | Material type, ROHS compliance | | Reference drawings | Once |
| 2 | Cable incoming | Quadratic element or caliper | Key dimensions | | Reference drawings | 1 |
| | | | Common appearance defects of coaxial line components | | Refer to relevant inspection specifications | AQL0.65 |
| | | | Wire end welding | | Easy to weld, no oxidation, poor welding | 2 |
| | | | Material type, ROHS compliance | | Reference drawings | Once |
| 3 | Cable welding | Soldering iron and tin wire | Soldering with iron | welding temperature | 320±10°C | 1 |
| | | | Welding appearance | | Do not short circuit, connect tin, wire skin scald | 100%Self inspection |
| | | | | | False welding and false welding are not allowed | 100%Self inspection |
| 4 | Network test | network analyzer | Test waveform compliance | Network parameters | The test waveform parameters of the product are consistent with the set waveform parameters, and the display of | 100% |
| | | | appearance | | Refer to t8010 antenna inspection specification | 100% |
| | | | | Number of packages | | Refer to relevant inspection specifications |
| 5 | 100% Appearance inspection And packaging | Cartons, pallets, labels, finished products to be packed | Correct marking | | Correct product name, quantity and related information | Once |
| | | | Key size and position of antenna | | Reference drawings | Once |
| | | | | Thickness and drawing adhesion | | Refer to product drawing and PCB welding antenna inspection specification |
| 6 | OQC Delivery inspection | Quadratic element / caliper 3M glue | Pull out force test of coaxial line | | Refer to product drawing force test standard | Once |
| | | | Salt spray test | | Refer to product salt spray test standard | Monthly / time |
| | | | Antenna appearance, packaging and labeling | | Refer to T8600 antenna inspection specification | AQL0.65 |

Test items

| | | | | | |
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| Serial number | Test items | Specifications | Testing equipment | The measured data | | | | |
|---------------|---------------------------|---|--|-------------------|------------|------------|------------|------------|
| | | | | SAMPLE # 1 | SAMPLE # 2 | SAMPLE # 3 | SAMPLE # 4 | SAMPLE # 5 |
| 1 | Appearance | ① 重点管理项目（主要不良类型） ② 不能有漏铜切断现像区域 ③ 公差±0.15mm 以内 ④ 不多胶铜短路胶 ⑤ 产品不能有划伤，脏污，印刷掉落 等 | Visual inspection | OK | OK | OK | OK | OK |
| 2 | Color | ① 要在颜色限度样本范围内 ② 时颜色不能有明显差异（上~下） | Visual inspection | OK | OK | OK | OK | OK |
| 3 | Packaging | Production date, Part No, etc incoming/outgoing daily check for consistency | Visual inspection | OK | OK | OK | OK | OK |
| 4 | Dimension measurement | Recognize the importance of drawing management dimension measurement | Second dimension, measuring instrument | OK | OK | OK | OK | OK |
| 5 | Thickness of copper layer | cu: 0.50z P11mial | Thickness gauge | | | | | |
| 6 | Harmful substances | 要达到 Rohs 6大物质及Halogen物质基准 ※ 参照 XRF 分析日志 | XRF Measuring instrument | OK | OK | OK | OK | OK |
| 7 | Performance | Test fixture performance to confirm | Network analyzer | OK | OK | OK | OK | OK |
| | | | | | | | | |
| | | | | | | | | |

Packaging method



PART LIST

*包装图为示意图，不代表图片为实际产品

| NO | DESCRIPTION | Q'TY | MATERIAL | REMARKS | REV. |
|----|--------------|--------|----------|---------|------|
| 1 | ANTENNA | 1/1000 | PET | N/A | A |
| 2 | PAD OUT | 1/4 | SW A골 5T | N/A | A |
| 4 | CARTOON BOX | - | SW A골 5T | N/A | A |
| 5 | PACKING TAPE | - | PP | N/A | A |
| | | | | | |