

# Zhejiang Haitong Communication Electronic Co. , Ltd.

## Acknowledgment

(LDS class)

Customer name: Hytera

Project name: W45HM650

Material code: 5121000091558A

Product name: HM650 BT antenna BT antenna LDS (RoHS) (REACH)

texture of mater

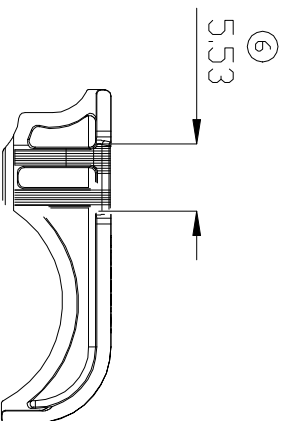
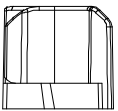
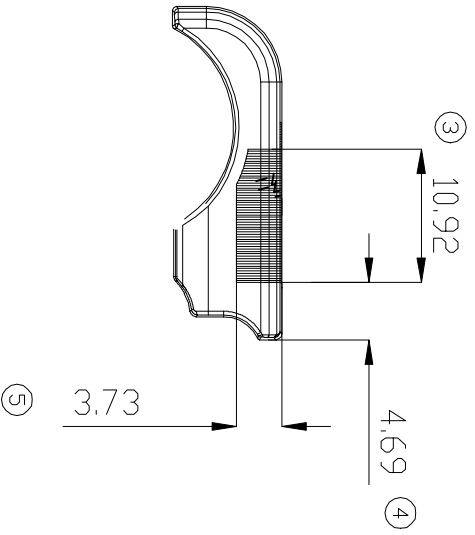
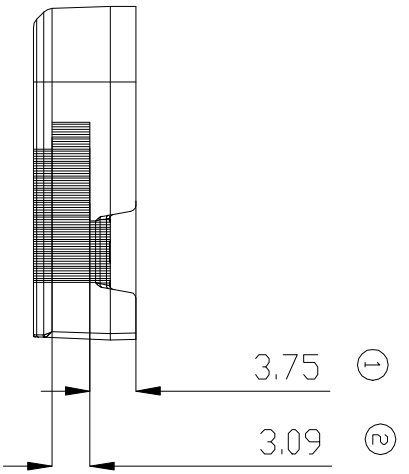
Date: 8/15/2022

| Haitong confirmation column |            |           |
|-----------------------------|------------|-----------|
| make                        | to examine | approval  |
| Ran Guangkang               | He Jurong  | Hou Lijun |

| Customer confirmation column |            |          |
|------------------------------|------------|----------|
| Undertaker                   | to examine | approval |
|                              |            |          |

## st of acknowledgmen

- I, cover
- II, catalogue
- III, Component drawing
- IV, Component size
- V, Component CPK
- VI, Baige Report
- VII, Constant temperature and humidity report
- VIII, Salt spray test report
- IX, QC Engineering Drawing
- X, packing
- XI, Material certificate
- XII, Restricted substance composition questionnaire
- XIII, Electrical performance report



## DIMENSION TEXT REPORT

| Part name:                                                                                         | HT1863-BT antenna | DWG. No.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | B. 1. 03. L. 0173 |                           |                           |        | TYPE:                                                                                                   | LDS                       |        |        |        |                      |                      |
|----------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------|---------------------------|--------|---------------------------------------------------------------------------------------------------------|---------------------------|--------|--------|--------|----------------------|----------------------|
| Quantity:                                                                                          | 5                 | Client DWG. No.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | /                 |                           |                           |        | Machine:                                                                                                | /                         |        |        |        |                      |                      |
| Drawing Rev.:                                                                                      | A                 | Dept/Vendor:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | /                 |                           |                           |        | Page:                                                                                                   | 1 of 1                    |        |        |        |                      |                      |
| Environment:                                                                                       | Temp 22 °C        | Humidity:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 55 %RH            |                           |                           |        | Test date:                                                                                              | 2022. 08. 13              |        |        |        |                      |                      |
| Subject to be evaluated:<br><br><span style="font-size: 1.2em; color: blue;">Full dimension</span> |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                           |                           |        | Item class:<br>SC=Significant Char<br>KCC=Key Control Char<br>KC=Key Control Item<br>NOR=Reference Item |                           |        |        |        |                      |                      |
| No.                                                                                                | Spec.             | Control tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   | Class                     | Instr. measurin<br>g tool | 1#     | 2#                                                                                                      | 3#                        | 4#     | 5#     | Result | Remark               | Engineering Comments |
|                                                                                                    |                   | upper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | lower             |                           |                           |        |                                                                                                         |                           |        |        | OK/NG  |                      |                      |
| 1                                                                                                  | 3. 75             | 0. 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0. 10             | NOR                       | c                         | 3. 70  | 3. 68                                                                                                   | 3. 69                     | 3. 67  | 3. 68  | OK     |                      |                      |
| 2                                                                                                  | 3. 09             | 0. 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0. 10             | KC                        | c                         | 3. 07  | 3. 06                                                                                                   | 3. 05                     | 3. 09  | 3. 08  | OK     |                      |                      |
| 3                                                                                                  | 10. 92            | 0. 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0. 10             | NOR                       | c                         | 10. 91 | 10. 90                                                                                                  | 10. 92                    | 10. 93 | 10. 91 | OK     |                      |                      |
| 4                                                                                                  | 4. 69             | 0. 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0. 10             | NOR                       | c                         | 4. 65  | 4. 67                                                                                                   | 4. 66                     | 4. 68  | 4. 67  | OK     |                      |                      |
| 5                                                                                                  | 3. 73             | 0. 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0. 10             | NOR                       | c                         | 3. 74  | 3. 72                                                                                                   | 3. 73                     | 3. 72  | 3. 71  | OK     |                      |                      |
| 6                                                                                                  | 5. 53             | 0. 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0. 10             | NOR                       | c                         | 5. 48  | 5. 50                                                                                                   | 5. 51                     | 5. 49  | 5. 50  | OK     |                      |                      |
| appearance                                                                                         |                   | 1. Plastic parts: no appearance shrinkage, air lines, weld lines, scratches, deformation, flash and other defects; 2. FPC: no appearance impurities, discoloration spots, scratches, crushing, creases, gold finger oxidation, surface damage and other defects; 3. LDS: no defects such as missing engraving, pinhole, laser engraving fracture, laser engraving deformation, scratch, oil stain, etc; 4. Electroplating: no defects such as missing plating, over plating, scratches, dents, deformation, etc. |                   |                           |                           |        |                                                                                                         |                           |        |        | OK     | /                    |                      |
| Instruments: C                                                                                     |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                           |                           |        |                                                                                                         |                           |        |        |        |                      |                      |
| A: Handy push pull gauge (meter card)                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   | B: Digital caliper        |                           |        |                                                                                                         | C: Video measuring system |        |        |        | D: Salt spray tester |                      |
| E: Temperature and humidity                                                                        |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   | F: Toolmaker's microscope |                           |        |                                                                                                         | G: Network analyzer       |        |        |        | H: Pin gauge         |                      |
| I: Knife Tool                                                                                      |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   | J: Flat plate             |                           |        |                                                                                                         | K: Soldering spot         |        |        |        |                      |                      |

## CPK Report

Form No. : HZHT-FM-PZ051 Version No. : A/0

|                           |                   |  |               |                       |  |
|---------------------------|-------------------|--|---------------|-----------------------|--|
| Product name              | HT1863-BT antenna |  | supplier      | Haitong Communication |  |
| Item No                   | B. 1. 03. L. 0173 |  | Confirmed by  | He Jurong             |  |
| Module No                 | /                 |  | Inches/mm     | mm                    |  |
| Acupoint number           | /                 |  | Material name | /                     |  |
| edition                   | A                 |  | date          | 2022.08.13            |  |
| Dimension No              | 7                 |  |               |                       |  |
| Nominal size              | 3.09              |  |               |                       |  |
| Positive tolerance        | 0.10              |  |               |                       |  |
| Negative tolerance        | -0.10             |  |               |                       |  |
| Upper specification limit | 3.19              |  |               |                       |  |
| Lower specification limit | 2.99              |  |               |                       |  |
| 1                         | 3.07              |  |               |                       |  |
| 2                         | 3.06              |  |               |                       |  |
| 3                         | 3.09              |  |               |                       |  |
| 4                         | 3.08              |  |               |                       |  |
| 5                         | 3.06              |  |               |                       |  |
| 6                         | 3.07              |  |               |                       |  |
| 7                         | 3.08              |  |               |                       |  |
| 8                         | 3.06              |  |               |                       |  |
| 9                         | 3.09              |  |               |                       |  |
| 10                        | 3.10              |  |               |                       |  |
| 11                        | 3.08              |  |               |                       |  |
| 12                        | 3.09              |  |               |                       |  |
| 13                        | 3.07              |  |               |                       |  |
| 14                        | 3.05              |  |               |                       |  |
| 15                        | 3.09              |  |               |                       |  |
| 16                        | 3.08              |  |               |                       |  |
| 17                        | 3.06              |  |               |                       |  |
| 18                        | 3.09              |  |               |                       |  |
| 19                        | 3.08              |  |               |                       |  |
| 20                        | 3.06              |  |               |                       |  |
| 21                        | 3.07              |  |               |                       |  |
| 22                        | 3.08              |  |               |                       |  |
| 23                        | 3.05              |  |               |                       |  |
| 24                        | 3.09              |  |               |                       |  |
| 25                        | 3.10              |  |               |                       |  |
| 26                        | 3.08              |  |               |                       |  |
| 27                        | 3.09              |  |               |                       |  |
| 28                        | 3.07              |  |               |                       |  |
| 29                        | 3.06              |  |               |                       |  |
| 30                        | 3.09              |  |               |                       |  |
| 31                        | 3.08              |  |               |                       |  |
| 32                        | 3.10              |  |               |                       |  |
| 33                        | 3.09              |  |               |                       |  |
| 34                        | 3.08              |  |               |                       |  |
| 35                        | 3.06              |  |               |                       |  |
| MAX.                      | 3.10              |  |               |                       |  |
| MIN.                      | 3.05              |  |               |                       |  |
| AVERAGE                   | 3.08              |  |               |                       |  |
| STDEV                     | 0.01              |  |               |                       |  |
| CP                        | 2.34              |  |               |                       |  |
| Cpk                       | 2.04              |  |               |                       |  |
| Measuring tools           | pixiv             |  |               |                       |  |

Reviewed by: He Jurong

Prepared by: Yang Du

# Baige test report

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                        |        |       |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|--------|-------|
| Test date: August 11, 2022     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   | Test code: 20220811001 |        |       |
| Real sample                    | Product Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | HT1863-BT antenna | Plating                | Cu     | Ni    |
|                                | Item No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | B.1.03. L.0173    | thickness              | 8-12um | 2-4um |
| ASTM grade: 4B and above       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   | ISO Grade: Grade 1     |        |       |
| Inspection tools               | Art knife/Baige knife, brush, eraser, 3M610 tape                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                        |        |       |
| Inspection method              | 1. Draw 10x10 (100) 1mm × 1mm small grids on the surface of the test sample with a grid knife, and each line shall be deep enough to reach the bottom layer of the coating;<br>2. Clean the debris in the test area with a brush;<br>3. Firmly stick the small grid to be tested with 3M610 tape, and wipe the tape with an eraser to increase the contact area and strength between the tape and the tested area;<br>4. Grasp one end of the tape by hand and quickly pull it down in the vertical direction (90 °);<br>5. Observe the damaged area of the coating for judgment. |                   |                        |        |       |
| Criteria                       | 1. If there is a small piece of peeling at the intersection of the cut, it is qualified if the actual damage (peeling) area in the grid area is $\leq 5\%$ , and it is unqualified if it is $> 5\%$ .<br>2. Refer to the evaluation standard of coating adhesion cross cut test (GB/T9286-88)                                                                                                                                                                                                                                                                                     |                   |                        |        |       |
| experiment Description         | After the product test, the surface coating shall not fall off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                        |        |       |
| Pictures or samples after test |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |        |       |
| conclusion                     | <input checked="" type="checkbox"/> Qualified <input type="checkbox"/> Unqualified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |        |       |

Approved by: Zeng Qingping Reviewed by: He Jurong Tested by: Yang Du

## Experiment Report

Form No. : HZHT-FM-PZ046 Version No. : A/0

|                                                                                                                                                                                                                                                                                                          |                                   |                                                                                                                                                                                      |                                       |                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                      |  |                                                                                                                                                                                                                                            |  |            |  |                            |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------|--|----------------------------|------------------------|
| Product name                                                                                                                                                                                                                                                                                             |                                   | HT1863-BT antenna                                                                                                                                                                    |                                       | Part number                                                                                                                                                                                                                                                                                                        |  | B. 1. 03. L. 0173                                                                                                                                                                    |  | Laboratory temperature                                                                                                                                                                                                                     |  | 22℃        |  | Report No                  | 20220811001            |
|                                                                                                                                                                                                                                                                                                          |                                   |                                                                                                                                                                                      |                                       |                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                      |  |                                                                                                                                                                                                                                            |  |            |  | Batch No. of product to be | new product            |
| Date                                                                                                                                                                                                                                                                                                     |                                   | 2022.08.11                                                                                                                                                                           |                                       | Documentation                                                                                                                                                                                                                                                                                                      |  | Product Design Specification                                                                                                                                                         |  | Laboratory humidity                                                                                                                                                                                                                        |  | 55%        |  | Client Dept                | engineering department |
| Experiment reasons                                                                                                                                                                                                                                                                                       |                                   |                                                                                                                                                                                      |                                       | <input checked="" type="checkbox"/> New product <input type="checkbox"/> ECN later <input type="checkbox"/> Product to be out spec <input type="checkbox"/> Daily Experience                                                                                                                                       |  |                                                                                                                                                                                      |  | Housing tool cavity                                                                                                                                                                                                                        |  | /          |  | Metal tool                 | /                      |
| Quantity                                                                                                                                                                                                                                                                                                 |                                   | 5PCS                                                                                                                                                                                 |                                       | Sample Description                                                                                                                                                                                                                                                                                                 |  | LDS laser plated products                                                                                                                                                            |  | Plastic material                                                                                                                                                                                                                           |  | /          |  | Metal material             | /                      |
| Test Order                                                                                                                                                                                                                                                                                               | Experiment project                | Samples Qty                                                                                                                                                                          | Experiment equipment                  | Experiment method                                                                                                                                                                                                                                                                                                  |  | Experience note of product                                                                                                                                                           |  | Test result                                                                                                                                                                                                                                |  | Conclusion |  |                            |                        |
| 1                                                                                                                                                                                                                                                                                                        | Constant temperature and humidity | 5                                                                                                                                                                                    | Constant temperature and humidity box | 1. Put the sample in a constant temperature and humidity environment with temperature of $55 \pm 2^{\circ}\text{C}$ and relative humidity of $95\% \pm 3\%$ for 48h, and then restore it to 2h at room temperature for inspection. Start time: 13:30, August 11, 2022 to 13:30, August 13, 2022, 48 hours in total |  | LDS product surface has no obvious discoloration, blistering and other appearance abnormalities, and it is qualified when the adhesion test is $\geq 3B$ . The RF test is qualified. |  | After the experiment, the appearance electroplating of the product shall be checked to ensure that there is no abnormal appearance such as discoloration and bubble. Adhesion test $>3B$ , RF meets the requirements of the specification. |  | OK         |  |                            |                        |
| Photos after the experiment                                                                                                                                                                                                                                                                              |                                   | <div>   </div> |                                       |                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                      |  |                                                                                                                                                                                                                                            |  |            |  |                            |                        |
| Remarks: 1. The above time is described in 24-hour format. 2. When an experiment fails, other relevant similar experiments will not continue. 3. During the experiment, observe whether the product is abnormal through the detection window for 4 hours each time, and stop the experiment if there is. |                                   |                                                                                                                                                                                      |                                       |                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                      |  |                                                                                                                                                                                                                                            |  |            |  |                            |                        |
| Approved by: Zeng Qingping Checked by: He Jurong Name of operator: Yang Du                                                                                                                                                                                                                               |                                   |                                                                                                                                                                                      |                                       |                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                      |  |                                                                                                                                                                                                                                            |  |            |  |                            |                        |

## Salt spray test report

|                                            |                                                   |                                                                                                           |                                                      |                |        |
|--------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------|--------|
| Test date: August 11, 2022                 |                                                   |                                                                                                           | Batch No. of materials to be tested:<br>new products |                |        |
|                                            |                                                   |                                                                                                           | Test code: 20220811001                               |                |        |
| Test method: NSS (neutral salt spray test) |                                                   |                                                                                                           | Test standard: EIA-364-26B                           |                |        |
| Real sample                                | Product Name                                      | HT1863-BT antenna                                                                                         | Item No                                              | B.1.03. L.0173 |        |
|                                            | texture of material                               | PC+electrolytic copper                                                                                    | Plating thickness                                    | Ni             | Cu     |
|                                            | Specifications                                    | /                                                                                                         |                                                      | 2-4um          | 8-12um |
|                                            | Appearance before experiment                      | The line surface is dark silver                                                                           | quantity                                             | 5PCS           |        |
| experiment Conditions                      | Test time: 13:30 on the 11th to 13:30 on the 13th |                                                                                                           |                                                      |                |        |
|                                            | Spray time: 48H                                   |                                                                                                           | Moisturizing time: 48H                               |                |        |
|                                            | Temperature of test chamber: 35 ° C ± 2 ° C       |                                                                                                           | Pressure barrel temperature: 47 oC ± 1 oC            |                |        |
|                                            | Relative humidity of test chamber: > 85%          |                                                                                                           | Atmospheric pressure: 200~400KPA                     |                |        |
|                                            | NACL concentration: 5% ± 1%                       |                                                                                                           | PH value: 6.5-7.2 (neutral)                          |                |        |
| experiment Description                     | Appearance after experiment                       | The product surface shall be free of corrosion, blistering, delamination and other undesirable phenomena. |                                                      |                |        |

|                           |                                                                                   |                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| on                        | Appearance after removing corrosion products                                      | The product surface shall be free of corrosion, blistering, delamination and other undesirable phenomena. |
| experimental result       | OK                                                                                |                                                                                                           |
| Pictures after experiment |  |                                                                                                           |

Approved by: Zeng Qingping Reviewed by: He Jurong Tested by: Yang Du

Zhejiang Haitong Communication Electronics Co., Ltd. Huizhou Branch

QC Engineering Drawing and Quality Control Schedule

| Product range                                                                                                                        | HT1863                 |                                     |                                                             | Document No                          |                                               | 220726-001                                                     |                                                                                                                                                                          | primary contact                                                                                         | He Jurong                                              |                  | Telephone              | 0752-5319982          |                               |                                                                                 | make                              | to examine                                | Approved |  |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------|-------------------------------------------------------------|--------------------------------------|-----------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------|------------------------|-----------------------|-------------------------------|---------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------|----------|--|
| Process                                                                                                                              | LDS, chemical plating, |                                     |                                                             | Date of preparation                  |                                               | 8/12/2022                                                      |                                                                                                                                                                          | Core group                                                                                              | Zeng Qingping, He Jurong, Chen Xiwang, Hou Lijun, Wang |                  | edition                | A1                    |                               |                                                                                 |                                   |                                           |          |  |
| Process                                                                                                                              | □ Sample □ Trial       |                                     |                                                             | Management method (calculation and   |                                               | Management specifications (product/process                     |                                                                                                                                                                          | Confirmation method                                                                                     | Confirmation frequency                                 | Control method   | Person in charge       | Responsible person    | Disposal                      | Exception handling (response)                                                   |                                   |                                           |          |  |
| flow chart                                                                                                                           | Product name           | Measuring machine, fixture and tool | number                                                      | Management (process) characteristics | Quality (product) characteristics             | is a process                                                   | Management specifications (product/process                                                                                                                               | Confirmation method                                                                                     | Confirmation frequency                                 | Control method   | Person in charge       | Responsible person    | Disposal                      | record                                                                          | Connection regulation             | remarks                                   |          |  |
| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | 01                     | Temporary receipt of materials      | Electronic balance                                          | 01-1                                 | Product name and quantity                     | Appearance and weight                                          | The packaging of raw materials shall be free from damage and moisture. Packaging requirements shall conform to specifications. The weight conforms to the delivery note. | visual                                                                                                  | Times/batch                                            | Spot check       | Raw material warehouse | executive director    | return goods                  | Delivery Note Inspection Sheet                                                  | Warehouse management system       |                                           |          |  |
|                                                                                                                                      | 02                     | Incoming inspection                 | Caliper image measuring instrument, thermostat test chamber | 02-1                                 | Appearance, function and size                 | Appearance, material, high temperature and humidity resistance | Relevant quality characteristics meet the requirements of inspection specifications                                                                                      | Visual measurement                                                                                      | Times/batch                                            | Spot check       | IQC                    | Quality Manager       | Return Special Purchase       | Inspection Sheet Incoming Material Inspection Record Nonconformity Review Sheet | Incoming inspection specification |                                           |          |  |
|                                                                                                                                      | 03                     | Warehousing                         | Temperature and humidity meter                              | 03-1                                 | Product name and quantity                     | Appearance, weight, temperature and humidity                   | The packaging of raw materials shall be free from damage and moisture. Packaging requirements shall conform to specifications.                                           | Visual measurement                                                                                      | Minimum package                                        | Full inspection  | Raw material warehouse | executive director    | correct                       | Temperature and Humidity Record of Warehousing Sheet                            |                                   |                                           |          |  |
|                                                                                                                                      | 04                     | Collect                             | visual                                                      | 04-1                                 | Product name and quantity                     | Product name and quantity                                      | The collected materials are consistent with the BOM and order requirements.                                                                                              | visual                                                                                                  | Minimum package                                        | Full inspection  | Material clerk         | executive director    | correct                       | Material requisition                                                            |                                   |                                           |          |  |
|                                                                                                                                      | 05                     | IPQC inspection                     | visual                                                      | 05-1                                 | Appearance, function and size                 | appearance                                                     | The appearance meets the requirements of the inspection specification for the enclosure series products                                                                  | visual                                                                                                  | 2H/first article                                       | Spot check       | IPQC                   | Quality Department    | Special mining and discarding | First inspection record Patrol inspection record                                | Patrol inspection specification   |                                           |          |  |
|                                                                                                                                      |                        |                                     | Caliper projector                                           | 05-2                                 |                                               | size                                                           | ★                                                                                                                                                                        | Dimensions meet the requirements of product part drawings                                               | measure                                                | 2H/first article |                        |                       |                               |                                                                                 |                                   | Spot check                                |          |  |
|                                                                                                                                      |                        |                                     | /                                                           | 05-3                                 |                                               | function                                                       |                                                                                                                                                                          | Functions meet the requirements of product drawings                                                     | measure                                                | 2H/first article |                        |                       |                               |                                                                                 |                                   | Spot check                                |          |  |
|                                                                                                                                      | 06                     | LDS                                 | CCD                                                         | 06-1                                 | Appearance and size                           | Appearance and size                                            | The size shall meet the requirements of the product part drawing.                                                                                                        | Visual measurement                                                                                      | 2H/first article                                       | Spot check       | IPQC                   | Quality Department    | Special mining and discarding | First inspection record Patrol inspection record                                | Patrol inspection specification   |                                           |          |  |
|                                                                                                                                      | 07                     | Chemical plating                    | CCD                                                         | 07-1                                 | Appearance, film thickness, size and function | Appearance, film thickness, size and function                  | The size and film thickness shall meet the requirements of product part drawings, and there shall be                                                                     | Visual measurement                                                                                      | IQC                                                    | Spot check       | IQC                    | Quality Department    | Special mining and discarding | Inspection Sheet Incoming Material Inspection Record Nonconformity Review Sheet | Incoming inspection specification | Outbound: Zhongrui                        |          |  |
|                                                                                                                                      | 09                     | RF test                             | Network analyzer                                            | 09-1                                 | RF function                                   | RF waveform                                                    | ★                                                                                                                                                                        | RF waveform must conform to the required parameters                                                     | Automatic judgment                                     | 100%             | Total                  | operator              | Production Department         | Scrap                                                                           | SOP                               | Finished product inspection specification |          |  |
|                                                                                                                                      | 10                     | Full inspection                     | visual                                                      | 10-1                                 | appearance                                    | appearance                                                     |                                                                                                                                                                          | The appearance meets the requirements of inspection specifications for antenna assembly series products | visual                                                 | 100%             | Total                  | Full inspection QC    | Production Department         | Special mining and discarding                                                   | SOP                               | Finished product inspection specification |          |  |
| 11                                                                                                                                   | packing                | visual                              | 11-1                                                        | Quantity and identification          | Quantity and identification                   |                                                                | Packaging specification                                                                                                                                                  | visual                                                                                                  | 100%                                                   | Total            | Packaging Department   | Production Department | correct                       |                                                                                 | Packaging specification           |                                           |          |  |

|                                                     |            |                 |                          |      |                               |                                                                        |                        |                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                                  |                 |                            |                    |                               |                                                      |                                                     |  |
|-----------------------------------------------------|------------|-----------------|--------------------------|------|-------------------------------|------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-----------------|----------------------------|--------------------|-------------------------------|------------------------------------------------------|-----------------------------------------------------|--|
| <div>◇</div> <div>○</div> <div>◇</div> <div>△</div> | 12         | IPQC inspection | Caliper visual projector | 12-1 | Appearance, function and size | Appearance and size                                                    | ★                      | The appearance meets the requirements of the inspection specification for antenna assembly series products. The dimensions shall meet the requirements of product part drawings. The functions meet the functional standards of antenna assembly series. The packaging direction, product structure and material number conform to the customer's sealed samples. | Measurement visual inspection | 2H/time for the first article                                    | Spot check      | IPQC                       | Quality Department | Special mining and discarding | IPQC Inspection Record                               | Finished product inspection specification           |  |
|                                                     | 13         | Warehousing     | visual                   | 13-1 | Product name and quantity     | Appearance, temperature and humidity                                   |                        | The package shall be free from damage and moisture, and the packaging requirements shall meet the specifications. Temperature: 15℃~30℃                                                                                                                                                                                                                            | Visual measurement            | Per box                                                          | Full inspection | Finished product warehouse | executive director | correct                       | Temperature and Humidity Record of Warehousing Sheet | Finished product warehouse management specification |  |
|                                                     | 14         | OQC spot check  | visual                   | 14-1 | Appearance and mark           | Product name, material number, quantity, identification and appearance |                        | The appearance meets the requirements of the inspection specification for antenna assembly series products. The packaging method and material identification shall meet the requirements of the delivery note and order.                                                                                                                                          | visual                        | Sampling according to GB/T2828.1-2012 one-time sampling standard | Spot check      | OQC                        | Quality Department | Special mining and discarding | Shipping report                                      | Outgoing inspection specification                   |  |
|                                                     | 15         | Shipment        | visual                   | 15-1 | Product name and quantity     | Product name, quantity and mark                                        |                        | The product name, quantity and mark are consistent with the requirements of the delivery note and the order.                                                                                                                                                                                                                                                      | visual                        | Per box                                                          | Full inspection | Finished product warehouse | executive director | correct                       | Delivery note                                        |                                                     |  |
|                                                     |            |                 |                          |      |                               |                                                                        |                        |                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                                  |                 |                            |                    |                               |                                                      |                                                     |  |
| Ⓢ<br>H<br>i<br>s                                    | propose    |                 | confirm                  |      | specific date                 | edition                                                                | Revision               |                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                                  |                 |                            |                    |                               |                                                      |                                                     |  |
|                                                     | He Jiarong |                 | Zeng Qingping            |      | 8/12/2022                     | A1                                                                     | Draft of first edition |                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                                  |                 |                            |                    |                               |                                                      |                                                     |  |
|                                                     |            |                 |                          |      |                               |                                                                        |                        |                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                                  |                 |                            |                    |                               |                                                      |                                                     |  |
|                                                     |            |                 |                          |      |                               |                                                                        |                        |                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                                  |                 |                            |                    |                               |                                                      |                                                     |  |

Symbol description: ▽: Receiving △: Shipping ○: Operation ◇: Inspection

# Packing (Samples)

General Requirements:

1,Description of customer name, project name, model

2. Picture description of the inner and outer boxes, shipping packaging, number of bags, number of single bags, etc.

3,In the remarks column, fill in the name, quantity, etc. of the material used for packing

4. Signed by the head of quality, date



Figure 1: Single  
Tray Packaging \*  
PCS products



Figure 2: \* Layer Bundle



Figure 3: A box of \* Bundles  
of total \* CS products, each  
stack of lower left-hand  
corner affixed certificate  
of compliance



Figure 4: Top left-hand  
Corner with inner box  
label



Figure 5: The upper right-hand corner affixed with ready-made tickets, the upper left-hand corner affixed with Rohs and month labels, the lower left-hand corner affixed with status label model number, etc. .

Product  
No. :

5121000091558A

Product  
name:

HM650 BT antenna BT antenna LDS (RoHS)  
(REACH)

Product  
version:

A1

Packing:

Outer box of release film base plate  
(packing according to customer  
requirements)

The  
way

规格Specifications

Quantity

Quantity  
of  
product

Pallets

—

xPCS/layer

—

Bottom  
plate

—

X  
layer/stack

—

Bottom  
box

xcm\*xcn\*xcn

X  
bundles/box  
es

—

Remarks: The mantissa must be  
labeled with the mantissa.

Temperature: 18-30° C Humidity: 35%-75%RH

Store in a low temperature, low humidity, and  
non-corrosive gas environment.

Use period: 6 months (desiccant is required for  
storage)

Note: The picture is for reference  
only, because there is no official  
mass-produced product and Pallet,  
picture is not true picture,  
packing process is the same.

|                      |  |
|----------------------|--|
| Materials in Product |  |
|----------------------|--|

## 1. Basic Information of Supplier

\*Supplier name: Zhejiang Haitong Communication Electronics Co., Ltd. Huizhou Branch

Date: August 13, 2022

|                                |
|--------------------------------|
| Department: Quality Department |
|--------------------------------|

Completed by: Huang Xiaoting

E-MAIL : pz04-hz@haitongele.com

Tel:+86 752-7833129-805

Fax:+86 752-7833319

## II. Materials in Product

[illegible]

Questionnaire

Supplier (agent):

| Customer Code:<br>customerSubpart No |                       | Material name/model Subpart<br>Name/model |                                          | Supplier Subpart No          |                    |                                                                        | Manufacturer                                                        |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                | Green logo                              |        |              |      |  |  |            |
|--------------------------------------|-----------------------|-------------------------------------------|------------------------------------------|------------------------------|--------------------|------------------------------------------------------------------------|---------------------------------------------------------------------|--------------|----------------------------|--------------------------------|---------------------------------------|------------------------------------|-----------------------------|-------------------------|-----------------------------|----------------------|--------------------|--------------|---------------|----------------------|------------------------|------------|----------------------------|--------------------------|---------------|----------------|-----------------------------------------|--------|--------------|------|--|--|------------|
| 5121000091558A                       |                       | HT1863_BT antenna                         |                                          | B.1.03.L0173                 |                    |                                                                        | Zhejiang Haitong Communication Electronics Co., Ltd. Huizhou Branch |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                | HSF2.0 (RoHS+HF)                        |        |              |      |  |  |            |
| Item                                 | Material Name         | Material<br>No                            | Raw<br>Material<br>Manufactur<br>er Name | RoHS Third Party Test Report |                    | Restricted Substances Concentration in Homogeneous Material (UoM: ppm) |                                                                     |              |                            |                                |                                       |                                    |                             |                         | HF Third Party Test Report  |                      |                    |              |               |                      | Third LAB. Test Report |            |                            |                          |               |                |                                         |        |              |      |  |  | Exemptions |
|                                      |                       |                                           |                                          | Test Date (YY-MM-DD)         | No. Test Report No | Lead (Pb)                                                              | Cadmium (Cd)                                                        | Mercury (Hg) | Hexavalent chromium (Cr6+) | Polybrominated biphenyls (PBB) | Polybrominated diphenyl ethers (PBDE) | Di (2-ethylhexyl) phthalate (DEHP) | Tolyl butyl phthalate (BBP) | Dibutyl phthalate (DBP) | Diisobutyl phthalate (DIBP) | Test Date (YY-MM-DD) | No. Test Report No | Bromine (Br) | Chlorine (Cl) | Test Date (YY-MM-DD) | No. Test Report No     | Phosphorus | Phthalates 7P (Phthalates) | Polyvinyl chloride (PVC) | Antimony (Sb) | Beryllium (Be) | Polycyclic aromatic hydrocarbons (PAHs) | Nickel | Arsenic (As) | SCCP |  |  |            |
| 1                                    | PC                    | /                                         | Helida                                   | 2021/12/6                    | A2210506755101001E | ND                                                                     | ND                                                                  | ND           | ND                         | ND                             | ND                                    | ND                                 | ND                          | ND                      | 2021/12/6                   | A2210506755101002E   | ND                 | ND           |               |                      |                        |            |                            |                          |               |                |                                         |        |              |      |  |  |            |
| 2                                    | Copper nickel coating | /                                         | Nomogram                                 | 2022/1/21                    | A2220004798101001E | ND                                                                     | ND                                                                  | ND           | ND                         | ND                             | ND                                    | ND                                 | ND                          | ND                      | 2022/1/21                   | A2220004798101002E   | ND                 | ND           | 2022/1/21     | A2220004798101003E   |                        |            |                            | ND                       |               |                |                                         |        |              |      |  |  |            |
| 3                                    |                       |                                           |                                          |                              |                    |                                                                        |                                                                     |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                |                                         |        |              |      |  |  |            |
| 4                                    |                       |                                           |                                          |                              |                    |                                                                        |                                                                     |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                |                                         |        |              |      |  |  |            |
| 5                                    |                       |                                           |                                          |                              |                    |                                                                        |                                                                     |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                |                                         |        |              |      |  |  |            |
| 6                                    |                       |                                           |                                          |                              |                    |                                                                        |                                                                     |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                |                                         |        |              |      |  |  |            |
| 7                                    |                       |                                           |                                          |                              |                    |                                                                        |                                                                     |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                |                                         |        |              |      |  |  |            |
| 8                                    |                       |                                           |                                          |                              |                    |                                                                        |                                                                     |              |                            |                                |                                       |                                    |                             |                         |                             |                      |                    |              |               |                      |                        |            |                            |                          |               |                |                                         |        |              |      |  |  |            |

Filled by: Huang Xiaoting

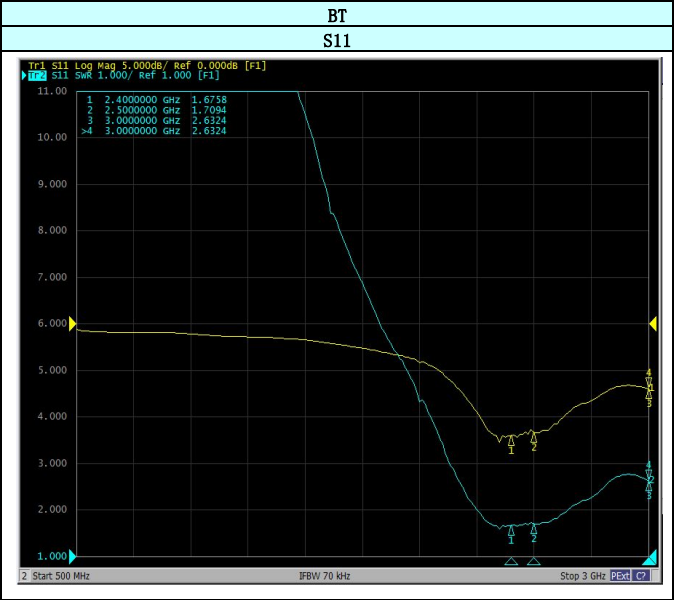
Filled by Company/Department: Quality Department

Seal:

|                     |                   |                         |              |
|---------------------|-------------------|-------------------------|--------------|
| RF Engineer         | Zheng Youqiang    |                         |              |
| Structural Engineer | Zhang Youyuan     |                         |              |
| Test Engineer       | Ma Xiqin          |                         |              |
| Review              | Zhou Zhenbang     |                         |              |
| Customer Engineer   | Weng Lingpeng     |                         |              |
| testing environment | temperature       | 22℃                     | humidity 65% |
| Machine status      | Mainboard version |                         |              |
|                     | PA match          | ANT switch-matching-PA  |              |
|                     | Antenna version   | HM680-A1                |              |
|                     | Antenna matching  | ANT-matching-ANT switch |              |
|                     | Software version  |                         |              |
|                     | other             | BT:2.4-2.5GHz           |              |

Reflection loss test results

|                |                      |
|----------------|----------------------|
| Test equipment | VNA (Aglient E5071C) |
|----------------|----------------------|



Efficiency test results

|                |             |
|----------------|-------------|
| Test equipment | Satimo SG24 |
|----------------|-------------|

| BT      |       |        |            |
|---------|-------|--------|------------|
| F (MHz) | E (%) | E (dB) | Gain (dBi) |
| 2400    | 47%   | -3.3   | 2.6        |
| 2410    | 48%   | -3.1   | 2.6        |
| 2420    | 51%   | -3.0   | 2.7        |
| 2430    | 52%   | -2.8   | 2.9        |
| 2440    | 54%   | -2.7   | 3.2        |
| 2450    | 57%   | -2.5   | 3.5        |
| 2460    | 59%   | -2.3   | 3.7        |
| 2470    | 59%   | -2.3   | 3.8        |
| 2480    | 58%   | -2.3   | 3.6        |
| 2490    | 58%   | -2.3   | 3.3        |
| 2500    | 59%   | -2.3   | 3.4        |

Pattern

