



South  
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South Star Technology Hong Kong Co.,LTD

# APPROVAL SHEET

Sample seal

Customer Name Tonly

Product Model Charge ESS3

Customer P/N

Specifications BT antenna

Southstar P/N 3. N204. 0517

Production date 2025. 09. 16

Revision Rev. 3. 0

| Southstar |     |     |
|-----------|-----|-----|
| FICTION   | DQE | R&D |
|           |     |     |
| Customer  |     |     |
| PUR       | QC  | R&D |
|           |     |     |

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## History

| Version  | Date       | Change Description                           | Note |
|----------|------------|----------------------------------------------|------|
| Rev. 1.0 | 2025.09.02 | First edition specification sheet            |      |
| Rev. 2.0 | 2025.09.05 | Update the drawing                           |      |
| Rev. 3.0 | 2025.09.16 | Update the drawings and optimize the antenna |      |
|          |            |                                              |      |
|          |            |                                              |      |
|          |            |                                              |      |
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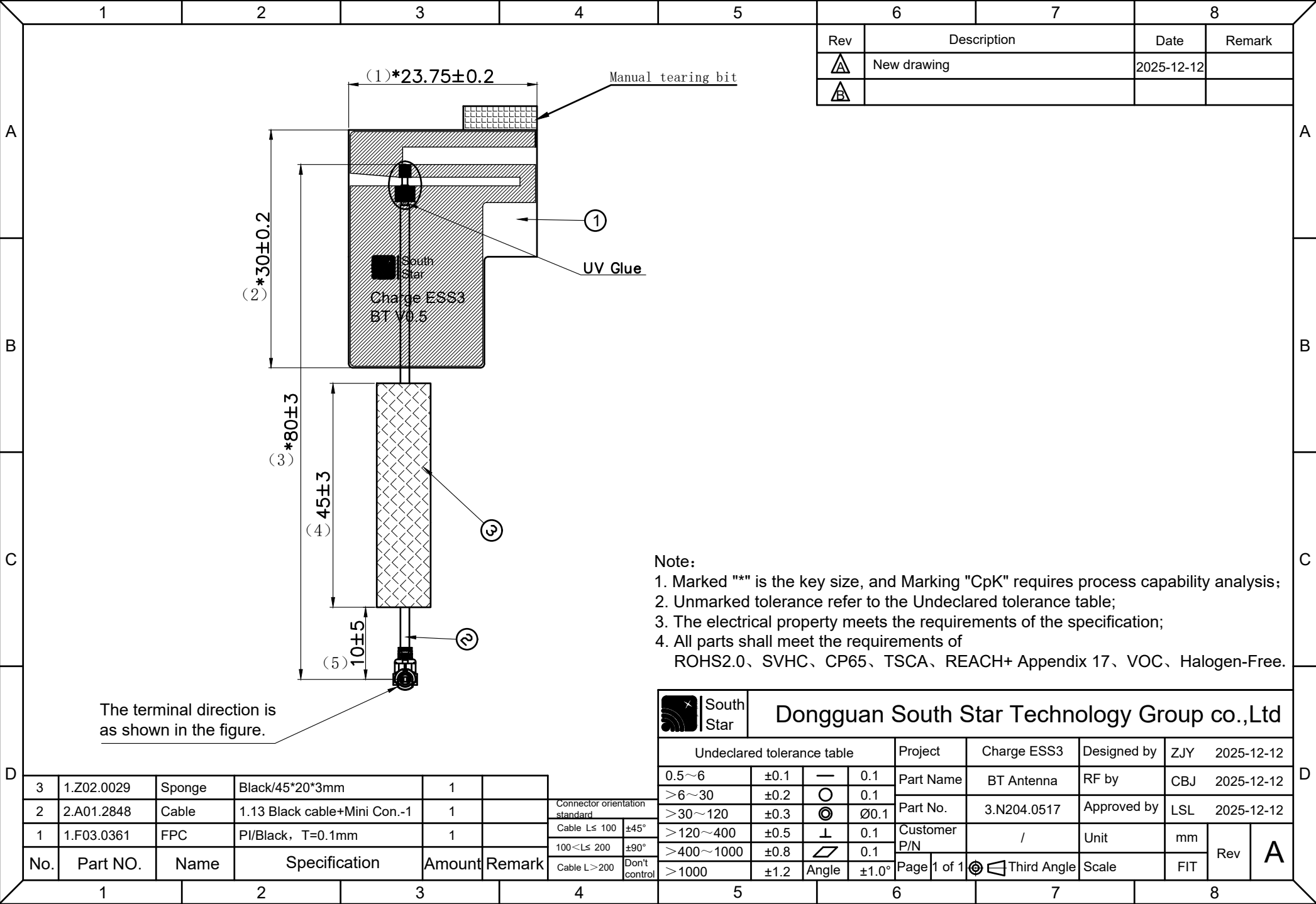
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## The basic parameters

| A. Electrical Characteristics            |                           |
|------------------------------------------|---------------------------|
| Frequency                                | 2400MHz~2500MHz           |
| VSWR                                     | < 2                       |
| Efficiency                               | >50%                      |
| Impedance                                | 50 Ohm                    |
| Polarization                             | Linear                    |
| Peak Gain                                | 2.12dBi                   |
| Antenna type                             | PIFA                      |
| B. Material & Mechanical Characteristics |                           |
| Material of Radiator                     | FPC Black                 |
| Cable Type                               | 1.13 wire diameter Black  |
| Connector Type                           | First-generation terminal |
| C. Environmental                         |                           |
| Operation Temperature                    | - 30° C ~ + 65° C         |
| Storage Temperature                      | - 40° C ~ + 70° C         |





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## Test Equipment & Conditions

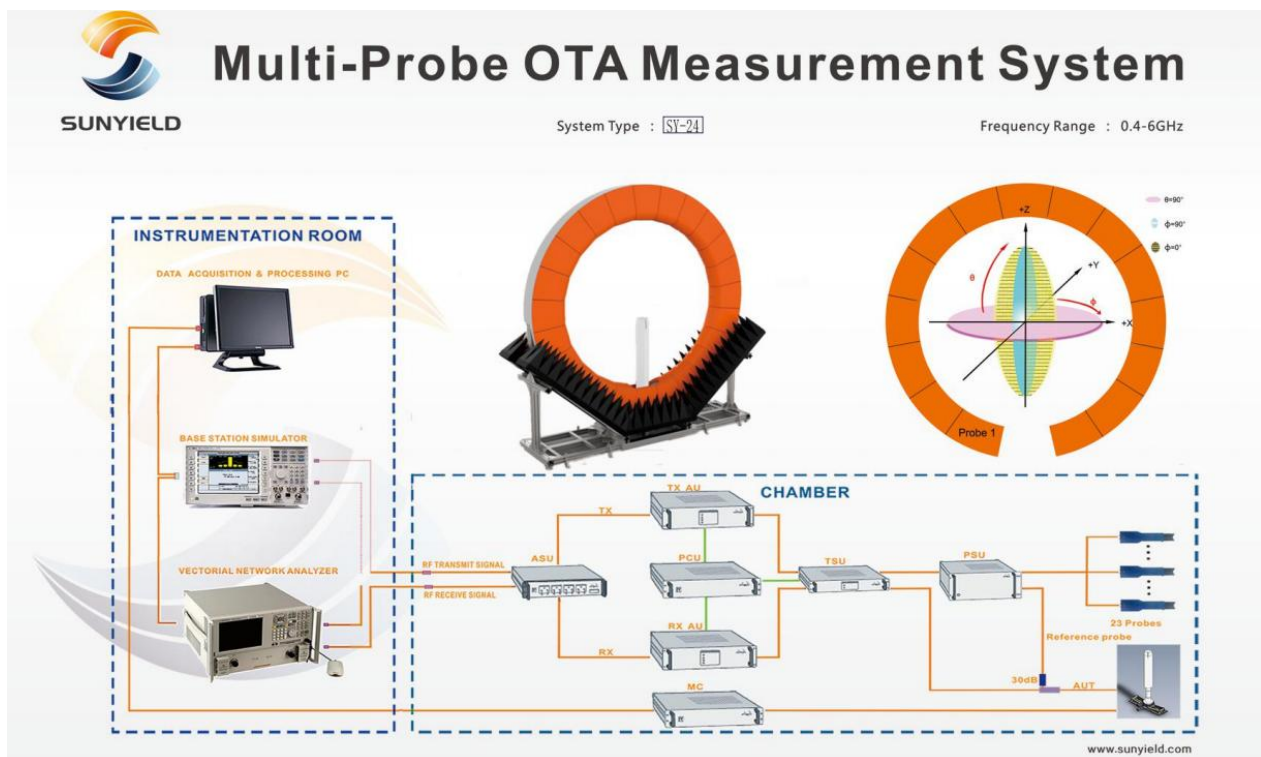
### 1. NetWork Analyzers:

Keysight E5071C

### 2. Comprehensive tester:

CMW500 、 MT8000A、 MT8862A

### 3. 3D Chamber Test System:

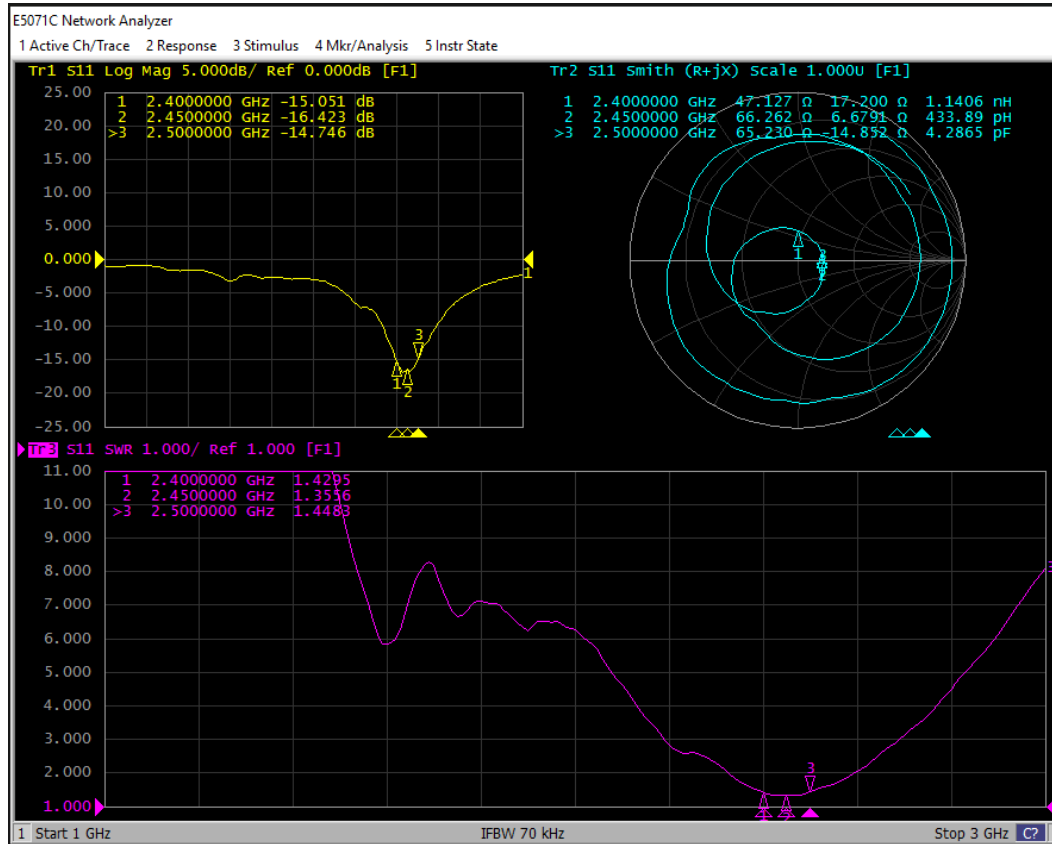




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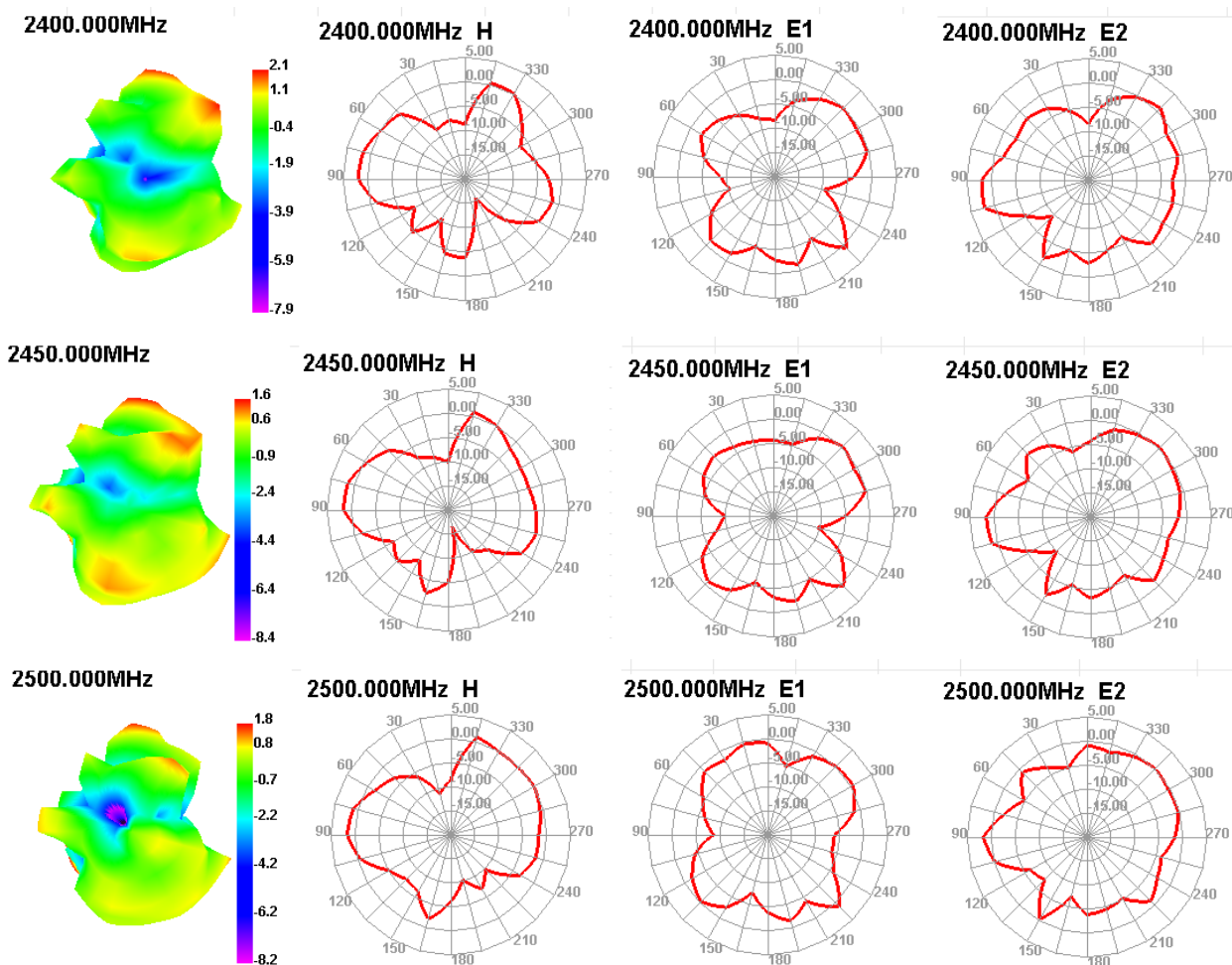
Antenna Impedance: S11



Efficiency & Gain:

| Freq (MHz) | Effi (%) | Gain (dBi) |
|------------|----------|------------|
| 2400       | 63.82    | 2.06       |
| 2410       | 62.25    | 1.95       |
| 2420       | 63.98    | 2.12       |
| 2430       | 64.38    | 1.92       |
| 2440       | 63.3     | 1.69       |
| 2450       | 62.64    | 1.55       |
| 2460       | 62.27    | 1.84       |
| 2470       | 62.09    | 1.83       |
| 2480       | 61.33    | 1.57       |
| 2490       | 63.85    | 1.74       |
| 2500       | 63.61    | 1.76       |
| avg        | 63.05    | 1.82       |

Antenna 3D & 2D pattern:



OTA:

|    |         |      |        |               |               |
|----|---------|------|--------|---------------|---------------|
| 1# |         |      |        |               |               |
| BR | Channel | TRP  | TIS    | Conduction TX | Conduction RX |
|    | 0       | 6.79 | -93.32 | 8.75          | -95           |
|    | 39      | 6.31 | -93.46 | 8.45          | -95           |
|    | 78      | 6.24 | -93.57 | 8             | -95           |
| 2# |         |      |        |               |               |
| BR | Channel | TRP  | TIS    |               |               |
|    | 0       | 6.82 | -93.42 |               |               |
|    | 39      | 6.42 | -93.37 |               |               |
|    | 78      | 6.19 | -93.42 |               |               |

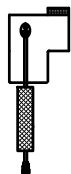


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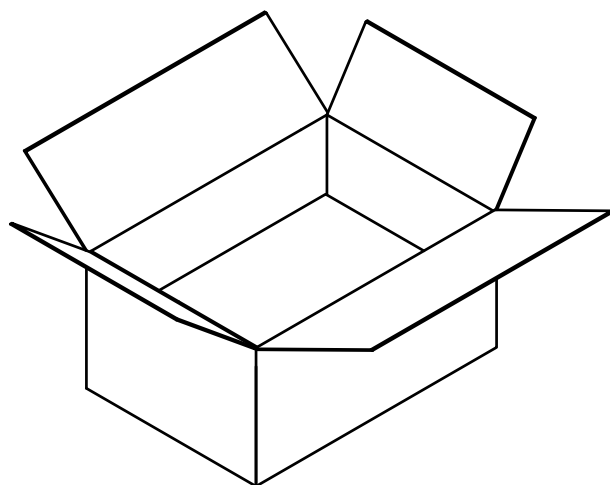
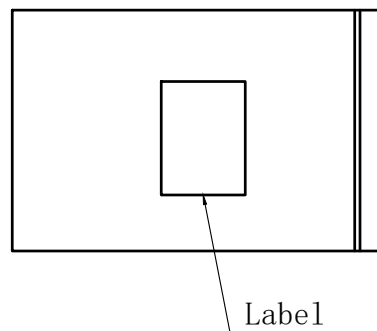
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|                            |            |
|----------------------------|------------|
| Name : Charge ESS3 Antenna | Version: A |
|                            | Customer:  |

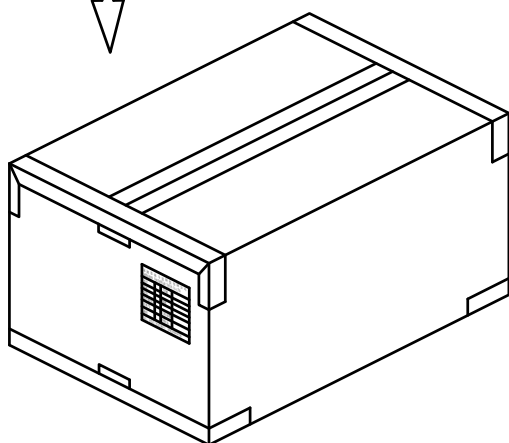
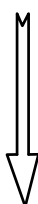
1. The Product



2. 100PCS/per Bag



3. Packing (subject to actual packing) .



DESIGNED By: ZJY

APPROVED By: LSL