

**SPECIFICATION APPROVAL SHEET**

CUSTOMER \_\_\_\_\_

CUS PART NO \_\_\_\_\_

版次:

REV \_\_\_\_\_ X1

SPECIFICATION \_\_\_\_\_  
2.4-2.5GHz  
WIFI Antenna L=280mm(Ø1.13+Tin )

单重:

weight \_\_\_\_\_

SUP PART NO \_\_\_\_\_  
SLEingA200330280

DATE \_\_\_\_\_  
2024.02.01

SUP APPROVED

|                           |         |            |          |
|---------------------------|---------|------------|----------|
| APPROVED                  | CHECKED | QA CHECKED | DESIGNED |
| <i>Jackey</i><br>2024.2.1 | Jerry   | <i>LSY</i> | Jerry    |

CUS APPROVED

|          |         |            |          |
|----------|---------|------------|----------|
| APPROVED | CHECKED | QA CHECKED | DESIGNED |
|          |         |            |          |

DONGGUAN SLEing INTEL-TECH CO.,LTD

Room 402, No. 6 Plant, Accelerator of Modern Enterprise, No. 24 Industry East Road  
Songshanlake District, Dongguan City, Guangdong Province, China.

Tel: +86-076989208968

Fax: +86-0769-89208969

[www.sleing.com](http://www.sleing.com)



DONGGUAN SLEing INTEL-TECH CO.,LTD

变更记录  
MODIFICATION RECORD SHEET

| (REV.) | (Modification date) | Summary of modification content | Signature | Approval |
|--------|---------------------|---------------------------------|-----------|----------|
| X1     | 2024.02.01          | First Issue                     | Jerry     | Jongrei  |
|        |                     |                                 |           |          |
|        |                     |                                 |           |          |
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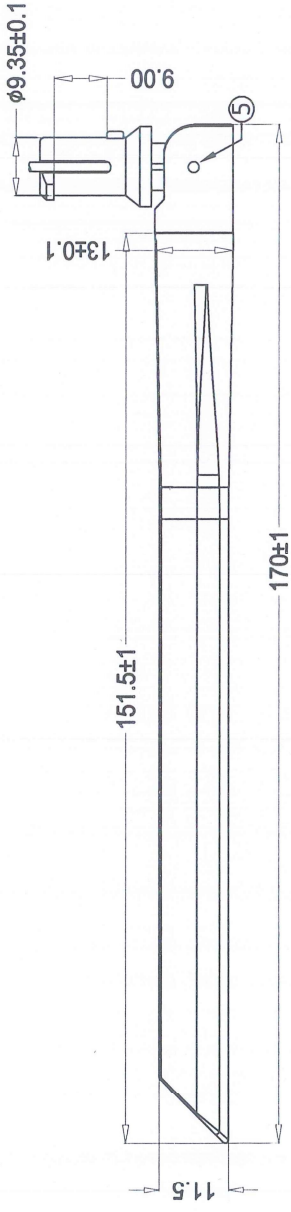
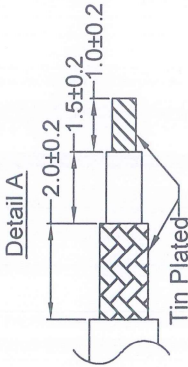
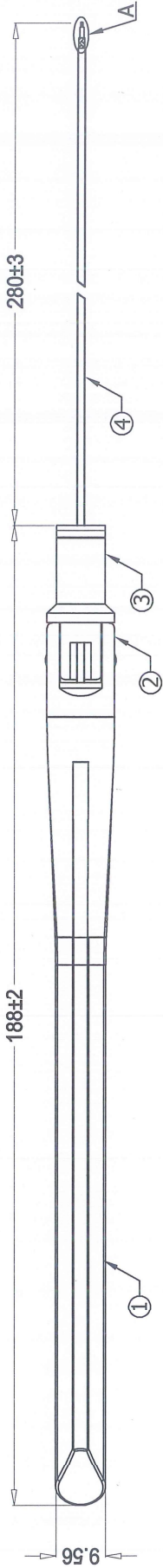
## Spec Item

| N0. | Project                   | Remark | Page |
|-----|---------------------------|--------|------|
| 1   | Spec Cover                |        | 1    |
| 2   | MODIFICATION RECORD SHEET |        | 2    |
| 3   | Spec Item                 |        | 3    |
| 4   | Drawing                   |        | 4    |
| 5   | Test Reports              |        | 5    |
| 6   | S Parameter Test          |        | 6    |
| 7   | Test Setup                |        | 7    |
| 8   | Test Efficiency           |        | 8    |
| 9   | Patten                    |        | 9    |
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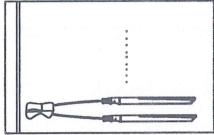
Give clear indication of:

1. The contents of the acknowledgement shall be arranged in order according to the items in the check sheet.
2. The number of copies of the acceptance letter shall be printed according to the customer's requirements, and the SGS report shall be stamped with the engineering seal.
3. All materials shall be confirmed by the customer. Any material/process/changes that may affect product quality and environmental quality must be re-sent to the customer for confirmation before import.
4. SGS report is valid for one year.
5. According to the contents attached to the actual acknowledgement, check the check form: "Yes" is provided, "no" is provided according to customer requirements.

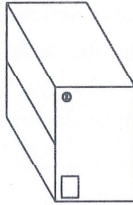
| REV. | CONTENT     | DATE       |
|------|-------------|------------|
| A    | First Issue | 2024.02.01 |



Specification:  
 Frequency Rang:2.4~2.5GHz  
 Return Loss:-10dB or less  
 VSWR:1.92 Max  
 Gain:5.0±0.5 dBi

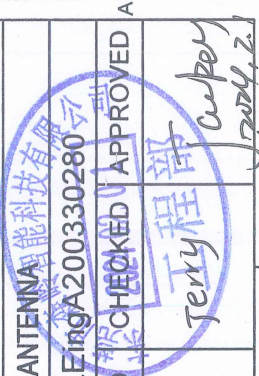


25pcs/Bundle  
Packing:50pcs/bag



外箱须贴ROHS标签与物料标签各1PCS

|                                     |  |  |                      |  |  |                                                |  |  |          |  |                                      |  |                  |  |
|-------------------------------------|--|--|----------------------|--|--|------------------------------------------------|--|--|----------|--|--------------------------------------|--|------------------|--|
| 25pcs Bundle<br>Packing: 50pcs /bag |  |  | 外箱须贴ROHS标签与物料标签各1PCS |  |  | SLEing®<br>DONGGUAN SLEing INTEL-TECH CO., LTD |  |  | CUSTOMER |  |                                      |  |                  |  |
|                                     |  |  |                      |  |  |                                                |  |  | PART NO  |  |                                      |  |                  |  |
|                                     |  |  |                      |  |  |                                                |  |  | TITLE    |  | RF ANTENNA                           |  |                  |  |
| 5                                   |  |  | Rivet                |  |  | POM, Color: White                              |  |  | 2        |  | S.L P/NO                             |  | SLEingA200330280 |  |
| 4                                   |  |  | Cable                |  |  | Φ1.13mm Coaxial Cable Dark Gray, 50Ω           |  |  | 1        |  | SIZE                                 |  | DRAWN            |  |
| 3                                   |  |  | Bottom Base          |  |  | PC, Color: White                               |  |  | 1        |  | TOLERANCE UNLESS OTHERWISE SPECIFIED |  | CHECKED          |  |
| 2                                   |  |  | Upper Base           |  |  | PC, Color: White                               |  |  | 1        |  | UNIT: mm                             |  | APPROVED         |  |
| 1                                   |  |  | Antenna Cap          |  |  | TPEE, Color: White                             |  |  | 1        |  | ANGLES ±0.5°                         |  | X. ±0.3          |  |
|                                     |  |  |                      |  |  |                                                |  |  |          |  | SHEET: 1/1                           |  | XX. ±0.5         |  |
| NO                                  |  |  | PART NAME            |  |  | DESCRIPTION                                    |  |  | REMARK   |  | SCALE: 1/1                           |  | XXX. ±2.0        |  |
| 8                                   |  |  |                      |  |  | 7                                              |  |  | 6        |  | 4                                    |  | 3                |  |
| 2                                   |  |  |                      |  |  | 5                                              |  |  | 1        |  | A4                                   |  | Jerry            |  |
| 2                                   |  |  |                      |  |  |                                                |  |  |          |  | 2                                    |  | 2024.2.          |  |



Jerry  
 2024.2.1

## Test Reports

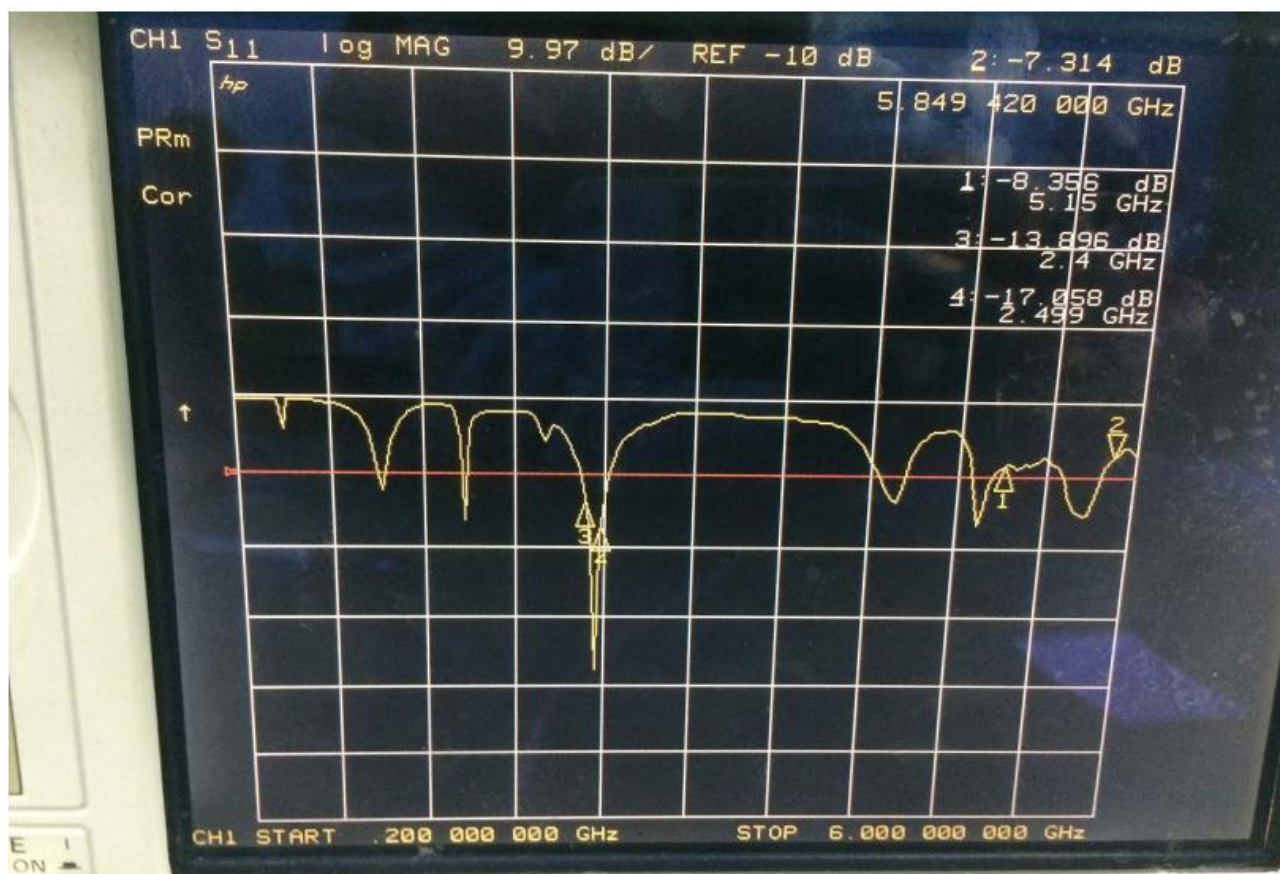
| Electrical Properties |                          |
|-----------------------|--------------------------|
| Frequency             | 2.4-2.5GHz               |
| Impedance             | 50 Ohm Nominal           |
| V.S.W.R               | $\leq 1.92$              |
| Return Loss           | -10dB Max                |
| Radiation             | Omni-directional         |
| Gain                  | $5 \pm 1$ dBi            |
| Polarization          | Linear, Vertical         |
| Admitted Power        | 2 W                      |
| Connector             | Tin                      |
| Physical Properties   |                          |
| Antenna Material      | TPEE/PC/POM              |
| Cable Type            | $\Phi 1.13$ mm Dark Grey |
| Operating Temp        | -40°C-85°C               |
| Storage Temp.         | -40°C-85°C               |
|                       |                          |

## S Parameter Test

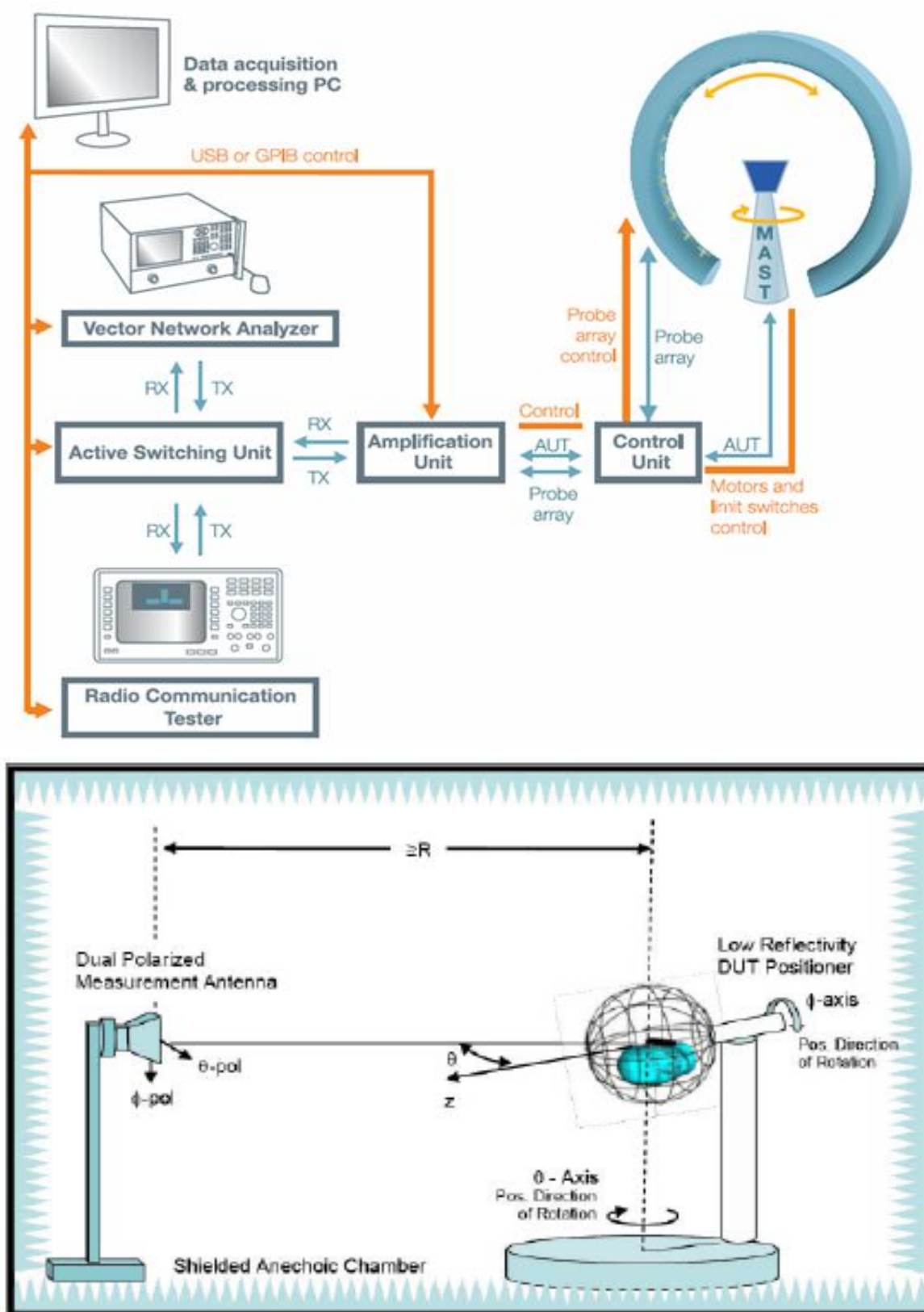
Agilent E5071C Network Analyzer



RF Antenna (Return Loss)



## Setup

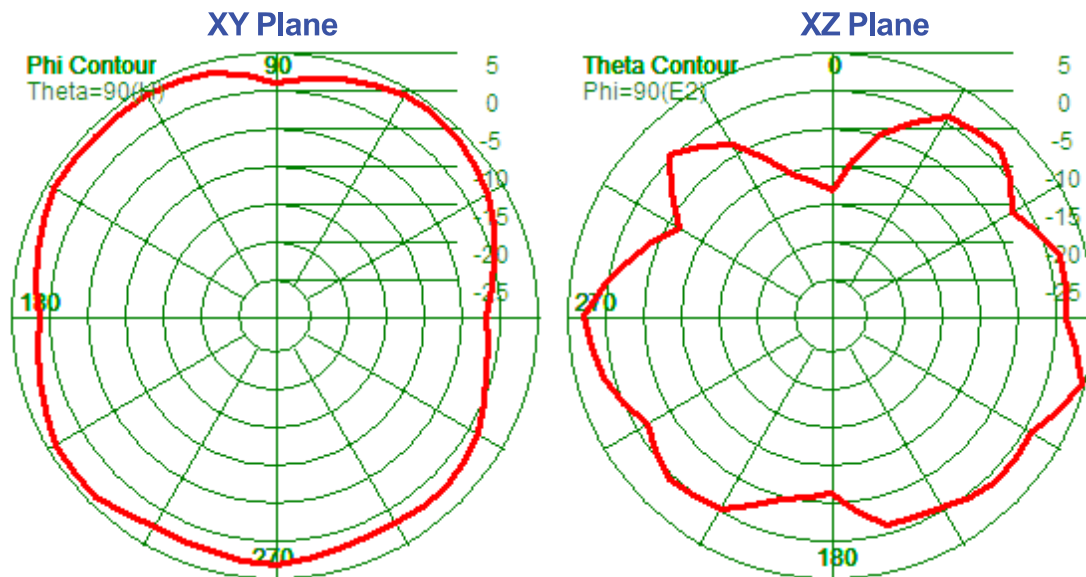


## Test Efficiency

| Test Point ID | Freq. (MHz) | TRP (dBm) | Gain (dBi) | Directivity v (dBi) | Efficiency v (%) | Efficiency v (dB) | Max (dBm) | Theta of Max | Phi of Max | Min (dBm) | Theta of Min | Phi of Min | AVG (dBm) | Max/Min (dB) | Max/AVG (dB) | Min/AVG (dB) |
|---------------|-------------|-----------|------------|---------------------|------------------|-------------------|-----------|--------------|------------|-----------|--------------|------------|-----------|--------------|--------------|--------------|
| 1             | 2400.0      | 2400.00   | 4.36       | 5.79                | 71.9%            | -1.43             | 4.36      | 105          | 90         | -14.90    | 0            | 30         | -0.89     | 19.26        | 5.25         | -14.01       |
| 2             | 2410.0      | 2410.00   | 4.29       | 5.87                | 69.5%            | -1.58             | 4.29      | 105          | 135        | -17.26    | 0            | 30         | -1.41     | 21.55        | 5.70         | -15.85       |
| 3             | 2420.0      | 2420.00   | 4.45       | 6.02                | 69.7%            | -1.57             | 4.45      | 90           | 60         | -20.51    | 0            | 30         | -1.82     | 24.96        | 6.27         | -18.69       |
| 4             | 2430.0      | 2430.00   | 4.48       | 5.93                | 71.6%            | -1.45             | 4.48      | 90           | 60         | -24.13    | 0            | 30         | -2.28     | 28.61        | 6.76         | -21.85       |
| 5             | 2440.0      | 2440.00   | 4.50       | 5.76                | 74.8%            | -1.26             | 4.50      | 90           | 60         | -25.48    | 0            | 45         | -2.61     | 29.98        | 7.11         | -22.87       |
| 6             | 2450.0      | 2450.00   | 4.87       | 6.05                | 76.2%            | -1.18             | 4.87      | 90           | 60         | -24.39    | 0            | 45         | -2.43     | 29.26        | 7.30         | -21.97       |
| 7             | 2460.0      | 2460.00   | 4.81       | 6.17                | 73.1%            | -1.36             | 4.81      | 90           | 60         | -23.90    | 0            | 165        | -2.60     | 28.71        | 7.41         | -21.30       |
| 8             | 2470.0      | 2470.00   | 5.12       | 6.44                | 73.7%            | -1.32             | 5.12      | 90           | 60         | -23.46    | 0            | 165        | -2.37     | 28.58        | 7.49         | -21.09       |
| 9             | 2480.0      | 2480.00   | 5.13       | 6.58                | 71.6%            | -1.45             | 5.13      | 90           | 60         | -22.43    | 0            | 165        | -2.40     | 27.56        | 7.53         | -20.03       |
| 10            | 2490.0      | 2490.00   | 4.80       | 6.21                | 72.2%            | -1.41             | 4.80      | 90           | 60         | -21.93    | 0            | 165        | -2.81     | 26.73        | 7.61         | -19.12       |
| 11            | 2500.0      | 2500.00   | 5.02       | 6.34                | 73.8%            | -1.32             | 5.02      | 90           | 60         | -20.44    | 0            | 165        | -2.59     | 25.47        | 7.62         | -17.85       |
| 12            | --          | --        | --         | --                  | --               | --                | --        | --           | --         | --        | --           | --         | --        | --           | --           | --           |

## Patten

### 1.3 2D Radiation patterns test results (Passive Antenna)



### 1.5 3D Radiation patterns test results (Passive Antenna)

#### 3D

