

# 承 认 书

## APPROVAL SHEET

客 户 名 称

CUSTOMER NAME:

产 品 名 称

PRODUCT NAME: 2.4G FPC Antenna L=110mm+terminal

客 户 料 号

CUSTOMER P/N:

优比电子料号

Youbi P/N: UB01C110F2D3551A REV: A

|              |                                                                                          |                       |
|--------------|------------------------------------------------------------------------------------------|-----------------------|
|              | MANUFACTURER<br>SIGNATURE                                                                | CUSTOMER<br>SIGNATURE |
| CHECKED BY:  |  Eddy |                       |
| APPROVED BY: | Changxing. Liu                                                                           |                       |
| DATE:        | 2023/2/3                                                                                 |                       |

### Modification History

| Version | Content Revision | Issued by | Date     |
|---------|------------------|-----------|----------|
| A       | Original version | Eddy      | 2023-2-3 |
|         |                  |           |          |
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## *Content*

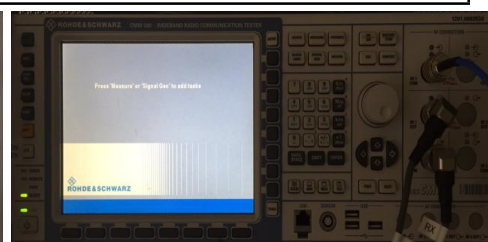
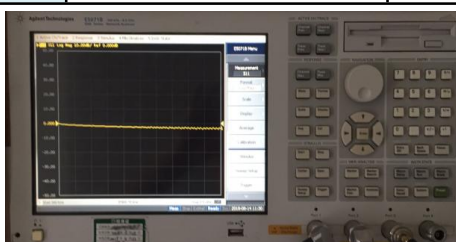
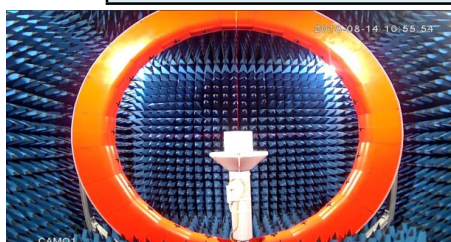
| <i>Item</i> | <i>Description</i>           |
|-------------|------------------------------|
| 1.-----     | Electrical Specification     |
| 2.-----     | Test Items and Equipment     |
| 3.-----     | S Parameter                  |
| 4.-----     | Efficiency and Gain          |
| 5.-----     | Radiation Pattern            |
| 6.-----     | Active test data             |
| 7.-----     | Antenna installation diagram |
| 8.-----     | Mechanical Specification     |
| 9.-----     | Packaging                    |

## 1. Electrical Specification:

| Characteristics       | Specifications      | Unit     |
|-----------------------|---------------------|----------|
| Outline Dimensions    | 39x16.5,L110        | mm       |
| Frequency             | 2400-2500           | MHz      |
| Impedance             | 50                  | $\Omega$ |
| VSWR                  | < 2                 |          |
| Polarization          | Linear Polarization |          |
| Gain                  | 4.71                | dBi      |
| Efficiency            | >50                 | %        |
| Connector Type        | MHF-1-Plug          |          |
| Operating temperature | -20℃~+85℃           |          |
| Storage Temp          | -20℃~+50℃           |          |

## 2. Test Items and Equipment

|                                            | Test items                                   | Test equipment                                                                       |
|--------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------|
| S Parameter                                | 1.Return Loss<br>2.VSWR                      | Network analyzer<br>(Agilent E5071B)                                                 |
| The whole machine of<br>Passive parameters | 1.Frequency<br>2.Gain<br>3.Radiation Pattern | 1.3D microwave darkroom<br>(5m*5m*5m)<br>2.Network analyzer<br>(Agilent E5071B)      |
| The whole machine of<br>Active parameters  | 1.TRP<br>2.TIS                               | 1.3D microwave darkroom<br>(5m*5m*5m)<br>2.Comprehensive test instrument<br>(CMW500) |



### 3. S Parameter

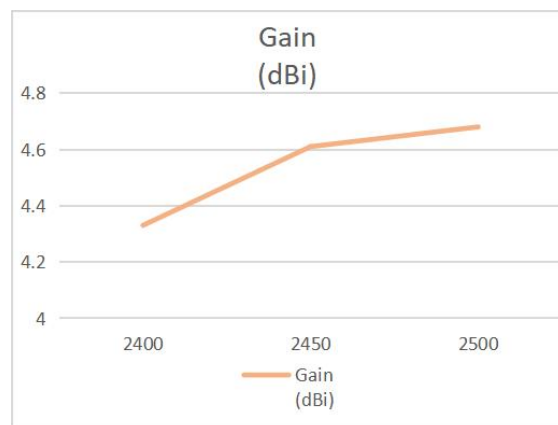
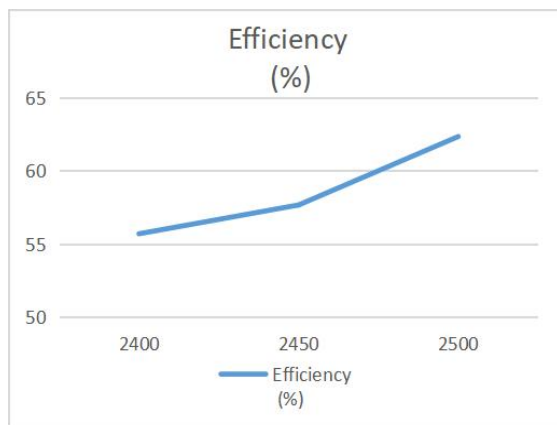
| Frequency (MHz) | Return Loss (dB) | VSWR |
|-----------------|------------------|------|
| 2400            | -11.33           | 1.75 |
| 2450            | -14.30           | 1.47 |
| 2500            | -20.26           | 1.21 |

\* Voltage Standing Wave Ratio(VSWR)  
Return Loss(RL)  
 $RL = 20 * \log_{10}[(VSWR + 1) / (VSWR - 1)]$



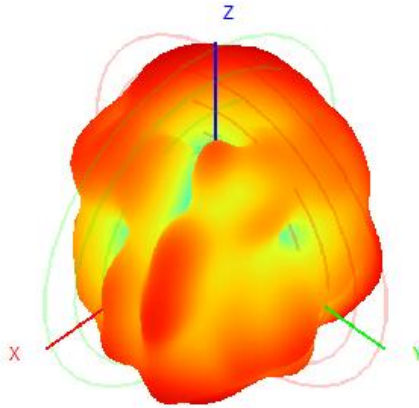
### 4. Efficiency and Gain

| Frequency (MHz) | 2400  | 2450  | 2500  |
|-----------------|-------|-------|-------|
| Efficiency (%)  | 55.71 | 57.68 | 62.36 |
| Gain (dBi)      | 4.33  | 4.61  | 4.71  |

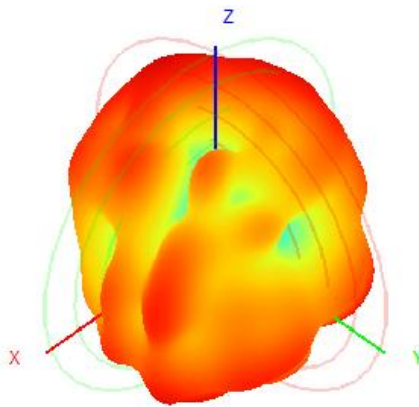


## 5. Radiation Pattern

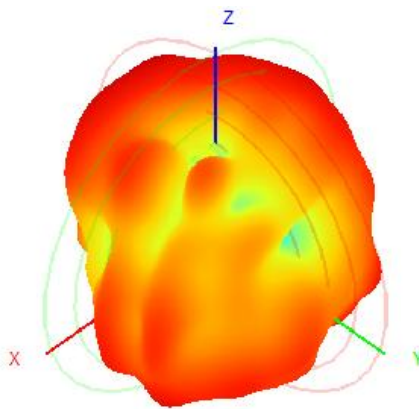
5-1 Antenna 3D Radiation Pattern



2400MHz

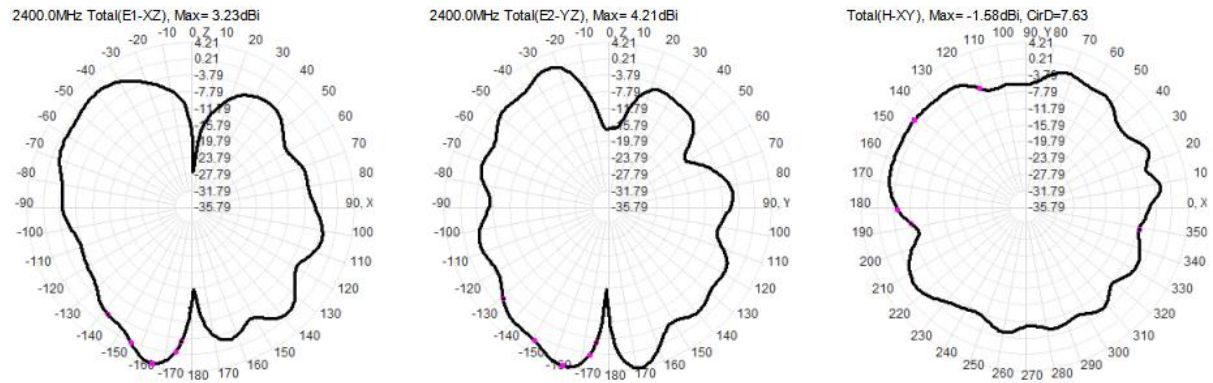


2450MHz

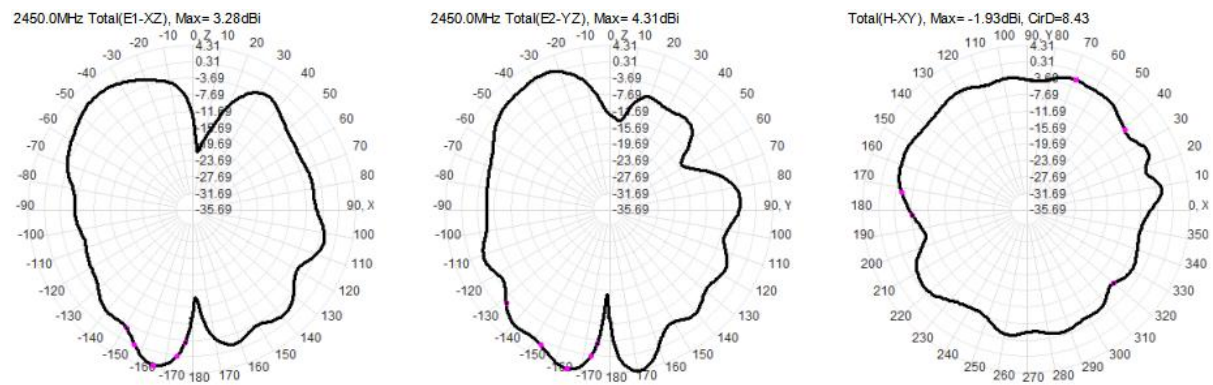


2500MHz

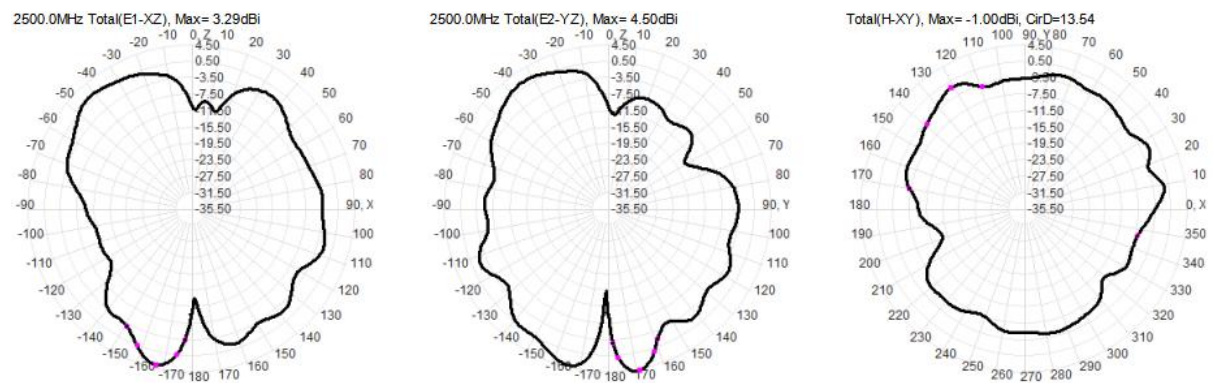
## 5-2 Antenna 2D Radiation Pattern



2400MHz



2450MHz



2500MHz

## 6. Active test data

| 802.11B |             |        |
|---------|-------------|--------|
| Item    | Measurement | Total  |
| 1       | TRP         | 21     |
| 6       | TRP         | 19.49  |
| 11      | TRP         | 19.28  |
| 1       | TIS(EIRP)   | -84.41 |
| 6       | TIS(EIRP)   | -83.64 |
| 11      | TIS(EIRP)   | -86.24 |

| 802.11G |             |        |
|---------|-------------|--------|
| Item    | Measurement | Total  |
| 1       | TRP         | 19.63  |
| 6       | TRP         | 19.71  |
| 11      | TRP         | 17.01  |
| 1       | TIS(EIRP)   | -69.86 |
| 6       | TIS(EIRP)   | -70.99 |
| 11      | TIS(EIRP)   | -71.01 |

| 802.11N |             |        |
|---------|-------------|--------|
| Item    | Measurement | Total  |
| 1       | TRP         | 19.77  |
| 6       | TRP         | 17.1   |
| 11      | TRP         | 15.51  |
| 1       | TIS(EIRP)   | -66.39 |
| 6       | TIS(EIRP)   | -66.42 |
| 11      | TIS(EIRP)   | -66.24 |

7.Mechanical Specification

