

## Declaration

### APPROVAL SHEET

CUSTOMER NAME: Anker

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PRODUCT NAME: On-board antenna

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CUSTOMER P/N:

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Youbi P/N:

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REV: A

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|               |                                                                                             |                       |
|---------------|---------------------------------------------------------------------------------------------|-----------------------|
|               | MANUFACTURER<br>SIGNATURE                                                                   | CUSTOMER<br>SIGNATURE |
| CHECKED BY:   | <br>Lina |                       |
| APPROVED BY : | Jiatao. jiang                                                                               |                       |
| DATE:         | 2025/06/19                                                                                  |                       |



Modification History

| Version | Content Revision | Issued by | Date       |
|---------|------------------|-----------|------------|
| A       | Original version | lina      | 2025-06-19 |
|         |                  |           |            |
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## *Content*

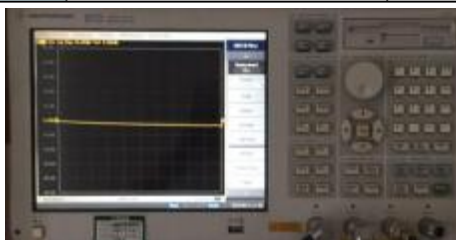
| <i>Item</i> | <i>Description</i>       |
|-------------|--------------------------|
| 1.-----     | Electrical Specification |
| 2.-----     | Test Items and Equipment |
| 3.-----     | S Parameter              |
| 4.-----     | Efficiency and Gain      |
| 5. -----    | Radiation Pattern        |
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## 1. Electrical Specification

| Characteristics       | Specifications      | Unit     |
|-----------------------|---------------------|----------|
| Outline Dimensions    | /                   | mm       |
| Frequency             | 2400-2500           | MHz      |
| Impedance             | 50                  | $\Omega$ |
| VSWR                  | < 2                 |          |
| Polarization          | Linear Polarization |          |
| AVG Gain              | 4.01                | dBi      |
| Efficiency            | >60                 | %        |
| Connector Type        | /                   |          |
| Operating temperature | -20℃~+85℃           |          |
| Storage Temp          | -20℃~+50℃           |          |

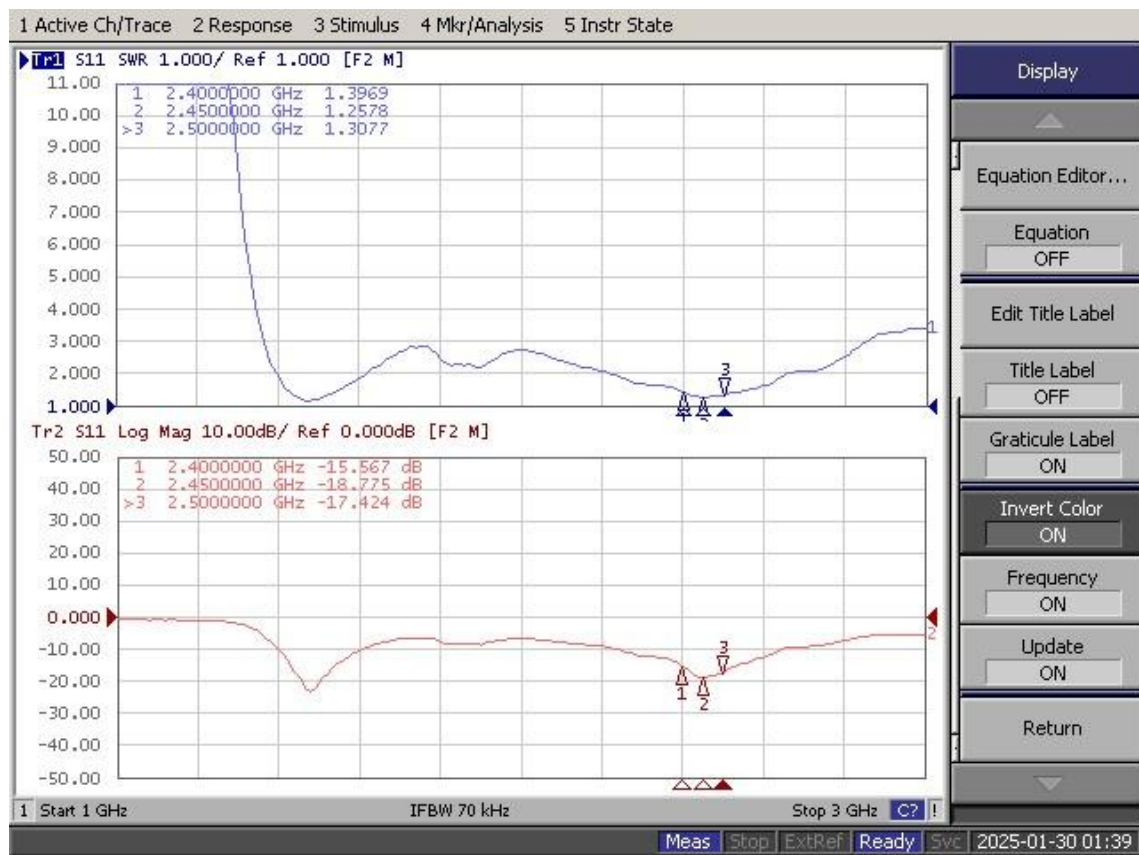
## 2.Test Items and Equipment

|                                            | 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<br>(MHz) | Return<br>Loss (dB) | VSWR |
|--------------------|---------------------|------|
| 2400               | -15.56              | 1.39 |
| 2450               | -18.77              | 1.25 |
| 2500               | -17.42              | 1.30 |

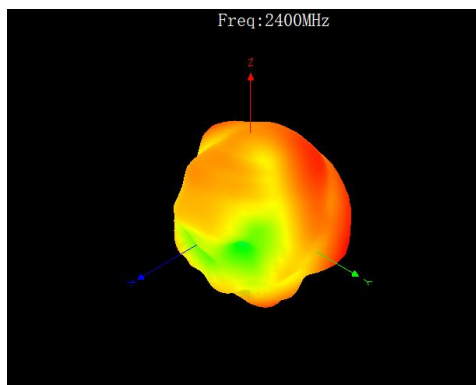


\* Voltage Standing Wave Ratio(VSWR)  
Return Loss(RL)  
 $RL=20*\log_{10}[(VSWR+1)/(VSWR-1)]$

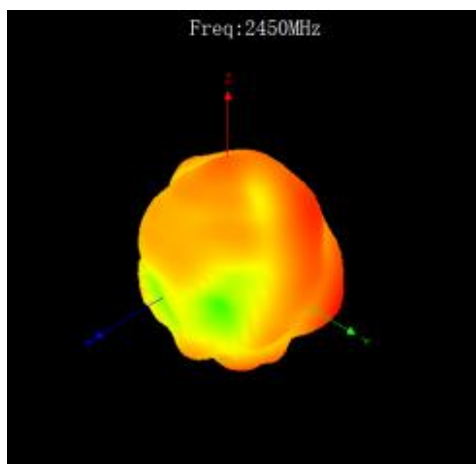
## 4. Efficiency and Gain

| Frequency / MHz | Efficiency / % | Gain/ dBi |
|-----------------|----------------|-----------|
| 2400            | 70.47          | 3.83      |
| 2410            | 69.5           | 3.89      |
| 2420            | 71.45          | 3.91      |
| 2430            | 72.44          | 3.46      |
| 2440            | 73.11          | 3.55      |
| 2450            | 72.61          | 4.21      |
| 2460            | 70.79          | 3.7       |
| 2470            | 73.79          | 4.68      |
| 2480            | 73.28          | 4.32      |
| 2490            | 71.78          | 4.17      |
| 2500            | 73.11          | 4.4       |

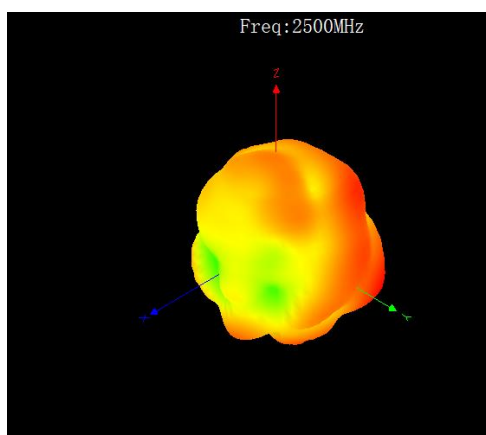
## 5. Radiation Pattern



2400MHz

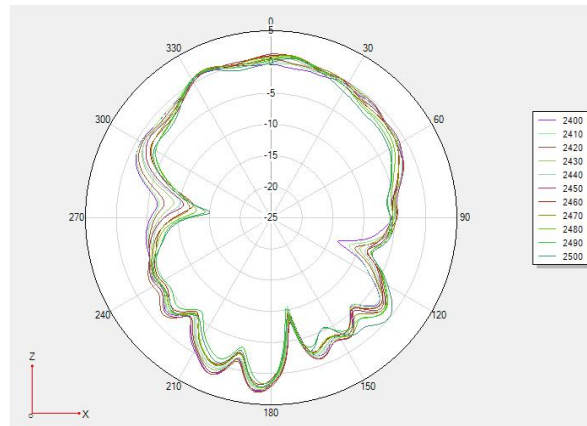


2450MHz

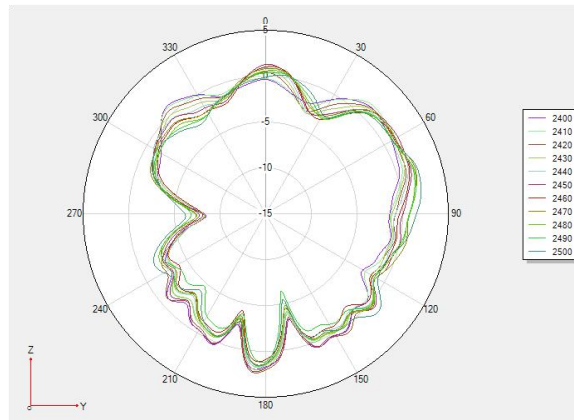


2500MHz

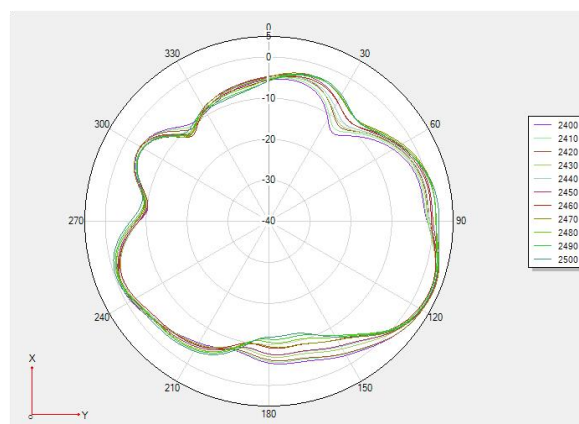
5-2 Antenna 2D Radiation Pattern



Phi 0 2D

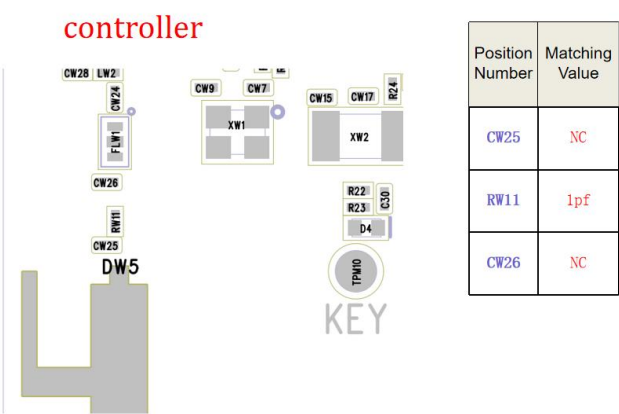


Phi 90 2D



Theta 90

6. Match changes



## 7.Mechanical Specification

