

## Antenna specifications

|                        |                                                                                                                                       |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Laboratory</b> | Shenzhen Morlab Communications Technology Co., Ltd.                                                                                   |
| <b>Address</b>         | FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District,<br>ShenZhen , GuangDong Province, P. R. China |
| <b>Contact:</b>        | EDWARD.LYU +86 755 36698555                                                                                                           |
| <b>Model</b>           | On-board Antenna                                                                                                                      |

|                     |                                                                                                            |
|---------------------|------------------------------------------------------------------------------------------------------------|
| <b>Manufacturer</b> | Dongguan Youbi Electronics Co., LTD                                                                        |
| <b>Address</b>      | Building 79, New Sun Industrial City, Lincun Community, Tangxia Town, Dongguan<br>City, Guangdong Province |

### 1. Test procedures

| Standards           | Description of Test Item                           | Result    |
|---------------------|----------------------------------------------------|-----------|
| ANSI/ IEEE 149-2021 | IEEE Recommended Practice for Antenna Measurements | Compliant |

2. Test Items and Equipment

|                                         | Test items                             | Test equipment                                                            |
|-----------------------------------------|----------------------------------------|---------------------------------------------------------------------------|
| S Parameter                             | 1.Return Loss 2.VSWR                   | Network analyzer (Agilent E5071B)                                         |
| The whole machine of Passive parameters | 1.Frequency 2.Gain 3.Radiation Pattern | 1.3D microwave darkroom (6m*6m*6m)<br>2.Network analyzer (Agilent E5071B) |

3. Test Equipment

| Equipement Name            | Serial No.   | Type                                       | Manufacture | Cal.Date   | Cal.Due Date |
|----------------------------|--------------|--------------------------------------------|-------------|------------|--------------|
| Network Analyzer           | MY46110140   | E5071C                                     | Agilent     | 2024.05.30 | 2025.05.29   |
| OTA Chamber                | TJ2235-Q1793 | AMS-8923-150                               | ETS         | 2022-11-30 | 2025-11-29   |
| Antenna Measurement System | 1685         | EMQuest<br>EMQ-100<br>V1.13 Build<br>21267 | ETS         | N/A        | N/A          |

#### 4. Name of commercial test software

| Software Name              | Serial No. | Version                                 | Manufacturer |
|----------------------------|------------|-----------------------------------------|--------------|
| Antenna Measurement System | 1685       | "EMQuest EMQ-100<br>V 1.13 Build 21267" | ETS          |

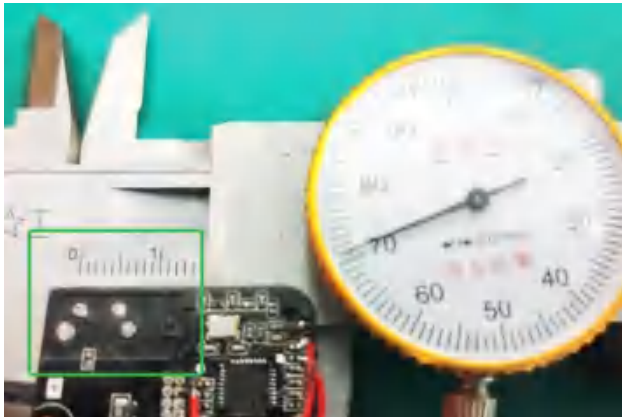
5. The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO. When the test result is a critical value, we will use the measurement uncertainty to give the judgment result based on the 95% Confidence intervals.

#### 6. DUT Setup Photo



#### 7. PCB Antenna Physical Size (unit: mm)





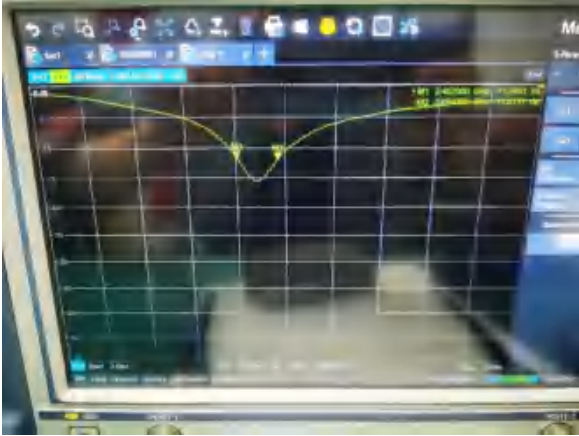
## 8. Antenna Electrical Specification

| On-board Antenna      |                  |
|-----------------------|------------------|
| Freq                  | 2.4~2.483GHz     |
| Gain                  | -2.54dBi         |
| VSWR                  | <2               |
| Impedance             | 50 ohm           |
| Polarization          | Linear           |
| Type of Antenna       | PCB Antenna      |
| Outline Dimensions    | 27mm*8.5mm*1.5mm |
| Manufacture           | EcoFlow          |
| Efficiency            | ≥20.93%          |
| Connector Type        | Microstrip lines |
| Operating Temperature | -40°C~+85°C      |
| Storage Temp          | -40°C~+85°C      |

## 9. 2.4G Antenna Type & Gain

Type: PCB Antenna

### 9.1 S-PARA

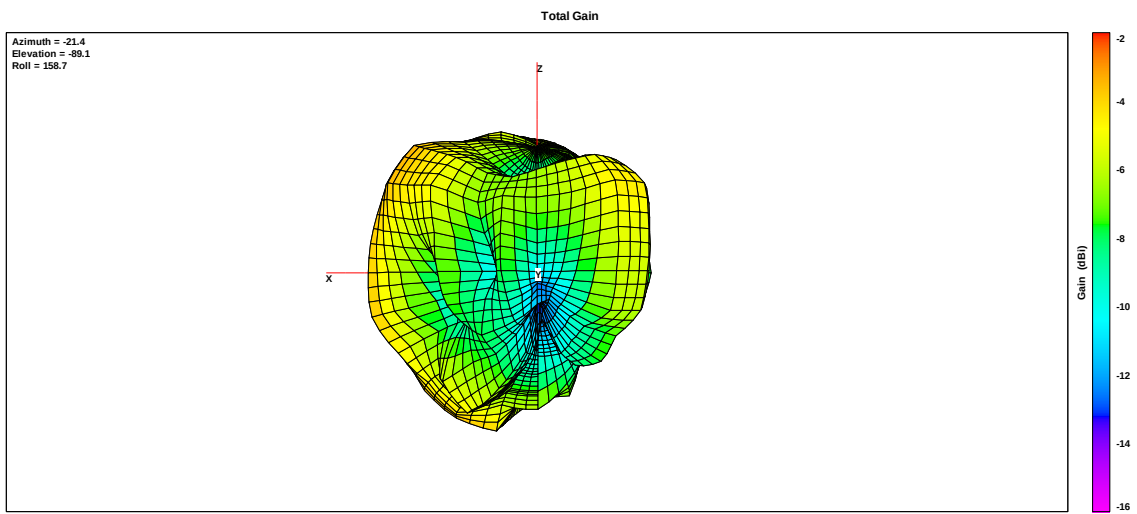


### 9.2 GAIN AND EFFICIENCY

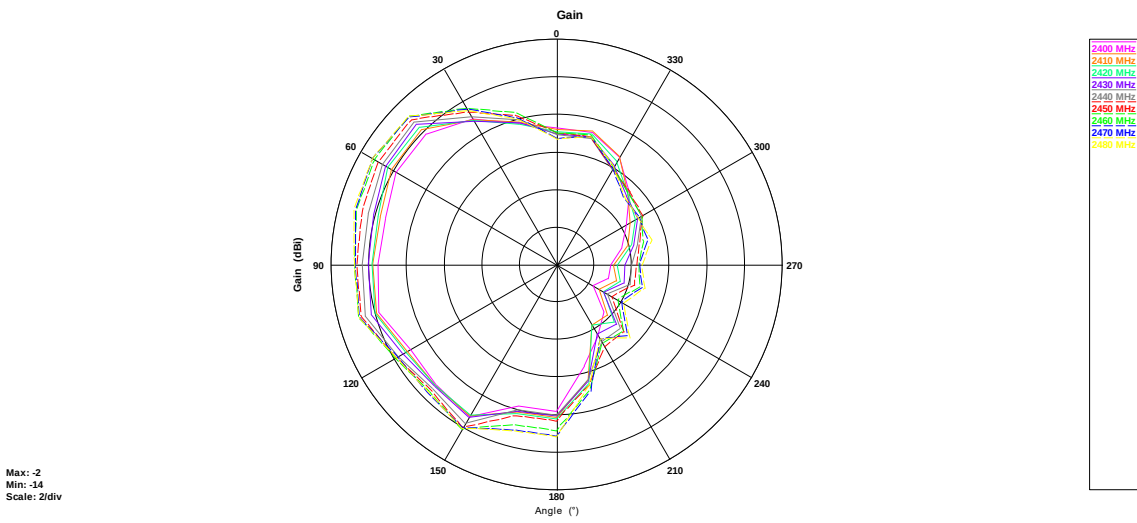
| On-board Antenna |           |              |
|------------------|-----------|--------------|
| Frequency        | Gain(dBi) | Efficiency % |
| 2400             | -3.77     | 20.93        |
| 2410             | -3.79     | 21.93        |
| 2420             | -3.62     | 22.37        |
| 2430             | -3.47     | 22.86        |
| 2440             | -3.26     | 24.07        |
| 2450             | -2.99     | 25.33        |
| 2460             | -2.80     | 26.44        |
| 2470             | -2.71     | 26.50        |
| 2480             | -2.59     | 26.67        |
| 2490             | -2.54     | 26.51        |

10. Pattern and Gain

On-board Antenna  
3D PATTERN



PHI=0DEG



PHI=90DEG