



# Antenna Datasheet

**Product OC:** Y0REB0CA7AA

**Version:** 0.2

**Date:** 2025-01-02

**Status:** Released

**Product Name:** Wi-Fi Steel Antenna

**Key Features:**

Frequency Band: 2400–2500 MHz, 5150–5850 MHz

Dimensions: 18 mm × 4 mm × 5.8 mm

Efficiency: Up to 52%

RoHS, REACH and HF Compliant

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# 1 Specification

Test Condition: Assembled in test device

## 1.1. Electrical

| Electrical        |                              |
|-------------------|------------------------------|
| Frequency Range   | 2400–2500 MHz, 5150–5850 MHz |
| Impedance         | 50 $\Omega$                  |
| Polarization      | Linear                       |
| Radiation Pattern | Omni-directional             |
| VSWR              | $\leq 3.0$                   |
| Peak Gain         | 1.83 dBi                     |

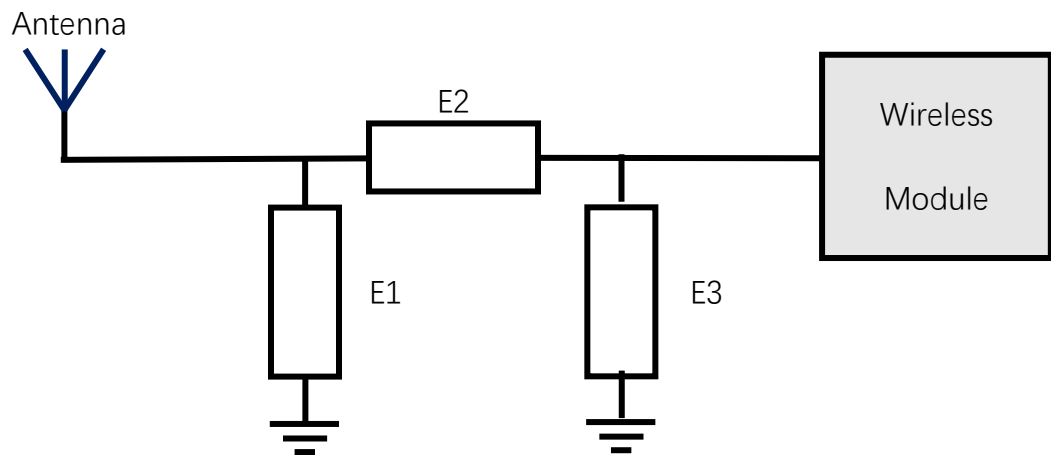
## 1.2. Mechanical & Environmental

| Mechanical                  |                       |
|-----------------------------|-----------------------|
| Antenna Dimensions          | 18 mm × 4 mm × 5.8 mm |
| Material & Color            | SUS304 & Natural      |
| Weight                      | Typ. 0.5 g            |
| Mounting Type               | SMT                   |
| Environmental               |                       |
| Operation Temperature       | -40 °C to +85 °C      |
| Storage Temperature         | -40 °C to +85 °C      |
| RoHS & REACH & HF Compliant | Yes                   |

### 1.3. Antenna Assembly

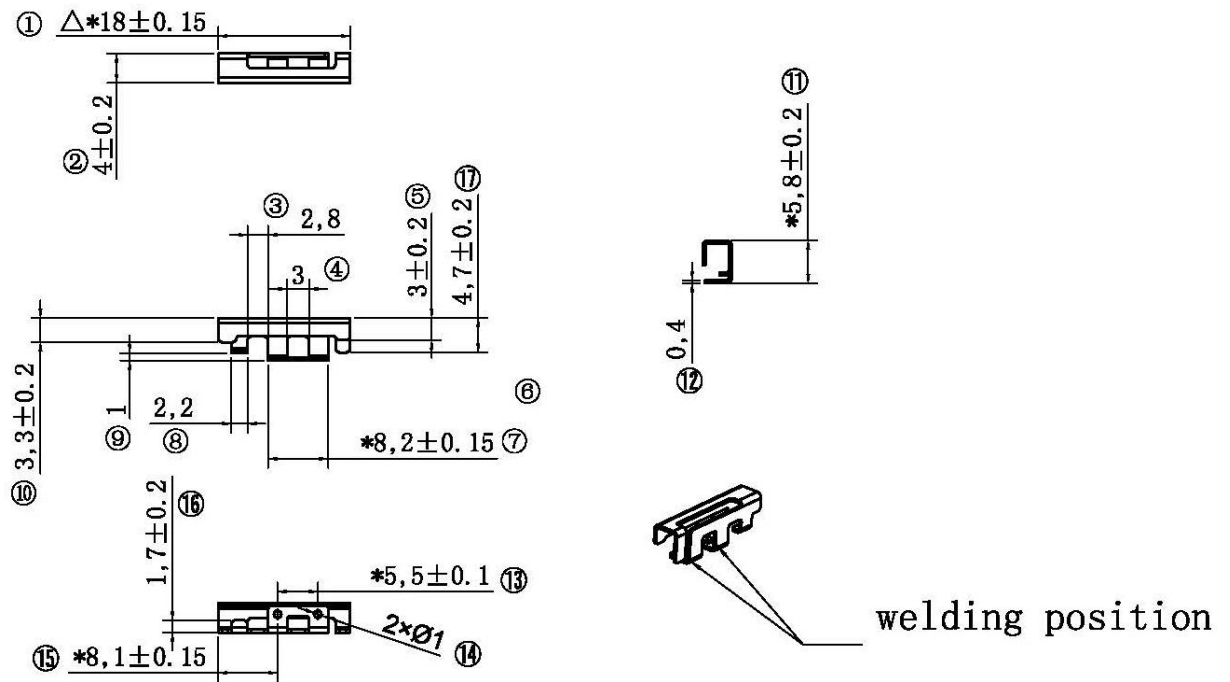


### 1.4. Matching Circuit



|      |                  | E1 | E2    | E3 |
|------|------------------|----|-------|----|
| WIFI | Default Matching | NA | 0 ohm | NA |
|      | Tolerance        | NA | NA    | NA |

## 2 Drawing

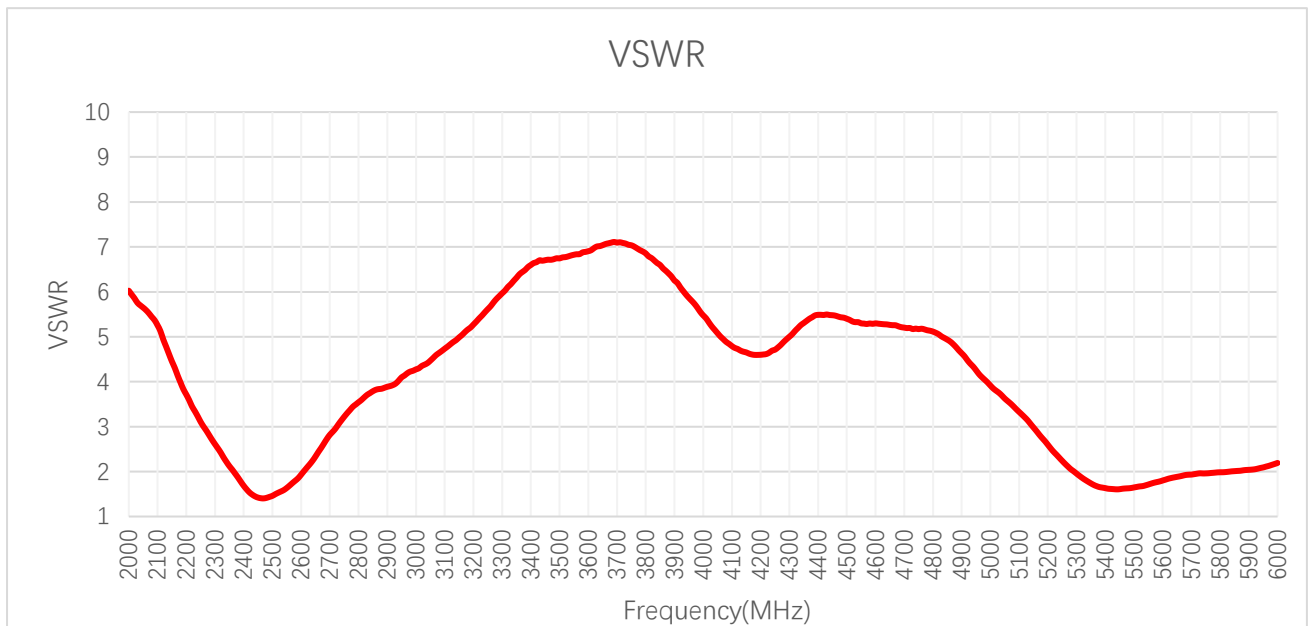


## 3 Detailed Performance

- Network Analyzer: Keysight E5071C (Device number: QTB6331E; Calibration date: 2024-08-27; Due date:2025-04-26)
- Chamber: OTA RayZone 2800 GTS (Device number: QTA0709; Calibration date: 2024-07-14; Due date:2025-07-13)
- Testing Software: Libra
- Antenna type: Wi-Fi Steel Antenna
- Test Engineer: *Damon Zhang*

### 3.1. S-Parameter Test

#### 3.1.1. VSWR



VSWR

| Frequency (MHz) | 2400 | 2450 | 2500 | 5150 | 5300 | 5400 | 5500 | 5700 | 5850 |
|-----------------|------|------|------|------|------|------|------|------|------|
| VSWR            | 1.7  | 1.4  | 1.5  | 3.0  | 2.0  | 1.6  | 1.7  | 1.9  | 2.0  |

## 3.2. Radiation Performance Test

### 3.2.1. Efficiency & Peak Gain

| Frequency (MHz) | Peak Gain (dBi) | Efficiency (%) | Frequency (MHz) | Peak Gain (dBi) | Efficiency (%) |
|-----------------|-----------------|----------------|-----------------|-----------------|----------------|
| 2400            | 1.39            | 46.88          | 5150            | -1.07           | 31.65          |
| 2410            | 1.38            | 47.03          | 5200            | -1.13           | 30.56          |
| 2420            | 1.52            | 47.59          | 5250            | -0.93           | 31.34          |
| 2430            | 1.4             | 47.97          | 5300            | -0.95           | 31.98          |
| 2440            | 1.21            | 48.3           | 5350            | -0.98           | 32.83          |
| 2450            | 1.27            | 49.68          | 5400            | -0.75           | 30.15          |
| 2460            | 1.5             | 50.47          | 5450            | -0.25           | 30.34          |
| 2470            | 1.65            | 51.69          | 5500            | -0.14           | 32.36          |
| 2480            | 1.78            | 51.17          | 5550            | -0.03           | 33.19          |
| 2490            | 1.83            | 51.01          | 5600            | -0.01           | 35.23          |
| 2500            | 1.79            | 51.22          | 5650            | 0.24            | 35.96          |
| MAX             | 1.83            |                | 5700            | 0.32            | 38.16          |
|                 |                 |                | 5750            | 0.46            | 43.01          |
|                 |                 |                | 5800            | 0.41            | 41.54          |
|                 |                 |                | 5850            | 0.42            | 42.57          |
|                 |                 |                | MAX             | 0.46            |                |

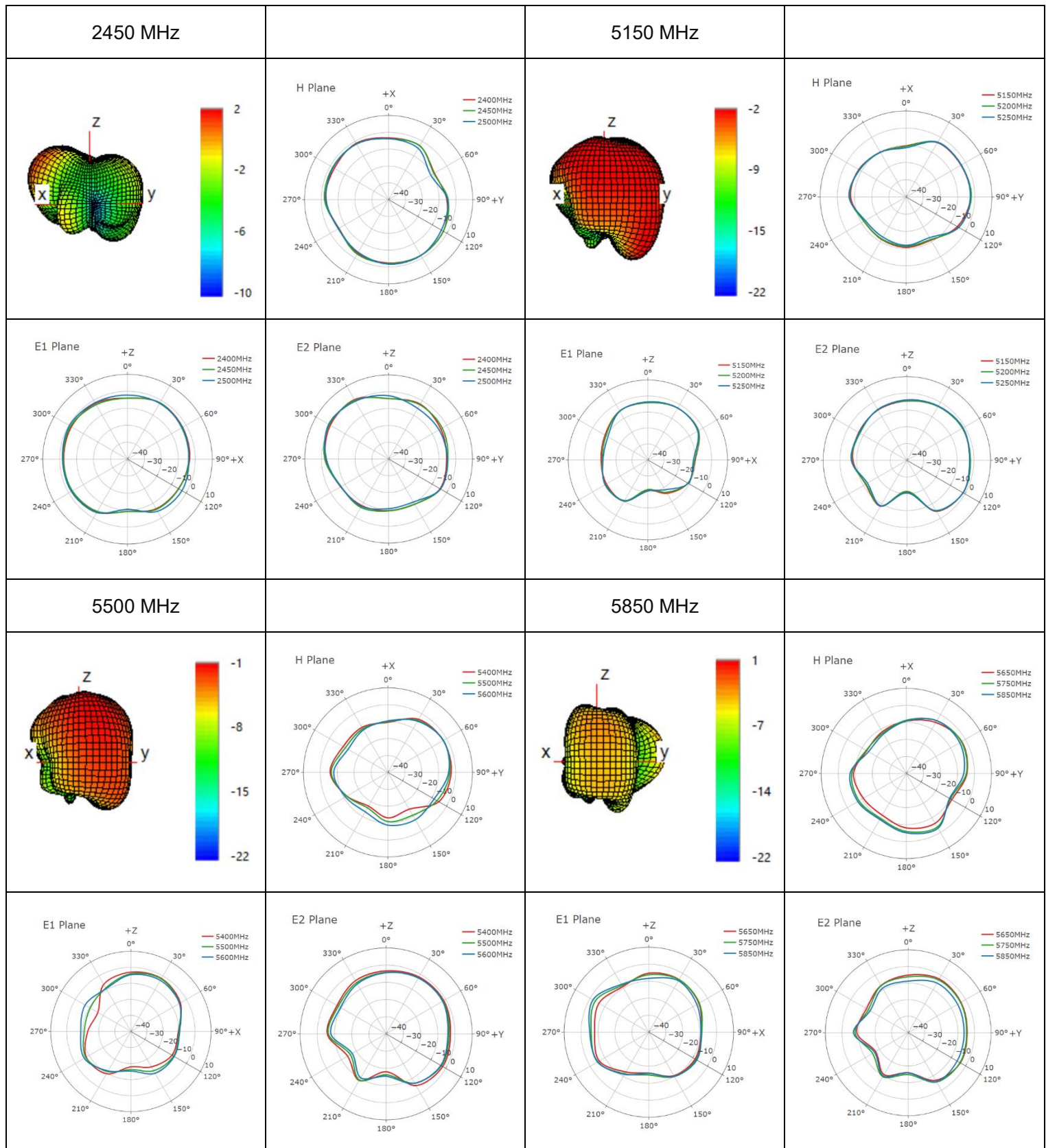
Antenna Type : PIFA Antenna

### 3.2.2. 3D & 2D Radiation Pattern

- Test Condition: Assembled in test device
- Test Chamber: GL-G-1



● **WIFI**



## Contact US

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## Revision History

| Version | Date       | Author                                    | Note                     |
|---------|------------|-------------------------------------------|--------------------------|
| -       | 2024-12-26 | Damon ZHANG/<br>Rojin LUO/<br>Rainey LIAO | Creation of the document |
| 0.1     | 2024-12-26 | Damon ZHANG/<br>Rojin LUO/<br>Rainey LIAO | First official release   |
| 0.2     | 2025-01-02 | Damon ZHANG/<br>Rojin LUO/<br>Rainey LIAO | Add test lab information |



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## NFC Antenna

NFC Frequency Band : 13.553 - 13.567 MHz

Modulation Type : ASK

Supported Card Type : A / B

NFC Antenna Type : Loop Antenna

NFC Antenna size : 96.15\*69.8\*0.5 mm