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# Handheld Thermal Camera (F2W\F2VW) On-board Antenna Datasheet V1.0

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# Contents

|                                         |   |
|-----------------------------------------|---|
| 1. Antenna Features .....               | 2 |
| 1.1 Antenna Structures .....            | 2 |
| 1.2 Specifications and Interfaces ..... | 2 |
| 2. Test Environment .....               | 3 |
| 2.1 Test Equipment .....                | 3 |
| 2.2 Test Results .....                  | 4 |
| Return Loss (S11) .....                 | 4 |
| Antenna Direction .....                 | 5 |
| Antenna Efficiency .....                | 7 |
| Revision History .....                  | 7 |

# 1. Antenna Features

This data sheet describes the tests of the 2.4 GHz Wi-Fi antenna's physical properties and electrical capabilities.

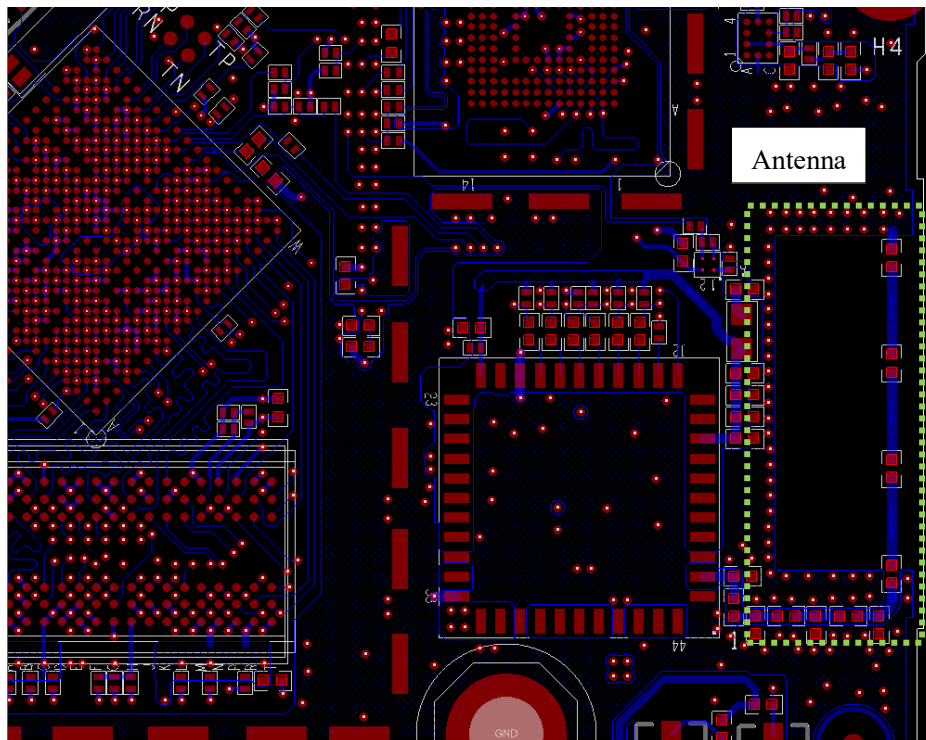


Figure 1-1 Antenna

## 1.1 Antenna Structures

The antenna is formed of the on-board routing of PCB.

## 1.2 Specifications and Interfaces

| Design Specifications | Typical                             |
|-----------------------|-------------------------------------|
| Antenna Type          | Printed Circuit Board (PCB) Antenna |
| Working Frequency     | 2400 to 2500 MHz                    |
| Gain                  | 2.5 dB                              |
| Antenna efficiency    | 40 %                                |
| VSWR                  | < 3                                 |
| Polarization          | Linear Polarization                 |
| Axial Ratio           | N/A                                 |
| Radiation Pattern     | Omnidirectional                     |
| Impedance             | 50 ohm                              |
| Power Handling        | 33 dBm                              |
| Interface             | N/A                                 |
| Overall Dimensions    | 15.16 mm*5.26 mm                    |

| Design Specifications | Typical       |
|-----------------------|---------------|
| Weight                | N/A           |
| Operating Temperature | -30°C to 70°C |
| Storing Temperature   | -30°C to 70°C |

## 2. Test Environment

### 2.1 Test Equipment

The test of the antenna is performed by ROHDE&SCHWARZ ZNB 20 vector network analyzer.

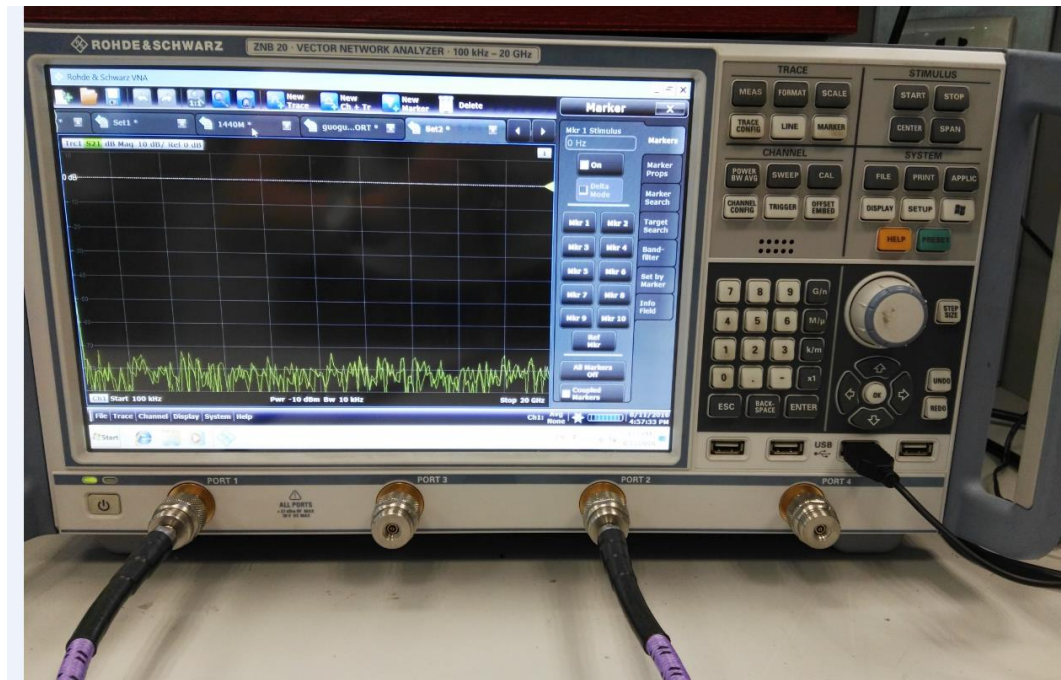


Figure 2-1 Vector Network Analyzer

## 2.2 Test Results

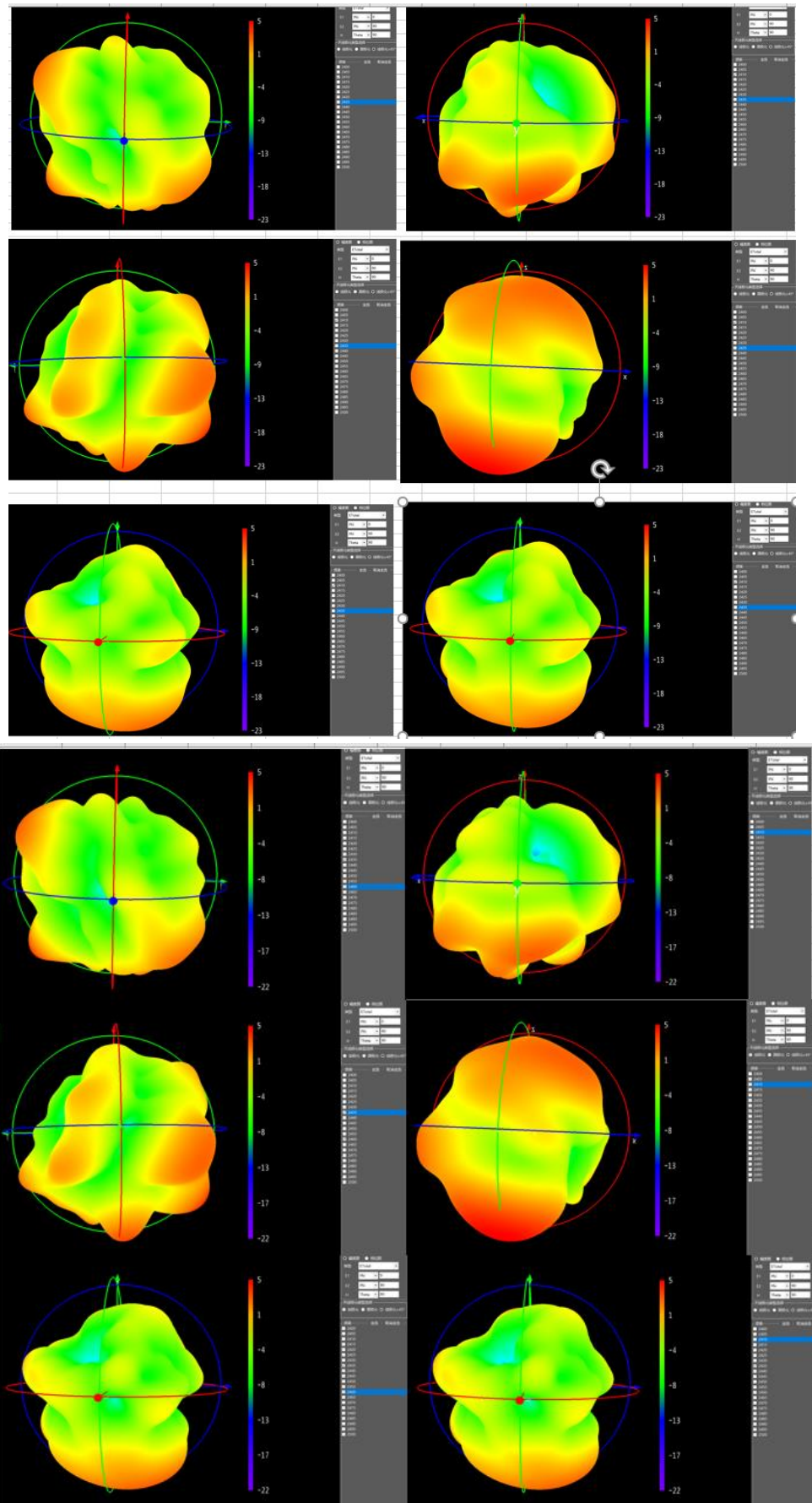
### Return Loss (S11)

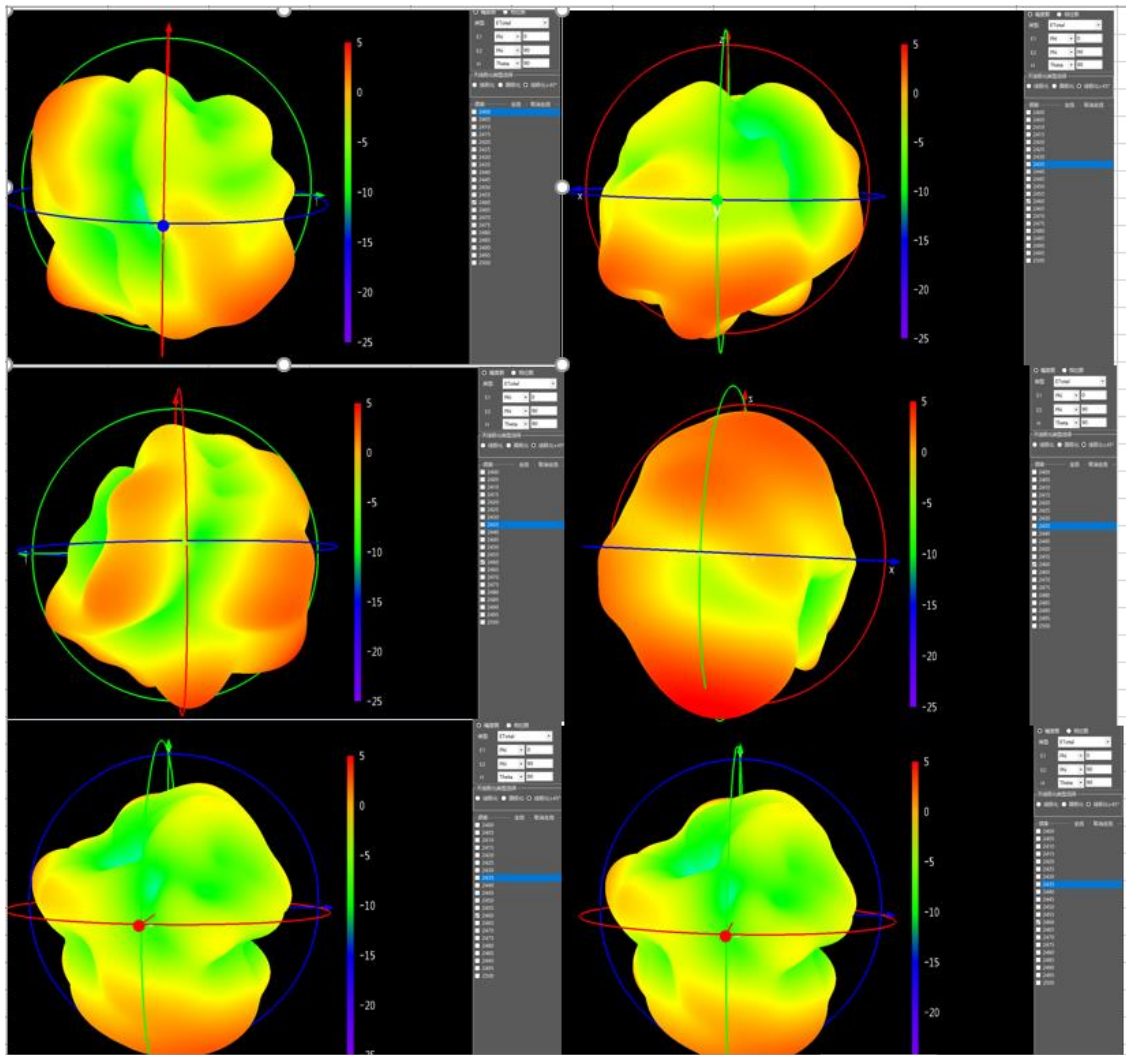


Figure 2-2 Return Loss

The data above indicates that the antenna's resonance and impedance matching perform well.

## Antenna Direction





## Antenna Efficiency

| A                    | B               | F                        | G                   | H                       |
|----------------------|-----------------|--------------------------|---------------------|-------------------------|
|                      |                 | Gain&Efficiency<br>增益和效率 |                     |                         |
| frequency<br>频率(MHz) | gain<br>增益(dBi) | efficiency<br>效率(dBi)    | efficiency<br>效率(%) | lowerhemisphere<br>gain |
| 2400                 | 2.1             | -4.13                    | 38.65               | 2.1                     |
| 2405                 | 2.05            | -4.29                    | 37.24               | 2.05                    |
| 2410                 | 2.38            | -4.08                    | 39.11               | 2.38                    |
| 2415                 | 2.47            | -4.1                     | 38.94               | 2.47                    |
| 2420                 | 2.59            | -4.02                    | 39.65               | 2.59                    |
| 2425                 | 2.84            | -3.79                    | 41.82               | 2.84                    |
| 2430                 | 2.61            | -3.99                    | 39.89               | 2.61                    |
| 2435                 | 2.56            | -4                       | 39.82               | 2.56                    |
| 2440                 | 2.56            | -3.93                    | 40.42               | 2.56                    |
| 2445                 | 2.79            | -3.65                    | 43.18               | 2.79                    |
| 2450                 | 2.41            | -4.02                    | 39.64               | 2.41                    |
| 2455                 | 2.28            | -4.15                    | 38.50               | 2.28                    |
| 2460                 | 2.43            | -4.05                    | 39.35               | 2.43                    |
| 2465                 | 2.56            | -3.99                    | 39.87               | 2.56                    |
| 2470                 | 2.59            | -4.04                    | 39.43               | 2.59                    |
| 2475                 | 2.43            | -4.27                    | 37.45               | 2.43                    |
| 2480                 | 2.66            | -4.07                    | 39.16               | 2.66                    |
| 2485                 | 2.79            | -3.91                    | 40.62               | 2.79                    |
| 2490                 | 2.51            | -4.1                     | 38.88               | 2.51                    |
| 2495                 | 2.44            | -4.05                    | 39.40               | 2.44                    |
| 2500                 | 2.41            | -3.92                    | 40.54               | 2.41                    |

## Revision History

| Version | Changes         | DATE     | Editor |
|---------|-----------------|----------|--------|
| V1.0    | First released. | 9/3/2021 |        |
|         |                 |          |        |