

Antenna Specifications

ShenZhen Emerycomm wireless Technologies CO., LTD.

深圳市铱讯科技有限公司 产品规格书

| | | | |
|-------------------------|----------------|-----------------------|-------------------|
| Customer | / | Mode | WIFI |
| Project | M4 | Frequency band | 2.4G WIFI |
| Color | NA | Revision | P01 |
| Design | Rentz | Date | 2024-05-15 |
| Check | Vincent | Date | 2024-05-15 |
| Approve | Kevin | Date | 2024-05-15 |
| Customer Approve | | Date | |

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1. General

1.1 Product Description

This antenna product consists of a fixed internal antenna which consisting of an FPC antenna. They are used in a portable unit for wireless communication (called walkie-talkies). The walkie-talkie uses a WIFI antenna and works in the 2.4G WIFI band.



Figure1-1 The pictures of the device

1.2 Product Part Number

Emery Product Part Number: 10100700166

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2. Electrical Properties

2.1 Frequency Band

WIFI: 2.4G

2.2 Test Environment

R&S ZND VNA is used to test return loss. SUNYIELD 3D near filed chamber is used to test antenna efficiency and active data.

2.2.1 Methods of passive measurements

One end of the 50-ohm coaxial cable is connected to the S11 and the other end to the SMA connector of the PCB board.

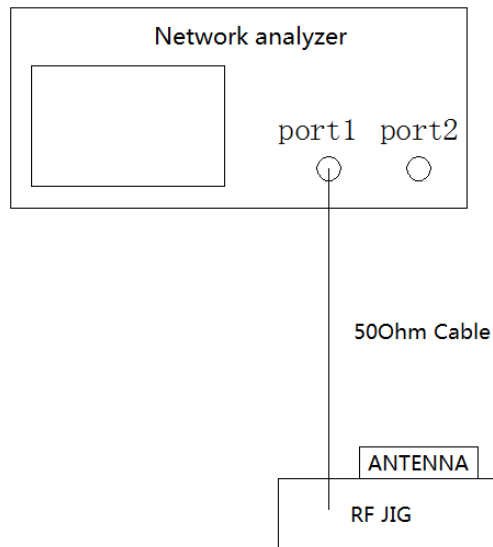


Figure 2-1 The Methods of passive measurements

2.2.2 Methods of active measurements

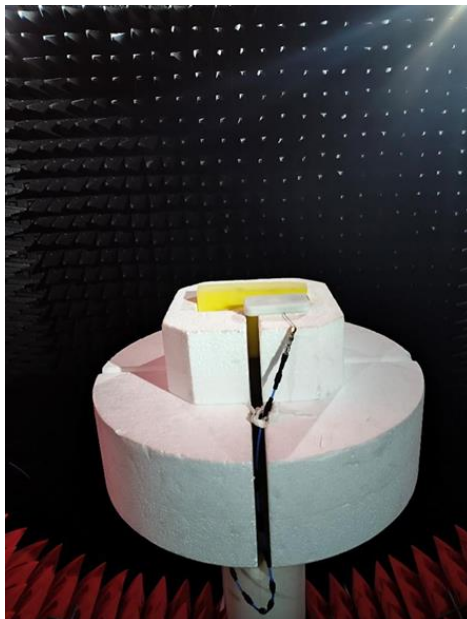


Figure 2-2 The Methods of active measurements

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2.3 Passive Specifications

2.3.1 Return Loss

Use network analyzer to test return loss. Test the FPC antenna return loss.

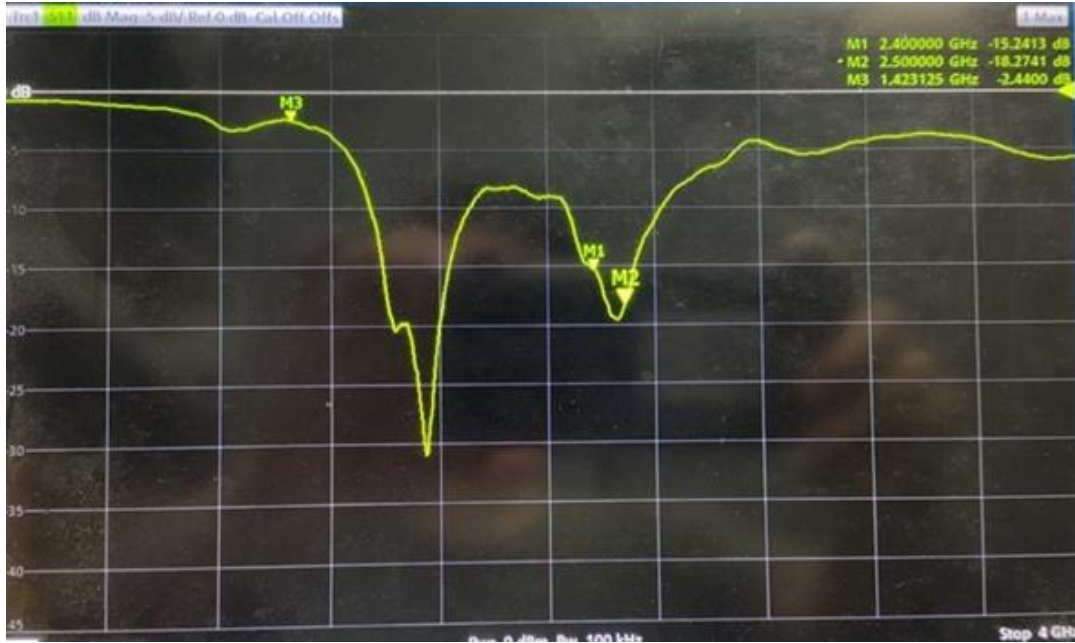


Figure2-3 Return loss of wifi antenna

2.3.2 Efficiency Specifications (Free Space)

Chambers which complies with CTIA criteria is used in Emery to measure antenna parameters such as antenna efficiency, Gain. Table 2-4 is the efficiency of the typical sample.

| Fre(MHz) | Gain(dBi) | Eff(dB) | Eff(%) |
|----------|-----------|---------|--------|
| 2400 | 3.33 | -2.13 | 61.2 |
| 2410 | 3.36 | -2.02 | 62.85 |
| 2420 | 3.39 | -1.98 | 63.4 |
| 2430 | 3.35 | -1.96 | 63.72 |
| 2440 | 3.31 | -1.91 | 64.37 |
| 2450 | 3.29 | -1.87 | 65.02 |
| 2460 | 3.41 | -1.83 | 65.67 |
| 2470 | 3.61 | -1.82 | 65.83 |
| 2480 | 3.59 | -1.87 | 64.97 |
| 2490 | 3.73 | -1.86 | 65.21 |
| 2500 | 3.89 | -1.74 | 66.92 |

Table2-4 The efficiency of Wifi antenna

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2.3.3 3D Radiation (Free Space)

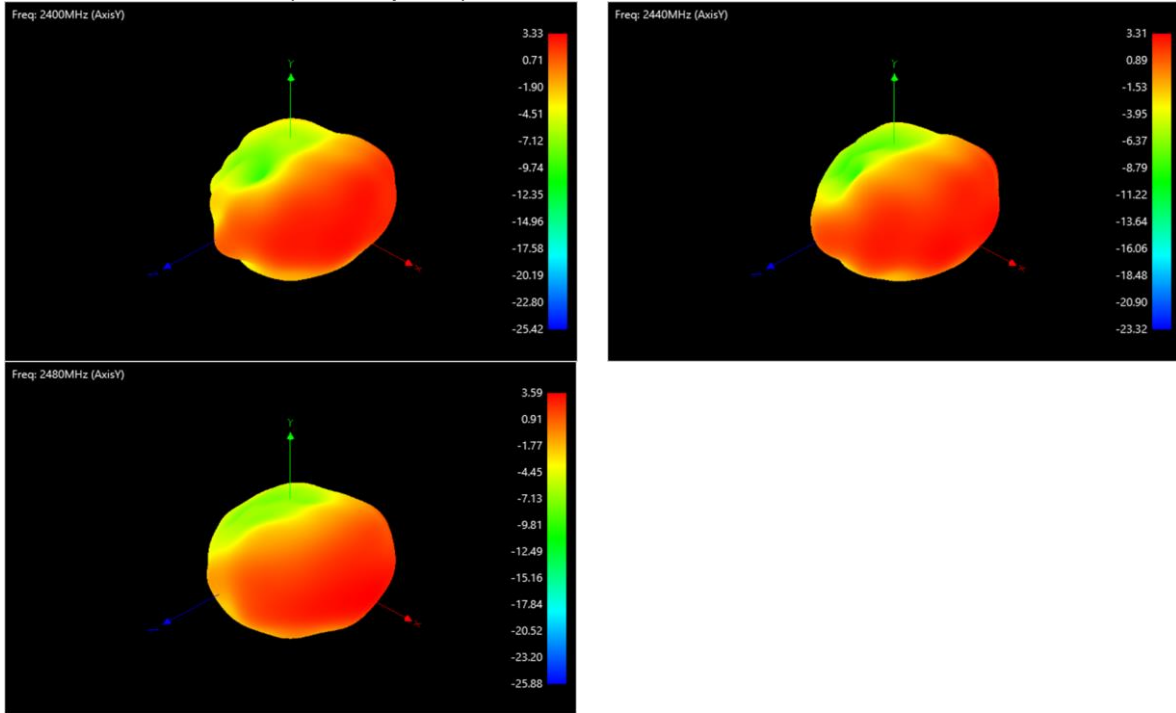


Table2-5 3D Radiation

2.4 Active Specifications

| Mode | Fre(MHz) | Channel | TRP | TIS |
|---------------------------|----------|---------|-------|--------|
| 11B TRP 11M TIS 11M | 2402 | 0 | 16.29 | -86.21 |
| | 2441 | 39 | 15.37 | -84.8 |
| | 2480 | 78 | 14.19 | -83.32 |

Table2-6 Wifi antenna active dat0061

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3. Mechanical Properties

3.1 Specifications Drawings

