



Report No.: SHATBL2304021

# OTA TEST REPORT

## Client Information:

Manufacturer.....: Shanghai AllyNav Technology Co.,Ltd.

Address add.....: Room 201, Building #1, No. 99, Lane 215, Gaoguang Road, Qingpu District, Shanghai 201702 P.R.C

Product Name.....: GNSS Receiver

Model Name.....: R61-1

Date of Test.....20 Jun. 2023

Date of Issue.....20 Jun. 2023

Report Prepared by :

Qi Jiao Zhao

(qiyaozhao)

Report Approved by :

Leo Li

(leo Li)



"Shanghai ATBL Technology Co., Ltd." hereby certifies that the test results described in the company's standard test site test report and the structure of the test equipment are recorded in detail based on the actual test situation. The test results of this report are only applicable to the above-mentioned tested prototypes and the equipment described in the report. This report is not allowed to be copied without the written consent of Shanghai ATBL Technology Co.,

Ltd.;Shanghai ATBL Technology Co., Ltd.

Building 8, No. 160 Basheng road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai

Tel: +86(0)21-51298625 Web: www.atbl-lab.com

## Table of Contents

|                                      |    |
|--------------------------------------|----|
| Revision History-----                | 3  |
| 1. Device list -----                 | 4  |
| 2. Sample photo -----                | 5  |
| 3. Test layout-----                  | 6  |
| 4. Results Summary -----             | 7  |
| 5. Radiation Pattern/Efficiency----- | 8  |
| 6. Standing Wave Ratio Test-----     | 14 |

## Revision History

| Rev. | Issue Date   | Report No.    | Effect Page | Contents      |
|------|--------------|---------------|-------------|---------------|
| 00   | 20 Jun. 2023 | SHATBL2306002 | ALL         | Initial Issue |
|      |              |               |             |               |

## 1. Device list

| Equipment              | Manufacturer | Model  | Cal. Date    | Cal. Due     |
|------------------------|--------------|--------|--------------|--------------|
| TEST RECEIVER          | R&S          | ESPI   | Nov 10, 2022 | Nov 09, 2023 |
| CMW500                 | R&S          | CMW500 | Nov 10, 2022 | Nov 09, 2023 |
| Network Analyzer       | AGILENT      | E5071C | Nov 10, 2022 | Nov 09, 2023 |
| Frequency Spectrograph | AGILENT      | N9020A | Nov 10, 2022 | Nov 09, 2023 |

## 2.Sample photo



### 3.Test layout



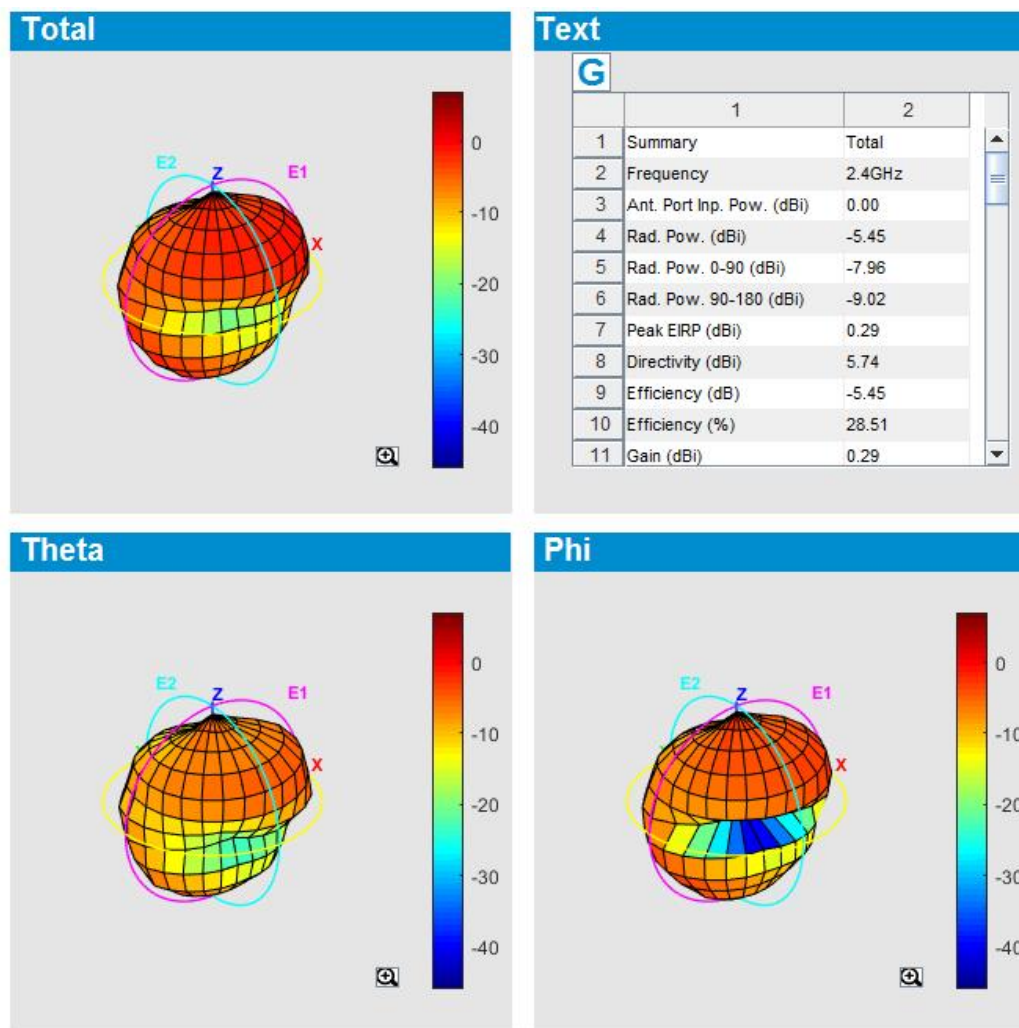
## 4. Results Summary

### Overview

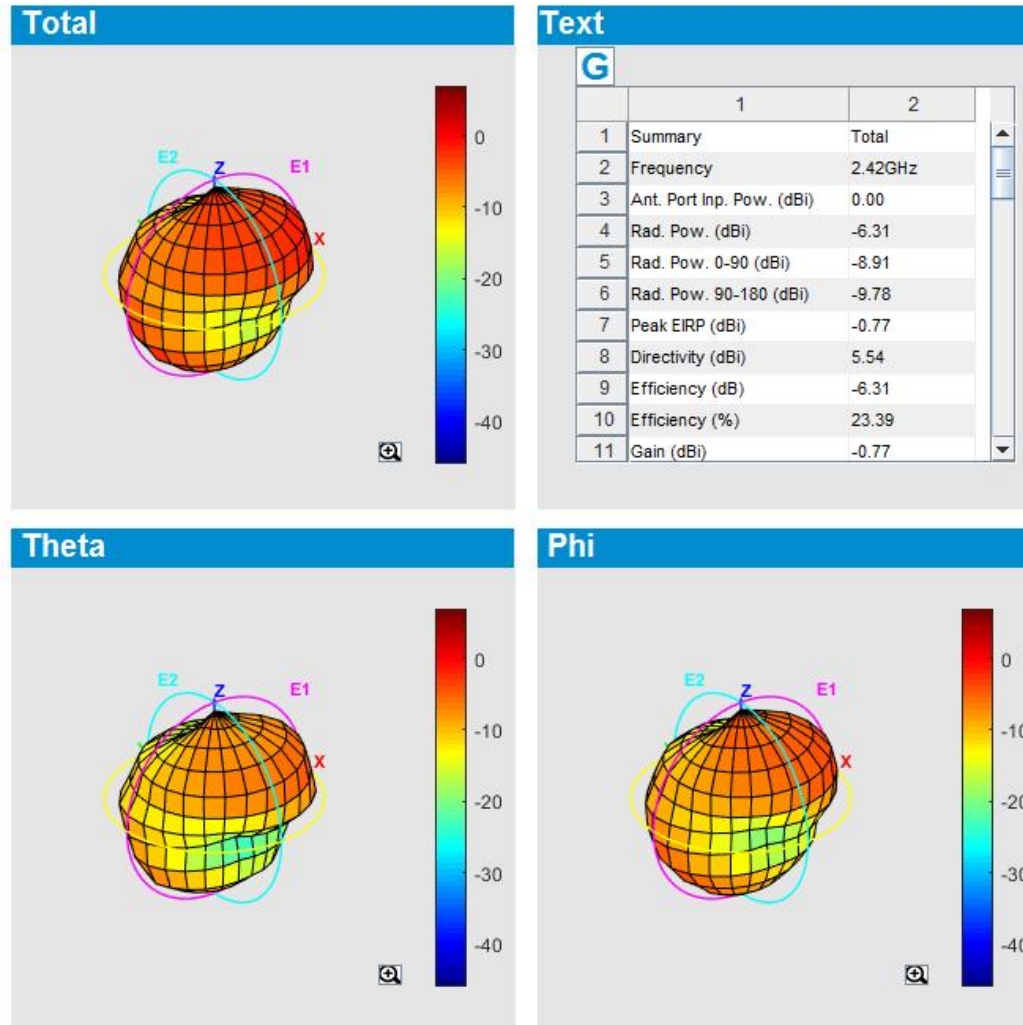
| Test / Position       | Free Space  |             |             |             |             |             |             |             |             |             |             |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Communication System  | Gain        |             |             |             |             |             |             |             |             |             |             |
| frequency             | 2400        | 2410        | 2420        | 2430        | 2440        | 2450        | 2460        | 2470        | 2480        | 2490        | 2500        |
| <b>Avg Gain</b>       | <b>-5.5</b> | <b>-5.7</b> | <b>-6.3</b> | <b>-5.5</b> | <b>-4.9</b> | <b>-5.3</b> | <b>-6.0</b> | <b>-6.3</b> | <b>-6.1</b> | <b>-5.3</b> | <b>-4.6</b> |
| Peak Gain             | 0.3         | -0.1        | -0.8        | -0.4        | 0.1         | -0.1        | -0.6        | -0.8        | -0.6        | 0.4         | 1.2         |
| Directivity           | 5.7         | 5.6         | 5.5         | 5.1         | 5.0         | 5.2         | 5.5         | 5.5         | 5.5         | 5.8         | 5.8         |
| Efficiency            | -5.5        | -5.7        | -6.3        | -5.5        | -4.9        | -5.3        | -6.0        | -6.3        | -6.1        | -5.3        | -4.6        |
| <b>Efficiency (%)</b> | <b>28.5</b> | <b>26.7</b> | <b>23.4</b> | <b>28.3</b> | <b>32.5</b> | <b>29.6</b> | <b>25.0</b> | <b>23.5</b> | <b>24.4</b> | <b>29.3</b> | <b>35.0</b> |
| Gain                  | 0.3         | -0.1        | -0.8        | -0.4        | 0.1         | -0.1        | -0.6        | -0.8        | -0.6        | 0.4         | 1.2         |
| Note                  |             |             |             |             |             |             |             |             |             |             |             |

## 5. Radiation Pattern/Efficiency

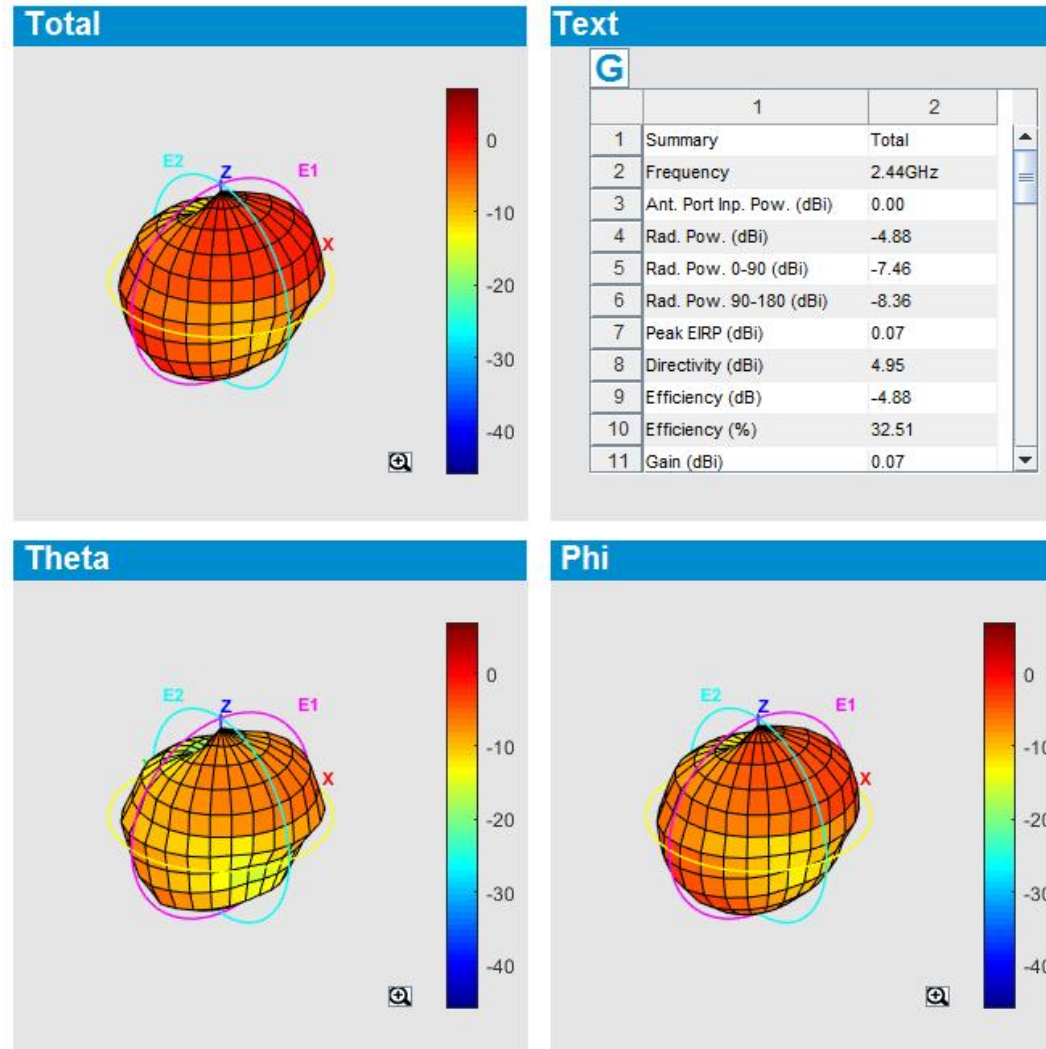
2.4GHz



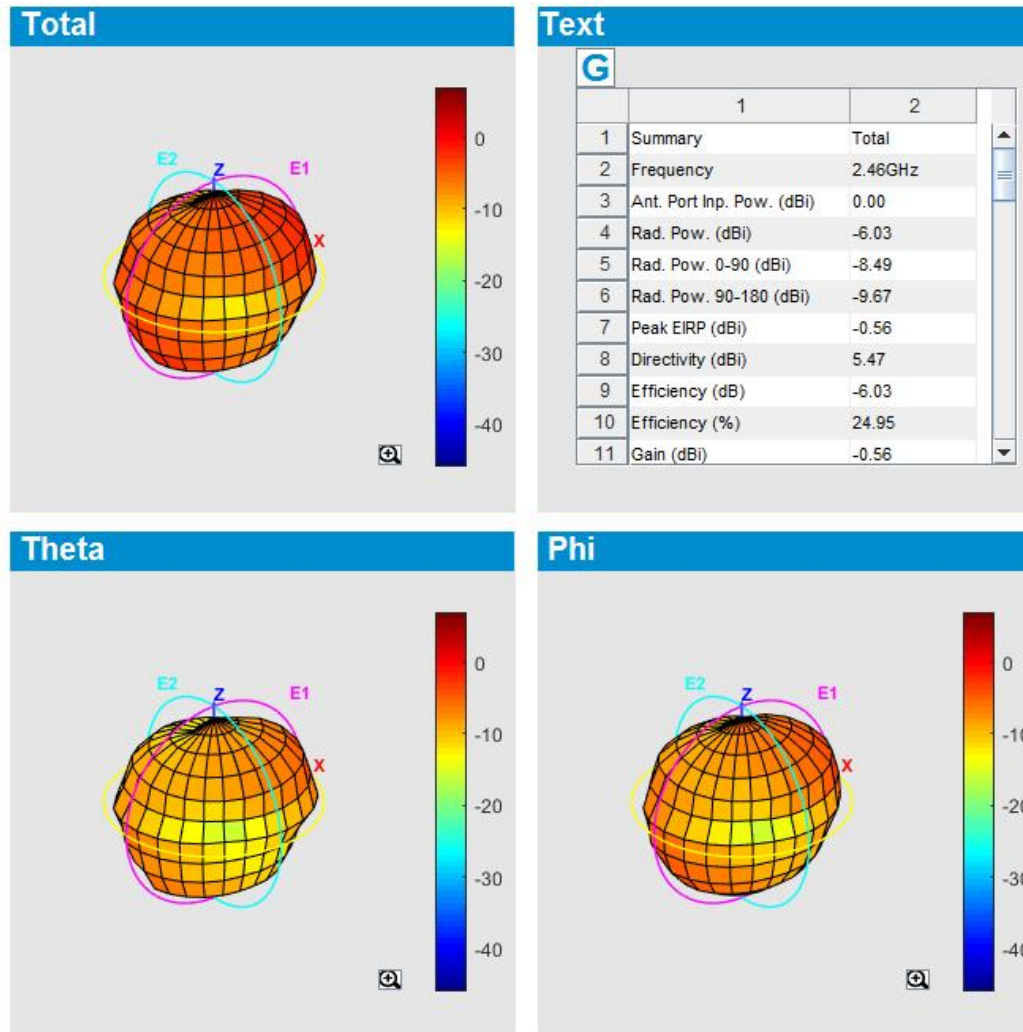
## 2.42GHz



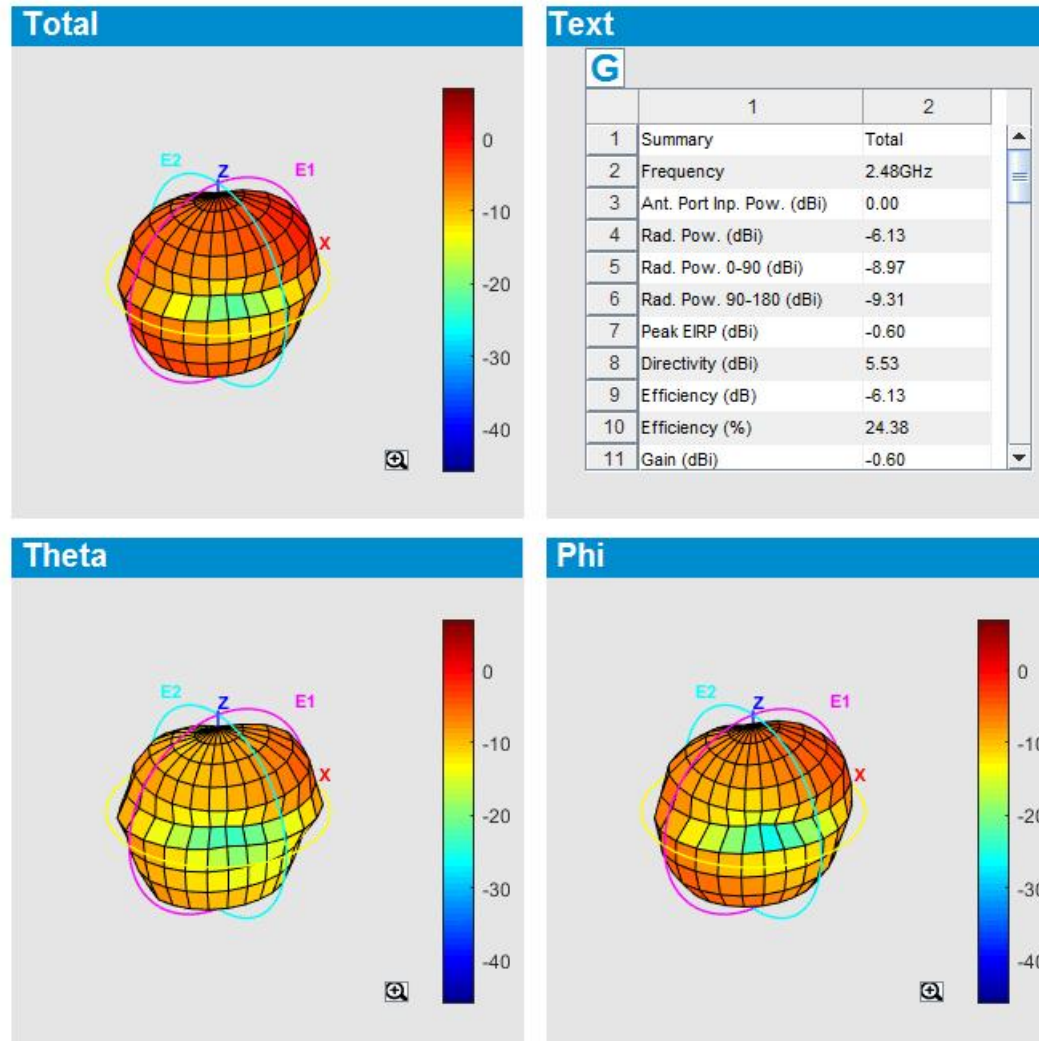
## 2.44GHz



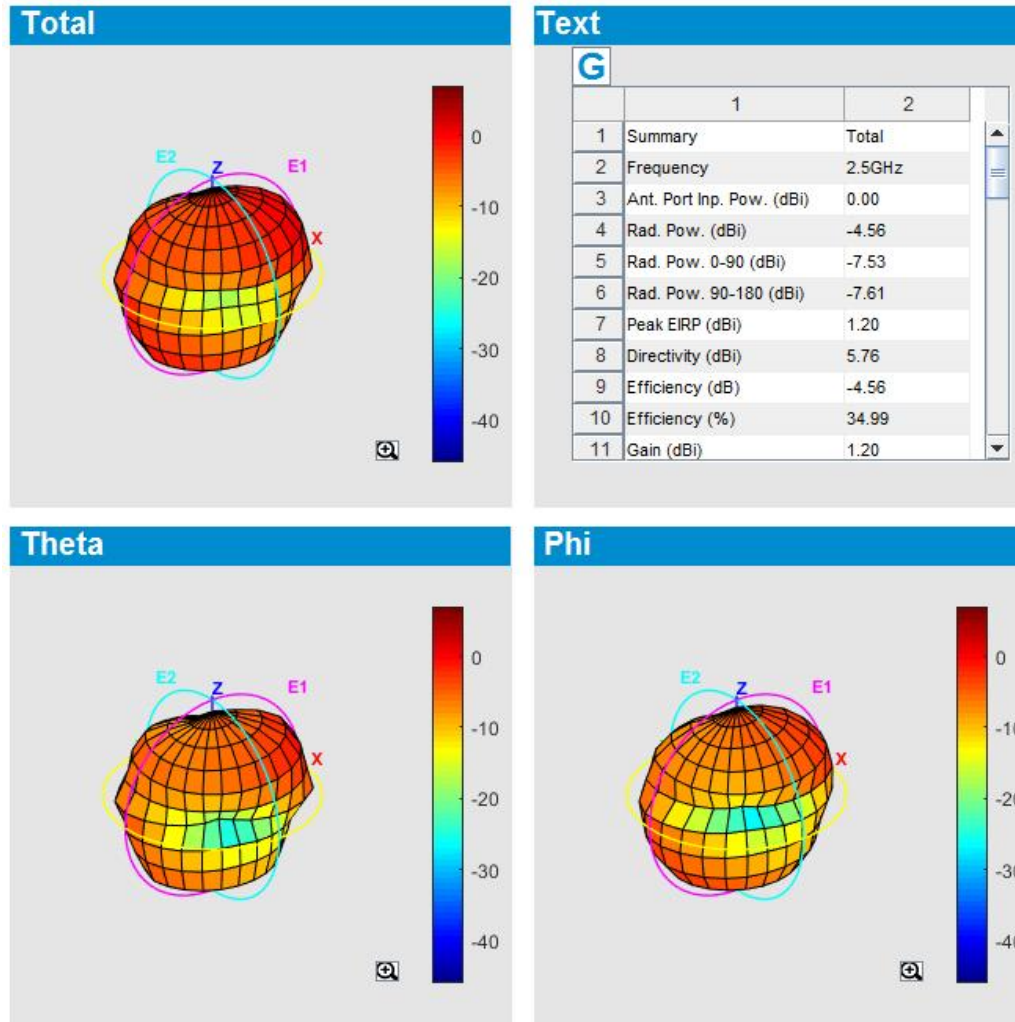
## 2.46GHz



## 2.48GHz



## 2.5GHz



## 6. Standing Wave Ratio Test

### SWR

