

# ***RF antenna assembly\_external\_ WiFi2\_5G\_single\_omni\_4dBi Antenna test report***

*Document Number: -*

*Version: **V 1.00***

*Released Date: **2022/11/23***

*Prepared By: **Anton***

*Reviewed By: **J.H.***

# Contents

- Revised History
- Specification
- Antenna Placement & Solution
- VSWR Results
- Test Setup for Radiation Pattern Measurement
- 2D Radiation Pattern Results
- Results Summary (peak gain, efficiency )

# Revision History

| Released Date | Version | Revised Record  |
|---------------|---------|-----------------|
| 2022/11/23    | 1.00    | Initial version |
|               |         |                 |
|               |         |                 |
|               |         |                 |
|               |         |                 |
|               |         |                 |
|               |         |                 |

# Specification

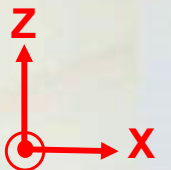
## Requirements of Antenna Design

| RF Function | Number of ANT | Frequency Band            | Remark |
|-------------|---------------|---------------------------|--------|
| WiFi2_5G    | 1             | 2400~2500 / 5150~5850 MHz |        |
|             |               |                           |        |
|             |               |                           |        |
|             |               |                           |        |
|             |               |                           |        |

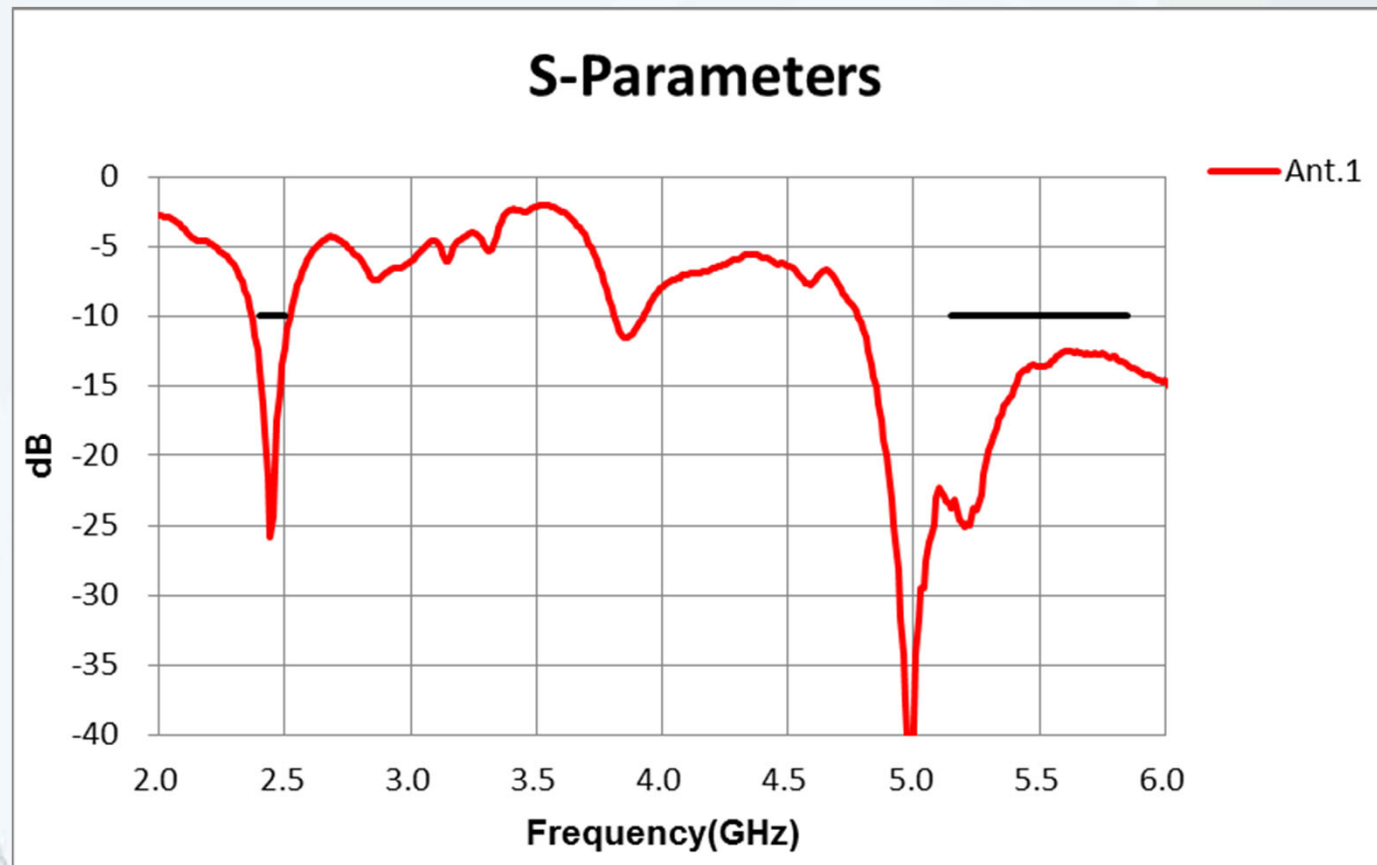
## Requirements of Measurement

| Test Item         | Specification                            | Remark |
|-------------------|------------------------------------------|--------|
| Return loss       | 9 dB Min.                                |        |
| Polarization      | Linear; Vertical                         |        |
| Peak gain         | 2400~2500MHz <3.4 / 4900~5825MHz <4.2dBi |        |
| Efficiency        | >50%                                     |        |
| Radiation pattern | Scale: +10~ -40dBi                       |        |

# Antenna Placement & Solution

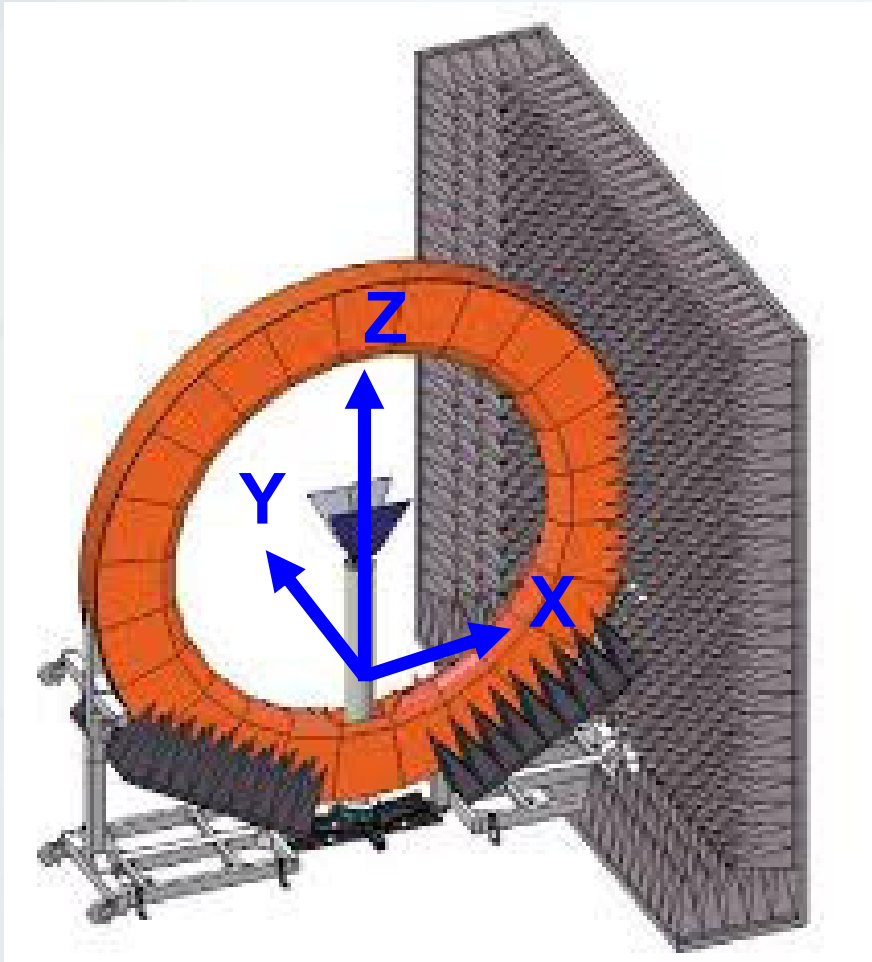


# VSWR Results



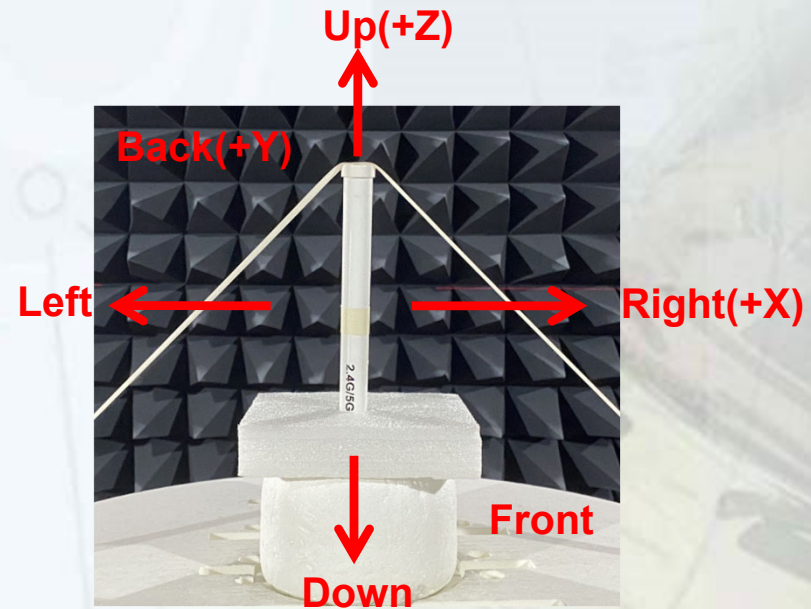
# Test Setup for Radiation Pattern Measurement

## Chamber Information



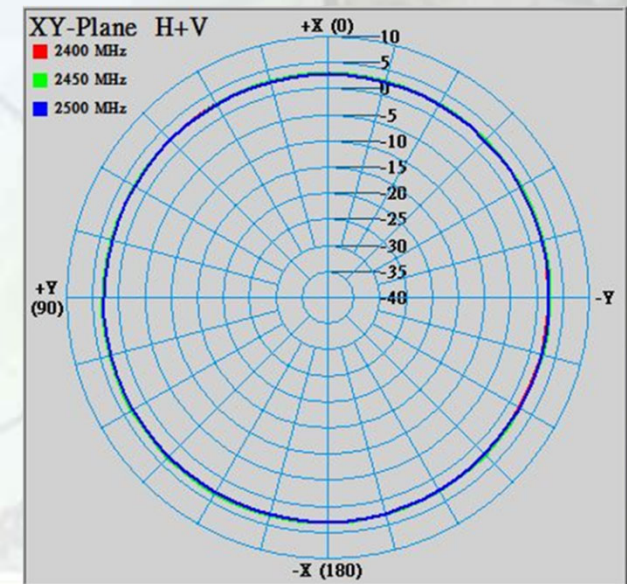
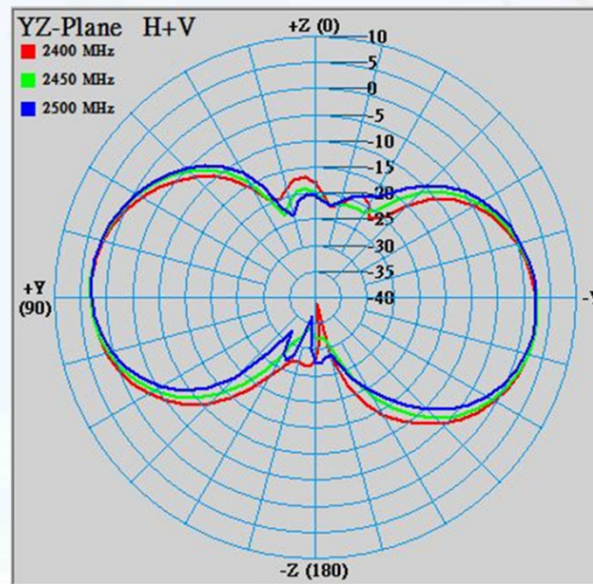
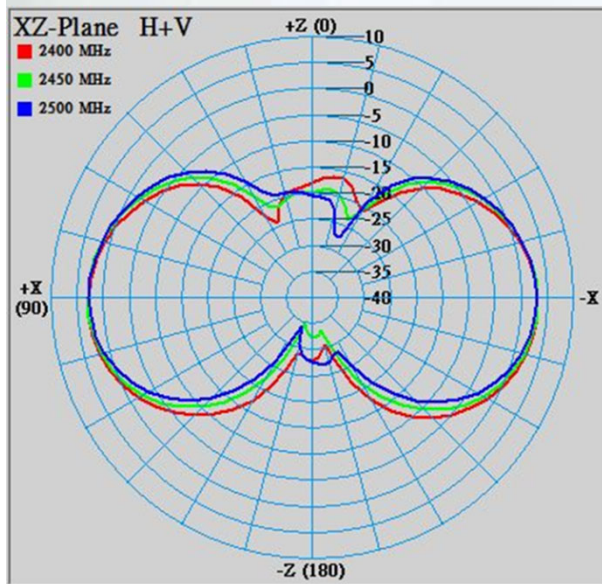
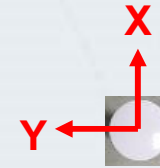
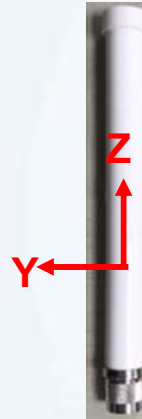
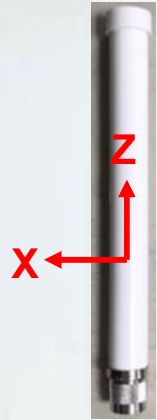
- **SATIMO SG-24L Multi-Probe Antenna Measurement System**

- Angle between probes:  $15^\circ$
- Frequency range: 400 MHz – 9 GHz
- Chamber Room Size: 5m L x 5m W x 5m H



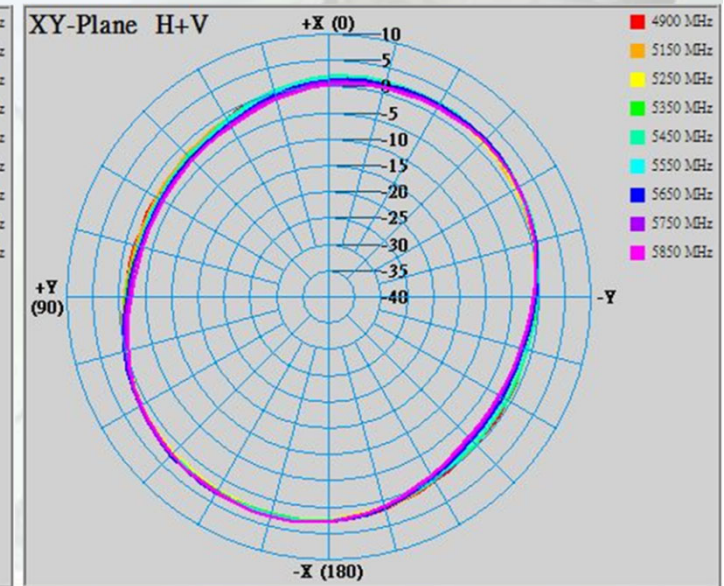
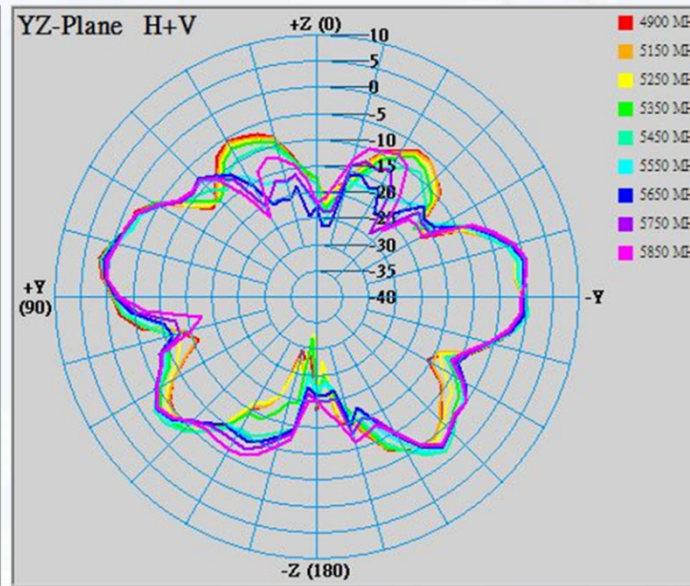
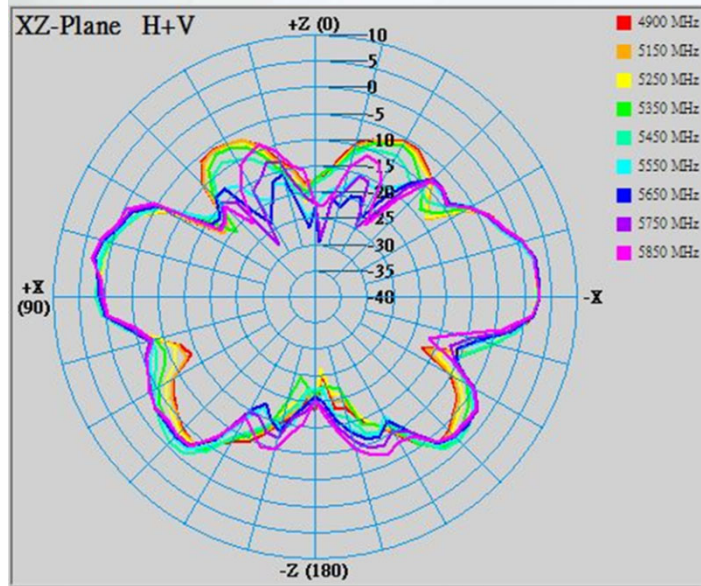
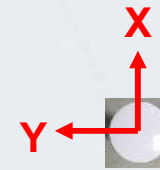
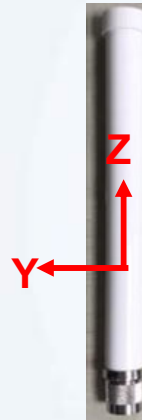
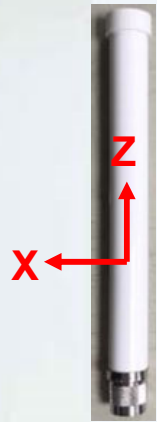
# 2D Radiation Pattern Results

2400-2500 MHz



# 2D Radiation Pattern Results

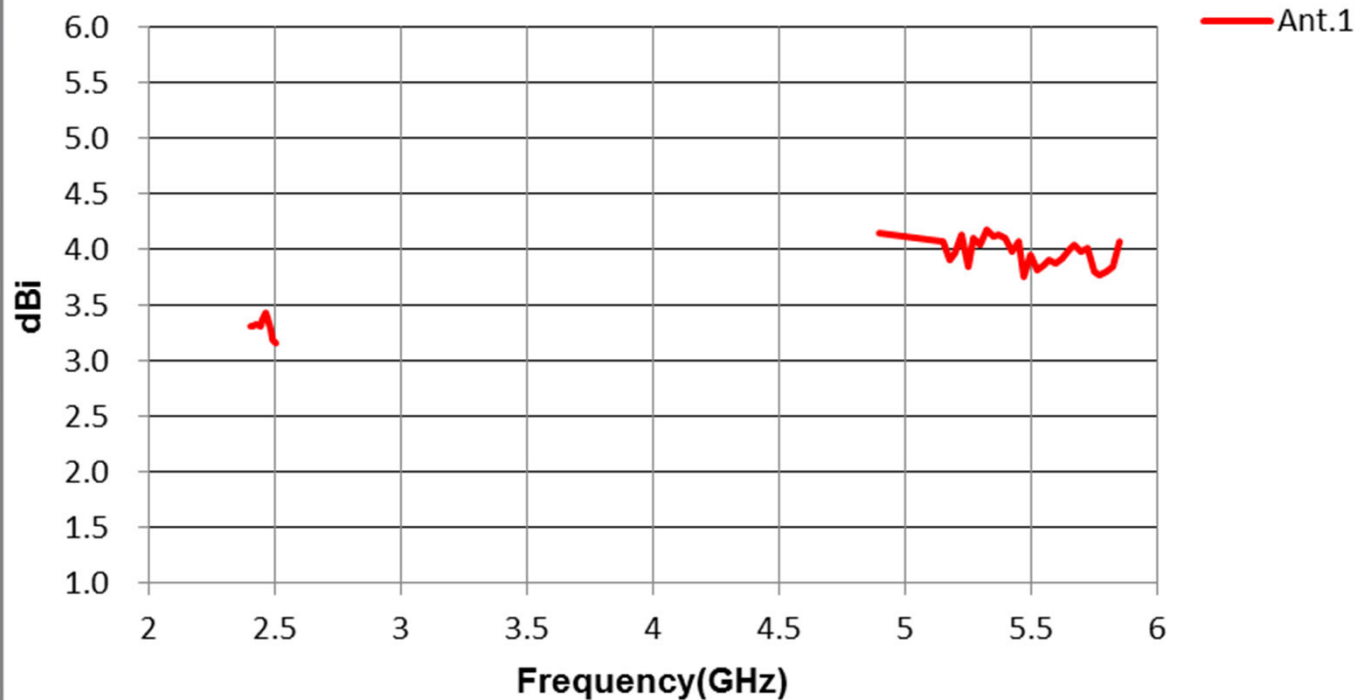
5150-5850 MHz



# Results Summary

## Peak gain

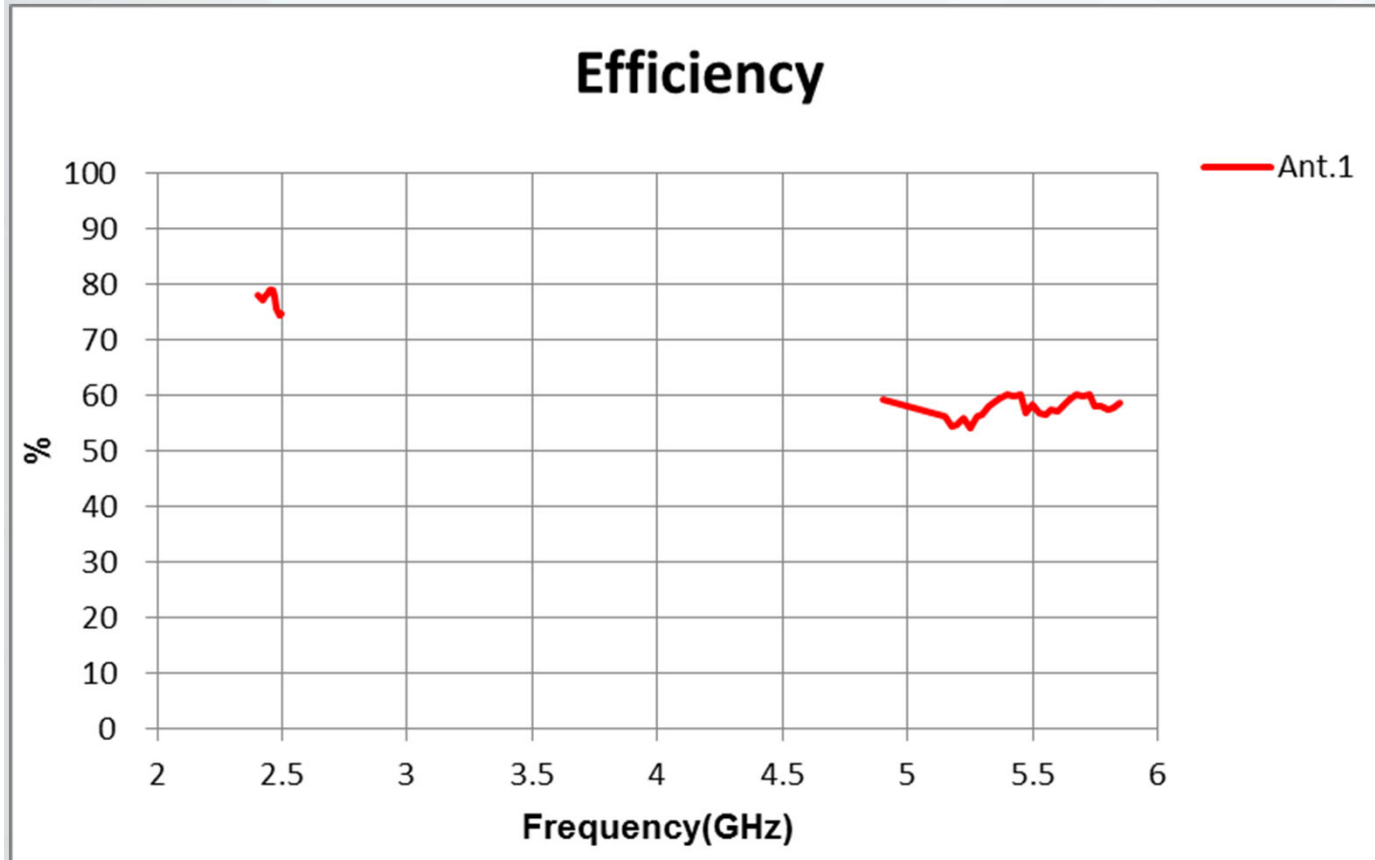
**Peak Gain**



| Frequency (MHz) | Ant1 Gain(dBi) |
|-----------------|----------------|
| 2400            | 3.30           |
| 2450            | 3.36           |
| 2500            | 3.15           |
| 4900            | 4.15           |
| 5150            | 4.08           |
| 5250            | 3.85           |
| 5350            | 4.12           |
| 5450            | 4.07           |
| 5550            | 3.87           |
| 5650            | 4.00           |
| 5750            | 3.80           |
| 5850            | 4.08           |

# Results Summary

## Efficiency



| Frequency (MHz) | Ant1 Efficiency(%) |
|-----------------|--------------------|
| 2400            | 78                 |
| 2450            | 79                 |
| 2500            | 75                 |
| 4900            | 59                 |
| 5150            | 56                 |
| 5250            | 54                 |
| 5350            | 59                 |
| 5450            | 60                 |
| 5550            | 57                 |
| 5650            | 59                 |
| 5750            | 58                 |
| 5850            | 59                 |