

# 連騰科技

## 股份有限公司

**Advanced Wireless & Antenna Inc.**

### XAC

# Chase Card Reader test report

No.888, Hua-Yuan Road, Zhang-Pu Town,  
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TEL: 86-512-5744-6616

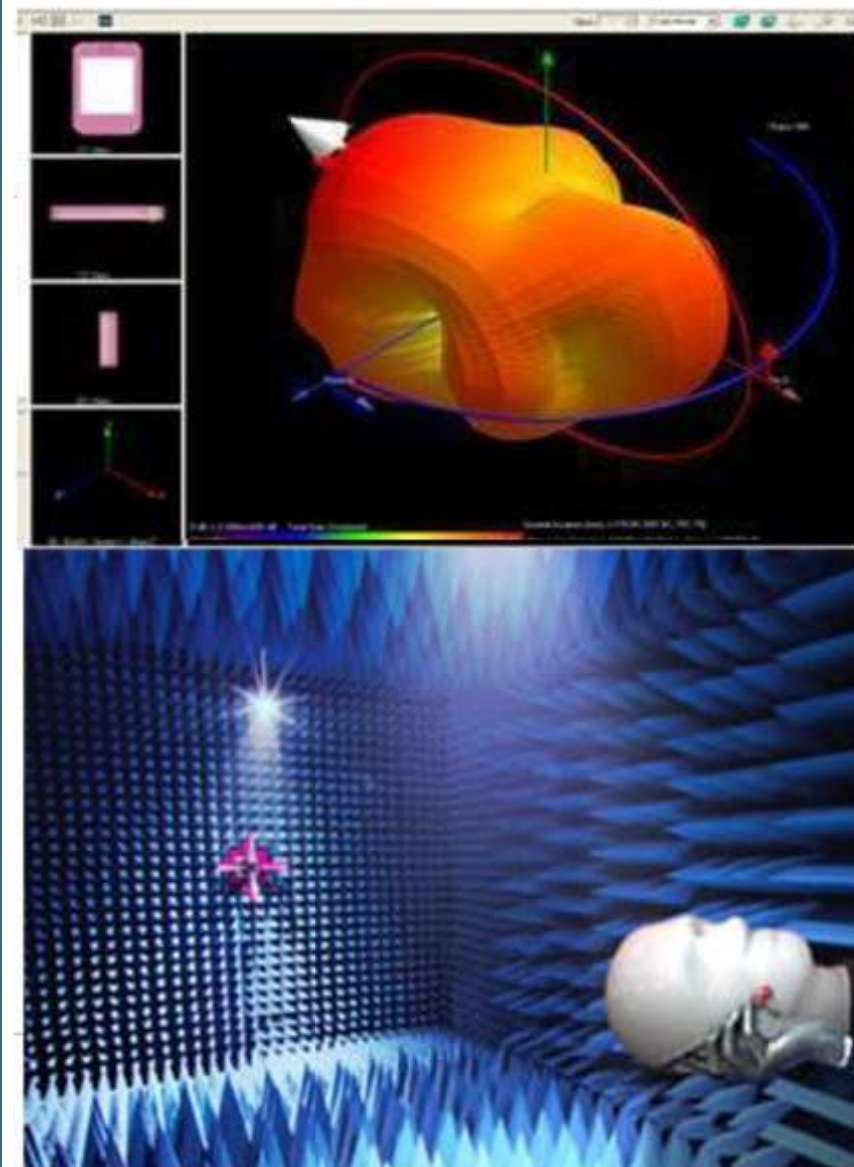
FAX: 86-512-5744-9168

<http://www.awan-ant.com>

**[www.awan-ant.com](http://www.awan-ant.com)**

*Date : 2022/7/22*

|               |             |
|---------------|-------------|
| Tester        | William.Lee |
| Measured Date | 2022/07/15  |



# Antenna Test System

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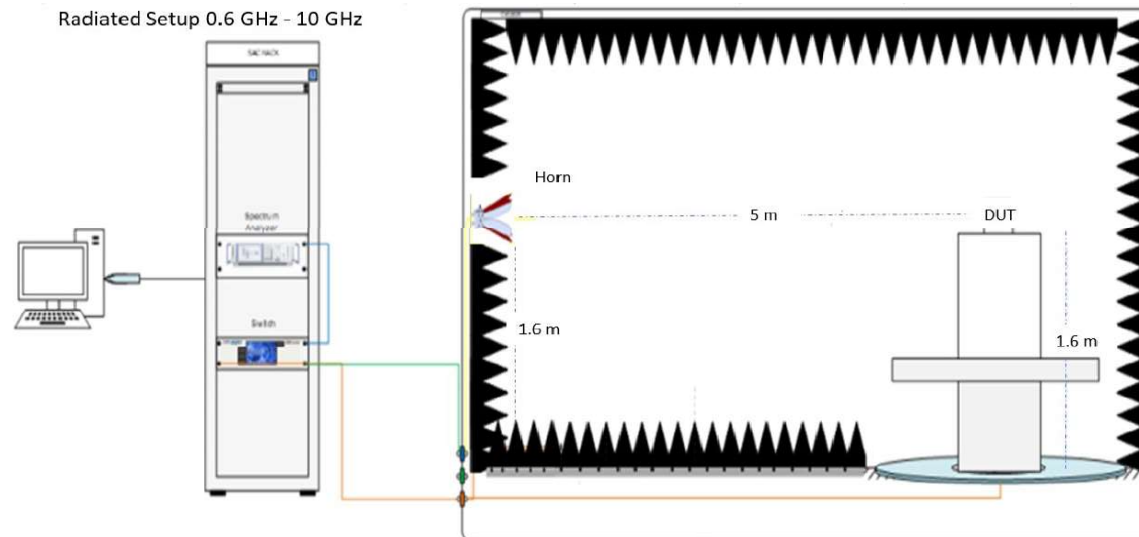
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## Applicable test methods

This test report is prepared for host antenna testing under a Full Anechoic Chamber.

## Test & System Description

### a. Test setup block diagram



### c. Equipment list

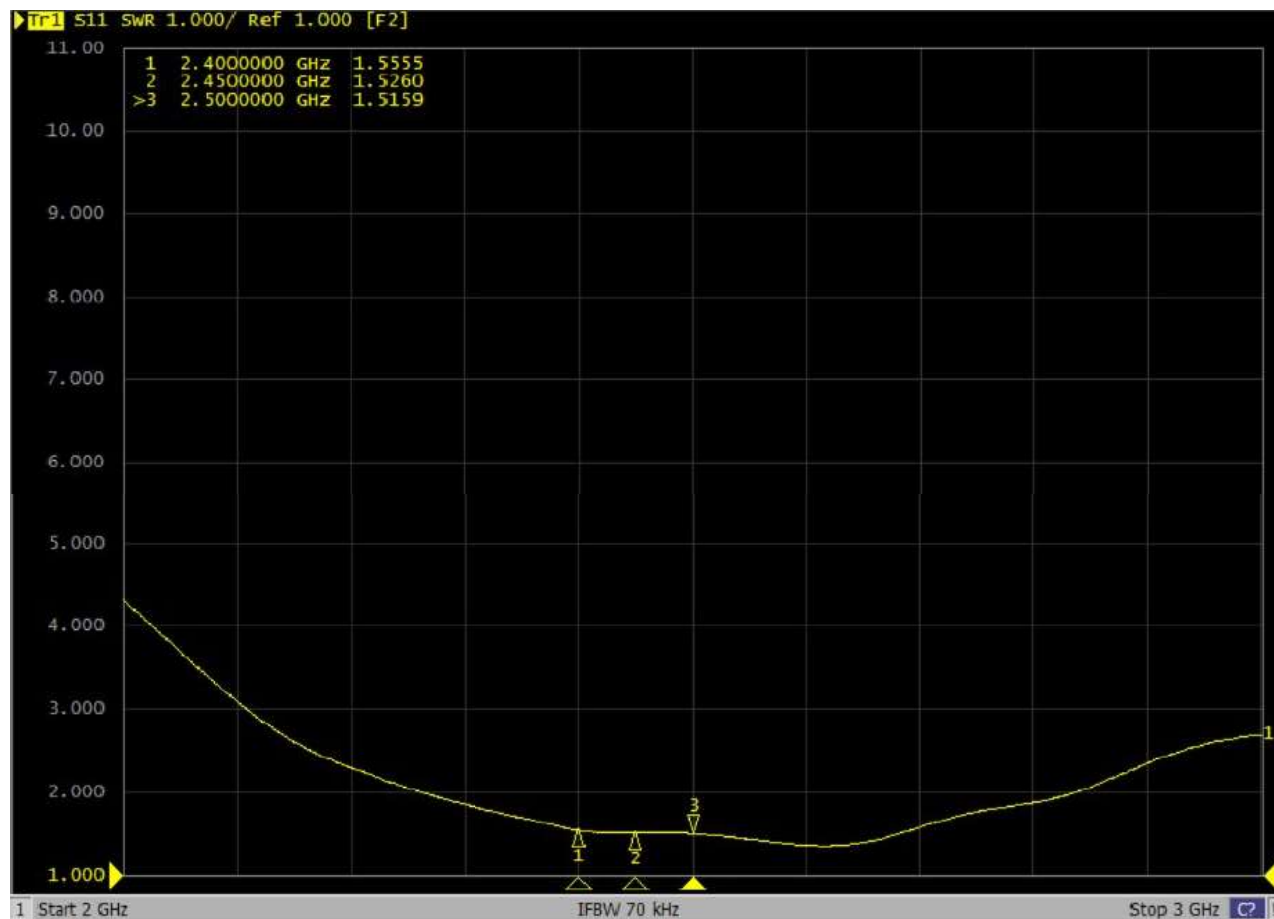
| Device                  | Type/Module    | Serial#          | Manufacturer | Cal. Date | Cal. Due Date |
|-------------------------|----------------|------------------|--------------|-----------|---------------|
| Anechoic Chamber        | AMS-8500       | 1047             | ETS-Lindgren | 2022/1/21 | 2023/7/22     |
| Turn Table              | ETS            | -                | ETS-Lindgren | N/A       | N/A           |
| Rotate controller       | 2090           | SN 00035073      | ETS-Lindgren | N/A       | N/A           |
| Horn Antenna            | HAD-0710       | 111025-02        | Bwant        | 2021/5/16 | 2023/5/16     |
| Vector Network Analyzer | E5071C         | MY46733781       | Keysight     | 2022/1/21 | 2023/1/21     |
| Cable 40cm 18 GHz       | 201EH012010400 | 201EH012010400#1 | Jmtt         | 2022/3/27 | 2023/3/27     |
| Cable 6m 18 GHz         | 201EH012016000 | 201EH012016000#3 | Jmtt         | 2022/3/27 | 2023/3/27     |
| Cable 6m 18 GHz         | 201EH012016000 | 201EH012016000#5 | Jmtt         | 2022/3/27 | 2023/3/27     |
| Cable 3.5m 18 GHz       | 201EH012013500 | 201EH012013500#3 | Jmtt         | 2022/3/27 | 2023/3/27     |
| Cable 1.5m 18 GHz       | 201EH012011500 | 201EH012011500#2 | Jmtt         | 2022/3/27 | 2023/3/27     |

# Test result : VSWR

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| Frequency | 2.4GHz | 2.45GHz | 2.5GHz |
|-----------|--------|---------|--------|
| V.S.W.R   | 1.55   | 1.52    | 1.51   |

# Antenna Gain and Efficiency

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| Configuration: Chase Card Reader |                   |                   |               |
|----------------------------------|-------------------|-------------------|---------------|
| Frequency(MHz)                   | 3D Avg. Gain(dBi) | 3D Peak Gain(dBi) | Efficiency(%) |
| 2400                             | -5.37             | 0.336             | 29.04         |
| 2450                             | -4.97             | 0.466             | 31.84         |
| 2500                             | -5.02             | -0.228            | 31.48         |

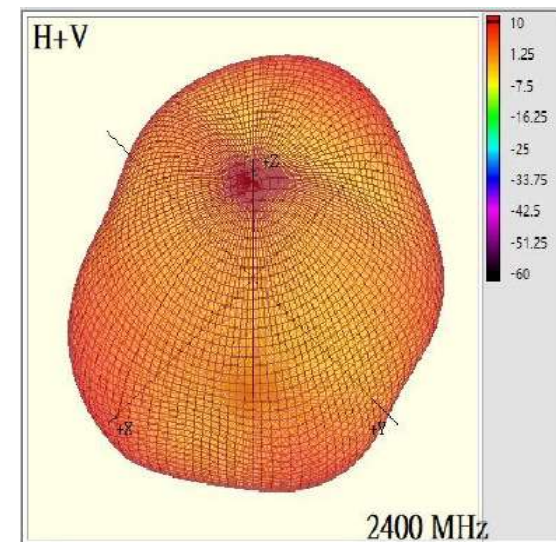
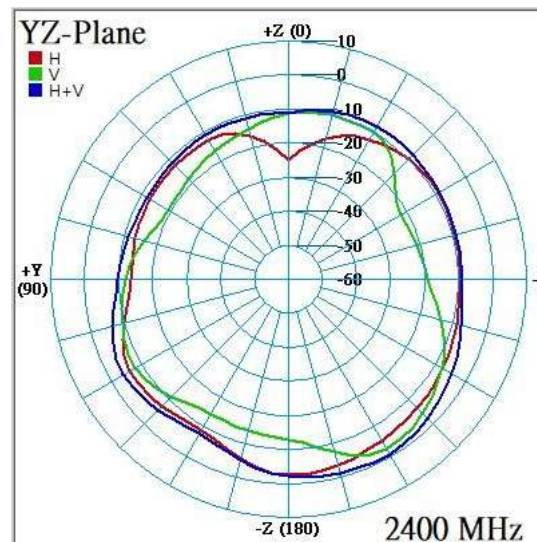
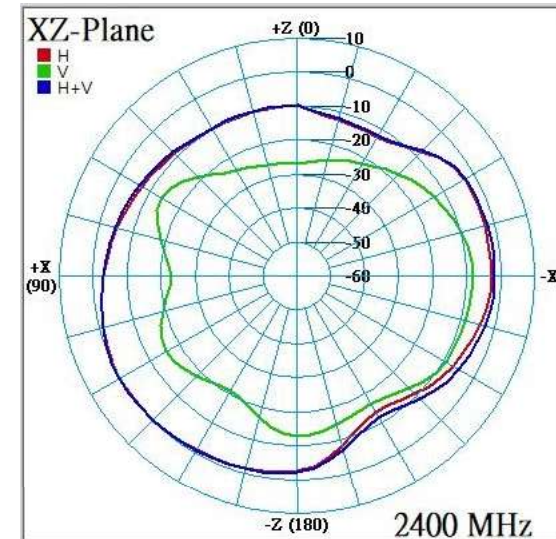
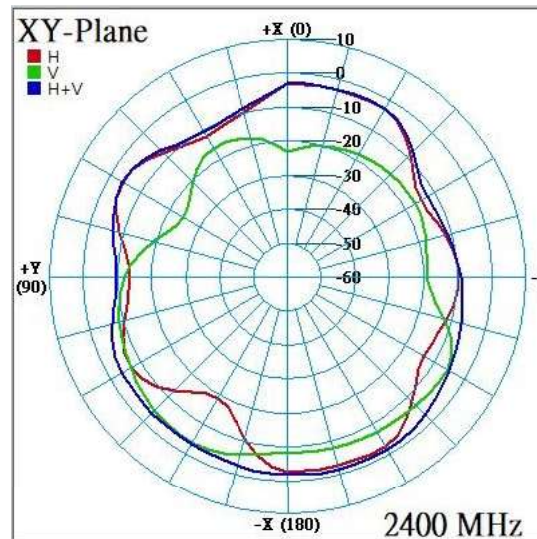
# Radiation Patterns 2400MHz

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| dBm              | XY Plane | XZ Plane | YZ Plane |
|------------------|----------|----------|----------|
| H+V.<br>(Max.)   | -1.281   | 0.336    | -0.581   |
| H-Pol.<br>(Max.) | -2.45    | 0.224    | -2.402   |
| V-Pol.<br>(Max.) | -3.535   | -8.204   | -2.425   |

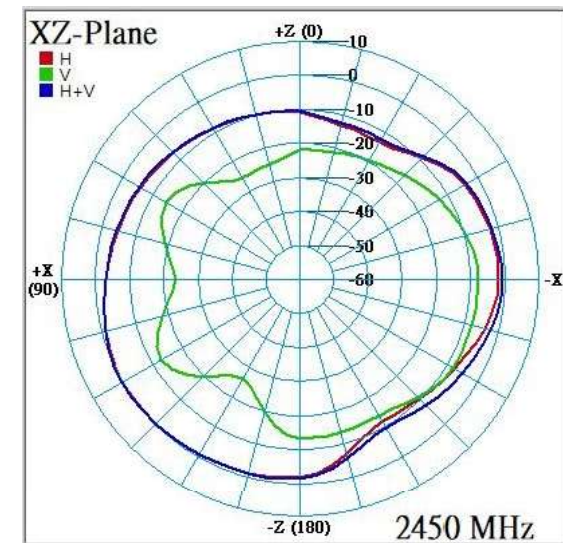
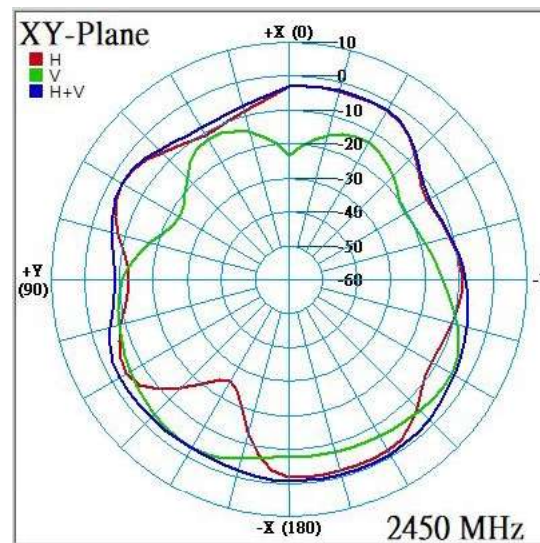


# Radiation Patterns 2450MHz

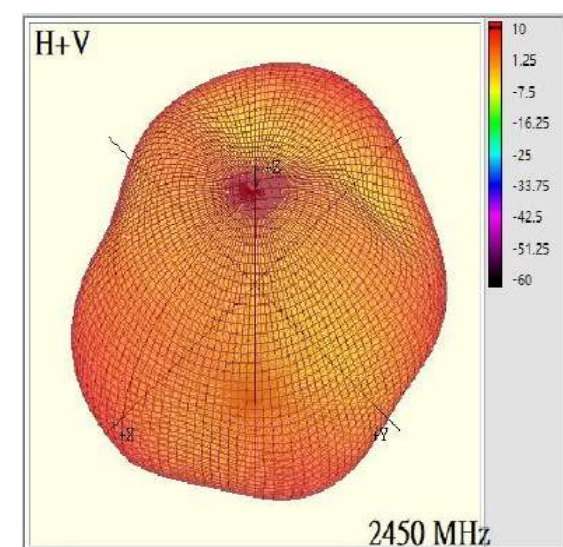
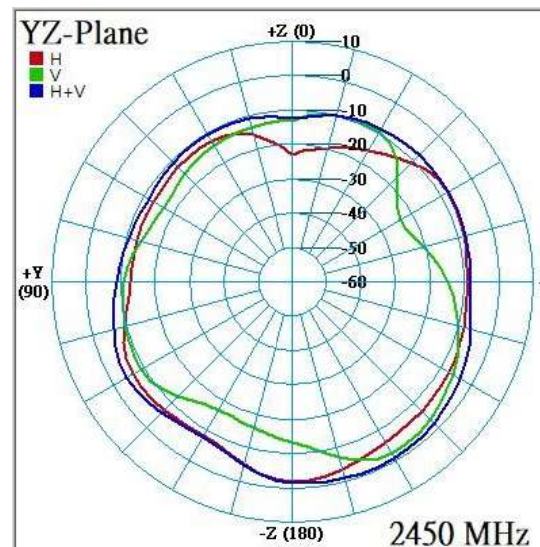
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| dBm              | XY Plane | XZ Plane | YZ Plane |
|------------------|----------|----------|----------|
| H+V.<br>(Max.)   | -0.571   | 0.466    | -0.638   |
| H-Pol.<br>(Max.) | -1.632   | 0.264    | -1.722   |
| V-Pol.<br>(Max.) | -2.76    | -7.733   | -2.148   |

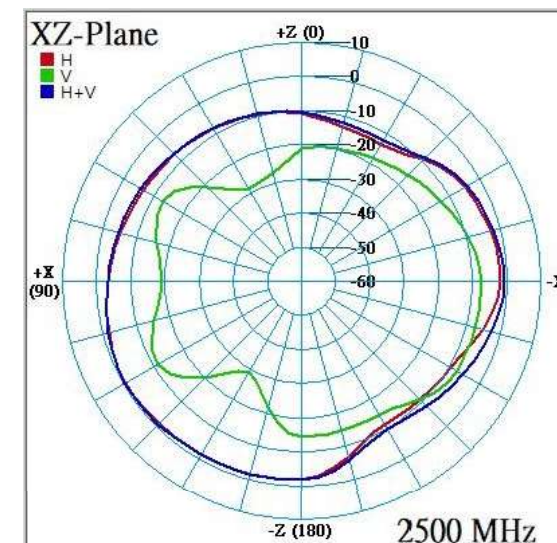
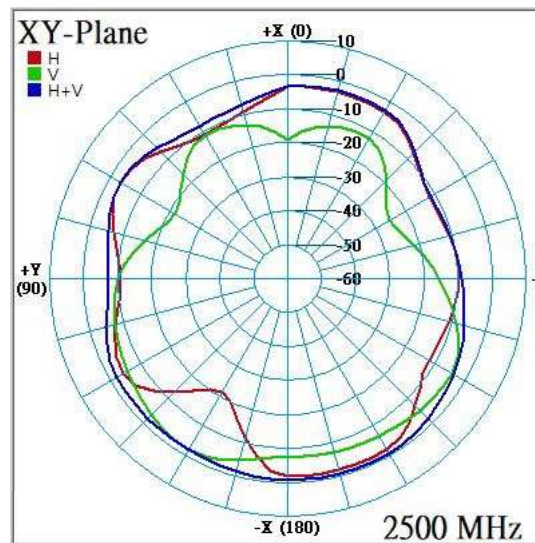


# Radiation Patterns 2500MHz

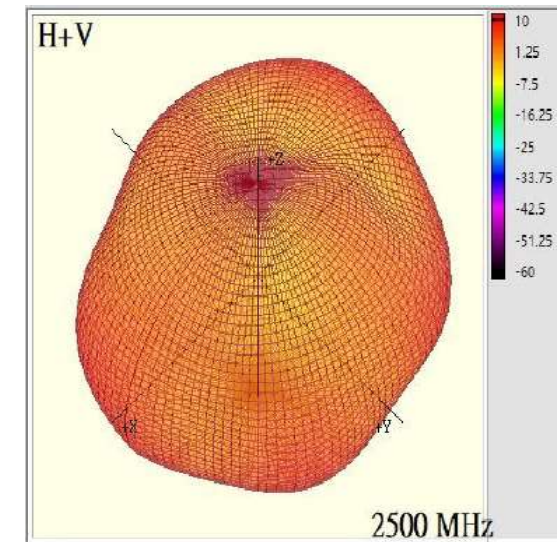
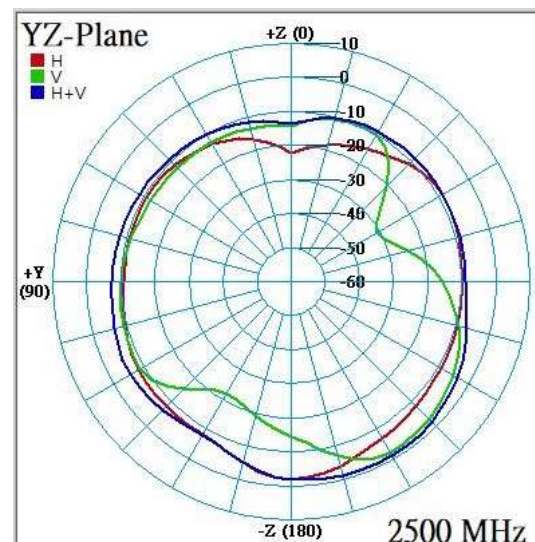
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| dBm              | XY Plane | XZ Plane | YZ Plane |
|------------------|----------|----------|----------|
| H+V.<br>(Max.)   | -0.574   | -0.228   | -0.741   |
| H-Pol.<br>(Max.) | -1.77    | -0.57    | -1.885   |
| V-Pol.<br>(Max.) | -1.792   | -7.435   | -1.996   |

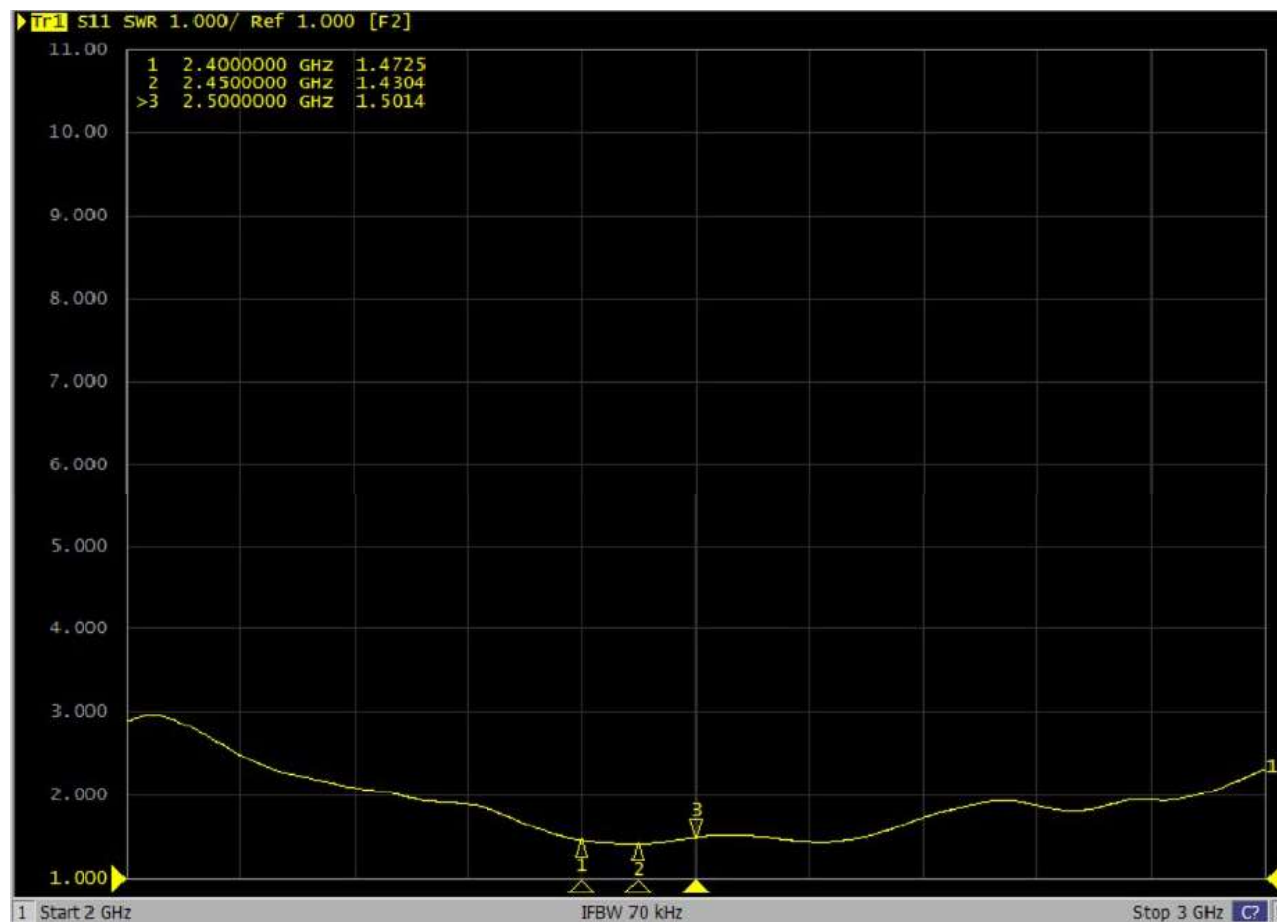


# Test result : VSWR

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| Frequency | 2.4GHz | 2.45GHz | 2.5GHz |
|-----------|--------|---------|--------|
| V.S.W.R   | 1.47   | 1.43    | 1.5    |

# Antenna Gain and Efficiency

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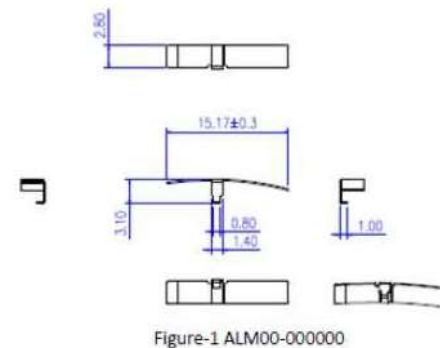
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Configuration: Chase Card Reader and Chase Card Reader Charging Base

| Frequency(MHz) | 3D Avg. Gain(dBi) | 3D Peak Gain(dBi) | Efficiency(%) |
|----------------|-------------------|-------------------|---------------|
| 2400           | -5.47             | -0.771            | 28.38         |
| 2450           | -5.41             | -0.565            | 28.77         |
| 2500           | -6.23             | -1.319            | 23.82         |

| Description | Tester      | Measured Date |
|-------------|-------------|---------------|
| Measured    | William.Lee | 2022/07/15    |

|                    |                                   |                  |
|--------------------|-----------------------------------|------------------|
| Antenna Model      | ALM00-000000                      |                  |
| Antenna Type       | PIFA Antenna for WiFi application |                  |
| Connector Material | Welding method                    |                  |
| Cable Type         | N/A                               |                  |
| Impedance          | 50Ω                               |                  |
| Polarization       | Linear                            |                  |
| Radiation pattern  | Omni-directional                  |                  |
| Frequency          | WIFI 802.11b/g/n                  | 2.40 ~ 2.50 GHz  |
| VSWR               | WIFI 802.11b/g/n                  | 2.0 Max.         |
| Peak gain(dBi)     | WIFI 802.11b/g/n                  | 0.466            |
| Antenna dimension  | WIFI (ALM00-000000)               | Figure-1, Silver |

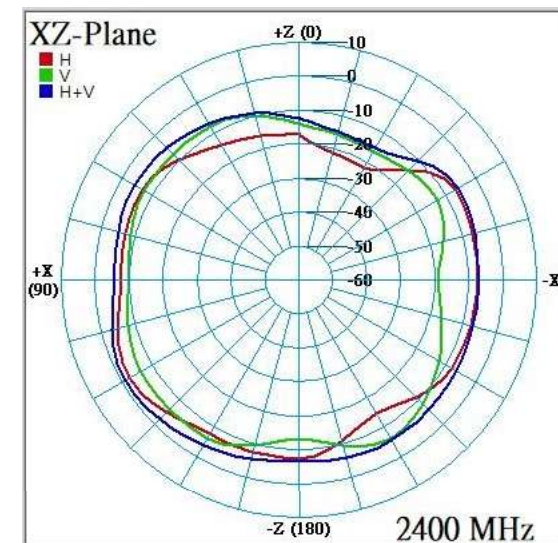
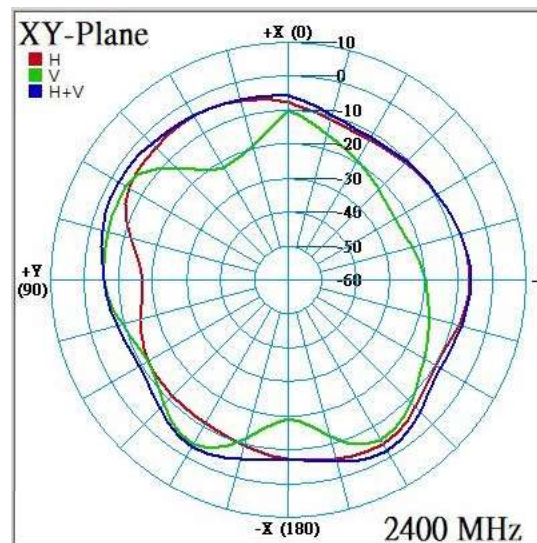


# Radiation Patterns 2400MHz

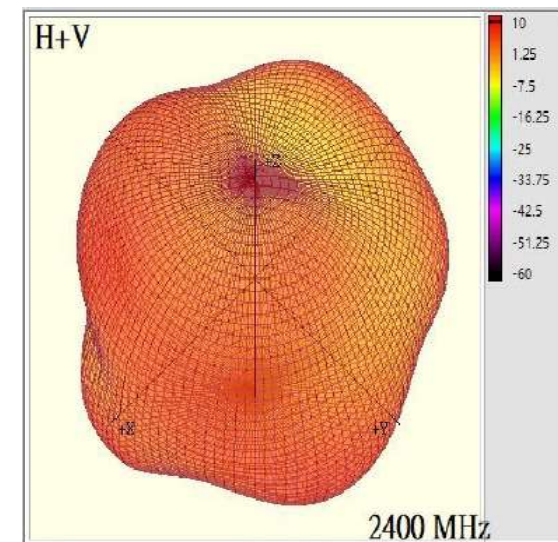
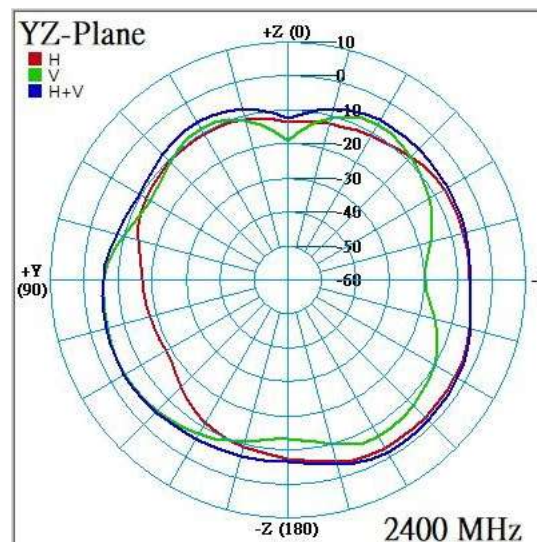
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| dBm              | XY Plane | XZ Plane | YZ Plane |
|------------------|----------|----------|----------|
| H+V.<br>(Max.)   | -1.928   | -0.771   | -1.304   |
| H-Pol.<br>(Max.) | -4.326   | -2.258   | -2.749   |
| V-Pol.<br>(Max.) | -4.173   | -6.037   | -4.514   |

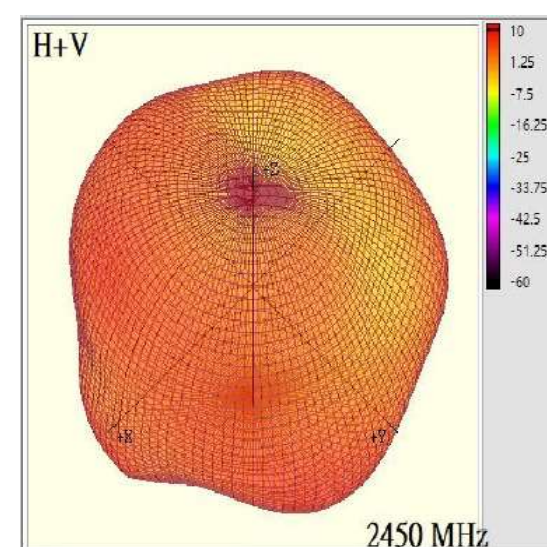
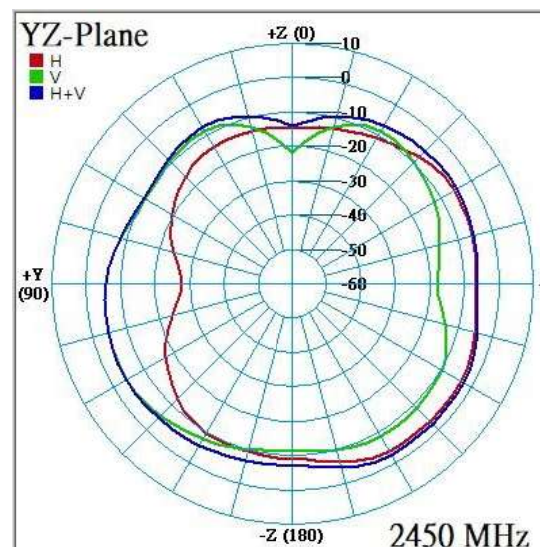
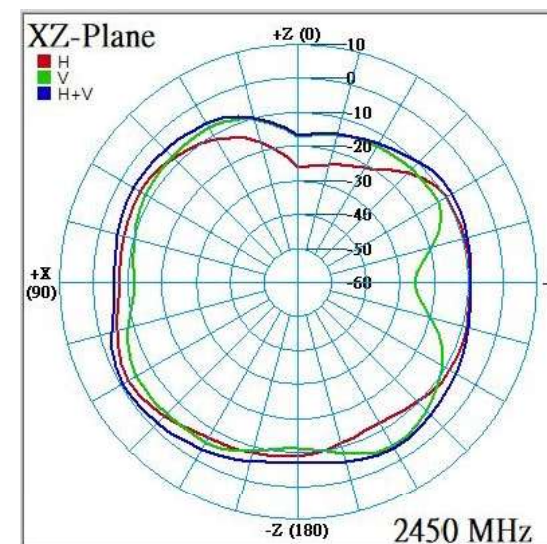
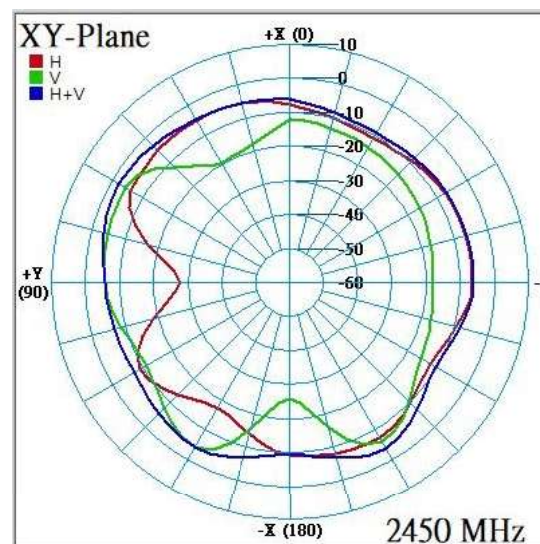


# Radiation Patterns 2450MHz

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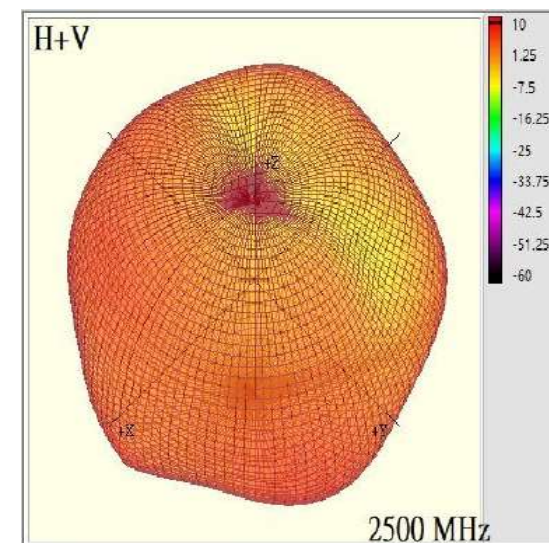
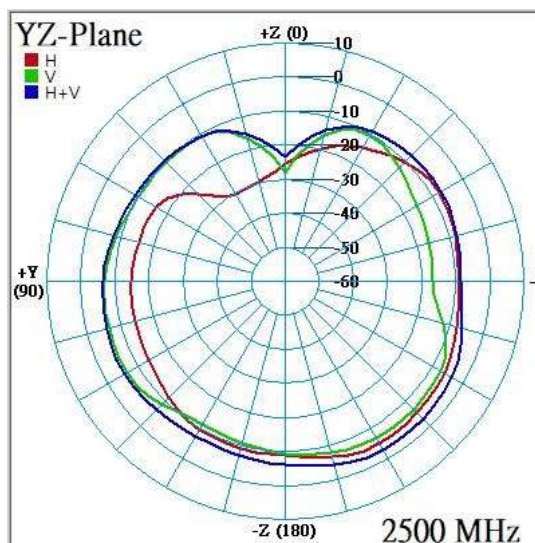
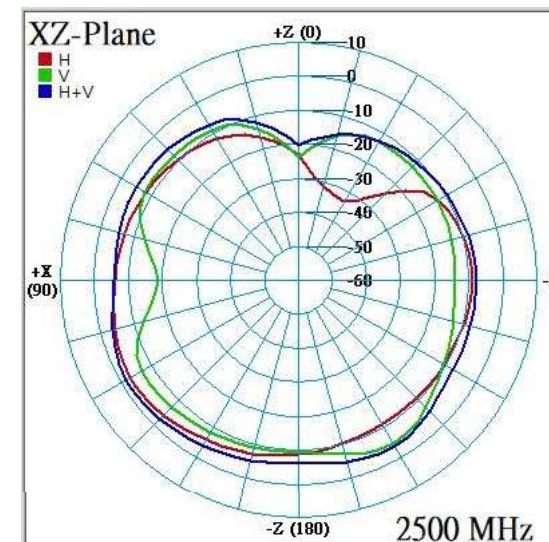
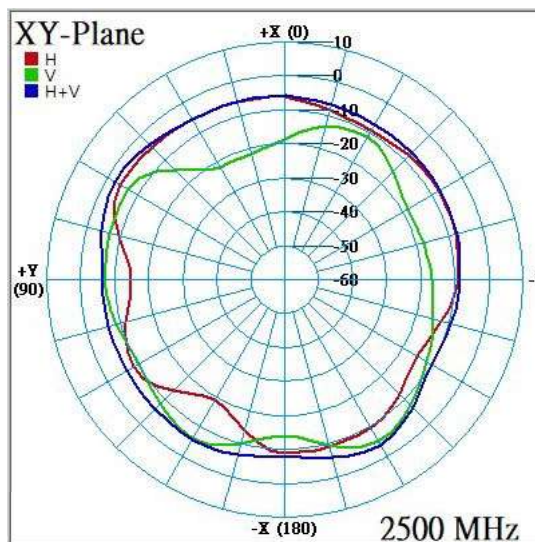
| dBm              | XY Plane | XZ Plane | YZ Plane |
|------------------|----------|----------|----------|
| H+V.<br>(Max.)   | -2.05    | -0.565   | -2.408   |
| H-Pol.<br>(Max.) | -4.878   | -2.458   | -3.374   |
| V-Pol.<br>(Max.) | -4.271   | -4.535   | -4.2     |

# Radiation Patterns 2500MHz

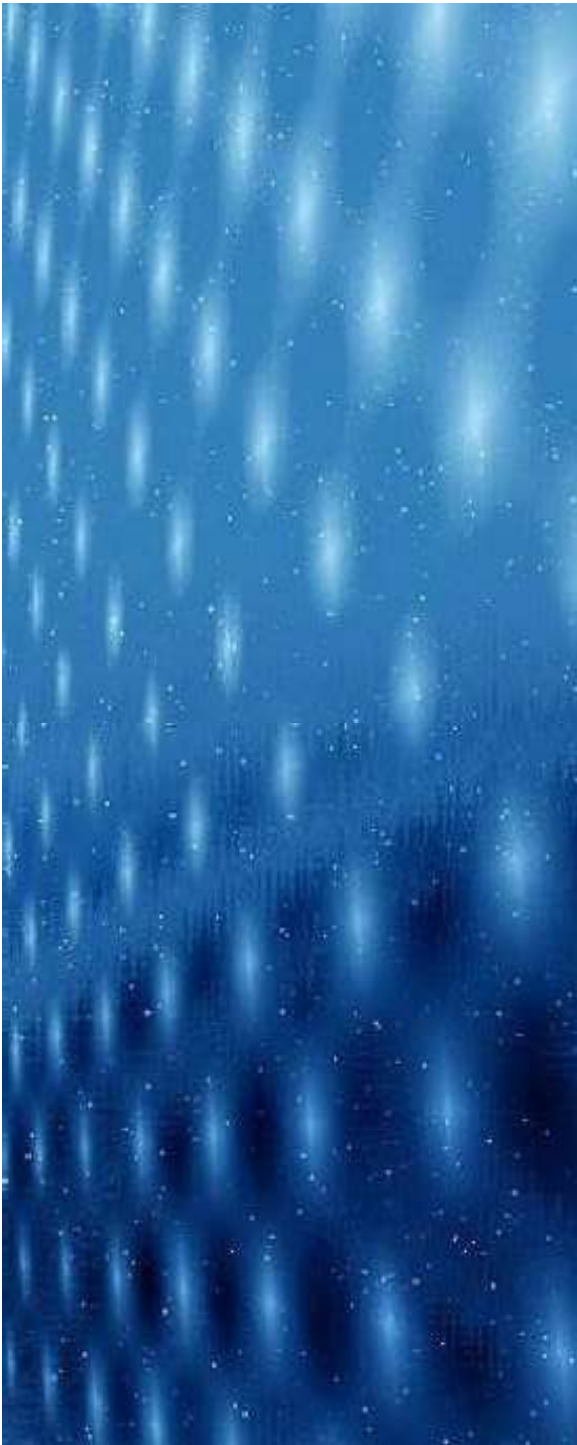
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| dBm              | XY Plane | XZ Plane | YZ Plane |
|------------------|----------|----------|----------|
| H+V.<br>(Max.)   | -2.287   | -1.139   | -2.673   |
| H-Pol.<br>(Max.) | -4.199   | -2.804   | -4.852   |
| V-Pol.<br>(Max.) | -5.055   | -4.44    | -6.203   |



***Thanks for Your Time***

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