Report No.: XCL-AC202409-0067

# TEST REPORT

**Product Name:** PCB Antenna

**Model**: AT-2.4TX-P01A

**Test Sort:** External Commission Test

**Client:** Huizhou Yuanyun Electronics Co., Ltd

**Test by:** Xingci Lab

**GUANGDONG XINGCI TESTING TECHNOLOGY RESEARCH Co.,Ltd.**

# Announcement

1. This report is invalid without seal.
2. This report must not be partially duplicated without permission.
3. The manufacturer would be responsible for the test samples.
4. Xingci Lab would be only responsible for report items of the test sample, this test result is only used for scientific research, teaching, and internal control, and does not have a proof function to the society.
5. If the client has any question about the test report, please contact our lab as agreed within 15 days. Disagreement couldn't be accepted over 15 days.
6. Test report inquires telephone No.:+ 86-757-87744743

Add: No#4, Jinye 2nd road, Yundonghai street, Sanshui, Foshan,Guangdong Province, China,528100

Tel: 0086-(0757)-87744743

Post Code: 528100

# Test Report

| | | | | |
|---|---|---|---|---|
| Product Name | | PCB Antenna | Manufacture Date | / |
| Product Model | | AT-2.4TX-P01A | Brand Name | / |
| Client | Name | Huizhou Yuanyun Electronics Co., Ltd | | |
| | Address | XiaZhao, Dameng Village, Xialiao Committee, Longxi Town, Bolou, Huizhou, Guangdong, China | | |
| Test Type | | External Commission Test | | |
| Test Place | | SG64 Anechoic Chamber (Guangdong Xingci testing technology research Co.,Ltd.) | | |
| Sample Qty | | 1pc | Test Date | Sep. 20, 2024 |
| Test Environment | | Temperature: (21~22) ℃ | Relative Humidity: (63~66) % | |
| Test Item | | Electrical performance: Radiation Pattern, Gain,Efficiency | | |
| Test Standard | | According to the client's requirements, refer to the following standard: IEEE Std 149™-2021 IEEE Recommended Practice for Antenna Measurements | | |
| Test Description | | Guangdong Xingci testing technology research Co., Ltd. tested the electrical performance of 1pc of PCB Antenna under the guideline of relevant standard. Please see test result in page 5, Radiation Patterns in pages 6-8. | | |
| Remarks | | | | |

| | | |
|---|---|---|
| Tested by: Luguanze<br>Date: Sep.20, 2024 | Checked by: Zhang Xiao jun<br>Date: Sep. 23, 2024 | Approved by: (Authorized signatory) Luojianhua<br>Date: Sep. 23, 2024 |

# Sample Description

| | |
|---|---|
| Accessories | ☑ No □ Yes: |
| Outlook/Appearance | ☑ Qualified □ Unqualified: |
| Status at the beginning of Test | ☑ Working Normally □ Working Abnormally: |
| Status after Test | ☑ Working Normally □ Other: |
| Photograph | □ No ☑ In page 9 |
| Remarks (Provided by the customer) | Antenna size: 20mm×7mm×1mm<br>Device size: 45mm×35mm×12mm<br>Device weight: 9.5g |

# Sample Number

| Item | Sample Number | Serial Number |
|---|---|---|
| 1 | AC2024092003 | / |

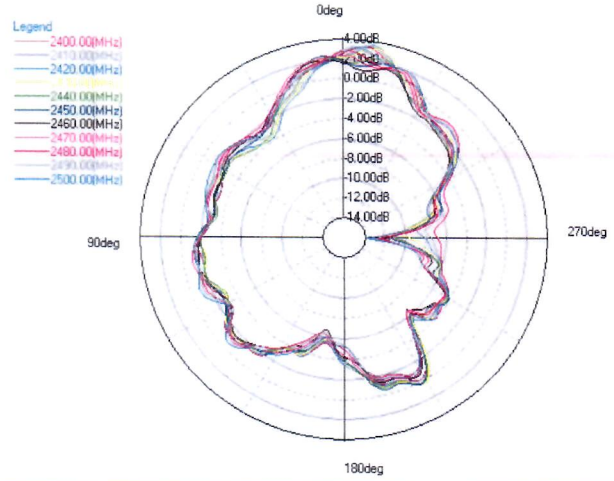
# Electrical Performance Test Result

| Item | Test Item | Technical Requirement | Unit | Test Frequency (MHz) | Test Result |
|---|---|---|---|---|---|
| 1 | Gain | / | dBi | 2400 | 3.43 |
| | | | | 2410 | 3.42 |
| | | | | 2420 | 3.54 |
| | | | | 2430 | 3.18 |
| | | | | 2440 | 2.39 |
| | | | | 2450 | 2.83 |
| | | | | 2460 | 2.54 |
| | | | | 2470 | 2.80 |
| | | | | 2480 | 2.89 |
| | | | | 2490 | 3.23 |
| | | | | 2500 | 3.22 |
| 2 | Efficiency | / | % | 2400 | 59.61 |
| | | | | 2410 | 57.14 |
| | | | | 2420 | 56.53 |
| | | | | 2430 | 55.51 |
| | | | | 2440 | 53.32 |
| | | | | 2450 | 57.43 |
| | | | | 2460 | 54.34 |
| | | | | 2470 | 58.26 |
| | | | | 2480 | 56.05 |
| | | | | 2490 | 57.08 |
| | | | | 2500 | 59.89 |
| 3 | Radiation Pattern | / | / | 2400-2500 | Pages 6-8 |
| Note:Test Method: Near Field Measurement Method. | | | | | |

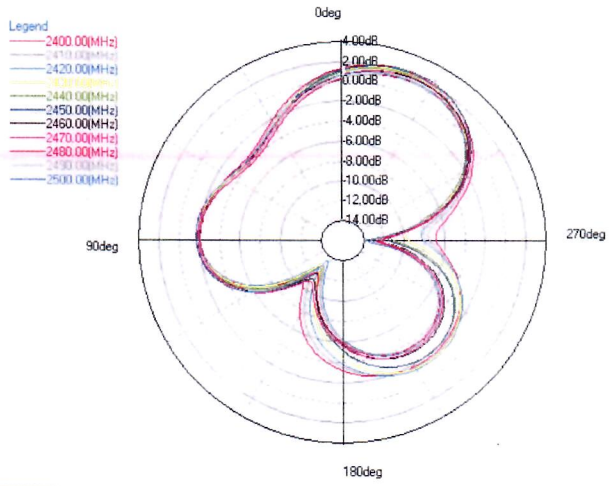
# Radiation Pattern

## 2D

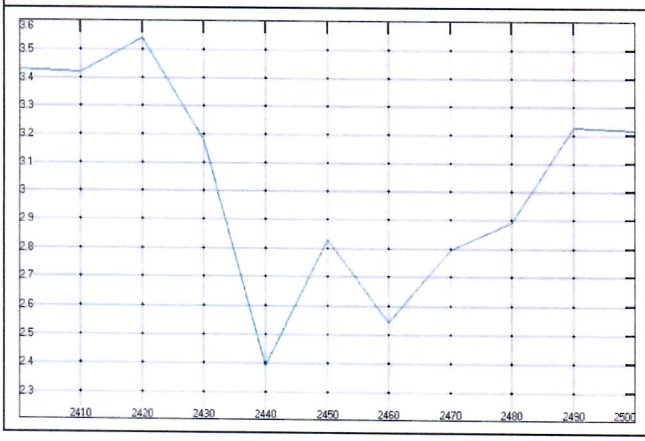
### Vertical Radiation Pattern



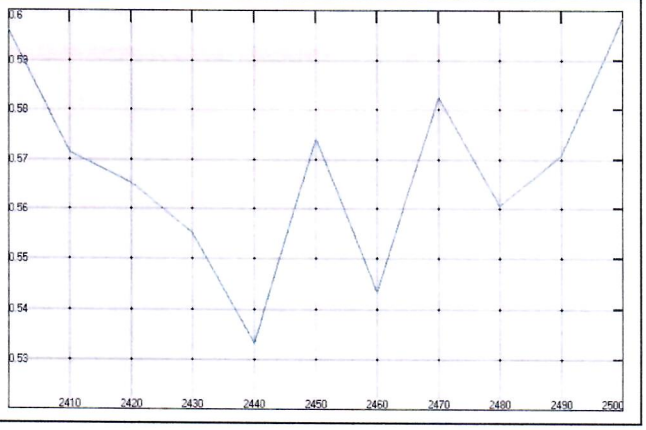

### Horizontal Radiation Pattern



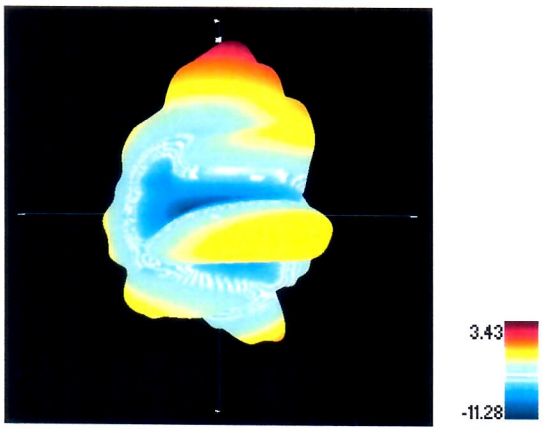
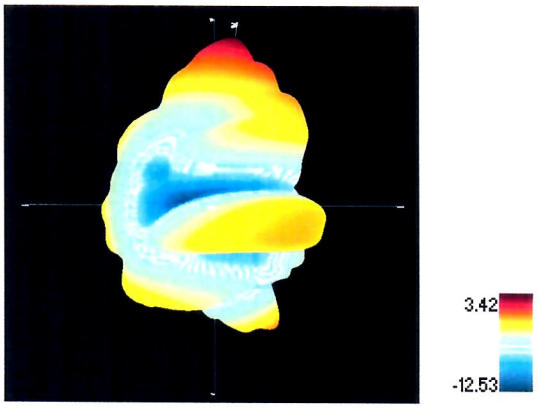
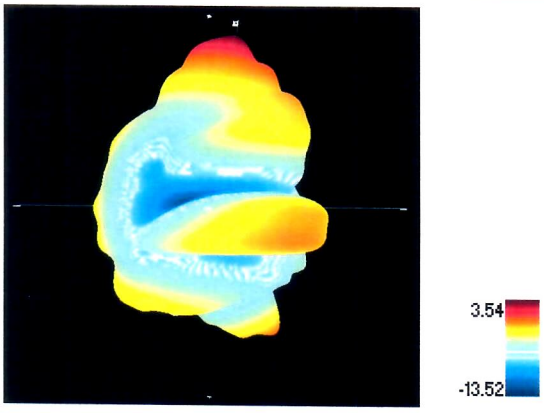
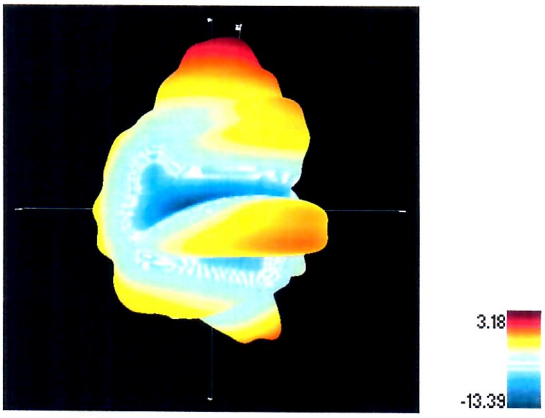
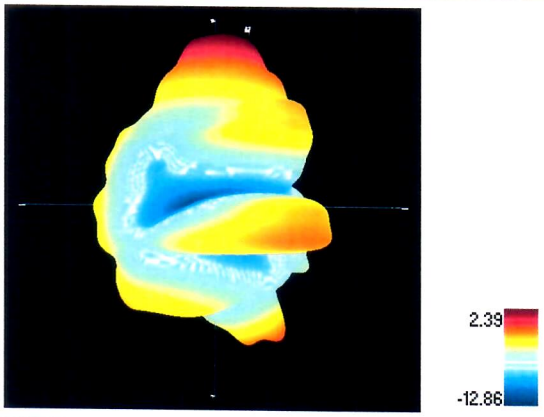
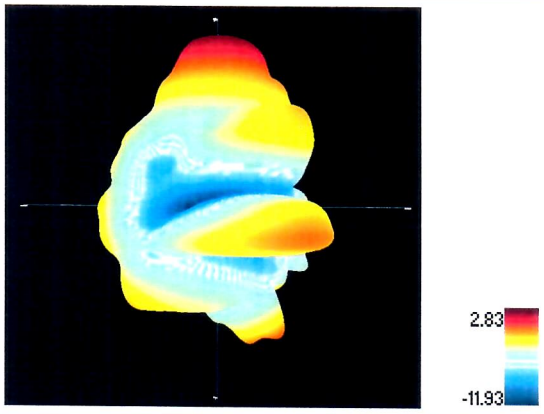

### Gain

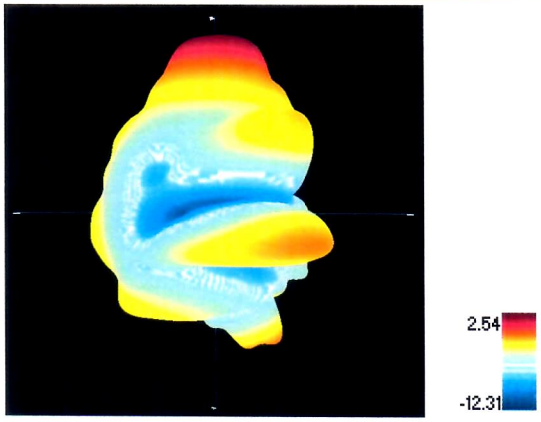
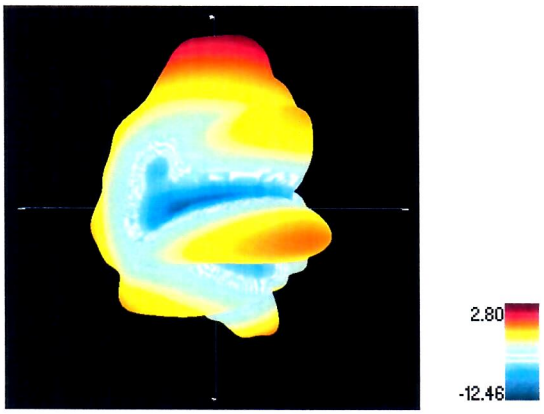
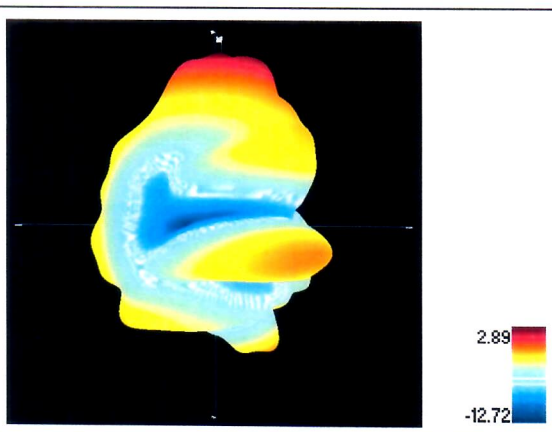
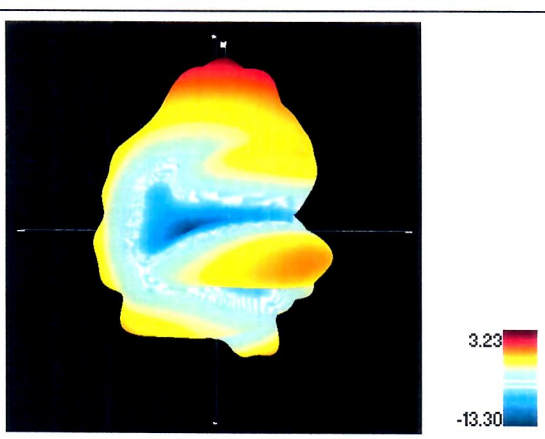
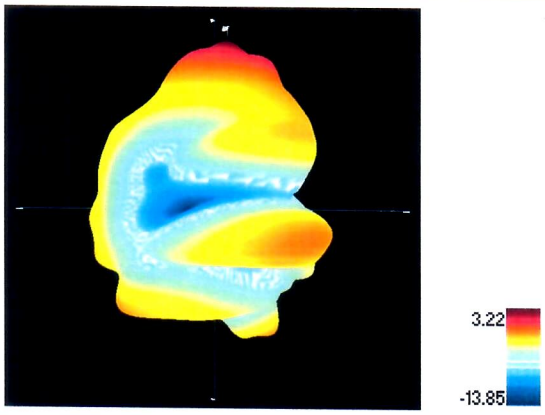



### Efficiency

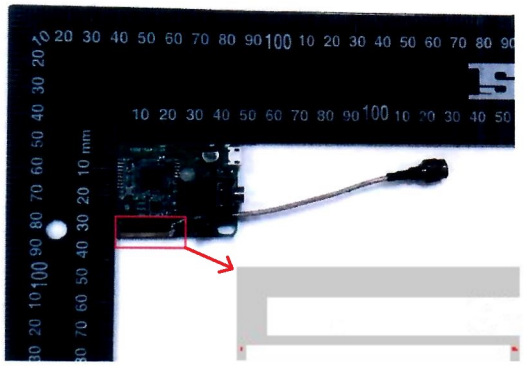


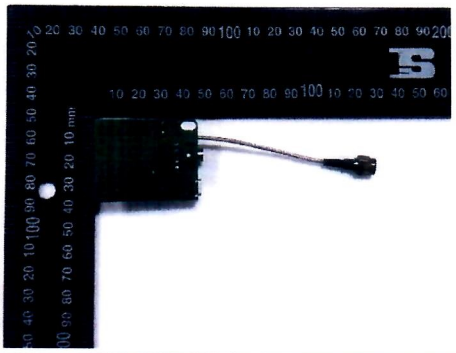
# 3D

| 2400MHz | 2410MHz |
|---|---|
|   |   |
| **2420MHz** | **2430MHz** |
|   |   |
| **2440MHz** | **2450MHz** |
|   |   |

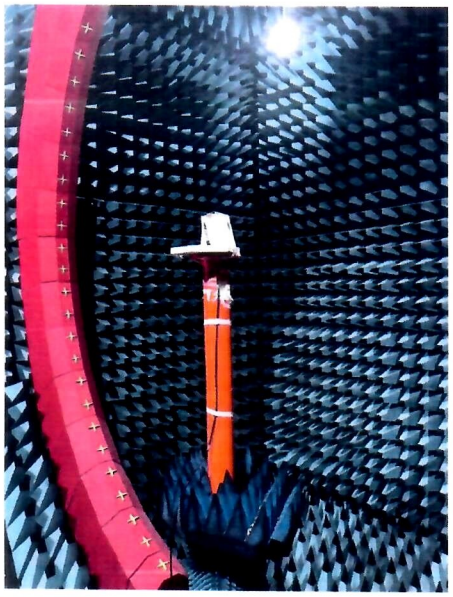
| 2460MHz | 2470MHz |
| --- | --- |
|  |  |
| **2480MHz** | **2490MHz** |
|  |  |
| **2500MHz** | / |
|  | / |

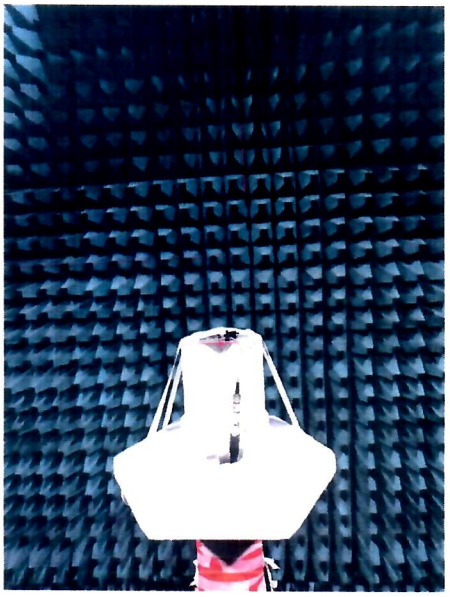
## Sample photo





## Radiation Pattern Test site





# Main instruments and equipment for testing and test system

| No. | NAME | Model | SERIAL NUMBER | VALIDITY DATE (DD/MM/YY) |
|---|---|---|---|---|
| 1 | Analog Signal Generator | N5172B | MY59100269 | 05/03/2025 |
| 2 | Analog Signal Generator | N5181A | MY50140747 | 05/03/2025 |
| 3 | Standard Gain Antenna | SH400-440 | XCA014 | 22/11/2024 |
| 4 | Microwave Anechoic Chamber | 5m×5m×5m | XCC03 | 22/08/2025 |
| 5 | SG64 Antenna Test System | SATENV 2.0.1.5 Build12 | XCXT03 | N/A |

**----------End of Report----------**