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# ANT Test Report

Product Name: 2.4G PCB ANT

Model Name: L620

Issued Date: 12<sup>th</sup> Dec, 2023

Report Version: V1.0

Issue By

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Note: The test results relate only to the samples tested. This report shall not be reproduced in full, without the written approval of CST TestCenter.

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## General Summary

|                |                                                                                                                                 |              |                           |
|----------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------|
| Product Name   | 2.4G PCB ANT                                                                                                                    | Model Name   | D1                        |
| Brand Name     | /                                                                                                                               | Receipt Date | 24 <sup>th</sup> Nov,2022 |
| Applicant      | SHENZHEN PANWEI ELECTRONICS CO.,LTD                                                                                             |              |                           |
| Address        | Fl. 8, Shenshan New Generation Information Industrial Park, No. 19, Keji Middle Road, High tech Zone, Shantou, Guangdong, China |              |                           |
| Manufacturer   | SHENZHEN PANWEI ELECTRONICS CO.,LTD                                                                                             |              |                           |
| Address        | Fl. 8, Shenshan New Generation Information Industrial Park, No. 19, Keji Middle Road, High tech Zone, Shantou, Guangdong, China |              |                           |
| Test Program   | Passive &VSWR                                                                                                                   |              |                           |
| Performed Date | 06 <sup>th</sup> Dec,2022~12 <sup>th</sup> Dec,2022                                                                             |              |                           |
| Comment        | The test result only responds to the test sample                                                                                |              |                           |

## SECTION 1 General Information

### 1.1 Applicant Information

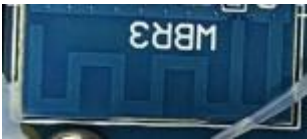
Company: BOTIN SMART TECHNOLOGY (Guangdong) Co., LTD.

Fl. 8, Shenshan New Generation Information Industrial Park, No. 19, Keji Middle



1.2 Equipment under Test (EUT) Information

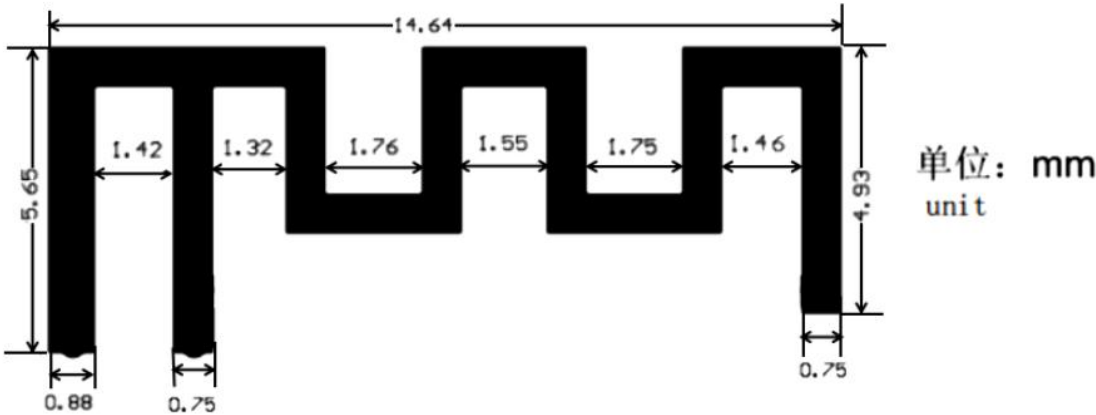
Table 1-1 EUT Information

|                                  |                                                                                   |
|----------------------------------|-----------------------------------------------------------------------------------|
| Manufacture                      | BOTIN SMART TECHNOLOGY (Guangdong) Co., LTD.                                      |
| Device Type                      | 2.4G PCB ANT                                                                      |
| Model                            | 2.4G PCB ANT                                                                      |
| Antenna Type                     |  |
| Device Operation Configurations: |                                                                                   |
| Test Item                        | Configuration                                                                     |
| VSWR                             | 2400MHz, 2450MHz, 2500MHz                                                         |
| Passive                          | 2400MHz, 2450MHz, 2500MHz                                                         |

1.3 EUT Distribute

Table 1-2 EUT Used For Each Test

| Model        | Sample NO. | Test Item | Test Condition |
|--------------|------------|-----------|----------------|
| 2.4G PCB ANT |            | VSWR      | 23.0℃, 49%RH   |
|              |            | Passive   |                |



## SECTION 2 Test Method

### 2.1 Test System Describe

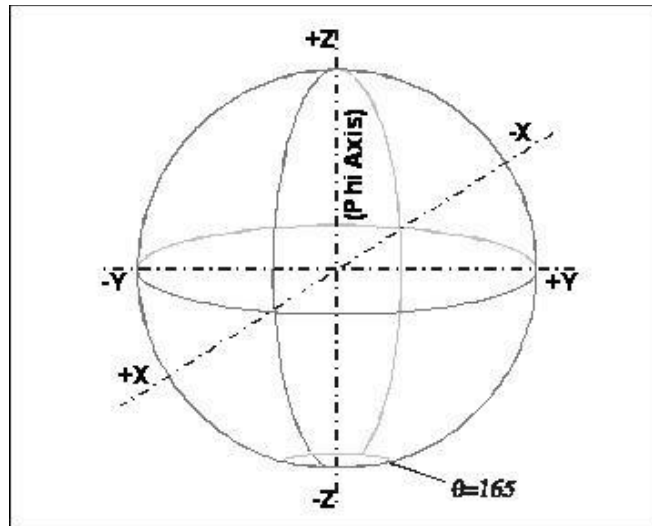


Fig.1 Coordinate Axis

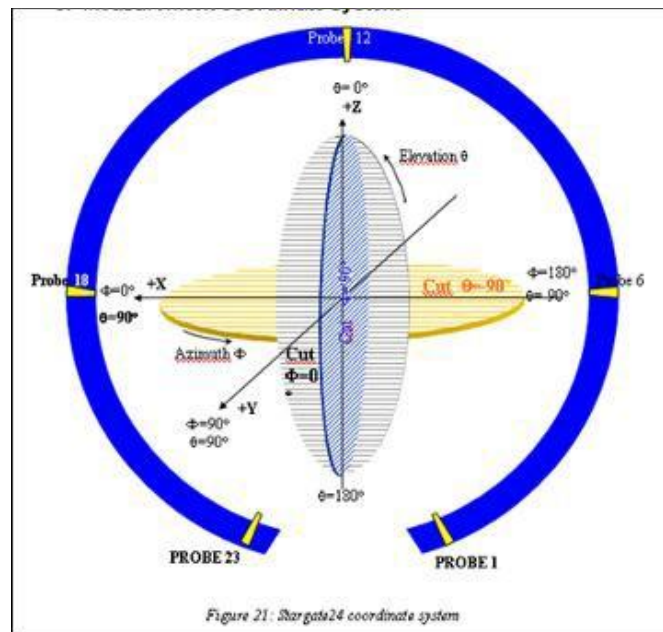
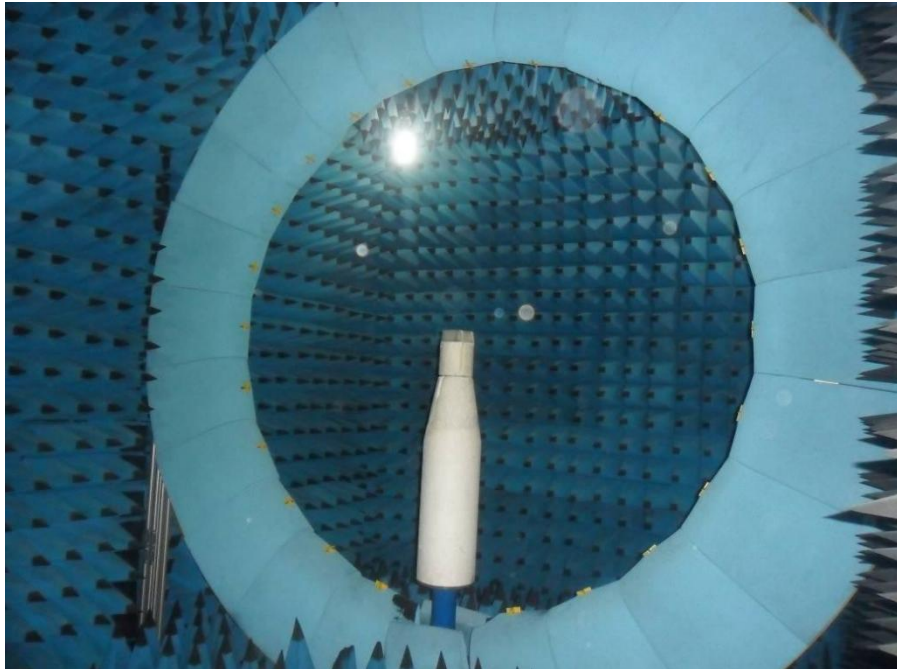


Fig.2 Coordinate Axis

For the purposes of these tests, two principal categories of positioning systems will be defined, based on expected methods of performing spherical pattern tests. These are distributed-axis systems and combined-axis systems. Distributed-axis systems move the measurement antenna about the EUT and Phi-axis positioner and are representative of most conicalcut method systems.

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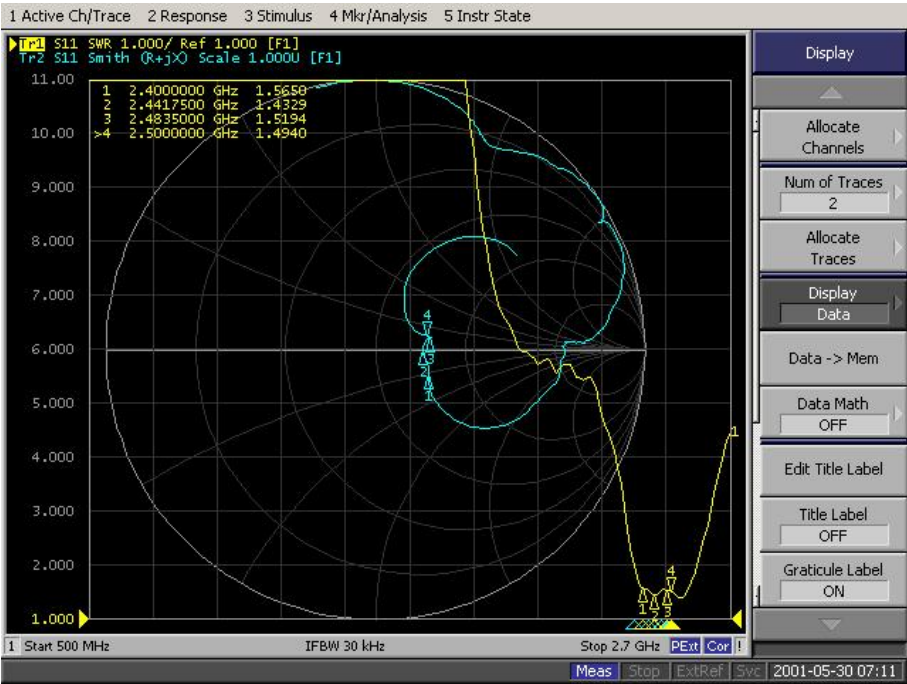
## 2.2 Chamber Test Photos



# SECTION 3 Test Result

## 3.1 Test Result

### 3.1.1 VSWR,Smith



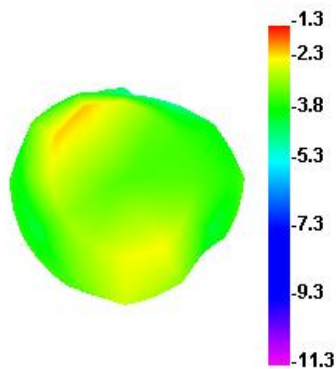
VSWR

### 3.1.2 Passive Result

| Freq<br>(MHz) | Effi<br>(%) | Effi<br>(dB) | Gain<br>(dBi) | Gain<br>(dBd) | Max<br>(dB) | Min<br>(dB) |
|---------------|-------------|--------------|---------------|---------------|-------------|-------------|
| 2400          | 26.8        | -5.72        | -1.28         | -3.43         | -1.28       | -18.77      |
| 2410          | 25.72       | -5.9         | -1.62         | -3.77         | -1.62       | -18.66      |
| 2420          | 27.67       | -5.58        | -1.34         | -3.49         | -1.34       | -18.14      |
| 2430          | 30.04       | -5.22        | -1.04         | -3.19         | -1.04       | -16.76      |
| 2440          | 31.56       | -5.01        | -0.85         | -3            | -0.85       | -16.31      |
| 2450          | 41.67       | -3.8         | 0.00          | -1.73         | 0.42        | -14.41      |
| 2460          | 34.86       | -4.58        | -0.47         | -2.62         | -0.47       | -15.33      |
| 2470          | 42.19       | -3.75        | -0.28         | -1.87         | 0.28        | -15.81      |
| 2480          | 50.79       | -2.94        | -1.03         | -1.12         | 1.03        | -15.86      |
| 2490          | 47.4        | -3.24        | -1.02         | -1.13         | 1.02        | -16.54      |
| 2500          | 49.43       | -3.06        | -1.03         | -0.76         | 1.39        | -15.76      |

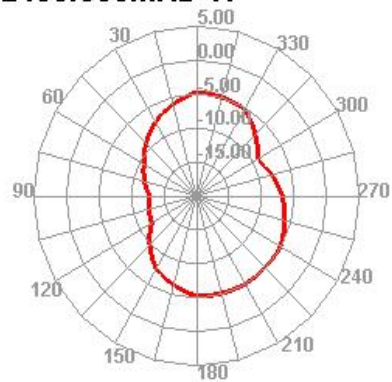
#### 3.1.2.1 Pattern Plots of Passive

2400.000MHz



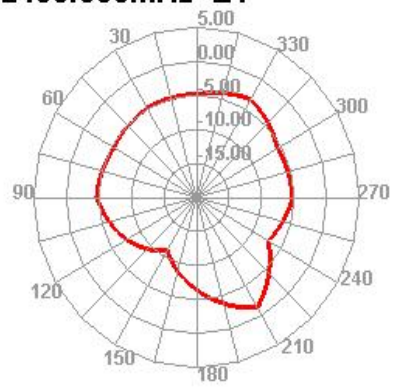
2400MHz

2400.000MHz H



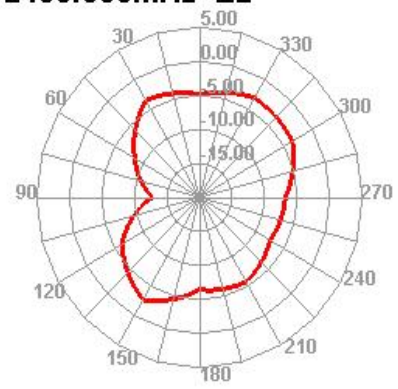
2400MHz-H

2400.000MHz E1



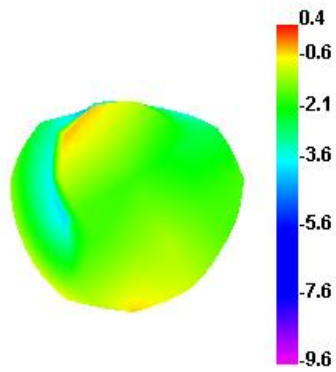
2400MHz-E1

2400.000MHz E2



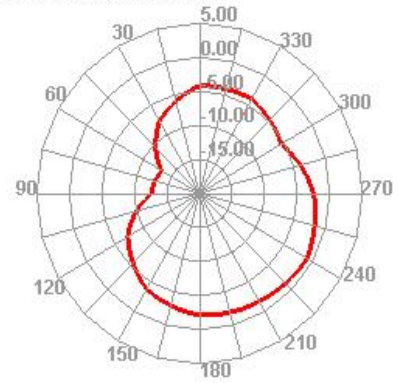
2400MHz-E2

2450.000MHz



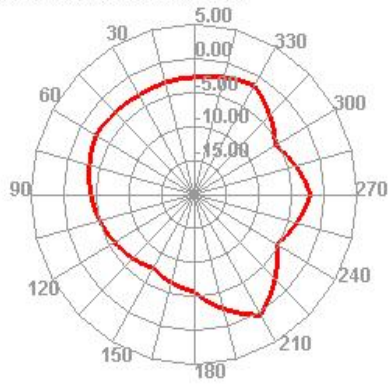
2450MHz

2450.000MHz H



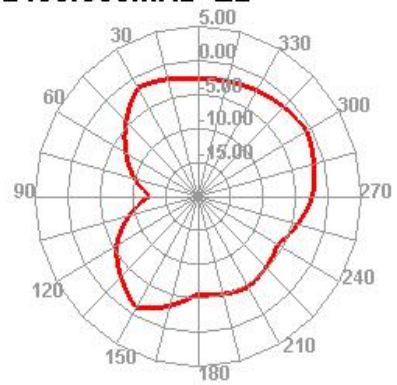
2450MHz-H

2450.000MHz E1



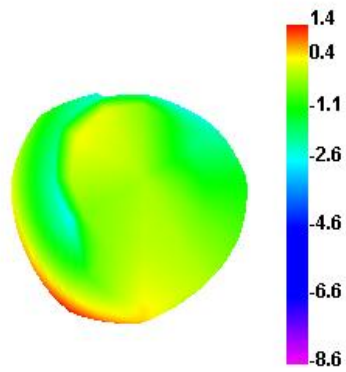
2450MHz-E1

2450.000MHz E2



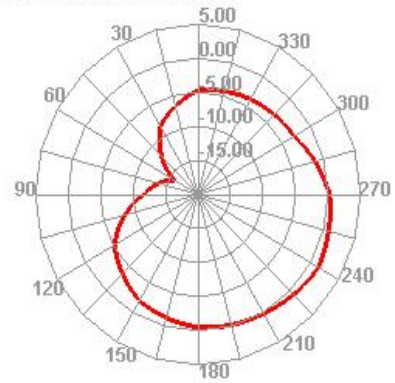
2450MHz-E2

2500.000MHz



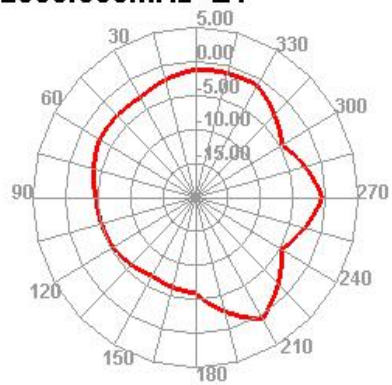
2500MHz

2500.000MHz H



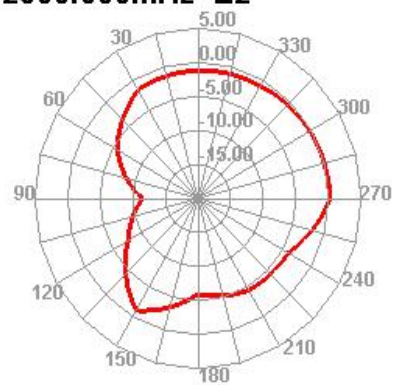
2500MHz-H

2500.000MHz E1



2500MHz-E1

2500.000MHz E2



2500MHz-E2

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## SECTION 4 Other Information

### 4.1 Sample Photo



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## 4.2 Equipment List

| NO | Name                           | Model  | S/N        | Calibration Due Date      |
|----|--------------------------------|--------|------------|---------------------------|
| 1  | Satimo                         | SG24   | /          | 22 <sup>th</sup> Jul,2023 |
| 2  | ENA Series<br>Network Analyzer | E5071C | MY46213516 | 22 <sup>th</sup> Jul,2023 |

\*\*\*\*\*The End\*\*\*\*\*