TEST REPORT

Applicant:	Wuxi Jianyou Trading Co., Ltd.
Address:	No. 2 Fengwei Road, Xishan Etdz, Wuxi City, Jiangsu Province, China 214000
Equipment Type:	PCB Antenna
Model Name:	PH5XHC176
Brand Name:	N/A
Test Standard:	IEEE Std 149-2021
Sample Arrival Date:	Aug. 29, 2023
Test Date:	Sep. 21, 2023
Date of Issue:	Oct. 19, 2023

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Mai Jintian **Checked by:** Zou Liu **Approved by:** Tolan Tu (Testing Director)

Revision History

Version	Issue Date	Revisions
Rev. 01	Oct. 19, 2023	Initial Issue

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☑ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Wuxi Jianyou Trading Co., Ltd.
Address	No. 2 Fengwei Road, Xishan Etdz, Wuxi City, Jiangsu Province, China 214000

2.2 Manufacturer Information

Manufacturer	Wuxi Jianyou Trading Co., Ltd.
Address	No. 2 Fengwei Road, Xishan Etdz, Wuxi City, Jiangsu Province, China 214000

2.3 General Description for Equipment under Test (EUT)

EUT Name	PCB Antenna
Model Name Under Test	PH5XHC176
Antenna Type	PCB Antenna
Dimensions	5*1mm

2.4 Ancillary Equipment

Note: Not applicable.

2.5 Technical Information

Frequency Range	2400MHz ~ 2500MHz
Test Frequencies	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2480MHz, 2490MHz, 2500MHz

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	IEEE Std 149-2021	IEEE Standard Test Procedures for Antennas

3.2 Test Verdict

Report Section	Description	Remark
ANNEX A.1	Gain and Efficiency	--
ANNEX A.2	VSWR	--
ANNEX B	Radiation Pattern	--

3.3 Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Item	Uncertainty
VSWR(S11)	±0.61
Gain	±1.92dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Condition

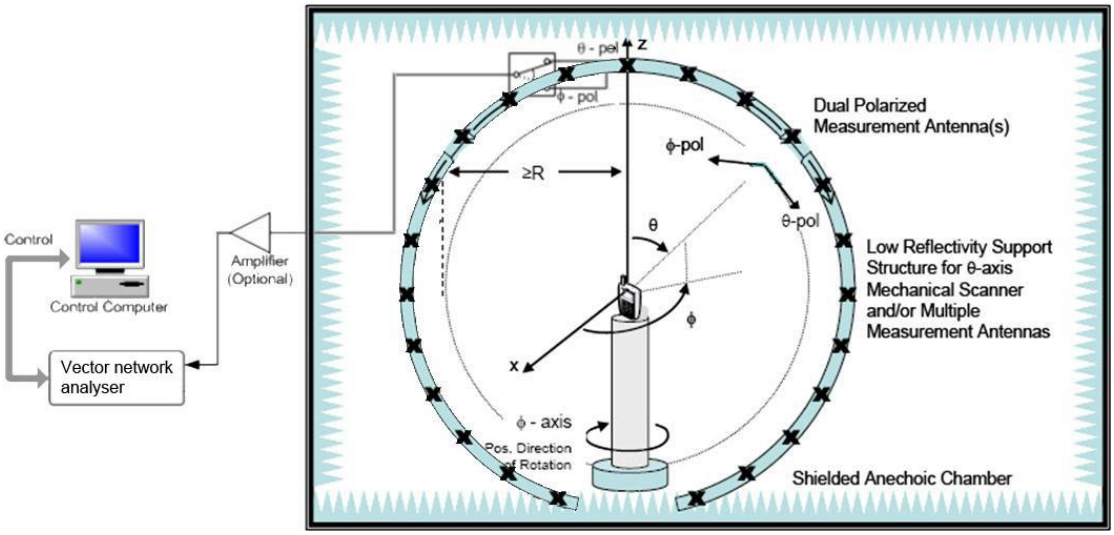
Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(℃)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	21.6	N/A	51

4.2 Test Equipment List

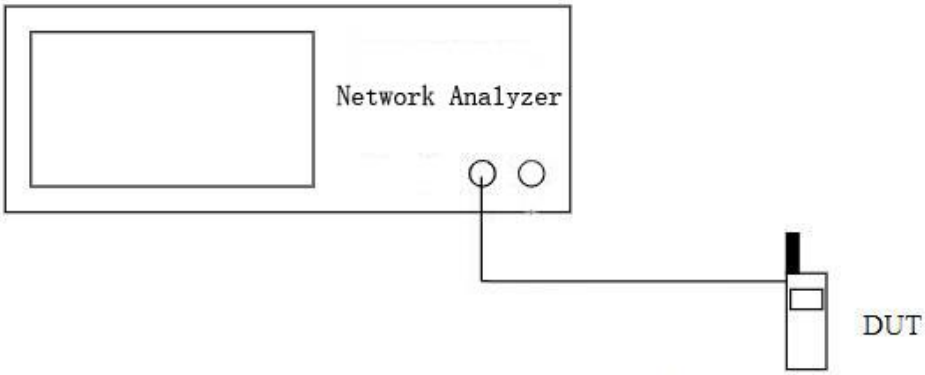
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
SG24 Multi-probe Antenna Measurement System	SATIMO	SG24-L	1101855-0001	2021.11.12	2024.11.11
Vector Network Analyzer	Agilent	E5071B	MY42404001	2023.03.26	2024.03.25
Description	Manufacturer	Name		Version	
Test Software	MVG	SPM		V 1.8	

4.3 Test Setup

4.3.1 Antenna gain, efficiency and radiation pattern test setup



4.3.2 S11 parameter test setup



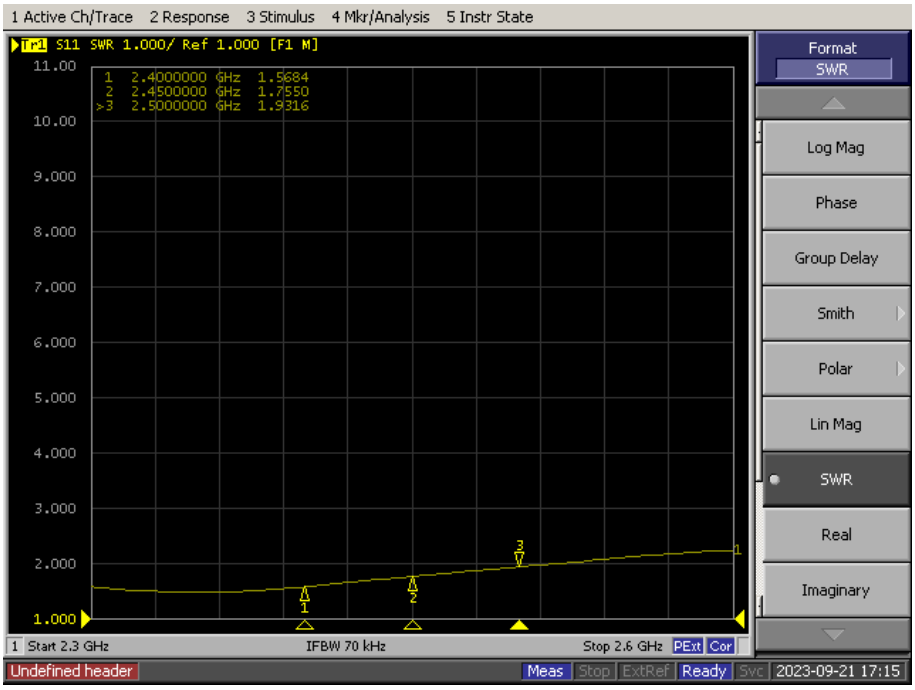
ANNEX A TEST RESULTS

A.1 Gain and Efficiency

Frequency	Gain (dBi)	Efficiency (%)
2400MHz	**-2.70**	**18**
2410MHz	-2.92	17
2420MHz	-3.07	17
2430MHz	-3.09	16
2440MHz	-3.48	15
2450MHz	-3.73	15
2460MHz	-3.77	14
2470MHz	-3.81	14
2480MHz	-3.69	14
2490MHz	-3.93	14
2500MHz	-4.18	14

A.2 VSWR

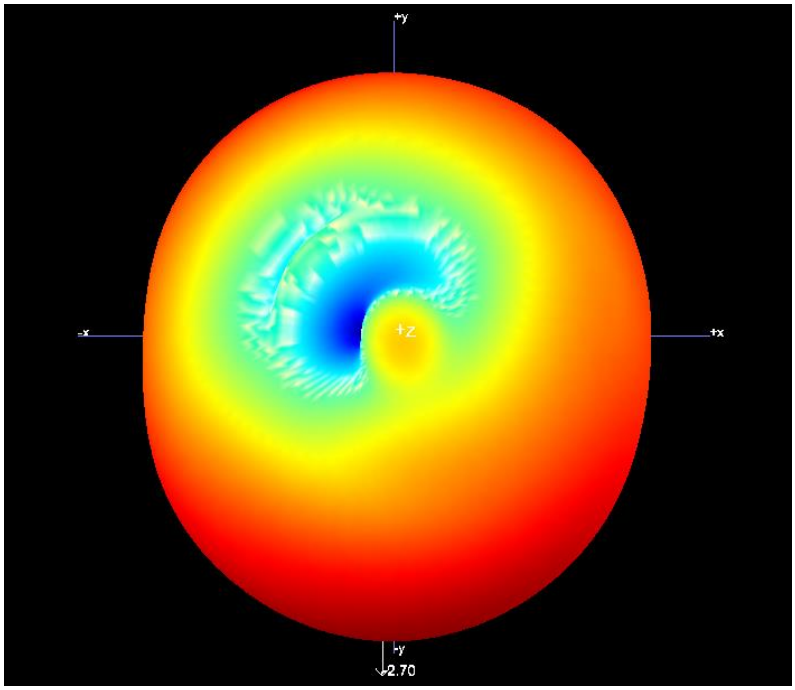
Frequency	VSWR
2400MHz	1.57
2450MHz	1.76
2500MHz	1.93



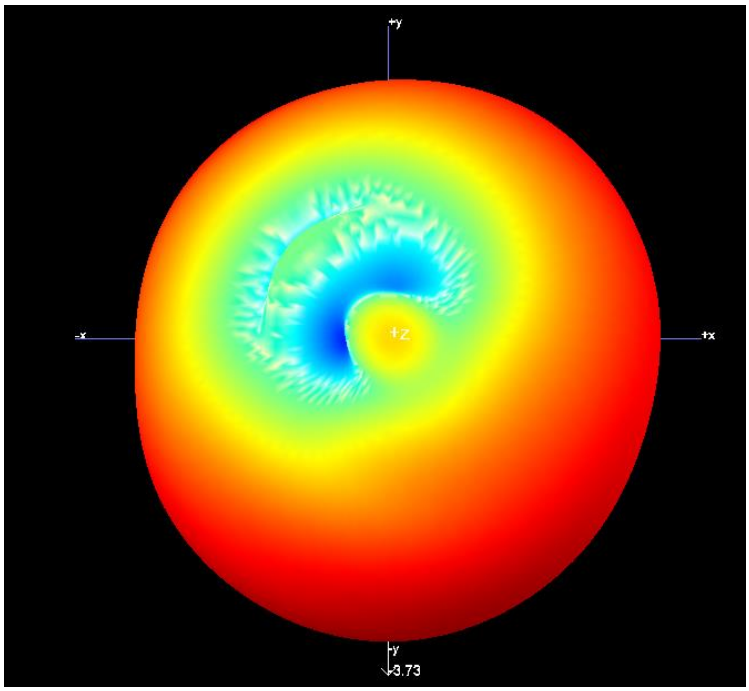
ANNEX B RADIATION PATTERN

B.1 3D Pattern

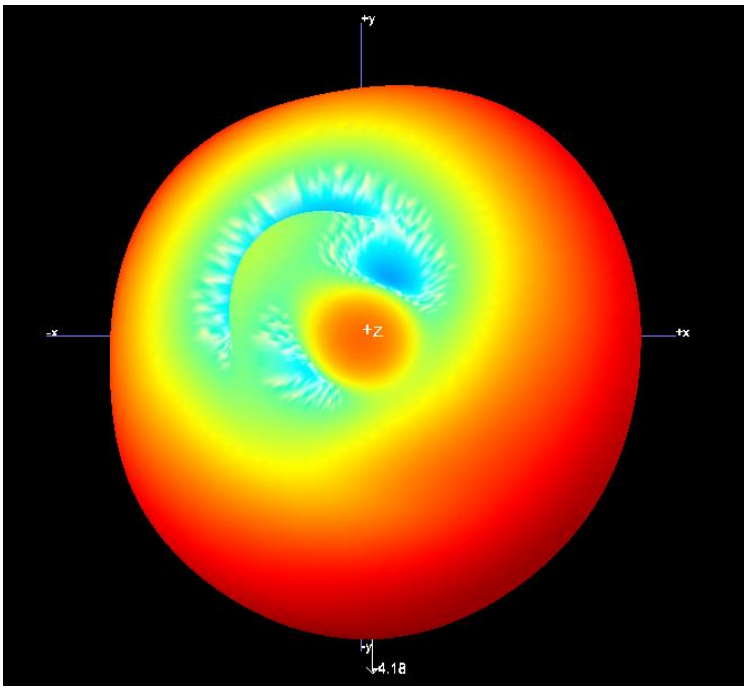
B1.1 3D Pattern for 2400MHz



B1.2 3D Pattern for 2450MHz

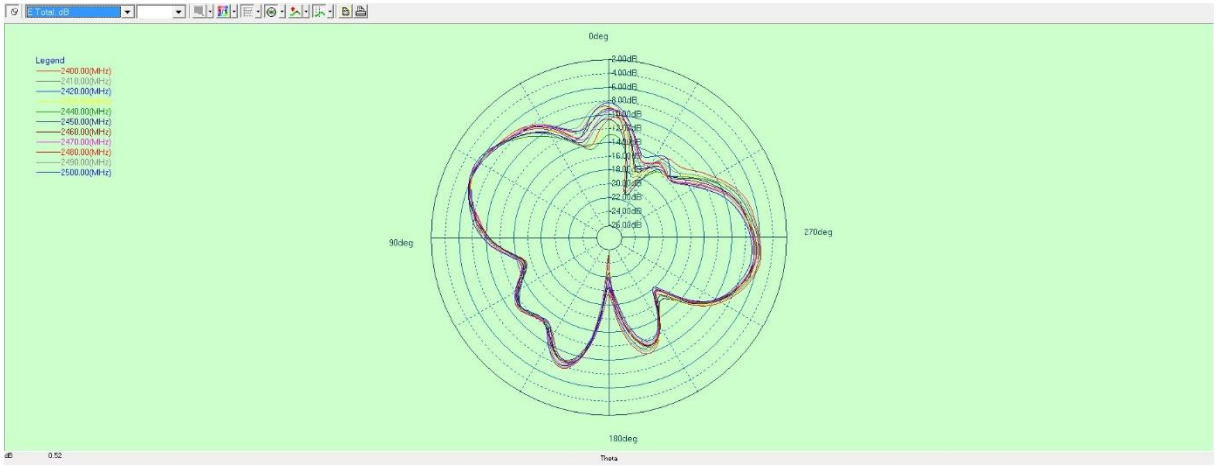


B1.3 3D Pattern for 2500MHz

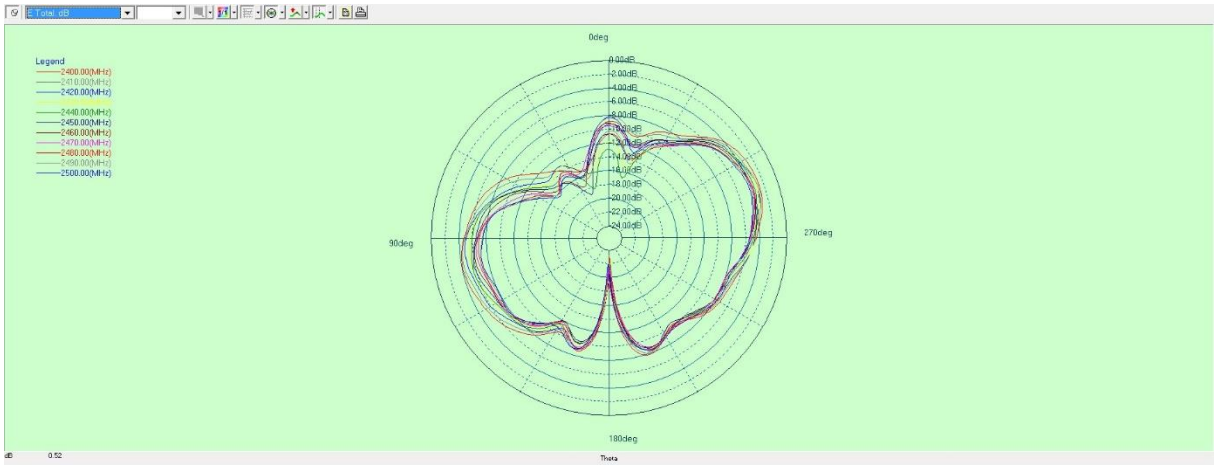


B.2 1D Radiation Pattern

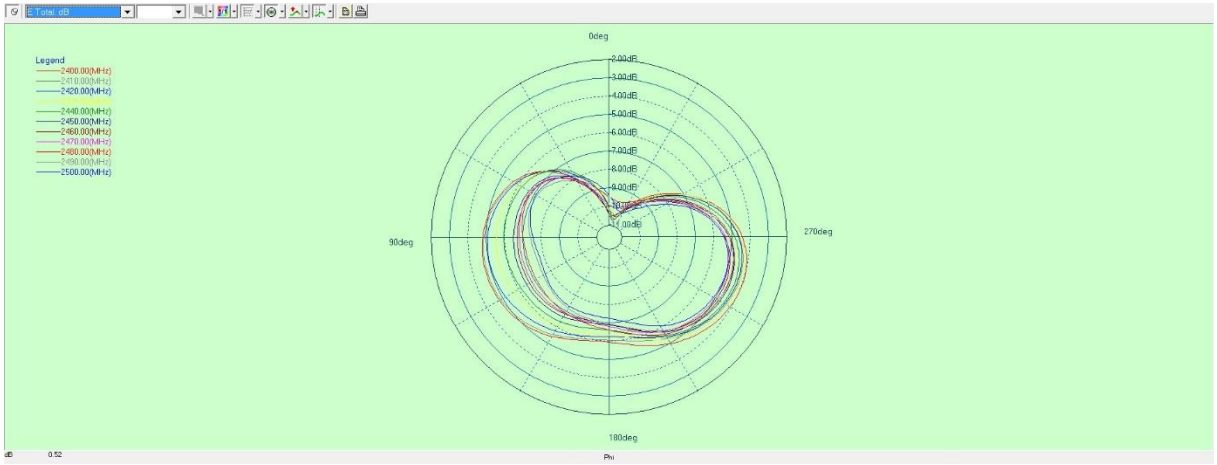
B2.1 PHI=0



B2.2 PHI=90



B2.3 THETA=90



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--END OF REPORT--