TEST REPORT

Applicant:	SHENZH BOYCHUANG TECHNOLOGY CO., LTD
Address:	North, 5 / F, Building 3, Tea West, Zone A, Huafeng First Science Park, Hangcheng Street, Baoan District, Shenzhen
Equipment Type:	2.4G Antenna
Model Name:	SE96K
Brand Name:	BOYCHUANG
Test Standard:	IEEE Std 149-2021
Sample Arrival Date:	Mar. 07, 2024
Test Date:	Mar. 08, 2024
Date of Issue:	Mar. 13, 2024

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Mai Jintian **Checked by:** Xia Long **Approved by:** Tolan Tu (Testing Director)

Mai Jintian Xia Long Tolan Tu

Revision History

Version	Issue Date	Revisions
Rev. 01	Mar. 13, 2024	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	SHENZH BOYCHUANG TECHNOLOGY CO., LTD
Address	North, 5 / F, Building 3, Tea West, Zone A, Huafeng First Science Park, Hangcheng Street, Baoan District, Shenzhen
Contact Person	WEIYUAN WANG
Telephone Number	18675575732
E-mail Address	sparkwang2008@126.com

2.2 Manufacturer Information

Manufacturer	SHENZH BOYCHUANG TECHNOLOGY CO., LTD
Address	North, 5 / F, Building 3, Tea West, Zone A, Huafeng First Science Park, Hangcheng Street, Baoan District, Shenzhen

2.3 General Description for Equipment under Test (EUT)

EUT Name	2.4G Antenna
Model Name Under Test	SE96K
Antenna Type	Whip Antenna
Dimensions	26 mm

2.4 Ancillary Equipment

Note: Not applicable.

2.5 Technical Information

Frequency Range	2402MHz ~ 2480MHz

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 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

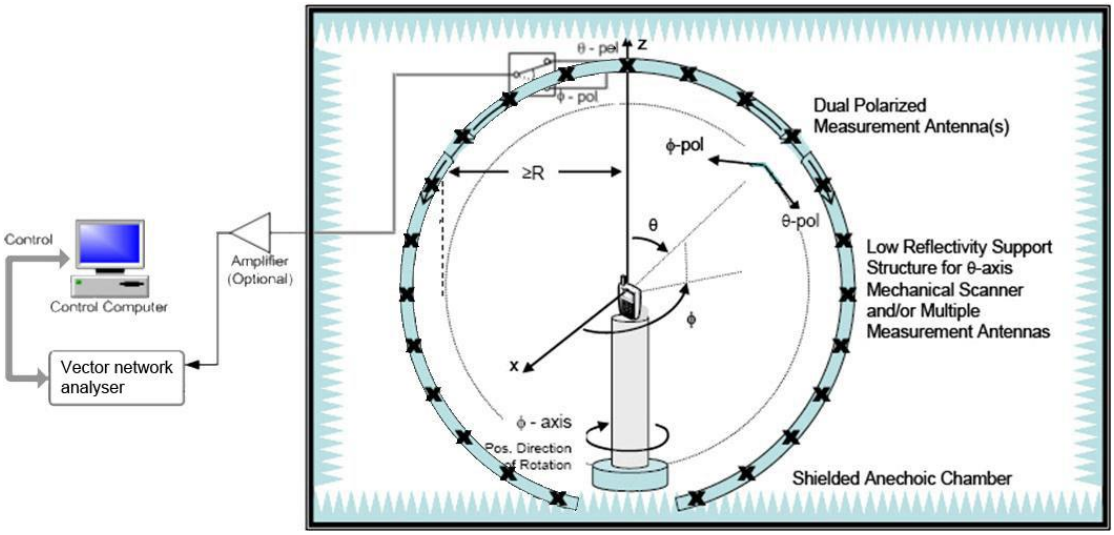
Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(℃)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	21.5	N/A	43

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	2024.01.16	2025.01.15
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



4.4 Test Frequencies

Test Frequencies	2402MHz, 2440MHz, 2480MHz

ANNEX A TEST RESULTS

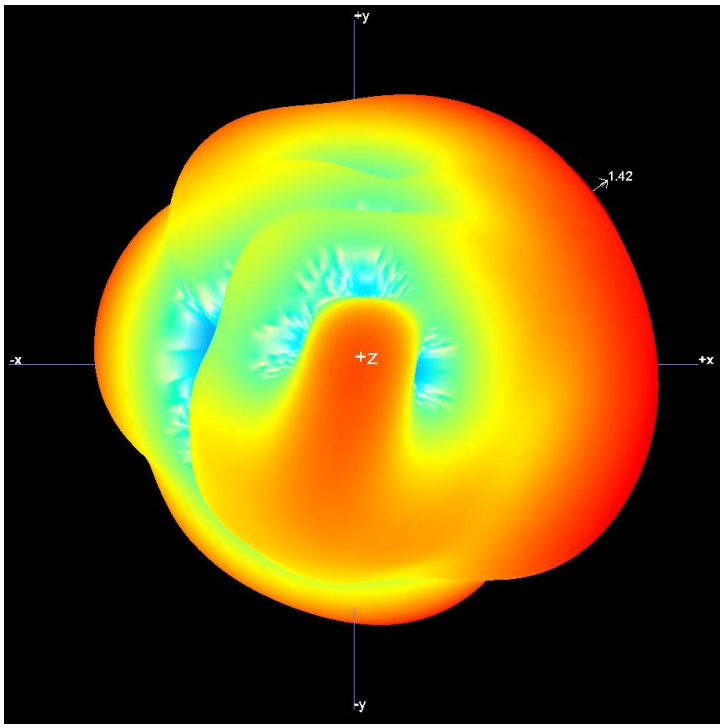
A.1 Gain and Efficiency

Frequency	Gain (dBi)	Efficiency (%)
2402MHz	**1.42**	**35**
2440MHz	0.98	33
2480MHz	1.32	34

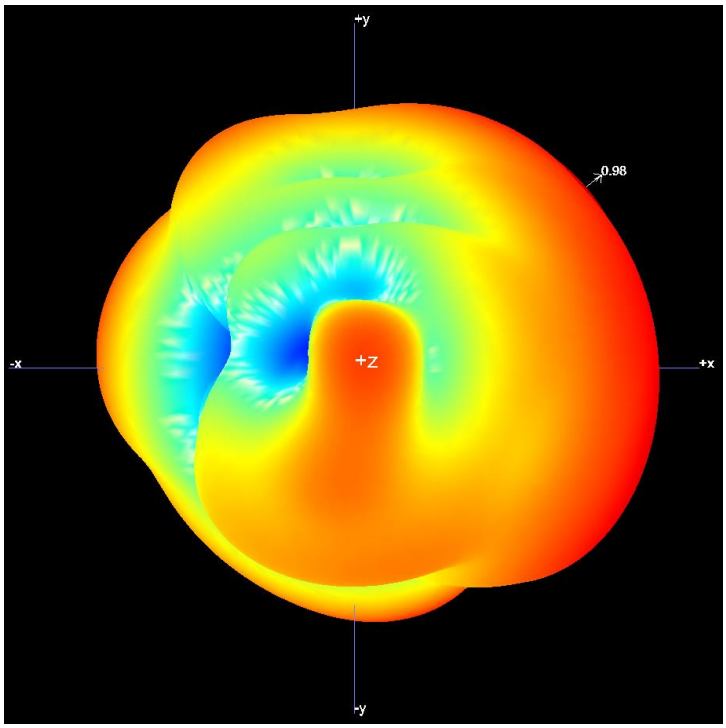
ANNEX B RADIATION PATTERN

B.1 3D Pattern

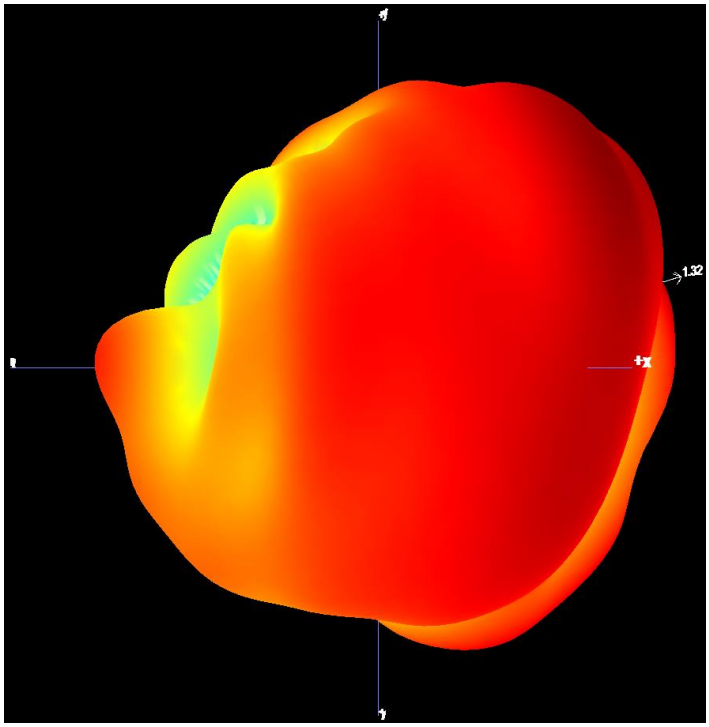
B1.1 3D Pattern for 2402MHz



B1.2 3D Pattern for 2440MHz

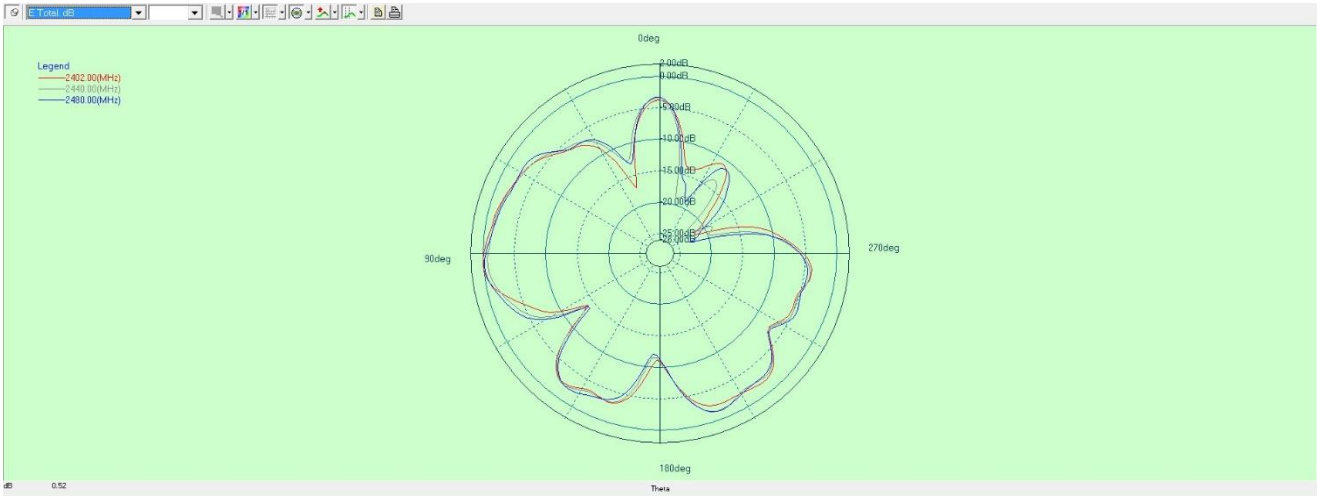


B1.3 3D Pattern for 2480MHz

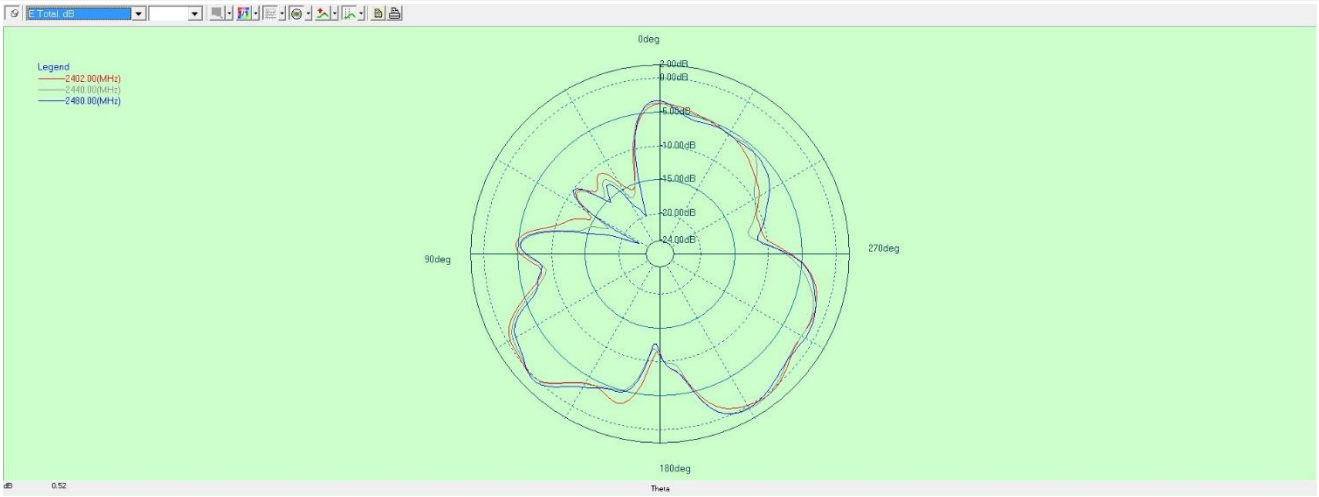


B.2 1D Radiation Pattern

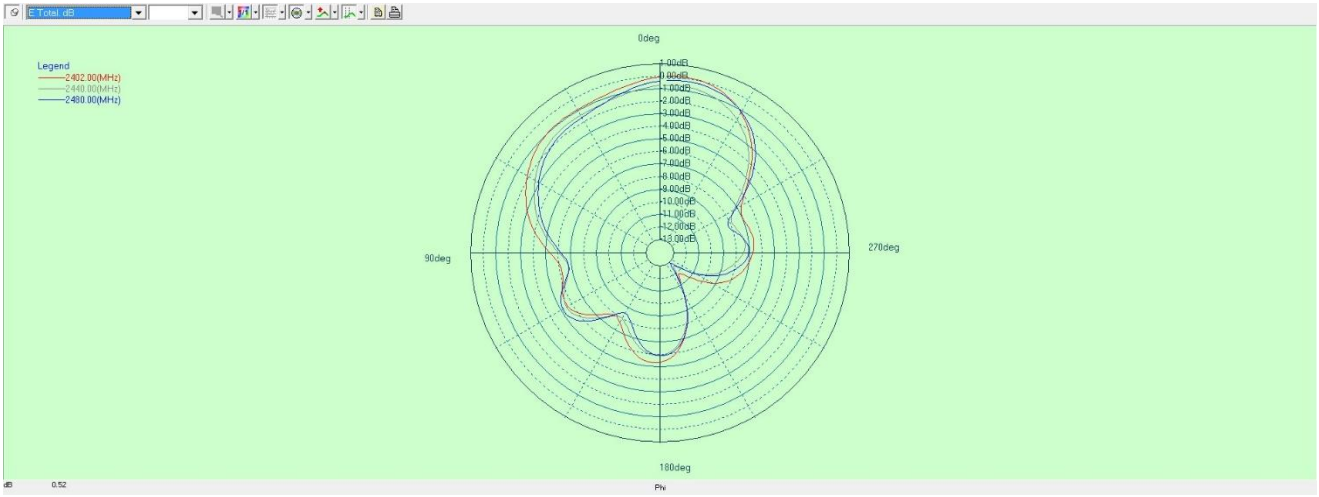
B2.1 PHI=0



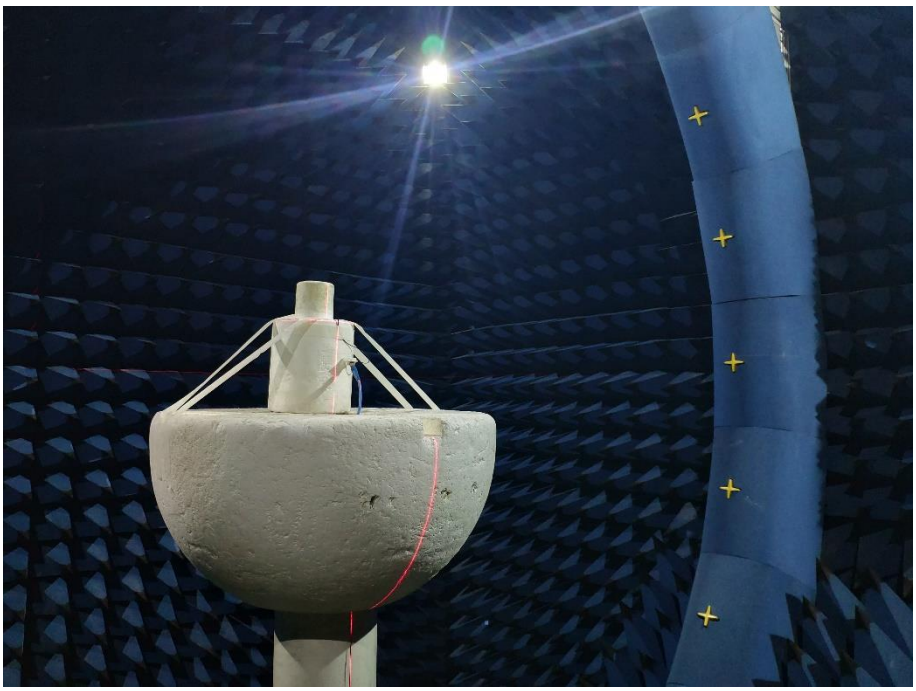
B2.2 PHI=90

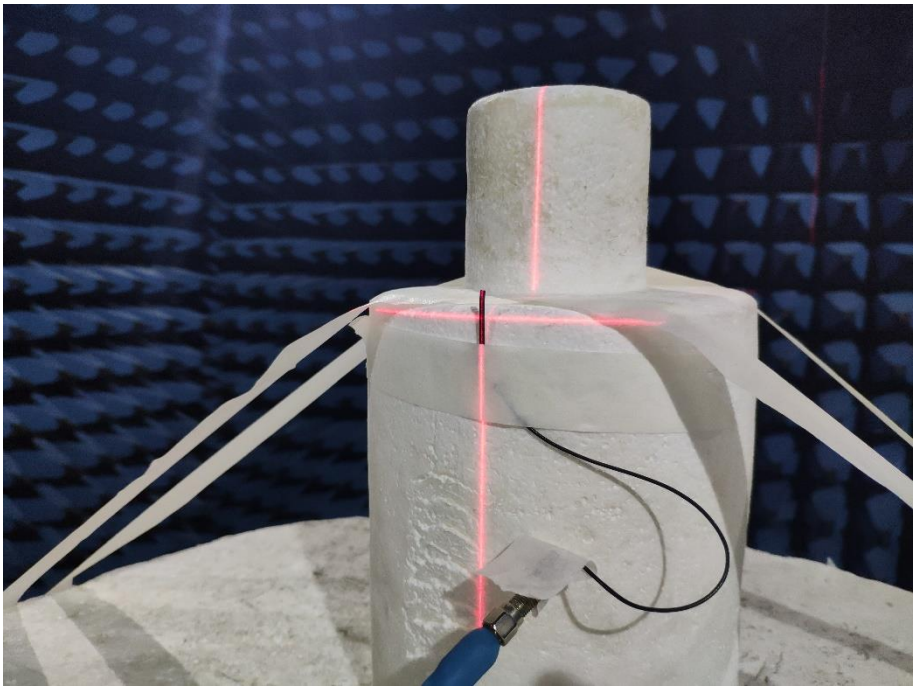


B2.3 THETA=90

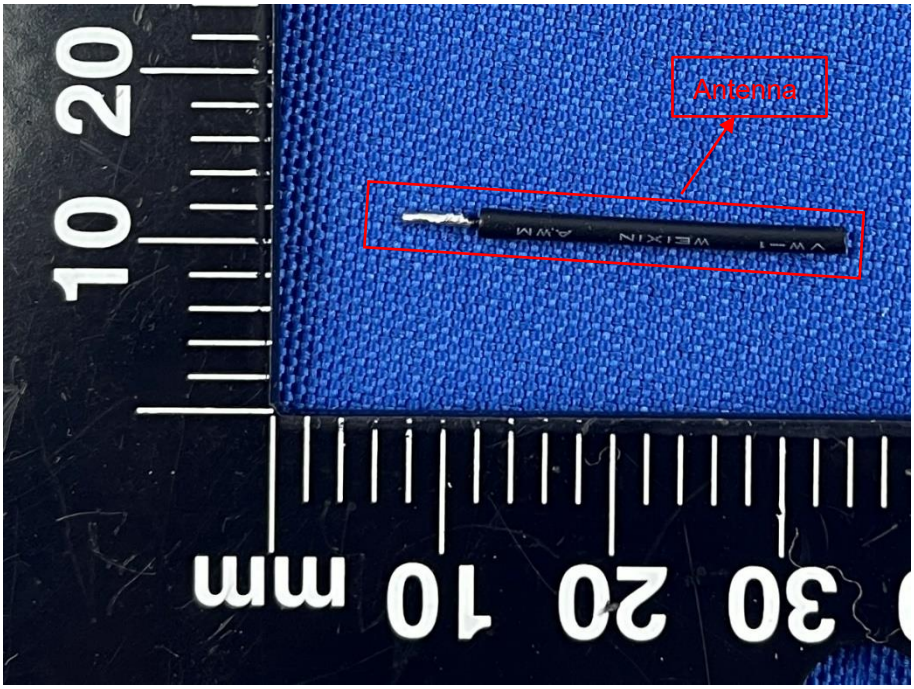


ANNEX C TEST SETUP PHOTO





ANNEX D EUT PHOTO



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--END OF REPORT--