TEST REPORT

Applicant:	Lidarvision Limited
Address:	Unit 1, 19/F, Tak Lee Industrial Centre Blk B, 8 Tsing Yeung Circuit, Tuen Mun, New Territories, Hong Kong
Equipment Type:	PCB BLE Antenna
Model Name:	LV220901_ANT
Brand Name:	Lidarvision Limited
Test Standard:	ANSI/IEEE Std 149-2021
Sample Arrival Date:	Jan. 13, 2023
Test Date:	Jan. 13, 2023
Date of Issue:	Jan. 18, 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	Jan. 18, 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	Lidarvision Limited
Address	Unit 1, 19/F, Tak Lee Industrial Centre Blk B, 8 Tsing Yeung Circuit, Tuen Mun, New Territories, Hong Kong

2.2 Manufacturer Information

Manufacturer	Lidarvision Limited
Address	Unit 1, 19/F, Tak Lee Industrial Centre Blk B, 8 Tsing Yeung Circuit, Tuen Mun, New Territories, Hong Kong

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	PCB BLE Antenna
Model Name Under Test	LV220901_ANT
Antenna Type	PCB Antenna
Dimensions	17*5 mm

2.5 Ancillary Equipment

Note: Not applicable.

2.6 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	ANSI/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 A.3	Input impedance	--
ANNEX A.4	Return Loss	--
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

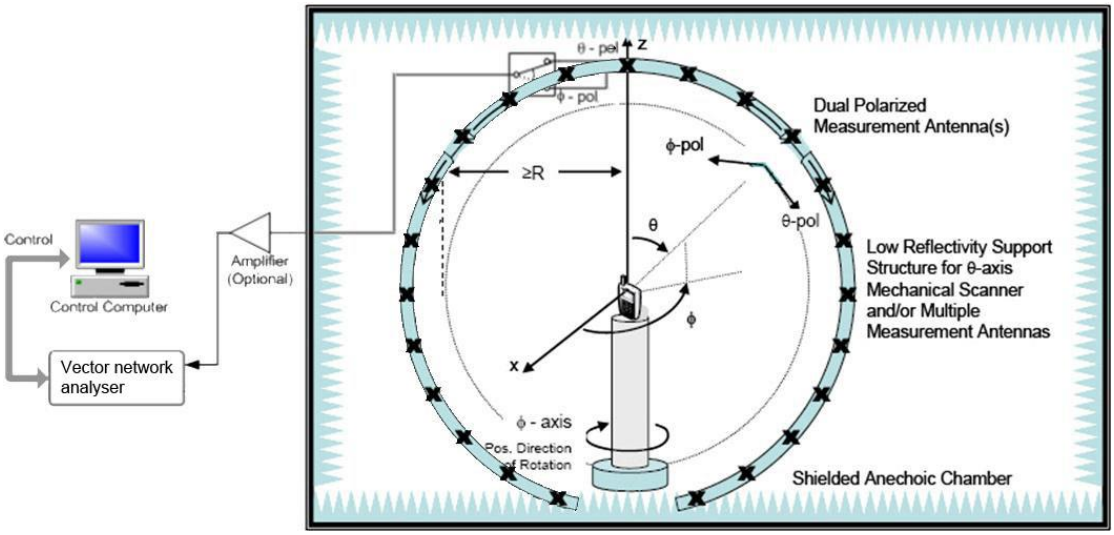
Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(℃)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	21.5	N/A	49

4.2 Test Equipment List

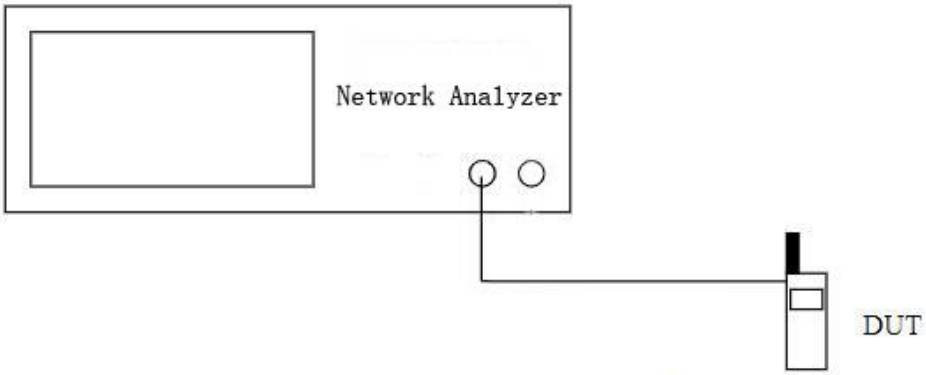
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
SG24 Multi-probe Antenna Measurement System	SATIMO	SG24-L	1101855-0001	2021.11.12	2024.11.11
Vector Network Analyzer	Agilent	E5071B	MY42404001	2022.04.02	2023.04.01
Description	Manufacturer	Name		Version	
Test Software	MVG	SPM		V 1.8	

4.3 Test Setup

4.3.1 Antenna gain, efficiency and radiation pattern test setup



4.3.2 S11 parameter test setup



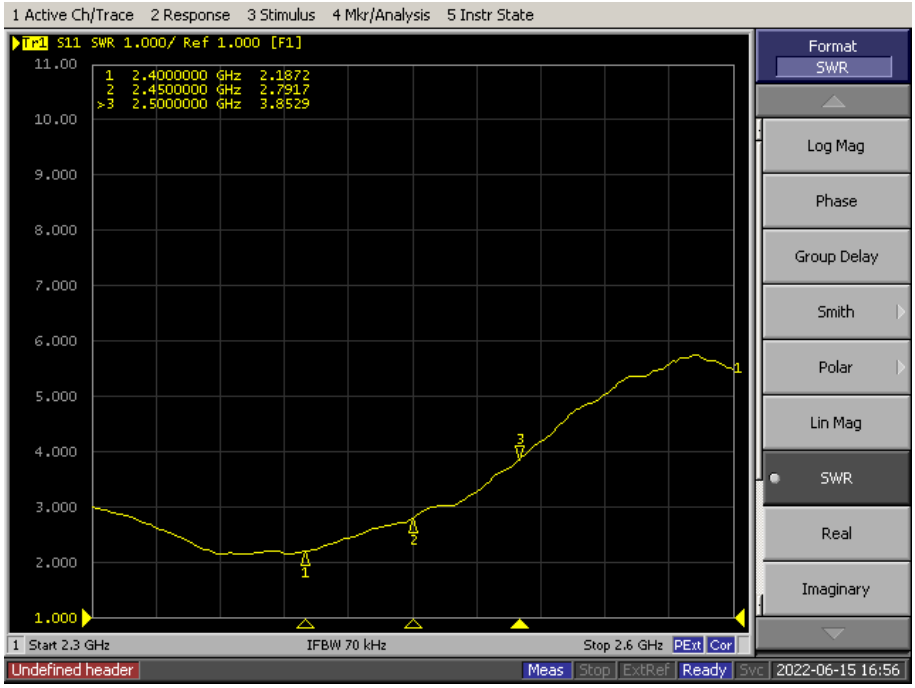
ANNEX A TEST RESULTS

A.1 Gain and Efficiency

Frequency	Gain (dBi)	Efficiency (%)
2400MHz	**2.94**	**69**
2410MHz	2.91	67
2420MHz	2.58	62
2430MHz	2.30	58
2440MHz	2.27	55
2450MHz	1.99	53
2460MHz	1.80	49
2470MHz	1.62	46
2480MHz	1.42	44
2490MHz	1.18	42
2500MHz	1.18	40

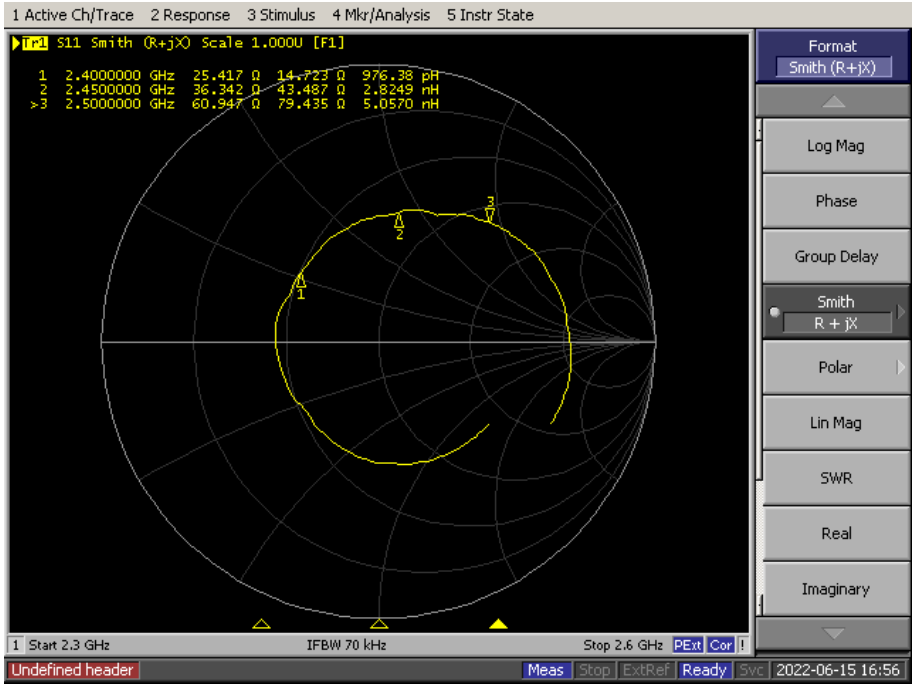
A.2 VSWR

Frequency	VSWR
2400MHz	2.19
2450MHz	2.79
2500MHz	3.85



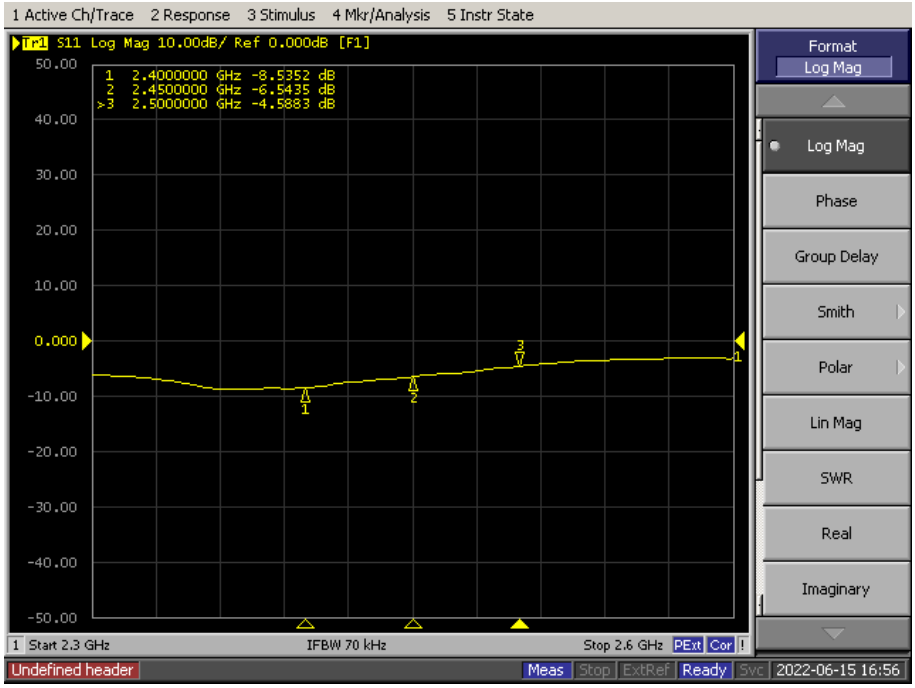
A.3 Input Impedance

Frequency	Input Impedance (Ω)
2400MHz	25.42
2450MHz	36.34
2500MHz	60.95



A.4 Return Loss

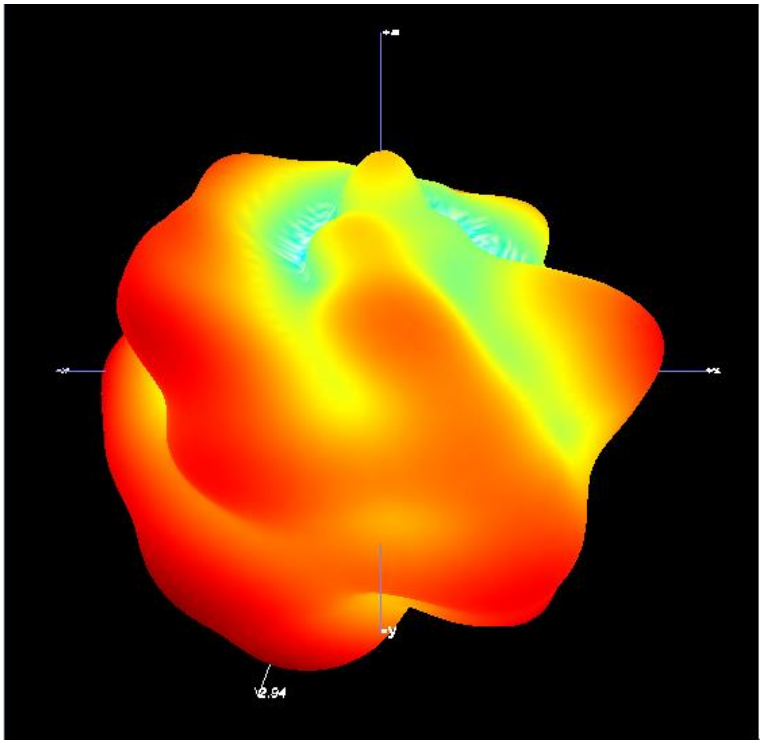
Frequency	Return Loss (dB)
2400MHz	-8.54
2450MHz	-6.54
2500MHz	-4.59



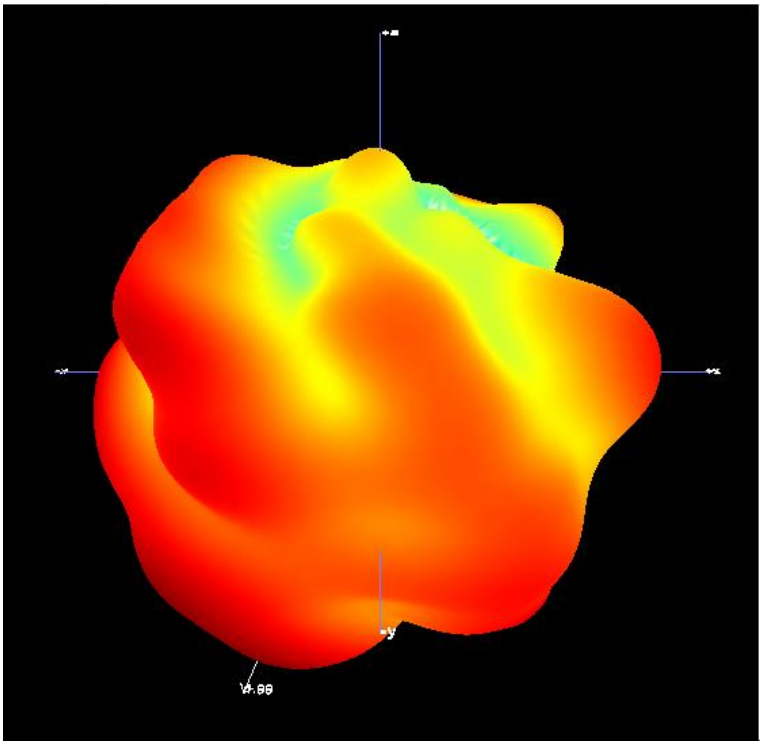
ANNEX B RADIATION PATTERN

B.1 3D Pattern

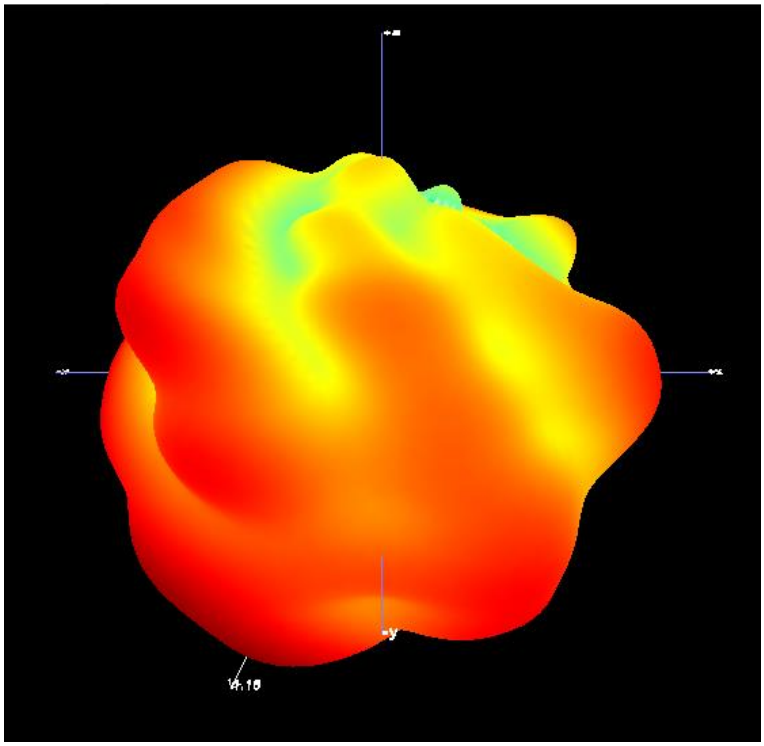
B1.1 3D Pattern for 2400MHz



B1.2 3D Pattern for 2450MHz

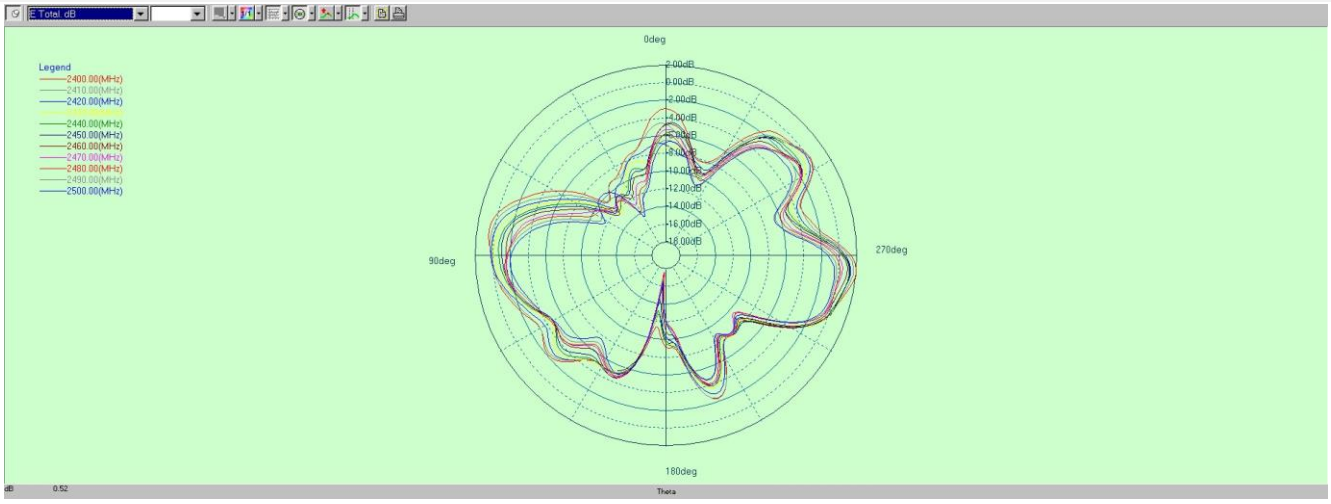


B1.3 3D Pattern for 2500MHz

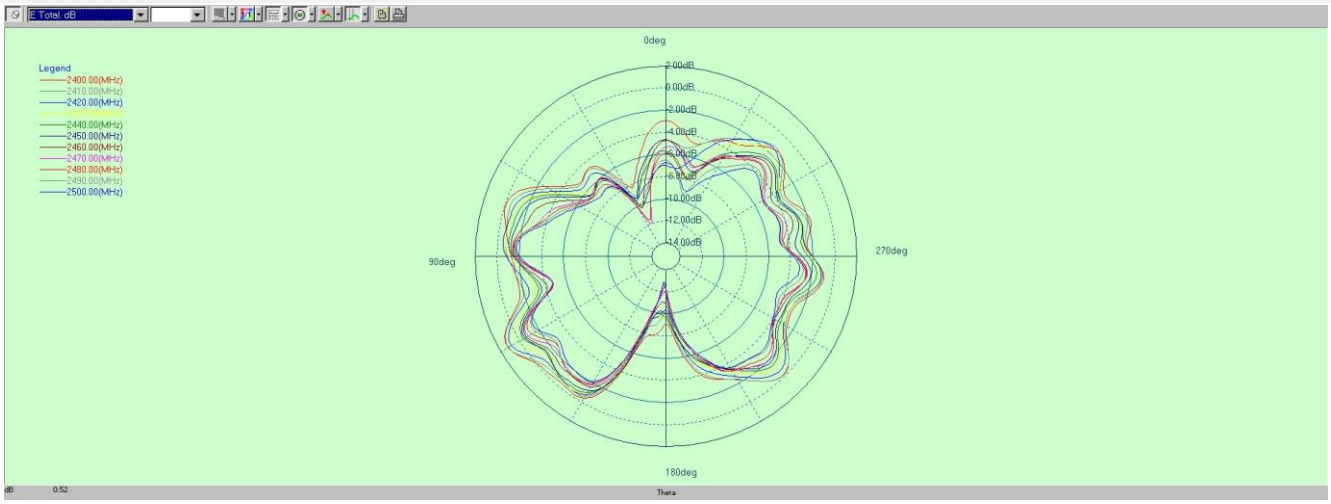


B.2 1D Radiation Pattern

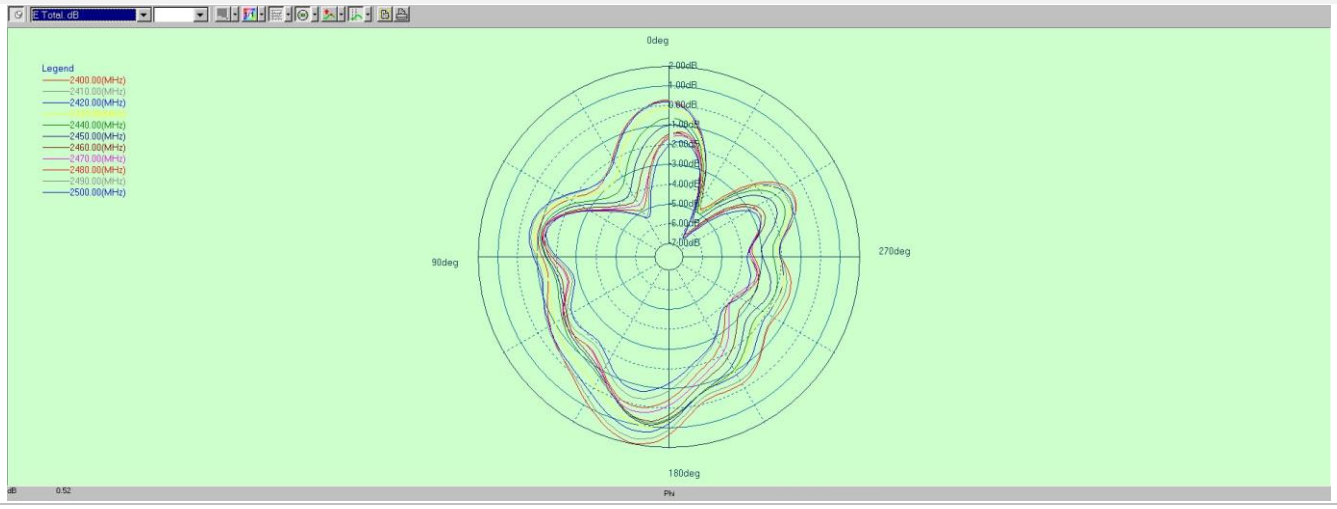
B2.1 PHI=0



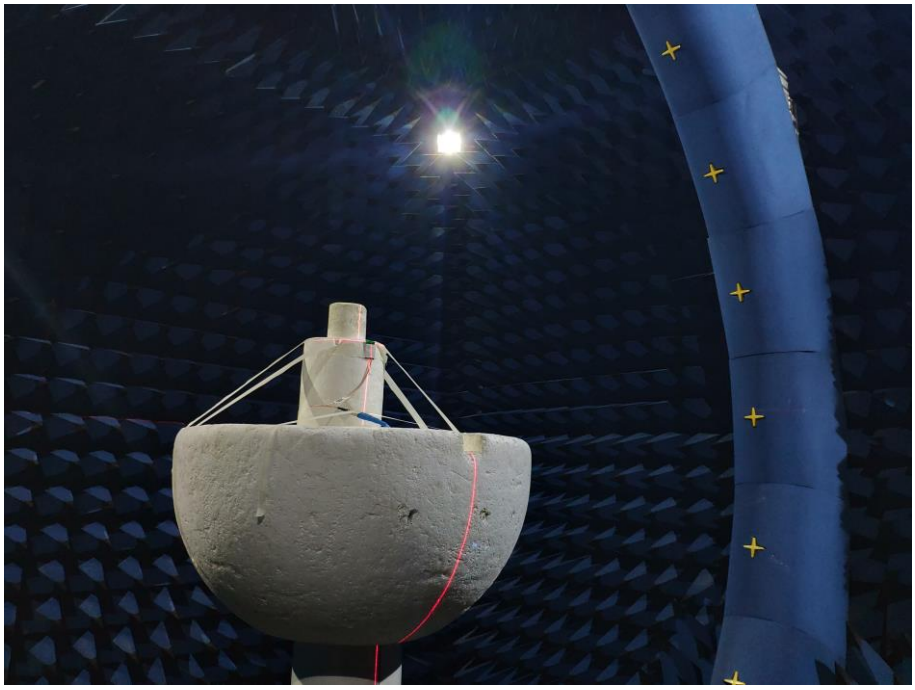
B2.2 PHI=90

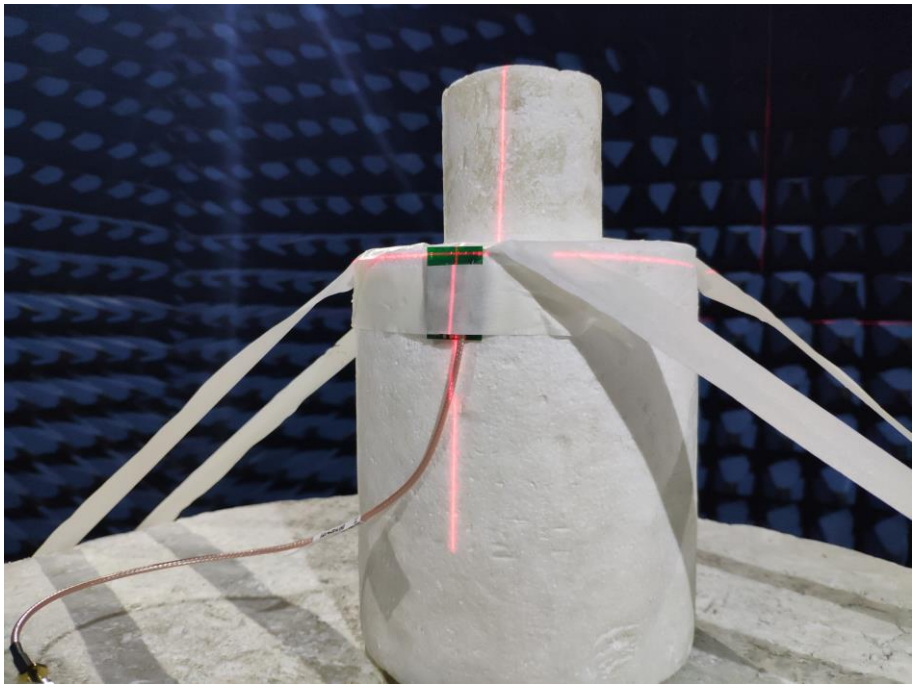


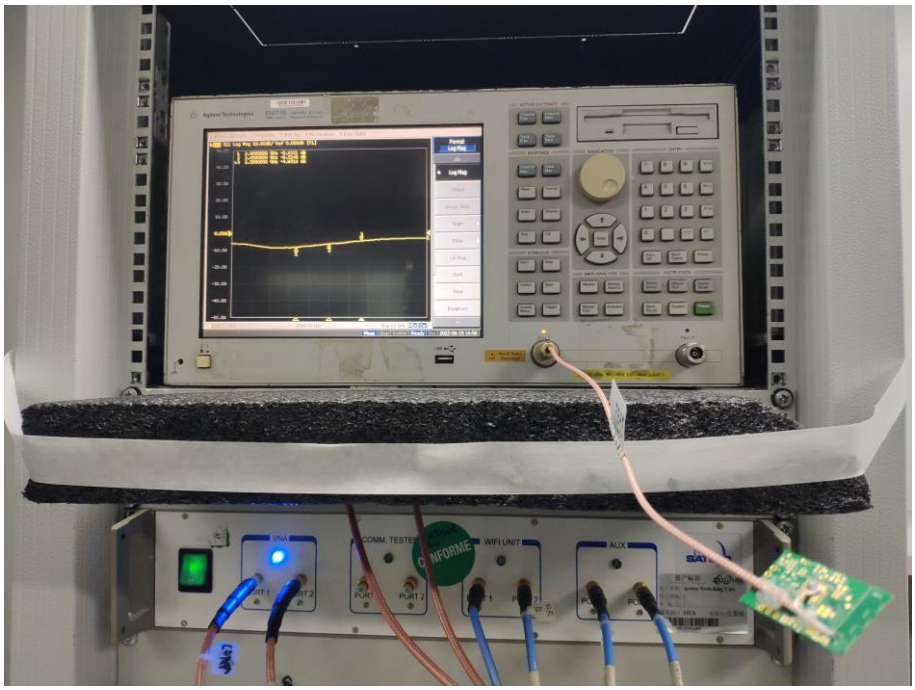
B2.3 THETA=90



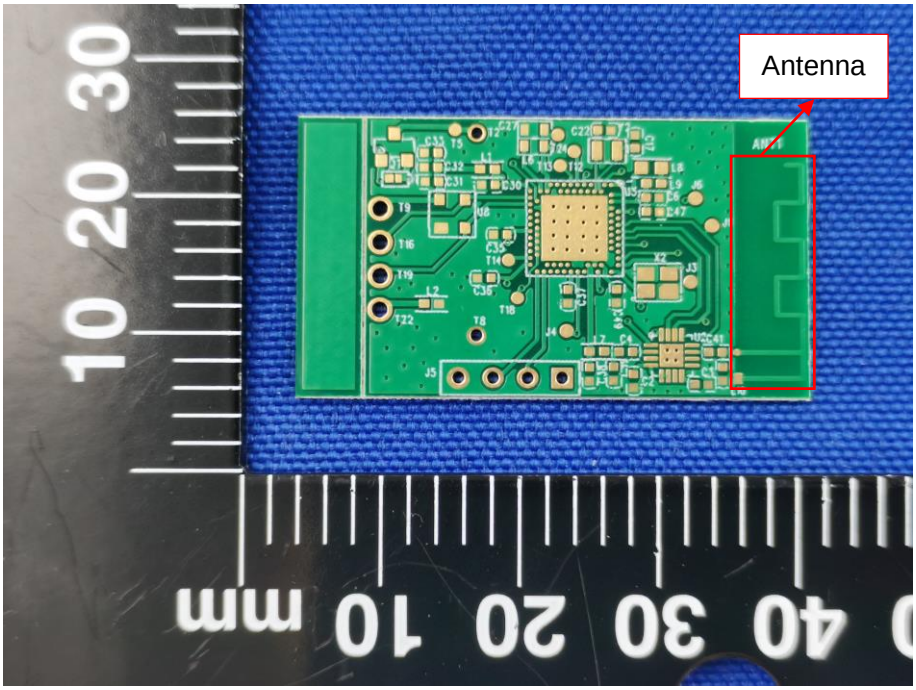
ANNEX C TEST SETUP PHOTO



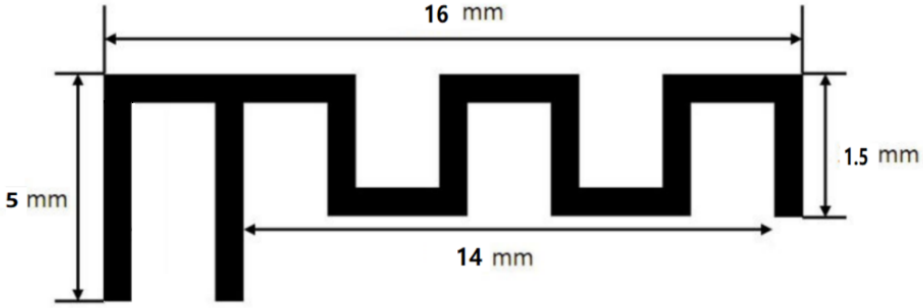



VNA
COMM. TESTER
WIFI UNIT
AUX

ANNEX D EUT PHOTO



Antenna Photo & Length (mm)



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