TEST REPORT

Applicant:	Guangdong Lvtong New Energy Electric Vehicle TechnologyCo., Ltd.
Address:	No.15, Hongmei Section, Wangsha Road, Hongmei Town, Dongguan City, Guangdong Province
Equipment Type:	Amplifier module PCB antenna
Model Name:	JX-X3
Brand Name:	N/A
Test Standard:	IEEE Std 149-2021
Sample Arrival Date:	Sep. 10, 2025
Test Date:	Sep. 12, 2025
Date of Issue:	Dec. 04, 2025

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	Dec. 04, 2025	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	Guangdong Lvtong New Energy Electric Vehicle TechnologyCo., Ltd.
Address	No.15, Hongmei Section, Wangsha Road, Hongmei Town, Dongguan City, Guangdong Province

2.2 Manufacturer Information

Manufacturer	Shenzhen Jiuxing Technology Co., Ltd
Address	508, Building C, Pengcheng Huihui Intelligent Manufacturing Innovation Park, Shajing, Bao'an District, Shenzhen

2.3 General Description for Equipment under Test (EUT)

EUT Name	Amplifier module PCB antenna
Model Name Under Test	JX-X3
Antenna Type	PCB Antenna
Dimensions	14*6 mm

2.4 Ancillary Equipment

Note: Not applicable.

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

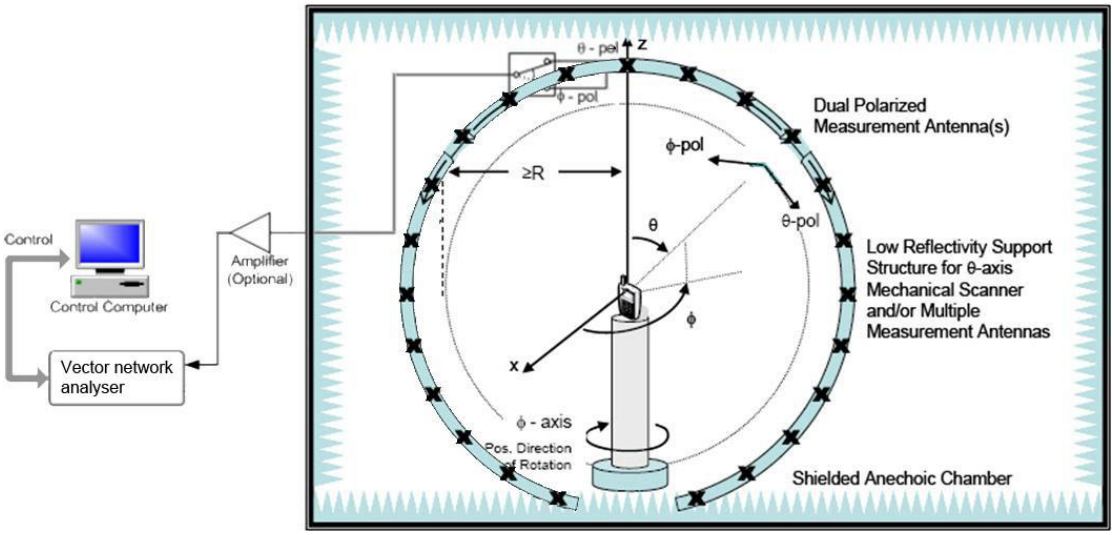
Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(℃)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	21.7	N/A	44

4.2 Test Equipment List

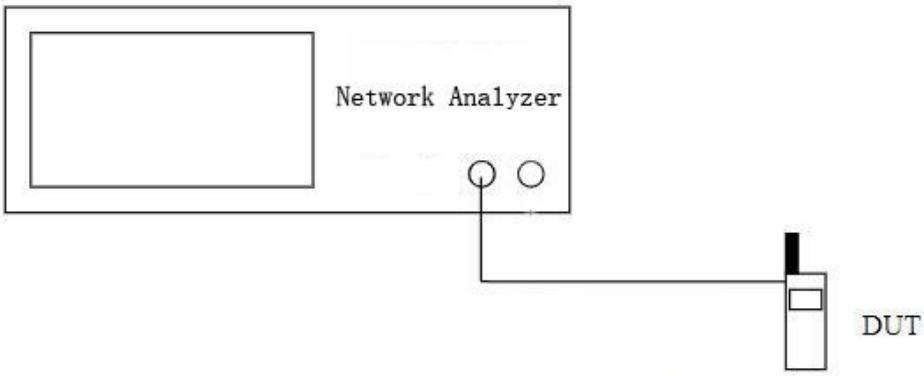
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Small portable antenna measurement system (multi-probe)	Sunyield	SY24-M	N/A	2025.08.02	2028.08.01
Vector Network Analyzer	Agilent	E5071B	MY42404001	2025.01.23	2026.01.22
Description	Manufacturer	Name		Version	
Test Software	Sunyield	PMS		V3	

4.3 Test Setup

4.3.1 Antenna gain, efficiency and radiation pattern test setup



4.3.2 S11 parameter test setup



4.4 Test Frequencies

Test Frequencies	2400MHz, 2402MHz, 2404MHz, 2406MHz, 2408MHz, 2410MHz, 2412MHz, 2414MHz, 2416MHz, 2418MHz, 2420MHz, 2422MHz, 2424MHz, 2426MHz, 2428MHz, 2430MHz, 2432MHz, 2434MHz, 2436MHz, 2438MHz, 2440MHz, 2442MHz, 2444MHz, 2446MHz, 2448MHz, 2450MHz, 2452MHz, 2454MHz, 2456MHz, 2458MHz, 2460MHz, 2462MHz, 2464MHz, 2466MHz, 2468MHz, 2470MHz, 2472MHz, 2474MHz, 2476MHz, 2478MHz, 2480MHz, 2482MHz, 2483.5MHz

ANNEX A TEST RESULTS

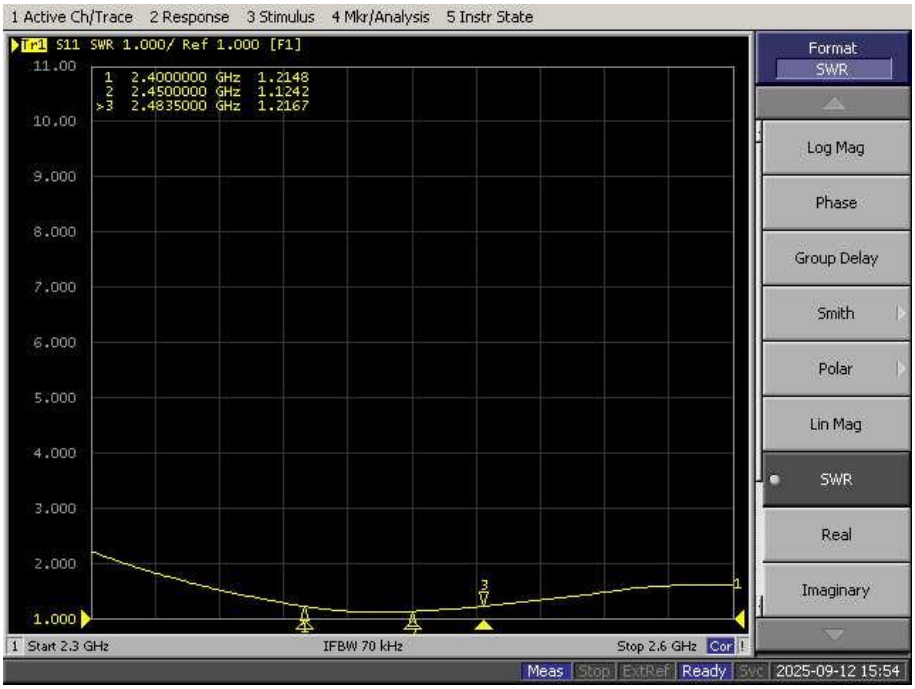
A.1 Gain and Efficiency

Frequency	Gain (dBi)	Efficiency (%)
2400MHz	4.44	45
2402MHz	4.48	45
2404MHz	4.53	45
2406MHz	4.44	45
2408MHz	4.49	45
2410MHz	4.49	45
2412MHz	4.50	45
2414MHz	4.51	45
2416MHz	4.15	44
2418MHz	4.30	45
2420MHz	4.48	46
2422MHz	4.57	46
2424MHz	4.61	46
2426MHz	4.32	46
2428MHz	4.40	46
2430MHz	4.56	47
2432MHz	4.67	46
2434MHz	**4.79**	47
2436MHz	4.49	47
2438MHz	4.51	46
2440MHz	4.51	46
2442MHz	4.51	45
2444MHz	4.55	45
2446MHz	4.43	46
2448MHz	4.47	46
2450MHz	4.46	46
2452MHz	4.49	47
2454MHz	4.52	47
2456MHz	4.49	47
2458MHz	4.55	47
2460MHz	4.59	48
2462MHz	4.63	48
2464MHz	4.64	48
2466MHz	4.41	48
2468MHz	4.48	48
2470MHz	4.57	48
2472MHz	4.66	49
2474MHz	4.72	**50**

2476MHz	4.38	49
2478MHz	4.43	49
2480MHz	4.53	49
2482MHz	4.65	49
2483.5MHz	4.74	49

A.2 VSWR

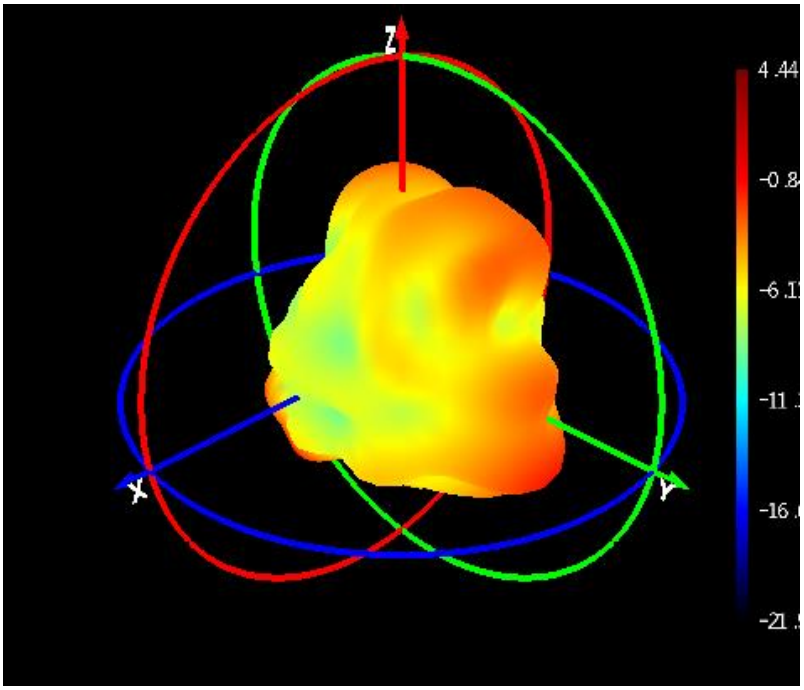
Frequency	VSWR
2400MHz	1.21
2440MHz	1.12
2483.5MHz	1.22



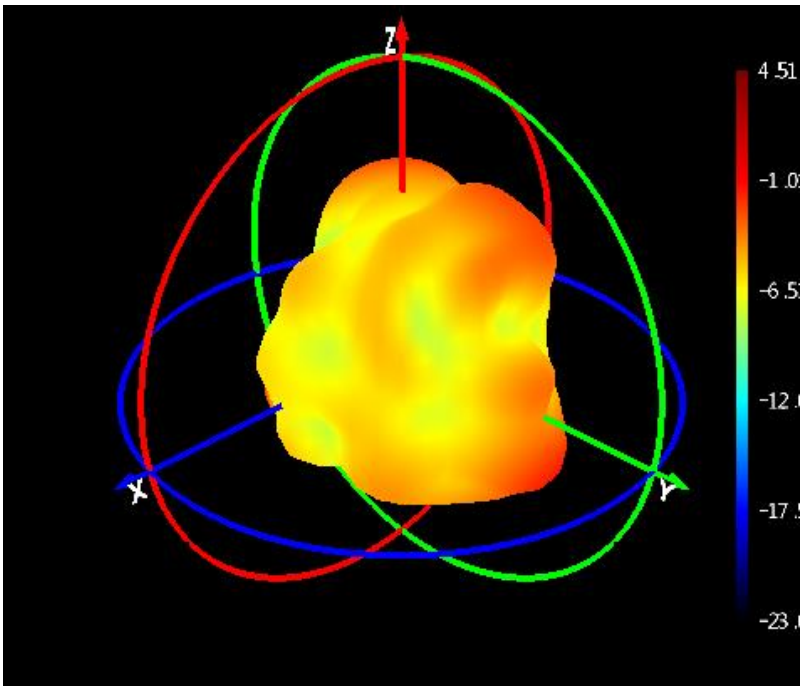
ANNEX B RADIATION PATTERN

B.1 3D Pattern

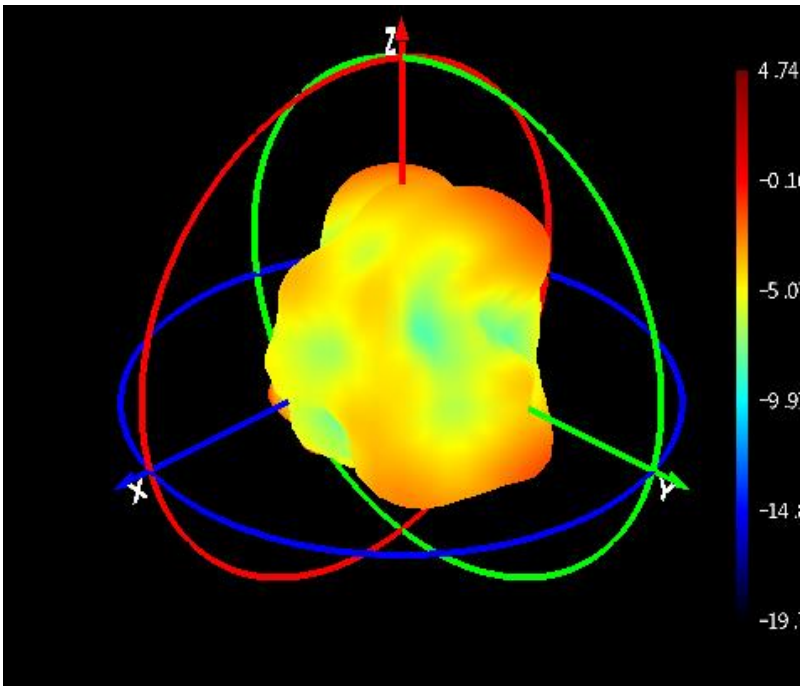
B1.1 3D Pattern for 2400MHz



B1.2 3D Pattern for 2440MHz

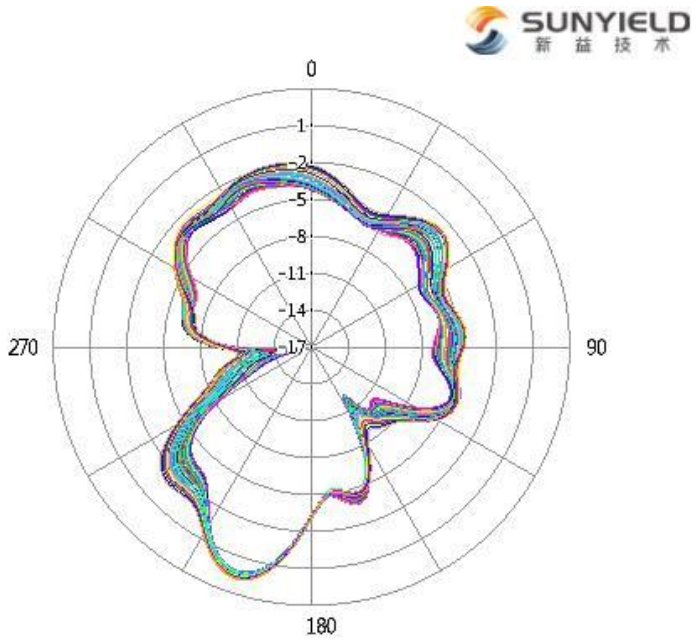


B1.3 3D Pattern for 2483.5MHz

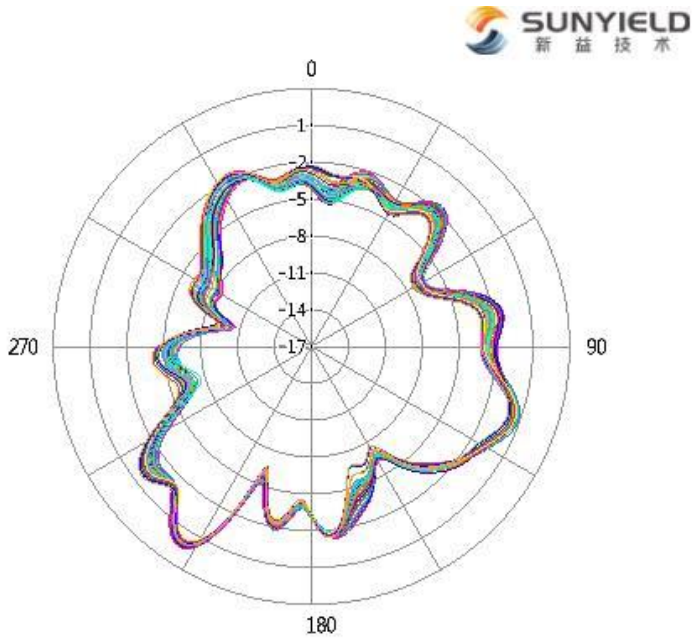


B.2 1D Radiation Pattern

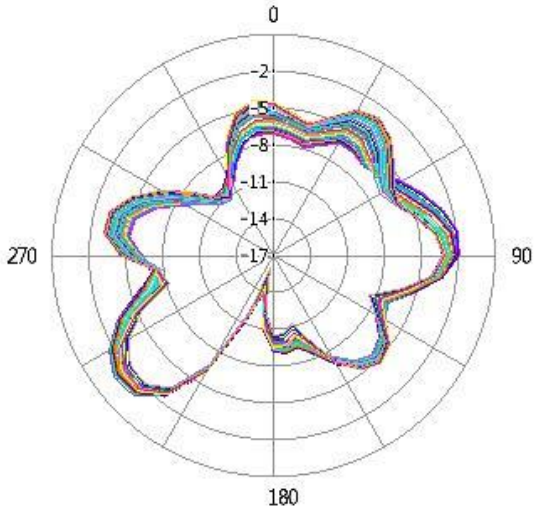
B2.1 PHI=0



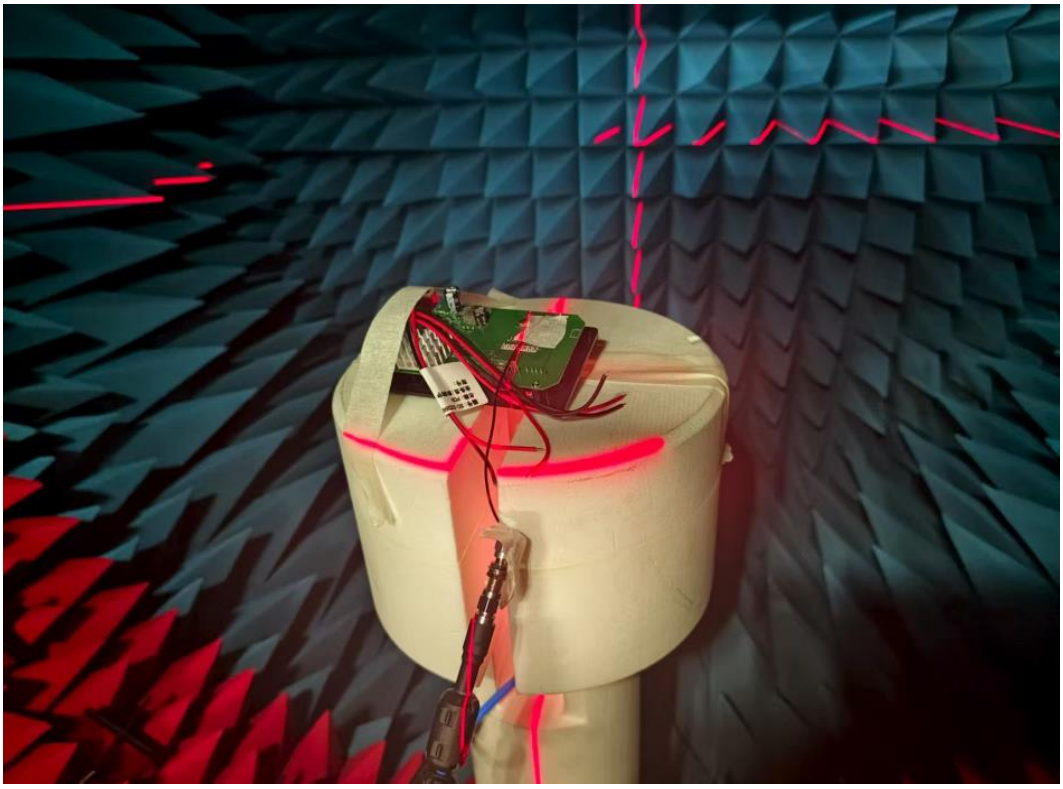
B2.2 PHI=90



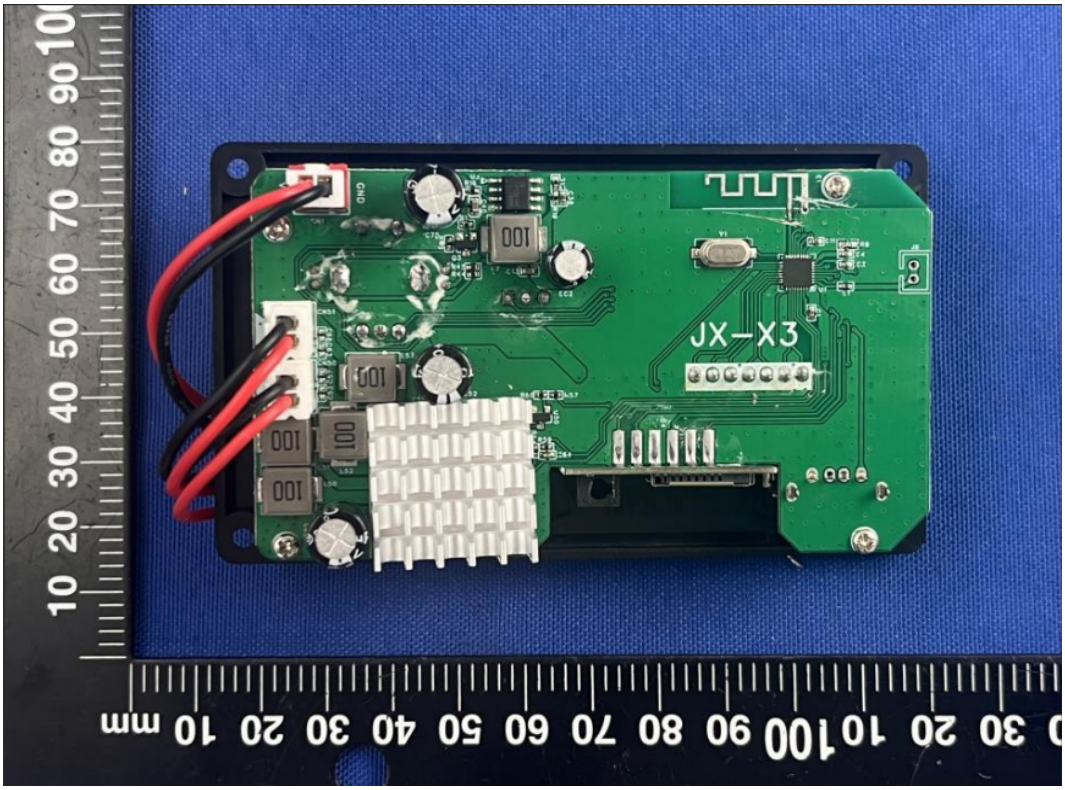
B2.3 THETA=90



ANNEX C TEST SETUP PHOTOS



ANNEX D EUT PHOTO



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--END OF REPORT--