TEST REPORT

Applicant:	LINAK A/S
Address:	Group Headquarters, Smedevænget 8, Guderup DK-6430 Nordborg, Denmark
Equipment Type:	LA14IO
Model Name:	LA14IO
Brand Name:	LINAK
Test Standard:	IEEE Std 149-2021
Sample Arrival Date:	May 08, 2024
Test Date:	May 10, 2024 - May 21, 2024
Date of Issue:	May 23, 2024

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

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

Revision History

Version	Issue Date	Revisions
Rev. 01	May 23, 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	LINAK A/S
Address	Group Headquarters, Smedevænget 8, Guderup DK-6430 Nordborg, Denmark
Contact Person	King
Tel. No.	13265684833

2.2 Manufacturer Information

Manufacturer	LINAK A/S
Address	Group Headquarters, Smedevænget 8, Guderup DK-6430 Nordborg, Denmark

2.3 General Description for Equipment under Test (EUT)

EUT Name	LA14IO
Model Name Under Test	LA14IO
Antenna Type	Wire Antenna
Dimensions	60 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

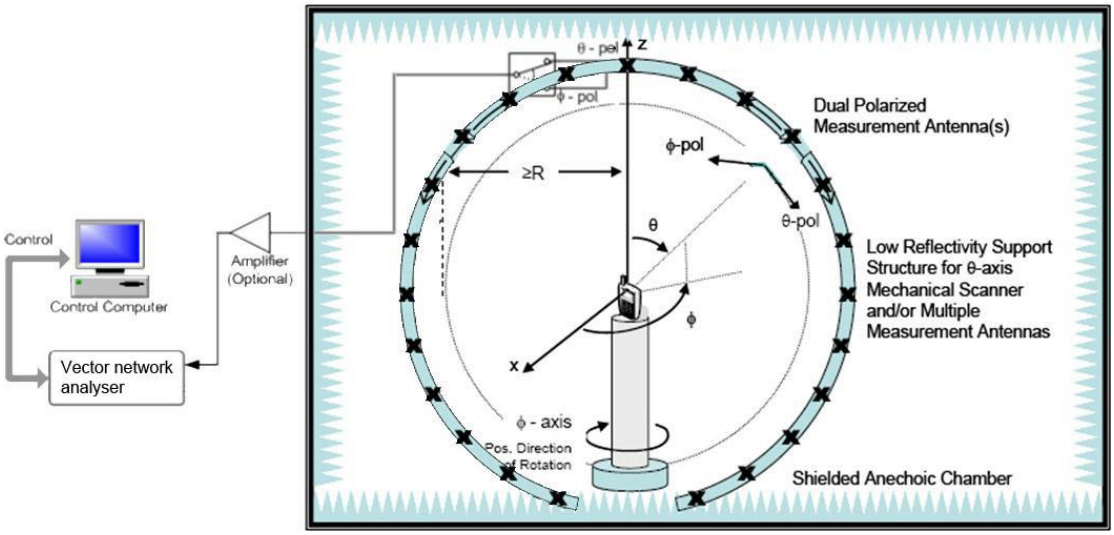
Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(℃)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	21.5	N/A	46

4.2 Test Equipment List

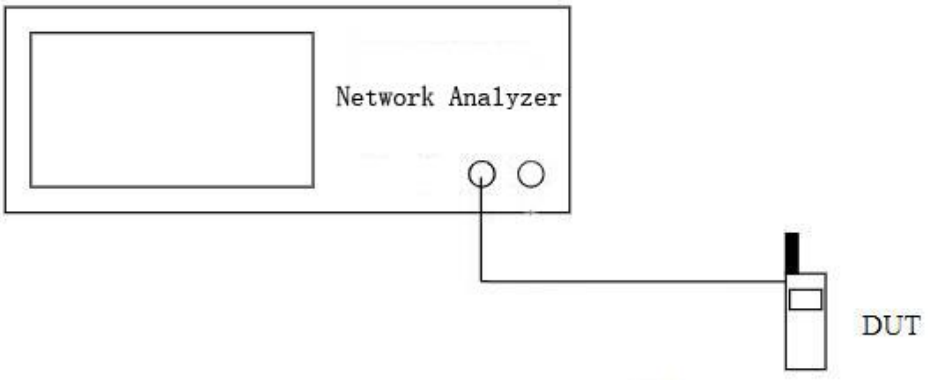
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
SG24 Multi-probe Antenna Measurement System	SATIMO	SG24-L	1101855-0001	2021.11.12	2024.11.11
Vector Network Analyzer	Agilent	E5071B	MY42404001	2024.01.16	2025.01.15
Description	Manufacturer	Name		Version	
Test Software	MVG	SPM		V 1.8	

4.3 Test Setup

4.3.1 Antenna gain, efficiency and radiation pattern test setup



4.3.2 S11 parameter test setup



4.4 Test Frequencies

Test Frequencies	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2477.7MHz, 2480MHz, 2490MHz, 2500MHz

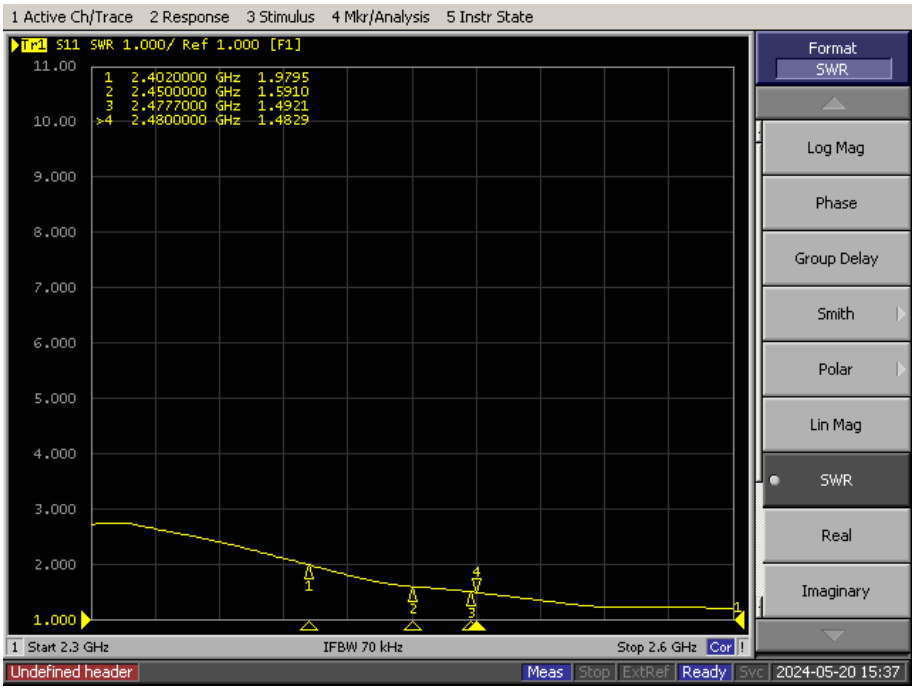
ANNEX A TEST RESULTS

A.1 Gain and Efficiency

Frequency	Gain (dBi)	Efficiency (%)	Efficiency (dB)
2400MHz	1.78	25	-5.97
2410MHz	1.51	24	-6.13
2420MHz	1.37	24	-6.28
2430MHz	1.52	24	-6.26
2440MHz	1.77	24	-6.12
2450MHz	1.87	25	-6.03
2460MHz	2.08	26	-5.89
2470MHz	2.44	27	-5.65
2480MHz	**2.66**	**28**	**-5.48**
2490MHz	2.53	28	-5.50
2500MHz	2.39	28	-5.56

A.2 VSWR

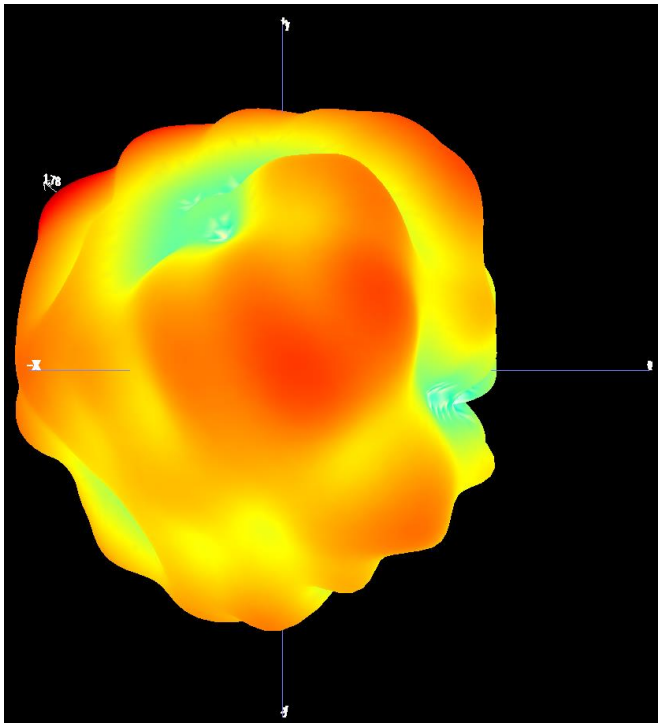
Frequency	VSWR
2402MHz	1.98
2450MHz	1.59
2477.7MHz	1.49
2480MHz	1.48



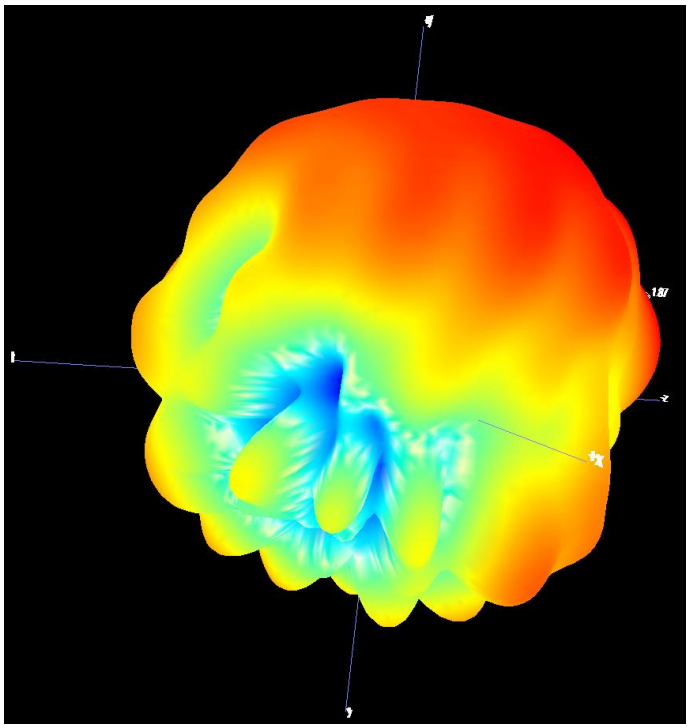
ANNEX B RADIATION PATTERN

B.1 3D Pattern

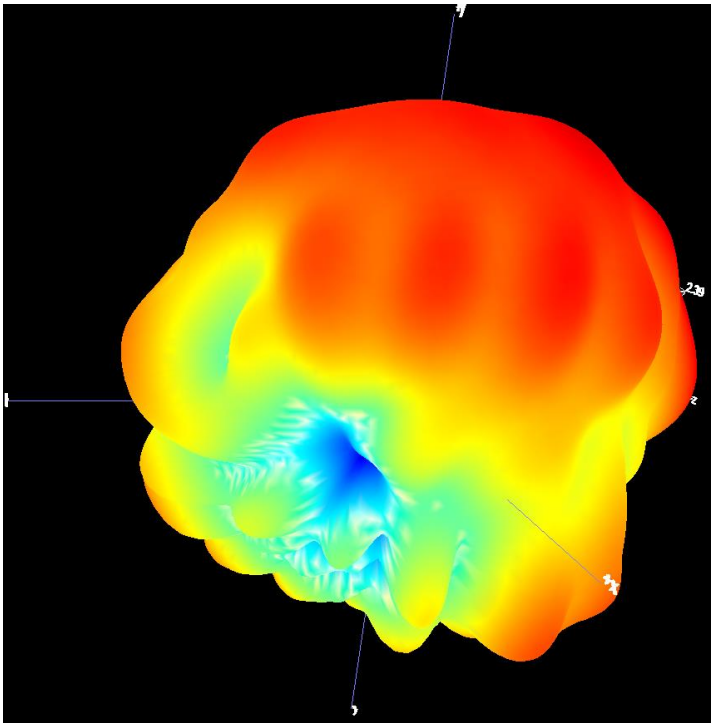
B1.1 3D Pattern for 2400MHz



B1.2 3D Pattern for 2450MHz

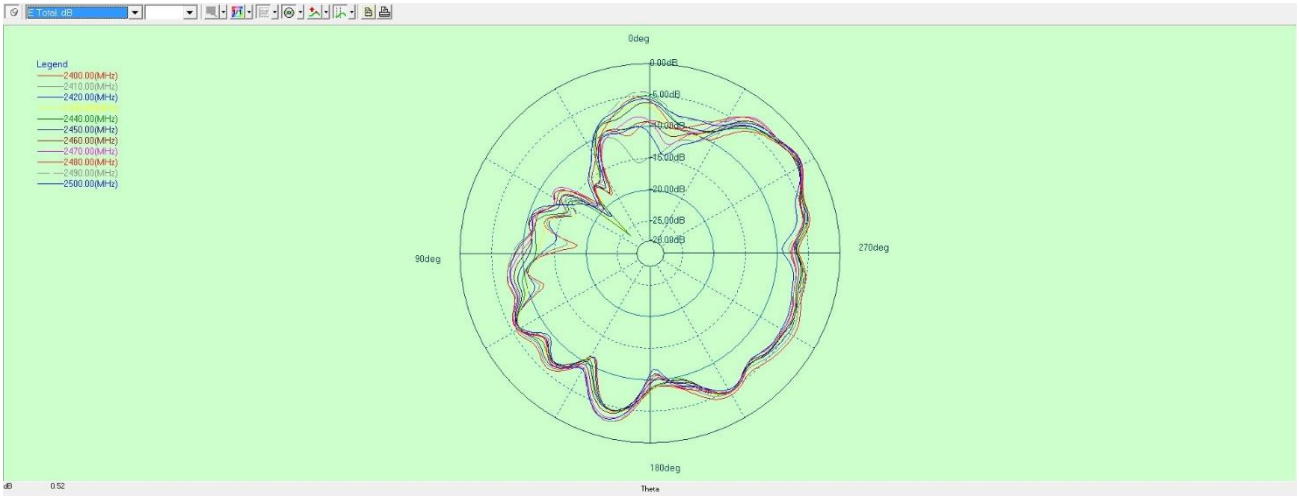


B1.3 3D Pattern for 2500MHz



B.2 1D Radiation Pattern

B2.1 PHI=0



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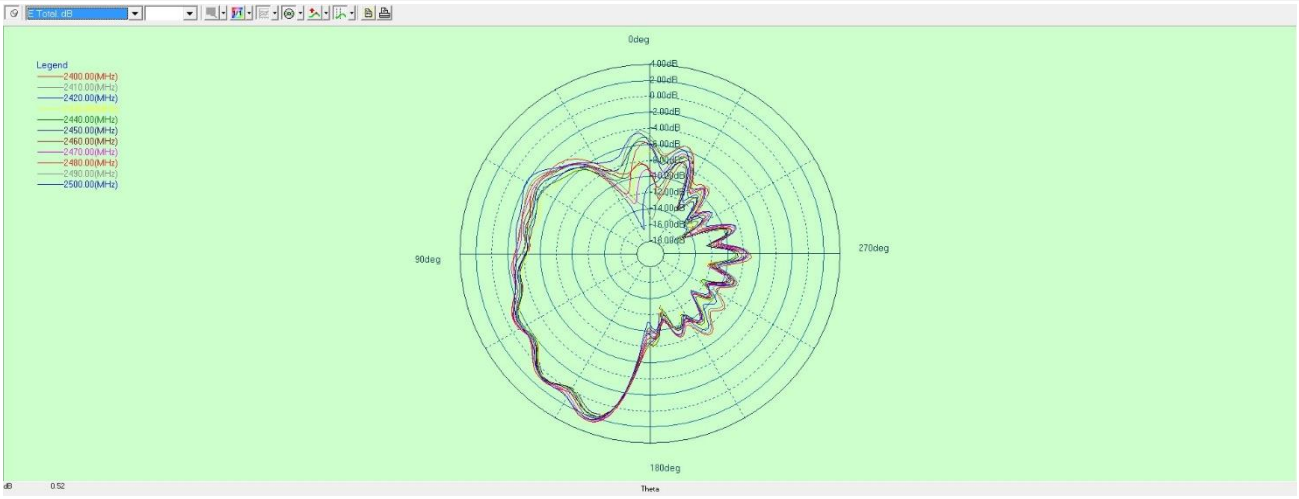
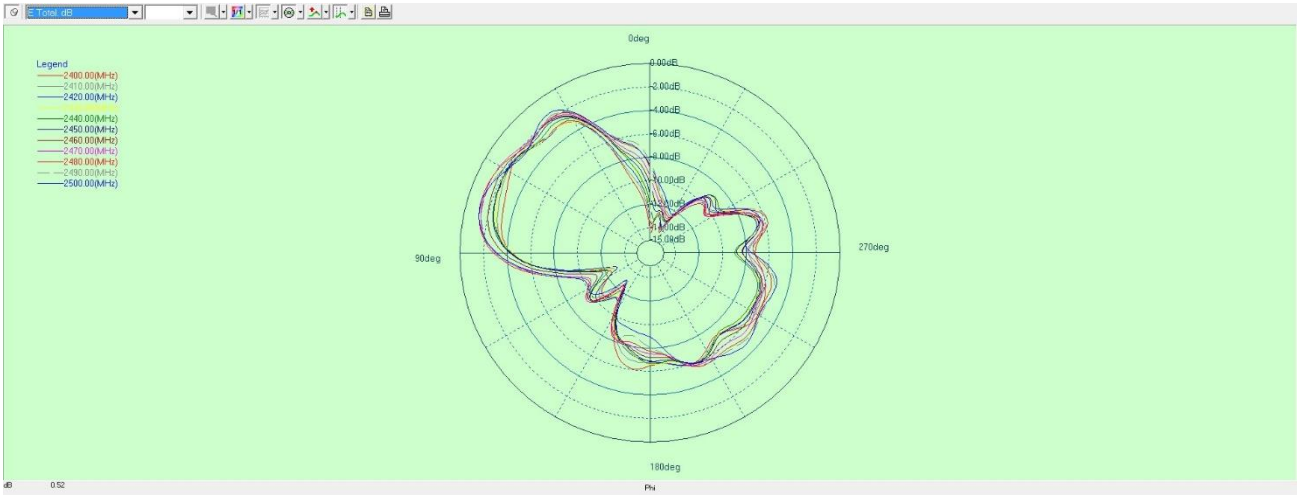


B2.3 THETA=90



ANNEX C TEST SETUP PHOTOS

Please refer the document “BL-SZ2450220-AO.PDF”.

ANNEX D EUT PHOTO

Please refer the document “BL-SZ2450220-AA.PDF”.

Statement

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--END OF REPORT--