



Shenzhen Boomtech Industry Co.,Ltd.

1. Project specification

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2. Test methods and test standards

Name	Parameter	Method	Standard no.
Antenna performanee	Radiation efficieney	IEEE Standard Test Proeedures for Antennas	ANSI/IEEE Std 149-2021



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3. List of instruments and calibration dates

Equipment	Manufacturer	Model No.	Last Cal.	Due Date
Network analyzer	Agilent	E5062A	2025/10/23	2026/04/23
Microwave Lab	General test	RayZone® 1800	2025/10/23	2026/04/23
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	2025/10/23	2026/04/23

4. Laboratory information

Test lab name: bluetrum Shenzhen Nanshan Laboratory

Address: Building A, 1st Floor, Wisdom Plaza, Shenzhen City

Test date: 2025/11/16 Test personnel: delu Ran

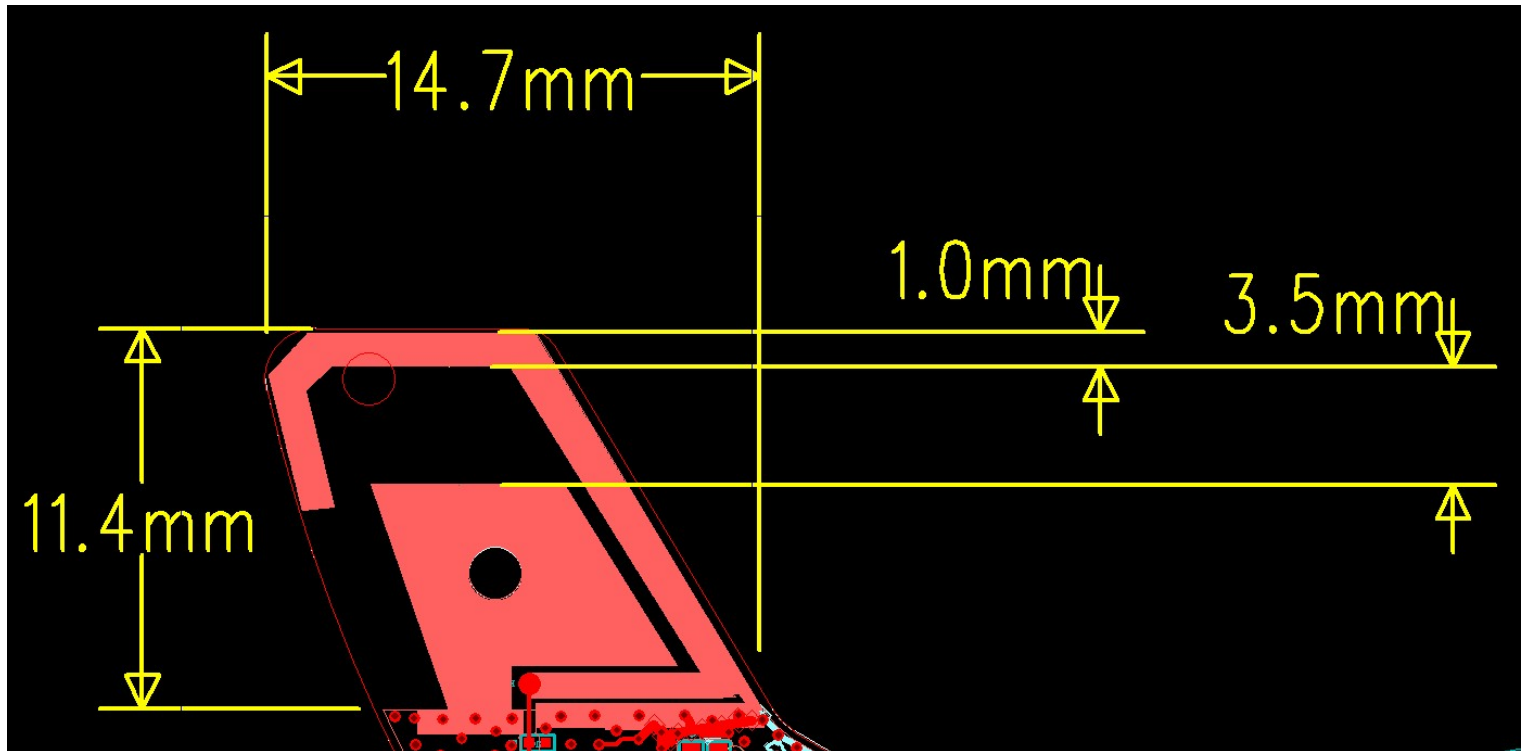
5. Electrical performance test report

Frequency	2.402GHz-2.48GHz
Impdeance	50 Ω hm
VSWR	2.0 MAX
Return Loss	-35dB Max
Radiation	Omni-directional
Gain(peak)	2.59 dBi
Polarization	Linear.Vertical
Type of antenna	PCB Antenna

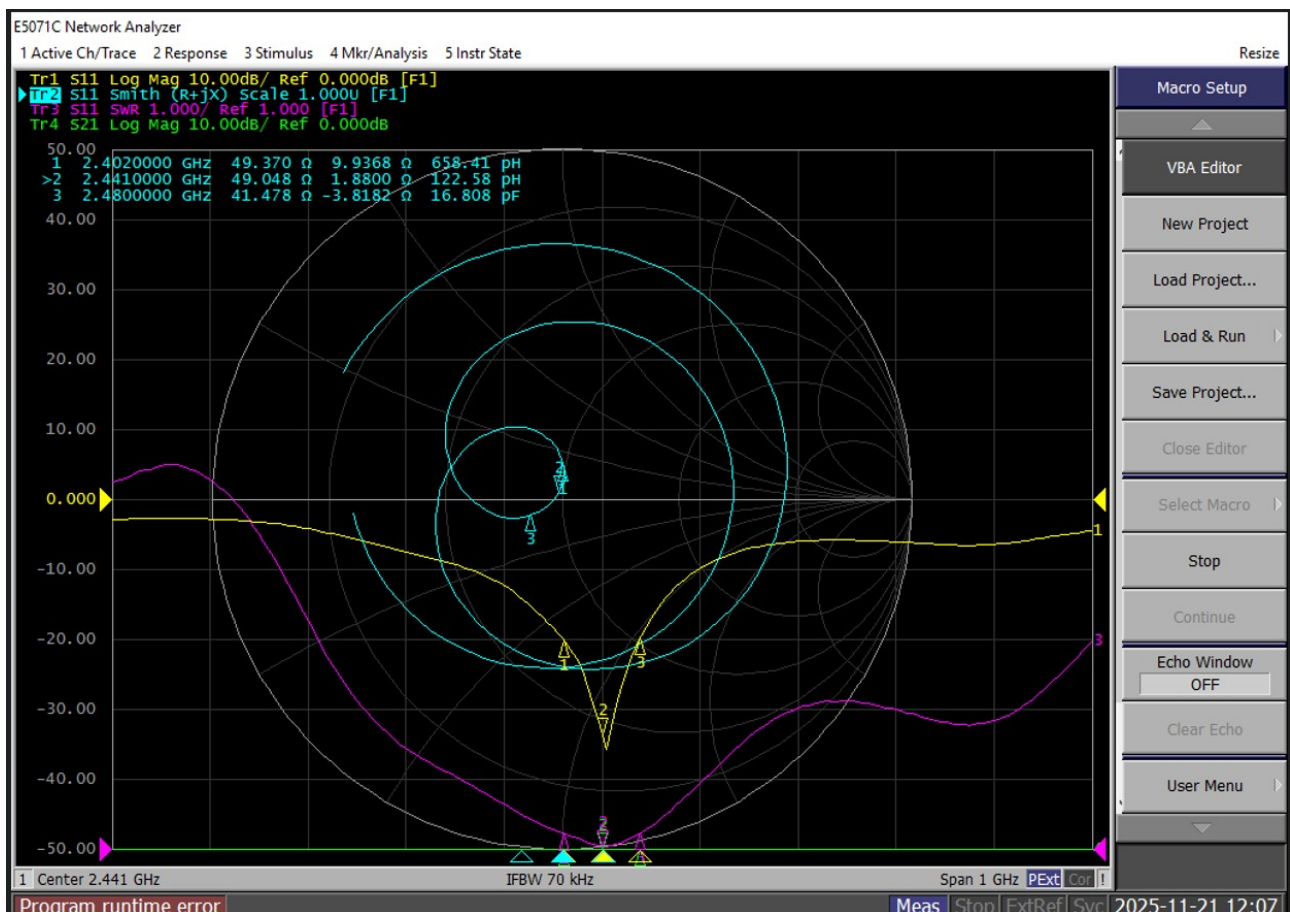


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6.Product graph



7.Network analyzer graph





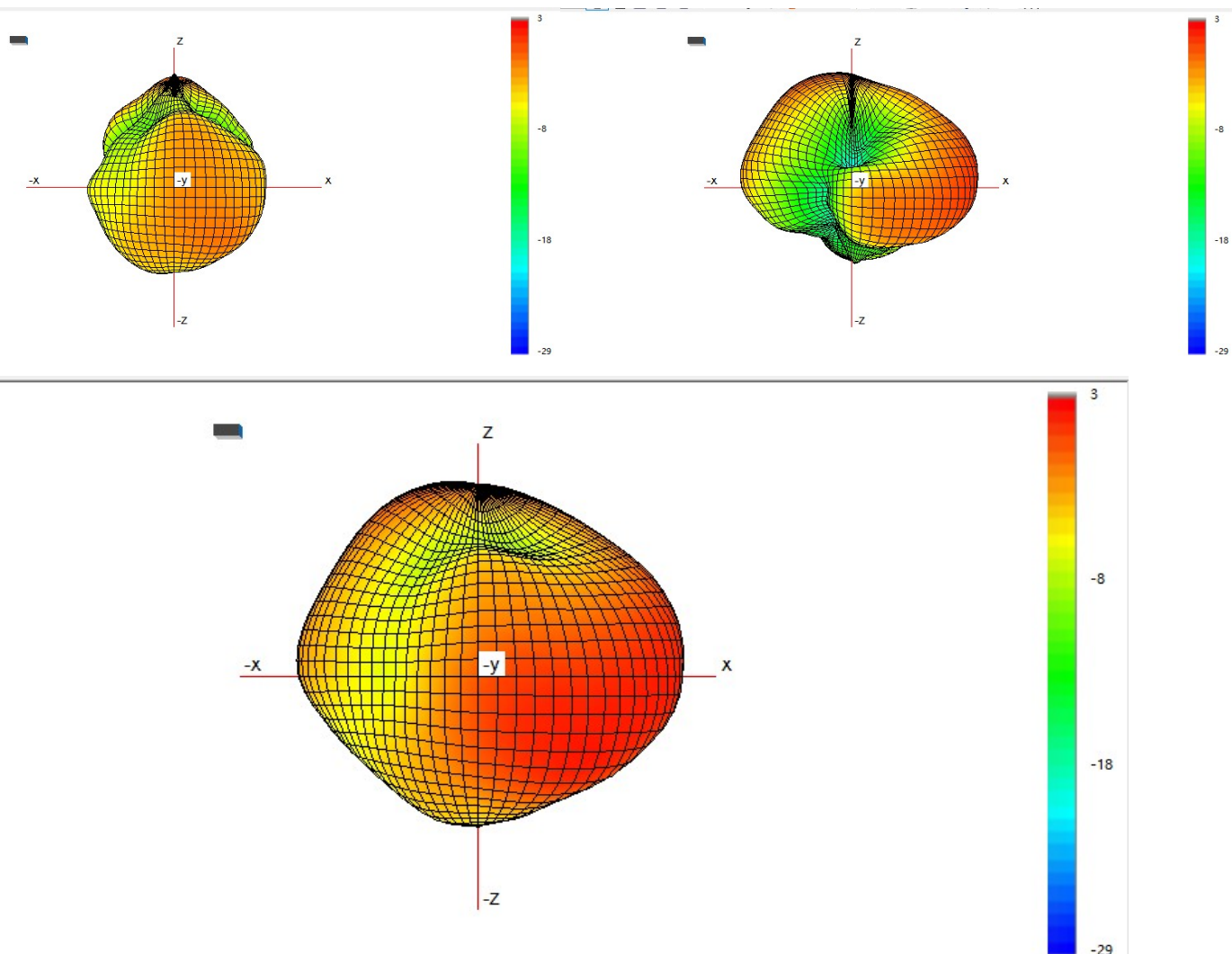
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8.Efficiency and Gain test results

Frequency: 2.40-2.480GHz (Free)			
Frequency Point(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	2.59	-2.40	57.60
2410	2.47	-2.43	57.13
2420	2.43	-2.50	56.24
2430	2.35	-2.54	55.76
2440	2.24	-2.58	55.17
2450	2.25	-2.62	54.67
2460	2.25	-2.75	53.06
2470	2.24	-2.90	51.24
2480	2.27	-2.96	50.55
AVG value	2.34	-2.63	54.6

9.Radiation pattern

3D Diagram 2.440GHz (Free) ---dBi



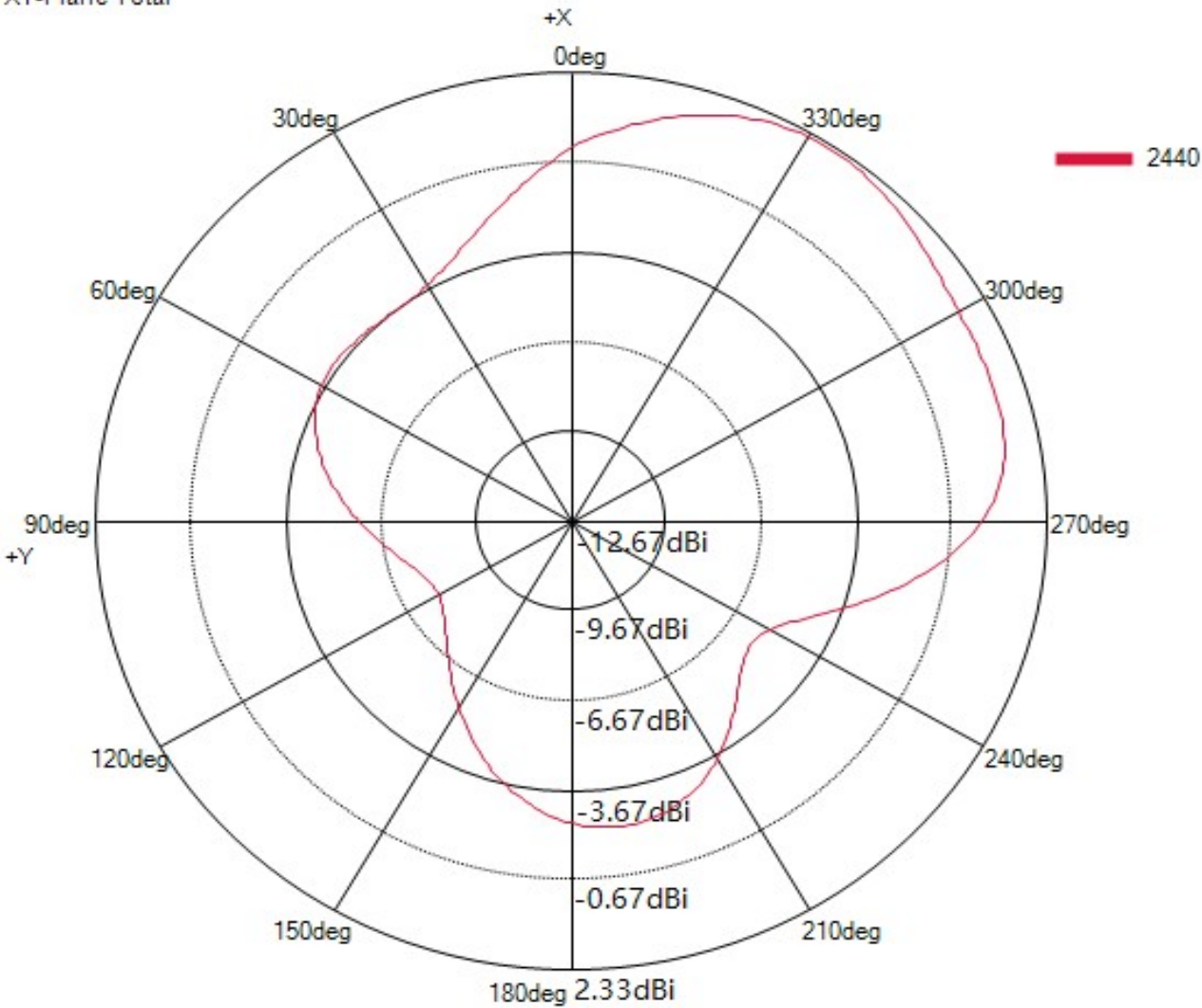


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2D Diagram 2.440GHz (Free) ---dBi

Freq(MHz) 2440	XY-Plane Total	Max.	2.24171	Ave.	-1.76192	Min.	-7.76925
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XY-Plane Total

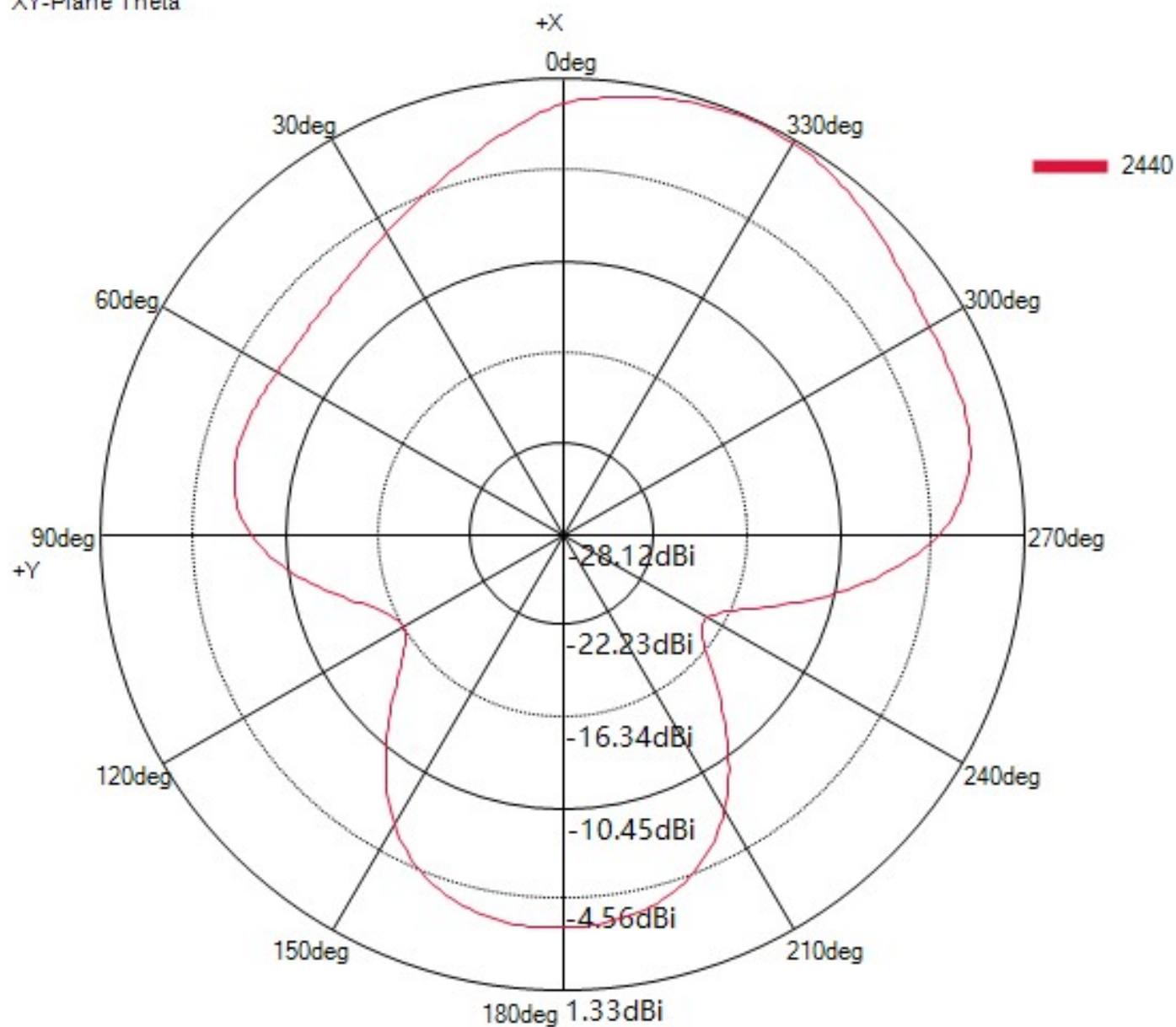




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Freq(MHz) 2440	XY-Plane Theta	Max.	1.217146	Ave.	-3.75483	Min.	-17.5126
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XY-Plane Theta

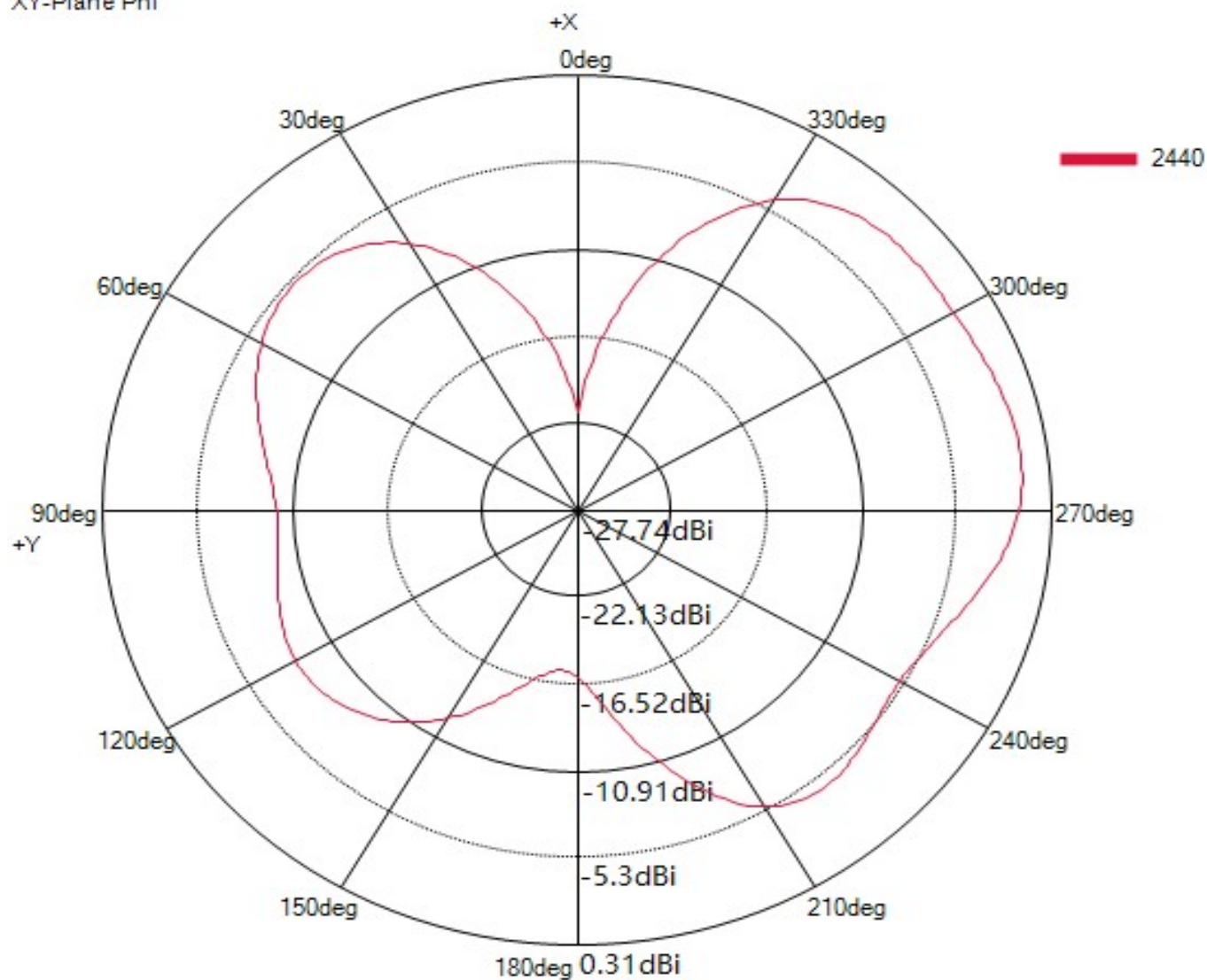




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Freq(MHz) 2440	XY-Plane Phi	Max.	-1.6303	Ave.	-6.10331	Min.	-21.4023
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XY-Plane Phi





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9. Test photo



9. Test configuration diagram

Ubitestify Libra Setup Test Data Pathloss

仪表
Please Enter IP Port R8S_ZNB8 Generator 1 TELNE 刷新 识别

控制器
波特率: 9600 数据位: 8
奇偶校验: None 停止位: OnePointFive
IP地址: IP Port: 0

Chamber
θ offset: 0.0 ° Z1 offset: 0.0 mm
Φ offset: 0.0 ° Z2 offset: 0.0 mm
X offset: 0.0 mm Z3 offset: 0.0 mm
Y offset: 0.0 mm
θ Speed: 20.0 deg/s
Φ Speed: 90.0 deg/s

Environment
操作人员: TESTER
温度: 26 °C
湿度: 50 %

测试摘要
Template: No testing template

日志记录
10:25:56 >> start
10:25:56 >> Application license
lefts 967 times.
10:25:56 >> chamber type is
RayPact1000
10:25:56 >> Reading TurnTable
[PCI_controller] completed

准备就绪 预计时间: 00:00:00 Theta: 0.00 Phi: 0.00 Polar: - 测试状态: Connected