

Antenna Test Report

Report No.: AGC13659211201PA01

PRODUCT DESIGNATION : PCB Antenna
BRAND NAME : N/A
MODEL NAME : AT0028
APPLICANT : Dark Voice Technology Co., Ltd
DATE OF ISSUE : Dec. 29, 2021
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 29, 2021	Valid	Initial release

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1. PRODUCT INFORMATION

General information	
Applicant	Dark Voice Technology Co., Ltd.
Address	Room 1612, Building 4, Cloud Park Part 2, No. 2018 Xuegang Road, Longgang District, Shenzhen
Manufacturer	Dark Voice Technology Co., Ltd.
Address	Room 1612, Building 4, Cloud Park Part 2, No. 2018 Xuegang Road, Longgang District, Shenzhen
Factory	Dark Voice Technology Co., Ltd.
Address	Room 1612, Building 4, Cloud Park Part 2, No. 2018 Xuegang Road, Longgang District, Shenzhen
Product Designation	PCB Antenna
Brand Name	N/A
Test Model	AT0028
Date of test	Dec. 24, 2021 to Dec. 29, 2021
Report Template	AGCRT-ER-PA/V1.0
Technical information	
Frequency Range	2400MHz-2500MHz
Test Frequencies	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2480MHz, 2490MHz, 2500MHz
Antenna Type	PCB Antenna
Dimensions	10mm*8mm
Impedance	50 Ω
Maximum test values	Gain: 2.853dBi; Efficiency: 46.320%; VSWR: 1.212:1

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test results of this report relate only to the tested sample identified in this report.

Prepared By

*Cool Cheng*Cool Cheng
(Project Engineer)

Dec. 29, 2021

Reviewed By

*Calvin Liu*Calvin Liu
(Reviewer)

Dec. 29, 2021

Approved By

*Max Zhang*Max Zhang
(Authorized Officer)

Dec. 29, 2021

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2. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3. TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Cal. Date	Cal. Due
ANTENNA MEASUREMENT SYSTEM	ETS-Lindgren	AMS-8600	Nov. 26, 2021	Nov. 25, 2022
Network Analyzer	R&S	101443	Oct. 14, 2021	Oct. 15, 2022
Test Software	ETS-Lindgren	EMQuest (Ver V1.12)	N/A	N/A

4. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of VSWR, $U_c = \pm 1.5\text{dB}$
- Uncertainty of Gain, $U_c = \pm 0.8\text{dB}$

5. TEST SUMMARY LIST

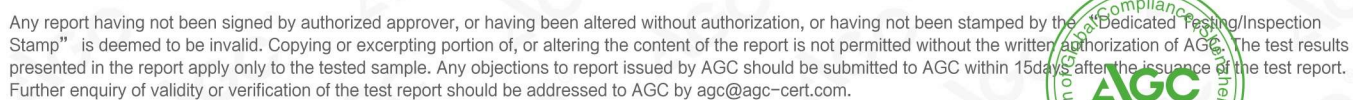
NO.	Test item	Remark
1	VSWR	--
2	Gain and efficiency	--
3	Radiation pattern	--

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The diagram illustrates a measurement setup within a wedge-shaped environment, likely representing a biological tissue. On the left, a "Dual Polarized Measurement Antenna" is shown with two orthogonal polarization directions labeled θ -pol and ϕ -pol. A horizontal line extends from the antenna towards the right, indicating the direction of measurement. On the right, a detailed view of the antenna's mechanical structure is shown, including a vertical support and a rotating arm. The coordinate system is defined with the Y-axis as the vertical axis, the X-axis as the horizontal axis, and the Z-axis as the axis of rotation. The angle θ is shown between the Z-axis and the X-axis, and the angle ϕ is shown between the Y-axis and the Z-axis. The label ϕ -axis is also present, indicating the axis of rotation for the antenna's polarization.



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7. TEST RESULTS

7.1. VSWR

Frequency(MHz)	VSWR
2402	1.173:1
2410	1.212:1
2450	1.203:1
2480	1.074:1



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7.2. GAIN AND EFFICIENCY

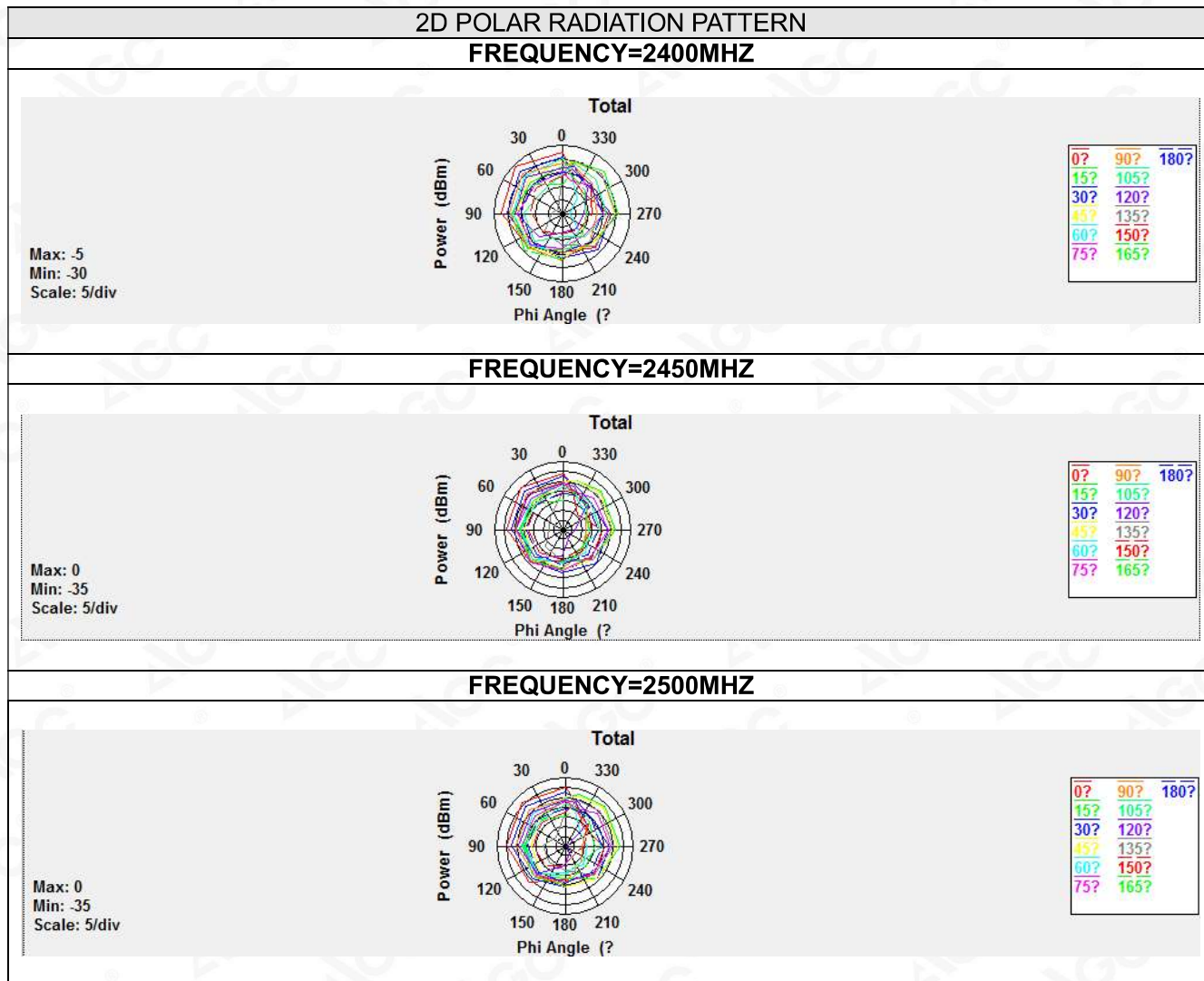
Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-4.331	37.230	1.554
2410	-4.269	37.766	1.450
2420	-4.454	36.188	1.170
2430	-4.321	37.320	1.298
2440	-3.899	41.130	1.744
2450	-3.723	42.834	2.052
2460	-3.787	42.209	2.017
2470	-4.058	39.652	1.774
2480	-3.760	42.472	2.098
2490	-3.602	44.055	2.449
2500	-3.384	46.320	2.853

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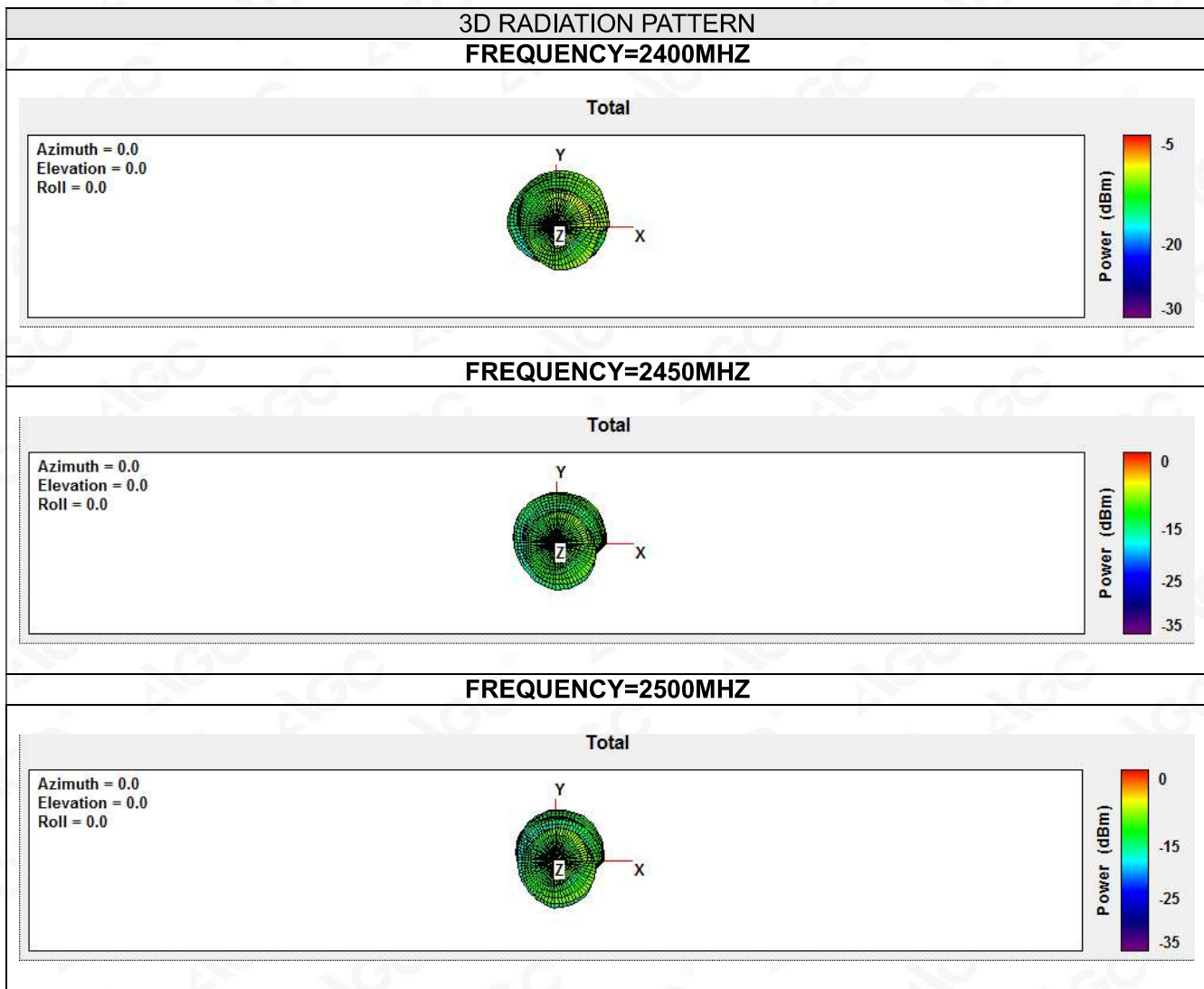


7.3. RADIATION PATTERN



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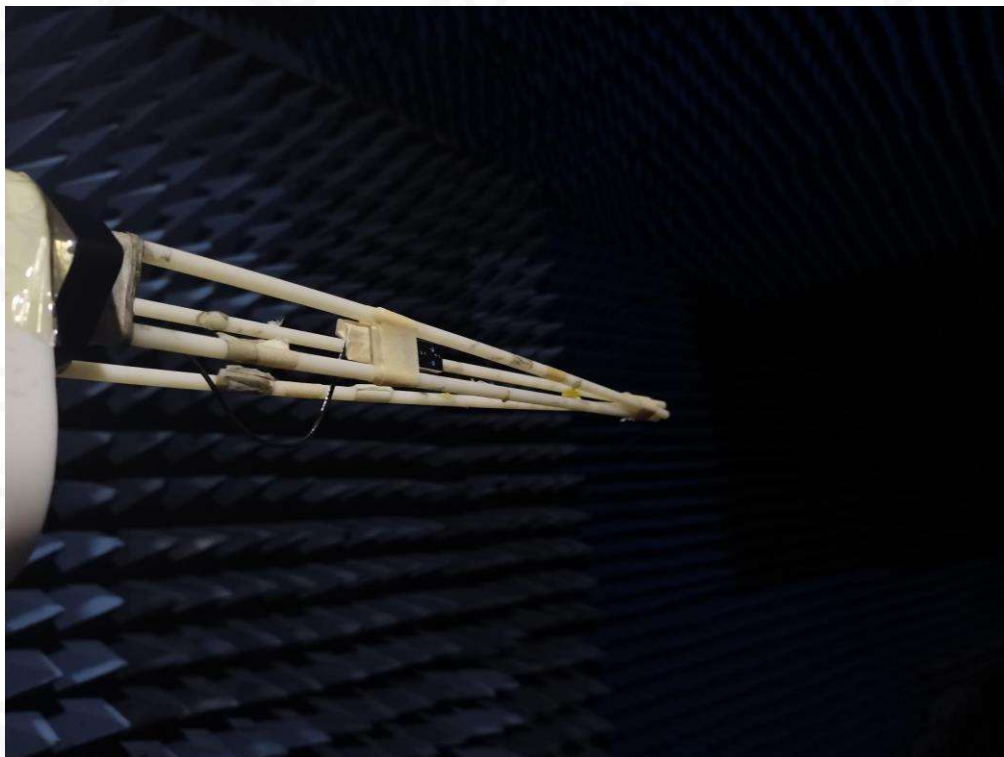




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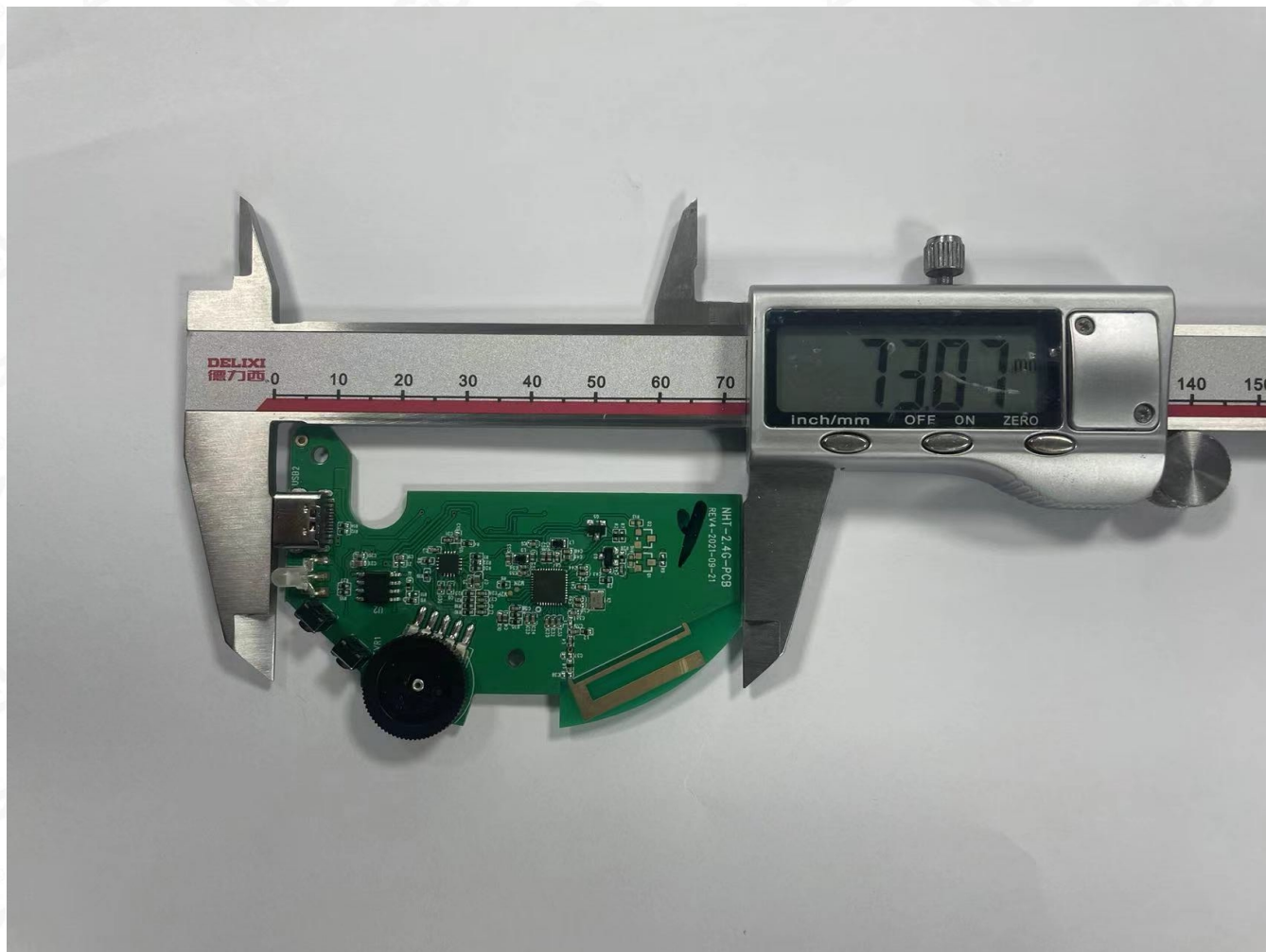
APPENDIX A: PHOTOGRAPHS OF TEST SETUP



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----END OF REPORT----

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3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
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7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
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