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# Antenna Test Report

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Report No.: AGC13659211211PA01

**PRODUCT DESIGNATION** : PCB Antenna  
**BRAND NAME** : N/A  
**MODEL NAME** : AT0029  
**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	
<b>Applicant</b>	Dark Voice Technology Co., Ltd.
<b>Address</b>	Room 1612, Building 4, Cloud Park Part 2, No. 2018 Xuegang Road, Longgang District, Shenzhen
<b>Manufacturer</b>	Dark Voice Technology Co., Ltd.
<b>Address</b>	Room 1612, Building 4, Cloud Park Part 2, No. 2018 Xuegang Road, Longgang District, Shenzhen
<b>Factory</b>	Dark Voice Technology Co., Ltd.
<b>Address</b>	Room 1612, Building 4, Cloud Park Part 2, No. 2018 Xuegang Road, Longgang District, Shenzhen
<b>Product Designation</b>	PCB Antenna
<b>Brand Name</b>	N/A
<b>Test Model</b>	AT0028
<b>Date of test</b>	Dec. 24, 2021 to Dec. 29, 2021
<b>Report Template</b>	AGCRT-ER-PA/V1.0
Technical information	
<b>Frequency Range</b>	2400MHz-2500MHz
<b>Test Frequencies</b>	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2480MHz, 2490MHz, 2500MHz
<b>Antenna Type</b>	PCB Antenna
<b>Dimensions</b>	10mm*8mm
<b>Impedance</b>	50 Ω
<b>Maximum test values</b>	Gain: 2.0dBi; 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  
 (Project Engineer) Dec. 29, 2021

Reviewed By   
 \_\_\_\_\_  
 Calvin Liu  
 (Reviewer) Dec. 29, 2021

Approved By   
 \_\_\_\_\_  
 Max Zhang  
 (Authorized Officer) Dec. 29, 2021

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## 2. TEST FACILITY

<b>Test Site</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	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,  $U_c = \pm 0.8\text{dB}$

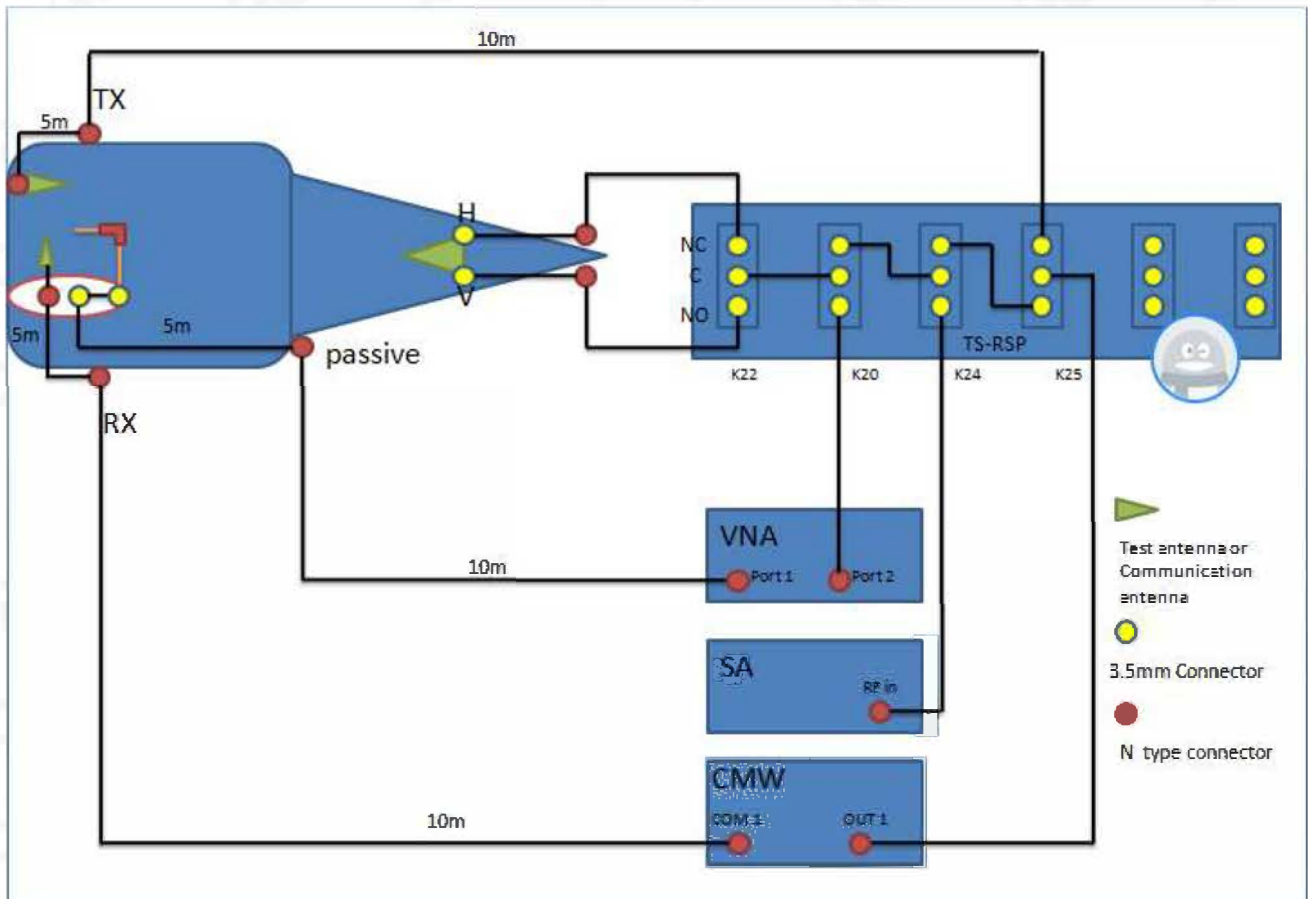
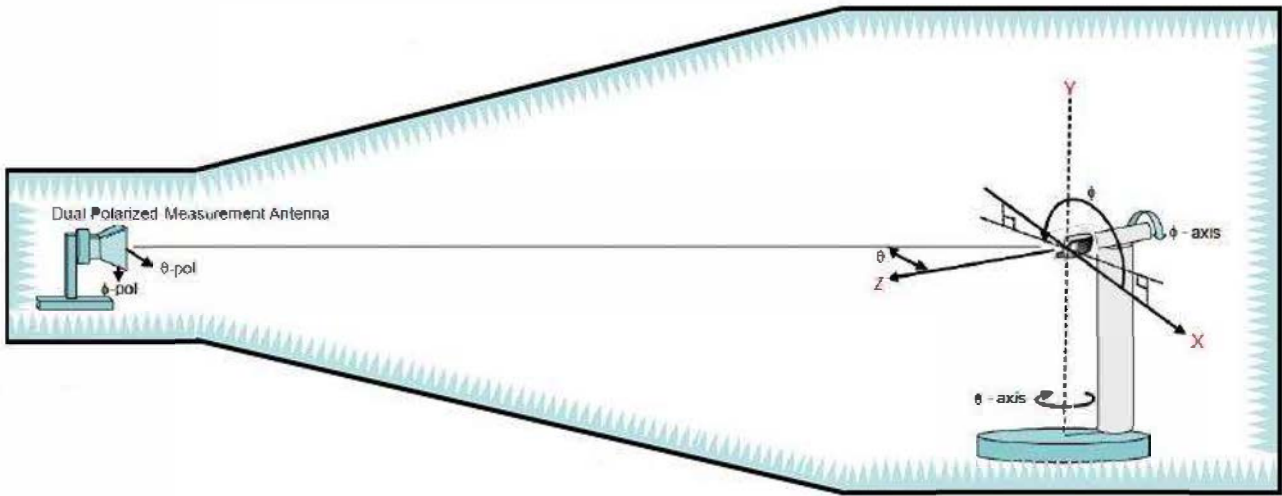
## 5. TEST SUMMARY LIST

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

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### 6. TEST SETUP



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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	2.000
2460	-3.787	42.209	1.985
2470	-4.058	39.652	1.774
2480	-3.760	42.472	2.000
2490	-3.602	44.055	1.949
2500	-3.384	46.320	2.000

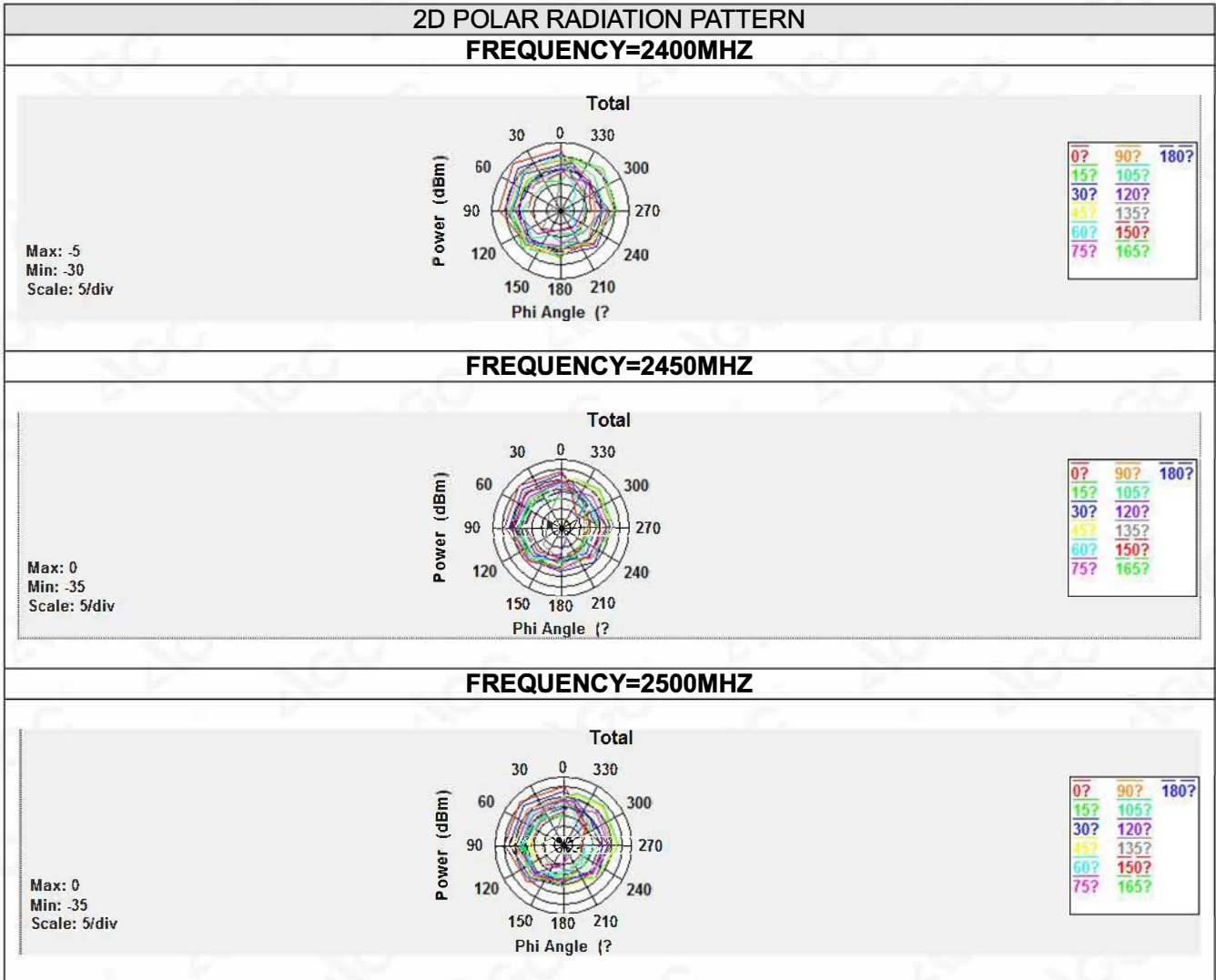
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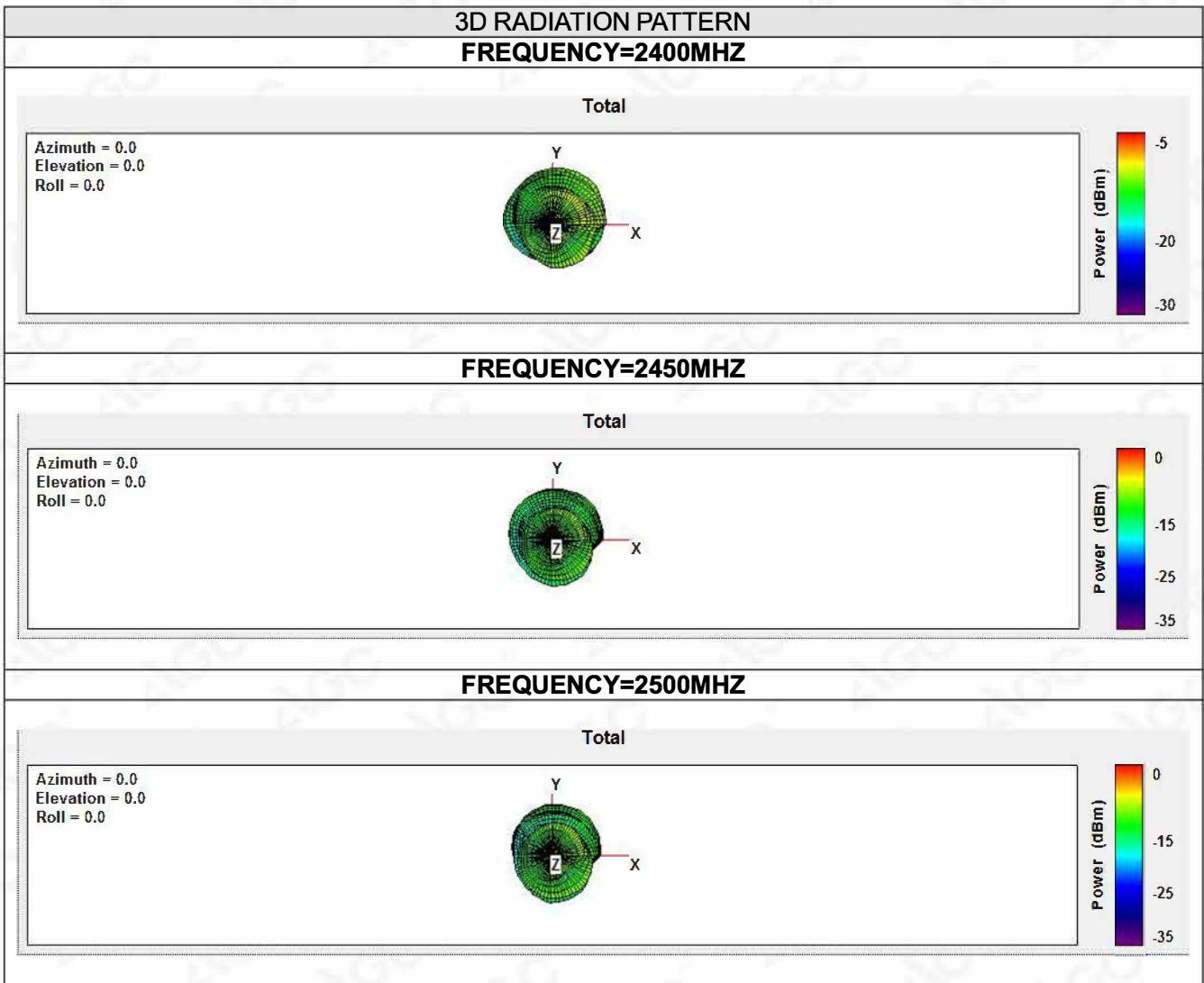


### 7.3. RADIATION PATTERN



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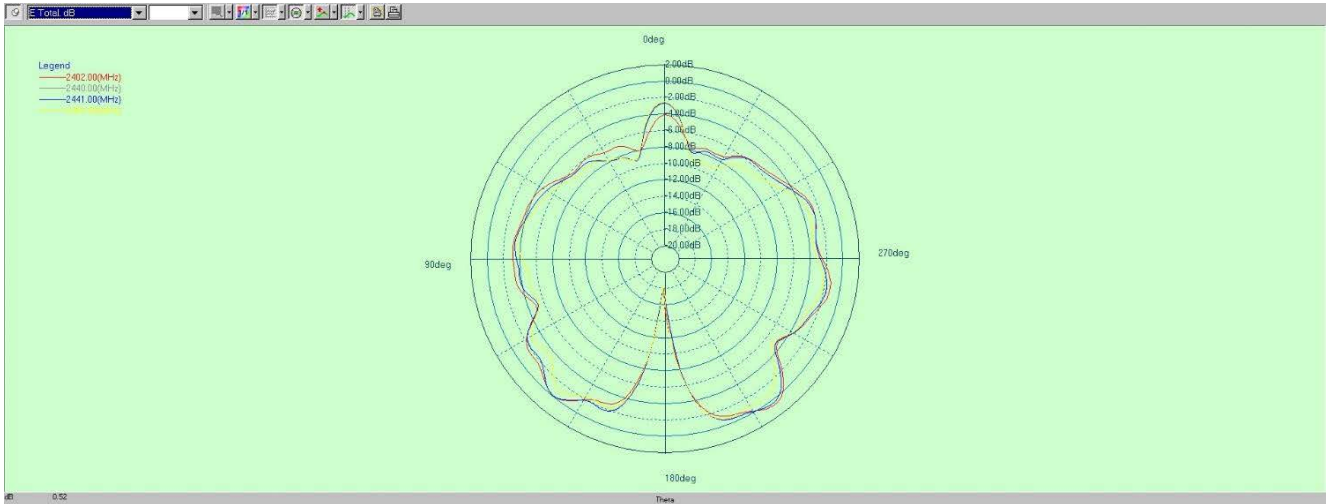




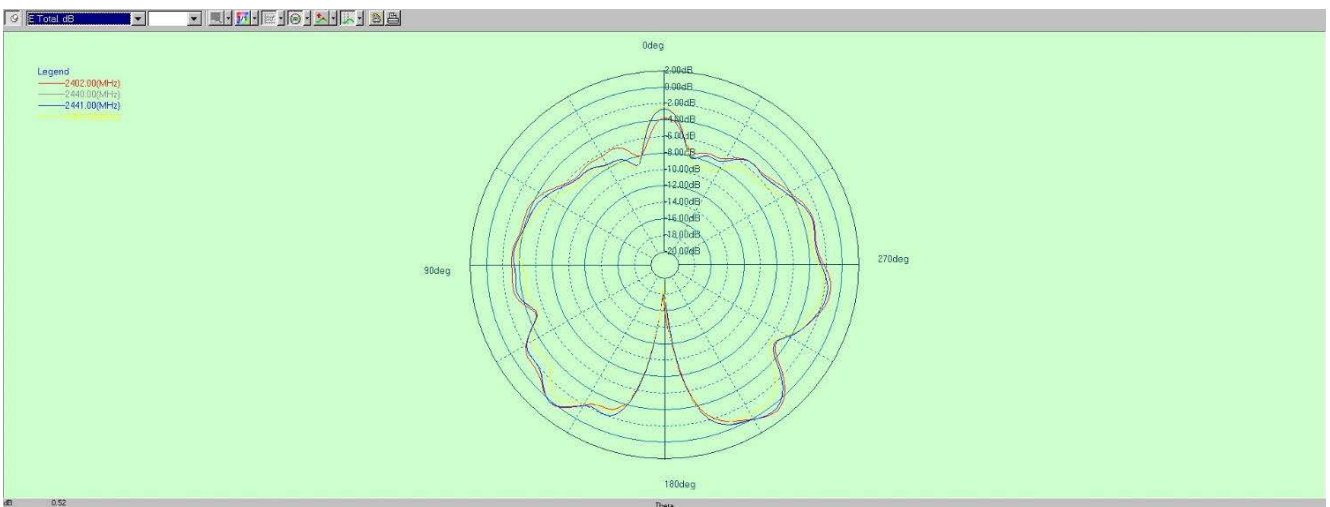
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## 2D Radiation Pattern Phi=0°



## Phi=90°

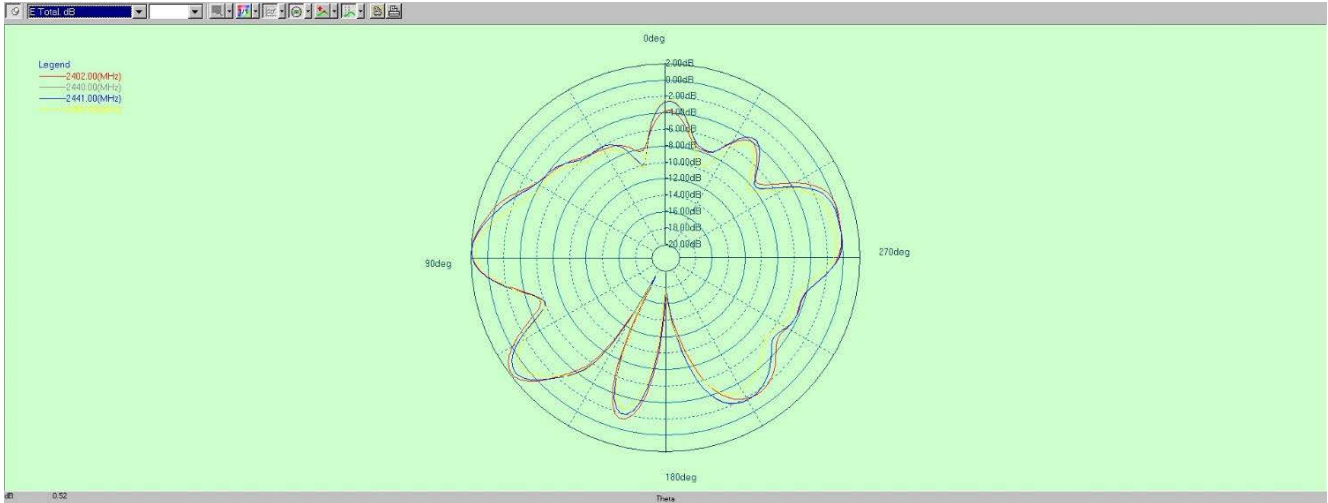


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## 2D Radiation Pattern Theta=90°

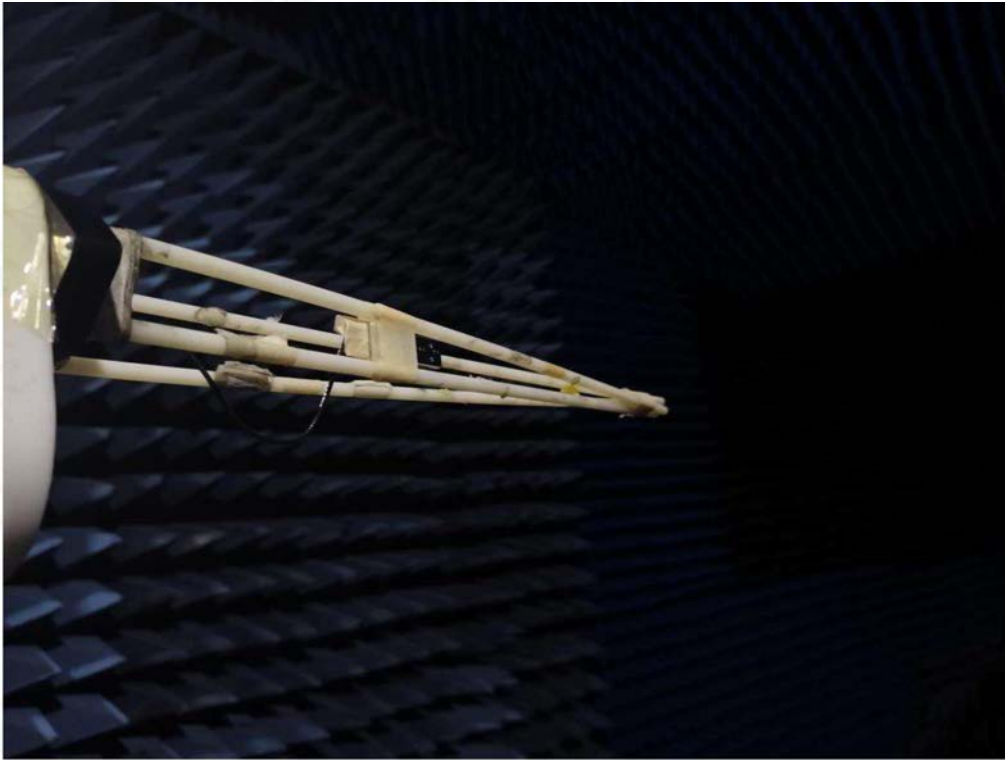


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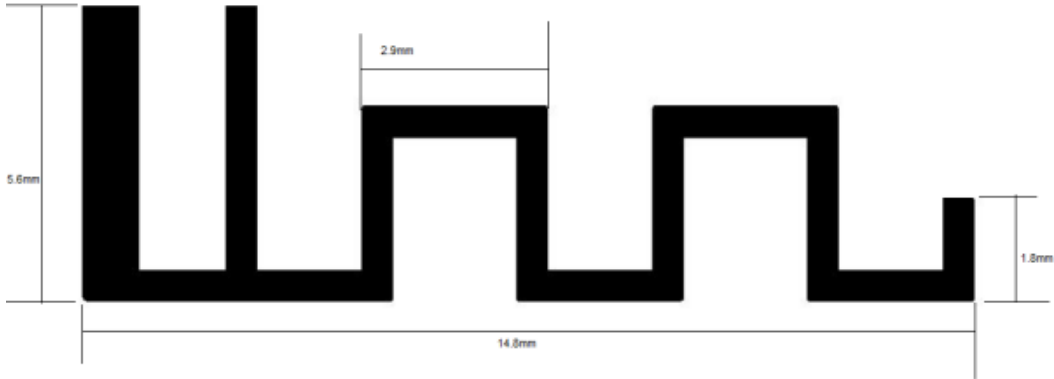
## APPENDIX A: PHOTOGRAPHS OF TEST SETUP



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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.
6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
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.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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