

Antenna Test Report

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

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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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TABLE OF CONTENTS

1. PRODUCT INFORMATON	4
2. TEST FACILITY	5
3. TEST EQUIPMENT LIST	5
4. MEASUREMENT UNCERTAINTY	5
5. TEST SUMMARY LIST	5
6. TEST SETUP	6
7. TEST RESULTS	7
7.1. VSWR	7
7.2. GAIN AND EFFICIENCY	8
7.3. RADIATION PATTERN	9
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	11
APPENDIX B: PHOTOGRAPHS OF PCB	12

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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: 2.0dBi; 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*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

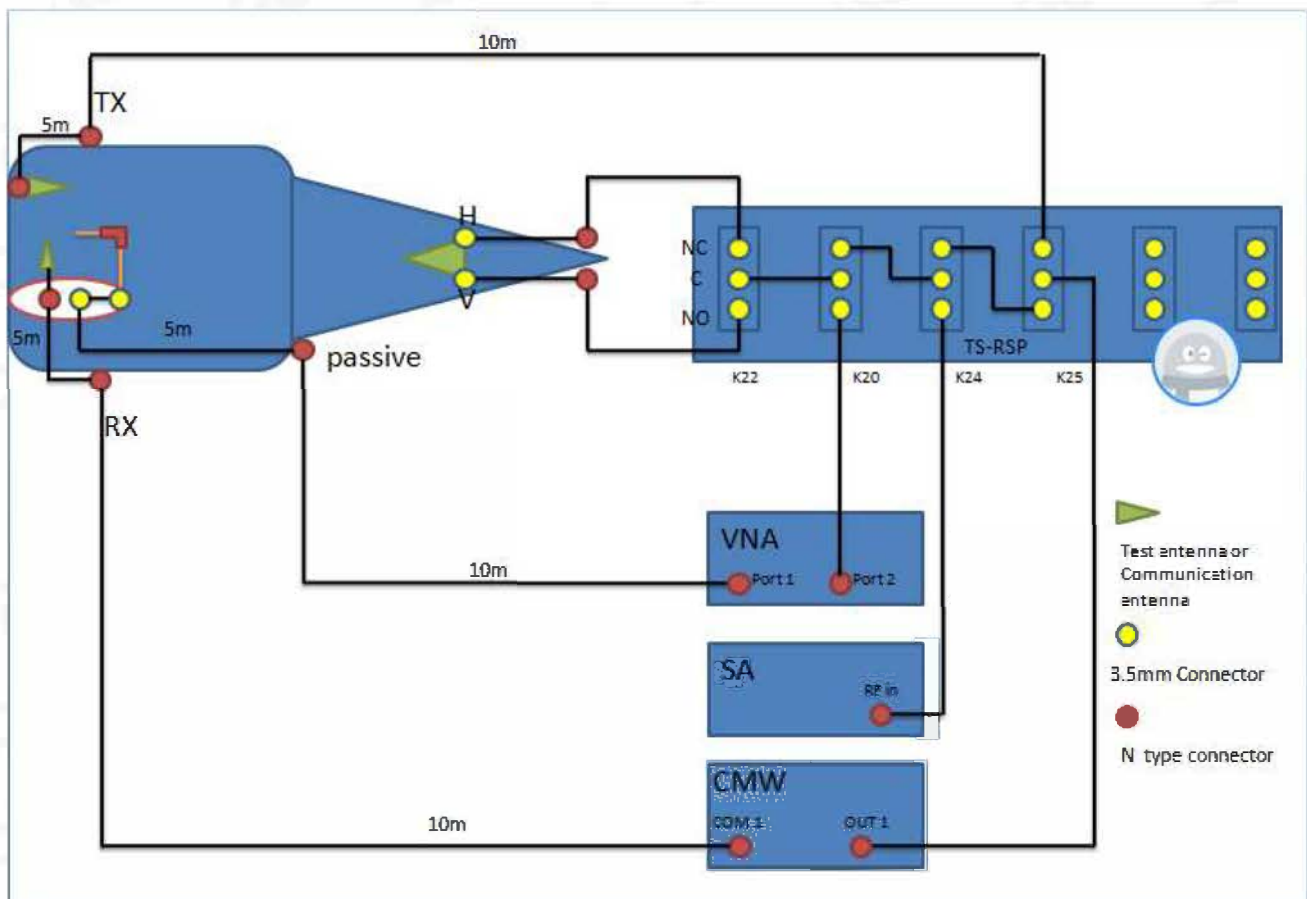
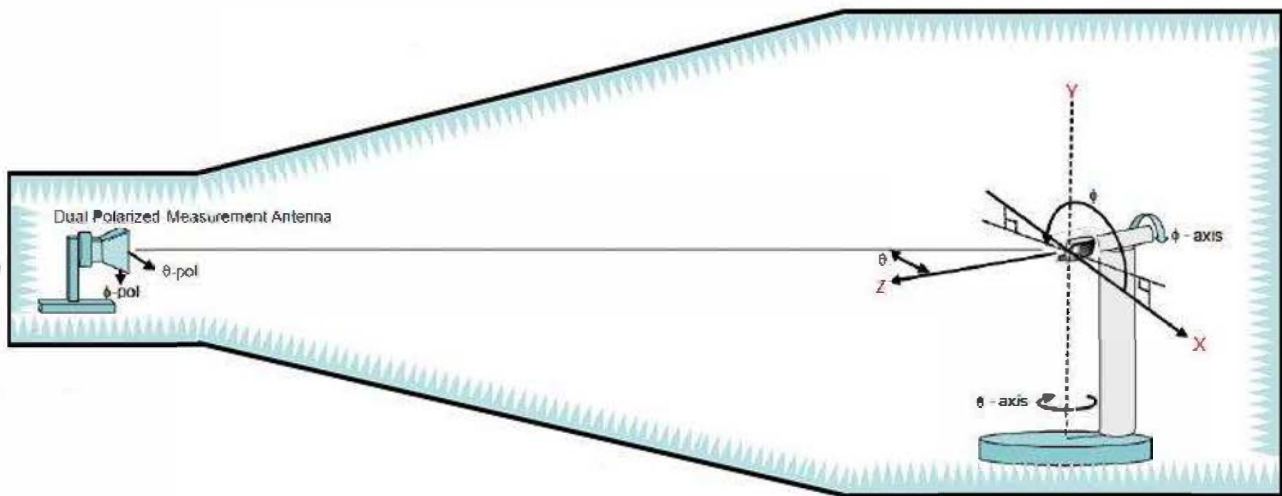
NO.	Test item	Remark
1	VSWR	--
2	Gain and efficiency	--
3	Radiation pattern	--

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6. TEST SETUP



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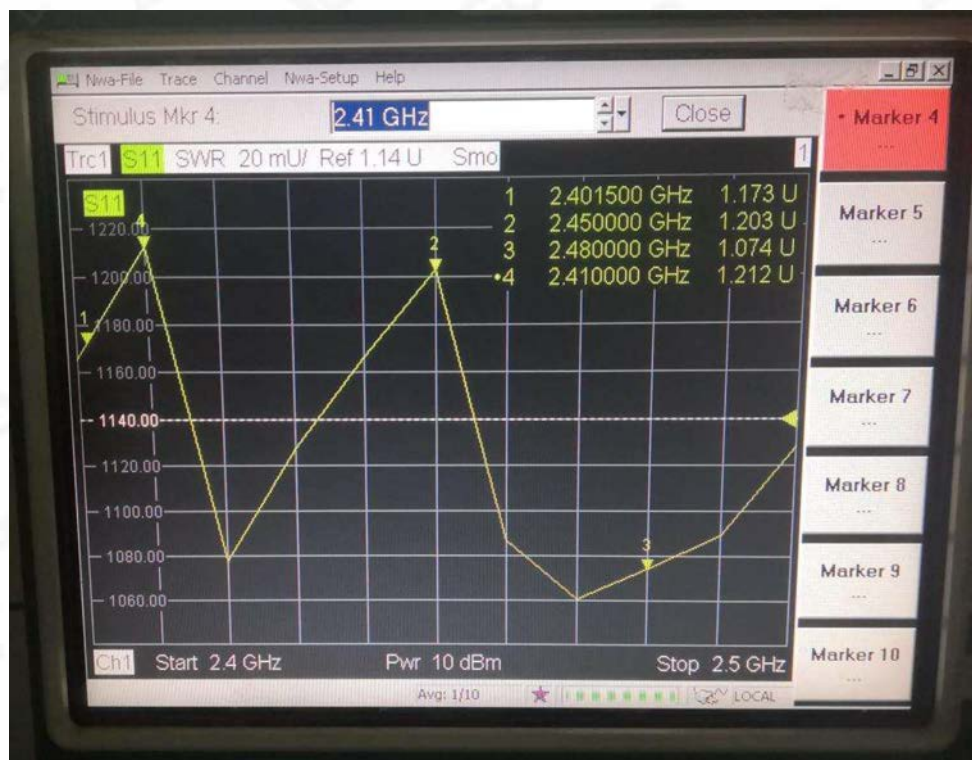
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7. TEST RESULTS

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

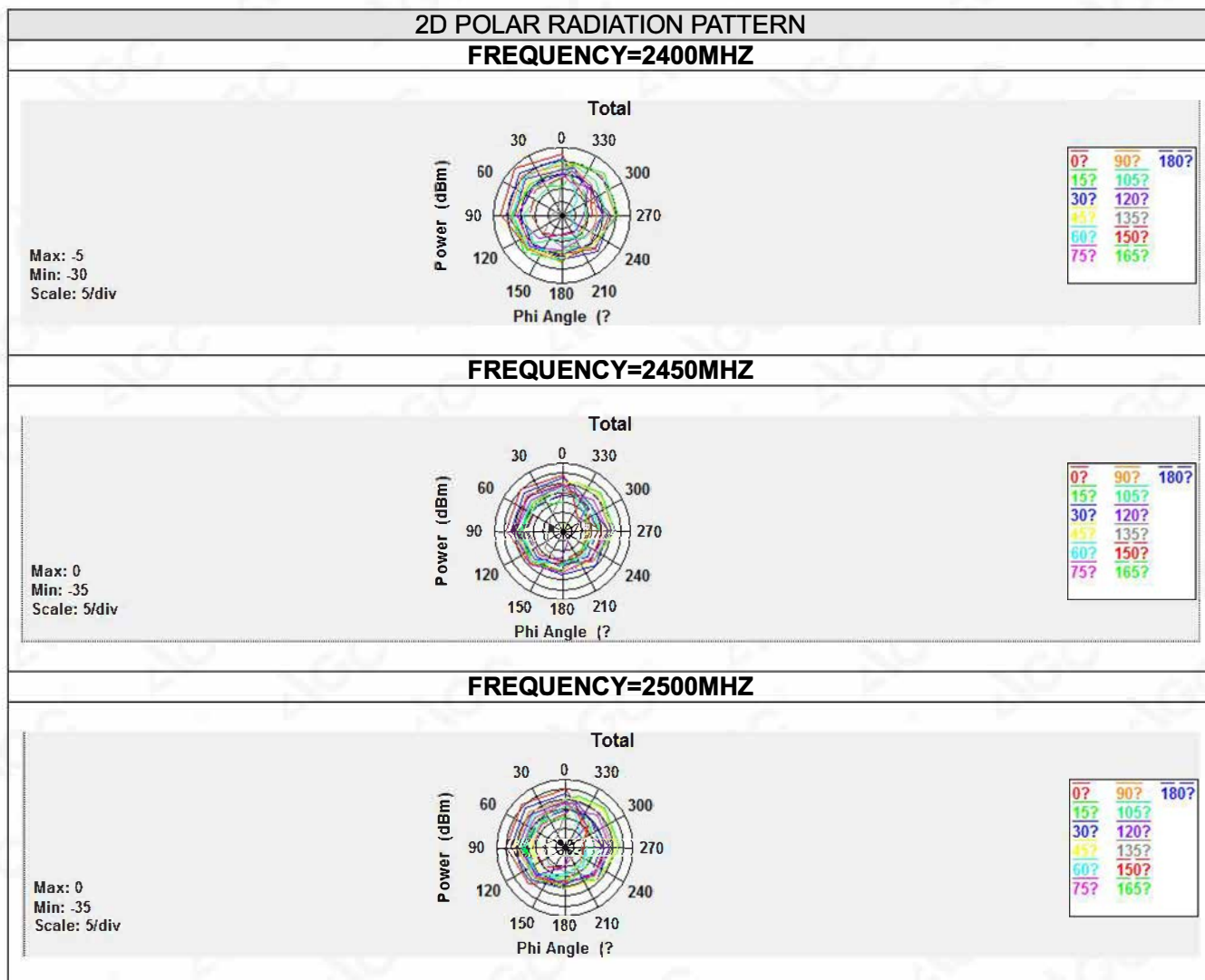
Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-4.331	37.230	1.554
2410	-4.269	37.766	1.450
2420	-4.454	36.188	1.170
2430	-4.321	37.320	1.298
2440	-3.899	41.130	1.744
2450	-3.723	42.834	2.000
2460	-3.787	42.209	1.985
2470	-4.058	39.652	1.774
2480	-3.760	42.472	2.000
2490	-3.602	44.055	1.949
2500	-3.384	46.320	2.000

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7.3. RADIATION PATTERN



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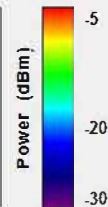
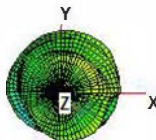


3D RADIATION PATTERN

FREQUENCY=2400MHZ

Total

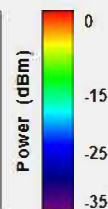
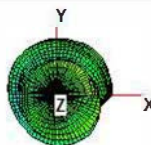
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Roll = 0.0



FREQUENCY=2450MHZ

Total

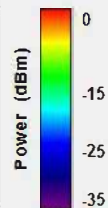
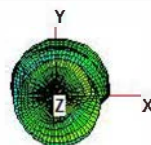
Azimuth = 0.0
Elevation = 0.0
Roll = 0.0



FREQUENCY=2500MHZ

Total

Azimuth = 0.0
Elevation = 0.0
Roll = 0.0



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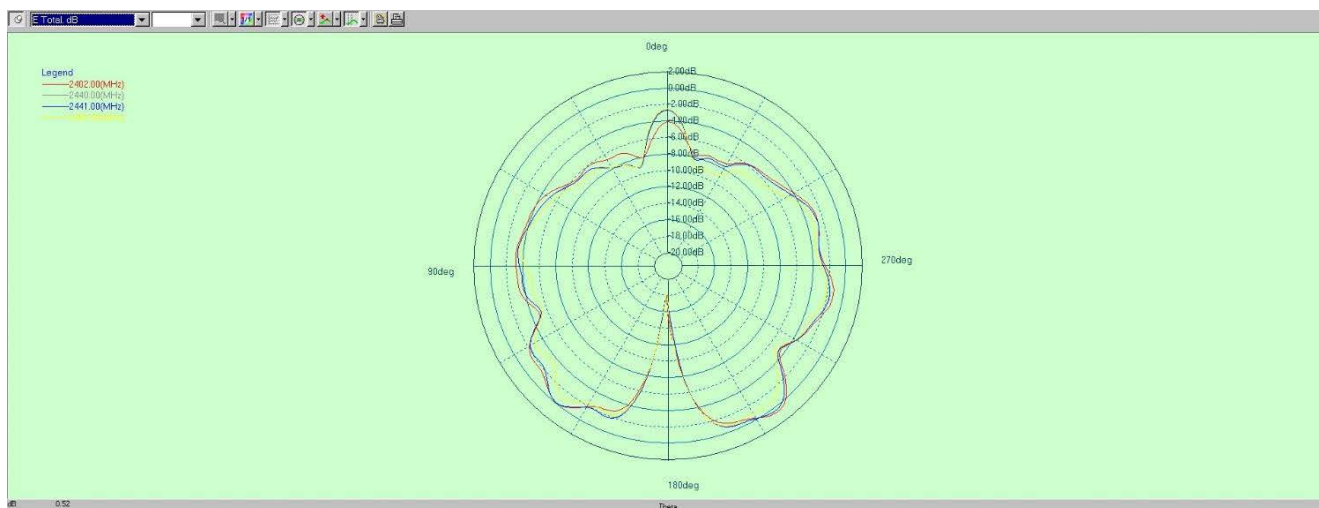
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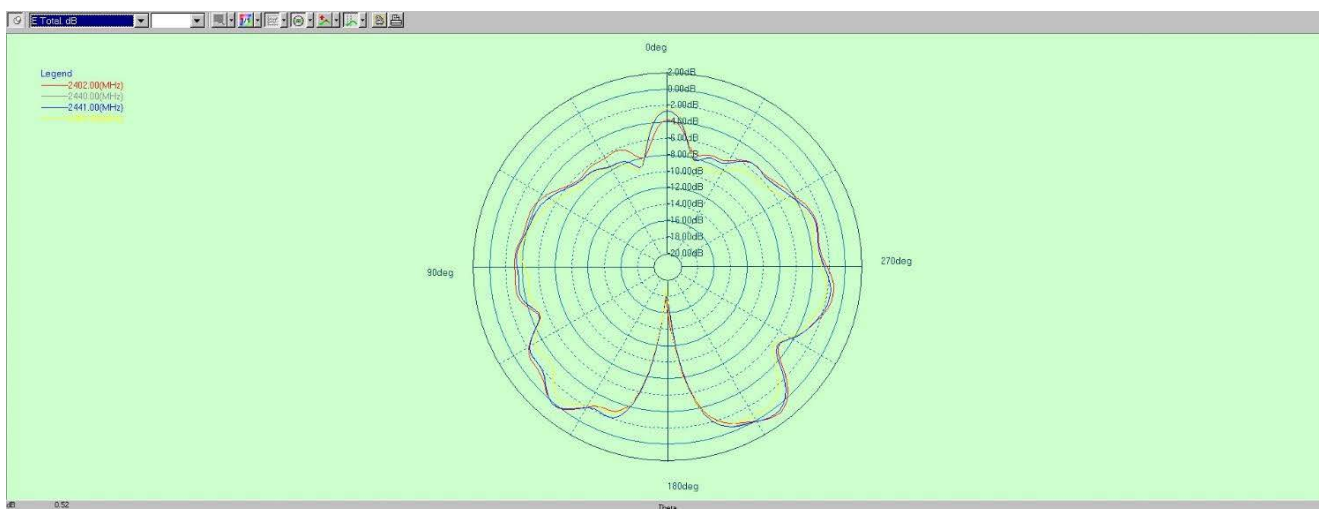


2D Radiation Pattern

Phi=0°



Phi=90°



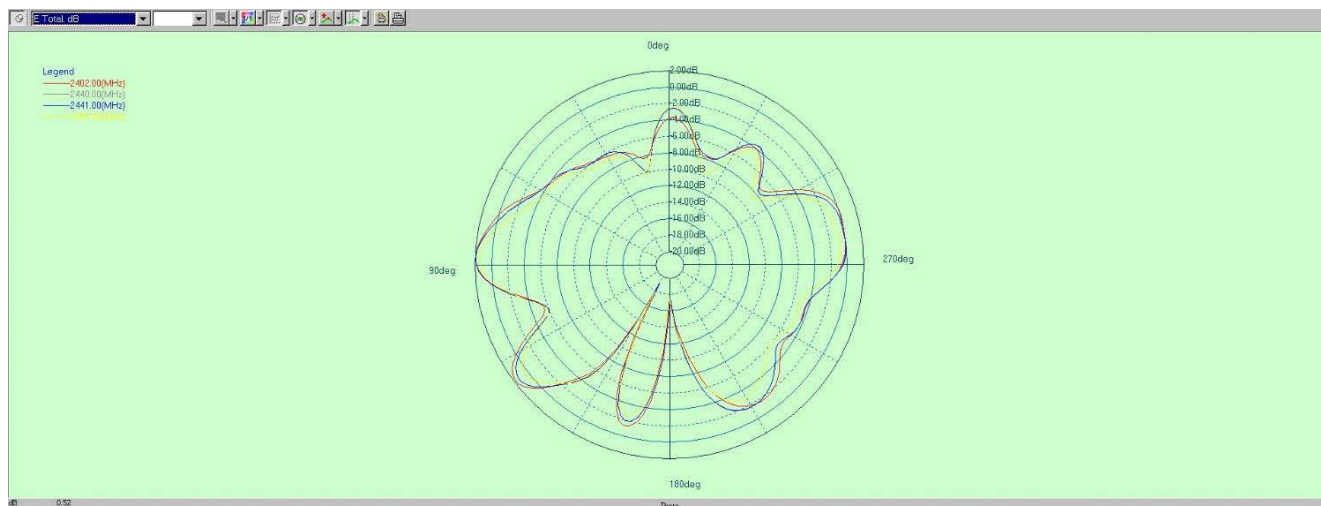
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2D Radiation Pattern

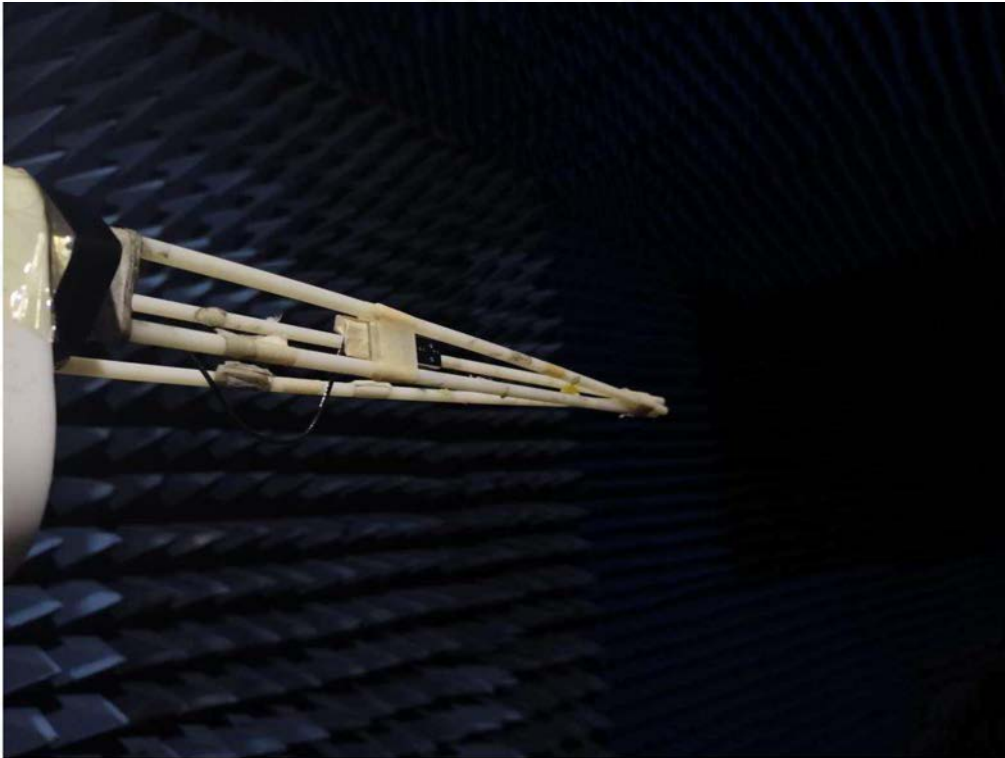
Theta=90°



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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

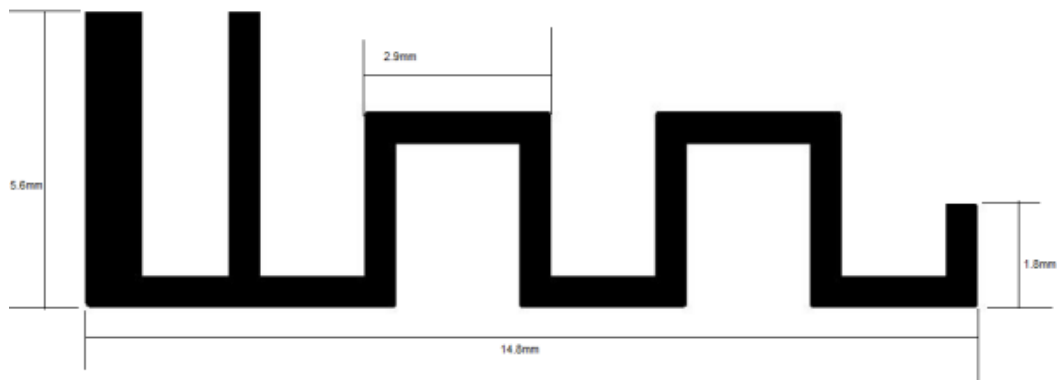
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2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
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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