

ANTENNA TEST REPORT

For

Kibeam Wand Reading System

Model Number: Wand 3.0

Report Number : WT258501865

Test Laboratory : Shenzhen Academy of Metrology and Quality
Inspection
Site Location : No.4, Tongfa Road, Xili Street, Nanshan District,
Shenzhen, Guangdong, China
Tel : 0086-755-86928965
Fax : 0086-755-86009898-31396
Web : www.smq.com.cn

The "important statement" on the back of report's homepage is an element of the report, and any copy that does not contain the "important statement" is incomplete.

重 要 声 明

Important statement

1、报告/证书无主检、审核、批准人签字，或涂改，或未盖本院报告/证书专用章及骑缝章无效。未经本院许可，不得部分复印或摘用本报告/证书的内容。复印报告/证书未重新加盖本院报告/证书专用章无效。

Any report/certificate having not been signed by relevant responsible engineer, reviewer or authorized approver, or having been altered without authorization and having not been stamped by both the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report/certificate is not permitted without the written authorization of SMQ. Any copy of certificates/reports without the Dedicated Report/Certificate Seal is deemed to be invalid.

2、对报告/证书若有异议，应于报告/证书发出之日起十五日内向本院提出，否则视为无异议（有特别规定除外）。政府行政管理部门下达的监督检验任务，受检方对报告/证书有异议的，应按政府行政管理部门文件规定及国家相关法律、法规进行。

Any objections to the report/certificate issued by SMQ should be submitted to SMQ within 15 days after the issuance of report/certificate. Otherwise, it will be deemed as no objection (except for special provisions). The mandatory inspection assigned by government administrative departments shall be carried out in accordance with the documents and regulations of the government administrative department and relevant national laws and regulations if inspected parties raise any objection to the inspection.

3、委托检验的项目/样品及委托方信息均来源于委托方填写的协议书，本院不对其信息的真实性、完整性及准确性负责。

The items/product information and entrusting party information are all from the agreement that filled by the entrusting party, and SMQ assumes no responsibility for their validity, integrity and accuracy.

4、本院严格按照协议书及有关检验方法中列明的条款与条件进行检验，报告/证书得出的数据或结论是基于特定的时间、特定的方法以及特定的适用标准对检验项目/样品特征、成份、性能或质量进行的描述，采用不同的方法和标准、在不同的环境条件下对项目/样品进行检验有可能得出不同的结论。

SMQ strictly in accordance with the agreement and the terms stated in the relevant test method and test conditions. Data or conclusions of report/certificate are a description of the characteristics, composition, performance or quality of the test item/sample based on a specific time, method and applicable criteria. Testing items/samples using different methods and standards, under different environmental conditions, may lead to different conclusions.

5、检测数据及检验结果只对检验对象在检测/检验时的状态有效，不适用于被检对象以外的评价和宣传。非因检验结果的准确性导致的报告/证书使用所产生的直接或间接损失，本院不承担任何责任。如果委托方滥用或者违法使用报告/证书，导致侵犯第三方权益或造成第三方损失的，本院不承担任何责任。如果因委托方不合理使用报告/证书，导致本院遭受损失的，委托方应当赔偿本院所遭受的所有损失，包括但不限于赔偿款、诉讼费、律师费、交通费、公证费等。

The test data and results are only valid for the state of the test object at the time of the test/inspection, and are not applicable to evaluation and publicity outside the test object. SMQ does not assume any responsibility for direct or indirect losses arising from the use of reports/certificates not caused by the accuracy of the inspection results. If the entrusting party abuses or illegally uses the report/certificate, causing infringement of the rights of a third party or causing losses to the third party, SMQ shall not bear any responsibility. If SMQ suffers losses due to unreasonable use of the report/certificate by the entrusting party, the entrusting party shall compensate all losses suffered by SMQ, including but not limited to compensation, litigation fees, attorney fees, car fee, notarial fees, etc.

6、只申领电子报告时，相关内容和效力以电子报告为准；电子报告和纸质报告同时申领时，电子报告仅作为纸质报告的副本，相关内容和效力以同编号纸质报告为准。

The relevant content and effectiveness is subject to the electronic version of the original report which was only applied for. When an electronic report and a paper report are applied for at the same time, the electronic report is only a copy of the paper report, and the relevant content and effectiveness is subject to the paper report.

7、报告/证书被撤销或者更改的，本院已经发出并被撤销更改的报告/证书不再具有效力，报告/证书纸质复制件、电子版复制件、扫描件及传真件均不具有报告/证书原件的效力，委托方有义务及时将更改后的报告/证书向曾经提供使用原报告/证书的相关方做出更换及说明。

Any report/certificate that has been changed and revoked is no longer valid, even if it has been issued. Paper copies, electronic copies, scanned copies and faxed copies of the report/certificate do not have the effect of the original report/certificate. The entrusting party assumes the responsibility of timely providing the revised version and explaining to any interested party who uses them.

8、检验报告二维码具浏览和下载完整报告功能，是应委托方要求所设，该二维码及其复制图能使任何人扫描获取完整的检验报告电子版，本报告持有人如需限制他人经该二维码获取检验报告内容，应自行遮盖或消除检验报告及其复制件所附二维码，我院对委托方选择检验报告二维码功能所致的信息泄露概不负责。

The QR code has the function of browsing and downloading complete report. Setting this function or not is chosen by the customer. The QR code and its copy enable anyone to scan and obtain the complete electronic version of the test report. Thus, if the owner of this report needs to restrict others from obtaining the content of the test report through the QR code, he shall cover or remove the QR code attached to the test report and its copies by himself. SMQ assumes no responsibility for the information leakage caused by the customer's selection of the QR code function of the test report.

投诉及报告/证书真伪查询电话

Complaint hotline: 400-900-8999 按5

Email: complaint@smq.com.cn

TEST REPORT DECLARATION

Applicant : Kibeam Learning Inc
Address : 1440 BROADWAY, STE 200-199 OAKLAND, CA
94612-2022 USA
Manufacturer : Kibeam Learning Inc
Address : 1440 BROADWAY, STE 200-199 OAKLAND, CA
94612-2022 USA
EUT Description : Kibeam Wand Reading System
MODEL No : Wand 3.0
Brand : Kibeam

Test Standards: IEEE Std 149-1979

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project
Engineer:


(Zhou Li 周立)

Date: Aug. 14, 2025

Checked by:


(Wan Xiaojing 万晓婧)

Date: Aug. 14, 2025

Approved by:


(Lin Bin 林斌)

Date: Aug. 14, 2025

TABLE OF CONTENTS

TEST REPORT DECLARATION	2
1. TEST RESULTS SUMMARY	4
2. GENERAL INFORMATION	5
2.1. Report information.....	5
2.2. Laboratory Accreditation and Relationship to Customer	5
3. GENERAL INFORMATION	6
4. TEST PROCEDURE	6
5. SUMMATION TEST REPORT	7
5.1. Equipment Under Test DescRiption	7
5.2. Test Setup	7
6. TEST EQUIPMENT USED	8
7. TEST DATA	8
7.1. TEST RESULTS.....	8

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Frequency Band (MHz)	Gain	Efficiency
2402-2482	-2.55	9.64%

Remark: "N/A" means "Not applicable."

2. GENERAL INFORMATION

2.1. Report information

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

The lab will not be liable for any loss or damage resulting for false, inaccurate, inappropriate or incomplete product information provided by the applicant/manufacturer.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918.

The Laboratory is registered to perform emission tests with Innovation, Science and Economic Development (ISED), and the registration number is 11177A.

The Laboratory is registered to perform emission tests with VCCI, and the registration number are C-20048, G20076, R-20077, R-20078 and T-20047.

The Laboratory is Accredited Testing Laboratory of American Association for Laboratory Accreditation (A2LA) and certificate number is 3292.01.

3. GENERAL INFORMATION

Over the Air Measurements (Active) are performed in a Satimo SG-24. The SG-24 has 23 probe antennas mounted with equal spacing on a circular arch. Electronic switching of the probe antennas provides outstanding measurement speed. The geometry of the setup, with only a Styrofoam column within 1.6 meters of the EUT, ensures minimum interference and low ripple on the measured radiation patterns.

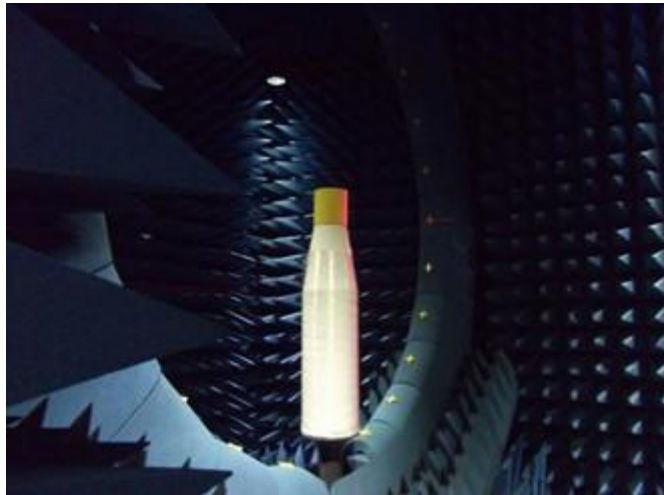


Figure 1– SG-24. The DUT is placed on top of the pedestal, in the center of the system.

4. TEST PROCEDURE

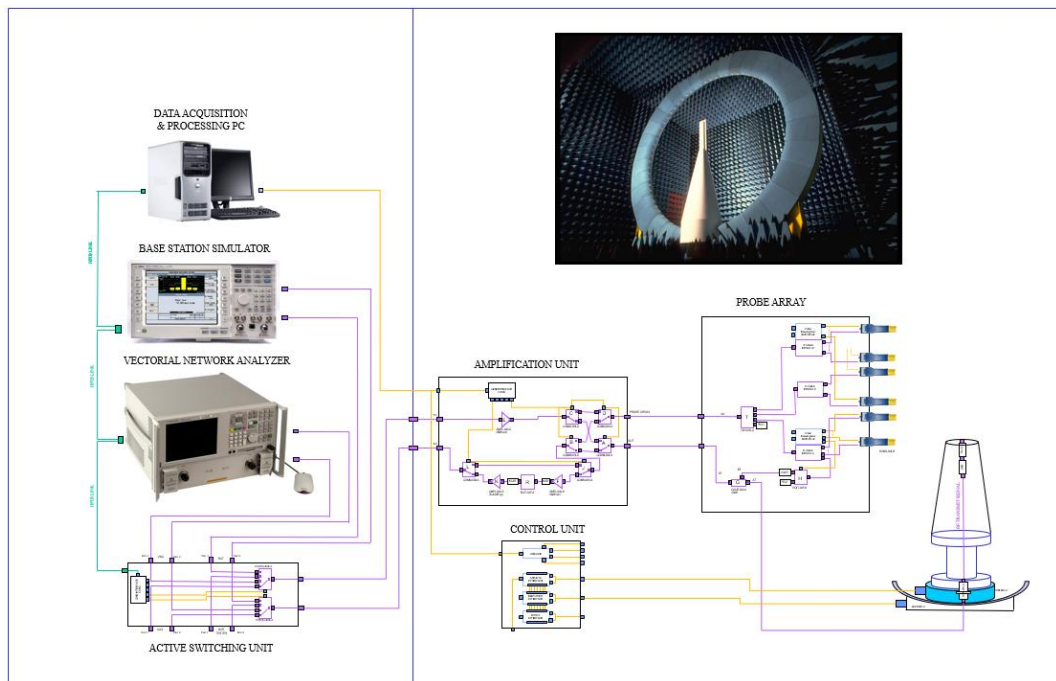
The gain of the antenna was measured in the anechoic chamber Satimo SG24. The chamber provides less than -30 dB reflectivity from 400 MHz through 6 GHz. The chamber size is: 8m*5m*5m. The measurement results are calibrated using a dipole antenna. The antenna gain and efficiency are measured with AUT placed in the chamber.

5. SUMMATION TEST REPORT

5.1. Equipment Under Test Description

Date of Measurements:	Aug. 13, 2025
Device Manufacturer:	Kibeam Learning Inc
Kibeam Wand Reading System Type	LOOP
Temperature	22~24 °C
Relative Humidity	40~50 %

5.2. Test Setup



6. TEST EQUIPMENT USED

Table 2 Test Equipment

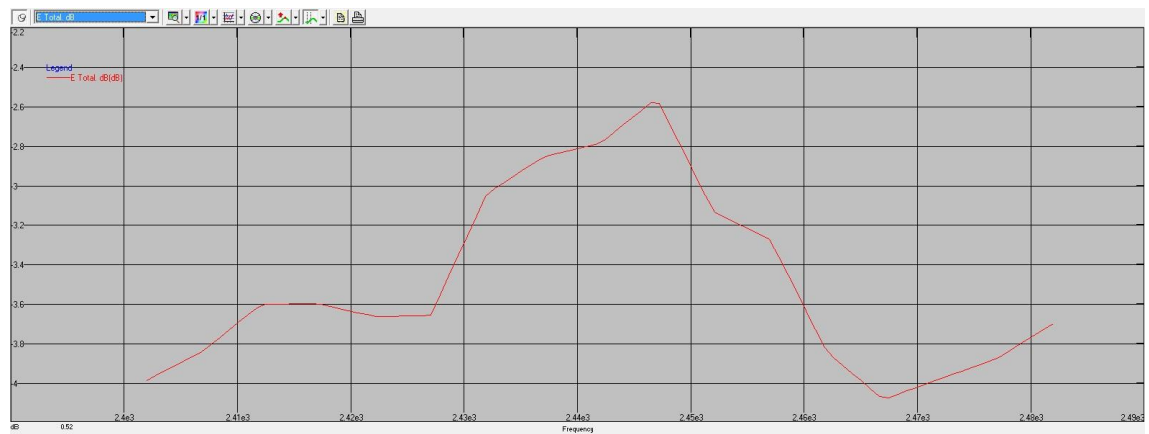
No.	Equipment	Manufacturer	Model No.	LAST CALIB	Period
SB9011/01	Network analyzer	Agilent	E5071C	2025.04.15	1 Year
--	Passive Measurement	SATIMO	1.1.4	--	--

7. TEST DATA

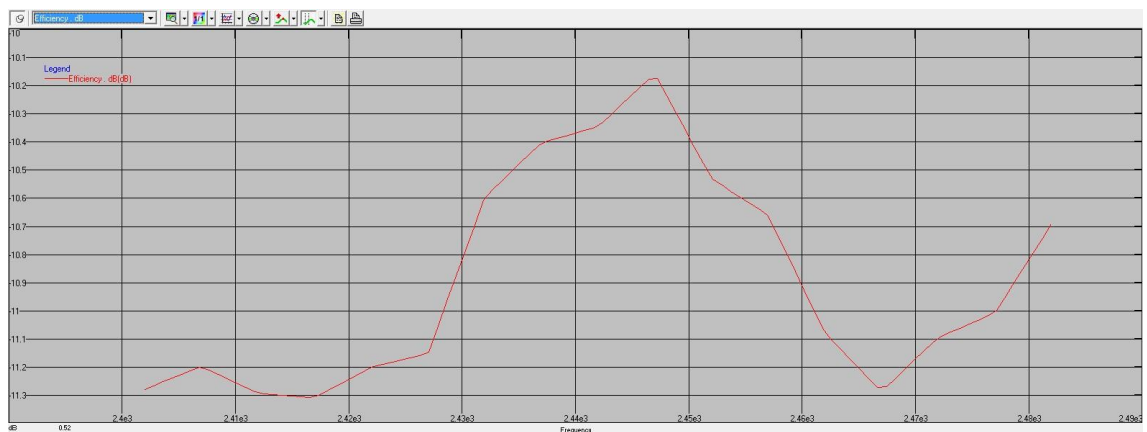
7.1.TEST RESULTS

Table 3 Test Data 1#

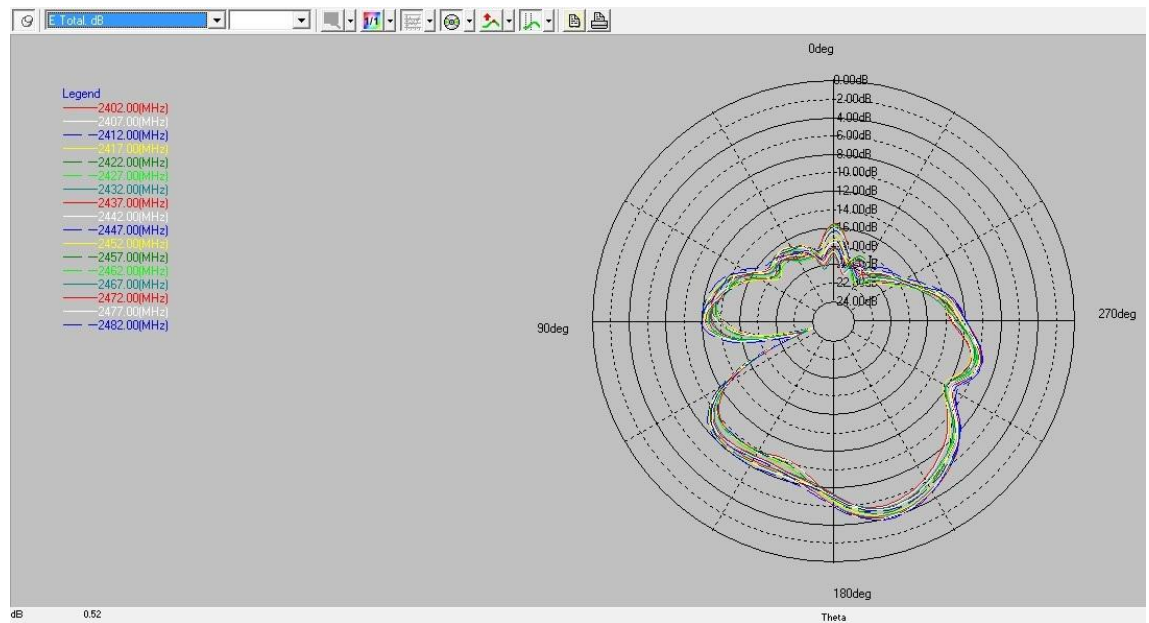
Frequency	Gain	Efficiency
2402	-3.98	7.45%
2407	-3.84	7.59%
2412	-3.60	7.43%
2417	-3.59	7.40%
2422	-3.66	7.59%
2427	-3.66	7.67%
2432	-3.04	8.72%
2437	-2.85	9.11%
2442	-2.78	9.23%
2447	-2.55	9.64%
2452	-3.13	8.85%
2457	-3.27	8.59%
2462	-3.84	7.80%
2467	-4.08	7.44%
2472	-3.98	7.77%
2477	-3.88	7.93%
2482	-3.70	8.53%



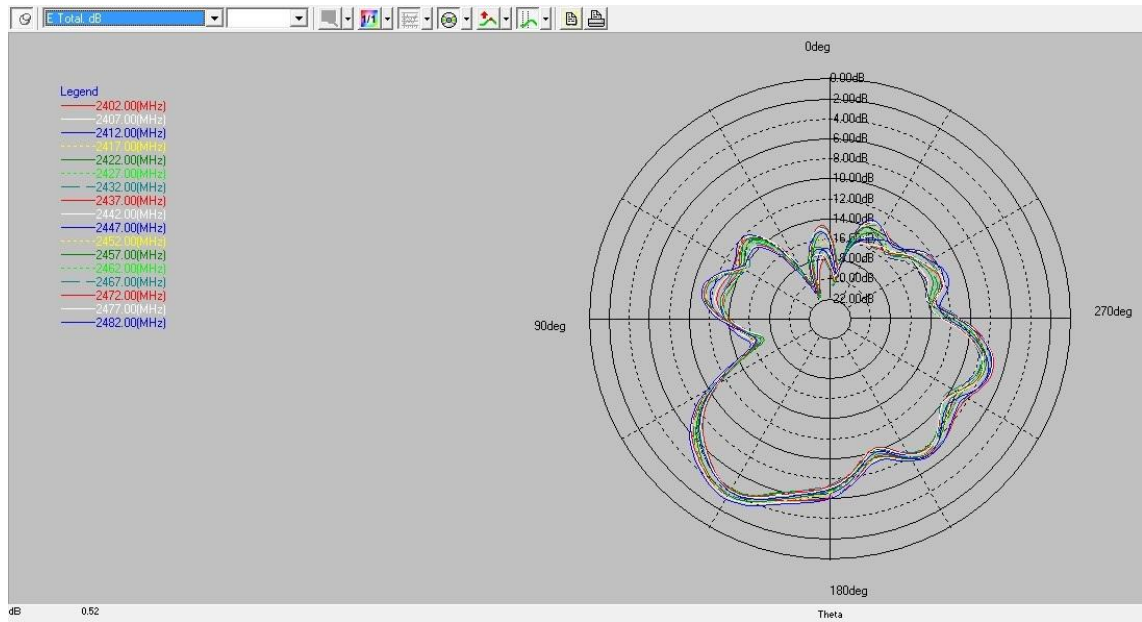
Peak Gain



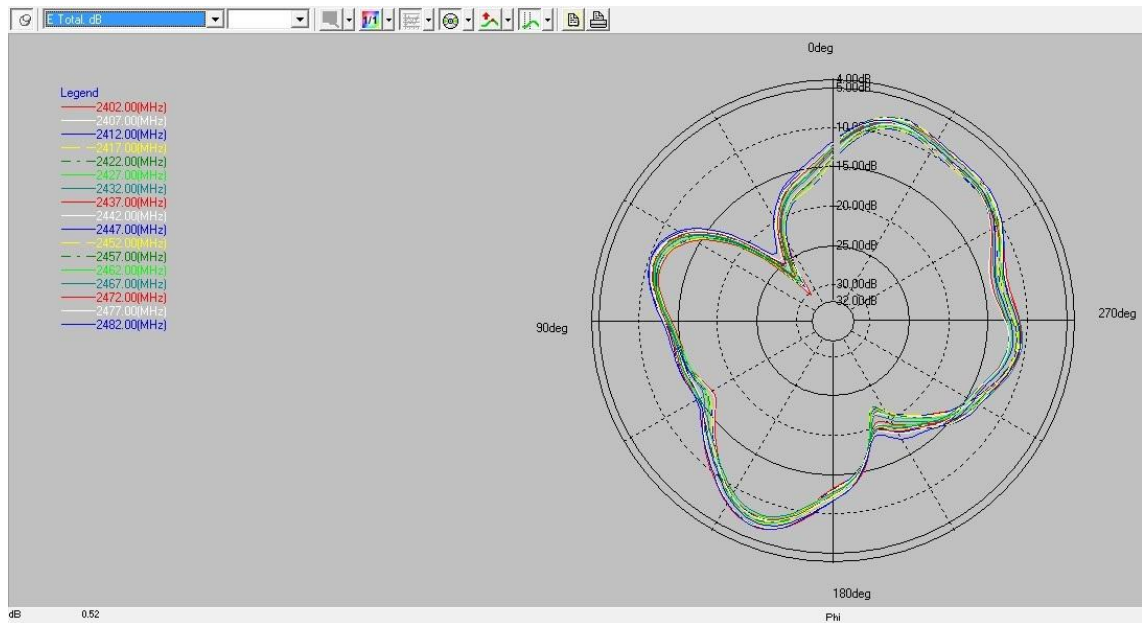
Efficiency



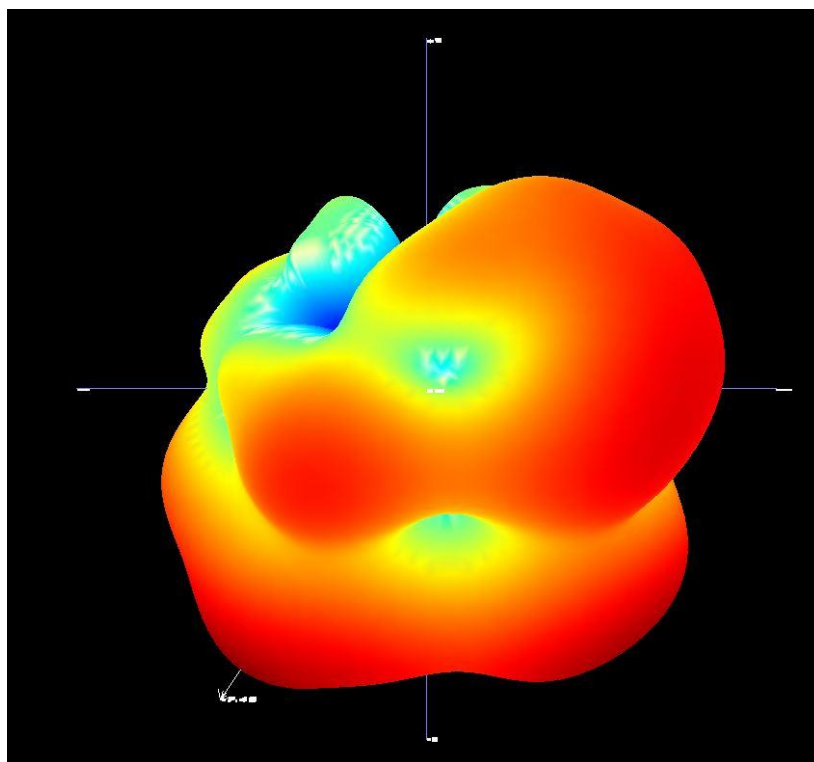
X-Z Plane



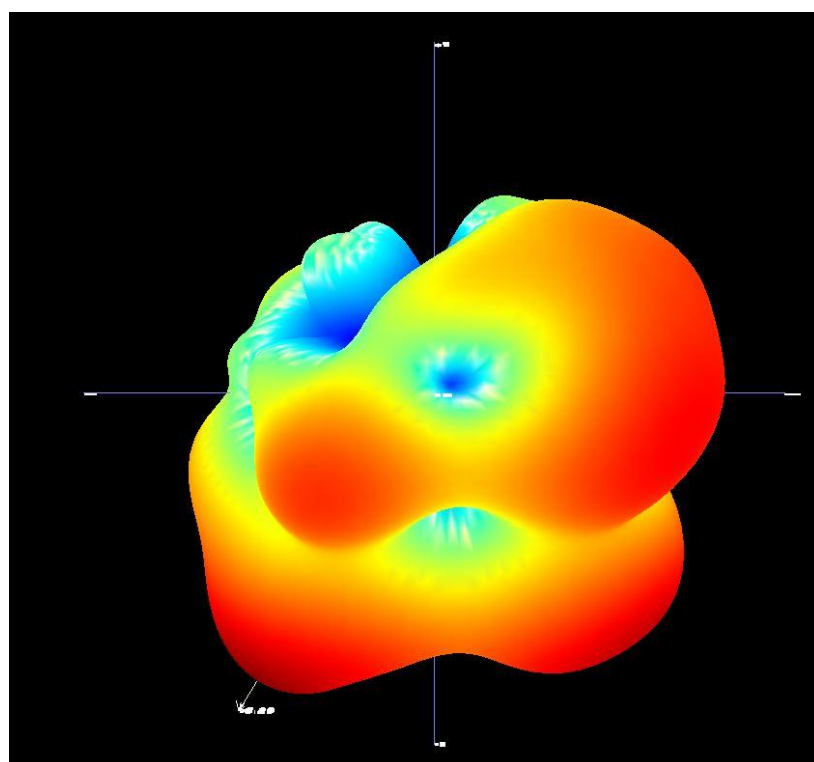
Y-Z Plane



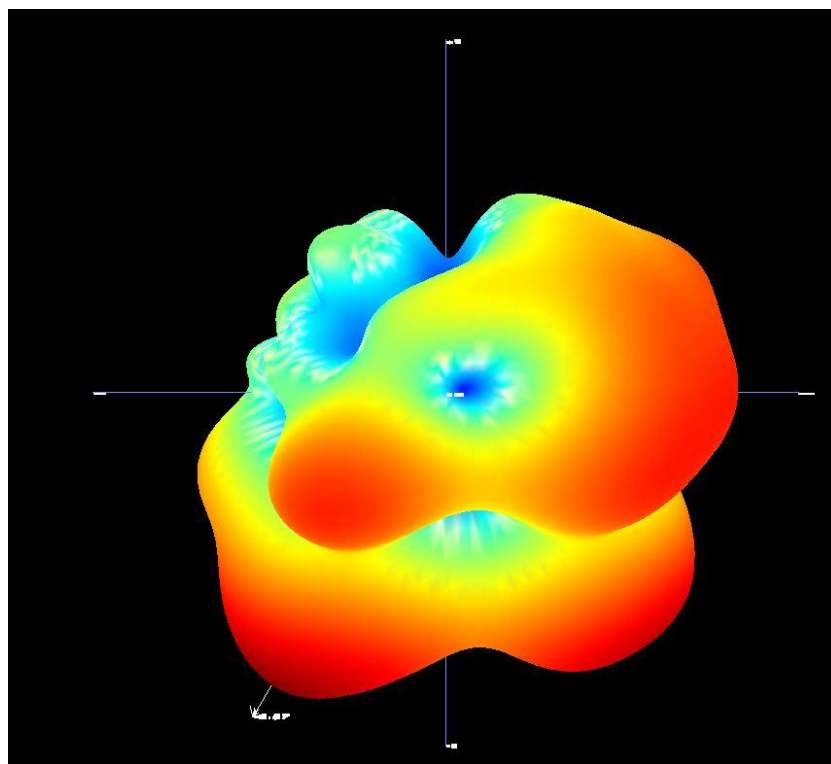
X-Y Plane



2402 MHz



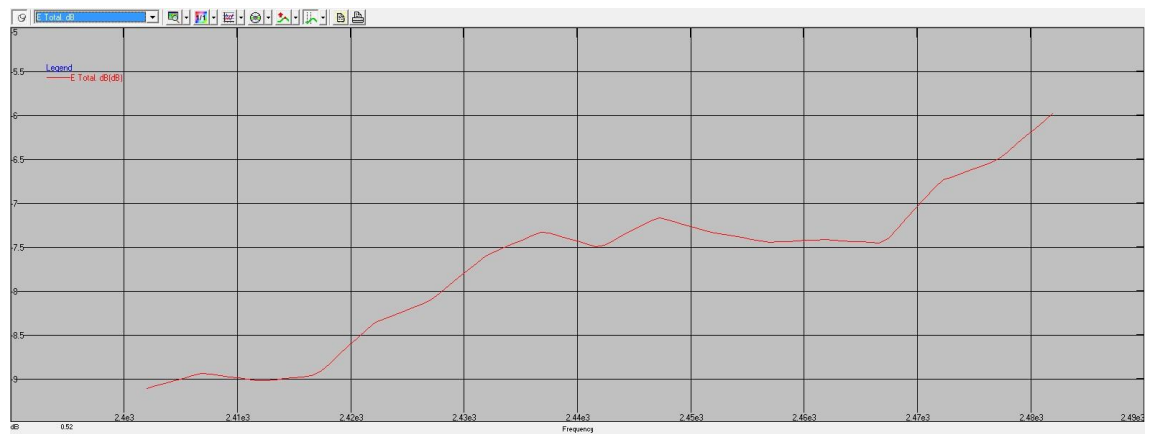
2442 MHz



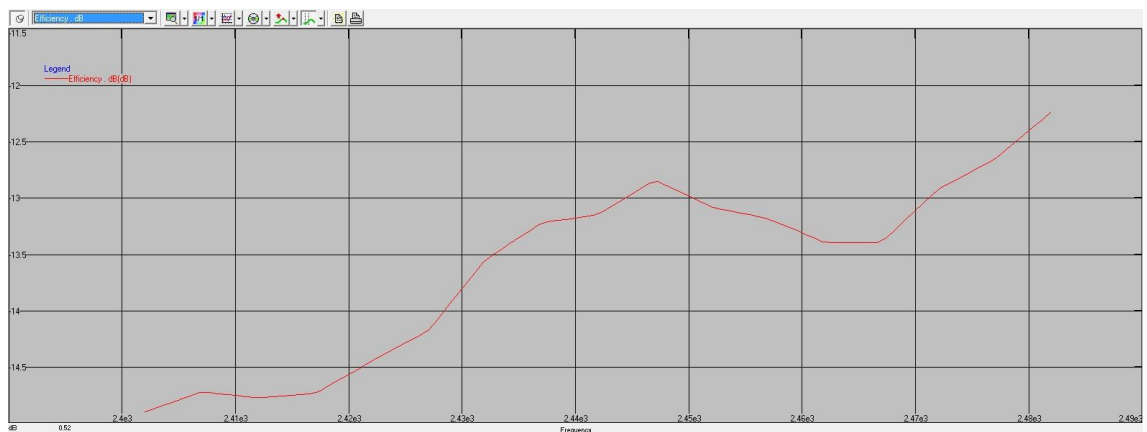
2482 MHz

Table 4 Test Data 2#

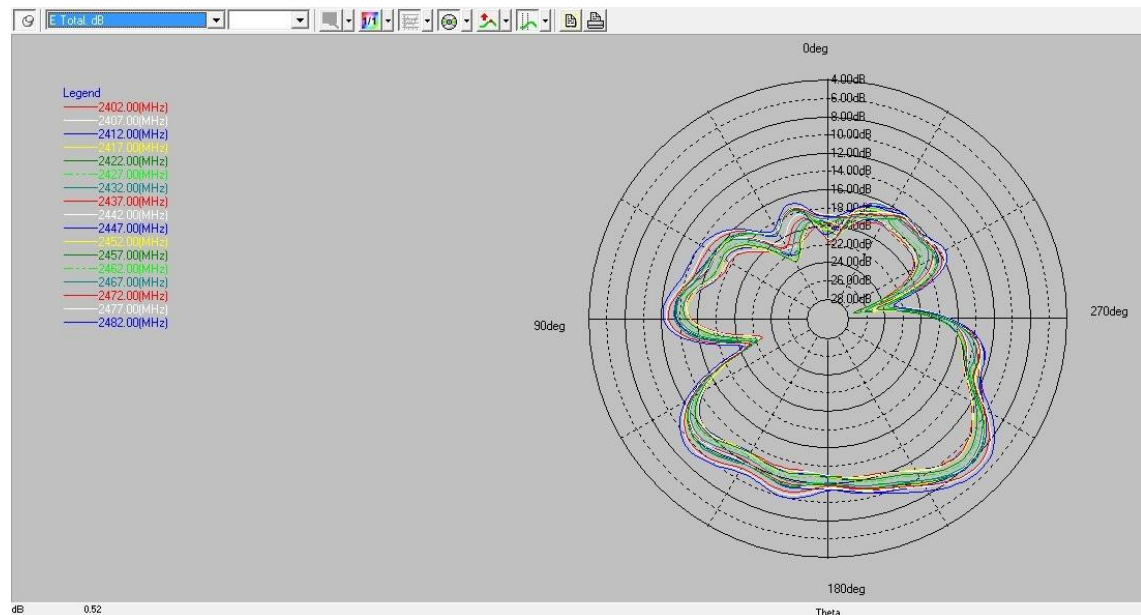
Frequency	Gain	Efficiency
2402	-9.11	3.24%
2407	-8.93	3.37%
2412	-9.03	3.33%
2417	-8.96	3.36%
2422	-8.36	3.59%
2427	-8.11	3.82%
2432	-7.58	4.41%
2437	-7.32	4.77%
2442	-7.51	4.85%
2447	-7.15	5.20%
2452	-7.33	4.92%
2457	-7.44	4.81%
2462	-7.41	4.58%
2467	-7.46	4.58%
2472	-6.75	5.11%
2477	-6.51	5.43%
2482	-5.97	5.98%



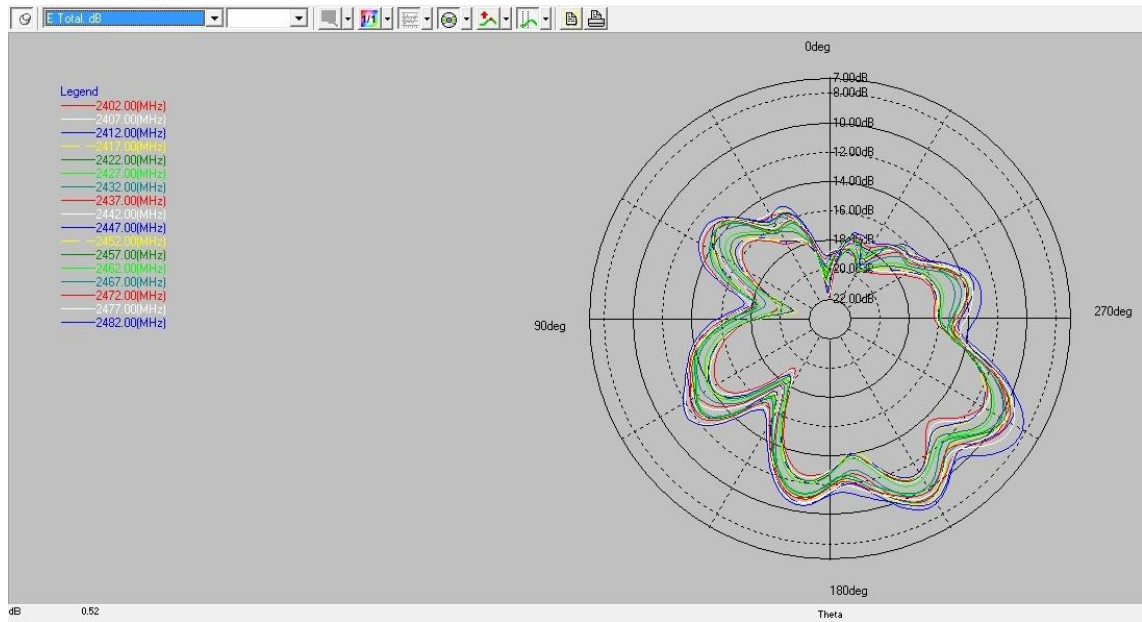
Peak Gain



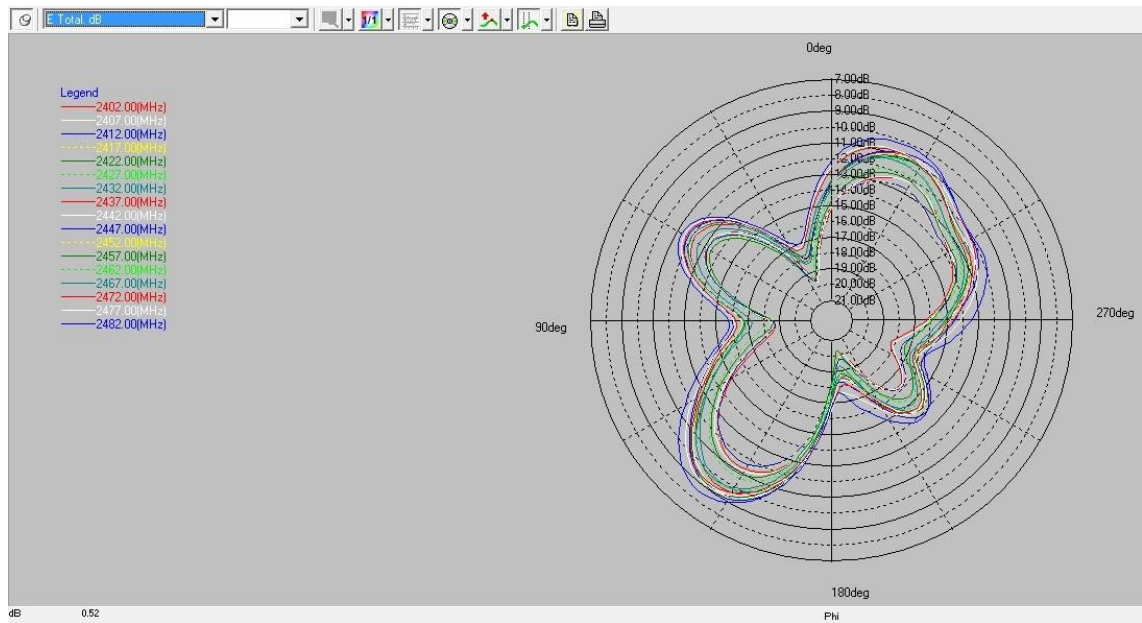
Efficiency



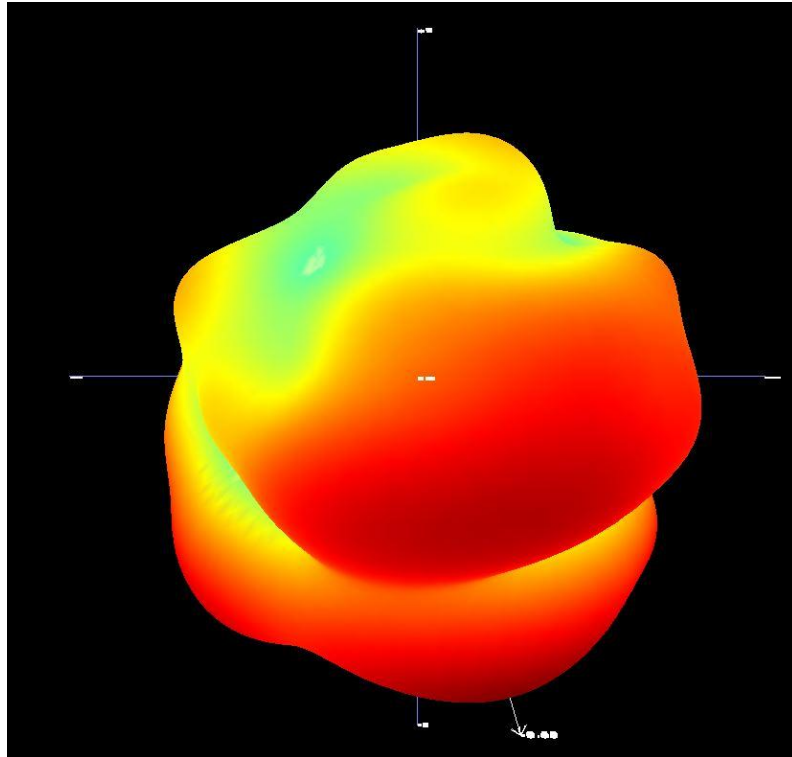
X-Z Plane



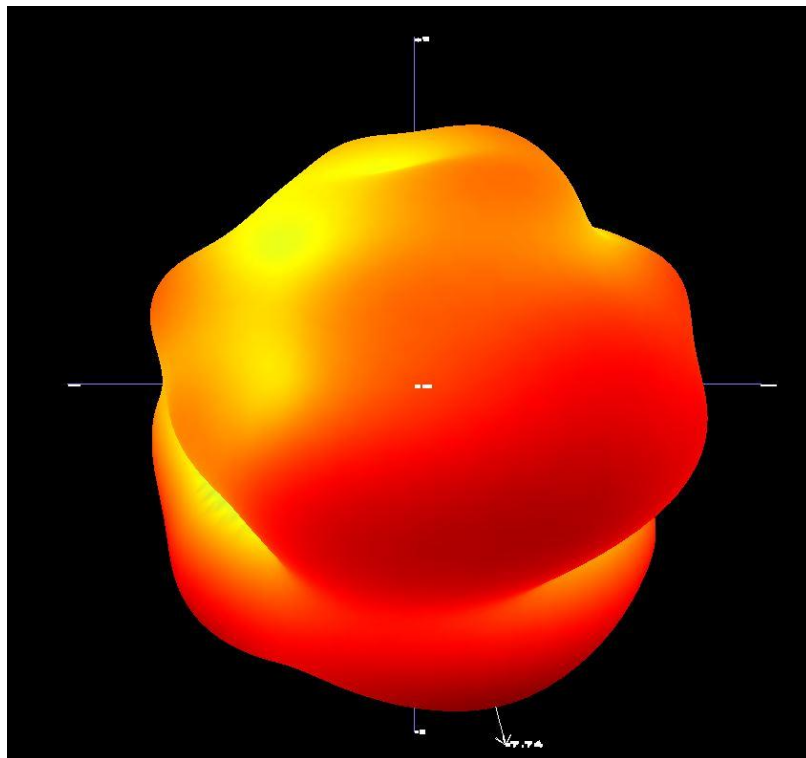
Y-Z Plane



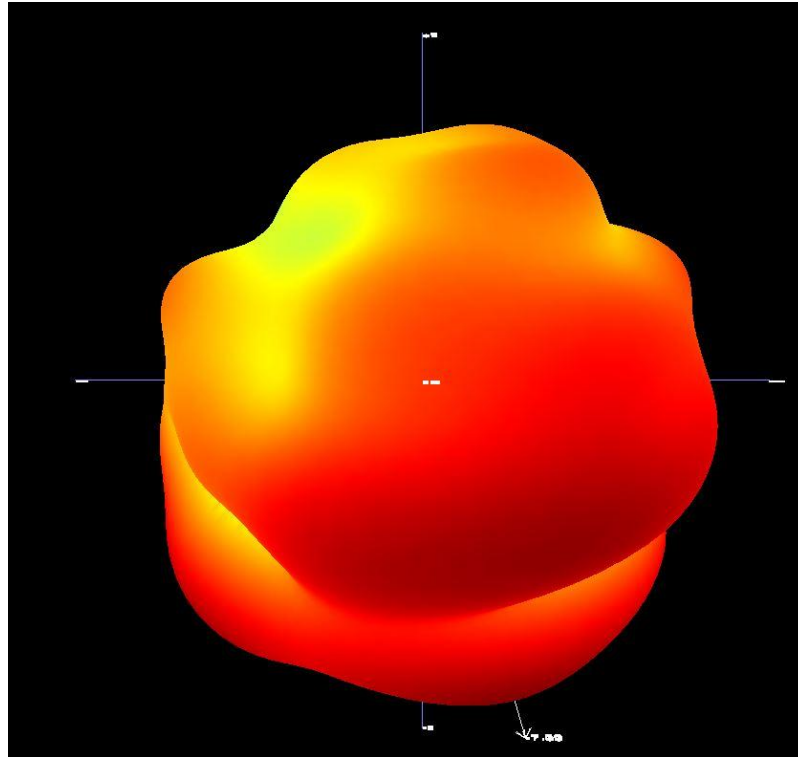
X-Y Plane



2402 MHz



2442 MHz



2482 MHz

-----END-----