深圳市计量质量检测研究院
Shenzhen Academy of Metrology & Quality Inspection

ANTENNA TEST REPORT

For

Auria

Model Number: FS2345

Report Number : WT248001431

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

重 要 声 明

Important statement

1. 本院是深圳市人民政府依法设置的产品质量监督检验机构，系社会公益型非营利性技术机构，为各级政府执法部门进行监督管理提供技术支持和接受社会各界的委托检验。

SMQ is a legal non-profit technical institute established by Shenzhen Municipal Government to undertake the quality supervision and inspection of products, and to provide technical support to relevant supervision and administration and also conduct commission test from the society.

2. 本院保证检验的科学性、公正性和准确性，对检验的数据负责，并对委托单位所提供的样品和技术资料保密。

SMQ is committed to assuring the scientificness, impartiality and accuracy of all tests carried out, responsibility for test data gained, and keeping confidential of all test samples and technical documents provided.

3. 抽样按照本院程序文件《抽样程序》和相应产品的检验细则的规定执行。

The sampling should be carried out according to the "sampling procedure" defined in the Procedure Document and relevant testing specifications.

4. 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、摘用或篡改本报告/证书内容。复印证书/报告未重新加盖本院证书/报告专用章无效。

Any report/certificate having not been signed by relevant responsible engineer, reviewer or authorized approver, or having been altered without authorization, or without both the Dedicated Report/Certificate Seal and its across-page seal 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.

5. 送样委托检验结果仅对来样有效：委托检验的样品、样品及委托方信息均由委托方提供，本院不对样品的代表性、真实性及信息的完整性和准确性负责。

The test results presented in the report apply only to the tested sample. The customer provides thier own information, the sample, and the sample information. Thus, SMQ assumes no responsibility for representativeness , authenticity of the sample and validity and accuracy of the information..

6. 未经检验机构同意，样品委托人不得擅自使用检验结果进行不当宣传。

Any use of SMQ test result for advertisement of the tested material or product must be approved in writing by SMQ.

7. 无 CMA 标志的报告/证书，仅作为科研、教学或内部质量控制之用。含粤字编号的 CAL 标志仅适用于产品标准和判定标准。

The non-CMA report/certificate issued by SMQ is only permitted to be used for research, teaching or internal quality control. CAL logo with symbol "Yue" is only relevant to product standards and reference of standards.

8. 委托方对报告/证书有异议的，应于报告发出之日起十五日内向本院提出。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 objection to report/certificate issued by SMQ should be submitted to SMQ within 15 days after the issuance of the test. 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.

9. 报告/证书更改后，发出的电子版报告/证书、报告/证书的扫描件及传真件将不被追回，委托方有义务将更改后的报告/证书提供给使用原报告/证书的相关方。

SMQ is not responsible for recalling the electronic version of the original report/certificate when any revision is made to them. The applicant assumes the responsibility of providing the revised version to any interested party who uses them.

10. 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.

11. 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（适用于附二维码报告）。

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 (This clause applies to reports with QR code attached) .

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	:	FRONTIER SMART TECHNOLOGIES
Address	:	Harston Mill, Harston, Cambridge, CB22 7GG, UNITED KINGDOM
Manufacturer	:	FRONTIER SMART TECHNOLOGIES
Address	:	Harston Mill, Harston, Cambridge, CB22 7GG, UNITED KINGDOM
EUT Description	:	Auria
Brand	:	--
MODEL No	:	FS2345

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:	Jul. 19, 2024
Checked by:	(Wan Xiao Jing 万晓婧)	Date:	Jul. 19, 2024
Approved by:	(Lin Bin 林斌)	Date:	Jul. 19, 2024

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
8. TEST PHOTO **11**

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Frequency Band (MHz)	Gain (max)	Efficiency (max)
2400~2483.5	1.86	43.92
5150~5350	3.02	53.43
5470~5725	2.04	48.97
5725~5875	0.22	38.79

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.

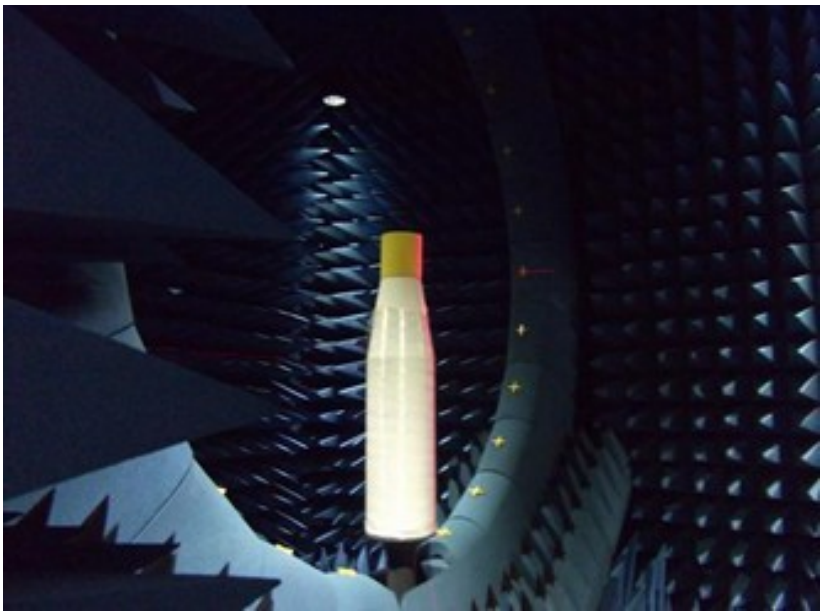


Figure 1– SG-24. The DUT is placed on top of the pedestal, in the center of the system.

4. TEST PROCEDURE

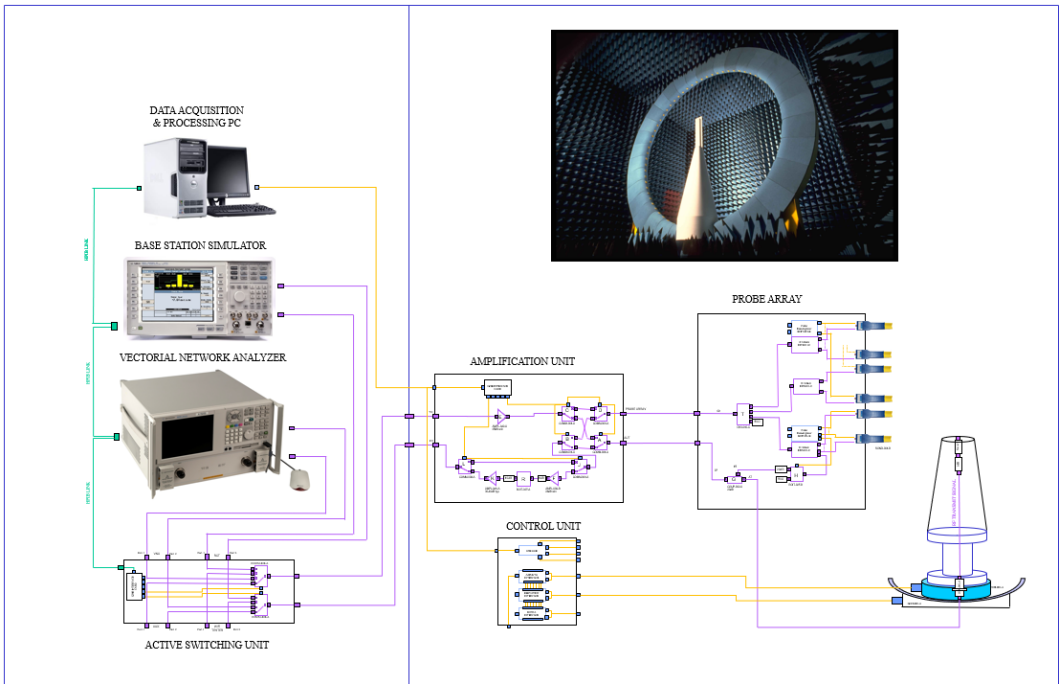
The gain of the antenna was measured in the anechoic chamber Satimo SG24. The chamber provides less than –30 dB reflectivity from 400 MHz through 6 GHz. The chamber size is:8m*5m*5m. The measurement results are calibrated using a dipole antenna. The antenna gain and efficiency are measured with AUT placed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

5. SUMMATION TEST REPORT

5.1. Equipment Under Test DescRiption

Date of Measurements:	Jun. 24~Jun. 26, 2024
Device Manufacturer:	FRONTIER SMART TECHNOLOGIES
Antenna No.:	FS2345
Antenna Type	linear antenna
Temperature	22~24 ℃
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	Antenna Test Systems	SATIMO	SG24	--	--
SB9011/01	Network Analyzer	Agilent	E5071C	2024.04.22	1 year
SB9011/17	Test software	SATIMO	Passive Measurement	--	--

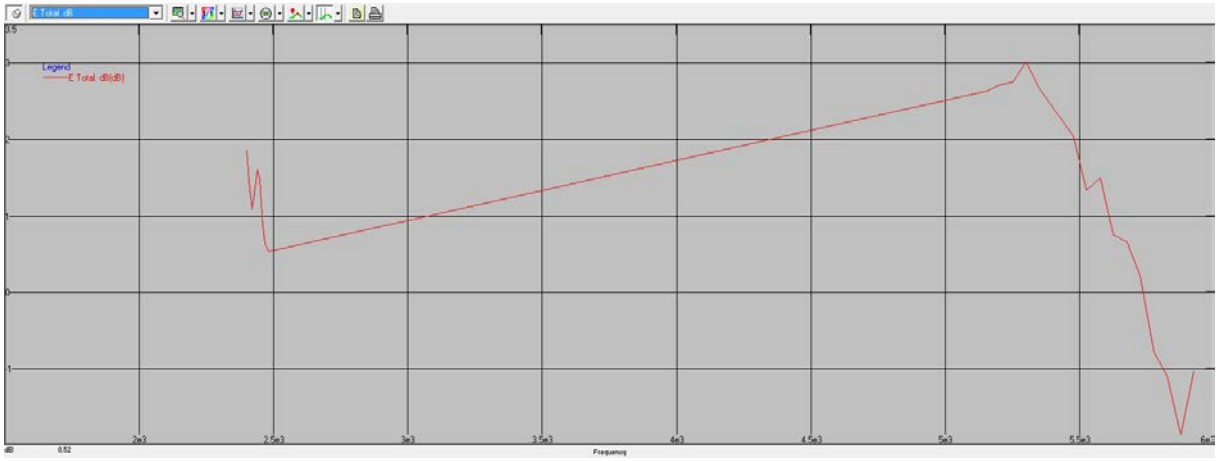
7. TEST DATA

7.1. TEST RESULTS

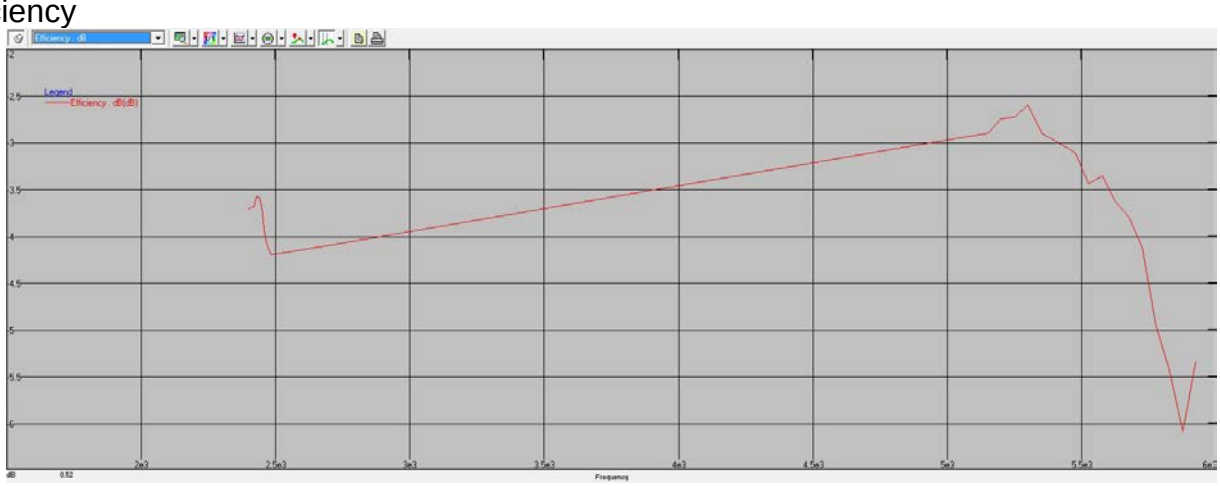
Table 3 Antenna 1#

Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	1.86	42.58
2410	1.45	42.77
2420	1.08	42.84
2430	1.29	43.92
2440	1.60	43.81
2450	1.47	42.85
2460	0.87	39.97
2470	0.64	39.09
2483	0.53	38.07
5150	2.63	51.41
5200	2.71	53.29
5250	2.75	53.43
5300	3.02	55.15
5350	2.66	51.40
5475	2.04	48.97
5525	1.33	45.37
5575	1.49	46.19
5625	0.75	43.47
5675	0.65	41.72
5725	0.22	38.79
5775	-0.78	32.00
5825	-1.09	28.79
5875	-1.86	24.62
5925	-1.03	29.33

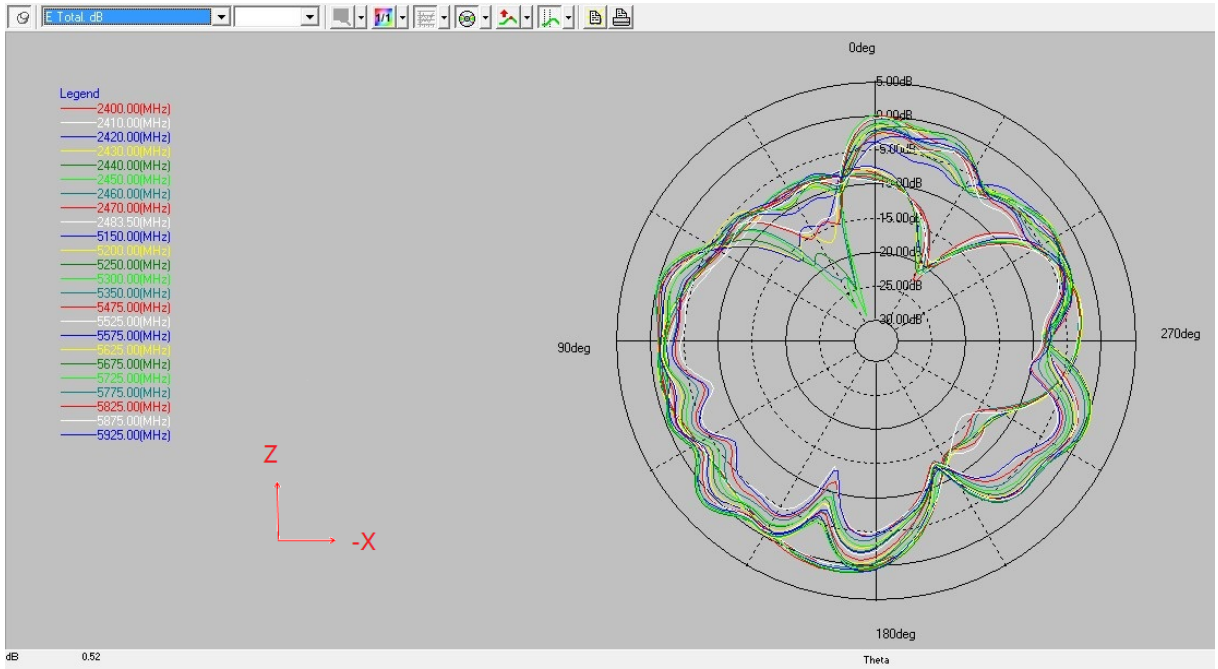
Peak Gain



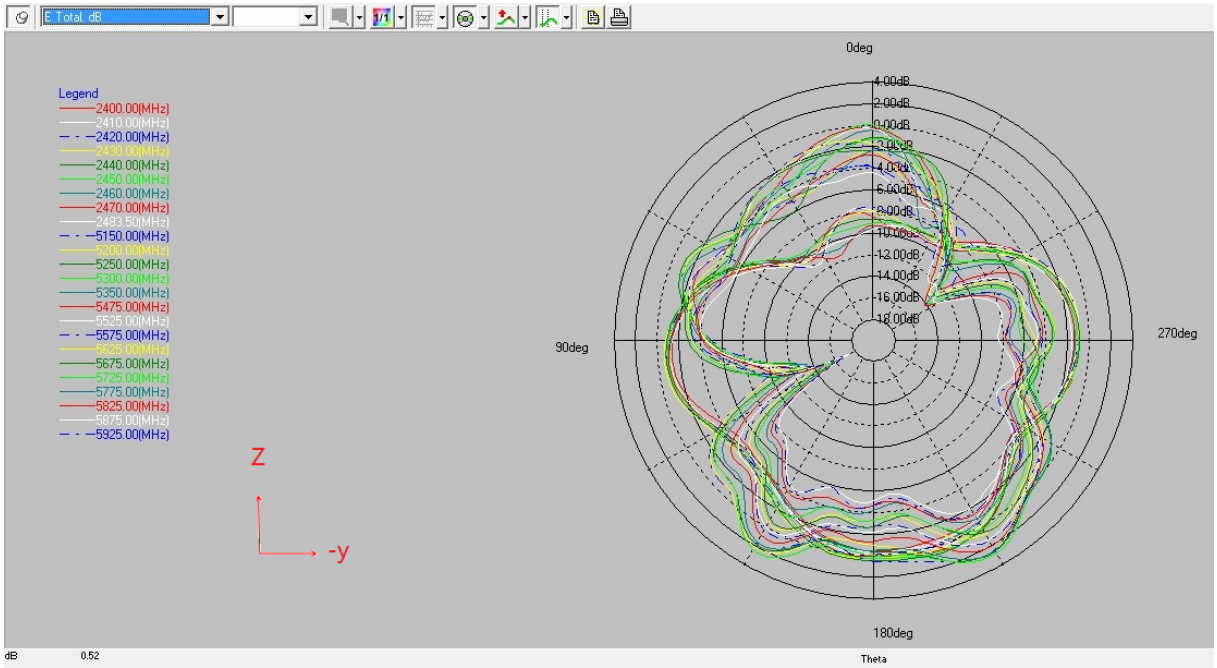
Efficiency



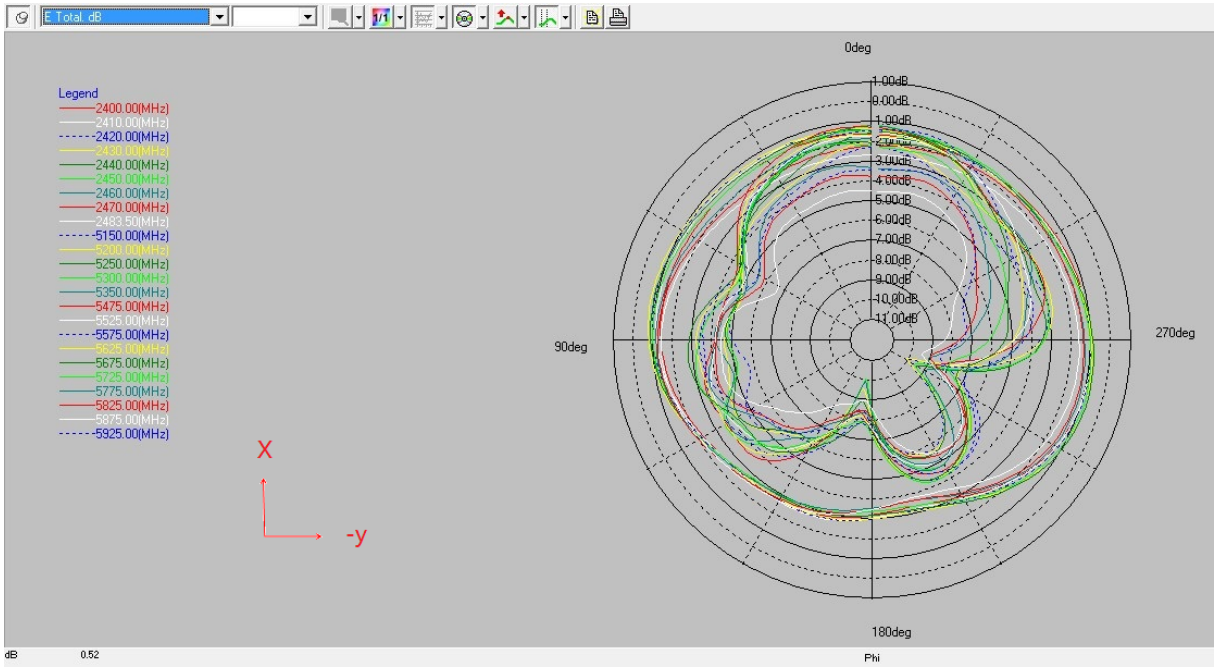
Phi=0



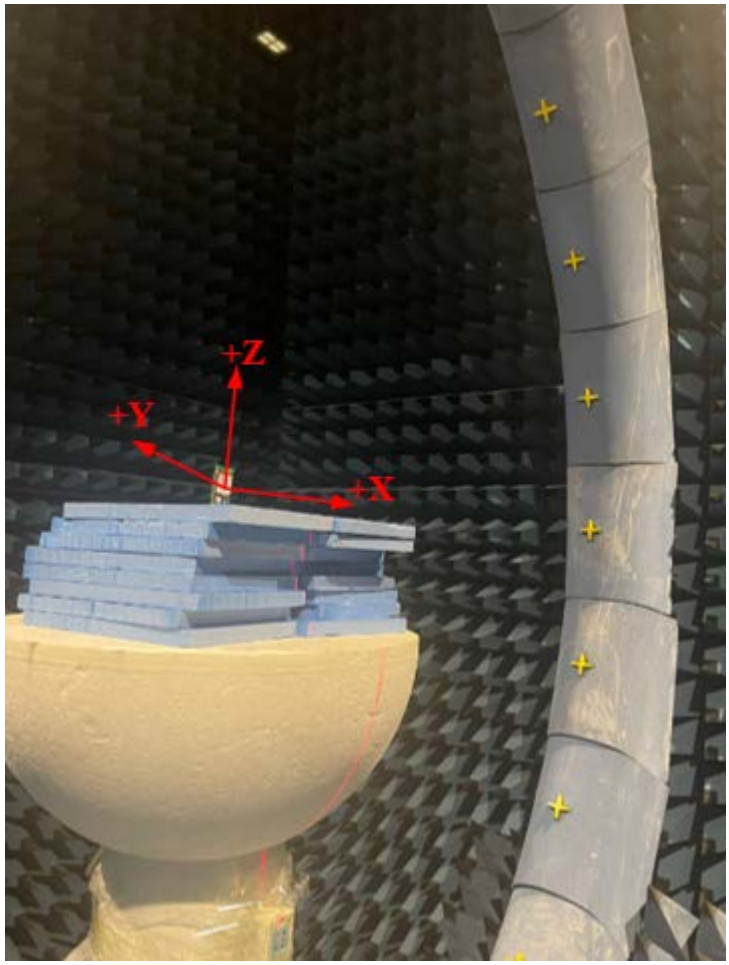
Phi=90



Theta=90



8. TEST PHOTO



----------END----------