



Antenna Test Report

Report No.: AGC16253240402PA01

PRODUCT DESIGNATION	:	Set Top Box
BRAND NAME	:	N/A
MODEL NAME	:	SEI700B2MW, SN6BKXX(X=A-Z)
APPLICANT	:	Shenzhen SEI Robotics Co., Ltd
DATE OF ISSUE	:	May 14, 2024
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd







REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 14, 2024	Valid	Initial release



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1. PRODUCT INFORMATON

General information		
Applicant	Shenzhen SEI Robotics Co., Ltd	
Address	4th Floor, Productivity Building D, #5 Hi-Tech Middle 2nd Road, Shernzhen Hi-Tech Industrial Park, Nanshan District, Shenzhen, China	
Manufacturer	Shenzhen SEI Robotics Co., Ltd	
Manufacturer	4th Floor, Productivity Building D, #5 Hi-Tech Middle 2nd Road, Shernzhen	
Address	Hi-Tech Industrial Park, Nanshan District, Shenzhen, China	
Factory	Shenzhen SEI Robotics Co., Ltd	
Address	4th Floor, Productivity Building D, #5 Hi-Tech Middle 2nd Road, Shernzhen Hi-Tech Industrial Park, Nanshan District, Shenzhen, China	
Product Designation	Set Top Box	
Brand Name	N/A	
Test Model	SEI700B2MW	
Series Model	SN6BKXX(X=A-Z)	
Difference Description	Differences in shell and its color.	
Date of receipt of test item	Apr. 16, 2024	
Date of Test	Apr. 16, 2024~ May 14, 2024	
Report Template	AGCRT-ER-PA/V1.0	
Technical information		
Frequency Range	2400-2500MHz	
Test Frequencies	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2480MHz, 2490MHz, 2500MHz; 5150MHz, 5250MHz, 5350MHz, 5450MHz, 5550MHz, 5650MHz, 5750MHz, 5850MHz;	
Antenna Type	FPC antenna for BT PCB onboard antenna for WLAN	
Dimensions	BT: 6.7mmx30.5mm; WLAN ant1: 8.3mmx18.5mm; WLAN ant2: 10mmx27.3mm;	
Impedance	50 Ω	
Maximum test values	BT Gain: -0.940dBi; Efficiency: 6.377%; VSWR: 1.085:1 2.4G WLAN ant1 Gain: 1.623dBi; Efficiency: 44.249%; VSWR: 1.080:1 2.4G WLAN ant2 Gain: 2.745dBi; Efficiency: 22.094%; VSWR: 1.086:1 5G WLAN ant1 Gain: -3.123dBi; Efficiency: 14.110%; VSWR: 1.177: 1 5G WLAN ant2 Gain: -1.397dBi; Efficiency: 9.070%; VSWR: 1.174: 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.

Thea Huang Prepared By Thea Huang May 14, 2024 (Project Engineer) **Reviewed By** Calvin Liu May 14, 2024 (Reviewer) Max Zhan Approved By Max Zhang



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. 28, 2023	Nov. 27, 2024
Network Analyzer	R&S	ZVL-6	Sep. 21, 2023	Sep. 20, 2024
Test software	ETS-Lindgren	EMQuest (Ver V1.12)	N/A	N/A

4. MEASUREMENT UNCERTAINTY

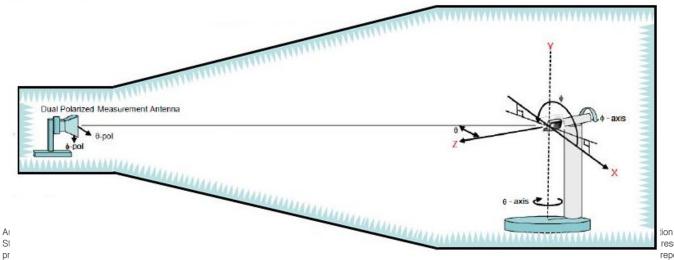
The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of VSWR, Uc = ± 1.5 dB
- Uncertainty of Gain, $Uc = \pm 0.8 dB$

5. TEST SUMMARY LIST

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

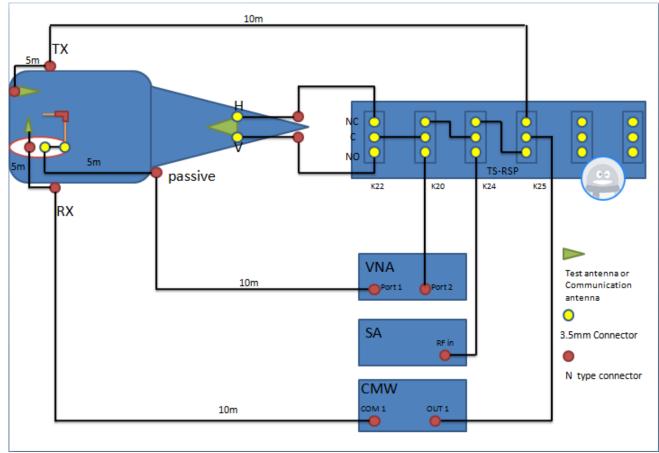
6. TEST SETUP



Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

results report.



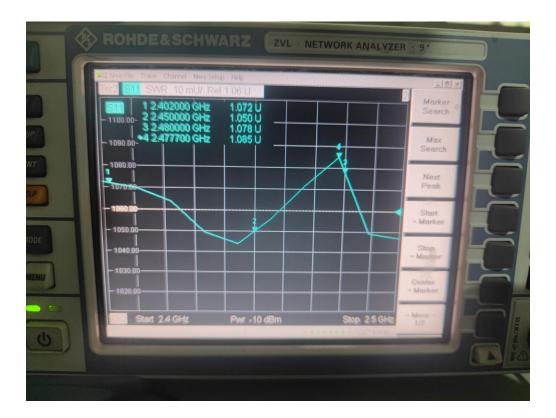




7.1. VSWR

BT:

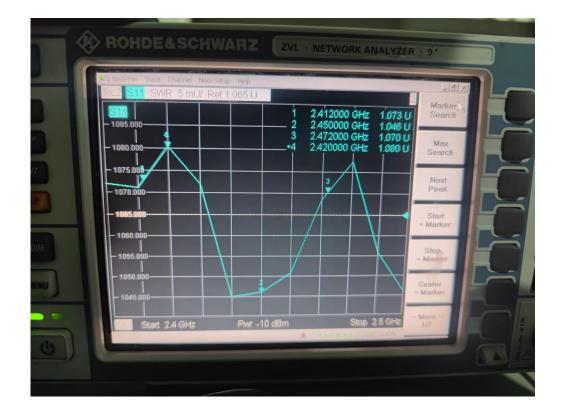
Frequency(MHz)	VSWR
2402	1.072:1
2450	1.050:1
2477	1.085:1
2480	1.078:1





2.4GWLAN-ANT1

Frequency(MHz)	VSWR
2412	1.073:1
2450	1.046:1
2472	1.070:1
2420	1.080:1





2.4GWLAN-ANT2

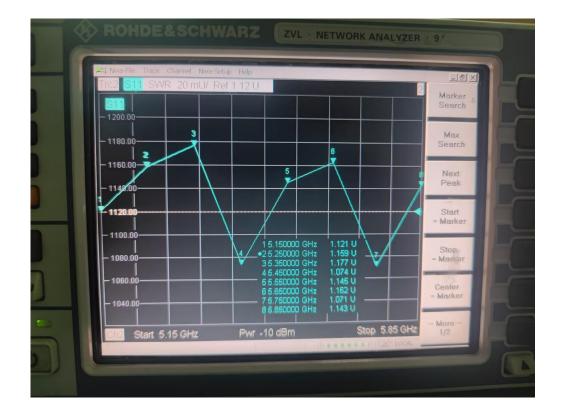
Frequency(MHz)	VSWR
2412	1.073:1
2450	1.052:1
2472	1.070:1
2420	1.086:1





5GWLAN-ANT1

Frequency(MHz)	VSWR
5150	1.121: 1
5250	1.159: 1
5350	1.177: 1
5450	1.074: 1
5550	1.145: 1
5650	1.162: 1
5750	1.071: 1
5850	1.143: 1





5GWLAN-ANT2

Frequency(MHz)	VSWR
5150	1.128: 1
5250	1.155: 1
5350	1.174: 1
5450	1.086: 1
5550	1.139: 1
5650	1.150: 1
5750	1.082: 1
5850	1.132: 1





7.2. GAIN AND EFFICIENCY

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Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-13.081	4.918	-2.255
2410	-13.202	4.783	-2.440
2420	-13.276	4.702	-2.428
2430	-13.002	5.008	-2.147
2440	-12.827	5.214	-1.917
2450	-12.732	5.330	-1.743
2460	-12.565	5.539	-1.486
2470	-12.611	5.480	-1.488
2480	-12.191	6.037	-1.121
2490	-12.017	6.284	-1.039
2500	-11.953	6.377	-0.940

2.4GWLAN-ANT1

Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-3.699	42.666	0.820
2410	-3.672	42.930	0.833
2420	-3.813	41.558	0.655
2430	-3.643	43.212	0.832
2440	-3.540	44.249	1.007
2450	-3.645	43.197	1.174
2460	-3.653	43.119	1.400
2470	-3.778	41.891	1.415
2480	-3.602	43.622	1.623
2490	-3.550	44.148	1.566
2500	-3.587	43.774	1.480



2.4GWLAN-ANT2

Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-7.004	19.932	2.733
2410	-6.978	20.053	2.662
2420	-7.038	19.774	2.537
2430	-6.779	20.993	2.698
2440	-6.567	22.044	2.745
2450	-6.557	22.094	2.654
2460	-6.611	21.820	2.505
2470	-6.789	20.941	2.140
2480	-6.662	21.565	2.052
2490	-6.676	21.494	1.700
2500	-6.716	21.298	1.340

5GWLAN-ANT1

Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
5150	-8.504	14.110	-3.123
5250	-9.305	11.733	-4.129
5350	-11.144	7.683	-4.993
5450	-11.428	7.197	-4.461
5550	-12.325	5.584	-4.978
5650	-12.893	5.135	-5.560
5750	-10.935	8.061	-4.272
5850	-12.089	6.180	-4.515

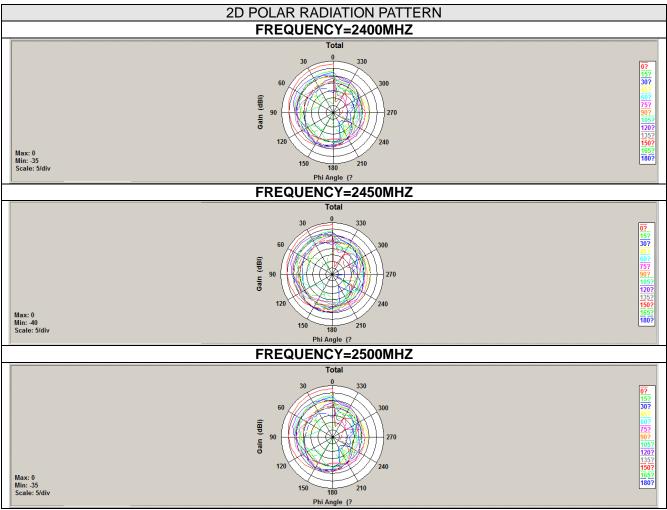
5GWLAN-ANT2

Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
5150	-15.728	2.674	-7.824
5250	-16.574	2.200	-8.792
5350	-16.849	2.065	-8.694
5450	-15.226	3.001	-5.973
5550	-14.364	3.660	-4.902
5650	-10.423	9.070	-1.397
5750	-10.690	8.530	-2.085
5850	-12.234	5.977	-3.656



7.3. RADIATION PATTERN



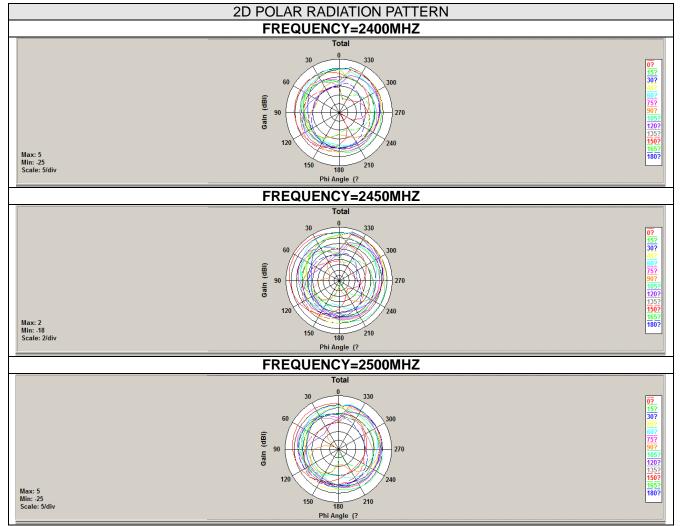




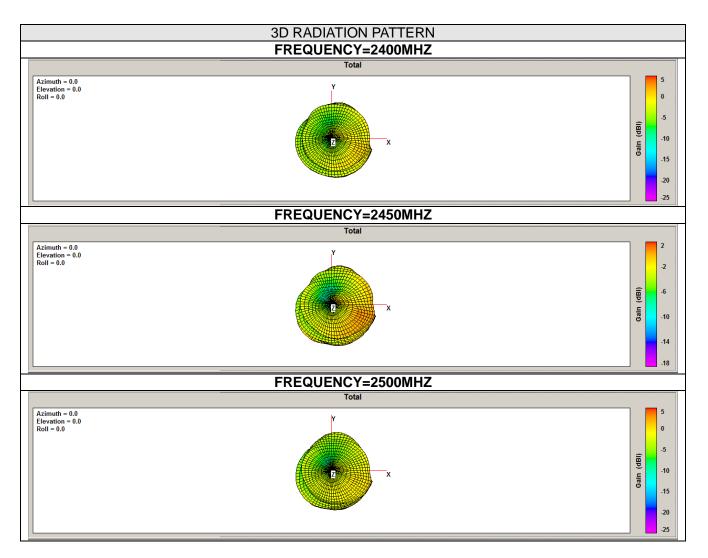




2.4GWLAN-ANT1:

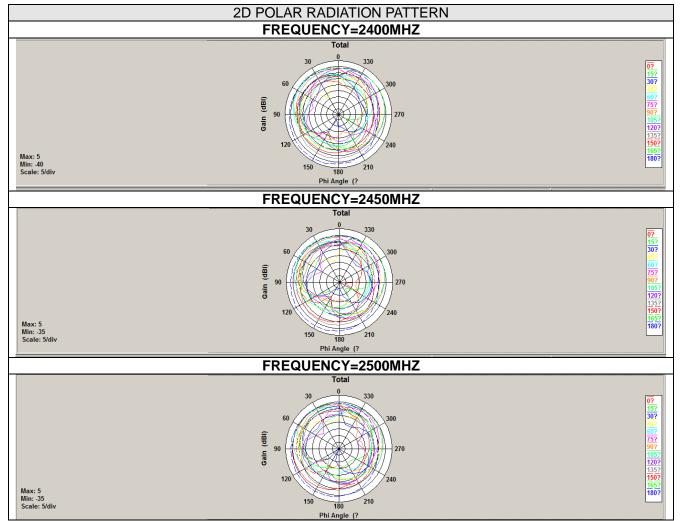




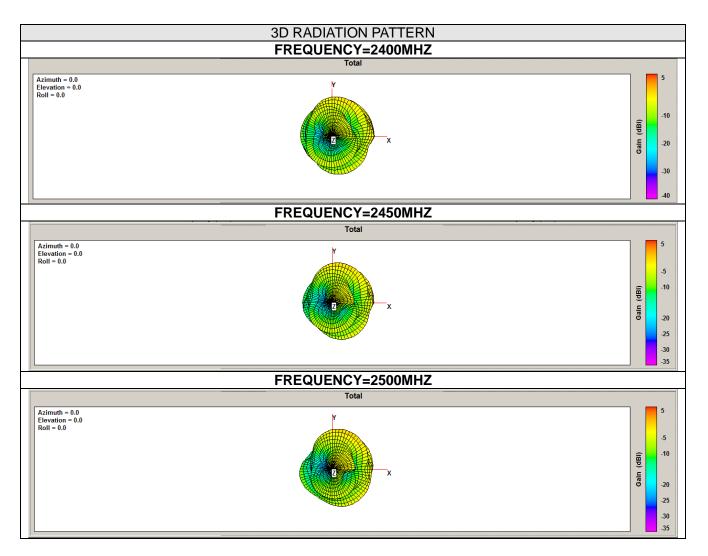




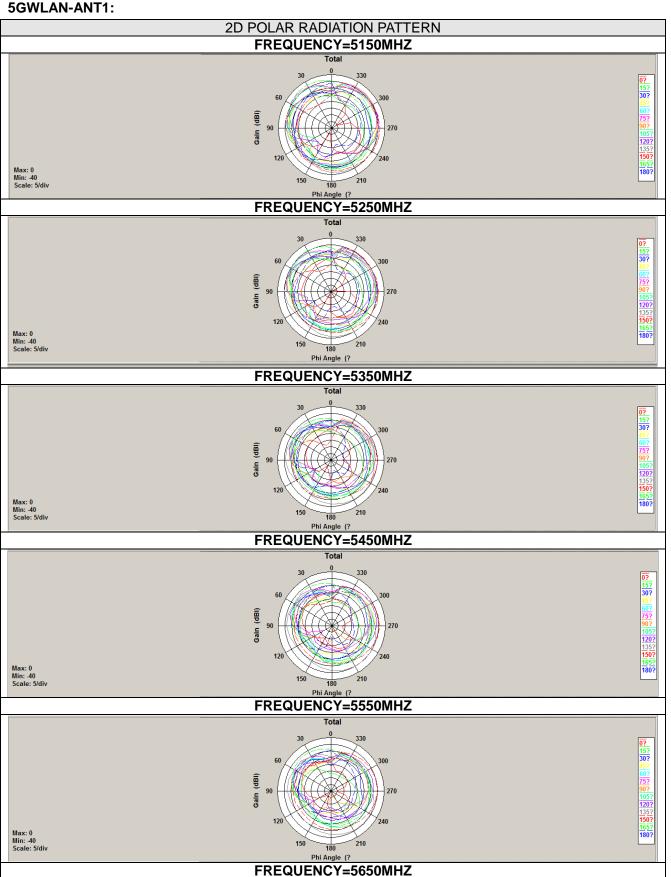
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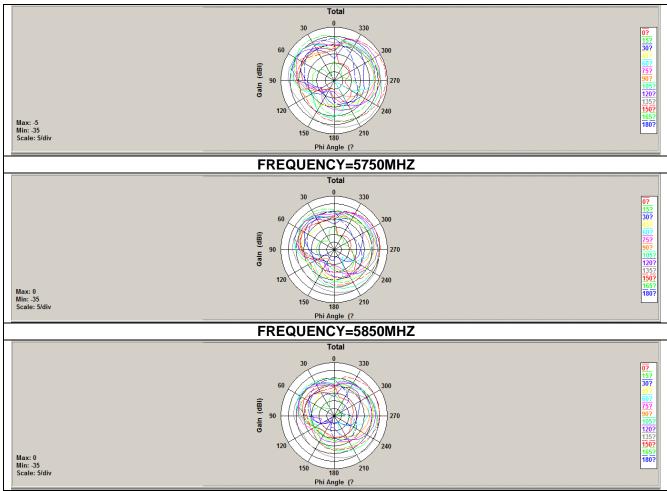




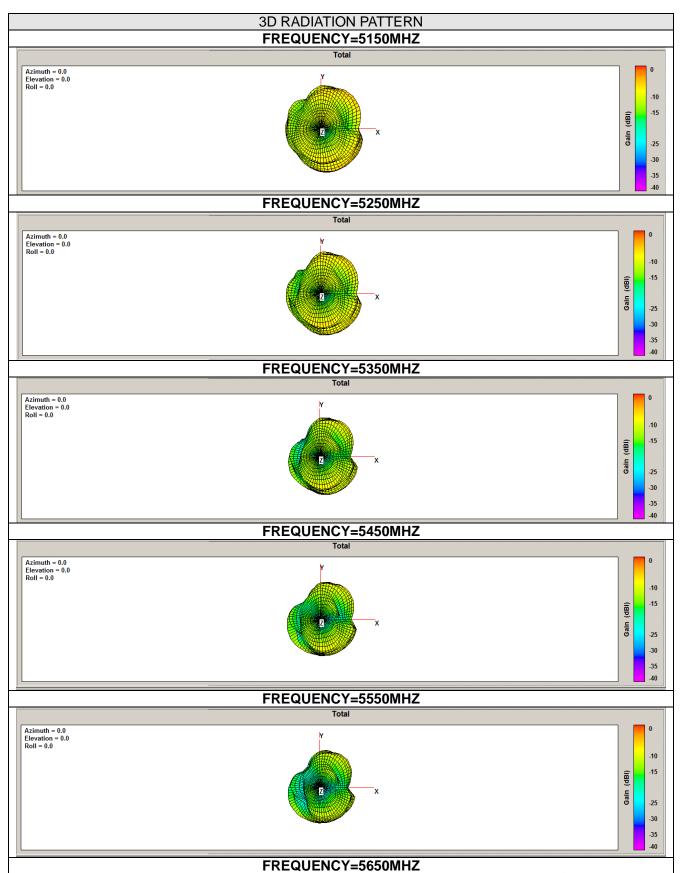




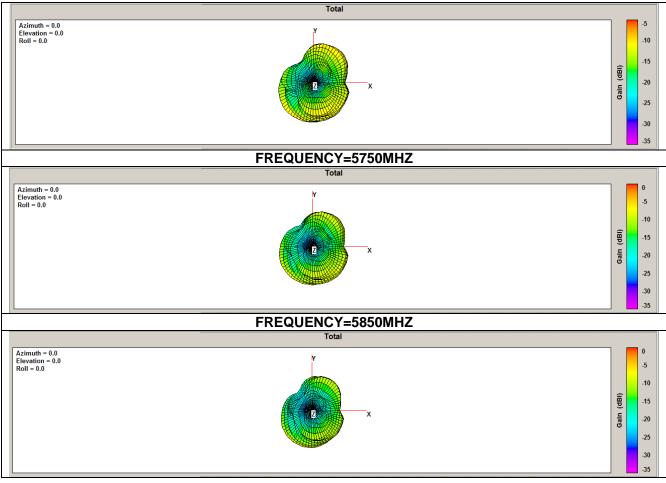






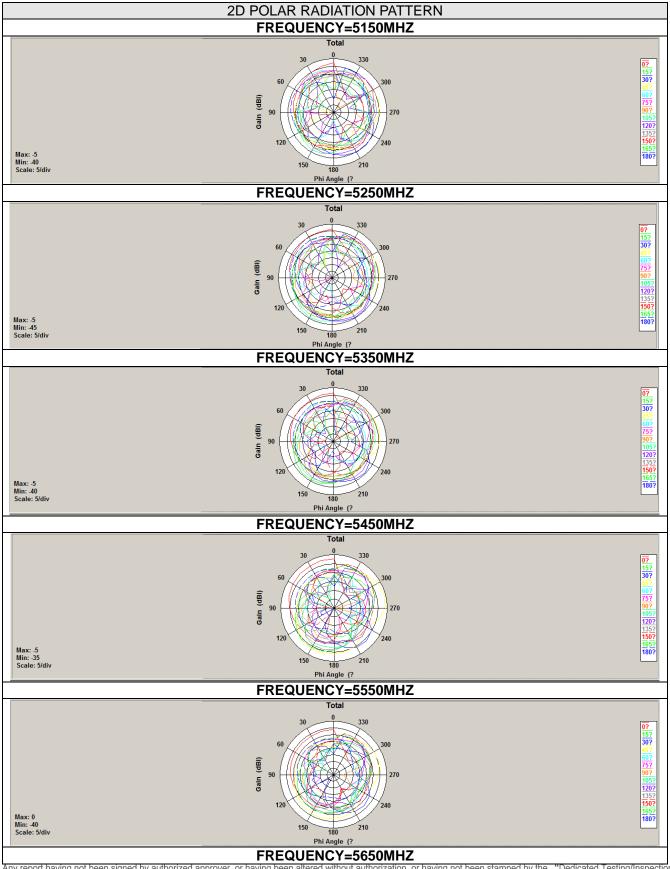




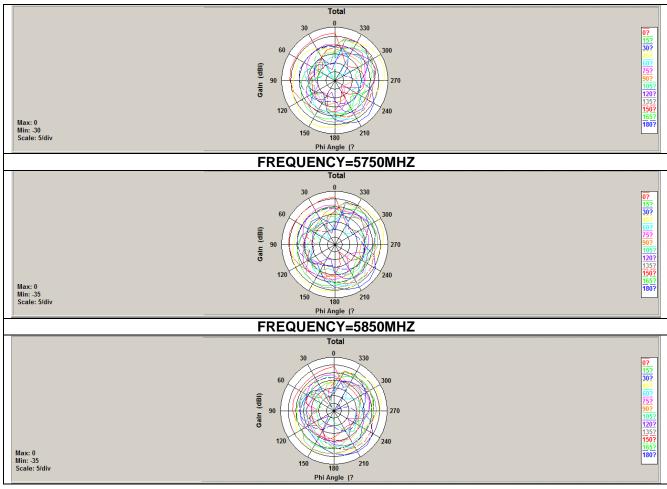




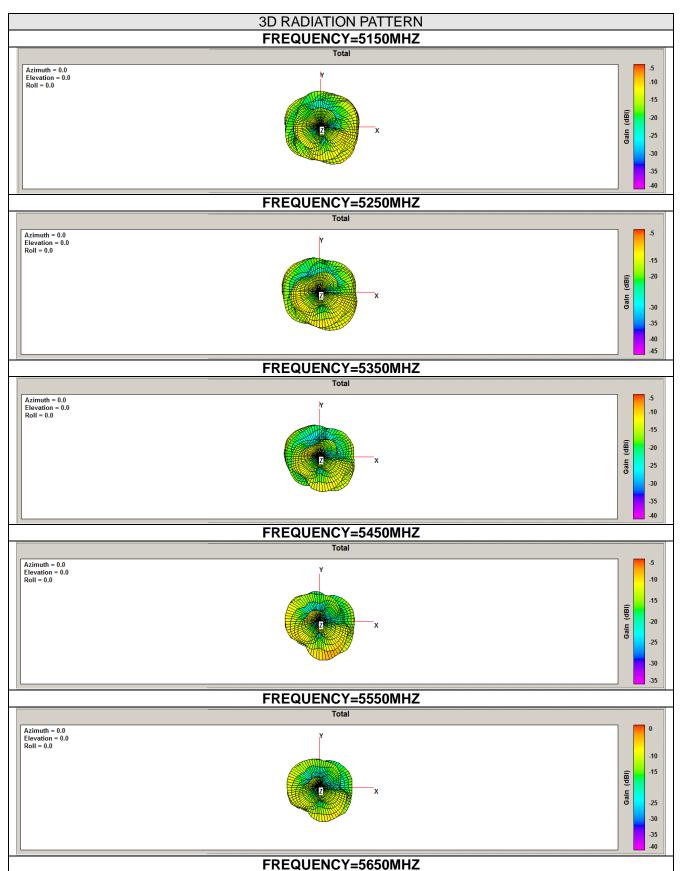
5GWLAN-ANT2:

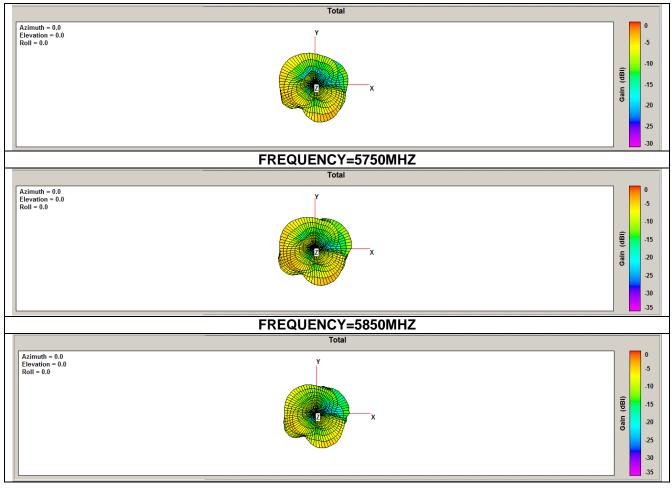


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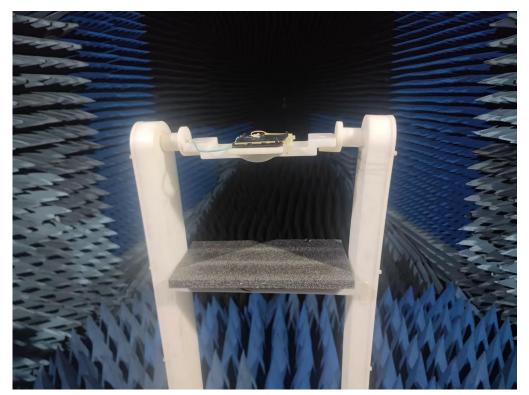








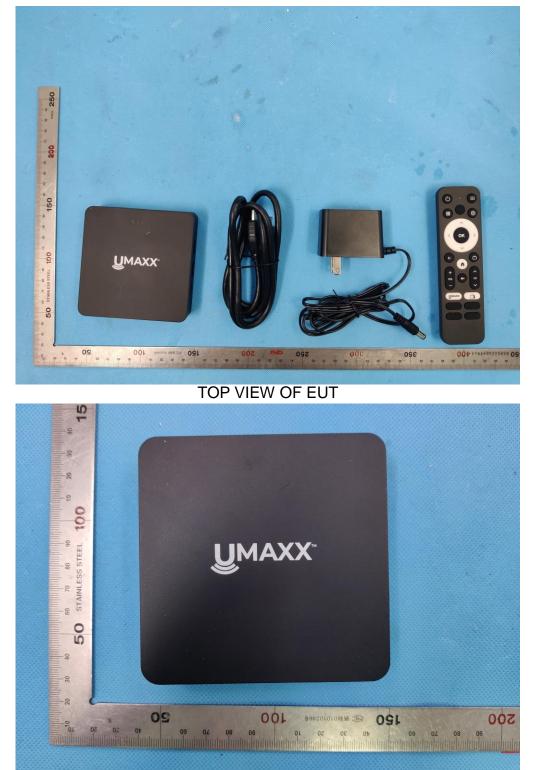
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

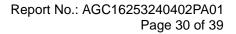




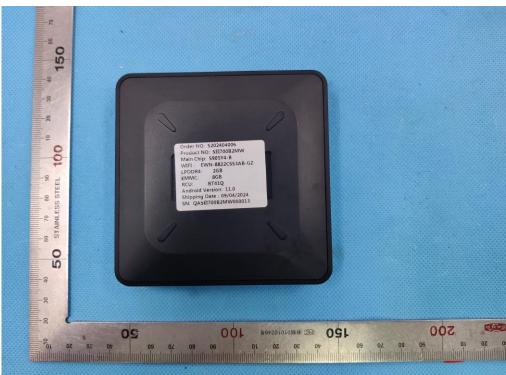
APPENDIX B: PHOTOGRAPHS OF EUT

All VIEW OF EUT









FRONT VIEW OF EUT



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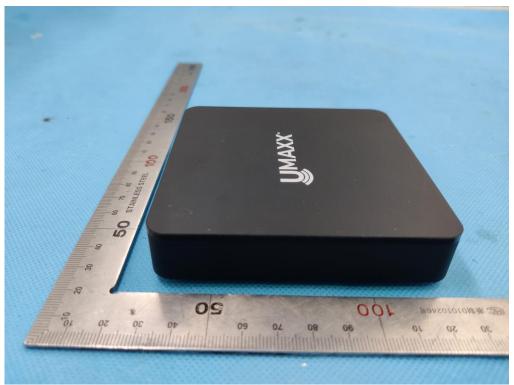




BACK VIEW OF EUT



LEFT VIEW OF EUT

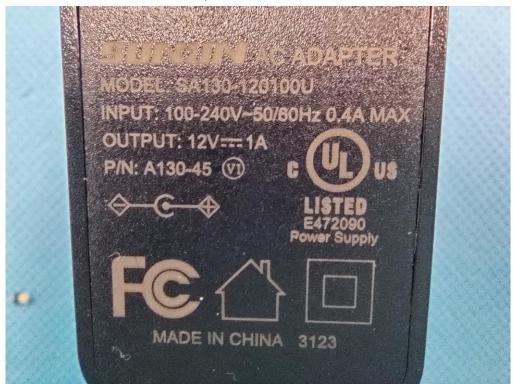




RIGHT VIEW OF EUT



Adapter VIEW OF EUT





Port VIEW OF EUT-1

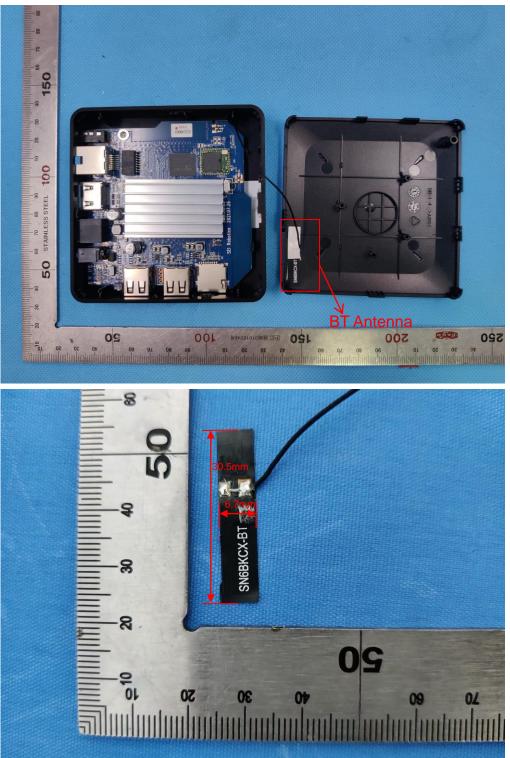


Port VIEW OF EUT-2



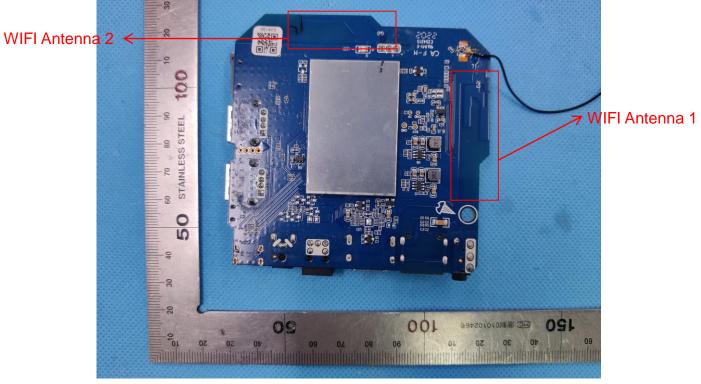


OPEN VIEW OF EUT (FIGURE 1)

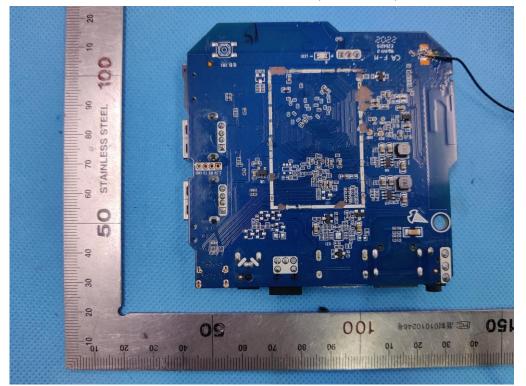




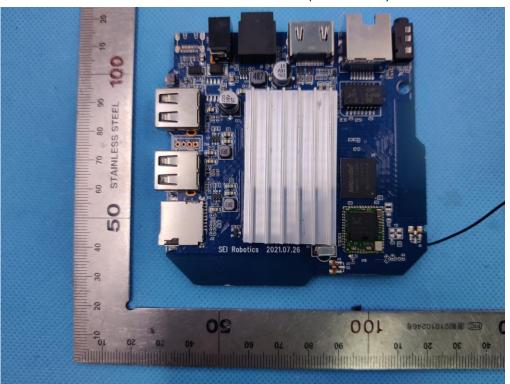
INTERNAL VIEW OF EUT (FIGURE 1)



INTERNAL VIEW OF EUT (FIGURE 2)





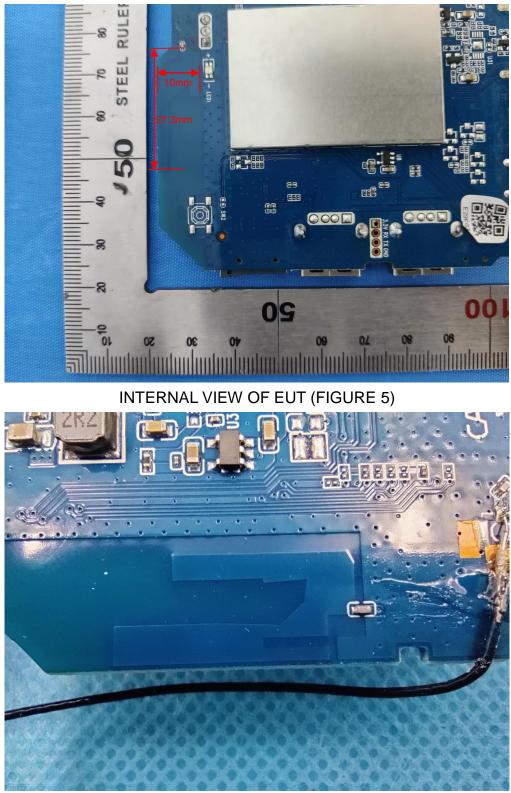


INTERNAL VIEW OF EUT (FIGURE 3)

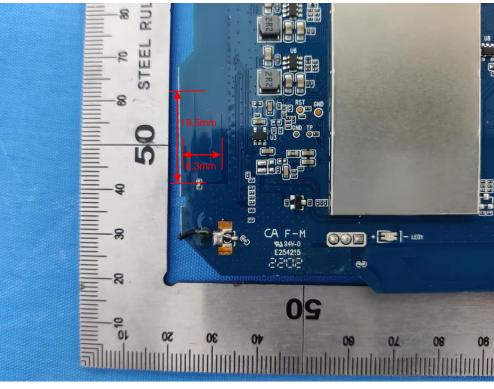
INTERNAL VIEW OF EUT (FIGURE 4)











INTERNAL VIEW OF EUT (FIGURE 6)





INTERNAL VIEW OF EUT (FIGURE 7)



----END OF REPORT----



Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

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.