
Antenna Test Report

Report No.: AGC09272221202PA01

PRODUCT DESIGNATION : RC TOYS,RC ROBOTS

BRAND NAME : N/A

MODEL NAME : 1088, 09-039, 09-139, 09-839, 09-939, 2048, 2049,
2056A, 2059, 2069, 2079, 2089, 2099, 3086A, 2088,
3088, 4088, 5088, 6088, 7088, 8088, 9088, 8080A,
9090A, 3066A, 3066B, 3066C, 18081, 18082, 18083,
18011, 18012, 8801, 8802, 8803, 8804, 8805, 303554,
303555, 303558, 303559, NX01, 2101, 6601

APPLICANT : Guangdong Amwell Toys Industry Co., Ltd

DATE OF ISSUE : Dec. 12, 2022

REPORT VERSION : V1.0

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 12, 2022	Valid	Initial release

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1. PRODUCT INFORMATION

General information	
Applicant	Guangdong Amwell Toys Industry Co., Ltd
Address	Xingda Industrial Park, Fengxiang, Chenghai, Shantou City, Guangdong Province, China
Manufacturer	Guangdong Amwell Toys Industry Co., Ltd
Address	Xingda Industrial Park, Fengxiang, Chenghai, Shantou City, Guangdong Province, China
Factory	Guangdong Amwell Toys Industry Co., Ltd
Address	Xingda Industrial Park, Fengxiang, Chenghai, Shantou City, Guangdong Province, China
Product Designation	RC TOYS, RC ROBOTS
Brand Name	N/A
Test Model	1088
Series Model	09-039, 09-139, 09-839, 09-939, 2048, 2049, 2056A, 2059, 2069, 2079, 2089, 2099, 3086A, 2088, 3088, 4088, 5088, 6088, 7088, 8088, 9088, 8080A, 9090A, 3066A, 3066B, 3066C, 18081, 18082, 18083, 18011, 18012, 8801, 8802, 8803, 8804, 8805, 303554, 303555, 303558, 303559, NX01, 2101, 6601
Difference Description	All the series models are the same as the test model except for the model names and the color of appearance.
Date of receipt of test item	Dec.07, 2022
Date of test	Dec.09, 2022
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
Antenna Type	Wire antenna
Dimensions	32mm
Impedance	50 Ω
Maximum test values	Gain: 2.200dBi; Efficiency: 26.944%; VSWR: 1.178:1

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



Alan Duan
(Project Engineer)

Dec.12, 2022

Reviewed By



Calvin Liu
(Reviewer)

Oct. 12, 2022

Approved By



Max Zhang
(Authorized Officer)

Oct. 12, 2022

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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, 2022	Nov. 25, 2023
Network Analyzer	R&S	101443	Oct. 15, 2022	Oct. 14, 2023
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, $U_c = \pm 0.8\text{dB}$

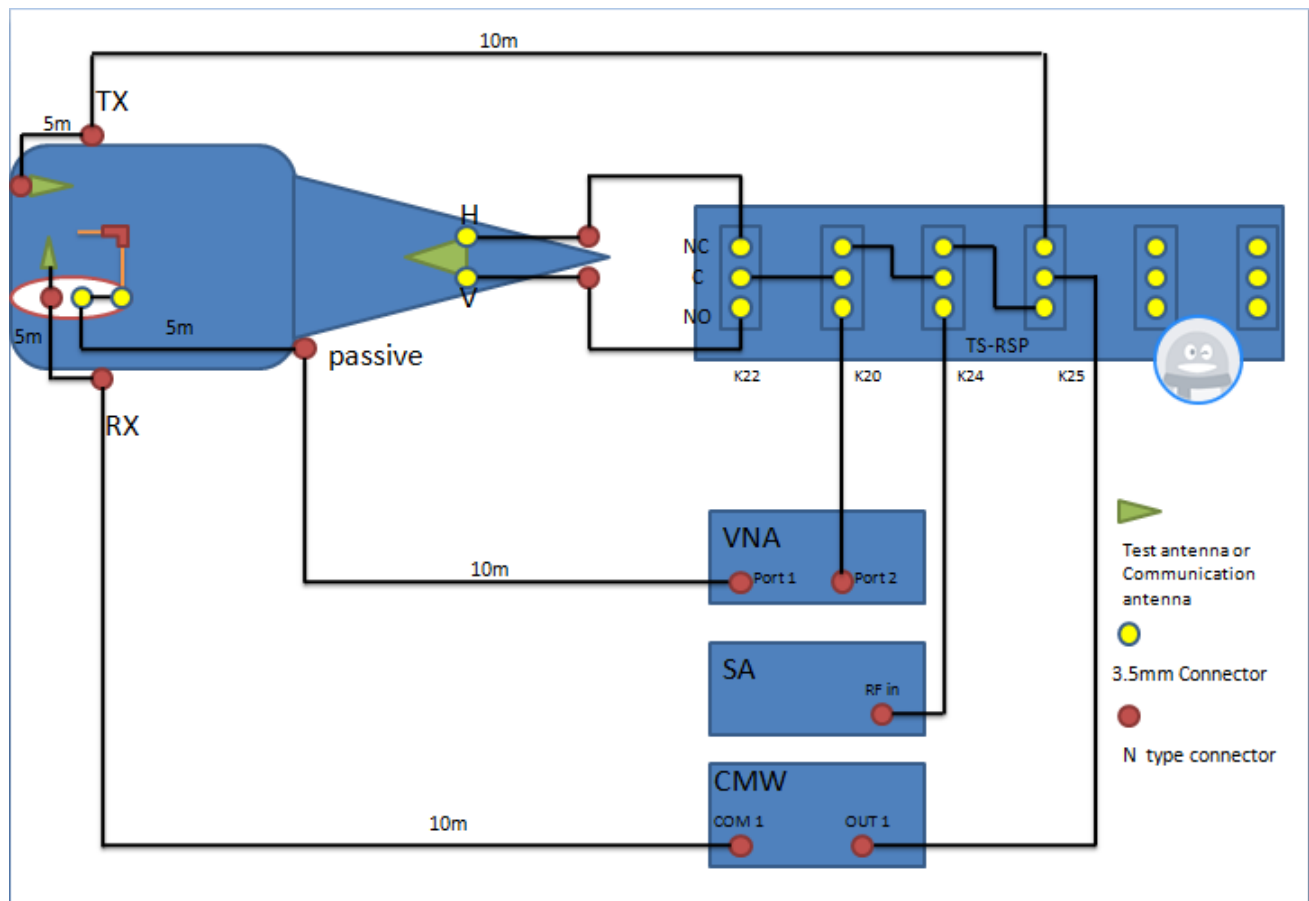
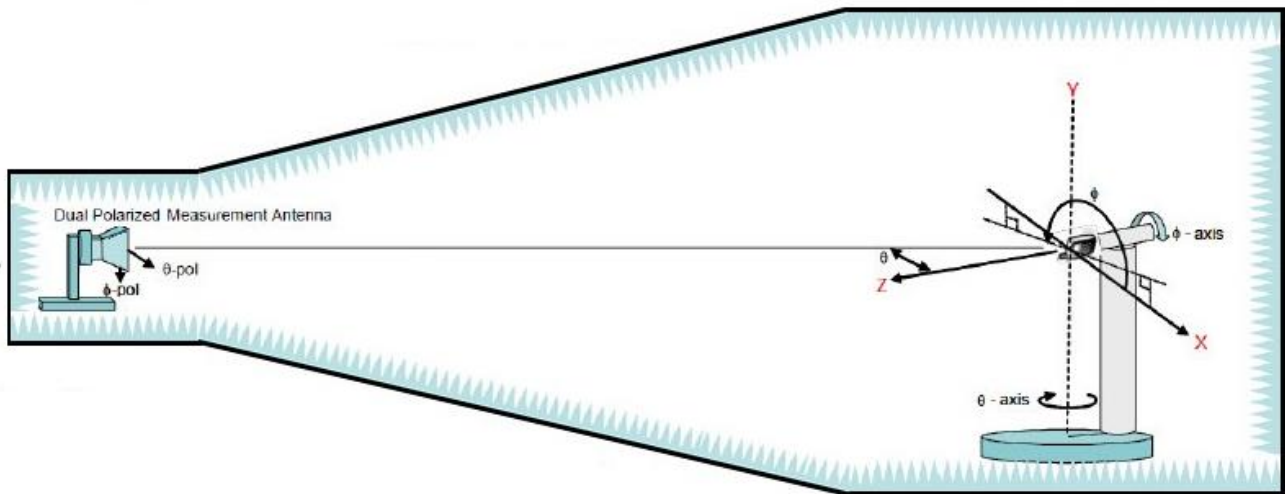
5. TEST SUMMARY LIST

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	1.168:1
2410	1.178:1
2450	1.163:1
2480	1.107:1



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7.2. GAIN AND EFFICIENCY

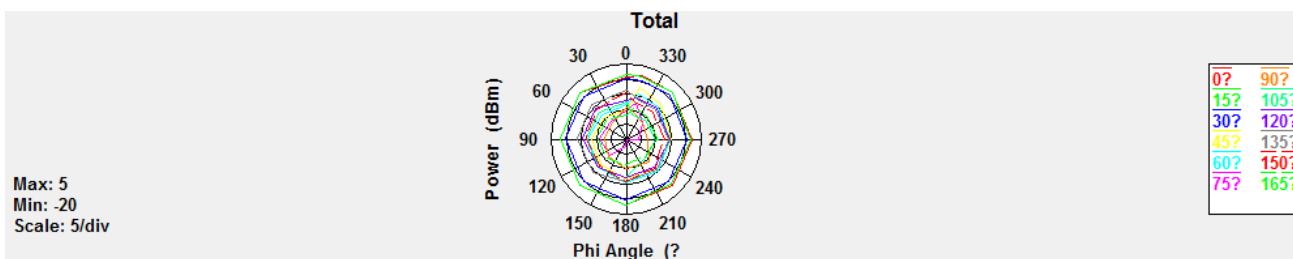
Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-5.924	25.560	1.550
2410	-6.863	20.590	0.346
2420	-7.437	18.039	-0.251
2430	-6.831	20.742	0.588
2440	-5.736	26.691	1.892
2450	-5.442	28.557	2.200
2460	-5.695	26.944	1.841
2470	-6.047	24.845	1.465
2480	-5.795	26.332	1.572
2490	-5.872	25.865	1.327
2500	-5.737	26.684	1.575

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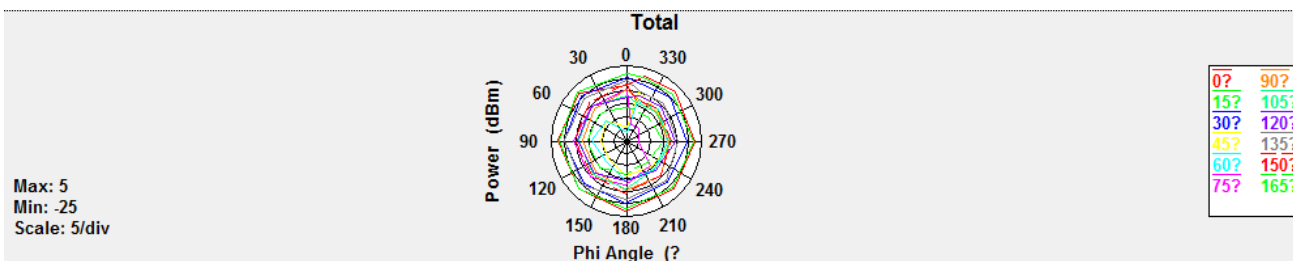
7.3. RADIATION PATTERN

2D POLAR RADIATION PATTERN

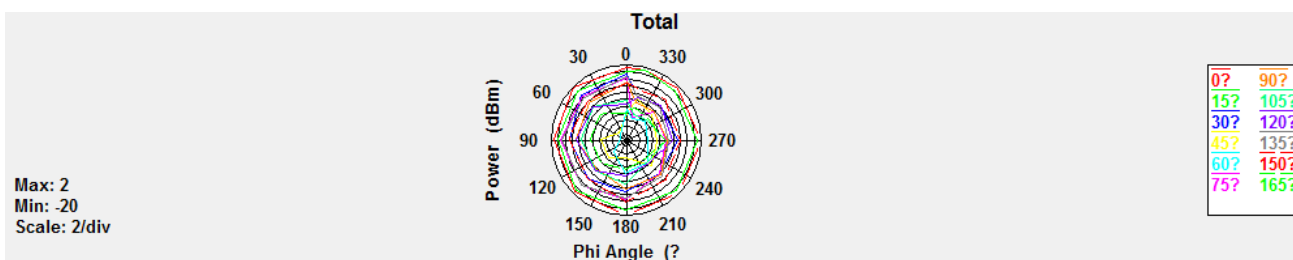
FREQUENCY=2400MHZ



FREQUENCY=2450MHZ



FREQUENCY=2500MHZ

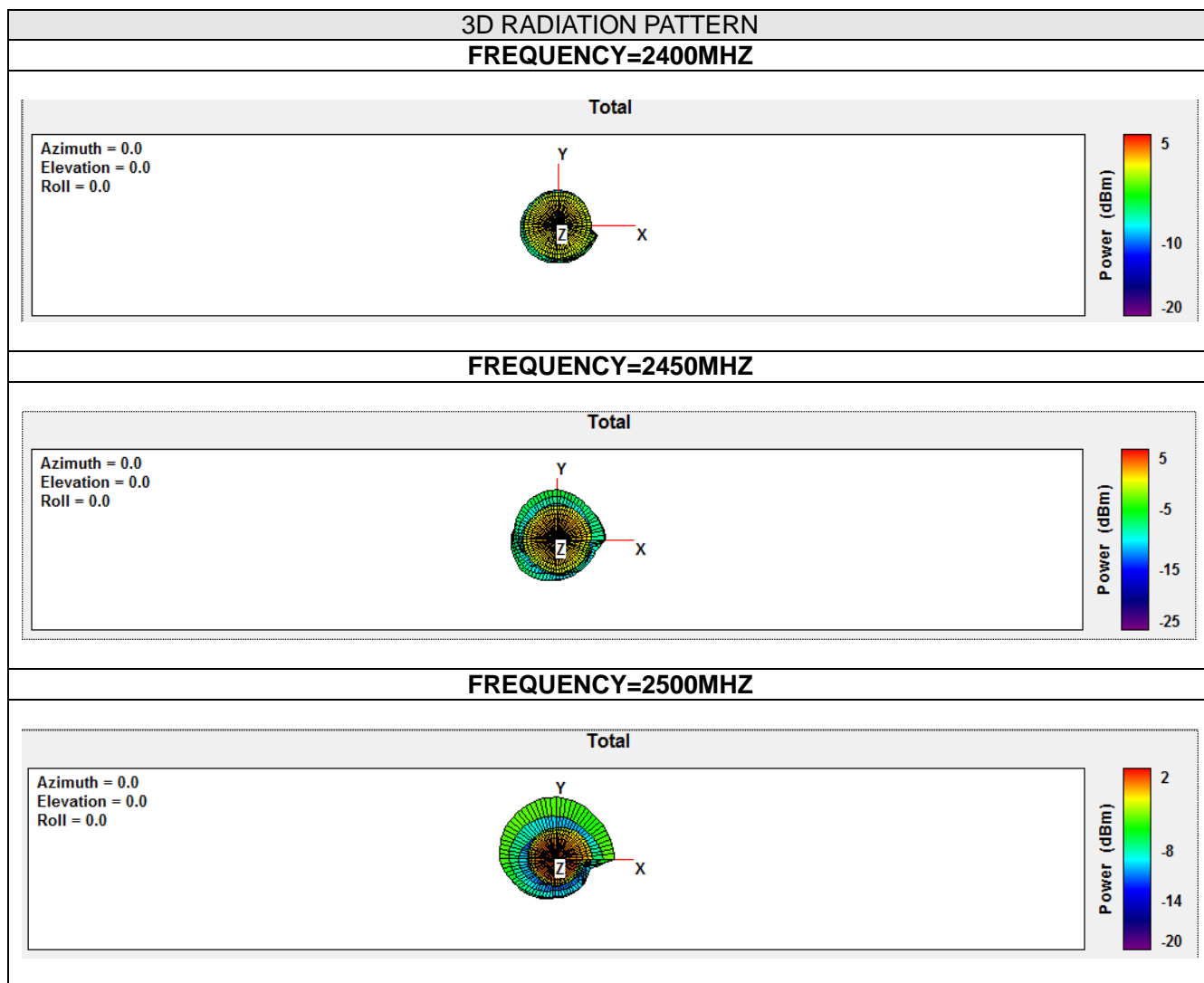


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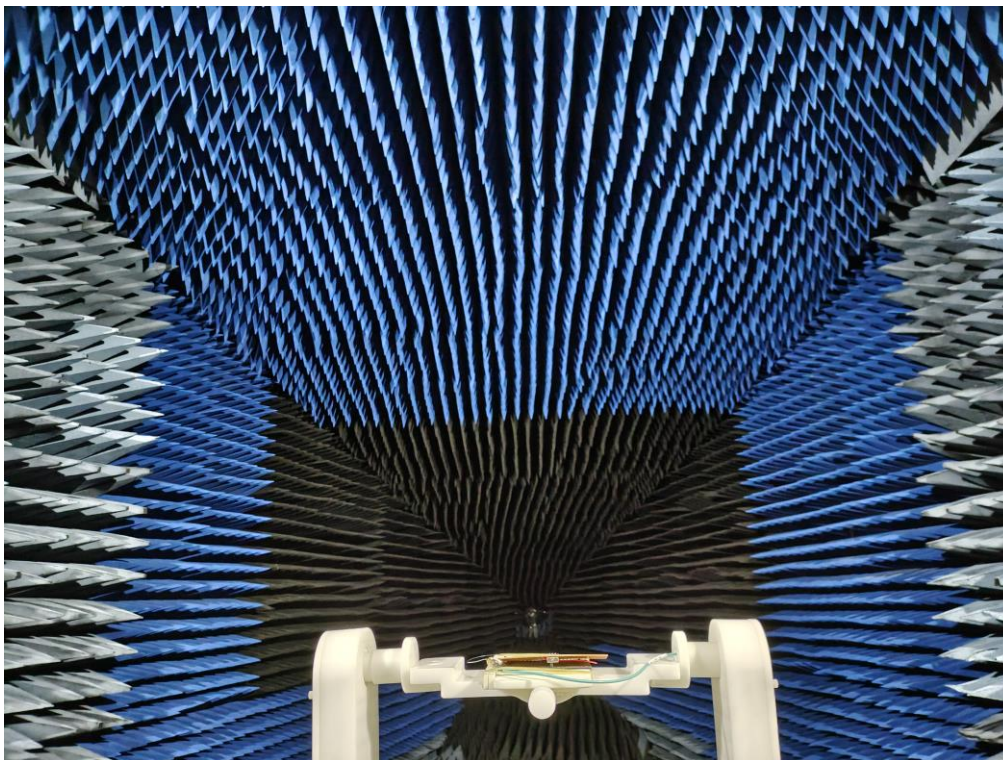
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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

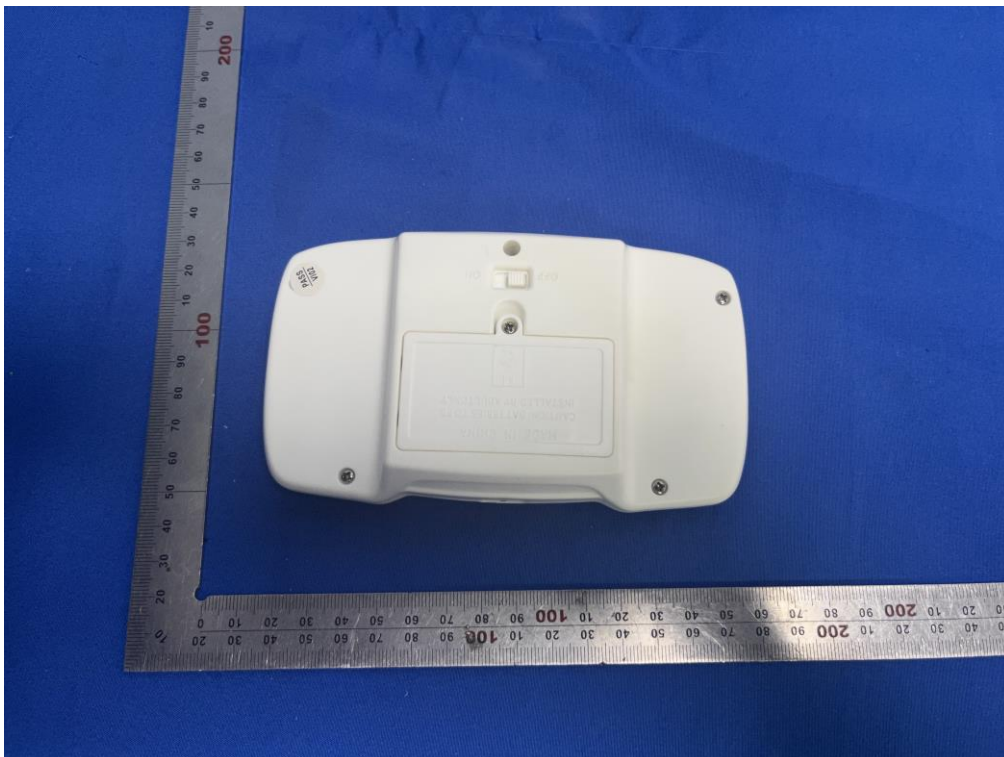
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APPENDIX B: PHOTOGRAPHS OF EUT

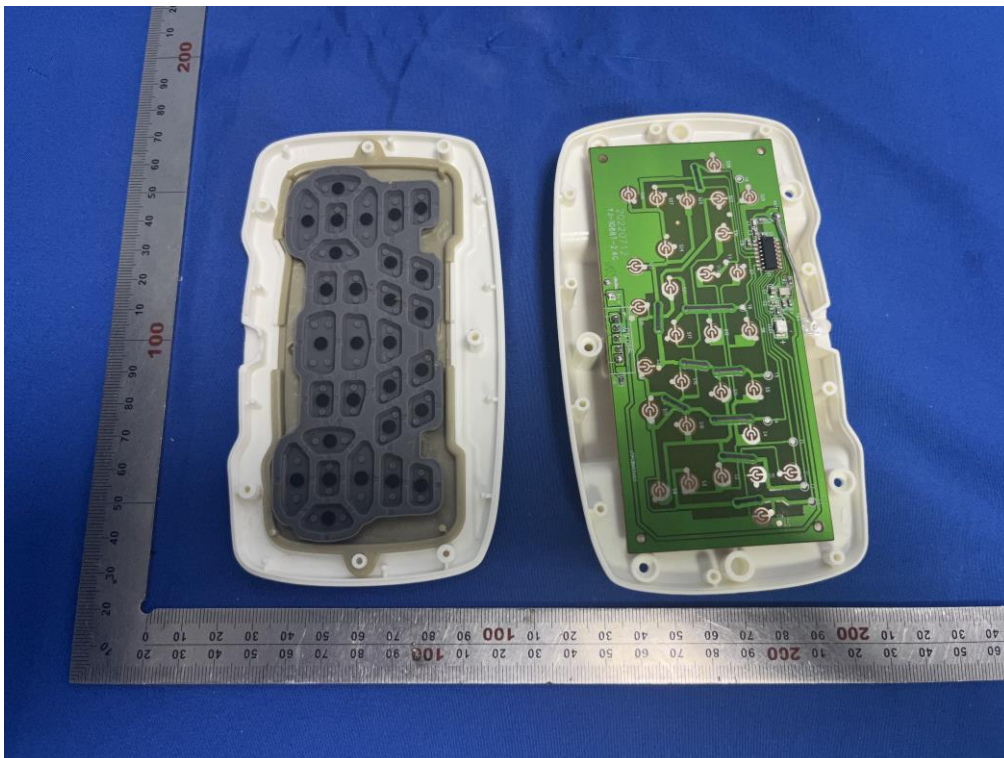
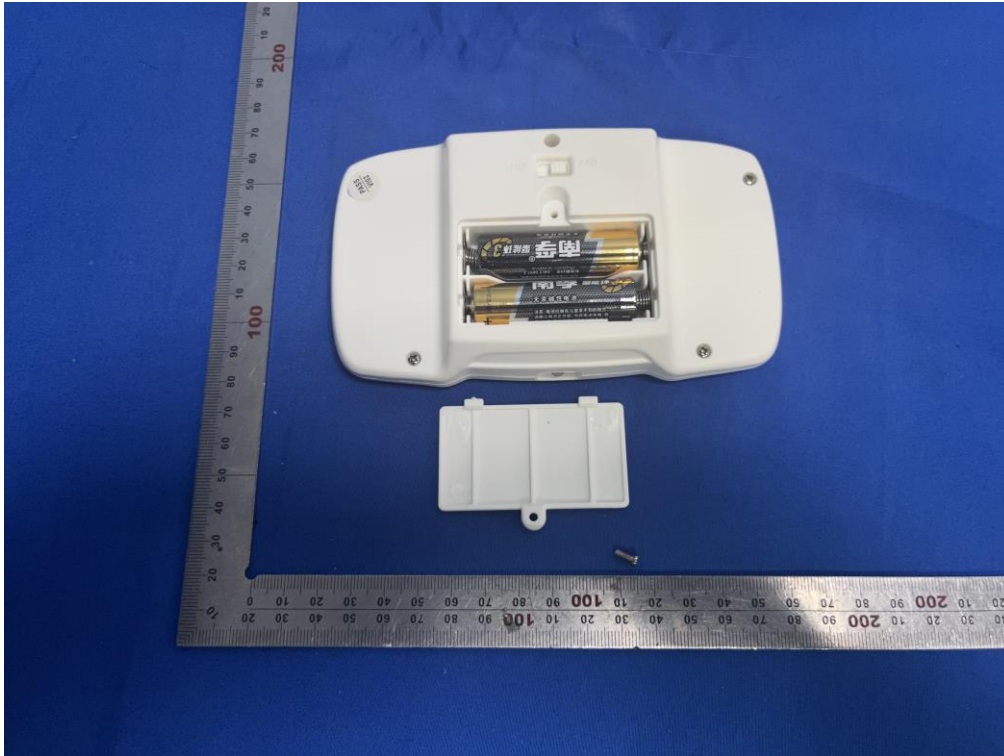


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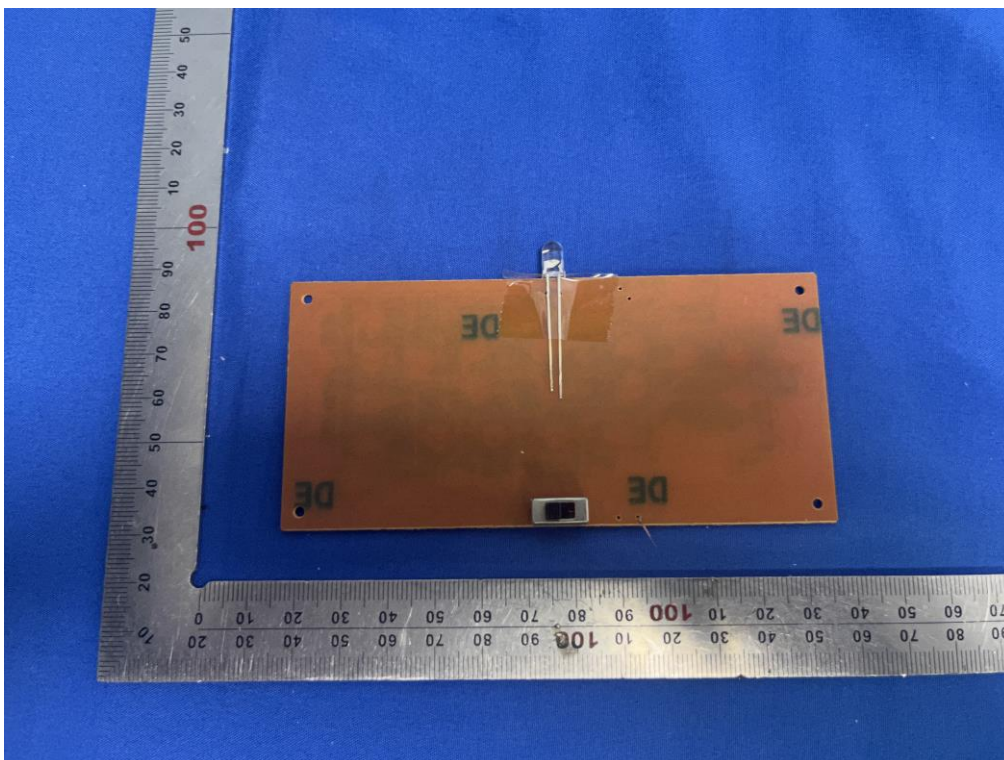
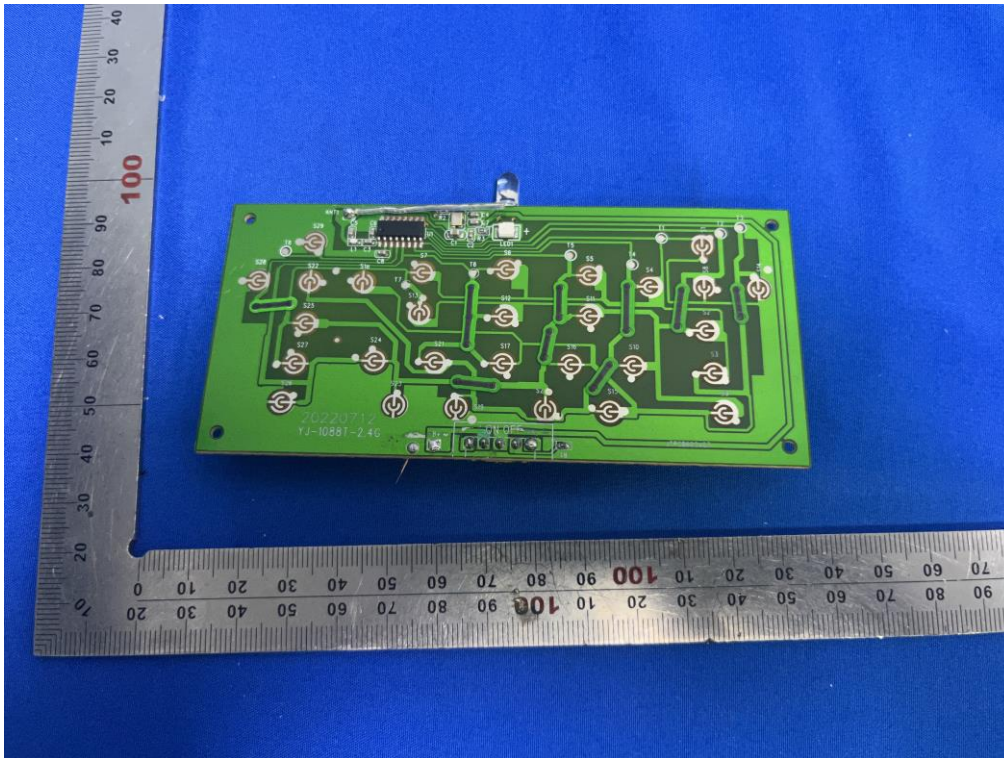


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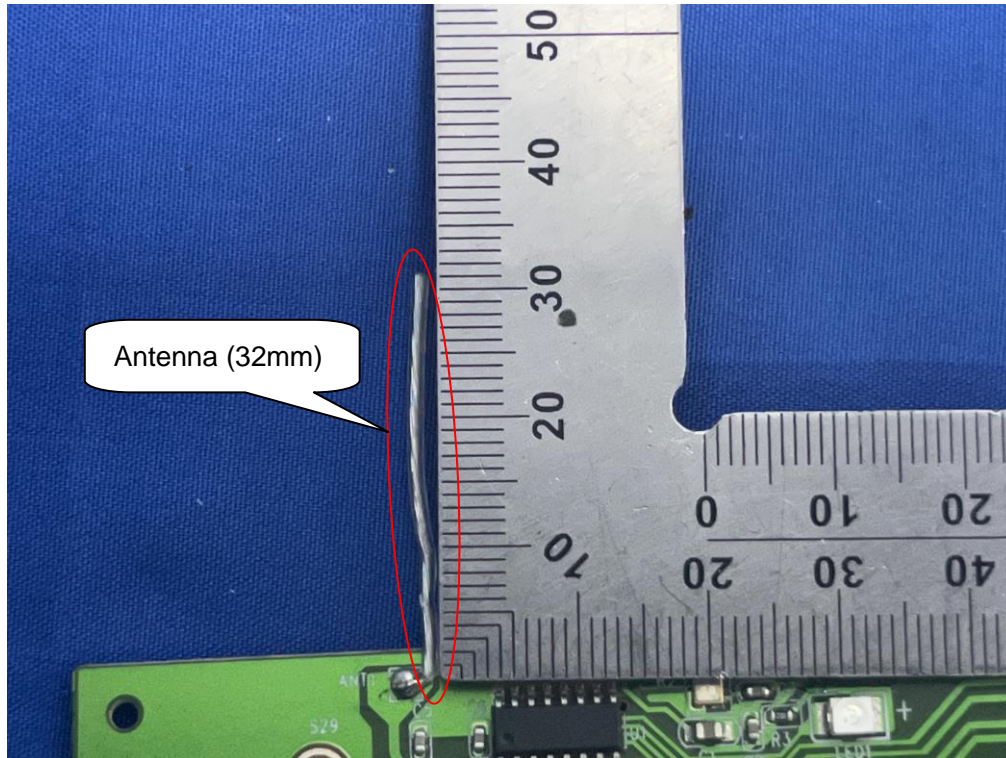


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3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the 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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