
Antenna Test Report

Report No.: AGC11476240901PA01

PRODUCT DESIGNATION : Electronic Bluetooth Hearing Protector
BRAND NAME : PROHEAR, ZOHAN, Hocazor, ZOHEAR, KAYNN
MODEL NAME : EM030
APPLICANT : Hangzhou ZH Tech Co., Ltd.
DATE OF ISSUE : Sep. 20, 2024
REPORT VERSION : V1.0

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 20, 2024	Valid	Initial release

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1. PRODUCT INFORMATION

General information	
Applicant	Hangzhou ZH Tech Co., Ltd.
Address	Floor 4, 6 Shunle Road, Changle Industrial Park, Jingshan Town, Yuhang District, Hangzhou City, Zhejiang Province, China
Manufacturer	Hangzhou ZH Tech Co., Ltd.
Address	Floor 4, 6 Shunle Road, Changle Industrial Park, Jingshan Town, Yuhang District, Hangzhou City, Zhejiang Province, China
Factory	Hangzhou ZH Tech Co., Ltd.
Address	Floor 4, 6 Shunle Road, Changle Industrial Park, Jingshan Town, Yuhang District, Hangzhou City, Zhejiang Province, China
Product Designation	Electronic Bluetooth Hearing Protector
Brand Name	PROHEAR, ZOHAN, Hocazor, ZOHEAR, KAYNN
Test Model	EM030
Series Model	N/A
Difference Description	N/A
Date of test	Sep. 19, 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
Antenna Type	PCB antenna
Dimensions	10mm*6.2mm
Impedance	50 Ω
Maximum test values	Gain: 0.125dBi; Efficiency: 20.286%; VSWR: 1.087:1

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By

Cici Li
(Project Engineer)

Sep. 19, 2024

Reviewed By

Calvin Liu
(Reviewer)

Sep. 19, 2024

Approved By

Max Zhang
(Authorized Officer)

Sep. 19, 2024

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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. 20, 2023	Nov. 19, 2024
Network Analyzer	R&S	ZVL-6	Oct. 04, 2023	Oct. 03, 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, $U_c = \pm 1.5\text{dB}$
- Uncertainty of Gain, $U_c = \pm 0.8\text{dB}$

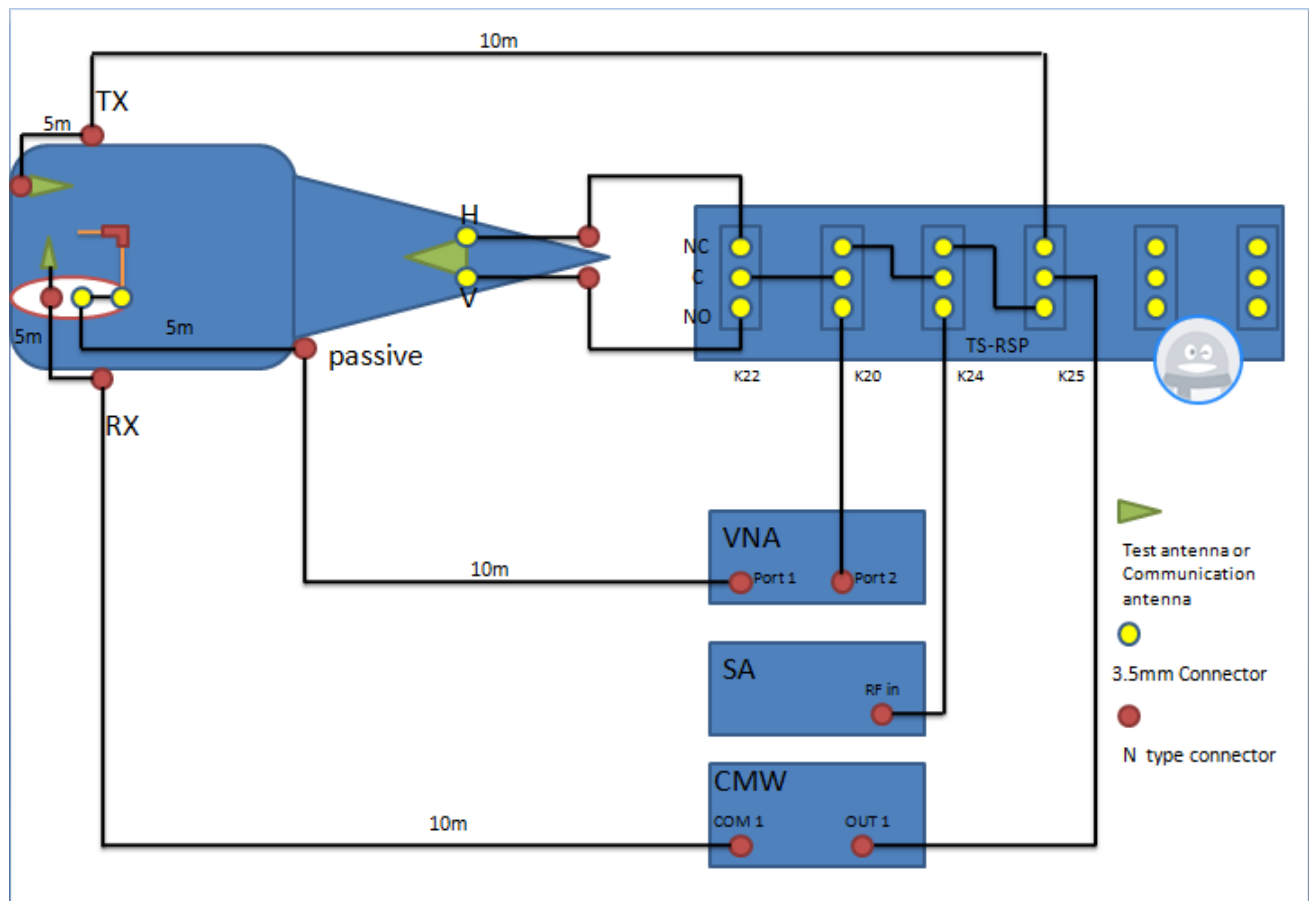
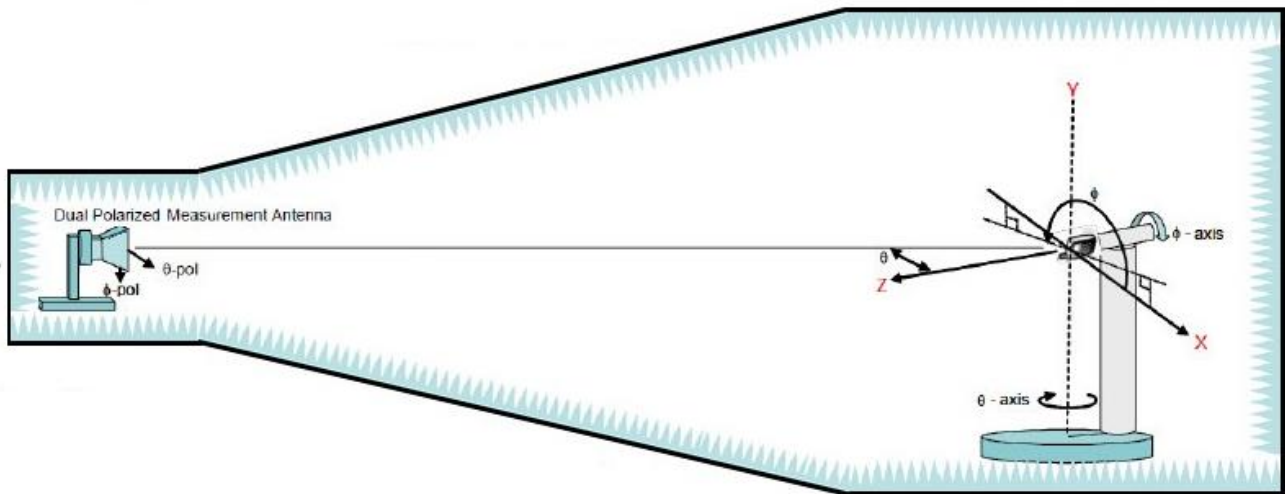
5. TEST SUMMARY LIST

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

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6. TEST SETUP



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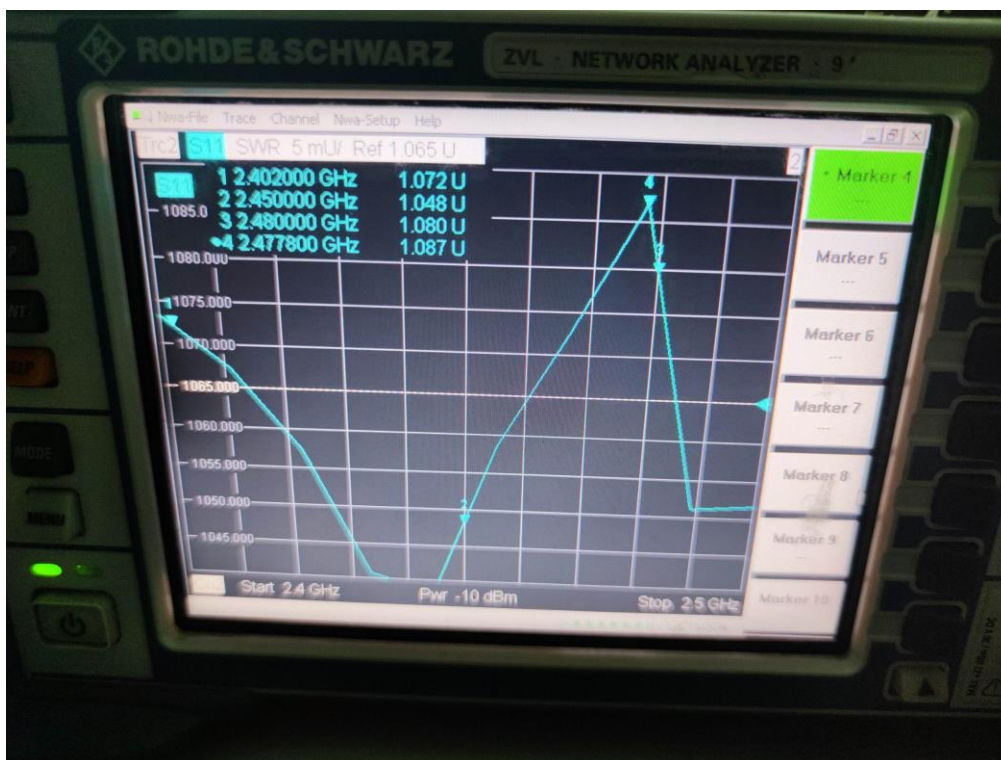
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7. TEST RESULTS

7.1. VSWR

Frequency(MHz)	VSWR
2402	1.072:1
2450	1.048:1
2480	1.087:1
2420	1.080:1



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7.2. GAIN AND EFFICIENCY

Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-8.596	13.816	-2.247
2410	-8.605	13.788	-2.355
2420	-8.589	13.839	-2.460
2430	-8.199	15.140	-2.132
2440	-7.949	16.037	-1.882
2450	-7.762	16.742	-1.730
2460	-7.524	17.686	-1.300
2470	-7.514	17.725	-0.994
2480	-7.201	19.051	-0.411
2490	-7.058	19.689	-0.132
2500	-6.928	20.286	0.125

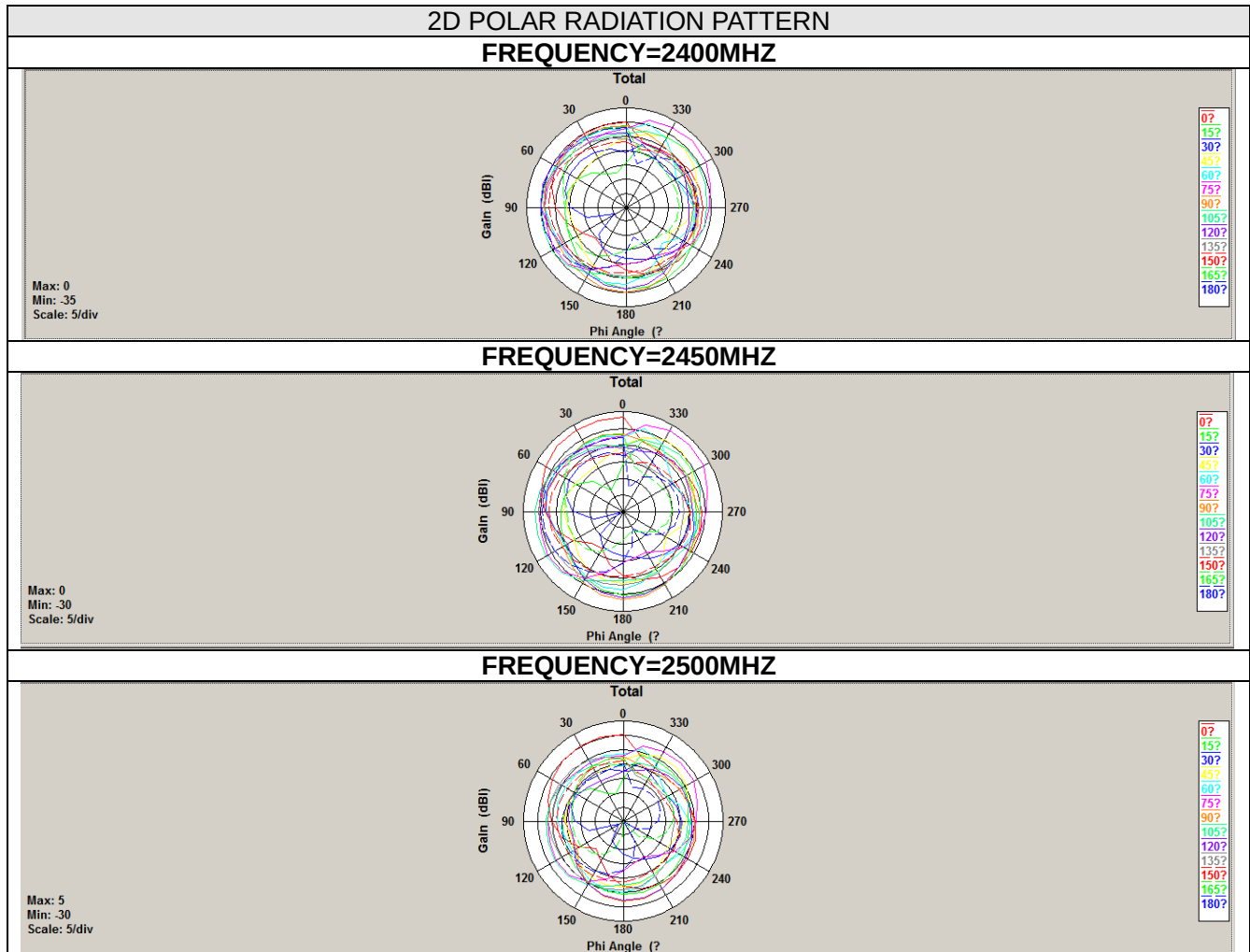
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7.3. RADIATION PATTERN

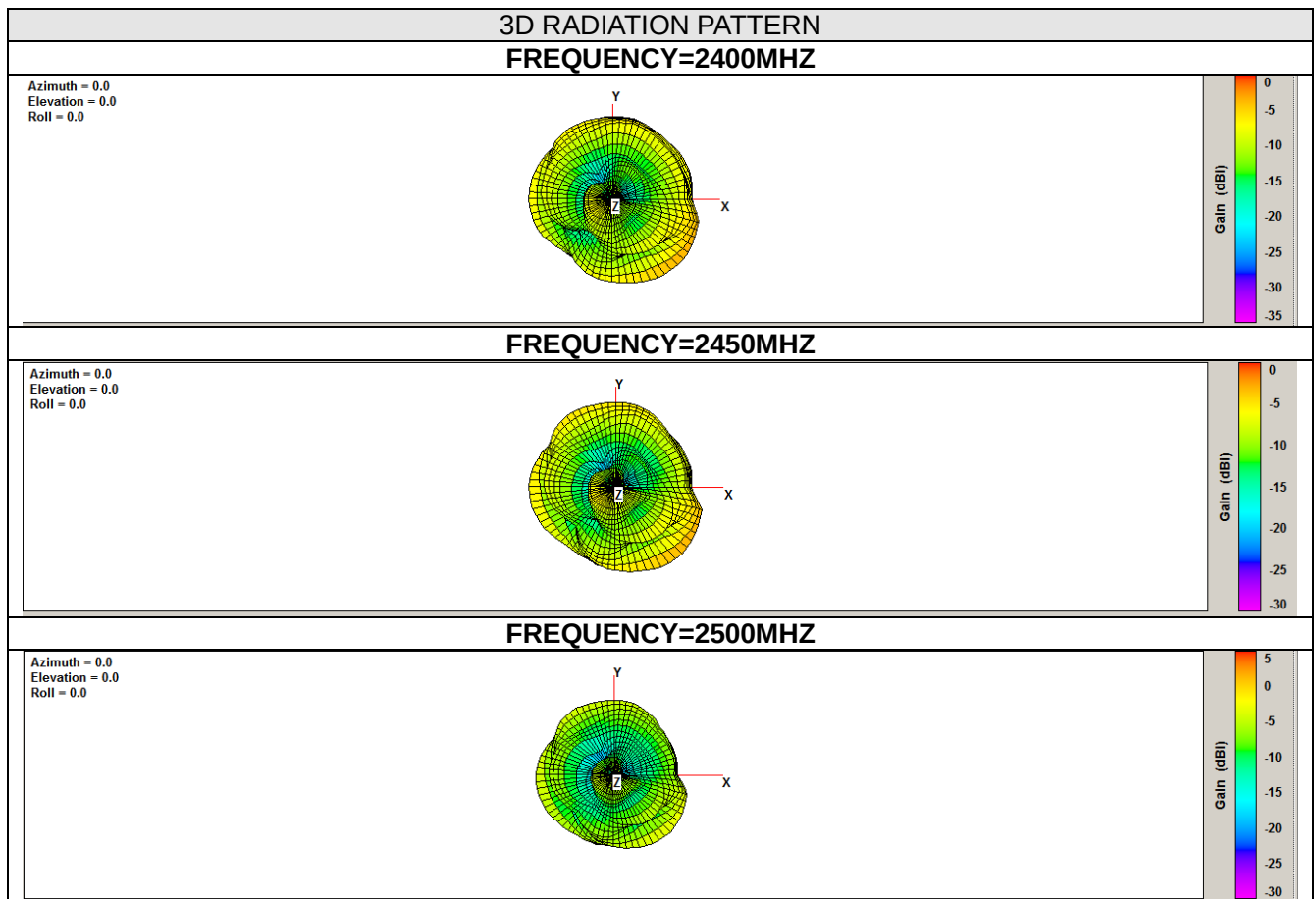


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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

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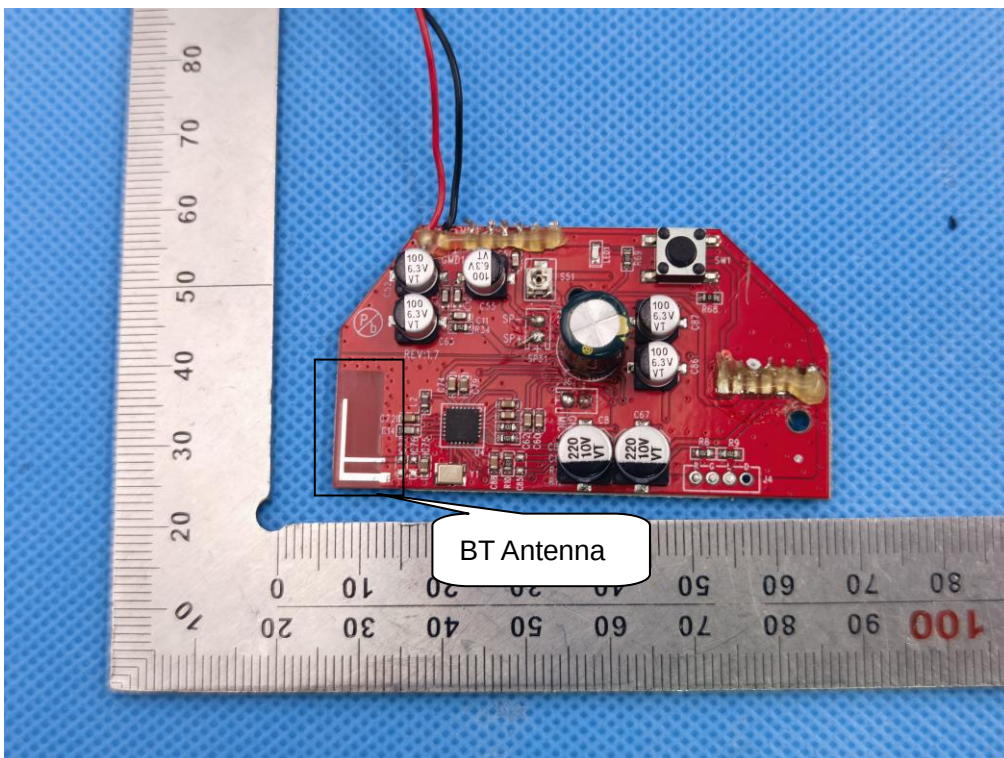
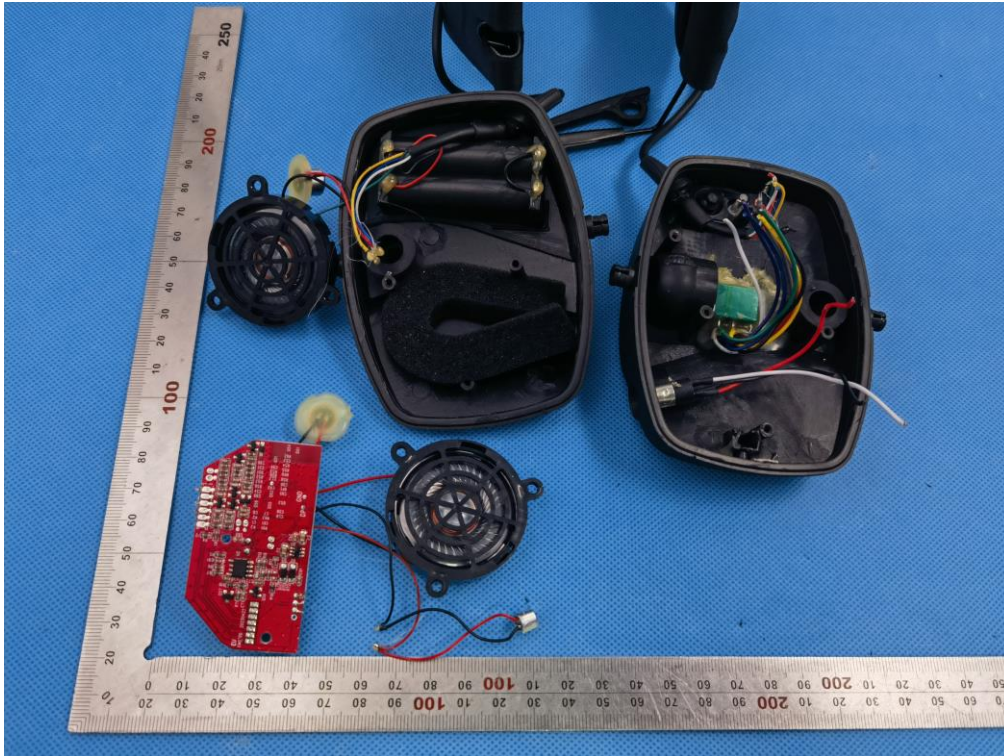


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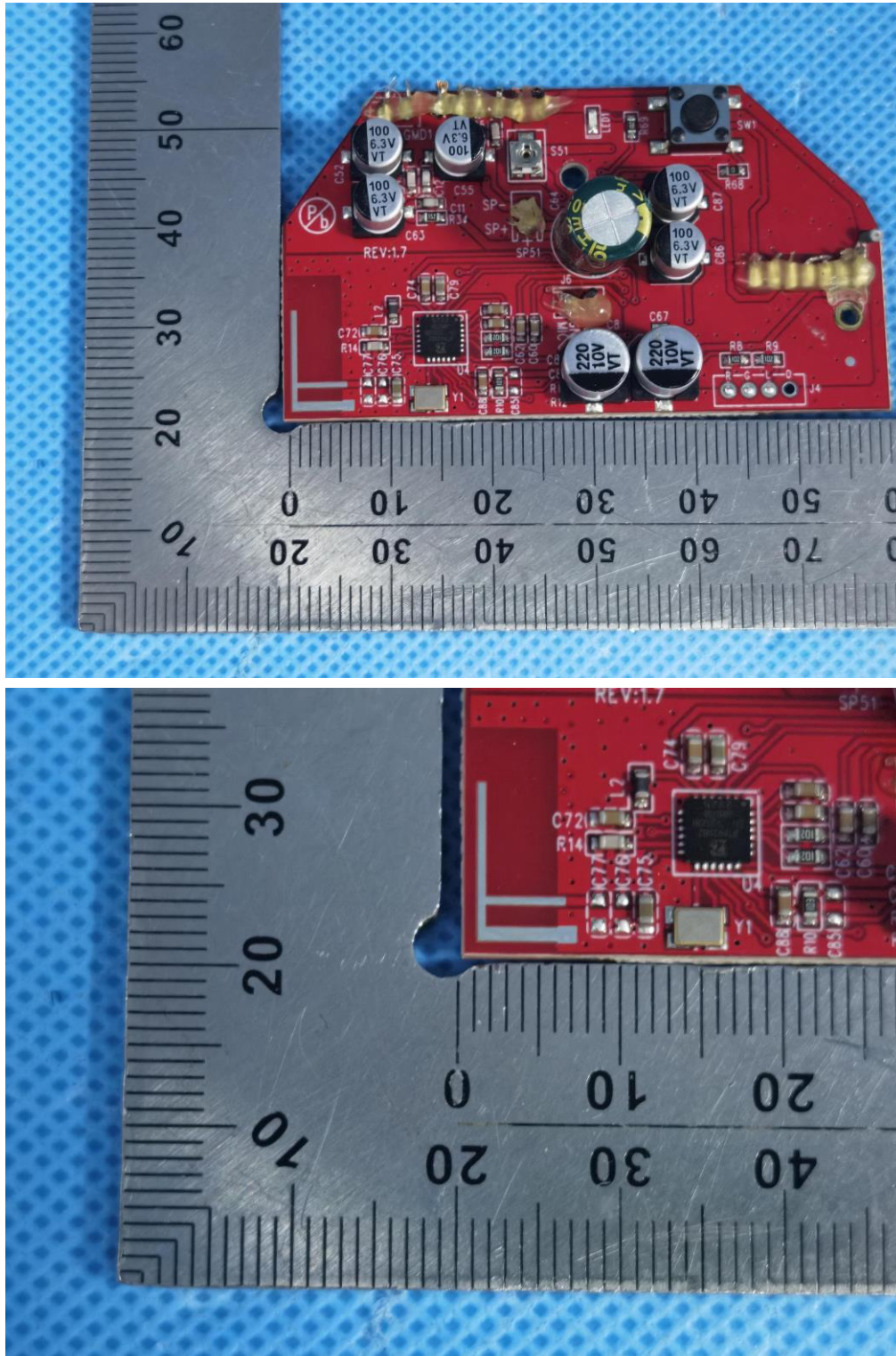


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3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the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