
Antenna Test Report

Report No.: AGC16626241102PA01

PRODUCT DESIGNATION : Smart OBD II Dongle

BRAND NAME : XTOOL, AutoProPAD

MODEL NAME : A102, AD20, AD20 Pro

APPLICANT : Shenzhen Xtooltech Intelligent Co., Ltd.

DATE OF ISSUE : Dec. 04, 2024

REPORT VERSION : V1.0



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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 04, 2024	Valid	Initial release

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1. PRODUCT INFORMATION

General information	
Applicant	Shenzhen Xtooltech Intelligent Co., Ltd.
Address	17&18/F, A2 Building, Creative City, Liuxian Avenue, Nanshan District, Shenzhen
Manufacturer	Shenzhen Xtooltech Intelligent Co., Ltd.
Address	17&18/F, A2 Building, Creative City, Liuxian Avenue, Nanshan District, Shenzhen
Factory	Bao'an Branch of Shenzhen Xtooltech Intelligent Co., Ltd.
Address	2,3,4/F, Building 12, Tangtou Third Industrial Zone, Shiyan street, Bao'an District, Shenzhen
Product Designation	Smart OBD II Dongle
Brand Name	XTOOL, AutoProPAD
Test Model	A102
Series Model(s)	AD20, AD20 Pro
Difference Description	All the same except for the model name.
Date of receipt of test item	Nov. 25, 2024
Date of test	Nov. 25, 2024 to Dec. 04, 2024
Report Template	AGCRT-ER-PA/V1.0
Technical information	
Frequency Range	2400MHz-2500MHz
Test Frequencies	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2480MHz, 2490MHz, 2500MHz
Antenna Type	PCB Antenna
Dimensions	9.5mm*3.7mm
Impedance	50 Ω
Maximum test values	Gain: -1.867dBi; Efficiency: 16.466%; VSWR: 1.138:1

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

Prepared By



Jack Gui
(Project Engineer)

Dec. 04, 2024

Reviewed By



Calvin Liu
(Reviewer)

Dec. 04, 2024

Approved By



Angela Li
(Authorized Officer)

Dec. 04, 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. 28, 2023	Nov. 27, 2024
Antenna Measurement System	ETS-Lindgren	AMS-8600	Nov. 27, 2024	Nov. 26, 2025
Network Analyzer	R&S	101443	Jul. 24, 2024	Jul. 23, 2025
Test Software	ETS-Lindgren	EMQuest	Ver V1.12	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, $U_c = \pm 0.8\text{dB}$

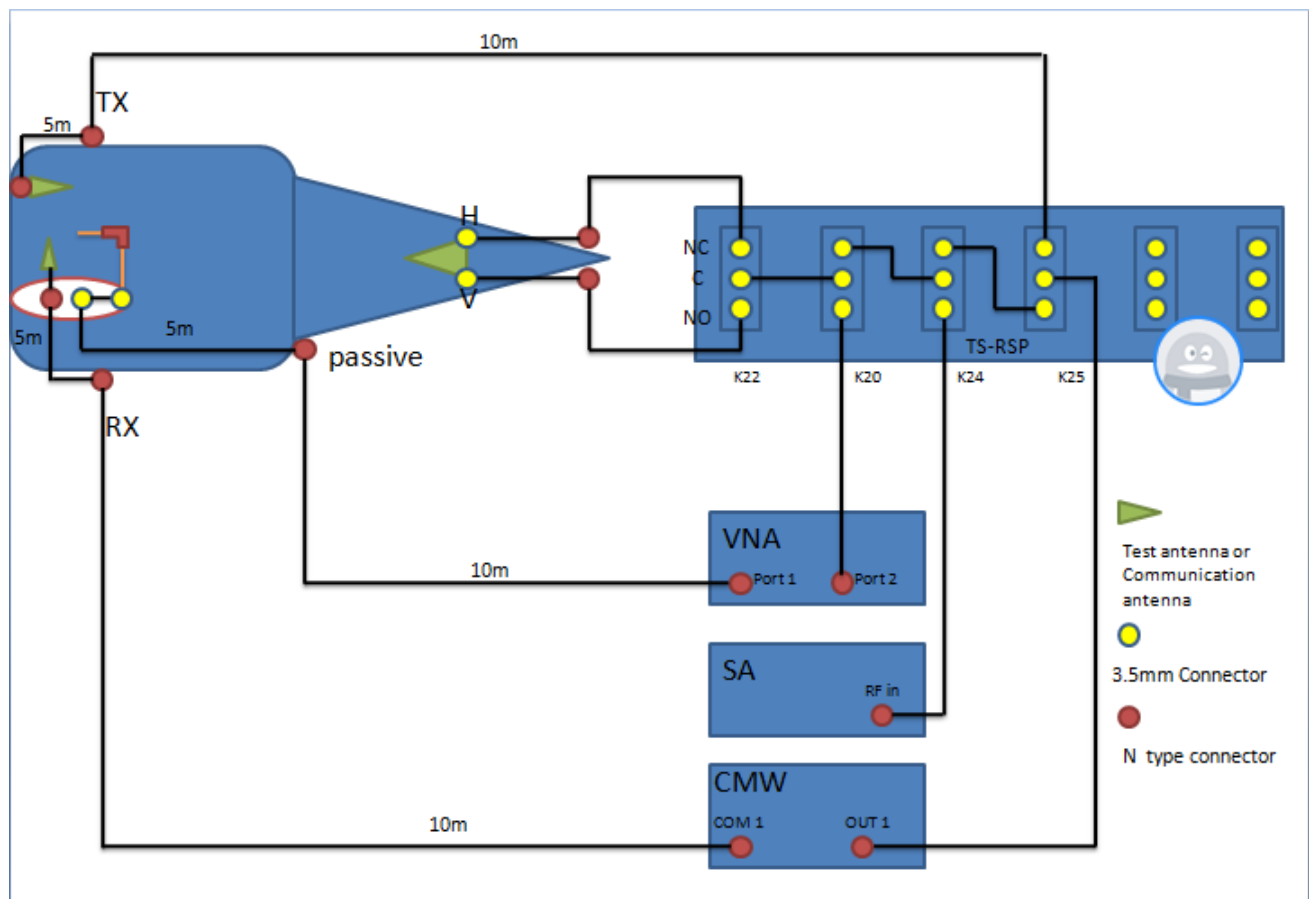
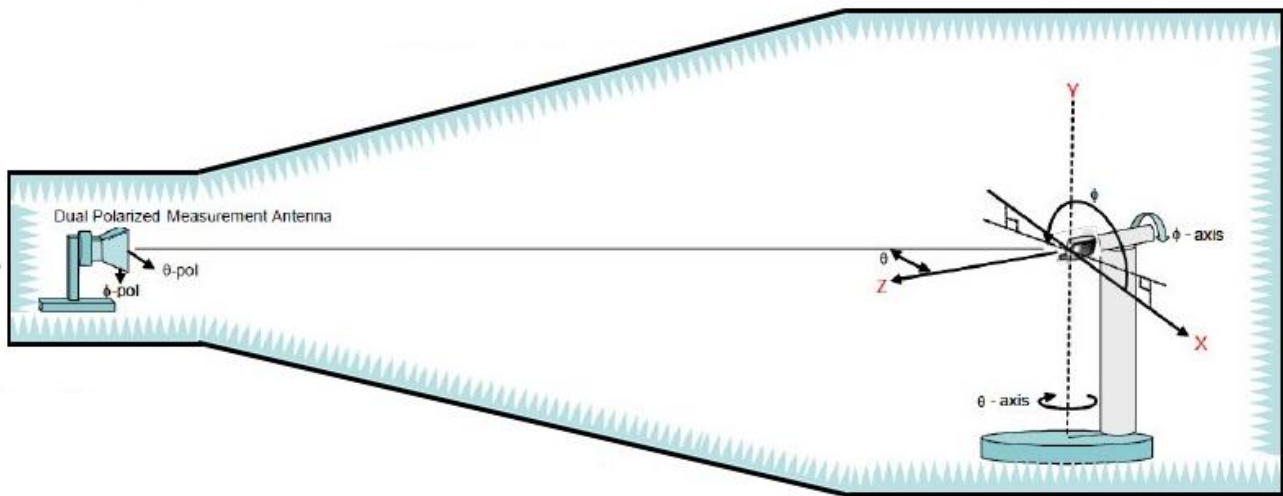
5. TEST SUMMARY LIST

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

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6. TEST SETUP



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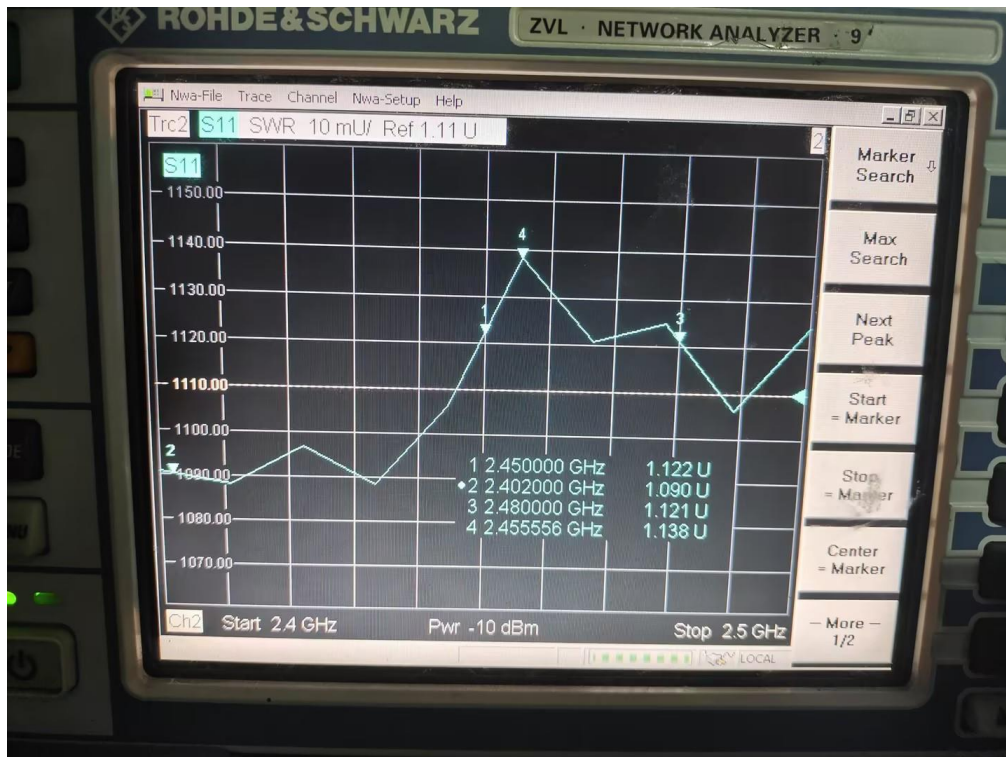
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7. TEST RESULTS

7.1. VSWR

Frequency(MHz)	VSWR
2402	1.090:1
2450	1.122:1
2455	1.138:1
2480	1.121:1



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7.2. GAIN AND EFFICIENCY

Frequency(MHz)	Efficiency(dB)	Efficiency (%)	Gain(dBi)
2400	-8.722	13.421	-3.595
2410	-8.734	13.382	-2.889
2420	-8.468	14.229	-2.521
2430	-8.061	15.624	-2.405
2440	-7.834	16.466	-2.517
2450	-8.009	15.815	-2.537
2460	-7.914	16.163	-2.469
2470	-8.141	15.341	-2.096
2480	-8.193	15.156	-1.867
2490	-8.251	14.961	-1.924
2500	-8.373	14.543	-2.181

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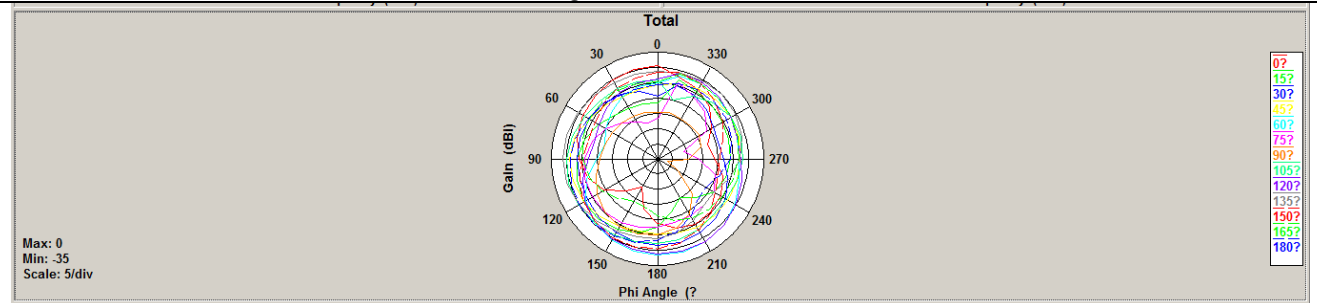
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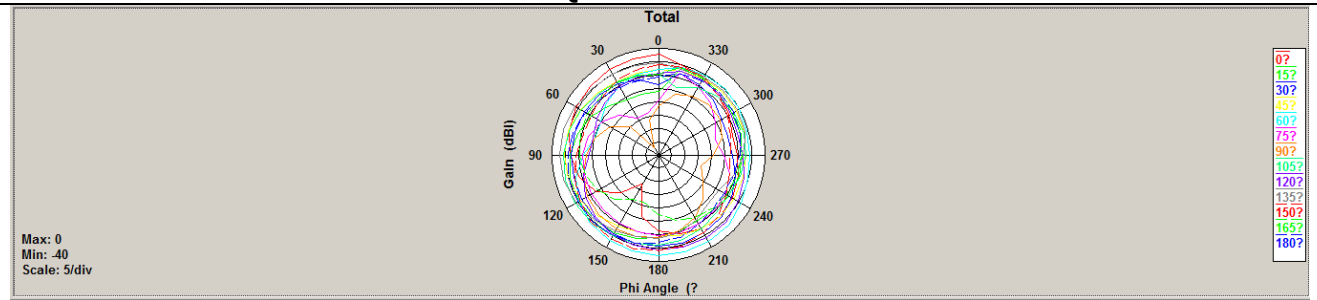
7.3. RADIATION PATTERN

2D POLAR RADIATION PATTERN

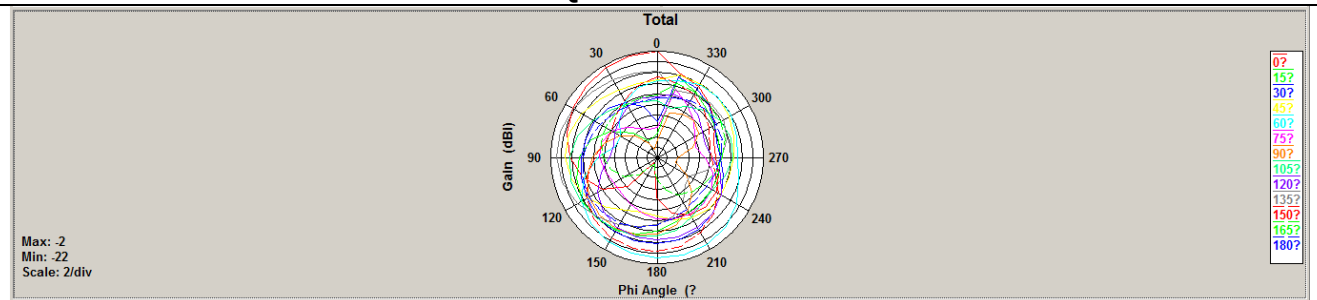
FREQUENCY=2400MHZ



FREQUENCY=2450MHZ



FREQUENCY=2500MHZ

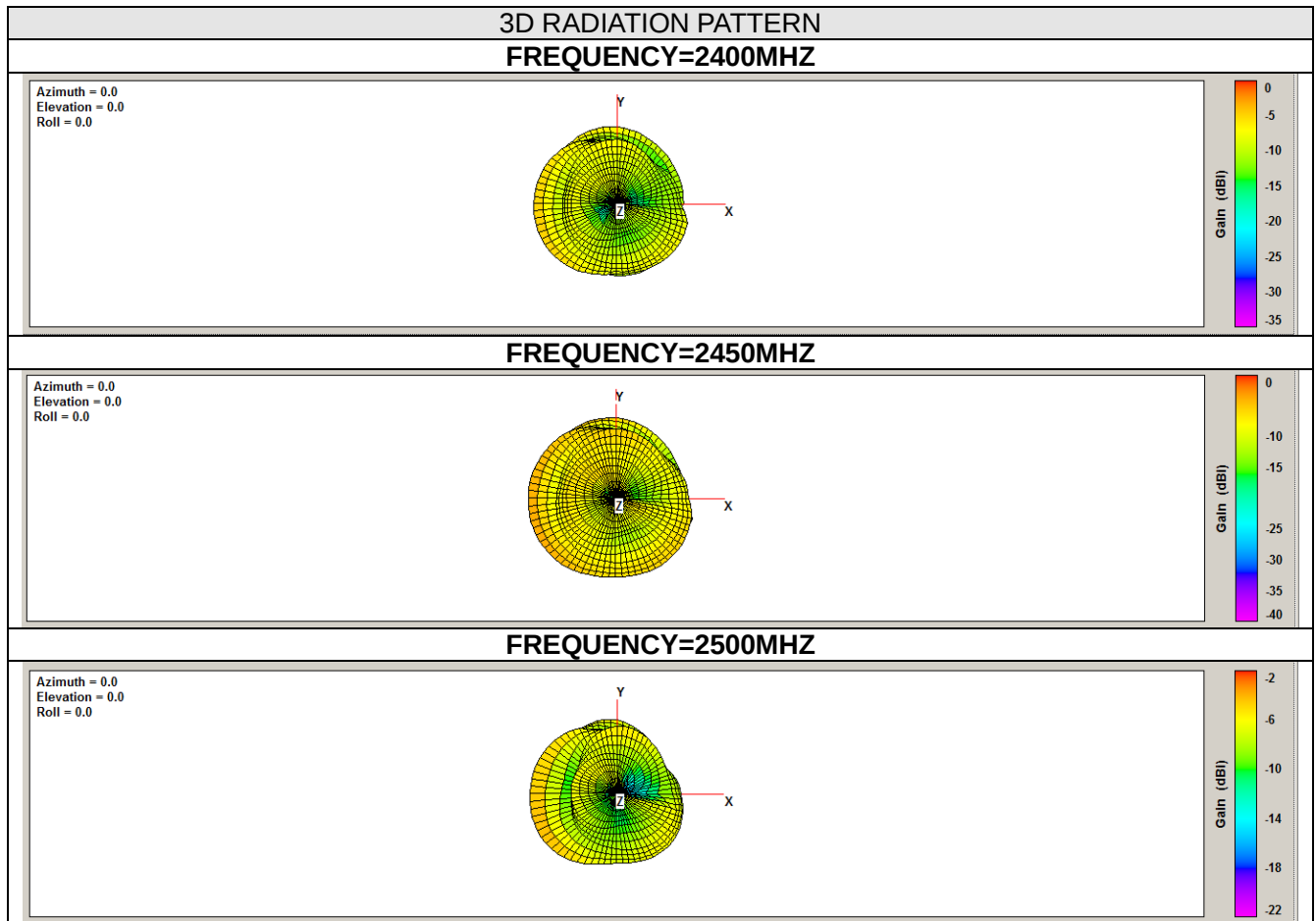


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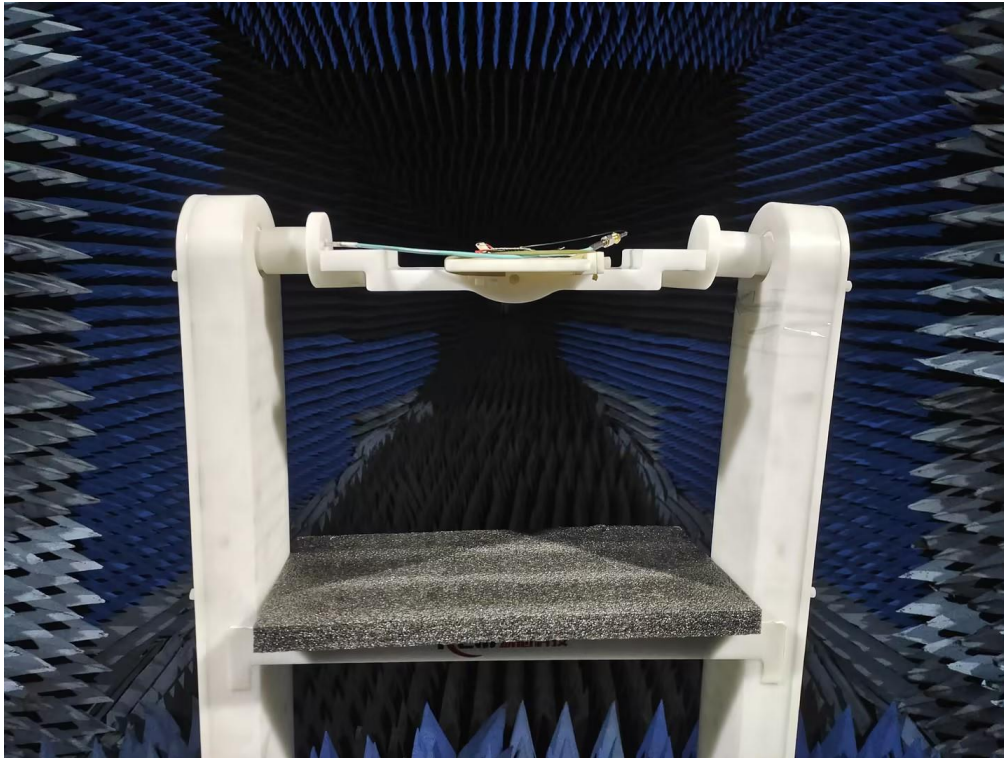


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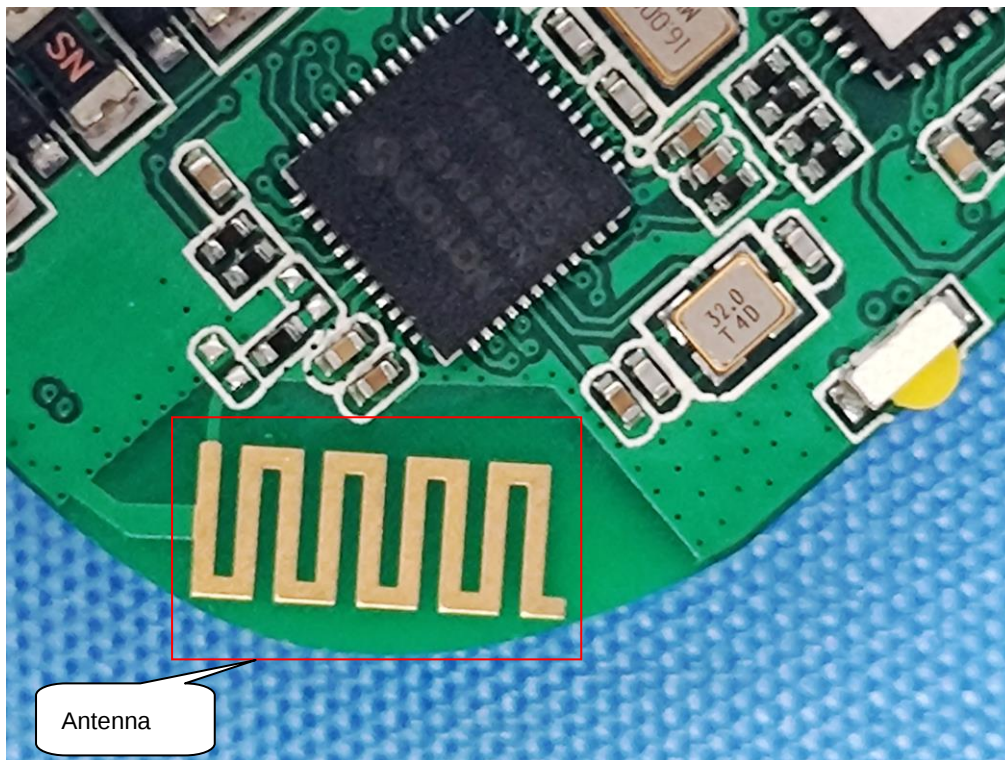
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APPENDIX B: PHOTOGRAPHS OF EUT

VIEW OF ANTENNA



-----End of Report-----

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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.

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