FCC Test Report

EUT Name	:	car antenna
Brand Name	:	N/A
Model Name	:	YJH-AL136
Series Model	:	See page six for details
Applicant	:	**Cixi Yuanhang Elextric Co., ltd**
Address	:	No.10 New District Xinchao Village,Zhouxiang.Cixi,Zhejiang Prov. China
Manufacturer	:	**Cixi Yuanhang Elextric Co., ltd**
Address	:	No.10 New District Xinchao Village,Zhouxiang.Cixi,Zhejiang Prov. China
Date of Receipt	:	July 29, 2024
Date of Test	:	July 29, 2024- Aug.05, 2024
Issued Date	:	Aug.05, 2024
Report Version	:	V1.0
Test Sample	:	AiTSZ-240729004-1
Standard(s)	:	FCC Part 15B Rules
FCC ID	:	2BKH4-YHYJHALSF

Lab: Guangdong Asia Hongke Test Technology Limited
Add: B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Tel.: +86 0755-230967639 Fax.: +86 0755-230967639

This device described above has been tested by Guangdong Asia Hongke Test Technology Limited and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Reviewed by: Leon Yi
Leon.yi

Approved by: Sean She
Sean She

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug.05, 2024	Valid	Initial Release

Table of Contents

1.Test Summary

Test	Test Requirement	Test Method	Criterion	Result
Mains Terminals Disturbance Voltage, 150kHz to 30MHz	FCC Part 15 Subpart B	FCC Part 15 Subpart B ANSI C63.4: 2014	Limits	N/A
Radiated Emissions 30MHz to 1GHz	FCC Part 15 Subpart B	FCC Part 15 Subpart B ANSI C63.4: 2014	Limits	PASS

1.1. Measurement Uncertainty

The report uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty Multiplied by a coverage factor of **k=2** , providing a level of confidence of approximately 95% .

No.	Item	Frequency Range	U , Value
1	Power Line Conducted Emission	150KHz~30MHz	1.20 dB
2	Disturbance Power Emission	30MHz~300MHz	2.96 dB
3	Radiated Emission Test	30MHz~1GHz	3.30 dB
4	Radiated Emission Test	1GHz~18GHz	3.30 dB

2.Test Facility

The test facility is recognized, certified or accredited by the following organizations:

FCC-Registration No.: 251906 Designation Number: CN1376

Guangdong Asia Hongke Test Technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC —Registration No.: 31737 CAB identifier: CN0165

The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

A2LA-Lab Cert. No.: 7133.01

Guangdong Asia Hongke Test Technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

3.Deviation from standard

None

4.Abnormalities from standard conditions

None

5.General Information

5.1. General Description of EUT

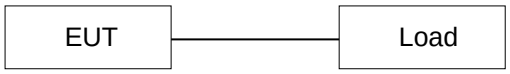
EUT Name:	car antenna
Model No:	YJH-AL136
Serial No:	YJH-AL004,YJH-AL009,YJH-AL030,YJH-AL050,YJH-AL076,YJH-AL090,YJH-AL095, YJH-AL100,YJH-AL110,YJH-AL120,YJH-AL8291,YJH-SF170Y,YJH-SF065, YJH-SF171Y,YJH-SF090,JH-SF172Y, YJH-AL090RD,YJH-SF173Y,YJH-AL050D, YJH-SF174Y, YJH-SF200Y,YJH-AL050G,YJH-SF174,YJH-AL095GPB,YJH-SF175D, YJH-AL030B,YJH-SF175F,YJH-SF175Y,YJH-SF178,YJH-SF200PY,YJH-407, YJH-407-1,YJH-407-2,YJH-407-3,YJH-SF240,YJH-SF280,YJH-SF300Y,YJH-SF301, YJH-SF350Y,YJH-SF350-1,YJH-SF356-1,YJH-SF380Y,YJH-SF410,YJH-SF450, YJH-SF550,YJH-SF590
Brand Name:	N/A
Power Range:	Input: DC 12V
Model description:	Different model names

5.2. EUT Test Mode

Mode 1	Working

5.3. Description of Test setup

EUT was tested in normal configuration (Please See following Block diagrams)

1. Block diagram of EUT Configuration-EMI


5.4.Test Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

5.5. EUT Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

6.Equipments List for All Test Items

☒ Radiation Test Equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101160	2023-09-13	2024-09-12
2	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00282	2023-09-13	2024-09-12
3	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2023-04-28	2025-04-27
4	Spectrum Analyzer	Agilent	N9020A	MY51289843	2023-09-08	2024-09-07
5	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2023-09-08	2024-09-07
6	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120D	452	2023-08-29	2025-08-28

☐ Conduction Test equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101160	2023-09-13	2024-09-12
2	LISN	R&S	ESH3-Z5	892785/016	2023-10-29	2024-10-28
3	Pulse Limiter	R&S	ESH3-Z2	102789	2023-09-13	2024-09-12

Note:

1. ☐ is not applicable in this Test Report. ☒ is applicable in this Test Report.

7.Emission Test Results

7.1.Mains Terminals Disturbance Voltage Measurement

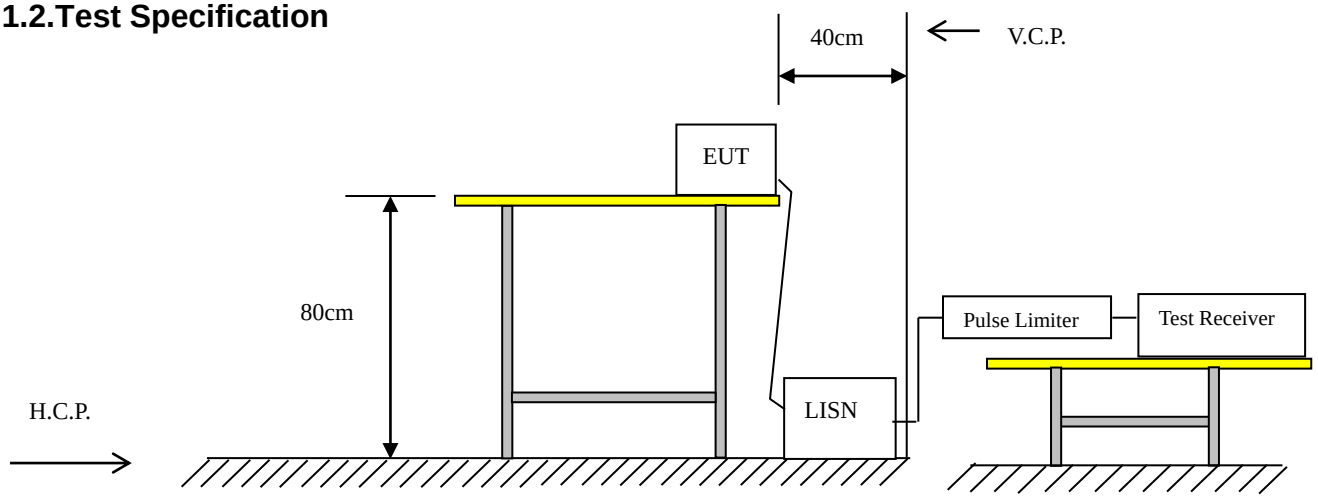
Frequency (MHz)	☐ Class A (dBμV)		☐ Class B (dBμV)	
	Q.P. (Quasi-Peak)	A.V. (Average)	Q.P. (Quasi-Peak)	A.V. (Average)
0.15 ~ 0.50	79	66	66 to 56	56 to 46
0.50 ~ 5.0	73	60	56	46
5.0 ~ 30	73	60	60	50

Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximized peak within 6dB of Average Limit

7.1.1.E.U.T. Operation

Temperature:	--	Humidity:	--	Atmospheric Pressure:	--	Kpa
Test Mode:	N/A			The Worst Mode:	N/A	

7.1.2.Test Specification



EUT was placed upon a wooden test table 0.8m above the horizontal metal reference plane and 0.4m from the vertical ground plane, and it was connected to an AMN. The closest distance between the boundary of the EUT and the surface of the AMN is 0.8m. All peripherals were connected to another AMN, and placed at a distance of 10cm from each other. A spectrum and receiver was connected to the RF output port of the AMN. Both average and quasi-peak value were detected.

7.1.3.Measurement Data

Note: N/A

7.2.Radiated Emission Measurement

Limits of Radiated Emission Measurement

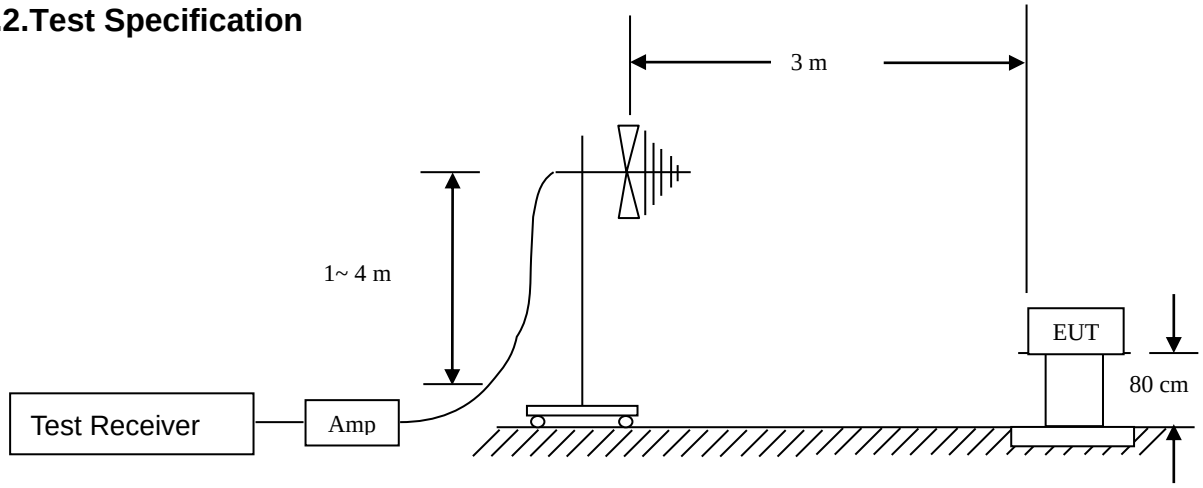
Frequency (MHz)	☐ Class A (10m)	☒ Class B (3m)
	Quasi-Peak dB(μV/m)	Quasi-Peak dB(μV/m)
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximum peak within 6dB of limit

7.2.1.E.U.T. Operation

Temperature:	26°C	Humidity:	54% RH	Atmospheric Pressure:	1006	Kpa
Test Mode:	Mode 1			The Worst Mode:	Mode 1	

7.2.2.Test Specification



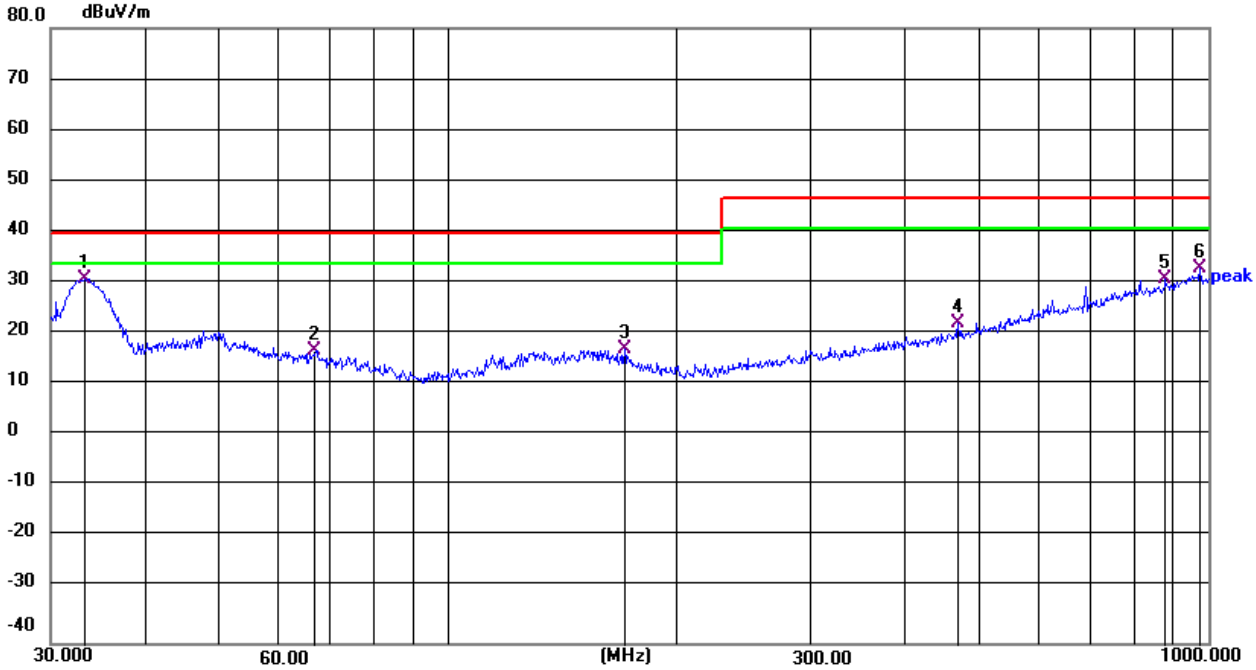
EUT was placed upon a wooden test table which was placed on the turn table 0.8m above the horizontal metal ground plane, and operating in the mode as mentioned above. A receiving antenna was placed 3m away from the EUT. During testing, turn around the turn table and move the antenna from 1m to 4m to find the maximum field-strength reading. All peripherals were placed at a distance of 10cm between each other. Both horizontal and vertical antenna polarities were tested.

7.2.3.Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyzers in peak detection mode. The EUT was measured by Biology antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following quasi-peak measurements were performed on the EUT.

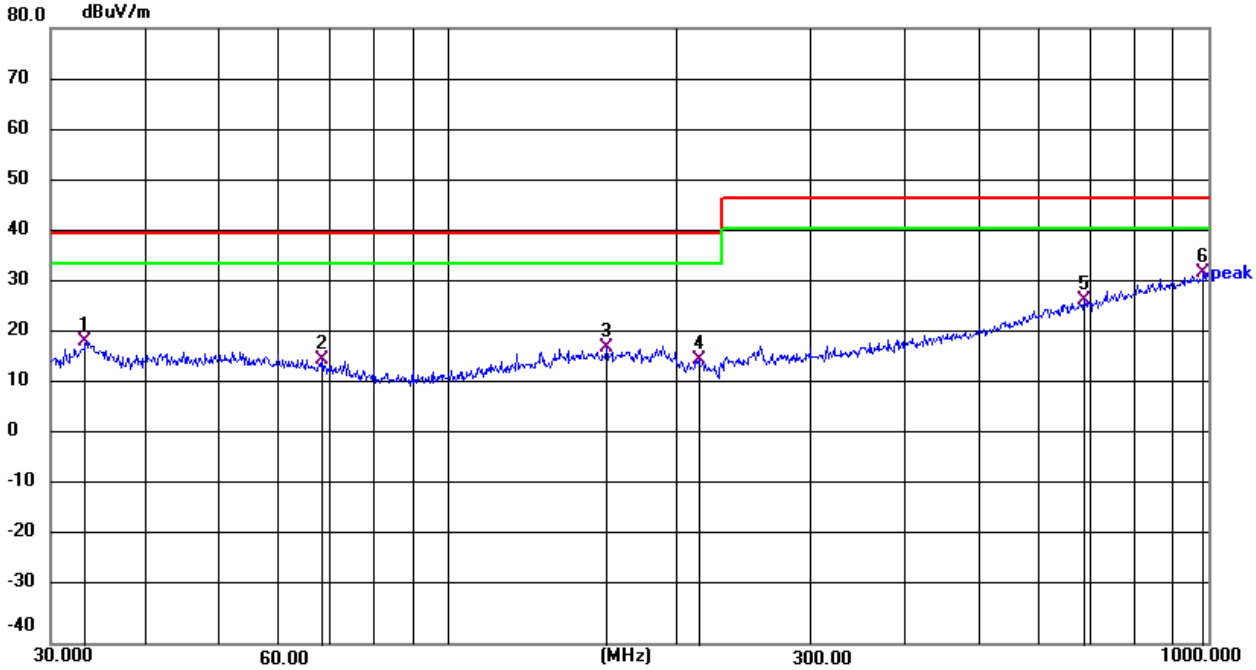
Test Mode:	Mode 1	Polarization:	Vertical
Model:	YJH-AL136	Date:	2024-08-01



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1 *	33.2112	48.58	-17.35	31.23	40.00	-8.77	QP
2	66.9669	35.72	-18.42	17.30	40.00	-22.70	QP
3	170.7926	34.56	-16.95	17.61	40.00	-22.39	QP
4	468.8762	35.48	-12.96	22.52	47.00	-24.48	QP
5	878.3214	36.14	-5.08	31.06	47.00	-15.94	QP
6	975.7529	36.48	-3.38	33.10	47.00	-13.90	QP

Test Mode:	Mode 1	Polarization:	Horizontal
Model:	YJH-AL136	Date:	2024-08-01



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	33.4449	36.17	-17.33	18.84	40.00	-21.16	QP
2	68.3908	34.17	-18.65	15.52	40.00	-24.48	QP
3	161.4742	34.22	-16.59	17.63	40.00	-22.37	QP
4	213.7634	35.66	-20.30	15.36	40.00	-24.64	QP
5	687.1507	35.41	-8.42	26.99	47.00	-20.01	QP
6 *	986.0717	35.66	-3.34	32.32	47.00	-14.68	QP

7.2.4.Test Setup photograph

APPENDIX - EUT Constructional Details

Photo 1

Photo 2

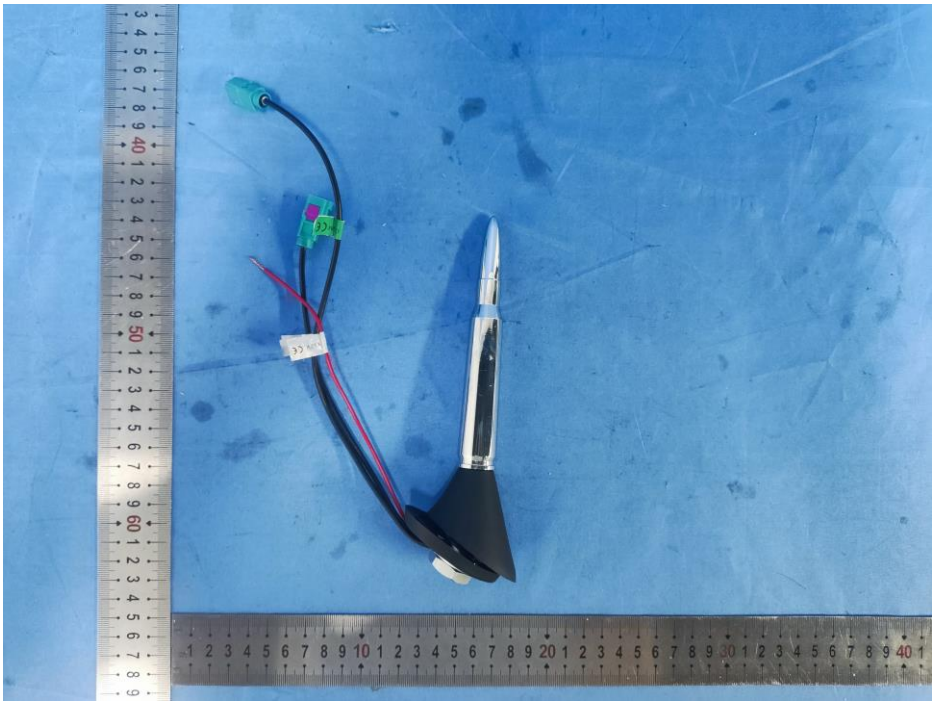
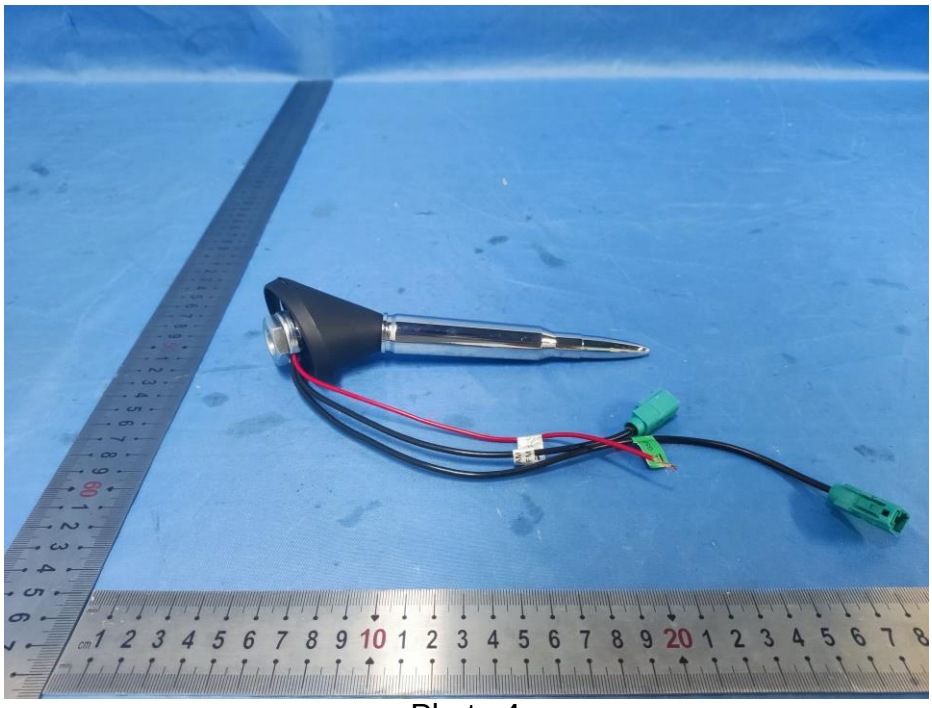


Photo 3



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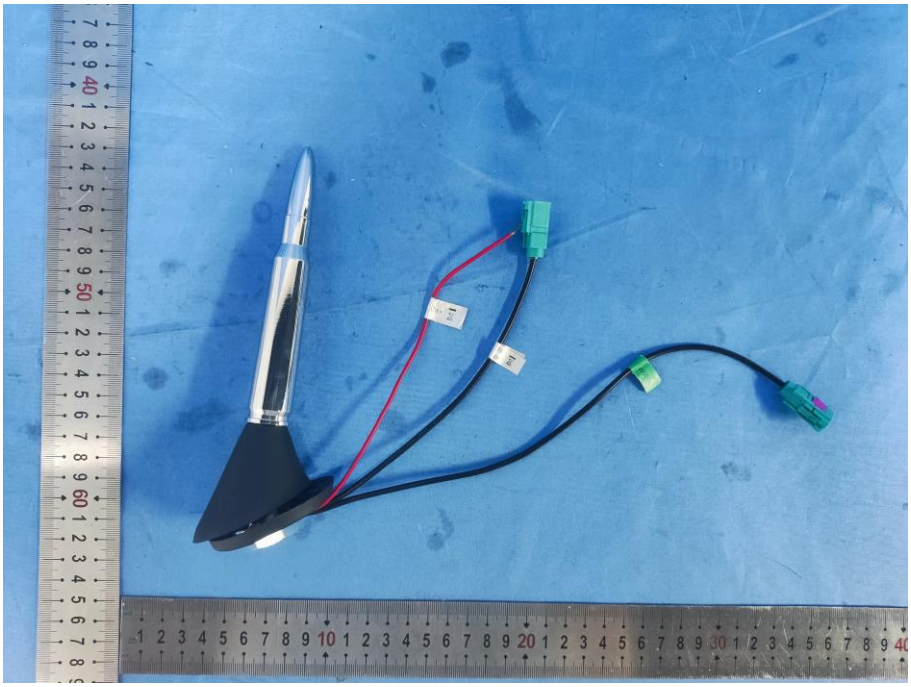

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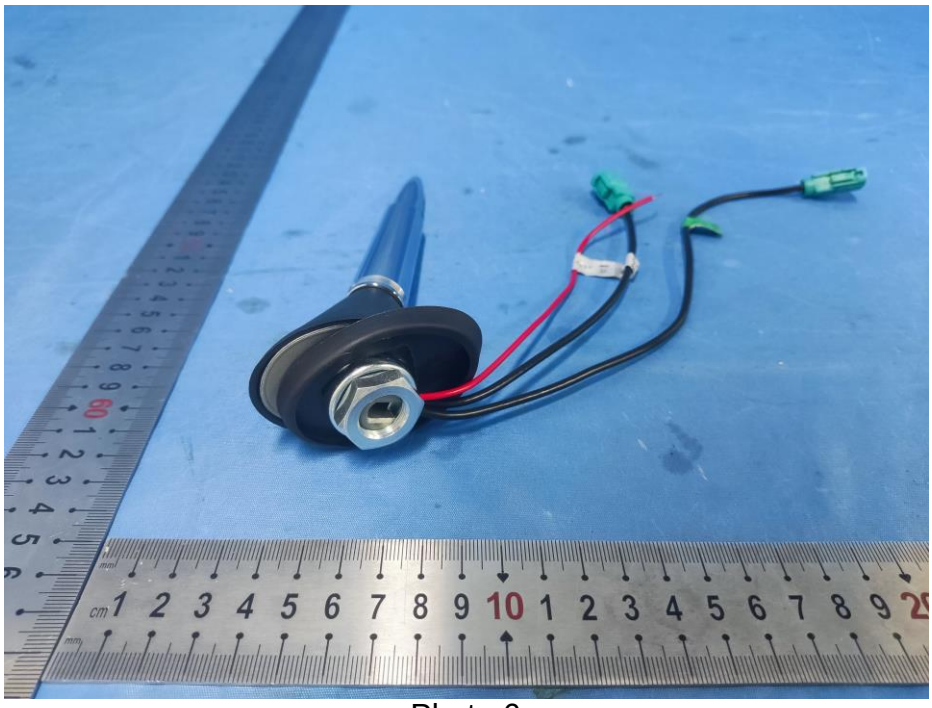

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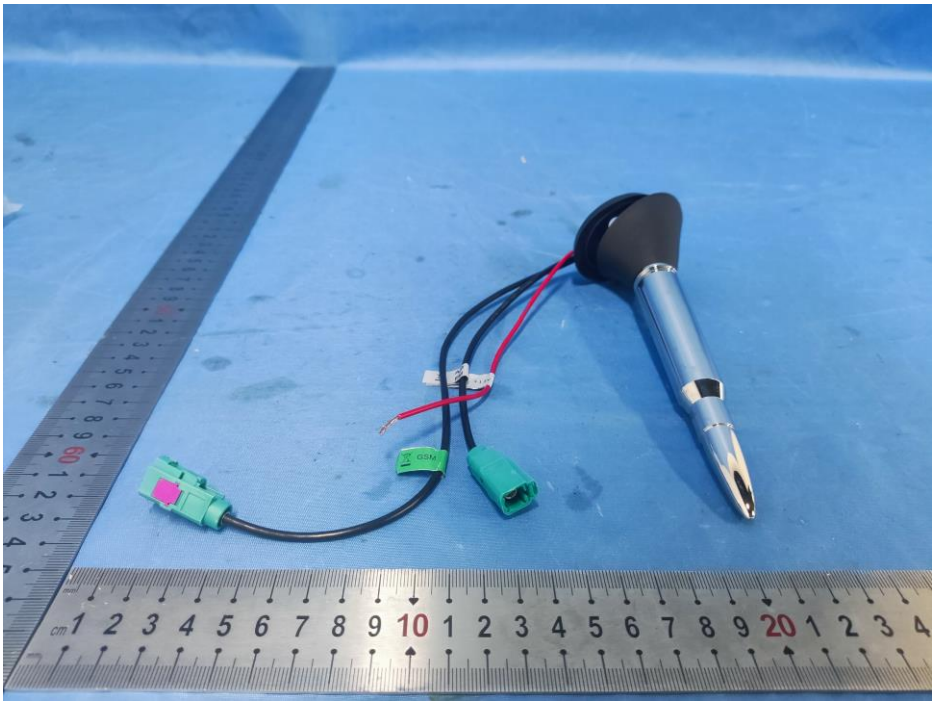

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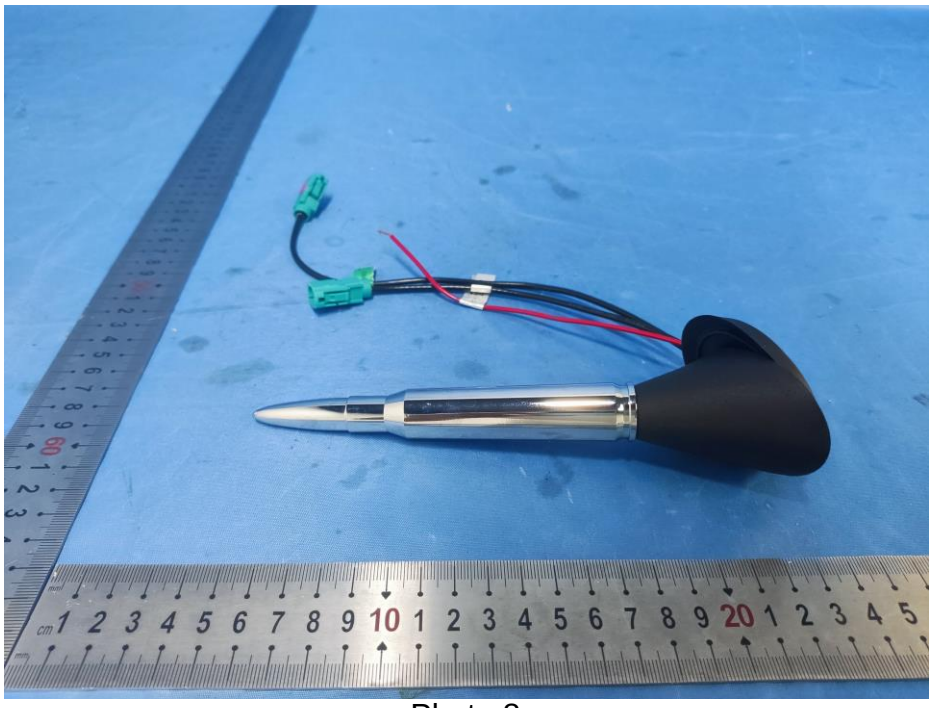


Photo 8

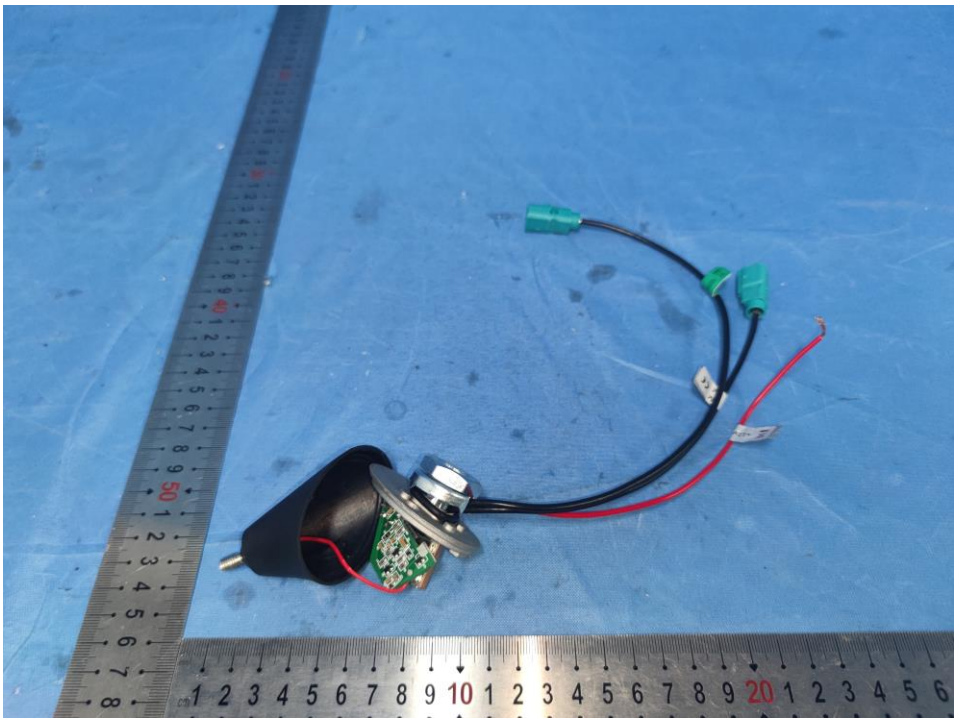


Photo 9

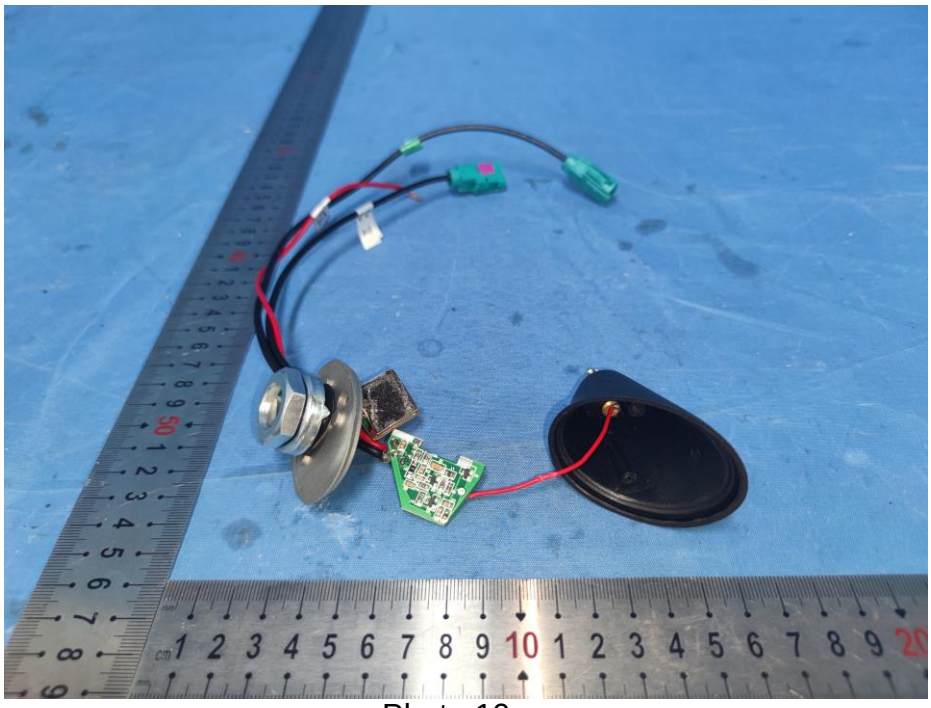


Photo 10

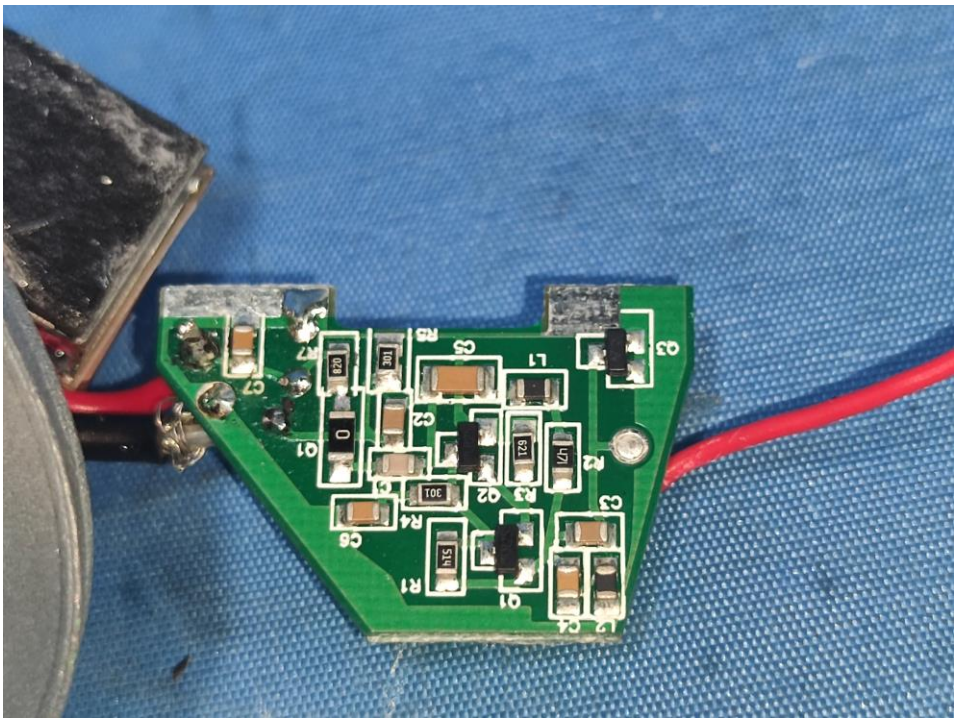
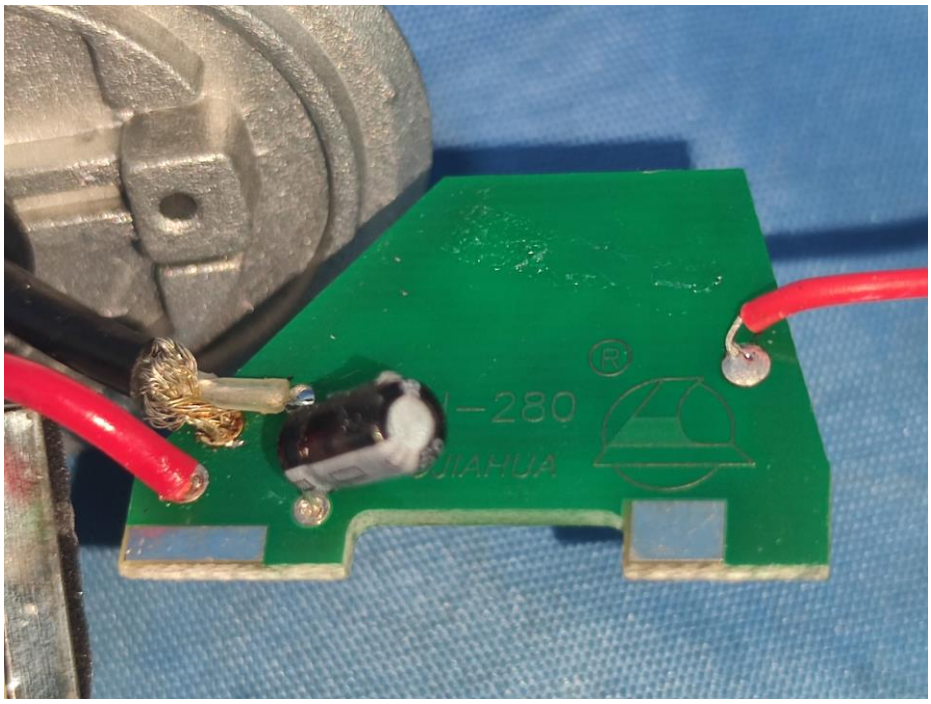


Photo 11



End of report