EMC Test Report

Report No.: AGC16631250301EE01

PRODUCT DESIGNATION	:	Car Audio Amplifier
BRAND NAME	:	N/A
MODEL NAME	:	DI550.4
APPLICANT	:	AVS(NINGBO) INDUSTRIAL CO.,LTD.
DATE OF ISSUE	:	Mar. 26, 2025
STANDARD(S)	:	EN 50498:2010
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	/	Mar. 26, 2025	Valid	Initial release

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1. GENERAL INFORMATION

Applicant	AVS(NINGBO) INDUSTRIAL CO.,LTD.
Address	7TH BUILDING, NO.59 CHANUG FU ROAD, XIAO GANG INDUSTRIAL ZONE, NINGBO 315800, CHINA
Manufacturer	AVS(NINGBO) INDUSTRIAL CO.,LTD.
Address	7TH BUILDING, NO.59 CHANUG FU ROAD, XIAO GANG INDUSTRIAL ZONE, NINGBO 315800, CHINA
Factory	AVS(NINGBO) INDUSTRIAL CO.,LTD.
Address	7TH BUILDING, NO.59 CHANUG FU ROAD, XIAO GANG INDUSTRIAL ZONE, NINGBO 315800, CHINA
Product Designation	Car Audio Amplifier
Brand Name	N/A
Test Model	DI550.4
Series Model	N/A
Difference Description	N/A
Date of receipt of test item	Mar. 11, 2025
Date of test	Mar. 11, 2025~Mar. 22, 2025
Deviation	None
Test Result	Pass
Report Template	AGCTR-ER-CE-ECEV1.0

Prepared By	Jack Gui (Project Engineer)	Mar. 26, 2025
Reviewed By	Calvin Liu (Reviewer)	Mar. 26, 2025
Approved By	Angela Li (Authorized Officer)	Mar. 26, 2025

2. PRODUCT INFORMATION

2.1 PRODUCT TECHNICAL DESCRIPTION

Housing Type	Plastic and metal
Hardware Version	N/A
Software Version	N/A
EUT Input Rating	DC 10-16V, 20A
EUT Output Rating	N/A

I/O Port Information (☒Applicable ☐Not Applicable)

Port Type	Input/Output	Number	Cable Description
Power Input	Input	1	--
Speaker Input	Input	4	--
Speaker Output	Output	4	--

2.2 EQUIPMENT USED IN TESTED SYSTEM

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

☒ Test Accessories Come From The Laboratory

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
Cement resistance	--	--	--	--	--
Speaker	LANG FAN	LONVIN D1	--	--	--
Battery	--	--	--	--	--
Phone	LOGICOM	LUNAR	--	--	--

☐ Test Accessories Come From The Manufacturer

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
--	--	--	--	--	--

2.3 TEST MODE DESCRIPTION

TEST MODE	
Mode 1	Audio playback mode

2.4 OBSERVA TIONMETHOD FOR IMMUNITY TEST

Method	Description of The Monitoring Methods
Visual	Observe the phenomena of the indicator lights and sounds of the DUT

2.5 CLASSIFICATION OF FUNCTIONAL STATUS

EN 50498:2010	
Criteria A:	All functions of a device/system perform as designed during and after exposure to disturbance.
Criteria B:	All functions of a device/system perform as designed during exposure. However, one or more of them can go beyond specified tolerance. All functions return automatically to within normal limits after exposure is removed. Memory functions shall remain class A.
Criteria C:	One or more functions of a device/system do not perform as designed during exposure but return automatically to normal operation after exposure is removed.
Criteria D:	One or more functions of a device/system do not perform as designed during exposure and do not return to normal operation until exposure is removed and the device/system is reset by simple “operator/use” action.
Criteria E:	One or more functions of a device/system do not perform as designed during and after exposure and cannot be returned to proper operation without repairing or replacing the device/system.

3. TEST ENVIRONMENT

3.1 ADDRESS OF THE TEST LABORATORY

Laboratory Name: Attestation of Global Compliance (Shenzhen) Co., Ltd

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 TEST FACILITY

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

3.3 MEASUREMENT UNCERTAINTY

The reported 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%.

Item	Measurement Uncertainty
Uncertainty of Radiated Emission-ALSE Method	±4.0dB

3.4 LIST OF EQUIPMENTS USED

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment Name	Manufacturer	Model	S/N	Cal. Date	Cal. Due
V-Network	R&S	ESH3-Z6	N/A	2024/05/24	2025/05/23
V-Network	R&S	ESH3-Z6	N/A	2024/05/24	2025/05/23
Biconical Antenna	ETS-Lindgren	3104C	8907-4069	2024/03/28	2025/03/27
Log Periodic Dipole Antenna	Rohde&Schwrz	HL223	N/A	2024/03/28	2025/03/27

TEST EQUIPMENT OF TRANSIENT EMISSION

Equipment Name	Manufacturer	Model	S/N	Cal. Date	Cal. Due
V-Network	R&S	ESH3-Z6	N/A	2024/05/24	2025/05/23
Vehicle Transient Conduction Test Device	3c-Test	VTE 743T1	N/A	2024/05/15	2025/05/14
Electronic Switch	Schaffner	NSG417	N/A	2024/03/28	2025/03/27

TEST EQUIPMENT OF TRANSIENT IMMUNITY TEST

Equipment Name	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Automotive transient simulator	NOISEKEN	ISS-7610	ISS0930327	2024/03/28	2025/03/27
Automotive transient simulator	NOISEKEN	ISS-7630	ISS0930329	2024/03/28	2025/03/27
Automotive transient simulator	NOISEKEN	ISS-7690	ISS0930330	2024/03/28	2025/03/27
Automotive transient simulator	NOISEKEN	ISS-7650	ISS0930326	2024/03/28	2025/03/27

Note: The equipment check before test.

4. TEST ITEMS AND THE RESULTS

Description of Test Item	Standard	Results
Radiated Emission	EN 50498:2010	Pass
Transient Emission	EN 50498:2010	Pass
Transient Immunity	EN 50498:2010	Pass

Note:
1. Each test item follows test standard and with no deviation.
2. “Pass” represents “result meets the requirement”; “Fail” represents “result doesn’t meet the requirement”;
3. “N/A or －” represents “result doesn’t judge”.

5. RADIATED EMISSION TEST

5.1 DESCRIPTION OF THE TEST LOCATION

Test location: Semi-anechoic Chamber

Test distance: 1 meter

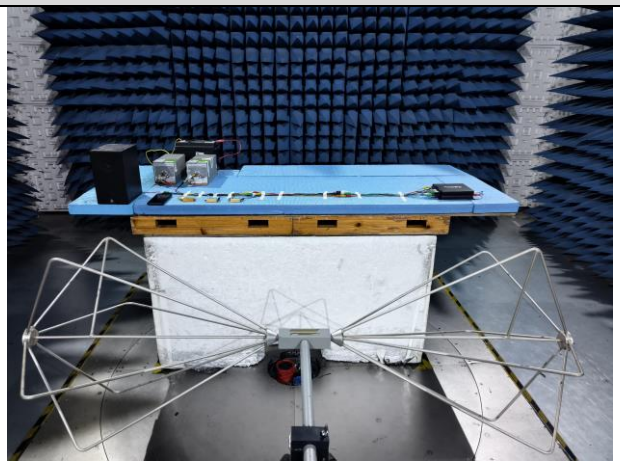
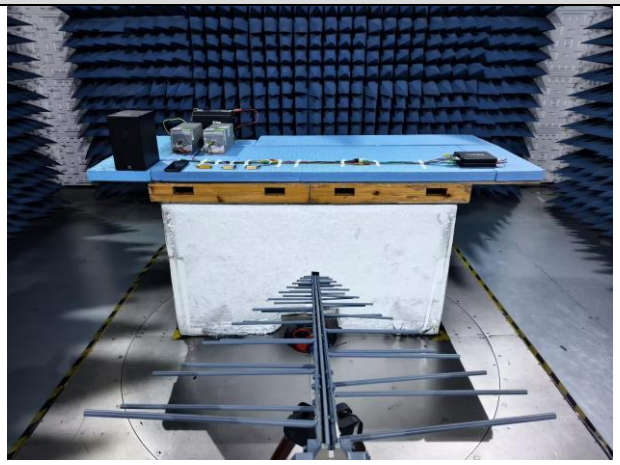
5.2 TEST SPECIFICATION

Frequency range: 30MHz – 1000MHz

The test was carried out in the following operation mode(s):

- DC 12V

5.3 PHOTO DOCUMENTATION OF THE TEST SET-UP

30MHz-200MHz

200MHz-1000MHz


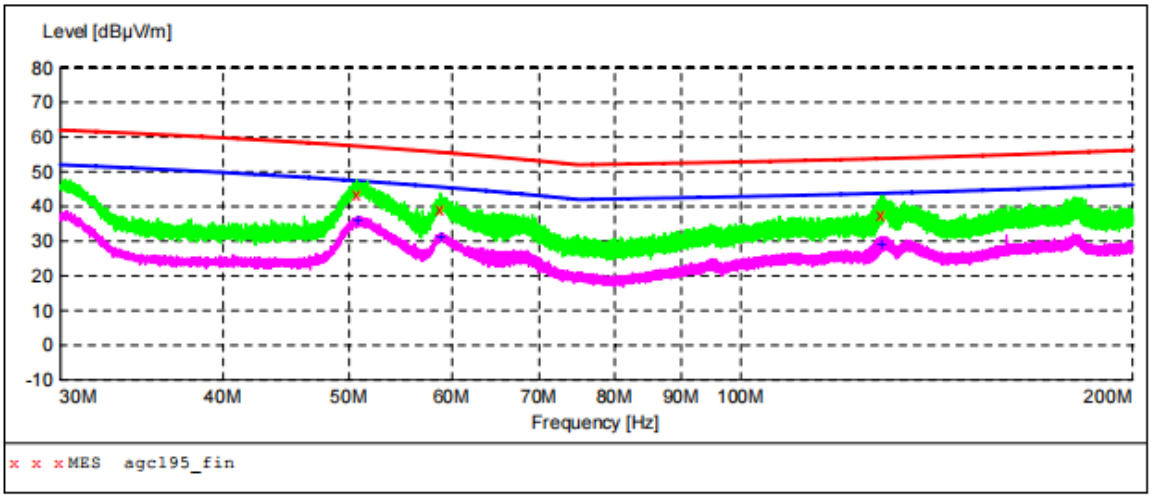
Note:

The ESA was placed in a height of 5 cm, isolated to the ground plane. There was no connection to the ground plane. The ESA has to be installed isolated from the vehicle ground.

Cables which are longer than 2m have been bundled to a length of 2 m.

5.4 TEST RESULT

EUT Name:	Car Audio Amplifier	Sample Number:	250311139
Test Voltage:	DC 13.5V	Model(s):	DI550.4
Antenna Polarisation:	Horizontal	Frequency Range:	30MHz–200MHz
Temperature:	18.4℃	Humidity:	58.1%
Worst Mode:	Mode 1	Test Result:	Pass



MEASUREMENT RESULT: "agc195_fin"

2025/3/16 2:34

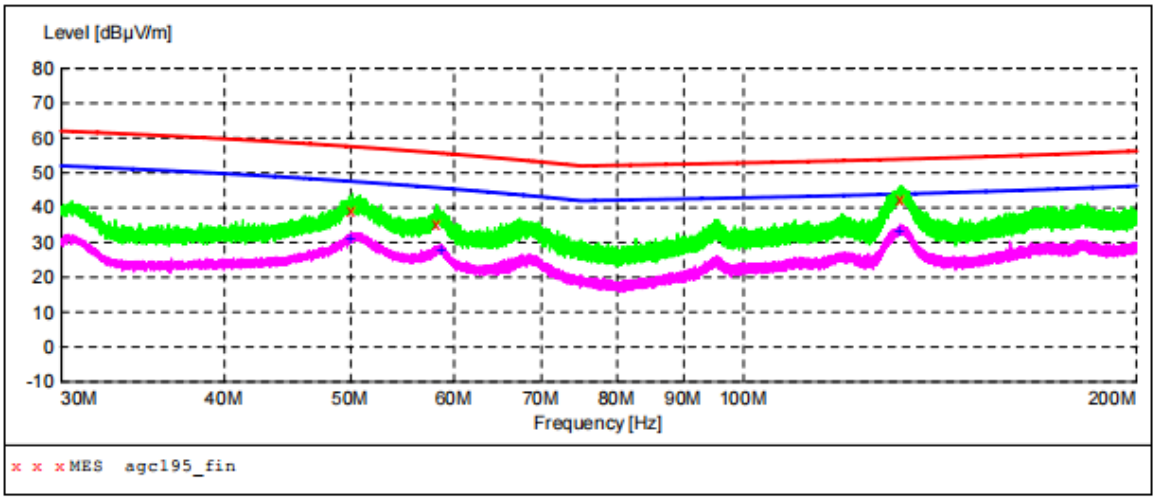
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
50.635000	43.60	14.0	57.4	13.8	QP
58.770000	39.10	12.9	55.6	16.5	QP
128.170000	37.70	14.1	53.8	16.1	QP

MEASUREMENT RESULT: "agc195_fin2"

2025/3/16 2:34

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
50.840000	35.90	14.0	47.4	11.5	AV
58.890000	31.10	12.8	45.6	14.5	AV
128.315000	29.20	14.0	43.8	14.6	AV

EUT Name:	Car Audio Amplifier	Sample Number:	250311139
Test Voltage:	DC 13.5V	Model(s):	DI550.4
Antenna Polarisation:	Vertical	Frequency Range:	30MHz–200MHz
Temperature:	18.4℃	Humidity:	58.1%
Worst Mode	Mode 1	Test Result:	Pass



MEASUREMENT RESULT: "agc195_fin"

2025/3/16 2:36

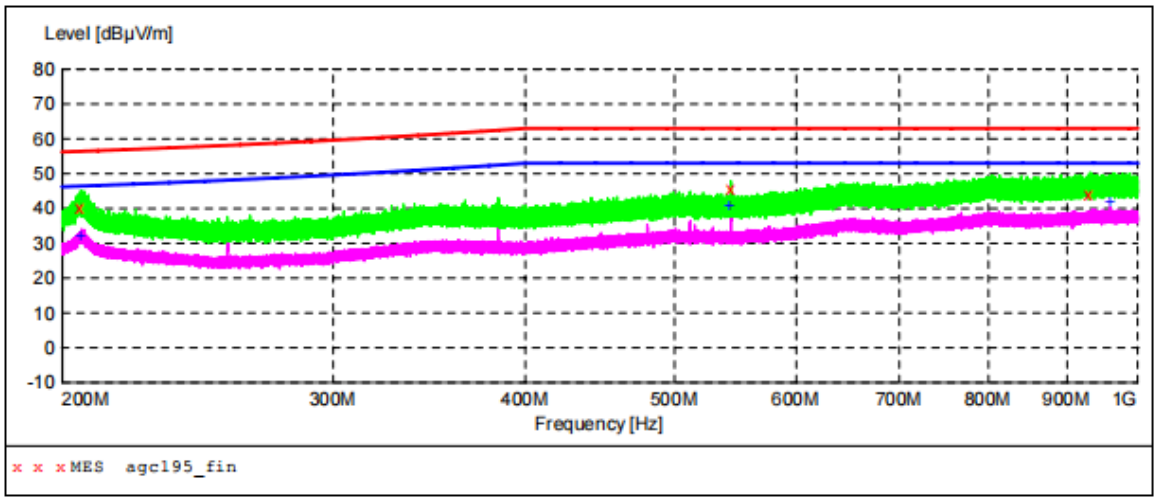
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
50.140000	39.20	14.1	57.5	18.3	QP
58.160000	35.50	12.9	55.7	20.2	QP
132.020000	42.20	13.8	53.9	11.7	QP

MEASUREMENT RESULT: "agc195_fin2"

2025/3/16 2:36

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
50.020000	31.20	14.1	47.6	16.4	AV
58.700000	27.70	12.9	45.6	17.9	AV
131.865000	33.40	13.8	43.9	10.5	AV

EUT Name:	Car Audio Amplifier	Sample Number:	250311139
Test Voltage:	DC 13.5V	Model(s):	DI550.4
Antenna Polarisation:	Horizontal	Frequency Range:	200MHz–1GHz
Temperature:	18.4℃	Humidity:	58.1%
Worst Mode	Mode 1	Test Result:	Pass



MEASUREMENT RESULT: "agc195_fin"

2025/3/16 2:30

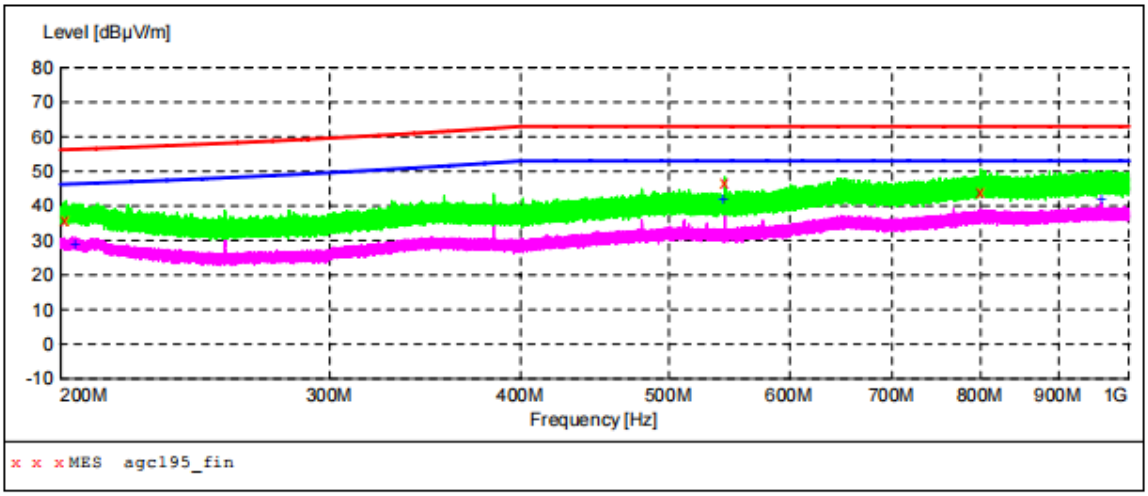
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
205.580000	40.10	19.1	56.4	16.3	QP
544.015000	45.80	22.1	63.0	17.2	QP
931.165000	44.30	27.7	63.0	18.7	QP

MEASUREMENT RESULT: "agc195_fin2"

2025/3/16 2:30

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
205.810000	31.80	19.1	46.4	14.6	AV
543.995000	40.60	22.1	53.0	12.4	AV
959.970000	41.70	27.9	53.0	11.3	AV

EUT Name:	Car Audio Amplifier	Sample Number:	250311139
Test Voltage:	DC 13.5V	Model(s):	DI550.4
Antenna Polarisation:	Vertical	Frequency Range:	200MHz–1GHz
Temperature:	18.4℃	Humidity:	58.1%
Worst Mode	Mode 1	Test Result:	Pass



MEASUREMENT RESULT: "agc195_fin"

2025/3/16 2:25

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
201.555000	35.70	19.4	56.3	20.6	QP
544.000000	46.90	22.1	63.0	16.1	QP
800.160000	43.90	27.0	63.0	19.1	QP

MEASUREMENT RESULT: "agc195_fin2"

2025/3/16 2:25

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Detector
204.335000	28.80	19.2	46.4	17.6	AV
544.000000	42.10	22.1	53.0	10.9	AV
960.010000	42.00	27.9	53.0	11.0	AV

6. TRANSIENT EMISSION TEST

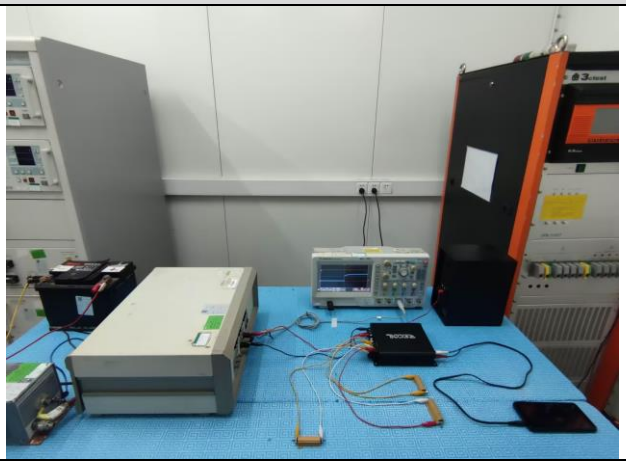
6.1 TEST LIMIT

Suggested limits for the classification of 12V equipment	
Positive	+ 75 V
Negative	− 100 V

6.2 DESCRIPTION OF THE TEST LOCATION

Test location: Shielded room

6.3 PHOTO DOCUMENTATION OF THE TEST SET-UP

TRANSIENT EMISSION TEST


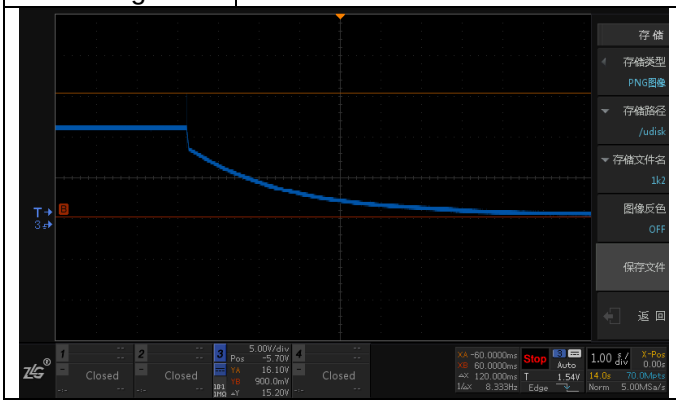
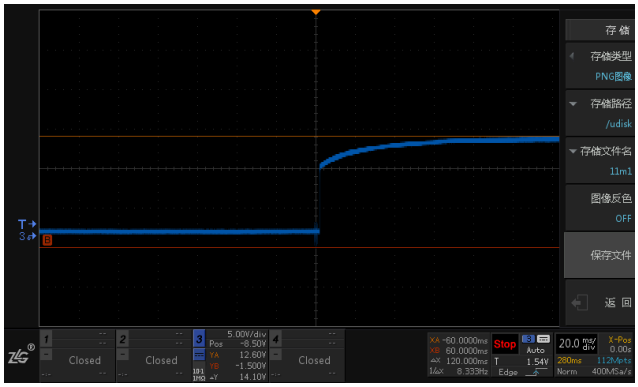
6.4 TEST SPECIFICATION

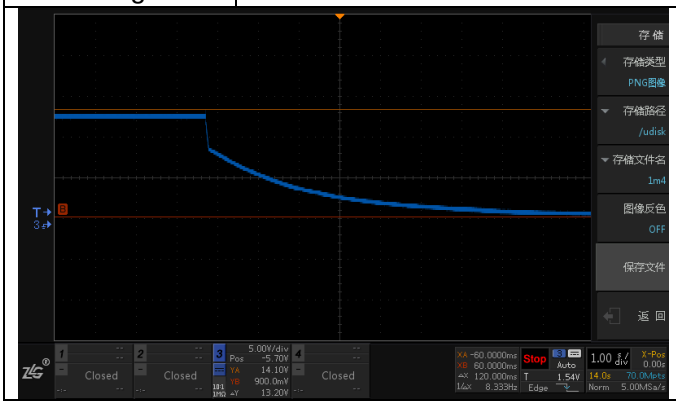
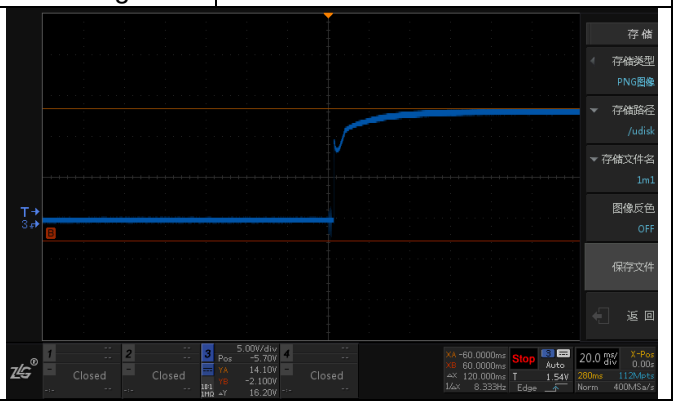
The test was carried out in the following operation mode(s):

-Nominal 12V system for DC13.5±0.5V

6.5 TEST RESULT

Product Name:	Car Audio Amplifier	Sample Number:	250311139
Test Model:	DI550.4	Supply Voltage:	DC 13.6V
Temperature:	20.8℃	Humidity:	51.8 %
Worst Mode	Mode 1	Test Result:	Pass

Fast Pulse			
Camera Status: On->Off		Camera Status: Off->On	
Max. Positive:	2.5V	Max. Positive:	-1V
Max. Negative:	-12.7V	Max. Negative:	-19.9V
			

Slow Pulse			
Camera Status: On->Off		Camera Status: Off->On	
Max. Positive:	0.5V	Max. Positive:	0.5V
Max. Negative:	-12.7V	Max. Negative:	-15.7V
			

7. TRANSIENT IMMUNITY TEST

7.1 DESCRIPTION OF THE TEST LOCATION

Test location: Shielded room

7.2 TEST SPECIFICATION

Pulse 1:	Test level:	-75V(DC 12V),-450V(DC 12V)
	Number of pulses:	5000
Pulse 2a:	Test level:	+37V(DC 12V),-450V(DC 12V)
	Number of pulses:	5000
Pulse 2b:	Test level:	+10V(DC 12V),+20V(DC 12V)
	Number of pulses:	10
Pulse 3a:	Test level:	-112V(DC 12V),-150V (DC 12V)
	Coupling duration:	1 h
Pulse 3b:	Test level:	+75V(DC 12V),+150V(DC 12V)
	Coupling duration:	1 h
Pulse 4:	Test level:	-6V(DC 12V),-12V(DC 12V)
	Number of pulses:	1

7.3 PHOTO DOCUMENTATION OF THE TEST SET-UP

TRANSIENT IMMUNITY TEST

7.4TEST RESULT

Product Name:	Car Audio Amplifier	Sample Number:	250311139
Test Model:	DI550.4	Supply Voltage:	DC 13.6V
Temperature:	22.3℃	Humidity:	54.6 %
Test Mode	Mode 1	Test Result:	Pass

Test Pulse	Test Voltage	Number of Pulses/ Duration	Required Status	Functional Status
1 (12V)	-75 V	5000	D	C[2]
2a (12V)	+37 V	5000	D	A[1]
2b (12V)	+10 V	10	D	C[2]
3a (12V)	-112 V	1 h	D	A[1]
3b (12V)	+75 V	1 h	D	A[1]
4 (12V)	-6 V	1	D	A[1]

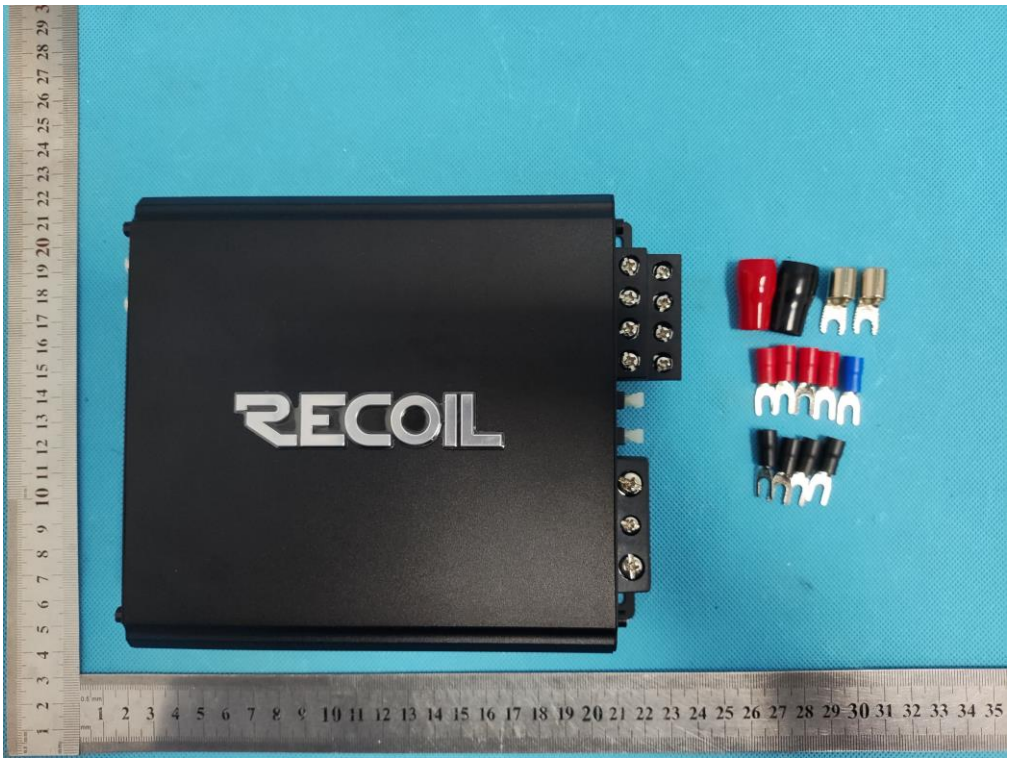
Remark:
1.During test and after test, the EUT works normal.
2.During the test, the DUT sounds intermittently. After the test, the sample automatically returned to the functional state before the test

7.5 CLASSIFICATION OF FUNCTIONAL STATUS

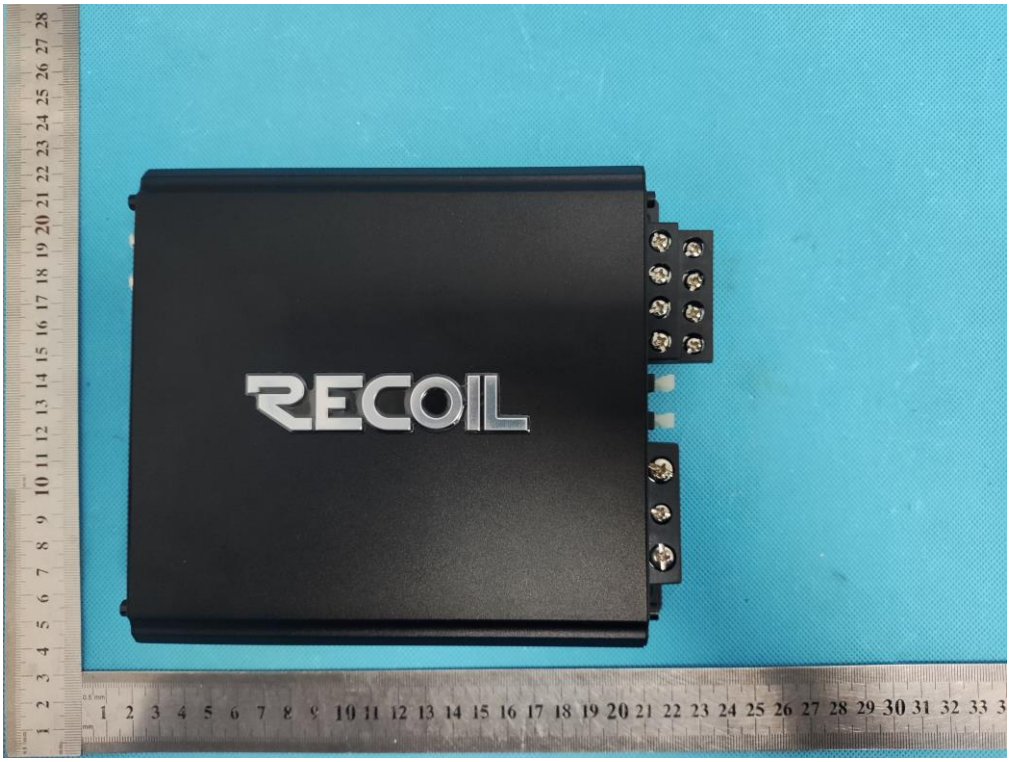
Criteria A:	All functions of a device/system perform as designed during and after exposure to disturbance.
Criteria B:	All functions of a device/system perform as designed during exposure. However, one or more of them can go beyond specified tolerance. All functions return automatically to within normal limits after exposure is removed. Memory functions shall remain class A.
Criteria C:	One or more functions of a device/system do not perform as designed during exposure but return automatically to normal operation after exposure is removed.
Criteria D:	One or more functions of a device/system do not perform as designed during exposure and do not return to normal operation until exposure is removed and the device/system is reset by simple “operator/use” action.
Criteria E:	One or more functions of a device/system do not perform as designed during and after exposure and cannot be returned to proper operation without repairing or replacing the device/system.

☒**PASS**	☐**FAIL**

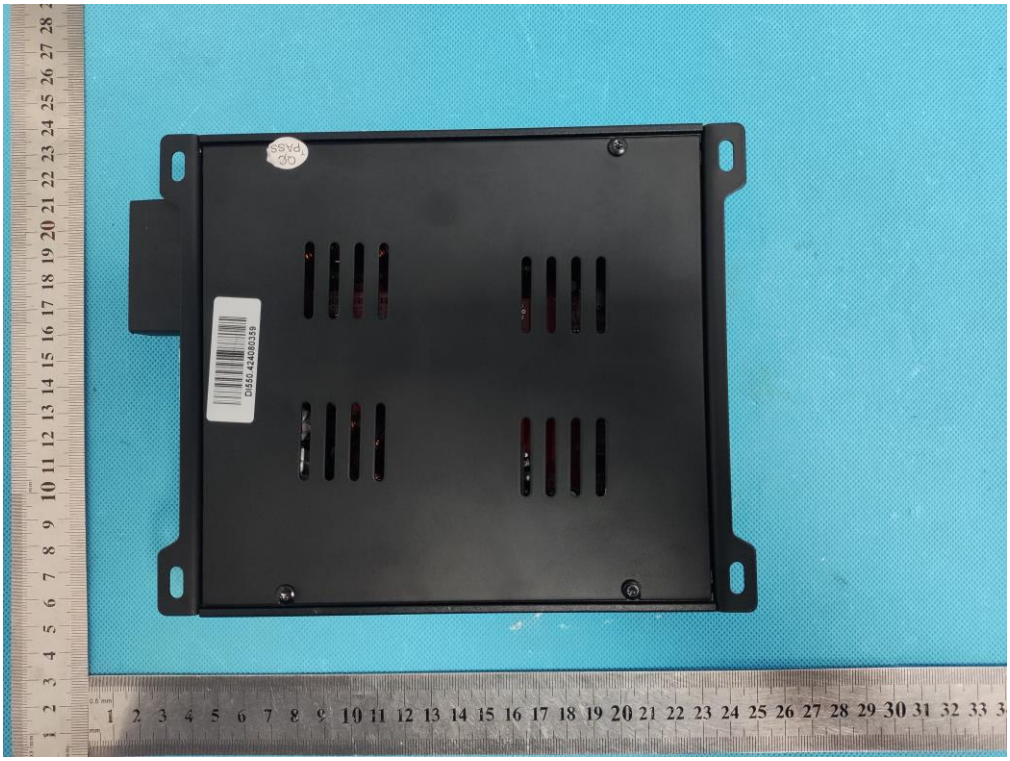
APPENDIX I: PHOTOGRAPHS OF TEST EUT



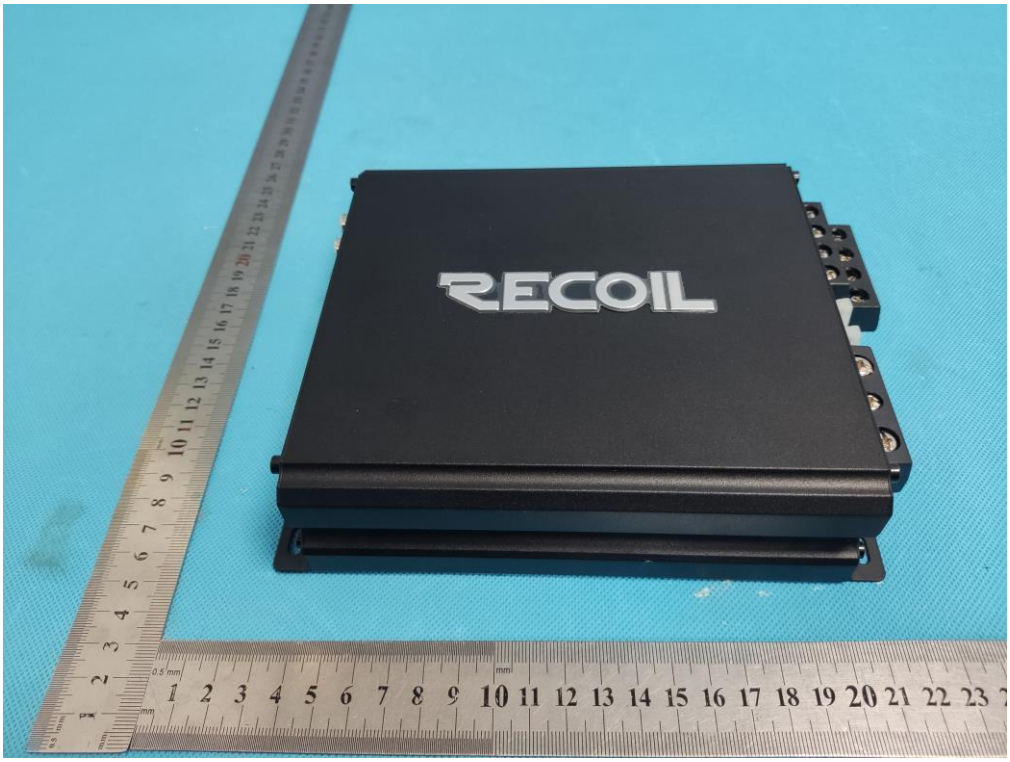
All view of EUT



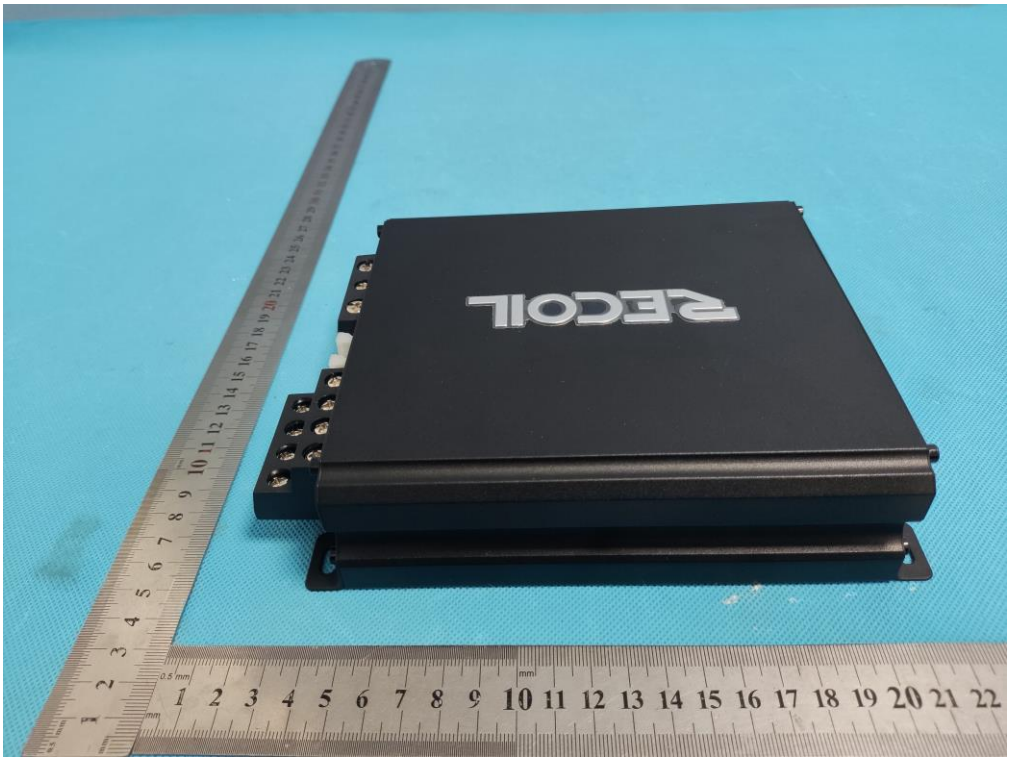
Top view of EUT



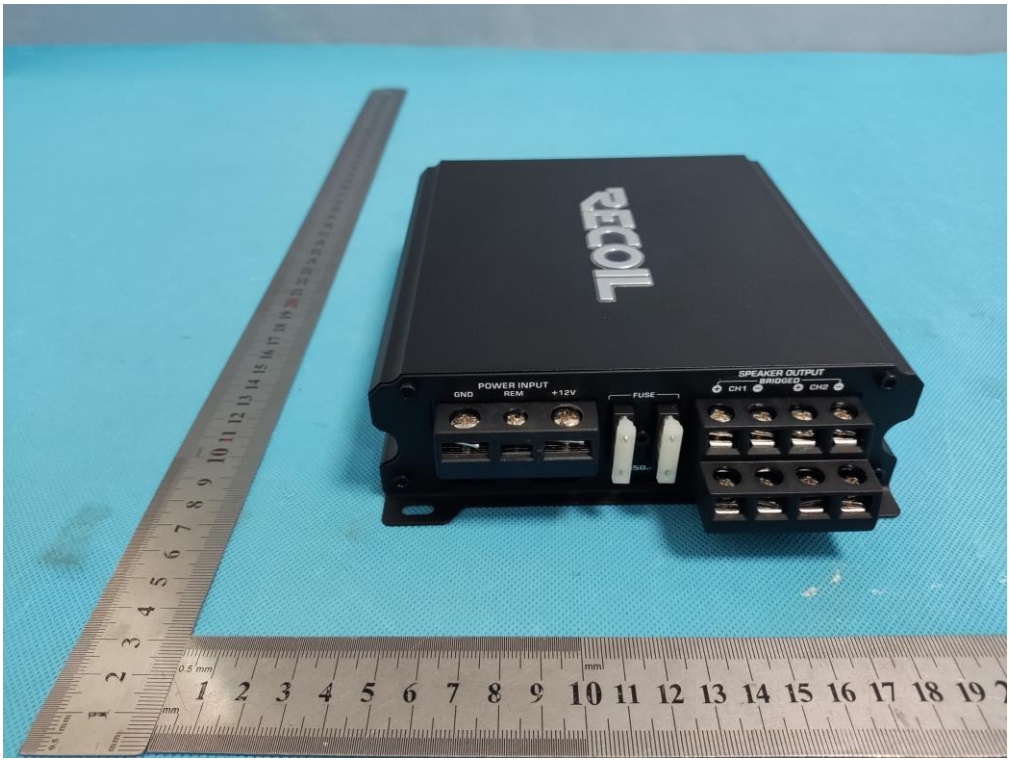
Bottom view of EUT



Front view of EUT

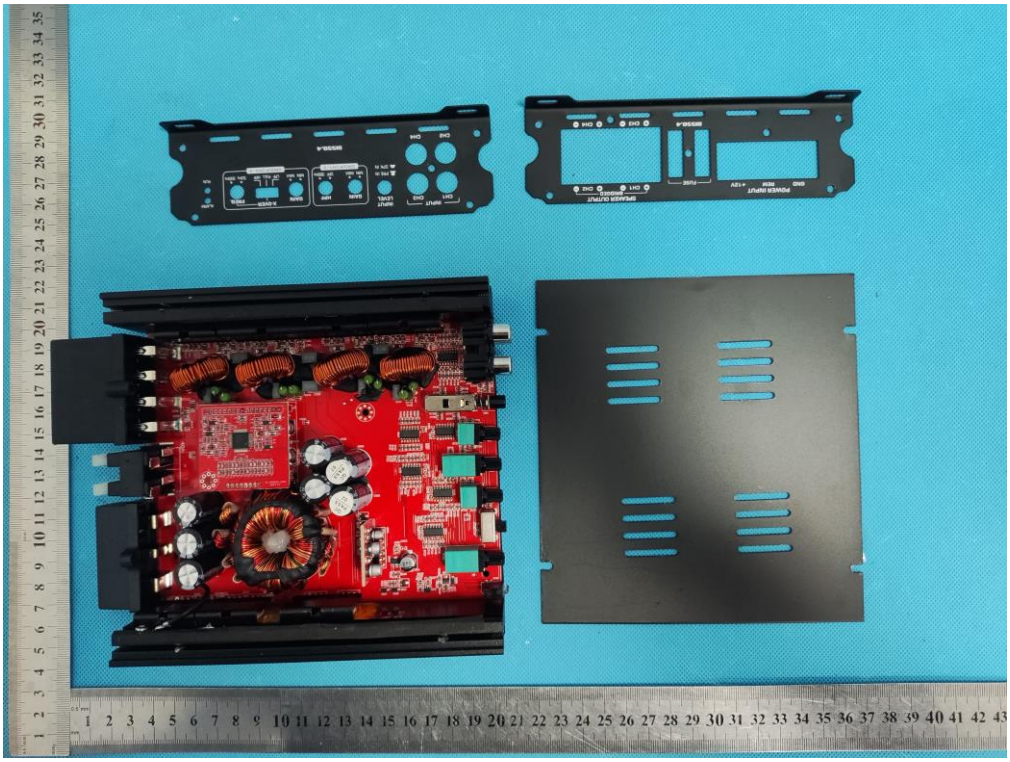


Back view of EUT

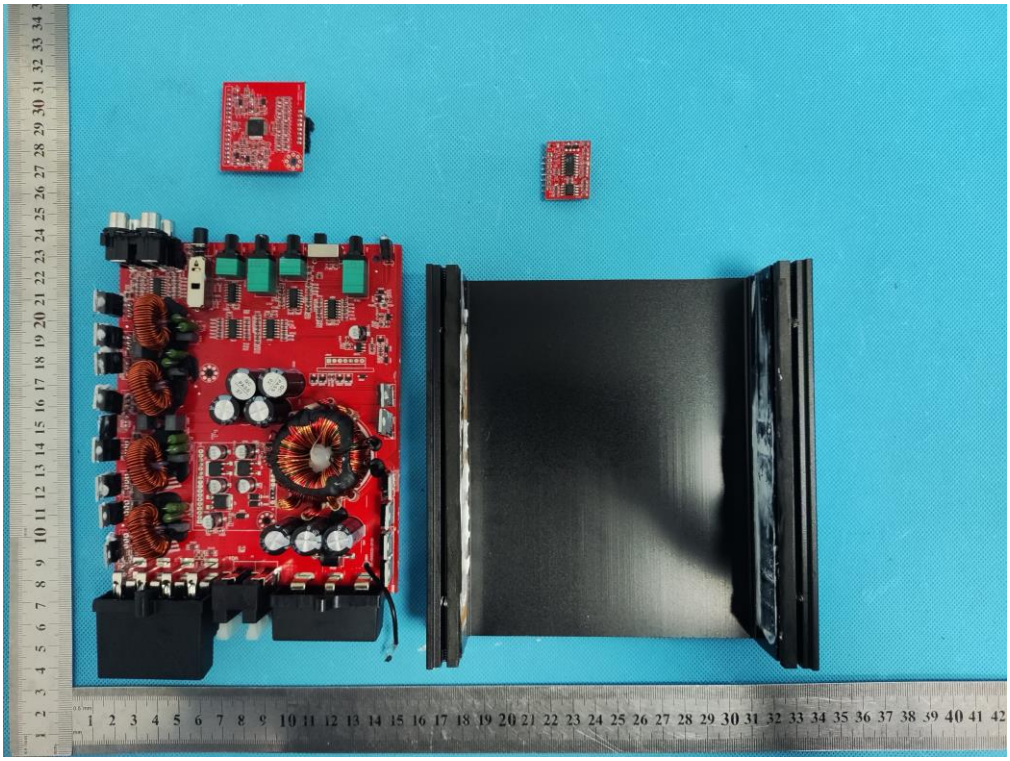


Left view of EUT

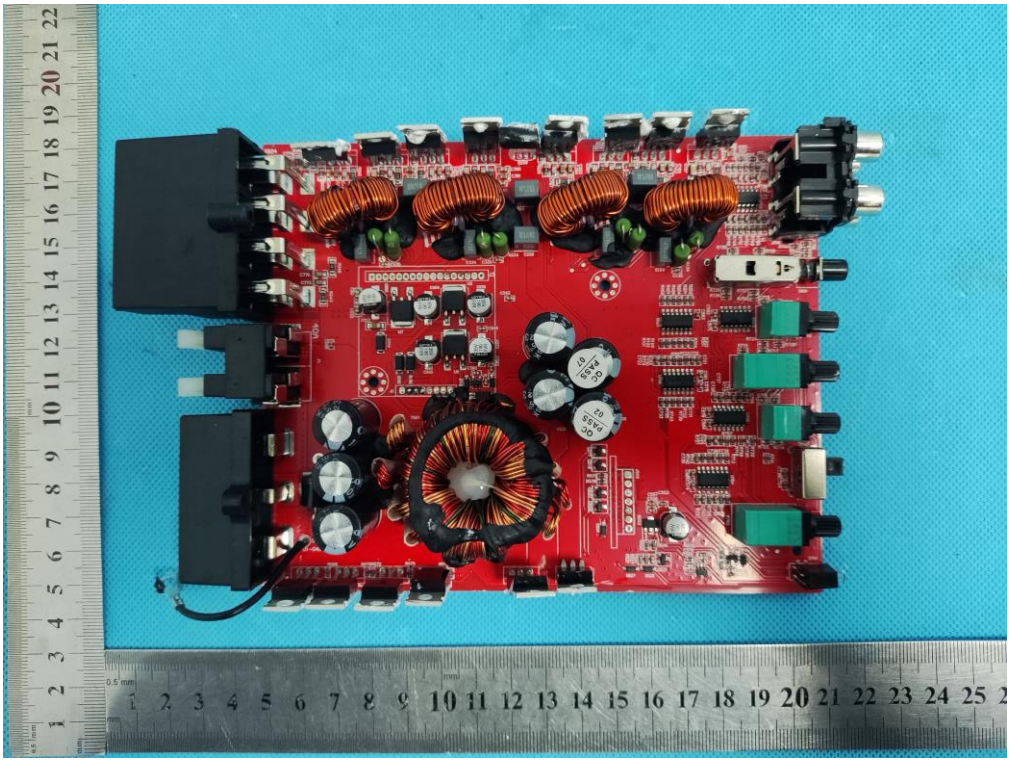
Right view of EUT



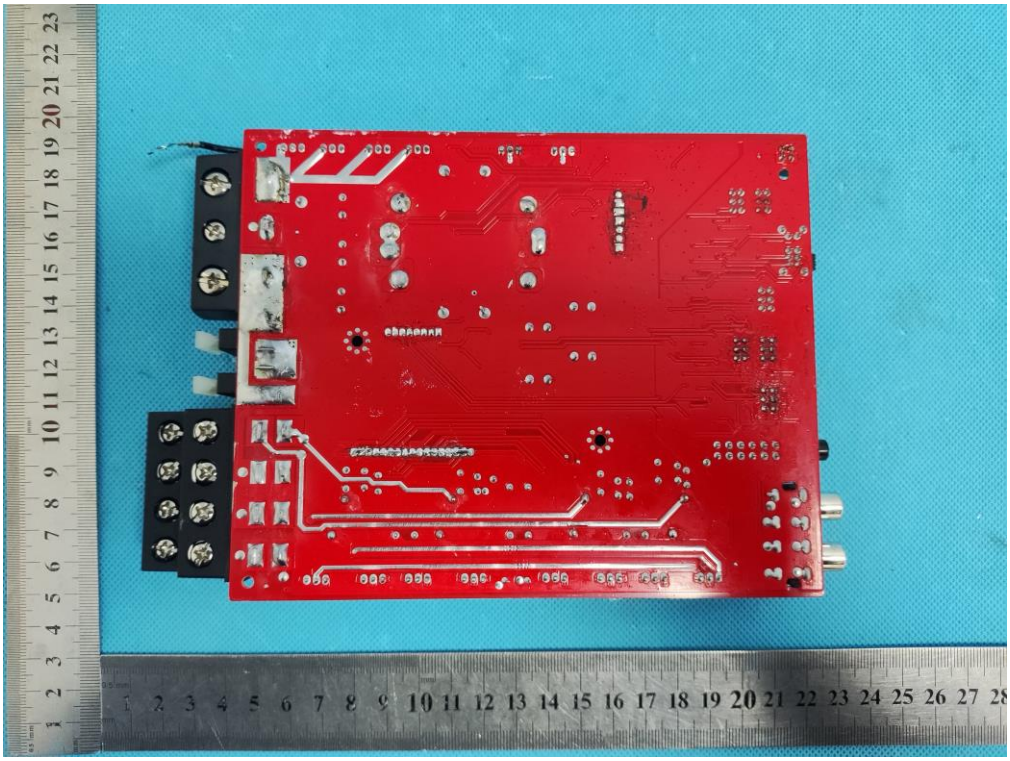
Open view-1 of EUT



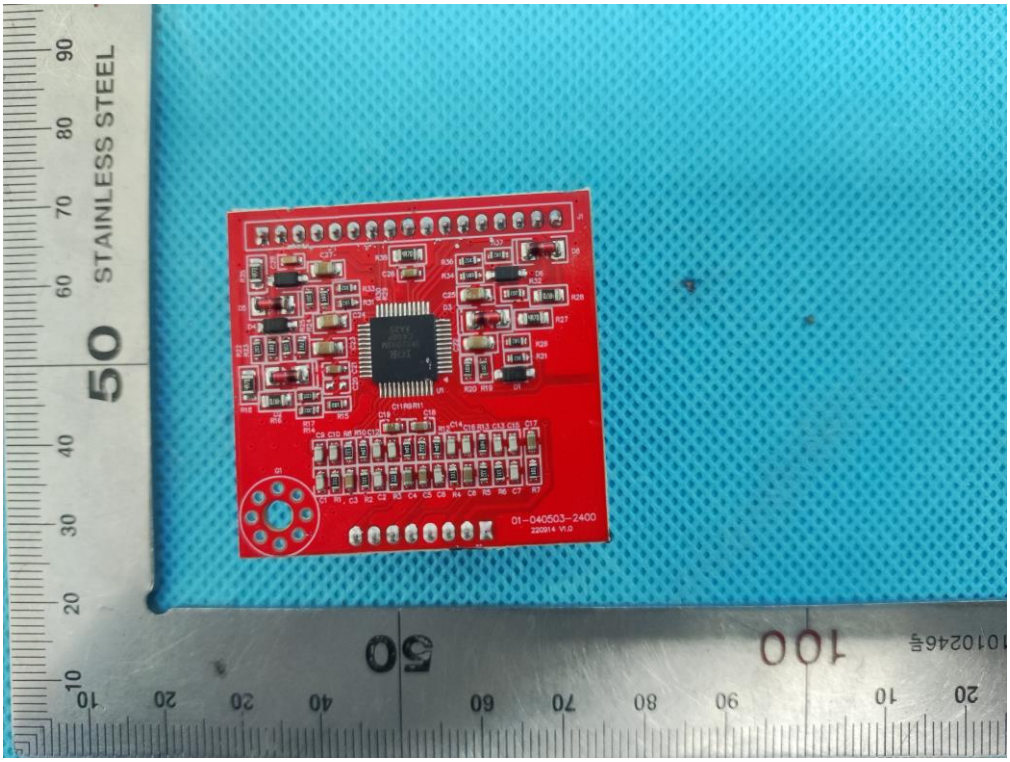
Open view-2 of EUT



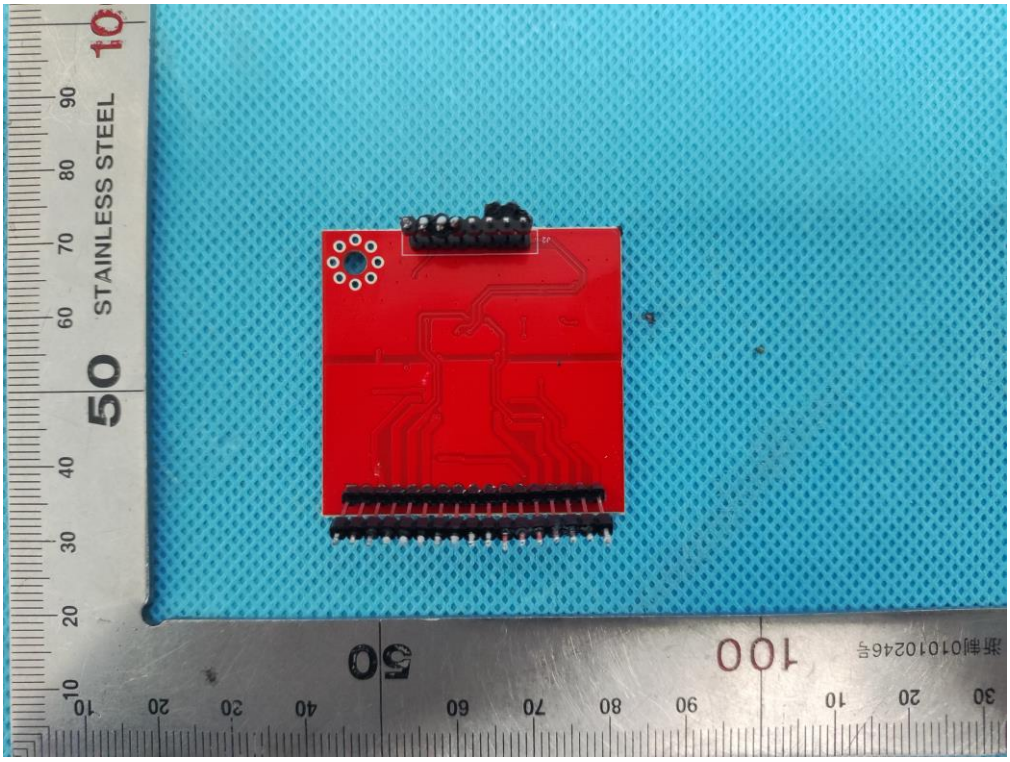
Internal view-1 of EUT



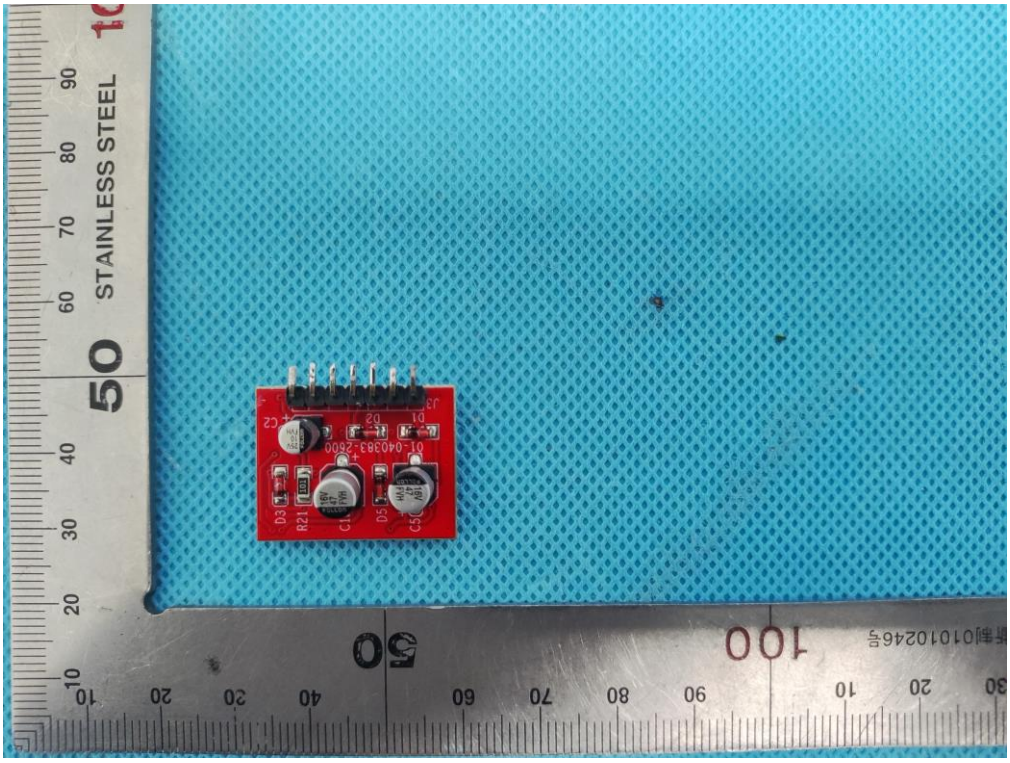
Internal view-2 of EUT



Internal view-3 of EUT



Internal view-4 of EUT



Internal view-5 of EUT

----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.