



EMC Test Report

For

Applicant Name: Shenzhen Youhu Electronic Commerce Co., LTD
Address: 614, Building 120, Nanyuan New Village, Minzhi Street, Longhua District, Shenzhen
EUT Name: Computer speaker
Brand Name: N/A
Model Number: LLR050
Series Model Number: Refer to section 2

Issued By

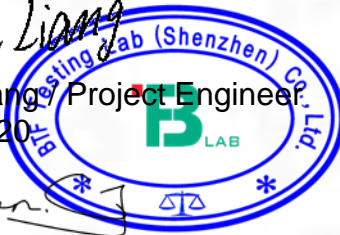
Company Name: BTF Testing Lab (Shenzhen) Co., Ltd.
Address: F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Report Number: BTF231114E00101
Test Standards: EN 55032:2015+A1:2020
EN 55035:2017+A11:2020

Test Conclusion: Pass
Test Date: 2023-11-14 to 2023-11-17
Date of Issue: 2023-11-20

Prepared By: Jason Liang
Date: 2023-11-20
Jason Liang / Project Engineer

Approved By: Ryan.CJ
Date: 2023-11-20
Ryan.CJ / EMC Manager



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Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-11-20	Original
<i>Note: Once the revision has been made, then previous versions reports are invalid.</i>		

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1 Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.3 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 Product Information

2.1 Application Information

Company Name:	Shenzhen Youhu Electronic Commerce Co., LTD
Address:	614, Building 120, Nanyuan New Village, Minzhi Street, Longhua District, Shenzhen

2.2 Manufacturer Information

Company Name:	Gelinstar Technology Co.,Limited
Address:	#414 building #1 Jiasheng Business Building Xin An Third Road Bao An District Shenzhen China

2.3 Factory Information

Company Name:	Gelinstar Technology Co.,Limited
Address:	#414 building #1 Jiasheng Business Building Xin An Third Road Bao An District Shenzhen China

2.4 General Description of Equipment under Test (EUT)

EUT Name:	Computer speaker
Test Model Number:	LLR050
Series Model Number:	GL305

2.5 Technical Information

Power Supply:	DC 5V/1.2A
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3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards:

EN 55032:2015+A1:2020: Electromagnetic compatibility of multimedia equipment - Emission requirements

EN 55035:2017+A11:2020: Electromagnetic compatibility of multimedia equipment - Immunity requirements.

3.2 Uncertainty of Test

Item	Measurement Uncertainty
Radiated Emissions (30M - 1GHz)	±4.12dB

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Radiated emissions (30MHz-1GHz)	EN 55032:2015+A1:2020	Class B	Pass
Electrostatic discharges	EN 55035:2017+A11:2020	Contact Discharge: +/- 4kV Air Discharge: +/- 8kV	Pass
RF electromagnetic field disturbances	EN 55035:2017+A11:2020	3V/m, 80%, 1kHz Amp. Mod.	Pass

4 Test Configuration

4.1 Test Equipment List

Radiated emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

Electrostatic discharges					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
ESD Generator	Prima	PESD6030	PR210823683	2022-11-24	2023-11-23

RF electromagnetic field disturbances					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Field Probe	Narda	EP-601	811ZX01057	2023-07-03	2024-07-02
Antenna	SKET	STLP9129_Plus	/	/	/
Amplifier	SKET	HAP_03G06G-80W	202004044	2023-07-03	2024-07-02
Amplifier	SKET	HAP_01G03G-75W	202104180	2023-07-03	2024-07-02
Amplifier	SKET	HAP_80M01G-250W	/	2023-02-24	2024-02-23
USB Power Sensor	Agilent	U2001A	MZ54330012	2023-02-24	2024-02-23
USB Power sensor	Agilent	U2000A	MY53410013	2023-02-24	2024-02-23
Signal Generator	Agilent	N5181A	MY50141997	2022-12-06	2023-12-05

4.2 Test Auxiliary Equipment

Title	Manufacturer	Model No.	Serial No.
Notebook Computer	ASUS	/	/

4.3 Test Modes

No.	Test Modes
TM1	Operation

5 Emission Test Results (EMI)

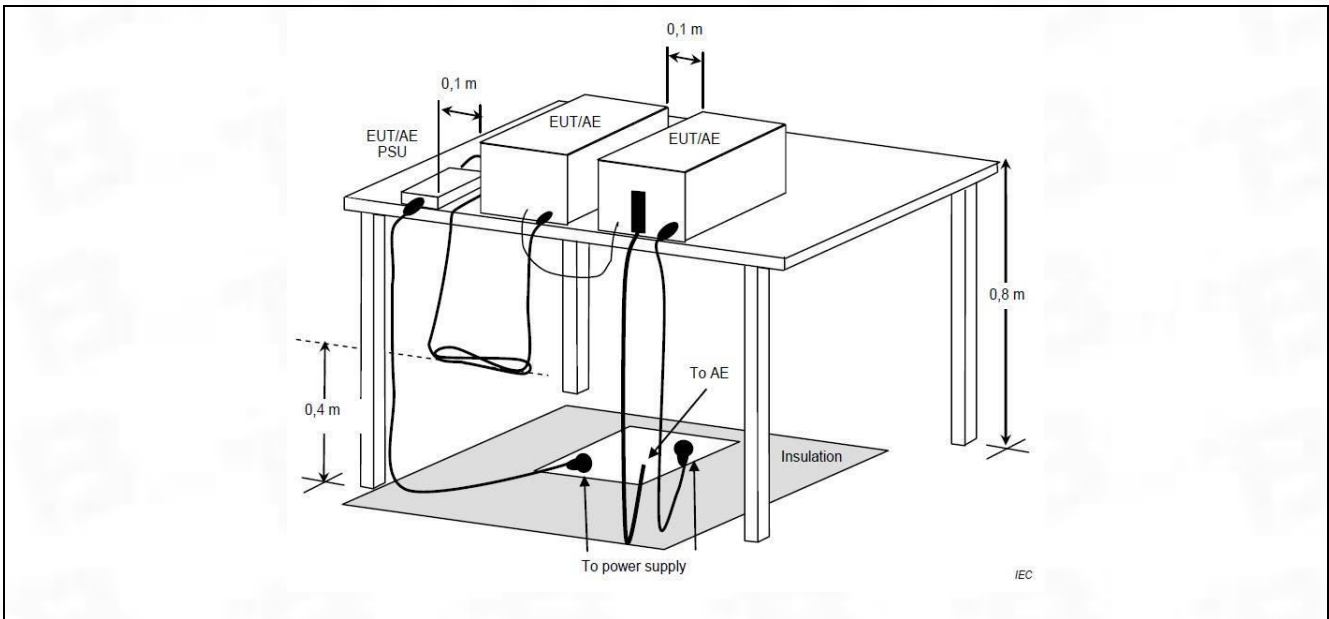
5.1 Radiated emissions (30MHz-1GHz)

Test Requirement:	Class B		
Test Method:	Clause 7.3 of CISPR 16-2-3:2016		
Test Limit:	Frequency (MHz)	Limit [dB(uV/m) at 10m]	Limit [dB(uV/m) at 3m]
	30 to 230	30	40
	230 to 1000	37	47
	Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz	
Procedure:	<p>An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.</p> <p>Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor</p>		

5.1.1 E.U.T. Operation:

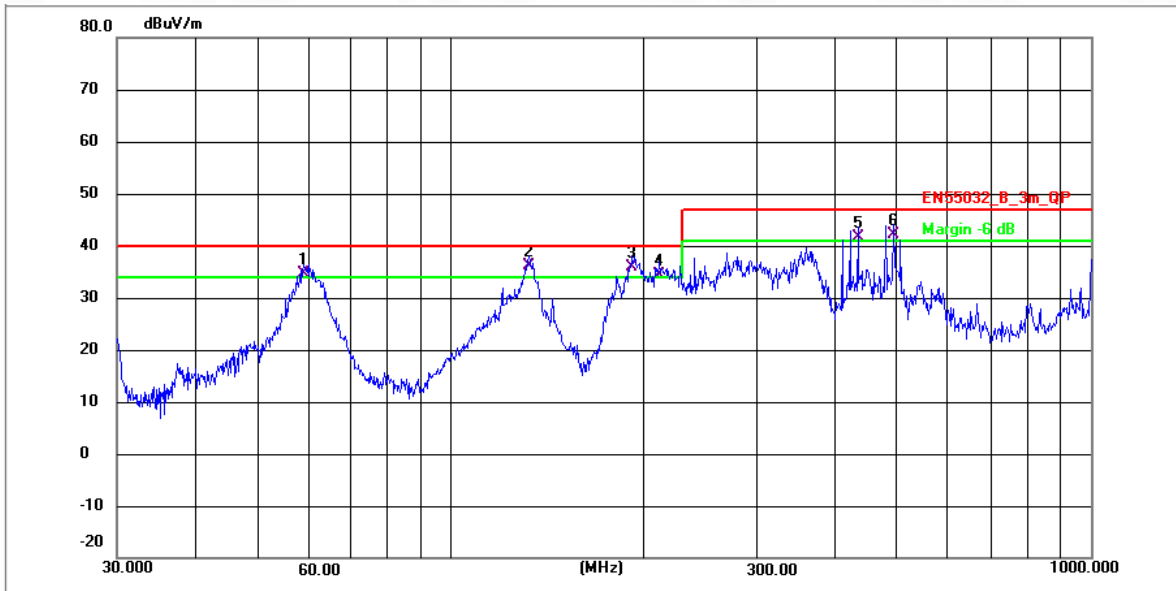
Operating Environment:	
Temperature:	24.1 °C
Humidity:	54.2 %
Atmospheric Pressure:	1010 mbar

5.1.2 Test Setup Diagram:



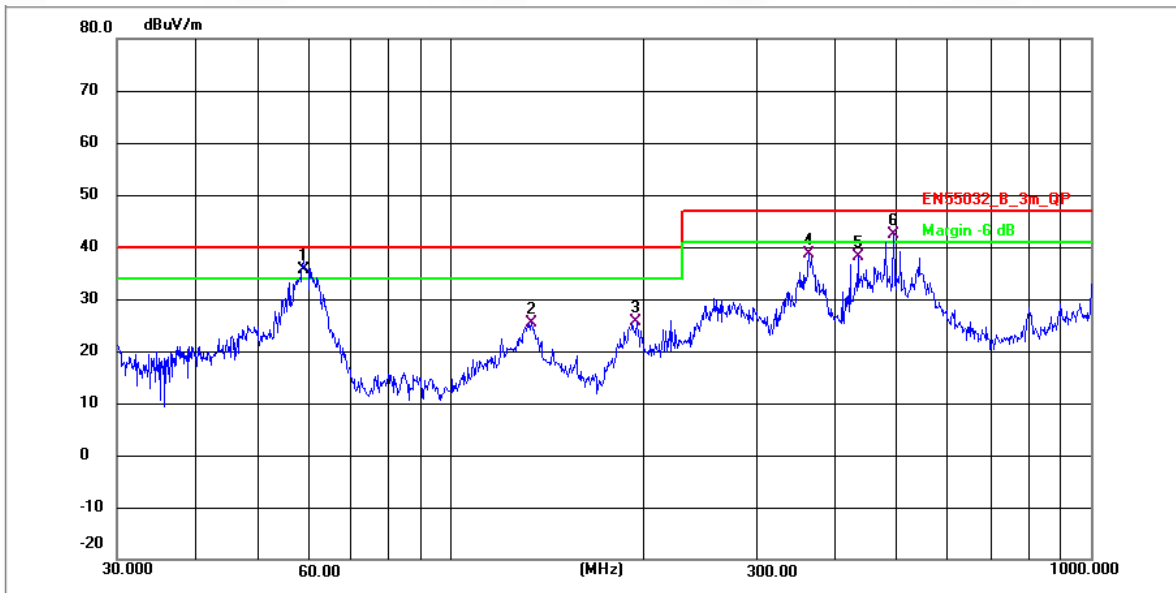
5.1.3 Test Data:

TM1 / Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 !	58.8185	52.80	-18.20	34.60	40.00	-5.40	QP	P
2 *	132.4525	64.03	-27.93	36.10	40.00	-3.90	QP	P
3 !	192.0815	63.21	-27.41	35.80	40.00	-4.20	QP	P
4 !	212.2694	61.19	-26.79	34.40	40.00	-5.60	QP	P
5 !	432.5456	64.71	-23.11	41.60	47.00	-5.40	QP	P
6 !	492.4685	63.51	-21.31	42.20	47.00	-4.80	QP	P

TM1 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	58.8185	55.87	-20.17	35.70	40.00	-4.30	QP	P
2	133.6188	53.26	-27.92	25.34	40.00	-14.66	QP	P
3	195.4789	52.91	-27.37	25.54	40.00	-14.46	QP	P
4	361.7139	63.57	-24.94	38.63	47.00	-8.37	QP	P
5	432.5457	61.23	-23.11	38.12	47.00	-8.88	QP	P
6 !	492.4685	63.70	-21.31	42.39	47.00	-4.61	QP	P

6 Immunity Test Results (EMS)

General Performance Criteria

Performance Criteria A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance Criteria B

During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test.

After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance.

If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance Criteria C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

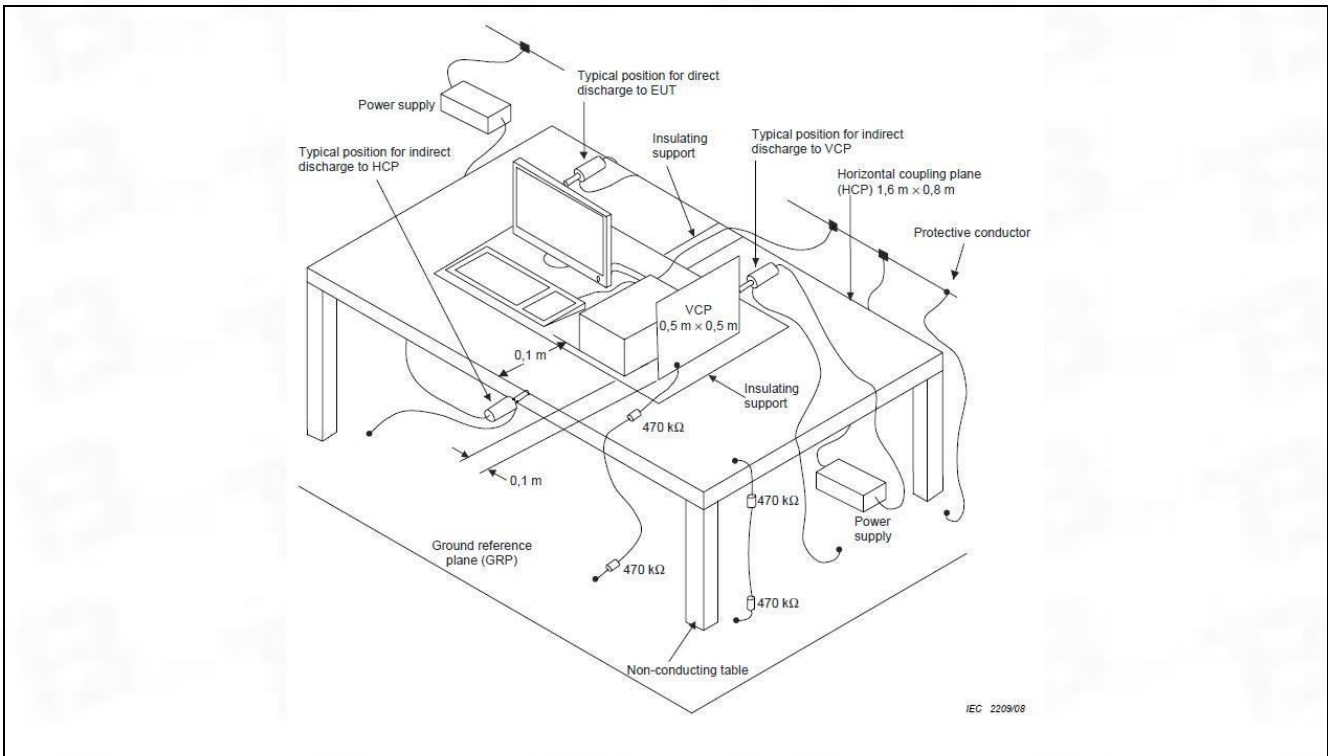
6.1 Electrostatic discharges

Test Requirement:	Contact Discharge: +/- 4kV Air Discharge: +/- 8kV
Test Method:	EN 61000-4-2: 2009
Procedure:	Discharge Impedance: 330Ω/150pF Number of Discharge: Minimum 10 times at each test point Discharge Mode: Single Discharge Discharge Period: 1 second minimum
Performance Criteria:	B

6.1.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.8 °C
Humidity:	52.8 %
Atmospheric Pressure:	1010 mbar

6.1.2 Test Setup Diagram:



6.1.3 Test Data:

Discharge type	Volt (kV)	Polarity	Test Point	Result/ Observations
Air discharge	2,4,8	+	Refer to note1	A
Air discharge	2,4,8	-	Refer to note1	A
Contact discharge	4	+	Refer to note1	A
Contact discharge	4	-	Refer to note1	A
Horizontal Coupling	4	+	Refer to note1	A
Horizontal Coupling	4	-	Refer to note1	A
Vertical Coupling	4	+	Refer to note1	A
Vertical Coupling	4	-	Refer to note1	A

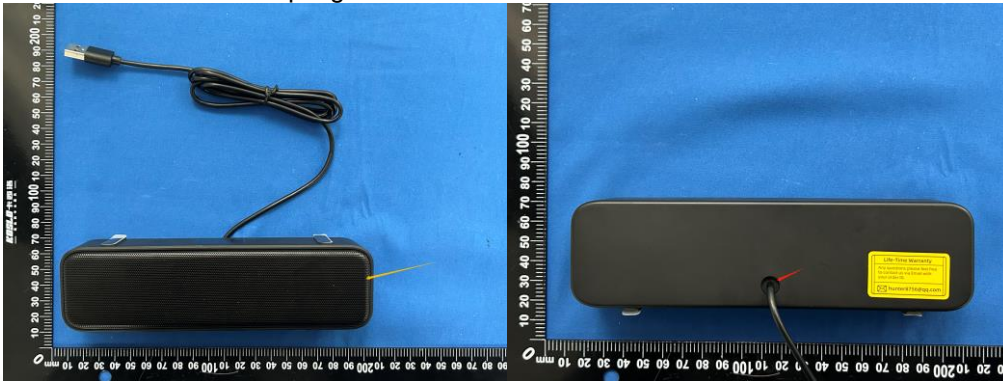
Note1:

Test Points:

Air discharge: Red Arrow

Contact discharge: Yellow Arrow

Horizontal / Vertical Coupling: All sides



A: No degradation in the performance of the EUT was observed.

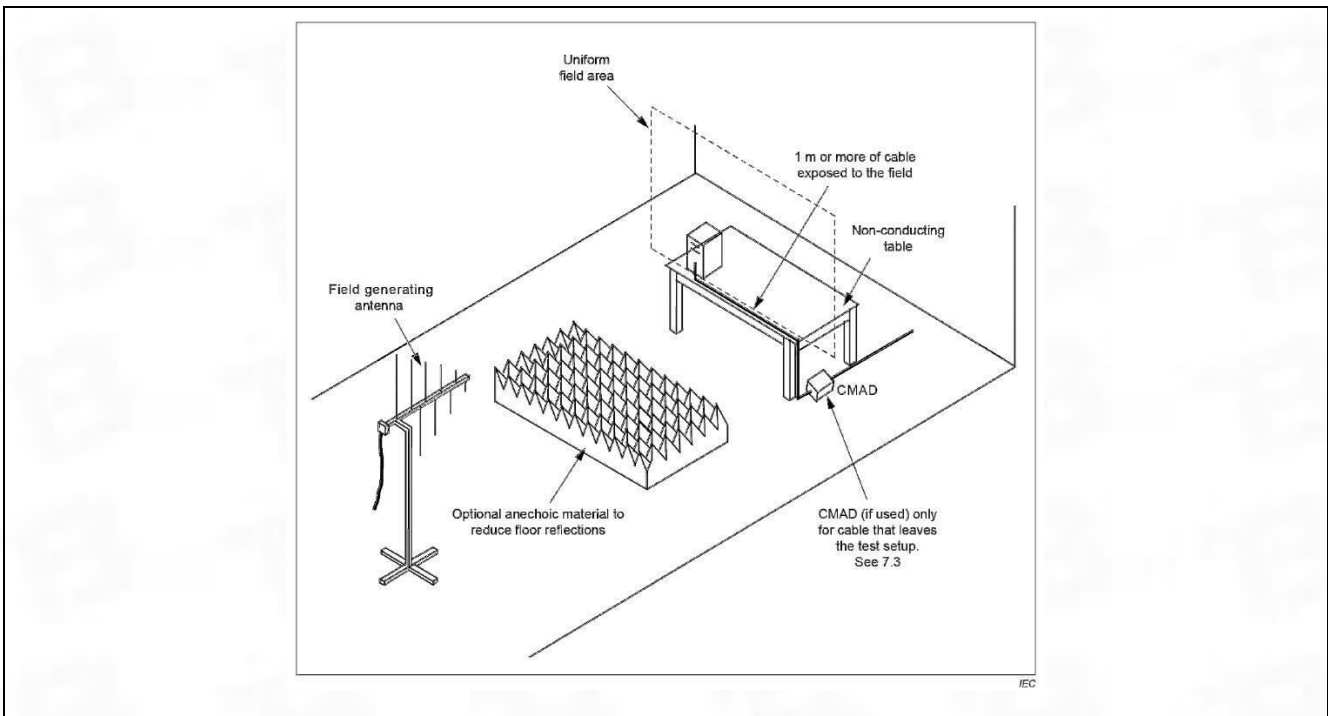
6.2 RF electromagnetic field disturbances

Test Requirement:	3V/m, 80%, 1kHz Amp. Mod.
Test Method:	EN IEC 61000-4-3: 2020
Procedure:	Frequency Range: 80MHz to 1GHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz Antenna Polarisation: Vertical and Horizontal Modulation: 1kHz,80% Amp. Mod,1% increment
Performance Criteria:	A

6.2.1 E.U.T. Operation:

Operating Environment:	
Temperature:	24.3 °C
Humidity:	54.6 %
Atmospheric Pressure:	1010 mbar

6.2.2 Test Setup Diagram:



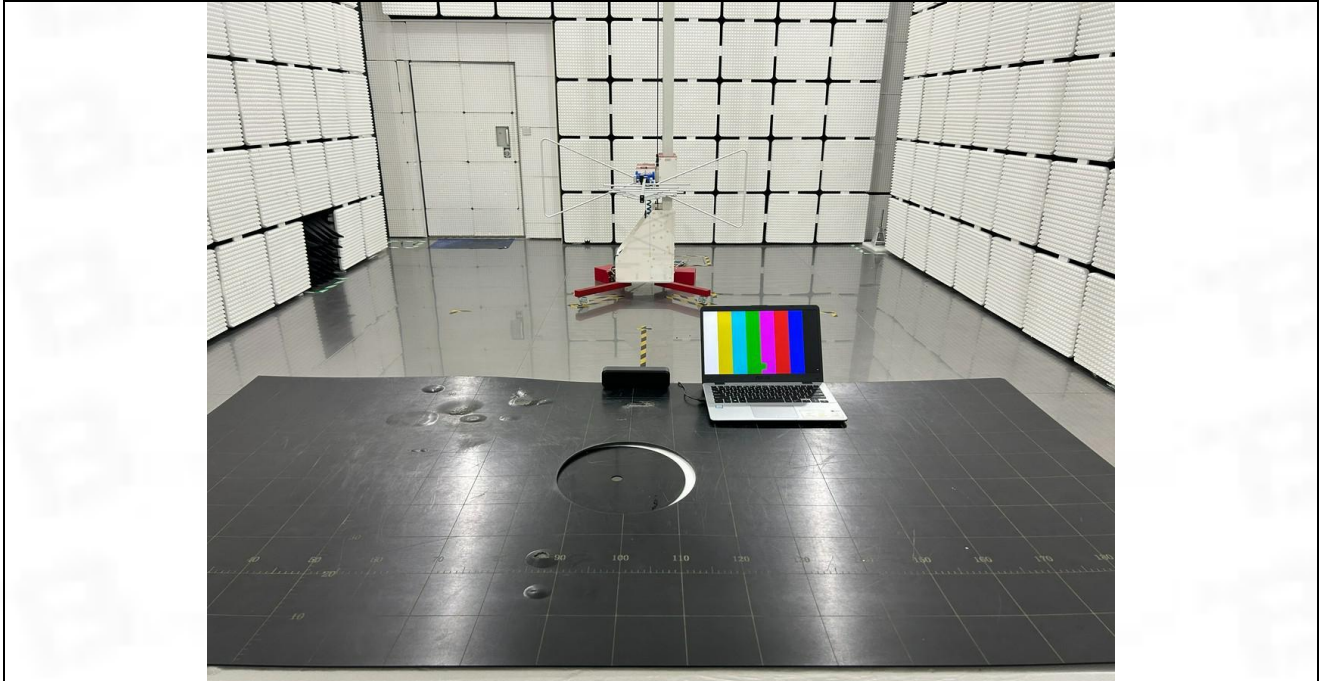
6.2.3 Test Data:

Frequency	Field Strength (V/m)	EUT face	Dwell time	Result/ Observations
80MHz-1GHz	3	Front	3s	A
80MHz-1GHz	3	Back	3s	A
80MHz-1GHz	3	Left	3s	A
80MHz-1GHz	3	Right	3s	A
80MHz-1GHz	3	Top	3s	A
80MHz-1GHz	3	Bottom	3s	A
1800MHz	3	Front	3s	A
1800MHz	3	Back	3s	A
1800MHz	3	Left	3s	A
1800MHz	3	Right	3s	A
1800MHz	3	Top	3s	A
1800MHz	3	Bottom	3s	A
2600MHz	3	Front	3s	A
2600MHz	3	Back	3s	A
2600MHz	3	Left	3s	A
2600MHz	3	Right	3s	A
2600MHz	3	Top	3s	A
2600MHz	3	Bottom	3s	A
3500MHz	3	Front	3s	A
3500MHz	3	Back	3s	A
3500MHz	3	Left	3s	A
3500MHz	3	Right	3s	A
3500MHz	3	Top	3s	A
3500MHz	3	Bottom	3s	A
5000MHz	3	Front	3s	A
5000MHz	3	Back	3s	A
5000MHz	3	Left	3s	A
5000MHz	3	Right	3s	A
5000MHz	3	Top	3s	A
5000MHz	3	Bottom	3s	A

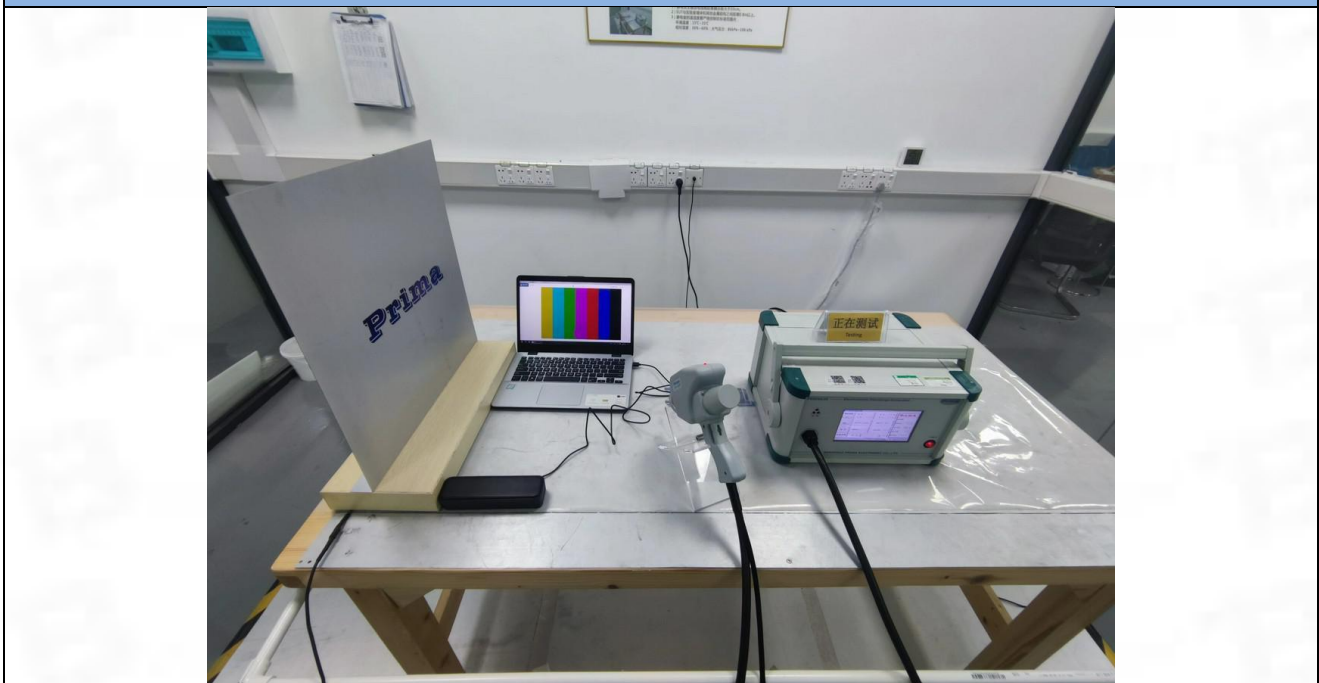
A: No degradation in the performance of the EUT was observed.

7 Test Setup Photos

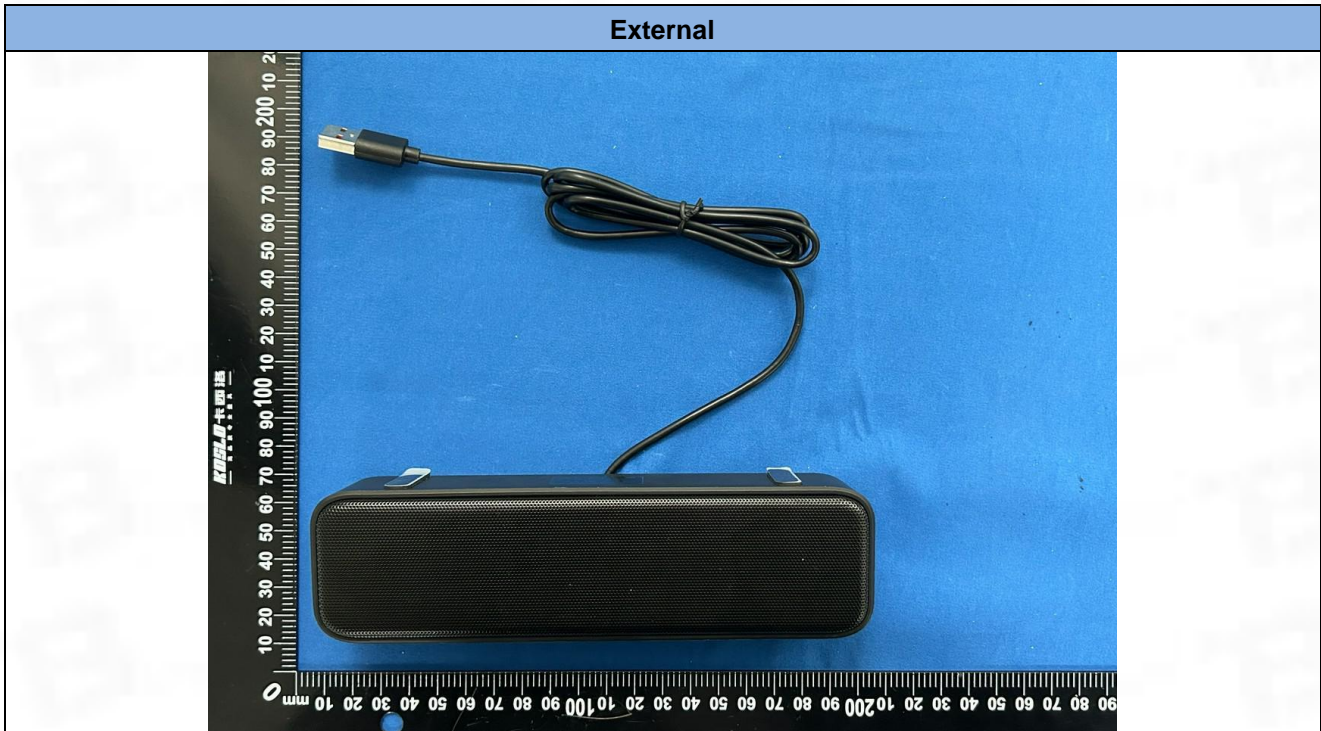
Radiated emissions (30MHz-1GHz)

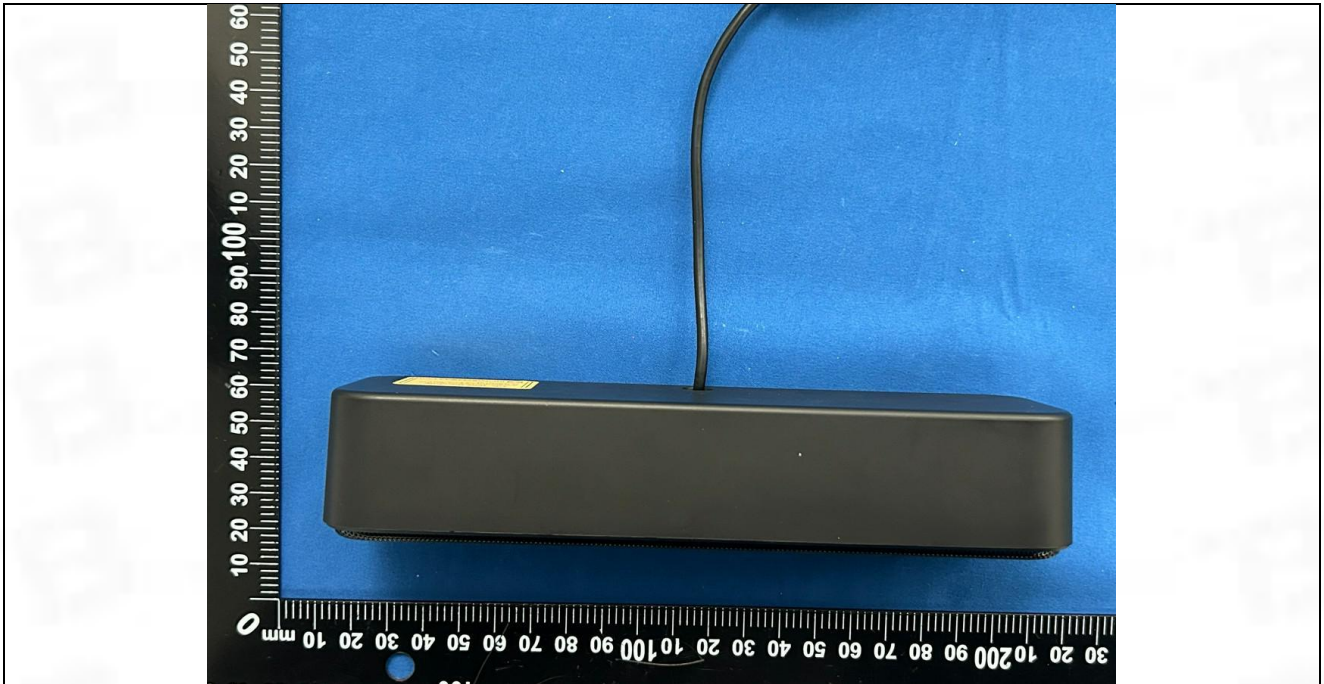


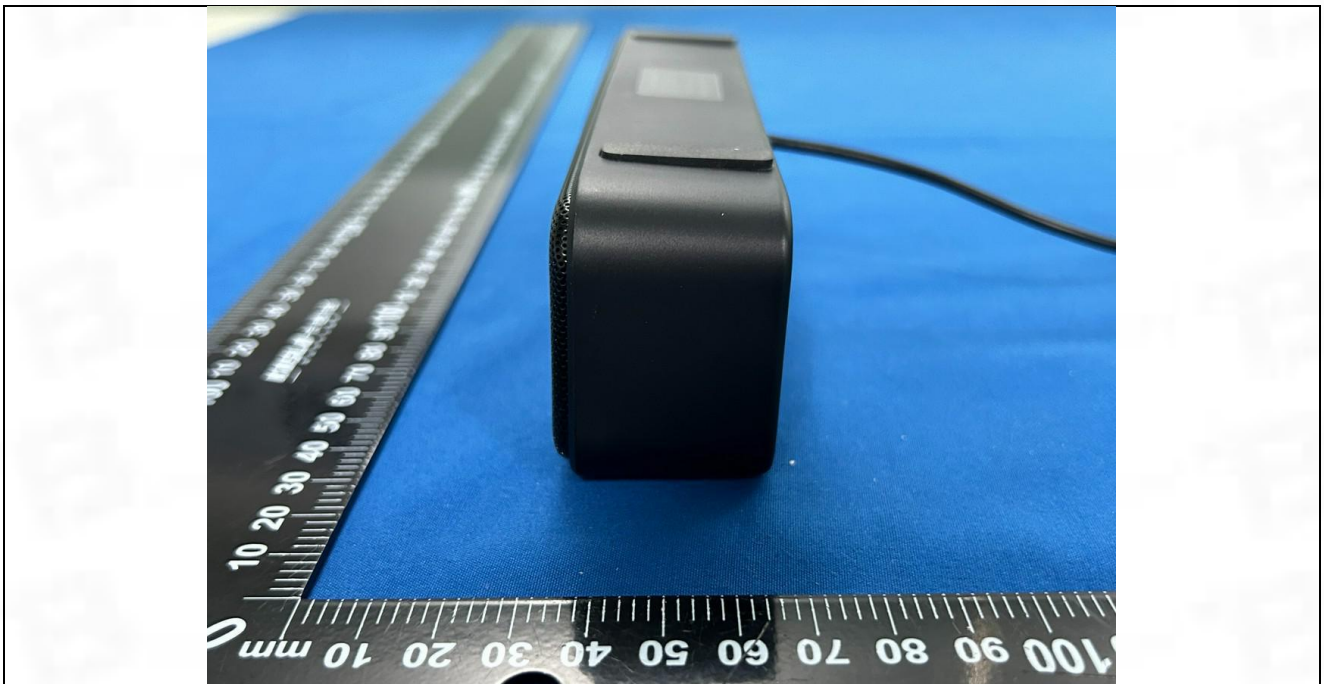
Electrostatic discharges

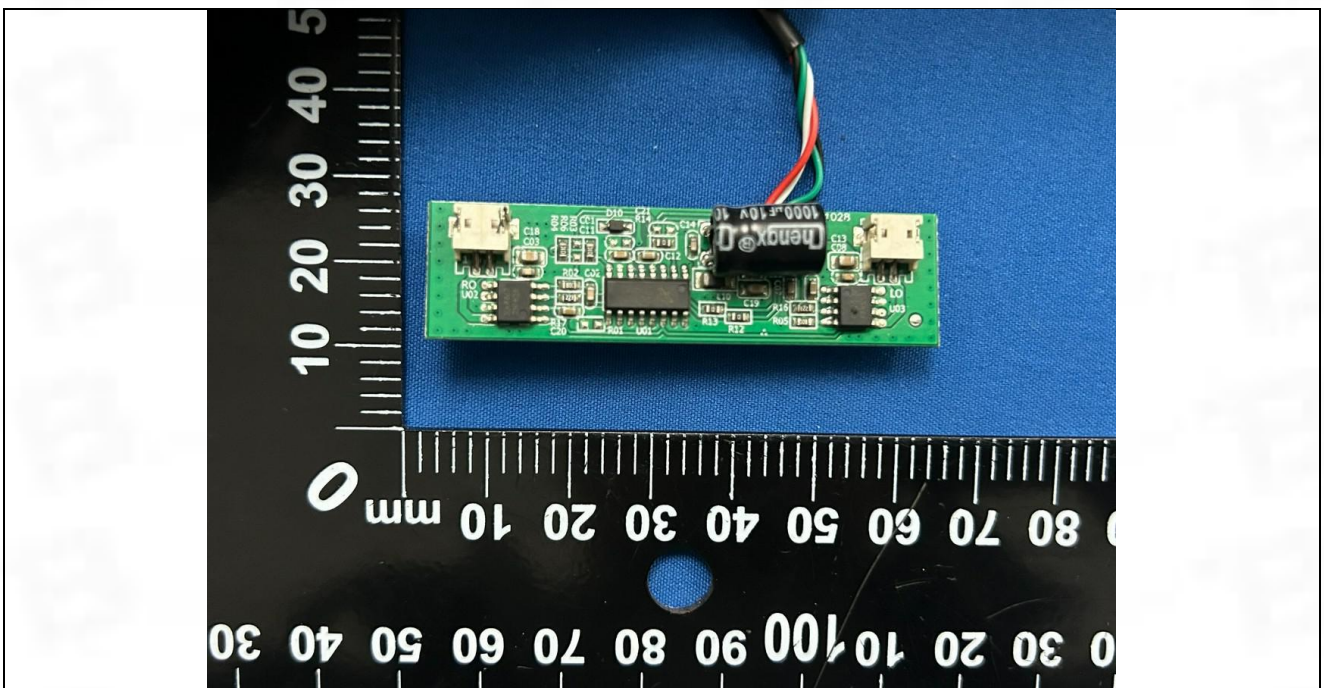
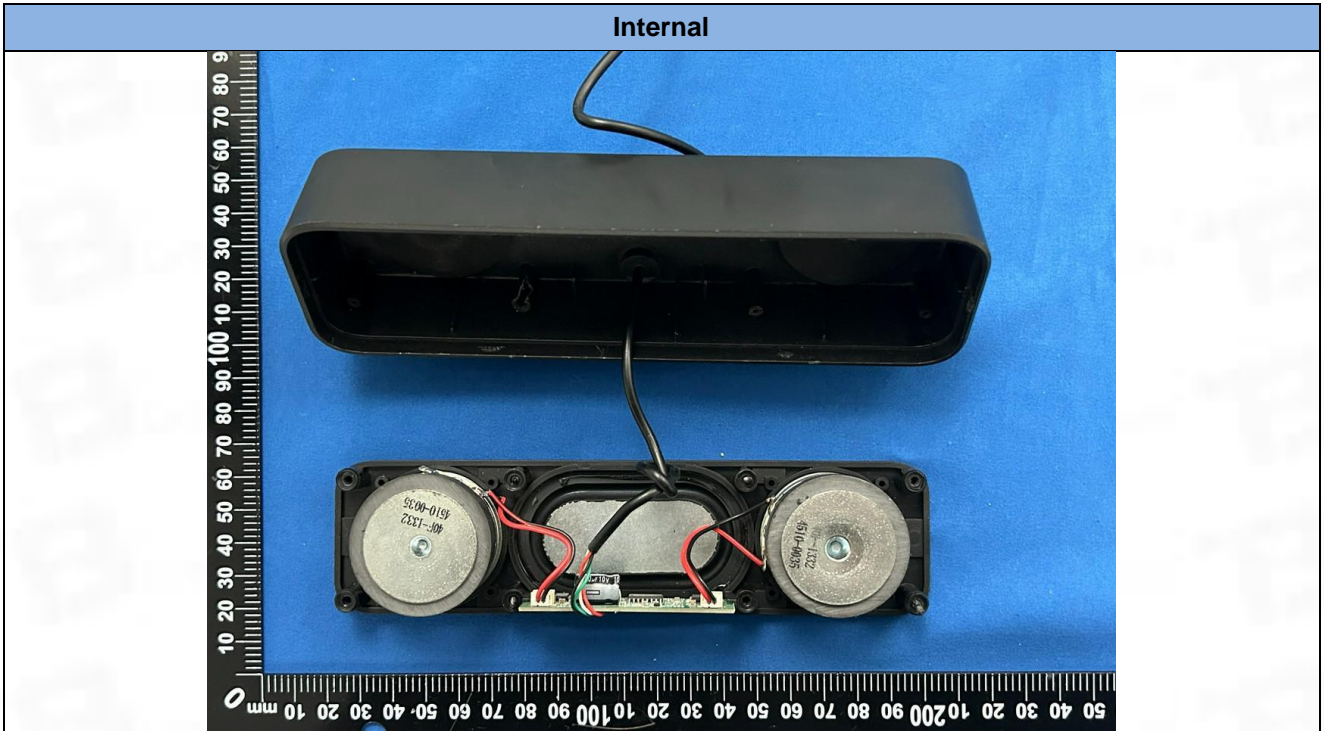


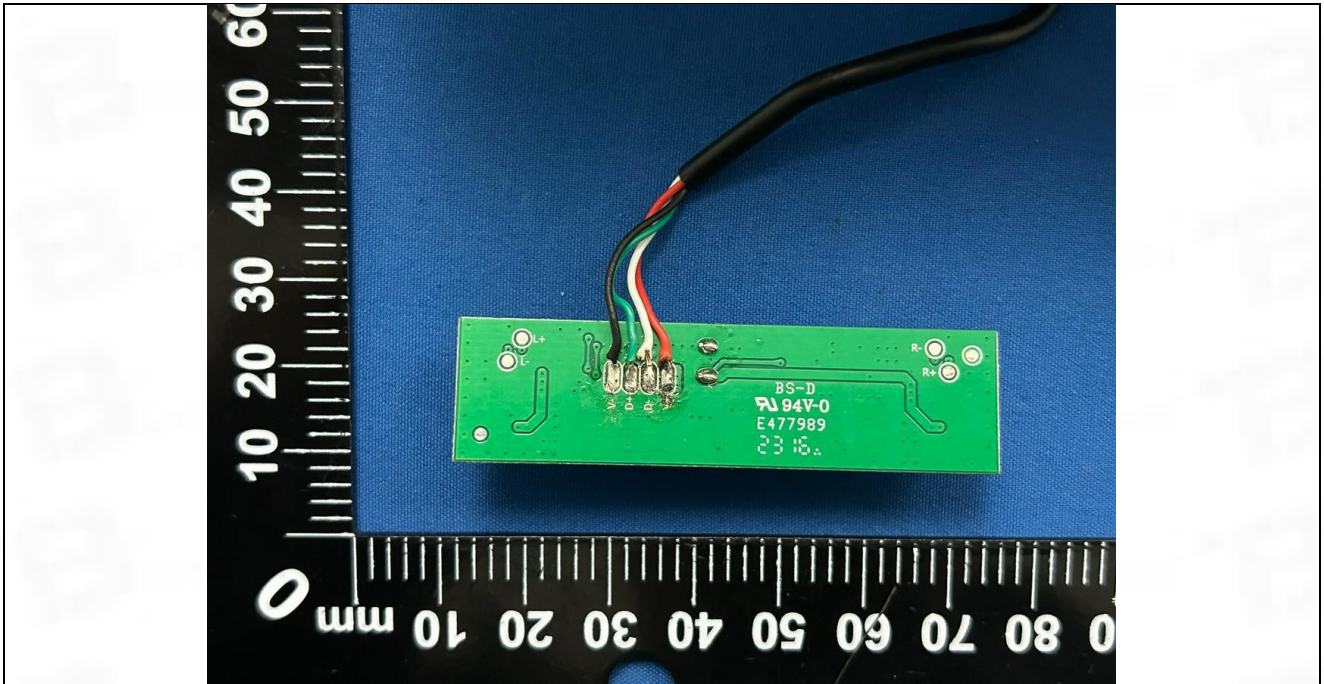
8 EUT Constructional Details (EUT Photos)













Test Report Number: BTF231114E00101



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Bao'an District, Shenzhen, China

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-- END OF REPORT --