

TEST REPORT

Application No.: SZCR2111023784AT
Applicant: SKULLCANDY, INC.
Address of Applicant: 6301 N Landmark Dr Park City UT 84098, Utah United States of America
Manufacturer: SKULLCANDY, INC.
Address of Manufacturer: 6301 N Landmark Dr Park City UT 84098, Utah United States of America
Equipment Under Test (EUT):
EUT Name: Riff Wireless 2
Model No.: S5PRW
Trade Mark:



Skullcandy

Standard(s) : 47 CFR Part 15, Subpart B
Date of Receipt: 2021-11-17
Date of Test: 2021-11-22 to 2021-11-25
Date of Issue: 2021-12-08

Test Result:

Pass*

* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-12-08		Original

Authorized for issue by:				
		Damon Su		
		Damon Su/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.4:2014	Class B	Pass



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.7V by rechargeable lithium battery and recharged via USB port.
Cable(s):	USB Cable, 12cm, Unshielded Aux in cable, 125cm, Unshielded

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Apple	A1443	REF. No.SEA05D11D
Mobile Phone	SAMSUNG	SM-G9500	REF. No.SEA16J00

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at Mains Terminals (150kHz-30MHz)	$\pm 2.9\text{dB}$
Radiated Emissions (30MHz-1GHz)	$\pm 5.5\text{dB}$

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI (Member No. 1937)**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2019-06-13	2022-06-12
EMI Test Receiver	Rohde&Schwarz	ESCI	SEM004-02	2021-03-24	2022-03-23
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2021-07-09	2022-07-08
LISN	Rohde&Schwarz	ENV216	SEM007-01	2021-09-23	2022-09-22
LISN	ETS-LINDGREN	3816/2	SEM007-02	2021-03-24	2022-03-25

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2021-03-27	2024-03-26
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2021-10-21	2022-10-20
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2021-10-28	2023-10-27
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2021-04-08	2022-04-07
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2021-07-09	2022-07-08

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2021-09-14	2022-09-13
Humidity/ Temperature Indicator	Anymetre	TH101B	SEM002-09	2021-09-14	2022-09-13
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2021-03-30	2022-03-29

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart B
Test Method: ANSI C63.4:2014

Limit:

0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

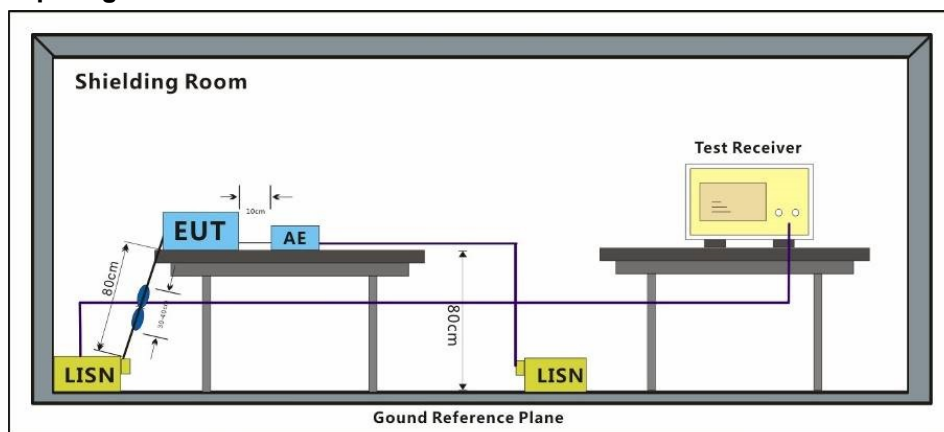
Operating Environment:

Temperature: 24.2 °C Humidity: 48.5 % RH Atmospheric Pressure: 1015 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	Charge mode_Keep the EUT charged by type-c port.
Final test	06	Charge+Aux in_Keep the EUT playing music via Aux in port and charging.

6.1.3 Test Setup Diagram

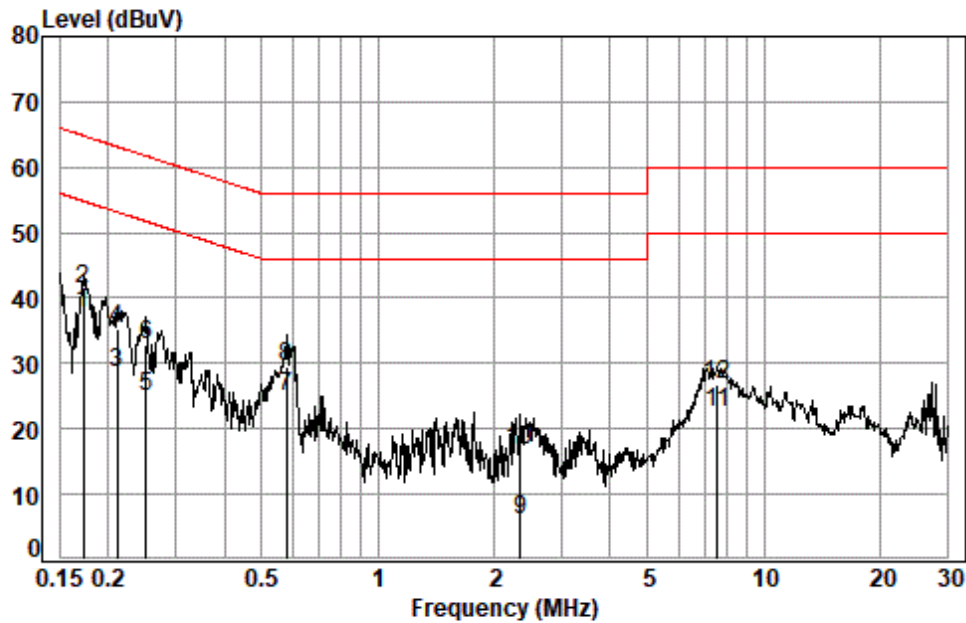


6.1.4 Measurement Procedure and Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Remark: Level= Read Level+ Cable Loss+ LISN Factor

Test Mode: 06; Line: Live line

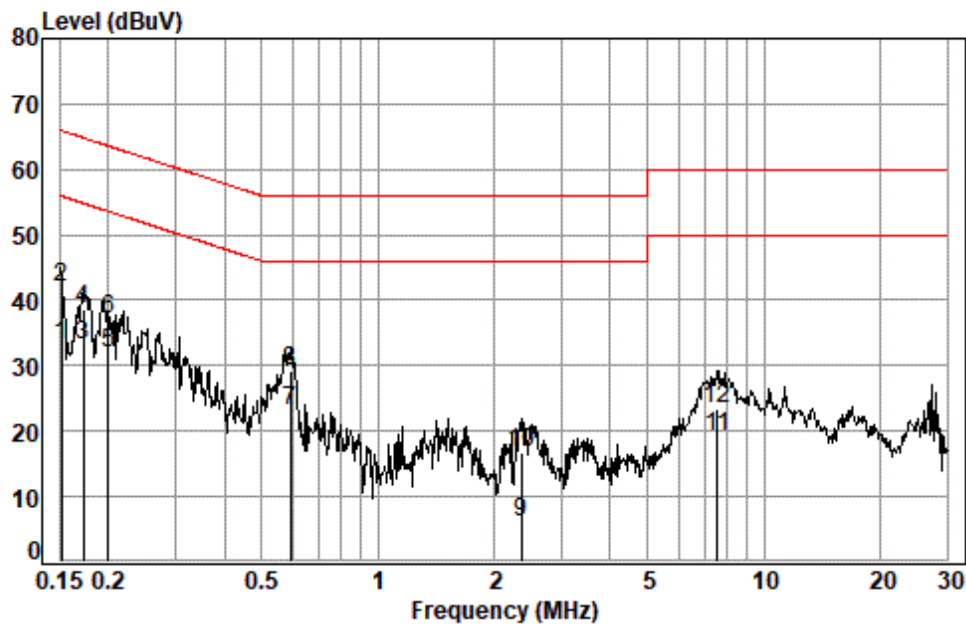


Site : Shielding Room
Condition: Line
Job No. : 23784AT
Test mode: 06

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1731	0.12	9.71	27.89	37.72	54.81	-17.09	Average
2	0.1731	0.12	9.71	31.68	41.51	64.81	-23.30	QP
3	0.2117	0.13	9.73	18.60	28.46	53.14	-24.68	Average
4	0.2117	0.13	9.73	25.43	35.29	63.14	-27.85	QP
5	0.2508	0.14	9.74	15.10	24.98	51.73	-26.75	Average
6	0.2508	0.14	9.74	22.89	32.77	61.73	-28.96	QP
7	0.5792	0.18	9.77	14.90	24.85	46.00	-21.15	Average
8	0.5792	0.18	9.77	19.70	29.65	56.00	-26.35	QP
9	2.3460	0.20	9.82	-3.95	6.07	46.00	-39.93	Average
10	2.3460	0.20	9.82	6.74	16.76	56.00	-39.24	QP
11	7.5658	0.14	10.06	12.19	22.39	50.00	-27.61	Average
12	7.5658	0.14	10.06	16.61	26.81	60.00	-33.19	QP



Test Mode: 06; Line: Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 23784AT
Test mode: 06

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1516	0.12	9.71	23.34	33.17	55.91	-22.74	Average
2	0.1516	0.12	9.71	32.00	41.83	65.91	-24.08	QP
3	0.1722	0.12	9.71	23.34	33.17	54.86	-21.69	Average
4	0.1722	0.12	9.71	28.92	38.75	64.86	-26.11	QP
5	0.2007	0.13	9.72	22.02	31.87	53.58	-21.71	Average
6	0.2007	0.13	9.72	27.36	37.21	63.58	-26.37	QP
7	0.5948	0.18	9.77	13.17	23.12	46.00	-22.88	Average
8	0.5948	0.18	9.77	19.18	29.13	56.00	-26.87	QP
9	2.3585	0.20	9.82	-4.05	5.97	46.00	-40.03	Average
10	2.3585	0.20	9.82	6.66	16.68	56.00	-39.32	QP
11	7.5658	0.14	10.08	8.95	19.17	50.00	-30.83	Average
12	7.5658	0.14	10.08	13.09	23.31	60.00	-36.69	QP



6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Measurement Distance: 10m

Limit:

FREQUENCY (MHz)	dBμV/m (At 10m)	dBμV/m (At 3m)
	Class B	Class B
30MHz -88MHz	29.5	40.0
88MHz-216MHz	33.1	43.5
216MHz-960MHz	35.6	46.0
960MHz-1000MHz	43.5	54.0
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz		

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.6 °C

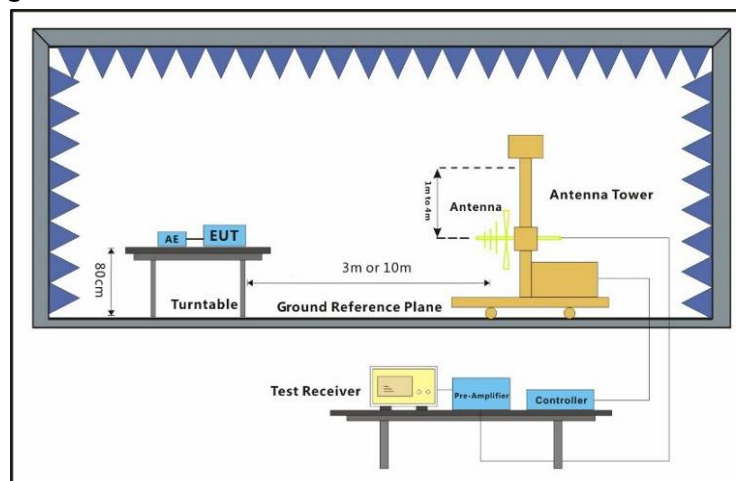
Humidity: 49.5 % RH

Atmospheric Pressure: 1015 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	04	Charge mode_Keep the EUT charged by type-c port.
Pre-scan	05	Aux in mode_Keep the EUT playing music via Aux in port
Final test	06	Charge+Aux in_Keep the EUT playing music via Aux in port and charging.
Pre-scan	07	Idle:Keep the EUT standby.

6.2.3 Test Setup Diagram



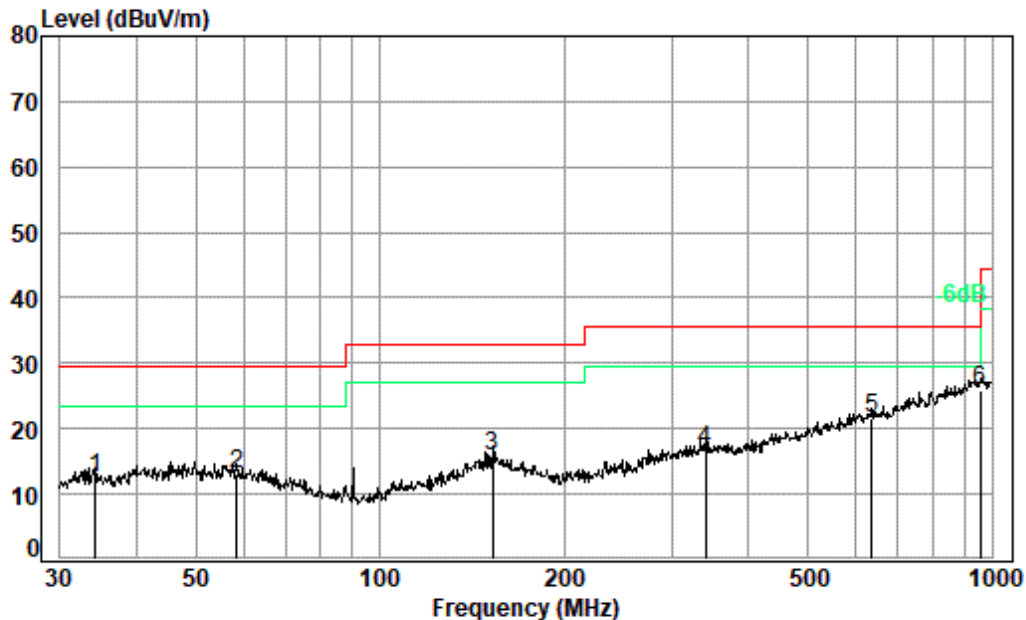
6.2.4 Measurement Procedure and Data

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.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamplifier Factor



Test Mode: 06; Polarity: Horizontal



Condition: 10m HORIZONTAL

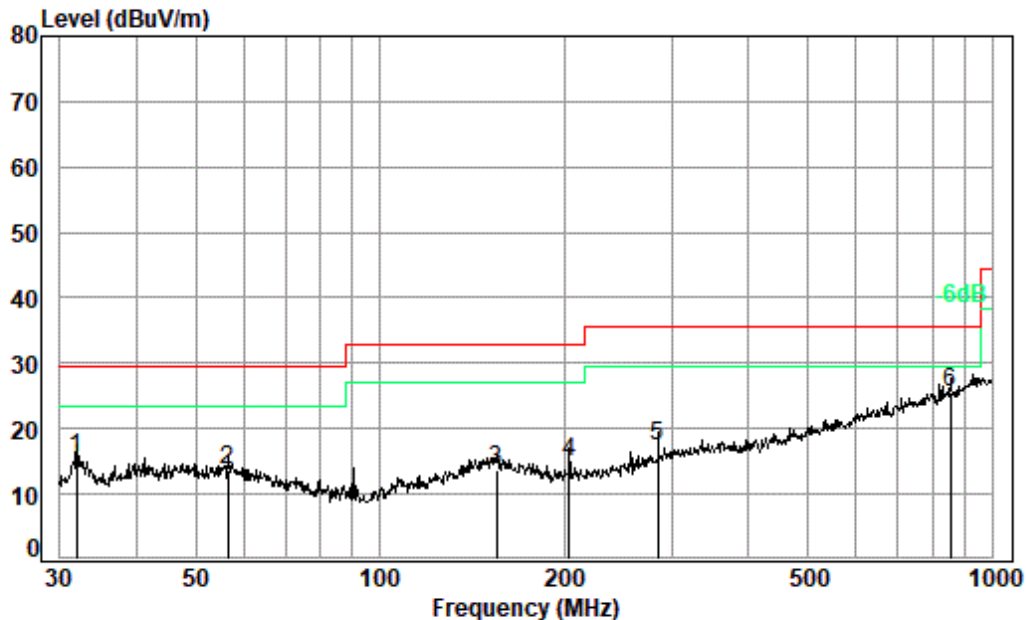
Job No. : 23784AT

Test Mode: 06

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	34.276	27.04	16.34	1.44	32.44	12.38	29.50	-17.12	QP
2	58.407	26.76	17.24	1.39	32.40	12.99	29.50	-16.51	QP
3	152.664	28.65	17.82	1.75	32.40	15.82	33.00	-17.18	QP
4	340.782	27.88	18.52	2.62	32.40	16.62	35.60	-18.98	QP
5	636.134	27.73	24.45	1.80	32.50	21.48	35.60	-14.12	QP
6 pp	955.438	26.48	28.38	2.20	31.19	25.87	35.60	-9.73	QP



Test Mode: 06; Polarity: Vertical



Condition: 10m VERTICAL

Job No. : 23784AT

Test Mode: 06

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	31.955	30.34	16.25	1.44	32.45	15.58	29.50	-13.92	QP
2	56.395	27.36	17.31	1.37	32.40	13.64	29.50	-15.86	QP
3	155.364	26.55	17.81	1.77	32.40	13.73	33.00	-19.27	QP
4	203.523	30.38	14.81	2.09	32.40	14.88	33.00	-18.12	QP
5	284.977	29.90	17.42	2.45	32.40	17.37	35.60	-18.23	QP
6 pp	854.025	28.63	26.87	2.08	31.97	25.61	35.60	-9.99	QP

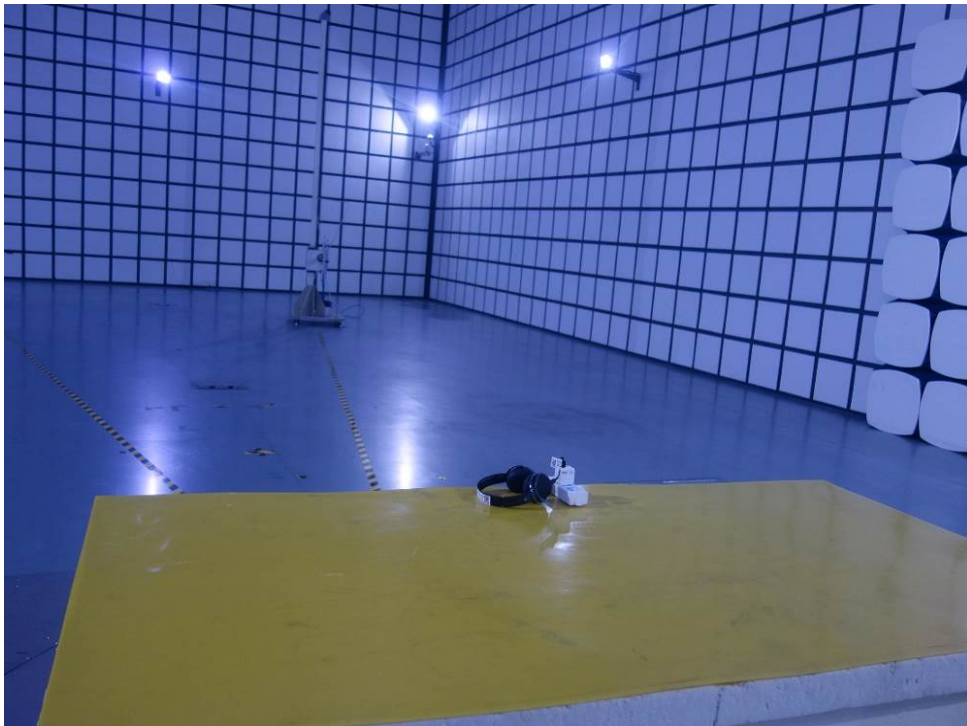


7 Test Setup Photo

Conducted Emissions at Mains Terminals (150kHz-30MHz)



Radiated Emissions (30MHz-1GHz)





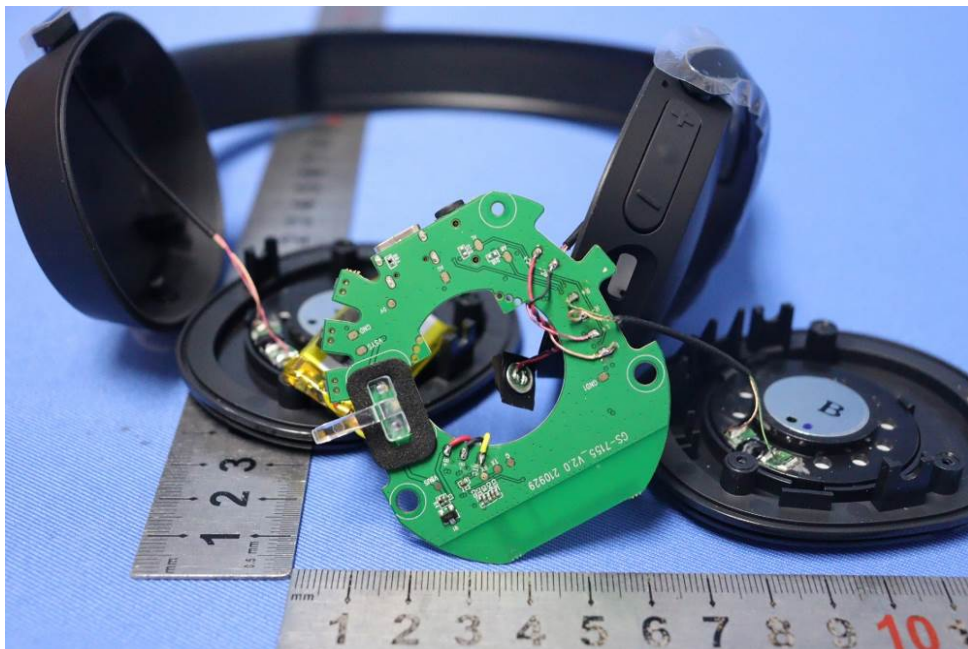
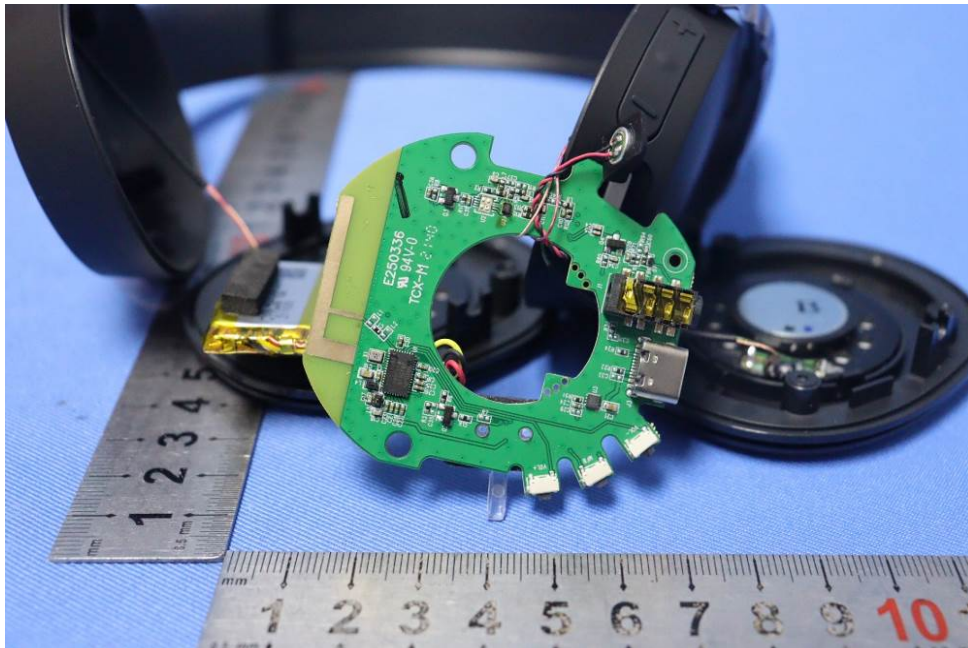
8 EUT Constructional Details (EUT Photos)

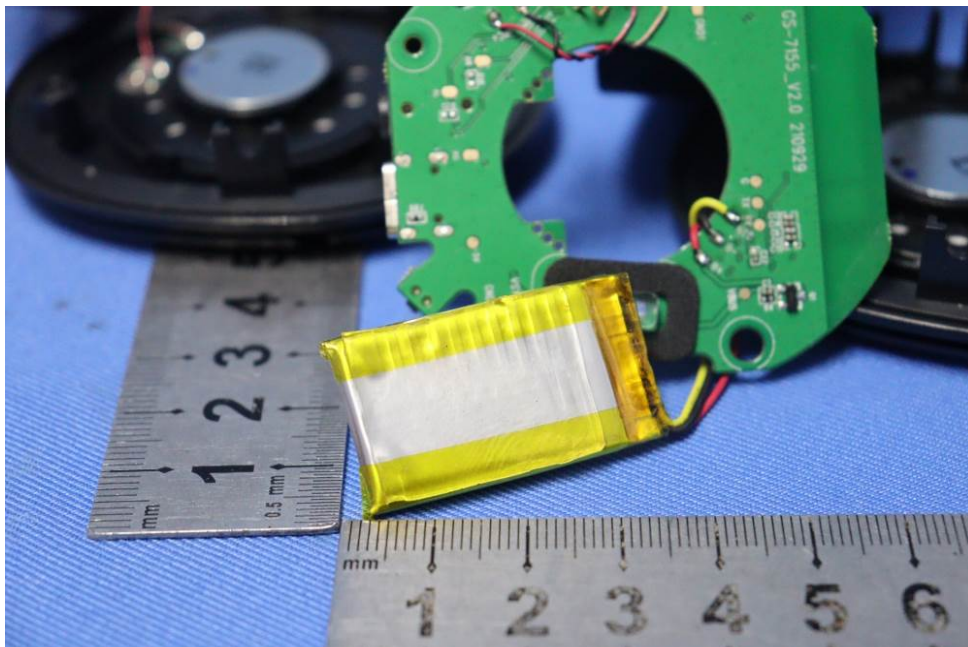
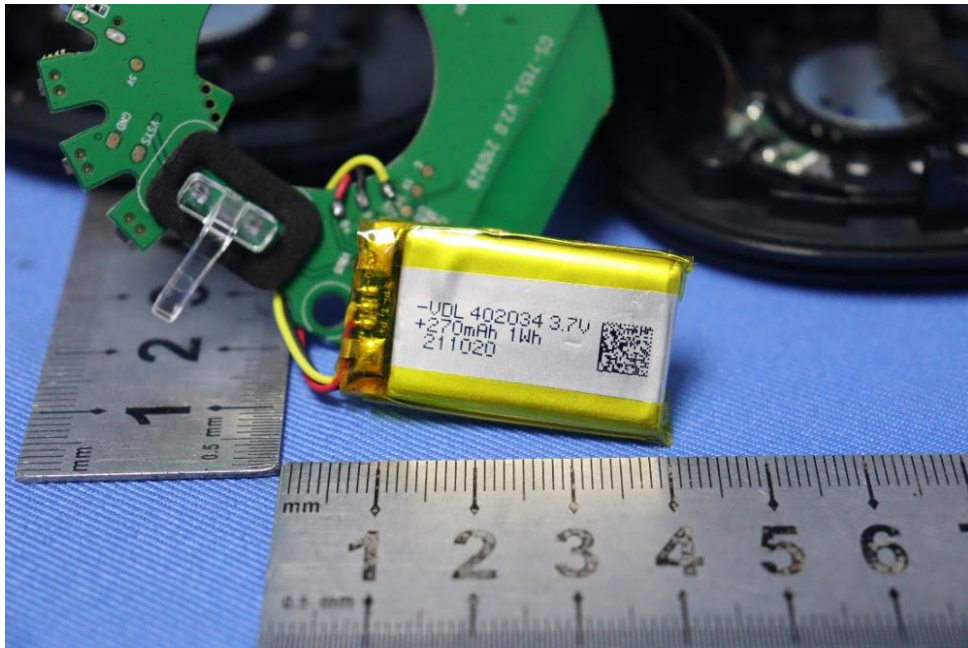












- End of the Report -

