

TEST REPORT

Product Name : Smart Audio
Brand Mark : KG Mobility
Model No. : H1RU
Report Number : BLA-EMC-202403-A0204
FCC ID : 2BFV2HFEMCDUR201CVY
Date of Sample Receipt : 2024/3/4
Date of Test : 2024/3/4 to 2024/4/29
Date of Issue : 2024/4/29
Test Standard : 47 CFR Part 15, Subpart C 15.247
Test Result : Pass

Prepared for:

Nanjing AutoAI Technology Co., Ltd.

Room 2006, Block A, Excellence Times Square, southeast corner of the intersection of Haitian Road and Baohua Road, Bao'an District, Shenzhen

Prepared by:

BlueAsia of Technical Services(Shenzhen) Co.,Ltd.

Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China

TEL: +86-755-23059481

Compiled by:

Jozu

Approved by:

Blue Zheng

Review by:

Sueels

Date:

2024/4/29



REPORT REVISE RECORD

Version No.	Date	Description
00	2024/4/29	Original

BlueAsia

TABLE OF CONTENTS

1	TEST SUMMARY	5
2	GENERAL INFORMATION	6
3	GENERAL DESCRIPTION OF E.U.T.	6
4	TEST ENVIRONMENT	8
5	TEST MODE	8
6	MEASUREMENT UNCERTAINTY	8
7	DESCRIPTION OF SUPPORT UNIT	9
8	TEST FACILITY	9
9	LABORATORY LOCATION	9
10	TEST INSTRUMENTS LIST	10
11	ANTENNA REQUIREMENT	12
11.1	CONCLUSION	12
12	RADIATED SPURIOUS EMISSIONS	13
12.1	LIMITS	13
12.2	BLOCK DIAGRAM OF TEST SETUP	14
12.3	PROCEDURE	14
12.4	TEST DATA	16
13	RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS	25
13.1	LIMITS	25
13.2	BLOCK DIAGRAM OF TEST SETUP	26
13.3	PROCEDURE	26
13.4	TEST DATA	28
14	CONDUCTED SPURIOUS EMISSIONS	45
14.1	LIMITS	45
14.2	BLOCK DIAGRAM OF TEST SETUP	45
14.3	TEST DATA	46
15	CONDUCTED BAND EDGES MEASUREMENT	47
15.1	LIMITS	47
15.2	BLOCK DIAGRAM OF TEST SETUP	47

15.3	TEST DATA	48
16	MINIMUM 6DB BANDWIDTH	49
16.1	LIMITS	49
16.2	BLOCK DIAGRAM OF TEST SETUP	49
16.3	TEST DATA	49
17	POWER SPECTRUM DENSITY	50
17.1	LIMITS	50
17.2	BLOCK DIAGRAM OF TEST SETUP	50
17.3	TEST DATA	50
18	CONDUCTED PEAK OUTPUT POWER	51
18.1	LIMITS	51
18.2	BLOCK DIAGRAM OF TEST SETUP	51
18.3	TEST DATA	52
19	APPENDIX1	53
APPENDIX A: PHOTOGRAPHS OF TEST SETUP		110
APPENDIX B: PHOTOGRAPHS OF EUT		111

1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Average Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5 & Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(1) & 15.247(b)(3)	Pass
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	N/A

2 GENERAL INFORMATION

Applicant	Nanjing AutoAI Technology Co., Ltd.
Address	Room 2006, Block A, Excellence Times Square, southeast corner of the intersection of Haitian Road and Baohua Road, Bao'an District, Shenzhen
Manufacturer	Nanjing AutoAI Technology Co., Ltd.
Address	Room 2006, Block A, Excellence Times Square, southeast corner of the intersection of Haitian Road and Baohua Road, Bao'an District, Shenzhen
Factory	Guangdong Creator & FlyAudio Electronic Technology Co.,Ltd
Address	building D1, banxianshan third industrial zone, Hengli Town, Dongguan
Product Name	Smart Audio
Test Model No.	H1RU

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40):7
Antenna Type:	Internal Antenna
Antenna Gain:	2dBi (Provided by the applicant)

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	5	2432MHz	9	2452MHz		
2	2417MHz	6	2437MHz	10	2457MHz		
3	2422MHz	7	2442MHz	11	2462MHz		
4	2427MHz	8	2447MHz				
Remark:The EUT operation in above frequency list, and used test software to control the EUT for staying in continuous transmitting and receiving mode. Channel 1, 6and 11 of 802.11B/G/N20 chosen for testing.Channel 3, 6and 9 of 802.11N40 chosen for testing.							

4 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	DC12V

5 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
Transmitting mode	Keep the EUT in continuously transmitting mode with modulation.
Remark: Full battery is used during all test except ac conducted emission, 802.11b/g/n(HT20) and 802.11n(HT40) all have been tested, During the radiated spurious emission test, 802.11b/11g/11nH20/11nH40 modulations all have been tested,only worse case 802.11nH20 is reported.	

6 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30Mz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB

Parameter	Expanded Uncertainty (Confidence of 95%)
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3.0 dB
Unwanted Emissions, conducted	±3.0 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %
Unwanted Radiated Emission (30MHz ~ 1000MHz)	±4.35 dB
Unwanted Radiated Emission (1GHz ~ 18GHz)	±4.44 dB

7 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
N/A	N/A	N/A	N/A	N/A

8 TEST FACILITY

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

- FCC — Designation No.: CN1252

BlueAsia of Technical Services(Shenzhen) Co., Ltd 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 files. Designation CN1252.

- ISED — CAB identifier No.: CN0028

BlueAsia of Technical Services(Shenzhen) Co., Ltd has been registered by Certification and Engineering Bureau of ISED for radio equipment testing with CAB identifier CN0028.

9 LABORATORY LOCATION

All tests were performed at:

BlueAsia of Technical Services(Shenzhen) Co., Ltd.

Building C, No. 107, Shihuan Road, Shiyuan Sub-District, Baoan District, Shenzhen, Guangdong Province, China

Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673

No tests were sub-contracted.

10 TEST INSTRUMENTS LIST

Test Equipment Of Radiated Spurious Emissions					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber 1	SKET	966	N/A	2023/11/16	2026/11/15
Chamber 2	SKET	966	N/A	2021/07/20	2024/07/19
Spectrum	R&S	FSP40	100817	2023/08/30	2024/08/29
Receiver	R&S	ESR7	101199	2023/08/30	2024/08/29
Receiver	R&S	ESPI7	101477	2023/07/07	2024/07/06
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2022/10/12	2025/10/11
Horn Antenna	Schwarzbeck	BBHA9120D	01892 P:00331	2022/09/13	2025/09/12
Horn Antenna	Schwarzbeck	BBHA 9170	1106	2022/04/24	2024/04/23
Amplifier	SKET	LNPA_30M01G-30	SK2021060801	2023/07/07	2024/07/06
Amplifier	SKET	PA-000318G-45	N/A	2023/08/30	2024/08/29
Amplifier	SKET	LNPA_18G40G-50	SK2022071301	2023/07/14	2024/07/13
Filter group	SKET	2.4G/5G Filter group r	N/A	2023/07/07	2024/07/06
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2022/09/14	2025/09/13
1kHz calibration audio source	SKET	MCS-ABT-C35	N/A	2023/09/04	2024/09/03
Free Field Microphone	SKET	MGS MP 663	0414	2023/09/04	2024/09/03
Audio shielding box	SKET	SB-ABT-C35	N/A	2023/07/07	2024/07/06
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A
Signal Generator DTV	ECREDIX	DSG-1000	N/A	N/A	N/A

Test Equipment Of Conducted Emissions at AC Power Line (150kHz-30MHz)

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Shield room	SKET	833	N/A	2023/11/16	2025/11/15
Receiver	R&S	ESPI3	101082	2023/08/30	2024/08/29
LISN	R&S	ENV216	3560.6550.15	2023/08/30	2024/08/29
LISN	AT	AT166-2	AKK1806000003	2023/08/30	2024/08/29
ISN	TESEQ	ISNT8-cat6	53580	2023/08/30	2024/08/29
Single-channel vehicle artificial power network	Schwarzbeck	NNBM 8124	01045	2023/07/07	2024/07/06
Single-channel vehicle artificial power network	Schwarzbeck	NNBM 8124	01075	2023/07/07	2024/07/06
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

Test Equipment Of RF Conducted Test

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2023/08/30	2024/08/29
Spectrum	Agilent	N9020A	MY49100060	2023/08/30	2024/08/29
Spectrum	Agilent	N9020A	MY54420161	2023/08/30	2024/08/29
Signal Generator	Agilent	N5182A	MY47420955	2023/08/30	2024/08/29
Signal Generator	Agilent	N5181A	MY46240904	2023/07/07	2024/07/06
Signal Generator	R&S	CMW500	132429	2023/08/30	2024/08/29
BluetoothTester	Anritsu	MT8852B	06262047872	2023/08/30	2024/08/29
Power probe	DARE	RPR3006W	14I00889SN042	2023/09/01	2024/08/31
Power detection box	CDKMV	MW100-PSB	MW201020JYT	2023/07/07	2024/07/06
DCPowersupply	zhaoxin	KXN-305D	20K305D1221363	2023/08/30	2024/08/29
DCPowersupply	zhaoxin	RXN-1505D	19R1505D050168	2023/08/30	2024/08/29
2.4GHz/5GHz RF Test software	MTS	MTS 8310	Version 2.0.0.0	N/A	N/A
Audio Analyzer	Audio Precision	ATS-1	ATS141094	2023/07/07	2024/07/06

11 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

11.1 CONCLUSION

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The best case gain of the antenna is 2dBi.

12 RADIATED SPURIOUS EMISSIONS

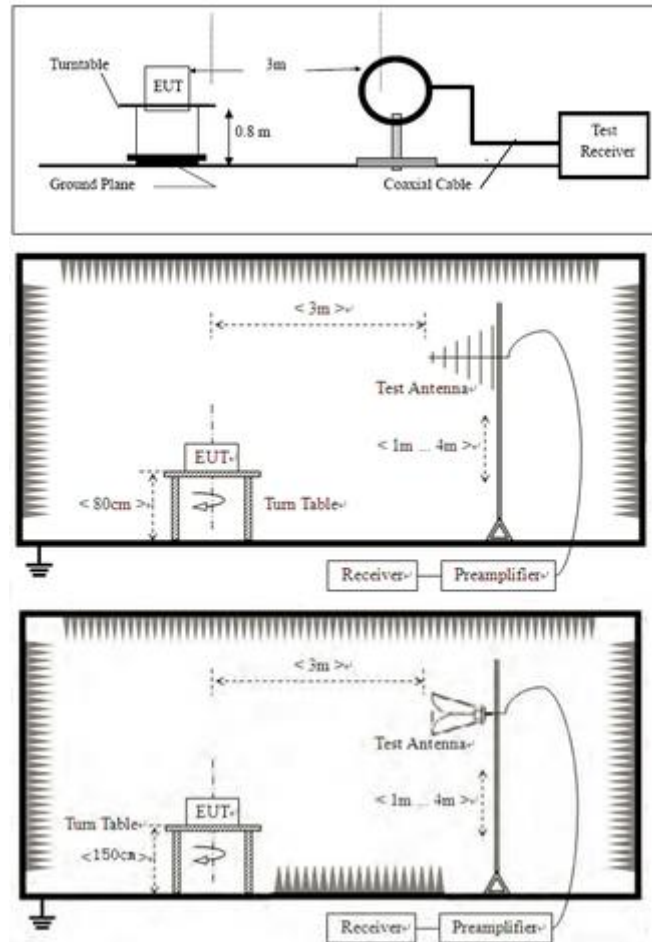
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

12.1 LIMITS

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

12.2 BLOCK DIAGRAM OF TEST SETUP



12.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

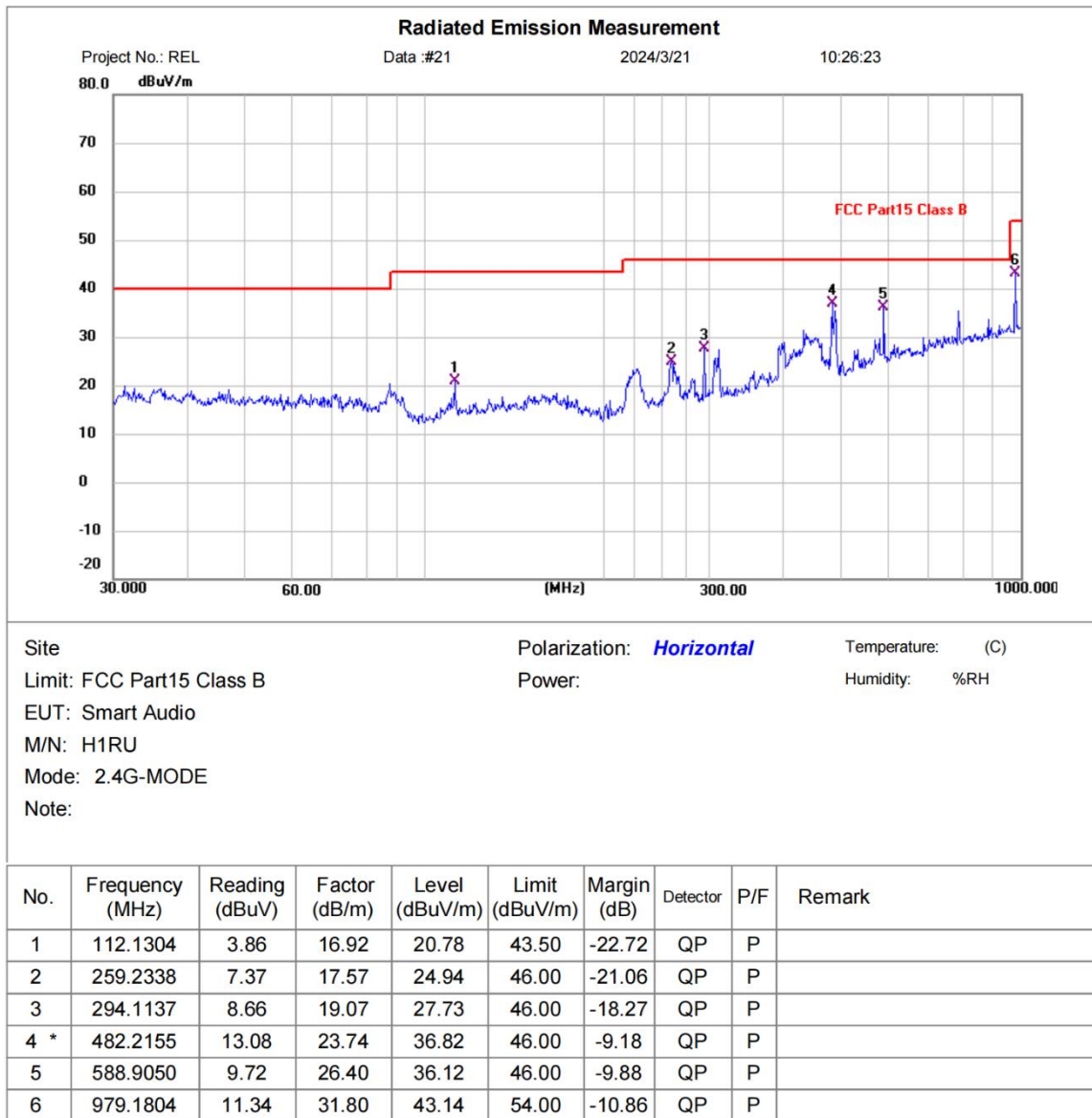
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark:

- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. fundamental frequency is blocked by filter, and only spurious emission is shown.
- 4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

12.4 TEST DATA

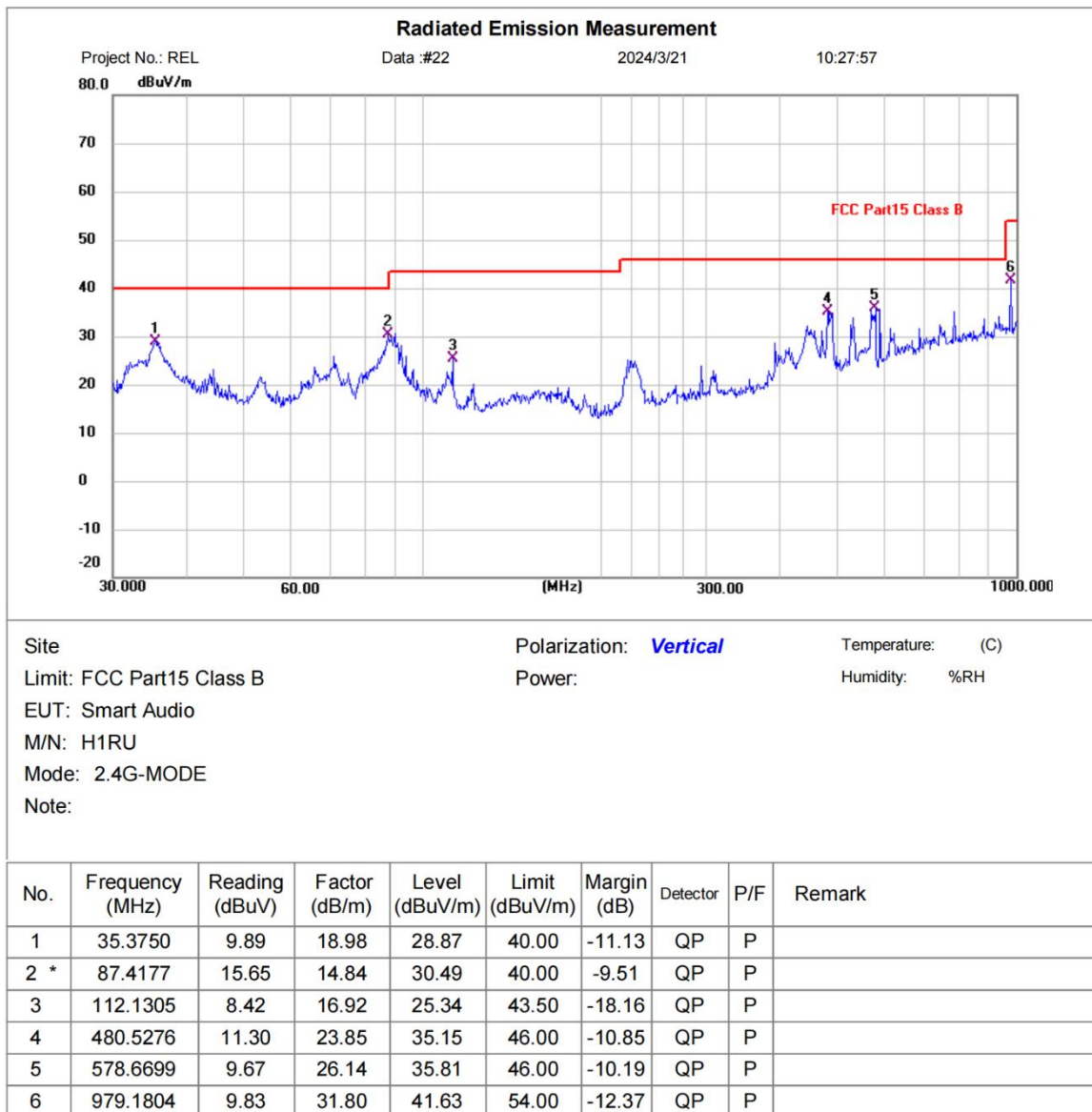
[TestMode: TX below 1G]; [Polarity: Horizontal]



*:Maximum data x:Over limit !:over margin

Test Result: Pass

[TestMode: TX below 1G]; [Polarity: Vertical]

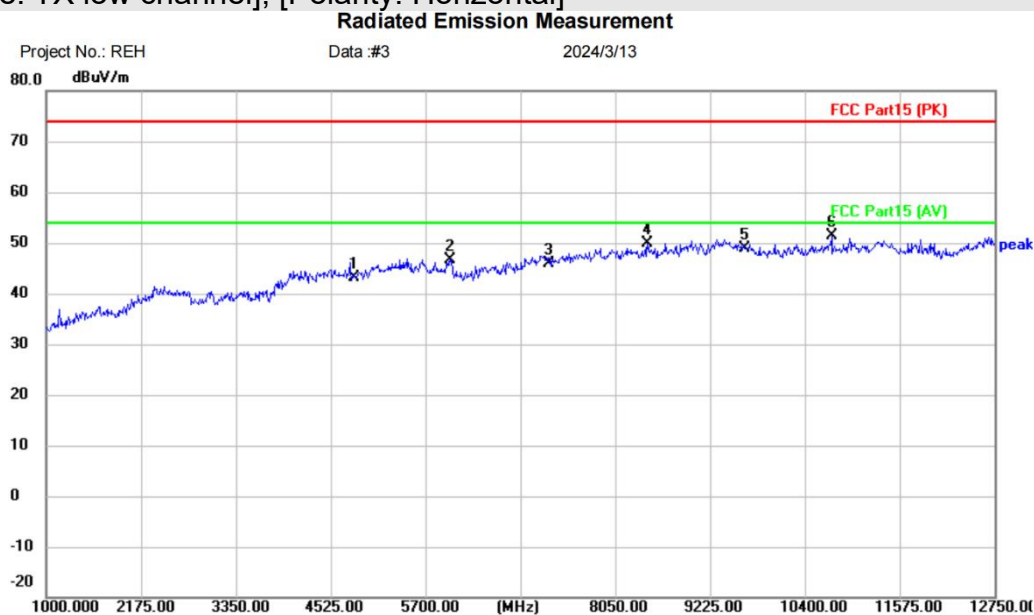


*:Maximum data x:Over limit !:over margin

Test Result: Pass

Remark: During the test, pre-scan the 802.11b/g/n mode, and found the 802.11n(HT20) mode which it is worse case.

[TestMode: TX low channel]; [Polarity: Horizontal]



Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Smart Audio		
M/N: H1RU		
Mode: 11B-2412		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	37.39	5.65	43.04	74.00	-30.96	peak	
2		6005.500	41.10	5.61	46.71	74.00	-27.29	peak	
3		7236.000	36.68	9.24	45.92	74.00	-28.08	peak	
4		8449.500	39.23	10.63	49.86	74.00	-24.14	peak	
5		9648.000	36.63	12.28	48.91	74.00	-25.09	peak	
6	*	10729.00	38.34	13.05	51.39	74.00	-22.61	peak	

*:Maximum data x:Over limit !:over margin

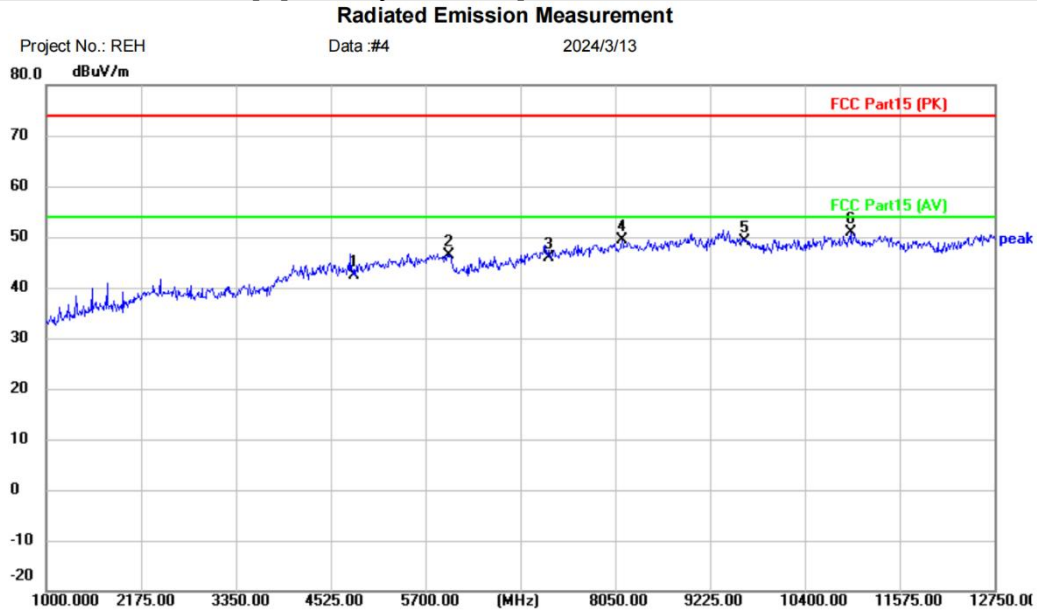
(Reference Only)

Receiver: ESR_1

Spectrum Analyzer: FSP40

Test Result: Pass

[TestMode: TX low channel]; [Polarity: Vertical]



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Smart Audio
M/N: H1RU
Mode: 11B-2412
Note:

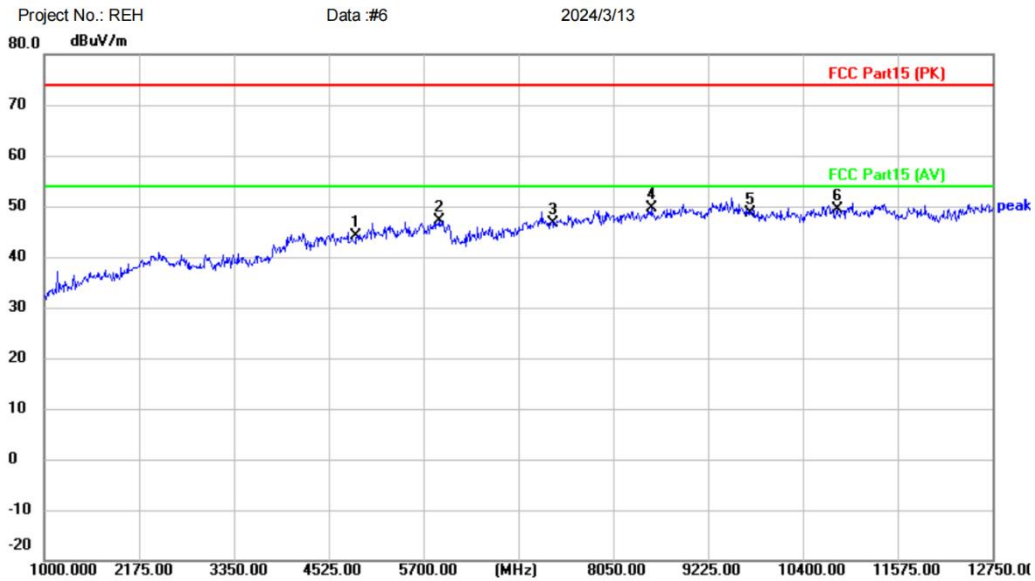
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	36.83	5.65	42.48	74.00	-31.52	peak	
2		5982.000	37.72	8.74	46.46	74.00	-27.54	peak	
3		7236.000	36.76	9.24	46.00	74.00	-28.00	peak	
4		8132.250	39.49	9.89	49.38	74.00	-24.62	peak	
5		9648.000	36.81	12.28	49.09	74.00	-24.91	peak	
6	*	10964.00	37.52	13.35	50.87	74.00	-23.13	peak	

*:Maximum data x:Over limit !:over margin <Reference Only
Receiver: ESR_1 Spectrum Analyzer: FSP40

Test Result: Pass

[TestMode: TX mid channel]; [Polarity: Horizontal]

Radiated Emission Measurement



Site: Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Smart Audio
M/N: H1RU
Mode: 11B-2437
Note:

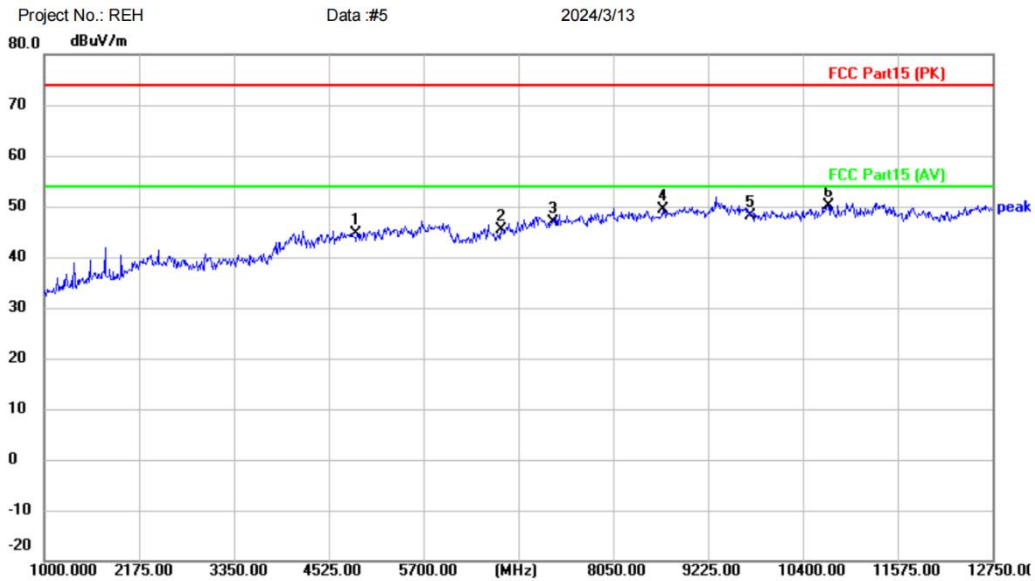
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	38.52	5.71	44.23	74.00	-29.77	peak	
2		5888.000	38.41	8.60	47.01	74.00	-26.99	peak	
3		7311.000	37.23	9.44	46.67	74.00	-27.33	peak	
4	*	8520.000	38.50	11.04	49.54	74.00	-24.46	peak	
5		9748.000	36.32	12.19	48.51	74.00	-25.49	peak	
6		10823.00	36.56	12.89	49.45	74.00	-24.55	peak	

*:Maximum data x:Over limit !:over margin (Reference Only)
Receiver: ESR_1 Spectrum Analyzer: FSP40

Test Result: Pass

[TestMode: TX mid channel]; [Polarity: Vertical]

Radiated Emission Measurement



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Smart Audio
M/N: H1RU
Mode: 11B-2437
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	38.96	5.71	44.67	74.00	-29.33	peak	
2		6663.500	37.69	7.58	45.27	74.00	-28.73	peak	
3		7311.000	37.37	9.44	46.81	74.00	-27.19	peak	
4		8661.000	38.03	11.34	49.37	74.00	-24.63	peak	
5		9748.000	35.99	12.19	48.18	74.00	-25.82	peak	
6	*	10717.25	37.13	13.08	50.21	74.00	-23.79	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)

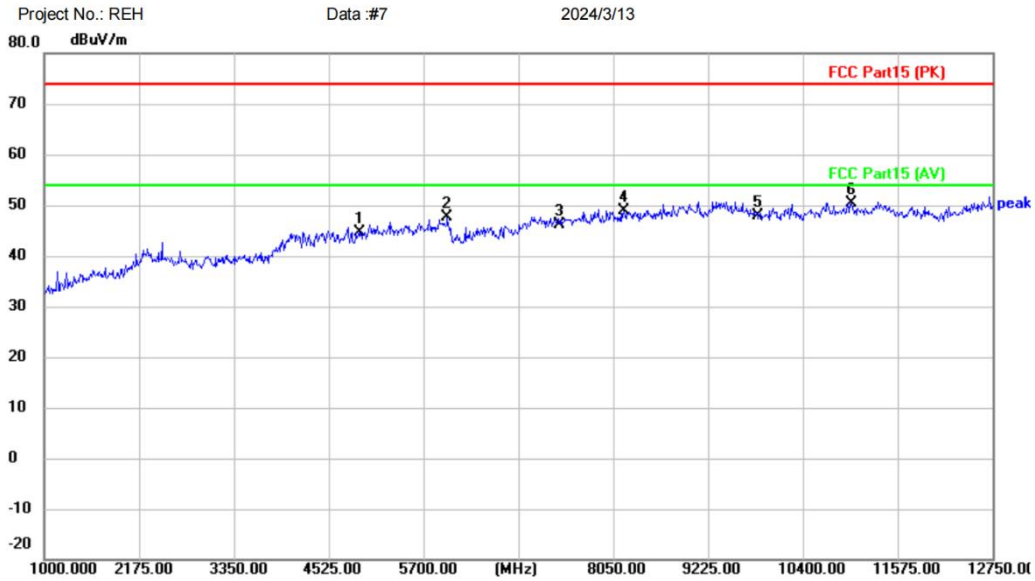
Receiver: ESR_1

Spectrum Analyzer: FSP40

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Horizontal]

Radiated Emission Measurement



Site: Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Smart Audio
M/N: H1RU
Mode: 11B-2462
Note:

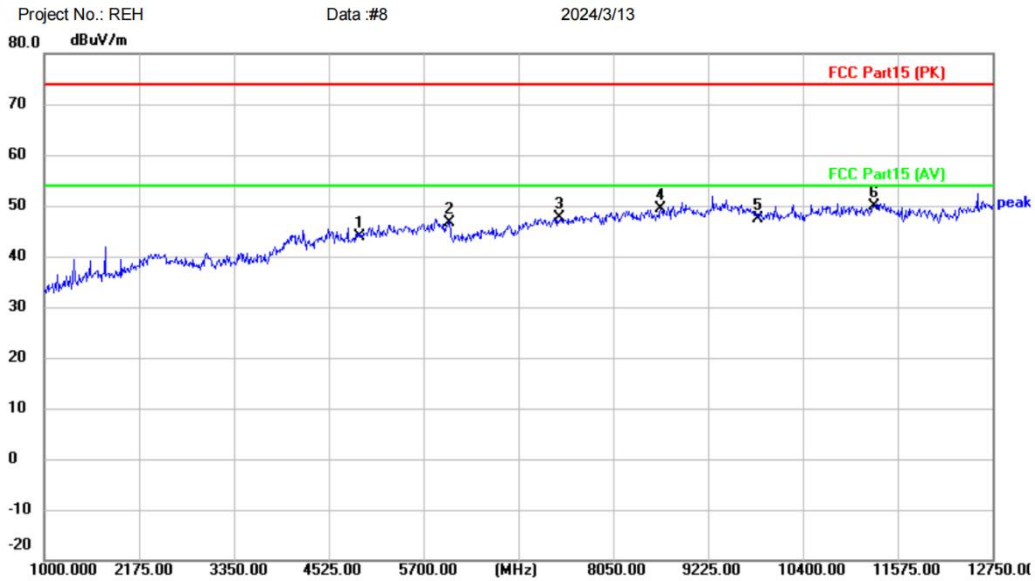
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	38.52	6.09	44.61	74.00	-29.39	peak	
2		5993.750	38.84	8.75	47.59	74.00	-26.41	peak	
3		7386.000	36.88	9.37	46.25	74.00	-27.75	peak	
4		8179.250	39.05	9.87	48.92	74.00	-25.08	peak	
5		9848.000	35.63	12.31	47.94	74.00	-26.06	peak	
6	*	10999.25	36.85	13.48	50.33	74.00	-23.67	peak	

*:Maximum data x:Over limit !:over margin (Reference Only)
Receiver: ESR_1 Spectrum Analyzer: FSP40

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Vertical]

Radiated Emission Measurement



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Smart Audio
M/N: H1RU
Mode: 11B-2462
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	37.67	6.09	43.76	74.00	-30.24	peak	
2		6017.250	41.12	5.63	46.75	74.00	-27.25	peak	
3		7386.000	38.32	9.37	47.69	74.00	-26.31	peak	
4		8637.500	38.06	11.25	49.31	74.00	-24.69	peak	
5		9848.000	35.12	12.31	47.43	74.00	-26.57	peak	
6	*	11281.25	37.23	12.70	49.93	74.00	-24.07	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Receiver: ESR_1

Spectrum Analyzer: FSP40

Test Result: Pass

Remark:

1. Final Level = Receiver Read level + Correct factor
2. Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

BlueAsia

13 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

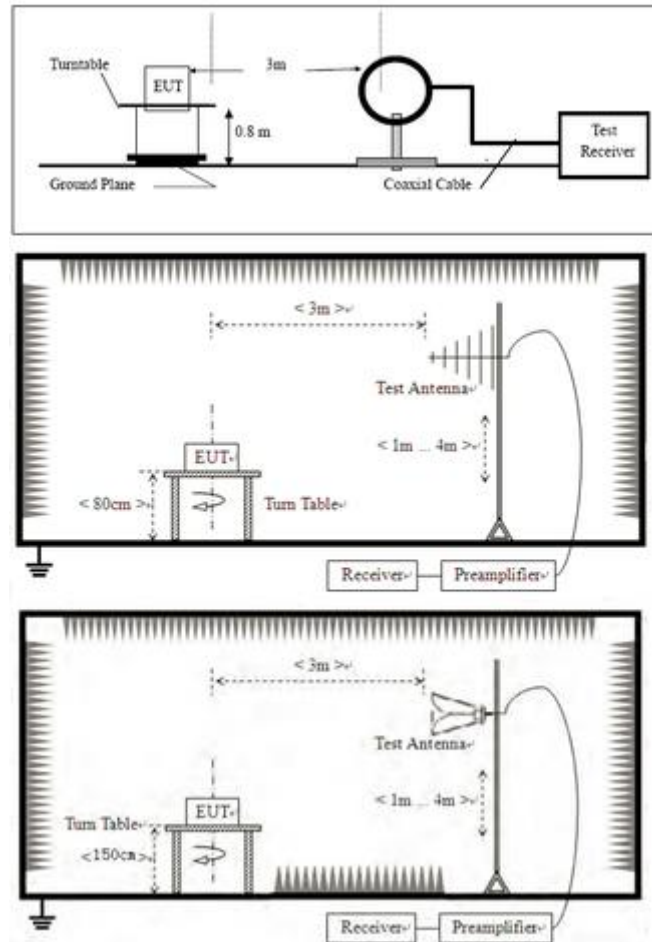
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

13.1 LIMITS

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

13.2 BLOCK DIAGRAM OF TEST SETUP



13.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

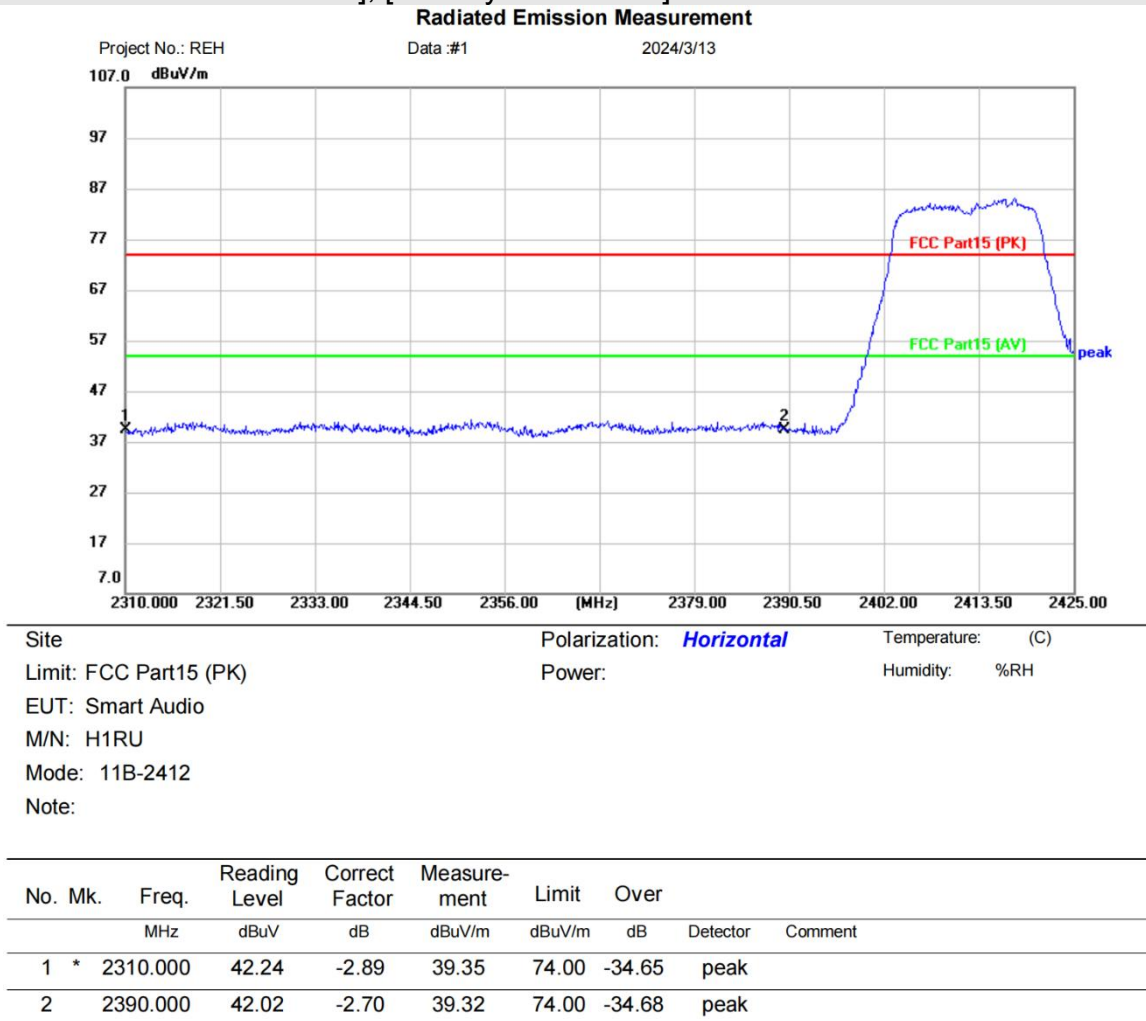
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamp Factor}$

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

13.4 TEST DATA

[TestMode: TX b low channel]; [Polarity: Horizontal]



*:Maximum data x:Over limit !:over margin

⟨Reference Only

Receiver: ESR_1

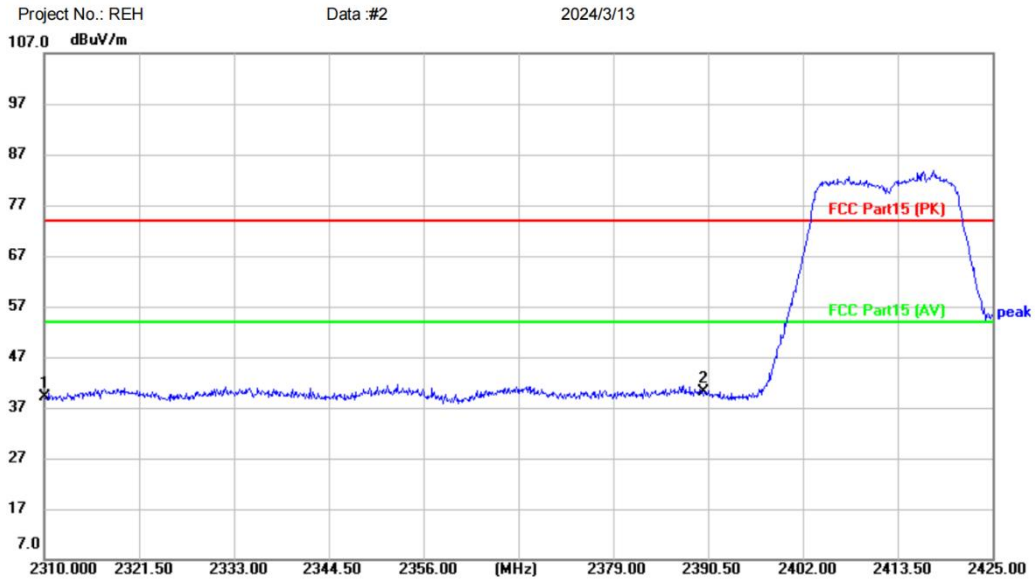
Spectrum Analyzer:

FSP40

Test Result: Pass

[TestMode: TX b low channel]; [Polarity: Vertical]

Radiated Emission Measurement



Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Smart Audio
M/N: H1RU
Mode: 11B-2412
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	41.98	-2.89	39.09	74.00	-34.91	peak	
2	*	2390.000	42.74	-2.70	40.04	74.00	-33.96	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)

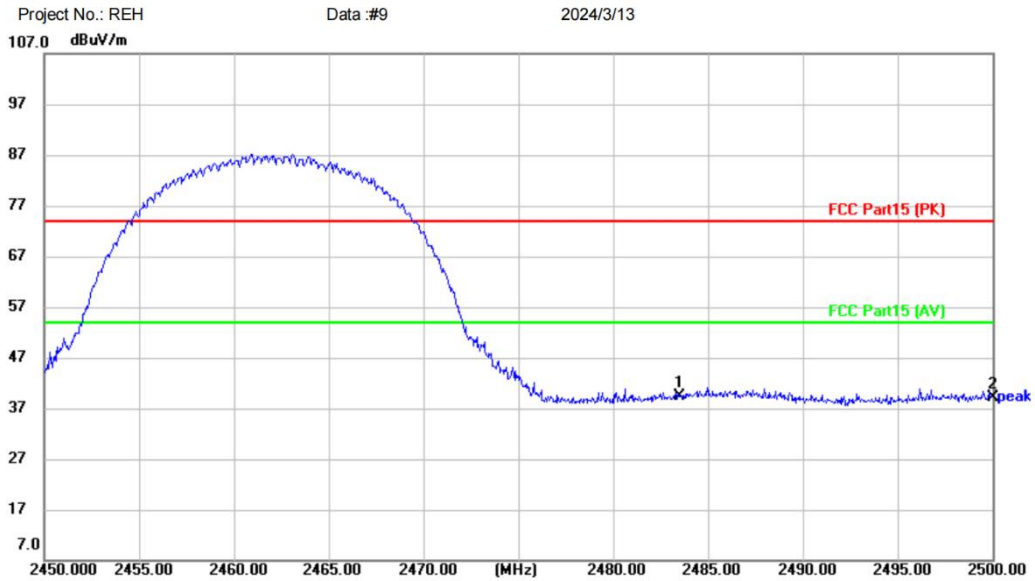
Receiver: ESR_1

Spectrum Analyzer: FSP40

Test Result: Pass

[TestMode: TX b high channel]; [Polarity: Horizontal]

Radiated Emission Measurement



Site Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Smart Audio
M/N: H1RU
Mode: 11B-2462
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	2483.500	42.41	-2.91	39.50	74.00	-34.50	peak	
2		2500.000	42.16	-3.00	39.16	74.00	-34.84	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Receiver: ESR_1

Spectrum Analyzer:

FSP40

Test Result: Pass