

TEST REPORT

Product Name: AI Karaoke Adapter
FCC ID: OKUWR5410AA
Trademark: OTIC
Model Number: WR-5410AA
Prepared For: Shenzhen Junlan Electronic Ltd
Address: No. 277, Pingkui Road, Shijing Community, Pingshan Office, Pingshan New District, Shenzhen, China
Manufacturer: Shenzhen Junlan Electronic Ltd
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Prepared By: Shenzhen CTB Testing Technology Co., Ltd.
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Sample Received Date: Jul. 10, 2025
Sample tested Date: Jul. 10, 2025 to Jul. 04, 2025
Issue Date: Jul. 04, 2025
Report No.: CTB25071007305RF02
Test Standards: FCC CFR Title 47 Part 15 Subpart C Section 15.239
ANSI C63.10:2020
Test Results: PASS
Remark: This is FM radio test report.

Compiled by:

Reviewed by:

Approved by:

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Arron Liu

Bin Mei

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Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

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(NOTE: N/A MEANS NOT APPLICABLE)



1. VERSION

Report No.	Issue Date	Description	Approved
CTB25071007305RF02	Jul. 04, 2025	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

Test Item	Test Requirement	Test method	Result
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2020	PASS
Radiated Spurious emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2020	PASS
Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.239a	ANSI C63.10-2020	PASS
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2020	PASS
Band Edge Measurement	47 CFR Part 15 Subpart C Section 15.239a	ANSI C63.10-2020	PASS

Remark:

Test according to ANSI C63.4-2014 & ANSI C63.10-2020.

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product 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.

Item	Uncertainty
Occupancy bandwidth	54.3kHz
Conducted output power above 1G	0.9dB
Conducted output power below 1G	0.9dB
Power Spectral Density, Conduction	0.9dB
Conduction spurious emissions	2.0dB
Out of band emission	2.0dB
3m chamber Radiated spurious emission(9kHz-30MHz)	4.8dB
3m chamber Radiated spurious emission(30MHz-1GHz)	4.6dB
3m chamber Radiated spurious emission(1GHz-18GHz)	5.1dB
3m chamber Radiated spurious emission(18GHz-40GHz)	3.4dB
Humidity uncertainty	5.5%
Temperature uncertainty	0.63℃
Frequency	1×10 ⁻⁷
Conducted Emission(150kHz-30MHz)	3.2 dB
Radiated Emission(30MHz ~ 1000MHz)	4.8 dB
Radiated Emission(1GHz ~6GHz)	4.9 dB

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	WR-5410AA
Model Description:	N/A
Hardware Version:	V1.3
Software Version:	V1.3.3
Operation Frequency:	107.9MHz
Type of Modulation:	FM
Antenna installation:	External antenna
Antenna Gain:	1.0dBi
Ratings:	DC 5V 1A

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1.	Adapter	JYIN	JY-05100C	/	AE
2.	Laptop	DELL	Vostro 5490	N/A	AE

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

For All Emission	
Final Test Mode	Description
Mode 1	107.9 MHz

4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Test mode	Frequency (MHz)
Transmitting	107.9

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	5V
Normal Temperature(°C)	23
Low Temperature(°C)	0
High Temperature(°C)	40

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Floor 1&2, Building A, No. 26 of Xinhe Road, Xinqiao Street, Baoan District, Shenzhen China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: CN1276

5.2 Test Instrument Used

No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Calibrated Date	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	A.14.16	2025/5/23	2026/5/22
2	Power Sensor	Agilent	U2021XA	MY56120032	/	2025/5/23	2026/5/22
3	Power Sensor	Agilent	U2021XA	MY56120034	/	2025/5/23	2026/5/22
4	Communication test set	R&S	CMW500	108058	V3.5.80	2025/5/23	2026/5/22
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/5/23	2026/5/22
6	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2025/5/22	2026/5/21
7	Vector signal generator	Agilent	N5182A	MY47420195	A.01.87	2025/5/22	2026/5/21
8	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/22	2026/5/21
9	2.4 GHz Filter	Shenxiang	MSF2400-2483. 5MS-1154	20181015001	/	2025/6/18	2026/6/17
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	/	2025/6/18	2026/6/17
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	/	2025/5/24	2026/5/23
12	BT&WI-FI Automatic test software	Microwave	MTS8310	Ver. 2.0.0.0	/	/	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	/	2024/10/31	2025/10/30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	/	2025/5/22	2026/5/21
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/	/	/
16	966 chamber	C.R.T.	966	/	/	2024/6/23	2027/6/22
17	Receiver	R&S	ESPI	100362	RF_ATTEN_7	2025/5/23	2026/5/22

					(104489/003)		
18	Amplifier	HP	8447E	2945A02747	/	2025/5/23	2026/5/22
19	Amplifier	Agilent	8449B	3008A01838	/	2025/6/2	2026/6/1
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/29	2026/6/28
21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	/	2025/6/1	2026/5/31
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/	/	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/2	2026/6/1
24	loop antenna	ZHINAN	ZN30900A	GTS534	/	/	/
25	40G Horn antenna	A/H/System	SAS-574	588	/	2025/6/2	2026/6/1
26	Amplifier	AEROFLEX	Aeroflex	097	/	2025/6/2	2026/6/1
27	Power Meter	KEYSIGHT	N1912AP	N/A	A.05.00	2025/6/2	2026/6/1

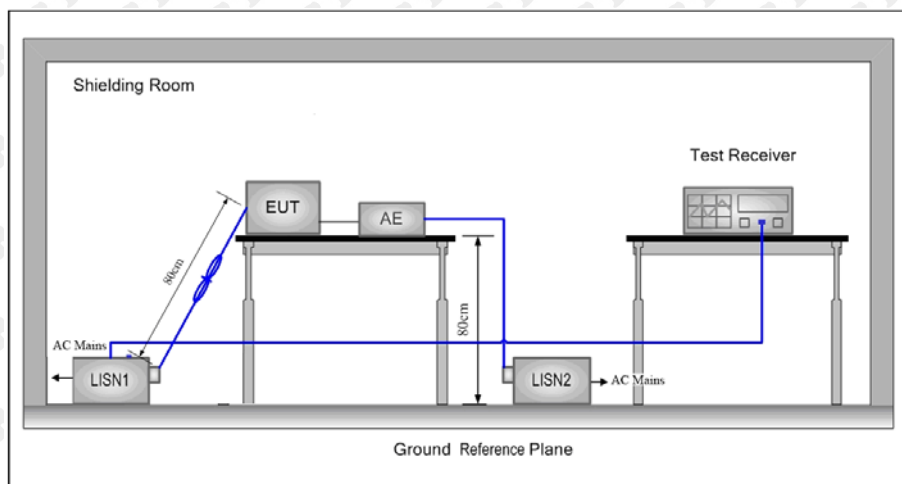
Continuous disturbance							
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated Date	Calibrated until
1	843 Shield Room	C/ R/ T	843	/	/	2024/6/22	2027/6/21
2	LISN	ROHDE&SCHWARZ	ESH3-Z5	831551852	/	2025/5/22	2026/5/21
3	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428	V4.42.SP3	2025/5/22	2026/5/21
4	Coaxial cable	ZDECL	Z302S	18091904	/	2025/5/22	2026/5/21
5	ISN	Schwarzbeck	NTFM8158	183	/	2025/6/18	2026/6/17
6	Voltage sensor	Schwarzbeck	TK 9420	01189	/	2024/10/26	2025/10/25
7	EZ-EMC	Frad	EMC-con3A1.1	/	/	/	/
8	Current Probe	FCC	F-52B	199453	/	2025/5/24	2026/5/23
9	Communication test set	R&S	CMW500	108058	B.19.07 (E1962B)	2025/5/23	2026/5/22
10	Communication test set	Agilent	E5515C	MY50102567	V3.5.80	2025/5/23	2026/5/22

Radiated emission(No.1 Chamber)							
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until	Calibrated until
1	966 Chamber	C/ R/ T	966	/	/	2024/6/23	2027/6/22
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	/	2025/6/1	2026/5/31
3	TRILOG Broadband	Schwarzbeck	VULB 9168	00869	/	2025/6/29	2026/6/28

	Antenna						
4	Amplifier	Agilent	8449B	3008A01838	/	2025/6/3	2026/6/2
5	Amplifier	HP	8447E	2945A02747	/	2025/5/23	2026/5/22
6	loop antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/2	2026/6/1
7	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/5/23	2026/5/22
8	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/5/23	2026/5/22
9	Coaxial cable	ETS	RFC-SNS-100-NMS-80	/	/	2025/5/24	2026/5/23
10	Coaxial cable	ETS	RFC-SN-100-NMS-20	/	/	2025/5/24	2026/5/23
11	Coaxial cable	ETS	RFC-SNS-100-SMS-20	/	/	2025/5/24	2026/5/23
12	Coaxial cable	ETS	RFC-NNS-100-NMS-300	/	/	2025/5/24	2026/5/23
13	EMI test software	Frad	EZ-EMC	Ver/ FA-03A2 RE	/	/	/
14	Communication test set	R&S	CMW500	108058	B.19.07 (E1962B)	2025/5/23	2026/5/22
15	Communication test set	Agilent	E5515C	MY50102567	V3.5.80	2025/5/23	2026/5/22

6. AC POWER LINE CONDUCTED EMISSION

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Maximum RF Line Voltage (dB μ V)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

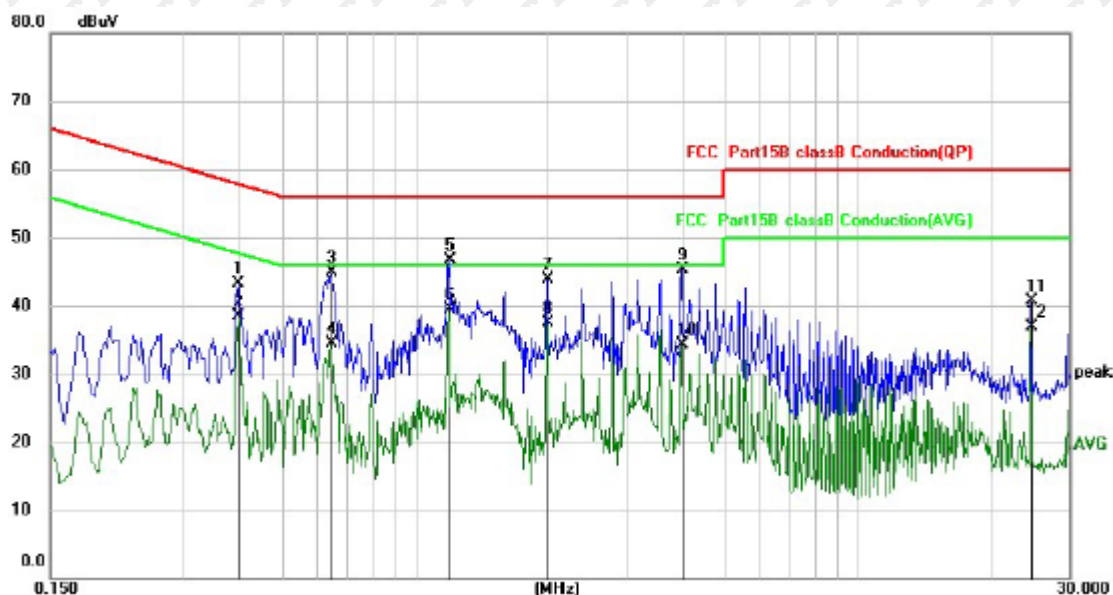
6.3 Test procedure

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
- 6) All modes were tested at AC 120V and 240V, only the worst result of AC 120V 60Hz was reported.
- 7) If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.

6.4 Test Result

Test Specification: Line
AC 120V 60Hz

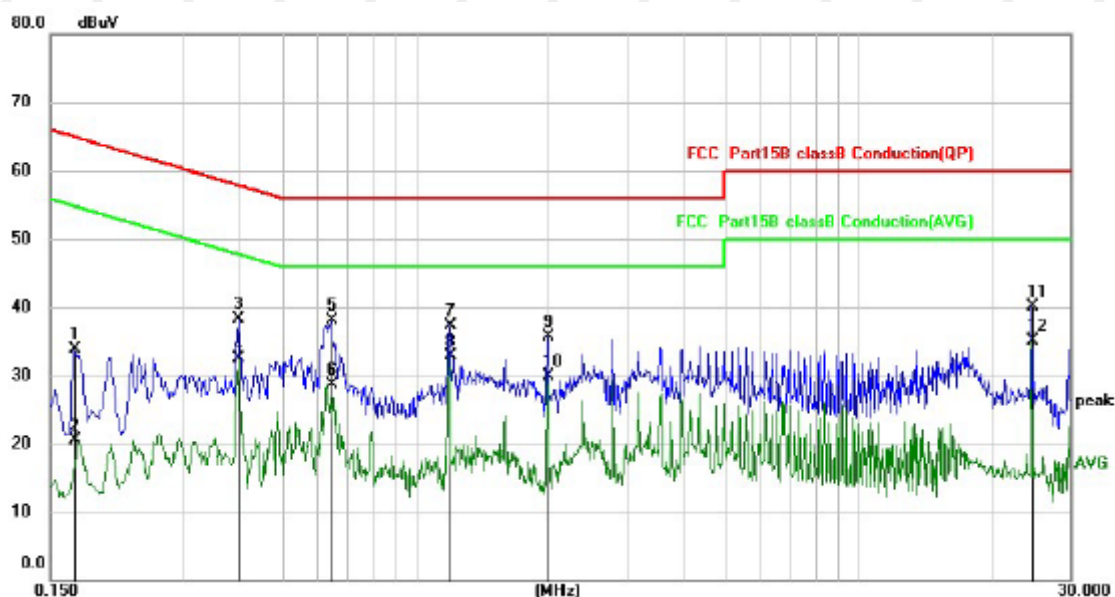


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.3996	33.18	10.09	43.27	57.86	-14.59	QP
2		0.3996	28.47	10.09	38.56	47.86	-9.30	AVG
3		0.6460	34.80	10.10	44.90	56.00	-11.10	QP
4		0.6460	24.50	10.10	34.60	46.00	-11.40	AVG
5		1.1979	36.66	10.14	46.80	56.00	-9.20	QP
6	*	1.1979	29.30	10.14	39.44	46.00	-6.56	AVG
7		1.9900	33.83	10.17	44.00	56.00	-12.00	QP
8		1.9900	27.30	10.17	37.47	46.00	-8.53	AVG
9		3.9860	34.99	10.24	45.23	56.00	-10.77	QP
10		3.9860	24.08	10.24	34.32	46.00	-11.68	AVG
11		24.5779	29.43	11.18	40.61	60.00	-19.39	QP
12		24.5779	25.73	11.18	36.91	50.00	-13.09	AVG

Remark:

Factor = Cable loss + LISN factor, Margin = Measurement – Limit

Test Specification: Neutral
AC 120V 60Hz



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV	dBuV	dB	
1		0.1700	23.76	10.07	33.83	64.96	-31.13	QP
2		0.1700	10.44	10.07	20.51	54.96	-34.45	AVG
3		0.3980	28.24	10.09	38.33	57.90	-19.57	QP
4		0.3980	22.45	10.09	32.54	47.90	-15.36	AVG
5		0.6460	28.04	10.10	38.14	56.00	-17.86	QP
6		0.6460	18.57	10.10	28.67	46.00	-17.33	AVG
7		1.1939	27.15	10.14	37.29	56.00	-18.71	QP
8	*	1.1939	22.76	10.14	32.90	46.00	-13.10	AVG
9		1.9900	25.48	10.17	35.65	56.00	-20.35	QP
10		1.9900	19.73	10.17	29.90	46.00	-16.10	AVG
11		24.5779	29.00	11.18	40.18	60.00	-19.82	QP
12		24.5779	23.96	11.18	35.14	50.00	-14.86	AVG

Remark:

Factor = Cable loss + LISN factor, Margin = Measurement – Limit

7. RADIATED SPURIOUS EMISSION

7.1 Block Diagram Of Test Setup

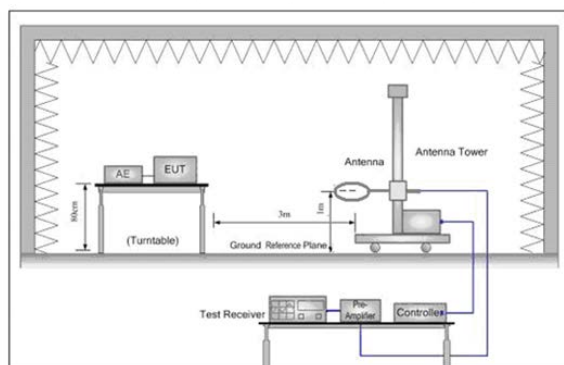


Figure 1. Below 30MHz

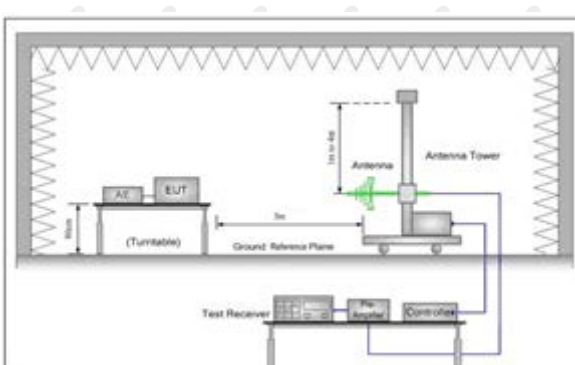


Figure 2. 30MHz to 1GHz

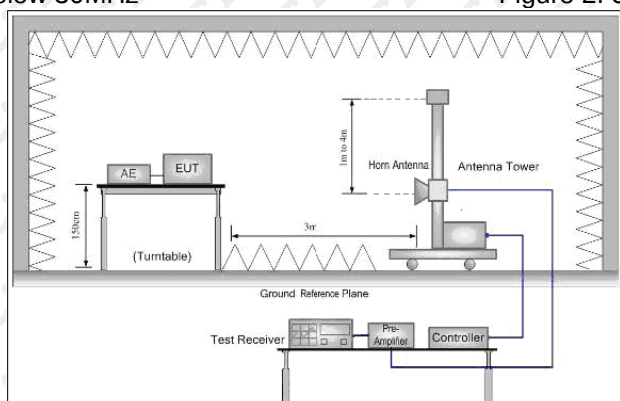


Figure 3. Above 1GHz

7.2 Limit

Spurious Emissions:

Frequency	Field strength (microvolt/meter)	Limit (dB μ V/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F (kHz)	-	-	300
0.490MHz-1.705MHz	24000/F (kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

7.3 Test procedure

Below 1GHz test procedure as below:

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 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 rota table 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.

Above 1GHz test procedure as below:

- Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
- Test the EUT in the lowest channel ,the middle channel ,the Highest channel
- Repeat above procedures until all frequencies measured was complete.
- Full battery is use dduring test

Receiver set:

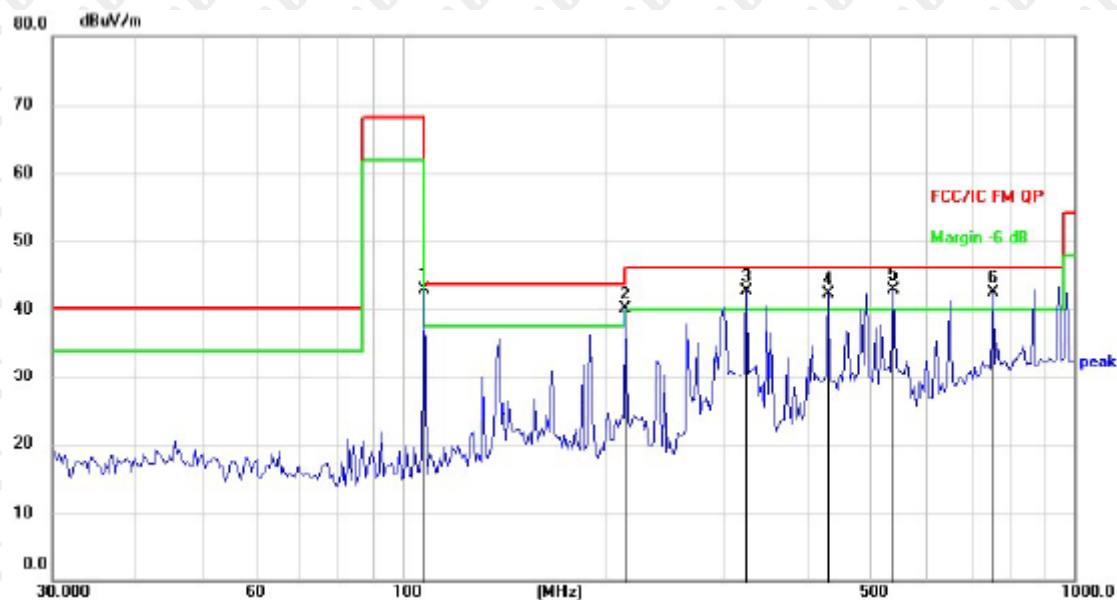
Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30KHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30KHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30KHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30KHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30KHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120 kHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

7.4 Test Result

Below 1GHz Test Results:

Antenna polarity: H

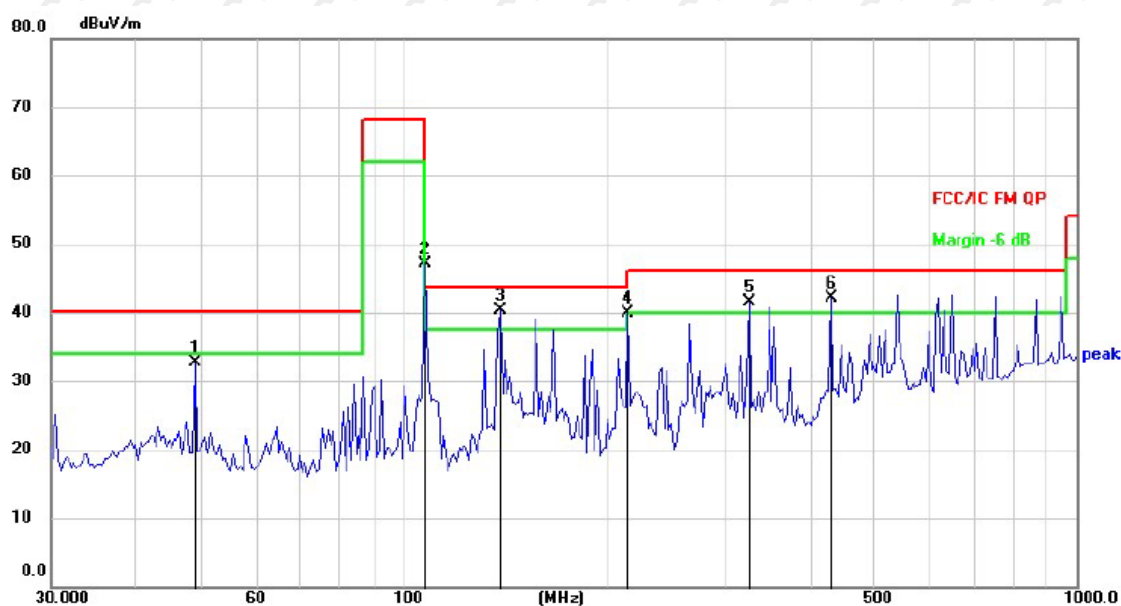
Mode 1-the worst



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		107.8876	50.00	-7.06	42.94	68.00	-25.06	QP
2	!	215.6453	46.07	-5.92	40.15	43.50	-3.35	QP
3	!	325.5957	44.86	-2.11	42.75	46.00	-3.25	QP
4	!	431.0314	42.64	-0.33	42.31	46.00	-3.69	QP
5	*	541.3723	40.70	2.20	42.90	46.00	-3.10	QP
6	!	755.3872	34.93	7.59	42.52	46.00	-3.48	QP

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement- Limit

Antenna polarity: V



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		49.0144	39.05	-6.39	32.66	40.00	-7.34	QP
2		107.8876	54.26	-7.06	47.20	68.00	-20.80	QP
3	*	139.1168	45.69	-5.44	40.25	43.50	-3.25	QP
4	!	215.6452	45.78	-5.92	39.86	43.50	-3.64	QP
5	!	325.5957	43.61	-2.11	41.50	46.00	-4.50	QP
6	!	431.0314	42.45	-0.33	42.12	46.00	-3.88	QP

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement- Limit

For average Emission

Frequency MHz	Average Level dBuV/m	Limit AVG	Margin	Polarization
107.9	42.94	48	-5.06	Horizontal
107.9	47.2	48	-0.8	Vertical

Above 1 GHz Test Results:

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
V	1078.4	54.52	30.55	5.77	24.66	54.4	74	-19.6	PK
V	1078.4	45.88	30.55	5.77	24.66	45.76	54	-8.24	AV
V	1186.9	54.16	30.33	6.32	24.55	54.7	74	-19.3	PK
V	1186.9	45.36	30.33	6.32	24.55	45.9	54	-8.1	AV
V	1289.2	53.26	30.85	7.45	24.69	54.55	74	-19.45	PK
V	1289.2	44.26	30.85	7.45	24.69	45.55	54	-8.45	AV
H	1078.4	53.33	31.02	8.99	25.57	56.87	74	-17.13	PK
H	1078.4	44.11	31.02	8.99	25.57	47.65	54	-6.35	AV
H	1186.9	53.16	30.55	5.77	24.66	53.04	74	-20.96	PK
H	1186.9	44.09	30.55	5.77	24.66	43.97	54	-10.03	AV
H	1289.2	53.58	30.33	6.32	24.55	54.12	74	-19.88	PK
H	1289.2	44.02	30.33	6.32	24.55	44.56	54	-9.44	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Restricted bands around fundamental frequency (Radiated)

Horizontal

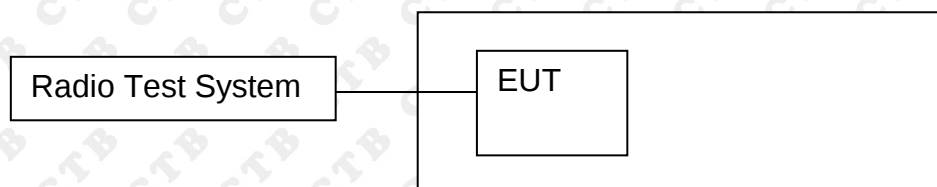
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
88.00	39.32	-15.83	23.49	40.00	-16.51	QP
108.00	39.88	-15.89	23.99	43.50	-19.51	QP
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
88.00	39.41	-15.85	23.56	40.00	-16.44	QP
108.00	39.79	-15.91	23.88	43.50	-19.62	QP
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

8. BANDWIDTH TEST

8.1 Block Diagram Of Test Setup



8.2 Limit

According to 15.209&15.239 requirement:

The bandwidth of the emission shall not exceed 200 kHz.

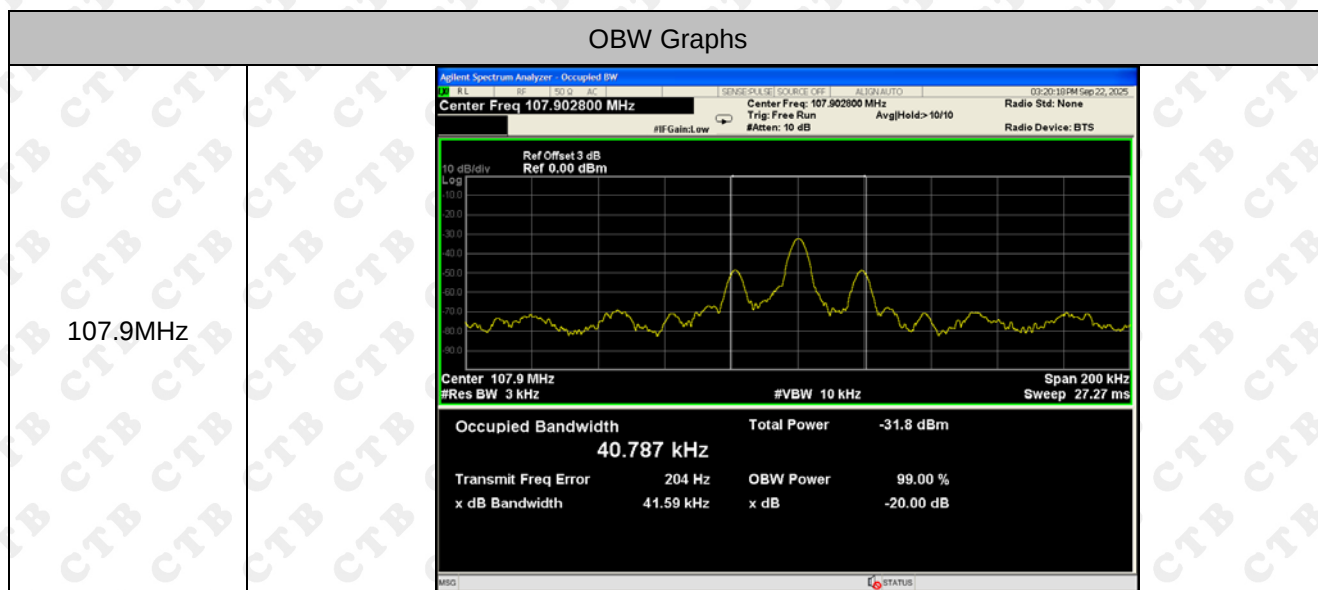
8.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
RBW = 3kHz, VBW = 10kHz, Sweep = auto
Detector function = peak, Trace = max hold

8.4 Test Result

Temperature :	23 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX Mode		

Frequency	20dBc bandwidth (kHz)	Limit (kHz)	Result
107.9 MHz	41.59	200	PASS



9. ANTENNA REQUIREMENT

15.203 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 a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is External antenna. The best case gain of the antenna is 1.0dBi.

10. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

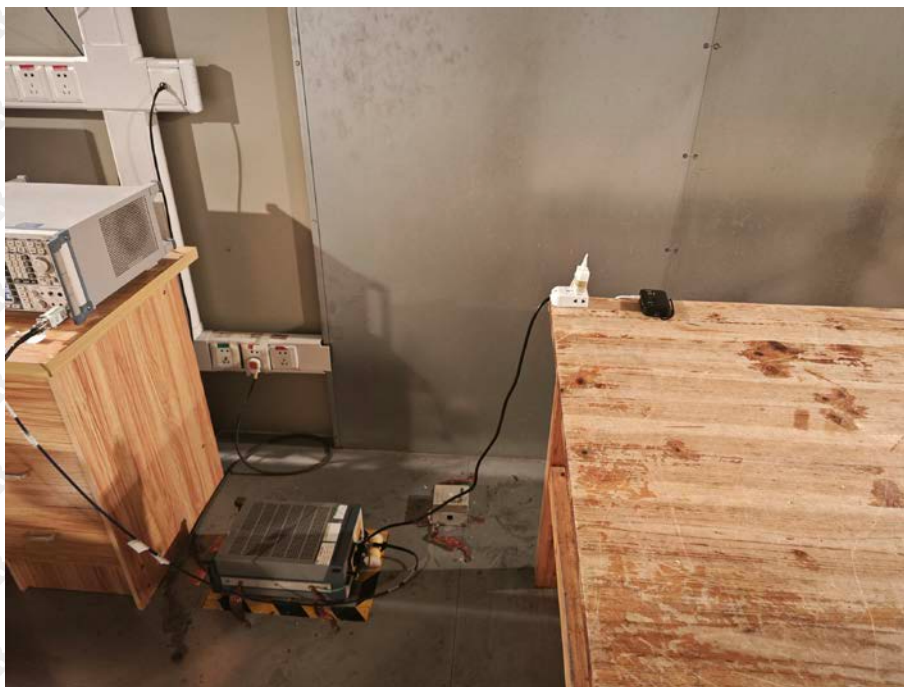
Below 1G



Above 1G



Conducted emissions



***** END OF REPORT *****