For Question,
Please Contact with WSCT
www.wsct-cert.com

TEST REPORT

FCC ID: 2AAUL-OVO-J1

Wireless Microphone

Model: OVO-J1,OVO-J1-D

Trade Mark: OVO

Test Report Number: WSCT-A2LA-R&E211000009A-2.4G

Issued Date: 04 November 2021

Issued for

OVOMEDIA CREATIVE INC

3F., No.151, Ziqiang 5th Rd., Zhubei City, Hsinchu County, Taiwan

Issued By:

WORLD STANDARDIZATION CERTIFICATION & TESTING GROUP (SHENZHEN) CO., LTD.
Building A-B, Baoshi Road, Baoshi Science &Technology Park, Bao'an District, Shenzhen, Guangdong, People's Republic of China
TEL: + (86) 13924678855
FAX: +86-755-86376605

Note: In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with A2LA's ENERGY STAR ® Accreditation Program requirements 1) accreditation is granted to this laboratory to perform the following tests: EMC, electromagnetic compatibility, telecommunications and Energy Star.

Revision History Of Report

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	WSCT-A2LA-R&E211000009A-2.4G	Initial Issue	ALL	Wang Fengbing

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1. Test Certification

Product:	Wireless Microphone
Model:	OVO-J1
Additional Model:	OVO-J1-D
Trade Mark:	OVO
Applicant:	**OVOMEDIA CREATIVE INC** 3F., No.151, Ziqiang 5th Rd., Zhubei City, Hsinchu County, Taiwan
Manufacturer:	**ShenZhen BestLink Electronics co.,LTD** 401, building A11, silicon valley power QingHu Park, DaHe Road, QingHu street, LongHua District, Shenzhen
Factory:	**ShenZhen BestLink Electronics co.,LTD** 401, building A11, silicon valley power QingHu Park, DaHe Road, QingHu street, LongHua District, Shenzhen
Tested:	22 October 2021 ~ 04 November 2021
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249&RSS210

Deviation from Applicable Standard
None

The above equipment has been tested by WORLD STANDARDIZATION CERTIFICATION & TESTING GROUP (SHENZHEN) CO., LTD. And found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Wang Xiang ***(Wang Xiang)***

Check By: Qin Shuiquan ***(Qin Shuiquan)***

Approved By: ***(Wang Fengbing)***

Date: 04 Nov. 2021

2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	N/A
Field Strength of Fundamental	§15.249 (a) &RSS210	PASS
Spurious Emissions	§2.1053 §15.249 (a) (d) &RSS210/ §15.209	PASS
Band Edge	§2.1053 §15.249 (d) &RSS210/ §15.205	PASS
20dB Occupied Bandwidth	§2.1049 §15.215 (c)	PASS

Note:

1. Pass: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

3. EUT Description

Product	Wireless Microphone
Model	OVO-J1
Additional Model	OVO-J1-D
Trade Mark	OVO
Operation Frequency:	2450MHz
Number of Channel:	1
Modulation Technology:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	2dBi
Power Supply:	DC : AA(1.5V)*2 Voltage: 3V

Note: N/A stands for no applicable.

Models difference

Model	Additional Model	Models difference
OVO-J1	OVO-J1-D	Only the model is different, all tests are carried out on OVO-J1

Channel list:

Channel	Frequency
1	2450MHz

4. Genera Information

4.1. Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel
The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.	

5. Facilities and Accreditations

5.1. Facilities

All measurement facilities used to collect the measurement data are located at **Building A-B, Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China of the WORLD STANDARDIZATION CERTIFICATION & TESTING GROUP (SHENZHEN) CO., LTD.**

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.2. ACCREDITATIONS

China National Accreditation Service for Conformity Assessment (CNAS)
Registration number NO: L3732

American Association for Laboratory Accreditation(A2LA)

Registration NO：5768.01

Copies of granted accreditation certificates are available for downloading from our web site, **http://www.wsct-cert.com**

5.3. 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 %.

No.	Item	MU
1	Conducted Emission	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1GHz)	±3.92dB
5	All emissions, radiated(>1GHz)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

6. MEASUREMENT INSTRUMENTS

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.
EMI Test Receiver	R&S	ESCI	100005	11/05/2020	11/04/2021
LISN	AFJ	LS16	16010222119	11/05/2020	11/04/2021
LISN(EUT)	Mestec	AN3016	04/10040	11/05/2020	11/04/2021
Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2020	11/04/2021
Coaxial cable	Megalon	LMR400	N/A	11/05/2020	11/04/2021
GPIB cable	Megalon	GPIB	N/A	11/05/2020	11/04/2021
Spectrum Analyzer	R&S	FSU	100114	11/05/2020	11/04/2021
Pre Amplifier	H.P.	HP8447E	2945A02715	11/05/2020	11/04/2021
Pre-Amplifier	CDSI	PAP-1G18-38	--	11/05/2020	11/04/2021
Bi-log Antenna	SUNOL Sciences	JB3	A021907	11/05/2020	11/04/2021
9*6*6 Anechoic	--	--	--	11/05/2020	11/04/2021
Horn Antenna	COMPLIANCE ENGINEERING	CE18000	--	11/05/2020	11/04/2021
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2020	11/04/2021
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2020	11/04/2021
System-Controller	CCS	N/A	N/A	N.C.R	N.C.R
Turn Table	CCS	N/A	N/A	N.C.R	N.C.R
Antenna Tower	CCS	N/A	N/A	N.C.R	N.C.R
RF cable	Murata	MXHQ87WA3000	-	11/05/2020	11/04/2021
Loop Antenna	EMCO	6502	00042960	11/05/2020	11/04/2021
Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2020	11/04/2021
Power meter	Anritsu	ML2487A	6K00003613	11/05/2020	11/04/2021
Power sensor	Anritsu	MX248XD	--	11/05/2020	11/04/2021

7. EMC EMISSION TEST

7.1. CONDUCTED EMISSION MEASUREMENT

7.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Conducted limit (dBμV)		Conducted limit (dBμV)
	Quasi-peak	Quasi-peak	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

7.1.2 TEST PROCEDURE

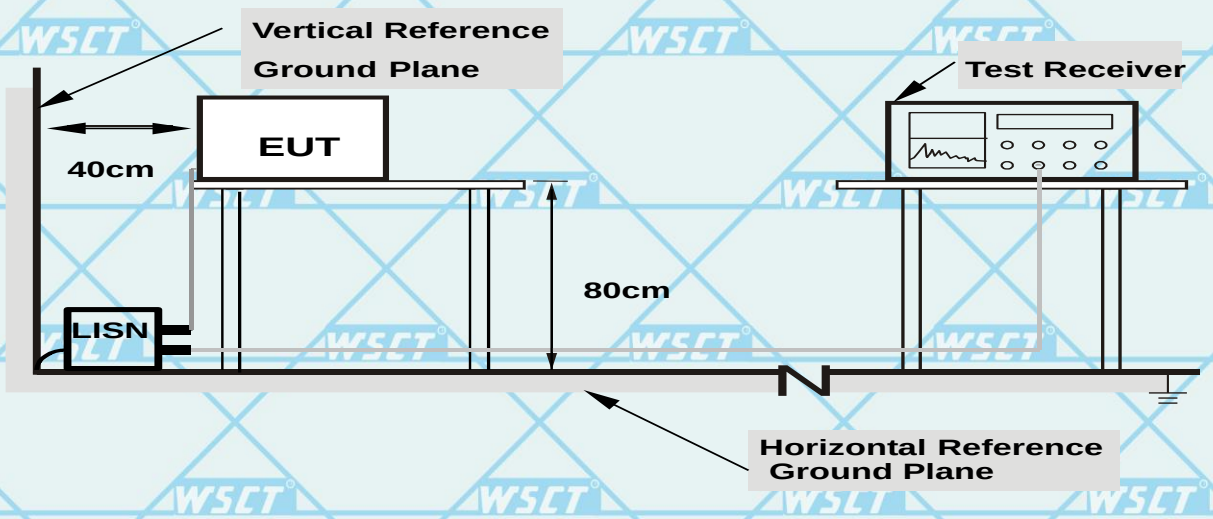
a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

7.1.3 DEVIATION FROM TEST STANDARD

No deviation

7.1.1.

7.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

7.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

7.1.6 TEST RESULTS

Not applicable. Due to this product is supplied by battery.

7.2. Radiated Emission Measurement

7.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.209/ Part 2 J Section 2.1053
Test Method:	ANSI C63.10:2013
Frequency Range:	9 kHz to 25 GHz
Measurement Distance:	3 m
Antenna Polarization:	Horizontal & Vertical
Receiver Setup:	

Frequency	Detector	RBW	VBW	Remark
9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit(Field strength of the fundamental signal):

Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.00	Average Value
	114.00	Peak Value

Limit(Spurious Emissions):

Frequency	Limit (dBuV/m @3m)	Remark
0.009-0.490	2400/F(KHz)	Quasi-peak Value
0.490-1.705	24000/F(KHz)	Quasi-peak Value
1.705-30	30	Quasi-peak Value
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

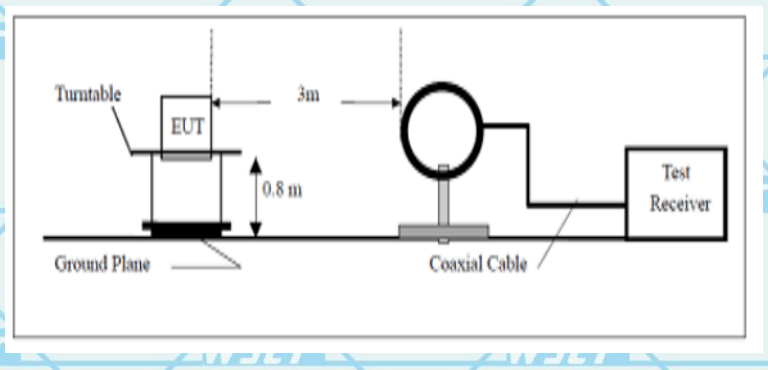
Limit (band edge) :	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber in below 1GHz, 1.5m above the ground in above 1GHz. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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.

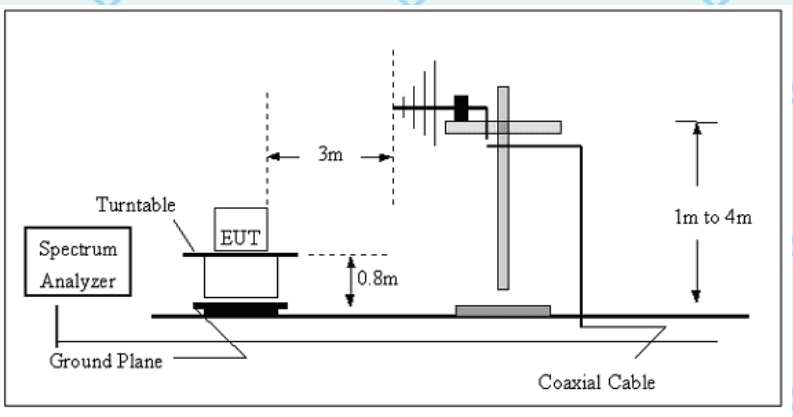
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. 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.

Test setup:

For radiated emissions below 30MHz

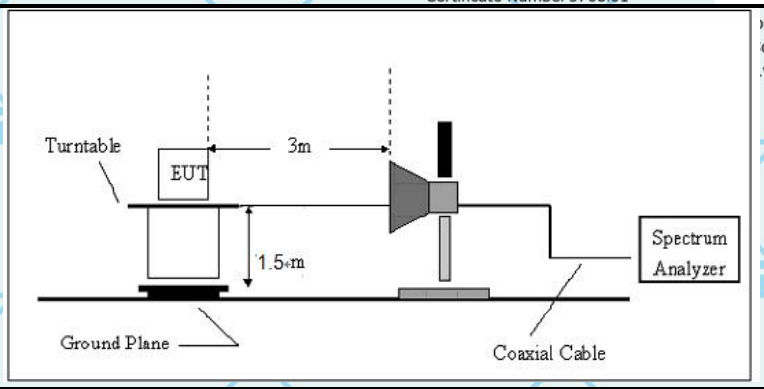


30MHz to 1GHz



Above 1GHz

(The diagram below shows the test setup that is utilized to make the measurements for emission from 1GHz to the tenth harmonic of the highest fundamental frequency or to 40GHz emissions, whichever is lower.)

	
Test results:	PASS

7.2.2. Test Data

Field Strength of Fundamental

Frequency (MHz)	Emission PK/AV (dBuV/m)	Horizontal /Vertical	Limits PK/AV (dBuV/m)	Margin (dB)
2450	92.12	H	114	-21.88
2450	90.14	H	94	-3.86
2450	92.14	V	114	-21.76
2450	91.62	V	94	-2.38

Spurious Emissions

Frequency Range (9 kHz-30MHz)

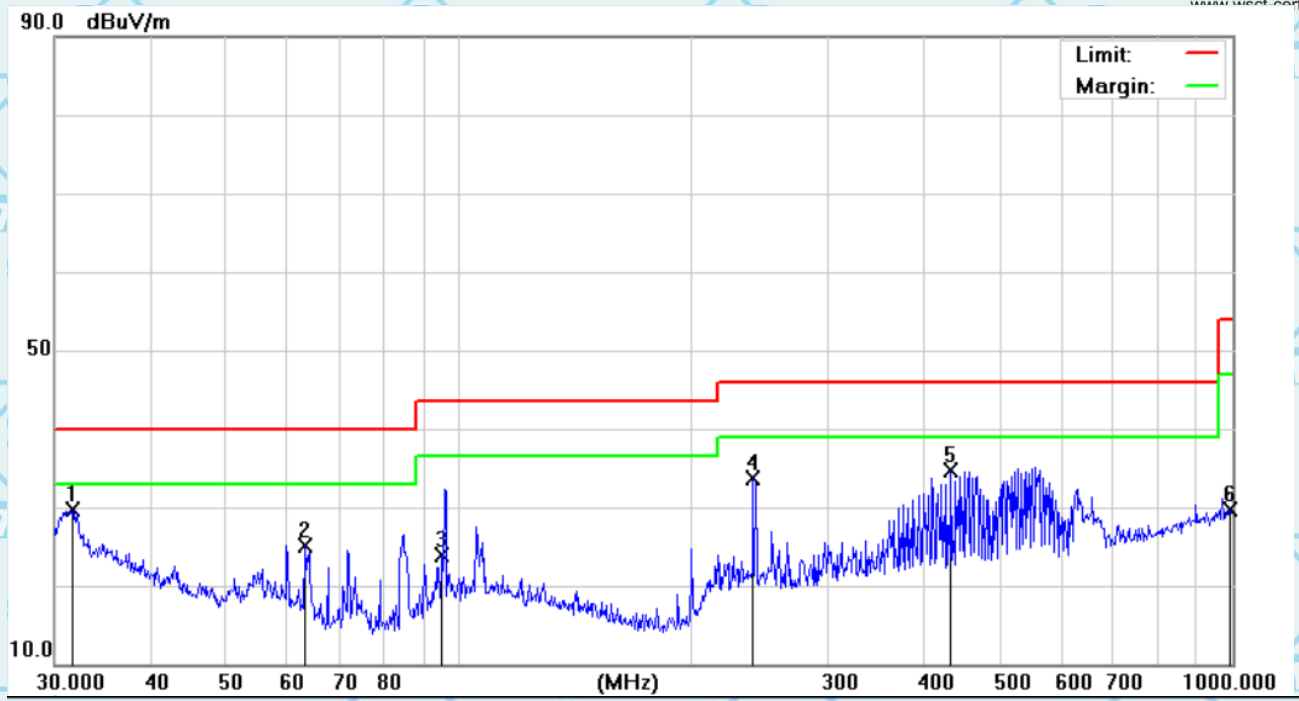
Frequency (MHz)	Level@3m (dBμV/m)	Limit@3m (dBμV/m)
--	--	--
--	--	--
--	--	--
--	--	--

Note: *1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor*

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

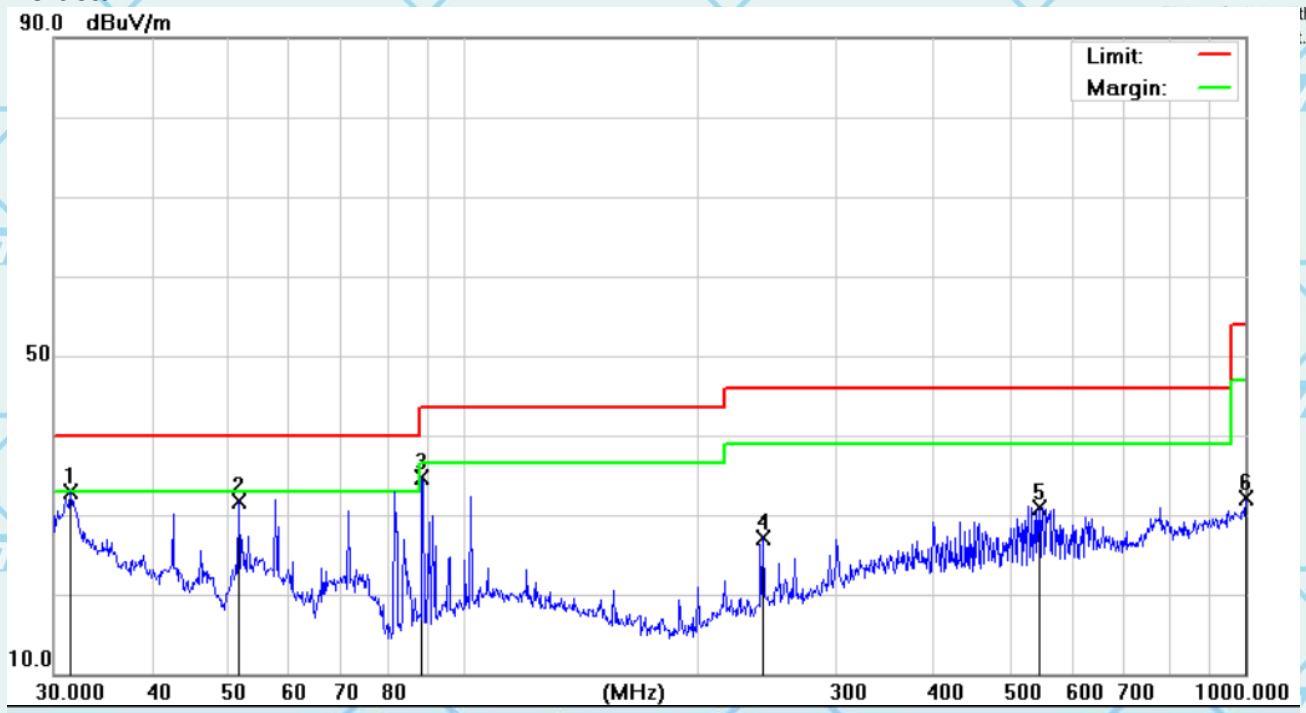
Frequency Range (30MHz-1GHz)

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	31.6202	25.54	4.17	29.71	40.00	-10.29	QP
2		63.3132	31.55	-6.47	25.08	40.00	-14.92	QP
3		95.0930	28.69	-4.84	23.85	43.50	-19.65	QP
4		239.9874	38.95	-5.18	33.77	46.00	-12.23	QP
5		432.5457	35.13	-0.48	34.65	46.00	-11.35	QP
6		993.0114	22.51	7.19	29.70	54.00	-24.30	QP

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	31.5095	28.59	4.22	32.81	40.00	-7.19	QP
2		51.6616	37.00	-5.22	31.78	40.00	-8.22	QP
3		88.6524	40.71	-6.08	34.63	43.50	-8.87	QP
4		241.6763	32.15	-5.11	27.04	46.00	-18.96	QP
5		545.1826	30.00	0.90	30.90	46.00	-15.10	QP
6		1000.000	24.71	7.32	32.03	54.00	-21.97	QP

Above 1GHz

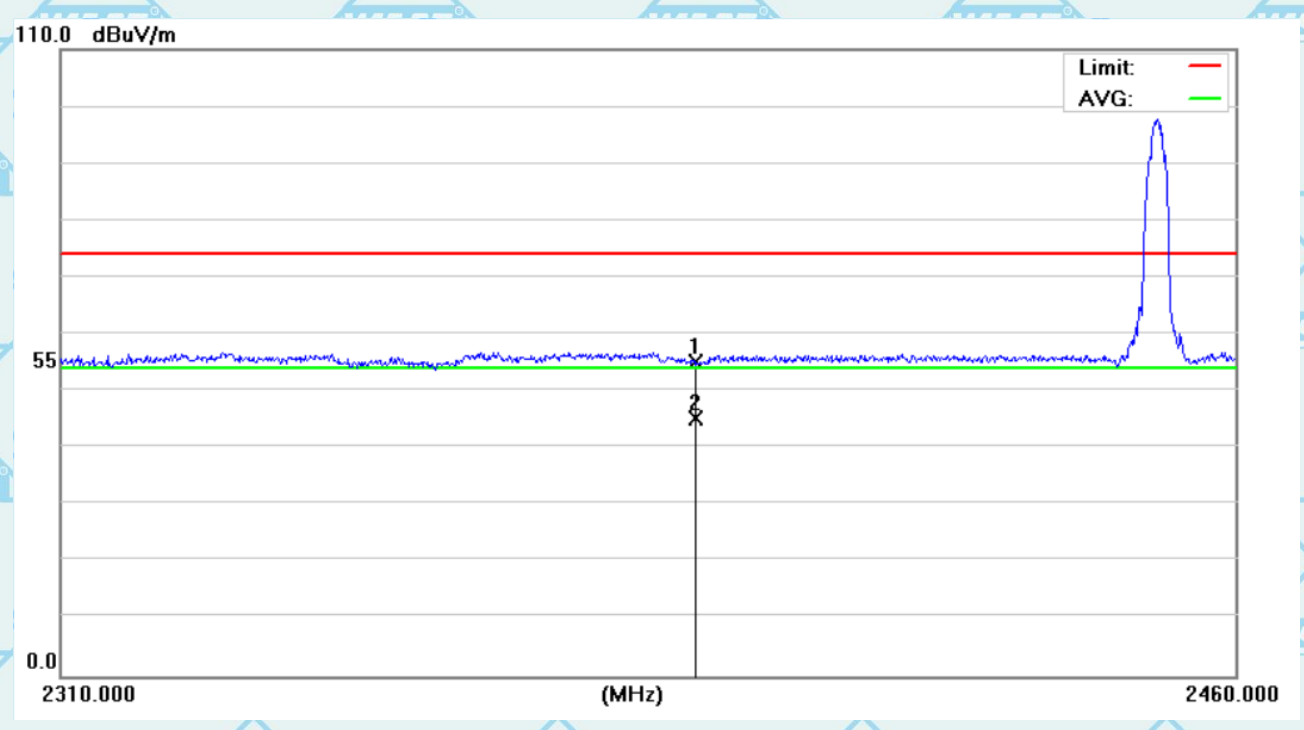
Middle Channel-2450MHz							
4900	59.62	-0.8	58.82	74	-15.18	H	PK
4900	40.34	-0.8	39.54	54	-14.46	H	AV
7350	46.80	6.94	53.74	74	-20.26	H	PK
7350	33.16	6.94	40.10	54	-13.90	H	AV
4900	55.98	-0.8	55.18	74	-18.82	V	PK
4900	43.49	-0.8	42.69	54	-11.31	V	AV
7350	45.33	6.94	52.27	74	-21.73	V	PK
7350	33.30	6.94	40.24	54	-13.76	V	AV

Note:

1. *All emissions not reported were more than 20dB below the specified limit or in the noise floor.*
2. *Emission Level= Reading Level+Probe Factor +Cable Loss.*
3. *Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*

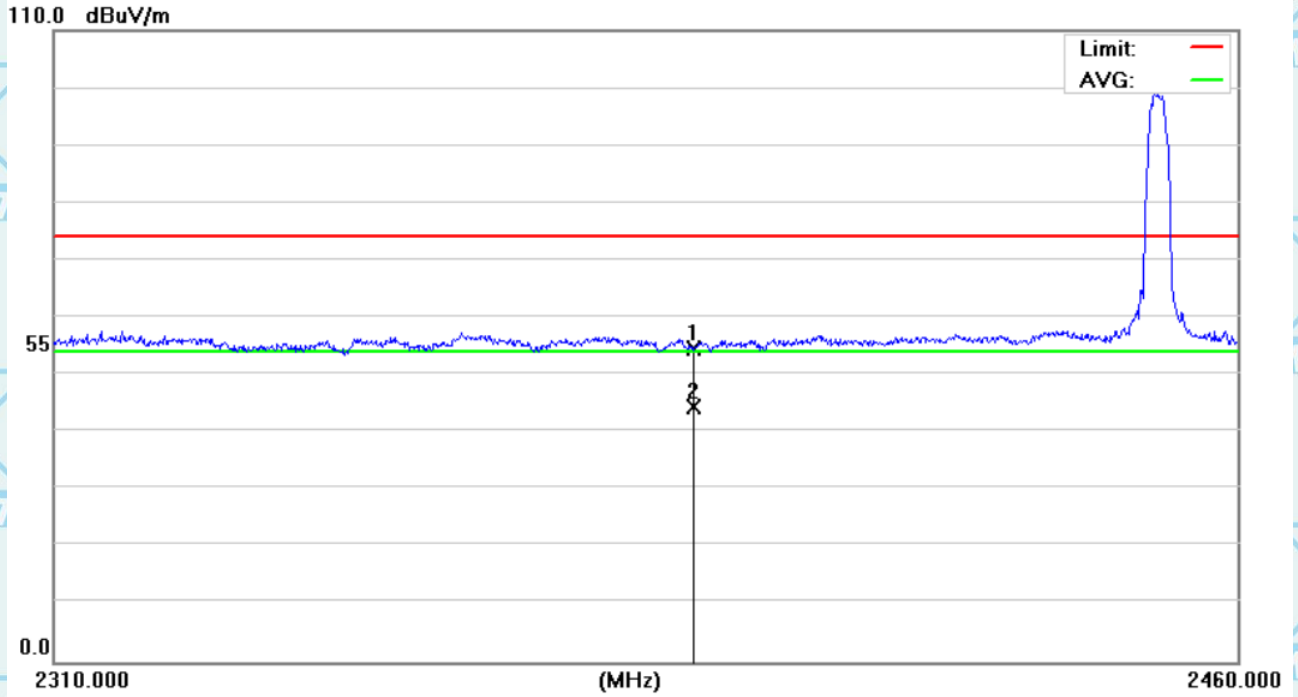
Band Edge Requirement

Horizontal:



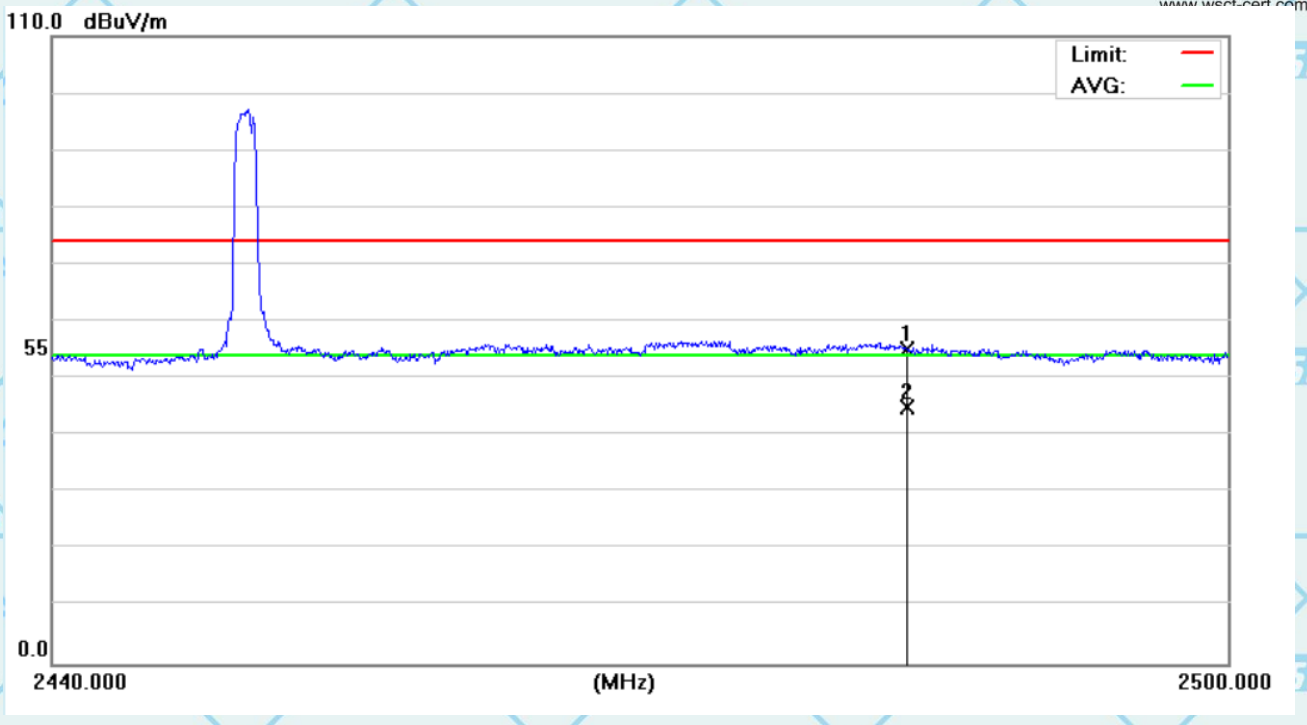
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2390.000	46.93	8.10	55.03	74.00	-18.97	peak
2	*	2390.000	37.16	8.10	45.26	54.00	-8.74	AVG

Vertical:



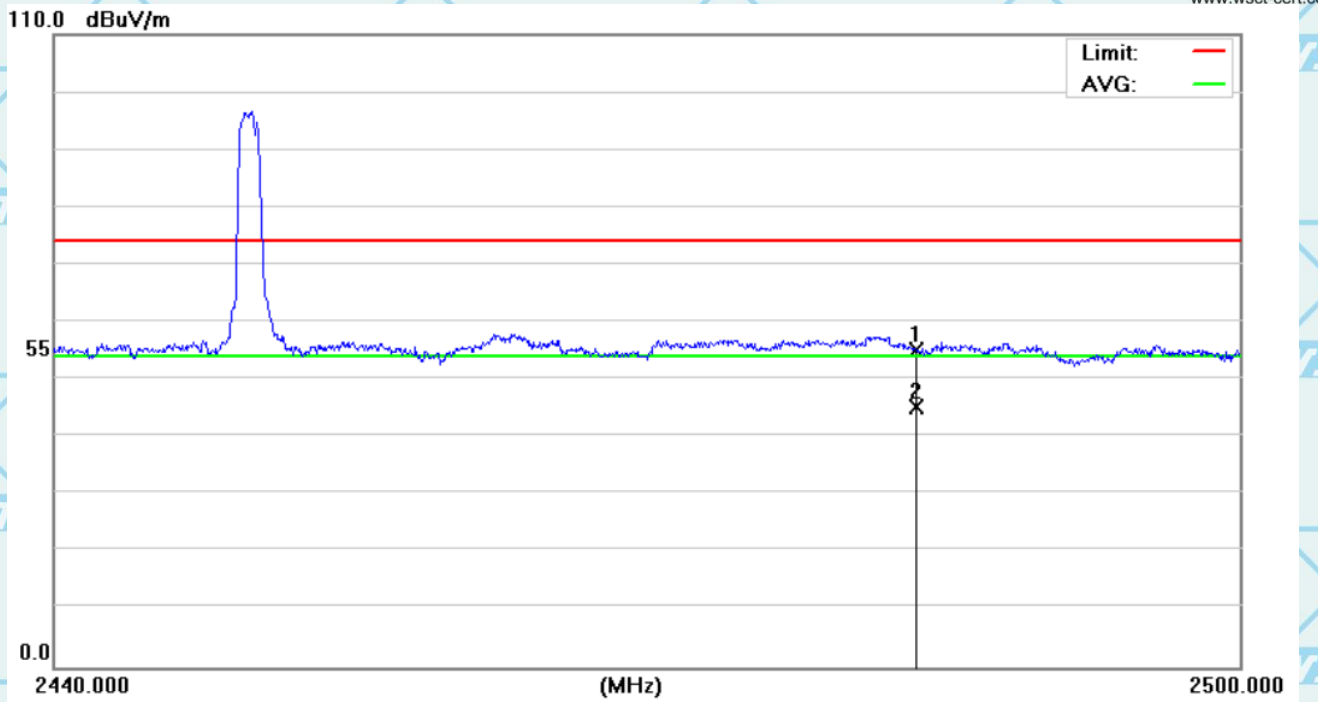
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2390.000	46.43	8.10	54.53	74.00	-19.47	peak
2	*	2390.000	36.18	8.10	44.28	54.00	-9.72	AVG

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	46.96	8.13	55.09	74.00	-18.91	peak
2	*	2483.500	36.74	8.13	44.87	54.00	-9.13	AVG

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	46.96	8.13	55.09	74.00	-18.91	peak
2	*	2483.500	37.02	8.13	45.15	54.00	-8.85	AVG

7.3.20dB Occupied Bandwidth

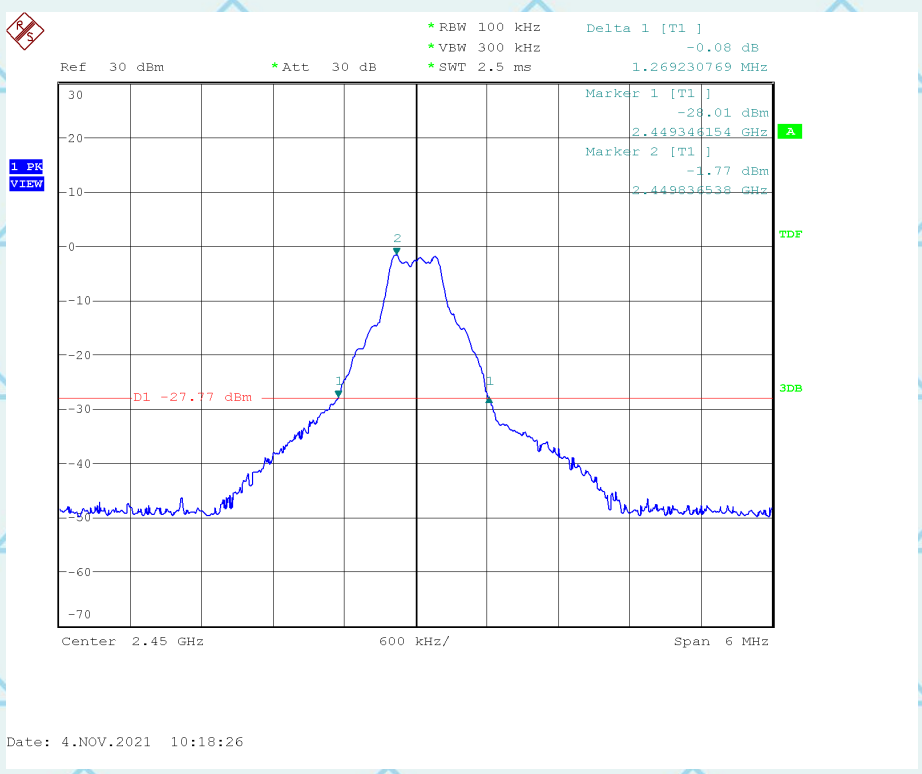
7.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.215(c)/ Part 2 J Section 2.1049
Test Method:	ANSI C63.10: 2013
Limit:	N/A
	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW≥1% of the 20 dB bandwidth; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. 4. Measure and record the results in the test report.
Test setup:	
Test Mode:	Transmitting mode with modulation
Test results:	PASS

7.3.2. Test data

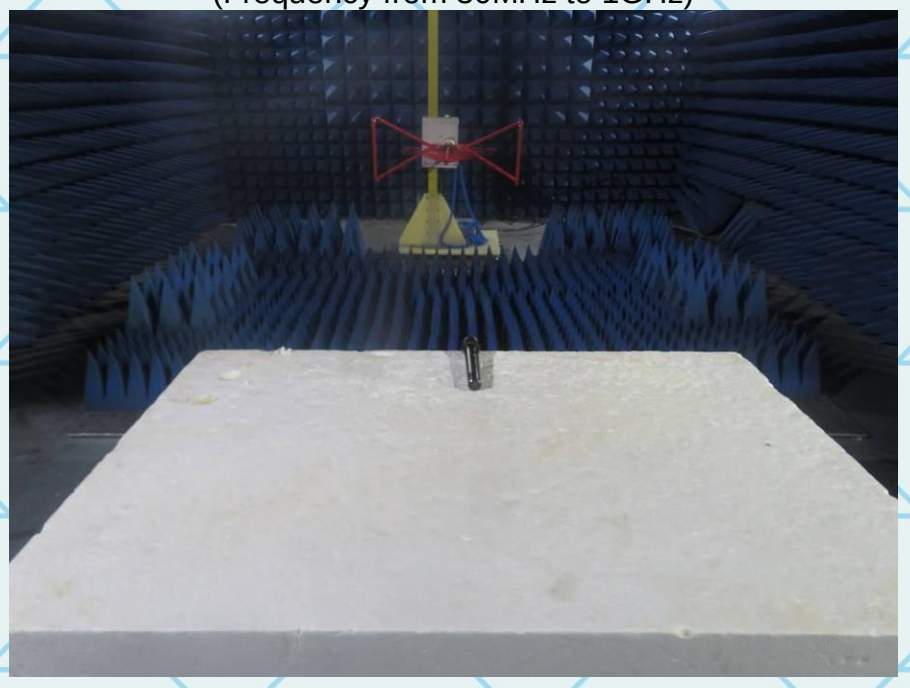
Test Channel	20dB Occupy Bandwidth (kHz)	Conclusion
2450(MHz)	1269	PASS

Test plots as follows:



8. EUT TEST PHOTO

RADIATED EMISSION TEST
(Frequency from 30MHz to 1GHz)



RADIATED EMISSION TEST
(Frequency above 1GHz)