

RF TEST REPORT

For

Dongguan Lingjie Electronics & Technology Co., Ltd

Product Name: 2.4G wireless mouse

Test Model(s): MK228

Report Reference No. : DACE260131001RF001

FCC ID : 2ANBU-MK228

Applicant's Name : Dongguan Lingjie Electronics & Technology Co., Ltd

Address : No.23 Zhenxing North RD, Xiegang Town, Dongguan China

Testing Laboratory : Shenzhen DACE Testing Technology Co., Ltd.

Address : 102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park,
Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen,
Guangdong, China

Test Specification Standard : 47 CFR Part 15.249

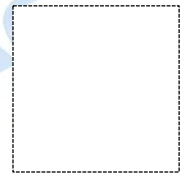
Date of Receipt : January 31, 2026

Date of Test : January 31, 2026 to March 12, 2026

Date of Issue : March 12, 2026

Result : Pass

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen DACE Testing Technology Co., Ltd. This document may be altered or revised by Shenzhen DACE Testing Technology Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample



Apply for company information

Applicant's Name	:	Dongguan Lingjie Electronics & Technology Co., Ltd
Address	:	No.23 Zhenxing North RD, Xiegang Town, Dongguan China
Product Name	:	2.4G wireless mouse
Test Model(s)	:	MK228
Series Model(s)	:	MK368RGB, MK228G, MK368G, K228, K368, K368RGB, LPK368, LPK228, K795, K795U, K793, K793U, Q9, Q9U, Q10, Q10U
Test Specification Standard(s)	:	47 CFR Part 15.249

NOTE1:

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

Compiled by:

Amy Zhu / Test Engineer

March 12, 2026

Supervised by:

Stone Yin / Project Engineer

March 12, 2026

Approved by:

Tom Chen / Manager

March 12, 2026

Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	DACE260131001RF001	March 12, 2026

CONTENTS

1	TEST SUMMARY	5
1.1	TEST STANDARDS	5
1.2	SUMMARY OF TEST RESULT	5
2	GENERAL INFORMATION.....	6
2.1	CLIENT INFORMATION	6
2.2	DESCRIPTION OF DEVICE (EUT).....	6
2.3	DESCRIPTION OF TEST MODES.....	6
2.4	DESCRIPTION OF SUPPORT UNITS	6
2.5	OPERATION FREQUENCY EACH OF CHANNEL.....	7
2.6	EQUIPMENTS USED DURING THE TEST	8
2.7	STATEMENT OF THE MEASUREMENT UNCERTAINTY	10
3	EVALUATION RESULTS (EVALUATION).....	11
3.1	ANTENNA REQUIREMENT.....	11
3.1.1	Conclusion:.....	11
4	RADIO SPECTRUM MATTER TEST RESULTS (RF).....	12
4.1	CONDUCTED EMISSION AT AC POWER LINE	12
4.1.1	E.U.T. Operation:.....	12
4.1.2	Test Setup Diagram:.....	12
4.1.3	Test Data:	13
4.2	OCCUPIED BANDWIDTH	15
4.2.1	E.U.T. Operation:.....	15
4.2.2	Test Setup Diagram:.....	16
4.2.3	Test Data:	16
4.3	FIELD STRENGTH OF FUNDAMENTAL	17
4.3.1	E.U.T. Operation:.....	17
4.3.2	Test Data:	17
4.4	BAND EDGE EMISSIONS (RADIATED)	18
4.4.1	E.U.T. Operation:.....	18
4.4.2	Test Setup Diagram:.....	18
4.4.3	Test Data:	19
4.5	EMISSIONS IN FREQUENCY BANDS (BELOW 1GHz)	23
4.5.1	E.U.T. Operation:.....	24
4.5.2	Test Data:	25
4.6	EMISSIONS IN FREQUENCY BANDS (ABOVE 1GHz).....	27
4.6.1	E.U.T. Operation:.....	28
4.6.2	Test Setup Diagram:.....	28
4.6.3	Test Data:	29
5	TEST SETUP PHOTOS	35
6	PHOTOS OF THE EUT	37
7	OCCUPIED BANDWIDTH	39

1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

47 CFR Part 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz

1.2 Summary of Test Result

Item	Standard	Method	Requirement	Result
Antenna requirement	47 CFR Part 15.249	/	47 CFR Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15.249	ANSI C63.10-2020 section 6.2	47 CFR 15.207(a)	Pass
Occupied Bandwidth	47 CFR Part 15.249	ANSI C63.10-2020, section 6.9.2	47 CFR 15.215(c)	Pass
Field strength of fundamental	47 CFR Part 15.249	ANSI C63.10-2020 section 6.6	47 CFR 15.249(a) 47 CFR 15.249(b)(1)	Pass
Band edge emissions (Radiated)	47 CFR Part 15.249	ANSI C63.10-2020 section 6.6.4	47 CFR 15.249(d)	Pass
Emissions in frequency bands (below 1GHz)	47 CFR Part 15.249	ANSI C63.10-2020 section 6.5	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)	Pass
Emissions in frequency bands (above 1GHz)	47 CFR Part 15.249	ANSI C63.10-2020 section 6.6	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)	Pass

2 GENERAL INFORMATION

2.1 Client Information

Applicant's Name : Dongguan Lingjie Electronics & Technology Co., Ltd
Address : No.23 Zhenxing North RD, Xiegang Town, Dongguan China

Manufacturer : Dongguan Lingjie Electronics & Technology Co., Ltd
Address : No.23 Zhenxing North RD, Xiegang Town, Dongguan China

2.2 Description of Device (EUT)

Product Name:	2.4G wireless mouse
Model/Type reference:	MK228
Series Model:	MK368RGB, MK228G, MK368G, K228, K368, K368RGB, LPK368, LPK228, K795, K795U, K793, K793U, Q9, Q9U, Q10, Q10U
Model Difference:	All the model are the same circuit and RF module, only for model name are different. Test sample model: MK228
Trade Mark:	
Power Supply:	DC 5V charging from adapter DC 3.7V by battery
Operation Frequency:	2403.85-2479.85MHz
Number of Channels:	3CH
Modulation Type:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	2.34dBi
Hardware Version:	V1.0
Software Version:	V1.0

2.3 Description of Test Modes

No	Title	Description
TM1	TX	Keep the EUT in TX mode
Test Environment		Normal Voltage(DC): 3.7V

2.4 Description of Support Units

Title	Manufacturer	Model No.	Serial No.
Adapter	PHOTON	ATXC-069AC65B	/
PC	HP	TPN-Q304	/

2.5 Operation Frequency each of channel

CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
1	2403.85	2	2441.85	3	2479.85	/	/

Note: In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)
	GFSK
Lowest channel	2403.85MHz
Middle channel	2441.85MHz
Highest channel	2479.85MHz

2.6 Equipments Used During The Test

Conducted Emission at AC power line					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Power absorbing clamp	SCHWARZ BECK	MESS-ELEKTRONIK	/	2025-04-23	2026-04-22
Electric Network	SCHWARZ BECK	CAT5 8158	CAT5 8158#207	2025-04-18	2026-04-17
Cable	SCHWARZ BECK	/	/	2025-04-18	2026-04-17
Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Attenuation	561-G071	2025-12-02	2026-12-01
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	1164.6607K03 -102109-MH	2025-04-25	2026-04-24
L.I.S.N	R&S	ESH3-Z5	831.5518.52	2025-04-18	2026-04-17
L.I.S.N	SCHWARZ BECK	NSLK 8126	05055	2025-04-18	2026-04-17
Pulse Limiter	CYBERTEK	EM5010A	/	2025-04-25	2026-04-24
EMI test software	EZ -EMC	EZ	V1.1.42	/	/

Occupied Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RF Test Software	Tachoy Information Technology(she nzen) Co.,Ltd.	RTS-01	V1.0.0	/	/
RF Sensor Unit	Tachoy Information Technology(she nzen) Co.,Ltd.	TR1029-2	000001	/	/
Wideband radio communication tester	R&S	CMW500	113410	2025-04-25	2026-04-24
Vector Signal Generator	Keysight	N5181A	MY50143455	2025-12-02	2026-12-01
Signal Generator	Keysight	N5182A	MY48180415	2025-12-02	2026-12-01
Spectrum Analyzer	Keysight	N9020A	MY53420323	2025-12-02	2026-12-01

**Field strength of fundamental
Band edge emissions (Radiated)
Emissions in frequency bands (below 1GHz)
Emissions in frequency bands (above 1GHz)**

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test software	Farad	EZ -EMC	V1.1.42	/	/
Positioning Controller	MF	MF-7802	/	/	/
Amplifier(18-40G)	COM-POWER	AH-1840	10100008-1	2024-04-26	2027-04-25
Horn antenna	COM-POWER	AH-1840 (18-40G)	10100008	2024-04-26	2027-04-25
Loop antenna	ZHINAN	ZN30900C	ZN30900C	2025-04-28	2026-04-27
Cable(LF)#2	Schwarzbeck	/	/	2025-04-12	2026-04-11
Cable(LF)#1	Schwarzbeck	/	/	2025-04-17	2026-04-16
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2025-04-25	2026-04-24
Cable(HF)#1	Schwarzbeck	SYV-50-3-1	/	2025-04-25	2026-04-24
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2025-04-29	2026-04-28
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2025-04-29	2026-04-28
Wideband radio communication tester	R&S	CMW500	113410	2025-04-25	2026-04-24
Spectrum Analyzer	R&S	FSP30	1321.3008K40-101729-jR	2025-04-18	2026-04-17
Test Receiver	R&S	ESCI 3	1166.5950K03-101431-Jq	2025-04-18	2026-04-17
Horn Antenna	Sunol Sciences	DRH-118	A091114	2025-04-21	2026-04-20
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2024-09-28	2026-09-27

2.7 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Disturbance (0.15~30MHz)	±3.41dB
Occupied Bandwidth	±3.63%
Radiated Emission (Above 1GHz)	±5.46dB
Radiated Emission (Below 1GHz)	±5.79dB
Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3 Evaluation Results (Evaluation)

3.1 Antenna requirement

Test Requirement:	Refer to 47 CFR Part 15.203, 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 shall be considered sufficient to comply with the provisions of this section.
-------------------	---

3.1.1 Conclusion:



4 Radio Spectrum Matter Test Results (RF)

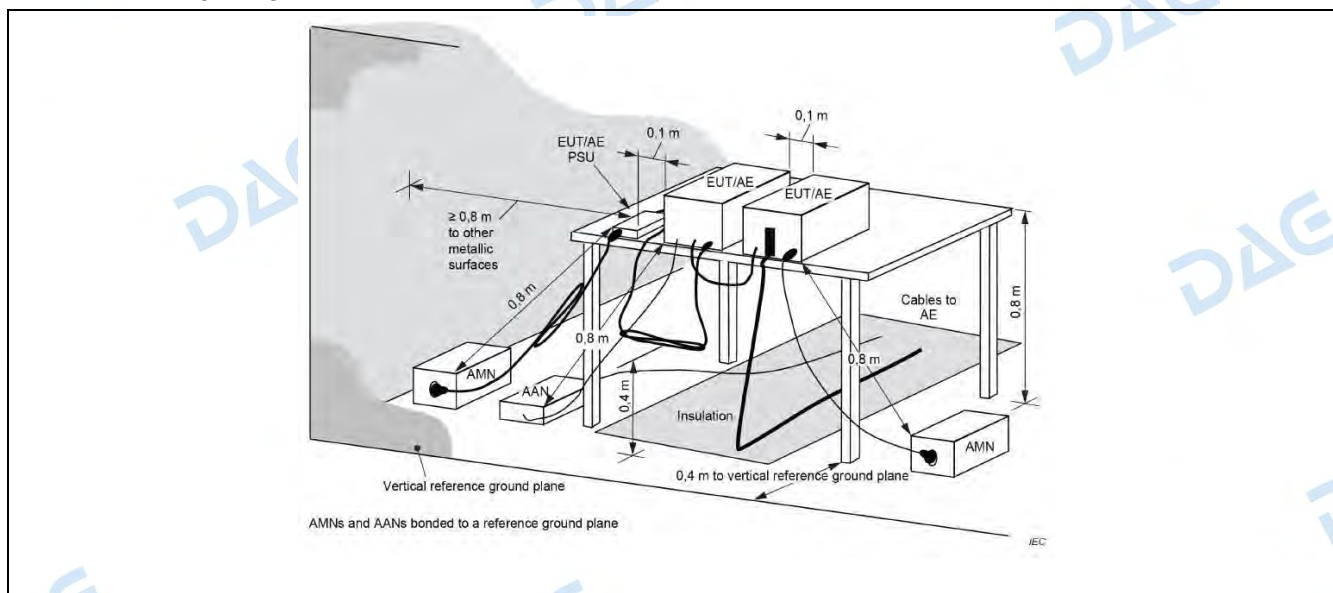
4.1 Conducted Emission at AC power line

Test Requirement:	Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.10-2020 section 6.2		
Procedure:	Refer to ANSI C63.10-2020 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

4.1.1 E.U.T. Operation:

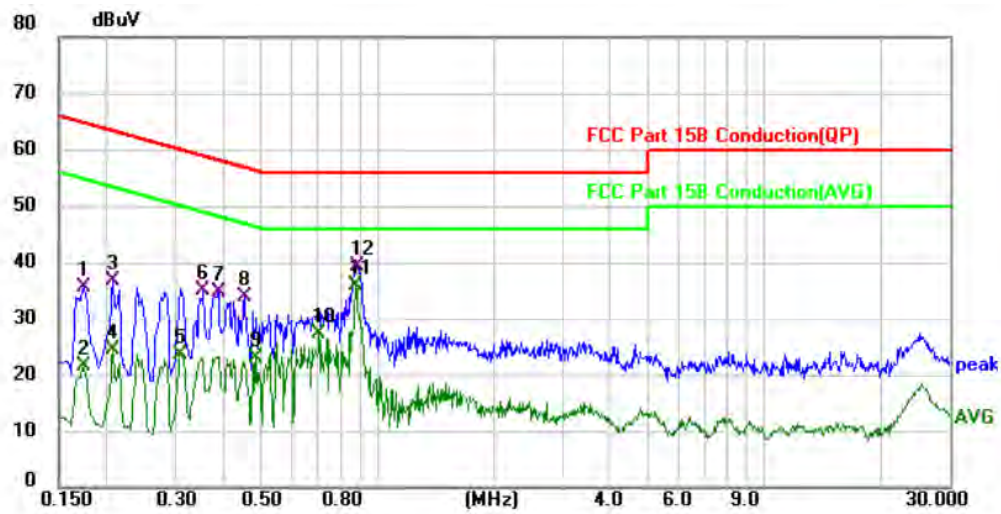
Operating Environment:					
Temperature:	23.5 °C	Humidity:	50 %	Atmospheric Pressure:	101.8 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

4.1.2 Test Setup Diagram:



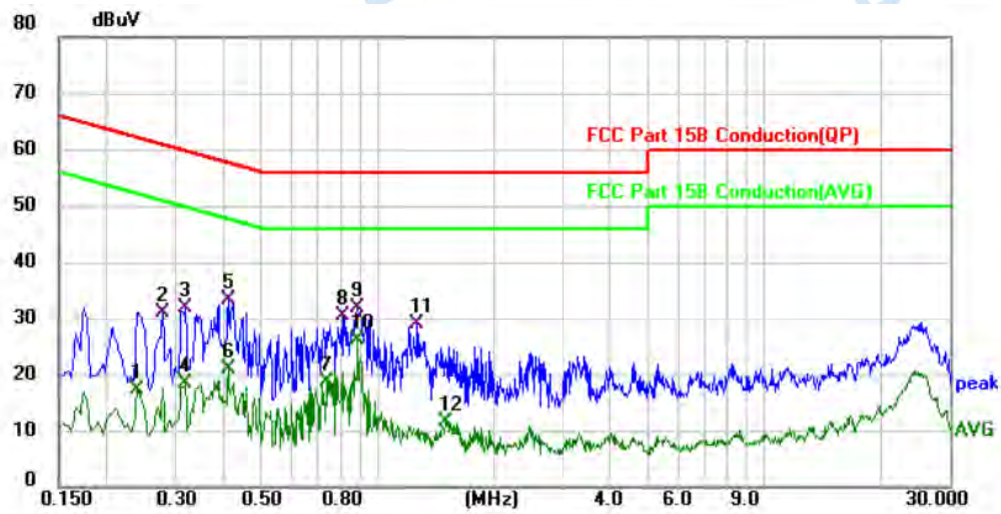
4.1.3 Test Data:

TM1 / Line: Line / Band: 2.4G / BW: 1 / CH: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1740	25.37	10.10	35.47	64.77	-29.30	QP	
2		0.1740	11.40	10.10	21.50	54.77	-33.27	AVG	
3		0.2060	26.50	10.10	36.60	63.37	-26.77	QP	
4		0.2060	14.43	10.10	24.53	53.37	-28.84	AVG	
5		0.3100	13.45	10.09	23.54	49.97	-26.43	AVG	
6		0.3540	24.81	10.08	34.89	58.87	-23.98	QP	
7		0.3860	24.73	10.09	34.82	58.15	-23.33	QP	
8		0.4500	23.70	10.10	33.80	56.88	-23.08	QP	
9		0.4860	12.92	10.10	23.02	46.24	-23.22	AVG	
10		0.7060	17.15	10.11	27.26	46.00	-18.74	AVG	
11	*	0.8780	25.77	10.10	35.87	46.00	-10.13	AVG	
12		0.8820	29.27	10.10	39.37	56.00	-16.63	QP	

TM1 / Line: Neutral / Band: 2.4G / BW: 1 / CH: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2380	7.23	10.08	17.31	52.17	-34.86	AVG	
2		0.2779	20.96	10.08	31.04	60.88	-29.84	QP	
3		0.3180	21.72	10.08	31.80	59.76	-27.96	QP	
4		0.3180	8.27	10.08	18.35	49.76	-31.41	AVG	
5		0.4100	23.29	10.08	33.37	57.65	-24.28	QP	
6		0.4100	10.87	10.08	20.95	47.65	-26.70	AVG	
7		0.7380	8.73	10.09	18.82	46.00	-27.18	AVG	
8		0.8100	20.27	10.09	30.36	56.00	-25.64	QP	
9		0.8860	21.86	10.08	31.94	56.00	-24.06	QP	
10	*	0.8860	16.03	10.08	26.11	46.00	-19.89	AVG	
11		1.2660	18.81	10.06	28.87	56.00	-27.13	QP	
12		1.5100	1.46	10.05	11.51	46.00	-34.49	AVG	

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

4.2 Occupied Bandwidth

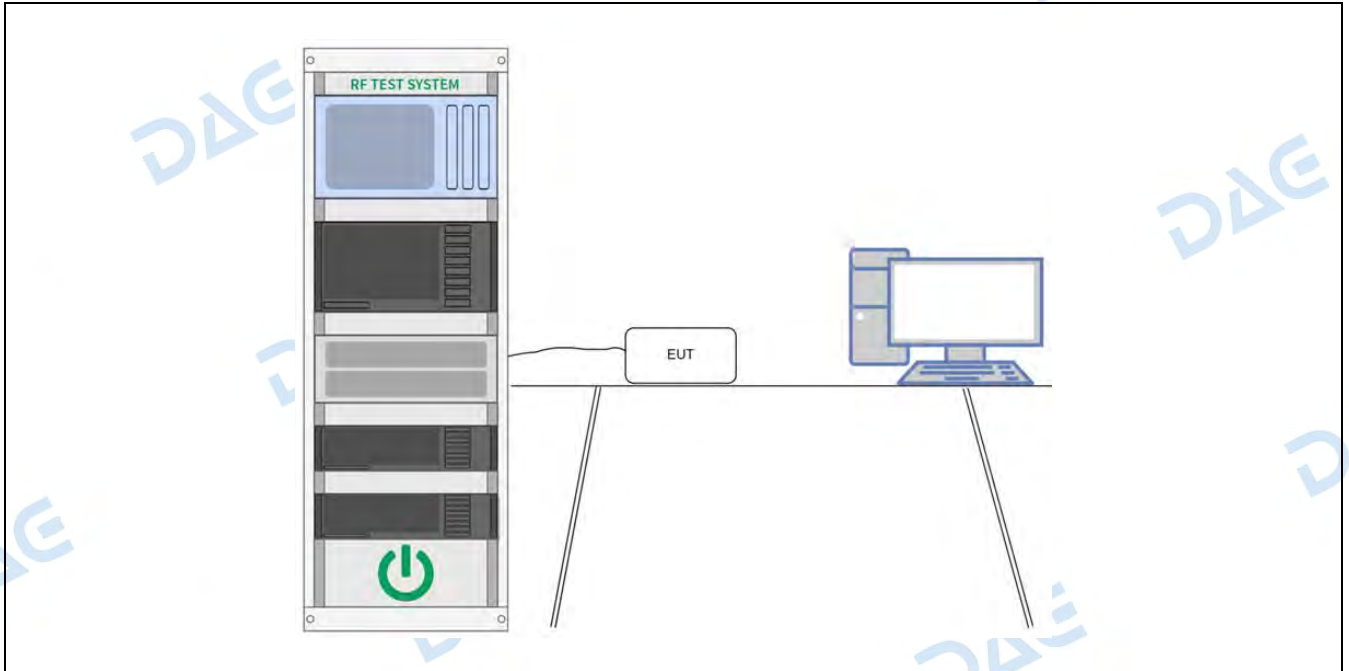
Test Requirement:	47 CFR 15.215(c)
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Method:	ANSI C63.10-2020, section 6.9.2
Procedure:	a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2. d) Steps a) through c) might require iteration to adjust within the specified tolerances. e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value. f) Set detection mode to peak and trace mode to max hold. g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value). h) Determine the “-xx dB down amplitude” using $[(\text{reference value}) - \text{xx}]$. Alternatively, this calculation may be made by using the marker-delta function of the instrument. i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j). j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth. k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

4.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.3 °C	Humidity:	50 %	Atmospheric Pressure:	101.8 kPa
Pretest mode:	TM1				

Final test mode:	TM1
------------------	-----

4.2.2 Test Setup Diagram:



4.2.3 Test Data:

Please Refer to Appendix for Details.

4.3 Field strength of fundamental

Test Requirement:	Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following: <table><tr><th>Fundamental frequency</th><th>Field strength of fundamental (millivolts/meter)</th><th>Field strength of harmonics (microvolts/meter)</th></tr><tr><td>902-928 MHz</td><td>50</td><td>500</td></tr><tr><td>2400-2483.5 MHz</td><td>50</td><td>500</td></tr><tr><td>5725-5875 MHz</td><td>50</td><td>500</td></tr><tr><td>24.0-24.25 GHz</td><td>250</td><td>2500</td></tr></table> The field strength of emissions in this band shall not exceed 2500 millivolts/meter.	Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)	902-928 MHz	50	500	2400-2483.5 MHz	50	500	5725-5875 MHz	50	500	24.0-24.25 GHz	250	2500
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)														
902-928 MHz	50	500														
2400-2483.5 MHz	50	500														
5725-5875 MHz	50	500														
24.0-24.25 GHz	250	2500														
Test Method:	ANSI C63.10-2020 section 6.6															
Procedure:	ANSI C63.10-2020 section 6.6 NOTE: For fundamental frequency, $RBW > 20 \text{ dB BW}$, $\sqrt{BW} > 3 \times RBW$, PK detector is for PK value, RMS detector is for AV value.															

4.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.9 °C	Humidity:	49 %	Atmospheric Pressure:	101.8 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.3.2 Test Data:

Frequency (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dBuV/m)	Detector (PK/AVG)	Polarization (H/V)
2403.85	95.01	114.00	-18.99	PK	H
2403.85	68.66	94.00	-25.34	AVG	V
2441.85	98.41	114.00	-15.59	PK	H
2441.85	66.64	94.00	-33.67	AVG	V
2479.85	98.00	114.00	-16.00	PK	H
2479.85	77.40	94.00	-16.60	AVG	V

Note: Margin = Emission Level – Limit; For fundamental frequency, RBW>20dB BW, VBW>=3XRBW

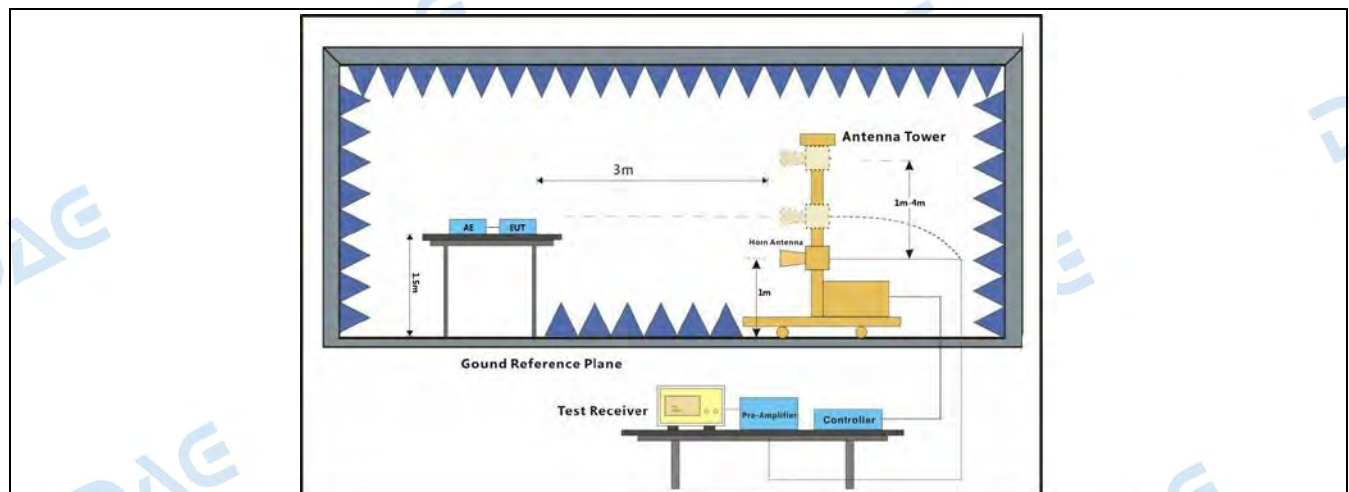
4.4 Band edge emissions (Radiated)

Test Requirement:	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 § 15.209, whichever is the lesser attenuation.		
Test Limit:	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 § 15.209, whichever is the lesser attenuation.		
	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
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.		
Test Method:	ANSI C63.10-2020 section 6.6.4		
Procedure:	ANSI C63.10-2020 section 6.6.4		

4.4.1 E.U.T. Operation:

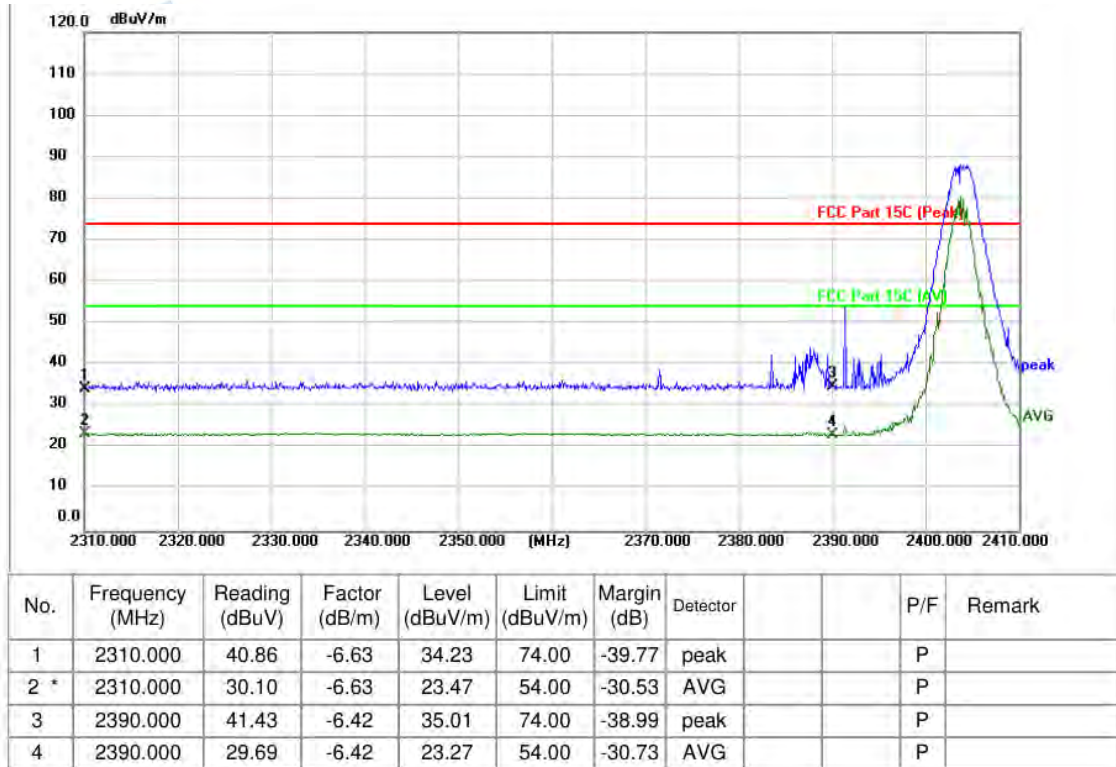
Operating Environment:					
Temperature:	22.7 °C	Humidity:	47 %	Atmospheric Pressure:	101.8 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

4.4.2 Test Setup Diagram:

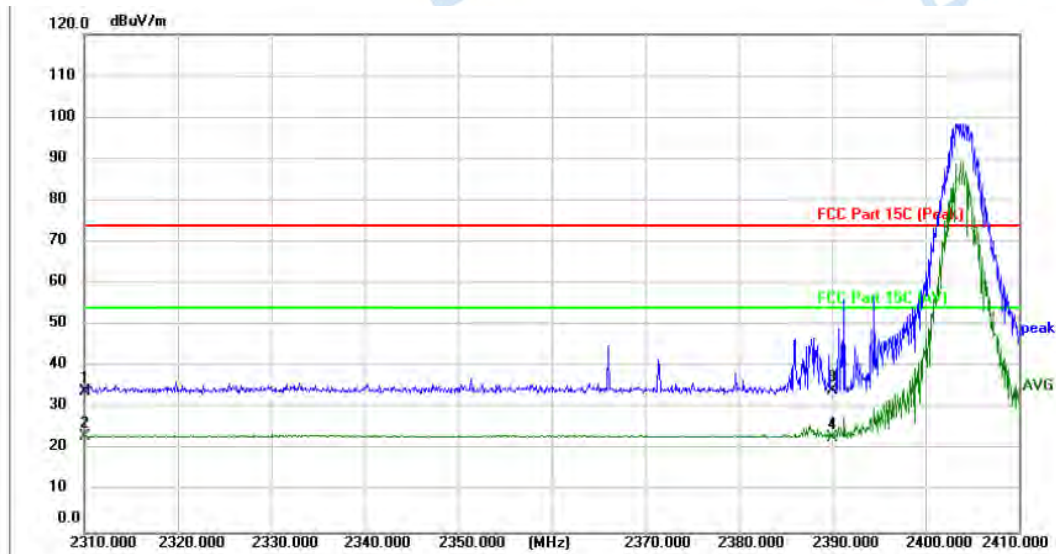


4.4.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L

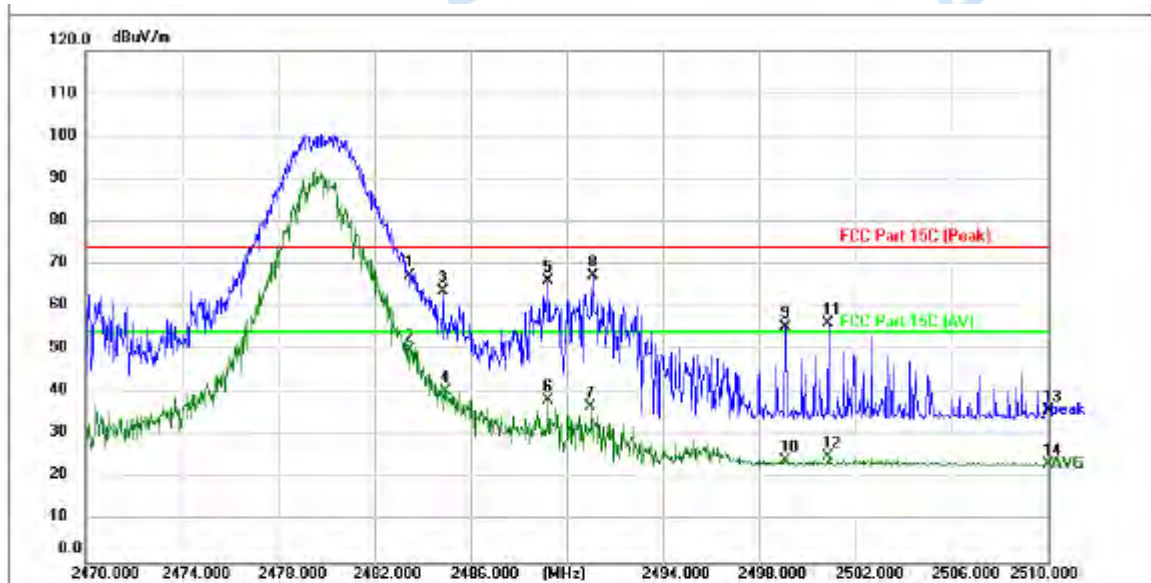


TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: L



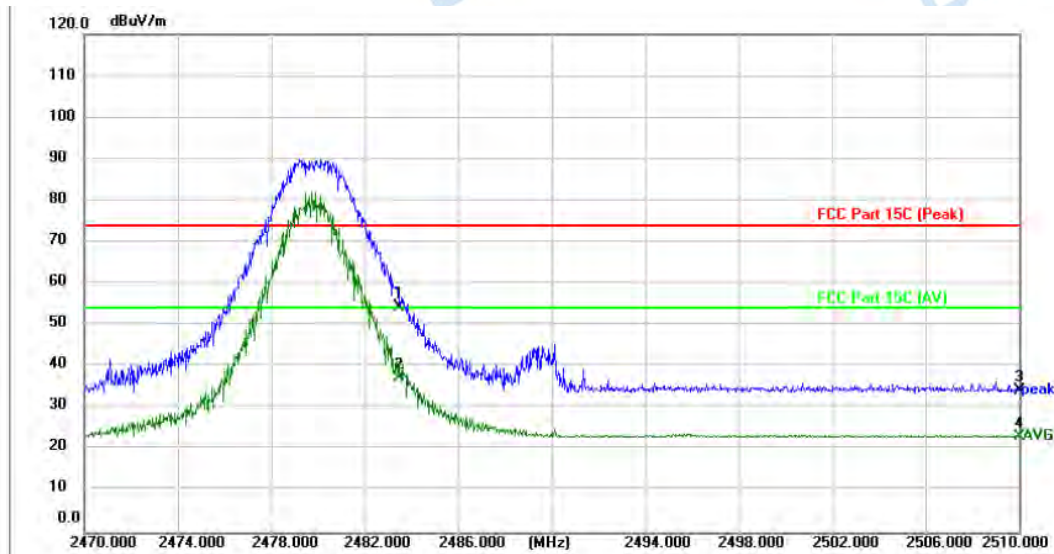
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			P/F	Remark
1	2310.000	40.74	-6.63	34.11	74.00	-39.89	peak			P	
2 *	2310.000	29.97	-6.63	23.34	54.00	-30.66	AVG			P	
3	2390.000	40.75	-6.42	34.33	74.00	-39.67	peak			P	
4	2390.000	29.49	-6.42	23.07	54.00	-30.93	AVG			P	

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	2483.500	73.55	-6.17	67.38	74.00	-6.62	peak		P	
2 *	2483.500	56.01	-6.17	49.84	54.00	-4.16	AVG		P	
3	2484.880	69.90	-6.17	63.73	74.00	-10.27	peak		P	
4	2484.960	46.62	-6.17	40.45	54.00	-13.55	AVG		P	
5	2489.240	72.18	-6.16	66.02	74.00	-7.98	peak		P	
6	2489.240	44.53	-6.16	38.37	54.00	-15.63	AVG		P	
7	2491.000	42.96	-6.16	36.80	54.00	-17.20	AVG		P	
8	2491.080	73.50	-6.16	67.34	74.00	-6.66	peak		P	
9	2499.080	61.50	-6.13	55.37	74.00	-18.63	peak		P	
10	2499.080	30.40	-6.13	24.27	54.00	-29.73	AVG		P	
11	2500.880	62.48	-6.13	56.35	74.00	-17.65	peak		P	
12	2500.880	31.31	-6.13	25.18	54.00	-28.82	AVG		P	
13	2510.000	41.87	-6.11	35.76	74.00	-38.24	peak		P	
14	2510.000	29.42	-6.11	23.31	54.00	-30.69	AVG		P	

TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			P/F	Remark
1	2483.500	60.71	-6.17	54.54	74.00	-19.46	peak			P	
2 *	2483.500	43.43	-6.17	37.26	54.00	-16.74	AVG			P	
3	2510.000	40.56	-6.11	34.45	74.00	-39.55	peak			P	
4	2510.000	29.36	-6.11	23.25	54.00	-30.75	AVG			P	

Remark: Margin=Level - Limit, Level=Test receiver reading + correction factor

4.5 Emissions in frequency bands (below 1GHz)

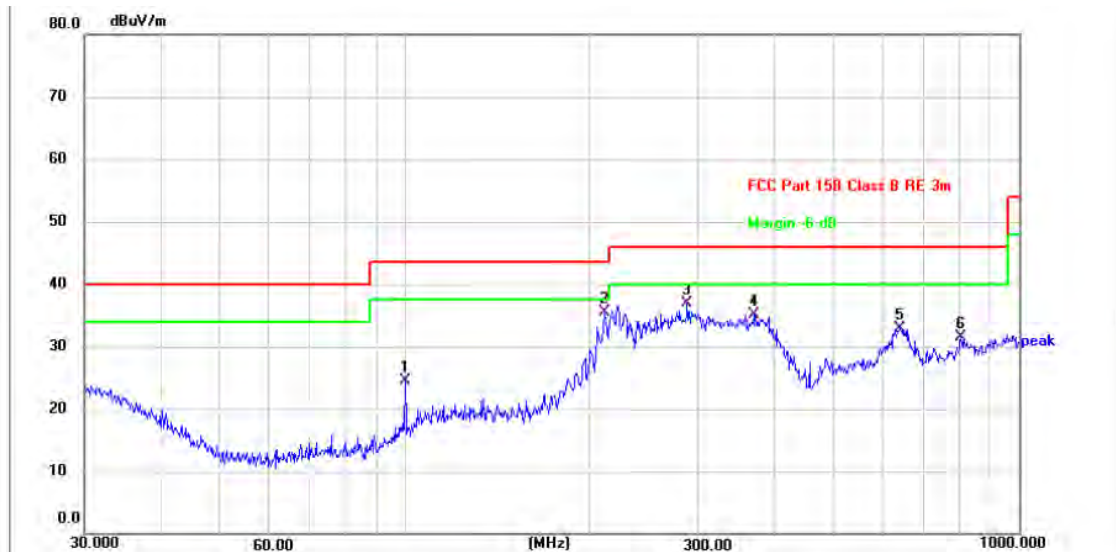
Test Requirement:	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)																																								
Test Limit:	Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following: <table border="1"> <thead> <tr> <th>Fundamental frequency</th><th>Field strength of fundamental (millivolts/meter)</th><th>Field strength of harmonics (microvolts/meter)</th></tr> </thead> <tbody> <tr> <td>902-928 MHz</td><td>50</td><td>500</td></tr> <tr> <td>2400-2483.5 MHz</td><td>50</td><td>500</td></tr> <tr> <td>5725-5875 MHz</td><td>50</td><td>500</td></tr> <tr> <td>24.0-24.25 GHz</td><td>250</td><td>2500</td></tr> </tbody> </table> 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 § 15.209, whichever is the lesser attenuation. <table border="1"> <thead> <tr> <th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr> </thead> <tbody> <tr> <td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr> <tr> <td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr> <tr> <td>1.705-30.0</td><td>30</td><td>30</td></tr> <tr> <td>30-88</td><td>100 **</td><td>3</td></tr> <tr> <td>88-216</td><td>150 **</td><td>3</td></tr> <tr> <td>216-960</td><td>200 **</td><td>3</td></tr> <tr> <td>Above 960</td><td>500</td><td>3</td></tr> </tbody> </table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section 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 point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.		Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)	902-928 MHz	50	500	2400-2483.5 MHz	50	500	5725-5875 MHz	50	500	24.0-24.25 GHz	250	2500	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
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)																																							
902-928 MHz	50	500																																							
2400-2483.5 MHz	50	500																																							
5725-5875 MHz	50	500																																							
24.0-24.25 GHz	250	2500																																							
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																																							
Test Method:	ANSI C63.10-2020 section 6.5																																								
Procedure:	ANSI C63.10-2020 section 6.5																																								

4.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.7 °C	Humidity:	48 %	Atmospheric Pressure:	101.8 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

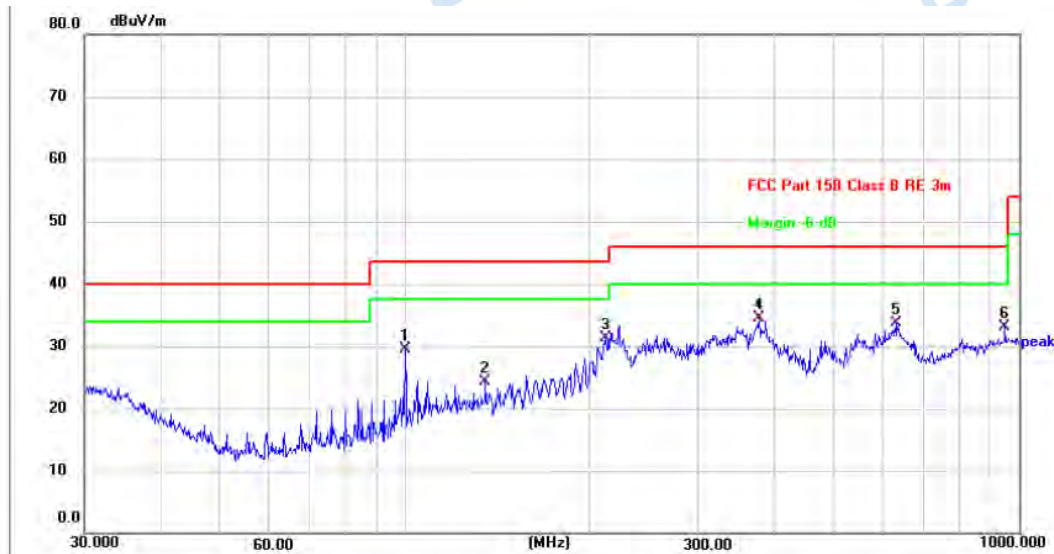
4.5.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	99.8777	33.71	-9.13	24.58	43.50	-18.92	QP	100		P	
2 *	210.7860	45.60	-10.02	35.58	43.50	-7.92	QP	100		P	
3	287.9904	44.95	-7.96	36.99	46.00	-9.01	QP	100		P	
4	369.4047	41.84	-6.69	35.15	46.00	-10.85	QP	100		P	
5	640.6110	34.10	-1.23	32.87	46.00	-13.13	QP	100		P	
6	804.6028	29.01	2.56	31.57	46.00	-14.43	QP	100		P	

TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	99.8777	38.63	-9.14	29.49	43.50	-14.01	QP	100		P	
2	135.0319	31.49	-7.17	24.32	43.50	-19.18	QP	100		P	
3	212.2695	41.07	-9.69	31.38	43.50	-12.12	QP	100		P	
4 *	377.2591	41.16	-6.60	34.56	46.00	-11.44	QP	100		P	
5	631.6884	34.82	-1.15	33.67	46.00	-12.33	QP	100		P	
6	948.7610	28.76	4.34	33.10	46.00	-12.90	QP	100		P	

Remark: Margin=Level - Limit, Level=Test receiver reading + correction factor

The test software will only record the worst test angle and height, and only the worst case will be recorded in the test report.

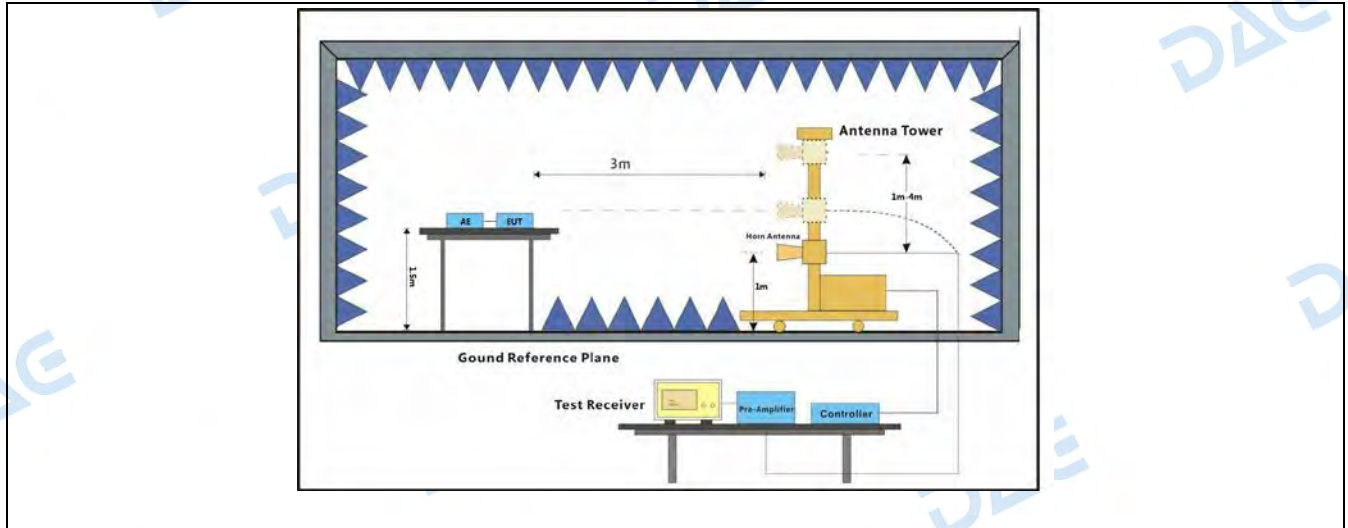
4.6 Emissions in frequency bands (above 1GHz)

Test Requirement:	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)																																								
Test Limit:	Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following: <table border="1"> <thead> <tr> <th>Fundamental frequency</th><th>Field strength of fundamental (millivolts/meter)</th><th>Field strength of harmonics (microvolts/meter)</th></tr> </thead> <tbody> <tr> <td>902-928 MHz</td><td>50</td><td>500</td></tr> <tr> <td>2400-2483.5 MHz</td><td>50</td><td>500</td></tr> <tr> <td>5725-5875 MHz</td><td>50</td><td>500</td></tr> <tr> <td>24.0-24.25 GHz</td><td>250</td><td>2500</td></tr> </tbody> </table> 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 § 15.209, whichever is the lesser attenuation. <table border="1"> <thead> <tr> <th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr> </thead> <tbody> <tr> <td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr> <tr> <td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr> <tr> <td>1.705-30.0</td><td>30</td><td>30</td></tr> <tr> <td>30-88</td><td>100 **</td><td>3</td></tr> <tr> <td>88-216</td><td>150 **</td><td>3</td></tr> <tr> <td>216-960</td><td>200 **</td><td>3</td></tr> <tr> <td>Above 960</td><td>500</td><td>3</td></tr> </tbody> </table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section 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 point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.		Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)	902-928 MHz	50	500	2400-2483.5 MHz	50	500	5725-5875 MHz	50	500	24.0-24.25 GHz	250	2500	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
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)																																							
902-928 MHz	50	500																																							
2400-2483.5 MHz	50	500																																							
5725-5875 MHz	50	500																																							
24.0-24.25 GHz	250	2500																																							
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																																							
Test Method:	ANSI C63.10-2020 section 6.6																																								
Procedure:	ANSI C63.10-2020 section 6.6																																								

4.6.1 E.U.T. Operation:

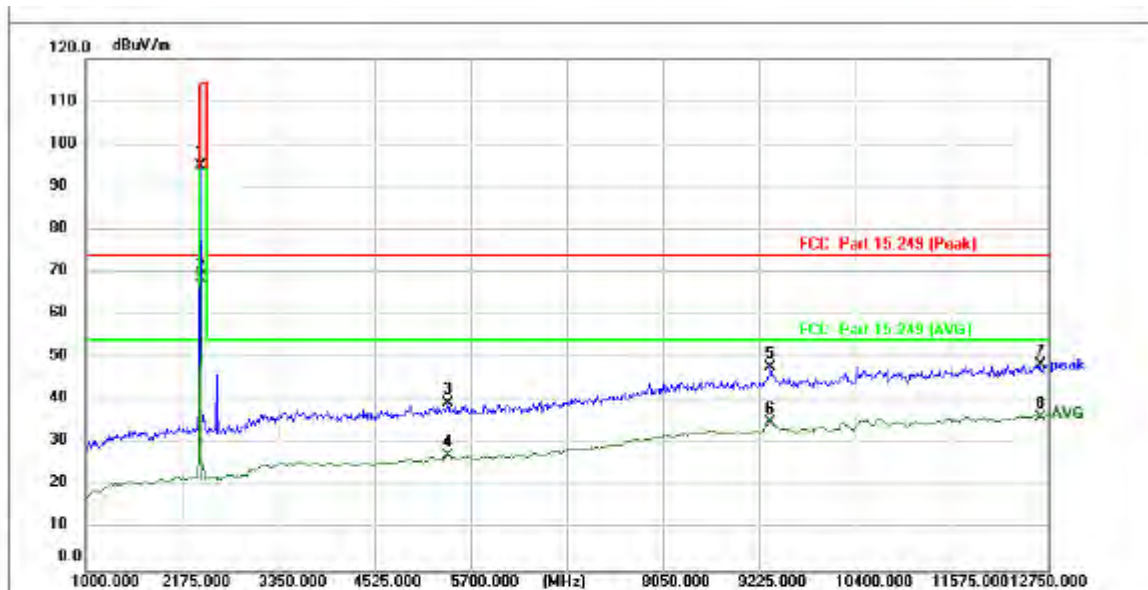
Operating Environment:					
Temperature:	23 °C	Humidity:	47 %	Atmospheric Pressure:	101.8 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.6.2 Test Setup Diagram:



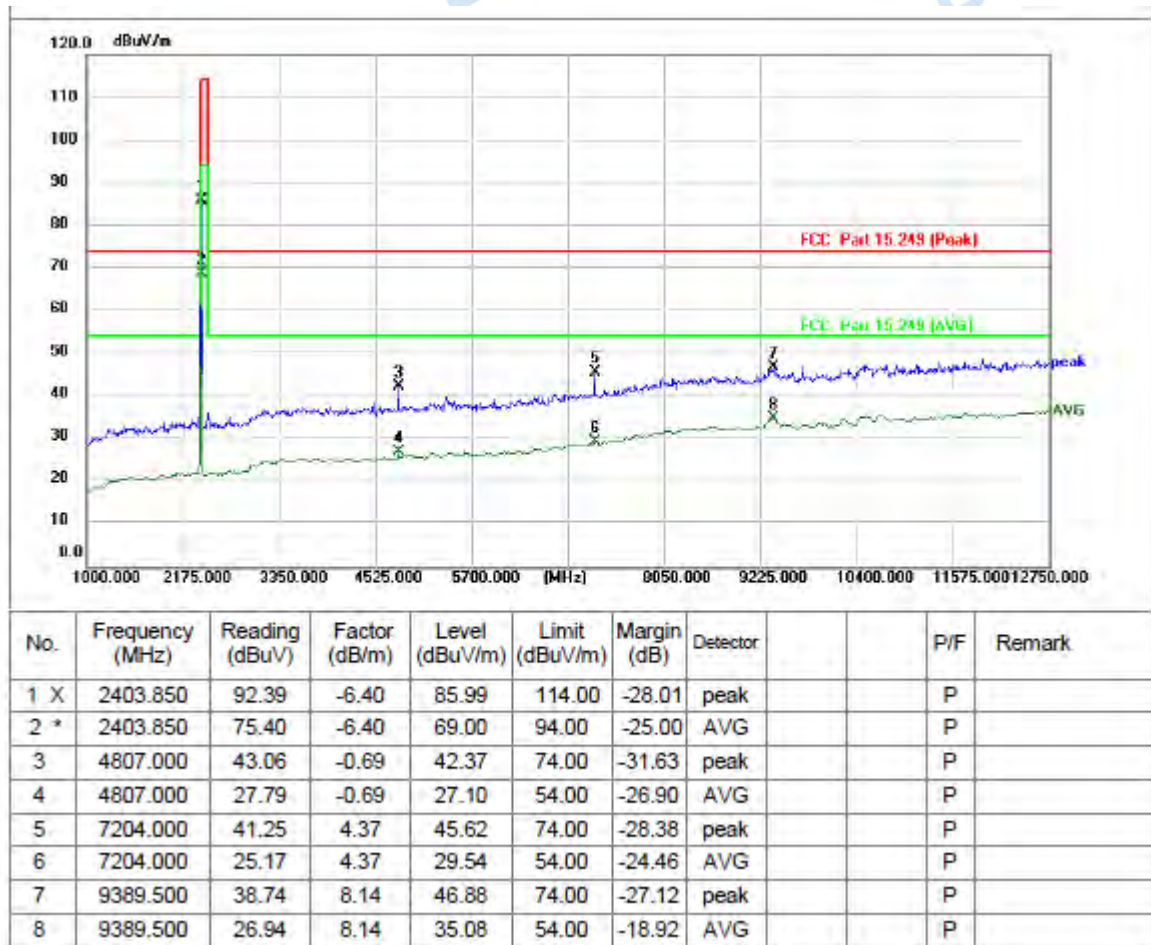
4.6.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L

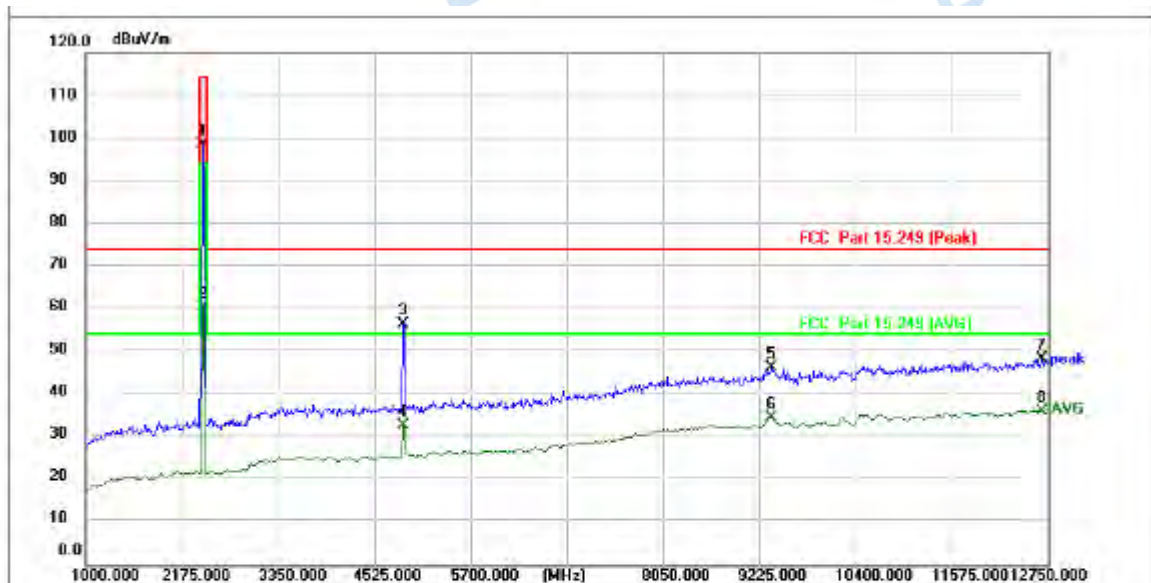


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1 *	2403.850	101.41	-6.40	95.01	114.00	-18.99	peak		P	
2 X	2403.850	75.06	-6.40	68.66	94.00	-25.34	AVG		P	
3	5429.750	38.69	0.80	39.49	74.00	-34.51	peak		P	
4	5429.750	26.25	0.80	27.05	54.00	-26.95	AVG		P	
5	9354.250	39.55	8.15	47.70	74.00	-26.30	peak		P	
6	9354.250	26.82	8.15	34.97	54.00	-19.03	AVG		P	
7	12656.000	37.26	11.28	48.54	74.00	-25.46	peak		P	
8	12656.000	24.93	11.28	36.21	54.00	-17.79	AVG		P	

TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: L

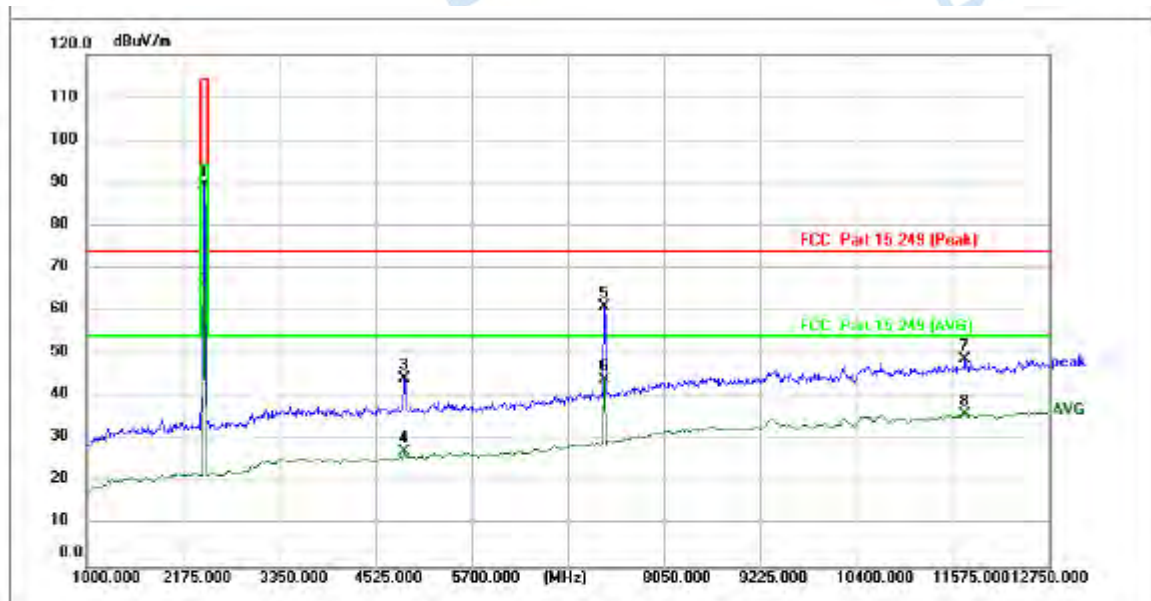


TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: M



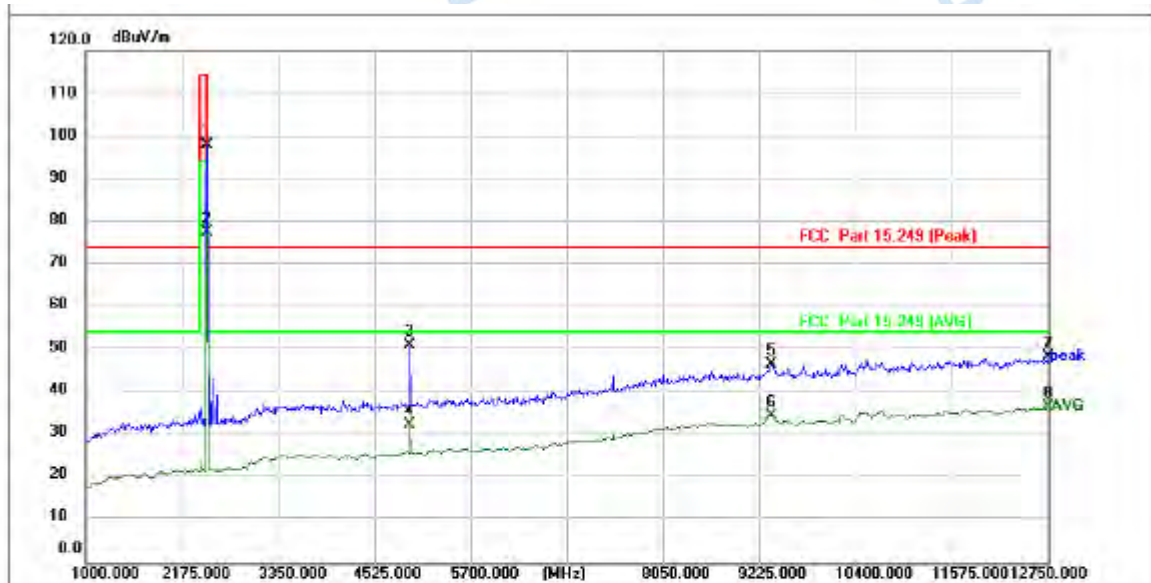
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			P/F	Remark
1 *	2441.850	104.72	-6.31	98.41	114.00	-15.59	peak			P	
2	2441.850	66.64	-6.31	60.33	94.00	-33.67	AVG			P	
3	4883.700	57.05	-0.45	56.60	74.00	-17.40	peak			P	
4	4883.700	33.25	-0.45	32.80	54.00	-21.20	AVG			P	
5	9366.000	38.28	8.15	46.43	74.00	-27.57	peak			P	
6	9366.000	26.64	8.15	34.79	54.00	-19.21	AVG			P	
7	12679.500	37.19	11.32	48.51	74.00	-25.49	peak			P	
8	12679.500	24.88	11.32	36.20	54.00	-17.80	AVG			P	

TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: M



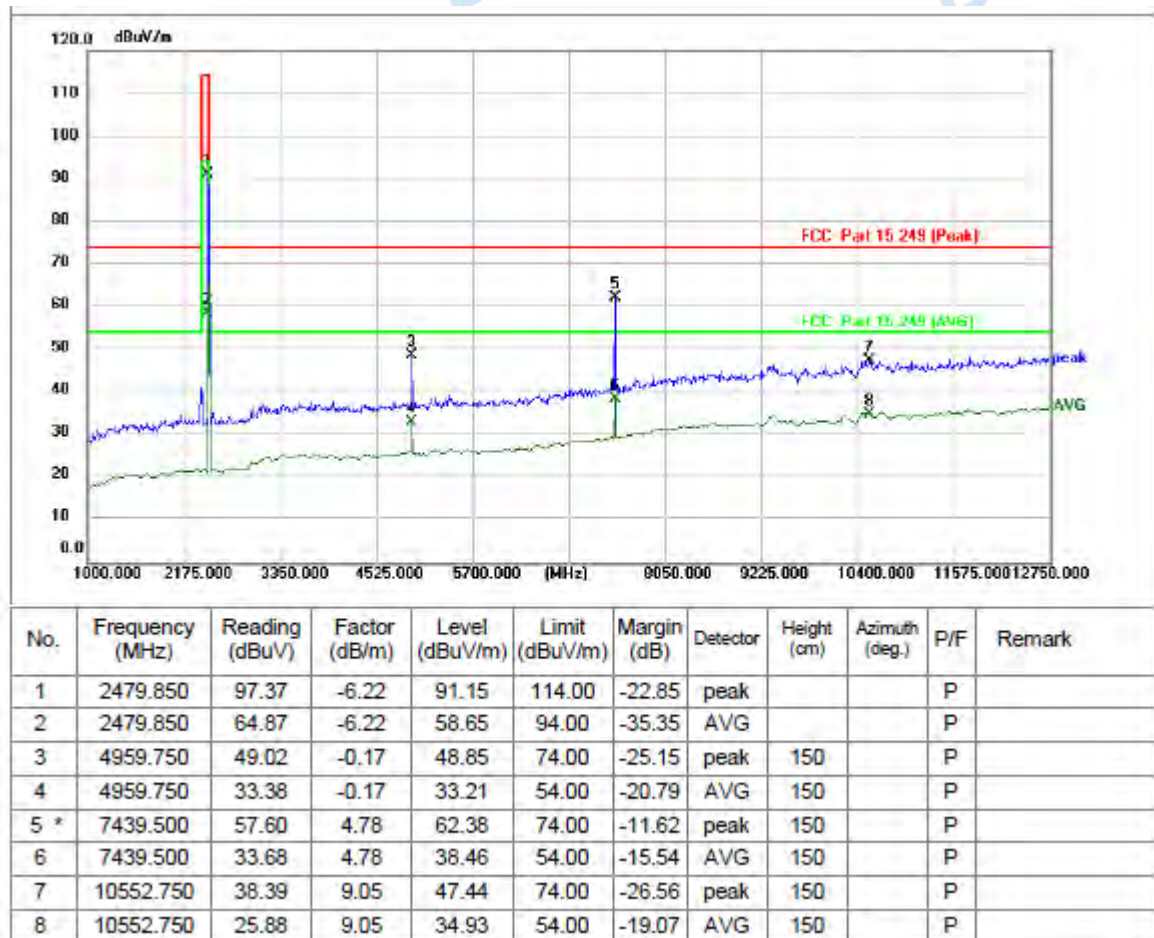
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	2441.850	95.90	-6.31	89.59	114.00	-24.41	peak		P	
2	2441.850	72.30	-6.31	65.99	94.00	-28.01	AVG		P	
3	4883.700	44.66	-0.45	44.21	74.00	-29.79	peak		P	
4	4883.700	27.56	-0.45	27.11	54.00	-26.89	AVG		P	
5	7325.500	56.52	4.57	61.09	74.00	-12.91	peak		P	
6 *	7325.500	39.33	4.57	43.90	54.00	-10.10	AVG		P	
7	11727.750	38.83	9.82	48.65	74.00	-25.35	peak		P	
8	11727.750	26.17	9.82	35.99	54.00	-18.01	AVG		P	

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	2479.850	104.19	-6.19	98.00	114.00	-16.00	peak			P	
2	2479.850	83.59	-6.19	77.40	94.00	-16.60	AVG			P	
3	4959.750	51.36	-0.17	51.19	74.00	-22.81	peak	150		P	
4	4959.750	32.66	-0.17	32.49	54.00	-21.51	AVG	150		P	
5	9377.750	38.46	8.14	46.60	74.00	-27.40	peak	150		P	
6	9377.750	26.62	8.14	34.76	54.00	-19.24	AVG	150		P	
7	12750.000	36.92	11.44	48.36	74.00	-25.64	peak	150		P	
8	12750.000	25.25	11.44	36.69	54.00	-17.31	AVG	150		P	

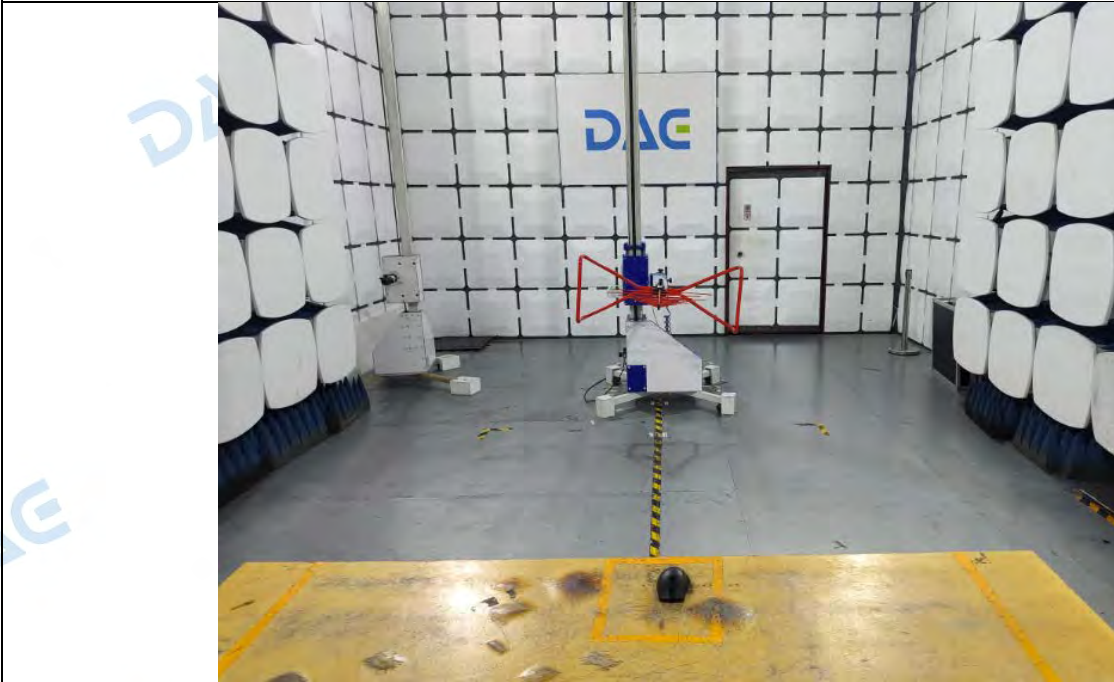
TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: H



Remark: Margin=Level - Limit, Level=Test receiver reading + correction factor

5 TEST SETUP PHOTOS

Emissions in frequency bands (below 1GHz)



Emissions in frequency bands (above 1GHz)



Conducted Emission at AC power line



6 PHOTOS OF THE EUT

Refer to Appendix - EUT Photos for EUT External Photo and Internal Photo.

Appendix

7 Occupied Bandwidth

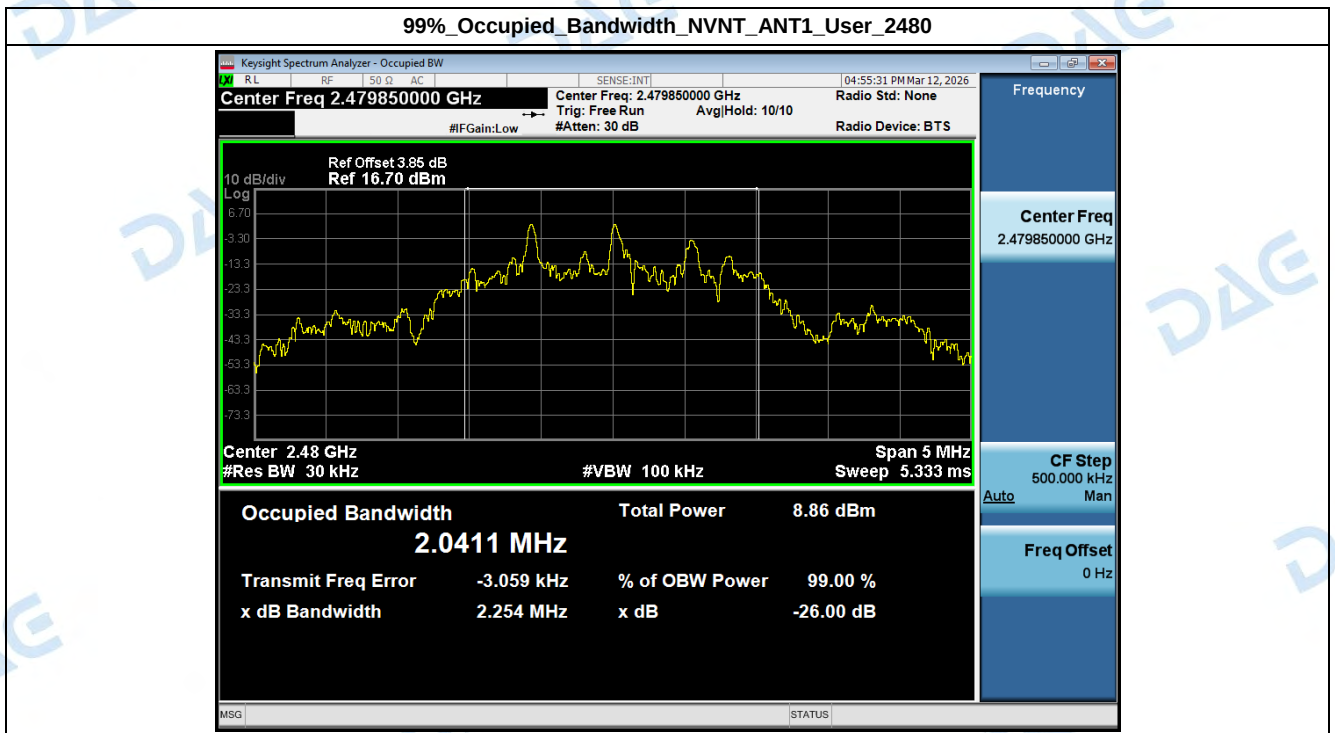
Condition	Antenna	Rate	Frequency (MHz)	99%OBW(MHz)
NVNT	ANT1	User	2403.85	2.015
NVNT	ANT1	User	2441.85	2.035
NVNT	ANT1	User	2479.85	2.041

99% Occupied Bandwidth_NVNT_ANT1_User_2404



99% Occupied Bandwidth_NVNT_ANT1_User_2442





***** End of Report *****