

RF TEST REPORT

For

Chengdu Hotack Technology Co., Ltd.

Product Name: PROJECTOR

Test Model(s): X5AD

Report Reference No. : DACE260409008RL006

FCC ID : 2BFIZ-X5AD

Applicant's Name : Chengdu Hotack Technology Co., Ltd.

Address : 501-502, Unit 3, Building 13, No. 666 Jinfenghuang Avenue, High-tech Industry Park, Jinniu District, Chengdu City, Si Chuan Province, 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 15.247

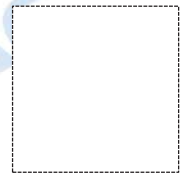
Date of Receipt : April 9, 2026

Date of Test : April 9, 2026 to June 30, 2026

Date of Issue : June 30, 2026

Result : **Pass**

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Apply for company information

Applicant's Name	:	Chengdu Hotack Technology Co., Ltd.
Address	:	501-502, Unit 3, Building 13, No. 666 Jinfenghuang Avenue, High-tech Industry Park, Jinniu District, Chengdu City, Si Chuan Province, China
Product Name	:	PROJECTOR
Test Model(s)	:	X5AD
Series Model(s)	:	X5Max, X5MAX, X5GTV, AC1069, X5, X5DD, X5BD, X5CD, X5ED, QV3000, WV3000, SDT2602
Test Specification Standard(s)	:	47 CFR Part 15.247

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.

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June 30, 2026

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June 30, 2026

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June 30, 2026

Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	DACE260409008RL006	June 30, 2026

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1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

47 CFR Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

1.2 Summary of Test Result

Item	Standard	Method	Requirement	Result
Antenna requirement	47 CFR Part 15.247	---	47 CFR 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15.247	ANSI C63.10-2020 section 6.2	47 CFR 15.207(a)	Pass
6dB Bandwidth	47 CFR Part 15.247	ANSI C63.10-2020, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(a)(2)	Pass
Maximum Conducted Output Power	47 CFR Part 15.247	ANSI C63.10-2020 section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(b)(3)	Pass
Power Spectral Density	47 CFR Part 15.247	ANSI C63.10-2020, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(e)	Pass
Emissions in non-restricted frequency bands	47 CFR Part 15.247	ANSI C63.10-2020 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d)	Pass
Band edge emissions (Radiated)	47 CFR Part 15.247	ANSI C63.10-2020 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (below 1GHz)	47 CFR Part 15.247	ANSI C63.10-2020 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (above 1GHz)	47 CFR Part 15.247	ANSI C63.10-2020 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d), 15.209, 15.205	Pass

2 GENERAL INFORMATION

2.1 Client Information

Applicant's Name : Chengdu Hotack Technology Co., Ltd.
Address : 501-502, Unit 3, Building 13, No. 666 Jinfenghuang Avenue, High-tech Industry Park, Jinniu District, Chengdu City, Si Chuan Province, China

Manufacturer : Chengdu Hotack Technology Co., Ltd.
Address : 501-502, Unit 3, Building 13, No. 666 Jinfenghuang Avenue, High-tech Industry Park, Jinniu District, Chengdu City, Si Chuan Province, China

2.2 Description of Device (EUT)

Product Name:	PROJECTOR
Model/Type reference:	X5AD
Series Model:	X5Max, X5MAX, X5GTV, AC1069, X5, X5DD, X5BD, X5CD, X5ED, QV3000, WV3000, SDT2602
Model Difference:	All the model are the same circuit and RF module, only the model name, appearance color and appearance are different. Test sample model: X5AD
Trade Mark:	N/A
Power Supply:	100-240V~, 50/60Hz, 2.5A
Operation Frequency:	2402-2480MHz
Number of Channels:	40CH
Modulation Type:	GFSK
Antenna Type:	Internal Antenna
Antenna Gain:	2.56dBi
Hardware Version:	V1.0
Software Version:	V1.0

2.3 Description of Test Modes

No	Title	Description
TM1	TX mode	Keep the EUT in TX mode
Test Environment		Normal Voltage(AC): 120V

2.4 Description of Support Units

The EUT was tested as an independent device.

2.5 Operation Frequency each of channel

CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
1	2412	2	2417	3	2422	4	2427
5	2432	6	2437	7	2442	8	2447
9	2462	10	2457	11	2462	/	/

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)
	BLE(1Mbps, 2Mbps)
Lowest channel	2402MHz
Middle channel	2440MHz
Highest channel	2480MHz

2.6 Equipments Used During The Test

Conducted Emission at AC power line						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Date	Cal Due Date
Power absorbing clamp	SCHWARZ BECK	MESS-ELEKTRONIK	/	2025-03-24	2026-04-14	2027-04-13
Electric Network	SCHWARZ BECK	CAT5 8158	CAT5 8158#207	2025-03-24	2026-04-14	2027-04-13
Cable	SCHWARZ BECK	/	/	2025-03-19	2026-04-14	2027-04-13
Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Attenuation	561-G071	2025-12-05	2025-12-02	2026-12-01
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	1164.6607K03-102109-MH	2025-06-11	2026-04-14	2027-04-13
L.I.S.N	R&S	ESH3-Z5	831.5518.52	2025-12-11	2026-04-14	2027-04-13
L.I.S.N	SCHWARZ BECK	NSLK 8126	05055	2025-06-13	2026-04-14	2027-04-13
Pulse Limiter	CYBERTEK	EM5010A	/	2025-09-26	2026-04-14	2027-04-13
EMI test software	EZ -EMC	EZ	V1.1.42	/	/	/

6dB Bandwidth
Maximum Conducted Output Power
Power Spectral Density
Emissions in non-restricted frequency bands

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Date	Cal Due Date
RF Test Software	Tachoy Information Technology (shenzhen) Co.,Ltd.	RTS-01	V1.0.0	/	/	/
RF Sensor Unit	Tachoy Information Technology (shenzhen) Co.,Ltd.	TR1029-2	000001	/	/	/
Wideband radio communication tester	R&S	CMW500	113410	2025-06-11	2026-04-14	2027-04-13
Vector Signal Generator	Keysight	N5181A	MY50143455	2024-12-06	2025-12-02	2026-12-01
Signal Generator	Keysight	N5182A	MY48180415	2024-12-06	2025-12-02	2026-12-01
Spectrum Analyzer	Keysight	N9020A	MY53420323	2024-12-06	2025-12-02	2026-12-01

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 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	2024-06-14	2026-04-14	2027-04-13
Cable(LF)#2	Schwarzbeck	/	/	2025-02-18	2026-04-13	2027-04-12
Cable(LF)#1	Schwarzbeck	/	/	2025-02-18	2026-04-14	2027-04-13
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2025-03-19	2026-04-14	2027-04-13
Cable(HF)#1	Schwarzbeck	SYV-50-3-1	/	2025-03-19	2026-04-14	2027-04-13
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2025-06-11	2026-04-14	2027-04-13
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2025-06-11	2026-04-14	2027-04-13
Wideband radio communication tester	R&S	CMW500	113410	2025-06-11	2026-04-14	2027-04-13
Spectrum Analyzer	R&S	FSP30	1321.3008K40-101729-jR	2025-06-11	2026-04-14	2027-04-13
Test Receiver	R&S	ESCI 3	1166.5950K03-101431-Jq	2025-06-12	2026-04-14	2027-04-13
Horn Antenna	Sunol Sciences	DRH-118	A091114	2025-05-12	2026-04-14	2027-04-13
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)	$\pm 3.41\text{dB}$
Occupied Bandwidth	$\pm 3.63\%$
RF conducted power	$\pm 0.733\text{dB}$
RF power density	$\pm 0.234\%$
Conducted Spurious emissions	$\pm 1.98\text{dB}$
Radiated Emission (Above 1GHz)	$\pm 5.46\text{dB}$
Radiated Emission (Below 1GHz)	$\pm 5.79\text{dB}$
Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

2.8 Identification of Testing Laboratory

Company Name:	Shenzhen DACE Testing Technology Co., Ltd.
Address:	102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyao Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252

Identification of the Responsible Testing Location

Company Name:	Shenzhen DACE Testing Technology Co., Ltd.
Address:	102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyao Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252
FCC Registration Number:	0032847402
Designation Number:	CN1342
Test Firm Registration Number:	778666
A2LA Certificate Number:	6270.01

2.9 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by DACE and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) We hereby declare that the laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant. the laboratory is not responsible for the accuracy of the information provided by the client(item 2.2). When the information provided by the customer may affect the effectiveness of the results, the responsibility lies with the customer, and the laboratory does not assume any responsibility.

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.
Test Method:	---

3.1.1 Conclusion:



4 Radio Spectrum Matter Test Results (RF)

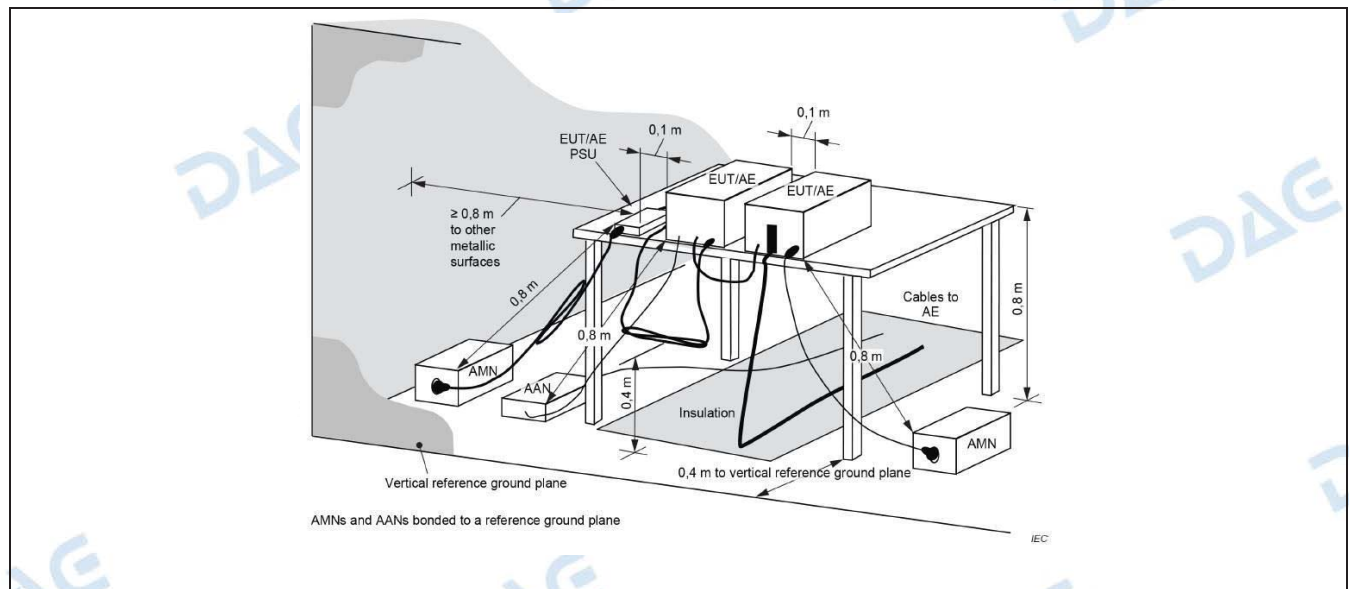
4.1 Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), 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:

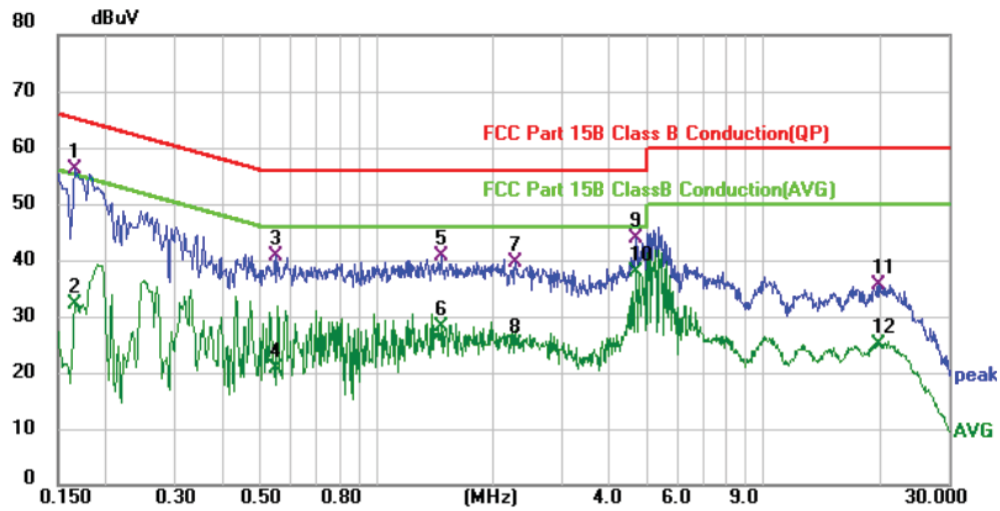
Operating Environment:					
Temperature:	23.5 °C	Humidity:	48 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

4.1.2 Test Setup Diagram:



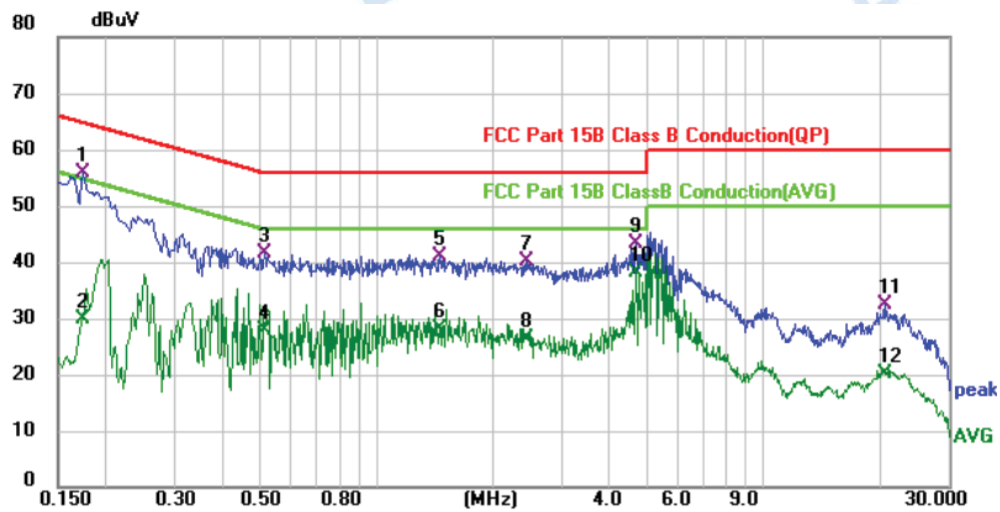
4.1.3 Test Data:

TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1660	46.26	9.98	56.24	65.16	-8.92	QP	
2		0.1660	22.25	9.98	32.23	55.16	-22.93	AVG	
3		0.5460	30.81	9.99	40.80	56.00	-15.20	QP	
4		0.5460	10.71	9.99	20.70	46.00	-25.30	AVG	
5		1.4700	30.77	9.89	40.66	56.00	-15.34	QP	
6		1.4700	18.22	9.89	28.11	46.00	-17.89	AVG	
7		2.2900	29.67	9.81	39.48	56.00	-16.52	QP	
8		2.2900	15.06	9.81	24.87	46.00	-21.13	AVG	
9		4.6860	33.84	9.88	43.72	56.00	-12.28	QP	
10	*	4.6860	27.99	9.88	37.87	46.00	-8.13	AVG	
11		19.8700	27.71	7.93	35.64	60.00	-24.36	QP	
12		19.8700	17.19	7.93	25.12	50.00	-24.88	AVG	

TM1 / Line: Neutral / Band: 2400-2483.5 MHz / 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	45.80	10.00	55.80	64.77	-8.97	QP	
2		0.1740	19.78	10.00	29.78	54.77	-24.99	AVG	
3		0.5140	31.54	10.00	41.54	56.00	-14.46	QP	
4		0.5140	18.00	10.00	28.00	46.00	-18.00	AVG	
5		1.4620	31.19	9.90	41.09	56.00	-14.91	QP	
6		1.4620	18.15	9.90	28.05	46.00	-17.95	AVG	
7		2.4500	30.31	9.81	40.12	56.00	-15.88	QP	
8		2.4500	16.58	9.81	26.39	46.00	-19.61	AVG	
9		4.6860	33.62	9.78	43.40	56.00	-12.60	QP	
10	*	4.6860	28.31	9.78	38.09	46.00	-7.91	AVG	
11		20.6780	24.87	7.65	32.52	60.00	-27.48	QP	
12		20.6780	12.55	7.65	20.20	50.00	-29.80	AVG	

NOTE:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor, Over = Limit - Measurement

4.2 6dB Bandwidth

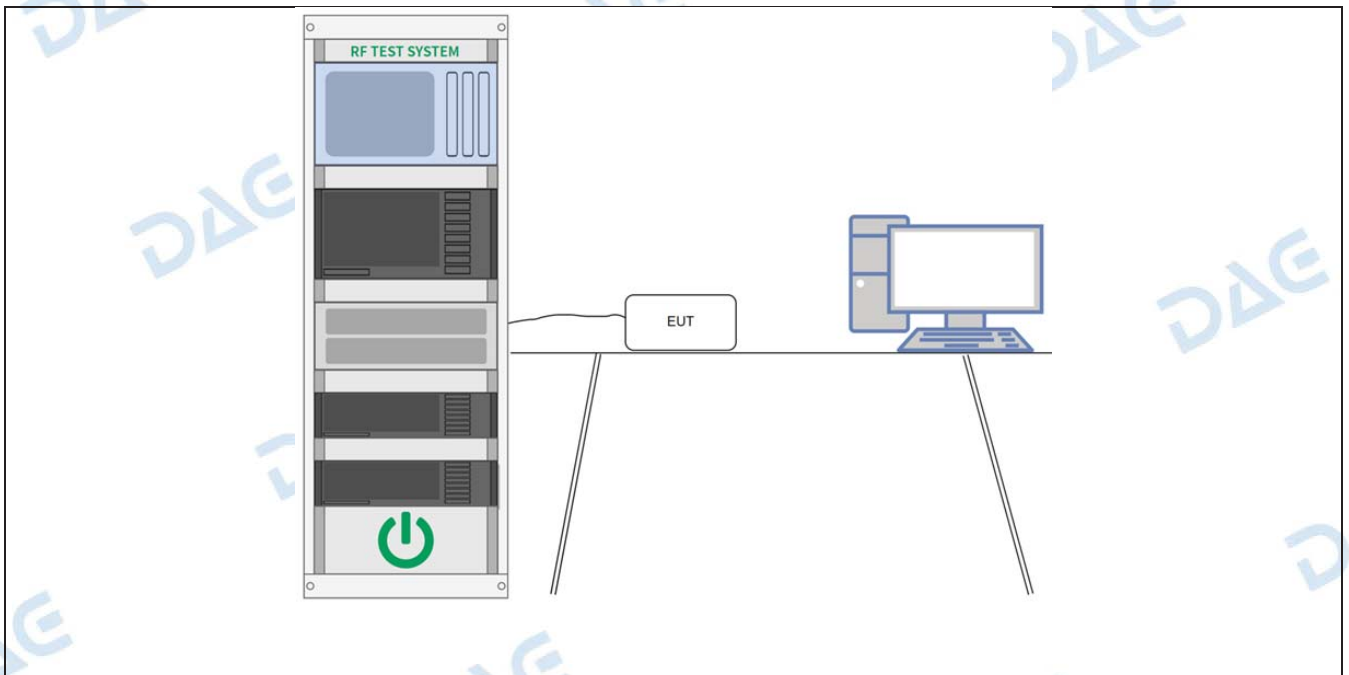
Test Requirement:	47 CFR 15.247(a)(2)
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Method:	ANSI C63.10-2020, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	11.8.1 Option 1 The steps for the first option are as follows: a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz. b) Set the VBW $\geq [3 \times \text{RBW}]$. c) Detector = peak. d) Trace mode = max-hold. e) Sweep = No faster than coupled (auto) time. f) Allow the trace to stabilize. g) Measure the maximum width of the emission by placing 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 “-6 dB down amplitude”. If a marker is below this “-6 dB down amplitude” value, then it shall be as close as possible to this value. 11.8.2 Option 2 The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW $\geq 3 \times \text{RBW}$, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

4.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.6 °C	Humidity:	47 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.2.2 Test Setup Diagram:

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4.2.3 Test Data:

Please Refer to Appendix for Details.

4.3 Maximum Conducted Output Power

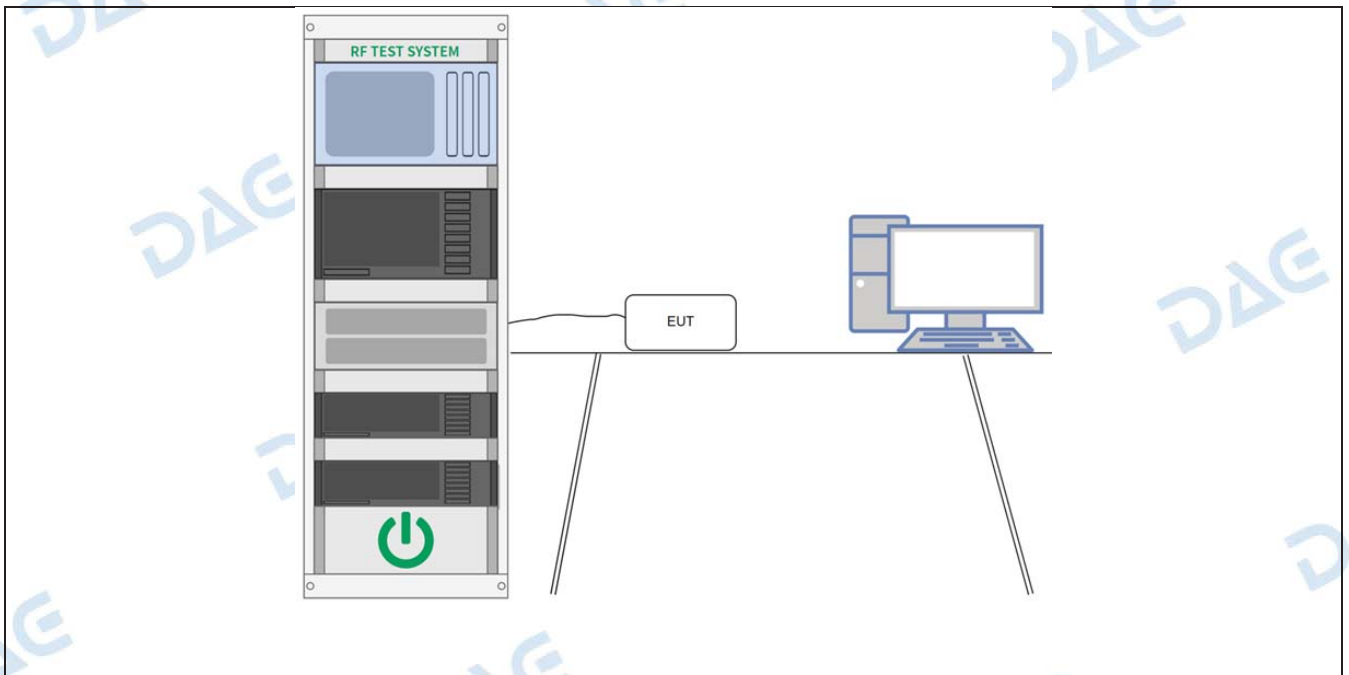
Test Requirement:	47 CFR 15.247(b)(3)
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Test Method:	ANSI C63.10-2020 section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2020, section 11.9.1 Maximum peak conducted output power Note: Per ANSI C63.10-2020, if there are two or more antennas, the conducted powers at Core 0, Core 1, ..., Core i were first measured separately, as shown in the section above (this product only have one antenna). The measured values were then summed in linear power units then converted back to dBm. Per ANSI C63.10-2020 Section 14.4.3.2.3, the directional gain is calculated using the following formula, where GN is the gain of the nth antenna and NANT, the total number of antennas used. For correlated unequal antenna gain Directional gain = $10 \cdot \log[(10G1/20 + 10G2/20 + \dots + 10GN/20)^2 / NANT]$ dBi For completely uncorrelated unequal antenna gain Directional gain = $10 \cdot \log[(10G1/10 + 10G2/10 + \dots + 10GN/10) / NANT]$ dBi Sample Multiple antennas Calculation: Core 0 + Core 1 + ... Core i. = MIMO/CDD (i is the number of antennas) (#VALUE! mW + mW) = #VALUE! mW = dBm Sample e.i.r.p. Calculation: e.i.r.p. (dBm) = Conducted Power (dBm) + Ant gain (dBi)

4.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.3 °C	Humidity:	49 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.3.2 Test Setup Diagram:

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4.3.3 Test Data:

Please Refer to Appendix for Details.

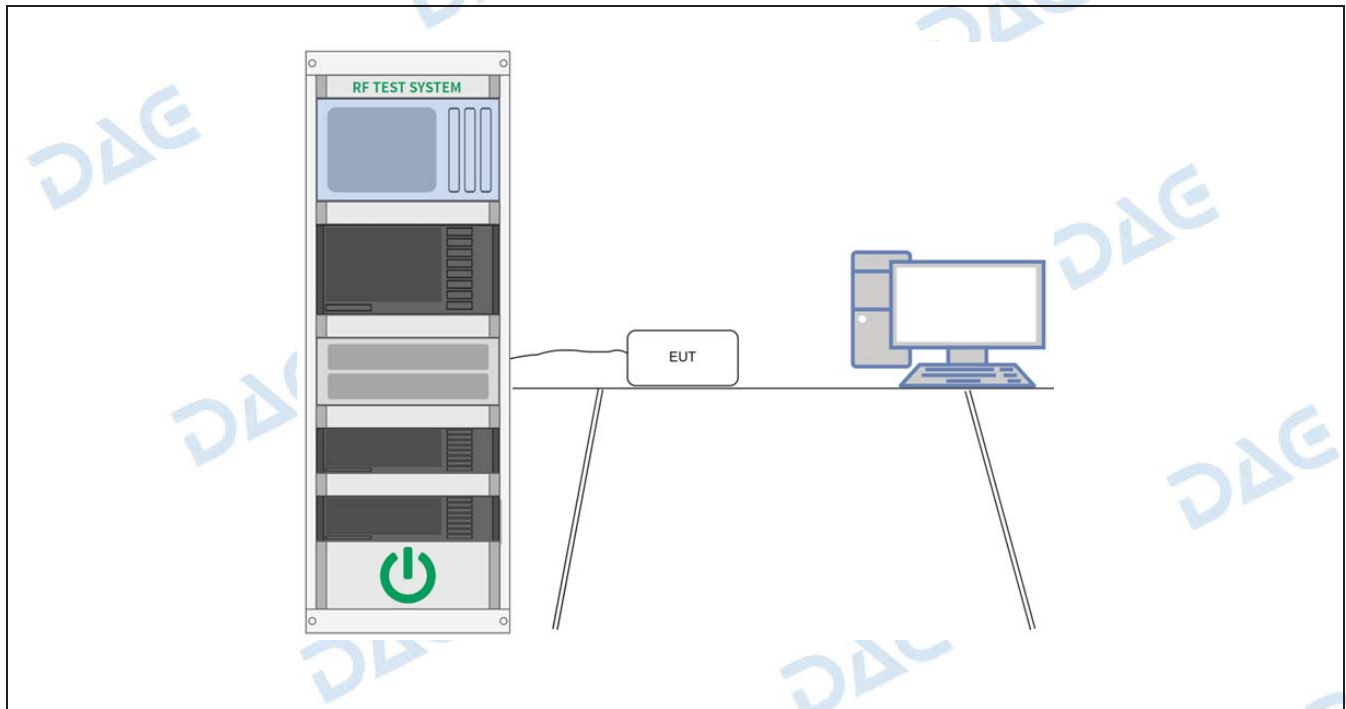
4.4 Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Limit:	Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Test Method:	ANSI C63.10-2020, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2020+Cor 1-2023, section 11.10, Maximum power spectral density level in the fundamental emission

4.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.3 °C	Humidity:	53 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.4.2 Test Setup Diagram:



4.4.3 Test Data:

Please Refer to Appendix for Details.

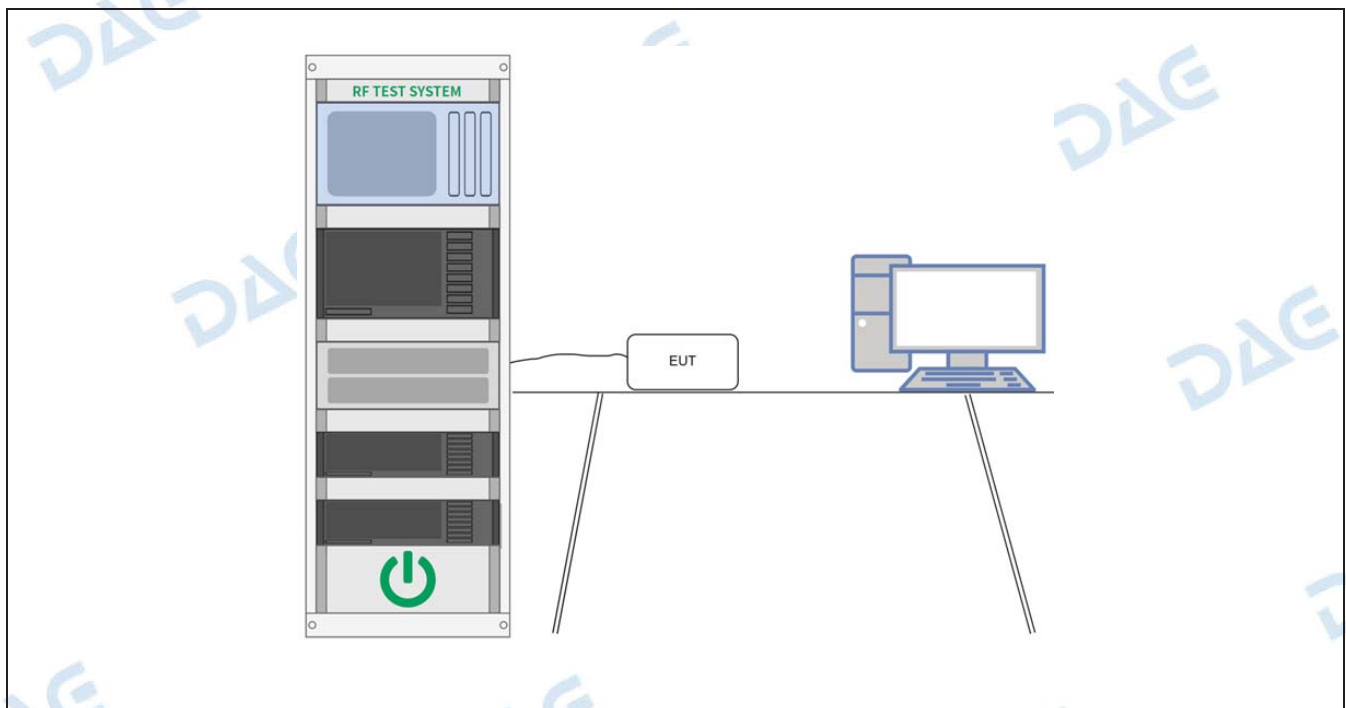
4.5 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Test Method:	ANSI C63.10-2020 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2020 Section 11.11.1, Section 11.11.2, Section 11.11.3

4.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.2 °C	Humidity:	46 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.5.2 Test Setup Diagram:



4.5.3 Test Data:

Please Refer to Appendix for Details.

4.6 Band edge emissions (Radiated)

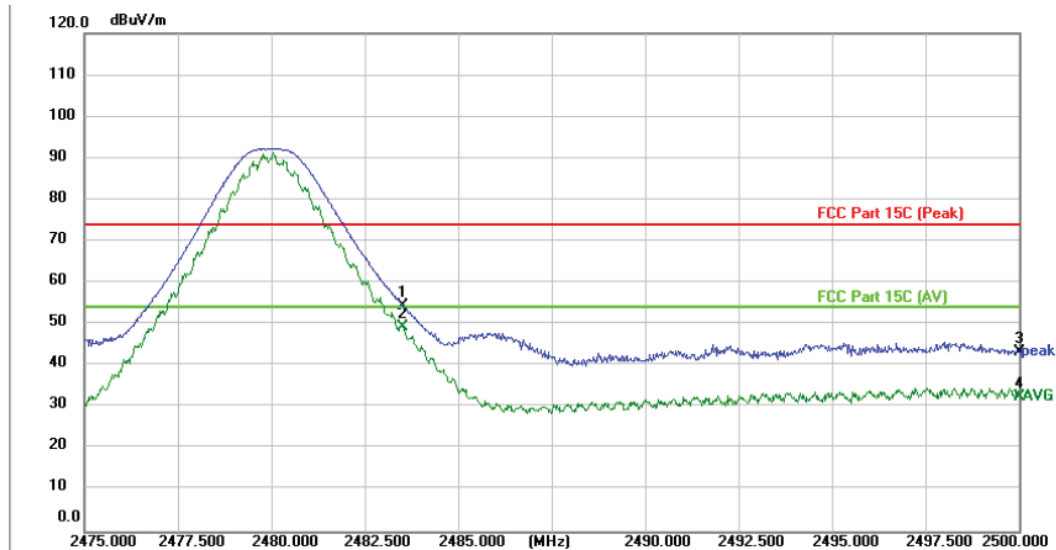
Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement 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 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020 section 6.10.5.2		

4.6.1 E.U.T. Operation:

Operating Environment:			
Temperature:	23.5 °C	Humidity:	50 %
Atmospheric Pressure:	101.2 kPa		
Pretest mode:	TM1		
Final test mode:	TM1		

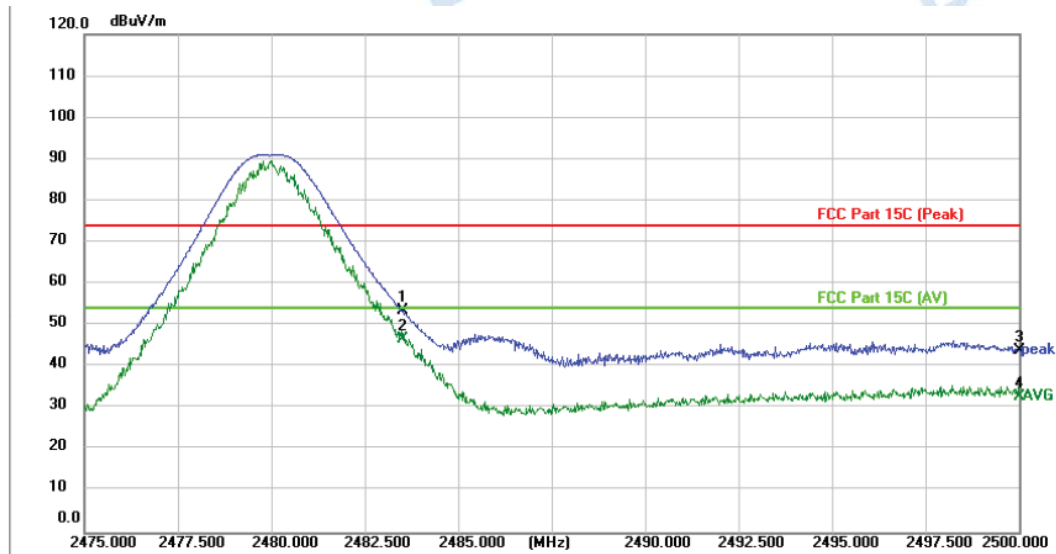
4.6.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



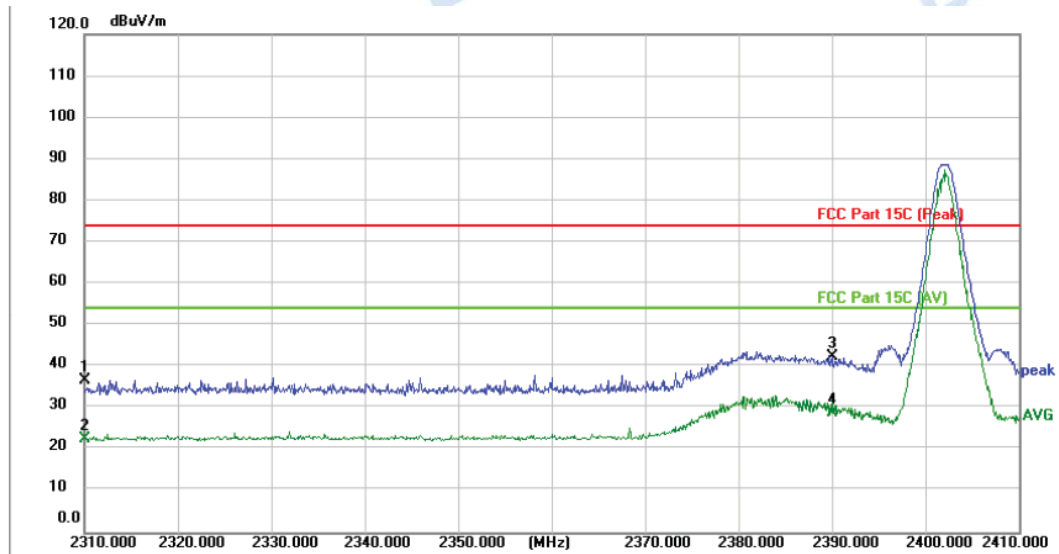
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	2483.500	60.67	-6.17	54.50	74.00	-19.50	peak		P	
2 *	2483.500	55.61	-6.17	49.44	54.00	-4.56	AVG		P	
3	2500.000	49.61	-6.13	43.48	74.00	-30.52	peak		P	
4	2500.000	38.72	-6.13	32.59	54.00	-21.41	AVG		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



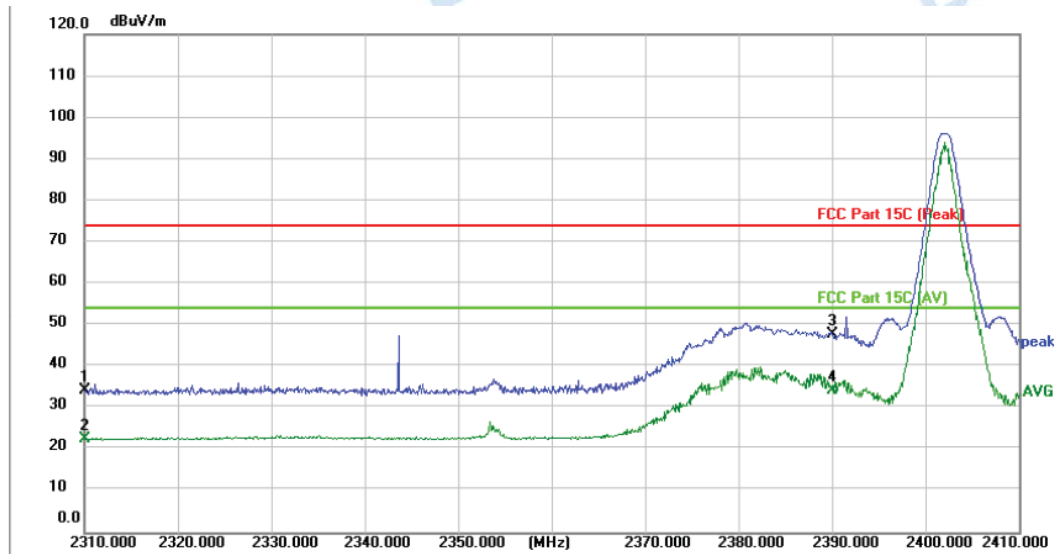
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	2483.500	59.62	-6.17	53.45	74.00	-20.55	peak		P	
2 *	2483.500	52.69	-6.17	46.52	54.00	-7.48	AVG		P	
3	2500.000	50.04	-6.13	43.91	74.00	-30.09	peak		P	
4	2500.000	39.05	-6.13	32.92	54.00	-21.08	AVG		P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / 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	2310.000	43.43	-6.63	36.80	74.00	-37.20	peak		P	
2	2310.000	29.24	-6.63	22.61	54.00	-31.39	AVG		P	
3	2390.000	48.95	-6.42	42.53	74.00	-31.47	peak		P	
4 *	2390.000	35.41	-6.42	28.99	54.00	-25.01	AVG		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



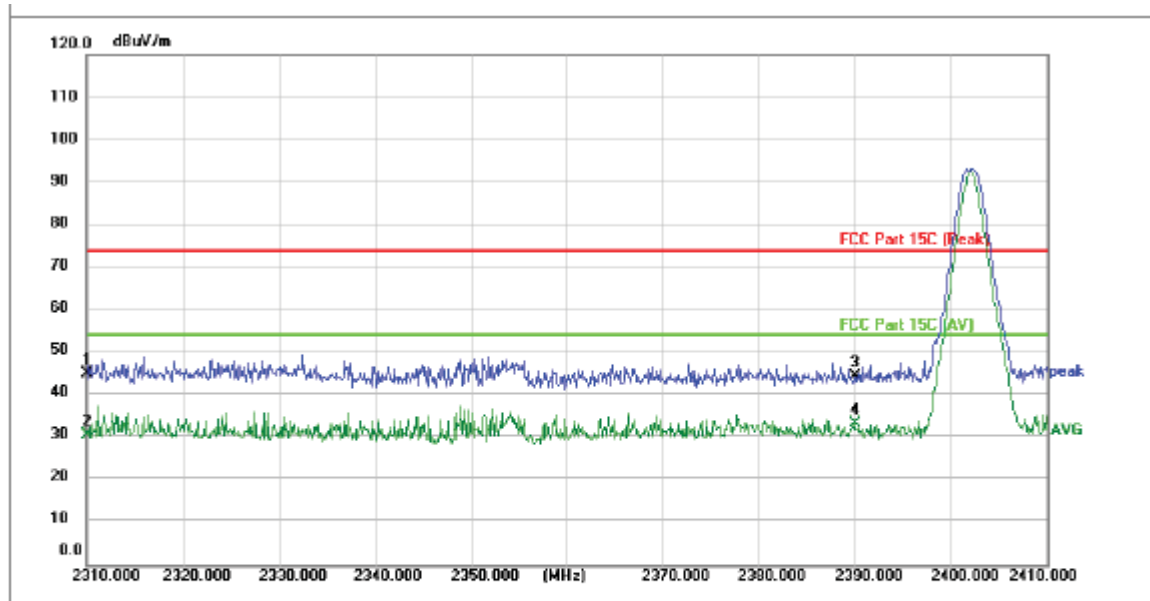
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	2310.000	40.86	-6.63	34.23	74.00	-39.77	peak		P	
2	2310.000	29.39	-6.63	22.76	54.00	-31.24	AVG		P	
3	2390.000	54.18	-6.42	47.76	74.00	-26.24	peak		P	
4 *	2390.000	40.83	-6.42	34.41	54.00	-19.59	AVG		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.

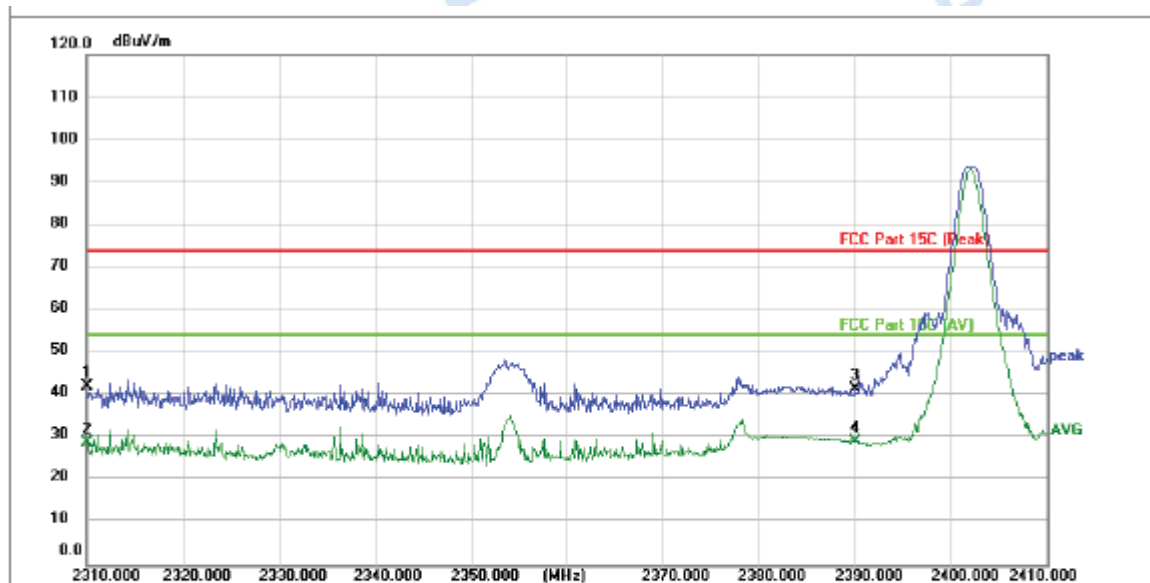
Module 1+ Module 2 simultaneous transmission:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



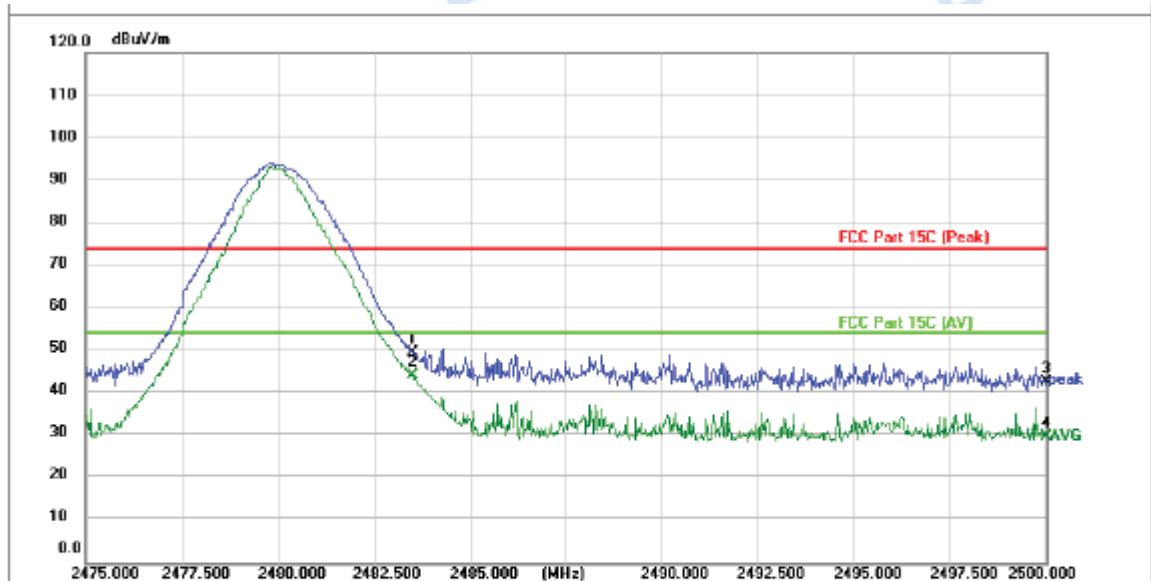
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	2310.000	51.85	-6.63	45.22	74.00	-28.78	peak		P	
2	2310.000	37.48	-6.63	30.85	54.00	-23.15	AVG		P	
3	2390.000	50.93	-6.42	44.51	74.00	-29.49	peak		P	
4 *	2390.000	40.00	-6.42	33.58	54.00	-20.42	AVG		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



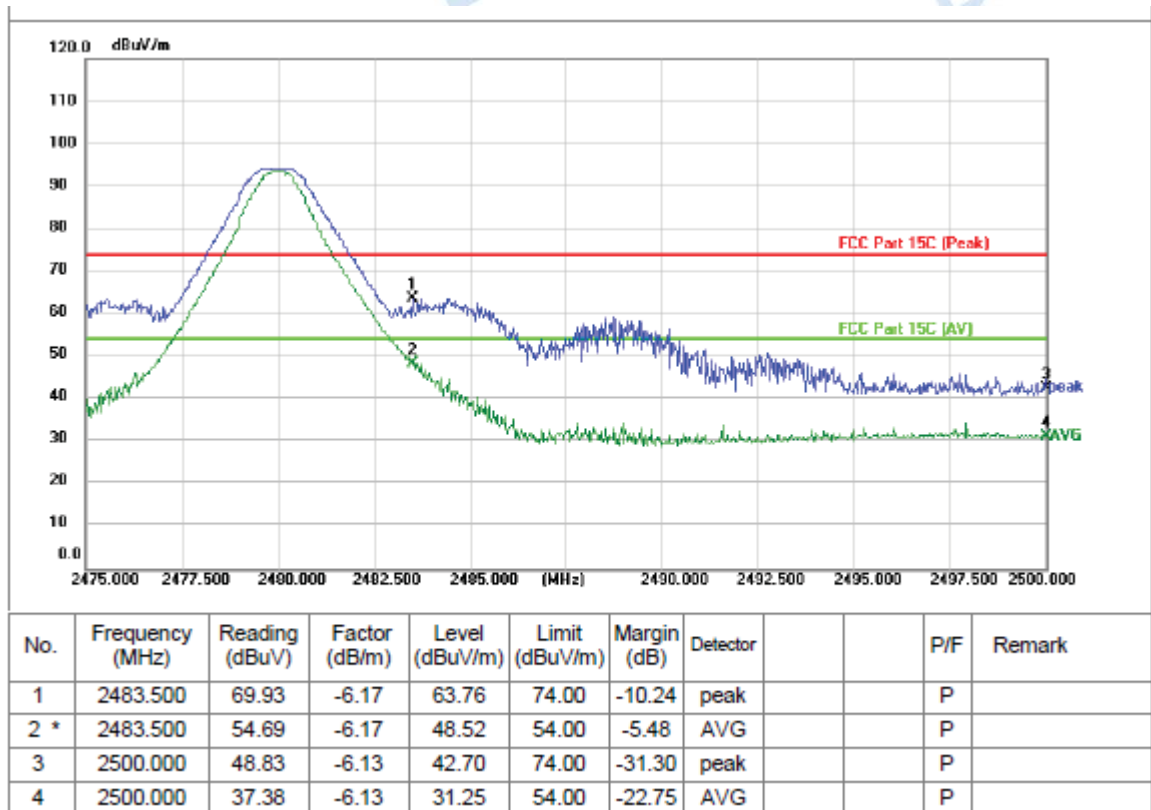
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	2310.000	48.71	-6.63	42.08	74.00	-31.92	peak		P	
2	2310.000	35.67	-6.63	29.04	54.00	-24.96	AVG		P	
3	2390.000	48.07	-6.42	41.65	74.00	-32.35	peak		P	
4 *	2390.000	35.55	-6.42	29.13	54.00	-24.87	AVG		P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / 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	55.90	-6.17	49.73	74.00	-24.27	peak		P	
2 *	2483.500	50.32	-6.17	44.15	54.00	-9.85	AVG		P	
3	2500.000	49.03	-6.13	42.90	74.00	-31.10	peak		P	
4	2500.000	35.98	-6.13	29.85	54.00	-24.15	AVG		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



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.

4.7 Emissions in frequency bands (below 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	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 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	a. 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. b. 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. c. 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. d. 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. e. 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. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. 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		

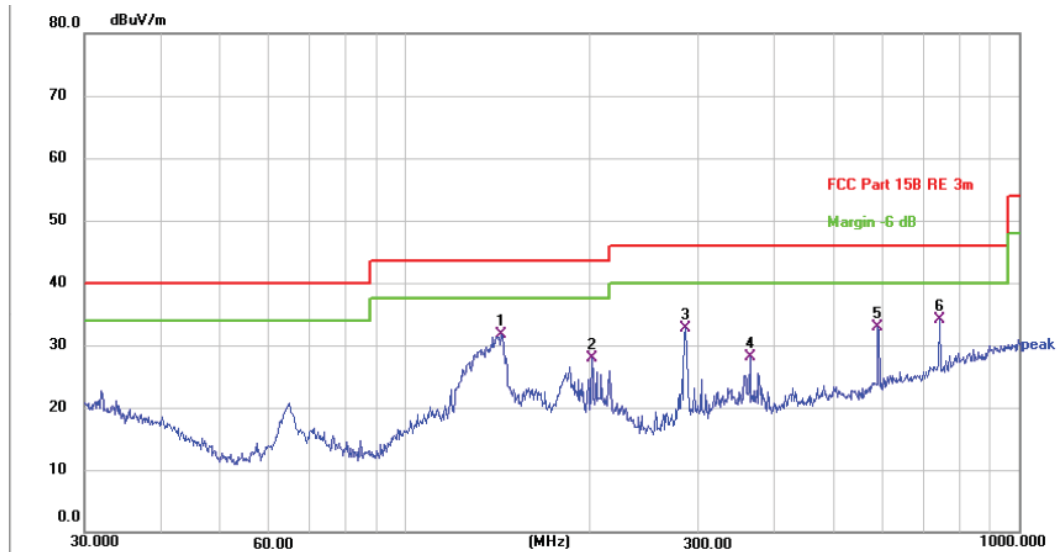
	channel. Only the worst case is recorded in the report. 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test Level = Receiver Reading + Antenna Factor + Cable Factor + Preamplifier Factor 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.
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4.7.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.1 °C	Humidity:	56 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.7.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / 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 *	143.3261	38.80	-7.11	31.69	43.50	-11.81	QP	100		P	
2	201.3930	37.71	-9.71	28.00	43.50	-15.50	QP	100		P	
3	285.9778	40.54	-7.89	32.65	46.00	-13.35	QP	100		P	
4	364.2595	34.74	-6.61	28.13	46.00	-17.87	QP	100		P	
5	588.9051	34.66	-1.82	32.84	46.00	-13.16	QP	100		P	
6	742.2587	32.85	1.25	34.10	46.00	-11.90	QP	100		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



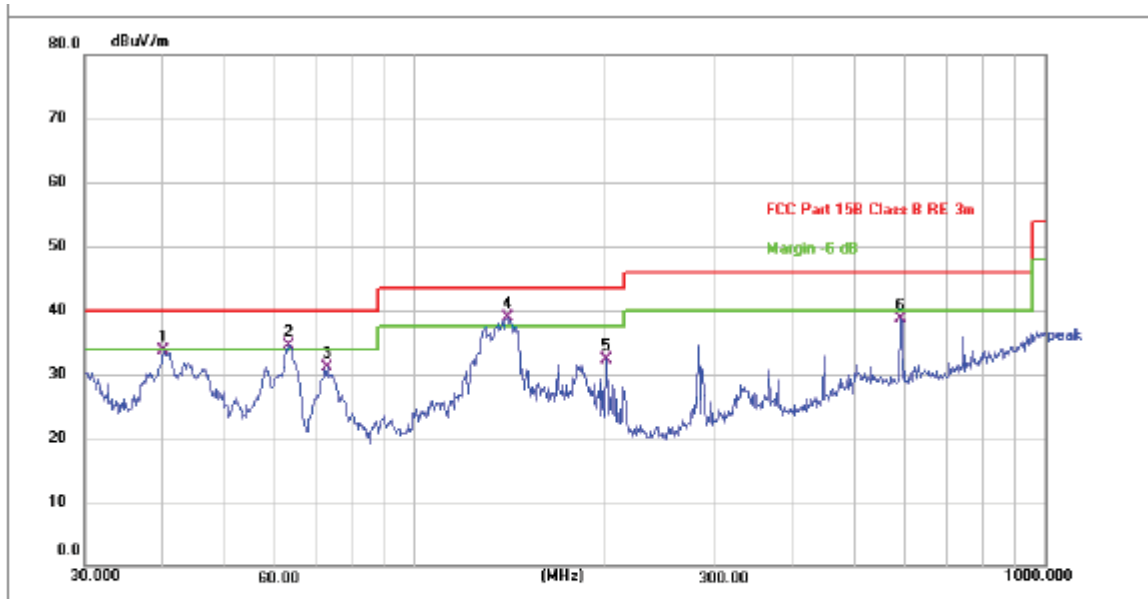
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	42.7496	35.50	-9.34	26.16	40.00	-13.84	QP	100		P	
2	63.7588	44.05	-13.78	30.27	40.00	-9.73	QP	100		P	
3	73.1025	39.41	-12.85	26.56	40.00	-13.44	QP	100		P	
4	106.0126	32.89	-7.63	25.26	43.50	-18.24	QP	100		P	
5	128.5630	40.24	-7.01	33.23	43.50	-10.27	QP	100		P	
6 *	143.8295	41.92	-7.62	34.30	43.50	-9.20	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 of GFSK 1MHz recorded in the test report.

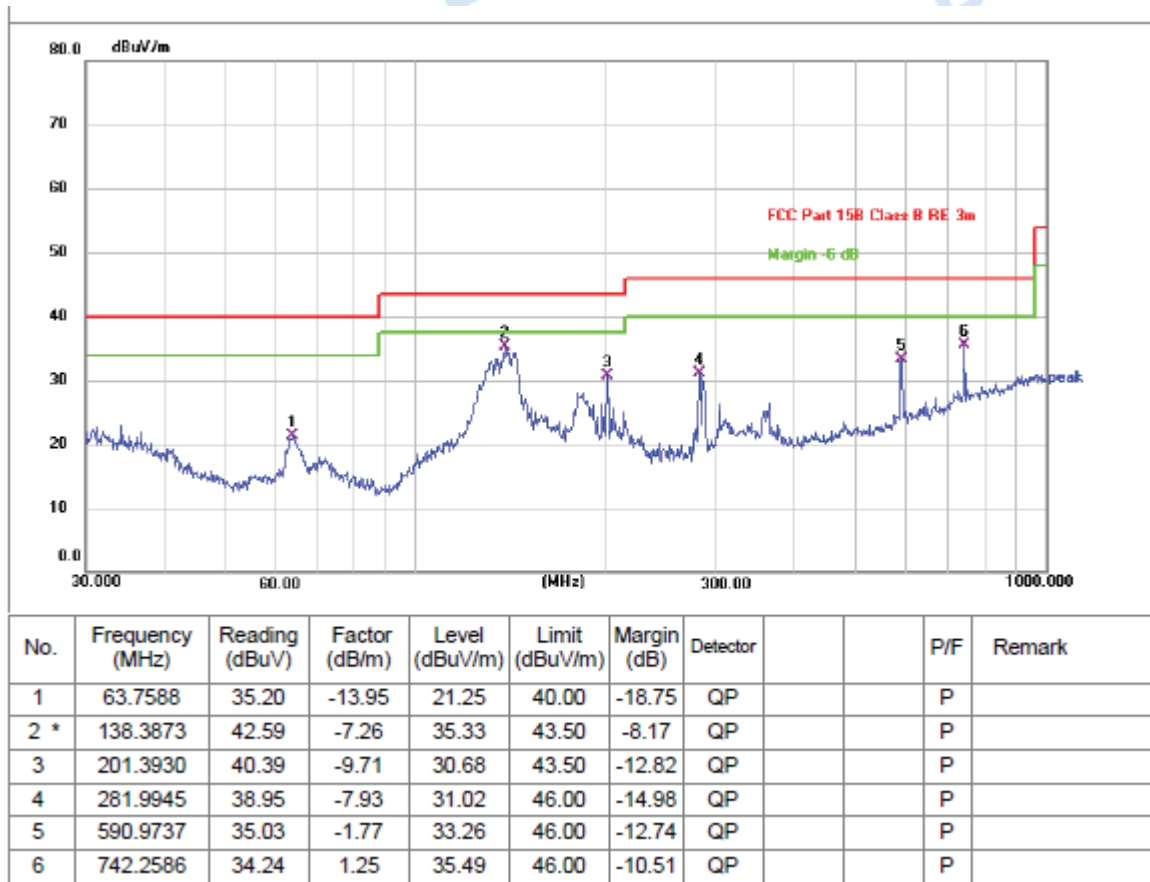
Module 1+ Module 2 simultaneous transmission:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / 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	40.0056	36.25	-2.57	33.68	40.00	-6.32	QP		P	
2 !	63.3605	43.56	-8.99	34.57	40.00	-5.43	QP		P	
3	72.6557	39.84	-8.66	31.18	40.00	-8.82	QP		P	
4 *	140.5590	42.09	-3.15	38.94	43.50	-4.56	QP		P	
5	201.7771	36.45	-4.14	32.31	43.50	-11.19	QP		P	
6	590.6625	34.81	3.99	38.80	46.00	-7.20	QP		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



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 of GFSK 1MHz recorded in the test report.

4.8 Emissions in frequency bands (above 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	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 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	a. 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. b. 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. c. 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. d. 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. e. 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. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. 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:		

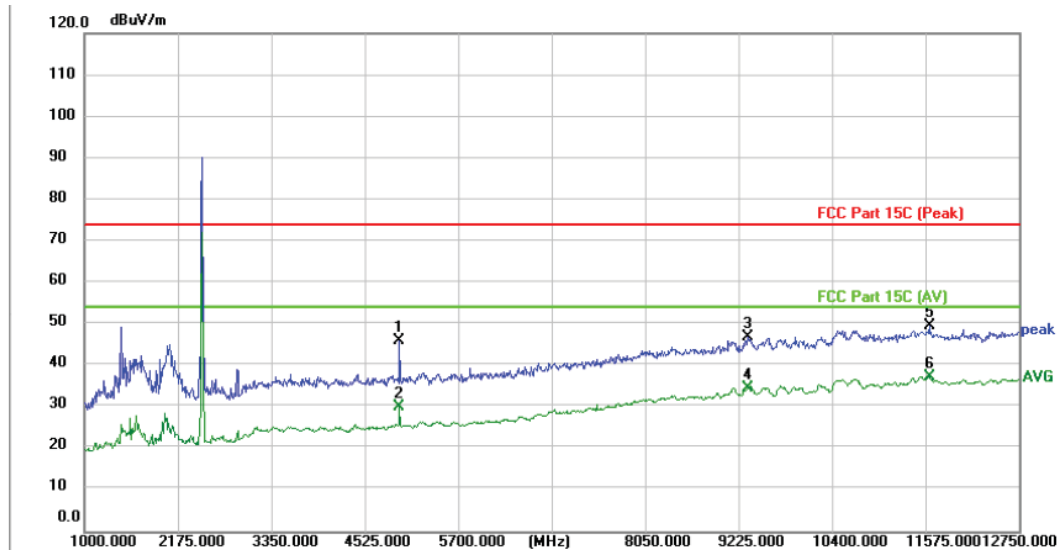
	1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report. 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test 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.
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4.8.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.6 °C	Humidity:	50 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

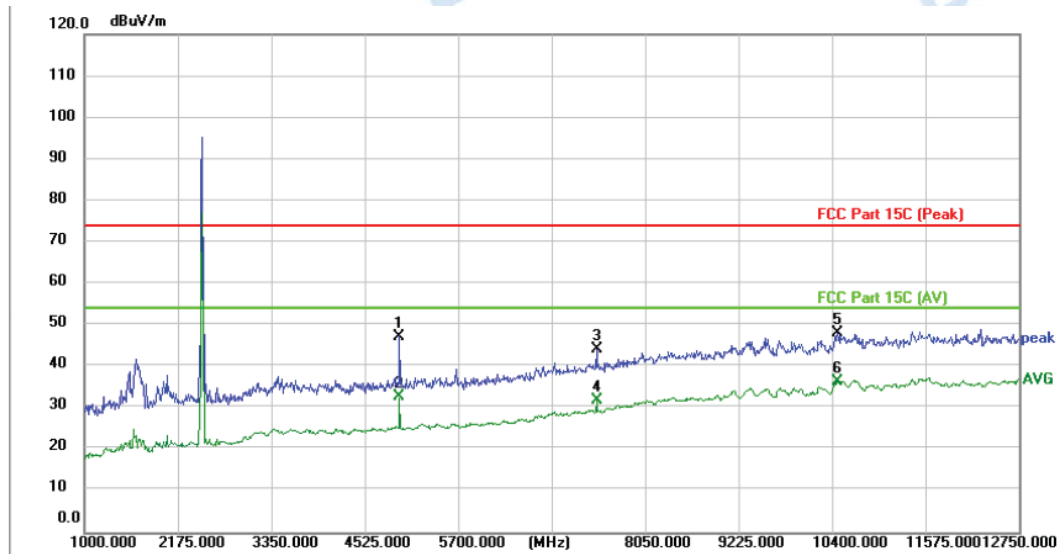
4.8.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



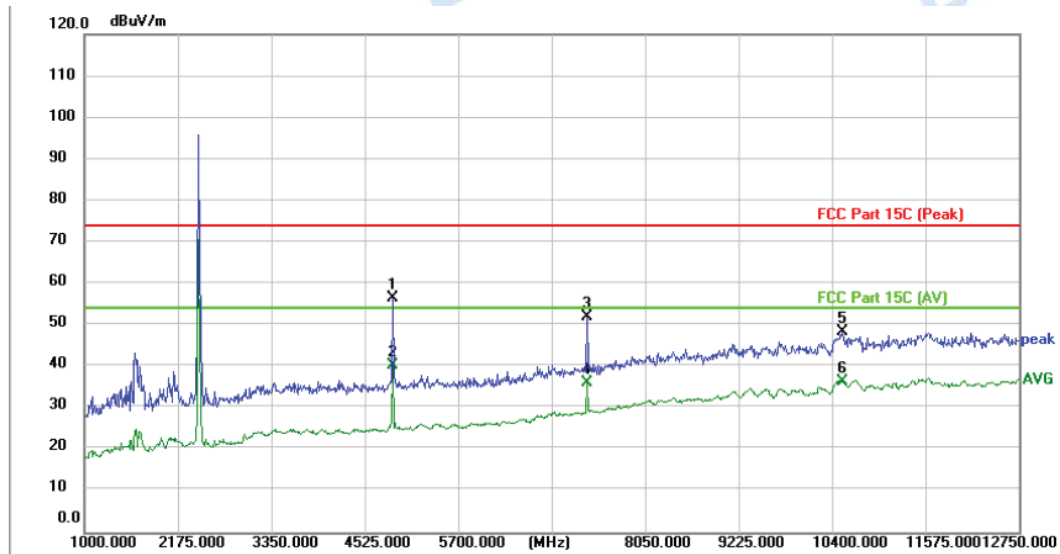
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	4959.750	46.16	-0.17	45.99	74.00	-28.01	peak		P	
2	4959.750	30.24	-0.17	30.07	54.00	-23.93	AVG		P	
3	9342.500	38.69	8.16	46.85	74.00	-27.15	peak		P	
4	9342.500	26.45	8.16	34.61	54.00	-19.39	AVG		P	
5	11622.000	39.81	9.75	49.56	74.00	-24.44	peak		P	
6 *	11622.000	27.60	9.75	37.35	54.00	-16.65	AVG		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



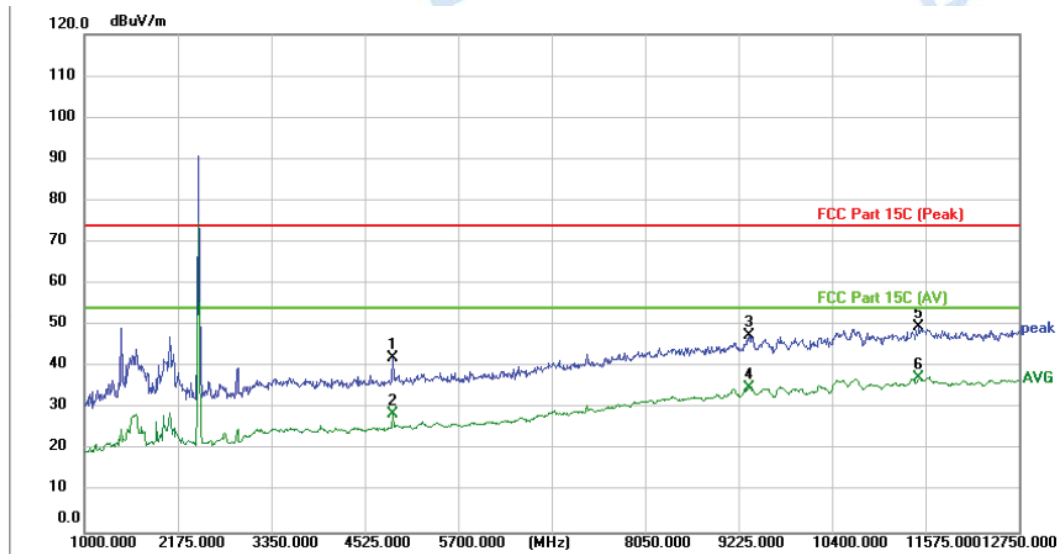
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			P/F	Remark
1	4959.750	47.57	-0.17	47.40	74.00	-26.60	peak			P	
2	4959.750	32.87	-0.17	32.70	54.00	-21.30	AVG			P	
3	7439.000	39.38	4.78	44.16	74.00	-29.84	peak			P	
4	7439.000	27.12	4.78	31.90	54.00	-22.10	AVG			P	
5	10470.500	39.07	8.95	48.02	74.00	-25.98	peak			P	
6 *	10470.500	27.41	8.95	36.36	54.00	-17.64	AVG			P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M



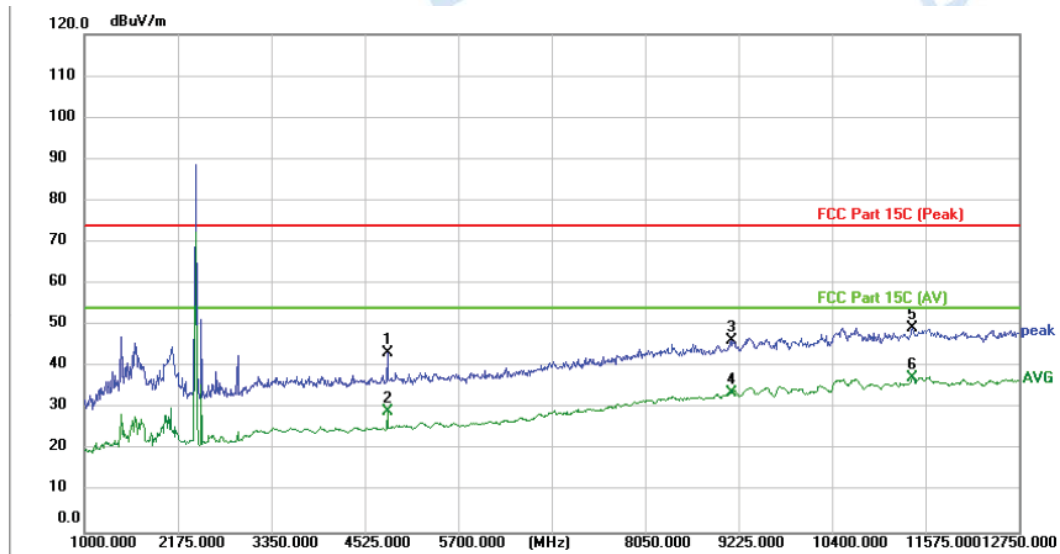
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			P/F	Remark
1	4877.500	56.86	-0.45	56.41	74.00	-17.59	peak			P	
2 *	4877.500	40.72	-0.45	40.27	54.00	-13.73	AVG			P	
3	7321.500	47.60	4.57	52.17	74.00	-21.83	peak			P	
4	7321.500	31.66	4.57	36.23	54.00	-17.77	AVG			P	
5	10529.250	39.39	9.03	48.42	74.00	-25.58	peak			P	
6	10529.250	27.56	9.03	36.59	54.00	-17.41	AVG			P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M



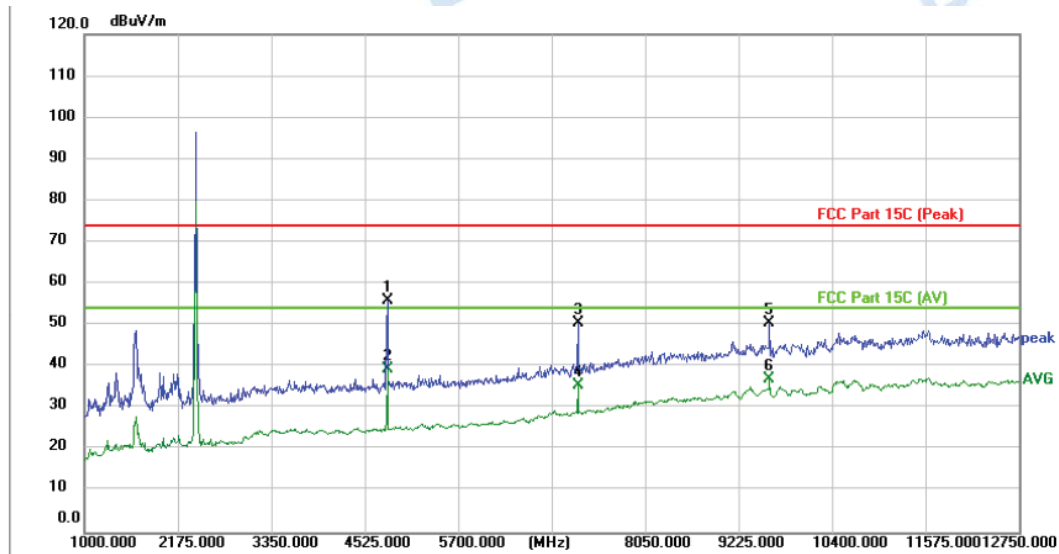
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			P/F	Remark
1	4877.500	42.74	-0.45	42.29	74.00	-31.71	peak			P	
2	4877.500	29.12	-0.45	28.67	54.00	-25.33	AVG			P	
3	9354.250	39.52	8.15	47.67	74.00	-26.33	peak			P	
4	9354.250	26.76	8.15	34.91	54.00	-19.09	AVG			P	
5	11492.750	40.14	9.66	49.80	74.00	-24.20	peak			P	
6 *	11492.750	27.54	9.66	37.20	54.00	-16.80	AVG			P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / 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	4807.000	44.08	-0.69	43.39	74.00	-30.61	peak			P	
2	4807.000	29.93	-0.69	29.24	54.00	-24.76	AVG			P	
3	9131.000	38.02	8.24	46.26	74.00	-27.74	peak			P	
4	9131.000	25.65	8.24	33.89	54.00	-20.11	AVG			P	
5	11410.500	39.84	9.61	49.45	74.00	-24.55	peak			P	
6 *	11410.500	27.64	9.61	37.25	54.00	-16.75	AVG			P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



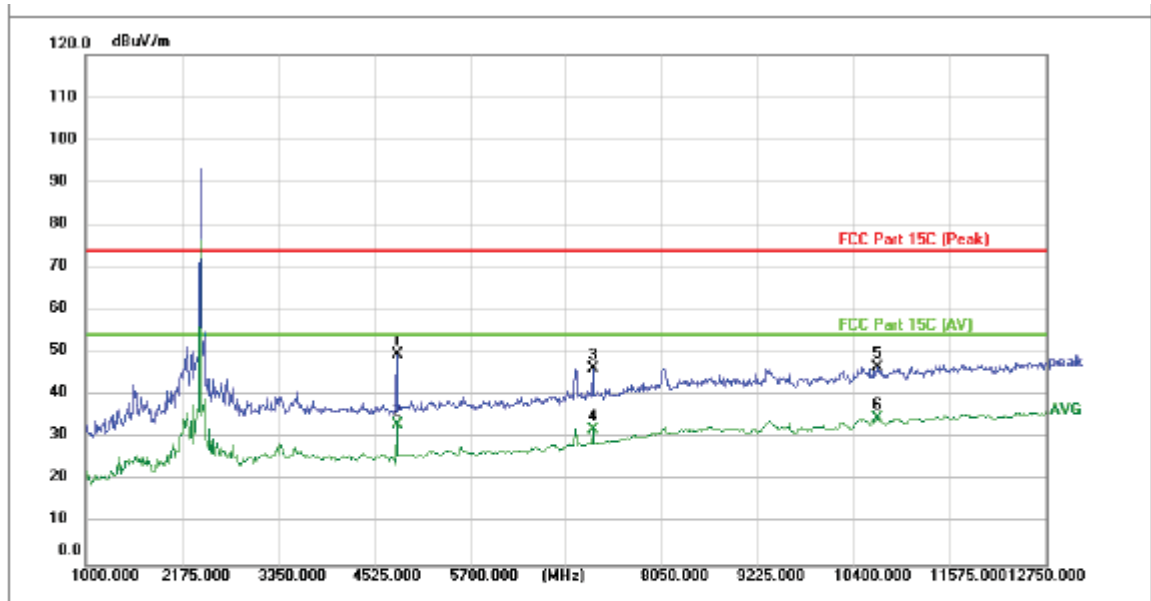
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			P/F	Remark
1	4807.000	56.66	-0.69	55.97	74.00	-18.03	peak			P	
2 *	4807.000	40.21	-0.69	39.52	54.00	-14.48	AVG			P	
3	7204.000	46.08	4.37	50.45	74.00	-23.55	peak			P	
4	7204.000	31.04	4.37	35.41	54.00	-18.59	AVG			P	
5	9612.750	42.32	8.10	50.42	74.00	-23.58	peak			P	
6	9612.750	28.97	8.10	37.07	54.00	-16.93	AVG			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.

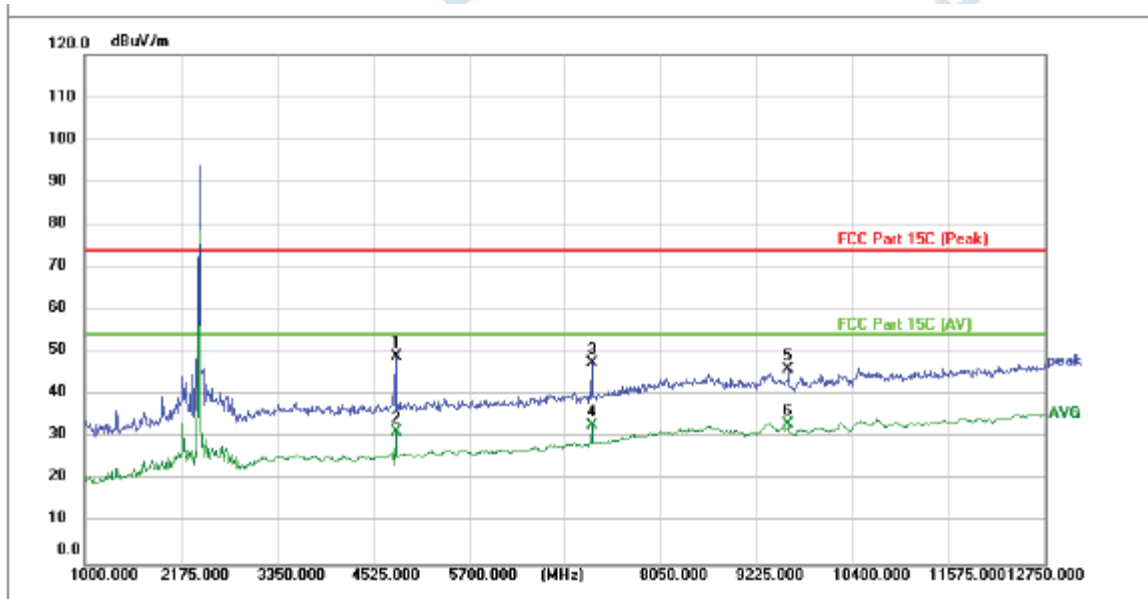
Module 1+ Module 2 simultaneous transmission:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



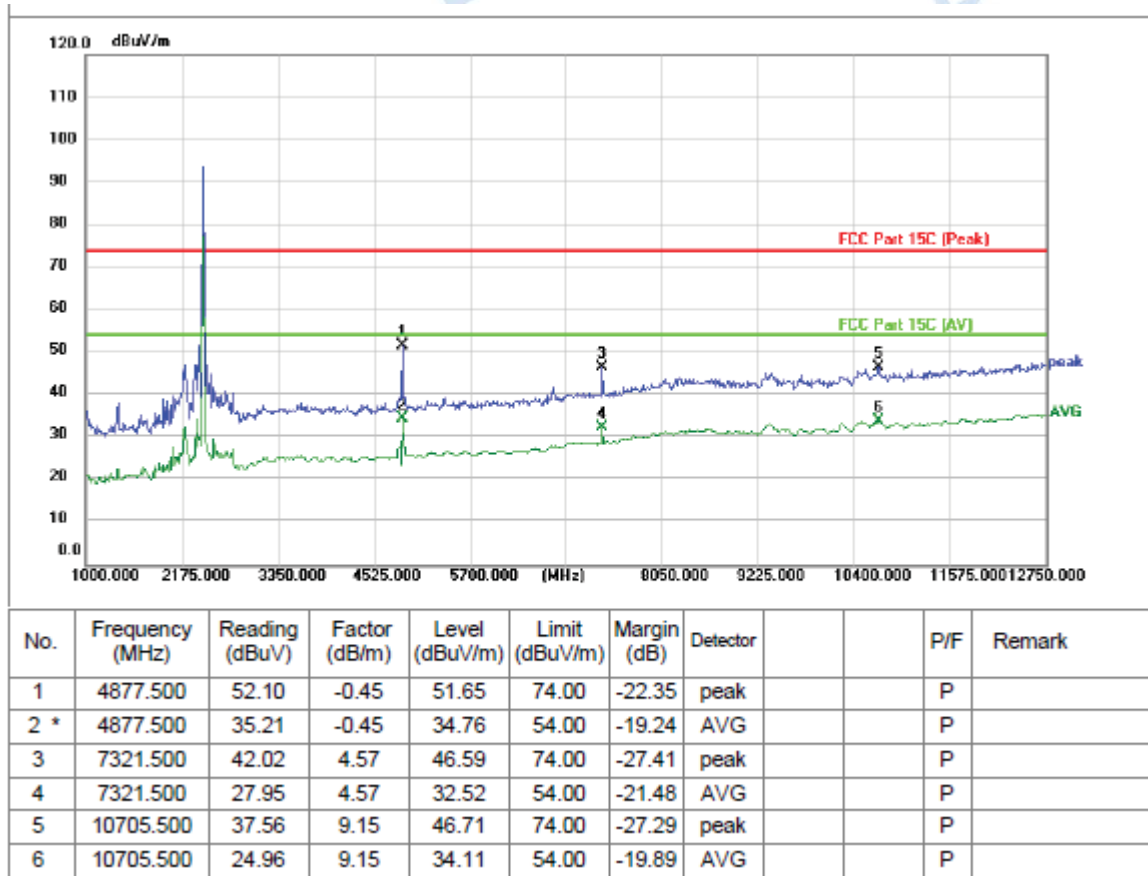
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	4807.000	50.46	-0.69	49.77	74.00	-24.23	peak		P	
2	4807.000	33.89	-0.69	33.20	54.00	-20.80	AVG		P	
3	7204.000	41.95	4.37	46.32	74.00	-27.68	peak		P	
4	7204.000	27.54	4.37	31.91	54.00	-22.09	AVG		P	
5	10693.750	37.38	9.15	46.53	74.00	-27.47	peak		P	
6 *	10693.750	25.44	9.15	34.59	54.00	-19.41	AVG		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / 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	4807.000	49.61	-0.69	48.92	74.00	-25.08	peak			P	
2	4807.000	31.99	-0.69	31.30	54.00	-22.70	AVG			P	
3	7204.000	43.30	4.37	47.67	74.00	-26.33	peak			P	
4	7204.000	28.37	4.37	32.74	54.00	-21.26	AVG			P	
5	9612.750	38.08	8.10	46.18	74.00	-27.82	peak			P	
6 *	9612.750	24.99	8.10	33.09	54.00	-20.91	AVG			P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M

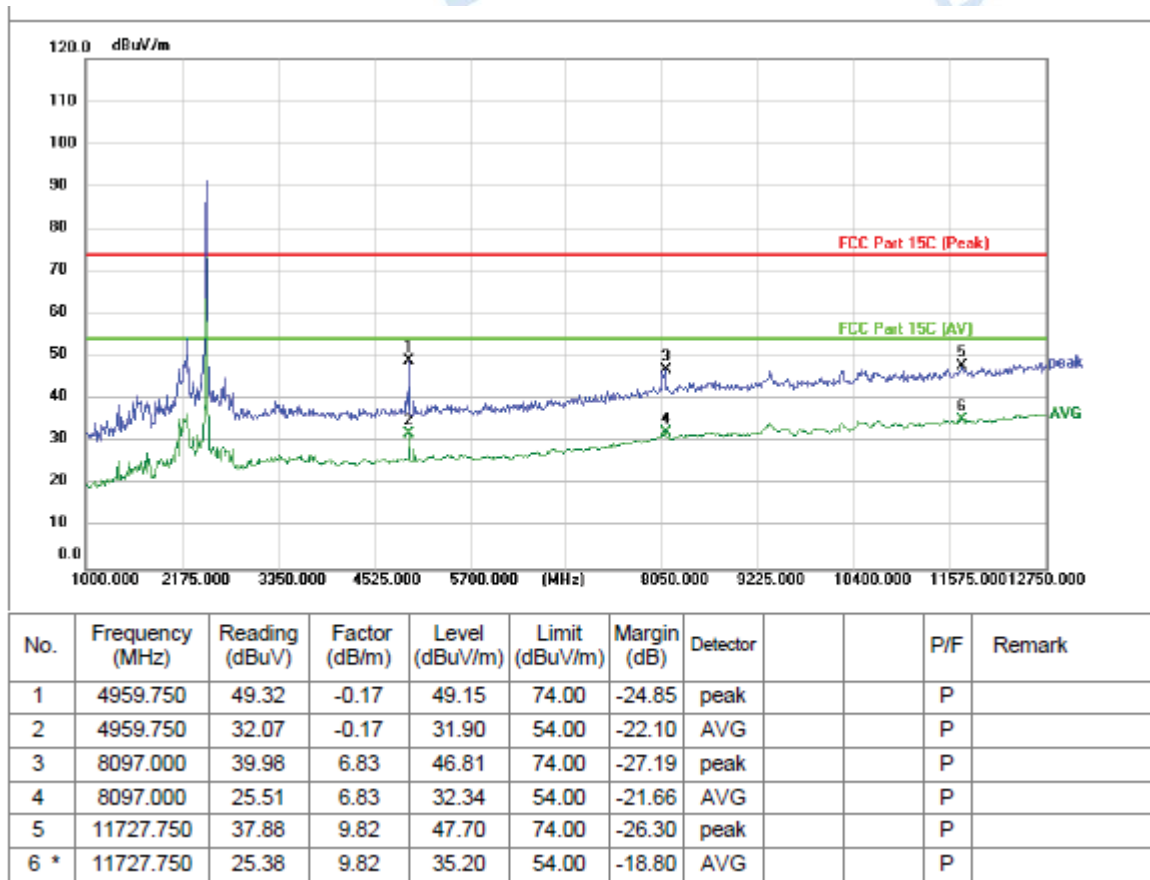


TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M

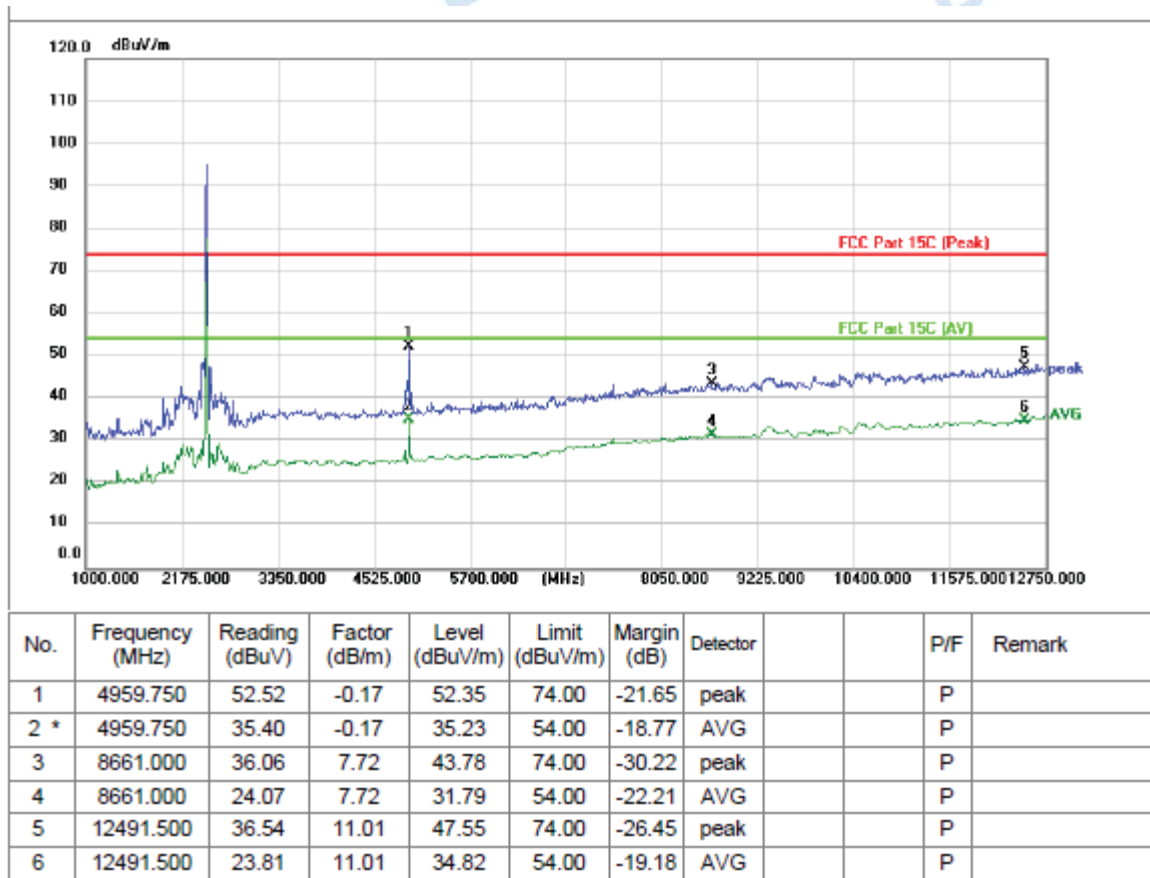


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		P/F	Remark
1	4877.500	47.90	-0.45	47.45	74.00	-26.55	peak		P	
2	4877.500	31.80	-0.45	31.35	54.00	-22.65	AVG		P	
3	8097.000	40.40	6.83	47.23	74.00	-26.77	peak		P	
4	8097.000	25.08	6.83	31.91	54.00	-22.09	AVG		P	
5	12632.500	36.81	11.24	48.05	74.00	-25.95	peak		P	
6 *	12632.500	24.35	11.24	35.59	54.00	-18.41	AVG		P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



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

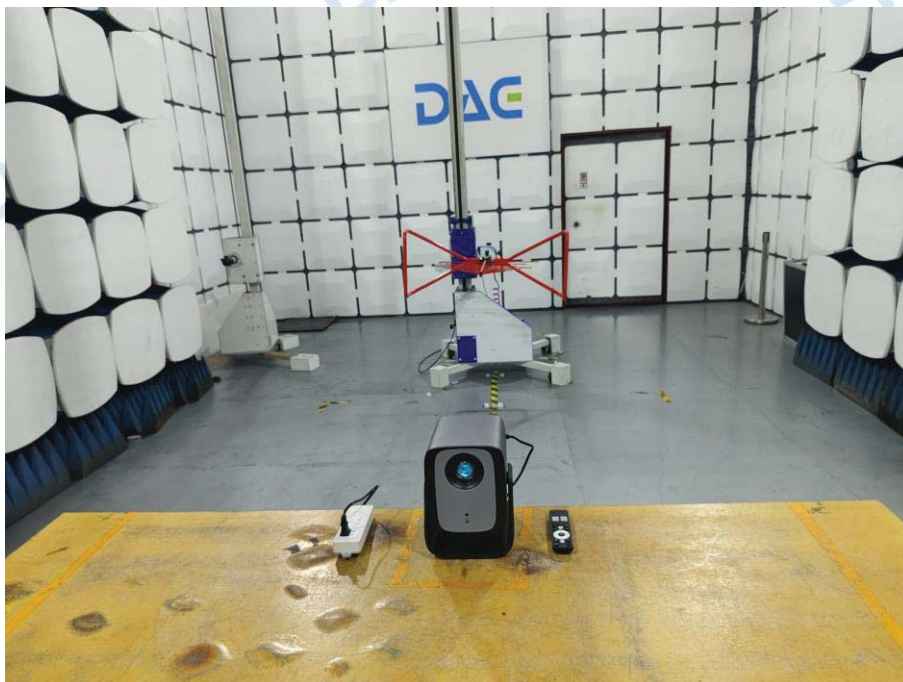
The test software will only record the worst test angle and height, and only the worst case will be recorded in the test report.

5 TEST SETUP PHOTOS

Conducted Emission at AC power line



Emissions in frequency bands (below 1GHz)



Emissions in frequency bands (above 1GHz)



6 PHOTOS OF THE EUT

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

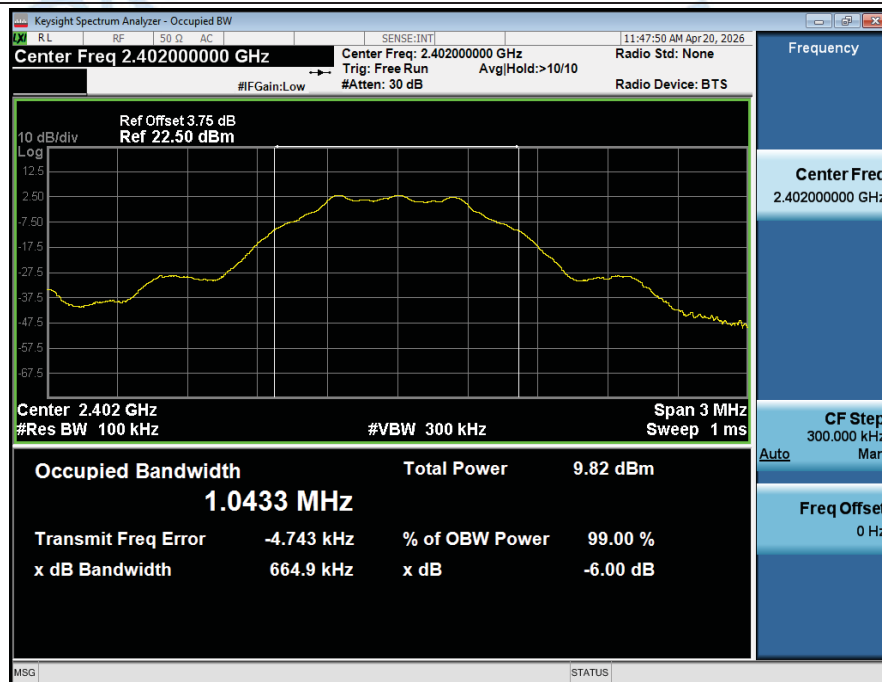
Appendix

FCC_BLE (Part15.247) Test Data

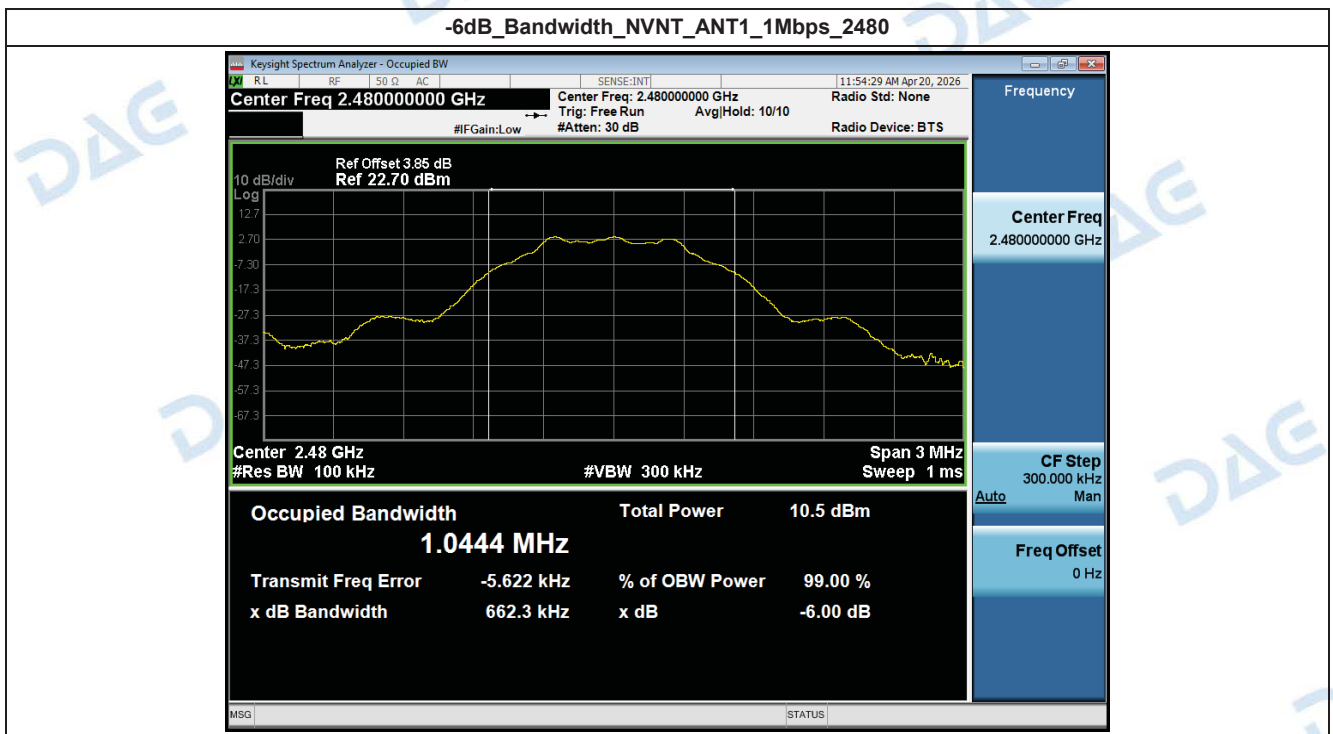
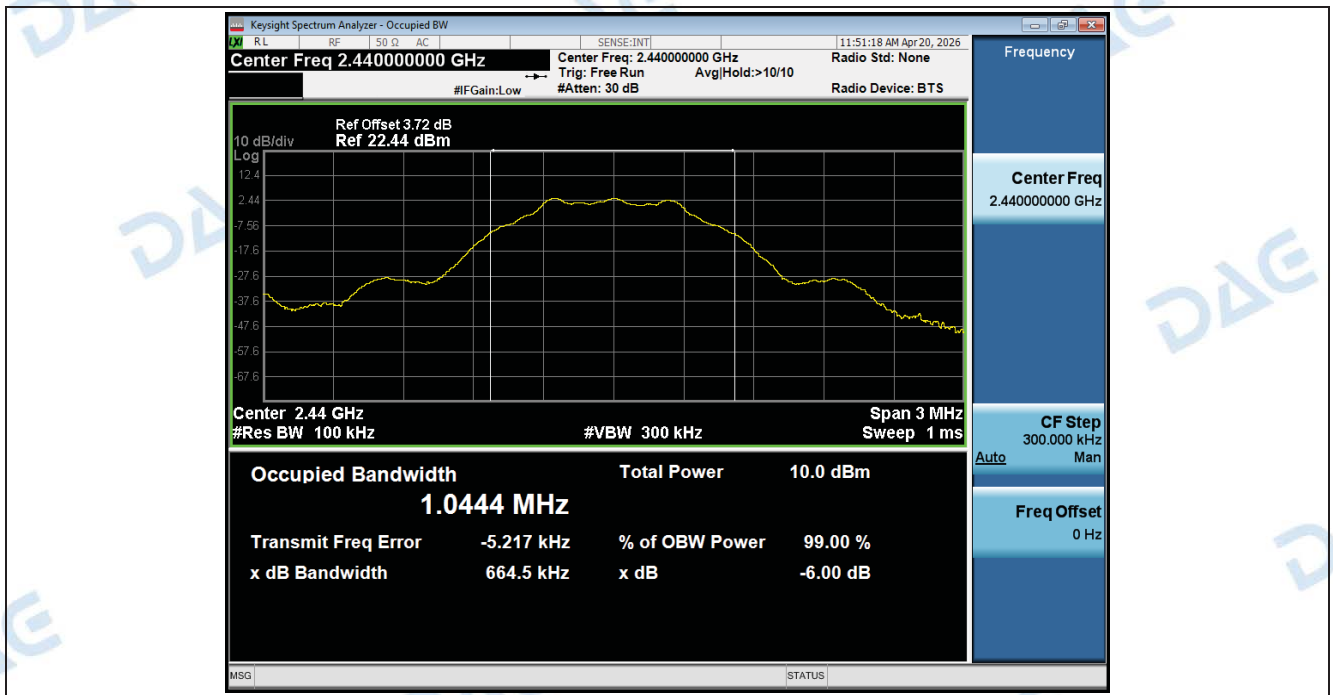
1. -6dB Bandwidth

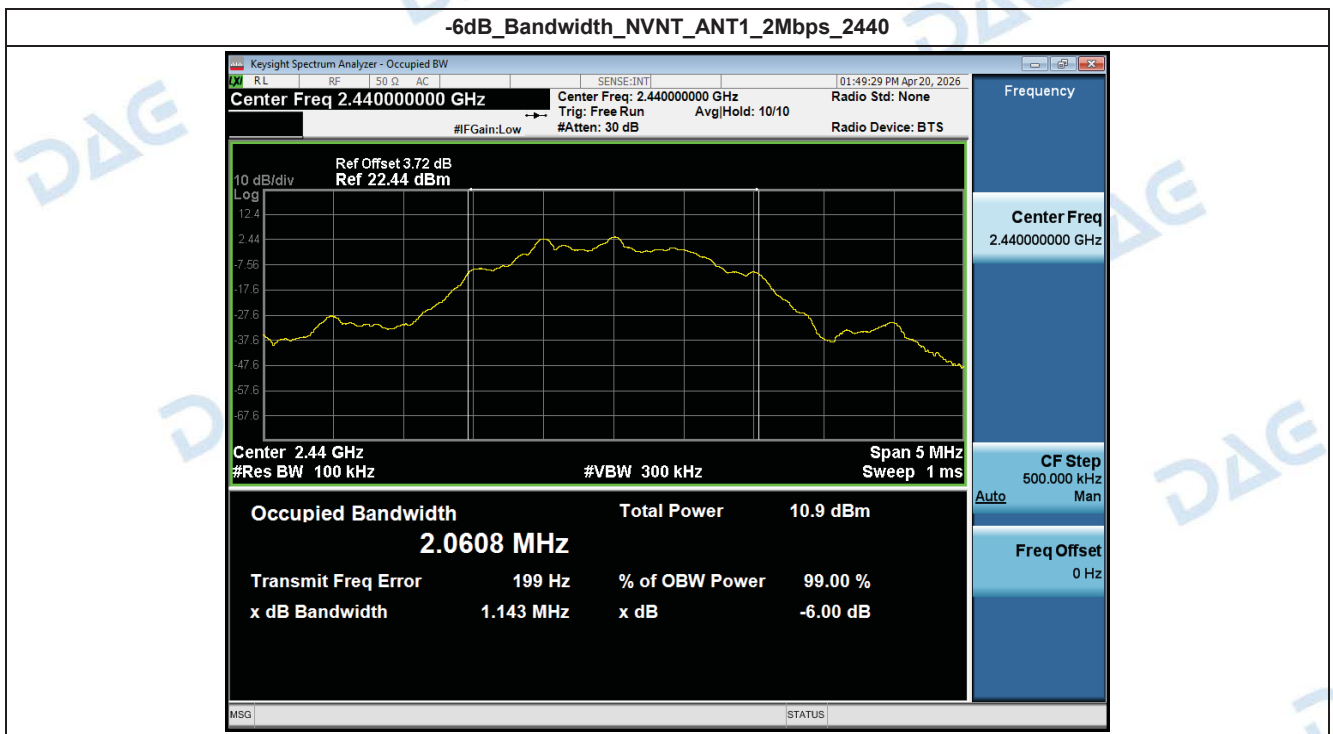
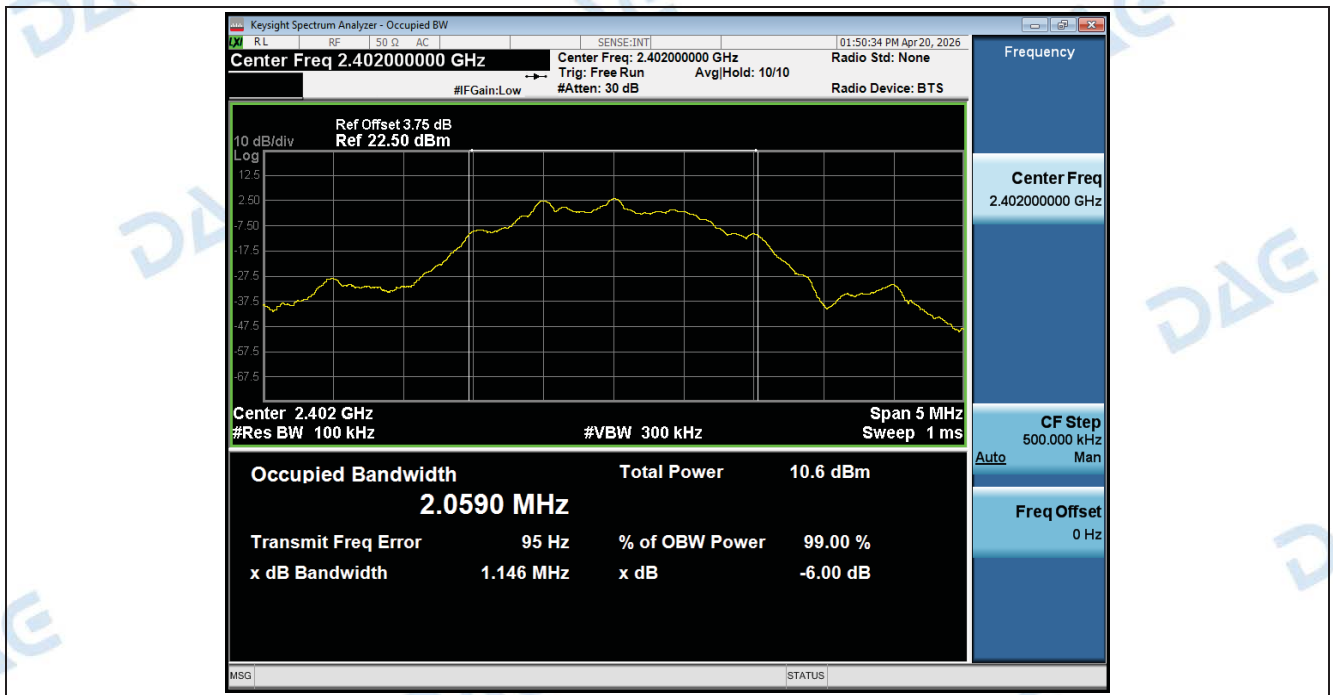
Condition	Antenna	Rate	Frequency (MHz)	-6dB BW(kHz)	limit(kHz)	Result
NVNT	ANT1	1Mbps	2402.00	664.94	500	Pass
NVNT	ANT1	1Mbps	2440.00	664.50	500	Pass
NVNT	ANT1	1Mbps	2480.00	662.31	500	Pass
NVNT	ANT1	2Mbps	2402.00	1145.61	500	Pass
NVNT	ANT1	2Mbps	2440.00	1143.05	500	Pass
NVNT	ANT1	2Mbps	2480.00	1155.49	500	Pass

-6dB_Bandwidth_NVNT_ANT1_1Mbps_2402

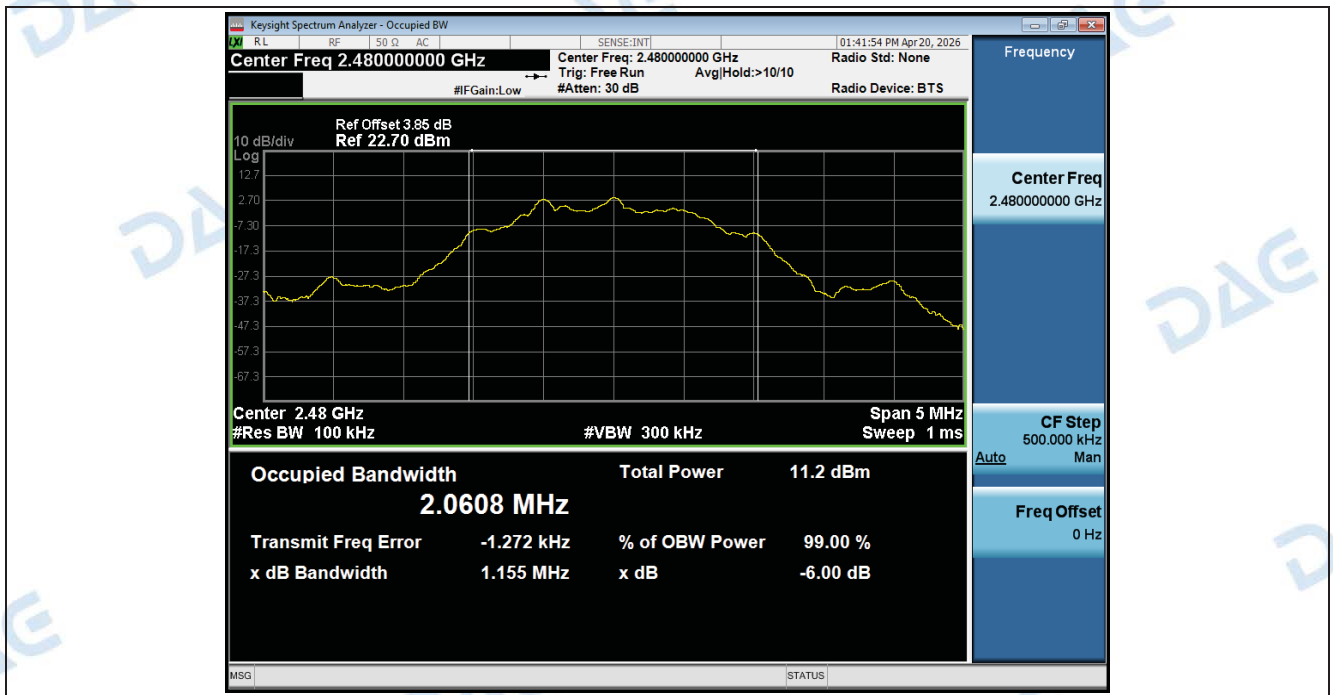


-6dB_Bandwidth_NVNT_ANT1_1Mbps_2440





-6dB_Bandwidth_NVNT_ANT1_2Mbps_2480



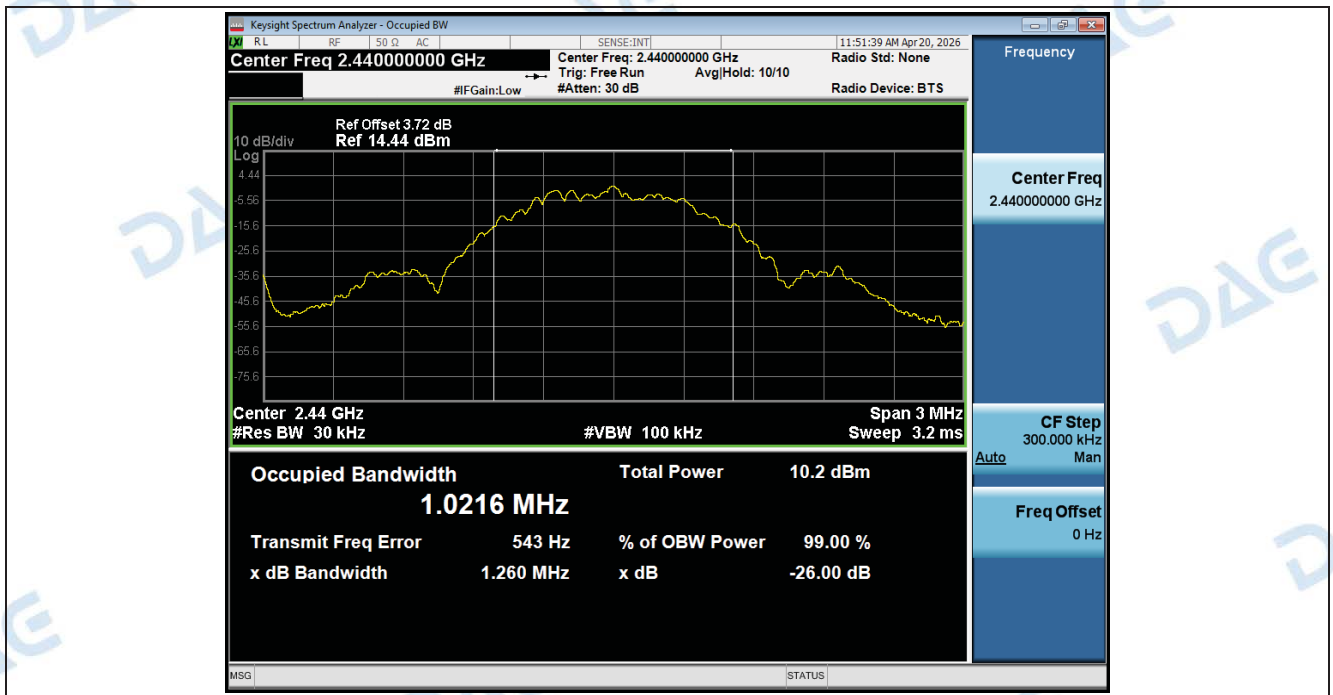
2. 99% Occupied Bandwidth

Condition	Antenna	Rate	Frequency (MHz)	99% BW (MHz)
NVNT	ANT1	1Mbps	2402.00	1.022
NVNT	ANT1	1Mbps	2440.00	1.022
NVNT	ANT1	1Mbps	2480.00	1.023
NVNT	ANT1	2Mbps	2402.00	2.031
NVNT	ANT1	2Mbps	2440.00	2.033
NVNT	ANT1	2Mbps	2480.00	2.031

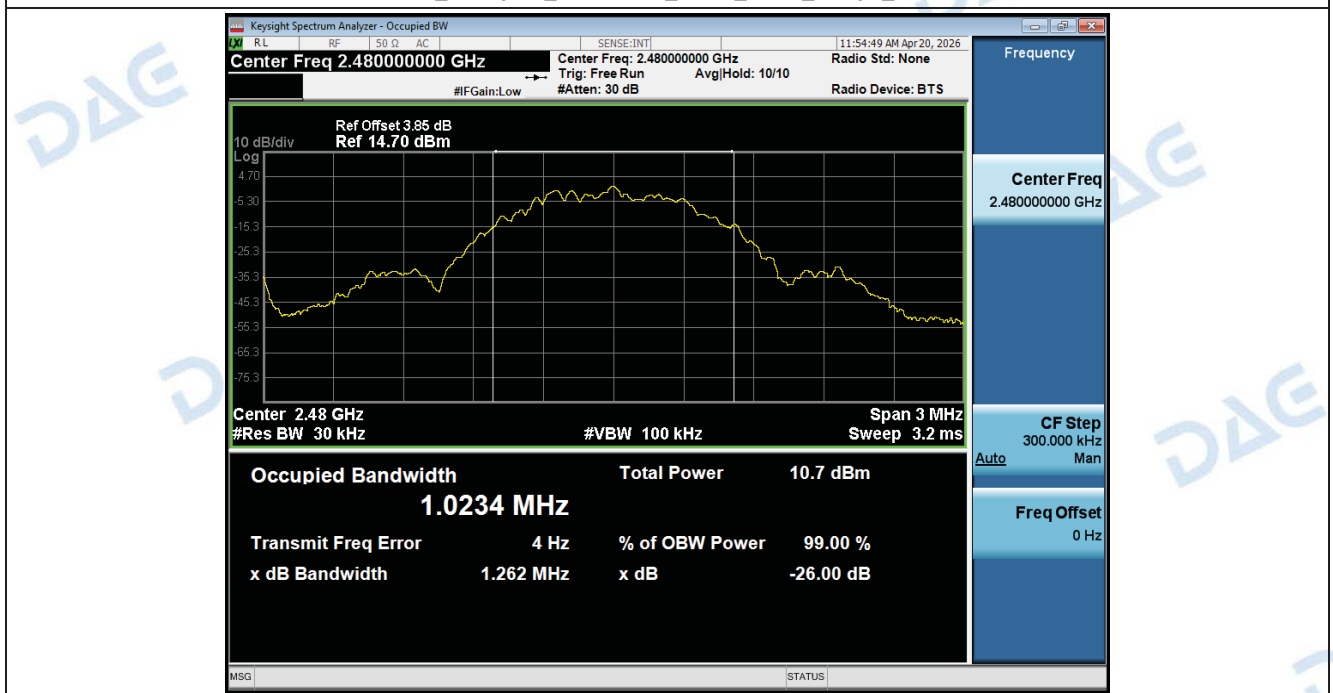
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2402



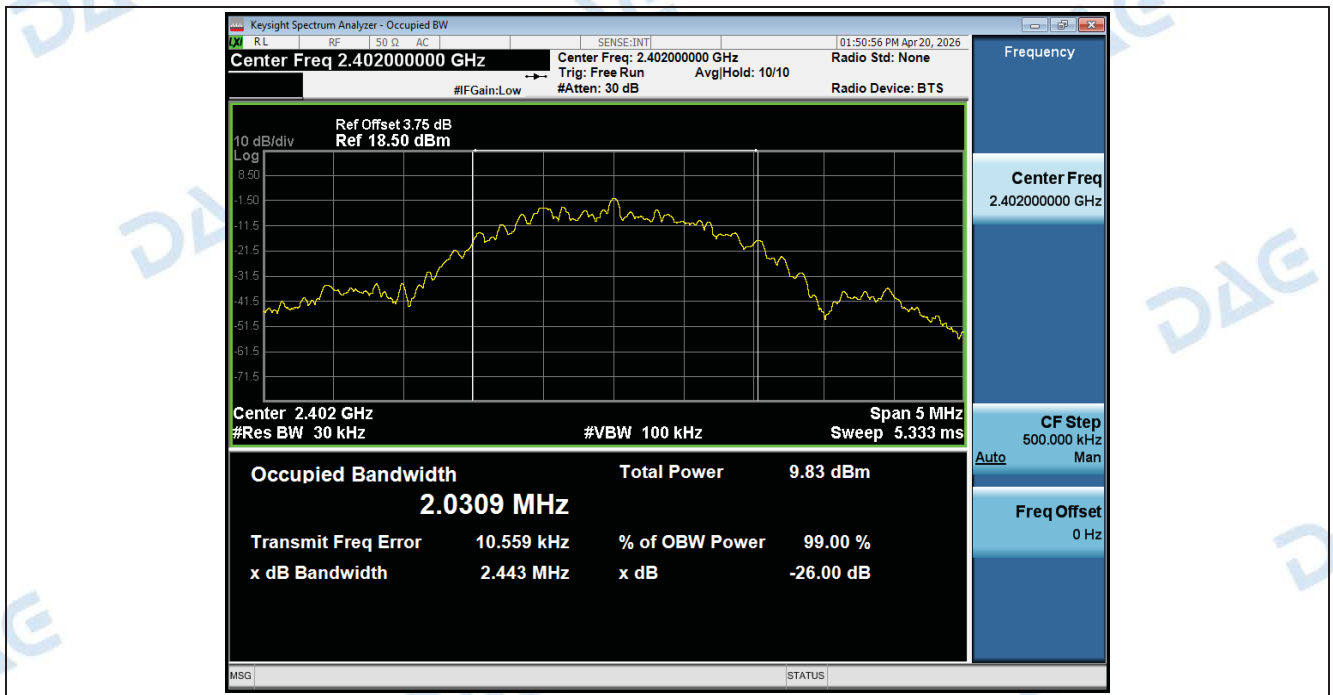
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2440



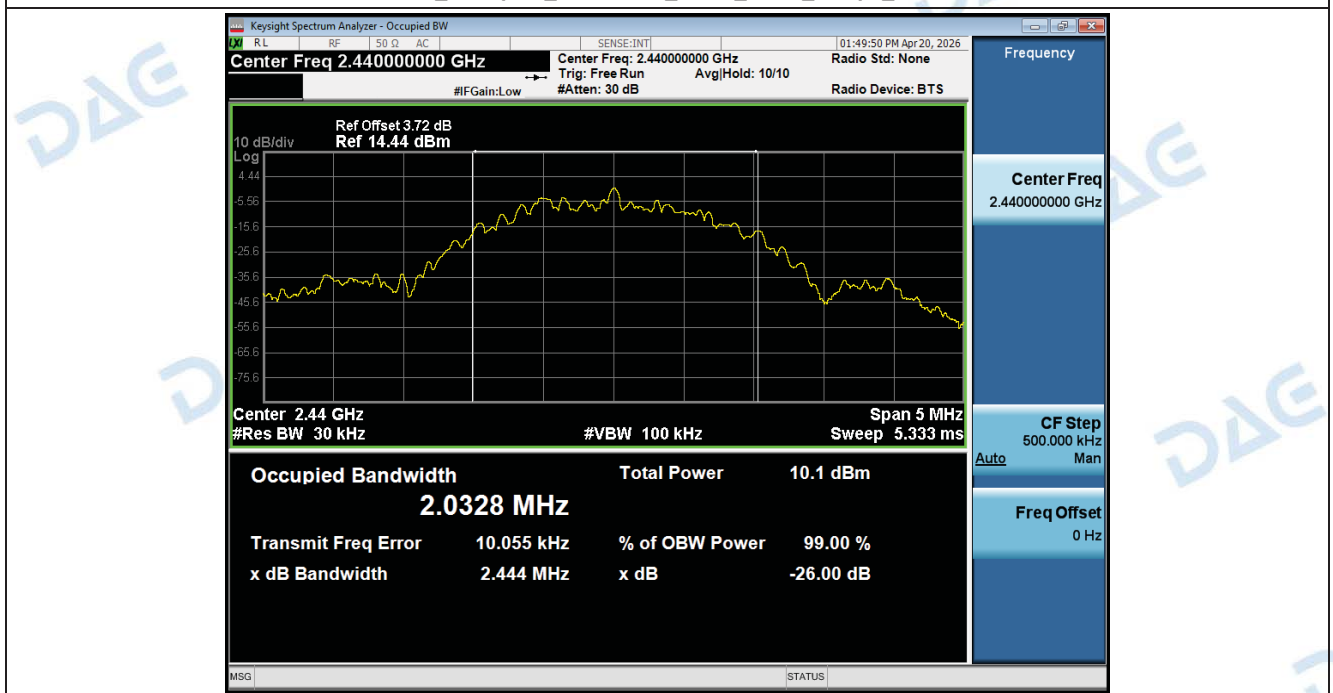
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2480



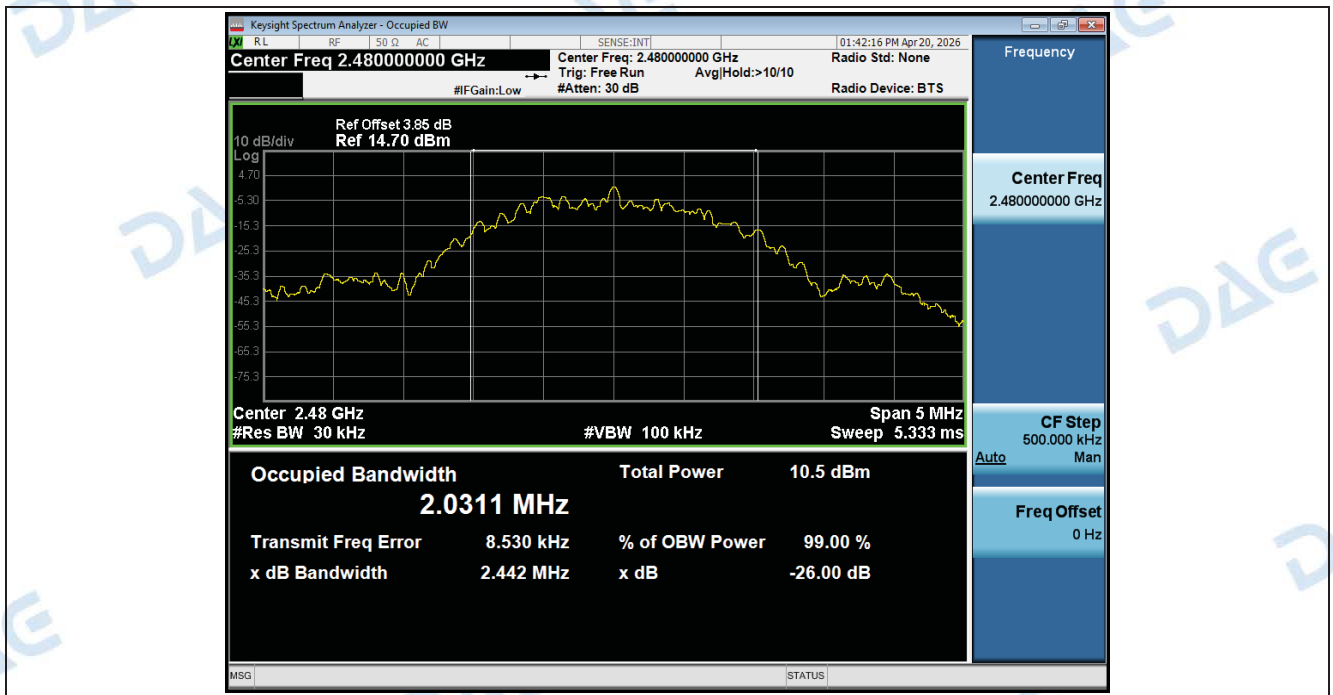
99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2402



99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2440



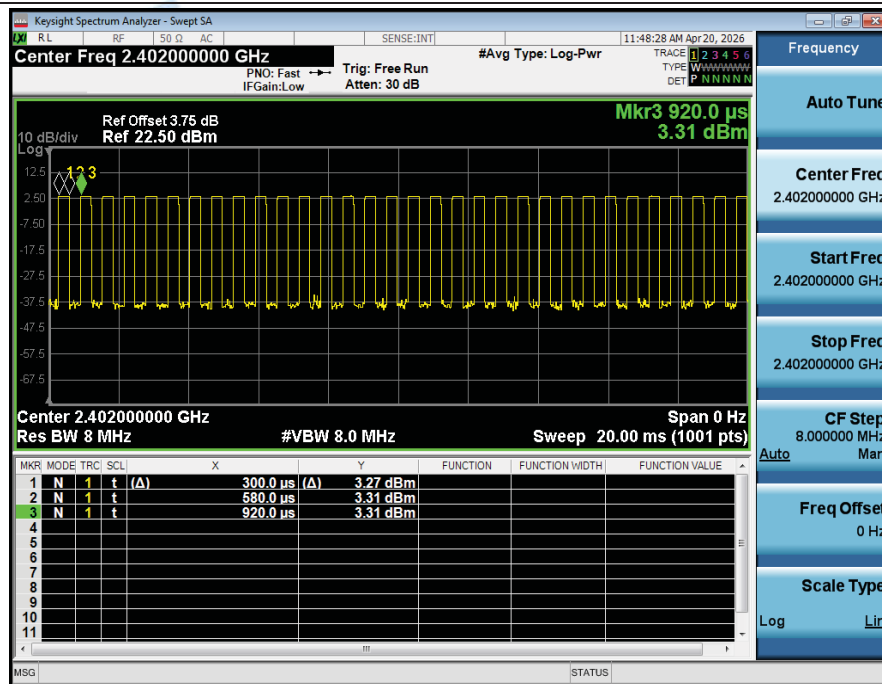
99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2480



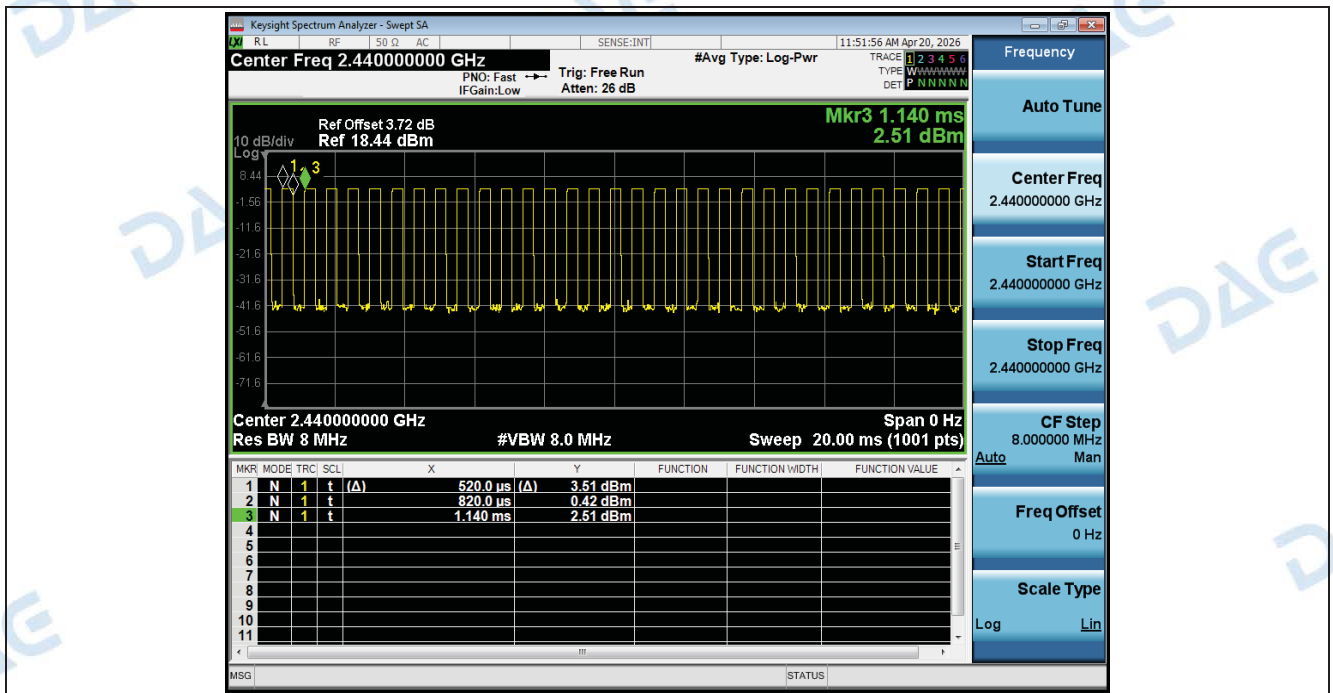
3. Duty Cycle

Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1Mbps	2402.00	45.16	3.45
NVNT	ANT1	1Mbps	2440.00	51.61	2.87
NVNT	ANT1	1Mbps	2480.00	48.39	3.15
NVNT	ANT1	2Mbps	2402.00	25.81	5.88
NVNT	ANT1	2Mbps	2440.00	25.00	6.02
NVNT	ANT1	2Mbps	2480.00	29.03	5.37

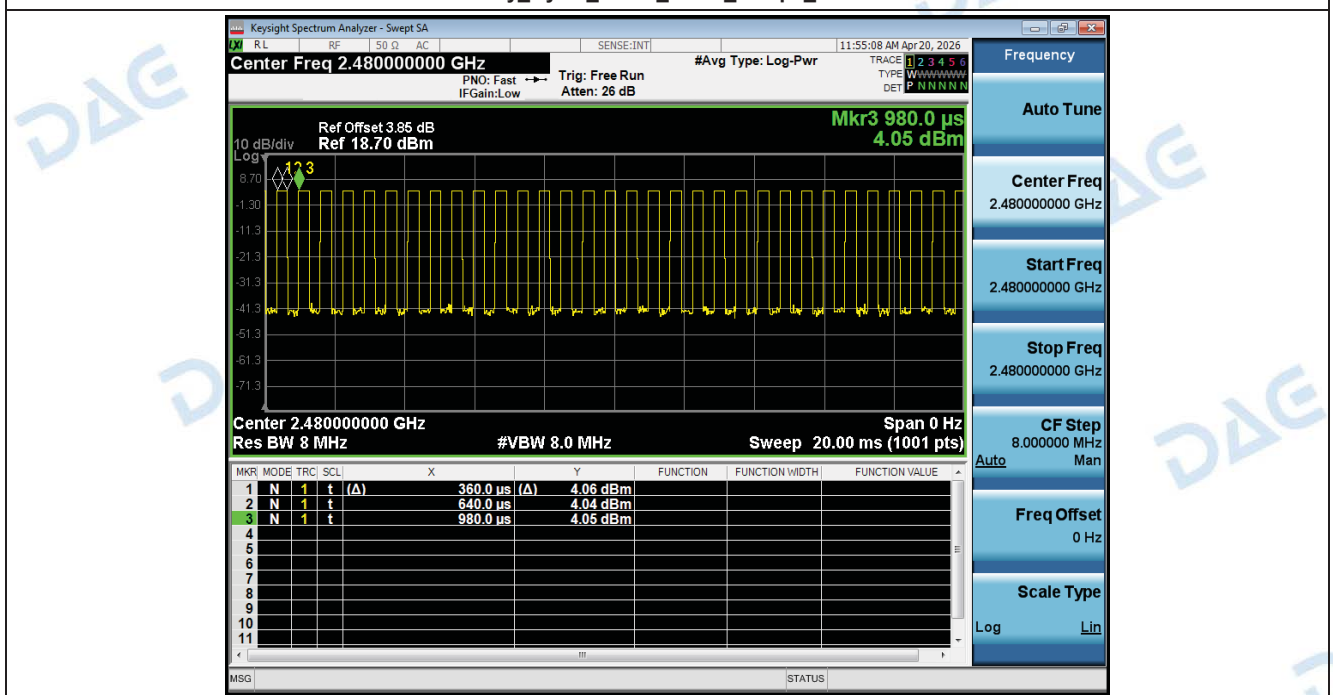
Duty_Cycle_NVNT_ANT1_1Mbps_2402



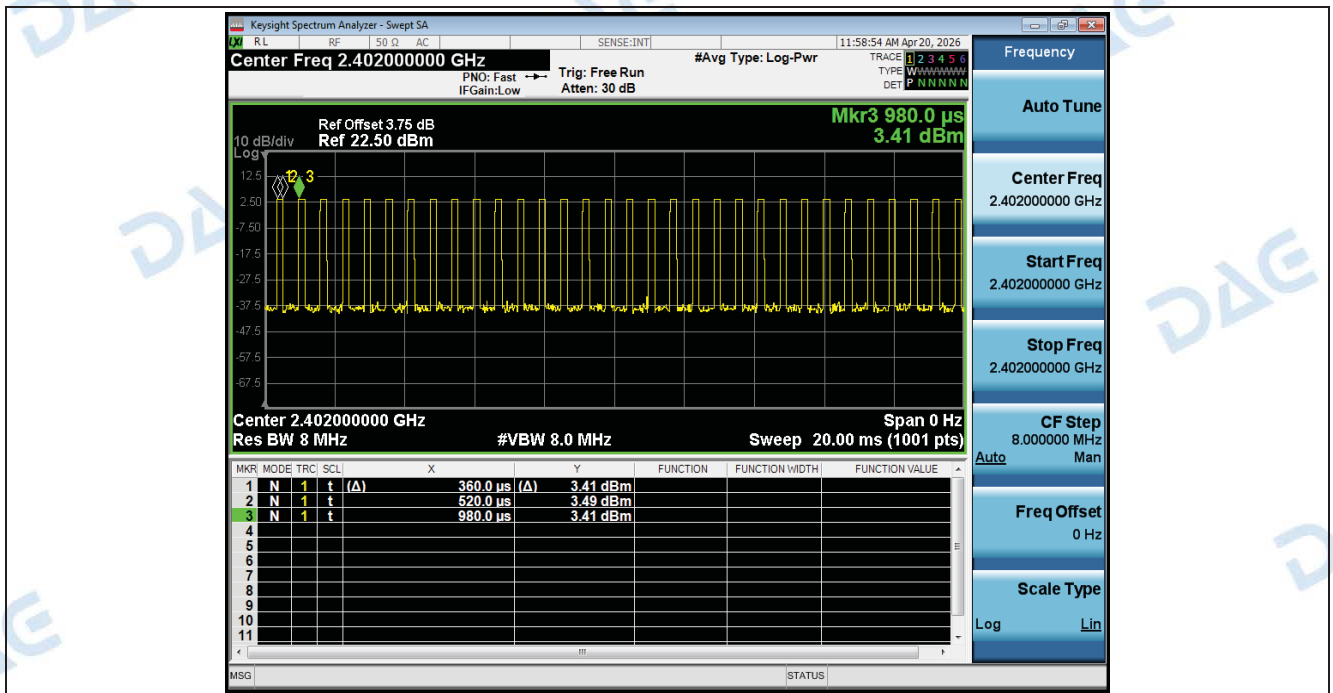
Duty_Cycle_NVNT_ANT1_1Mbps_2440



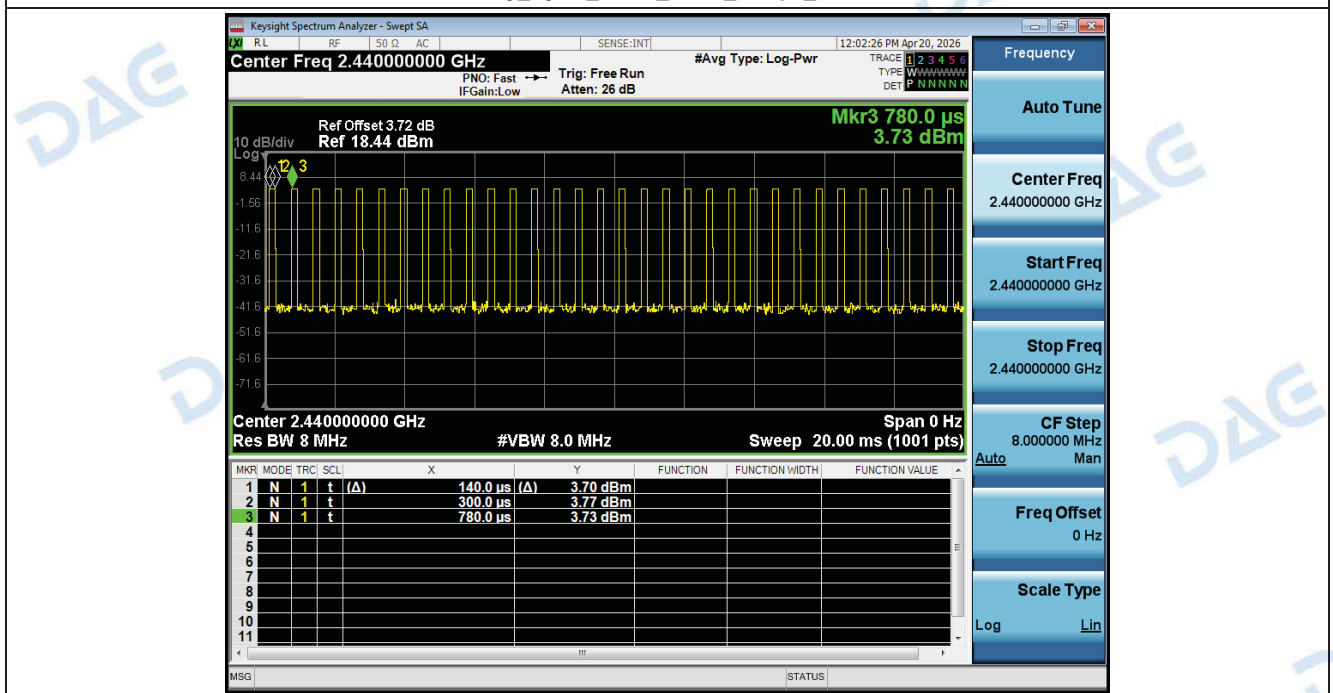
Duty_Cycle_NVNT_ANT1_1Mbps_2480



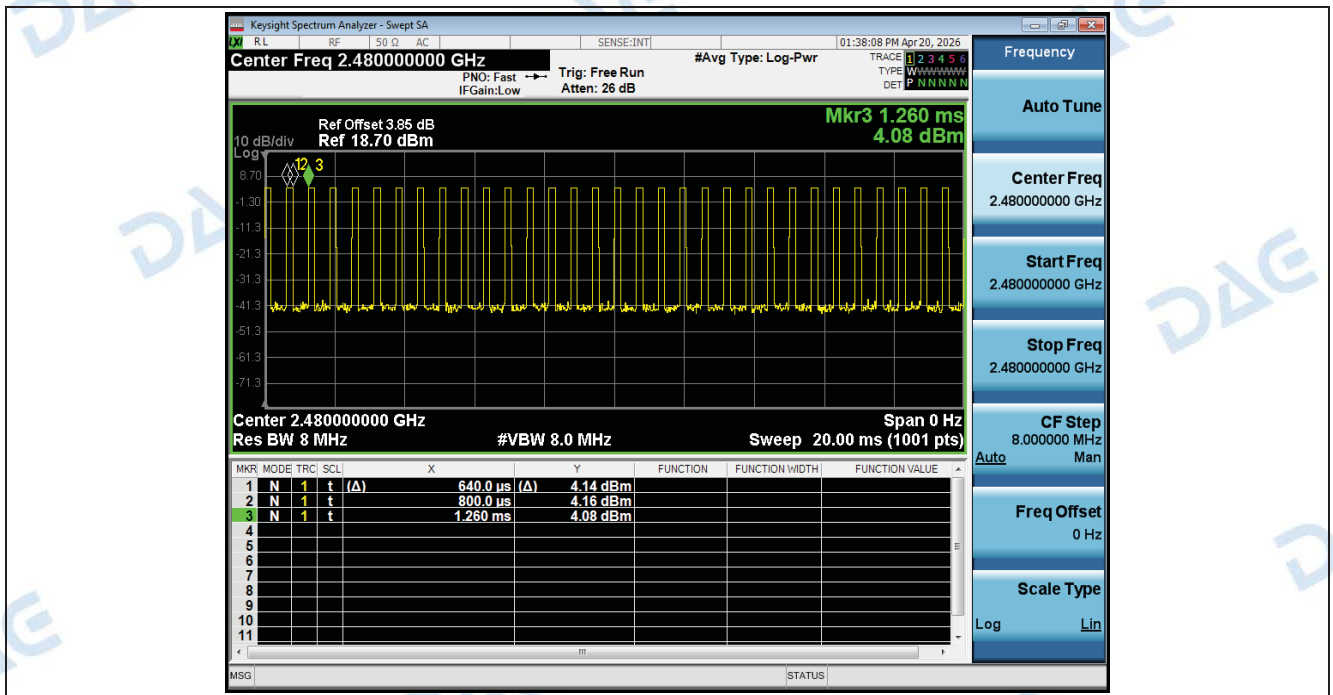
Duty_Cycle_NVNT_ANT1_2Mbps_2402



Duty_Cycle_NVNT_ANT1_2Mbps_2440



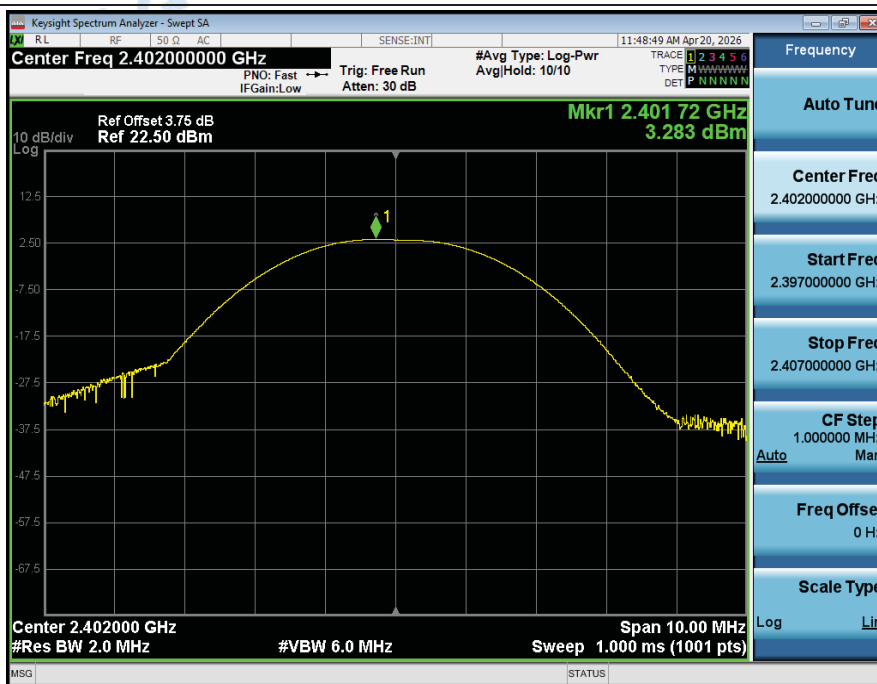
Duty_Cycle_NVNT_ANT1_2Mbps_2480



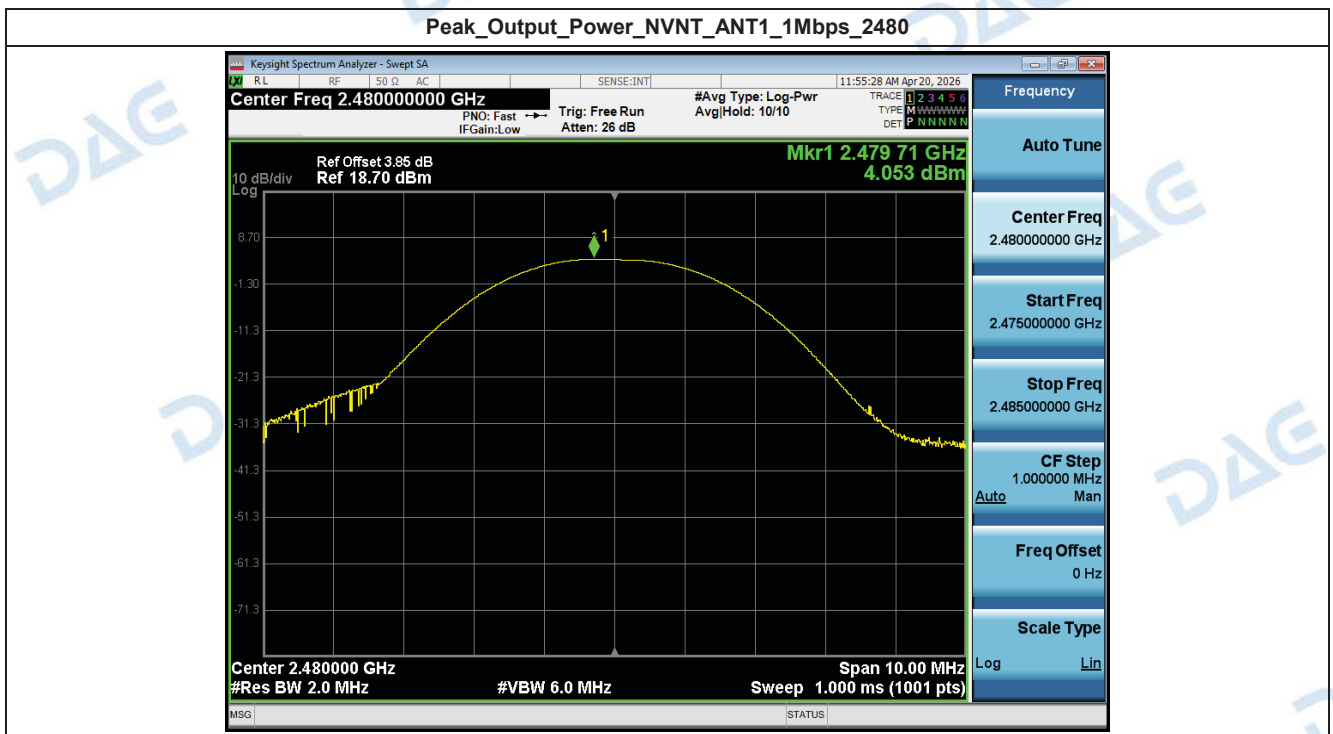
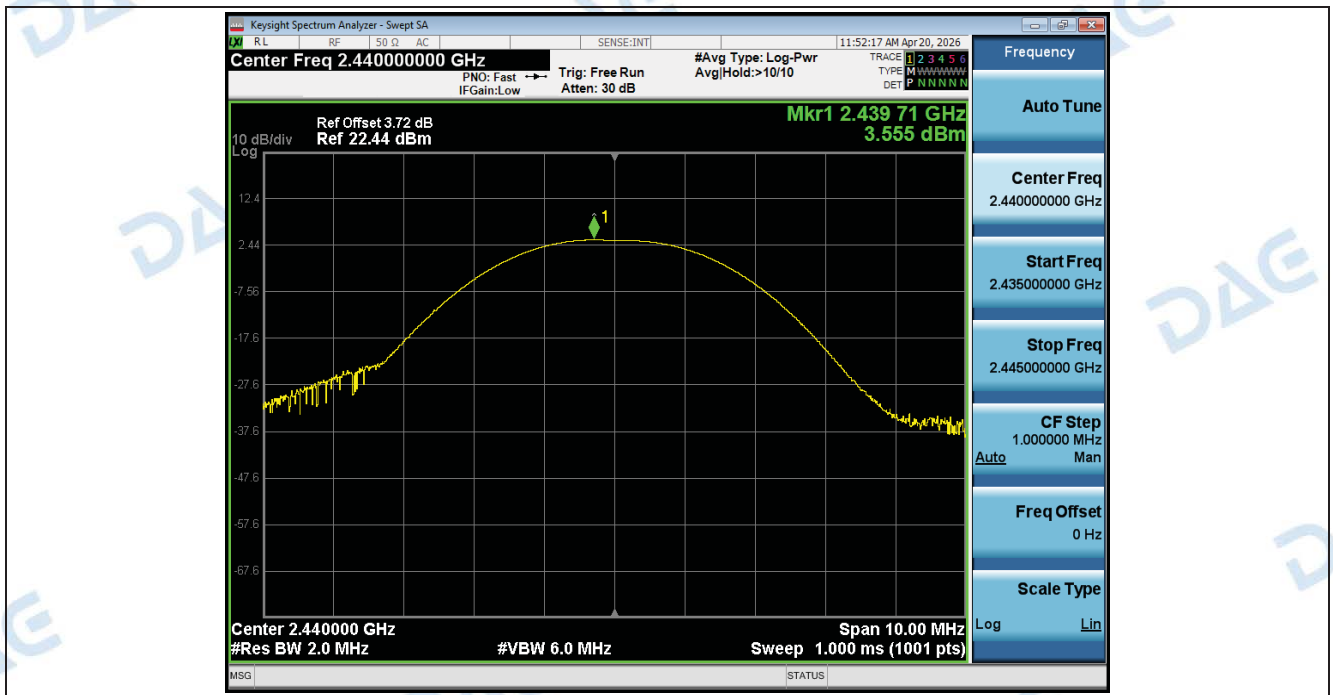
4. Peak Output Power

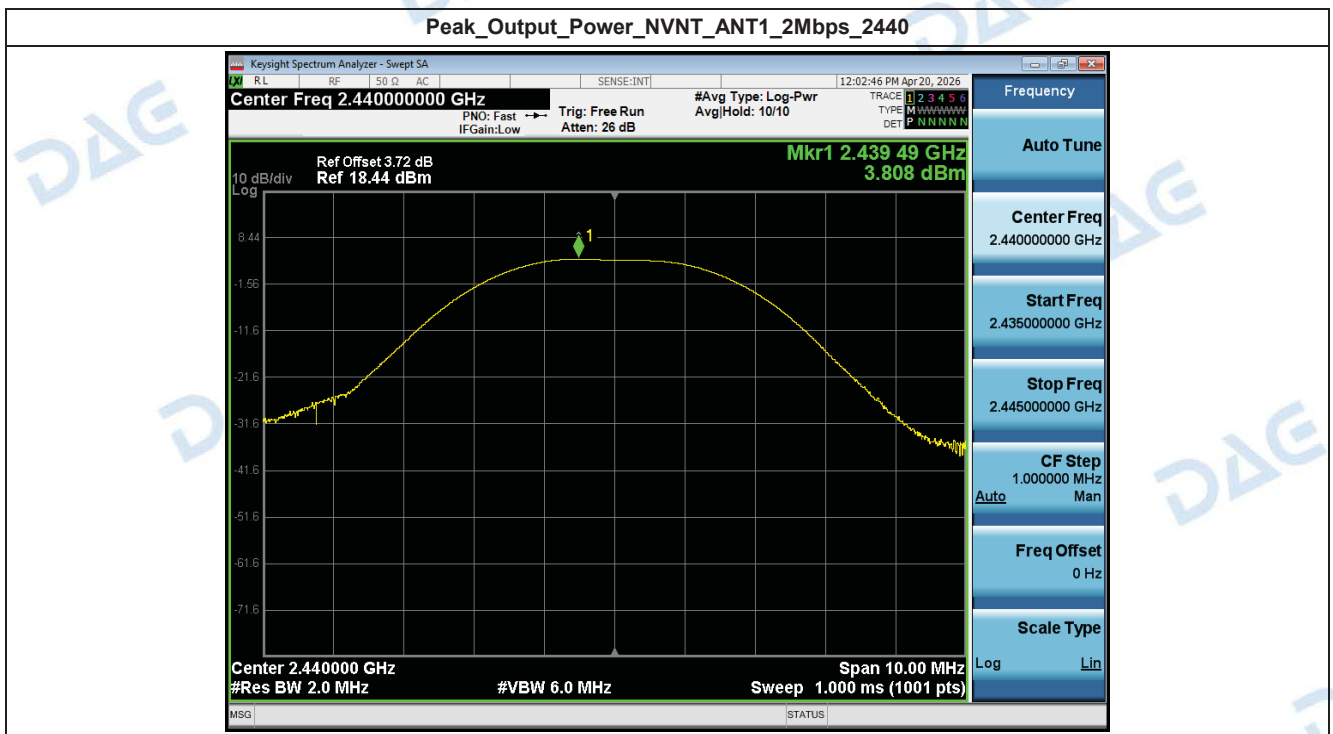
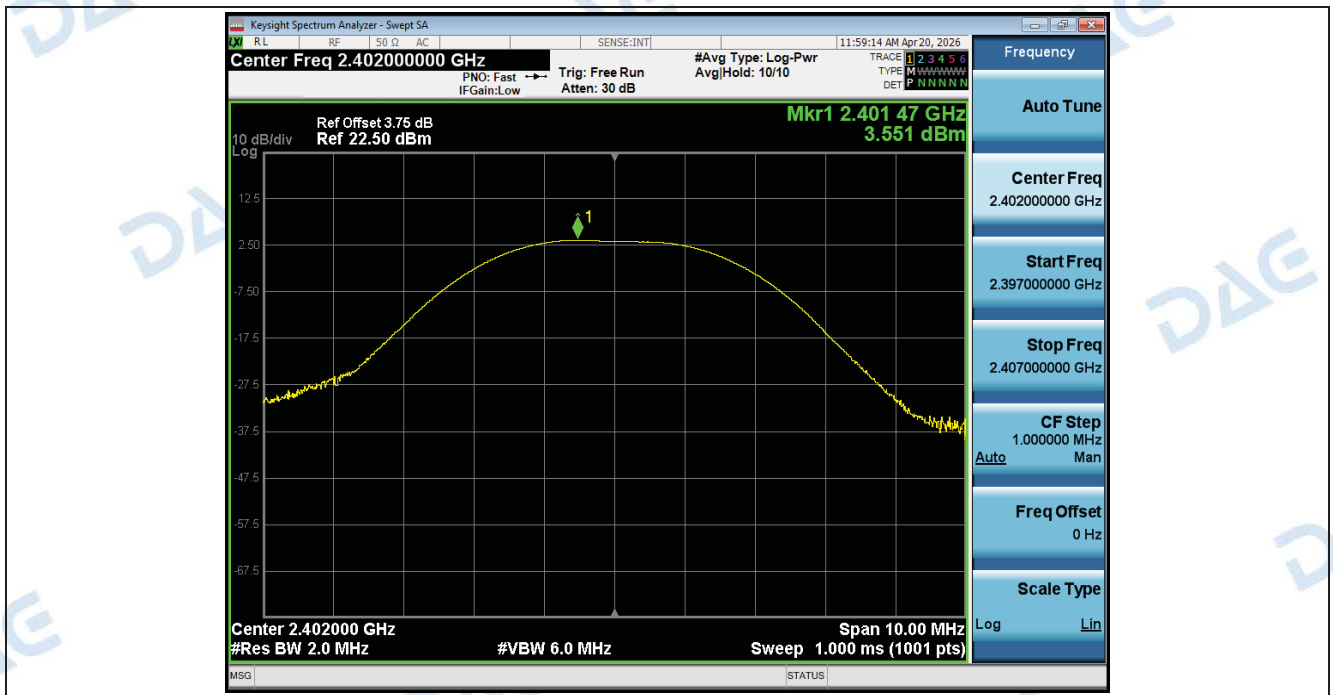
Condition	Antenna	Rate	Frequency (MHz)	Max. Conducted Power(dBm)	Max. Conducted Power(mW)	Limit(mW)	Result
NVNT	ANT1	1Mbps	2402.00	3.28	2.13	1000	Pass
NVNT	ANT1	1Mbps	2440.00	3.56	2.27	1000	Pass
NVNT	ANT1	1Mbps	2480.00	4.05	2.54	1000	Pass
NVNT	ANT1	2Mbps	2402.00	3.55	2.27	1000	Pass
NVNT	ANT1	2Mbps	2440.00	3.81	2.40	1000	Pass
NVNT	ANT1	2Mbps	2480.00	4.21	2.64	1000	Pass

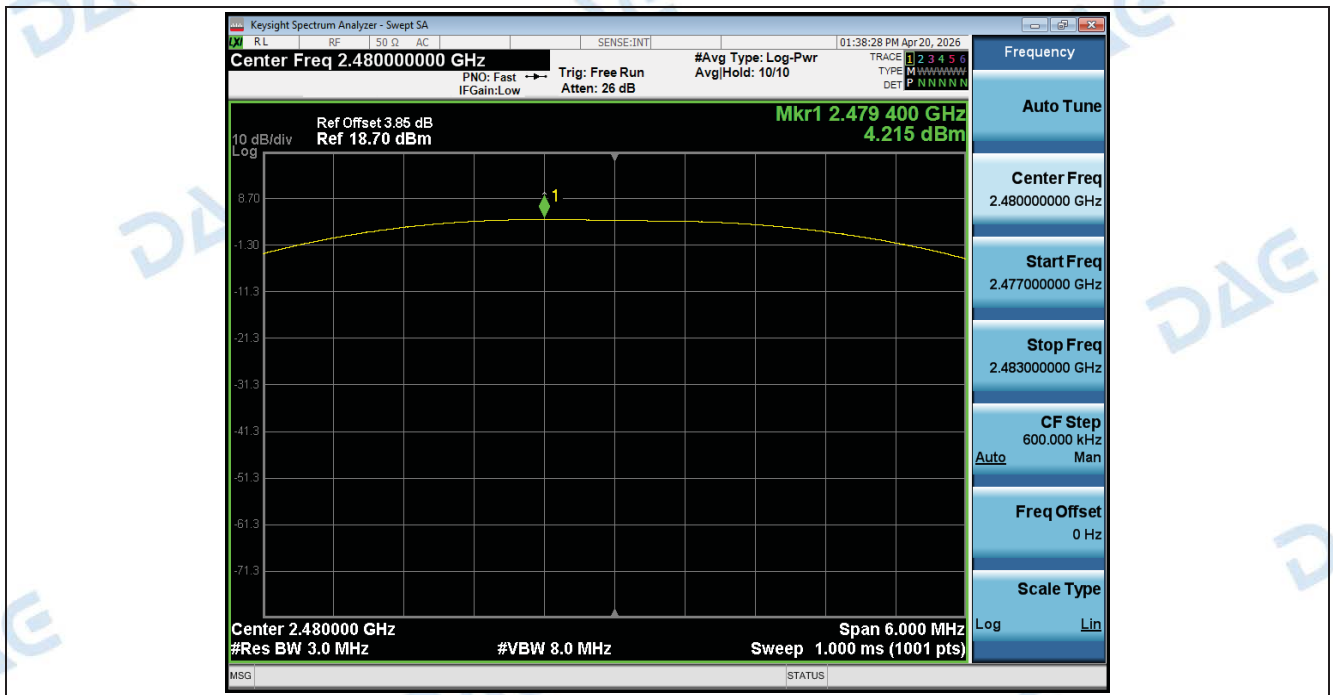
Peak_Output_Power_NVNT_ANT1_1Mbps_2402



Peak_Output_Power_NVNT_ANT1_1Mbps_2440



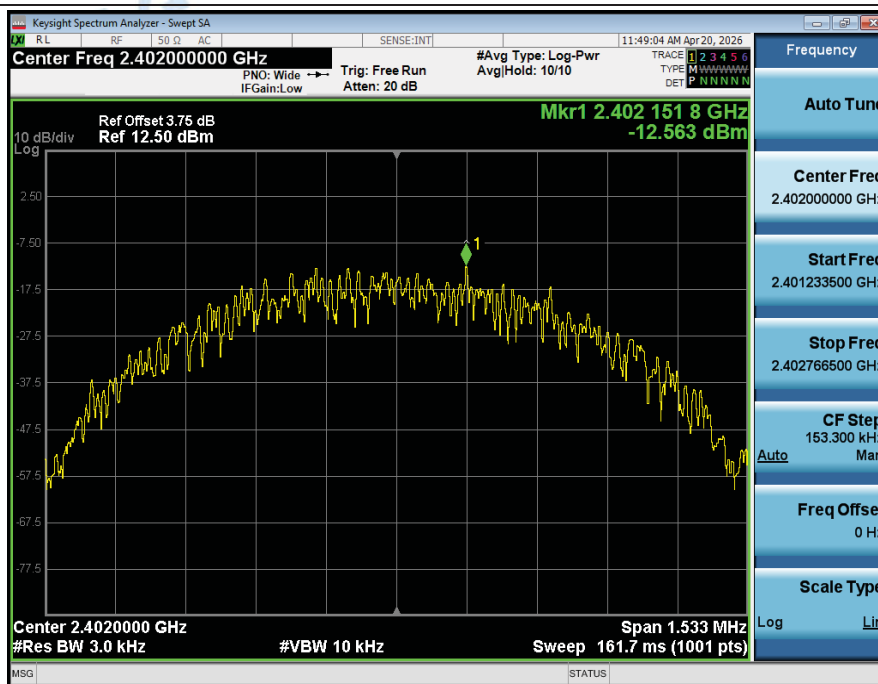




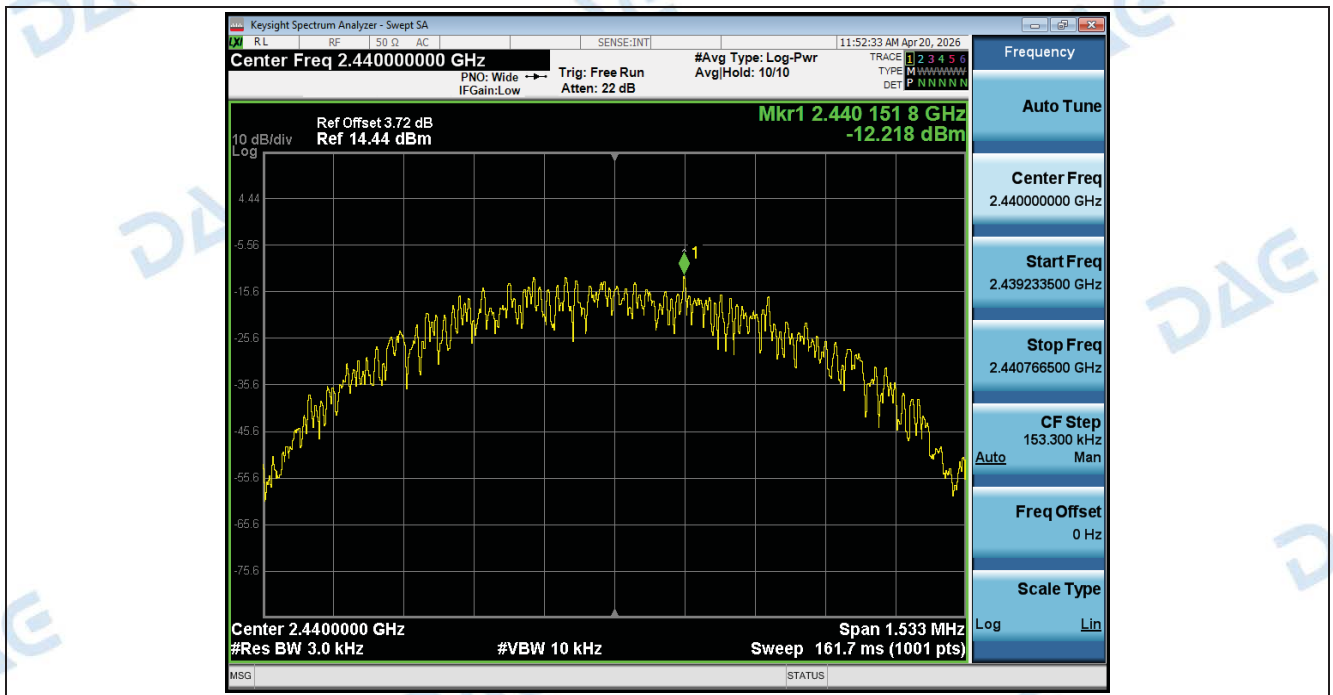
5. Power Spectral Density

Condition	Antenna	Rate	Frequency (MHz)	Power Spectral Density(dBm/3kHz)	Limit(dBm/3kHz)	Result
NVNT	ANT1	1Mbps	2402.00	-12.56	8	Pass
NVNT	ANT1	1Mbps	2440.00	-12.22	8	Pass
NVNT	ANT1	1Mbps	2480.00	-11.78	8	Pass
NVNT	ANT1	2Mbps	2402.00	-15.74	8	Pass
NVNT	ANT1	2Mbps	2440.00	-15.38	8	Pass
NVNT	ANT1	2Mbps	2480.00	-15.16	8	Pass

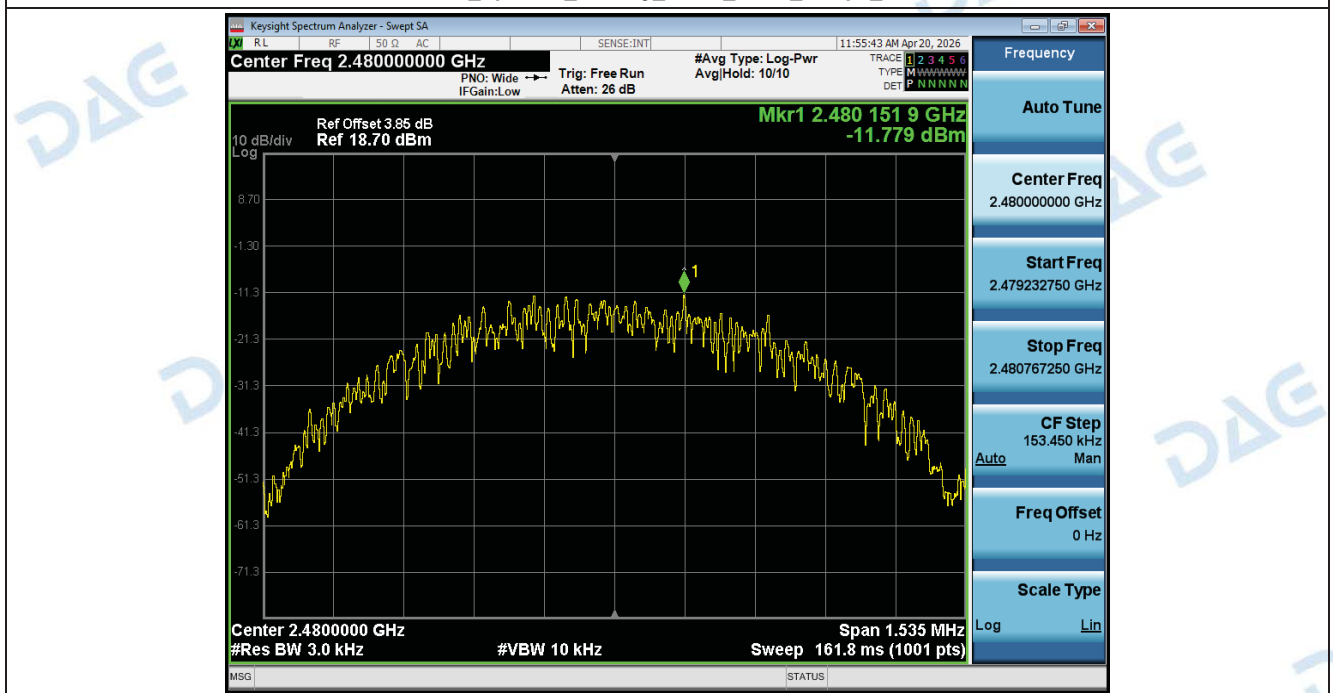
Power_Spectral_Density_NVNT_ANT1_1Mbps_2402



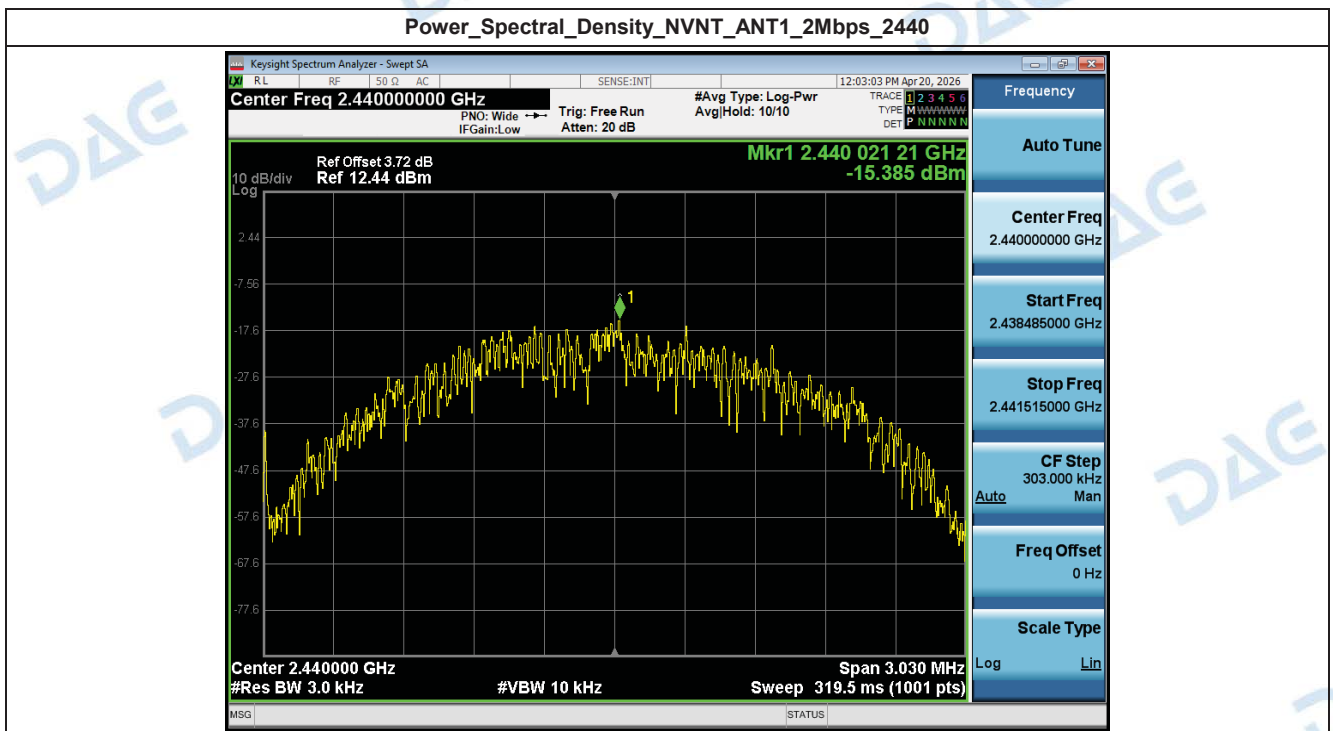
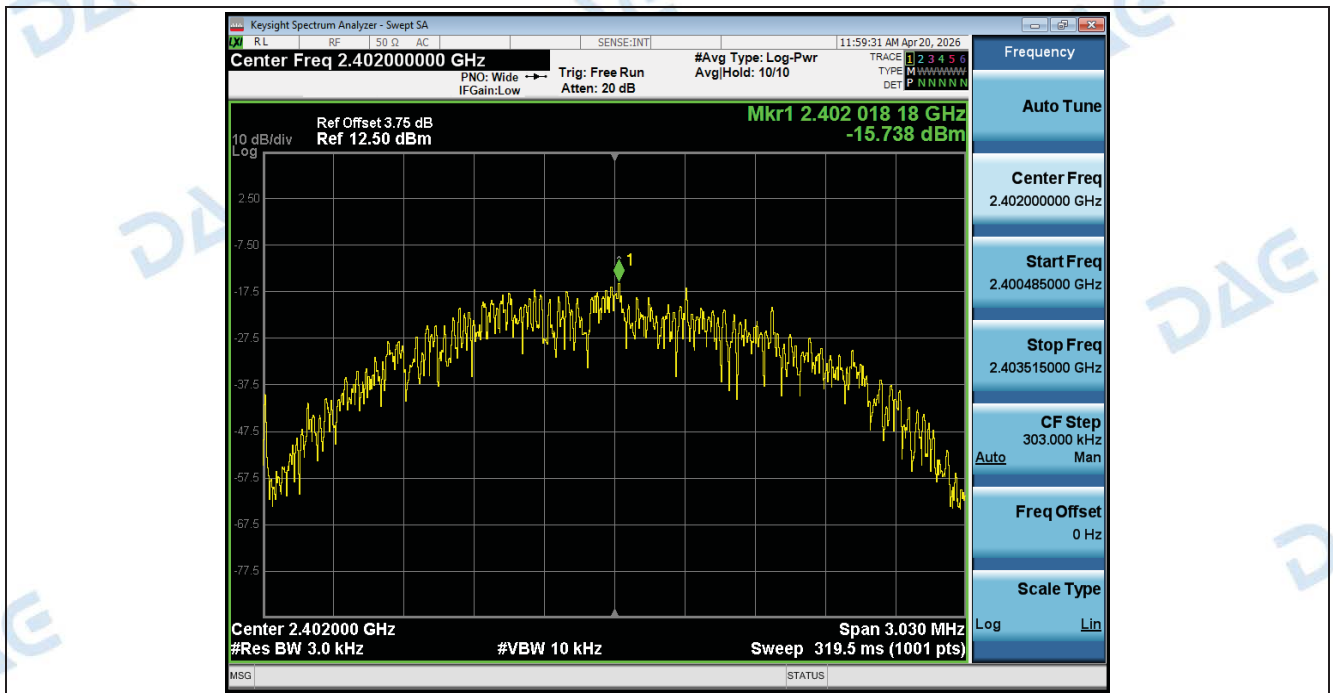
Power_Spectral_Density_NVNT_ANT1_1Mbps_2440



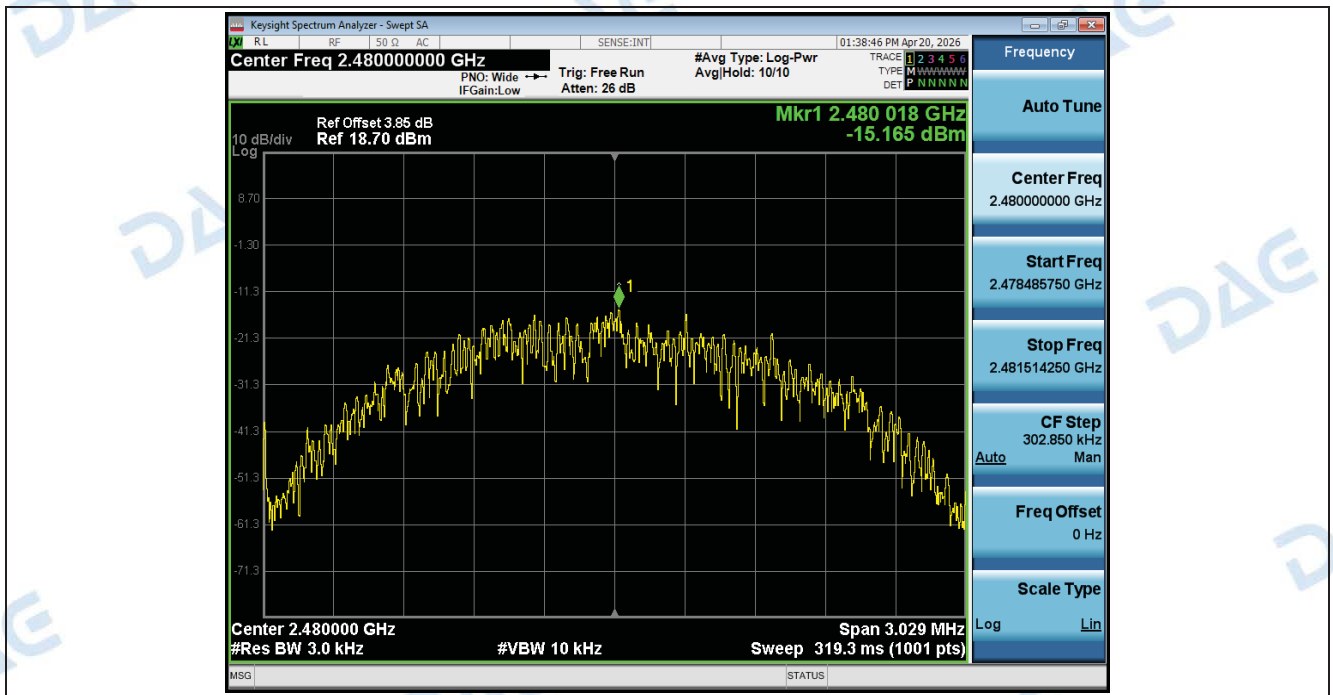
Power_Spectral_Density_NVNT_ANT1_1Mbps_2480



Power_Spectral_Density_NVNT_ANT1_2Mbps_2402



Power_Spectral_Density_NVNT_ANT1_2Mbps_2480



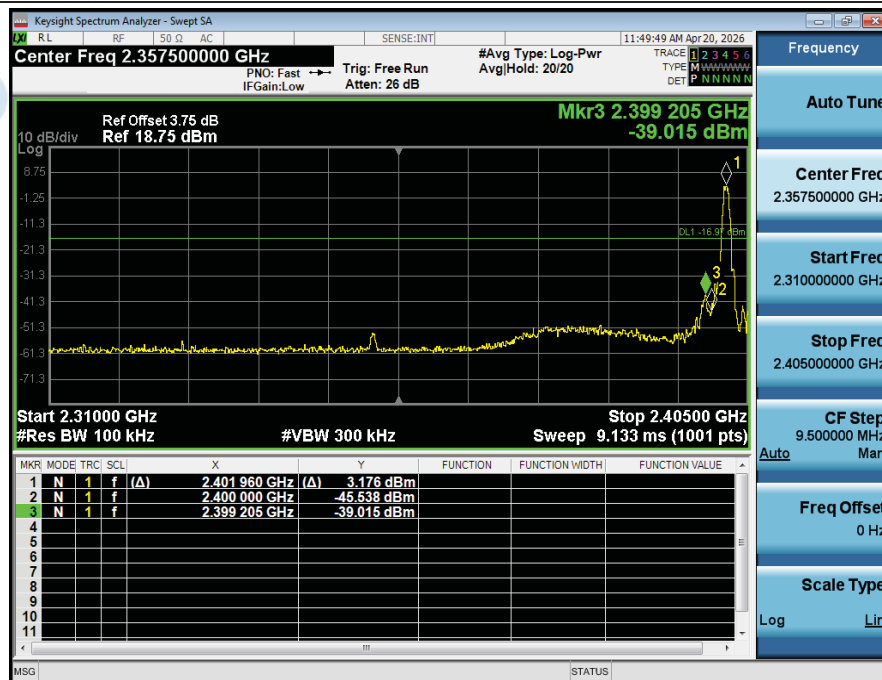
6. Bandedge

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_freq(MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402.00	2399.205	3.029	-39.015	-16.971	Pass
NVNT	ANT1	1Mbps	2480.00	2483.750	3.831	-39.166	-16.169	Pass
NVNT	ANT1	2Mbps	2402.00	2399.965	3.144	-28.302	-16.856	Pass
NVNT	ANT1	2Mbps	2480.00	2484.000	3.818	-43.740	-16.182	Pass

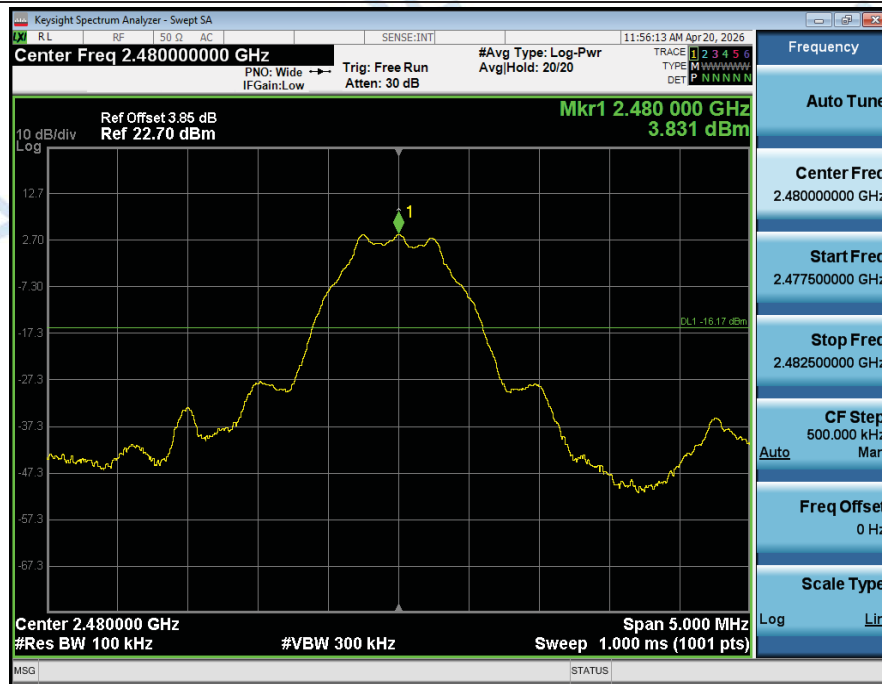
1_Reference_Level_NVNT_ANT1_1Mbps_2402



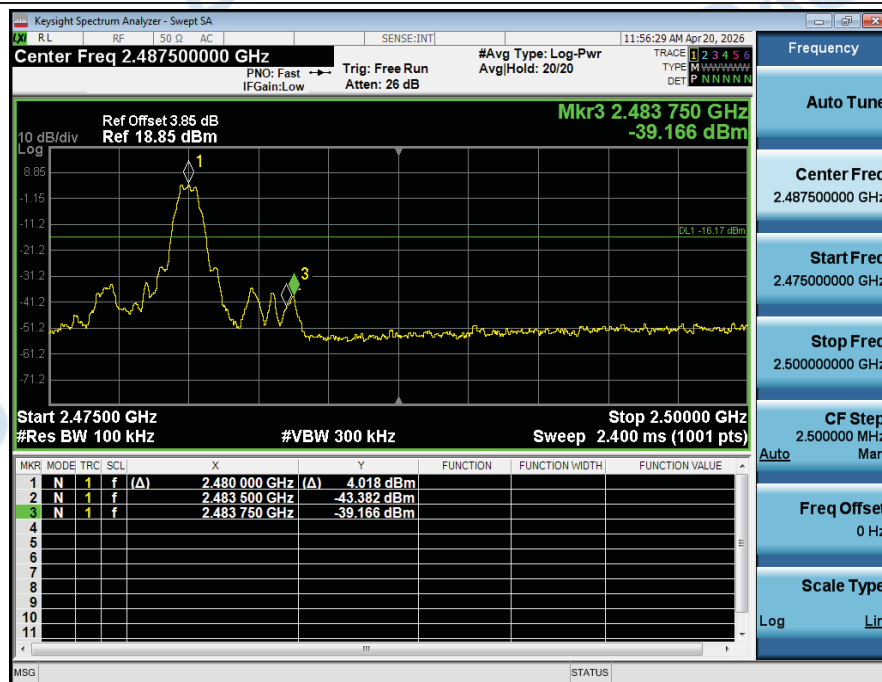
2_Bandedge_NVNT_ANT1_1Mbps_2402



1_Reference_Level_NVNT_ANT1_1Mbps_2480



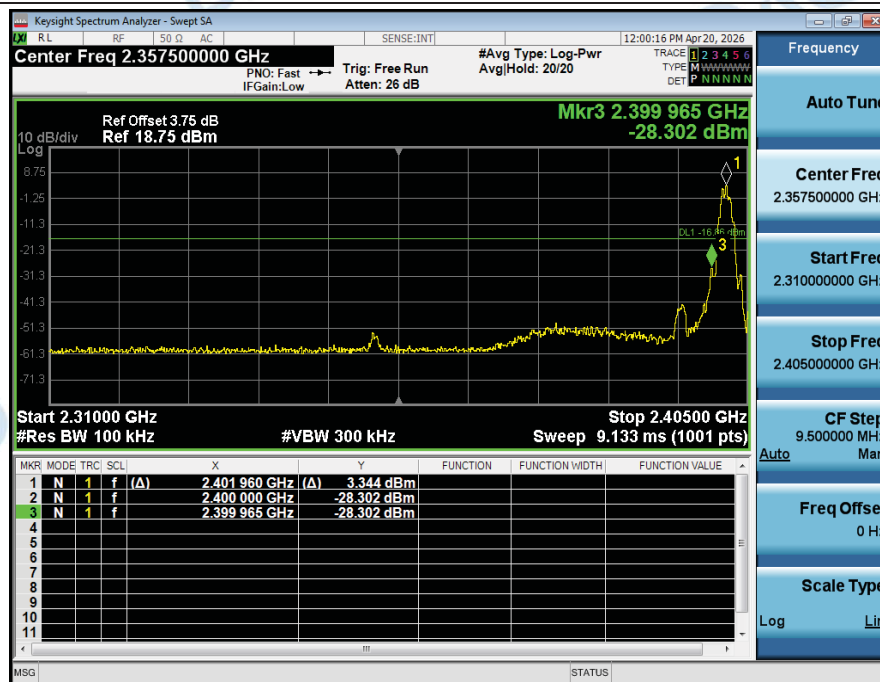
2_Bandedge_NVNT_ANT1_1Mbps_2480



1_Reference_Level_NVNT_ANT1_2Mbps_2402



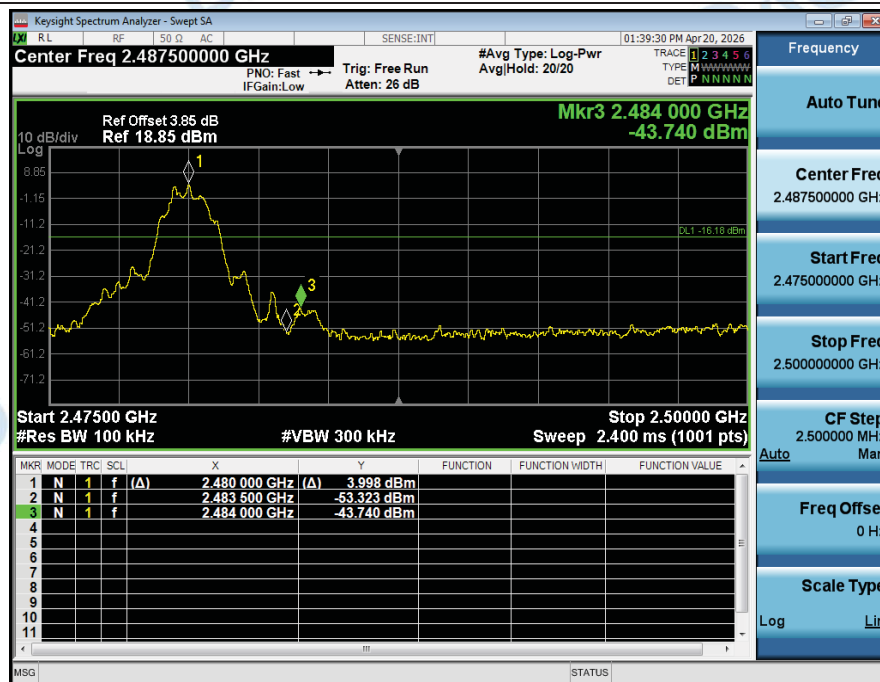
2_Bandedge_NVNT_ANT1_2Mbps_2402



1_Reference_Level_NVNT_ANT1_2Mbps_2480



2_Bandedge_NVNT_ANT1_2Mbps_2480



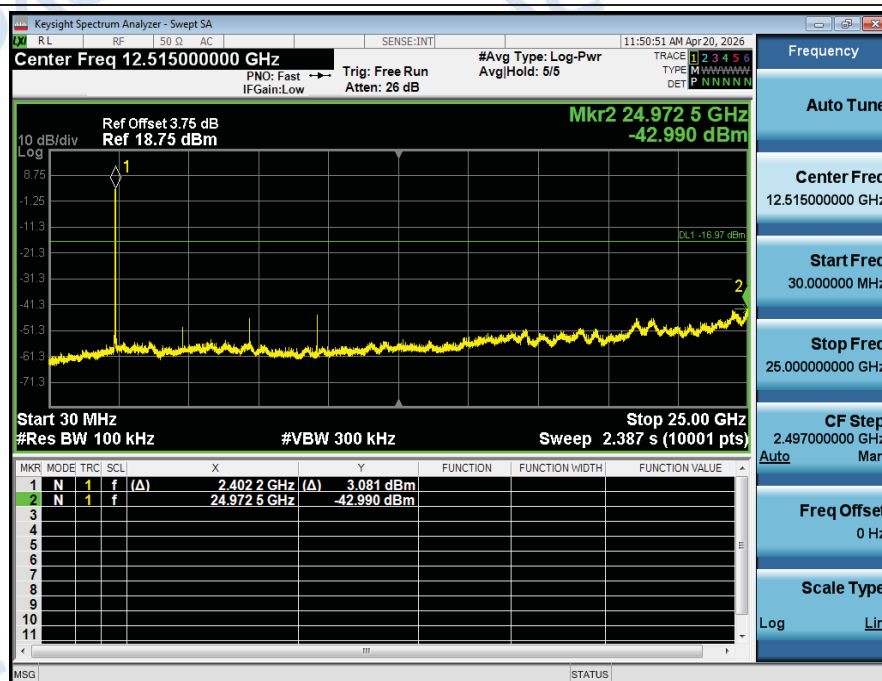
7. Spurious Emission

Condition	Antenna	Modulation	TX_Frequency (MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402.00	3.029	-42.990	-16.971	Pass
NVNT	ANT1	1Mbps	2440.00	3.323	-43.552	-16.677	Pass
NVNT	ANT1	1Mbps	2480.00	3.831	-42.883	-16.169	Pass
NVNT	ANT1	2Mbps	2402.00	3.144	-43.513	-16.856	Pass
NVNT	ANT1	2Mbps	2440.00	3.437	-43.649	-16.563	Pass
NVNT	ANT1	2Mbps	2480.00	3.818	-43.500	-16.182	Pass

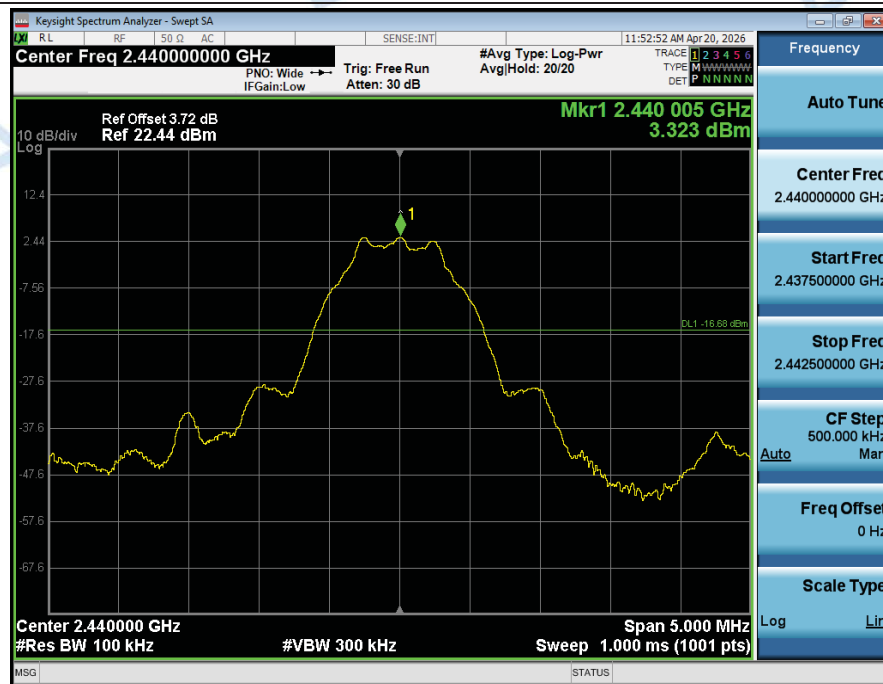
1_Reference_Level_NVNT_ANT1_1Mbps_2402



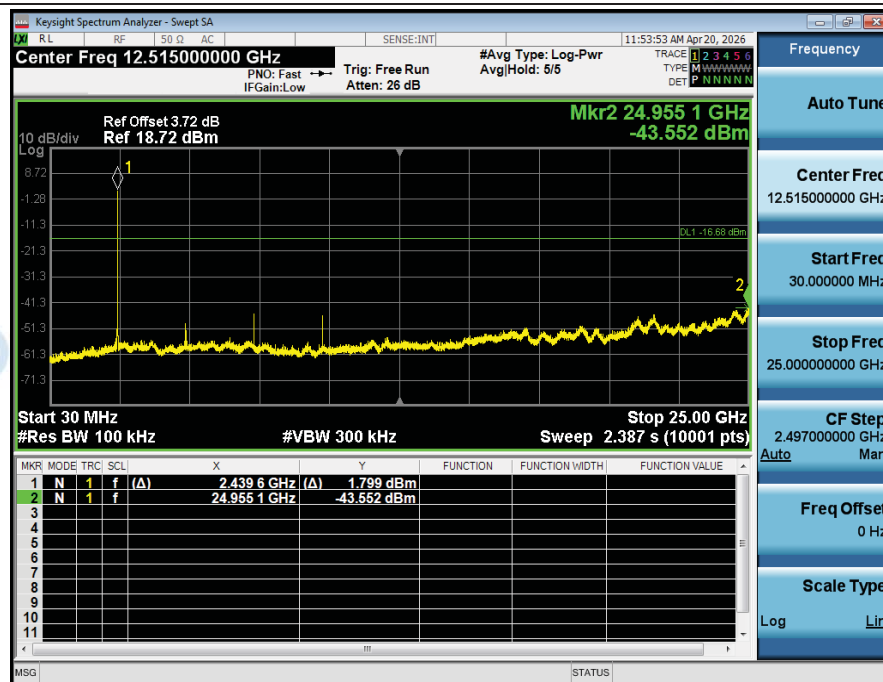
2_Spurious_Emission_NVNT_ANT1_1Mbps_2402



1_Reference_Level_NVNT_ANT1_1Mbps_2440



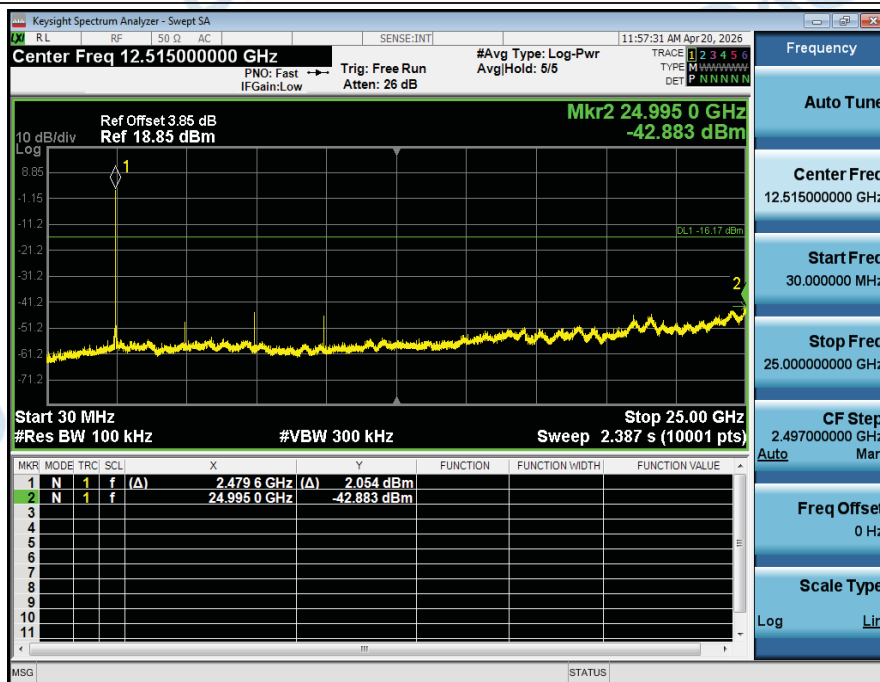
2_Spurious_Emission_NVNT_ANT1_1Mbps_2440



1_Reference_Level_NVNT_ANT1_1Mbps_2480



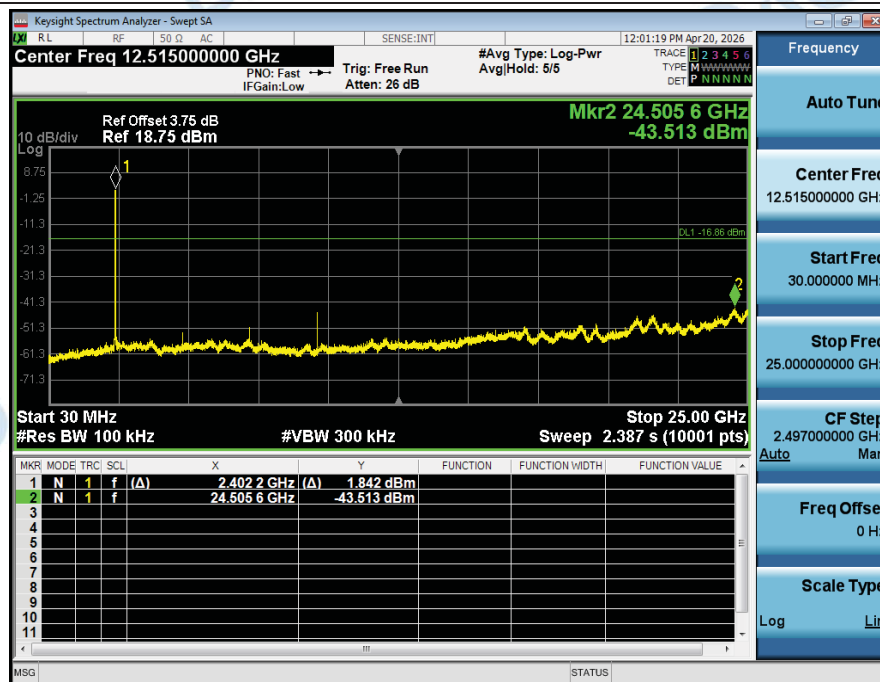
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1_Reference_Level_NVNT_ANT1_2Mbps_2402



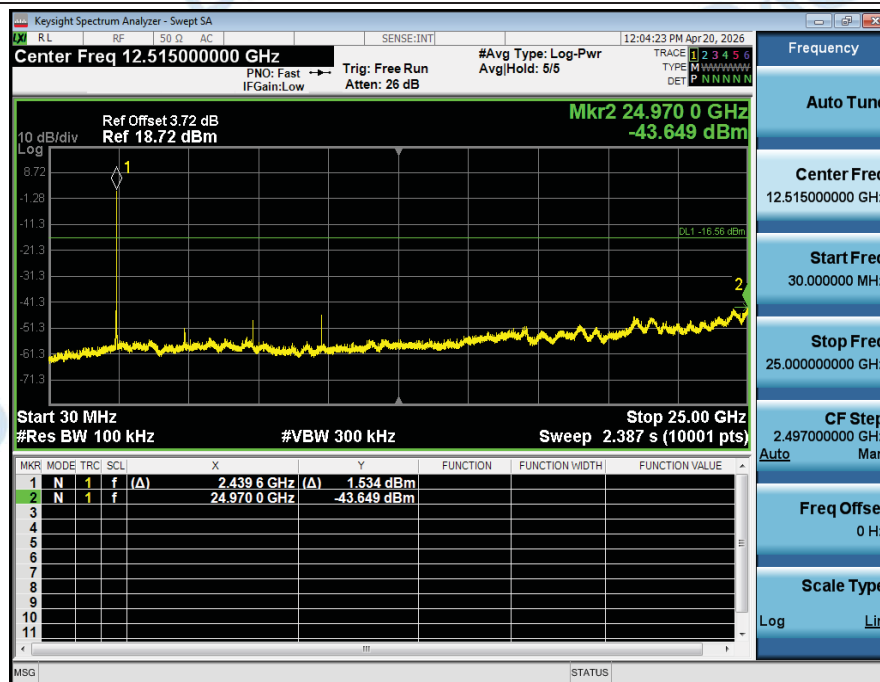
2_Spurious_Emission_NVNT_ANT1_2Mbps_2402



1_Reference_Level_NVNT_ANT1_2Mbps_2440



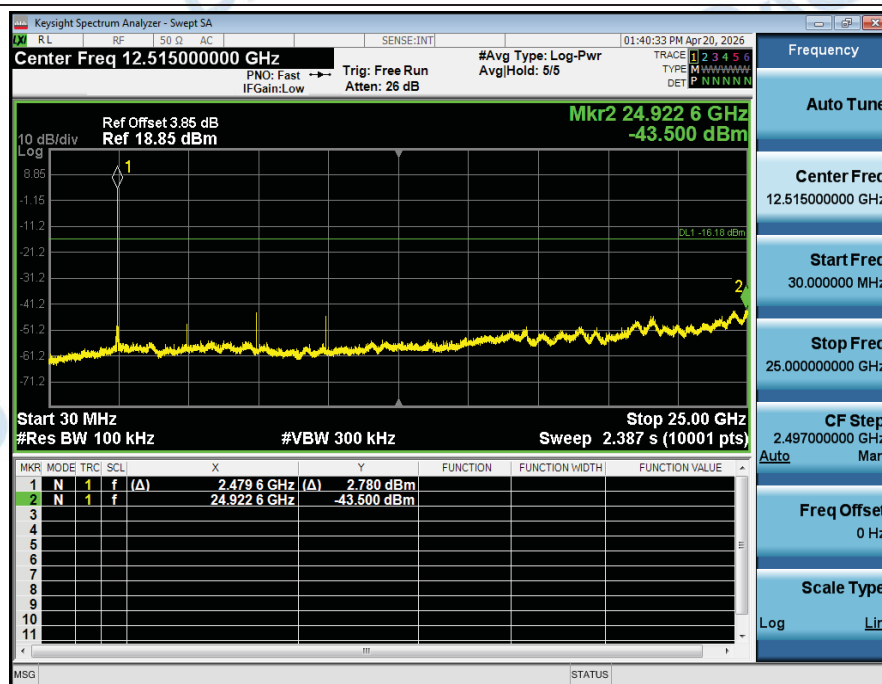
2_Spurious_Emission_NVNT_ANT1_2Mbps_2440



1_Reference_Level_NVNT_ANT1_2Mbps_2480



2_Spurious_Emission_NVNT_ANT1_2Mbps_2480



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