

RF TEST REPORT

For

KESENS Power Technology (JIAXING) CO., LTD

Product Name: PEPS

Test Model(s): KCPP037-01-001

Report Reference No. : DACE260811001RF001

FCC ID : 2BXZP-KCPP03701001

Applicant's Name : KESSENS Power Technology (JIAXING) CO., LTD

Address : No. 199 Tainshu road, Nanhu district, Jiaxing, Zhejiang 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 : August 11, 2026

Date of Test : August 11, 2026 to August 21, 2026

Date of Issue : August 21, 2026

Result : Pass

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Apply for company information

Applicant's Name	:	KESENS Power Technology (JIAXING) CO., LTD
Address	:	No. 199 Tainshu road, Nanhu district, Jiaxing, Zhejiang province, China
Product Name	:	PEPS
Test Model(s)	:	KCPP037-01-001
Series Model(s)	:	F-77090000, F-77100000, F-64030000, F-64040000, F-64050000, F-64060000
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.

Compiled by:

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Lucy Mo / Test Engineer

August 21, 2026

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August 21, 2026

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August 21, 2026

Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	DACE260811001RF001	August 21, 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
6dB Bandwidth	47 CFR Part 15.247	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 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 : KESENS Power Technology (JIAXING) CO., LTD
Address : No. 199 Tainshu road, Nanhu district, Jiaxing, Zhejiang province, China

Manufacturer : KESENS Power Technology (JIAXING) CO., LTD
Address : No. 199 Tainshu road, Nanhu district, Jiaxing, Zhejiang province, China

2.2 Description of Device (EUT)

Product Name:	PEPS
Model/Type reference:	KCPP037-01-001
Series Model:	F-77090000, F-77100000, F-64030000, F-64040000, F-64050000, F-64060000
Model Difference:	All the model are the same circuit and RF module, only for model name are different. Test sample model: KCPP037-01-001
Trade Mark:	KESENS
Power Supply:	DC 12V
Operation Frequency:	2402-2480MHz
Number of Channels:	40CH
Modulation Type:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	3dBi
Bluetooth Version:	V5.2
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(DC): 12V

2.4 Description of Support Units

Title	Manufacturer	Model No.	Serial No.
Battery	Camel	/	/

2.5 Operation Frequency each of channel

CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
0	2402	1	2404	2	2406	3	2408
4	2410	5	2412	6	2414	7	2416
8	2418	9	2420	10	2422	11	2424
12	2426	13	2428	14	2430	15	2432
16	2434	17	2436	18	2438	19	2440
20	2442	21	2444	22	2446	23	2448
24	2450	25	2452	26	2454	27	2456
28	2458	29	2460	30	2462	31	2464
32	2466	33	2468	34	2470	35	2478
36	2474	37	2476	38	2478	39	2480

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

6dB Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in non-restricted frequency bands					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RF Test Software	Tachoy Information Technology(she n zhen) Co.,Ltd.	RTS-01	V1.0.0	/	/
Power divider	MIDEWEST	PWD-2533	SMA-79	2026-04-16	2027-04-15
RF Power Sensor Unit	Tachoy Information Technology(she n zhen) Co.,Ltd.	TR1029-2	20220428P005	/	/
Wideband radio communication tester	R&S	CMW500	113410	2026-04-14	2027-04-13
Signal Generator	Keysight	N5181A	MY50143455	2025-12-02	2026-12-01
Vector Signal Generator	Keysight	N5182A	MY48180415	2025-12-02	2026-12-01
Spectrum Analyzer	Keysight	N9020A	MY53420323	2025-12-02	2026-12-01
RF Control Unit	Tachoy Information Technology(she n zhen) Co.,Ltd.	TR1029-1	20220428C005	/	/
Power meter	Agilent	E4416	MY48200166	2025-12-06	2026-12-05

Emissions in frequency bands (below 1GHz)
Emissions in frequency bands (above 1GHz)
Band edge emissions (Radiated)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test software	Farad	EZ -EMC	FA-03A2 RE+	/	/
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	2026-04-14	2027-04-13
Cable(LF)#2	Schwarzbeck	/	/	2026-04-13	2027-04-12
Cable(LF)#1	Schwarzbeck	/	/	2026-04-14	2027-04-13
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2026-04-14	2027-04-13
Cable(HF)#1	Schwarzbeck	SYV-50-3-1	/	2026-04-14	2027-04-13
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2026-04-14	2027-04-13
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2026-04-14	2027-04-13
Wideband radio communication tester	R&S	CMW500	113410	2026-04-14	2027-04-13
Spectrum Analyzer	R&S	FSP30	1321.3008K40-101729-jR	2026-04-14	2027-04-13
Test Receiver	R&S	ESCI 3	1166.5950K03-101431-Jq	2026-04-14	2027-04-13
Horn Antenna	Sunol Sciences	DRH-118	A091114	2026-04-14	2027-04-13
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2026-04-29	2028-04-28

2.7 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
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 $k=2$.

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 6dB Bandwidth

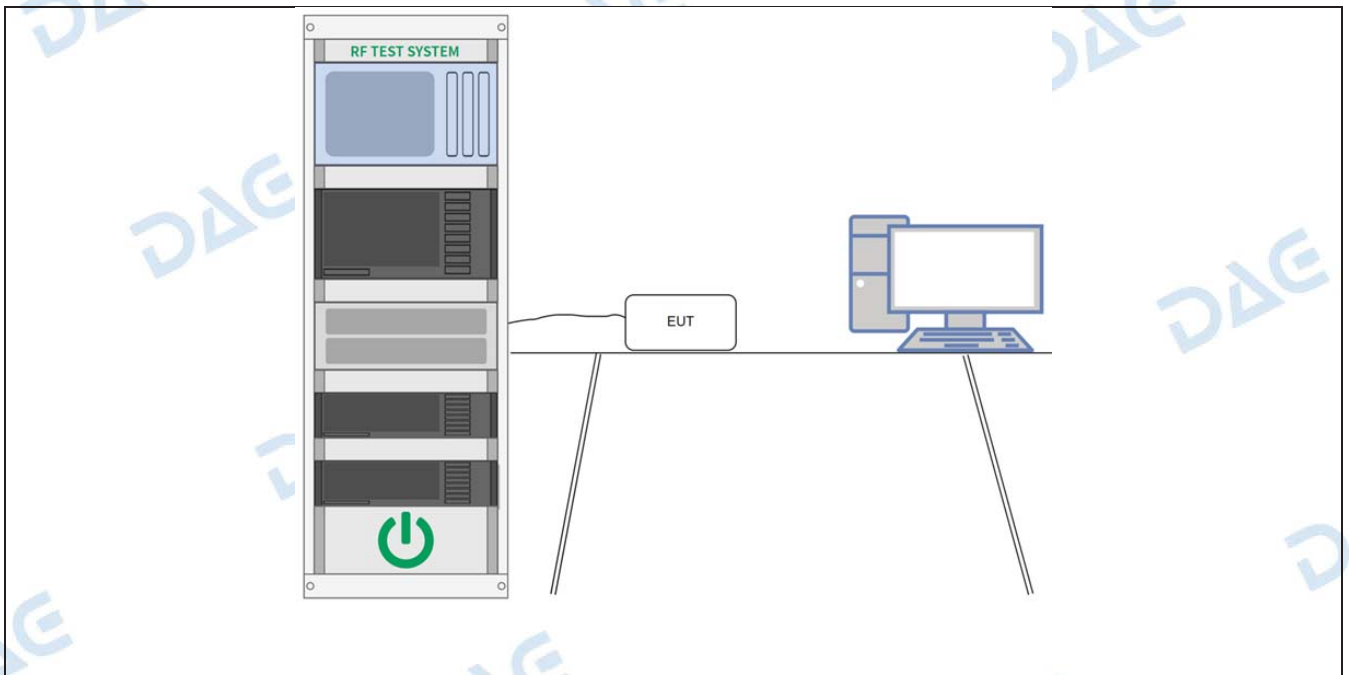
Test Requirement:	47 CFR 15.247(a)(2)
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Method:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, 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.

4.1.1 E.U.T. Operation:

Operating Environment:			
Temperature:	22 °C	Humidity:	49 %
Atmospheric Pressure:	101.2 kPa		
Pretest mode:	TM1		
Final test mode:	TM1		

4.1.2 Test Setup Diagram:

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4.1.3 Test Data:

Please Refer to Appendix for Details.

4.2 Maximum Conducted Output Power

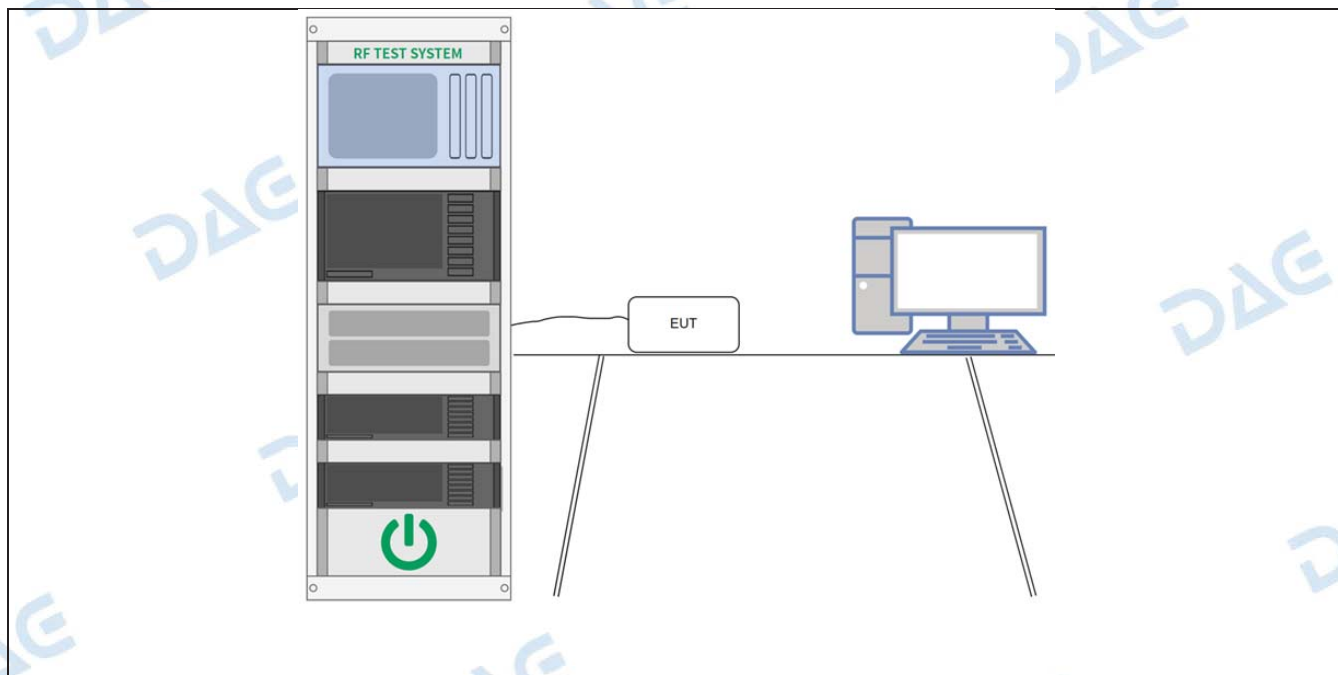
Test Requirement:	47 CFR 15.247(b)(3)
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2020, section 11.9.2 Maximum conducted (average) 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 = $10 \cdot \log[(10G_1/20 + 10G_2/20 + \dots + 10G_N/20)^2 / NANT]$ dBi For completely uncorrelated unequal antenna gain Directional gain = $10 \cdot \log[(10G_1/10 + 10G_2/10 + \dots + 10G_N/10) / NANT]$ 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)

4.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.7 °C	Humidity:	46 %	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.

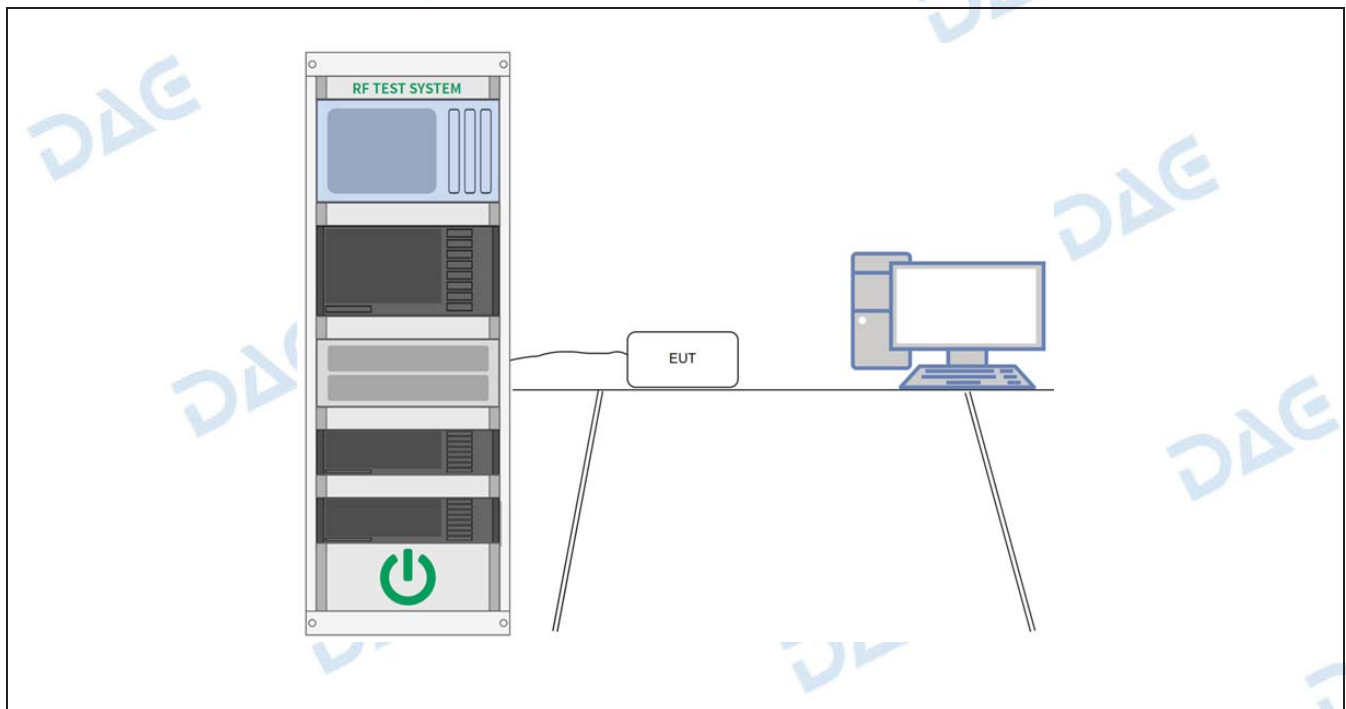
4.3 Power Spectral Density

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024, section 11.10, Maximum power spectral density level in the fundamental emission

4.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.3 °C	Humidity:	49 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:	TM1				
Final test mode:	TM1				

4.3.2 Test Setup Diagram:



4.3.3 Test Data:

Please Refer to Appendix for Details.

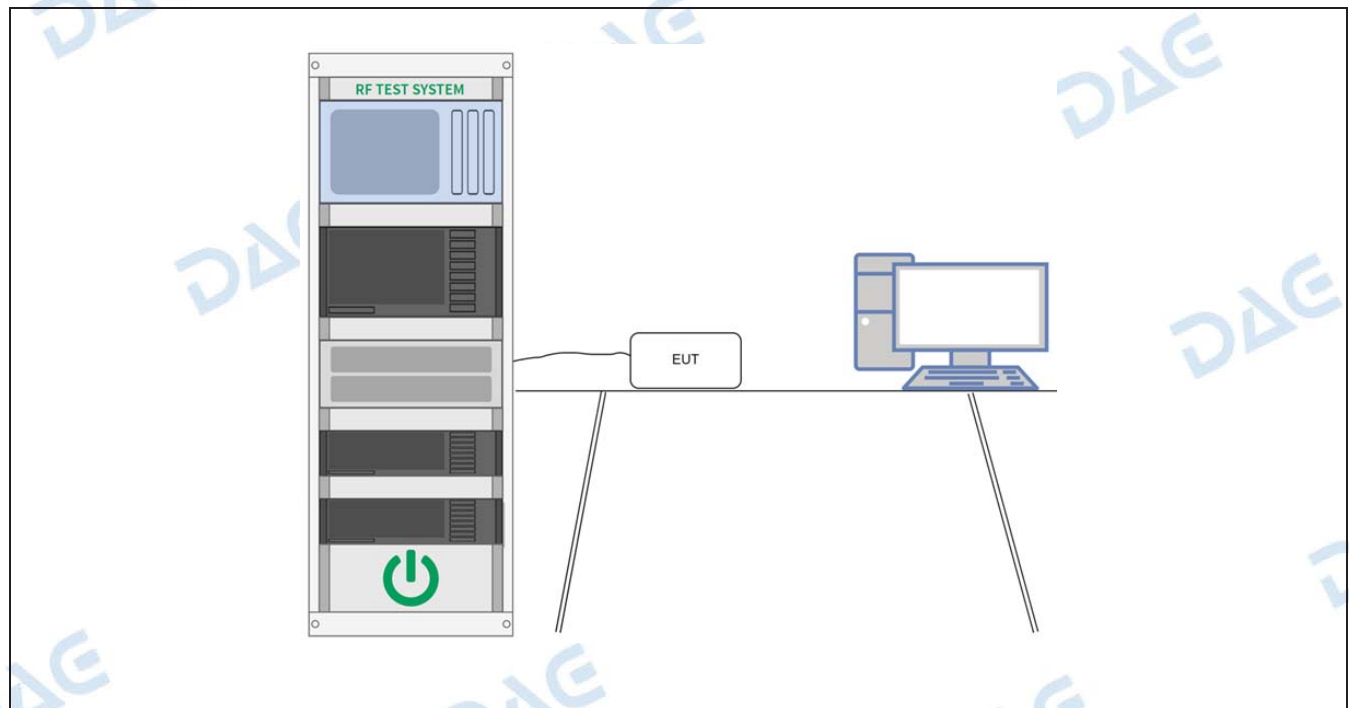
4.4 Emissions in non-restricted frequency bands

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 Section 11.11.1, Section 11.11.2, Section 11.11.3

4.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.9 °C	Humidity:	49 %	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.

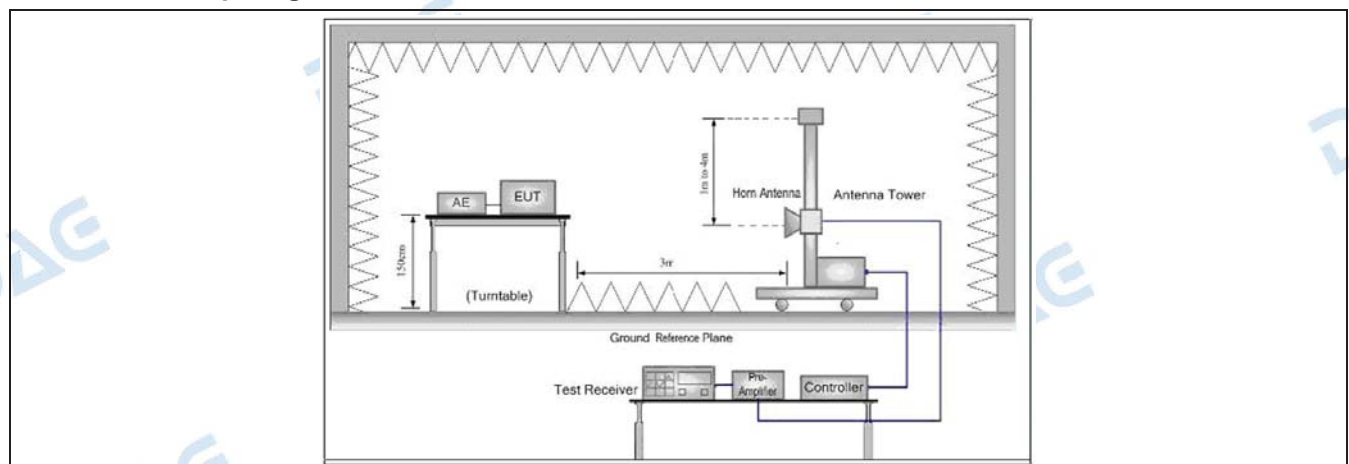
4.5 Band edge emissions (Radiated)

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.10.5.2		

4.5.1 E.U.T. Operation:

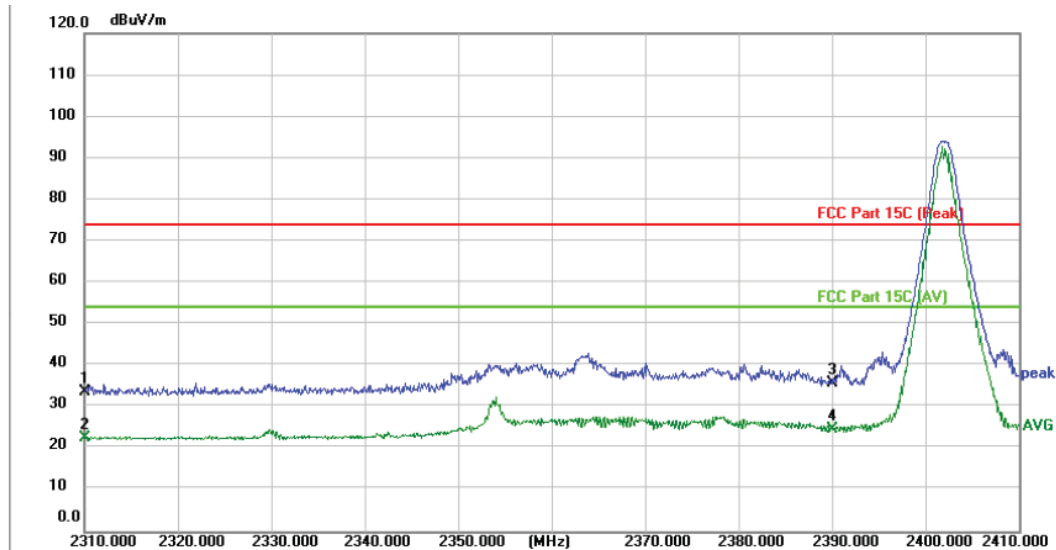
Operating Environment:			
Temperature:	22.7 °C	Humidity:	46 %
Atmospheric Pressure:	101.2 kPa		
Pretest mode:	TM1		
Final test mode:	TM1		

4.5.2 Test Setup Diagram:



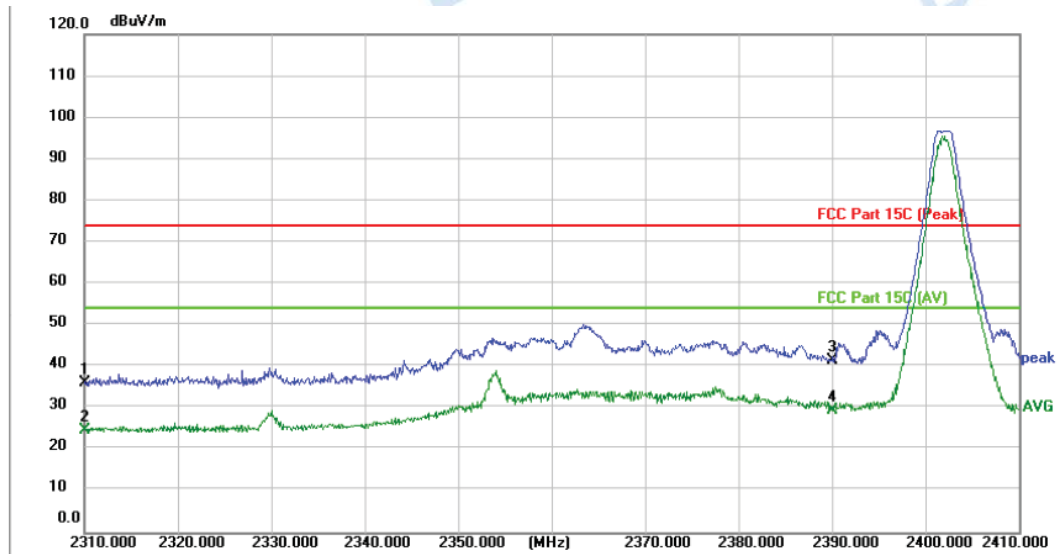
4.5.3 Test Data:

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



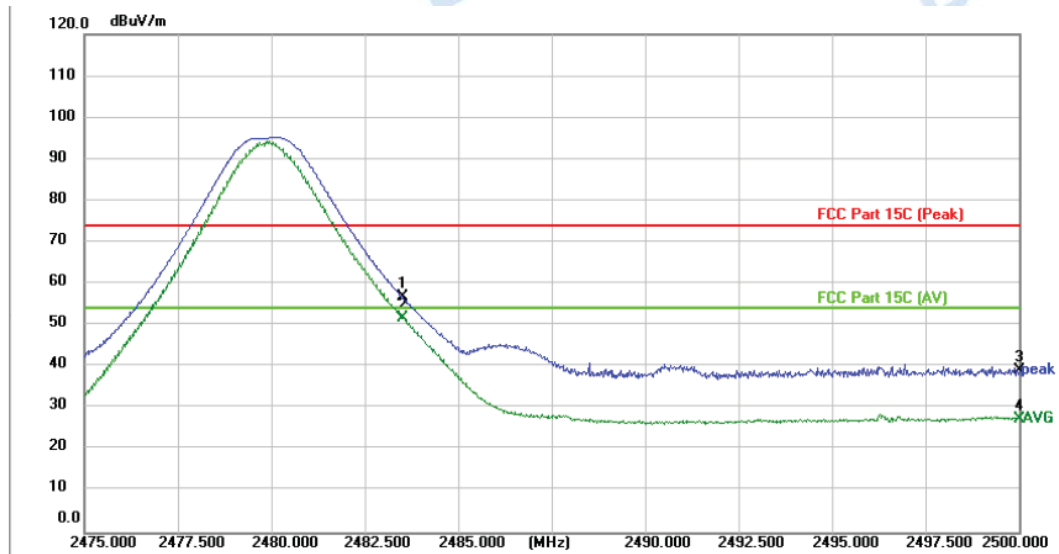
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2310.000	40.74	-6.85	33.89	74.00	-40.11	peak			P	
2	2310.000	29.43	-6.85	22.58	54.00	-31.42	AVG			P	
3	2390.000	42.41	-6.69	35.72	74.00	-38.28	peak			P	
4 *	2390.000	31.39	-6.69	24.70	54.00	-29.30	AVG			P	

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



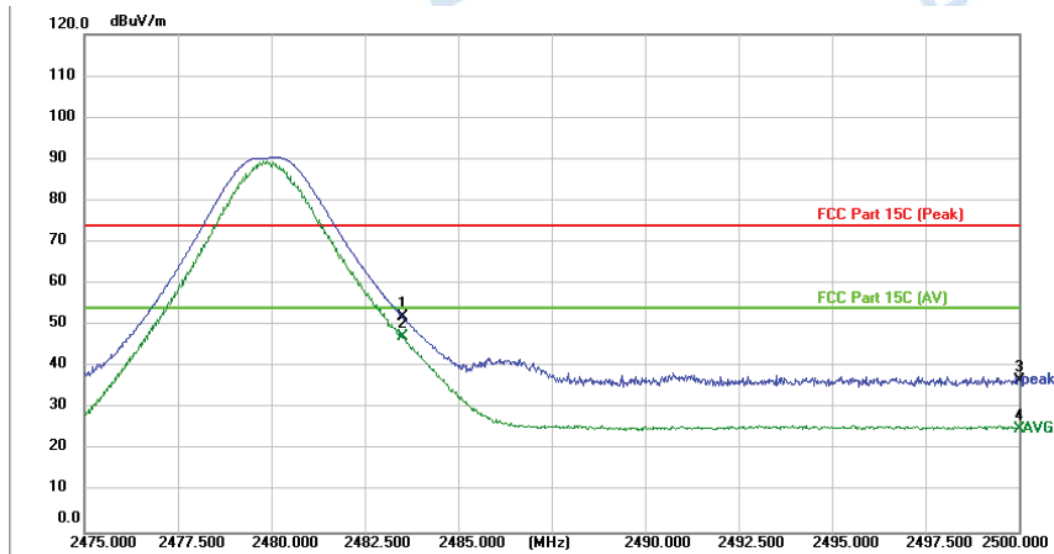
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2310.000	43.03	-6.85	36.18	74.00	-37.82	peak	149		P	
2	2310.000	31.59	-6.85	24.74	54.00	-29.26	AVG	149		P	
3	2390.000	48.29	-6.69	41.60	74.00	-32.40	peak	149		P	
4 *	2390.000	36.33	-6.69	29.64	54.00	-24.36	AVG	149		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	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2483.500	63.26	-6.51	56.75	74.00	-17.25	peak			P	
2 *	2483.500	58.29	-6.51	51.78	54.00	-2.22	AVG			P	
3	2500.000	45.54	-6.48	39.06	74.00	-34.94	peak			P	
4	2500.000	33.94	-6.48	27.46	54.00	-26.54	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	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2483.500	58.46	-6.51	51.95	74.00	-22.05	peak	149		P	
2 *	2483.500	53.62	-6.51	47.11	54.00	-6.89	AVG	149		P	
3	2500.000	43.16	-6.48	36.68	74.00	-37.32	peak	149		P	
4	2500.000	31.55	-6.48	25.07	54.00	-28.93	AVG	149		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.

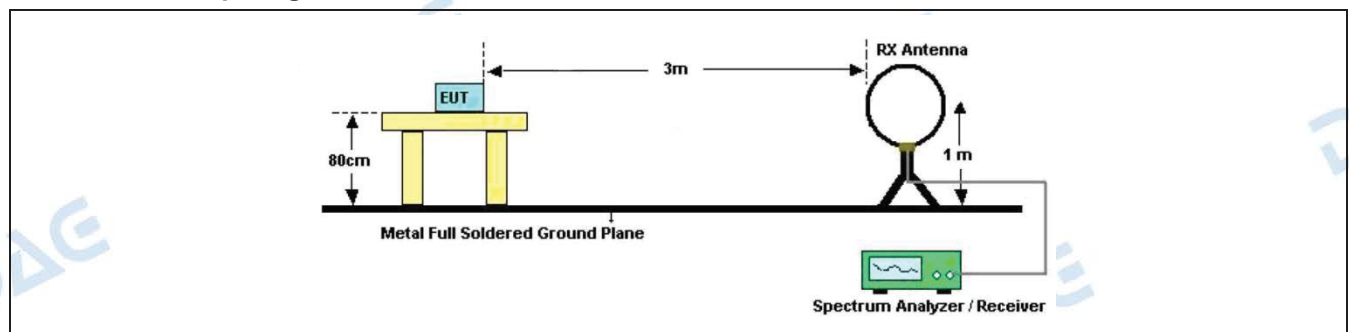
4.6 Emissions in frequency bands (below 1GHz)

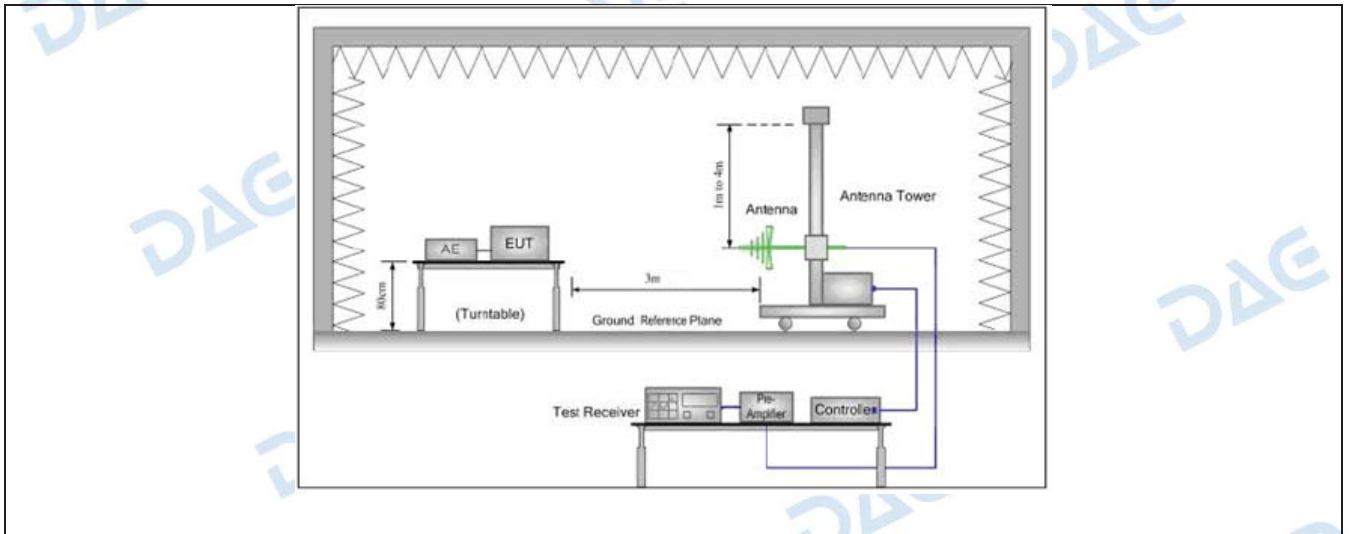
Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement 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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4		

4.6.1 E.U.T. Operation:

Operating Environment:			
Temperature:	22.6 °C	Humidity:	52 %
Atmospheric Pressure:	101.2 kPa		
Pretest mode:	TM1		
Final test mode:	TM1		

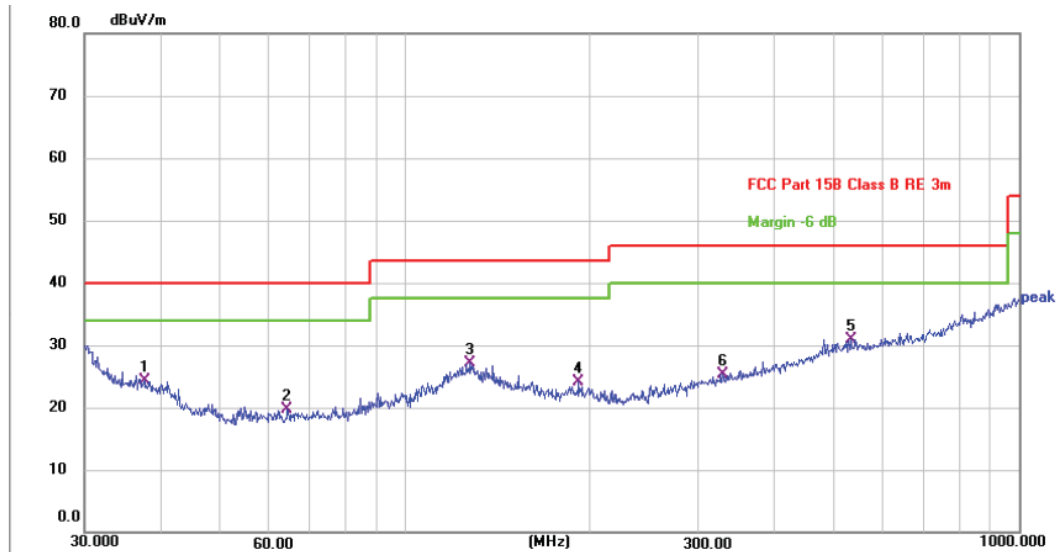
4.6.2 Test Setup Diagram:





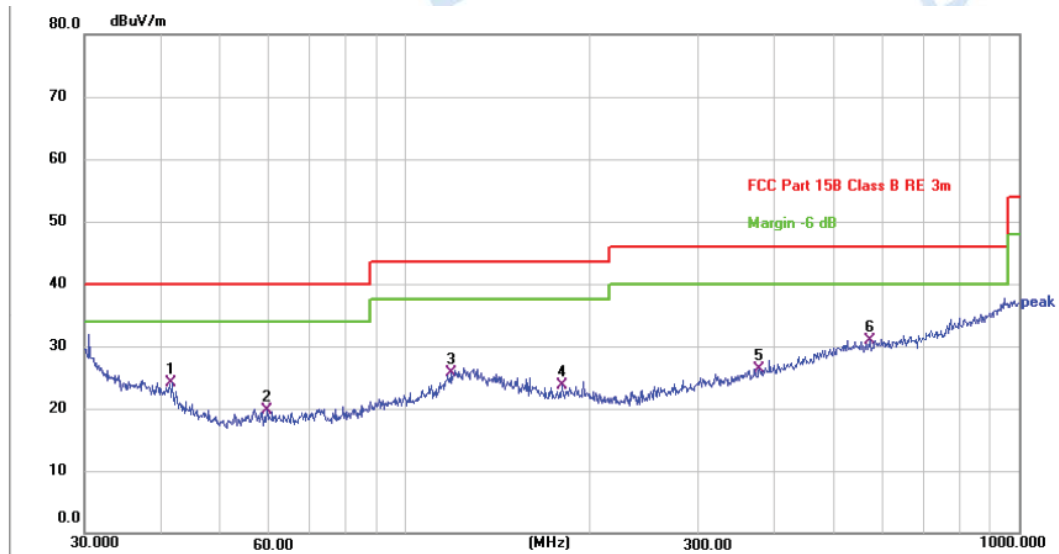
4.6.3 Test Data:

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	37.5479	26.63	-2.25	24.38	40.00	-15.62	QP	100		P	
2	64.2074	27.25	-7.61	19.64	40.00	-20.36	QP	100		P	
3	127.6645	26.89	0.19	27.08	43.50	-16.42	QP	100		P	
4	191.7450	27.61	-3.52	24.09	43.50	-19.41	QP	100		P	
5 *	531.9635	27.31	3.61	30.92	46.00	-15.08	QP	100		P	
6	329.0390	27.09	-1.75	25.34	46.00	-20.66	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	41.7129	28.12	-3.99	24.13	40.00	-15.87	QP			P	
2	59.4405	26.98	-7.34	19.64	40.00	-20.36	QP			P	
3	118.6013	26.59	-0.88	25.71	43.50	-17.79	QP			P	
4	180.0164	27.44	-3.71	23.73	43.50	-19.77	QP			P	
5	377.2590	26.84	-0.47	26.37	46.00	-19.63	QP			P	
6 *	570.6100	27.11	3.89	31.00	46.00	-15.00	QP			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.

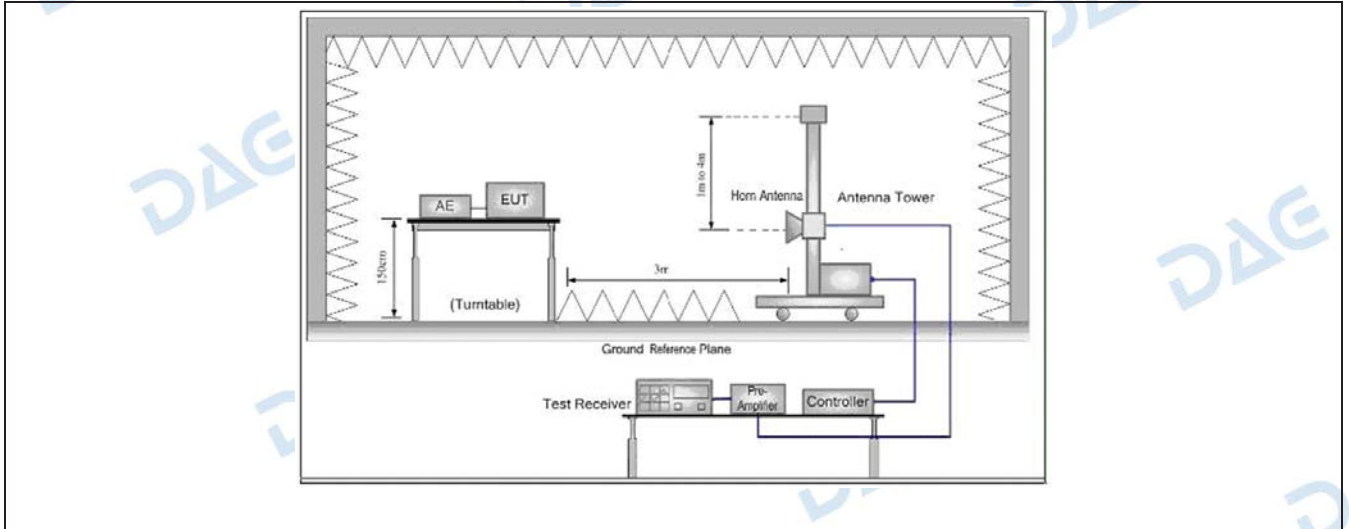
4.7 Emissions in frequency bands (above 1GHz)

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 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 section 6.5.4		

4.7.1 E.U.T. Operation:

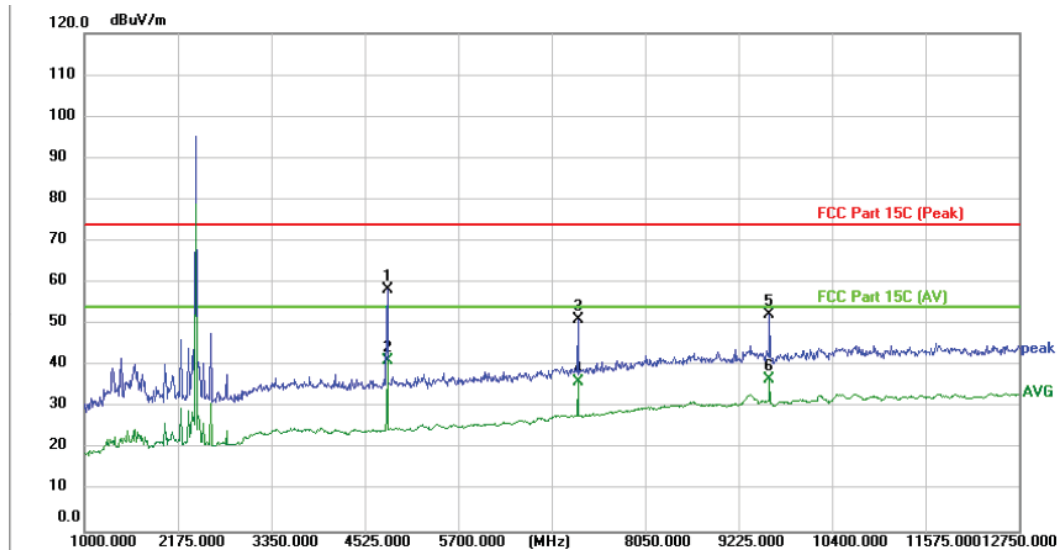
Operating Environment:					
Temperature:	22.1 °C	Humidity:	50 %	Atmospheric Pressure:	101.2 kPa
Pretest mode:		TM1			
Final test mode:		TM1			

4.7.2 Test Setup Diagram:



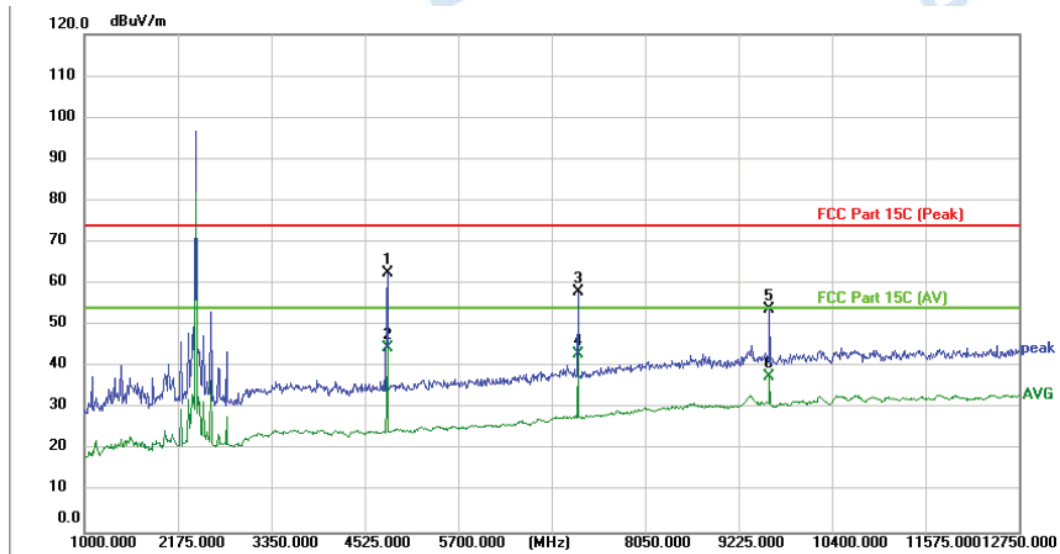
4.7.3 Test Data:

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



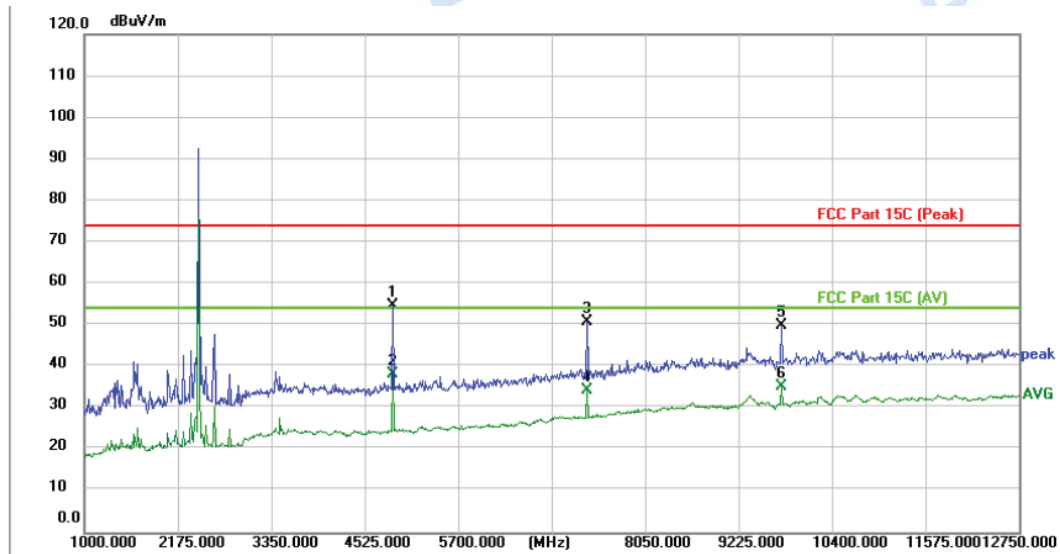
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4807.000	59.58	-1.32	58.26	74.00	-15.74	peak			P	
2 *	4807.000	42.46	-1.32	41.14	54.00	-12.86	AVG			P	
3	7204.000	47.44	3.58	51.02	74.00	-22.98	peak			P	
4	7204.000	32.55	3.58	36.13	54.00	-17.87	AVG			P	
5	9612.750	45.49	6.84	52.33	74.00	-21.67	peak			P	
6	9612.750	29.96	6.84	36.80	54.00	-17.20	AVG			P	

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



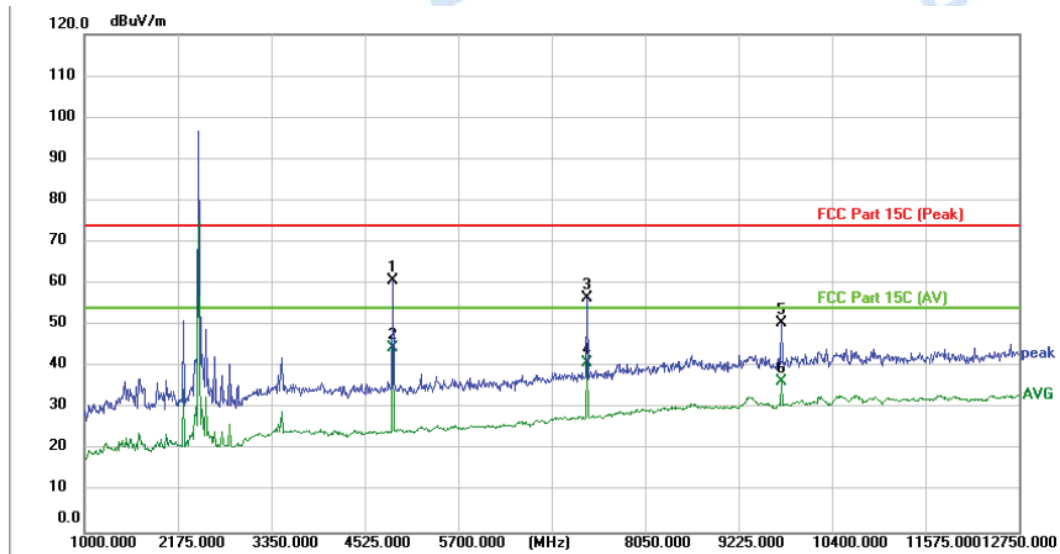
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4807.000	63.74	-1.32	62.42	74.00	-11.58	peak			P	
2 *	4807.000	45.78	-1.32	44.46	54.00	-9.54	AVG			P	
3	7204.000	54.54	3.58	58.12	74.00	-15.88	peak			P	
4	7204.000	39.48	3.58	43.06	54.00	-10.94	AVG			P	
5	9612.750	47.11	6.84	53.95	74.00	-20.05	peak			P	
6	9612.750	30.95	6.84	37.79	54.00	-16.21	AVG			P	

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



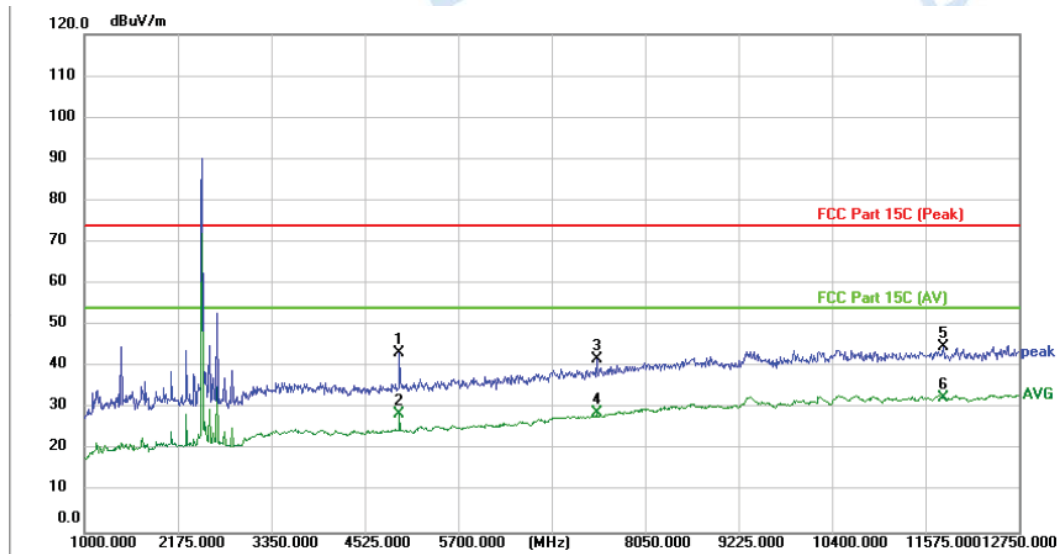
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4877.500	55.99	-1.10	54.89	74.00	-19.11	peak	149		P	
2 *	4877.500	39.36	-1.10	38.26	54.00	-15.74	AVG	149		P	
3	7321.500	47.14	3.68	50.82	74.00	-23.18	peak	149		P	
4	7321.500	30.68	3.68	34.36	54.00	-19.64	AVG	149		P	
5	9765.500	43.13	6.90	50.03	74.00	-23.97	peak	149		P	
6	9765.500	28.49	6.90	35.39	54.00	-18.61	AVG	149		P	

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



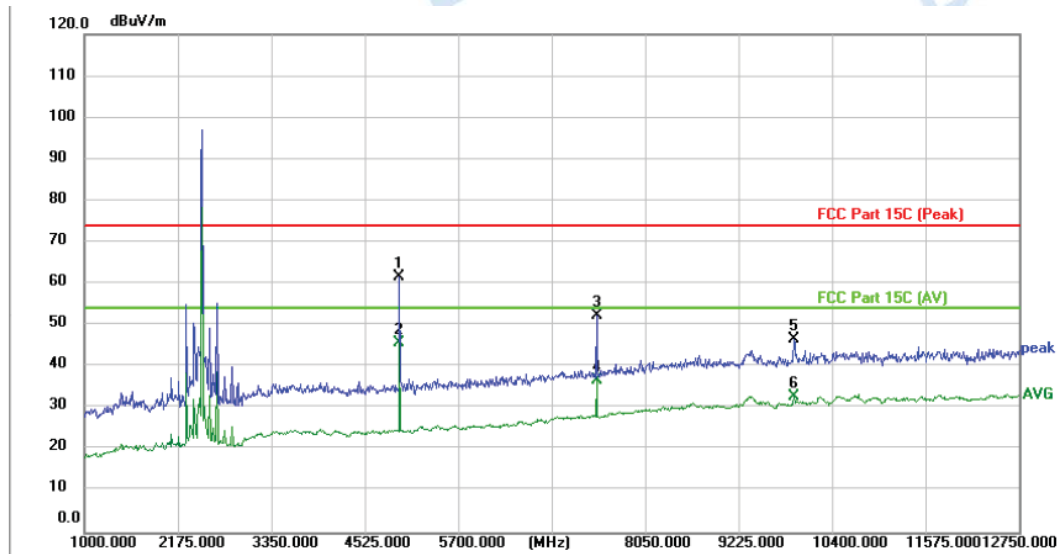
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4877.500	61.87	-1.10	60.77	74.00	-13.23	peak			P	
2 *	4877.500	45.60	-1.10	44.50	54.00	-9.50	AVG			P	
3	7321.500	52.76	3.68	56.44	74.00	-17.56	peak			P	
4	7321.500	37.38	3.68	41.06	54.00	-12.94	AVG			P	
5	9765.500	43.59	6.90	50.49	74.00	-23.51	peak			P	
6	9765.500	29.52	6.90	36.42	54.00	-17.58	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	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4959.750	44.27	-0.85	43.42	74.00	-30.58	peak			P	
2	4959.750	29.56	-0.85	28.71	54.00	-25.29	AVG			P	
3	7439.000	38.13	3.79	41.92	74.00	-32.08	peak			P	
4	7439.000	25.19	3.79	28.98	54.00	-25.02	AVG			P	
5	11798.250	37.15	7.61	44.76	74.00	-29.24	peak			P	
6 *	11798.250	24.85	7.61	32.46	54.00	-21.54	AVG			P	

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



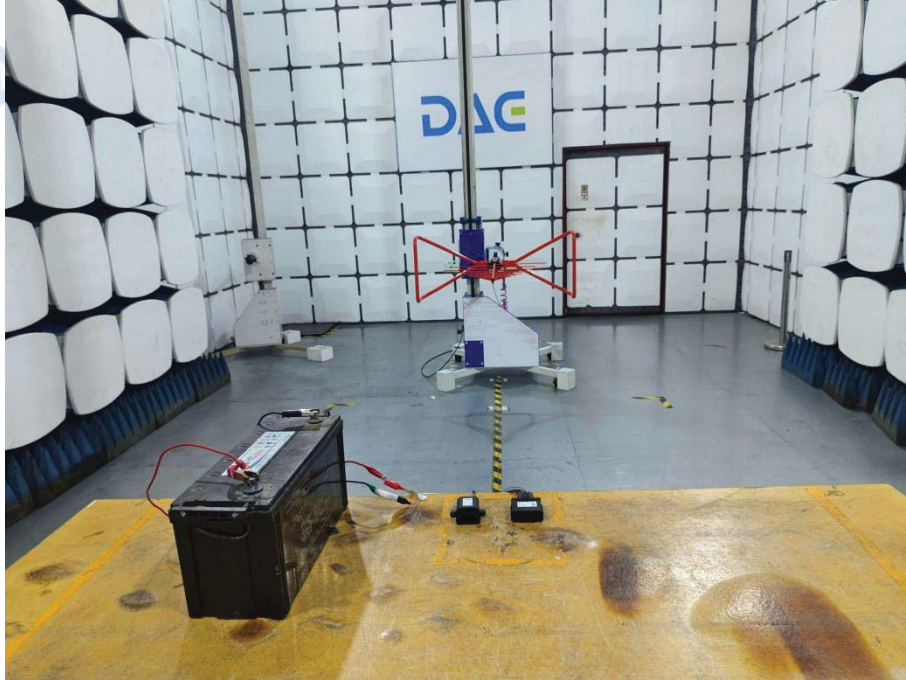
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4959.750	62.52	-0.85	61.67	74.00	-12.33	peak			P	
2 *	4959.750	46.75	-0.85	45.90	54.00	-8.10	AVG			P	
3	7439.000	48.41	3.79	52.20	74.00	-21.80	peak			P	
4	7439.000	32.94	3.79	36.73	54.00	-17.27	AVG			P	
5	9918.250	39.56	6.95	46.51	74.00	-27.49	peak			P	
6	9918.250	25.86	6.95	32.81	54.00	-21.19	AVG			P	

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

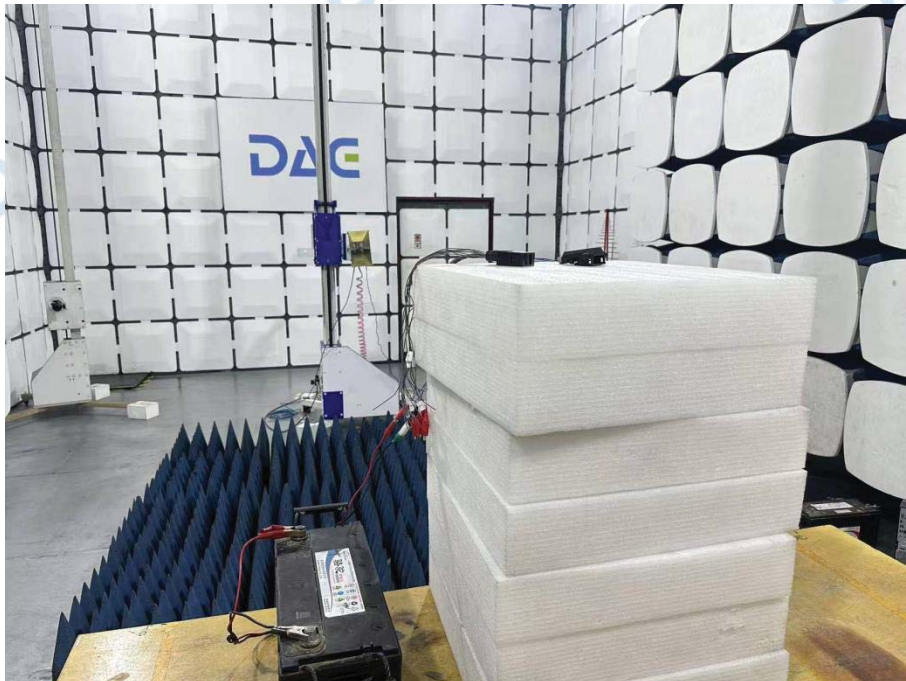
The test software will only record the worst test angle and height, and only the worst case will be of GFSK 1MHz recorded in the test report.

5 TEST SETUP PHOTOS

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.

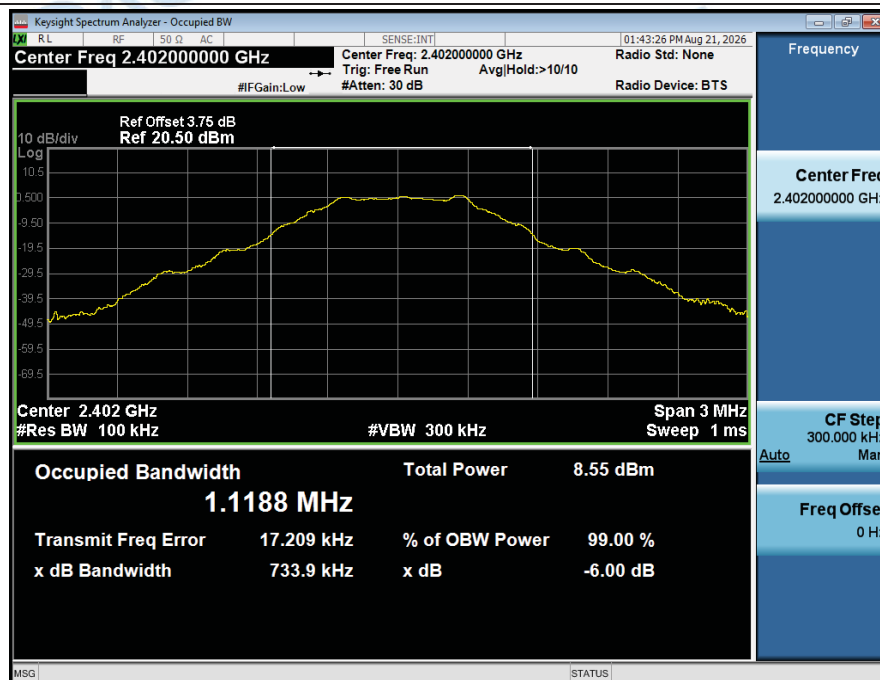
Appendix

FCC_BLE (Part15.247) Test Data

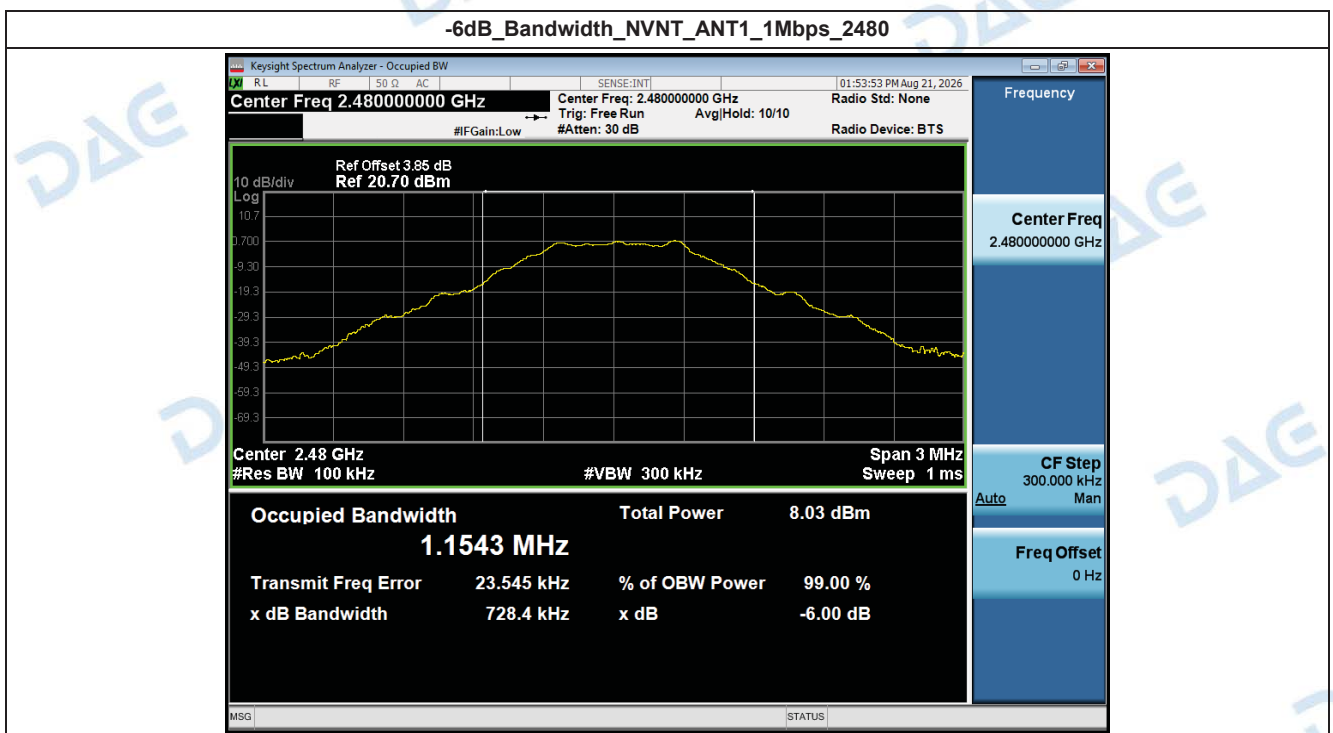
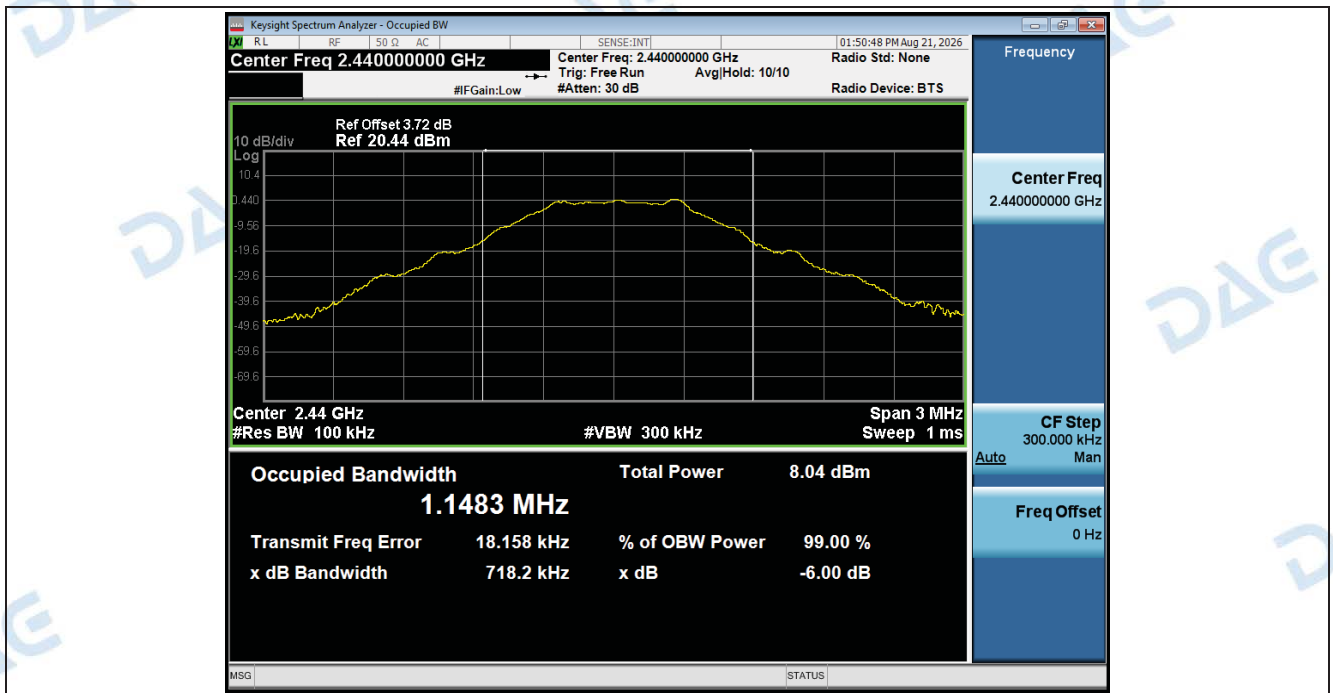
1. -6dB Bandwidth

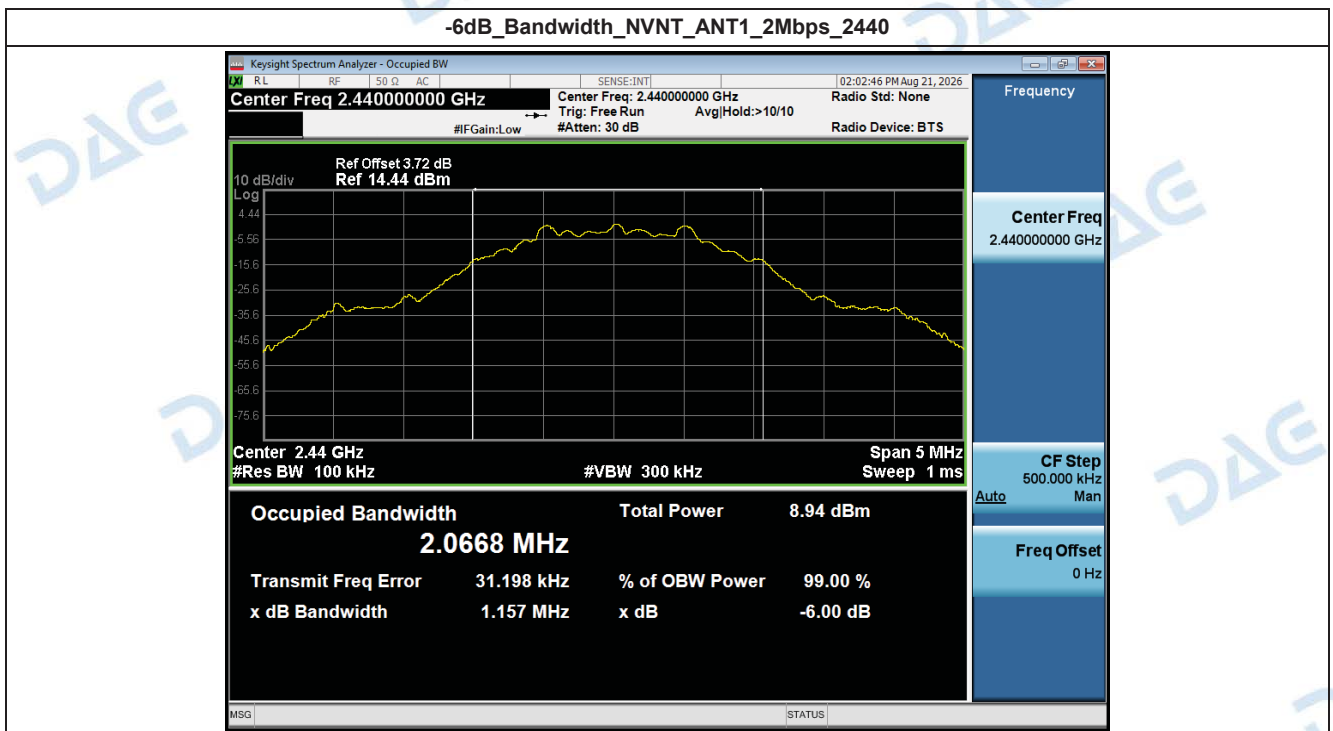
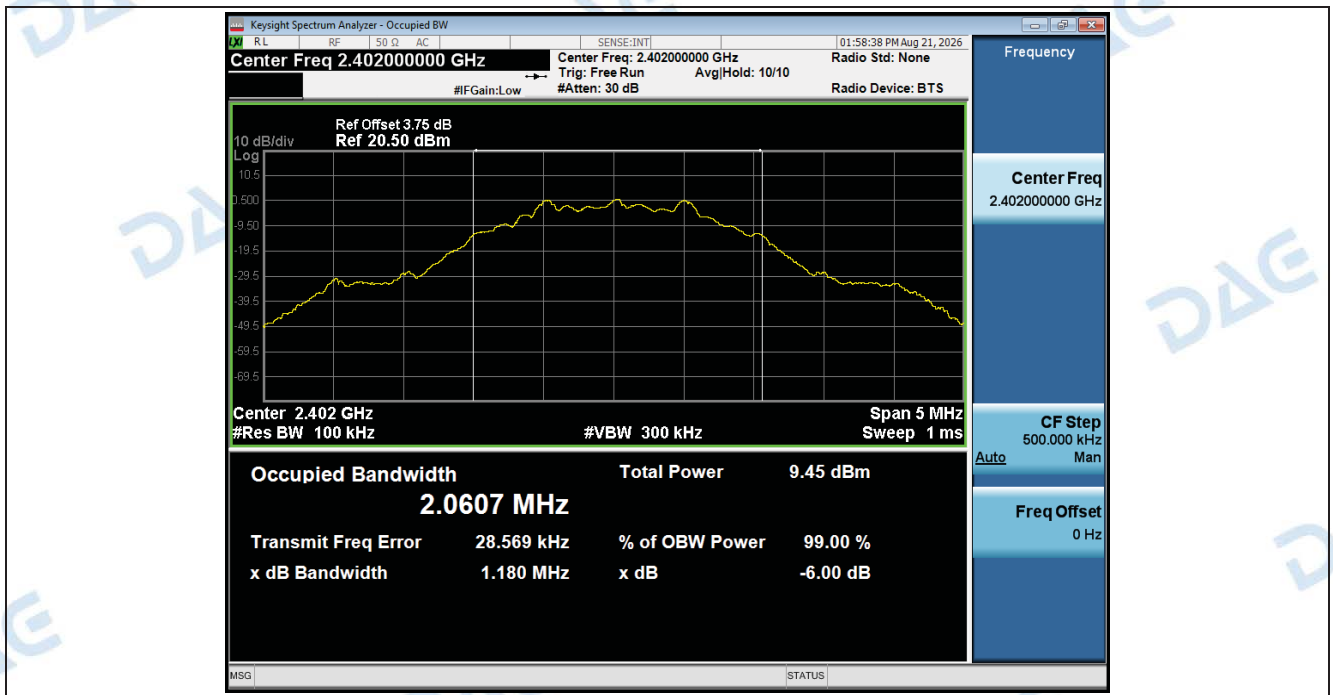
Condition	Antenna	Rate	Frequency (MHz)	-6dB BW(kHz)	limit(kHz)	Result
NVNT	ANT1	1Mbps	2402.00	733.86	500	Pass
NVNT	ANT1	1Mbps	2440.00	718.21	500	Pass
NVNT	ANT1	1Mbps	2480.00	728.35	500	Pass
NVNT	ANT1	2Mbps	2402.00	1180.40	500	Pass
NVNT	ANT1	2Mbps	2440.00	1156.92	500	Pass
NVNT	ANT1	2Mbps	2480.00	1170.23	500	Pass

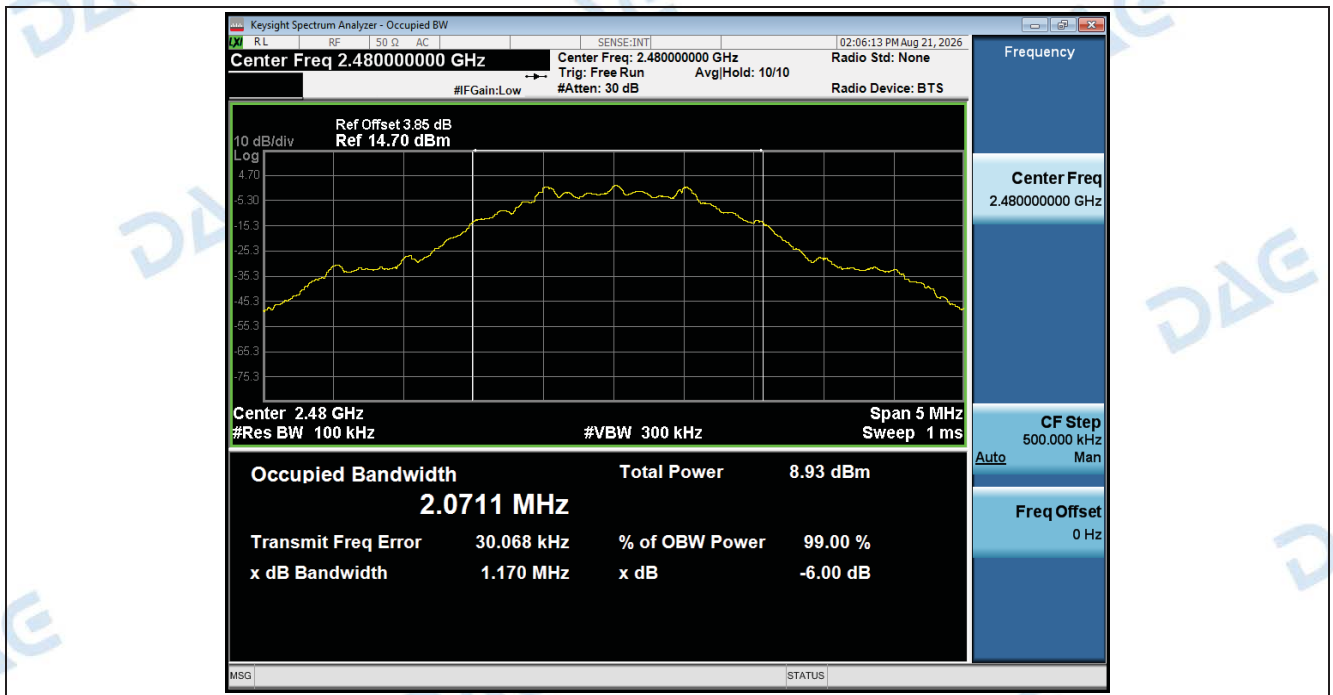
-6dB_Bandwidth_NVNT_ANT1_1Mbps_2402



-6dB_Bandwidth_NVNT_ANT1_1Mbps_2440



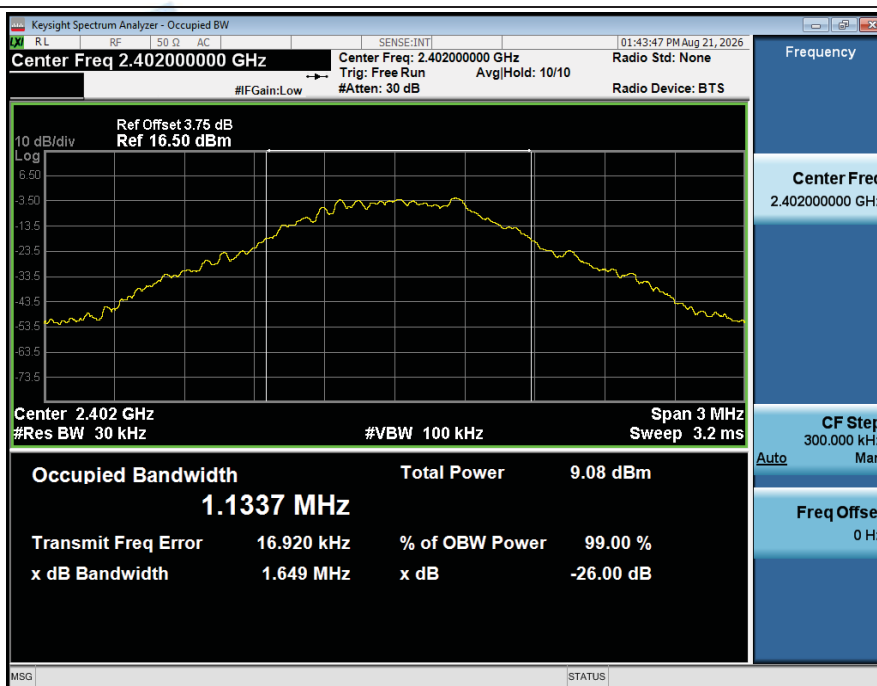




2. 99% Occupied Bandwidth

Condition	Antenna	Rate	Frequency (MHz)	99% BW (MHz)
NVNT	ANT1	1Mbps	2402.00	1.134
NVNT	ANT1	1Mbps	2440.00	1.155
NVNT	ANT1	1Mbps	2480.00	1.162
NVNT	ANT1	2Mbps	2402.00	2.086
NVNT	ANT1	2Mbps	2440.00	2.090
NVNT	ANT1	2Mbps	2480.00	2.092

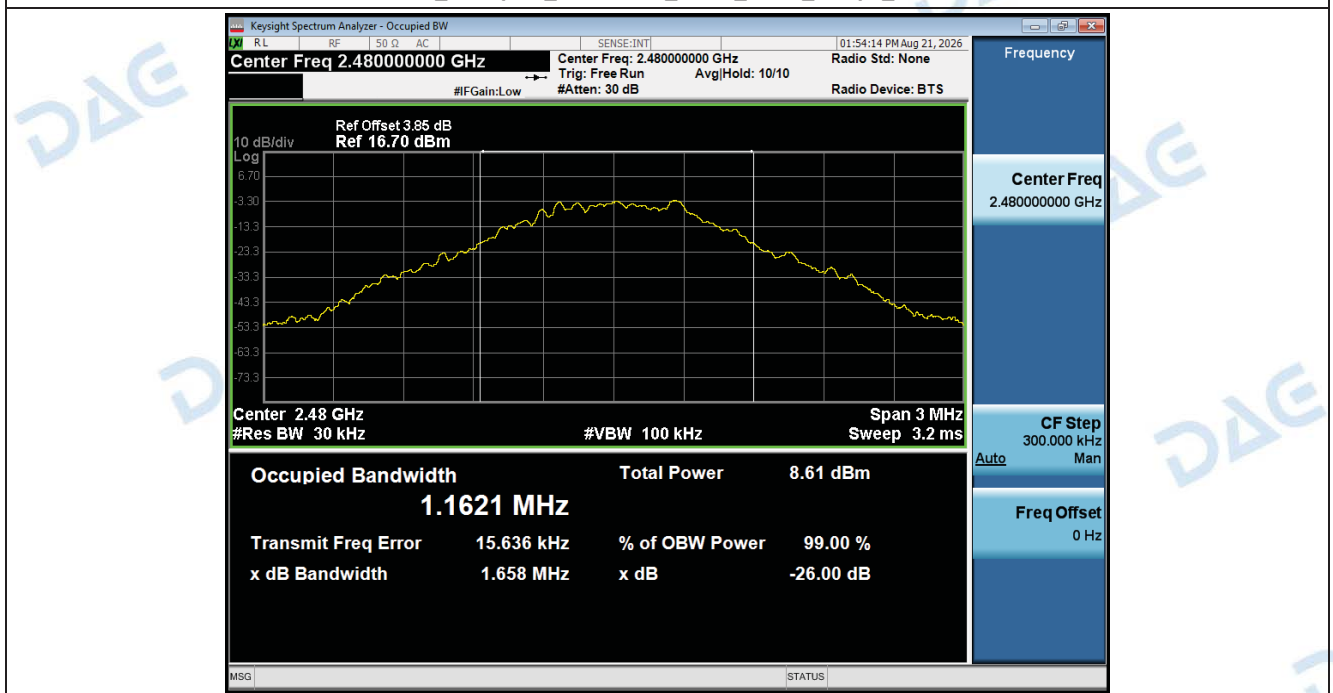
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2402



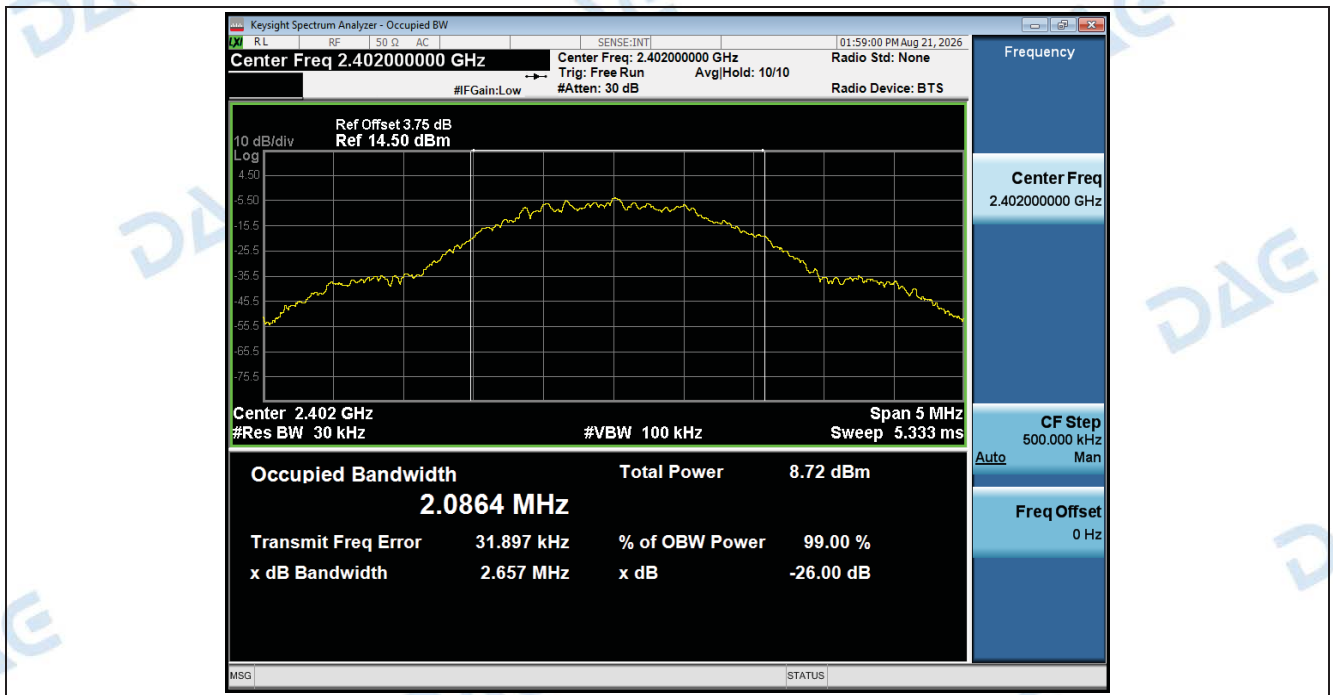
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2440



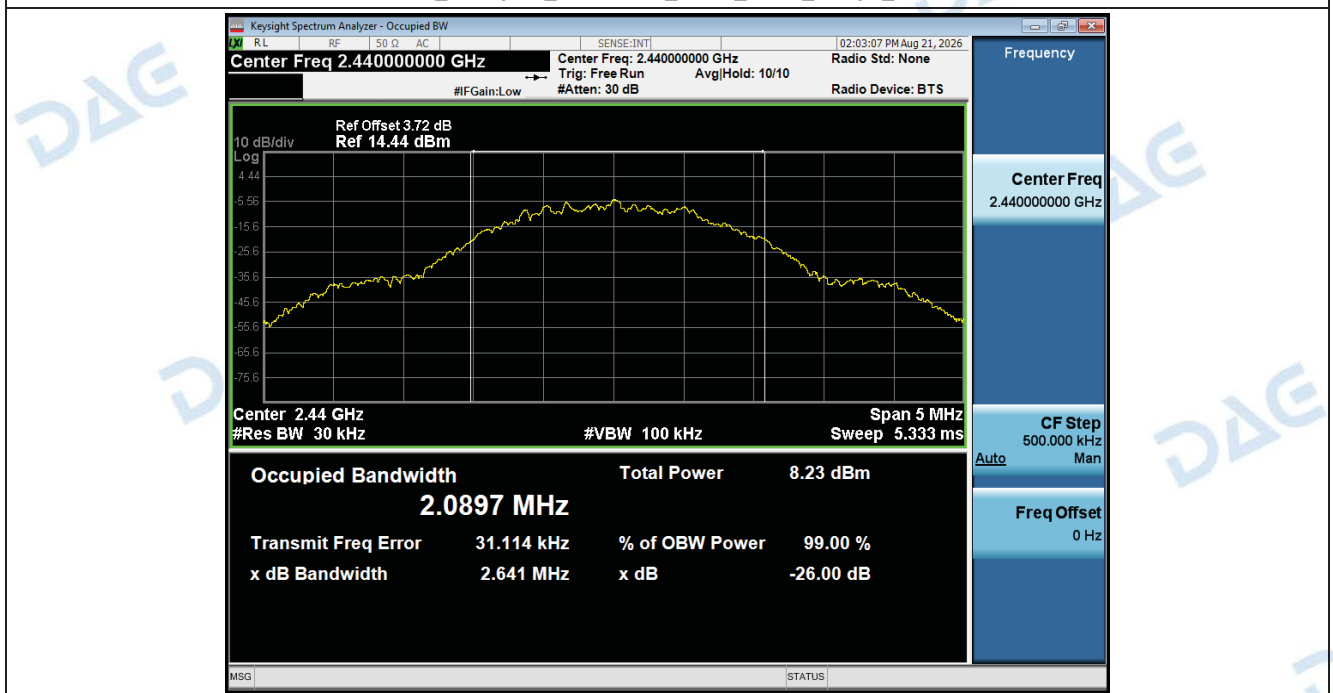
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2480



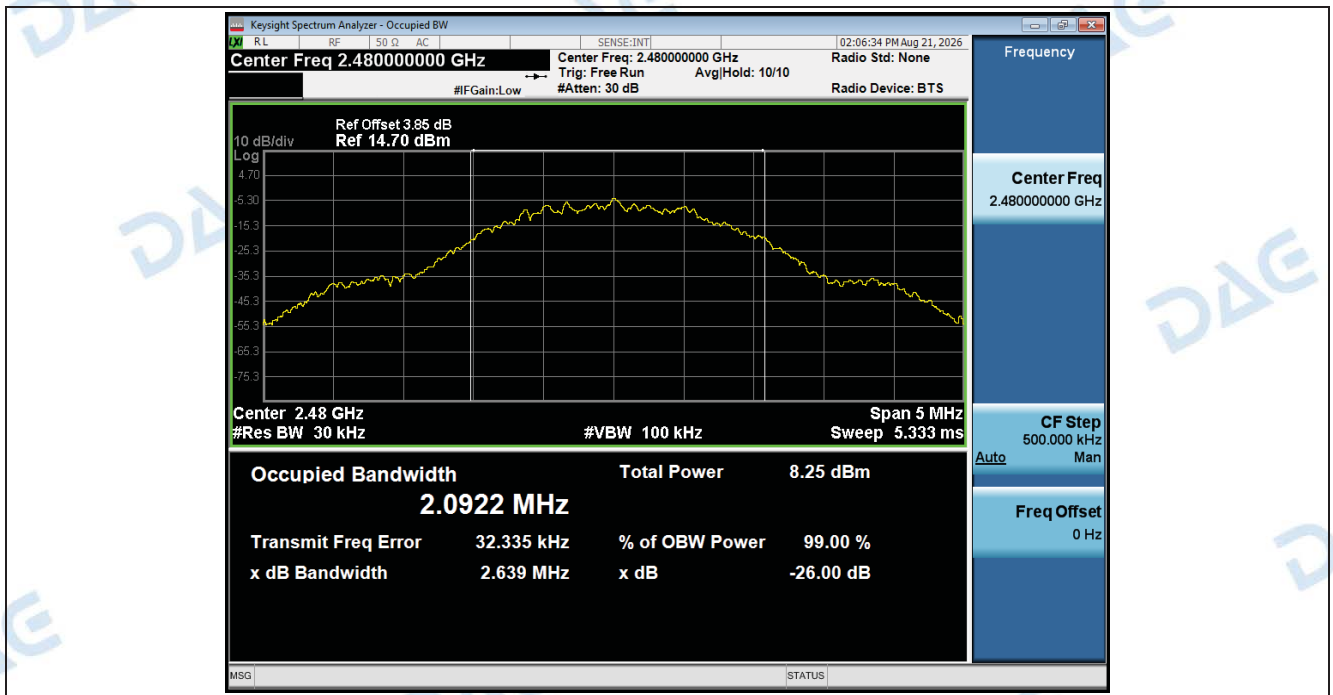
99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2402



99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2440



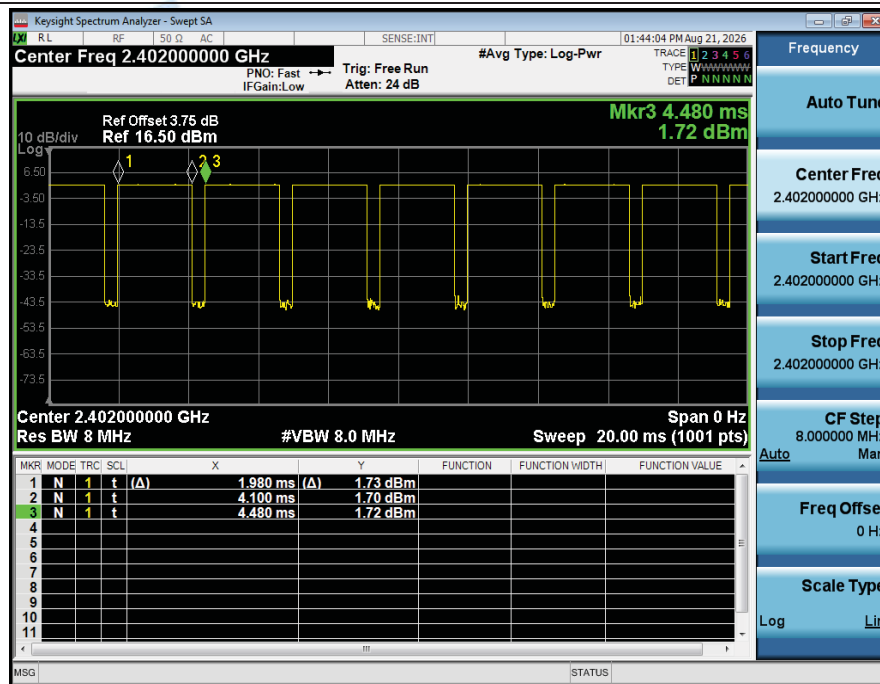
99%_Occupied_Bandwidth_NVNT_ANT1_2Mbps_2480



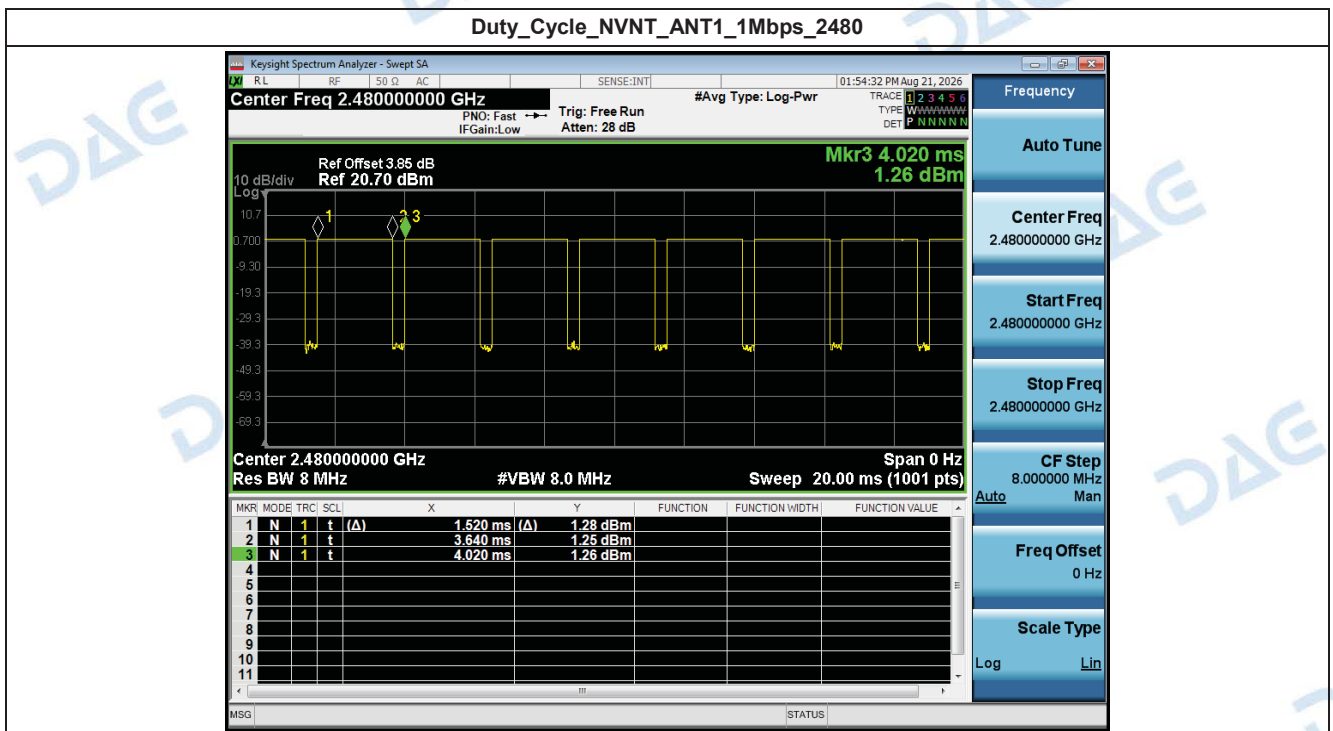
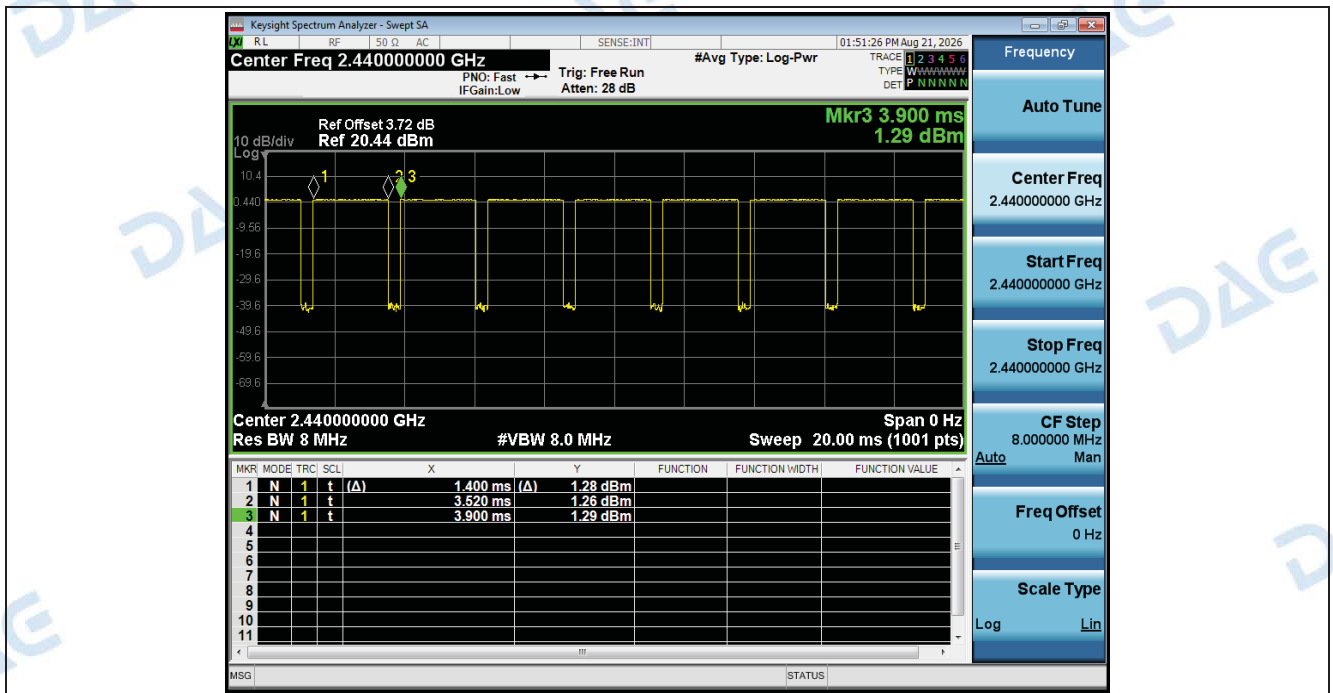
3. Duty Cycle

Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1Mbps	2402.00	85.60	0.68
NVNT	ANT1	1Mbps	2440.00	85.60	0.68
NVNT	ANT1	1Mbps	2480.00	85.60	0.68
NVNT	ANT1	2Mbps	2402.00	43.20	3.65
NVNT	ANT1	2Mbps	2440.00	44.00	3.57
NVNT	ANT1	2Mbps	2480.00	44.00	3.57

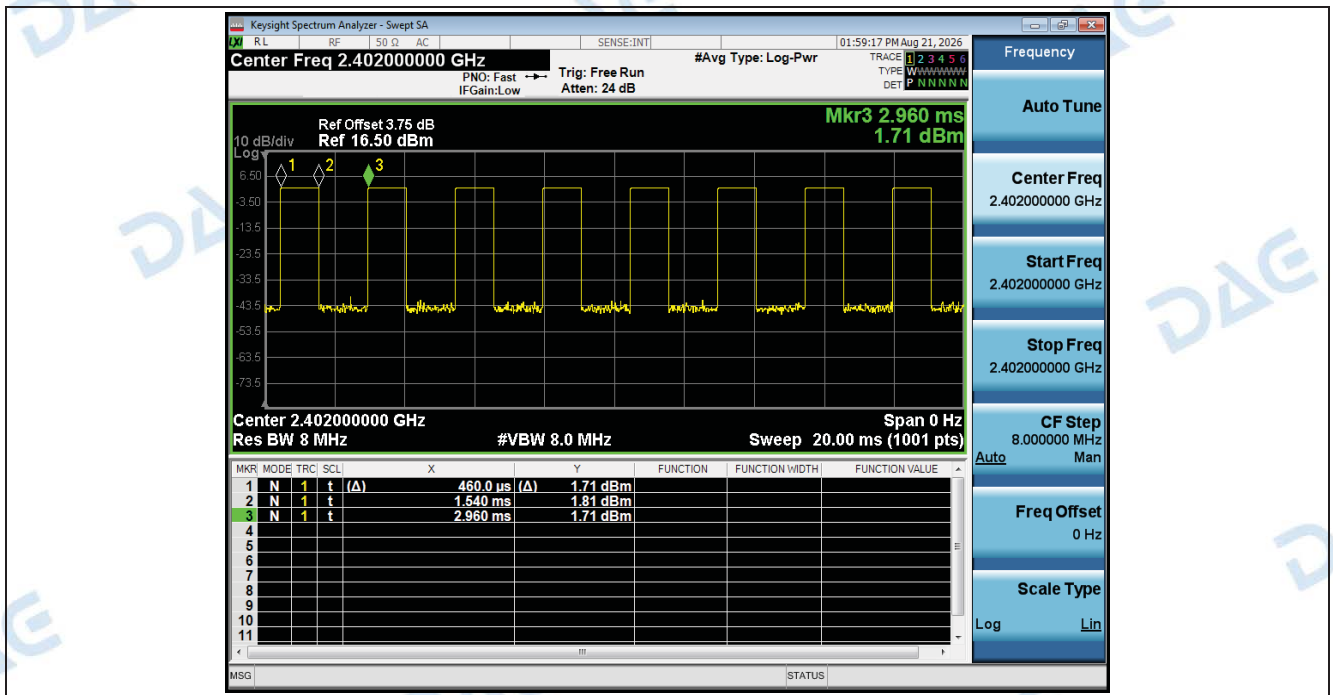
Duty_Cycle_NVNT_ANT1_1Mbps_2402



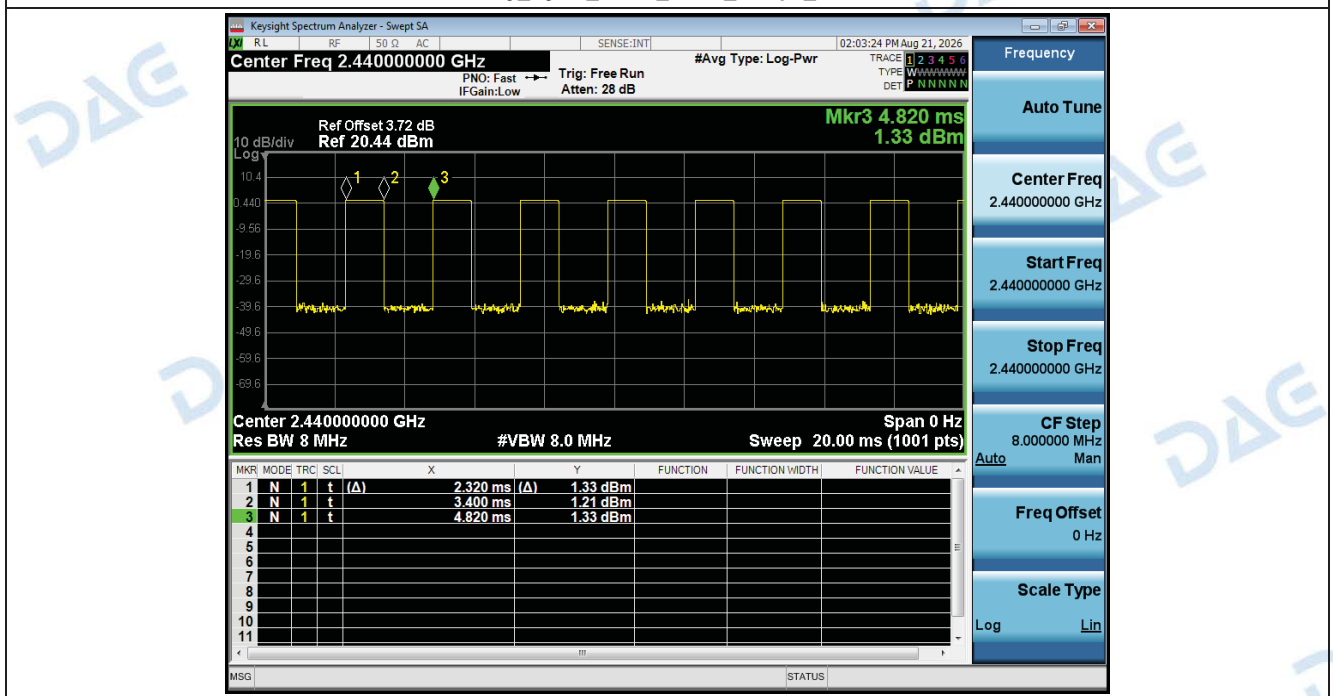
Duty_Cycle_NVNT_ANT1_1Mbps_2440



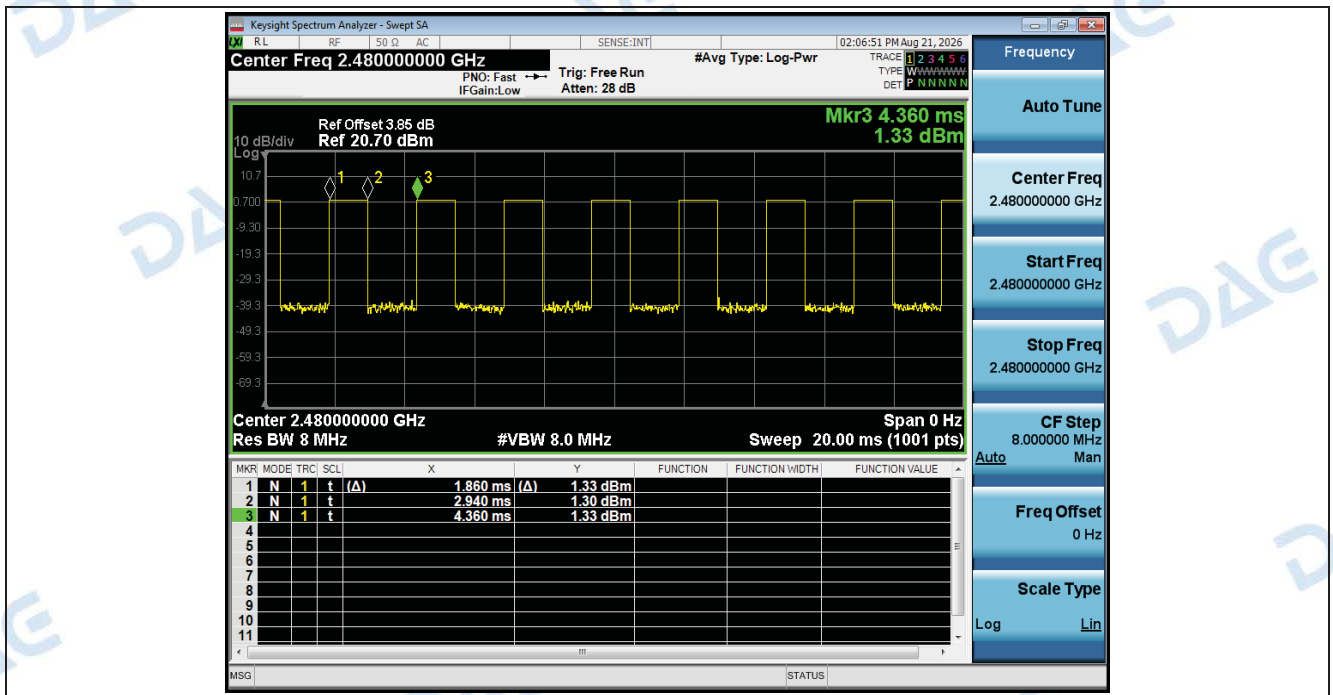
Duty Cycle NVNT_ANT1_2Mbps_2402



Duty_Cycle_NVNT_ANT1_2Mbps_2440



Duty_Cycle_NVNT_ANT1_2Mbps_2480



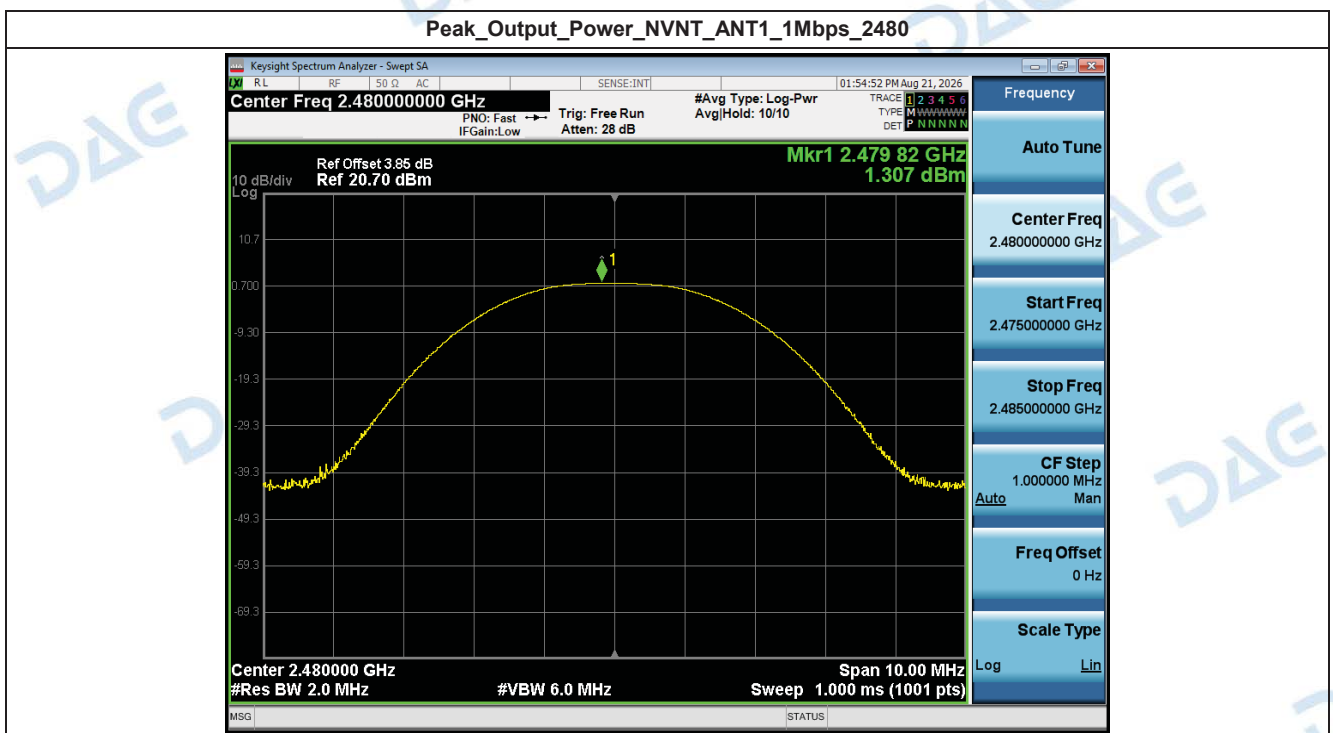
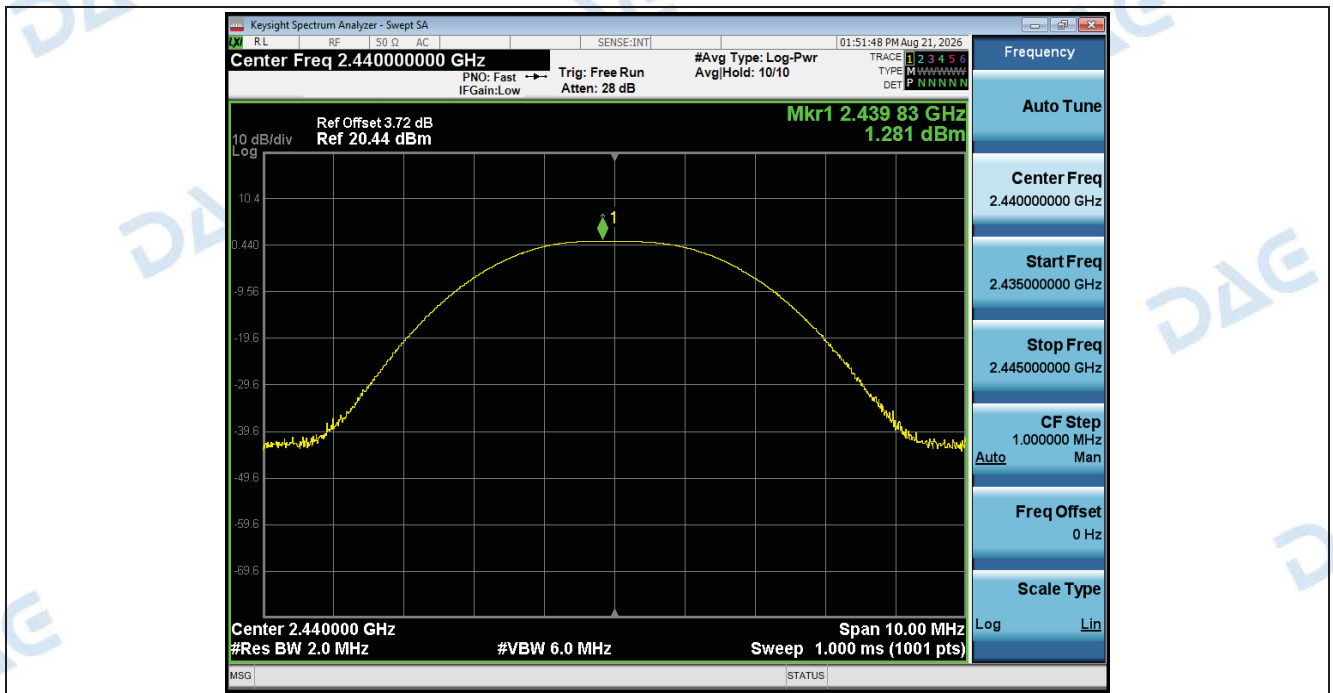
4. Peak Output Power

Condition	Antenna	Rate	Frequency (MHz)	Max. Conducted Power(dBm)	Max. Conducted Power(mW)	Limit(mW)	Result
NVNT	ANT1	1Mbps	2402.00	1.78	1.51	1000	Pass
NVNT	ANT1	1Mbps	2440.00	1.28	1.34	1000	Pass
NVNT	ANT1	1Mbps	2480.00	1.31	1.35	1000	Pass
NVNT	ANT1	2Mbps	2402.00	1.78	1.51	1000	Pass
NVNT	ANT1	2Mbps	2440.00	1.32	1.35	1000	Pass
NVNT	ANT1	2Mbps	2480.00	1.29	1.34	1000	Pass

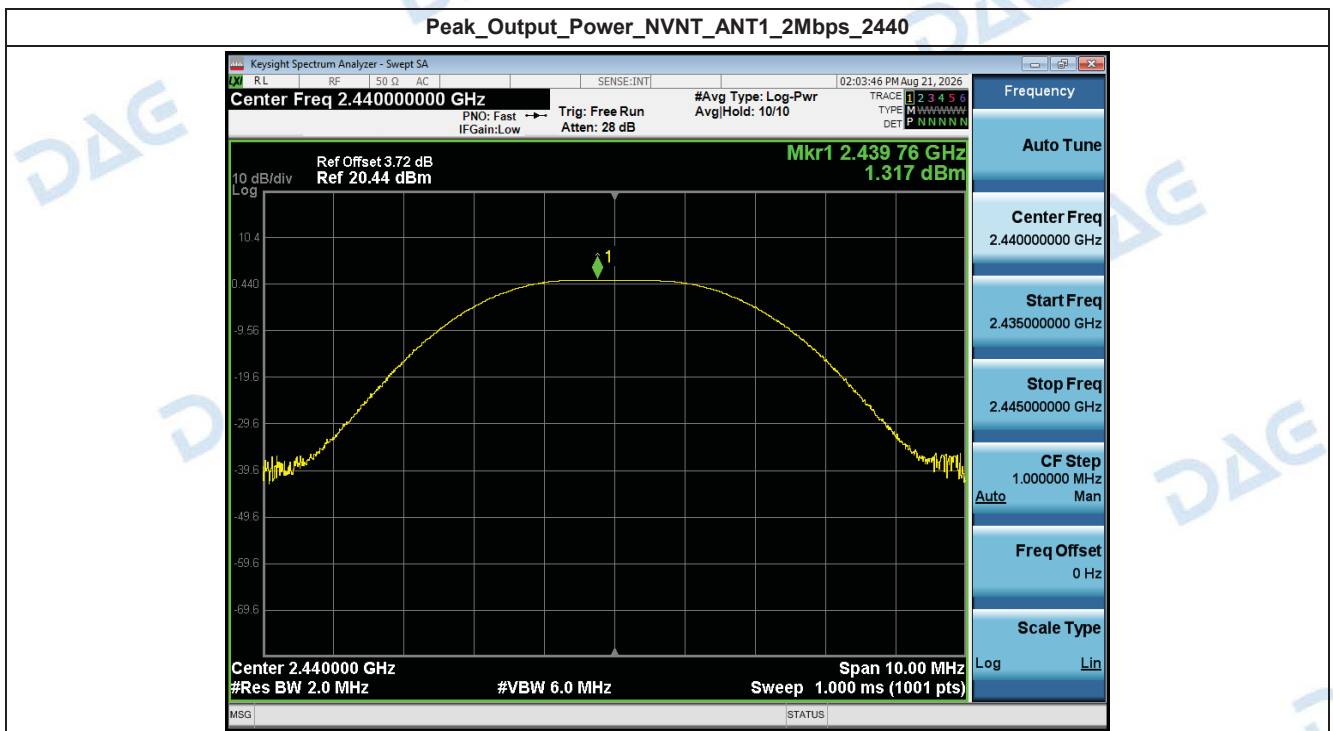
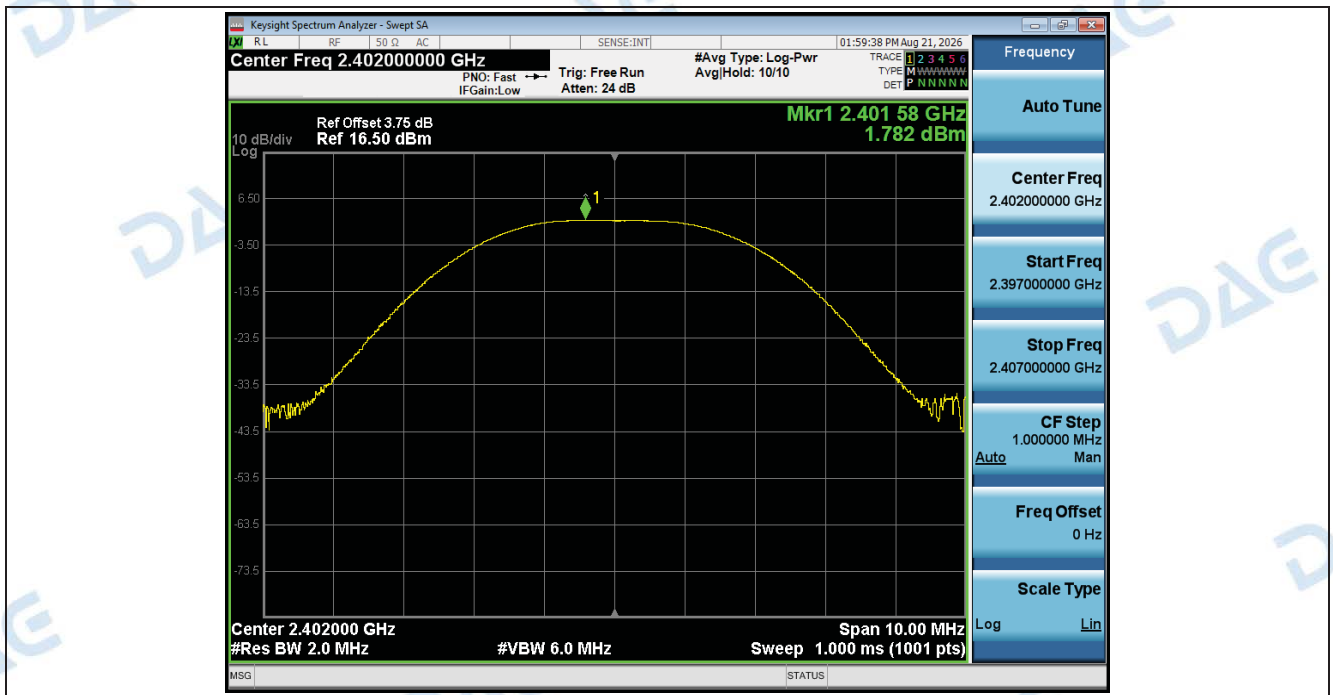
Peak_Output_Power_NVNT_ANT1_1Mbps_2402



Peak_Output_Power_NVNT_ANT1_1Mbps_2440



Peak_Output_Power_NVNT_ANT1_2Mbps_2402





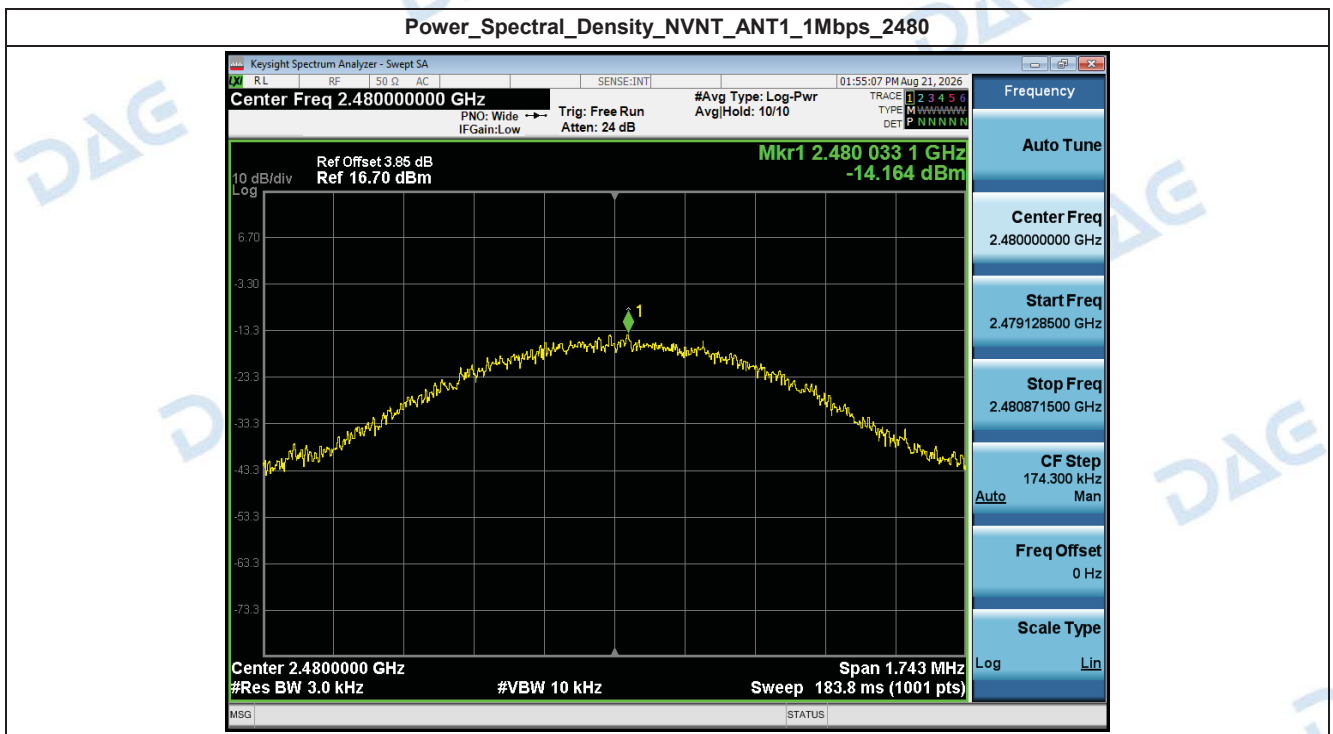
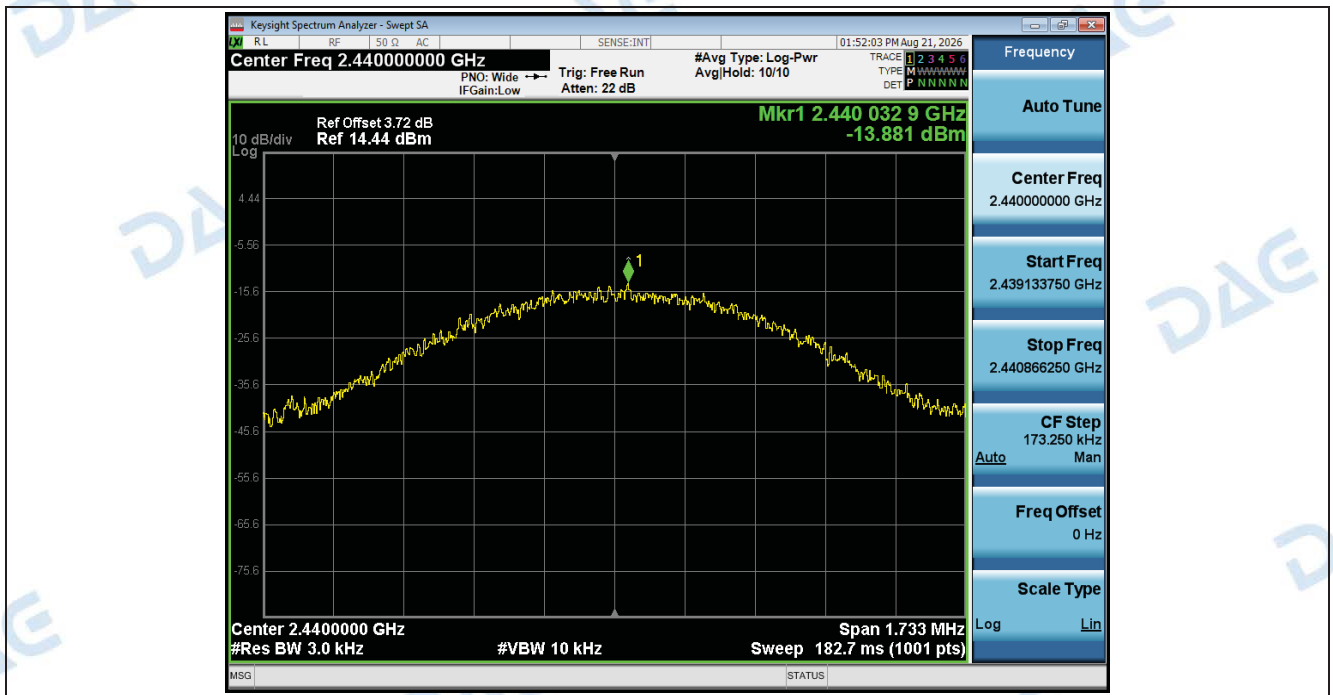
5. Power Spectral Density

Condition	Antenna	Rate	Frequency (MHz)	Power Spectral Density(dBm/3kHz)	Limit(dBm/3kHz)	Result
NVNT	ANT1	1Mbps	2402.00	-13.52	8	Pass
NVNT	ANT1	1Mbps	2440.00	-13.88	8	Pass
NVNT	ANT1	1Mbps	2480.00	-14.16	8	Pass
NVNT	ANT1	2Mbps	2402.00	-17.20	8	Pass
NVNT	ANT1	2Mbps	2440.00	-17.76	8	Pass
NVNT	ANT1	2Mbps	2480.00	-17.56	8	Pass

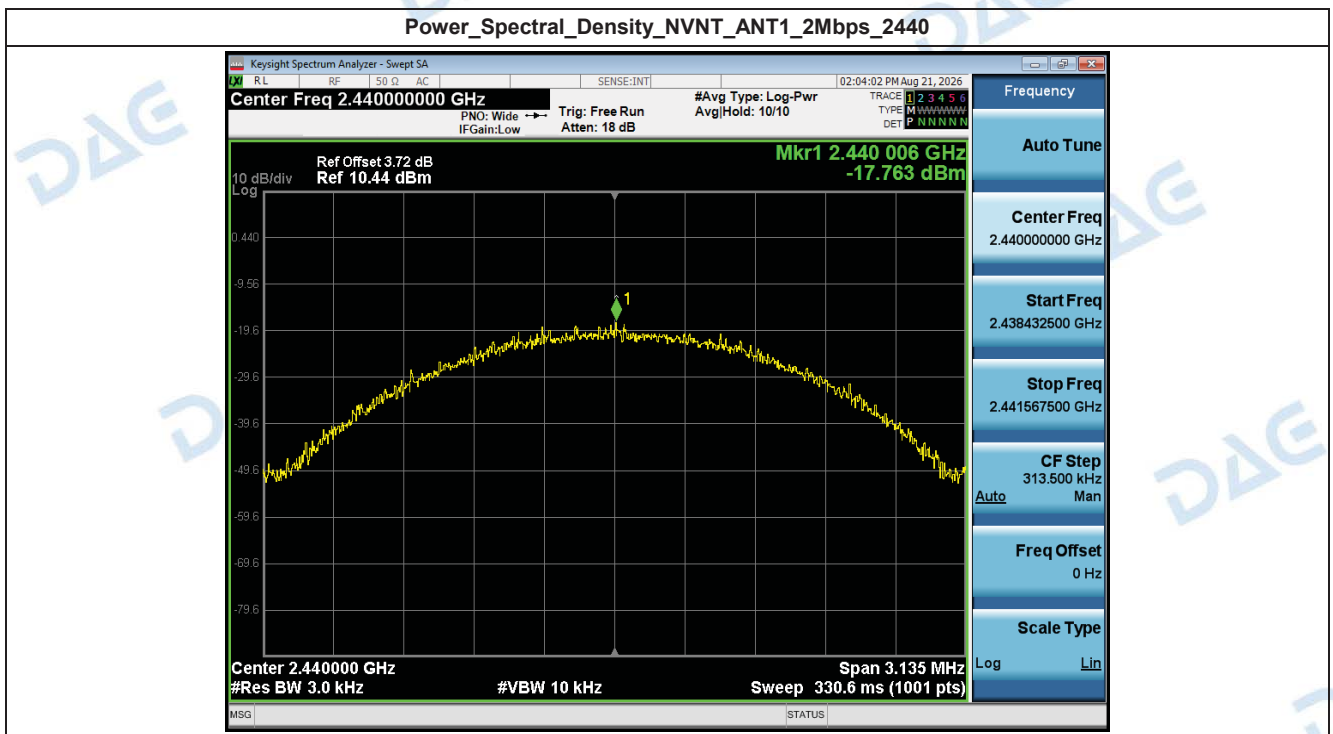
Power_Spectral_Density_NVNT_ANT1_1Mbps_2402



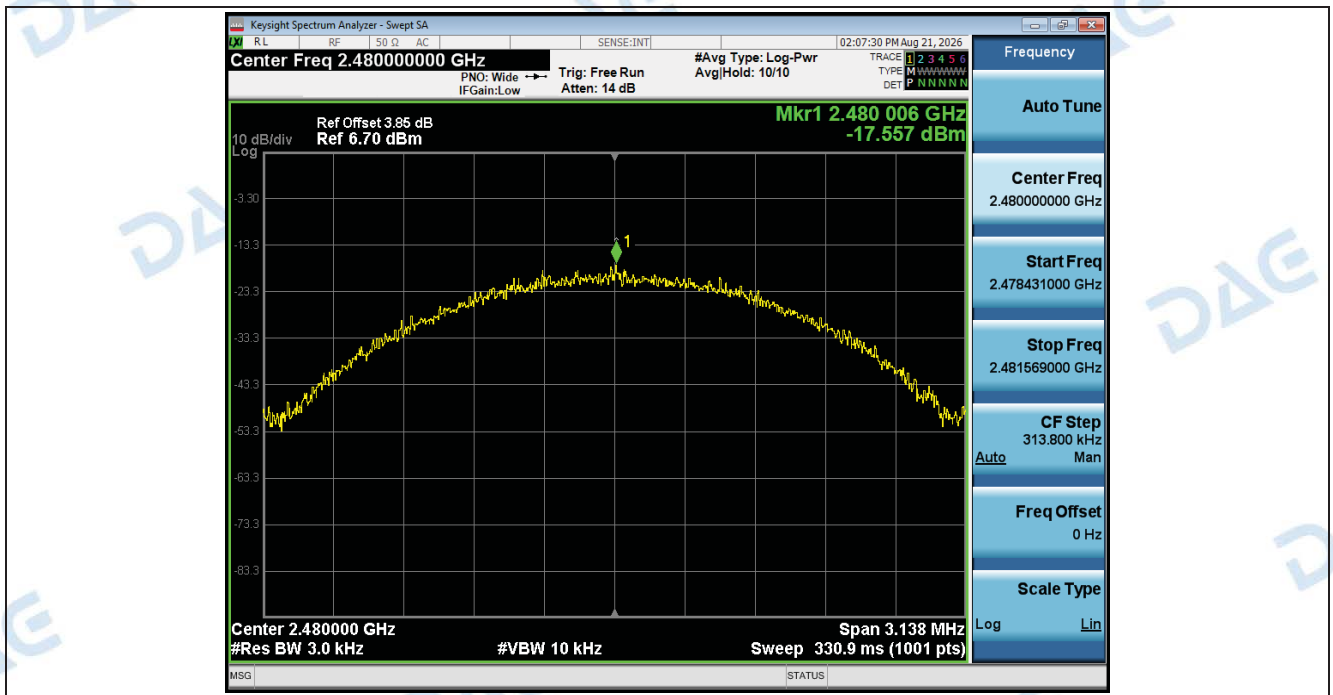
Power_Spectral_Density_NVNT_ANT1_1Mbps_2440



Power_Spectral_Density_NVNT_ANT1_2Mbps_2402



Power_Spectral_Density_NVNT_ANT1_2Mbps_2480



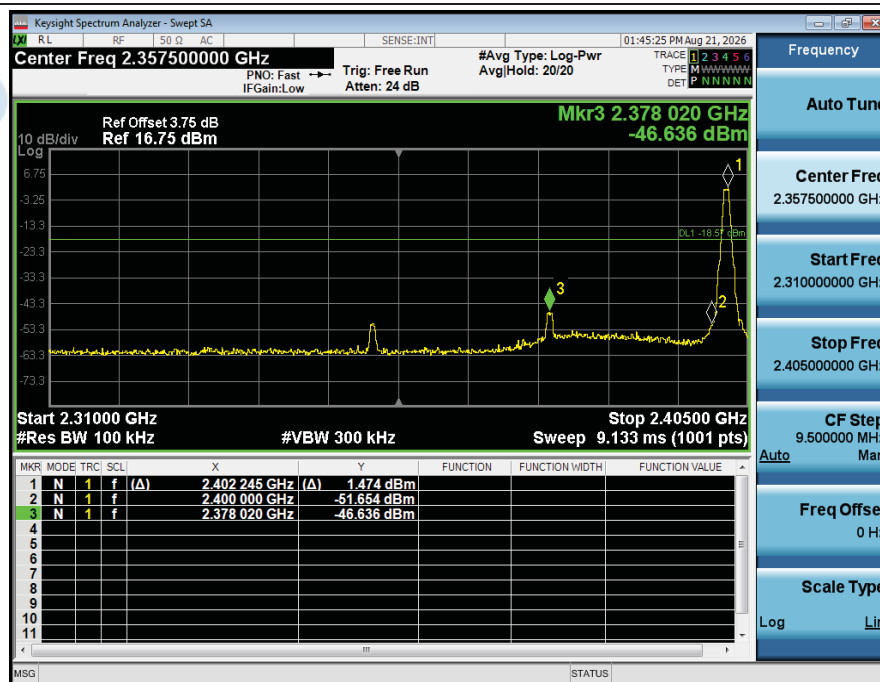
6. Bandedge

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_freq(MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402.00	2378.020	1.426	-46.636	-18.574	Pass
NVNT	ANT1	1Mbps	2480.00	2497.200	1.046	-54.221	-18.954	Pass
NVNT	ANT1	2Mbps	2402.00	2399.965	0.988	-31.330	-19.012	Pass
NVNT	ANT1	2Mbps	2480.00	2485.475	0.643	-49.886	-19.357	Pass

1_Reference_Level_NVNT_ANT1_1Mbps_2402



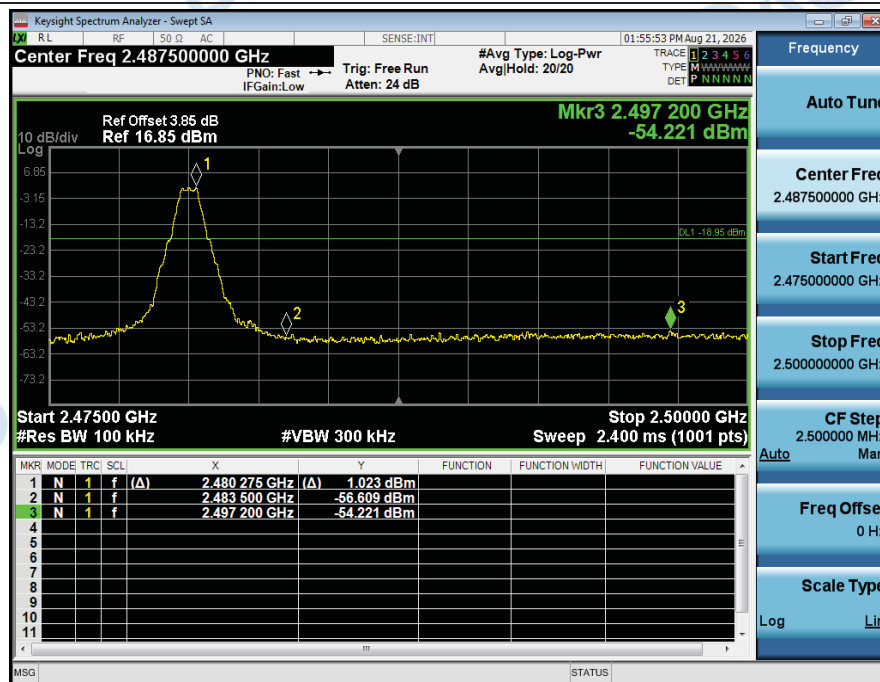
2_Bandedge_NVNT_ANT1_1Mbps_2402



1_Reference_Level_NVNT_ANT1_1Mbps_2480



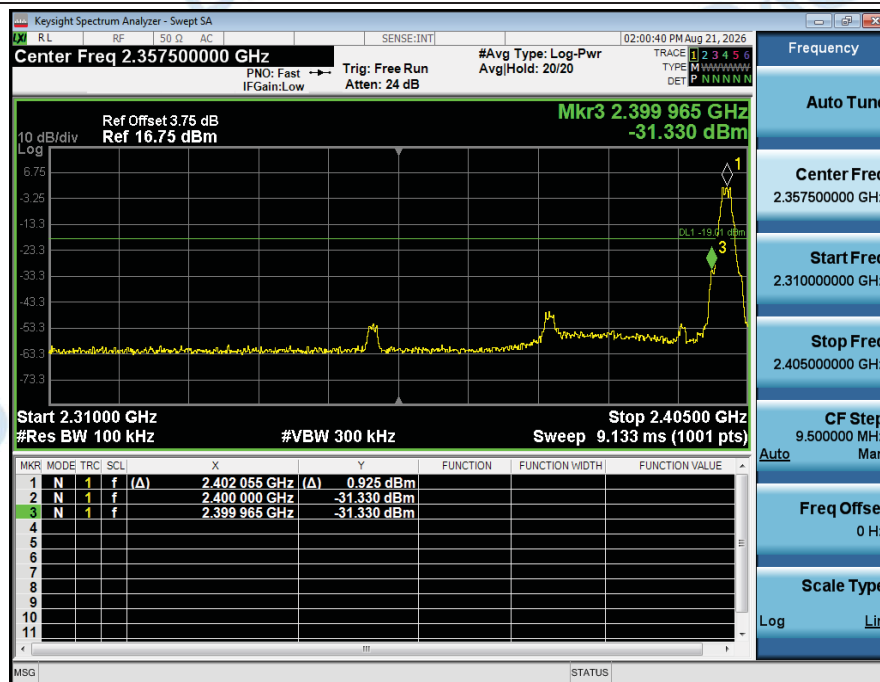
2_Bandedge_NVNT_ANT1_1Mbps_2480



1_Reference_Level_NVNT_ANT1_2Mbps_2402



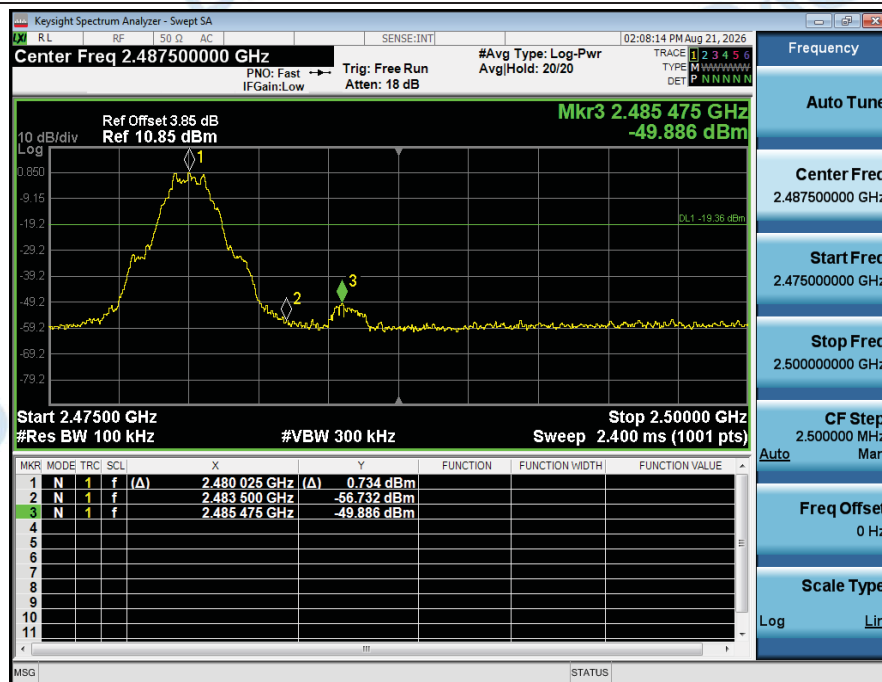
2_Bandedge_NVNT_ANT1_2Mbps_2402



1_Reference_Level_NVNT_ANT1_2Mbps_2480



2_Bandedge_NVNT_ANT1_2Mbps_2480



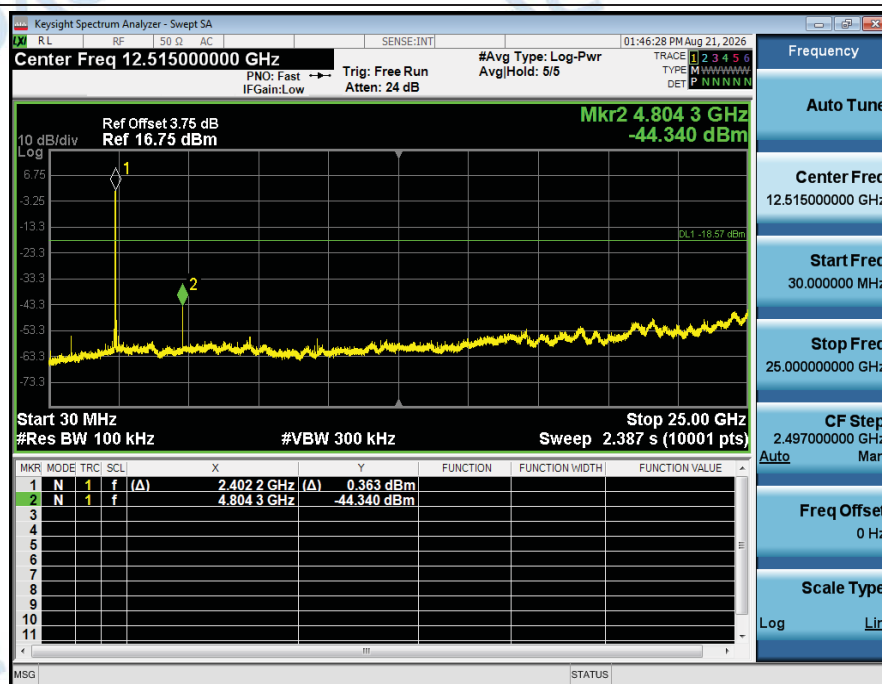
7. Spurious Emission

Condition	Antenna	Modulation	TX_Frequency (MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402.00	1.426	-44.340	-18.574	Pass
NVNT	ANT1	1Mbps	2440.00	1.055	-44.101	-18.945	Pass
NVNT	ANT1	1Mbps	2480.00	1.046	-42.565	-18.954	Pass
NVNT	ANT1	2Mbps	2402.00	0.988	-44.569	-19.012	Pass
NVNT	ANT1	2Mbps	2440.00	0.530	-44.590	-19.470	Pass
NVNT	ANT1	2Mbps	2480.00	0.643	-43.272	-19.357	Pass

1_Reference_Level_NVNT_ANT1_1Mbps_2402



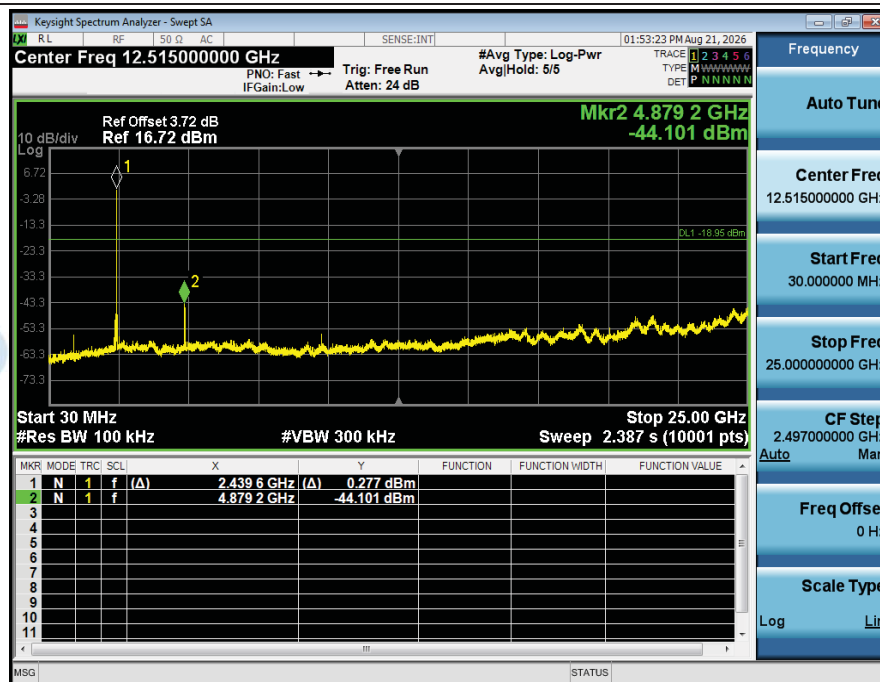
2_Spurious_Emission_NVNT_ANT1_1Mbps_2402



1_Reference_Level_NVNT_ANT1_1Mbps_2440



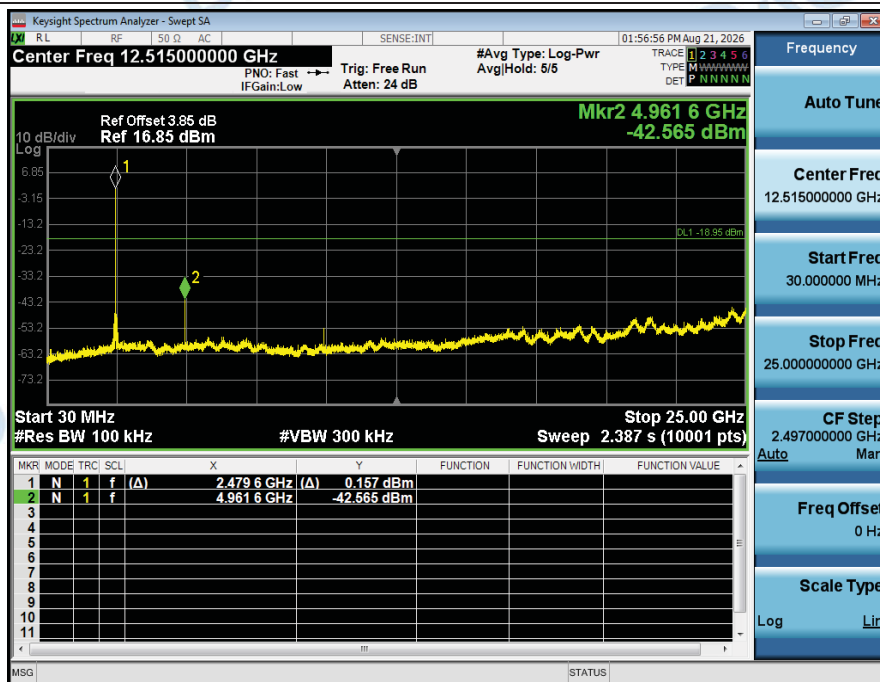
2_Spurious_Emission_NVNT_ANT1_1Mbps_2440



1_Reference_Level_NVNT_ANT1_1Mbps_2480



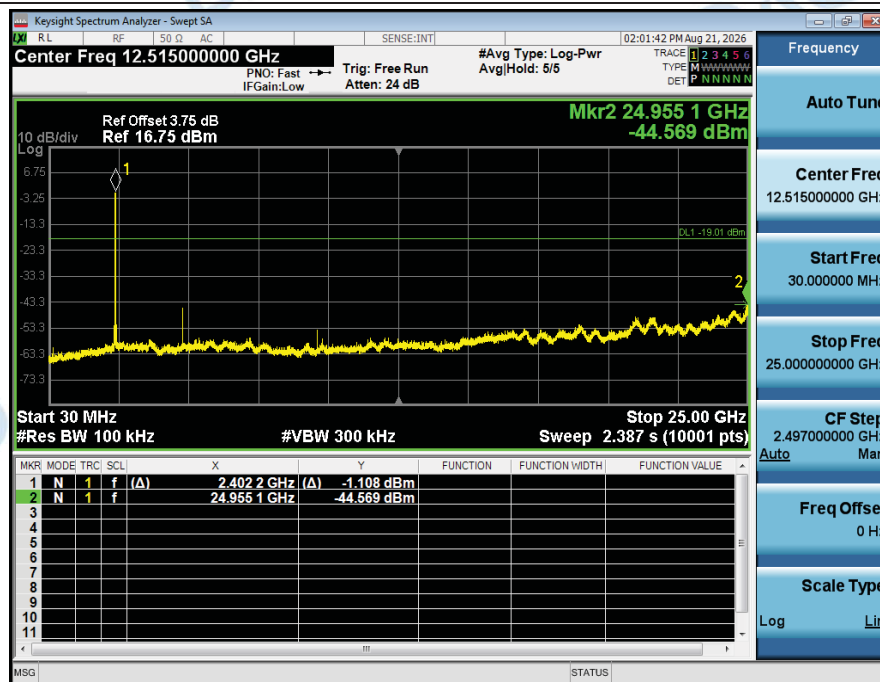
2_Spurious_Emission_NVNT_ANT1_1Mbps_2480



1_Reference_Level_NVNT_ANT1_2Mbps_2402



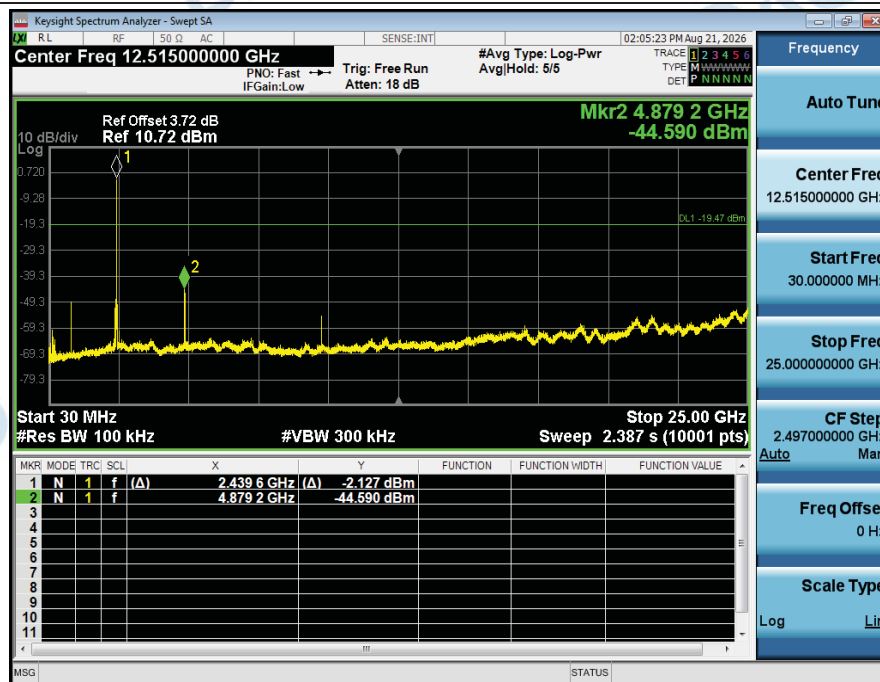
2_Spurious_Emission_NVNT_ANT1_2Mbps_2402



1_Reference_Level_NVNT_ANT1_2Mbps_2440



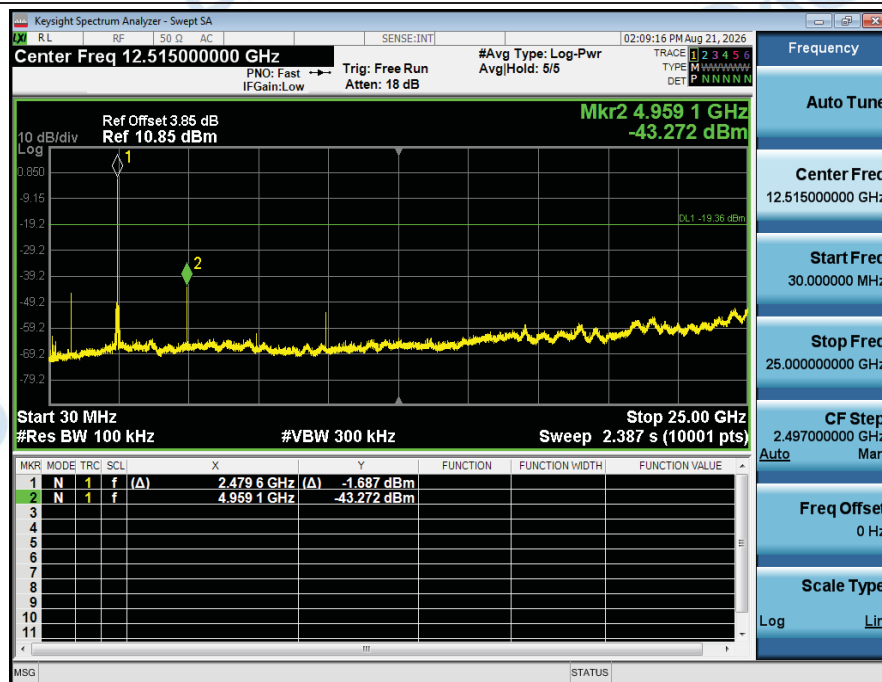
2_Spurious_Emission_NVNT_ANT1_2Mbps_2440



1_Reference_Level_NVNT_ANT1_2Mbps_2480



2_Spurious_Emission_NVNT_ANT1_2Mbps_2480



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