TEST REPORT

APPLICANT	:	Innovative Eyewear, Inc.
PRODUCT NAME	:	Active noise cancelling stereo Bluetooth headphone
MODEL NAME	:	LCD00X
BRAND NAME	:	Lucyd, Nautica, Eddie Bauer, Reebok
IC	:	30961-LCD00X
STANDARD(S)	:	RSS-GEN Issue 5, RSS-247 Issue 2
RECEIPT DATE	:	2023-06-29
TEST DATE	:	2023-07-05 to 2023-07-20
ISSUE DATE	:	2023-08-29

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Change History		
Version	**Date**	**Reason for change**
1.0	2023-08-29	First edition

1. Summary of Test Result

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
1	RSS-GEN, 8.3	Antenna Requirement	N/A	N/A	PASS	No deviation
2	RSS-247, 5.1	Hopping Mechanism	N/A	N/A	PASS	No deviation
3	RSS-247, 5.1(d)	Number of Hopping Frequency	Jul. 17, 2023	He Yuyang	PASS	No deviation
4	N/A	Duty Cycle	Jul. 06, 2023	He Yuyang	PASS	No deviation
5	RSS-247, 5.4(b)	Maximum Peak Conducted Output Power	Jul. 06, 2023	He Yuyang	PASS	No deviation
6	RSS-247, 5.4(b)	Maximum Average Conducted Output Power and E.I.R.P.	Jul. 06, 2023	He Yuyang	PASS	No deviation
7	RSS-247, 5.1(a)	20dB Bandwidth	Jul. 06, 2023	He Yuyang	PASS	No deviation
8	RSS-247, 5.1(b)	Carrier Frequency Separation	Jul. 17, 2023	He Yuyang	PASS	No deviation
9	RSS-247, 5.1(d)	Time of Occupancy (Dwell time)	Jul. 06, 2023	He Yuyang	PASS	No deviation
10	RSS-247, 5.5	Conducted Spurious Emission	Jul. 06, 2023	He Yuyang	PASS	No deviation
11	RSS-GEN, 8.8	Conducted Emission	N/A	N/A	N/A_{Note1}	N/A
12	RSS-GEN, 8.10	Restricted Frequency Bands	Jul. 07, 2023	Gao Jianrou	PASS	No deviation

13	RSS-GEN, 6.13, 8.9	Radiated Emission	Jul. 08, 2023	Gao Jianrou	PASS	No deviation

Note 1: Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.
Note 2: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2013, KDB558074 D01 v05r02 and DA 00-075.
Note 3: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.
Note 4: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.1. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:
• RSS-GEN Issue 5, April 2018 General Requirements for Compliance of Radio Apparatus
• RSS-247 Issue 2, February 2017 Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

1.2. Test Equipment List

1.2.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2023.02.27	2024.02.26
RF Cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial Cable	CB02	RF02	Morlab	N/A	N/A
SMA Connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

1.2.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2023.02.09	2024.02.08
LISN	8127449	NSLK 8127	Schwarzbeck	2023.02.21	2024.02.20
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2023.06.27	2024.06.26
RF Coaxial Cable (DC-100MHz)	BNC	MRE04	Qualwave	N/A	N/A

1.2.3 List of Software Used

Description	Manufacturer	Software Version
Test System	MaiWei	V2.0.0.0
Morlab EMCR V1.2	Morlab	V1.0
TS+ -[JS32-CE]	Tonscend	V2.5.0.0

1.2.4 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY54130016	N9038A	Agilent	2023.06.21	2024.06.20
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2022.05.25	2025.05.24
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2022.02.11	2025.02.10
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2022.07.13	2025.07.12
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2022.07.14	2025.07.13
Preamplifier (10MHz-6GHz)	46732	S10M100L3802	LUCIX CORP.	2023.06.26	2024.06.27
Preamplifier (2GHz-18GHz)	61171/61172	S020180L3203	LUCIX CORP.	2023.06.26	2024.06.27
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2022.07.23	2023.07.22
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2023.07.04	2024.07.03
Notch Filter	N/A	WRCG-2400-2483.5-60SS	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.05.10	2025.05.09

1.3. Measurement Uncertainty

Test Items	Uncertainty	Remark
Number of Hopping Frequency	±5%	Confidence levels of 95%
Peak Output Power	±2.22dB	Confidence levels of 95%
Bandwidth	±5%	Confidence levels of 95%
Carrier Frequency Separation	±5%	Confidence levels of 95%
Time of Occupancy (Dwell time)	±5%	Confidence levels of 95%
Conducted Spurious Emission	±2.77dB	Confidence levels of 95%
Restricted Frequency Bands	±5%	Confidence levels of 95%
Radiated Emission	±2.95dB	Confidence levels of 95%
Conducted Emission	±2.44dB	Confidence levels of 95%

1.4. Testing Laboratory

Laboratory Name	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
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IC Company Number	7183A

2. General Description

2.1. Information of Applicant and Manufacturer

Applicant	Innovative Eyewear, Inc.
Applicant Address	11900 Biscayne Bl, Suite 630, North Miami, FL 33181, United States
Manufacturer	Innovative Eyewear, Inc.
Manufacturer Address	11900 Biscayne Bl, Suite 630, North Miami, FL 33181, United States

2.2. Information of EUT

Product Name:	Active noise cancelling stereo Bluetooth headphone	
Sample No.:	4#	
Hardware Version:	HT-LCD006-V02	
Software Version:	Lucyd Lyte-1735-b4f52dd3	
Equipment Type:	Bluetooth classic	
Bluetooth Version:	5.3	
Modulation Type:	FHSS (GFSK(1Mbps), π/4-DQPSK(EDR 2Mbps))	
Operating Frequency Range:	2402MHz-2480MHz	
Antenna Type:	Ceramic Antenna	
Antenna Gain:	3.12dBi	
Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	N/A
	Serial No.:	N/A
	Capacity:	100mAh
	Rated Voltage:	3.7V
	Charge Limit:	4.2V
	Manufacturer:	ShenZhen Yotoga Technology Co.,Ltd

Accessory Information:	AC Adapter	
	Brand Name:	Dongguan XieYang Electronics co., Ltd
	Model No.:	XY-0033B
	Serial No.:	N/A
	Rated Input:	100-240V~50/60Hz, 0.15A
	Rated Output:	5V⎓1A
	Manufacturer:	Dongguan XieYang Electronics co., Ltd
	USB Cable	
	Model:	N/A
	Manufacturer:	N/A

Note 1: According to the certificate holder, they declare that the for model: LCD00X have multiple brands, These different trade names are as follows: Lucyd, Nautica, Eddie Bauer, Reebok, only different for brand name, all RF parameters remain the same. The main measuring model is Lucyd, only the results for Lucyd were recorded in this report

Note 2: We use the dedicated software to control the EUT continuous transmission.

Note 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.3. Channel List of EUT

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	**2402**	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	**78**	**2480**
19	2421	**39**	**2441**	59	2461		

Note 1: The black bold channels were selected for test.

2.4. Test Configuration of EUT

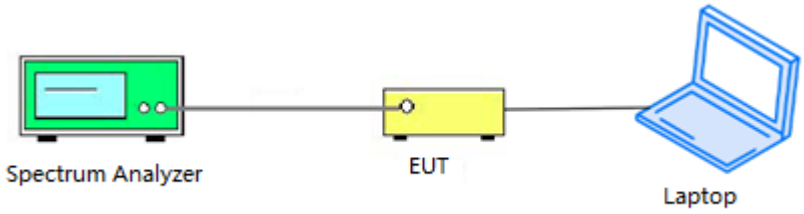
Test mode is used to control the EUT under the maximum power level during test.

2.5. Test Conditions

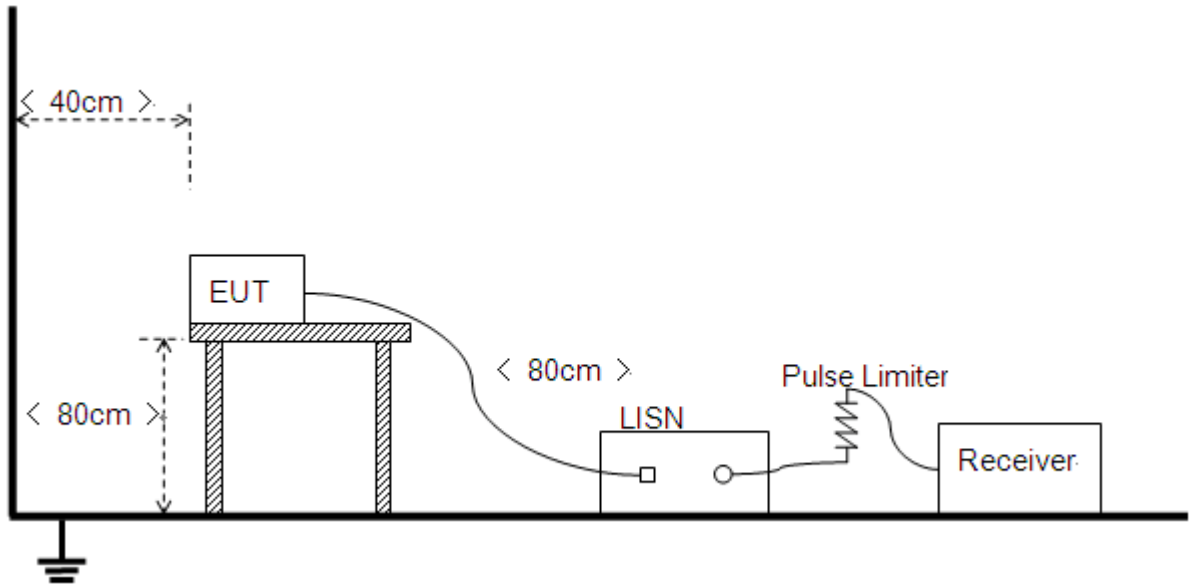
Temperature (°C)	15-35
Relative Humidity (%)	30-60
Atmospheric Pressure (kPa)	86-106

2.6. Test Setup Layout Diagram

2.6.1.Conducted Measurement

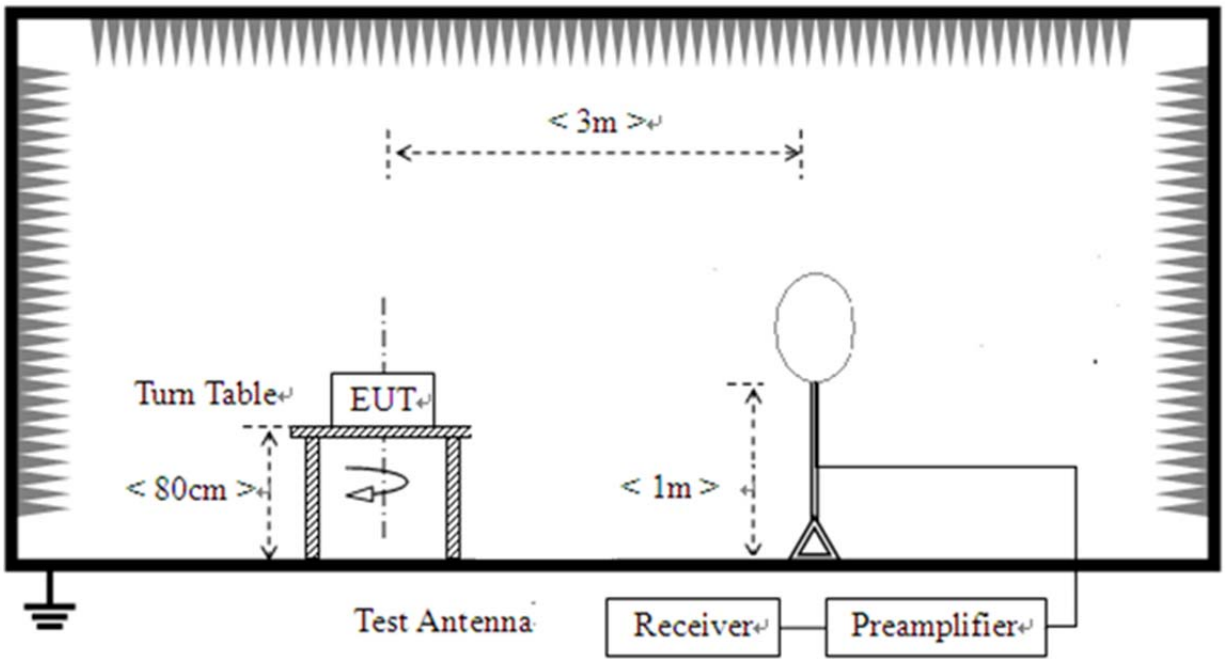


2.6.2.Conducted Emission Measurement

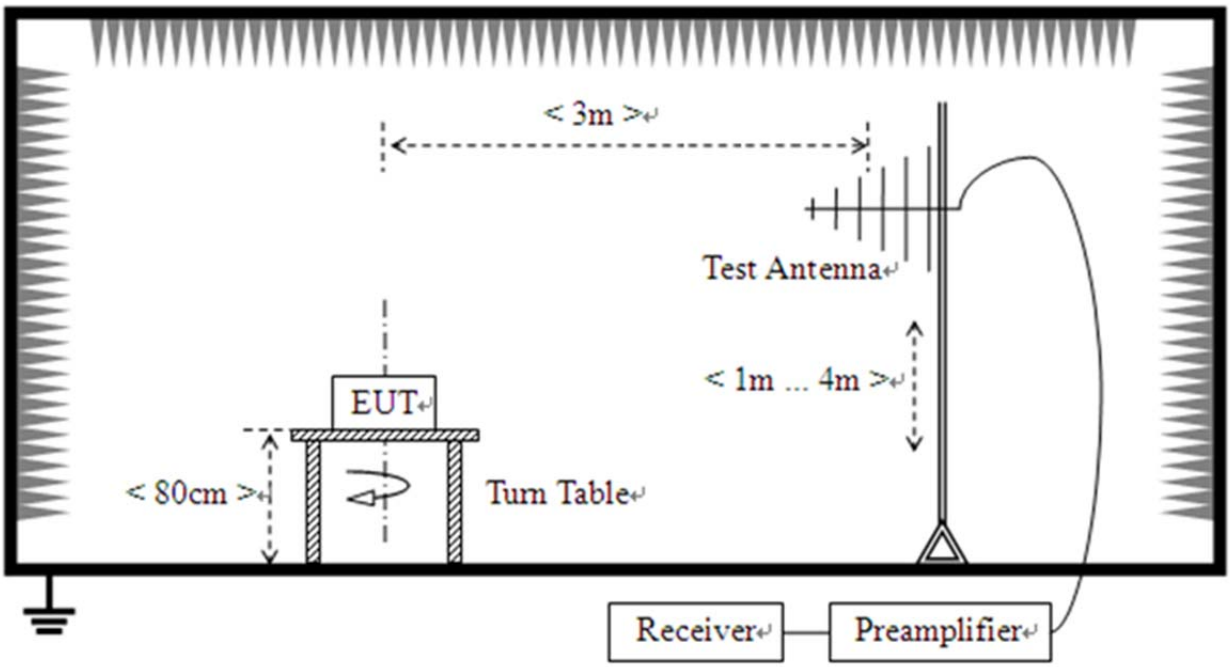


2.6.3.Radiation Measurement

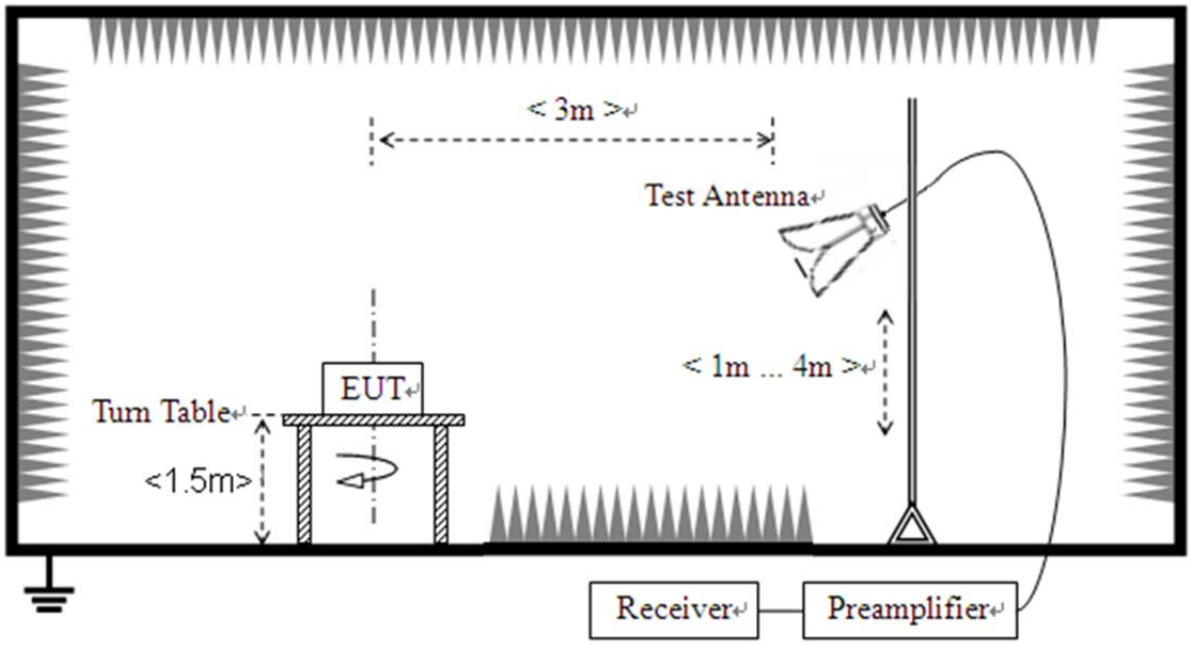
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



3. Test Results

3.1. Antenna Requirement

3.1.1.Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.1.2.Test Result

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

3.2. Hopping Mechanism

3.2.1.Requirement

According to RSS-247 Section 5.1, frequency hopping systems are not required to employ all available hopping frequencies during each transmission and shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

3.2.2.Test Result

The hopping mechanism of the EUT is in compliance with the document "***Bluetooth core specification v5.2***".

3.3. Number of Hopping Frequency

3.3.1.Requirement

According to RSS-247 Section 5.1(d), frequency hopping systems operating in the 2400MHz to 2483.5MHz bands shall use at least 15 hopping frequencies.

3.3.2.Test Procedures

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = the frequency band of operation
RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize

3.3.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.3.4.Test Result

Refer to Annex A.1 in this report.

3.4. Duty Cycle of Test Signal

3.4.1.Requirement

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%).When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be used to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration(T) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can then be used if the measurement/sweep time of the analyzer can be set such that it does not exceed T at any time that data are being acquired (i.e.,no transmitter OFF-time is to be considered).
When continuous transmission cannot be achieved and sweep triggering/signal gating cannot be implemented, alternative procedures are provided that can be used to measure the average power; however, they will require an additional measurement of the transmitter duty cycle (D). Within this sub clause, the duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than ±2%; otherwise, the duty cycle is considered to be non constant.

3.4.2.Test Result

Refer to Annex A.2 in this report.

3.5. Maximum Peak Conducted Output Power

3.5.1.Requirement

According to RSS-247 Section 5.4 (b), for FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W and the e.i.r.p. shall not exceed 4 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W and the e.i.r.p. shall not exceed 0.5 W if the hopset uses less than 75 hopping channels.

3.5.2.Test Procedures

KDB 558074 Section 8.3.1 was used in order to prove compliance.

3.5.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.5.4.Test Result

Refer to Annex A.3 in this report.

3.6. Maximum Average Conducted Output Power and E.I.R.P.

3.6.1.Requirement

According to RSS-247 Section 5.4 (b), for FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W and the e.i.r.p. shall not exceed 4 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W and the e.i.r.p. shall not exceed 0.5 W if the hopset uses less than 75 hopping channels.

3.6.2.Test Procedures

KDB 558074 Section 8.3.2 was used in order to prove compliance.

3.6.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.6.4.Test Result

Refer to Annex A.4 in this report.

3.7. 20dB Bandwidth and 99% Occupied Bandwidth

3.7.1.Requirement

According to RSS-247 Section 5.1(a), the bandwidth of a frequency hopping channel is the -20 dB emission bandwidth, measured with the hopping stopped. The system's radio frequency (RF) bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset, whereas the long-term distribution appears evenly distributed.

3.7.1.Test Procedures

Use the following spectrum analyzer settings:
Span = between 2 to 5 times the OBW, centered on the test channel
RBW= 1% to 5% of the OBW
VBW ≥ 3 x RBW
Sweep = auto
Detector function = peak
Trace = max hold

3.7.2.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.7.3.Test Result

Refer to Annex A.5 and A.6 in this report.

3.8. Carried Frequency Separation

3.8.1.Requirement

According to RSS-247 Section 5.1(b), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the -20 dB bandwidth of the hopping channel, whichever is greater.

3.8.2.Test Procedures

The EUT must have its hopping function enabled. According to DA 00-705, use the following spectrum analyzer settings:
Span = wide enough to capture the peaks of two adjacent channels
Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
Video (or Average) Bandwidth (VBW) ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

3.8.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.8.4.Test Result

Refer to Annex A.7 in this report.

3.9. Time of Occupancy (Dwell time)

3.9.1.Requirement

According to RSS-247 Section 5.1(d), FHSs operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that at least 15 hopping channels are used.

3.9.2.Test Procedures

Normal Mode:
DH1: Dwell time equal to Pulse time (ms) *(1600 / 2 /79)*31.6 Millisecond DH3: Dwell time equal to Pulse time (ms) * (1600 /4 /79) *31.6 Millisecond DH5: Dwell time equal to Pulse Time (ms)* (1600 / 6 /79) *31.6 Millisecond
AFH Mode:
DH1: Dwell time equal to Pulse time (ms) *(800 / 2 /20)*(0.4*20) Millisecond DH3: Dwell time equal to Pulse time (ms) * (800 / 4 /20)*(0.4*20) Millisecond DH5: Dwell time equal to Pulse Time (ms)* (800 / 6 /20)*(0.4*20) Millisecond.

3.9.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.9.4.Test Result

Refer to Annex A.8 in this report.

3.10. Conducted Spurious Emissions and Band Edge

3.10.1.Requirement

According to RSS-247 Section 5.5, in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

3.10.2.Test Procedures

Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 100 kHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize.

3.10.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.10.4.Test Result

Refer to Annex A.9 and A.10 in this report.

3.11. Conducted Emission

3.11.1.Requirement

According to RSS-GEN section 8.8, 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 within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency Range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

(a) The lower limit shall apply at the band edges.

(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.11.2.Test Procedures

The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10: 2013.

3.11.3.Test Setup Layout

Refer to chapter 2.6.2 in this report.

3.11.4.Test Result

Refer to Annex A.11 in this report.

3.12. Restricted Frequency Bands

3.12.1.Requirement

According to RSS-GEN section 8.10, in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in RSS-GEN section 8.10, must also comply with the radiated emission limits specified in RSS-247.

3.12.2.Test Procedures

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.
For the Test Antenna:
Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1GHz, 100 kHz for f < 1GHz
VBW = 3 MHz
Sweep = auto
Detector function = peak/average
Trace = max hold
Allow the trace to stabilize

3.12.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.12.4.Test Result

Refer to Annex A.12 in this report.

3.13. Radiated Emission

3.13.1.Requirement

According to Section 8.9 of RSS-GEN, except when the requirements applicable to a given device state otherwise, emissions from licence-exempt transmitters shall comply with the field strength limits shown in Table 4 or Table 5 below. Additionally, the level of any transmitter emission shall not exceed the level of the transmitter's fundamental emission.

Table 4 General Field Strength Limits for Licence-Exempt Transmitters at Frequencies Above 30 MHz

Frequency (MHz)	**Field Strength (μv/m at 3 metres)**
30-88	100
88-216	150
216-960	200
Above 960*	500
* Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.	

Note: Transmitting devices are not permitted in restricted frequency bands unless stated otherwise in the specific RSS.

Table 5 General Field Strength Limits for Licence-Exempt Transmitters at Frequencies Below 30 MHz

Frequency	**Electric Field Strength(μV/m)**	**Magnetic Field Strength (H-Field)(μA/m)**	**Measurement Distance(metres)**
9-490 kHz	2,400/F (F in kHz)	2,400/377F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/377F (F in kHz)	30
1,705-30 MHz	30	N/A	30

Note: The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector. Transmitting devices are not permitted in restricted frequency bands unless stated otherwise in the relevant RSS.

3.13.2.Test Procedures

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz.The antenna to EUT distance is 3meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 30MHz, the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9kHz-90 kHz, 110kHz-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements and as applicable for average measurements.

The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions. For measurements above 1 GHz, keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.

3.13.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.13.4.Test Result

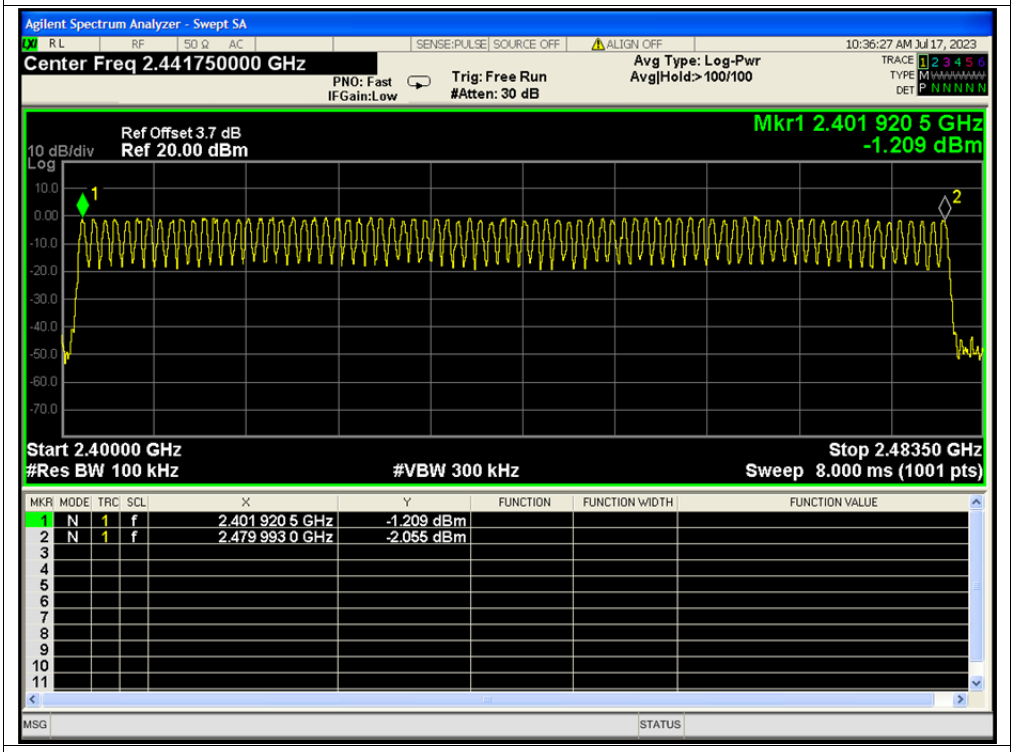
Refer to Annex A.13 in this report.

Annex A Test Data and Result

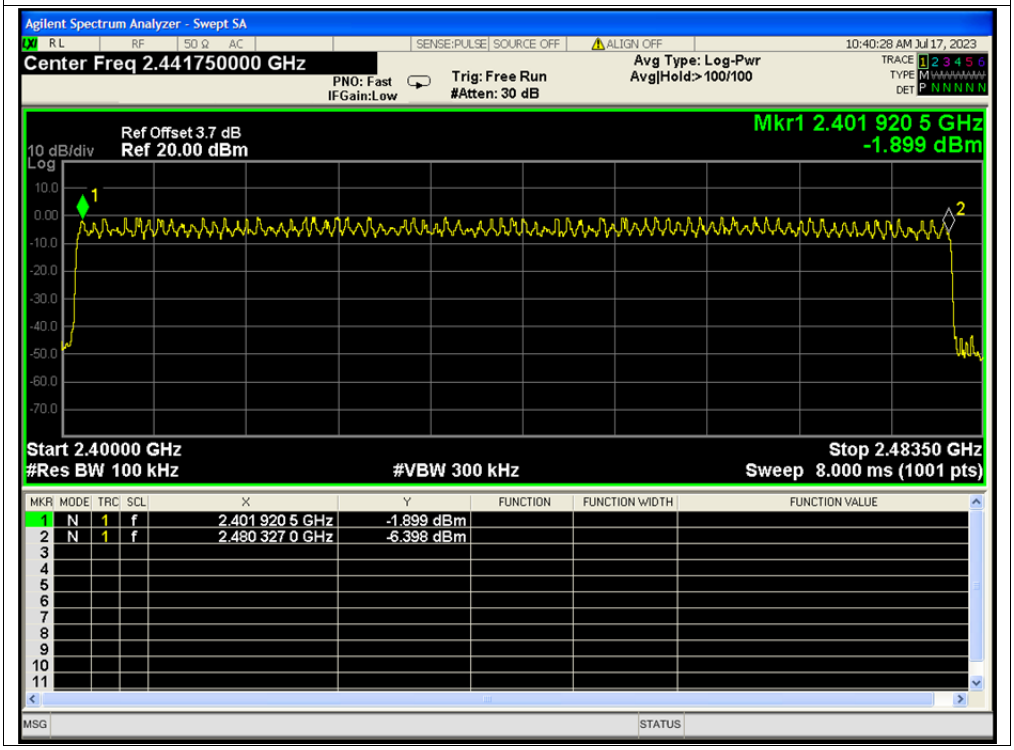
A.1. Number of Hopping Frequency

Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass

Test Graphs
Hopping No. NVNT 1-DH5 2402MHz Ant1



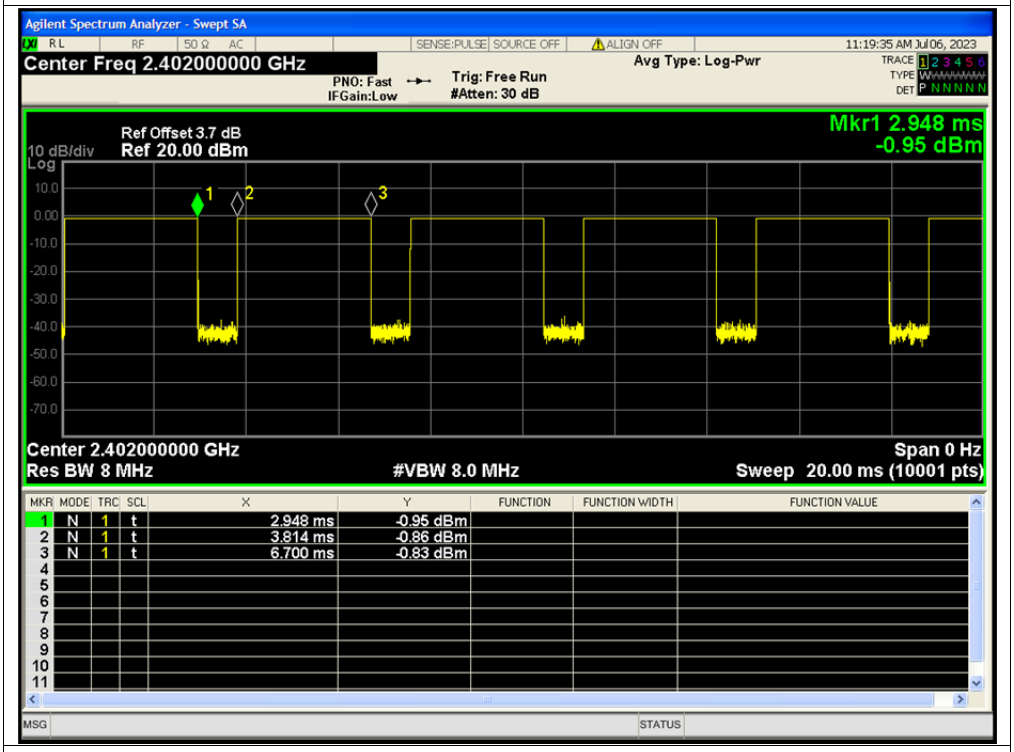
Hopping No. NVNT 2-DH5 2402MHz Ant1



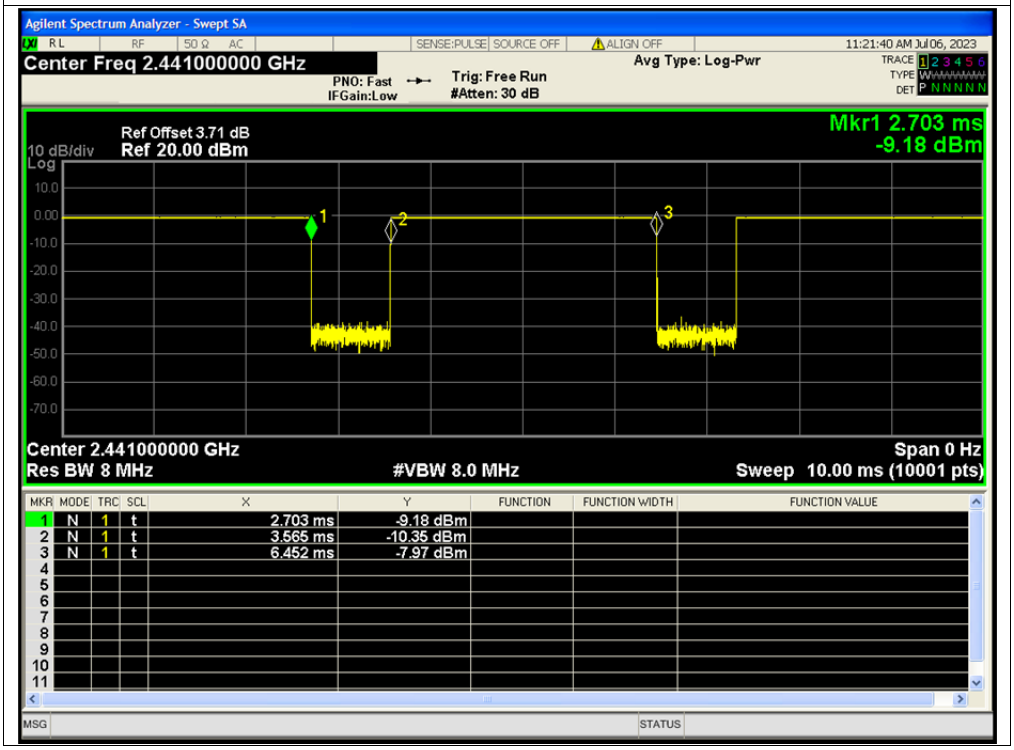
A.2. Duty Cycle of Test Signal

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.92	1.14	0.35
NVNT	1-DH5	2441	Ant1	77.01	1.13	0.35
NVNT	1-DH5	2480	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2402	Ant1	77.15	1.13	0.35
NVNT	2-DH5	2441	Ant1	77.15	1.13	0.35
NVNT	2-DH5	2480	Ant1	77.15	1.13	0.35

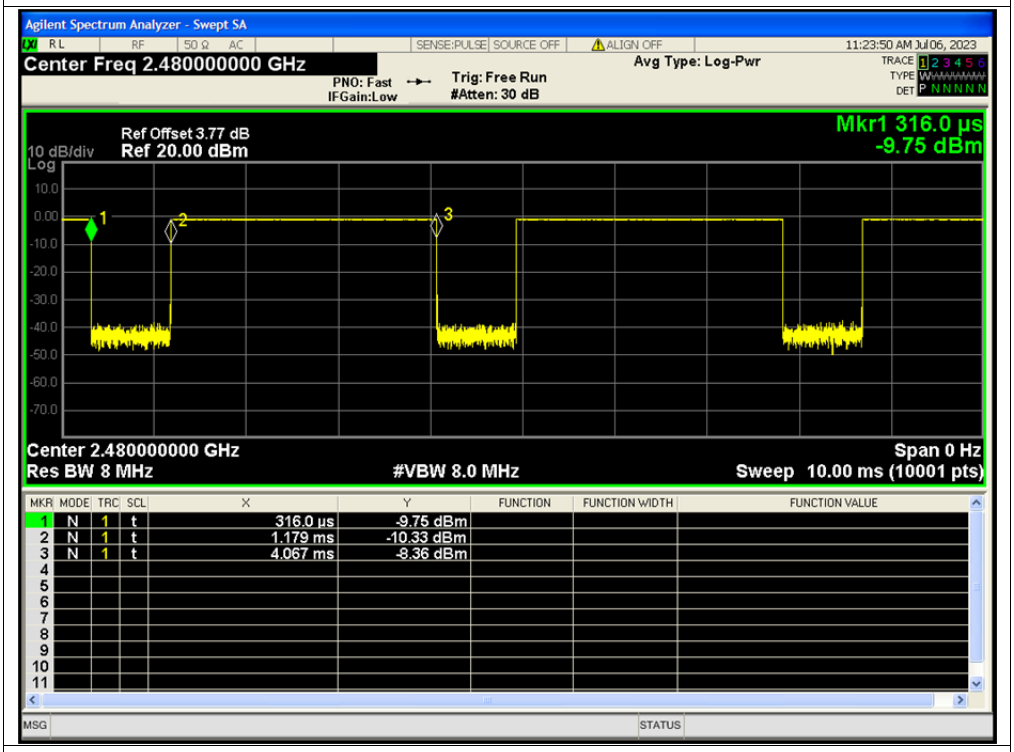
Test Graphs
Duty Cycle NVNT 1-DH5 2402MHz Ant1



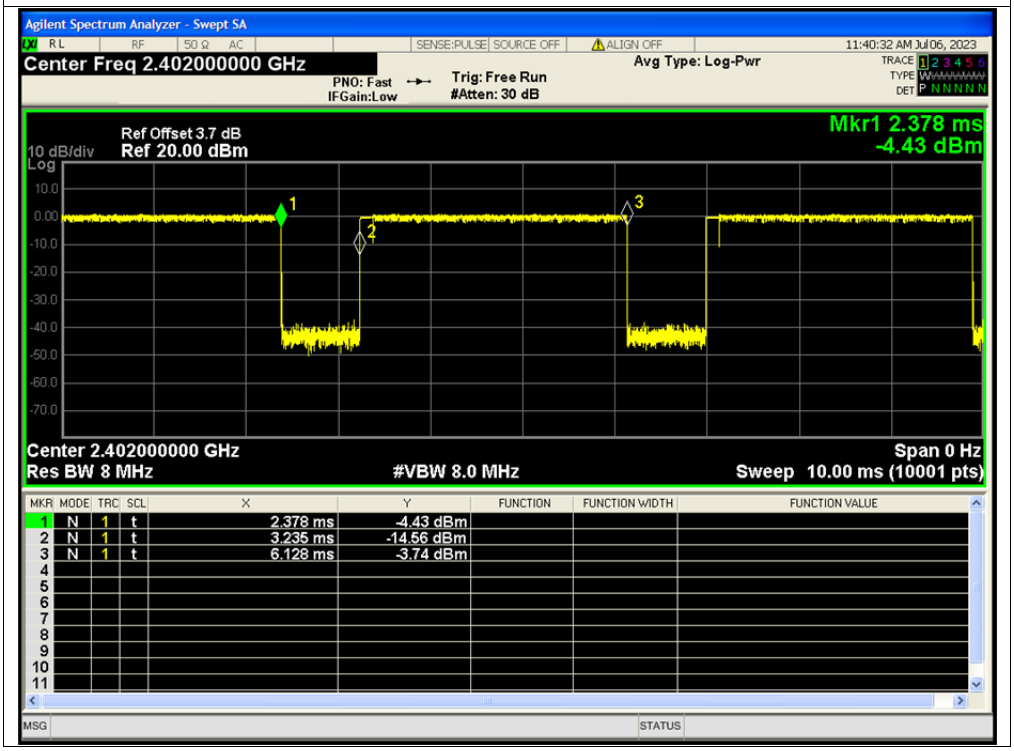
Duty Cycle NVNT 1-DH5 2441MHz Ant1



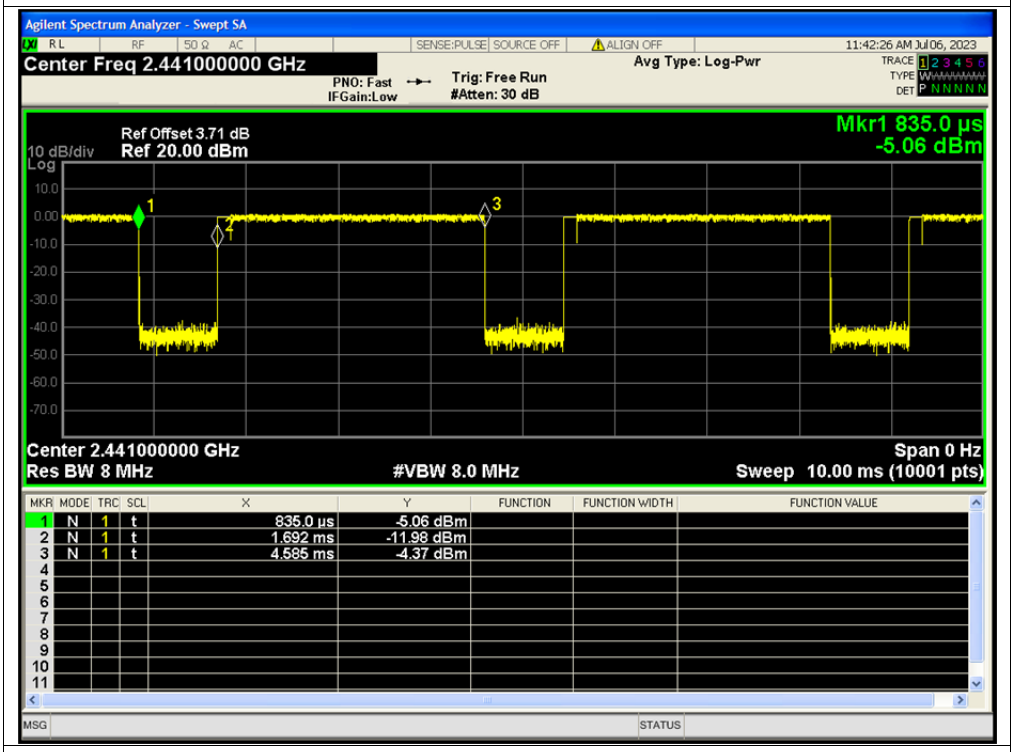
Duty Cycle NVNT 1-DH5 2480MHz Ant1



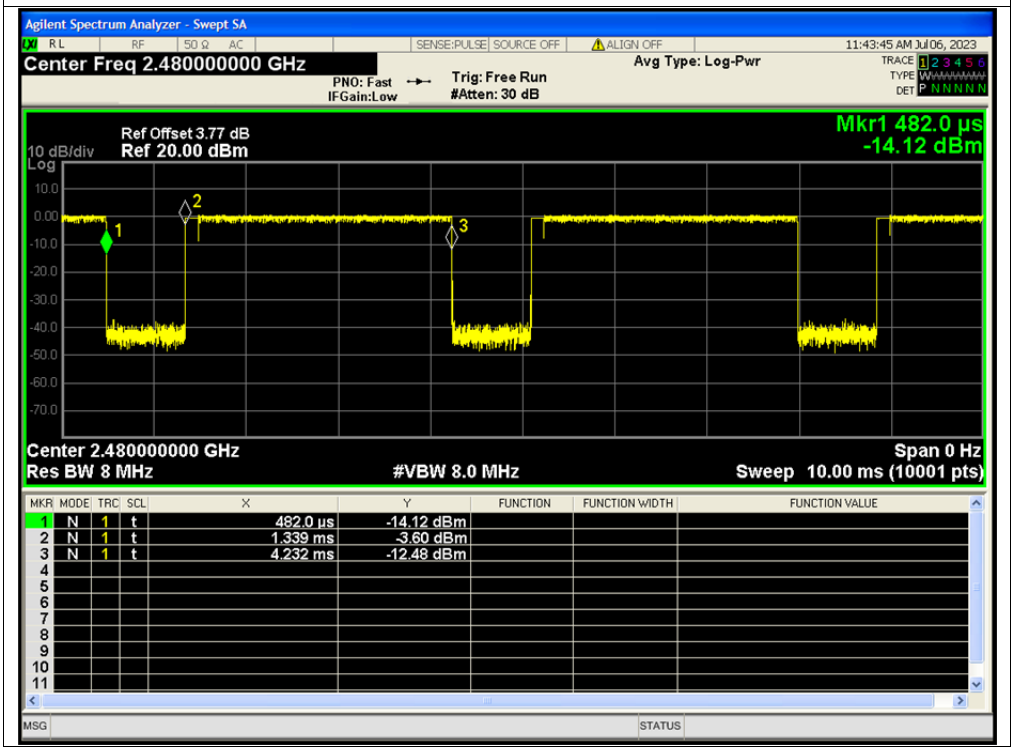
Duty Cycle NVNT 2-DH5 2402MHz Ant1



Duty Cycle NVNT 2-DH5 2441MHz Ant1



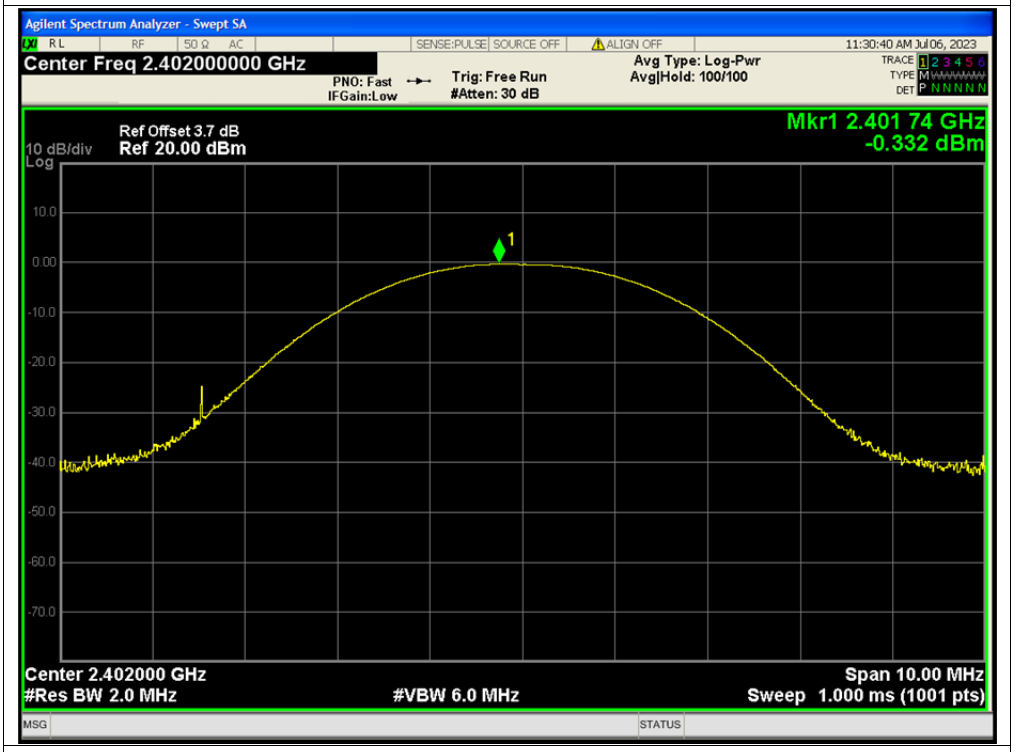
Duty Cycle NVNT 2-DH5 2480MHz Ant1



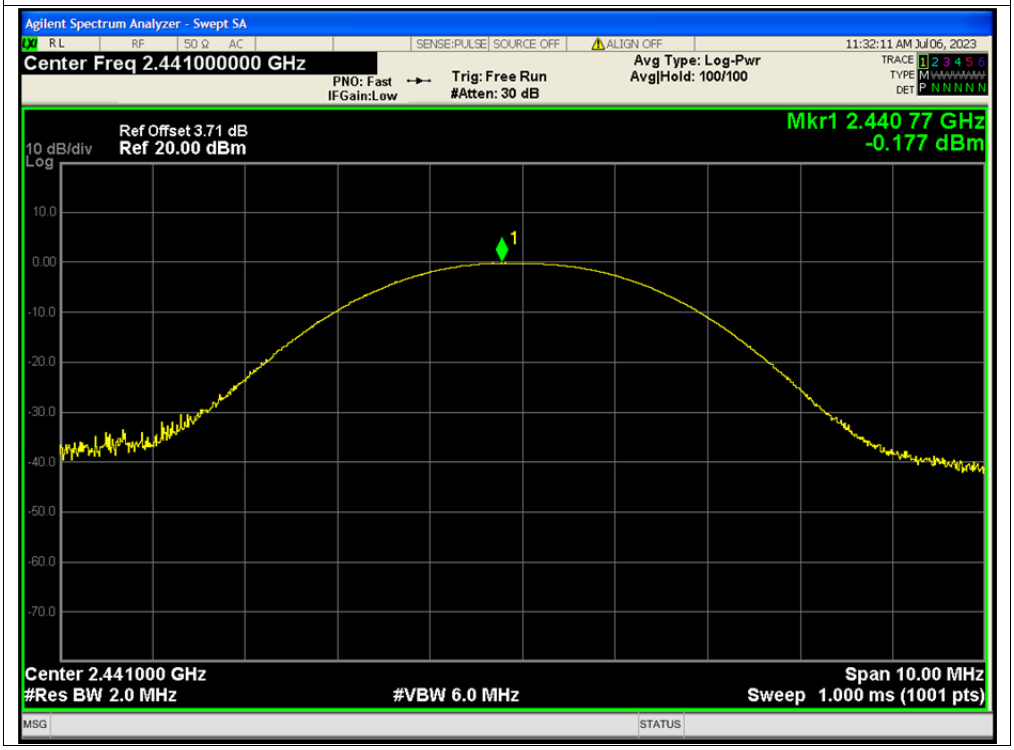
A.3. Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (mW)	Limit Conducted (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.33	0	-0.33	0.93	30	Pass
NVNT	1-DH5	2441	Ant1	-0.18	0	-0.18	0.96	30	Pass
NVNT	1-DH5	2480	Ant1	-0.61	0	-0.61	0.87	30	Pass
NVNT	2-DH5	2402	Ant1	0.56	0	0.56	1.14	30	Pass
NVNT	2-DH5	2441	Ant1	0.68	0	0.68	1.17	30	Pass
NVNT	2-DH5	2480	Ant1	0.4	0	0.4	1.1	30	Pass

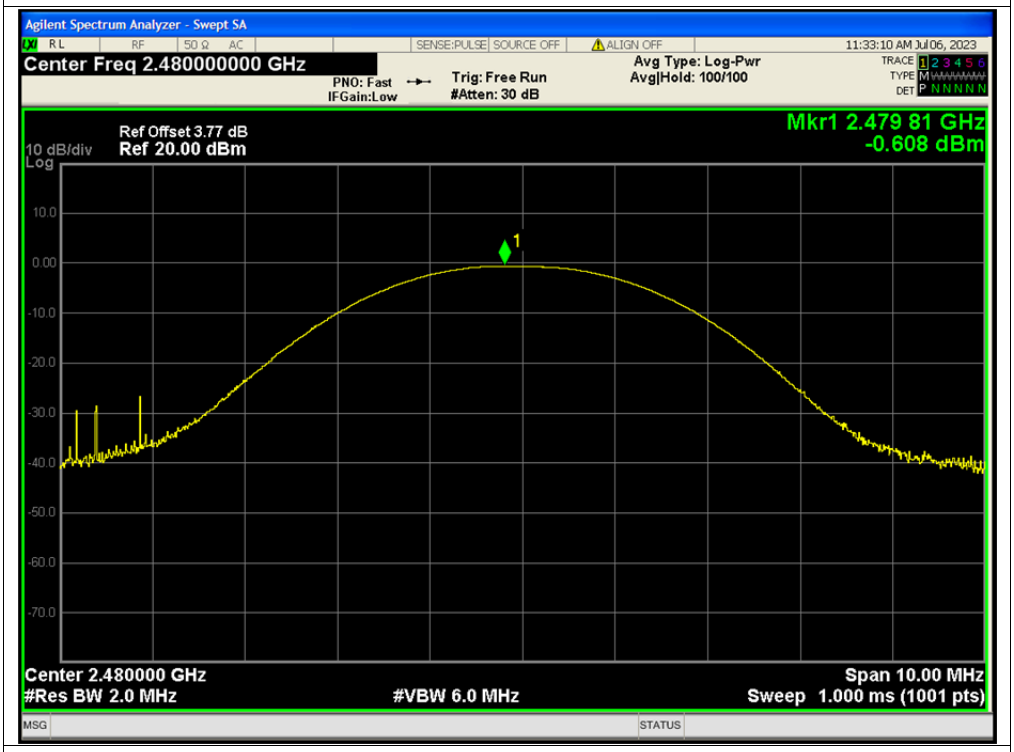
Test Graphs
Peak Power NVNT 1-DH5 2402MHz Ant1



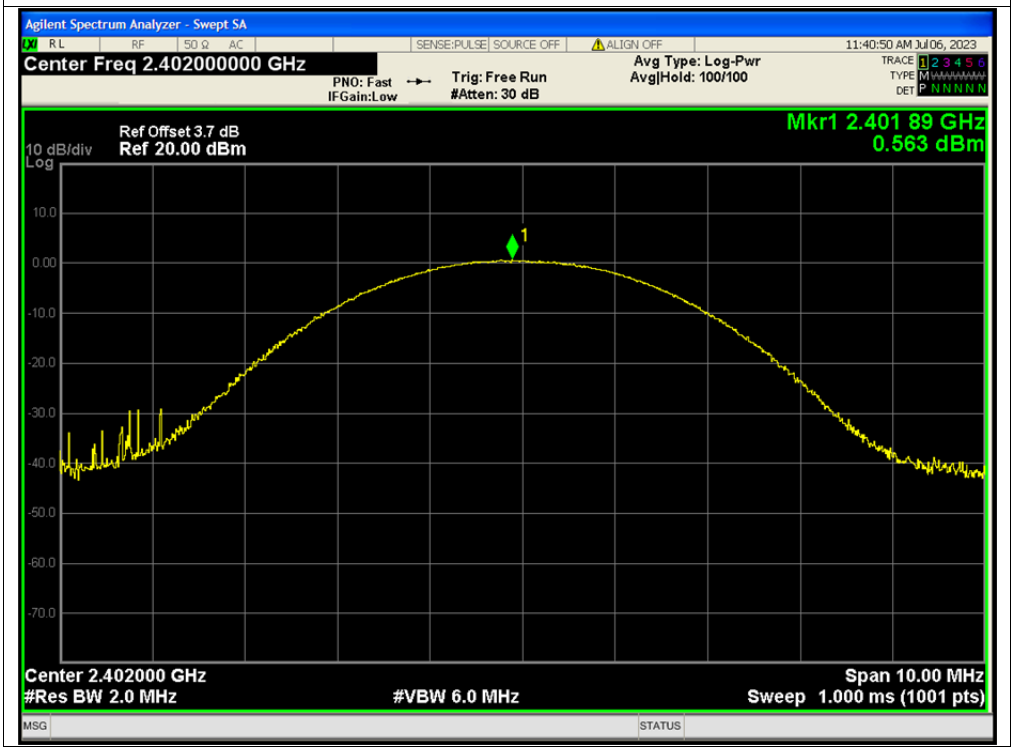
Peak Power NVNT 1-DH5 2441MHz Ant1



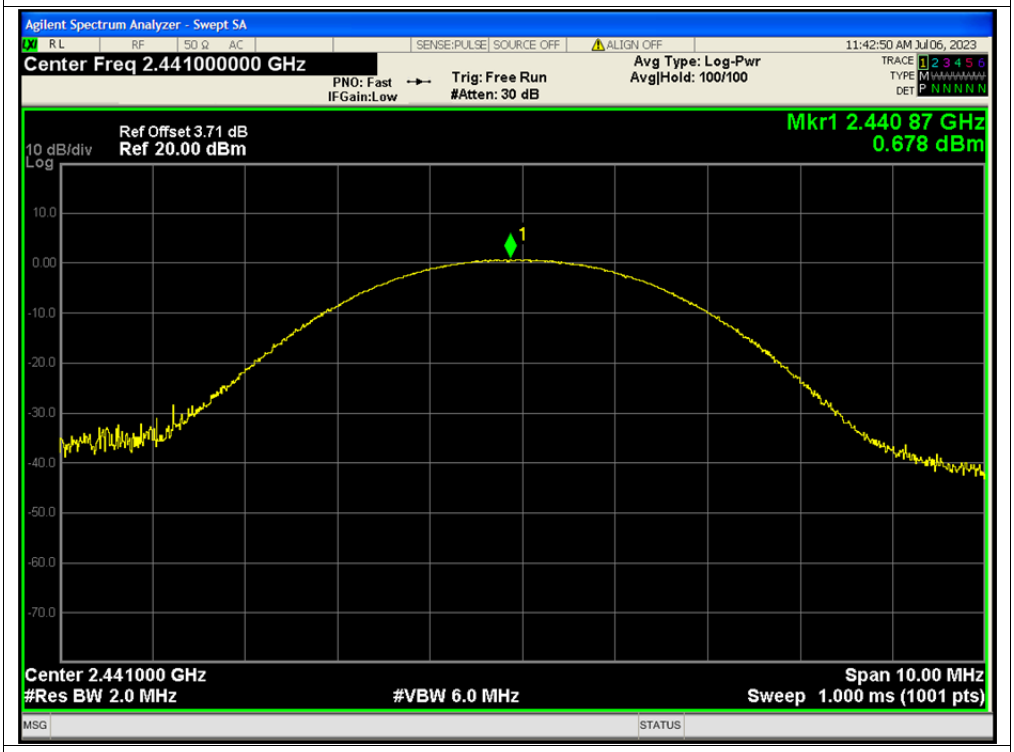
Peak Power NVNT 1-DH5 2480MHz Ant1



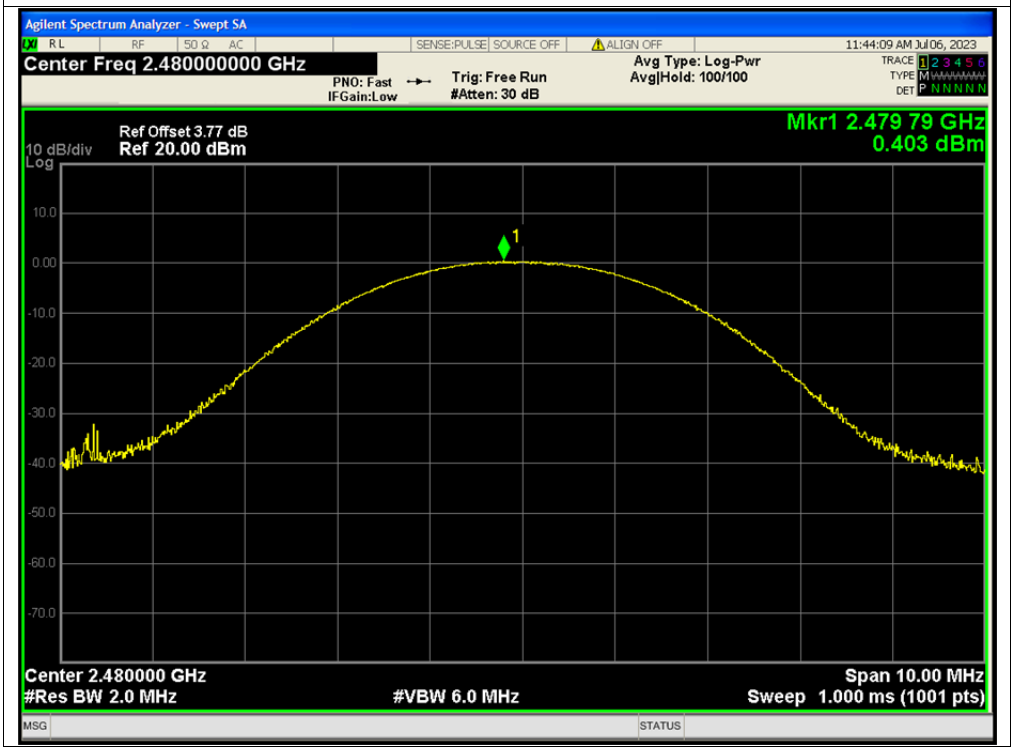
Peak Power NVNT 2-DH5 2402MHz Ant1



Peak Power NVNT 2-DH5 2441MHz Ant1



Peak Power NVNT 2-DH5 2480MHz Ant1

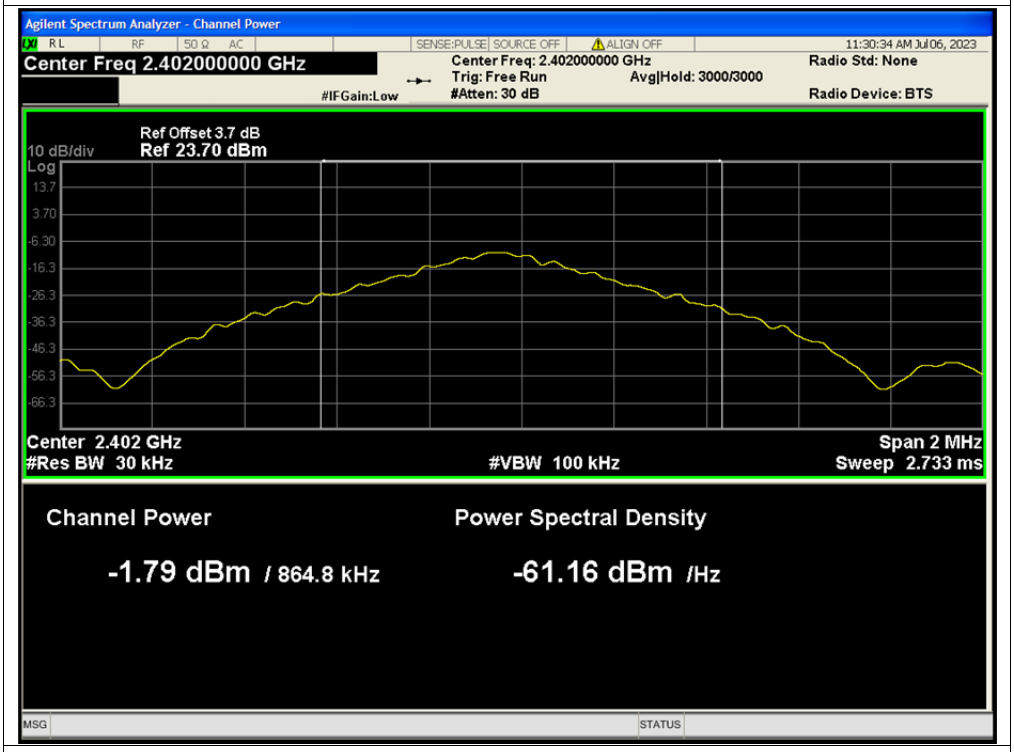


A.4. Maximum Average Conducted Output Power and E.I.R.P.

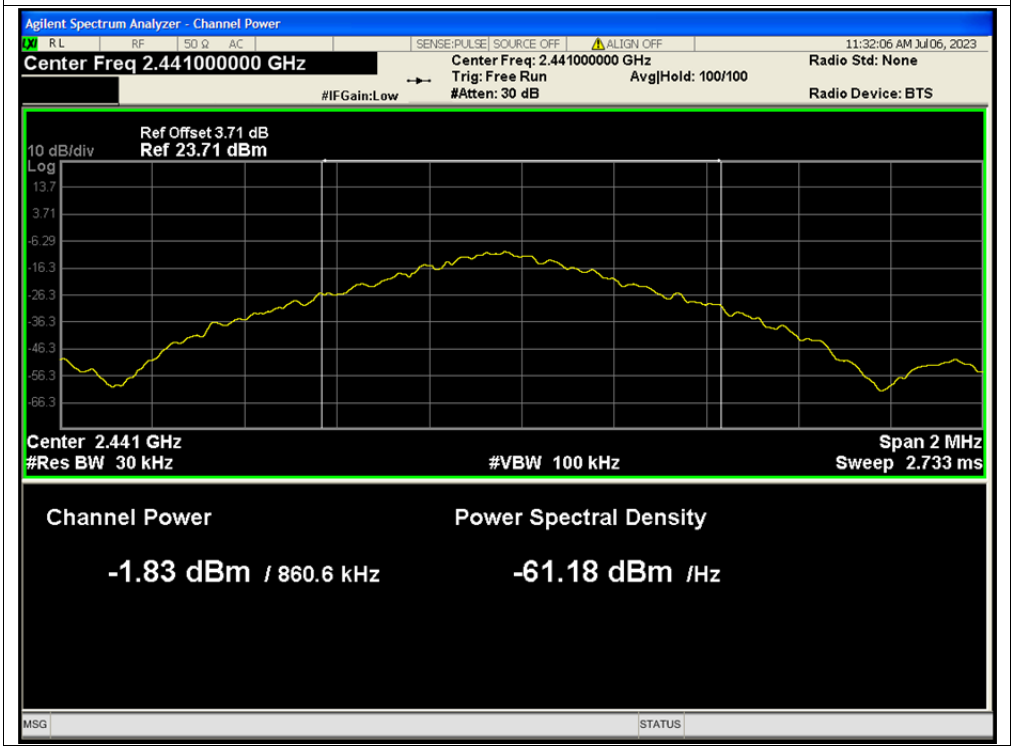
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (mW)	Limit Conducted (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-1.79	1.14	-0.65	0.86	30	Pass
NVNT	1-DH5	2441	Ant1	-1.83	1.13	-0.7	0.85	30	Pass
NVNT	1-DH5	2480	Ant1	-1.93	1.14	-0.79	0.83	30	Pass
NVNT	2-DH5	2402	Ant1	-3.28	1.13	-2.15	0.61	30	Pass
NVNT	2-DH5	2441	Ant1	-3.02	1.13	-1.89	0.65	30	Pass
NVNT	2-DH5	2480	Ant1	-3.48	1.13	-2.35	0.58	30	Pass

Condition	Mode	Frequency (MHz)	Antenna	Total Conducted Power (dBm)	Gain (dBi)	eirp (dBm)	eirp (mW)	Limit Conducted (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.65	3.12	2.47	1.77	36	Pass
NVNT	1-DH5	2441	Ant1	-0.7	3.12	2.42	1.75	36	Pass
NVNT	1-DH5	2480	Ant1	-0.79	3.12	2.33	1.71	36	Pass
NVNT	2-DH5	2402	Ant1	-2.15	3.12	0.97	1.25	36	Pass
NVNT	2-DH5	2441	Ant1	-1.89	3.12	1.23	1.33	36	Pass
NVNT	2-DH5	2480	Ant1	-2.35	3.12	0.77	1.19	36	Pass

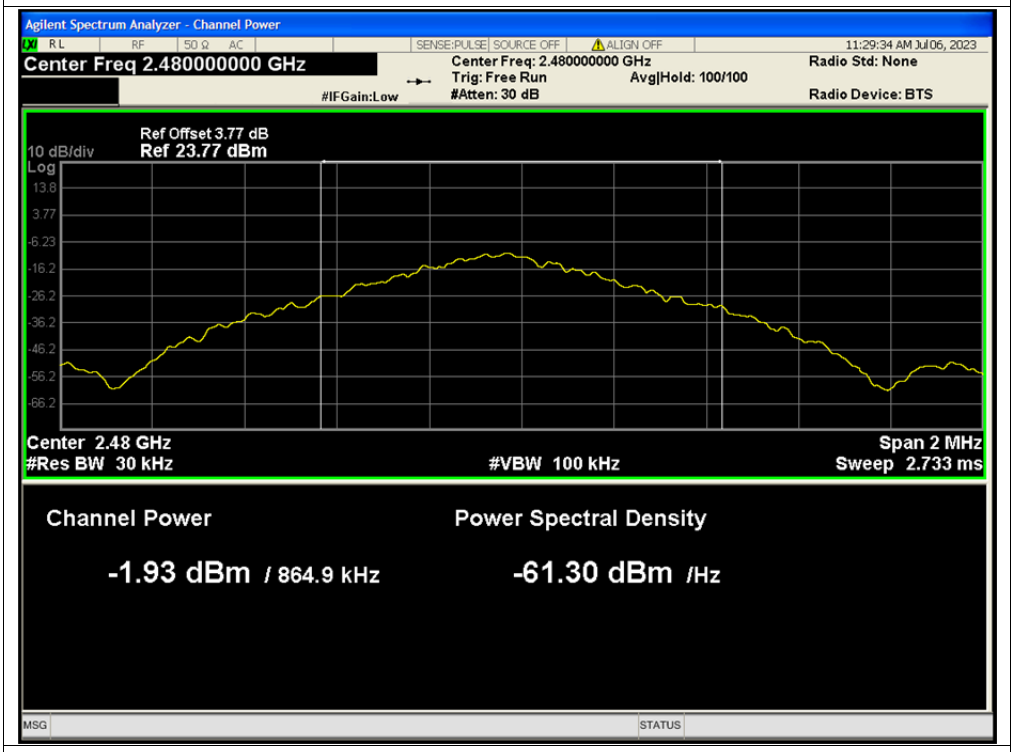
Test Graphs
Average Power NVNT 1-DH5 2402MHz Ant1



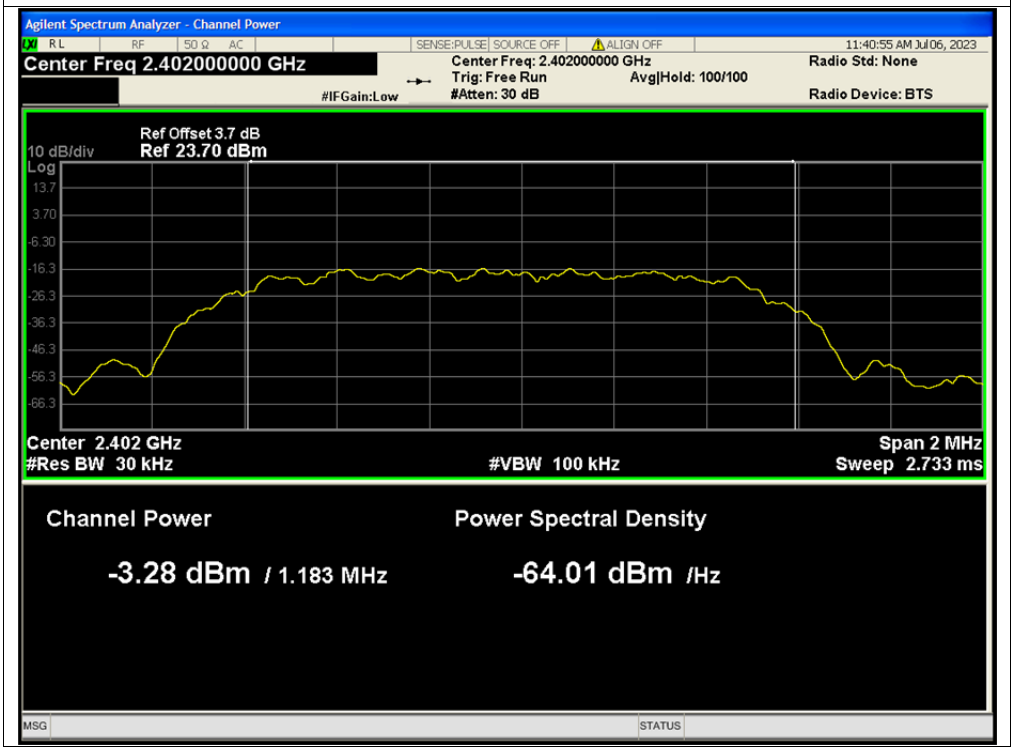
Average Power NVNT 1-DH5 2441MHz Ant1



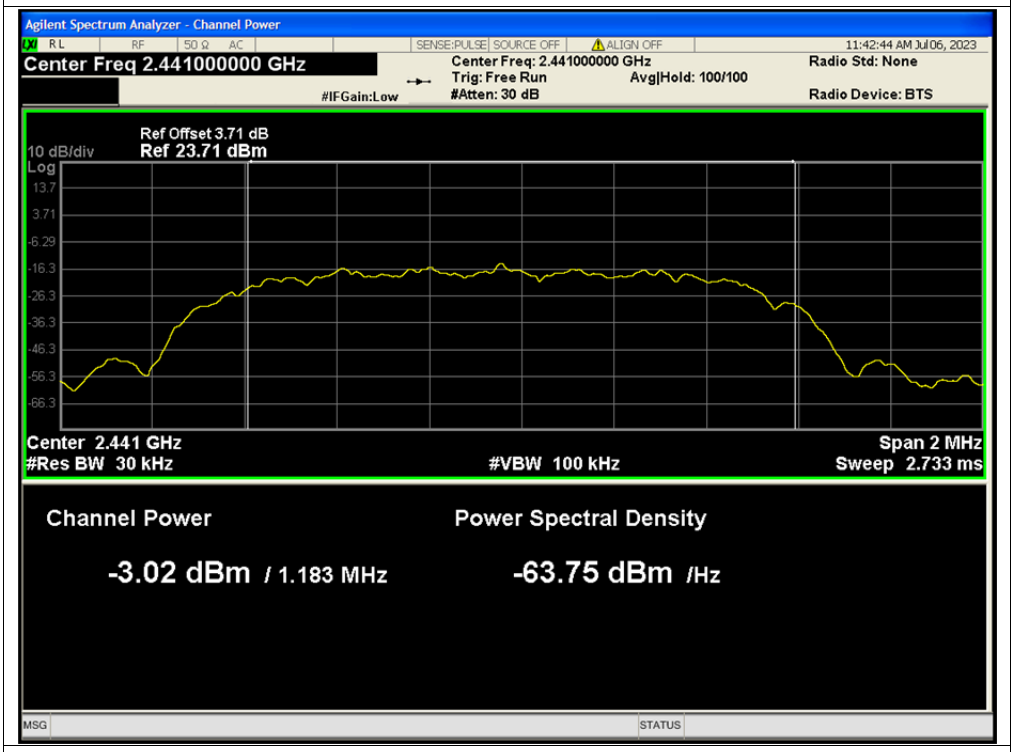
Average Power NVNT 1-DH5 2480MHz Ant1



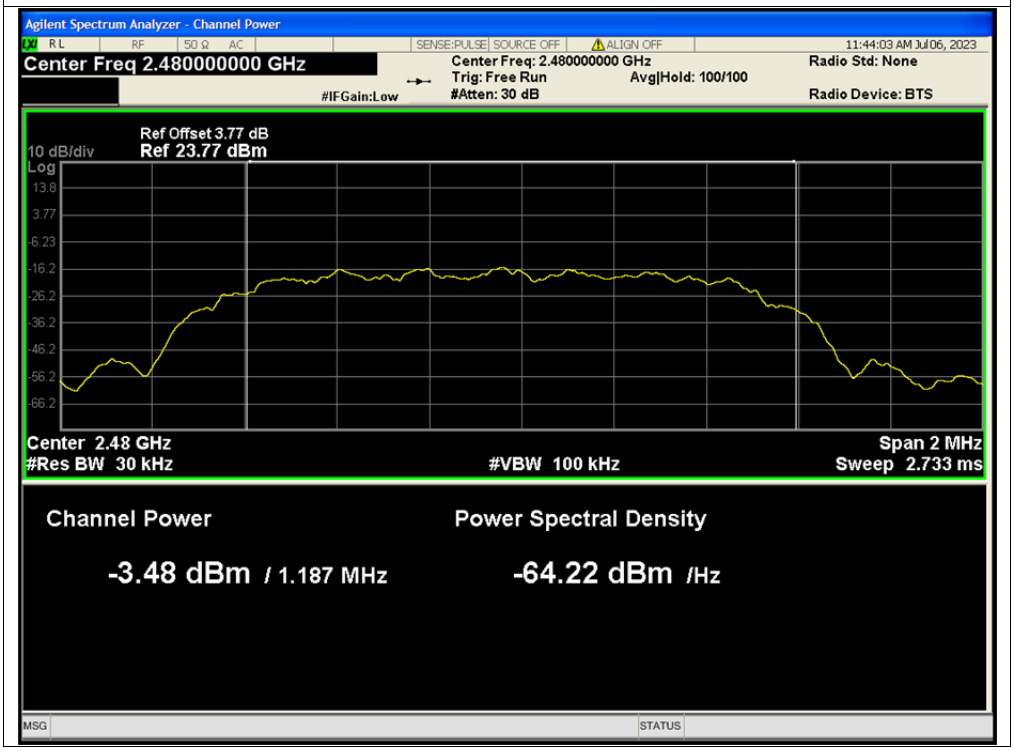
Average Power NVNT 2-DH5 2402MHz Ant1



Average Power NVNT 2-DH5 2441MHz Ant1



Average Power NVNT 2-DH5 2480MHz Ant1

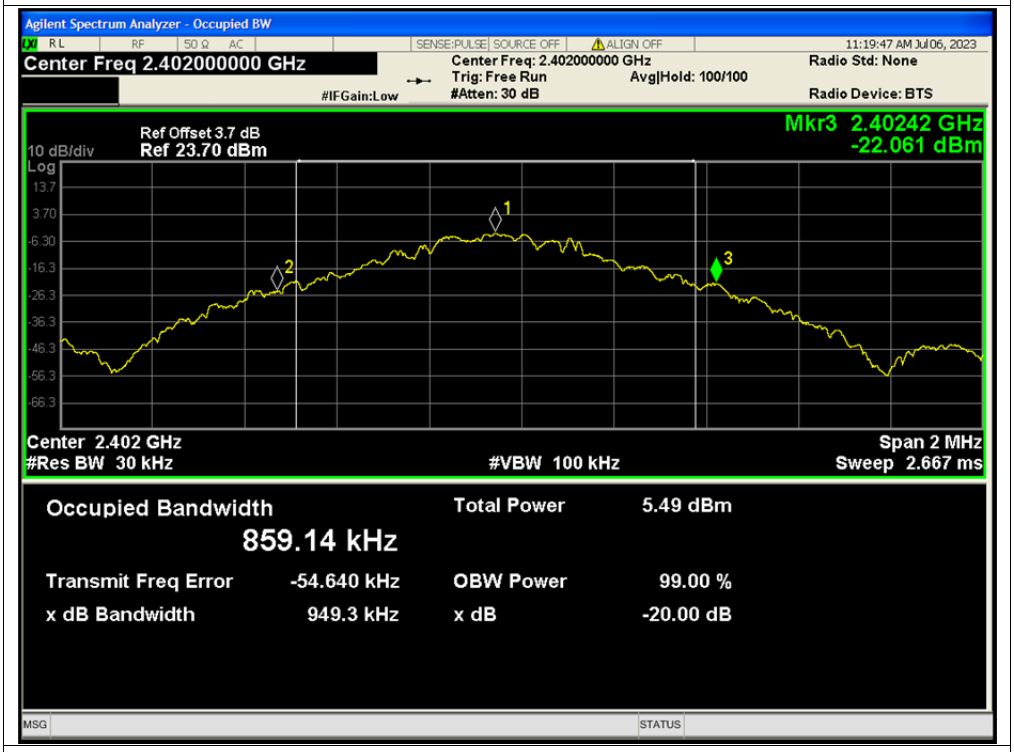


A.5. 20dB Bandwidth

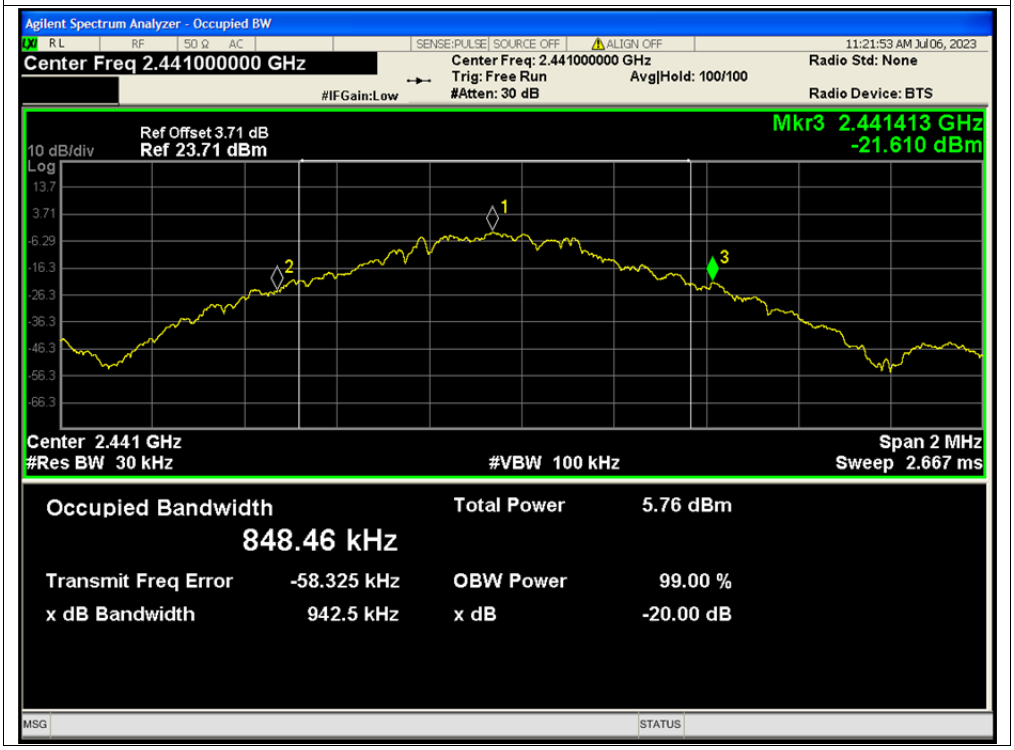
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)
NVNT	1-DH5	2402	Ant1	0.949
NVNT	1-DH5	2441	Ant1	0.943
NVNT	1-DH5	2480	Ant1	0.95
NVNT	2-DH5	2402	Ant1	1.27
NVNT	2-DH5	2441	Ant1	1.28
NVNT	2-DH5	2480	Ant1	1.293

Test Graphs

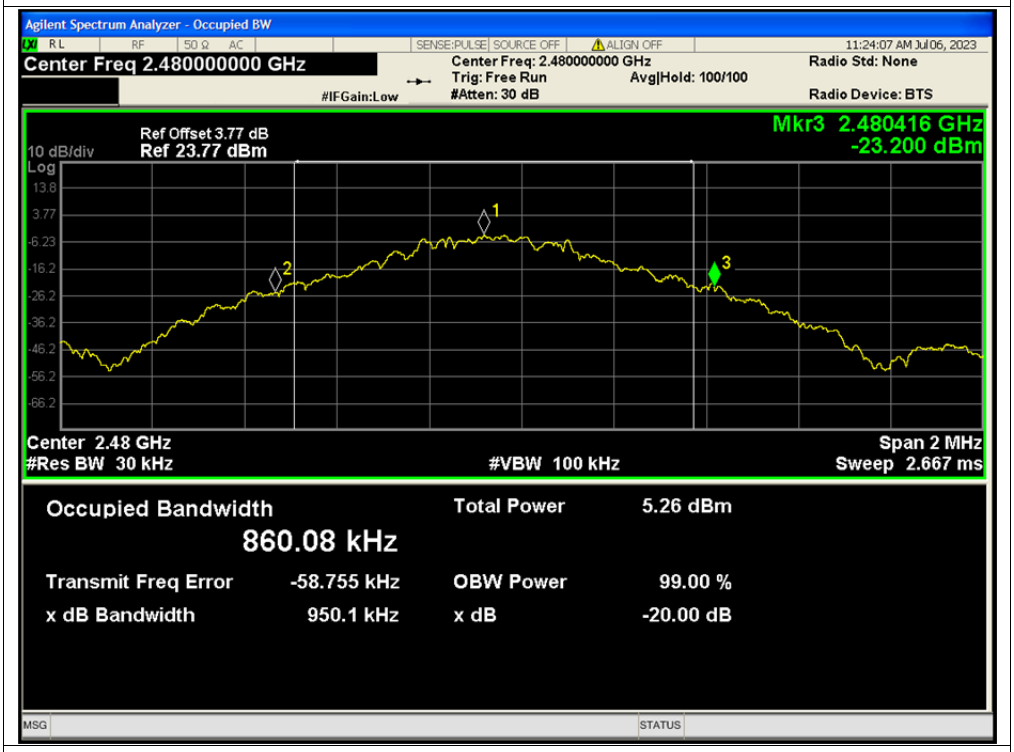
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



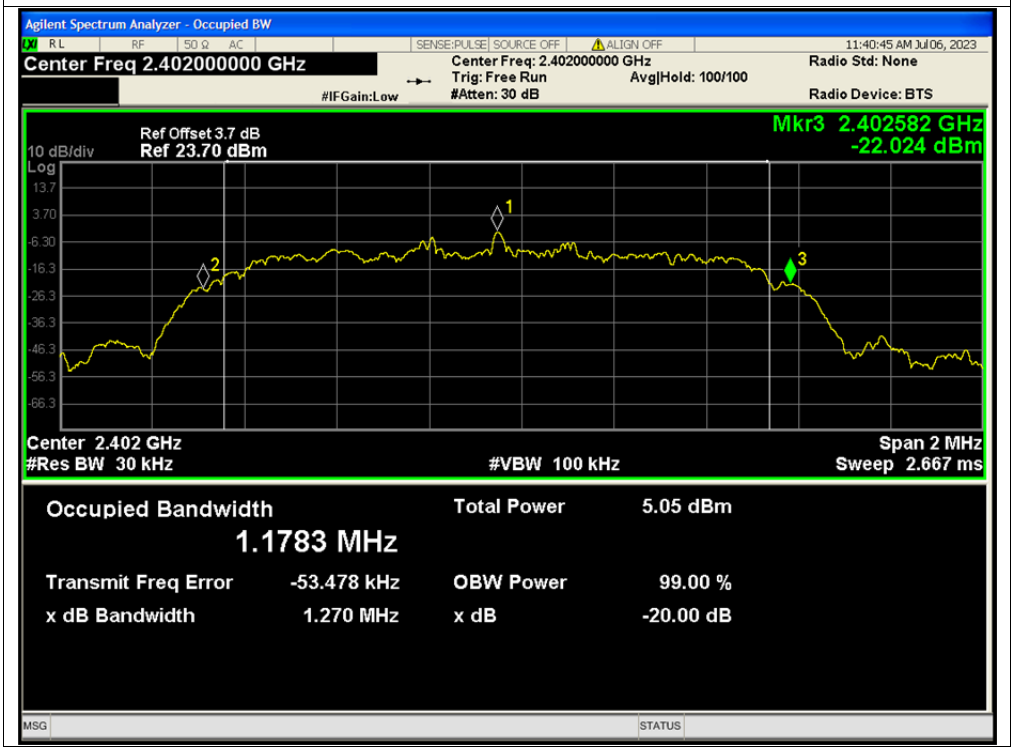
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



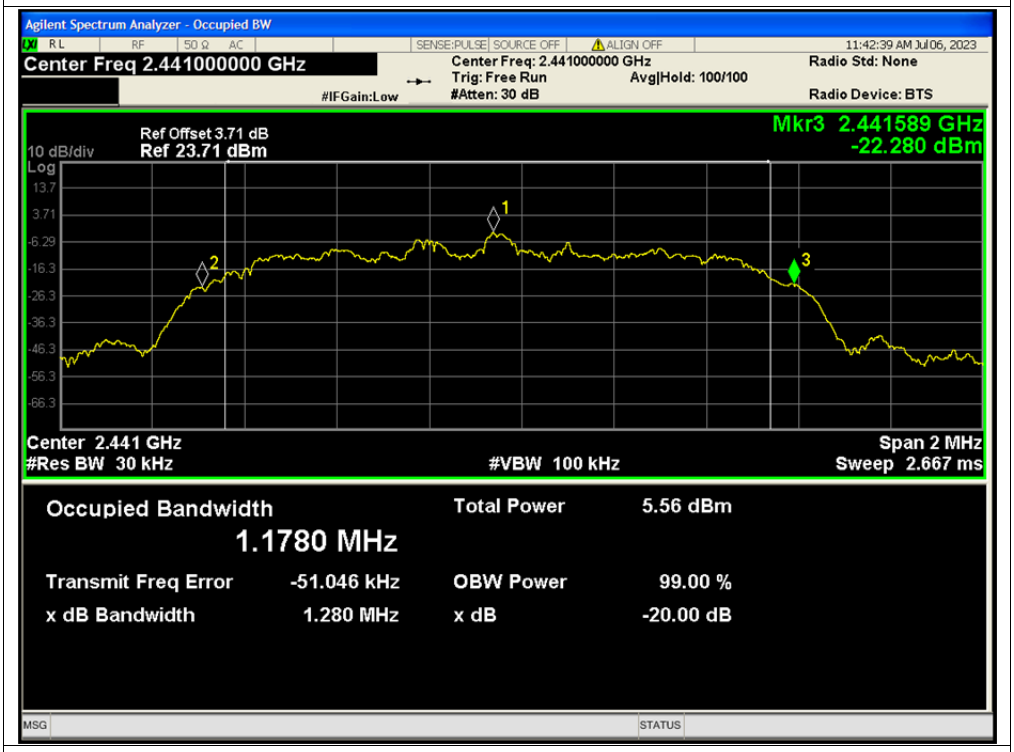
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



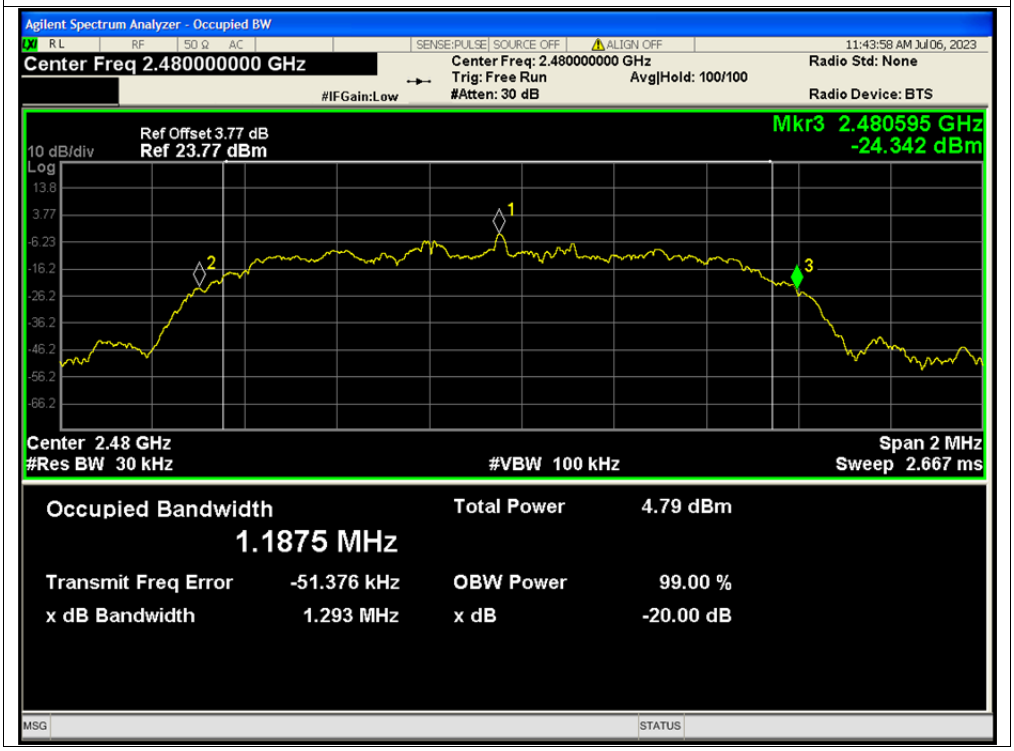
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



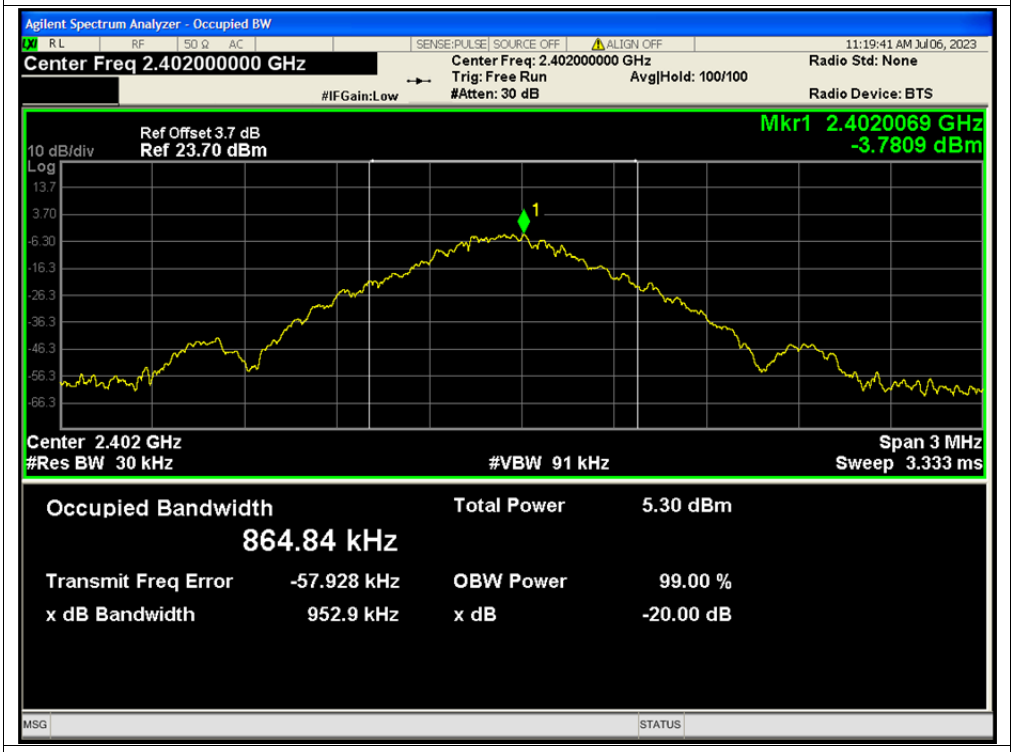
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



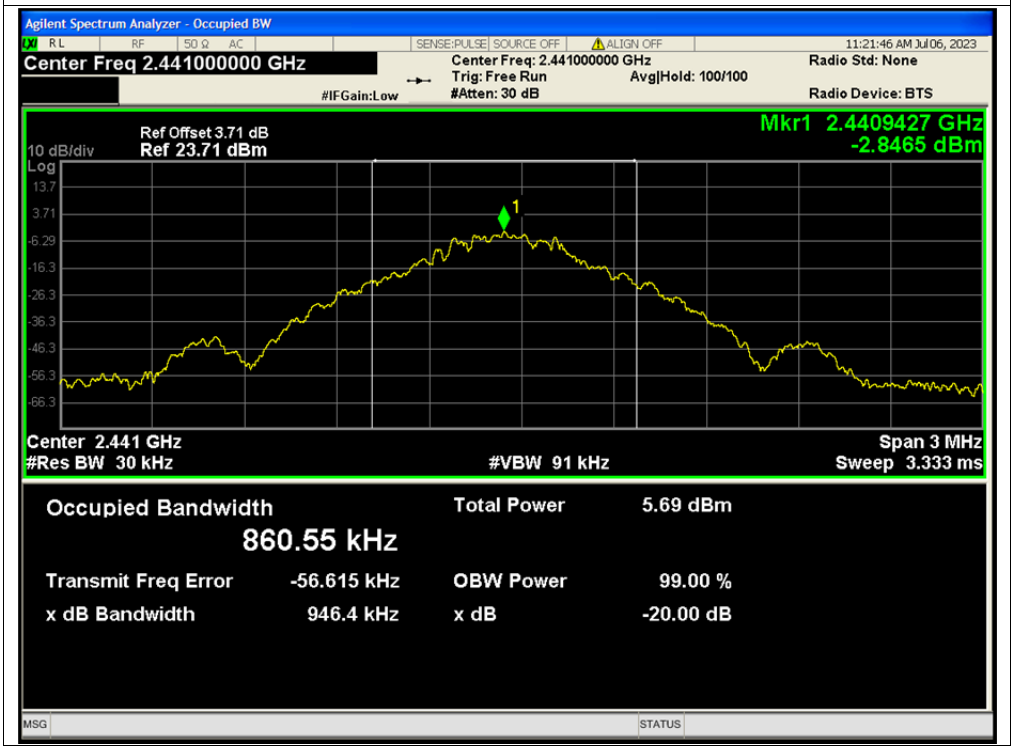
A.6. 99% Occupied Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% Occupied Bandwidth (MHz)
NVNT	1-DH5	2402	Ant1	0.8648
NVNT	1-DH5	2441	Ant1	0.8606
NVNT	1-DH5	2480	Ant1	0.8649
NVNT	2-DH5	2402	Ant1	1.1826
NVNT	2-DH5	2441	Ant1	1.1834
NVNT	2-DH5	2480	Ant1	1.1867

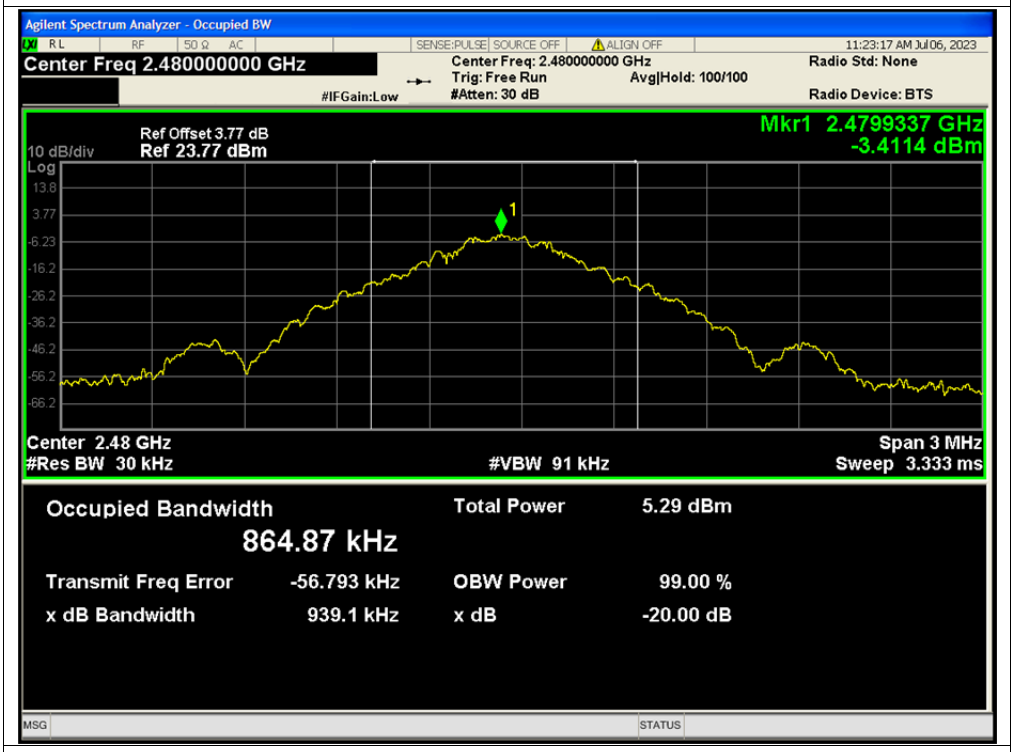
Test Graphs
OBW NVNT 1-DH5 2402MHz Ant1



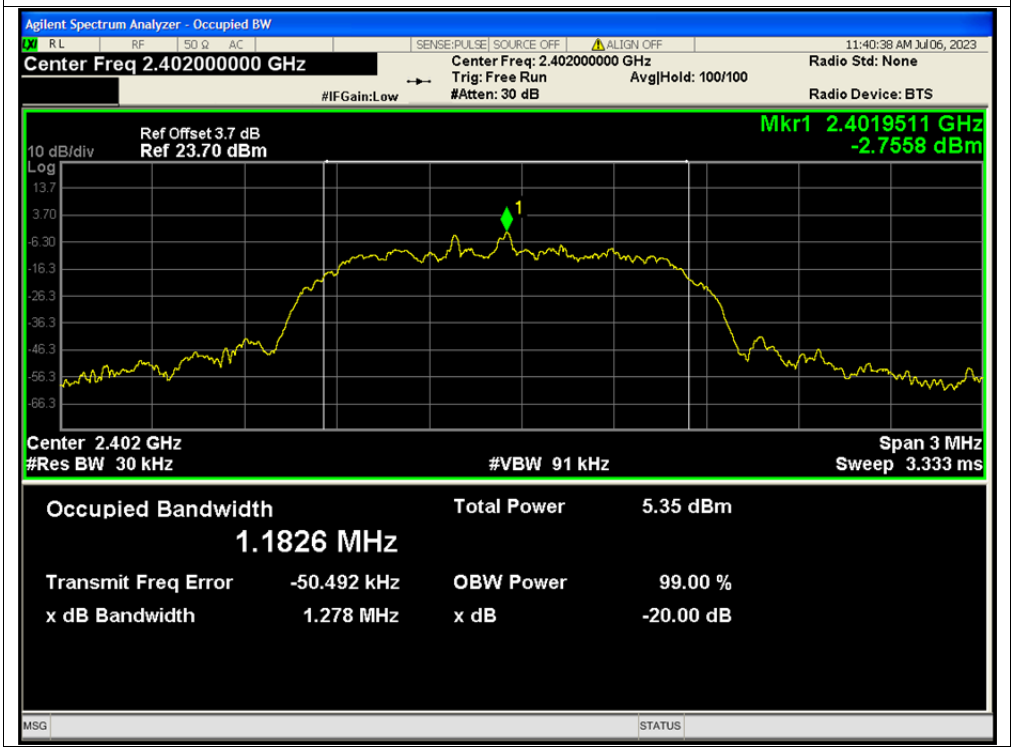
OBW NVNT 1-DH5 2441MHz Ant1



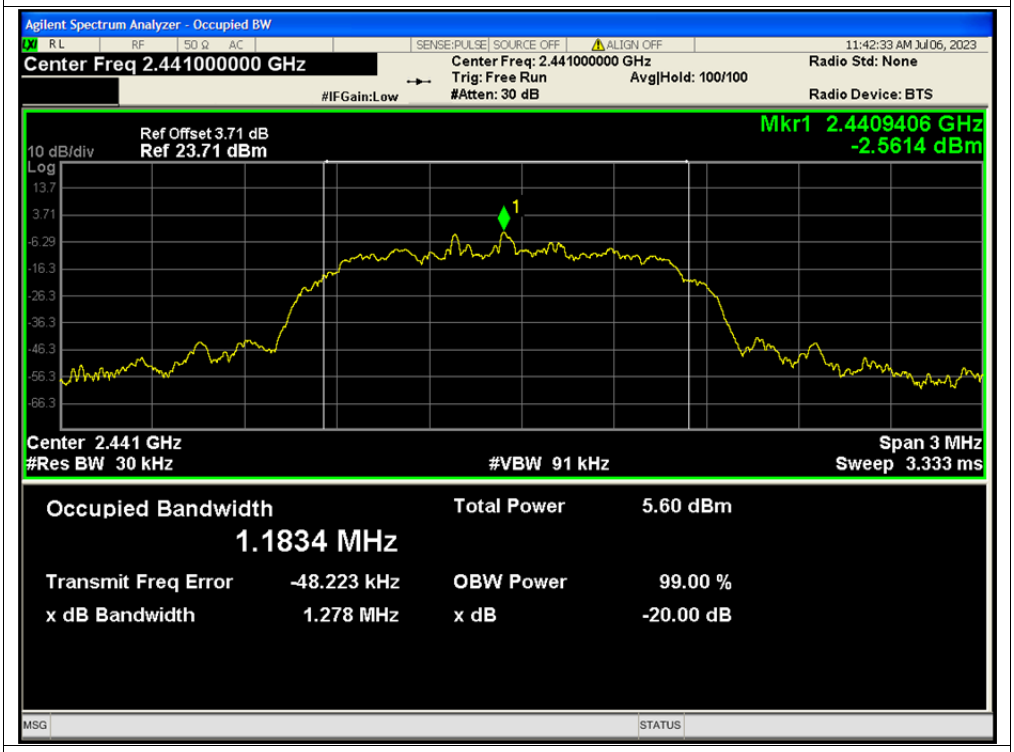
OBW NVNT 1-DH5 2480MHz Ant1



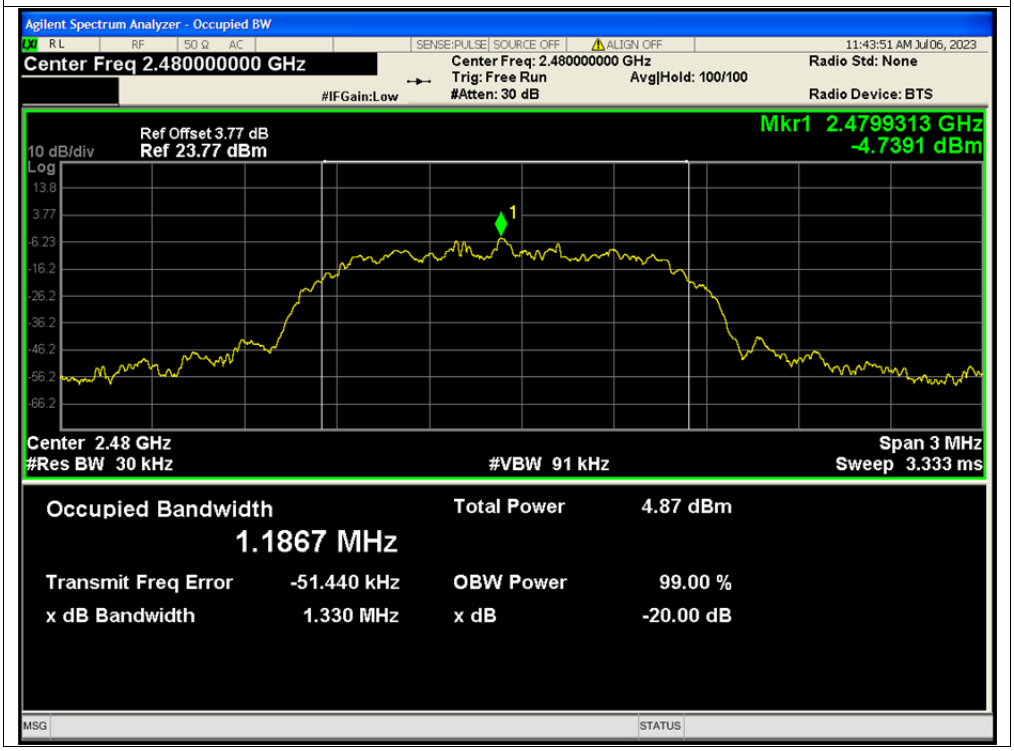
OBW NVNT 2-DH5 2402MHz Ant1



OBW NVNT 2-DH5 2441MHz Ant1



OBW NVNT 2-DH5 2480MHz Ant1

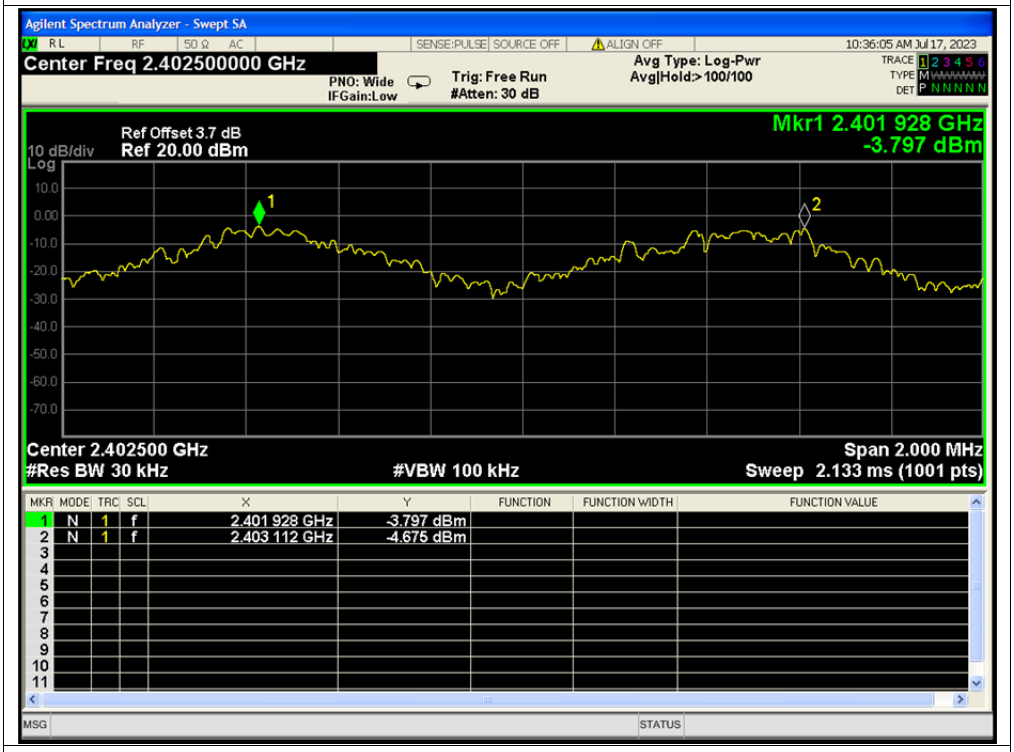


A.7. Carried Frequency Separation

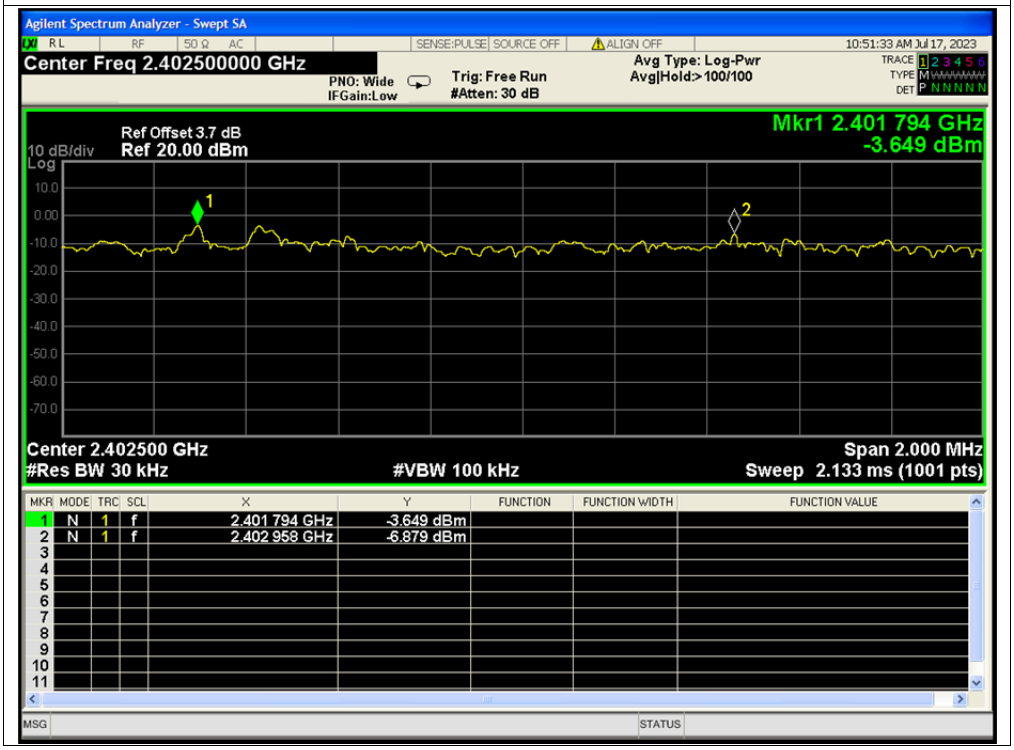
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.928	2403.112	1.184	0.633	Pass
NVNT	2-DH5	Ant1	2401.794	2402.958	1.164	0.847	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



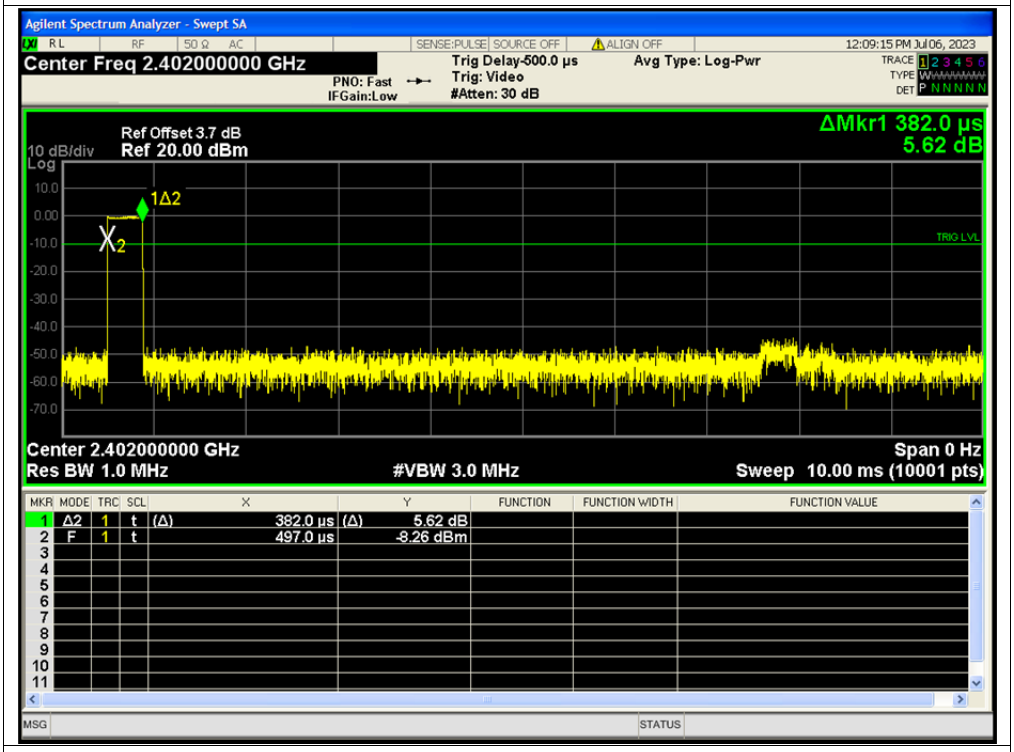
CFS NVNT 2-DH5 2402MHz Ant1



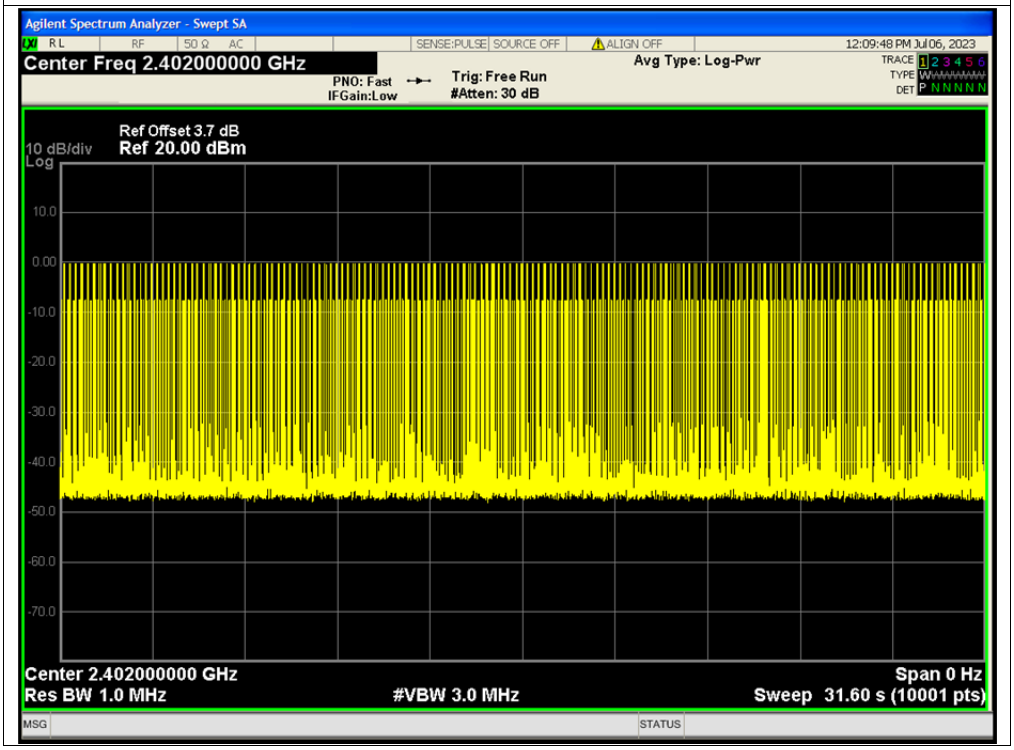
A.8. Time of Occupancy (Dwell time)

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2402	Ant1	0.382	121.476	318	31600	400	Pass
NVNT	1-DH3	2402	Ant1	1.638	262.08	160	31600	400	Pass
NVNT	1-DH5	2402	Ant1	2.886	337.662	117	31600	400	Pass
NVNT	2-DH1	2402	Ant1	0.392	124.656	318	31600	400	Pass
NVNT	2-DH3	2402	Ant1	1.642	274.214	167	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.891	326.683	113	31600	400	Pass

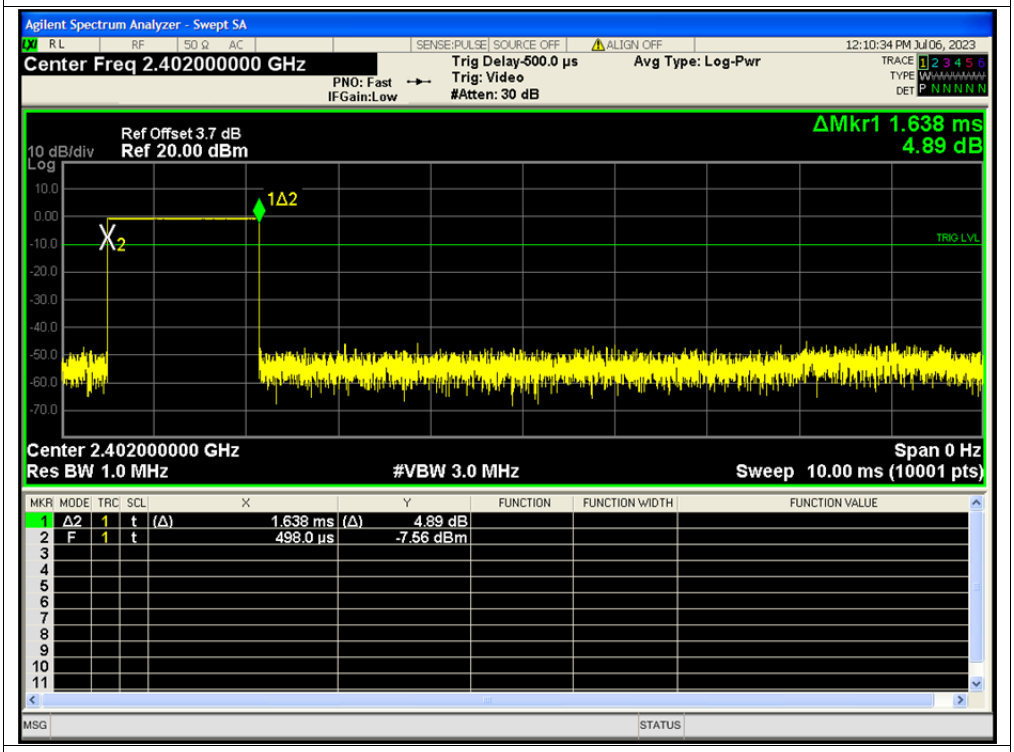
Test Graphs
Dwell NVNT 1-DH1 2402MHz Ant1 One Burst



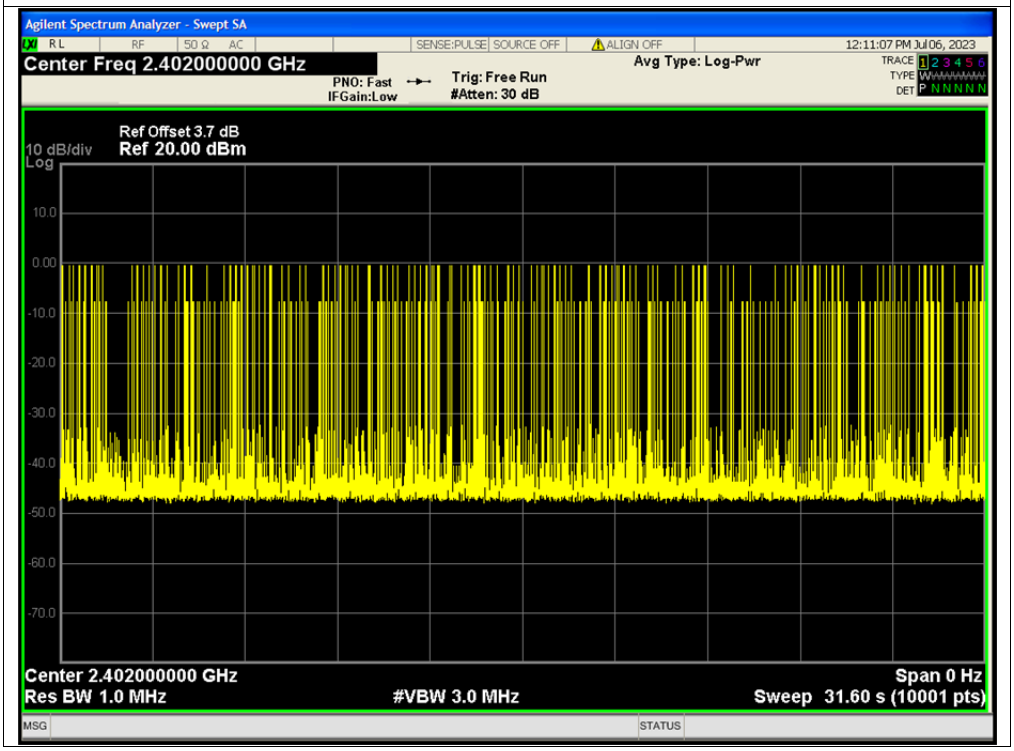
Dwell NVNT 1-DH1 2402MHz Ant1 Accumulated



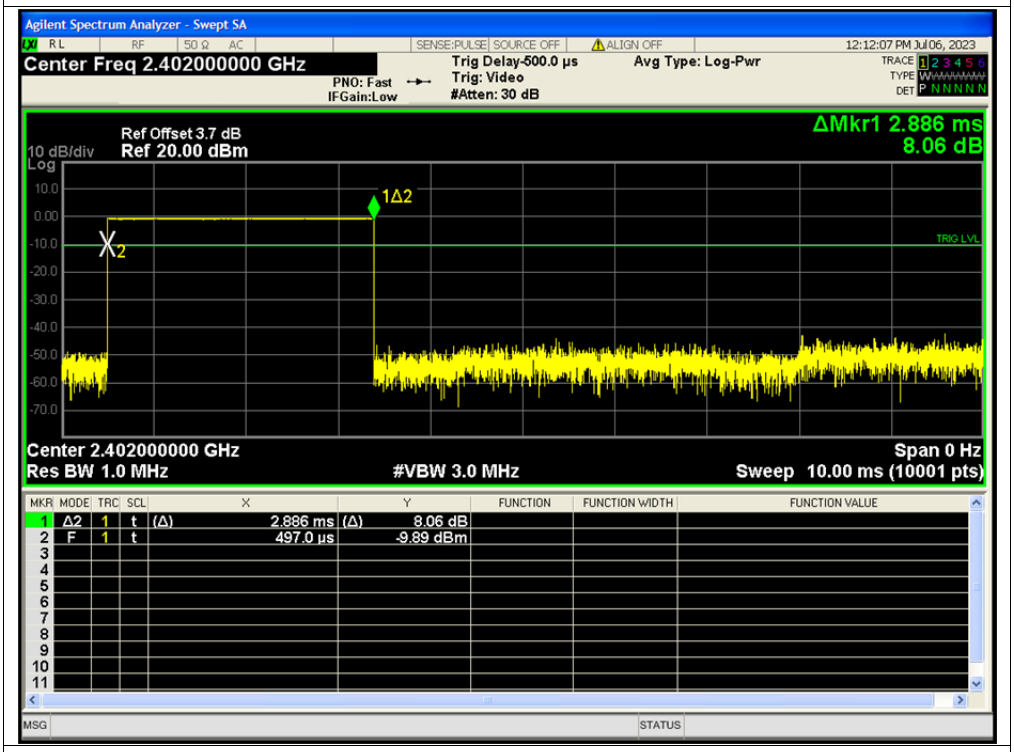
Dwell NVNT 1-DH3 2402MHz Ant1 One Burst



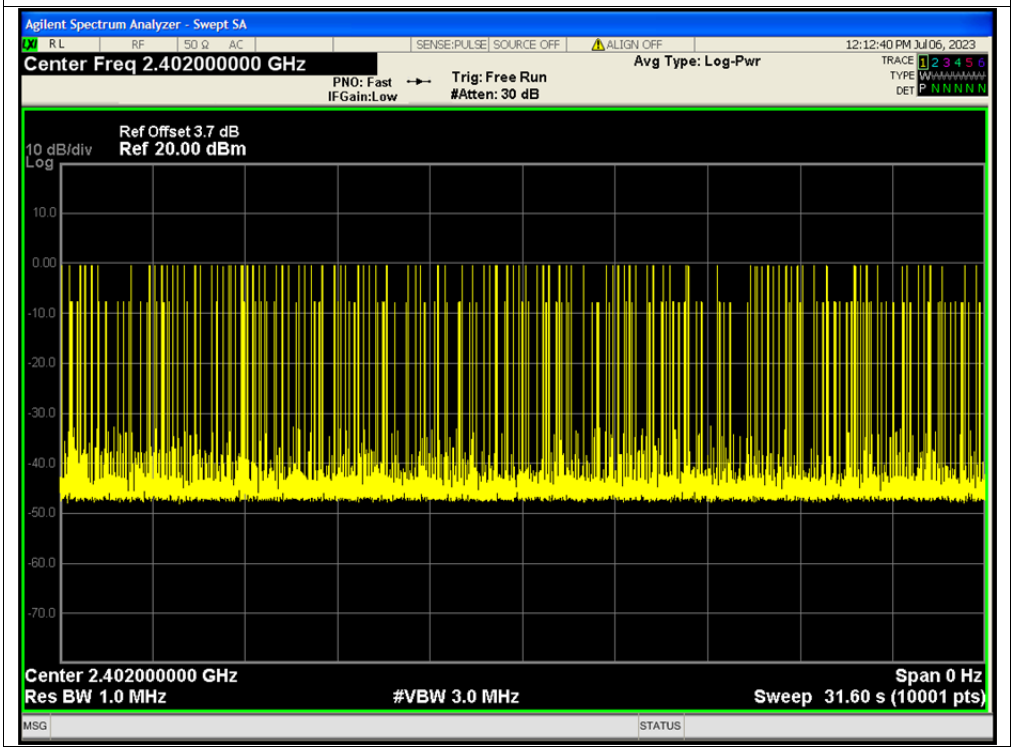
Dwell NVNT 1-DH3 2402MHz Ant1 Accumulated



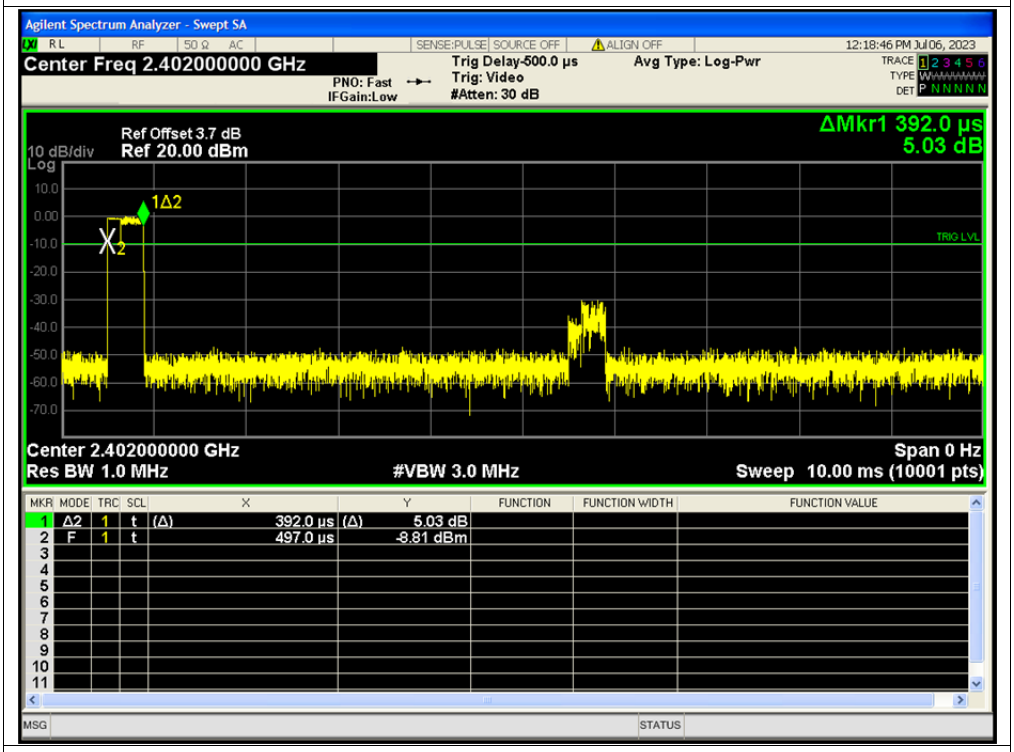
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



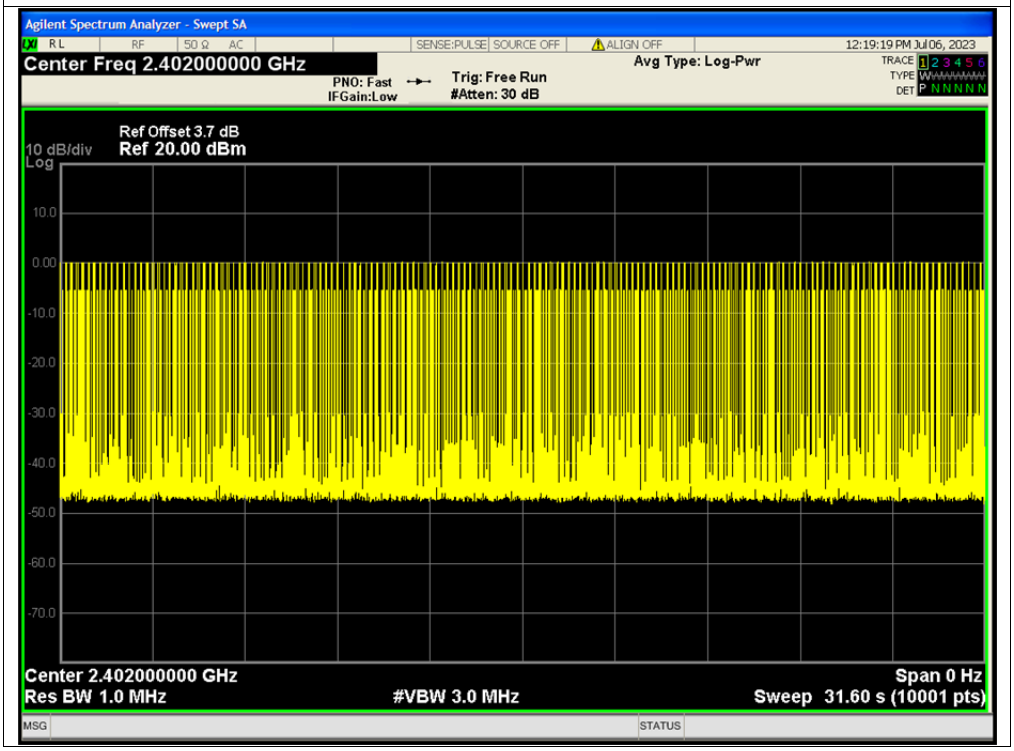
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



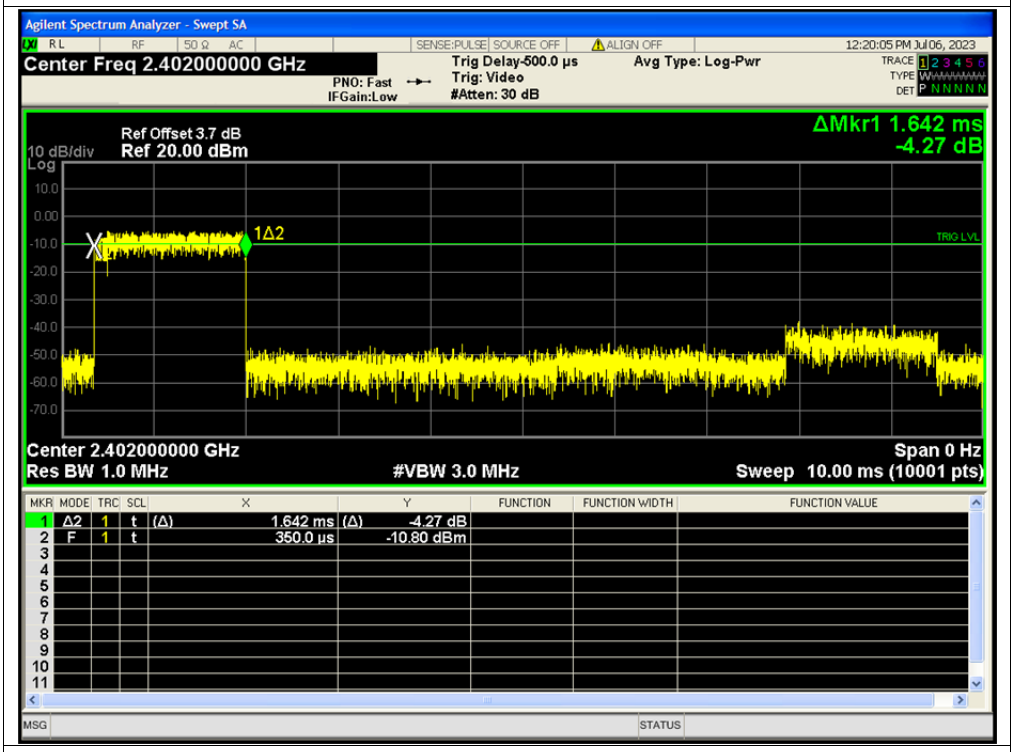
Dwell NVNT 2-DH1 2402MHz Ant1 One Burst



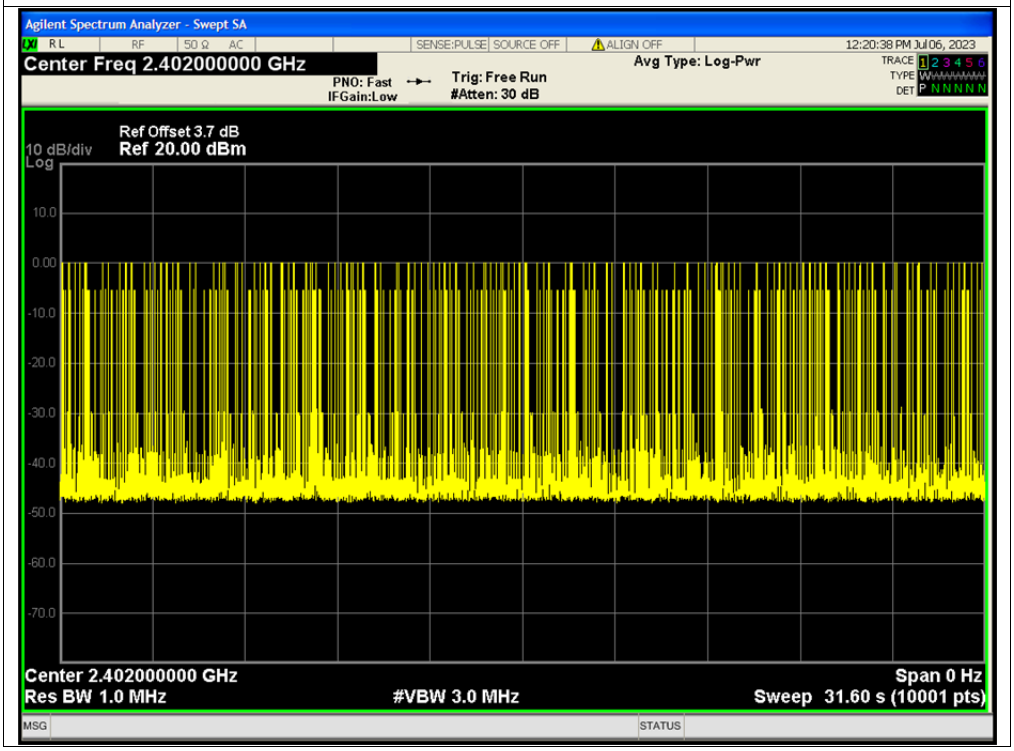
Dwell NVNT 2-DH1 2402MHz Ant1 Accumulated



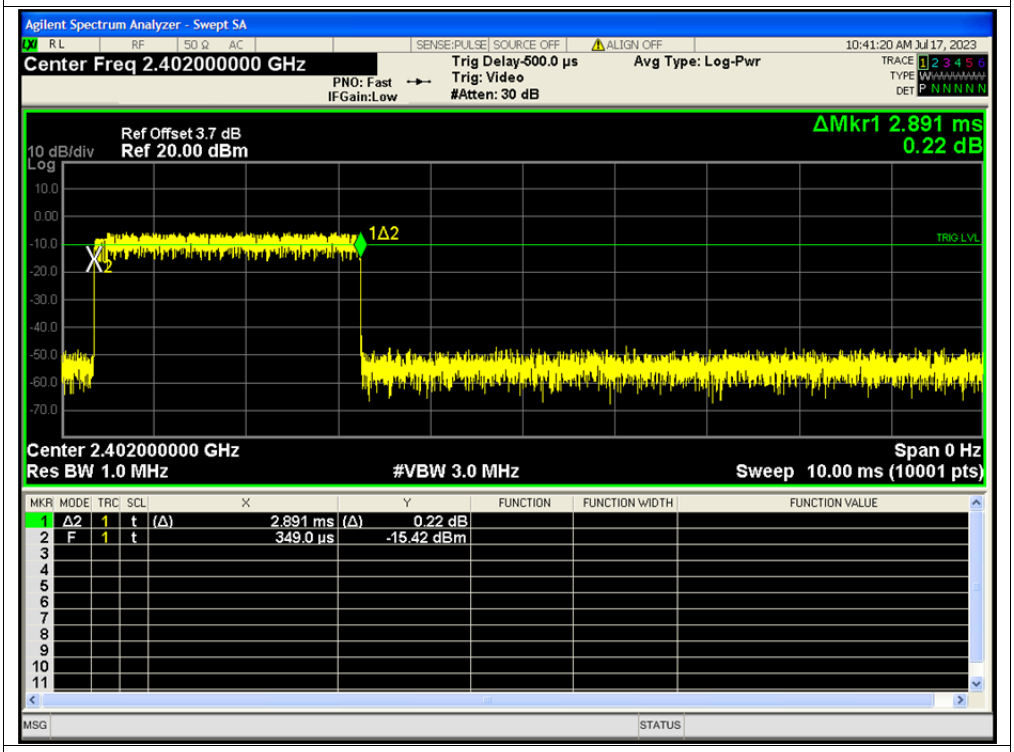
Dwell NVNT 2-DH3 2402MHz Ant1 One Burst



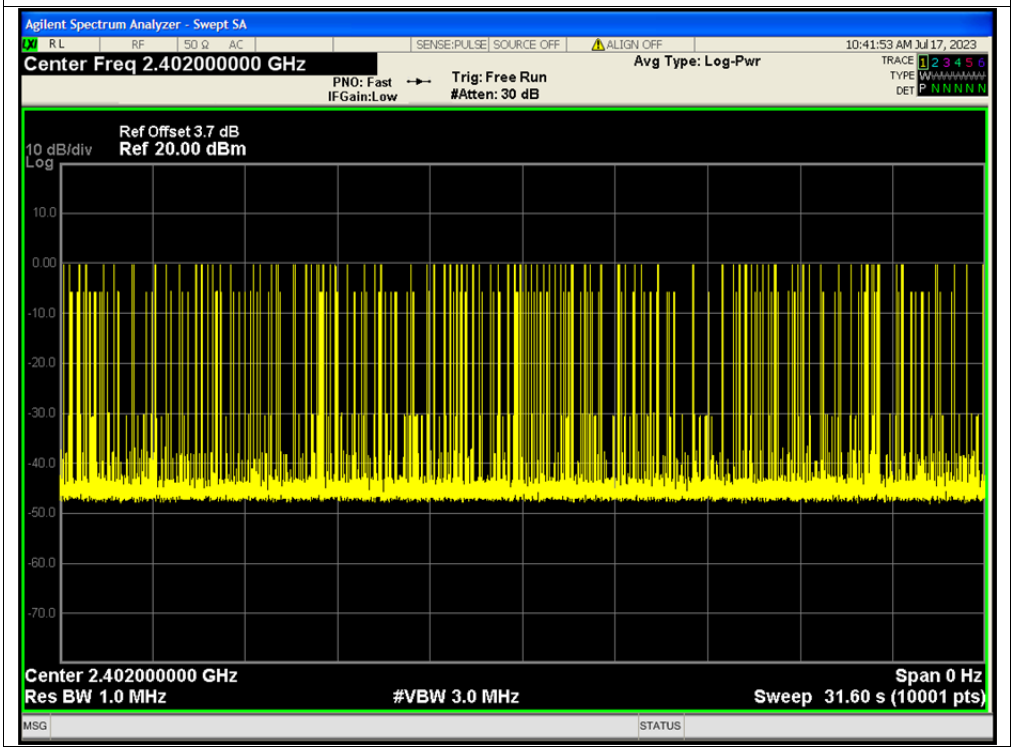
Dwell NVNT 2-DH3 2402MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

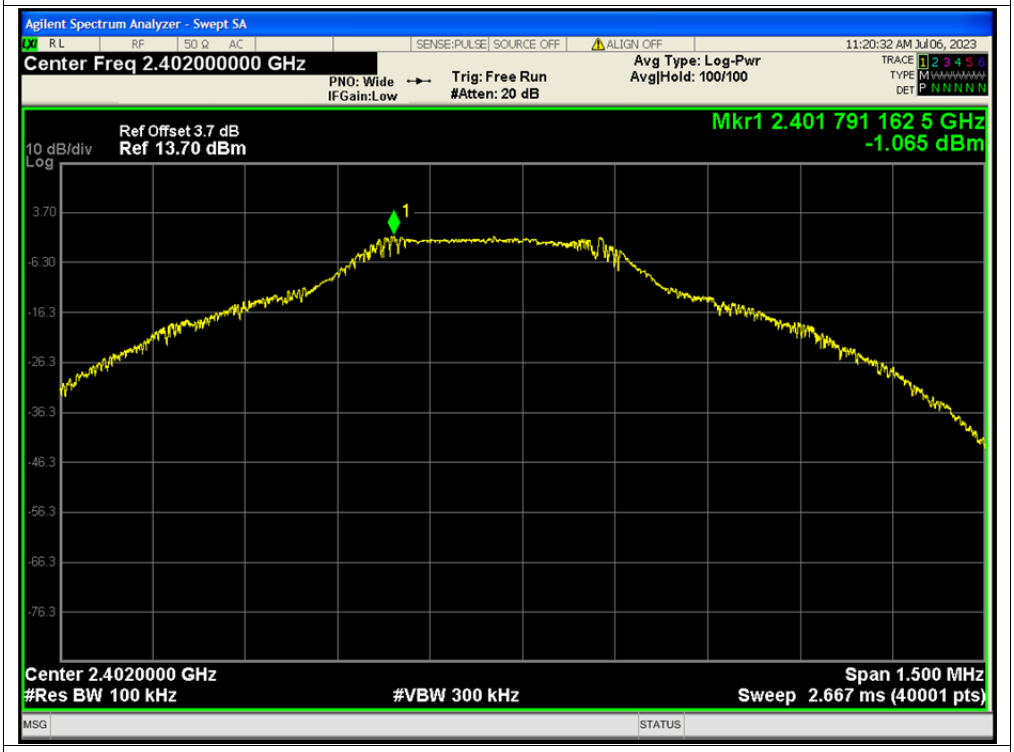


A.9. Conducted Spurious Emissions

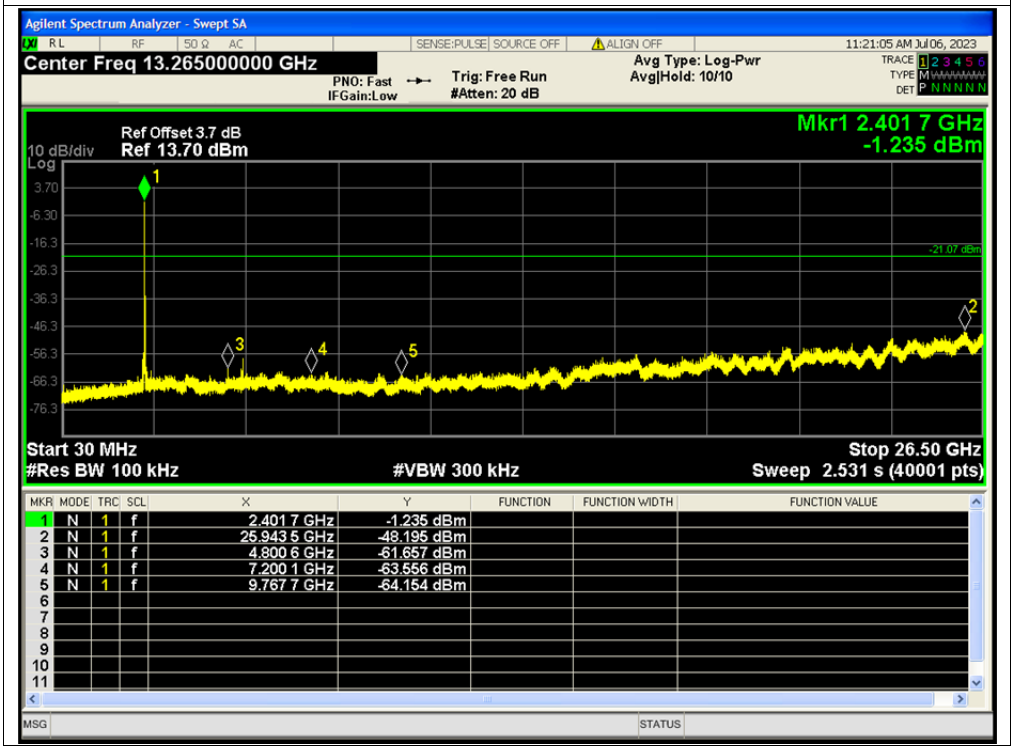
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-47.13	-20	Pass
NVNT	1-DH5	2441	Ant1	-46.43	-20	Pass
NVNT	1-DH5	2480	Ant1	-47	-20	Pass
NVNT	2-DH5	2402	Ant1	-47.73	-20	Pass
NVNT	2-DH5	2441	Ant1	-47.28	-20	Pass
NVNT	2-DH5	2480	Ant1	-46.64	-20	Pass

Test Graphs

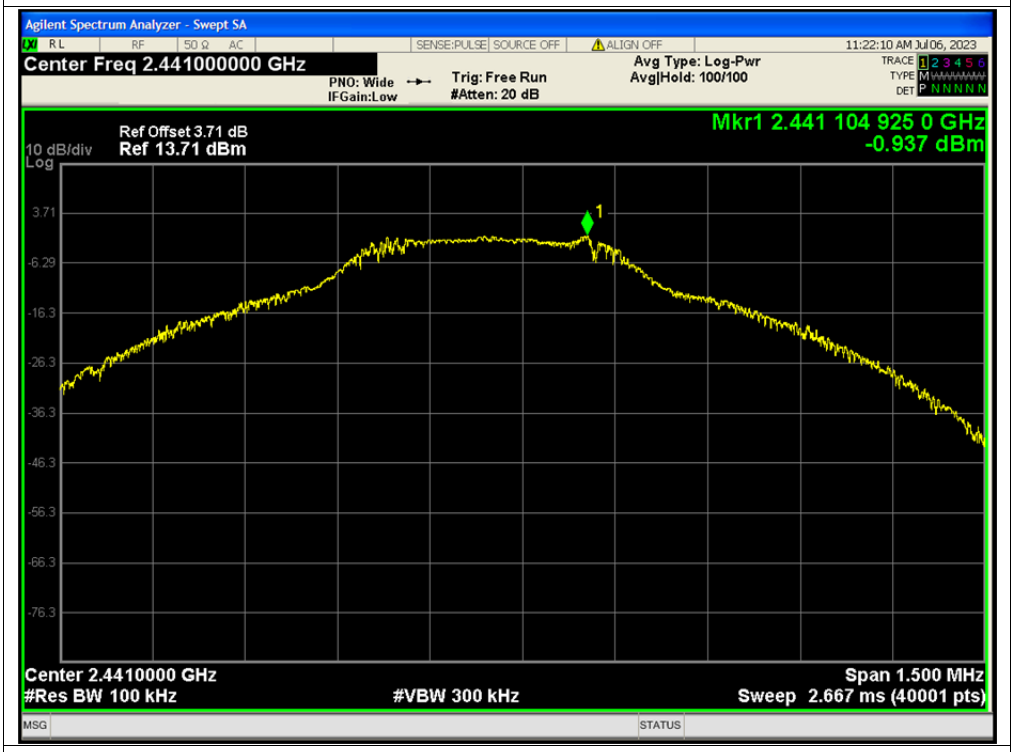
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



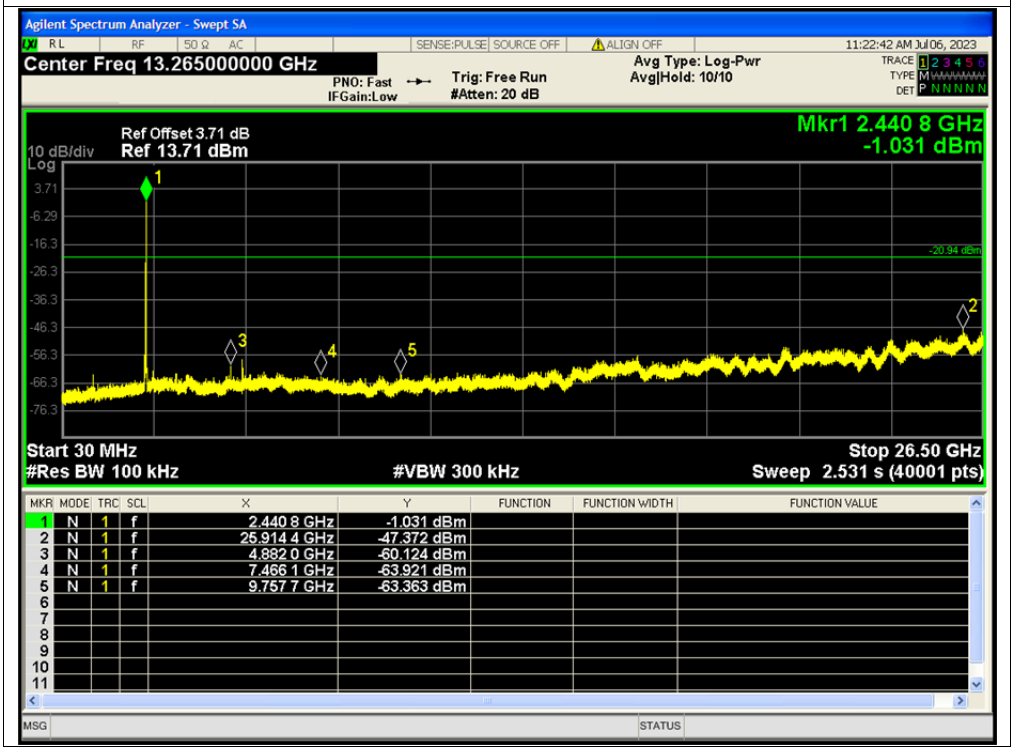
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

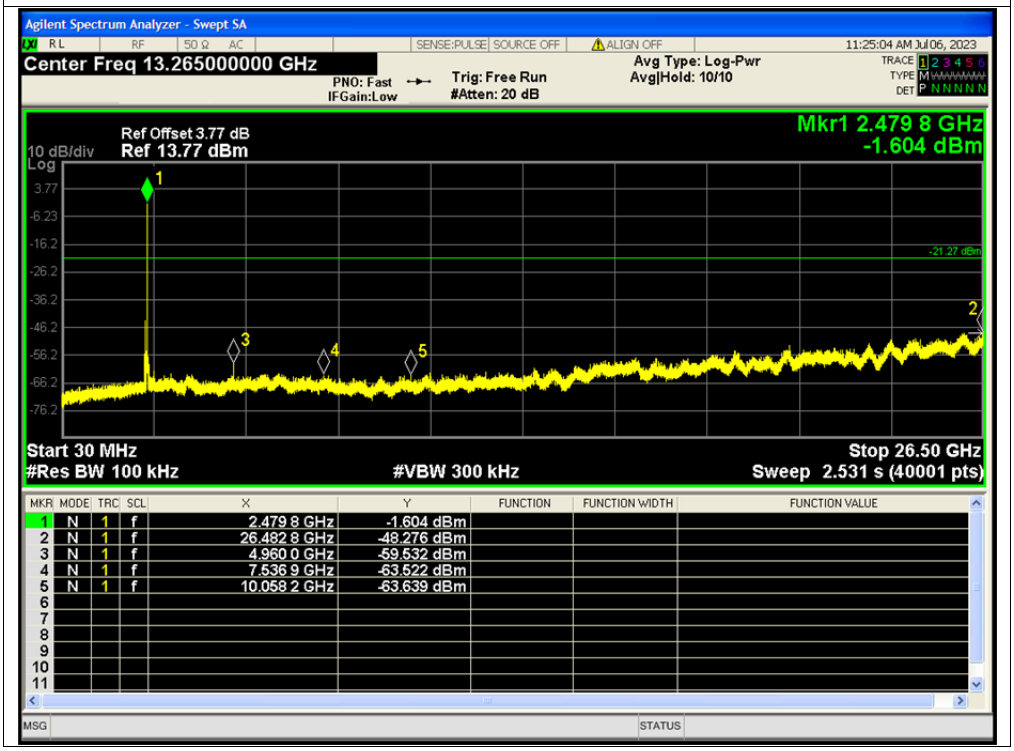


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

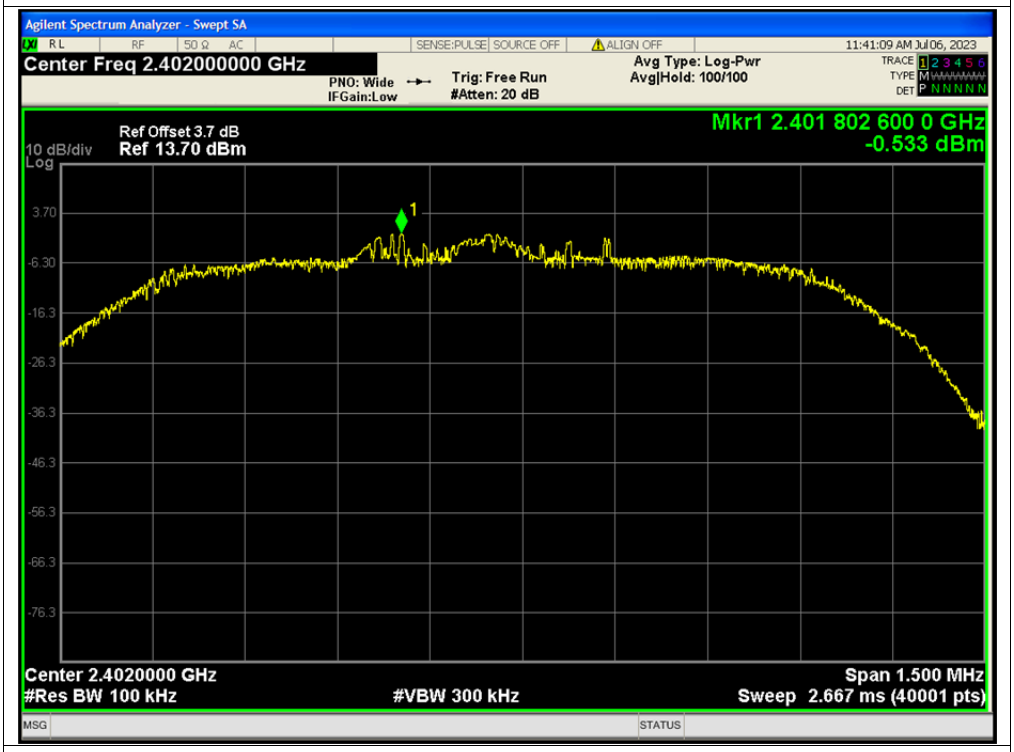


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

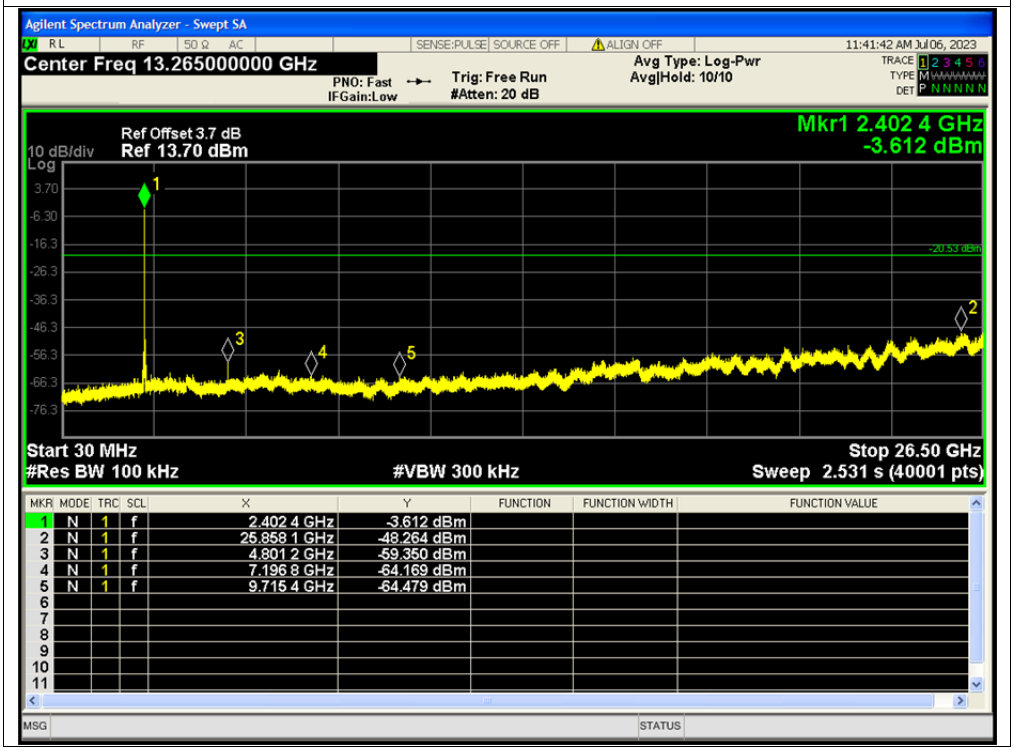
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



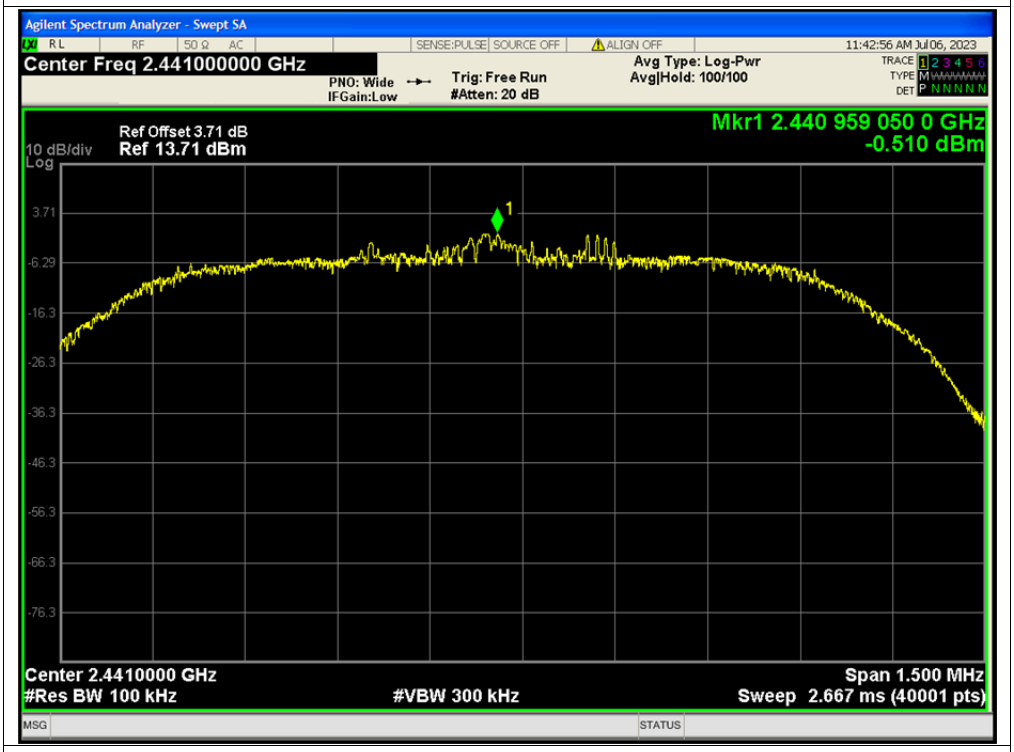
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



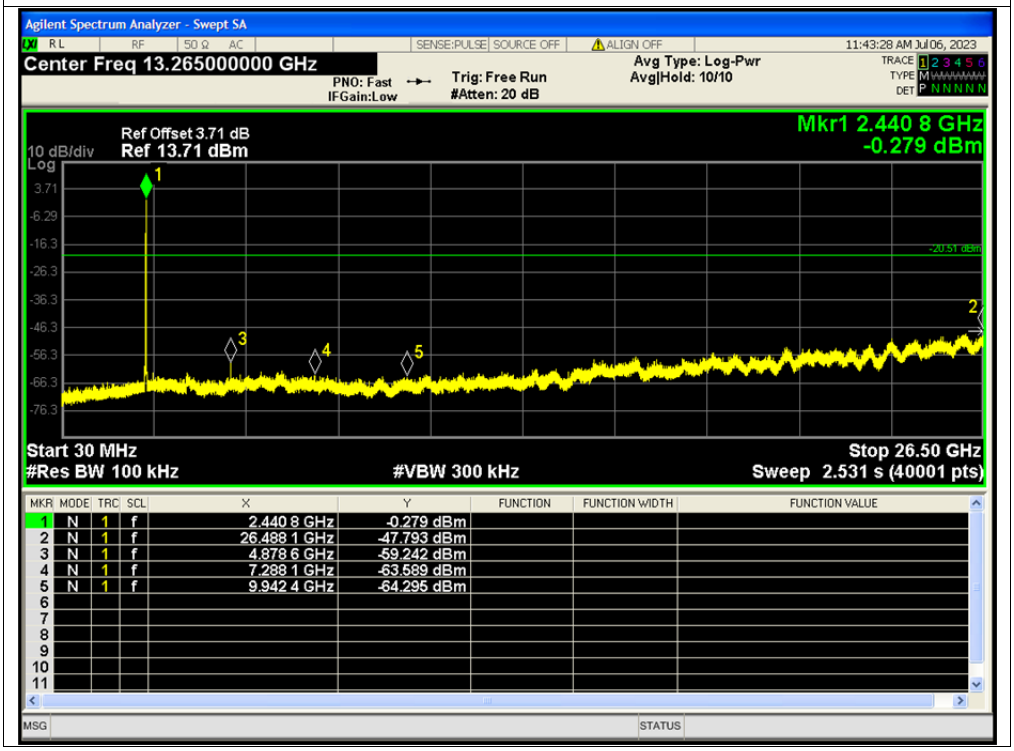
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

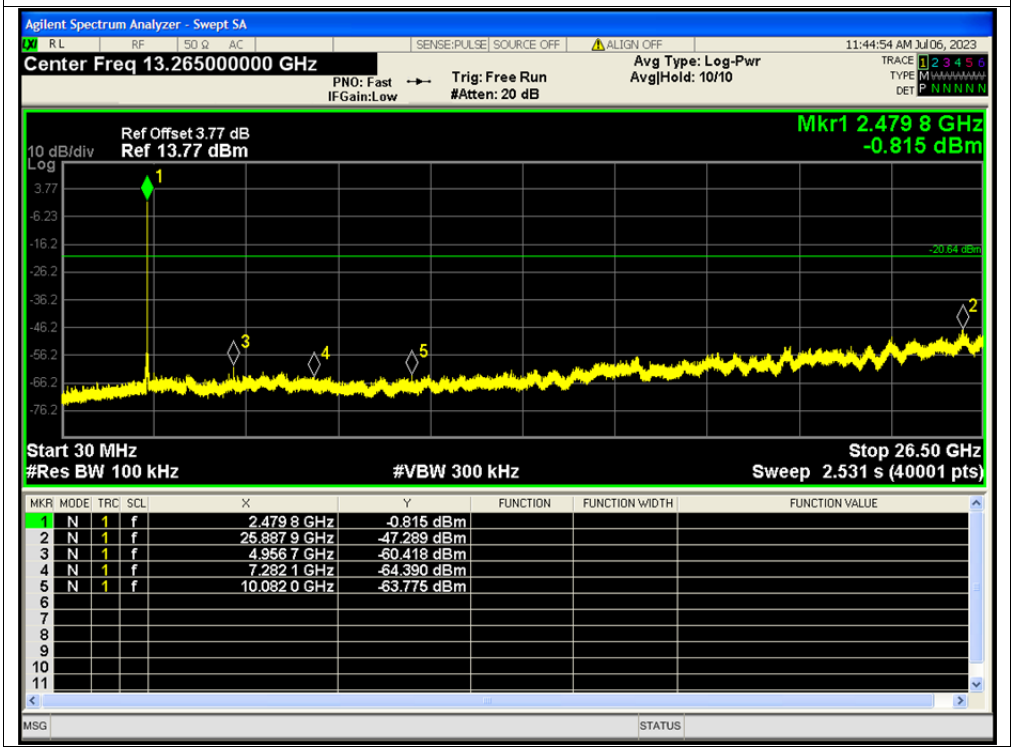


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref

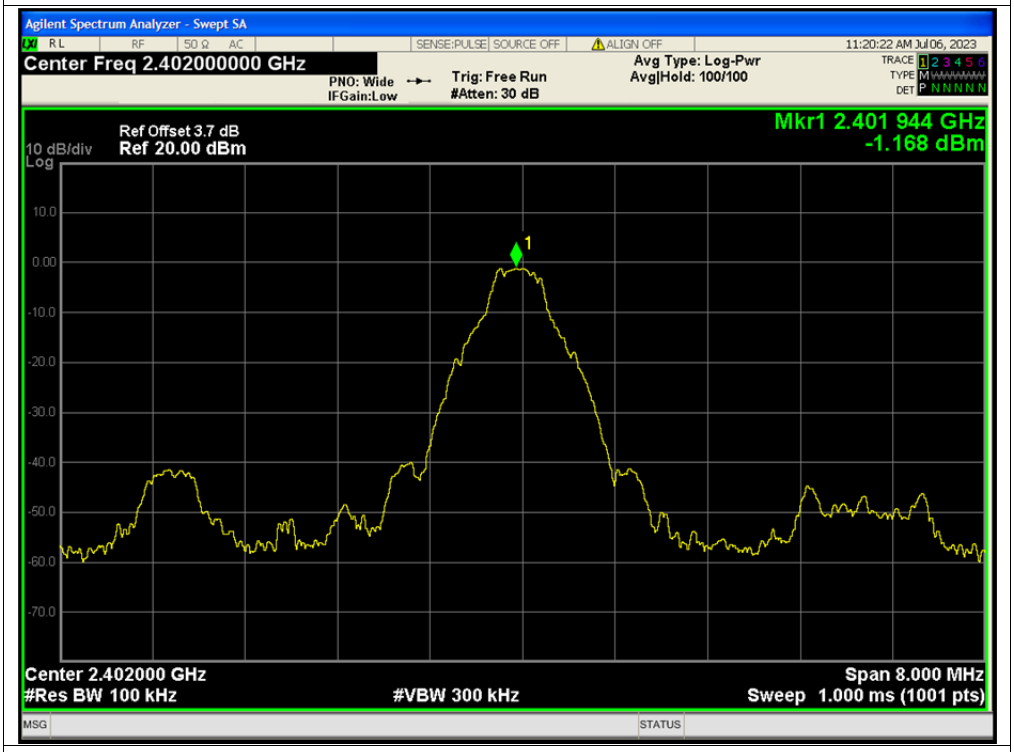
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



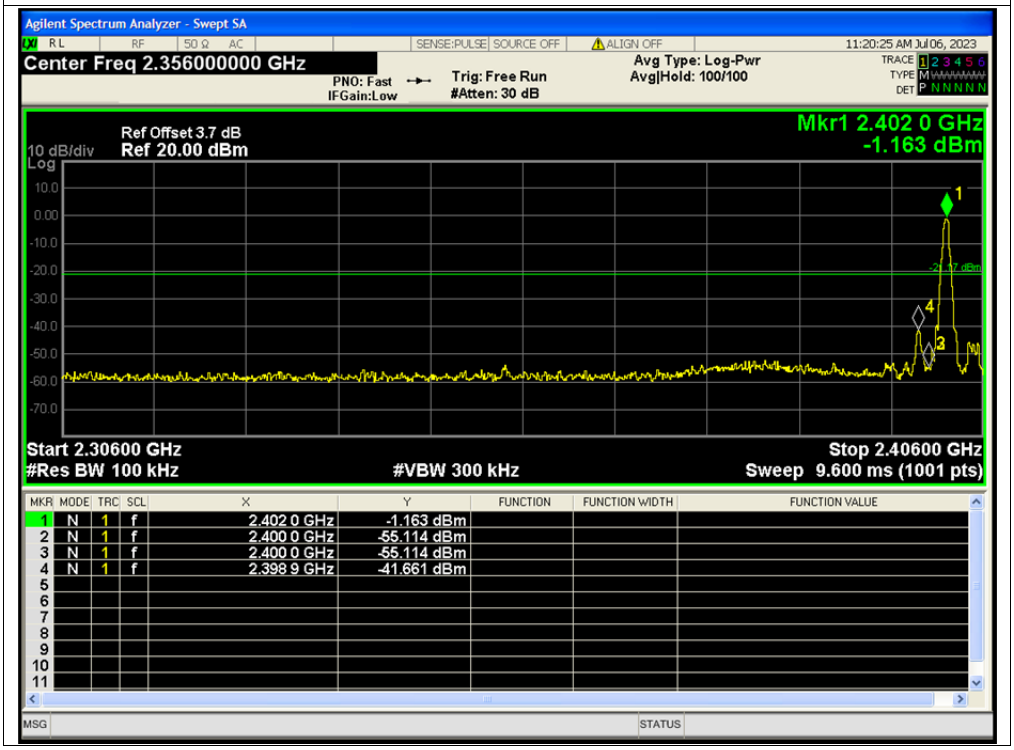
A.10. Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-40.49	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-42.68	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-43.69	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-45.44	-20	Pass
NVNT	1-DH5	2402	Ant1	Hopping	-51.11	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-45.47	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-51.29	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-49.35	-20	Pass

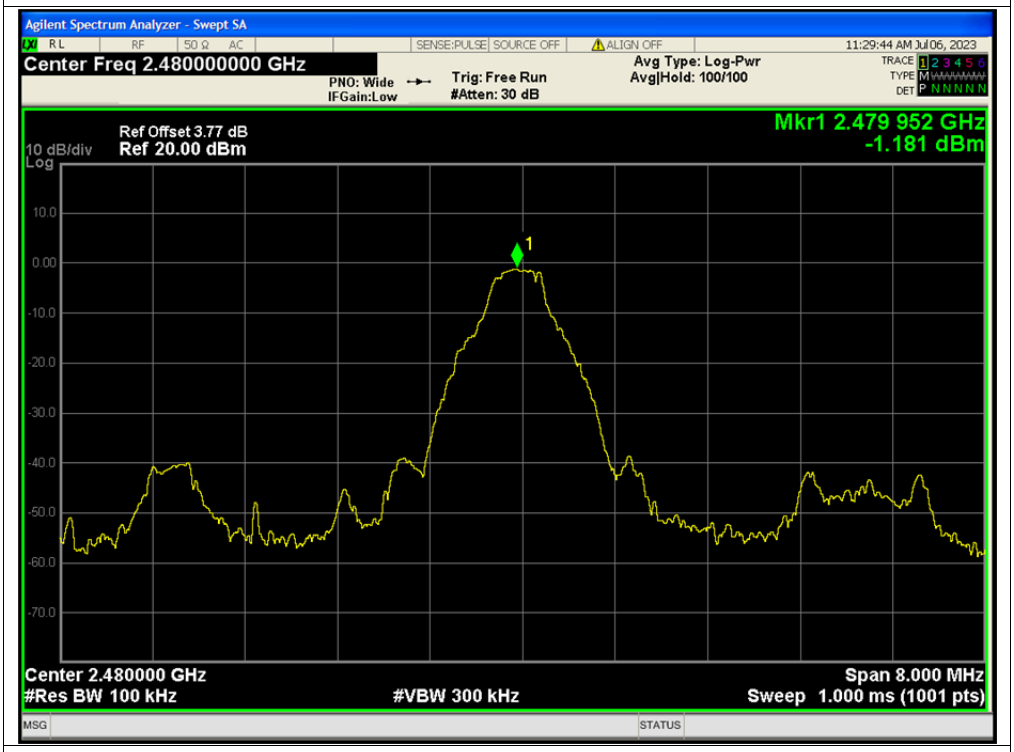
Test Graphs
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



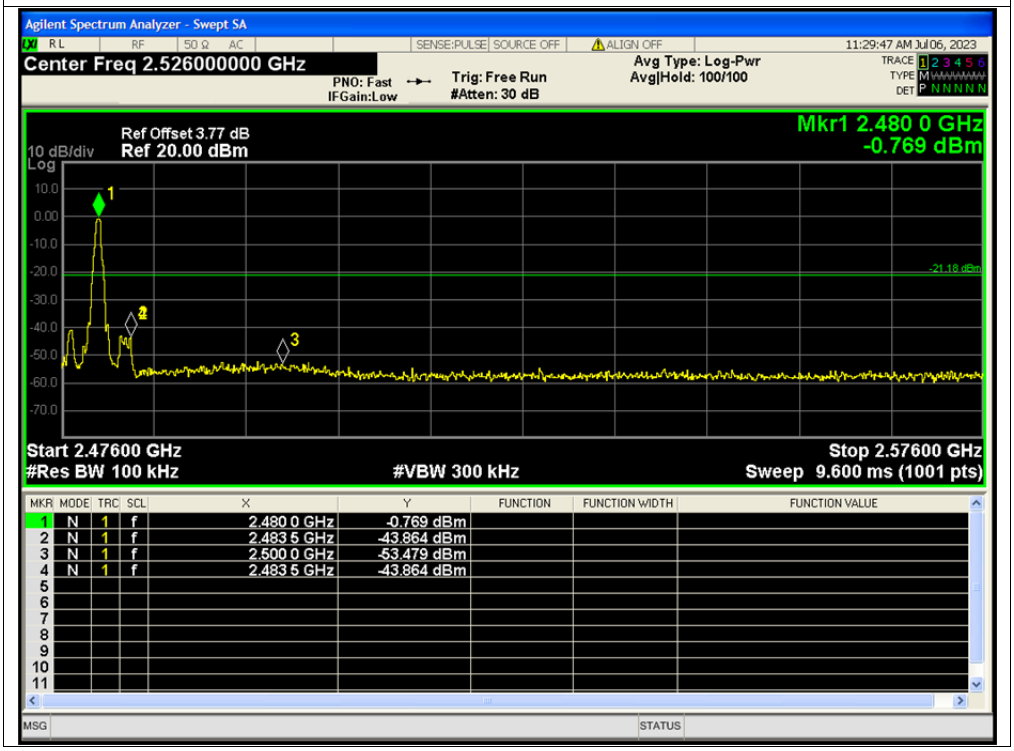
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



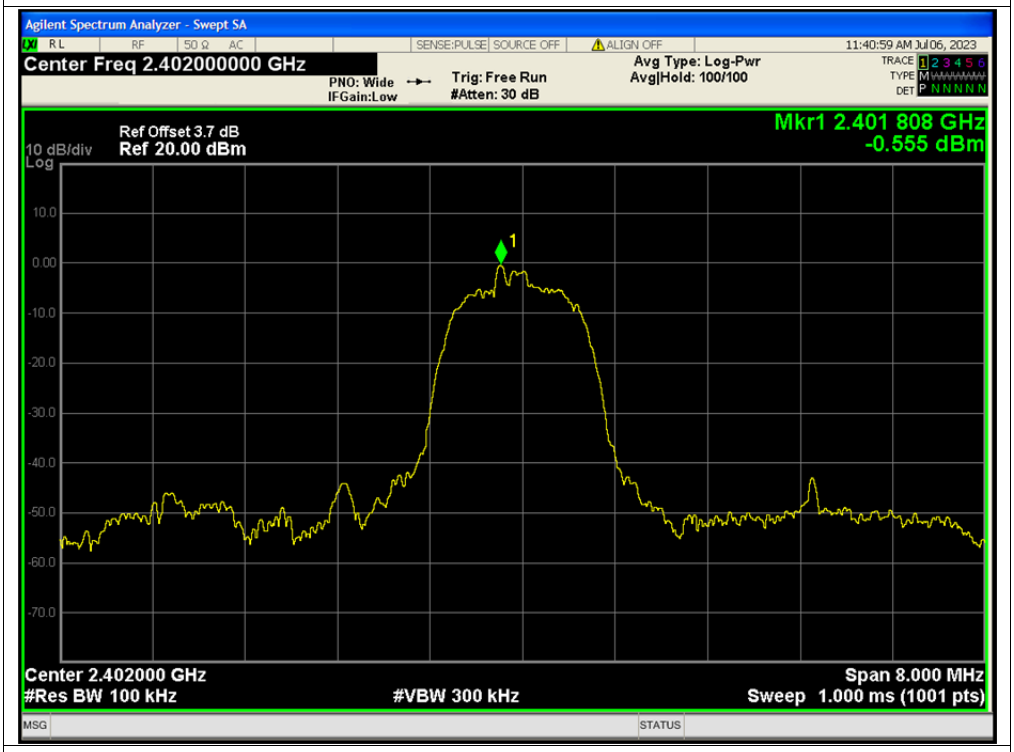
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



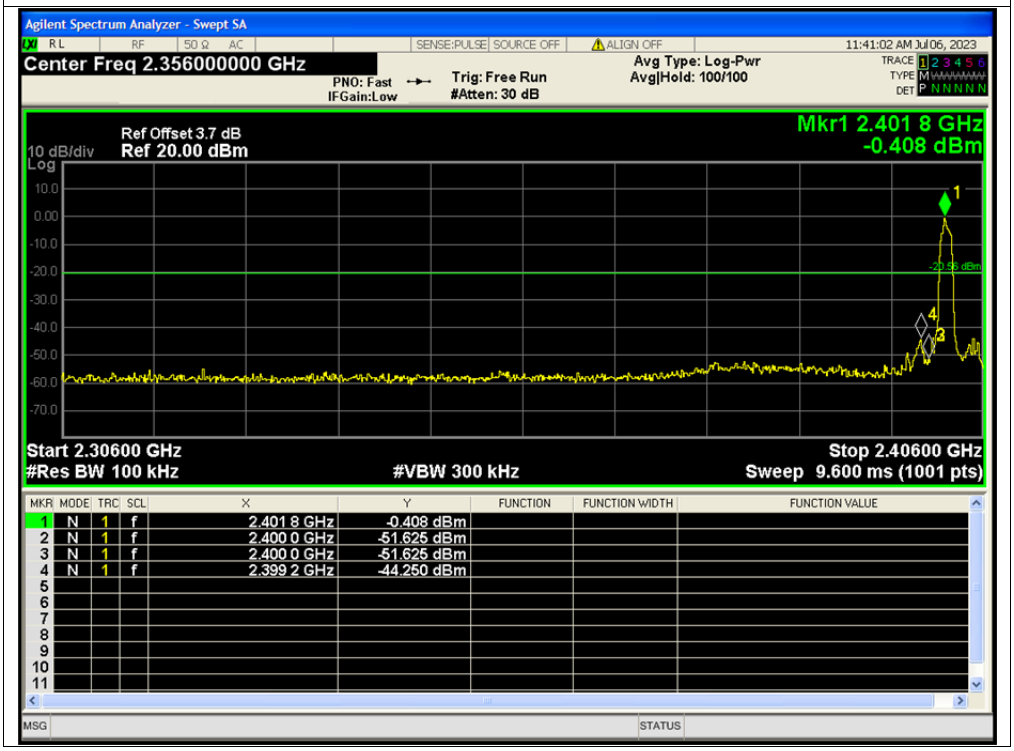
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



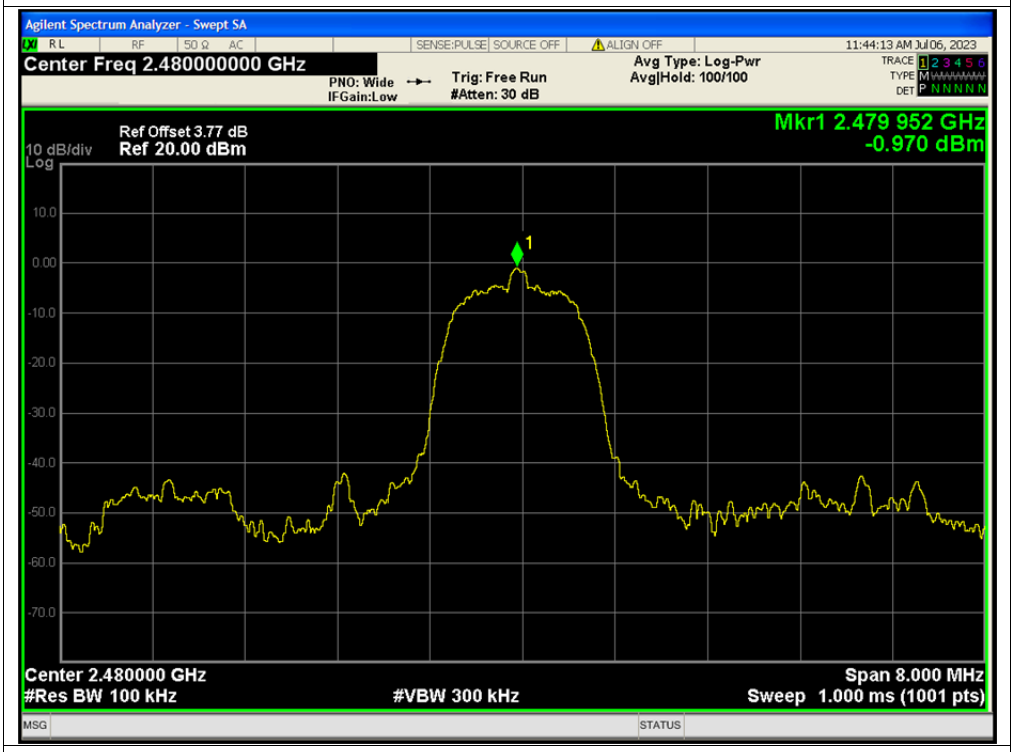
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



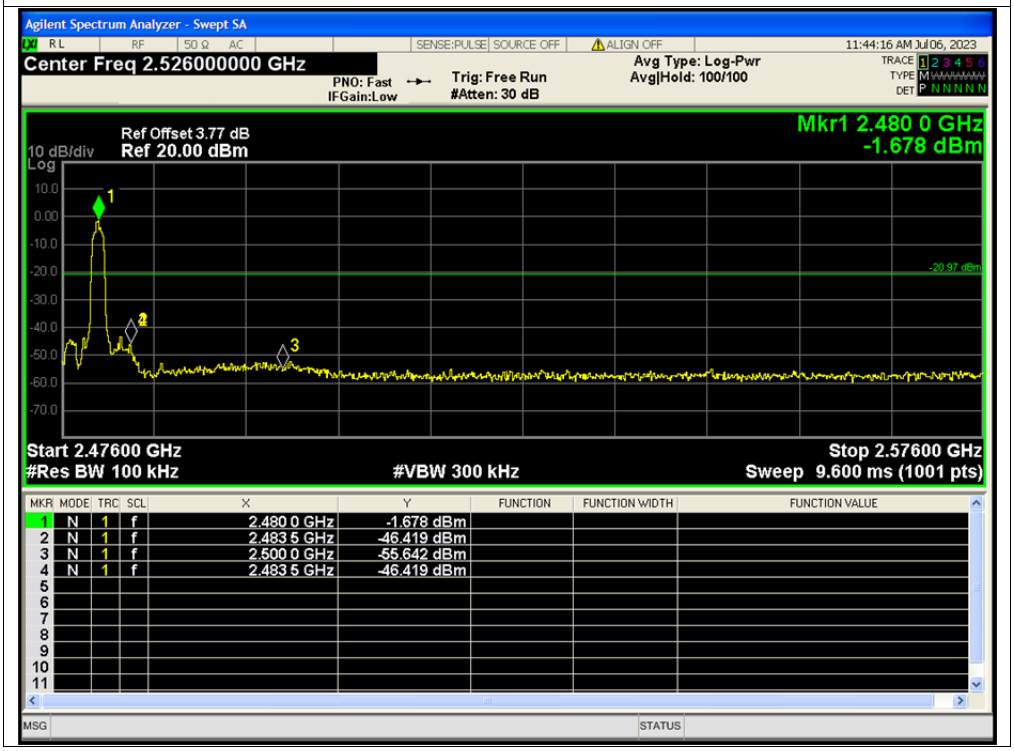
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



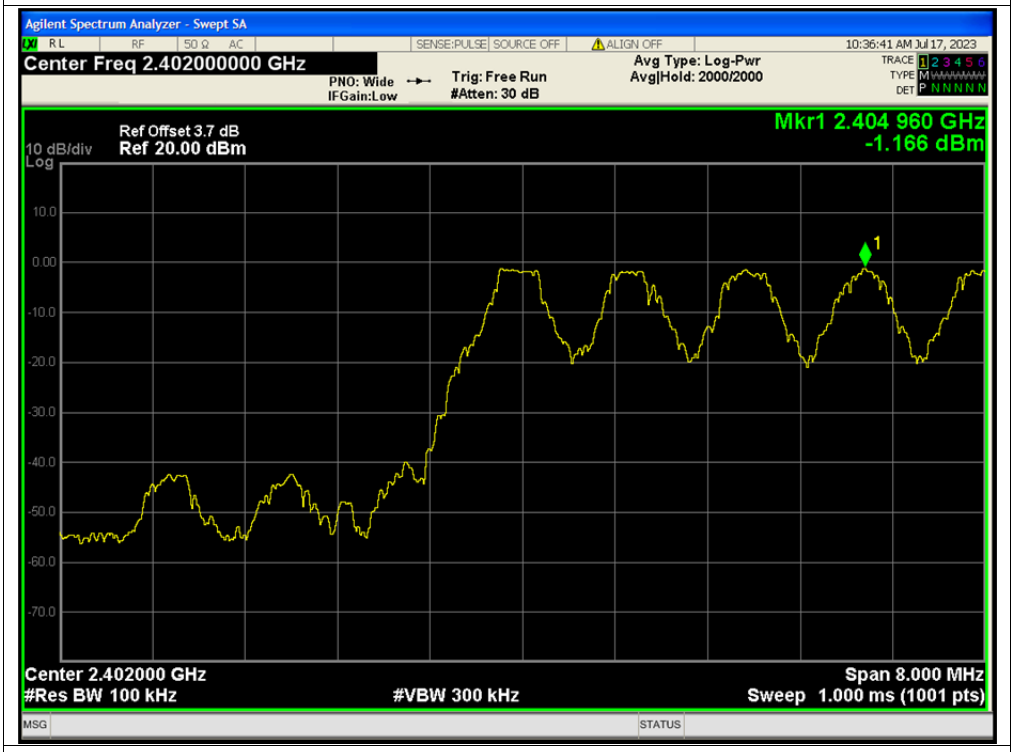
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



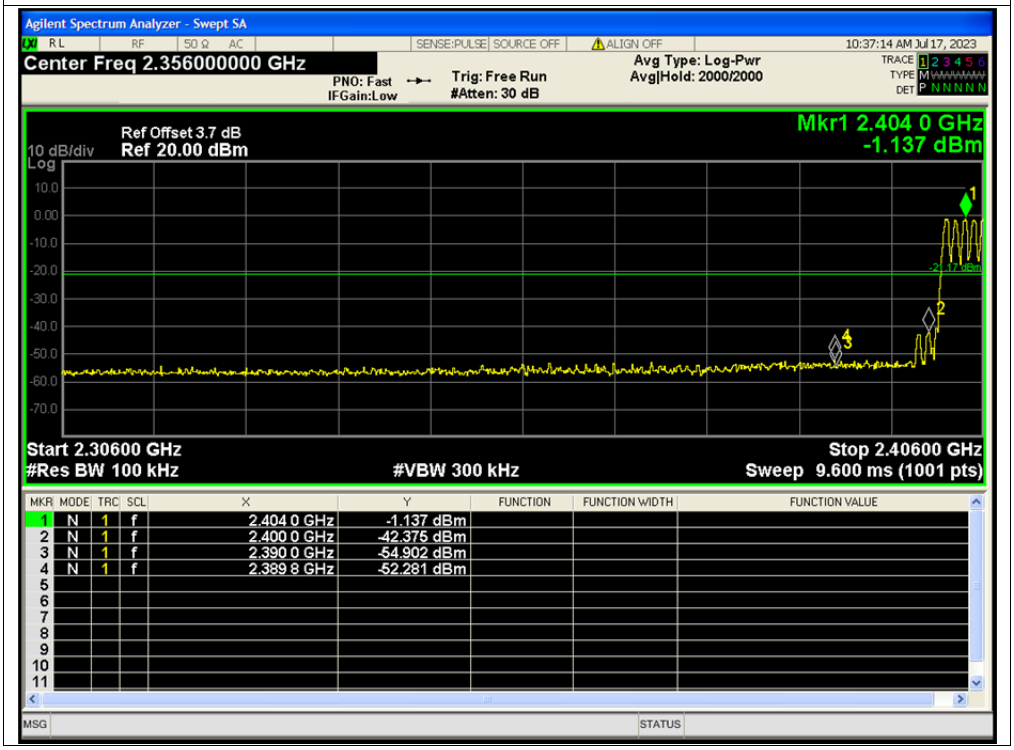
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



Test Graphs
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

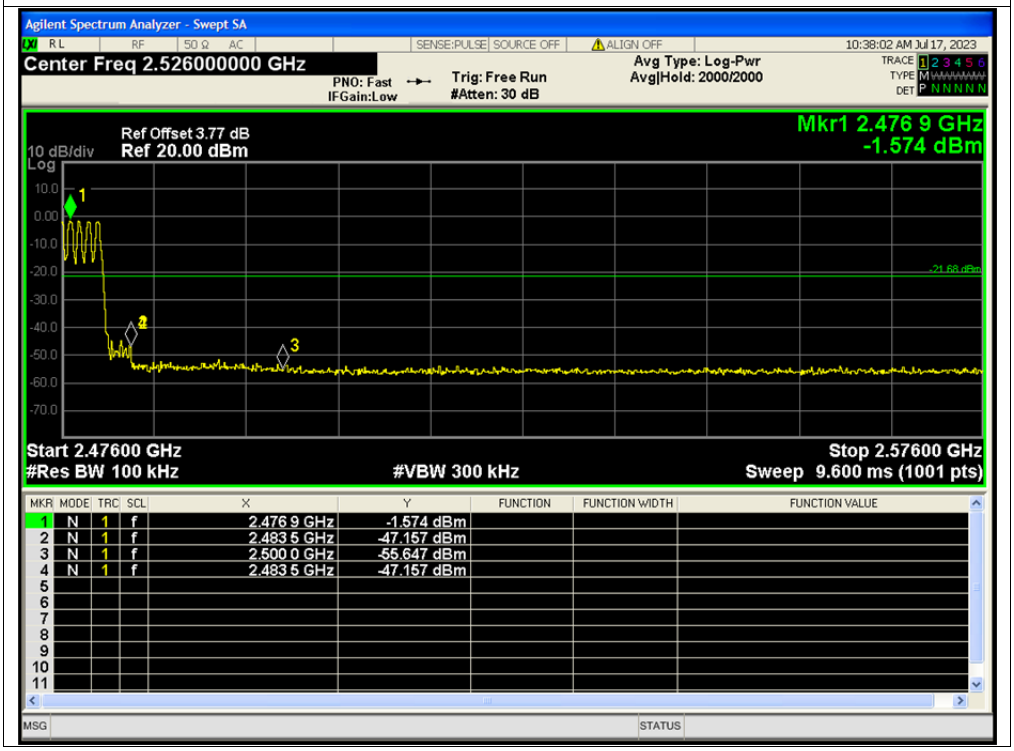


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

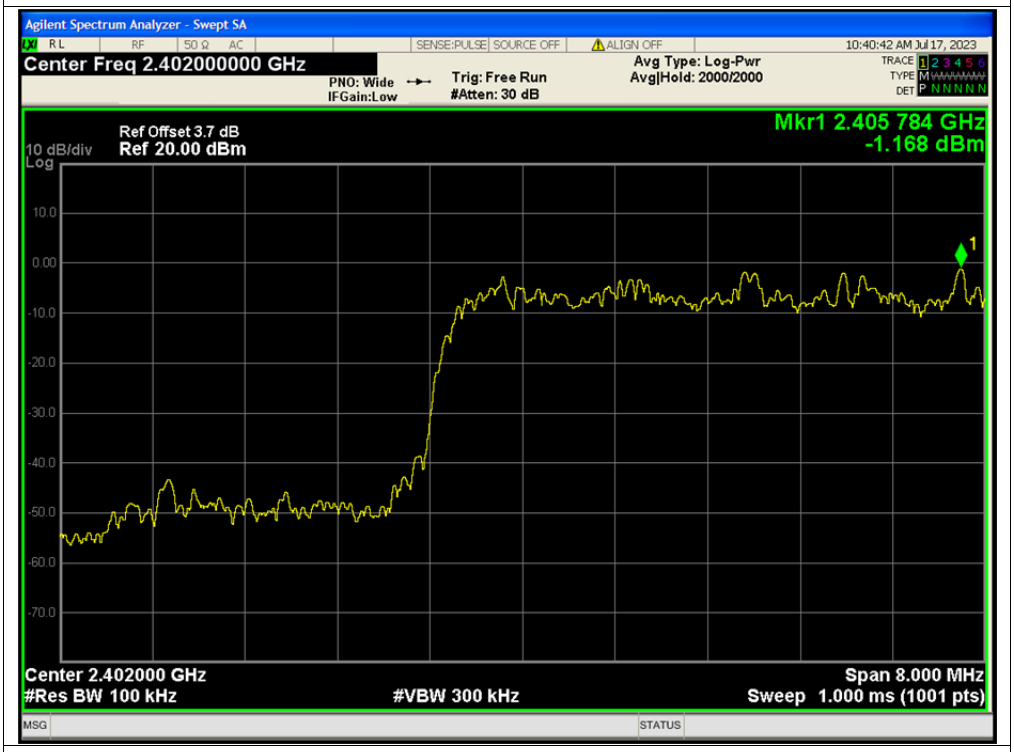


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref

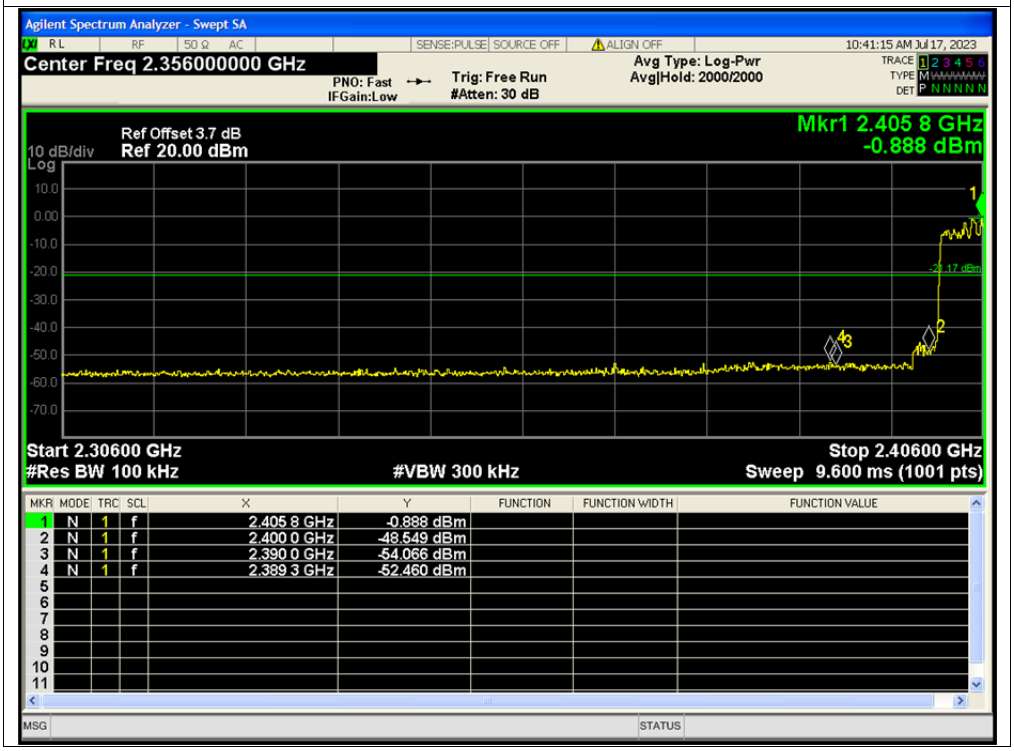
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



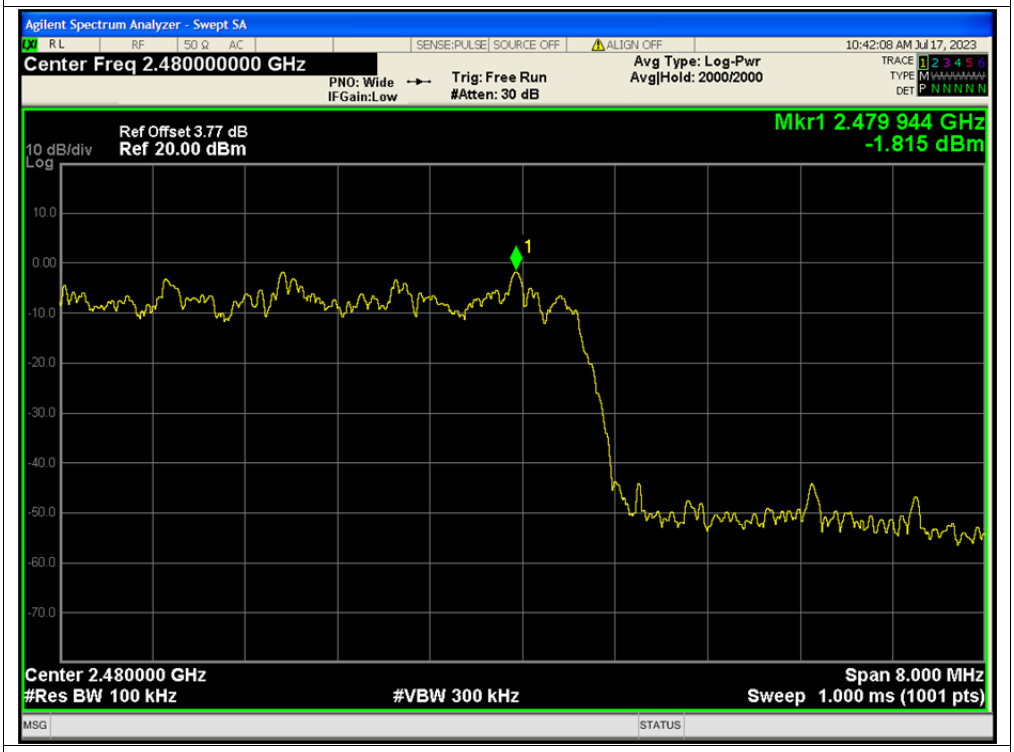
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



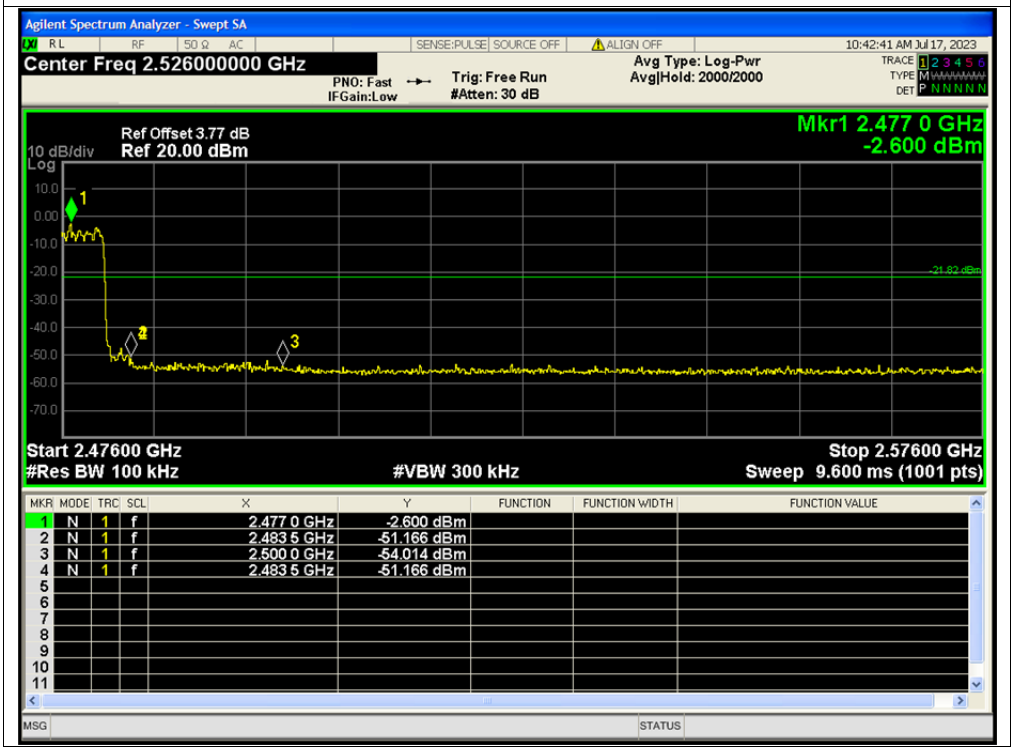
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



A.11. Conducted Emission

This test case does not apply this kind of EUT. The bluetooth function does not work when the device is connected to the AC power adapter, measurements to demonstrate compliance with the conducted limits are not required for devices which do not contain provisions for operation while connected to the AC power lines.

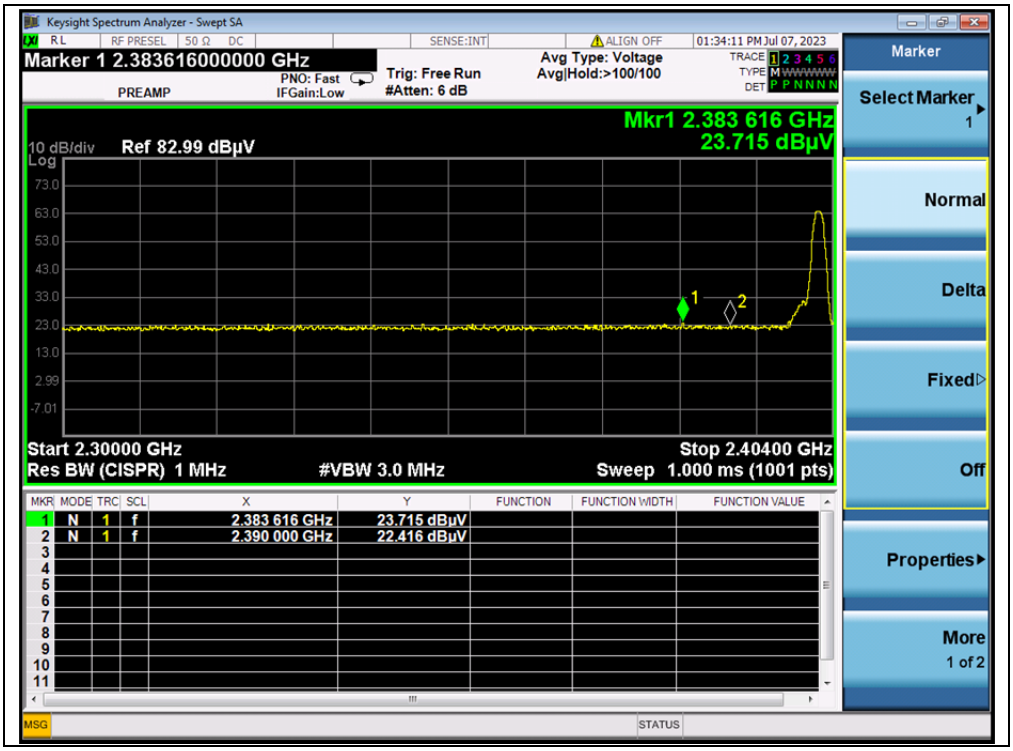
A.12. Restricted Frequency Bands

The lowest and highest channels are tested to verify the Restricted Frequency Bands.
The measurement results are obtained as below:
$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$
A_T: Total correction Factor except Antenna
U_R: Receiver Reading
G_{preamp}: Preamplifier Gain
A_{Factor}: Antenna Factor at 3m

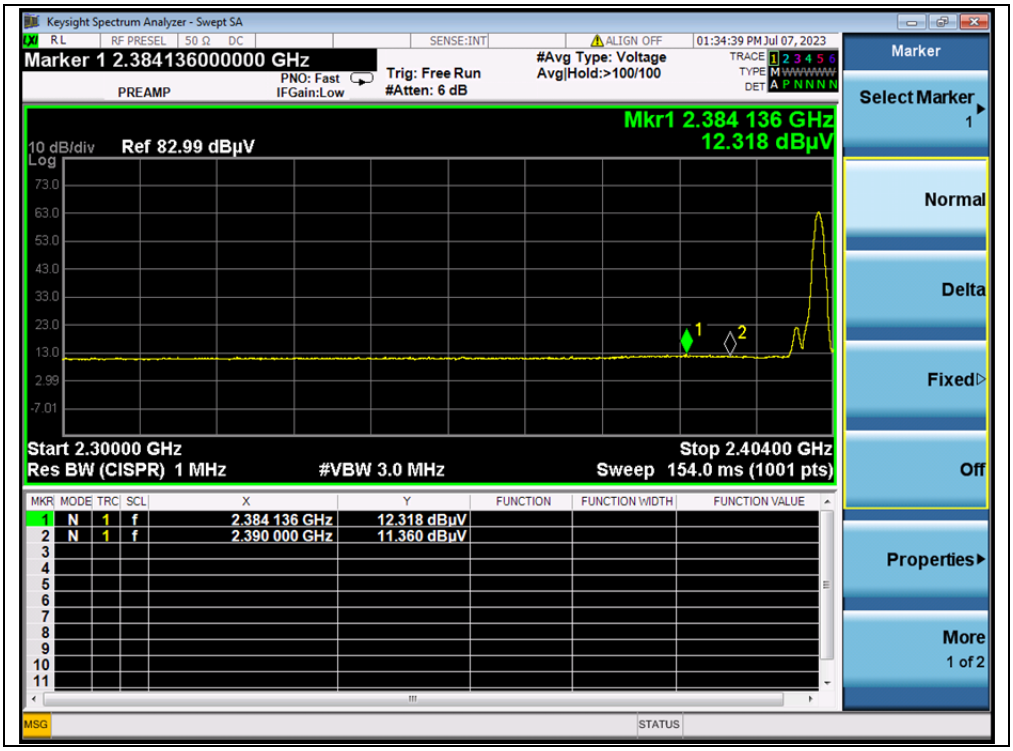
Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

GFSK Mode

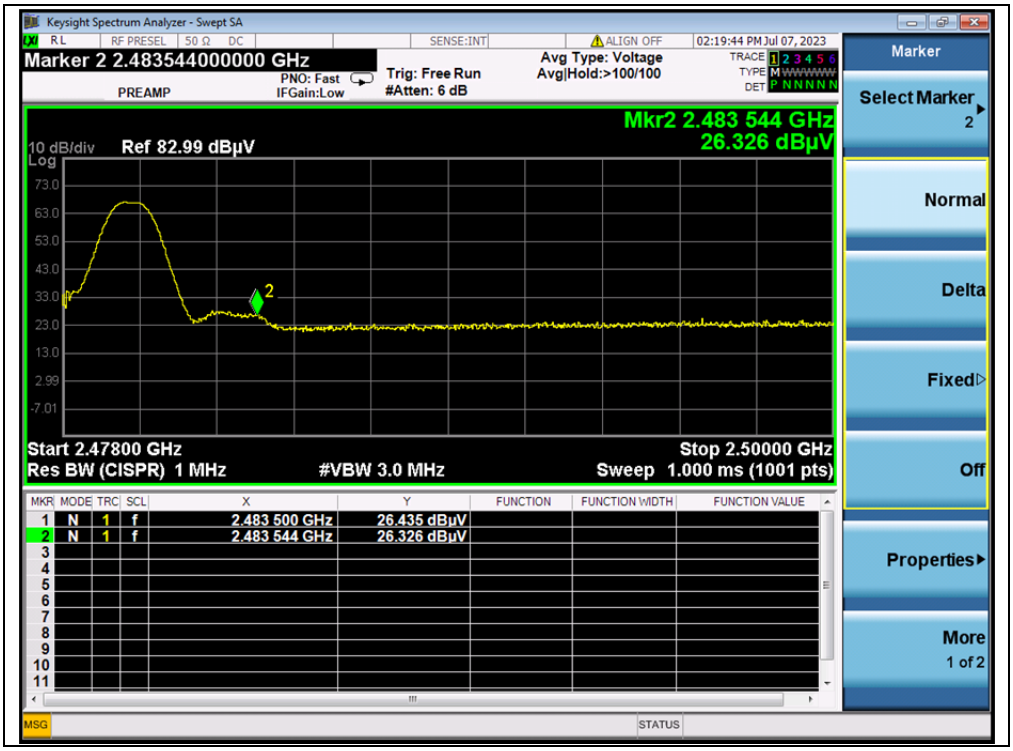
Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
0	2383.62	PK	23.72	6.74	27.20	57.66	74	PASS
0	2384.14	AV	12.32	6.74	27.20	46.26	54	PASS
78	2483.50	PK	26.44	6.74	27.20	60.38	74	PASS
78	2483.50	AV	16.89	6.74	27.20	50.83	54	PASS



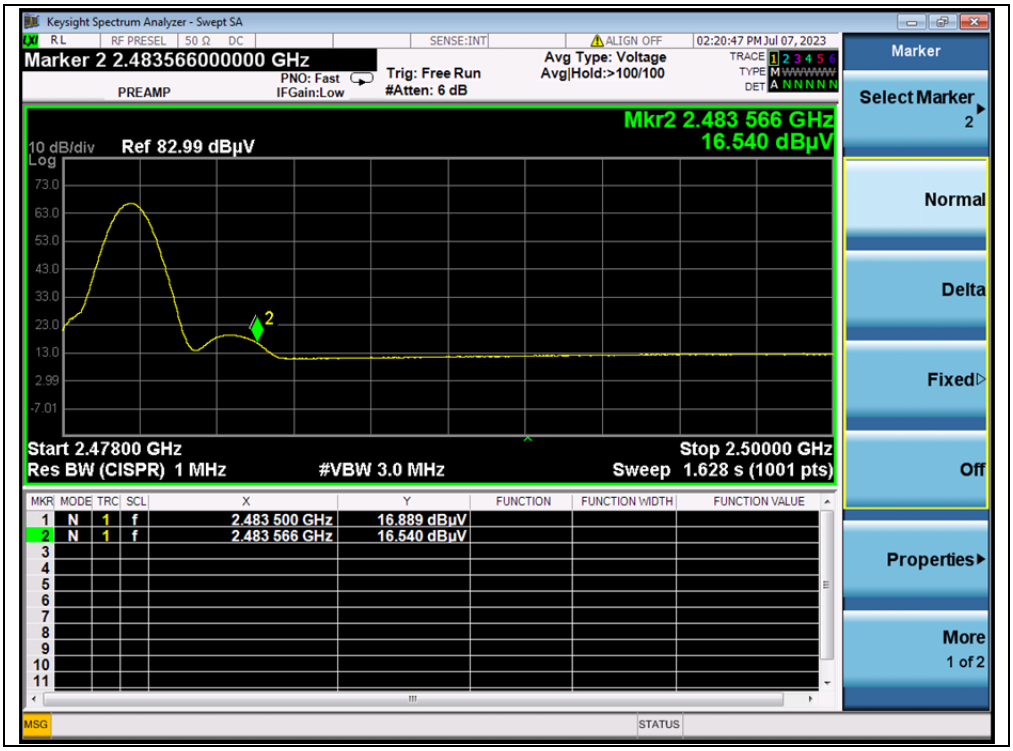
(PEAK, Channel 0, GFSK)



(AVERAGE, Channel 0, GFSK)



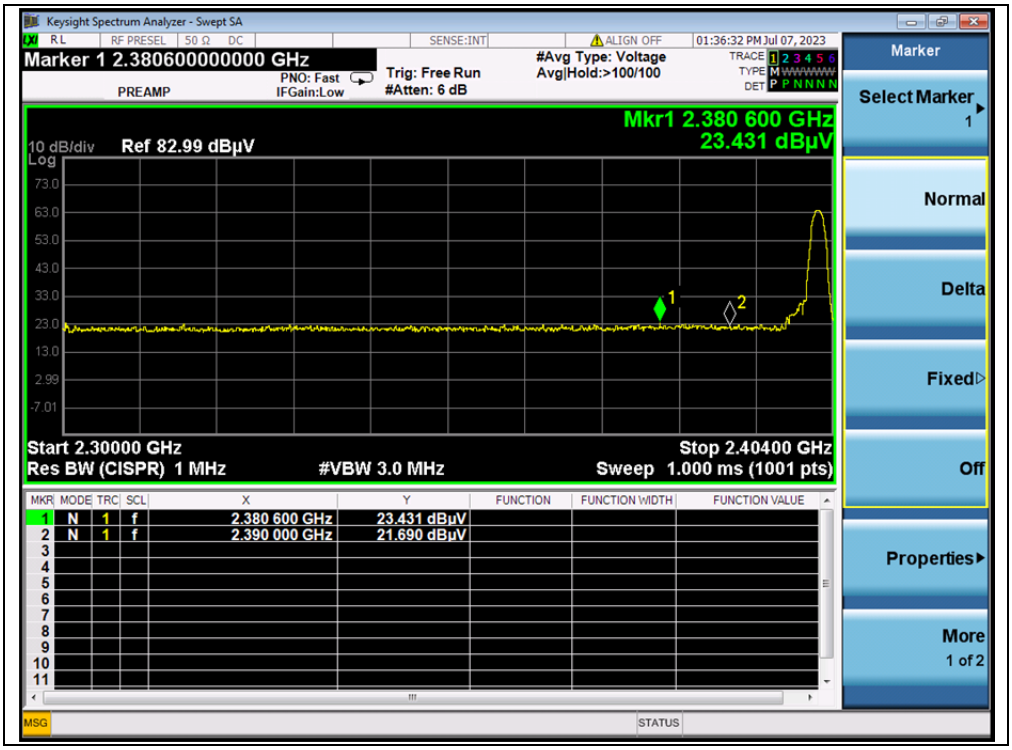
(PEAK, Channel 78, GFSK)



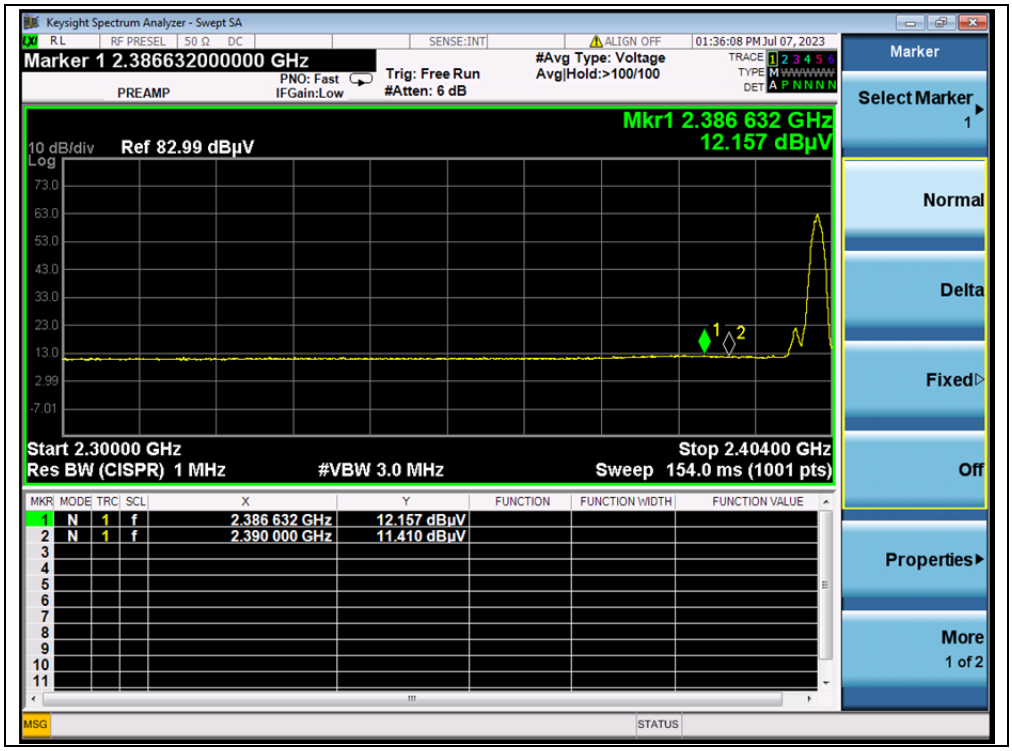
(AVERAGE, Channel 78, GFSK)

π/4-DQPSK Mode

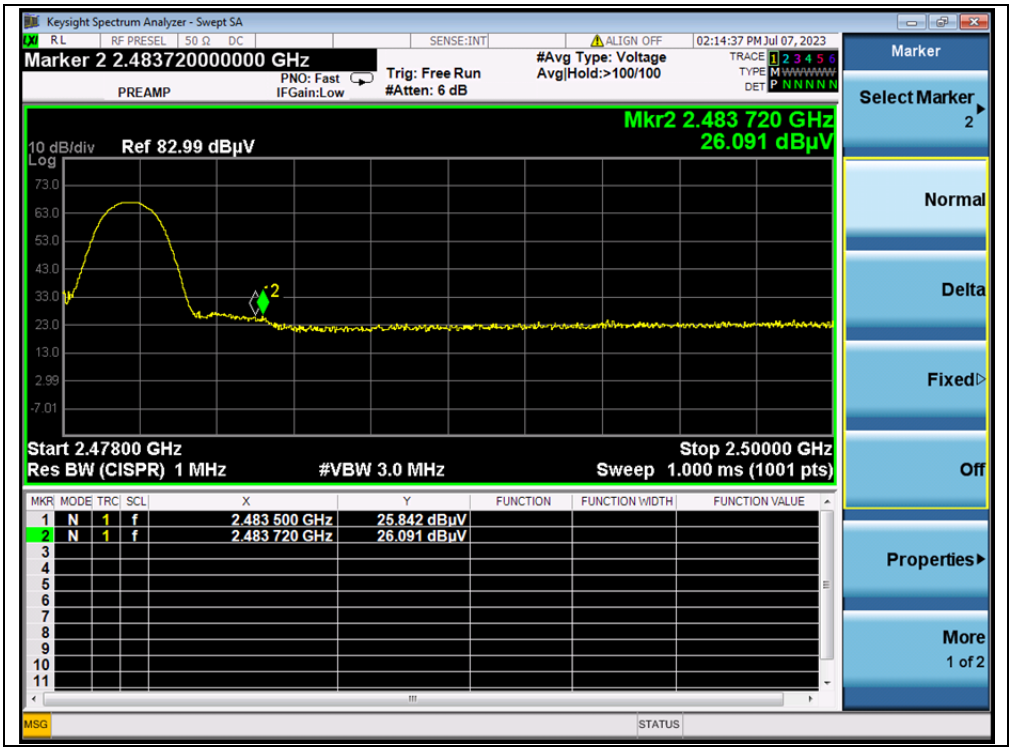
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
0	2380.60	PK	23.43	6.74	27.20	57.37	74	PASS
0	2386.63	AV	12.16	6.74	27.20	46.10	54	PASS
78	2483.72	PK	26.09	6.74	27.20	60.03	74	PASS
78	2483.50	AV	15.89	6.74	27.20	49.83	54	PASS



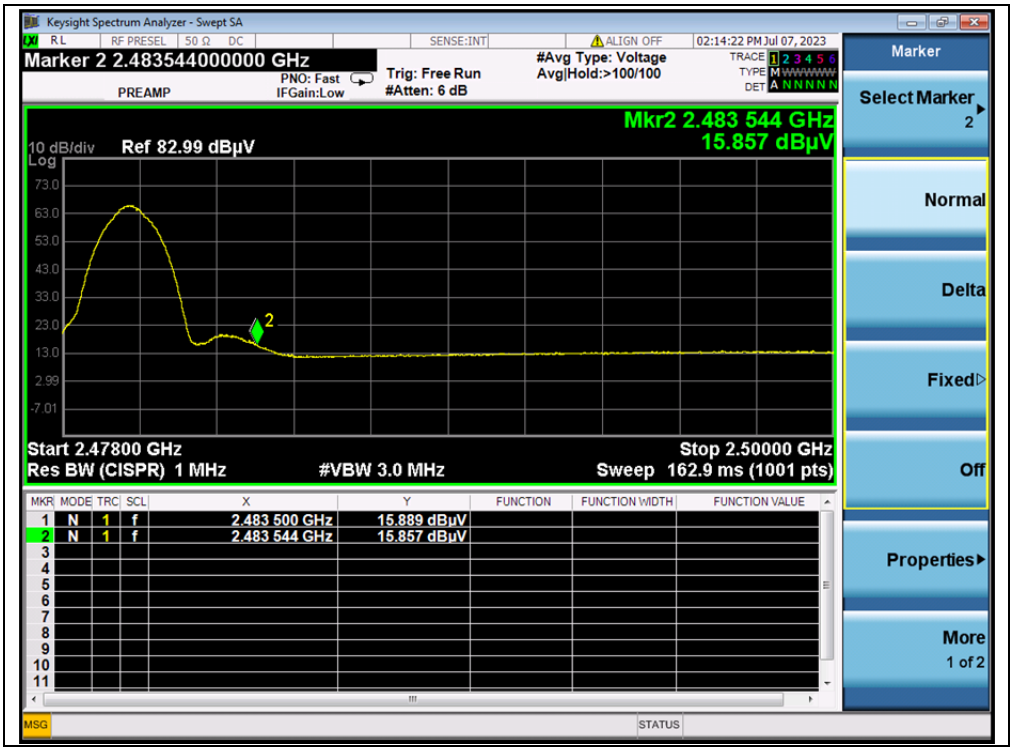
(PEAK, Channel 0,π/4-DQPSK)



(AVERAGE, Channel 0, π/4-DQPSK)



(PEAK, Channel 78, π/4-DQPSK)



(AVERAGE, Channel 78, π/4-DQPSK)

A.13. Radiated Emission

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

The measurement results are obtained as below:

$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

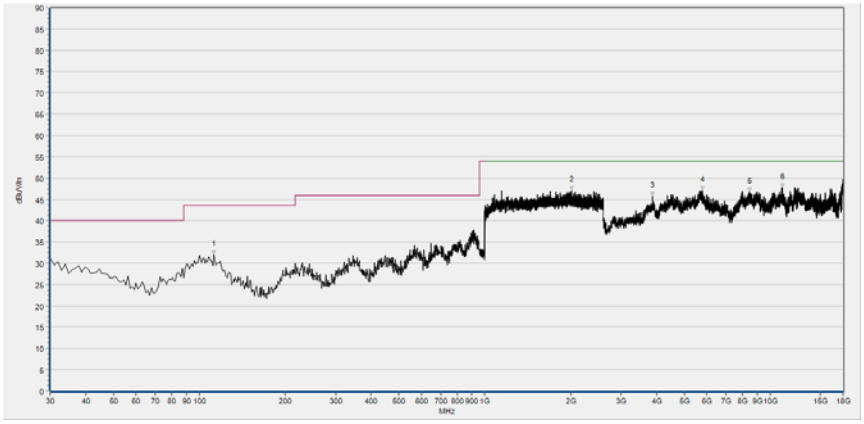
Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note3: For the frequency, which started from 18GHz to 10th harmonic of the highest frequency, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

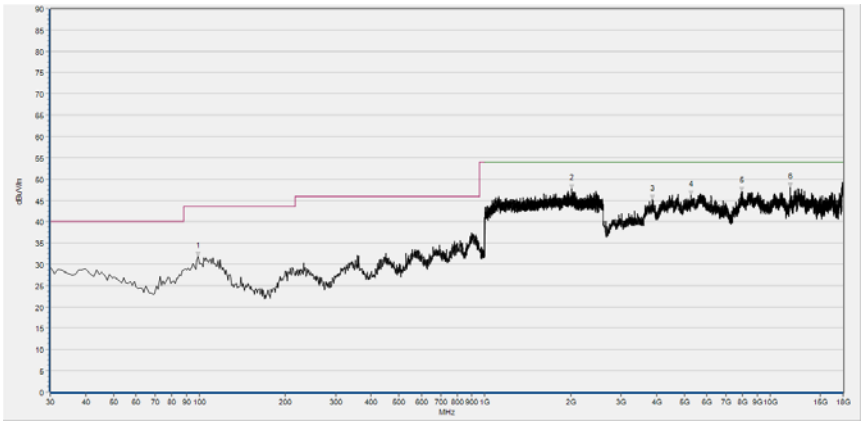
GFSK Mode

Plots for Channel 0



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
112.450	32.01	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2010.667	47.05	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3872.040	45.69	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5797.040	47.02	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8452.000	46.78	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11014.560	47.76	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

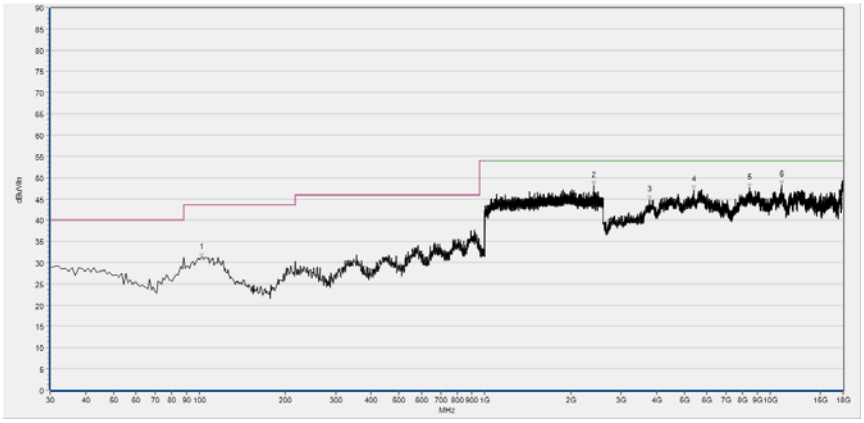
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
98.870	31.82	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2014.933	47.69	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3865.880	45.27	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5285.760	46.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7956.120	47.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
11744.520	48.10	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

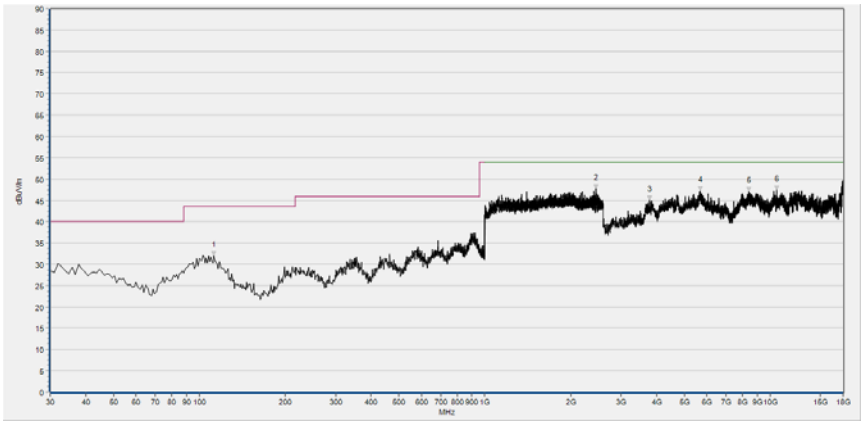
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 39



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.780	31.14	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2410.133	48.05	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3782.720	44.72	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5399.720	47.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8452.000	47.51	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10949.880	48.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

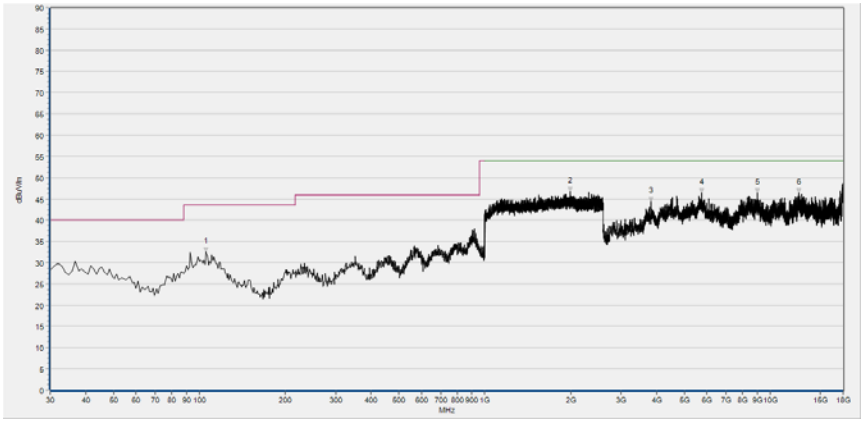
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
106.630	31.80	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1685.333	45.85	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3674.920	43.96	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5627.640	46.04	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8445.840	47.37	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10219.920	47.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

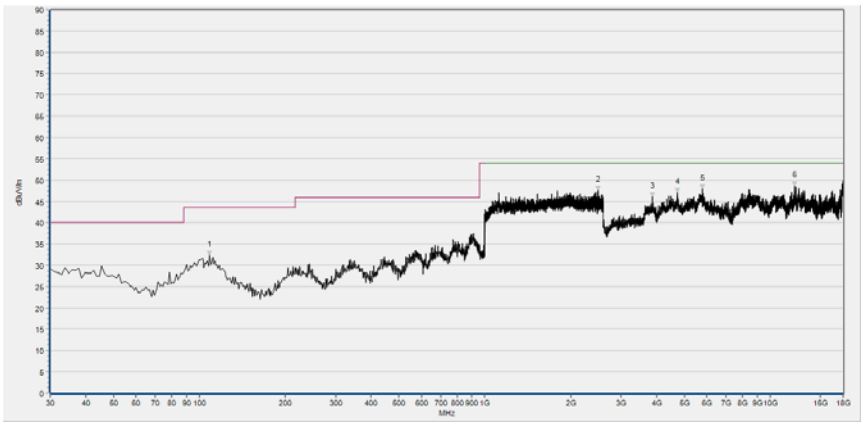
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 78



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
105.660	32.58	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1995.733	46.69	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3825.840	44.40	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5757.000	46.42	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8997.160	46.39	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12597.680	46.42	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)

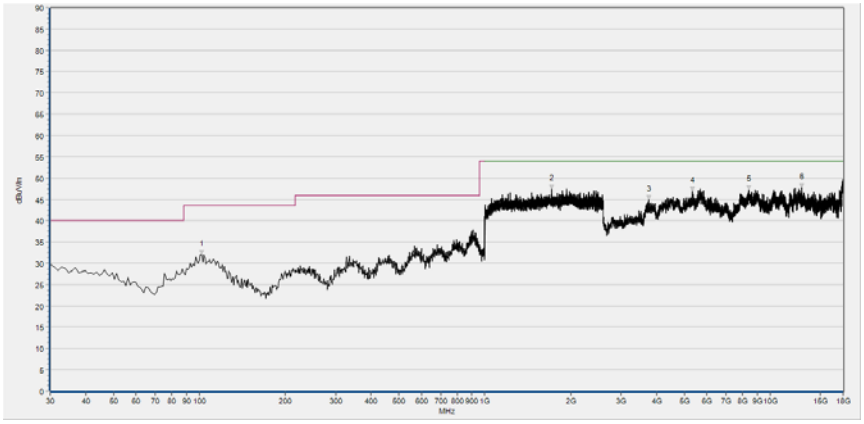


Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
108.570	32.39	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2490.133	47.59	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3859.720	46.04	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4737.520	47.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5781.640	47.99	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12151.080	48.56	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

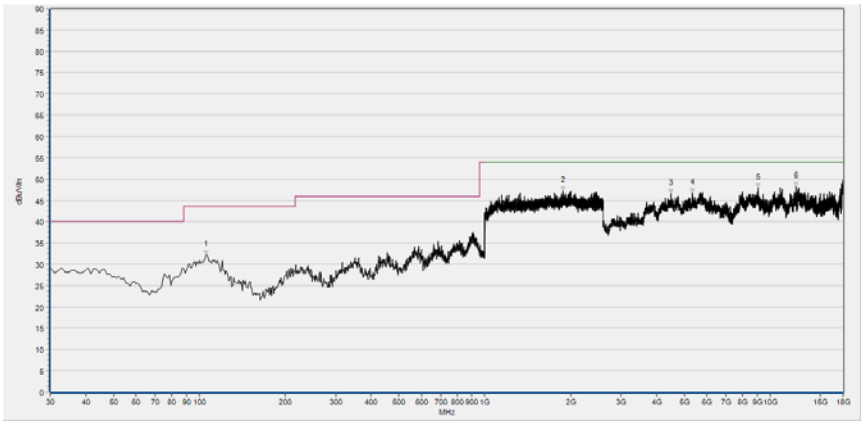
π/4-DQPSK Mode

Plots for Channel 0



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.780	31.94	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1711.467	47.45	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3755.000	44.85	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5322.720	46.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8421.200	47.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12884.120	47.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

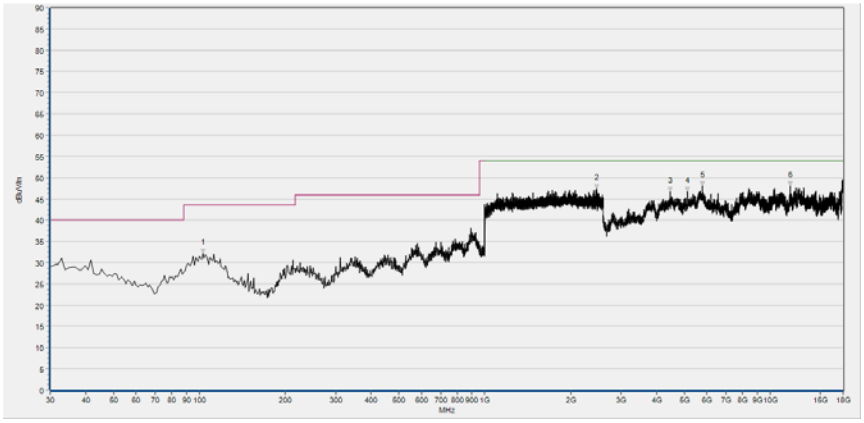
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
105.660	32.19	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1877.333	47.26	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4491.120	46.66	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5328.880	46.83	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9074.160	47.97	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12338.960	48.27	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

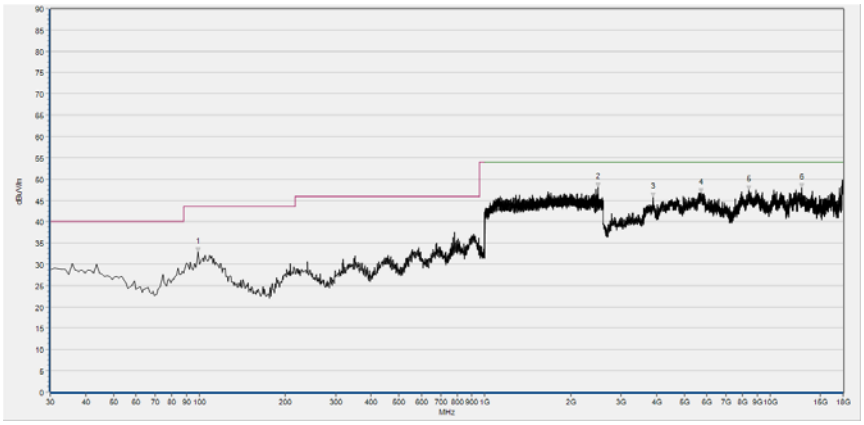
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 39



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
102.750	32.21	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2458.133	47.41	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4460.320	46.73	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5137.920	46.76	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5775.480	48.10	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11732.200	48.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

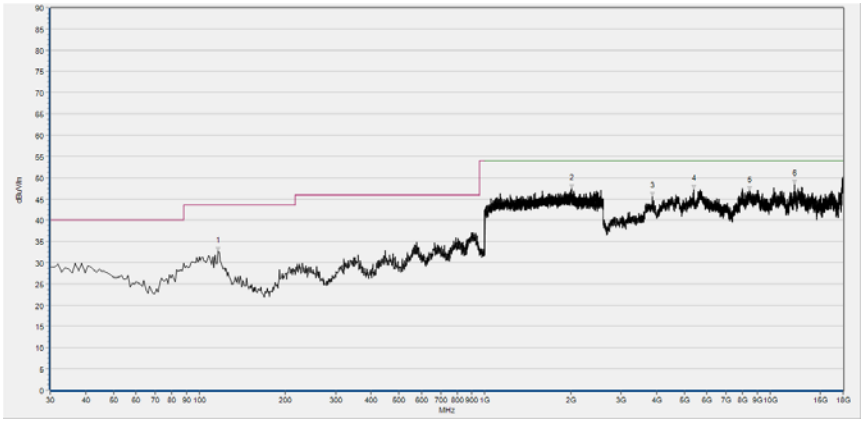
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
98.870	32.83	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2492.267	48.17	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3881.280	45.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5707.720	46.69	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8402.720	47.51	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12884.120	47.98	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

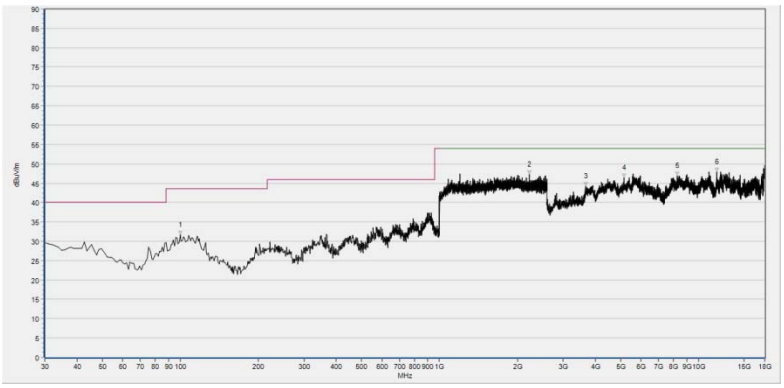
(Antenna Vertical, 30MHz to 18GHz)

Plot for Channel 78



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
116.330	32.61	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2014.400	47.43	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3859.720	45.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5402.800	47.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8442.760	46.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12178.800	48.48	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
99.840	31.68	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2217.600	47.34	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3659.520	44.18	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5165.640	46.41	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8285.680	46.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
11726.040	48.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

END OF REPORT