



REPORT No.: SZ25100252W02

TEST REPORT

APPLICANT : Shenzhen Chainway Information
Technology Co., Ltd

PRODUCT NAME : UHF Sled Reader

MODEL NAME : R7

BRAND NAME : CHAINWAY

FCC ID : 2AC6AR7

STANDARD(S) : 47 CFR Part 15 Subpart C

RECEIPT DATE : 2025-11-18

TEST DATE : 2025-12-10 to 2025-12-31

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Edited by:

Zeng Xiaoying
Zeng Xiaoying (Rapporteur)

Approved by:

Shen Junsheng
Shen Junsheng (Supervisor)

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MORLAB

Shenzhen Morlab Communications Technology Co., Ltd.
FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

Tel: 86-755-36698555

Http://www.morlab.cn

Fax: 86-755-36698525

E-mail: service@morlab.cn





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REPORT No.: SZ25100252W02

Change History		
Version	Date	Reason for change
1.0	2026-04-09	First edition



1. Summary of Test Result

No.	Section	Description	Test Date	Test Engineer	Result	Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	/
2	N/A	Duty Cycle of Test Signal	Dec. 17, 2025	Zhu Peihong	PASS	/
3	15.247(b)	Maximum Peak Conducted Output Power	Dec. 19, 2025	Zhu Peihong	PASS	/
4	15.247(b)	Maximum Average Conducted Output Power	Dec. 19, 2025	Zhu Peihong	PASS	/
5	15.247(a)	Bandwidth	Dec. 17, 2025	Zhu Peihong	PASS	/
6	15.247(d)	Conducted Spurious Emission and Band Edge	Dec. 17, 2025	Zhu Peihong	PASS	/
7	15.247(e)	Power Spectral Density	Dec. 31, 2025	Zhu Peihong	PASS	/
8	15.207	Conducted Emission	Dec. 24, 2025	Wang Yapeng	PASS	/
9	15.247(d)	Restricted Frequency Bands	Dec. 23, 2025	Tian Xin	PASS	/
10	15.209, 15.247(d)	Radiated Emission	Dec. 17, 2025	Tian Xin	PASS	/

Note 1: All test items are tested and evaluated in the worse mode with reference to output power results.

Note 2: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2020 and KDB 558074 D01 v05r02.

Note 3: Any additions, deviation, or exclusions from the method shall be noted in the "Remark".



1.1. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart C Radio Frequency Devices



1.2. Test Equipment List

1.2.1 Conducted Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2025.01.15	2026.01.14
RF Cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
SMA Connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

1.2.2 Conducted Emission Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	101052	ESPI	R&S	2025.05.15	2026.05.14
LISN	103131	ENV 216	R&S	2025.03.20	2026.03.19
RF Coaxial Cable (DC-100MHz)	EMC-CE-00514	N/A	N/A	2025.05.06	2026.05.05

1.2.3 List of Software Used

Description	Manufacturer	Software Version
Test System	MaiWei	2.0.0.0
JS32-RE	Tonscend	5.0.0
TS+ -[JS32-CE]	Tonscend	2.5.0.0

**1.2.4 Radiated Test Equipment**

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Signal Analyzer	MY56060145	N9020A	Agilent	2025.05.13	2026.05.12
Test Antenna - Bi-Log	9163-274	VULB 9163	Schwarzbeck	2025.06.28	2026.06.27
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2025.05.16	2026.05.15
Test Antenna – Horn	9120D-963	BBHA 9120D	Schwarzbeck	2025.05.16	2026.05.15
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2025.06.20	2026.06.19
Preamplifier (10MHz-6GHz)	46732	S10M100L38 02	LUCIX CORP.	2025.05.13	2026.05.12
Preamplifier (2GHz-18GHz)	61171/61172	S020180L32 03	LUCIX CORP.	2025.05.13	2026.05.12
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2025.09.03	2026.09.02
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2025.09.03	2026.09.02
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2025.09.03	2026.09.02
Notch Filter	N/A	WRCG-2400-2483.5-60SS	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2025.06.21	2028.06.20
Anechoic Chamber	N/A	9m*6m*6m	CRT	2025.04.19	2026.04.18



1.3. Measurement Uncertainty

Test Items	Uncertainty	Remark
Peak Output Power	$\pm 2.22\text{dB}$	Confidence levels of 95%
Power Spectral Density	$\pm 2.22\text{dB}$	Confidence levels of 95%
Bandwidth	$\pm 5\%$	Confidence levels of 95%
Conducted Spurious Emission	$\pm 2.77\text{dB}$	Confidence levels of 95%
Restricted Frequency Bands	$\pm 5\%$	Confidence levels of 95%
Radiated Emission	$\pm 2.95\text{dB}$	Confidence levels of 95%
Conducted Emission	$\pm 2.44\text{dB}$	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
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525
FCC Designation Number:	CN1192
FCC Test Firm Registration Number:	226174



2. General Description

2.1. Information of Applicant and Manufacturer

Applicant:	Shenzhen Chainway Information Technology Co., Ltd
Applicant Address:	9F Building 2, Daqian Industrial Park, District 67, XingDong Community, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Chainway Information Technology Co., Ltd
Manufacturer Address:	9F Building 2, Daqian Industrial Park, District 67, XingDong Community, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China

2.2. Information of EUT

Product Name:	UHF Sled Reader	
Sample No.:	1#, 2#, 4#	
Hardware Version:	R7_Hardware_Version	
Software Version:	R7_Software_Version	
Modulation Technology:	DSSS, OFDM, OFDMA	
Modulation Type:	Refer to section 2.4	
Wireless Technology:	802.11b, 802.11g, 802.11n (HT20), 802.11n (HT40), 802.11ax (HEW20), 802.11ax (HEW40)	
Operating Frequency Range:	2412MHz-2472MHz	
Antenna Type:	Chip Antenna	
Antenna Gain:	3.00dBi	
Accessory Information:	Battery	
	Brand Name:	Hixon
	Model No.:	J1116
	Serial No.:	N/A
	Capacity:	6500mAh
	Rated Voltage:	3.6V
	Charge Limit:	4.2V
	Manufacturer:	Hixon (Shenzhen) Technology Limited
	AC Adapter	
	Brand Name:	ULLPOWER
	Model No.:	NA010050020

	Serial No.:	N/A
	Rated Output:	5V $\pm$ 2000mA
	Rated Input:	100-240V $\sim$ 50/60Hz, 0.5A
	Manufacturer:	SHENZHEN SHI YING YUAN ELECTRONICS CO LTD

Note 1: The EUT description presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information. 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

Nominal Channel Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	1	2412	8	2447
	2	2417	9	2452
	3	2422	10	2457
	4	2427	11	2462
	5	2432	12	2467
	6	2437	13	2472
	7	2442		
Nominal Channel Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
40MHz	3	2422	8	2447
	4	2427	9	2452
	5	2432	10	2457
	6	2437	11	2462
	7	2442		

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

2.4. Test Configuration of EUT

2.4.1. Modulation Type and Data Rate of EUT

Mode	Bandwidth (MHz)	Modulation Technology	Modulation Type	Data Rate	RU Size
802.11b	20	DSSS	DBPSK	1/2/5.5/11Mbps	N/A
			DQPSK		
			CCK		
802.11g	20	OFDM	BPSK	6/9/12/18/24/36/48/54 Mbps	N/A
			QPSK		
			16QAM		
			64QAM		
802.11n	20 (HT20/40)	OFDM	BPSK	MCS0~MCS7	N/A
			QPSK		
			16QAM		
			64QAM		
802.11ax	20/40 (HEW20/40)	OFDM/ OFDMA	BPSK	MSC0~MCS11	26/52/106
			QPSK		
			16QAM		
			64QAM		
			256QAM		
			1024QAM		

Note1: The worst-case mode (bold face) in all data rates has been determined during the pre-scan, only the test data of the worst-case were recorded in this report.

Note2: The RF signal transmission of EUT is controlled by the build-in engineering mode which is provided by the manufacturer. The recorded power setting value is the maximum that the engineering mode has configuration during testing.

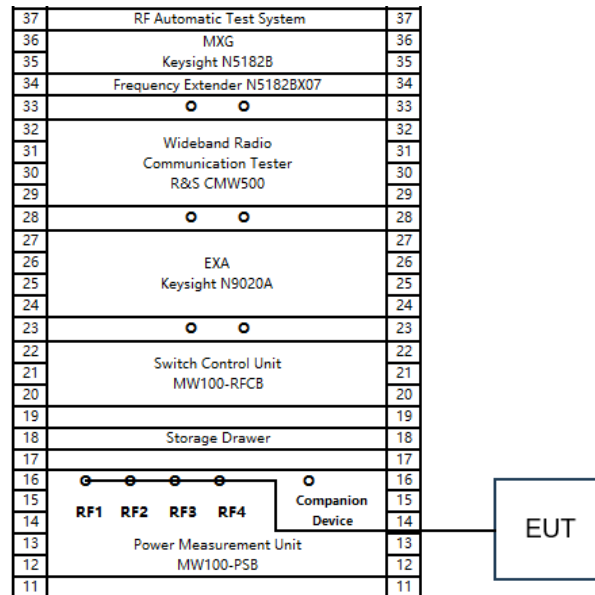
Note3: The RU allocation of 802.11ax mode, only full ru is supported.

2.5. Test Conditions

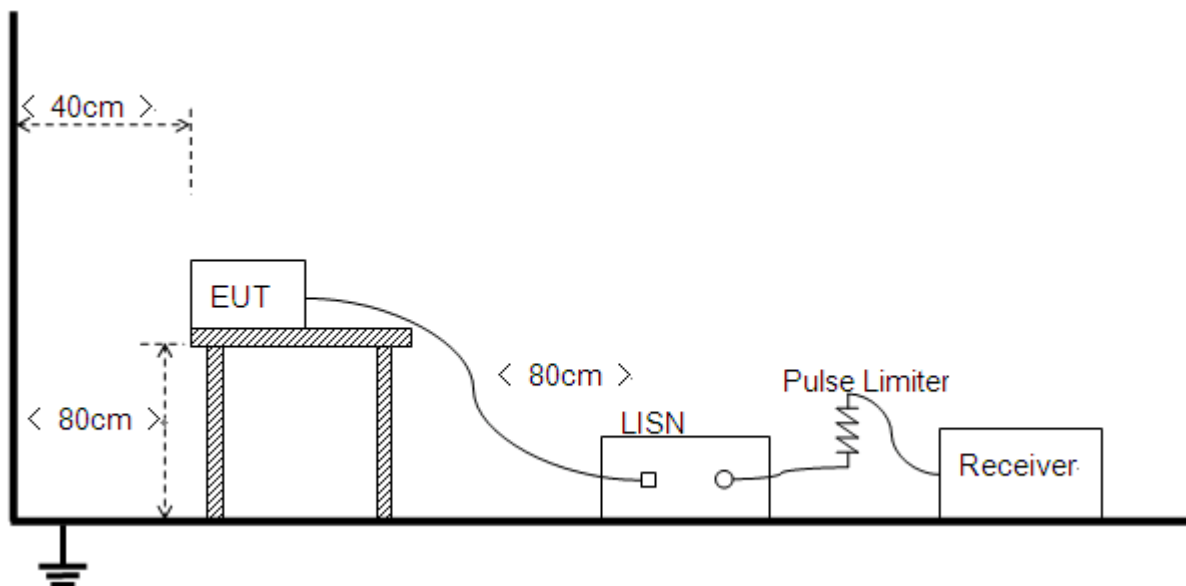
Temperature (°C):	15–35
Relative Humidity (%):	30–60
Atmospheric Pressure (kPa):	86–106

2.6. Test Setup Layout Diagram

2.6.1. Conducted Measurement

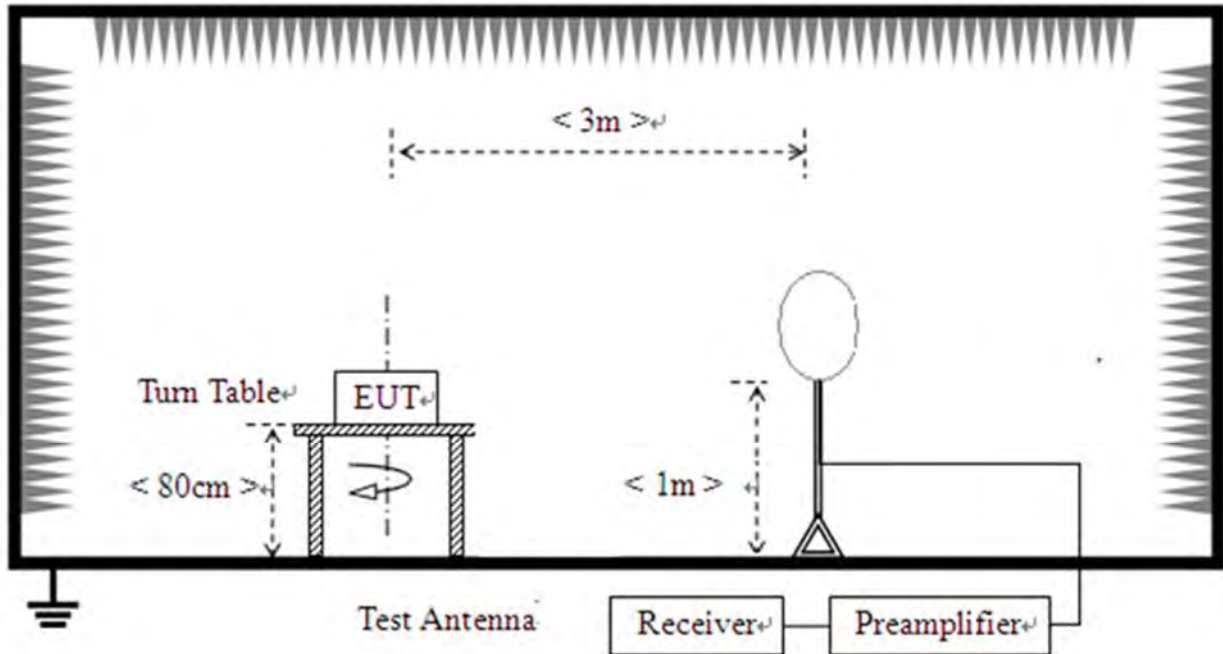


2.6.2. Conducted Emission Measurement

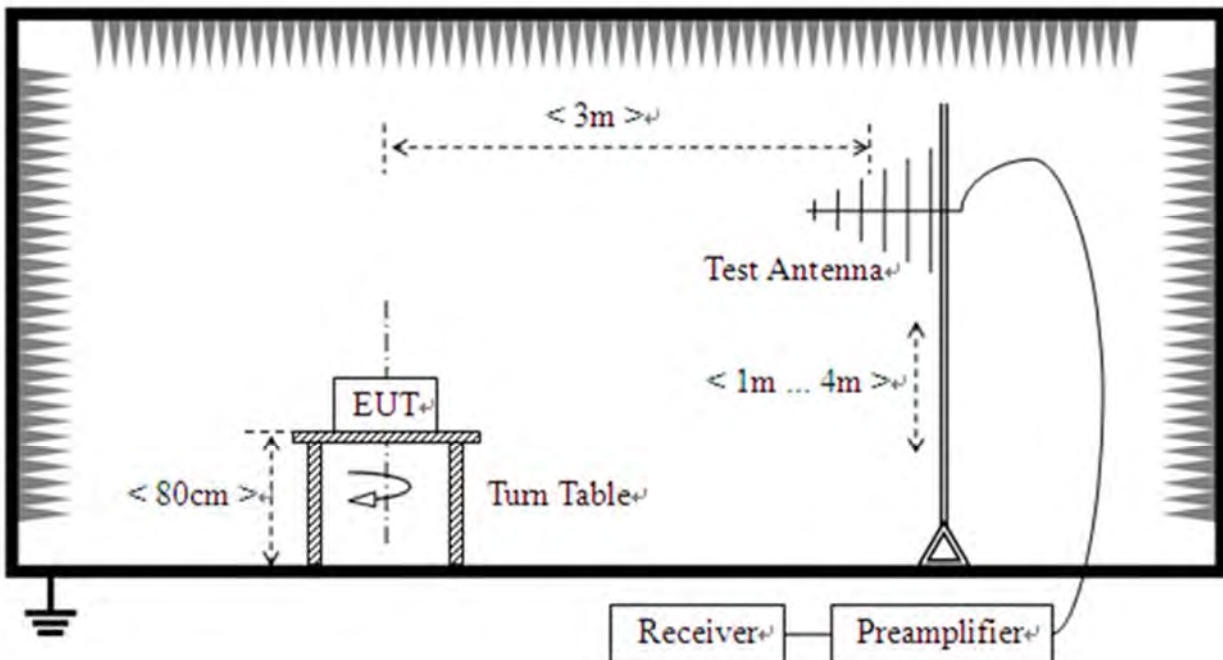


2.6.3.Radiation Measurement

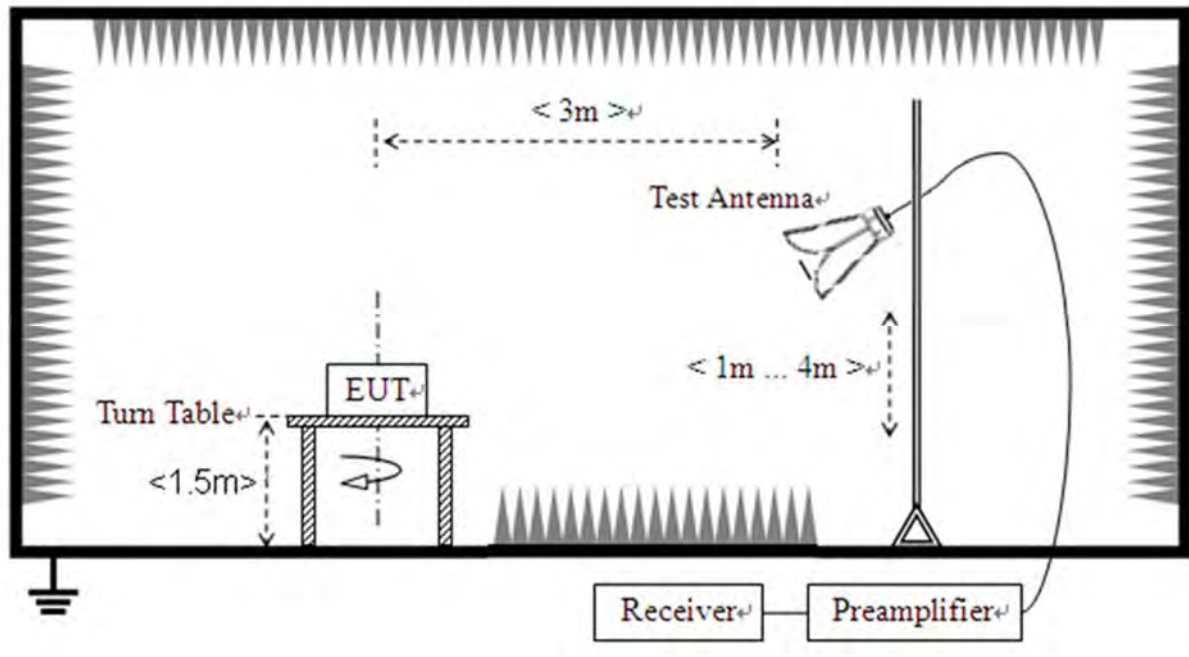
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to 1GHz



3) For radiated emissions above 1GHz





3. Test Results

3.1. Antenna Requirement

3.1.1. Requirement

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.1.2. Test Result

Antenna location	Antenna Type	Coupling Method
☒ Internal ☐ External	☐ FPC Antenna ☐ Spring Antenna ☐ Ceramic Antenna ☐ Integrated Antenna ☐ Dipole Antenna ☐ PCB Antenna ☐ PIFA Antenna ☒ Chip Antenna	☐ I-PEX Connector ☐ SMA Connector ☐ RP-SMA Connector ☐ Metal Shrapnel ☐ Layout ☒ Soldering

3.2. Duty Cycle of Test Signal

3.2.1. 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 $\pm 2\%$; otherwise, the duty cycle is considered to be non constant.

3.2.2. Test Result

Refer to Annex A.1 in this report.



3.3. Maximum Peak and Average Conducted Output Power

3.3.1. Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum conducted output power of the intentional radiator shall not exceed 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in above of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2. Test Procedures

The EUT (Equipment under the test) which is coupled to the USB Wideband Power Sensor; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

3.3.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.3.4. Test Result

Refer to Annex A.2 and A.3 in this report.



3.4.6 dB Bandwidth

3.4.1.Requirement

According to FCC section 15.247(a) (2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

3.4.1.Test Procedures

KDB 558074 Section 8.2 was used in order to prove compliance.

3.4.2.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.4.3.Test Result

Refer to Annex A.4 in this report.



3.5. Conducted Spurious Emissions and Band Edge

3.5.1. Requirement

According to FCC section 15.247(d), 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.

3.5.2. Test Procedures

KDB 558074 Section 8.5 and 8.7 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.5 and A.6 in this report.



3.6. Power Spectral Density

3.6.1. Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm 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.

3.6.2. Test Procedures

The measured power spectral density was calculated by the reading of the spectrum analyzer and calibration. Following is the test procedure for PSD test:

- a) Set analyzer center frequency to channel center frequency
- b) Set span to 1.5 times DTS
- c) Set RBW to 30kHz
- d) Set VBW to 100kHz
- e) Detector = peak
- f) Sweep time = auto couple
- g) Trace mode = max hold
- h) Allow trace to fully stabilize
- i) Use the peak marker function to determine the maximum amplitude level and recorded as PD
- j) Use below formula to calculate the Conducted PSD value that at specified RBW:

Conducted PSD = PD - 10lg(30k/3k)

3.6.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.6.4. Test Result

Refer to Annex A.7 in this report.

3.7. Conducted Emission

3.7.1. Requirement

According to FCC section 15.207, 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 50 μ H/50 Ω line impedance stabilization network (LISN).

Frequency Range (MHz)	Conducted Limit (dB μ V)	
	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.

3.7.2. 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.

3.7.3. Test Setup Layout

Refer to chapter 2.6.2 in this report.

3.7.4. Test Result

Refer to Annex A.8 in this report.

3.8. Restricted Frequency Bands

3.8.1. Requirement

According to FCC section 15.247(d), 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 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

3.8.2. 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 $f \geq 1\text{GHz}$, 100 kHz for $f < 1\text{GHz}$

VBW = 3 MHz

Sweep = auto

Detector function = peak/average

Trace = max hold

Allow the trace to stabilize

3.8.3. Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.8.4. Test Result

Refer to Annex A.9 in this report.

3.9. Radiated Emission

3.9.1. Requirement

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
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

Note1: For above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

Note2: For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK). In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).



3.9.2.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.

3.9.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.9.4.Test Result

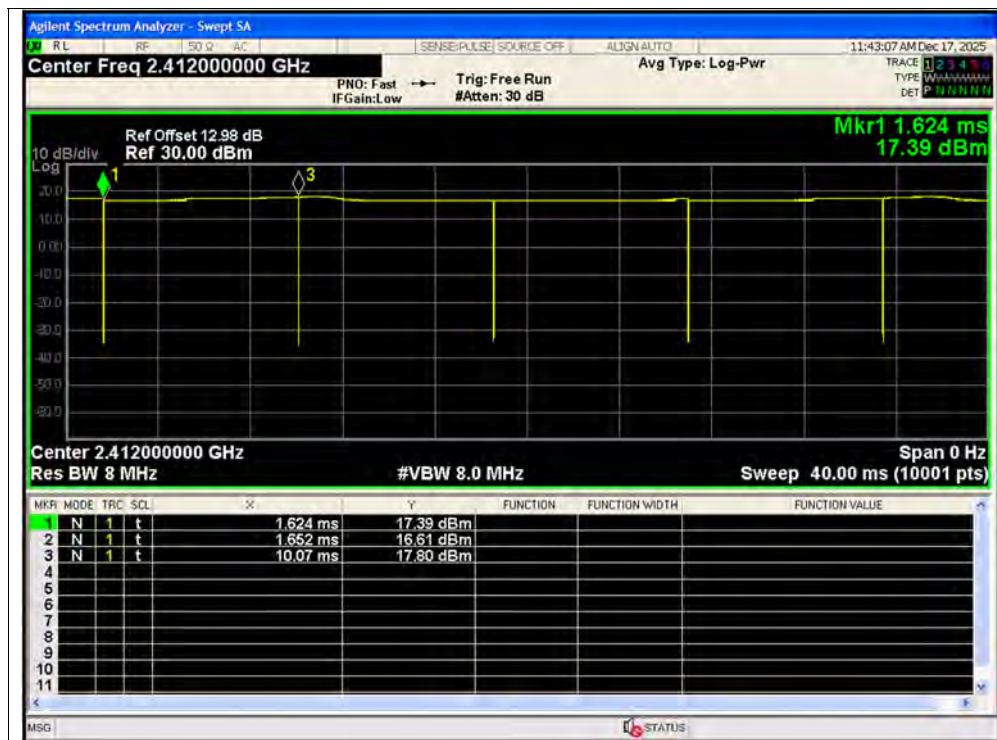
Refer to Annex A.10 in this report.



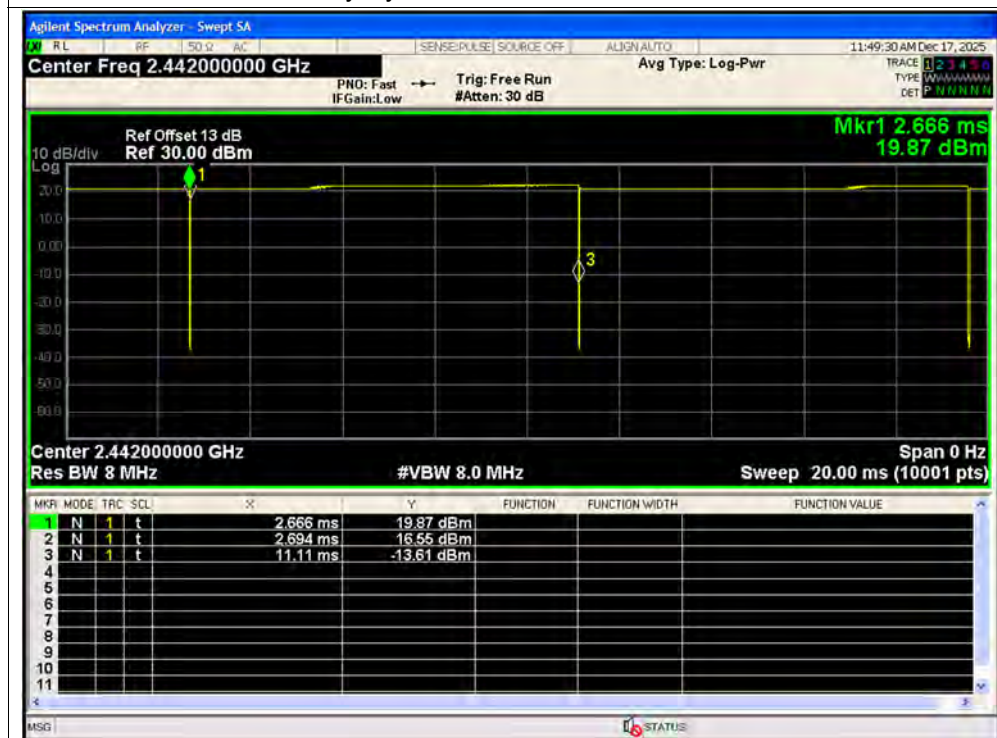
Annex A Test Data and Result

A.1. Duty Cycle of Test Signal

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.67	0.01	0.12
NVNT	b	2442	Ant1	99.67	0.01	0.12
NVNT	b	2472	Ant1	99.67	0.01	0.12
NVNT	g	2412	Ant1	97.63	0.1	0.72
NVNT	g	2442	Ant1	97.63	0.1	0.72
NVNT	g	2472	Ant1	97.63	0.1	0.72
NVNT	n20	2412	Ant1	99.34	0.03	0.2
NVNT	n20	2442	Ant1	99.34	0.03	0.2
NVNT	n20	2472	Ant1	99.34	0.03	0.2
NVNT	n40	2422	Ant1	99.31	0.03	0.2
NVNT	n40	2442	Ant1	99.31	0.03	0.2
NVNT	n40	2462	Ant1	99.31	0.03	0.2
NVNT	ax20	2412	Ant1	99.13	0.04	0.26
NVNT	ax20	2442	Ant1	99.13	0.04	0.26
NVNT	ax20	2472	Ant1	99.13	0.04	0.26
NVNT	ax40	2422	Ant1	99.13	0.04	0.26
NVNT	ax40	2442	Ant1	99.13	0.04	0.26
NVNT	ax40	2462	Ant1	99.13	0.04	0.26



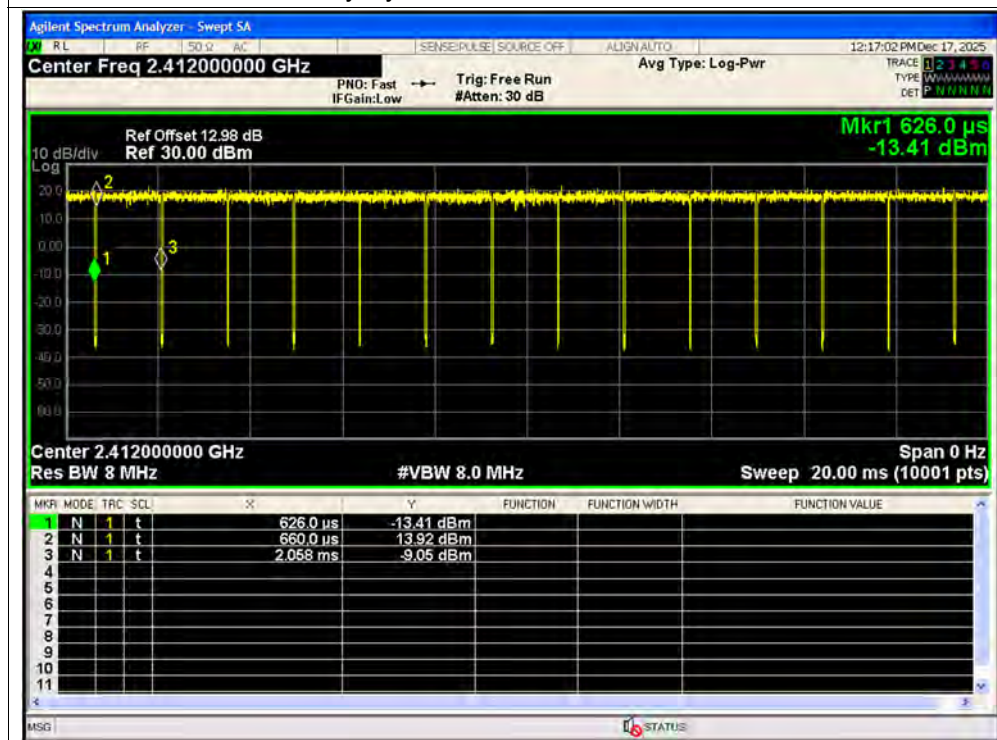
Duty Cycle NVNT b 2412MHz Ant1



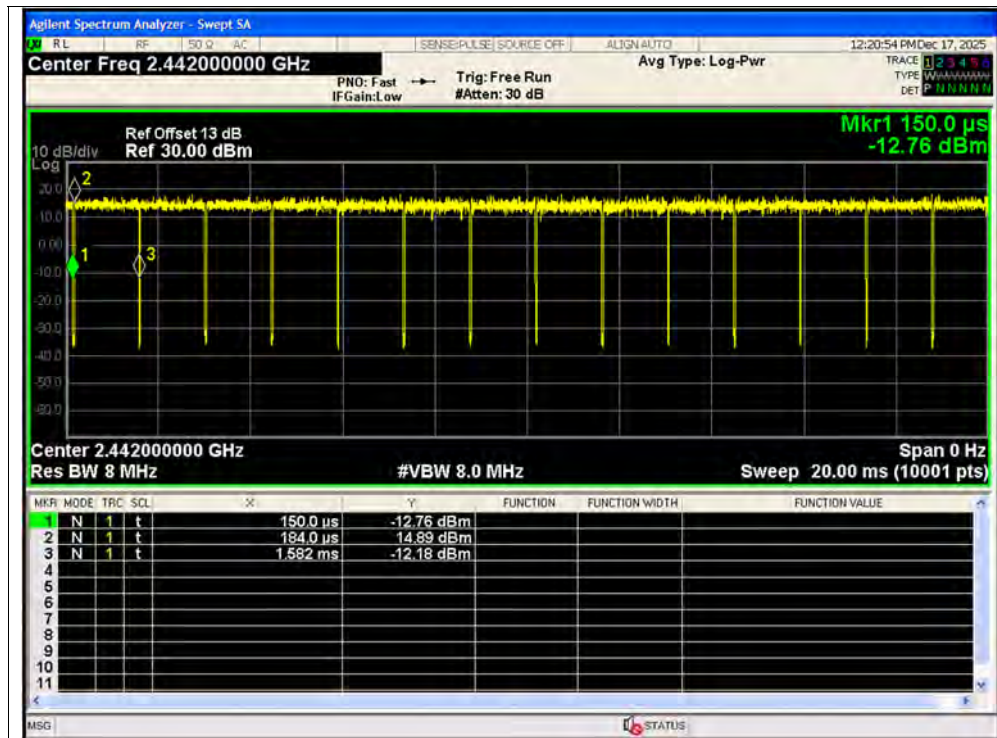
Duty Cycle NVNT b 2442MHz Ant1



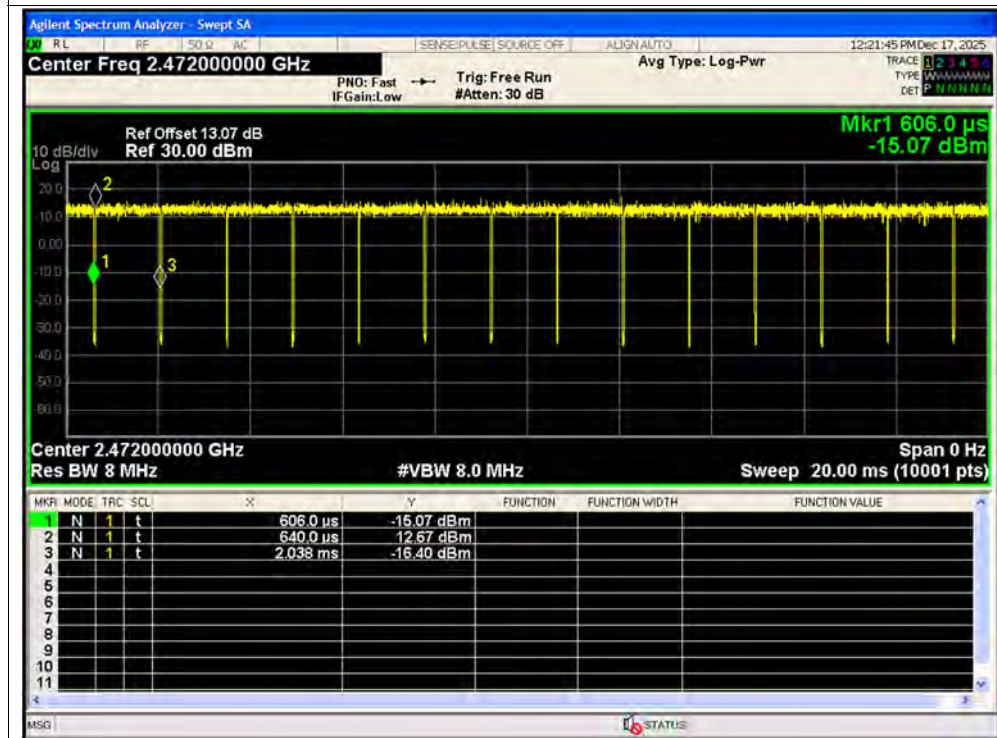
Duty Cycle NVNT b 2472MHz Ant1



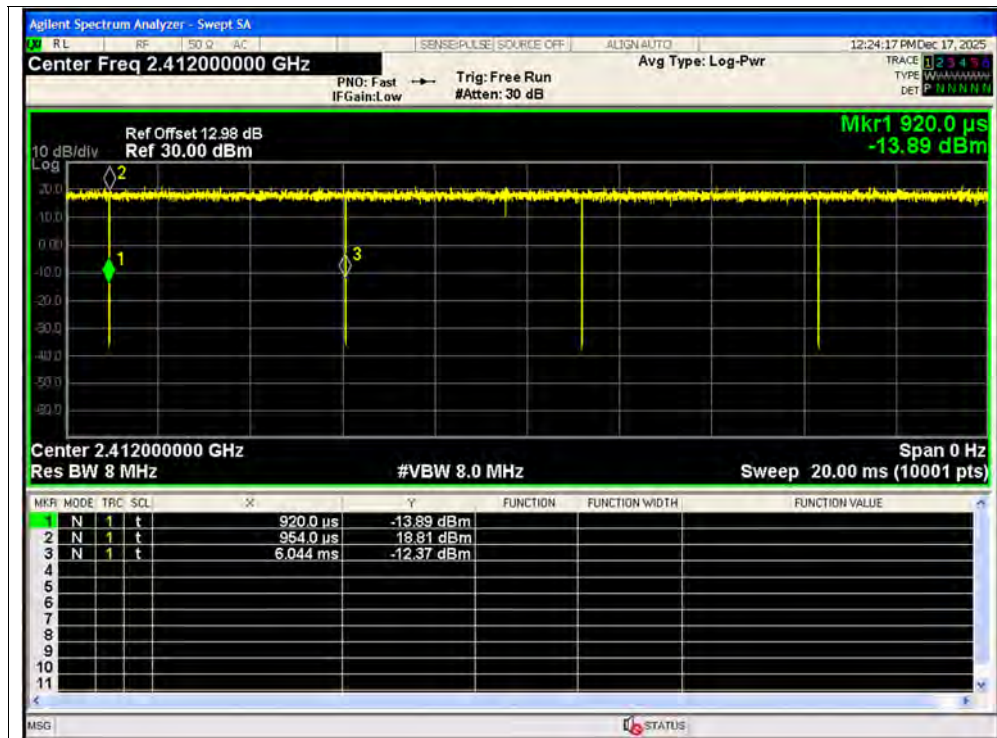
Duty Cycle NVNT g 2412MHz Ant1



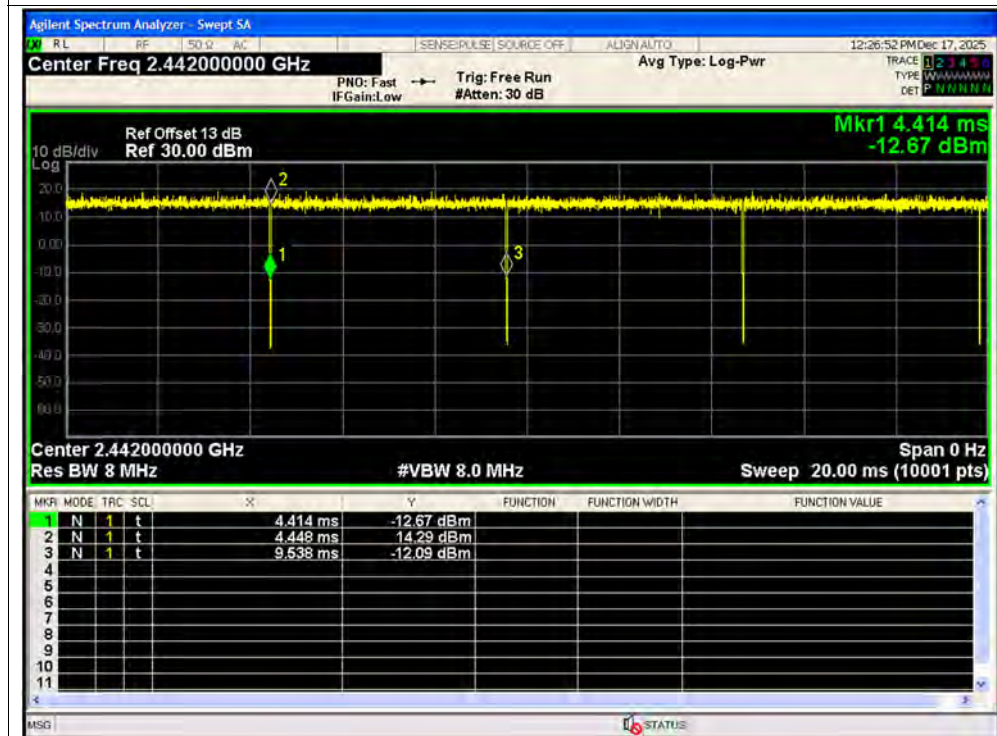
Duty Cycle NVNT g 2442MHz Ant1



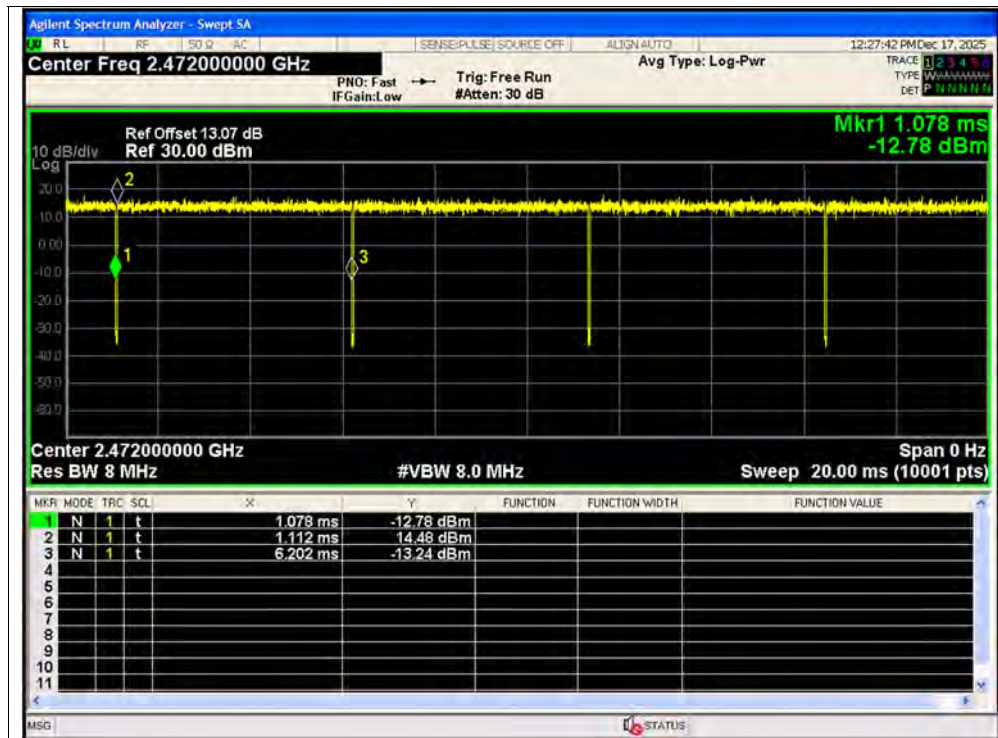
Duty Cycle NVNT g 2472MHz Ant1



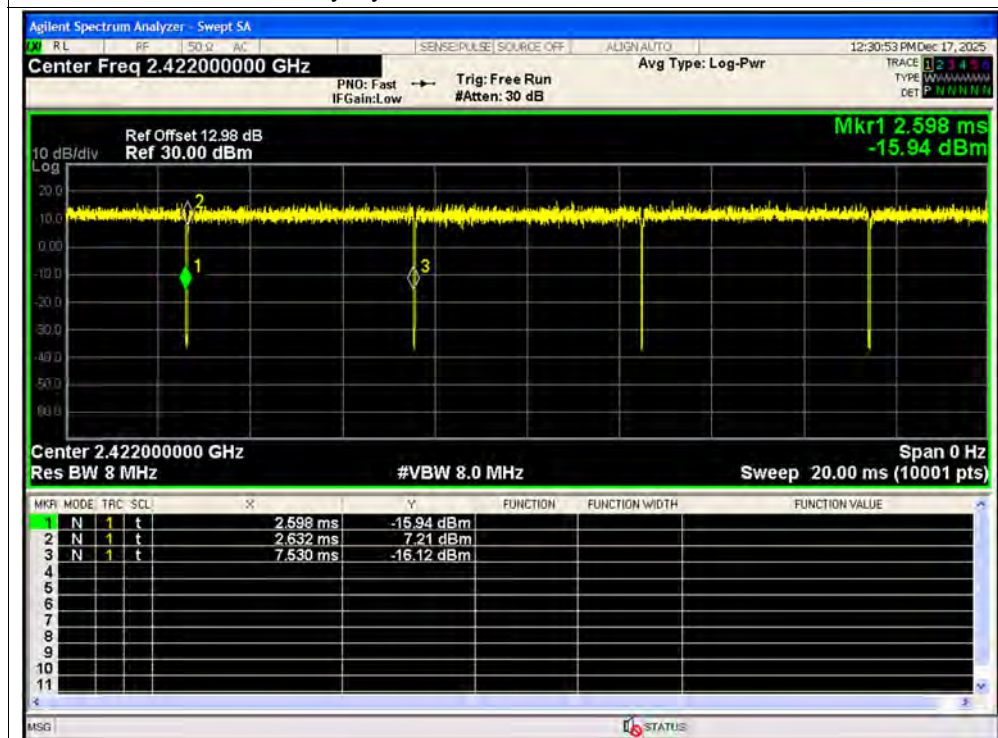
Duty Cycle NVNT n20 2412MHz Ant1



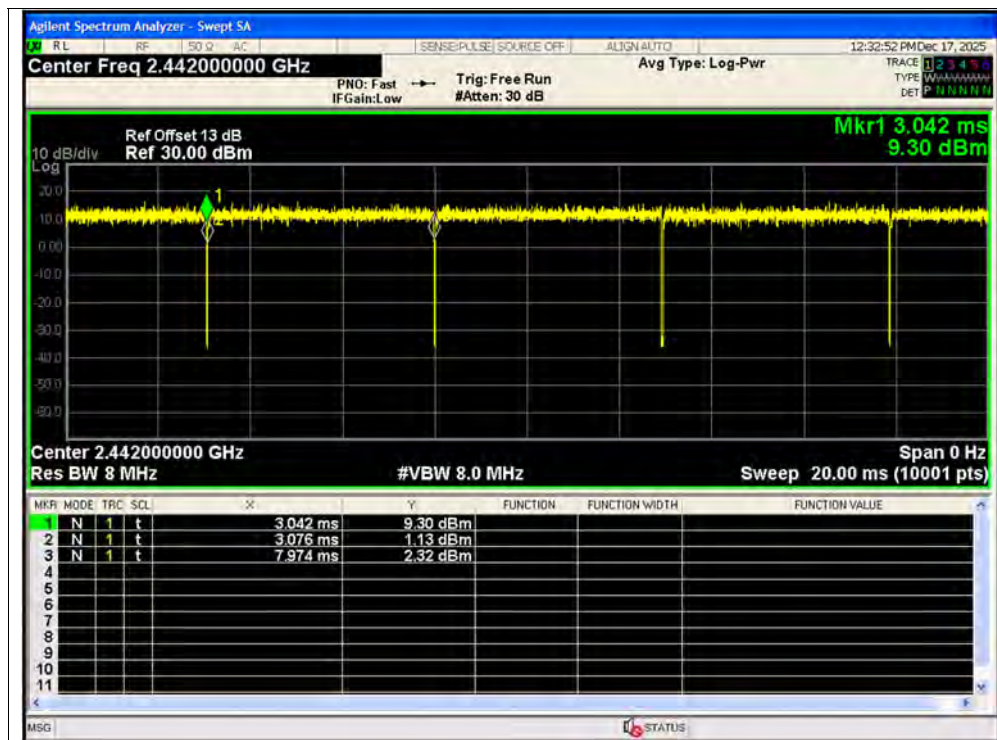
Duty Cycle NVNT n20 2442MHz Ant1



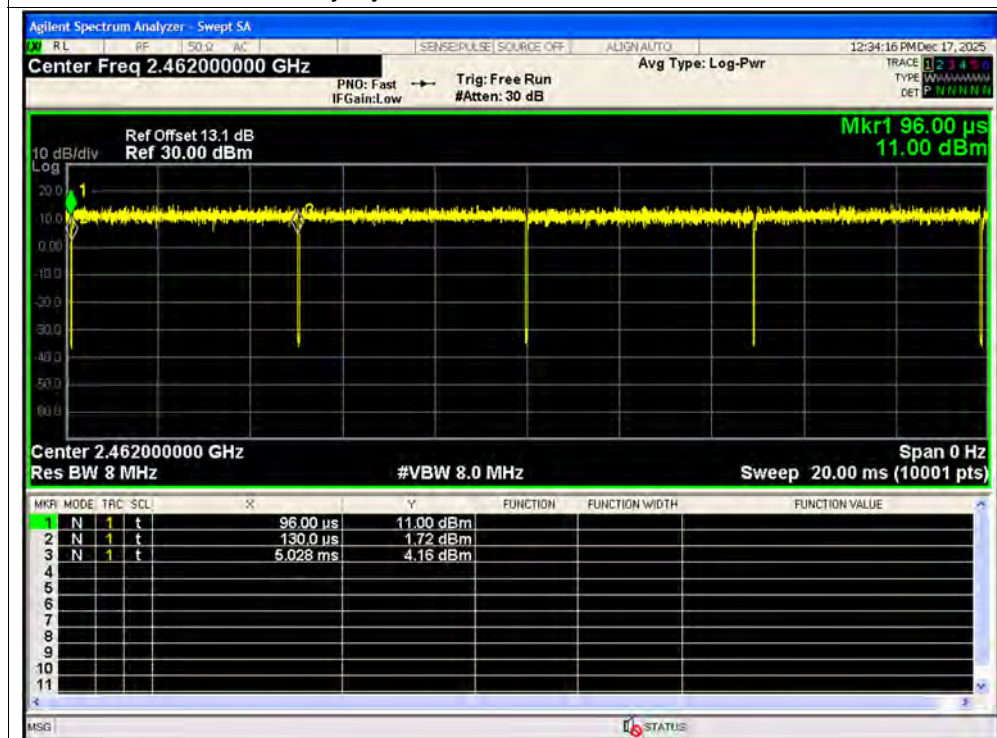
Duty Cycle NVNT n20 2472MHz Ant1



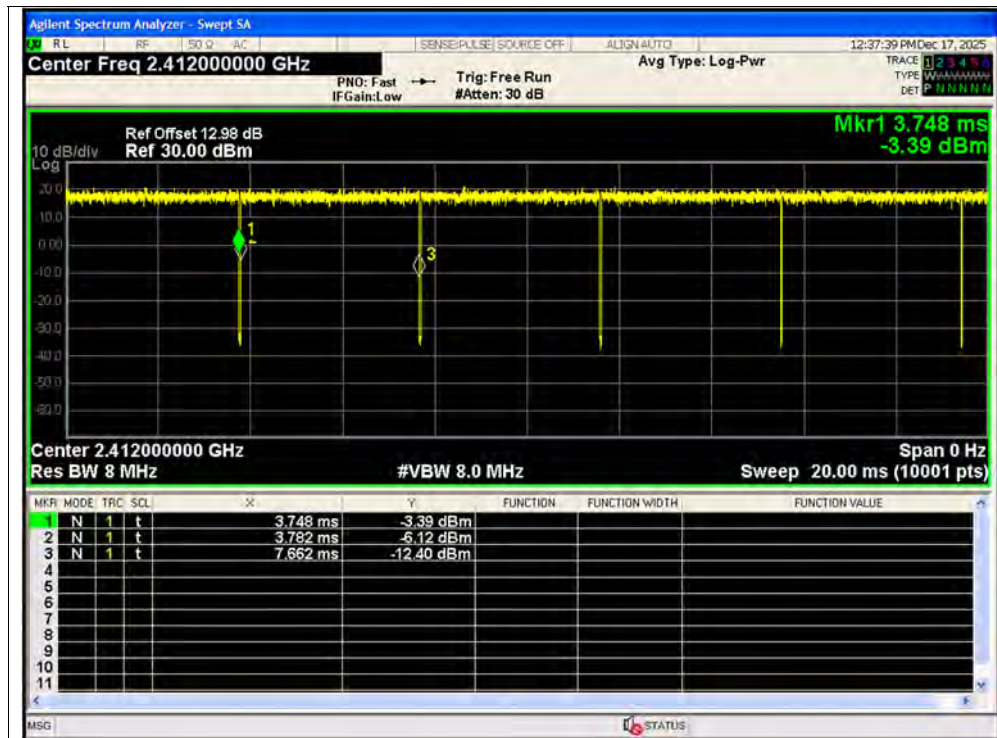
Duty Cycle NVNT n40 2422MHz Ant1



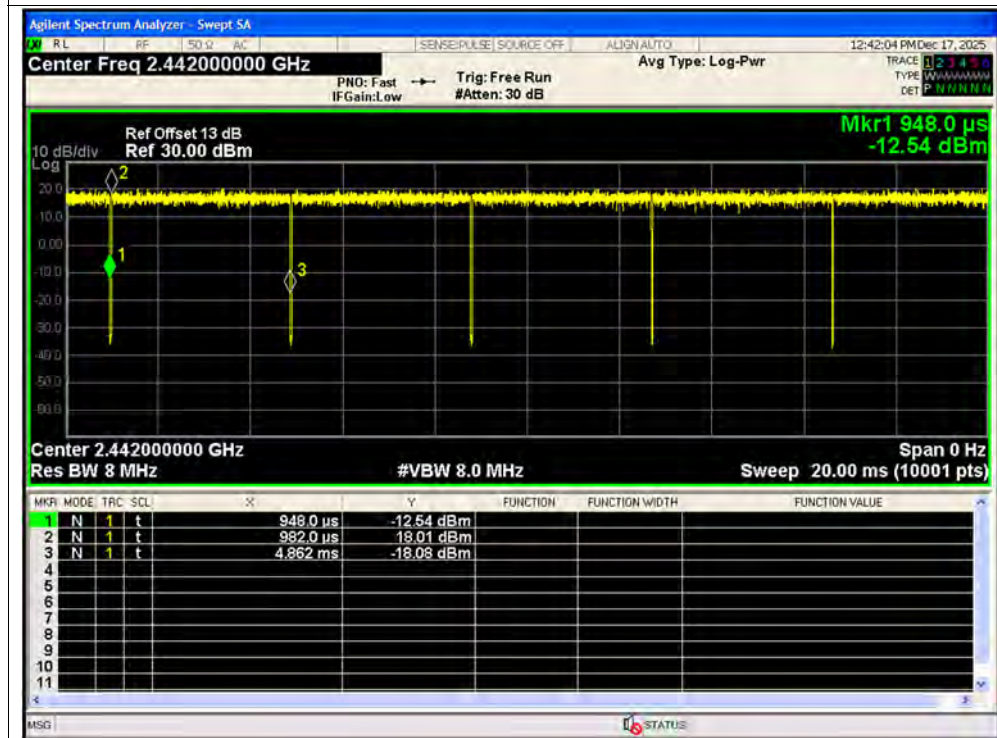
Duty Cycle NVNT n40 2442MHz Ant1



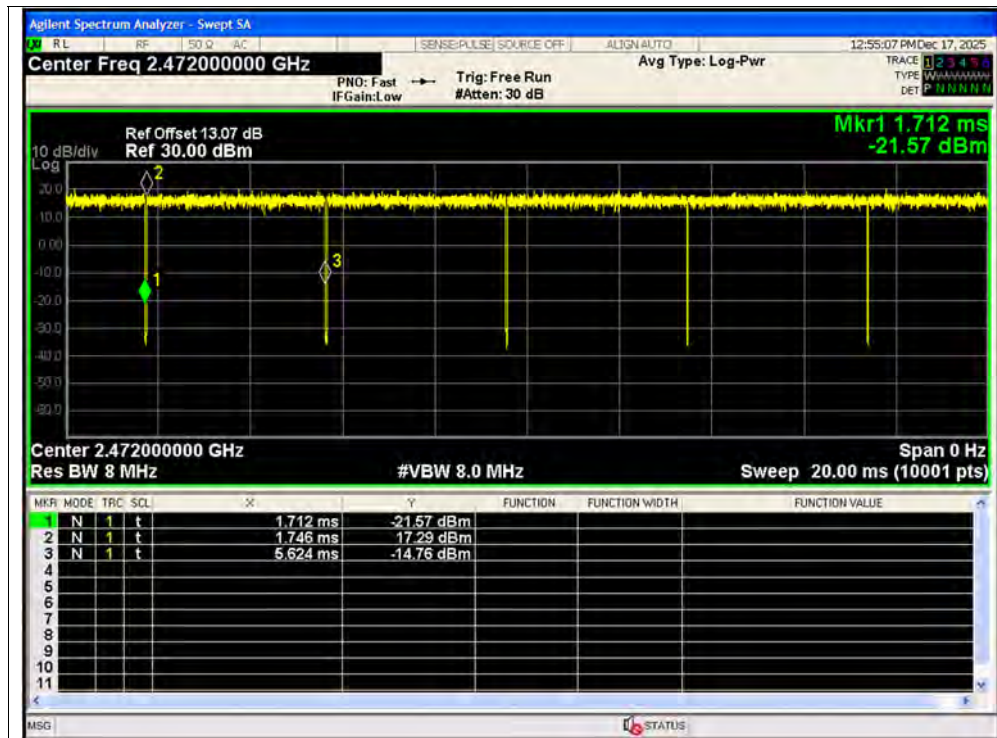
Duty Cycle NVNT n40 2462MHz Ant1



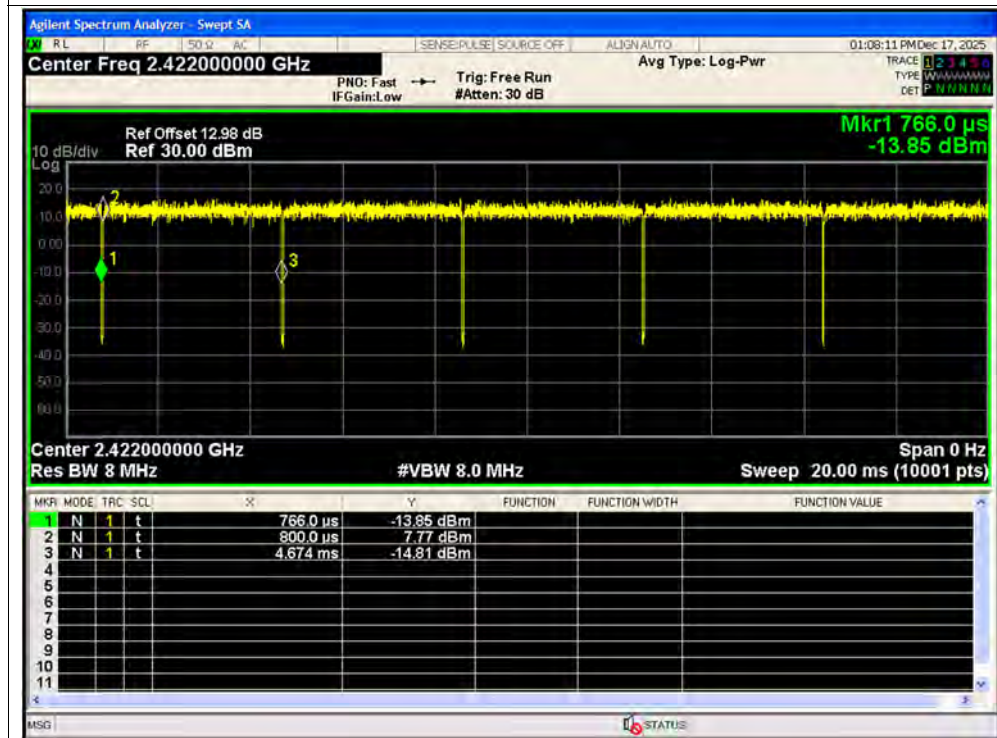
Duty Cycle NVNT ax20 2412MHz Ant1



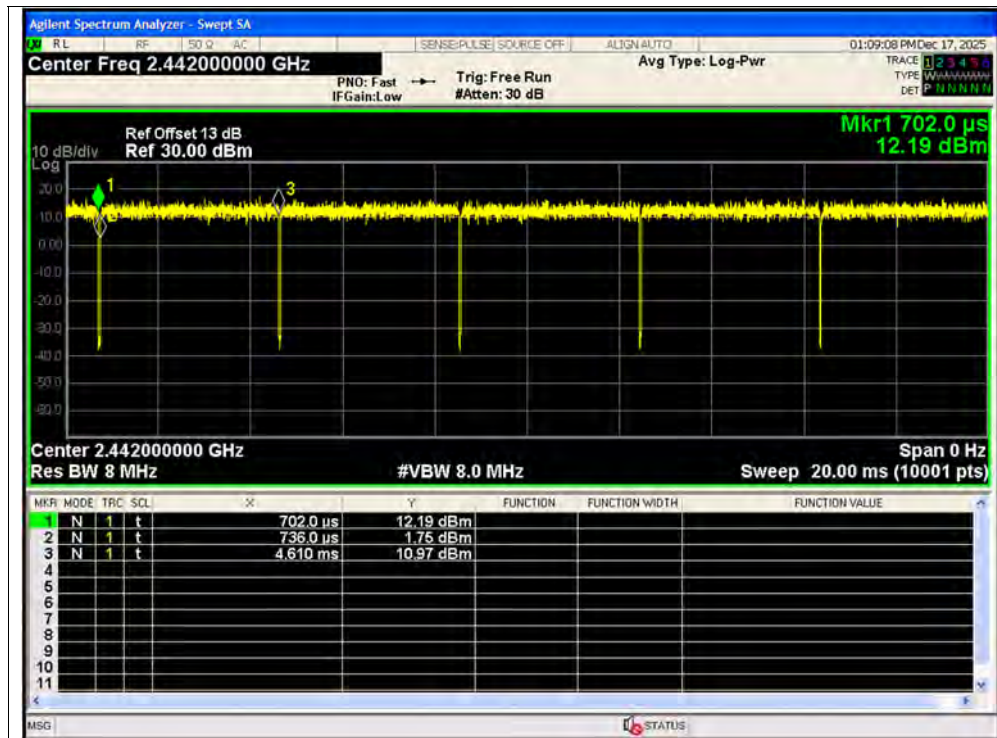
Duty Cycle NVNT ax20 2442MHz Ant1



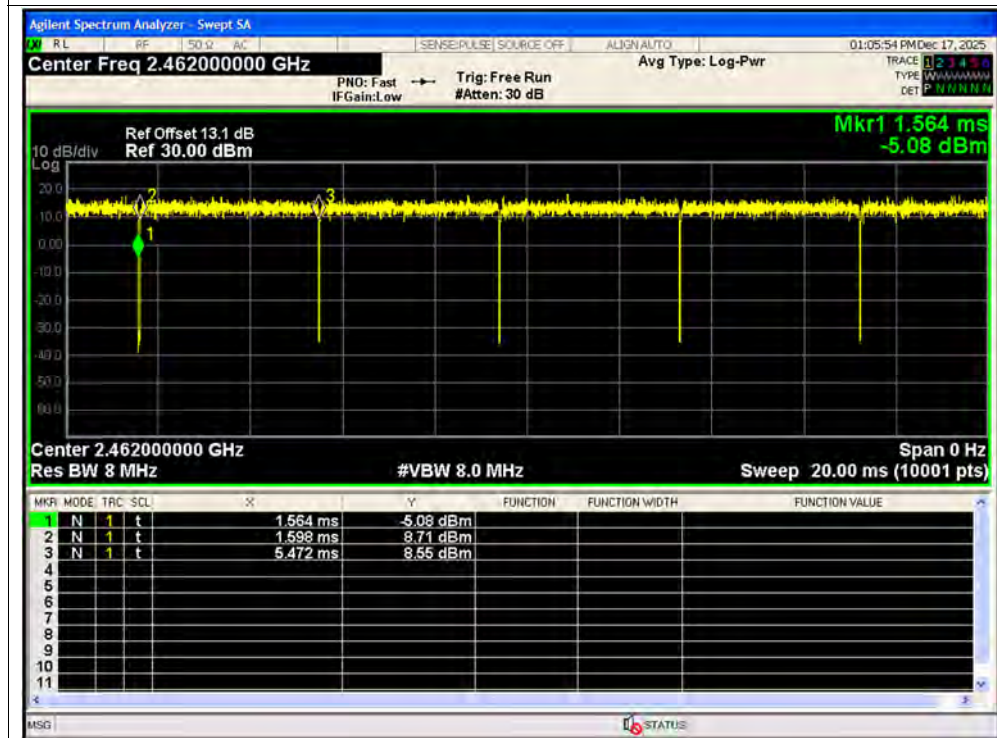
Duty Cycle NVNT ax20 2472MHz Ant1



Duty Cycle NVNT ax40 2422MHz Ant1



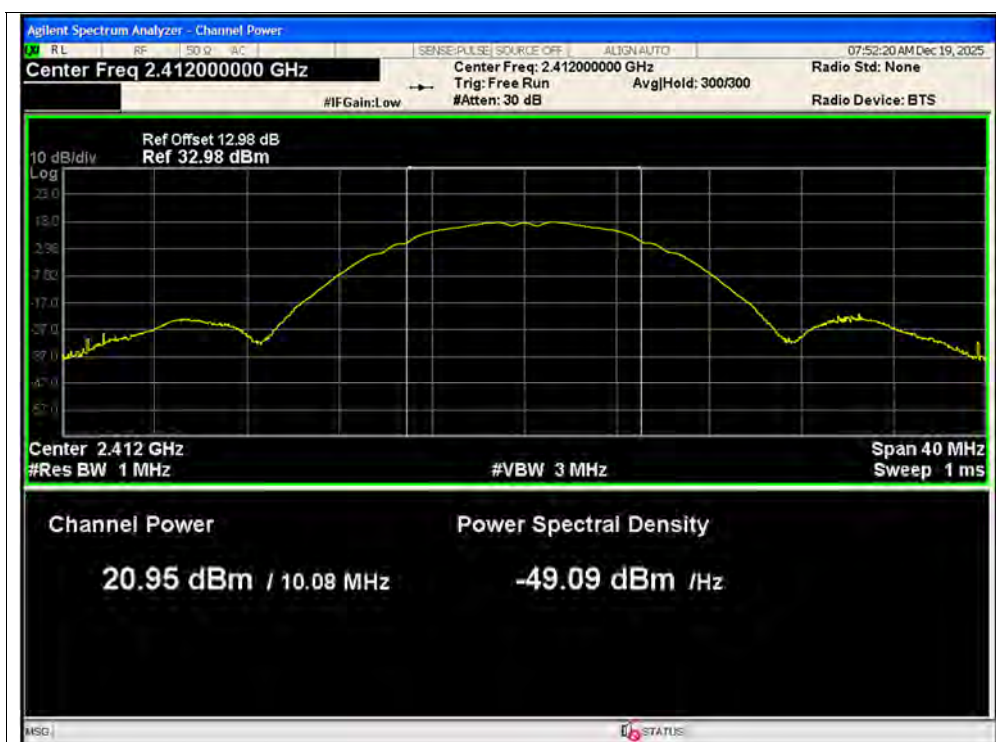
Duty Cycle NVNT ax40 2442MHz Ant1



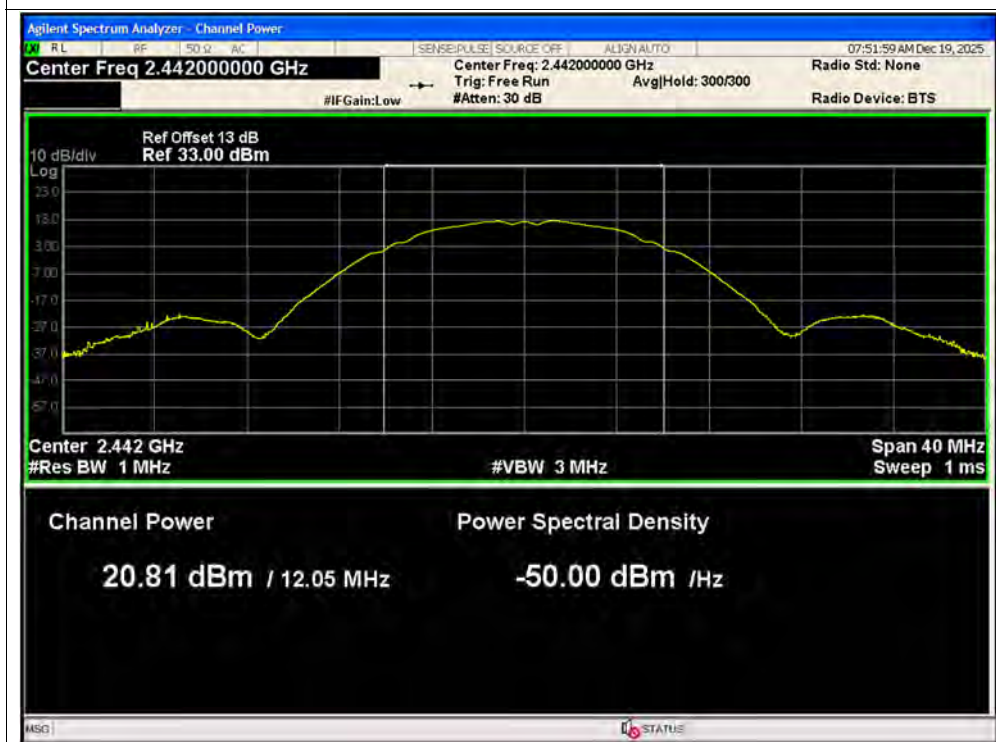
Duty Cycle NVNT ax40 2462MHz Ant1

**A.2. Maximum Peak Conducted Output Power**

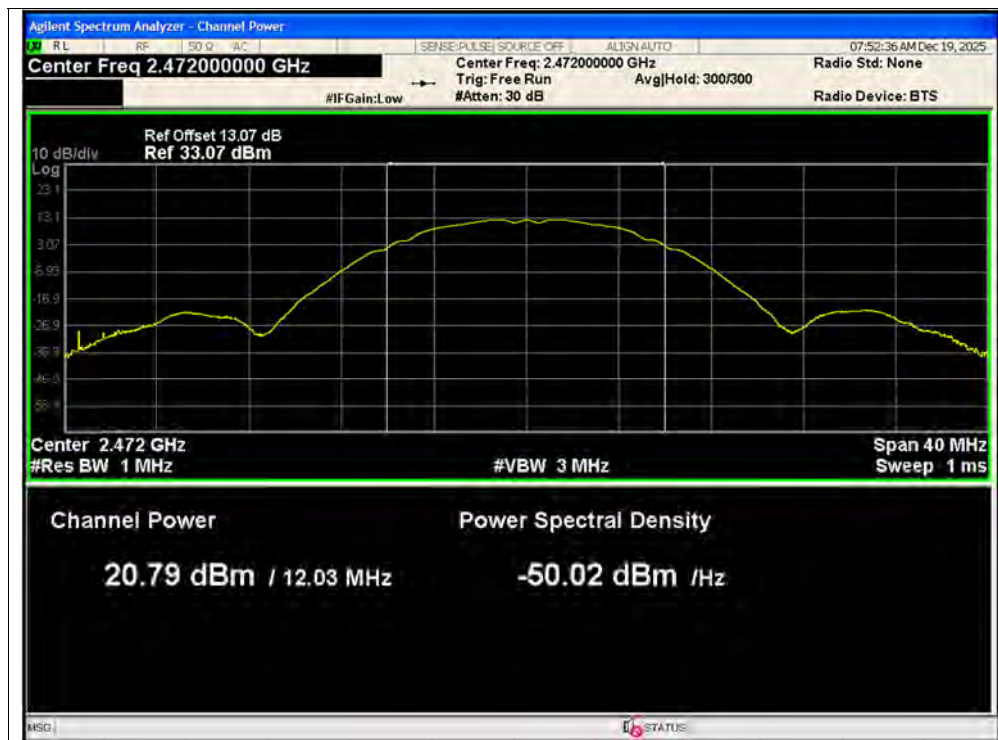
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	b	2412	Ant1	20.95	0	20.95	0.12445	30	Pass
NVNT	b	2442	Ant1	20.81	0	20.81	0.1205	30	Pass
NVNT	b	2472	Ant1	20.79	0	20.79	0.11995	30	Pass
NVNT	g	2412	Ant1	25.69	0	25.69	0.37068	30	Pass
NVNT	g	2442	Ant1	25.23	0	25.23	0.33343	30	Pass
NVNT	g	2472	Ant1	25.62	0	25.62	0.36475	30	Pass
NVNT	n20	2412	Ant1	24.66	0	24.66	0.29242	30	Pass
NVNT	n20	2442	Ant1	24.81	0	24.81	0.30269	30	Pass
NVNT	n20	2472	Ant1	24.8	0	24.8	0.302	30	Pass
NVNT	n40	2422	Ant1	24.94	0	24.94	0.31189	30	Pass
NVNT	n40	2442	Ant1	20.03	0	20.03	0.10069	30	Pass
NVNT	n40	2462	Ant1	25	0	25	0.31623	30	Pass
NVNT	ax20	2412	Ant1	25.39	0	25.39	0.34594	30	Pass
NVNT	ax20	2442	Ant1	24.52	0	24.52	0.28314	30	Pass
NVNT	ax20	2472	Ant1	25.34	0	25.34	0.34198	30	Pass
NVNT	ax40	2422	Ant1	25.57	0	25.57	0.36058	30	Pass
NVNT	ax40	2442	Ant1	25.18	0	25.18	0.32961	30	Pass
NVNT	ax40	2462	Ant1	25.75	0	25.75	0.37584	30	Pass



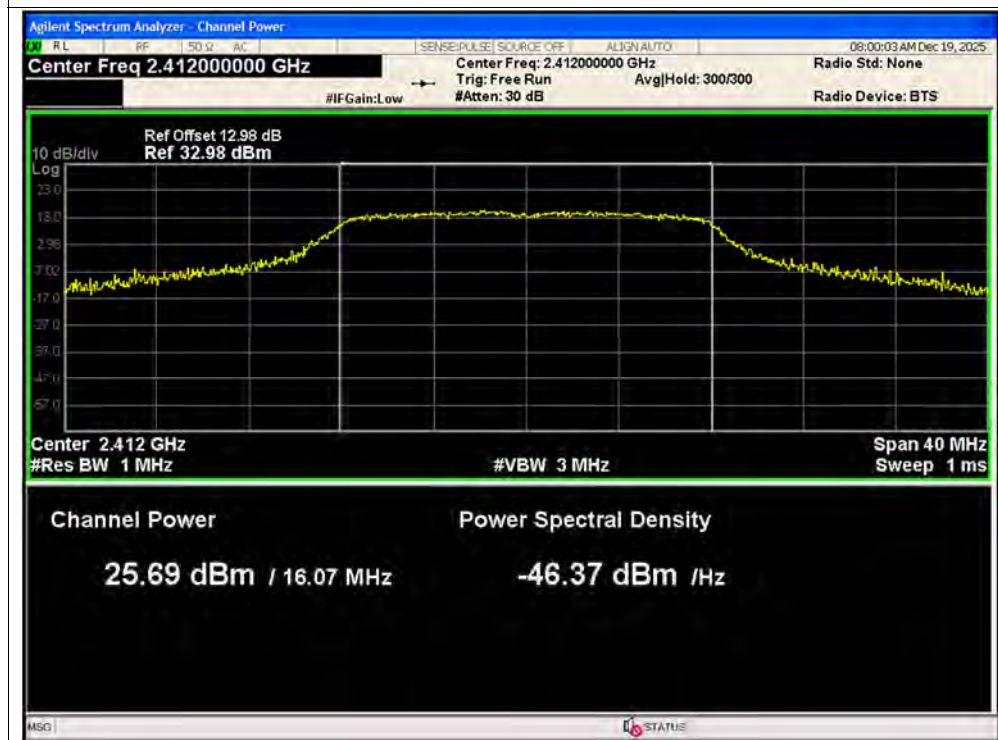
Peak Power NVNT b 2412MHz Ant1



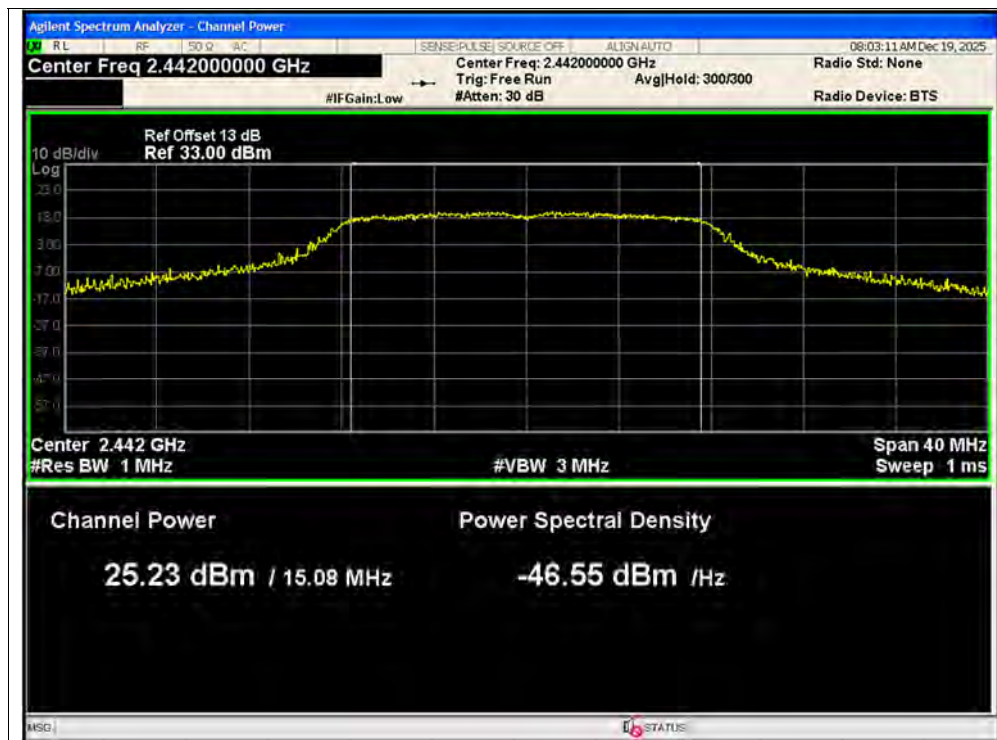
Peak Power NVNT b 2442MHz Ant1



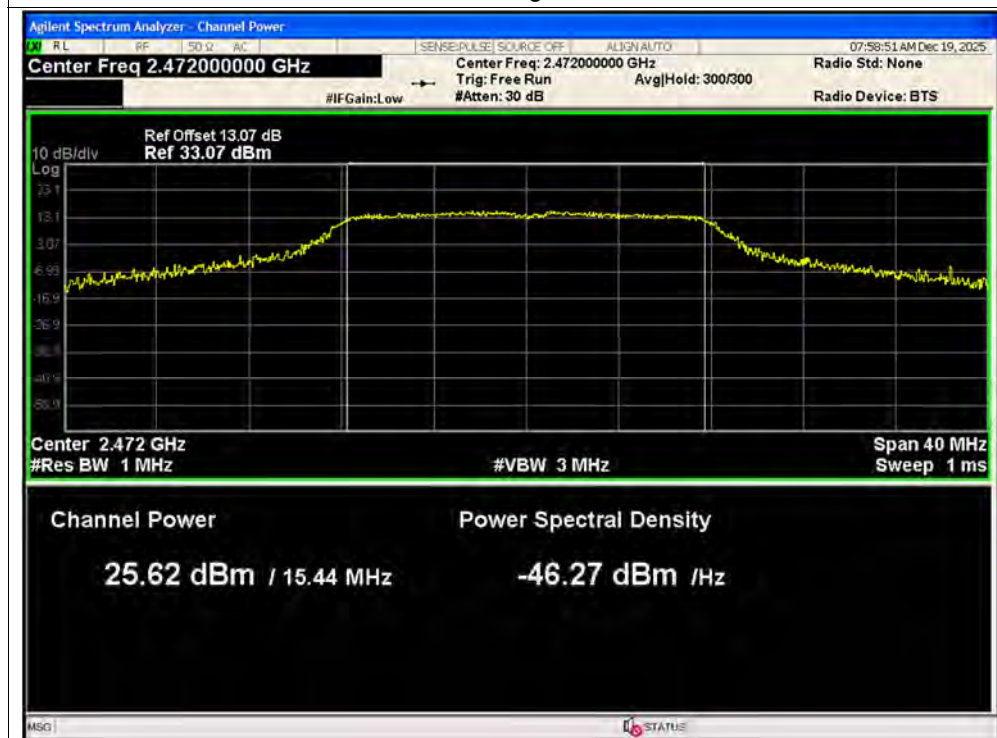
Peak Power NVNT b 2472MHz Ant1



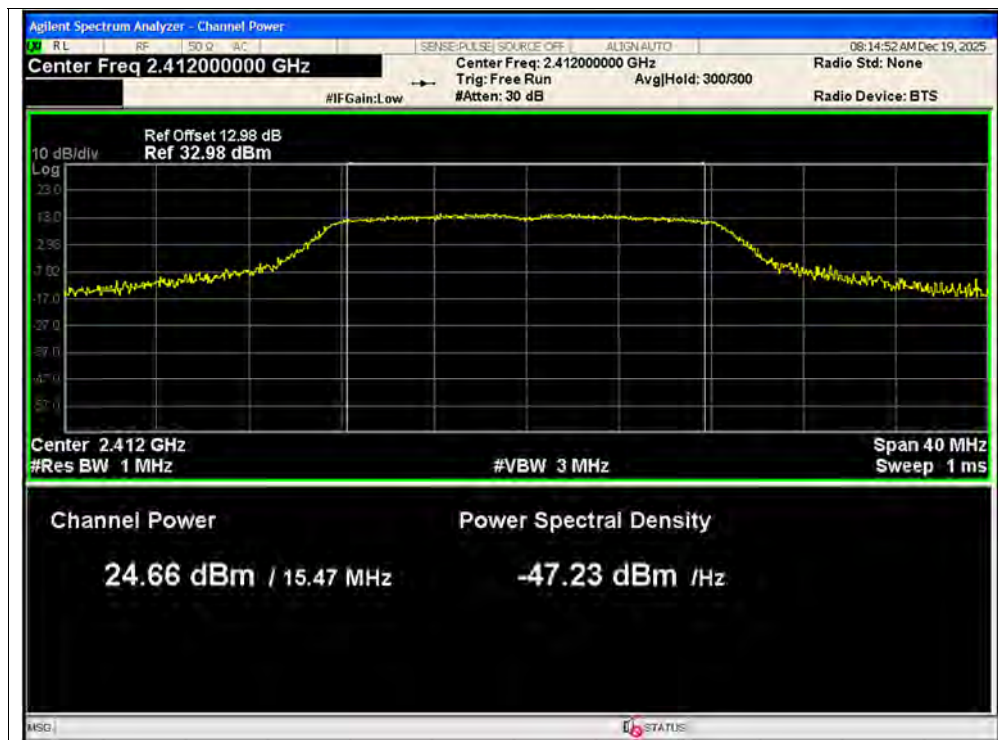
Peak Power NVNT g 2412MHz Ant1



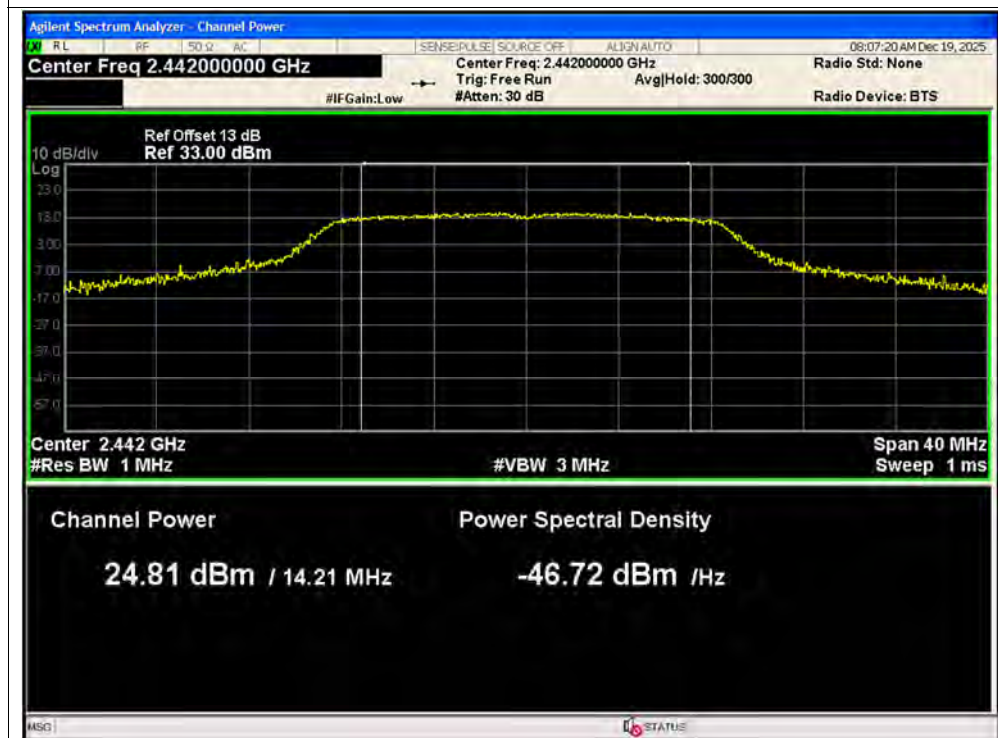
Peak Power NVNT g 2442MHz Ant1



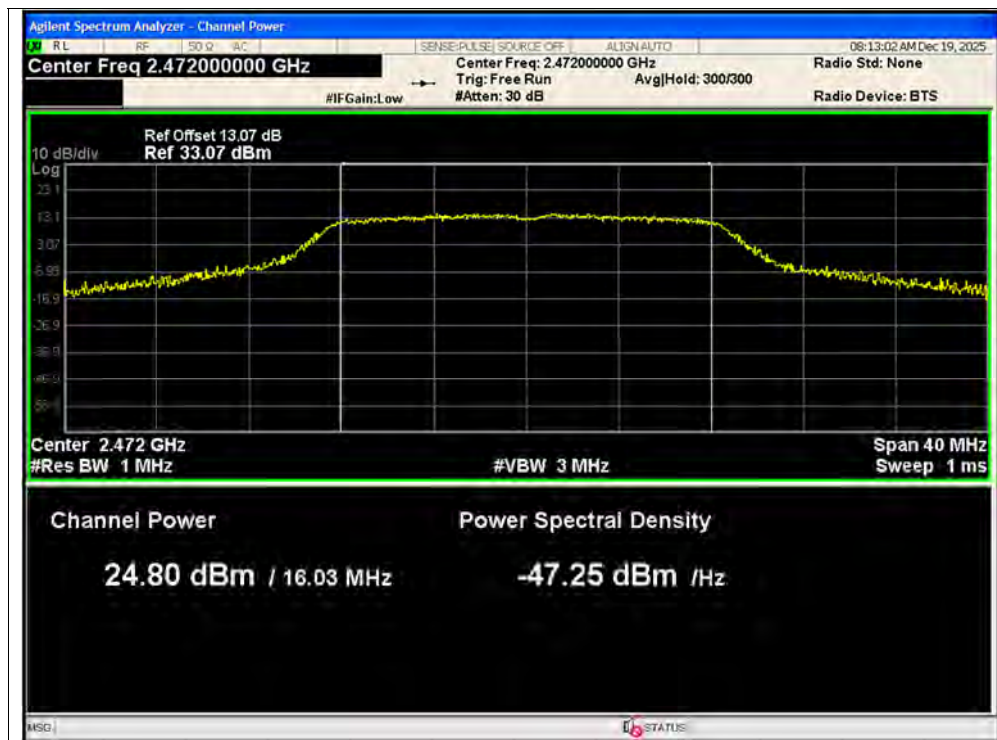
Peak Power NVNT g 2472MHz Ant1



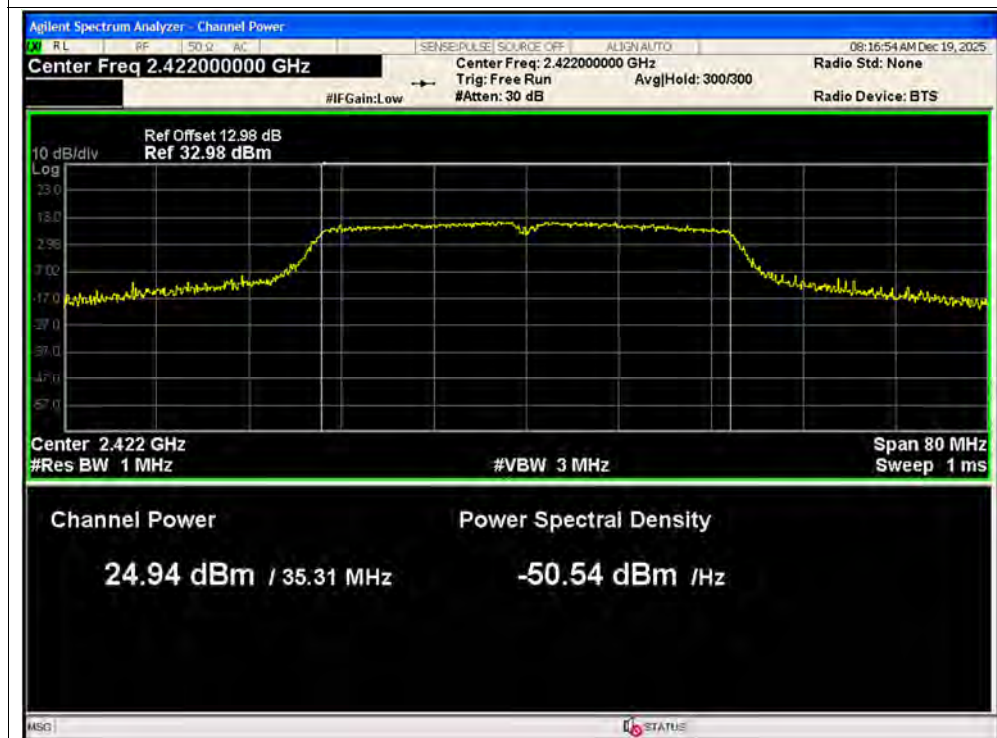
Peak Power NVNT n20 2412MHz Ant1



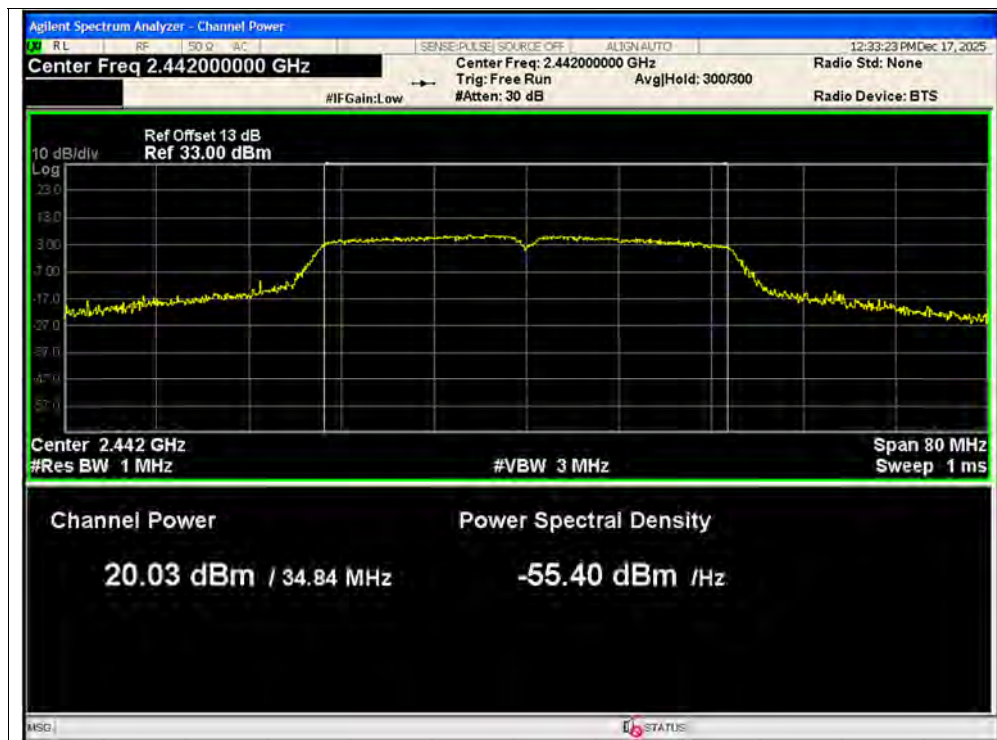
Peak Power NVNT n20 2442MHz Ant1



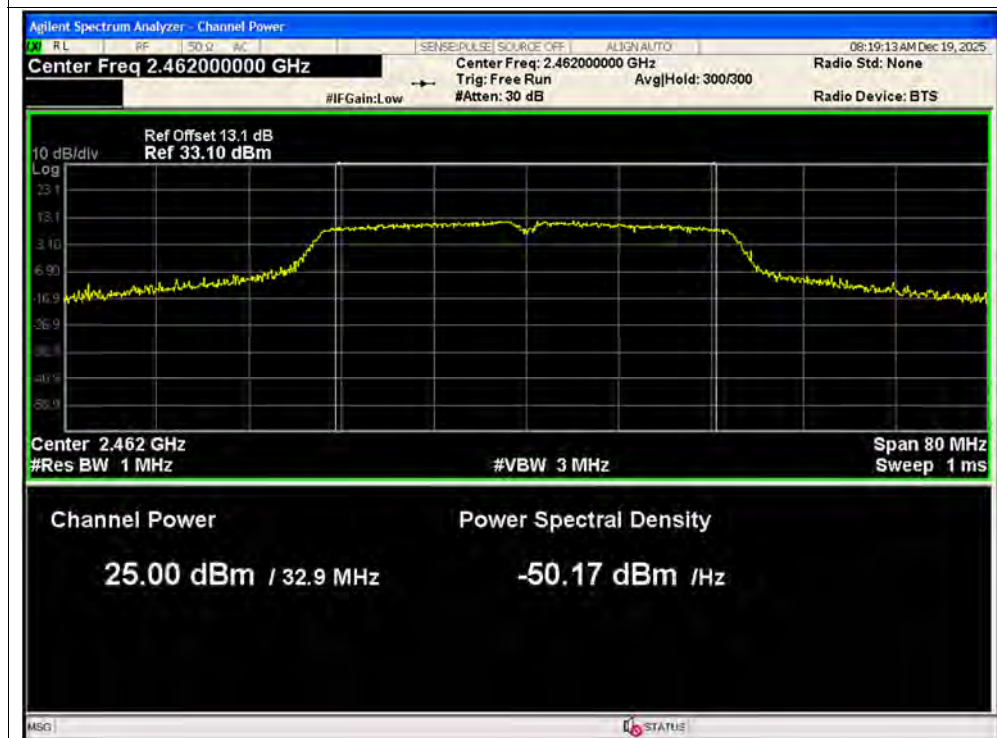
Peak Power NVNT n20 2472MHz Ant1



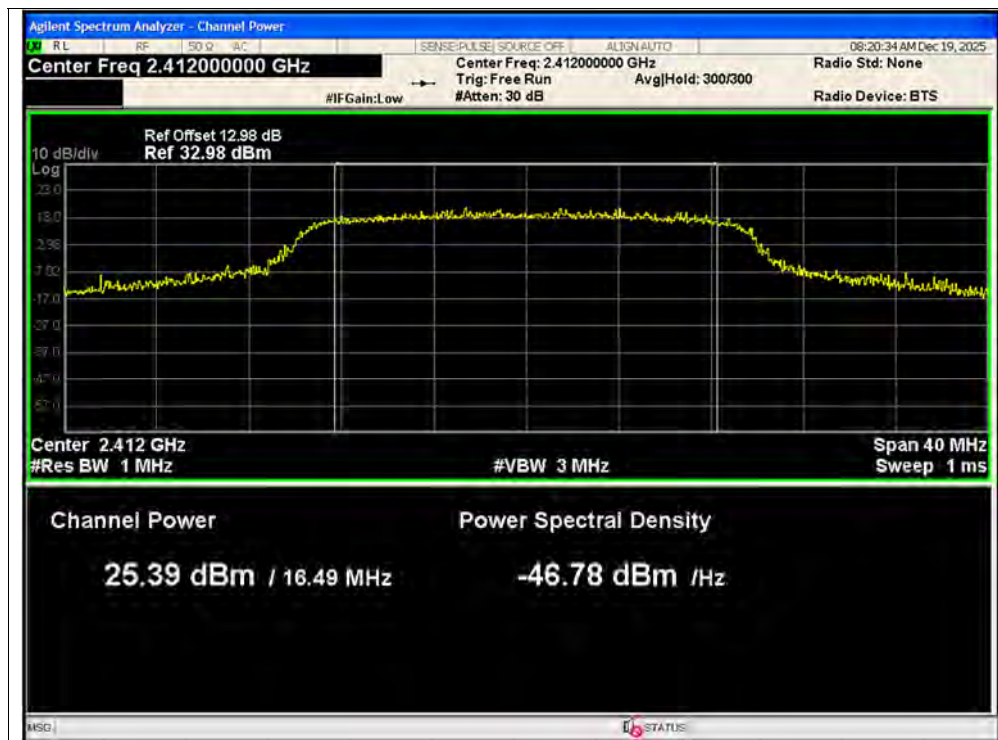
Peak Power NVNT n40 2422MHz Ant1



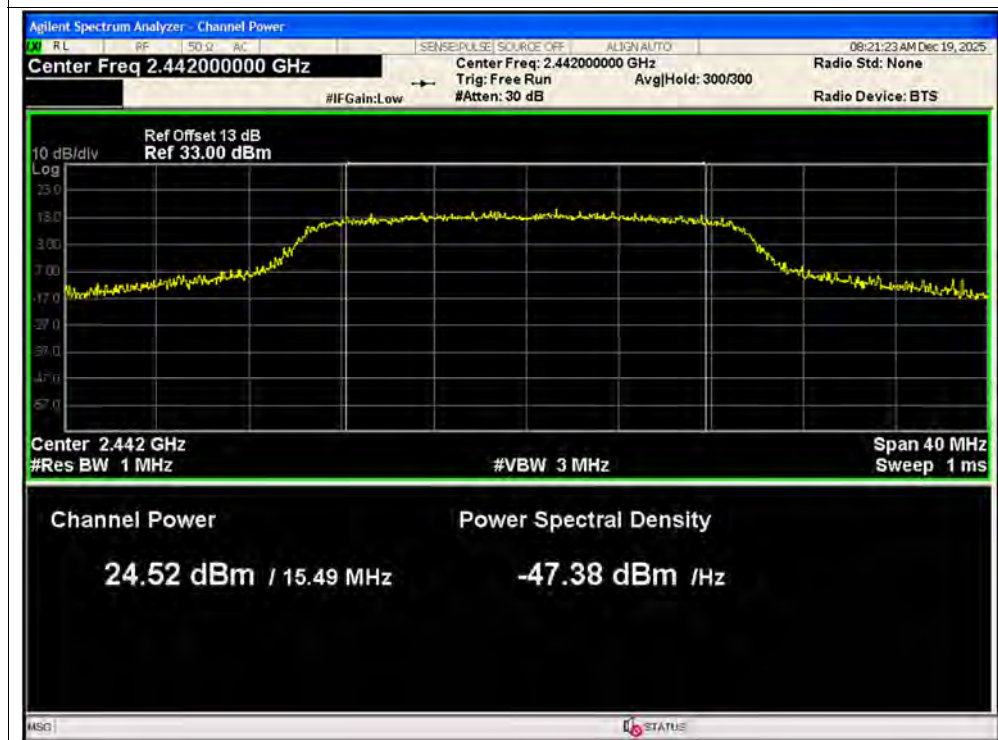
Peak Power NVNT n40 2442MHz Ant1



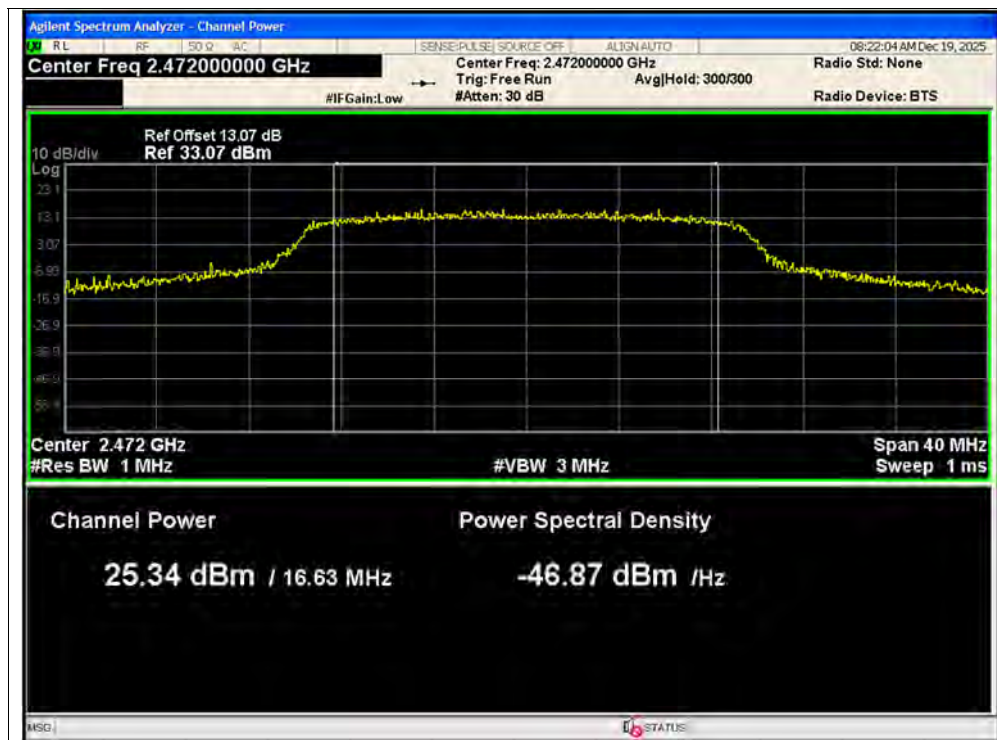
Peak Power NVNT n40 2462MHz Ant1



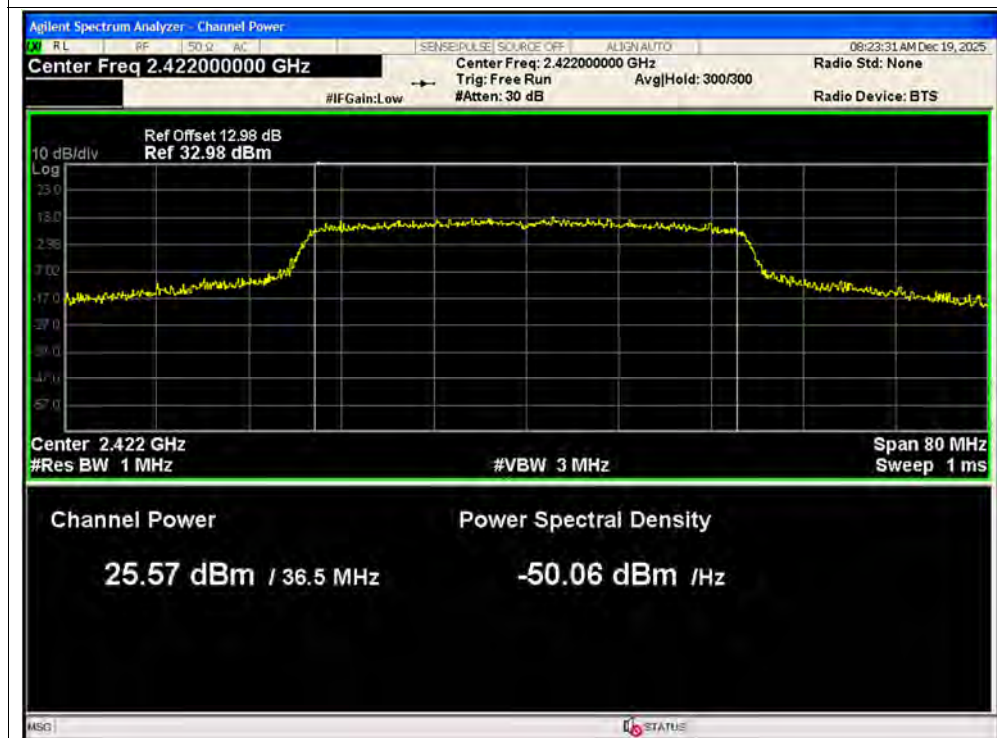
Peak Power NVNT ax20 2412MHz Ant1



Peak Power NVNT ax20 2442MHz Ant1



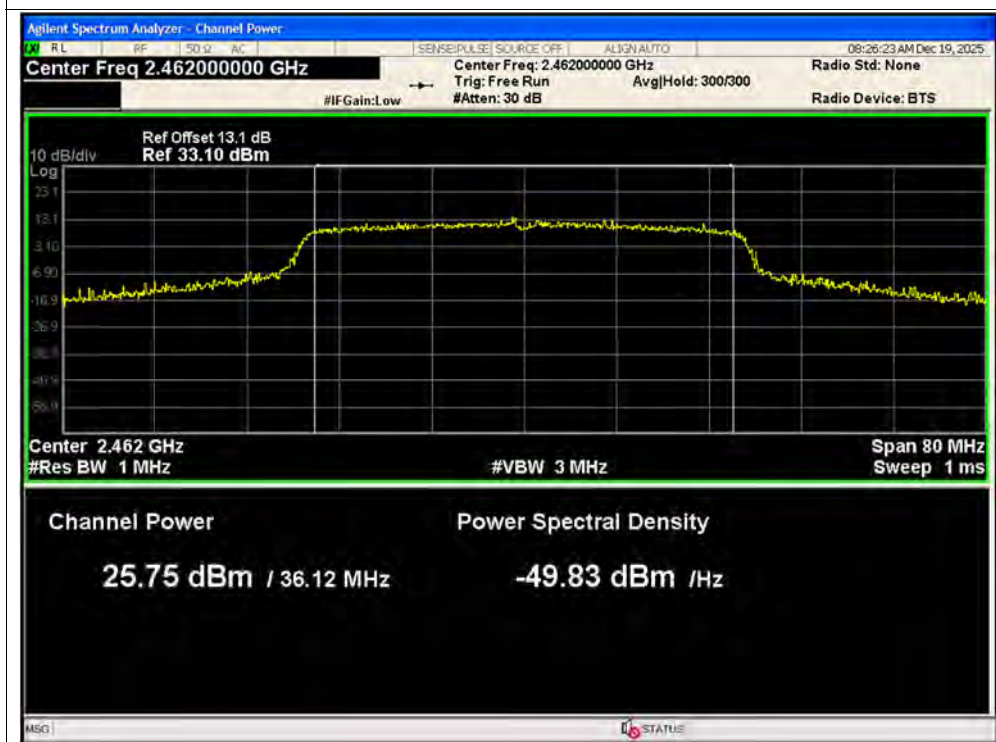
Peak Power NVNT ax20 2472MHz Ant1



Peak Power NVNT ax40 2422MHz Ant1



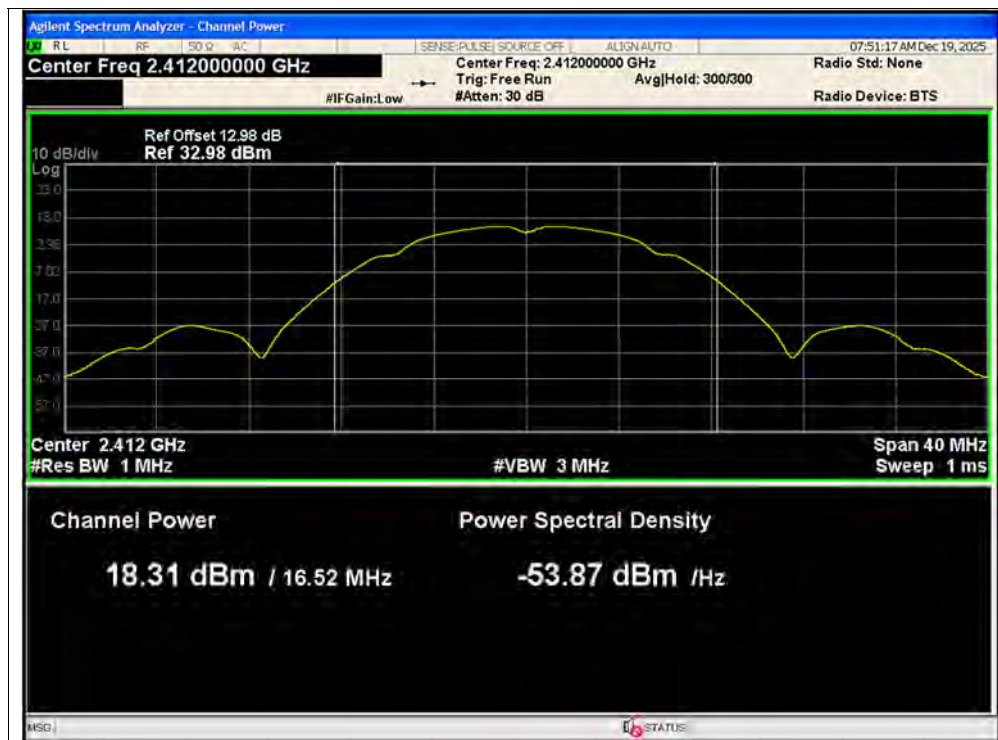
Peak Power NVNT ax40 2442MHz Ant1



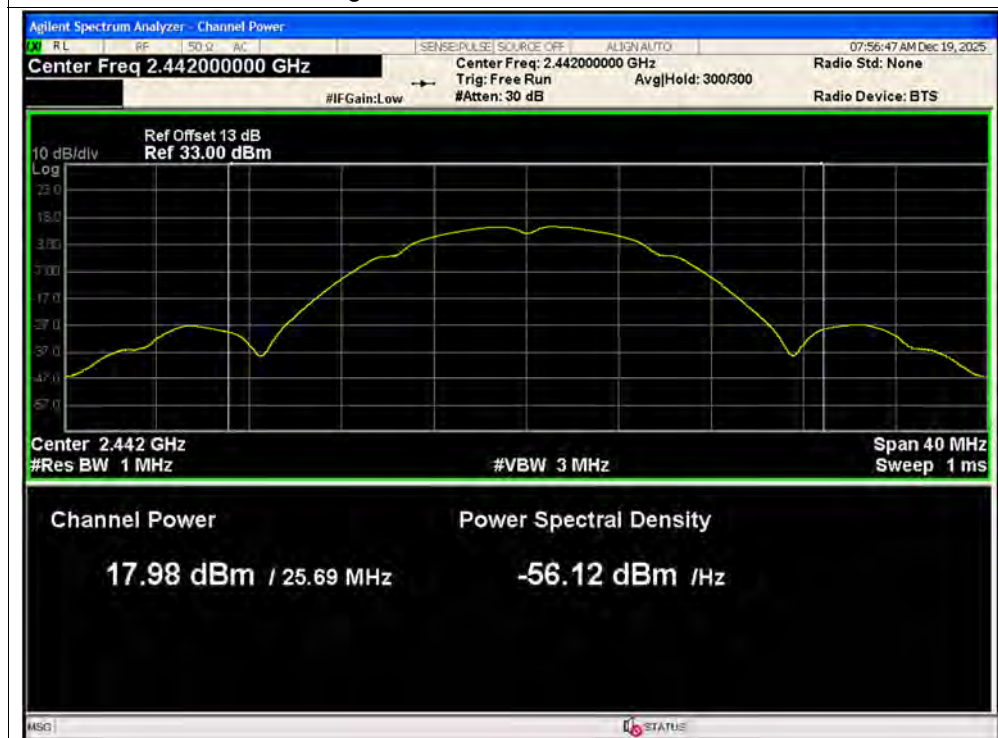
Peak Power NVNT ax40 2462MHz Ant1

**A.3. Maximum Average Conducted Output Power**

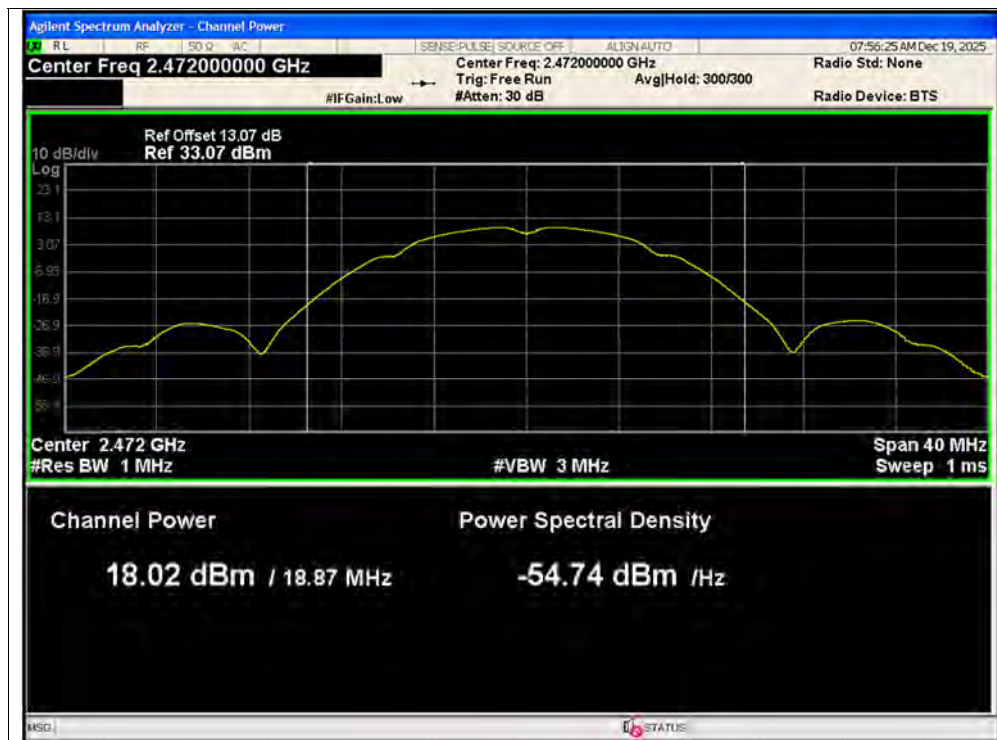
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	b	2412	Ant1	18.31	0.01	18.32	0.06792	30	Pass
NVNT	b	2442	Ant1	17.98	0.01	17.99	0.06295	30	Pass
NVNT	b	2472	Ant1	18.02	0.01	18.03	0.06353	30	Pass
NVNT	g	2412	Ant1	18.01	0.1	18.11	0.06471	30	Pass
NVNT	g	2442	Ant1	17.75	0.1	17.85	0.06095	30	Pass
NVNT	g	2472	Ant1	18.11	0.1	18.21	0.06622	30	Pass
NVNT	n20	2412	Ant1	17.42	0.03	17.45	0.05559	30	Pass
NVNT	n20	2442	Ant1	17.14	0.03	17.17	0.05212	30	Pass
NVNT	n20	2472	Ant1	17.27	0.03	17.3	0.0537	30	Pass
NVNT	n40	2422	Ant1	17.19	0.03	17.22	0.05272	30	Pass
NVNT	n40	2442	Ant1	17.16	0.03	17.19	0.05236	30	Pass
NVNT	n40	2462	Ant1	17.44	0.03	17.47	0.05585	30	Pass
NVNT	ax20	2412	Ant1	17.29	0.04	17.33	0.05408	30	Pass
NVNT	ax20	2442	Ant1	16.65	0.04	16.69	0.04667	30	Pass
NVNT	ax20	2472	Ant1	17.21	0.04	17.25	0.05309	30	Pass
NVNT	ax40	2422	Ant1	17.18	0.04	17.22	0.05272	30	Pass
NVNT	ax40	2442	Ant1	16.73	0.04	16.77	0.04753	30	Pass
NVNT	ax40	2462	Ant1	17.44	0.04	17.48	0.05598	30	Pass



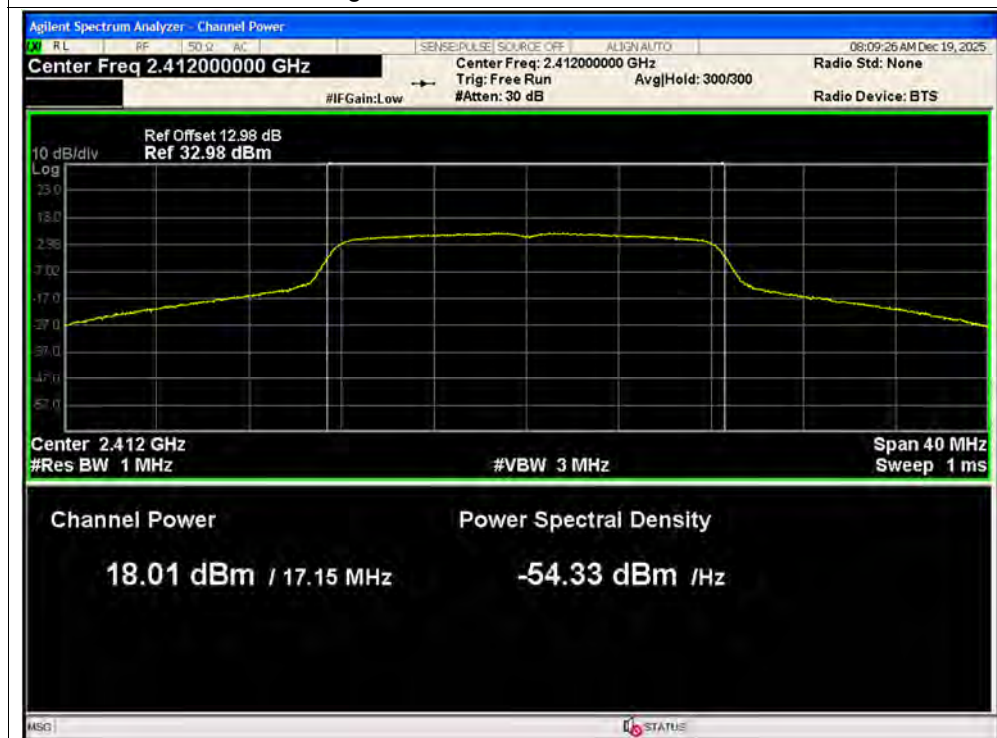
Average Power NVNT b 2412MHz Ant1



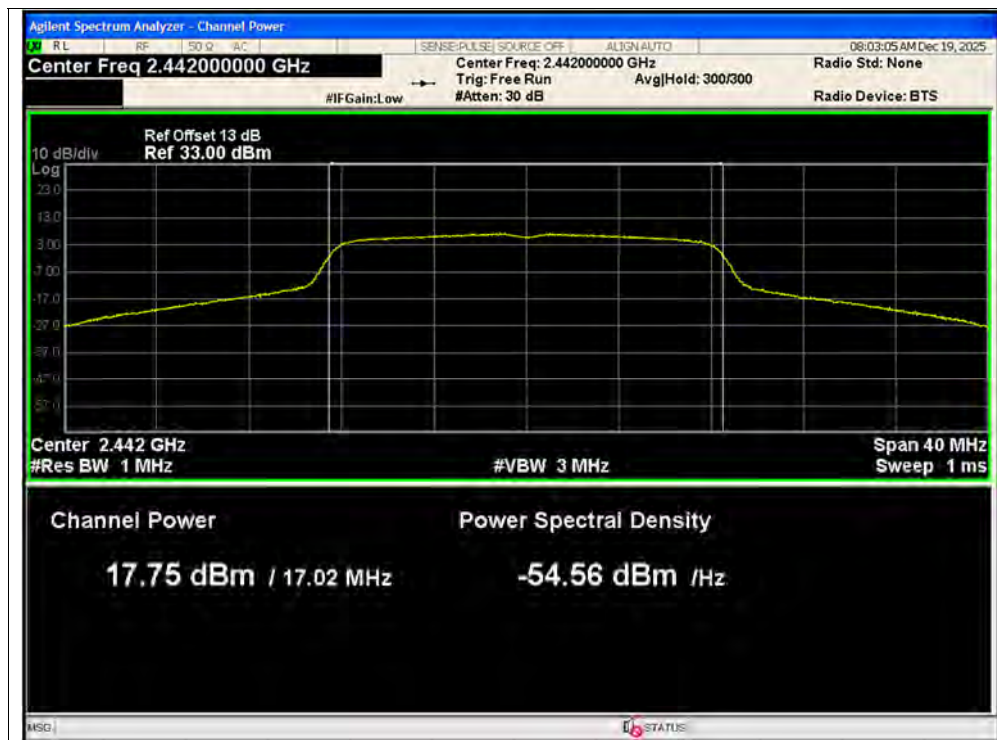
Average Power NVNT b 2442MHz Ant1



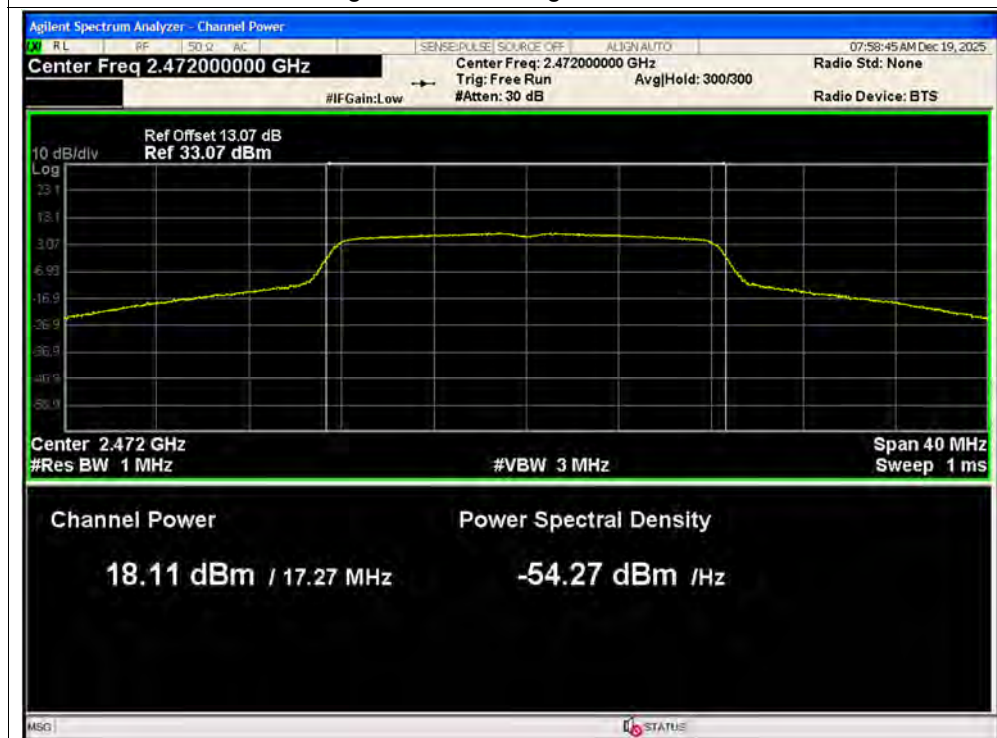
Average Power NVNT b 2472MHz Ant1



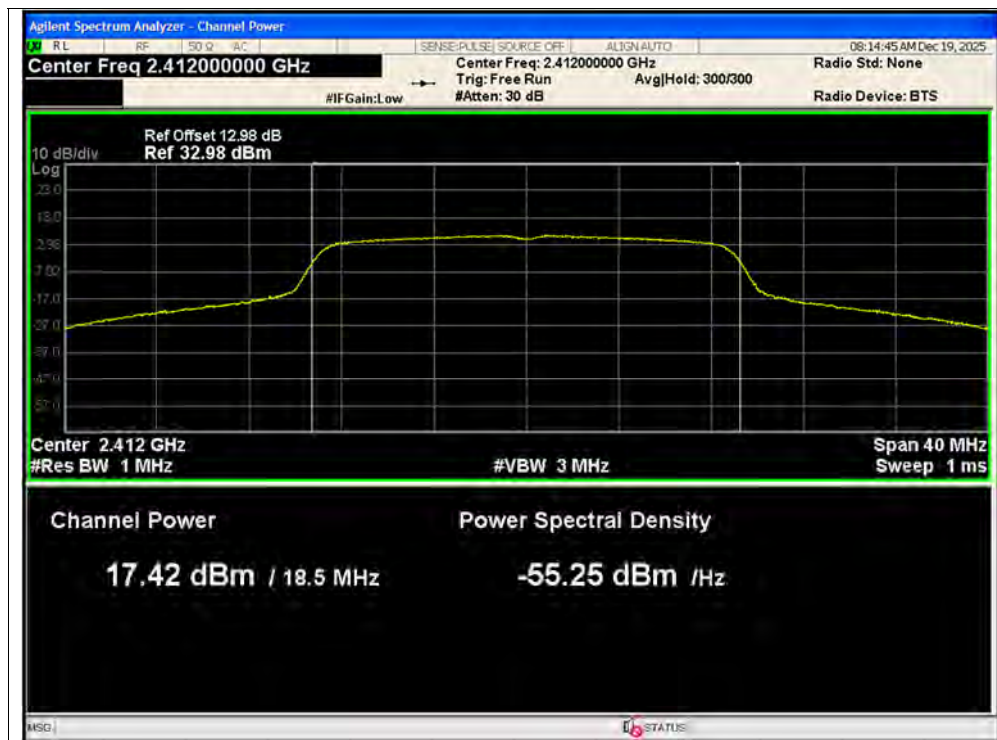
Average Power NVNT g 2412MHz Ant1



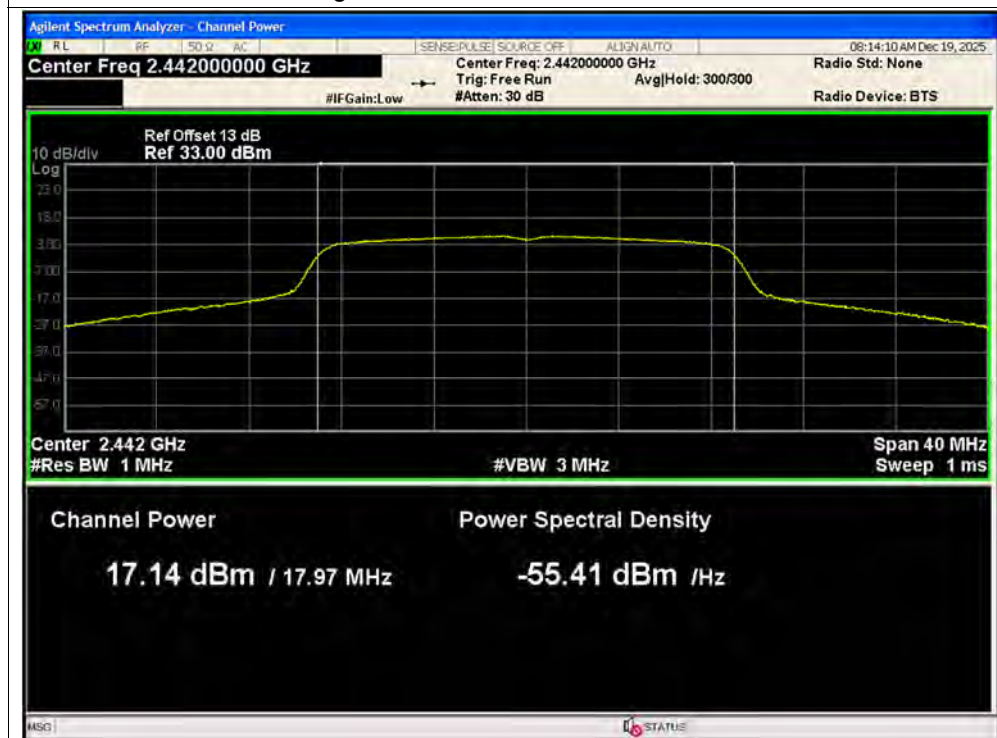
Average Power NVNT g 2442MHz Ant1



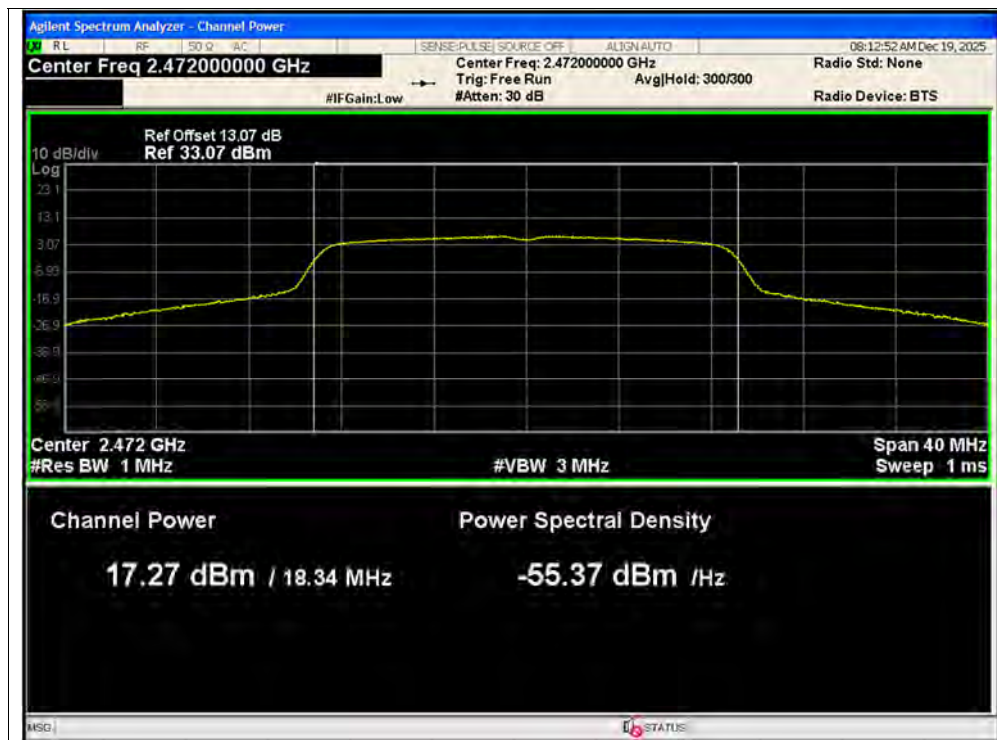
Average Power NVNT g 2472MHz Ant1



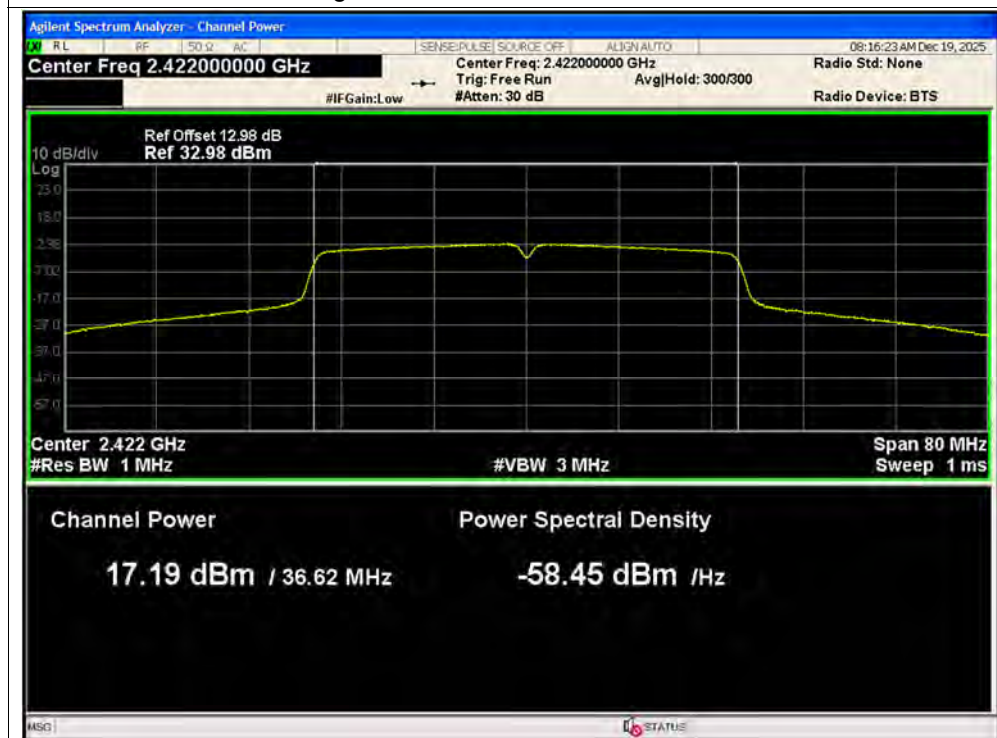
Average Power NVNT n20 2412MHz Ant1



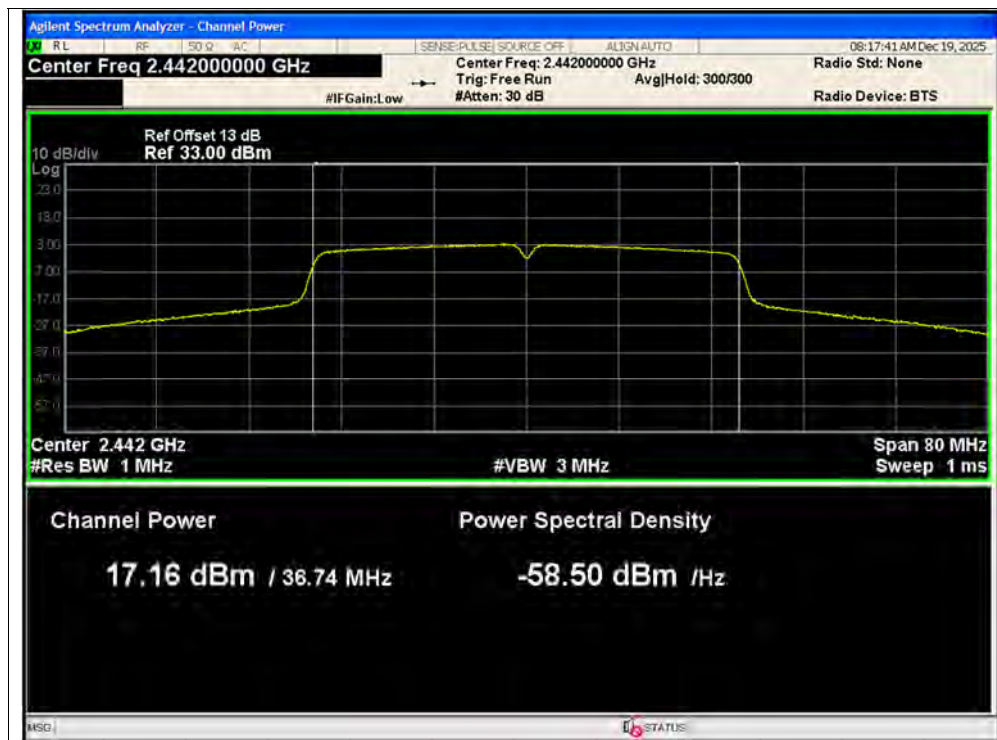
Average Power NVNT n20 2442MHz Ant1



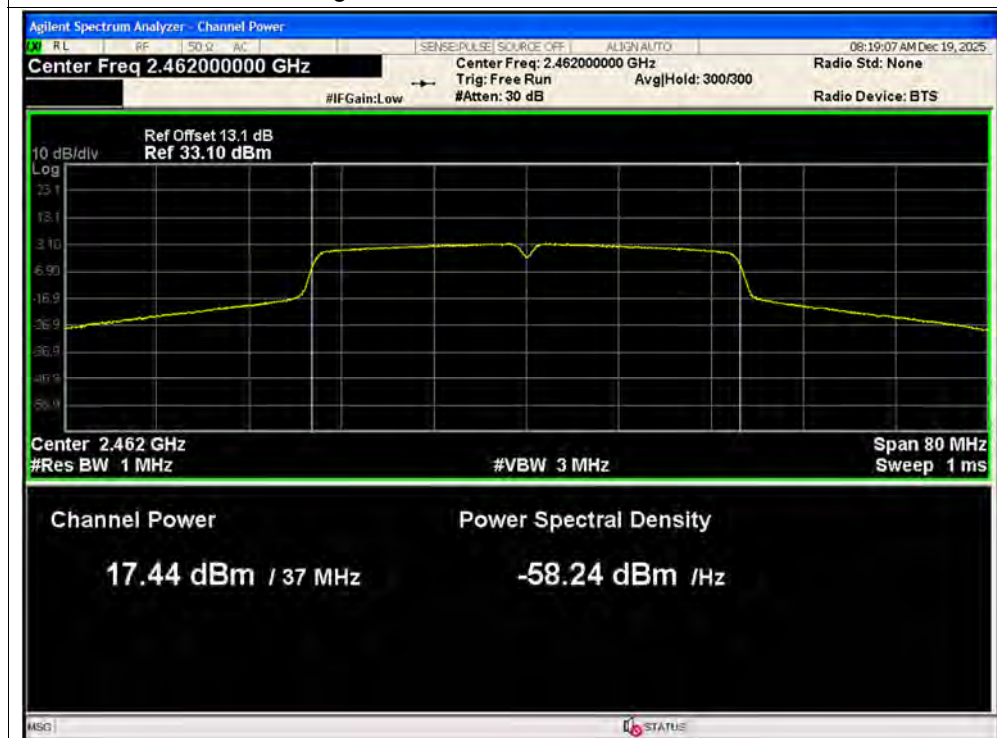
Average Power NVNT n20 2472MHz Ant1



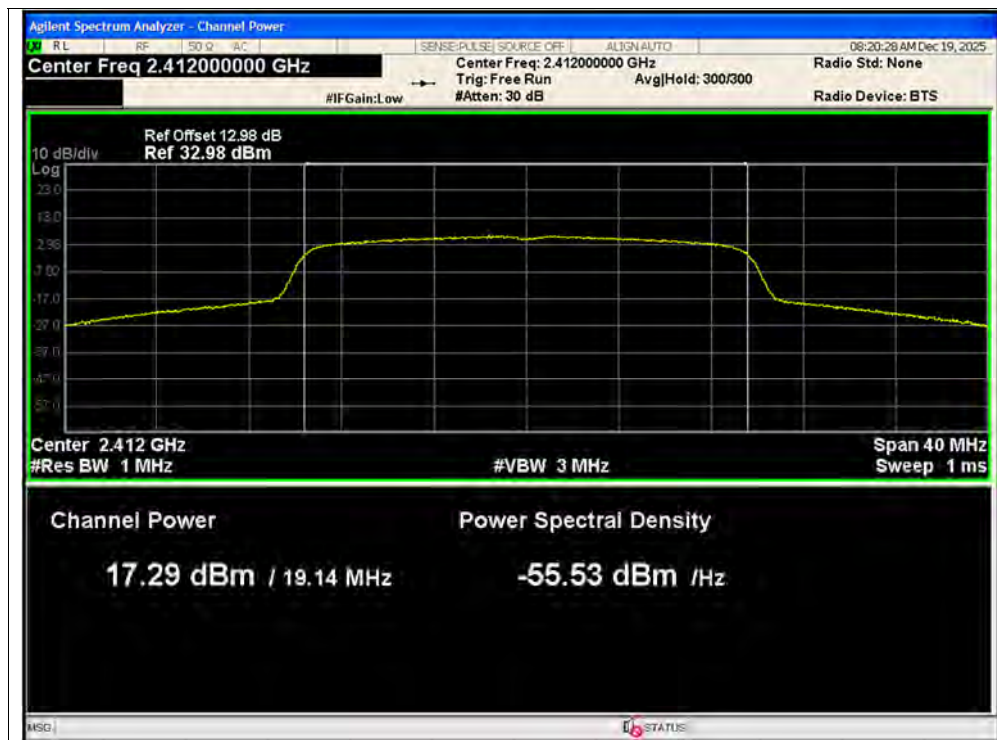
Average Power NVNT n40 2422MHz Ant1



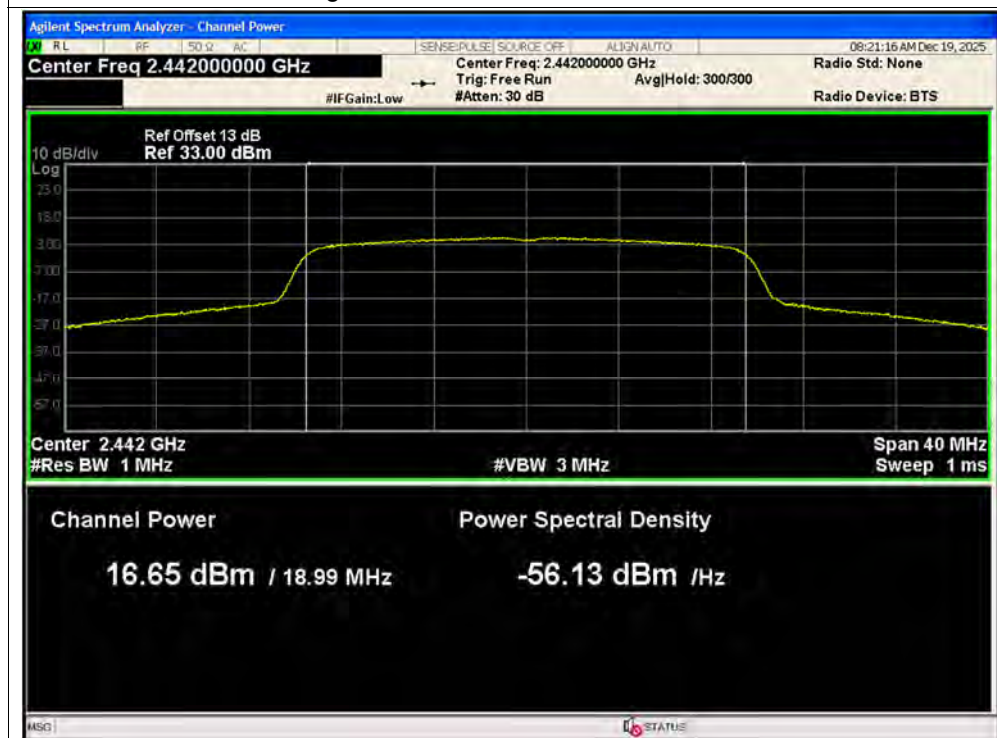
Average Power NVNT n40 2442MHz Ant1



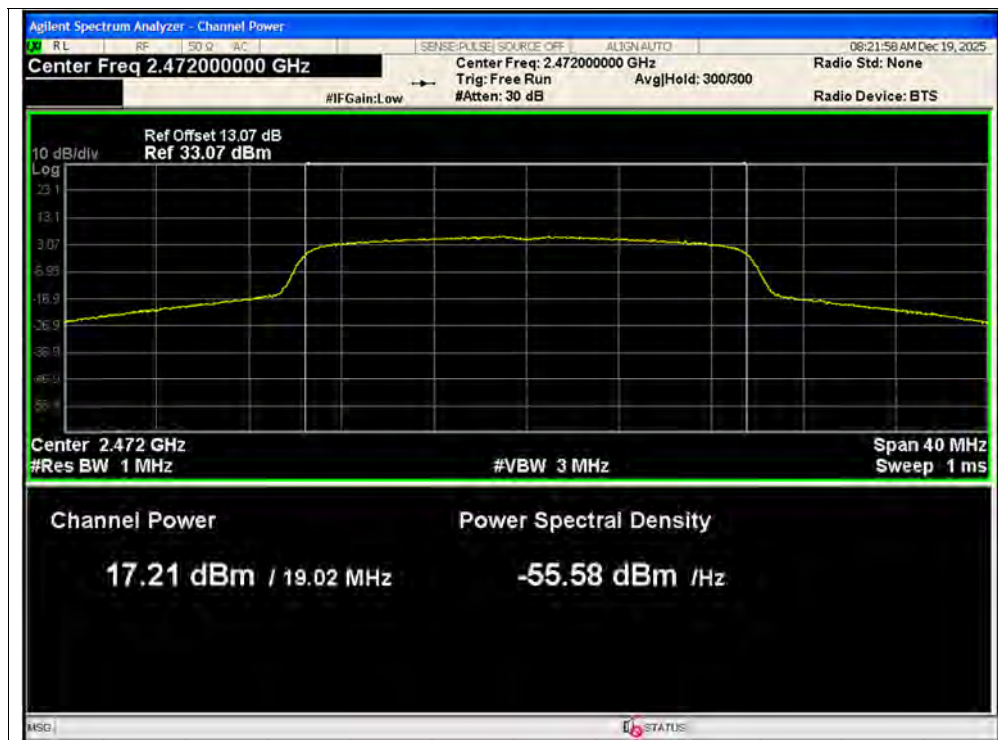
Average Power NVNT n40 2462MHz Ant1



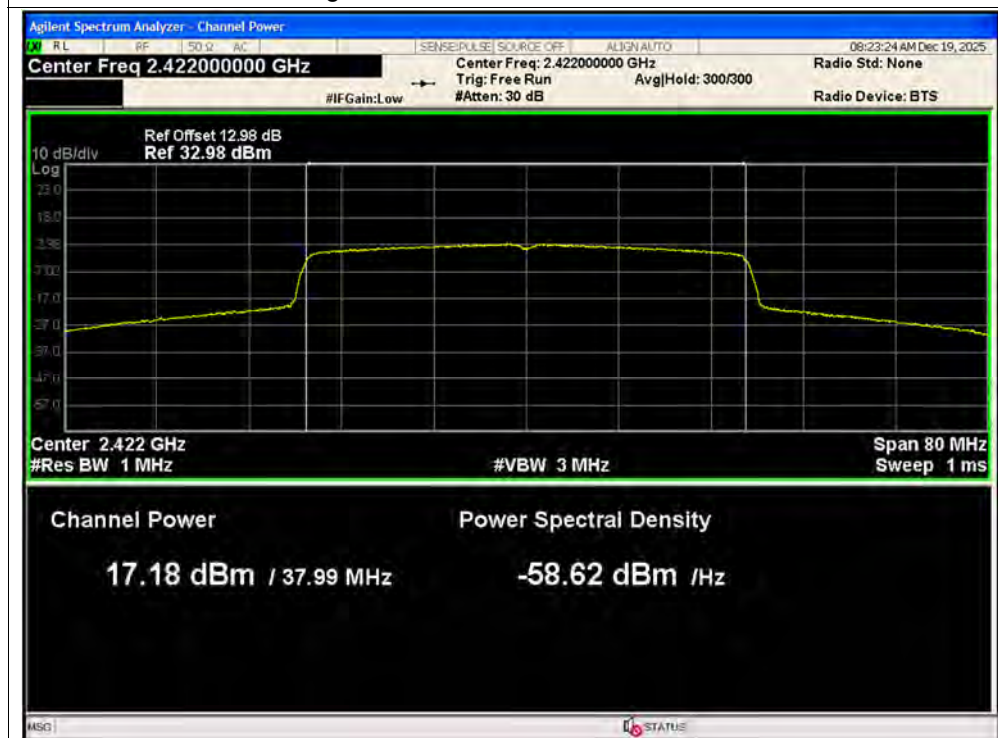
Average Power NVNT ax20 2412MHz Ant1



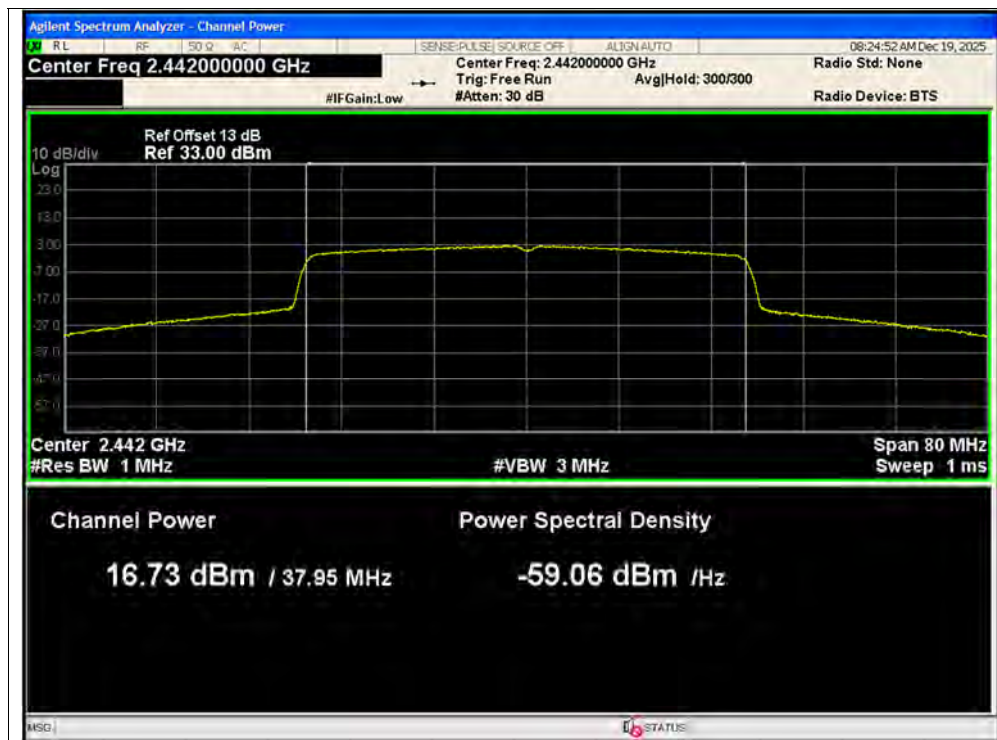
Average Power NVNT ax20 2442MHz Ant1



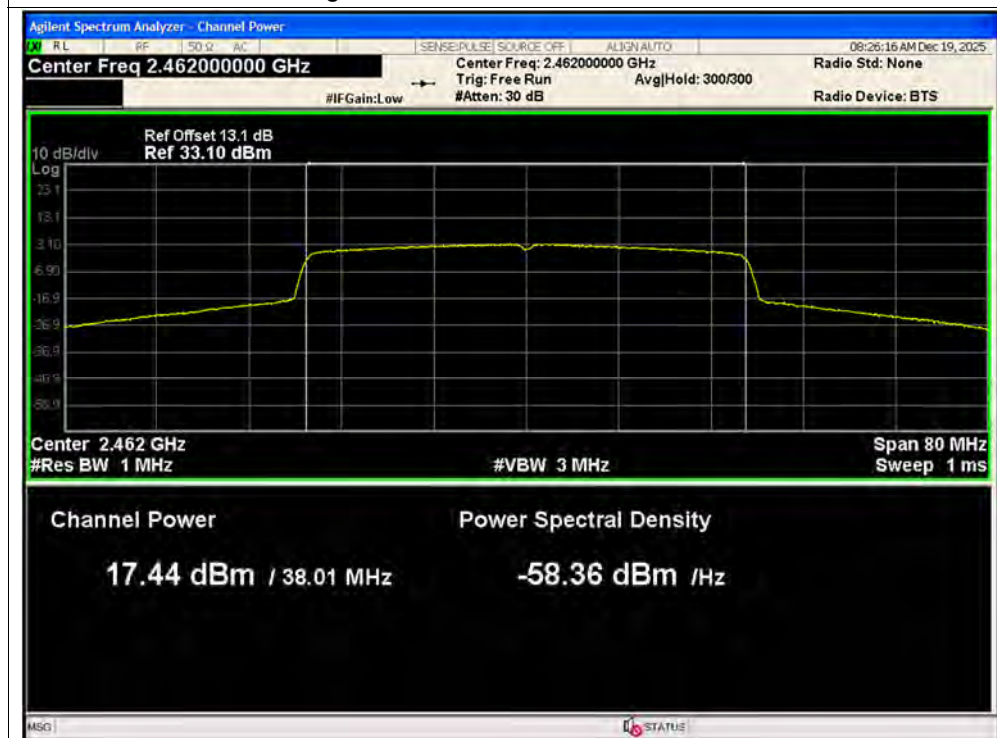
Average Power NVNT ax20 2472MHz Ant1



Average Power NVNT ax40 2422MHz Ant1



Average Power NVNT ax40 2442MHz Ant1



Average Power NVNT ax40 2462MHz Ant1

**A.4. 6 dB Bandwidth**

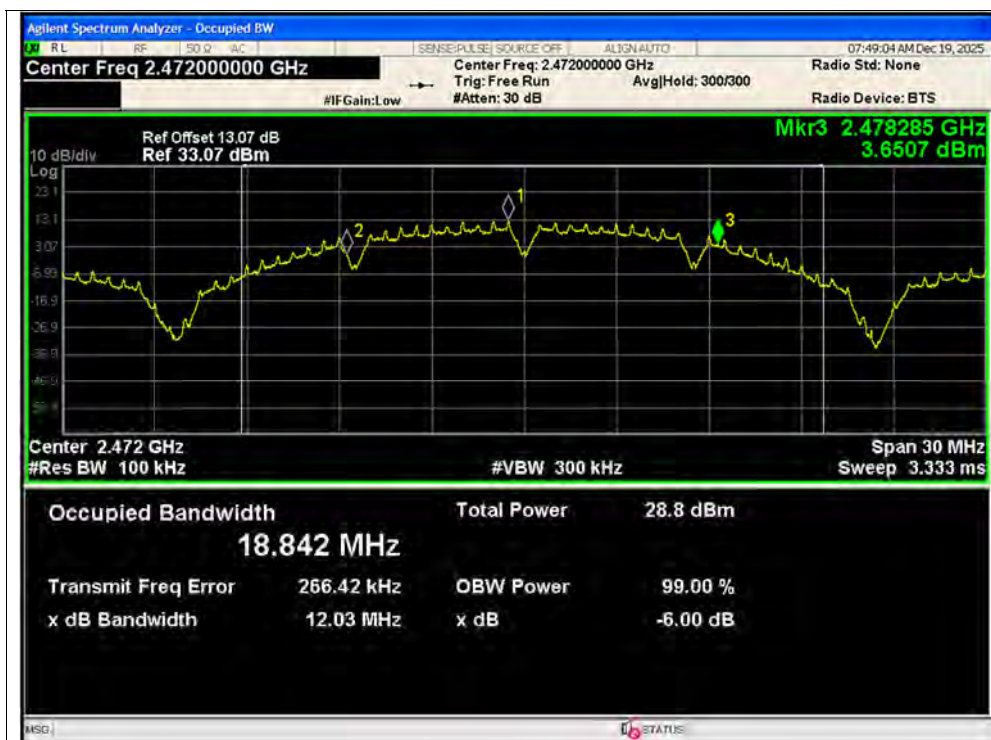
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	10.08	0.5	Pass
NVNT	b	2442	Ant1	12.05	0.5	Pass
NVNT	b	2472	Ant1	12.03	0.5	Pass
NVNT	g	2412	Ant1	16.07	0.5	Pass
NVNT	g	2442	Ant1	15.08	0.5	Pass
NVNT	g	2472	Ant1	15.44	0.5	Pass
NVNT	n20	2412	Ant1	15.47	0.5	Pass
NVNT	n20	2442	Ant1	15.68	0.5	Pass
NVNT	n20	2472	Ant1	16.03	0.5	Pass
NVNT	n40	2422	Ant1	35.31	0.5	Pass
NVNT	n40	2442	Ant1	34.84	0.5	Pass
NVNT	n40	2462	Ant1	32.9	0.5	Pass
NVNT	ax20	2412	Ant1	16.49	0.5	Pass
NVNT	ax20	2442	Ant1	15.49	0.5	Pass
NVNT	ax20	2472	Ant1	16.63	0.5	Pass
NVNT	ax40	2422	Ant1	36.5	0.5	Pass
NVNT	ax40	2442	Ant1	36.15	0.5	Pass
NVNT	ax40	2462	Ant1	36.12	0.5	Pass



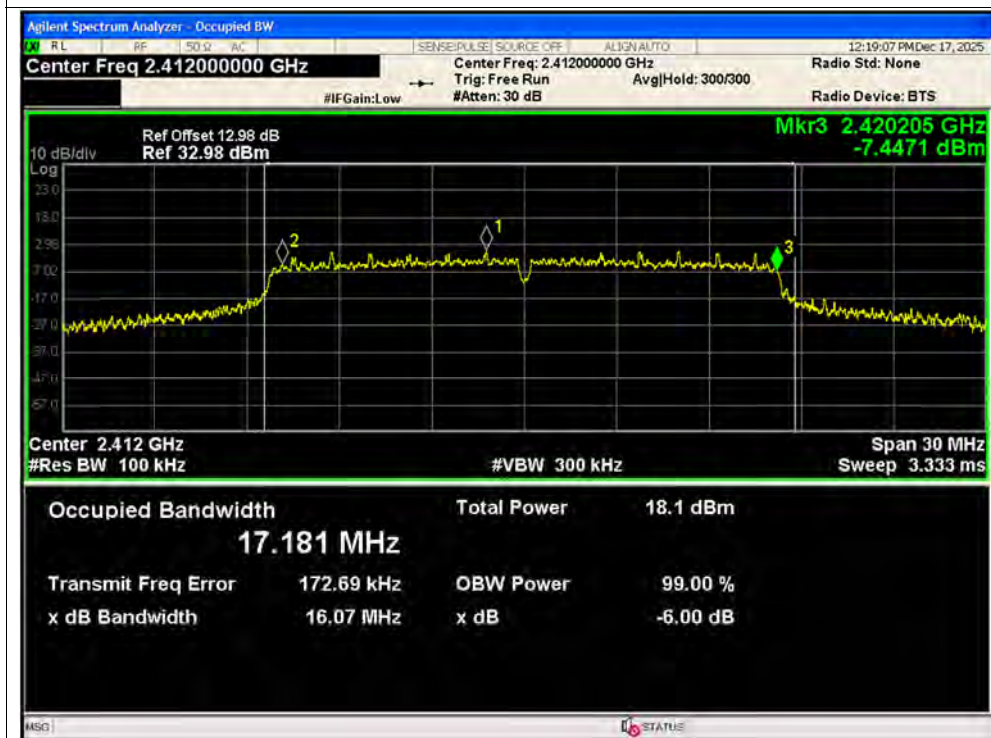
-6dB Bandwidth NVNT b 2412MHz Ant1



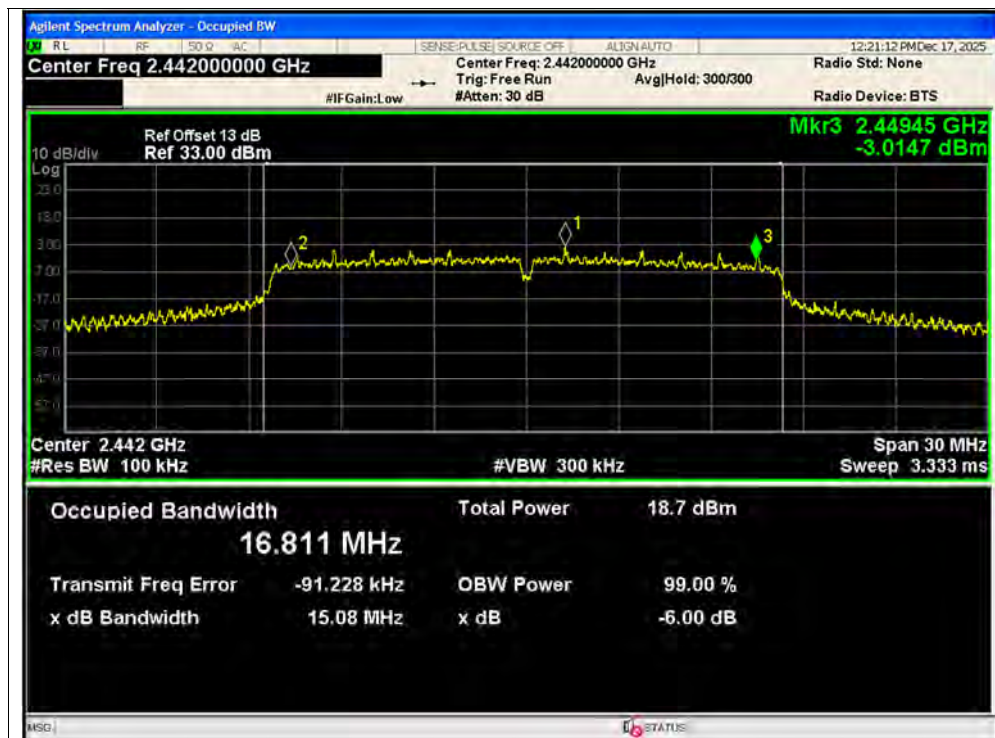
-6dB Bandwidth NVNT b 2442MHz Ant1



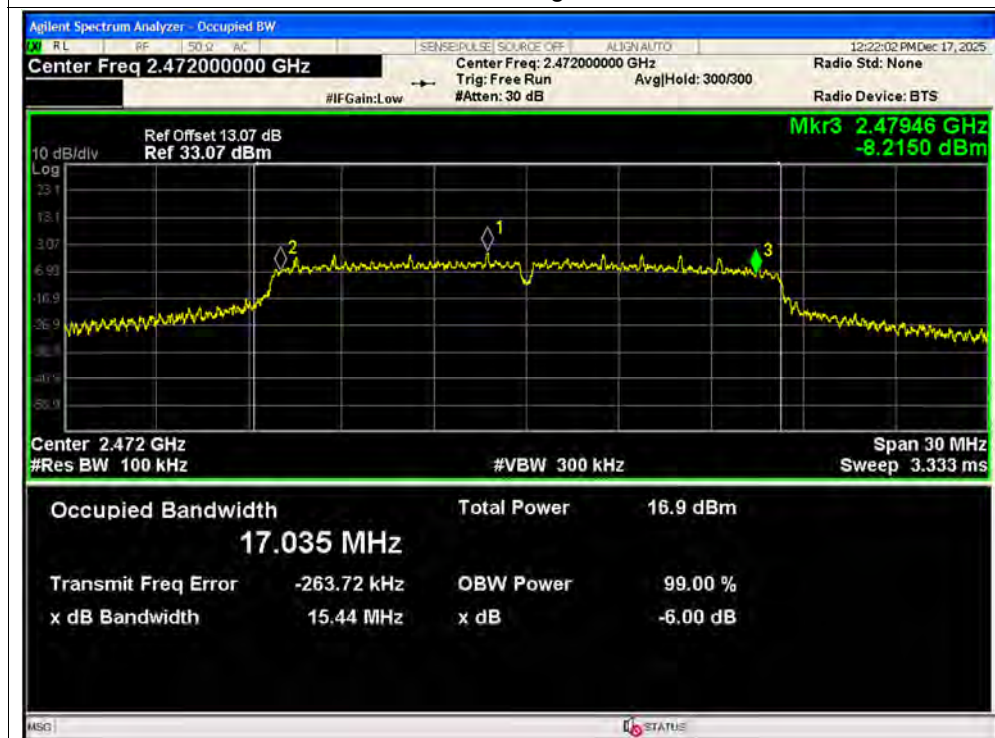
-6dB Bandwidth NVNT b 2472MHz Ant1



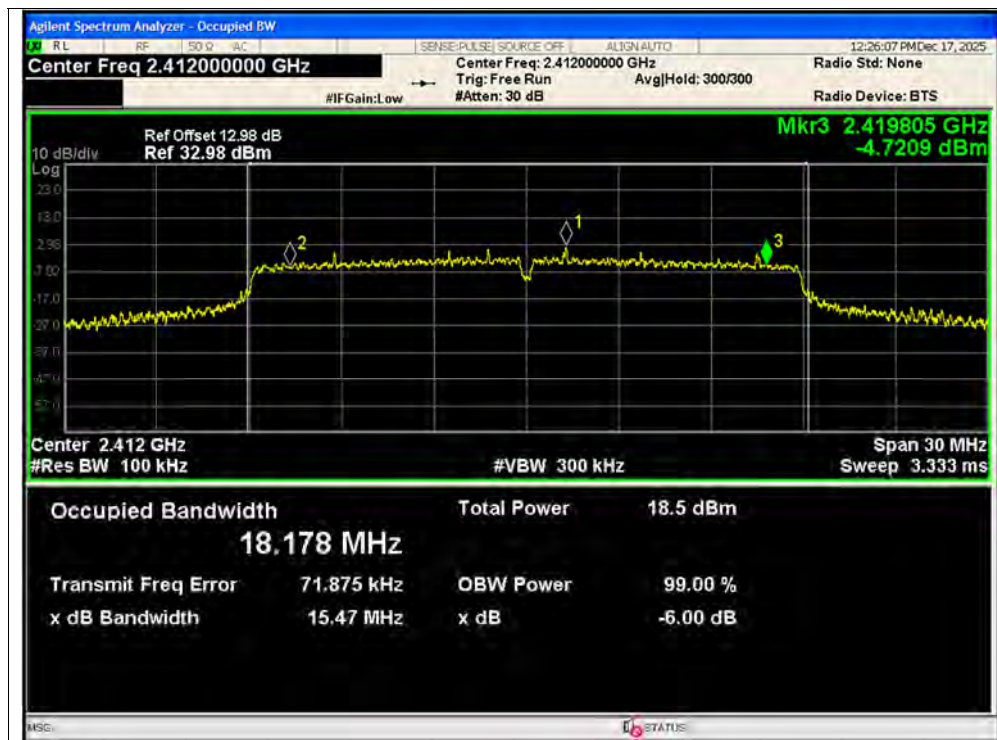
-6dB Bandwidth NVNT g 2412MHz Ant1



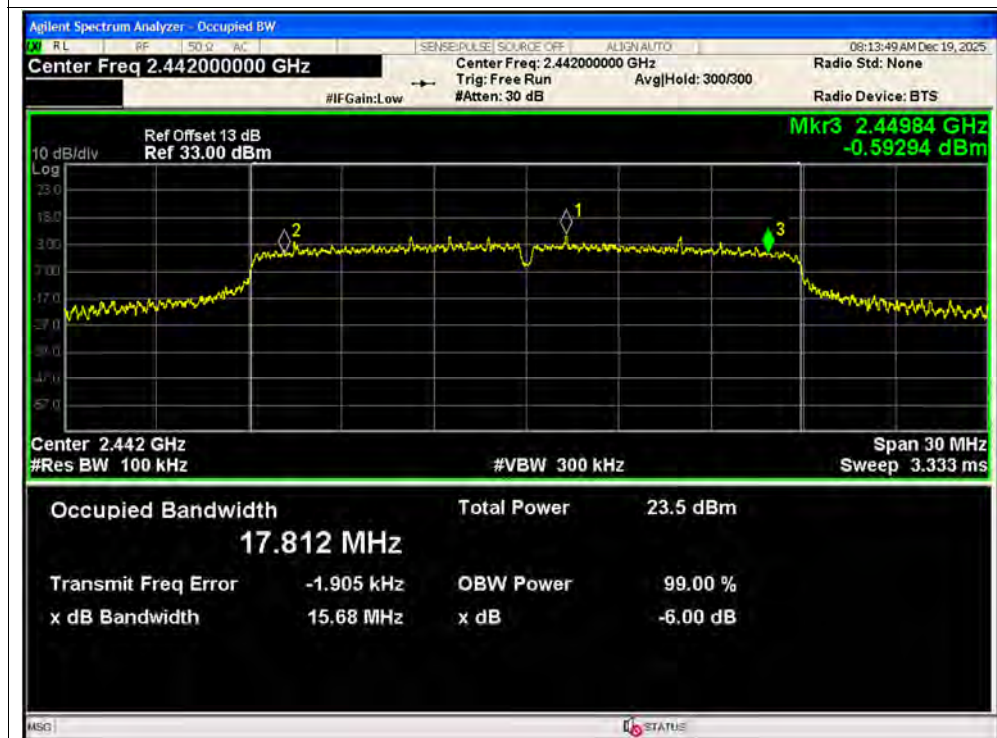
-6dB Bandwidth NVNT g 2442MHz Ant1



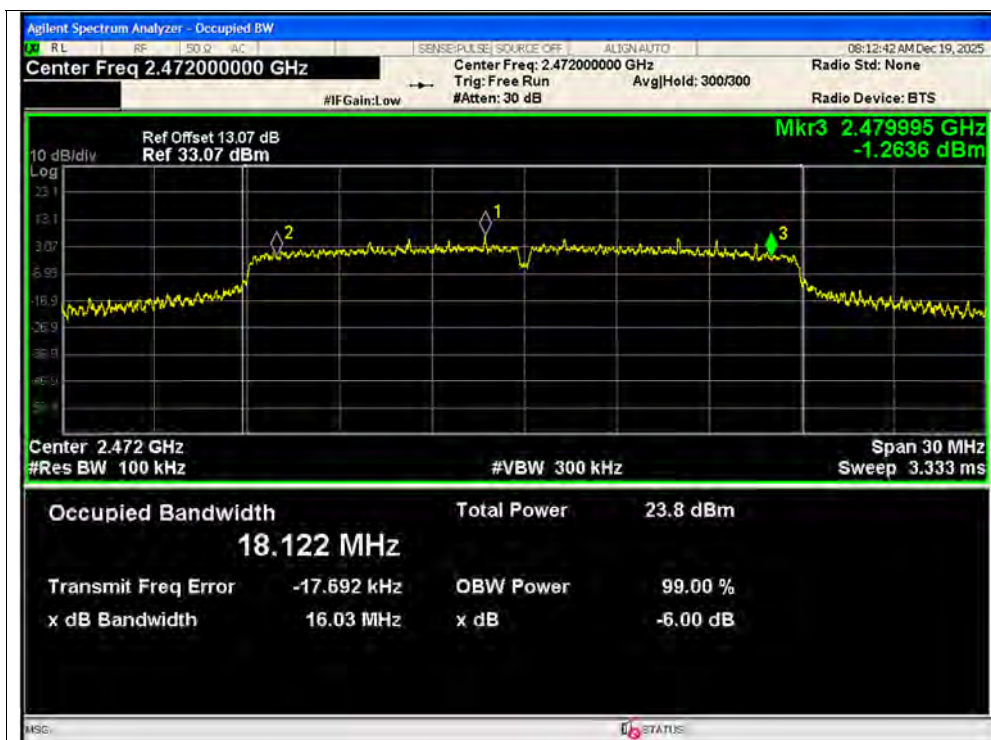
-6dB Bandwidth NVNT g 2472MHz Ant1



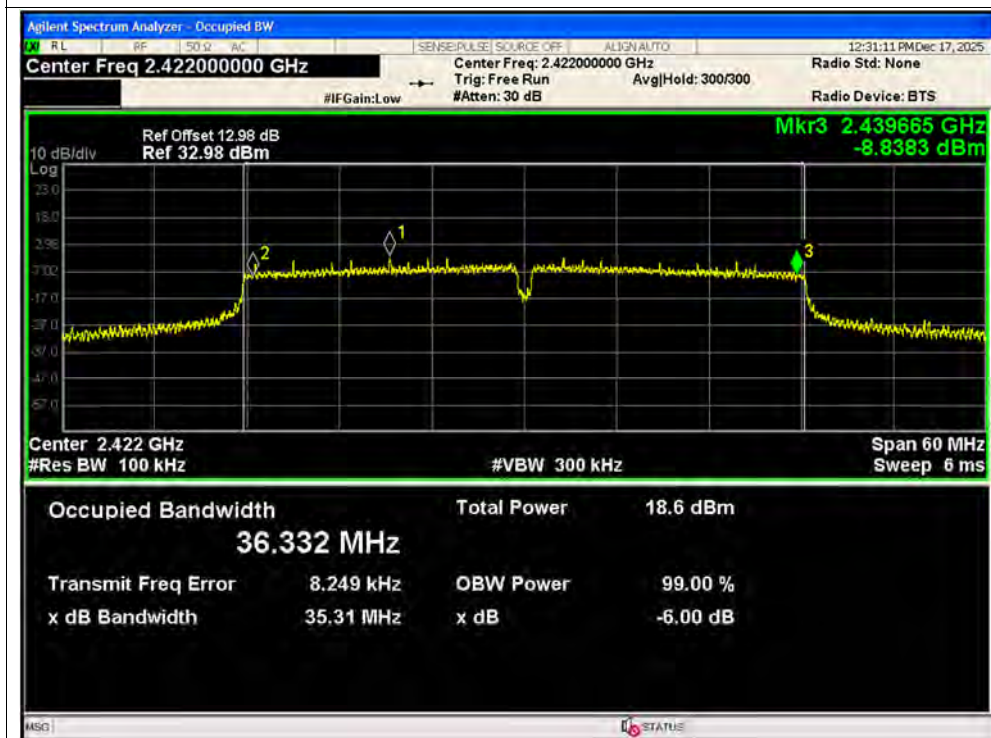
-6dB Bandwidth NVNT n20 2412MHz Ant1



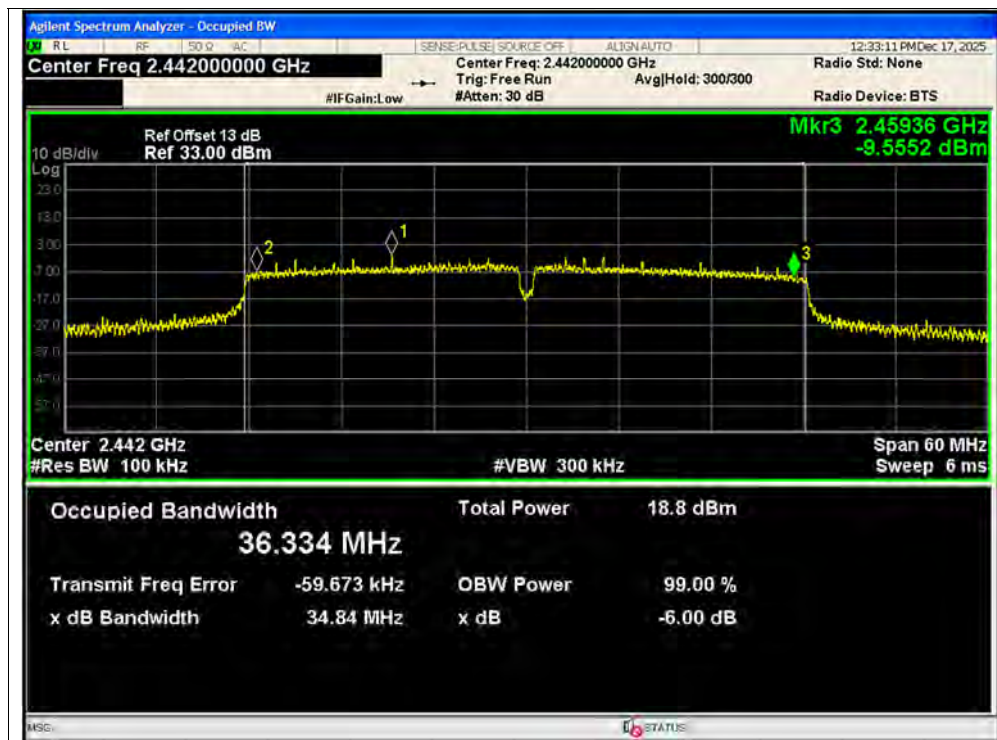
-6dB Bandwidth NVNT n20 2442MHz Ant1



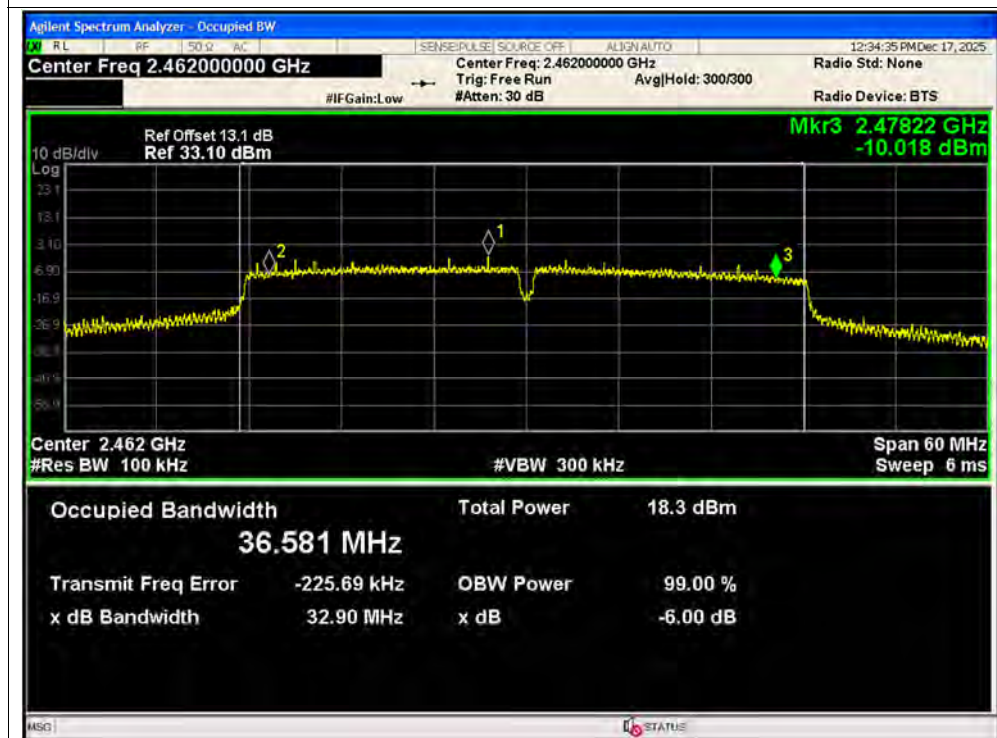
-6dB Bandwidth NVNT n20 2472MHz Ant1



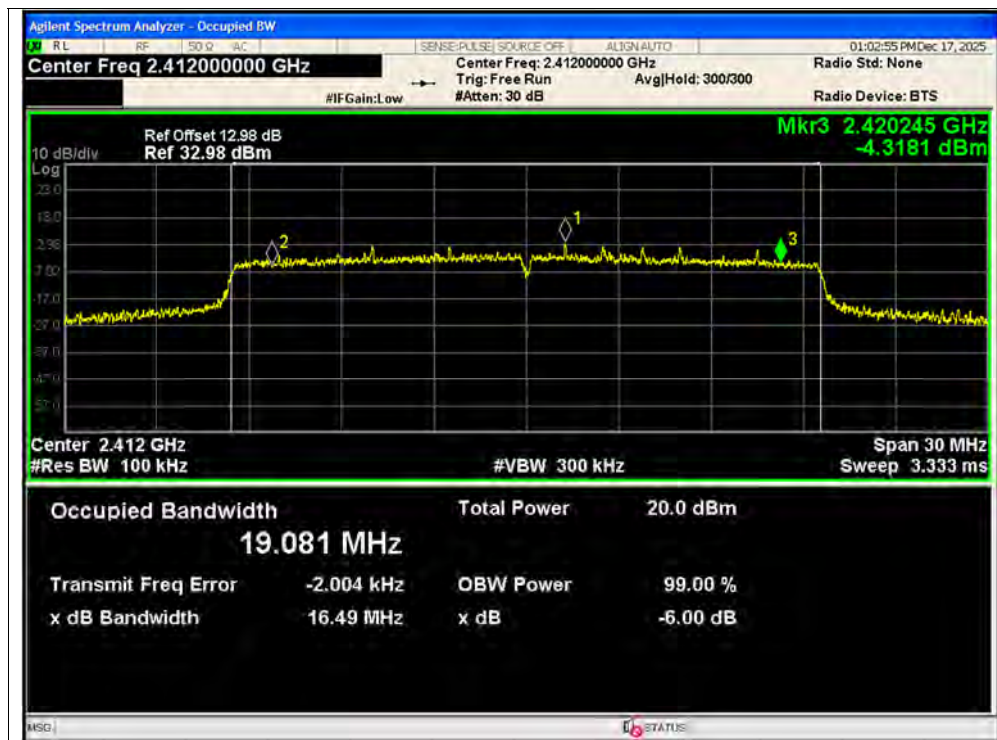
-6dB Bandwidth NVNT n40 2422MHz Ant1



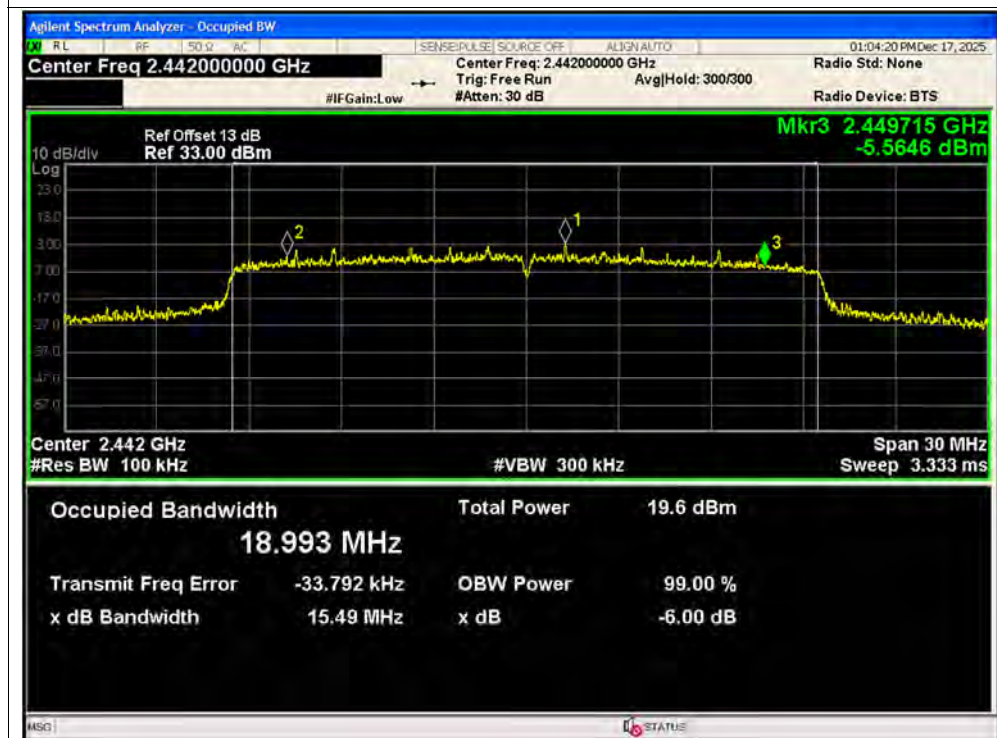
-6dB Bandwidth NVNT n40 2442MHz Ant1



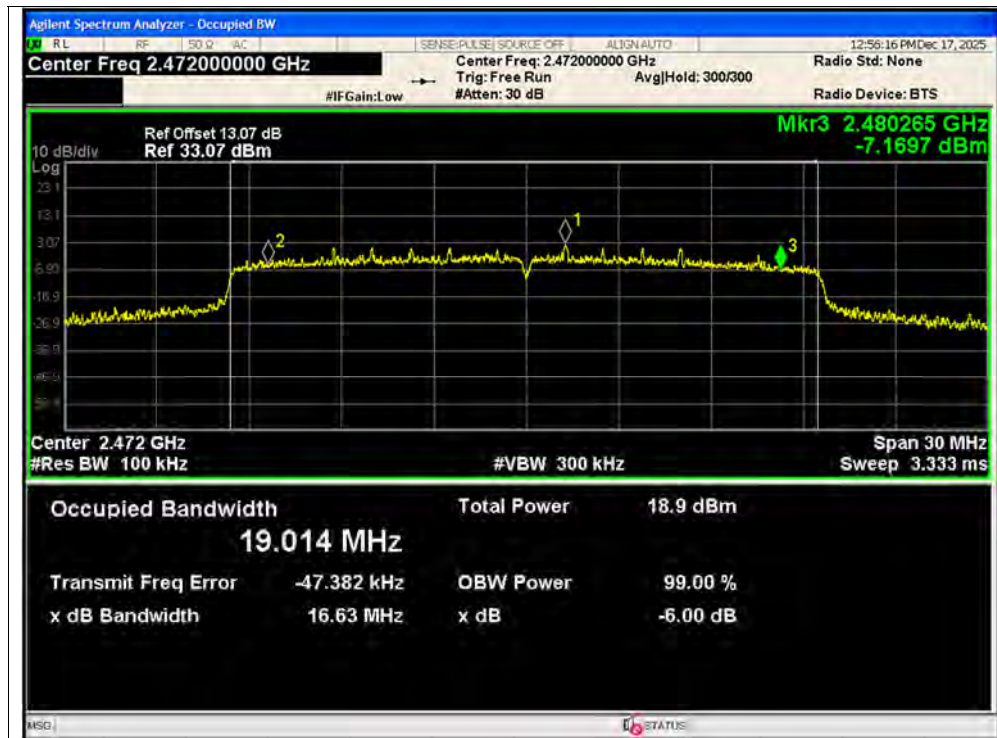
-6dB Bandwidth NVNT n40 2462MHz Ant1



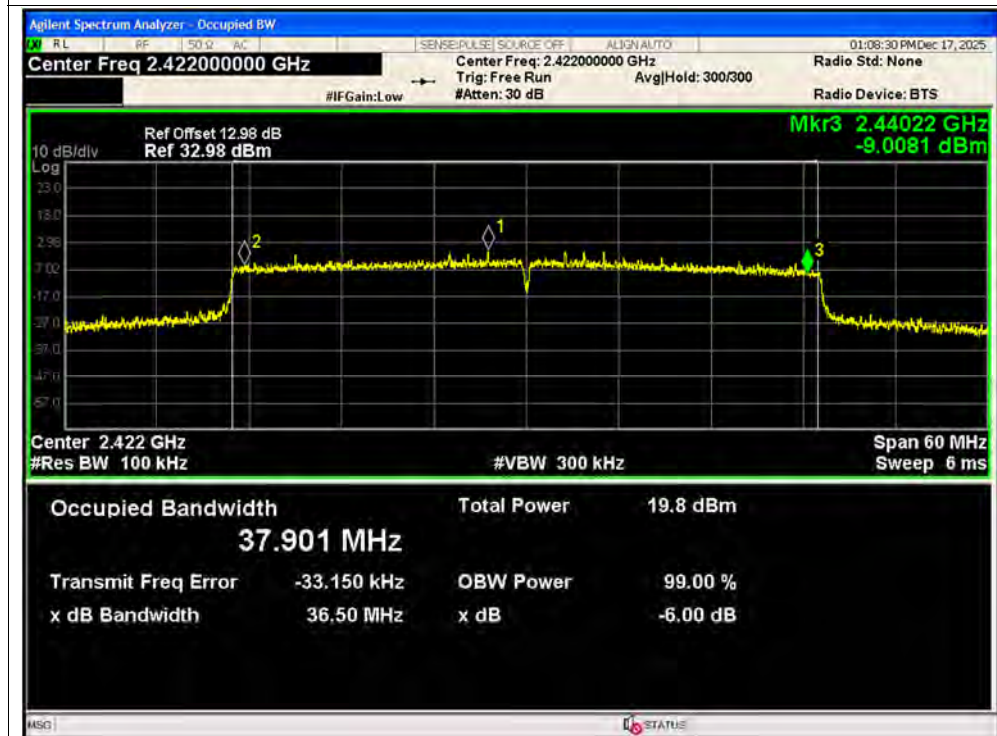
-6dB Bandwidth NVNT ax20 2412MHz Ant1



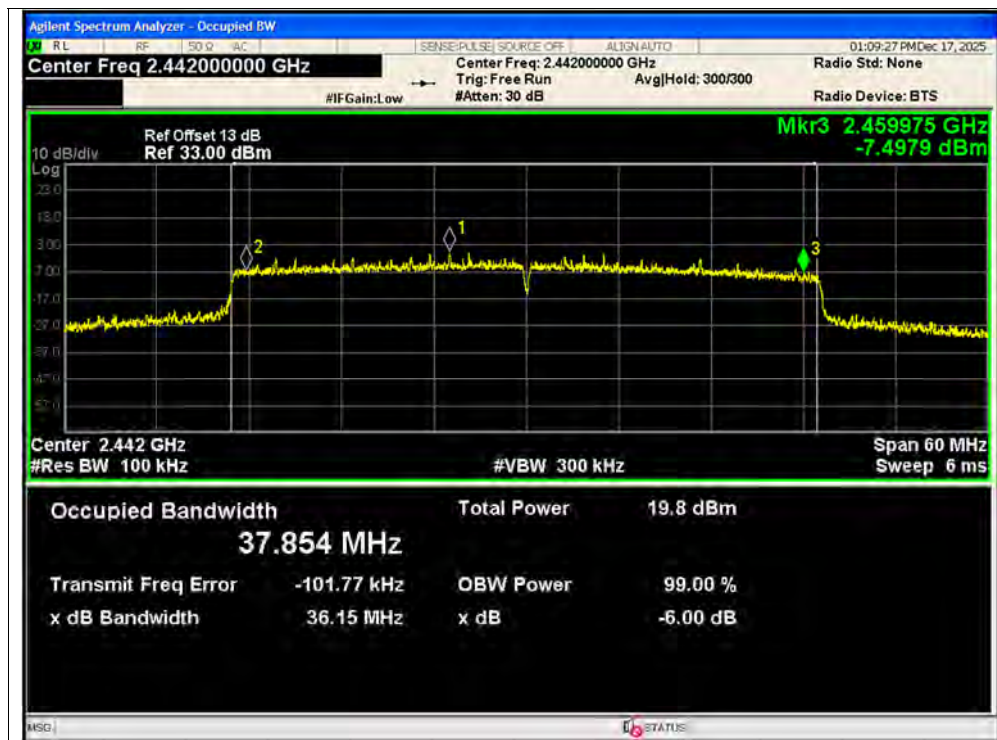
-6dB Bandwidth NVNT ax20 2442MHz Ant1



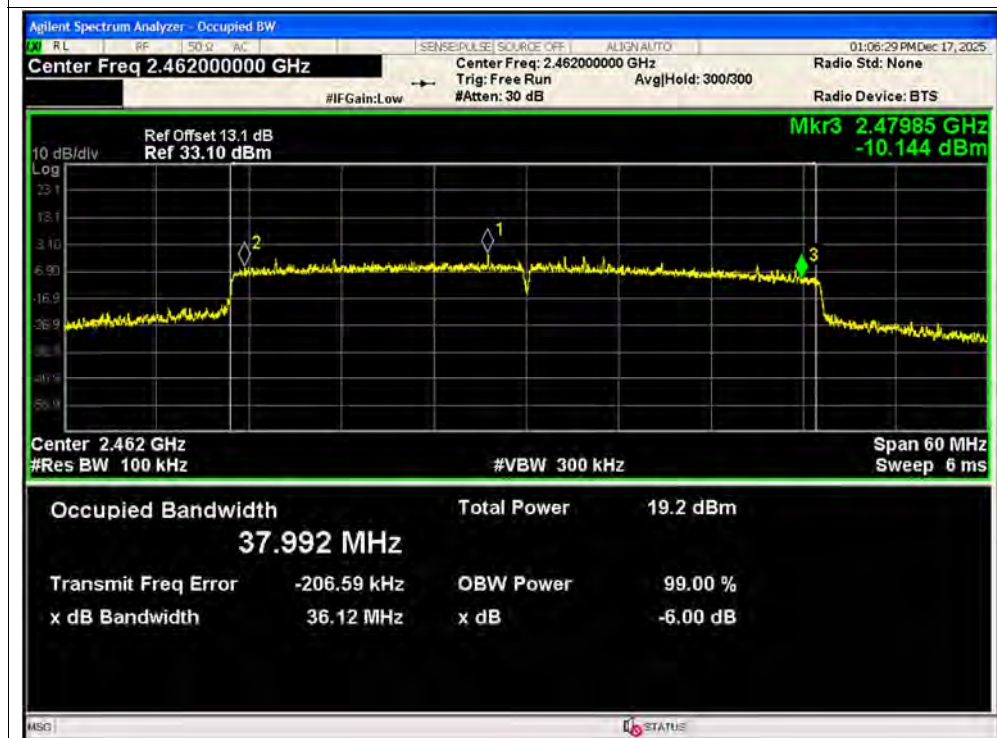
-6dB Bandwidth NVNT ax20 2472MHz Ant1



-6dB Bandwidth NVNT ax40 2422MHz Ant1



-6dB Bandwidth NVNT ax40 2442MHz Ant1



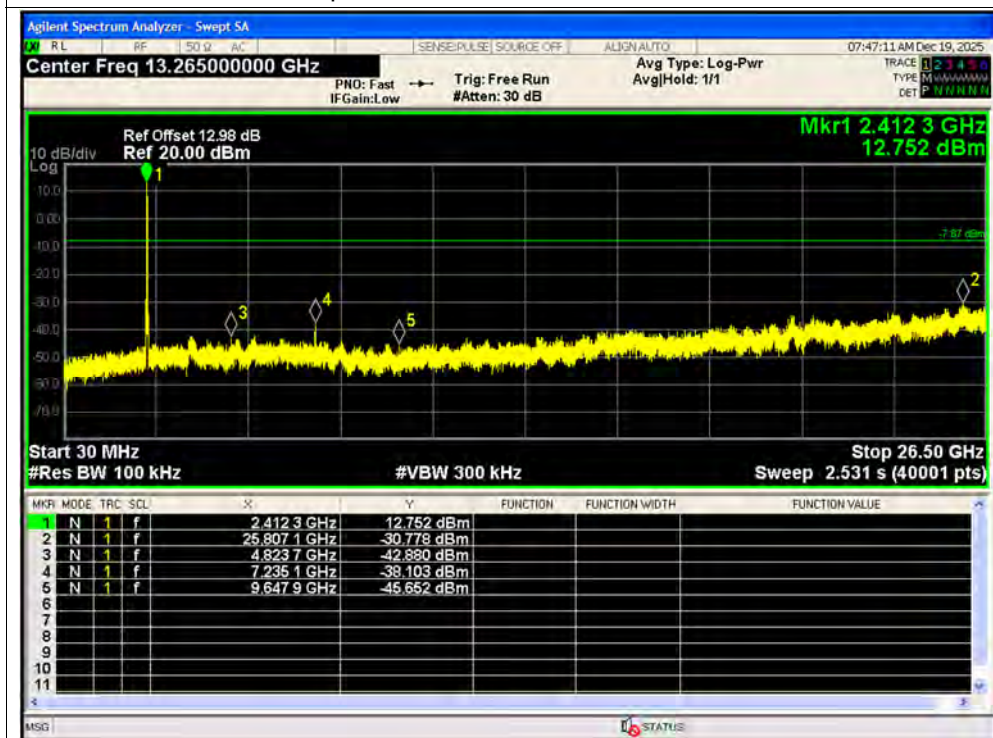
-6dB Bandwidth NVNT ax40 2462MHz Ant1

**A.5. Conducted Spurious Emissions**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-42.9	-20	Pass
NVNT	b	2442	Ant1	-39.04	-20	Pass
NVNT	b	2472	Ant1	-34.05	-20	Pass
NVNT	g	2412	Ant1	-36.13	-20	Pass
NVNT	g	2442	Ant1	-36.17	-20	Pass
NVNT	g	2472	Ant1	-35.83	-20	Pass
NVNT	n20	2412	Ant1	-33.6	-20	Pass
NVNT	n20	2442	Ant1	-32.97	-20	Pass
NVNT	n20	2472	Ant1	-34.81	-20	Pass
NVNT	n40	2422	Ant1	-30.45	-20	Pass
NVNT	n40	2442	Ant1	-30.64	-20	Pass
NVNT	n40	2462	Ant1	-32	-20	Pass
NVNT	ax20	2412	Ant1	-32.29	-20	Pass
NVNT	ax20	2442	Ant1	-33.41	-20	Pass
NVNT	ax20	2472	Ant1	-34.26	-20	Pass
NVNT	ax40	2422	Ant1	-30.61	-20	Pass
NVNT	ax40	2442	Ant1	-30.27	-20	Pass
NVNT	ax40	2462	Ant1	-30.69	-20	Pass



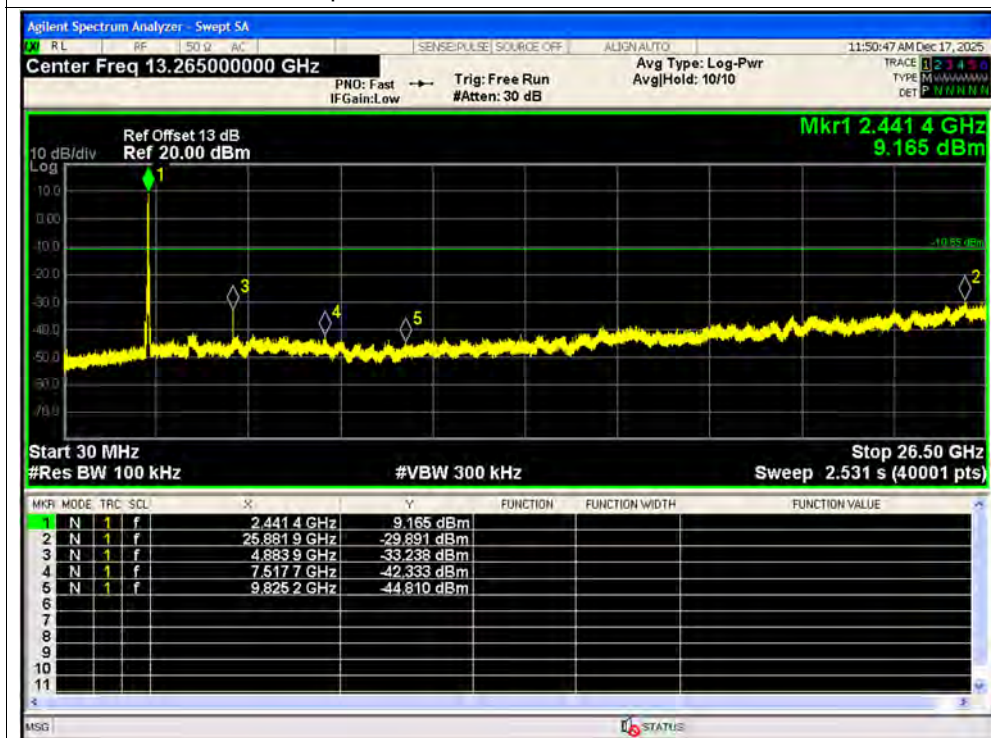
Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2412MHz Ant1 Emission



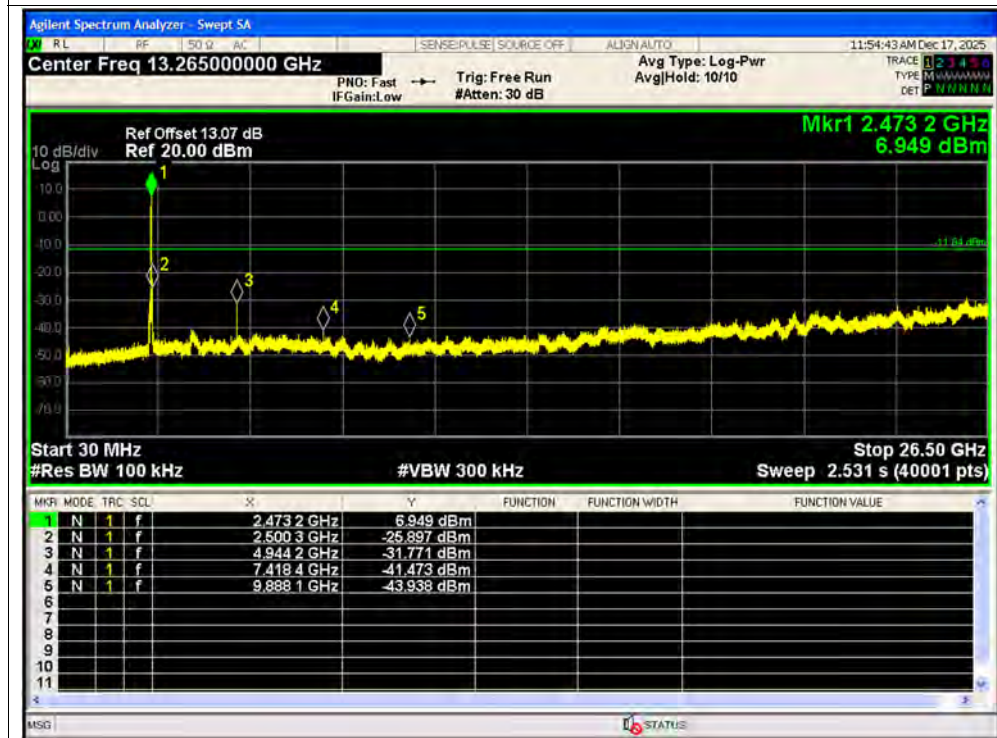
Tx. Spurious NVNT b 2442MHz Ant1 Ref



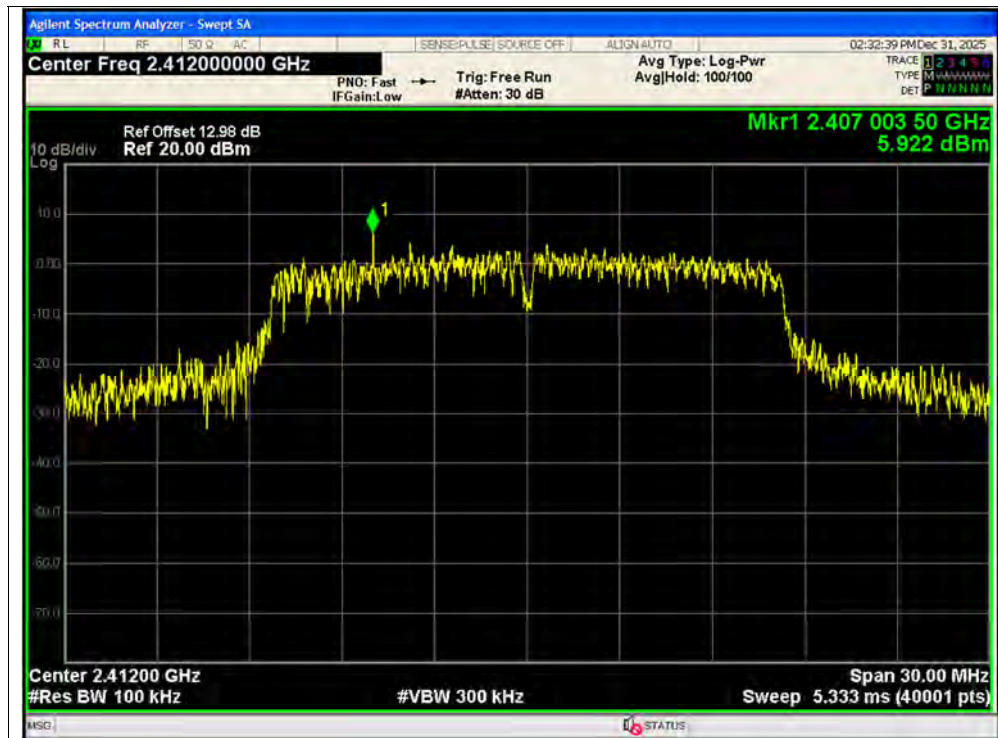
Tx. Spurious NVNT b 2442MHz Ant1 Emission



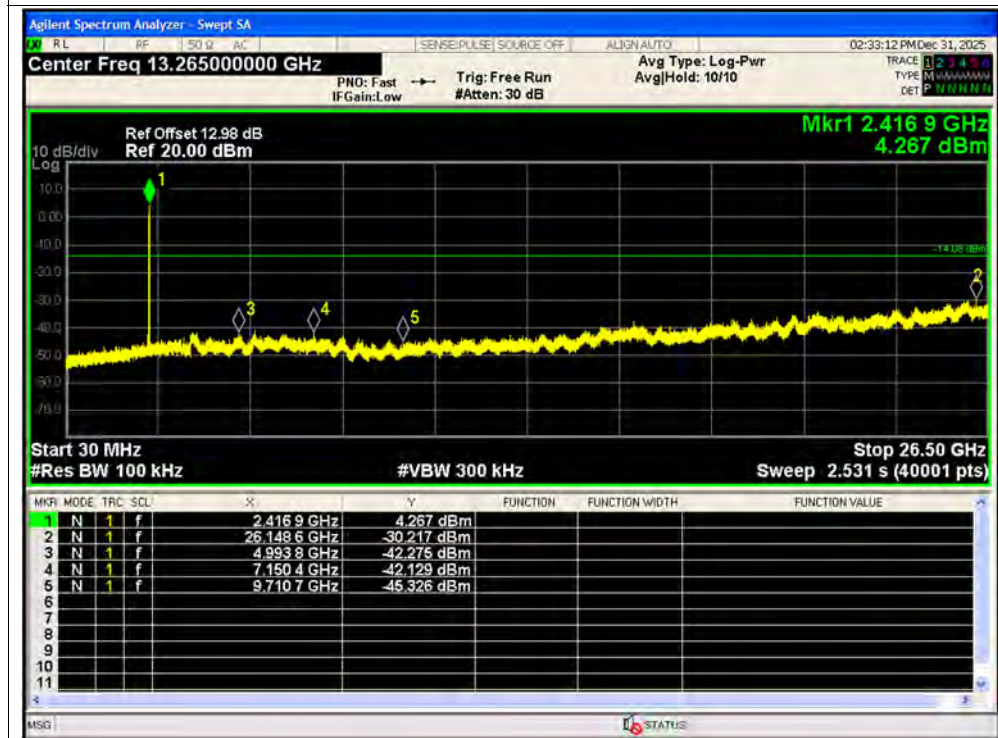
Tx. Spurious NVNT b 2472MHz Ant1 Ref



Tx. Spurious NVNT b 2472MHz Ant1 Emission



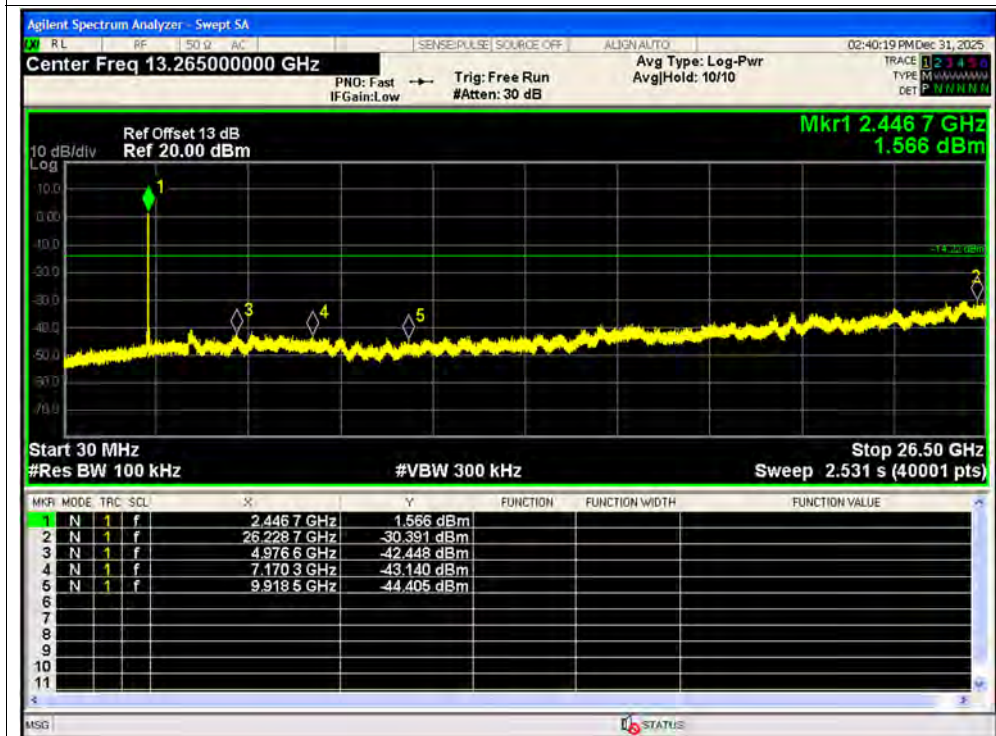
Tx. Spurious NVNT g 2412MHz Ant1 Ref



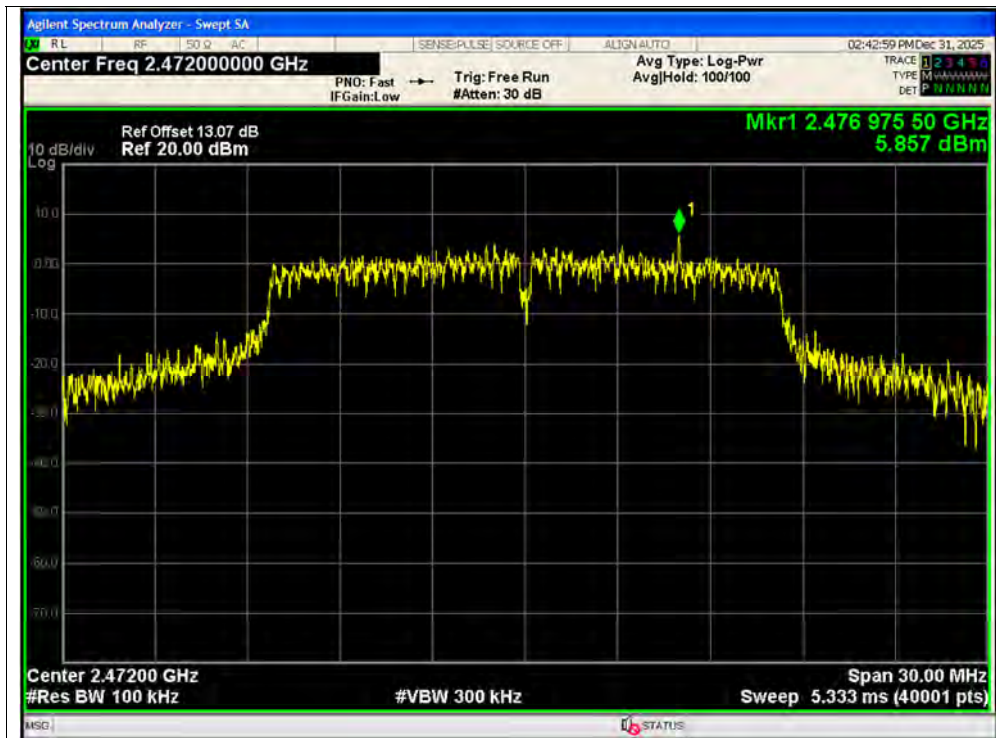
Tx. Spurious NVNT g 2412MHz Ant1 Emission



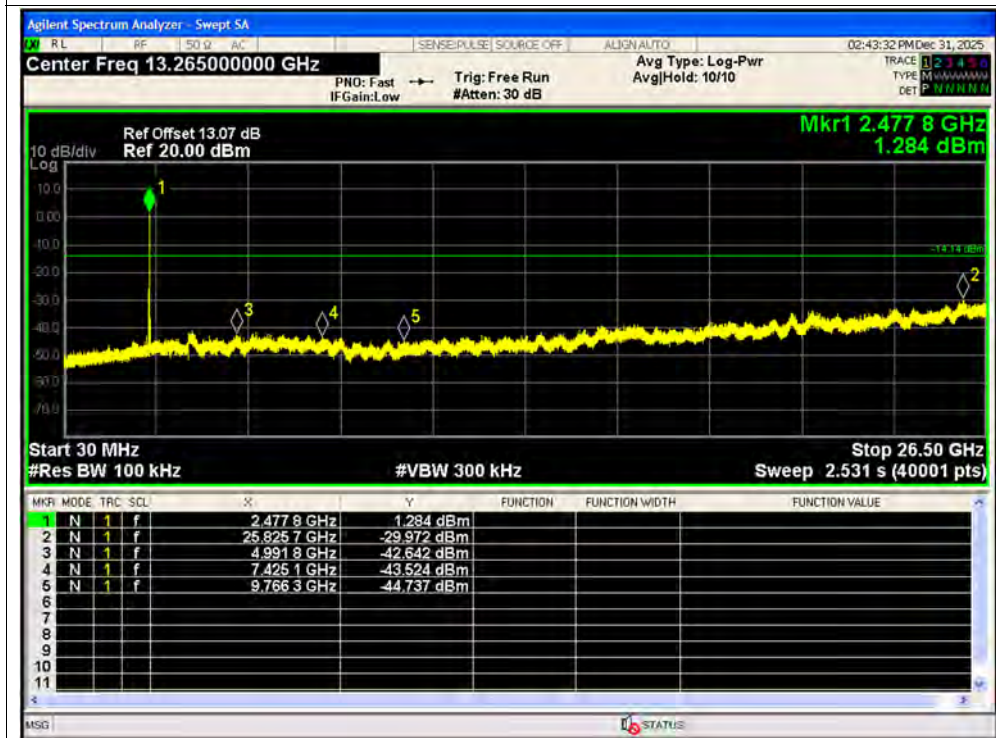
Tx. Spurious NVNT g 2442MHz Ant1 Ref



Tx. Spurious NVNT g 2442MHz Ant1 Emission



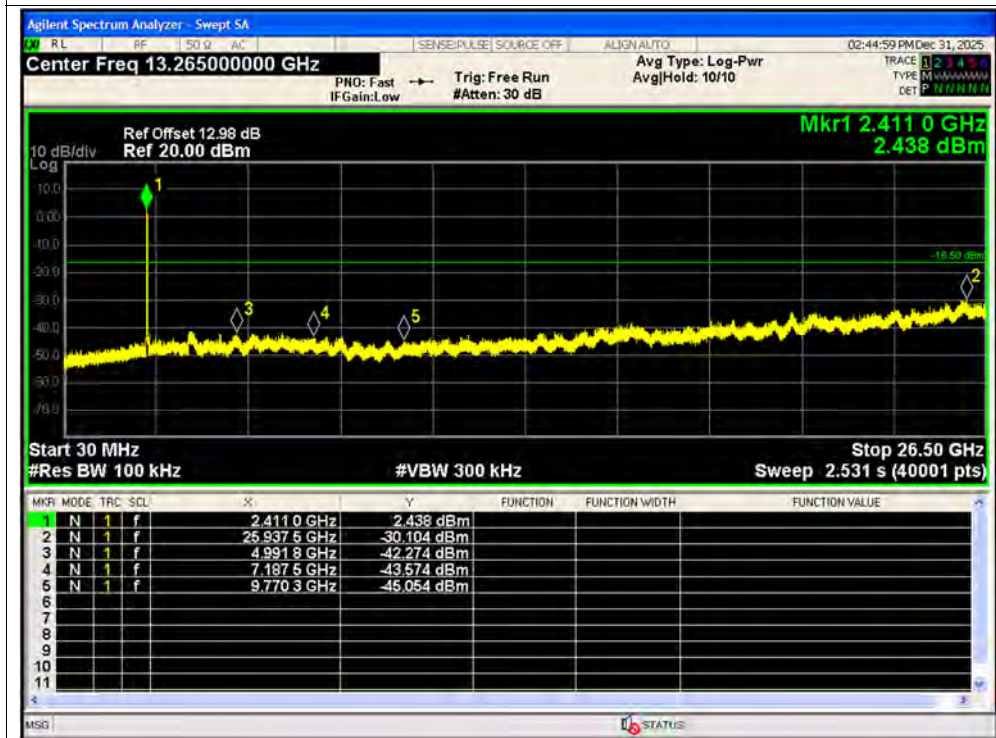
Tx. Spurious NVNT g 2472MHz Ant1 Ref



Tx. Spurious NVNT g 2472MHz Ant1 Emission



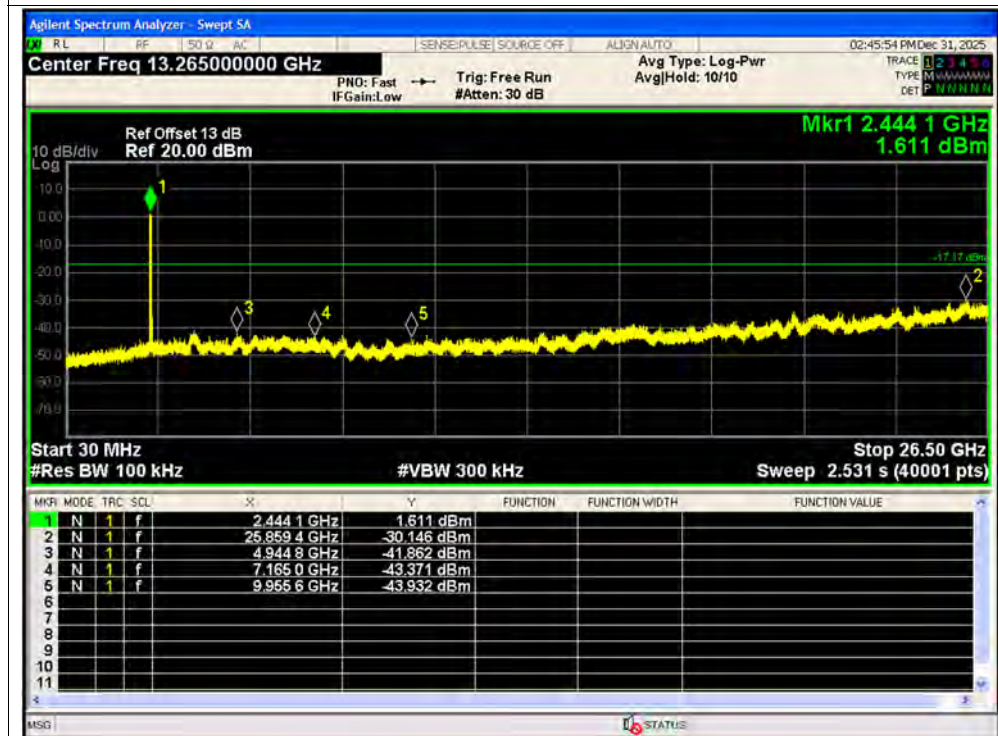
Tx. Spurious NVNT n20 2412MHz Ant1 Ref



Tx. Spurious NVNT n20 2412MHz Ant1 Emission



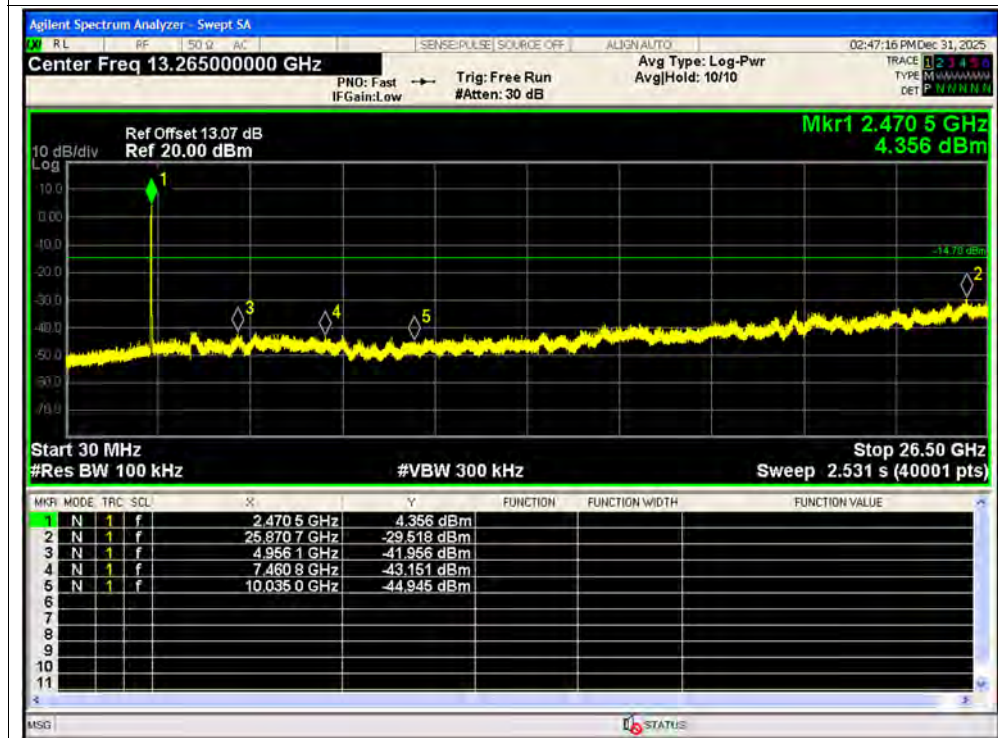
Tx. Spurious NVNT n20 2442MHz Ant1 Ref



Tx. Spurious NVNT n20 2442MHz Ant1 Emission



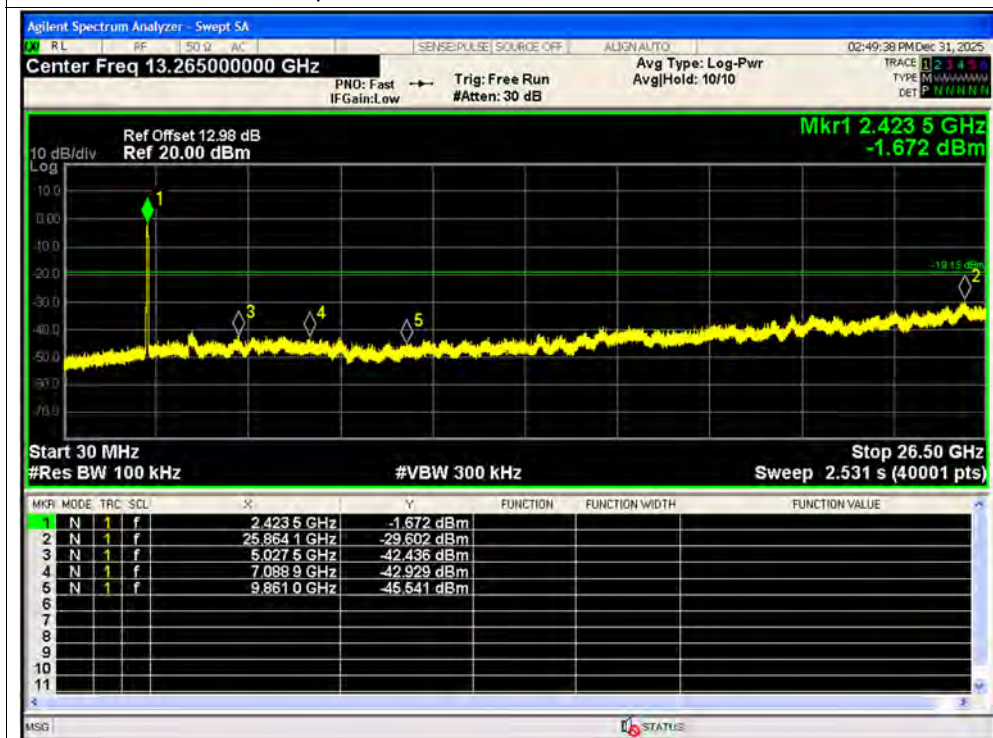
Tx. Spurious NVNT n20 2472MHz Ant1 Ref



Tx. Spurious NVNT n20 2472MHz Ant1 Emission



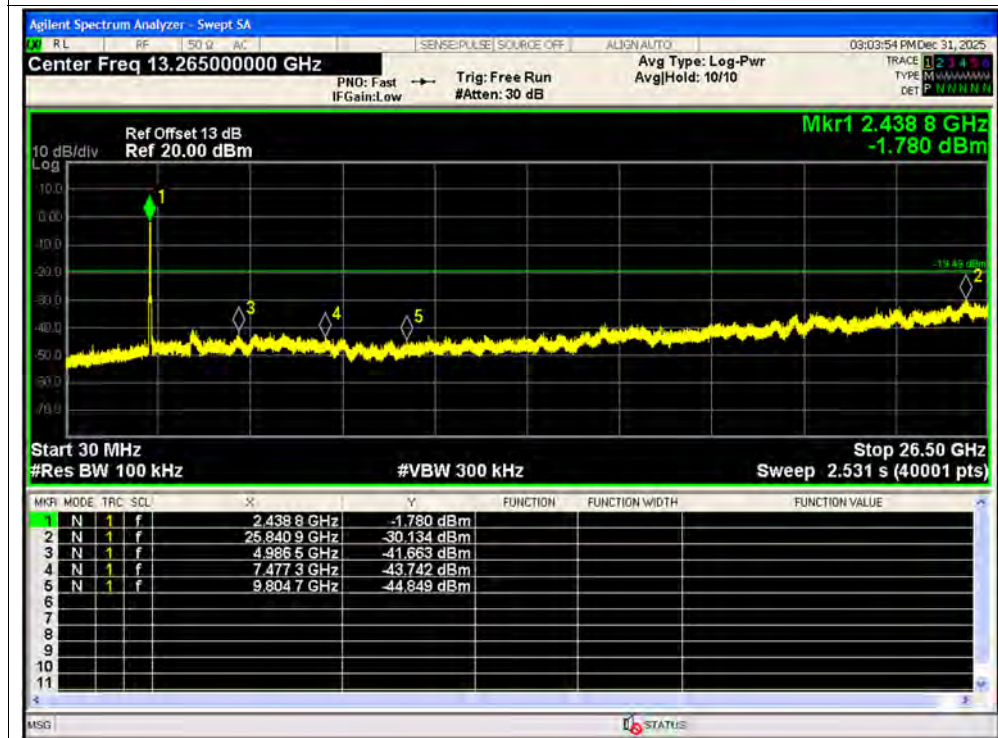
Tx. Spurious NVNT n40 2422MHz Ant1 Ref



Tx. Spurious NVNT n40 2422MHz Ant1 Emission



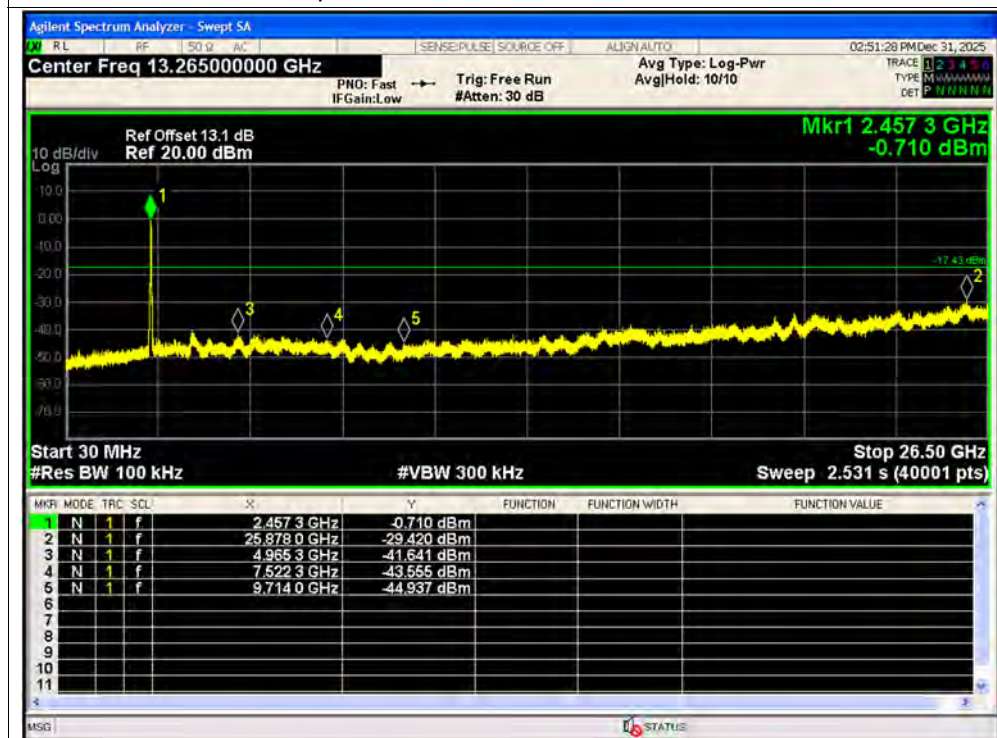
Tx. Spurious NVNT n40 2442MHz Ant1 Ref



Tx. Spurious NVNT n40 2442MHz Ant1 Emission



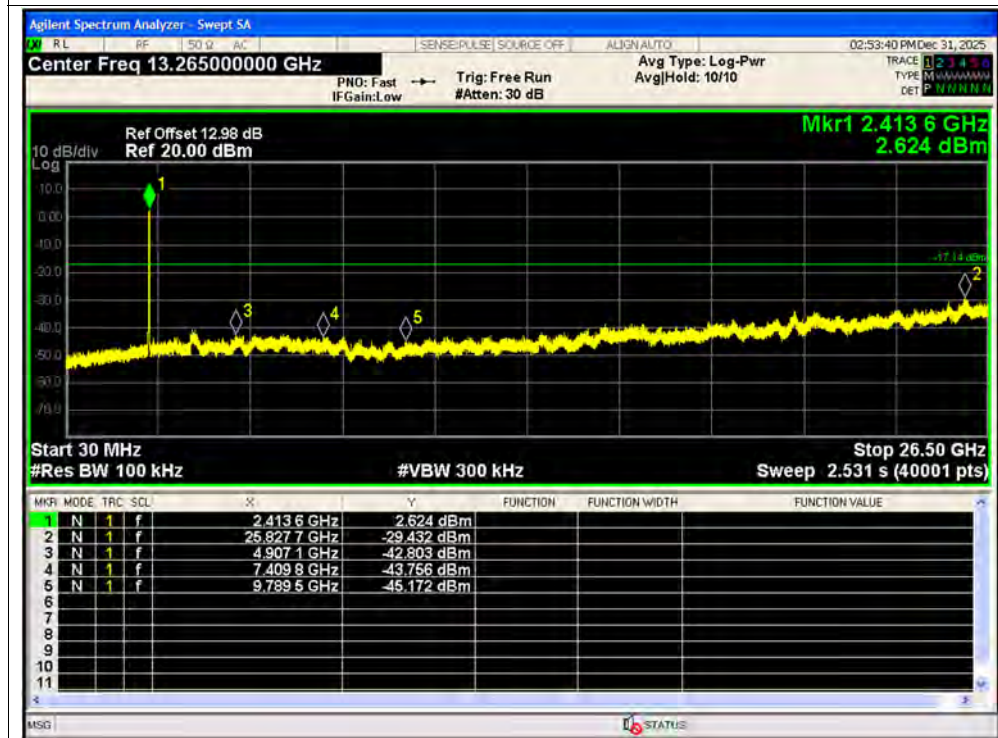
Tx. Spurious NVNT n40 2462MHz Ant1 Ref



Tx. Spurious NVNT n40 2462MHz Ant1 Emission



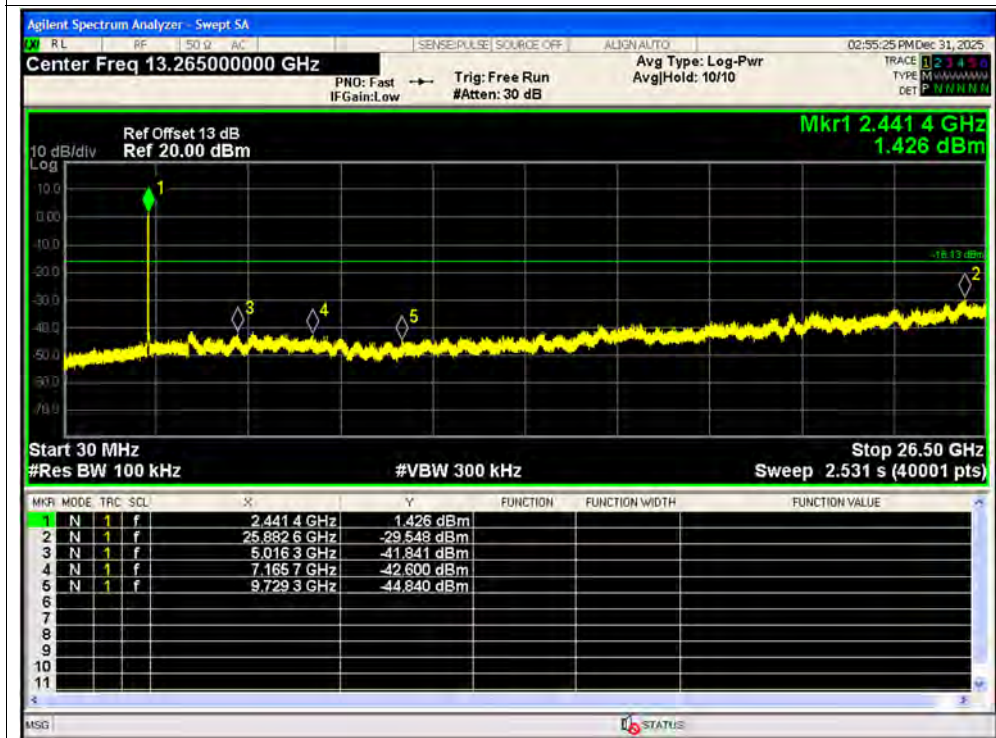
Tx. Spurious NVNT ax20 2412MHz Ant1 Ref



Tx. Spurious NVNT ax20 2412MHz Ant1 Emission



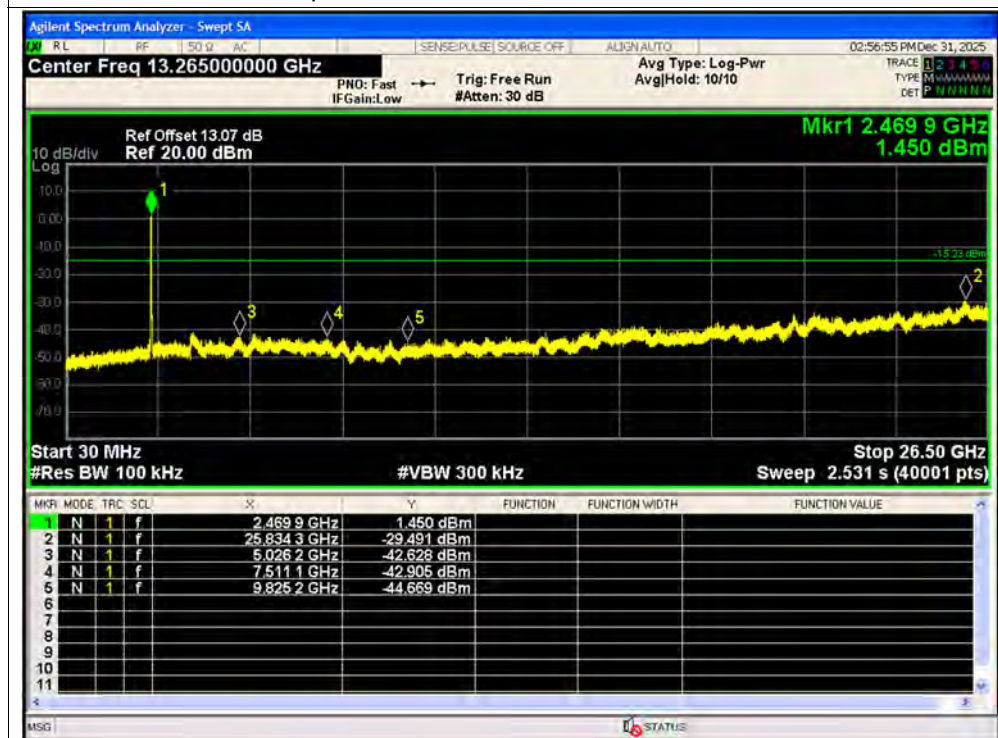
Tx. Spurious NVNT ax20 2442MHz Ant1 Ref



Tx. Spurious NVNT ax20 2442MHz Ant1 Emission



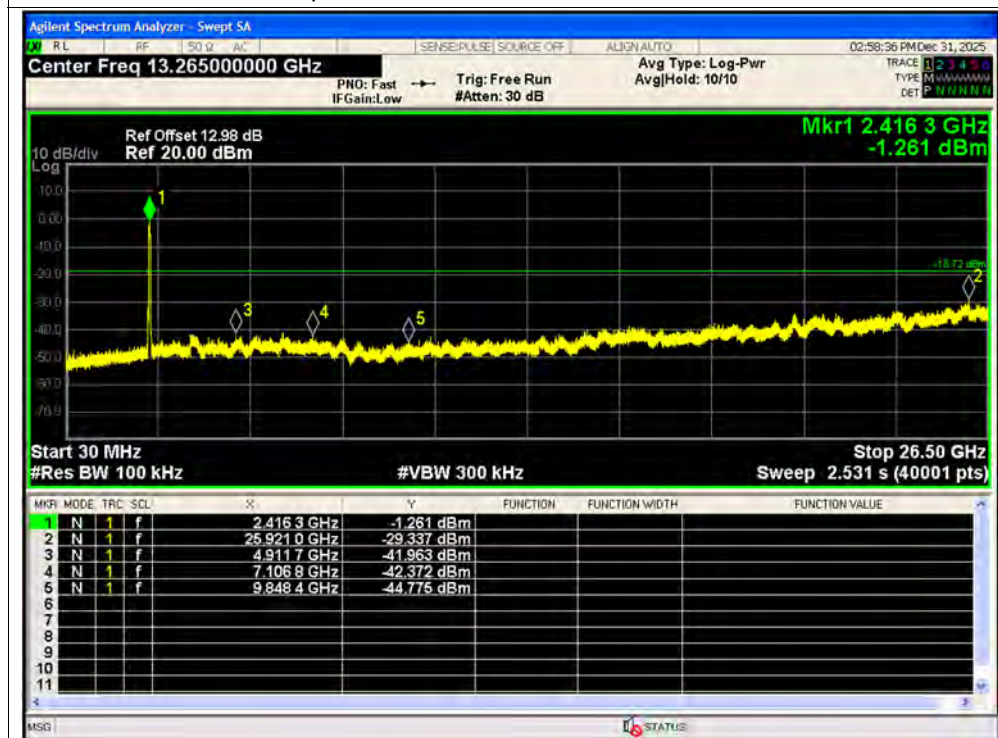
Tx. Spurious NVNT ax20 2472MHz Ant1 Ref



Tx. Spurious NVNT ax20 2472MHz Ant1 Emission



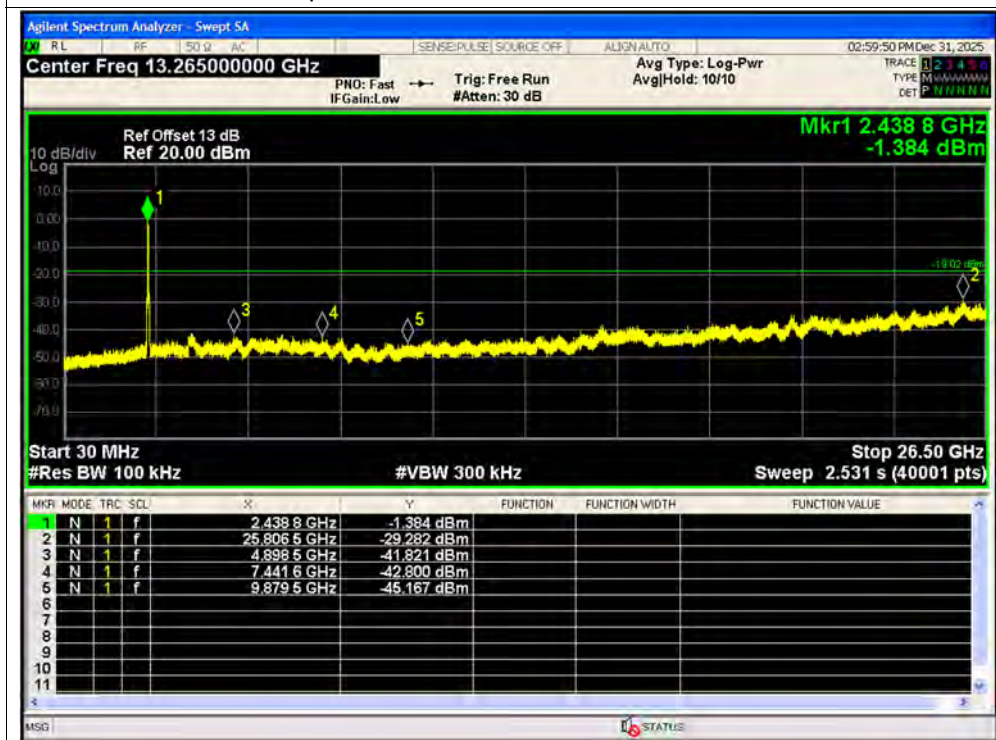
Tx. Spurious NVNT ax40 2422MHz Ant1 Ref



Tx. Spurious NVNT ax40 2422MHz Ant1 Emission



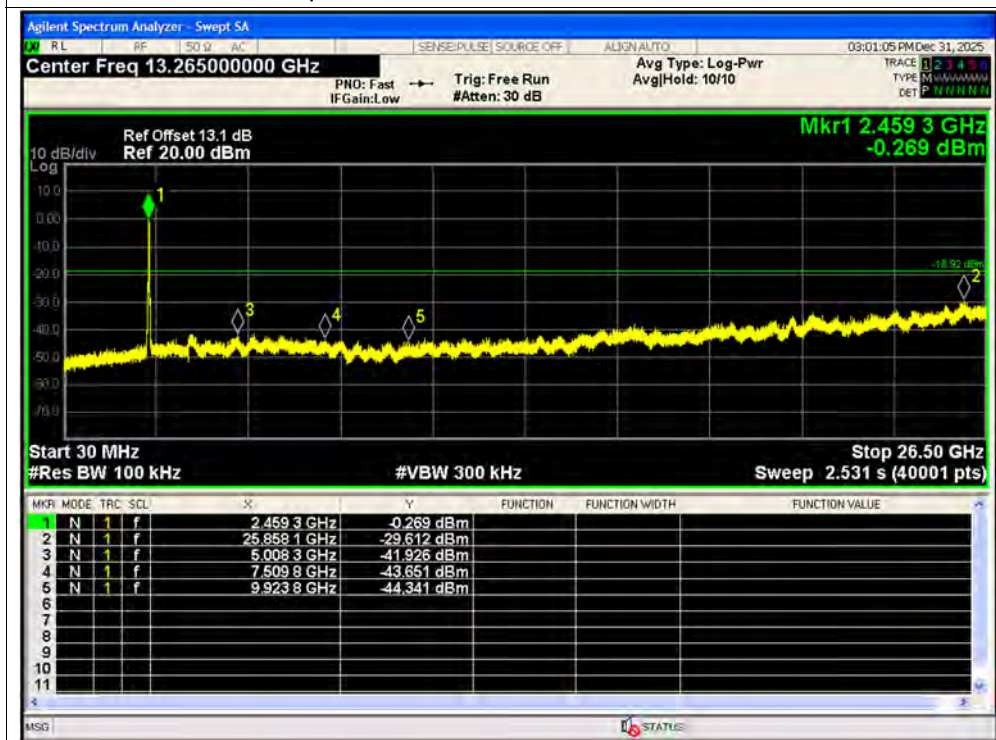
Tx. Spurious NVNT ax40 2442MHz Ant1 Ref



Tx. Spurious NVNT ax40 2442MHz Ant1 Emission



Tx. Spurious NVNT ax40 2462MHz Ant1 Ref



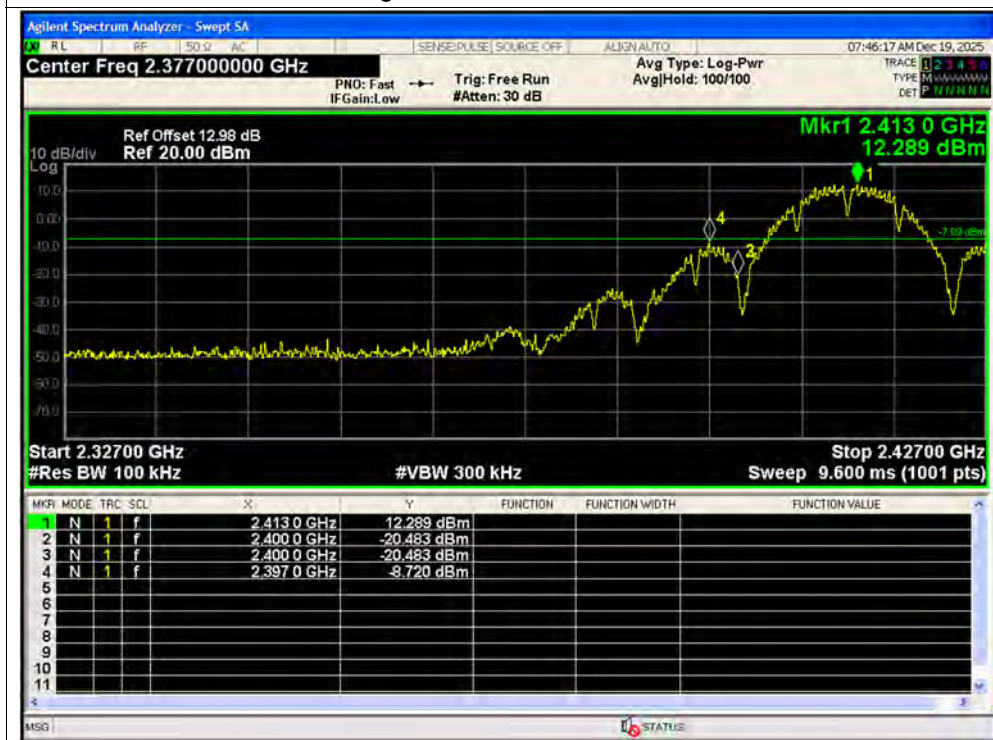
Tx. Spurious NVNT ax40 2462MHz Ant1 Emission

**A.6. Band Edge**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-21.64	-20	Pass
NVNT	b	2472	Ant1	-35.18	-20	Pass
NVNT	g	2412	Ant1	-23.23	-20	Pass
NVNT	g	2472	Ant1	-21.6	-20	Pass
NVNT	n20	2412	Ant1	-23.11	-20	Pass
NVNT	n20	2472	Ant1	-21.22	-20	Pass
NVNT	n40	2422	Ant1	-21.91	-20	Pass
NVNT	n40	2462	Ant1	-24.16	-20	Pass
NVNT	ax20	2412	Ant1	-23.9	-20	Pass
NVNT	ax20	2472	Ant1	-24.33	-20	Pass
NVNT	ax40	2422	Ant1	-26.63	-20	Pass
NVNT	ax40	2462	Ant1	-23.6	-20	Pass



Band Edge NVNT b 2412MHz Ant1 Ref



Band Edge NVNT b 2412MHz Ant1 Emission



Band Edge NVNT b 2472MHz Ant1 Ref



Band Edge NVNT b 2472MHz Ant1 Emission



Band Edge NVNT g 2412MHz Ant1 Ref



Band Edge NVNT g 2412MHz Ant1 Emission



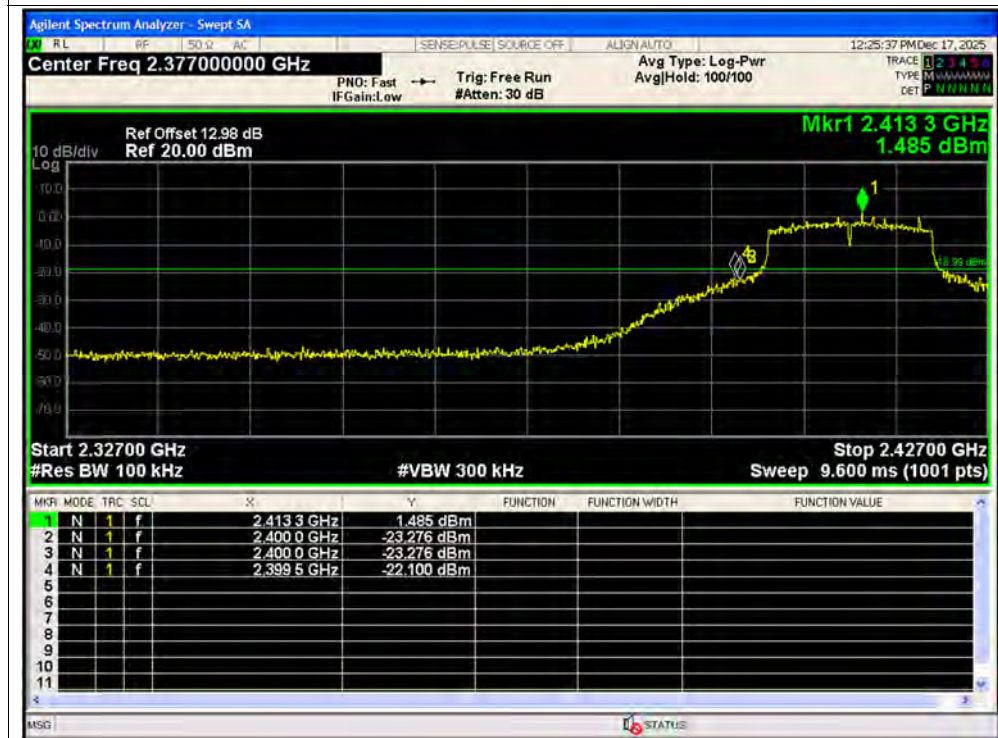
Band Edge NVNT g 2472MHz Ant1 Ref



Band Edge NVNT g 2472MHz Ant1 Emission



Band Edge NVNT n20 2412MHz Ant1 Ref



Band Edge NVNT n20 2412MHz Ant1 Emission



Band Edge NVNT n20 2472MHz Ant1 Ref



Band Edge NVNT n20 2472MHz Ant1 Emission



Band Edge NVNT n40 2422MHz Ant1 Ref



Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2462MHz Ant1 Ref



Band Edge NVNT n40 2462MHz Ant1 Emission



Band Edge NVNT ax20 2412MHz Ant1 Ref



Band Edge NVNT ax20 2412MHz Ant1 Emission



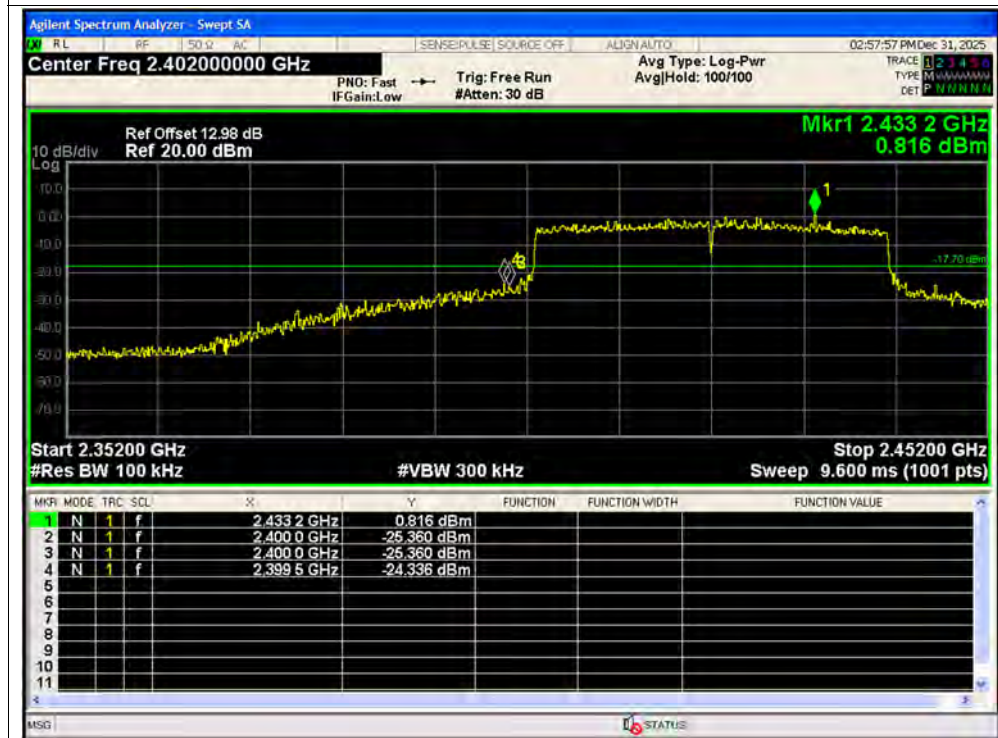
Band Edge NVNT ax20 2472MHz Ant1 Ref



Band Edge NVNT ax20 2472MHz Ant1 Emission



Band Edge NVNT ax40 2422MHz Ant1 Ref



Band Edge NVNT ax40 2422MHz Ant1 Emission



Band Edge NVNT ax40 2462MHz Ant1 Ref



Band Edge NVNT ax40 2462MHz Ant1 Emission

**A.7. Power Spectral Density**

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	0.28	0	0.28	8	Pass
NVNT	b	2442	Ant1	-4.31	0	-4.31	8	Pass
NVNT	b	2472	Ant1	-4.22	0	-4.22	8	Pass
NVNT	g	2412	Ant1	-13.31	0	-13.31	8	Pass
NVNT	g	2442	Ant1	-8.9	0	-8.9	8	Pass
NVNT	g	2472	Ant1	-12.6	0	-12.6	8	Pass
NVNT	n20	2412	Ant1	-9.88	0	-9.88	8	Pass
NVNT	n20	2442	Ant1	-9.42	0	-9.42	8	Pass
NVNT	n20	2472	Ant1	-8.5	0	-8.5	8	Pass
NVNT	n40	2422	Ant1	-12.38	0	-12.38	8	Pass
NVNT	n40	2442	Ant1	-13.11	0	-13.11	8	Pass
NVNT	n40	2462	Ant1	-12.26	0	-12.26	8	Pass
NVNT	ax20	2412	Ant1	-9.84	0	-9.84	8	Pass
NVNT	ax20	2442	Ant1	-11.3	0	-11.3	8	Pass
NVNT	ax20	2472	Ant1	-10.67	0	-10.67	8	Pass
NVNT	ax40	2422	Ant1	-12.25	0	-12.25	8	Pass
NVNT	ax40	2442	Ant1	-12.83	0	-12.83	8	Pass
NVNT	ax40	2462	Ant1	-10.72	0	-10.72	8	Pass



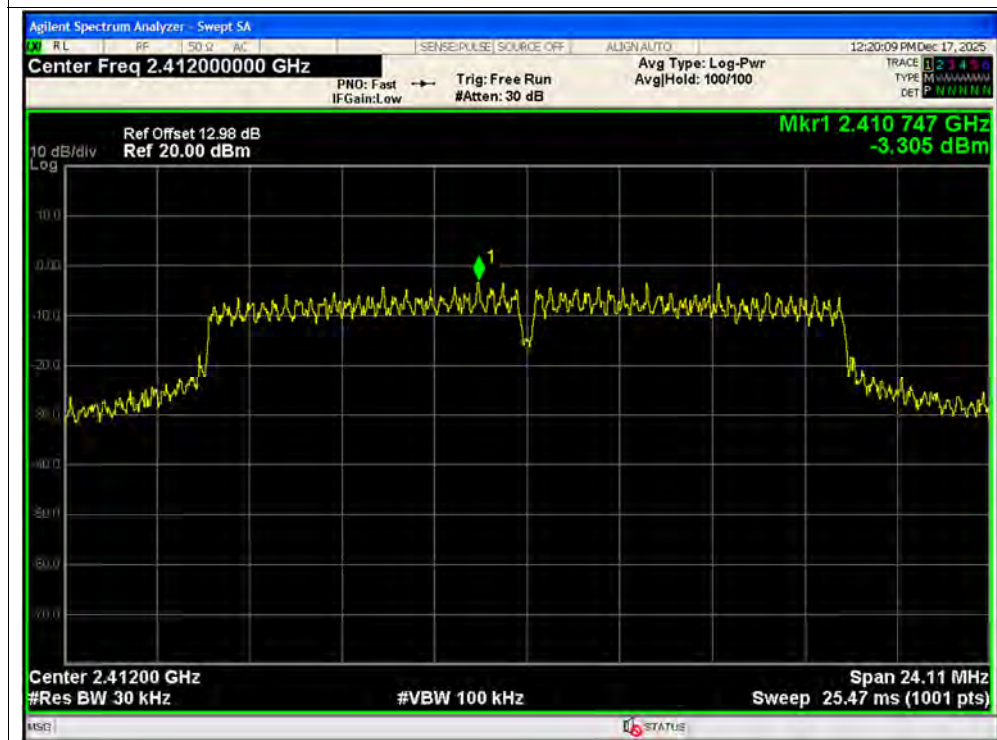
PSD NVNT b 2412MHz Ant1



PSD NVNT b 2442MHz Ant1



PSD NVNT b 2472MHz Ant1



PSD NVNT g 2412MHz Ant1



PSD NVNT g 2442MHz Ant1



PSD NVNT g 2472MHz Ant1



PSD NVNT n20 2412MHz Ant1



PSD NVNT n20 2442MHz Ant1



PSD NVNT n20 2472MHz Ant1



PSD NVNT n40 2422MHz Ant1





PSD NVNT ax20 2412MHz Ant1



PSD NVNT ax20 2442MHz Ant1



PSD NVNT ax20 2472MHz Ant1



PSD NVNT ax40 2422MHz Ant1



PSD NVNT ax40 2442MHz Ant1



PSD NVNT ax40 2462MHz Ant1



A.8. Conducted Emission

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and plots below.

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test Setup:

Test Mode: EUT+Notebook+Notebook adapter+USB cable+WIFI TX

Test voltage: AC 120V/60Hz

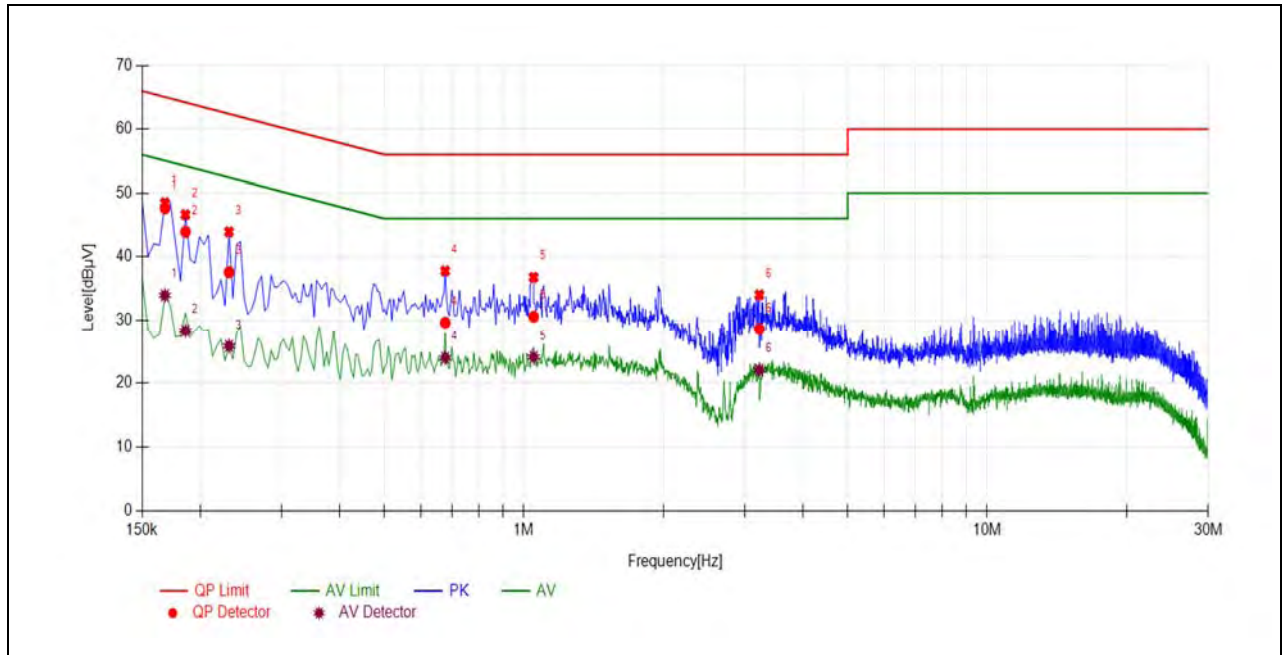
The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V]} = U_R + L_{\text{Cable loss [dB]} + A_{\text{Factor}}$$

U_R : Receiver Reading

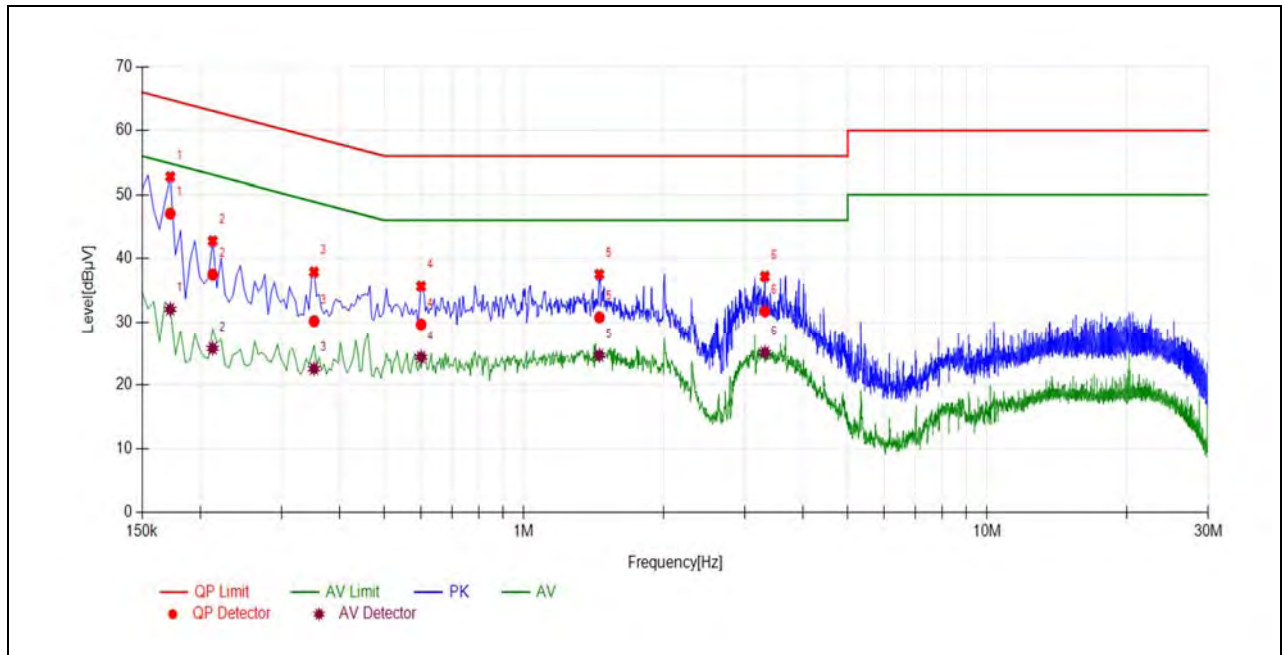
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1680	47.64	33.92	65.06	55.06	Line	PASS
2	0.1860	43.94	28.28	64.21	54.21		PASS
3	0.2310	37.57	25.84	62.41	52.41		PASS
4	0.6765	29.59	23.95	56.00	46.00		PASS
5	1.0501	30.54	24.08	56.00	46.00		PASS
6	3.2235	28.55	22.04	56.00	46.00		PASS



(N Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1725	47.06	32.05	64.84	54.84	Neutral	PASS
2	0.2130	37.50	25.76	63.09	53.09		PASS
3	0.3525	30.15	22.54	58.90	48.90		PASS
4	0.6000	29.64	24.38	56.00	46.00		PASS
5	1.4551	30.76	24.66	56.00	46.00		PASS
6	3.3134	31.74	25.10	56.00	46.00		PASS

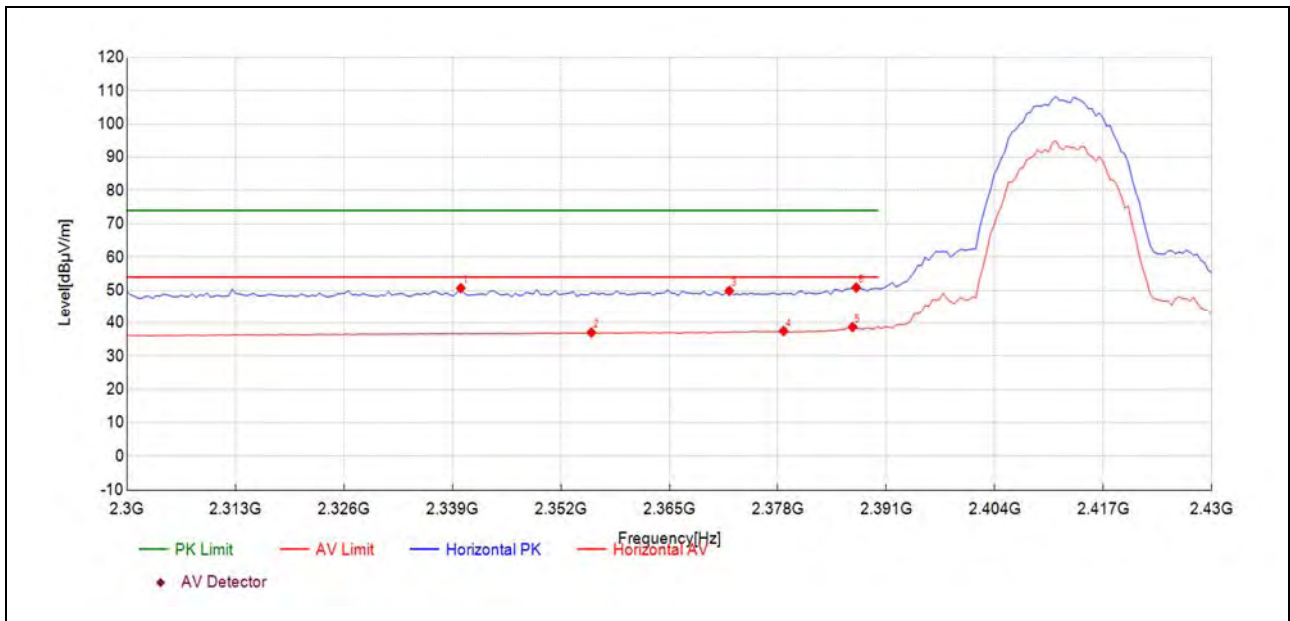
A.9. Restricted Frequency Bands

Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (Horizontal) was recorded in this test report.

Note 2 All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

802.11b Mode

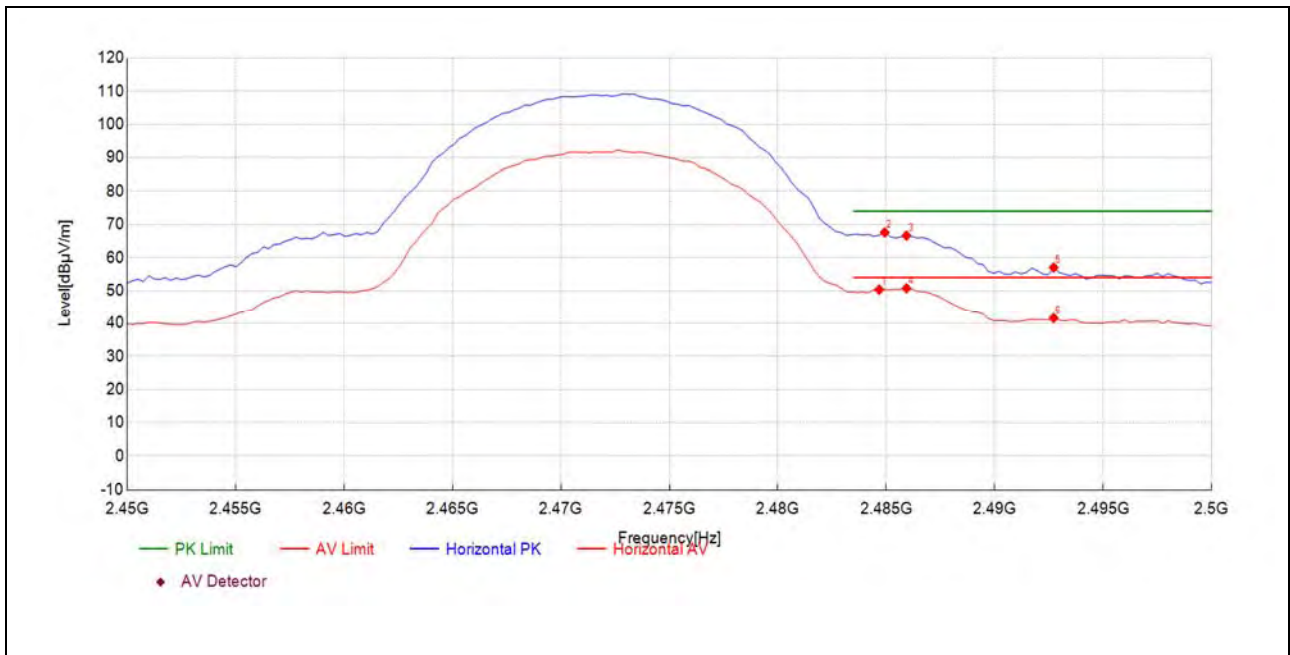
Plot for Channel 1



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2340.00	18.4	50.65	32.300	74.00	23.35	150	349	PK	PASS
2355.65	4.6	37.01	32.420	54.00	16.99	150	46	AV	PASS
2372.17	17.4	49.84	32.480	74.00	24.16	150	0	PK	PASS
2378.70	5.0	37.48	32.510	54.00	16.52	150	18	AV	PASS
2386.96	6.1	38.65	32.530	54.00	15.35	150	76	AV	PASS
2387.39	18.3	50.83	32.530	74.00	23.17	150	0	PK	PASS



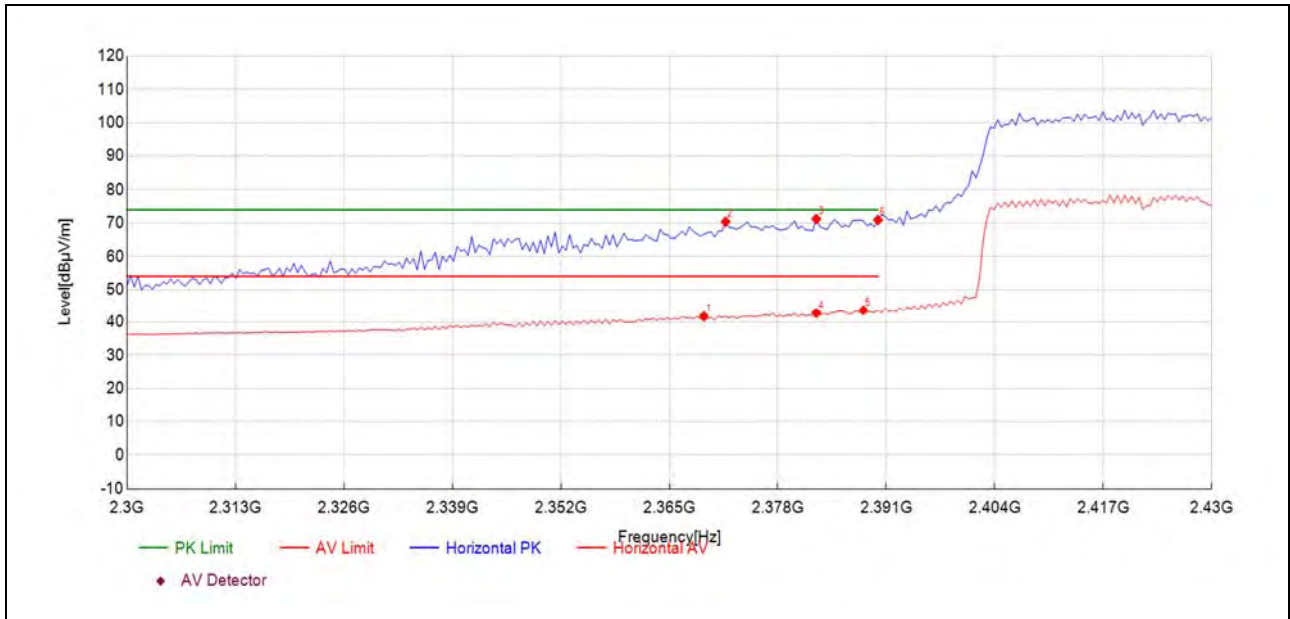
Plot for Channel 13



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2484.67	17.3	50.33	33.030	54.00	3.67	150	360	AV	PASS
2484.92	34.6	67.59	33.030	74.00	6.41	150	57	PK	PASS
2485.93	33.6	66.65	33.030	74.00	7.35	150	57	PK	PASS
2485.93	17.7	50.75	33.030	54.00	3.25	150	57	AV	PASS
2492.71	24.0	57.01	33.010	74.00	16.99	150	57	PK	PASS
2492.71	8.5	41.54	33.010	54.00	12.46	150	57	AV	PASS

**802.11ax (HEW40) Mode**

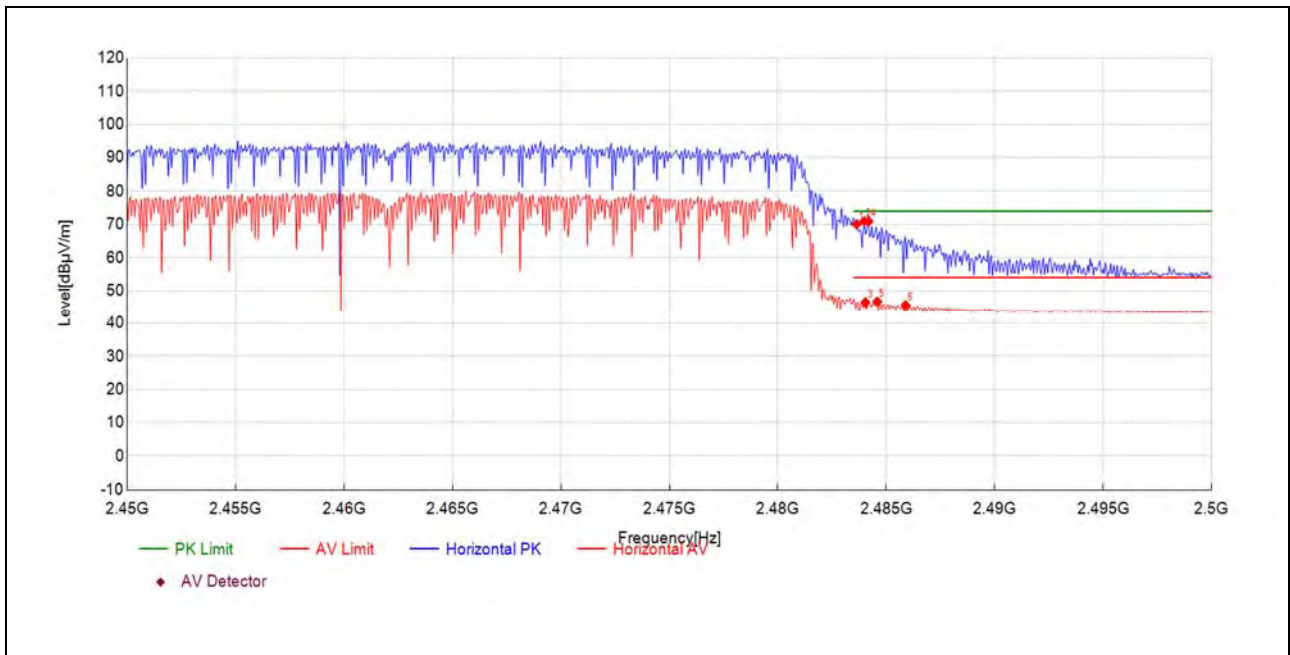
Plot for Channel 3



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2369.13	9.3	41.72	32.470	54.00	12.28	150	67	AV	PASS
2371.74	37.9	70.40	32.470	74.00	3.60	150	19	PK	PASS
2382.61	38.7	71.26	32.520	74.00	2.74	150	122	PK	PASS
2382.61	10.3	42.81	32.520	54.00	11.19	150	75	AV	PASS
2388.26	11.1	43.67	32.540	54.00	10.33	150	122	AV	PASS
2390.00	38.4	70.95	32.540	74.00	3.05	150	67	PK	PASS



Plot for Channel 11



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2483.63	37.1	70.08	33.030	74.00	3.92	150	4	PK	PASS
2483.98	37.9	70.97	33.030	74.00	3.03	150	19	PK	PASS
2484.03	13.5	46.50	33.030	54.00	7.50	150	350	AV	PASS
2484.18	37.9	70.93	33.030	74.00	3.07	150	59	PK	PASS
2484.58	13.7	46.72	33.030	54.00	7.28	150	40	AV	PASS
2485.89	12.6	45.60	33.030	54.00	8.40	150	0	AV	PASS



A.10. 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:

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

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.

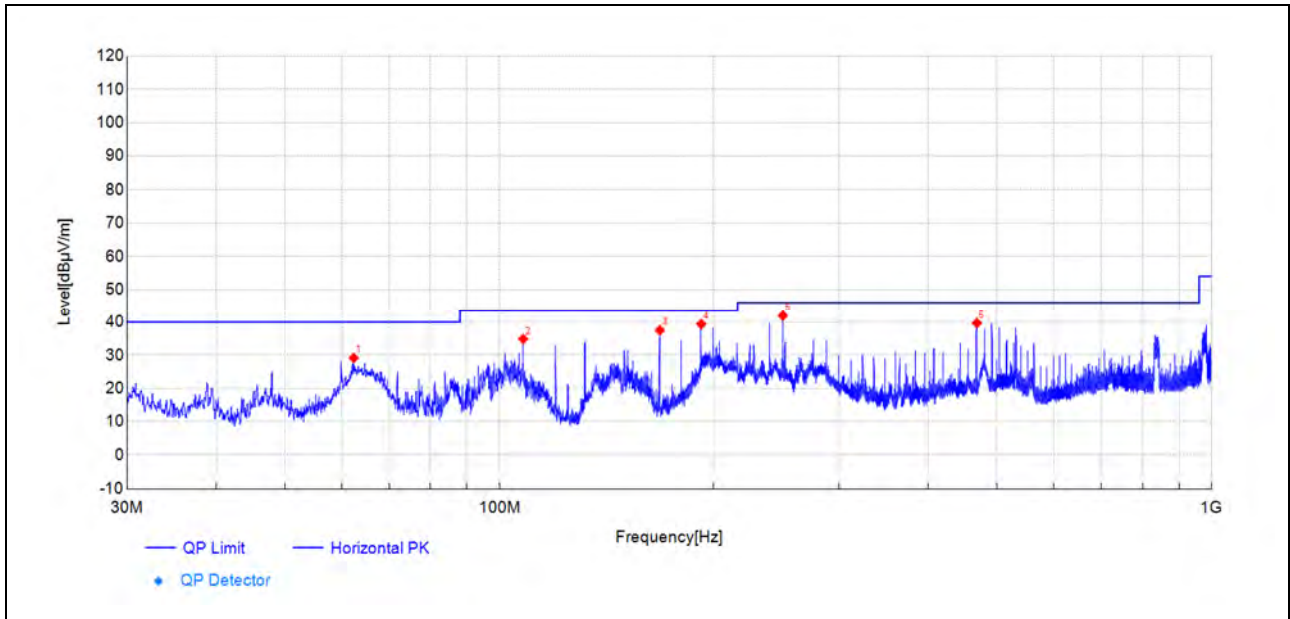
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note3: For the frequency, which started from 18GHz to 40GHz harmonic of the highest frequency, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note 4: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

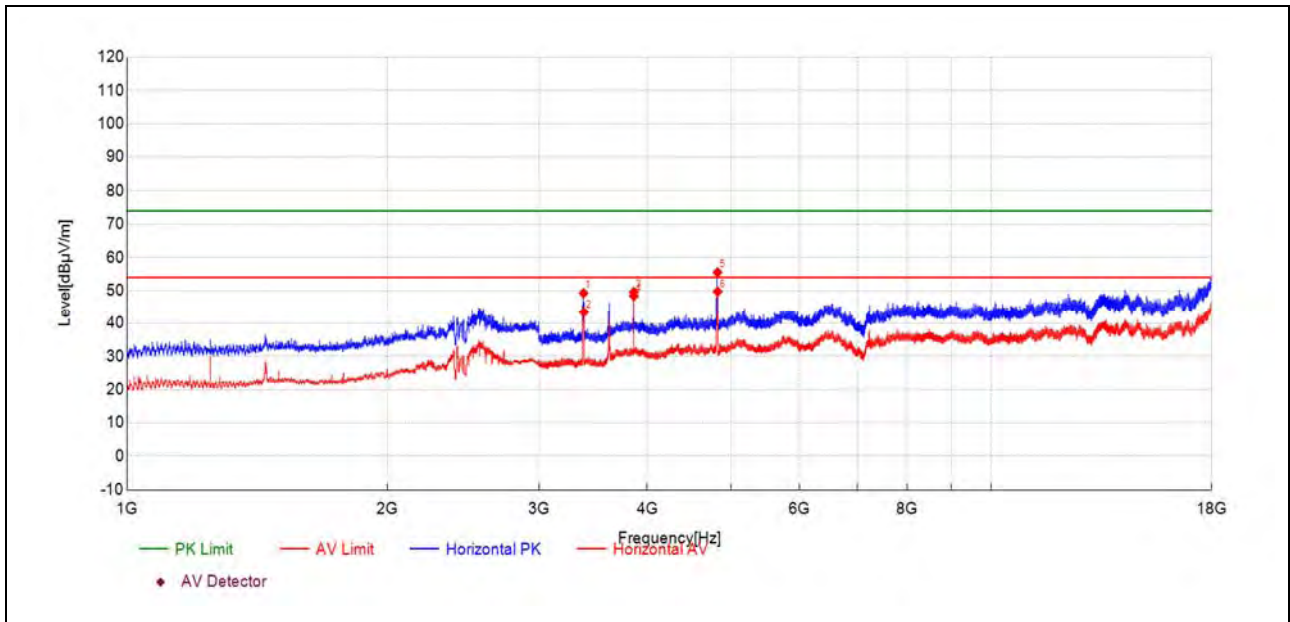
**802.11b Mode**

Plot for Channel 1



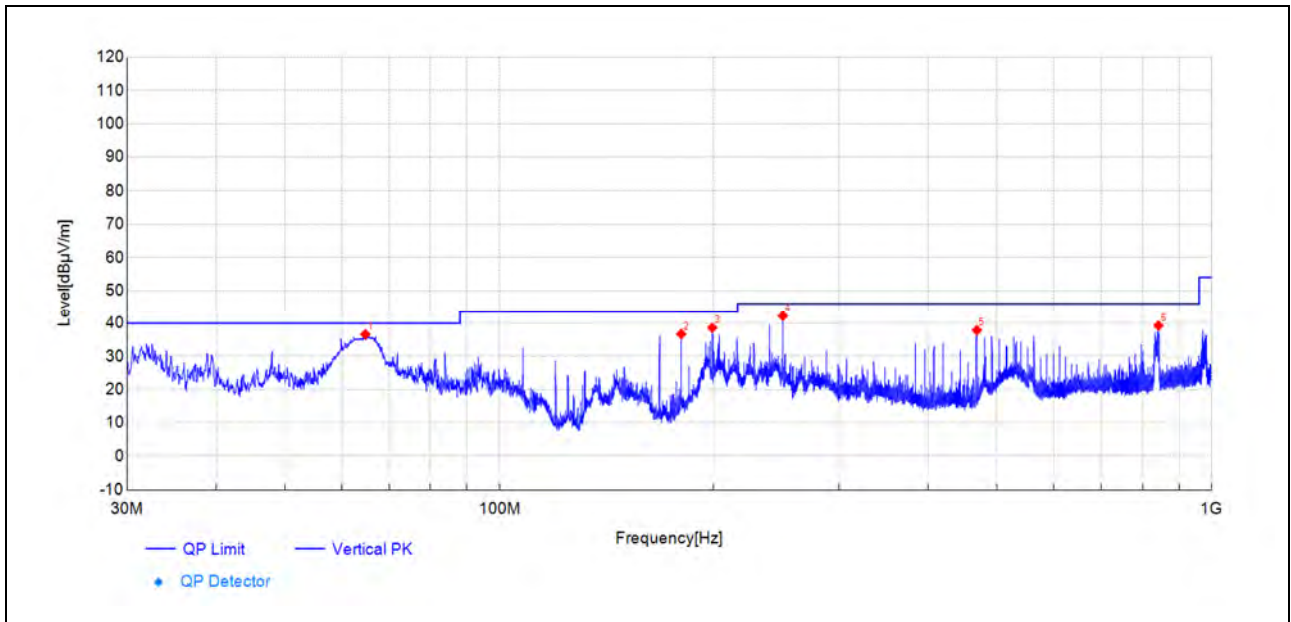
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
62.45	61.0	29.17	-31.790	40.00	10.83	150	121	PK	PASS
107.99	65.5	34.89	-30.600	43.50	8.61	150	1	PK	PASS
167.99	69.9	37.52	-32.330	43.50	5.98	150	228	PK	PASS
192.00	69.0	39.38	-29.600	43.50	4.12	150	3	PK	PASS
250.01	70.1	41.94	-28.120	46.00	4.06	150	95	PK	PASS
468.07	62.3	39.72	-22.620	46.00	6.28	150	107	PK	PASS



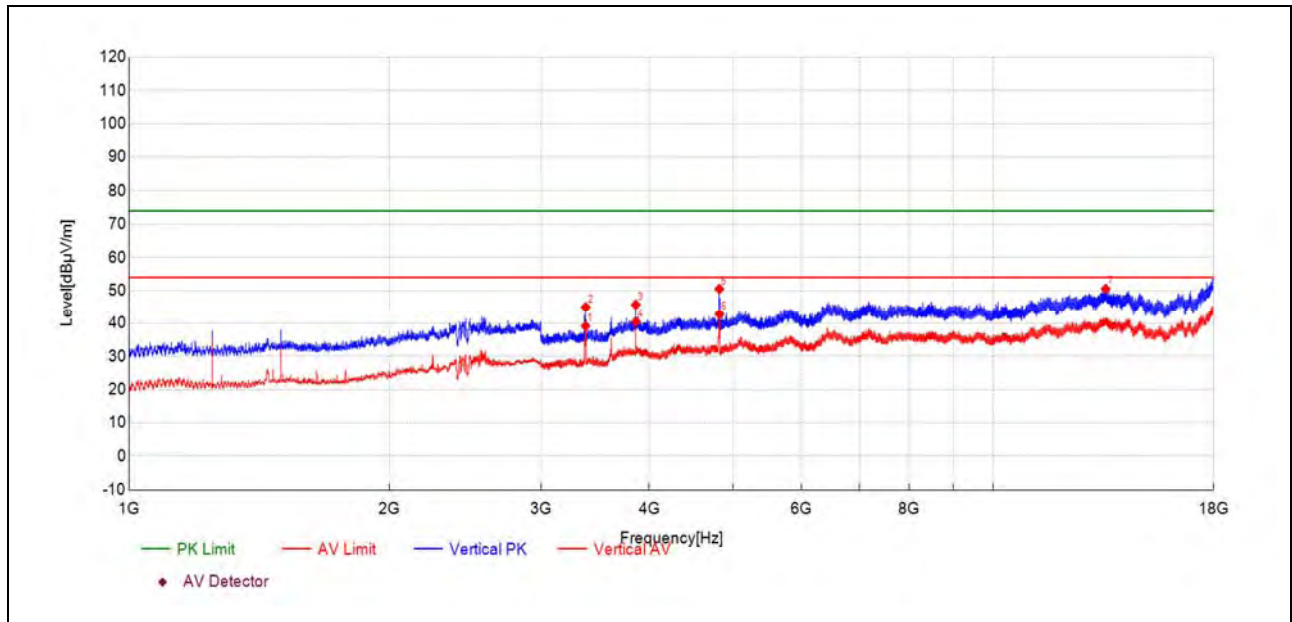
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3375.44	64.5	49.25	-15.270	74.00	24.75	150	11	PK	PASS
3378.44	58.6	43.40	-15.240	54.00	10.60	150	126	AV	PASS
3858.88	63.0	49.59	-13.400	74.00	24.41	150	204	PK	PASS
3859.74	61.8	48.39	-13.400	54.00	5.61	150	185	AV	PASS
4824.05	66.1	55.51	-10.550	74.00	18.49	150	11	PK	PASS
4824.48	60.3	49.71	-10.540	54.00	4.29	150	341	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
64.82	69.3	36.63	-32.620	40.00	3.37	150	11	PK	PASS
179.97	68.3	36.72	-31.550	43.50	6.78	150	92	PK	PASS
198.98	68.7	38.62	-30.030	43.50	4.88	150	159	PK	PASS
250.01	70.4	42.23	-28.120	46.00	3.77	150	145	PK	PASS
468.07	60.5	37.85	-22.620	46.00	8.15	150	11	PK	PASS
842.12	55.0	39.26	-15.730	46.00	6.74	150	227	PK	PASS

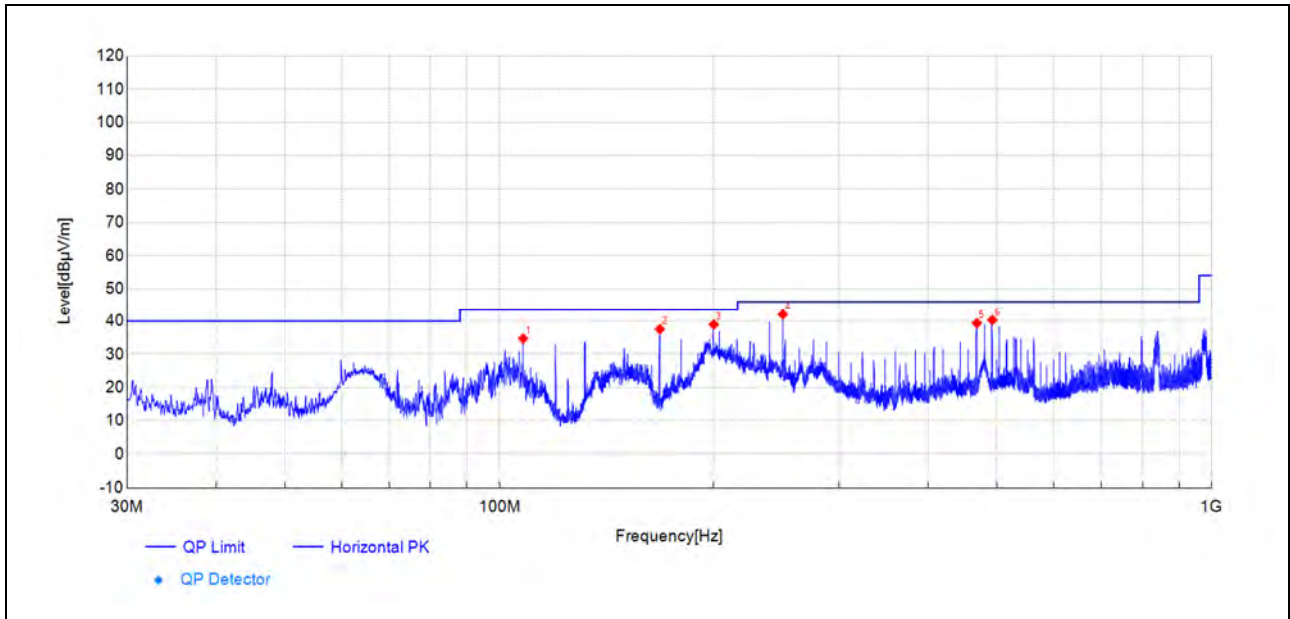


(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3376.30	54.4	39.15	-15.250	54.00	14.85	165	203	AV	PASS
3376.73	60.2	44.98	-15.250	74.00	29.02	165	224	PK	PASS
3858.88	59.1	45.69	-13.400	74.00	28.31	165	30	PK	PASS
3859.74	53.9	40.47	-13.400	54.00	13.53	165	30	AV	PASS
4821.05	61.1	50.50	-10.570	74.00	23.50	165	360	PK	PASS
4822.77	53.3	42.75	-10.560	54.00	11.25	165	360	AV	PASS
13499.01	45.8	50.55	4.710	74.00	23.45	165	355	PK	PASS

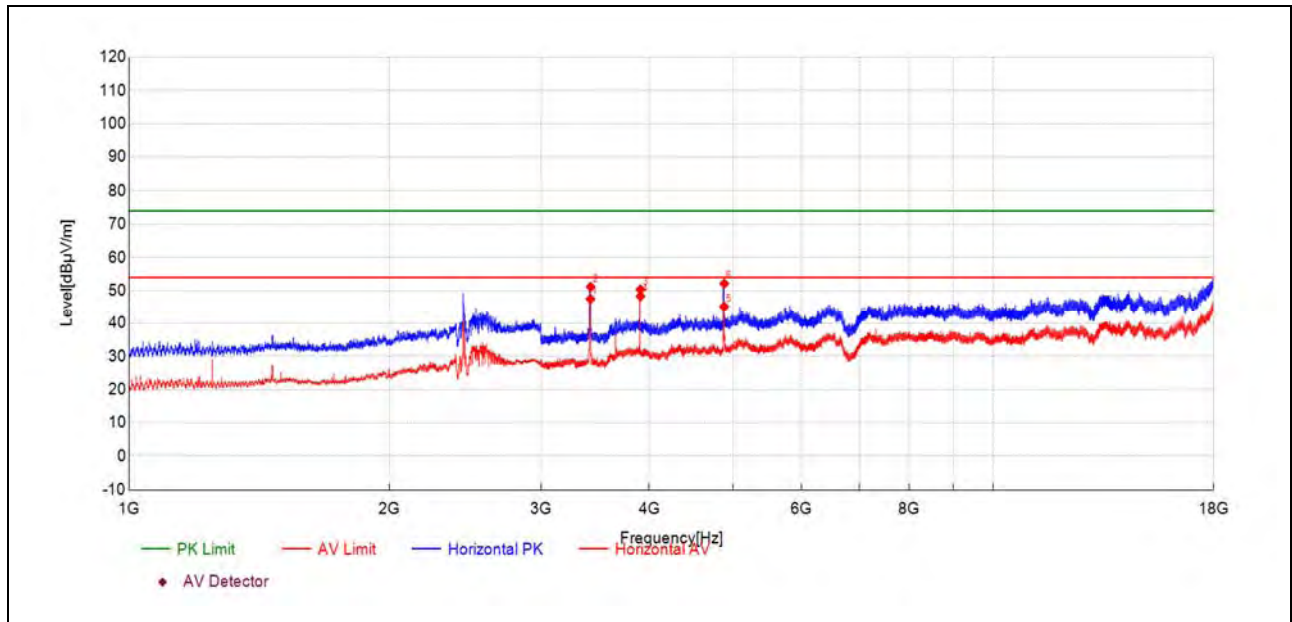


Plot for Channel 7



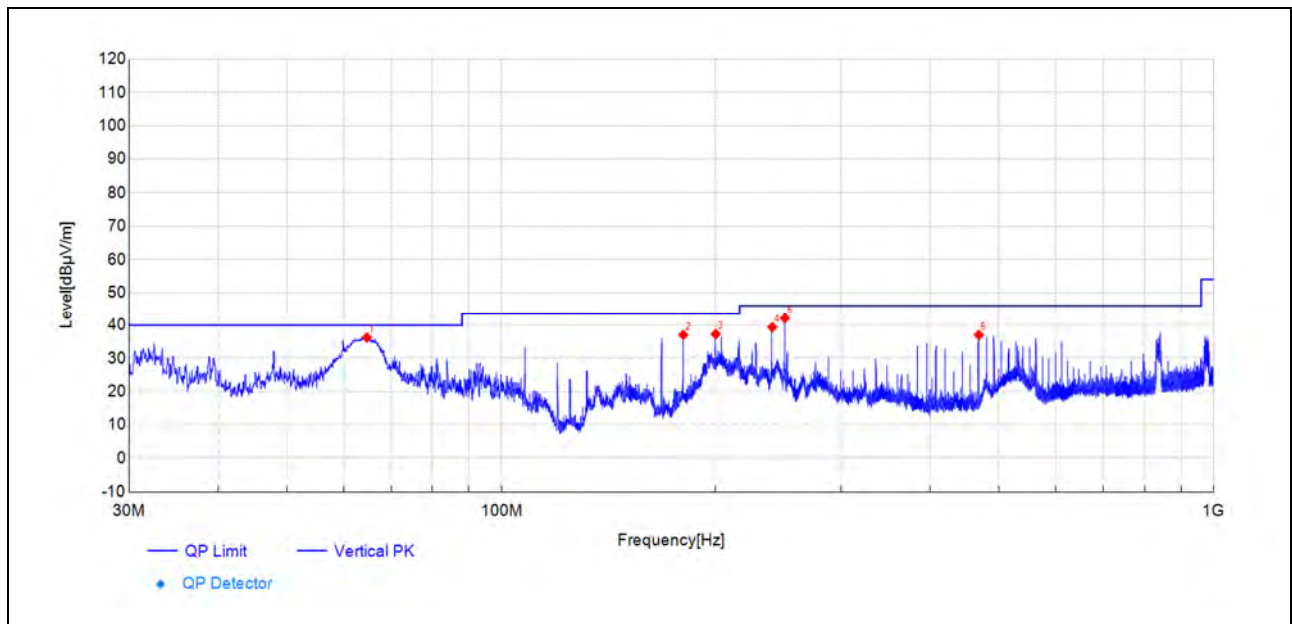
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
107.99	65.3	34.70	-30.600	43.50	8.80	150	0	PK	PASS
167.99	69.9	37.55	-32.330	43.50	5.95	150	213	PK	PASS
199.95	69.2	38.96	-30.220	43.50	4.54	150	120	PK	PASS
250.01	70.2	42.05	-28.120	46.00	3.95	150	79	PK	PASS
468.07	62.0	39.38	-22.620	46.00	6.62	150	106	PK	PASS
492.03	62.3	40.33	-22.010	46.00	5.67	150	79	PK	PASS



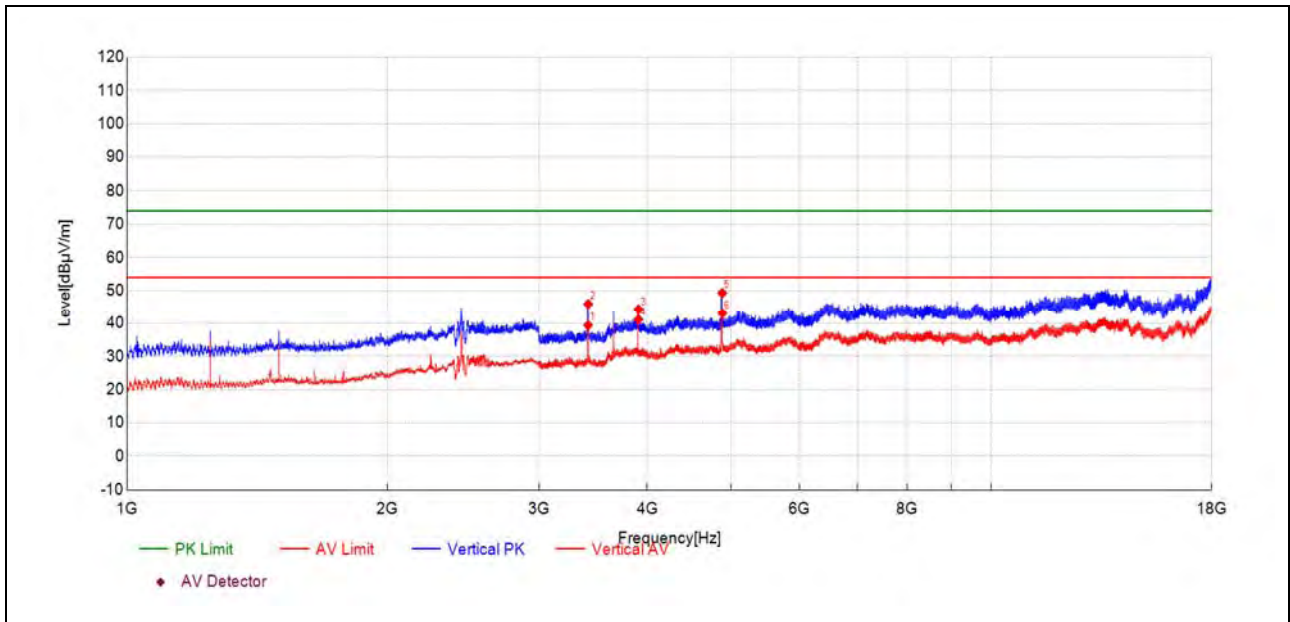
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3420.01	62.5	47.50	-14.950	54.00	6.50	150	49	AV	PASS
3421.73	66.1	51.16	-14.950	74.00	22.84	150	49	PK	PASS
3906.88	63.5	50.36	-13.150	74.00	23.64	150	184	PK	PASS
3907.74	61.5	48.34	-13.150	54.00	5.66	150	184	AV	PASS
4882.34	55.2	45.16	-9.990	54.00	8.84	150	359	AV	PASS
4884.91	62.1	52.15	-9.960	74.00	21.85	150	359	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

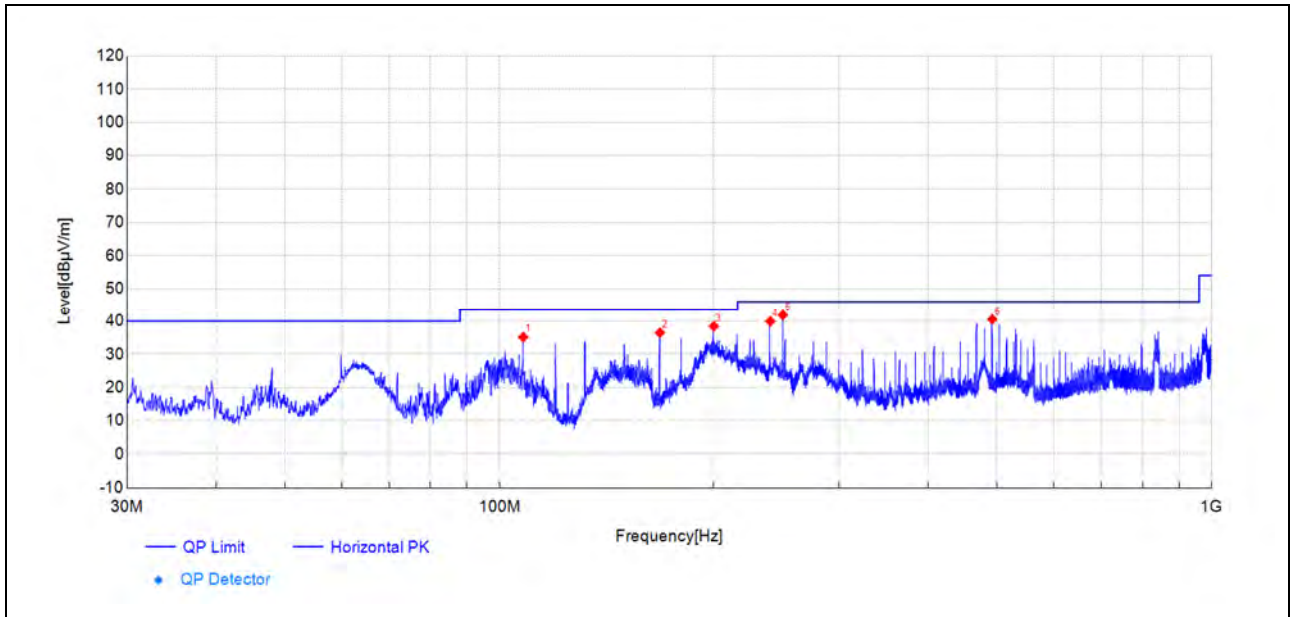
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
64.73	68.9	36.28	-32.590	40.00	3.72	150	106	PK	PASS
180.02	68.6	37.08	-31.550	43.50	6.42	150	106	PK	PASS
199.95	67.5	37.29	-30.220	43.50	6.21	150	190	PK	PASS
240.02	67.8	39.39	-28.420	46.00	6.61	150	176	PK	PASS
250.01	70.2	42.12	-28.120	46.00	3.88	150	133	PK	PASS
468.03	59.6	37.02	-22.620	46.00	8.98	150	360	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

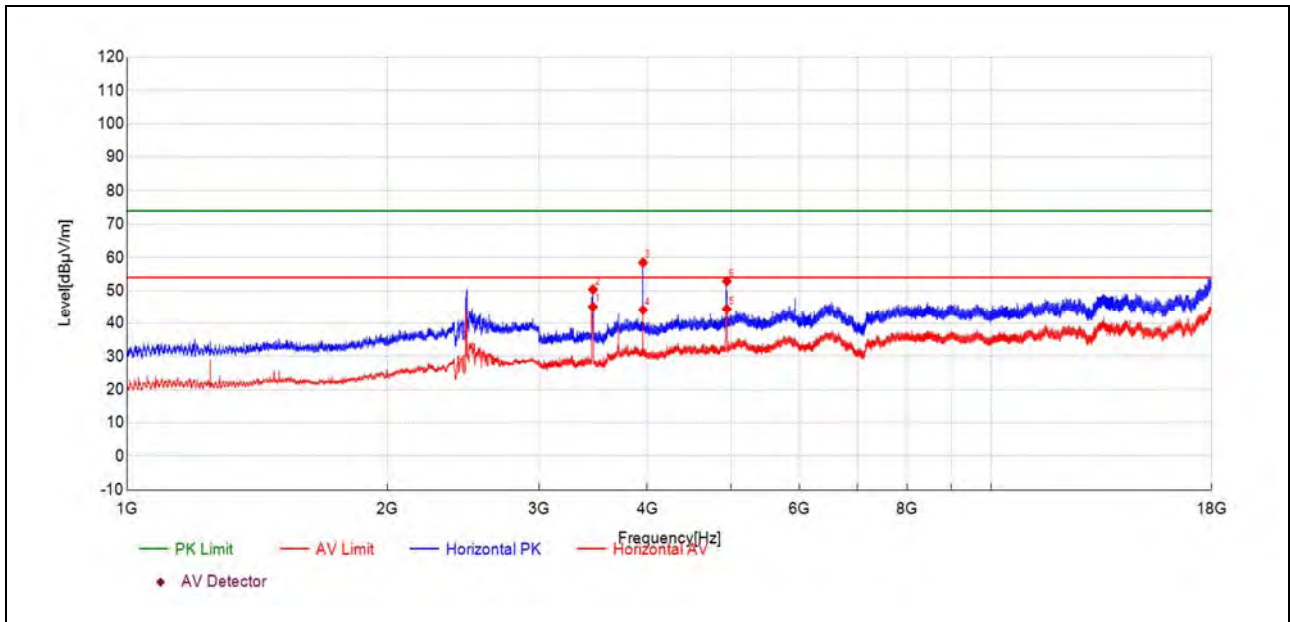
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3417.01	54.3	39.38	-14.960	54.00	14.62	165	11	AV	PASS
3417.44	60.9	45.91	-14.960	74.00	28.09	165	11	PK	PASS
3907.31	57.4	44.26	-13.150	74.00	29.74	165	127	PK	PASS
3907.74	54.3	41.15	-13.150	54.00	12.85	165	127	AV	PASS
4884.91	59.2	49.26	-9.960	74.00	24.74	165	11	PK	PASS
4886.20	53.0	43.05	-9.950	54.00	10.95	165	11	AV	PASS

Plot for Channel 13



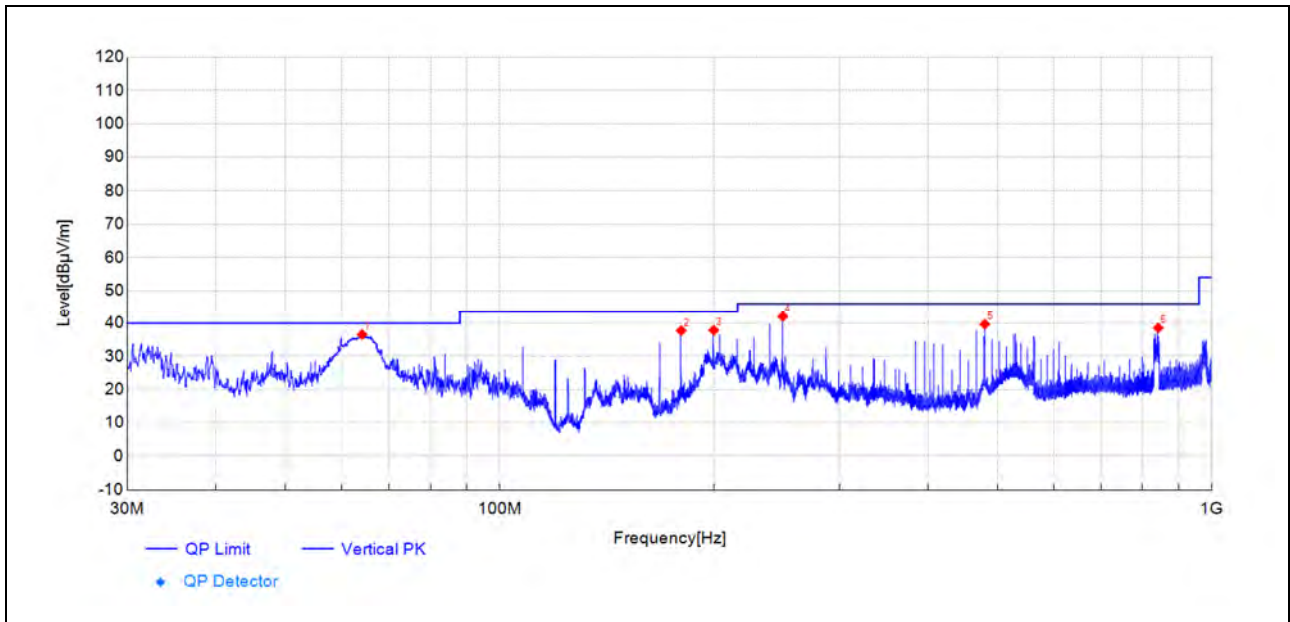
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
107.99	65.8	35.17	-30.600	43.50	8.33	150	336	PK	PASS
167.99	68.8	36.50	-32.330	43.50	7.00	150	132	PK	PASS
199.95	68.7	38.43	-30.220	43.50	5.07	150	146	PK	PASS
240.02	68.3	39.92	-28.420	46.00	6.08	150	0	PK	PASS
250.01	70.0	41.85	-28.120	46.00	4.15	150	93	PK	PASS
492.03	62.6	40.54	-22.010	46.00	5.46	150	79	PK	PASS



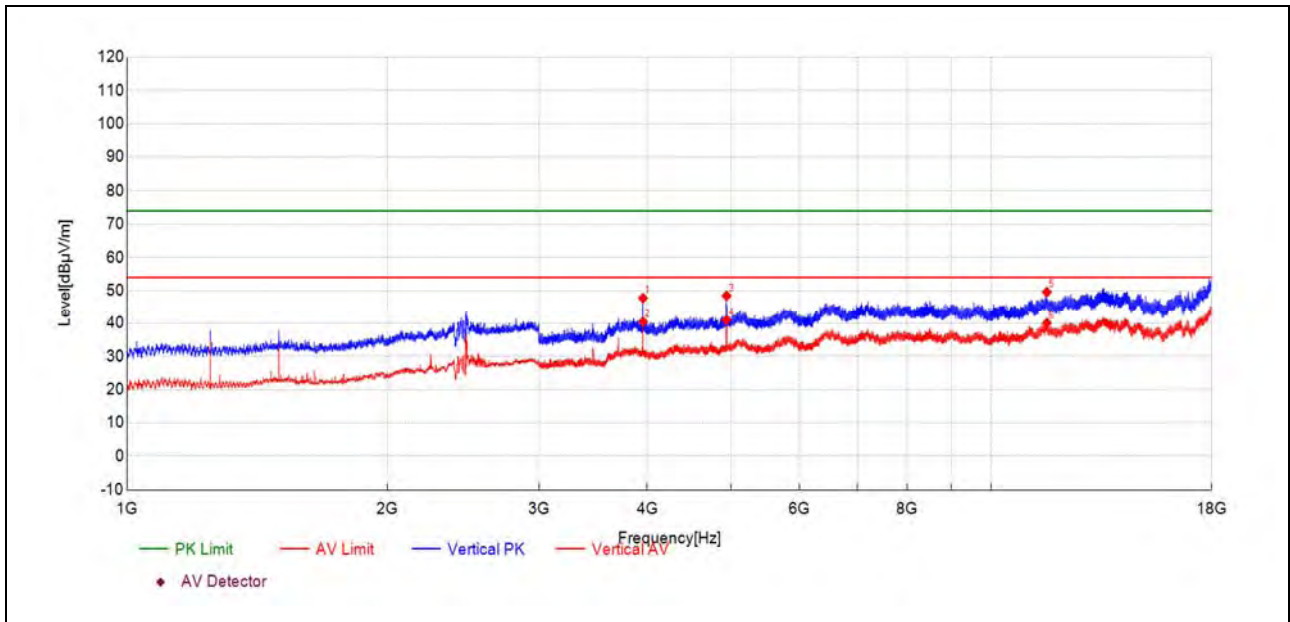
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3459.87	60.2	45.13	-15.050	54.00	8.87	150	353	AV	PASS
3461.16	65.4	50.36	-15.060	74.00	23.64	150	353	PK	PASS
3954.88	71.6	58.45	-13.160	74.00	15.55	150	163	PK	PASS
3955.31	57.2	44.08	-13.160	54.00	9.92	150	147	AV	PASS
4944.06	54.5	44.39	-10.110	54.00	9.61	150	353	AV	PASS
4944.48	63.0	52.86	-10.120	74.00	21.14	150	30	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
64.15	68.9	36.57	-32.360	40.00	3.43	150	186	PK	PASS
180.02	69.3	37.74	-31.550	43.50	5.76	150	91	PK	PASS
199.95	68.1	37.85	-30.220	43.50	5.65	150	172	PK	PASS
250.01	70.2	42.06	-28.120	46.00	3.94	150	146	PK	PASS
480.25	62.0	39.68	-22.330	46.00	6.32	150	172	PK	PASS
841.45	54.3	38.56	-15.750	46.00	7.44	150	212	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3954.88	60.9	47.73	-13.160	74.00	26.27	165	10	PK	PASS
3955.74	53.6	40.42	-13.160	54.00	13.58	165	127	AV	PASS
4941.06	58.5	48.44	-10.090	74.00	25.56	165	339	PK	PASS
4941.06	51.1	40.99	-10.090	54.00	13.01	165	318	AV	PASS
11599.10	46.7	49.56	2.870	74.00	24.44	165	32	PK	PASS
11602.96	37.2	40.04	2.830	54.00	13.96	165	110	AV	PASS



Notes

1. The report shall have report stamp or our company stamp.
2. The report shall be invalid without all the signatures of the editor and approver.
3. The report shall not be changed.
4. Any objections must be raised to Morlab within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.
5. Conformity declaration:
 - ☒ Morlab issues a statement of conformity based on the corresponding standards (default)
 - ☐ Morlab issues a statement of conformity based on the applicant requirement
6. Use of uncertainty of measurement for decisions on conformity (decision rule):

No decision rule is specified by the testing standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule).

————— END OF REPORT —————