



REPORT No.: SZ26050223W03

TEST REPORT

APPLICANT : Rokk Inc.

PRODUCT NAME : Rokk

MODEL NAME : Rokk A1

BRAND NAME : Rokk

FCC ID : 2BX3SROKK-A1

STANDARD(S) : 47 CFR Part 15 Subpart C

RECEIPT DATE : 2026-05-18

TEST DATE : 2026-06-29 to 2026-09-02

ISSUE DATE : 2026-10-14



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.: SZ26050223W03

Change History		
Version	Date	Reason for change
1.0	2026-10-14	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	Jul. 03, 2026	Li Xinpeng	PASS	/
3	15.247(b)	Maximum Peak Conducted Output Power	Jul. 03, 2026	Li Xinpeng	PASS	/
4	15.247(b)	Maximum Average Conducted Output Power	Jul. 03, 2026	Li Xinpeng	PASS	/
5	15.247(a)	Bandwidth	Jul. 03, 2026	Li Xinpeng	PASS	/
6	15.247(d)	Conducted Spurious Emission and Band Edge	Jul. 03, 2026	Li Xinpeng	PASS	/
7	15.247(e)	Power Spectral Density	Jul. 03, 2026	Li Xinpeng	PASS	/
8	15.207	Conducted Emission	Jun. 29, 2026	Wang Yapeng	PASS	/
9	15.247(d)	Restricted Frequency Bands	Jul. 13, 2026	Tian Xin	PASS	/
10	15.209, 15.247(d)	Radiated Emission	Jul. 13, 2026	Tian Xin	PASS	/

Note 1: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2020 and KDB 558074 D01 v05r02.

Note 2: 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	2025.12.23	2026.12.22
Power Sensor	MY54180008	U2021XA	Agilent	2025.09.03	2026.09.02
Attenuator	MTJ6004-20	VAT-10+	MTJ Cooperation	N/A	N/A
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	2026.05.07	2027.05.06
LISN	103131	ENV 216	R&S	2026.03.18	2027.03.17
RF Coaxial Cable (DC-100MHz)	EMC-CE-00514	N/A	N/A	2026.05.06	2027.05.05

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	2026.04.28	2027.04.27
Test Antenna - Bi-Log	9163-274	VULB 9163	Schwarzbeck	2026.06.28	2027.06.27
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2026.05.09	2027.05.08
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2026.05.30	2027.05.29
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2026.05.30	2027.05.29
Preamplifier (10MHz-6GHz)	46732	S10M100L38 02	LUCIX CORP.	2026.05.07	2027.05.06
Preamplifier (2GHz-18GHz)	61171/61172	S020180L32 03	LUCIX CORP.	2026.05.07	2027.05.06
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2026.05.07	2027.05.06
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2025.09.03	2026.09.02
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2025.09.03	2026.09.02
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2025.09.03	2026.09.02
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	2028.04.18



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.1-3, 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:	Rokk Inc.
Applicant Address:	2450 Colorado Avenue Suite 100E Santa Monica CA 90404 USA
Manufacturer:	Zhuhai Fenda Technology Co., Ltd.
Manufacturer Address:	3/F Building 3, 3/F Building 4, Building 5, 629 Damen Road, Sanzao Town, Jinwan District, Zhuhai City

2.2. Information of EUT

Product Name:	Rokk
Sample No.:	1#, 15#, 16#
Hardware Version:	Rokk
Software Version:	V1.0
Modulation Technology:	DSSS, OFDM
Modulation Type:	Refer to section 2.4.1
Wireless Technology:	802.11b, 802.11g, 802.11n (HT20)
Operating Frequency Range:	2412MHz–2472MHz
Antenna Type:	Chip Antenna
Antenna Gain:	2.23dBi

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		

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
802.11b	20	DSSS	DBPSK	1/2/5.5/11Mbps
			DQPSK	
			CCK	
802.11g	20	OFDM	BPSK	6/9/12/18/24/36/48/54Mbps
			QPSK	
			16QAM	
			64QAM	
802.11n	20 (HT20)	OFDM	BPSK	MCS0~MCS7
			QPSK	
			16QAM	
			64QAM	

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.

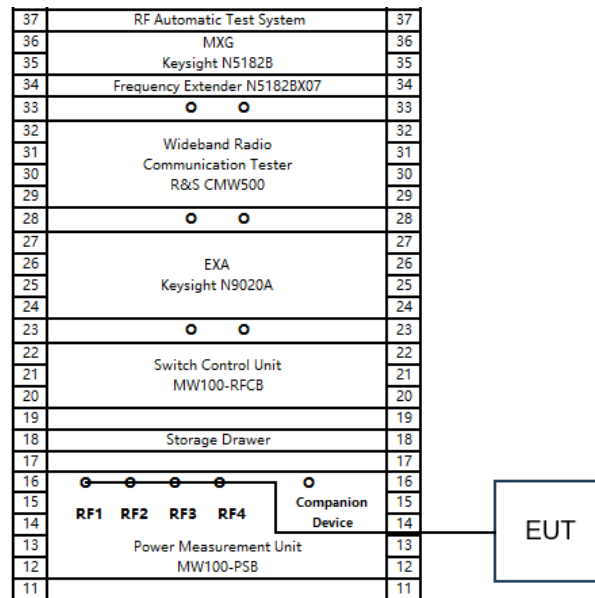
Note2: The RF signal transmission of EUT is controlled by the build-in engineering mode which is provided by the manufacturer. The recorded power setting value is the maximum that the engineering mode has configuration during testing.

2.5. Test Conditions

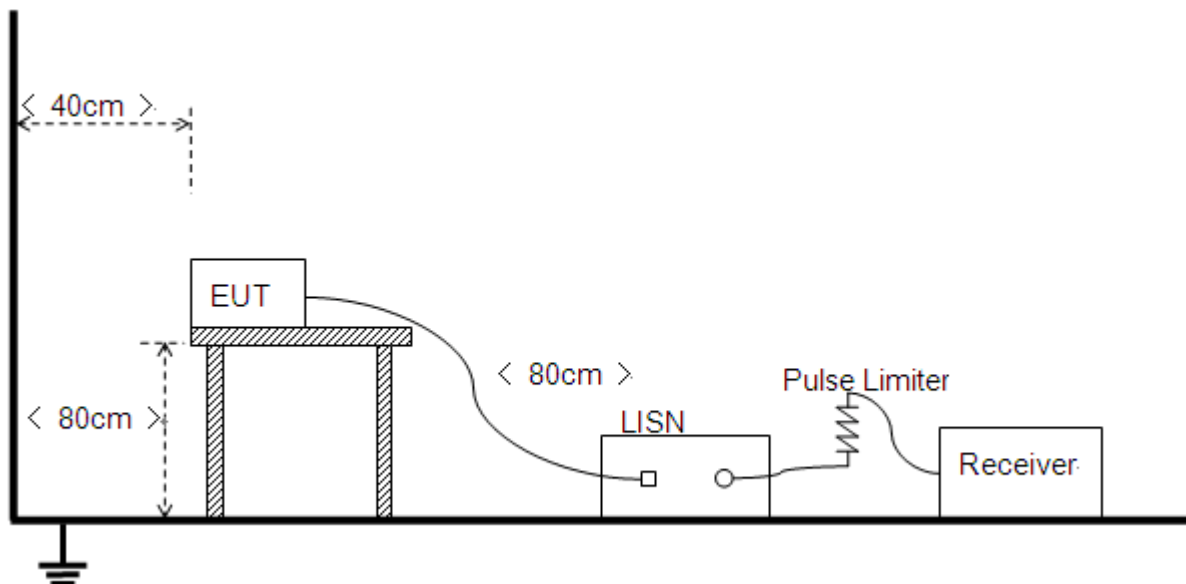
Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106

2.6.Test Setup Layout Diagram

2.6.1.Conducted Measurement

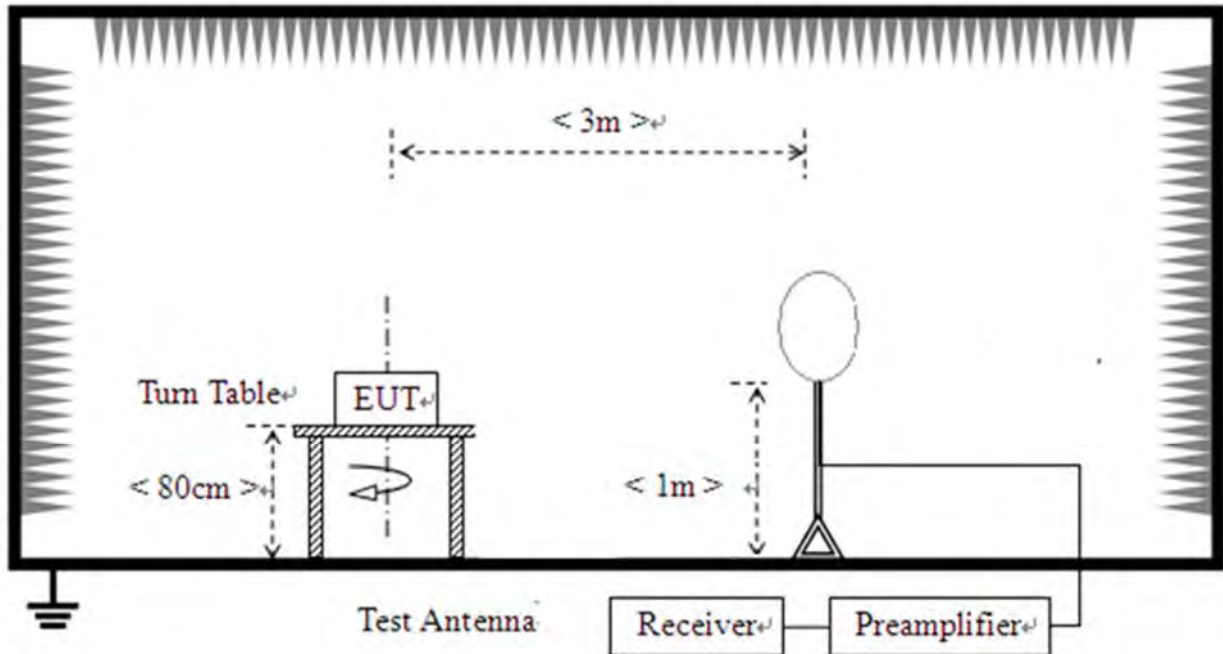


2.6.2.Conducted Emission Measurement

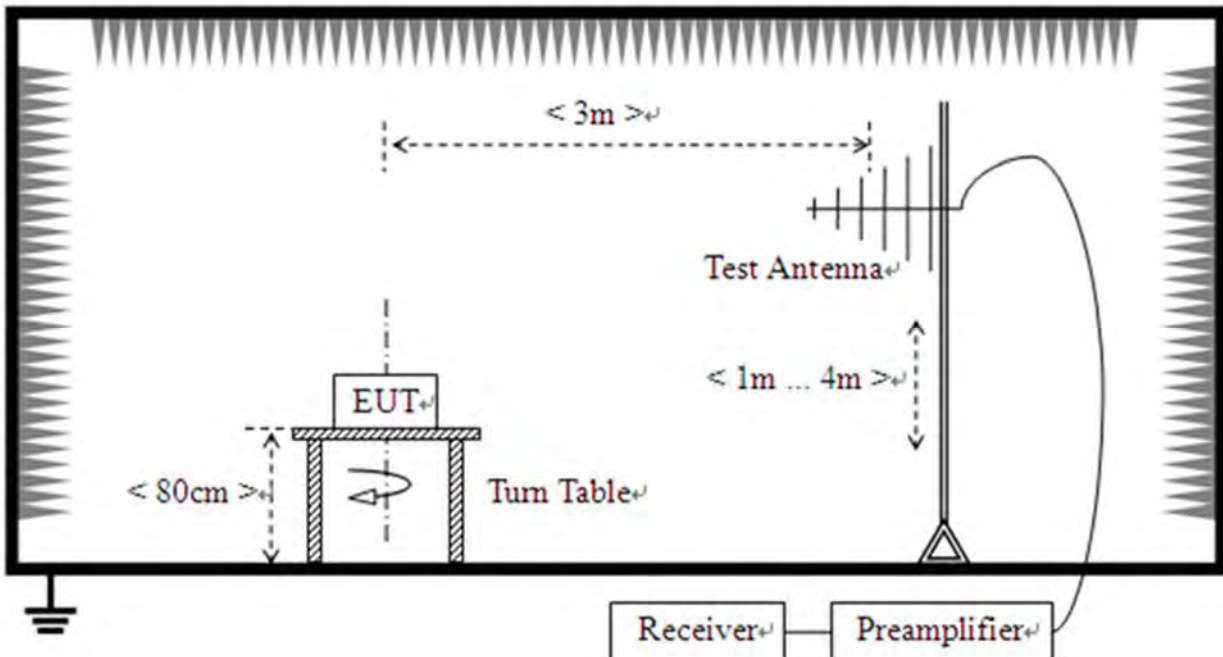


2.6.3.Radiation Measurement

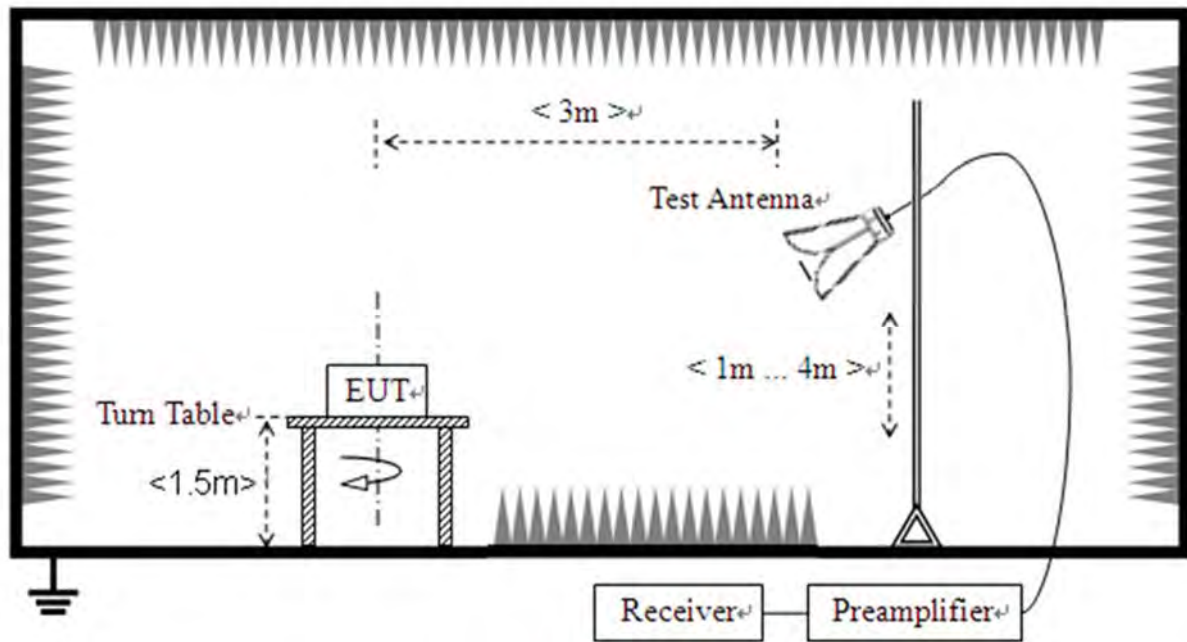
1) For radiated emissions from 9kHz to 30MHz



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 ☒ Chip Antenna ☐ PIFA Antenna	☐ I-PEX Connector ☐ SMA Connector ☐ RP-SMA Connector ☐ Metal Shrapnel ☒ Layout

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.

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:
$$\text{Conducted PSD} = \text{PD} - 10 \lg(30\text{k}/3\text{k})$$

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.

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 ($\mu\text{V}/\text{m}$)	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

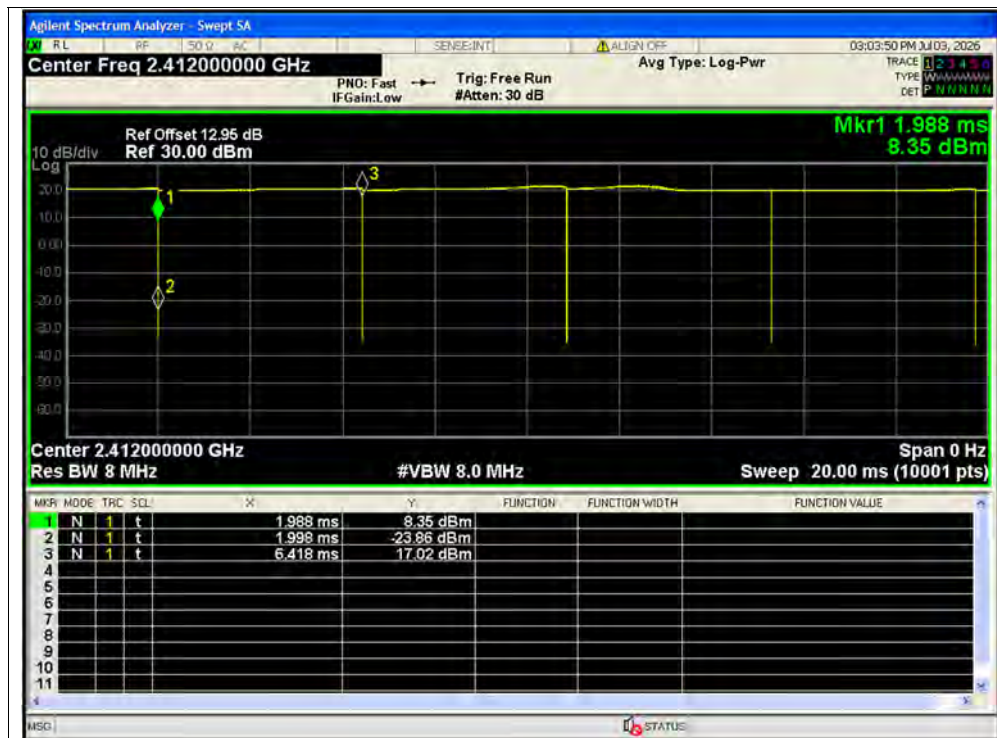
Refer to Annex A.10 in this report.



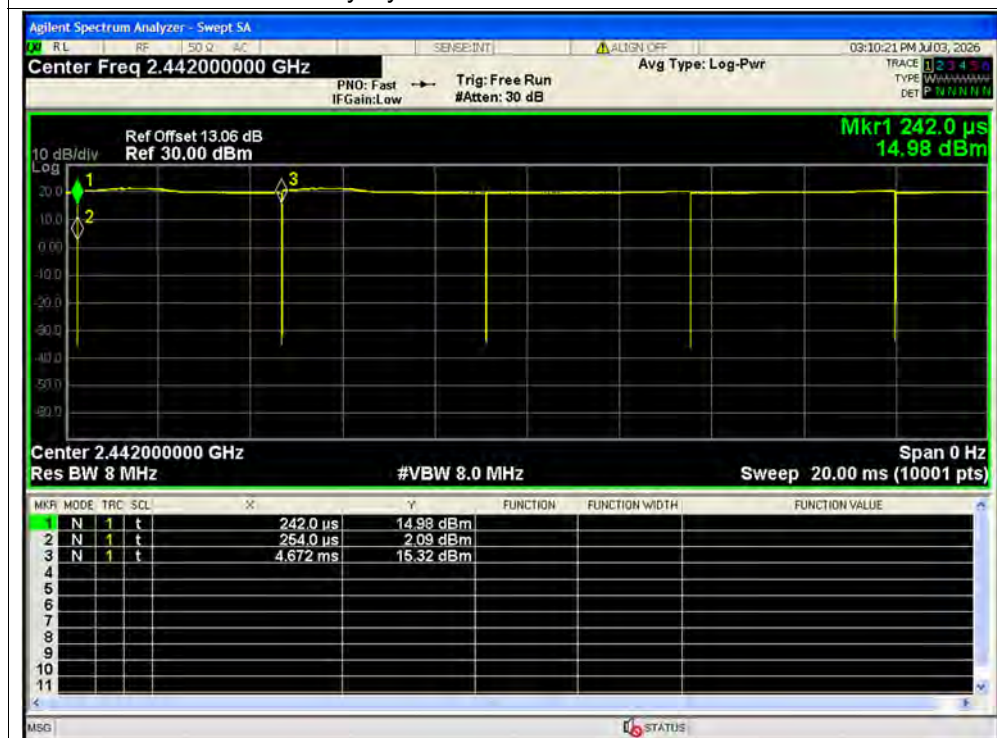
Annex A Test Data and Result

A.1. Duty Cycle of Test Signal

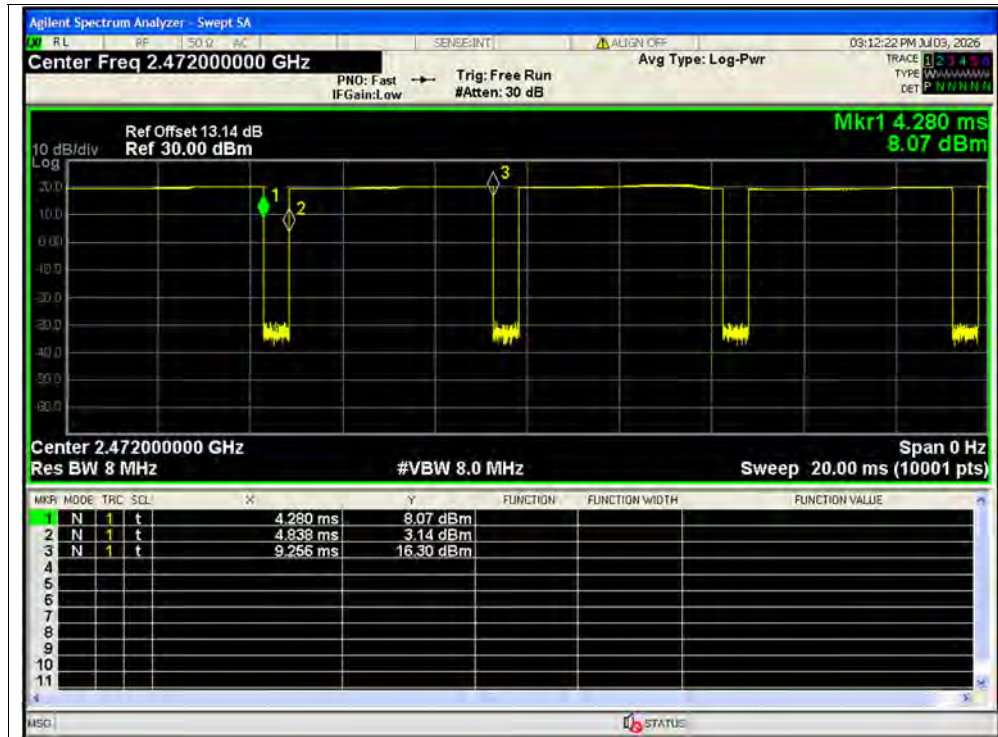
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.77	0.01	0.23
NVNT	b	2442	Ant1	99.73	0.01	0.23
NVNT	b	2472	Ant1	88.79	0.52	0.23
NVNT	g	2412	Ant1	98.76	0.05	0.7
NVNT	g	2442	Ant1	98.62	0.06	0.7
NVNT	g	2472	Ant1	98.62	0.06	0.7
NVNT	n20	2412	Ant1	98.53	0.06	0.75
NVNT	n20	2442	Ant1	79.31	1.01	0.75
NVNT	n20	2472	Ant1	93.33	0.3	0.74



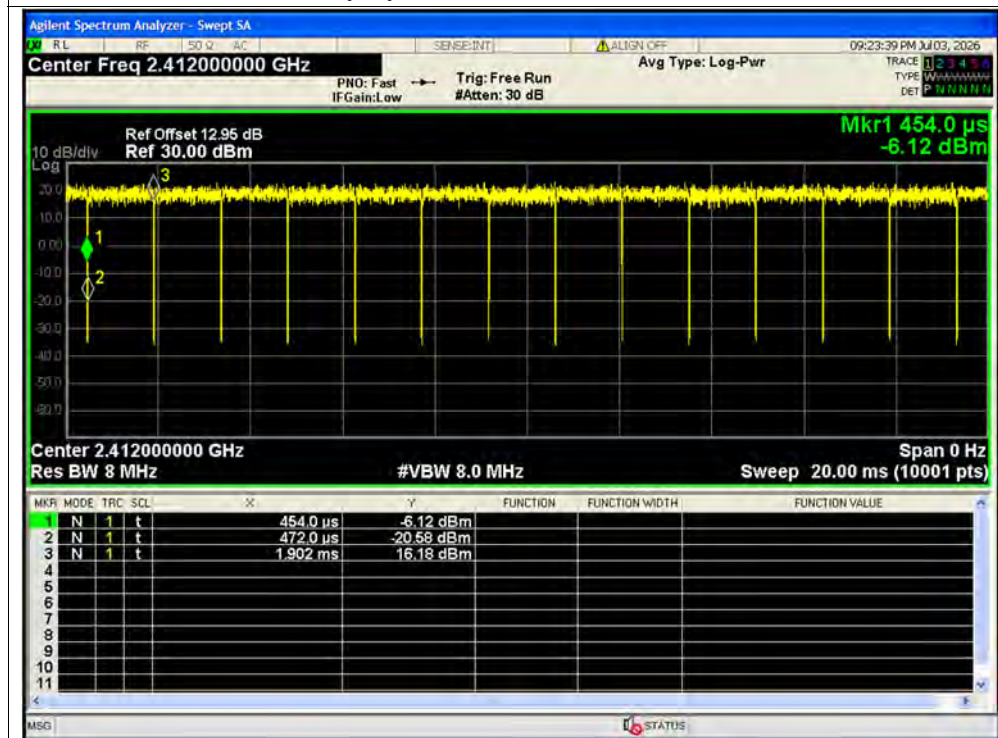
Duty Cycle NVNT b 2412MHz Ant1



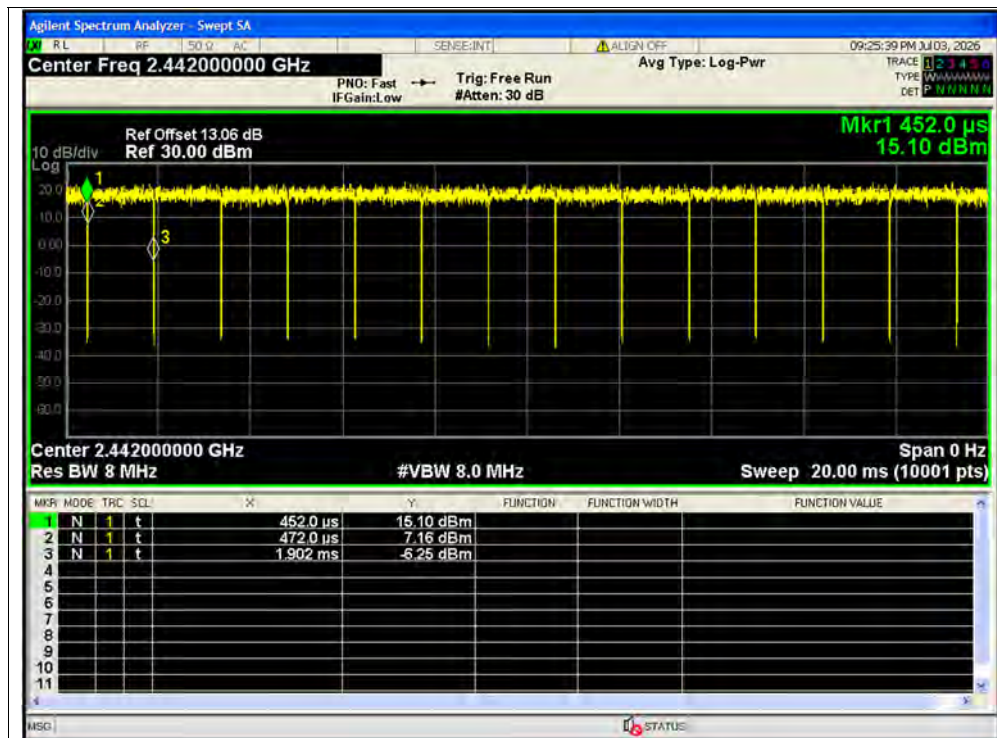
Duty Cycle NVNT b 2442MHz Ant1



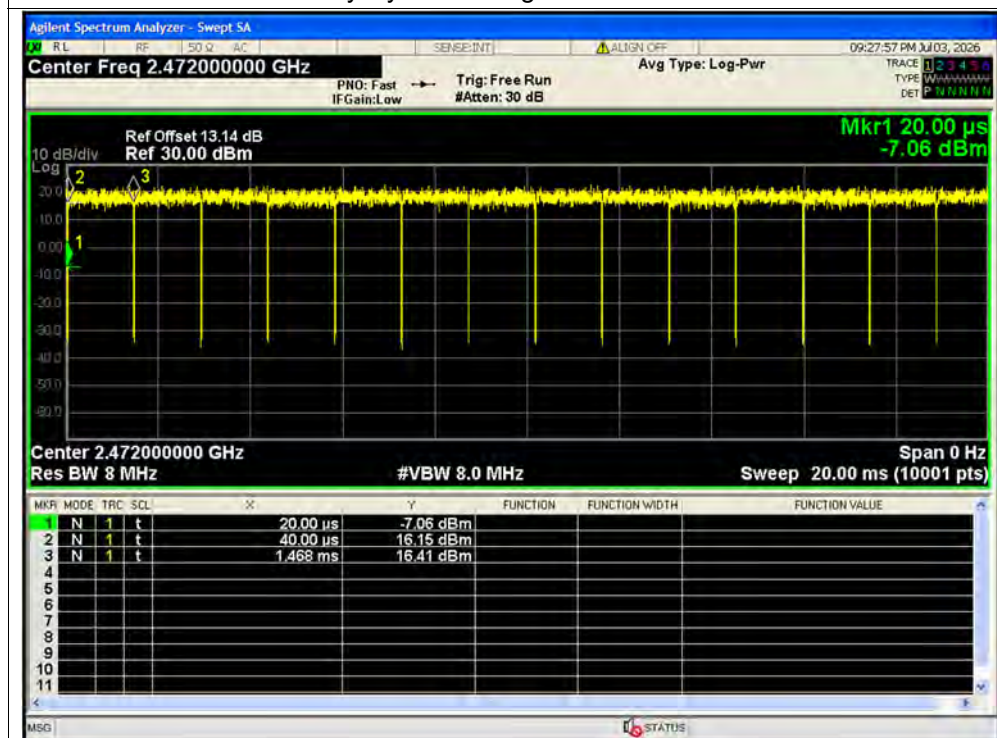
Duty Cycle NVNT b 2472MHz Ant1



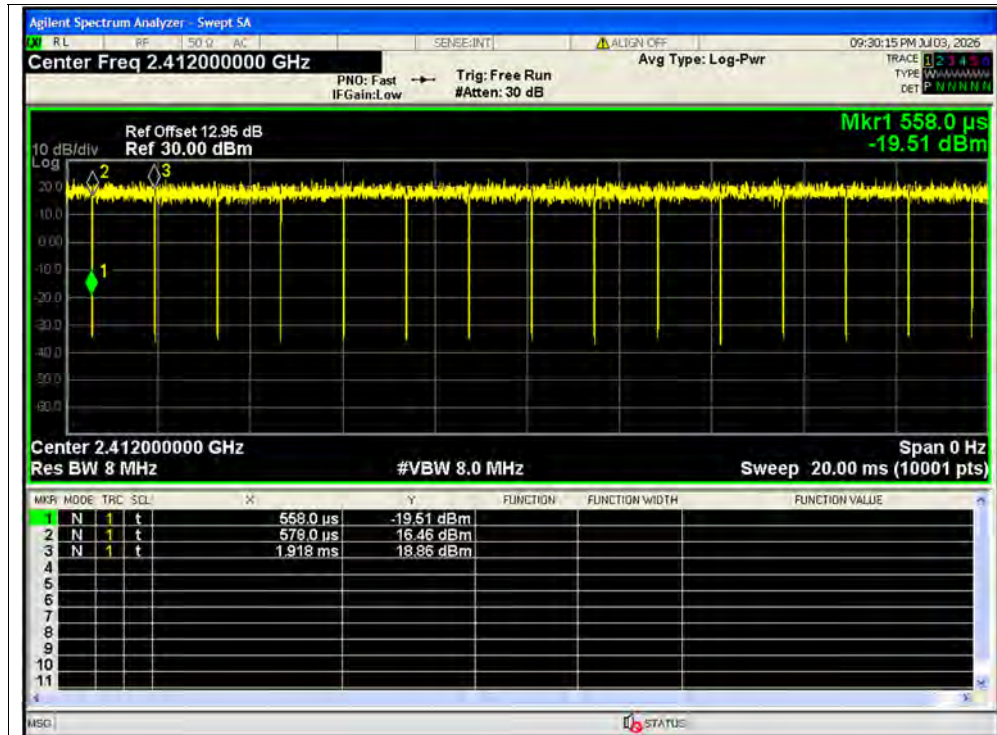
Duty Cycle NVNT g 2412MHz Ant1



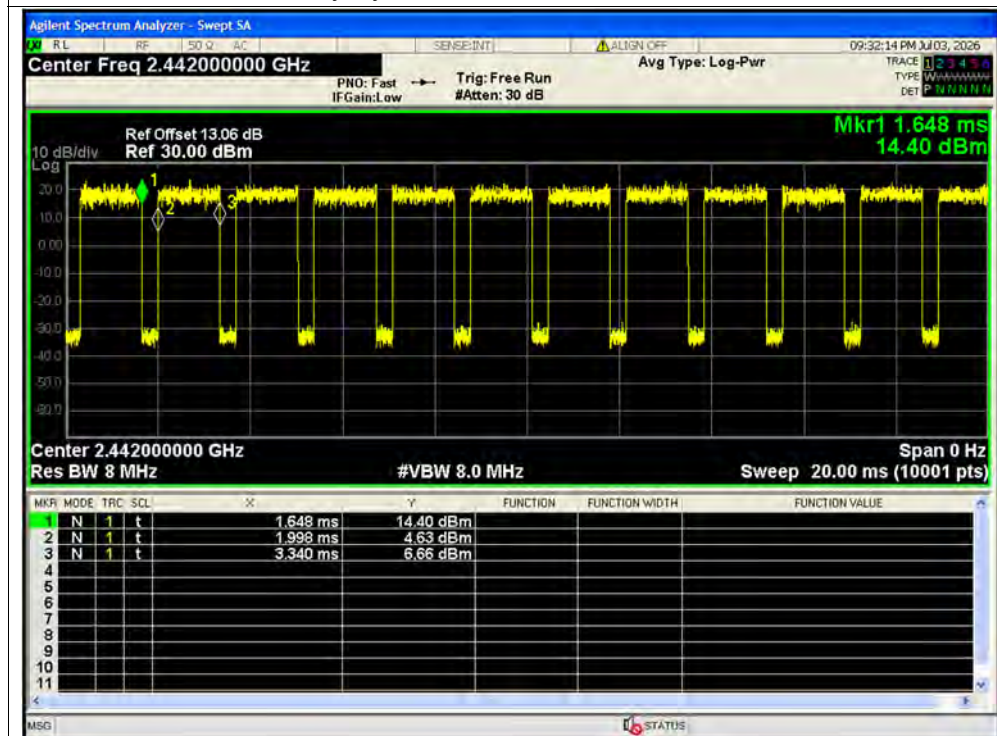
Duty Cycle NVNT g 2442MHz Ant1



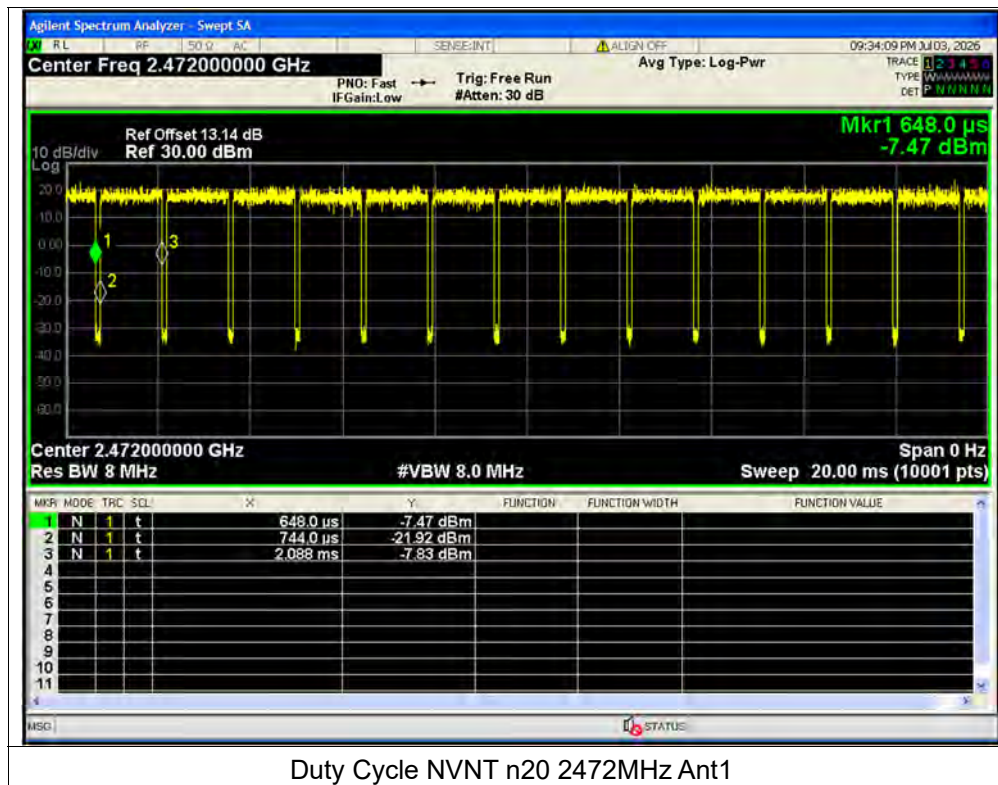
Duty Cycle NVNT g 2472MHz Ant1



Duty Cycle NVNT n20 2412MHz Ant1

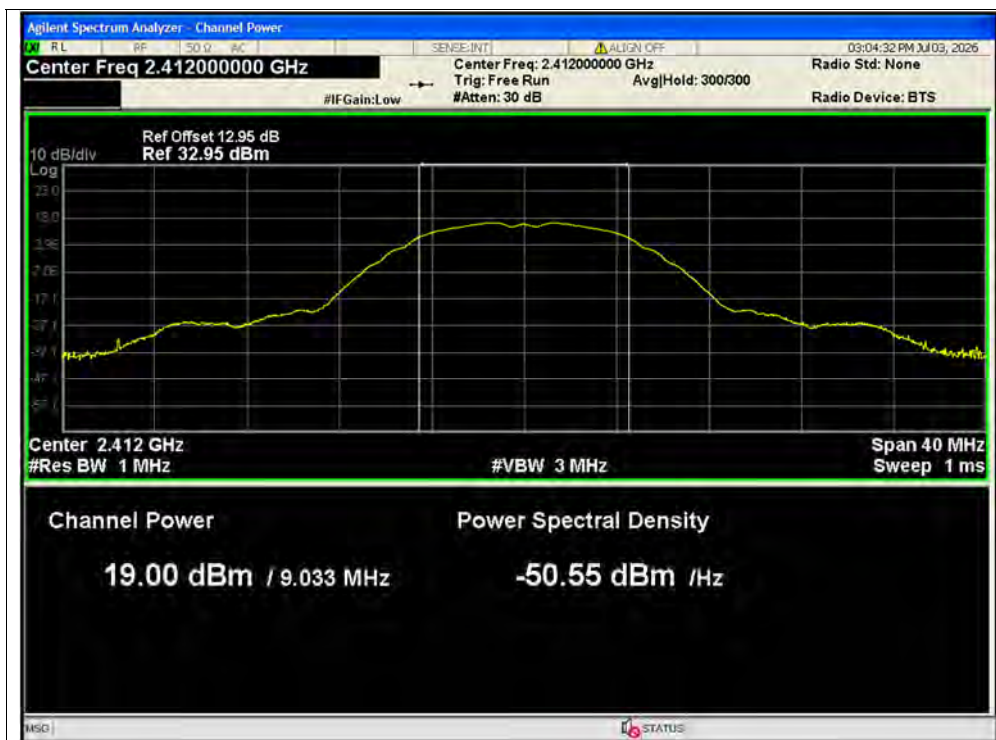


Duty Cycle NVNT n20 2442MHz Ant1

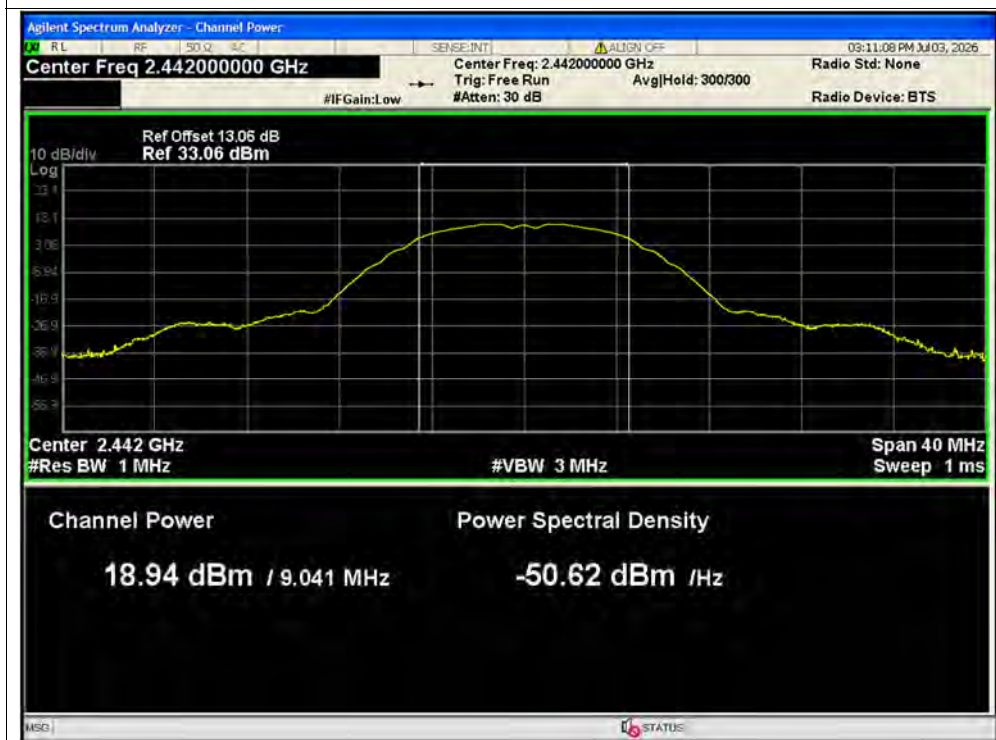


**A.2. Maximum Peak Conducted Output Power**

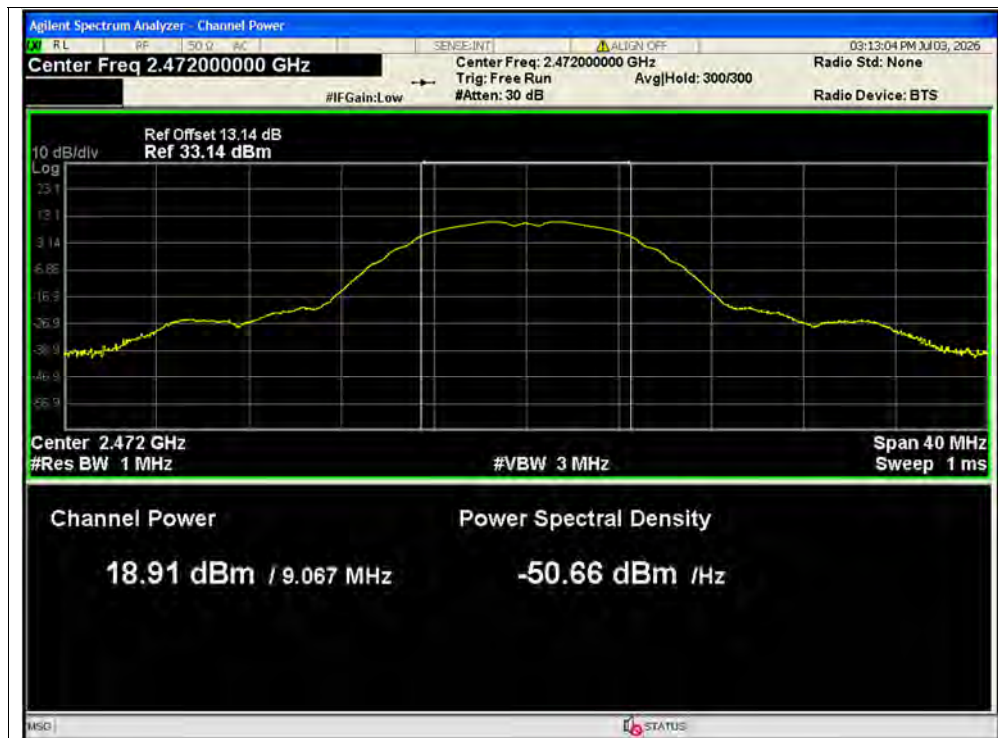
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	b	2412	Ant1	19	0	19	0.07943	30	Pass
NVNT	b	2442	Ant1	18.94	0	18.94	0.07834	30	Pass
NVNT	b	2472	Ant1	18.91	0	18.91	0.0778	30	Pass
NVNT	g	2412	Ant1	22.82	0	22.82	0.19143	30	Pass
NVNT	g	2442	Ant1	22.71	0	22.71	0.18664	30	Pass
NVNT	g	2472	Ant1	22.39	0	22.39	0.17338	30	Pass
NVNT	n20	2412	Ant1	22.68	0	22.68	0.18535	30	Pass
NVNT	n20	2442	Ant1	22.84	0	22.84	0.19231	30	Pass
NVNT	n20	2472	Ant1	22.3	0	22.3	0.16982	30	Pass



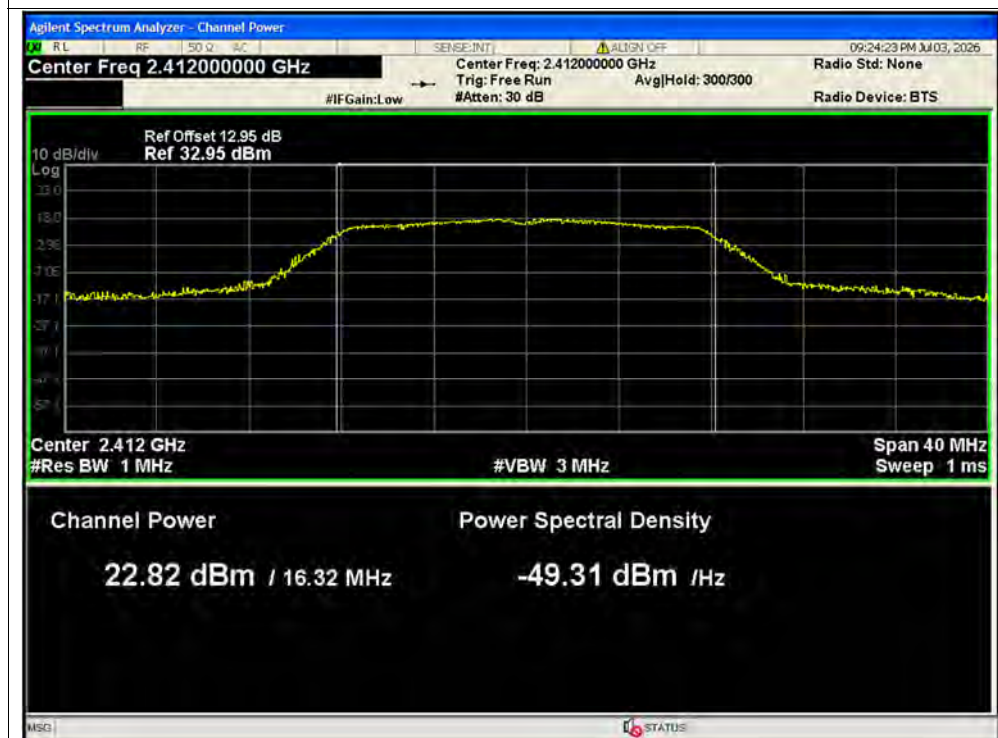
Peak Power NVNT b 2412MHz Ant1



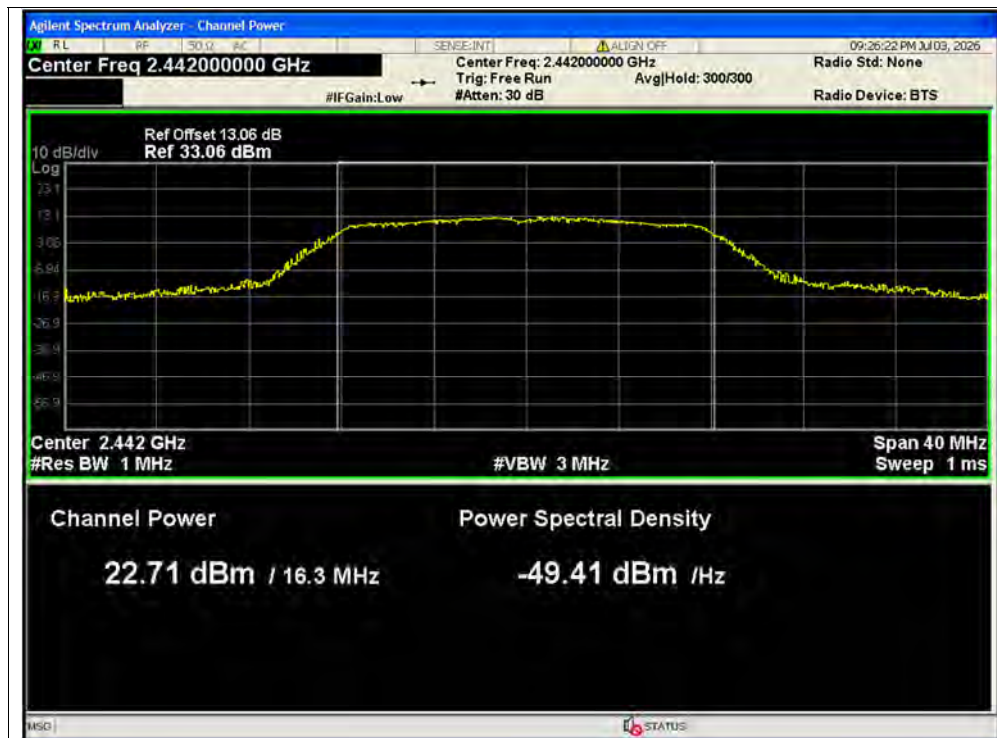
Peak Power NVNT b 2442MHz Ant1



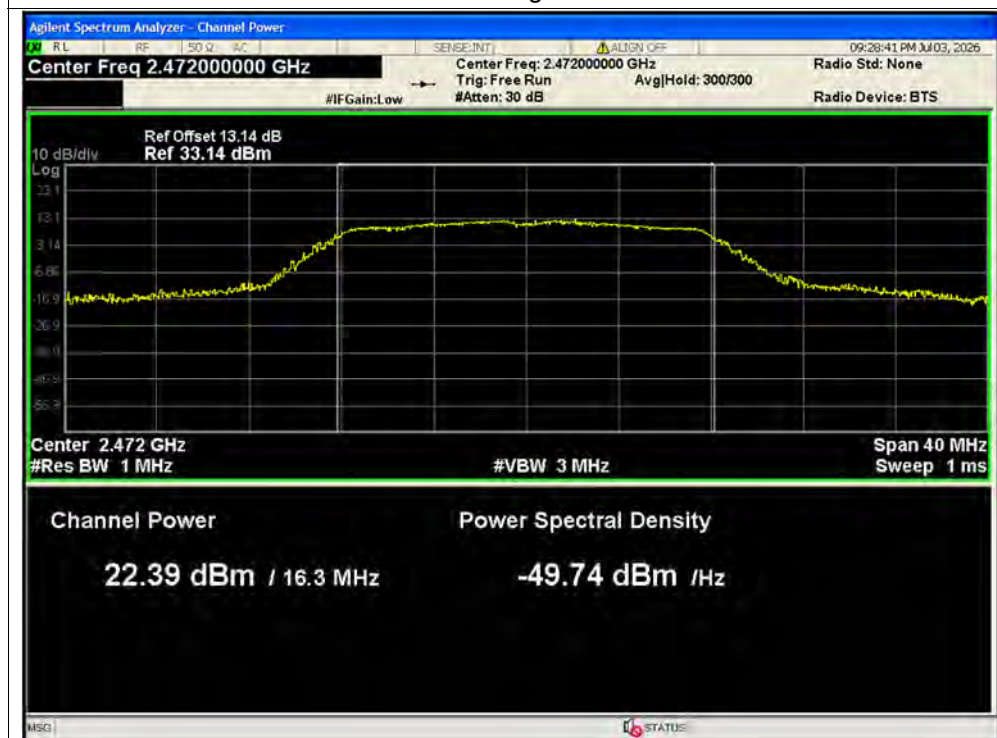
Peak Power NVNT b 2472MHz Ant1



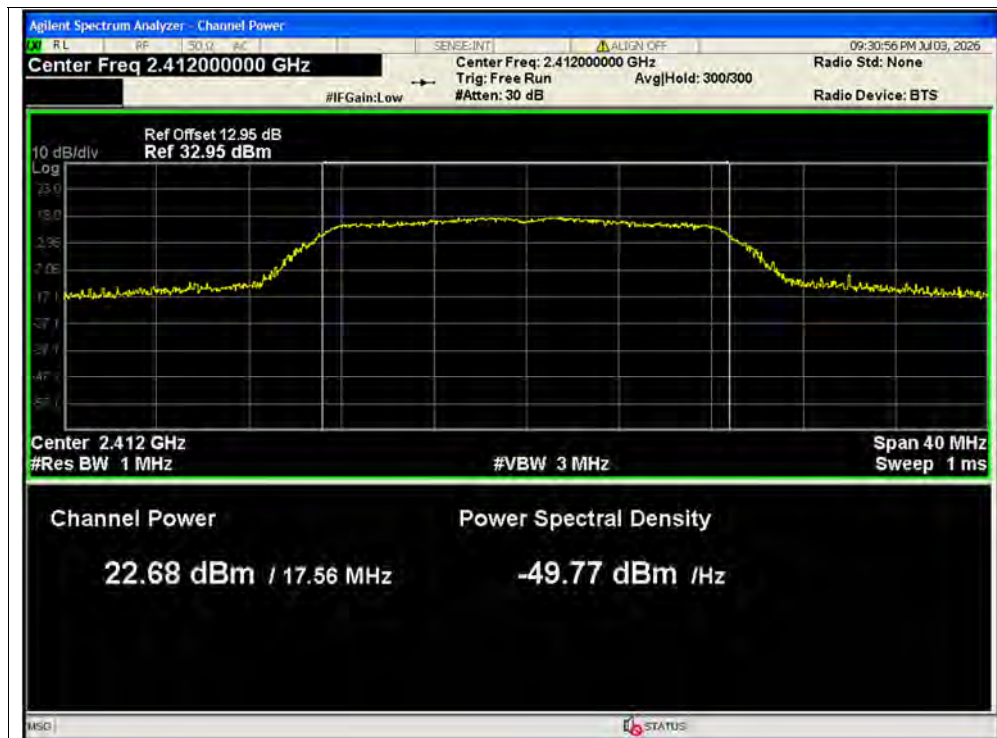
Peak Power NVNT g 2412MHz Ant1



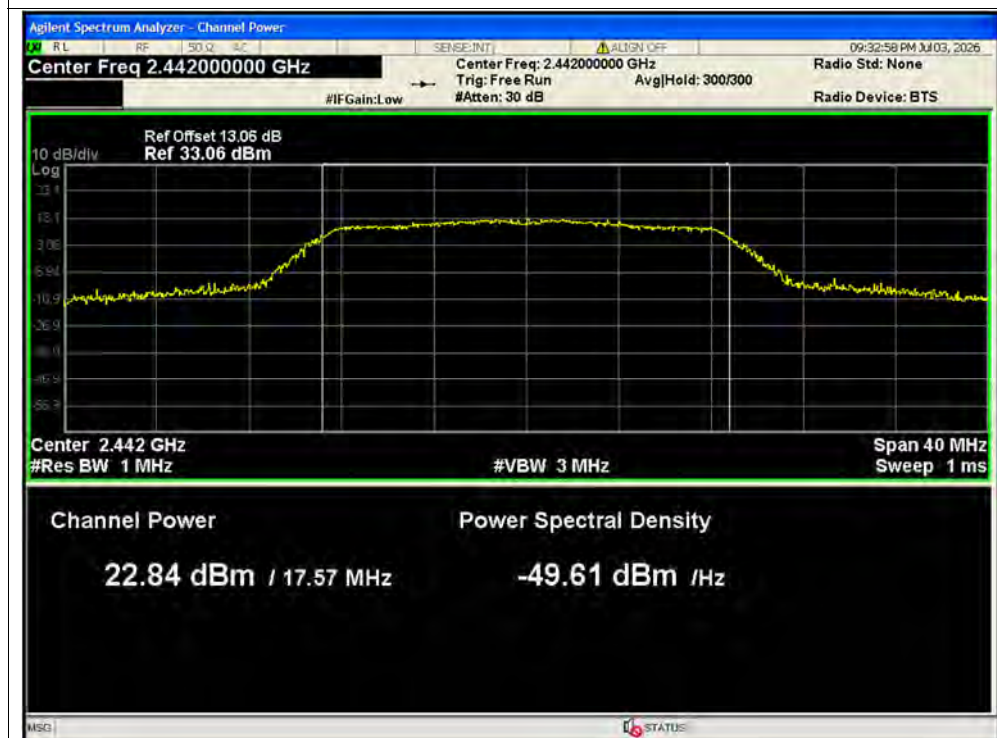
Peak Power NVNT g 2442MHz Ant1



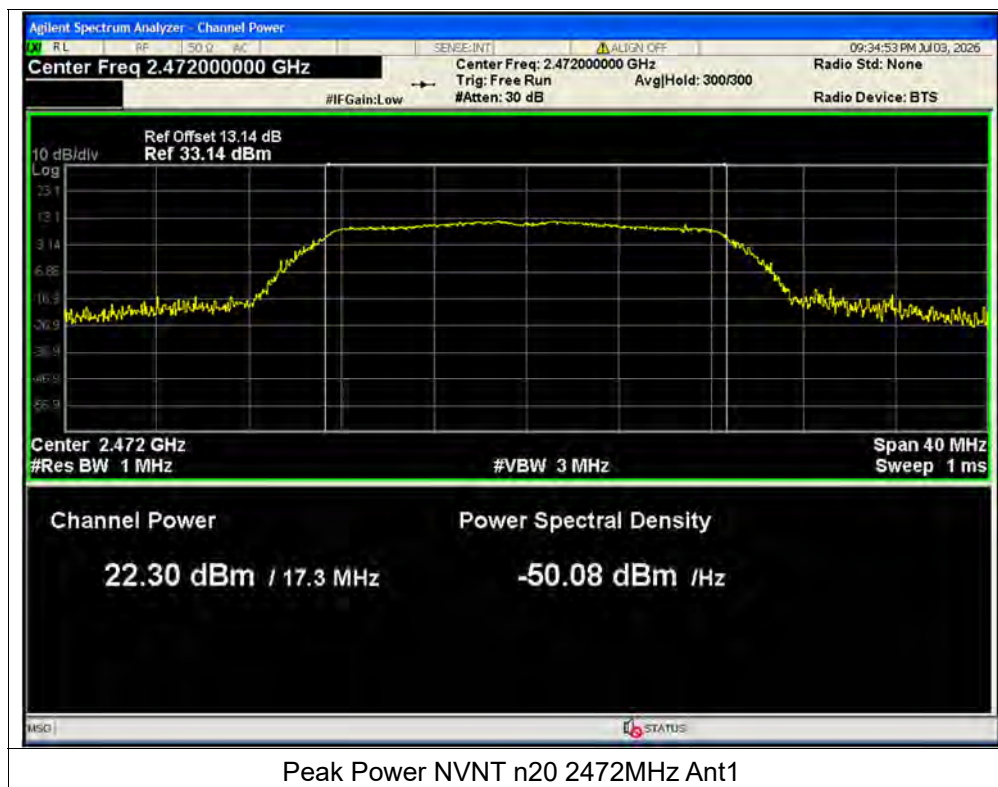
Peak Power NVNT g 2472MHz Ant1



Peak Power NVNT n20 2412MHz Ant1

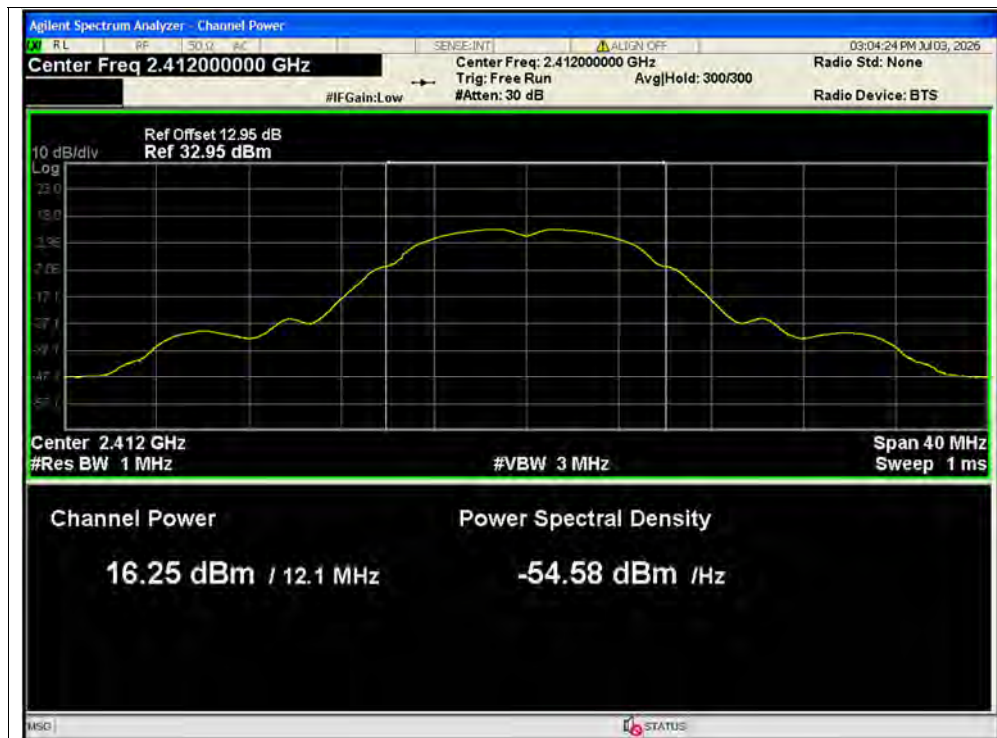


Peak Power NVNT n20 2442MHz Ant1

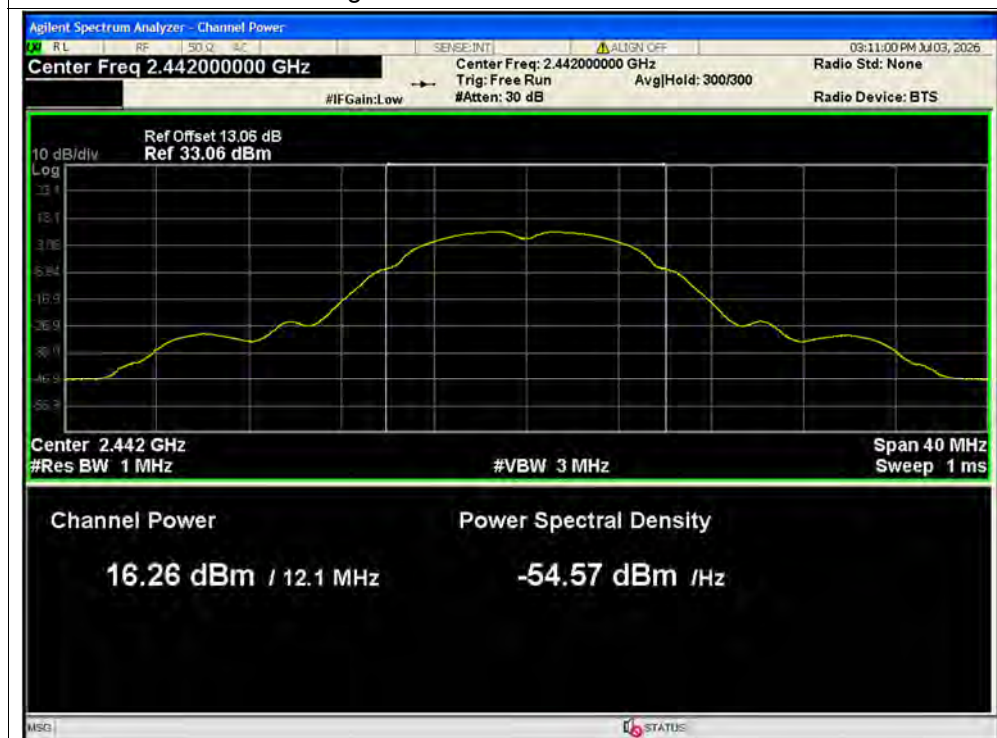


**A.3. Maximum Average Conducted Output Power**

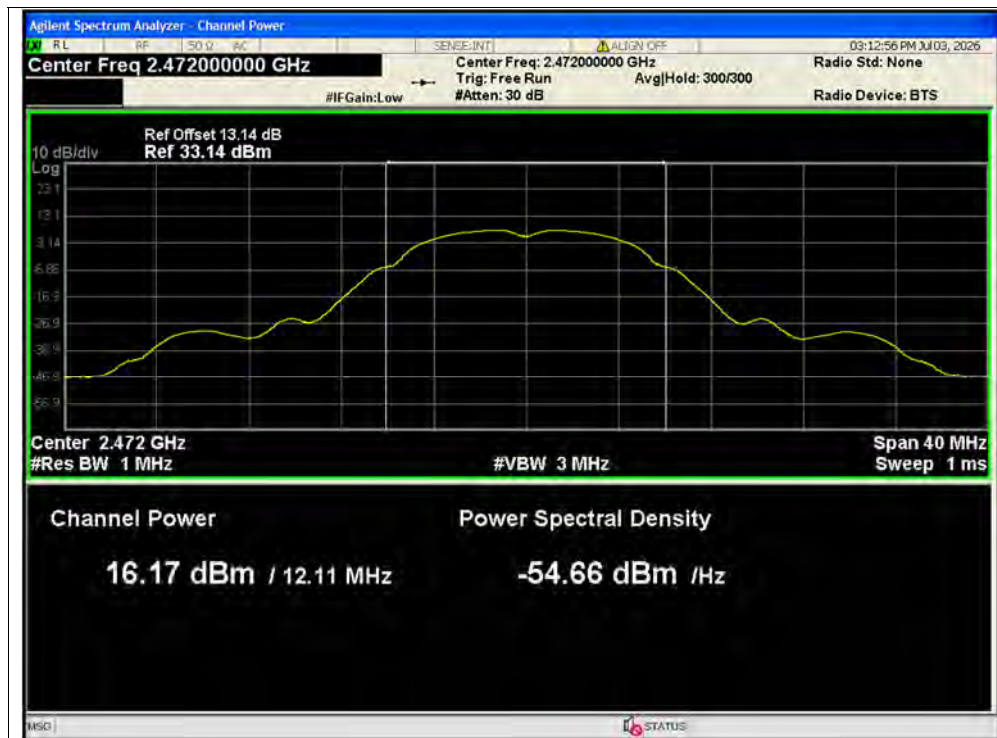
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	b	2412	Ant1	16.25	0.01	16.26	0.04227	30	Pass
NVNT	b	2442	Ant1	16.26	0.01	16.27	0.04236	30	Pass
NVNT	b	2472	Ant1	16.17	0.52	16.69	0.04667	30	Pass
NVNT	g	2412	Ant1	14.91	0.05	14.96	0.03133	30	Pass
NVNT	g	2442	Ant1	15.01	0.06	15.07	0.03214	30	Pass
NVNT	g	2472	Ant1	14.65	0.06	14.71	0.02958	30	Pass
NVNT	n20	2412	Ant1	14.92	0.06	14.98	0.03148	30	Pass
NVNT	n20	2442	Ant1	14.95	1.01	15.96	0.03945	30	Pass
NVNT	n20	2472	Ant1	14.61	0.3	14.91	0.03097	30	Pass



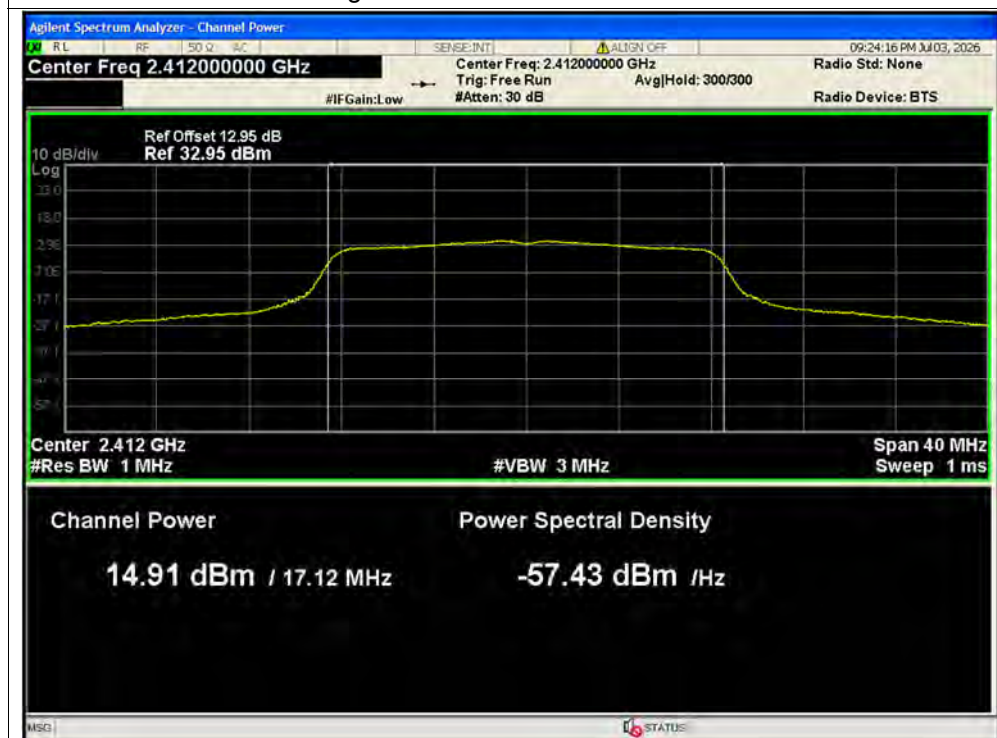
Average Power NVNT b 2412MHz Ant1



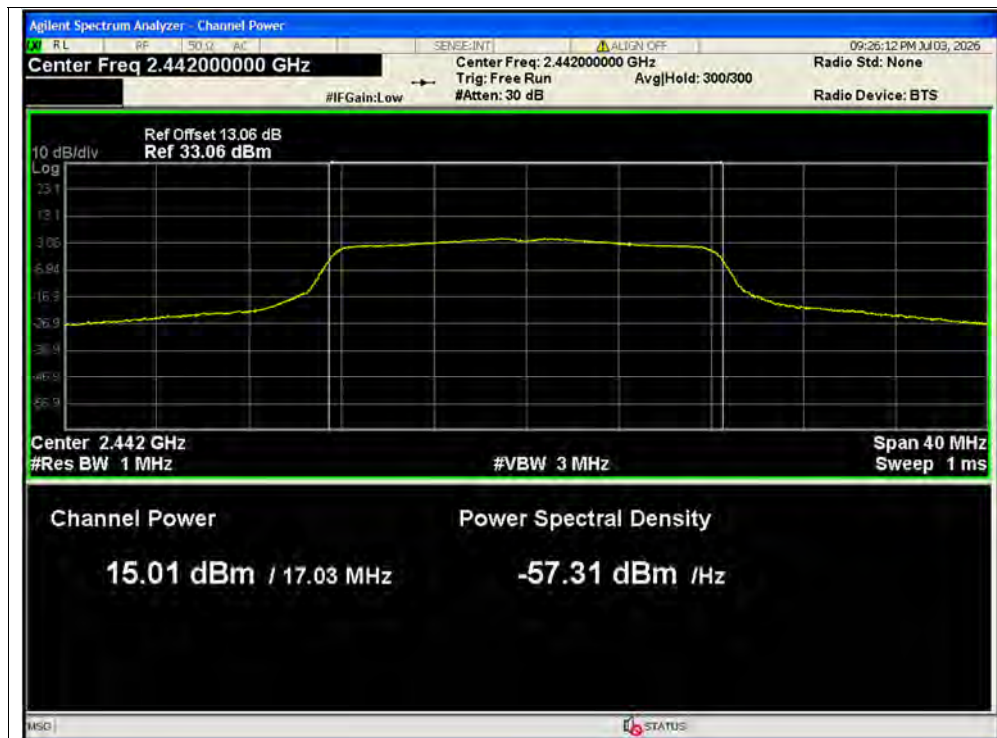
Average Power NVNT b 2442MHz Ant1



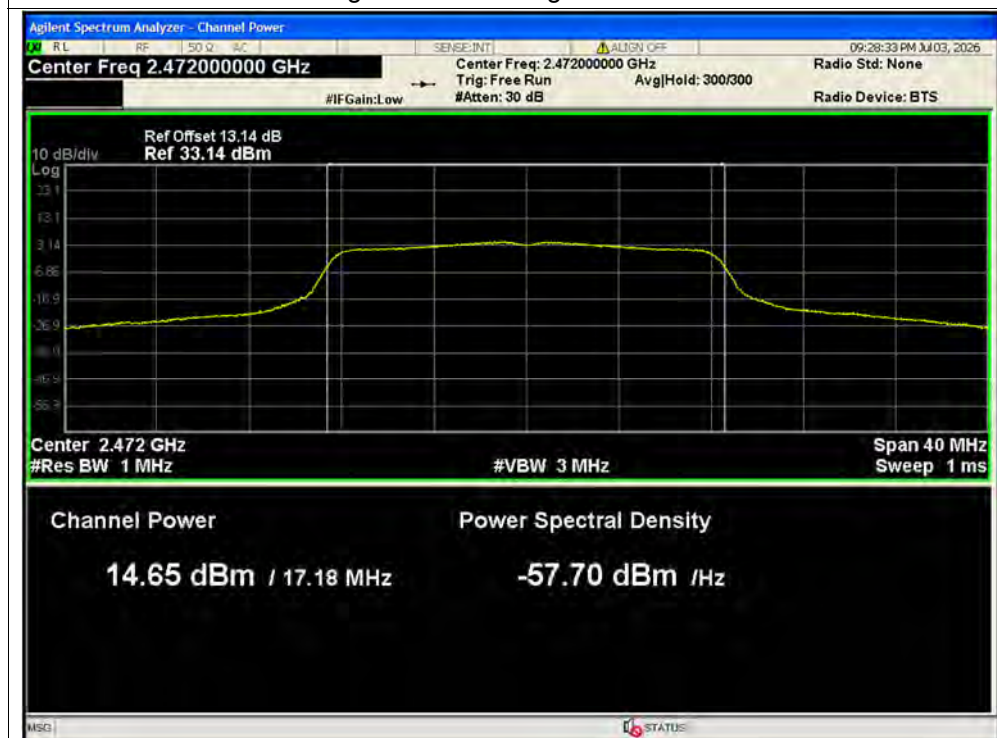
Average Power NVNT b 2472MHz Ant1



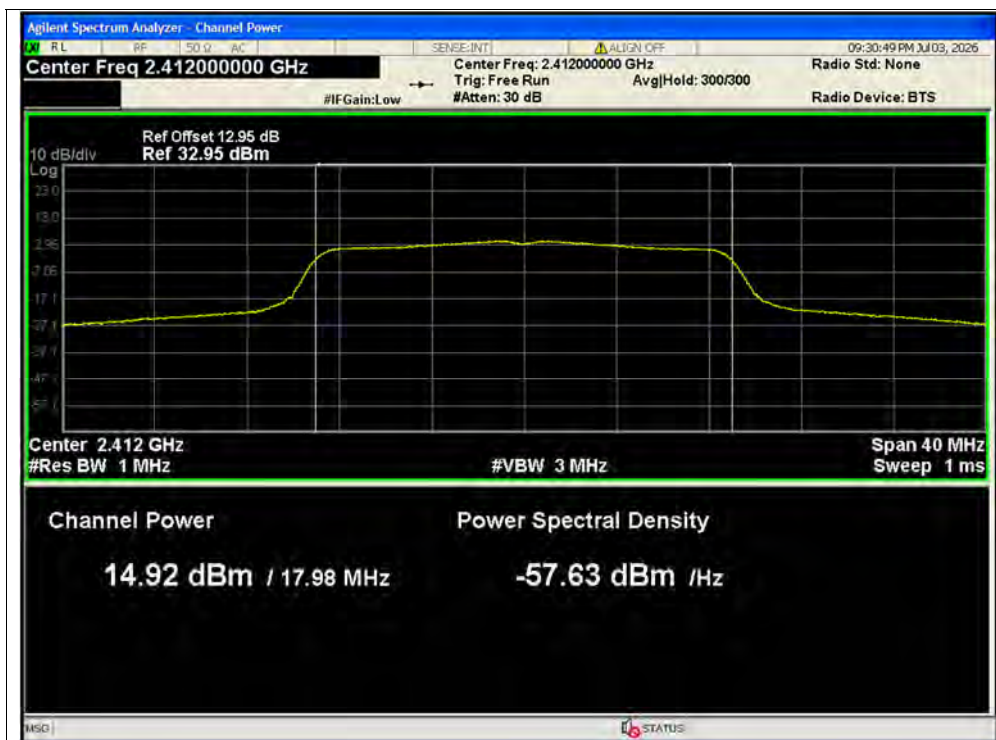
Average Power NVNT g 2412MHz Ant1



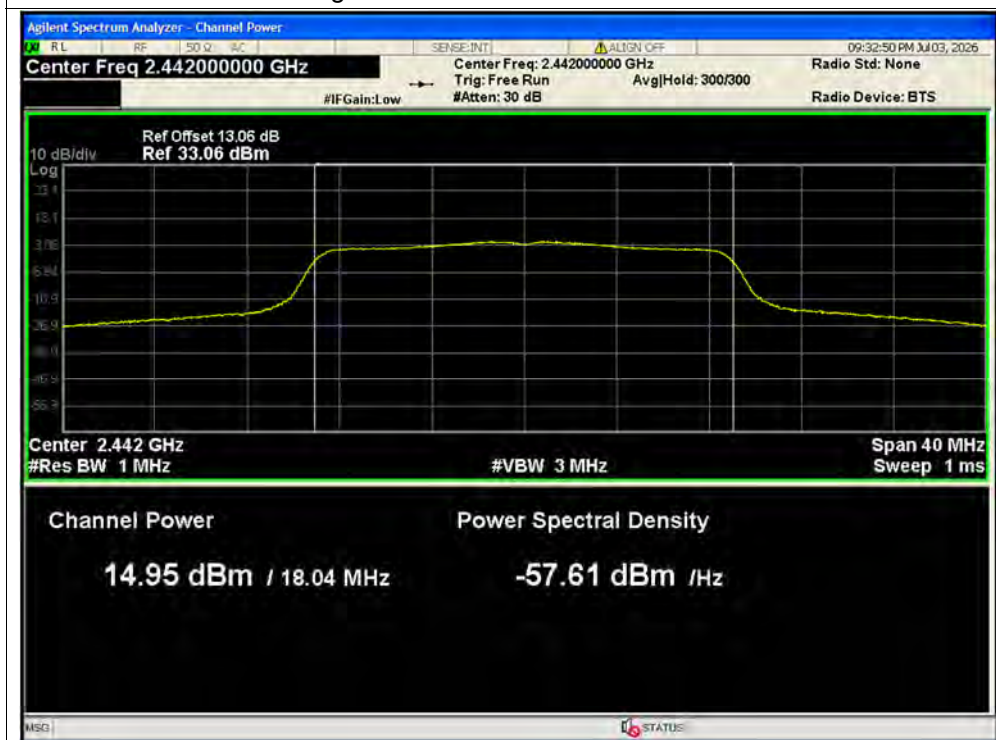
Average Power NVNT g 2442MHz Ant1



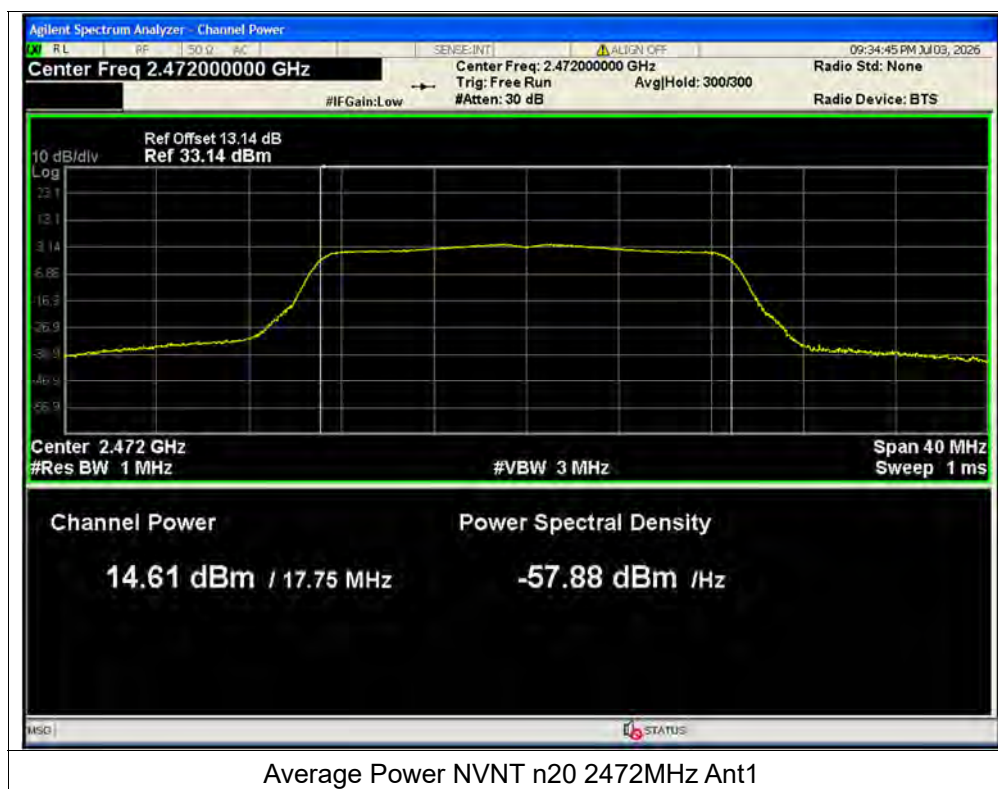
Average Power NVNT g 2472MHz Ant1



Average Power NVNT n20 2412MHz Ant1



Average Power NVNT n20 2442MHz Ant1



**A.4. 6 dB Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.033	0.5	Pass
NVNT	b	2442	Ant1	9.041	0.5	Pass
NVNT	b	2472	Ant1	9.067	0.5	Pass
NVNT	g	2412	Ant1	16.32	0.5	Pass
NVNT	g	2442	Ant1	16.3	0.5	Pass
NVNT	g	2472	Ant1	16.3	0.5	Pass
NVNT	n20	2412	Ant1	17.56	0.5	Pass
NVNT	n20	2442	Ant1	17.57	0.5	Pass
NVNT	n20	2472	Ant1	17.3	0.5	Pass



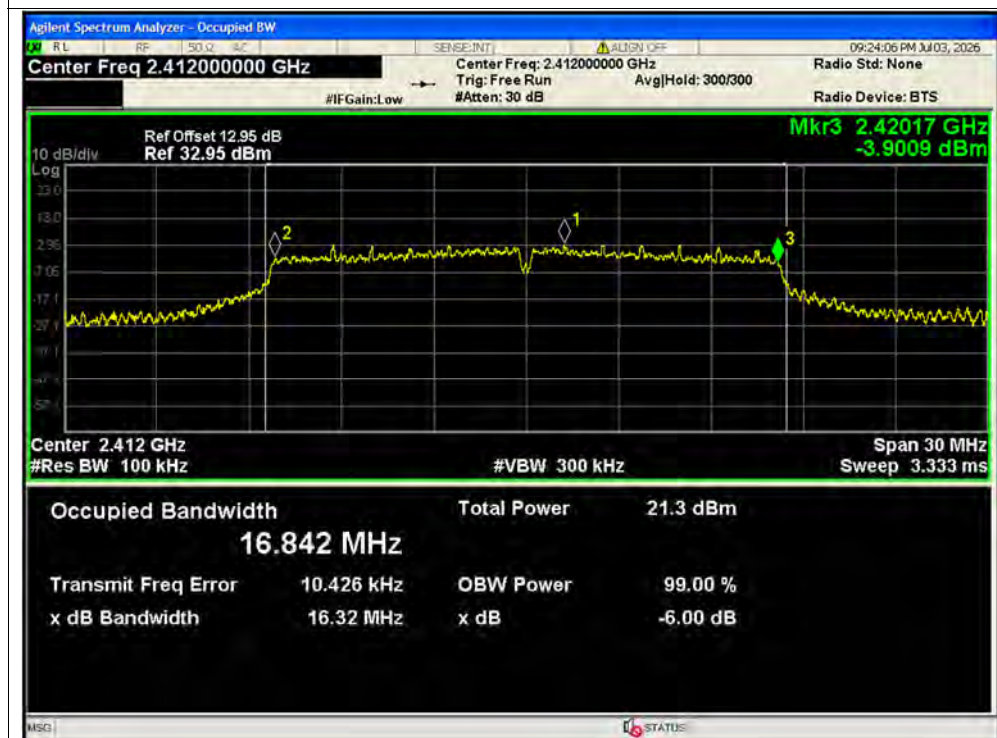
-6dB Bandwidth NVNT b 2412MHz Ant1



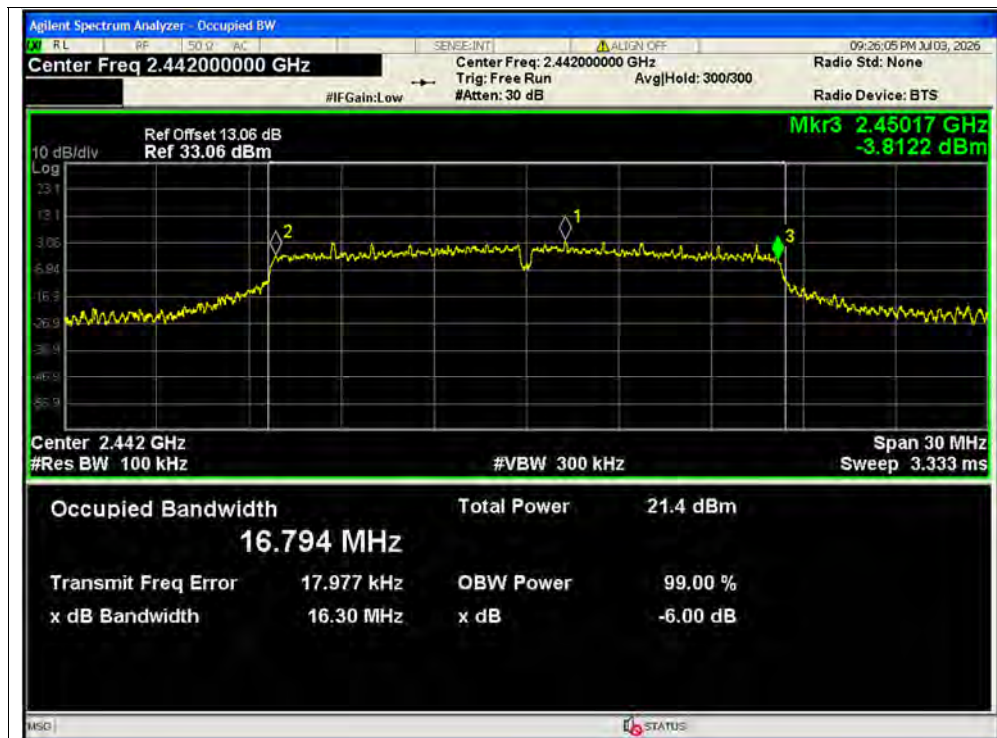
-6dB Bandwidth NVNT b 2442MHz Ant1



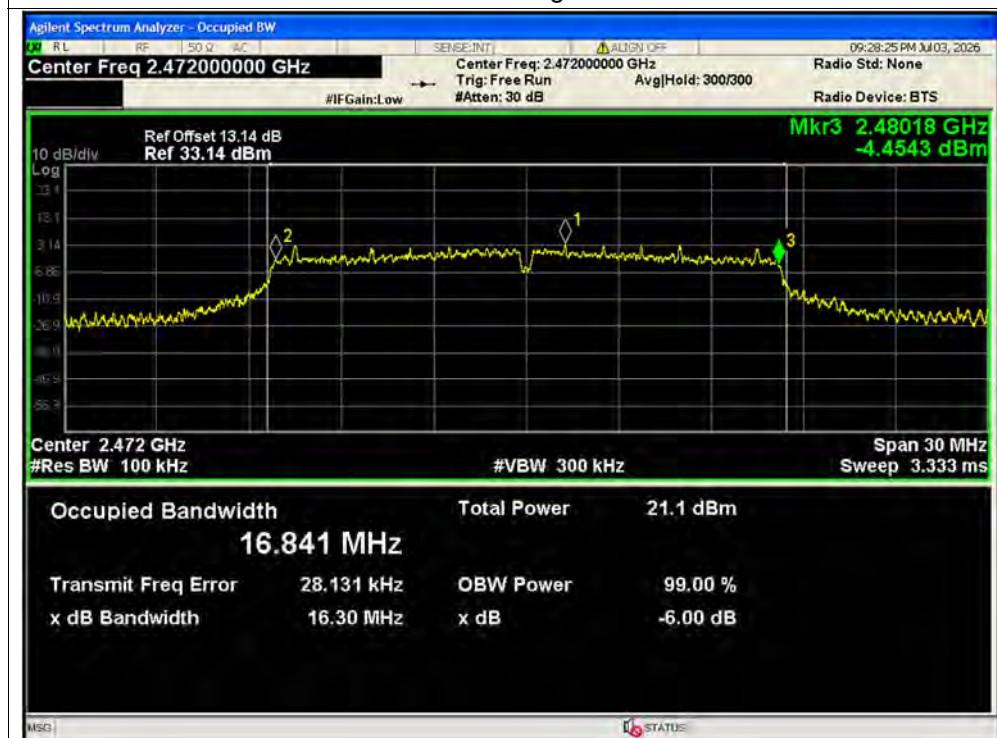
-6dB Bandwidth NVNT b 2472MHz Ant1



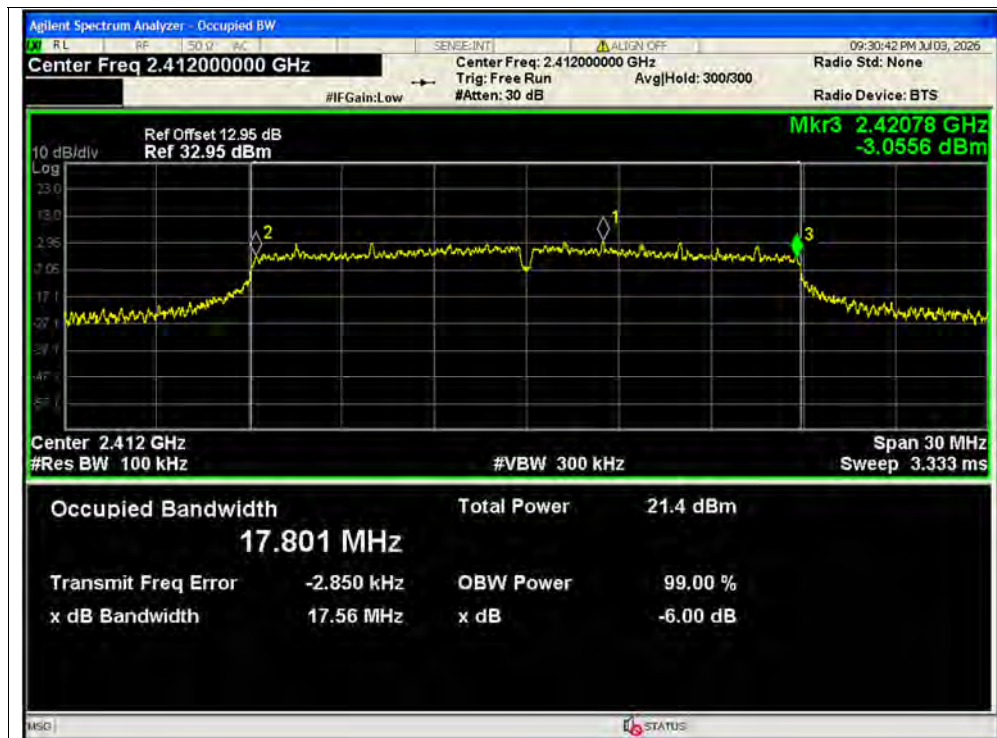
-6dB Bandwidth NVNT g 2412MHz Ant1



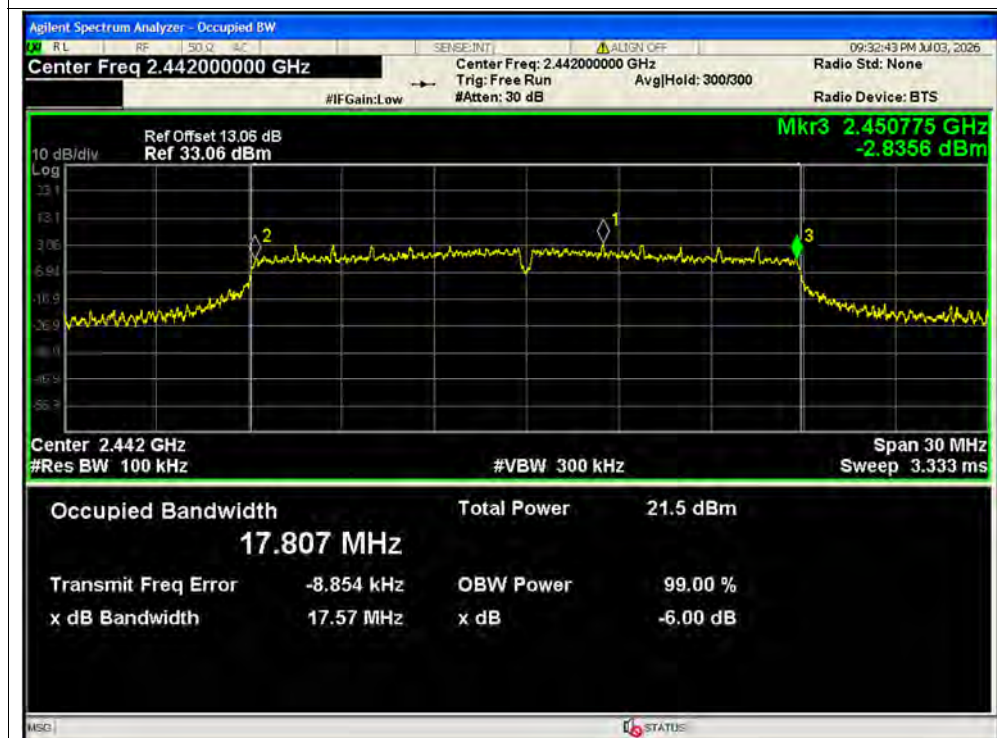
-6dB Bandwidth NVNT g 2442MHz Ant1



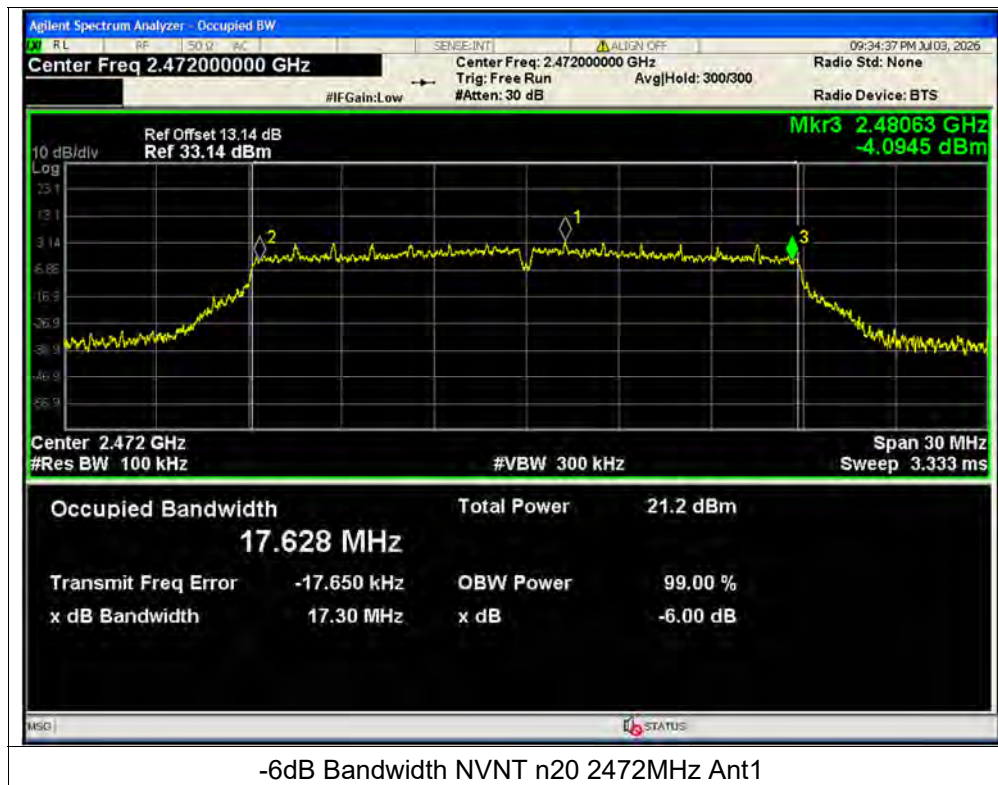
-6dB Bandwidth NVNT g 2472MHz Ant1



-6dB Bandwidth NVNT n20 2412MHz Ant1



-6dB Bandwidth NVNT n20 2442MHz Ant1

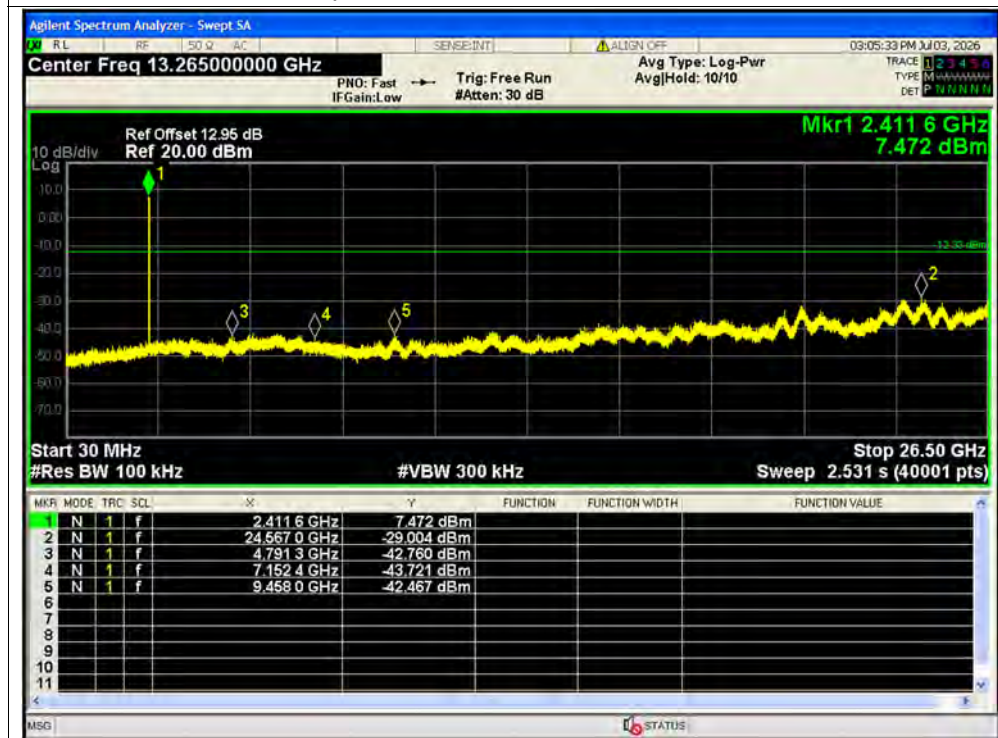


**A.5. Conducted Spurious Emissions**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-36.67	-20	Pass
NVNT	b	2442	Ant1	-36.1	-20	Pass
NVNT	b	2472	Ant1	-35.5	-20	Pass
NVNT	g	2412	Ant1	-32.6	-20	Pass
NVNT	g	2442	Ant1	-32.57	-20	Pass
NVNT	g	2472	Ant1	-30.62	-20	Pass
NVNT	n20	2412	Ant1	-31.95	-20	Pass
NVNT	n20	2442	Ant1	-32.74	-20	Pass
NVNT	n20	2472	Ant1	-32.06	-20	Pass



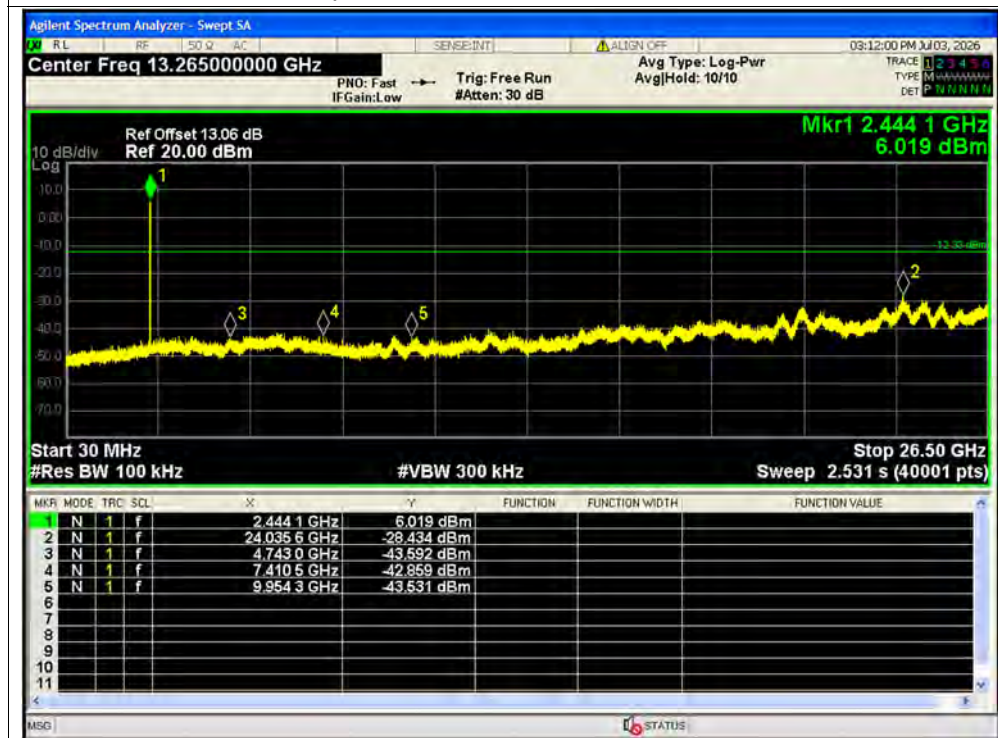
Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2412MHz Ant1 Emission



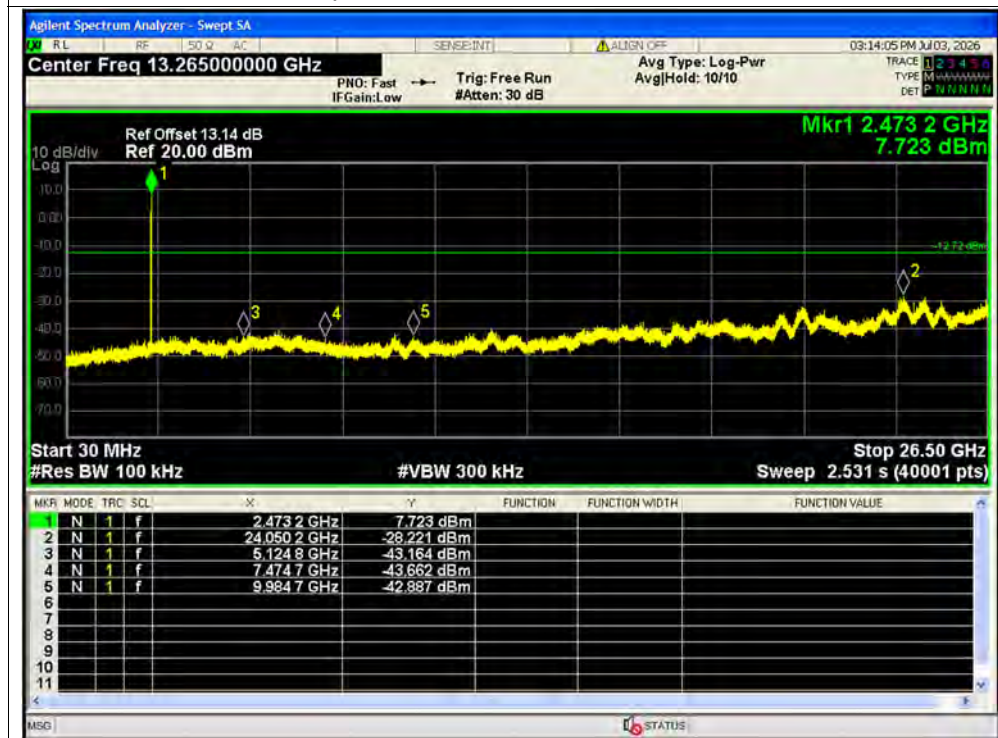
Tx. Spurious NVNT b 2442MHz Ant1 Ref



Tx. Spurious NVNT b 2442MHz Ant1 Emission



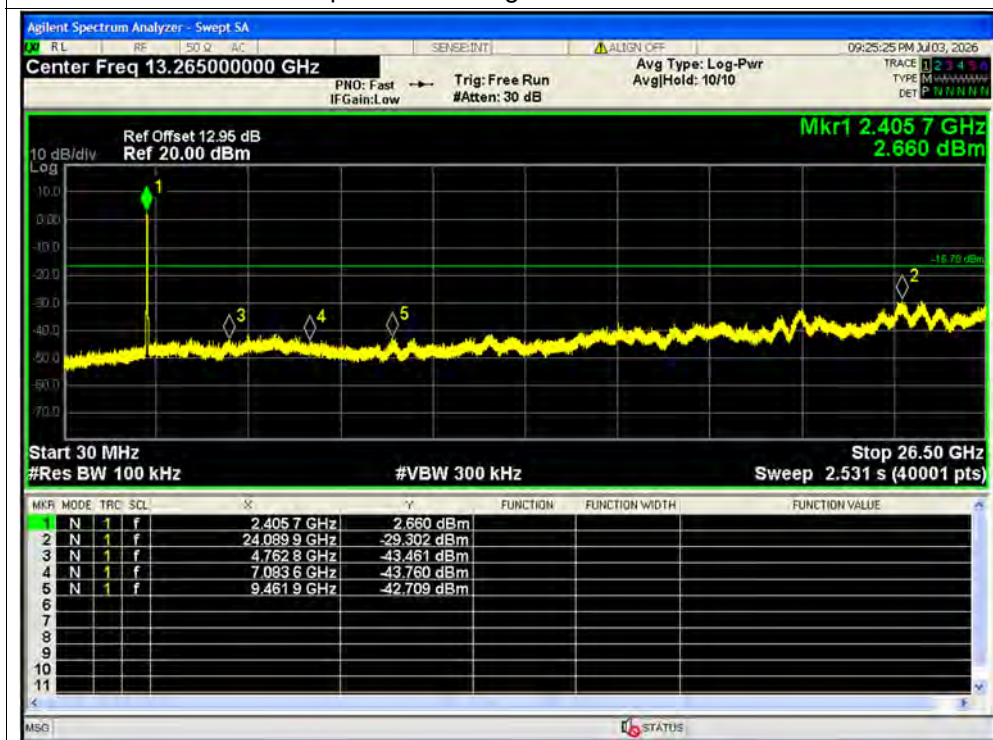
Tx. Spurious NVNT b 2472MHz Ant1 Ref



Tx. Spurious NVNT b 2472MHz Ant1 Emission



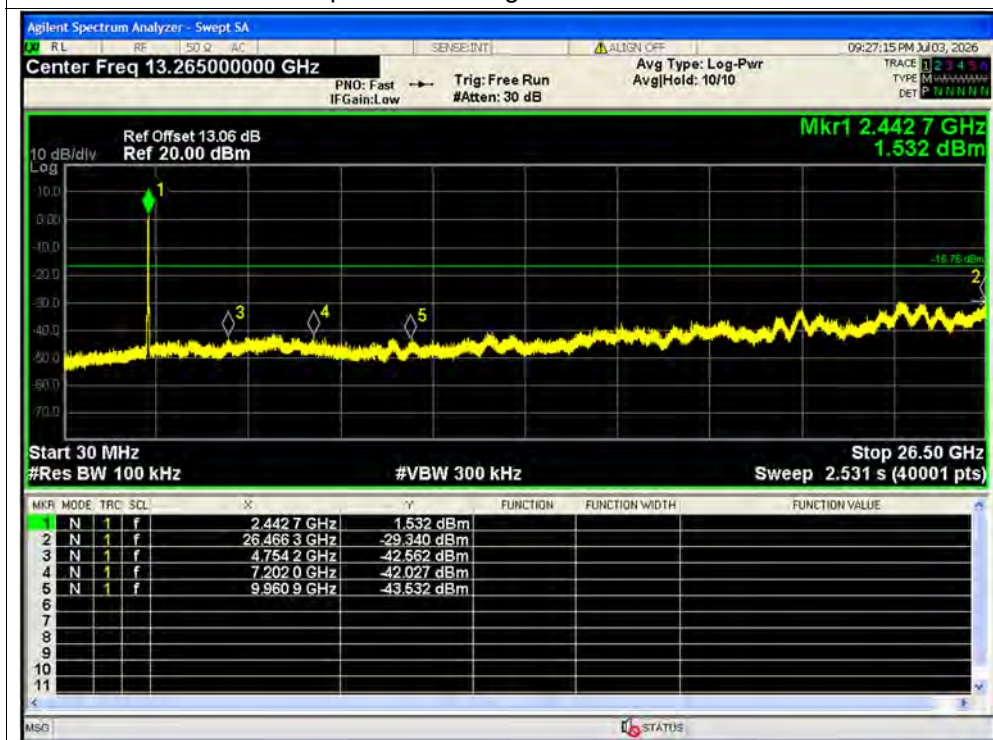
Tx. Spurious NVNT g 2412MHz Ant1 Ref



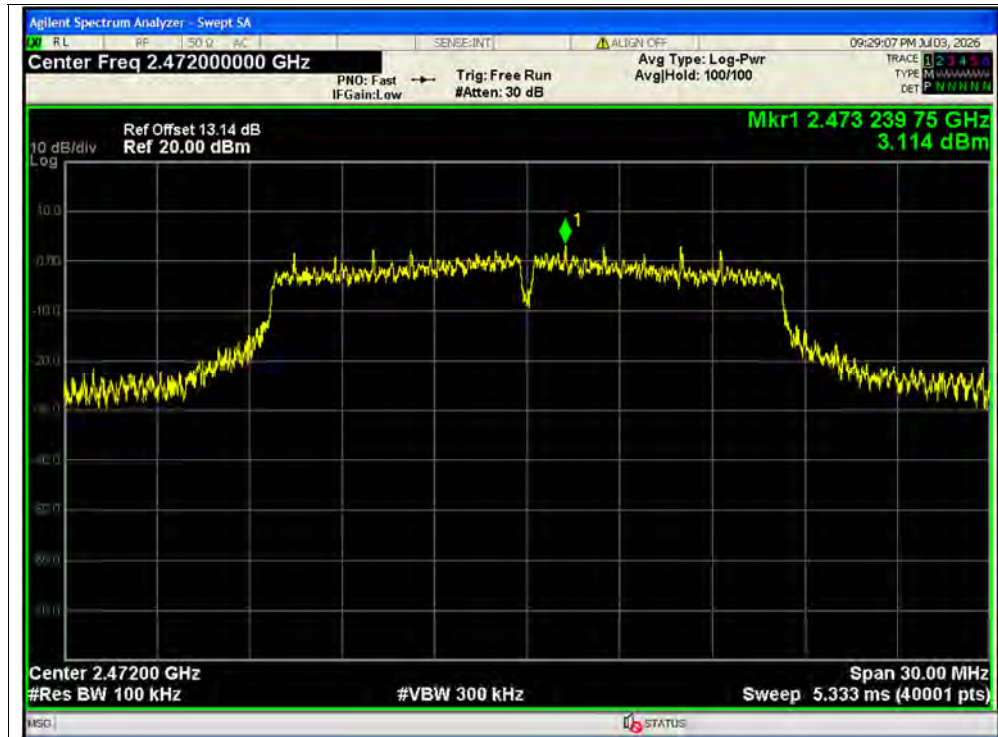
Tx. Spurious NVNT g 2412MHz Ant1 Emission



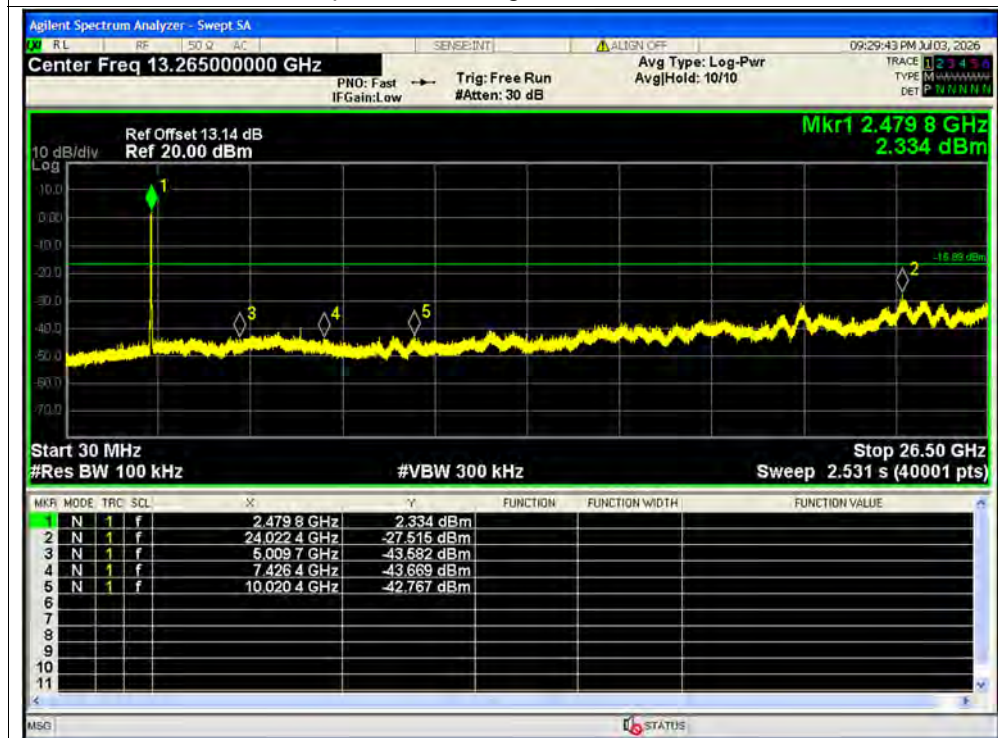
Tx. Spurious NVNT g 2442MHz Ant1 Ref



Tx. Spurious NVNT g 2442MHz Ant1 Emission



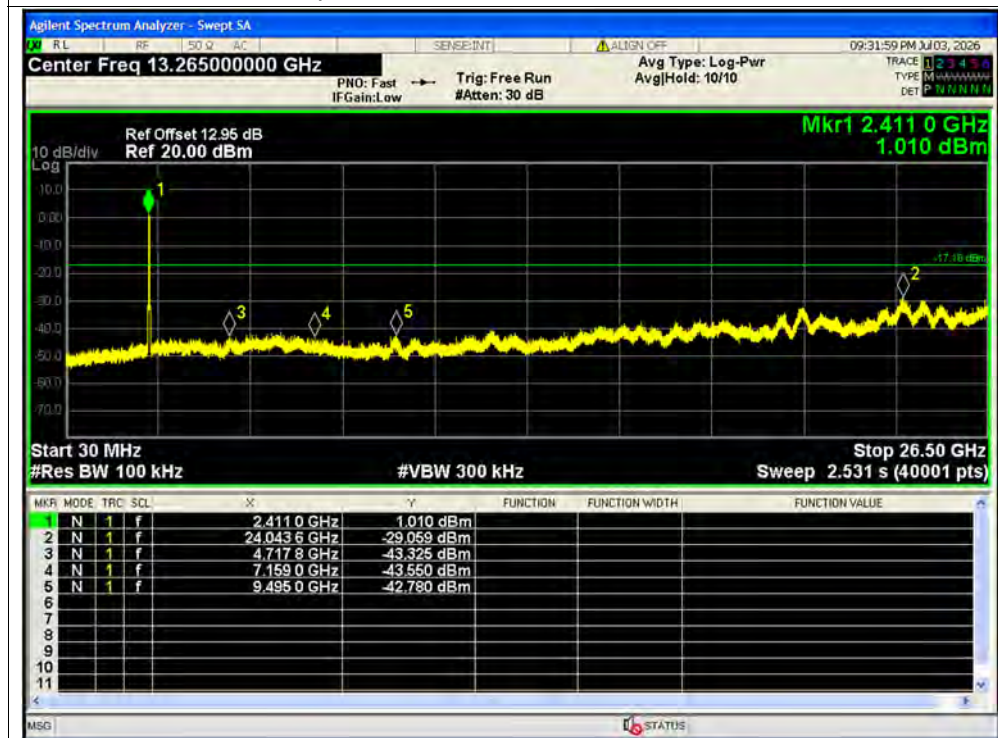
Tx. Spurious NVNT g 2472MHz Ant1 Ref



Tx. Spurious NVNT g 2472MHz Ant1 Emission



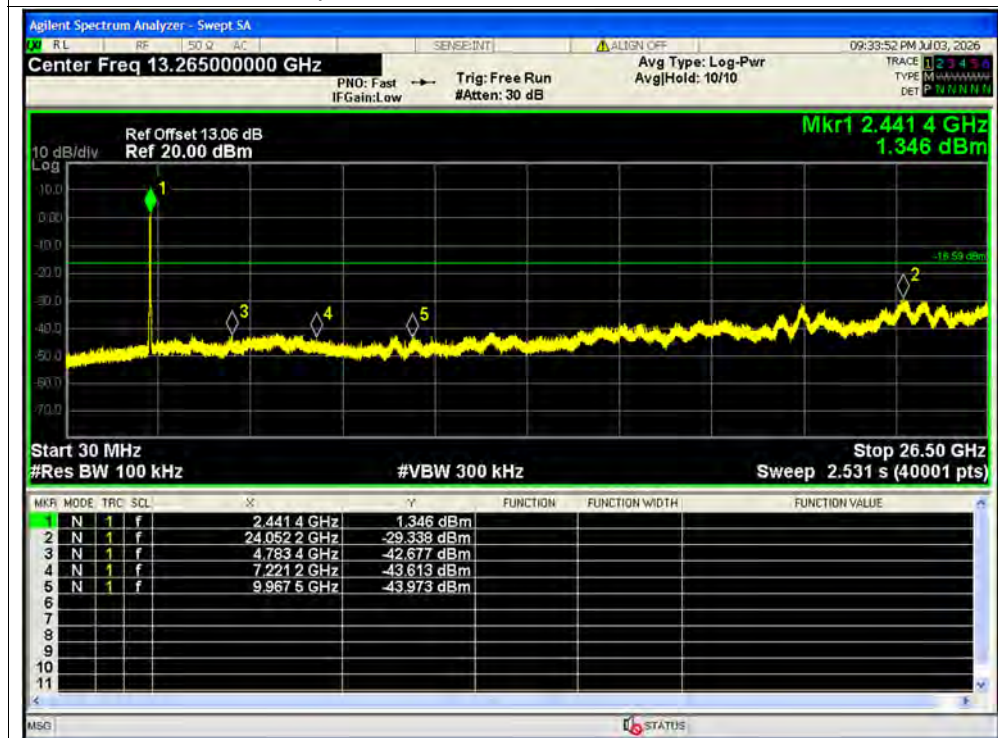
Tx. Spurious NVNT n20 2412MHz Ant1 Ref



Tx. Spurious NVNT n20 2412MHz Ant1 Emission



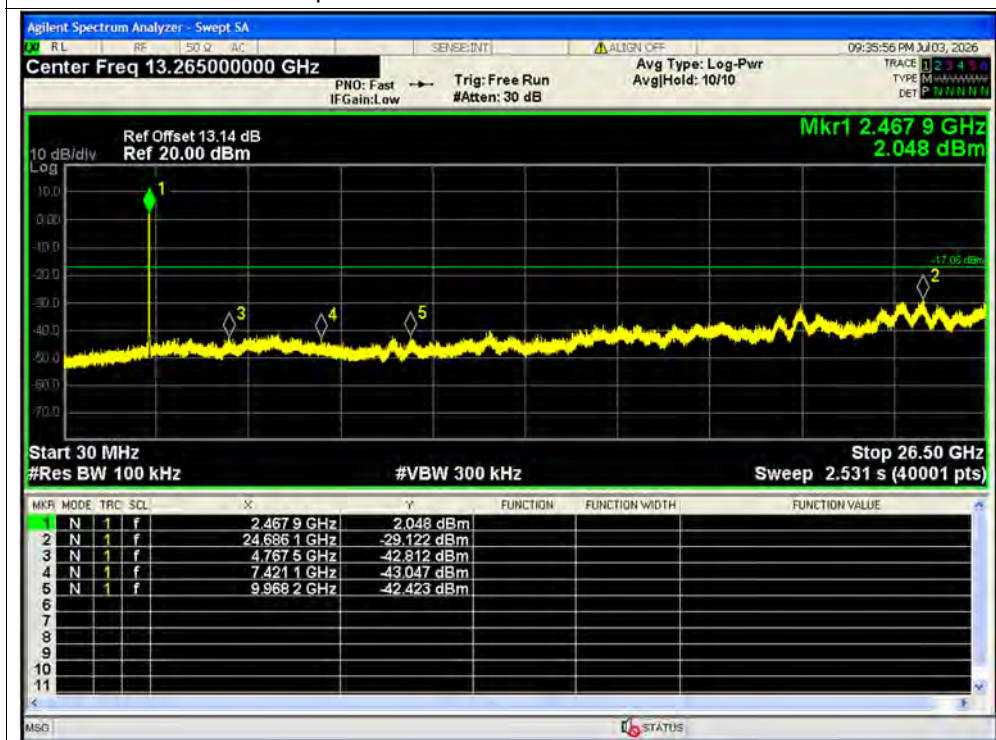
Tx. Spurious NVNT n20 2442MHz Ant1 Ref



Tx. Spurious NVNT n20 2442MHz Ant1 Emission



Tx. Spurious NVNT n20 2472MHz Ant1 Ref



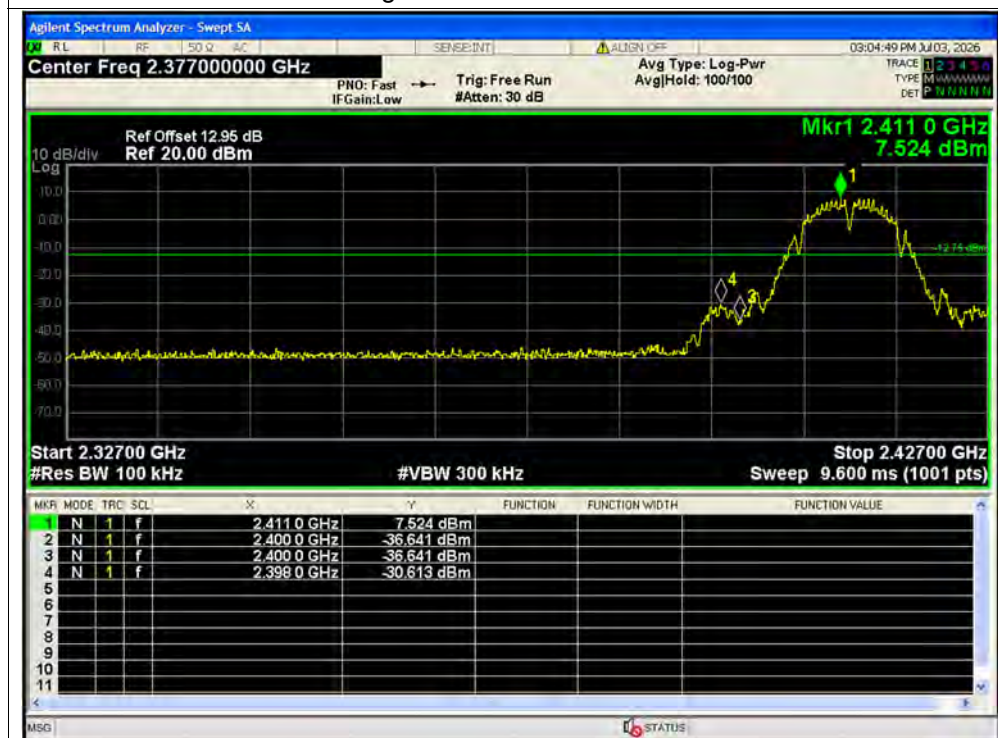
Tx. Spurious NVNT n20 2472MHz Ant1 Emission

**A.6. Band Edge**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-37.86	-20	Pass
NVNT	b	2472	Ant1	-38.42	-20	Pass
NVNT	g	2412	Ant1	-24.55	-20	Pass
NVNT	g	2472	Ant1	-23.35	-20	Pass
NVNT	n20	2412	Ant1	-25.38	-20	Pass
NVNT	n20	2472	Ant1	-33.26	-20	Pass



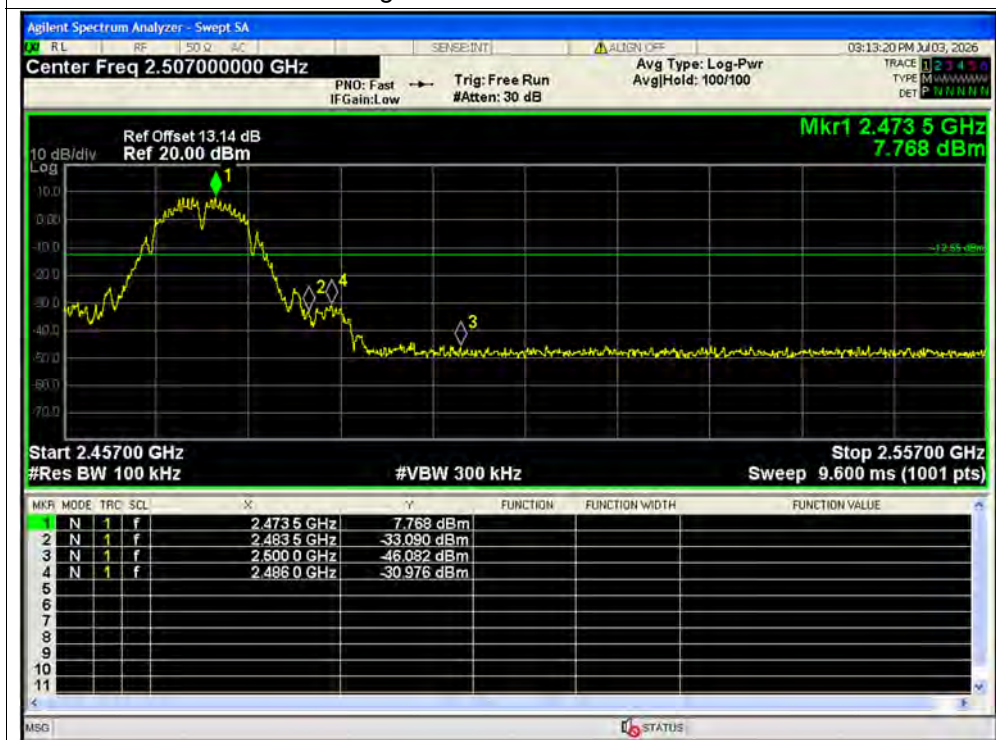
Band Edge NVNT b 2412MHz Ant1 Ref



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



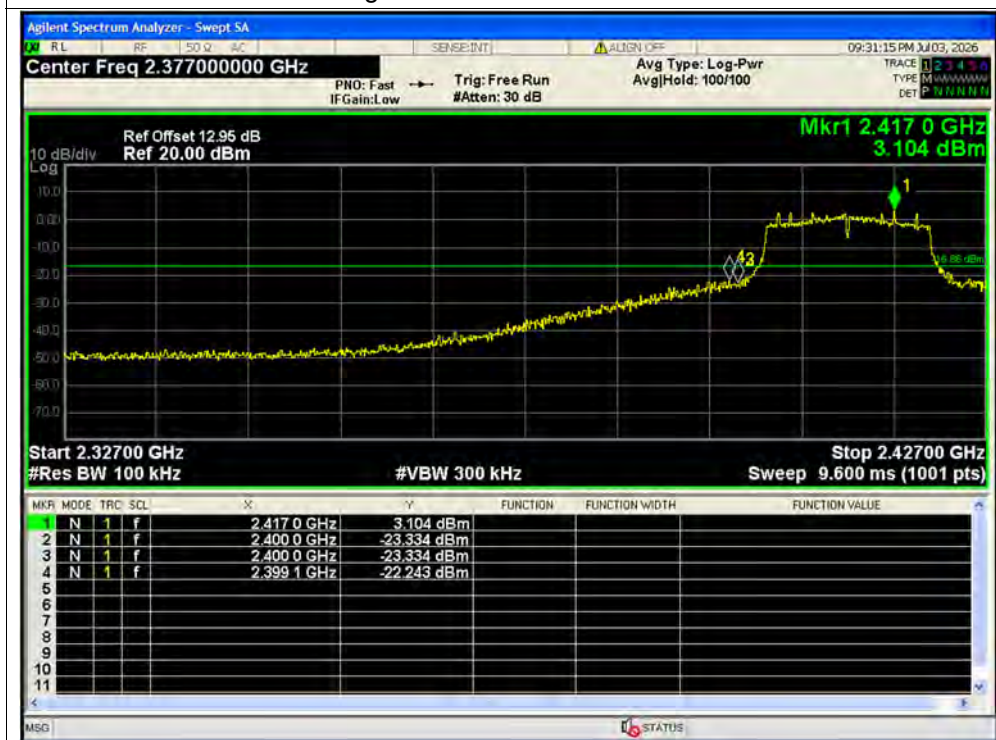
Band Edge NVNT g 2472MHz Ant1 Ref



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

**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	-6.72	0	-6.72	8	Pass
NVNT	b	2442	Ant1	-7.05	0	-7.05	8	Pass
NVNT	b	2472	Ant1	-5.27	0	-5.27	8	Pass
NVNT	g	2412	Ant1	-10.6	0	-10.6	8	Pass
NVNT	g	2442	Ant1	-10.77	0	-10.77	8	Pass
NVNT	g	2472	Ant1	-11.15	0	-11.15	8	Pass
NVNT	n20	2412	Ant1	-9.13	0	-9.13	8	Pass
NVNT	n20	2442	Ant1	-10.32	0	-10.32	8	Pass
NVNT	n20	2472	Ant1	-10.47	0	-10.47	8	Pass



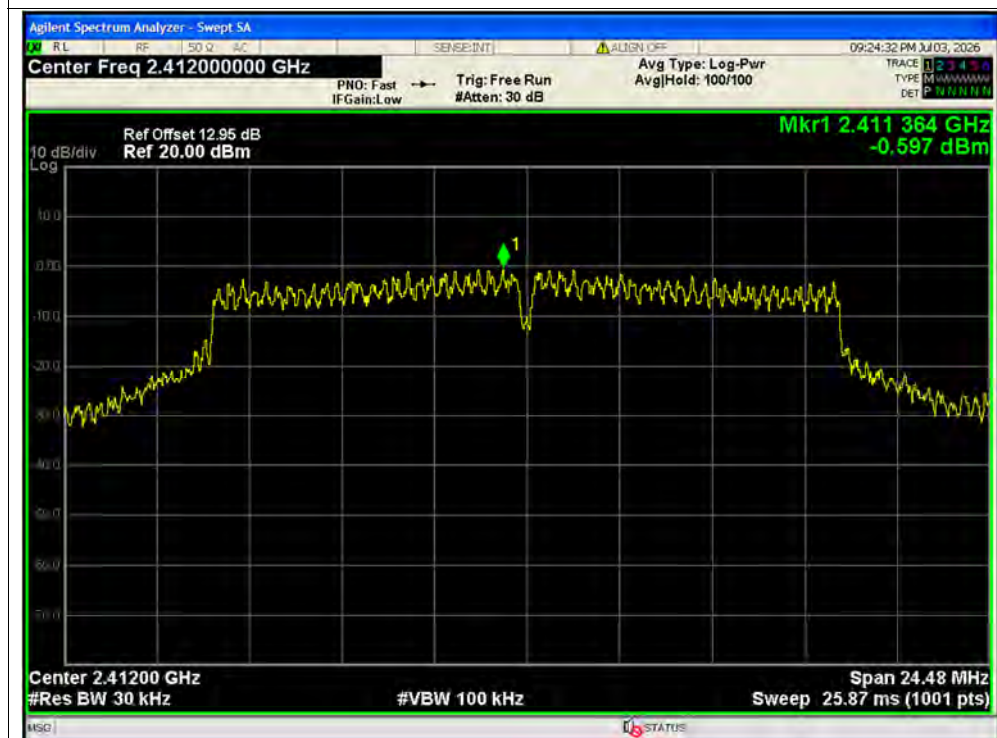
PSD NVNT b 2412MHz Ant1



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





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+Adapter+Charge Cable+Notebook+Serial port board+WIFI TX

Test voltage: AC 120V/60Hz

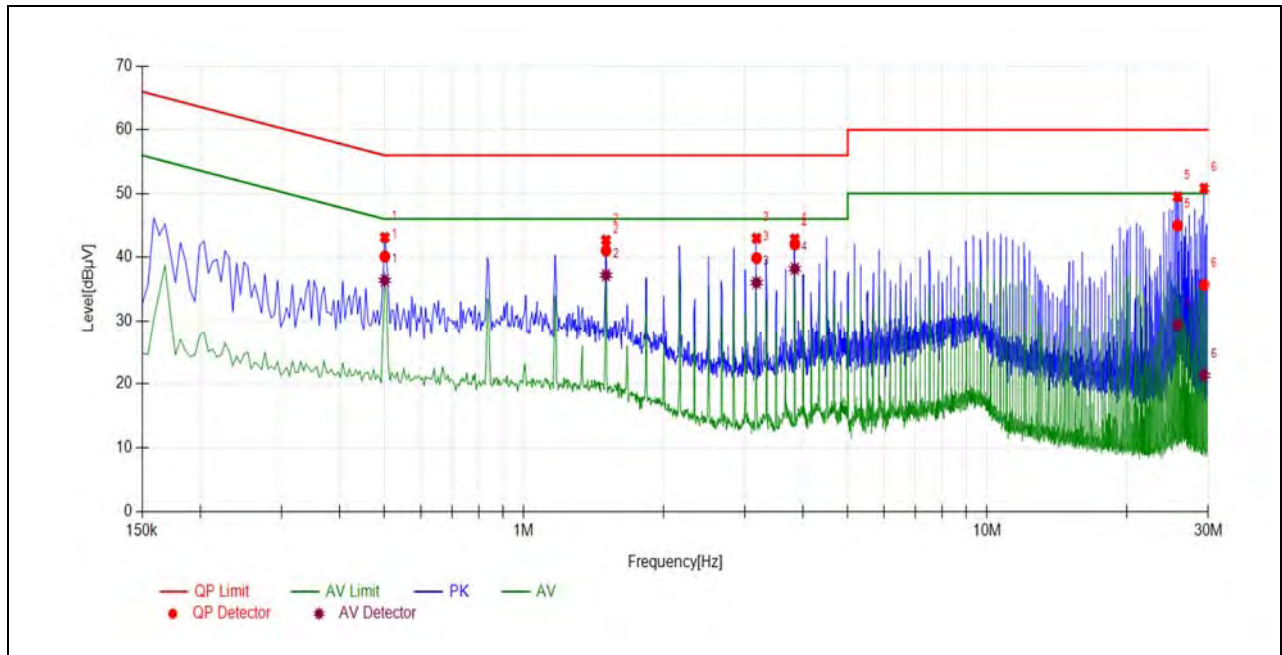
The measurement results are obtained as below:

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

U_R : Receiver Reading

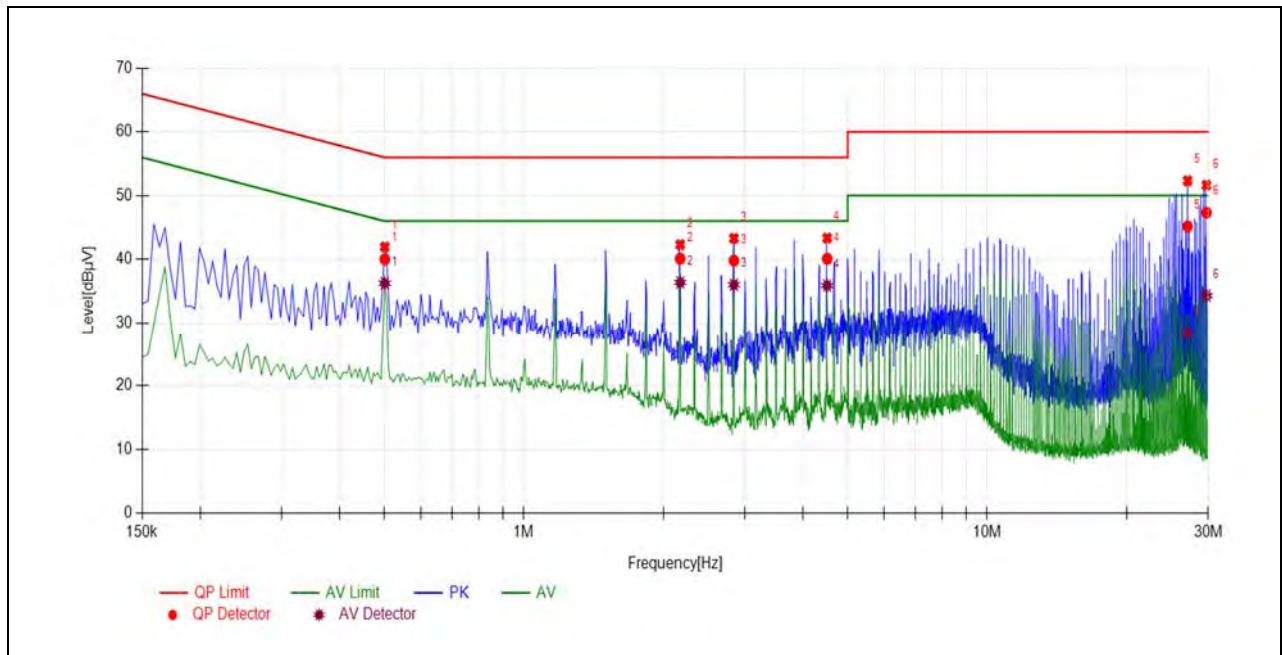
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.5010	40.11	36.37	56.00	46.00	Line	PASS
2	1.5045	41.04	37.19	56.00	46.00		PASS
3	3.1783	39.86	36.02	56.00	46.00		PASS
4	3.8447	42.01	38.21	56.00	46.00		PASS
5	25.7542	44.98	29.39	60.00	50.00		PASS
6	29.4286	35.65	21.31	60.00	50.00		PASS



(N Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.5010	40.00	36.25	56.00	46.00	Neutral	PASS
2	2.1749	40.09	36.36	56.00	46.00		PASS
3	2.8412	39.78	36.00	56.00	46.00		PASS
4	4.5152	40.08	35.88	56.00	46.00		PASS
5	27.0775	45.17	28.36	60.00	50.00		PASS
6	29.7436	47.34	34.30	60.00	50.00		PASS

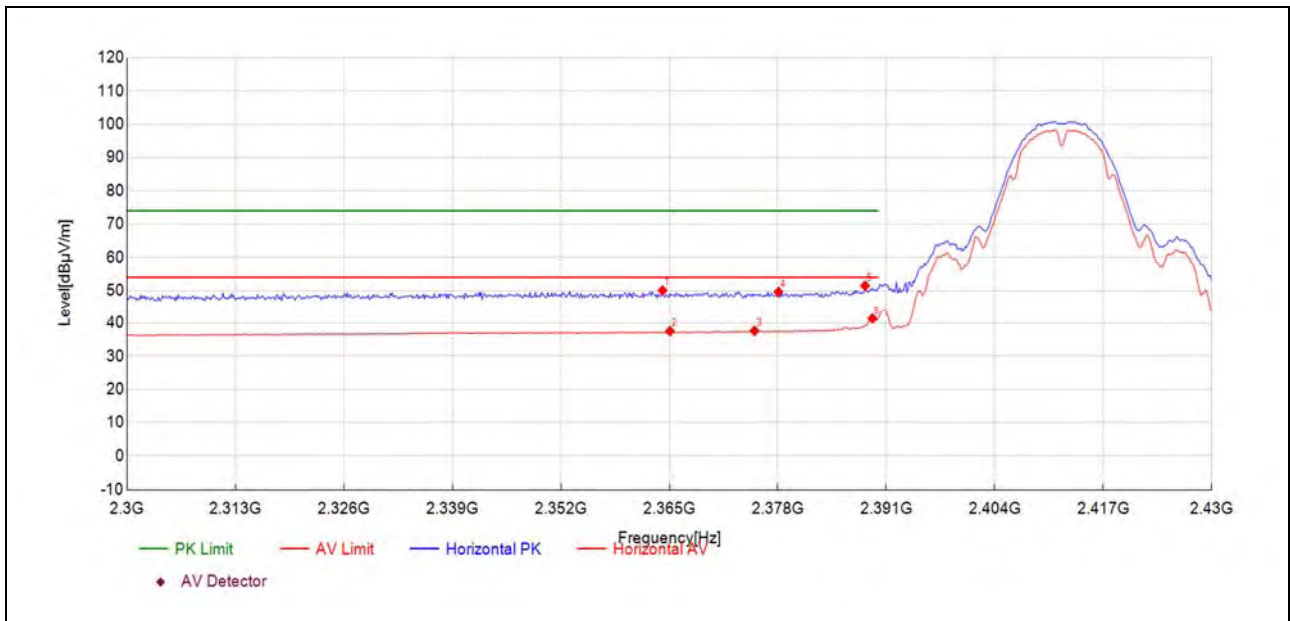
A.9. Restricted Frequency Bands

Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition 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

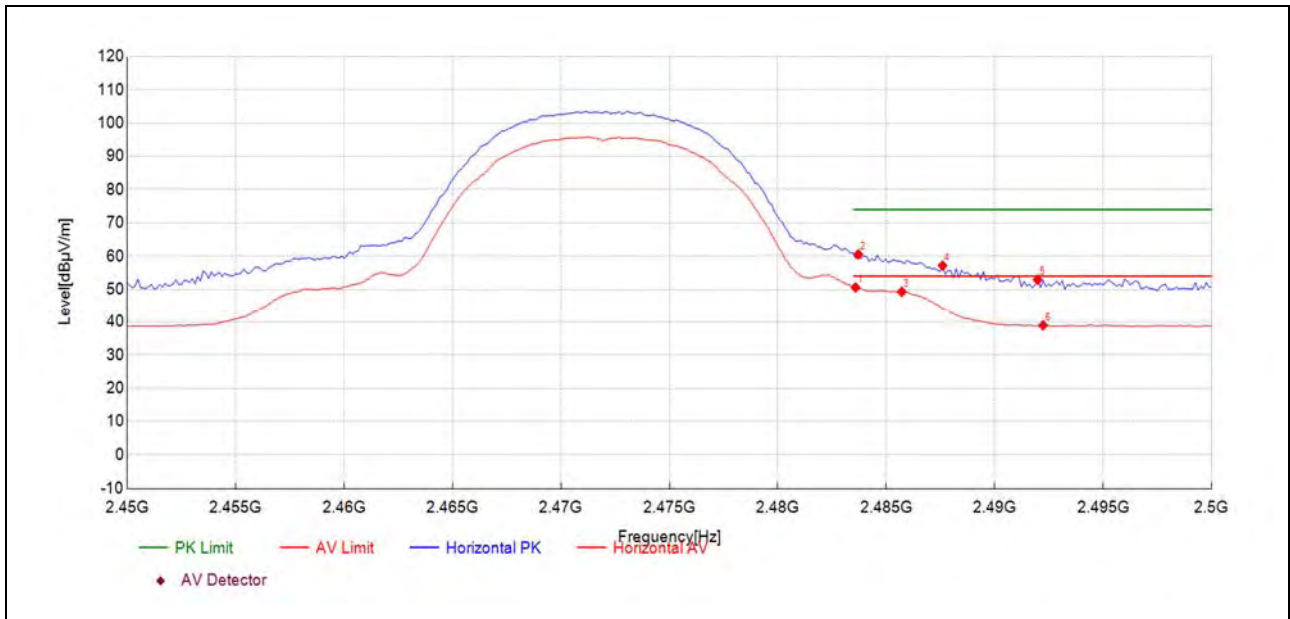
Plot for Channel 1



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2364.19	17.6	50.06	32.450	74.00	23.94	155	245	PK	PASS
2365.06	5.1	37.51	32.450	54.00	16.49	155	188	AV	PASS
2375.20	5.1	37.62	32.490	54.00	16.38	155	118	AV	PASS
2378.08	17.1	49.61	32.500	74.00	24.39	155	177	PK	PASS
2388.46	18.9	51.46	32.540	74.00	22.54	155	197	PK	PASS
2389.34	8.8	41.35	32.540	54.00	12.65	155	118	AV	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
2483.58	17.6	50.60	33.030	54.00	3.40	155	190	AV	PASS
2483.71	27.5	60.54	33.030	74.00	13.46	155	190	PK	PASS
2485.71	16.2	49.25	33.030	54.00	4.75	155	190	AV	PASS
2487.59	24.1	57.16	33.020	74.00	16.84	155	190	PK	PASS
2491.98	19.9	52.92	33.020	74.00	21.08	155	293	PK	PASS
2492.23	5.9	38.92	33.020	54.00	15.08	155	124	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.

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.

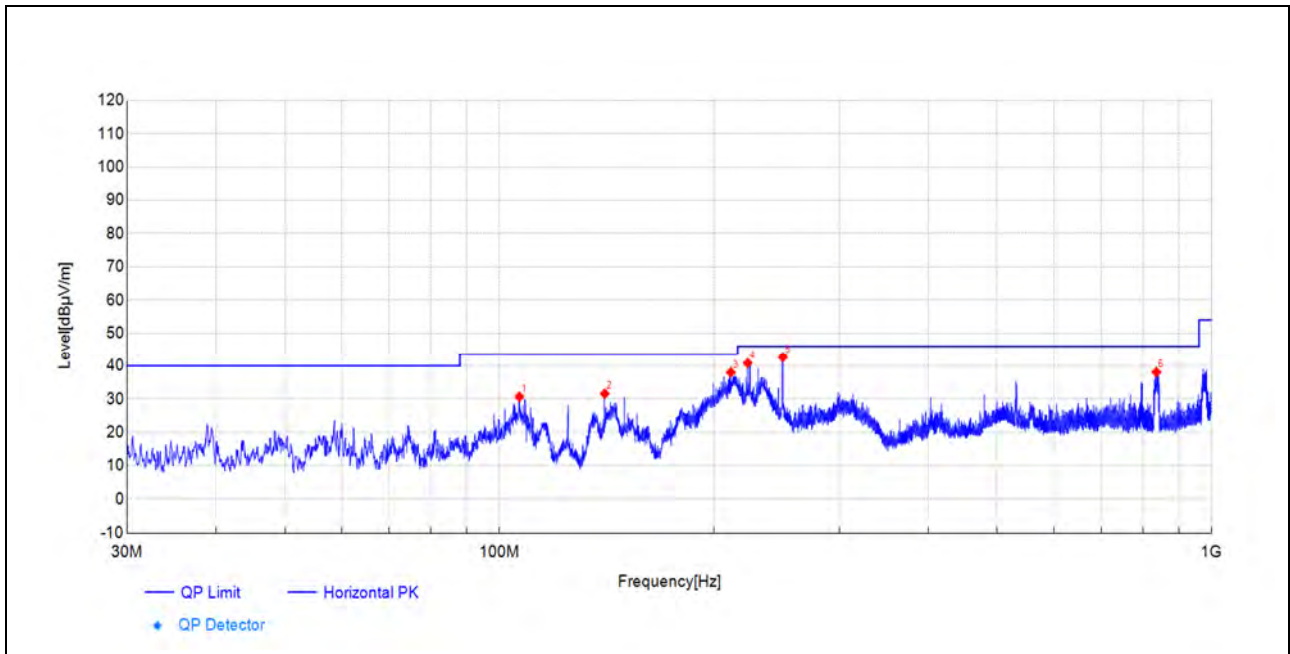
Note 3: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note 4: 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.



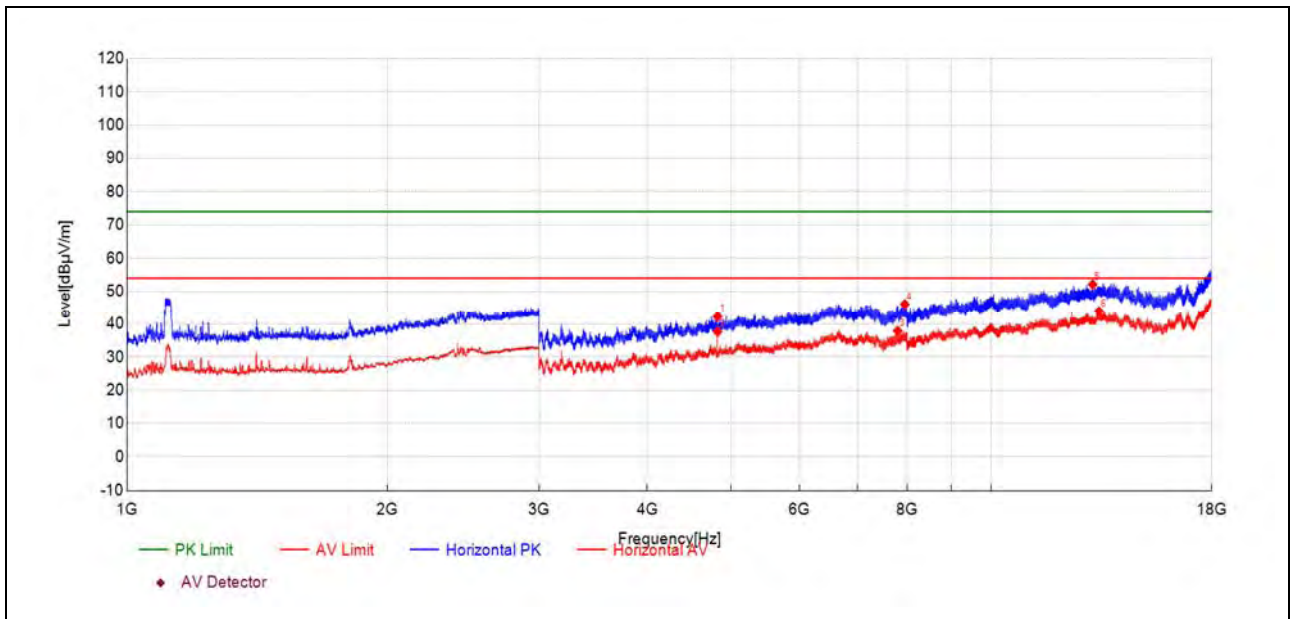
802.11b Mode

Plot for Channel 1



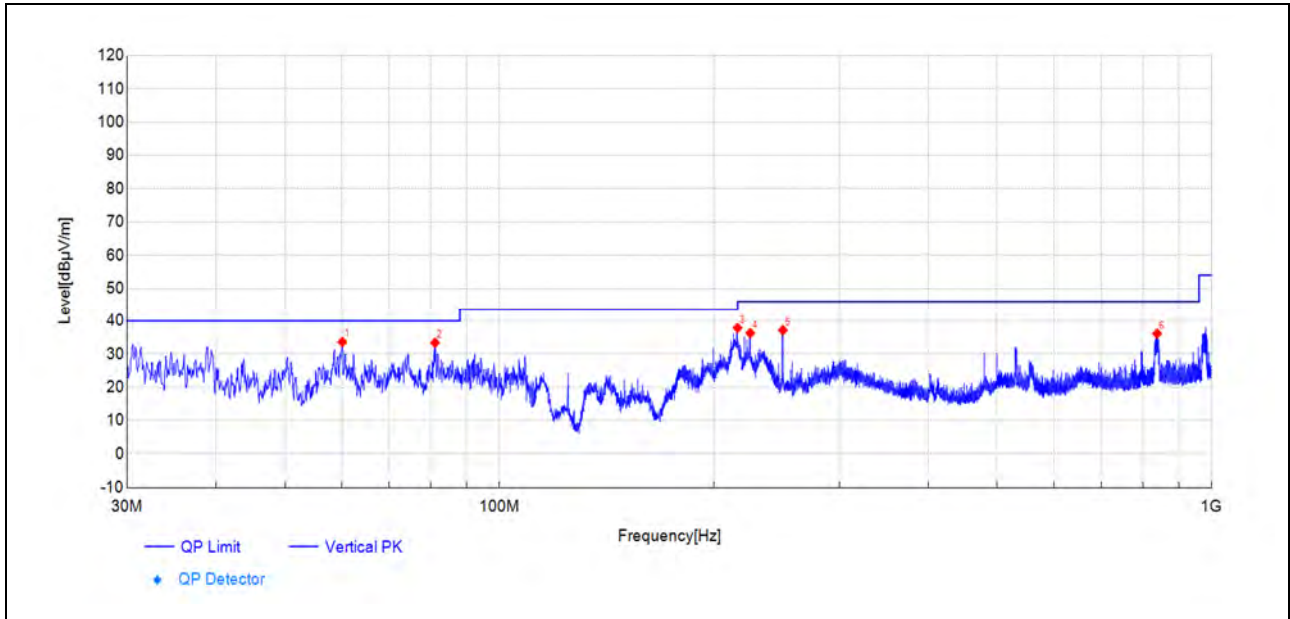
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
106.66	61.2	30.68	-30.480	43.50	12.82	155	325	PK	PASS
140.59	65.2	31.62	-33.580	43.50	11.88	155	98	PK	PASS
211.25	67.8	38.02	-29.760	43.50	5.48	155	1	PK	PASS
223.13	69.9	40.83	-29.050	46.00	5.17	155	124	PK	PASS
250.00	70.8	42.67	-28.120	46.00	3.33	155	98	PK	PASS
836.15	54.0	38.11	-15.880	46.00	7.89	155	110	PK	PASS



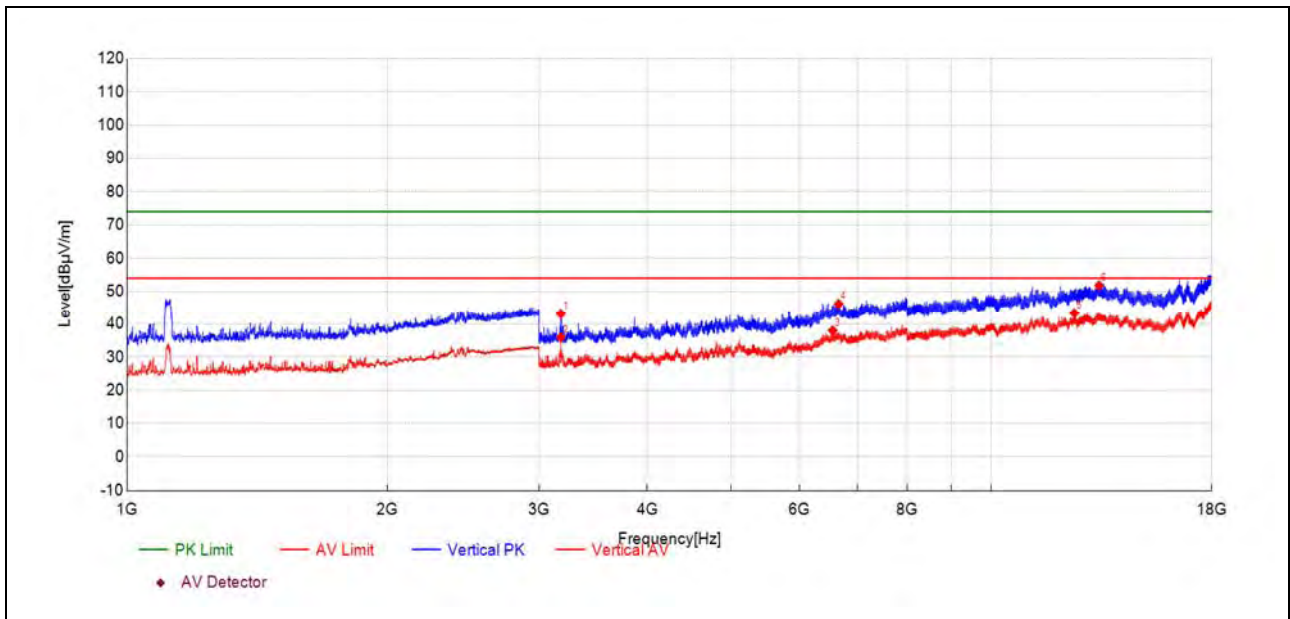
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4823.62	52.8	42.20	-10.550	74.00	31.80	160	220	PK	PASS
4824.05	48.2	37.64	-10.550	54.00	16.36	160	220	AV	PASS
7796.28	41.4	37.87	-3.530	54.00	16.13	160	0	AV	PASS
7944.57	49.5	46.07	-3.450	74.00	27.93	160	0	PK	PASS
13107.72	48.4	52.09	3.690	74.00	21.91	160	0	PK	PASS
13331.44	38.7	43.93	5.240	54.00	10.07	160	196	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

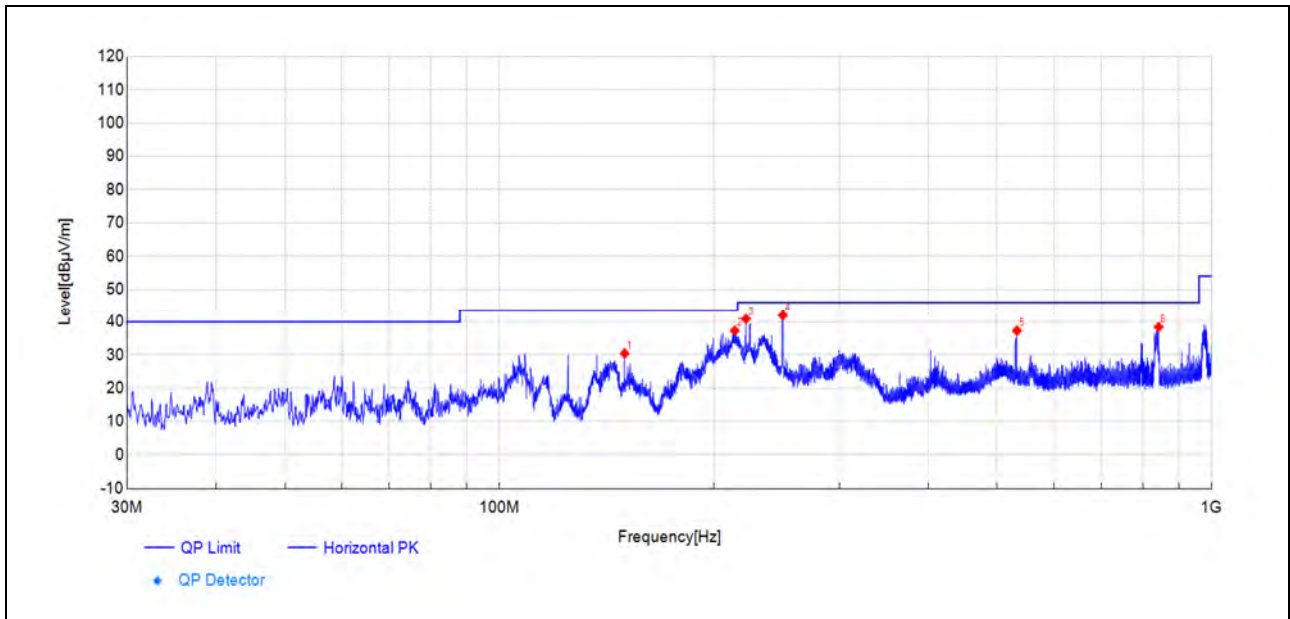
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
60.16	64.6	33.60	-30.970	40.00	6.40	155	150	PK	PASS
81.21	68.4	33.38	-35.010	40.00	6.62	155	150	PK	PASS
215.96	67.4	37.86	-29.500	43.50	5.64	155	176	PK	PASS
224.95	65.3	36.31	-28.960	46.00	9.69	155	138	PK	PASS
250.00	65.3	37.19	-28.120	46.00	8.81	155	36	PK	PASS
837.97	52.0	36.14	-15.850	46.00	9.86	155	188	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

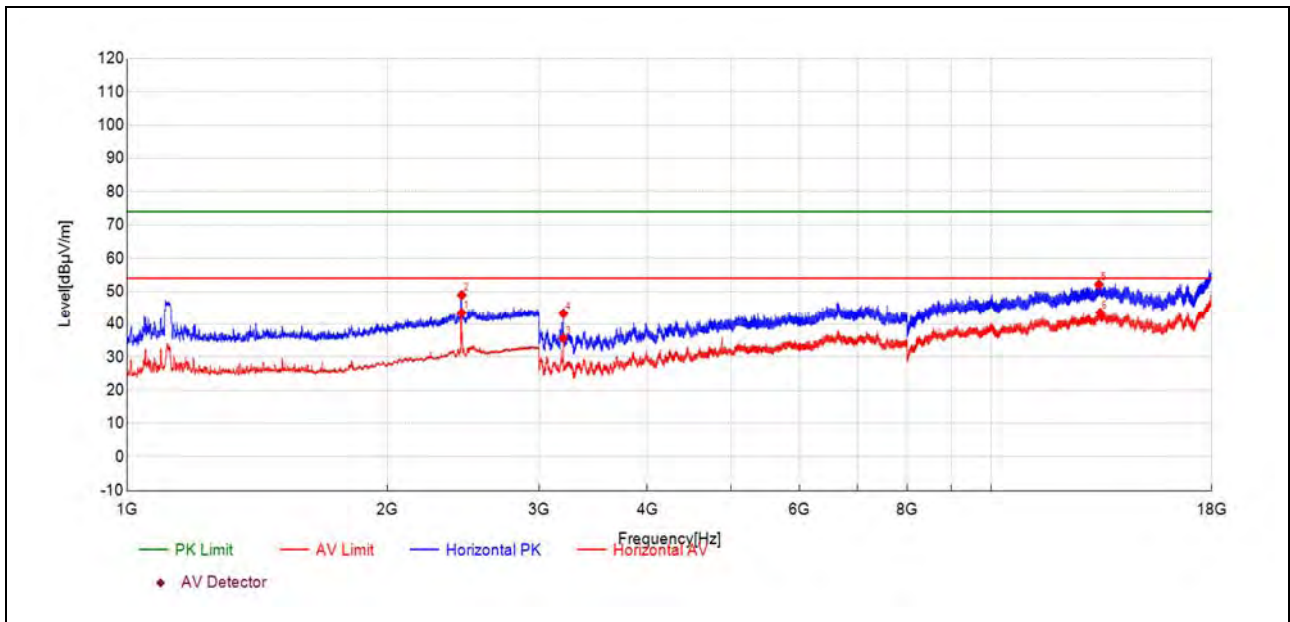
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3177.01	58.7	43.11	-15.590	74.00	30.89	160	200	PK	PASS
3178.72	51.5	35.93	-15.580	54.00	18.07	160	200	AV	PASS
6555.10	42.4	37.98	-4.410	54.00	16.02	160	48	AV	PASS
6660.53	49.9	46.17	-3.770	74.00	27.83	160	300	PK	PASS
12482.41	39.6	43.31	3.730	54.00	10.69	160	173	AV	PASS
13333.15	46.5	51.78	5.240	74.00	22.22	160	173	PK	PASS

Plot for Channel 7



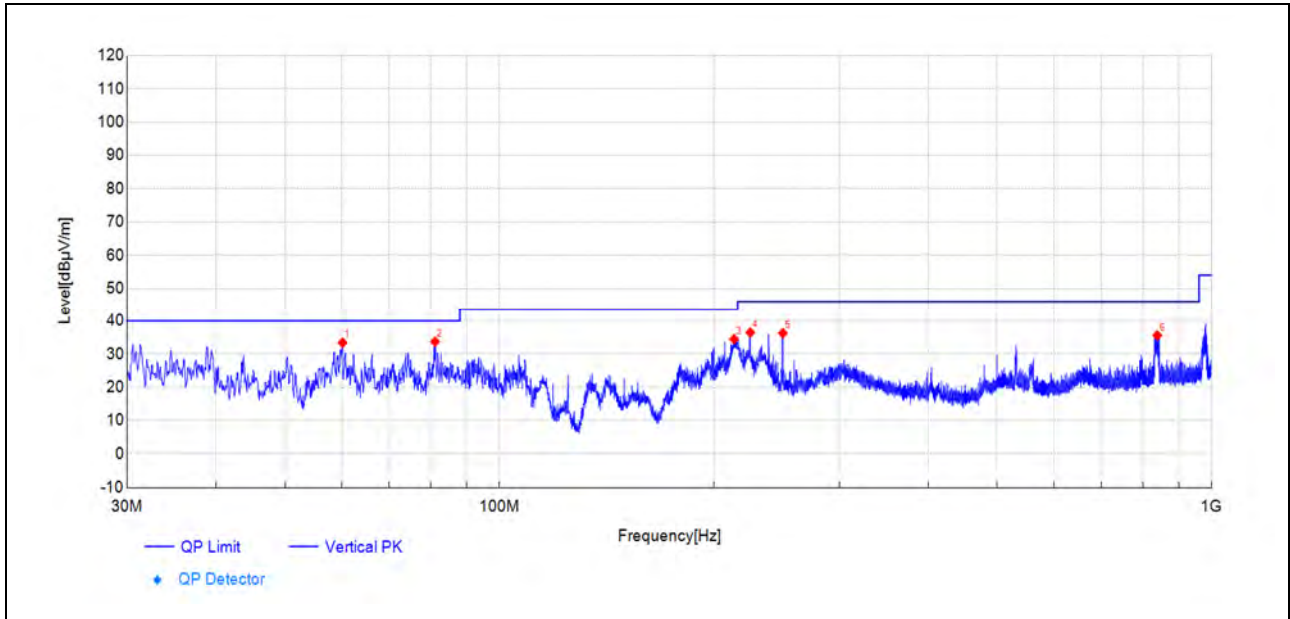
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
149.93	63.8	30.45	-33.390	43.50	13.05	155	108	PK	PASS
213.96	66.9	37.32	-29.620	43.50	6.18	155	134	PK	PASS
221.95	70.0	40.88	-29.110	46.00	5.12	155	0	PK	PASS
250.00	70.1	42.01	-28.120	46.00	3.99	155	108	PK	PASS
532.84	58.7	37.32	-21.390	46.00	8.68	155	122	PK	PASS
842.62	54.1	38.42	-15.710	46.00	7.58	155	108	PK	PASS



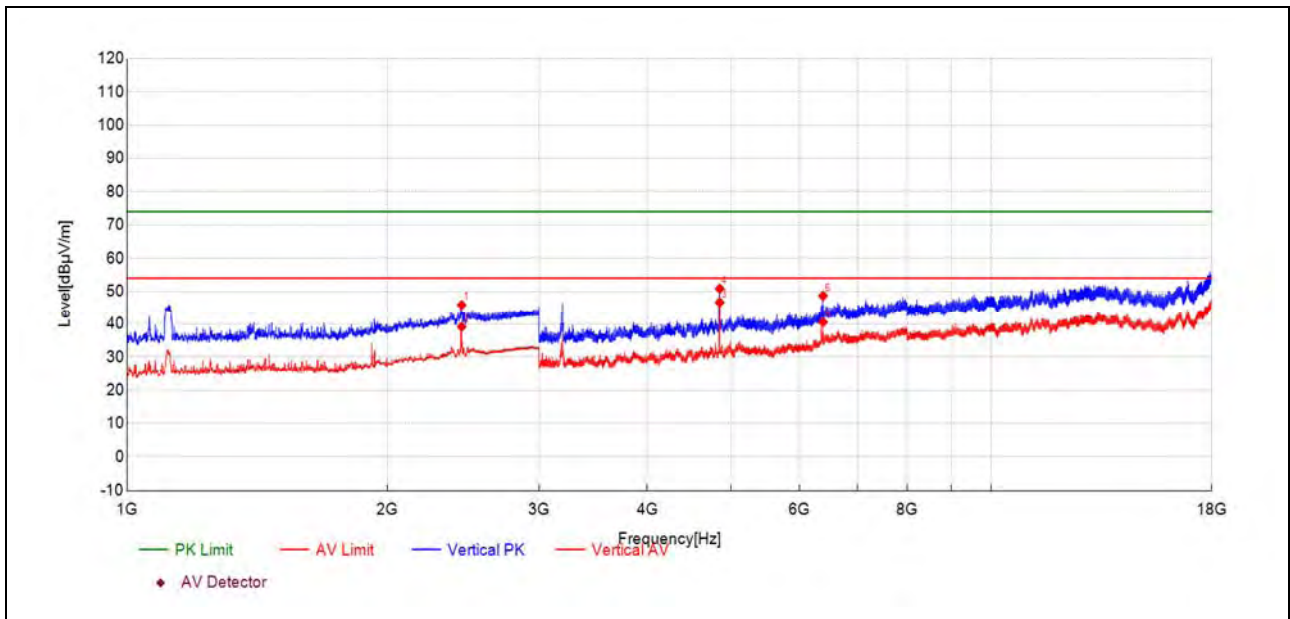
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2439.80	42.4	43.44	1.010	-	-	160	234	AV	NA
2439.80	47.9	48.88	1.010	-	-	160	234	PK	NA
3199.29	51.2	35.66	-15.500	54.00	18.34	160	67	AV	PASS
3199.29	58.7	43.24	-15.500	74.00	30.76	160	67	PK	PASS
13327.15	46.8	52.10	5.270	74.00	21.90	160	0	PK	PASS
13370.87	38.5	43.48	4.950	54.00	10.52	160	118	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

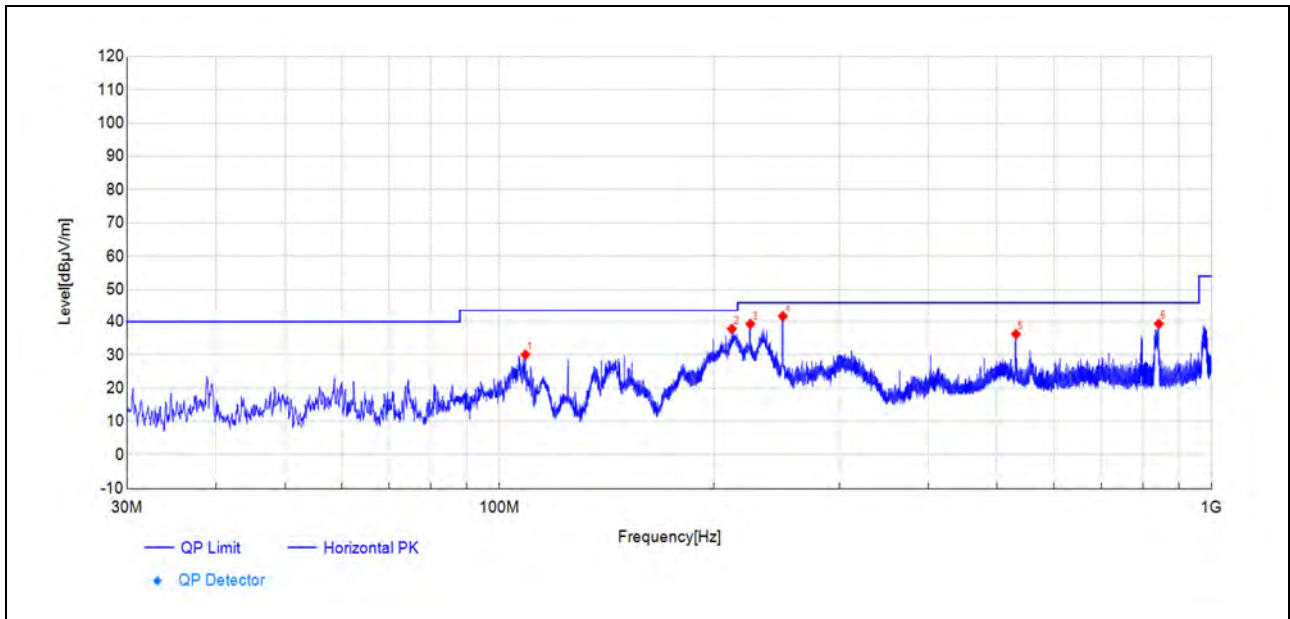
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
60.22	64.4	33.40	-30.990	40.00	6.60	155	137	PK	PASS
81.21	68.7	33.72	-35.010	40.00	6.28	155	137	PK	PASS
213.49	64.1	34.49	-29.640	43.50	9.01	155	149	PK	PASS
225.01	65.4	36.47	-28.960	46.00	9.53	155	149	PK	PASS
250.00	64.4	36.26	-28.120	46.00	9.74	155	61	PK	PASS
838.68	51.5	35.62	-15.830	46.00	10.38	155	200	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

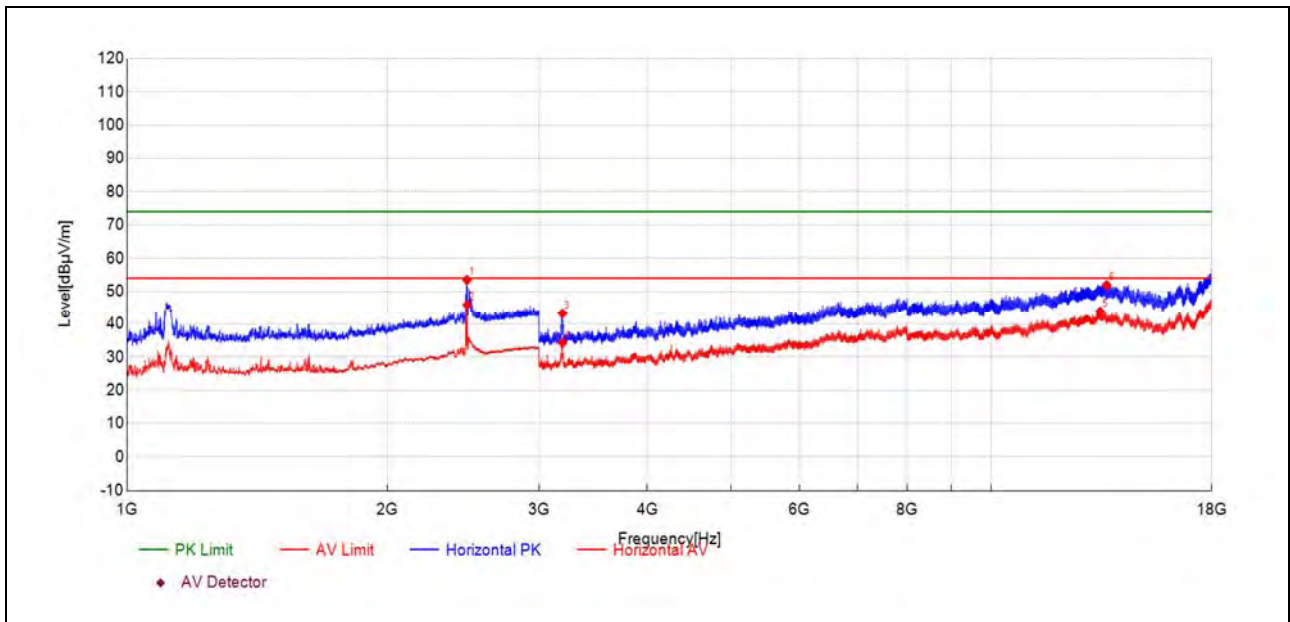
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2439.32	44.9	45.89	1.000	-	-	160	201	PK	NA
2439.32	38.1	39.12	1.000	-	-	160	189	AV	NA
4851.48	57.0	46.66	-10.310	54.00	7.34	160	0	AV	PASS
4852.34	61.1	50.81	-10.300	74.00	23.19	160	0	PK	PASS
6389.24	45.8	40.51	-5.300	54.00	13.49	160	71	AV	PASS
6389.67	53.9	48.64	-5.290	74.00	25.36	160	47	PK	PASS

Plot for Channel 13



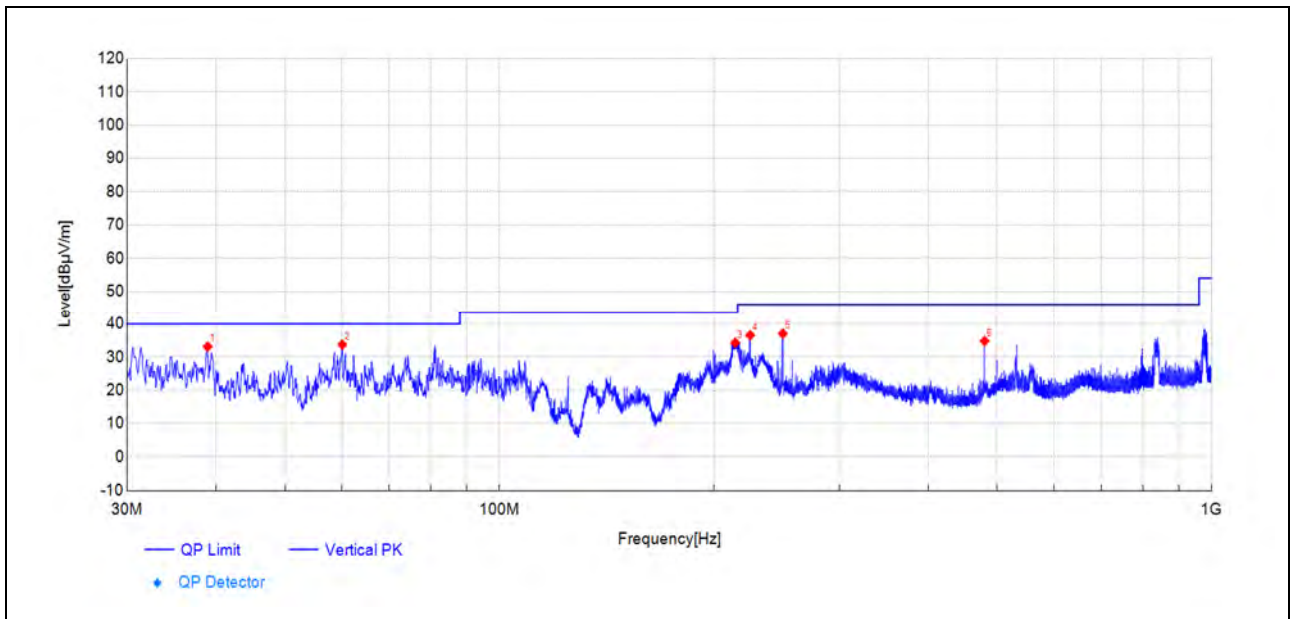
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
108.78	60.8	30.08	-30.680	43.50	13.42	155	286	PK	PASS
211.96	67.6	37.85	-29.720	43.50	5.65	155	0	PK	PASS
225.01	68.3	39.33	-28.960	46.00	6.67	155	109	PK	PASS
250.00	69.8	41.66	-28.120	46.00	4.34	155	96	PK	PASS
531.08	57.7	36.26	-21.400	46.00	9.74	155	123	PK	PASS
842.79	55.1	39.36	-15.700	46.00	6.64	155	96	PK	PASS



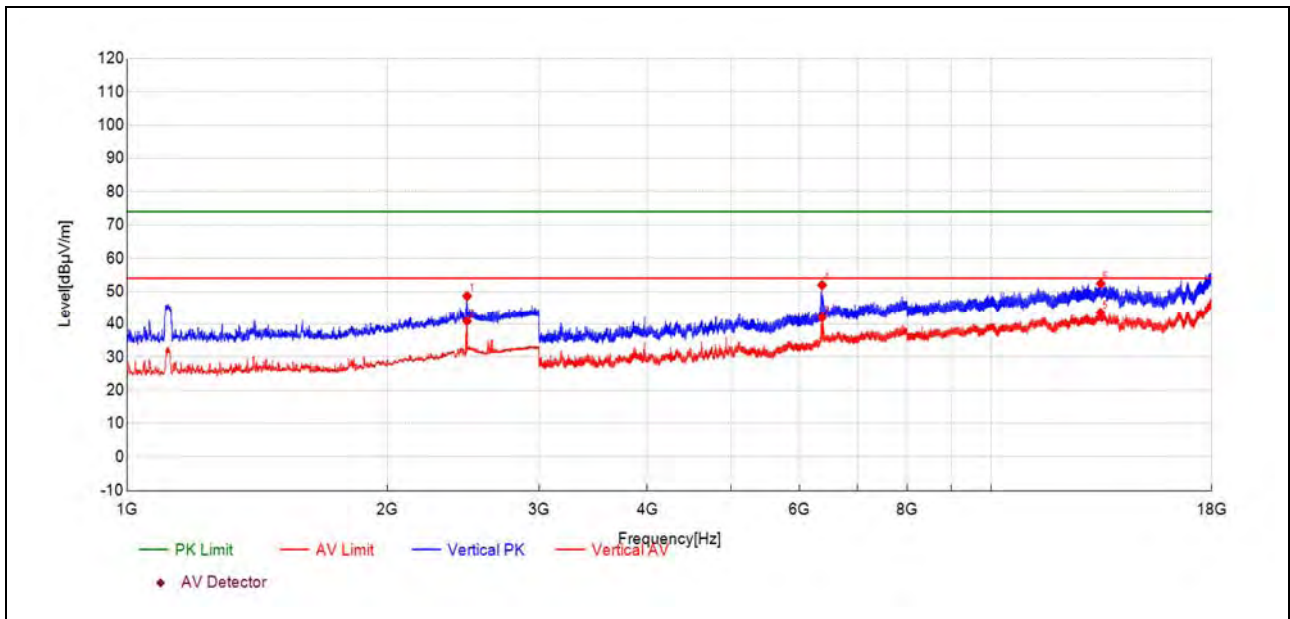
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2474.48	52.5	53.47	0.950	-	-	160	226	PK	NA
2475.46	45.0	45.93	0.940	-	-	160	226	AV	NA
3190.72	58.8	43.25	-15.540	74.00	30.75	160	67	PK	PASS
3191.58	49.8	34.29	-15.540	54.00	19.71	160	67	AV	PASS
13373.87	38.9	43.88	4.940	54.00	10.12	160	146	AV	PASS
13610.45	47.1	51.89	4.800	74.00	22.11	160	120	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
38.94	62.6	33.14	-29.430	40.00	6.86	155	354	PK	PASS
60.16	64.7	33.76	-30.970	40.00	6.24	155	126	PK	PASS
214.31	63.9	34.29	-29.610	43.50	9.21	155	149	PK	PASS
224.95	65.6	36.59	-28.960	46.00	9.41	155	137	PK	PASS
250.00	65.2	37.07	-28.120	46.00	8.93	155	48	PK	PASS
479.93	57.2	34.82	-22.330	46.00	11.18	155	226	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
2474.97	47.7	48.60	0.940	-	-	160	190	PK	NA
2474.97	39.9	40.82	0.940	-	-	160	190	AV	NA
6372.95	47.4	41.93	-5.480	54.00	12.07	160	96	AV	PASS
6373.81	57.4	51.90	-5.470	74.00	22.10	160	96	PK	PASS
13383.73	38.6	43.49	4.860	54.00	10.51	160	6	AV	PASS
13396.15	47.6	52.36	4.770	74.00	21.64	160	120	PK	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 —————