



TEST REPORT

APPLICANT : Rhino Mobility LLC
PRODUCT NAME : Smartphone
MODEL NAME : C6R
BRAND NAME : RHINO
FCC ID : 2AUOUC6R
STANDARD(S) : 47 CFR Part 15 Subpart C
RECEIPT DATE : 2023-08-04
TEST DATE : 2023-10-18 to 2023-11-23
ISSUE DATE : 2023-11-27



Edited by: Peng Mi
Peng Mi (Rapporteur)
Approved by: Shen Junsheng
Shen Junsheng (Supervisor)

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Annex A Test Data and Result28

Change History		
Version	Date	Reason for change
1.0	2023-11-27	First edition



1. Summary of Test Result

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	No deviation
2	15.247(a) 15.247(h)	Hopping Mechanism	N/A	N/A	PASS	No deviation
3	15.247(a)	Number of Hopping Frequency	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
4	ANSI C63.10	Duty Cycle	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
5	15.247(b)	Maximum Peak Conducted Output Power	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
6	15.247(b)	Maximum Average Conducted Output Power	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
7	15.247(a)	20dB Bandwidth	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
8	15.247(a)	Carrier Frequency Separation	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
9	15.247(a)	Time of Occupancy (Dwell time)	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
10	15.247(d)	Conducted Spurious Emission	Nov. 22, 2023	Zhong Yanshan	PASS	No deviation
11	15.207	Conducted Emission	Oct. 18, 2023	Wang Deyong	PASS	No deviation
12	15.247(d)	Restricted Frequency Bands	Oct. 25, 2023	Gao Jianrou Li Hanbin	PASS	No deviation
13	15.209,	Radiated	Oct. 26, 2023	Gao Jianrou	PASS	No deviation



	15.247(d)	Emission		Li Hanbin		
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Note 1: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2013, KDB558074 D01 v05r02 and DA 00-075.

Note 2: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.1. Testing Applied Standards

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

- 47 CFR Part 15 Subpart C Radio Frequency Devices



1.2. Test Equipment List

1.2.1 Conducted Test Equipments

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

1.2.2 Conducted Emission Test Equipments

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

1.2.3 List of Software Used

Description	Manufacturer	Software Version
Test System	MaiWei	2.0.0.0
Morlab EMCR	Morlab	V1.2
TS+ -[JS32-CE]	Tonscend	V2.5.0.0

**1.2.4 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY54130016	N9038A	Agilent	2023.06.21	2024.06.20
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2023.07.07	2024.06.30
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2023.06.26	2024.06.25
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2023.07.07	2024.06.30
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2023.07.01	2024.06.30
Preamplifier (10MHz-6GHz)	46732	S10M100L38 02	LUCIX CORP.	2023.06.27	2024.06.26
Preamplifier (2GHz-18GHz)	61171/61172	S020180L32 03	LUCIX CORP.	2023.06.27	2024.06.26
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2023.07.04	2024.07.03
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-K K-0.5	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-K KF-2	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-N N-5	Qualwave	2023.07.04	2024.07.03
Notch Filter	N/A	WRCG-2400-2483.5-60SS	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.05.10	2025.05.09



1.3. Measurement Uncertainty

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

1.4. Testing Laboratory

Laboratory Name	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
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	Rhino Mobility LLC
Applicant Address	8 The Green, Suite A, Dover, Delaware, 19901, USA
Manufacturer	Rhino Mobility LLC
Manufacturer Address	8 The Green, Suite A, Dover, Delaware, 19901, USA

2.2. Information of EUT

Product Name:	Smartphone	
Sample No.:	2#	
Hardware Version:	Q6010R_MB_V1.0	
Software Version:	C6R(001)_20231103	
Equipment Type:	Bluetooth classic	
Bluetooth Version:	5.1	
Modulation Type:	FHSS (GFSK(1Mbps), $\pi/4$ -DQPSK(EDR 2Mbps), 8-DPSK(EDR 3Mbps))	
Operating Frequency Range:	2402MHz-2480MHz	
Antenna Type:	PIFA Antenna	
Antenna Gain:	1.64dBi	
Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	BPC6R
	Serial No.:	N/A
	Capacity:	4000mAh
	Rated Voltage:	3.85V
	Charge Limit:	4.4V
	Manufacturer:	Phenix New Energy (Huizhou) Co., Ltd.



Accessory Information:	Adaptor	
	Brand Name:	RHINO
	Model No.:	TPA-10S120150UU01
	Serial No.:	N/A
	Rated Output:	3.6V-6.0V=3.0A; 6.0V-9.0V=2.0A; 9.0V-12.0V=1.5A
	Rated Input:	100-240V~50/60Hz, 0.6A
	Manufacturer:	Shenzhen Tianyin Electronics Co., Ltd.
	USB Cable 1	
	Model No.:	188.123022001-09
	Manufacturer:	Yibin Ruirun Electronics Co., Ltd.
	USB Cable 2	
	Model No.:	188.123022002-09
	Manufacturer:	Yibin Ruirun Electronics Co., Ltd.
	USB Cable 3	
	Model No.:	USB TYPE A TO C 2.0 Cable 2.0m
	Manufacturer:	HUIZHOU WASHIN ELECTRONICTS CO.,LTD.
	USB Cable 4	
	Model No.:	USB TYPE A TO C 2.0 Cable 1.0m
Manufacturer:	HUIZHOU WASHIN ELECTRONICTS CO.,LTD.	

Note 1: We use the dedicated software to control the EUT continuous transmission.

Note 2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



2.3. Channel List of EUT

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

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

2.4. Test Configuration of EUT

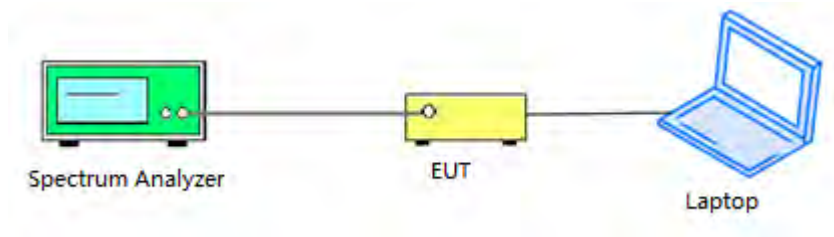
Test mode is used to control the EUT under the maximum power level during test.

2.5. Test Conditions

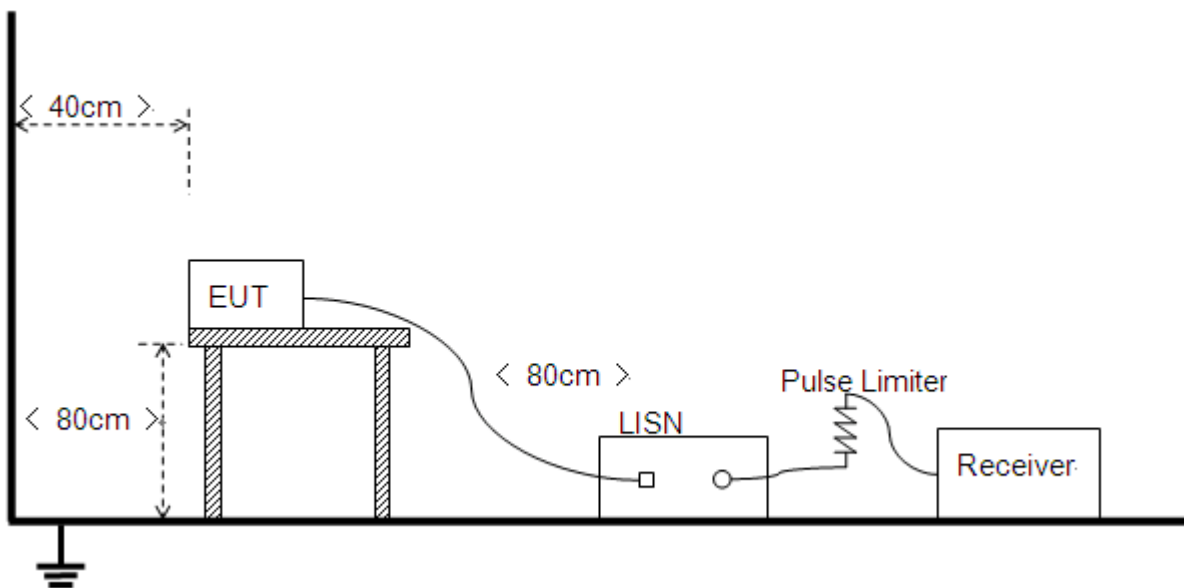
Temperature (°C)	15-35
Relative Humidity (%)	30-60
Atmospheric Pressure (kPa)	86-106

2.6. Test Setup Layout Diagram

2.6.1. Conducted Measurement

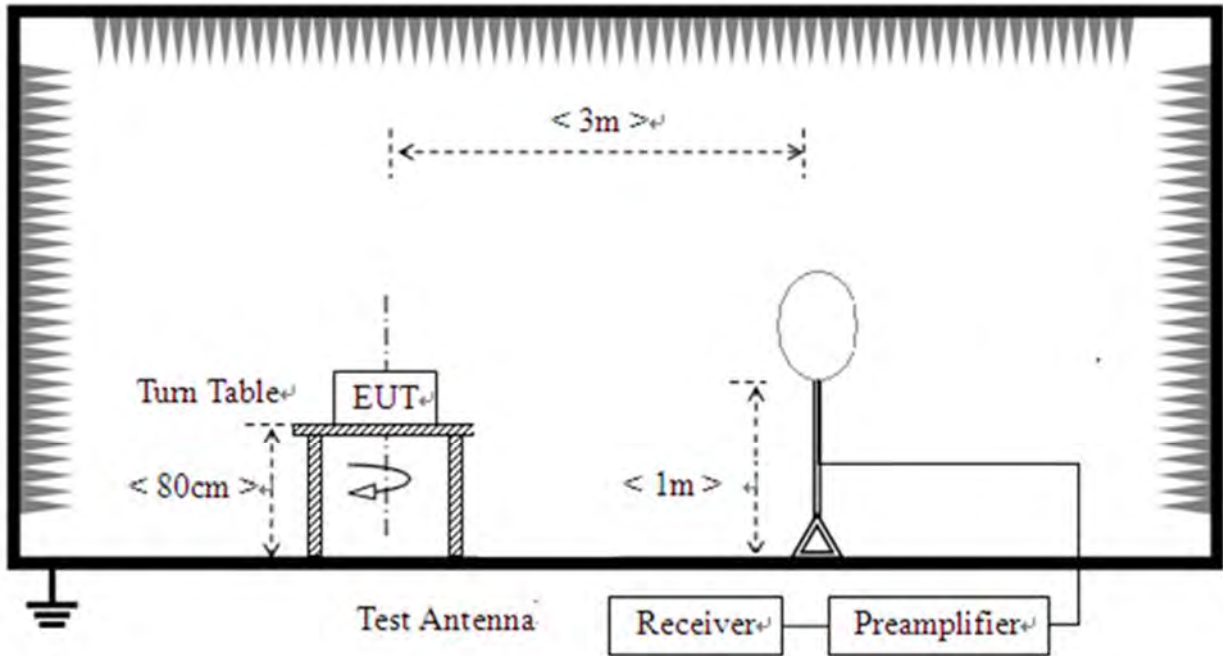


2.6.2. Conducted Emission Measurement

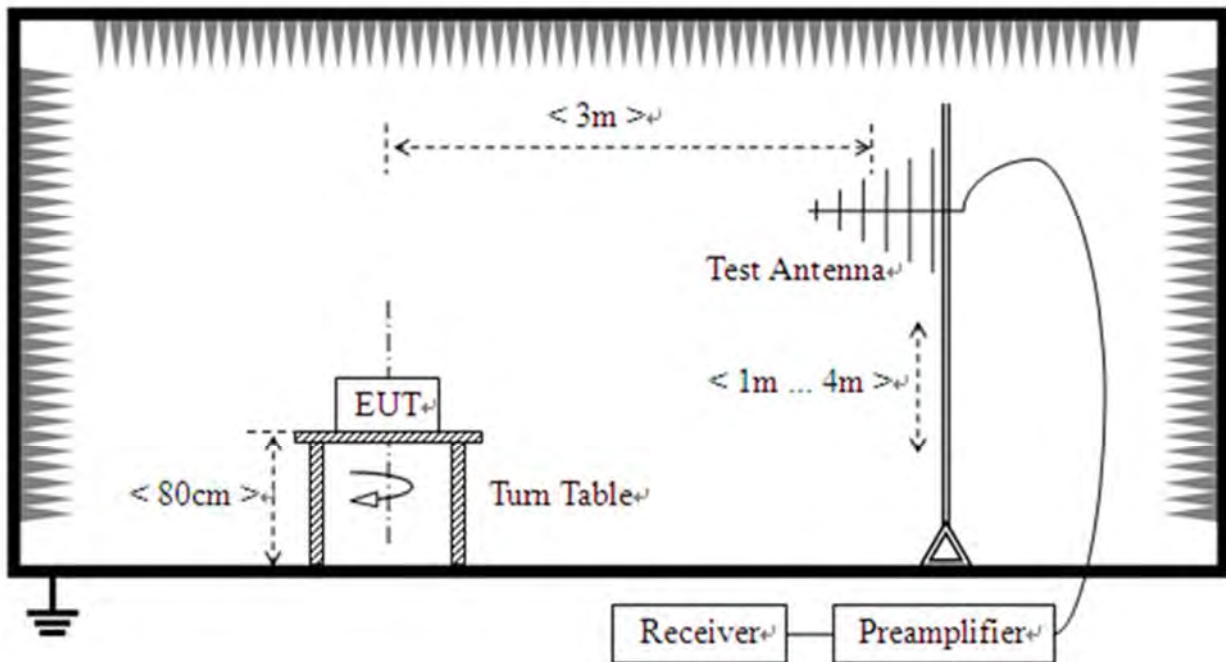


2.6.3.Radiation Measurement

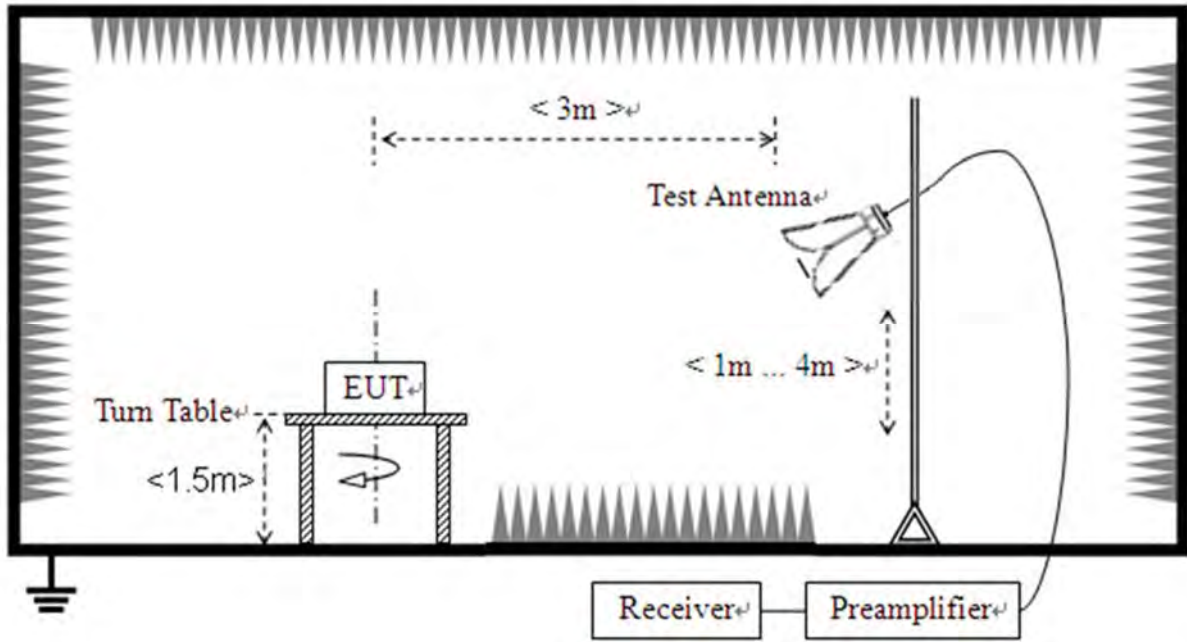
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz 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

Inside of the EUT has a PIFA antenna coupled with the metal shrapnel. Please refer to the EUT internal photos.

3.2. Hopping Mechanism

3.2.1. Requirement

According to FCC section 15.247(a)(1), a frequency hopping spread spectrum system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

According to FCC section 15.247(h), the incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

3.2.2. Test Result

The hopping mechanism of the EUT is in compliance with the document "**Bluetooth core specification v5.1**".



3.3. Number of Hopping Frequency

3.3.1. Requirement

According to FCC section 15.247(a)(1)(iii), frequency hopping systems operating in the 2400MHz to 2483.5MHz bands shall use at least 15 hopping frequencies.

3.3.2. Test Procedures

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = the frequency band of operation

RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize

3.3.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.3.4. Test Result

Refer to Annex A.1 in this report.



3.4. Duty Cycle of Test Signal

3.4.1. Requirement

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%). When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be used to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration (T) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can then be used if the measurement/sweep time of the analyzer can be set such that it does not exceed T at any time that data are being acquired (i.e., no transmitter OFF-time is to be considered).

When continuous transmission cannot be achieved and sweep triggering/signal gating cannot be implemented, alternative procedures are provided that can be used to measure the average power; however, they will require an additional measurement of the transmitter duty cycle (D). Within this sub clause, the duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than $\pm 2\%$; otherwise, the duty cycle is considered to be non constant.

3.4.2. Test Result

Refer to Annex A.2 in this report.



3.5. Maximum Peak Conducted Output Power

3.5.1. Requirement

According to FCC section 15.247(b)(1), for frequency hopping systems that operates in the 2400MHz to 2483.5MHz band employing at least 75 hopping channels, the maximum peak output power of the intentional radiator shall not exceed 1Watt. For all other frequency hopping systems in the 2400MHz to 2483.5MHz band, it is 0.125Watts.

3.5.2. Test Procedures

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

3.5.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.5.4. Test Result

Refer to Annex A.3 in this report.



3.6. Maximum Average Conducted Output Power

3.6.1. Requirement

According to FCC section 15.247(b)(1), for frequency hopping systems that operates in the 2400MHz to 2483.5MHz band employing at least 75 hopping channels, the maximum peak output power of the intentional radiator shall not exceed 1Watt. For all other frequency hopping systems in the 2400MHz to 2483.5MHz band, it is 0.125Watts.

3.6.2. Test Procedures

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

3.6.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.6.4. Test Result

Refer to Annex A.4 in this report.



3.7.20 dB Bandwidth

3.7.1.Requirement

According to FCC section 15.247(a)(1), the 20 dB bandwidth is known as the 99% emission bandwidth, or 20 dB bandwidth ($10 \cdot \log 1\% = 20 \text{ dB}$) taking the total RF output power.

3.7.1.Test Procedures

Use the following spectrum analyzer settings:

Span = between 2 to 5 times the OBW, centered on the test channel

RBW= 1% to 5% of the OBW

VBW $\geq 3 \times$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

3.7.2.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.7.3.Test Result

Refer to Annex A.5 in this report.



3.8. Carried Frequency Separation

3.8.1. Requirement

According to FCC section 15.247(a)(1), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

3.8.2. Test Procedures

The EUT must have its hopping function enabled. According to DA 00-705, use the following spectrum analyzer settings:

Span = wide enough to capture the peaks of two adjacent channels

Resolution (or IF) Bandwidth (RBW) \geq 1% of the span

Video (or Average) Bandwidth (VBW) \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

3.8.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.8.4. Test Result

Refer to Annex A.6 in this report.



3.9. Time of Occupancy (Dwell time)

3.9.1. Requirement

According to FCC section 15.247(a) (1) (iii), frequency hopping systems in the 2400 - 2483.5MHz band shall use at least 15 non-overlapping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

3.9.2. Test Procedures

Normal Mode:

DH1: Dwell time equal to Pulse time (ms) * (1600 / 2 / 79) * 31.6 Millisecond
DH3: Dwell time equal to Pulse time (ms) * (1600 / 4 / 79) * 31.6 Millisecond
DH5: Dwell time equal to Pulse Time (ms) * (1600 / 6 / 79) * 31.6 Millisecond

AFH Mode:

DH1: Dwell time equal to Pulse time (ms) * (800 / 2 / 20) * (0.4 * 20) Millisecond
DH3: Dwell time equal to Pulse time (ms) * (800 / 4 / 20) * (0.4 * 20) Millisecond
DH5: Dwell time equal to Pulse Time (ms) * (800 / 6 / 20) * (0.4 * 20) Millisecond.

3.9.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.9.4. Test Result

Refer to Annex A.7 in this report.



3.10. Conducted Spurious Emissions and Band Edge

3.10.1. 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.

3.10.2. Test Procedures

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

RBW = 100 kHz

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize.

3.10.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.10.4. Test Result

Refer to Annex A.8 and A.9 in this report.



3.11. Conducted Emission

3.11.1.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.

3.11.2.Test Procedures

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

3.11.3.Test Setup Layout

Refer to chapter 2.6.2 in this report.

3.11.4.Test Result

Refer to Annex A.10 in this report.



3.12. Restricted Frequency Bands

3.12.1.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).

3.12.2.Test Procedures

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1\text{GHz}$, 100 kHz for $f < 1\text{GHz}$

VBW = 3 MHz

Sweep = auto

Detector function = peak/average

Trace = max hold

Allow the trace to stabilize

3.12.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.12.4.Test Result

Refer to Annex A.11 in this report.



3.13. Radiated Emission

3.13.1.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).



3.13.2. Test Procedures

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

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

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

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

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

3.13.3. Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.13.4. Test Result

Refer to Annex A.12 in this report.



Annex A Test Data and Result

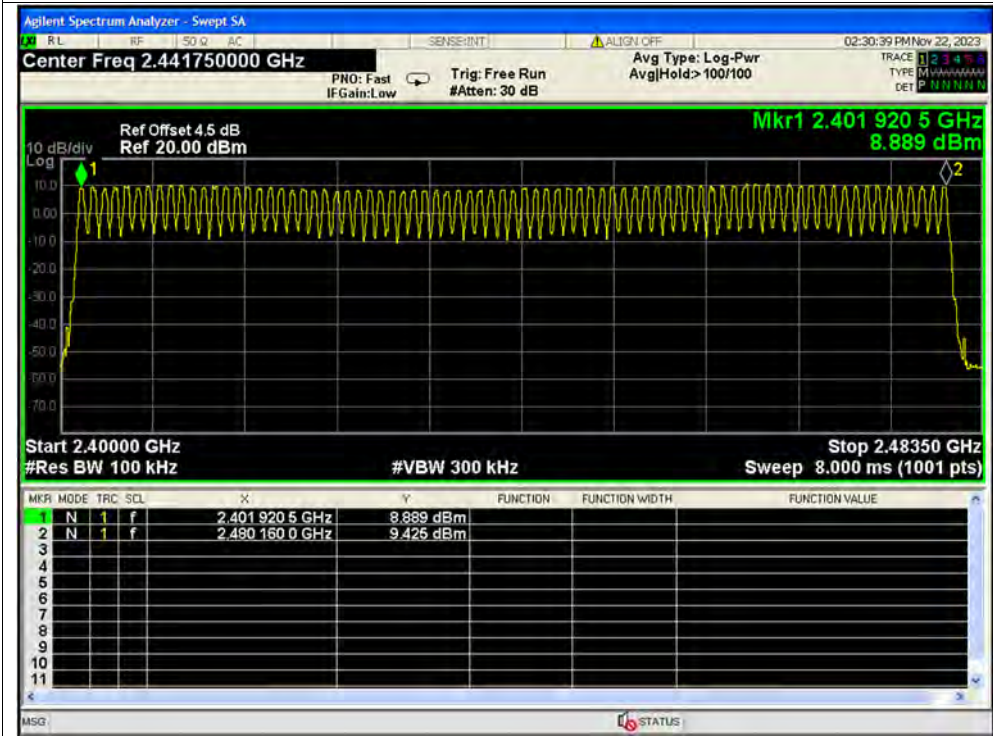
A.1. Number of Hopping Frequency

Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

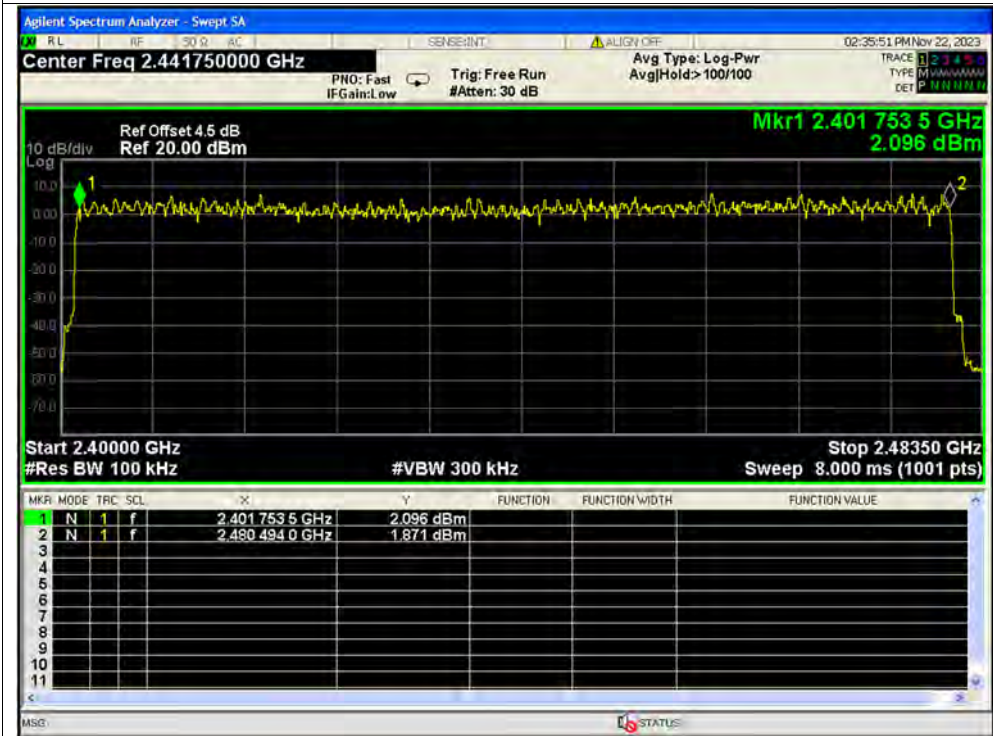


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1

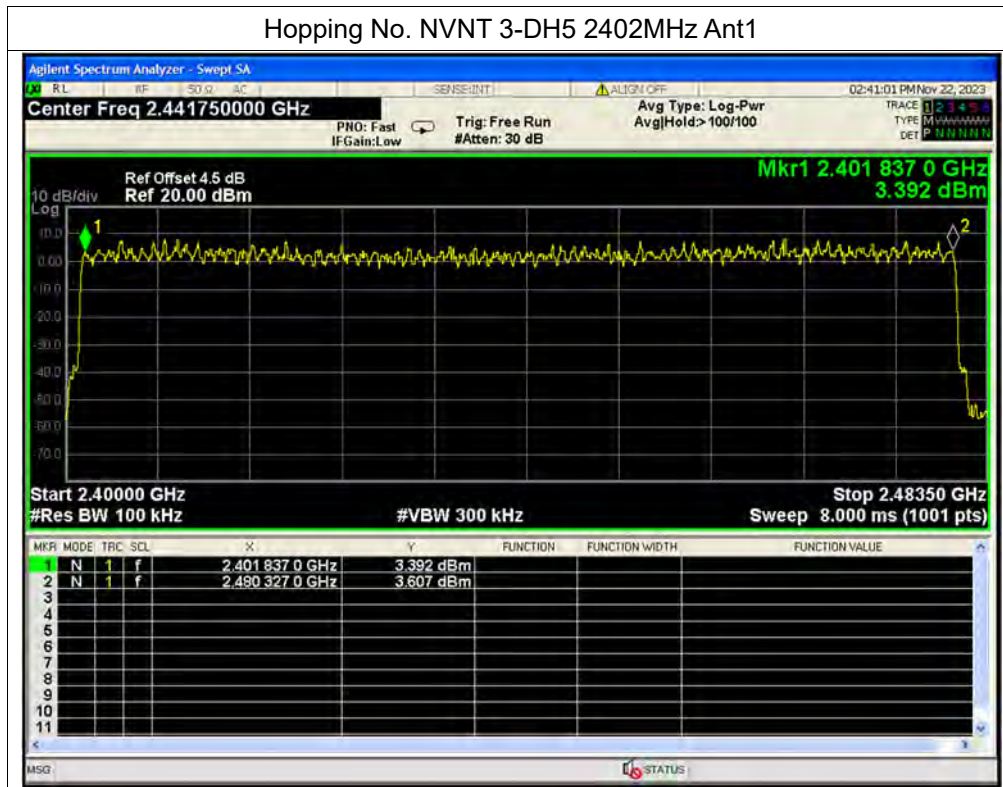


Hopping No. NVNT 2-DH5 2402MHz Ant1





Hopping No. NVNT 3-DH5 2402MHz Ant1





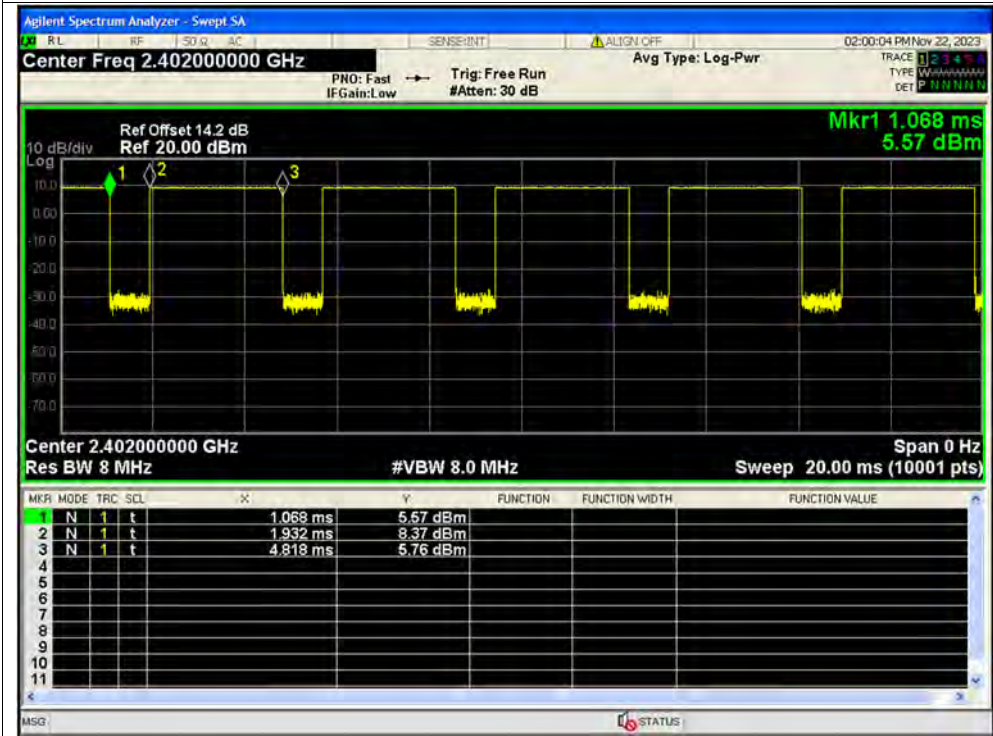
A.2. Duty Cycle of Test Signal

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.96	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.99	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2402	Ant1	77.06	1.13	0.35
NVNT	2-DH5	2441	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2480	Ant1	77.01	1.13	0.35
NVNT	3-DH5	2402	Ant1	77.04	1.13	0.35
NVNT	3-DH5	2441	Ant1	77.04	1.13	0.35
NVNT	3-DH5	2480	Ant1	77.04	1.13	0.35



Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

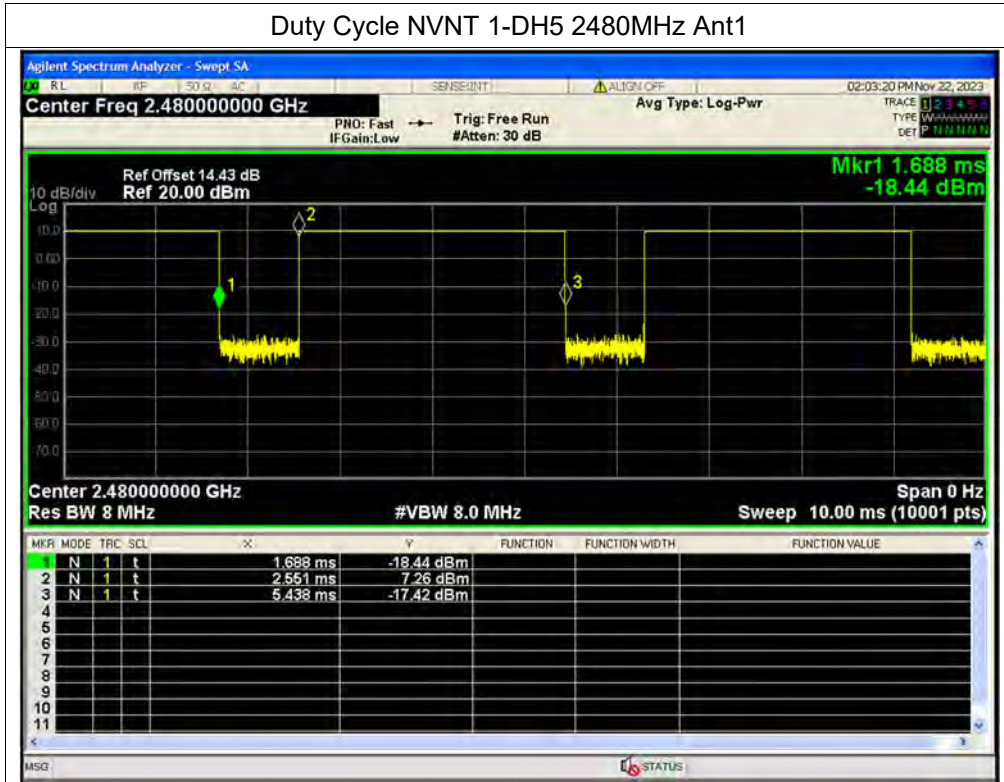


Duty Cycle NVNT 1-DH5 2441MHz Ant1

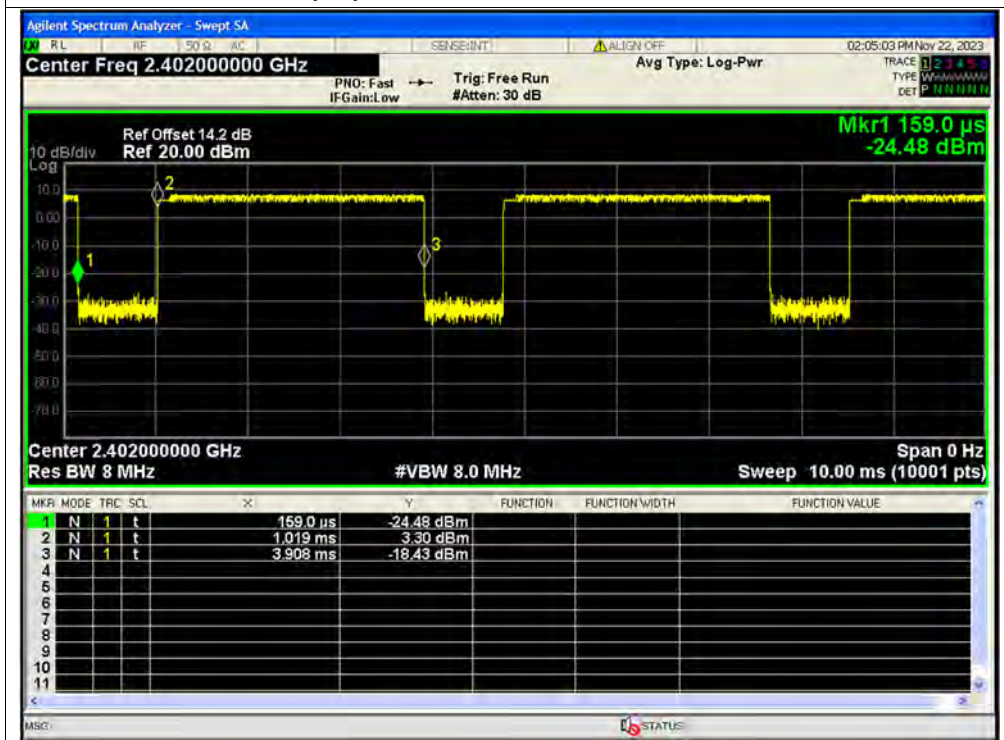




Duty Cycle NVNT 1-DH5 2480MHz Ant1

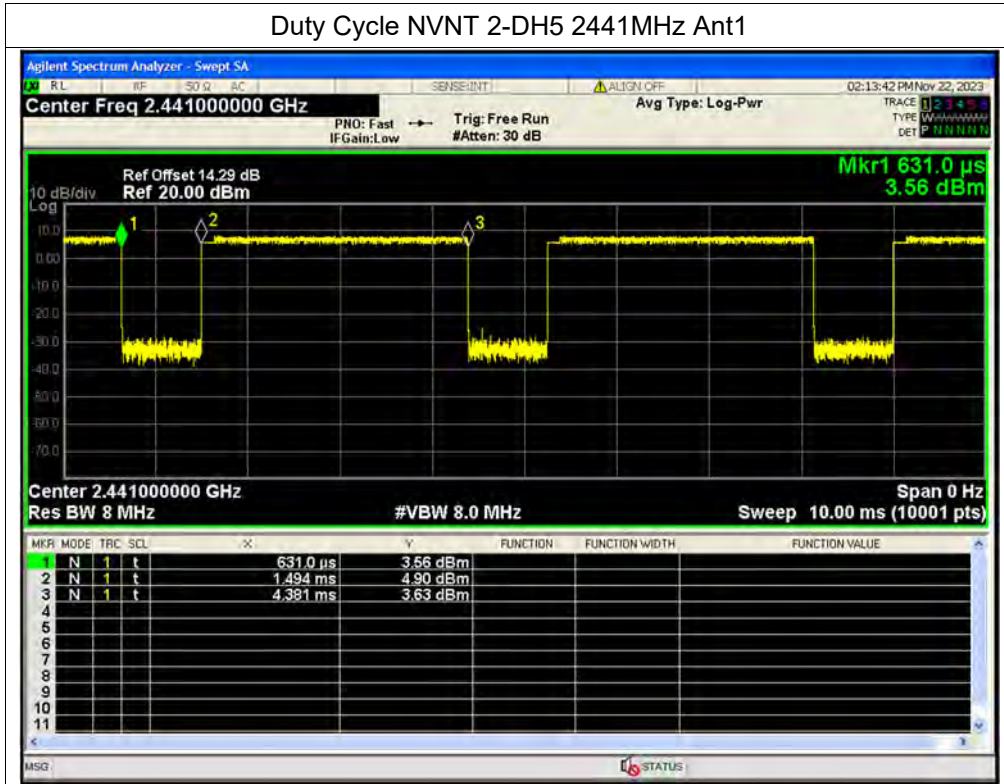


Duty Cycle NVNT 2-DH5 2402MHz Ant1

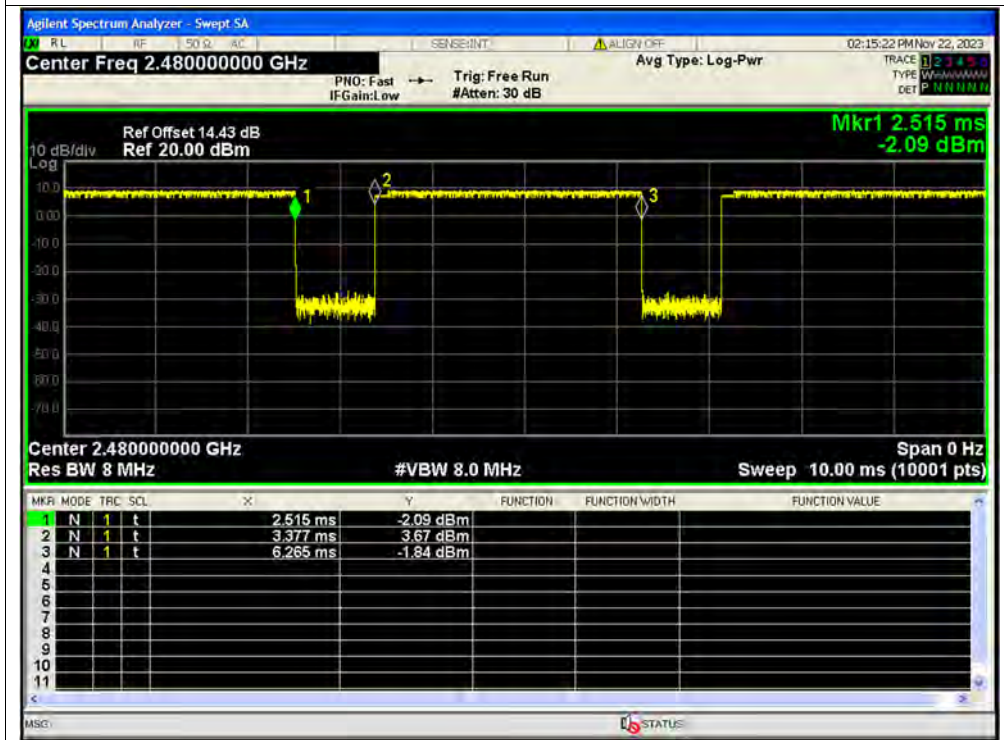




Duty Cycle NVNT 2-DH5 2441MHz Ant1

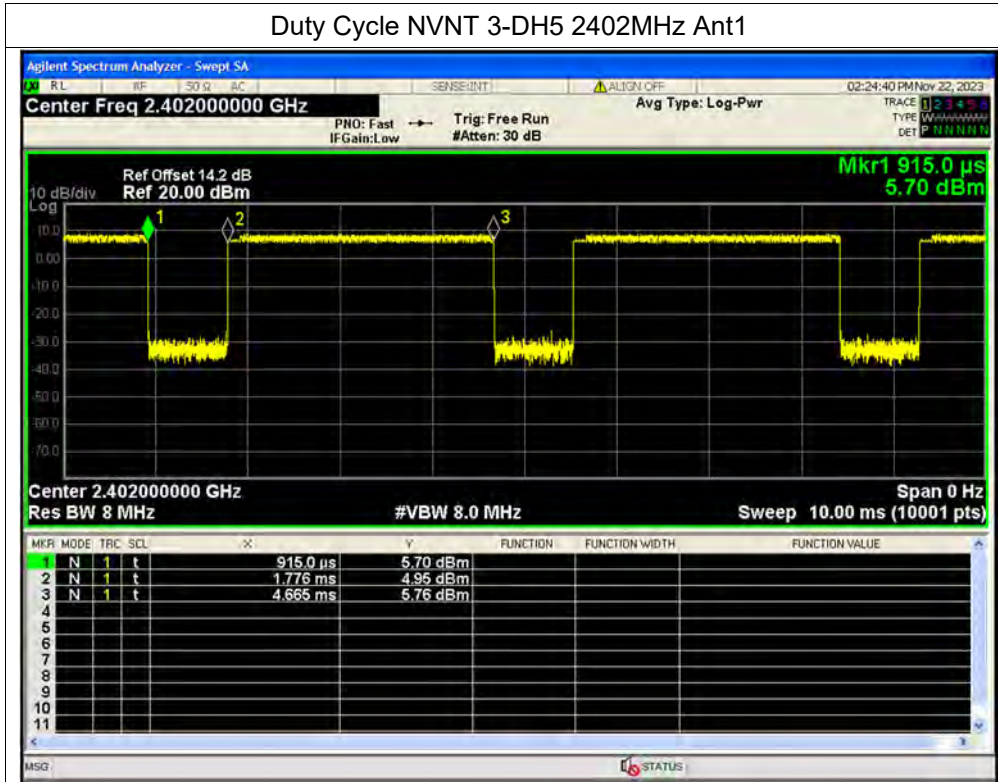


Duty Cycle NVNT 2-DH5 2480MHz Ant1

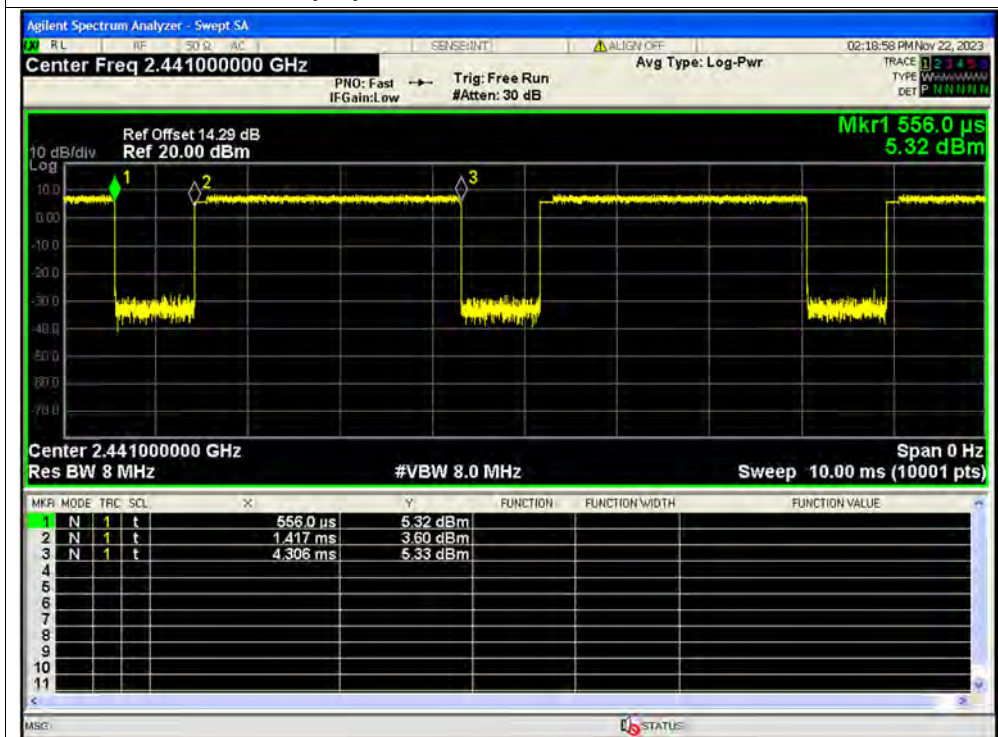




Duty Cycle NVNT 3-DH5 2402MHz Ant1

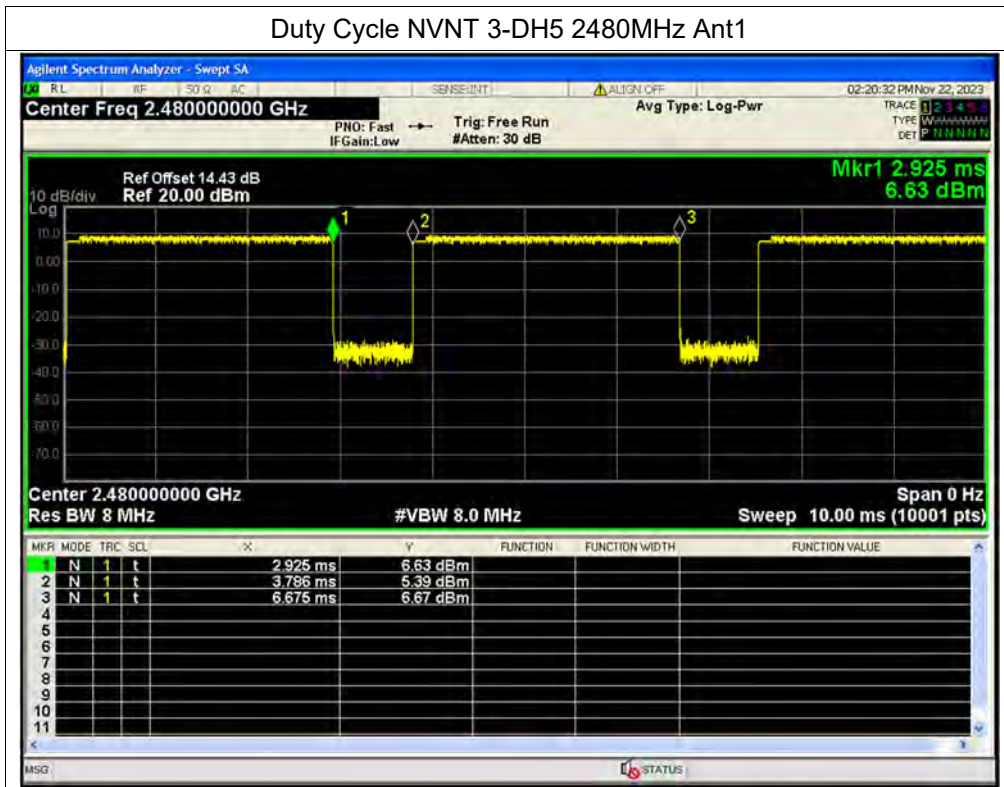


Duty Cycle NVNT 3-DH5 2441MHz Ant1





Duty Cycle NVNT 3-DH5 2480MHz Ant1



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

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Total Power (W)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	9.17	0	9.17	0.00826	21	Pass
NVNT	1-DH5	2441	Ant1	8.64	0	8.64	0.00731	21	Pass
NVNT	1-DH5	2480	Ant1	9.83	0	9.83	0.00962	21	Pass
NVNT	2-DH5	2402	Ant1	8.26	0	8.26	0.0067	21	Pass
NVNT	2-DH5	2441	Ant1	7.8	0	7.8	0.00603	21	Pass
NVNT	2-DH5	2480	Ant1	9.03	0	9.03	0.008	21	Pass
NVNT	3-DH5	2402	Ant1	8.69	0	8.69	0.0074	21	Pass
NVNT	3-DH5	2441	Ant1	8.1	0	8.1	0.00646	21	Pass
NVNT	3-DH5	2480	Ant1	9.3	0	9.3	0.00851	21	Pass



Test Graphs

Peak Power NVNT 1-DH5 2402MHz Ant1



Peak Power NVNT 1-DH5 2441MHz Ant1





Peak Power NVNT 1-DH5 2480MHz Ant1



Peak Power NVNT 2-DH5 2402MHz Ant1





Peak Power NVNT 2-DH5 2441MHz Ant1



Peak Power NVNT 2-DH5 2480MHz Ant1



Peak Power NVNT 3-DH5 2402MHz Ant1



Peak Power NVNT 3-DH5 2441MHz Ant1





Peak Power NVNT 3-DH5 2480MHz Ant1



**A.4. Maximum Average Conducted Output Power**

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Total Power (W)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	7.77	1.14	8.91	0.00778	21	Pass
NVNT	1-DH5	2441	Ant1	7.38	1.14	8.52	0.00711	21	Pass
NVNT	1-DH5	2480	Ant1	8.2	1.14	9.34	0.00859	21	Pass
NVNT	2-DH5	2402	Ant1	4.69	1.13	5.82	0.00382	21	Pass
NVNT	2-DH5	2441	Ant1	4.12	1.14	5.26	0.00336	21	Pass
NVNT	2-DH5	2480	Ant1	5.38	1.13	6.51	0.00448	21	Pass
NVNT	3-DH5	2402	Ant1	4.51	1.13	5.64	0.00366	21	Pass
NVNT	3-DH5	2441	Ant1	4.66	1.13	5.79	0.00379	21	Pass
NVNT	3-DH5	2480	Ant1	5.29	1.13	6.42	0.00439	21	Pass



Test Graphs

Average Power NVNT 1-DH5 2402MHz Ant1



Average Power NVNT 1-DH5 2441MHz Ant1

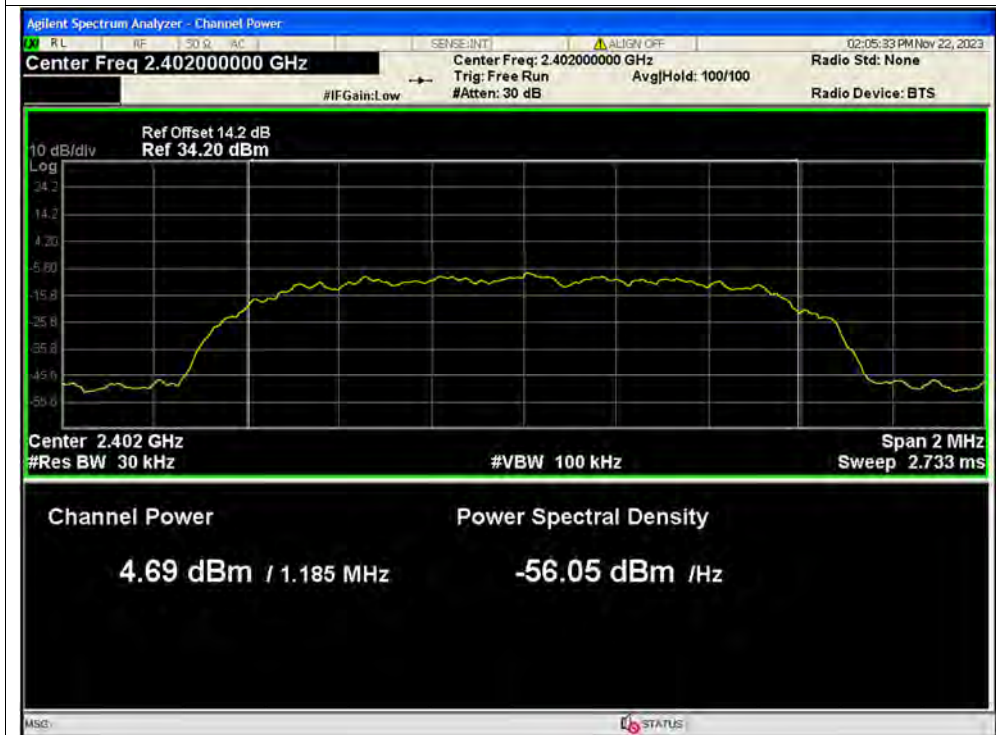




Average Power NVNT 1-DH5 2480MHz Ant1

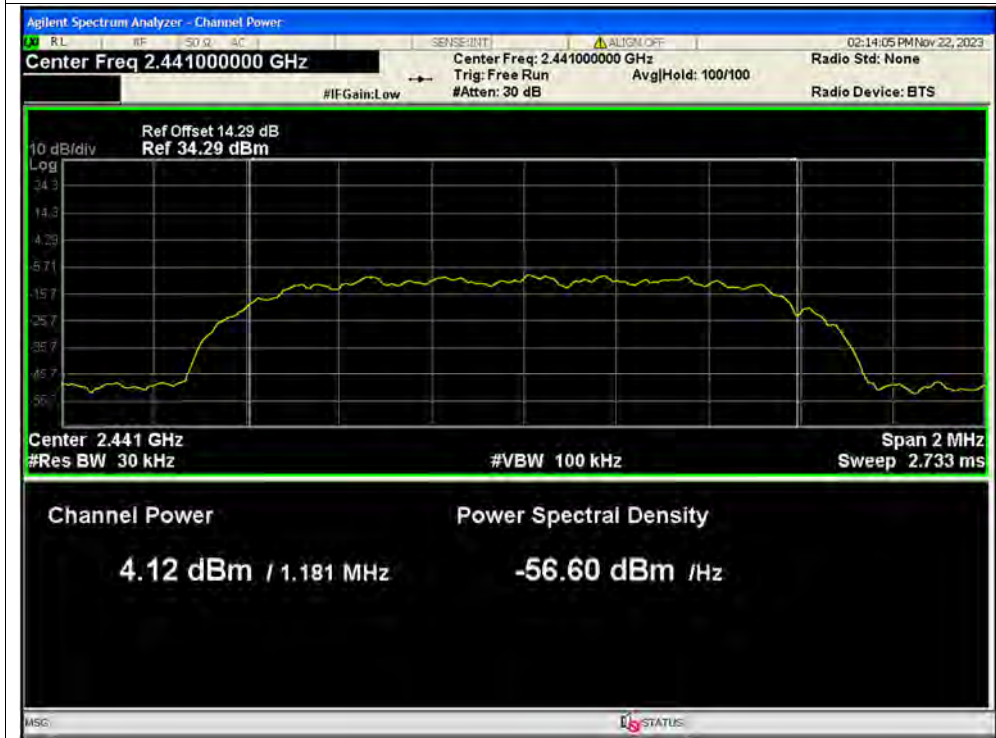


Average Power NVNT 2-DH5 2402MHz Ant1

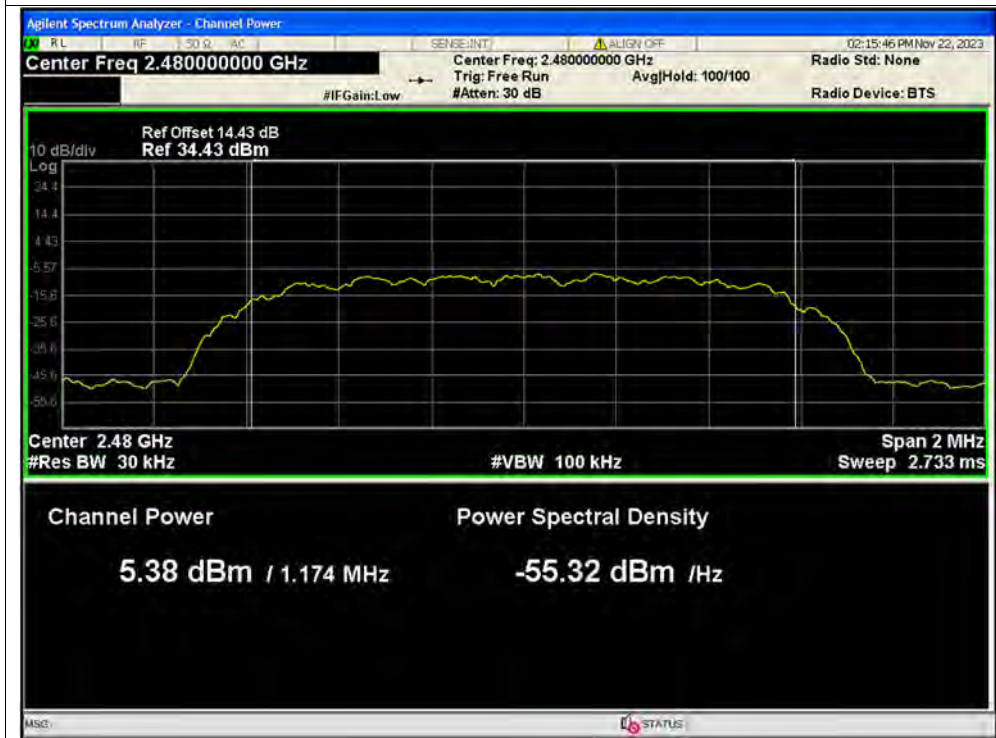




Average Power NVNT 2-DH5 2441MHz Ant1

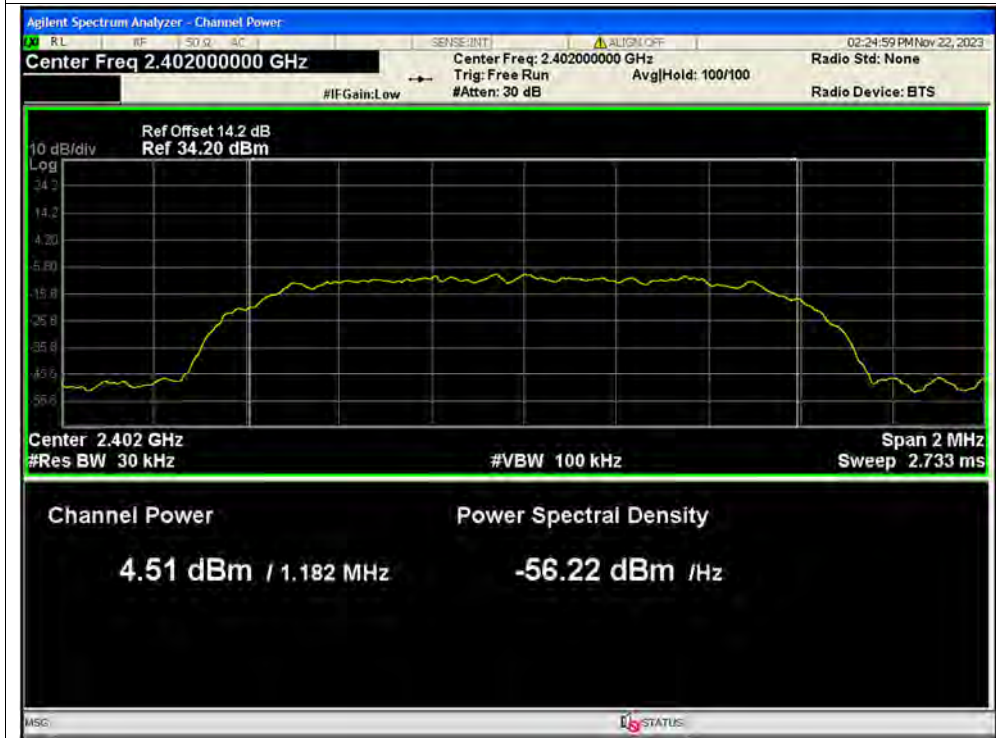


Average Power NVNT 2-DH5 2480MHz Ant1

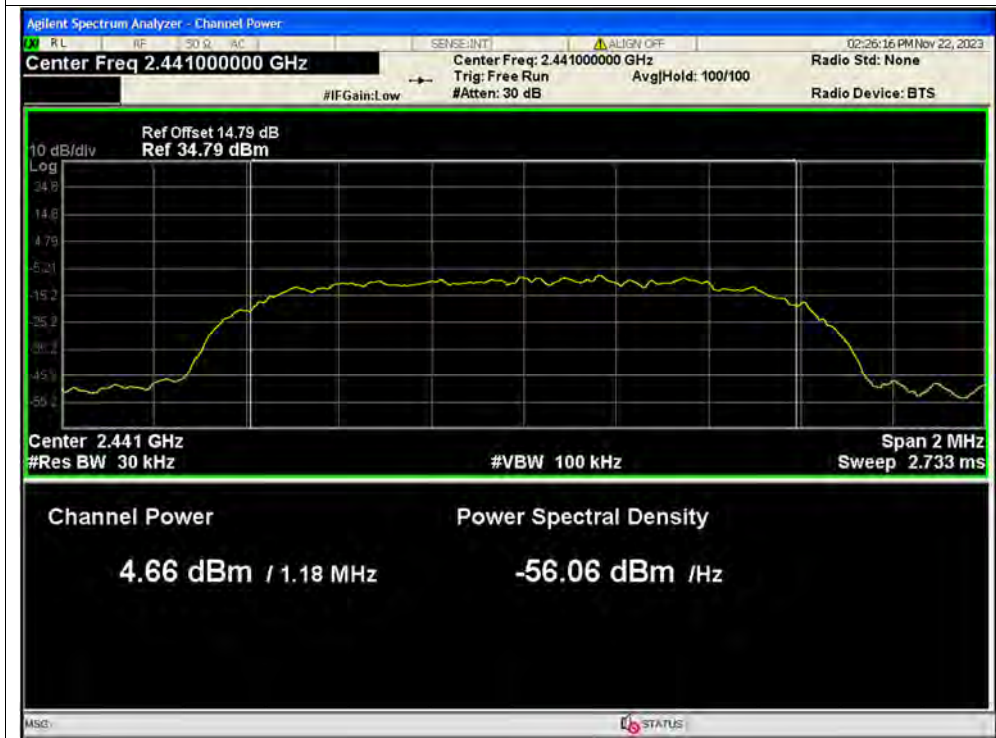


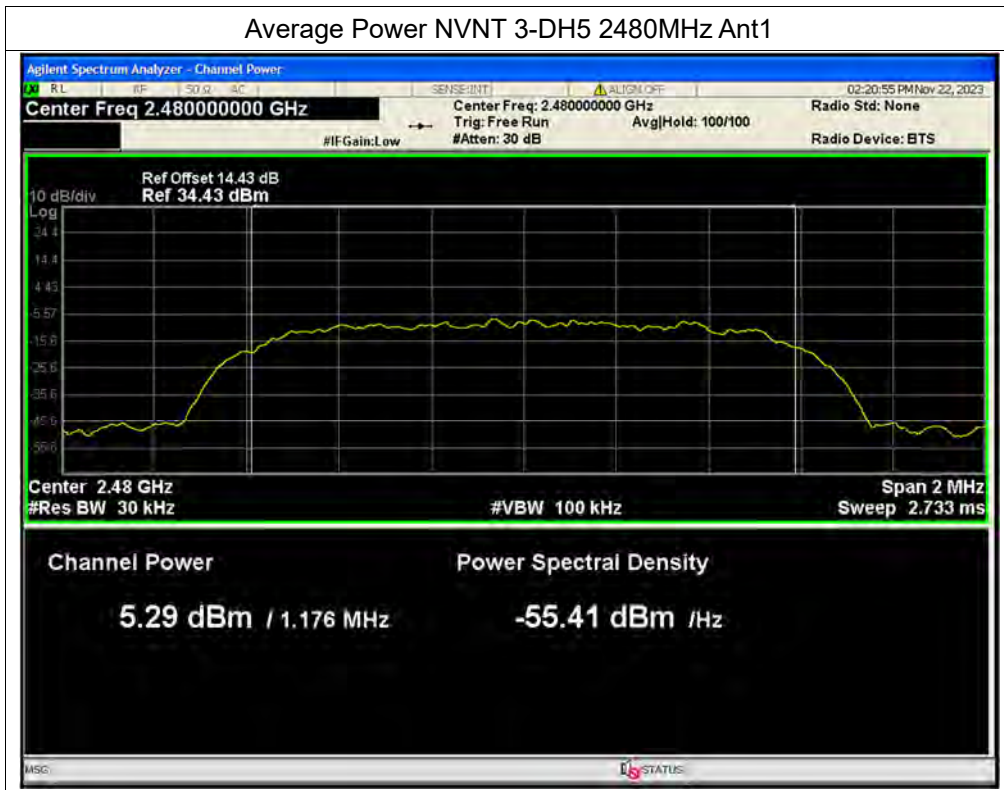


Average Power NVNT 3-DH5 2402MHz Ant1



Average Power NVNT 3-DH5 2441MHz Ant1





**A.5. 20 dB Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)
NVNT	1-DH5	2402	Ant1	0.945
NVNT	1-DH5	2441	Ant1	0.943
NVNT	1-DH5	2480	Ant1	0.946
NVNT	2-DH5	2402	Ant1	1.284
NVNT	2-DH5	2441	Ant1	1.271
NVNT	2-DH5	2480	Ant1	1.304
NVNT	3-DH5	2402	Ant1	1.286
NVNT	3-DH5	2441	Ant1	1.296
NVNT	3-DH5	2480	Ant1	1.285



Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

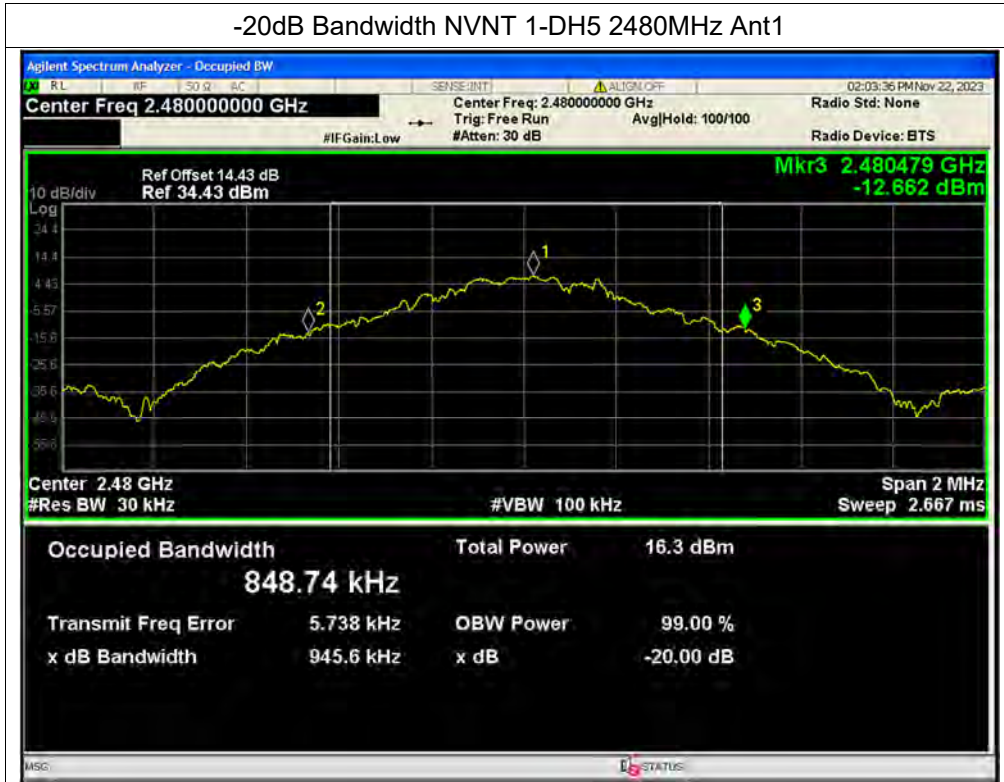


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

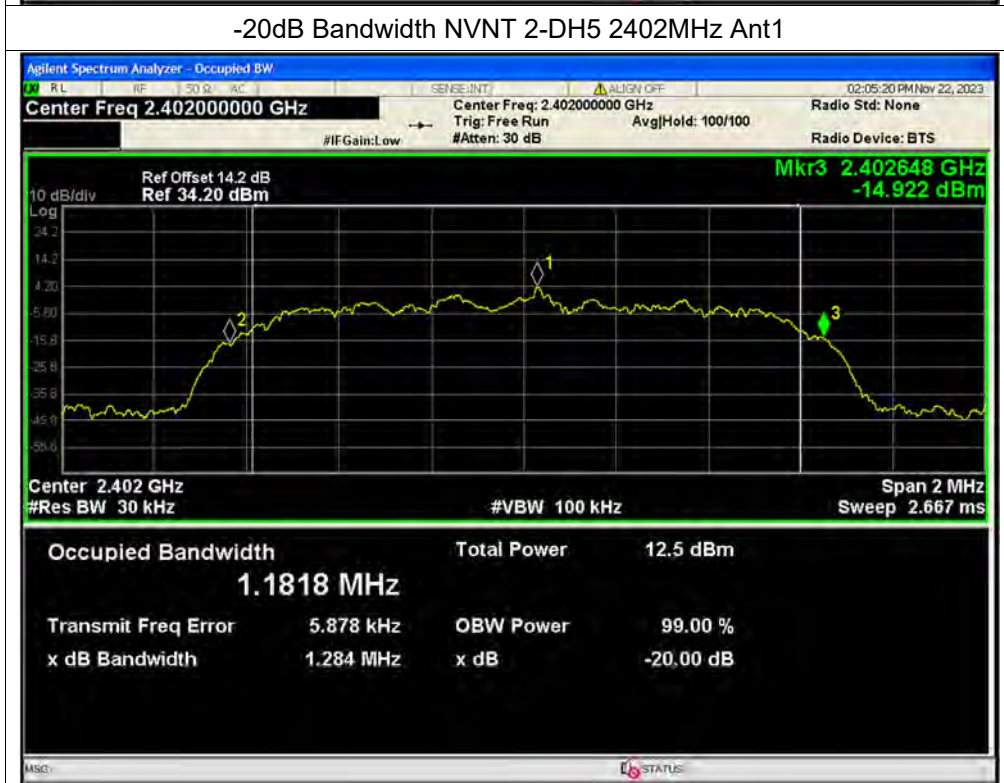




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

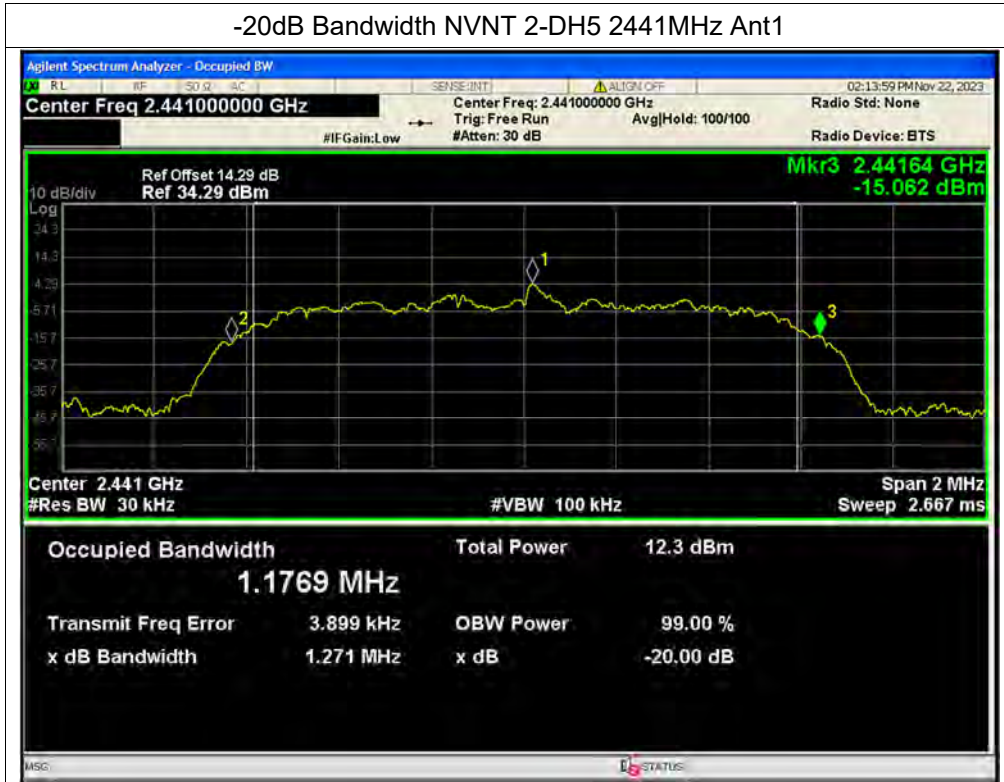


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1





-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

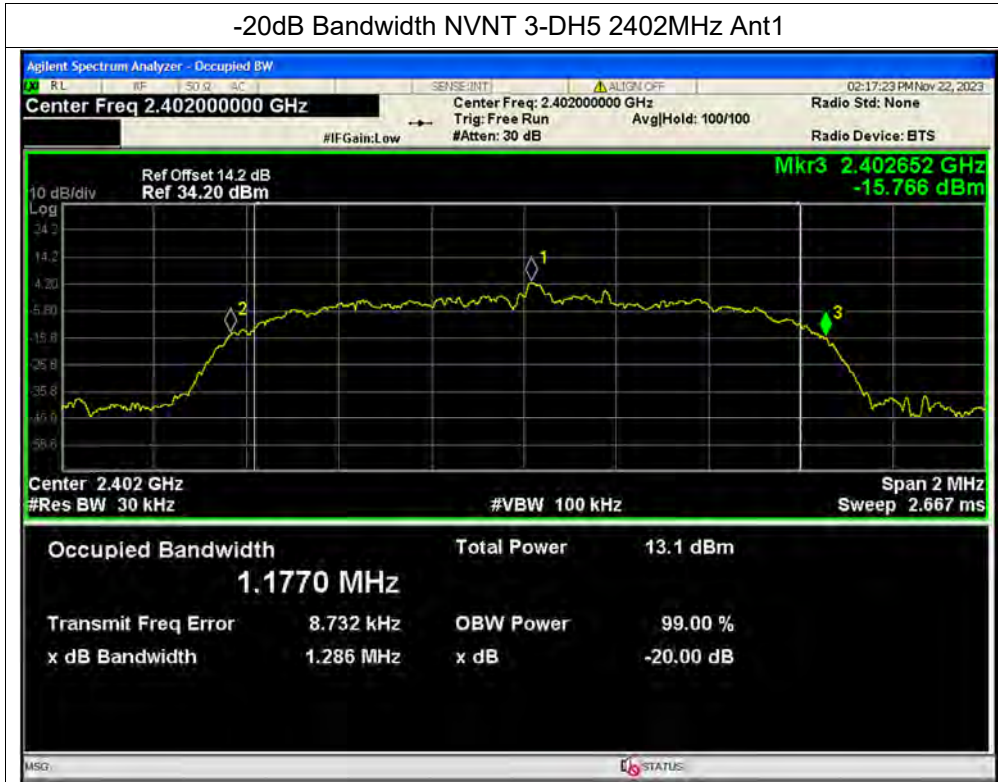


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

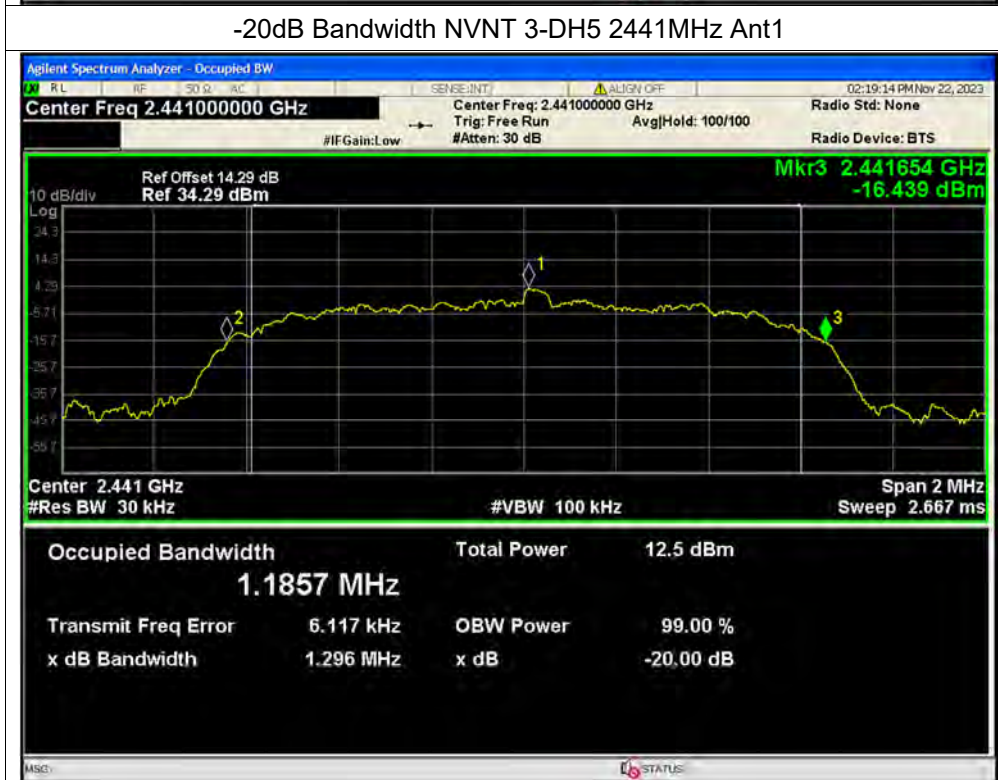


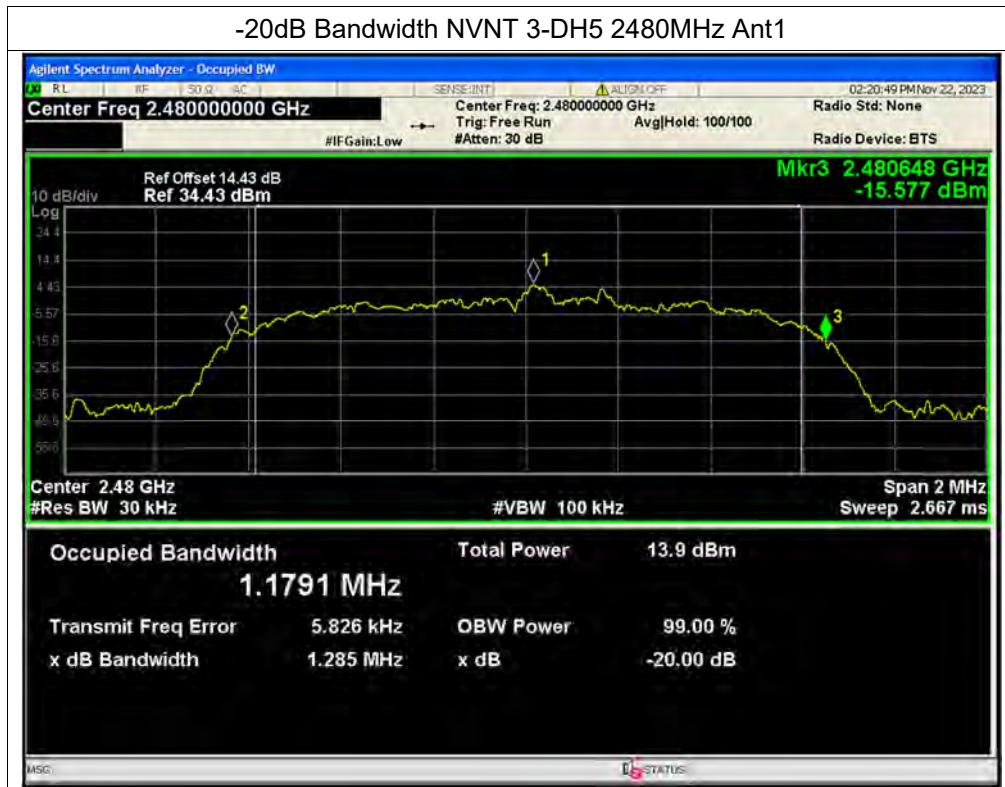


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1

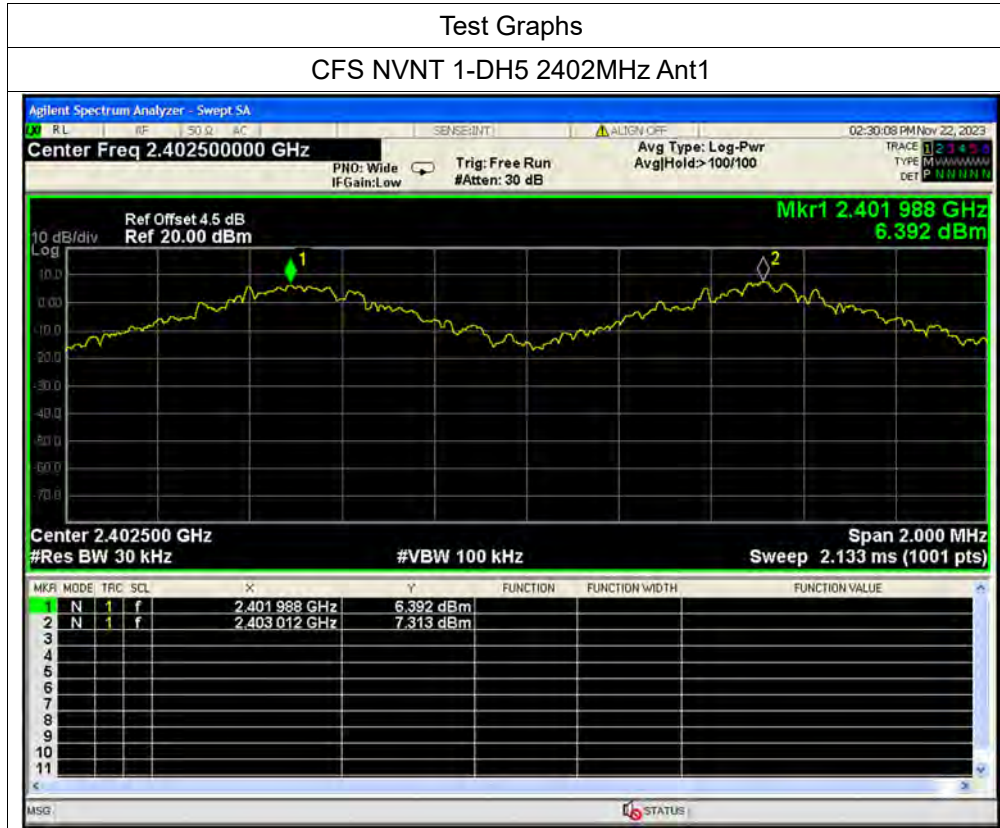






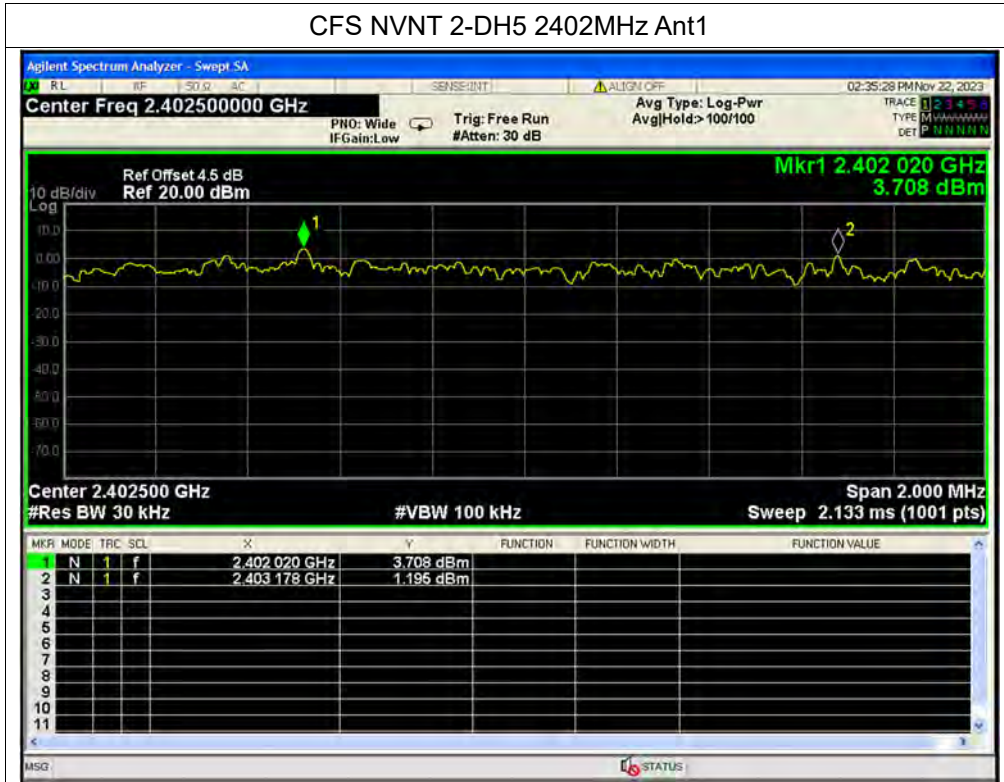
A.6. Carried Frequency Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.988	2403.012	1.024	0.63	Pass
NVNT	2-DH5	Ant1	2402.02	2403.178	1.158	0.856	Pass
NVNT	3-DH5	Ant1	2402.174	2403.166	0.992	0.857	Pass

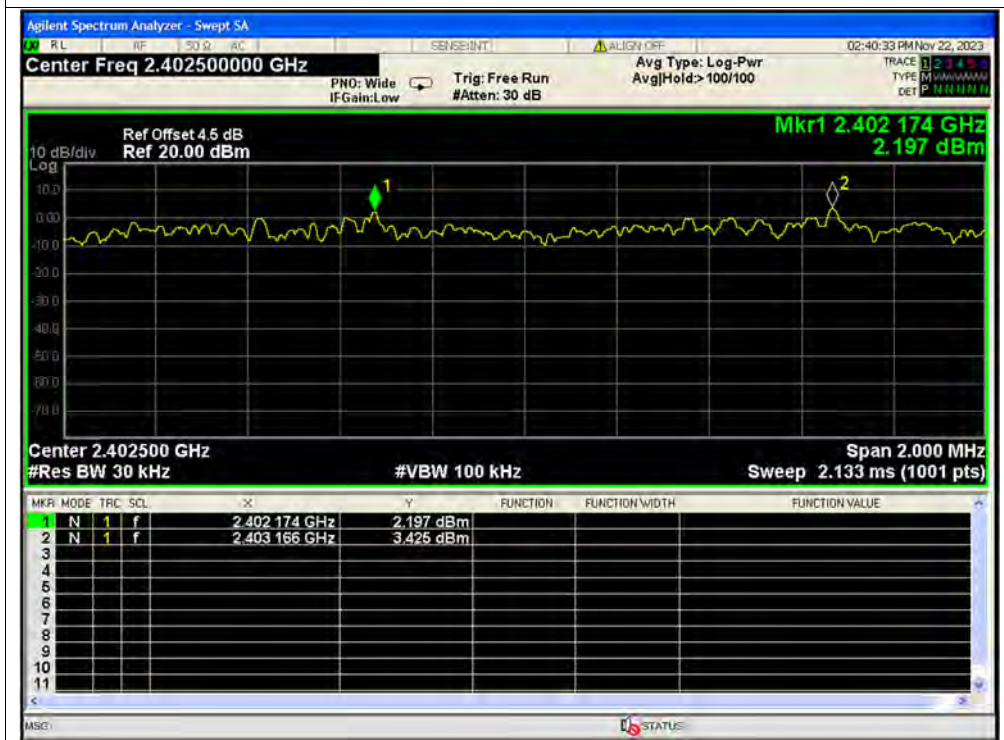




CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1



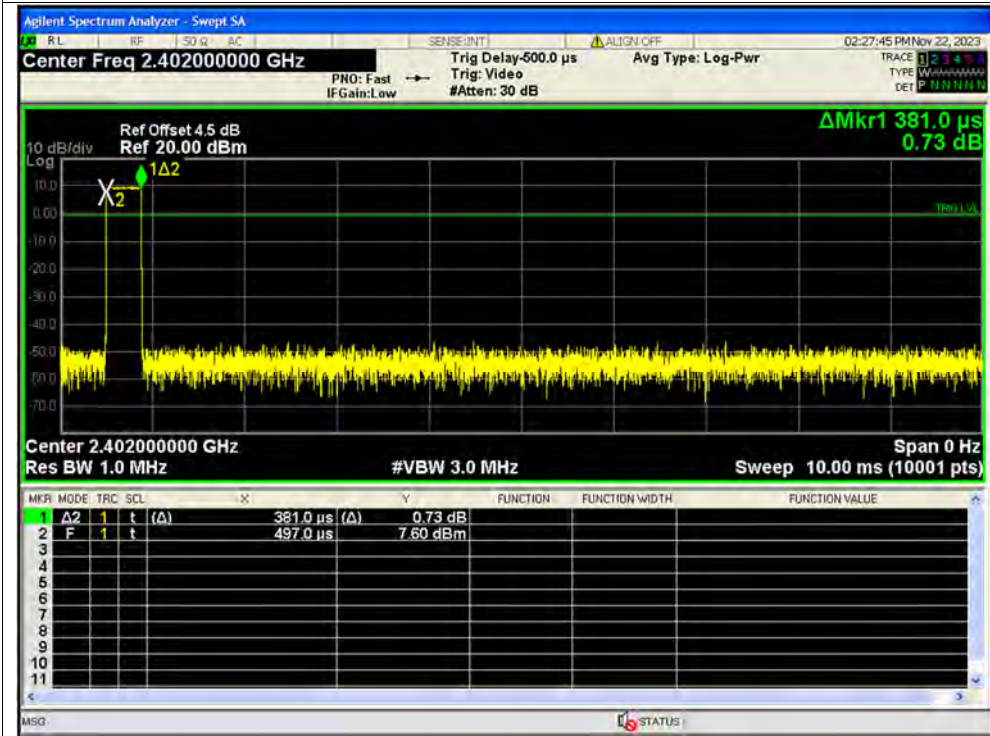
**A.7. Time of Occupancy (Dwell time)**

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2402	Ant1	0.381	120.777	317	31600	400	Pass
NVNT	1-DH3	2402	Ant1	1.637	253.735	155	31600	400	Pass
NVNT	1-DH5	2402	Ant1	2.886	253.968	88	31600	400	Pass
NVNT	2-DH1	2402	Ant1	0.388	121.444	313	31600	400	Pass
NVNT	2-DH3	2402	Ant1	1.64	267.32	163	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.887	332.005	115	31600	400	Pass
NVNT	3-DH1	2402	Ant1	0.387	122.292	316	31600	400	Pass
NVNT	3-DH3	2402	Ant1	1.638	270.27	165	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.889	320.679	111	31600	400	Pass



Test Graphs

Dwell NVNT 1-DH1 2402MHz Ant1 One Burst

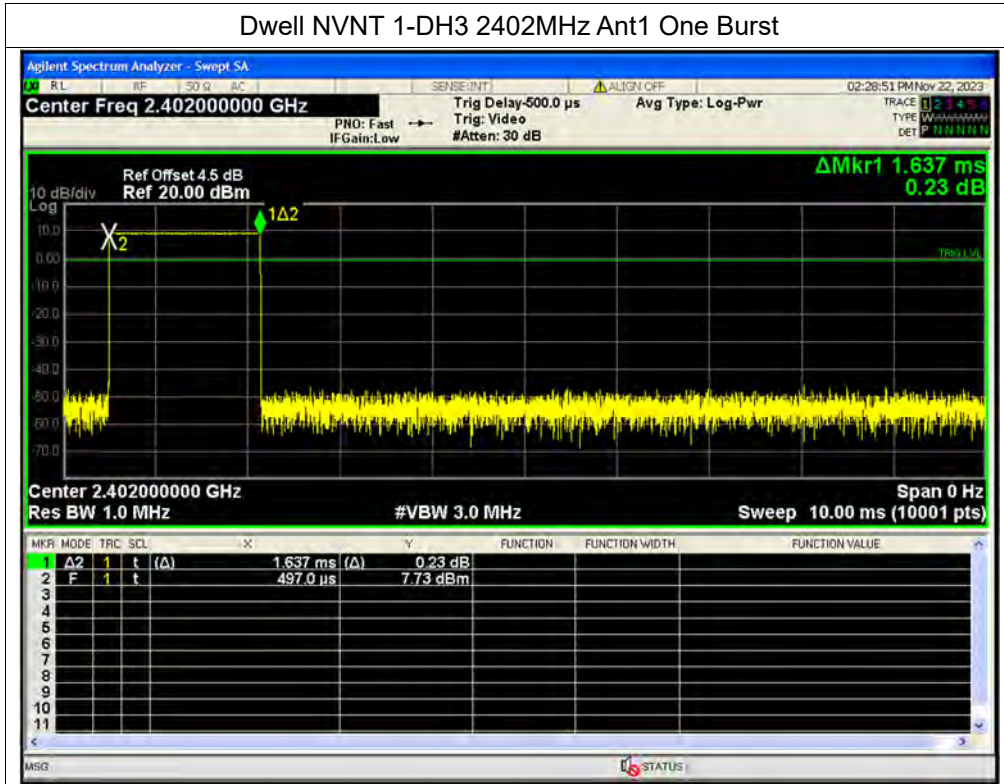


Dwell NVNT 1-DH1 2402MHz Ant1 Accumulated





Dwell NVNT 1-DH3 2402MHz Ant1 One Burst

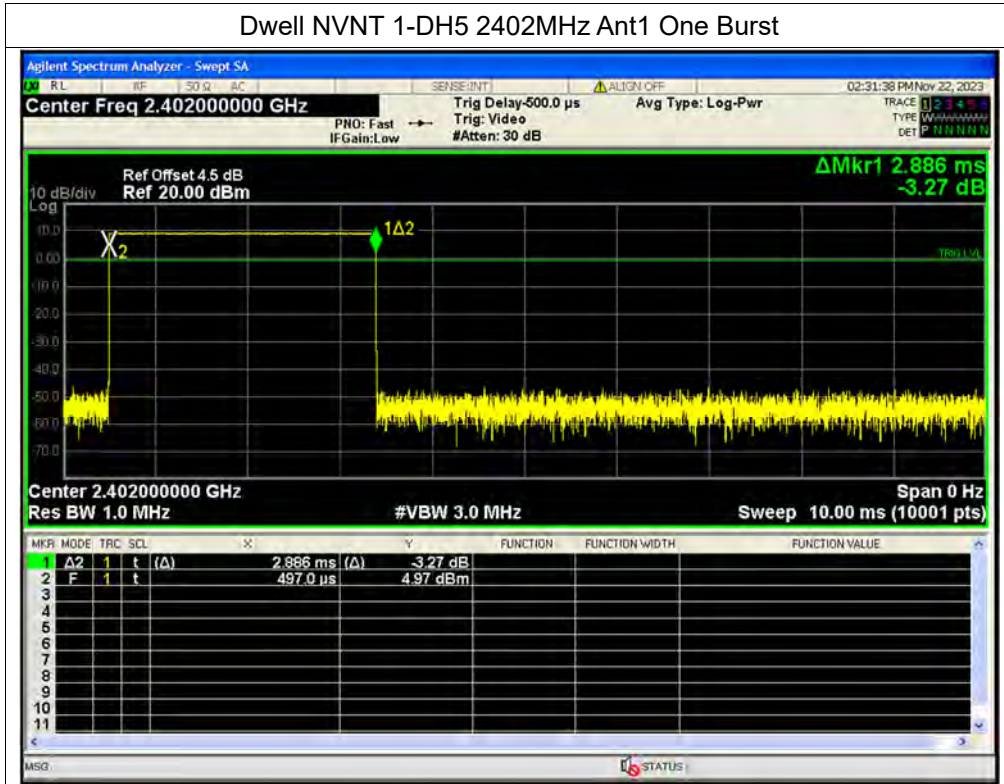


Dwell NVNT 1-DH3 2402MHz Ant1 Accumulated

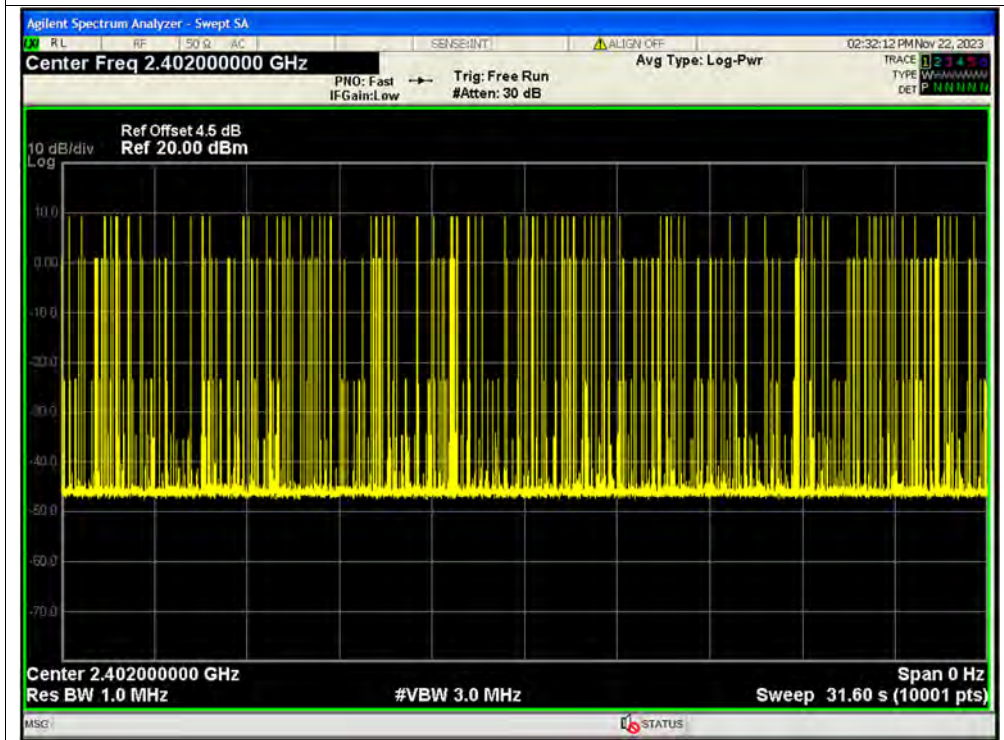




Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

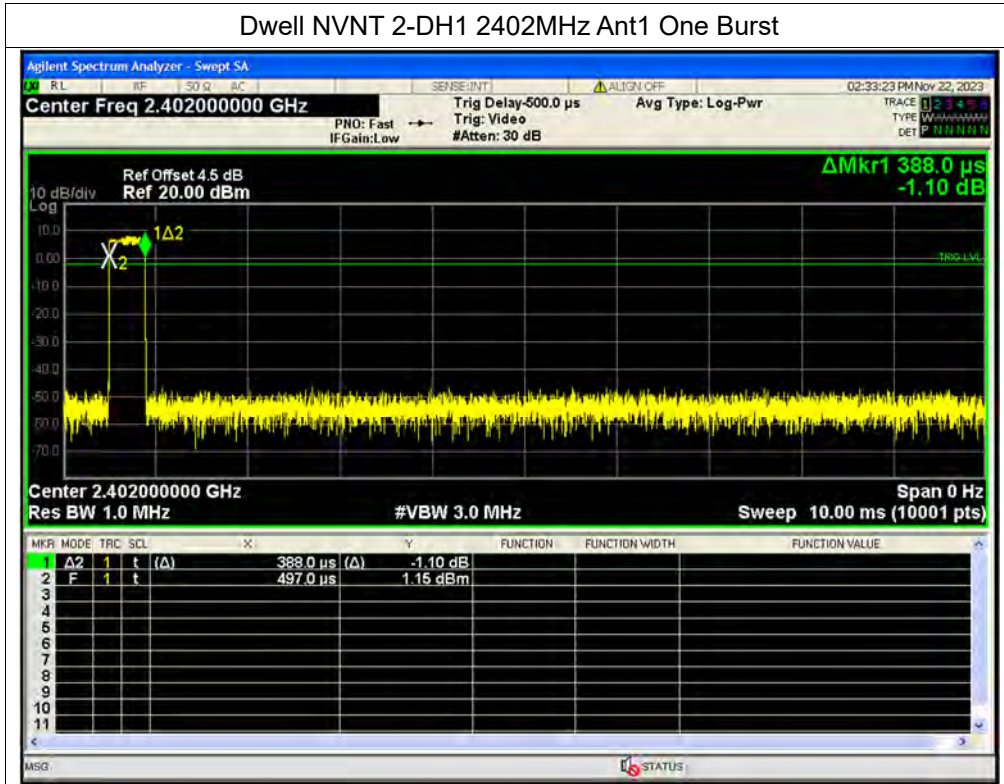


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

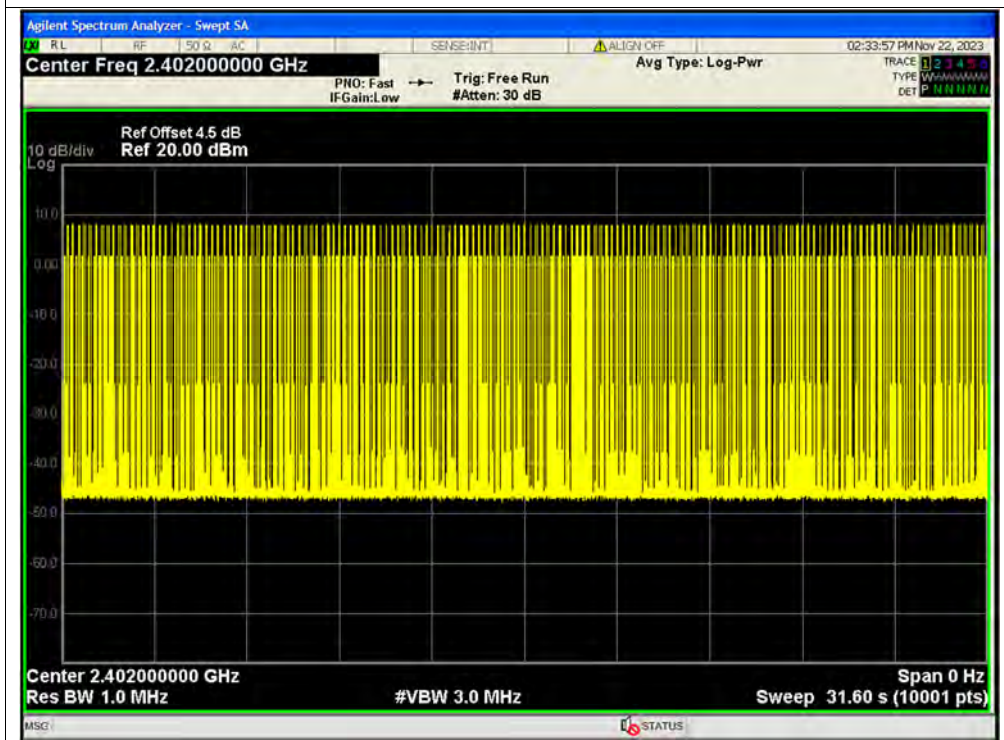




Dwell NVNT 2-DH1 2402MHz Ant1 One Burst

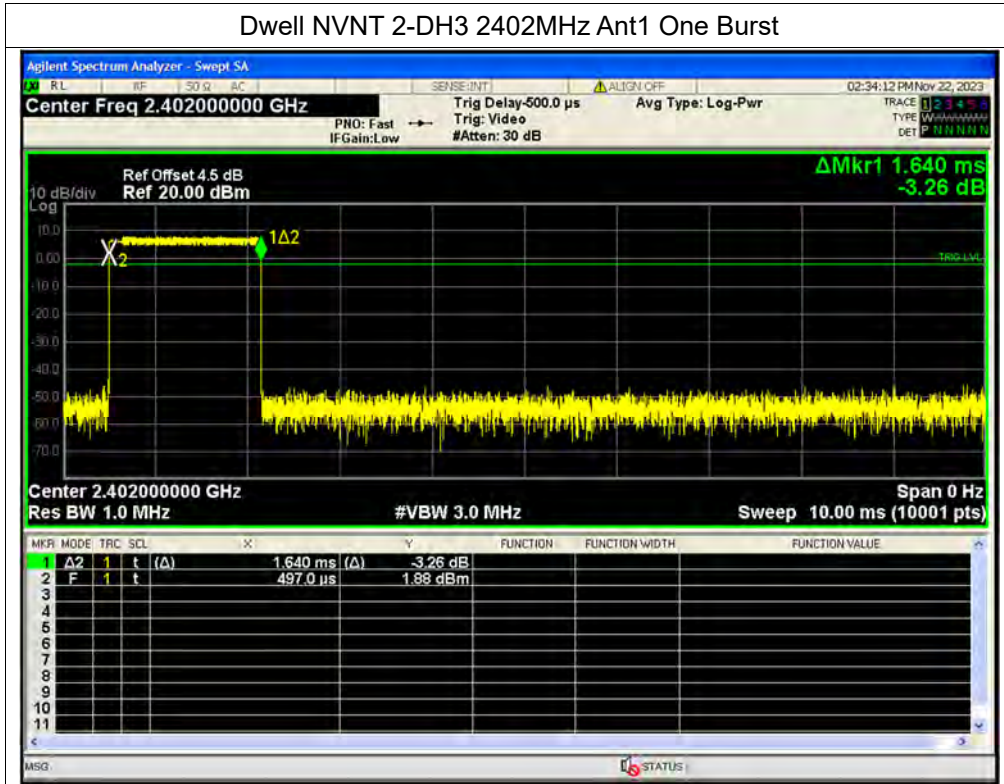


Dwell NVNT 2-DH1 2402MHz Ant1 Accumulated

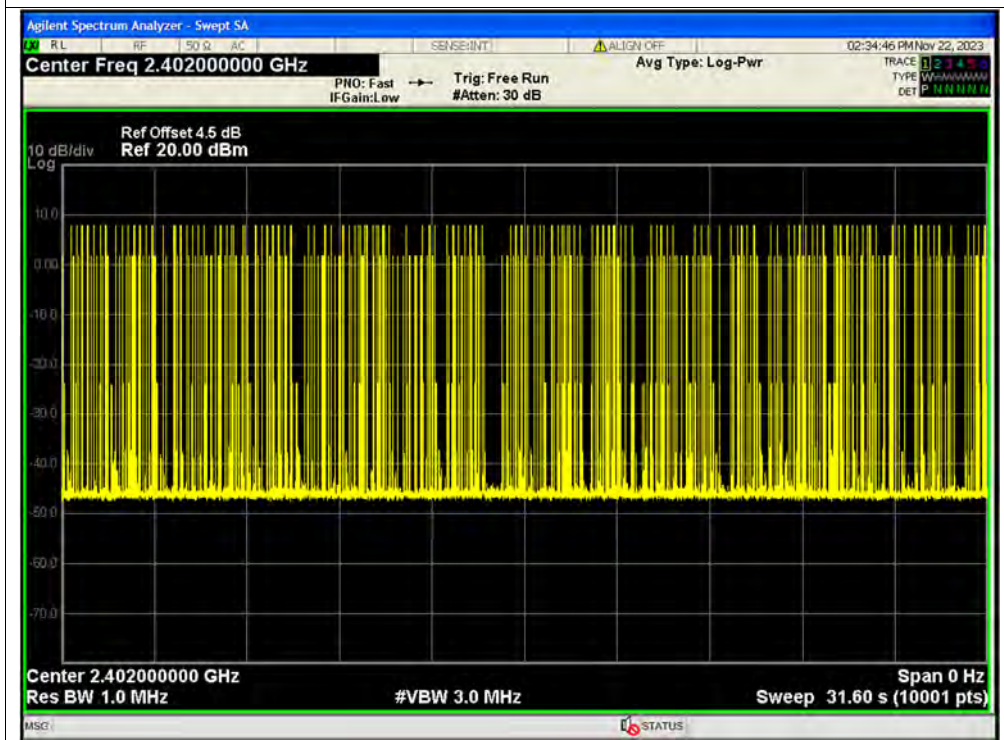




Dwell NVNT 2-DH3 2402MHz Ant1 One Burst

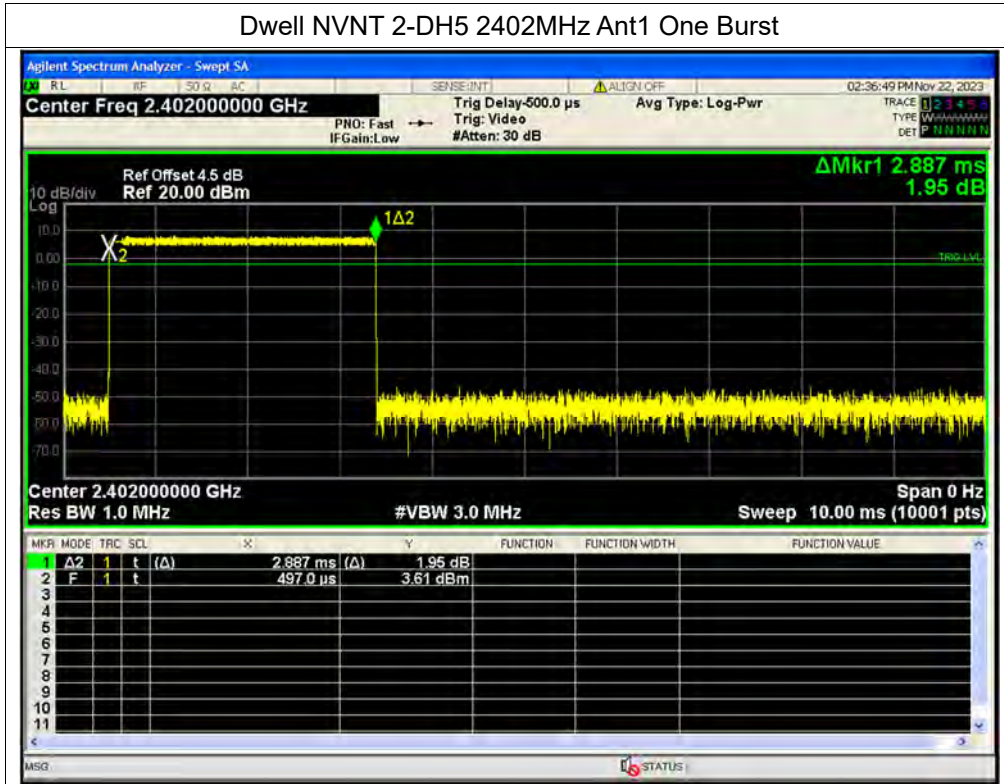


Dwell NVNT 2-DH3 2402MHz Ant1 Accumulated

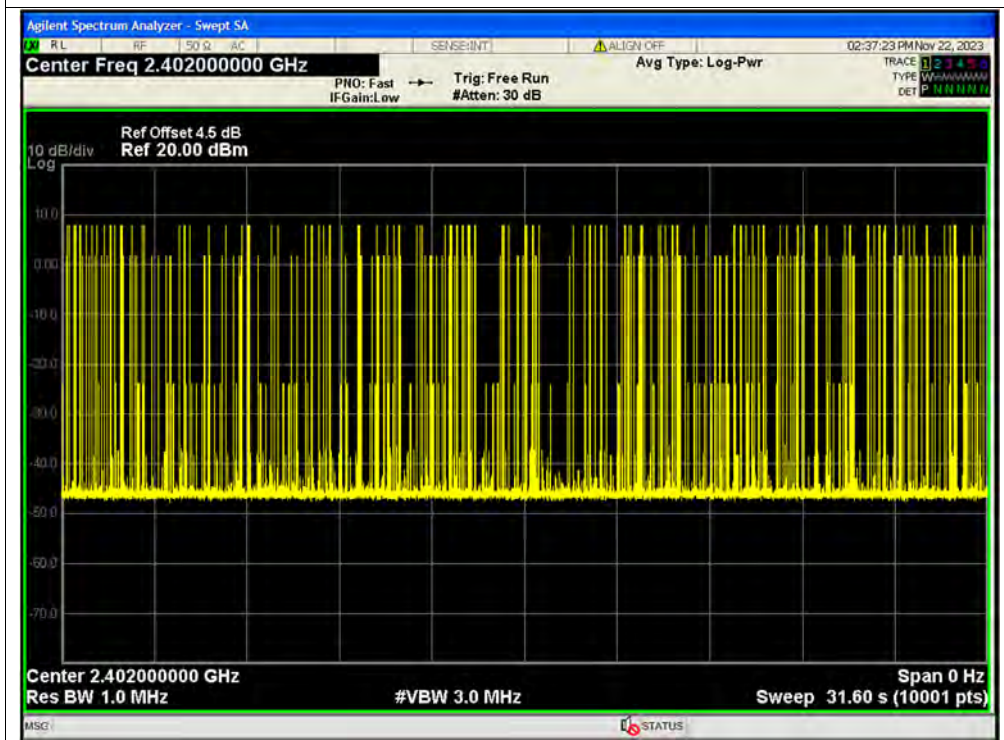




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

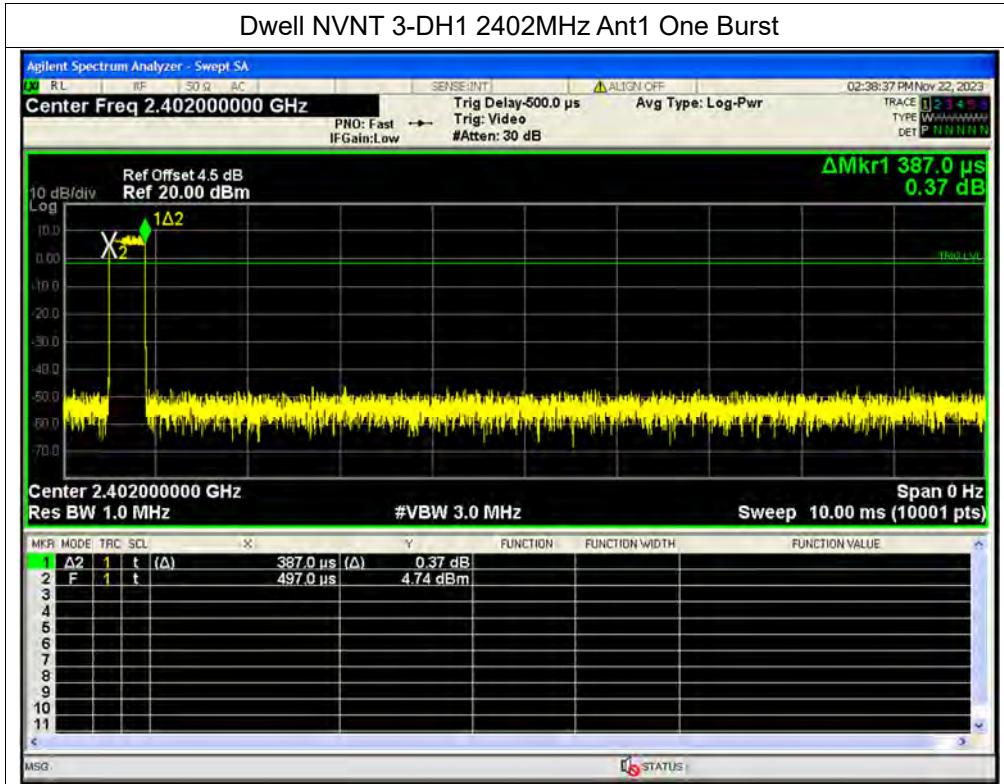


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

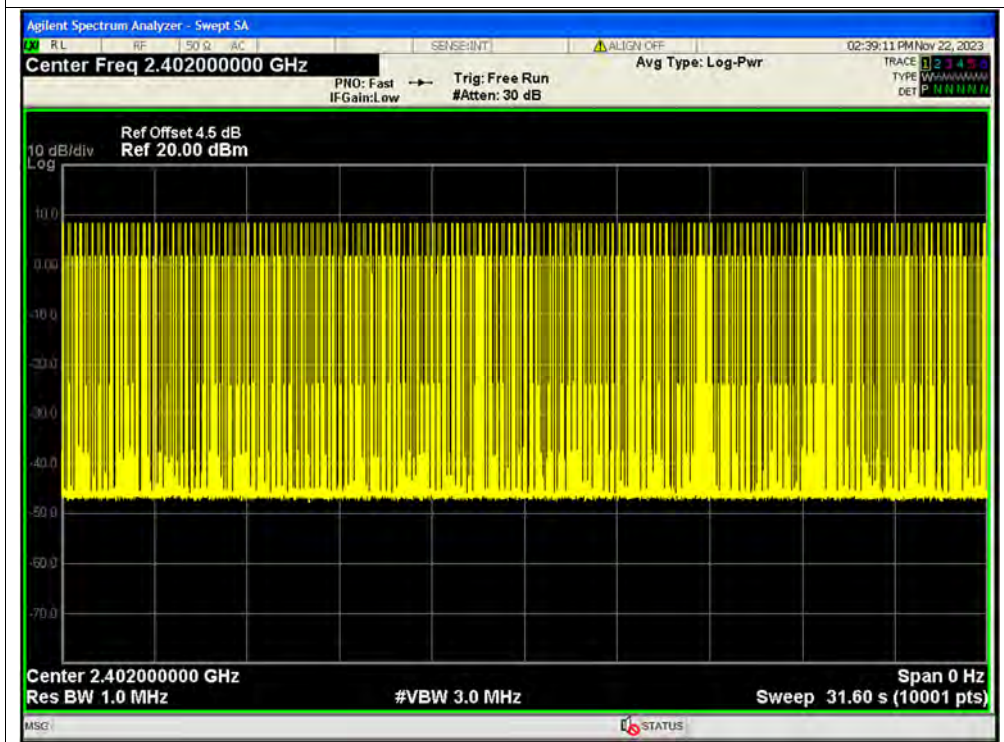




Dwell NVNT 3-DH1 2402MHz Ant1 One Burst

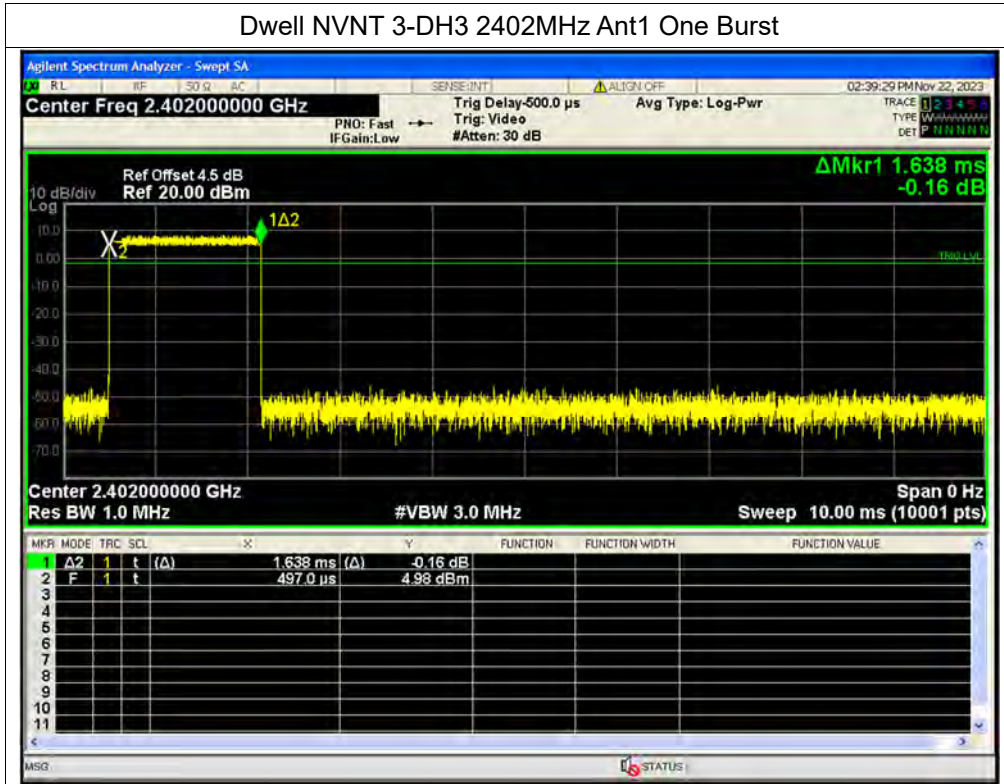


Dwell NVNT 3-DH1 2402MHz Ant1 Accumulated

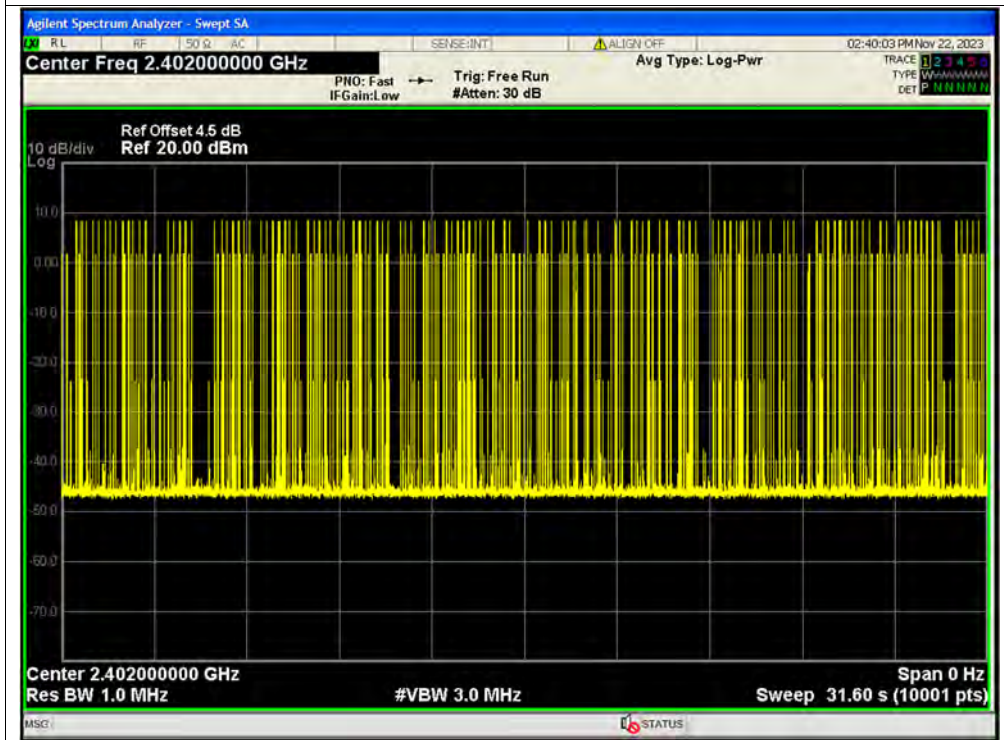




Dwell NVNT 3-DH3 2402MHz Ant1 One Burst

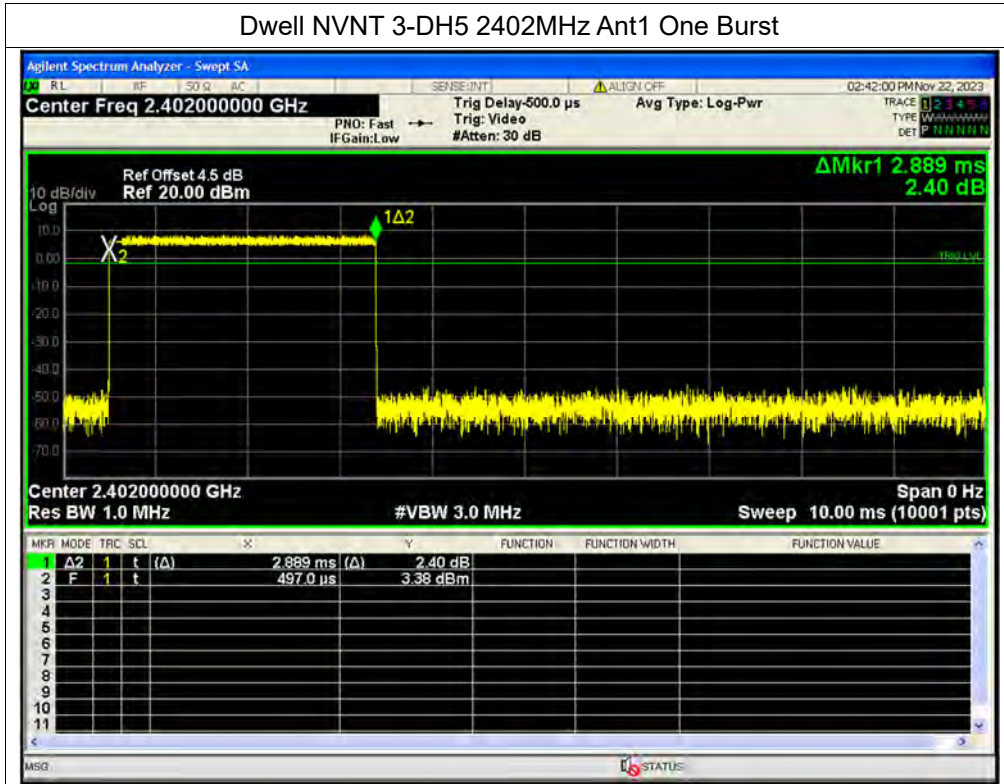


Dwell NVNT 3-DH3 2402MHz Ant1 Accumulated





Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated



**A.8. Conducted Spurious Emissions**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-47.14	-20	Pass
NVNT	1-DH5	2441	Ant1	-46.1	-20	Pass
NVNT	1-DH5	2480	Ant1	-47.78	-20	Pass
NVNT	2-DH5	2402	Ant1	-44.35	-20	Pass
NVNT	2-DH5	2441	Ant1	-43.84	-20	Pass
NVNT	2-DH5	2480	Ant1	-44.66	-20	Pass
NVNT	3-DH5	2402	Ant1	-43.82	-20	Pass
NVNT	3-DH5	2441	Ant1	-43.45	-20	Pass
NVNT	3-DH5	2480	Ant1	-44.12	-20	Pass

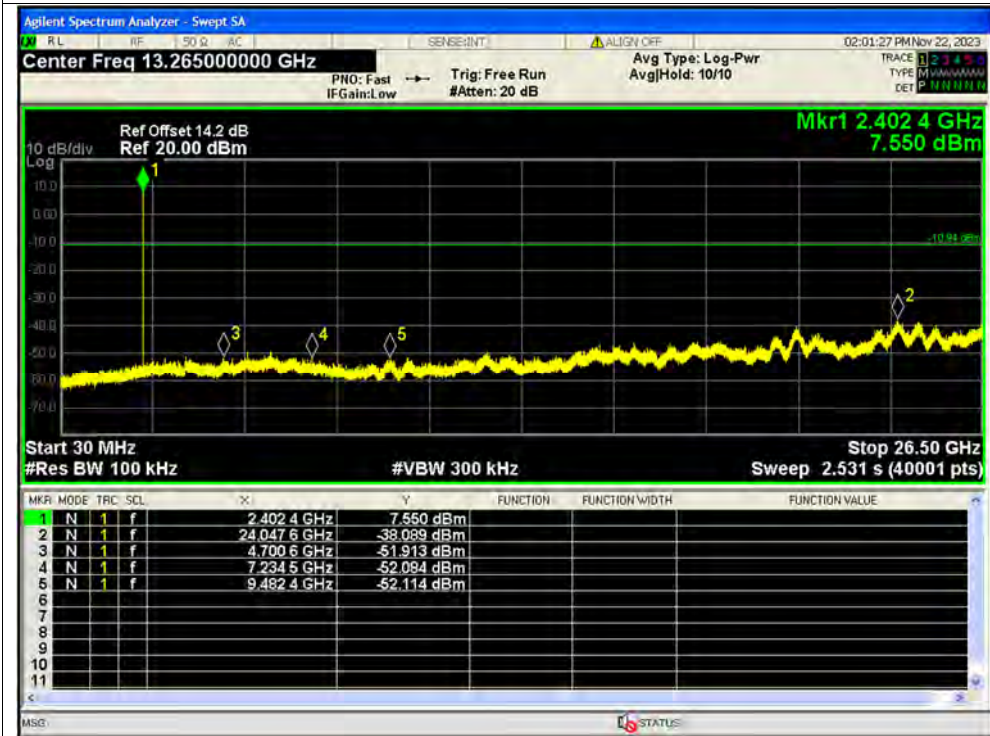


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

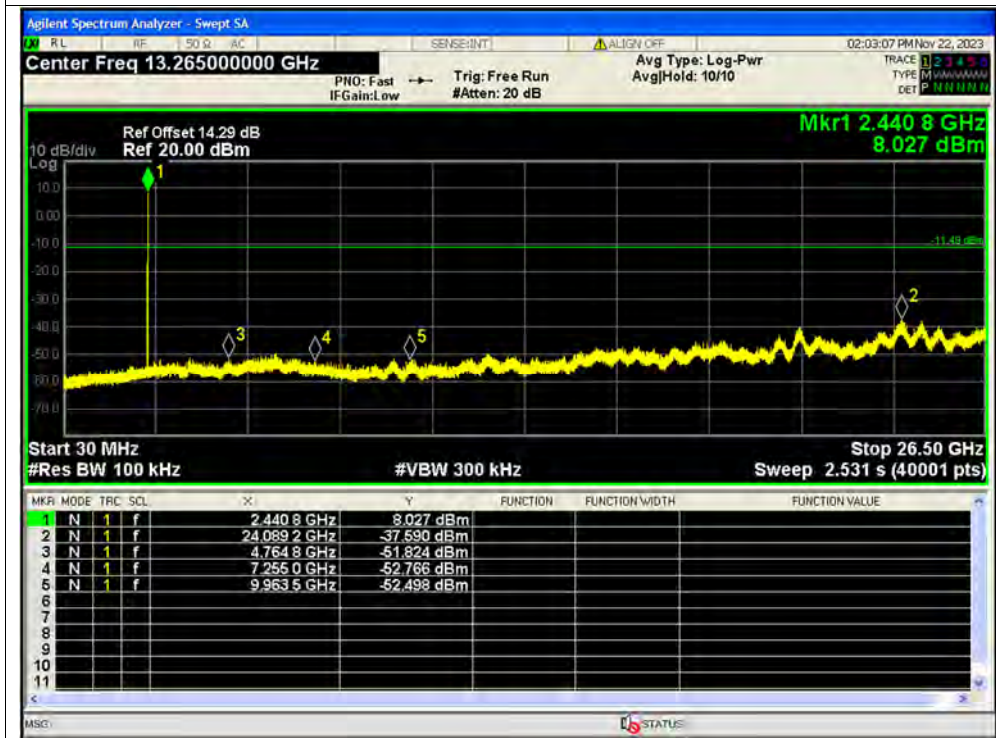




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

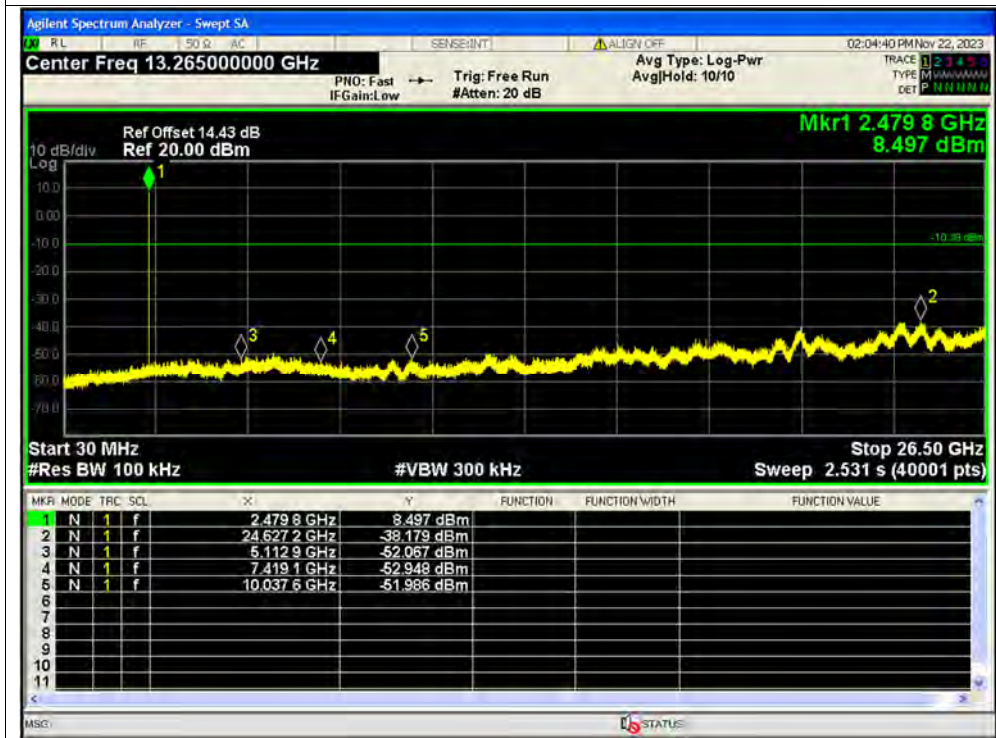




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

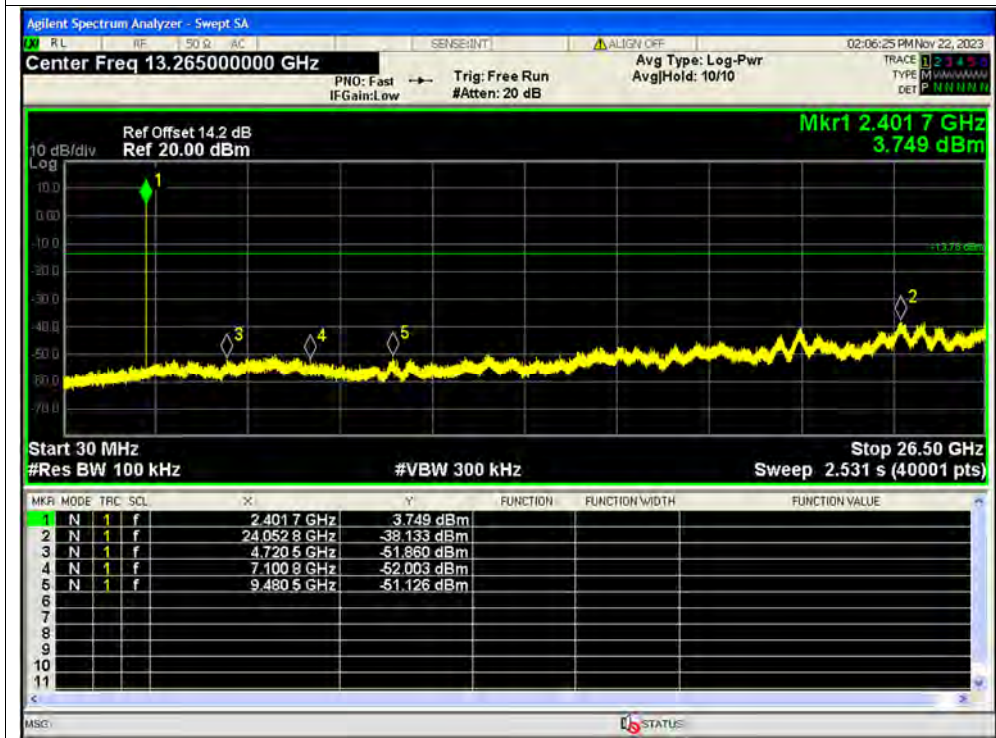




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

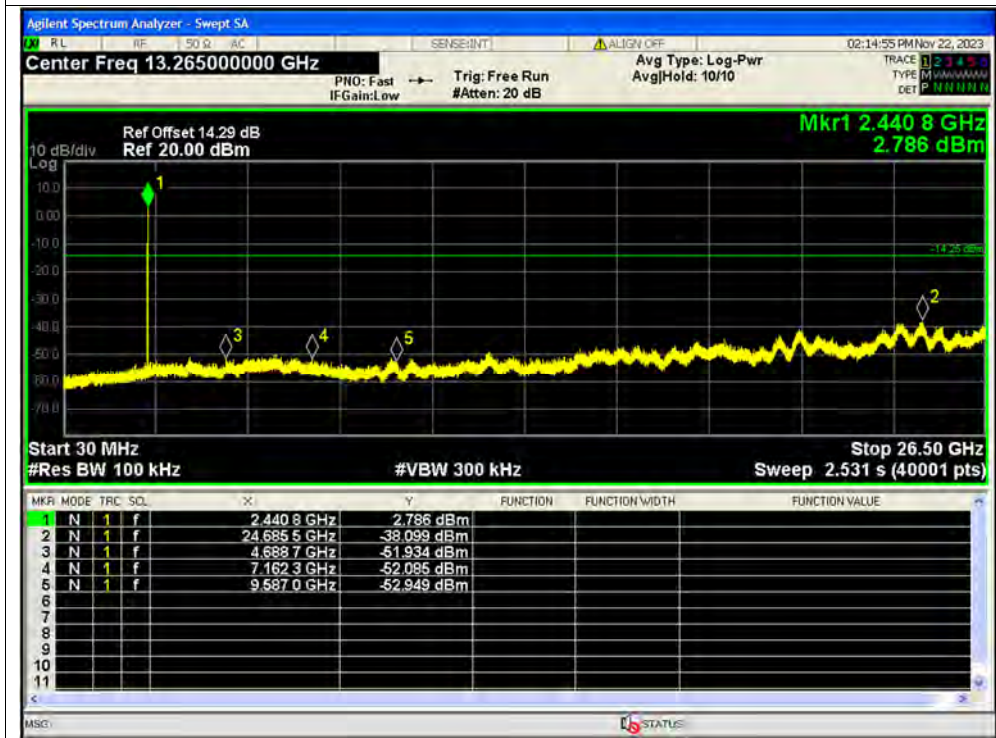




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

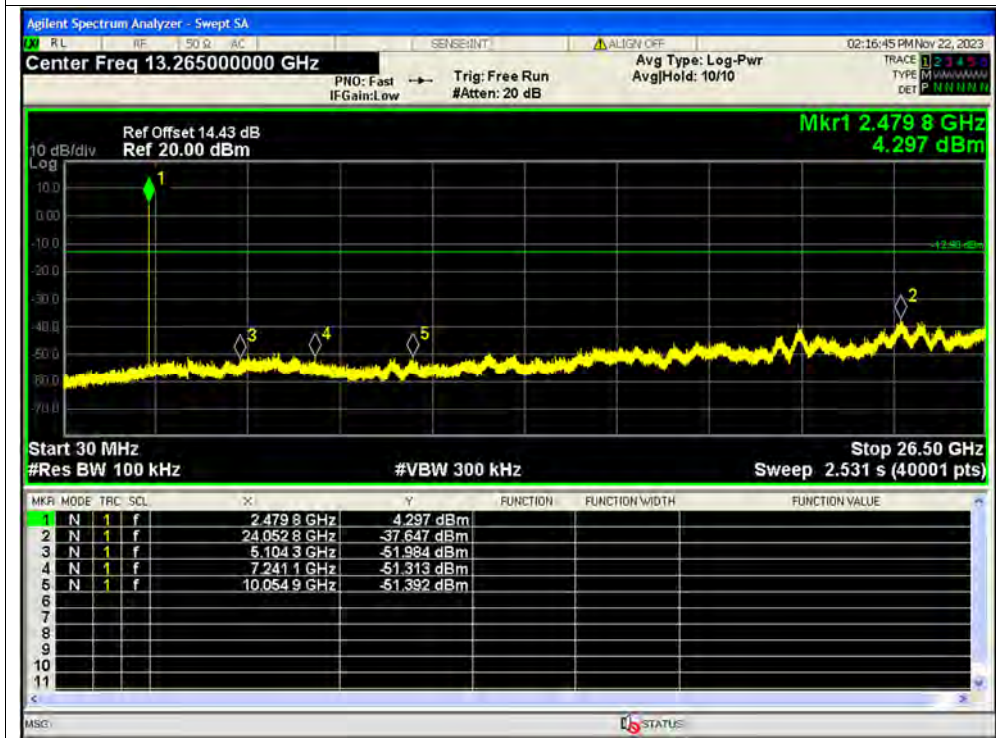




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref

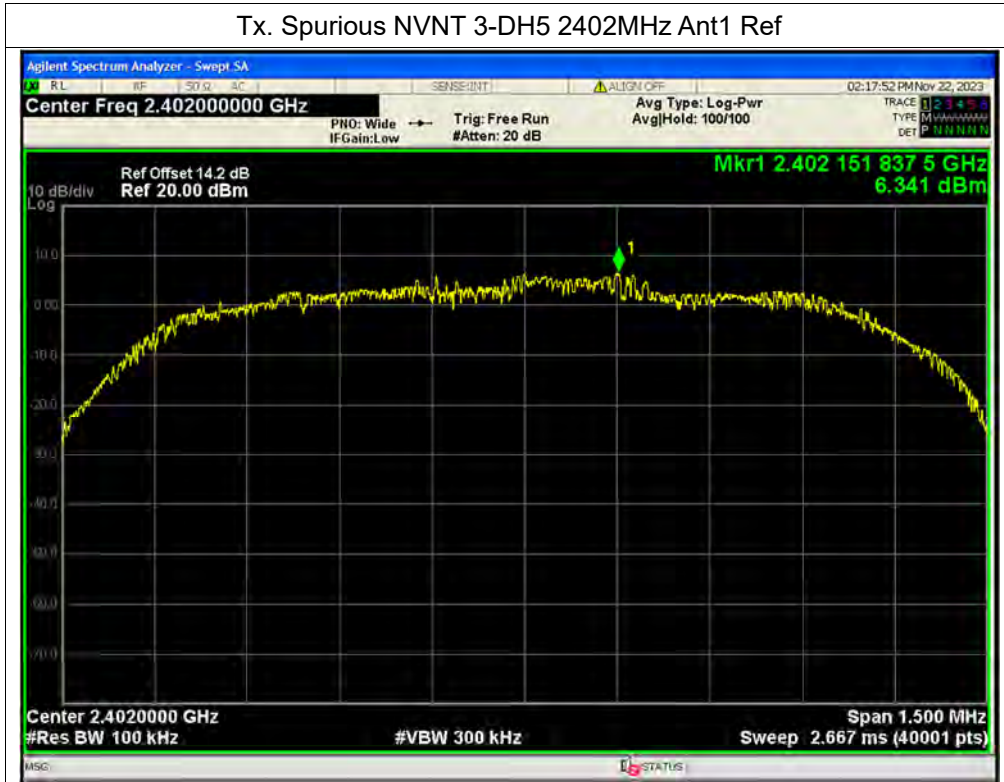


Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

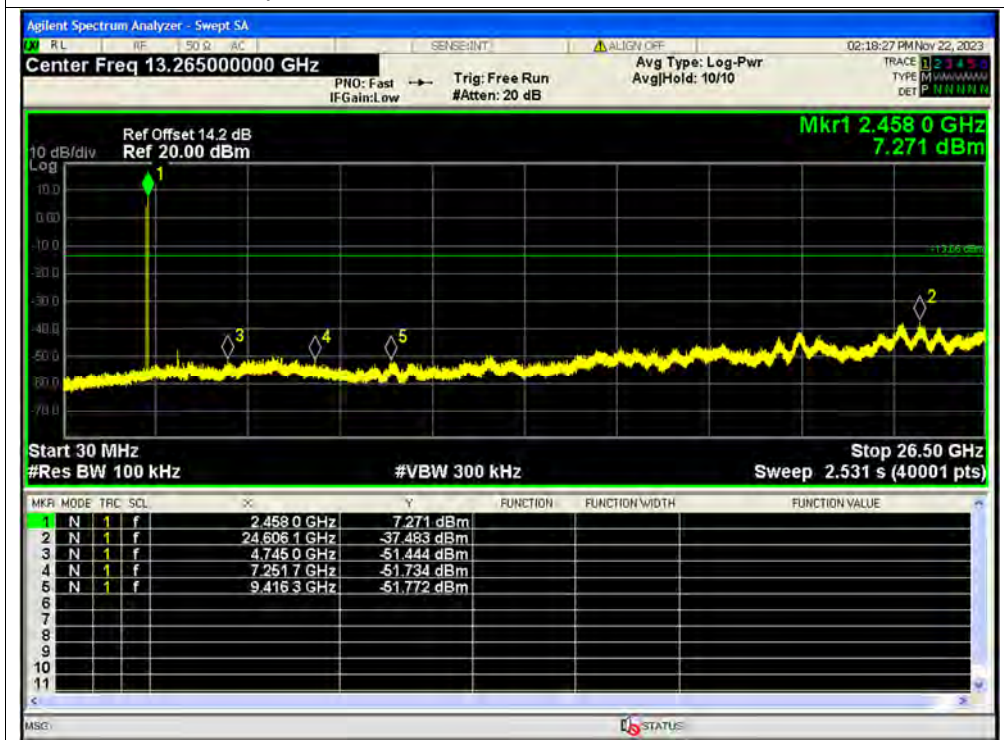




Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref

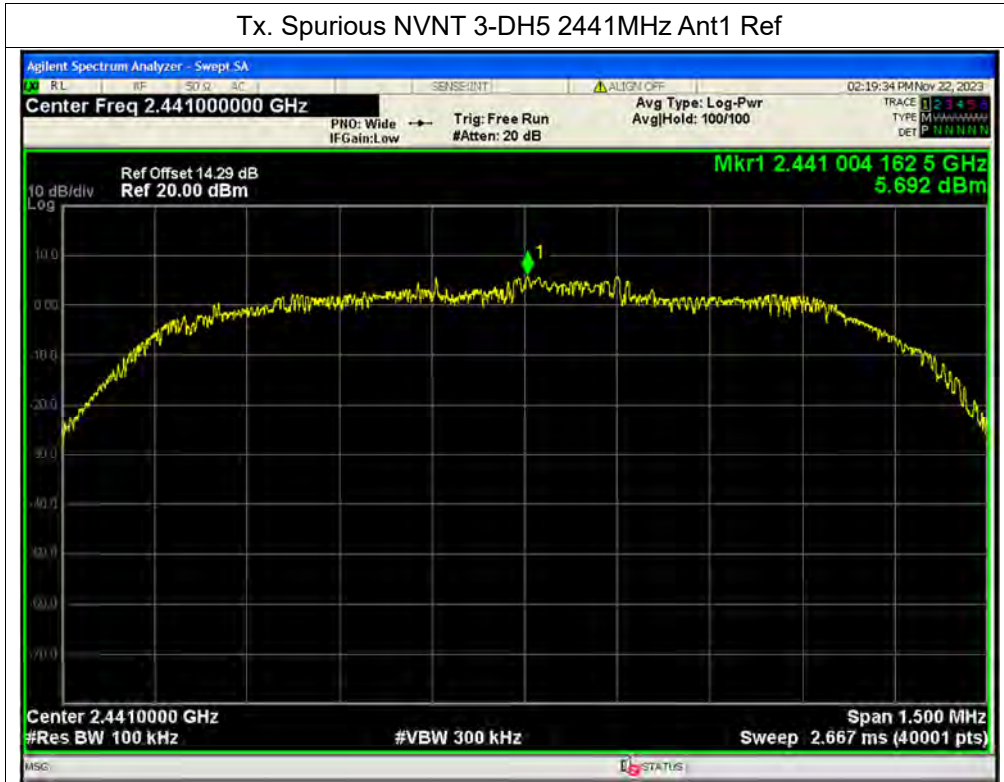


Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

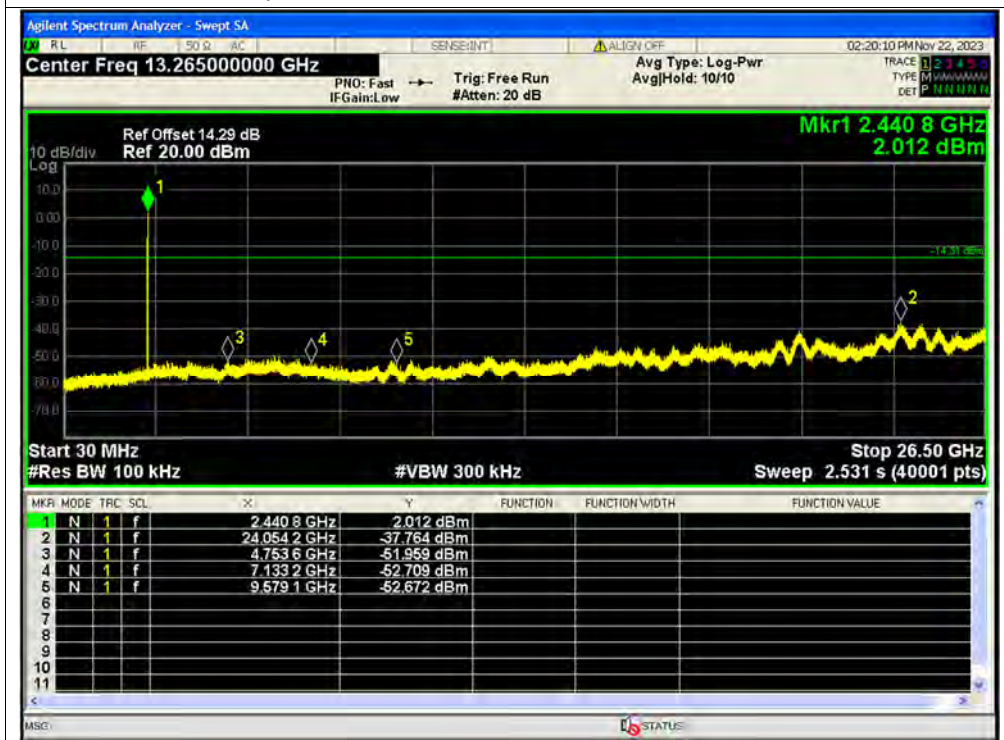




Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission

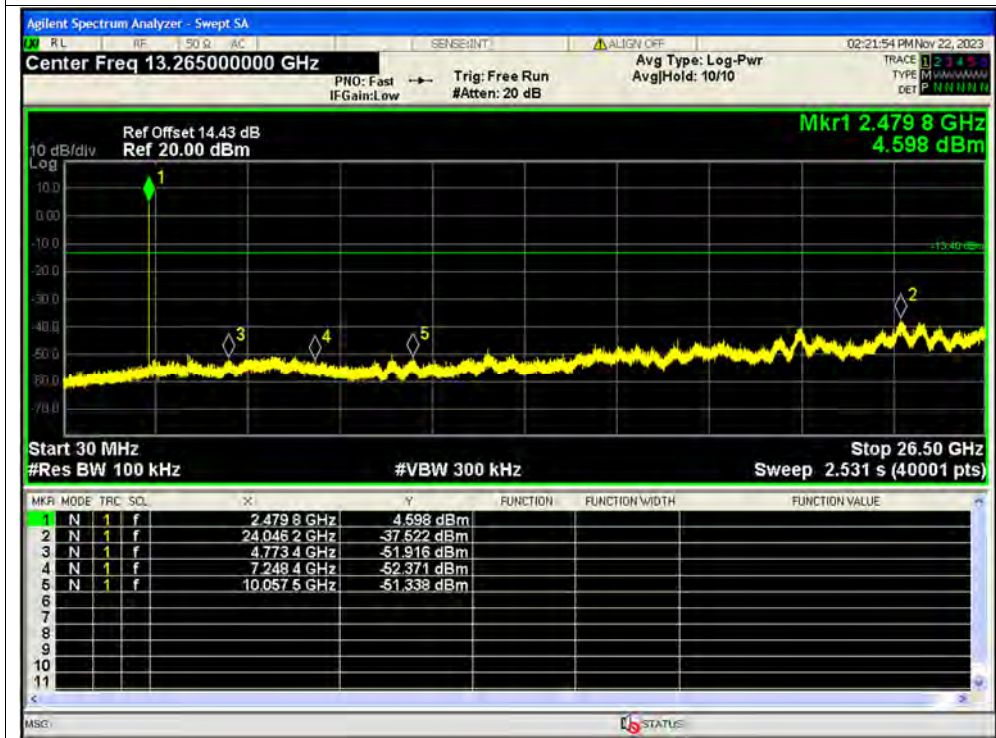




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission



**A.9. Band Edge**

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-53.05	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-55.04	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.69	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-52.91	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-49.79	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-51.29	-20	Pass
NVNT	1-DH5	2402	Ant1	Hopping	-62.87	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-63.68	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-59.94	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-60.86	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-59.7	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-58.62	-20	Pass

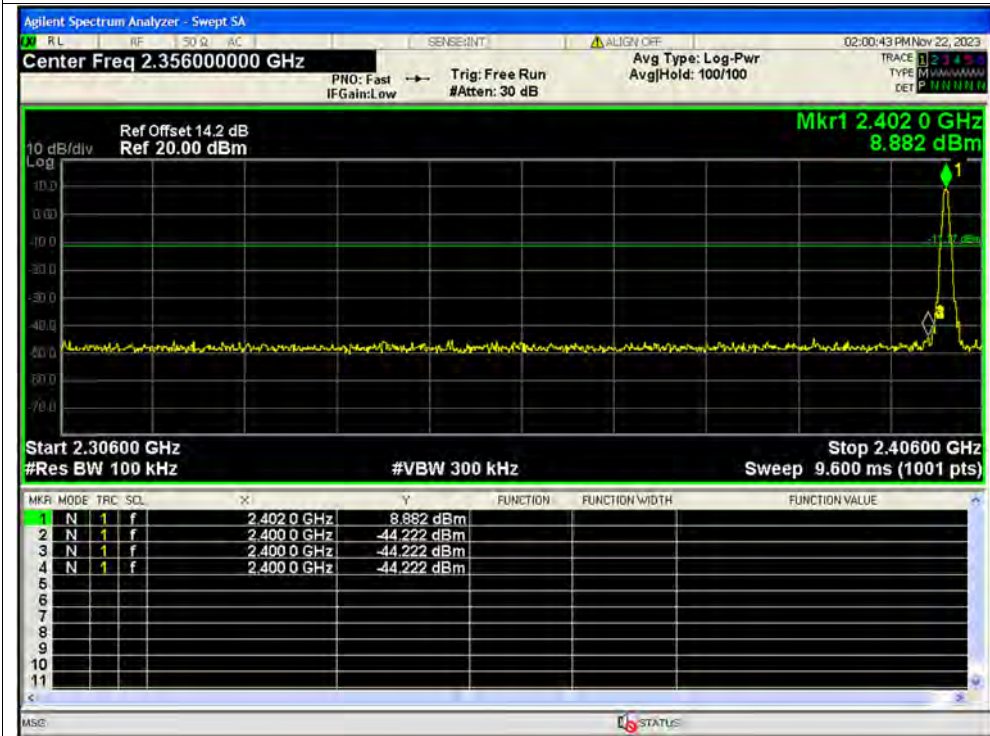


Test Graphs

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



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

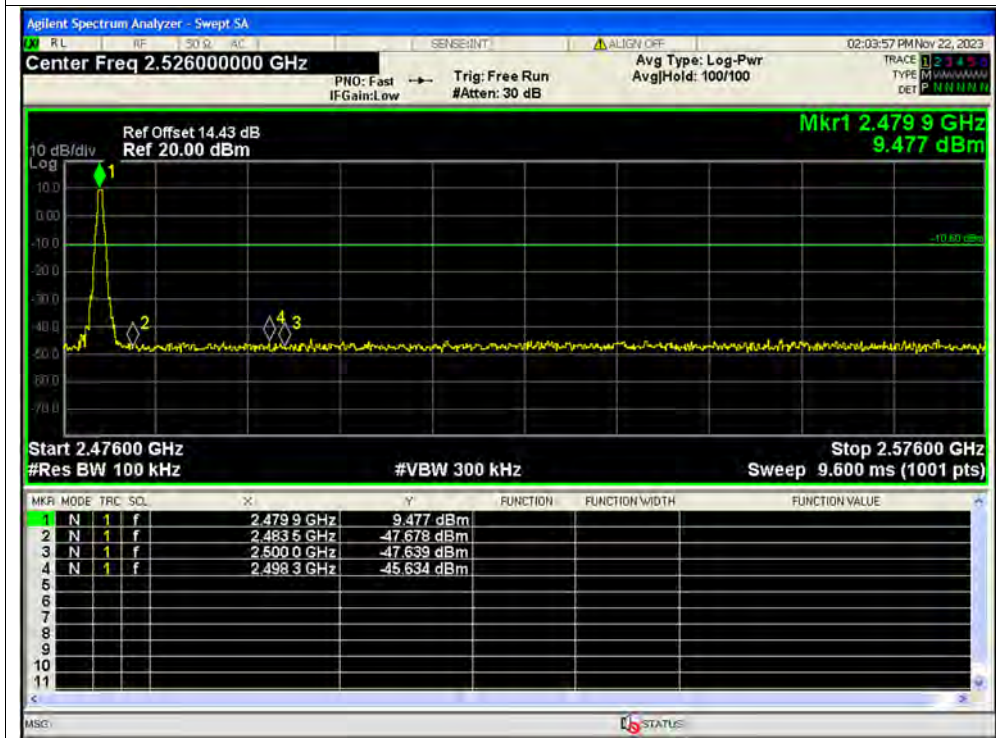




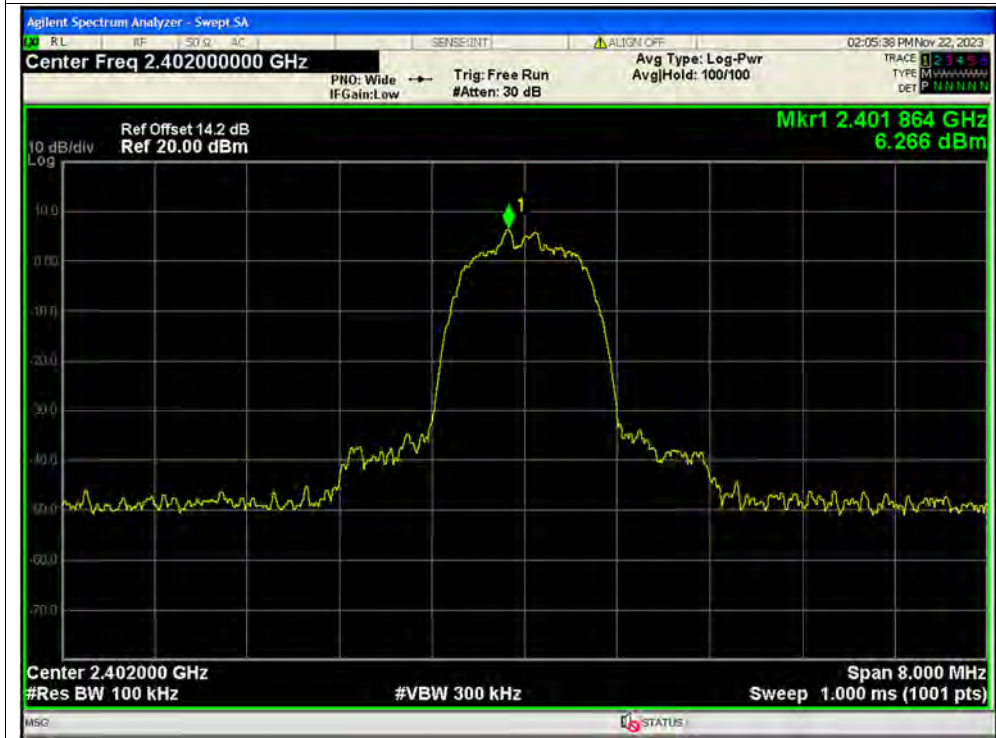
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



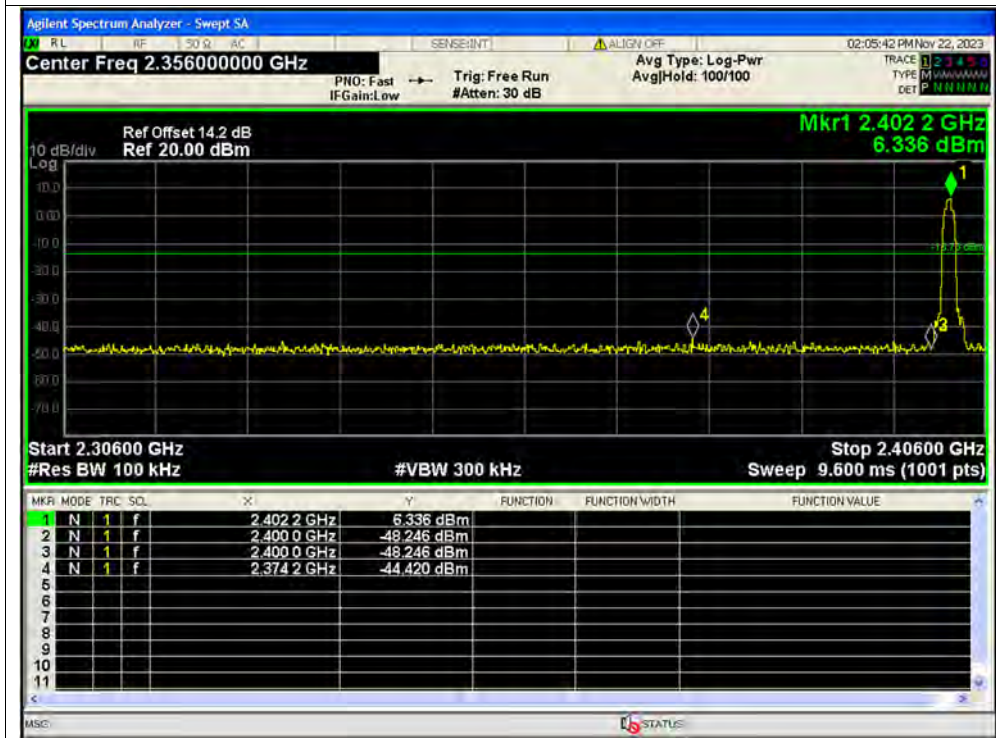
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



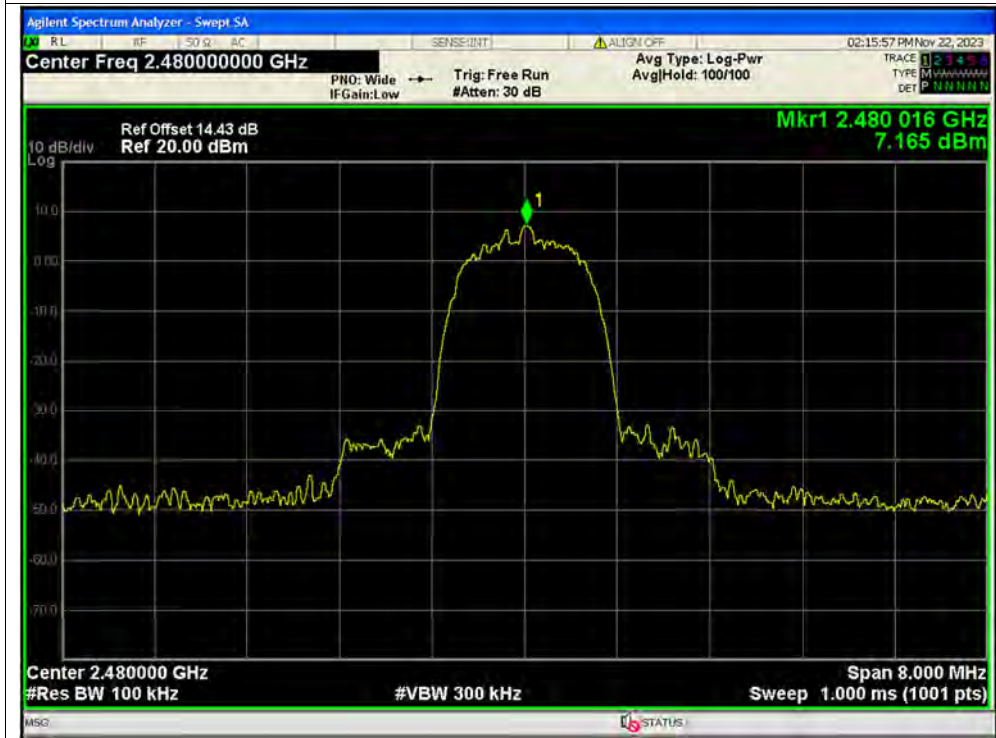
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



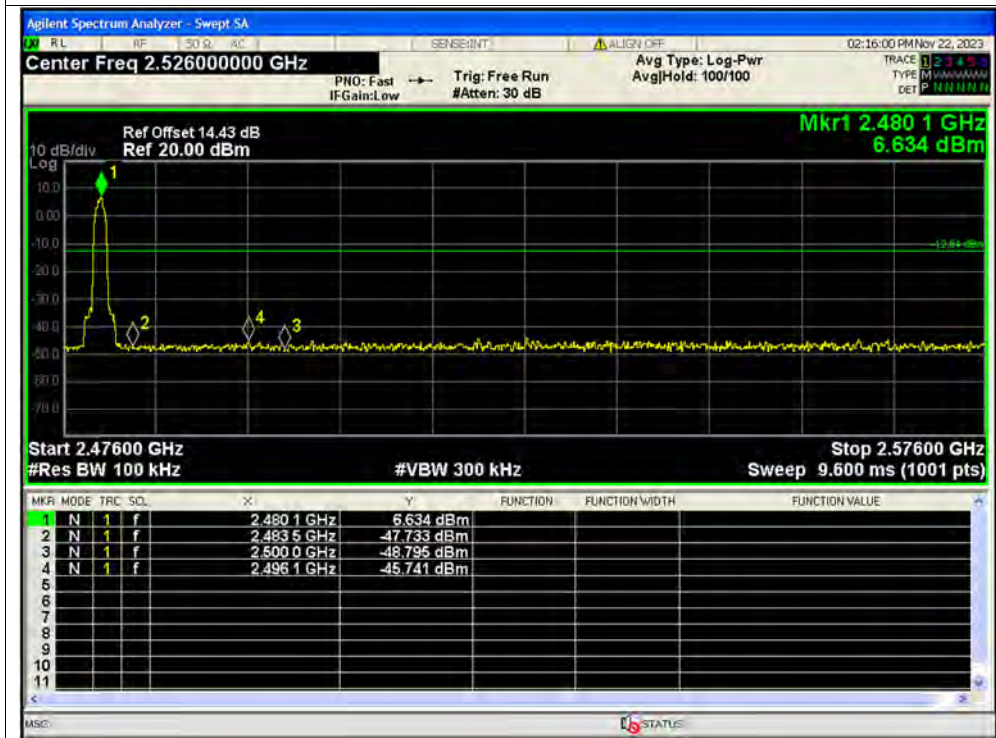
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



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



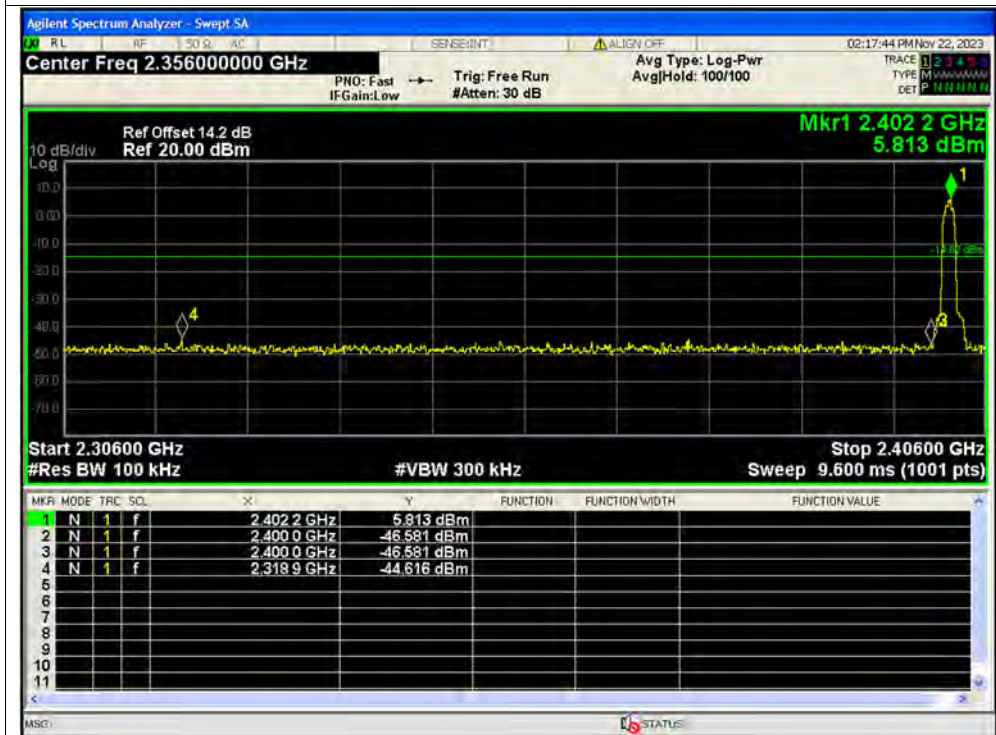
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

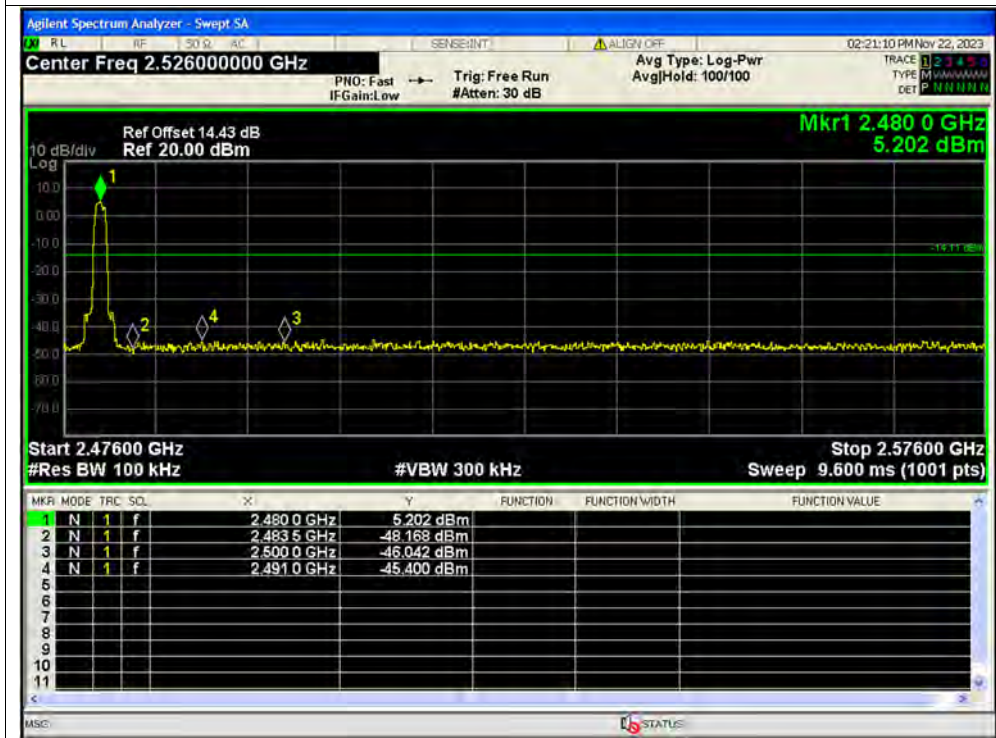




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission



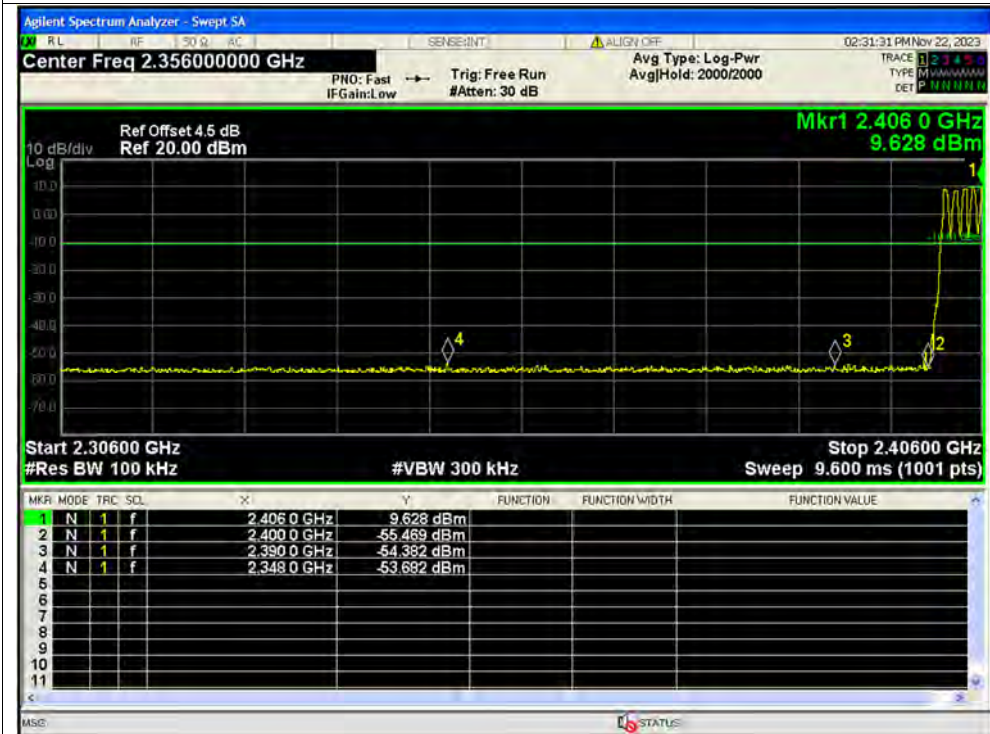


Test Graphs

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



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

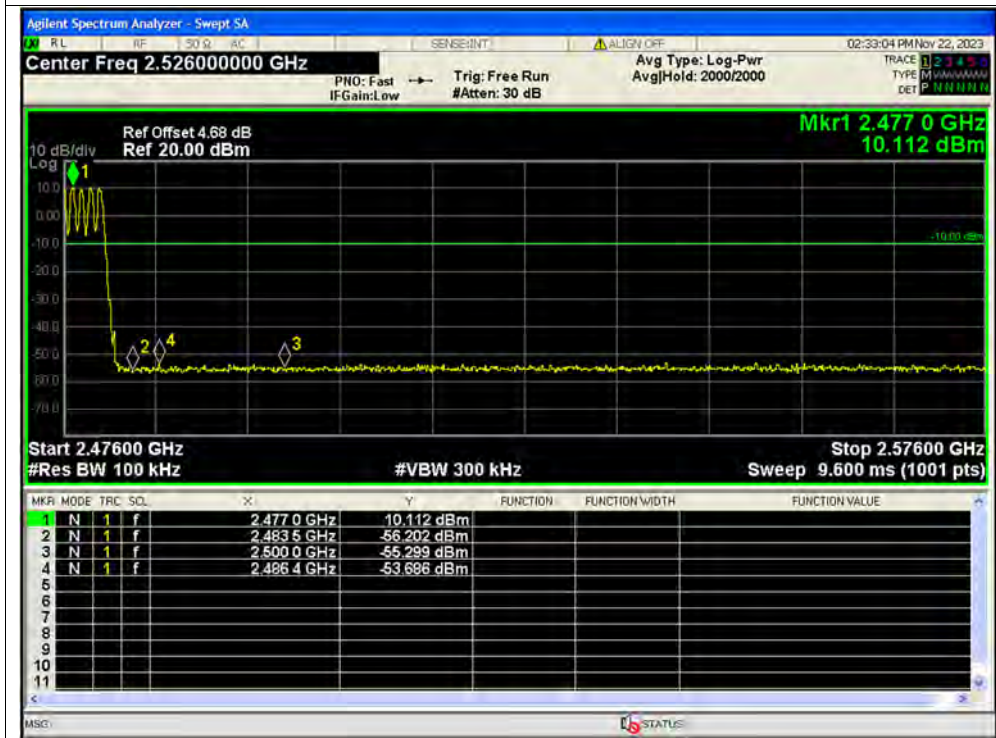




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



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

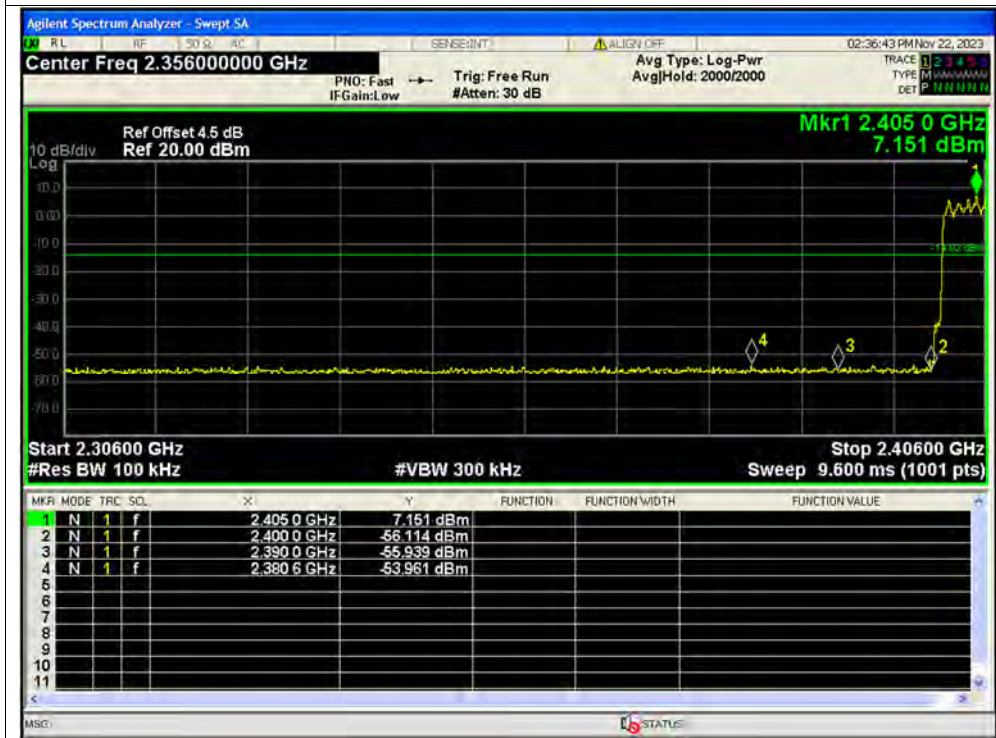




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



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

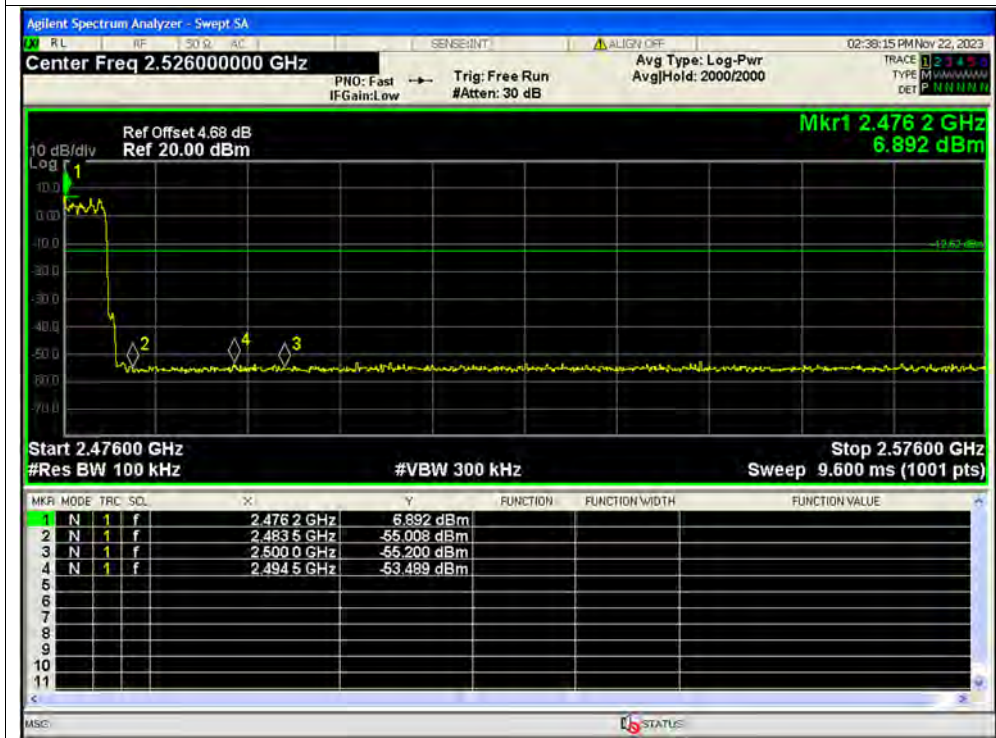




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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

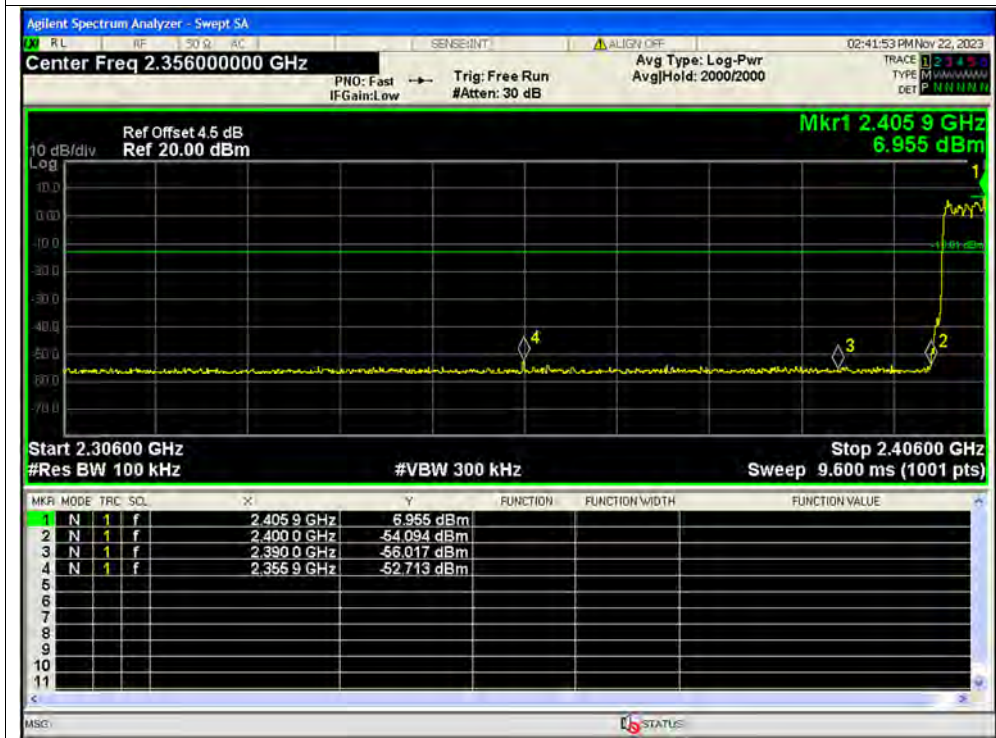




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission

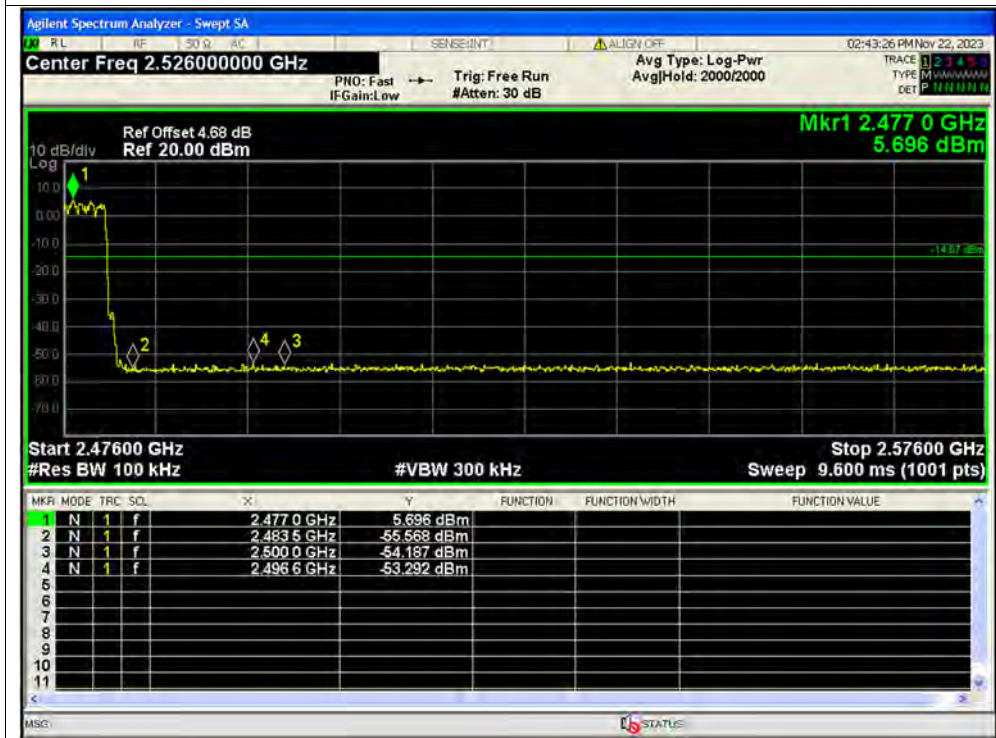




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission





A.10. 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 + USB Cable + PC + BT TX

Test voltage: AC 120V/60Hz

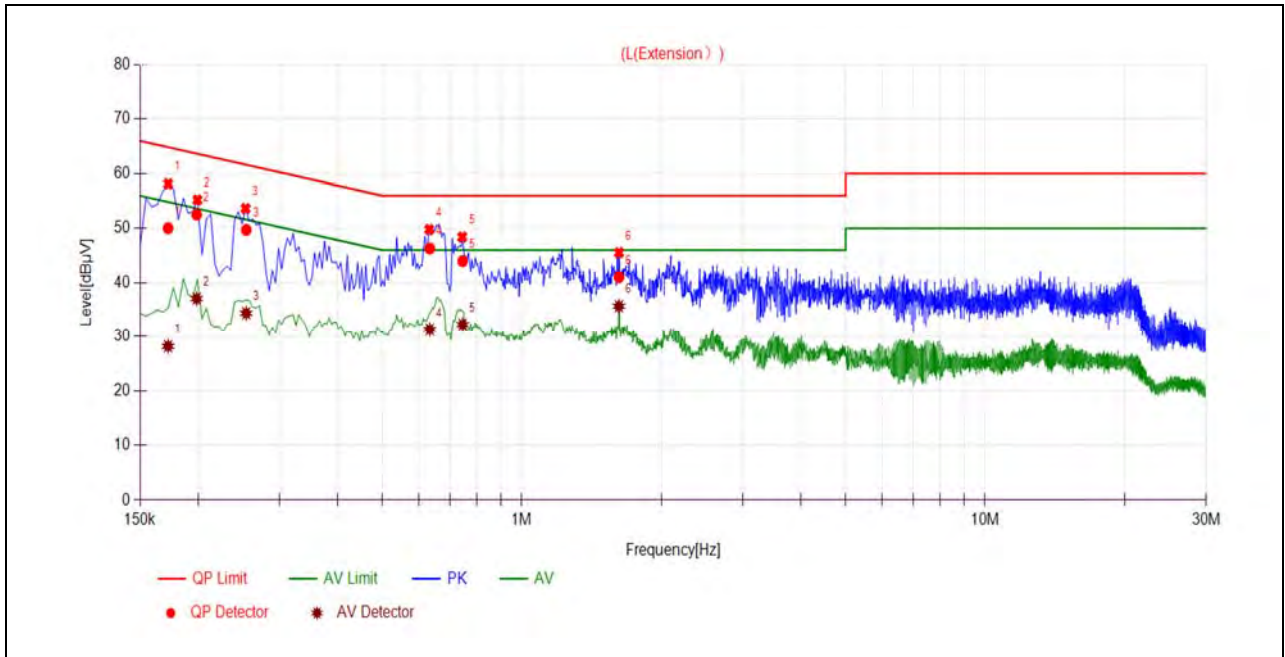
The measurement results are obtained as below:

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

U_R : Receiver Reading

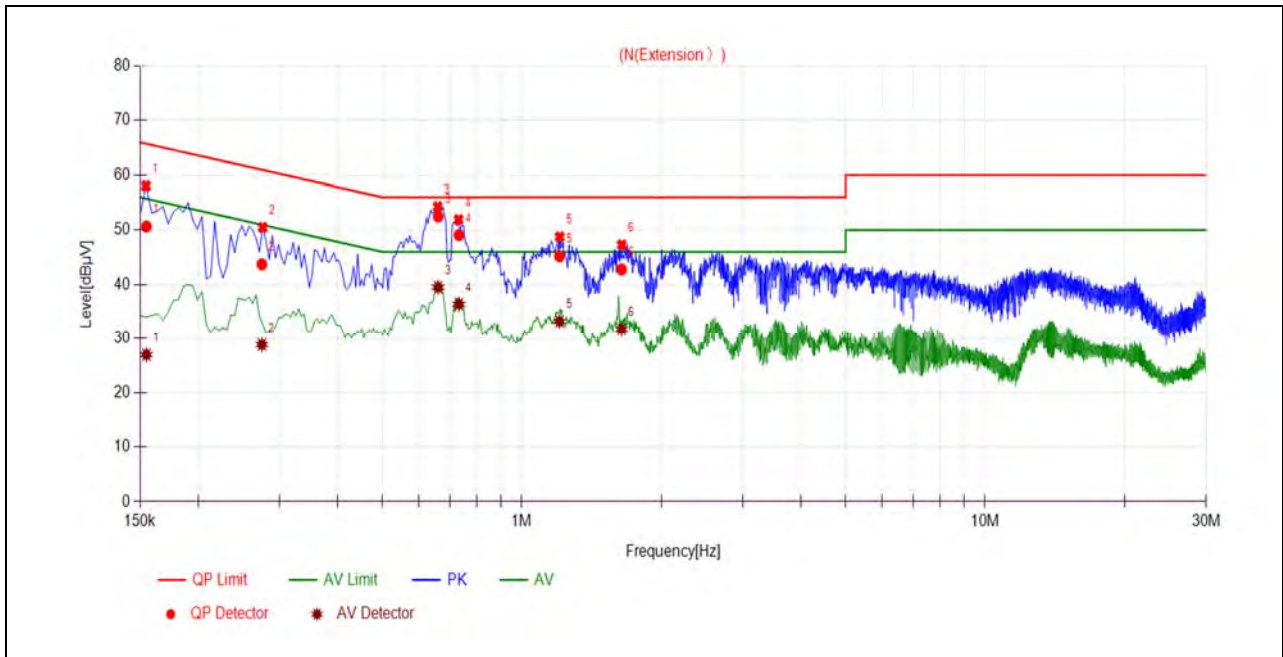
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1724	50.05	28.16	64.85	54.85	Line	PASS
2	0.1987	52.55	37.07	63.67	53.67		PASS
3	0.2542	49.73	34.37	61.62	51.62		PASS
4	0.6328	46.31	31.31	56.00	46.00		PASS
5	0.7452	43.99	32.25	56.00	46.00		PASS
6	1.6207	41.04	35.67	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	0.1548	50.66	26.97	65.74	55.74	Neutral	PASS
2	0.2748	43.74	28.83	60.97	50.97		PASS
3	0.6597	52.52	39.52	56.00	46.00		PASS
4	0.7316	49.09	36.39	56.00	46.00		PASS
5	1.2060	45.22	33.23	56.00	46.00		PASS
6	1.6420	42.79	31.75	56.00	46.00		PASS

**A.11. Restricted Frequency Bands**

The lowest and highest channels are tested to verify the Restricted Frequency Bands.

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

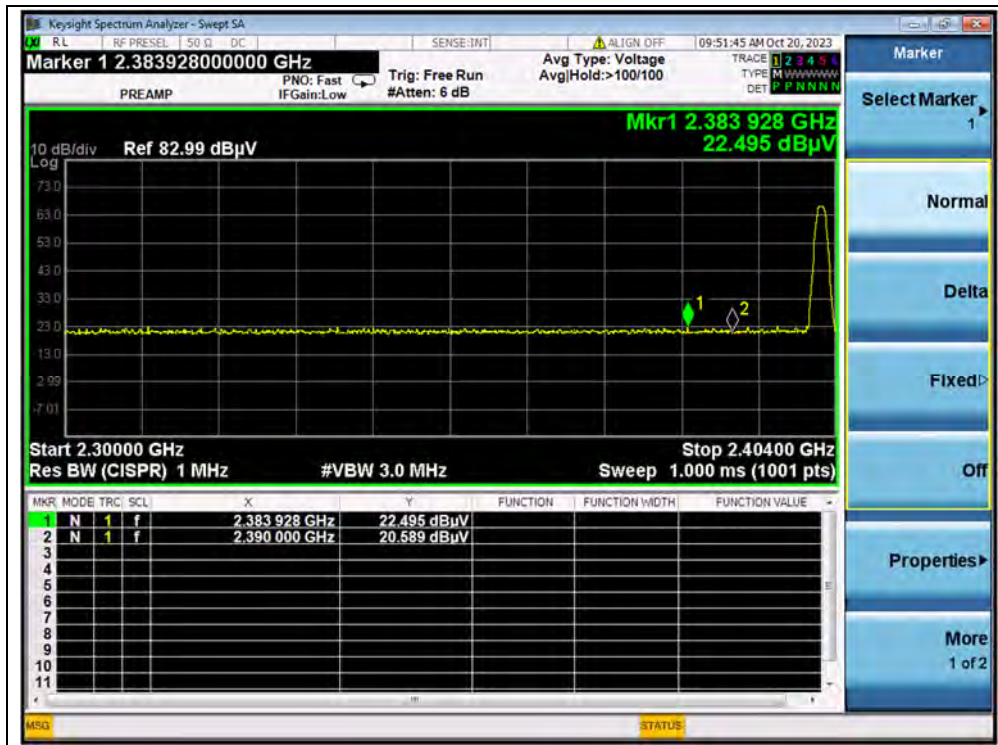
G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

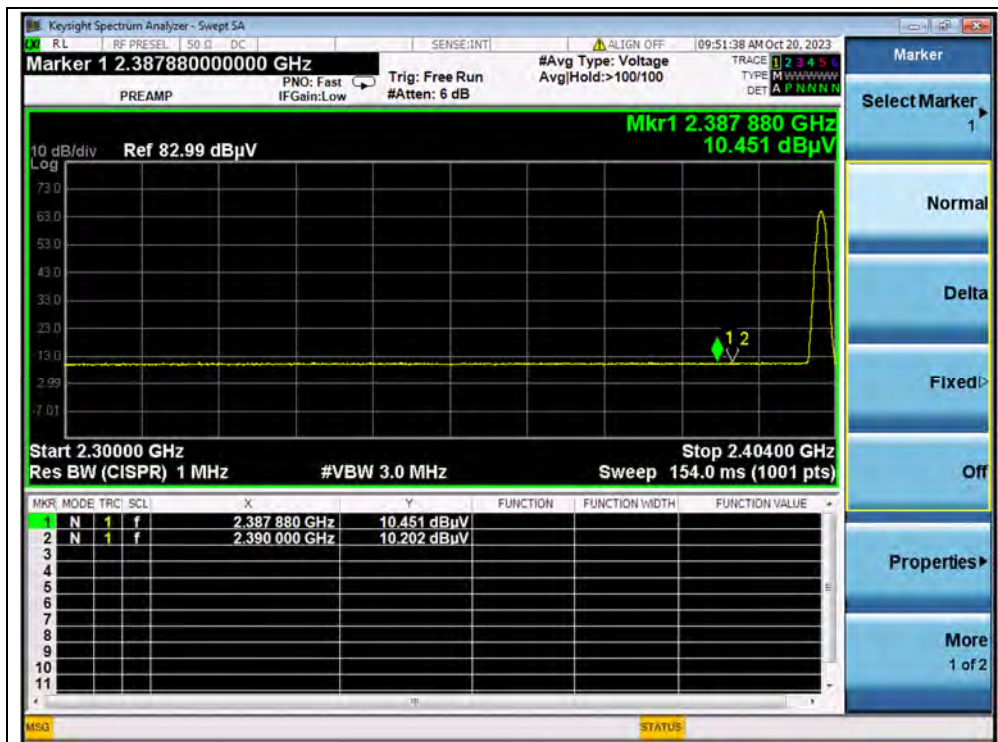
Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

GFSK Mode

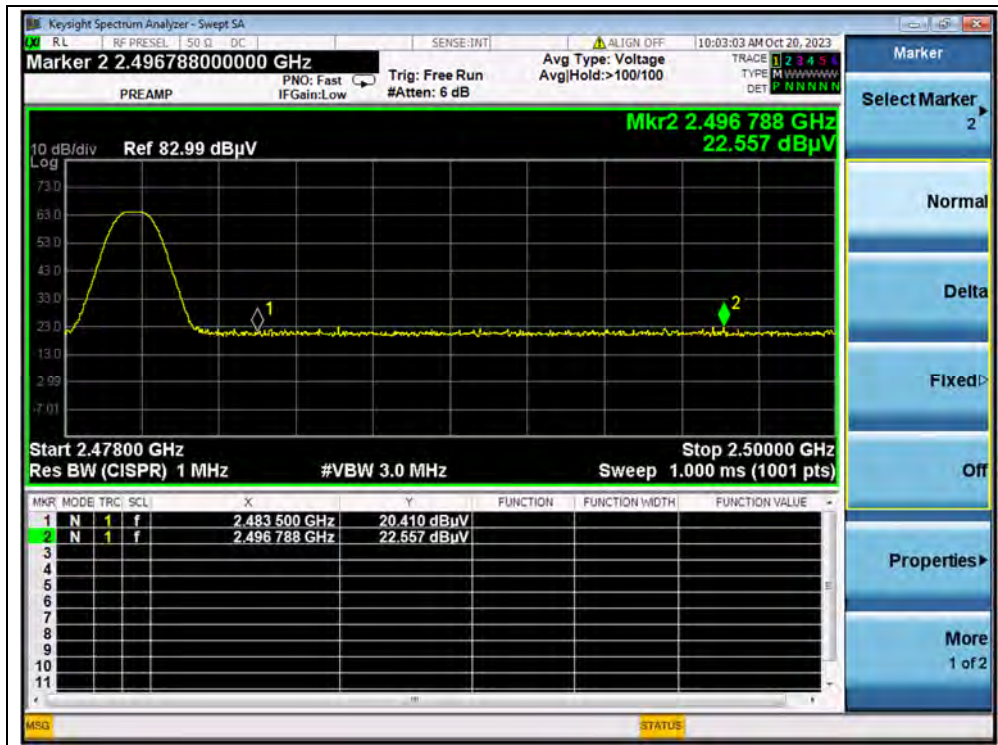
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
0	2383.93	PK	22.50	6.74	27.20	56.44	74	PASS
0	2387.88	AV	10.45	6.74	27.20	44.39	54	PASS
78	2496.79	PK	22.56	6.74	27.20	56.50	74	PASS
78	2485.00	AV	12.02	6.74	27.20	45.96	54	PASS



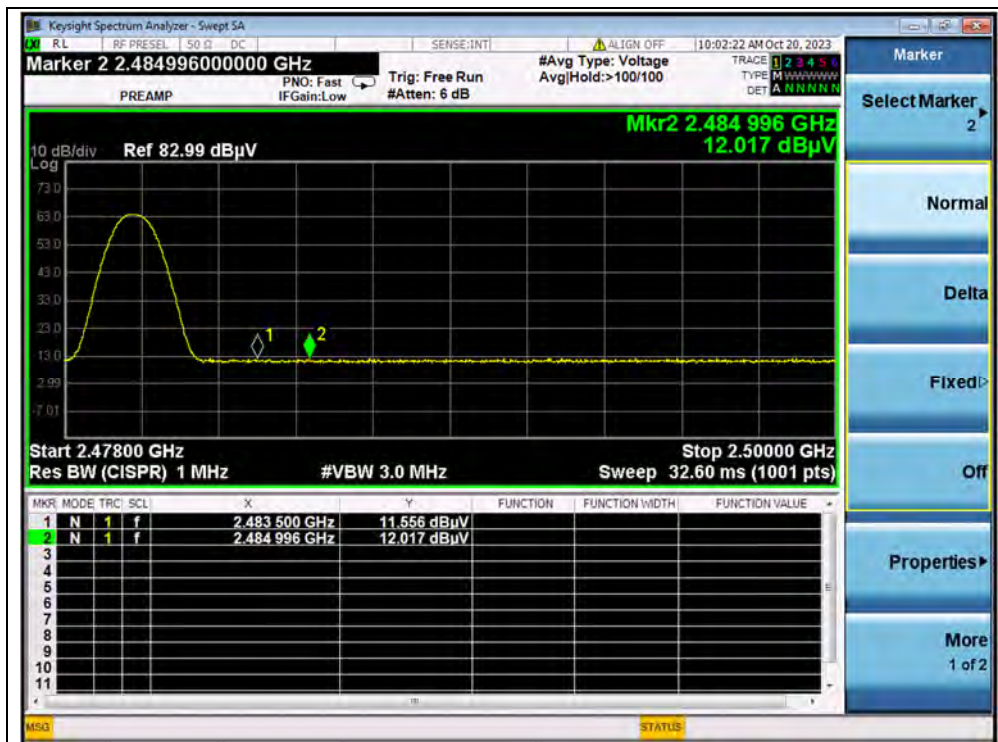
(PEAK, Channel 0, GFSK)



(AVERAGE, Channel 0, GFSK)



(PEAK, Channel 78, GFSK)

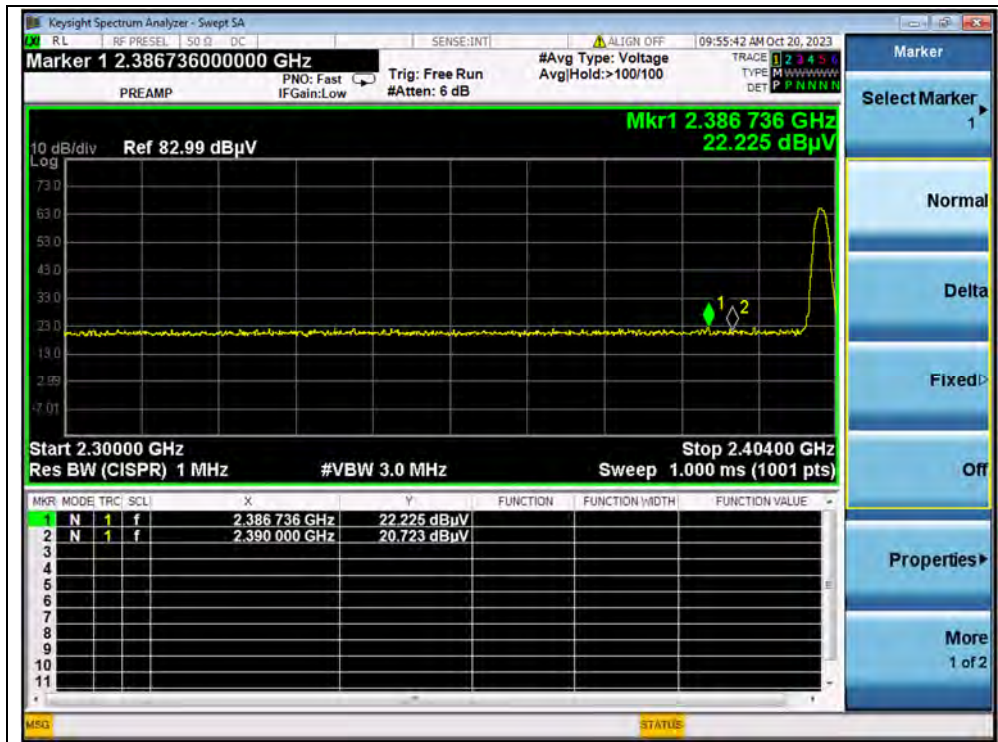


(AVERAGE, Channel 78, GFSK)

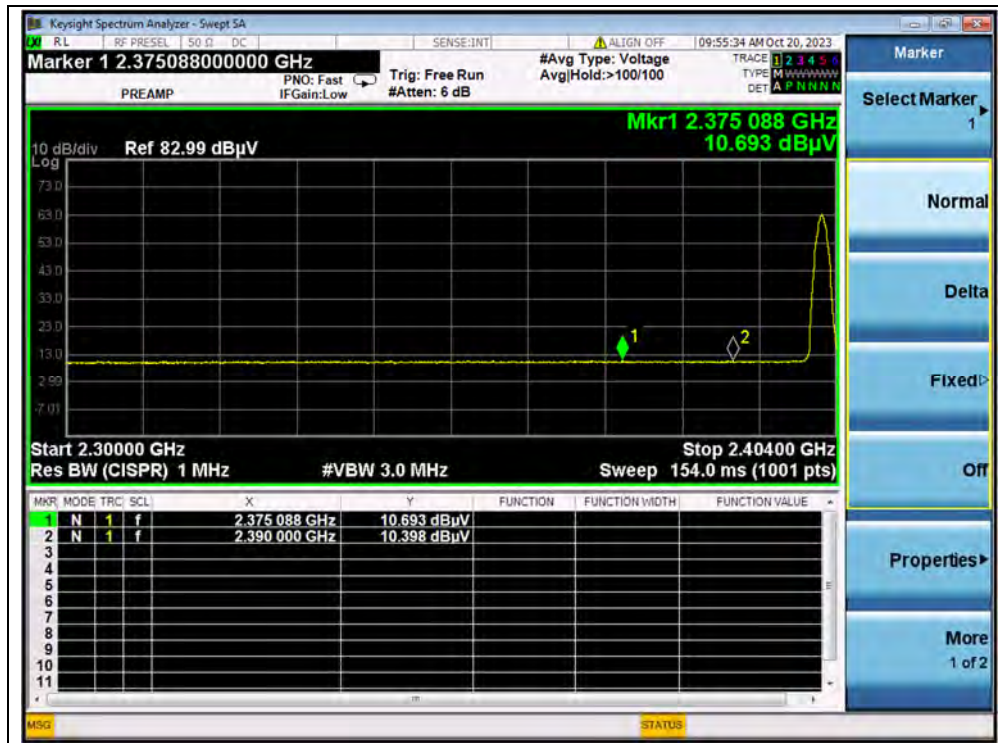


$\pi/4$ -DQPSK Mode

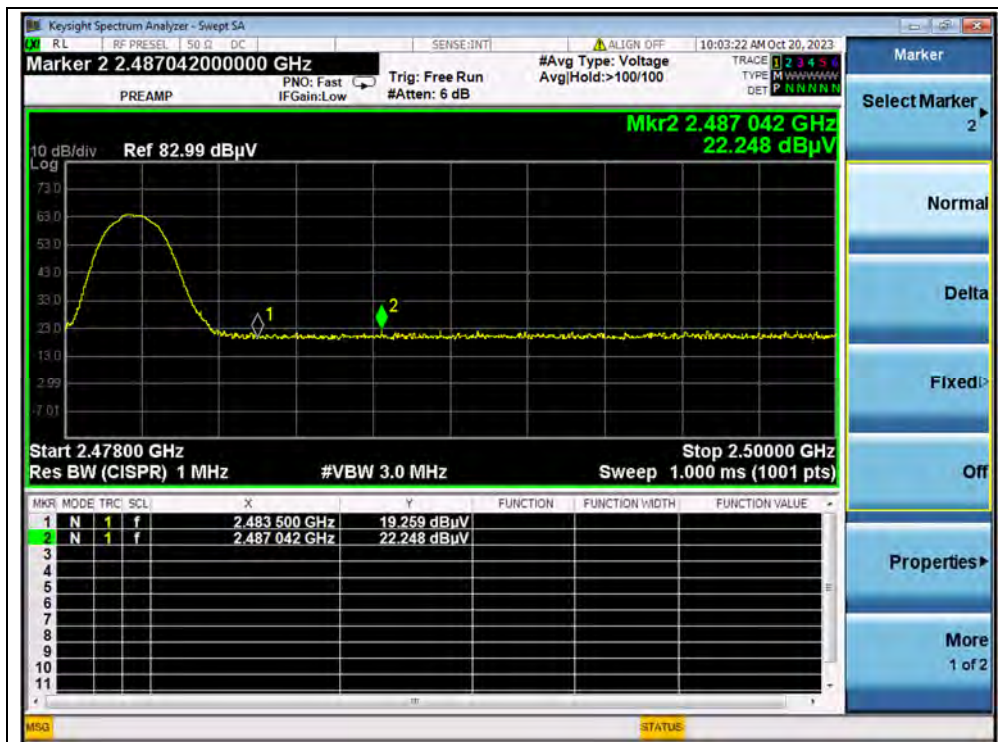
Channel	Frequency (MHz)	Detector	Receiver Reading	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission	Limit (dBμV/m)	Verdict
		PK/ AV	U _R (dBμV)			E (dBμV/m)		
0	2386.74	PK	22.23	6.74	27.20	56.17	74	PASS
0	2375.09	AV	10.69	6.74	27.20	44.63	54	PASS
78	2487.04	PK	22.25	6.74	27.20	56.19	74	PASS
78	248.33	AV	12.03	6.74	27.20	45.97	54	PASS



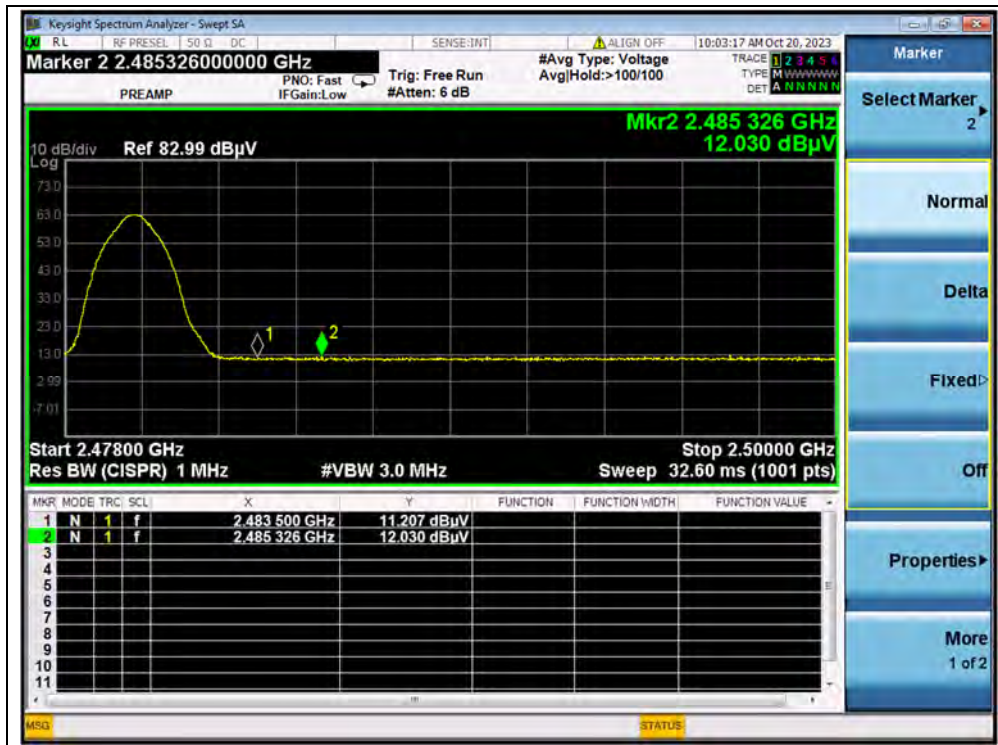
(PEAK, Channel 0, $\pi/4$ -DQPSK)



(AVERAGE, Channel 0, $\pi/4$ -DQPSK)



(PEAK, Channel 78, $\pi/4$ -DQPSK)

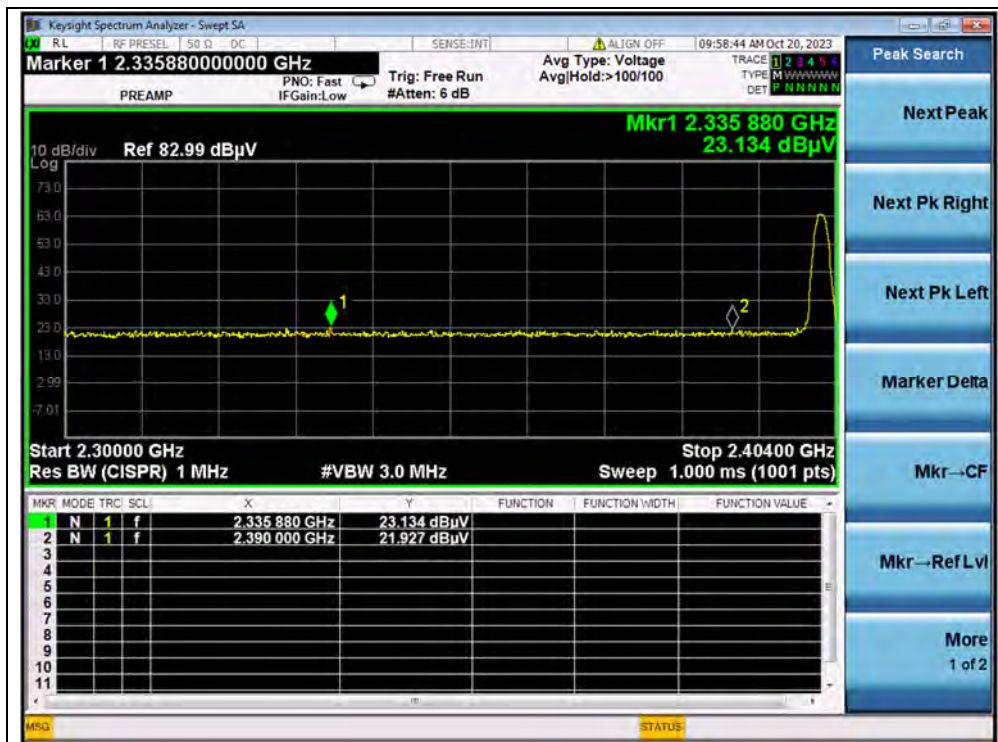


(AVERAGE, Channel 78, π/4-DQPSK)

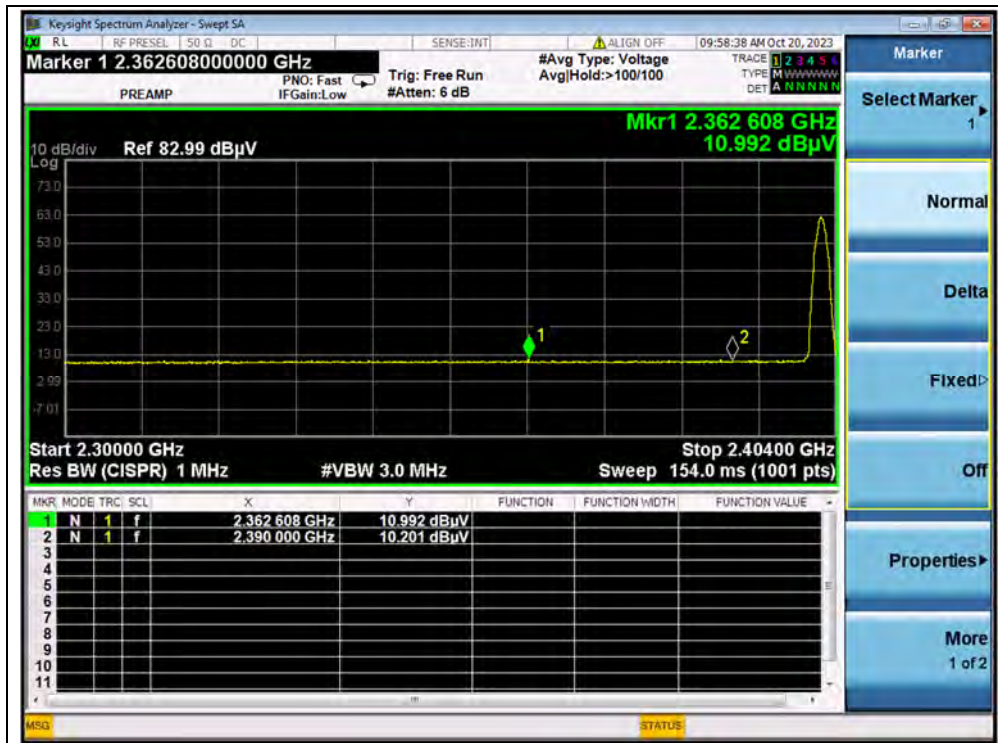


8-DPSK Mode

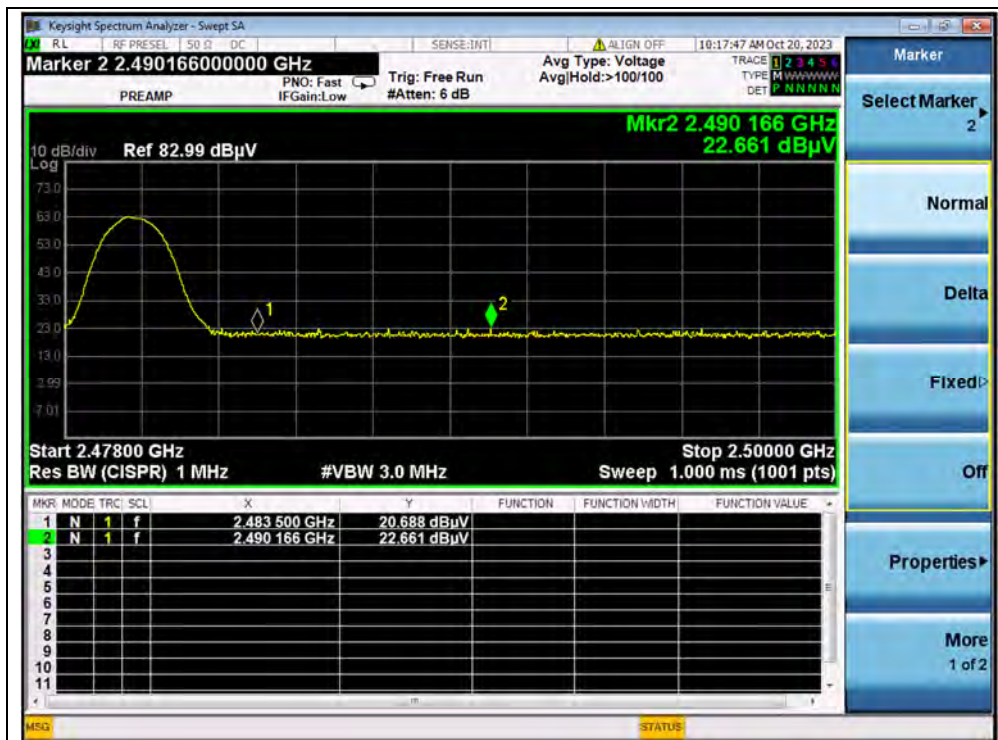
Channel	Frequency (MHz)	Detector	Receiver Reading	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV	U _R (dBμV)					
0	2335.88	PK	23.13	6.74	27.20	57.07	74	PASS
0	2362.61	AV	10.99	6.74	27.20	44.93	54	PASS
78	2490.17	PK	22.66	6.74	27.20	56.60	74	PASS
78	2485.37	AV	11.85	6.74	27.20	45.79	54	PASS



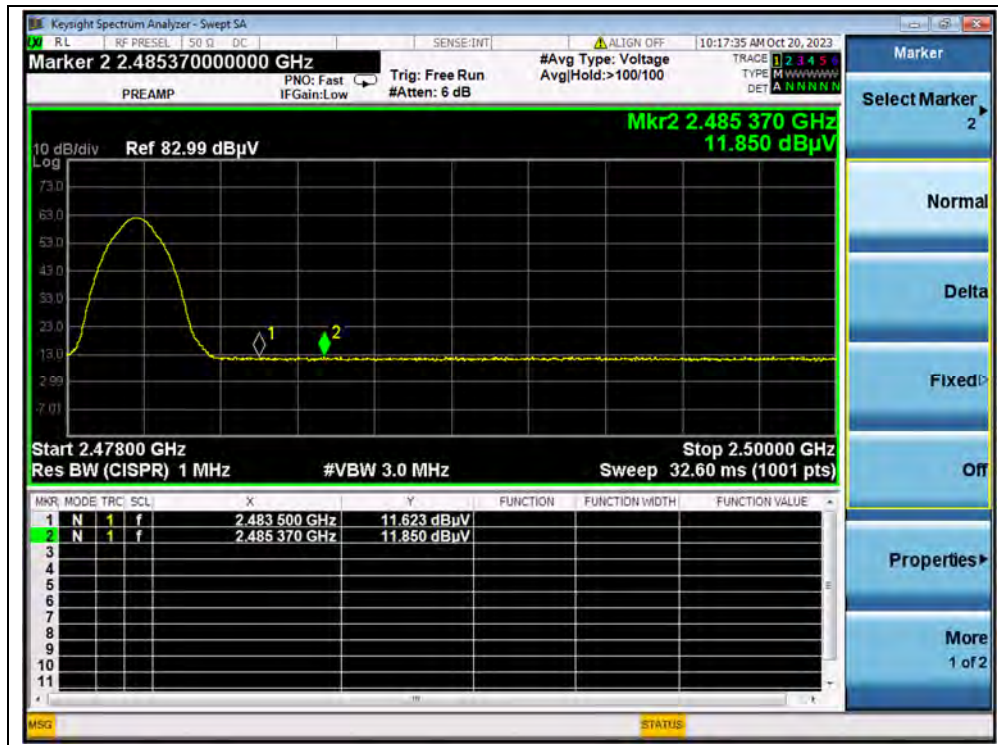
(PEAK, Channel 0, 8-DPSK)



(AVERAGE, Channel 0, 8-DPSK)



(PEAK, Channel 78, 8-DPSK)



(AVERAGE, Channel 78, 8-DPSK)



A.12. 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.

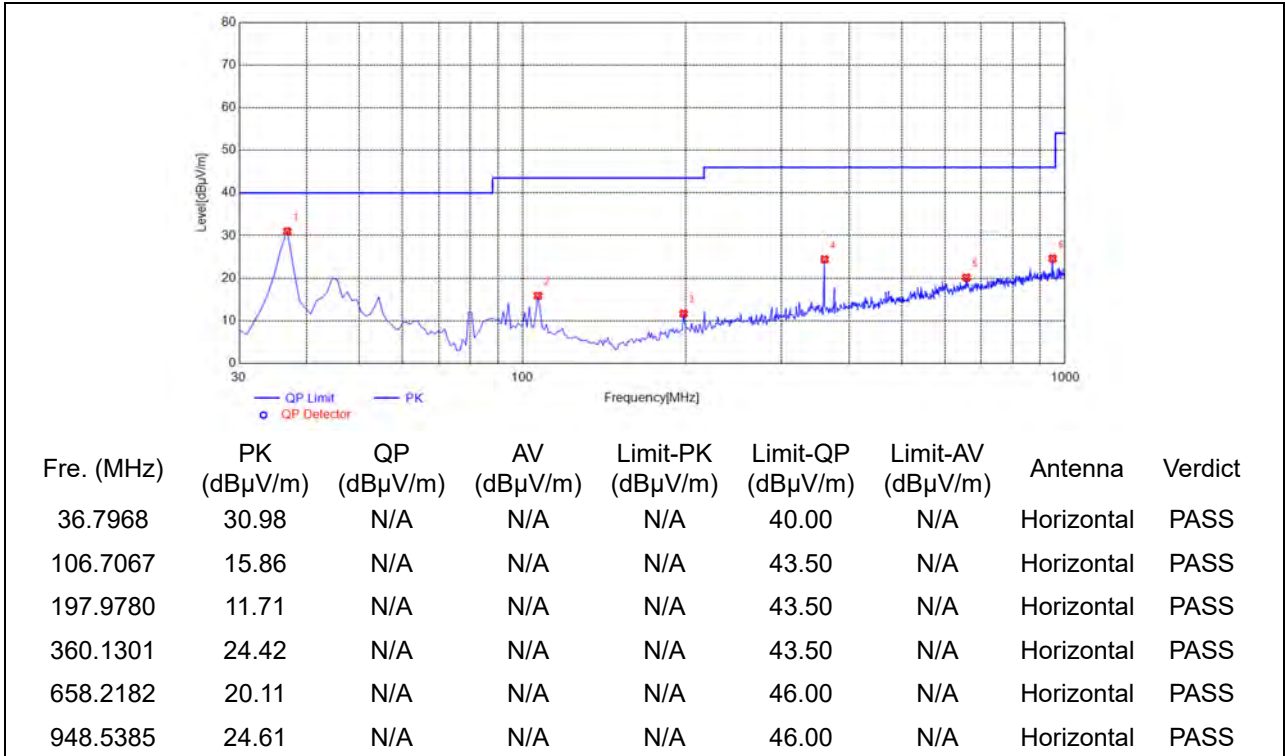
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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

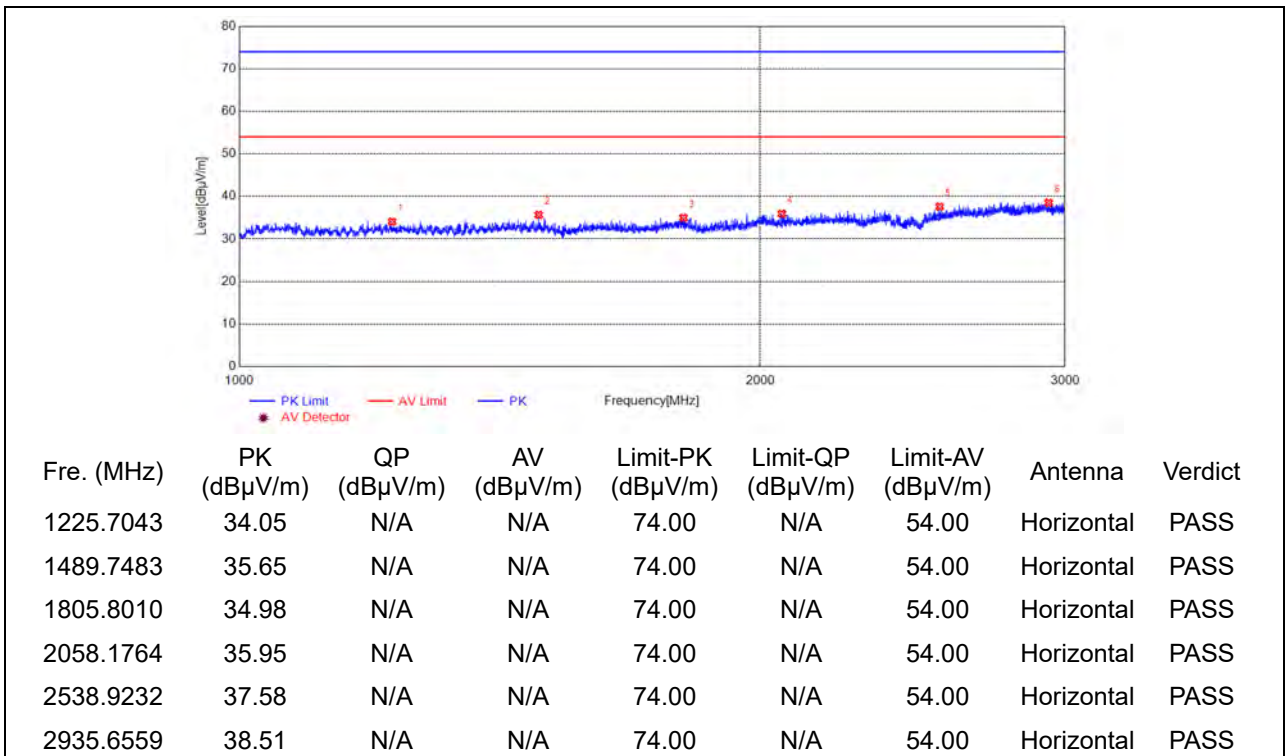


GFSK Mode

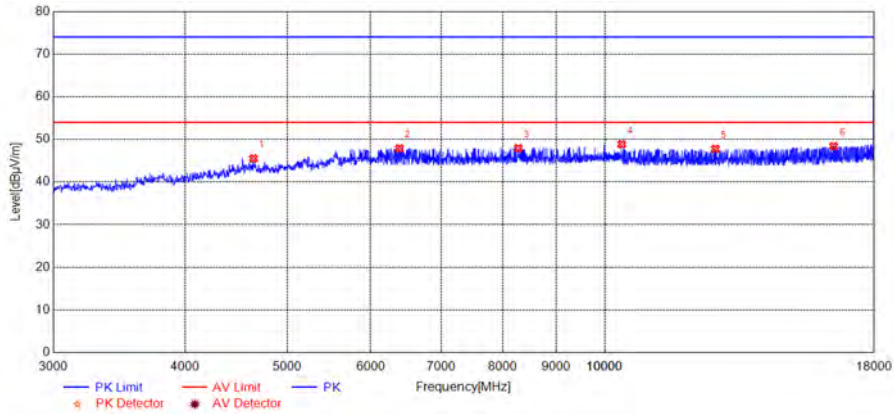
Plots for Channel 0



(Antenna Horizontal, 30MHz to 1GHz)

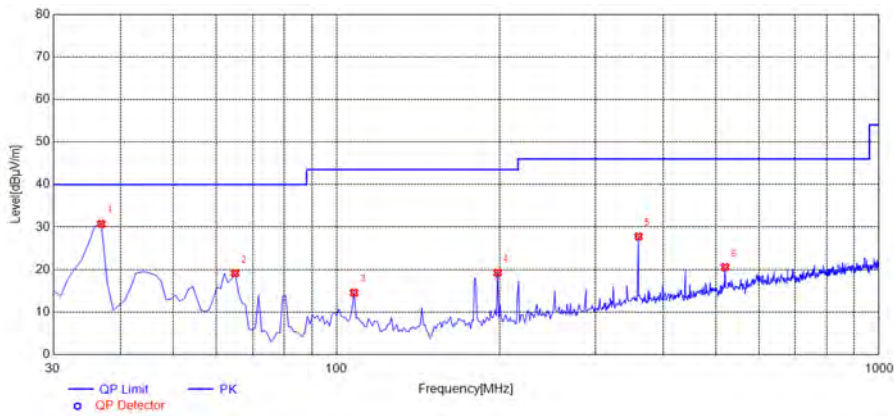


(Antenna Horizontal, 1GHz to 3GHz)



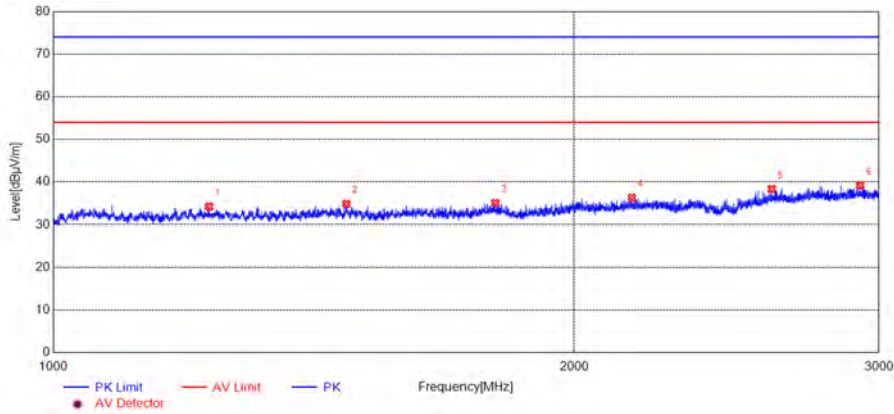
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
4644.3289	45.52	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6387.6775	47.88	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8281.0562	47.92	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10378.4757	48.86	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12727.9456	47.78	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
16481.6963	48.40	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



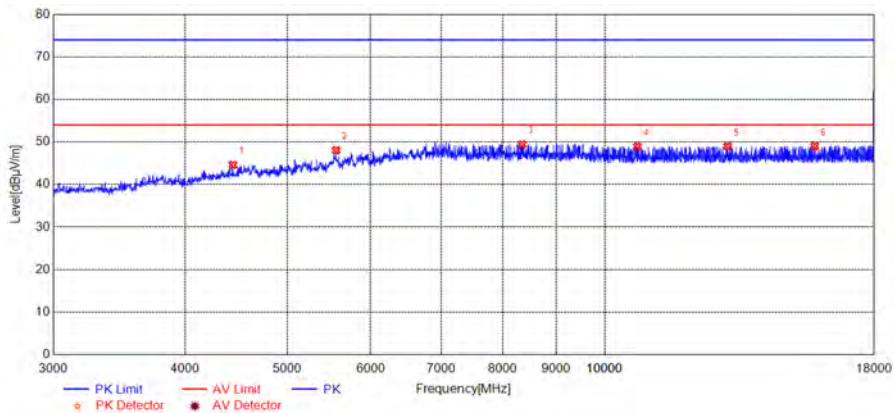
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
36.7968	30.74	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
64.9550	19.15	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	14.57	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.9780	19.23	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
360.1301	27.77	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
520.3403	20.57	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1230.3717	34.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1477.0795	34.86	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1800.8001	35.08	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2159.5266	36.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2601.2669	38.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2925.6543	39.21	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

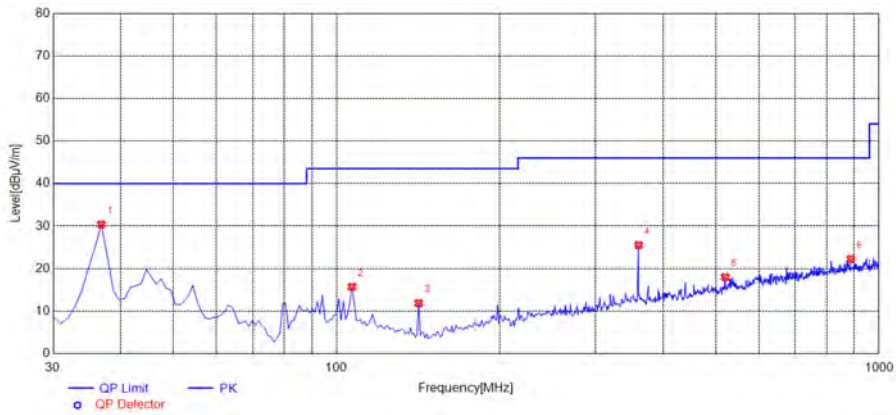
(Antenna Vertical, 1GHz to 3GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4440.2881	44.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5562.5125	48.05	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8350.0700	49.45	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10738.5477	48.96	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13076.0152	48.98	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
15815.5631	49.06	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

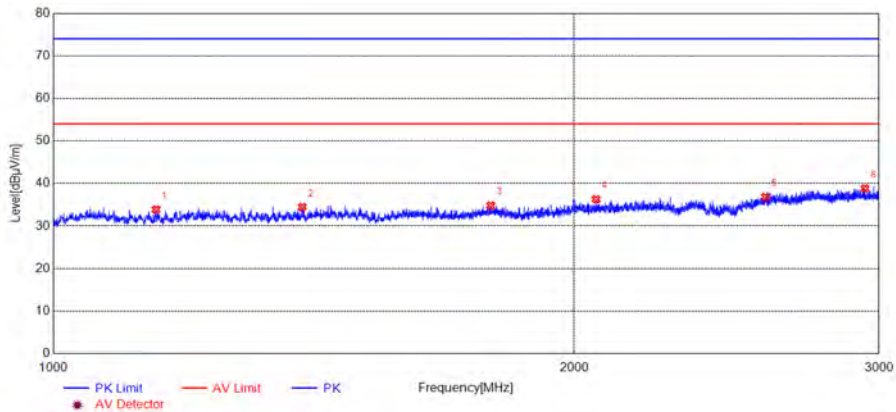
(Antenna Vertical, 3GHz to 18GHz)

Plot for Channel 39



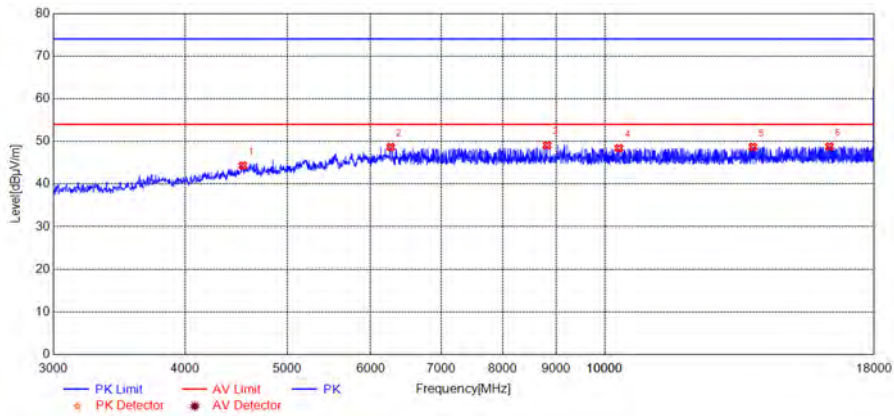
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
36.7968	30.37	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
106.7067	15.72	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
141.6617	11.88	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
360.1301	25.52	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
520.3403	17.99	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
887.3674	22.28	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



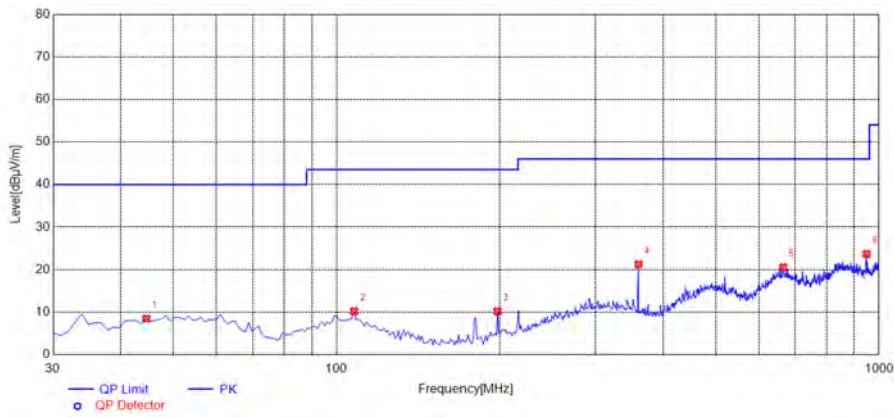
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1146.6911	33.85	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1392.7321	34.47	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1789.7983	34.83	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2058.8431	36.27	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2579.2632	36.82	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2944.6574	38.81	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



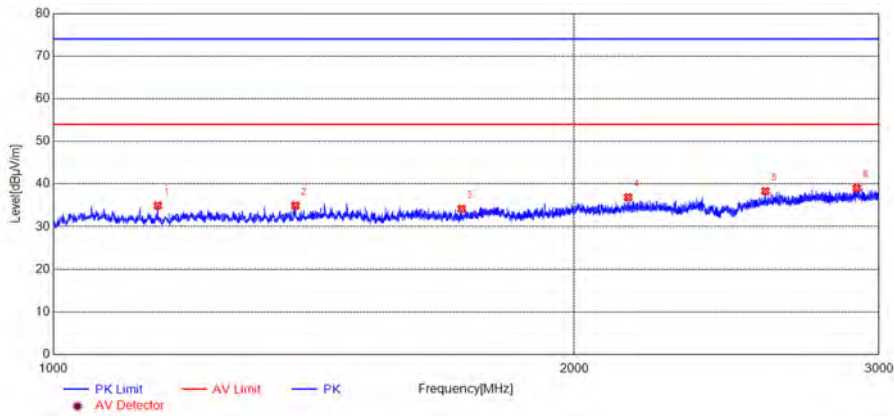
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
4539.3079	44.32	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6267.6535	48.67	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8818.1636	49.08	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10315.4631	48.40	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13820.1640	48.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
16331.6663	48.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



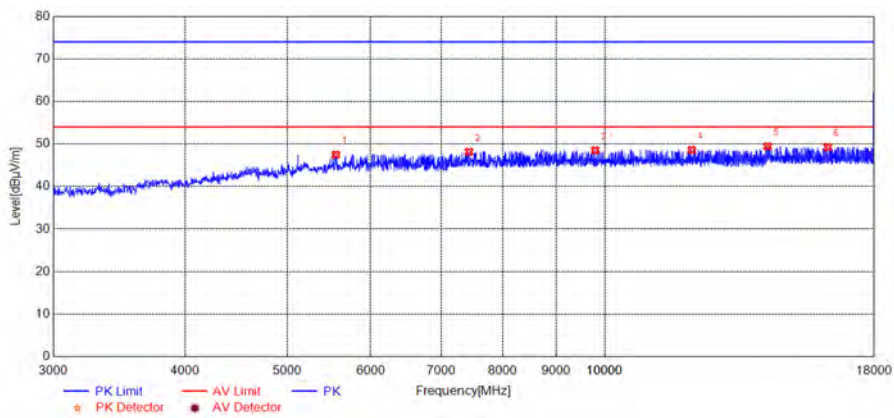
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
44.5646	8.47	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	10.20	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.9780	10.19	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
360.1301	21.24	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
665.9860	20.52	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
948.5385	23.66	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1149.3582	34.92	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1380.3967	34.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1721.7870	34.21	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2148.5248	36.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2579.2632	38.32	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2912.6521	39.02	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

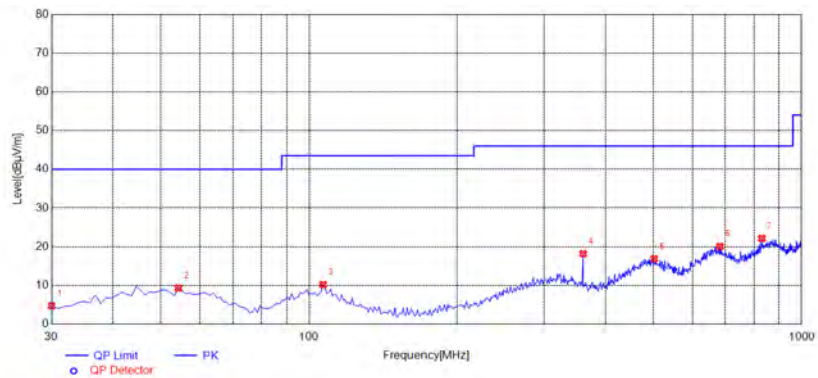
(Antenna Vertical, 1GHz to 3GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
5559.5119	47.48	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7434.8870	48.15	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9796.3593	48.53	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12091.8184	48.59	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14270.2541	49.45	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
16271.6543	49.28	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

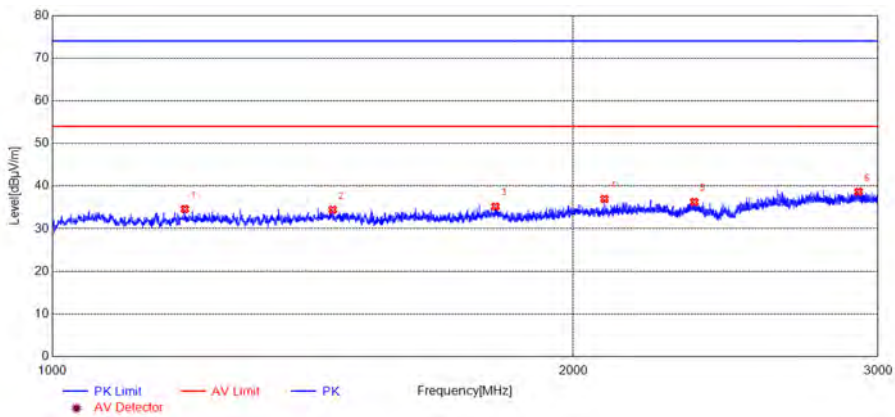
(Antenna Vertical, 3GHz to 18GHz)

Plot for Channel 78



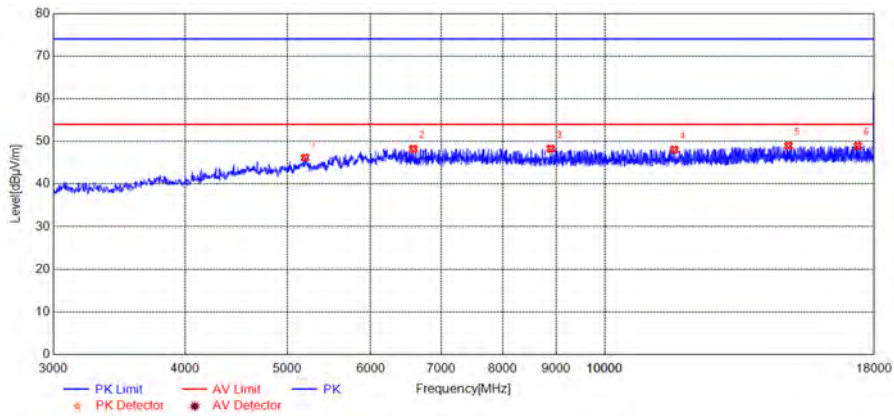
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
30.0000	4.73	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
54.2743	9.31	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
106.7067	10.19	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
360.1301	18.16	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
501.8919	16.85	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
682.4925	20.07	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
B. 830.0801	22.14	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



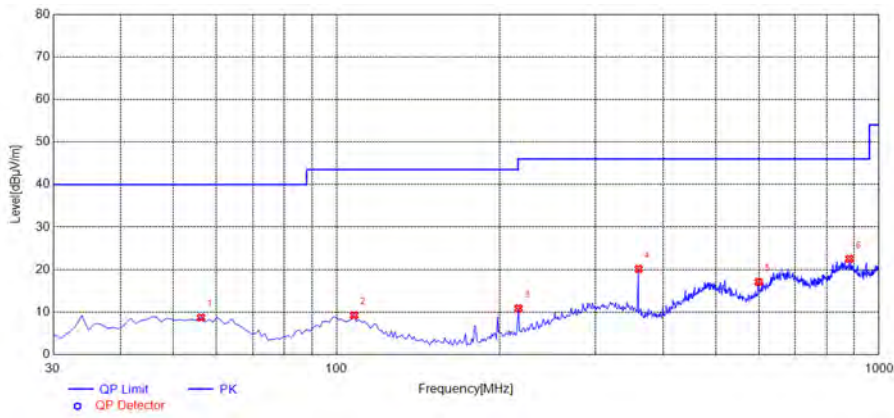
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1193.0322	34.60	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1452.4087	34.45	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1803.4672	35.19	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2084.8475	36.98	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2349.8916	36.27	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2923.6539	38.65	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



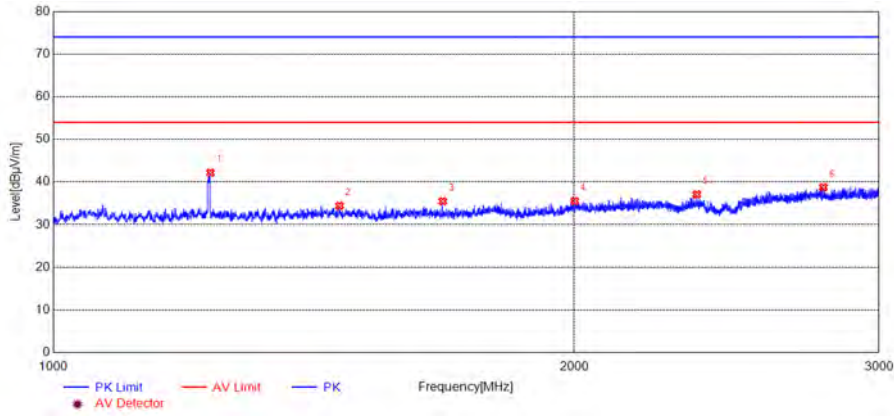
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
5199.4399	46.17	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6585.7171	48.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8890.1780	48.28	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11638.7277	48.07	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
14933.3867	48.96	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
17369.8740	48.93	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



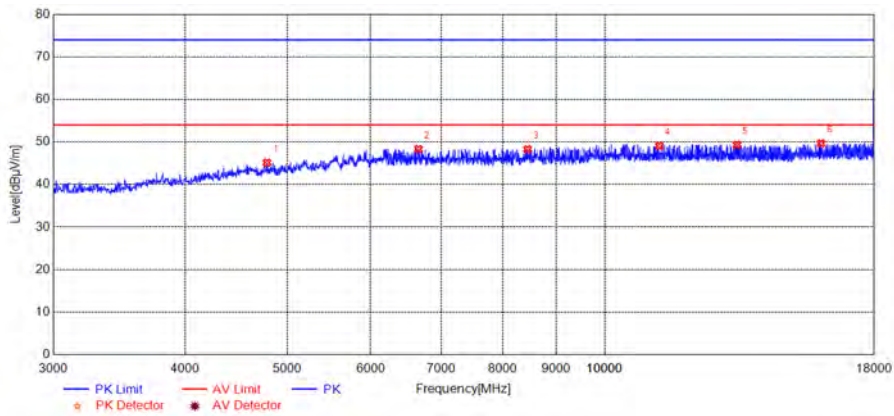
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
56.2162	8.74	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	9.23	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
216.4264	10.89	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
360.1301	20.17	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
599.9600	17.09	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
882.5125	22.52	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1232.7055	42.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1463.7440	34.43	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1679.1132	35.49	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2001.5003	35.53	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2354.2257	37.10	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2785.9643	38.74	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 1GHz to 3GHz)



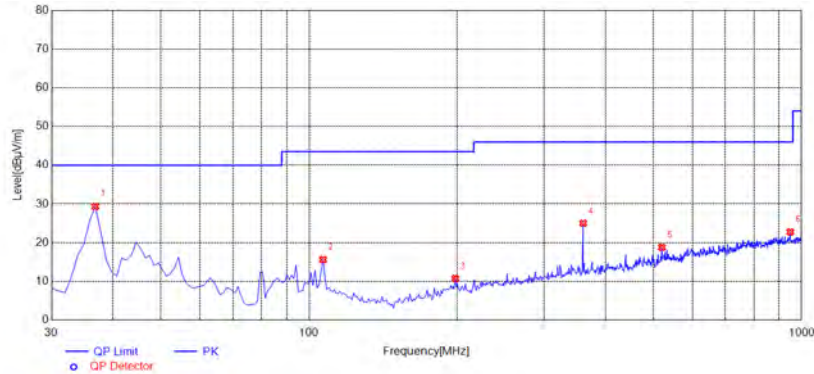
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4785.3571	45.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6660.7321	48.32	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8449.0898	48.29	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
11266.6533	49.11	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13346.0692	49.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
16034.6069	49.67	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 3GHz to 18GHz)



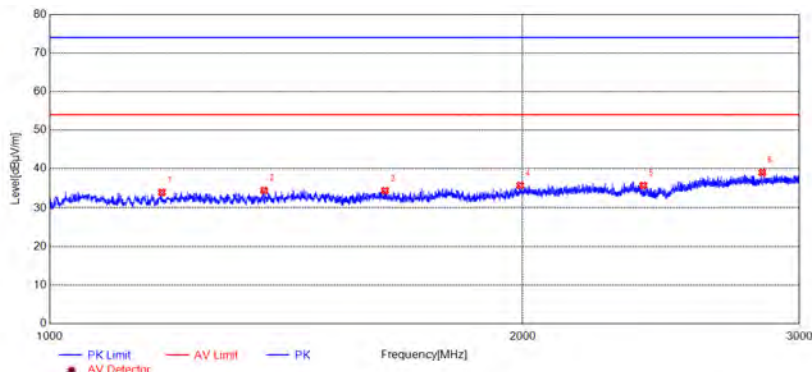
$\pi/4$ -DQPSK Mode

Plots for Channel 0



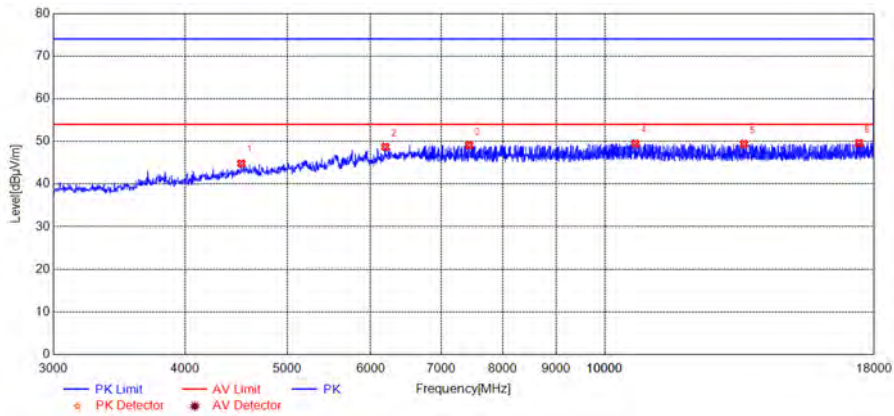
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
36.7968	29.34	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
106.7067	15.61	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
197.9780	10.77	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
360.1301	25.02	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
520.3403	18.79	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
948.5385	22.76	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



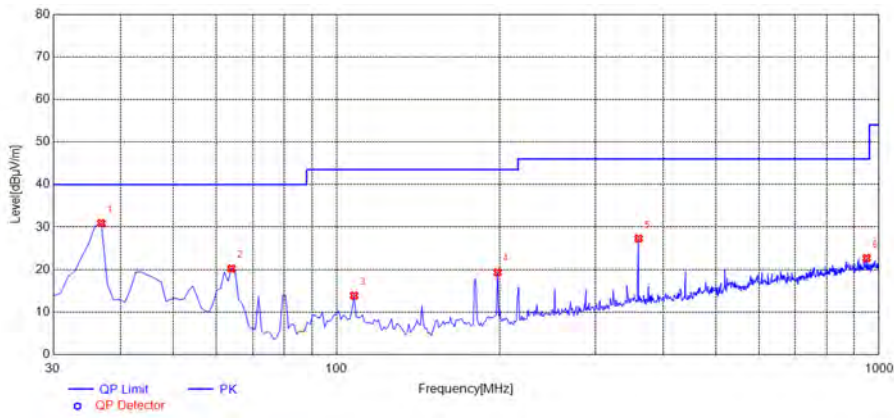
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1179.0298	33.88	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1369.3949	34.34	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1634.7725	34.28	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1992.8321	35.68	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2386.5644	35.66	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2841.3069	38.98	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



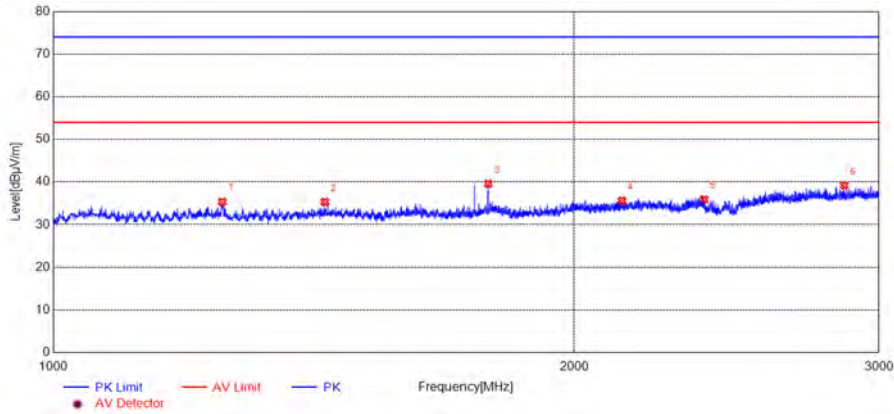
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
4524.3049	44.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6195.6391	48.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7437.8876	49.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10687.5375	49.45	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13550.1100	49.39	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
17420.8842	49.57	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



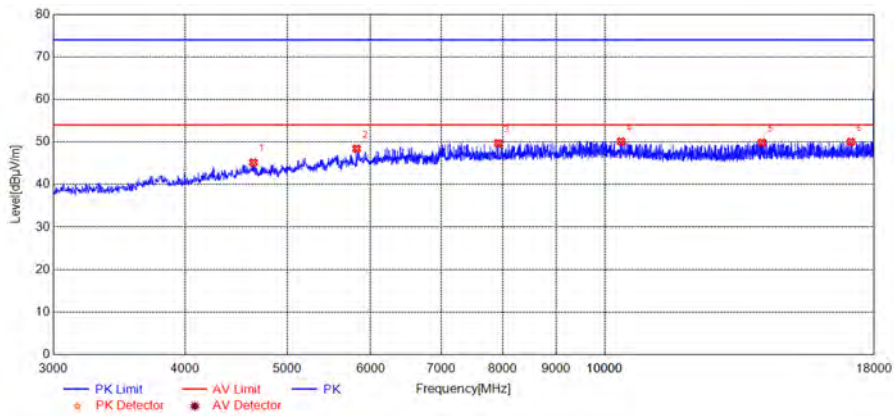
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
36.7968	30.90	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
63.9840	20.24	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	13.89	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.9780	19.36	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
360.1301	27.30	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
948.5385	22.72	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1252.3754	35.38	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1435.4059	35.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1783.7973	39.61	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2130.8551	35.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2377.2295	35.91	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2864.3107	39.22	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

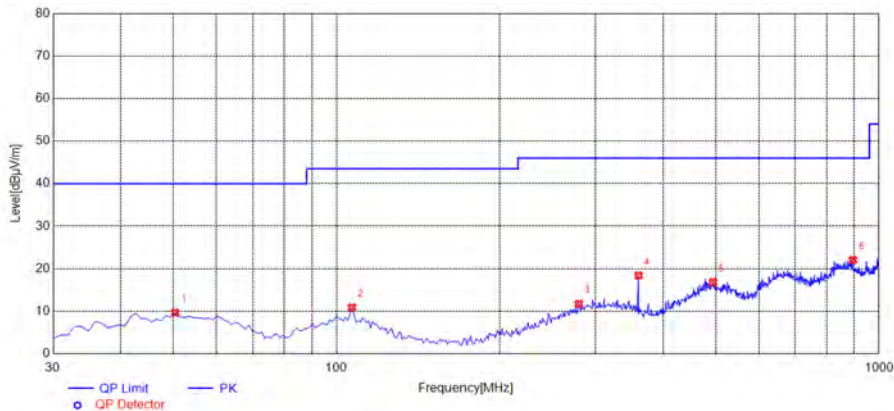
(Antenna Vertical, 1GHz to 3GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4644.3289	45.17	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5817.5635	48.43	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7926.9854	49.71	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10366.4733	50.11	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14096.2192	49.88	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
17111.8224	50.03	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

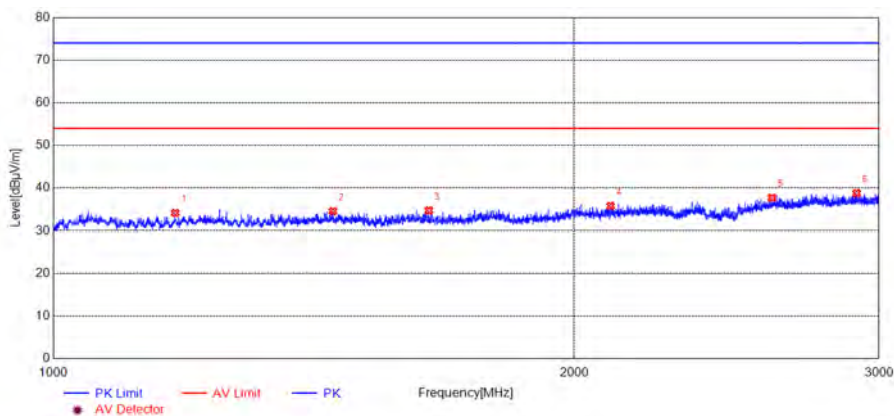
(Antenna Vertical, 3GHz to 18GHz)

Plot for Channel 39



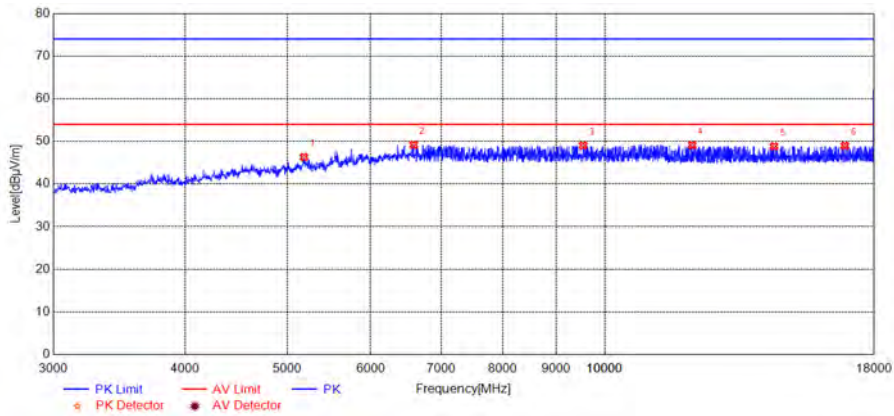
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
50.3904	9.67	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
106.7067	10.89	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
279.5395	11.72	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
360.1301	18.42	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
494.1241	16.79	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
895.1351	22.04	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



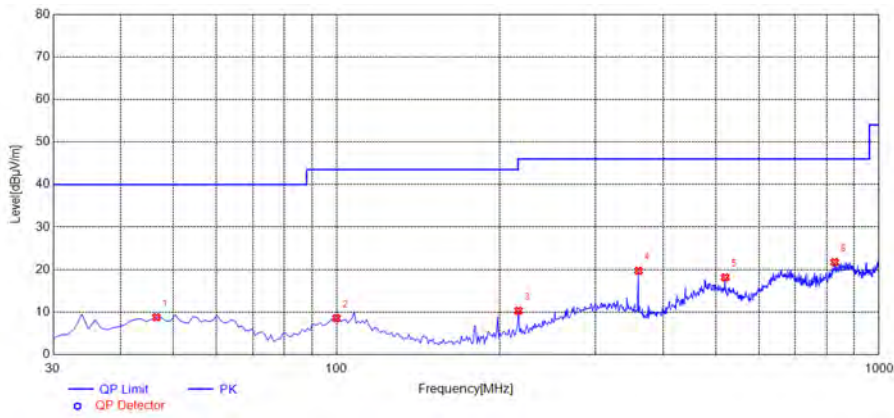
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1176.3627	34.17	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1450.7418	34.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1648.4414	34.76	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2099.1832	35.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2601.6003	37.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2911.6519	38.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



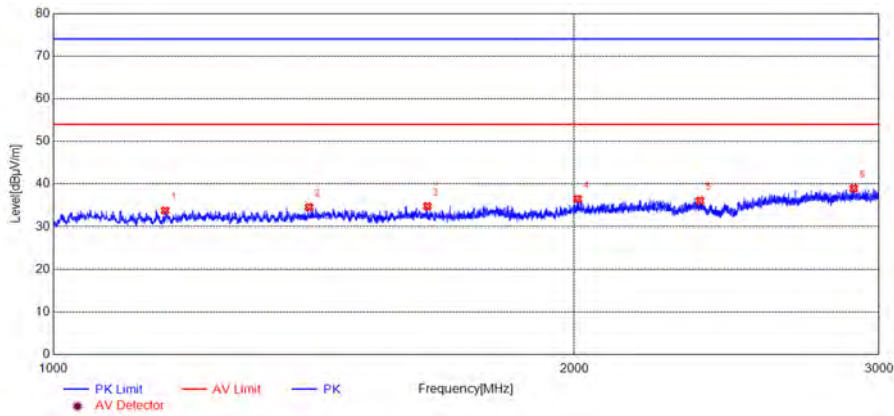
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
5187.4375	46.31	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6591.7183	49.19	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9538.3077	49.03	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12103.8208	49.12	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
14468.2937	48.85	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
16892.7786	48.97	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



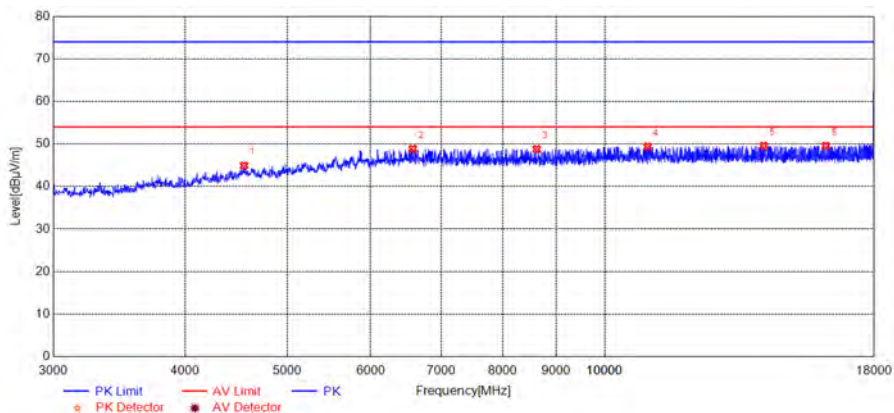
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
46.5065	8.81	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.9099	8.56	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
216.4264	10.33	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
360.1301	19.72	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
520.3403	18.16	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
828.1381	21.73	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1160.6934	33.78	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1405.4009	34.57	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1645.1075	34.80	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2009.5016	36.50	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2364.2274	36.10	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2900.3167	38.98	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

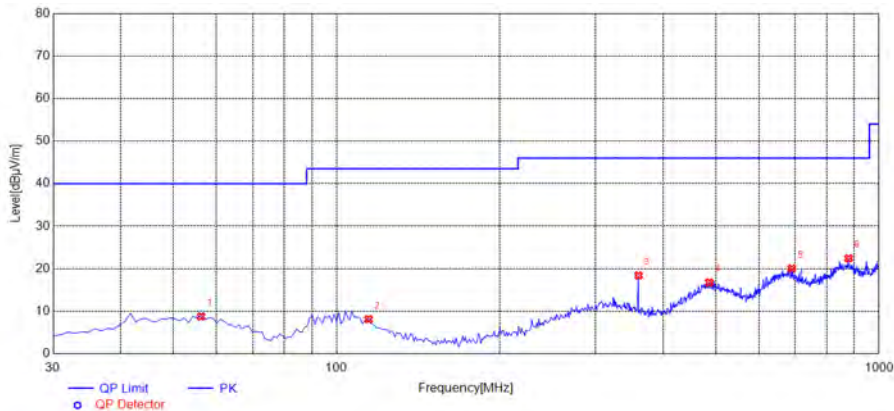
(Antenna Vertical, 1GHz to 3GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4551.3103	44.92	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6576.7153	48.86	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8620.1240	48.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10981.5963	49.38	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
14147.2294	49.57	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
16202.6405	49.57	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

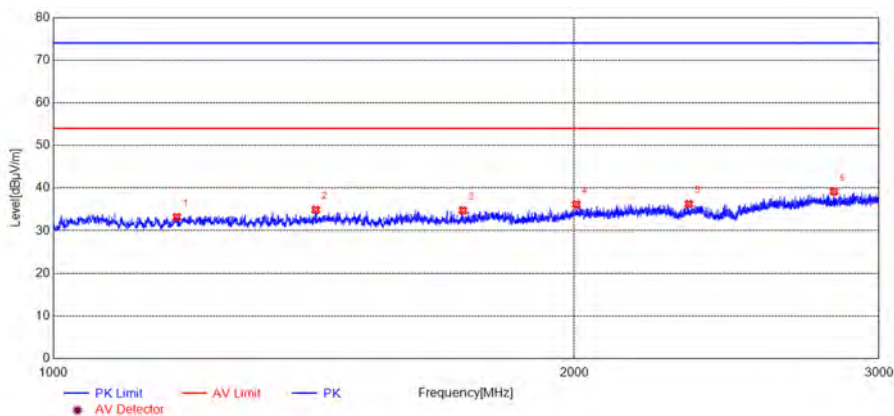
(Antenna Vertical, 3GHz to 18GHz)

Plot for Channel 78



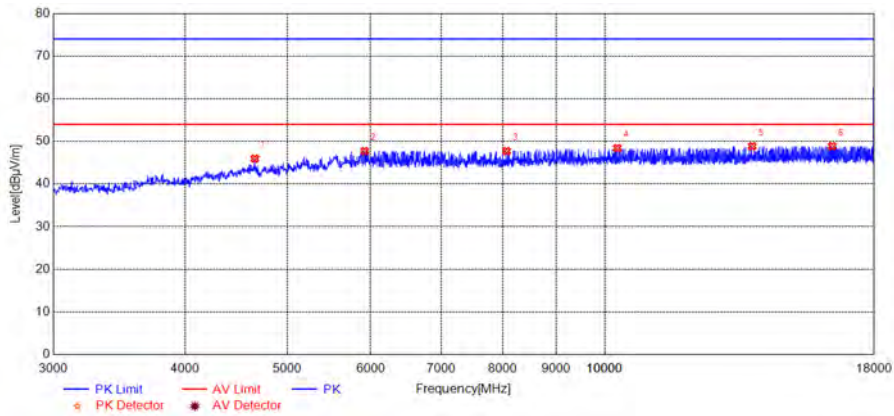
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
56.2162	8.76	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
114.4745	8.12	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
360.1301	18.41	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
486.3564	16.77	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
690.2603	20.05	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
878.6286	22.43	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



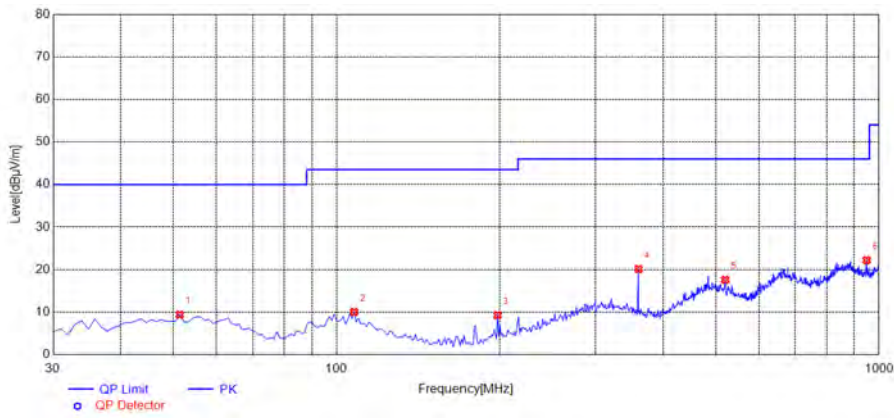
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1179.0298	33.18	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1418.0697	34.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1724.7875	34.73	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2005.5009	36.19	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2328.8881	36.26	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2825.6376	39.18	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



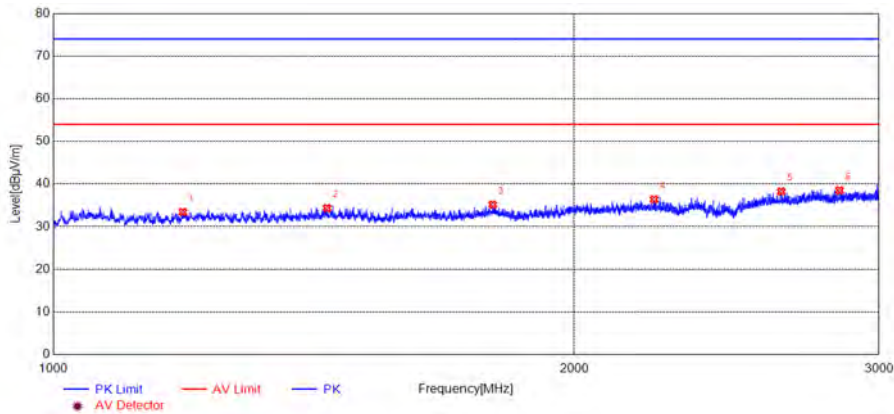
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4659.3319	45.95	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5922.5845	47.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8071.0142	47.73	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10279.4559	48.43	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13799.1598	48.86	N/A	N/A	74.00	N/A > <td 54.00	Horizontal	PASS	
16430.6861	48.87	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



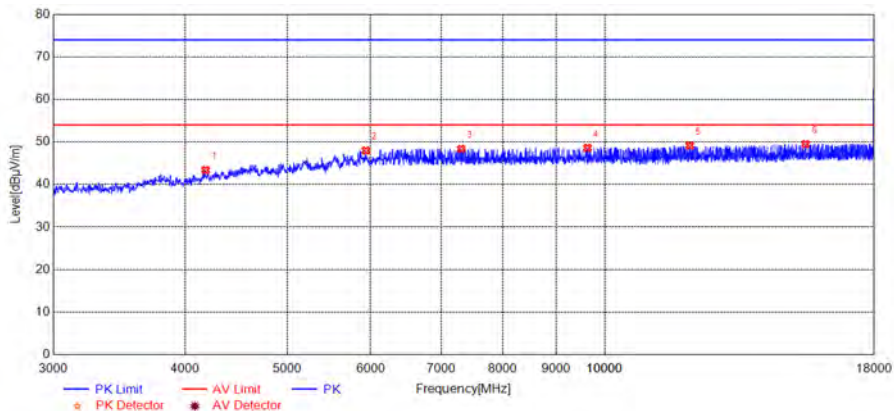
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
51.3614	9.40	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	10.05	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.9780	9.29	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
360.1301	20.12	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
520.3403	17.61	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
948.5385	22.21	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1188.3647	33.40	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1439.7400	34.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1794.7991	35.15	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2224.2040	36.39	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2633.9390	38.23	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2846.6411	38.51	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 1GHz to 3GHz)



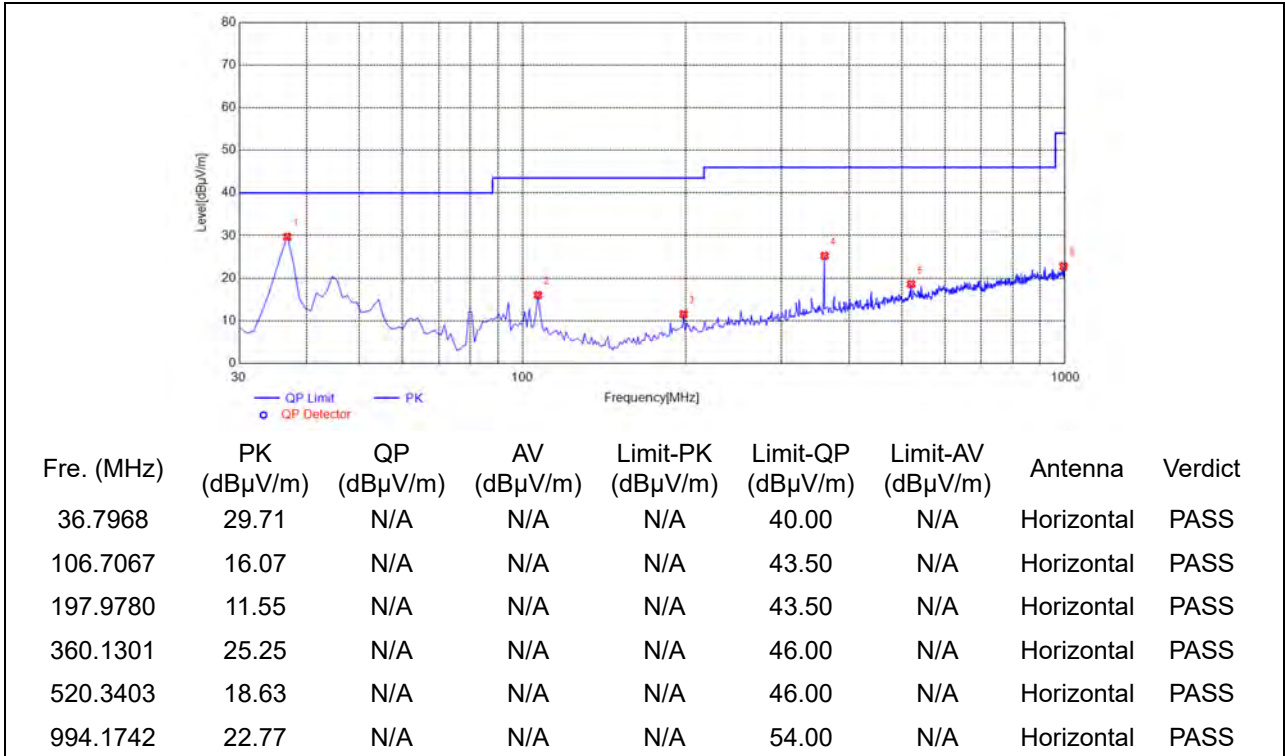
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4185.2370	43.41	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5937.5875	48.00	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7308.8618	48.38	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9631.3263	48.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12040.8082	49.17	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
15506.5013	49.50	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 3GHz to 18GHz)

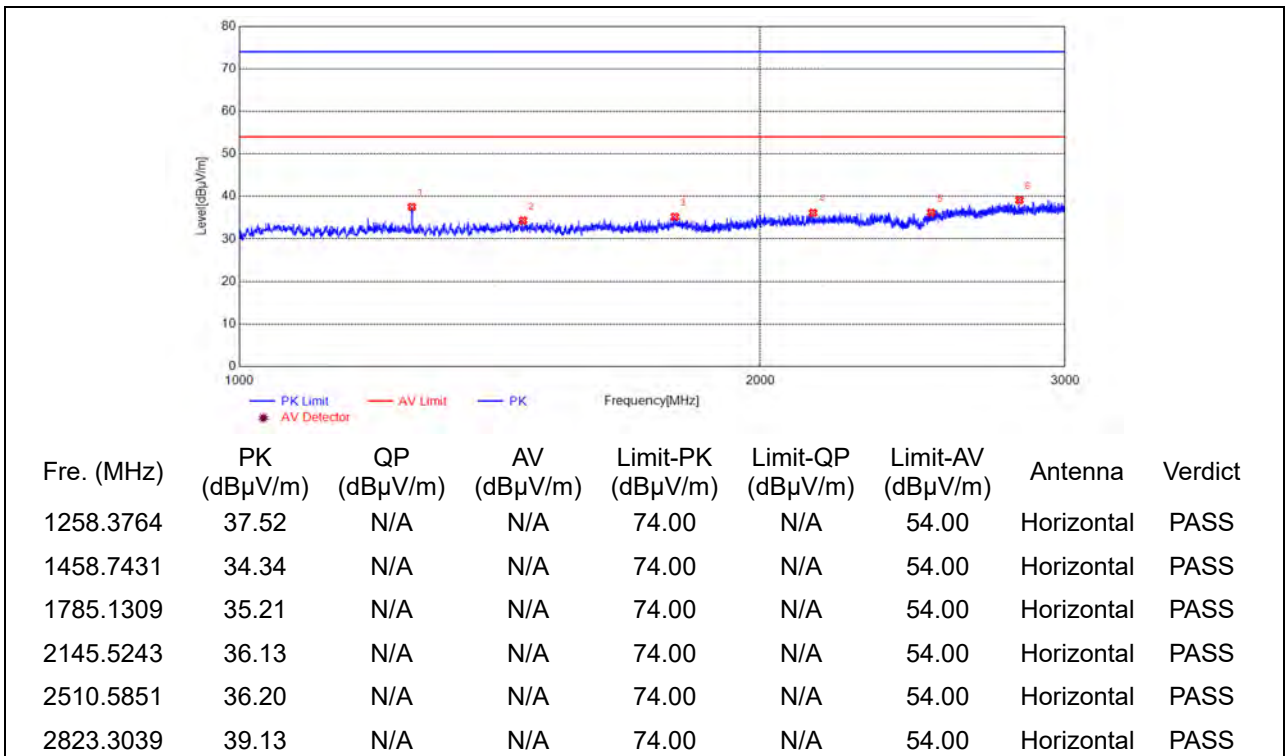


8-DPSK Mode

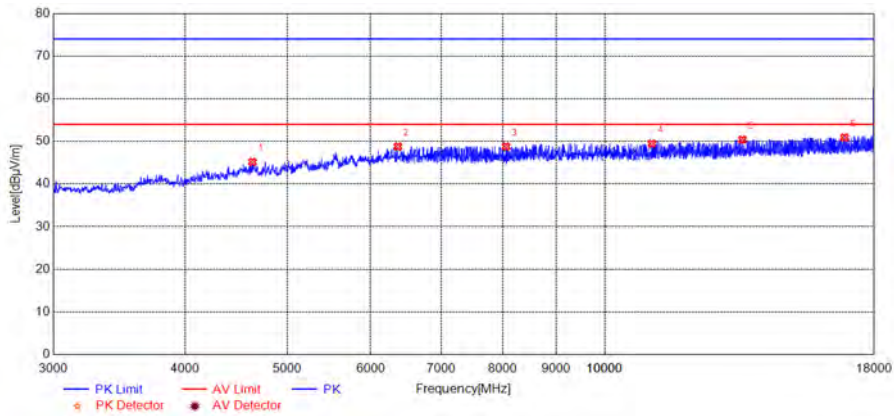
Plots for Channel 0



(Antenna Horizontal, 30MHz to 1GHz)

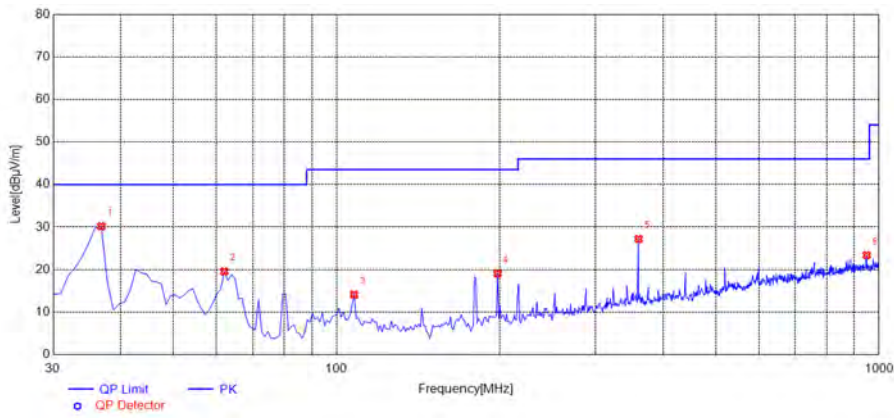


(Antenna Horizontal, 1GHz to 3GHz)



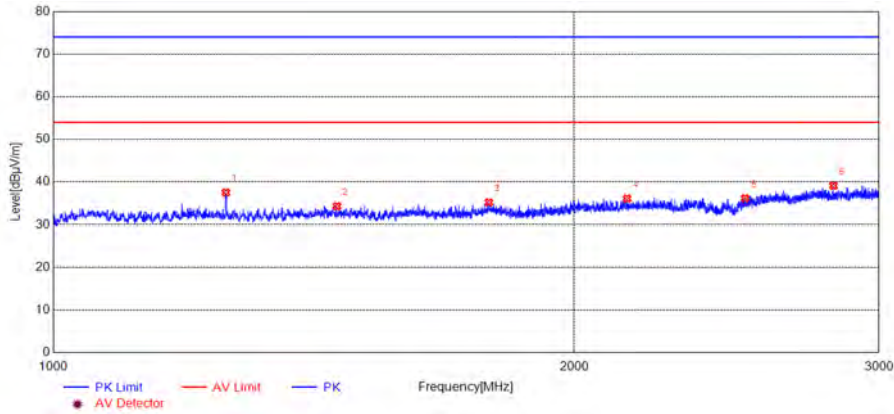
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
4635.3271	45.18	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6366.6733	48.79	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8062.0124	48.79	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11086.6173	49.47	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13505.1010	50.40	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
16877.7756	50.90	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



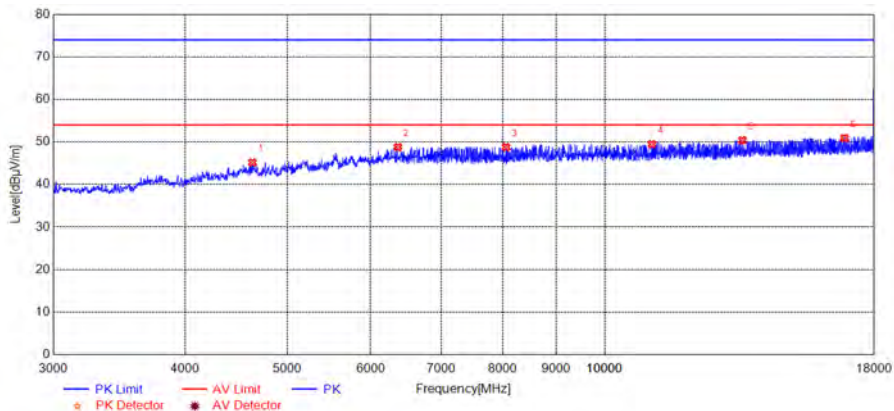
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
36.7968	30.18	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
62.0420	19.56	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	14.11	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
197.9780	19.10	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
360.1301	27.19	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
948.5385	23.40	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1258.3764	37.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1458.7431	34.34	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1785.1309	35.21	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2145.5243	36.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2510.5851	36.20	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2823.3039	39.13	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 1GHz to 3GHz)

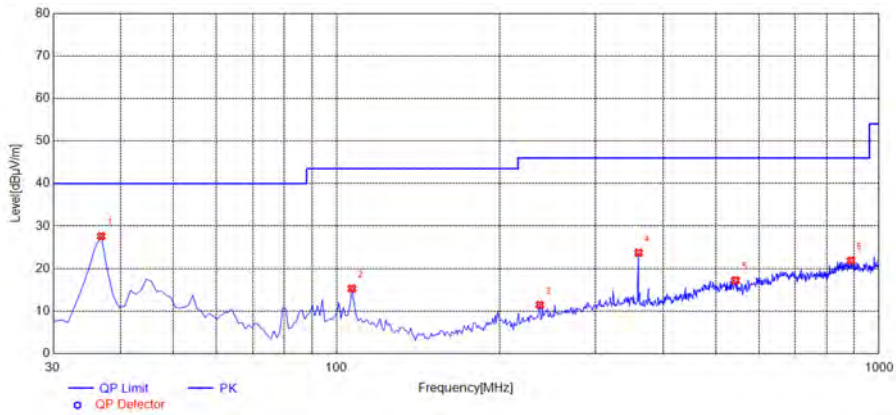


Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4635.3271	45.18	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6366.6733	48.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8062.0124	48.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
11086.6173	49.47	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13505.1010	50.40	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
16877.7756	50.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 3GHz to 18GHz)

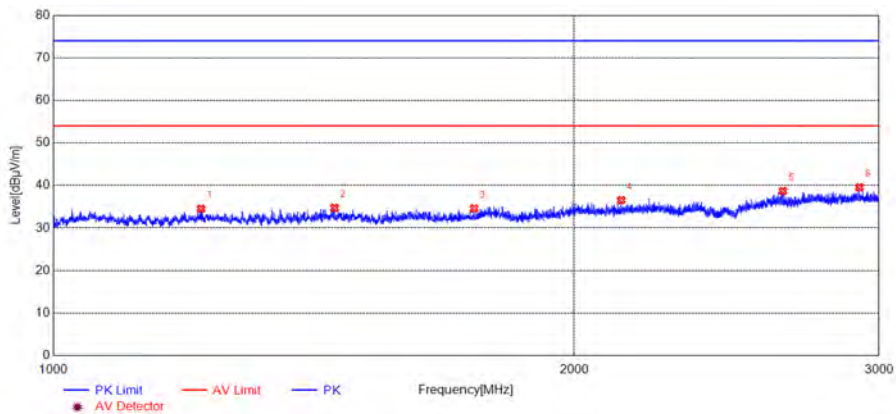


Plot for Channel 39



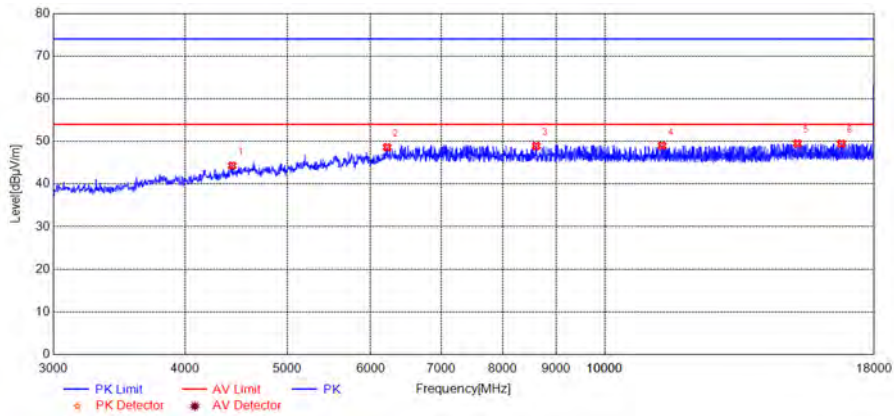
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
36.7968	27.62	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
106.7067	15.27	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
236.8168	11.46	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
360.1301	23.72	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
543.6436	17.23	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
887.3674	21.86	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



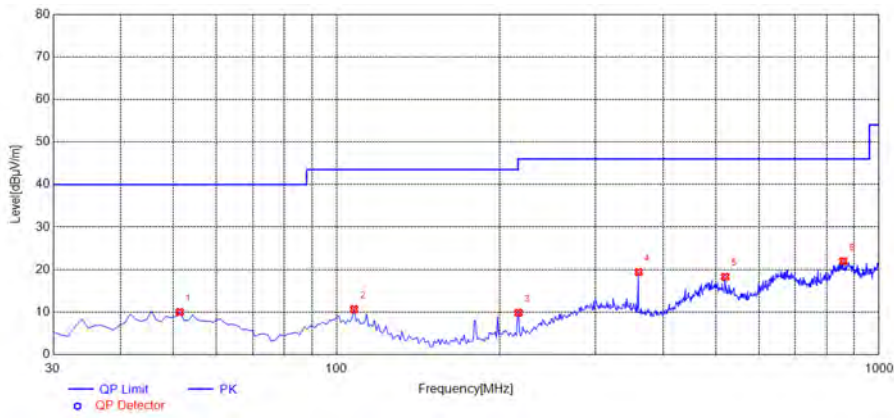
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1217.3696	34.52	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1454.0757	34.74	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1750.4584	34.57	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2129.1882	36.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2639.9400	38.68	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2922.9872	39.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



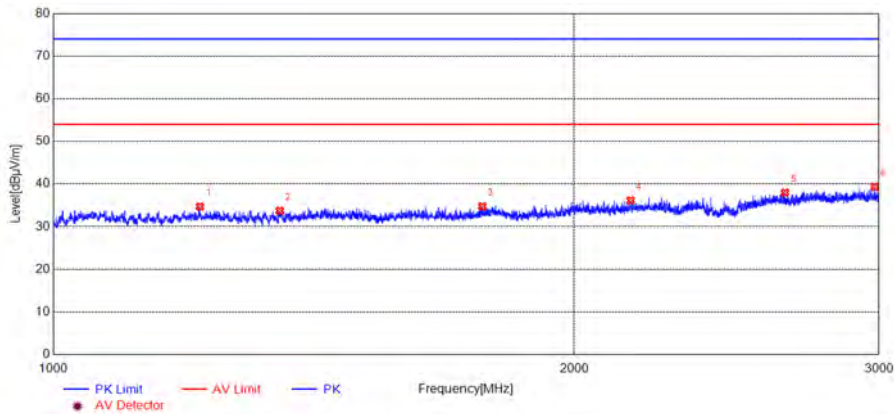
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
4434.2869	44.32	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6219.6439	48.62	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8611.1222	48.91	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
11335.6671	49.00	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
15227.4455	49.51	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
16766.7534	49.48	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



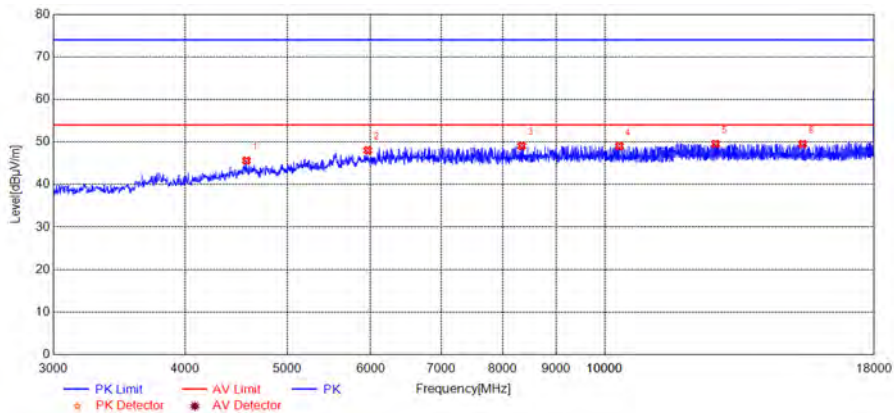
Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
51.3614	10.00	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	10.71	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
216.4264	9.85	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
360.1301	19.41	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
520.3403	18.28	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
859.2092	21.97	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1215.7026	34.70	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1351.7253	33.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1769.7950	34.75	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2155.8593	36.14	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2647.2745	37.97	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2983.3306	39.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

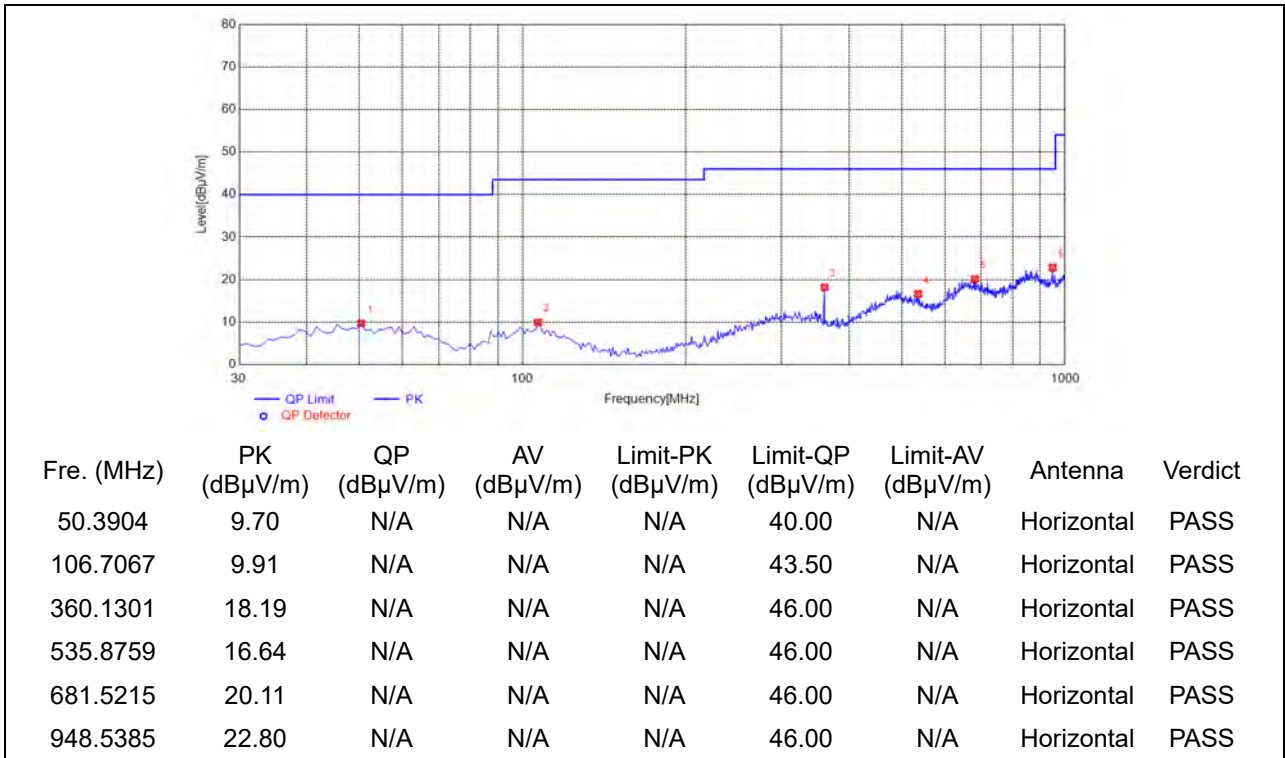
(Antenna Vertical, 1GHz to 3GHz)



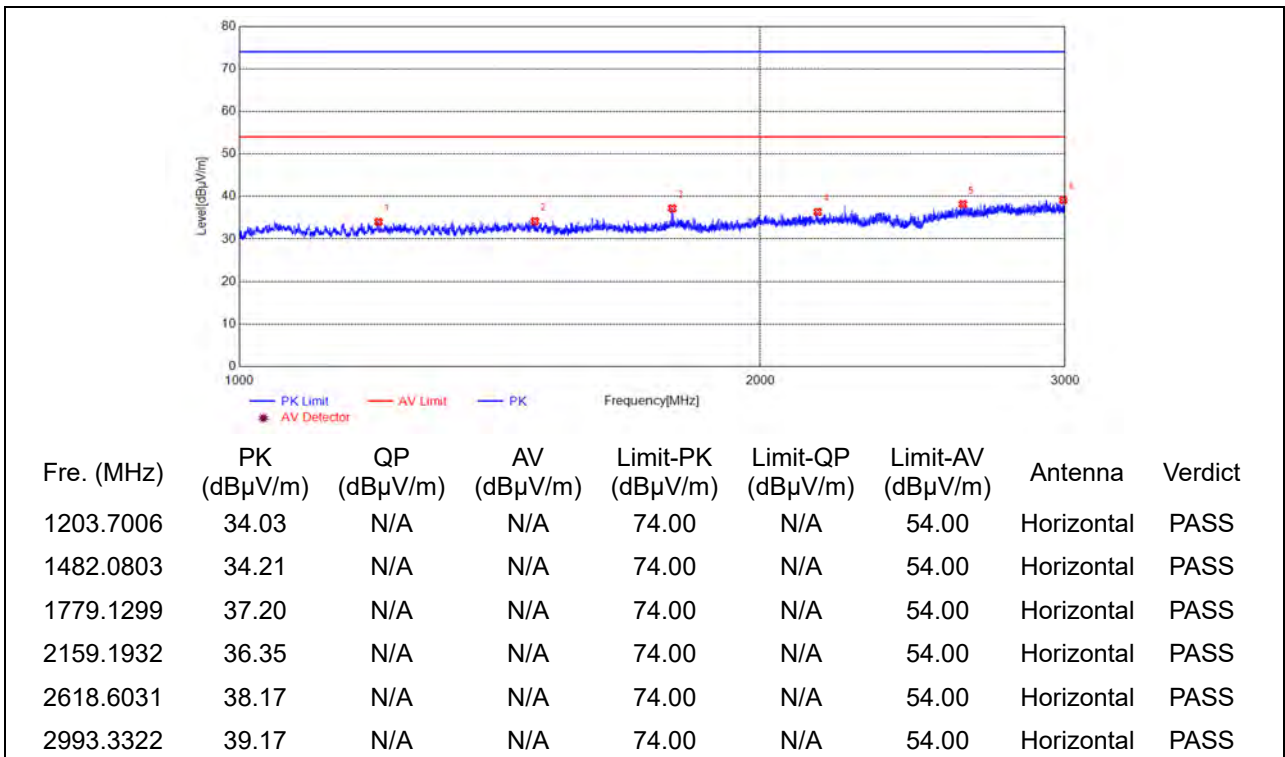
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4575.3151	45.62	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5961.5923	48.05	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8344.0688	49.08	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10327.4655	49.02	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12736.9474	49.54	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
15404.4809	49.51	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 3GHz to 18GHz)

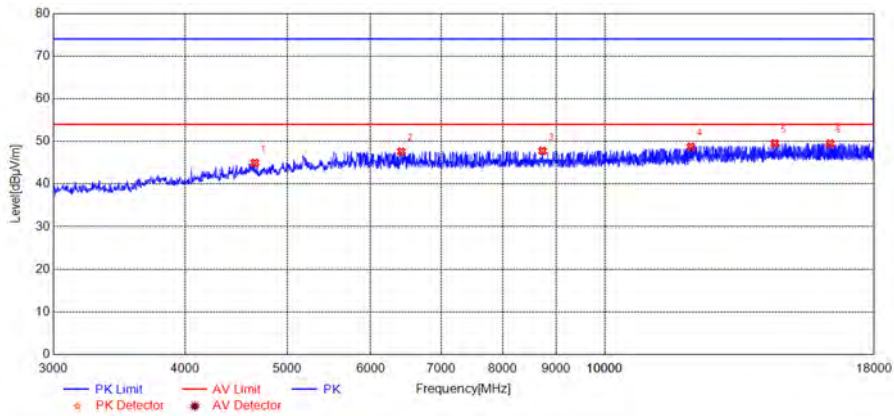
Plot for Channel 78



(Antenna Horizontal, 30MHz to 1GHz)

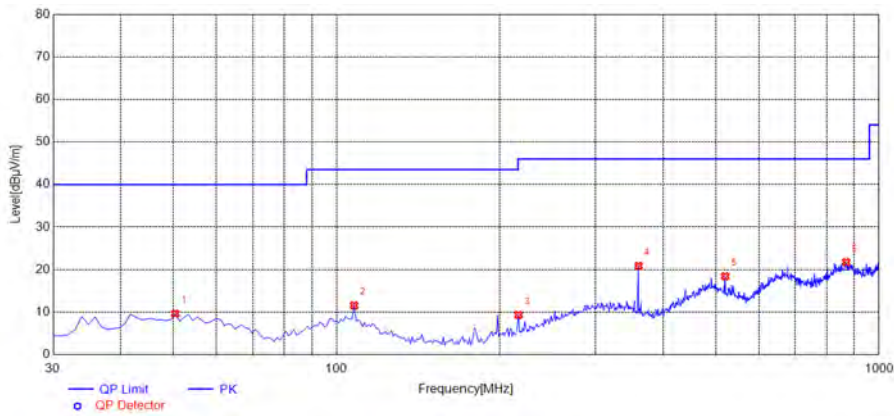


(Antenna Horizontal, 1GHz to 3GHz)



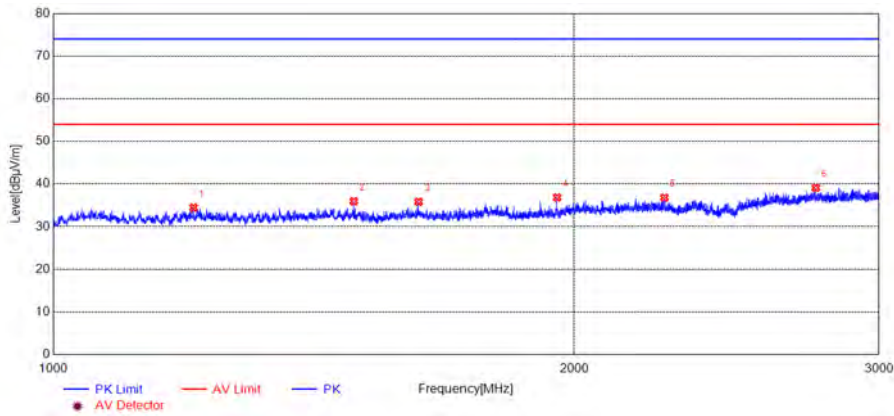
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4659.3319	44.95	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6414.6829	47.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8731.1462	47.76	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12067.8136	48.74	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
14492.2985	49.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
16358.6717	49.49	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 18GHz)



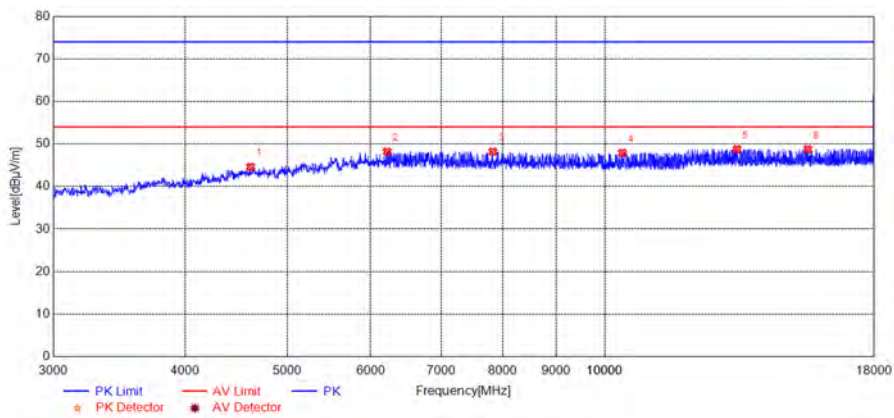
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
50.3904	9.66	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
107.6777	11.58	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
216.4264	9.33	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
360.1301	20.87	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
520.3403	18.43	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
869.8899	21.74	N/A	N/A	N/A	46.00	N/A	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1205.3676	34.47	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1491.7486	35.95	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1626.1044	35.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1955.1592	36.87	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2254.8758	36.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2758.2930	39.12	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 1GHz to 3GHz)



Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
4617.3235	44.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6219.6439	48.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7833.9668	48.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10390.4781	47.88	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
13346.0692	48.77	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
15587.5175	48.75	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 3GHz to 18GHz)

END OF REPORT