TEST REPORT

APPLICANT	:	Securus Technologies, LLC
PRODUCT NAME	:	Tablet
MODEL NAME	:	EVOTAB
BRAND NAME	:	SECURUS
FCC ID	:	2AZJPEVOTAB
STANDARD(S)	:	47 CFR Part 15 Subpart C
RECEIPT DATE	:	2024-09-03
TEST DATE	:	2025-05-15 to 2025-06-03
ISSUE DATE	:	2025-06-17

Edited by: Peng Mi (Rapporteur)

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Change History		
Version	**Date**	**Reason for change**
1.0	2025-06-17	First edition

1. Summary of Test Result

No.	Section	Description	Test Date	Test Engineer	Result	Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	/
2	N/A	Duty Cycle of Test Signal	May 26, 2025	Su Xiaoxian	PASS	/
3	15.247(b)	Maximum Peak Conducted Output Power	May 26, 2025	Su Xiaoxian	PASS	/
4	15.247(b)	Maximum Average Conducted Output Power	May 26, 2025	Su Xiaoxian	PASS	/
5	15.247(a)	Bandwidth	May 26, 2025	Su Xiaoxian	PASS	/
6	15.247(d)	Conducted Spurious Emission and Band Edge	May 26, 2025	Su Xiaoxian	PASS	/
7	15.247(e)	Power Spectral Density	May 26, 2025	Su Xiaoxian	PASS	/
8	15.207	Conducted Emission	May 14, 2025	Fan Shengquan Wang Yapeng	PASS	/
9	15.247(d)	Restricted Frequency Bands	Jun. 03, 2025	Tian Xin	PASS	/
10	15.209, 15.247(d)	Radiated Emission	May 26 to Jun. 03, 2025	Tian Xin	PASS	/

Note 1: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2013 and KDB 558074 D01 v05r02.

Note 2: Any additions, deviation, or exclusions from the method shall be noted in the “Remark".

1.1. Testing Applied Standards

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

• 47 CFR Part 15 Subpart C Radio Frequency Devices

1.2. Test Equipment List

1.2.1 Conducted Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2025.01.15	2026.01.14
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 Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2025.01.06	2026.01.05
LISN	8127449	NSLK 8127	Schwarzbeck	2025.01.09	2026.01.08
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2025.05.13	2026.05.12
RF Coaxial Cable (DC-100MHz)	BNC	MRE04	Qualwave	2024.07.02	2025.07.01

1.2.3 List of Software Used

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

1.2.4 Radiated Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Signal Analyzer	MY56060145	N9020A	Agilent	2025.05.13	2026.05.12
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2024.06.22	2025.06.21
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2024.06.03	2025.06.02
				2025.05.16	2026.05.15
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2024.06.22	2025.06.21
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2024.06.22	2025.06.21
Preamplifier (10MHz-6GHz)	46732	S10M100L3802	LUCIX CORP.	2025.05.13	2026.05.12
Preamplifier (2GHz-18GHz)	61171/61172	S020180L3203	LUCIX CORP.	2025.05.13	2026.05.12
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2025.05.13	2026.05.12
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2024.07.03	2025.07.02
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2024.07.03	2025.07.02
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2024.07.03	2025.07.02
Notch Filter	N/A	WRCG-2400-2483.5-60SS	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2025.04.19	2028.04.18
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.11.30	2025.11.29

1.3. Measurement Uncertainty

Test Items	Uncertainty	Remark
Peak Output Power	±2.22dB	Confidence levels of 95%
Power Spectral Density	±2.22dB	Confidence levels of 95%
Bandwidth	±5%	Confidence levels of 95%
Conducted Spurious Emission	±2.77dB	Confidence levels of 95%
Restricted Frequency Bands	±5%	Confidence levels of 95%
Radiated Emission	±2.95dB	Confidence levels of 95%
Conducted Emission	±2.44dB	Confidence levels of 95%

1.4. Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
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FCC Designation Number:	CN1192
FCC Test Firm Registration Number:	226174

2. General Description

2.1. Information of Applicant and Manufacturer

Applicant:	Securus Technologies, LLC
Applicant Address:	5360 Legacy Drive, Suite 300, Plano, Texas, United States, 75024
Manufacturer:	Rhino Mobility LLC
Manufacturer Address:	8 The Green, Suite A, Dover, Delaware,19901, USA

2.2. Information of EUT

Product Name:	Tablet	
Sample No.:	1#; 28#; 30#	
Hardware Version:	T8006_MB_V1.0	
Software Version:	T81R(001)_20250530	
Equipment Type:	Bluetooth LE	
Bluetooth Version:	5.1	
Modulation Type:	GFSK	
Data Rate:	1Mbps, 2Mbps	
Operating Frequency Range:	2402MHz-2480MHz	
Antenna Type:	PIFA Antenna	
Antenna Gain:	WCN3988: -3.49dBi; nRF52833: -4.44dBi	
Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	ST-E6
	Serial No.:	N/A
	Capacity:	6000mAh
	Rated Voltage:	3.87V
	Charge Limit:	4.45V
	Manufacturer:	PHENIX NEW ENERGY (HUIZHOU) CO., LTD.

Accessory Information:	AC Adapter	
	Brand Name:	N/A
	Model No.:	DCT18W090200US-T0
	Serial No.:	N/A
	Rated Output:	9V⎓2A
	Rated Input:	100-240V~50/60Hz, 0.7A
	Manufacturer:	Zhuzhou Dachuan Electronic Technology Co.,Ltd

Note 1: This device including two BT chips, one is Qualcomm WCN3988 which supports BR+EDR+LE(1M) mode, the other one is Nordic nRF52833 which supports LE(1&2M) mode only.

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

Note 3: The EUT description presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.3. Channel List of EUT

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	**2402**	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	**19**	**2440**	29	2460	**39**	**2480**

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

2.4. Test Configuration of EUT

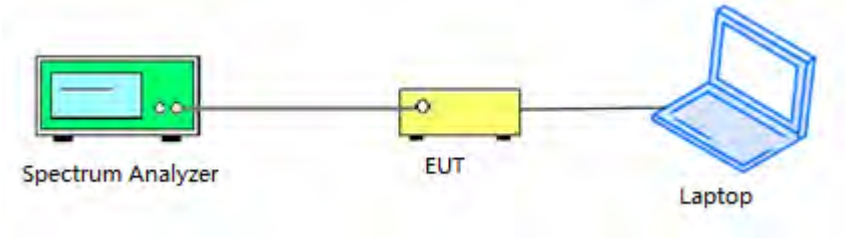
Test mode is used to control the EUT under the maximum power level during test.

2.5. Test Conditions

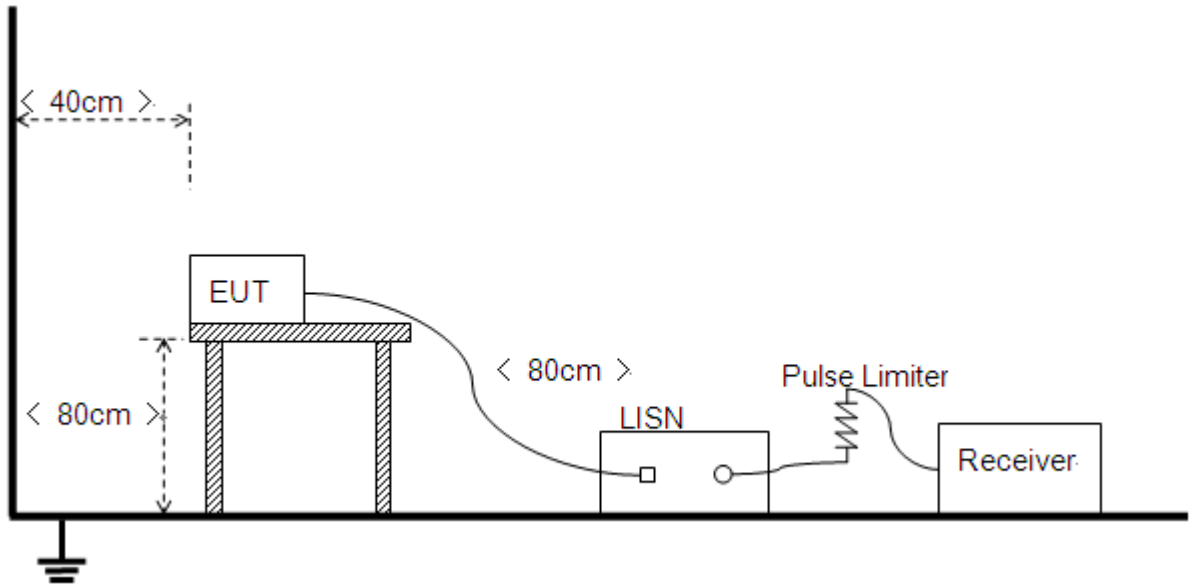
Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106

2.6. Test Setup Layout Diagram

2.6.1.Conducted Measurement

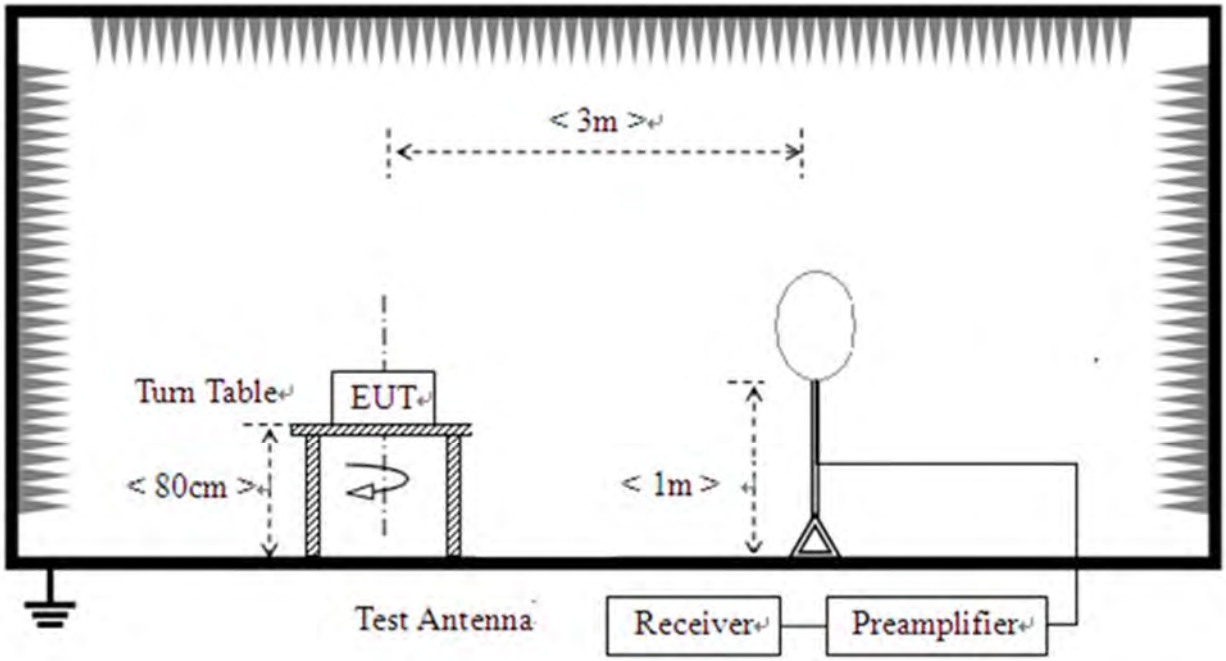


2.6.2.Conducted Emission Measurement

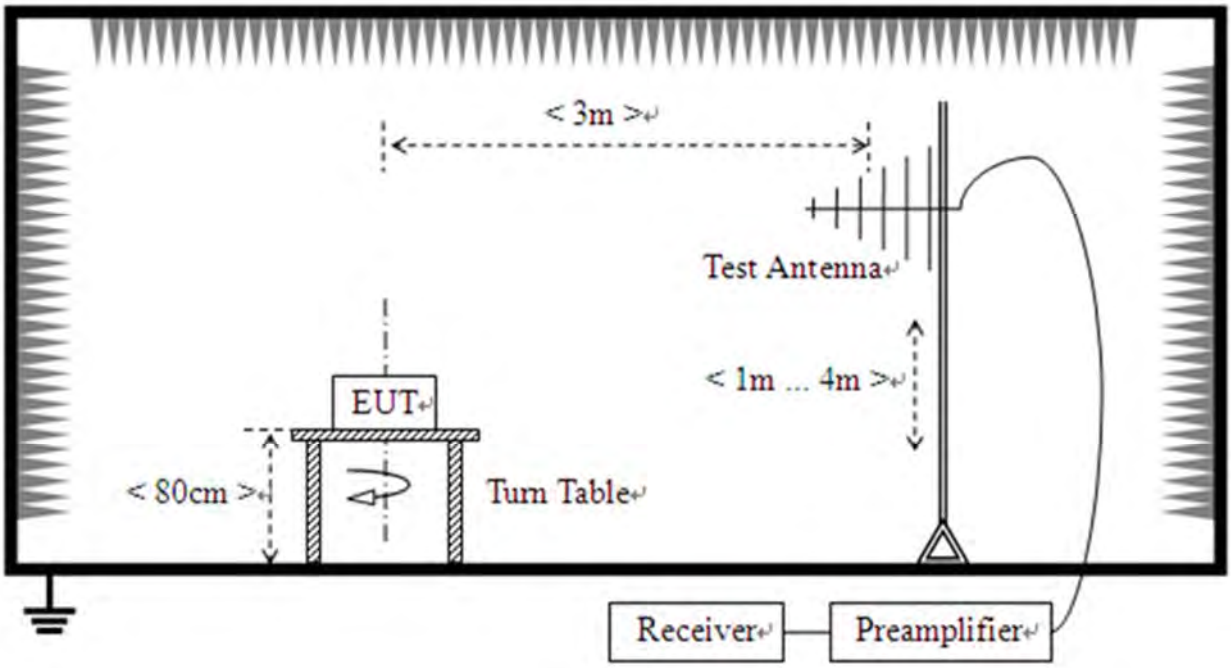


2.6.3.Radiation Measurement

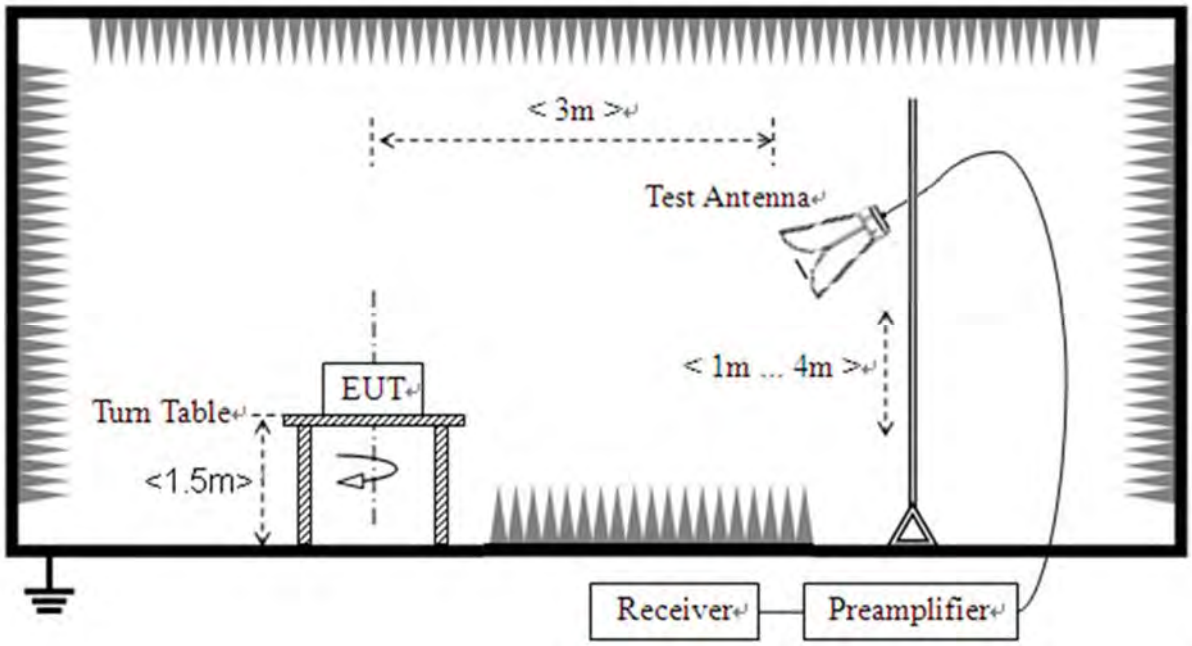
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



3. Test Results

3.1. Antenna Requirement

3.1.1.Requirement

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

3.1.2.Test Result

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

3.2. Duty Cycle of Test Signal

3.2.1.Requirement

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

3.2.2.Test Result

Refer to Annex A.1 in this report.

3.3. Maximum Peak Conducted Output Power

3.3.1. Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed 1 Watt.

3.3.2. Test Procedures

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

3.3.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.3.4. Test Result

Refer to Annex A.2 in this report.

3.4. Maximum Average Conducted Output Power

3.4.1. Requirement

According to FCC section 15.247(b)(3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum average conducted output power of the intentional radiator shall not exceed 1 Watt.

3.4.2. Test Procedures

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

3.4.3. Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.4.4. Test Result

Refer to Annex A.3 in this report.

3.5.6 dB Bandwidth

3.5.1.Requirement

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

3.5.1.Test Procedures

The steps for the first option are as follows:
a) Set analyzer center frequency to channel center frequency
b) Set RBW to100kHz
c) Set VBW to 300kHz
d) Detector = peak.
e) Trace mode = max hold
f) Sweep time = auto couple
g) Allow the trace to fully stabilize
h) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by6 dB relative to the maximum level measured in the fundamental emission
The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW ≥ 3 ×RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥6 dB.

3.5.2.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.5.3.Test Result

Refer to Annex A.4 in this report.

3.6. Conducted Spurious Emissions and Band Edge

3.6.1. 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.

3.6.2. Test Procedures

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

3.7. Power Spectral Density

3.7.1.Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

3.7.2.Test Procedures

The measured power spectral density was calculated by the reading of the spectrum analyzer and calibration. Following is the test procedure for PSD test:
a) Set analyzer center frequency to channel center frequency
b) Set span to1.5 times DTS
c) Set RBW to 3kHz
d) Set VBW to 10kHz
e) Detector = peak
f) Sweep time = auto couple
g) Trace mode = max hold
h) Allow trace to fully stabilize
i) Use the peak marker function to determine the maximum amplitude level within the RBW

3.7.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.7.4.Test Result

Refer to Annex A.7 in this report.

3.8. Conducted Emission

3.8.1.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 50μH/50Ω line impedance stabilization network (LISN).

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

Note:

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

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

3.8.2.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.

3.8.3.Test Setup Layout

Refer to chapter 2.6.2 in this report.

3.8.4.Test Result

Refer to Annex A.8 in this report.

3.9. Restricted Frequency Bands

3.9.1.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).

3.9.2.Test Procedures

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

3.9.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.9.4.Test Result

Refer to Annex A.8 in this report.

3.10. Radiated Emission

3.10.1.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 (μV/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).

3.10.2.Test Procedures

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

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

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

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

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

3.10.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.10.4.Test Result

Refer to Annex A.9 in this report.

Annex A Test Data and Result

A.1. Duty Cycle of Test Signal

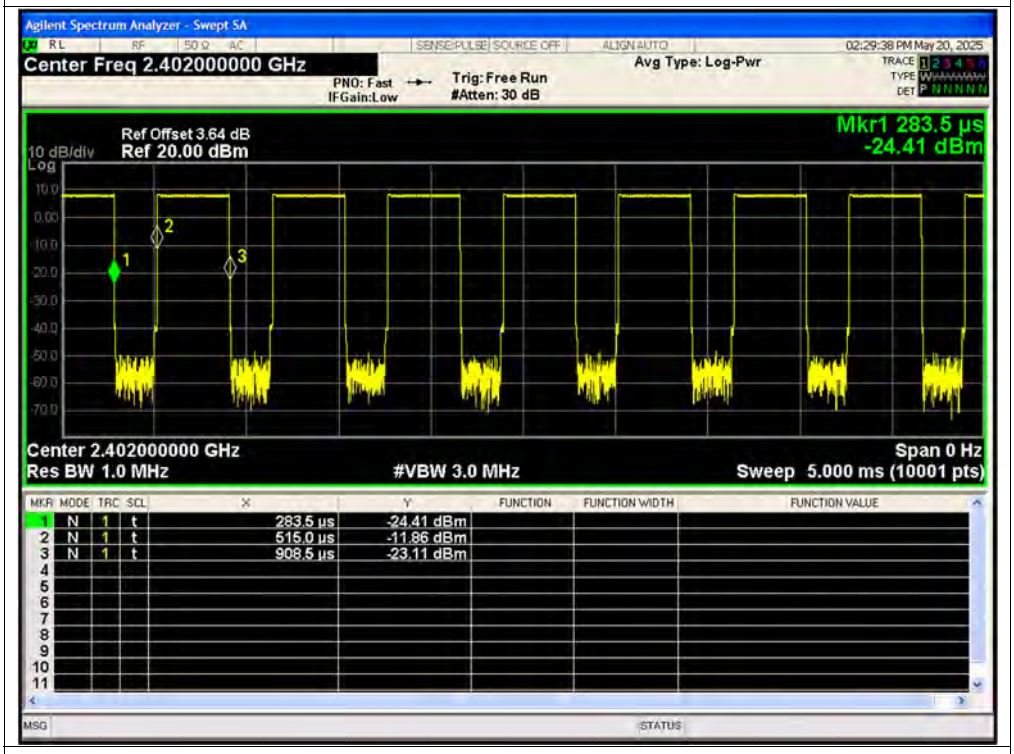
WCN3988:

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M SISO	2402	Ant1	62.96	2.01	2.54
NVNT	BLE 1M SISO	2440	Ant1	62.96	2.01	2.54
NVNT	BLE 1M SISO	2480	Ant1	62.96	2.01	2.54

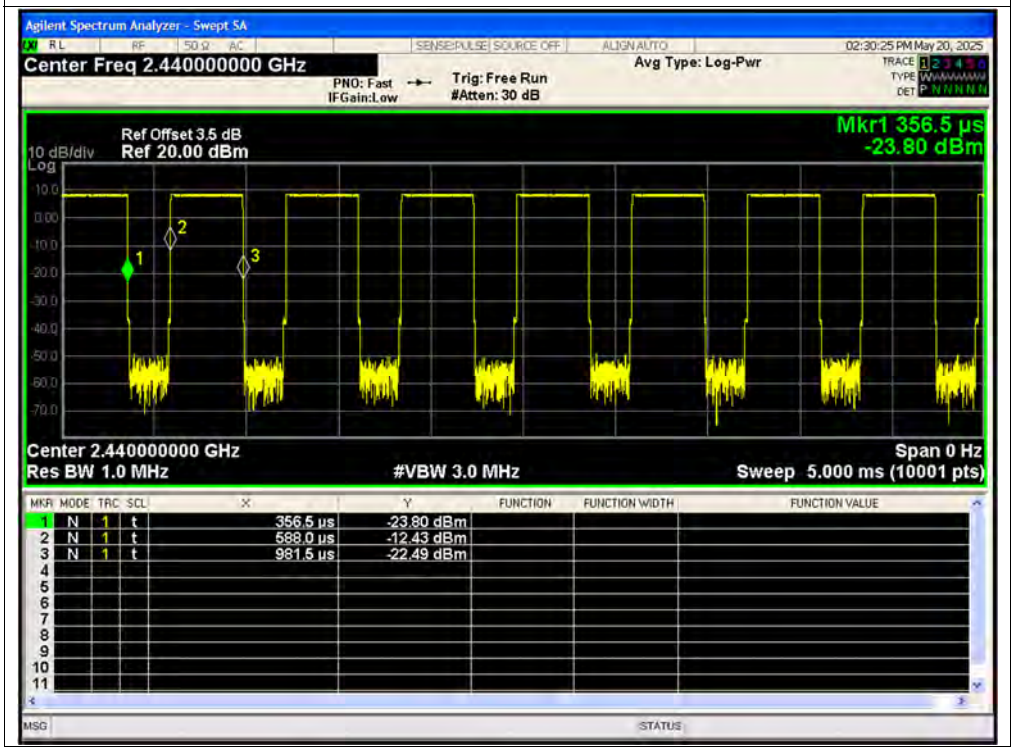
nRF52833:

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M SISO	2402	Ant1	63.04	2	2.54
NVNT	BLE 1M SISO	2440	Ant1	62.99	2.01	2.54
NVNT	BLE 1M SISO	2480	Ant1	63.04	2	2.54
NVNT	BLE 2M SISO	2404	Ant1	33.28	4.78	4.81
NVNT	BLE 2M SISO	2440	Ant1	33.28	4.78	4.81
NVNT	BLE 2M SISO	2478	Ant1	33.28	4.78	4.81

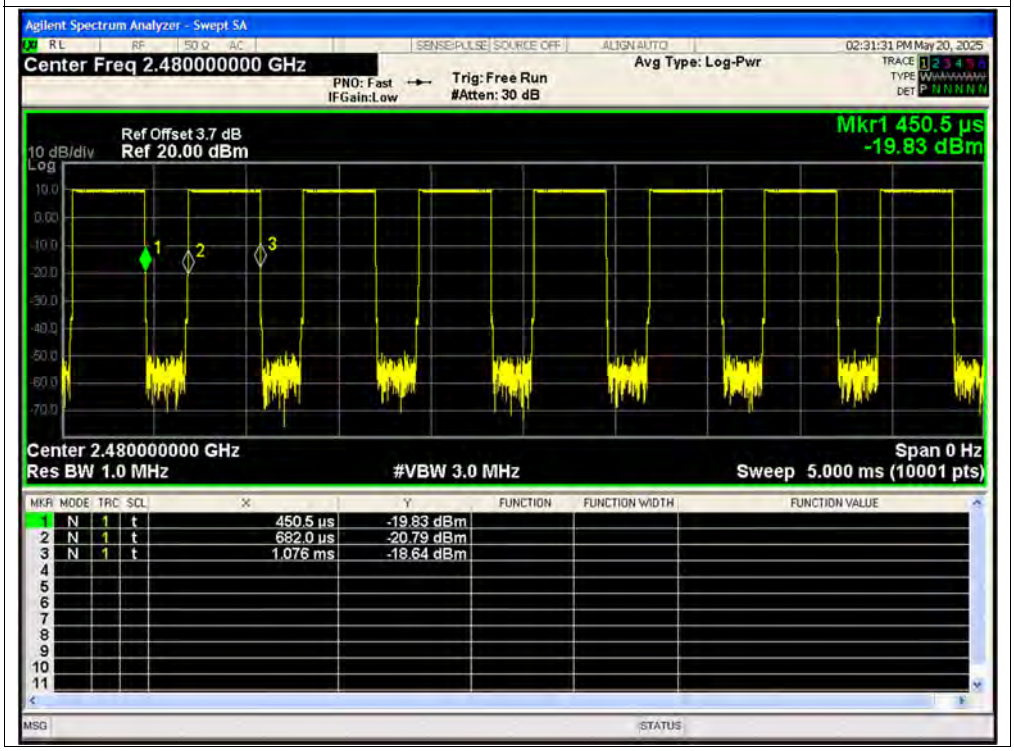
WCN3988
Test Graphs
Duty Cycle NVNT BLE 1M 2402MHz Ant1 SISO



Duty Cycle NVNT BLE 1M 2440MHz Ant1 SISO



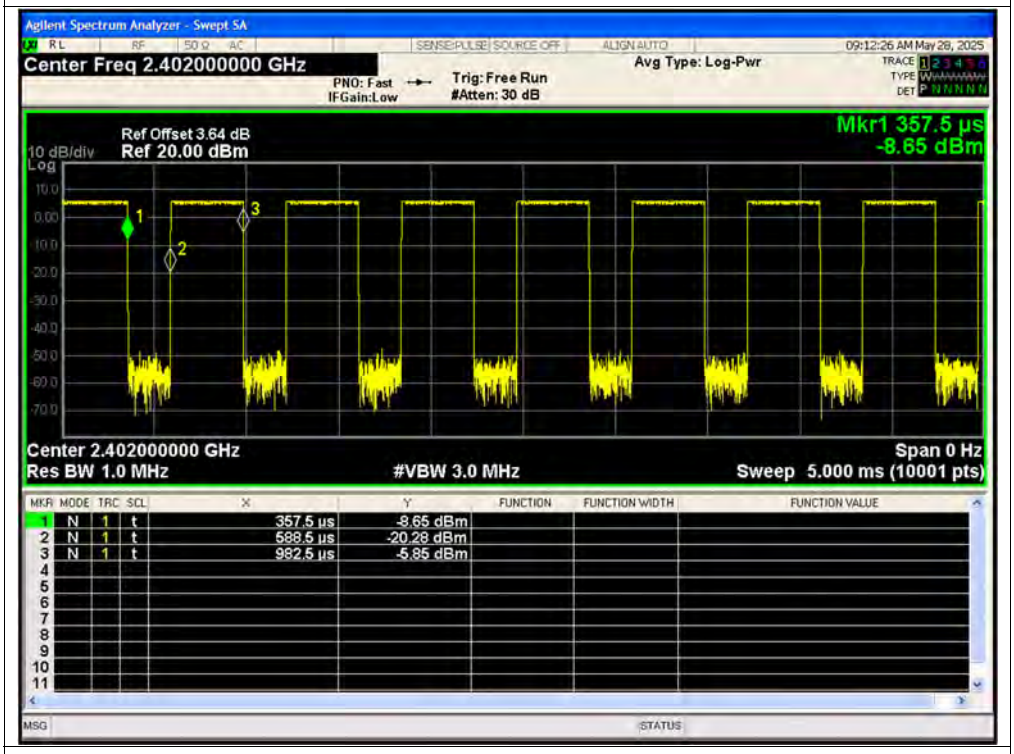
Duty Cycle NVNT BLE 1M 2480MHz Ant1 SISO



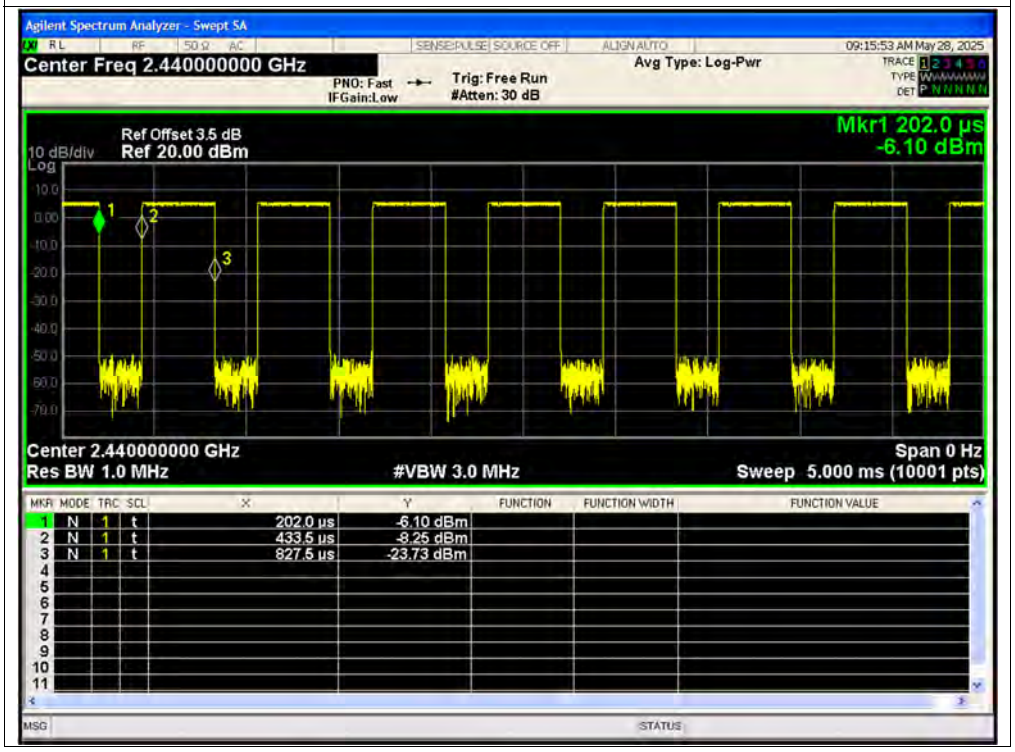
nRF52833

Test Graphs

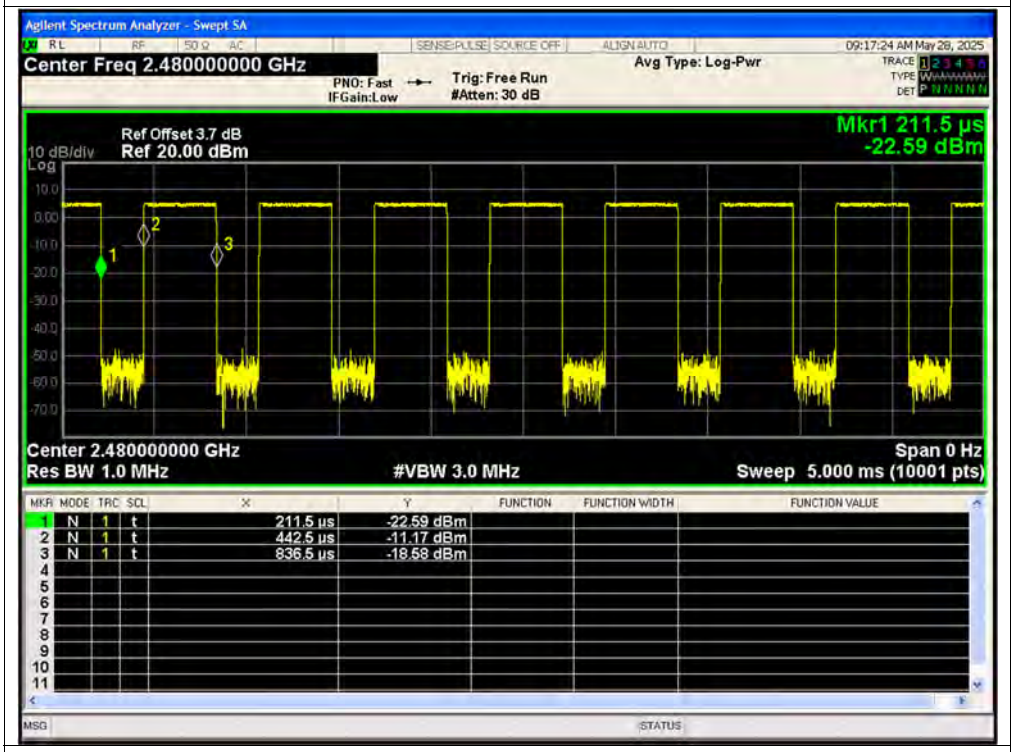
Duty Cycle NVNT BLE 1M 2402MHz Ant1 SISO



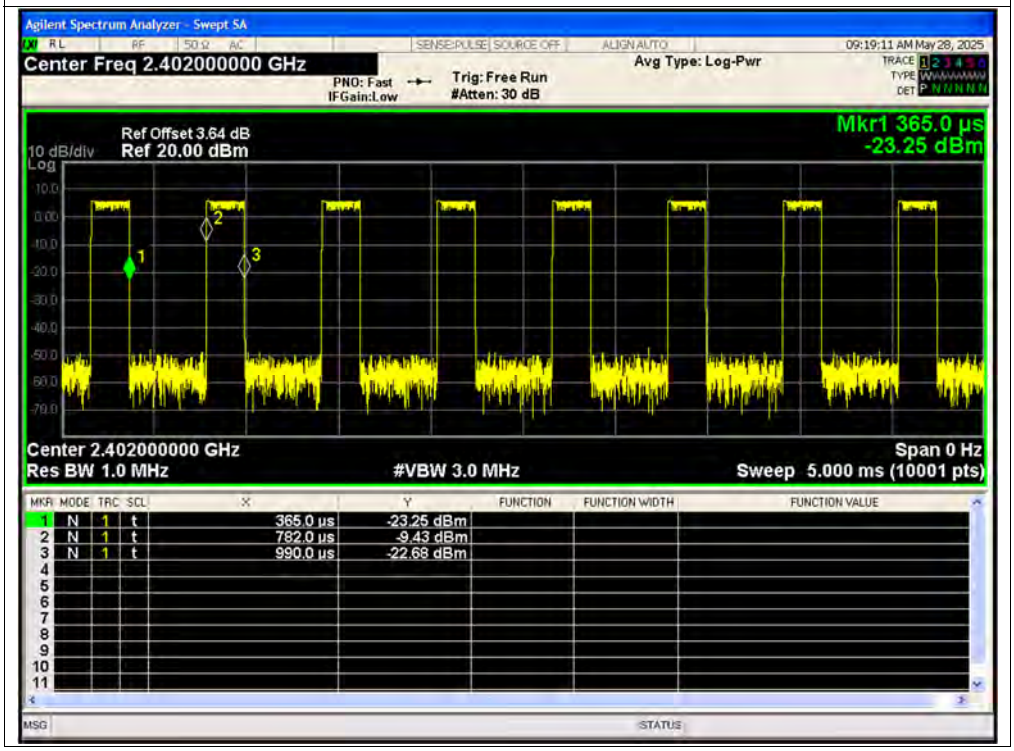
Duty Cycle NVNT BLE 1M 2440MHz Ant1 SISO



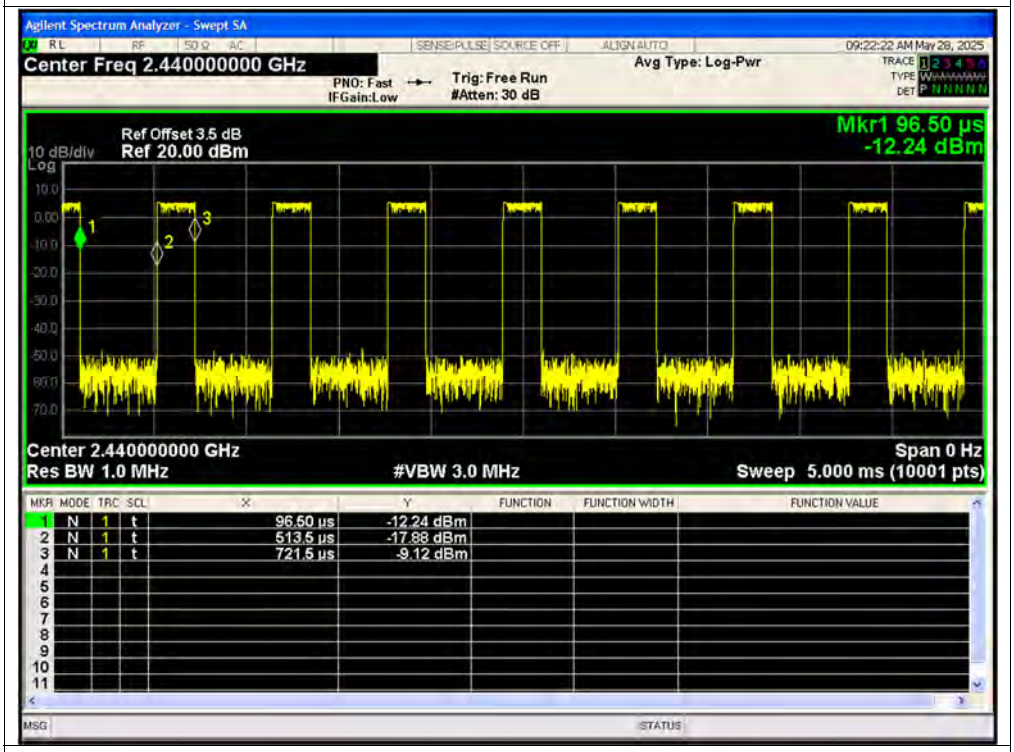
Duty Cycle NVNT BLE 1M 2480MHz Ant1 SISO



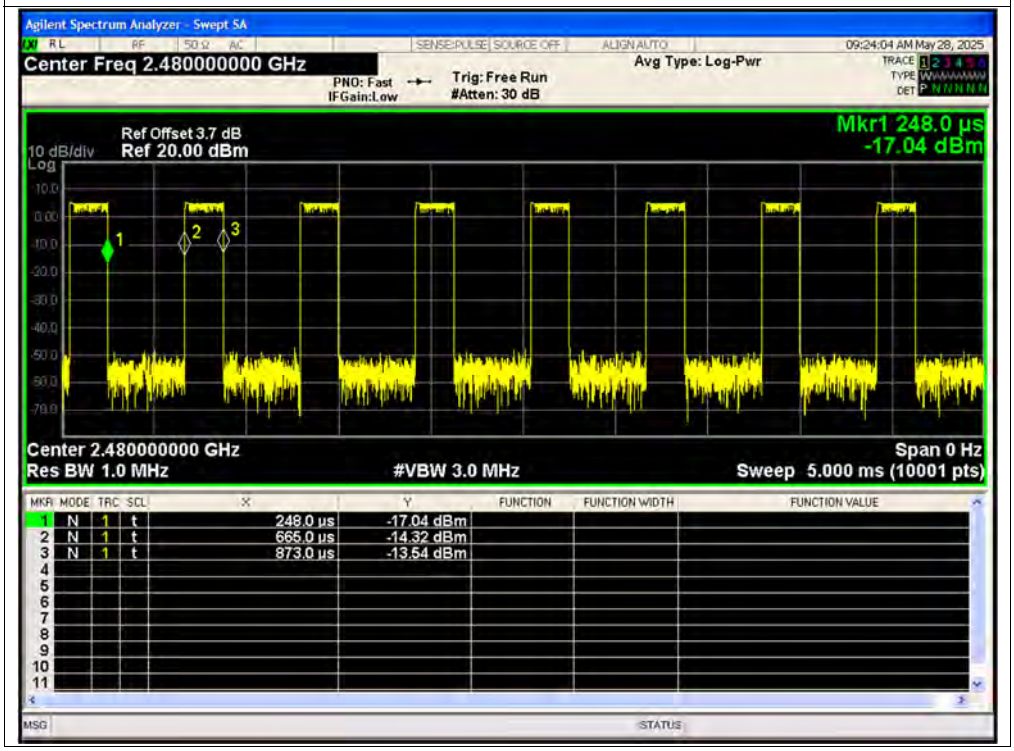
Duty Cycle NVNT BLE 2M 2404MHz Ant1 SISO



Duty Cycle NVNT BLE 2M 2440MHz Ant1 SISO



Duty Cycle NVNT BLE 2M 2478MHz Ant1 SISO



A.2. Maximum Peak Conducted Output Power

WCN3988:

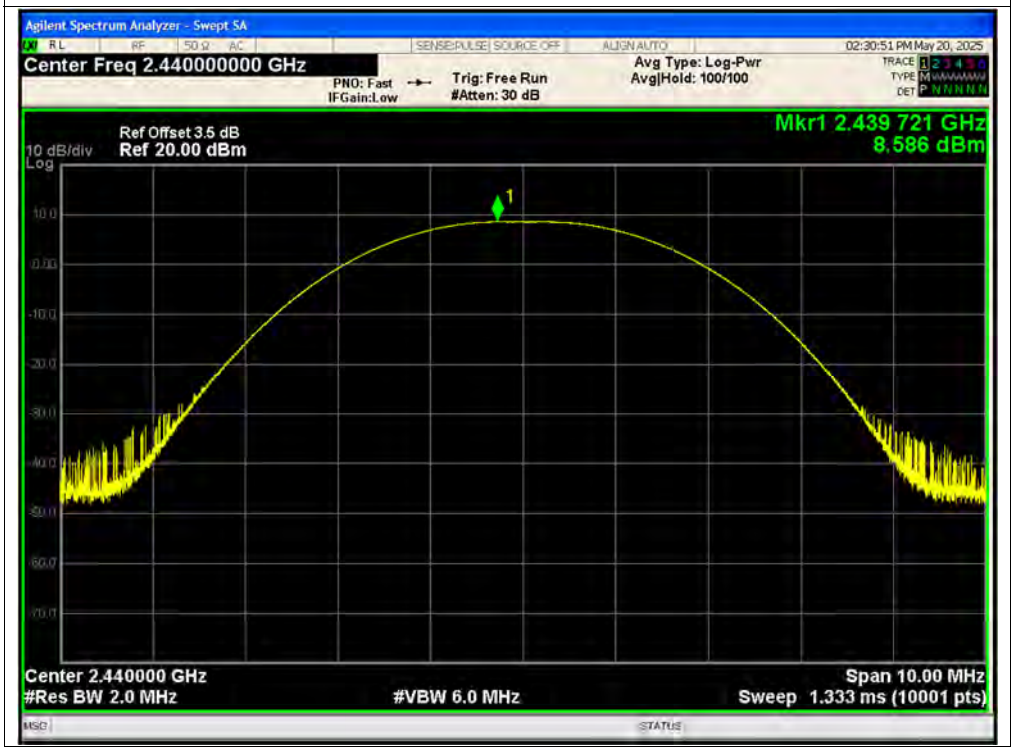
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	8.3	0	8.3	0.00676	30	Pass
NVNT	BLE 1M	2440	Ant1	8.59	0	8.59	0.00723	30	Pass
NVNT	BLE 1M	2480	Ant1	9.96	0	9.96	0.00991	30	Pass

nRF52833:

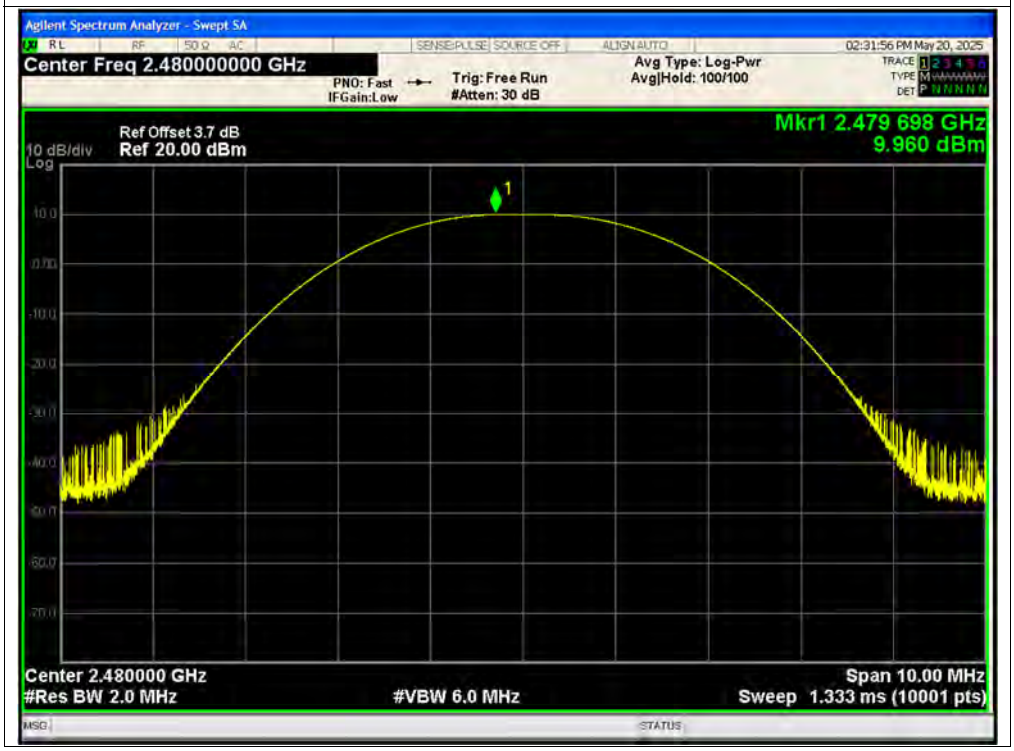
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	6.31	0	6.31	0.00428	30	Pass
NVNT	BLE 1M	2440	Ant1	5.55	0	5.55	0.00359	30	Pass
NVNT	BLE 1M	2480	Ant1	5.35	0	5.35	0.00343	30	Pass
NVNT	BLE 2M	2402	Ant1	6.19	0	6.19	0.00416	30	Pass
NVNT	BLE 2M	2440	Ant1	5.82	0	5.82	0.00382	30	Pass
NVNT	BLE 2M	2480	Ant1	5.52	0	5.52	0.00356	30	Pass

WCN3988
Test Graphs
Peak Power NVNT BLE 1M 2402MHz Ant1 SISO

Peak Power NVNT BLE 1M 2440MHz Ant1 SISO

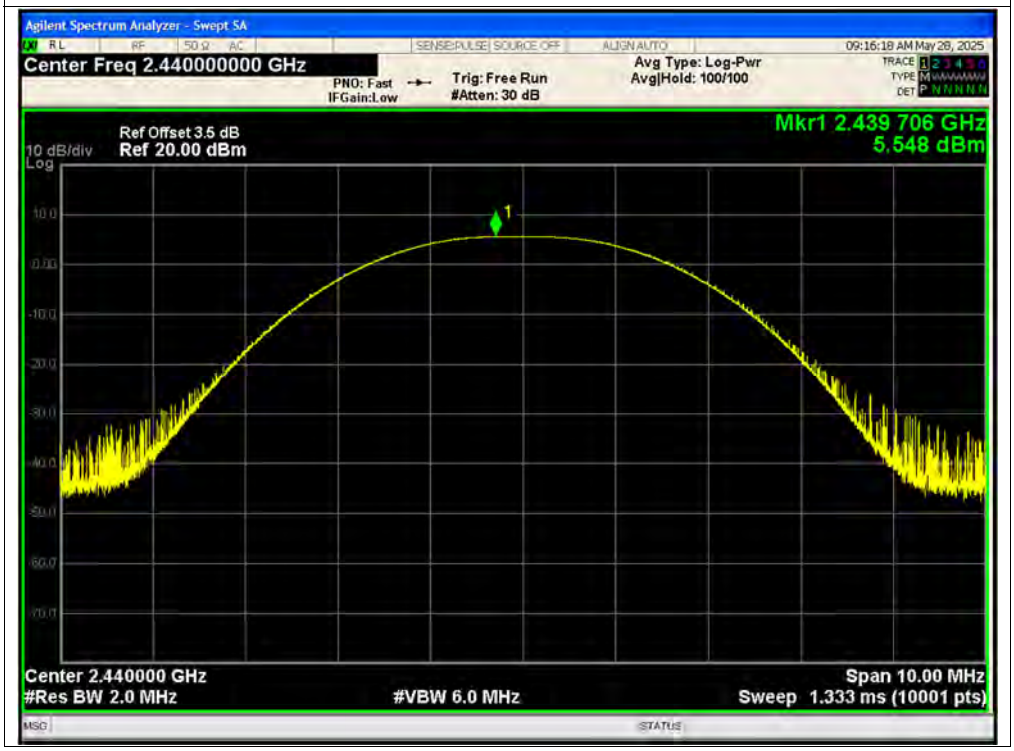


Peak Power NVNT BLE 1M 2480MHz Ant1 SISO

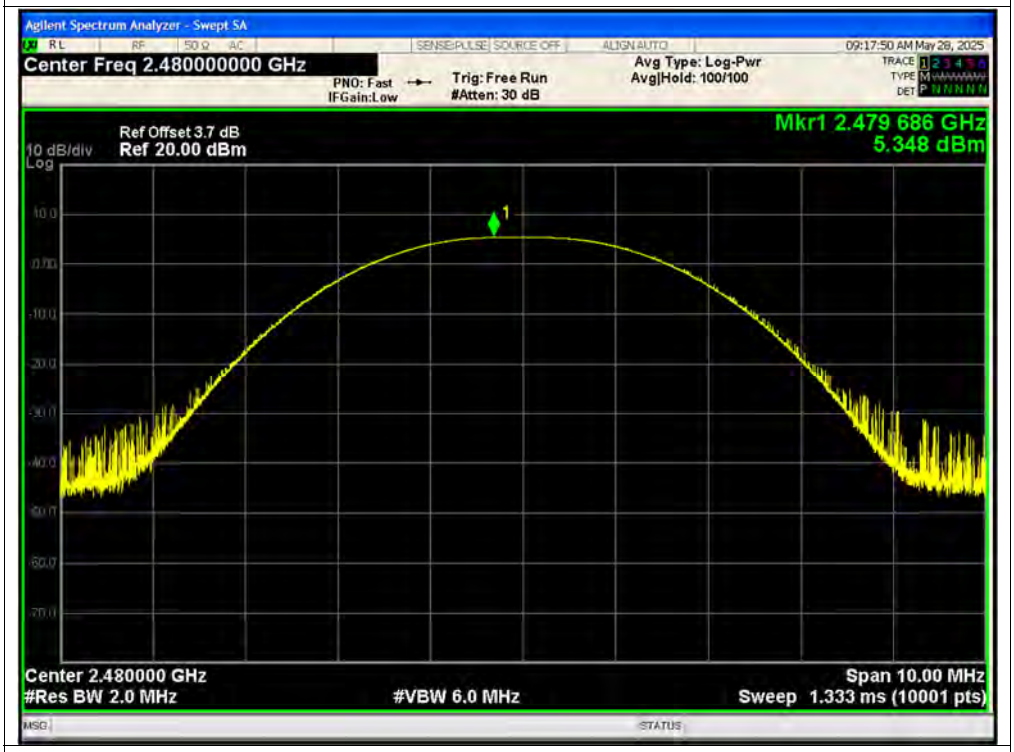


nRF52833
Test Graphs
Peak Power NVNT BLE 1M 2402MHz Ant1 SISO

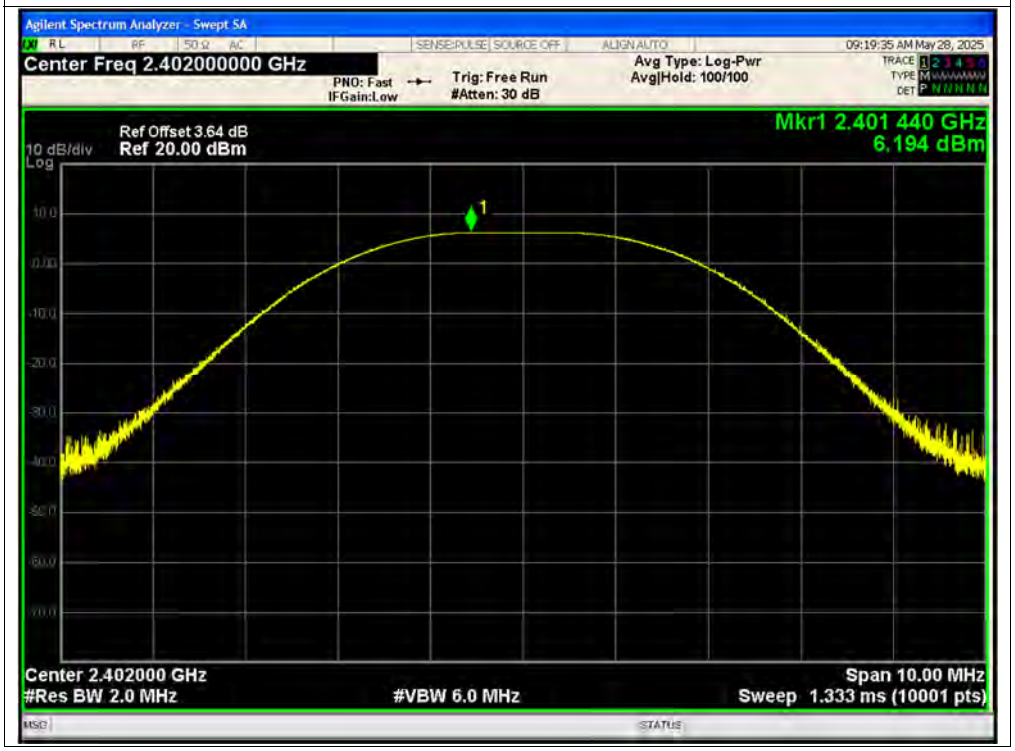
Peak Power NVNT BLE 1M 2440MHz Ant1 SISO



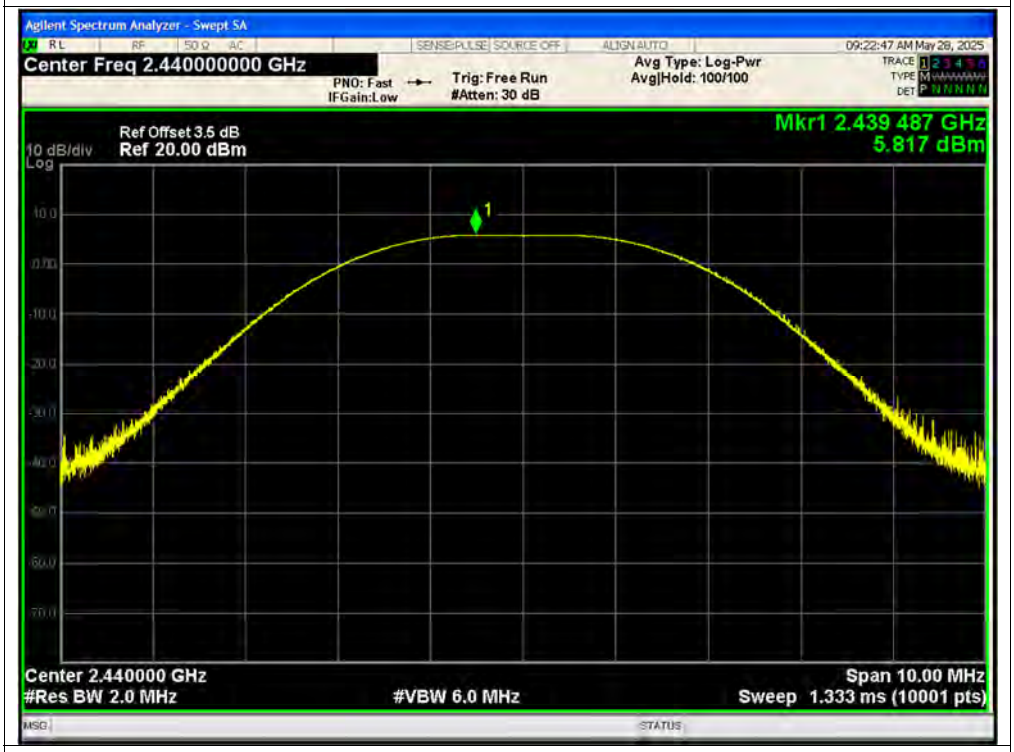
Peak Power NVNT BLE 1M 2480MHz Ant1 SISO



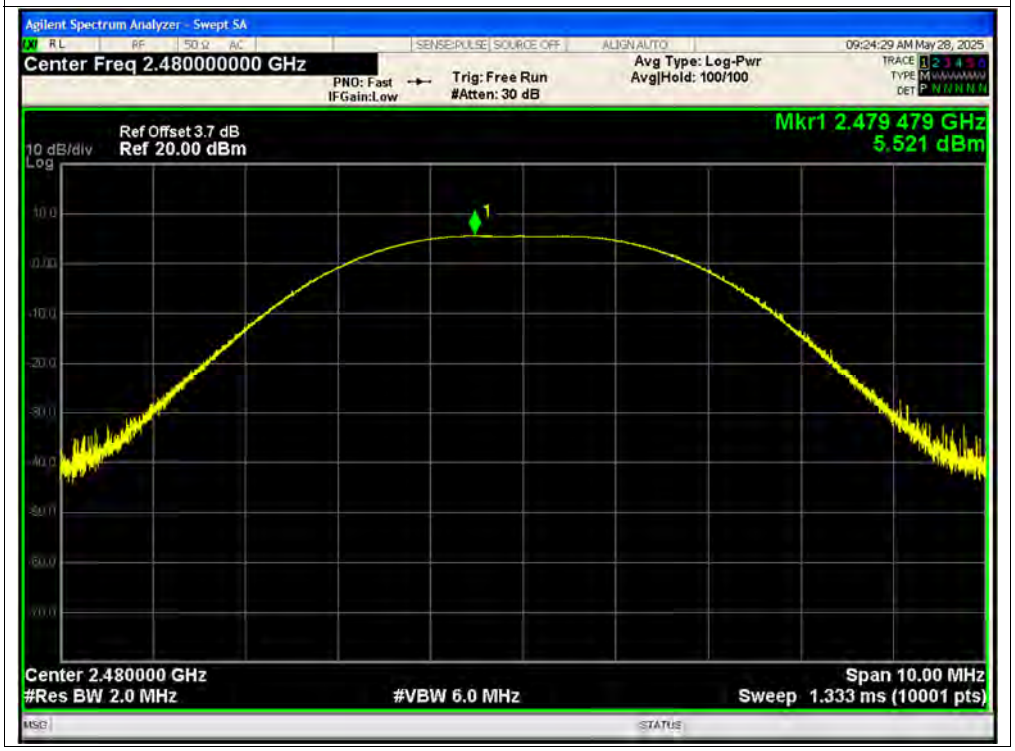
Peak Power NVNT BLE 2M 2404MHz Ant1 SISO



Peak Power NVNT BLE 2M 2440MHz Ant1 SISO



Peak Power NVNT BLE 2M 2478MHz Ant1 SISO



A.3. Maximum Average Conducted Output Power

WCN3988:

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	6.06	2.01	8.07	0.00641	NVNT	Pass
NVNT	BLE 1M	2440	Ant1	6.34	2.01	8.35	0.00684	NVNT	Pass
NVNT	BLE 1M	2480	Ant1	7.67	2.01	9.68	0.00929	NVNT	Pass

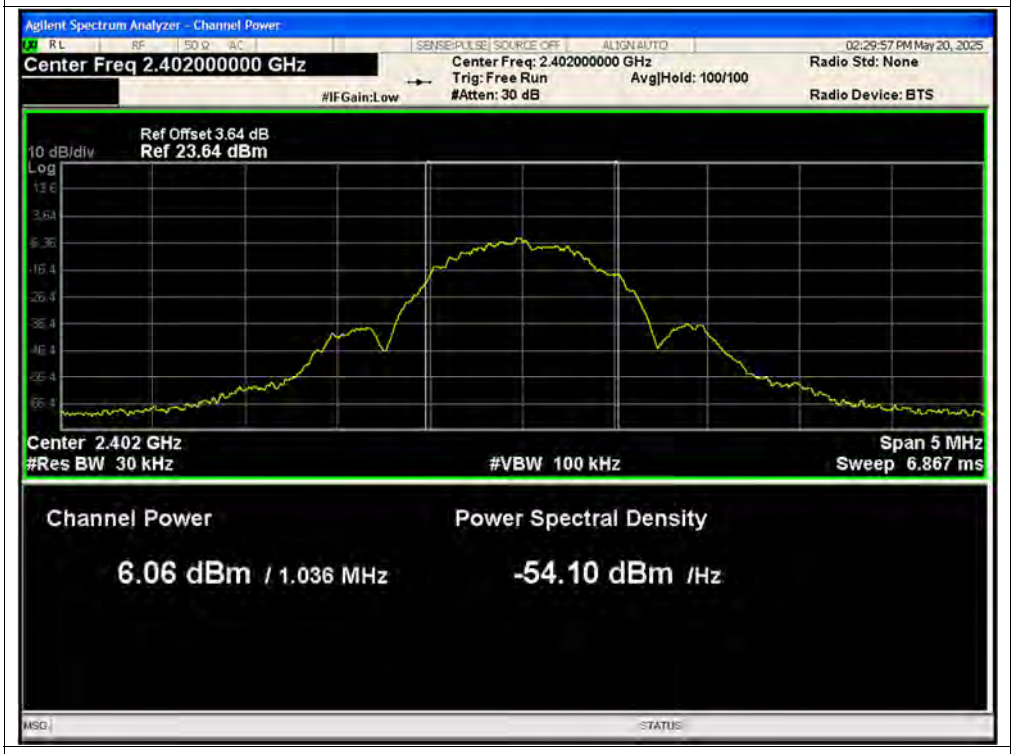
nRF52833:

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	4.07	2	6.07	0.00405	30	Pass
NVNT	BLE 1M	2440	Ant1	3.31	2.01	5.32	0.0034	30	Pass
NVNT	BLE 1M	2480	Ant1	3.3	2	5.3	0.00339	30	Pass
NVNT	BLE 2M	2402	Ant1	1.31	4.78	6.09	0.00406	30	Pass
NVNT	BLE 2M	2440	Ant1	0.82	4.78	5.6	0.00363	30	Pass
NVNT	BLE 2M	2480	Ant1	0.44	4.78	5.22	0.00333	30	Pass

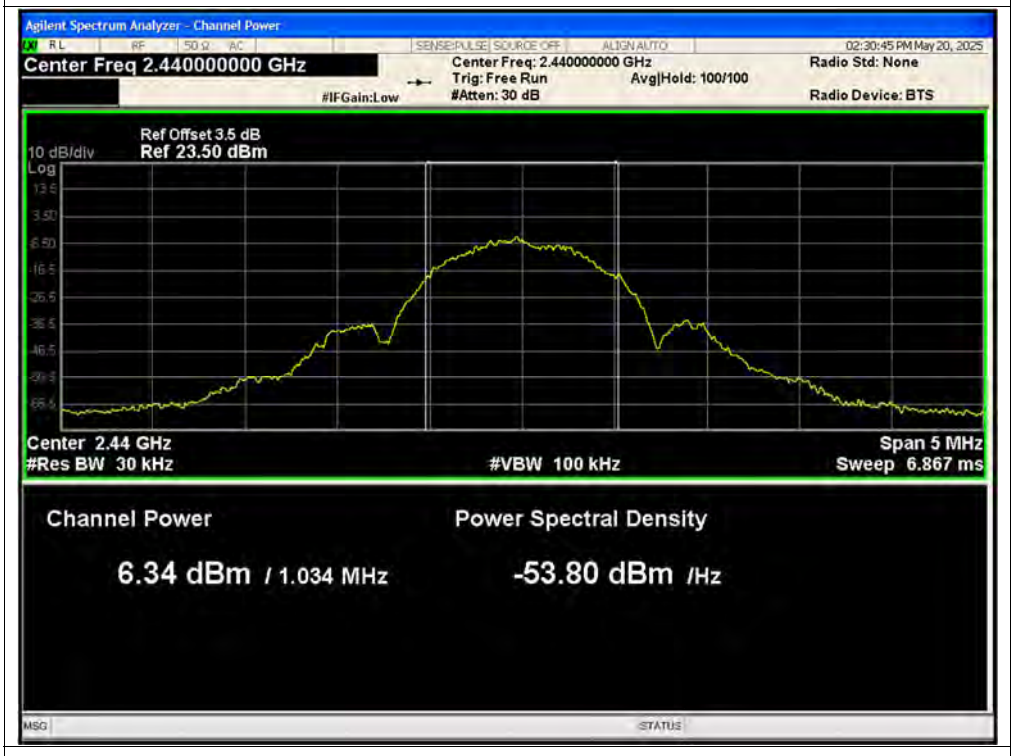
WCN3988

Test Graphs

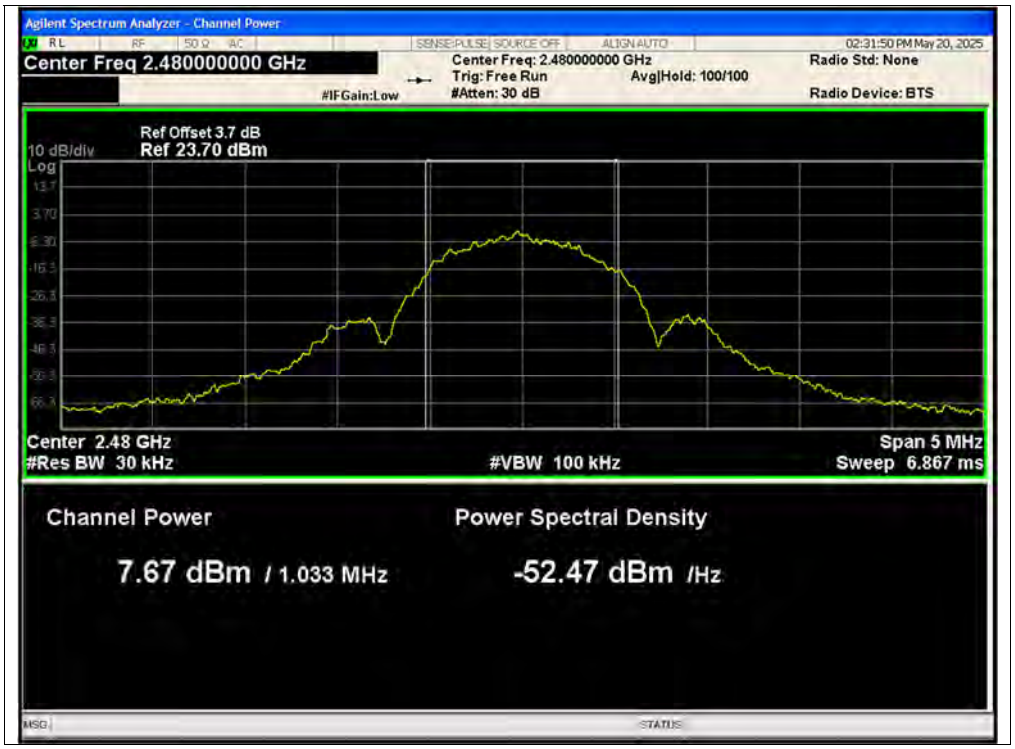
Average Power NVNT BLE 1M 2402MHz Ant1



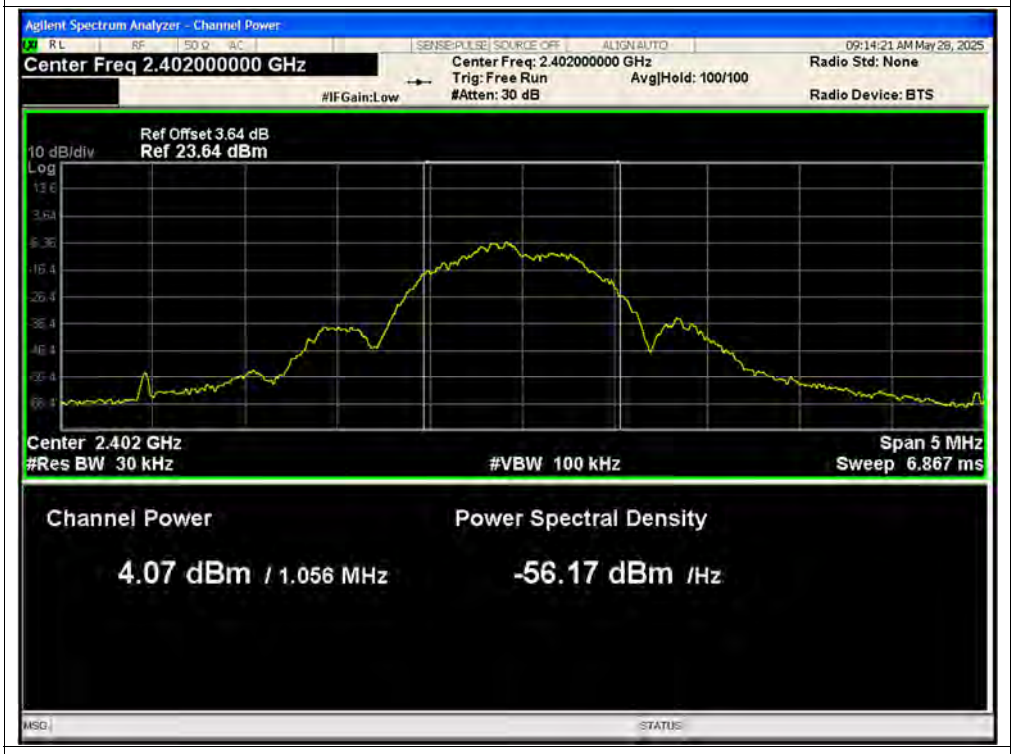
Average Power NVNT BLE 1M 2440MHz Ant1



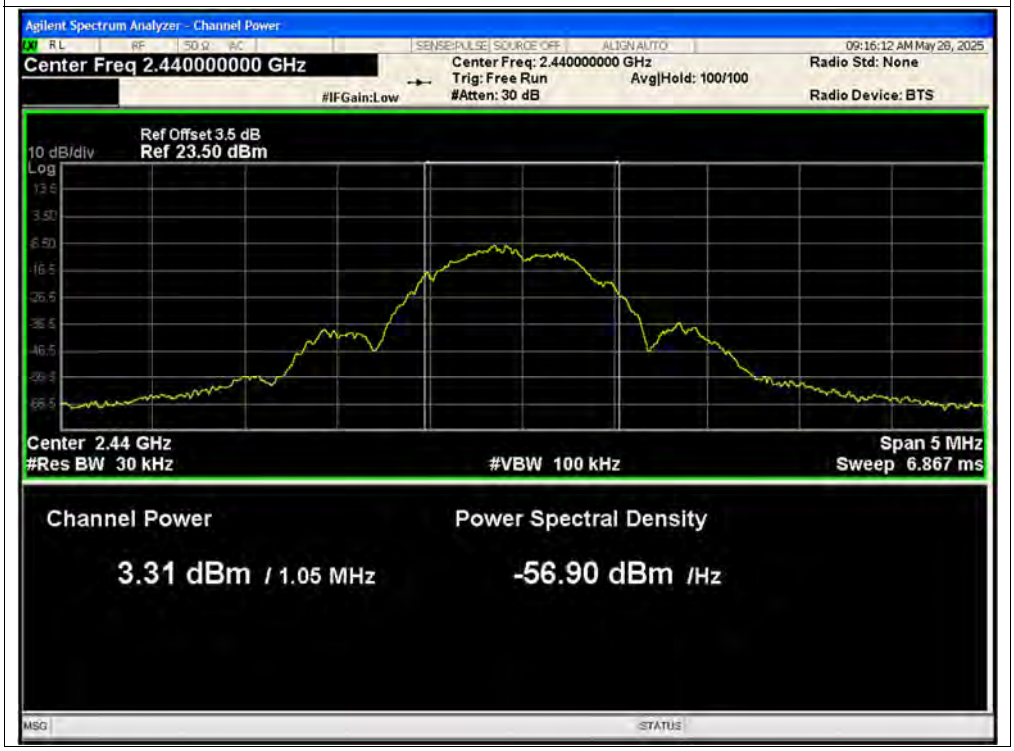
Average Power NVNT BLE 1M 2480MHz Ant1


Agilent Spectrum Analyzer - Channel Power
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold: 100/100
#IFGain:Low
02:31:50 PM May 20, 2025
Radio Std: None
Radio Device: BTS
Ref Offset 3.7 dB
10 dB/div
Ref 23.70 dBm
Log
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
7.67 dBm / 1.033 MHz
Power Spectral Density
-52.47 dBm /Hz

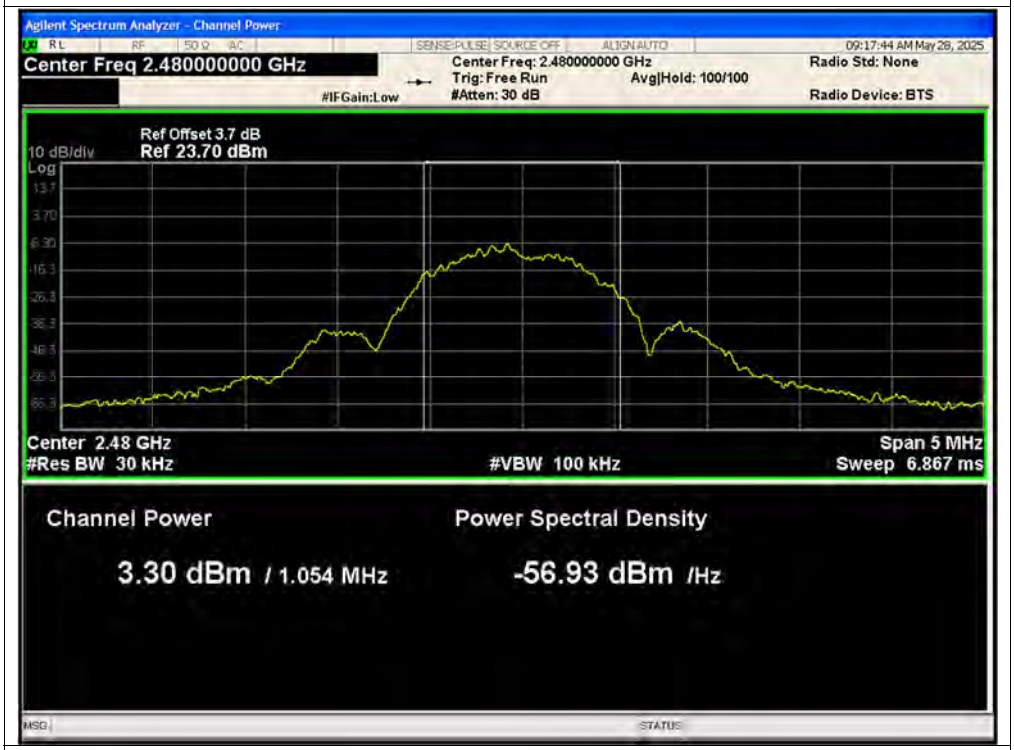
nRF52833
Test Graphs
Average Power NVNT BLE 1M 2402MHz Ant1



Average Power NVNT BLE 1M 2440MHz Ant1

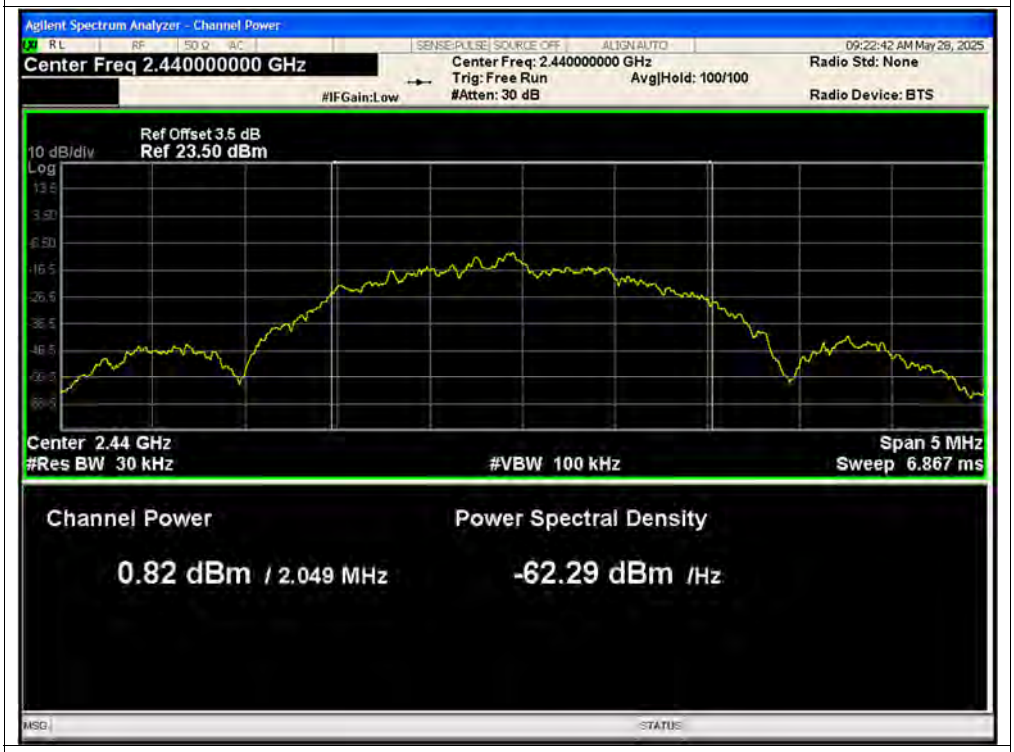


Average Power NVNT BLE 1M 2480MHz Ant1

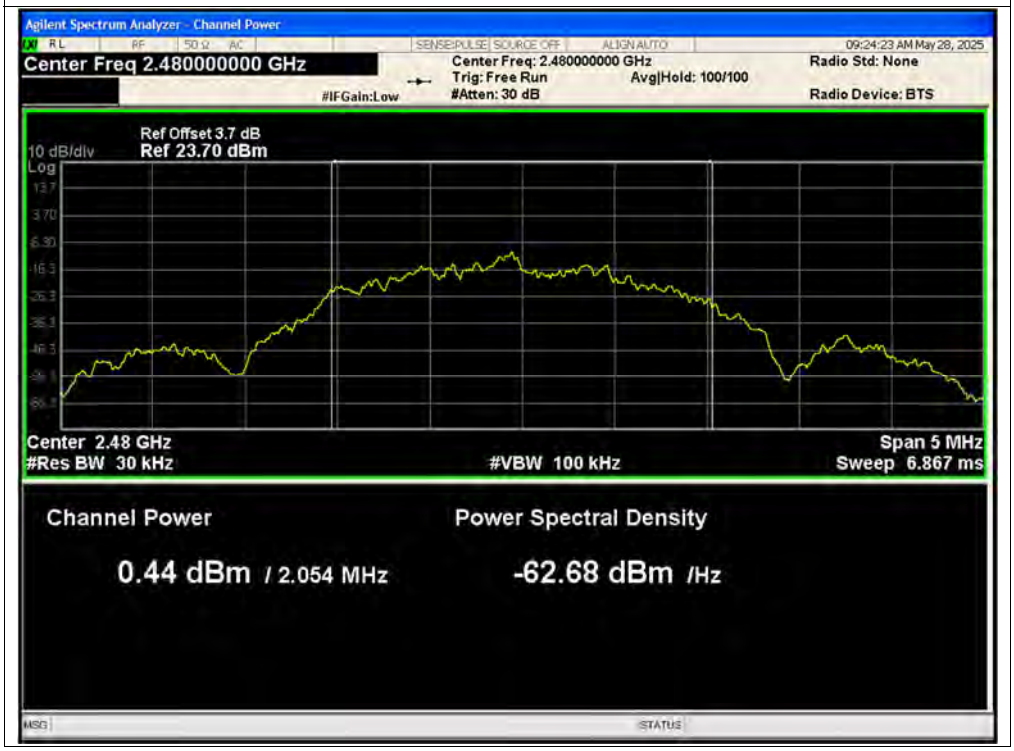


Average Power NVNT BLE 2M 2402MHz Ant1

Average Power NVNT BLE 2M 2440MHz Ant1



Average Power NVNT BLE 2M 2480MHz Ant1



A.4. 6 dB Bandwidth

WCN3988:

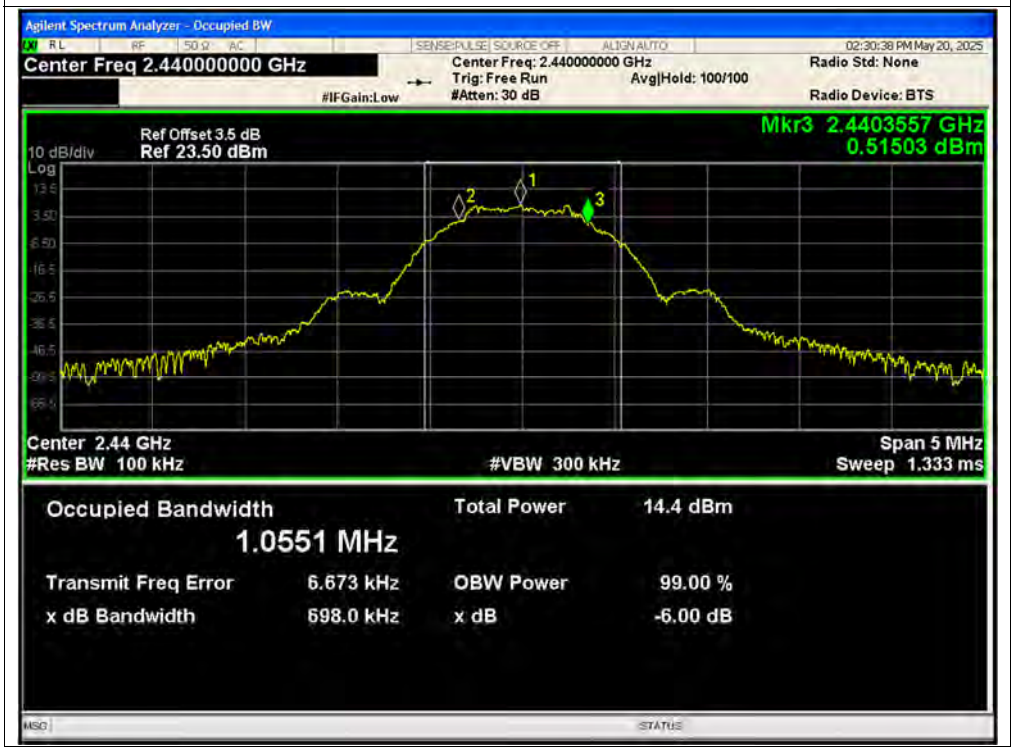
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.7028	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.698	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.698	0.5	Pass

nRF52833:

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.6867	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.6878	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.6666	0.5	Pass
NVNT	BLE 2M	2402	Ant1	1.117	0.5	Pass
NVNT	BLE 2M	2440	Ant1	1.112	0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.11	0.5	Pass

WCN3988
Test Graphs
-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1

-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

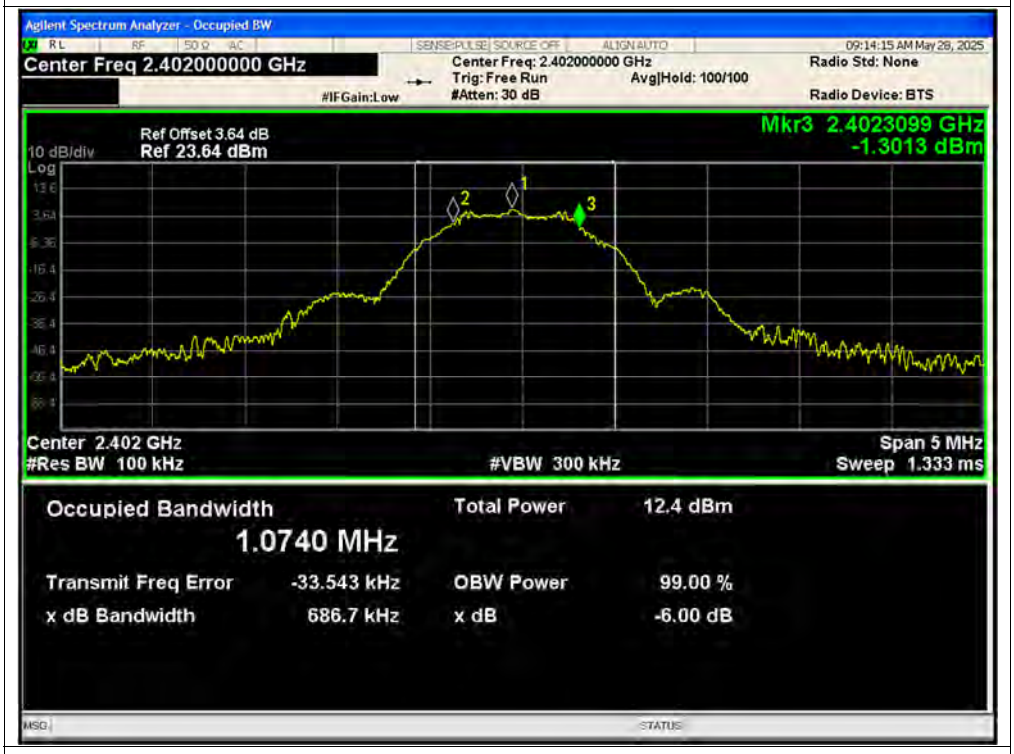


-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1

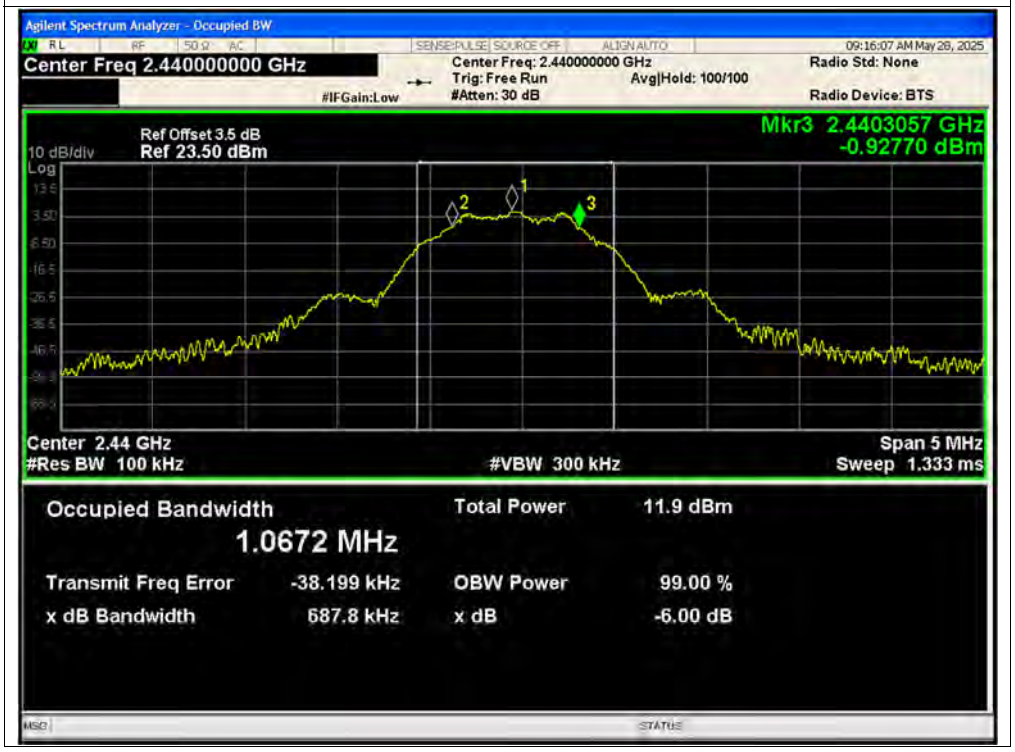
nRF52833

Test Graphs

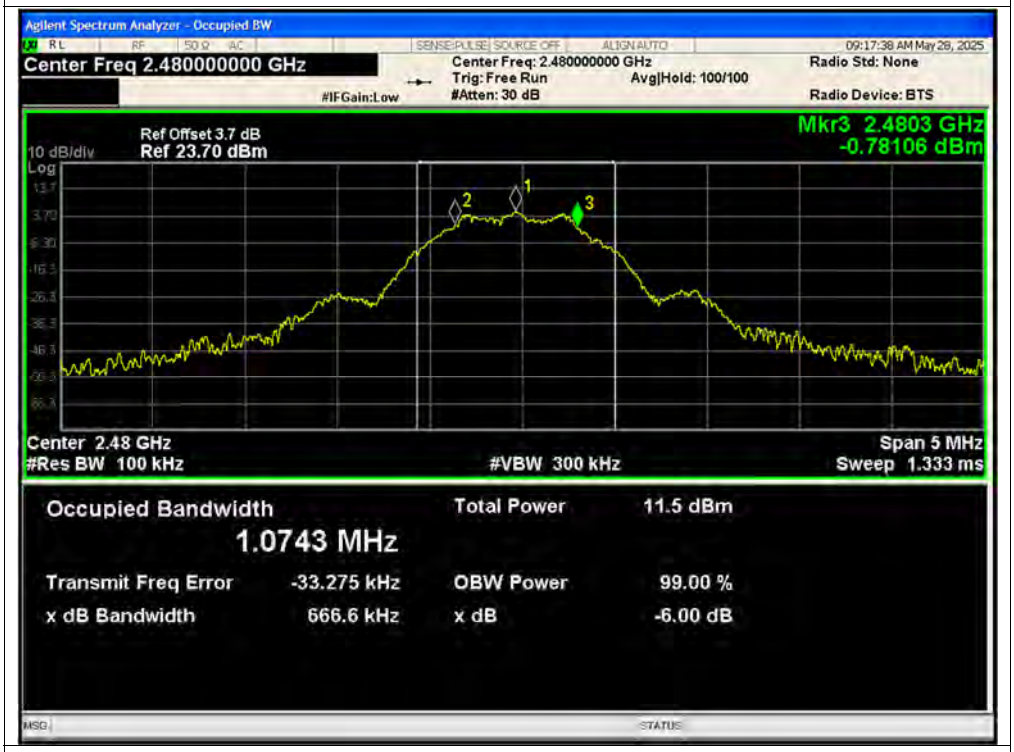
-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2402MHz Ant1

-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1

-6dB Bandwidth NVNT BLE 2M 2480MHz Ant1

A.5. Conducted Spurious Emissions

WCN3988:

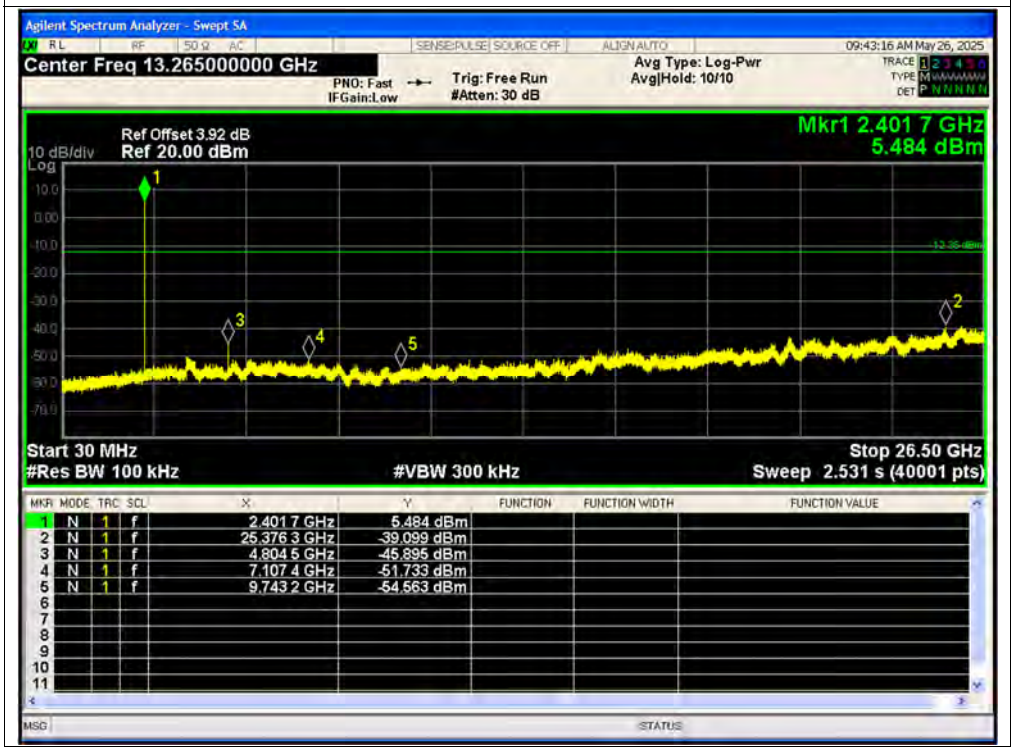
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-46.74	-20	Pass
NVNT	BLE 1M	2440	Ant1	-45.99	-20	Pass
NVNT	BLE 1M	2480	Ant1	-48.05	-20	Pass

nRF52833:

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-45.81	-20	Pass
NVNT	BLE 1M	2440	Ant1	-45.14	-20	Pass
NVNT	BLE 1M	2480	Ant1	-44.24	-20	Pass
NVNT	BLE 2M	2402	Ant1	-45.21	-20	Pass
NVNT	BLE 2M	2440	Ant1	-45.29	-20	Pass
NVNT	BLE 2M	2480	Ant1	-44.65	-20	Pass

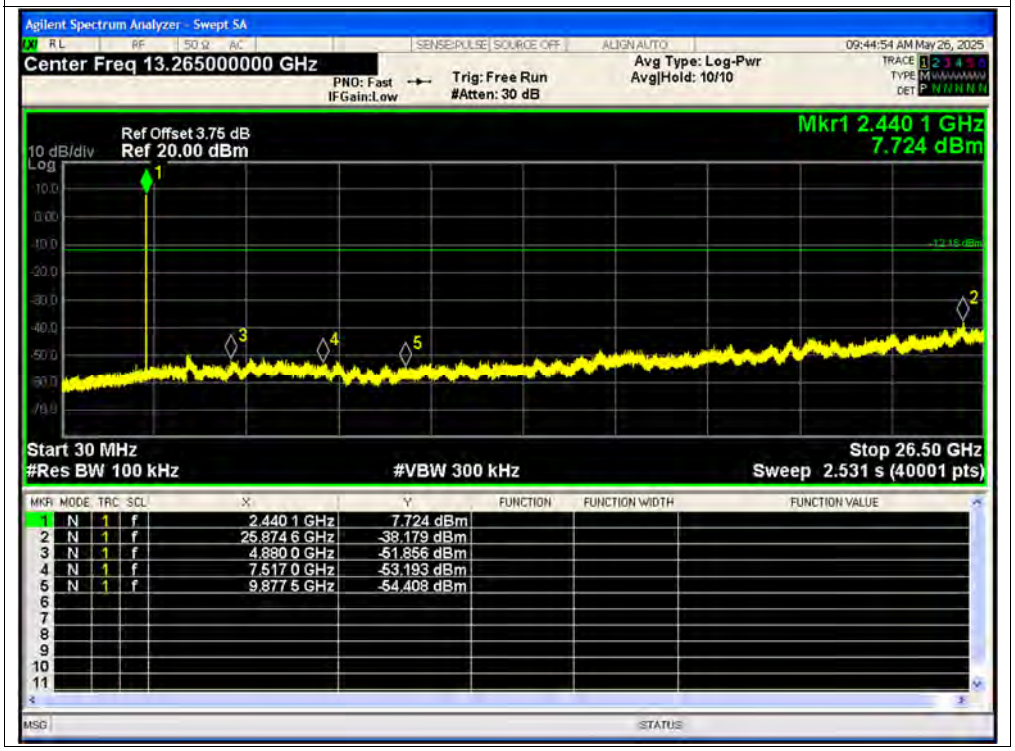
WCN3988
Test Graphs
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



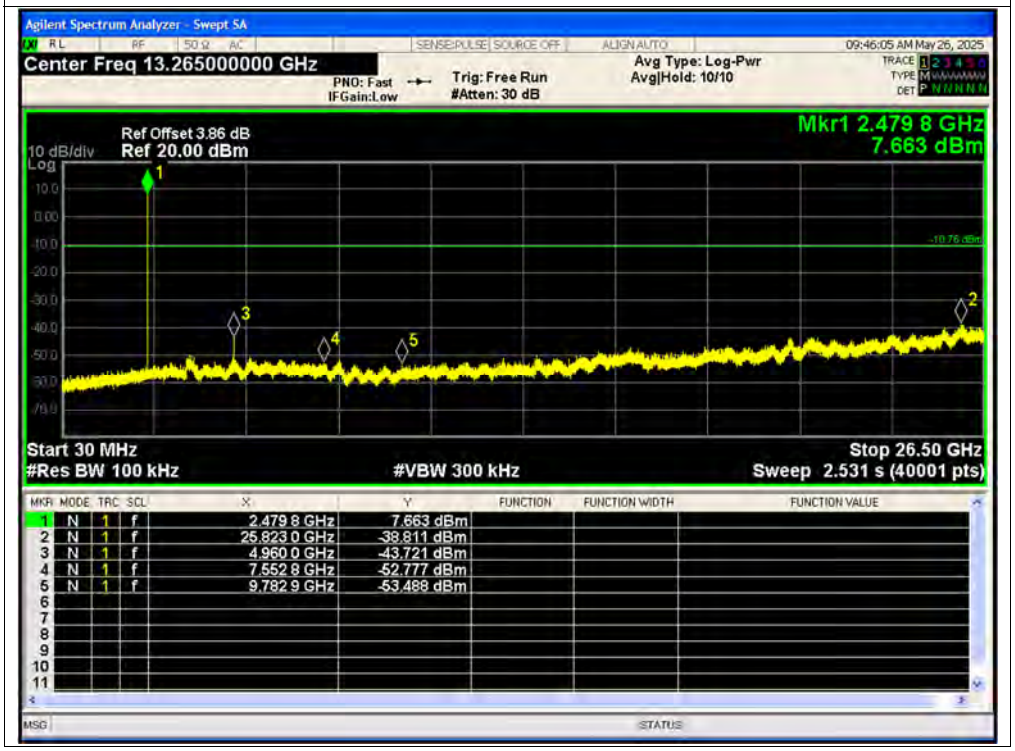
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



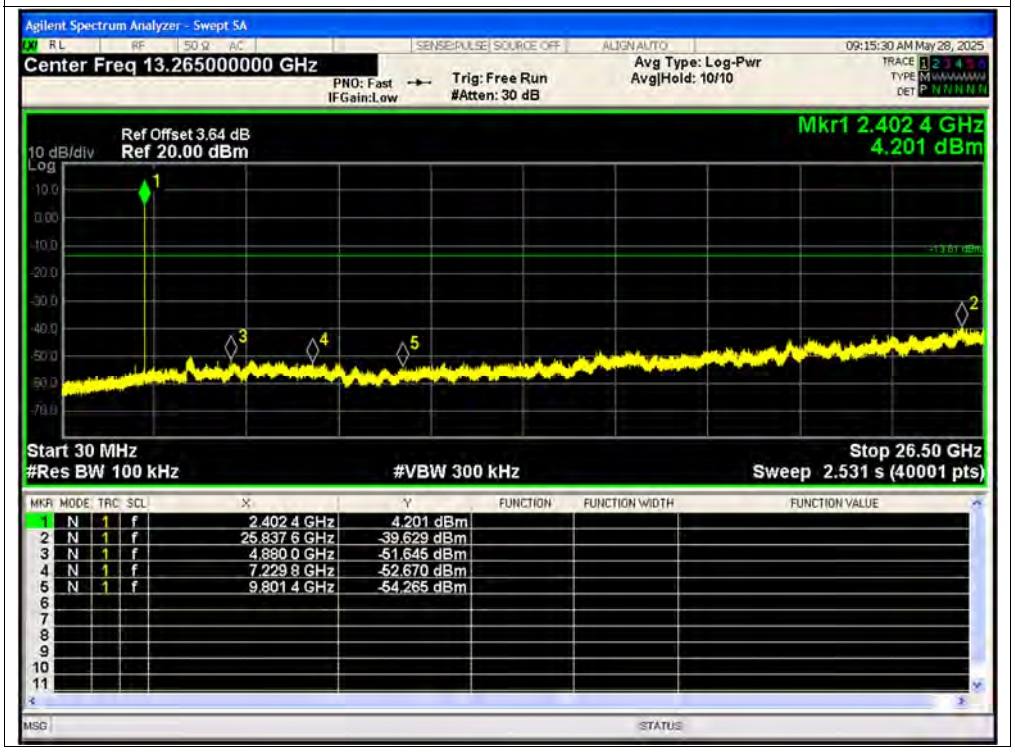
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



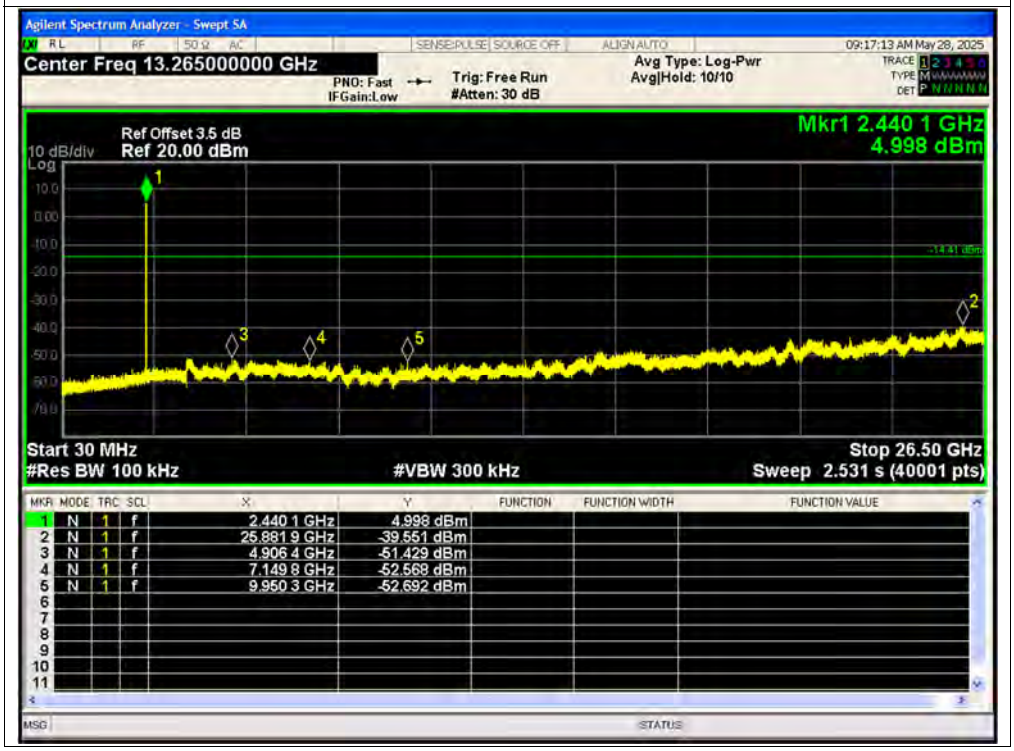
nRF52833
Test Graphs
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



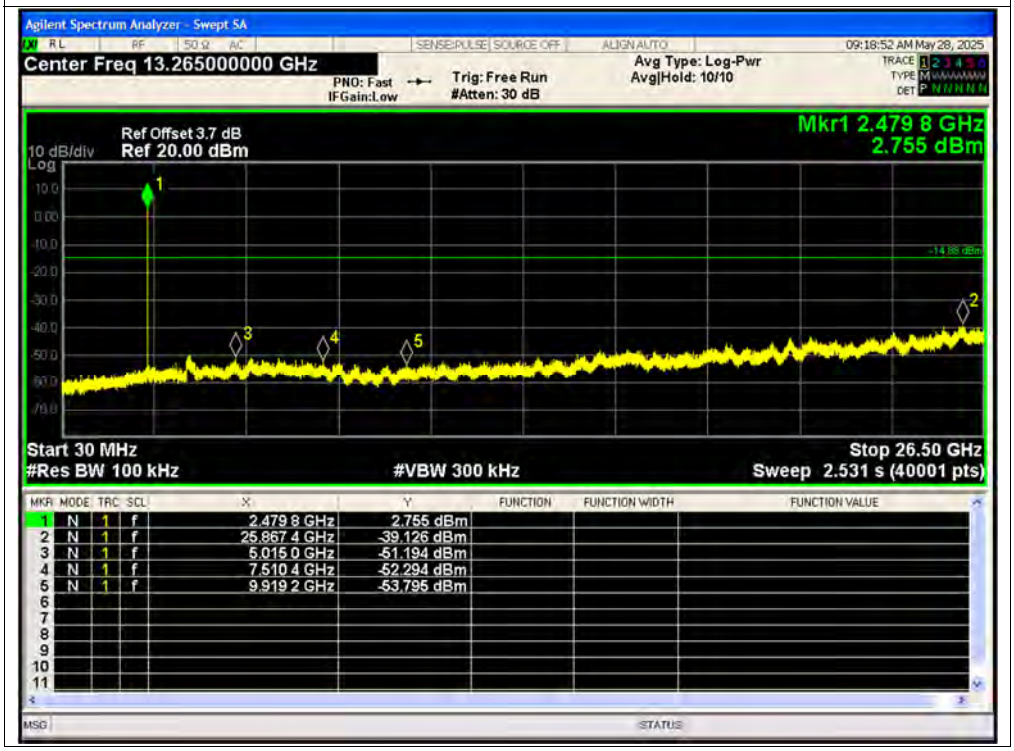
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



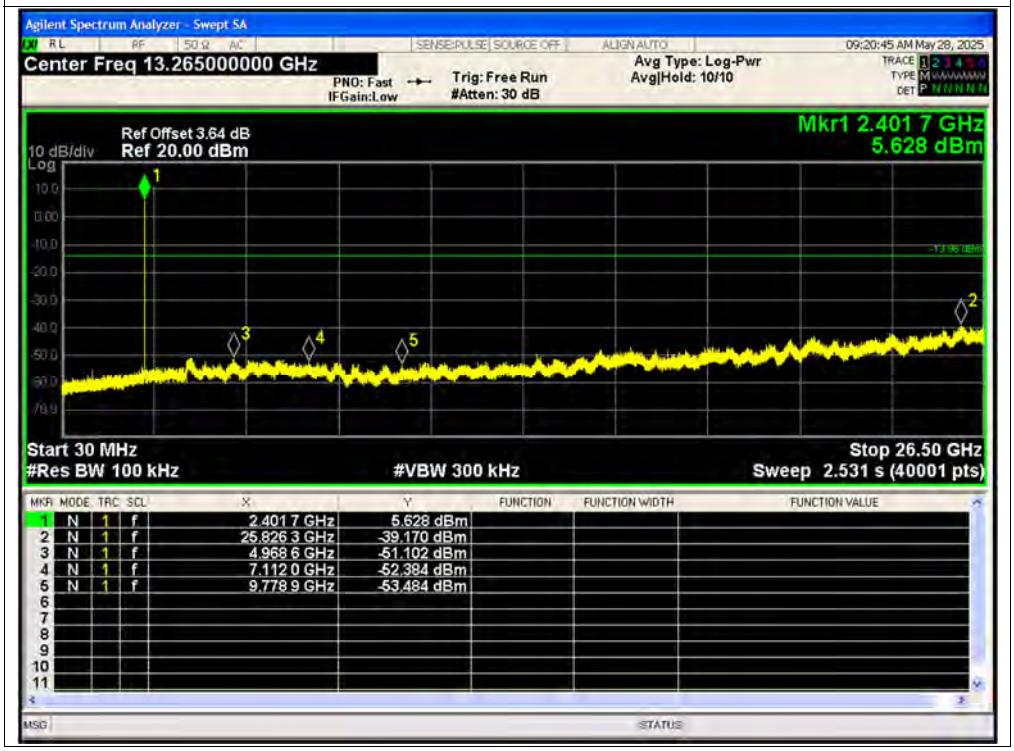
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



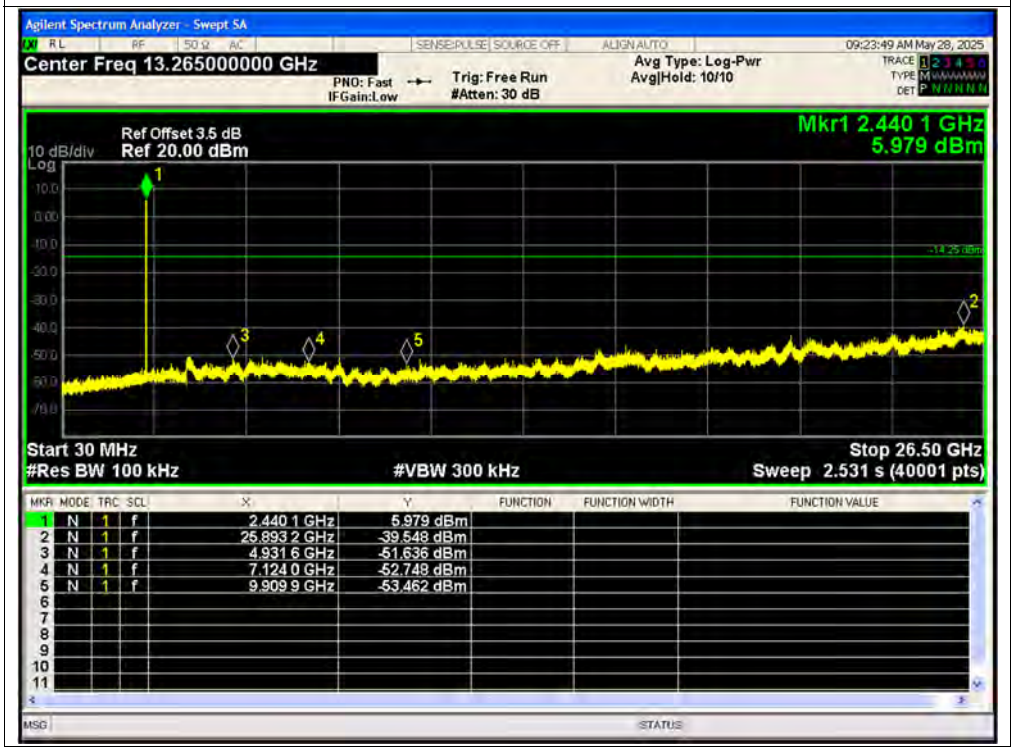
Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission



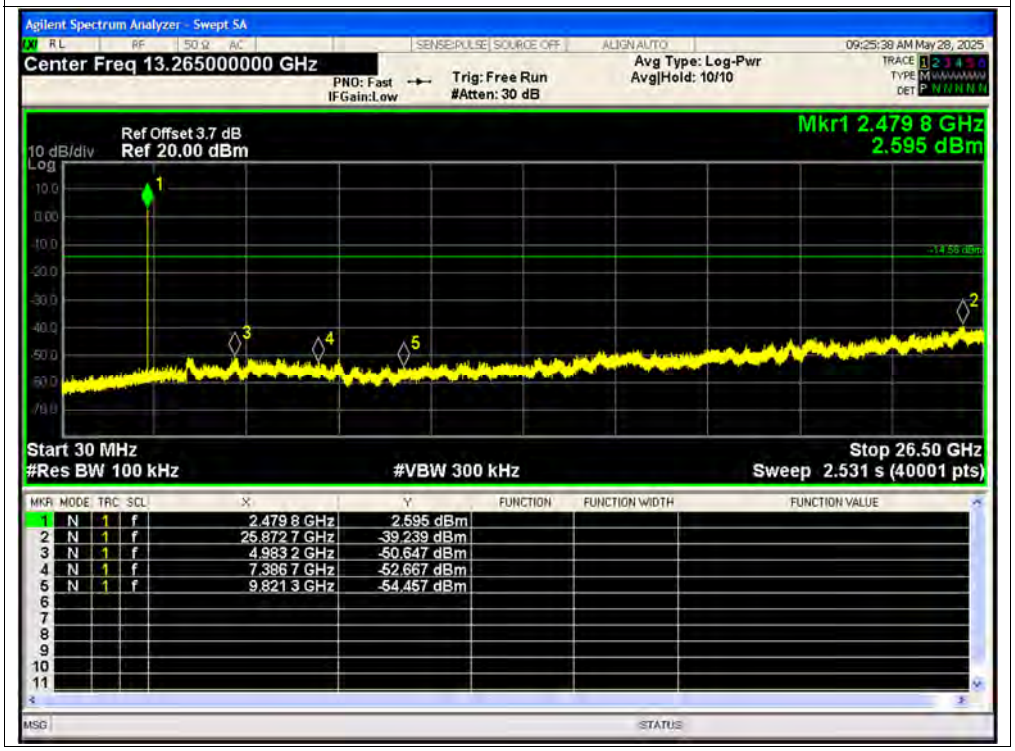
Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission



A.6. Band Edge

WCN3988:

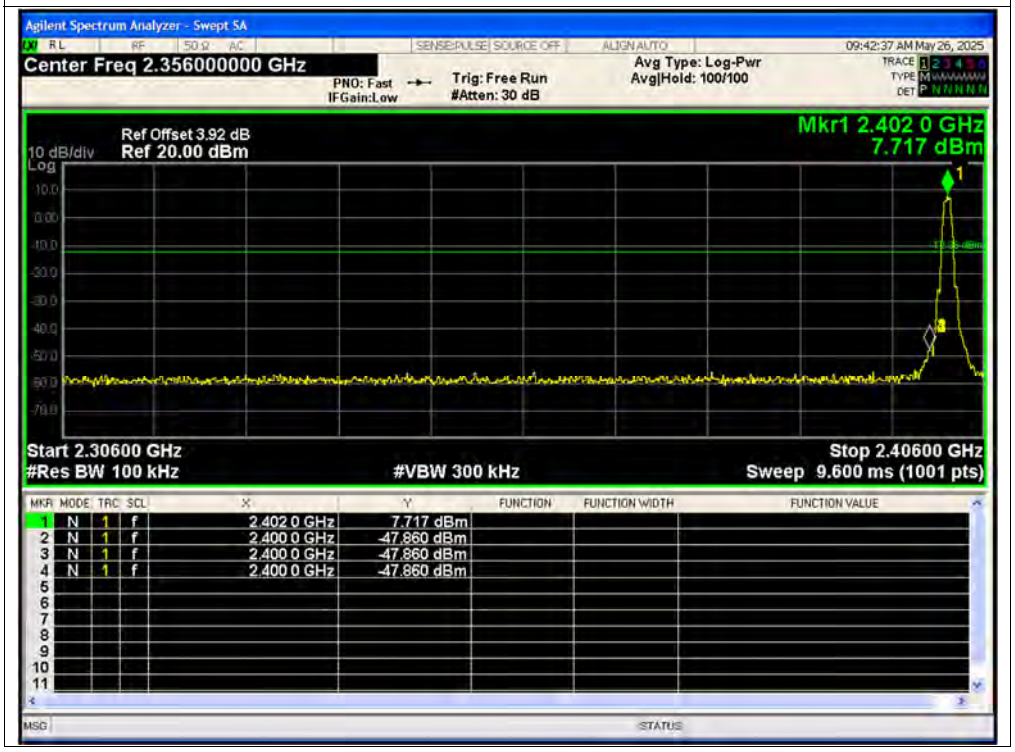
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-55.5	-20	Pass
NVNT	BLE 1M	2480	Ant1	-63.15	-20	Pass

nRF52833:

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-49.42	-20	Pass
NVNT	BLE 1M	2480	Ant1	-59.16	-20	Pass
NVNT	BLE 2M	2402	Ant1	-32.55	-20	Pass
NVNT	BLE 2M	2480	Ant1	-57.03	-20	Pass

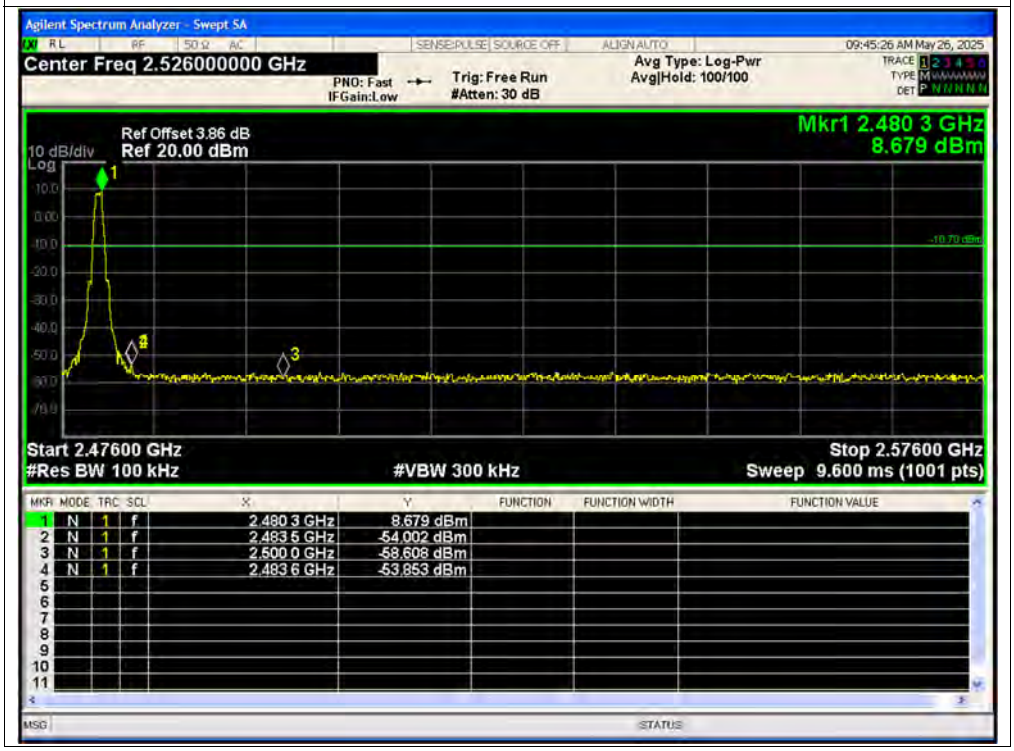
WCN3988
Test Graphs
Band Edge NVNT BLE 1M 2402MHz Ant1 Ref

Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



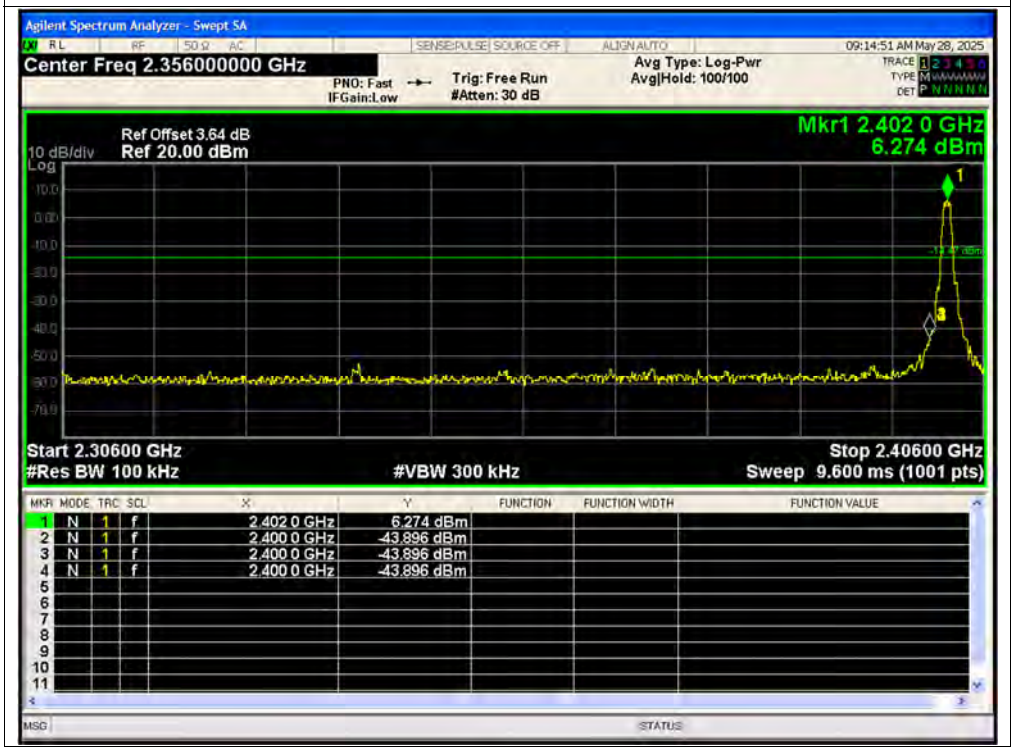
Band Edge NVNT BLE 1M 2480MHz Ant1 Ref

Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



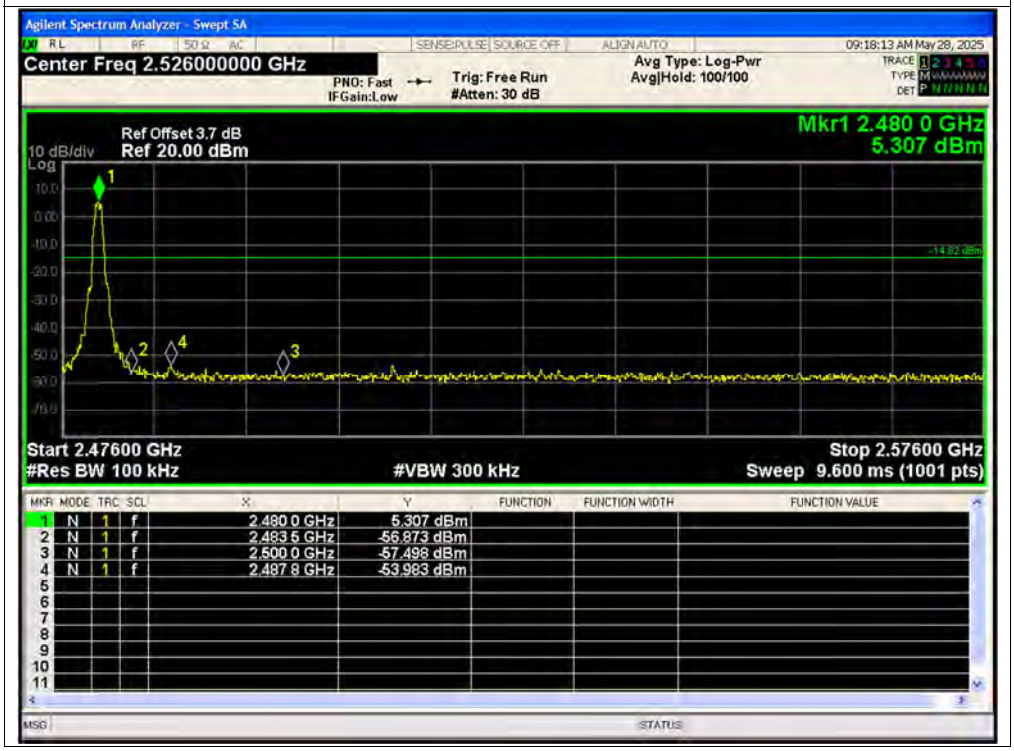
nRF52833
Test Graphs
Band Edge NVNT BLE 1M 2402MHz Ant1 Ref

Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



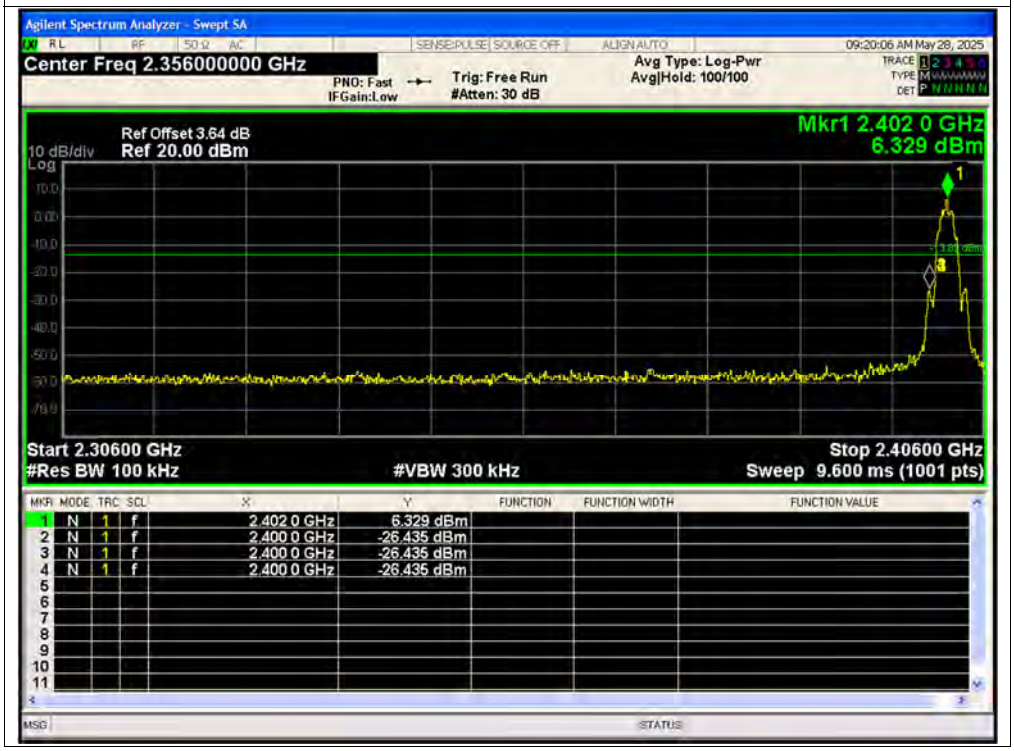
Band Edge NVNT BLE 1M 2480MHz Ant1 Ref

Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



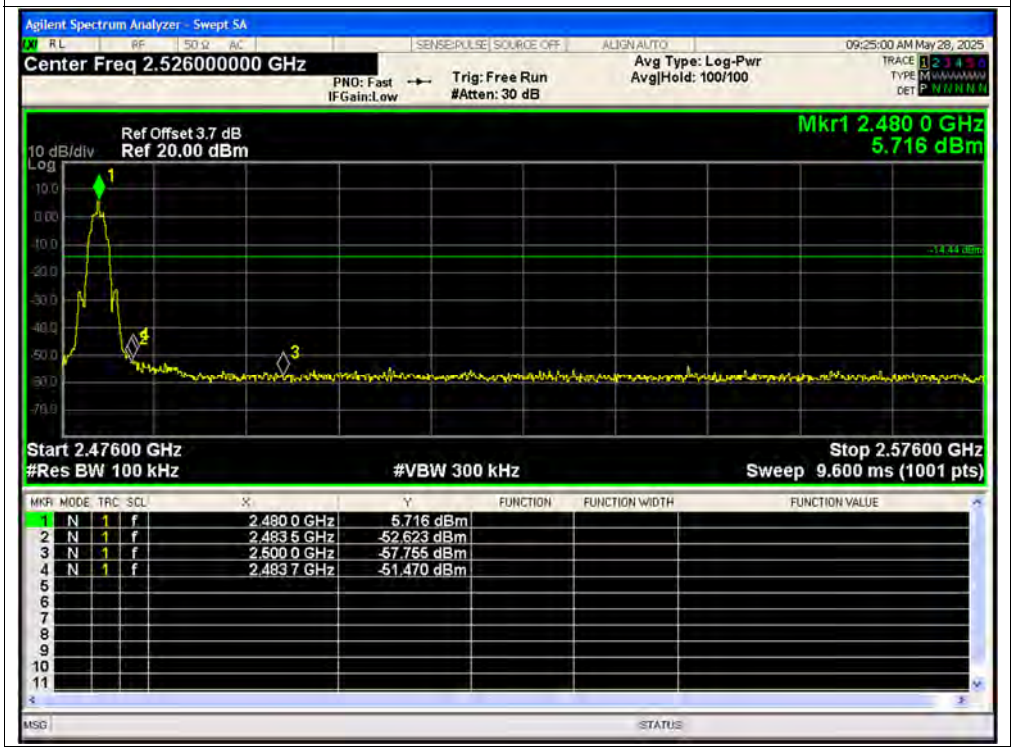
Band Edge NVNT BLE 2M 2402MHz Ant1 Ref

Band Edge NVNT BLE 2M 2402MHz Ant1 Emission



Band Edge NVNT BLE 2M 2480MHz Ant1 Ref

Band Edge NVNT BLE 2M 2480MHz Ant1 Emission



A.7. Power Spectral Density

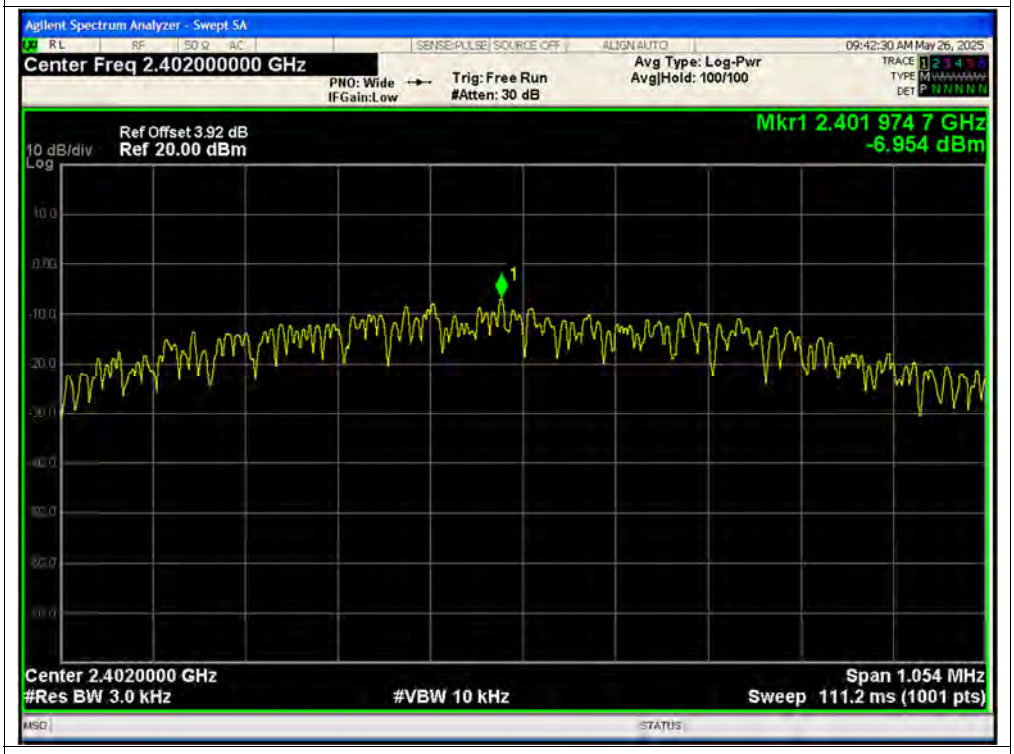
WCN3988:

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-6.95	0	-6.95	8	Pass
NVNT	BLE 1M	2440	Ant1	-6.67	0	-6.67	8	Pass
NVNT	BLE 1M	2480	Ant1	-5.28	0	-5.28	8	Pass

nRF52833:

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-8.53	0	-8.53	8	Pass
NVNT	BLE 1M	2440	Ant1	-9.25	0	-9.25	8	Pass
NVNT	BLE 1M	2480	Ant1	-9.65	0	-9.65	8	Pass
NVNT	BLE 2M	2402	Ant1	-11.26	0	-11.26	8	Pass
NVNT	BLE 2M	2440	Ant1	-11.65	0	-11.65	8	Pass
NVNT	BLE 2M	2480	Ant1	-11.95	0	-11.95	8	Pass

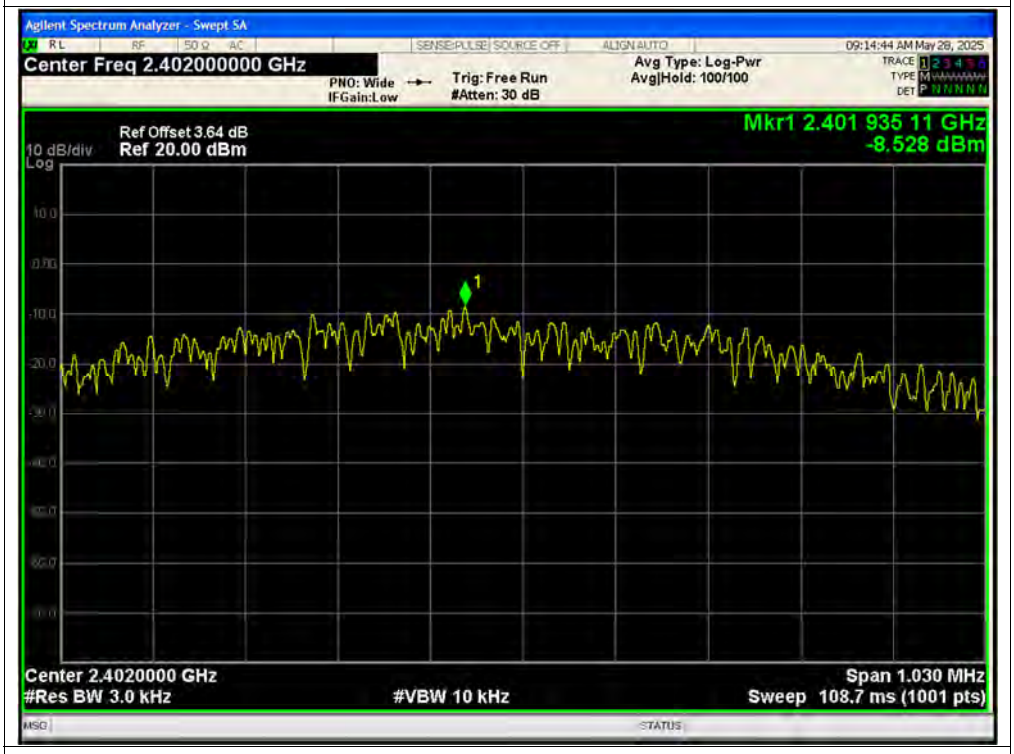
WCN3988
Test Graphs
PSD NVNT BLE 1M 2402MHz Ant1



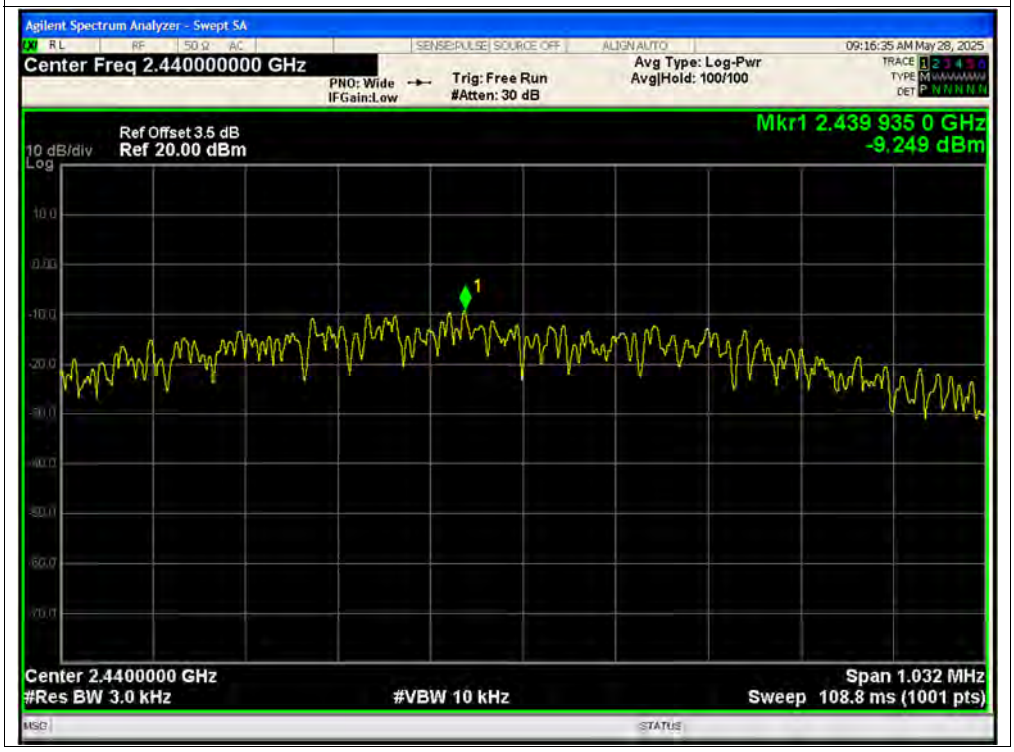
PSD NVNT BLE 1M 2440MHz Ant1

PSD NVNT BLE 1M 2480MHz Ant1

nRF52833
Test Graphs
PSD NVNT BLE 1M 2402MHz Ant1

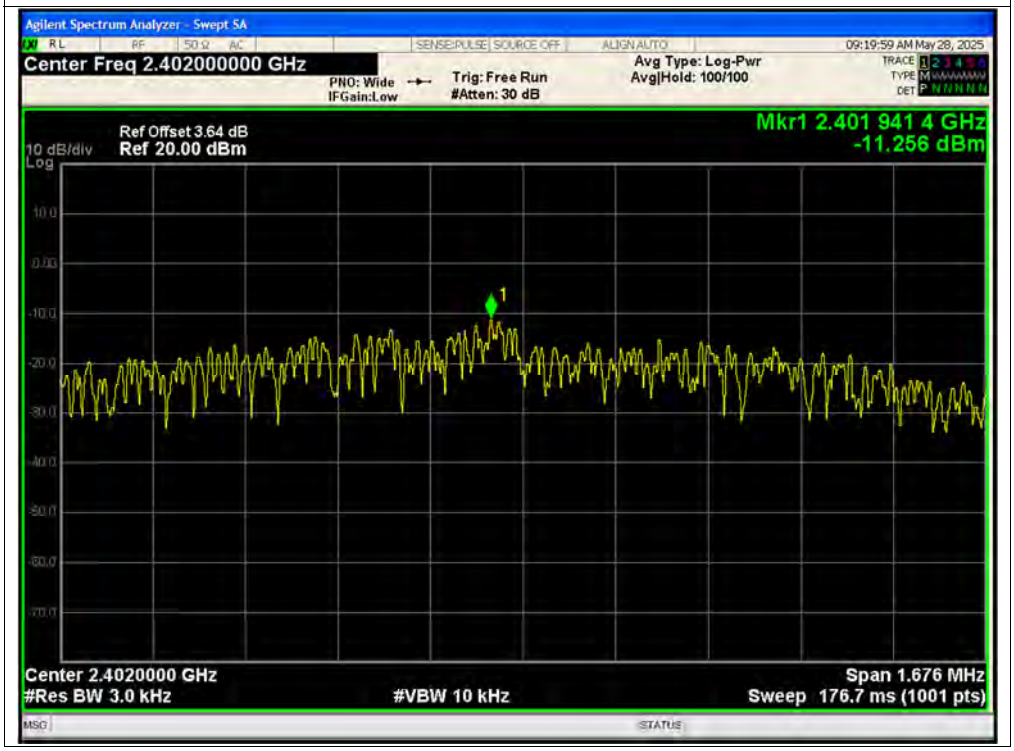


PSD NVNT BLE 1M 2440MHz Ant1

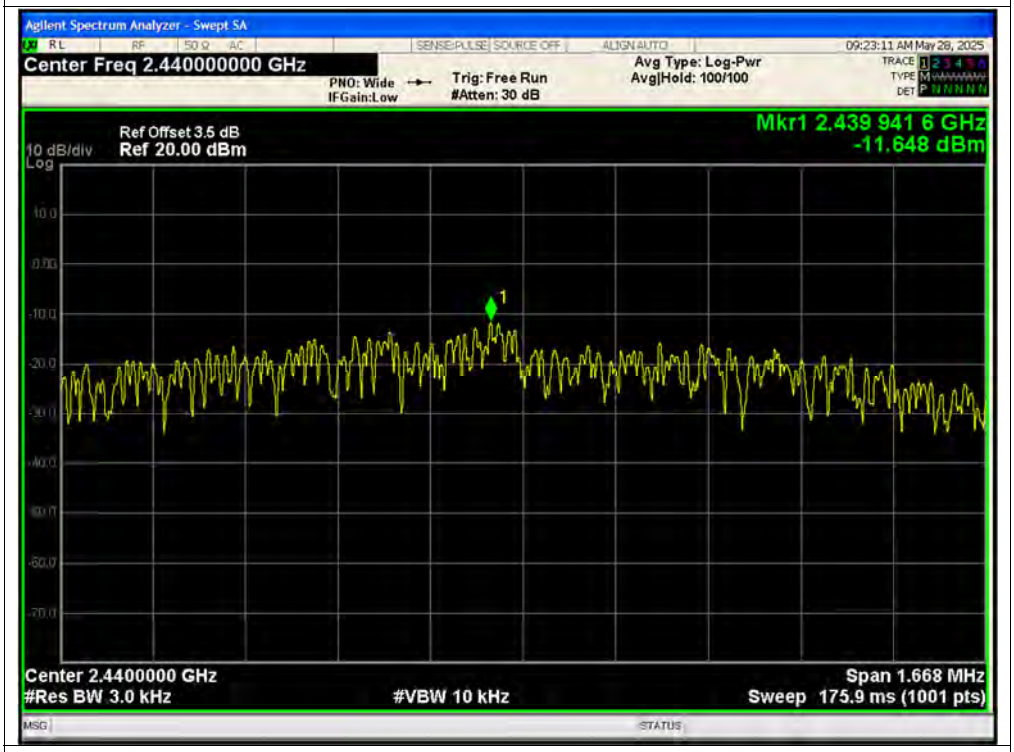


PSD NVNT BLE 1M 2480MHz Ant1

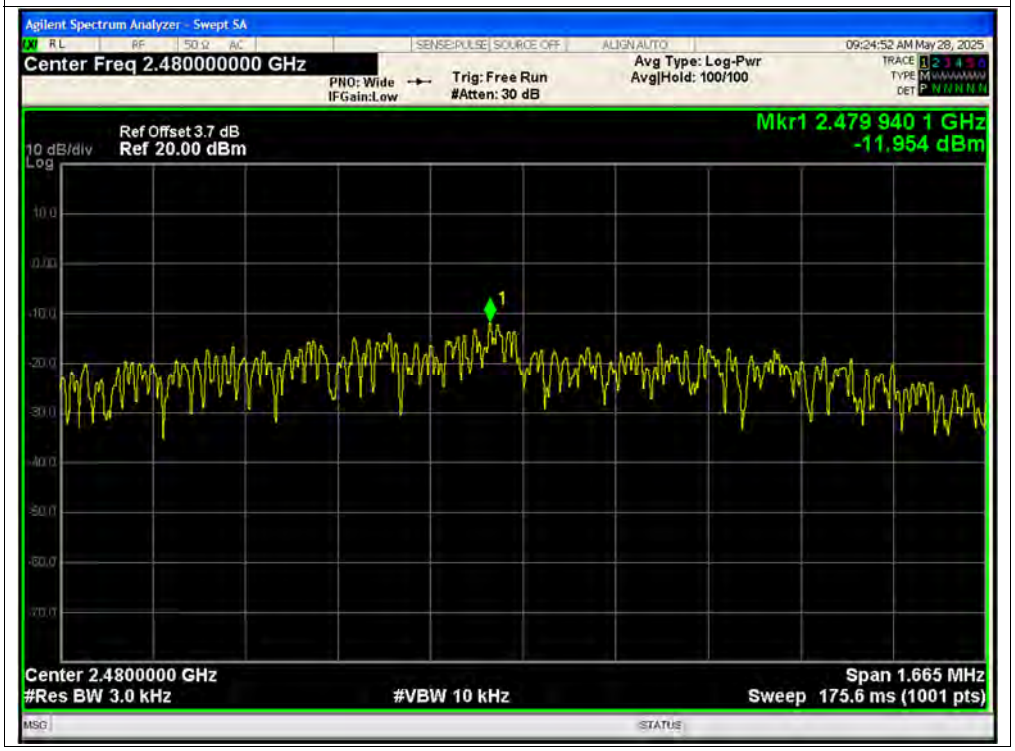
PSD NVNT BLE 2M 2402MHz Ant1



PSD NVNT BLE 2M 2440MHz Ant1



PSD NVNT BLE 2M 2480MHz Ant1



A.8. Conducted Emission

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

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

A. Test Setup:

Test Mode: EUT+ Adapter + Earphone + BT TX

Test voltage: AC 120V/60Hz

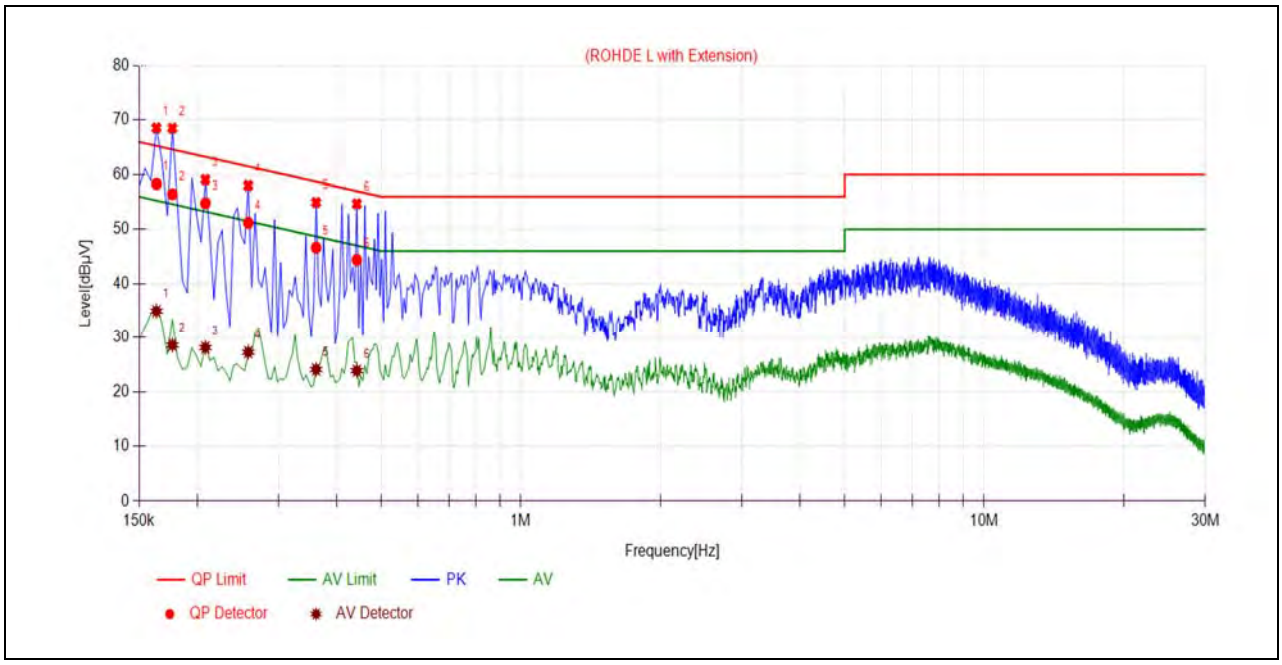
The measurement results are obtained as below:

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

U_R: Receiver Reading

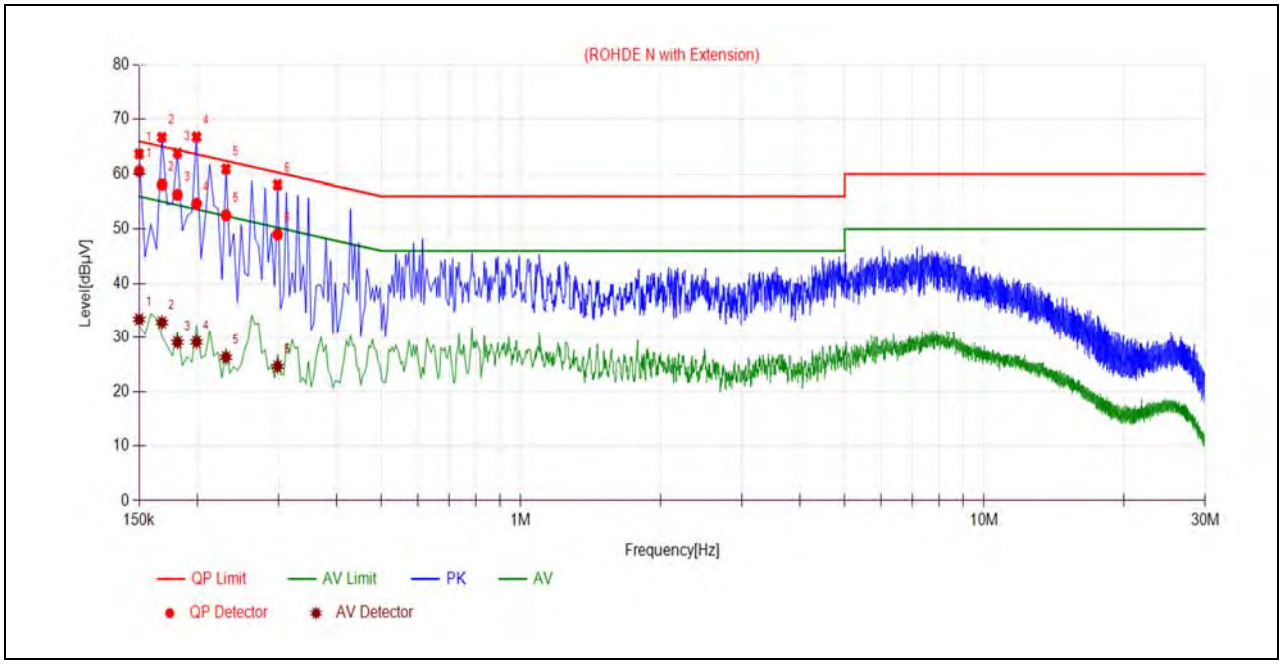
A_{Factor}: Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1635	58.32	34.94	65.28	55.28	Line	PASS
2	0.1770	56.45	28.58	64.62	54.62		PASS
3	0.2085	54.79	28.11	63.27	53.27		PASS
4	0.2580	51.22	27.26	61.50	51.50		PASS
5	0.3615	46.64	24.05	58.69	48.69		PASS
6	0.4425	44.40	23.84	57.02	47.02		PASS



(N Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1500	60.54	33.43	66.00	56.00	Neutral	PASS
2	0.1680	58.11	32.87	65.06	55.06		PASS
3	0.1815	56.29	29.07	64.42	54.42		PASS
4	0.1995	54.65	29.12	63.63	53.63		PASS
5	0.2310	52.54	26.30	62.41	52.41		PASS
6	0.2985	49.04	24.62	60.28	50.28		PASS

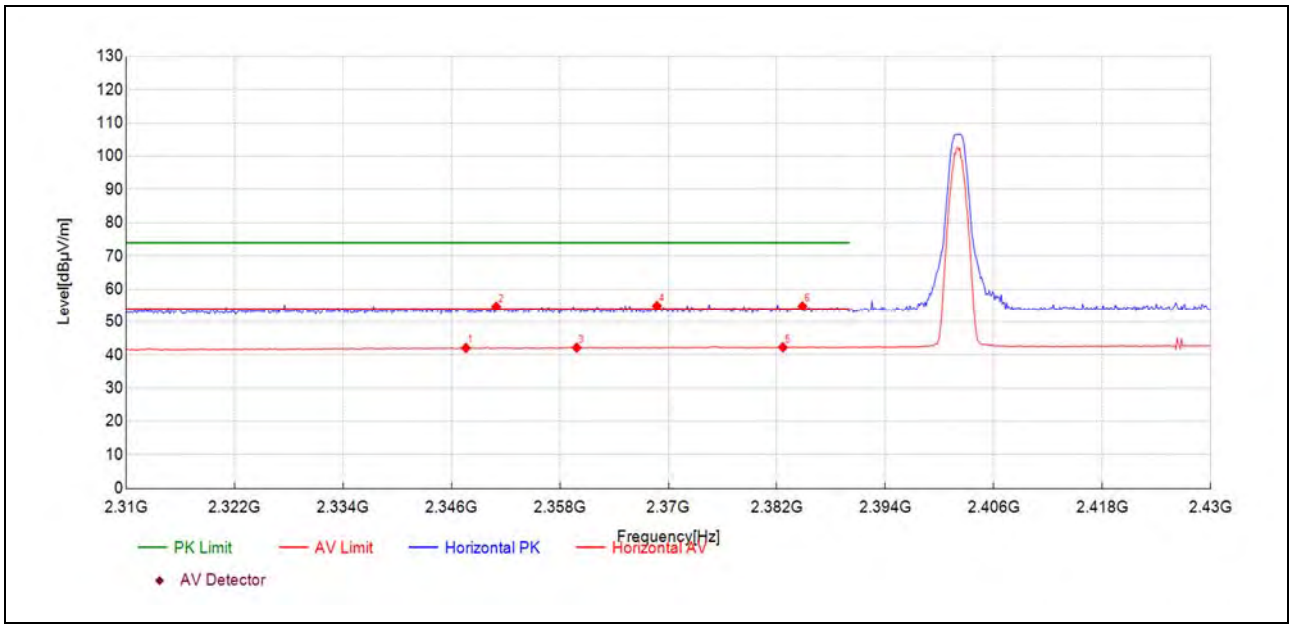
A.9. Restricted Frequency Bands

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.

WCN3988:

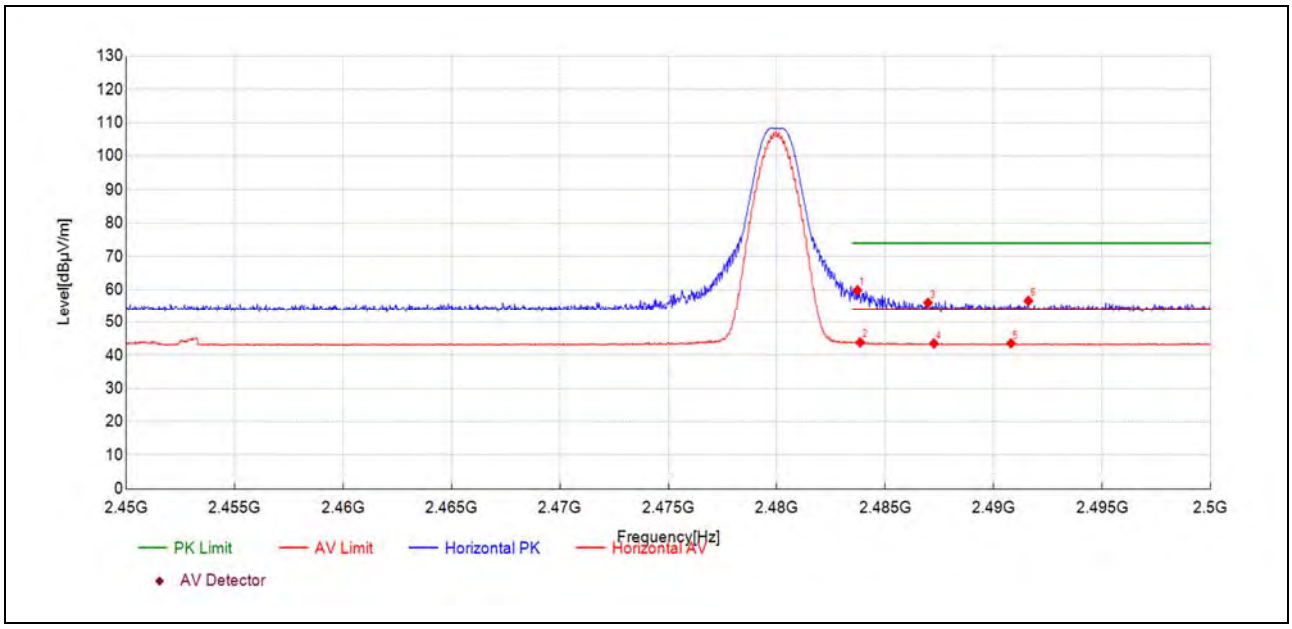
1Mbps

Plot for Channel 0



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2347.60	9.7	42.05	32.380	54.00	11.95	150	0	AV	PASS
2350.96	22.3	54.73	32.400	74.00	19.27	150	0	PK	PASS
2359.85	9.7	42.15	32.440	54.00	11.85	150	350	AV	PASS
2368.74	22.5	54.94	32.470	74.00	19.06	150	74	PK	PASS
2382.67	9.8	42.27	32.520	54.00	11.73	150	172	AV	PASS
2384.83	22.3	54.84	32.530	74.00	19.16	150	1	PK	PASS

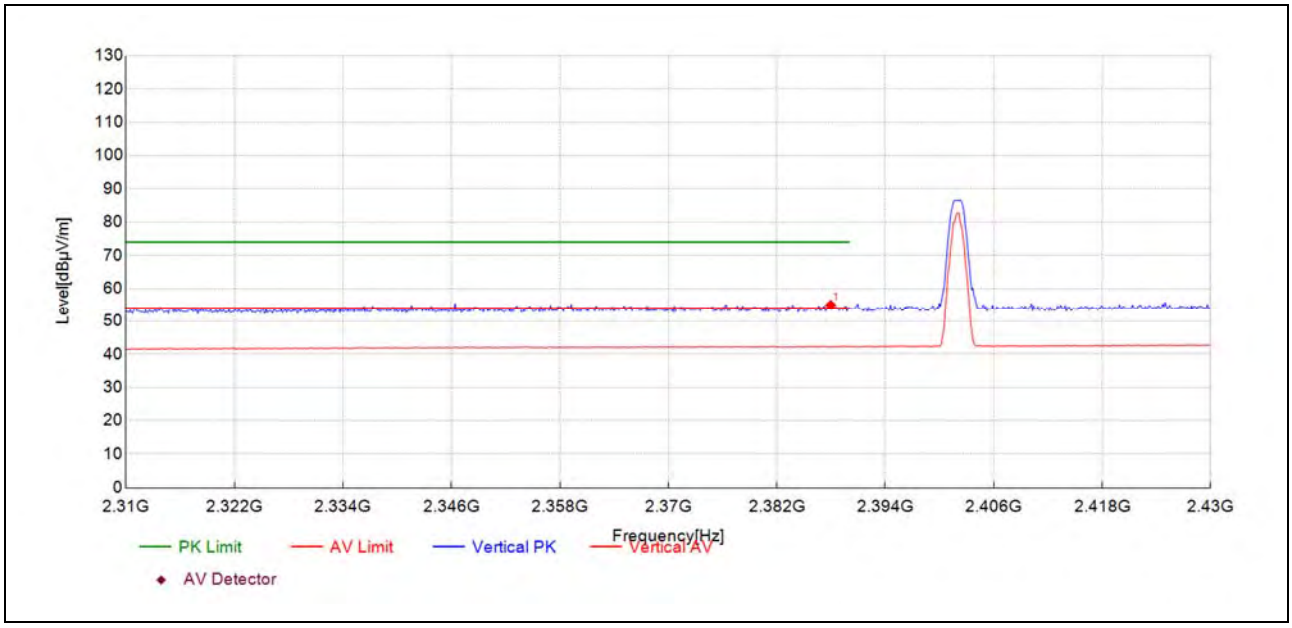
Plot for Channel 39



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2483.72	26.8	59.80	33.030	74.00	14.20	150	299	PK	PASS
2483.84	10.8	43.86	33.030	54.00	10.14	150	308	AV	PASS
2486.97	23.0	56.06	33.030	74.00	17.94	150	319	PK	PASS
2487.24	10.5	43.52	33.030	54.00	10.48	150	237	AV	PASS
2490.80	10.6	43.57	33.020	54.00	10.43	150	216	AV	PASS
2491.60	23.6	56.64	33.020	74.00	17.36	150	104	PK	PASS

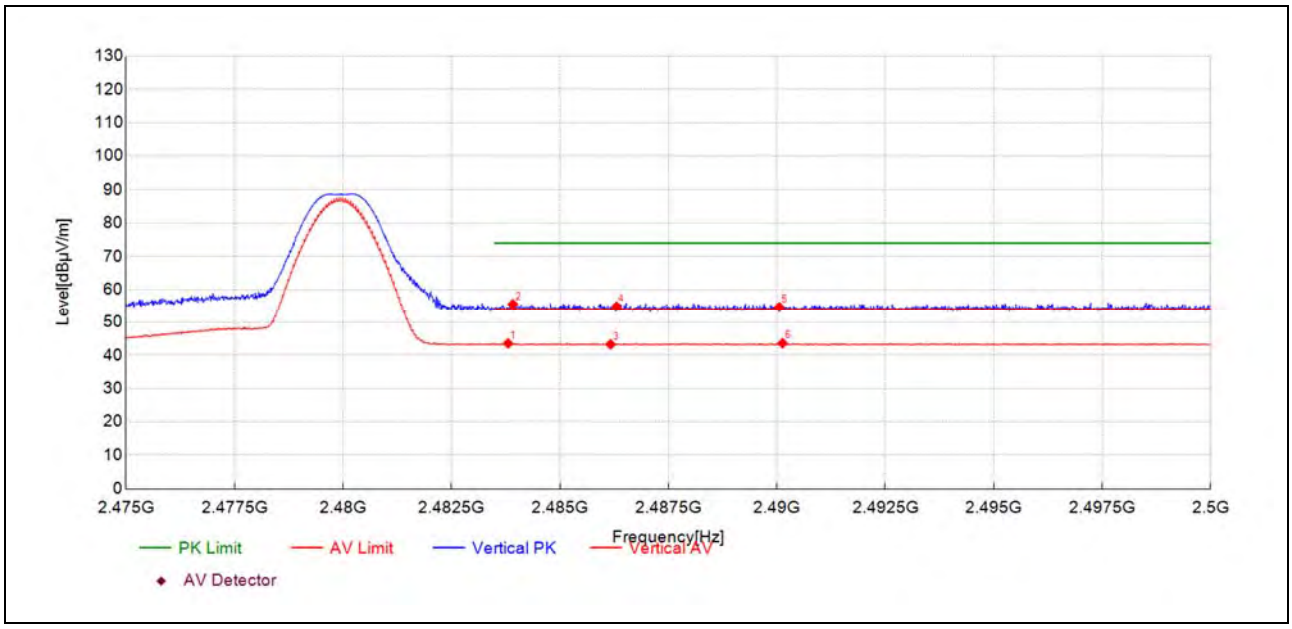
nRF52833:

1Mbps



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2387.96	22.5	54.99	32.540	74.00	19.01	150	359	PK	PASS

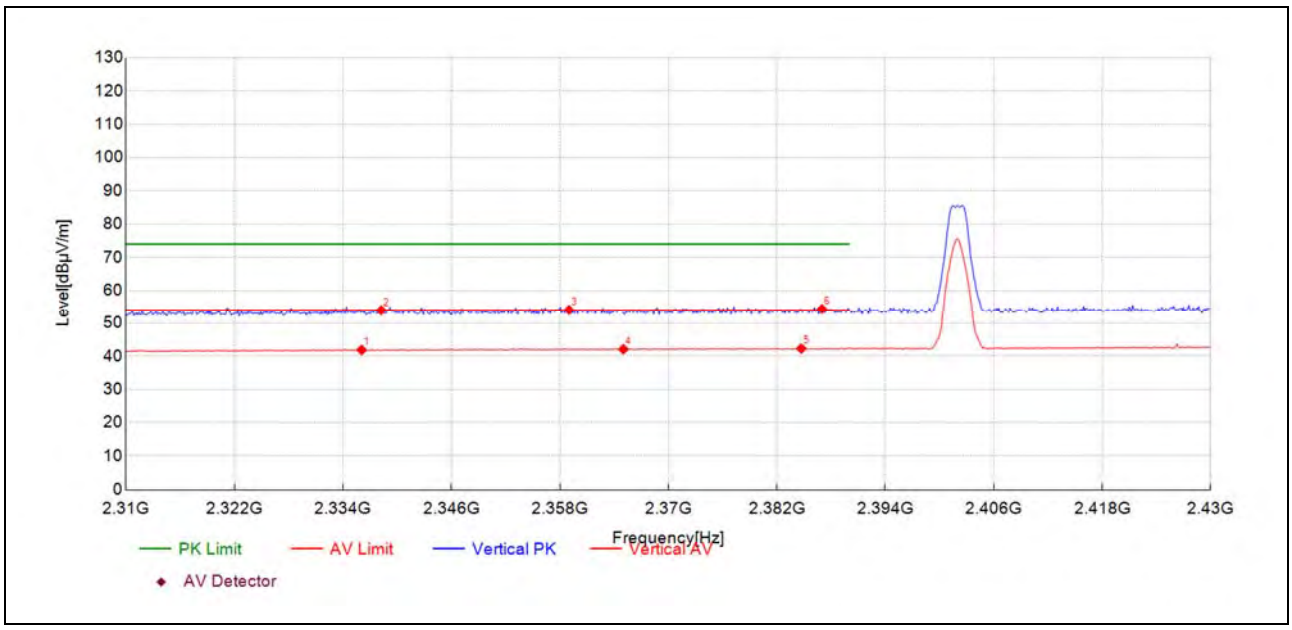
Plot for Channel 39



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2483.80	10.6	43.58	33.030	54.00	10.42	150	345	AV	PASS
2483.92	22.6	55.58	33.030	74.00	18.42	150	214	PK	PASS
2486.17	10.3	43.28	33.030	54.00	10.72	150	297	AV	PASS
2486.31	21.8	54.87	33.030	74.00	19.13	150	112	PK	PASS
2490.06	21.7	54.69	33.020	74.00	19.31	150	214	PK	PASS
2490.13	10.6	43.62	33.020	54.00	10.38	150	297	AV	PASS

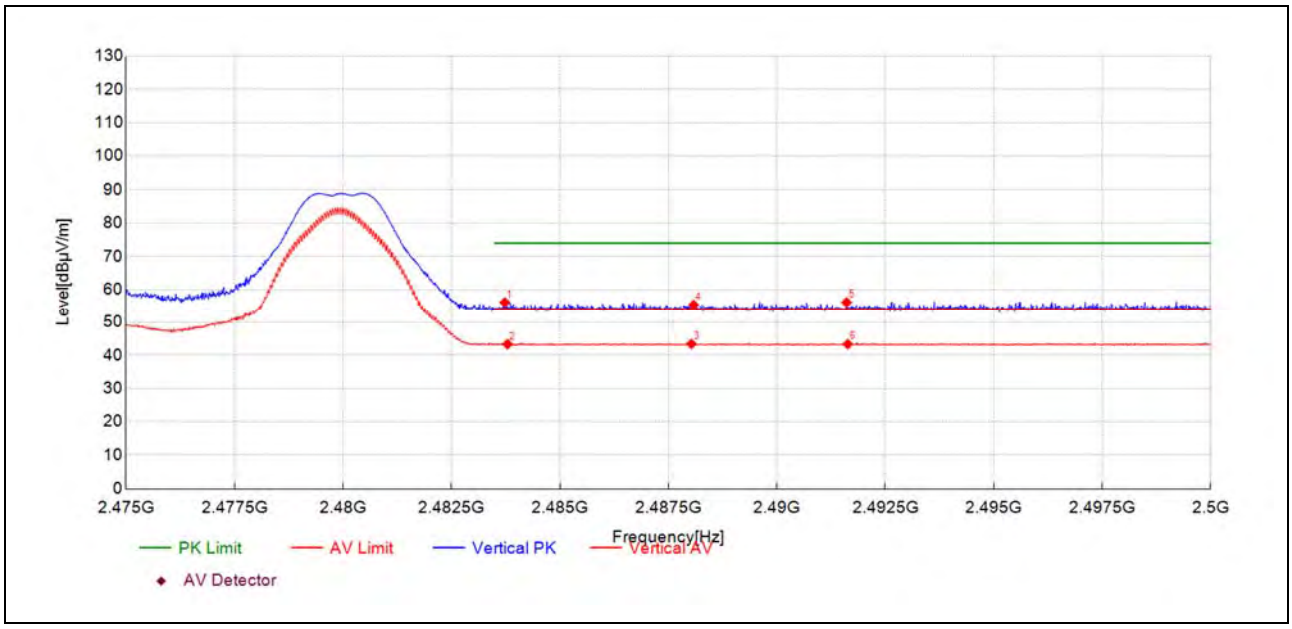
2Mbps

Plot for Channel 0



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2336.07	9.6	41.87	32.270	54.00	12.13	150	331	AV	PASS
2338.23	21.7	53.95	32.290	74.00	20.05	150	127	PK	PASS
2359.01	21.6	54.06	32.430	74.00	19.94	150	263	PK	PASS
2365.02	9.6	42.09	32.450	54.00	11.91	150	87	AV	PASS
2384.71	9.8	42.30	32.530	54.00	11.70	150	185	AV	PASS
2387.00	21.8	54.35	32.530	74.00	19.65	150	165	PK	PASS

Plot for Channel 39



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2483.73	23.1	56.11	33.030	74.00	17.89	150	214	PK	PASS
2483.79	10.3	43.32	33.030	54.00	10.68	150	325	AV	PASS
2488.03	10.4	43.41	33.020	54.00	10.59	150	183	AV	PASS
2488.08	22.3	55.36	33.020	74.00	18.64	150	325	PK	PASS
2491.61	23.1	56.14	33.020	74.00	17.86	150	336	PK	PASS
2491.63	10.3	43.34	33.020	54.00	10.66	150	103	AV	PASS

A.10. Radiated Emission

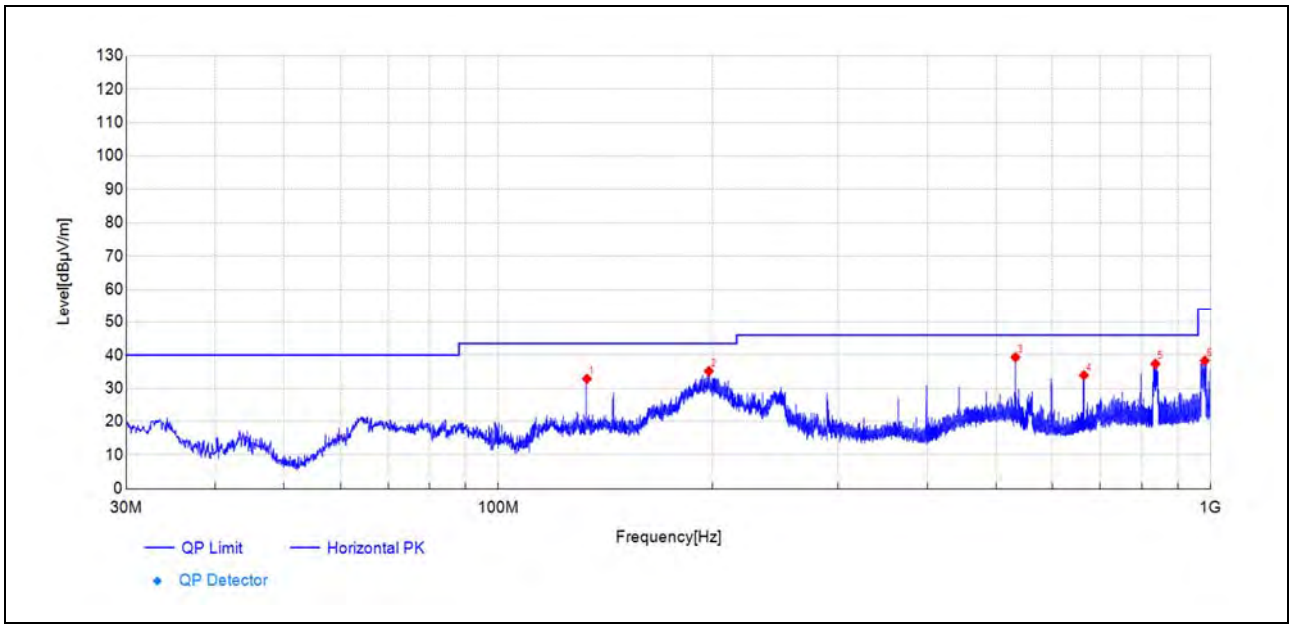
According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with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

The measurement results are obtained as below:
E [dBμV/m] $=U_R + A_T + A_{Factor}$ [dB]; $A_T = L_{Cable\ loss}$ [dB]$-G_{preamp}$ [dB]
A_T: Total correction Factor except Antenna
U_R: Receiver Reading
G_{preamp}: Preamplifier Gain
A_{Factor}: Antenna Factor at 3m
During the test, the total correction Factor A_T and A_{Factor} were built in test software.
Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.
Note3: For the frequency, which started from 18GHz to 10th harmonic of the highest frequency, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

WCN3988

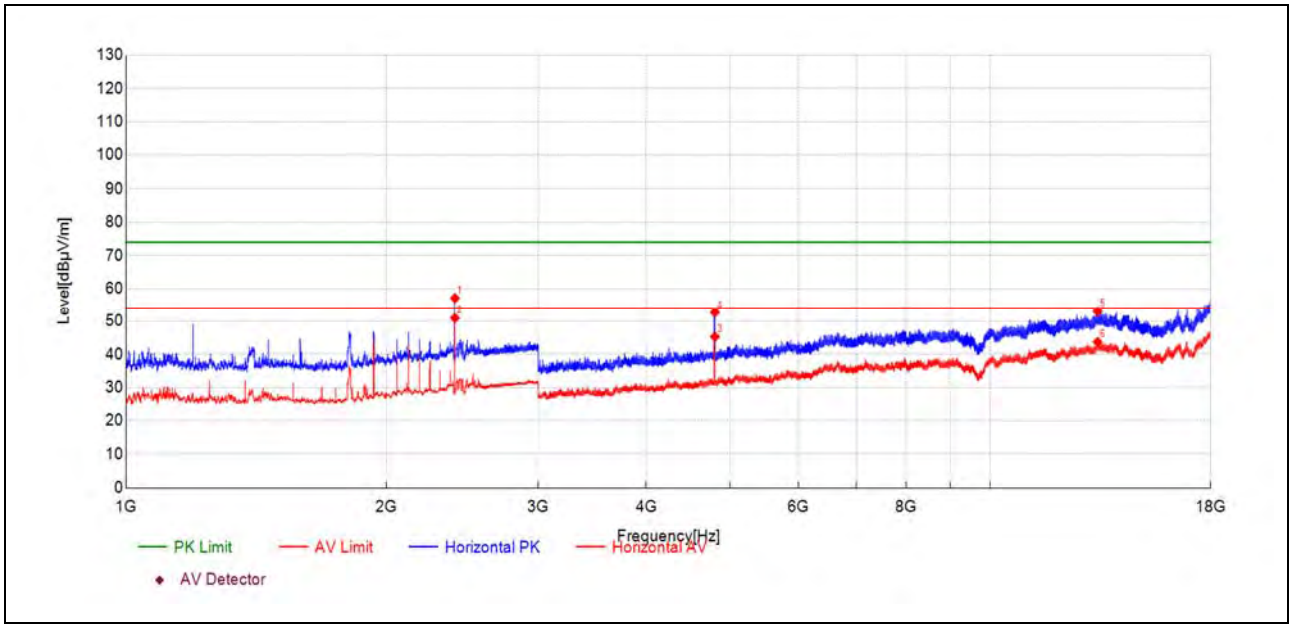
1Mbps

Plot for Channel 0



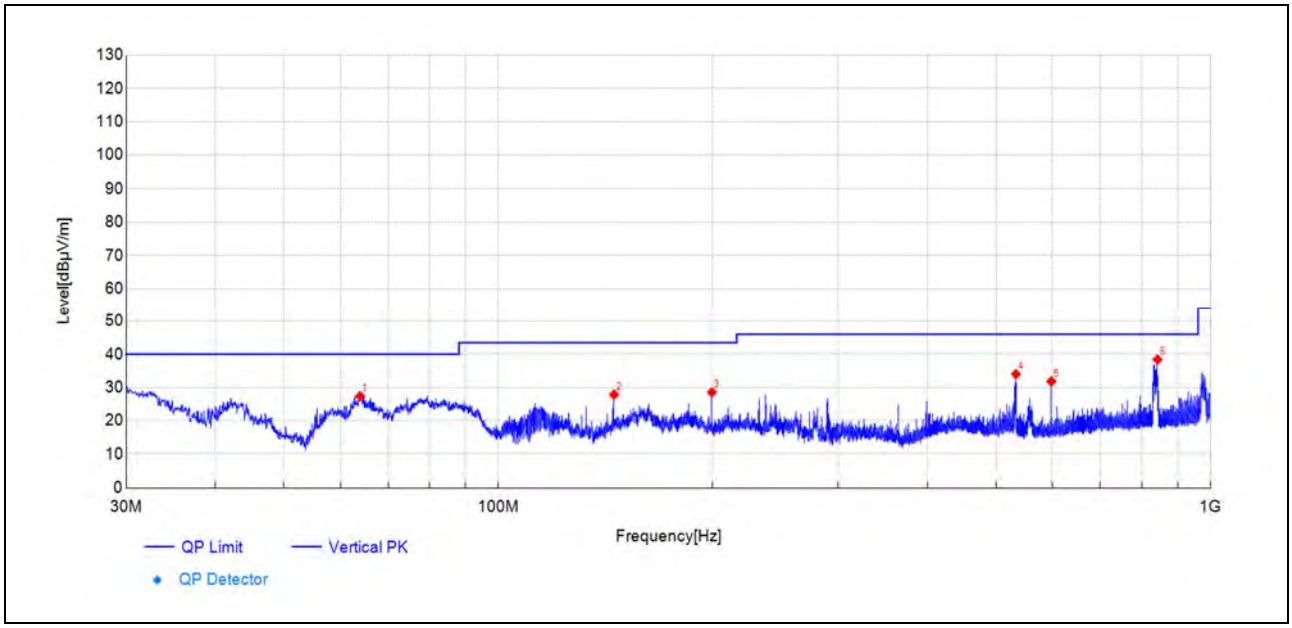
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
133.12	66.7	32.88	-33.810	43.50	10.62	150	9	PK	PASS
197.43	65.4	35.19	-30.190	43.50	8.31	150	218	PK	PASS
531.90	61.5	39.34	-22.200	46.00	6.66	150	248	PK	PASS
663.78	53.2	33.93	-19.310	46.00	12.07	150	106	PK	PASS
836.30	54.5	37.36	-17.120	46.00	8.64	150	248	PK	PASS
981.13	53.8	38.35	-15.400	54.00	15.65	150	146	PK	PASS



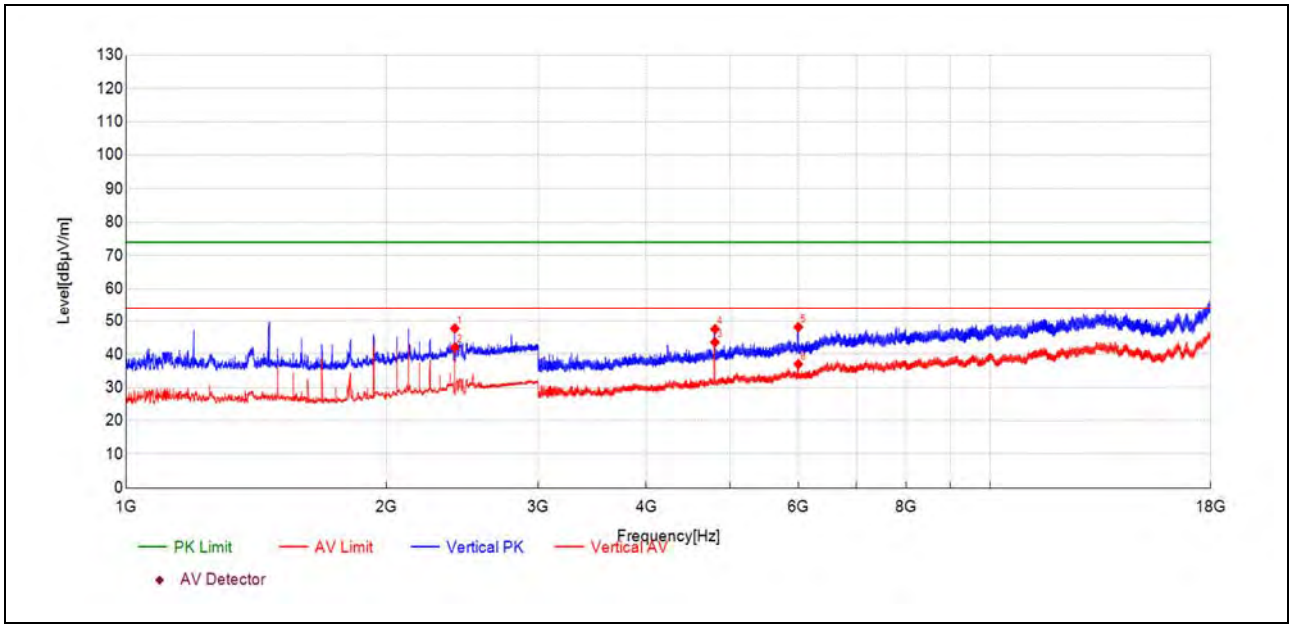
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2402.53	56.4	57.11	0.760	74.00	16.89	150	304	PK	NA
2402.53	50.2	50.93	0.760	54.00	3.07	150	304	AV	NA
4802.56	56.0	45.30	-10.730	54.00	8.70	150	127	AV	PASS
4802.56	63.4	52.70	-10.730	74.00	21.30	150	127	PK	PASS
13315.84	47.6	52.99	5.360	74.00	21.01	150	313	PK	PASS
13318.84	38.4	43.71	5.340	54.00	10.29	150	173	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

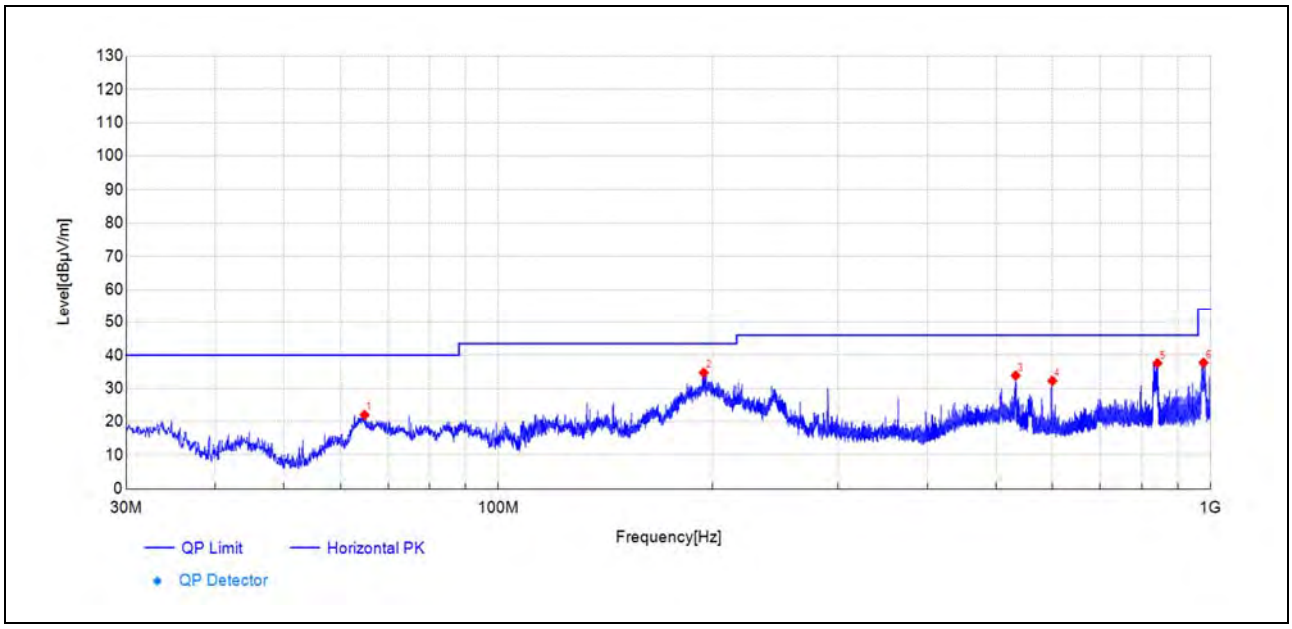
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
63.95	59.9	27.39	-32.460	40.00	12.61	150	359	PK	PASS
145.34	61.8	27.86	-33.950	43.50	15.64	150	11	PK	PASS
199.42	59.1	28.57	-30.480	43.50	14.93	150	350	PK	PASS
532.82	56.2	34.04	-22.200	46.00	11.96	150	243	PK	PASS
597.48	52.5	31.85	-20.670	46.00	14.15	150	204	PK	PASS
842.03	55.5	38.42	-17.120	46.00	7.58	150	232	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

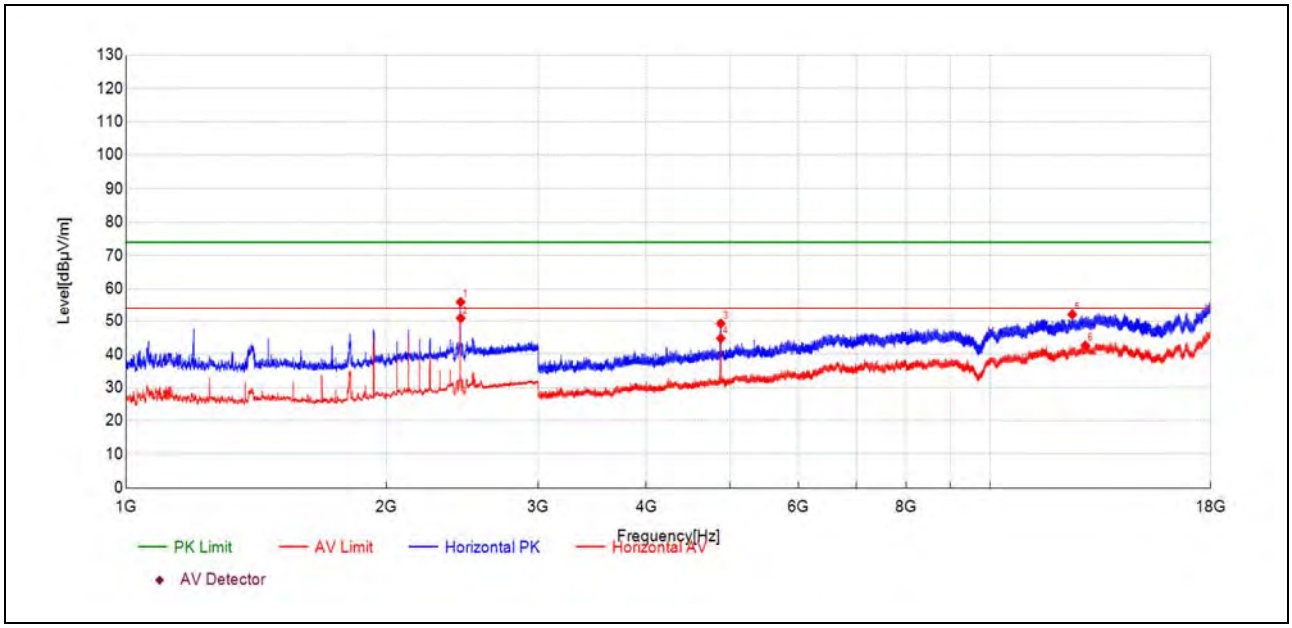
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2402.09	47.0	47.76	0.750	74.00	26.24	150	59	AV	NA
2402.09	41.3	42.08	0.750	54.00	11.92	150	59	AV	NA
4803.06	54.4	43.63	-10.730	54.00	10.37	150	57	AV	PASS
4805.06	58.3	47.57	-10.710	74.00	26.43	150	81	AV	PASS
5998.60	55.4	48.17	-7.260	74.00	25.83	150	11	AV	PASS
5998.60	44.3	37.03	-7.260	54.00	16.97	150	11	AV	PASS

Plot for Channel 19



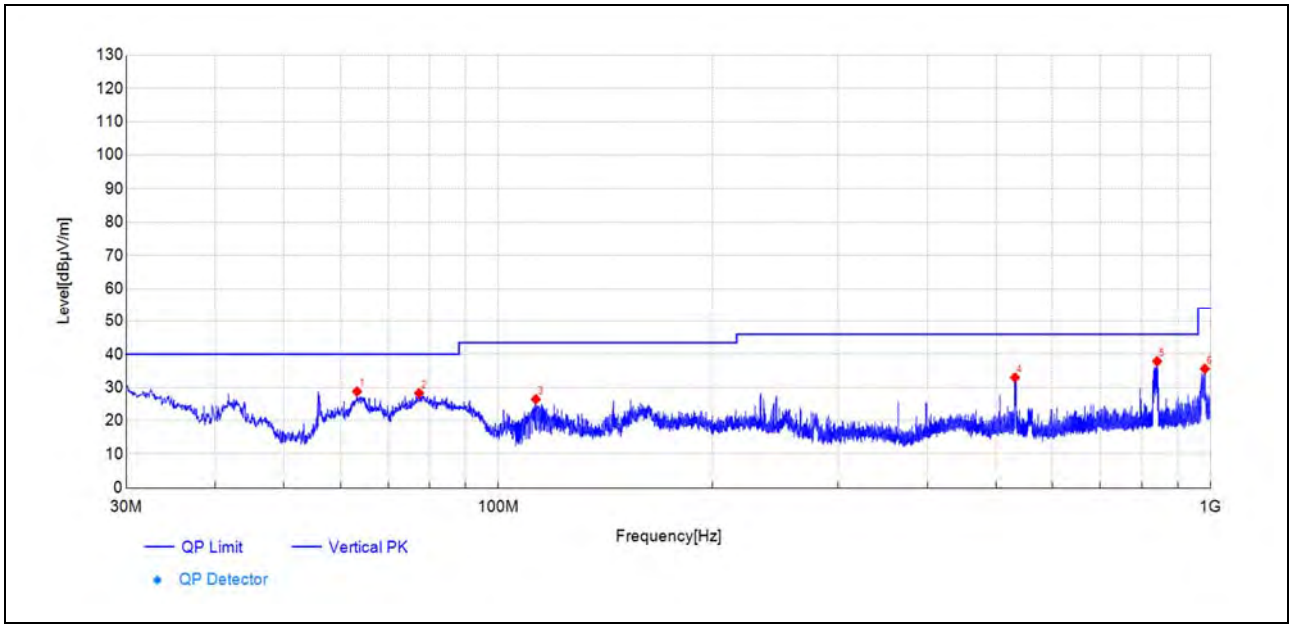
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
64.87	54.9	22.05	-32.810	40.00	17.95	150	359	PK	PASS
194.18	64.7	34.75	-29.930	43.50	8.75	150	243	PK	PASS
532.39	56.1	33.89	-22.200	46.00	12.11	150	274	PK	PASS
599.42	52.9	32.30	-20.640	46.00	13.70	150	183	PK	PASS
841.79	54.7	37.59	-17.120	46.00	8.41	150	253	PK	PASS
977.25	53.2	37.72	-15.440	54.00	16.28	150	143	PK	PASS



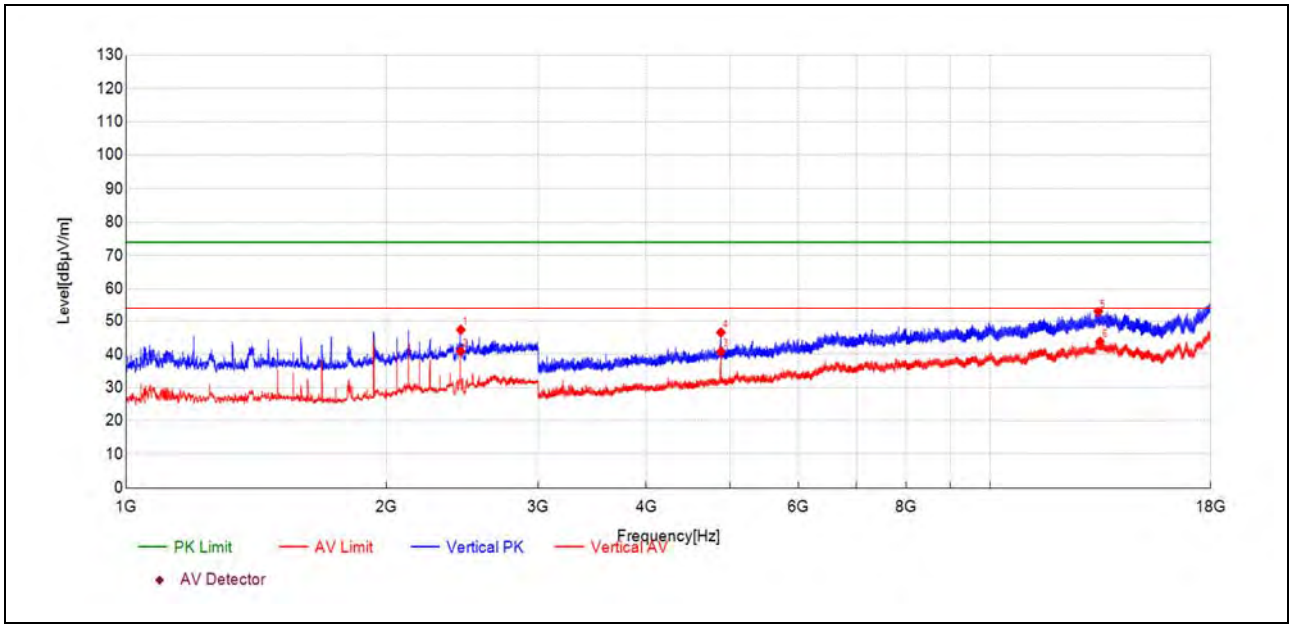
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2439.43	55.0	55.99	1.000	74.00	18.01	150	303	PK	NA
2439.88	49.8	50.85	1.010	54.00	3.15	150	281	AV	NA
4879.06	59.2	49.21	-10.020	74.00	24.79	150	80	PK	PASS
4879.06	54.8	44.77	-10.020	54.00	9.23	150	55	AV	PASS
12449.31	48.4	51.95	3.590	74.00	22.05	150	311	PK	PASS
12890.33	38.6	42.59	4.020	54.00	11.41	150	218	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

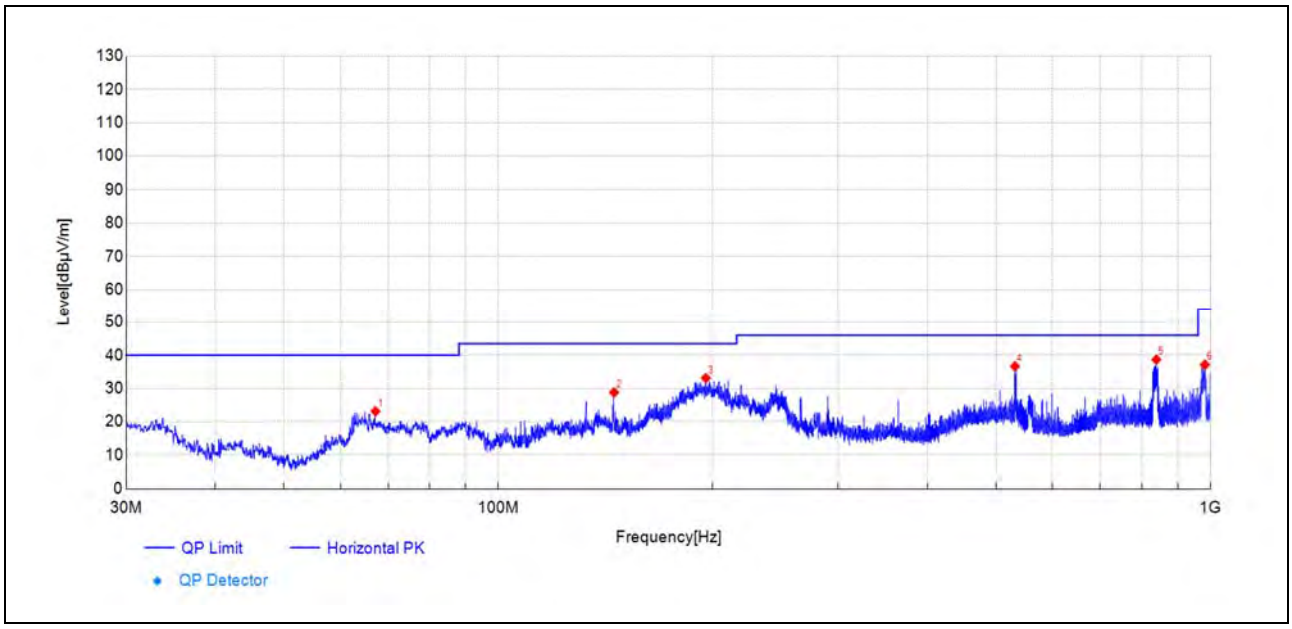
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
63.32	61.1	28.81	-32.270	40.00	11.19	150	36	PK	PASS
77.39	63.7	28.28	-35.460	40.00	11.72	150	0	PK	PASS
112.84	58.0	26.47	-31.480	43.50	17.03	150	238	PK	PASS
531.08	55.2	33.01	-22.210	46.00	12.99	150	217	PK	PASS
841.15	55.0	37.88	-17.140	46.00	8.12	150	217	PK	PASS
981.13	51.0	35.60	-15.400	54.00	18.40	150	177	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

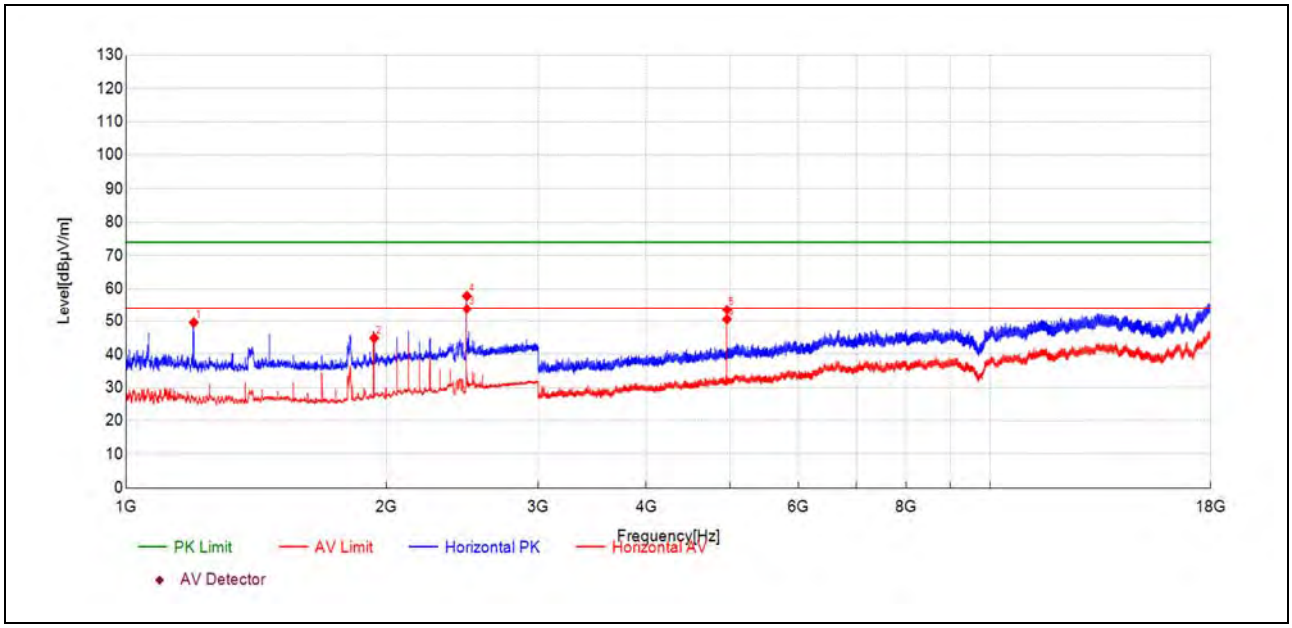
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2440.32	46.3	47.35	1.010	74.00	26.65	150	226	AV	NA
2440.32	39.9	40.91	1.010	54.00	13.09	150	226	AV	NA
4880.56	50.7	40.74	-10.000	54.00	13.26	150	151	AV	PASS
4880.56	56.6	46.56	-10.000	74.00	27.44	150	176	AV	PASS
13339.84	47.7	52.90	5.190	74.00	21.10	150	129	AV	PASS
13402.35	39.0	43.78	4.740	54.00	10.22	150	291	AV	PASS

Plot for Channel 39



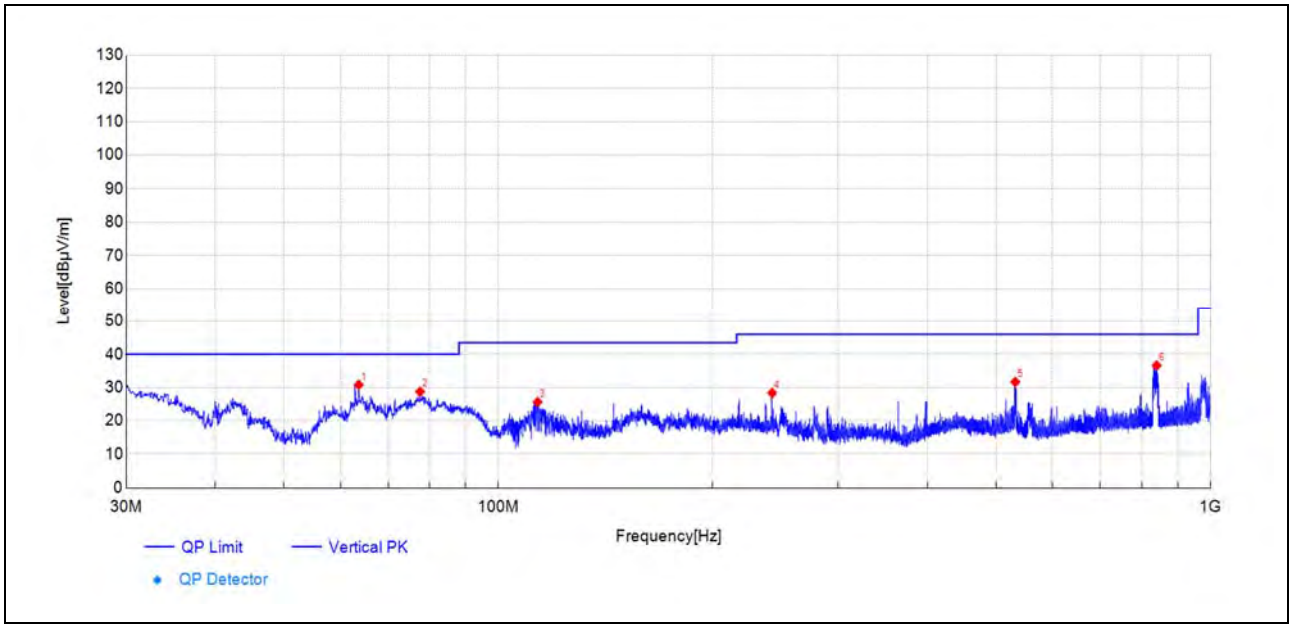
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
67.20	56.8	23.13	-33.620	40.00	16.87	150	146	PK	PASS
145.34	62.8	28.82	-33.950	43.50	14.68	150	338	PK	PASS
195.49	63.1	33.12	-30.010	43.50	10.38	150	198	PK	PASS
531.13	58.9	36.68	-22.210	46.00	9.32	150	268	PK	PASS
838.73	55.8	38.66	-17.140	46.00	7.34	150	258	PK	PASS
981.47	52.5	37.15	-15.390	54.00	16.85	150	137	PK	PASS



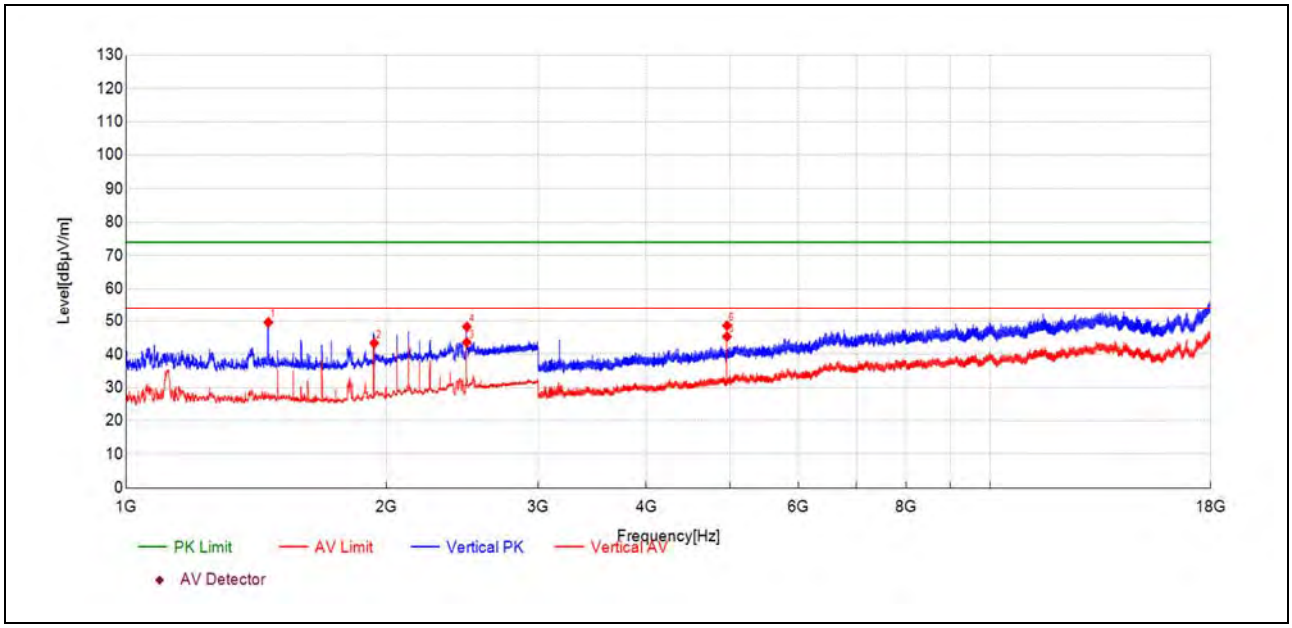
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
1197.82	55.1	49.53	-5.520	74.00	24.47	150	0	PK	PASS
1937.54	47.4	44.88	-2.550	54.00	9.12	150	268	AV	PASS
2479.88	52.9	53.78	0.920	54.00	0.22	150	291	AV	NA
2479.88	56.9	57.82	0.920	74.00	16.18	150	291	PK	NA
4959.57	63.7	53.52	-10.130	74.00	20.48	150	81	PK	PASS
4959.57	60.7	50.54	-10.130	54.00	3.46	150	81	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
63.66	63.2	30.82	-32.370	40.00	9.18	150	343	PK	PASS
77.63	64.2	28.75	-35.450	40.00	11.25	150	122	PK	PASS
113.47	57.2	25.64	-31.590	43.50	17.86	150	263	PK	PASS
242.30	57.2	28.38	-28.830	46.00	17.62	150	343	PK	PASS
531.76	53.9	31.67	-22.200	46.00	14.33	150	213	PK	PASS
839.60	53.8	36.63	-17.150	46.00	9.37	150	243	PK	PASS



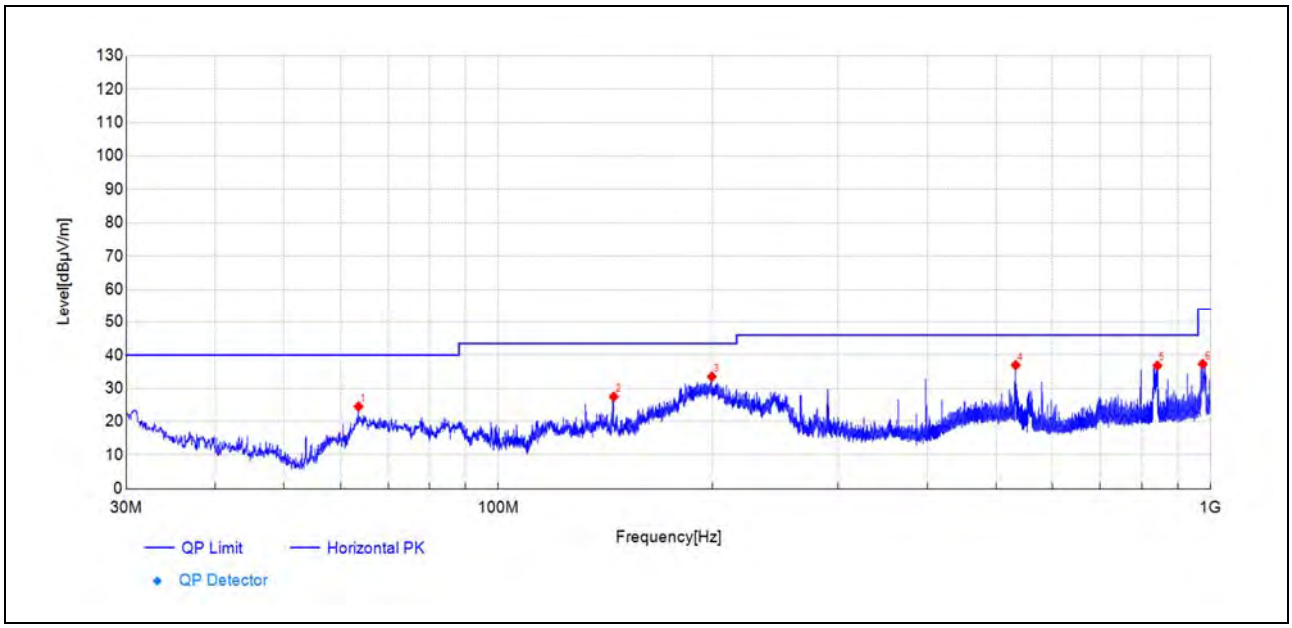
(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
1460.99	53.7	49.60	-4.120	74.00	24.40	150	233	PK	PASS
1937.54	45.9	43.35	-2.550	54.00	10.65	150	141	AV	PASS
2479.88	42.7	43.59	0.920	54.00	10.41	150	314	AV	NA
2480.33	47.4	48.29	0.920	74.00	25.71	150	314	PK	NA
4959.57	55.4	45.31	-10.130	54.00	8.69	150	56	AV	PASS
4959.57	58.8	48.62	-10.130	74.00	25.38	150	80	PK	PASS

nRF52833

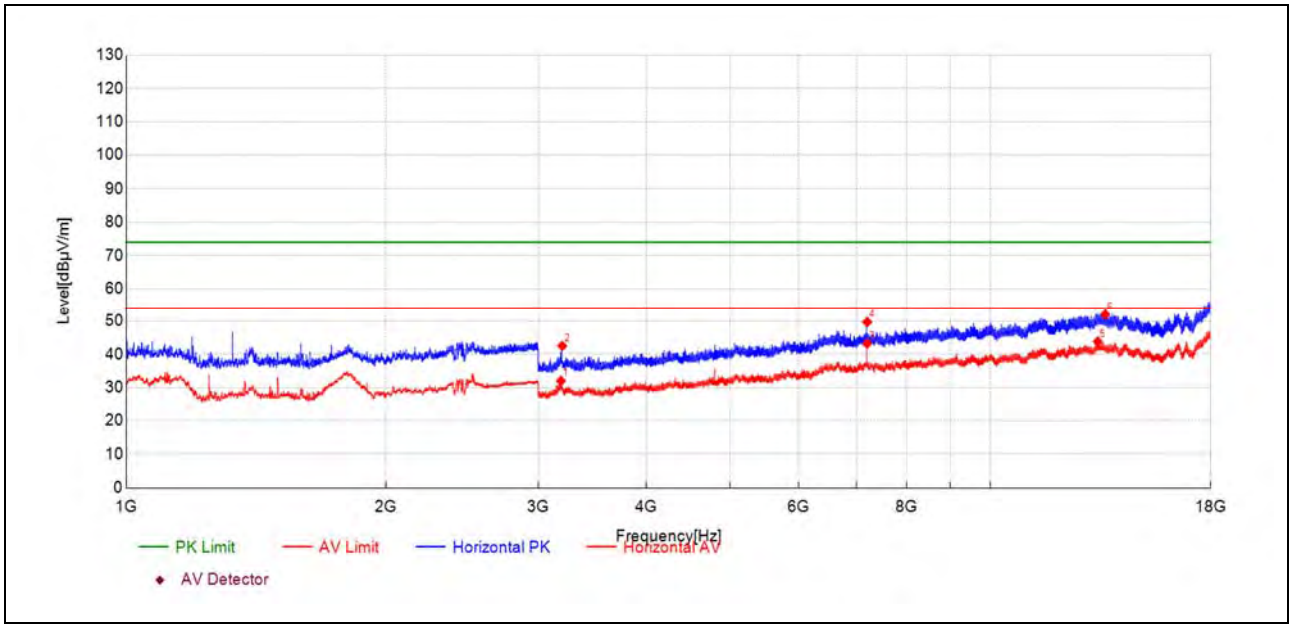
1Mbps

Plot for Channel 0



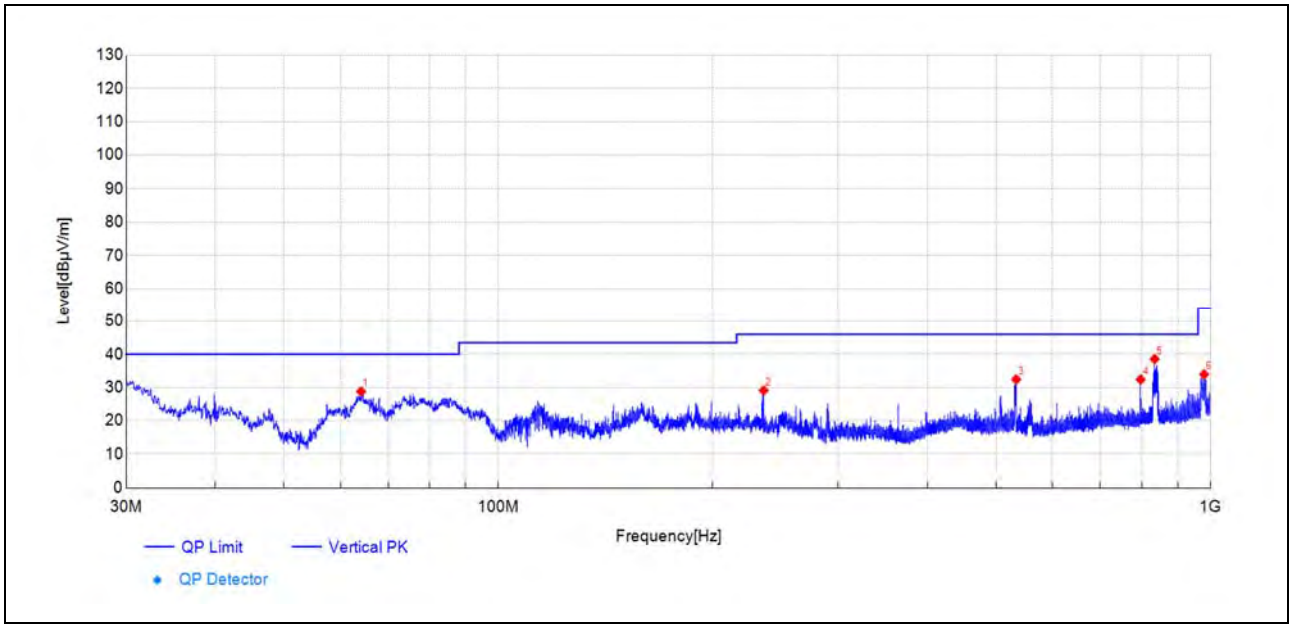
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
63.61	56.7	24.54	-32.180	40.00	15.46	150	9	PK	PASS
145.19	61.0	27.49	-33.540	43.50	16.01	150	349	PK	PASS
199.37	63.6	33.54	-30.100	43.50	9.96	150	198	PK	PASS
532.39	58.4	36.99	-21.390	46.00	9.01	150	289	PK	PASS
841.59	52.6	36.82	-15.750	46.00	9.18	150	258	PK	PASS
974.44	51.0	37.29	-13.660	54.00	16.71	150	138	PK	PASS



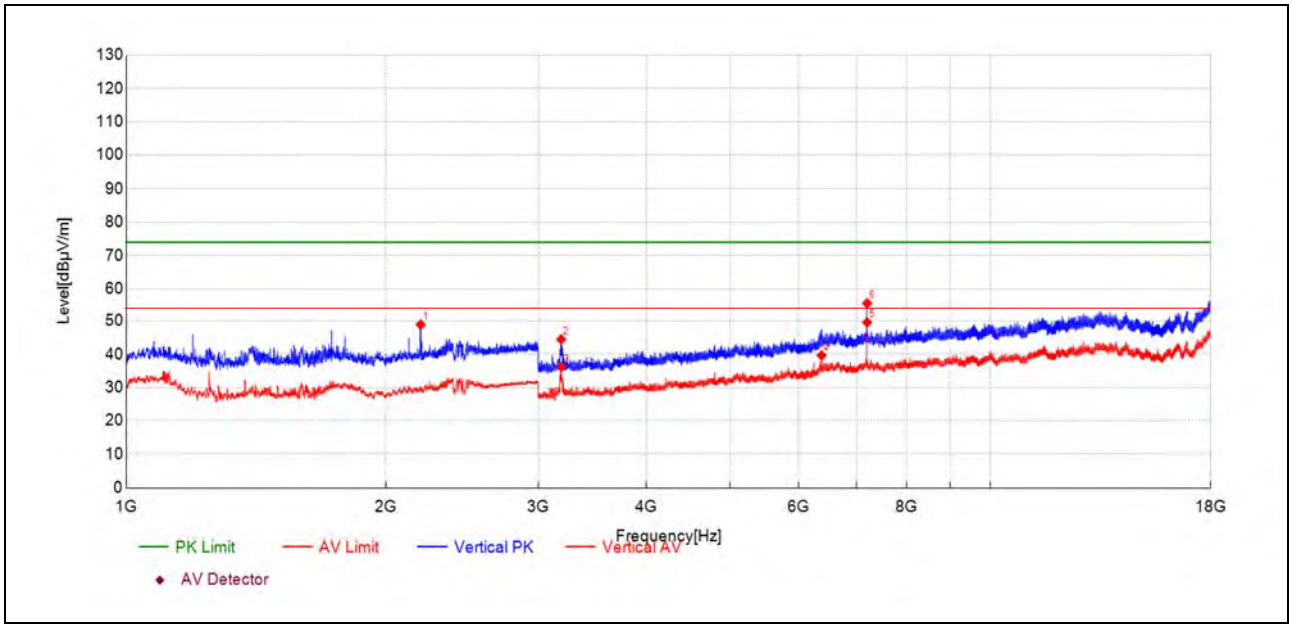
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3186.51	47.6	32.00	-15.550	54.00	22.00	150	149	AV	PASS
3197.51	58.0	42.50	-15.500	74.00	31.50	150	288	PK	PASS
7205.64	46.9	43.24	-3.650	54.00	10.76	150	238	AV	PASS
7206.64	53.4	49.71	-3.670	74.00	24.29	150	167	PK	PASS
13321.34	38.5	43.83	5.320	54.00	10.17	150	64	AV	PASS
13589.85	47.2	52.03	4.820	74.00	21.97	150	167	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

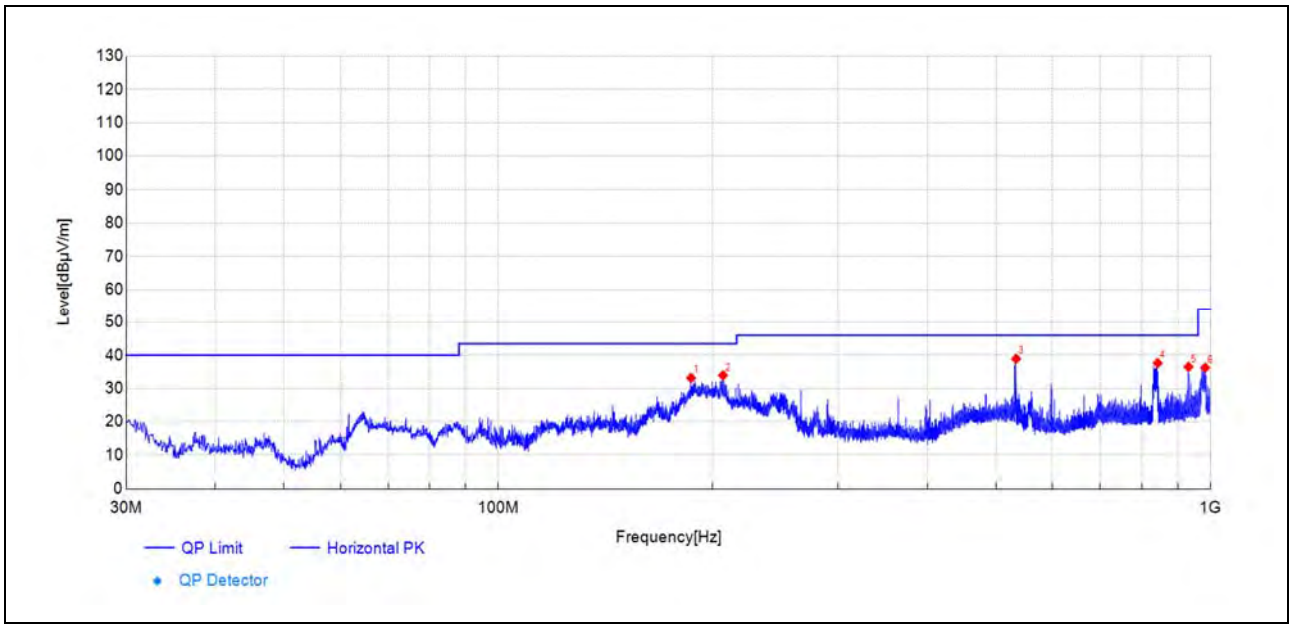
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
64.15	61.2	28.81	-32.360	40.00	11.19	150	351	PK	PASS
235.65	57.6	29.13	-28.460	46.00	16.87	150	342	PK	PASS
533.16	53.8	32.43	-21.380	46.00	13.57	150	222	PK	PASS
797.41	49.0	32.41	-16.590	46.00	13.59	150	274	PK	PASS
834.22	54.5	38.56	-15.910	46.00	7.44	150	222	PK	PASS
979.05	47.6	33.96	-13.590	54.00	20.04	150	182	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

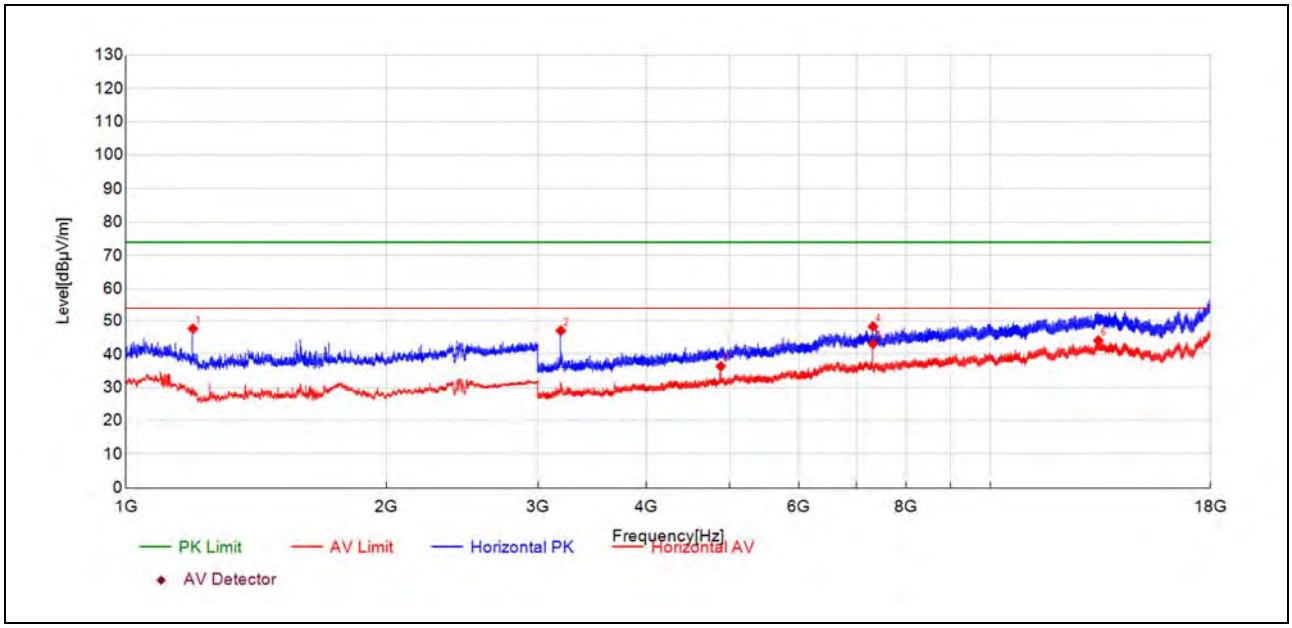
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2193.15	50.0	48.92	-1.120	74.00	25.08	150	120	PK	PASS
3189.01	60.0	44.50	-15.540	74.00	29.50	150	114	PK	PASS
3190.51	51.7	36.18	-15.540	54.00	17.82	150	344	AV	PASS
6383.11	45.0	39.66	-5.370	54.00	14.34	150	80	AV	PASS
7206.14	53.3	49.62	-3.660	54.00	4.38	150	221	AV	PASS
7206.64	59.3	55.62	-3.670	74.00	18.38	150	203	PK	PASS

Plot for Channel 19



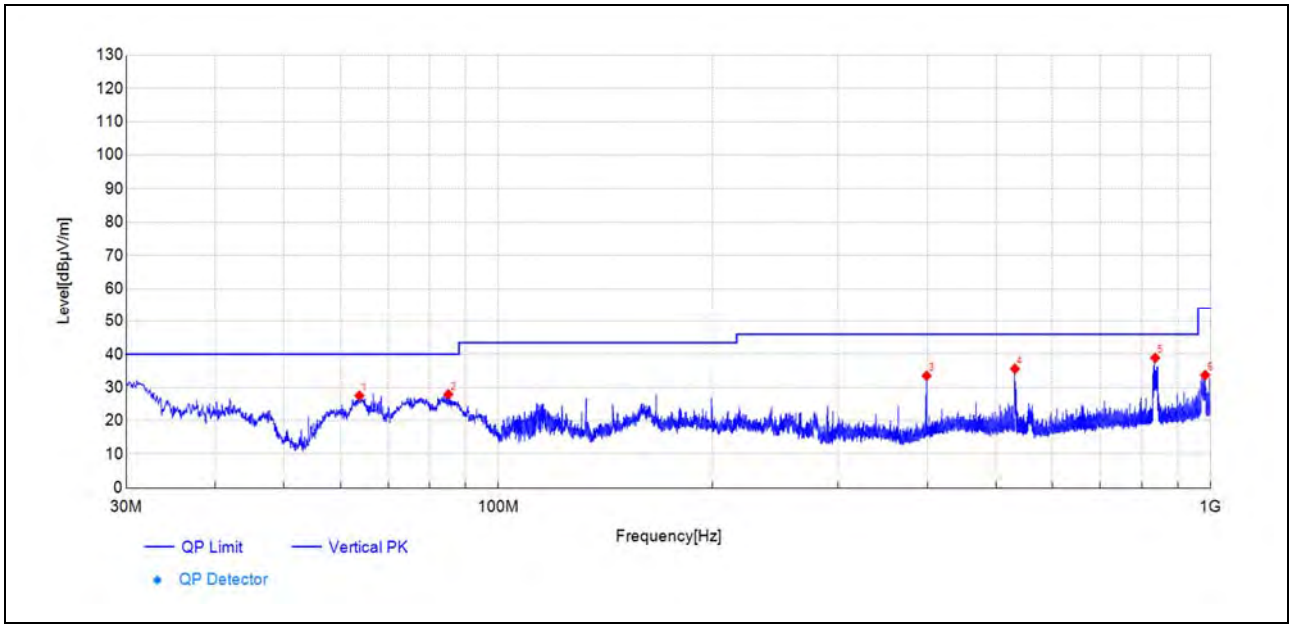
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
186.42	63.9	33.17	-30.700	43.50	10.33	150	233	PK	PASS
206.65	64.0	33.95	-30.060	43.50	9.55	150	223	PK	PASS
533.12	60.3	38.91	-21.390	46.00	7.09	150	293	PK	PASS
842.42	53.4	37.66	-15.720	46.00	8.34	150	264	PK	PASS
930.98	51.0	36.50	-14.500	46.00	9.50	150	274	PK	PASS
982.30	49.7	36.24	-13.500	54.00	17.76	150	144	PK	PASS



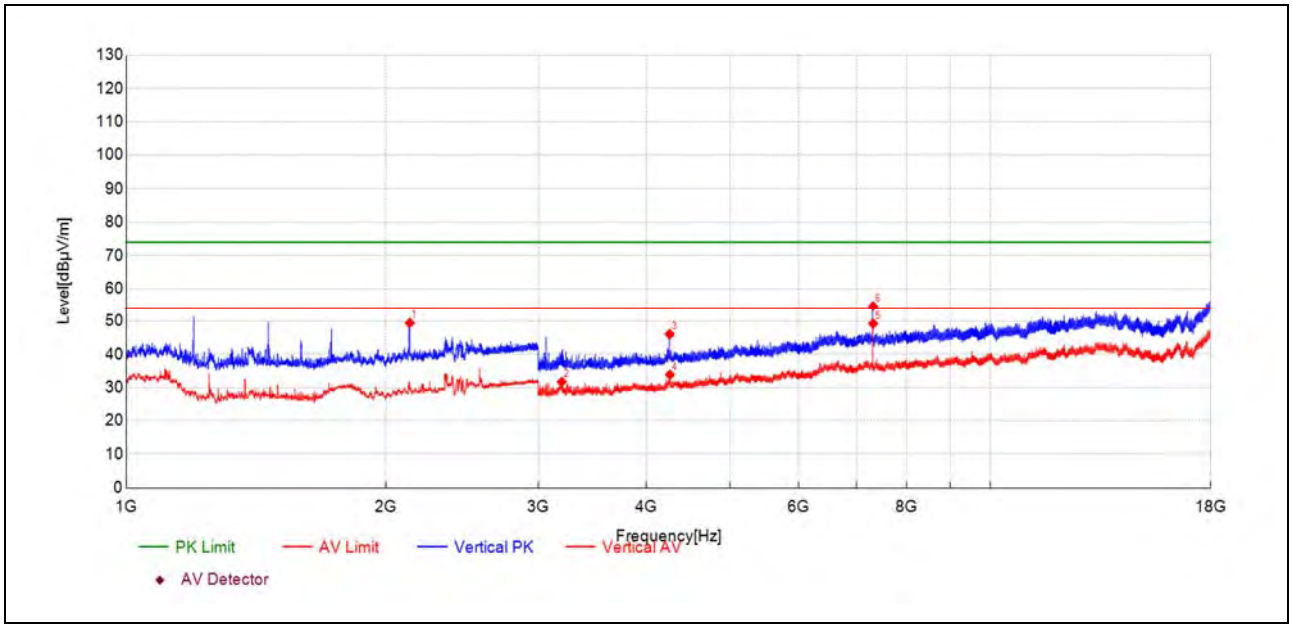
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
1195.15	53.2	47.71	-5.500	74.00	26.29	150	246	PK	PASS
3186.01	62.7	47.09	-15.560	74.00	26.91	150	81	PK	PASS
4879.56	46.4	36.38	-10.010	54.00	17.62	150	148	AV	PASS
7319.14	52.0	48.35	-3.660	74.00	25.65	150	175	PK	PASS
7319.14	46.8	43.14	-3.660	54.00	10.86	150	148	AV	PASS
13343.84	39.0	44.13	5.160	54.00	9.87	150	195	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

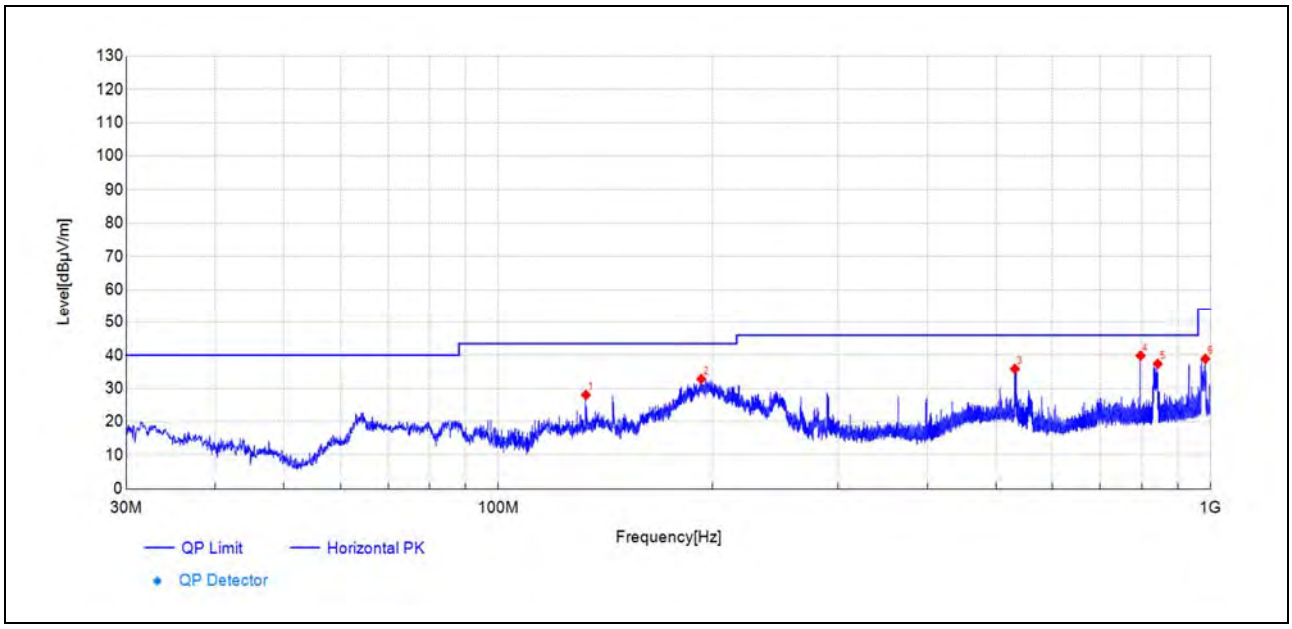
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
63.81	59.8	27.57	-32.240	40.00	12.43	150	240	PK	PASS
85.05	61.9	27.94	-33.970	40.00	12.06	150	19	PK	PASS
399.15	57.7	33.52	-24.170	46.00	12.48	150	310	PK	PASS
531.03	57.0	35.64	-21.400	46.00	10.36	150	0	PK	PASS
835.72	54.8	38.93	-15.890	46.00	7.07	150	220	PK	PASS
982.39	47.2	33.74	-13.500	54.00	20.26	150	118	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

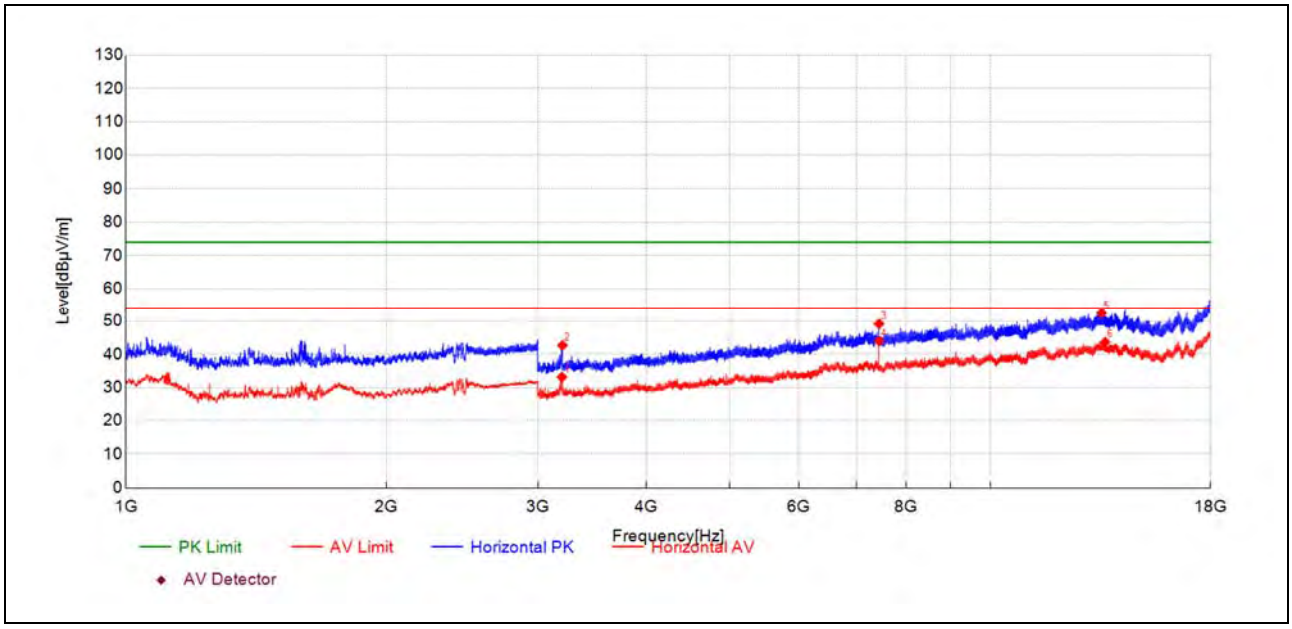
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2129.58	50.6	49.43	-1.120	74.00	24.57	150	170	PK	PASS
3194.51	47.2	31.69	-15.520	54.00	22.31	150	204	AV	PASS
4257.04	58.0	46.06	-11.930	74.00	27.94	150	275	PK	PASS
4260.54	45.8	33.86	-11.910	54.00	20.14	150	239	AV	PASS
7320.64	52.9	49.24	-3.670	54.00	4.76	150	204	AV	PASS
7320.64	58.3	54.66	-3.670	74.00	19.34	150	221	PK	PASS

Plot for Channel 39



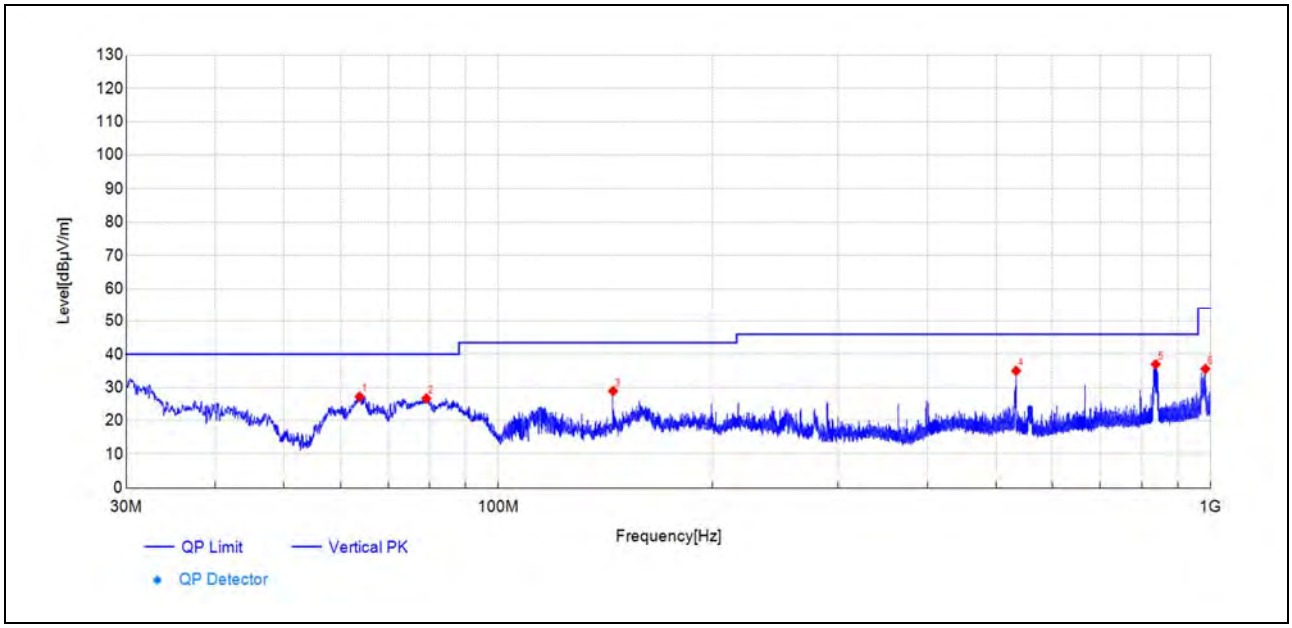
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
132.68	61.5	28.06	-33.430	43.50	15.44	150	1	PK	PASS
192.63	62.5	32.85	-29.600	43.50	10.65	150	217	PK	PASS
531.08	57.3	35.91	-21.400	46.00	10.09	150	308	PK	PASS
797.02	56.5	39.88	-16.600	46.00	6.12	150	248	PK	PASS
842.56	53.1	37.41	-15.710	46.00	8.59	150	258	PK	PASS
983.02	52.4	38.92	-13.480	54.00	15.08	150	137	PK	PASS



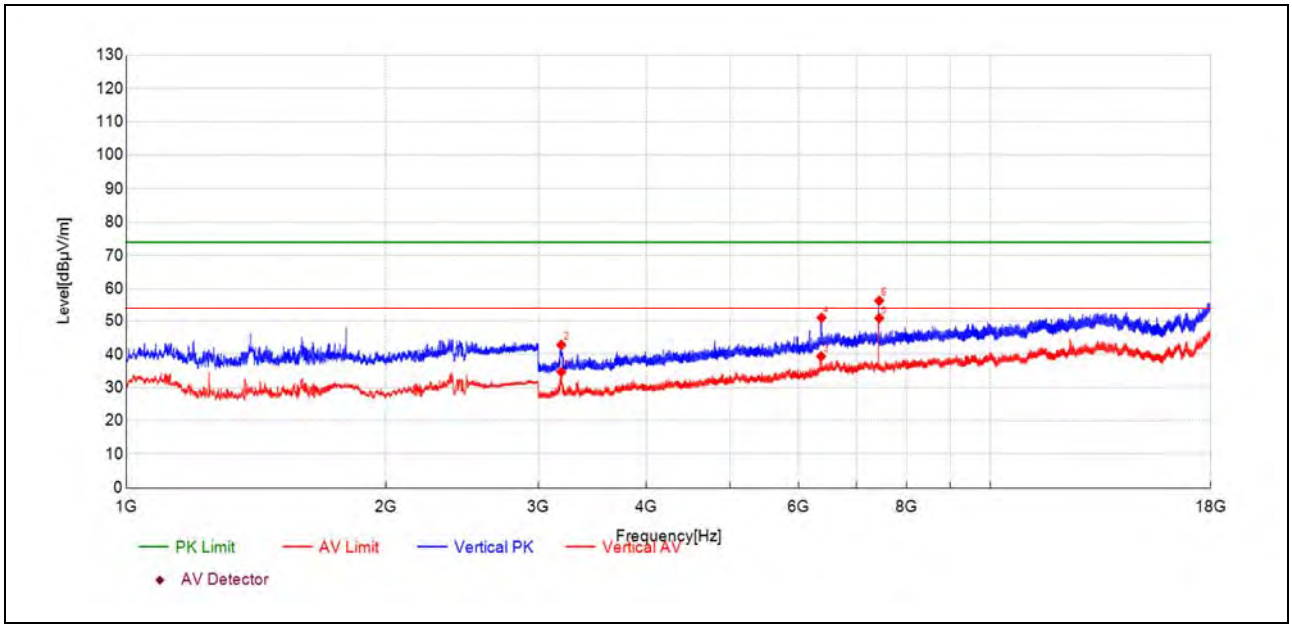
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3195.01	48.7	33.16	-15.520	54.00	20.84	150	314	AV	PASS
3199.51	58.2	42.71	-15.500	74.00	31.29	150	314	PK	PASS
7439.15	53.6	49.19	-4.440	74.00	24.81	150	176	PK	PASS
7439.15	48.4	43.98	-4.440	54.00	10.02	150	149	AV	PASS
13458.35	47.7	52.42	4.730	74.00	21.58	150	360	PK	PASS
13587.85	38.9	43.68	4.820	54.00	10.32	150	243	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
63.85	59.5	27.26	-32.260	40.00	12.74	150	294	PK	PASS
79.23	61.9	26.70	-35.180	40.00	13.30	150	334	PK	PASS
144.85	62.5	28.94	-33.540	43.50	14.56	150	10	PK	PASS
533.21	56.4	35.02	-21.380	46.00	10.98	150	334	PK	PASS
837.27	52.9	36.99	-15.860	46.00	9.01	150	242	PK	PASS
983.22	49.1	35.60	-13.470	54.00	18.40	150	283	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3190.01	50.2	34.65	-15.540	54.00	19.35	150	99	AV	PASS
3190.01	58.4	42.84	-15.540	74.00	31.16	150	115	PK	PASS
6374.11	44.9	39.38	-5.470	54.00	14.62	150	256	AV	PASS
6381.11	56.4	50.99	-5.380	74.00	23.01	150	256	PK	PASS
7440.15	55.3	50.87	-4.460	54.00	3.13	150	203	AV	PASS
7440.65	60.9	56.39	-4.470	74.00	17.61	150	221	PK	PASS

END OF REPORT