TEST REPORT

APPLICANT	:	Anker Innovations Limited
PRODUCT NAME	:	Video Doorbell Chime 2
MODEL NAME	:	T8026
BRAND NAME	:	eufy
FCC ID	:	2AOKB-T8026
STANDARD(S)	:	47 CFR Part 15 Subpart C
RECEIPT DATE	:	2025-08-26
TEST DATE	:	2025-09-03 to 2025-09-27
ISSUE DATE	:	2025-09-29

Edited by: Peng Mi (Rapporteur)

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Change History		
Version	**Date**	**Reason for change**
1.0	2025-09-29	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	Sep. 06, 2025	Zhu Peihong	PASS	/
3	15.247(b)	Maximum Peak Conducted Output Power	Sep. 06, 2025	Zhu Peihong	PASS	/
4	15.247(b)	Maximum Average Conducted Output Power	Sep. 06, 2025	Zhu Peihong	PASS	/
5	15.247(a)	Bandwidth	Sep. 06, 2025	Zhu Peihong	PASS	/
6	15.247(d)	Conducted Spurious Emission and Band Edge	Sep. 06, 2025	Zhu Peihong	PASS	/
7	15.247(e)	Power Spectral Density	Sep. 06, 2025	Zhu Peihong	PASS	/
8	15.207	Conducted Emission	Sep. 09, 2025	Fan Zehang	PASS	/
9	15.247(d)	Restricted Frequency Bands	Sep. 16&17, 2025	Li Hanbin	PASS	/
10	15.209, 15.247(d)	Radiated Emission	Sep. 16&17, 2025	Li Hanbin	PASS	/

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

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

1.1. Testing Applied Standards

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

• 47 CFR Part 15 Subpart C Radio Frequency Devices

1.2. Test Equipment List

1.2.1 Conducted Test Equipment

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

1.2.2 Conducted Emission Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	101052	ESPI	R&S	2025.05.15	2026.05.14
LISN	103131	ENV 216	R&S	2025.03.20	2026.03.19
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	R&S	2025.05.13	2026.05.12
RF Coaxial Cable (DC-100MHz)	EMC-CE-00514	N/A	N/A	2025.05.06	2026.05.05

1.2.3 List of Software Used

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

1.2.4 Radiated Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Signal Analyzer	MY56060145	N9020A	Agilent	2025.05.13	2026.05.12
Test Antenna - Bi-Log	9163-274	VULB 9163	Schwarzbeck	2025.06.28	2026.06.27
Test Antenna - Loop	00131	FMZB1519B	Schwarzbeck	2024.09.19	2025.09.18
				2025.09.08	2026.09.07
Test Antenna – Horn	9120D-963	BBHA 9120D	Schwarzbeck	2025.05.16	2026.05.15
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2025.06.20	2026.06.19
Preamplifier (10MHz-6GHz)	46732	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	2025.09.03	2026.09.02
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2025.09.03	2026.09.02
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2025.09.03	2026.09.02
Notch Filter	N/A	WRCG-2400-2483.5-60SS	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2025.06.21	2028.06.20
Anechoic Chamber	N/A	9m*6m*6m	CRT	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:	Anker Innovations Limited
Applicant Address:	Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong
Manufacturer:	Anker Innovations Limited
Manufacturer Address:	Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong

2.2. Information of EUT

Product Name:	Video Doorbell Chime 2
Sample No.:	2#, 3#, 7#
Hardware Version:	V3
Software Version:	V1.0.1.3
Equipment Type:	Bluetooth LE
Bluetooth Version:	5.3
Modulation Type:	GFSK
Data Rate:	1Mbps, 2Mbps
Operating Frequency Range:	2402MHz-2480MHz
Antenna Type:	FPC Antenna
Antenna Gain:	2.02dBi

Note 1: The EUT description presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.3. Channel List of EUT

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

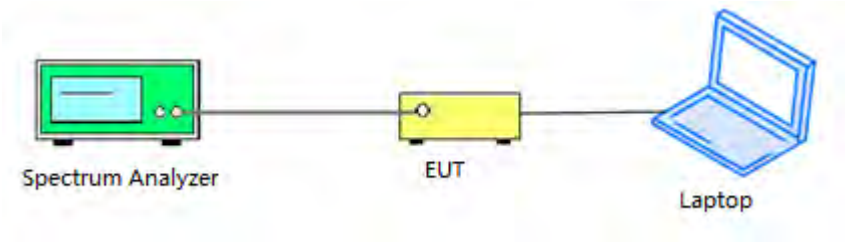
The EUT is controlled by dedicated software to transmit at the default maximum power level.

2.5. Test Conditions

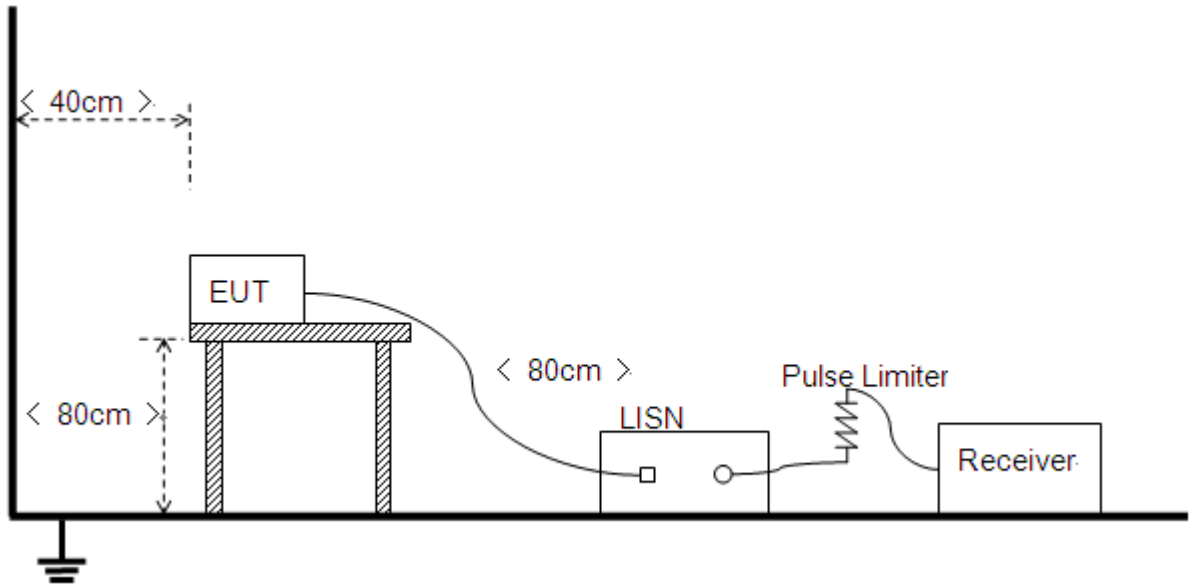
Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106

2.6. Test Setup Layout Diagram

2.6.1.Conducted Measurement

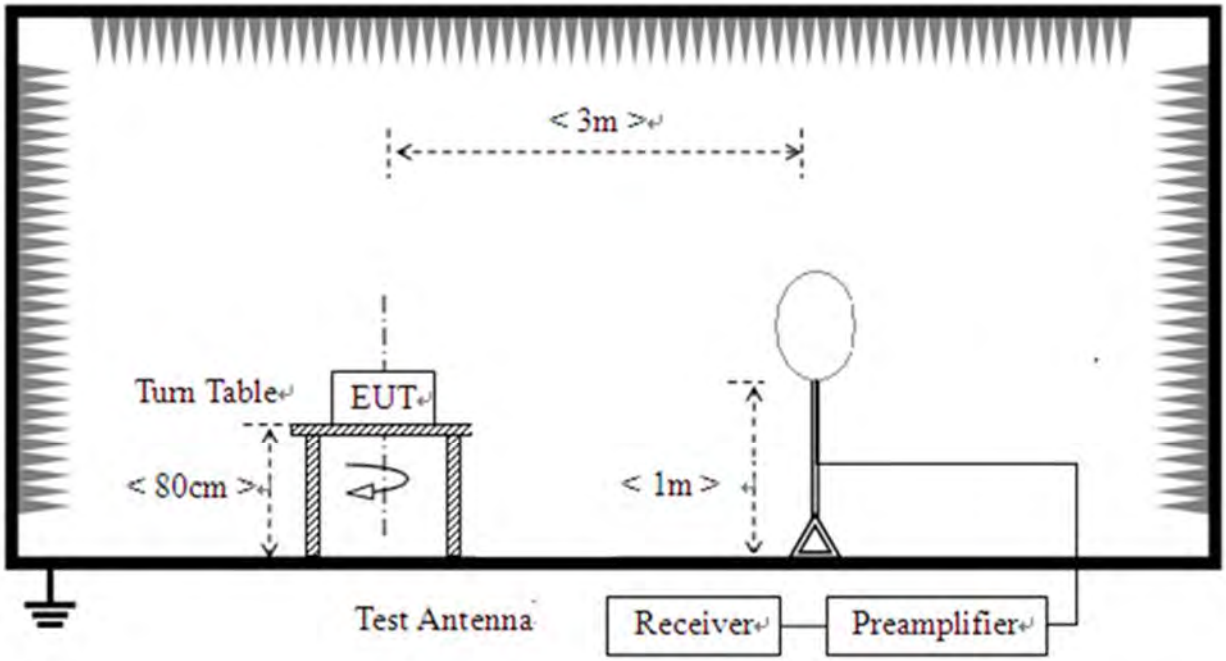


2.6.2.Conducted Emission Measurement

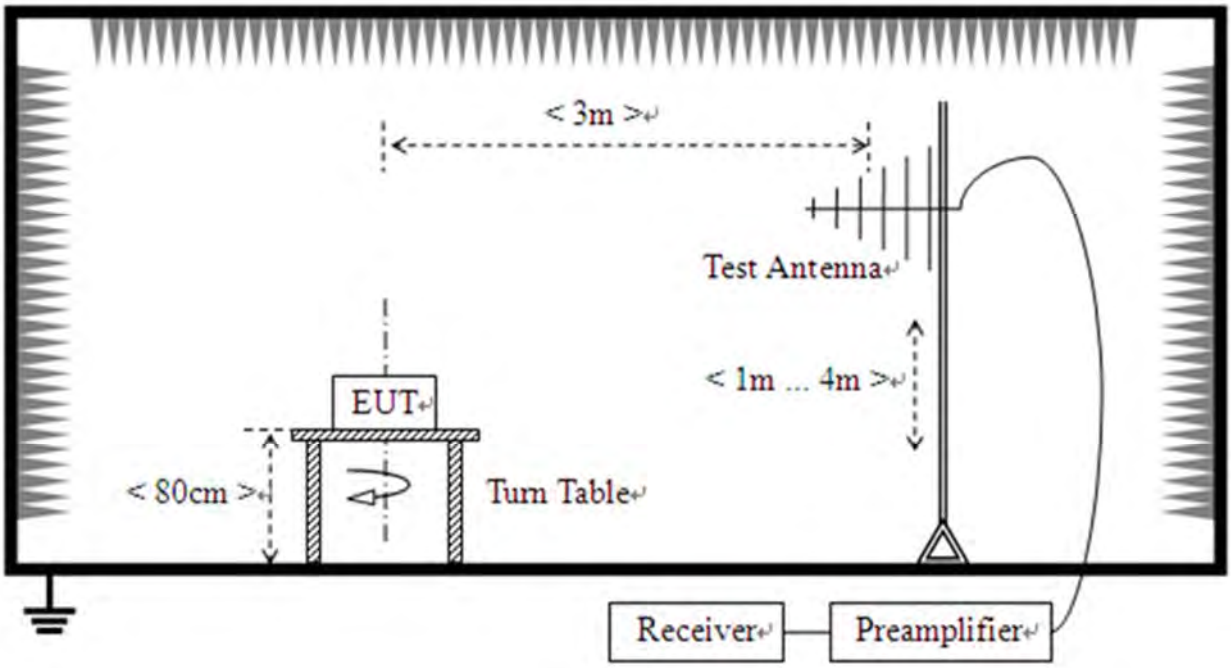


2.6.3.Radiation Measurement

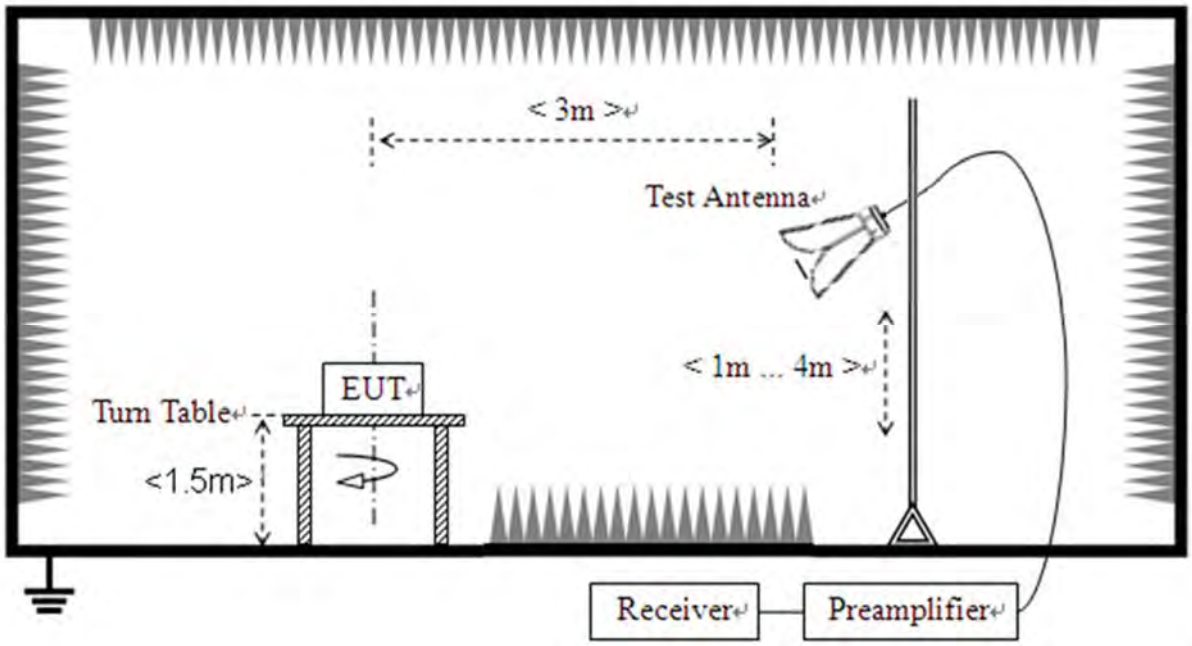
1) For radiated emissions from 9kHz to 30MHz



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 ☐Inverted F 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.

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.9 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.10 in this report.

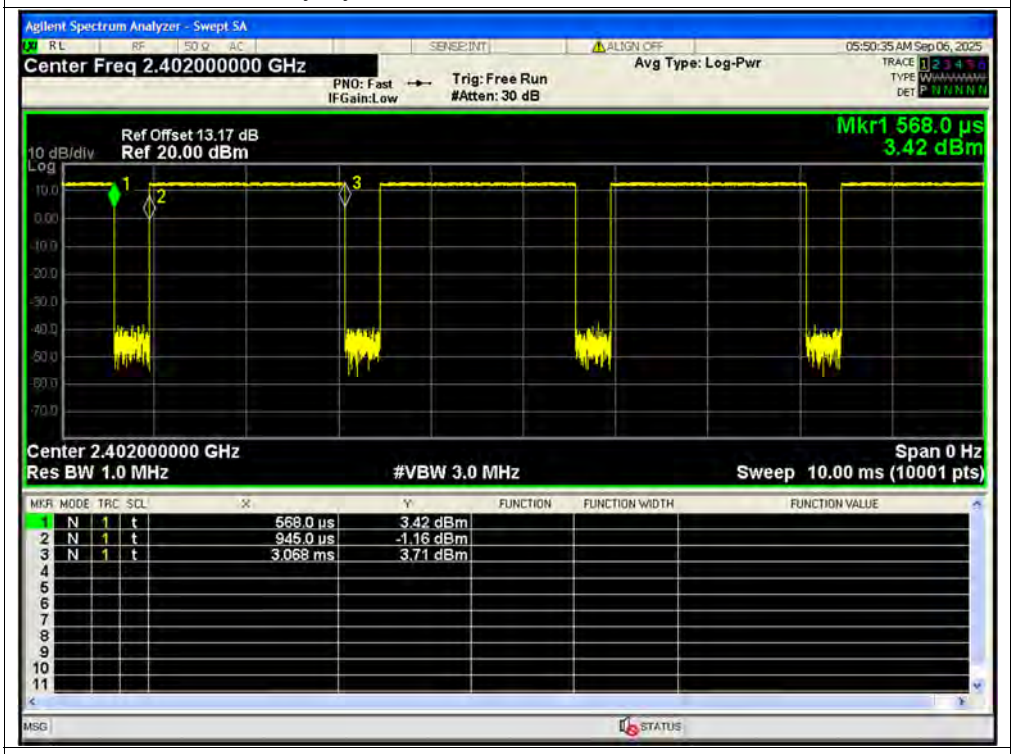
Annex A Test Data and Result

A.1. Duty Cycle of Test Signal

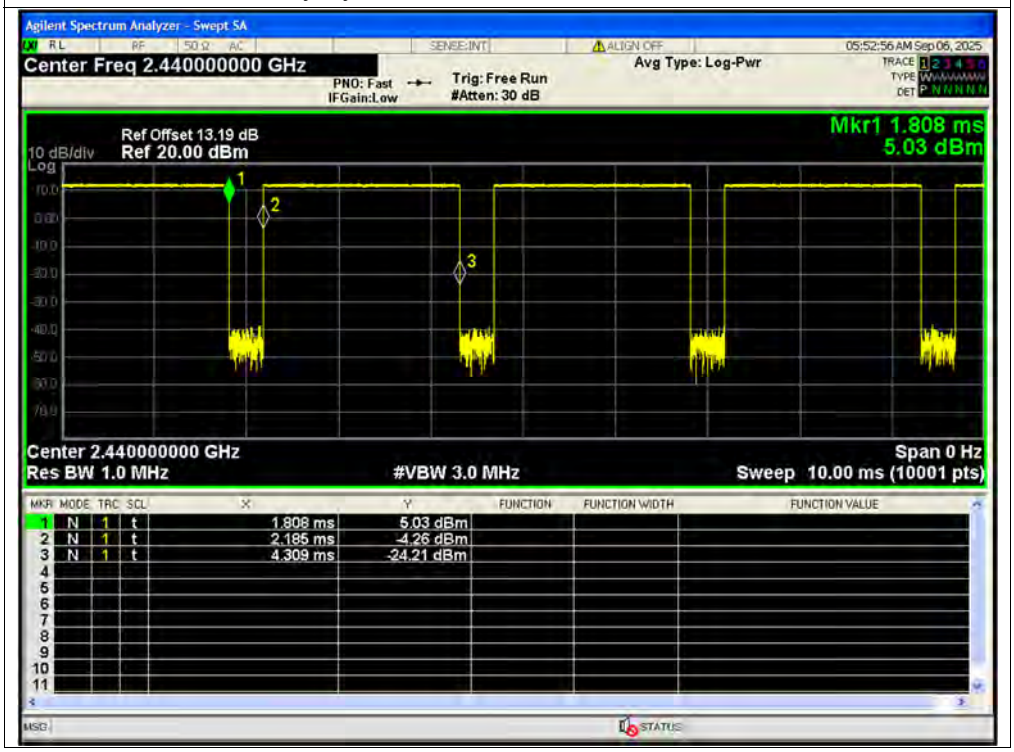
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant1	84.92	0.71	0.47
NVNT	BLE 1M	2440	Ant1	84.93	0.71	0.47
NVNT	BLE 1M	2480	Ant1	84.92	0.71	0.47
NVNT	BLE 2M	2402	Ant1	56.85	2.45	0.94
NVNT	BLE 2M	2440	Ant1	56.85	2.45	0.94
NVNT	BLE 2M	2480	Ant1	56.85	2.45	0.94

Test Graphs

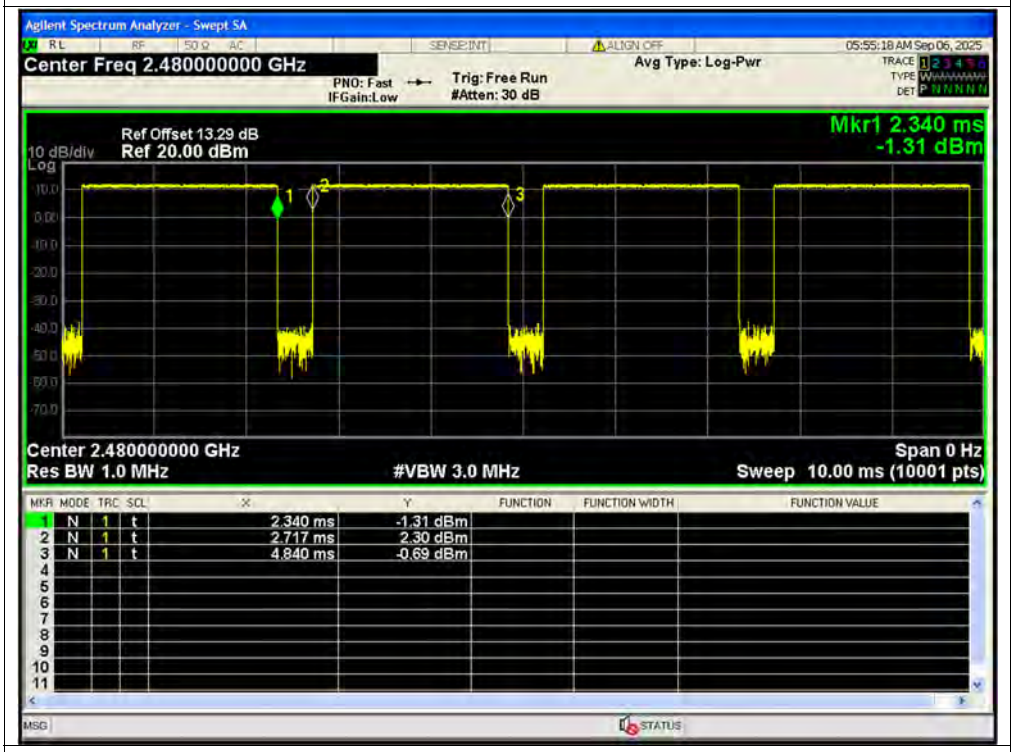
Duty Cycle NVNT BLE 1M 2402MHz Ant1



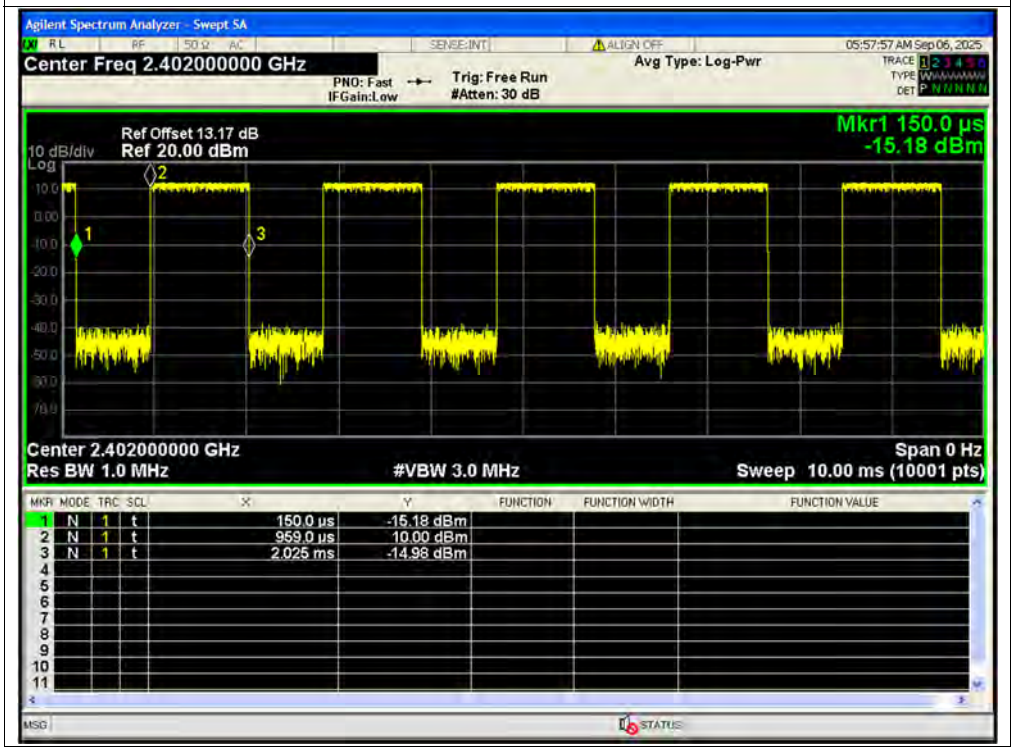
Duty Cycle NVNT BLE 1M 2440MHz Ant1



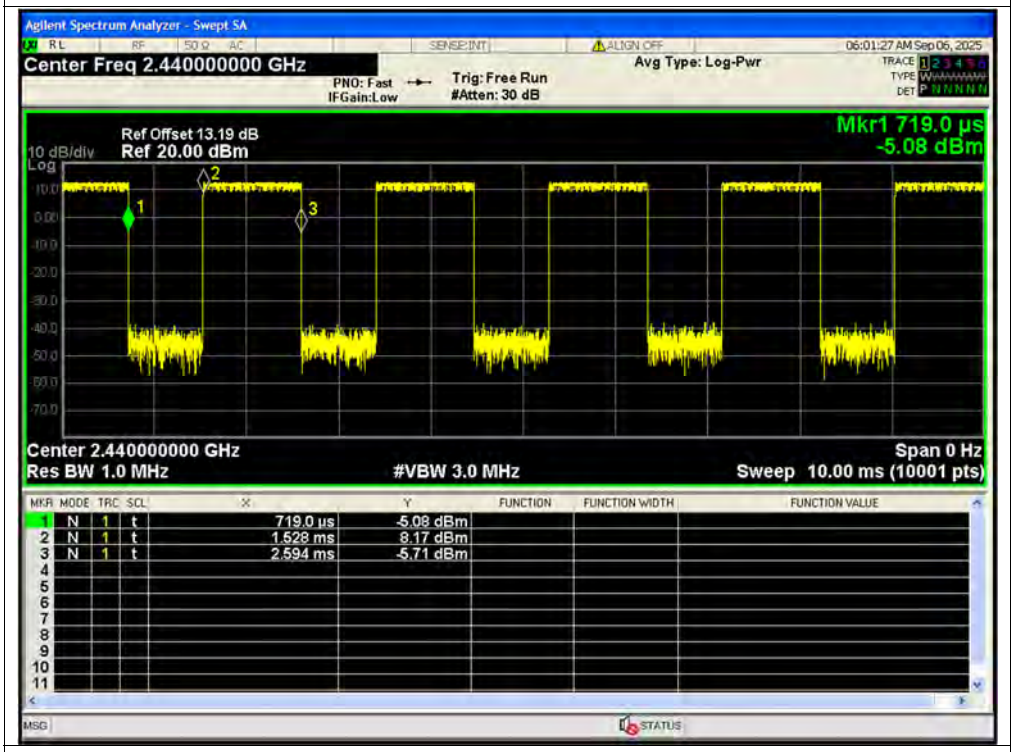
Duty Cycle NVNT BLE 1M 2480MHz Ant1



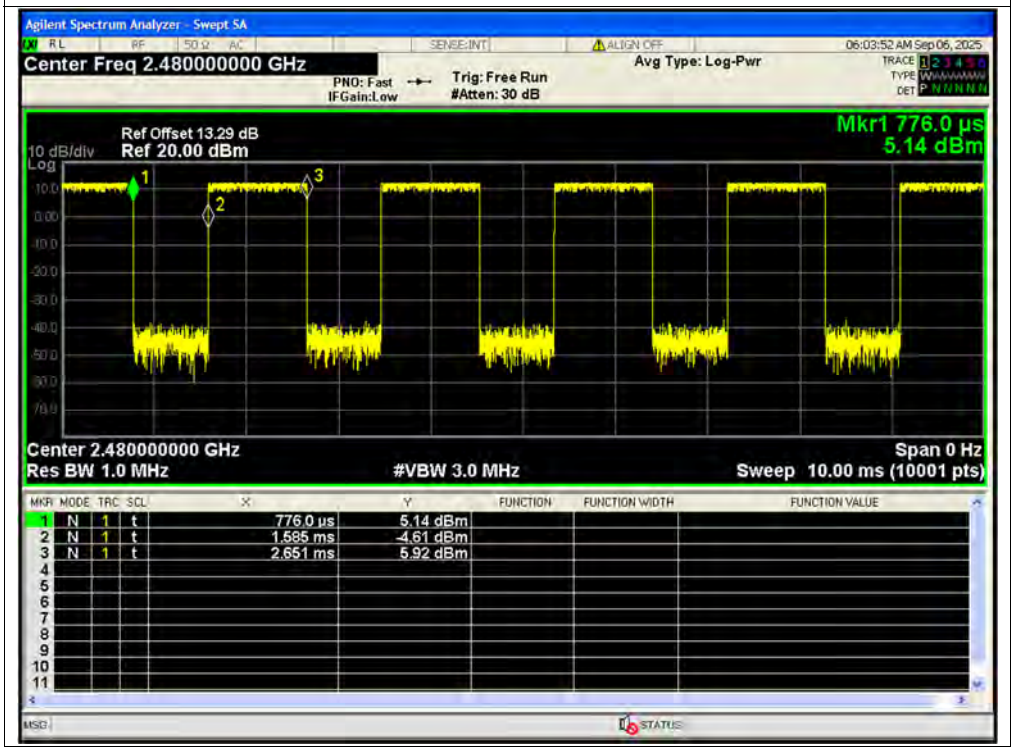
Duty Cycle NVNT BLE 2M 2402MHz Ant1



Duty Cycle NVNT BLE 2M 2440MHz Ant1



Duty Cycle NVNT BLE 2M 2480MHz Ant1

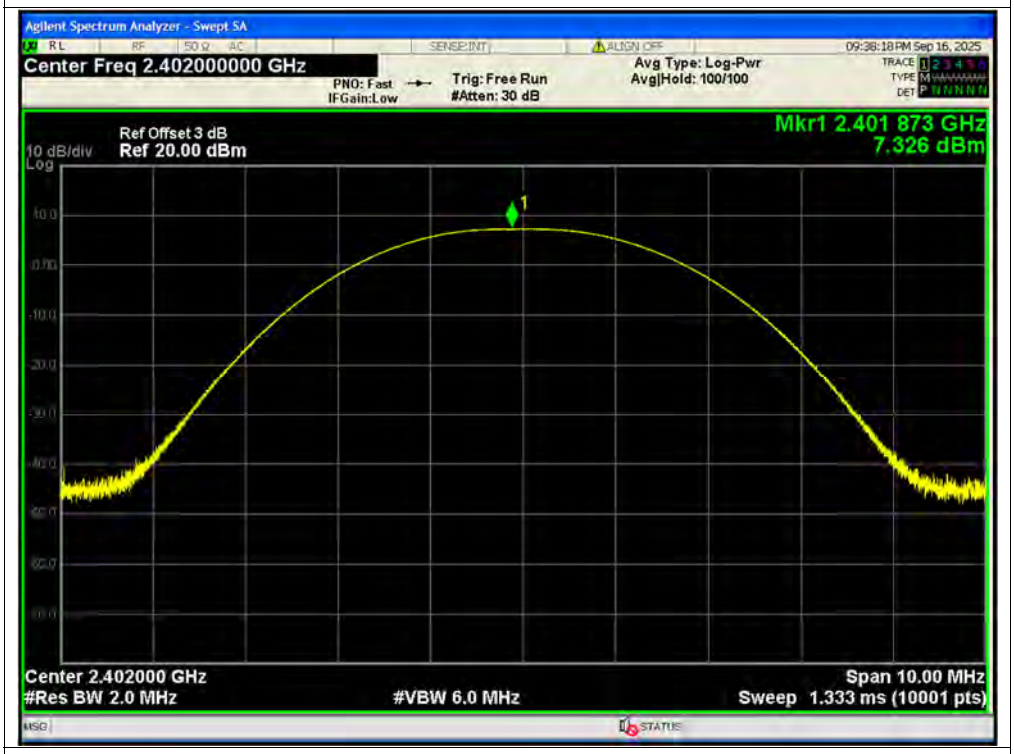


A.2. Maximum Peak Conducted Output Power

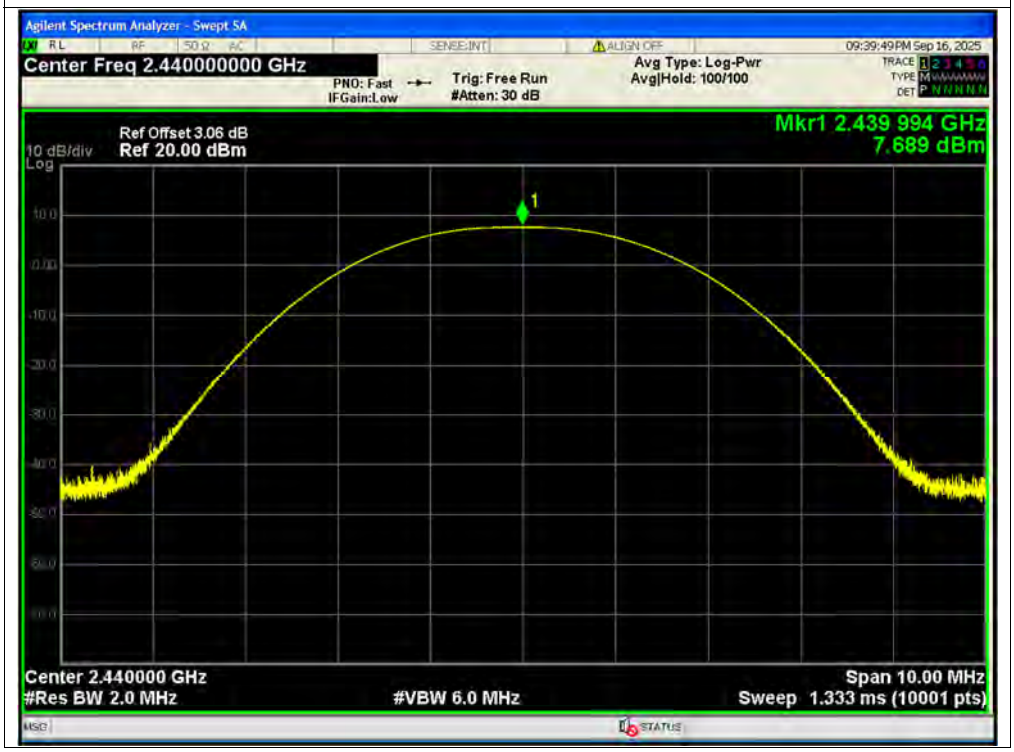
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	7.33	0	7.33	0.00541	30	Pass
NVNT	BLE 1M	2440	Ant1	7.69	0	7.69	0.00587	30	Pass
NVNT	BLE 1M	2480	Ant1	7.36	0	7.36	0.00545	30	Pass
NVNT	BLE 2M	2402	Ant1	7.18	0	7.18	0.00522	30	Pass
NVNT	BLE 2M	2440	Ant1	7.74	0	7.74	0.00594	30	Pass
NVNT	BLE 2M	2480	Ant1	7.01	0	7.01	0.00502	30	Pass

Test Graphs

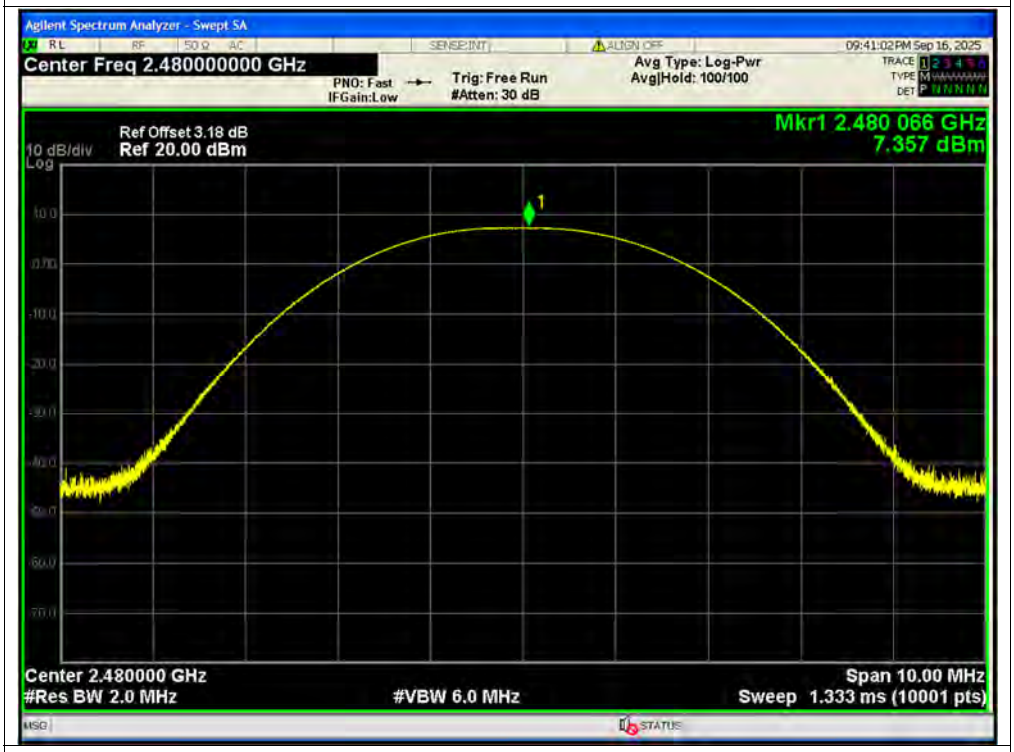
Peak Power NVNT BLE 1M 2402MHz Ant1



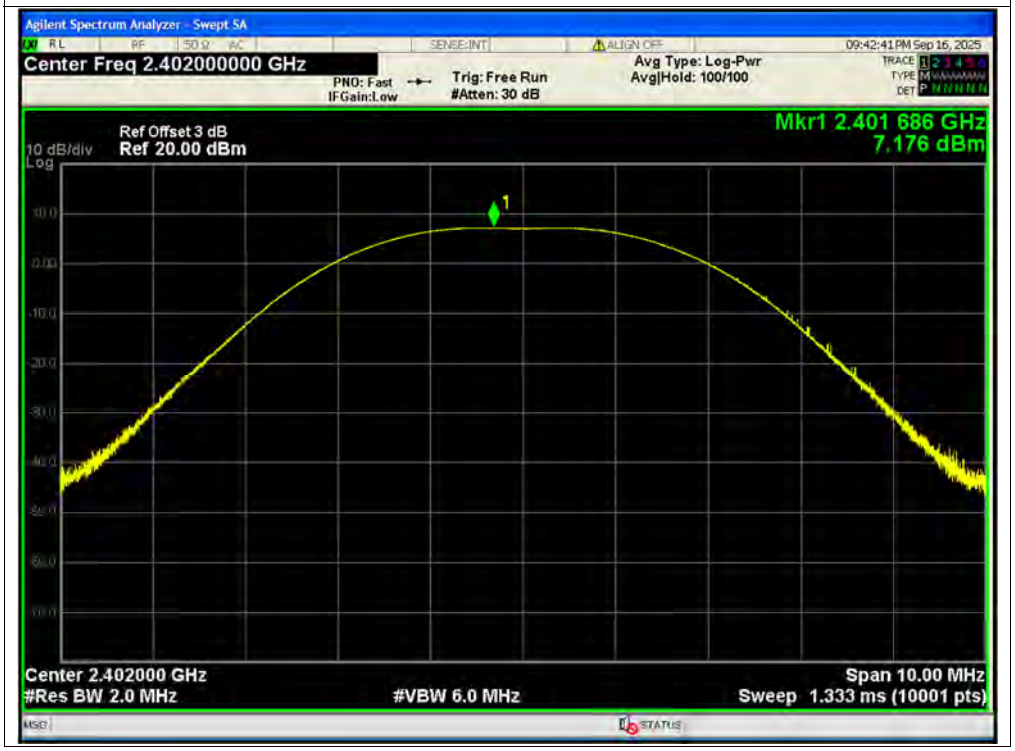
Peak Power NVNT BLE 1M 2440MHz Ant1



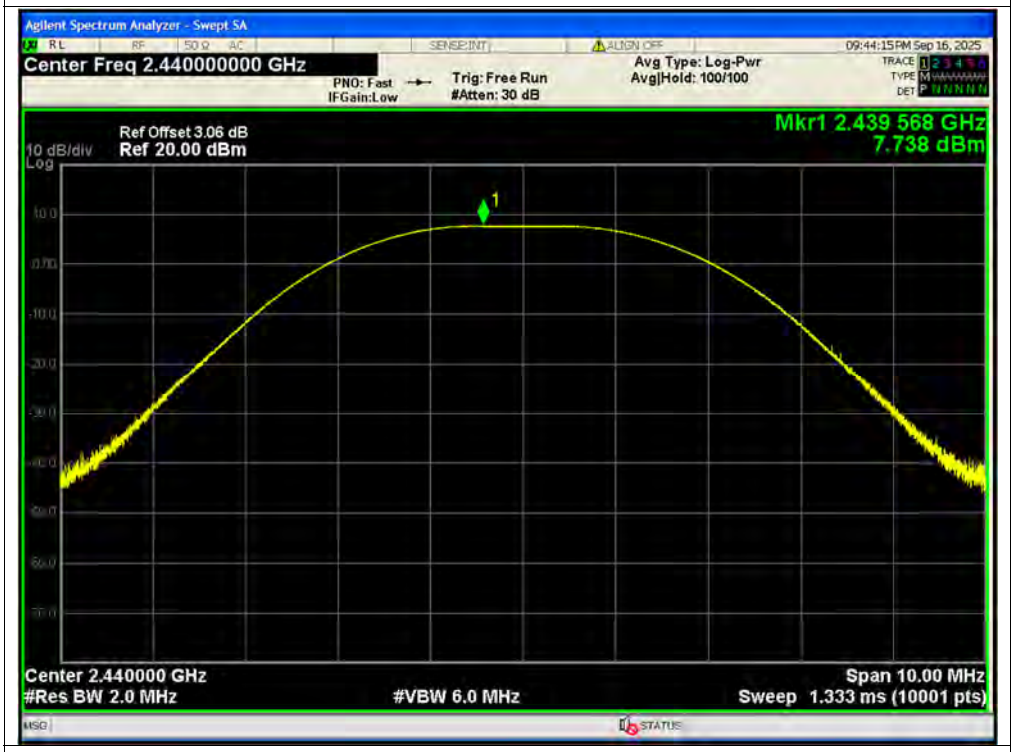
Peak Power NVNT BLE 1M 2480MHz Ant1



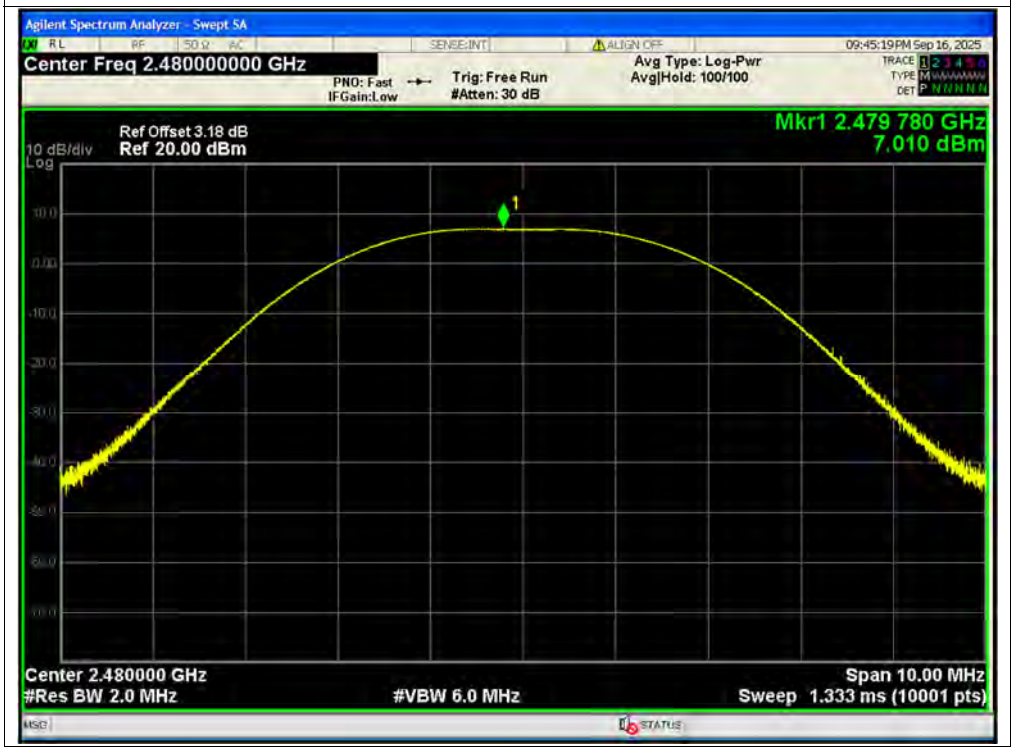
Peak Power NVNT BLE 2M 2402MHz Ant1



Peak Power NVNT BLE 2M 2440MHz Ant1



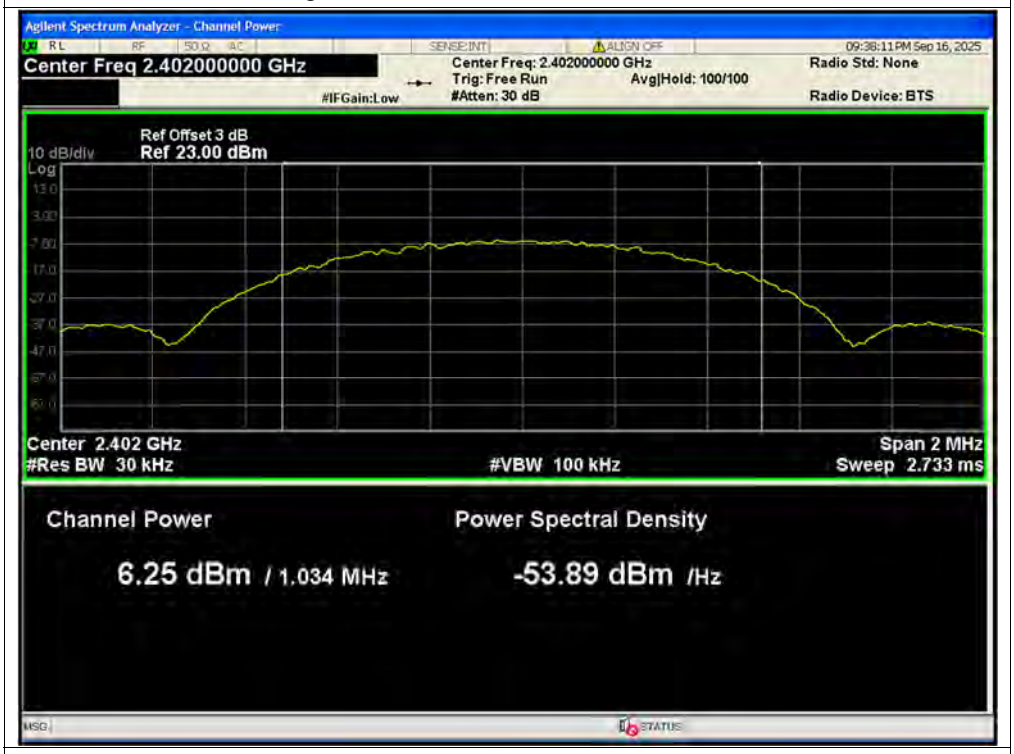
Peak Power NVNT BLE 2M 2480MHz Ant1



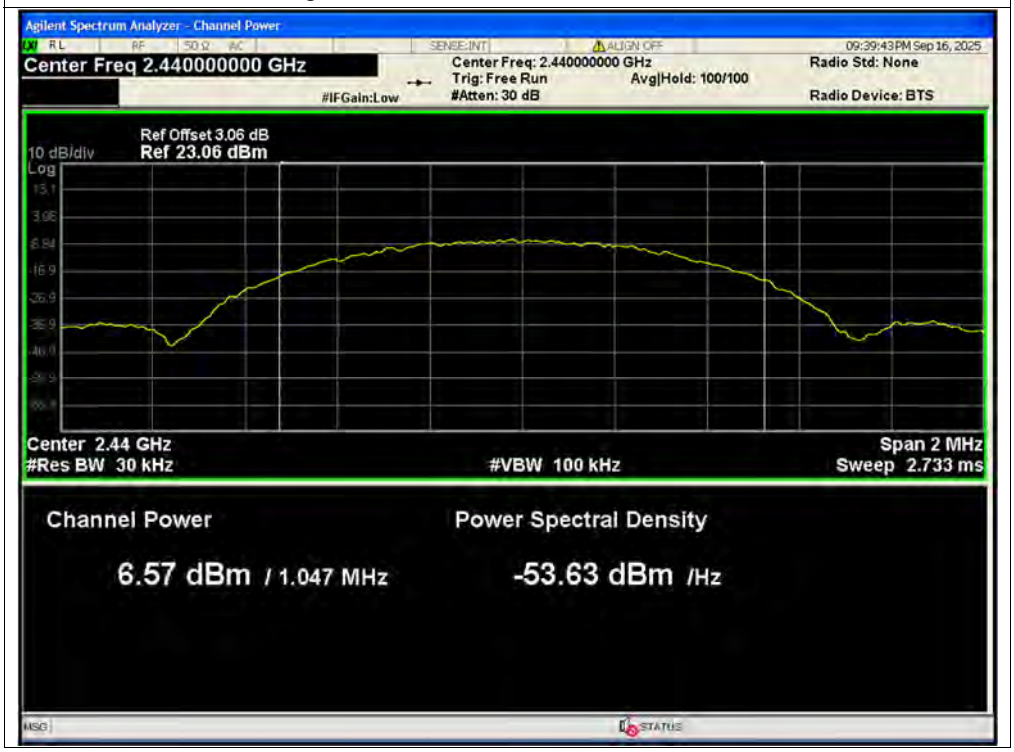
A.3. Maximum Average Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	6.25	0.71	6.96	0.00497	30	Pass
NVNT	BLE 1M	2440	Ant1	6.57	0.71	7.28	0.00535	30	Pass
NVNT	BLE 1M	2480	Ant1	6.2	0.71	6.91	0.00491	30	Pass
NVNT	BLE 2M	2402	Ant1	4.43	2.45	6.88	0.00488	30	Pass
NVNT	BLE 2M	2440	Ant1	4.97	2.45	7.42	0.00552	30	Pass
NVNT	BLE 2M	2480	Ant1	4.15	2.45	6.6	0.00457	30	Pass

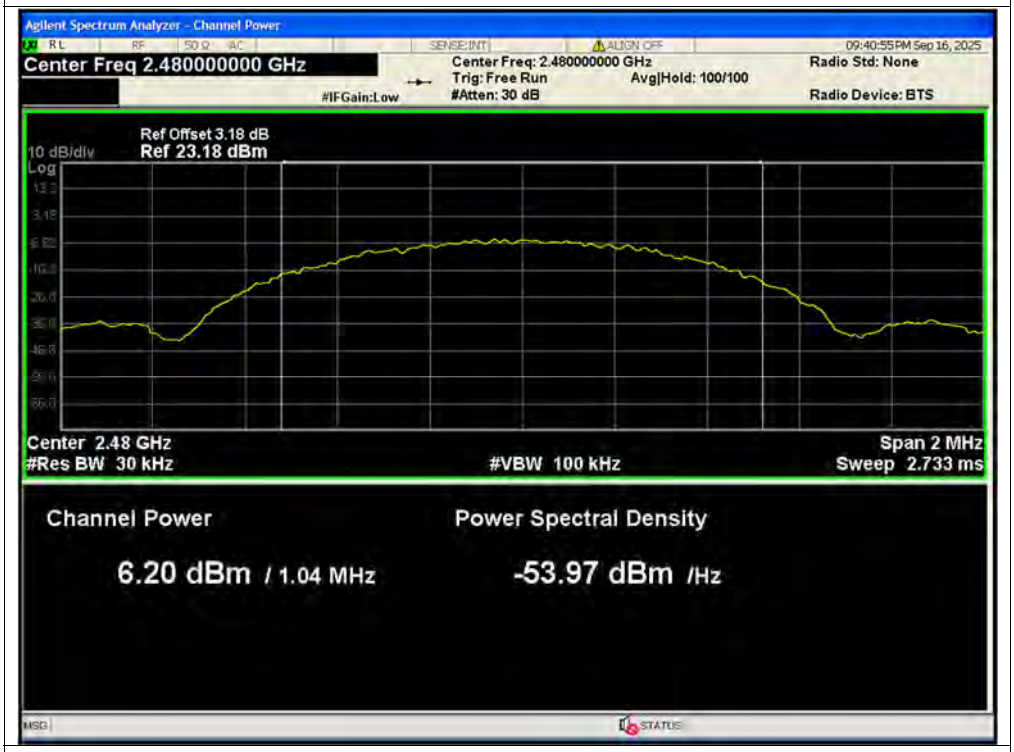
Test Graphs
Average Power NVNT BLE 1M 2402MHz Ant1



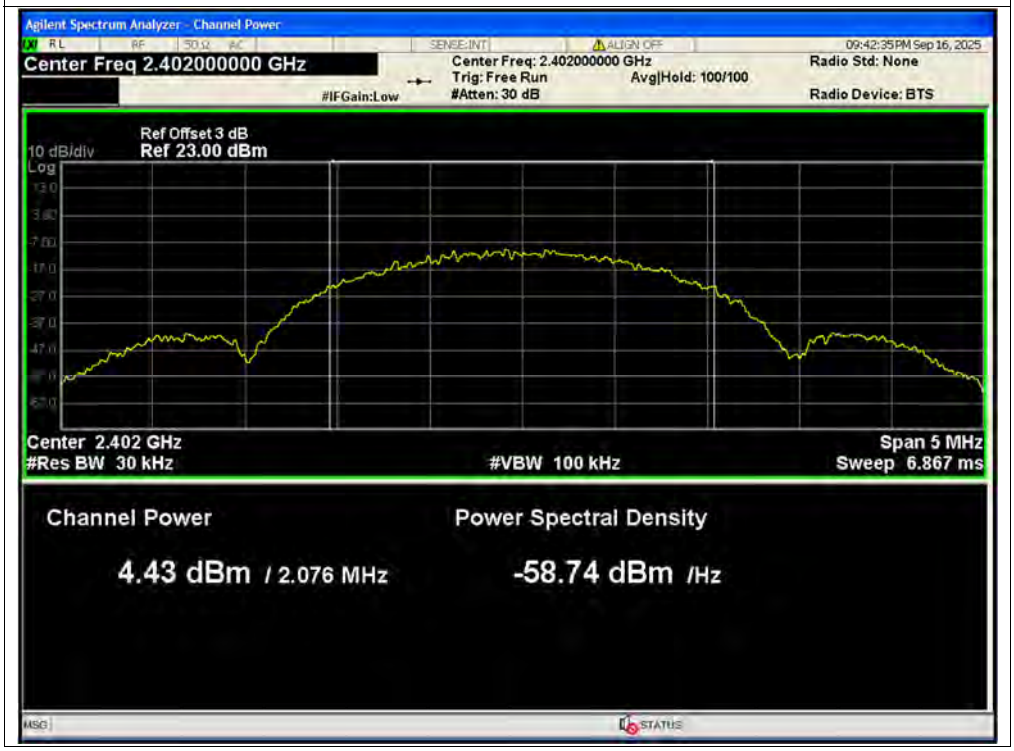
Average Power NVNT BLE 1M 2440MHz Ant1



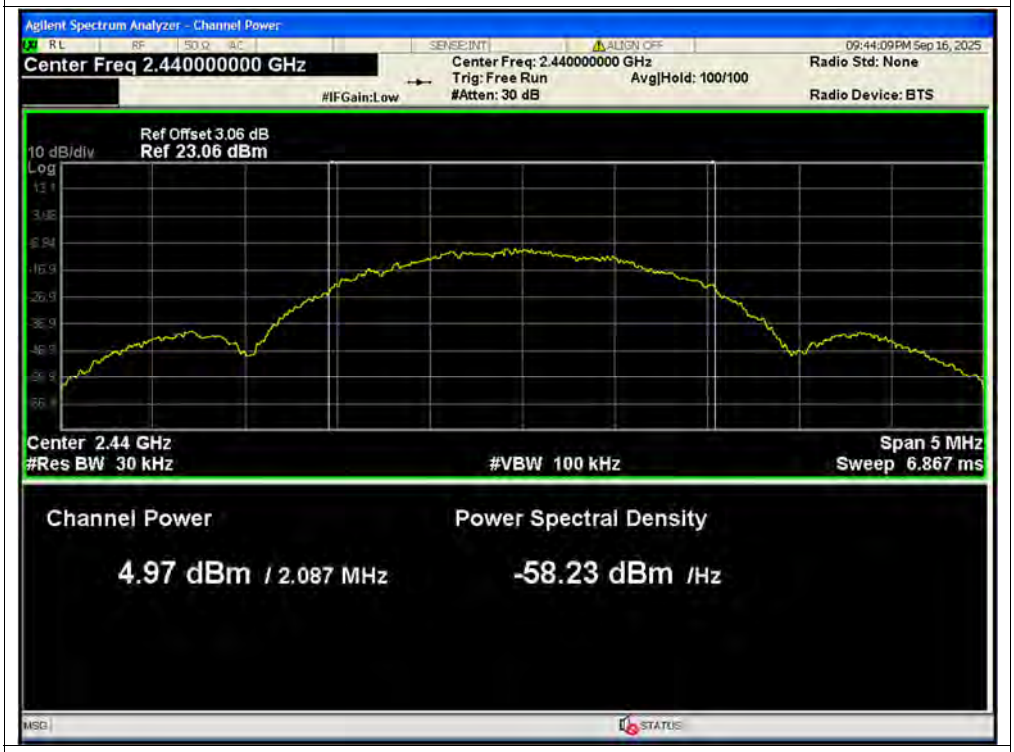
Average Power NVNT BLE 1M 2480MHz Ant1



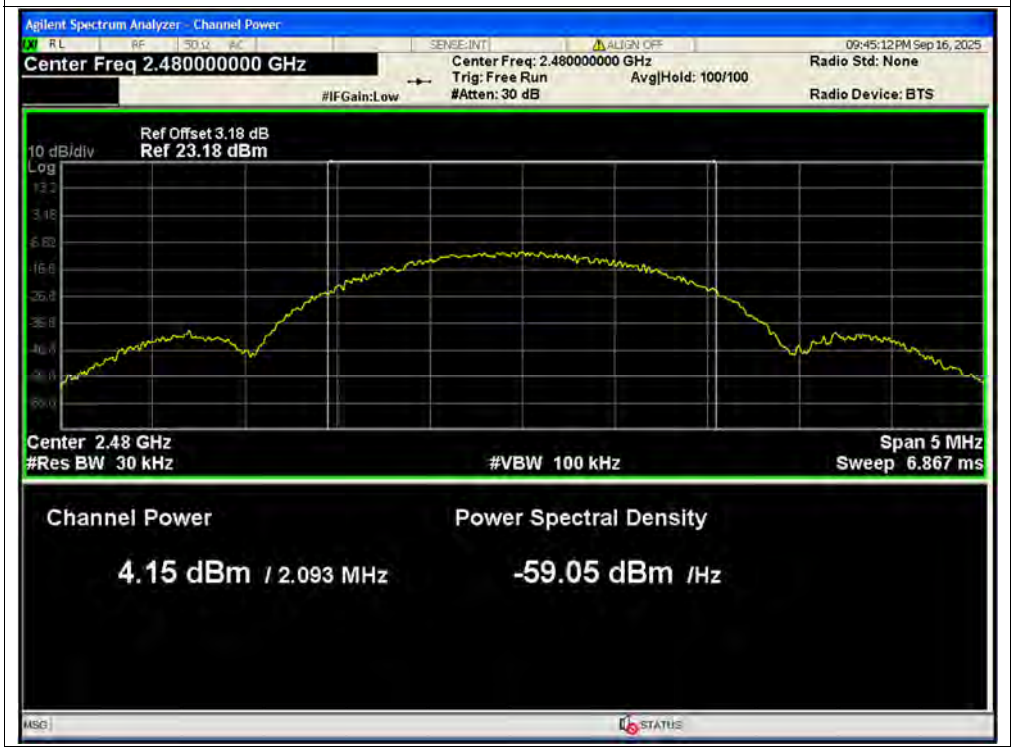
Average Power NVNT BLE 2M 2402MHz Ant1



Average Power NVNT BLE 2M 2440MHz Ant1



Average Power NVNT BLE 2M 2480MHz Ant1



A.4. 6 dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.7003	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.7099	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.6683	0.5	Pass
NVNT	BLE 2M	2402	Ant1	1.212	0.5	Pass
NVNT	BLE 2M	2440	Ant1	1.157	0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.242	0.5	Pass

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

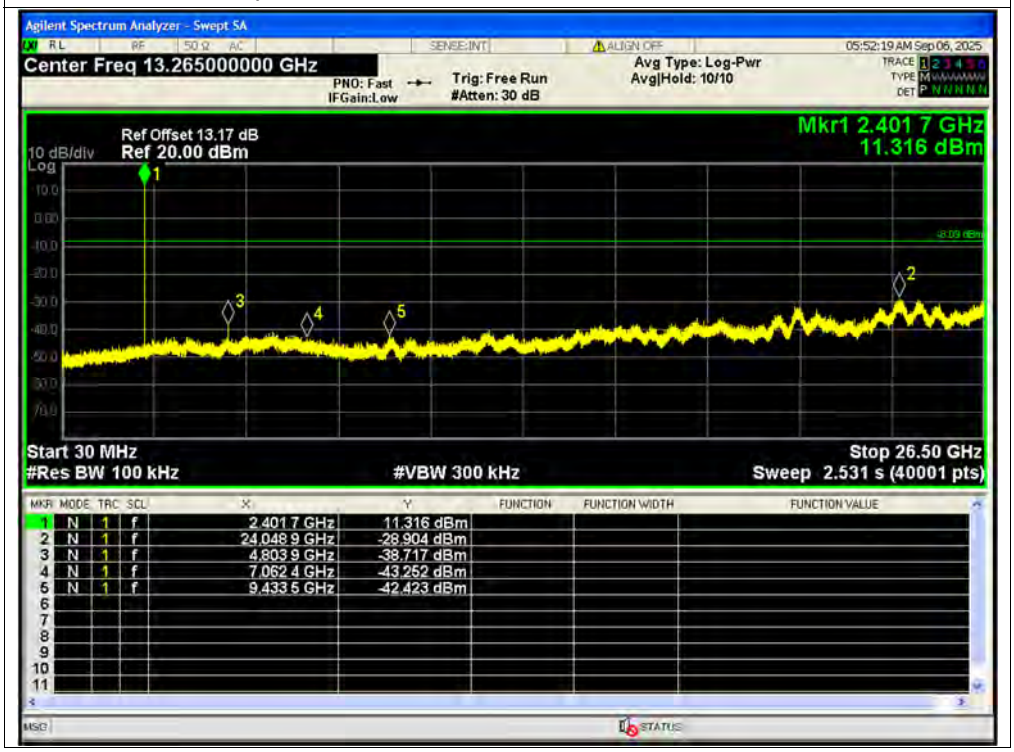
A.5. Conducted Spurious Emissions

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-40.81	-20	Pass
NVNT	BLE 1M	2440	Ant1	-41.02	-20	Pass
NVNT	BLE 1M	2480	Ant1	-39.92	-20	Pass
NVNT	BLE 2M	2402	Ant1	-40.28	-20	Pass
NVNT	BLE 2M	2440	Ant1	-39.66	-20	Pass
NVNT	BLE 2M	2480	Ant1	-39.98	-20	Pass

Test Graphs

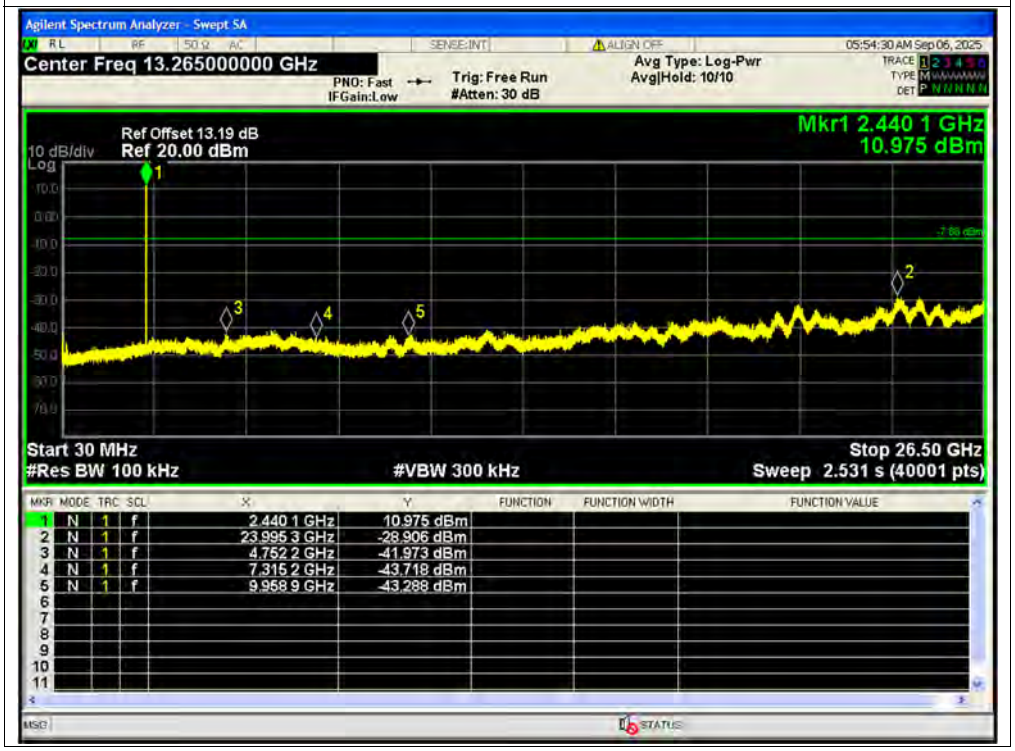
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



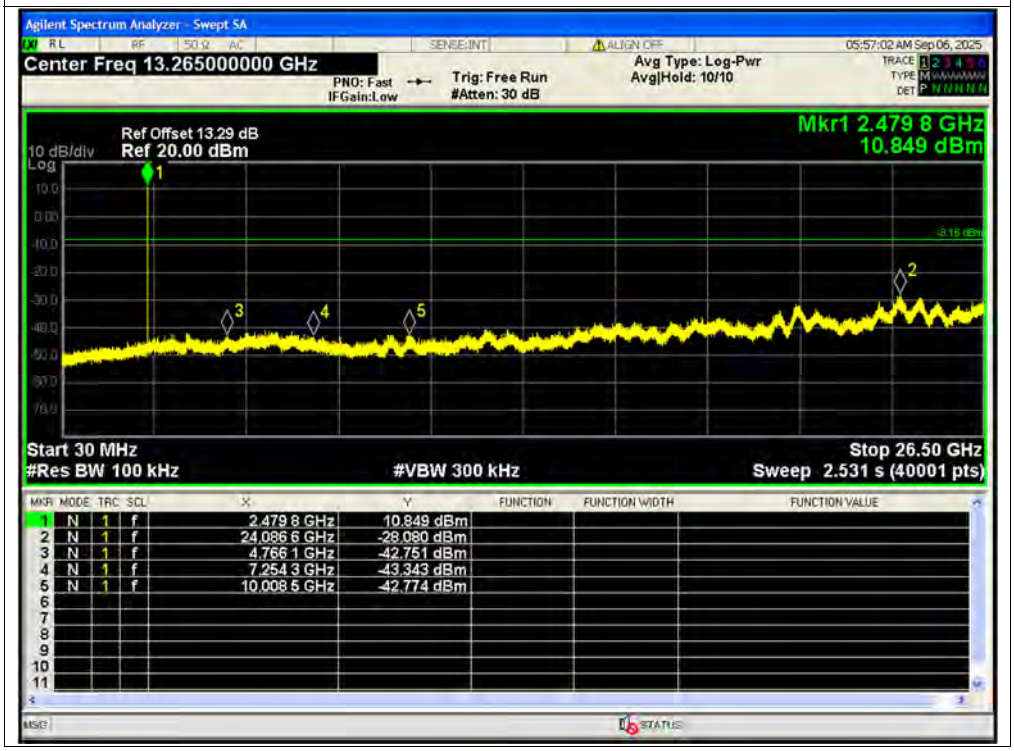
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



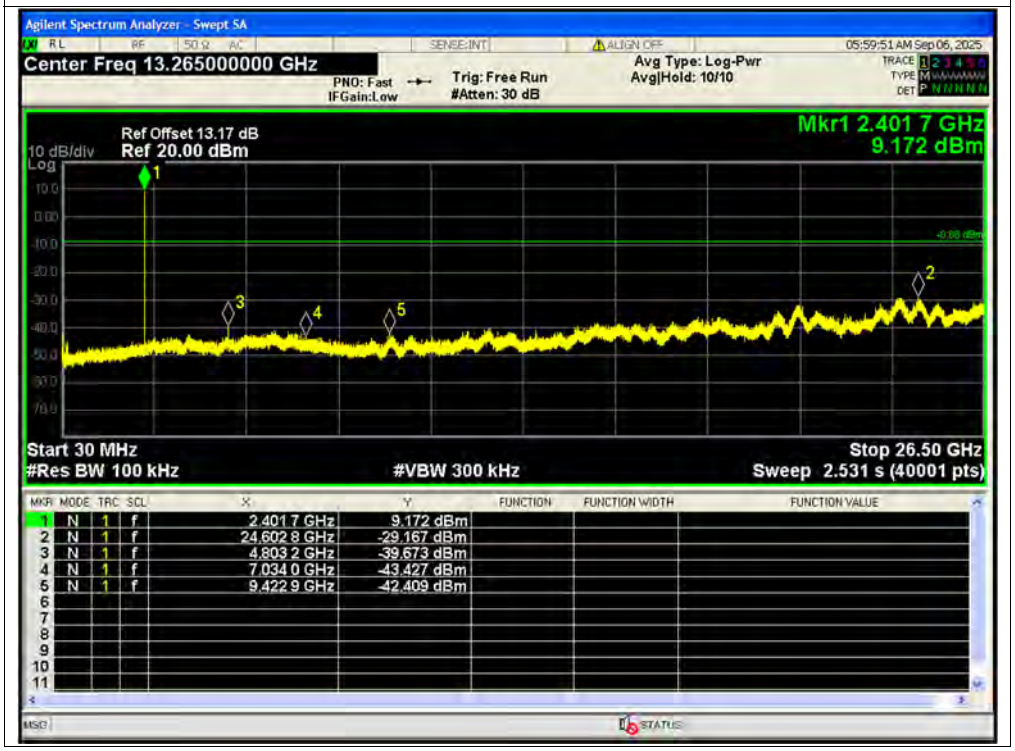
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



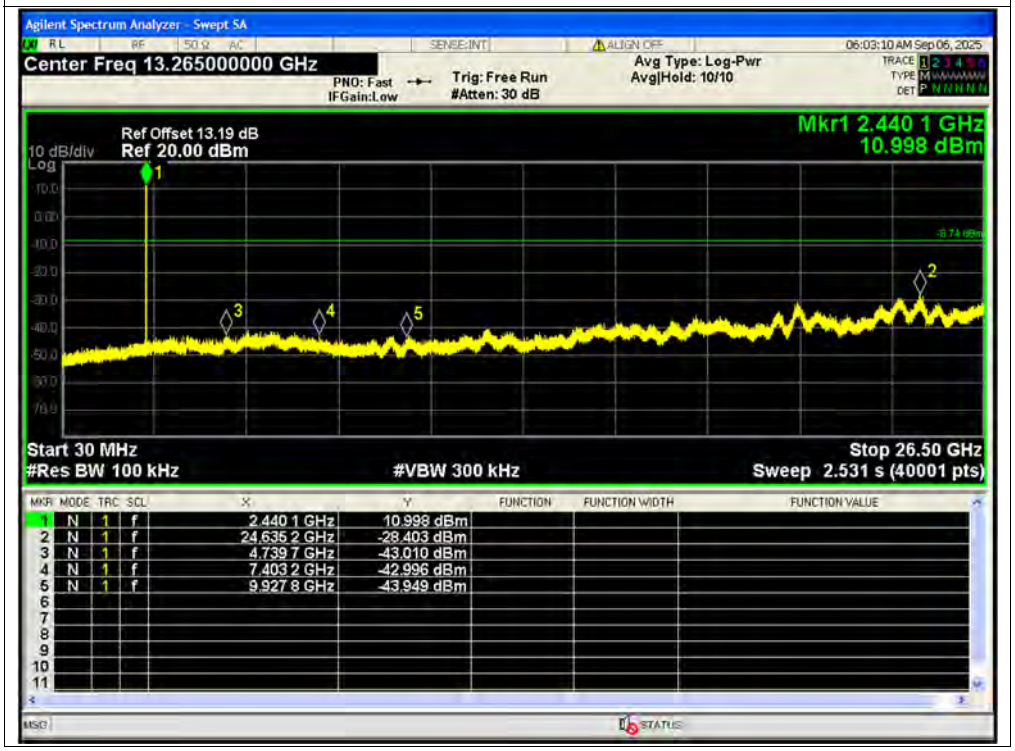
Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission



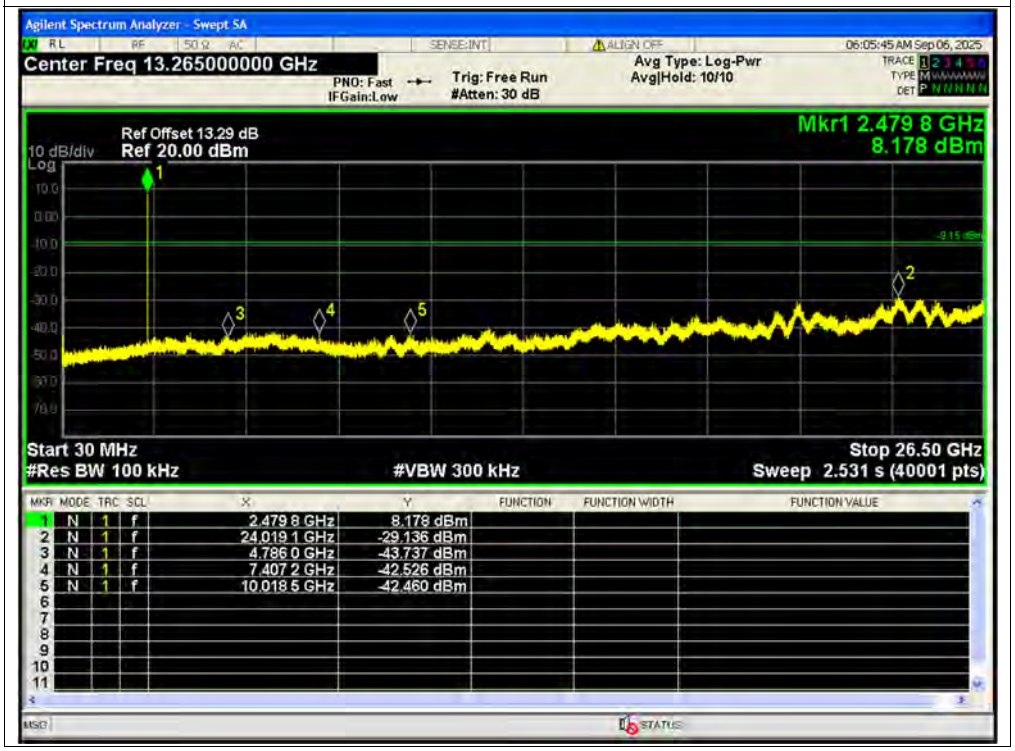
Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission

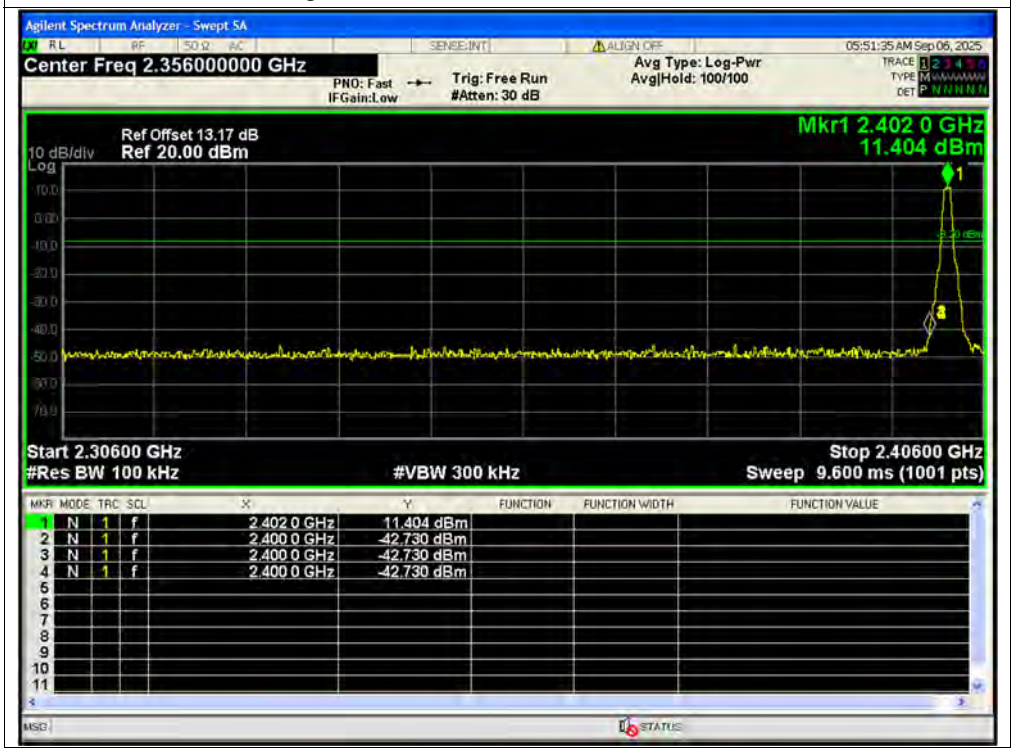


A.6. Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-54.54	-20	Pass
NVNT	BLE 1M	2480	Ant1	-56.69	-20	Pass
NVNT	BLE 2M	2402	Ant1	-33.51	-20	Pass
NVNT	BLE 2M	2480	Ant1	-56.24	-20	Pass

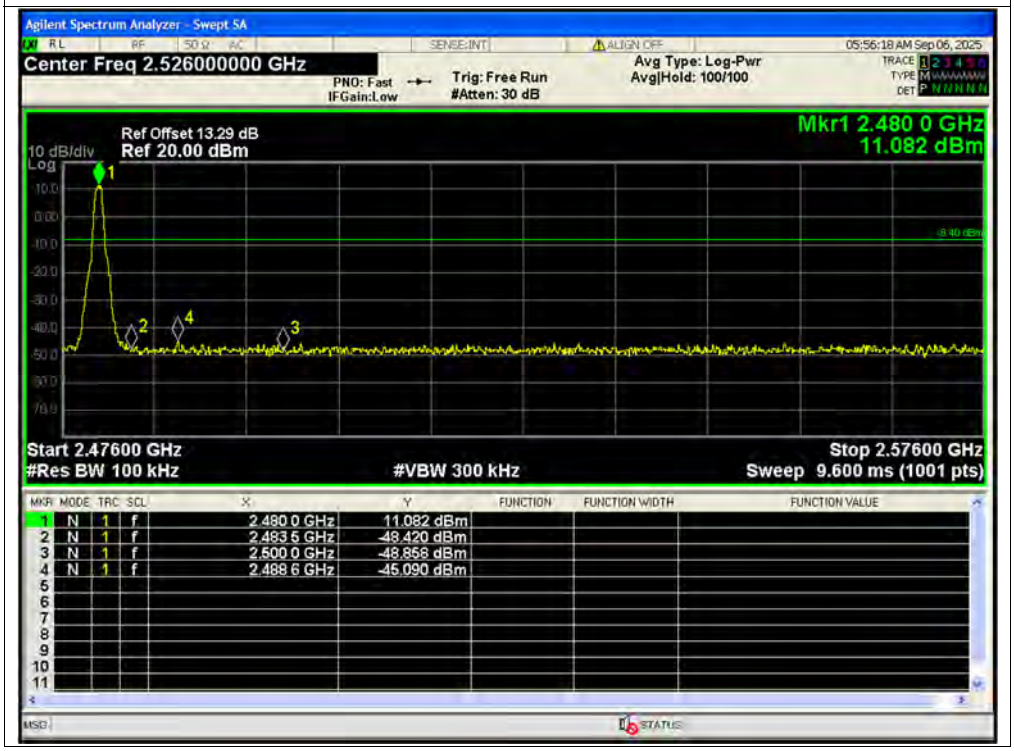
Test Graphs
Band Edge NVNT BLE 1M 2402MHz Ant1 Ref

Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



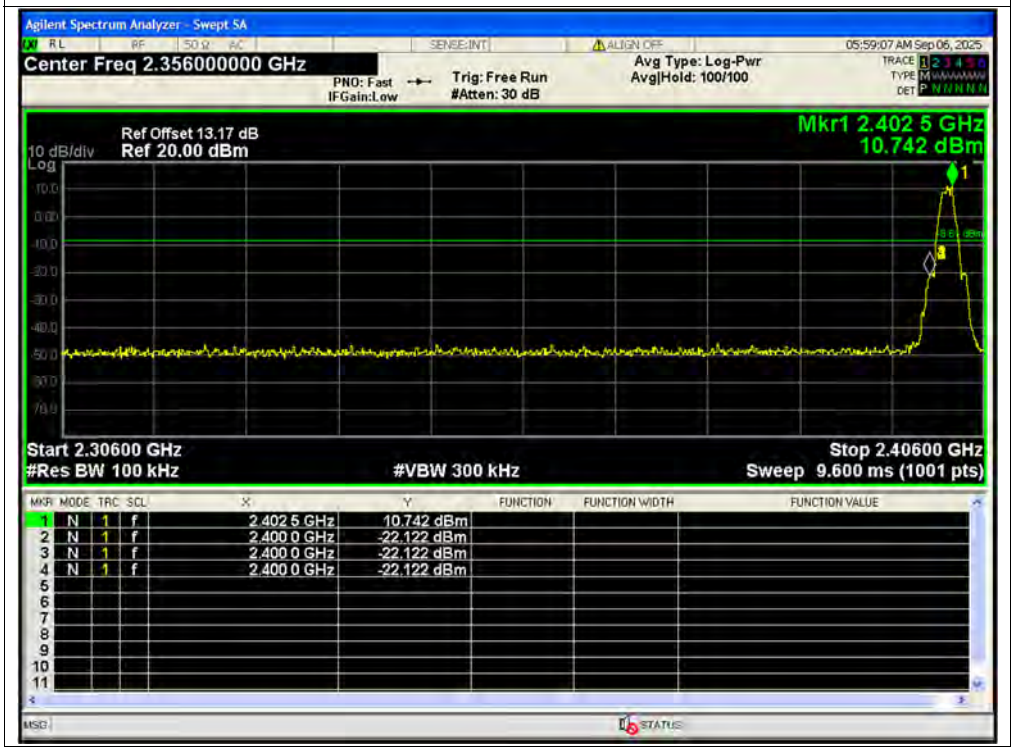
Band Edge NVNT BLE 1M 2480MHz Ant1 Ref

Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



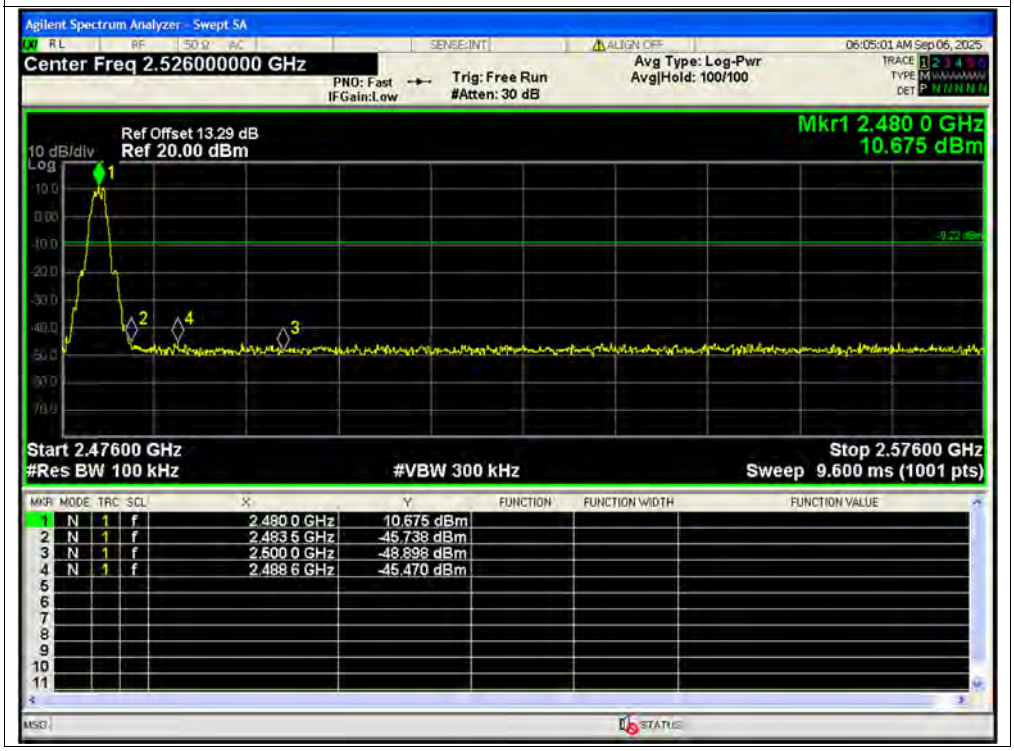
Band Edge NVNT BLE 2M 2402MHz Ant1 Ref

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

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	-8.78	0	-8.78	8	Pass
NVNT	BLE 1M	2440	Ant1	-8.23	0	-8.23	8	Pass
NVNT	BLE 1M	2480	Ant1	-8.57	0	-8.57	8	Pass
NVNT	BLE 2M	2402	Ant1	-12.24	0	-12.24	8	Pass
NVNT	BLE 2M	2440	Ant1	-11.62	0	-11.62	8	Pass
NVNT	BLE 2M	2480	Ant1	-12.28	0	-12.28	8	Pass

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 + PC+ PC Adapter + BLE TX

Test voltage: AC 120V/60Hz

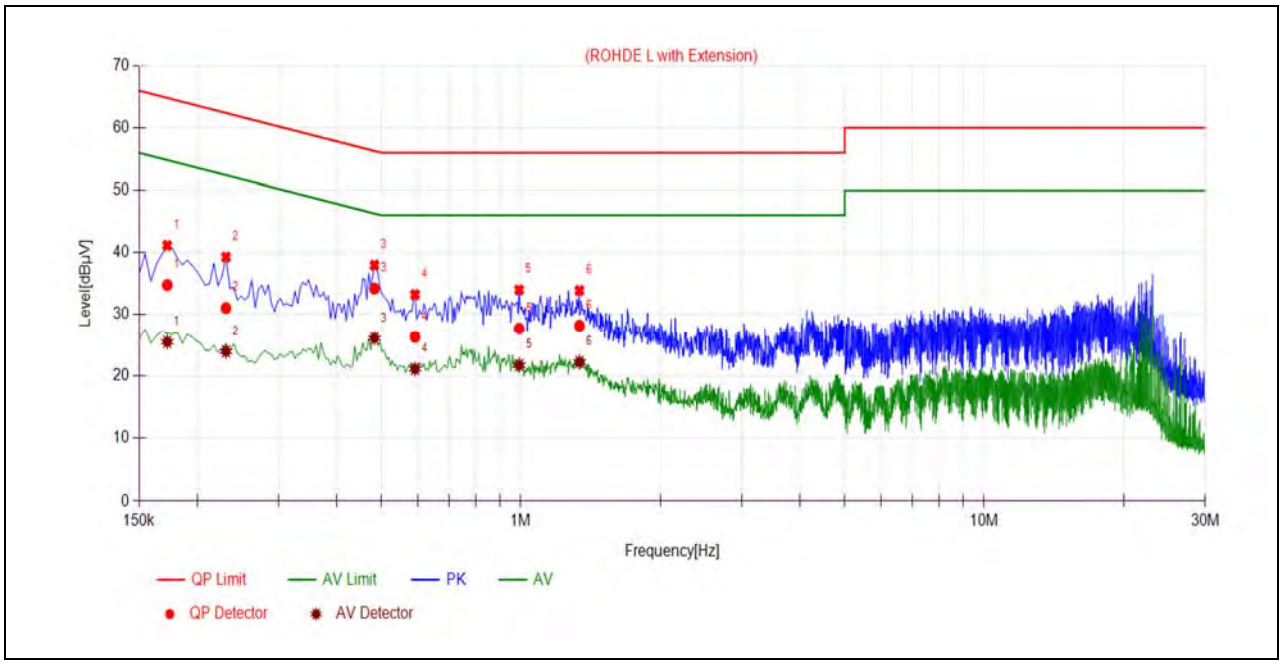
The measurement results are obtained as below:

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

U_R: Receiver Reading

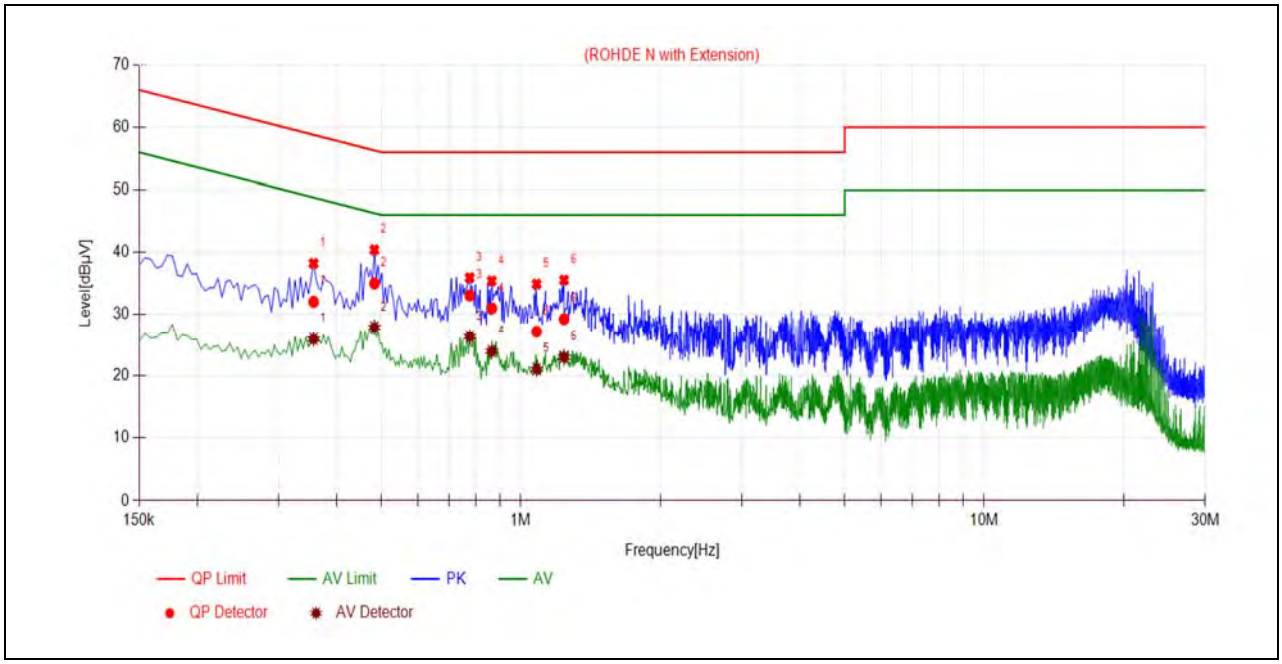
A_{Factor}: Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1725	34.79	25.52	64.84	54.84	Line	PASS
2	0.2310	31.06	23.97	62.41	52.41		PASS
3	0.4830	34.22	26.13	56.29	46.29		PASS
4	0.5911	26.34	21.15	56.00	46.00		PASS
5	0.9916	27.71	21.76	56.00	46.00		PASS
6	1.3379	28.19	22.26	56.00	46.00		PASS



(N Phase)

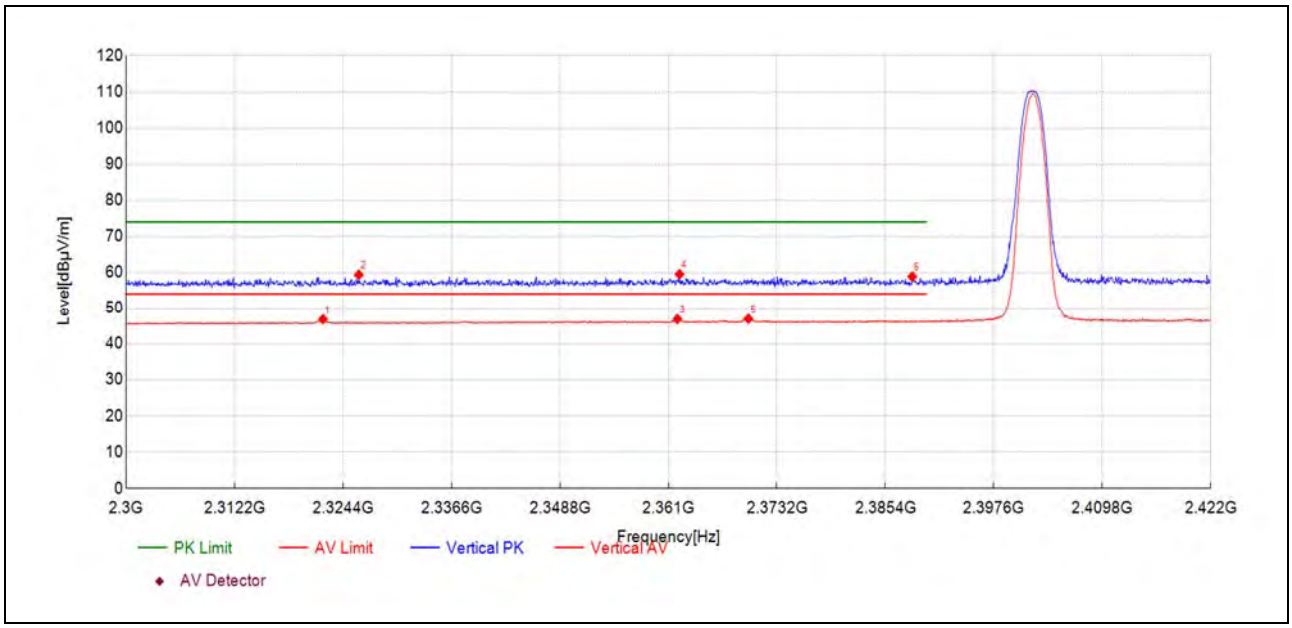
No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.3570	32.07	25.98	58.80	48.80	Neutral	PASS
2	0.4830	35.03	27.93	56.29	46.29		PASS
3	0.7755	33.09	26.40	56.00	46.00		PASS
4	0.8655	31.02	24.02	56.00	46.00		PASS
5	1.0815	27.22	21.09	56.00	46.00		PASS
6	1.2390	29.27	23.04	56.00	46.00		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.

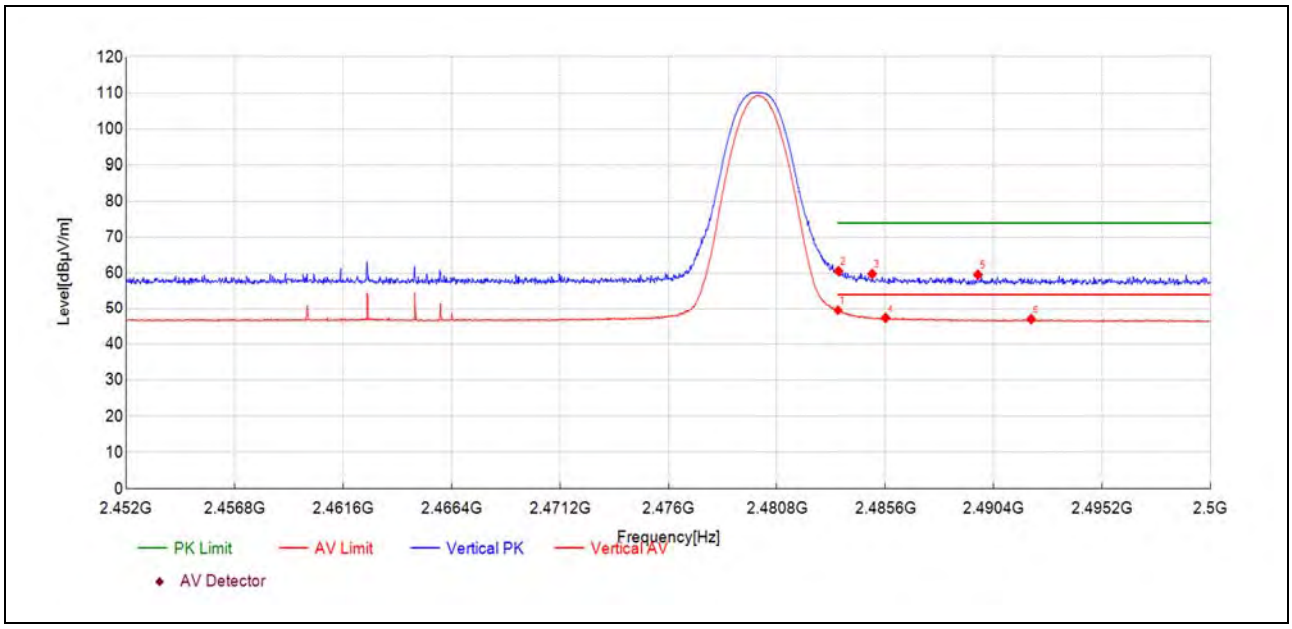
1Mbps

Plot for Channel 0



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2322.15	9.6	46.85	37.210	54.00	7.15	342	AV	PASS
2326.18	22.2	59.39	37.240	74.00	14.61	224	PK	PASS
2362.01	9.4	46.91	37.470	54.00	7.09	347	AV	PASS
2362.25	22.1	59.55	37.470	74.00	14.45	172	PK	PASS
2370.00	9.5	46.99	37.470	54.00	7.01	347	AV	PASS
2388.43	21.4	58.88	37.490	74.00	15.12	143	PK	PASS

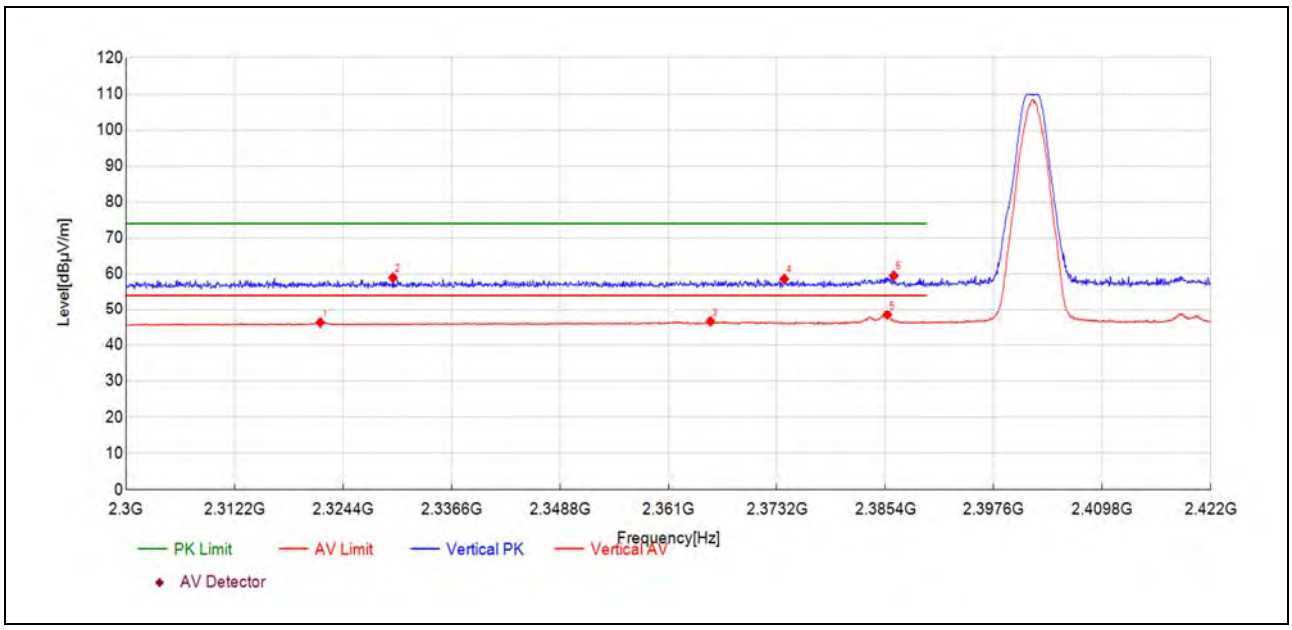
Plot for Channel 39



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2483.50	11.3	49.57	38.280	54.00	4.43	341	AV	PASS
2483.53	22.3	60.59	38.280	74.00	13.41	322	PK	PASS
2485.02	21.5	59.81	38.270	74.00	14.19	275	PK	PASS
2485.62	9.0	47.30	38.270	54.00	6.70	336	AV	PASS
2489.70	21.3	59.60	38.260	74.00	14.40	308	PK	PASS
2492.05	8.7	46.98	38.260	54.00	7.02	351	AV	PASS

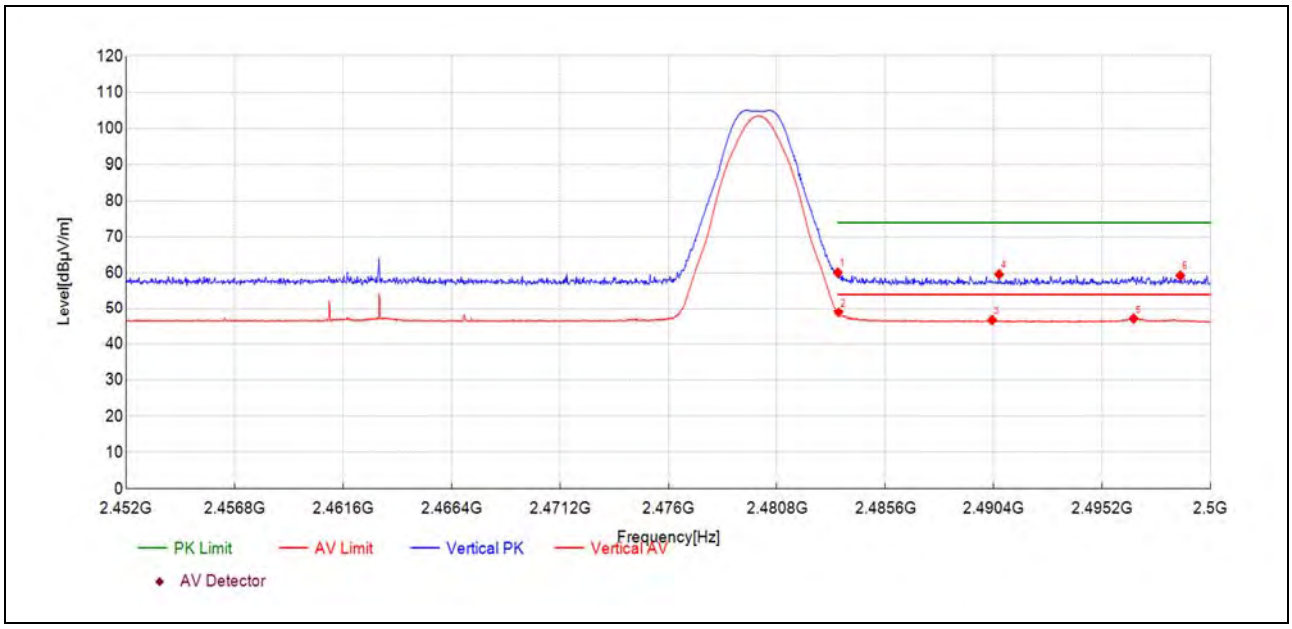
2Mbps

Plot for Channel 0



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2321.85	9.1	46.28	37.200	54.00	7.72	347	AV	PASS
2330.03	21.7	58.98	37.280	74.00	15.02	323	PK	PASS
2365.73	9.1	46.57	37.470	54.00	7.43	9	AV	PASS
2374.03	21.1	58.60	37.480	74.00	15.40	337	PK	PASS
2385.63	11.0	48.46	37.490	54.00	5.54	347	AV	PASS
2386.36	22.1	59.56	37.490	74.00	14.44	43	PK	PASS

Plot for Channel 39



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2483.50	21.8	60.11	38.280	74.00	13.89	360	PK	PASS
2483.53	10.7	48.97	38.280	54.00	5.03	327	AV	PASS
2490.32	8.4	46.70	38.270	54.00	7.30	5	AV	PASS
2490.64	21.4	59.64	38.270	74.00	14.36	237	PK	PASS
2496.59	8.8	47.09	38.250	54.00	6.91	360	AV	PASS
2498.66	21.0	59.30	38.260	74.00	14.70	285	PK	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.

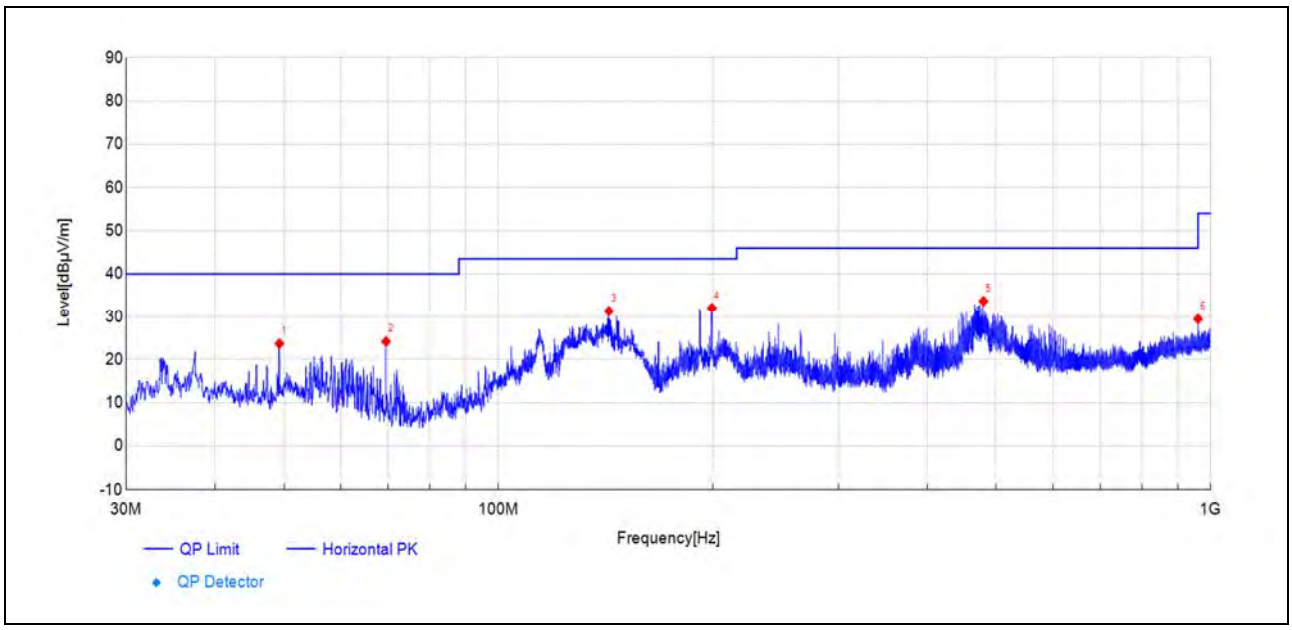
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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.

Note4: All test modes were considered and evaluated respectively by performing full test, only the worst data were recorded.

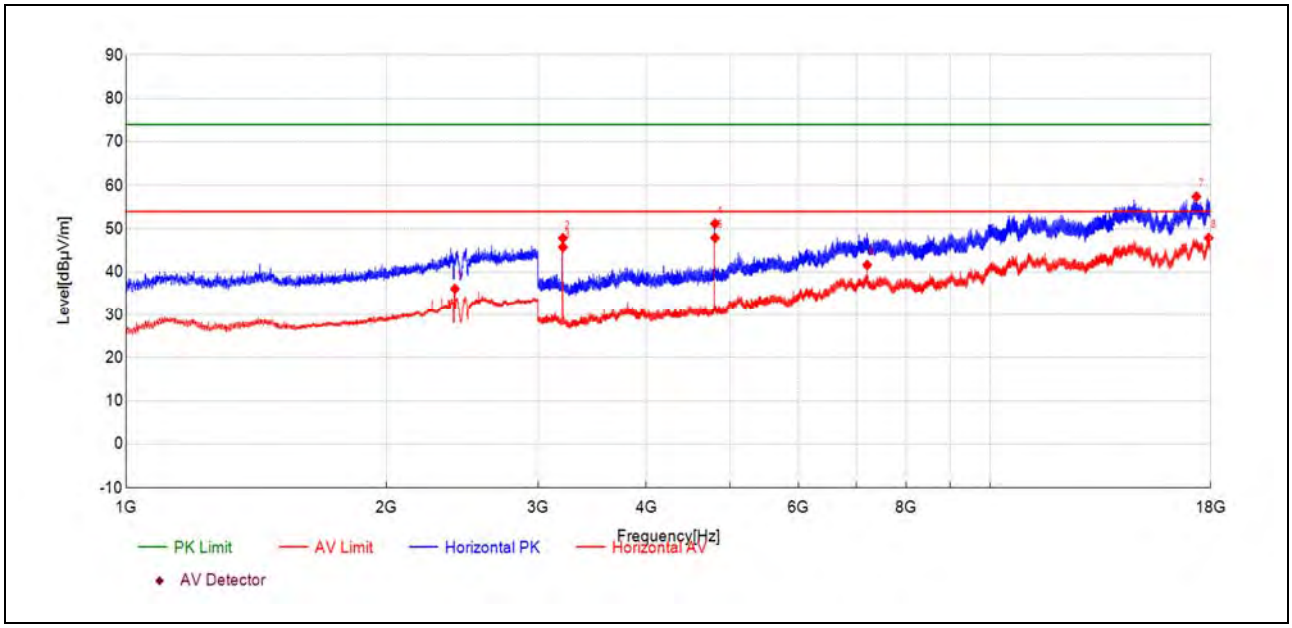
1Mbps

Plot for Channel 0



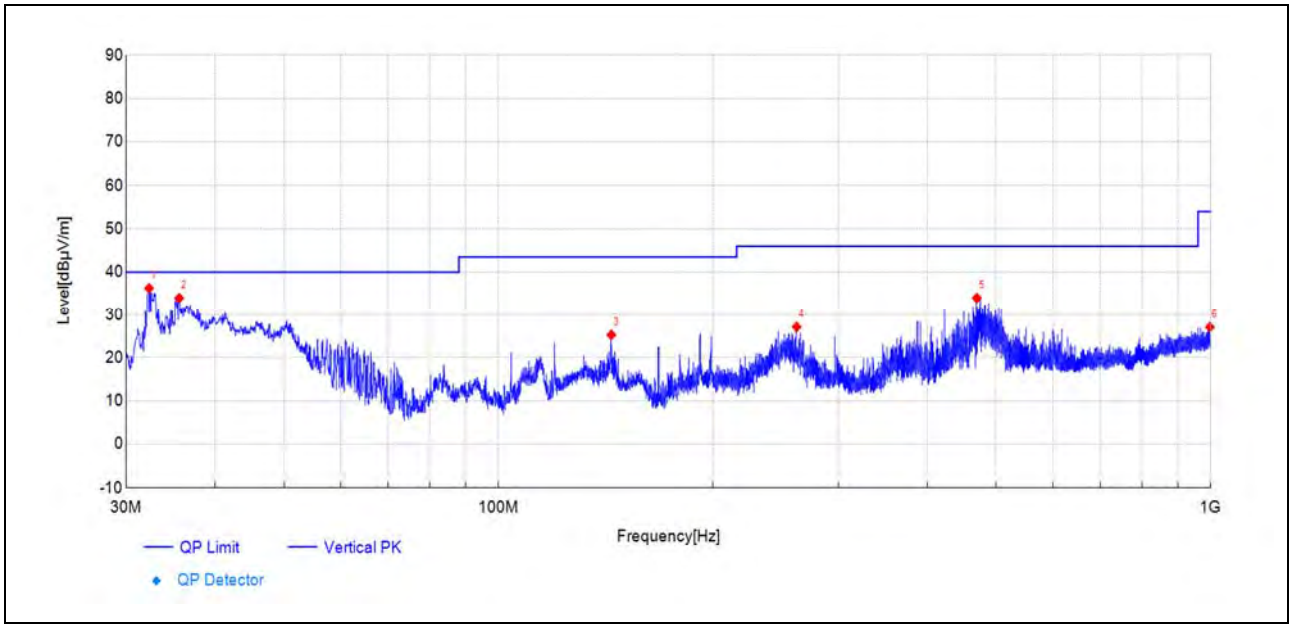
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
49.26	51.9	23.69	-28.200	40.00	16.31	22	PK	PASS
69.53	55.2	24.19	-31.050	40.00	15.81	22	PK	PASS
142.91	62.9	31.32	-31.610	43.50	12.18	70	PK	PASS
199.42	60.9	32.03	-28.850	43.50	11.47	42	PK	PASS
479.71	54.9	33.67	-21.180	46.00	12.33	351	PK	PASS
959.99	40.8	29.44	-11.330	46.00	16.56	4	PK	PASS



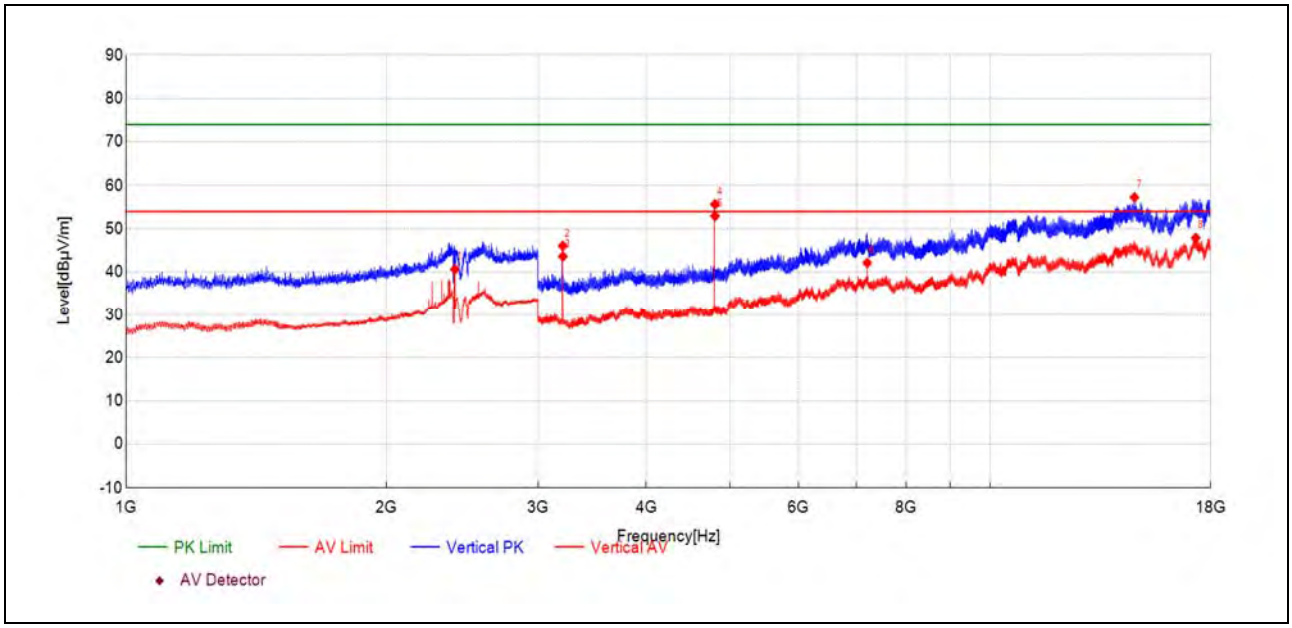
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2402.28	30.9	36.10	5.250	-	-	345	AV	NA
3202.72	58.7	47.86	-10.880	74.00	26.14	360	PK	PASS
3203.15	56.6	45.76	-10.880	54.00	8.24	356	AV	PASS
4803.48	56.4	51.21	-5.150	74.00	22.79	249	PK	PASS
4804.34	53.1	47.91	-5.140	54.00	6.09	249	AV	PASS
7206.55	36.6	41.63	5.020	54.00	12.37	196	AV	PASS
17326.27	38.3	57.47	19.220	74.00	16.53	356	PK	PASS
17901.00	28.4	47.91	19.520	54.00	6.09	237	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

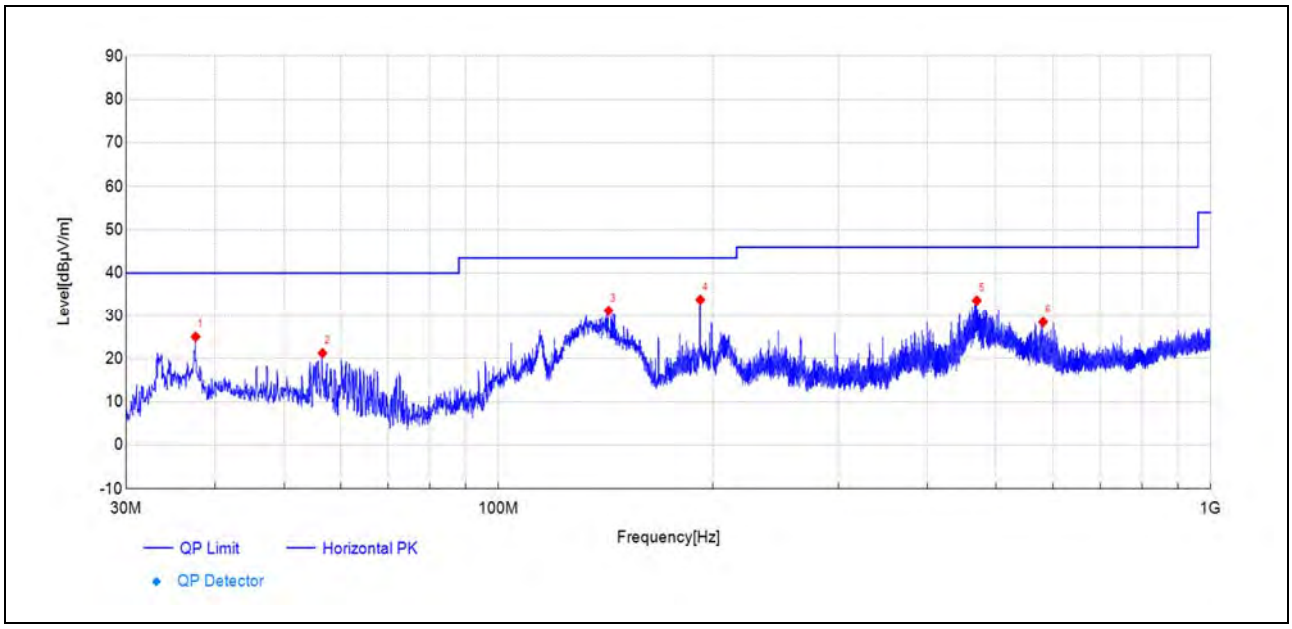
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
32.33	66.7	36.25	-30.480	40.00	3.75	103	PK	PASS
35.63	63.7	33.97	-29.750	40.00	6.03	351	PK	PASS
144.03	56.5	25.27	-31.270	43.50	18.23	124	PK	PASS
262.23	54.9	27.12	-27.760	46.00	18.88	55	PK	PASS
469.53	55.2	33.97	-21.270	46.00	12.03	34	PK	PASS
997.24	37.7	27.07	-10.600	54.00	26.93	248	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

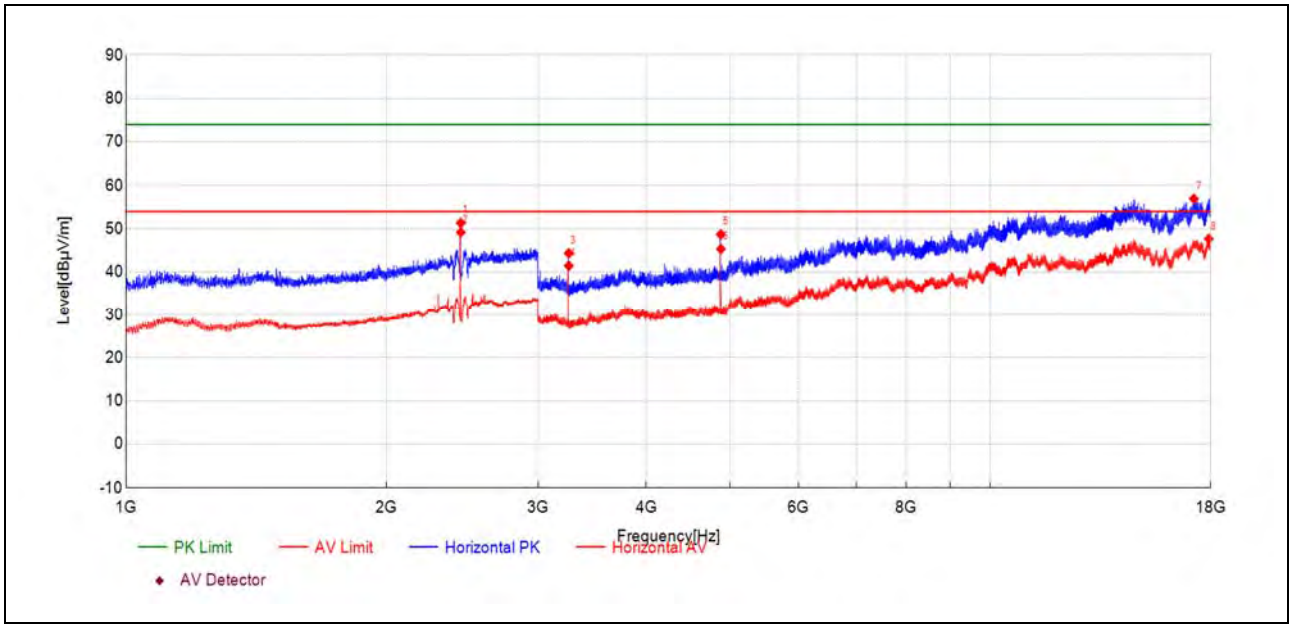
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2402.28	35.4	40.65	5.250	-	-	339	AV	NA
3202.29	56.9	46.07	-10.870	74.00	27.93	76	PK	PASS
3203.15	54.5	43.63	-10.880	54.00	10.37	76	AV	PASS
4803.91	60.8	55.69	-5.150	74.00	18.31	64	PK	PASS
4804.34	58.1	52.98	-5.140	54.00	1.02	64	AV	PASS
7206.98	37.1	42.14	5.020	54.00	11.86	9	AV	PASS
14691.76	36.7	57.31	20.580	74.00	16.69	315	PK	PASS
17298.41	29.0	47.94	18.900	54.00	6.06	144	AV	PASS

Plot for Channel 19



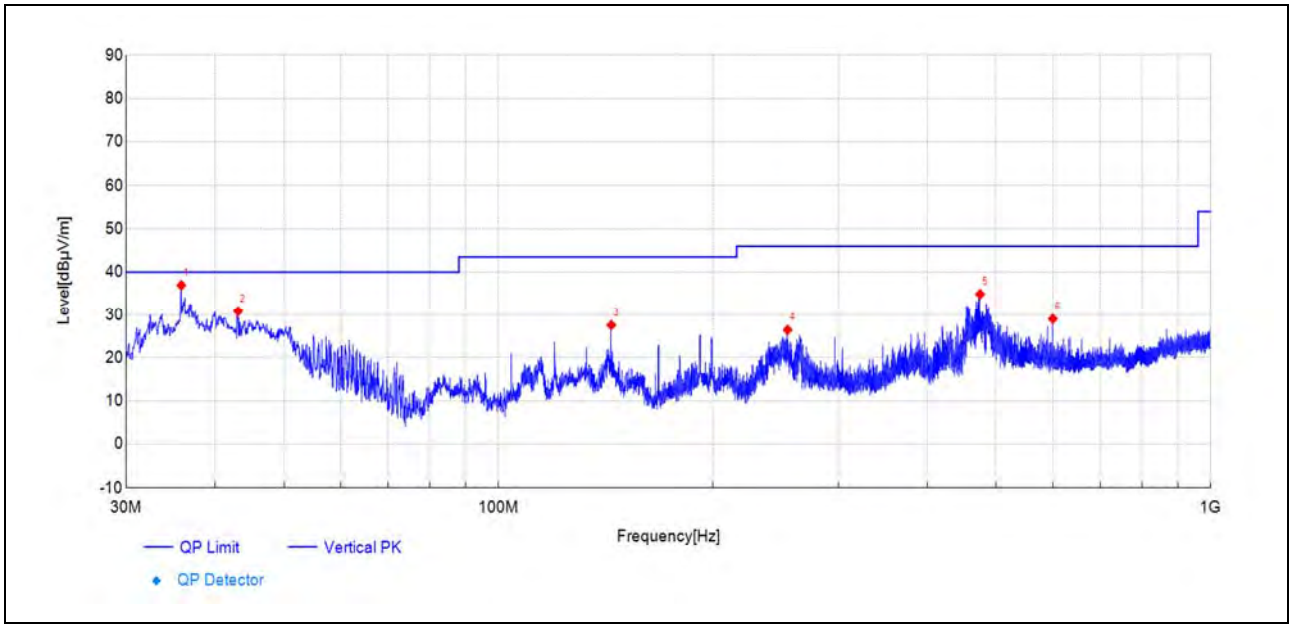
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
37.57	54.5	25.03	-29.430	40.00	14.97	216	PK	PASS
56.63	49.2	21.24	-27.990	40.00	18.76	16	PK	PASS
142.77	62.9	31.20	-31.650	43.50	12.30	86	PK	PASS
192.05	63.9	33.80	-30.090	43.50	9.70	72	PK	PASS
469.43	54.9	33.61	-21.280	46.00	12.39	360	PK	PASS
581.62	46.1	28.48	-17.630	46.00	17.52	51	PK	PASS



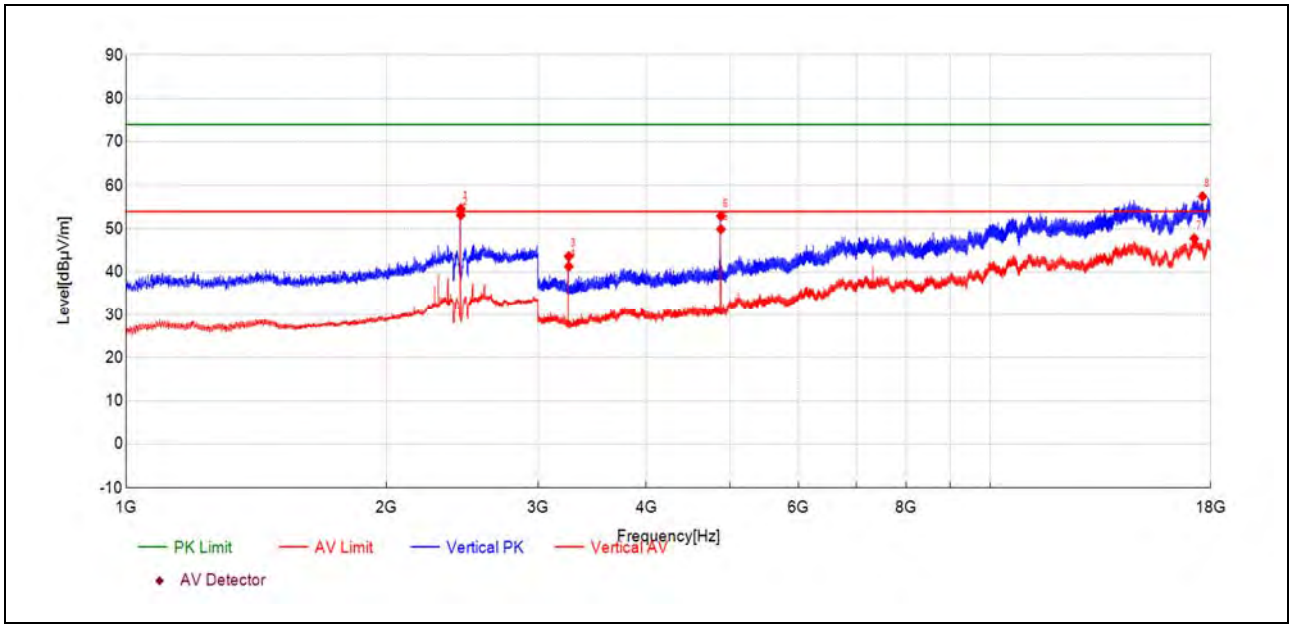
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2439.89	45.6	51.37	5.820	-	-	26	PK	NA
2440.29	43.4	49.23	5.820	-	-	32	PK	NA
3253.29	55.7	44.37	-11.310	74.00	29.63	360	PK	PASS
3253.72	52.8	41.48	-11.310	54.00	12.52	342	PK	PASS
4879.34	53.7	48.72	-4.990	74.00	25.28	262	PK	PASS
4880.20	50.4	45.35	-5.000	54.00	8.65	248	PK	PASS
17209.69	37.2	56.97	19.820	74.00	17.03	355	PK	PASS
17909.57	28.3	47.69	19.380	54.00	6.31	208	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

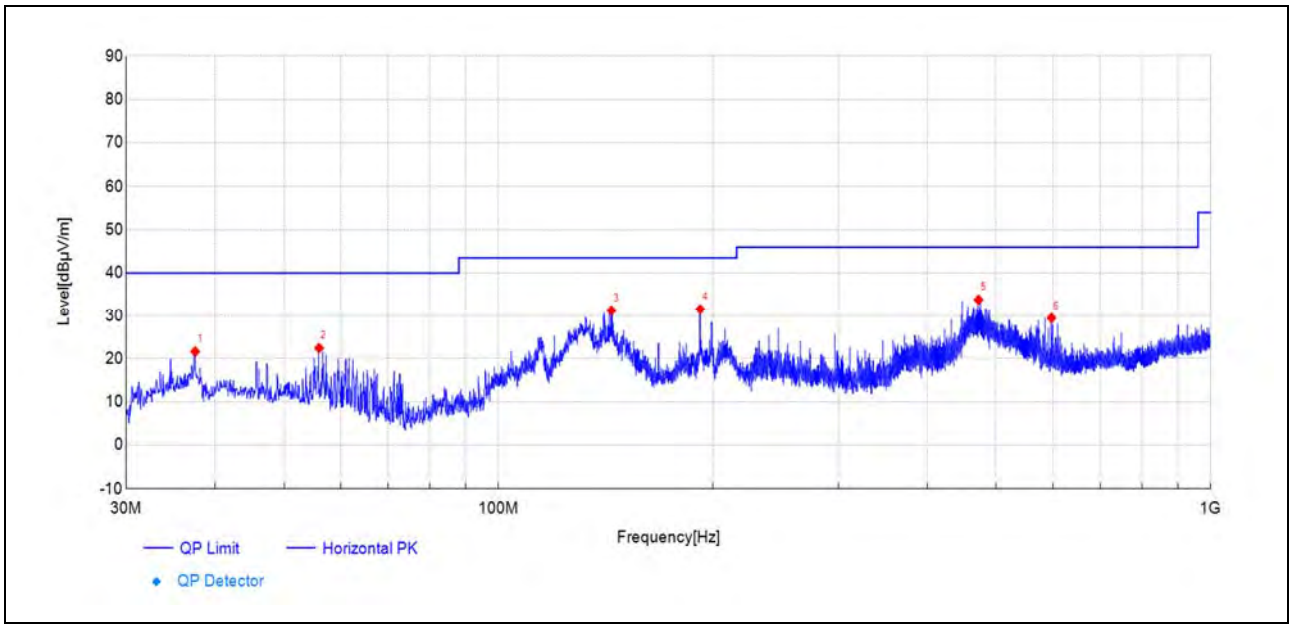
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
35.87	66.6	36.93	-29.650	40.00	3.07	88	PK	PASS
43.10	58.8	30.82	-28.010	40.00	9.18	101	PK	PASS
144.03	58.8	27.54	-31.270	43.50	15.96	75	PK	PASS
254.66	53.7	26.43	-27.220	46.00	19.57	61	PK	PASS
474.48	55.9	34.86	-21.010	46.00	11.14	48	PK	PASS
600.19	45.9	29.02	-16.850	46.00	16.98	13	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

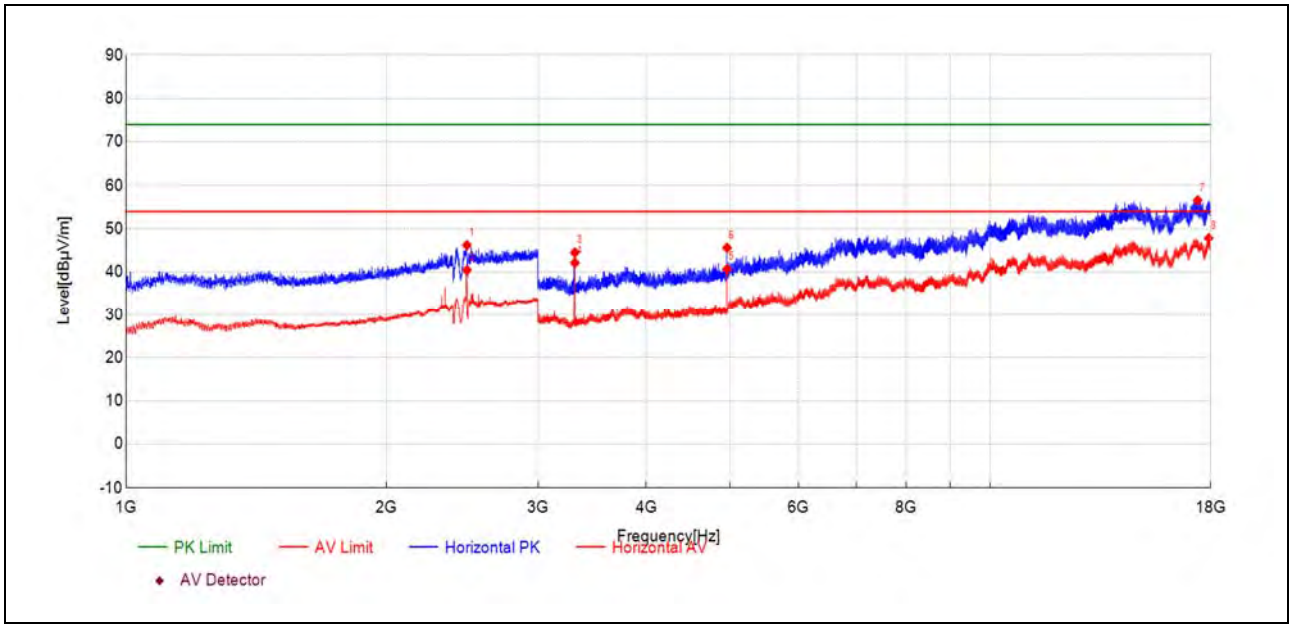
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2439.89	48.8	54.66	5.820	-	-	345	PK	NA
2440.29	47.4	53.19	5.820	-	-	345	AV	NA
3253.72	55.0	43.66	-11.310	74.00	30.34	116	PK	PASS
3253.72	52.6	41.32	-11.310	54.00	12.68	128	AV	PASS
4880.20	54.9	49.92	-5.000	54.00	4.08	63	AV	PASS
4880.63	58.0	52.97	-5.010	74.00	21.03	63	PK	PASS
17222.98	28.1	47.79	19.690	54.00	6.21	76	AV	PASS
17610.42	36.8	57.51	20.680	74.00	16.49	116	PK	PASS

Plot for Channel 39



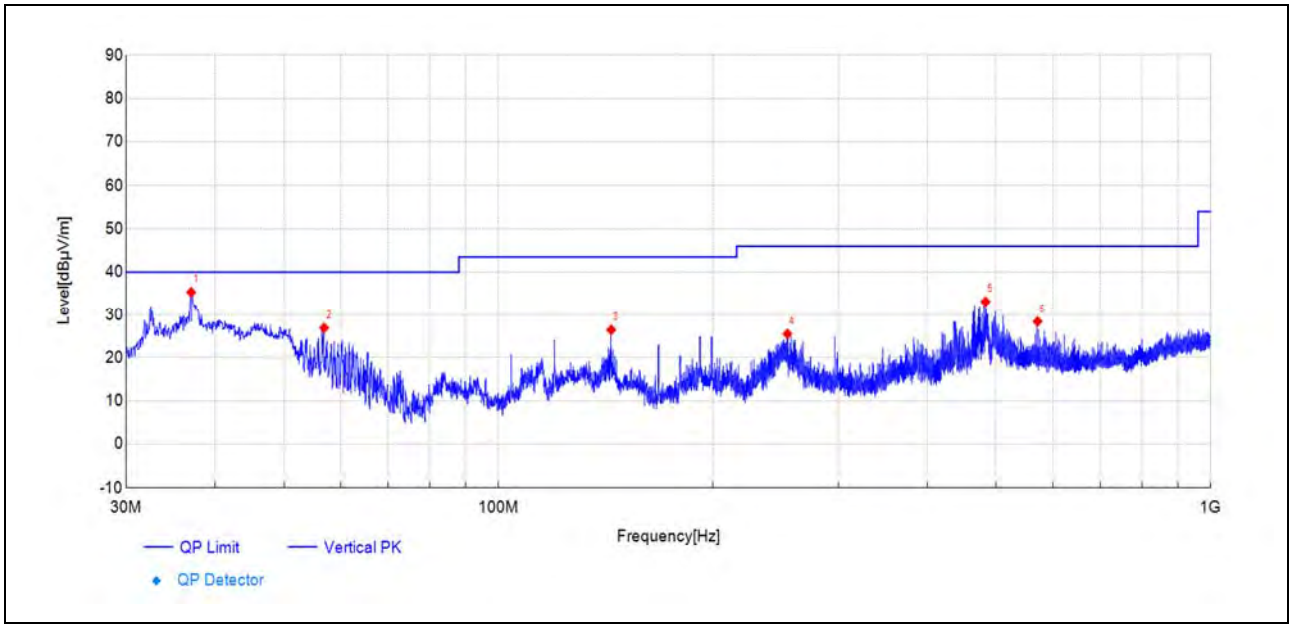
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Verdict
37.52	51.1	21.64	-29.420	40.00	18.36	237	PK	PASS
56.00	50.5	22.44	-28.050	40.00	17.56	51	PK	PASS
144.08	62.5	31.22	-31.280	43.50	12.28	44	PK	PASS
192.00	61.6	31.52	-30.090	43.50	11.98	78	PK	PASS
472.00	54.9	33.79	-21.100	46.00	12.21	99	PK	PASS
597.62	46.7	29.43	-17.280	46.00	16.57	57	PK	PASS



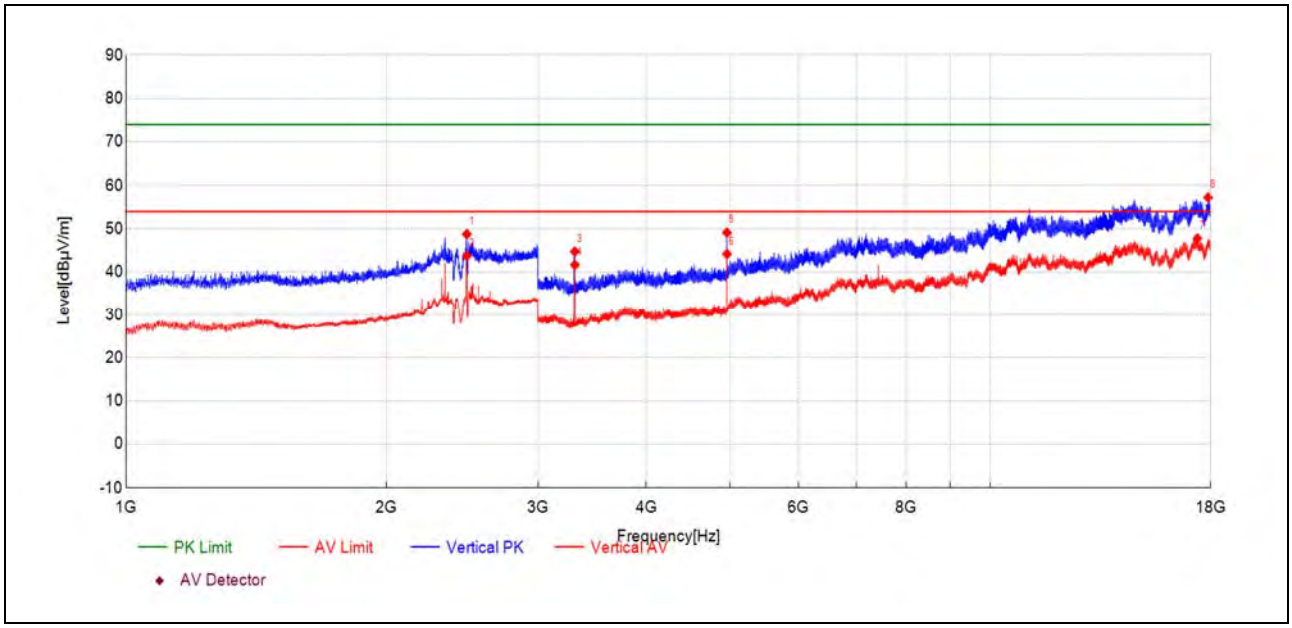
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2480.30	40.4	46.24	5.890	-	-	351	PK	NA
2480.30	34.6	40.45	5.890	-	-	25	AV	NA
3306.44	55.5	44.52	-11.000	74.00	29.48	356	PK	PASS
3306.87	53.2	42.15	-11.000	54.00	11.85	345	AV	PASS
4960.34	45.3	40.69	-4.610	54.00	13.31	237	AV	PASS
4960.34	50.2	45.63	-4.610	74.00	28.37	250	PK	PASS
17386.27	36.6	56.61	19.990	74.00	17.39	116	PK	PASS
17904.85	28.4	47.84	19.470	54.00	6.16	278	AV	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
37.03	64.6	35.33	-29.280	40.00	4.67	33	PK	PASS
56.92	54.9	26.89	-27.960	40.00	13.11	1	PK	PASS
143.98	57.7	26.43	-31.270	43.50	17.07	88	PK	PASS
254.52	52.7	25.50	-27.230	46.00	20.50	75	PK	PASS
482.87	53.8	33.10	-20.740	46.00	12.90	81	PK	PASS
571.34	46.6	28.40	-18.240	46.00	17.60	260	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict
2479.90	42.9	48.76	5.890	-	-	334	PK	NA
2480.30	37.9	43.75	5.890	-	-	318	AV	NA
3306.44	55.8	44.76	-11.000	74.00	29.24	116	PK	PASS
3307.29	52.7	41.66	-10.990	54.00	12.34	129	AV	PASS
4959.91	53.8	49.14	-4.610	74.00	24.86	49	PK	PASS
4960.34	48.8	44.19	-4.610	54.00	9.81	49	AV	PASS
17371.70	28.0	47.79	19.800	54.00	6.21	129	AV	PASS
17877.00	37.8	57.25	19.410	74.00	16.75	223	PK	PASS

END OF REPORT