TEST REPORT

Reference No.	:	WTX23X10217249W003
FCC ID	:	2AOKB-T86P2
Applicant	:	Anker Innovations Limited
Address	:	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hong Kong
Manufacturer	:	The same as Applicant
Address	:	The same as Applicant
Product Name	:	4G LTE Cam S330
Model No.	:	T86P2
Standards	:	47 CFR Part 15 Subpart C
Date of Receipt sample	:	2023-09-04
Date of Test	:	2023-09-08 to 2023-10-12
Date of Issue	:	2023-10-13
Test Report Form No.	:	WTX_Part 15_247W
Test Result	:	**Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

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Tested by:

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Approved by:

Silin Chen

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Report version

Version No.	Date of issue	Description
Rev.00	2023-10-13	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	4G LTE Cam S330
Trade Name:	eufy SECURITY
Model No.:	T86P2
Adding Model(s):	/
Rated Voltage:	Battery 3.69V
Battery Change Limit:	4.2V
Note: The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 802.11b/g/n(HT20)
RF Output Power:	20.44dBm (Peak Conducted) 24.59dBm (Average Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Quantity of Channels:	11 for 802.11b/g/n(HT20)
Channel Separation:	5MHz
Type of Antenna:	FPC Antenna
Antenna Gain:	3.35dBi

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.
KDB558074 D01 15.247 Meas Guidance v05r02: Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating undersection 15.247 of the Fcc rules.
ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02.
The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Test Facility

Address of the test laboratory
Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.
Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990
Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is mai ntained in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A
The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A and the CAB identifier is CN0057.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11b	Low:2412MHz, Middle:2437MHz,High:2462MHz
TM2	802.11g	Low:2412MHz, Middle:2437MHz,High:2462MHz
TM3	802.11n-HT20	Low:2412MHz, Middle:2437MHz,High:2462MHz

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	45~55 %.
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Type-C Cable	0.6	Unshielded	Without Ferrite

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Adapter	TianYin	TPA-98B050100CU01	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	±0.42dB
Occupied Bandwidth	Conducted	±1.5%
Power Spectral Density	Conducted	±1.8dB
Conducted Spurious Emission	Conducted	±2.17dB
Conducted Emissions	Conducted	9-150kHz ±3.74dB
		0.15-30MHz ±3.34dB
Transmitter Spurious Emissions	Radiated	30-200MHz ±4.52dB
		0.2-1GHz ±5.56dB
		1-6GHz ±3.84dB
		6-26GHz ±3.92dB

1.7 Test Equipment List and Details

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1005A1005	Spectrum Analyzer	Agilent	N9020A	US47140102	2023-02-25	2024-02-24
WTXE1084A1001	Spectrum Analyzer	Agilent	N9020A	MY54320548	2023-02-25	2024-02-24
☐Chamber A: Below 1GHz						
WTXE1005A1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2023-02-25	2024-02-24
WTXE1007A1001	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2023-02-25	2024-02-24
WTXE1007A1001	Amplifier	HP	8447F	2805A03475	2023-02-25	2024-02-24
WTXE1010A1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2024-03-19
WTXE1010A1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2023-03-20	2026-03-19
☐Chamber A: Above 1GHz						
WTXE1005A1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2023-02-25	2024-02-24
WTXE1007A1001	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2023-02-25	2024-02-24
WTXE1065A1001	Amplifier	C&D	PAP-1G18	14918	2023-02-25	2024-02-24
WTXE1010A1005	Horn Antenna	ETS	3117	00086197	2021-03-19	2024-03-18
WTXE1010A1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2021-03-19	2024-03-18
WTXE1003A1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2023-02-25	2024-02-24
☐Chamber B:Below 1GHz						
WTXE1010A1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2024-04-08
WTXE1010A1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2024-03-19
WTXE1038A1001	Amplifier	Agilent	8447D	2944A10179	2023-02-25	2024-02-24
WTXE1001A1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2023-02-25	2024-02-24
☒Chamber C:Below 1GHz						

WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2023-02-25	2024-02-24
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2021-05-28	2024-05-27
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2024-03-19
WTXE1007A 1002	Amplifier	HP	8447F	2944A03869	2023-02-25	2024-02-24
☒Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2023-02-25	2024-02-24
WTXE1103A 1005	Horn Antenna	POAM	RTF-11A	LP228060221	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806235	2023-02-25	2024-02-24
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2021-03-19	2024-03-18
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2023-02-25	2024-02-24
☐Conducted Room 1#						
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2023-02-25	2024-02-24
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2023-02-25	2024-02-24
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-224	2023-02-25	2024-02-24
☒Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2023-02-25	2024-02-24
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2023-02-25	2024-02-24

Software List			
Description	**Manufacturer**	**Model**	**Version**
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission Room 1#)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission Room 2#)*	SKET	EMC-I	V2.0

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§15.203; §15.247(b)(4)(i)	Antenna Requirement	Compliant
/	Duty Cycle of Test Signal	Compliant
§15.205	Restricted Band of Operation	Compliant
§15.207(a)	Conducted Emission	Compliant
§15.247(e)	Power Spectral Density	Compliant
§15.247(a)(2)	DTS Bandwidth	Compliant
§15.247(b)(3)	RF Output Power	Compliant
§15.209(a)	Radiated Emission	Compliant
§15.247(d)	Band Edge (Out of Band Emissions)	Compliant

N/A: Not applicable.

3. Antenna Requirement

3.1 Standard Applicable

According to FCC Part 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.

3.2 Evaluation Information

Inside of the EUT has a FPC antenna coupled with the metal shrapnel, fulfill the requirement of this section.

4. Duty Cycle of Test Signal

4.1 Requirement

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

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

4.2 Summary of Test Results/Plots

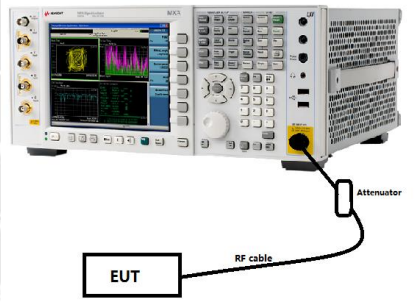
Please refer to Appendix A

5. Power Spectral Density

5.1 Standard Applicable

According to 15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

5.2 Test Setup Block Diagram



5.3 Test Procedure

According to the KDB 558074 D01 v05r02 Subclause 8.4 and ANSI C63.10-2013 Subclause 11.10.3, such specifications require that the same method as used to determine the conducted output power shall also be used to determine the power spectral density. The test method of power spectral density as below:

a) Set instrument center frequency to DTS channel center frequency.
b) Set span to at least 1.5 times the OBW.
c) Set RBW to: 3kHz ≤ RBW ≤ 100kHz. .
d) Set VBW ≥3 x RBW.
e) Detector = power averaging (RMS) or sample detector (when RMS not available).
f) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g) Sweep time = auto couple.
h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
i) Use the peak marker function to determine the maximum amplitude level.
j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

5.4 Summary of Test Results/Plots

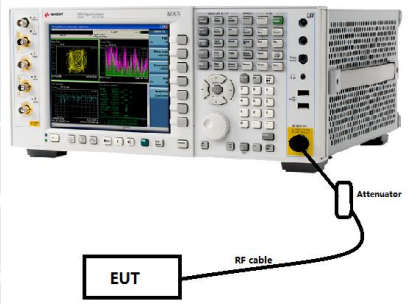
Please refer to Appendix B

6. DTS Bandwidth

6.1 Standard Applicable

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

6.2 Test Setup Block Diagram



6.3 Test Procedure

According to the KDB 558074 D01 v05r02 Subclause 8.2 and ANSI C63.10-2013 Subclause 11.8.1, the test method of DTS Bandwidth as below:

a) Set RBW = 100kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) 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 by 6 dB relative to the maximum level measured in the fundamental emission.

6.4 Summary of Test Results/Plots

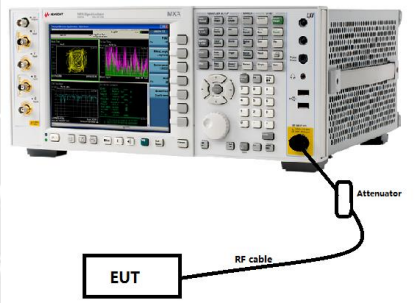
Please refer to Appendix C

7. RF Output Power

7.1 Standard Applicable

According to 15.247(b)(3), for systems using digital modulation in the 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz bands: 1 Watt.

7.2 Test Setup Block Diagram



7.3 Test Procedure

According to the KDB-558074 D01 v05r02 Sub clause 8.3.2.2 and ANSI C63.10-2013 Sub clause 11.9.2.2, when this option is exercised, the measured power is to be referenced to the OBW rather than the DTS bandwidth.

a) Set span to at least 1.5 times the OBW.
b) Set RBW = 1-5% of the OBW, not to exceed 1MHz.
c) Set VBW ≥ 3 x RBW.
d) Number of points in sweep ≥ 2 × span / RBW. (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
e) Sweep time = auto.
f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
g) If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
i) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

7.4 Summary of Test Results/Plots

Please refer to Appendix D

8. Field Strength of Spurious Emissions

8.1 Standard Applicable

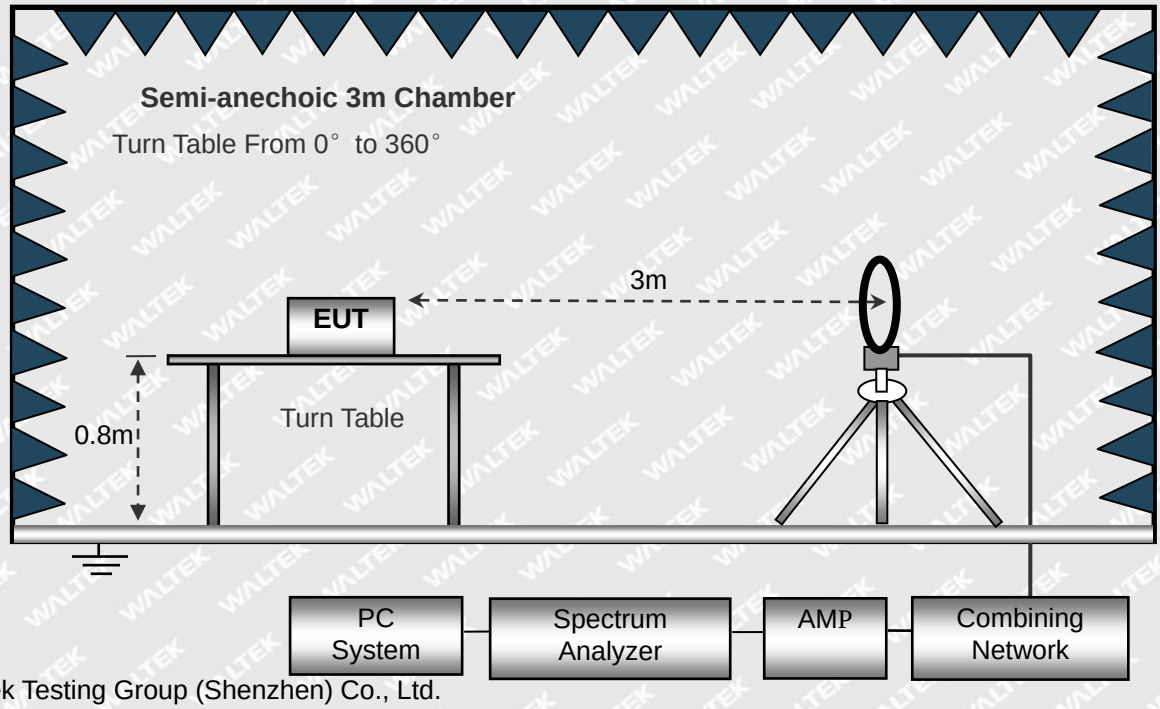
According to §15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required. 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).

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

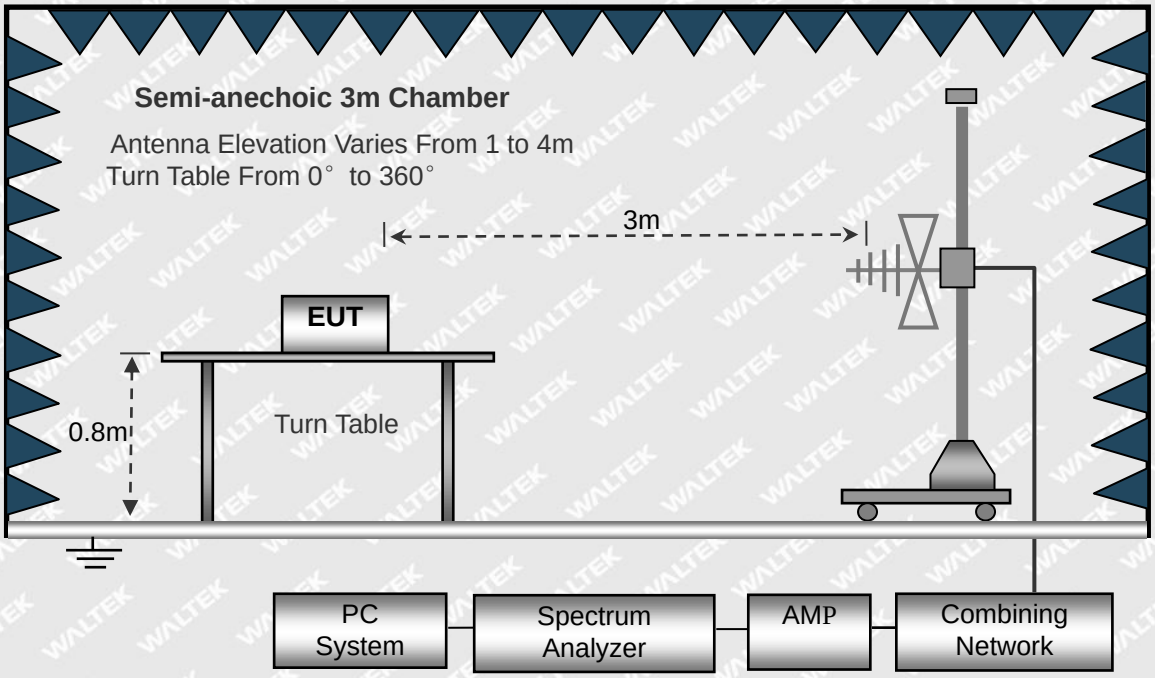
8.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle. The spacing between the peripherals was 10cm.

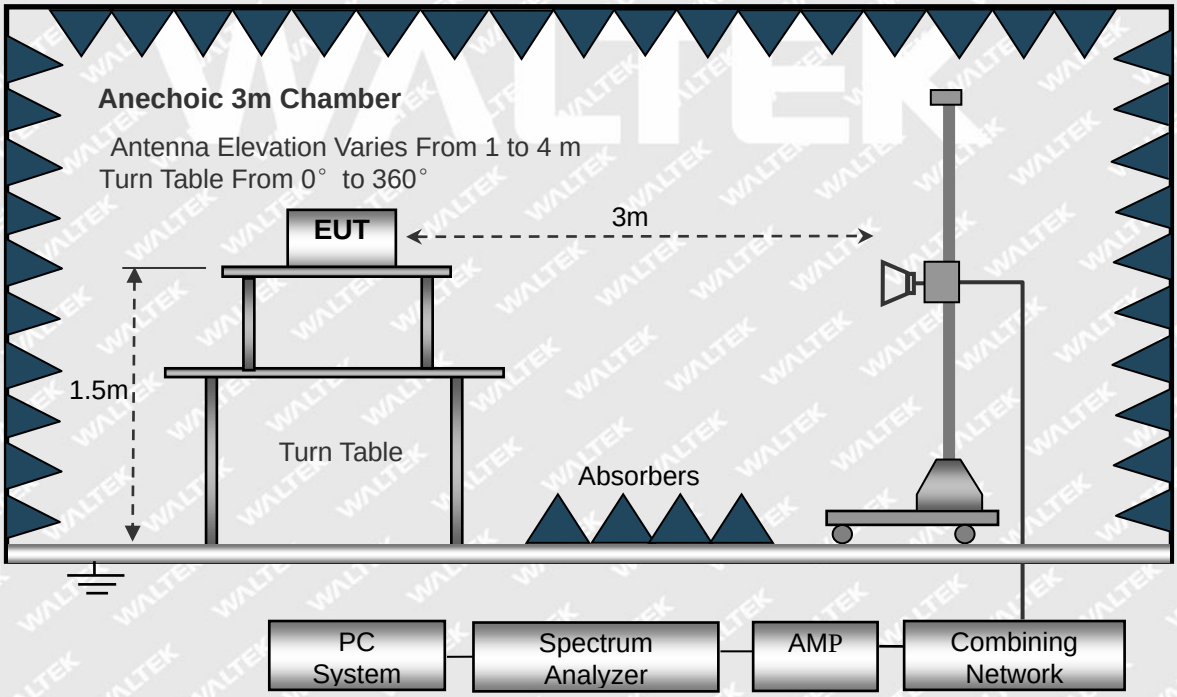
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1GHz.



Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

8.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15 Limit

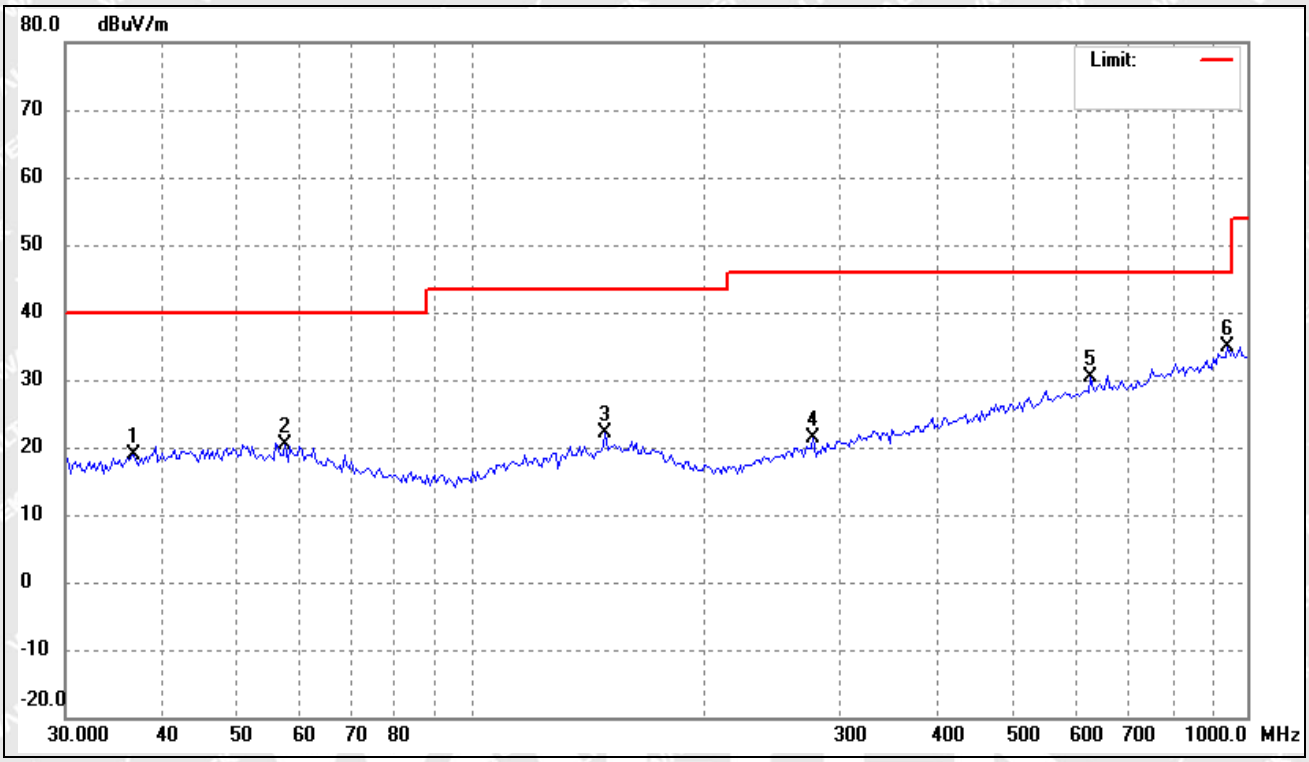
8.4 Summary of Test Results/Plots

Note: 1.This EUT was tested in 3 orthogonal positions and the worst case position data was reported.
All test modes (different data rate and different modulation) are performed, but only the worst case(802.11b_ 11Mbps) is recorded in this report.

2. The Fundamental refer to the test diagram in the restricted band section.

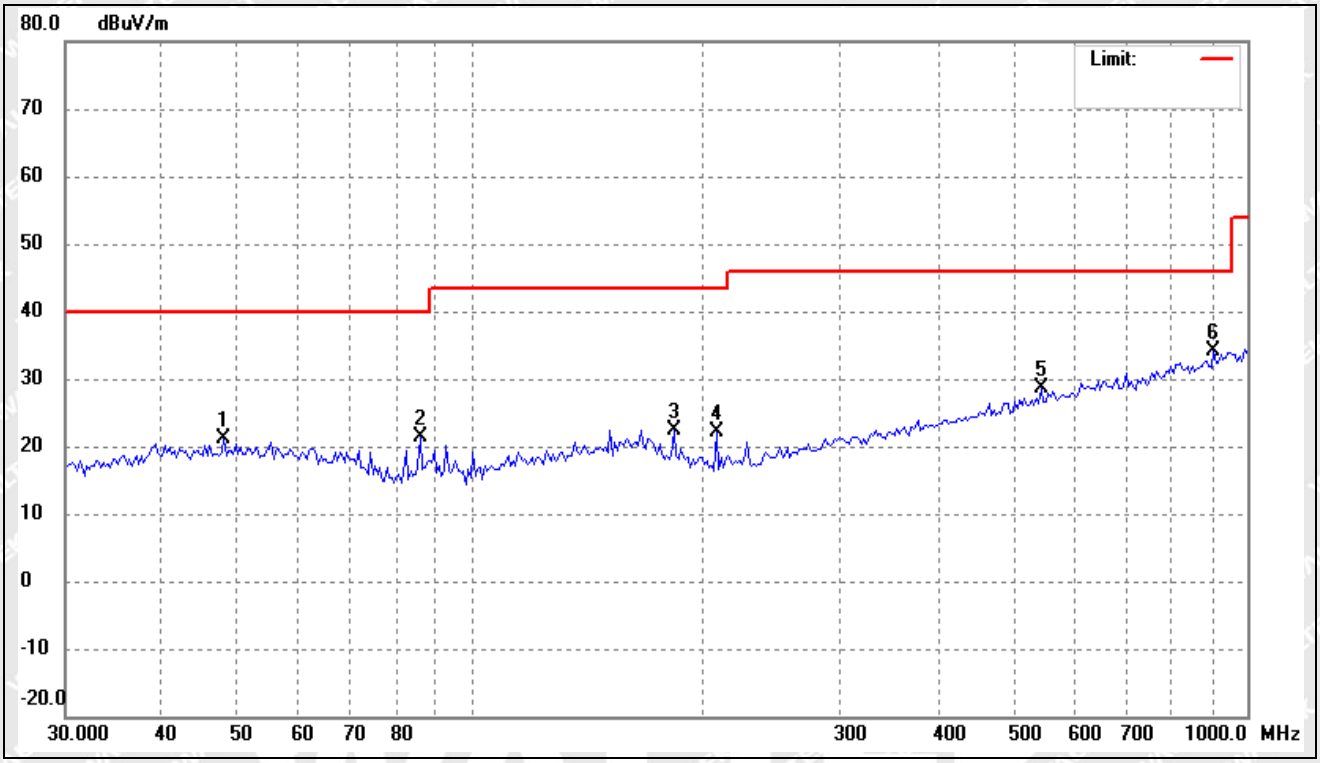
➢ Spurious Emissions Below 1GHz

802.11b			
Test Channel	Low	Polarity:	Horizontal



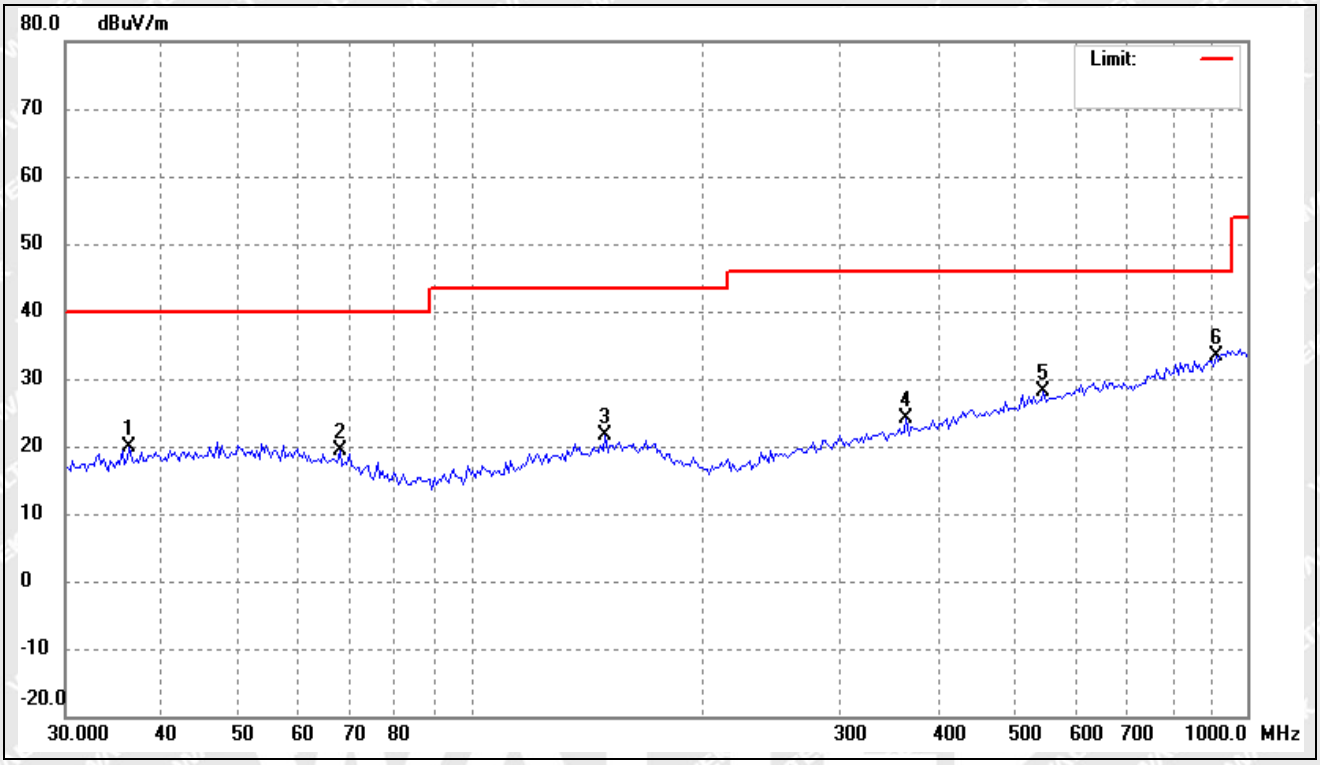
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	36.7811	28.13	-9.17	18.96	40.00	-21.04	-	-	peak
2	57.6693	29.29	-8.79	20.50	40.00	-19.50	-	-	peak
3	148.9175	30.90	-8.68	22.22	43.50	-21.28	-	-	peak
4	276.3818	30.37	-9.06	21.31	46.00	-24.69	-	-	peak
5	628.8936	31.72	-1.38	30.34	46.00	-15.66	-	-	peak
6	945.3336	32.64	2.15	34.79	46.00	-11.21	-	-	peak

802.11b			
Test Channel	Low	Polarity:	Vertical



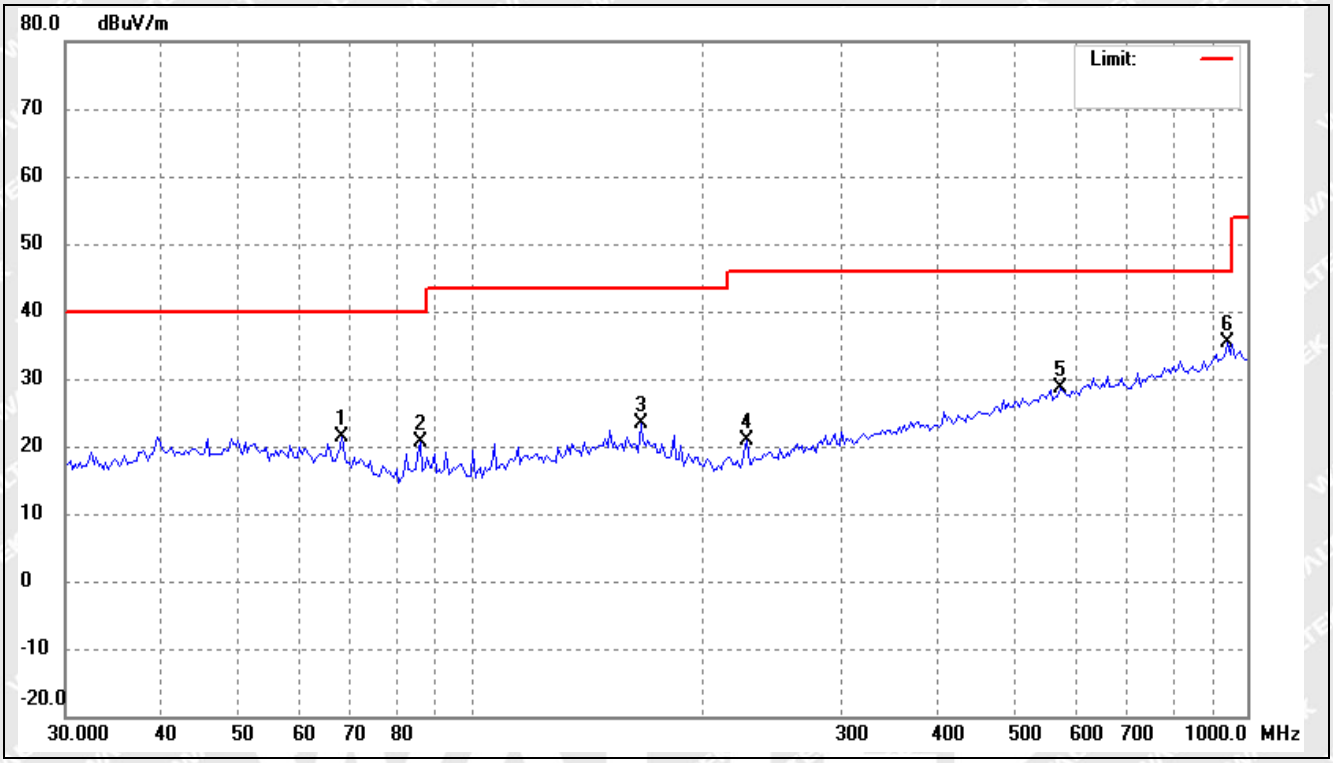
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	48.0392	29.27	-8.23	21.04	40.00	-18.96	-	-	peak
2	86.0795	34.53	-13.04	21.49	40.00	-18.51	-	-	peak
3	182.5785	32.96	-10.60	22.36	43.50	-21.14	-	-	peak
4	207.1968	34.14	-12.13	22.01	43.50	-21.49	-	-	peak
5	542.6104	31.78	-3.05	28.73	46.00	-17.27	-	-	peak
6	906.3041	32.76	1.32	34.08	46.00	-11.92	-	-	peak

802.11b			
Test Channel	Middle	Polarity:	Horizontal



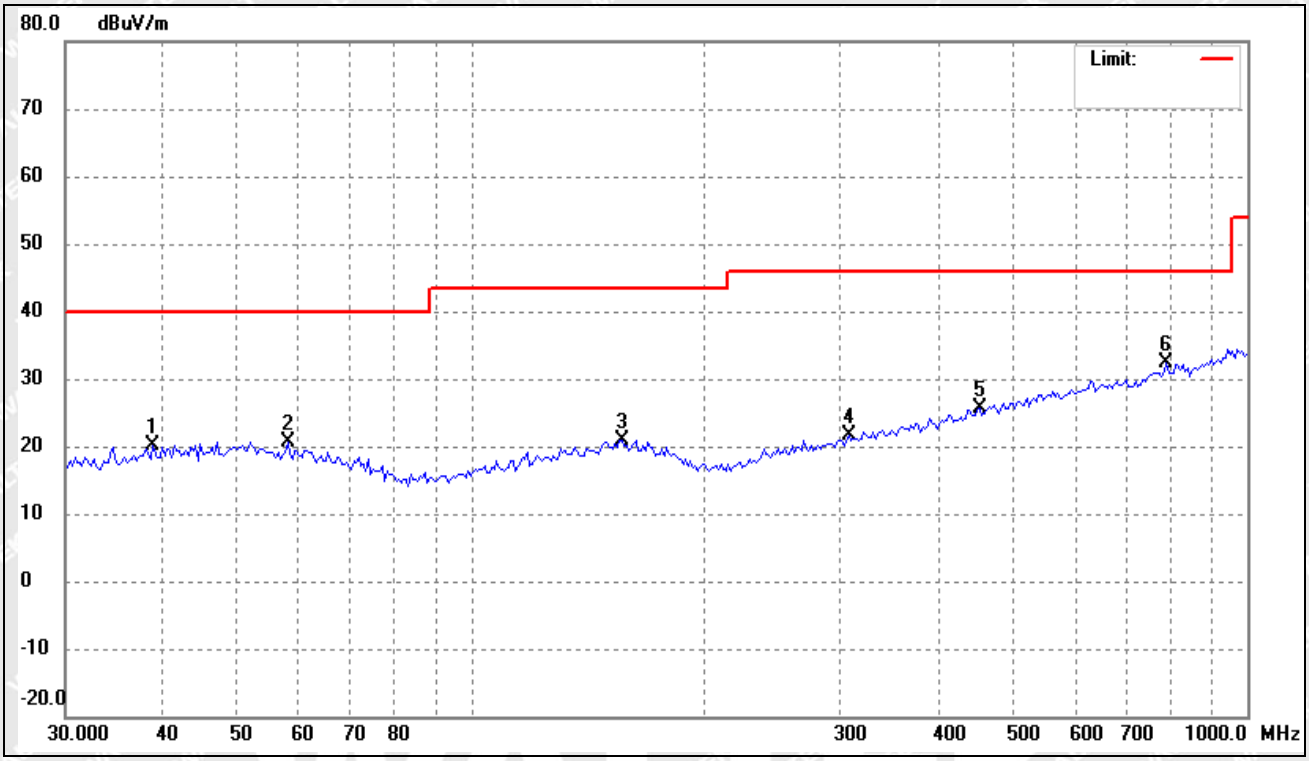
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	36.2678	29.06	-9.28	19.78	40.00	-20.22	-	-	peak
2	67.7856	29.74	-10.36	19.38	40.00	-20.62	-	-	peak
3	148.9175	30.39	-8.68	21.71	43.50	-21.79	-	-	peak
4	363.5231	31.00	-6.76	24.24	46.00	-21.76	-	-	peak
5	546.4368	31.12	-2.94	28.18	46.00	-17.82	-	-	peak
6	912.6953	32.01	1.46	33.47	46.00	-12.53	-	-	peak

802.11b			
Test Channel	Middle	Polarity:	Vertical



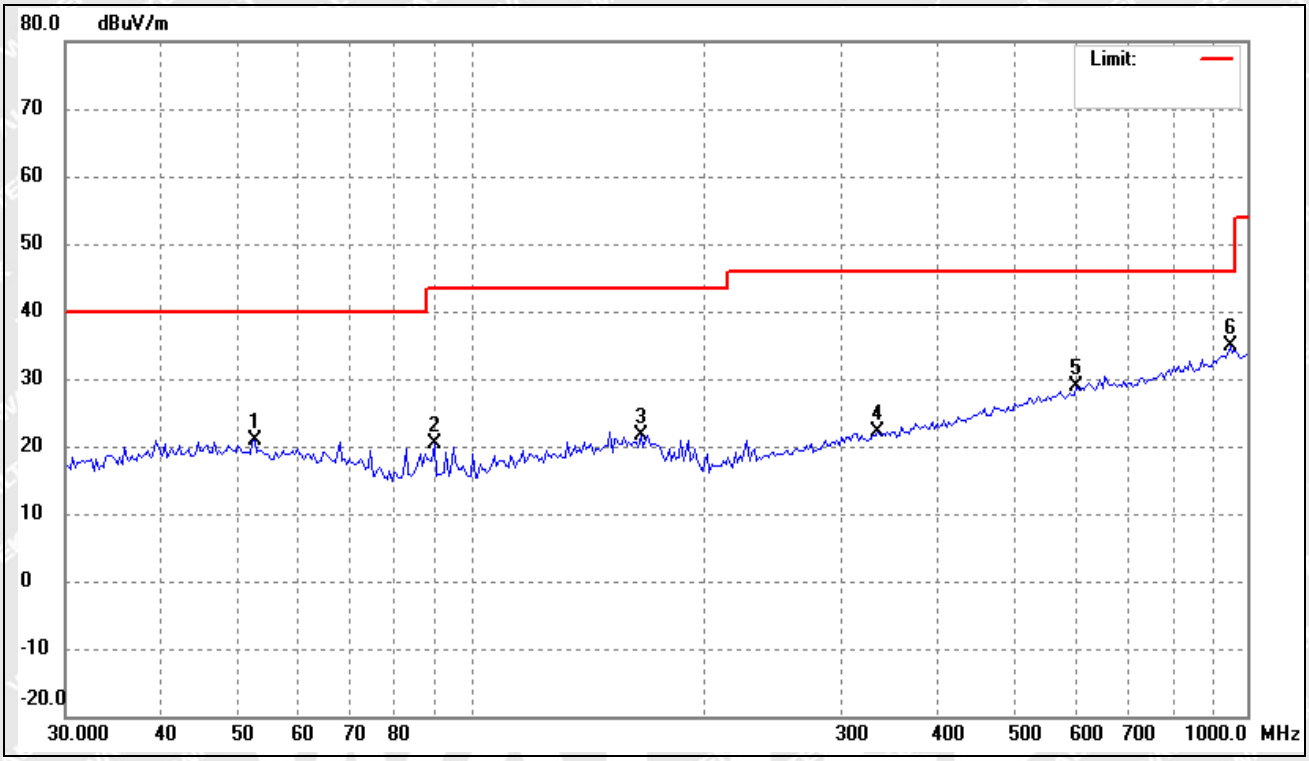
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	68.2636	31.71	-10.45	21.26	40.00	-18.74	-	-	peak
2	86.0795	33.71	-13.04	20.67	40.00	-19.33	-	-	peak
3	165.4716	32.16	-8.76	23.40	43.50	-20.10	-	-	peak
4	227.0164	32.66	-11.76	20.90	46.00	-25.10	-	-	peak
5	573.9882	30.86	-2.27	28.59	46.00	-17.41	-	-	peak
6	945.3336	33.11	2.15	35.26	46.00	-10.74	-	-	peak

802.11b			
Test Channel	High	Polarity:	Horizontal



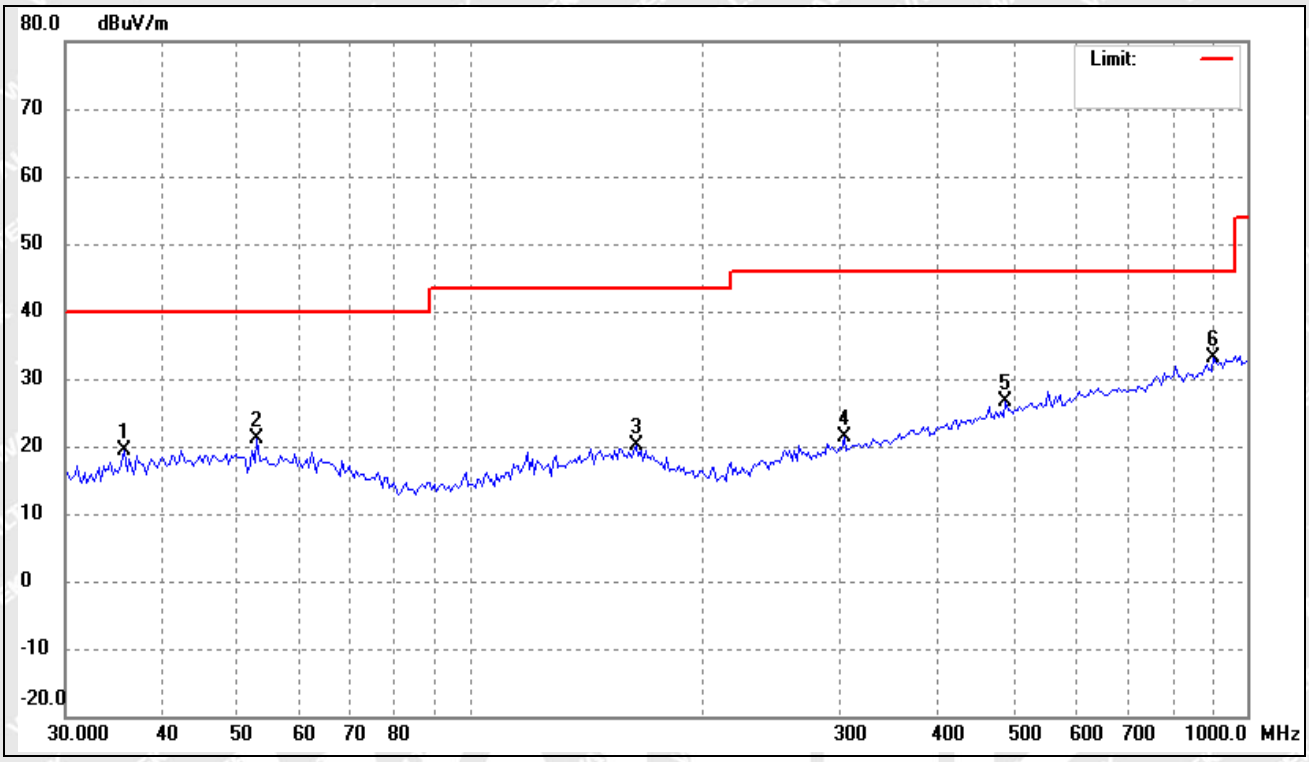
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	38.9081	28.86	-8.72	20.14	40.00	-19.86	-	-	peak
2	58.0759	29.35	-8.82	20.53	40.00	-19.47	-	-	peak
3	156.4259	29.55	-8.60	20.95	43.50	-22.55	-	-	peak
4	307.1053	29.78	-8.06	21.72	46.00	-24.28	-	-	peak
5	452.0013	30.09	-4.56	25.53	46.00	-20.47	-	-	peak
6	787.4749	32.07	0.19	32.26	46.00	-13.74	-	-	peak

802.11b			
Test Channel	High	Polarity:	Vertical



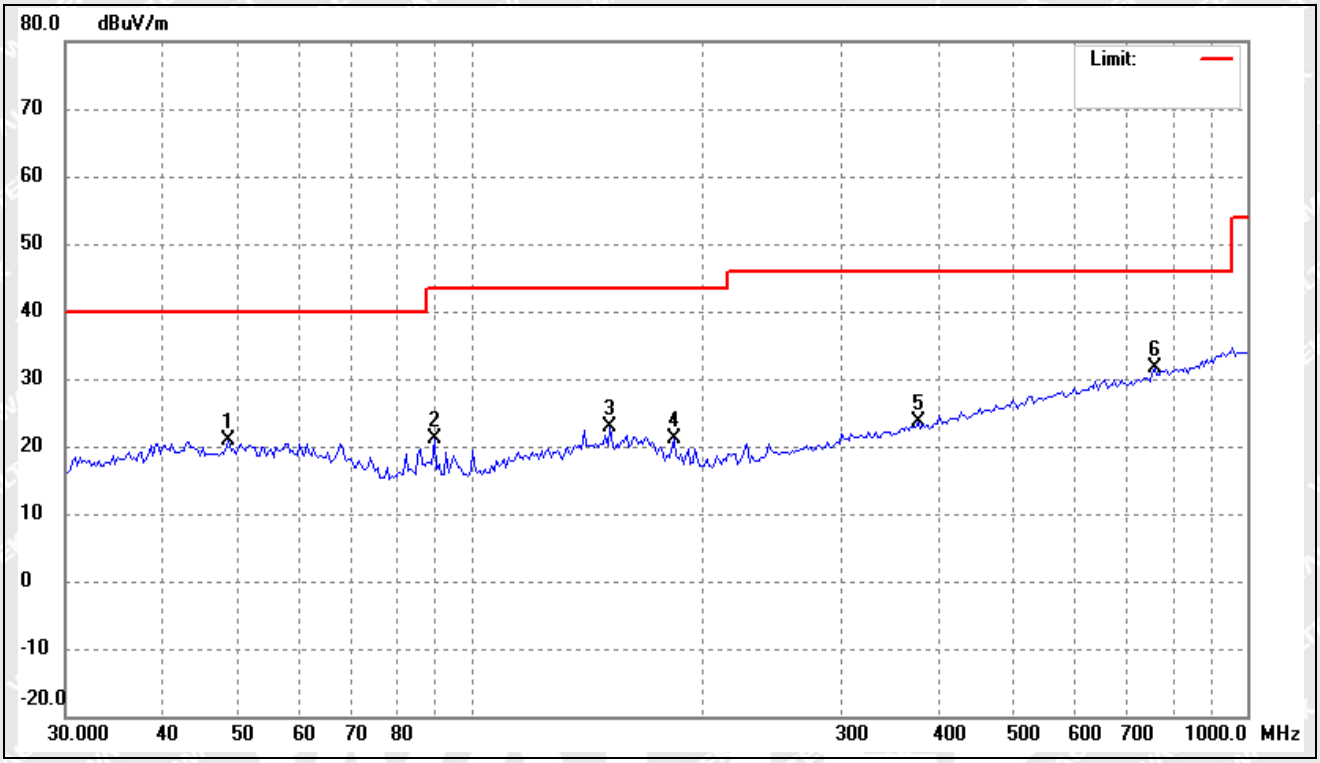
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	52.6345	29.17	-8.37	20.80	40.00	-19.20	-	-	peak
2	89.7866	33.56	-13.10	20.46	43.50	-23.04	-	-	peak
3	165.4716	30.47	-8.76	21.71	43.50	-21.79	-	-	peak
4	334.1255	29.57	-7.39	22.18	46.00	-23.82	-	-	peak
5	602.9287	30.50	-1.71	28.79	46.00	-17.21	-	-	peak
6	952.0001	32.67	2.25	34.92	46.00	-11.08	-	-	peak

802.11g			
Test Channel	Low	Polarity:	Horizontal



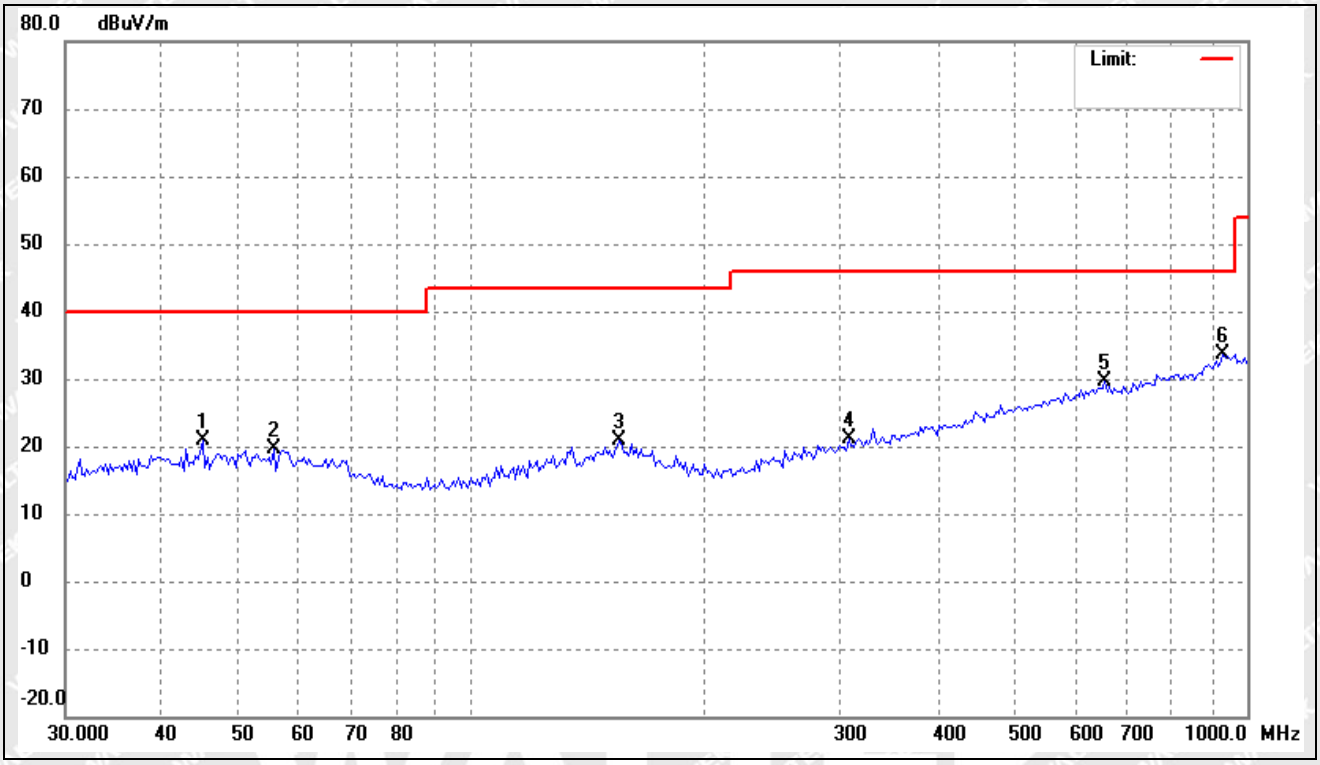
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	35.7617	28.67	-9.39	19.28	40.00	-20.72	-	-	peak
2	53.0056	29.51	-8.41	21.10	40.00	-18.90	-	-	peak
3	163.1623	28.74	-8.70	20.04	43.50	-23.46	-	-	peak
4	302.8193	29.56	-8.18	21.38	46.00	-24.62	-	-	peak
5	488.3263	30.57	-4.06	26.51	46.00	-19.49	-	-	peak
6	906.3041	31.84	1.32	33.16	46.00	-12.84	-	-	peak

802.11g			
Test Channel	Low	Polarity:	Vertical



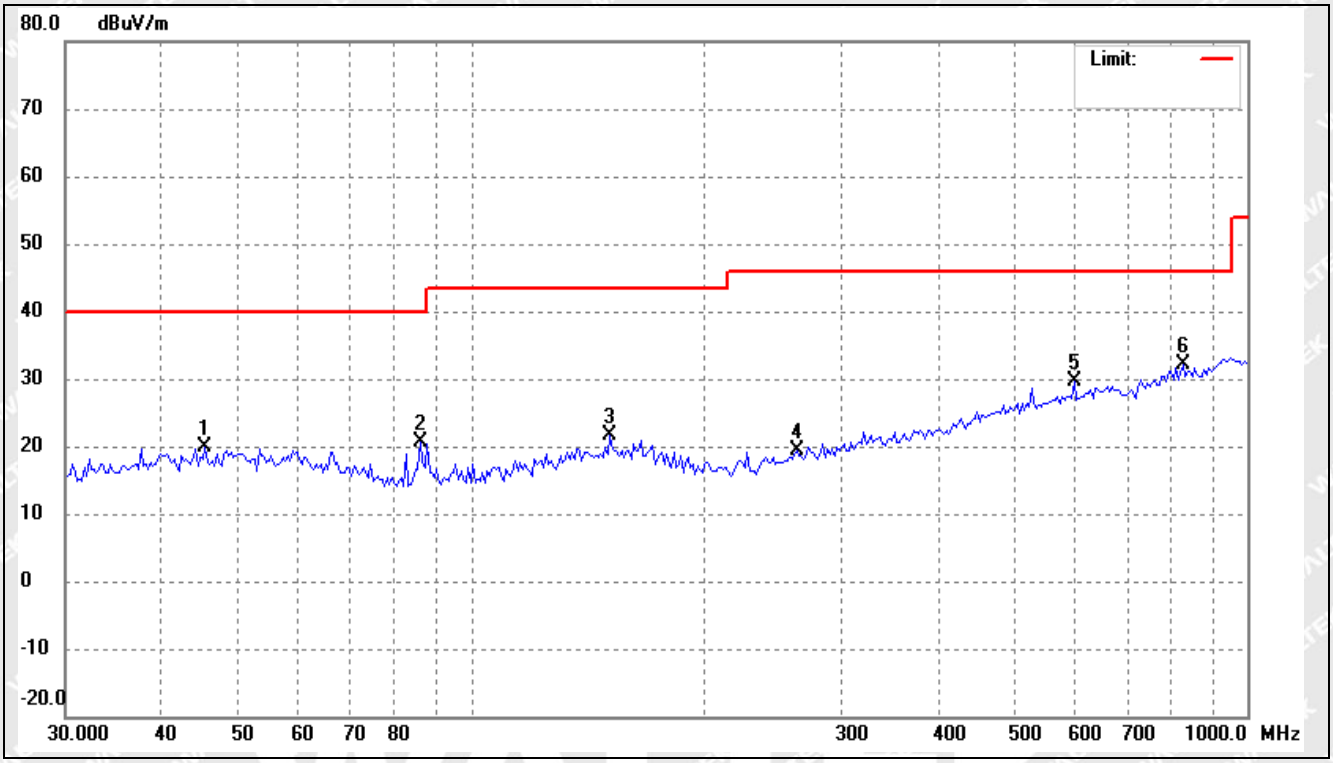
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	48.7191	29.02	-8.18	20.84	40.00	-19.16	-	-	peak
2	89.7866	34.17	-13.10	21.07	43.50	-22.43	-	-	peak
3	151.0252	31.56	-8.61	22.95	43.50	-20.55	-	-	peak
4	182.5785	31.69	-10.60	21.09	43.50	-22.41	-	-	peak
5	376.5228	30.04	-6.44	23.60	46.00	-22.40	-	-	peak
6	760.2867	31.69	-0.07	31.62	46.00	-14.38	-	-	peak

802.11g			
Test Channel	Middle	Polarity:	Horizontal



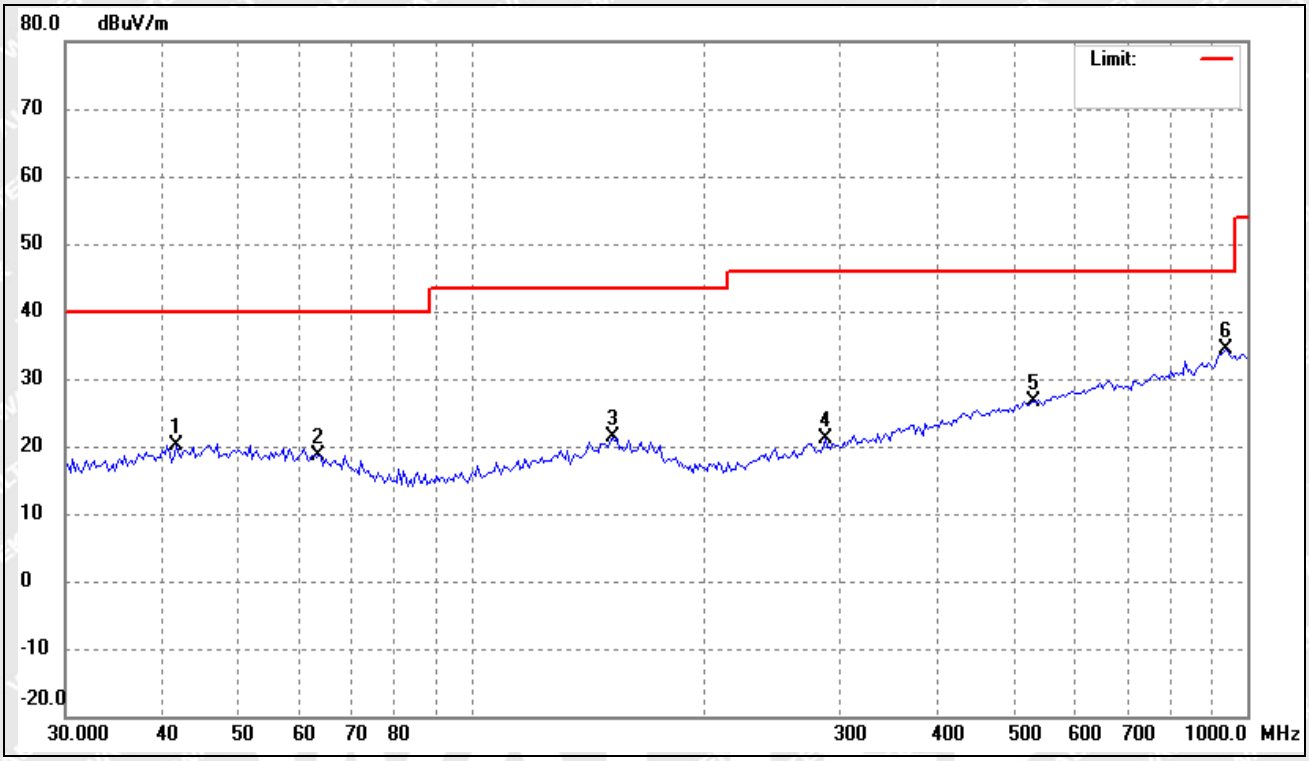
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	45.0951	29.45	-8.46	20.99	40.00	-19.01	-	-	peak
2	55.6782	28.36	-8.67	19.69	40.00	-20.31	-	-	peak
3	155.3305	29.50	-8.61	20.89	43.50	-22.61	-	-	peak
4	307.1053	29.25	-8.06	21.19	46.00	-24.81	-	-	peak
5	655.9766	31.00	-1.30	29.70	46.00	-16.30	-	-	peak
6	932.1405	31.88	1.87	33.75	46.00	-12.25	-	-	peak

802.11g			
Test Channel	Middle	Polarity:	Vertical



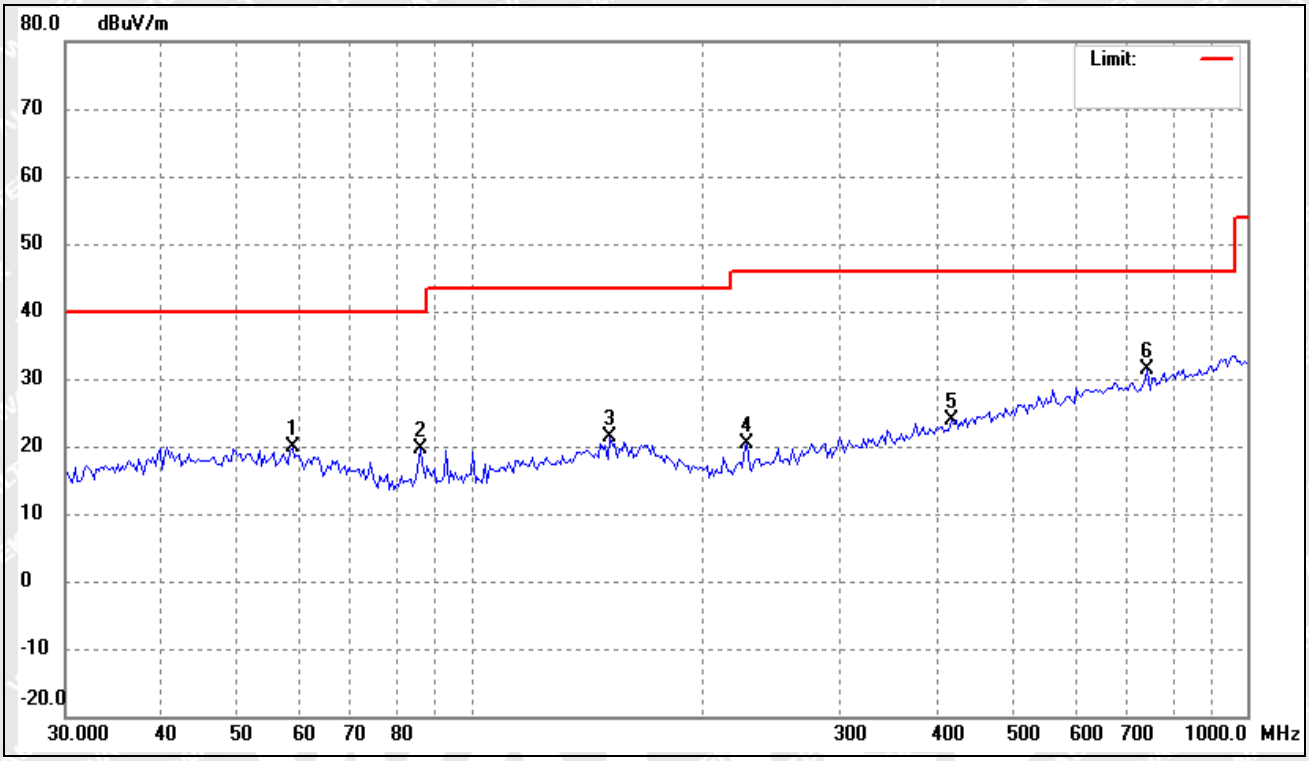
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	45.4131	28.37	-8.43	19.94	40.00	-20.06	-	-	peak
2	86.0796	33.65	-13.04	20.61	40.00	-19.39	-	-	peak
3	151.0252	30.30	-8.61	21.69	43.50	-21.81	-	-	peak
4	263.1155	28.99	-9.64	19.35	46.00	-26.65	-	-	peak
5	598.7067	31.51	-1.77	29.74	46.00	-16.26	-	-	peak
6	827.1795	31.62	0.54	32.16	46.00	-13.84	-	-	peak

802.11g			
Test Channel	High	Polarity:	Horizontal



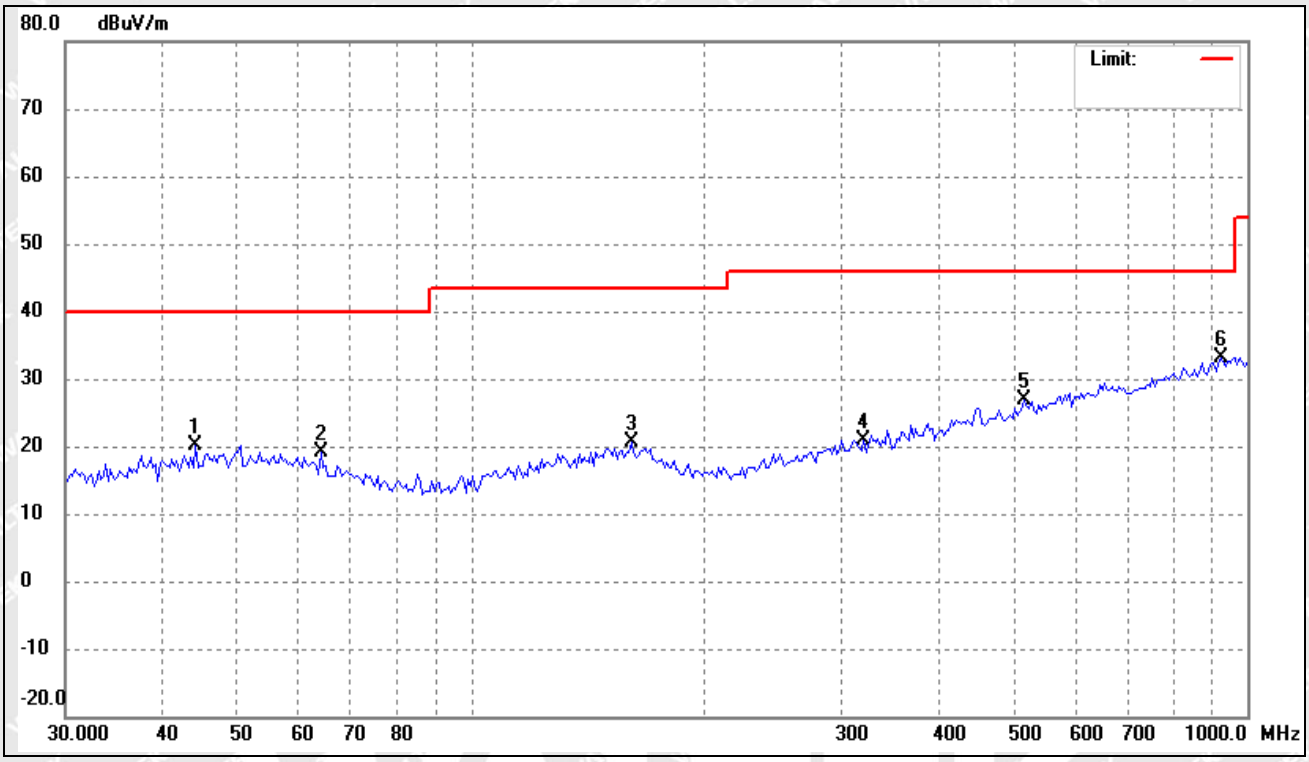
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	41.7406	28.69	-8.47	20.22	40.00	-19.78	-	-	peak
2	63.6312	28.29	-9.59	18.70	40.00	-21.30	-	-	peak
3	152.0902	29.92	-8.60	21.32	43.50	-22.18	-	-	peak
4	286.2653	29.77	-8.72	21.05	46.00	-24.95	-	-	peak
5	531.2910	29.95	-3.35	26.60	46.00	-19.40	-	-	peak
6	938.7139	32.46	2.01	34.47	46.00	-11.53	-	-	peak

802.11g			
Test Channel	High	Polarity:	Vertical



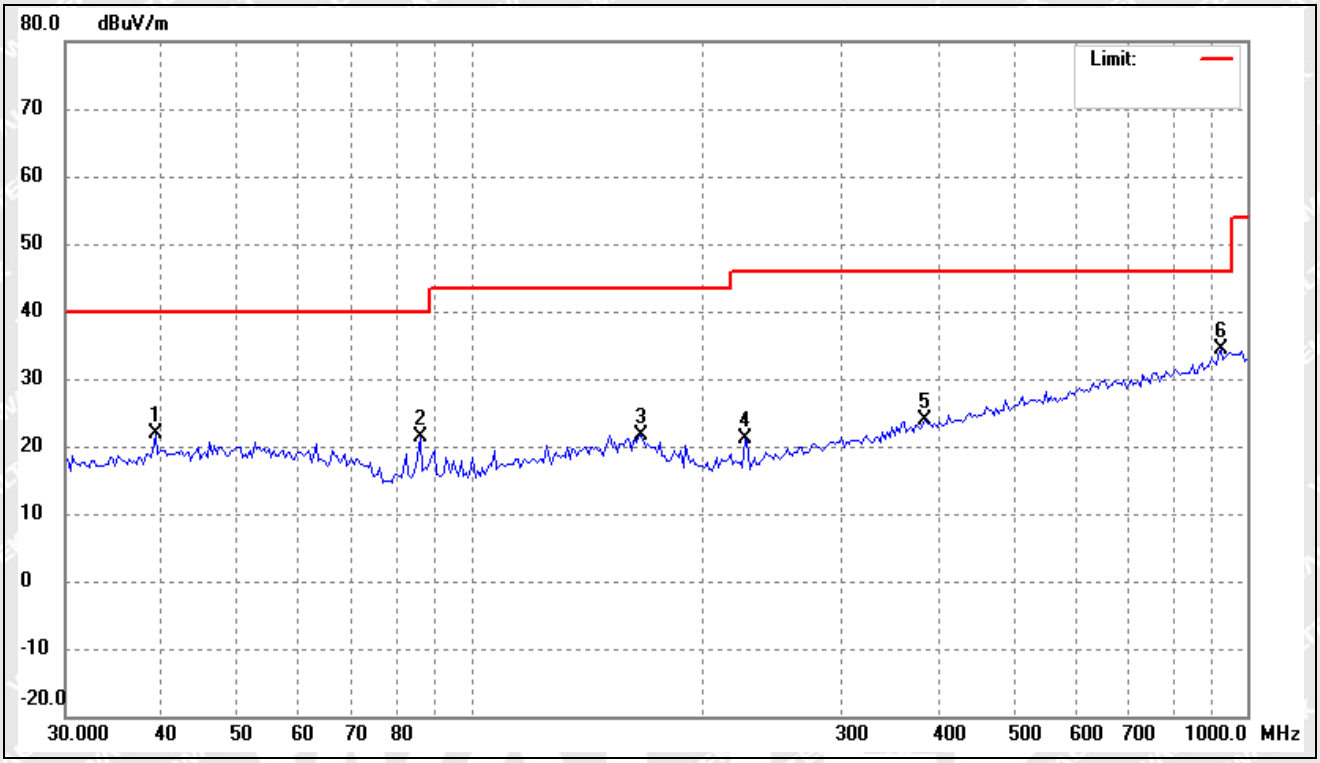
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	58.8979	28.65	-8.87	19.78	40.00	-20.22	-	-	peak
2	86.0796	32.75	-13.04	19.71	40.00	-20.29	-	-	peak
3	151.0252	30.03	-8.61	21.42	43.50	-22.08	-	-	peak
4	227.0164	32.04	-11.76	20.28	46.00	-25.72	-	-	peak
5	415.4486	29.52	-5.54	23.98	46.00	-22.02	-	-	peak
6	744.4265	31.72	-0.27	31.45	46.00	-14.55	-	-	peak

802.11n_HT20			
Test Channel	Low	Polarity:	Horizontal



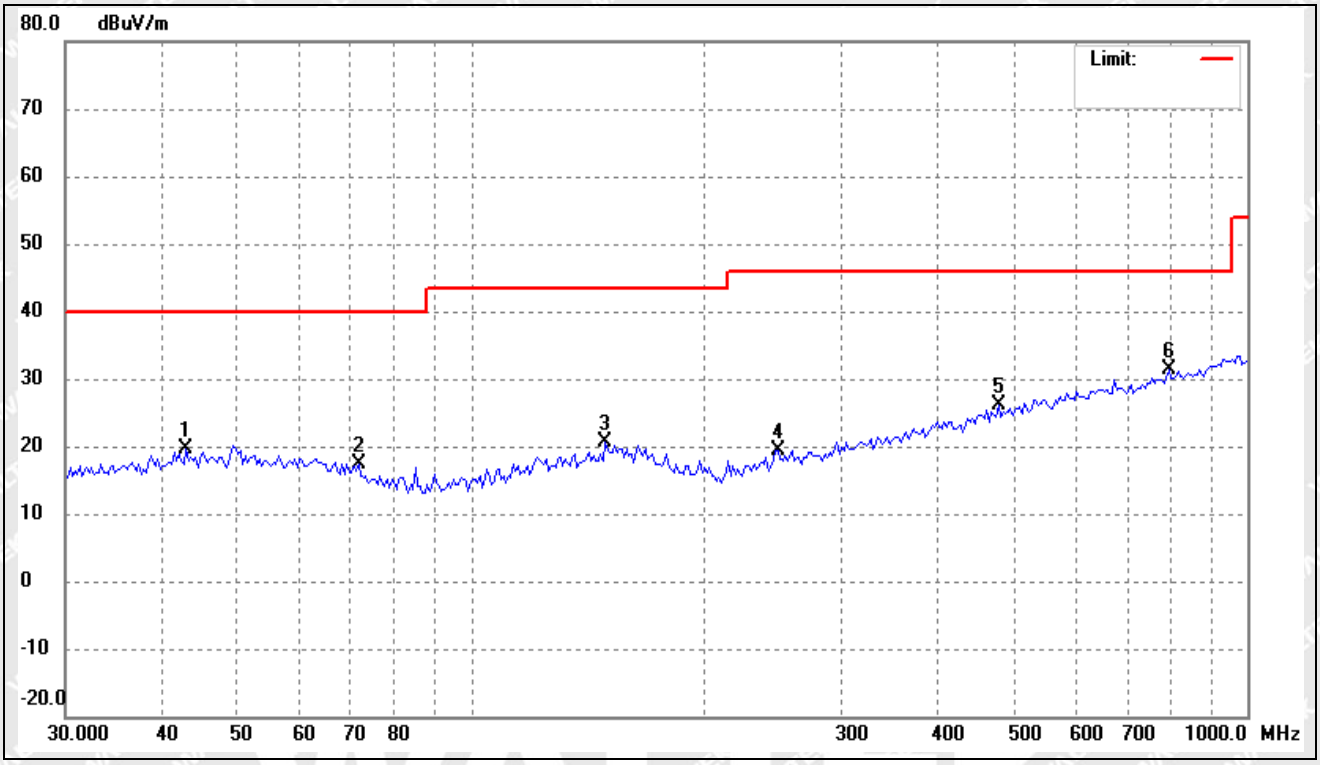
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	44.1544	28.63	-8.47	20.16	40.00	-19.84	-	-	peak
2	64.0800	28.78	-9.68	19.10	40.00	-20.90	-	-	peak
3	160.8852	29.38	-8.64	20.74	43.50	-22.76	-	-	peak
4	320.3306	28.66	-7.68	20.98	46.00	-25.02	-	-	peak
5	516.5651	30.55	-3.65	26.90	46.00	-19.10	-	-	peak
6	925.6132	31.27	1.74	33.01	46.00	-12.99	-	-	peak

802.11n_HT20			
Test Channel	Low	Polarity:	Vertical



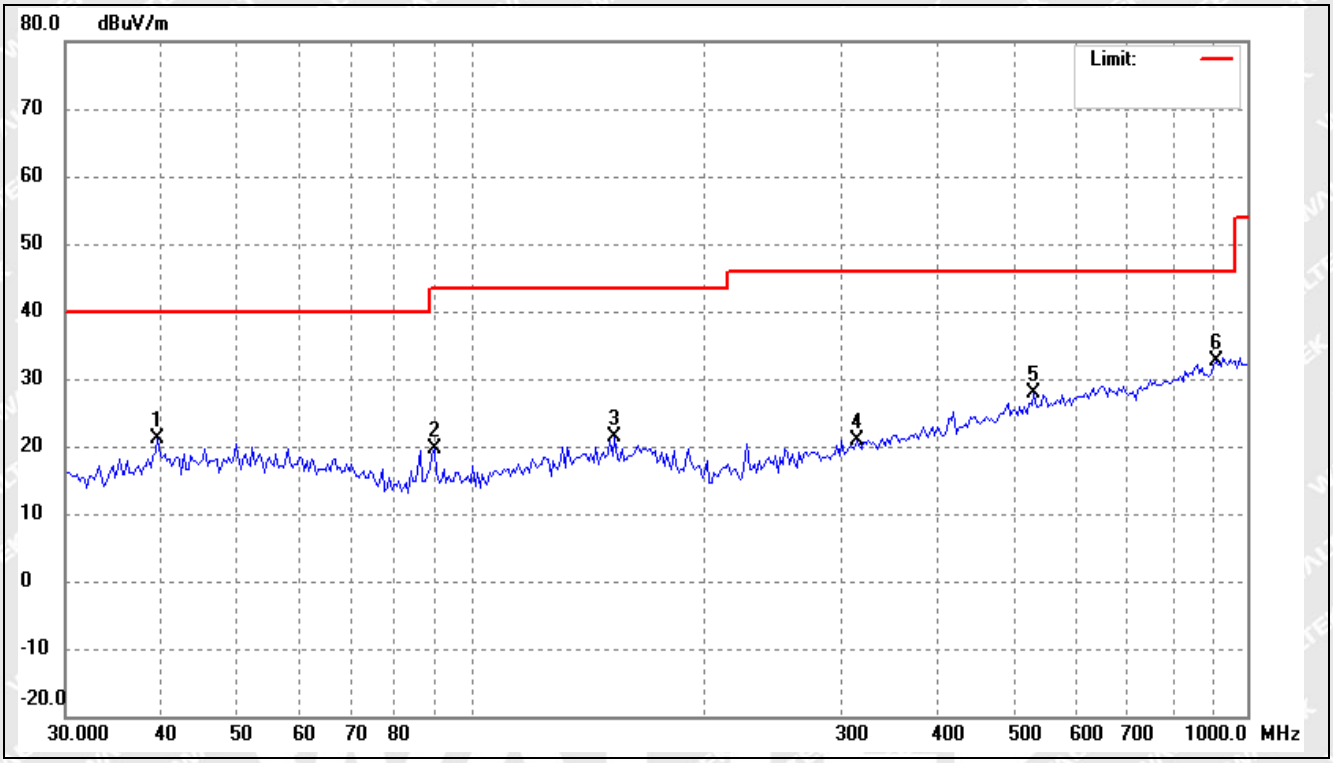
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	39.1825	30.50	-8.65	21.85	40.00	-18.15	-	-	peak
2	86.0795	34.49	-13.04	21.45	40.00	-18.55	-	-	peak
3	165.4716	30.47	-8.76	21.71	43.50	-21.79	-	-	peak
4	225.4267	32.86	-11.83	21.03	46.00	-24.97	-	-	peak
5	384.5447	30.20	-6.28	23.92	46.00	-22.08	-	-	peak
6	925.6132	32.65	1.74	34.39	46.00	-11.61	-	-	peak

802.11n_HT20			
Test Channel	Middle	Polarity:	Horizontal



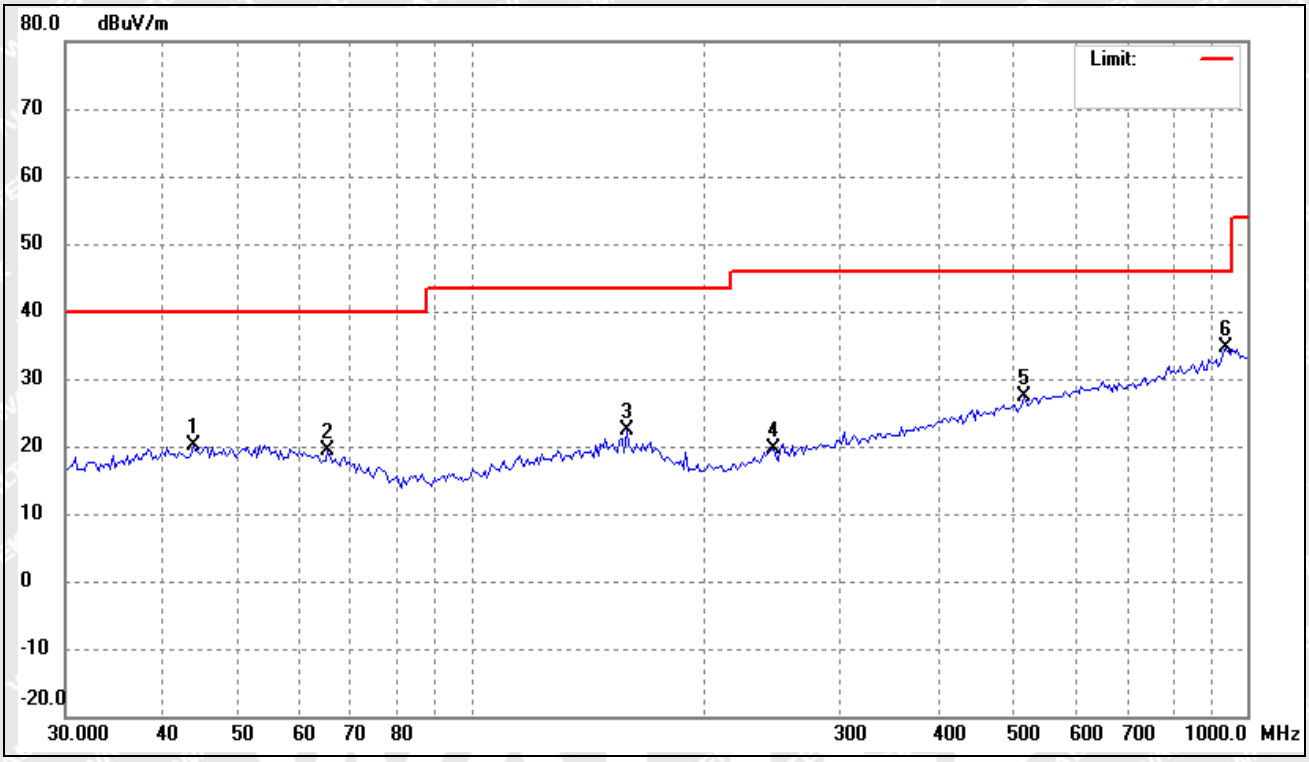
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	42.9305	28.17	-8.48	19.69	40.00	-20.31	-	-	peak
2	71.7054	28.46	-11.14	17.32	40.00	-22.68	-	-	peak
3	148.9175	29.43	-8.68	20.75	43.50	-22.75	-	-	peak
4	248.7319	29.68	-10.26	19.42	46.00	-26.58	-	-	peak
5	478.1394	30.40	-4.20	26.20	46.00	-19.80	-	-	peak
6	793.0281	31.13	0.23	31.36	46.00	-14.64	-	-	peak

802.11n_HT20			
Test Channel	Middle	Polarity:	Vertical



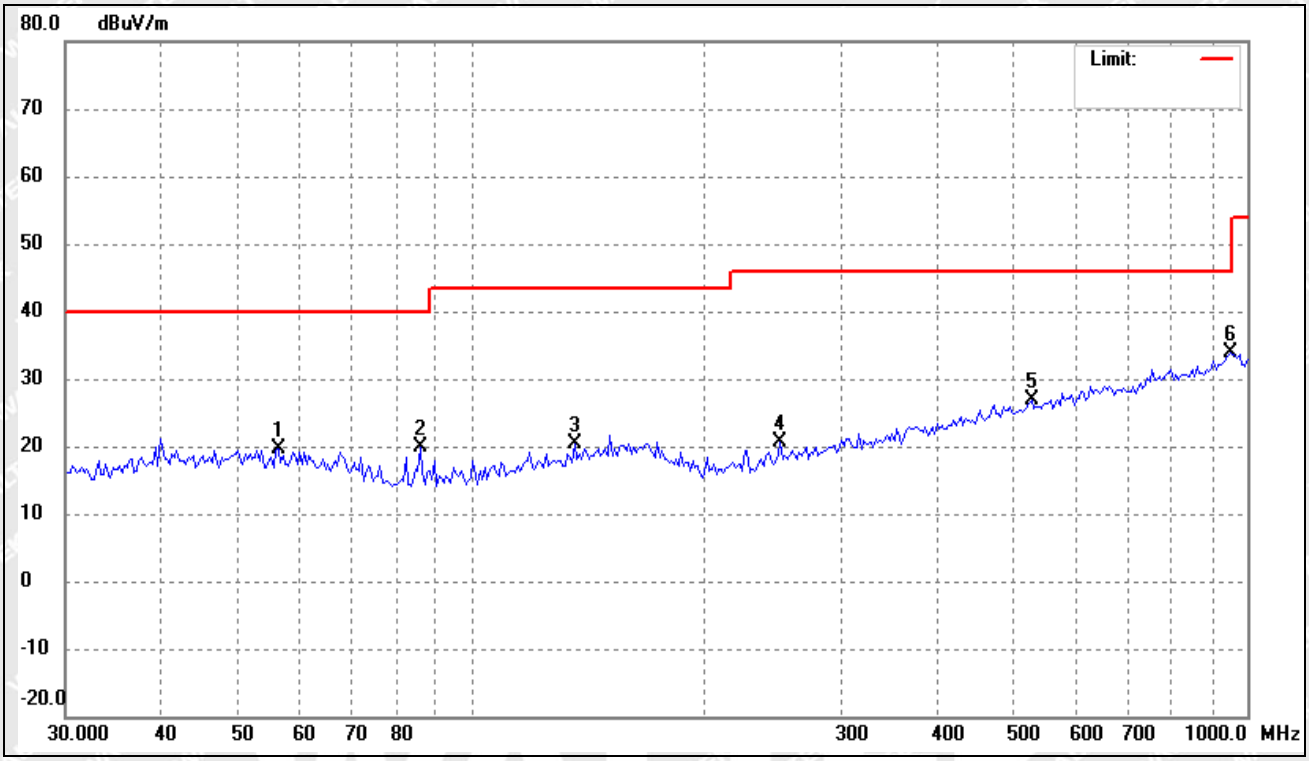
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	39.4588	29.79	-8.60	21.19	40.00	-18.81	-	-	peak
2	89.7866	32.72	-13.10	19.62	43.50	-23.88	-	-	peak
3	153.1627	29.91	-8.61	21.30	43.50	-22.20	-	-	peak
4	313.6483	28.87	-7.87	21.00	46.00	-25.00	-	-	peak
5	531.2910	31.32	-3.35	27.97	46.00	-18.03	-	-	peak
6	912.6953	31.17	1.46	32.63	46.00	-13.37	-	-	peak

802.11n_HT20			
Test Channel	High	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	43.8451	28.57	-8.48	20.09	40.00	-19.91	-	-	peak
2	65.4452	29.26	-9.93	19.33	40.00	-20.67	-	-	peak
3	158.6398	30.94	-8.61	22.33	43.50	-21.17	-	-	peak
4	245.2605	29.96	-10.36	19.60	46.00	-26.40	-	-	peak
5	516.5650	31.12	-3.65	27.47	46.00	-18.53	-	-	peak
6	938.7139	32.70	2.01	34.71	46.00	-11.29	-	-	peak

802.11n_HT20			
Test Channel	High	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(·)	(cm)	
1	56.4662	28.39	-8.72	19.67	40.00	-20.33	-	-	peak
2	86.0796	32.81	-13.04	19.77	40.00	-20.23	-	-	peak
3	135.9163	29.87	-9.61	20.26	43.50	-23.24	-	-	peak
4	250.4859	30.79	-10.18	20.61	46.00	-25.39	-	-	peak
5	527.5707	30.38	-3.45	26.93	46.00	-19.07	-	-	peak
6	952.0001	31.56	2.25	33.81	46.00	-12.19	-	-	peak

Remark: '-'Means' the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

- Spurious Emissions Above 1GHz
- *Test Mode: 802.11b*

Frequency	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz					
1314.133	46.03	74.00	27.97	H	PK
2383.467	56.11	74.00	17.89	H	PK
2383.467	41.73	54.00	12.27	H	AVG
1188.800	46.05	74.00	27.95	V	PK
2492.267	47.17	74.00	26.83	V	PK
Middle Channel-2437MHz					
1349.867	47.09	74.00	26.91	H	PK
2409.600	47.63	74.00	26.37	H	PK
1617.600	46.96	74.00	27.04	V	PK
2452.800	48.29	74.00	25.71	V	PK
High Channel-2462MHz					
1897.600	47.42	74.00	26.58	H	PK
2463.467	48.96	74.00	25.04	H	PK
1391.467	47.06	74.00	26.94	V	PK
2465.600	48.68	74.00	25.32	V	PK

- *Test Mode: 802.11g*

Frequency	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz					
1706.133	47.52	74.00	26.48	H	PK
2378.667	50.76	74.00	23.24	H	PK
1349.867	46.87	74.00	27.13	V	PK
2381.867	48.59	74.00	25.41	V	PK
Middle Channel-2437MHz					
1333.333	46.06	74.00	27.94	H	PK
2402.133	47.17	74.00	26.83	H	PK
2406.933	47.19	74.00	26.81	V	PK
2821.760	45.93	74.00	28.07	V	PK
High Channel-2462MHz					
1329.600	47.09	74.00	26.91	H	PK
2461.867	49.54	74.00	24.46	H	PK
1080.000	46.45	74.00	27.55	V	PK
2464.533	52.40	74.00	21.6	V	PK

➢ *Test Mode: 802.11n-HT20*

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2412MHz					
1314.133	46.03	74.00	27.97	H	PK
2383.467	56.11	74.00	17.89	H	PK
2383.467	41.73	54.00	12.27	H	AVG
1188.800	46.05	74.00	27.95	V	PK
2492.267	47.17	74.00	26.83	V	PK
Middle Channel-2437MHz					
1349.867	47.09	74.00	26.91	H	PK
2409.600	47.63	74.00	26.37	H	PK
1617.600	46.96	74.00	27.04	V	PK
2452.800	48.29	74.00	25.71	V	PK
High Channel-2462MHz					
1897.600	47.42	74.00	26.58	H	PK
2463.467	48.96	74.00	25.04	H	PK
1391.467	47.06	74.00	26.94	V	PK
2465.600	48.68	74.00	25.32	V	PK

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

9. Out of Band Emissions

9.1 Standard Applicable

According to §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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required. 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).

9.2 Test Procedure

According to the KDB 558074D01 v05r02 Subclause 8.4 and ANSI C63.10-2013 Subclause 11.11, the Emissions in nonrestricted frequency bands test method as follows:

a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 100kHz.
c) Set the VBW ≥ [3 × RBW].
d) Detector = peak.
e) Sweep time = auto couple.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.

According to the KDB 558074 D01 v05r02 Subclause 8.5 and ANSI C63.10-2013 Subclause 11.12, the Emissions in restricted frequency bands test method as follows:

A. Radiated emission measurements:
Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2310MHz to 2420MHz for low bandedge, 2460MHz to 2500MHz for the high bandedge)
RBW = 1MHz, VBW = 1MHz for peak value measured
RBW = 1MHz, VBW = 10Hz for average value measured
Sweep = auto; Detector function = peak/average; Trace = max hold
All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission

must comply with the 15.209 limit for fall in the restricted bands listed in section 15.205. Note that the method of measurement KDB publication number: 913591 may be used for the radiated bandedge measurements.

B. Antenna-port conducted measurements

Peak emission levels are measured by setting the instrument as follows:

a) RBW = as specified in Table 9.

b) VBW ≥ [3 × RBW].

c) Detector = peak.

d) Sweep time = auto.

e) Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be lengthened for low-duty-cycle applications.)

Table 9—RBW as a function of frequency

Frequency	RBW
9 kHz to 150 kHz	200 Hz to 300 Hz
0.15 MHz to 30 MHz	9 kHz to 10 kHz
30 MHz to 1000 MHz	100 kHz to 120 kHz
>1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in section 8.1. Report the three highest emissions relative to the limit.

9.3 Summary of Test Results/Plots

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

The measurement results are obtained as below:

E [dBμV/m] =UR + AT + AFactor [dB]; AT =LCable loss [dB]-Gpreamp [dB]

AT: Total correction Factor except Antenna

UR: Receiver Reading

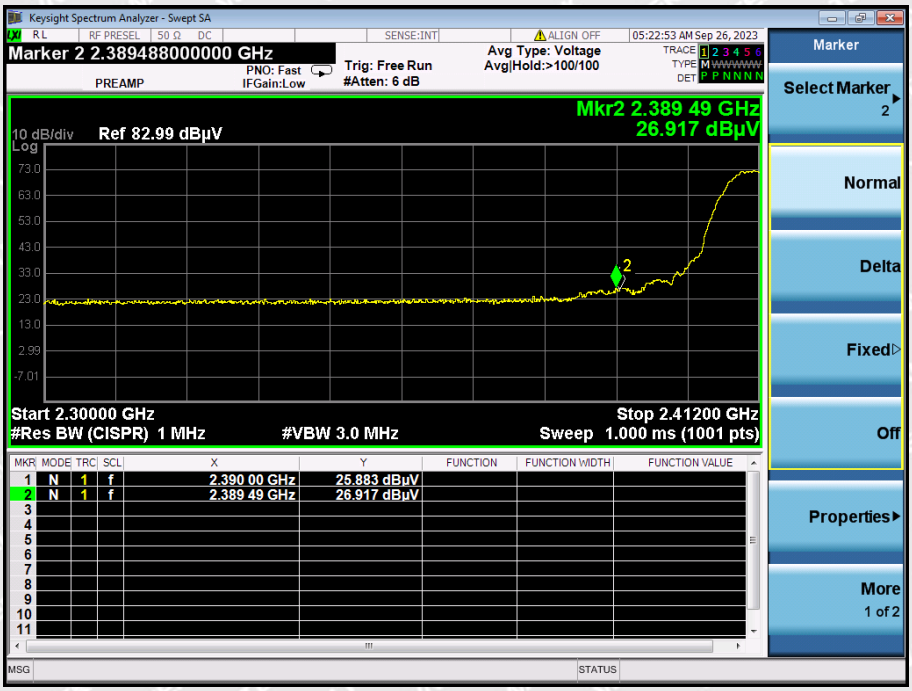
Gpreamp: Preamplifier Gain

AFactor: Antenna Factor at 3m

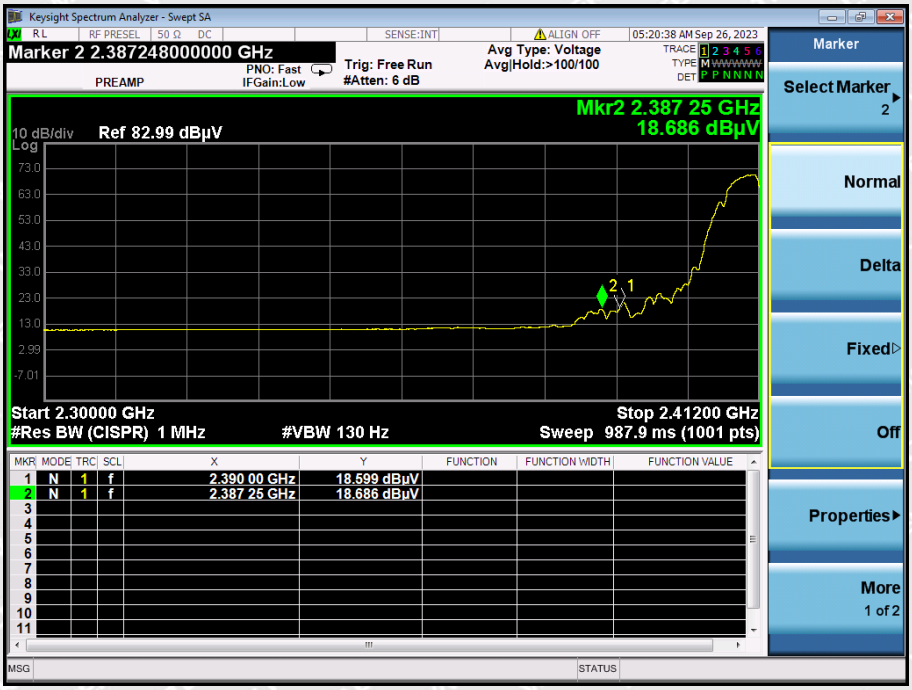
Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

- Radiated test
- *Test Mode: 802.11b*

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBμV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2389.49	PK	26.92	6.74	27.20	60.86	74	PASS
1	2387.25	AV	18.69	6.74	27.20	52.63	54	PASS
11	2483.93	PK	27.39	6.74	27.20	61.33	74	PASS
11	2487.84	AV	18.70	6.74	27.20	52.64	54	PASS

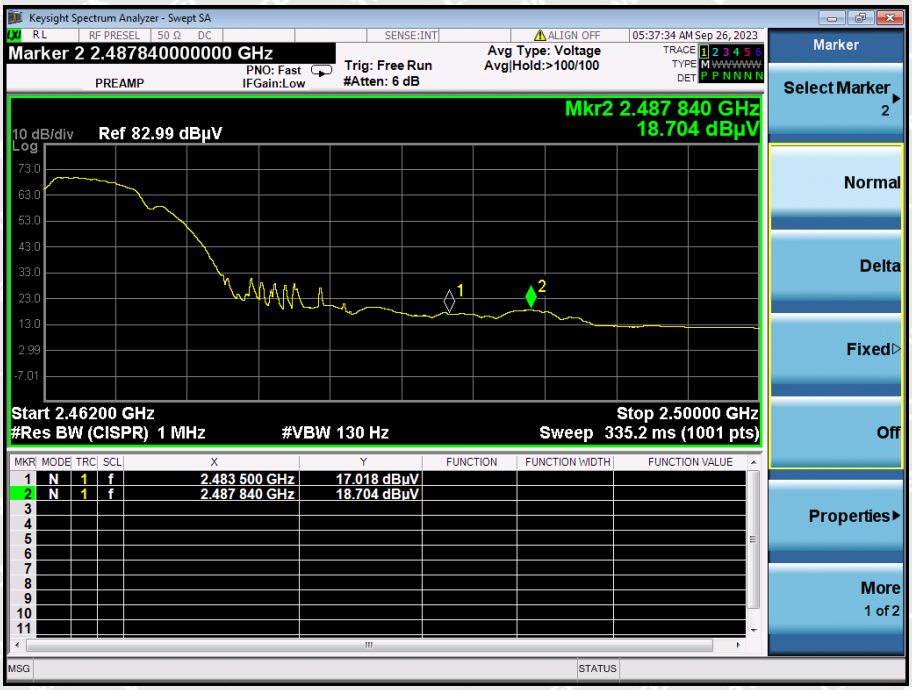


(PEAK, Channel 1, 802.11b)



(AVERAGE, Channel 1, 802.11b)

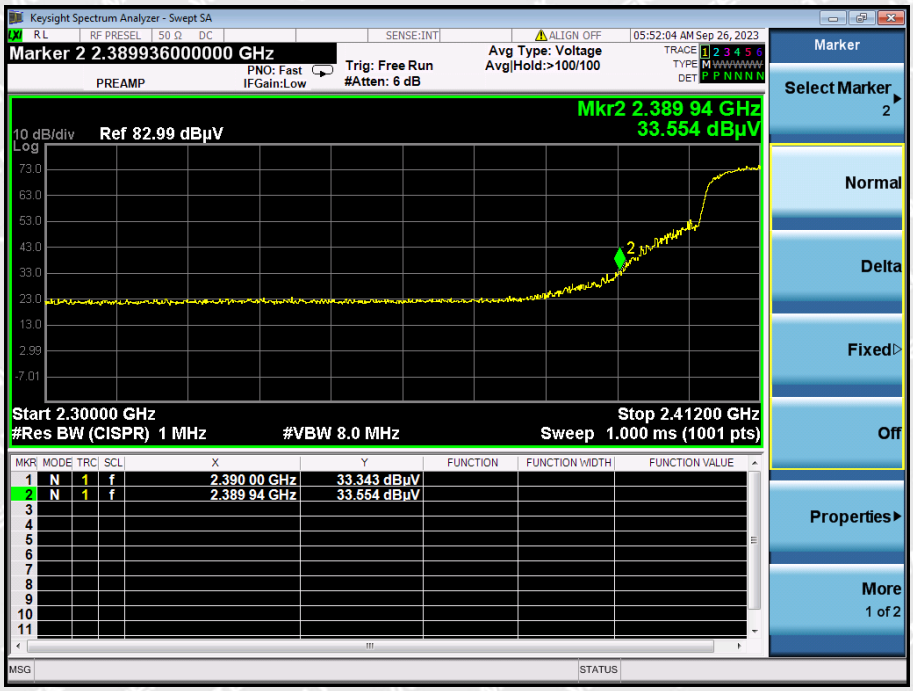
(PEAK, Channel 11, 802.11b)



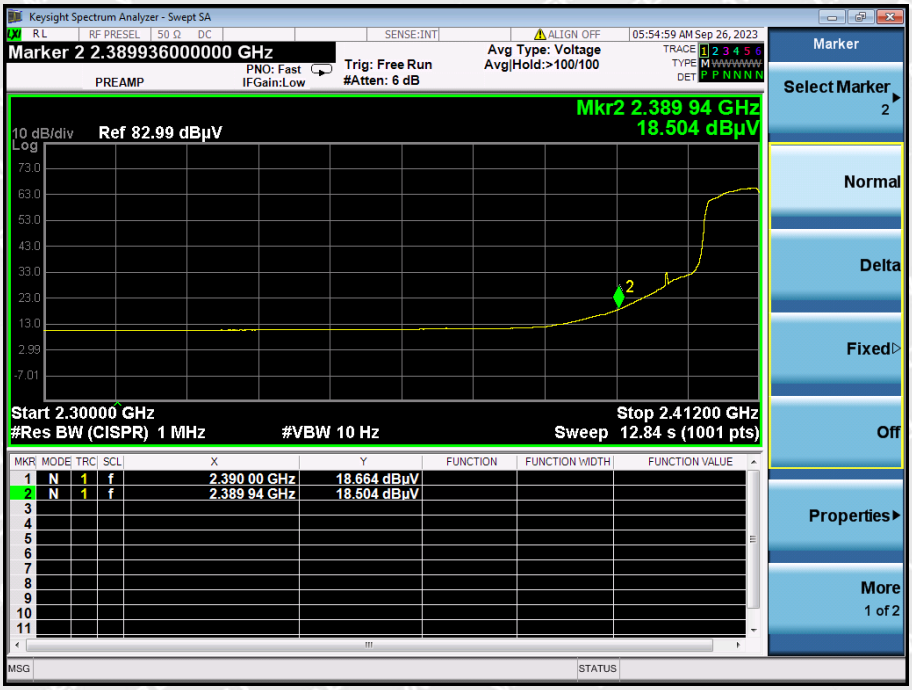
(AVERAGE, Channel 11, 802.11b)

➢ *Test Mode: 802.11g*

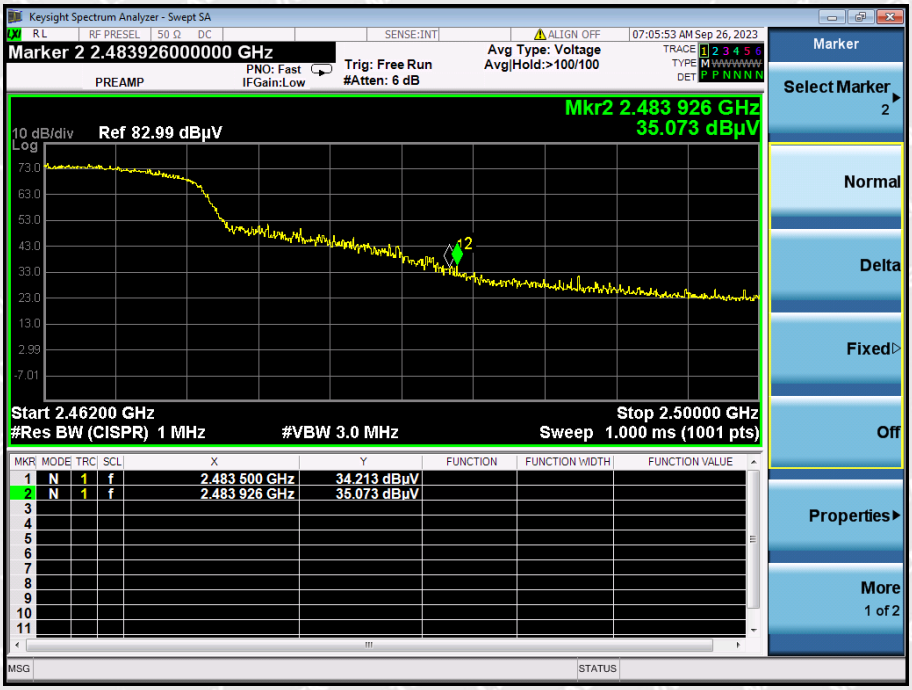
Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBμV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2389.94	PK	33.55	6.74	27.20	67.49	74	PASS
1	2390.00	AV	18.66	6.74	27.20	52.60	54	PASS
11	2483.93	PK	35.07	6.74	27.20	69.01	74	PASS
11	2483.50	AV	19.05	6.74	27.20	52.99	54	PASS



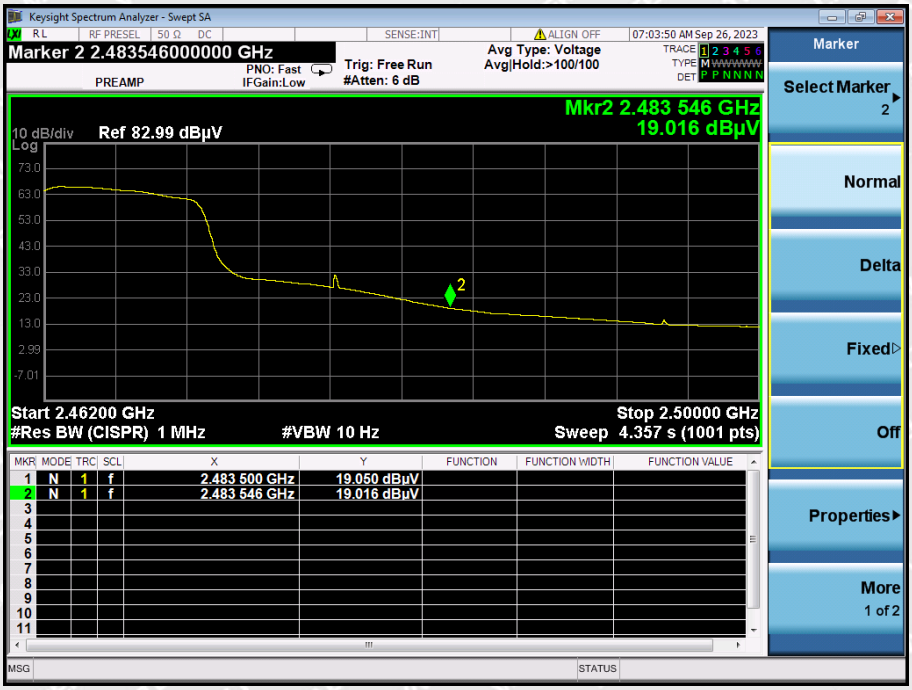
(PEAK, Channel 1, 802.11g)



(AVERAGE, Channel 1, 802.11g)



(PEAK, Channel 11, 802.11g)

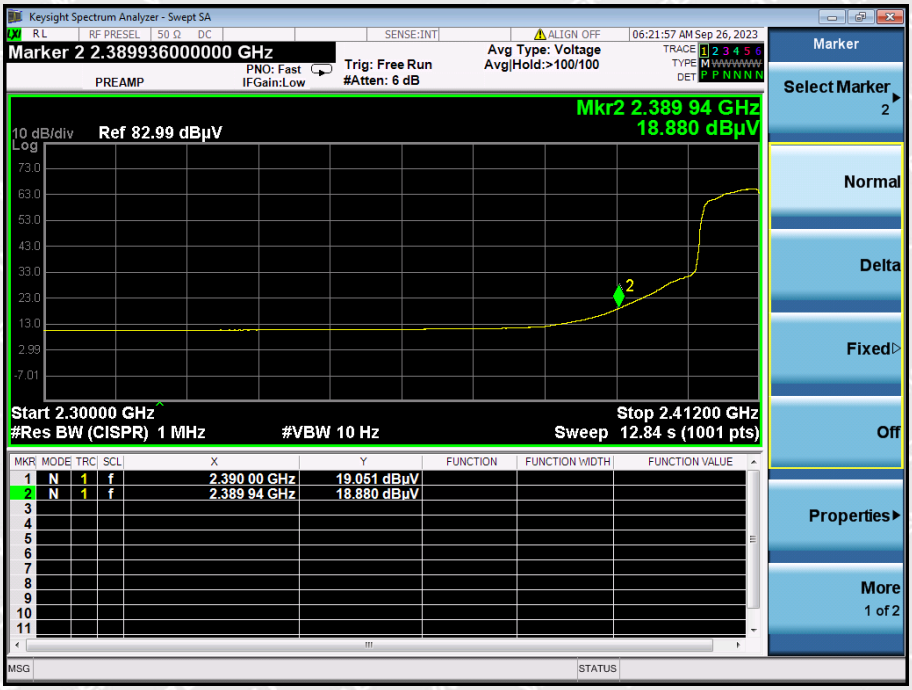


(AVERAGE, Channel 11, 802.11g)

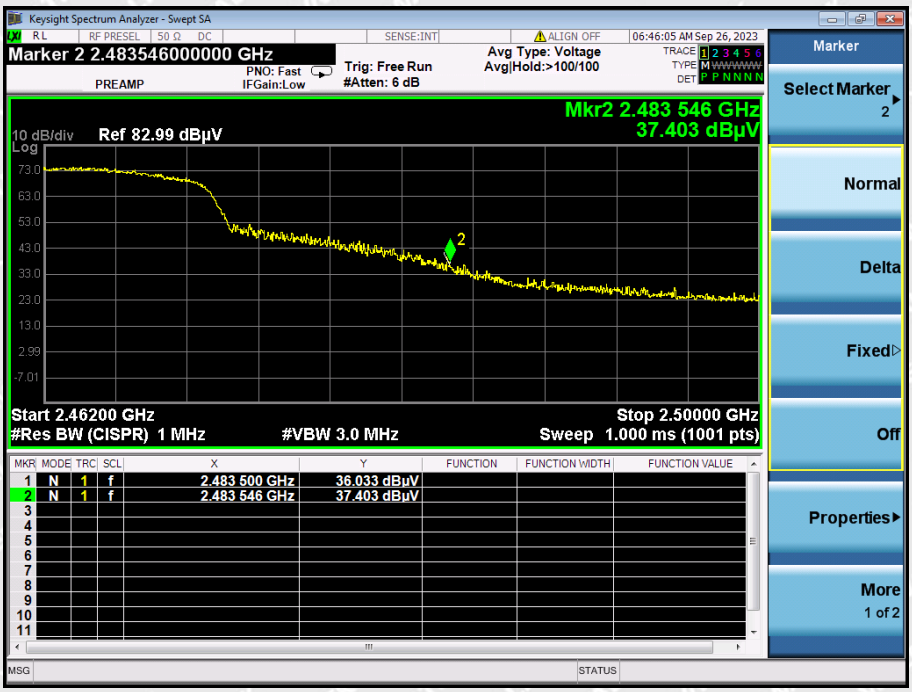
➢ *Test Mode: 802.11n-HT20*

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBμV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2389.26	PK	34.43	6.74	27.20	68.37	74	PASS
1	2390.00	AV	19.05	6.74	27.20	52.99	54	PASS
11	2483.55	PK	37.40	6.74	27.20	71.34	74	PASS
11	2483.55	AV	19.06	6.74	27.20	53.00	54	PASS

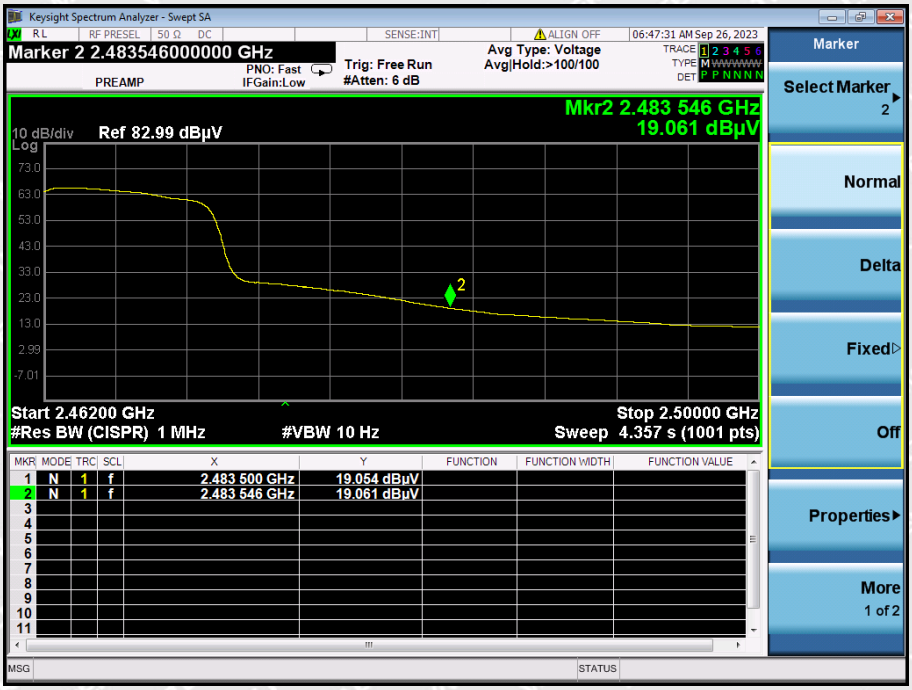
(PEAK, Channel 1, 802.11n (HT20))



(AVERAGE, Channel 1, 802.11n (HT20))



(PEAK, Channel 11, 802.11n (HT20))



(AVERAGE, Channel 11, 802.11n (HT20))

- Conducted test

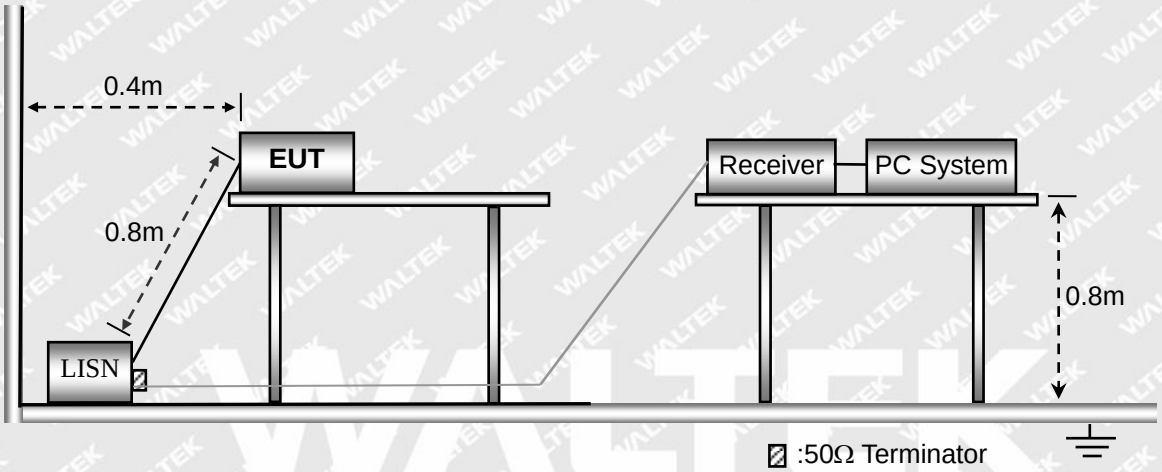
Please refer to Appendix E

10. Conducted Emissions

10.1 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle. The spacing between the peripherals was 10cm.

10.2 Basic Test Setup Block Diagram



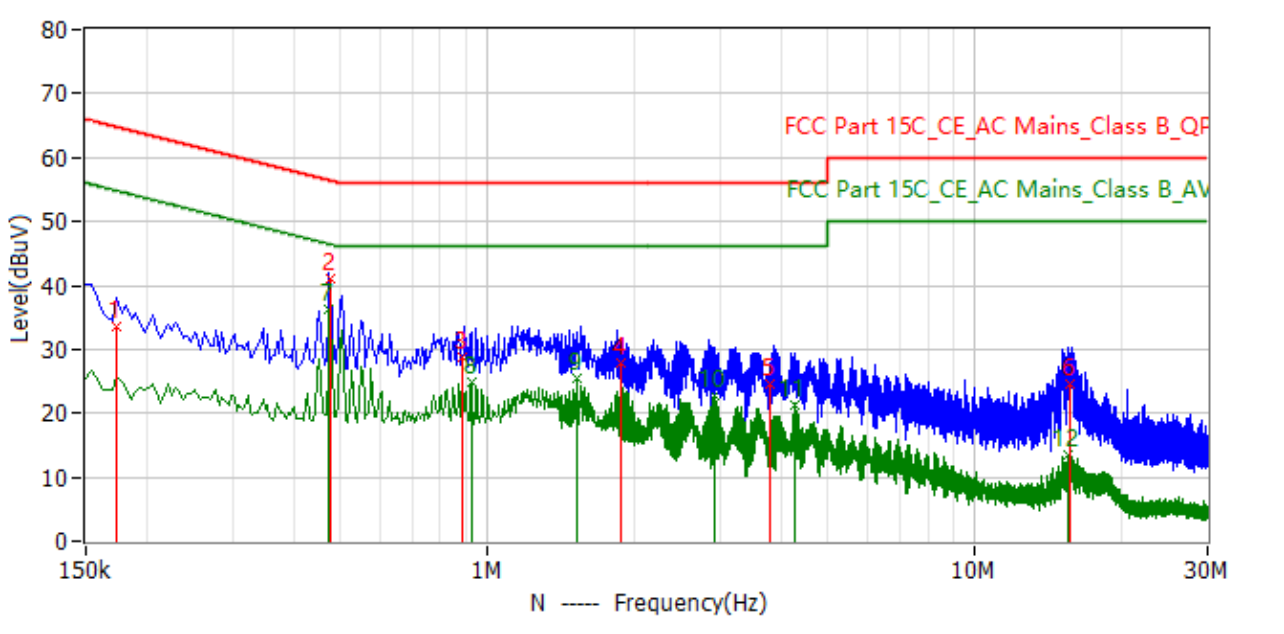
10.3 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency	150kHz
Stop Frequency	30MHz
Sweep Speed	Auto
IF Bandwidth	10kHz
Quasi-Peak Adapter Bandwidth	9kHz
Quasi-Peak Adapter Mode	Normal

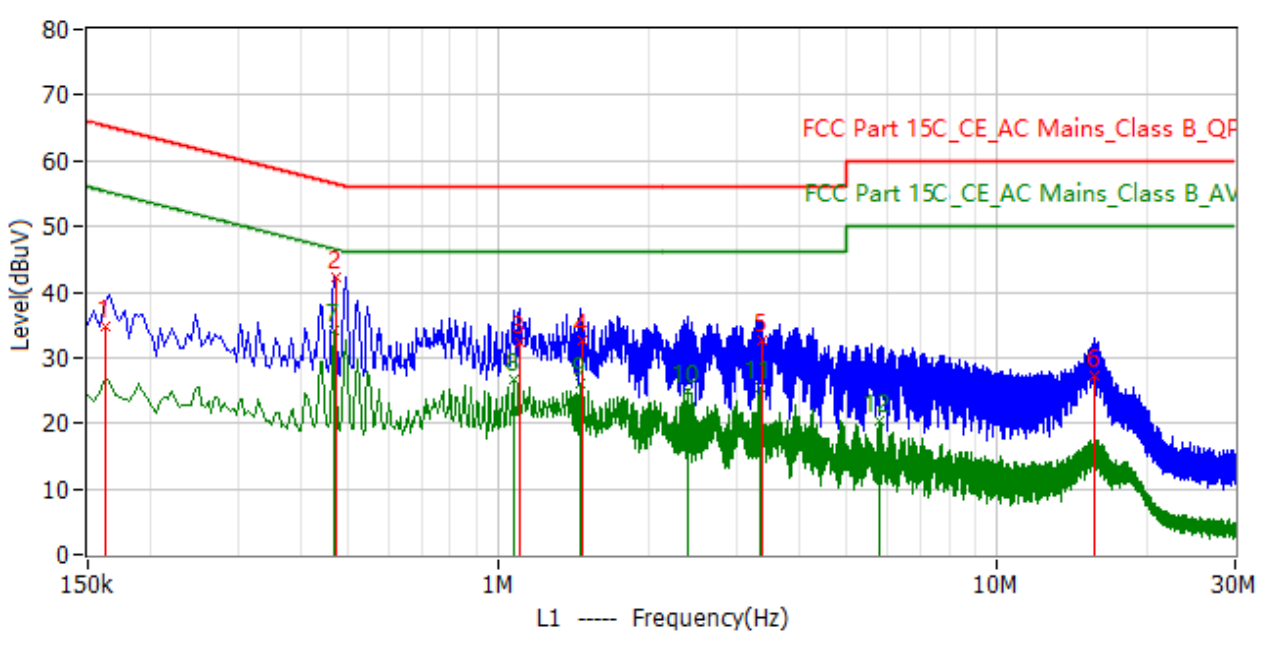
10.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral



No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector
1	174.000kHz	64.8	33.6	-31.2	23.9	9.7	QP
2	478.000kHz	56.4	41.0	-15.4	31.3	9.7	QP
3	886.000kHz	56.0	28.8	-27.2	19.1	9.7	QP
4	1.870MHz	56.0	27.9	-28.1	18.2	9.7	QP
5	3.814MHz	56.0	24.6	-31.4	14.8	9.8	QP
6	15.682MHz	60.0	24.7	-35.3	15.0	9.7	QP
7*	474.000kHz	46.4	36.2	-10.3	26.5	9.7	AV
8*	926.000kHz	46.0	25.0	-21.0	15.3	9.7	AV
9*	1.526MHz	46.0	25.4	-20.6	15.7	9.7	AV
10*	2.930MHz	46.0	22.8	-23.2	13.0	9.8	AV
11*	4.278MHz	46.0	21.4	-24.6	11.6	9.8	AV
12*	15.534MHz	50.0	13.4	-36.6	3.7	9.7	AV

Test Mode	Communication	AC120V 60Hz	Polarity:	Line



No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector
1	162.000kHz	65.4	34.8	-30.5	24.9	9.9	QP
2	470.000kHz	56.5	42.2	-14.3	32.4	9.8	QP
3	1.098MHz	56.0	32.5	-23.5	22.7	9.8	QP
4	1.466MHz	56.0	32.8	-23.2	23.0	9.8	QP
5	3.374MHz	56.0	32.8	-23.2	22.9	9.9	QP
6	15.658MHz	60.0	27.2	-32.8	17.4	9.8	QP
7*	466.000kHz	46.6	34.1	-12.5	24.3	9.8	AV
8*	1.070MHz	46.0	26.7	-19.3	16.9	9.8	AV
9*	1.454MHz	46.0	26.0	-20.0	16.2	9.8	AV
10*	2.386MHz	46.0	25.0	-21.0	15.1	9.9	AV
11*	3.346MHz	46.0	25.4	-20.6	15.5	9.9	AV
12*	5.782MHz	50.0	20.5	-29.5	10.7	9.8	AV

APPENDIX SUMMARY

APPENDIX	Description of Test Item	Result
A	Duty Cycle of Test Signal	Compliant
B	Power Spectral Density	Compliant
C	DTS Bandwidth	Compliant
D	RF Output Power	Compliant
E	Conducted Spurious Emissions and Band Edge	Compliant

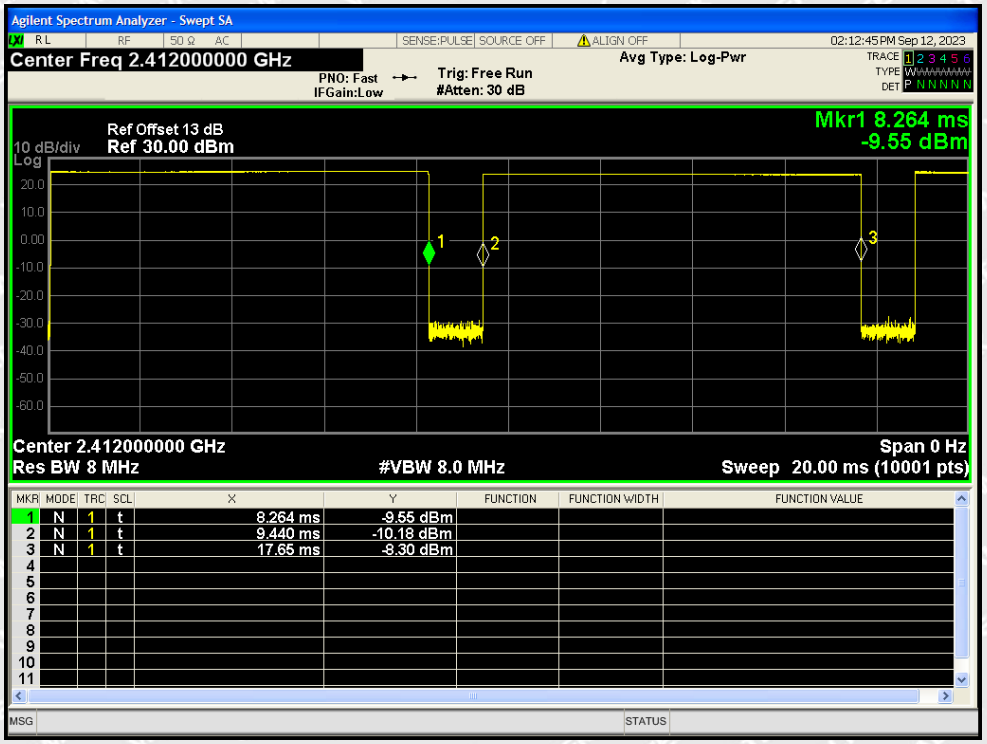
APPENDIX A

Duty Cycle

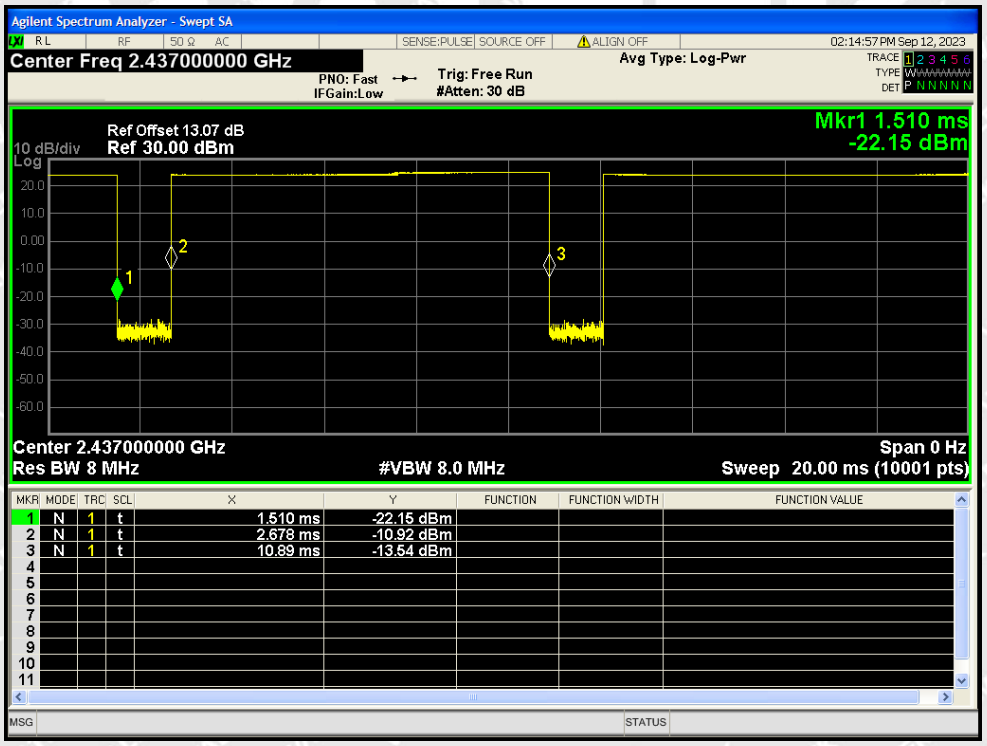
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	87.48	0.58	0.12
NVNT	b	2437	Ant1	87.55	0.58	0.12
NVNT	b	2462	Ant1	87.49	0.58	0.12
NVNT	g	2412	Ant1	53.66	2.70	0.73
NVNT	g	2437	Ant1	53.59	2.71	0.74
NVNT	g	2462	Ant1	53.71	2.70	0.74
NVNT	n20	2412	Ant1	51.84	2.85	0.79
NVNT	n20	2437	Ant1	51.97	2.84	0.79
NVNT	n20	2462	Ant1	51.93	2.85	0.79

Test Graphs

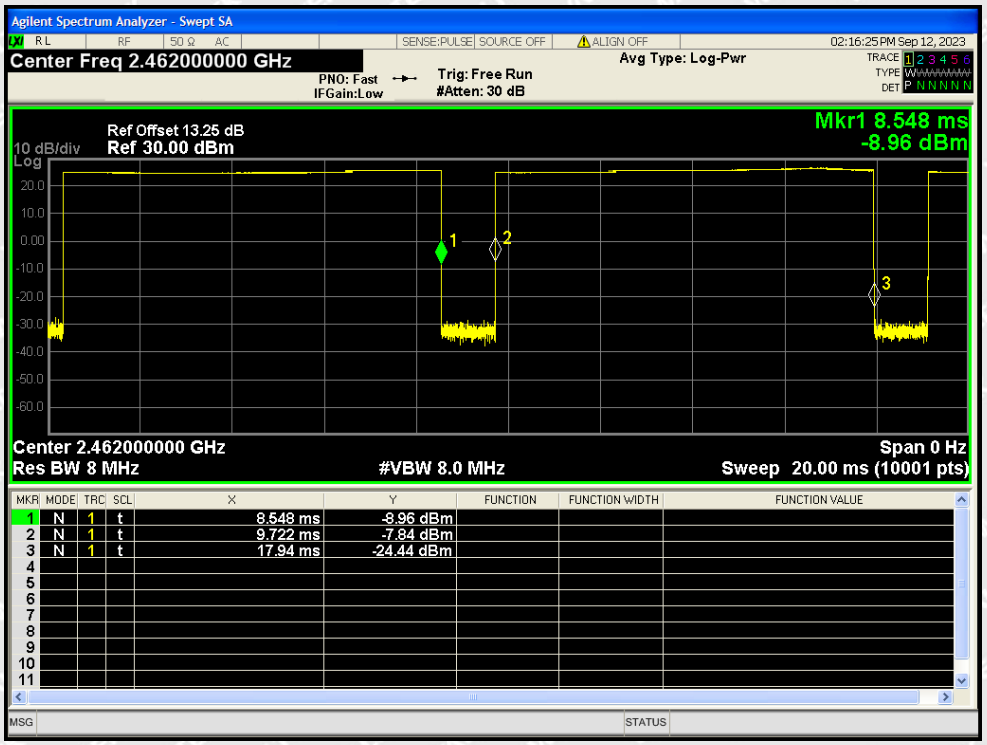
Duty Cycle NVNT b 2412MHz Ant1



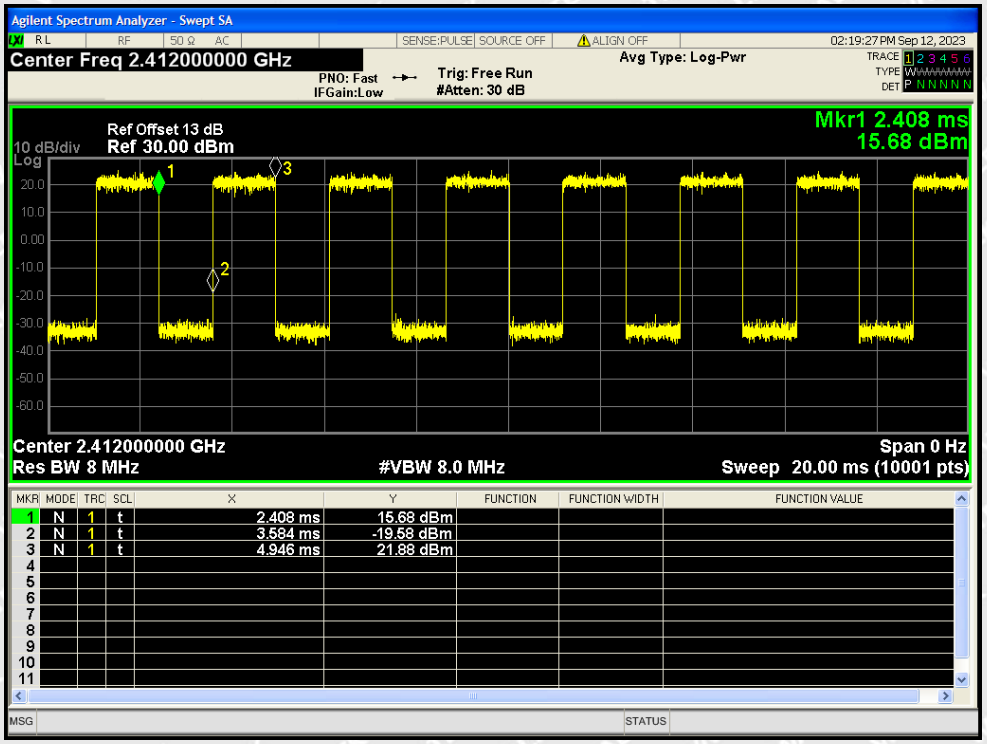
Duty Cycle NVNT b 2437MHz Ant1



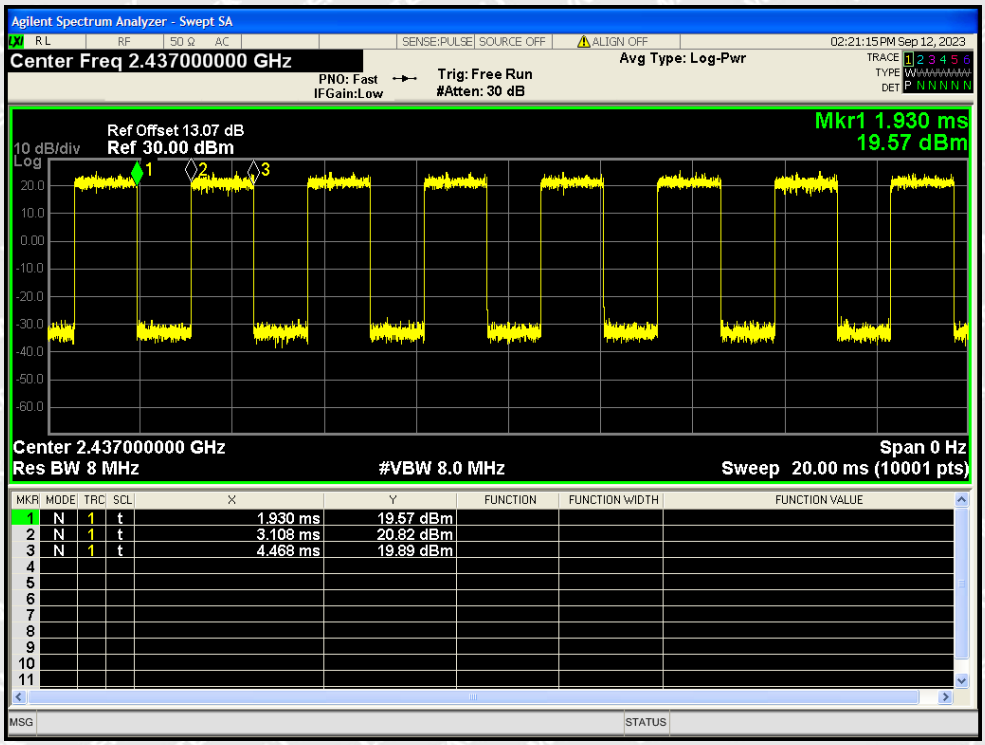
Duty Cycle NVNT b 2462MHz Ant1



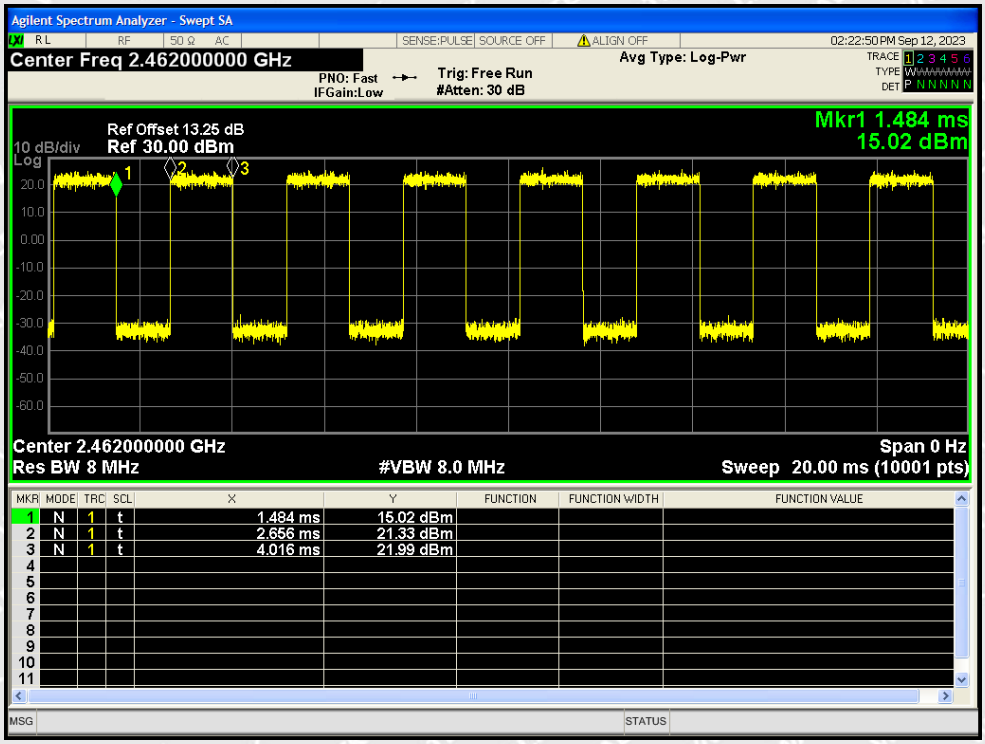
Duty Cycle NVNT g 2412MHz Ant1



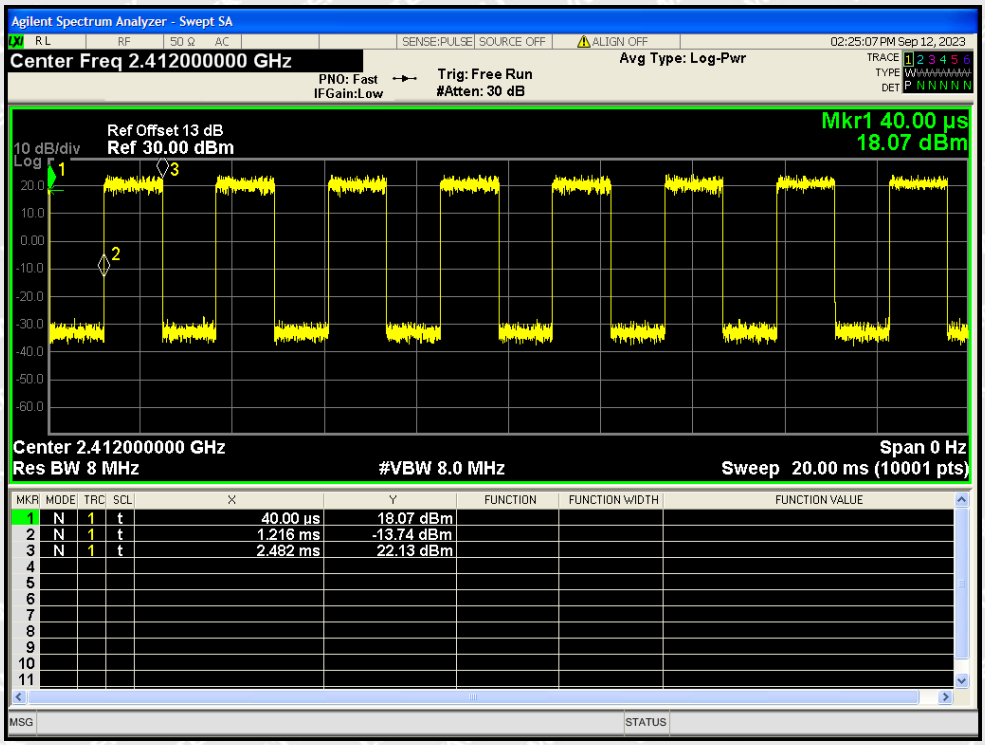
Duty Cycle NVNT g 2437MHz Ant1



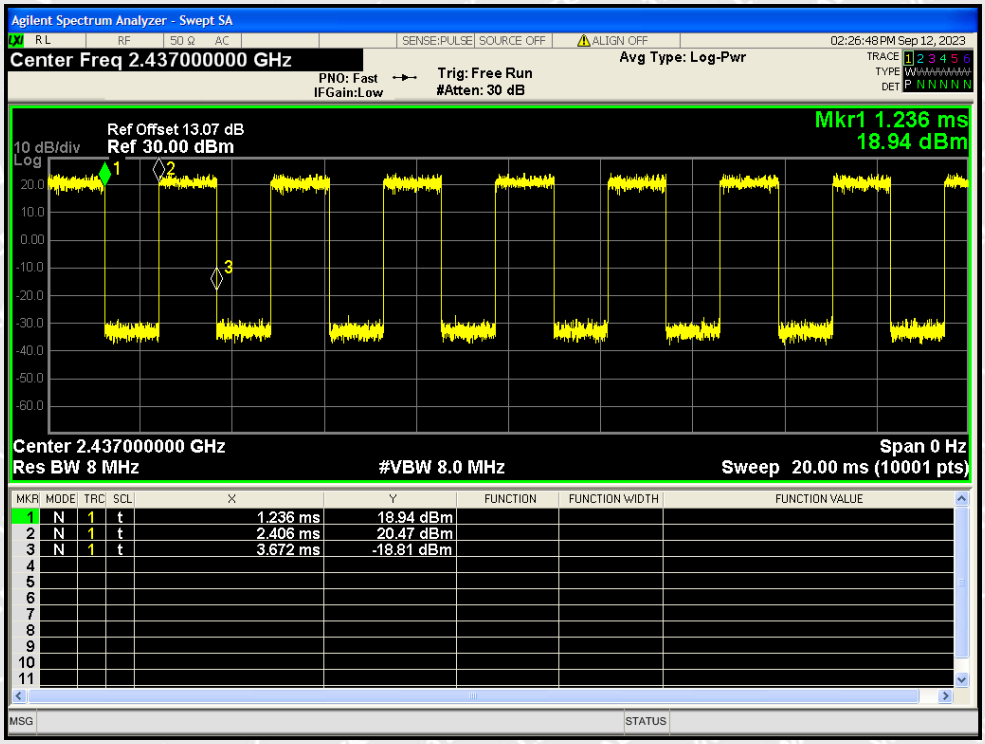
Duty Cycle NVNT g 2462MHz Ant1



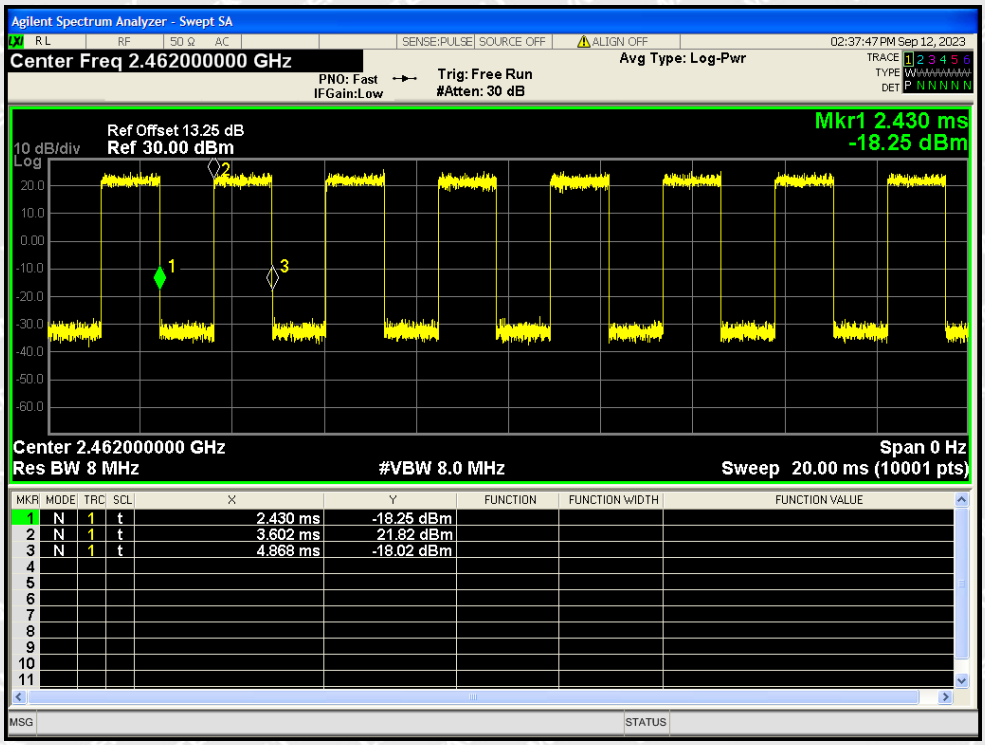
Duty Cycle NVNT n20 2412MHz Ant1



Duty Cycle NVNT n20 2437MHz Ant1



Duty Cycle NVNT n20 2462MHz Ant1



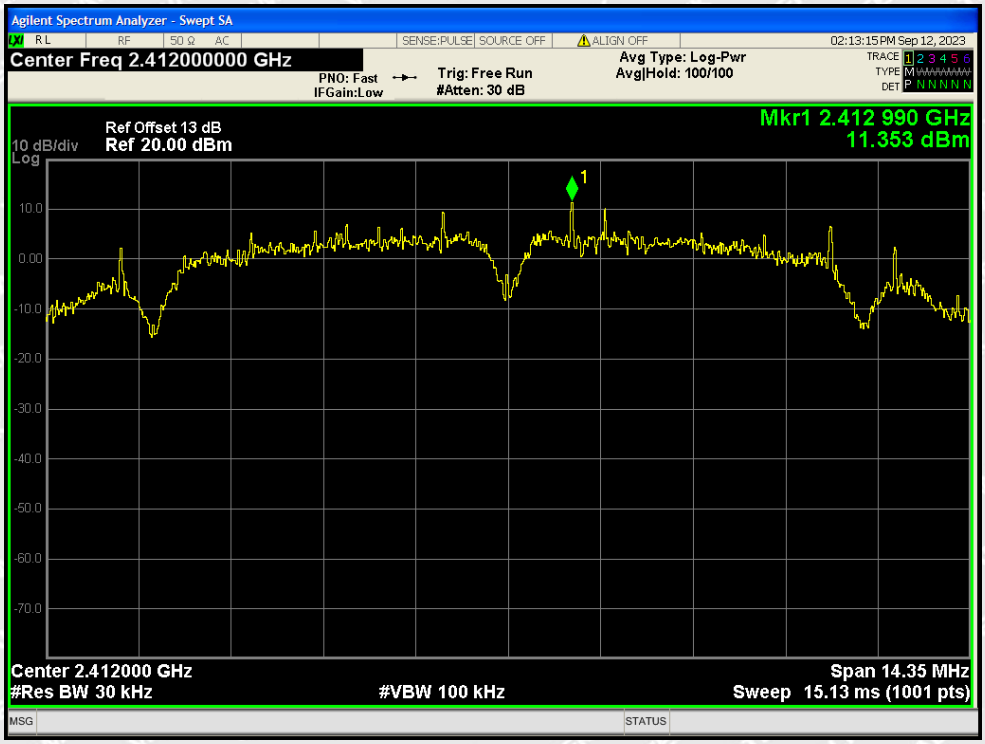
APPENDIX B

Maximum Power Spectral Density Level

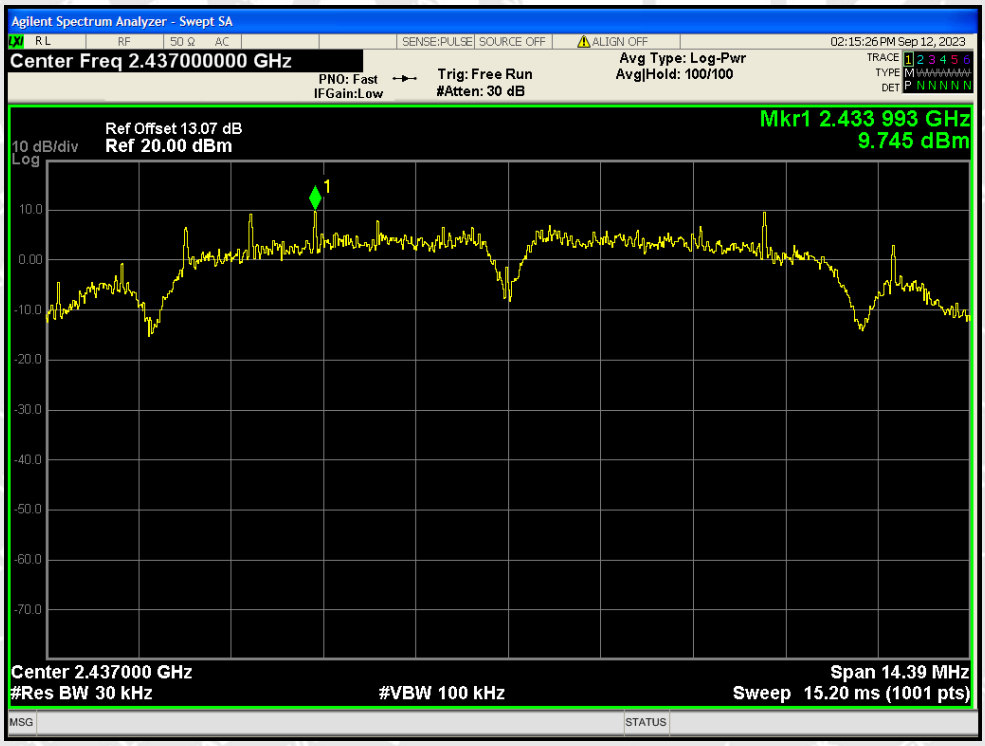
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	1.35	0	1.35	8	Pass
NVNT	b	2437	Ant1	-0.26	0	-0.26	8	Pass
NVNT	b	2462	Ant1	2.41	0	2.41	8	Pass
NVNT	g	2412	Ant1	-7.34	0	-7.34	8	Pass
NVNT	g	2437	Ant1	-7.19	0	-7.19	8	Pass
NVNT	g	2462	Ant1	-6.51	0	-6.51	8	Pass
NVNT	n20	2412	Ant1	-7.07	0	-7.07	8	Pass
NVNT	n20	2437	Ant1	-7.4	0	-7.4	8	Pass
NVNT	n20	2462	Ant1	-6	0	-6	8	Pass

Test Graphs

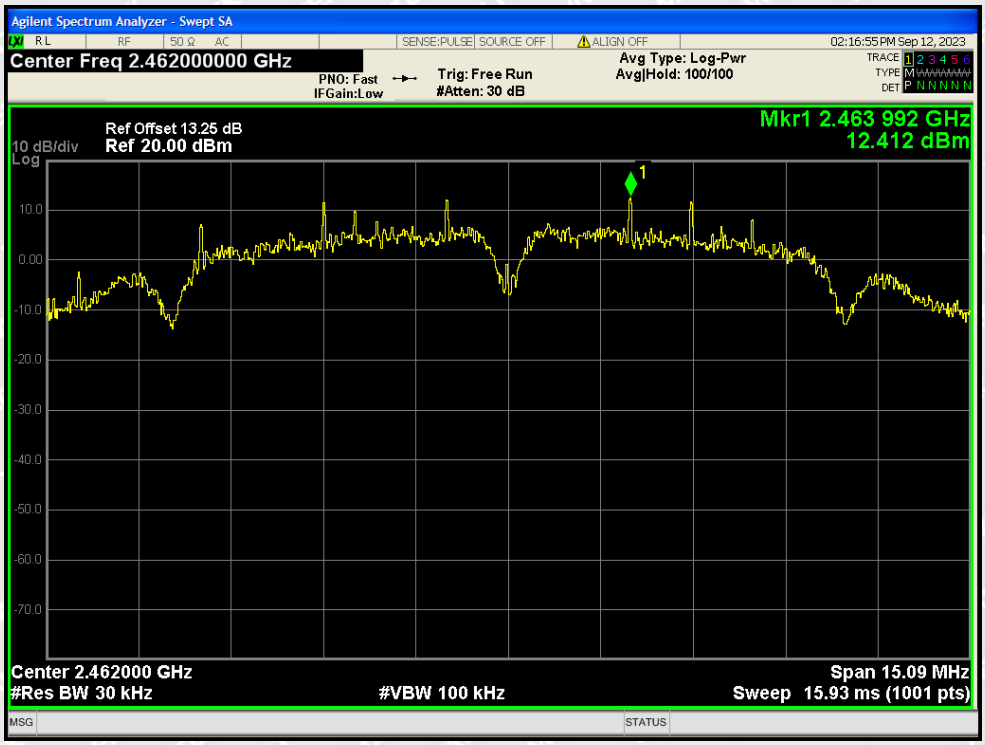
PSD NVNT b 2412MHz Ant1



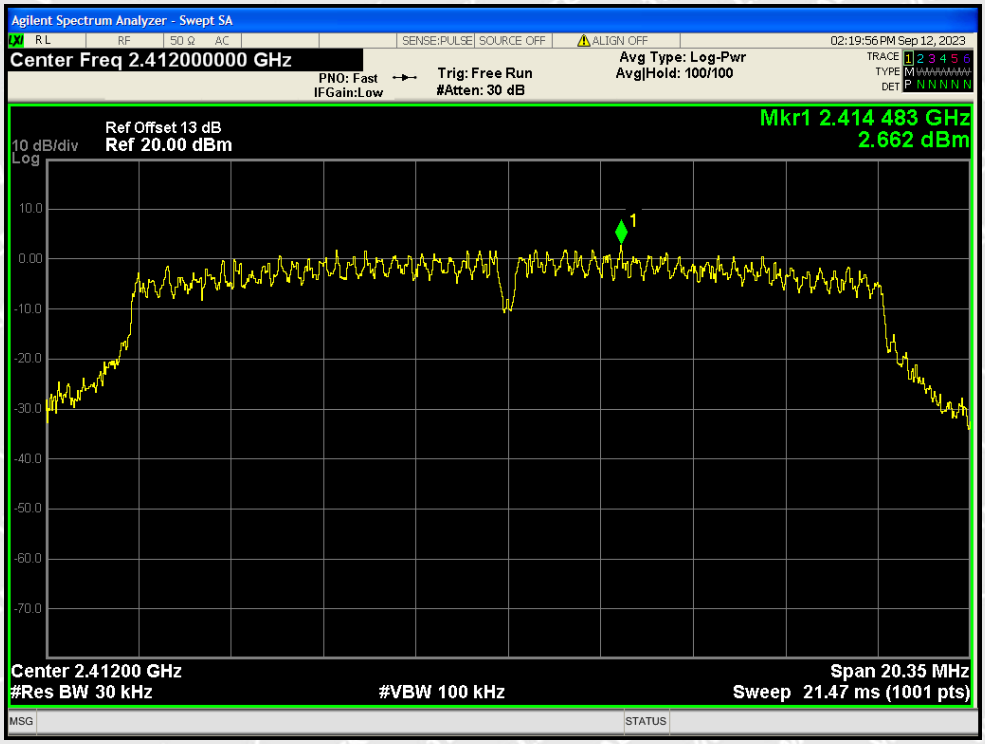
PSD NVNT b 2437MHz Ant1



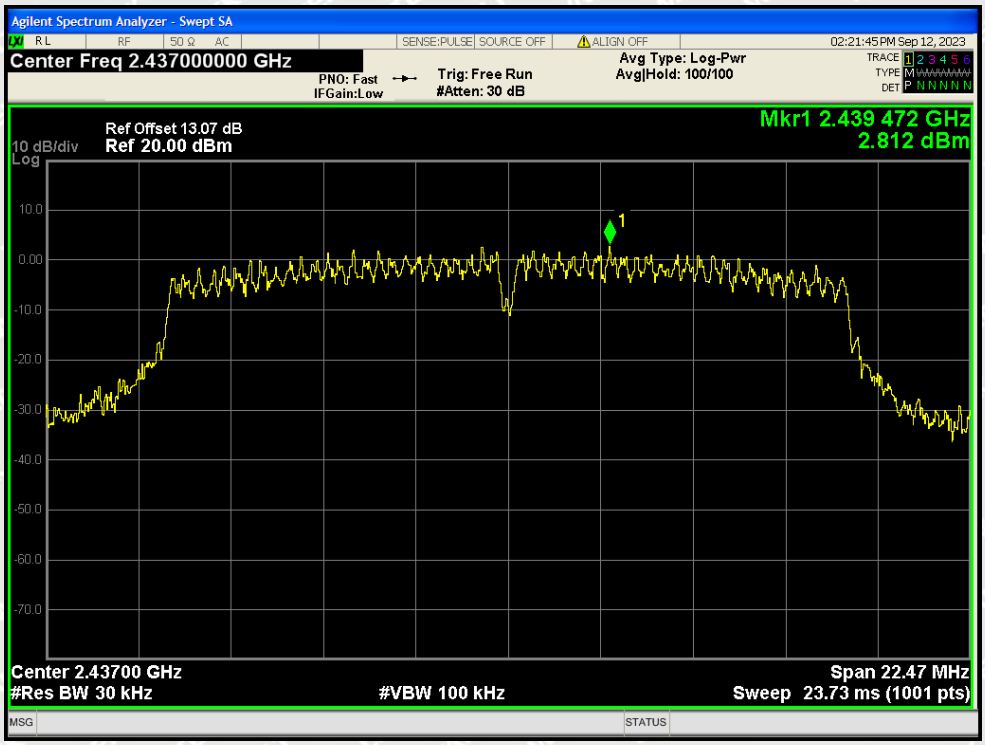
PSD NVNT b 2462MHz Ant1



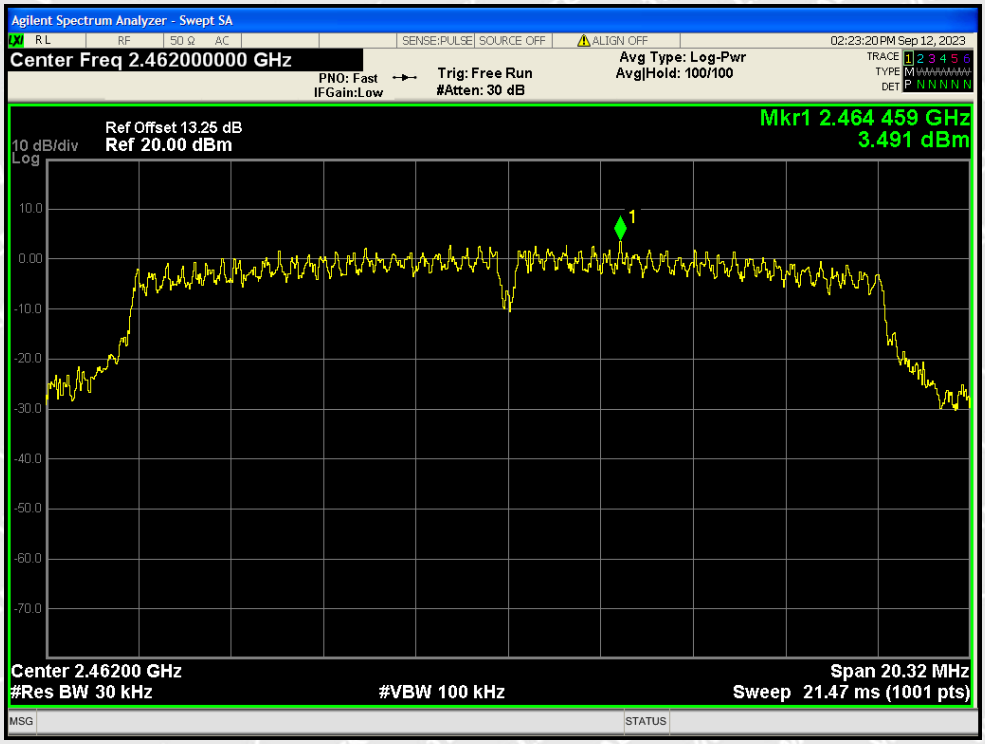
PSD NVNT g 2412MHz Ant1



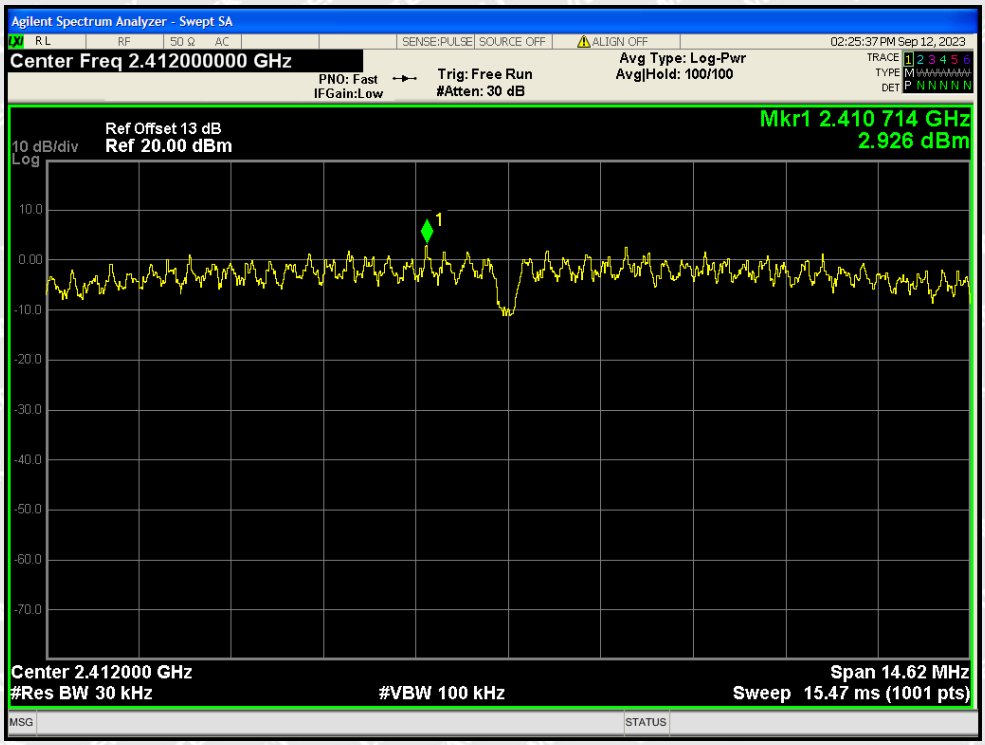
PSD NVNT g 2437MHz Ant1



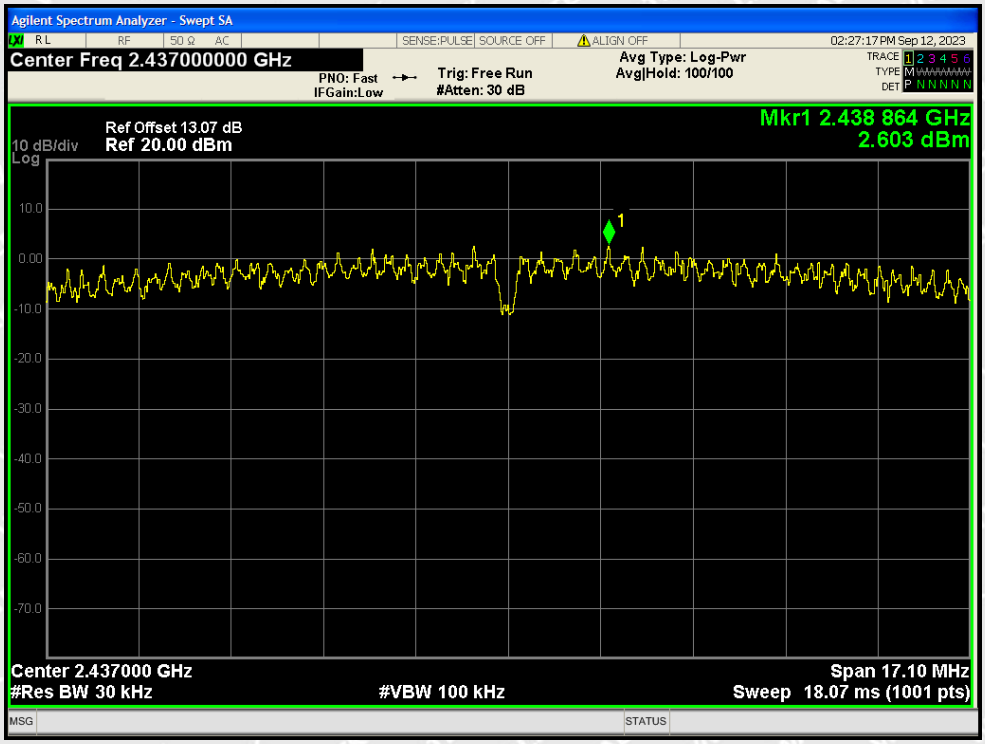
PSD NVNT g 2462MHz Ant1



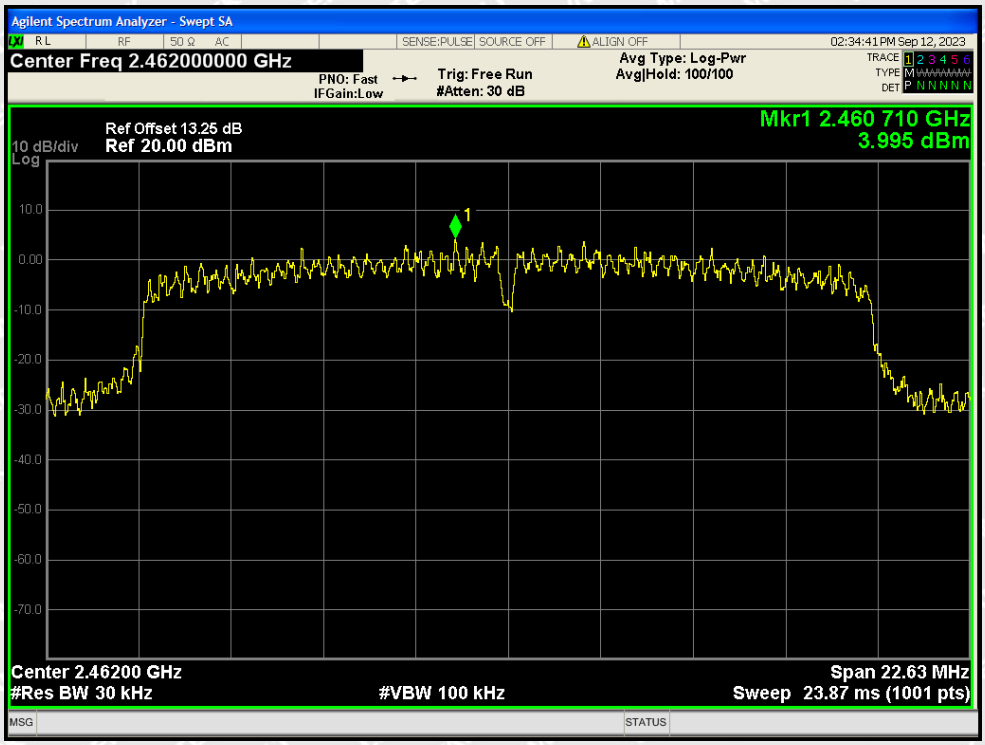
PSD NVNT n20 2412MHz Ant1



PSD NVNT n20 2437MHz Ant1



PSD NVNT n20 2462MHz Ant1



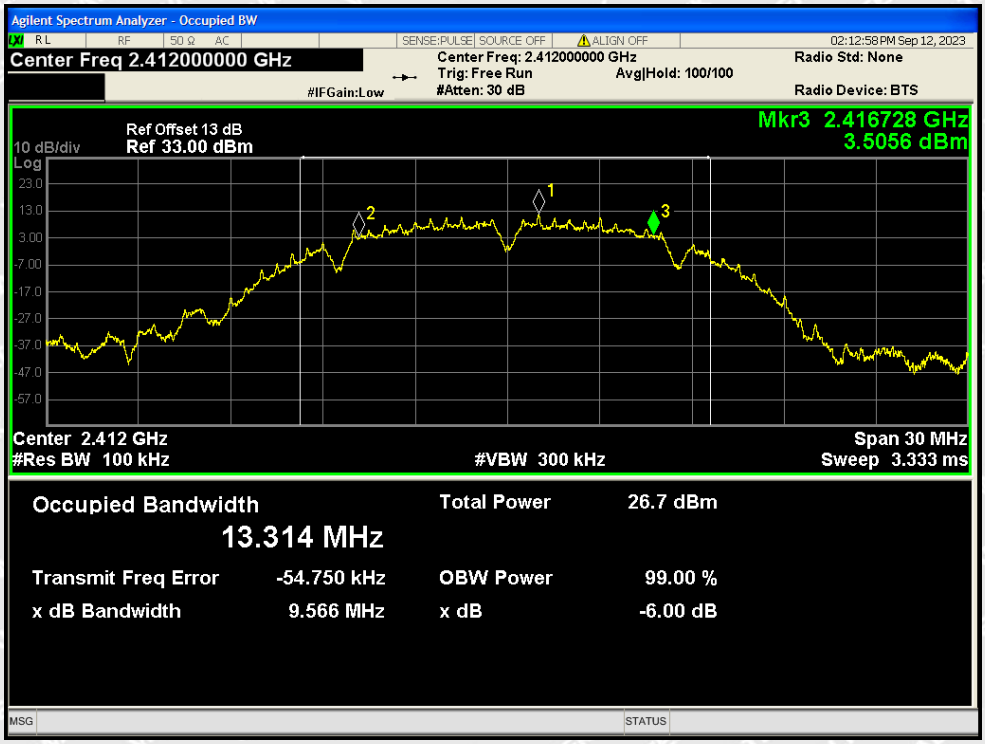
APPENDIX C

-6dB Bandwidth

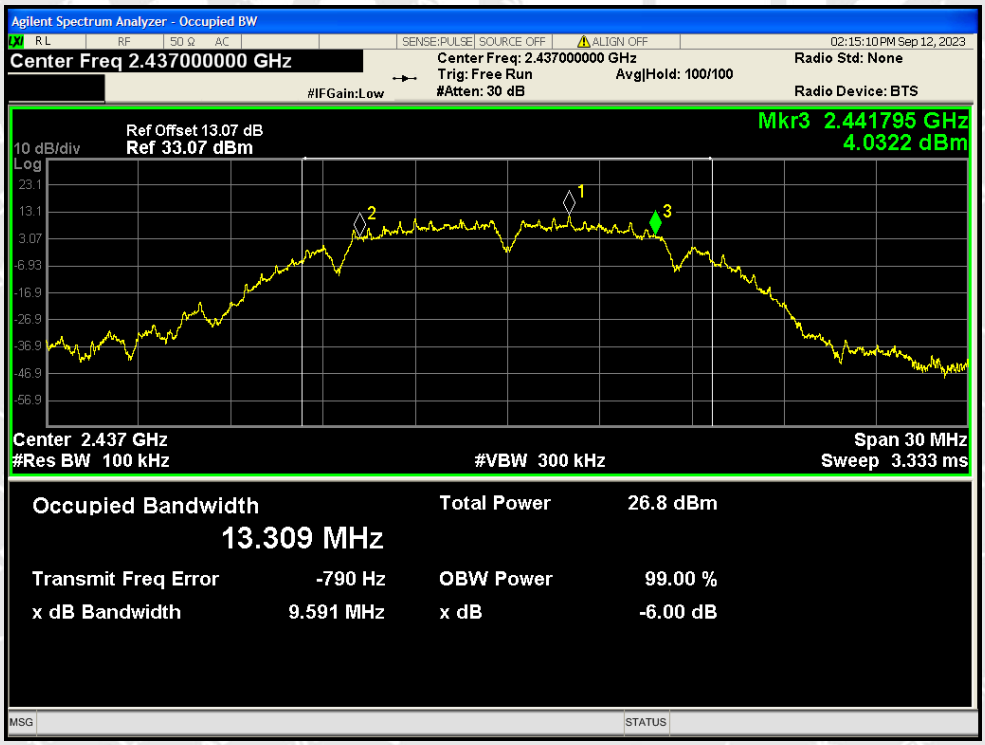
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.566	0.5	Pass
NVNT	b	2437	Ant1	9.591	0.5	Pass
NVNT	b	2462	Ant1	10.061	0.5	Pass
NVNT	g	2412	Ant1	13.567	0.5	Pass
NVNT	g	2437	Ant1	14.981	0.5	Pass
NVNT	g	2462	Ant1	13.549	0.5	Pass
NVNT	n20	2412	Ant1	9.746	0.5	Pass
NVNT	n20	2437	Ant1	11.401	0.5	Pass
NVNT	n20	2462	Ant1	15.087	0.5	Pass

Test Graphs

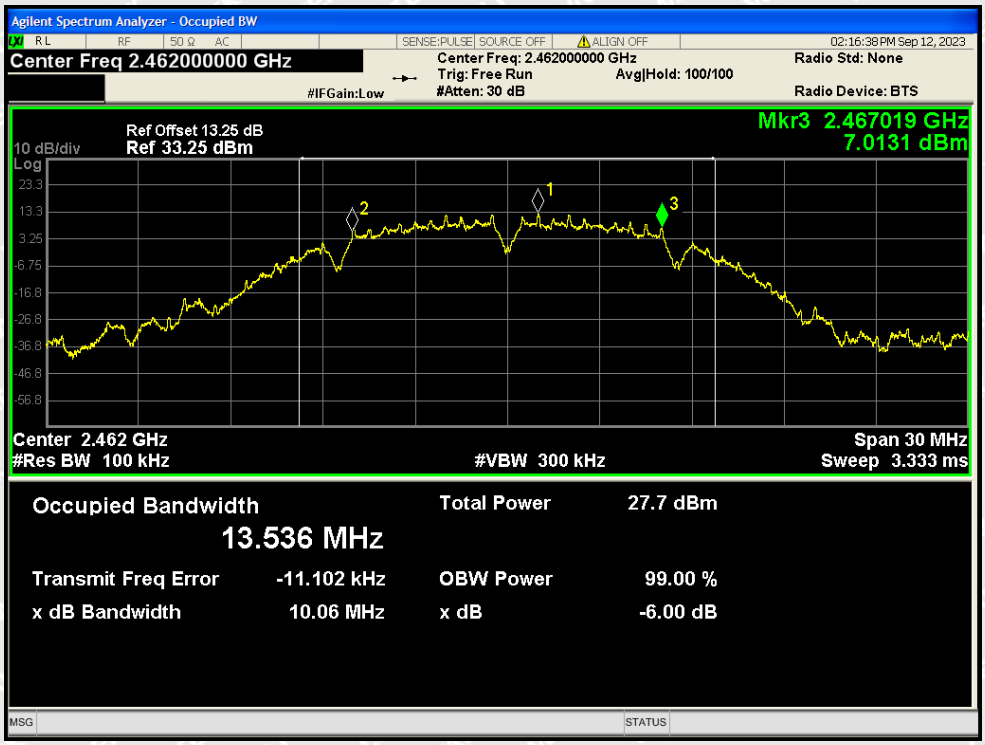
-6dB Bandwidth NVNT b 2412MHz Ant1



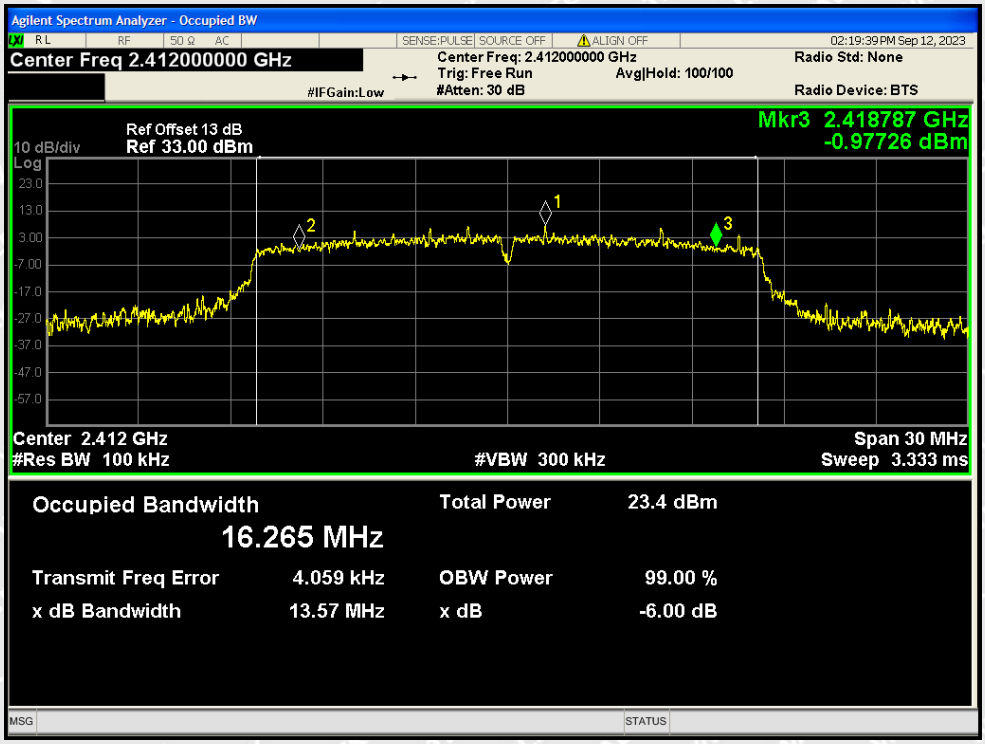
-6dB Bandwidth NVNT b 2437MHz Ant1



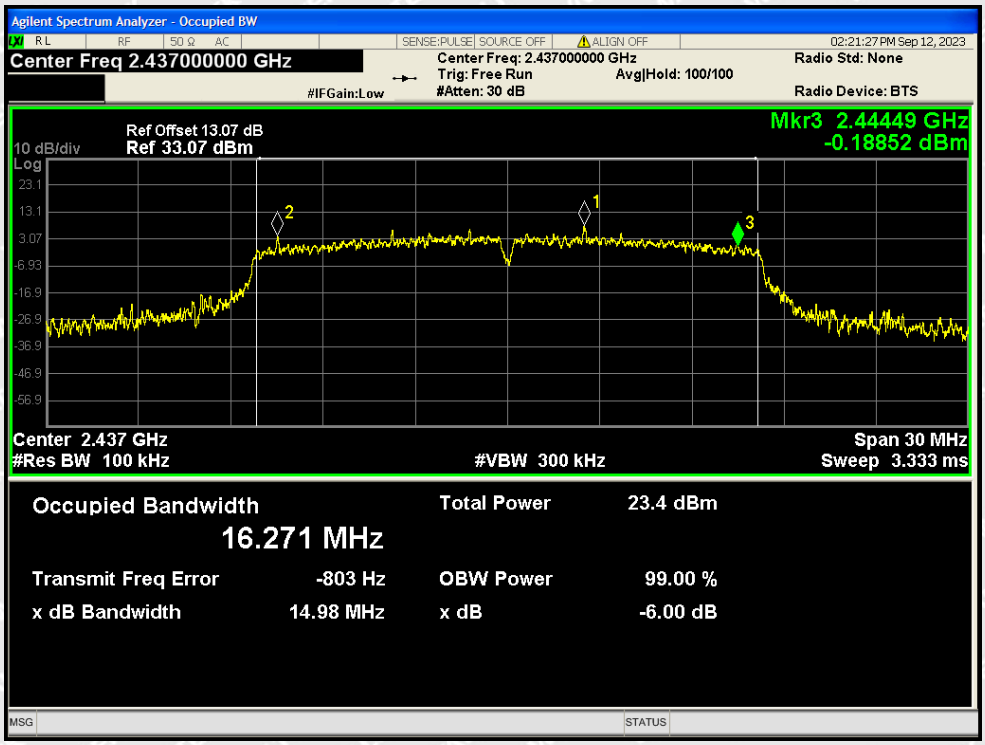
-6dB Bandwidth NVNT b 2462MHz Ant1



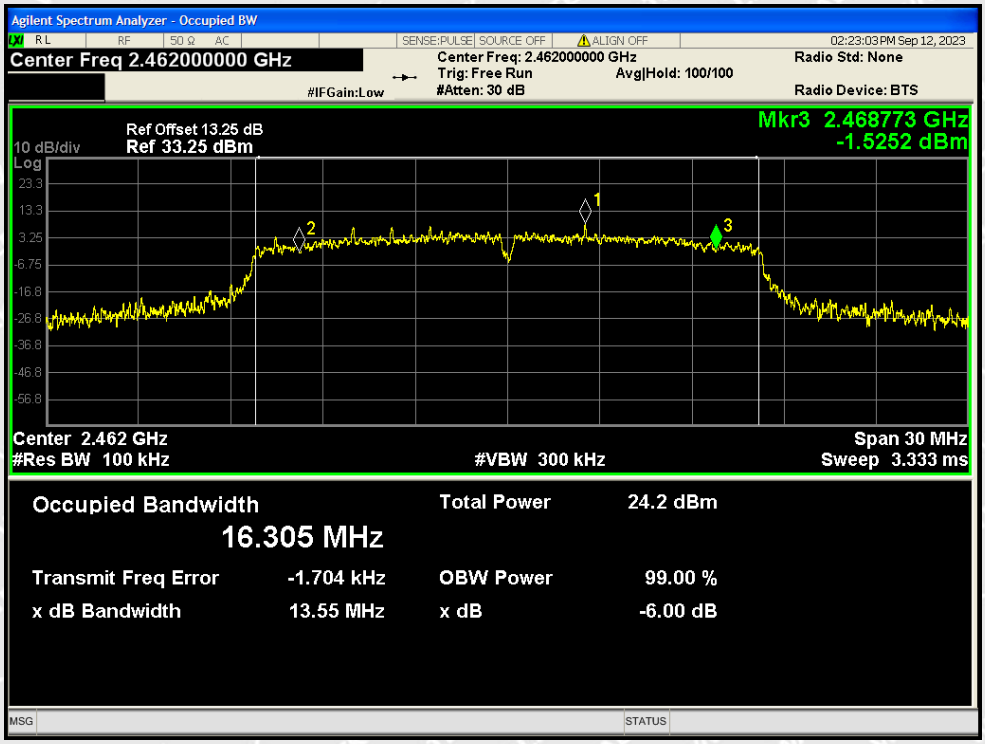
-6dB Bandwidth NVNT g 2412MHz Ant1



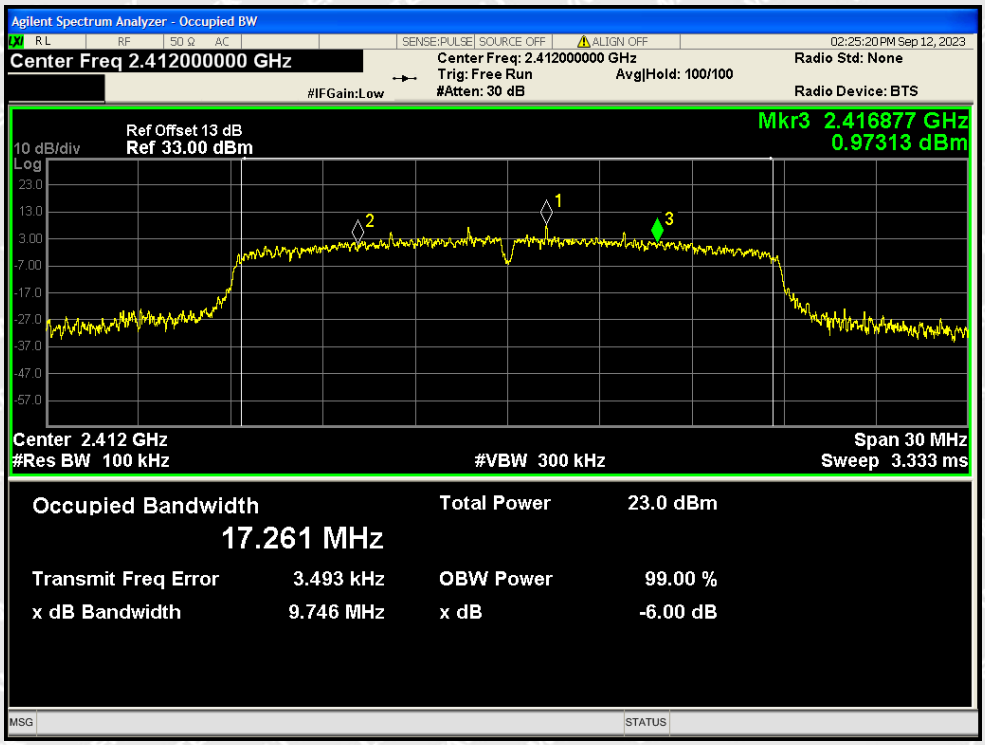
-6dB Bandwidth NVNT g 2437MHz Ant1



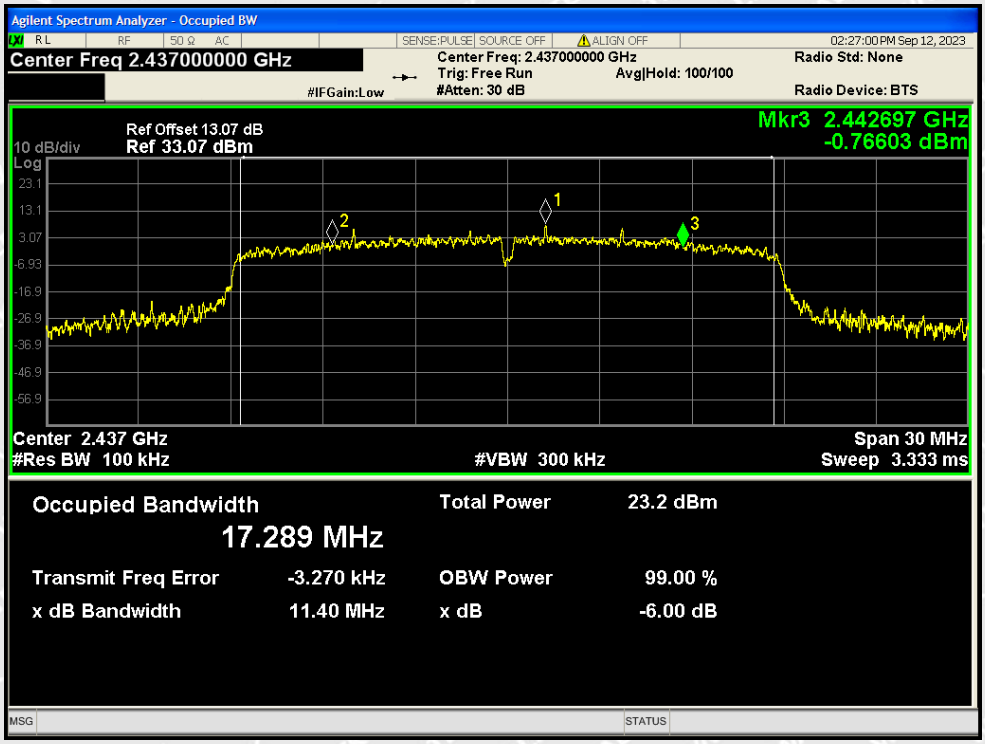
-6dB Bandwidth NVNT g 2462MHz Ant1



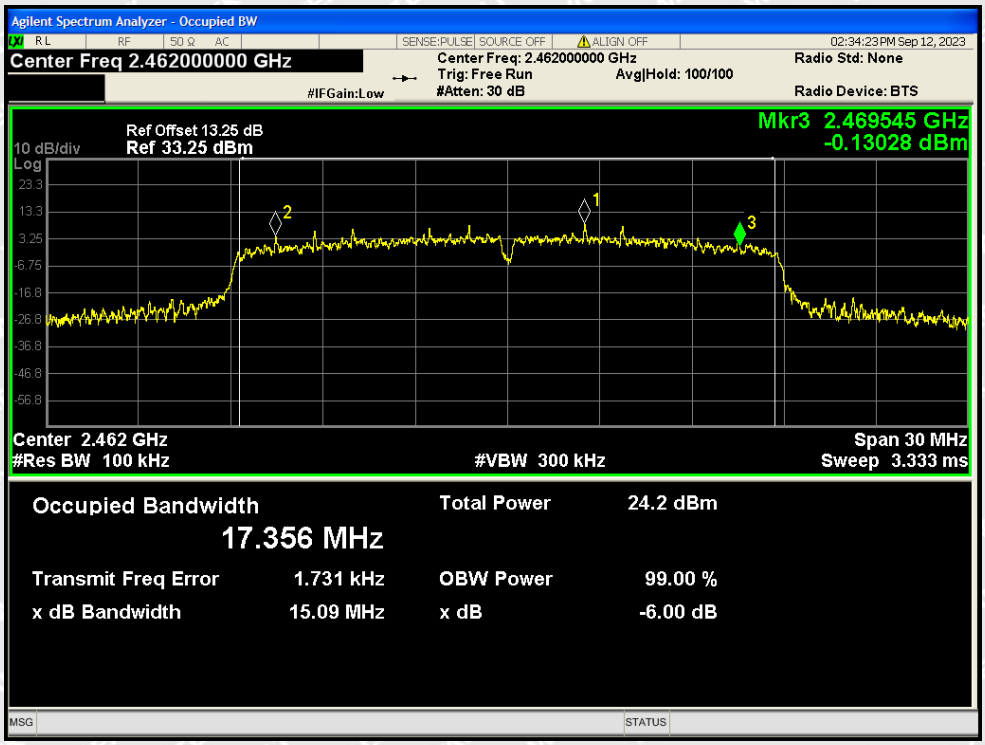
-6dB Bandwidth NVNT n20 2412MHz Ant1



-6dB Bandwidth NVNT n20 2437MHz Ant1



-6dB Bandwidth NVNT n20 2462MHz Ant1



APPENDIX D

Maximum Average Conducted Output Power

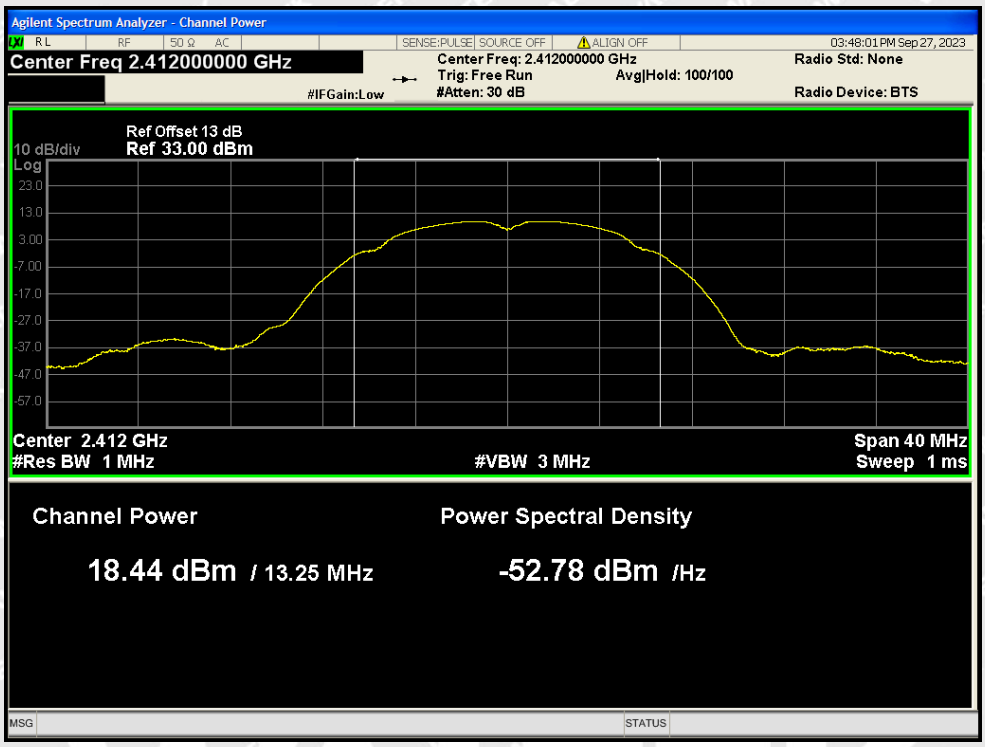
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted(dBm)	Verdict
NVNT	b	2412	Ant1	18.44	0.58	19.02	0.0798	30	Pass
NVNT	b	2437	Ant1	19.86	0.58	20.44	0.11066	30	Pass
NVNT	b	2462	Ant1	17.33	0.58	17.91	0.0618	30	Pass
NVNT	g	2412	Ant1	14.52	2.70	17.22	0.05272	30	Pass
NVNT	g	2437	Ant1	15.22	2.71	17.93	0.06209	30	Pass
NVNT	g	2462	Ant1	14.19	2.70	16.89	0.04887	30	Pass
NVNT	n20	2412	Ant1	13.91	2.85	16.76	0.04742	30	Pass
NVNT	n20	2437	Ant1	14.86	2.84	17.70	0.05888	30	Pass
NVNT	n20	2462	Ant1	13.41	2.85	16.26	0.04227	30	Pass

Maximum Peak Conducted Output Power

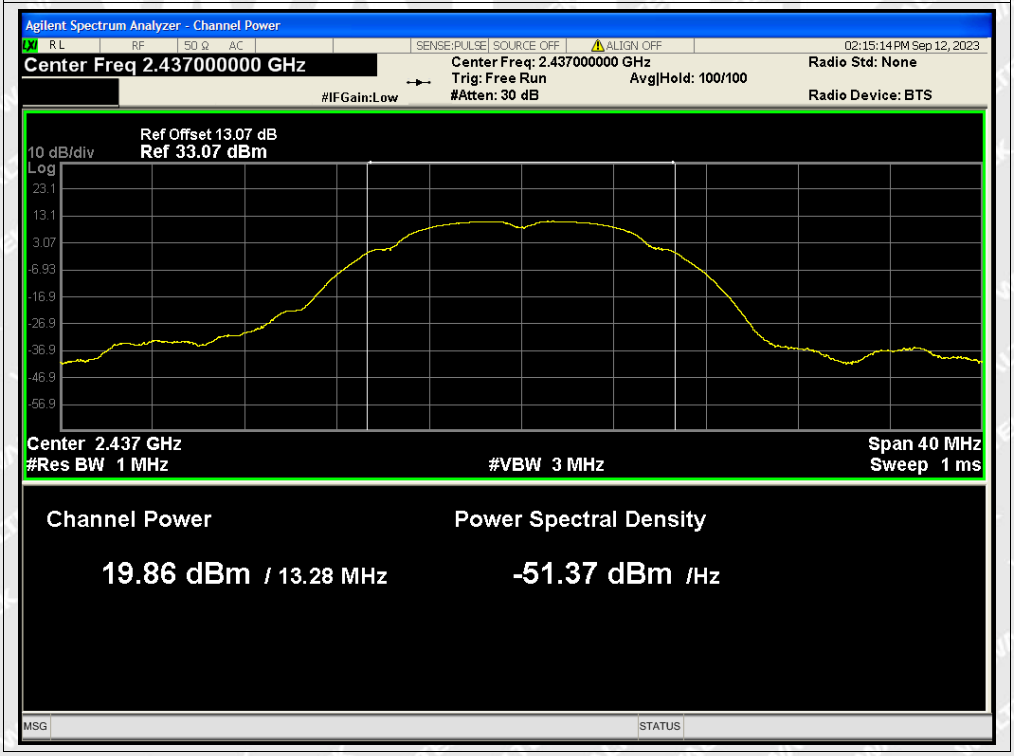
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted(dBm)	Verdict
NVNT	b	2412	Ant1	21.84	0	21.84	0.15276	30	Pass
NVNT	b	2437	Ant1	23.21	0	23.21	0.20941	30	Pass
NVNT	b	2462	Ant1	20.68	0	20.68	0.11695	30	Pass
NVNT	g	2412	Ant1	23.26	0	23.26	0.21184	30	Pass
NVNT	g	2437	Ant1	24.59	0	24.59	0.28774	30	Pass
NVNT	g	2462	Ant1	23.34	0	23.34	0.21577	30	Pass
NVNT	n20	2412	Ant1	22.2	0	22.20	0.16596	30	Pass
NVNT	n20	2437	Ant1	23.56	0	23.56	0.22699	30	Pass
NVNT	n20	2462	Ant1	23.4	0	23.40	0.21878	30	Pass

Maximum Average Conducted Output Power:

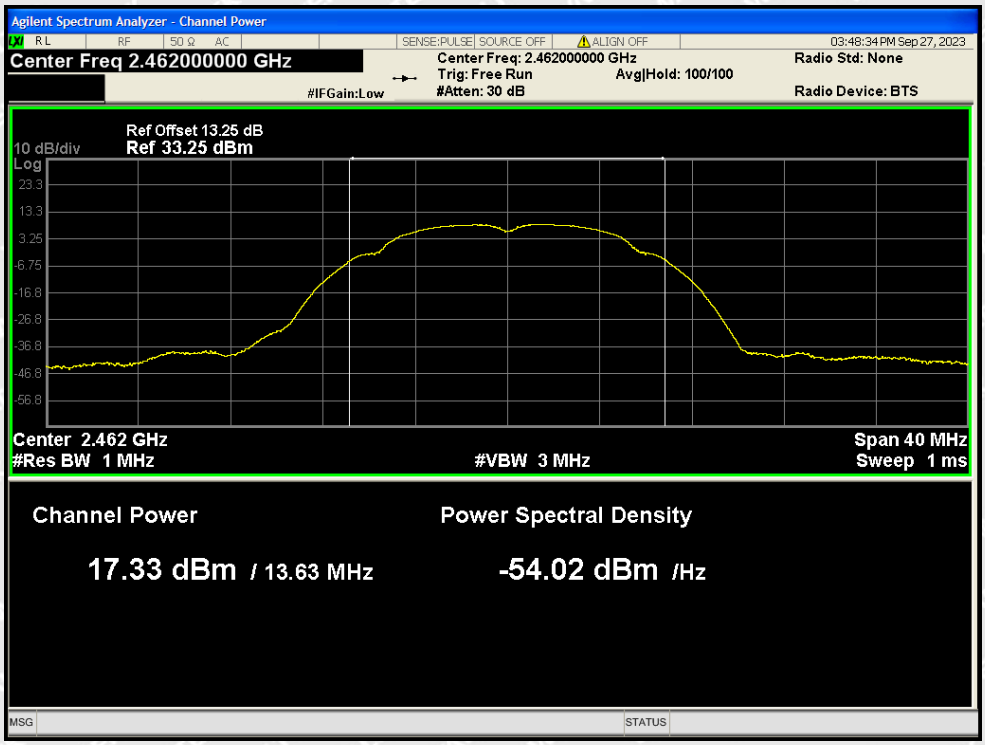
Test Graphs
Average Power NVNT b 2412MHz Ant1



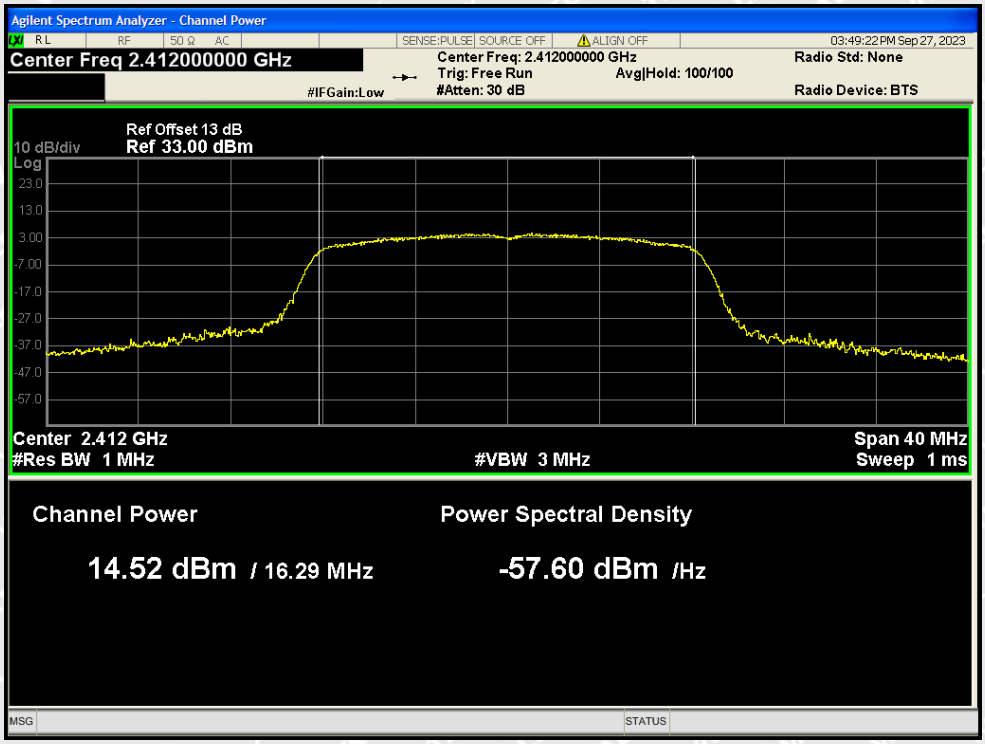
Average Power NVNT b 2437MHz Ant1



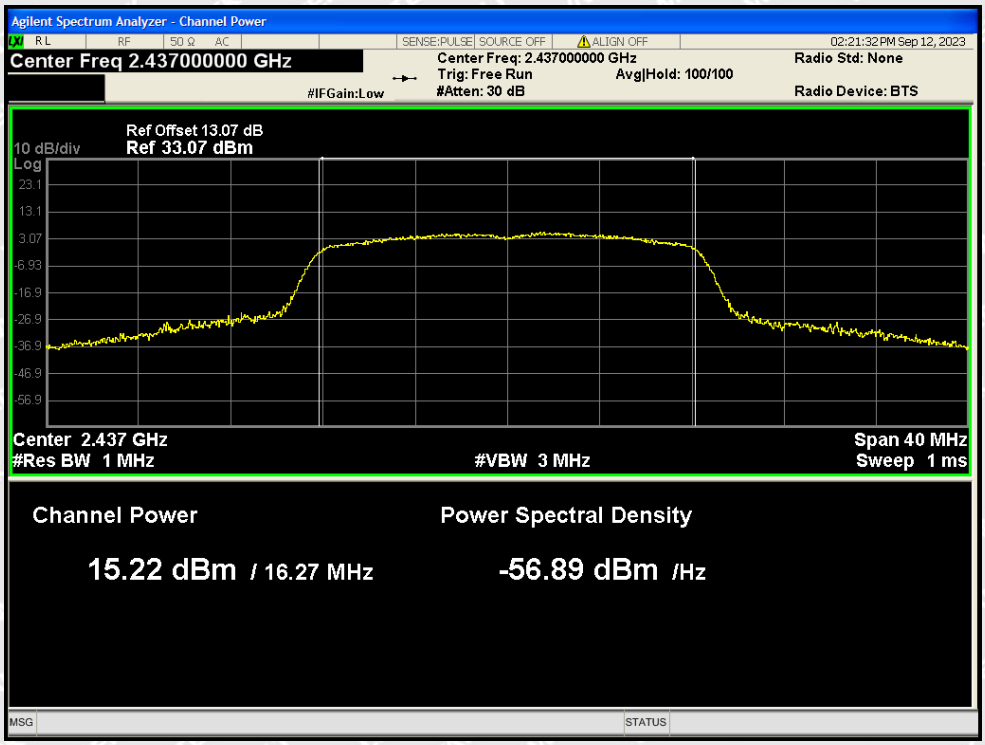
Average Power NVNT b 2462MHz Ant1



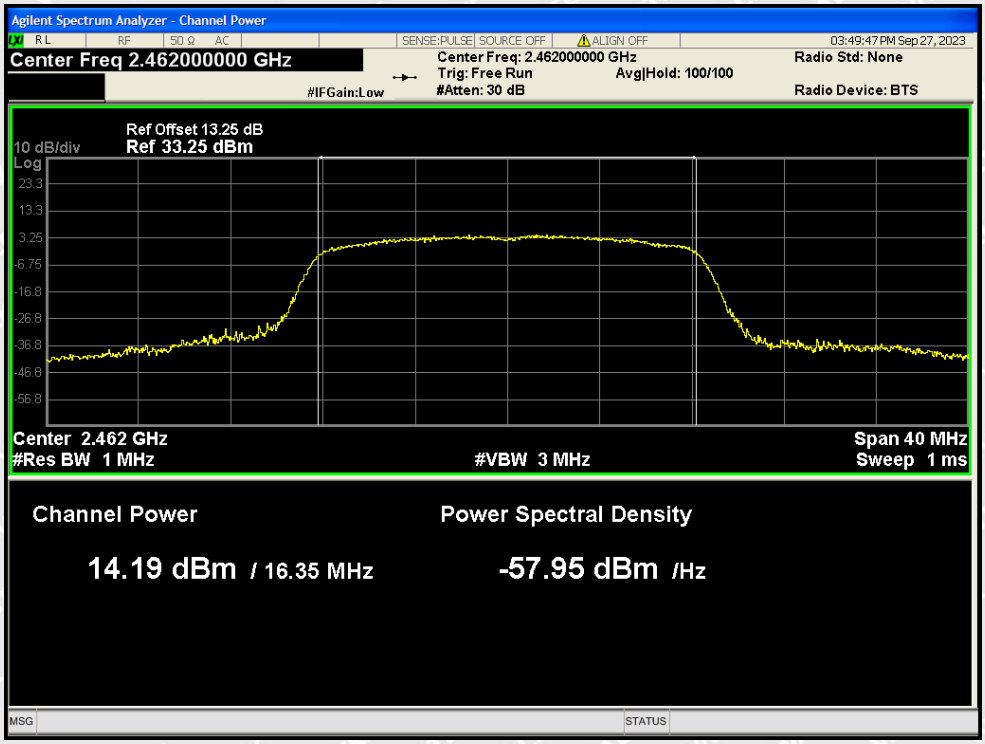
Average Power NVNT g 2412MHz Ant1



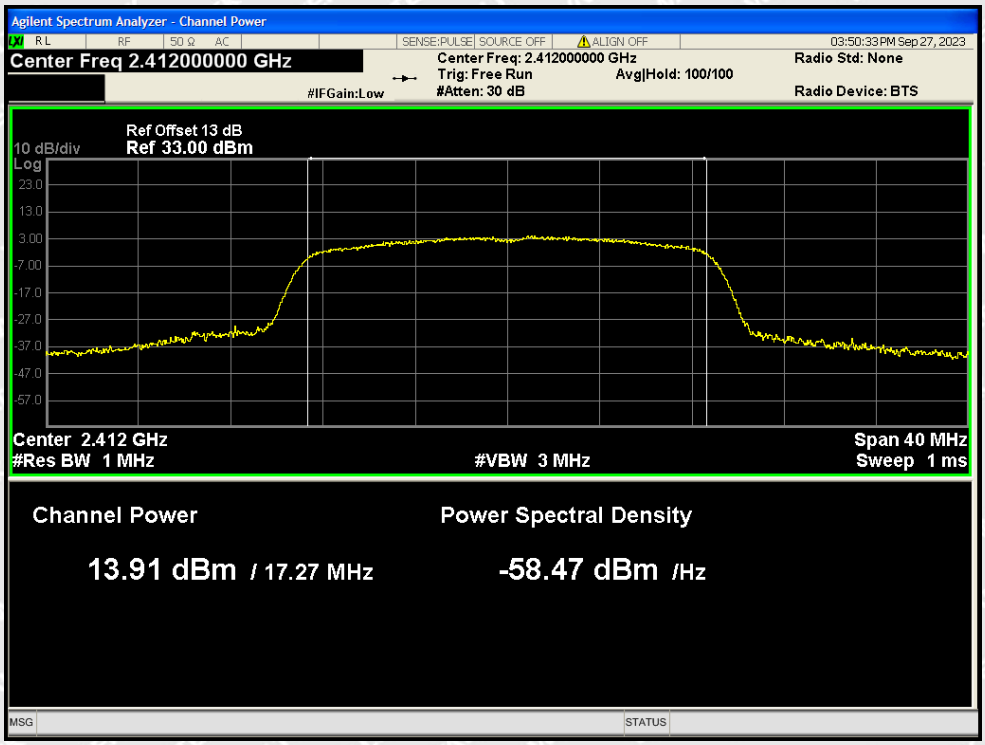
Average Power NVNT g 2437MHz Ant1



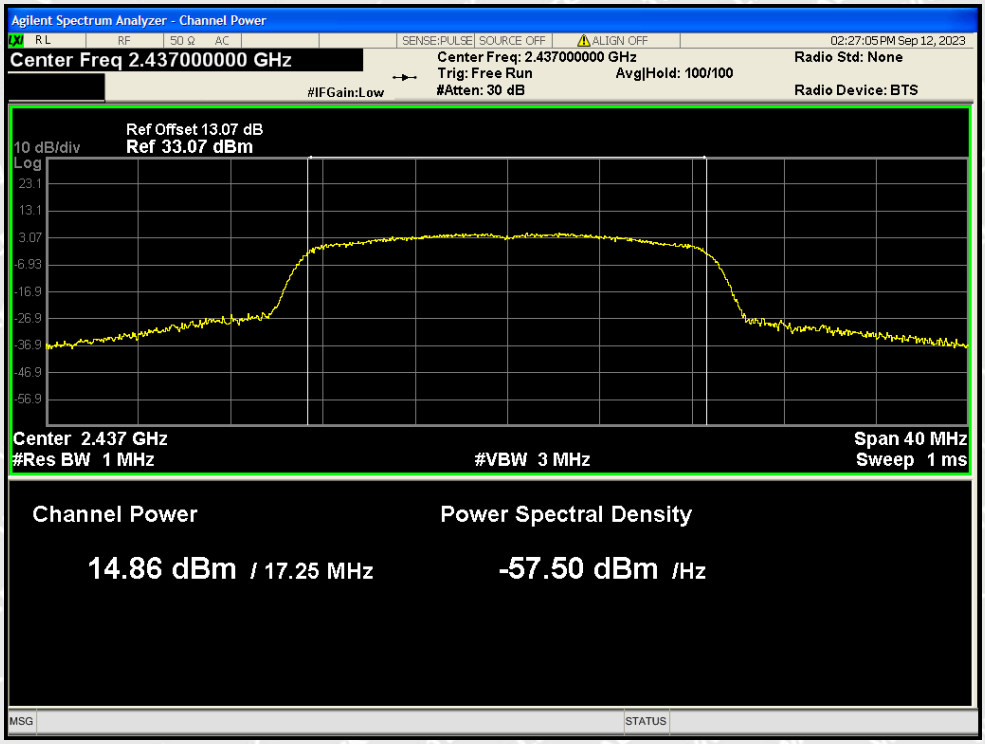
Average Power NVNT g 2462MHz Ant1

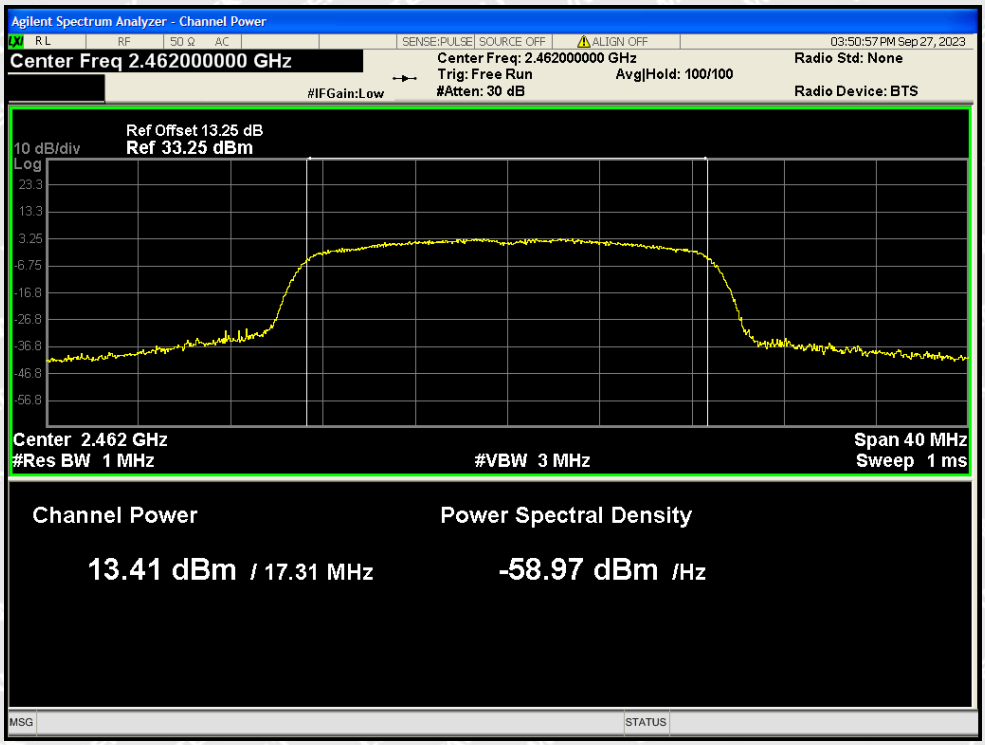


Average Power NVNT n20 2412MHz Ant1

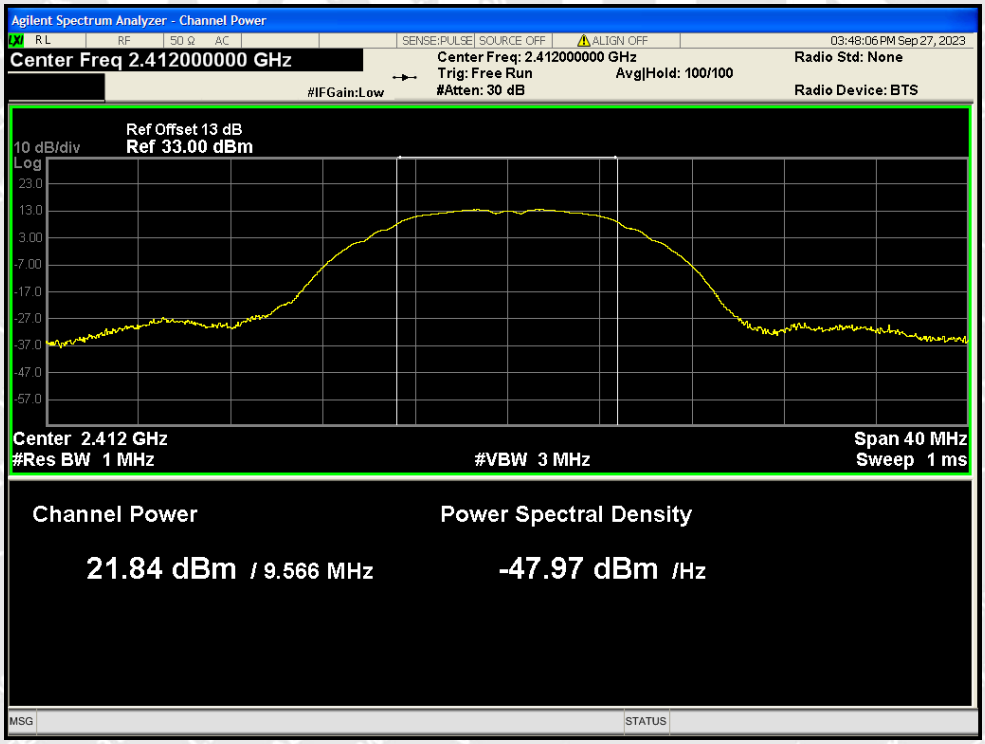


Average Power NVNT n20 2437MHz Ant1

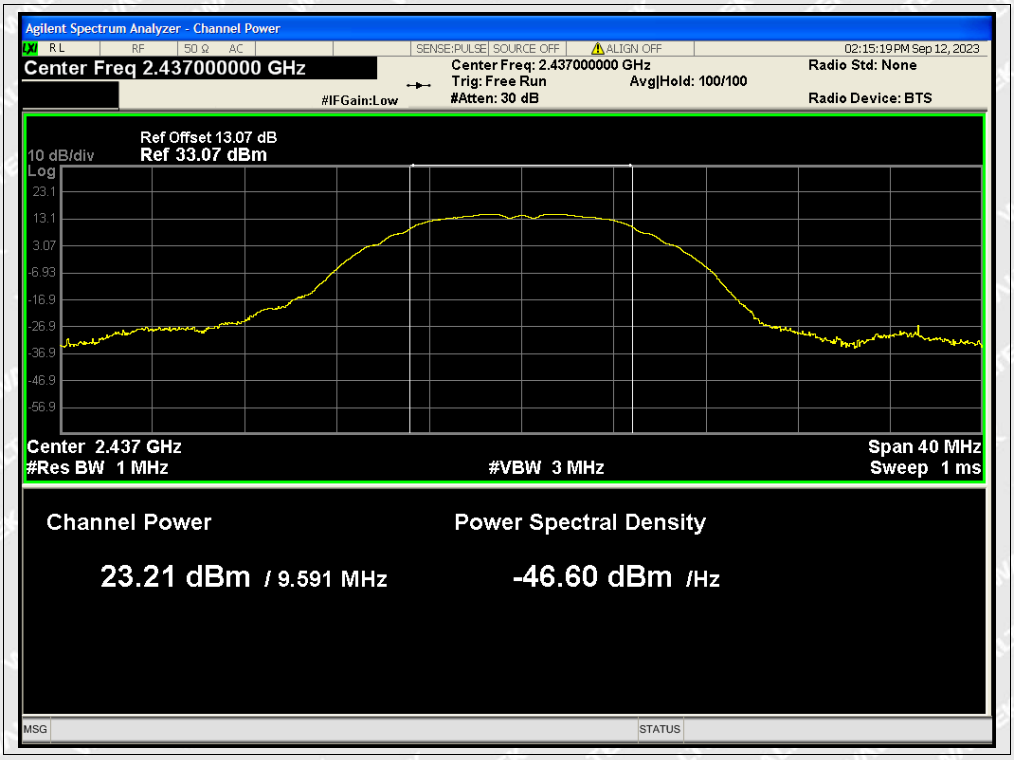


Average Power NVNT n20 2462MHz Ant1


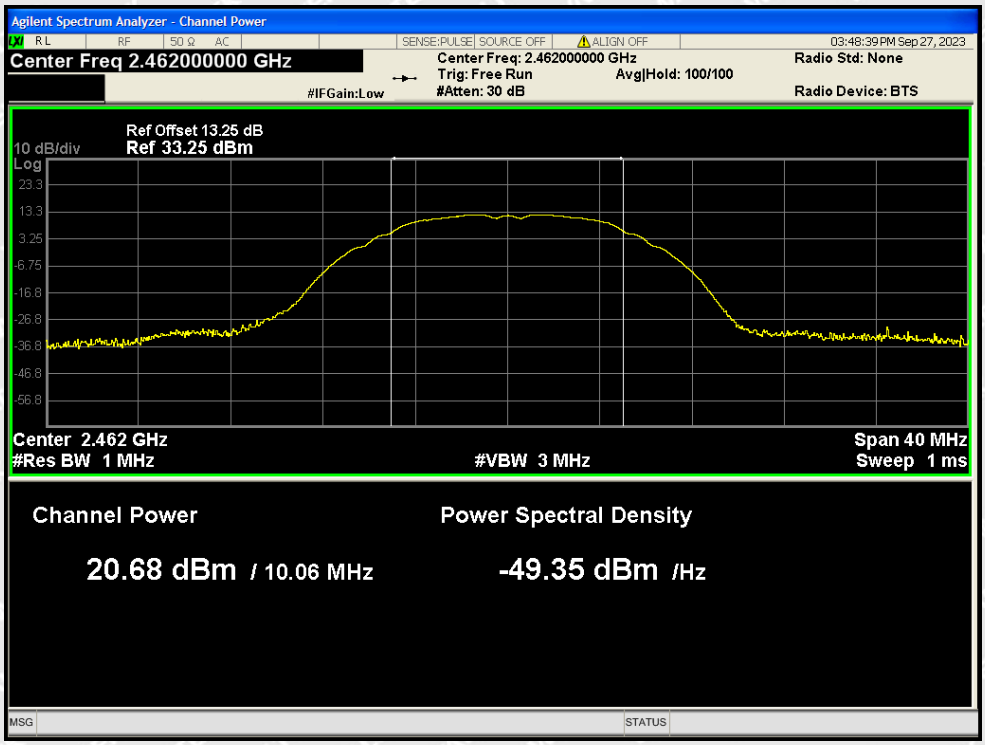
Maximum Peak Conducted Output Power:

Test Graphs
Peak Power NVNT b 2412MHz Ant1


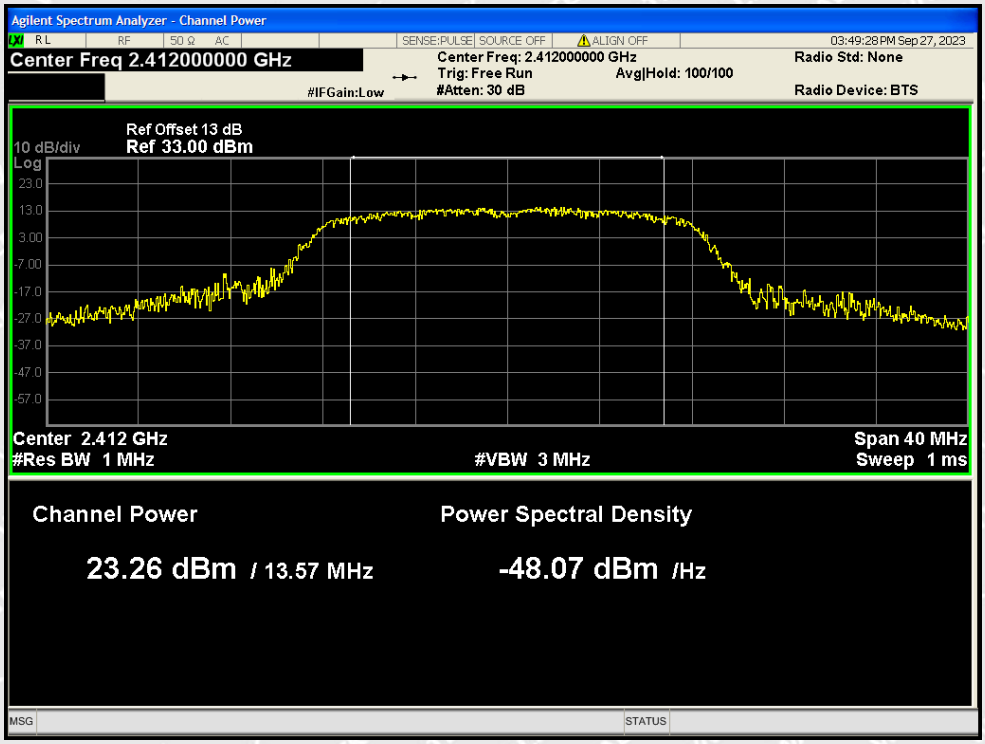
Peak Power NVNT b 2437MHz Ant1


Agilent Spectrum Analyzer - Channel Power
RL
RF
50 Ω AC
SENSE:PULSE
SOURCE OFF
ALIGN OFF
02:15:19 PM Sep 12, 2023
Center Freq 2.437000000 GHz
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 13.07 dB
10 dB/div
Ref 33.07 dBm
Log
23.1
13.1
3.07
-6.93
-16.9
-26.9
-36.9
-46.9
-56.9
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 40 MHz
Sweep 1 ms
Channel Power
23.21 dBm / 9.591 MHz
Power Spectral Density
-46.60 dBm /Hz
MSG
STATUS

Peak Power NVNT b 2462MHz Ant1



Peak Power NVNT g 2412MHz Ant1



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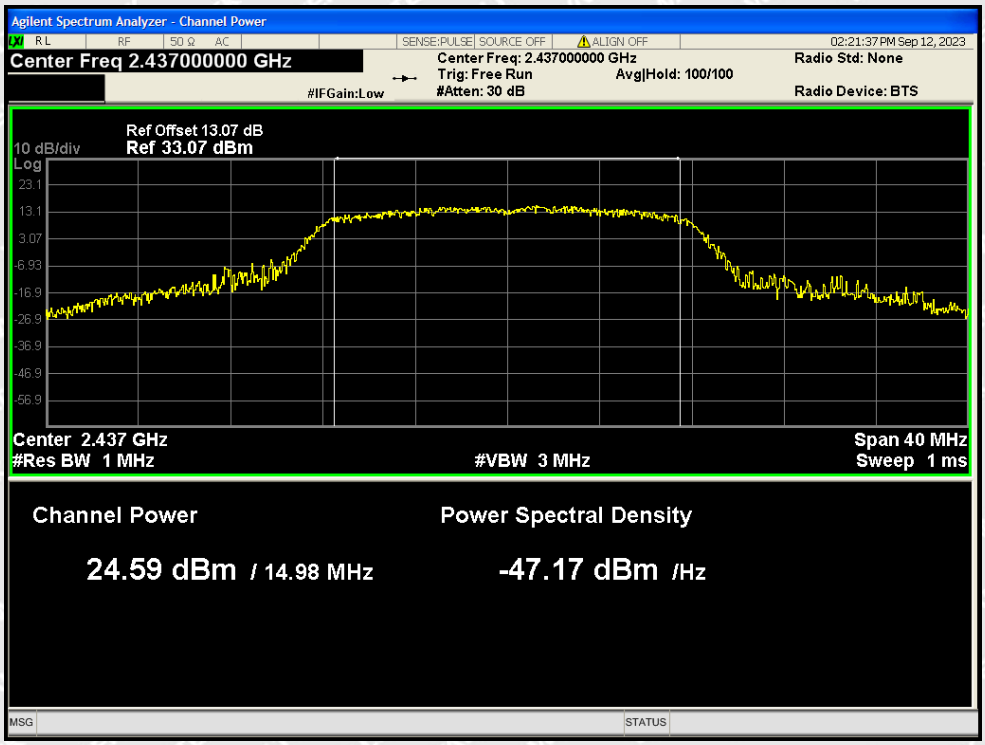

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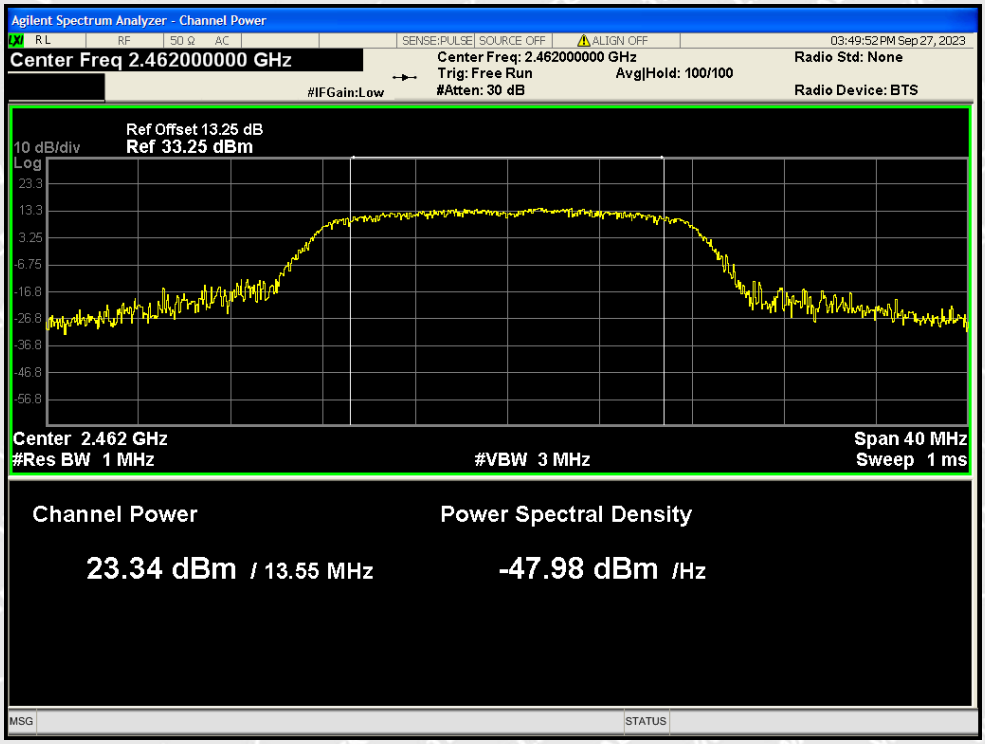
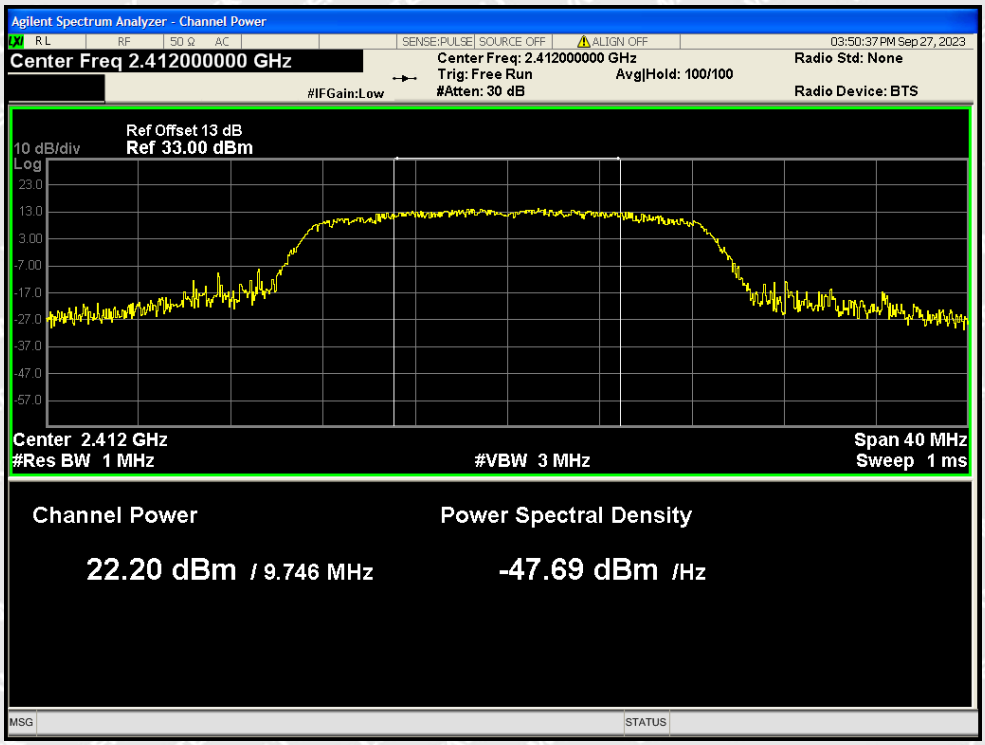
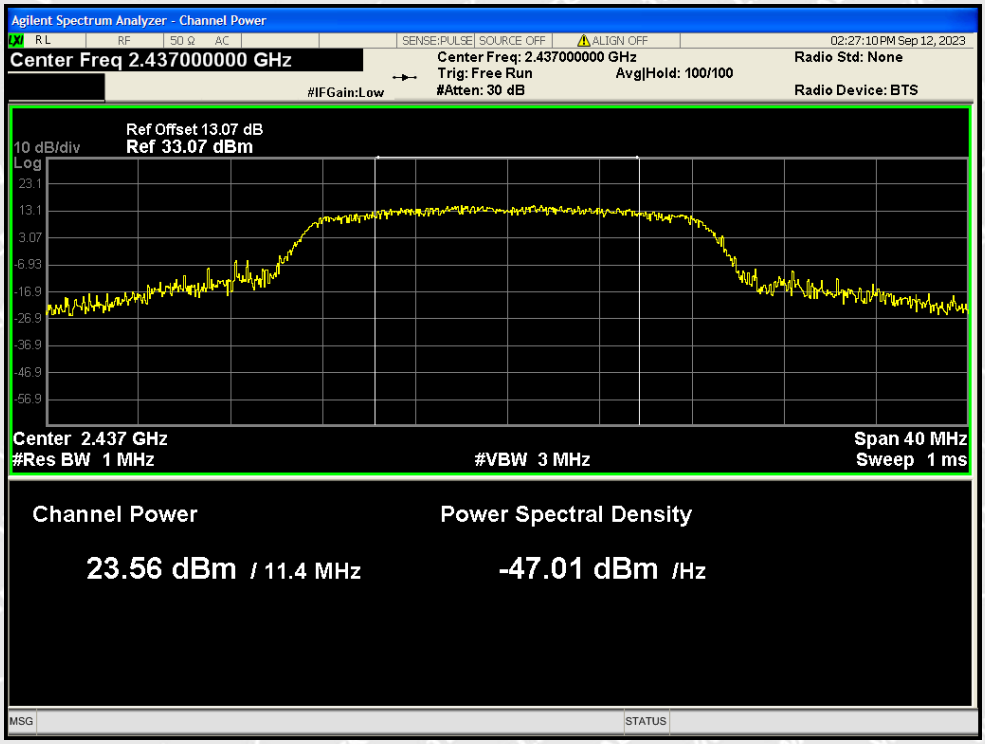


Peak Power NVNT n20 2412MHz Ant1



Peak Power NVNT n20 2437MHz Ant1



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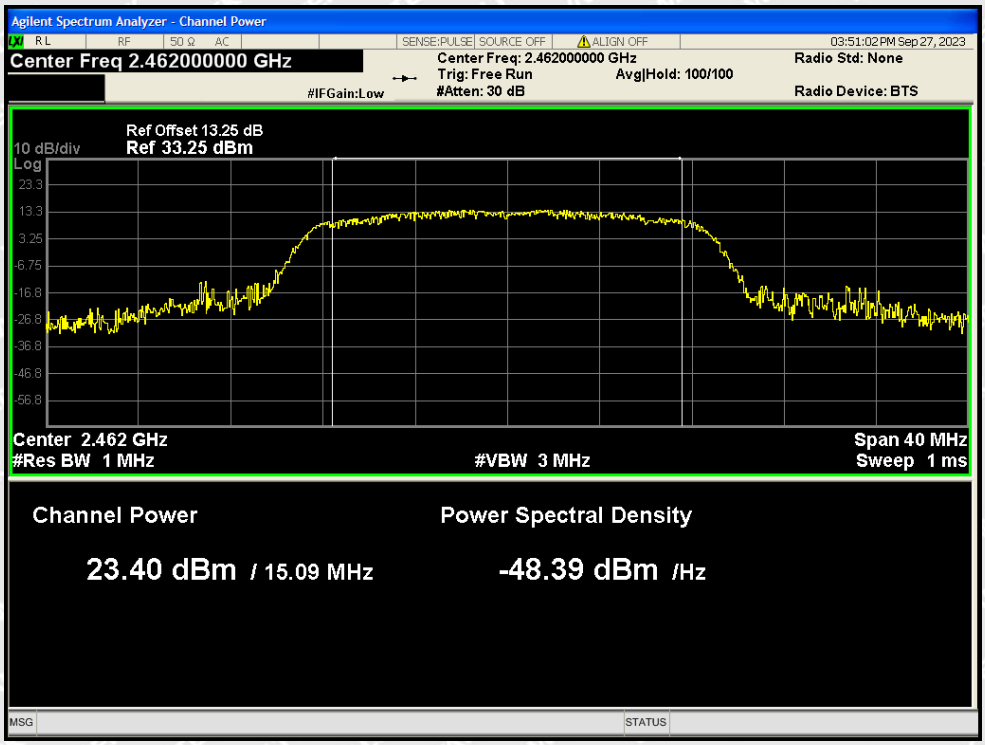


APPENDIX E

Conducted Out of Band Emissions

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-41.29	-20	Pass
NVNT	b	2462	Ant1	-45.18	-20	Pass
NVNT	g	2412	Ant1	-32.43	-20	Pass
NVNT	g	2462	Ant1	-41.33	-20	Pass
NVNT	n20	2412	Ant1	-30.36	-20	Pass
NVNT	n20	2462	Ant1	-41.97	-20	Pass

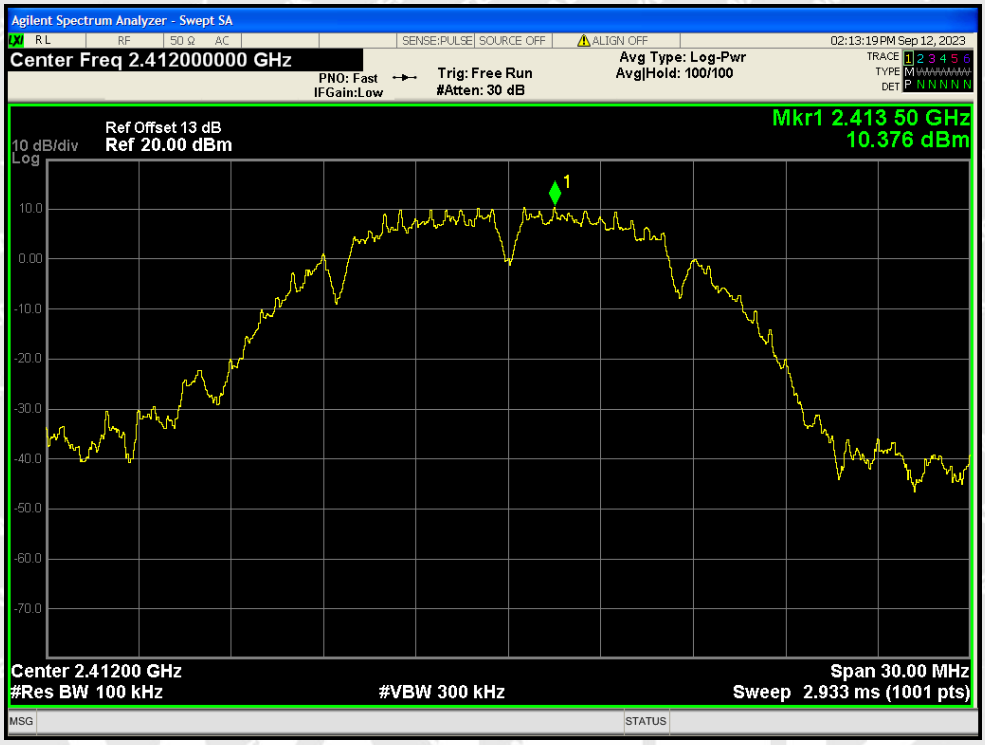
Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-39.97	-20	Pass
NVNT	b	2437	Ant1	-40.85	-20	Pass
NVNT	b	2462	Ant1	-41.42	-20	Pass
NVNT	g	2412	Ant1	-35.55	-20	Pass
NVNT	g	2437	Ant1	-36.37	-20	Pass
NVNT	g	2462	Ant1	-37.25	-20	Pass
NVNT	n20	2412	Ant1	-35.7	-20	Pass
NVNT	n20	2437	Ant1	-36.1	-20	Pass
NVNT	n20	2462	Ant1	-37.38	-20	Pass

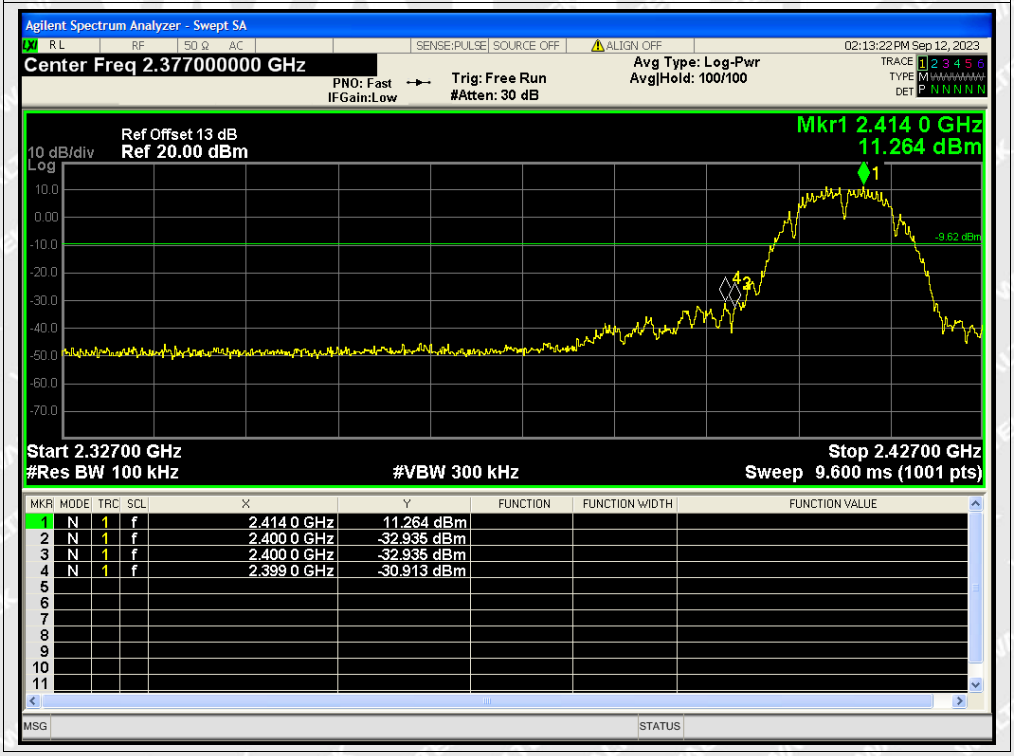
Conducted Out of Band Emissions

Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref

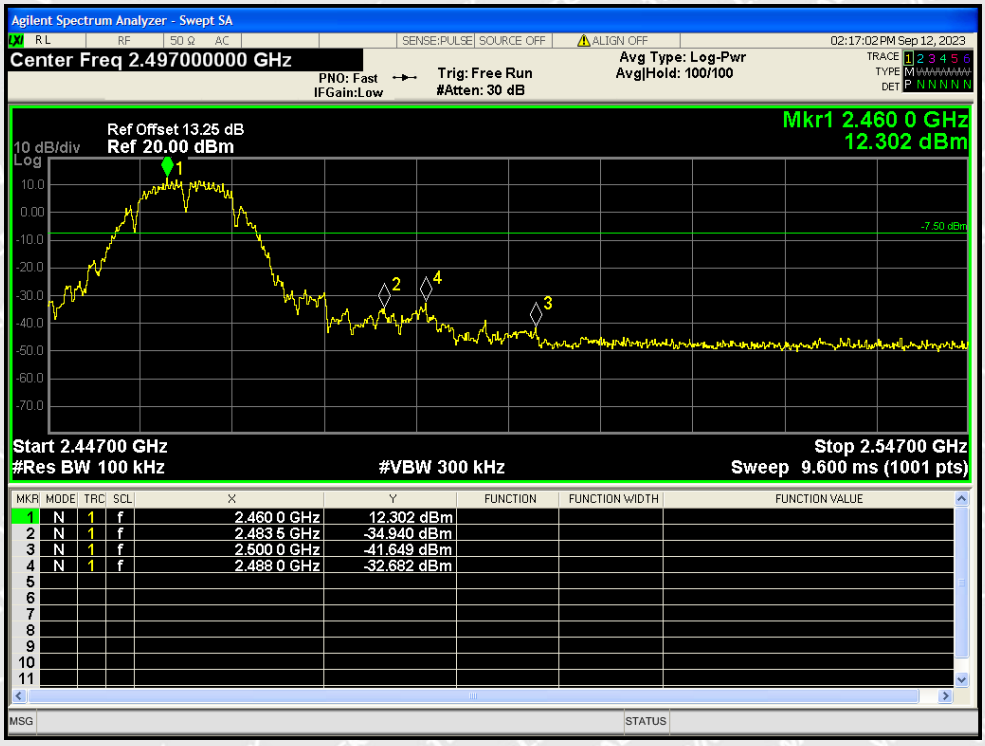


Band Edge NVNT b 2412MHz Ant1 Emission

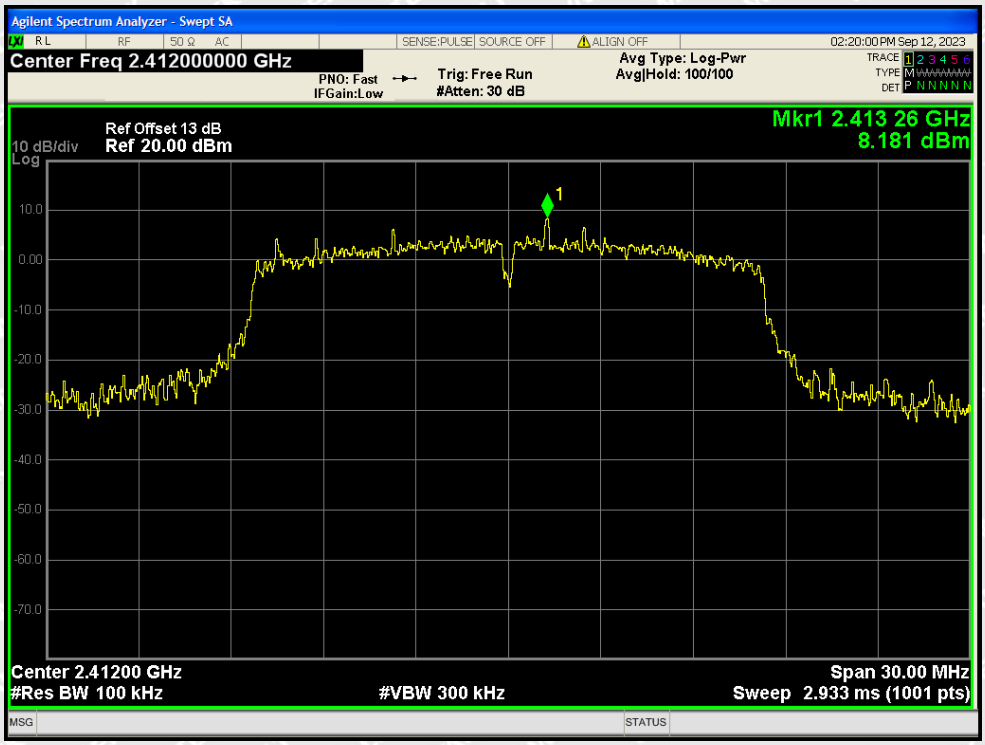


Band Edge NVNT b 2462MHz Ant1 Ref

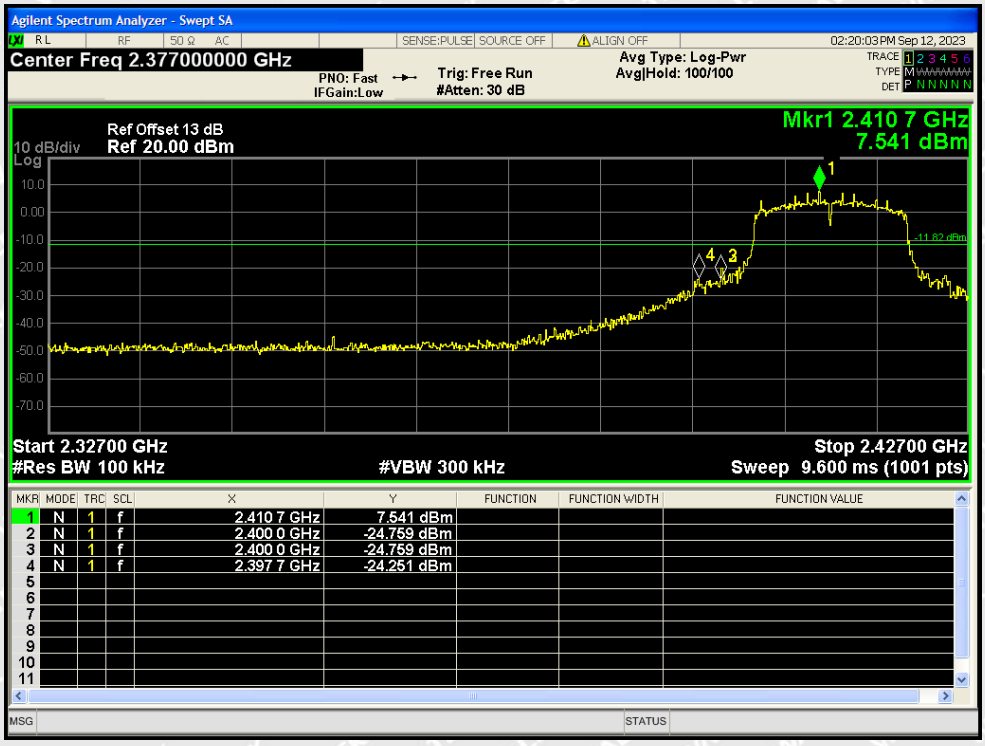
Band Edge NVNT b 2462MHz Ant1 Emission



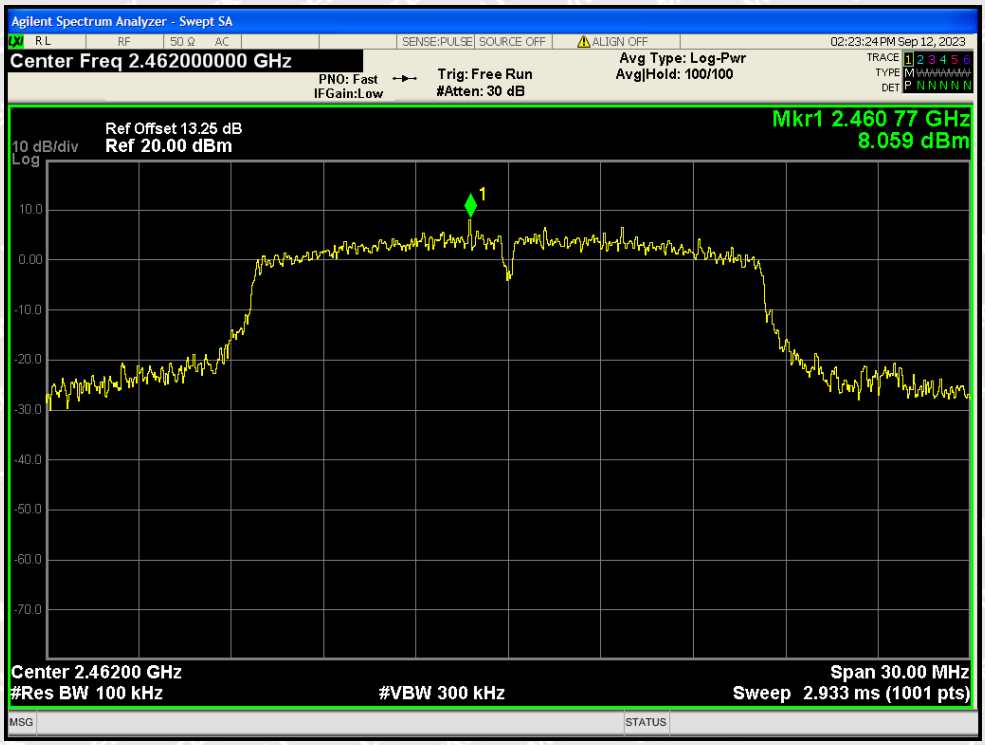
Band Edge NVNT g 2412MHz Ant1 Ref



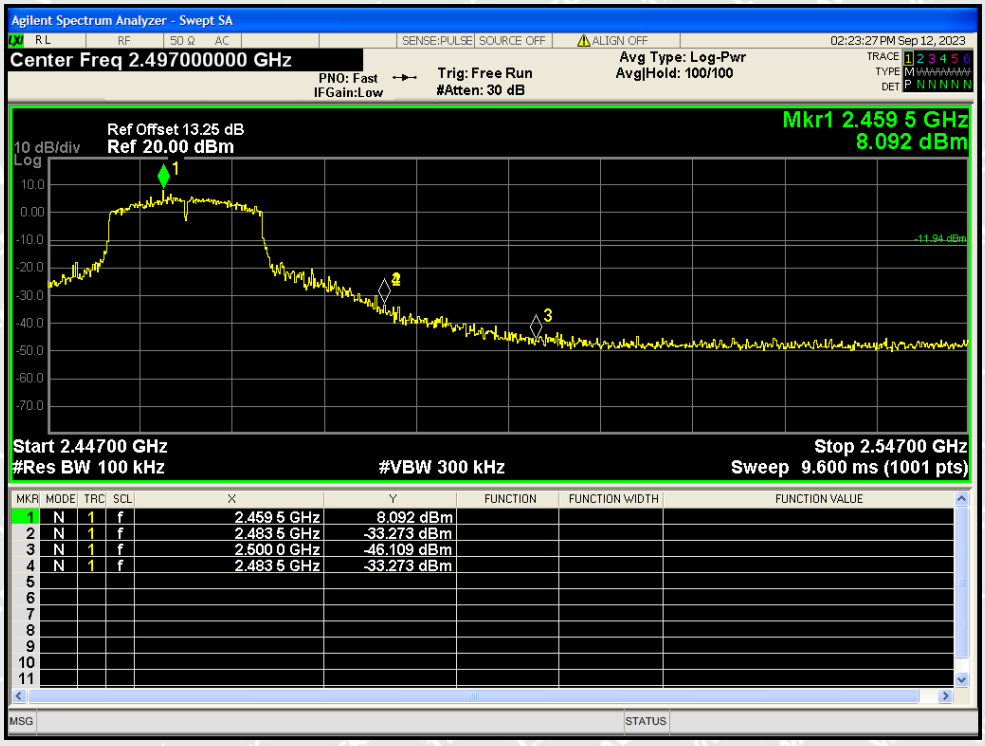
Band Edge NVNT g 2412MHz Ant1 Emission



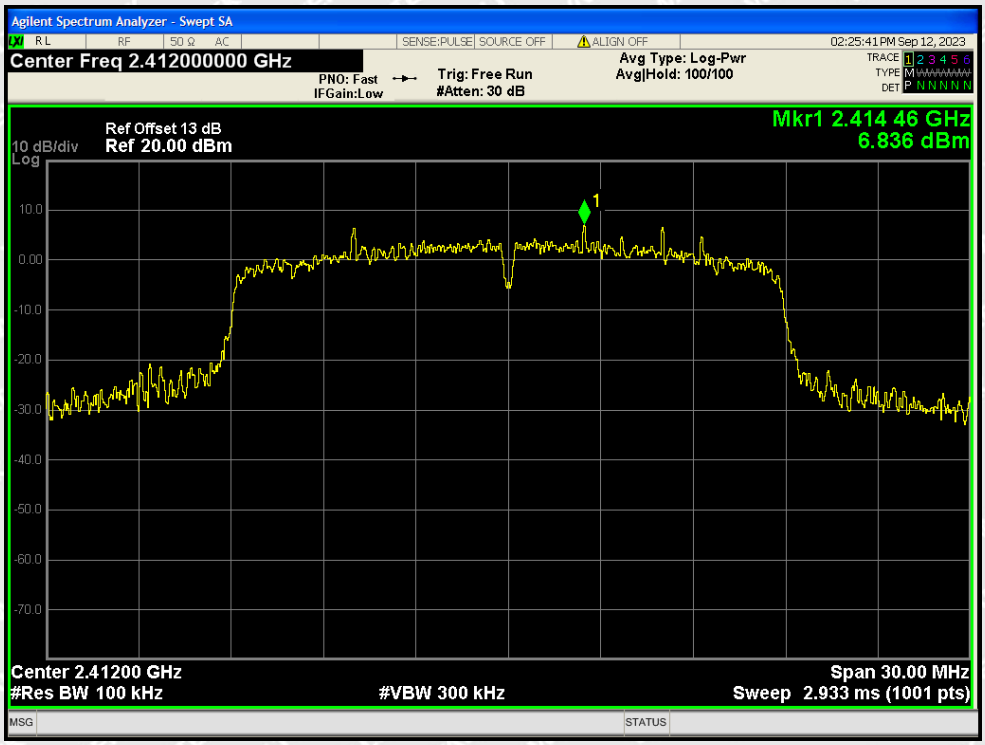
Band Edge NVNT g 2462MHz Ant1 Ref



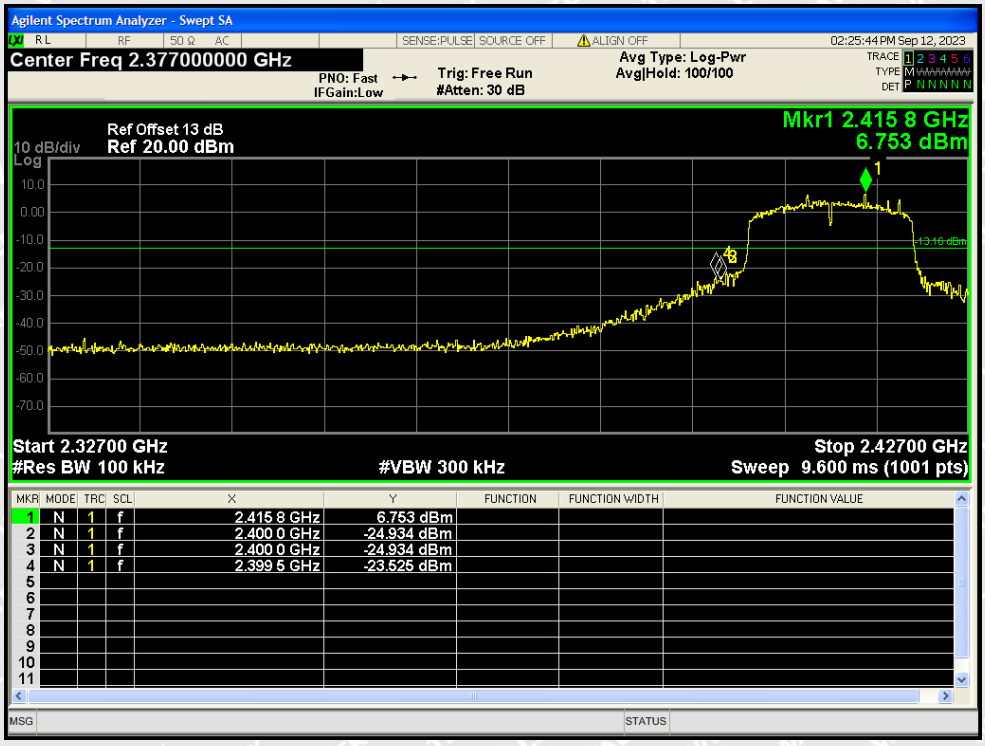
Band Edge NVNT g 2462MHz Ant1 Emission



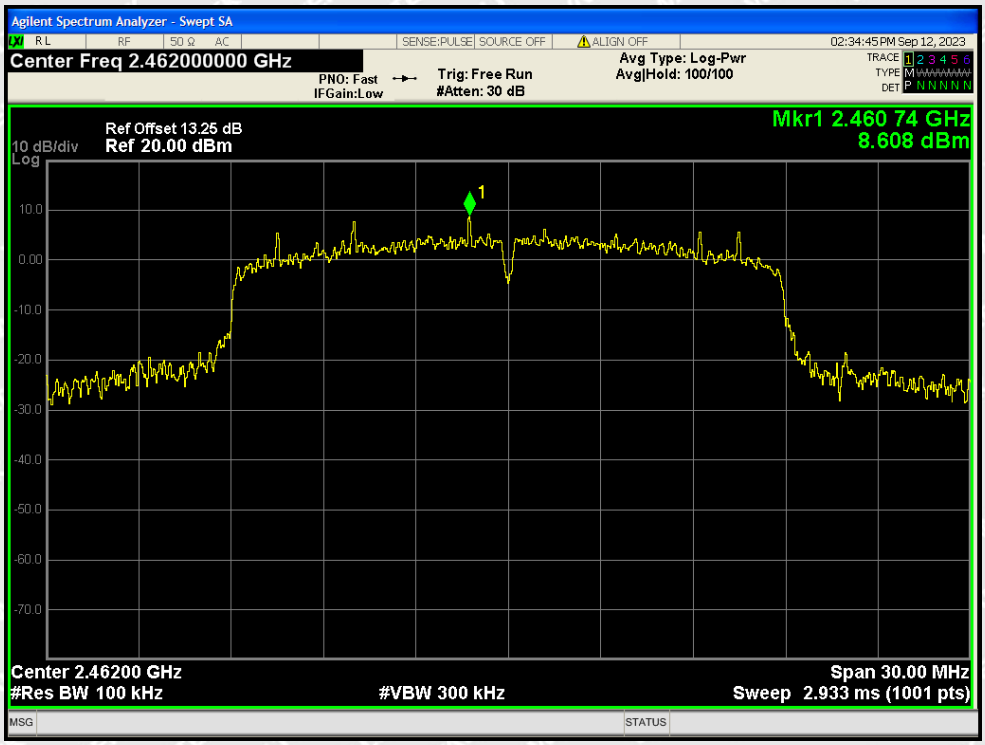
Band Edge NVNT n20 2412MHz Ant1 Ref



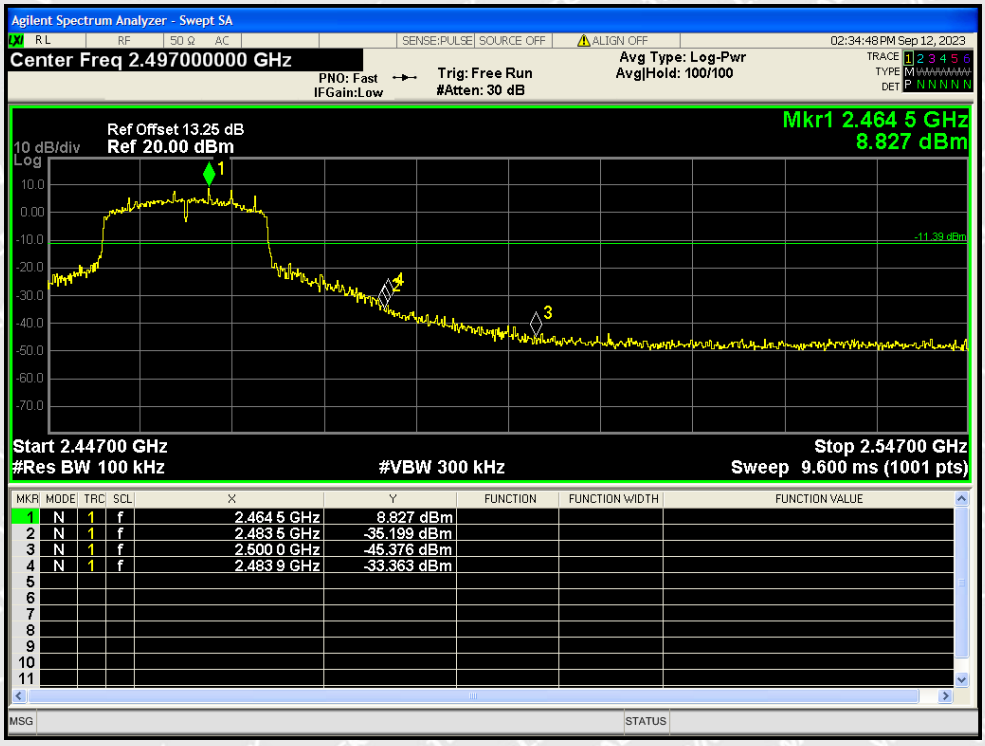
Band Edge NVNT n20 2412MHz Ant1 Emission



Band Edge NVNT n20 2462MHz Ant1 Ref

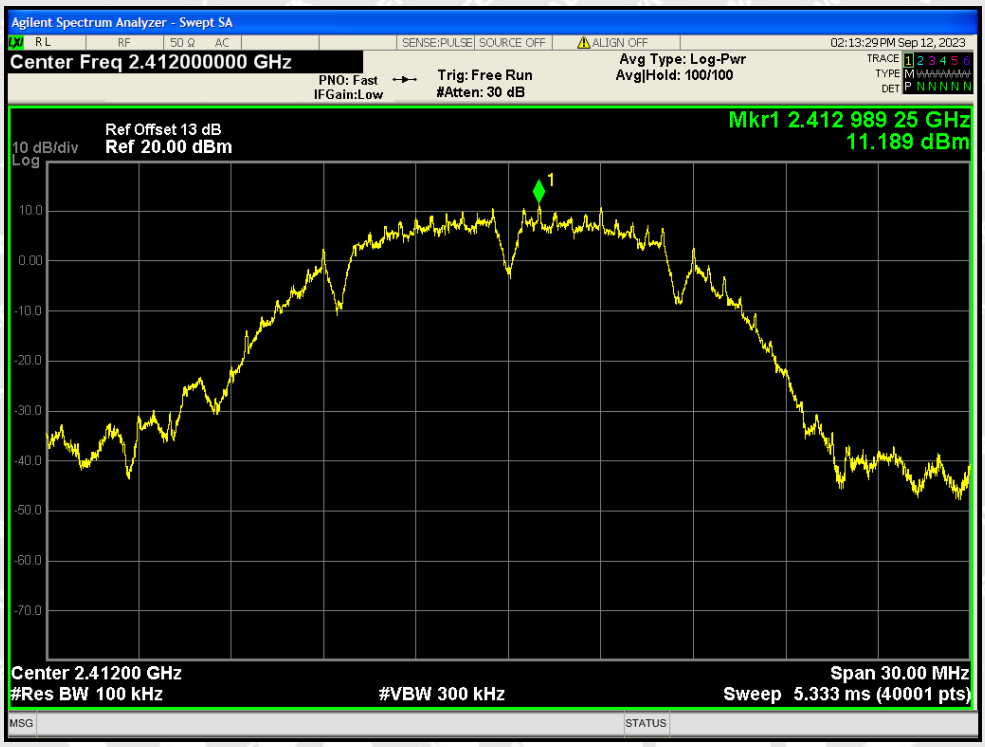


Band Edge NVNT n20 2462MHz Ant1 Emission

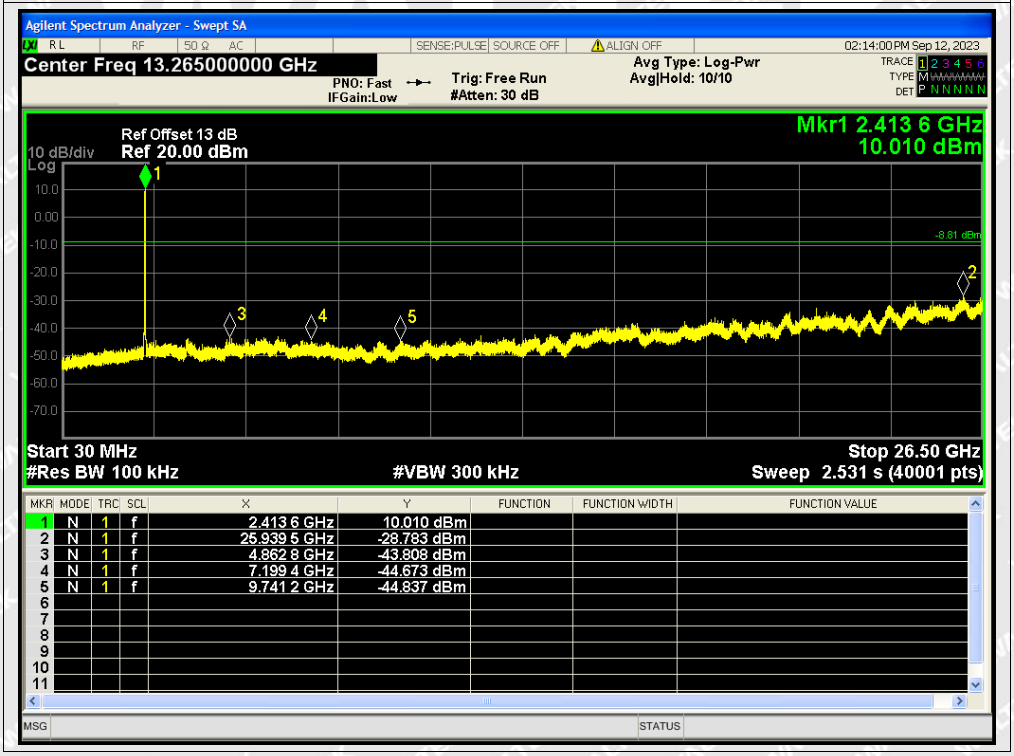


Conducted RF Spurious Emission

Test Graphs
Tx. Spurious NVNT b 2412MHz Ant1 Ref

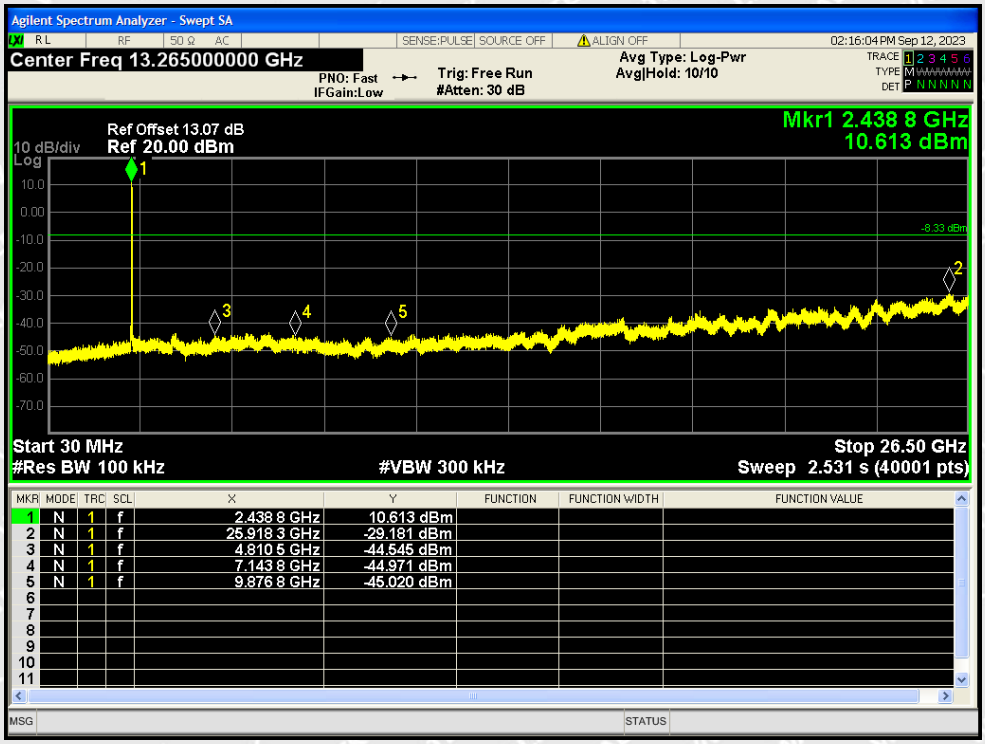


Tx. Spurious NVNT b 2412MHz Ant1 Emission



Tx. Spurious NVNT b 2437MHz Ant1 Ref

Tx. Spurious NVNT b 2437MHz Ant1 Emission



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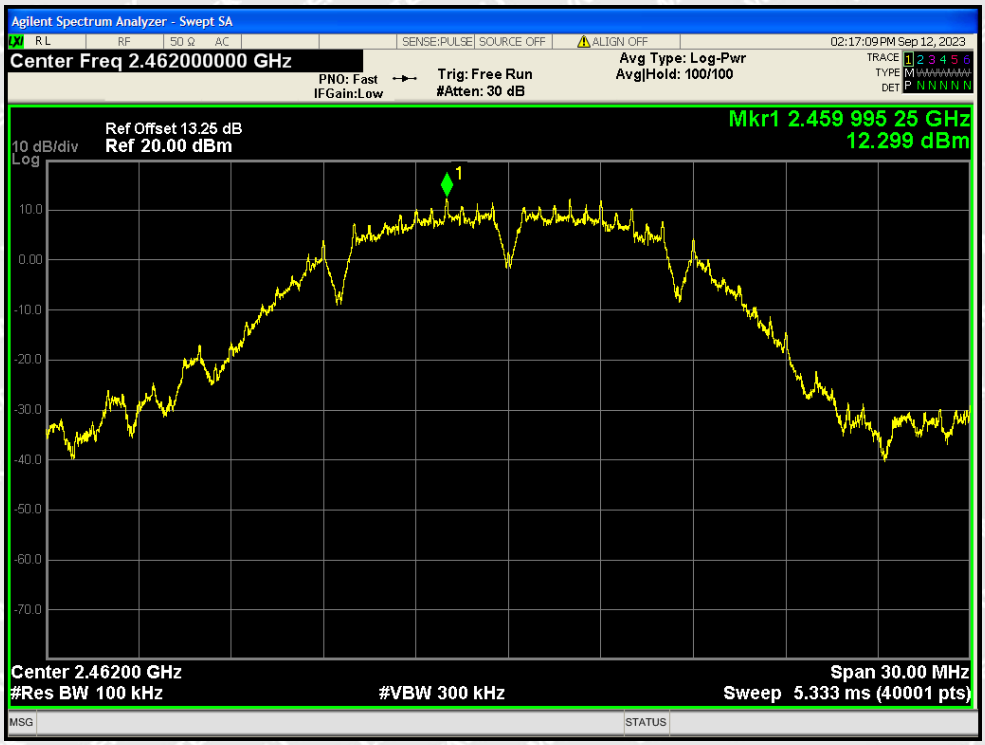

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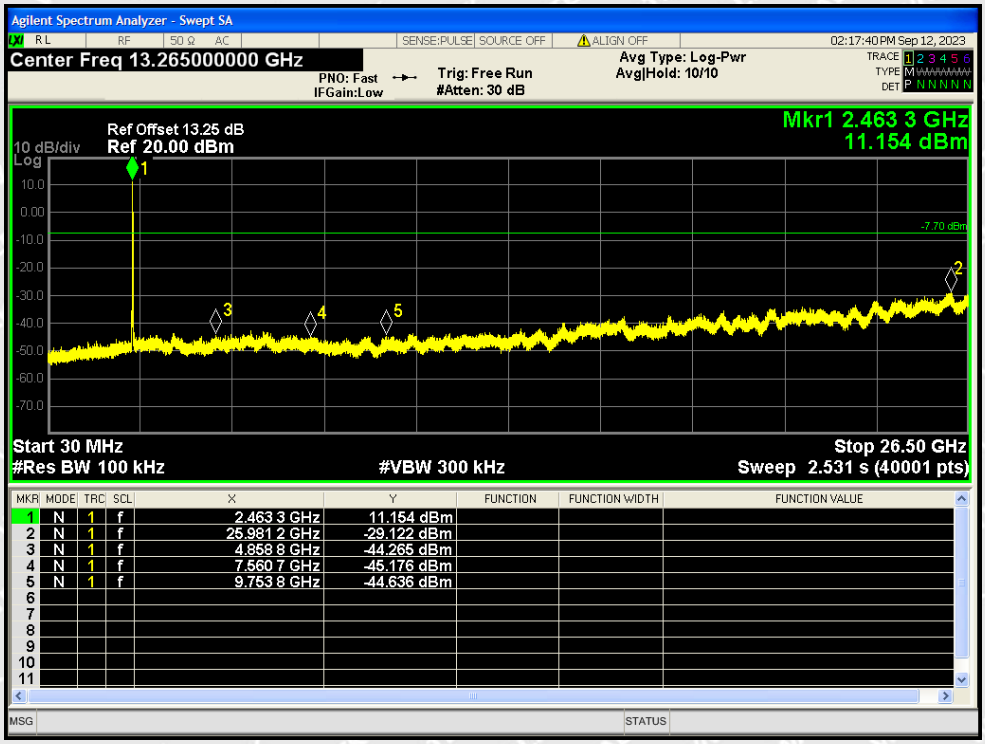
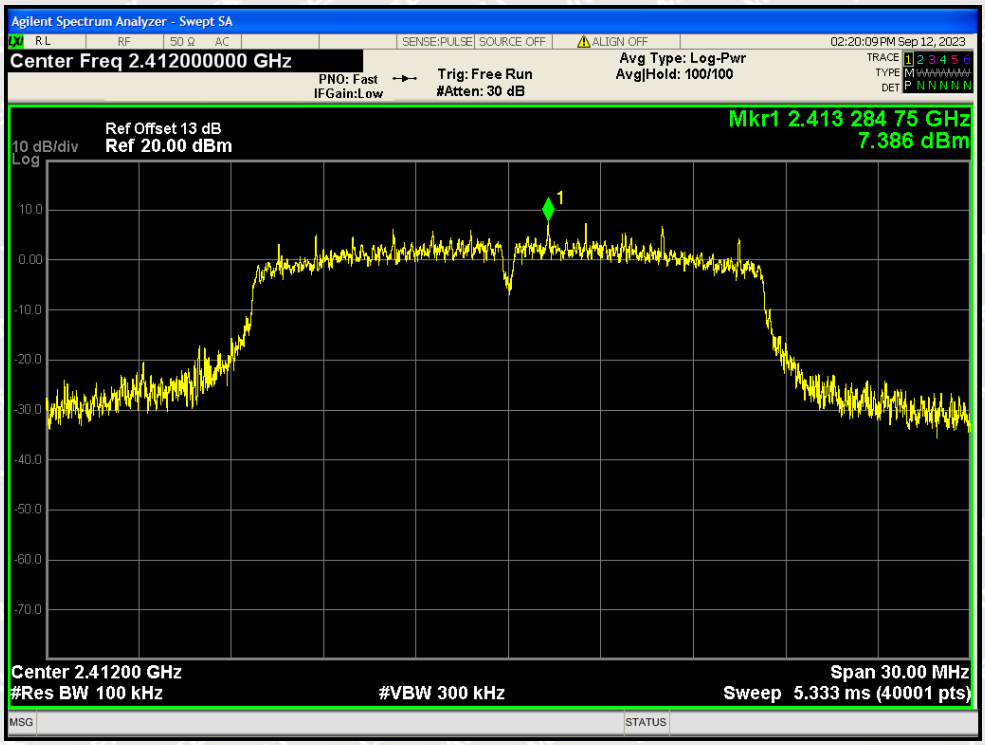
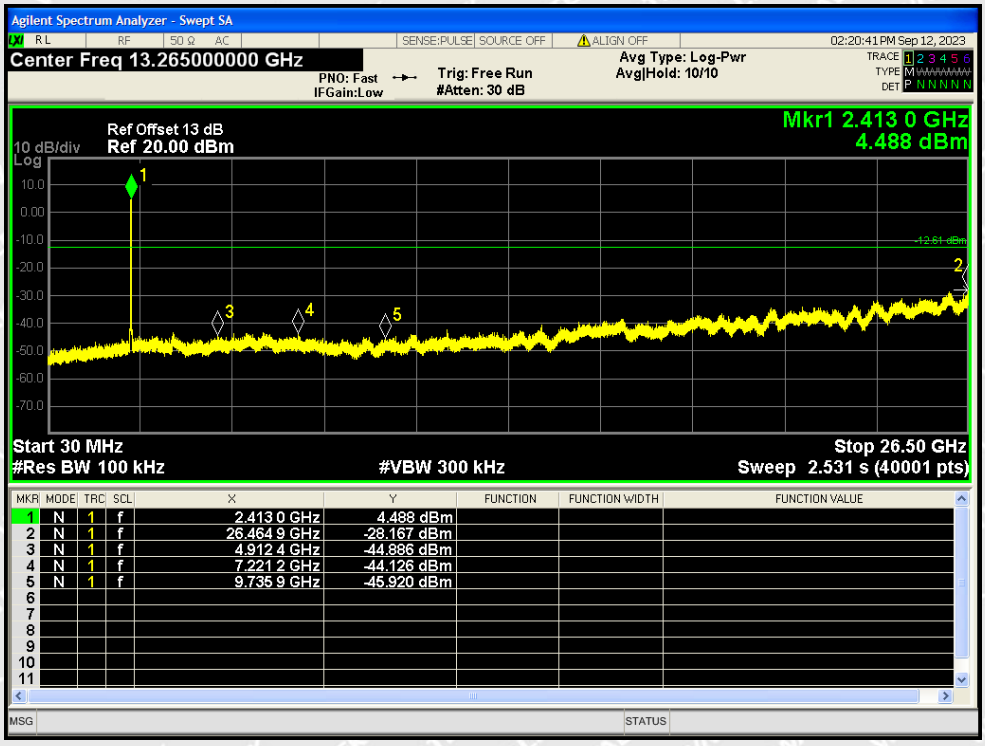


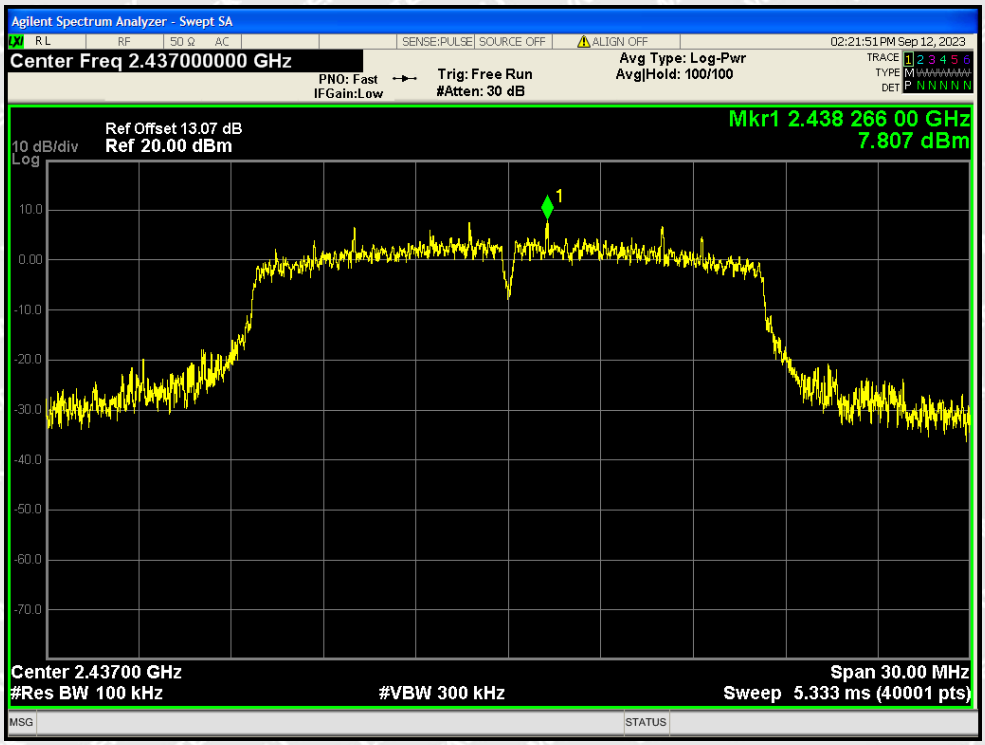
Tx. Spurious NVNT g 2412MHz Ant1 Ref



Tx. Spurious NVNT g 2412MHz Ant1 Emission



Tx. Spurious NVNT g 2437MHz Ant1 Ref



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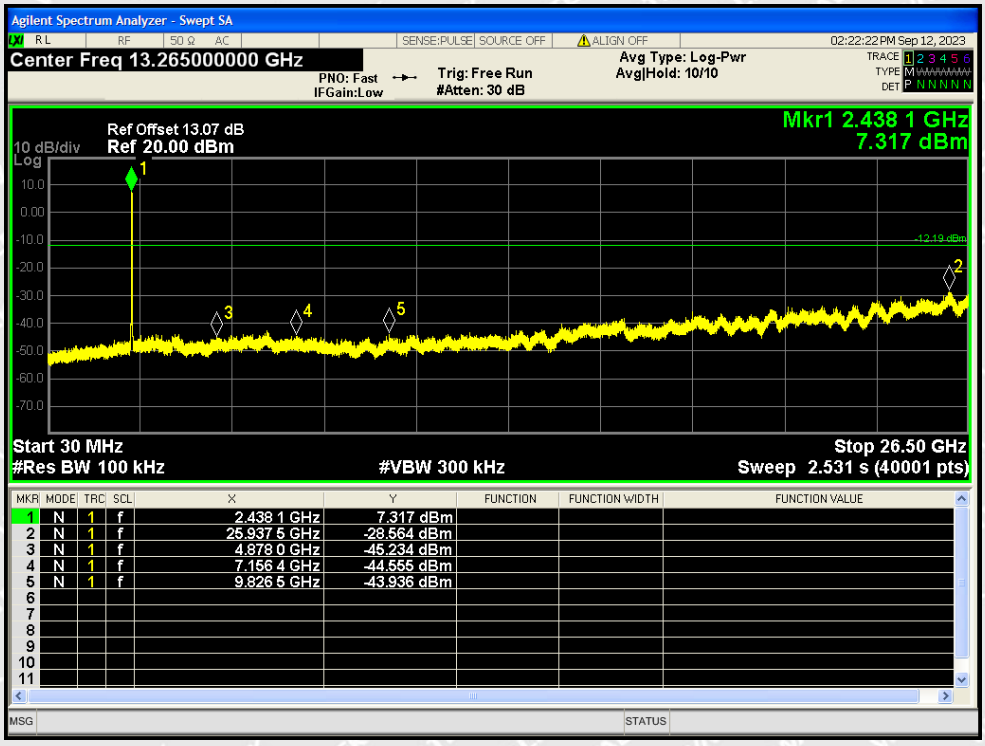

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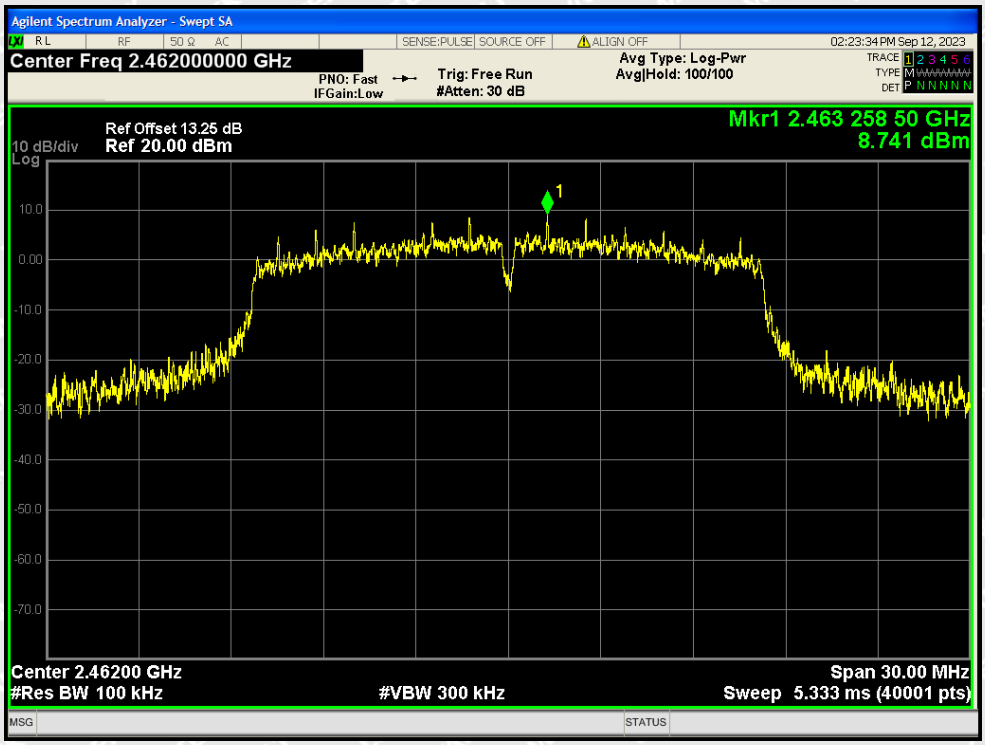
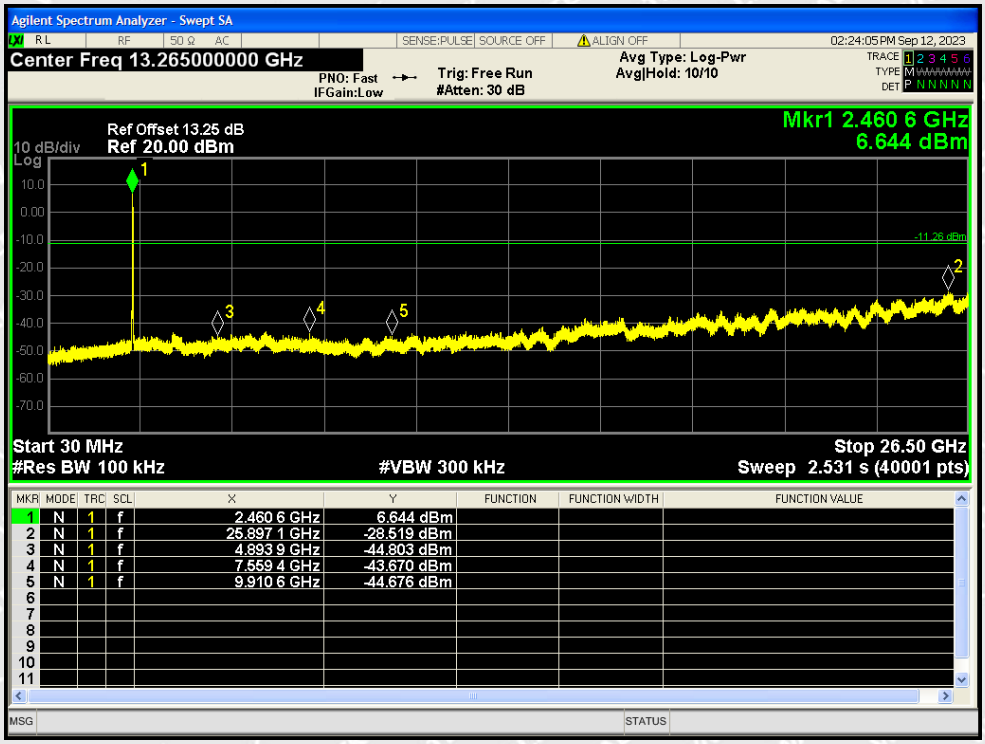
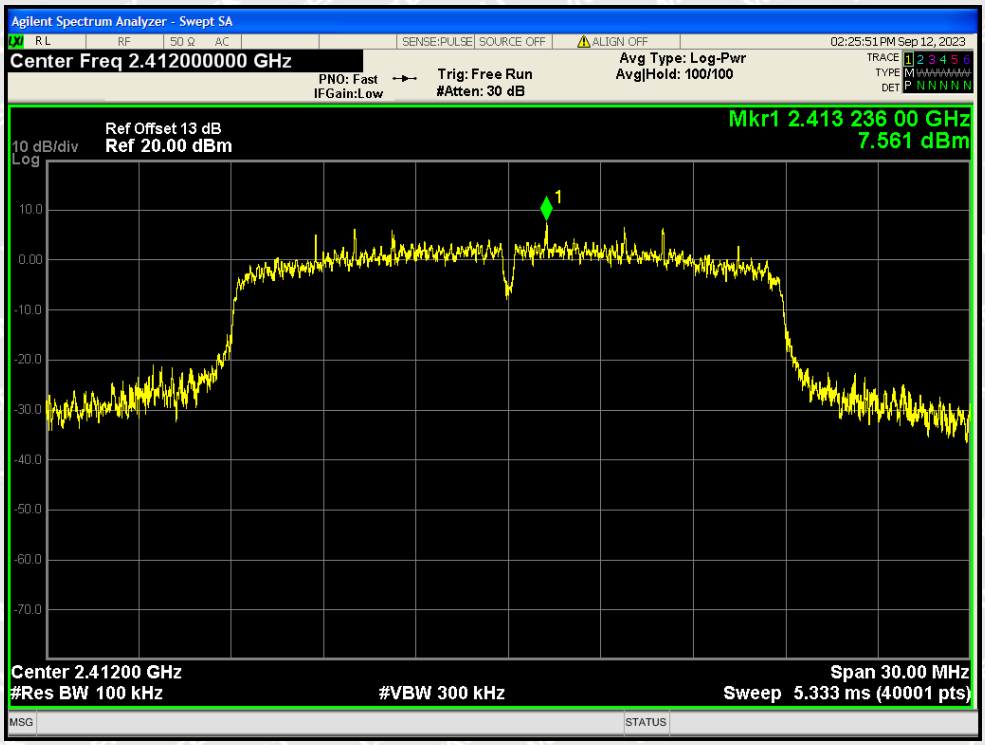


Tx. Spurious NVNT g 2462MHz Ant1 Emission



Tx. Spurious NVNT n20 2412MHz Ant1 Ref



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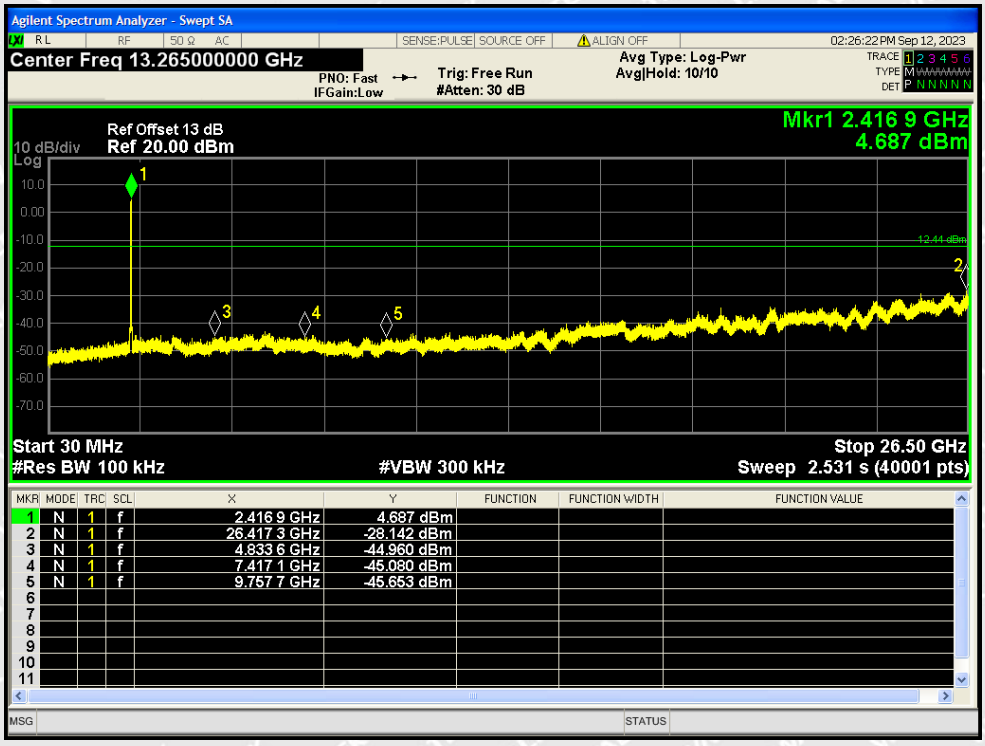
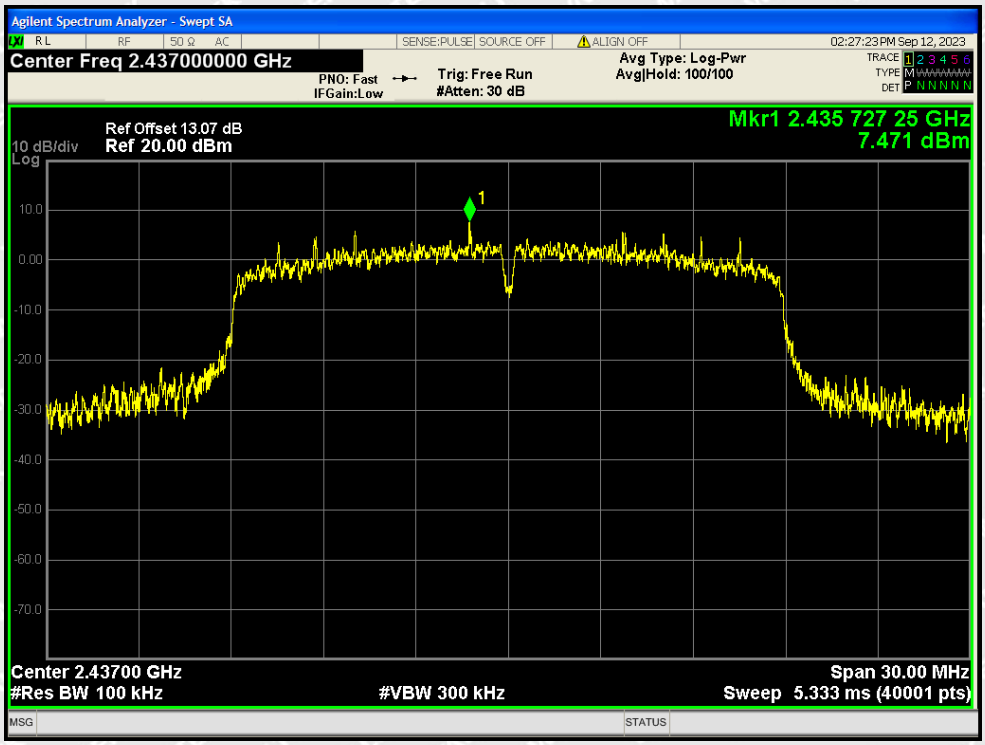


Tx. Spurious NVNT n20 2437MHz Ant1 Ref



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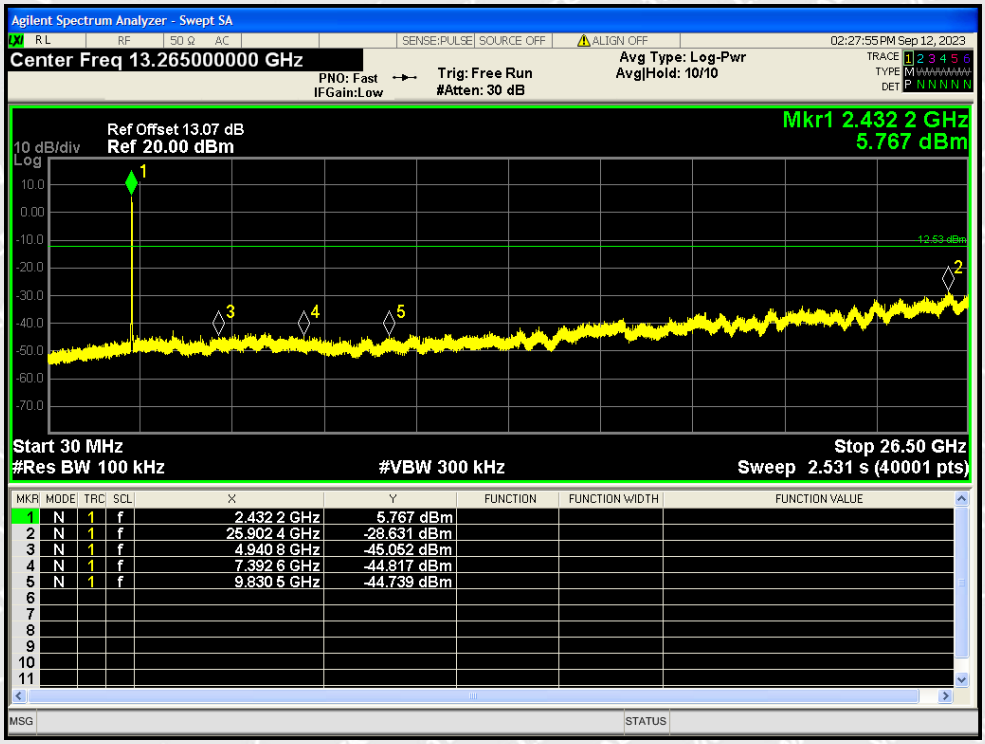

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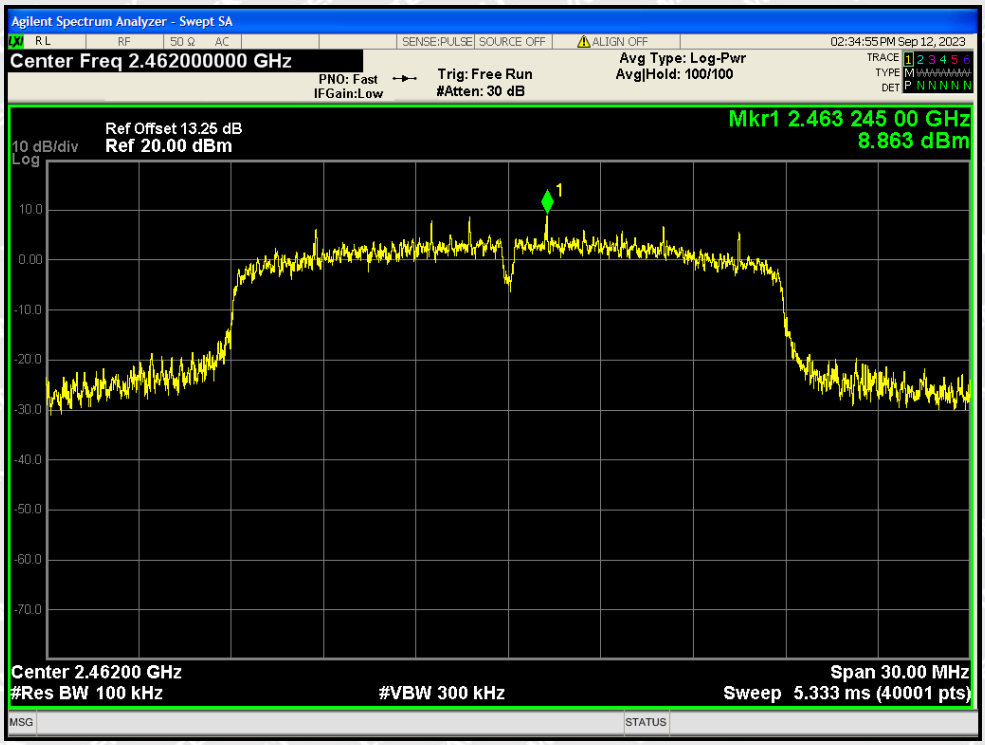
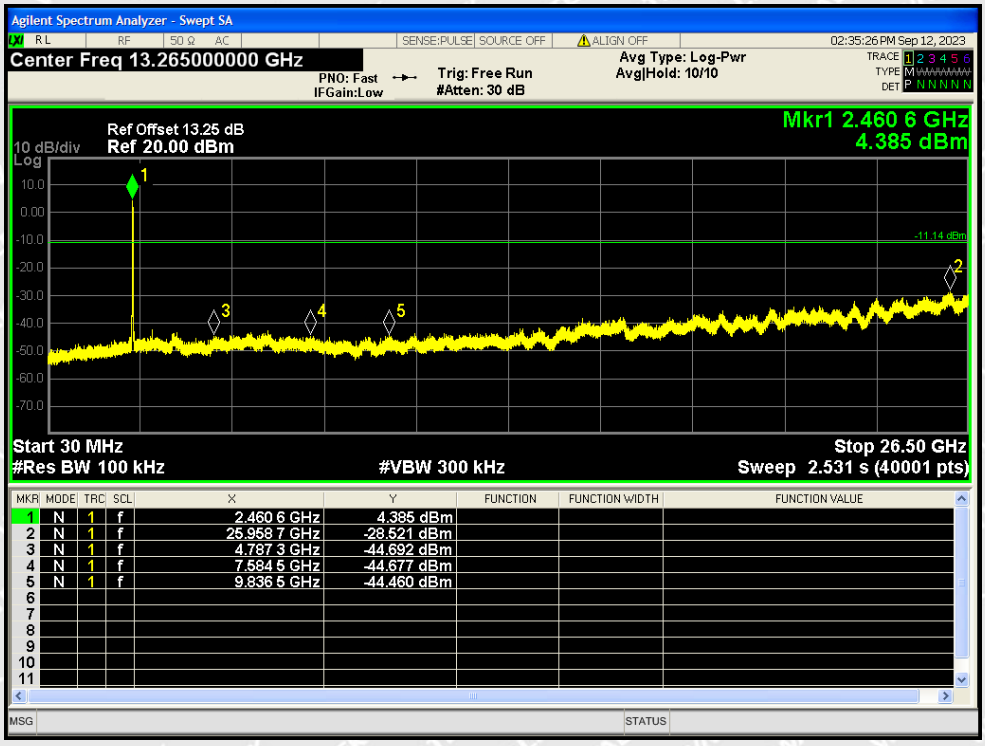


Tx. Spurious NVNT n20 2462MHz Ant1 Emission



TEST SETUP PHOTOGRAPHS

Please refer to “ANNEX”

******* END OF REPORT *******