

RF TEST REPORT

FCC ID: 2BX8P-T5PRO

Product Name: Rugged Tablet
Brand Name: RUGTAKE
Model Name: T5 Pro
Report No.: N26073003404E

Prepared for

Shenzhen Wanfeng Kerui Technology Co., Ltd
Room 521, 5th Floor, Liangji Building, Donghuan 1st Road, Fukang Community, Longhua Street, Longhua District, Shenzhen

Prepared by

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1 Revision History

Revision History			
Report No.	Version	Description	Issued Date
N26073003404E	Rev.01	Initial issue of report	25, Aug. 2026

2 Test Summary

FCC Rule	Test Item	Method	Tested By	Result
47 CFR 15.203	Antenna requirement	---	Yuqiang Xiao	Pass
47 CFR 15.207(a)	Conducted Emission at AC power line	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.2	Runmin Chen	Pass
47 CFR 15.247(a)(1)	20dB Bandwidth	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.6 KDB 558074 D01 15.247 Meas Guidance v05r02	Yuqiang Xiao	Pass
47 CFR 15.247(b)(1)	Maximum Conducted Output Power	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.5 KDB 558074 D01 15.247 Meas Guidance v05r02	Yuqiang Xiao	Pass
47 CFR 15.247(a)(1)	Channel Separation	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.2 KDB 558074 D01 15.247 Meas Guidance v05r02	Yuqiang Xiao	Pass
47 CFR 15.247(a)(1)(iii)	Number of Hopping Frequencies	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.3 KDB 558074 D01 15.247 Meas Guidance v05r02	Yuqiang Xiao	Pass
47 CFR 15.247(a)(1)(iii)	Dwell Time	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.4 KDB 558074 D01 15.247 Meas Guidance v05r02	Yuqiang Xiao	Pass
47 CFR 15.247(d)	Emissions in non-restricted frequency bands	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 7.8.7 KDB 558074 D01 15.247 Meas Guidance v05r02	Yuqiang Xiao	Pass
47 CFR 15.247(d), 15.209, 15.205	Band edge emissions (Radiated)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02	Harry Huang	Pass
47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (below 30MHz)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.4 KDB 558074 D01 15.247 Meas Guidance v05r02		Init
47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (30M - 1GHz)	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02	Harry Huang	Pass

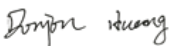
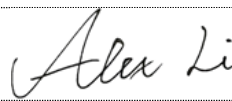
47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (1G - 18GHz)	ANSI C63.10-2020+Cor.1- 2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6 KDB 558074 D01 15.247 Meas Guidance v05r02	Harry Huang	Pass
47 CFR 15.247(d), 15.209, 15.205	Emissions in frequency bands (above 18GHz)	ANSI C63.10-2020+Cor.1- 2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6 KDB 558074 D01 15.247 Meas Guidance v05r02	Harry Huang	Pass

Remark:

1. "N/A" denotes test is not applicable in this Test Report.
2. All test items were verified and recorded according to the standards and without any deviation during the test.

3 Test Result Certification

CLIENT INFORMATION	
Applicant:	Shenzhen Wanfeng Kerui Technology Co., Ltd
Address of Applicant:	Room 521, 5th Floor, Liangji Building, Donghuan 1st Road, Fukang Community, Longhua Street, Longhua District, Shenzhen
Manufacturer:	Shenzhen Wanfeng Kerui Technology Co., Ltd
Address of Manufacturer:	Room 521, 5th Floor, Liangji Building, Donghuan 1st Road, Fukang Community, Longhua Street, Longhua District, Shenzhen
EUT INFORMATION	
Product Name:	Rugged Tablet
Brand Name:	RUGTAKE
Model Name:	T5 Pro
Sample Received Date:	05, Aug. 2026
Sample Number:	S2607310461-1#
Applicable Standards	47 CFR Part 15.247
Measurement Procedures	KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024
This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report. This report shall not be reproduced except in full without the written approval of NTEK. This document may be altered or revised only by NTEK personnel, and revisions shall be recorded in the revision history of the document.	
Date of Test:	10, Aug. 2026 to 21, Aug. 2026
Issue Date:	25, Aug. 2026

Prepared By:		Reviewed by:		Approved By:	
	Donjon Huang (Project Engineer)		Aaron Cheng (Supervisor)		Alex Li (Manager)

4 Facilities and Accreditations

4.1 Facilities

All measurement facilities used to collect the measurement data are located at

Building 1/2/11/12, No. 24 Xinfu East Road, Xiangshan Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 16-1-4.

4.2 Laboratory Accreditations And Listings

Site Description	
CNAS-Lab.	: Registration Code L5516
A2LA-Lab.	: Certificate Number 4298.01
FCC-Accredited	: Test Firms Registration Number: 463705 Designation Number: CN1184
ISED Wireless Device Testing Laboratories	: The ISED Company Number is 9270A CAB identifier:CN0074

4.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where the expanded uncertainty U is obtained by multiplying the standard uncertainty by a coverage factor $k=2$, corresponding to a confidence level of approximately 95%.

Item	Uncertainty
Conductions Emission-Power Port(0.15MHz ~ 30MHz)	3.30dB
FCC_Occupied bandwidth(2G/3G/4G/5G)	0.01
RF Power, conducted	1.34dB
Spurious emissions, conducted	2.71dB
Radiated Spurious Emissions(1GHz ~ 18GHz)	5.1dB
Radiated Spurious Emissions(30MHz ~ 1GHz)	4.9dB
Radiated Spurious Emissions(18GHz ~ 40GHz)	5.76dB

5 General Description of EUT

5.1 Details of E.U.T.

Product Name	Rugged Tablet
Brand Name	RUGTAKE
Model Name	T5 Pro
Family Model	T1, T1 Pro, T1 Plus, T3, T3 Pro, T3 Plus, T5, T5 Plus, T6, T6 Pro, T6 Plus, T7, T7 Pro, T7 Plus, T8, T8 Pro, T8 Plus, T9, T9 Pro, T9 Plus
Model Difference	Only the model name is different.

Note 1: From the above models, model T5 Pro was selected as representative model for the test and its data was recorded in this report. Note 2: The above information was declared by manufacturer.

5.2 EUT Feature And Specification

Operation Frequency	2402MHz to 2480MHz			
Modulation	GFSK, $\pi/4$ DQPSK, 8DPSK			
Number of Channels	79			
Antenna Type	PIFA antenna			
Antenna Gain	-0.39dBi			
Antenna system	☒ SISO; ☐ MIMO;			
Power Supply	☒ DC supply: DC 3.87V			
	☒ Adapter supply: N/A			
Battery	DC 3.87V 20080mAh 77.71Wh			
Adapter	Model: QZ-D031A2-33 Input: 100-240V~50/60Hz 1.2A Output(PD): 5.0V---3.0A 15.0W or 9.0V---3.0A 27.0W or 12.0V---2.5A 30.0W or 15.0V---2.0A 30.0W or 20.0V---1.5A 30.0W Max. (PPS) 5.0V-11.0V---3.0A 33.0W Max.			
Hardware Version	J37_9621MB_D4FU_V1.0			
Firmware Version	N/A			
Software Version	RUGTAKE_T5 Pro_A16_V01_20260702			
Frequency and Channel list:				
Channel		Frequency(MHz)	Channel	Frequency(MHz)
0		2402	39	2441
1		2403	40	2442
...		...	...	...
37		2439	77	2479
38		2440	78	2480

Note: 1. The above mentioned information was declared by the manufacturer.

2. $F=2402\text{MHz}+k \times 1 \text{ MHz}$ ($k=0,1,\dots,78$)

5.3 Deviation from Standards

None

5.4 Abnormalities from Standard Condition

None

6 Description of Test Modes and Operation Configuration of EUT

6.1 Description of Test Modes

- The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.
- AC power line Conducted Emission was tested under maximum output power.
- The measurements are performed at the highest, middle, lowest available channels.
- The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

The following summary table is showing all test modes to demonstrate in compliance with the standard

No	Title	Description
TM1	TX-GFSK (Non-Hopping)	Keep the EUT in continuously transmitting mode (non-hopping) with GFSK modulation at lowest, middle and highest channel.
TM2	TX-Pi/4DQPSK (Non-Hopping)	Keep the EUT in continuously transmitting mode (non-hopping) with Pi/4DQPSK modulation at lowest, middle and highest channel.
TM3	TX-8DPSK (Non-Hopping)	Keep the EUT in continuously transmitting mode (non-hopping) with 8DPSK modulation at lowest, middle and highest channel.
TM4	TX-GFSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with GFSK modulation,.
TM5	TX-Pi/4DQPSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with Pi/4DQPSK modulation.
TM6	TX-8DPSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with 8DPSK modulation.

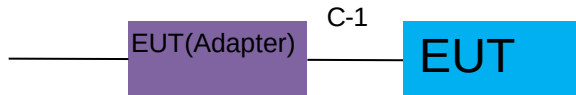
6.2 Operation Configuration of EUT

	Normal Test Conditions	Extreme Test Conditions
Temperature	25 °C	LTNV:0 °C HTNV:50 °C
Relative Humidity	20% - 75%	N/A
Supply Voltage	3.87VDC	N/A
Note: The HT 50°C and LT 0°C was declared by manufacturer, The EUT couldn't be operate normally with higher or lower temperature.		

7 Setup Of Equipment Under Test

7.1 Block Diagram Configuration Of Test System

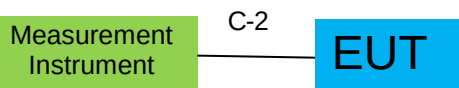
For AC Conducted Emission Mode



For Radiated Test Cases

EUT

For Conducted Test Cases



Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

7.2 Support Equipment

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Cable Type	Shielded Type	Ferrite Core	Length (cm)
C-1	Power Cable	YES	NO	1.0m
C-2	RF Cable	YES	NO	0.1m

8 Equipment List

Conducted Emission at AC power line					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Semi Anechoic Chamber	Taihe Mao Rui Electronic	854	N/A	2025-01-03	2028-01-02
Single Phase LISN	R&S	ENV216	102827	2026-04-08	2027-04-07
Single Phase LISN	R&S	ENV216	102849	2026-04-08	2027-04-07
Single Phase LISN	R&S	ENV216	101490	2026-04-08	2027-04-07
Single Phase LISN	R&S	ENV216	101313	2026-04-08	2027-04-07
Three-Phase LISN	SCHWARZBECK	NNLK 8129	8129245	2026-04-08	2027-04-07
EMI Test Receiver	R&S	ESCI	101160	2026-04-08	2027-04-07
EMI Test Receiver	R&S	ESPI3	1164.6407K03Ser.101417	2026-06-29	2027-06-28
EZ-EMC_CE-Software	Farad		AIT-03A	/	/

Emissions in non-restricted frequency bands 20dB Bandwidth Maximum Conducted Output Power Channel Separation Number of Hopping Frequencies Dwell Time					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Power meter	MWRFTtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Power meter	MWRFTtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Power meter	MWRFTtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Power meter	MWRFTtest	MW100-PSB	N/A	2025-09-16	2026-09-15
Spread spectrum device	MWRFTtest	MW100-7UD	N/A	2025-09-16	2026-09-15
Spectrum Analyzer	R&S	FSV40	101417	2026-04-08	2027-04-07
MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2026-04-08	2027-04-07
USB RF Power Sensor	DARE	RPR3006W	15I00041SNO84	2026-04-08	2027-04-07
Shielding Room	Taihe Mao Rui Electronic	743	N/A	2025-01-03	2028-01-02

Band edge emissions (Radiated) Emissions in frequency bands (30M - 1GHz) Emissions in frequency bands (1G - 18GHz) Emissions in frequency bands (above 18GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Low Noise Amplifier	EMC Solutions	TRLA-180400G 50	25102901	2026-04-08	2027-04-07
Wideband Radio Communication Tester	R&S	CMW500	153336	2026-04-08	2027-04-07
Spectrum Analyzer	Keysight	N9020B	MY60112710	2025-12-25	2026-12-24
Semi Anechoic Chamber	N/A	966	N/A	2024-05-20	2027-05-19
Spectrum Analyzer	Keysight	N9020A	MY53280244	2026-04-15	2027-04-14
Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2816	2024-05-18	2027-05-17
AMPLIFIER	Sonoma	310N	186604	2026-04-08	2027-04-07
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	803	2024-05-12	2027-05-11
Active Loop Antenna	SCHWARZBECK	FMZB 1519 B	055	2024-05-17	2027-05-16
Spectrum Analyzer	R&S	FSV40	101417	2026-04-08	2027-04-07
Low Noise Amplifier	B&Z	BZ-P540-550850-452727	16476-11729	2026-04-16	2027-04-15
Pre-Amplifier	EMC	EMC0518 35SE	980246	2026-04-08	2027-04-07
Universal Radio Communication Tester	R&S	CMU200	117858	2026-04-08	2027-04-07
Universal Radio Communication Tester	R&S	CMU200	105747	2026-04-08	2027-04-07
Broadband Horn Antenna	EM	EM-AH-10180	2011071402	2024-05-12	2027-05-11

Measurement Software

Item	Manufacturer	Software Name	Software Version	Description
1	MWRFTtest	MTS 8310 2.4GHz/5GHz	2.0	RF Conducted Test
2	Farad	EZ-EMC_RE	AIT-03A	RadiatedTest
3	raditeq	RadiMation	2023.1.3	RadiatedTest
4	Farad	EZ-EMC_CE	AIT-03A	AC Conducted Test

9 Evaluation Results (Evaluation)

9.1 Antenna requirement

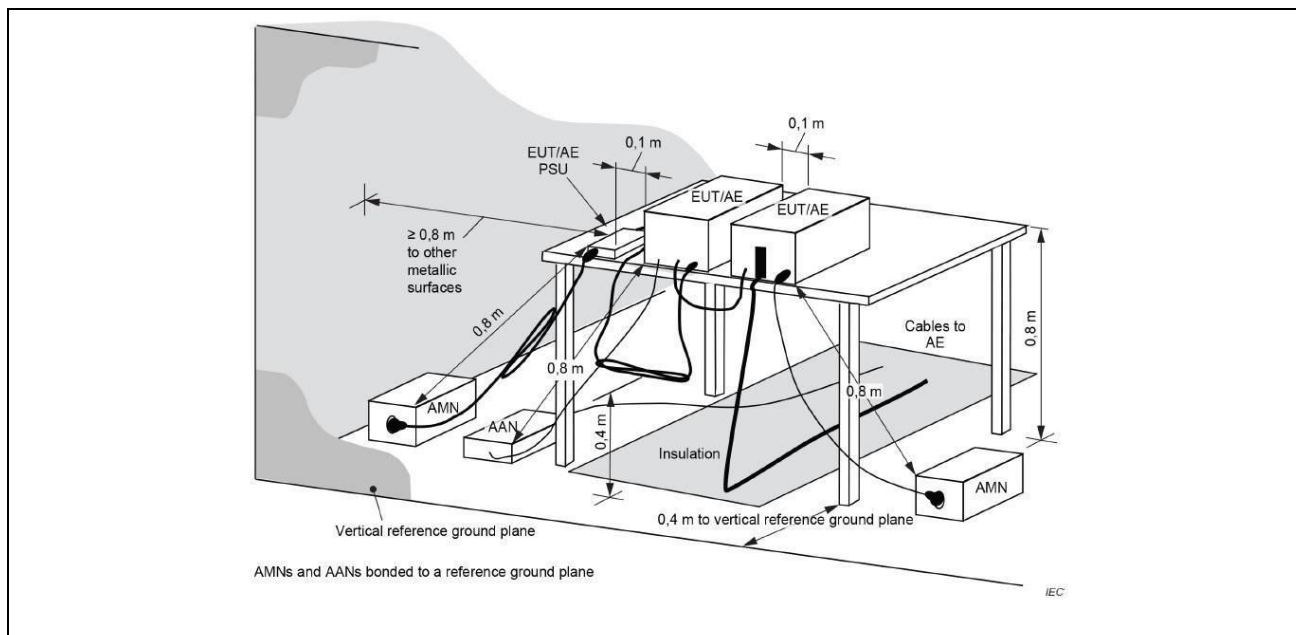
Test Requirement:	Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.
Conclusion	EUT Antenna: The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -0.39dBi. Antenna location: Refer to internal photos

10 Radio Spectrum Matter Test Results (RF)

10.1 Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b) and (c) of this section, 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 or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.2		
Procedure:	Refer to ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices Remark: 1. Test the EUT on the lowest, middle, and highest channels. 2. Level= Reading+ Factor, Margin= Level- Limit, Factor = Insertion Loss + Cable Loss. 3. All modes' lowest, middle, and highest channels were tested, but only the worst data was recorded in the report.		

10.1.1 Test Setup Diagram:

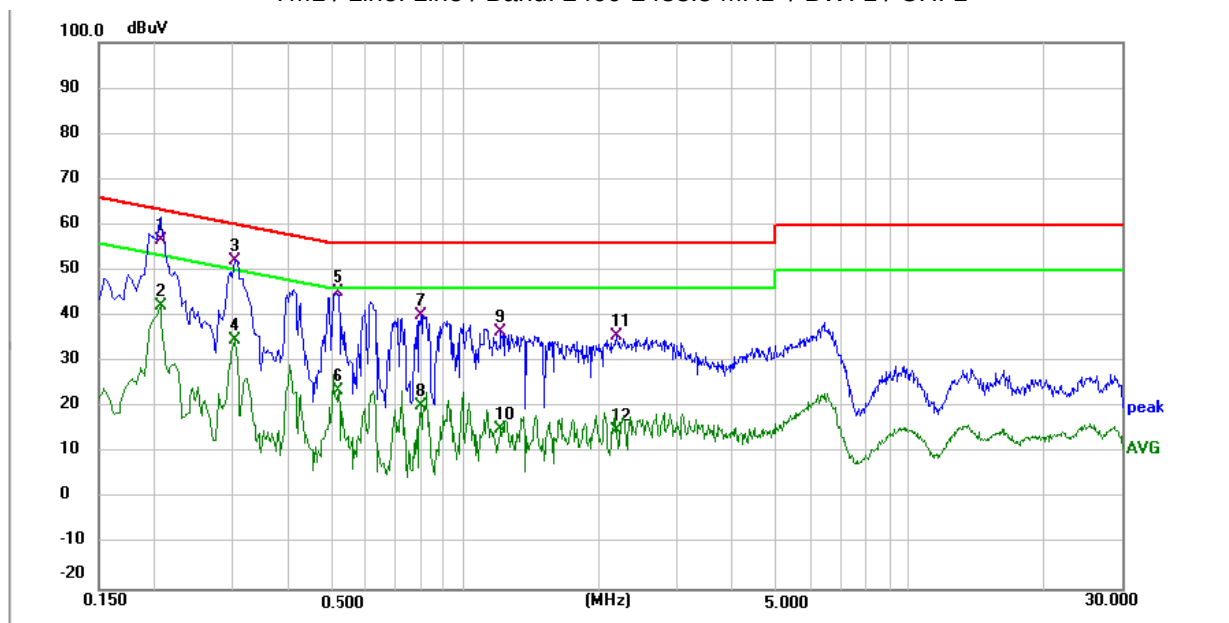


10.1.2 E.U.T. Operation:

Operating Environment:					
Temperature:	22.5 °C	Humidity:	52.6 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1				
Final test mode:	TM1(Low channel)				
Test Voltage:	AC 120V/60Hz				

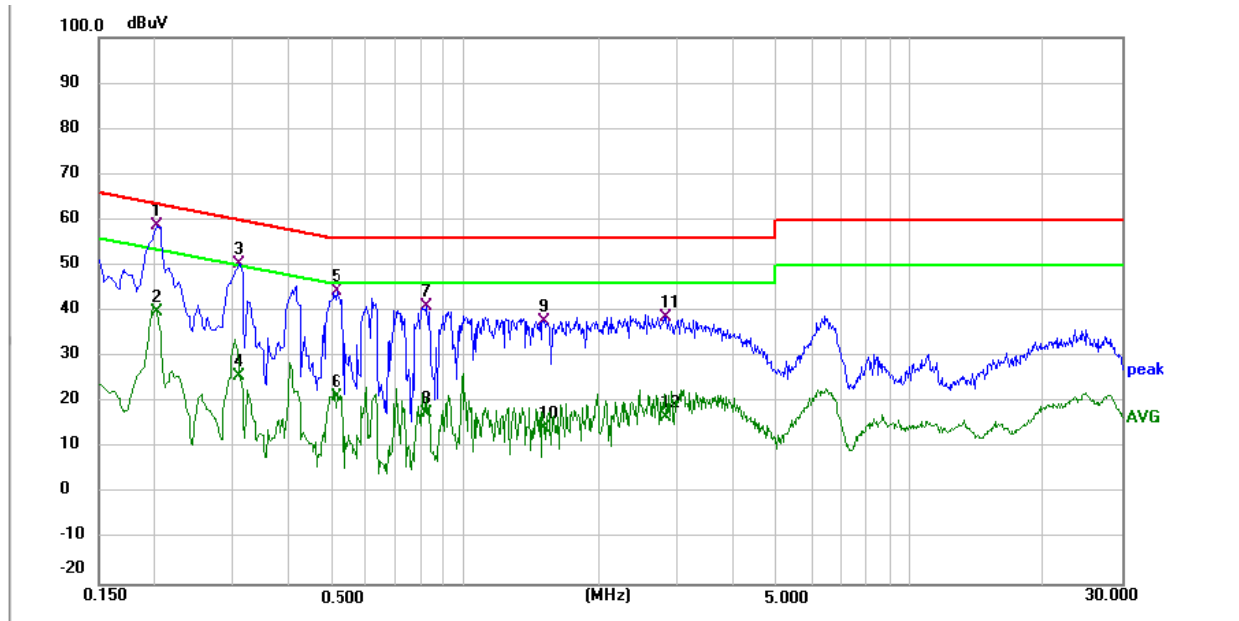
10.1.3 Test Data:

TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.2060	36.06	20.45	56.51	63.37	-6.86	QP	P	
2	0.2060	21.82	20.45	42.27	53.37	-11.10	AVG	P	
3	0.3020	31.74	20.53	52.27	60.19	-7.92	QP	P	
4	0.3020	14.37	20.53	34.90	50.19	-15.29	AVG	P	
5	0.5180	24.67	20.47	45.14	56.00	-10.86	QP	P	
6	0.5180	3.29	20.47	23.76	46.00	-22.24	AVG	P	
7	0.7980	19.77	20.43	40.20	56.00	-15.80	QP	P	
8	0.7980	0.07	20.43	20.50	46.00	-25.50	AVG	P	
9	1.2059	16.18	20.29	36.47	56.00	-19.53	QP	P	
10	1.2059	-5.14	20.29	15.15	46.00	-30.85	AVG	P	
11	2.1900	15.24	20.27	35.51	56.00	-20.49	QP	P	
12	2.1900	-5.32	20.27	14.95	46.00	-31.05	AVG	P	

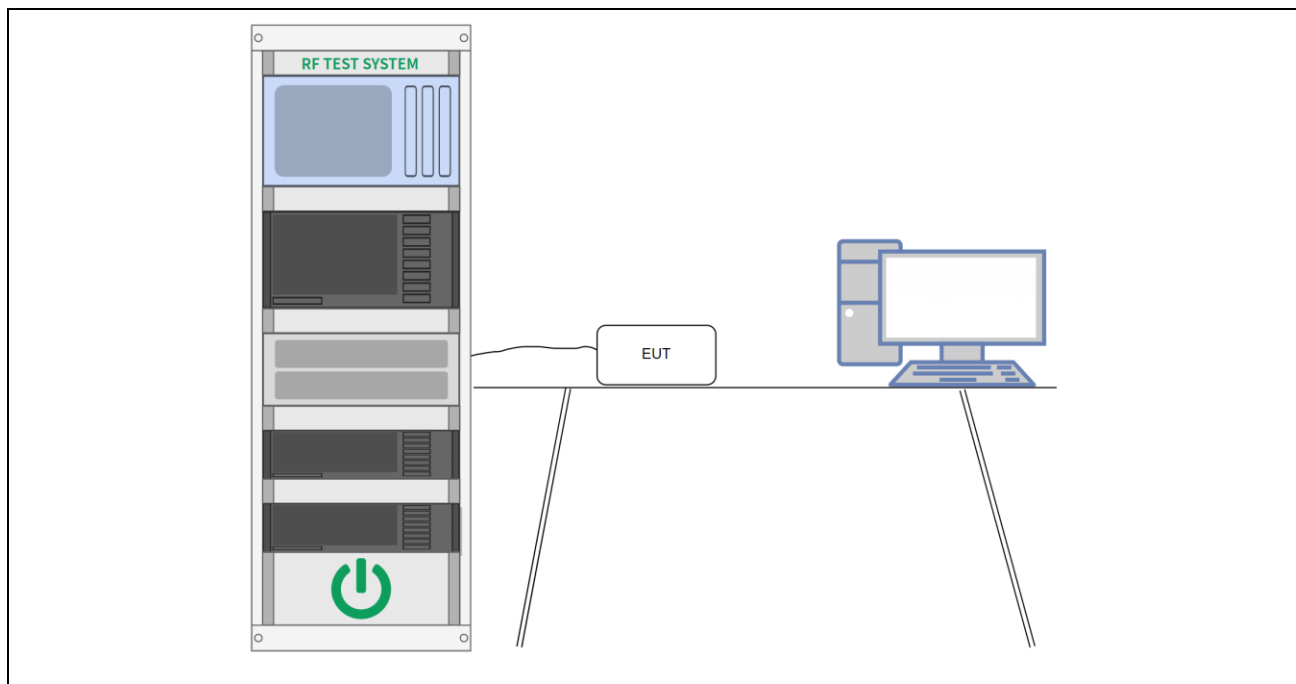
TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.2020	38.41	20.39	58.80	63.53	-4.73	QP	P	
2	0.2020	19.59	20.39	39.98	53.53	-13.55	AVG	P	
3	0.3100	29.85	20.54	50.39	59.97	-9.58	QP	P	
4	0.3100	5.20	20.54	25.74	49.97	-24.23	AVG	P	
5	0.5140	24.04	20.41	44.45	56.00	-11.55	QP	P	
6	0.5140	0.72	20.41	21.13	46.00	-24.87	AVG	P	
7	0.8260	20.70	20.44	41.14	56.00	-14.86	QP	P	
8	0.8260	-2.69	20.44	17.75	46.00	-28.25	AVG	P	
9	1.5100	17.59	20.26	37.85	56.00	-18.15	QP	P	
10	1.5100	-5.82	20.26	14.44	46.00	-31.56	AVG	P	
11	2.8300	18.32	20.20	38.52	56.00	-17.48	QP	P	
12	2.8300	-3.34	20.20	16.86	46.00	-29.14	AVG	P	

10.2 20dB Bandwidth

Test Requirement:	47 CFR 15.247(a)(1)
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.6, For occupied bandwidth measurements, use the procedure in 6.9.3. Frequency hopping shall be disabled for this test. KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth: - The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW. - The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement. - Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.6.2. - Step a) through step c) might require iteration to adjust within the specified range. - Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used. - Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth. - If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies. - The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

10.2.1 Test Setup Diagram:**10.2.2 E.U.T. Operation:**

Operating Environment:					
Temperature:	26.7 °C	Humidity:	42.5 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1, TM2, TM3				
Final test mode:	TM1, TM2, TM3				

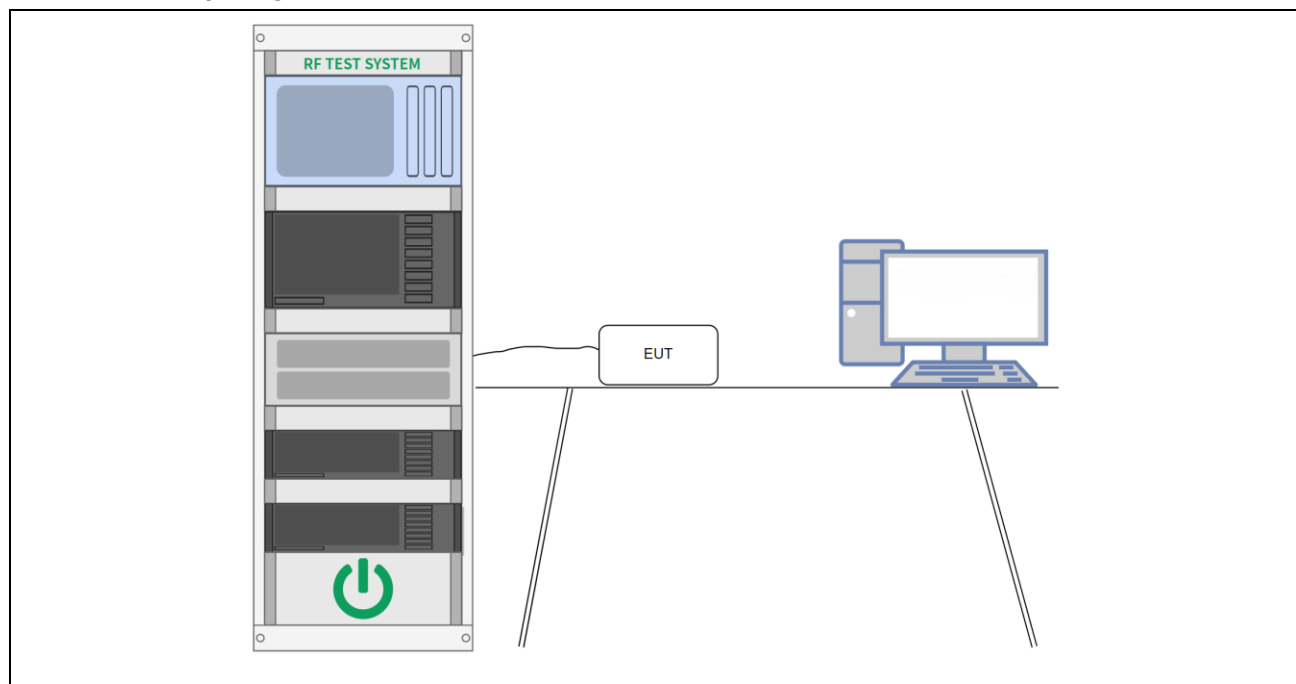
10.2.3 Test Data:

Please Refer to Appendix for Details.

10.3 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(1)
Test Limit:	Refer to 47 CFR 15.247(b)(1), For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.5 KDB 558074 D01 15.247 Meas Guidance v05r02

10.3.1 Test Setup Diagram:



10.3.2 E.U.T. Operation:

Operating Environment:					
Temperature:	26.7 °C	Humidity:	42.5 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM4, TM5, TM6				
Final test mode:	TM4, TM5, TM6				

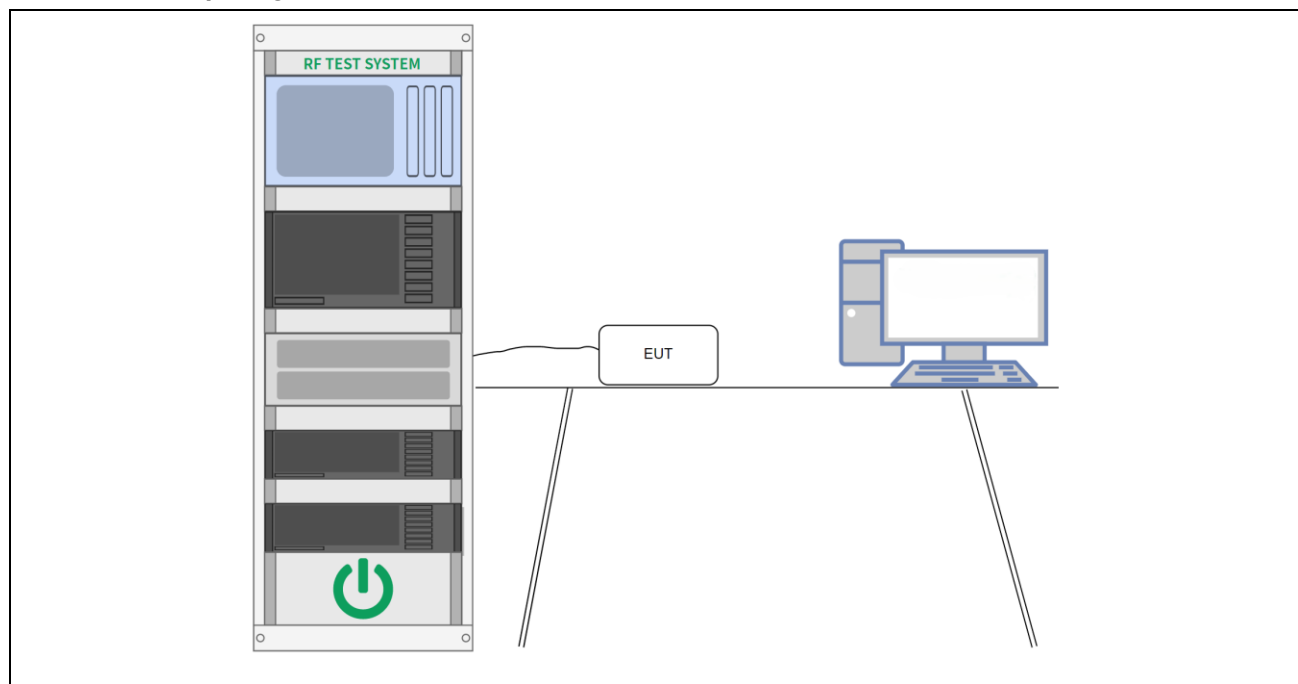
10.3.3 Test Data:

Please Refer to Appendix for Details.

10.4 Channel Separation

Test Requirement:	47 CFR 15.247(a)(1)
Test Limit:	Refer to 47 CFR 15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.2 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: Wide enough to capture the peaks of two adjacent channels. b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel. c) Video (or average) bandwidth (VBW) $\geq$ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A spectral plot of the data shall be included in the test report.

10.4.1 Test Setup Diagram:



10.4.2 E.U.T. Operation:

Operating Environment:					
Temperature:	26.7 °C	Humidity:	42.5 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM4, TM5, TM6				
Final test mode:	TM4, TM5, TM6				

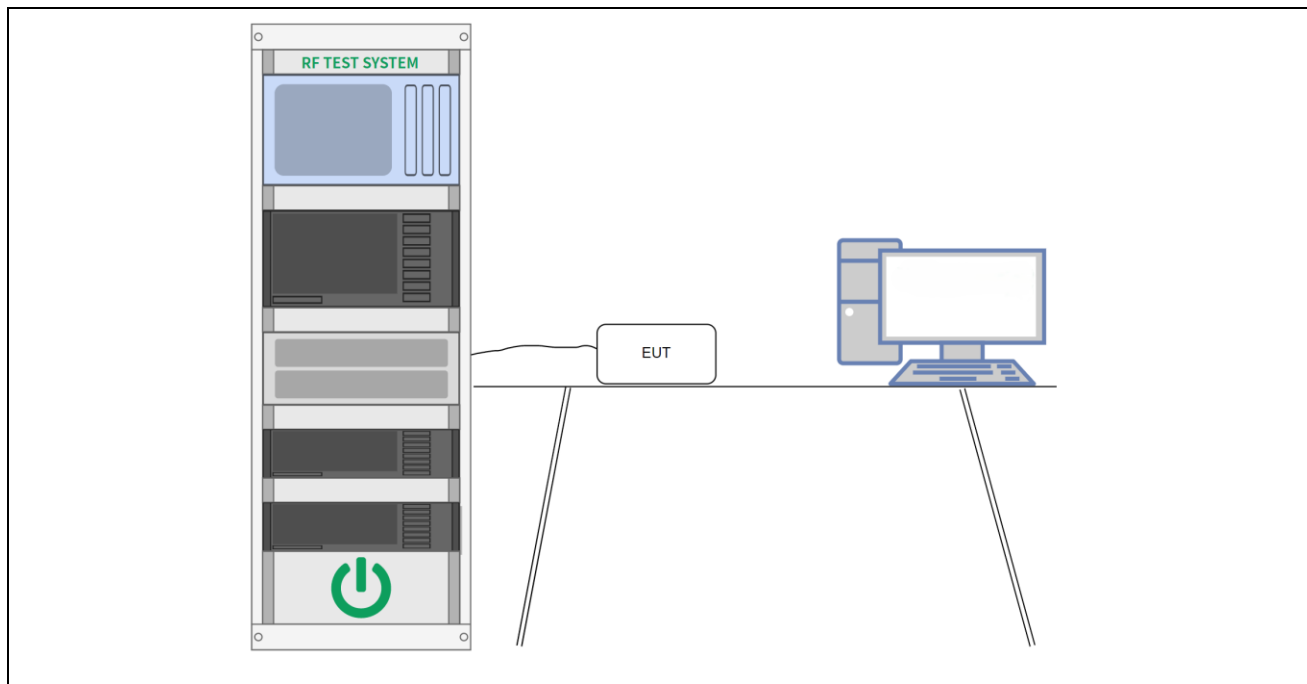
10.4.3 Test Data:

Please Refer to Appendix for Details.

10.5 Number of Hopping Frequencies

Test Requirement:	47 CFR 15.247(a)(1)(iii)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.3 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: The frequency band of operation. Depending on the number of channels the device supports, it could be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen. b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller. c) VBW $\geq$ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow the trace to stabilize. It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A spectral plot of the data shall be included in the test report.

10.5.1 Test Setup Diagram:



10.5.2 E.U.T. Operation:

Operating Environment:					
Temperature:	26.7 °C	Humidity:	42.5 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM4, TM5, TM6				
Final test mode:	TM4, TM5, TM6				

10.5.3 Test Data:

Please Refer to Appendix for Details.

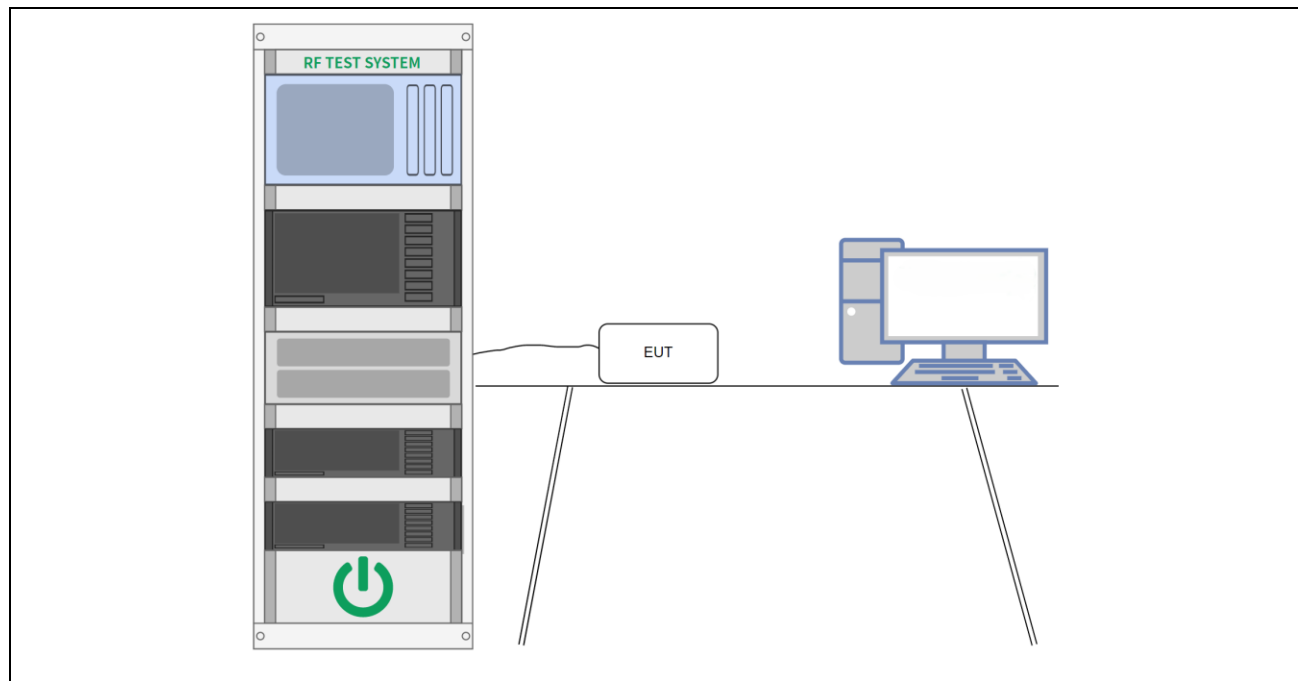
10.6 Dwell Time

Test Requirement:	47 CFR 15.247(a)(1)(iii)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024, section 7.8.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The dwell time per hop on a channel is the time from the start of the first transmission to the end of the last transmission for that hop. If the device has a single transmission per hop then the dwell time is the duration of that transmission. If the device has a multiple transmissions per hop then the dwell time is measured from the start of the first transmission to the end of the last transmission. The time of occupancy is the total time that the device dwells on a channel over an observation period specified in the regulatory requirement. To determine the time of occupancy the spectrum analyzer will be configured to measure both the dwell time per hop and the number of times the device transmits on a specific channel in a given period. The EUT shall have its hopping function enabled. Compliance with the requirements shall be made with the minimum and with the maximum number of channels enabled. If the dwell time per channel does not vary with the number of channels then compliance with the requirements may be based on the minimum number of channels. If the device supports different dwell times per channel (example Bluetooth devices can dwell on a channel for 1, 3 or 5 time slots) then measurements can be limited to the longest dwell time with the minimum number of channels. Use the following spectrum analyzer settings to determine the dwell time per hop: a) Span: Zero span, centered on a hopping channel. b) RBW shall be $\leq$ channel spacing and where possible RBW should be set $\gg 1/T$, where T is the expected transmission time per hop. c) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. Setting the sweep time to be slightly longer than the hopping period per channel (hopping period = $1/\text{hopping rate}$) should achieve this. d) Use a video trigger, where possible with a trigger delay, so that the start of the transmission is clearly observed. The trigger level might need adjustment to reduce the chance of triggering when the system hops on an adjacent channel. e) Detector function: Peak. f) Trace: Clear-write, single sweep. g) Place markers at the start of the first transmission on the channel and at the end of the last transmission. The dwell time per hop is the time between these two markers. To determine the number of hops on a channel in the regulatory observation period repeat the measurement using a longer sweep time. When the device uses a single hopping sequence the period of measurement should be sufficient to capture at least 2 hops. When the device uses a dynamic hopping sequence, or the sequence varies, the period of measurement may need to capture multiple hops to better determine the average time of occupancy. Count the number of hops on the channel across the sweep time. The average number of hops on the same channel within the regulatory observation period is calculated from the number of hops on the channel divided

by the spectrum analyzer sweep time multiplied by the regulatory observation period. For example, if three hops are counted with an analyzer sweep time of 500 ms and the regulatory observation period is 10 s, then the number of hops in that ten seconds is $3 / 0.5 \times 10$, or 60 hops.

The average time of occupancy is calculated by multiplying the dwell time per hop by the number of hops in the observation period.

10.6.1 Test Setup Diagram:



10.6.2 E.U.T. Operation:

Operating Environment:					
Temperature:	26.7 °C	Humidity:	42.5 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM4, TM5, TM6				
Final test mode:	TM4, TM5, TM6				

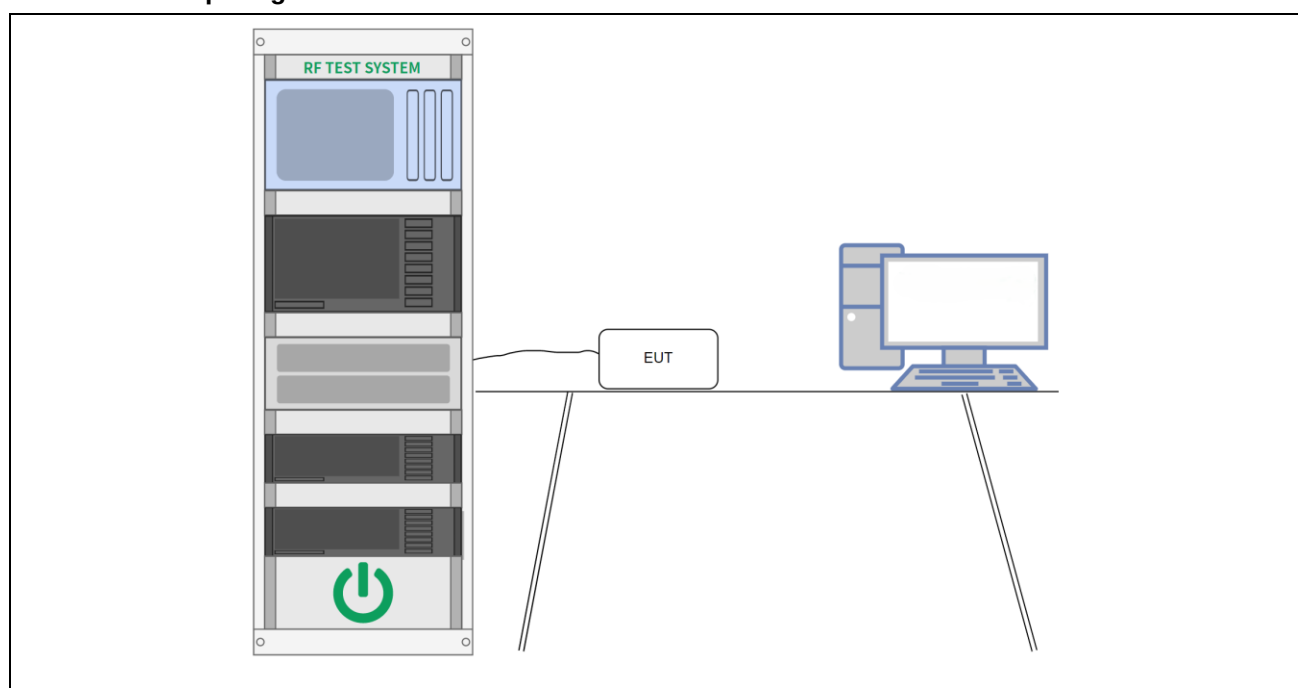
10.6.3 Test Data:

Please Refer to Appendix for Details.

10.7 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz 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 20 dB below that in the 100 kHz 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 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 7.8.7 KDB 558074 D01 15.247 Meas Guidance v05r02

10.7.1 Test Setup Diagram:



10.7.2 E.U.T. Operation:

Operating Environment:					
Temperature:	26.7 °C	Humidity:	42.5 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1, TM2, TM3, TM4, TM5, TM6				
Final test mode:	TM1, TM2, TM3, TM4, TM5, TM6				

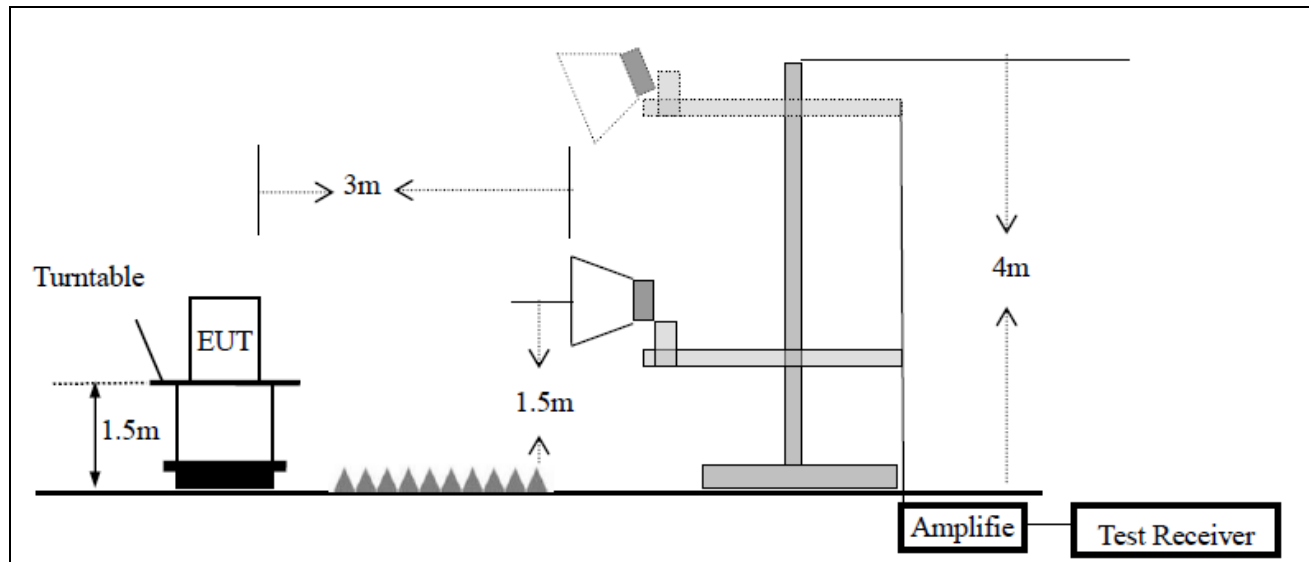
10.7.3 Test Data:

Please Refer to Appendix for Details.

10.8 Band edge emissions (Radiated)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)(see § 15.205(c)).		
Test Limit:	According to FCC Part 15.247(d): 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) (see §15.205(c)).		
	According to FCC Part15.205, Restricted bands		
	MHz	MHz	MHz
	0.090-0.110	16.42-16.423	399.9-410
	0.495-0.505	16.69475-16.69525	608-614
	2.1735-2.1905	16.80425-16.80475	960-1240
	4.125-4.128	25.5-25.67	1300-1427
	4.17725-4.17775	37.5-38.25	1435-1626.5
	4.20725-4.20775	73-74.6	1645.5-1646.5
	6.215-6.218	74.8-75.2	1660-1710
	6.26775-6.26825	123-138	2200-2300
	8.291-8.294	149.9-150.05	2310-2390
	8.362-8.366	156.52475-156.52525	2483.5-2500
	8.37625-8.38675	156.7-156.9	2690-2900
	8.41425-8.41475	162.0125-167.17	3260-3267
	12.29-12.293	167.72-173.2	3332-3339
	12.51975-12.52025	240-285	3345.8-3358
	12.57675-12.57725	322-335.4	3600-4400
	13.36-13.41		
	Limits of Radiated Emission Measurement(Above 1000MHz)		
	Frequency(MHz)	Class B (dBuV/m) (at 3M)	
		PEAK	AVERAGE
	Above 1000	74	54
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.10.5.2 Remark: 1. Measurement at a distance of 3 meters. 2. Test the EUT on the lowest and highest channels. 3. Level= Reading+ Factor, Margin= Level- Limit. 4. All modes' lowest and highest channels were tested, but only the worst data was recorded in the report.		

10.8.1 Test Setup Diagram

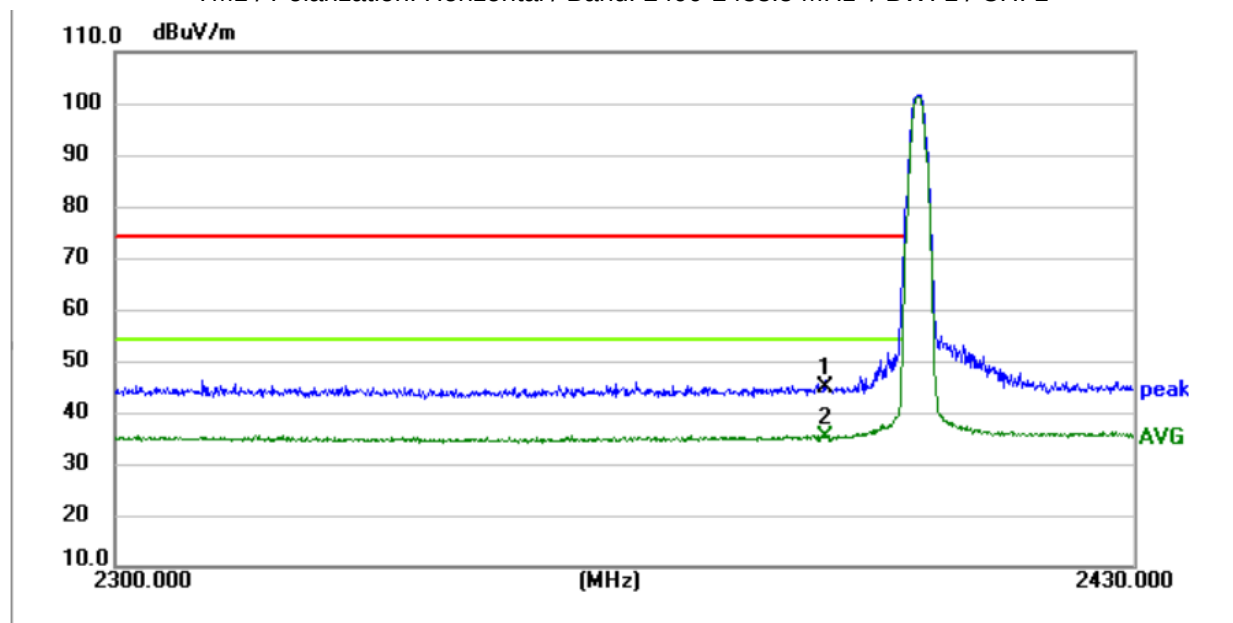


10.8.2 E.U.T. Operation:

Operating Environment:					
Temperature:	26.1 °C	Humidity:	47.2 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1, TM2, TM3				
Final test mode:	TM1, TM2, TM3				
Test Voltage:	DC 3.87V				

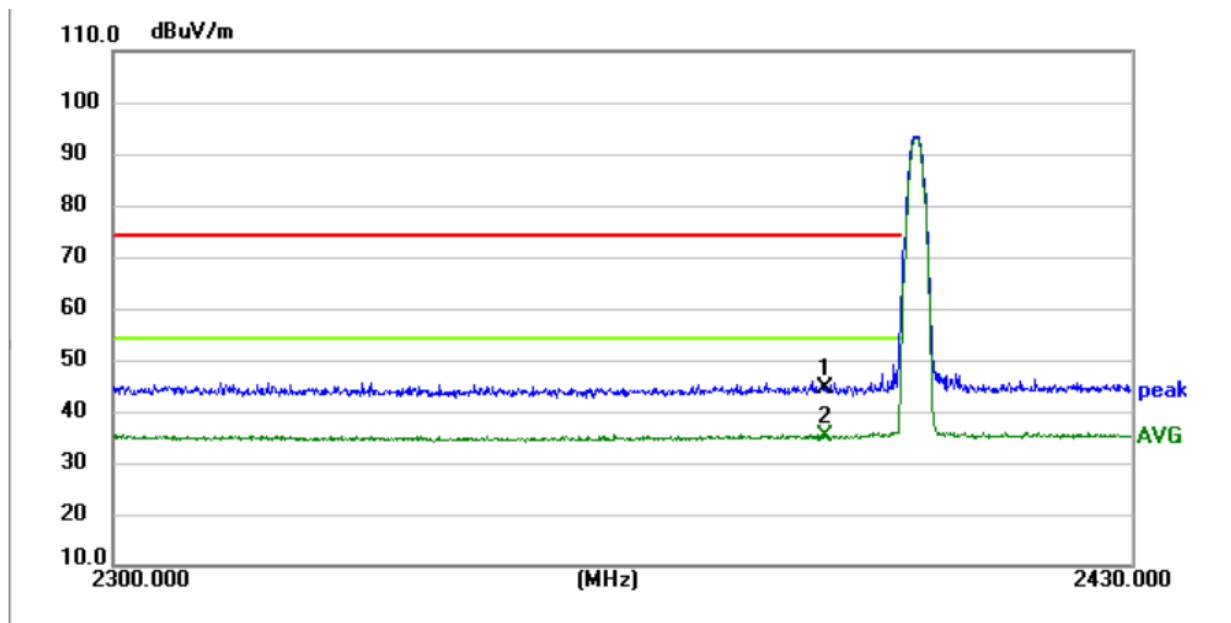
10.8.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



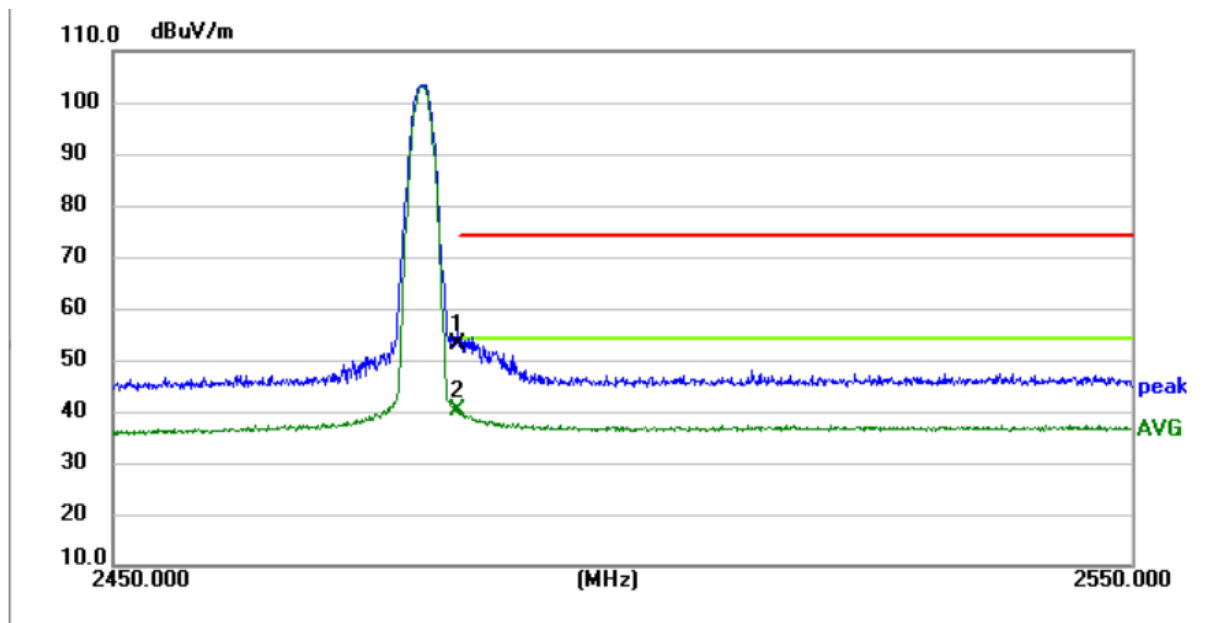
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2390.000	14.86	29.88	44.74	74.00	-29.26	peak	P	
2 *	2390.000	5.17	29.88	35.05	54.00	-18.95	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



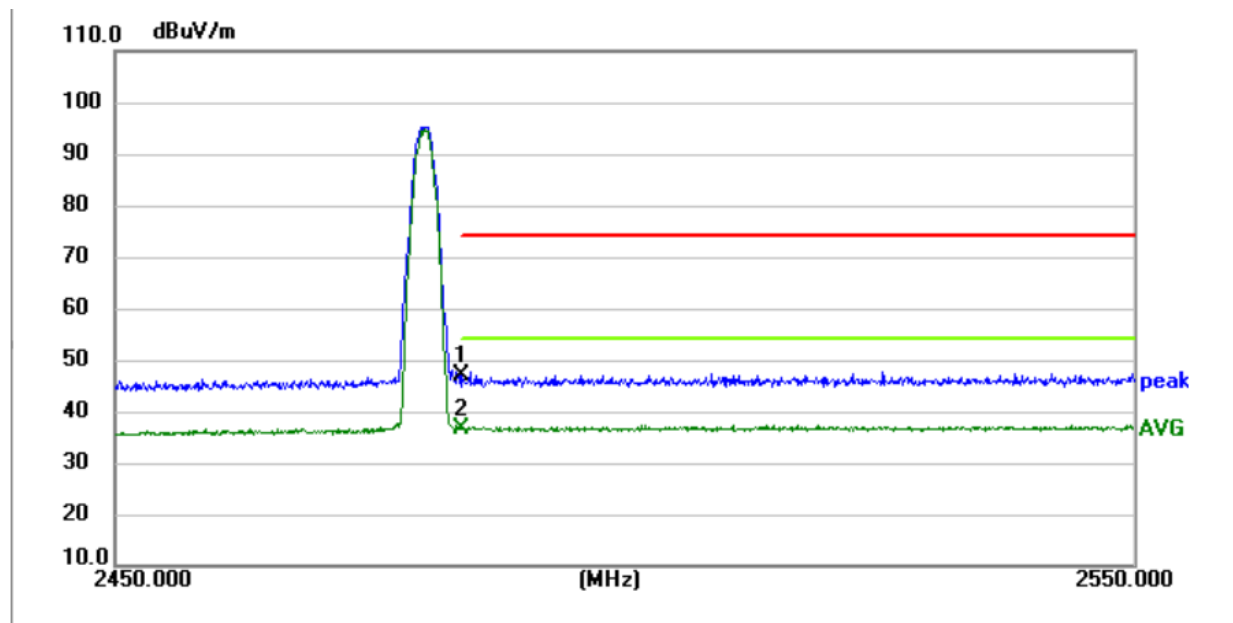
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2390.000	14.48	29.88	44.36	74.00	-29.64	peak	P	
2 *	2390.000	5.46	29.88	35.34	54.00	-18.66	AVG	P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	22.32	30.69	53.01	74.00	-20.99	peak	P	
2 *	2483.500	9.60	30.69	40.29	54.00	-13.71	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H

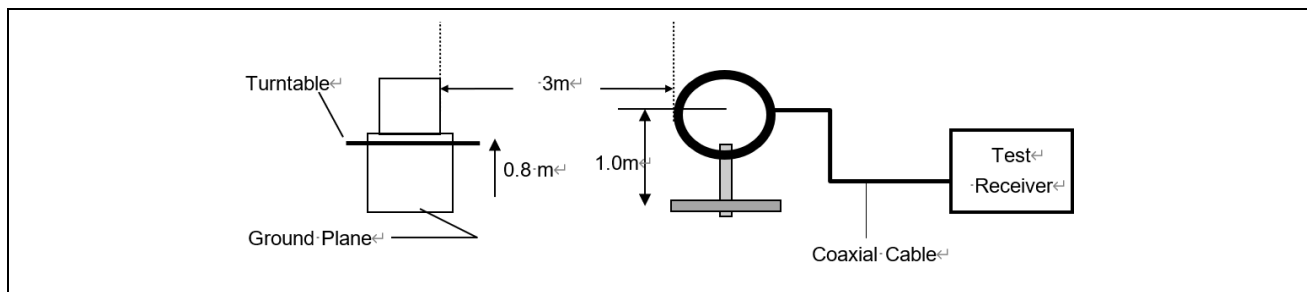


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	16.18	30.69	46.87	74.00	-27.13	peak	P	
2 *	2483.500	5.97	30.69	36.66	54.00	-17.34	AVG	P	

10.9 Emissions in frequency bands (below 30MHz)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)(see § 15.205(c)).		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	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
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.		
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.4 Remark: 1. Emission level, For Frequency 9kHz~30MHz: $\text{dBuA/m} = 20 \log(\mu\text{A/m})$ 2. Measurement was performed at an antenna to the closed point of EUT distance of meters. 3. For Frequency 9kHz~30MHz: Distance extrapolation factor $= 40 \log(\text{Specific distance} / \text{test distance}) (\text{dB})$; Limit line = Specific limits(dBuA) + distance extrapolation factor. - Limit line = Specific limits(dBuV) + distance extrapolation factor. 1. Measurement at a distance of 3 meters. 2. Test the EUT on the lowest, middle, and highest channels. 3. Level = Reading + Factor, Margin = Level - Limit. 4. All modes' lowest, middle, and highest channels were tested, but only the worst data was recorded in the report.		

10.9.1 Test Setup Diagram:



10.9.2 E.U.T. Operation:

Operating Environment:					
Temperature:	22.9 °C	Humidity:	49.6 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1				

Final test mode:	TM1
Test Voltage:	AC 120V/60Hz

10.9.3 Test Data:

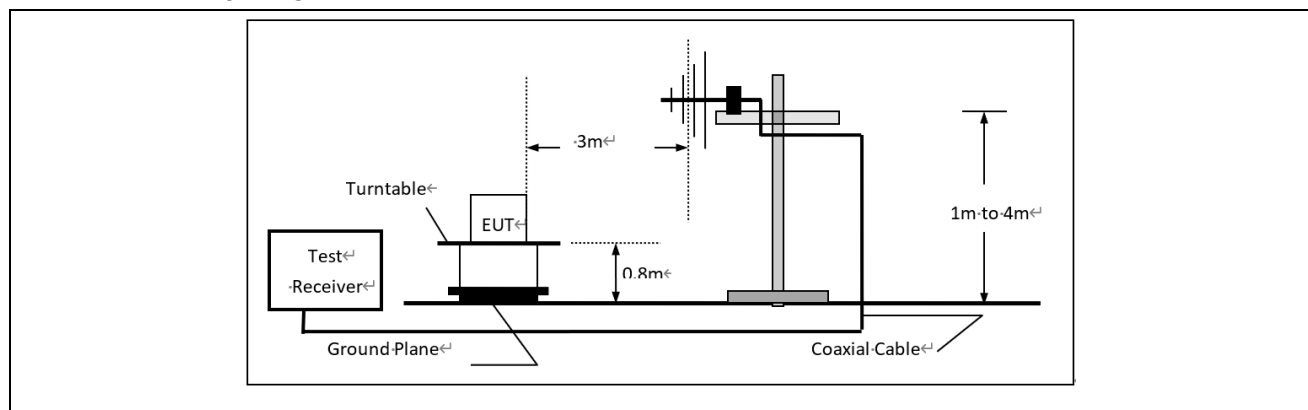
Freq. (MHz)	Ant. Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
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Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

10.10 Emissions in frequency bands (30M - 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)(see § 15.205(c)).		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	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
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.		
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.5.4 Remark: 1. Emission level, For Frequency above 30MHz: $\text{dBuV/m}=20 \log (\mu \text{V/m})$ and For Frequency 9kHz~30MHz: $\text{dBuA/m}=20 \log (\mu \text{A/m})$ 2. Measurement was performed at an antenna to the closed point of EUT distance of meters. 3. For Frequency 9kHz~30MHz: Distance extrapolation factor $=40 \log (\text{Specific distance/ test distance})(\text{dB})$; Limit line=Specific limits(dBuA) + distance extrapolation factor. 4. For Frequency above 30MHz: Distance extrapolation factor $=20 \log (\text{Specific distance/ test distance})(\text{dB})$; Limit line=Specific limits(dBuV) + distance extrapolation factor. 1. Measurement at a distance of 3 meters. 2. Test the EUT on the lowest, middle, and highest channels. 3. Level= Reading+ Factor, Margin= Level- Limit. 4. All modes' lowest, middle, and highest channels were tested, but only the worst data was recorded in the report.		

10.10.1 Test Setup Diagram:

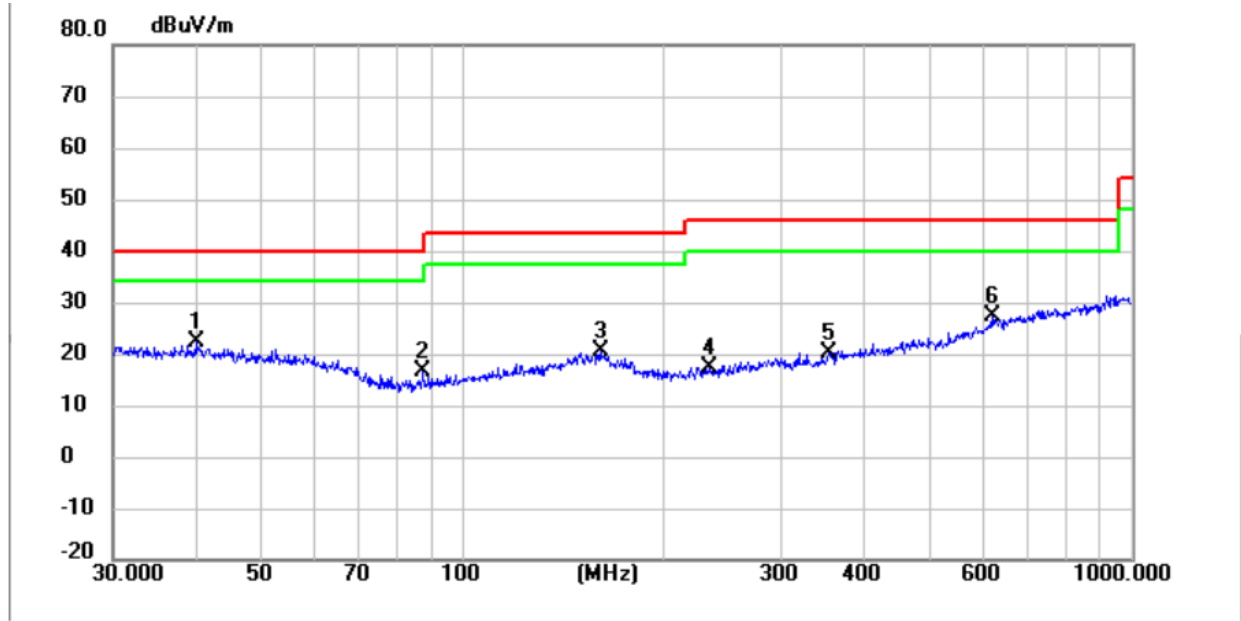


10.10.2 E.U.T. Operation:

Operating Environment:					
Temperature:	22.9 °C	Humidity:	49.6 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1				
Final test mode:	TM1(Low channel)				
Test Voltage:	AC 120V/60Hz				

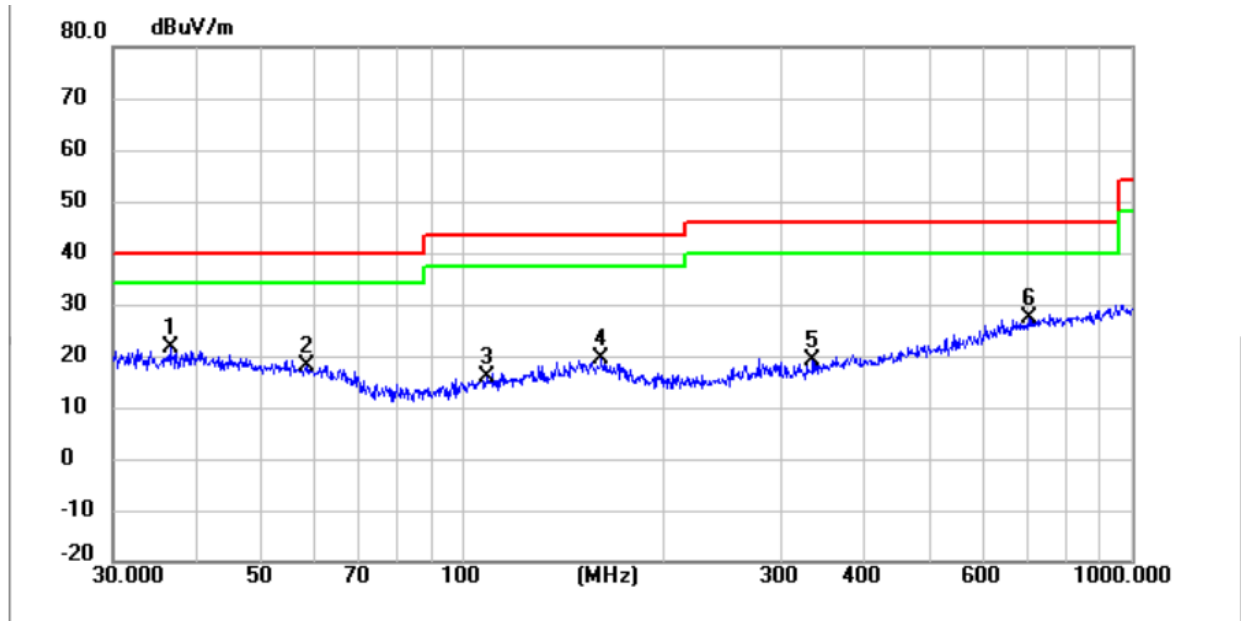
10.10.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	40.135	7.82	14.34	22.16	40.00	-17.84	peak	P	
2	87.418	6.61	9.82	16.43	40.00	-23.57	peak	P	
3	160.909	6.12	14.59	20.71	43.50	-22.79	peak	P	
4	233.349	5.28	11.95	17.23	46.00	-28.77	peak	P	
5	352.943	5.35	14.73	20.08	46.00	-25.92	peak	P	
6	618.537	7.89	19.48	27.37	46.00	-18.63	peak	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L

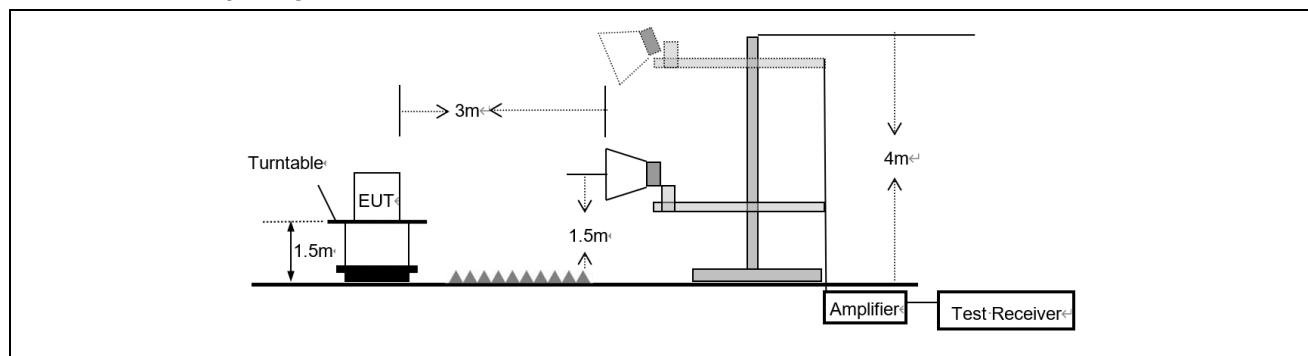


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	36.509	7.84	13.87	21.71	40.00	-18.29	peak	P	
2	58.407	4.71	13.24	17.95	40.00	-22.05	peak	P	
3	109.029	4.29	11.49	15.78	43.50	-27.72	peak	P	
4	161.474	4.94	14.55	19.49	43.50	-24.01	peak	P	
5	333.687	4.78	14.38	19.16	46.00	-26.84	peak	P	
6	701.761	6.19	21.06	27.25	46.00	-18.75	peak	P	

10.11 Emissions in frequency bands (1G - 18GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)(see § 15.205(c)).		
Test Limit:	Frequency(MHz)	Class B (dBuV/m) (at 3M)	
		PEAK	AVERAGE
	Above 1000	74	54
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6 Remark: 1. Measurement at a distance of 3 meters. 2. Test the EUT on the lowest, middle, and highest channels. 3. Level= Reading+ Factor, Margin= Level- Limit. 4. All modes' lowest, middle, and highest channels were tested, but only the worst data was recorded in the report.		

10.11.1 Test Setup Diagram:

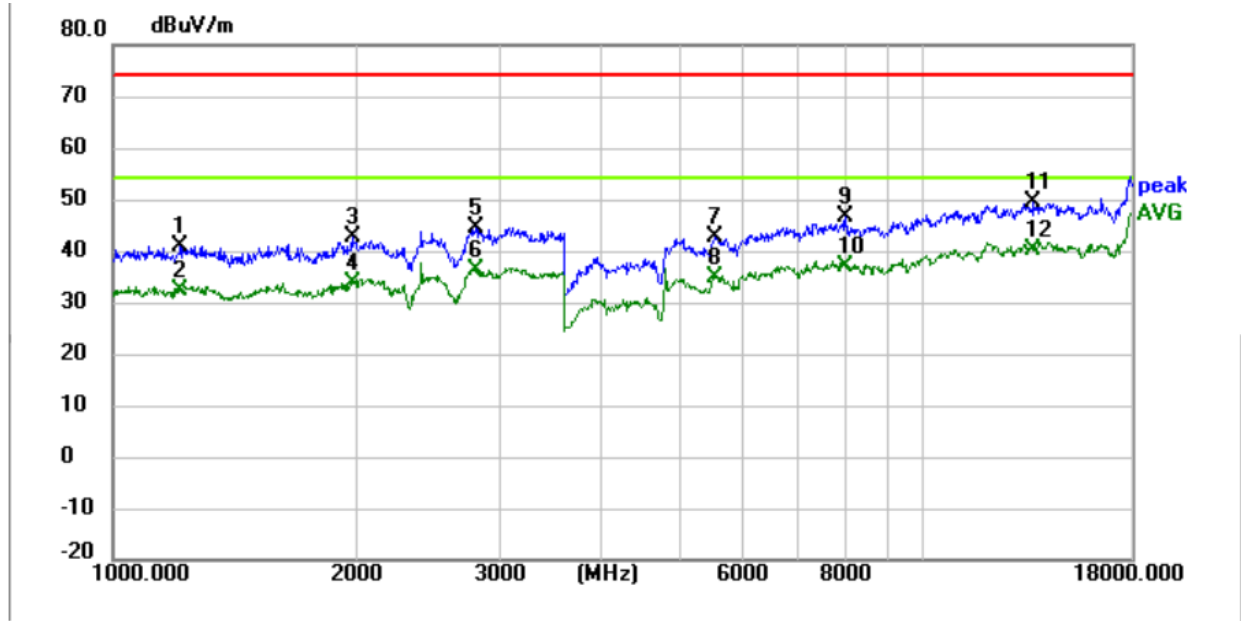


10.11.2 E.U.T. Operation:

Operating Environment:					
Temperature:	26.1 °C	Humidity:	47.2 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1, TM2, TM3				
Final test mode:	TM1				
Test Voltage:	DC 3.87V				

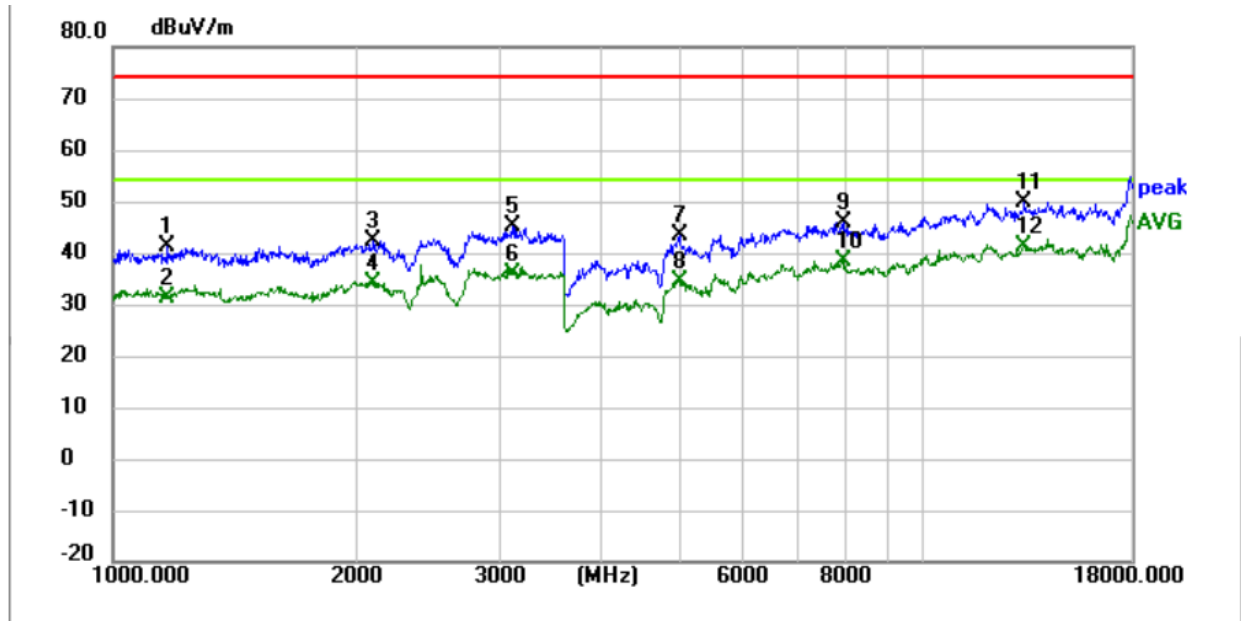
10.11.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



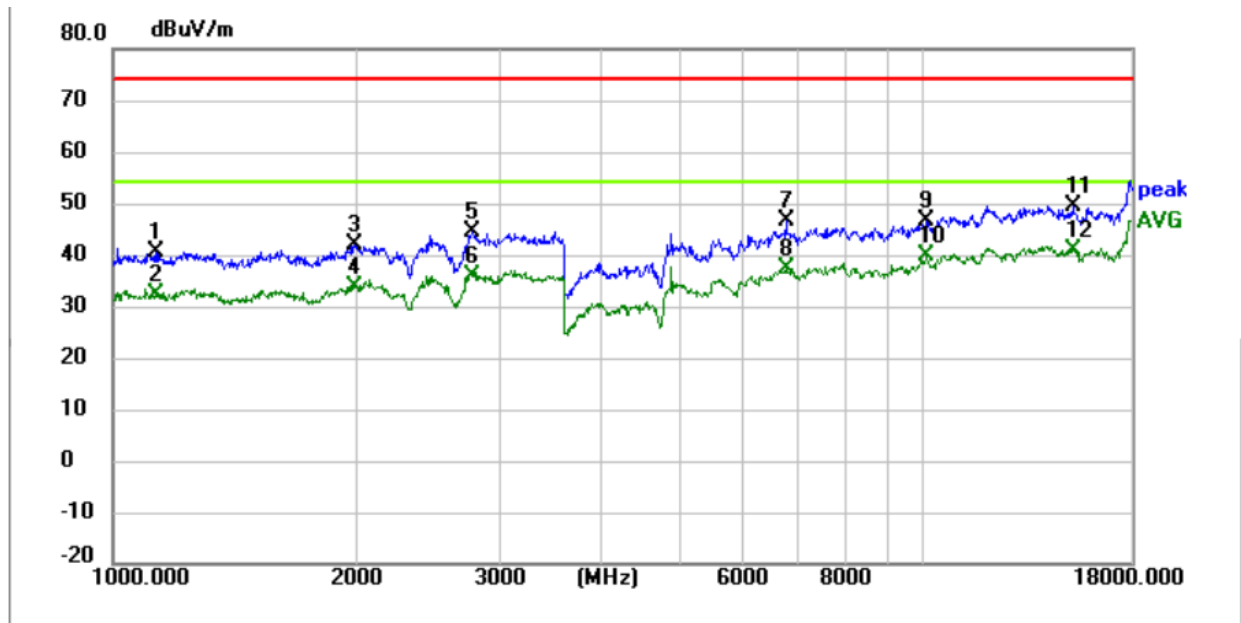
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1213.350	59.31	-18.25	41.06	74.00	-32.94	peak	P	
2	1213.350	50.68	-18.25	32.43	54.00	-21.57	AVG	P	
3	1973.250	56.85	-14.21	42.64	74.00	-31.36	peak	P	
4	1973.250	48.04	-14.21	33.83	54.00	-20.17	AVG	P	
5	2810.075	54.99	-10.38	44.61	74.00	-29.39	peak	P	
6	2810.075	46.55	-10.38	36.17	54.00	-17.83	AVG	P	
7	5539.425	48.43	-5.60	42.83	74.00	-31.17	peak	P	
8	5539.425	40.50	-5.60	34.90	54.00	-19.10	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



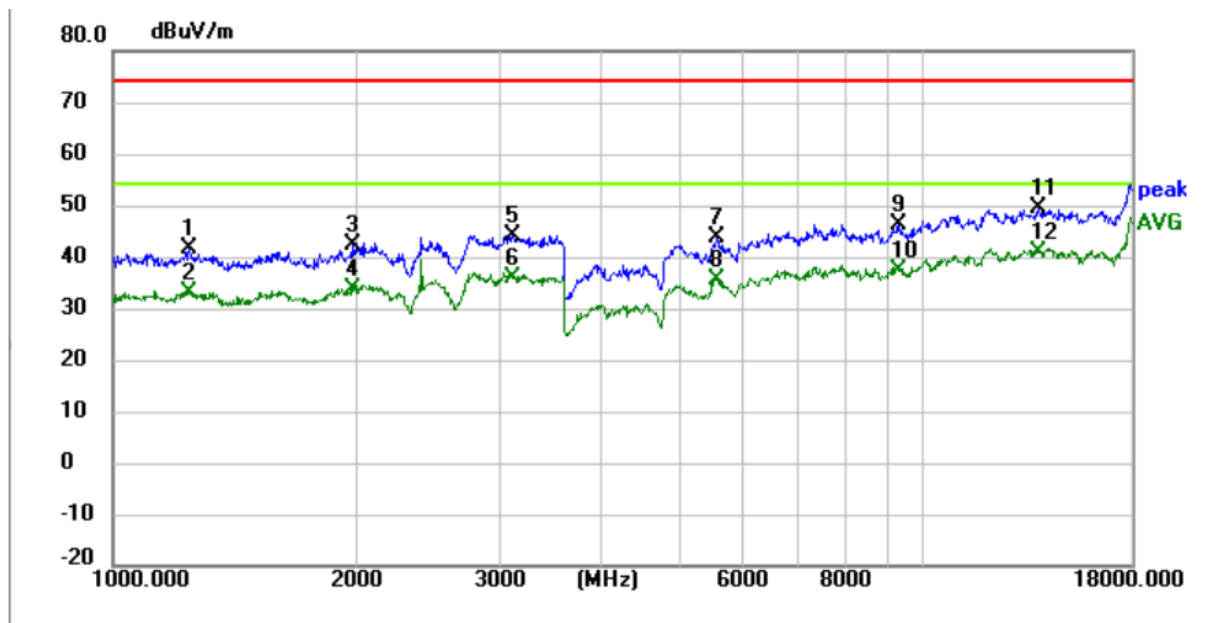
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1170.850	59.96	-18.70	41.26	74.00	-32.74	peak	P	
2	1170.850	49.96	-18.70	31.26	54.00	-22.74	AVG	P	
3	2099.475	54.72	-12.48	42.24	74.00	-31.76	peak	P	
4	2099.475	46.74	-12.48	34.26	54.00	-19.74	AVG	P	
5	3111.400	54.85	-9.54	45.31	74.00	-28.69	peak	P	
6	3111.400	45.60	-9.54	36.06	54.00	-17.94	AVG	P	
7	4991.600	49.56	-6.33	43.23	74.00	-30.77	peak	P	
8	4991.600	40.78	-6.33	34.45	54.00	-19.55	AVG	P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M



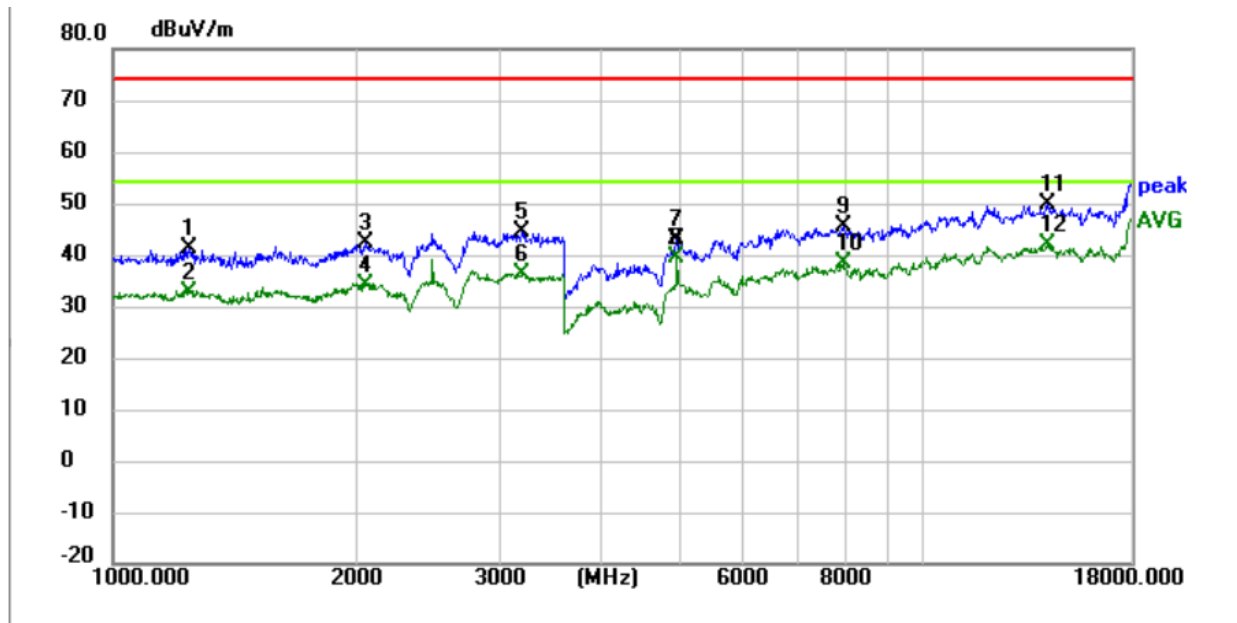
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1133.875	59.33	-18.62	40.71	74.00	-33.29	peak	P	
2	1133.875	51.06	-18.62	32.44	54.00	-21.56	AVG	P	
3	1987.275	55.92	-13.89	42.03	74.00	-31.97	peak	P	
4	1987.275	47.77	-13.89	33.88	54.00	-20.12	AVG	P	
5	2778.625	54.96	-10.60	44.36	74.00	-29.64	peak	P	
6	2778.625	46.66	-10.60	36.06	54.00	-17.94	AVG	P	
7	6764.700	50.32	-3.57	46.75	74.00	-27.25	peak	P	
8	6764.700	40.78	-3.57	37.21	54.00	-16.79	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M



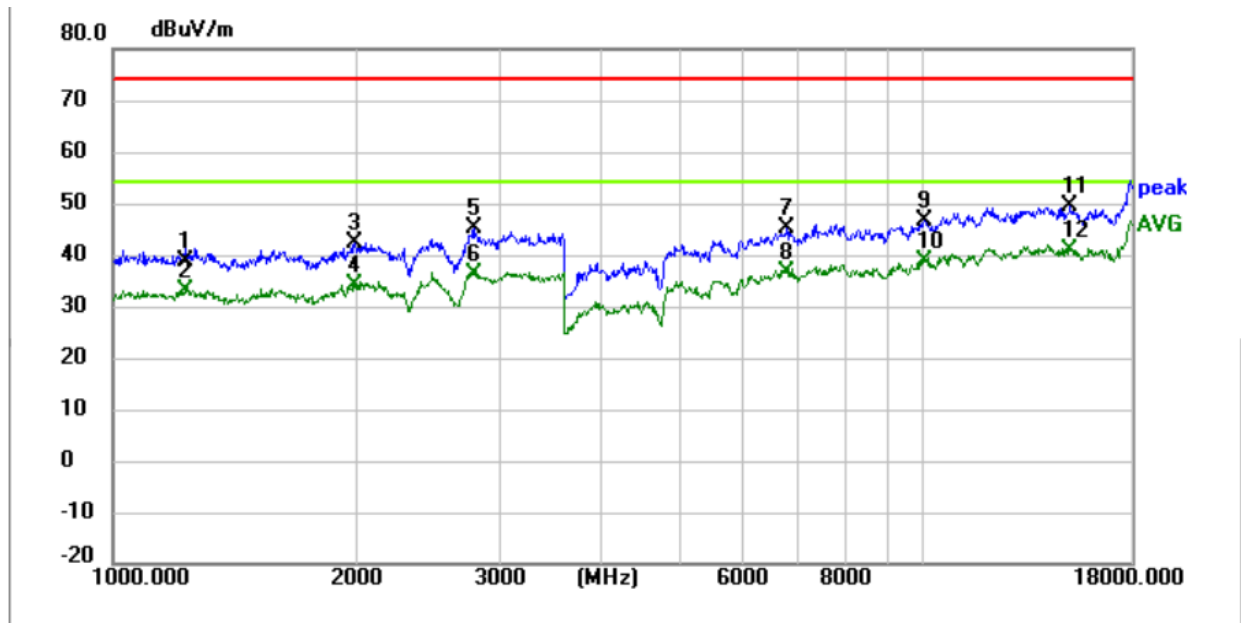
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1242.675	59.38	-17.95	41.43	74.00	-32.57	peak	P	
2	1242.675	51.03	-17.95	33.08	54.00	-20.92	AVG	P	
3	1983.450	56.17	-13.97	42.20	74.00	-31.80	peak	P	
4	1983.450	47.81	-13.97	33.84	54.00	-20.16	AVG	P	
5	3108.850	53.72	-9.54	44.18	74.00	-29.82	peak	P	
6	3108.850	45.60	-9.54	36.06	54.00	-17.94	AVG	P	
7	5566.200	49.61	-5.75	43.86	74.00	-30.14	peak	P	
8	5566.200	41.30	-5.75	35.55	54.00	-18.45	AVG	P	

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1242.250	59.24	-17.95	41.29	74.00	-32.71	peak	P	
2	1242.250	50.79	-17.95	32.84	54.00	-21.16	AVG	P	
3	2052.725	55.03	-12.86	42.17	74.00	-31.83	peak	P	
4	2052.725	46.89	-12.86	34.03	54.00	-19.97	AVG	P	
5	3193.425	53.77	-9.26	44.51	74.00	-29.49	peak	P	
6	3193.425	45.50	-9.26	36.24	54.00	-17.76	AVG	P	
7	4960.150	49.21	-6.07	43.14	74.00	-30.86	peak	P	
8	4960.150	45.65	-6.07	39.58	54.00	-14.42	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H

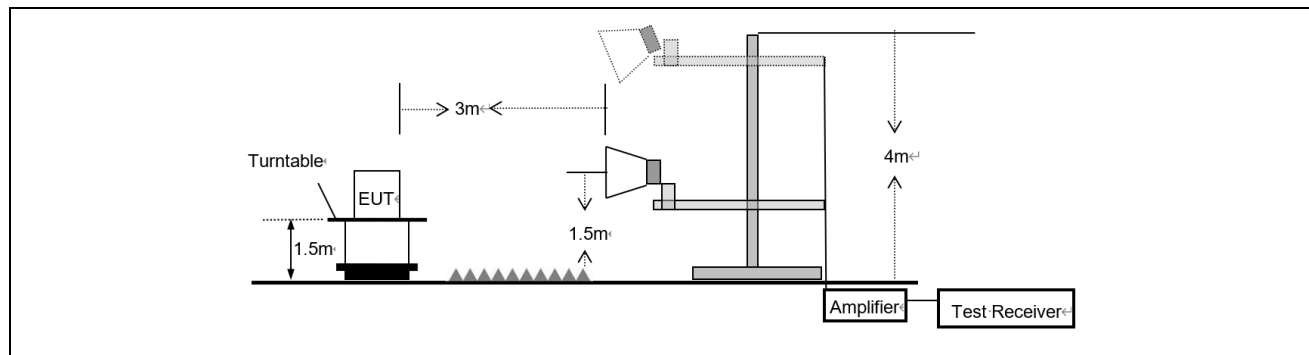


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	1230.775	56.85	-18.08	38.77	74.00	-35.23	peak	P	
2	1230.775	51.08	-18.08	33.00	54.00	-21.00	AVG	P	
3	1992.800	55.96	-13.76	42.20	74.00	-31.80	peak	P	
4	1992.800	47.97	-13.76	34.21	54.00	-19.79	AVG	P	
5	2783.725	55.76	-10.55	45.21	74.00	-28.79	peak	P	
6	2783.725	46.96	-10.55	36.41	54.00	-17.59	AVG	P	
7	6777.875	48.47	-3.44	45.03	74.00	-28.97	peak	P	
8	6777.875	39.98	-3.44	36.54	54.00	-17.46	AVG	P	

10.12 Emissions in frequency bands (above 18GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)(see § 15.205(c)).		
Test Limit:	Frequency(MHz)	Class B (dBuV/m) (at 3M)	
		PEAK	AVERAGE
	Above 1000	74	54
Test Method:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 section 6.6		

10.12.1 Test Setup Diagram:

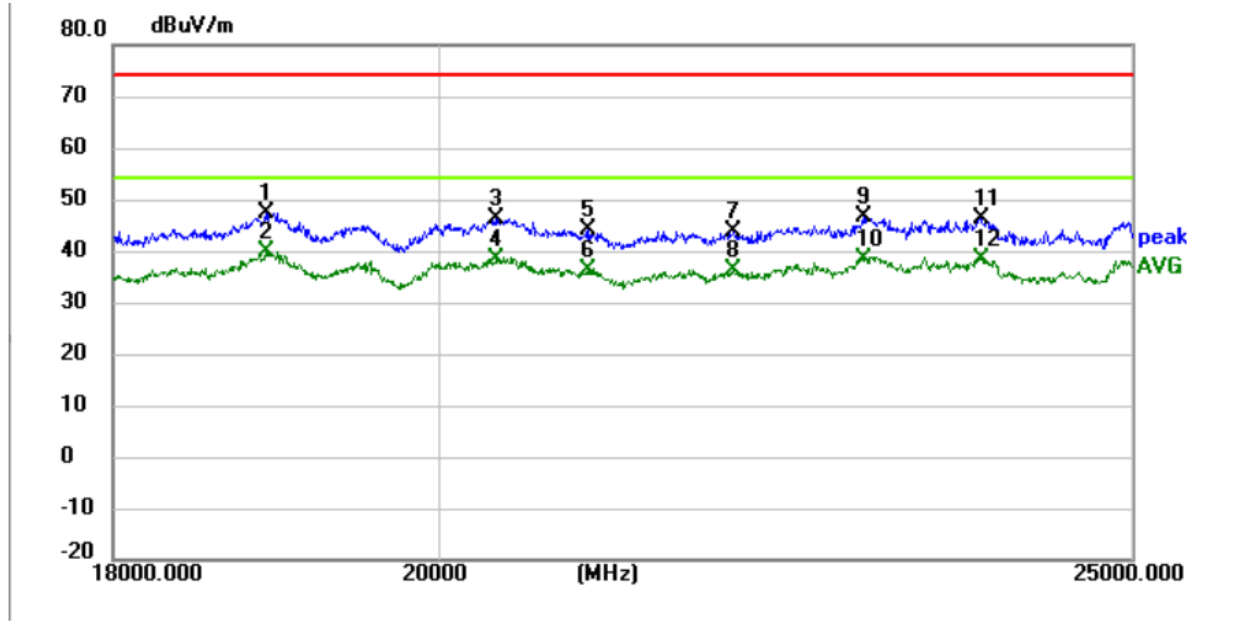


10.12.2 E.U.T. Operation:

Operating Environment:					
Temperature:	25.1 °C	Humidity:	43 %	Atmospheric Pressure:	1010 mbar
Per-test mode:	TM1, TM2, TM3				
Final test mode:	TM1 TM1(Low channel)				

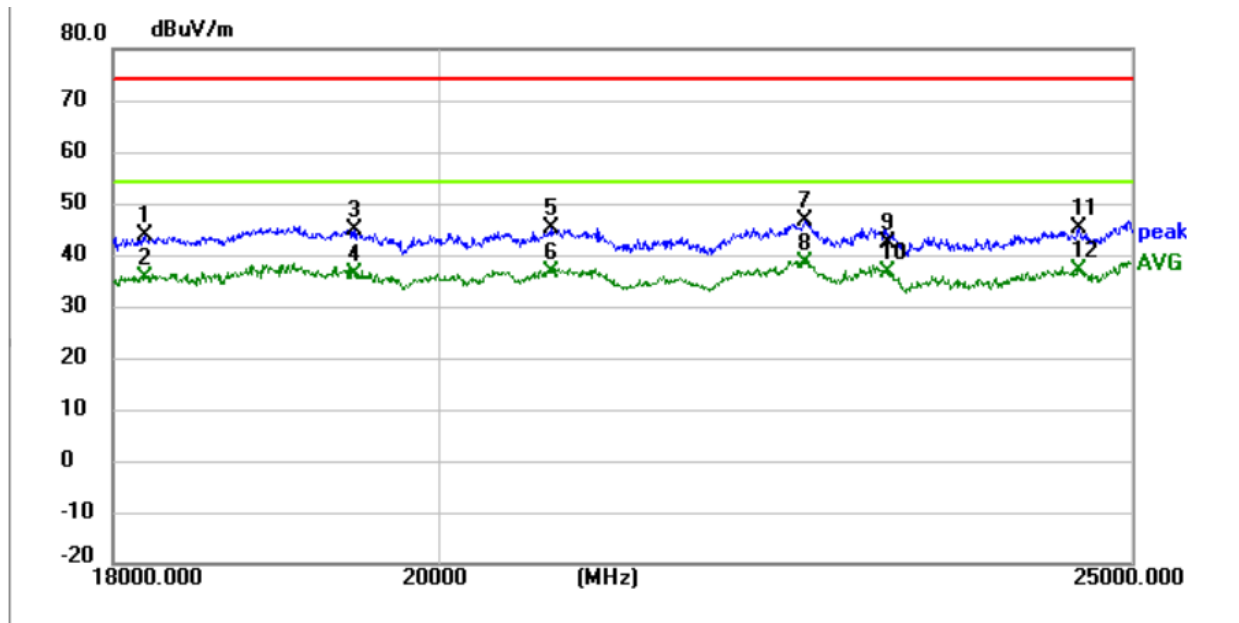
10.12.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	18914.025	61.73	-14.24	47.49	74.00	-26.51	peak	P	
2 *	18914.025	54.00	-14.24	39.76	54.00	-14.24	AVG	P	
3	20374.575	58.58	-12.46	46.12	74.00	-27.88	peak	P	
4	20374.575	50.80	-12.46	38.34	54.00	-15.66	AVG	P	
5	20983.750	56.23	-12.29	43.94	74.00	-30.06	peak	P	
6	20983.750	48.68	-12.29	36.39	54.00	-17.61	AVG	P	
7	21995.600	55.89	-11.99	43.90	74.00	-30.10	peak	P	
8	21995.600	48.15	-11.99	36.16	54.00	-17.84	AVG	P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L

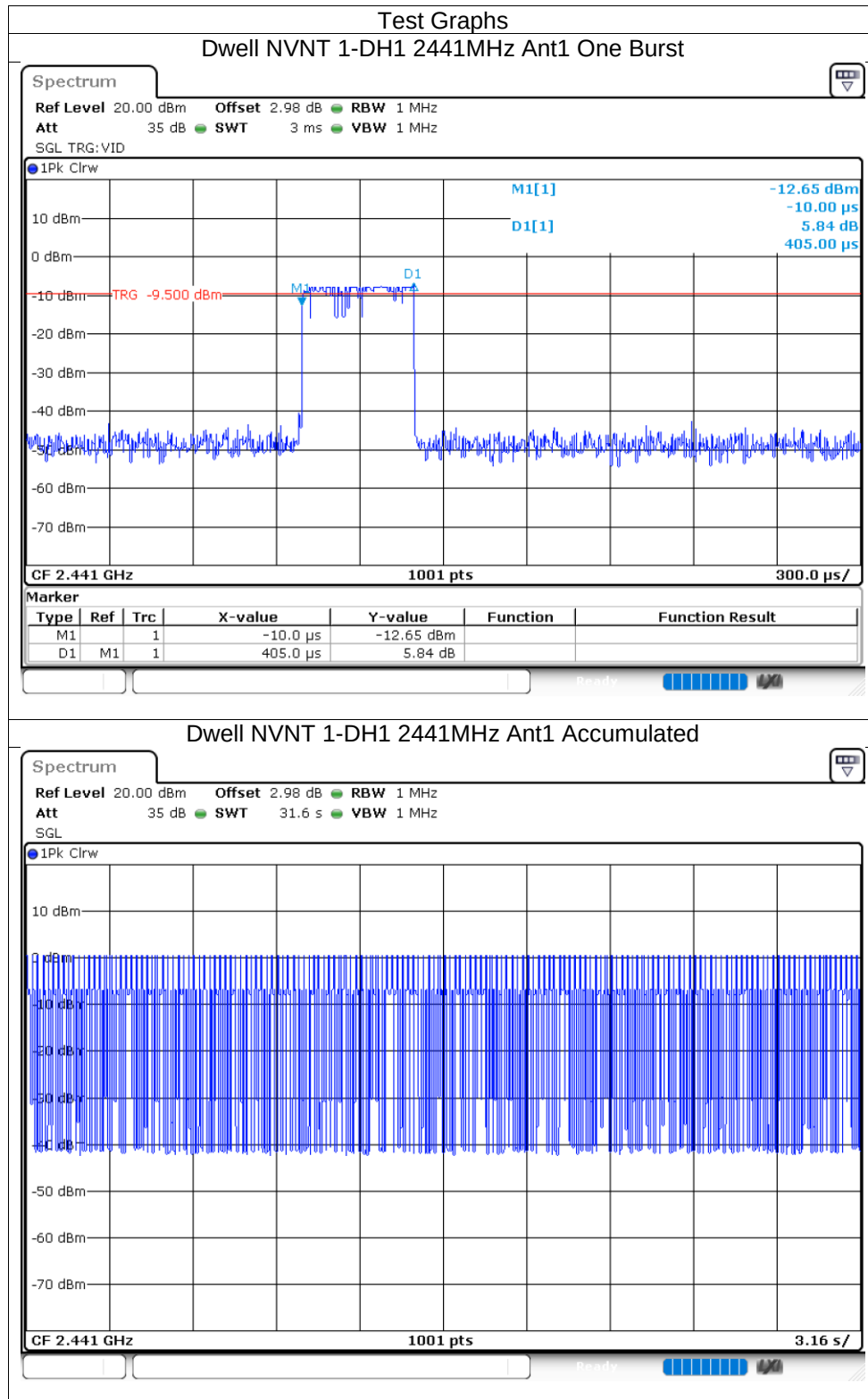


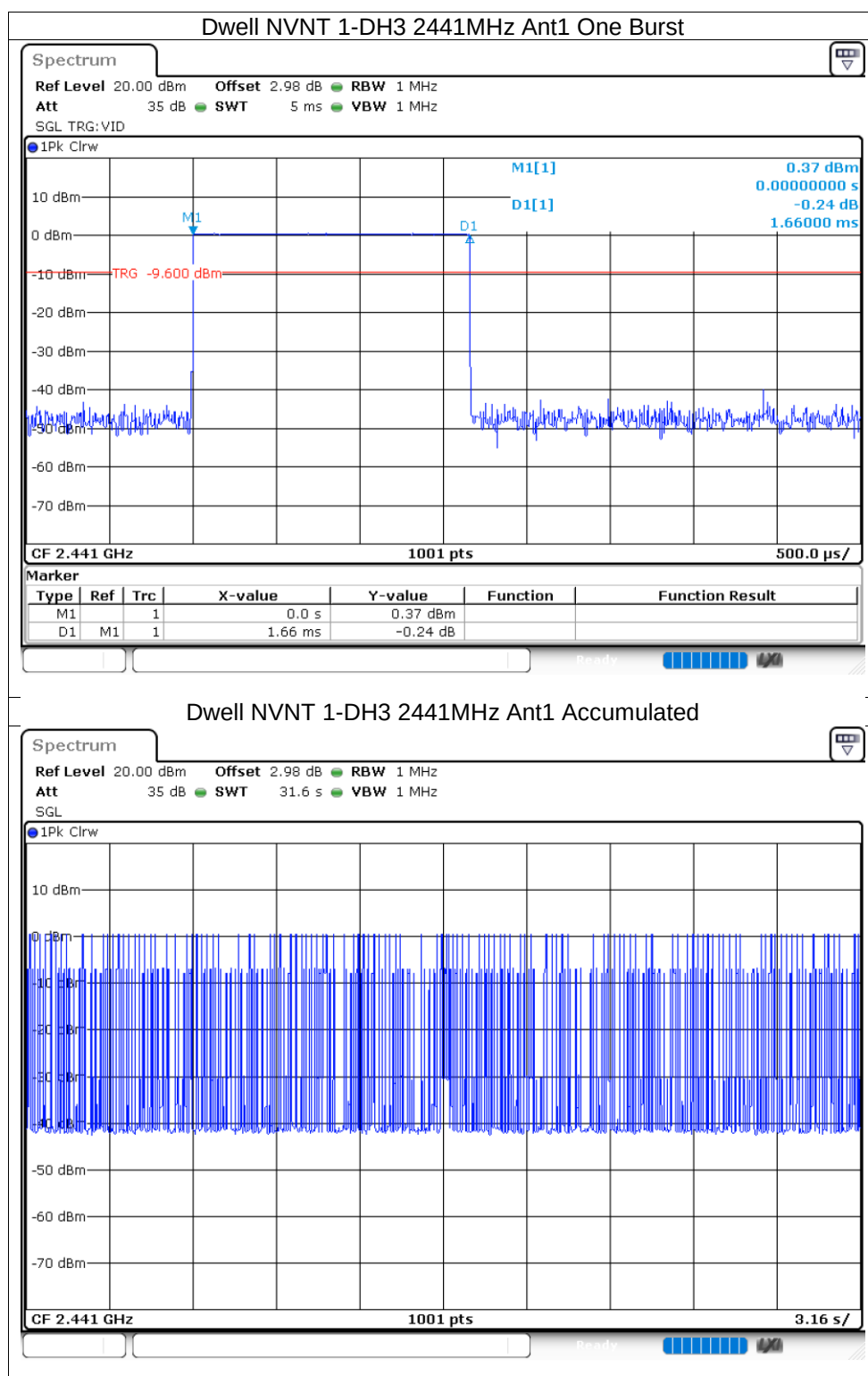
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	18184.275	58.60	-14.70	43.90	74.00	-30.10	peak	P	
2	18184.275	50.34	-14.70	35.64	54.00	-18.36	AVG	P	
3	19462.825	58.32	-13.53	44.79	74.00	-29.21	peak	P	
4	19462.825	49.62	-13.53	36.09	54.00	-17.91	AVG	P	
5	20735.600	57.31	-12.13	45.18	74.00	-28.82	peak	P	
6	20735.600	48.83	-12.13	36.70	54.00	-17.30	AVG	P	
7	22499.775	58.03	-11.49	46.54	74.00	-27.46	peak	P	
8 *	22499.775	49.96	-11.49	38.47	54.00	-15.53	AVG	P	

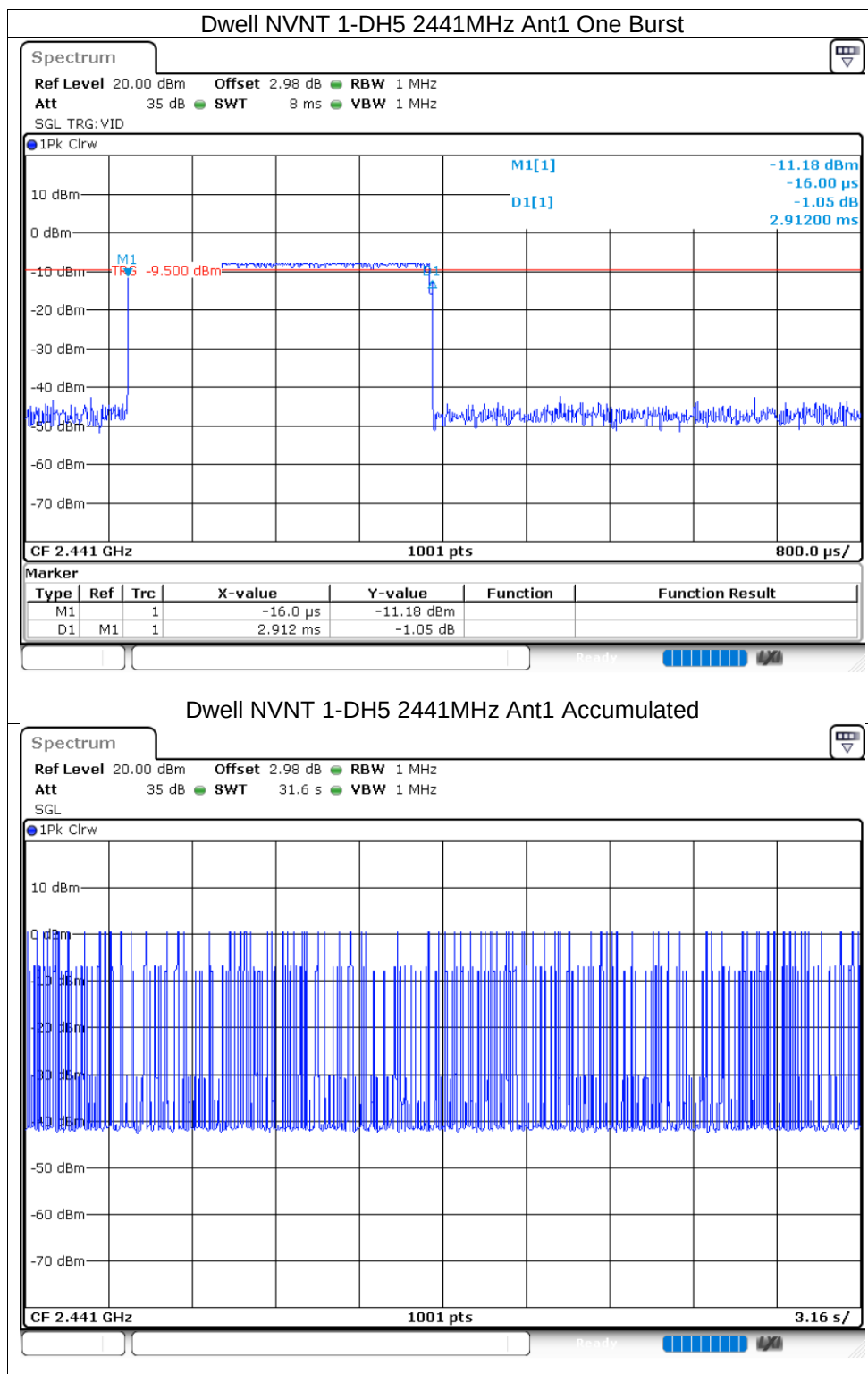
Appendix A

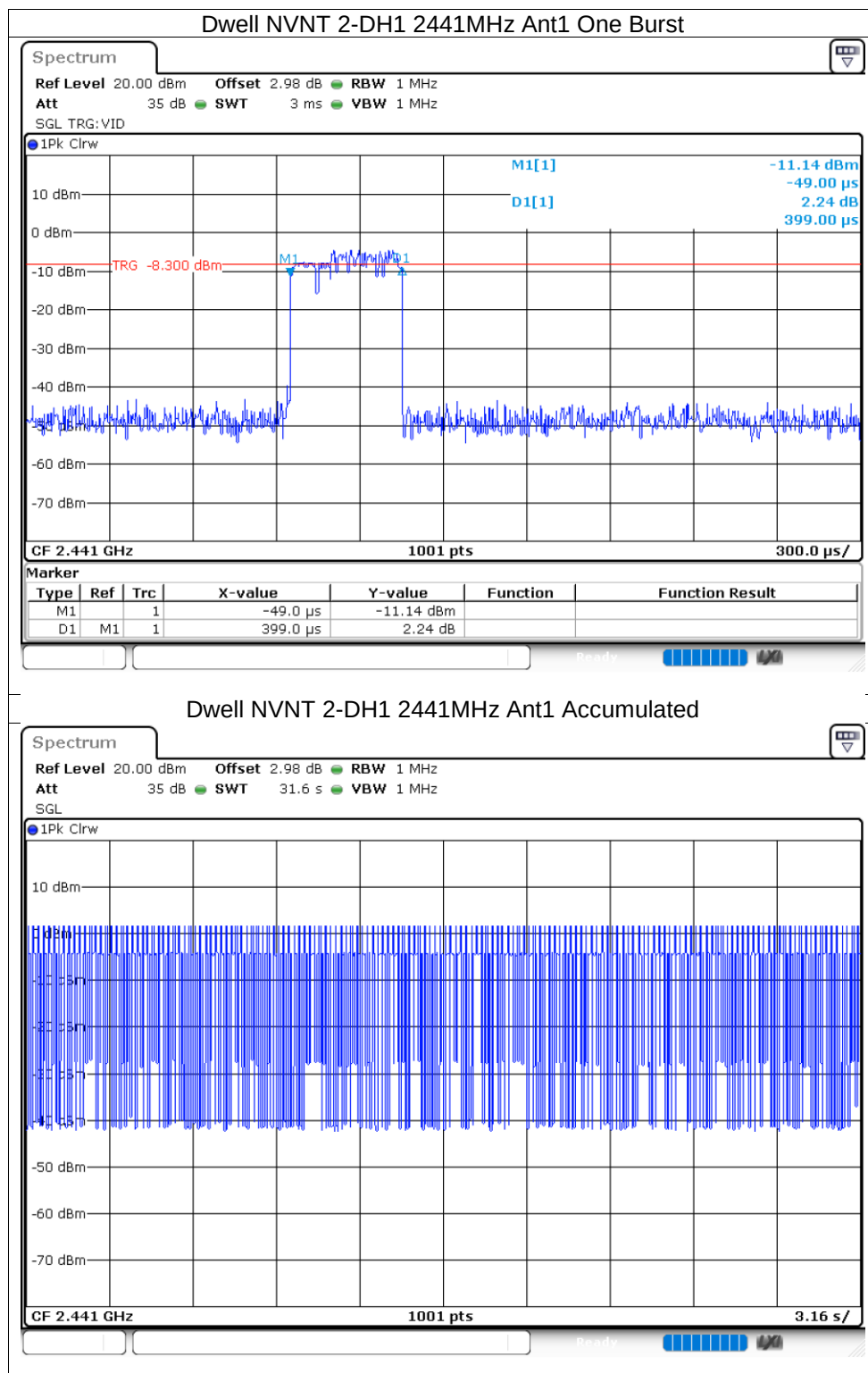
A.1 Dwell Time

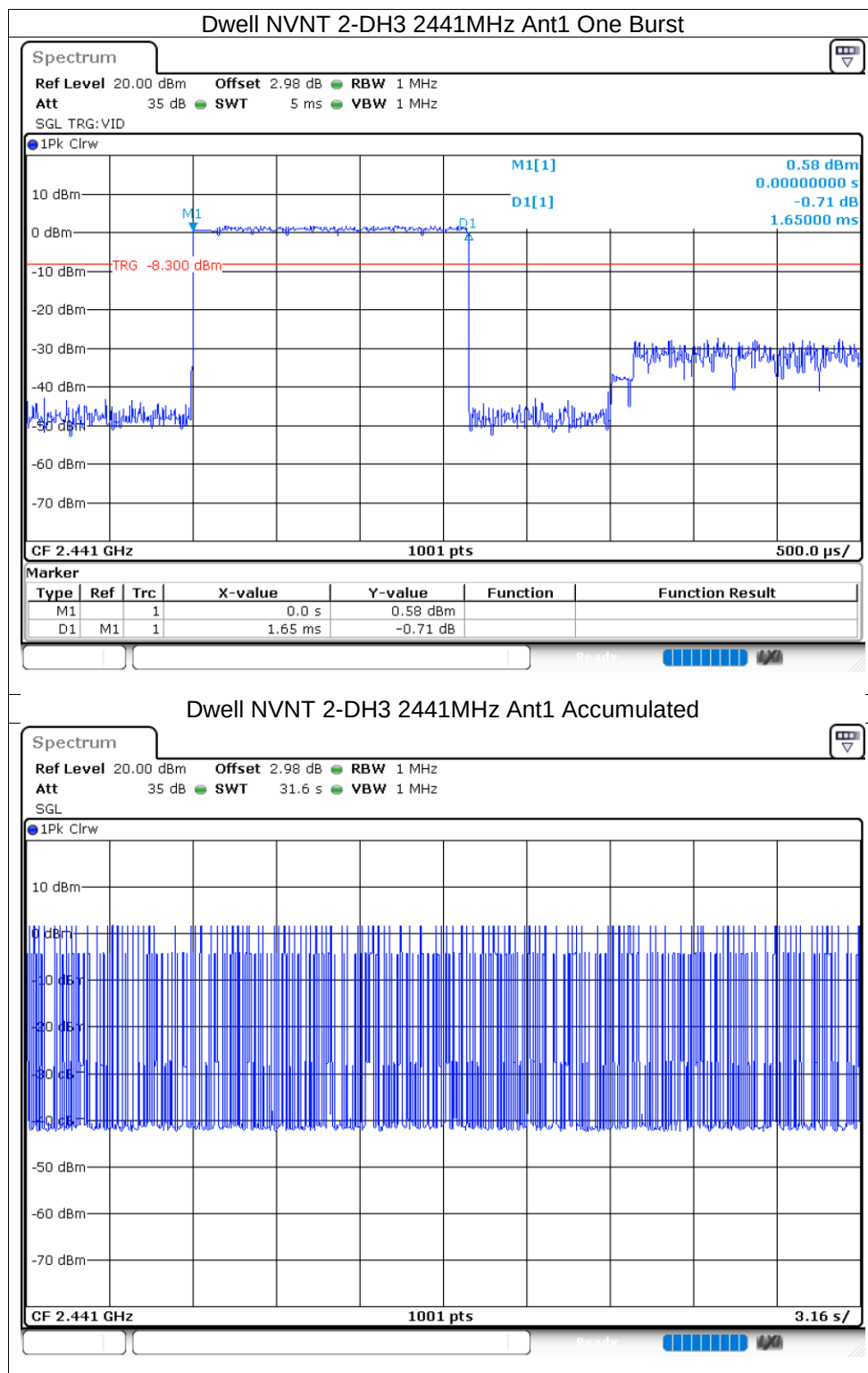
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.405	76.14	188	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.66	195.88	118	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.912	279.552	96	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.399	80.199	201	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.65	202.95	123	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.904	241.032	83	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.396	74.844	189	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.645	202.335	123	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.896	269.328	93	31600	400	Pass

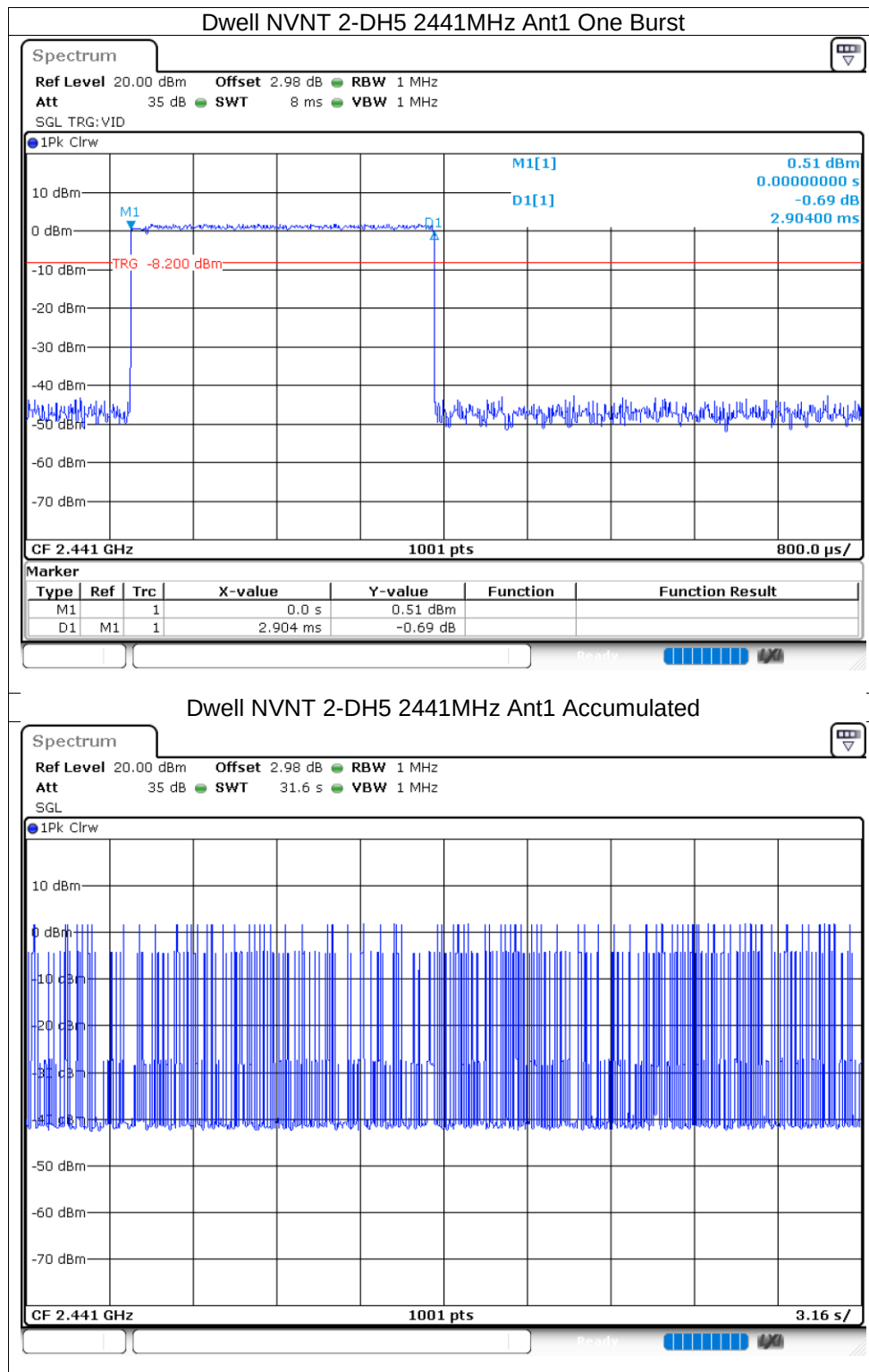


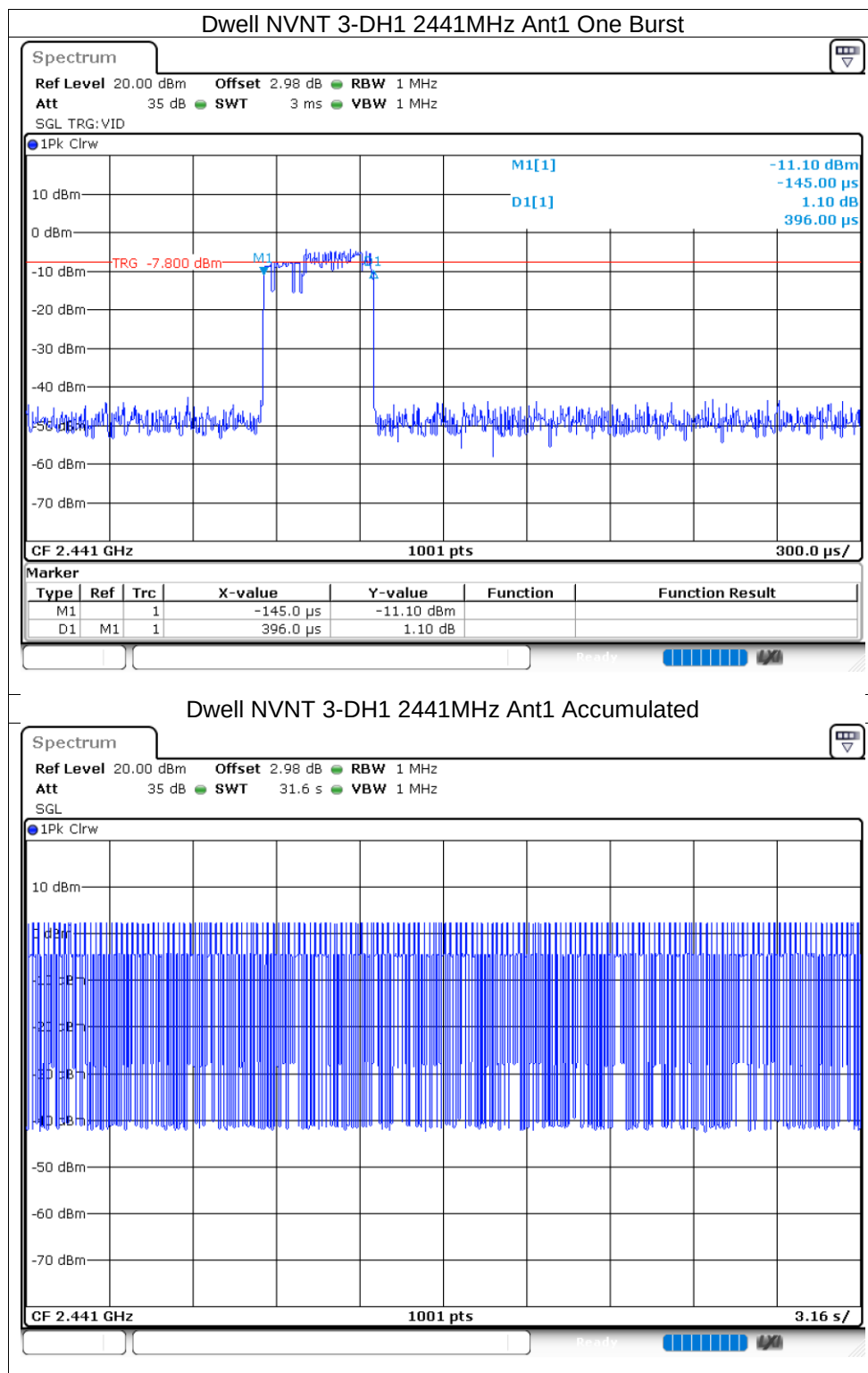


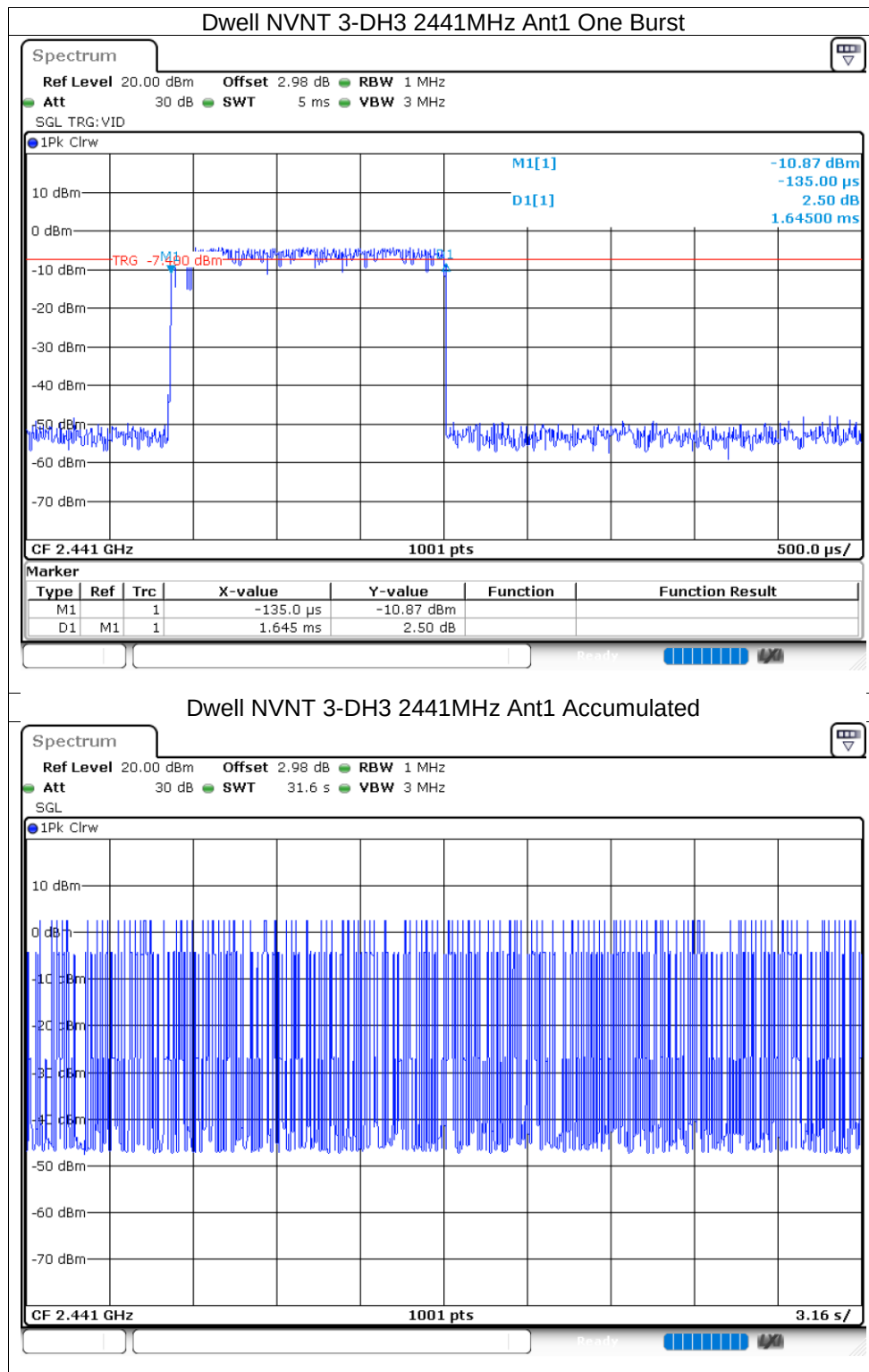


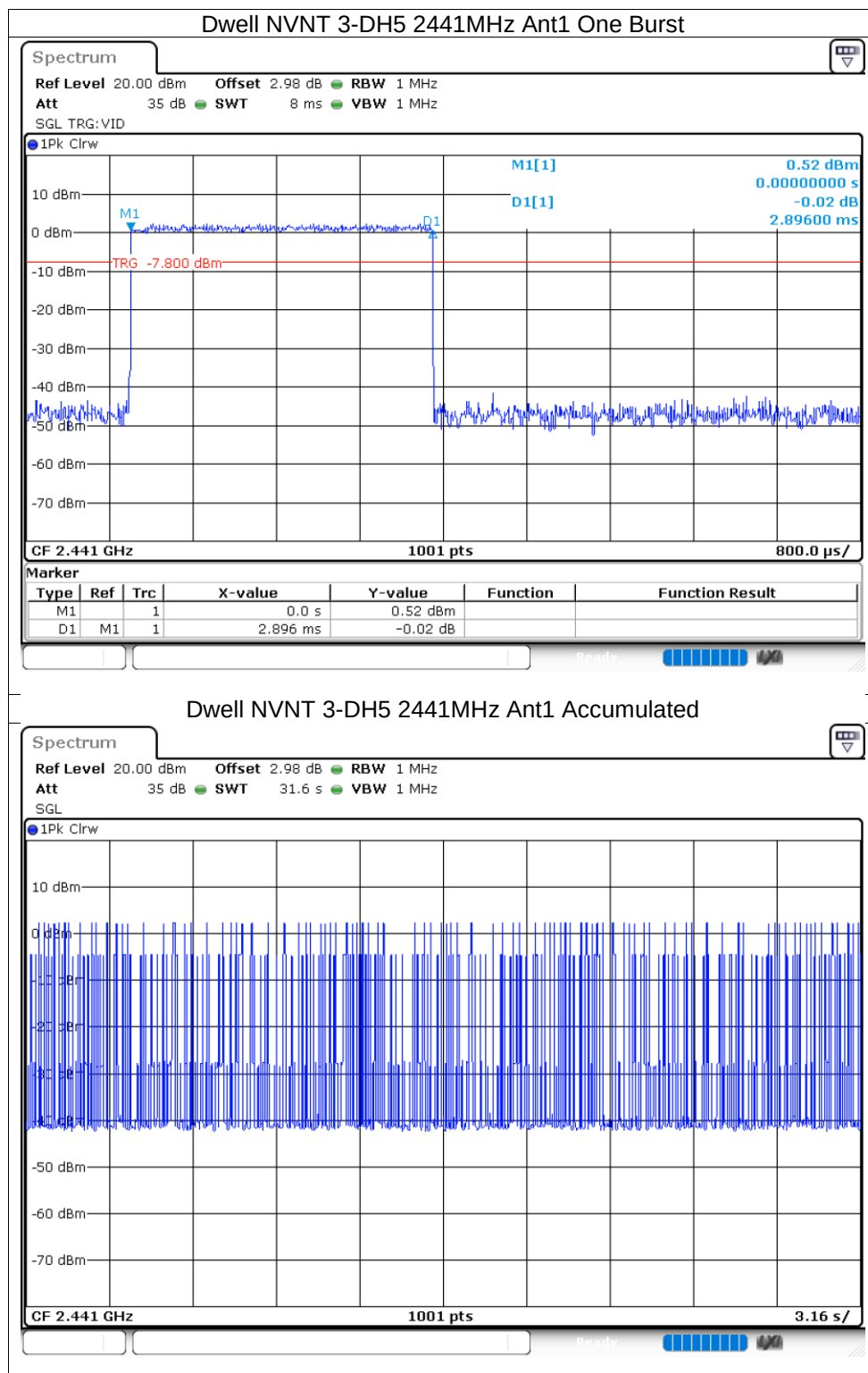






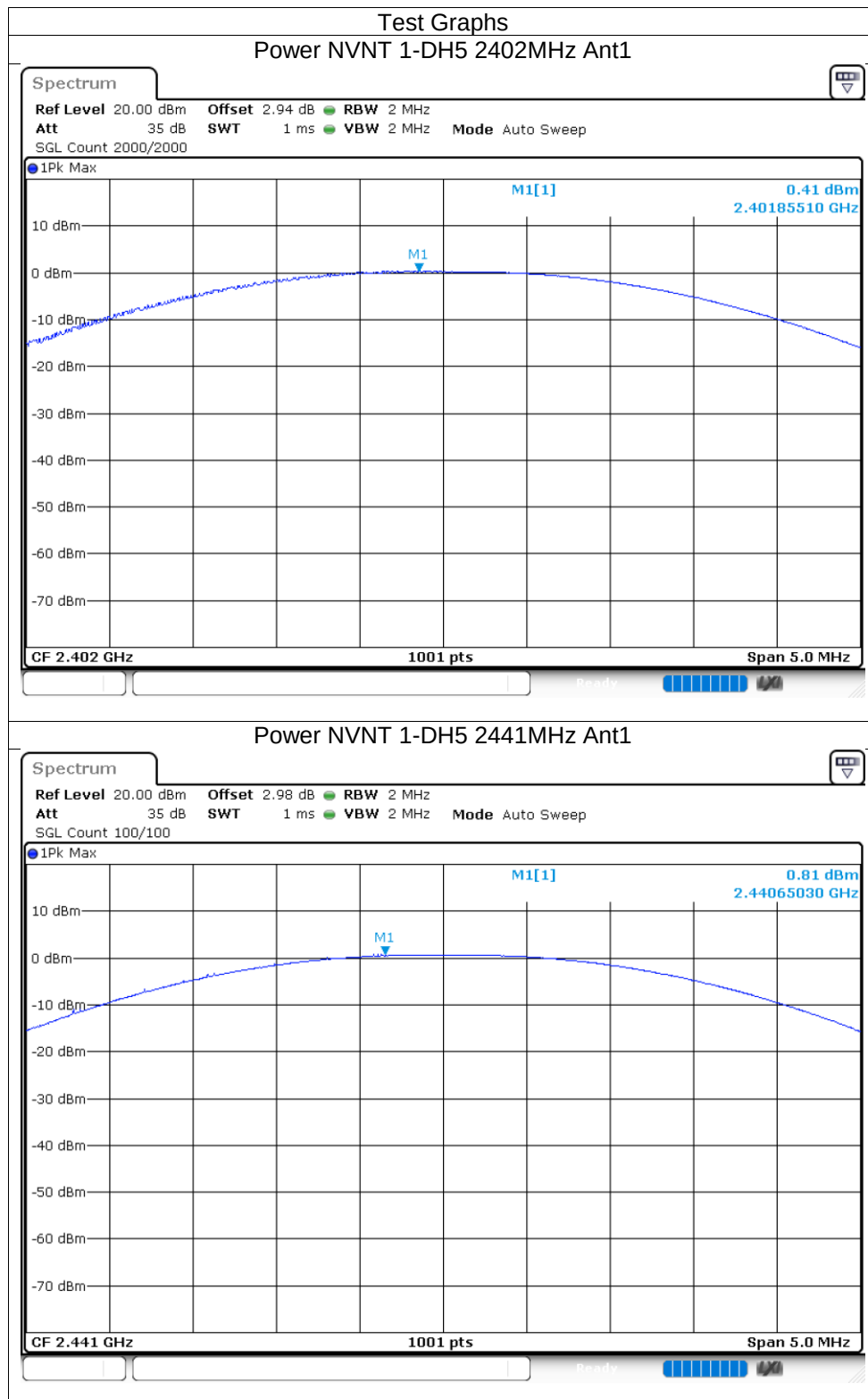


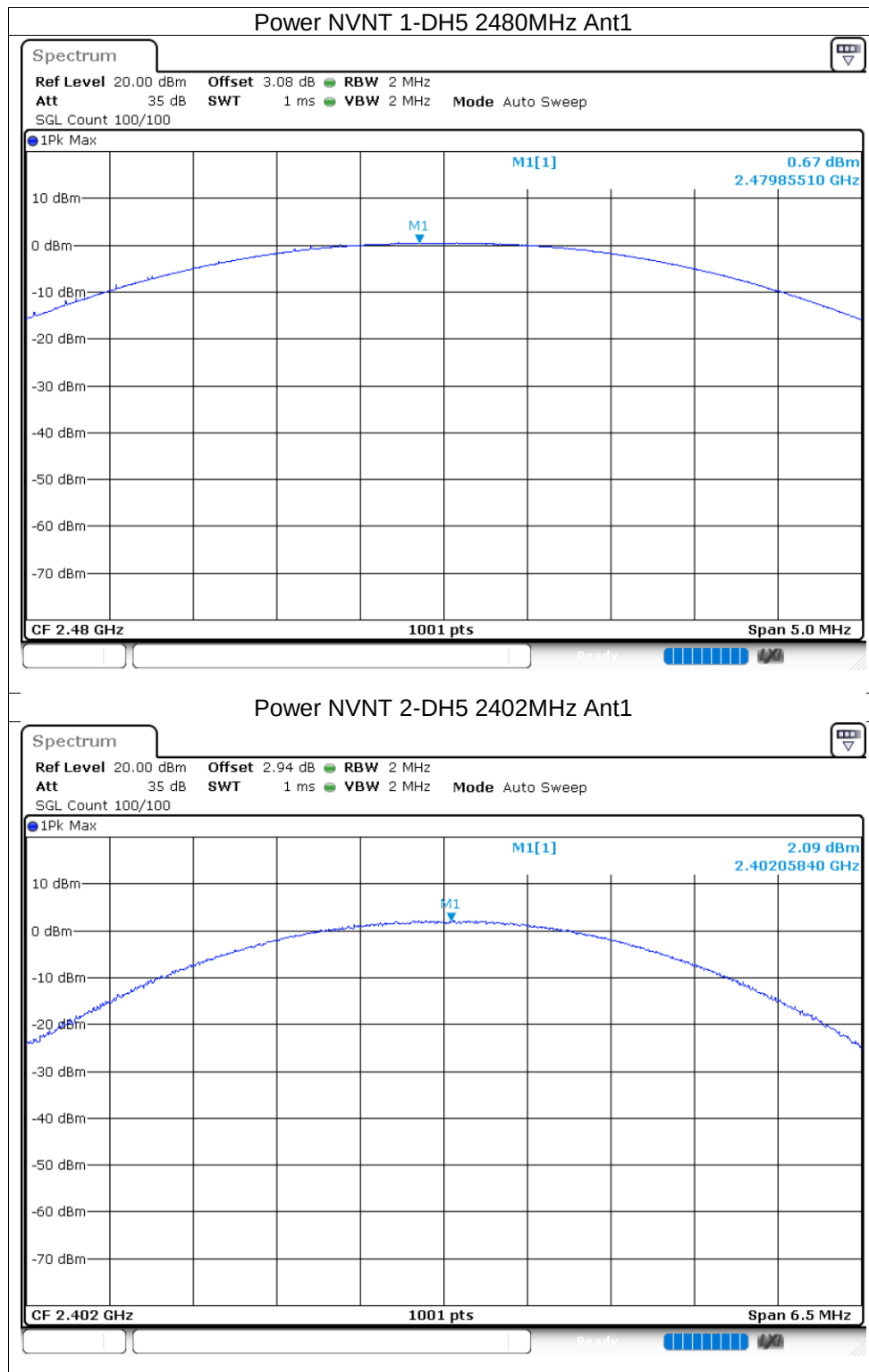


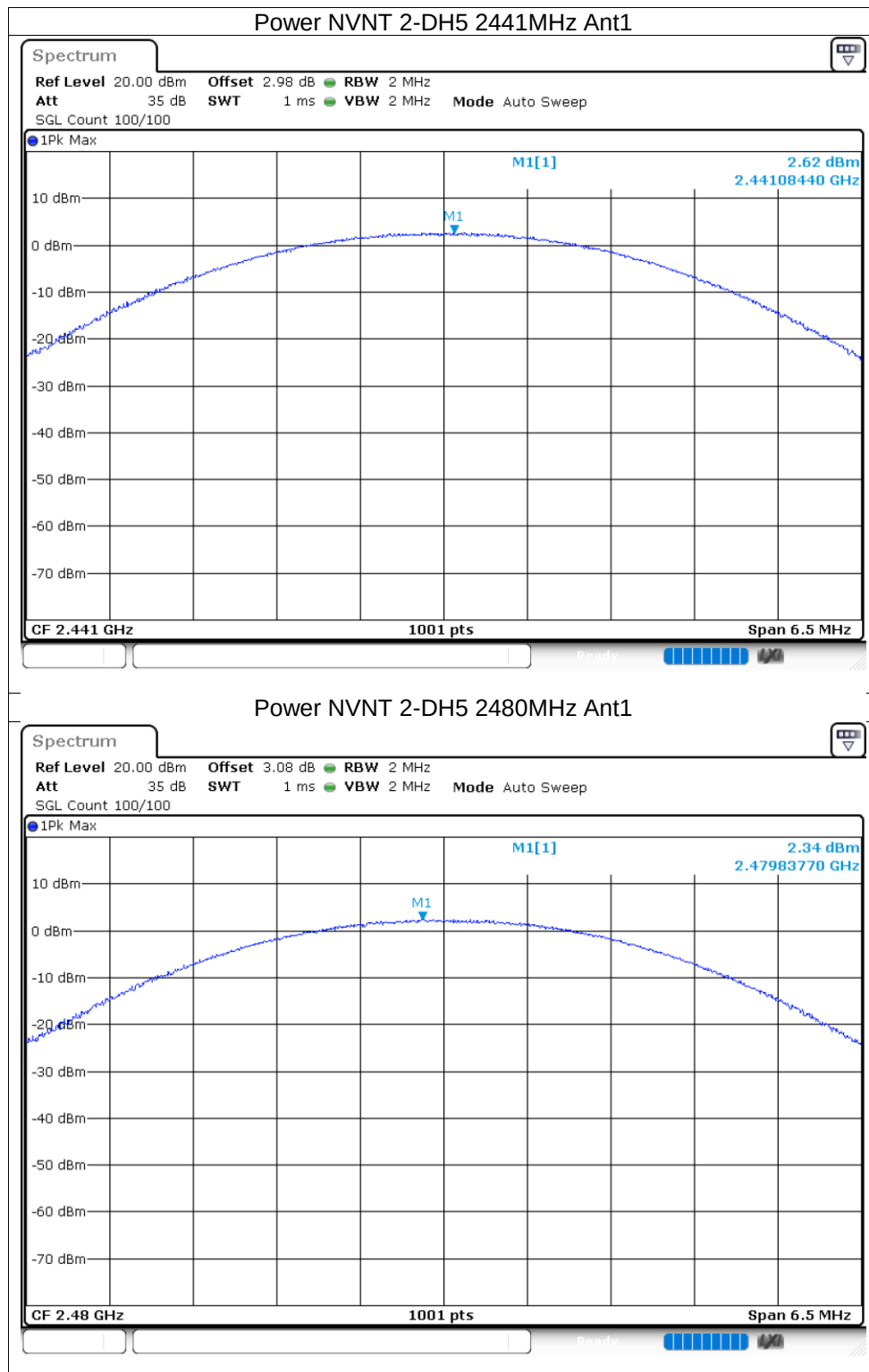


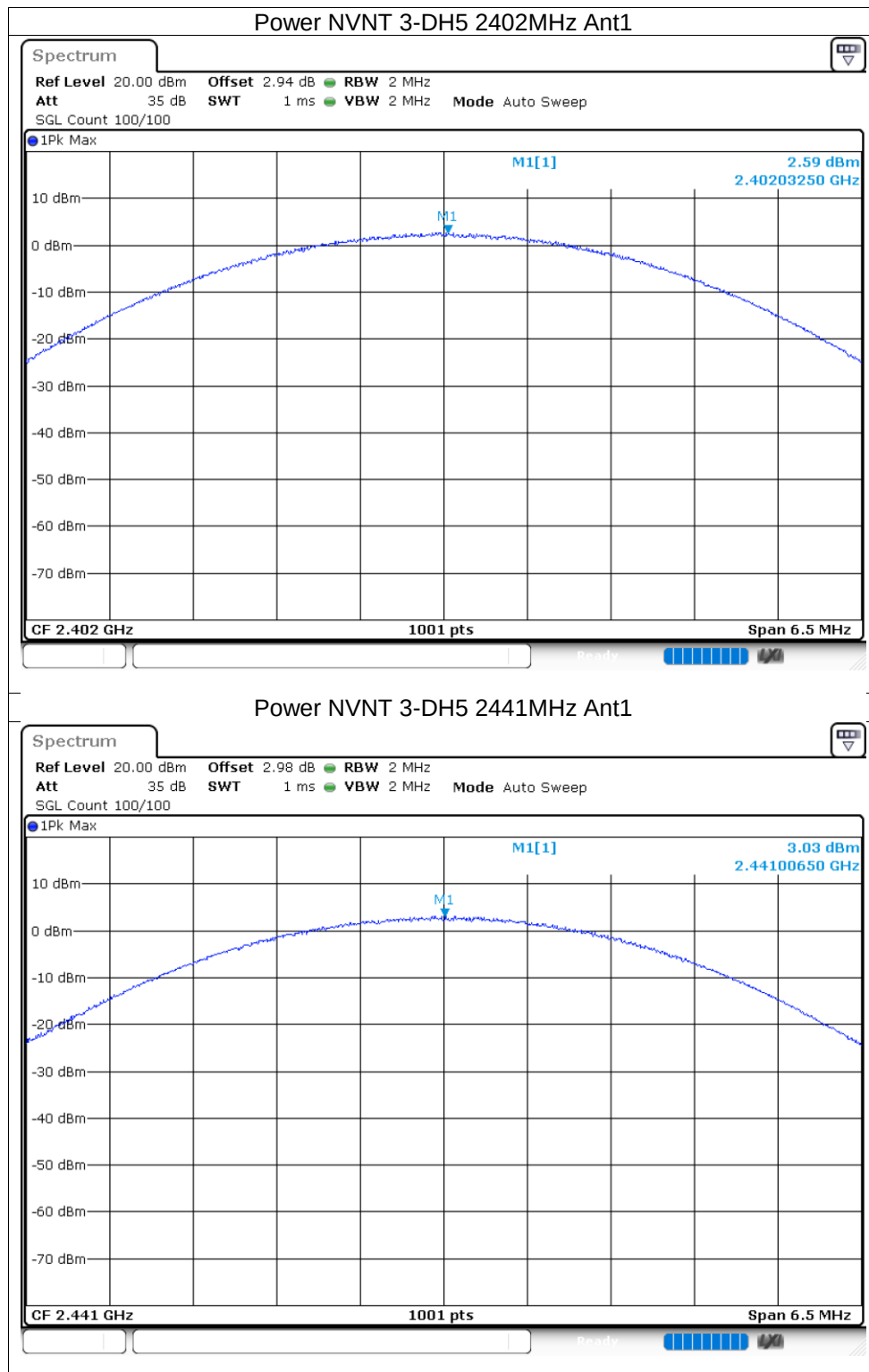
A.2 Maximum Conducted Output Power

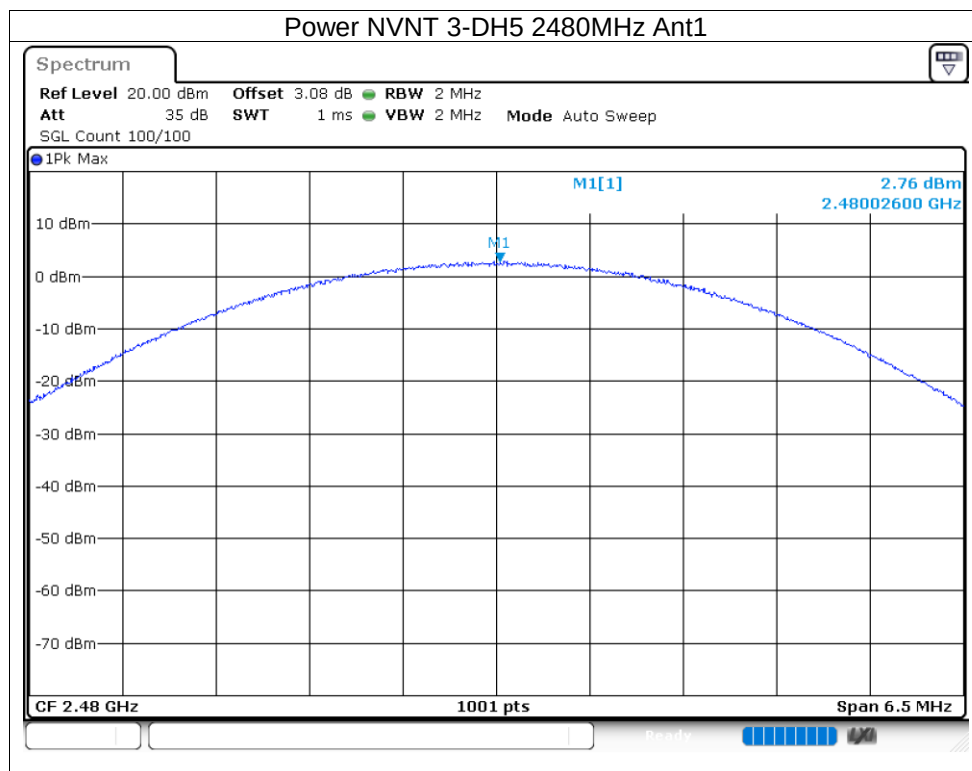
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.41	21	Pass
NVNT	1-DH5	2441	Ant1	0.81	21	Pass
NVNT	1-DH5	2480	Ant1	0.67	21	Pass
NVNT	2-DH5	2402	Ant1	2.09	21	Pass
NVNT	2-DH5	2441	Ant1	2.62	21	Pass
NVNT	2-DH5	2480	Ant1	2.34	21	Pass
NVNT	3-DH5	2402	Ant1	2.59	21	Pass
NVNT	3-DH5	2441	Ant1	3.03	21	Pass
NVNT	3-DH5	2480	Ant1	2.76	21	Pass











A.3 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.974	Pass
NVNT	1-DH5	2441	Ant1	0.962	Pass
NVNT	1-DH5	2480	Ant1	0.972	Pass
NVNT	2-DH5	2402	Ant1	1.322	Pass
NVNT	2-DH5	2441	Ant1	1.28	Pass
NVNT	2-DH5	2480	Ant1	1.292	Pass
NVNT	3-DH5	2402	Ant1	1.298	Pass
NVNT	3-DH5	2441	Ant1	1.3	Pass
NVNT	3-DH5	2480	Ant1	1.288	Pass

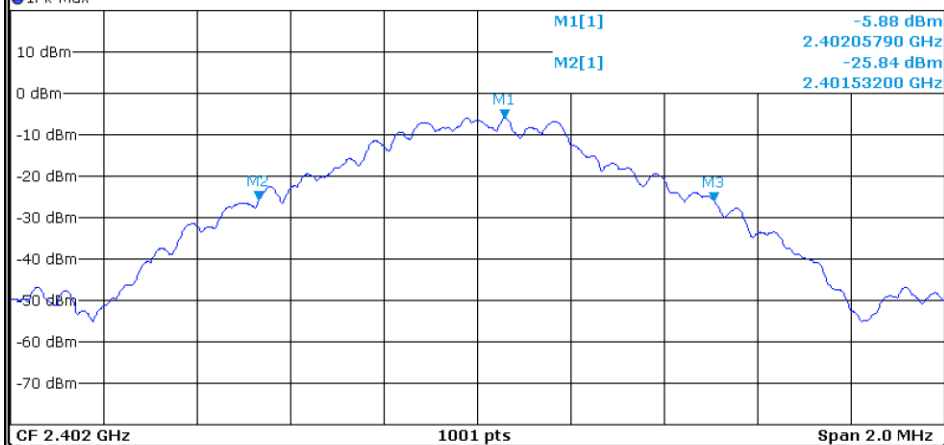
Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

Spectrum

Ref Level 20.00 dBm Offset 2.94 dB RBW 30 kHz
Att 35 dB SWT 63.3 μ s VBW 100 kHz Mode Auto FFT
SGL Count 100/100

1Pk Max



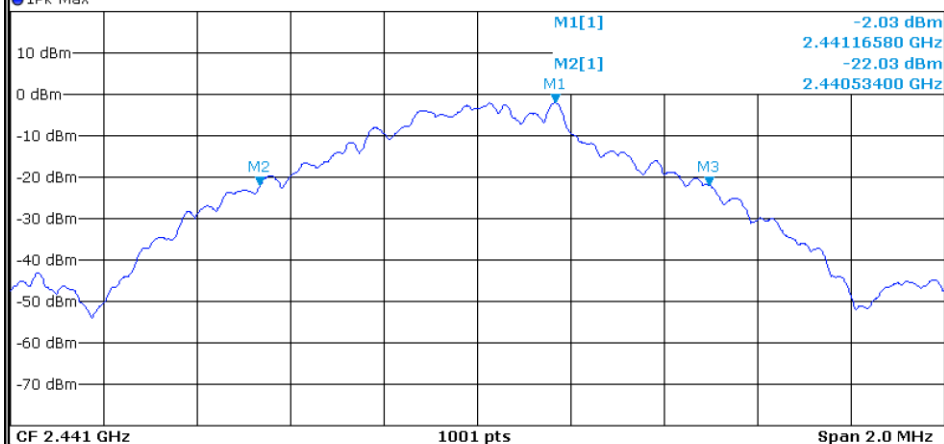
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4020579 GHz	-5.88 dBm		
M2		1	2.401532 GHz	-25.84 dBm		
M3		1	2.402506 GHz	-25.88 dBm		

-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

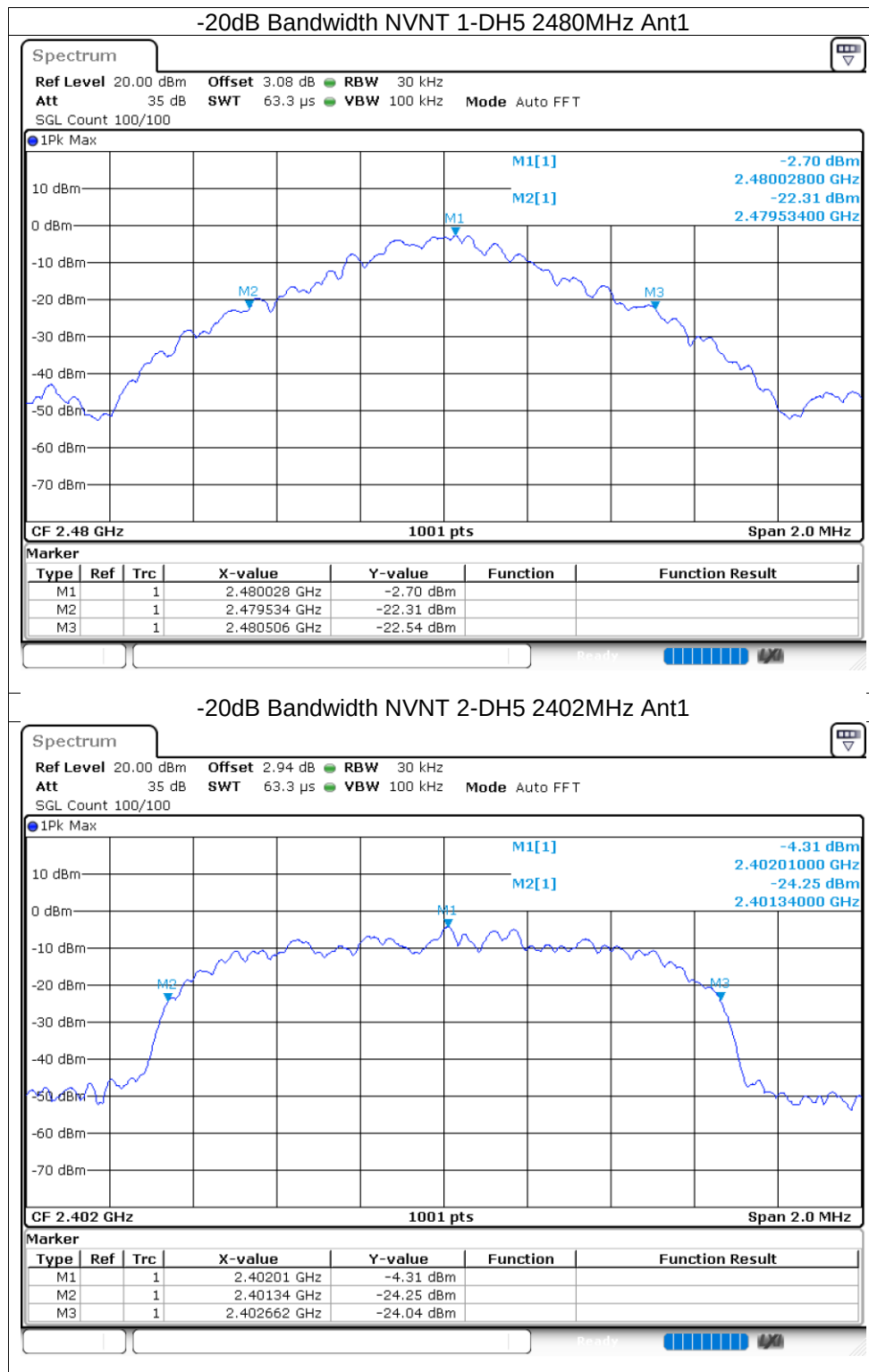
Spectrum

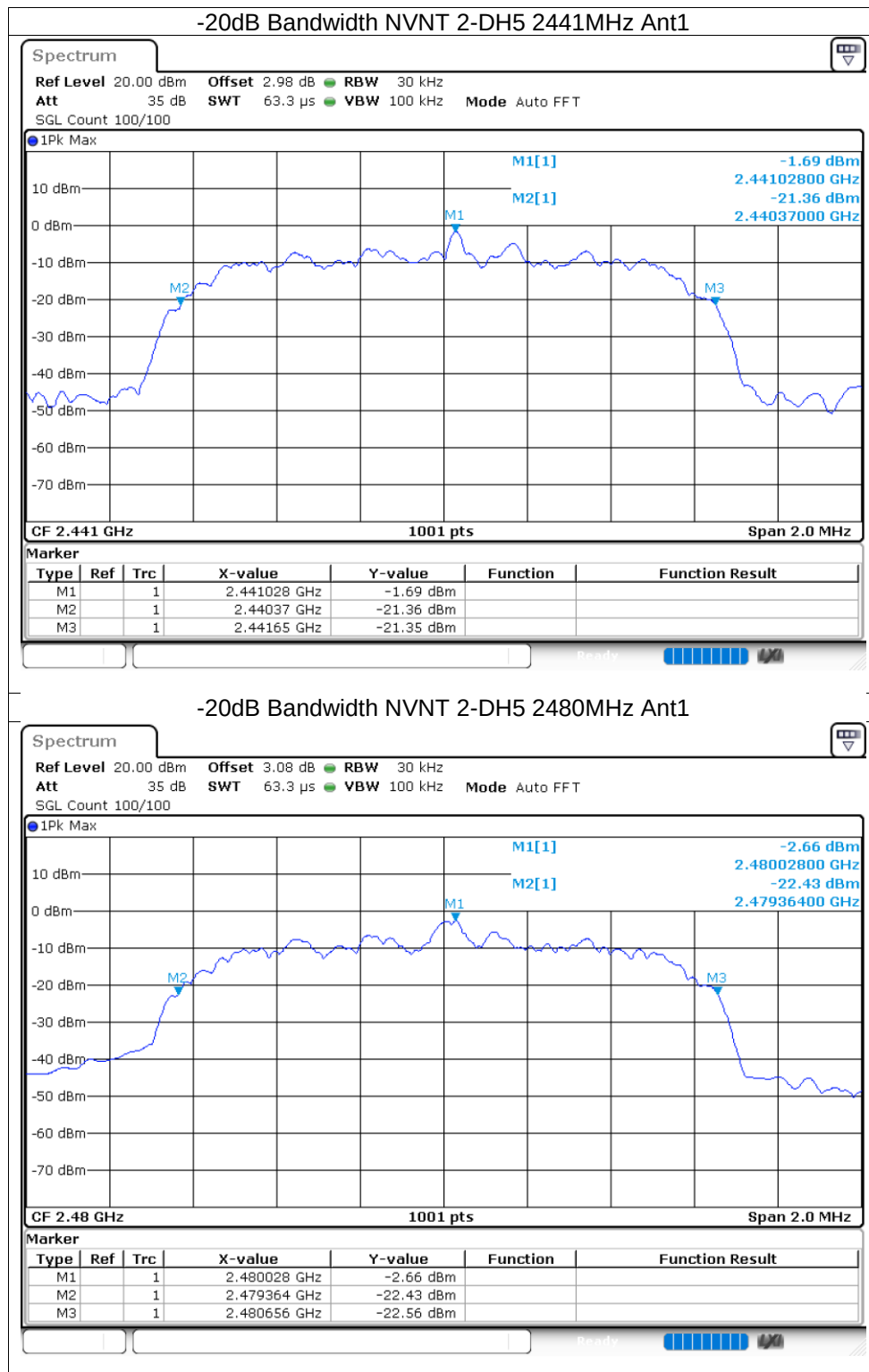
Ref Level 20.00 dBm Offset 2.98 dB RBW 30 kHz
Att 35 dB SWT 63.3 μ s VBW 100 kHz Mode Auto FFT
SGL Count 100/100

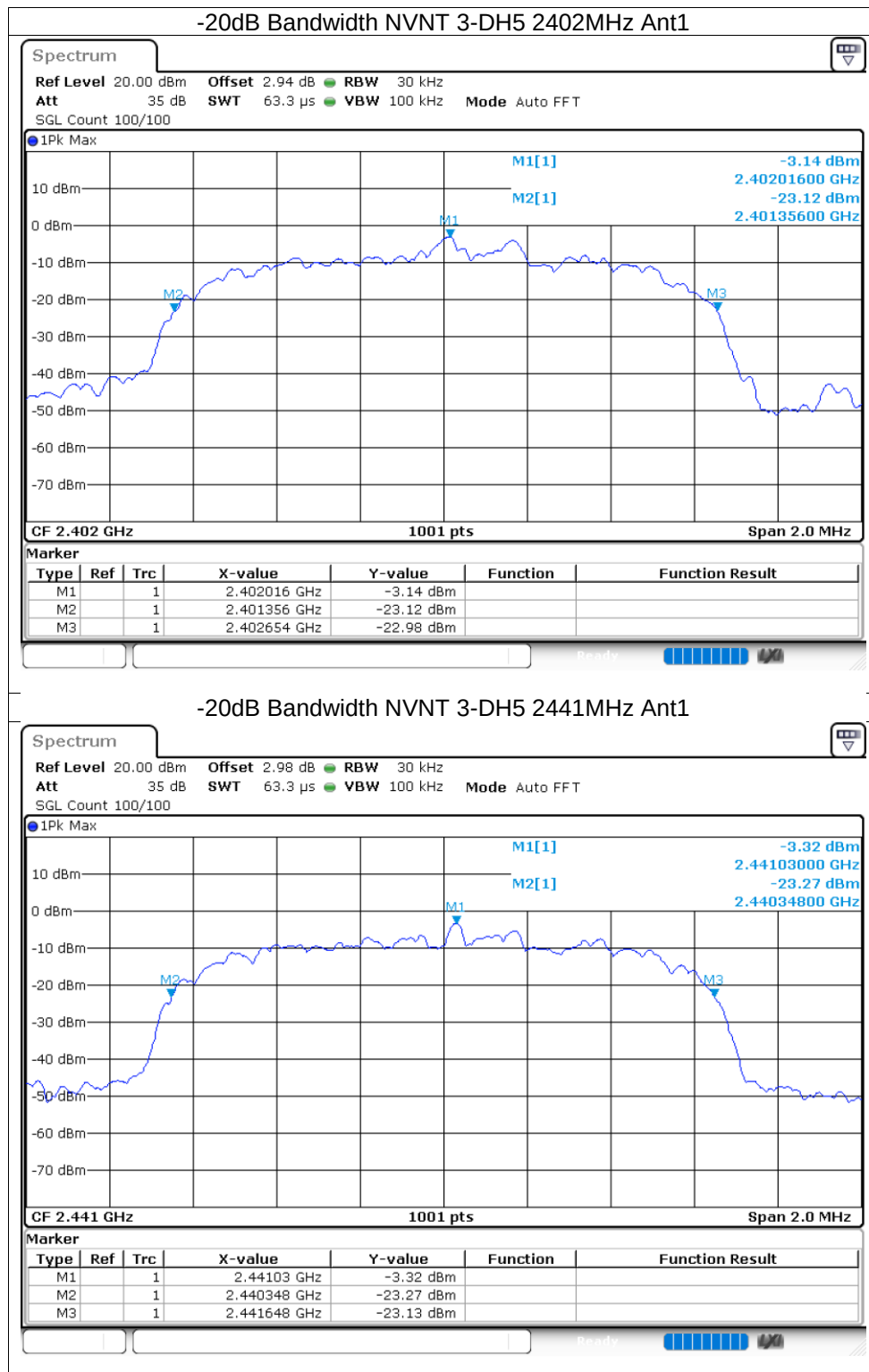
1Pk Max

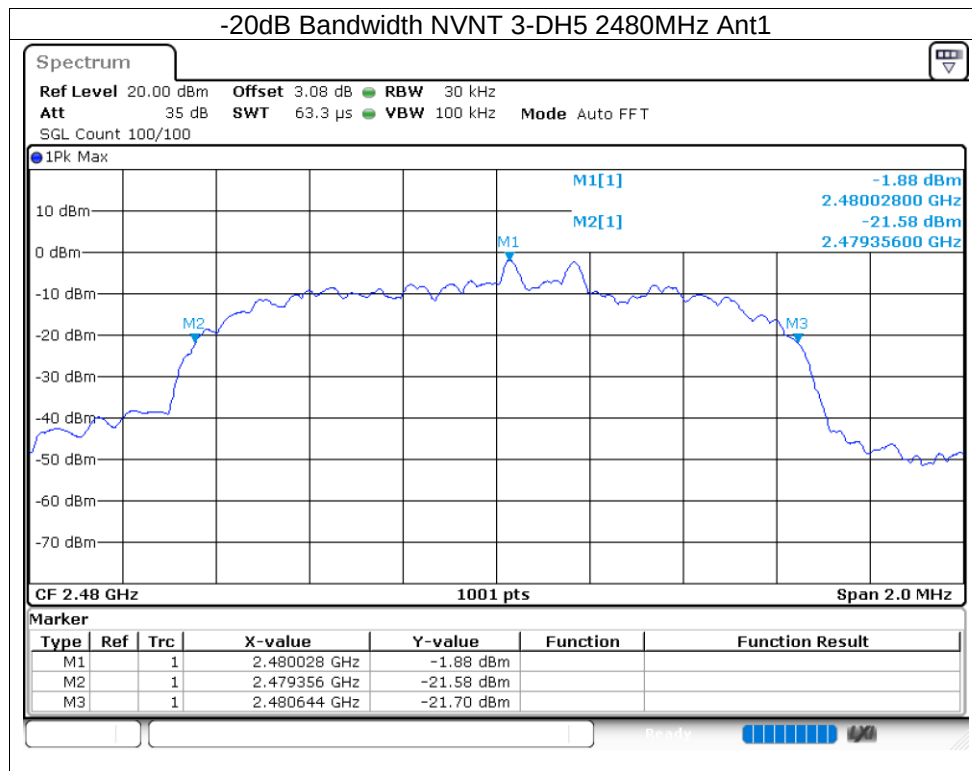


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4411658 GHz	-2.03 dBm		
M2		1	2.440534 GHz	-22.03 dBm		
M3		1	2.441496 GHz	-21.98 dBm		



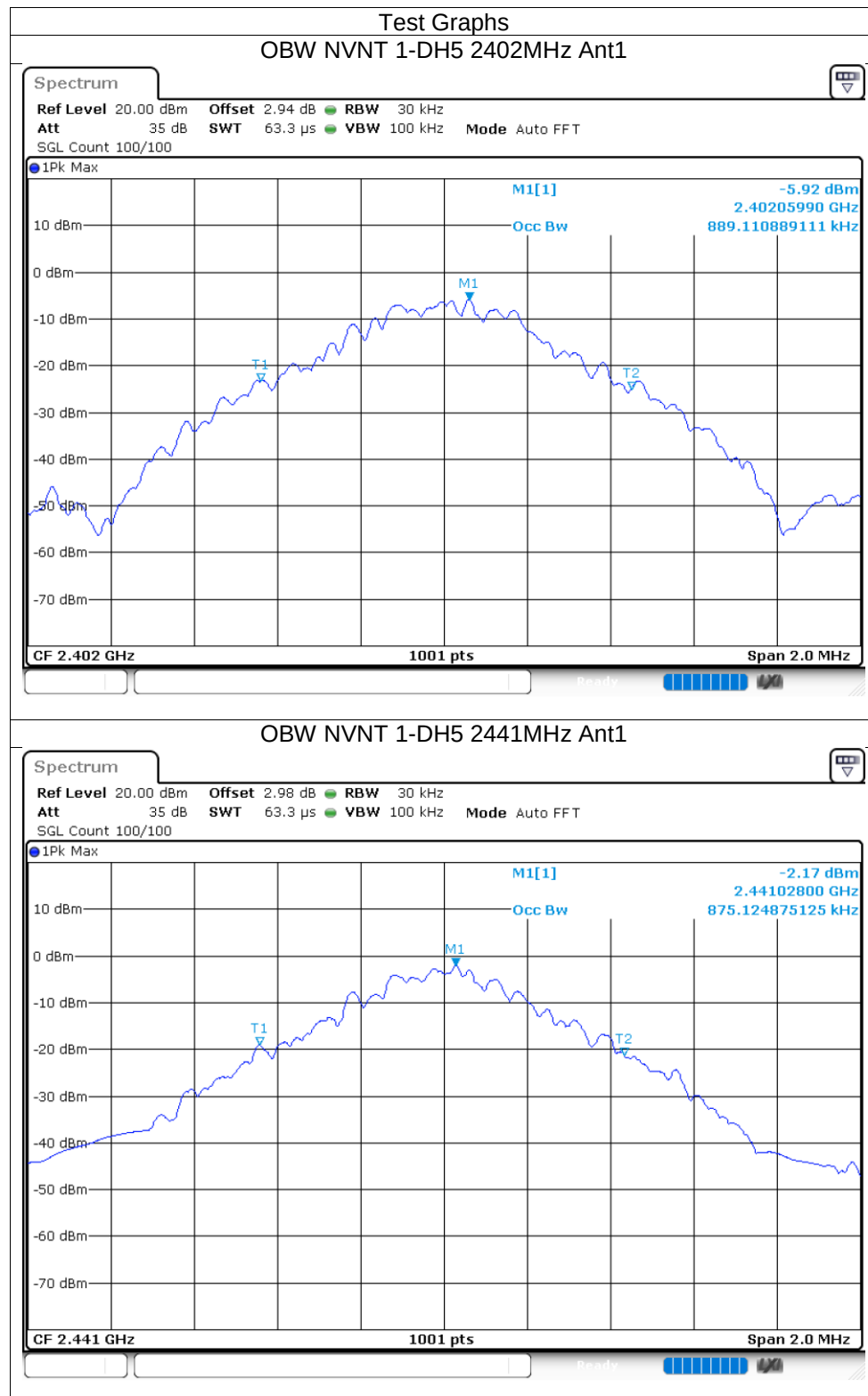


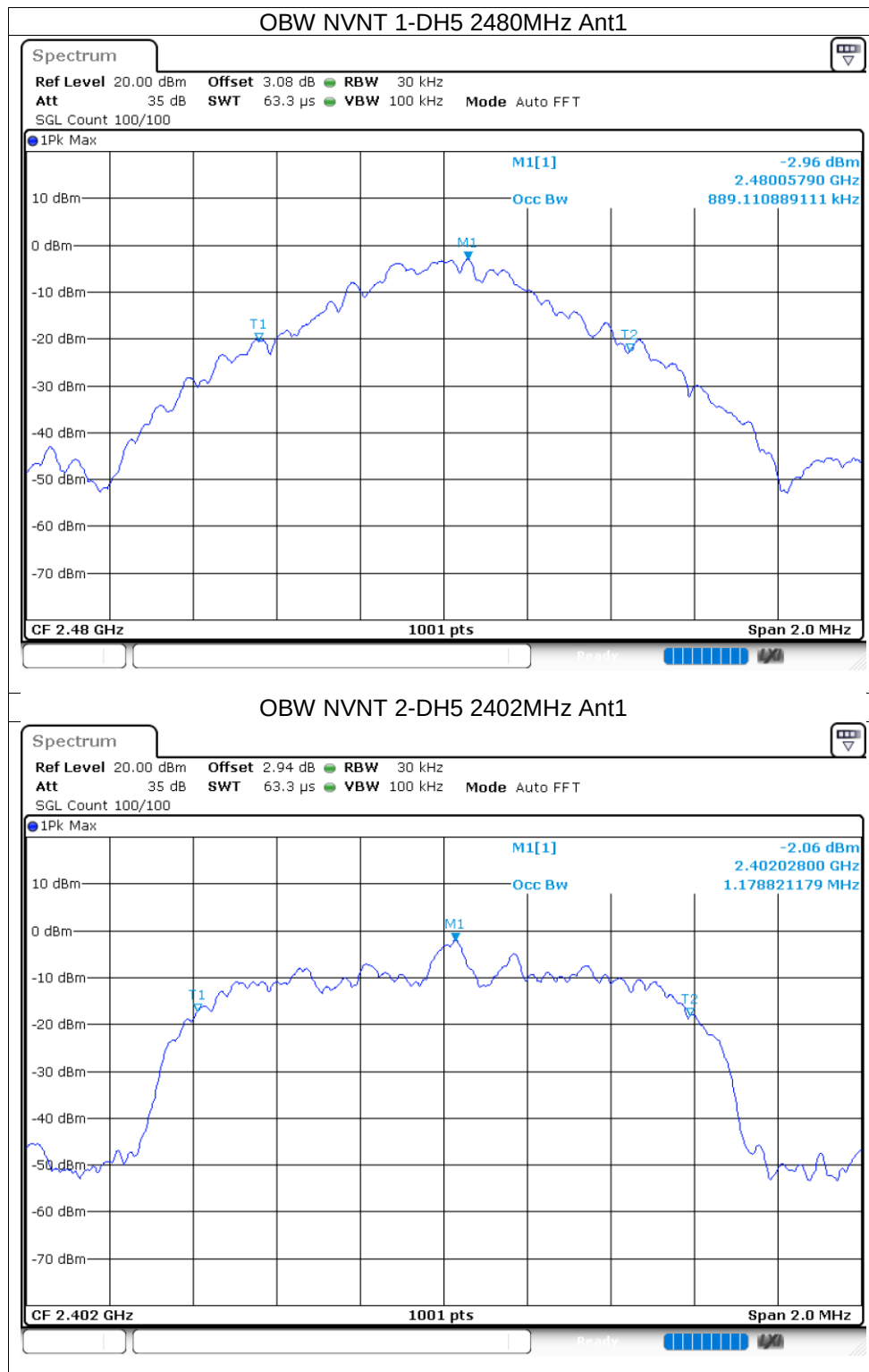


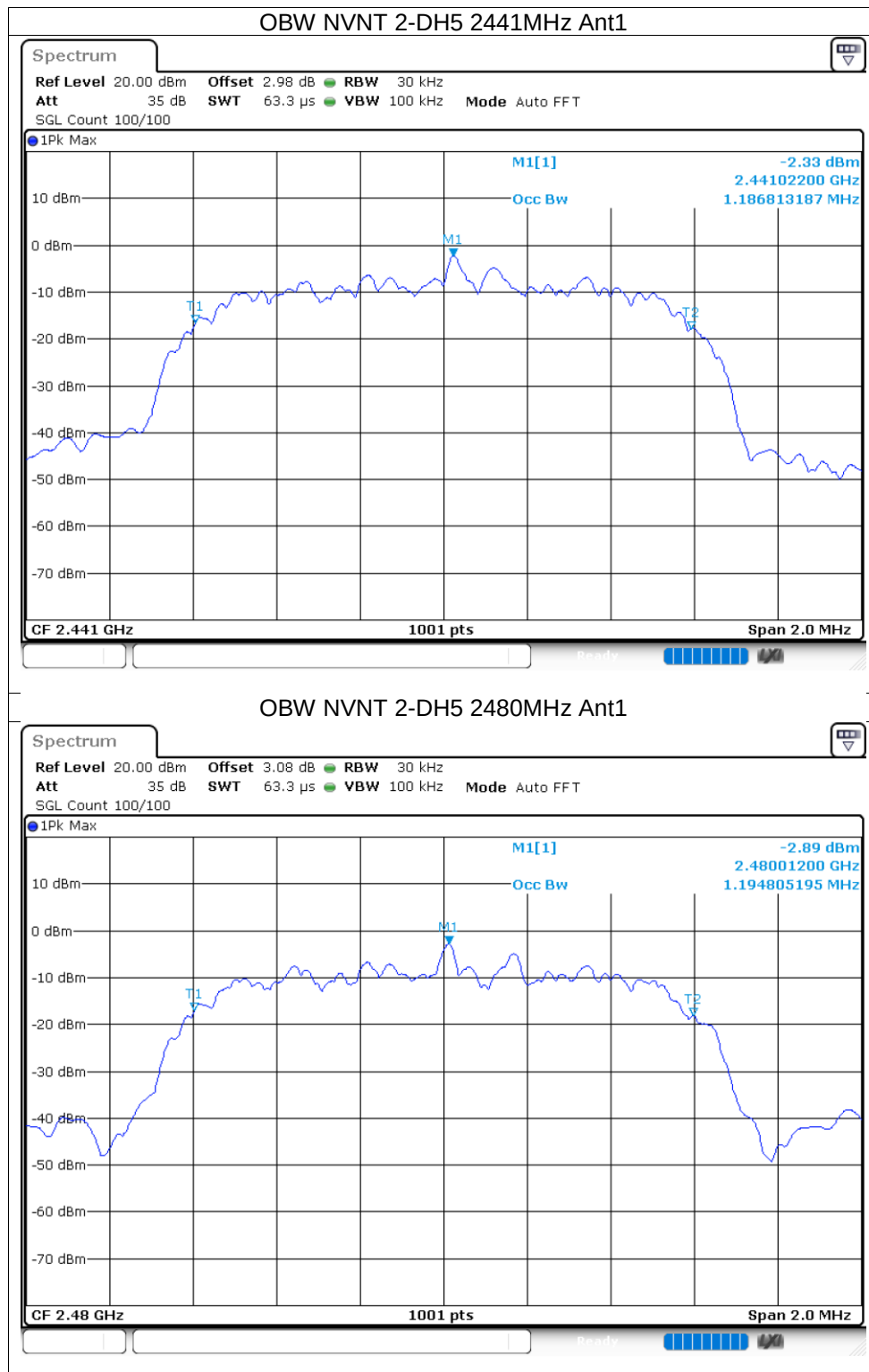


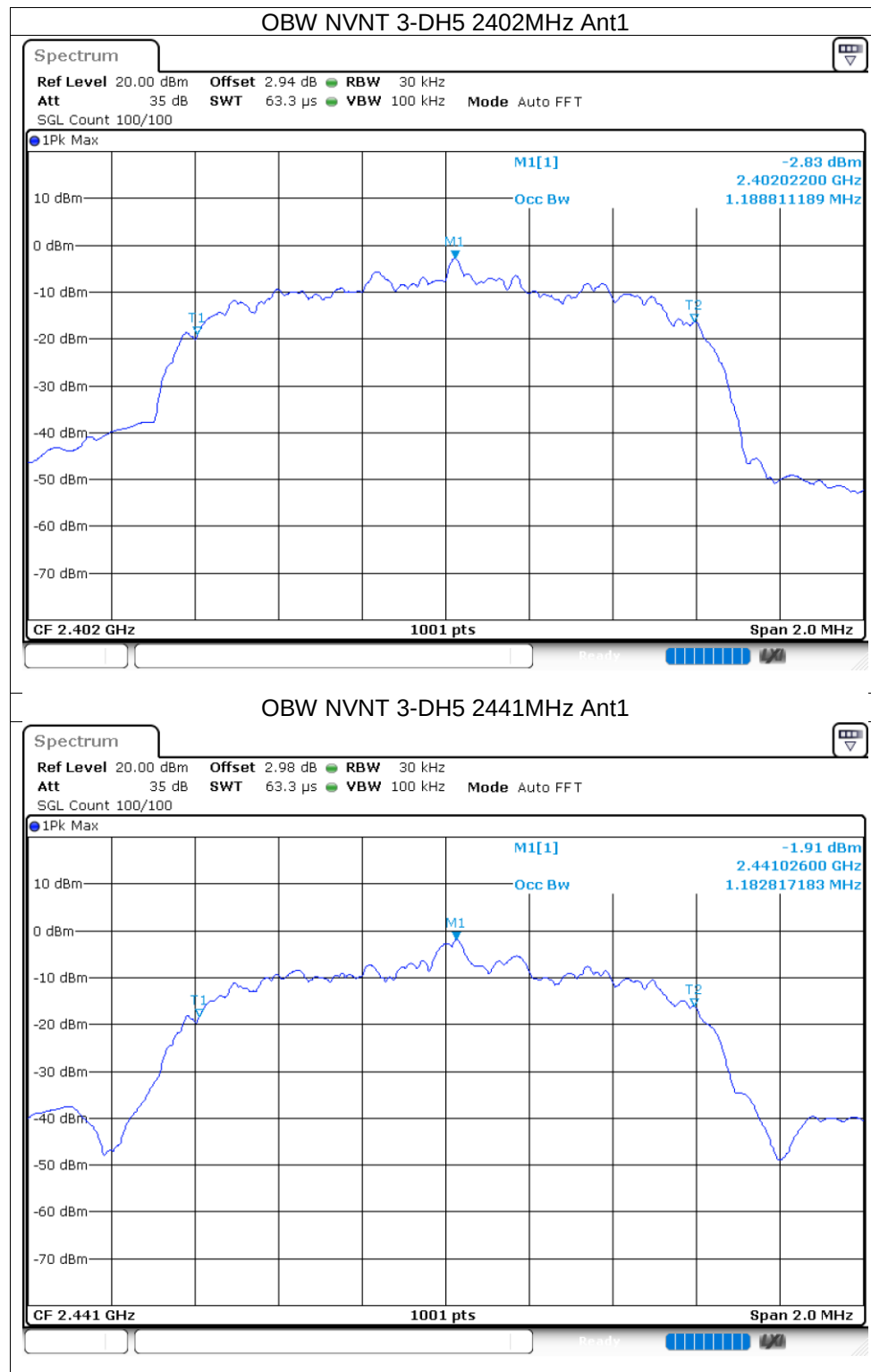
A.4 Occupied Channel Bandwidth

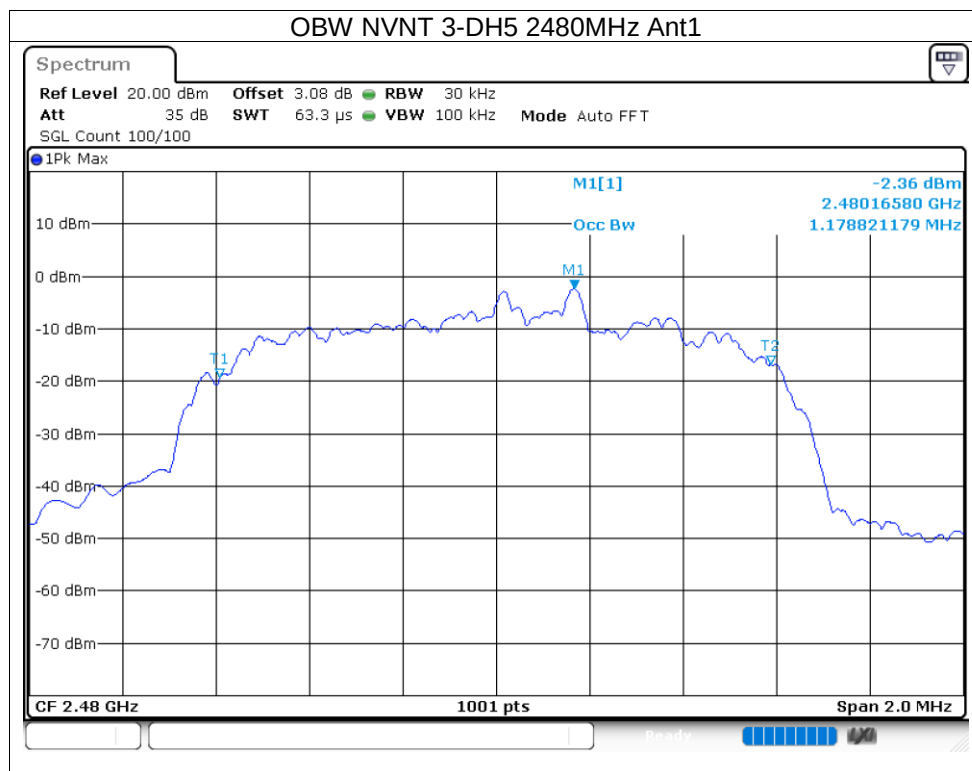
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH5	2402	Ant1	0.889
NVNT	1-DH5	2441	Ant1	0.875
NVNT	1-DH5	2480	Ant1	0.889
NVNT	2-DH5	2402	Ant1	1.179
NVNT	2-DH5	2441	Ant1	1.187
NVNT	2-DH5	2480	Ant1	1.195
NVNT	3-DH5	2402	Ant1	1.189
NVNT	3-DH5	2441	Ant1	1.183
NVNT	3-DH5	2480	Ant1	1.179











A.5 Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.058	2403.166	1.108	0.649	Pass
NVNT	1-DH5	Ant1	2440.838	2441.836	0.998	0.025	Pass
NVNT	1-DH5	Ant1	2478.834	2480.03	1.196	0.648	Pass
NVNT	2-DH5	Ant1	2402.012	2403.028	1.016	0.881	Pass
NVNT	2-DH5	Ant1	2441.076	2442.01	0.934	0.853	Pass
NVNT	2-DH5	Ant1	2479.078	2480.12	1.042	0.861	Pass
NVNT	3-DH5	Ant1	2402.028	2403.168	1.14	0.865	Pass
NVNT	3-DH5	Ant1	2440.977	2442.014	1.037	0.867	Pass
NVNT	3-DH5	Ant1	2479.028	2480.028	1	0.859	Pass