FCC&IC TEST REPORT

FCC ID: 2AJJ2-LEGEND

On Behalf of

NOKTA MUHENDISLIK A.S.

METAL DETECTOR

Model No.: THE LEGEND, THE LEGEND WHP, THE LEGEND PRO PACK

Prepared for	:	NOKTA MUHENDISLIK A.S.
Address	:	EMEK MAH. SAKIZ SOK. NO: 4/1, 34785 SANCAKTEPE, ISTANBUL, TURKEY

Prepared By	:	Shenzhen Alpha Product Testing Co., Ltd.
Address	:	Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

Report Number	:	A2112263-C02-R02
Date of Receipt	:	December 30, 2021
Date of Test	:	January 7, 2022 –January 10, 2022
Date of Report	:	January 10, 2022
Version Number	:	V0

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TEST REPORT DECLARATION

Applicant	:	NOKTA MUHENDISLIK A.S.
Address	:	EMEK MAH. SAKIZ SOK. NO: 4/1, 34785 SANCAKTEPE, ISTANBUL, TURKEY
Manufacturer	:	NOKTA MUHENDISLIK A.S.
Address	:	EMEK MAH. SAKIZ SOK. NO: 4/1, 34785 SANCAKTEPE, ISTANBUL, TURKEY
EUT Description	:	METAL DETECTOR
(A) Model No.	:	THE LEGEND, THE LEGEND WHP, THE LEGEND PRO PACK
(B) Trademark	:	NOKTA MAKRO DETECTION TECHNOLOGIES

Measurement Standard Used:

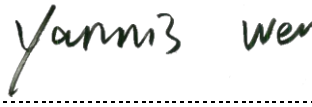
FCC Rules and Regulations Part 15 Subpart C Section 15.247,

RSS-247 Issue 2, RSS-Gen Issue 5, ANSI C63.10:2013, CISPR 16-1-4:2010

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....…..:	Yannis Wen Project Engineer	
Approved by (name + signature)…....:	Simple Guan Project Manager	
Date of issue…… ……..:	January 10, 2022	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	January 10, 2022	Initial released Issue	Yannis Wen

1. Summary Of Standards And Results

1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Test Item	Standards Paragraph	Result
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) RSS-247(5.4 b) ANSI C63.10 :2013	P
Bandwidth	FCC Part 15: 15.215 RSS-247(5.1 a) ANSI C63.10 :2013	P
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) RSS-247(5.1 b) ANSI C63.10 :2013	P
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1) RSS-247(5.1 d) ANSI C63.10 :2013	P
Dwell Time	FCC Part 15: 15.247(a)(1) RSS-247(5.1 d) ANSI C63.10 :2013	P
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) RSS-Gen(8.9), RSS-247(5.5) ANSI C63.10 :2013	P
Band Edge Compliance	FCC Part 15: 15.247(d) RSS-Gen(8.9), RSS-247(5.5) ANSI C63.10 :2013	P
Power Line Conducted Emissions	FCC Part 15: 15.207 RSS-GEN(8.8) ANSI C63.10 :2013	P
Frequency stability	RSS-GEN(6.11)	P
Antenna requirement	FCC Part 15: 15.203 RSS-GEN(6.8)	P
Note:	1. P is an abbreviation for Pass. 2. F is an abbreviation for Fail. 3. N/A is an abbreviation for Not Applicable.	

2. General Information

2.1.Description of Device (EUT)

Description/PMN	:	METAL DETECTOR
Model Number/FVIN(s)	:	THE LEGEND, THE LEGEND WHP, THE LEGEND PRO PACK
Diff.	:	There is no difference except for the appearance, shape and model name. So all the test were performed on the model THE LEGEND.
Trademark	:	NOKTA MAKRO DETECTION TECHNOLOGIES
Test Voltage	:	DC 3.7V from battery, DC 5V from USB
Radio Technology	:	Bluetooth (BR+ EDR)
Operation frequency	:	2402-2480MHz
Channel No.	:	79 Channels
Modulation type	:	GFSK, π /4 DQPSK, 8- DPSK
Antenna Type	:	Internal antenna, Maximum Gain is 0dBi.
Software version	:	V1.0
Hardware Version/FVIN	:	V1.0

Remark: The worst-case simultaneous transmission configuration was evaluated with no non-compliance found.
Results in this report are only for Bluetooth (BR+ EDR) function, and there is no other transmitter involved.

2.2.Accessories of Device (EUT)

Accessories1 : /

Manufacturer : /

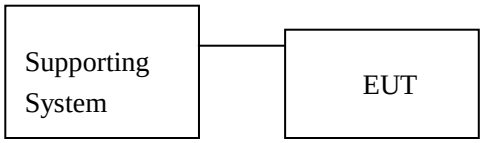
Model : /

Ratings : /

2.3.Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or SDOC
1.	Notebook PC	Lenovo	ThinkPad E14	N/A	**SDOC**
2	AC ADAPTER	Shenzhen HUONIU Technology Co., Ltd.	HNFCQC3024UU	N/A	N/A

2.4.Block Diagram of connection between EUT and simulators



2.5.Test Mode Description

Tested mode, channel, and data rate information		
Mode	**Channel**	**Frequency (MHz)**
GFSK	Low :CH1	2402
	Middle: CH40	2441
	High: CH79	2480
π /4 DQPSK	Low :CH1	2402
	Middle: CH40	2441
	High: CH79	2480
8- DPSK	Low :CH1	2402
	Middle: CH40	2441
	High: CH79	2480

2.6.Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	25℃
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	98kPa

2.7.Test Facility

Shenzhen Alpha Product Testing Co., Ltd
Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961
Designation Number: CN1236
July 15, 2019 Certificated by IC
Registration Number: 12135A

2.8.Measurement Uncertainty

(95% confidence levels, k=2)

Item	**Uncertainty**
Uncertainty for Power point Conducted Emissions Test	2.74dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB(Polarize: V)
	2.57dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.16dB(Polarize: H)
	4.13dB(Polarize: V)
Uncertainty for radio frequency	5.4×10-8
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2℃
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

2.9.Test Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	N/A	2020.09.02	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	102137	2021.08.25	1Year
Spectrum analyzer	Agilent	N9020A	MY499100060	2021.08.25	1Year
Receiver	ROHDE&SCHWARZ	ESR	1316.3003K03-102082-Wa	2021.08.25	1Year
Receiver	R&S	ESCI	101165	2021.08.25	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2020.04.12	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2Year
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2021.08.30	2Year
RF Cable	Resenberger	Cable 1	RE1	2021.08.25	1Year
RF Cable	Resenberger	Cable 2	RE2	2021.08.25	1Year
RF Cable	Resenberger	Cable 3	CE1	2021.08.25	1Year
Pre-amplifier	HP	HP8347A	2834A00455	2021.08.25	1Year
Pre-amplifier	Agilent	8449B	3008A02664	2021.08.25	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126-466	2021.08.25	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2021.08.25	1 Year
Horn Antenna	SCHWARZBECK	BBHA9170	00946	2021.08.30	2 Year
Preamplifier	SKET	LNPA_1840-50	SK2018101801	2021.08.25	1 Year
Power Meter	Agilent	E9300A	MY41496628	2021.08.25	1 Year
Power Sensor	DARE	RPR3006W	15100041SNO91	2021.08.25	1 Year
Temp. & Humid. Chamber	Weihuang	WHTH-1000-40-880	100631	2021.04.21	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	20140927-6	2021.08.25	1 Year
Adjustable attenuator	MWRFtest	N/A	N/A	N/A	N/A
10dB Attenuator	Mini-Circuits	DC-6G	N/A	N/A	N/A

3. Maximum Peak Output Power

3.1.Limit

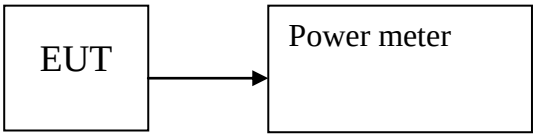
Please refer FCC part 15.247 & RSS-247..

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, the e.i.r.p shall not exceed 4W

3.2.Test Procedure

The transmitter output is connected to the RF Power meter. The Power meter is set to the peak power detection.

3.3.Test Setup



3.4.Test Result

Mode	Freq (MHz)	PK Output Power (dBm)	Limit (dBm)	Result
GFSK	2402	3.841	21	Pass
	2441	3.001	21	Pass
	2480	2.648	21	Pass
π /4 DQPSK	2402	4.104	21	Pass
	2441	2.993	21	Pass
	2480	2.745	21	Pass
8- DPSK	2402	3.786	21	Pass
	2441	2.955	21	Pass
	2480	2.548	21	Pass
Conclusion: PASS				

4. Bandwidth

4.1.Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in RSS-GEN, FCC Section 15.247(a)(1), 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.

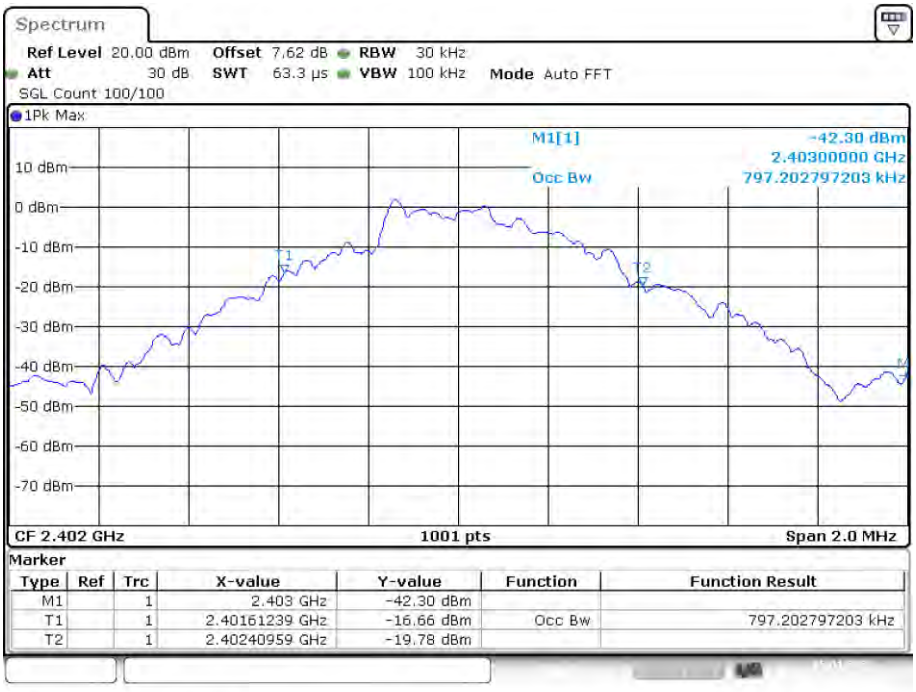
4.2.Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

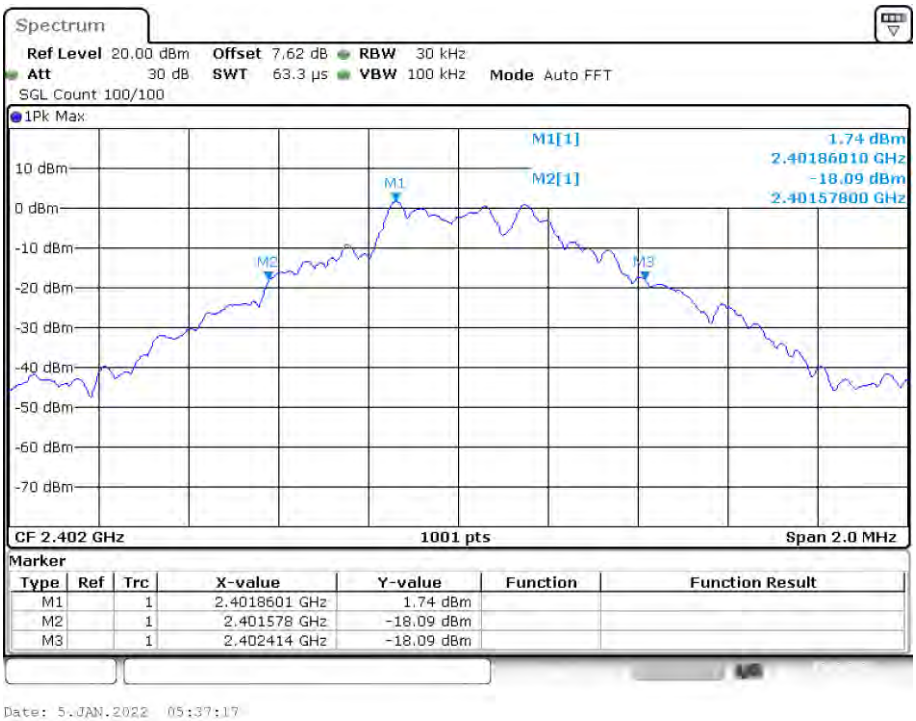
4.3.Test Result

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant 1	0.797	0.836	/	Pass
NVNT	1-DH1	2441	Ant 1	0.791	0.798	/	Pass
NVNT	1-DH1	2480	Ant 1	0.801	0.86	/	Pass
NVNT	2-DH1	2402	Ant 1	1.121	1.246	/	Pass
NVNT	2-DH1	2441	Ant 1	1.141	1.196	/	Pass
NVNT	2-DH1	2480	Ant 1	1.131	1.188	/	Pass
NVNT	3-DH1	2402	Ant 1	1.153	1.204	/	Pass
NVNT	3-DH1	2441	Ant 1	1.127	1.196	/	Pass
NVNT	3-DH1	2480	Ant 1	1.123	1.204	/	Pass

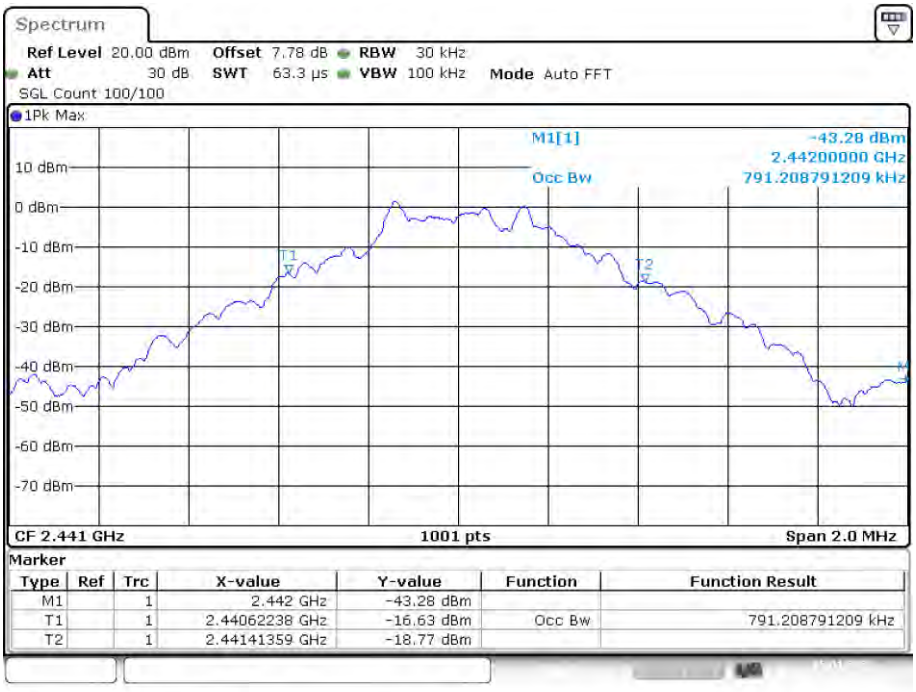
OBW NVNT 1-DH1 2402MHz Ant1



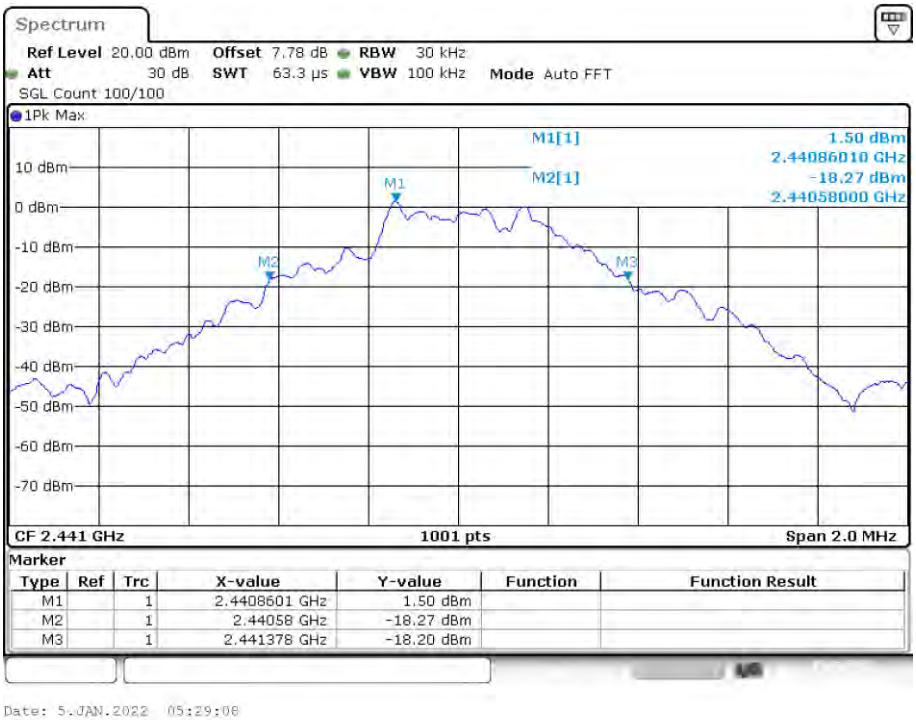
-20 dB BW NVNT 1-DH1 2402MHz Ant1



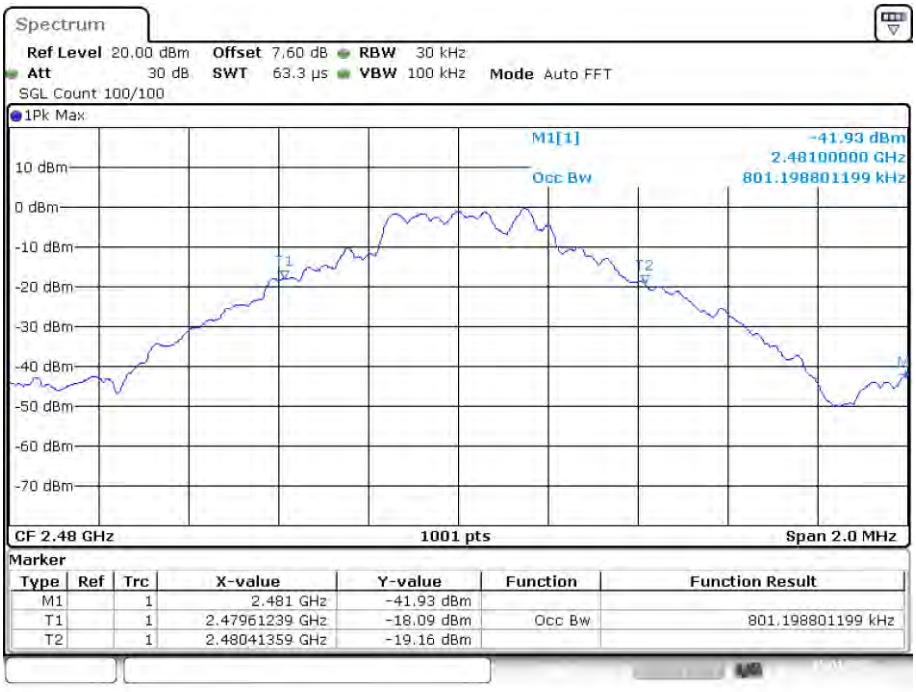
OBW NVNT 1-DH1 2441MHz Ant1



-20 dB BW NVNT 1-DH1 2441MHz Ant1



OBW NVNT 1-DH1 2480MHz Ant1



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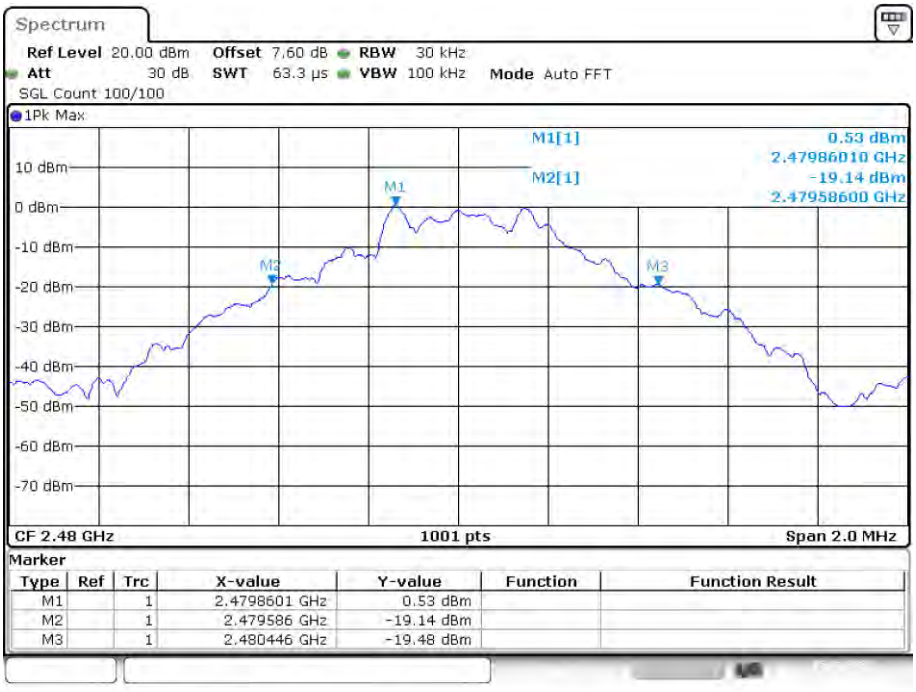

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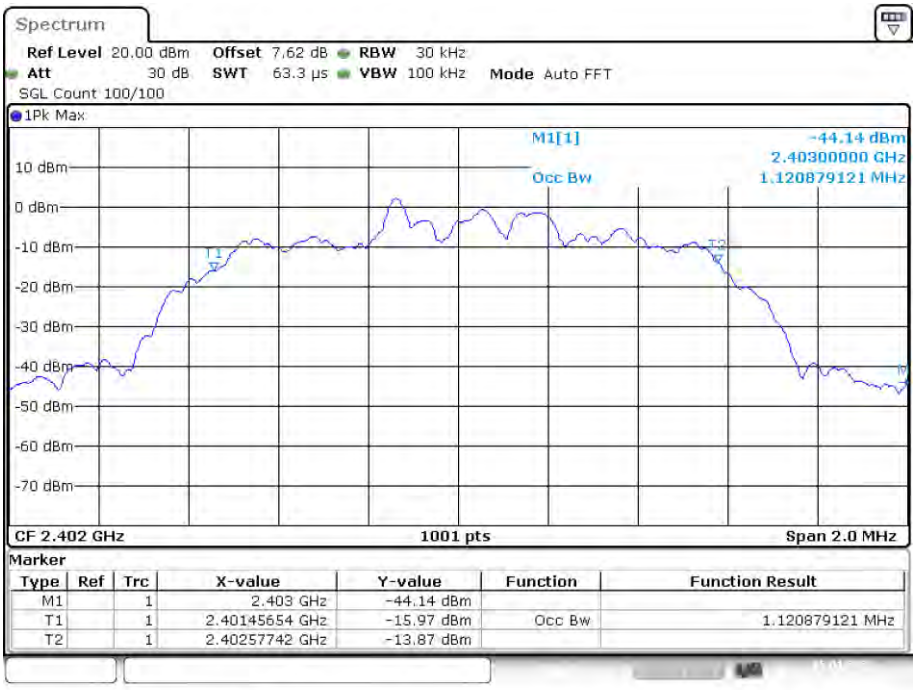
OBW NVNT 2-DH1 2402MHz Ant1



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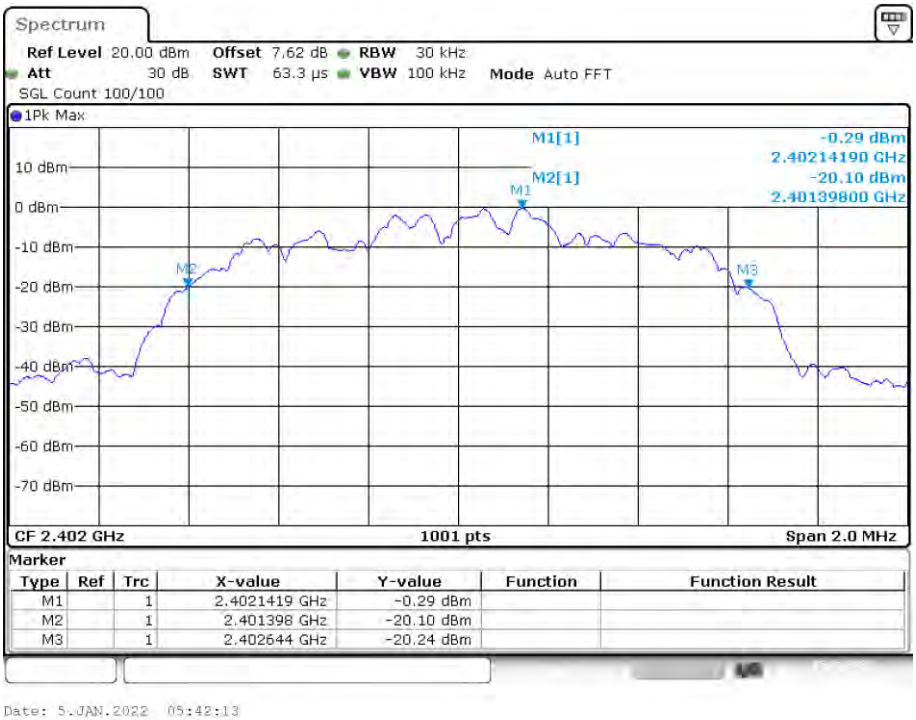
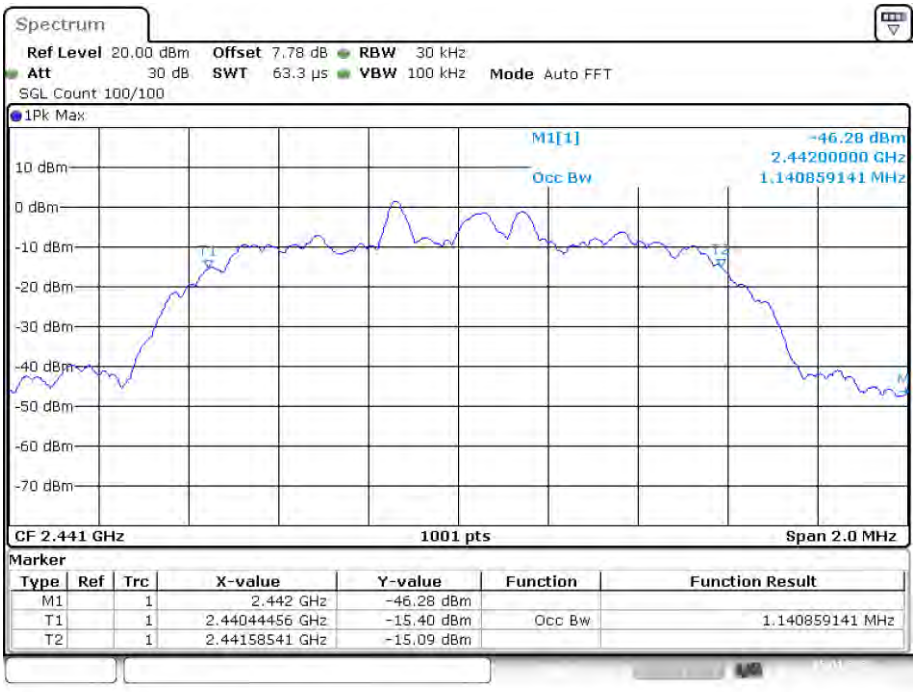
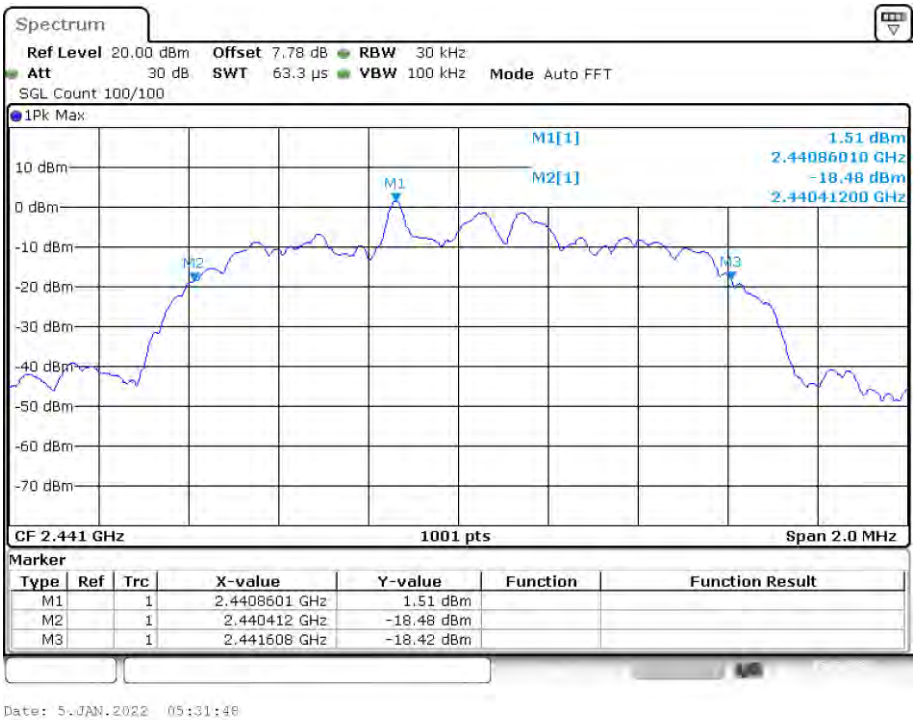


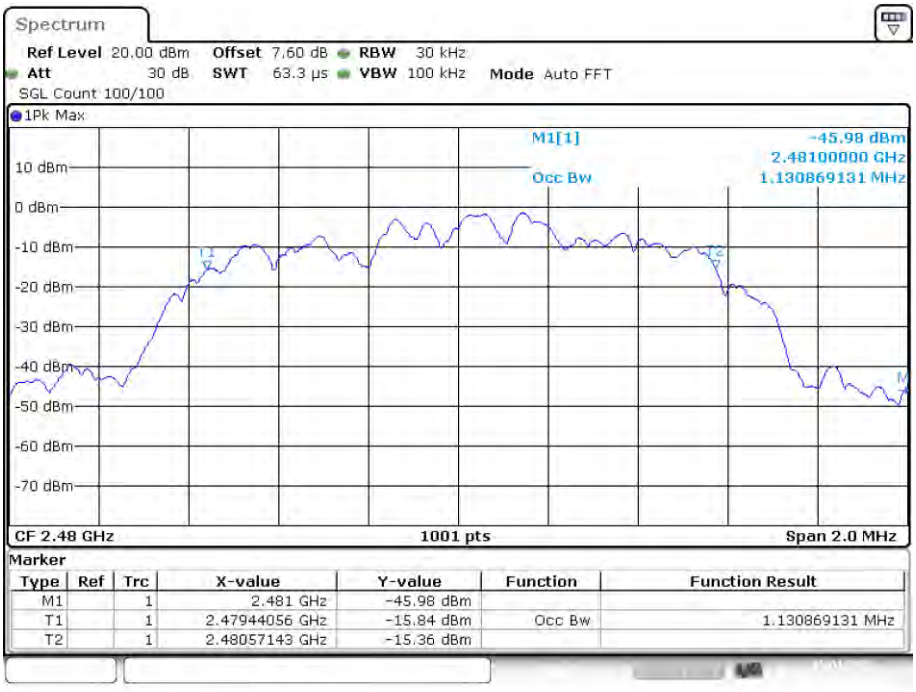
OBW NVNT 2-DH1 2441MHz Ant1



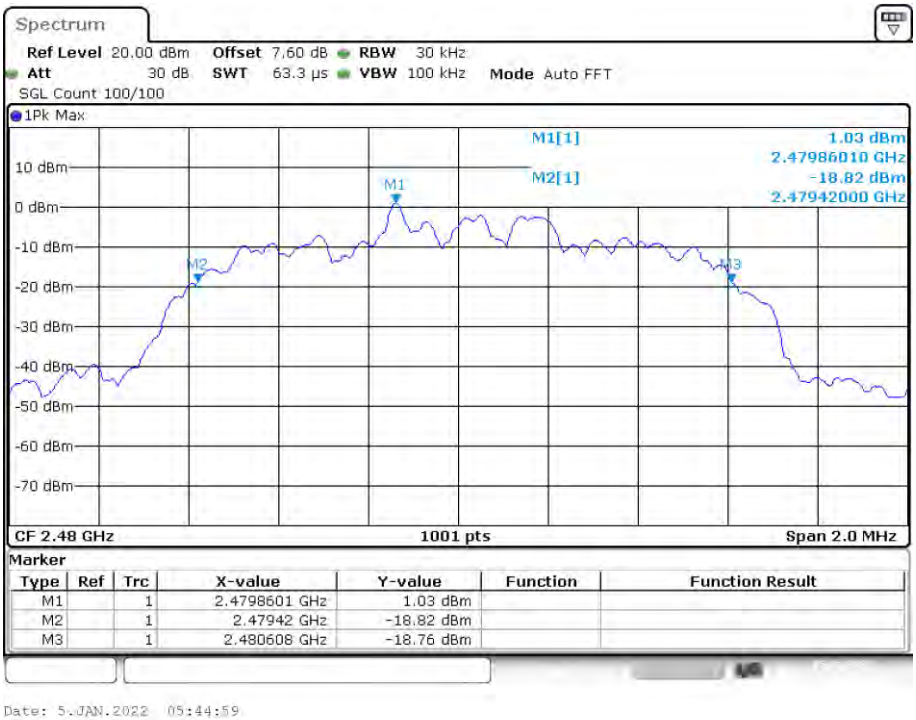
-20 dB BW NVNT 2-DH1 2441MHz Ant1



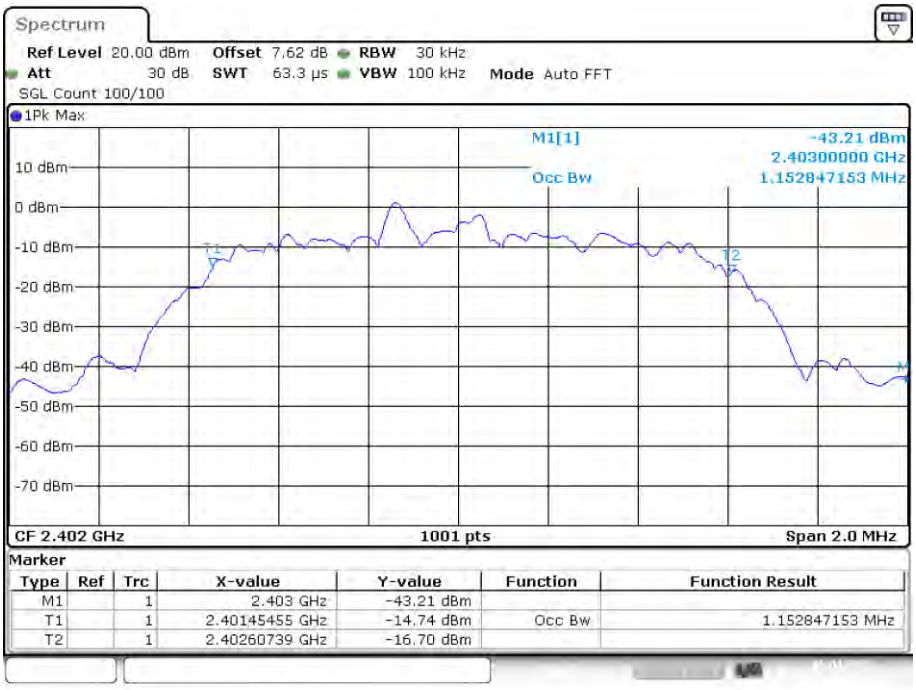
OBW NVNT 2-DH1 2480MHz Ant1



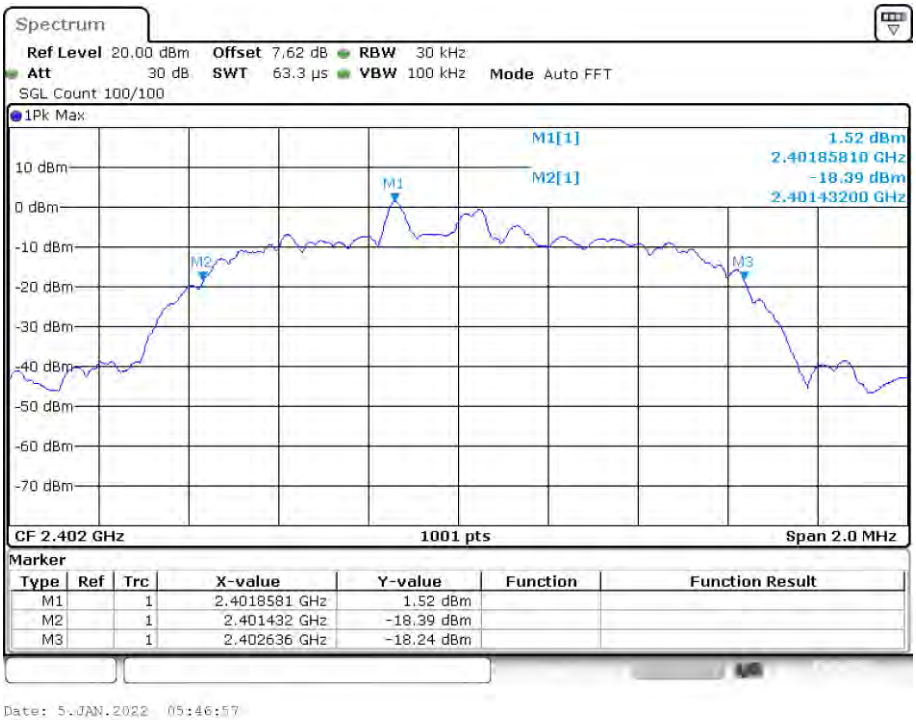
-20 dB BW NVNT 2-DH1 2480MHz Ant1



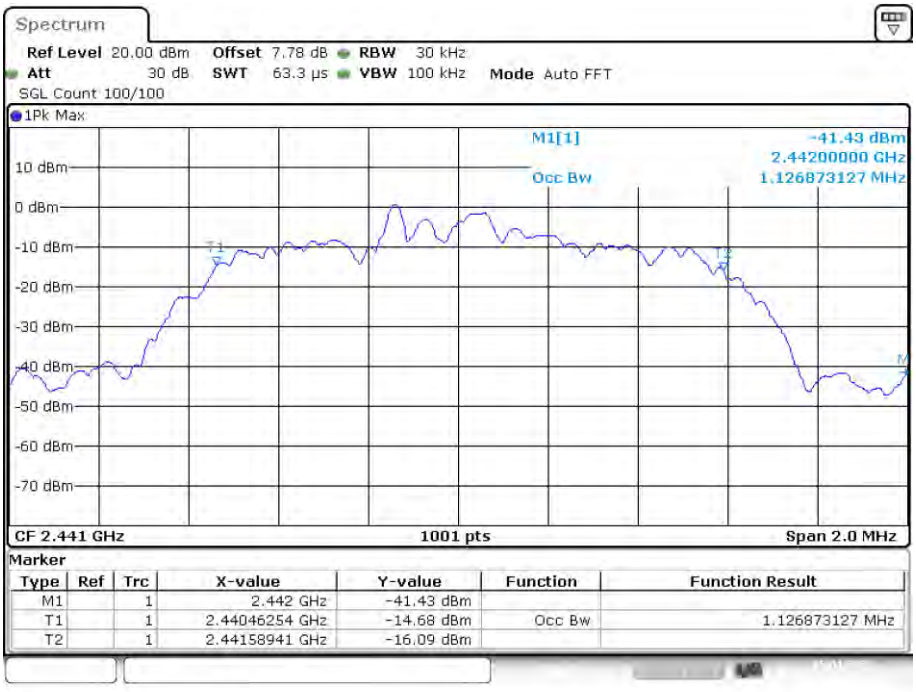
OBW NVNT 3-DH1 2402MHz Ant1



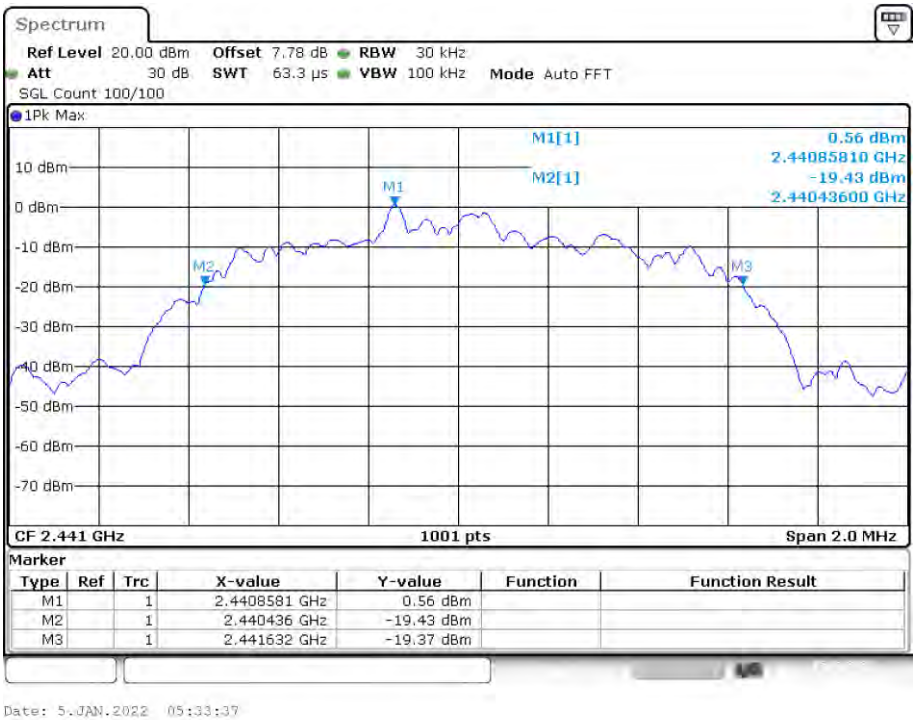
-20 dB BW NVNT 3-DH1 2402MHz Ant1



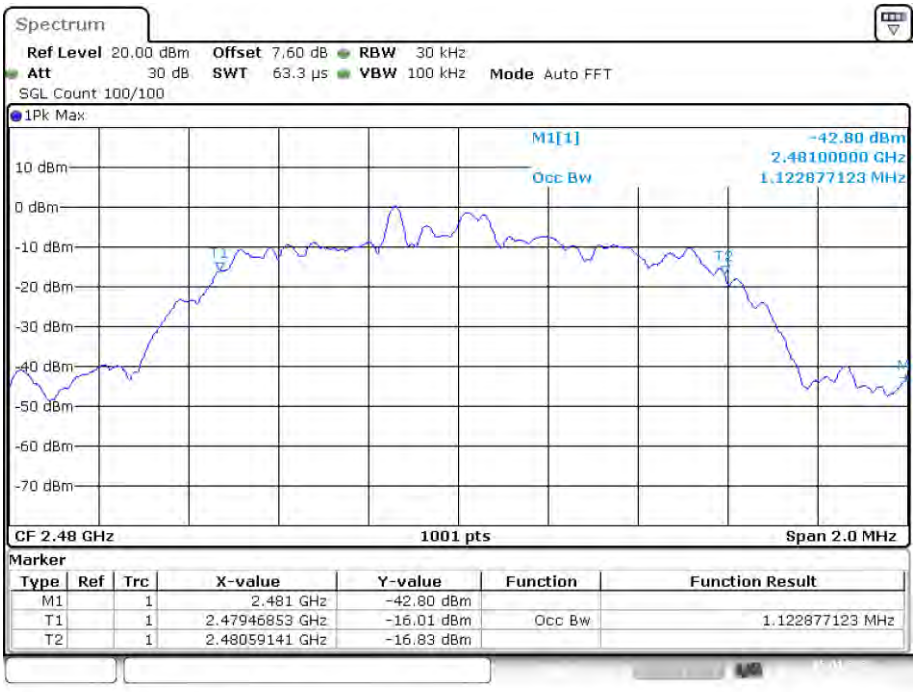
OBW NVNT 3-DH1 2441MHz Ant1



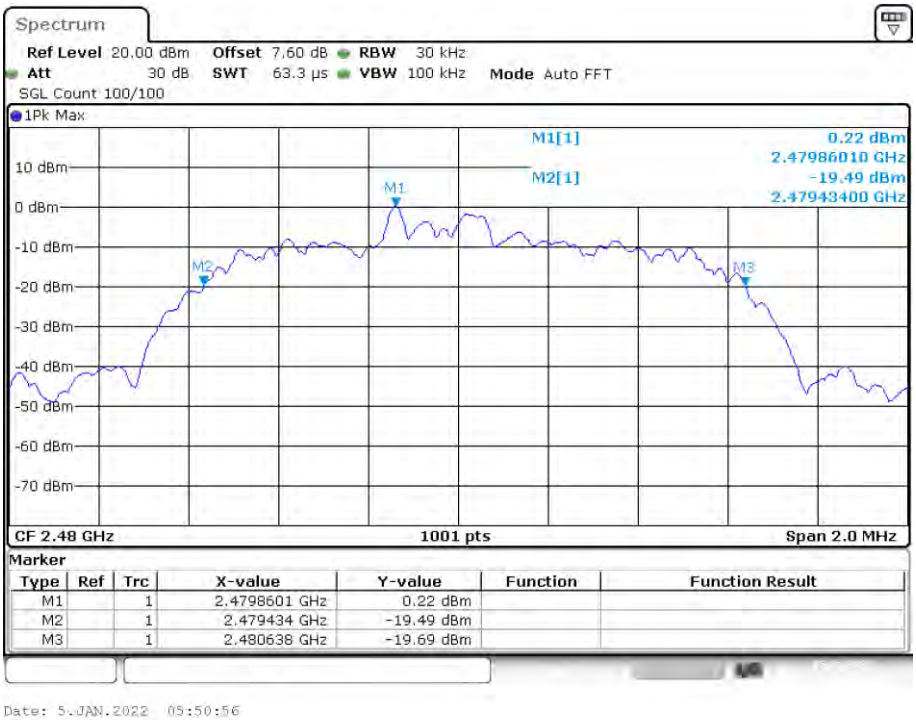
-20 dB BW NVNT 3-DH1 2441MHz Ant1



OBW NVNT 3-DH1 2480MHz Ant1



-20 dB BW NVNT 3-DH1 2480MHz Ant1



5. Carrier Frequency Separation

5.1.Limit

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

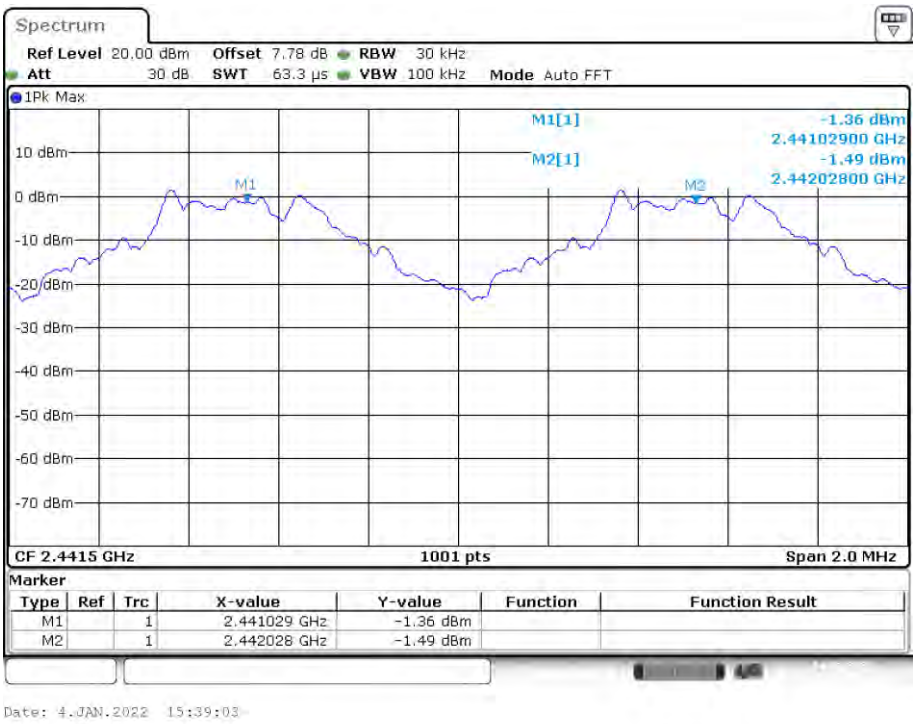
5.2.Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The carrier frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

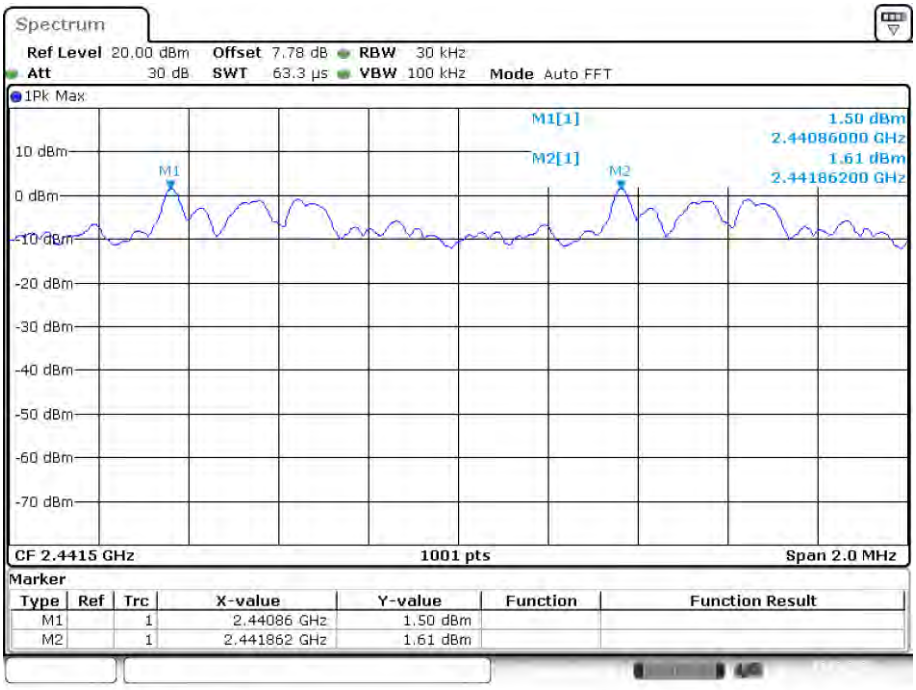
5.3.Test Result

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	2441.029	2442.028	0.999	0.532	Pass
NVNT	2-DH1	2440.86	2441.862	1.002	0.797	Pass
NVNT	3-DH1	2440.858	2441.86	1.002	0.797	Pass

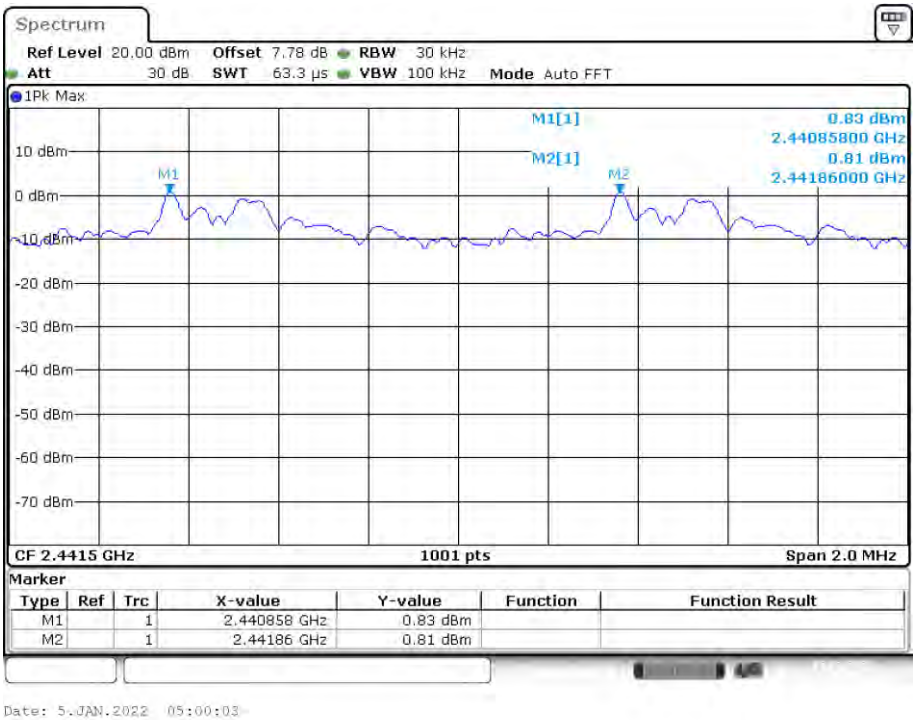
CFS NVNT 1-DH1 2441MHz



CFS NVNT 2-DH1 2441MHz



CFS NVNT 3-DH1 2441MHz



6. Number Of Hopping Channel

6.1.Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

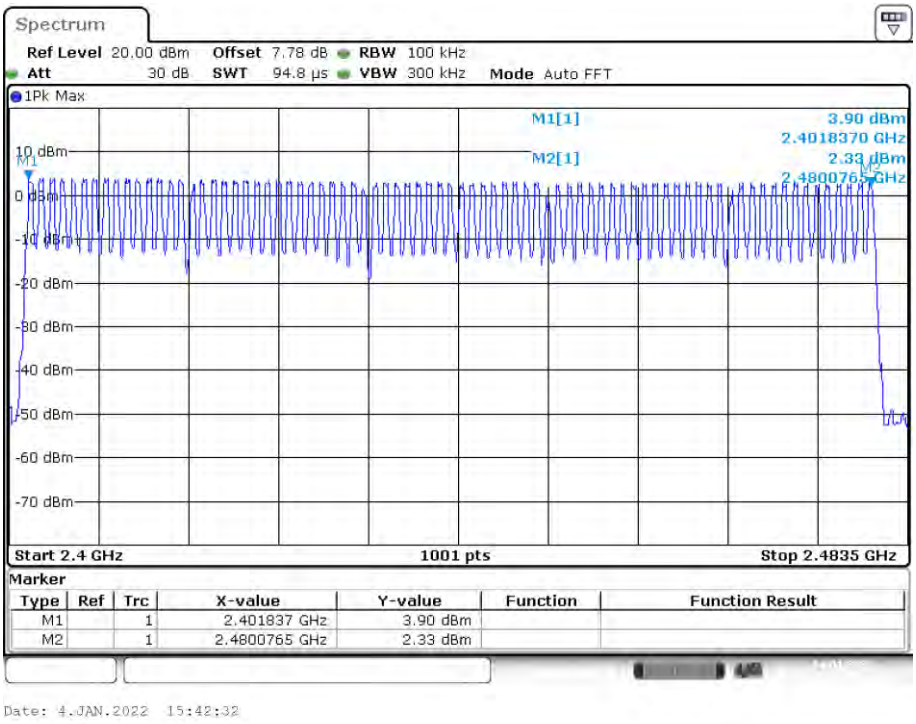
6.2.Test Procedure

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The number of hopping channel was measured by spectrum analyzer with 100kHz RBW and 300KHz VBW.

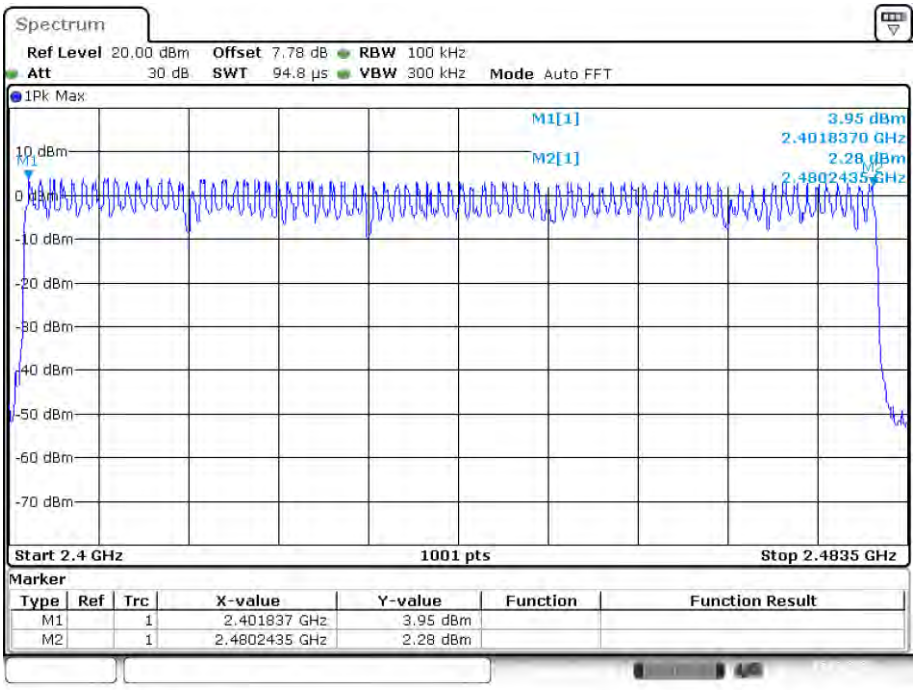
6.3.Test Result

Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH1	79	15	Pass
NVNT	2-DH1	79	15	Pass
NVNT	3-DH1	79	15	Pass

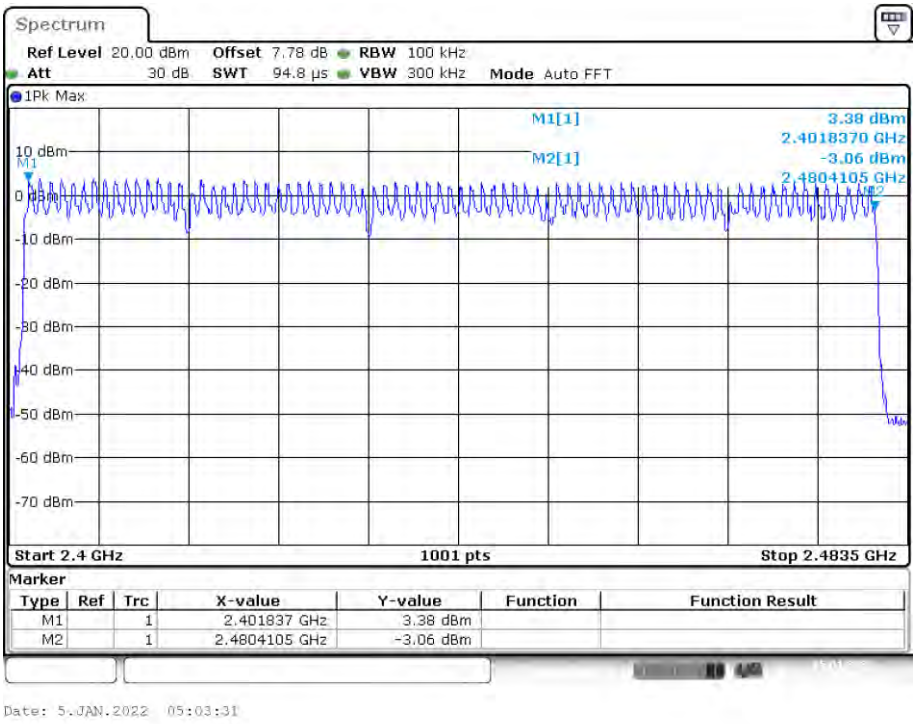
Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



Hopping No. NVNT 3-DH1 2441MHz Ant1



7. Dwell Time

7.1.Test limit

Please refer FCC part 15.247 & RSS-247.

Frequency hopping systems operating in the 2400MHz-2483.5 MHz. The average time of occupancy on any frequency shall not greater than 0.4 s within period of 0.4 seconds multiplied by the number of hopping channel employed.

7.2.Test Procedure

7.2.1. Place the EUT on the table and set it in transmitting mode.

7.2.2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

7.2.3. Set center frequency of spectrum analyzer = operating frequency.

7.2.4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.

7.2.5. Repeat above procedures until all frequency measured were complete.

7.3.Test Result

Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2402	0.388	124.160	31600	400	Pass
NVNT	1-DH1	2441	0.388	124.160	31600	400	Pass
NVNT	1-DH1	2480	0.389	124.480	31600	400	Pass
NVNT	1-DH3	2441	1.644	263.040	31600	400	Pass
NVNT	1-DH5	2441	2.892	308.480	31600	400	Pass
NVNT	2-DH1	2402	0.398	127.360	31600	400	Pass
NVNT	2-DH1	2441	0.399	127.680	31600	400	Pass
NVNT	2-DH1	2480	0.398	127.360	31600	400	Pass
NVNT	2-DH3	2441	1.648	263.680	31600	400	Pass
NVNT	2-DH5	2441	2.899	309.227	31600	400	Pass
NVNT	3-DH1	2402	0.4	128.000	31600	400	Pass
NVNT	3-DH1	2441	0.399	127.680	31600	400	Pass
NVNT	3-DH1	2480	0.399	127.680	31600	400	Pass
NVNT	3-DH3	2441	1.65	264.000	31600	400	Pass
NVNT	3-DH5	2441	2.897	309.013	31600	400	Pass

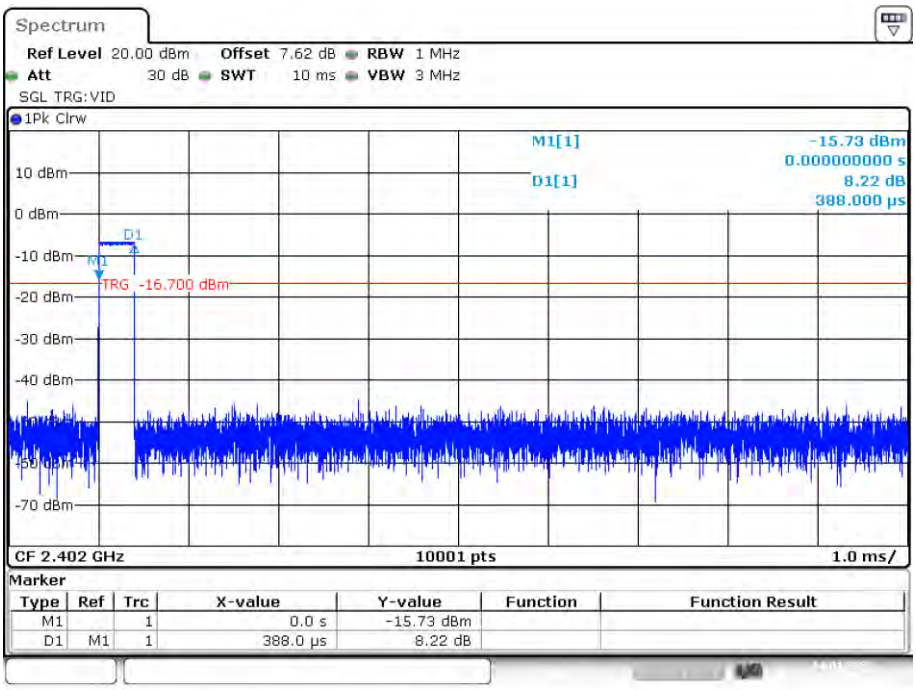
Note: 1 A period time = 0.4 (s) * 79 = 31.6(s)

2 DH1 time slot = Pulse Duration * (1600/(2*79)) * A period time

DH3 time slot = Pulse Duration * (1600/(4*79)) * A period time

DH5 time slot = Pulse Duration * (1600/(6*79)) * A period time

Dwell NVNT 1-DH1 2402MHz Ant1 One Burst



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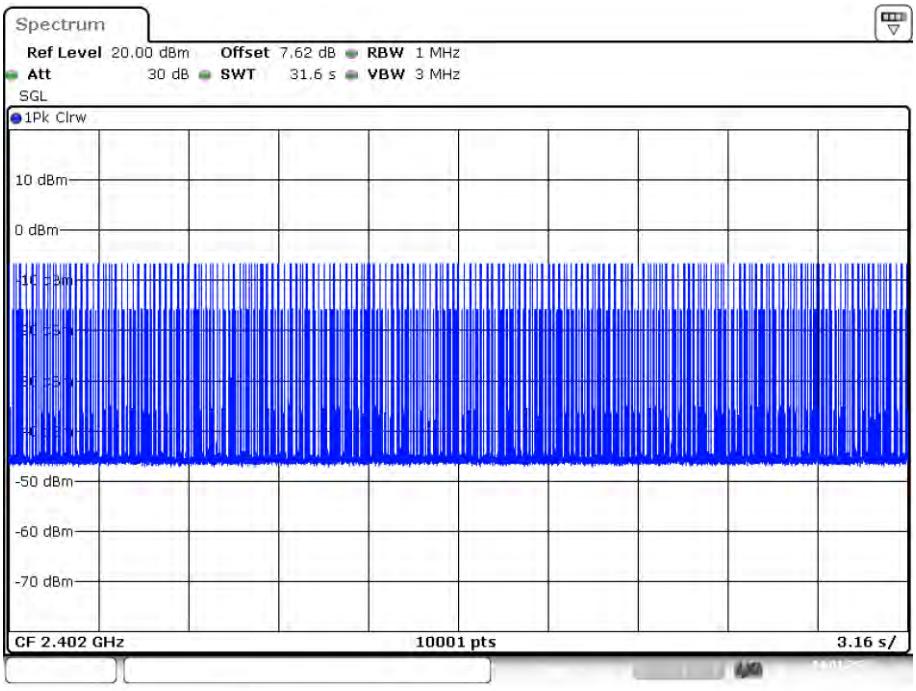
Dwell NVNT 1-DH1 2402MHz Ant1 Accumulated



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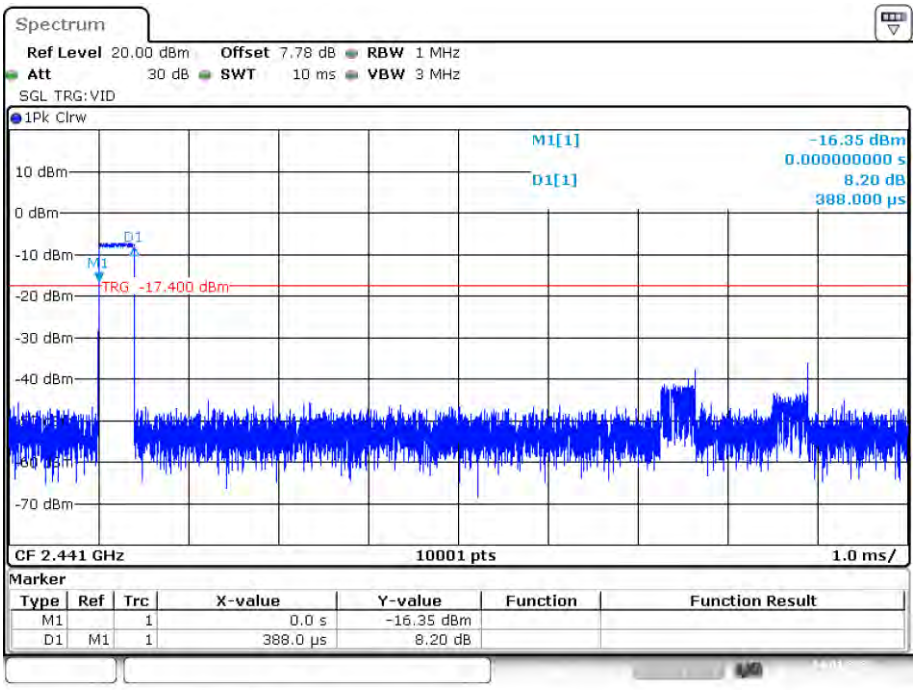
Dwell NVNT 1-DH1 2441MHz Ant1 One Burst



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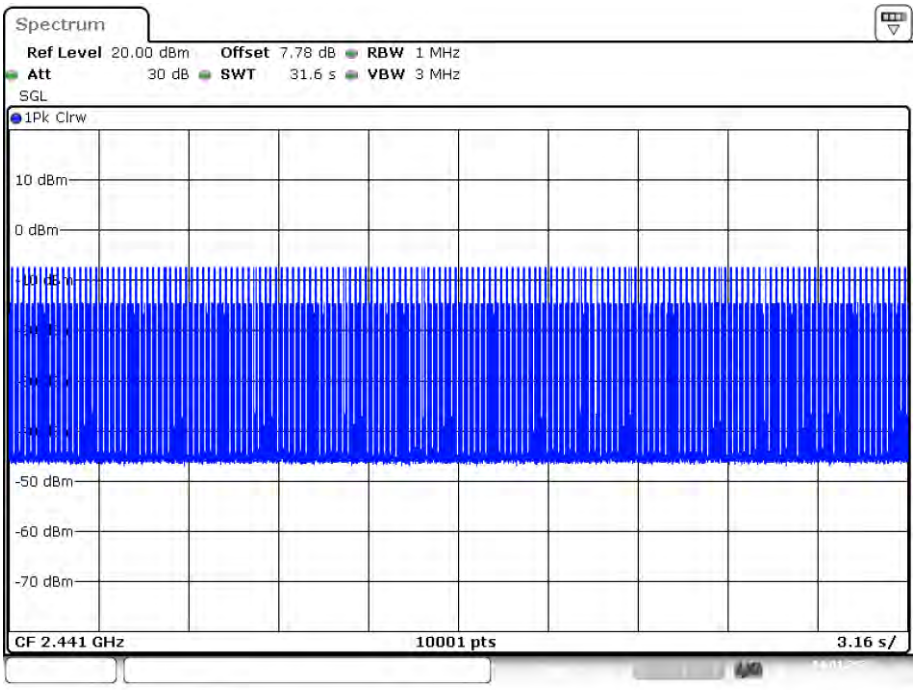

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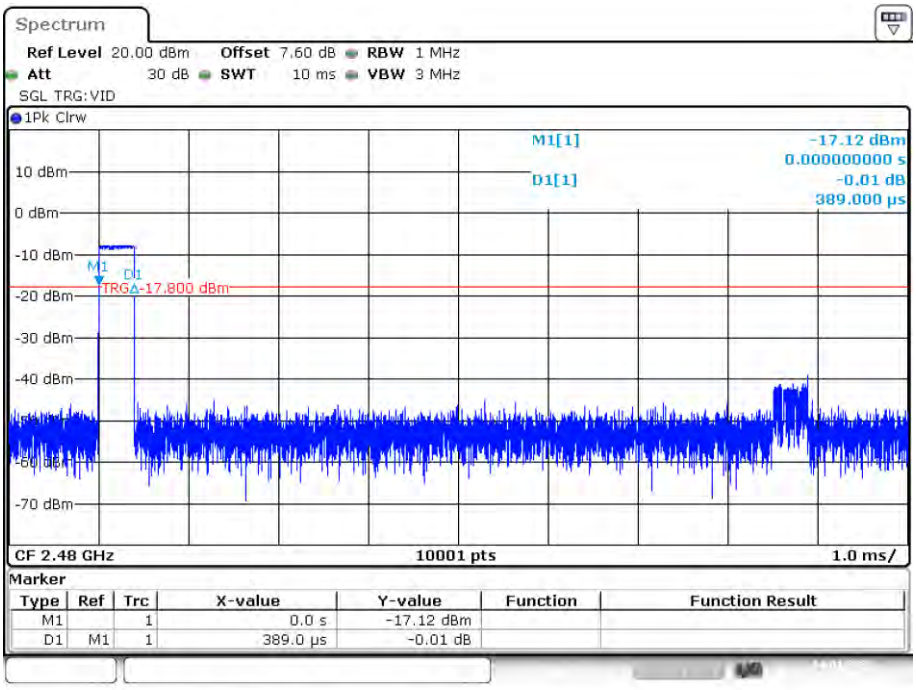
Dwell NVNT 1-DH1 2480MHz Ant1 One Burst



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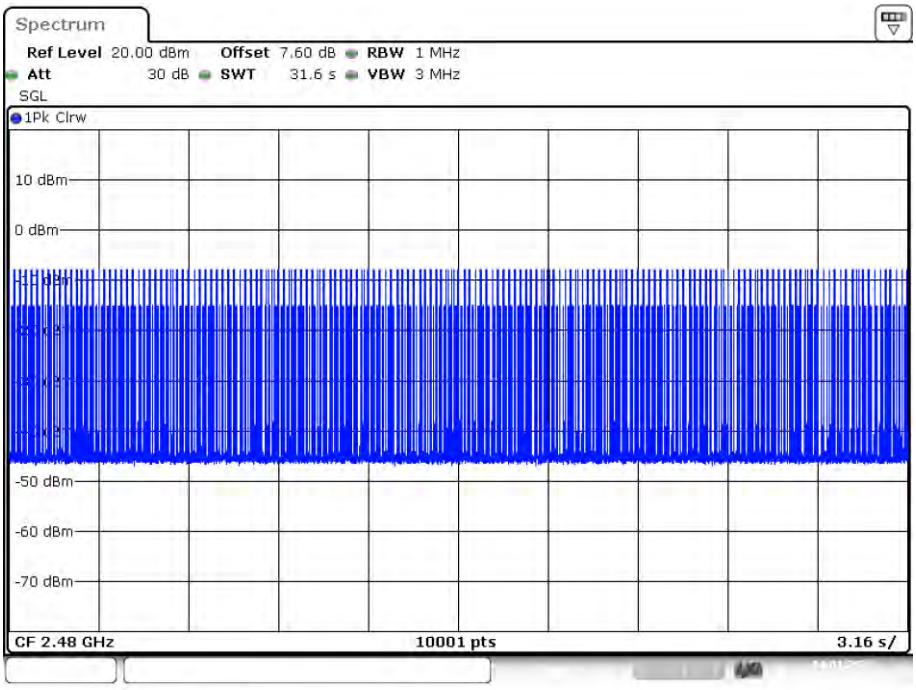

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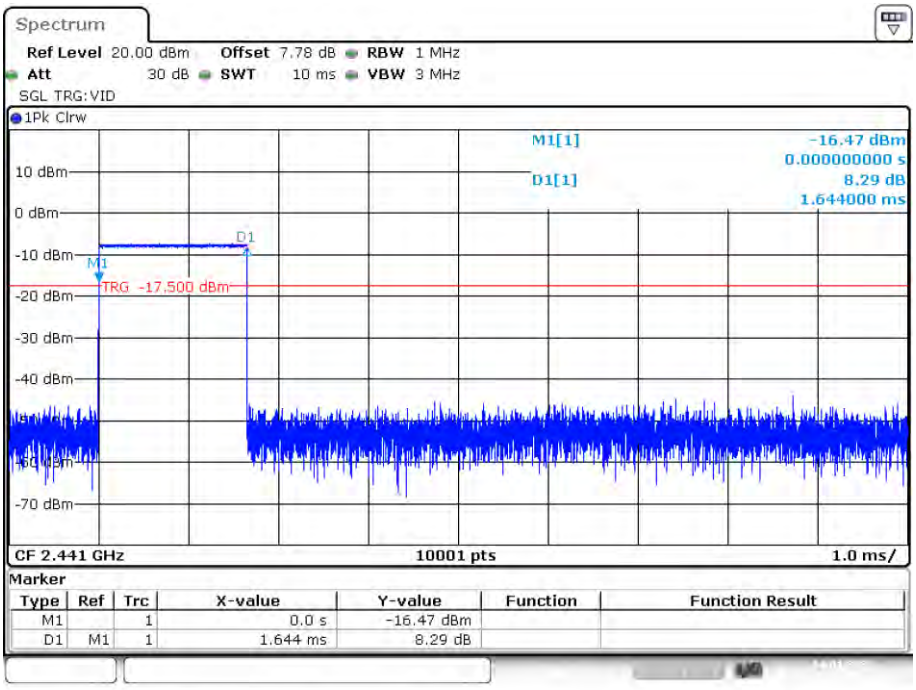
Dwell NVNT 1-DH3 2441MHz Ant1 One Burst



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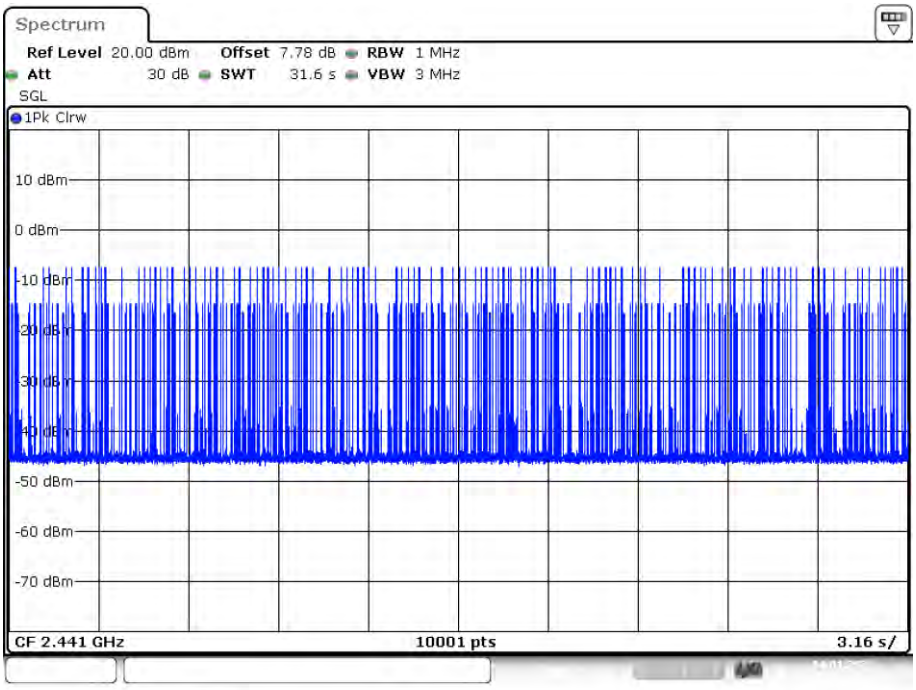
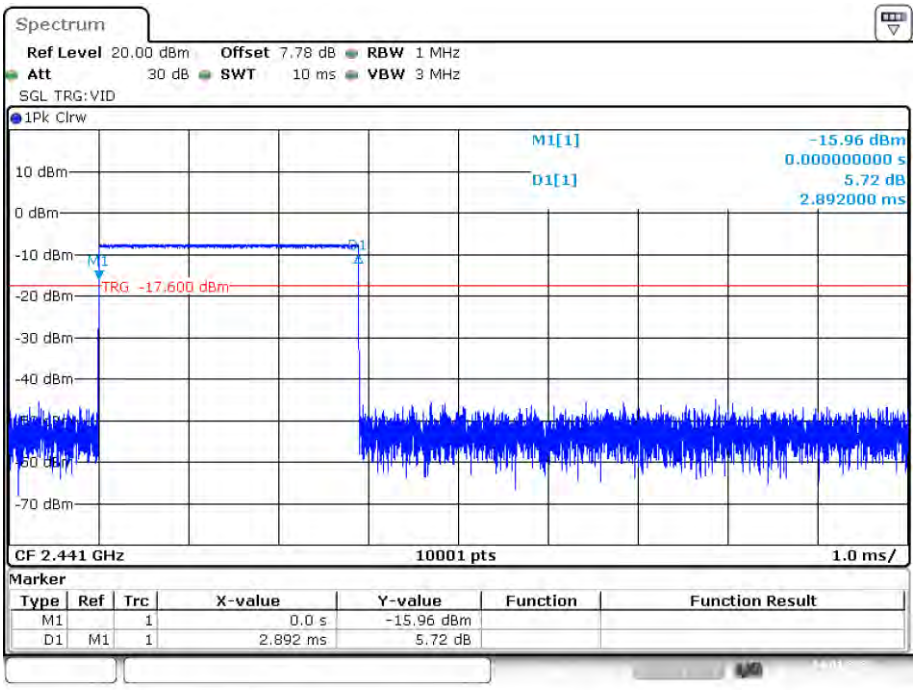
Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated



Date: 4.JAN.2022 15:48:28

Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



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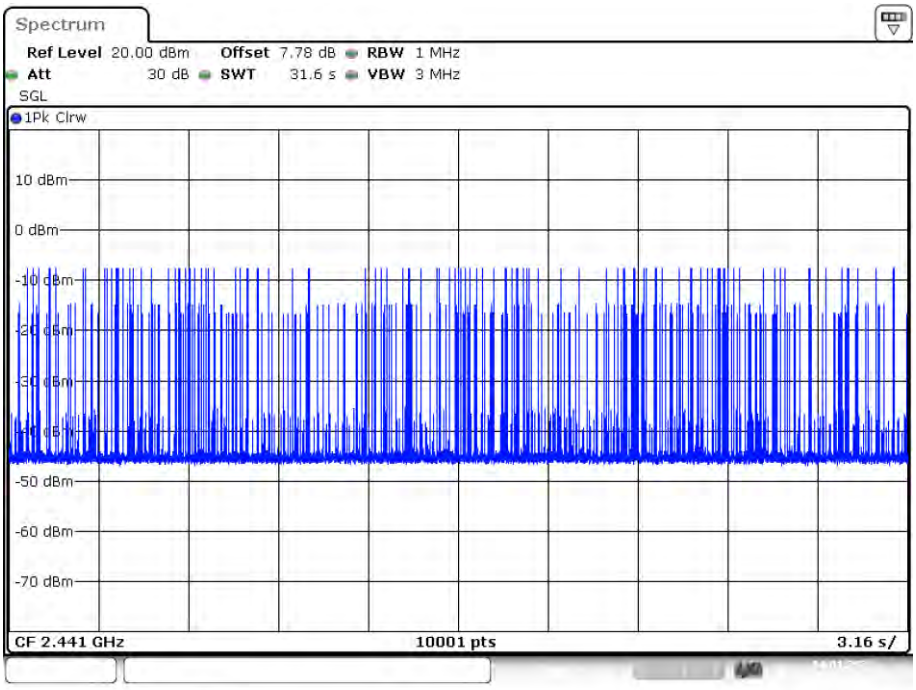
Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated



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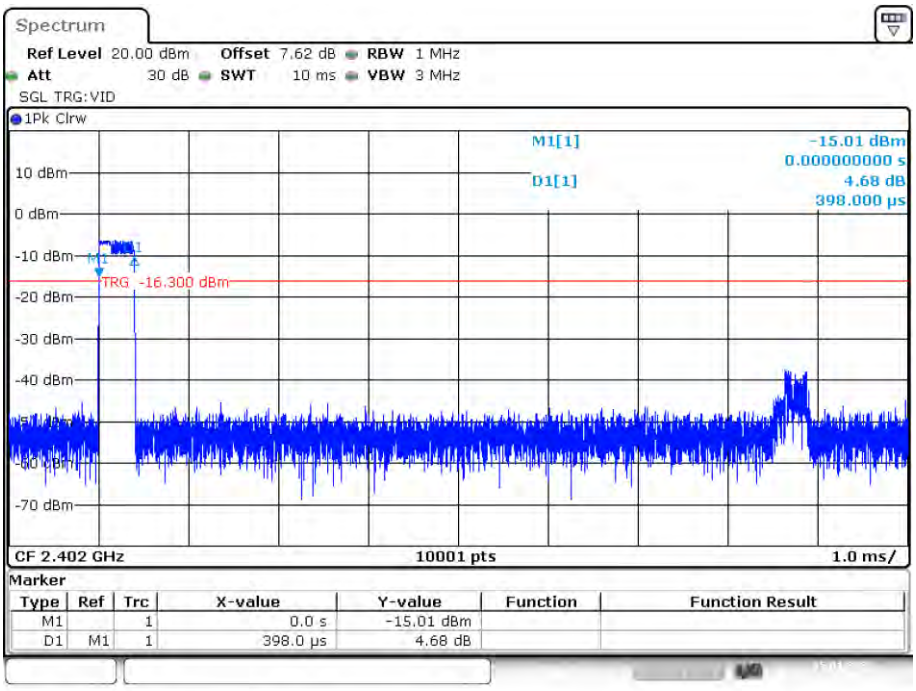
Dwell NVNT 2-DH1 2402MHz Ant1 One Burst



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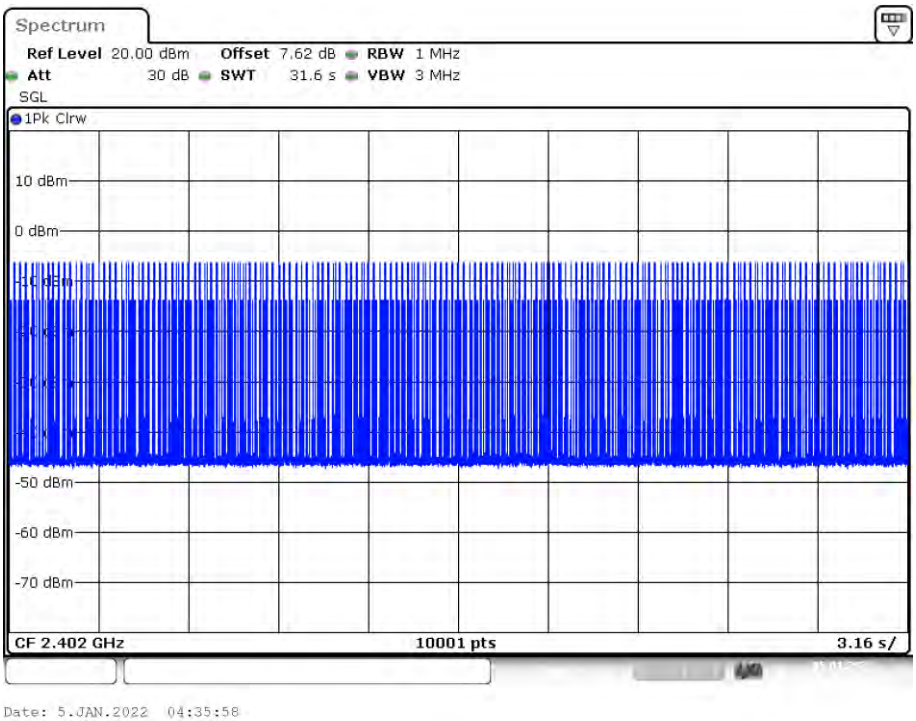

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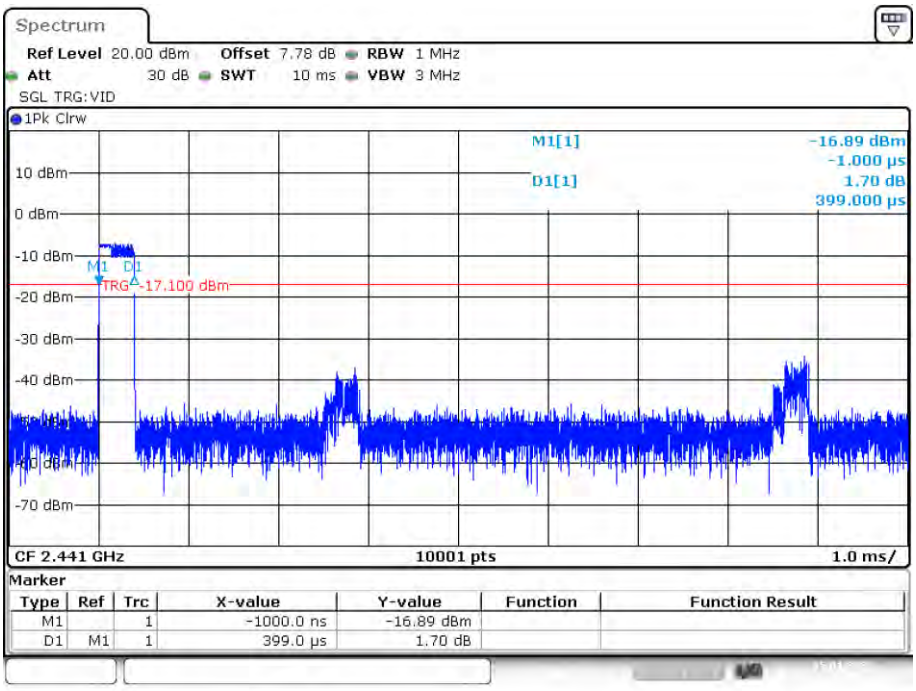

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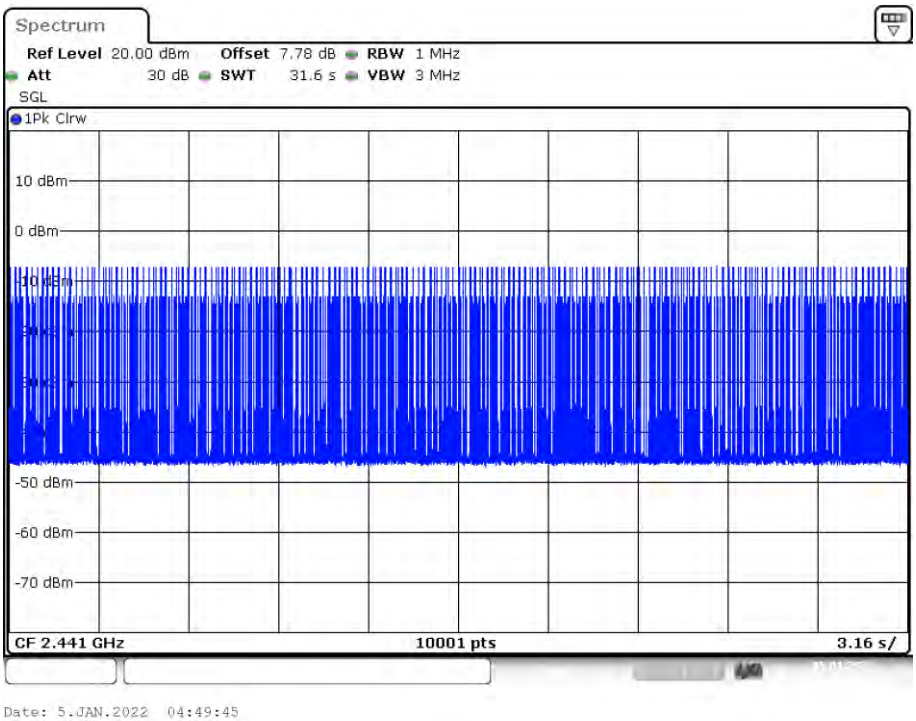
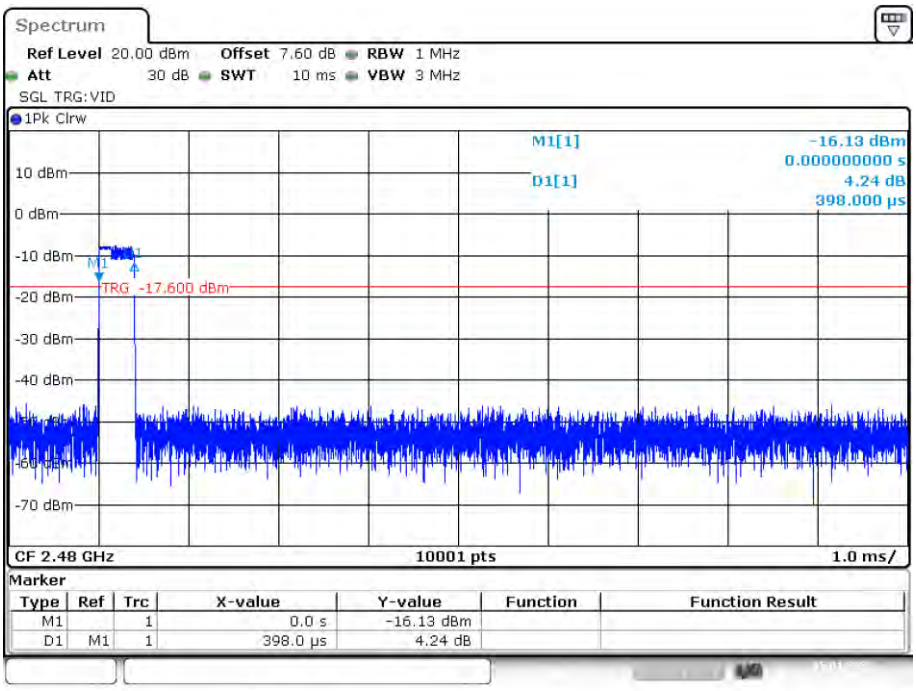
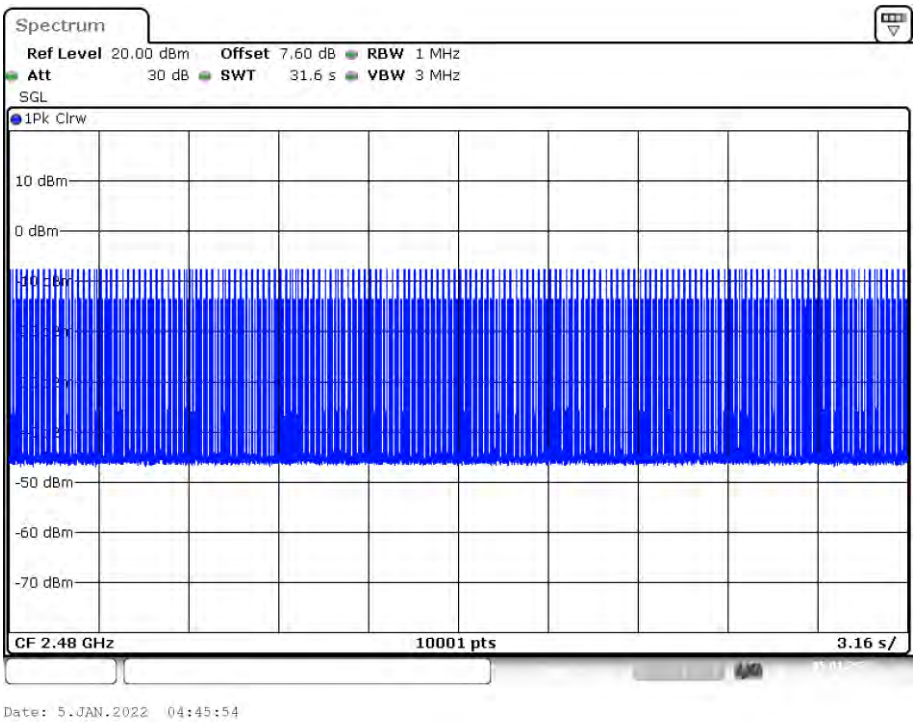


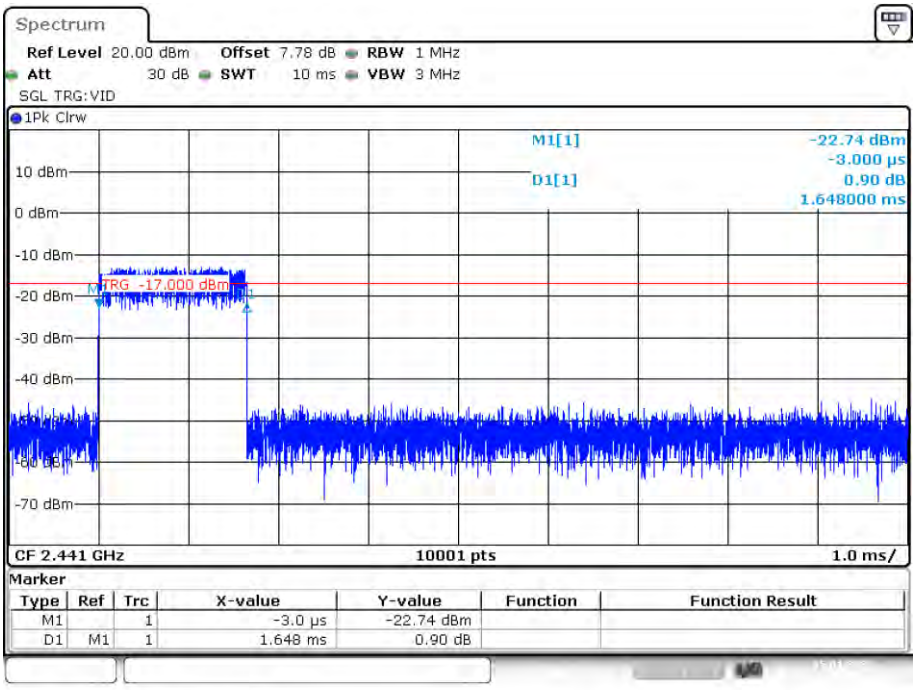
Dwell NVNT 2-DH1 2480MHz Ant1 One Burst



Dwell NVNT 2-DH1 2480MHz Ant1 Accumulated



Dwell NVNT 2-DH3 2441MHz Ant1 One Burst



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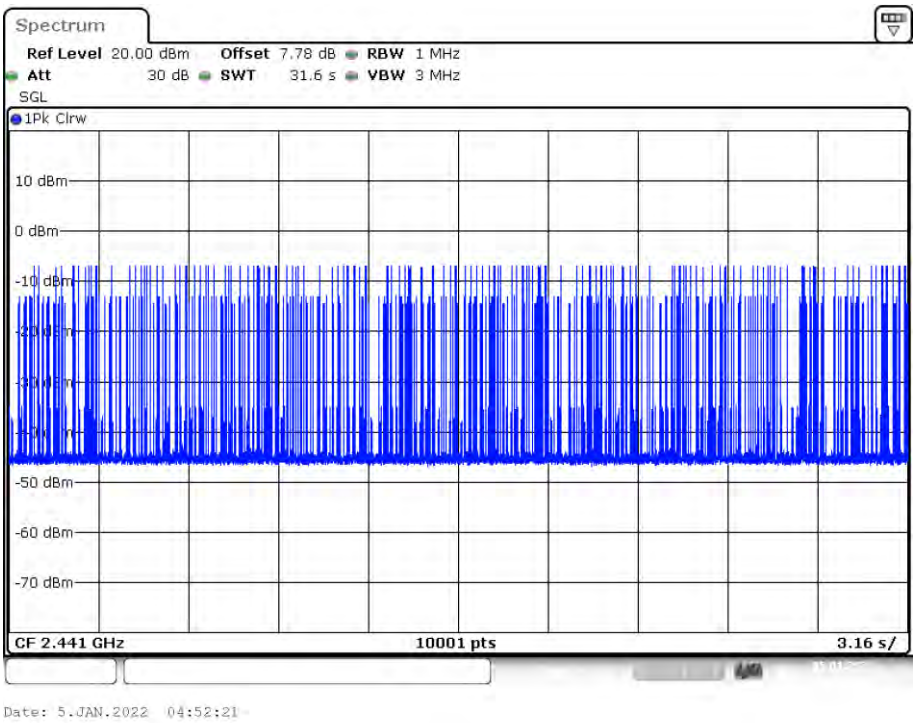
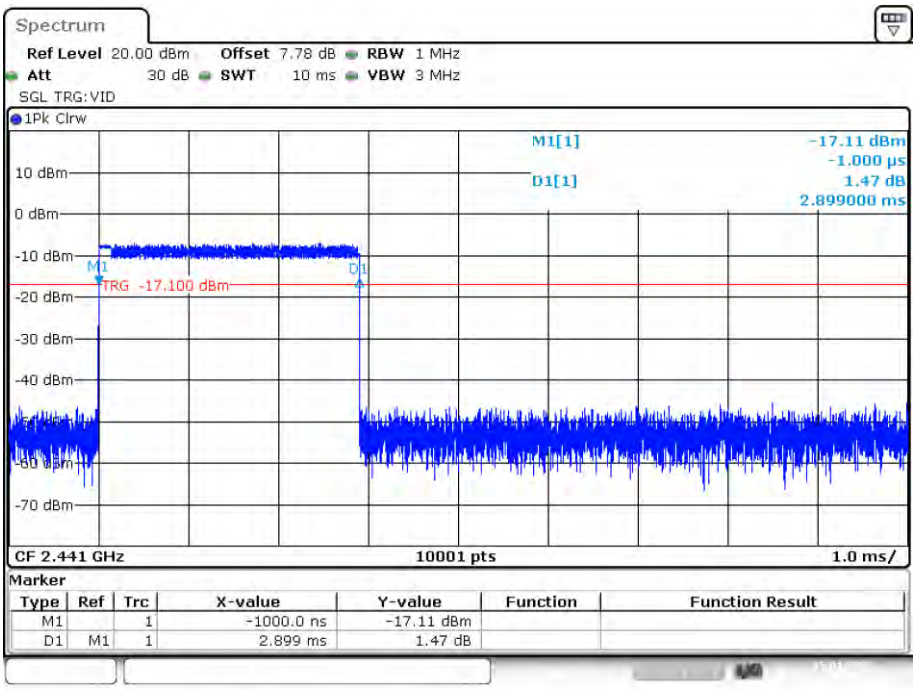


Dwell NVNT 2-DH5 2441MHz Ant1 One Burst



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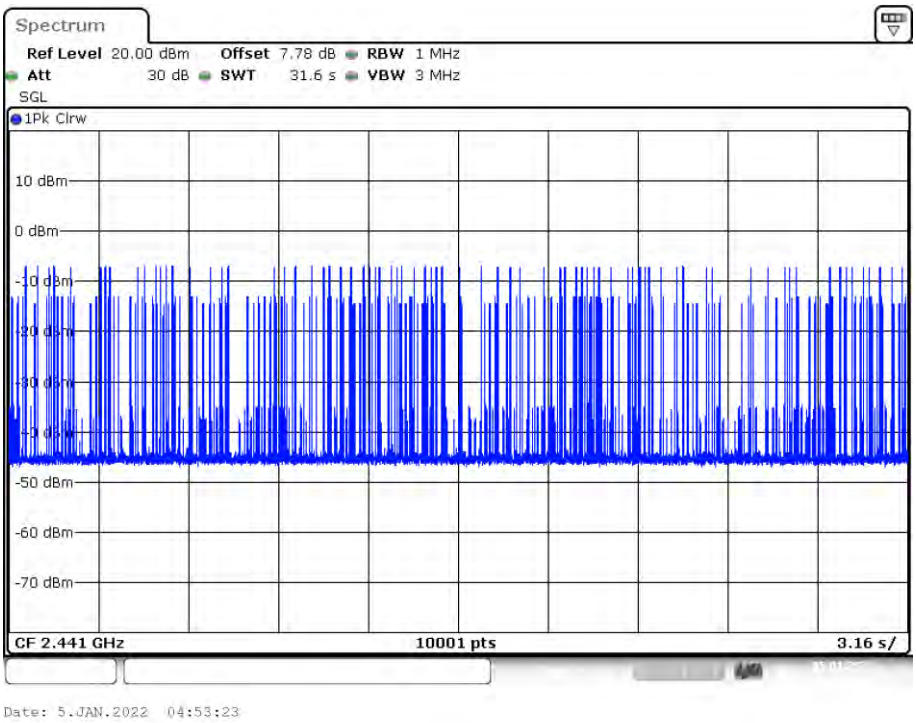
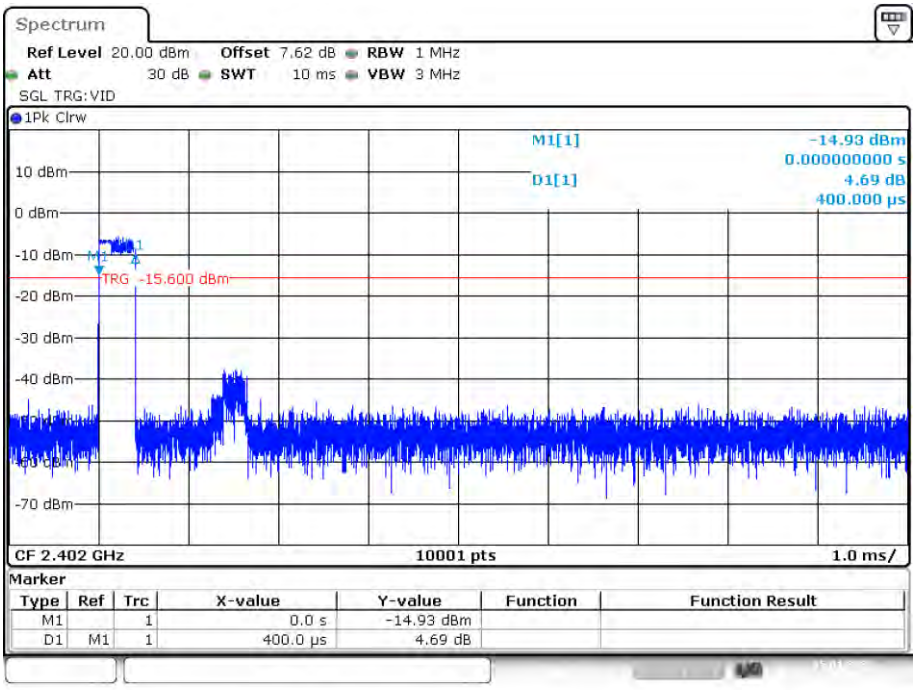
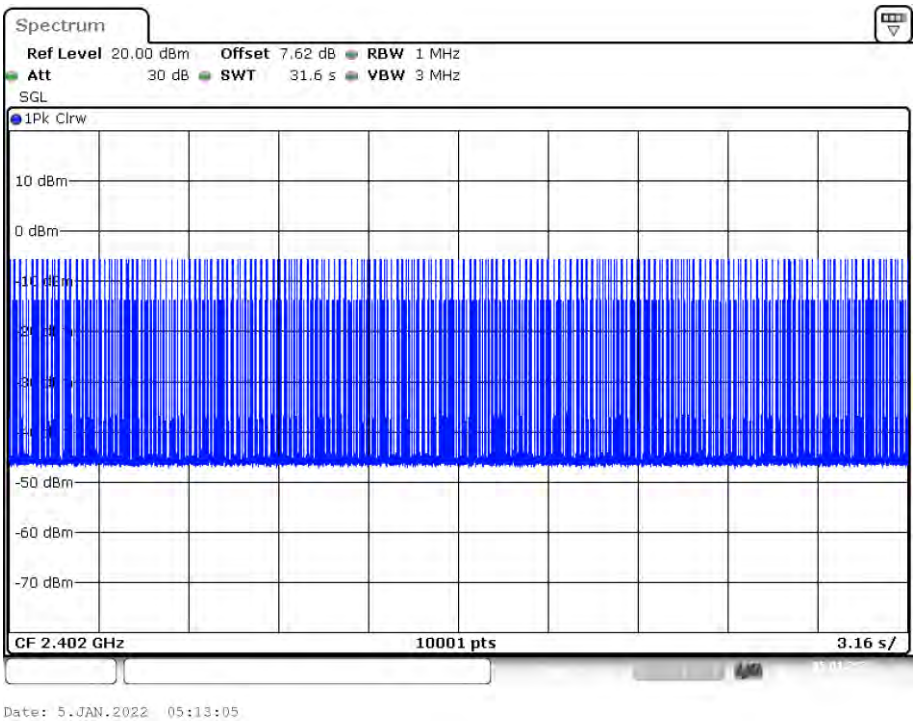


Dwell NVNT 3-DH1 2402MHz Ant1 One Burst



Dwell NVNT 3-DH1 2402MHz Ant1 Accumulated



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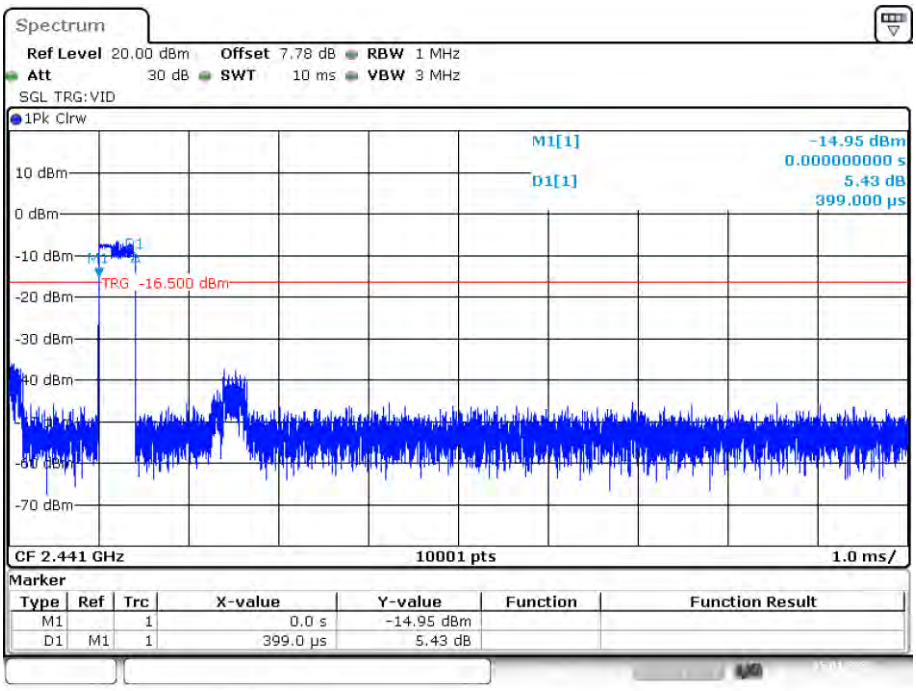

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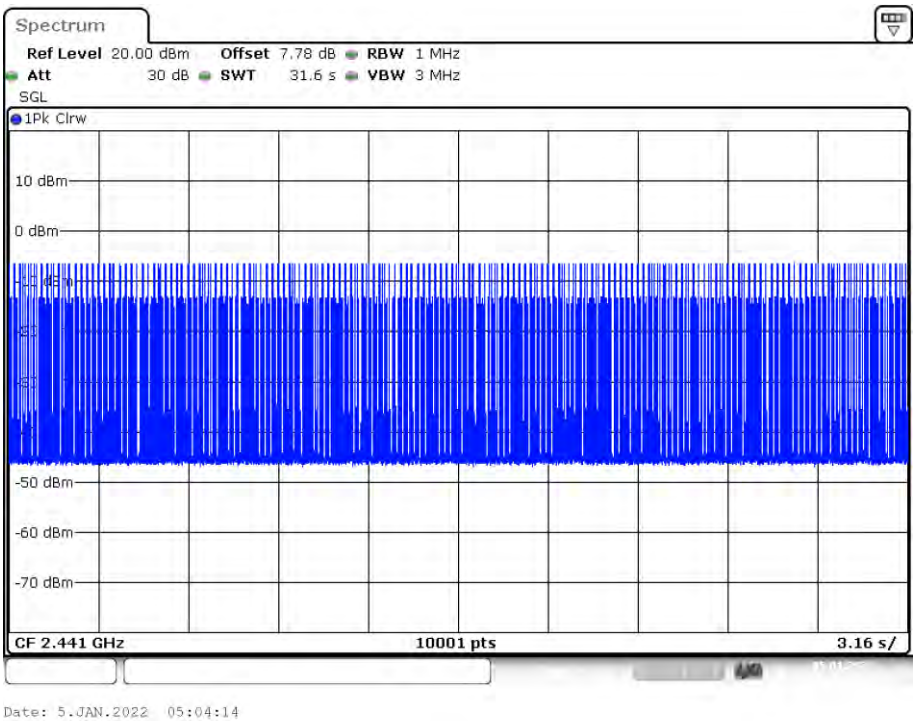
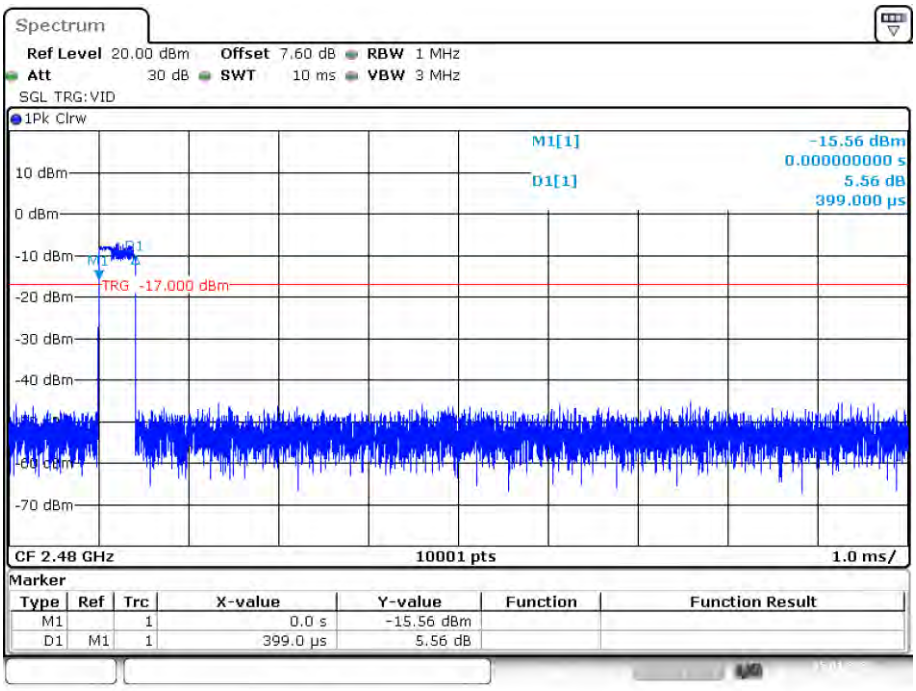


Dwell NVNT 3-DH1 2480MHz Ant1 One Burst



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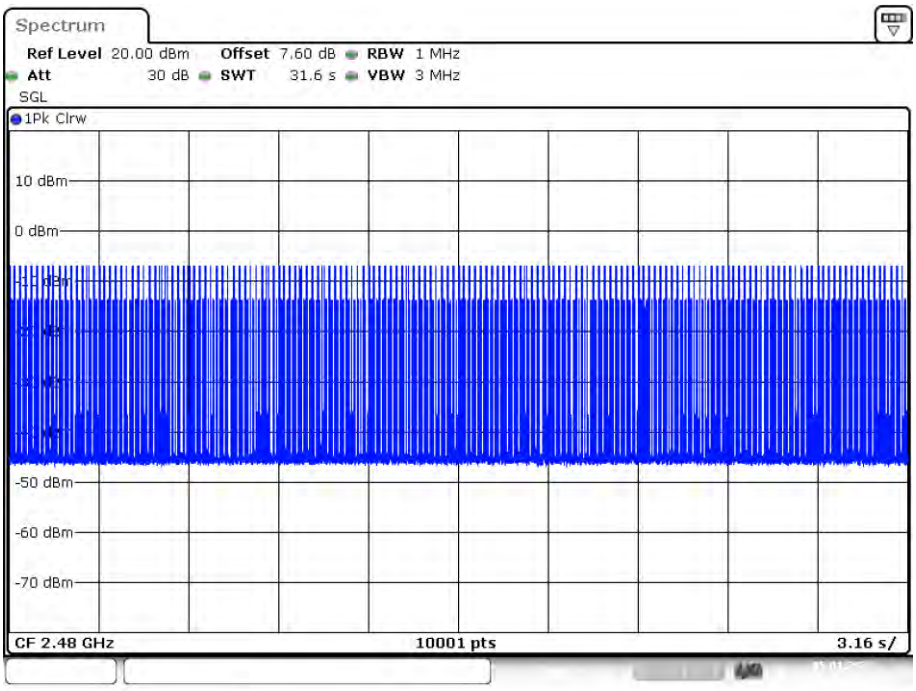

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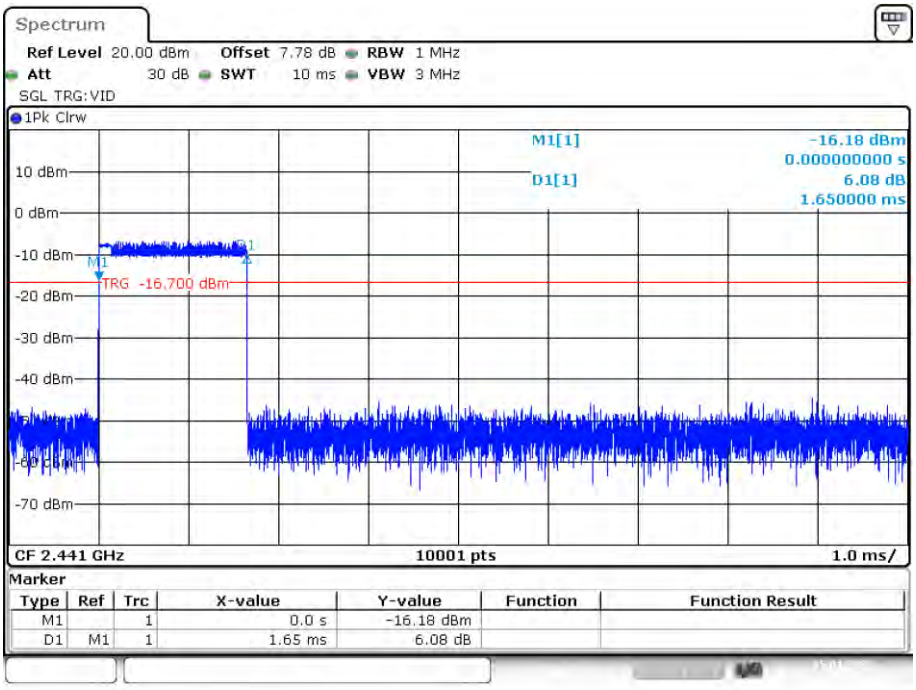
Dwell NVNT 3-DH3 2441MHz Ant1 One Burst



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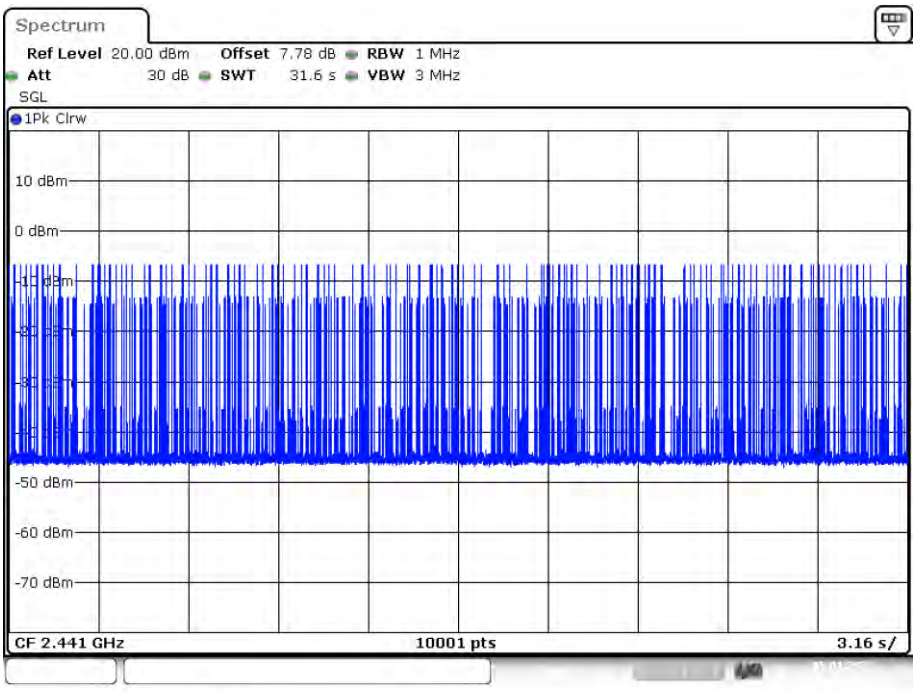

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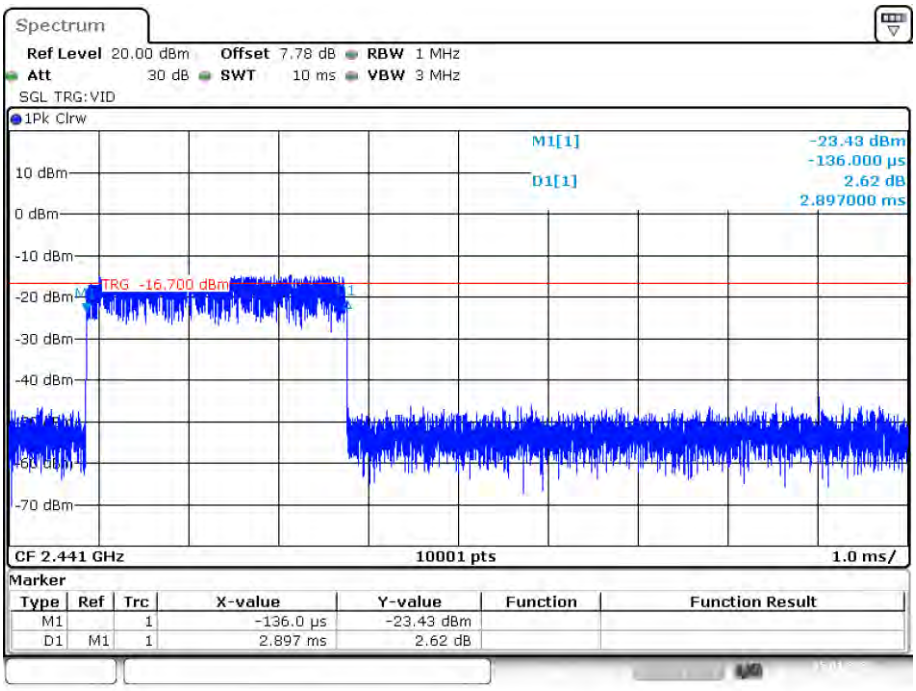
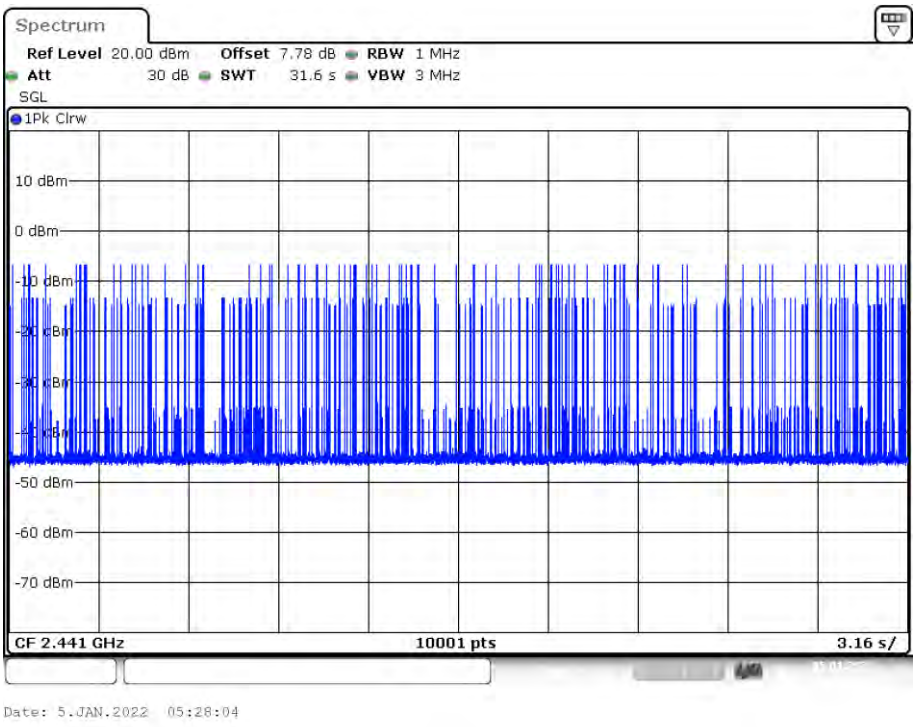
Dwell NVNT 3-DH5 2441MHz Ant1 One Burst



Dwell NVNT 3-DH5 2441MHz Ant1 Accumulated



8. Radiated Emissions

8.1.Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

RSS-GEN Restricted frequency band

Table 7 – Restricted frequency bands Note 1

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12

6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009-0.490	300	2400/F(KHz)	/
0.490-1.705	30	24000/F(KHz)	/
1.705-30	30	30	29.5
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Note: The peak limit is 20 dB higher than the average limit

Table 5 – General field strength limits at frequencies above 30 MHz

Frequency (MHz)	Field strength (μV/m at 3 m)
30 – 88	100
88 – 216	150
216 – 960	200
Above 960	500

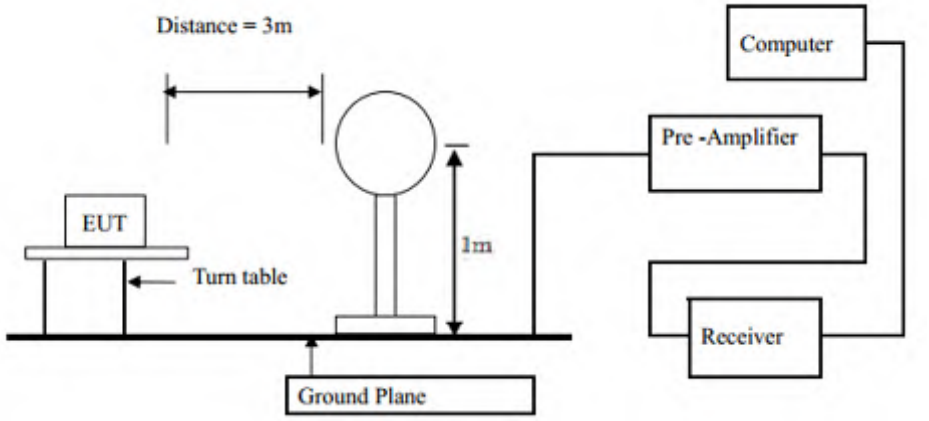
Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (μA/m)	Measurement distance (m)
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

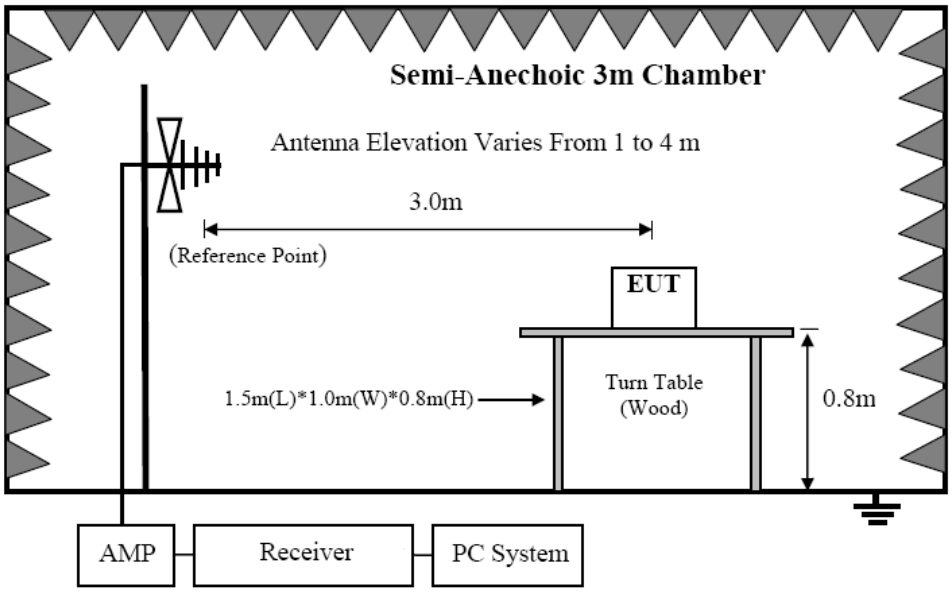
Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

8.2.Block Diagram of Test setup

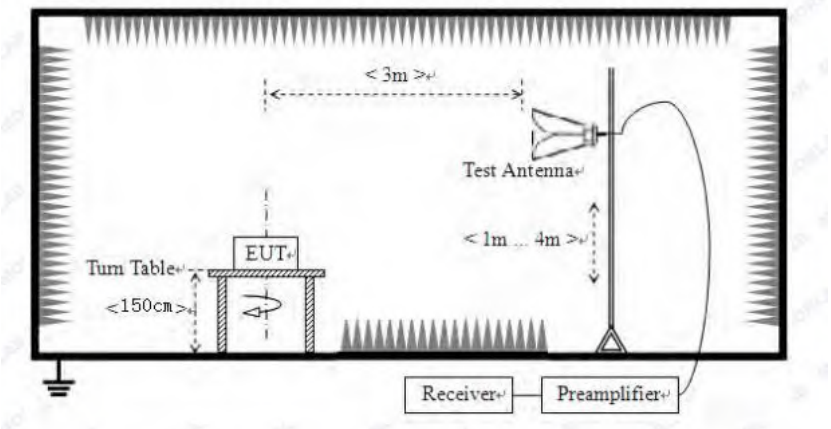
8.2.1 In 3m Anechoic Chamber Test Setup Diagram for below 30MHz



8.2.1 In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



8.2.2 In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

8.3.Test Procedure

(1) EUT was placed on a non-metallic table, 0.8 m high above ground for below 1GHz testing and 1.5m high for above1GHz testing inside a semi-anechoic chamber.
(2) Setup EUT and simulator
(3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
(a) Change work frequency or channel of device if practicable.
(b) Change modulation type of device if practicable.
(c) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
(4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated
(5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 :2013on Radiated Emission test.
(6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

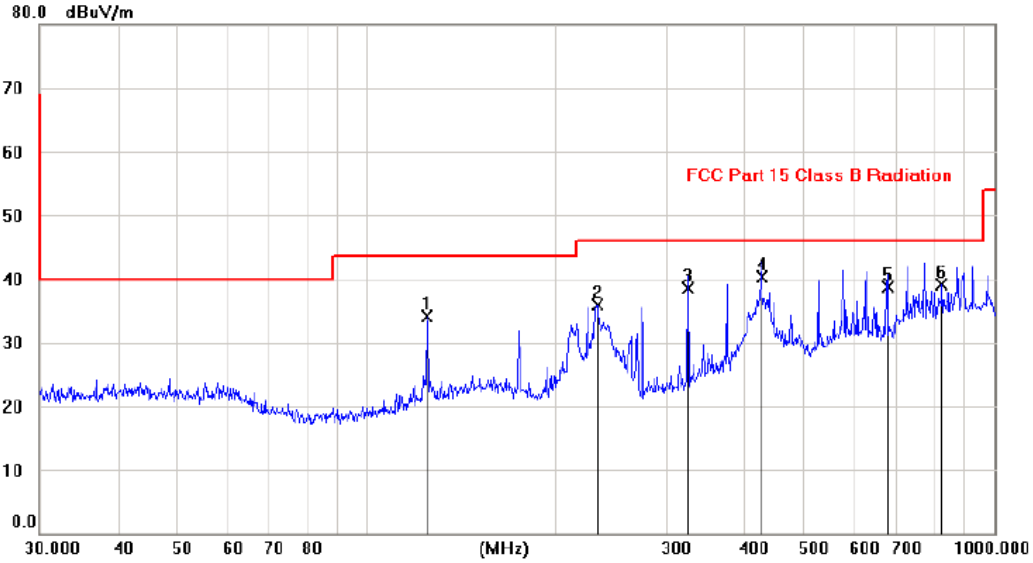
8.4.Test Result

We have scanned from 9kHz to the 10th harmonic of the EUT's highest frequency.
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

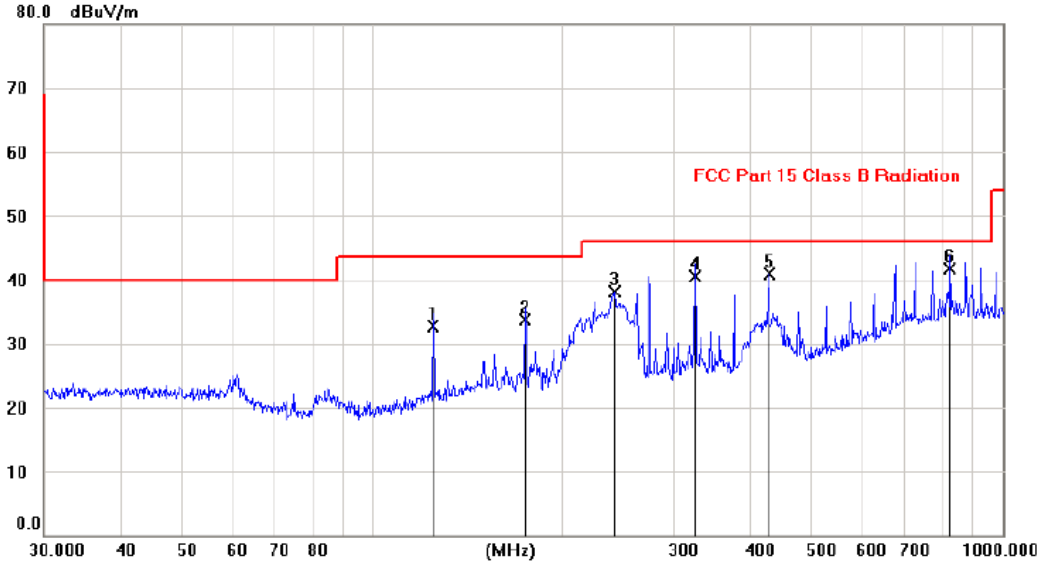
From 30MHz to 1000MHz: Conclusion: PASS
Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		125.0065	20.79	13.32	34.11	43.50	-9.39	peak			
2		232.9396	23.54	12.38	35.92	46.00	-10.08	peak			
3		325.0253	23.70	14.73	38.43	46.00	-7.57	QP			
4	*	425.0280	23.44	16.91	40.35	46.00	-5.65	QP			
5		675.2078	17.23	21.39	38.62	46.00	-7.38	QP			
6		825.3200	15.86	23.17	39.03	46.00	-6.97	peak			

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		125.0065	19.42	13.32	32.74	43.50	-10.76	QP			
2		175.0363	20.28	13.37	33.65	43.50	-9.85	QP			
3		241.8882	25.56	12.59	38.15	46.00	-7.85	peak			
4		325.0253	25.87	14.73	40.60	46.00	-5.40	QP			
5		425.0280	23.96	16.91	40.87	46.00	-5.13	peak			
6	*	825.3200	18.60	23.17	41.77	46.00	-4.23	QP			

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Remark: All modes have been tested, and only worst data of 8-DPSK mode, Channel 2480MHz (AC 120V/ 60Hz) was listed in this report.

From 1G-25GHz

Test Mode: GFSK TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4804	48.12	V	33.95	10.18	34.26	57.99	74	-16.01	PK
4804	35.37	V	33.95	10.18	34.26	45.24	54	-8.76	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
4804	48.12	H	33.95	10.18	34.26	57.99	74	-16.01	PK
4804	38.41	H	33.95	10.18	34.26	48.28	54	-5.72	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX Mid									
4882	41.59	V	33.93	10.2	34.29	51.43	74	-22.57	PK
4882	35.68	V	33.93	10.2	34.29	45.52	54	-8.48	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
4882	46.31	H	33.93	10.2	34.29	56.15	74	-17.85	PK
4882	33.54	H	33.93	10.2	34.29	43.38	54	-10.62	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX High									
4960	44.96	V	33.98	10.22	34.25	54.91	74	-19.09	PK
4960	34.68	V	33.98	10.22	34.25	44.63	54	-9.37	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
4960	44.25	H	33.98	10.22	34.25	54.20	74	-19.80	PK
4960	31.85	H	33.98	10.22	34.25	41.80	54	-12.20	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

From 1G-25GHz

Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Test Mode: π /4 DQPSK TX Low									
4804	48.89	V	34.68	10.18	34.94	58.81	74	-15.19	PK
4804	35.78	V	34.44	10.18	34.89	45.50	54	-8.50	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
4804	48.44	H	34.85	10.18	35.51	57.96	74	-16.04	PK
4804	38.83	H	34.32	10.18	35.68	47.64	54	-6.36	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
Test Mode: π /4 DQPSK TX Mid									
4882	42.33	V	34.92	10.2	34.88	52.57	74	-21.43	PK
4882	36.31	V	34.90	10.2	35.23	46.18	54	-7.82	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
4882	47.13	H	34.79	10.2	35.20	56.91	74	-17.09	PK
4882	34.48	H	34.53	10.2	35.24	43.97	54	-10.03	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
Test Mode: π /4 DQPSK TX High									
4960	45.46	V	34.83	10.22	35.60	54.91	74	-19.09	PK
4960	35.45	V	34.51	10.22	35.61	44.57	54	-9.43	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
4960	45.01	H	34.71	10.22	35.59	54.34	74	-19.66	PK
4960	32.26	H	34.89	10.22	35.74	41.63	54	-12.37	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

From 1G-25GHz

Test Mode: 8- DQPSK TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4804	49.47	V	35.65	10.18	36.26	59.05	74	-14.95	PK
4804	36.27	V	35.17	10.18	35.49	46.13	54	-7.87	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
4804	48.75	H	35.27	10.18	36.65	57.55	74	-16.45	PK
4804	39.18	H	34.73	10.18	36.51	47.59	54	-6.41	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
Test Mode: 8- DQPSK TX Mid									
4882	42.94	V	35.72	10.2	36.27	52.60	74	-21.40	PK
4882	36.78	V	35.41	10.2	36.35	46.04	54	-7.96	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
4882	47.80	H	35.11	10.2	35.79	57.32	74	-16.68	PK
4882	34.78	H	35.01	10.2	36.11	43.88	54	-10.12	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
Test Mode: 8- DQPSK TX High									
4960	45.90	V	35.66	10.22	37.10	54.68	74	-19.32	PK
4960	36.34	V	34.98	10.22	36.54	45.00	54	-9.00	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
4960	45.83	H	35.64	10.22	36.21	55.48	74	-18.52	PK
4960	33.00	H	35.34	10.22	36.53	42.03	54	-11.97	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/

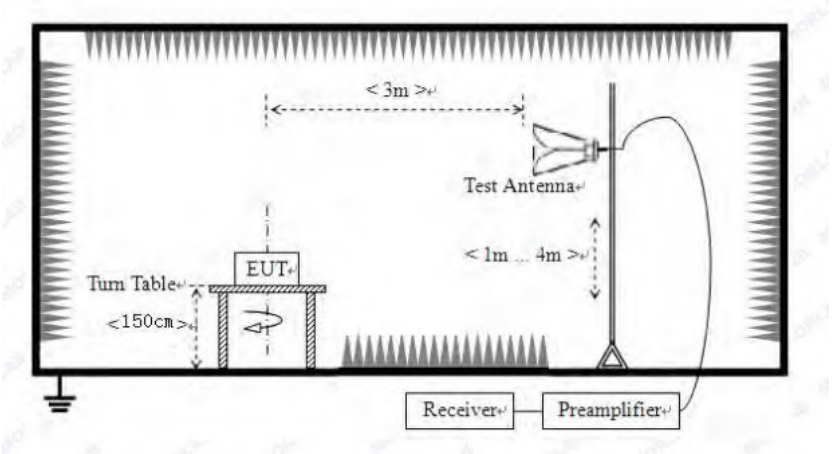
Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

9. Band Edge Compliance

9.1.Block Diagram of Test Setup



9.2.Limit

All the lower and upper band-edges emissions appearing within restricted frequency bands shall not exceed the limits shown in FCC part 15.209 and RSS-GEN, all the other emissions outside operation shall be at least 20dB below the fundamental emissions, or comply with FCC part 15.209 and RSS-GEN limits.

9.3.Test Procedure

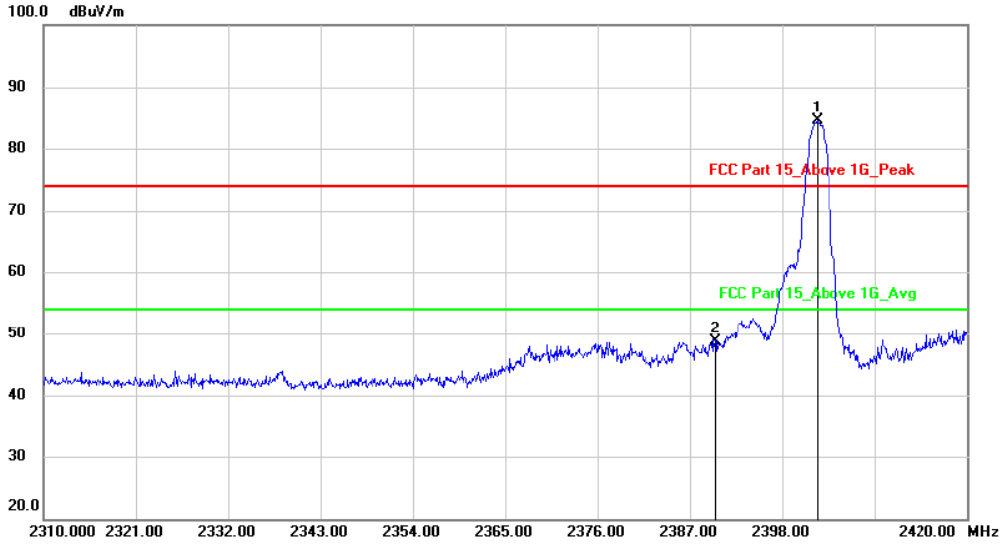
Refer to ANSI C 63.10, Clause 6.10.
All restriction band and non- restriction band have been tested, only worse case is reported.

9.4.Test Result

PASS. (See below detailed test data)

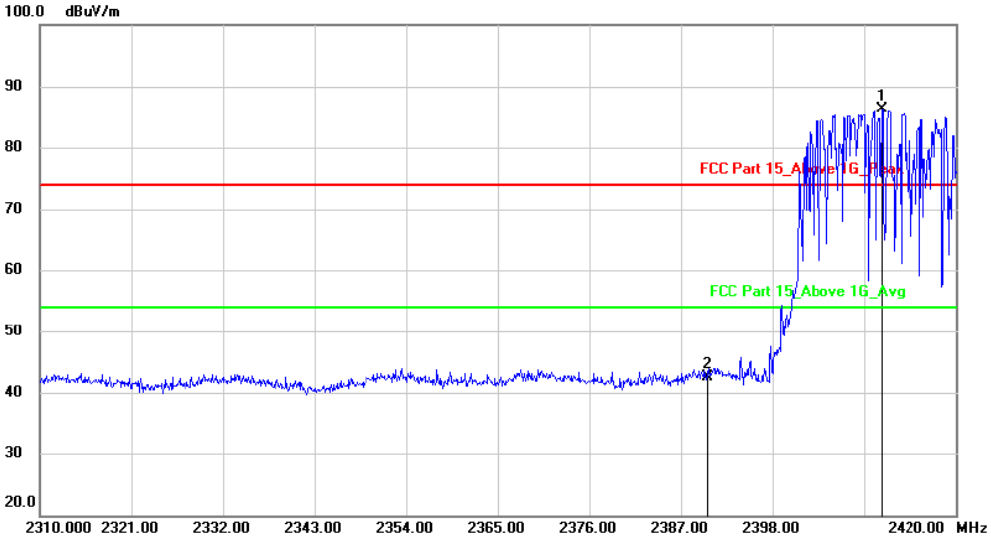
Radiated Method:

Polarization: Vertical Test Mode: GFSK-Low



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2402.180	88.01	-3.41	84.60	74.00	10.60	peak			
2		2390.000	52.01	-3.40	48.61	74.00	-25.39	peak			

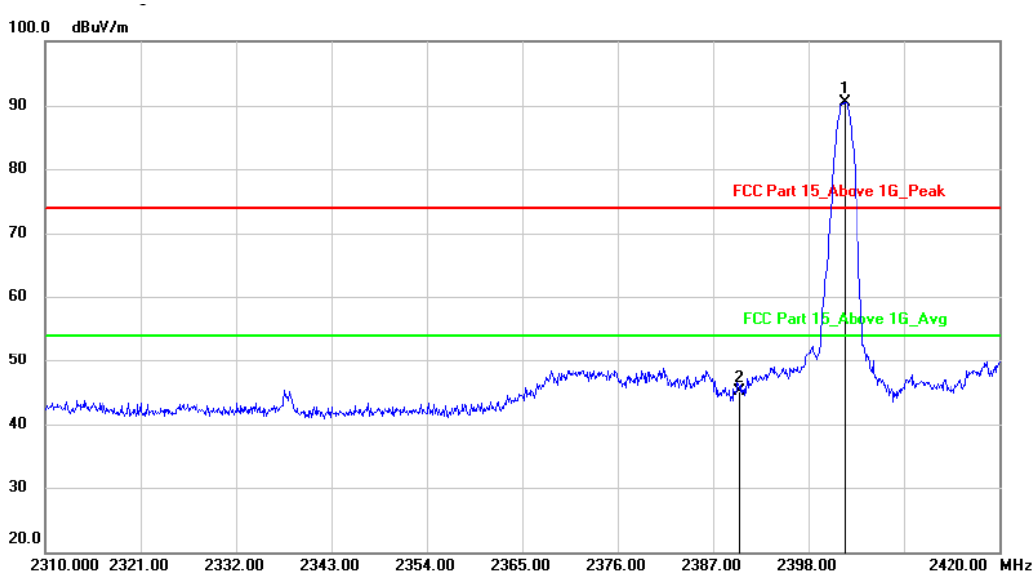
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2411.090	89.74	-3.40	86.34	74.00	12.34	peak			
2		2390.000	45.97	-3.40	42.57	74.00	-31.43	peak			

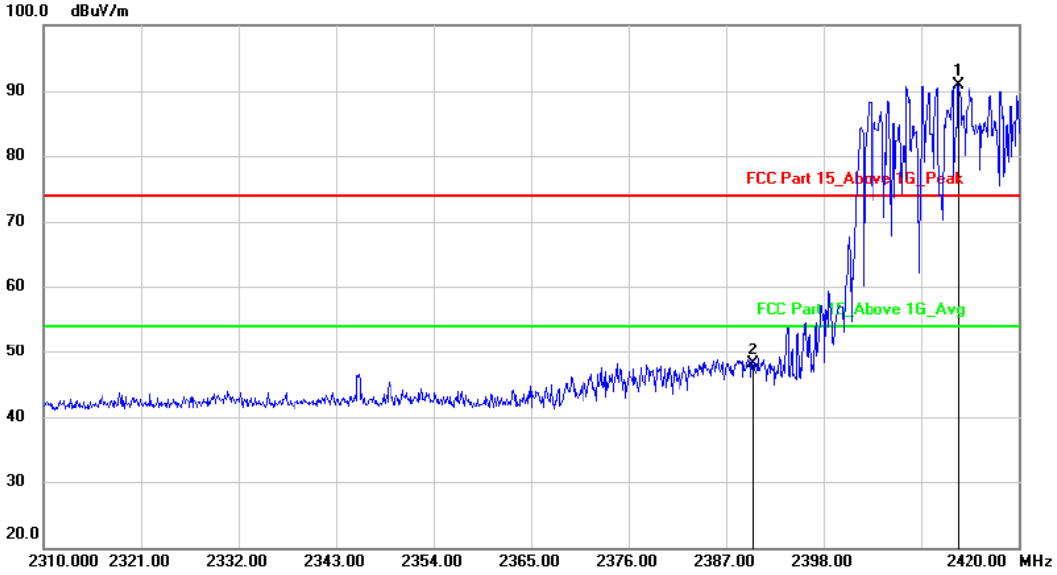
hopping-on

Polarization: Horizontal: Test Mode: GFSK-Low



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2402.180	93.93	-3.41	90.52	74.00	16.52	peak			
2		2390.000	48.45	-3.40	45.05	74.00	-28.95	peak			

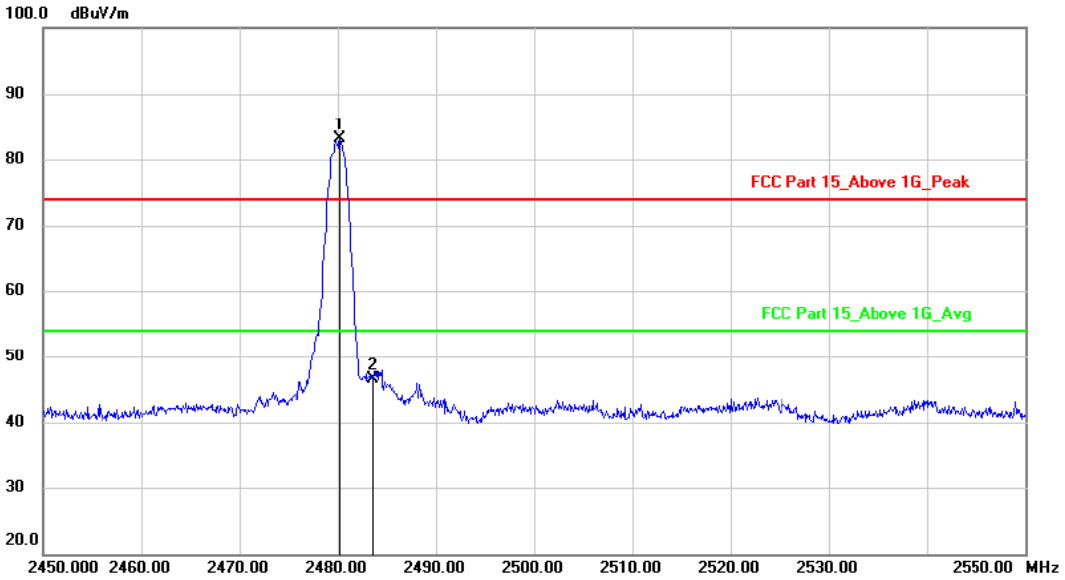
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2413.180	94.32	-3.41	90.91	74.00	16.91	peak			
2		2390.000	51.46	-3.40	48.06	74.00	-25.94	peak			

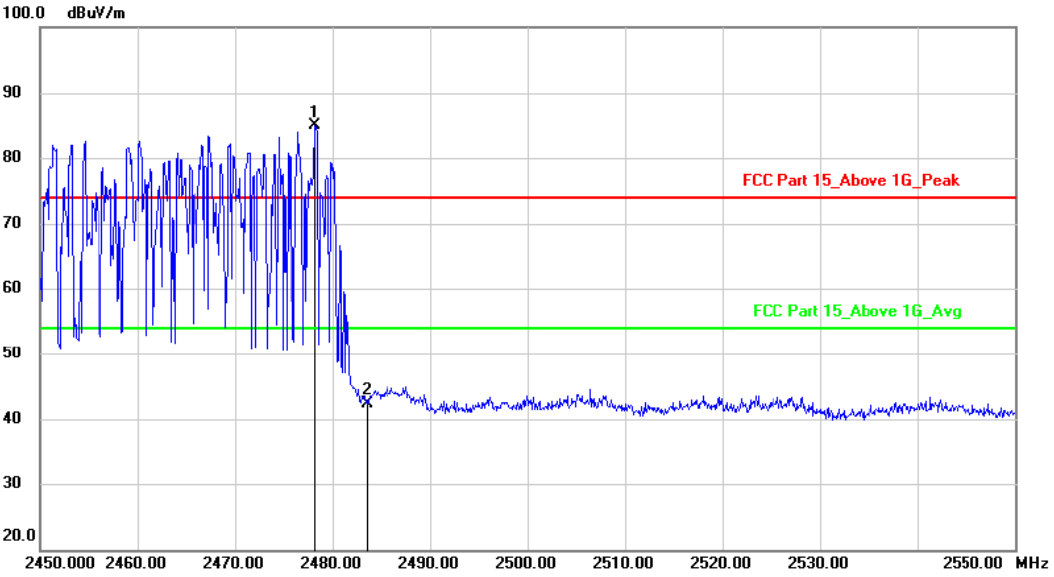
hopping-on

Polarization: Vertical Test Mode: GFSK-High



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2480.200	86.40	-3.38	83.02	74.00	9.02	peak			
2		2483.500	49.86	-3.38	46.48	74.00	-27.52	peak			

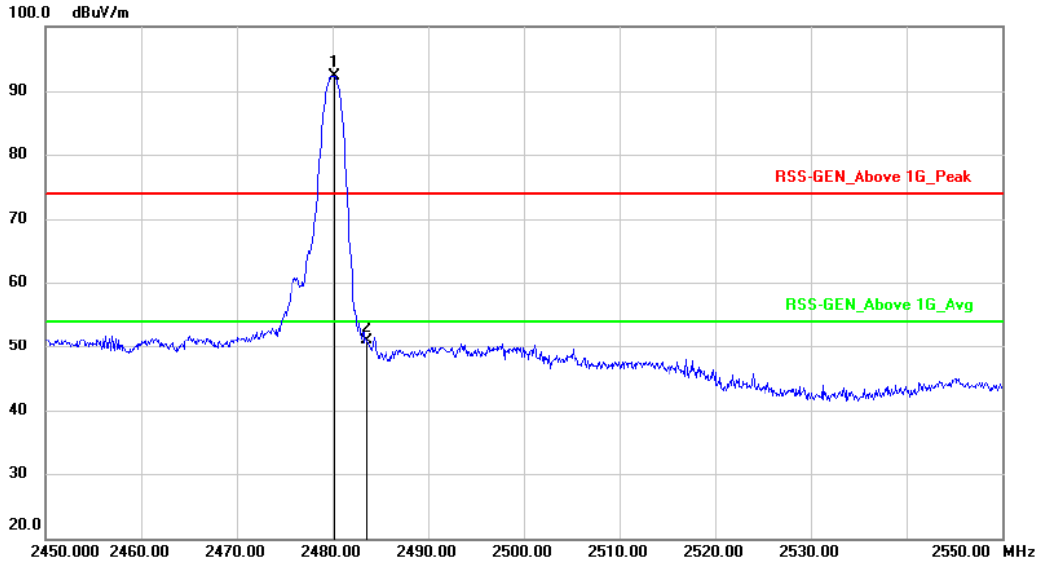
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2478.200	88.22	-3.39	84.83	74.00	10.83	peak			
2		2483.500	45.76	-3.38	42.38	74.00	-31.62	peak			

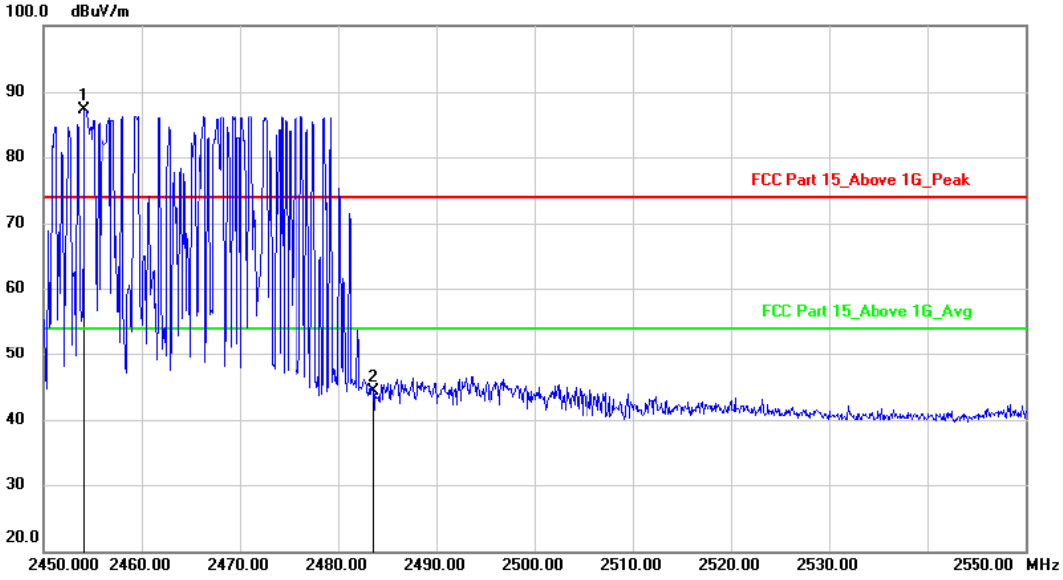
hopping-on

Polarization: Horizontal Test Mode: GFSK-High



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2480.200	95.75	-3.38	92.37	74.00	18.37	peak			
2		2483.500	54.32	-3.38	50.94	74.00	-23.06	peak			

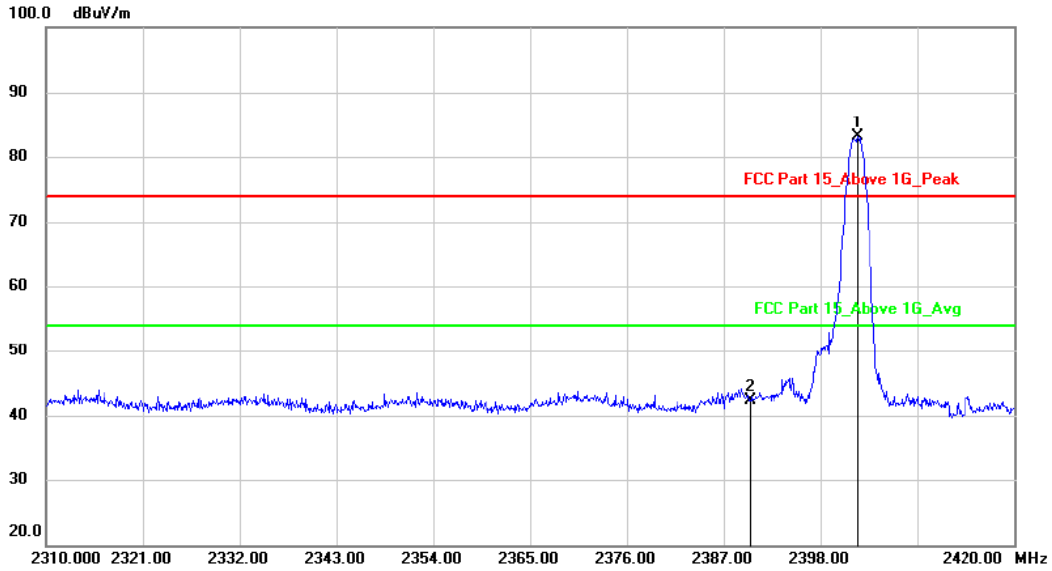
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2454.100	90.78	-3.39	87.39	74.00	13.39	peak			
2		2483.500	47.67	-3.38	44.29	74.00	-29.71	peak			

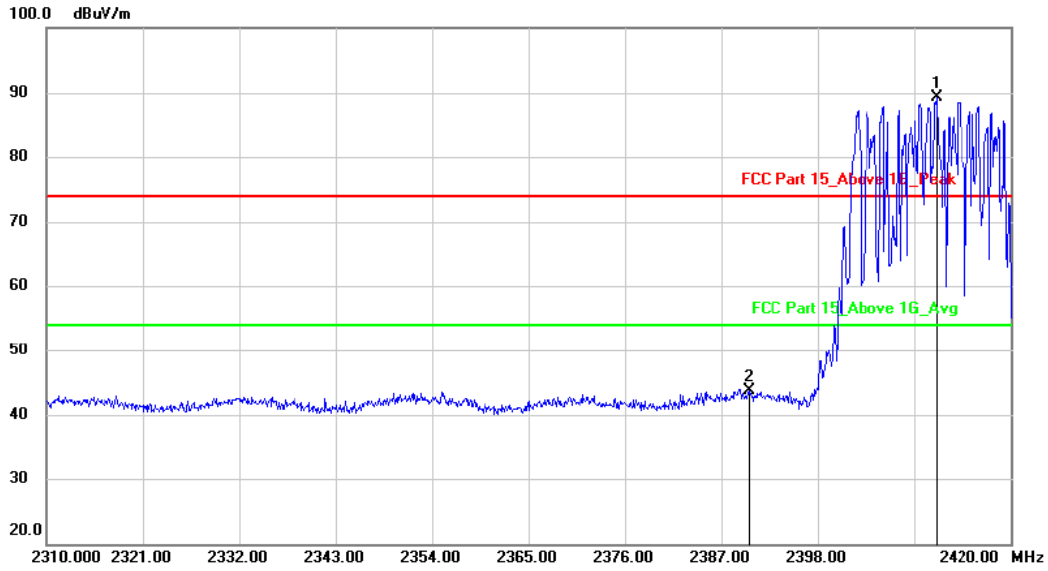
hopping-on

Polarization: Vertical Test Mode: π /4 DQPSK-Low



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2402.180	86.50	-3.41	83.09	74.00	9.09	peak			
2		2390.000	45.61	-3.40	42.21	74.00	-31.79	peak			

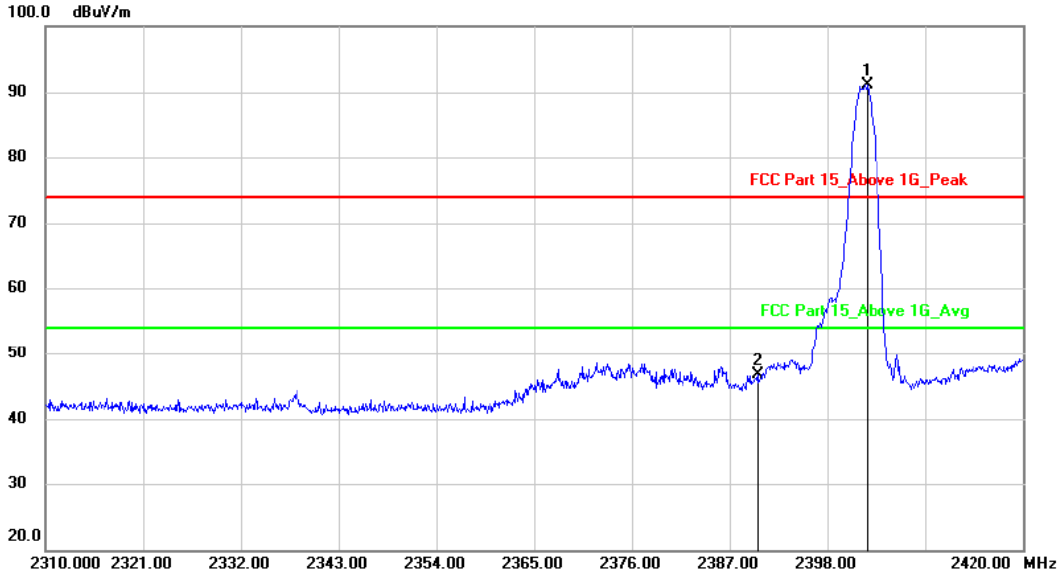
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2411.530	92.79	-3.40	89.39	74.00	15.39	peak			
2		2390.000	47.07	-3.40	43.67	74.00	-30.33	peak			

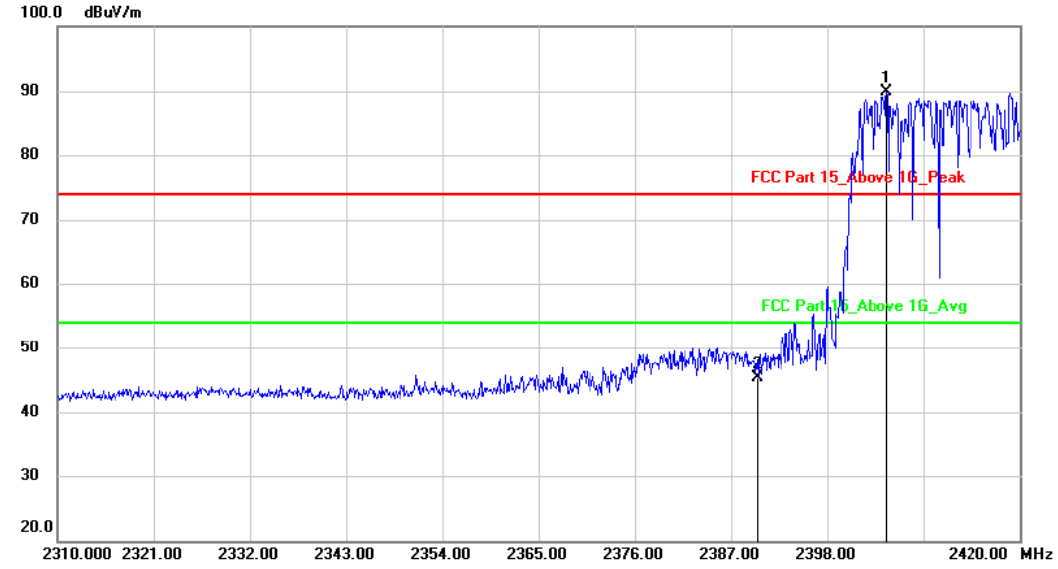
hopping-on

Polarization: Horizontal Test Mode: π /4 DQPSK-Low



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2402.510	94.48	-3.41	91.07	74.00	17.07	peak			
2		2390.000	50.18	-3.40	46.78	74.00	-27.22	peak			

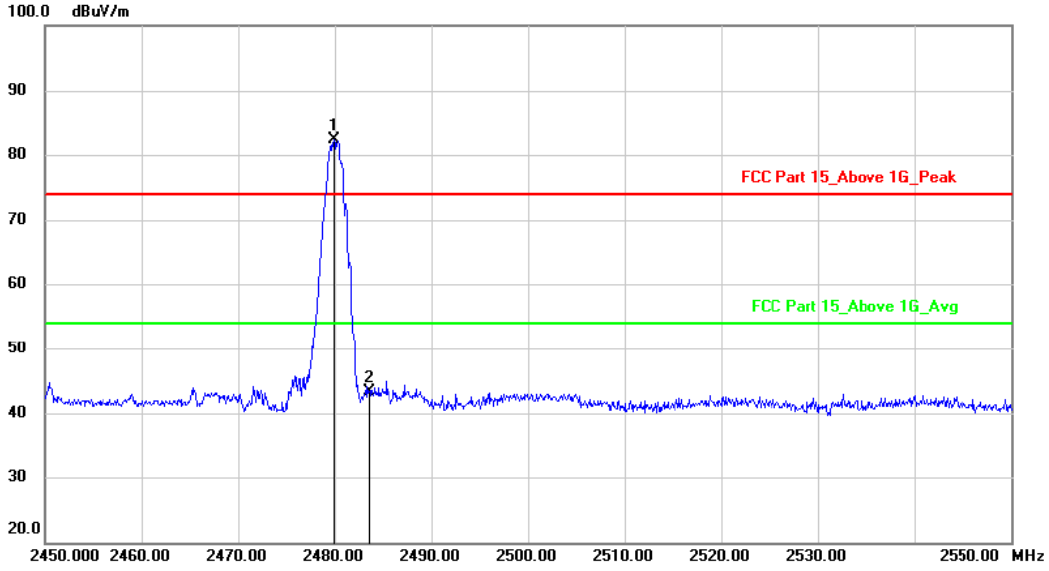
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2404.820	93.24	-3.41	89.83	74.00	15.83	peak			
2		2390.000	48.79	-3.40	45.39	74.00	-28.61	peak			

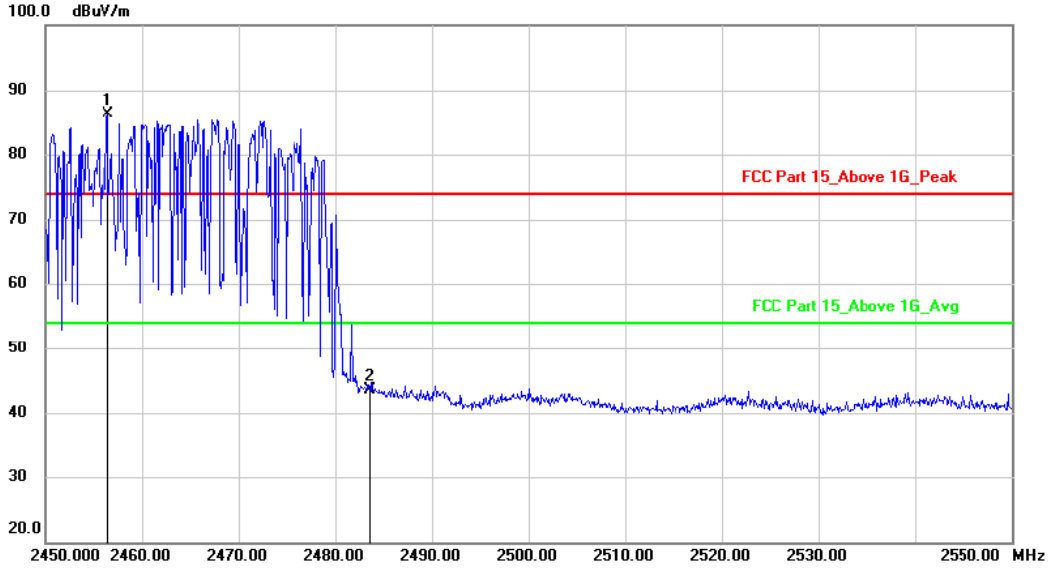
hopping-on

Polarization: Vertical Test Mode: π /4 DQPSK-High



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2479.900	85.69	-3.38	82.31	74.00	8.31	peak			
2		2483.500	46.71	-3.38	43.33	74.00	-30.67	peak			

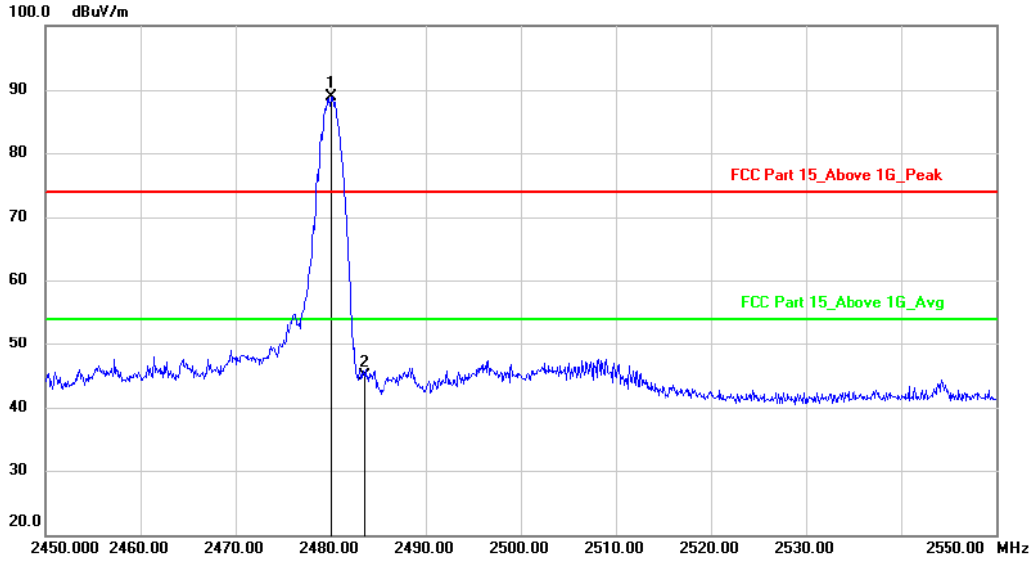
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2456.400	89.72	-3.39	86.33	74.00	12.33	peak			
2		2483.500	46.92	-3.38	43.54	74.00	-30.46	peak			

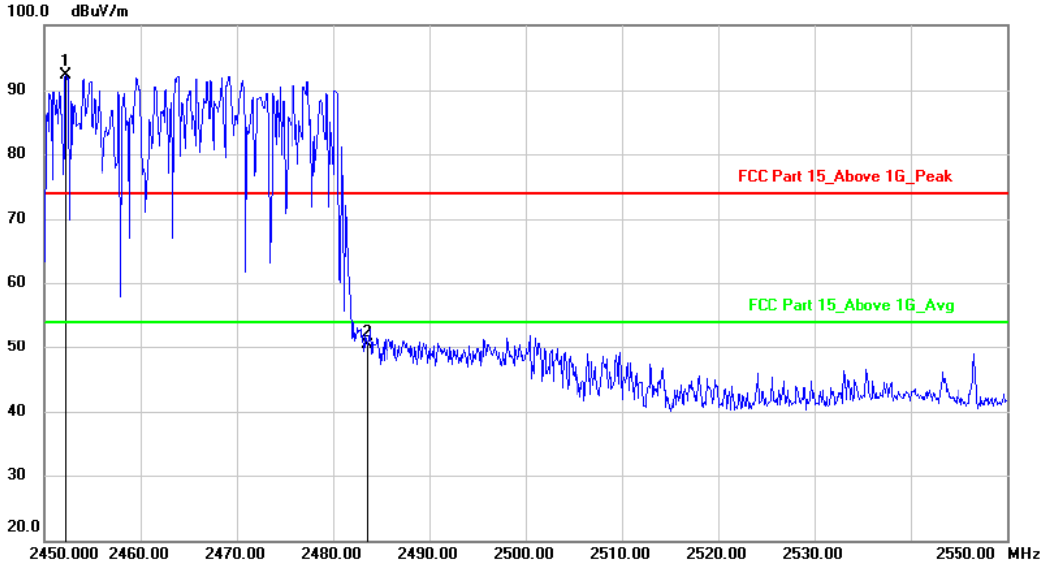
hopping-on

Polarization: Horizontal Test Mode: π /4 DQPSK-High



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2480.000	92.32	-3.38	88.94	74.00	14.94	peak			
2		2483.500	48.36	-3.38	44.98	74.00	-29.02	peak			

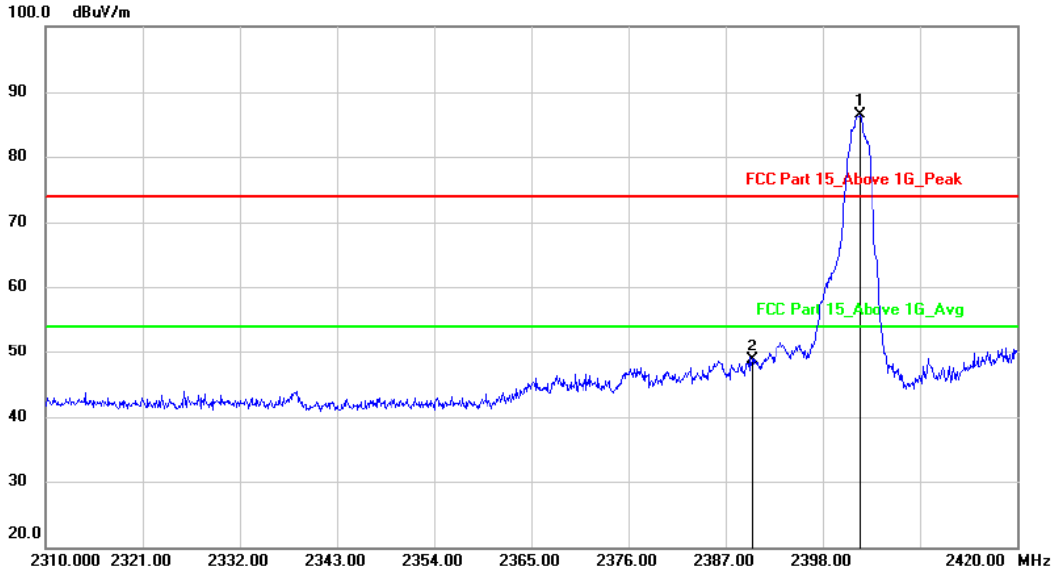
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2452.200	95.75	-3.39	92.36	74.00	18.36	peak			
2		2483.500	53.74	-3.38	50.36	74.00	-23.64	peak			

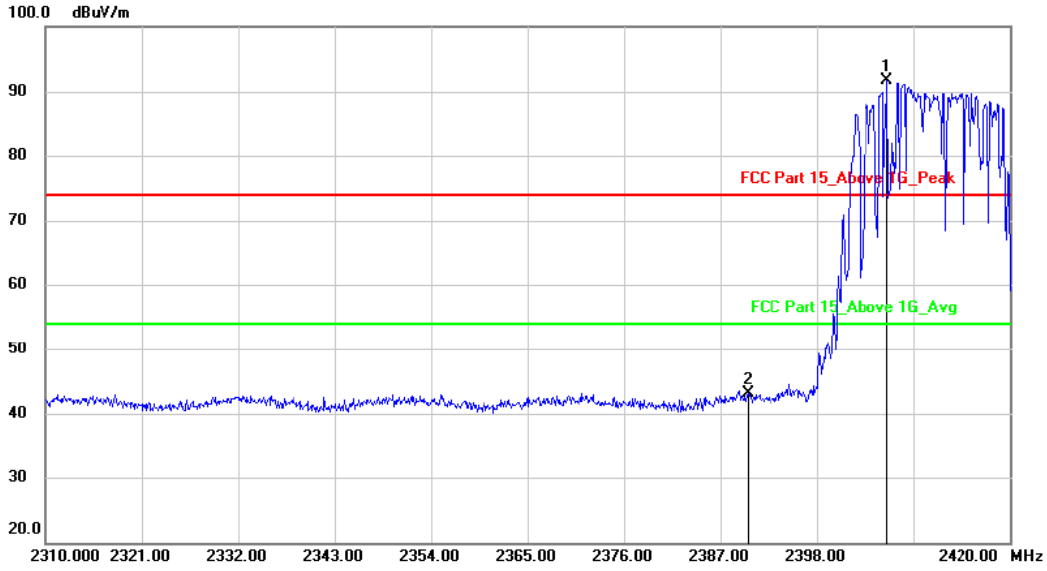
hopping-on

Polarization: Vertical Test Mode: 8DPSK-Low



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2402.180	90.01	-3.41	86.60	74.00	12.60	peak			
2		2390.000	52.01	-3.40	48.61	74.00	-25.39	peak			

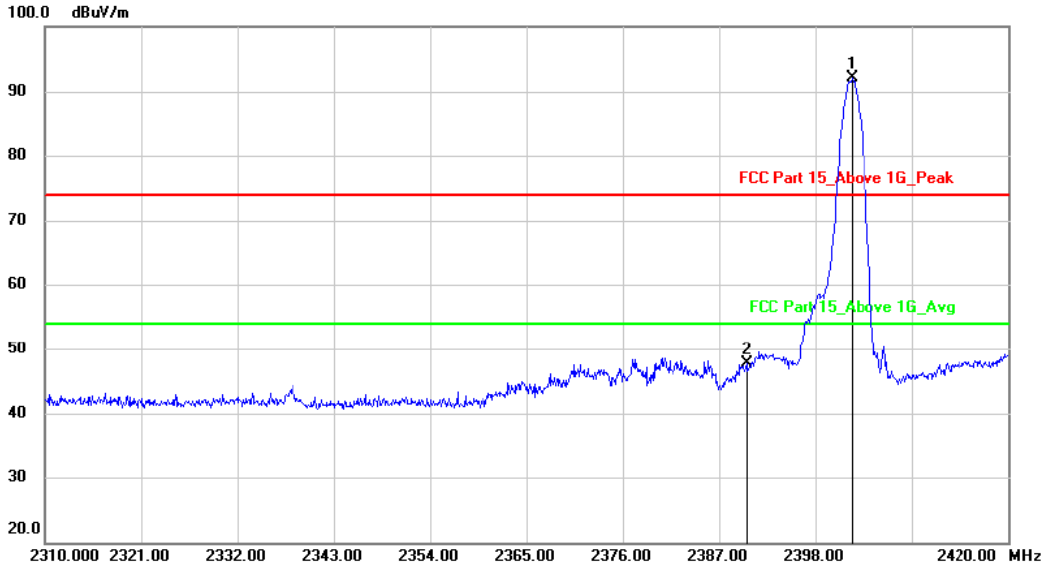
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2406.030	95.16	-3.41	91.75	74.00	17.75	peak			
2		2390.000	46.57	-3.40	43.17	74.00	-30.83	peak			

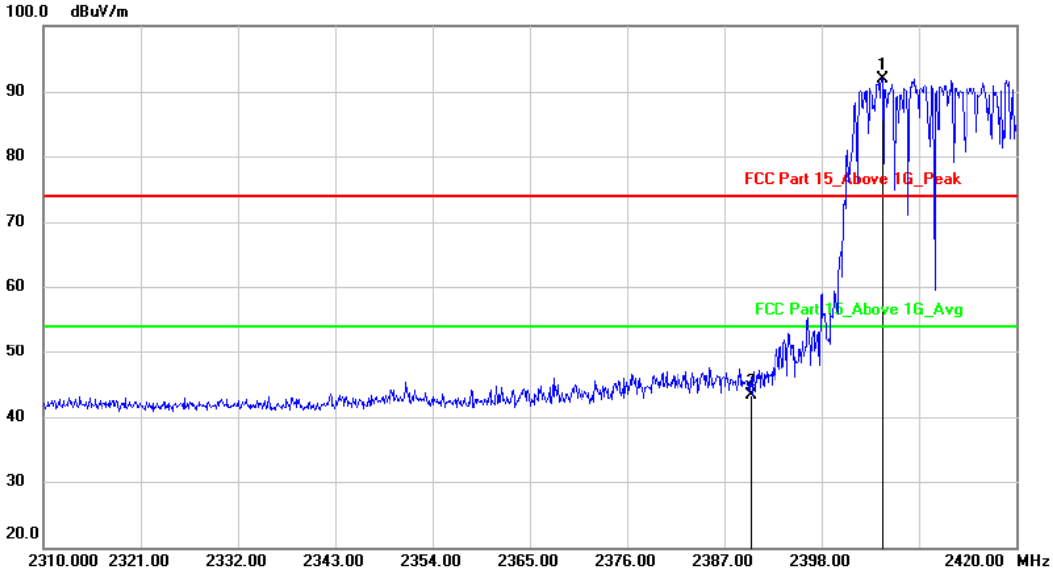
hopping-on

Polarization: Horizontal Test Mode: 8DPSK-Low



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2402.180	95.42	-3.41	92.01	74.00	18.01	peak			
2		2390.000	51.18	-3.40	47.78	74.00	-26.22	peak			

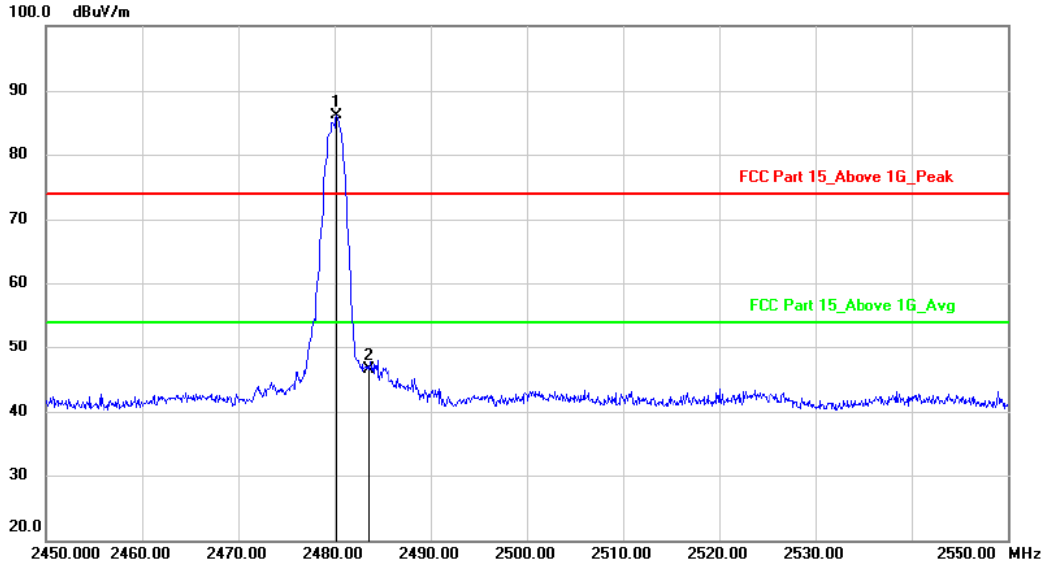
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2404.930	95.26	-3.41	91.85	74.00	17.85	peak			
2		2390.000	46.79	-3.40	43.39	74.00	-30.61	peak			

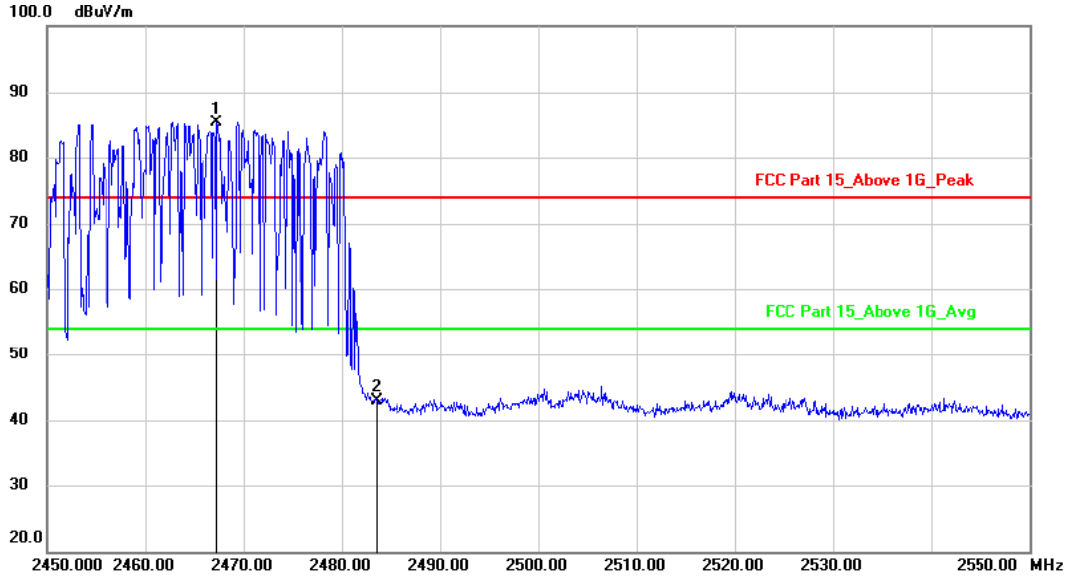
hopping-on

Polarization: Vertical Test Mode: 8DPSK-High



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2480.200	89.40	-3.38	86.02	74.00	12.02	peak			
2		2483.500	49.86	-3.38	46.48	74.00	-27.52	peak			

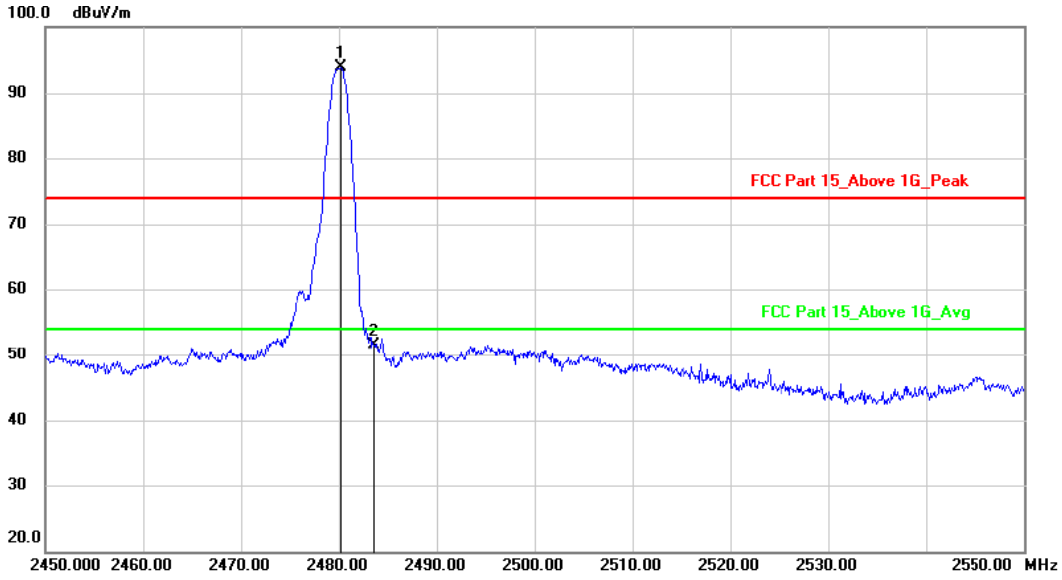
hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2467.300	88.75	-3.39	85.36	74.00	11.36	peak			
2		2483.500	46.26	-3.38	42.88	74.00	-31.12	peak			

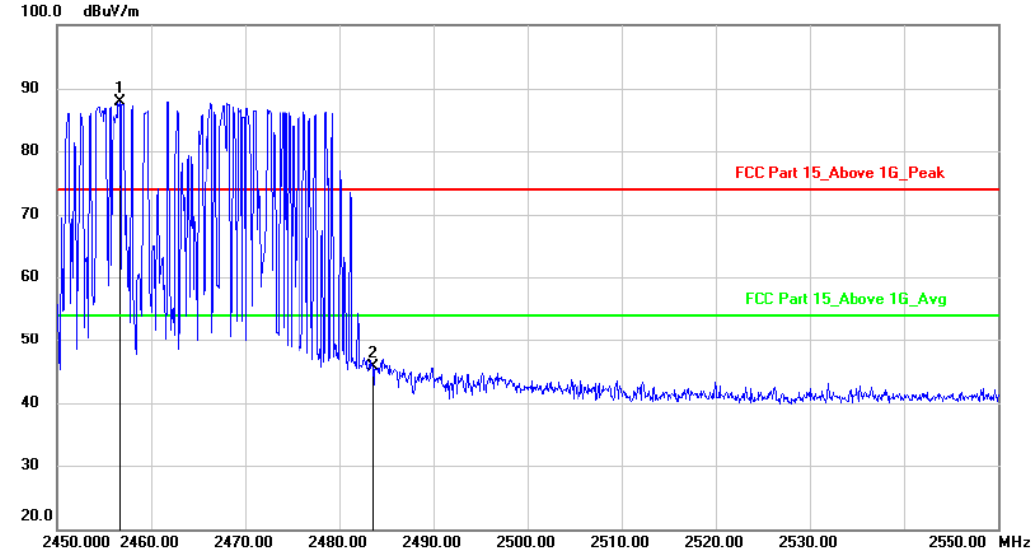
hopping-on

Polarization: Horizontal Test Mode: 8DPSK-High



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2480.200	97.25	-3.38	93.87	74.00	19.87	peak			
2		2483.500	54.82	-3.38	51.44	74.00	-22.56	peak			

hopping-off



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2456.700	91.33	-3.39	87.94	74.00	13.94	peak			
2		2483.500	49.17	-3.38	45.79	74.00	-28.21	peak			

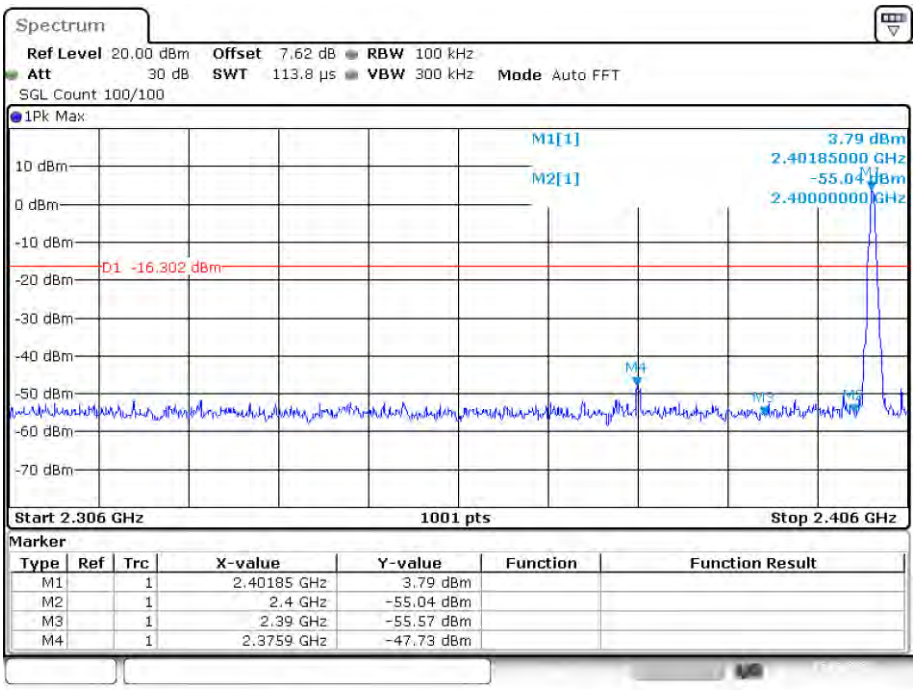
hopping-on

Note: 1. *:Maximum data; x:Over limit; !:over margin.

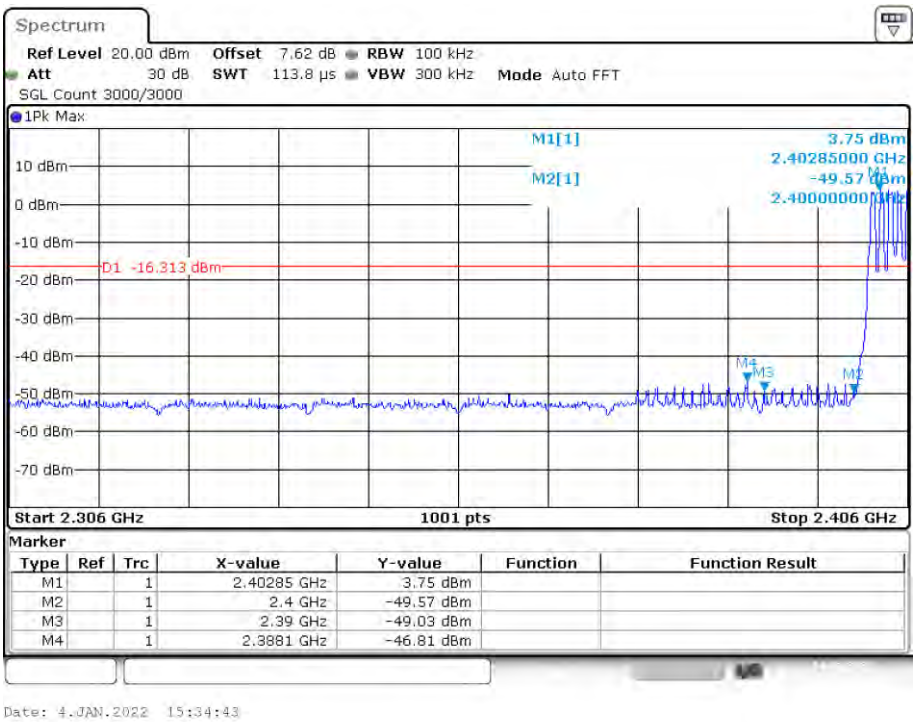
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Conducted Method

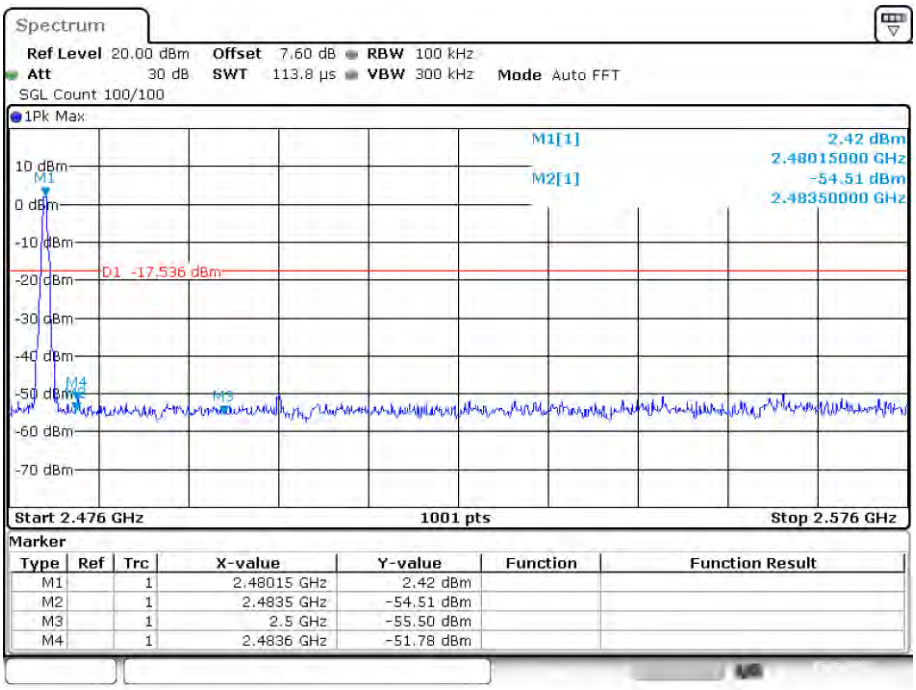
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



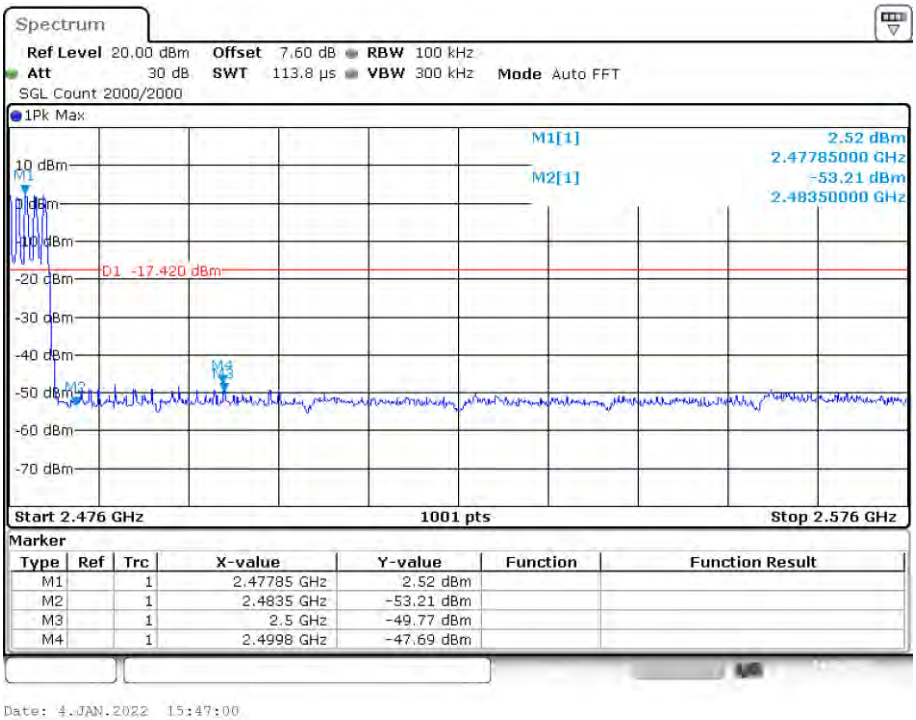
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



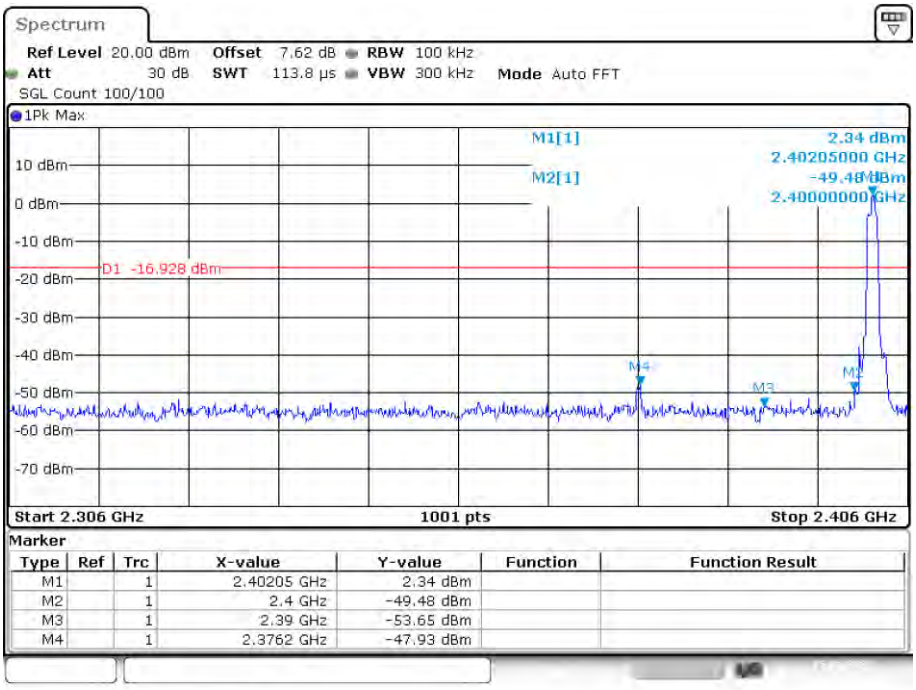
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



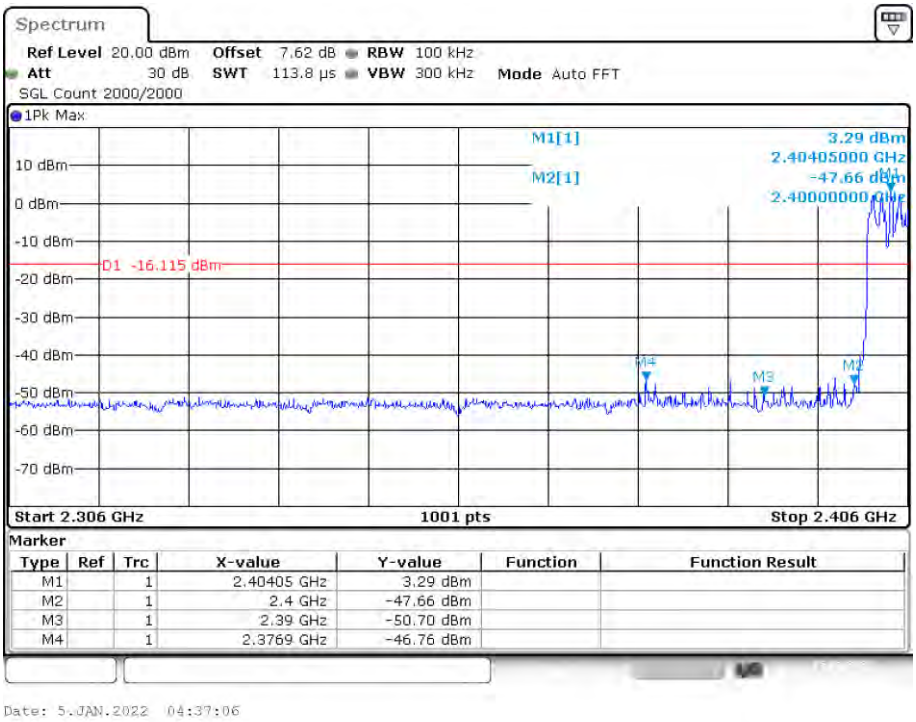
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



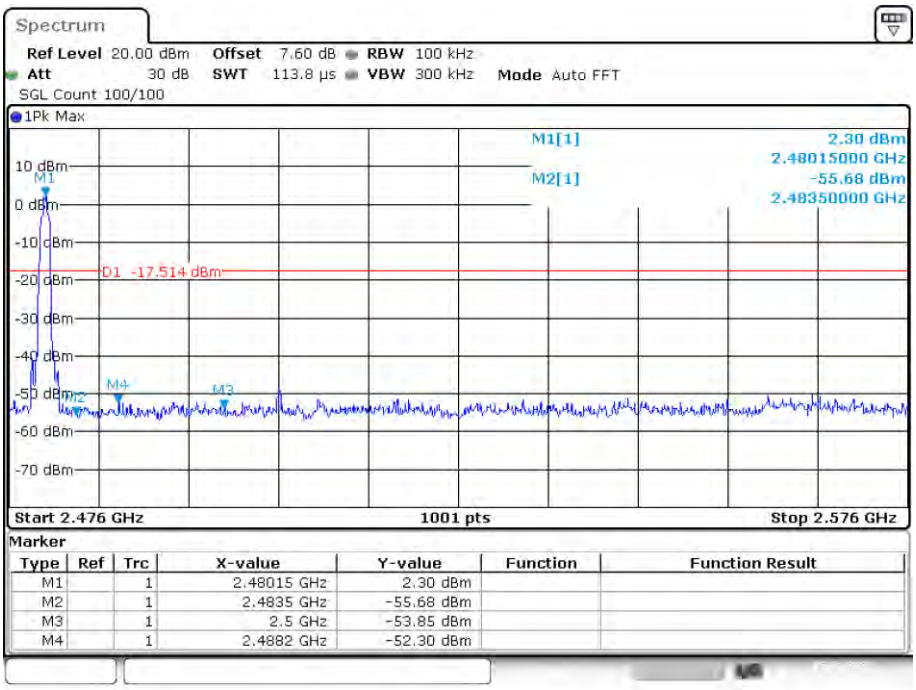
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission

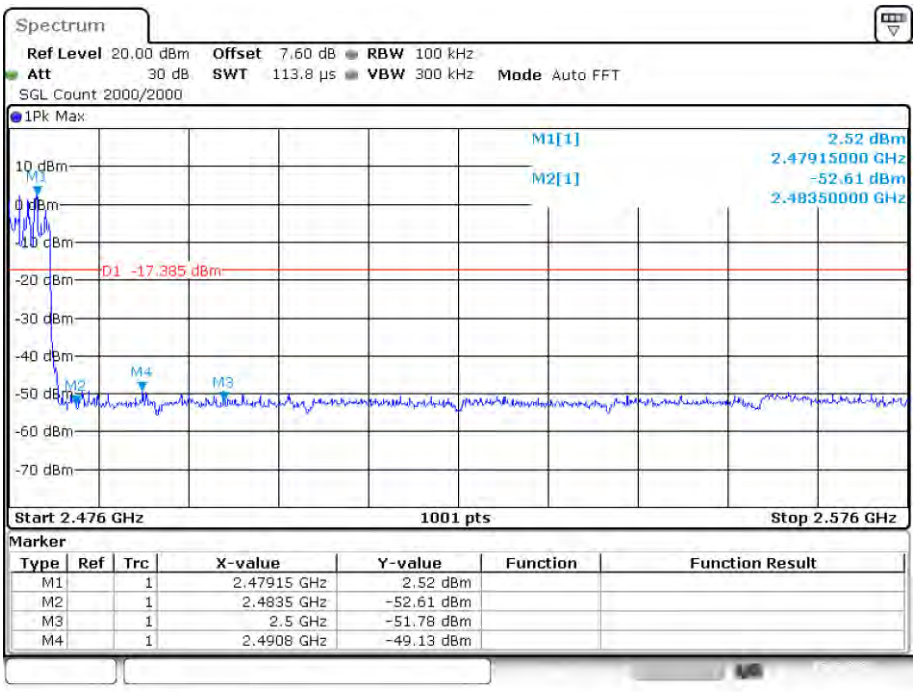


Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



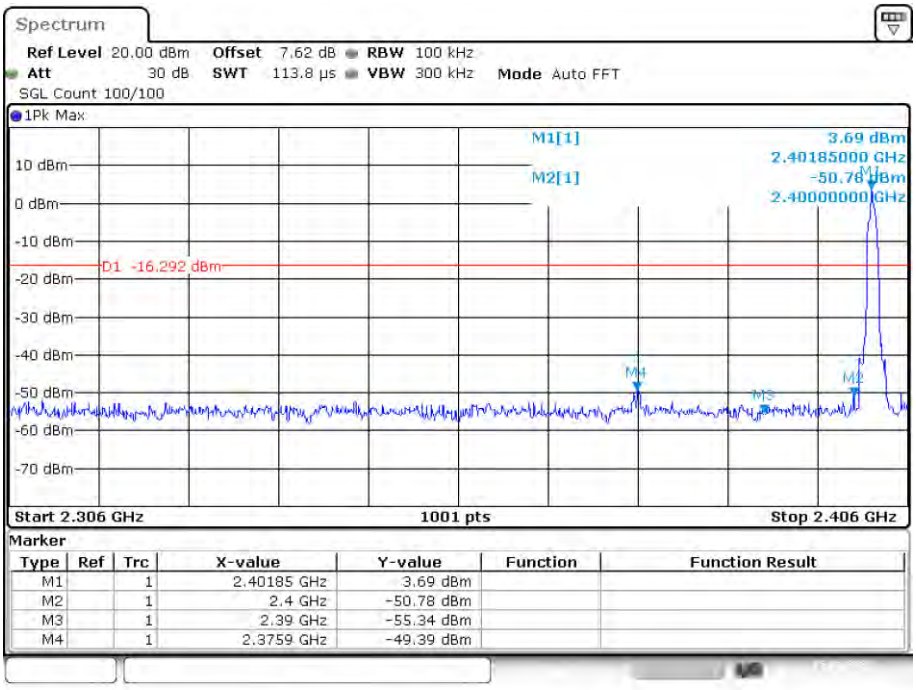
Date: 5.JAN.2022 05:45:17

Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission

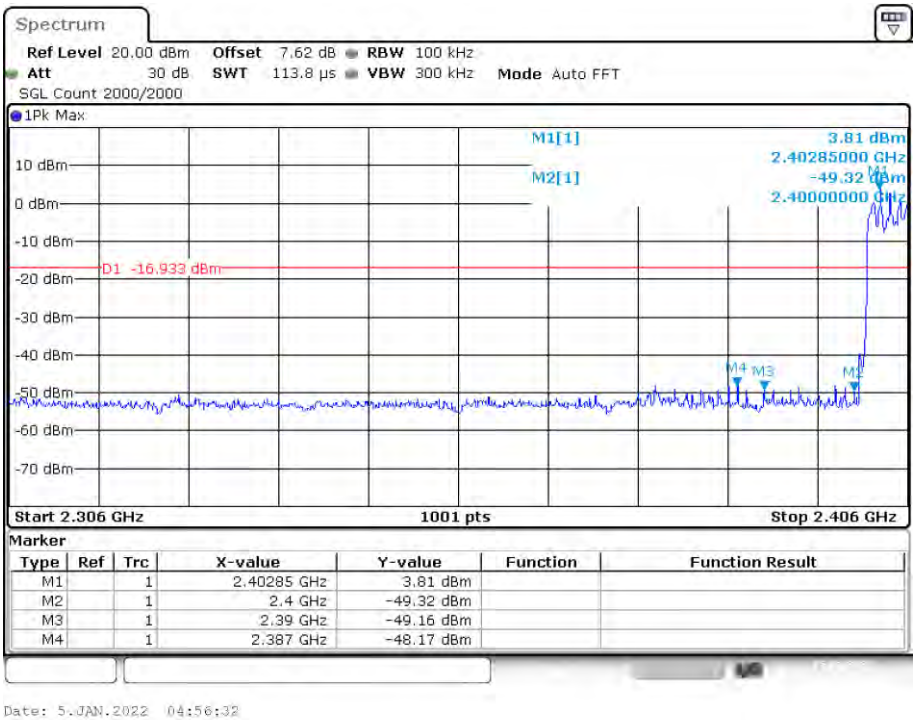


Date: 5.JAN.2022 04:47:02

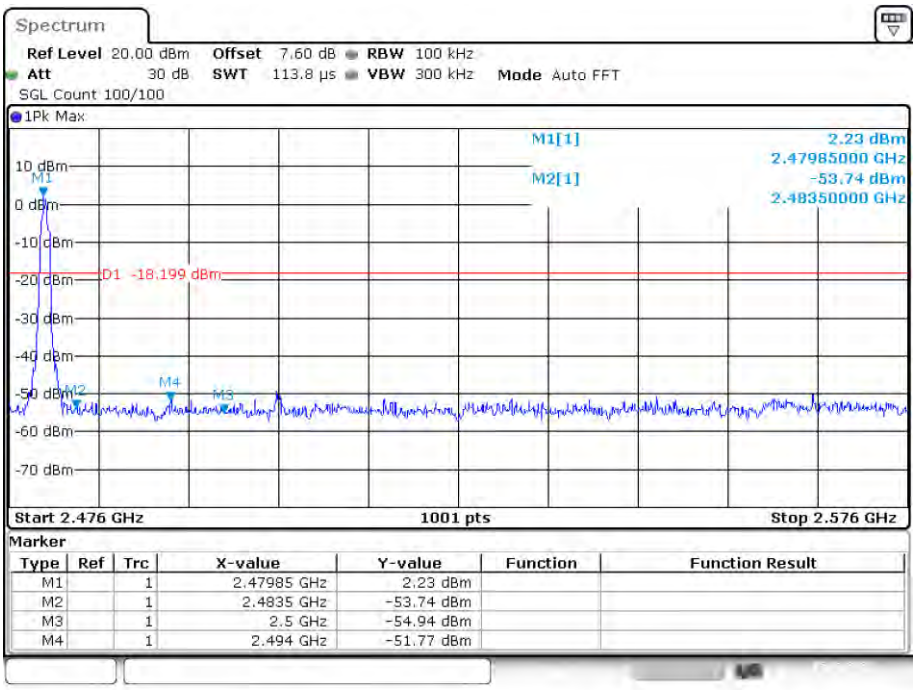
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission



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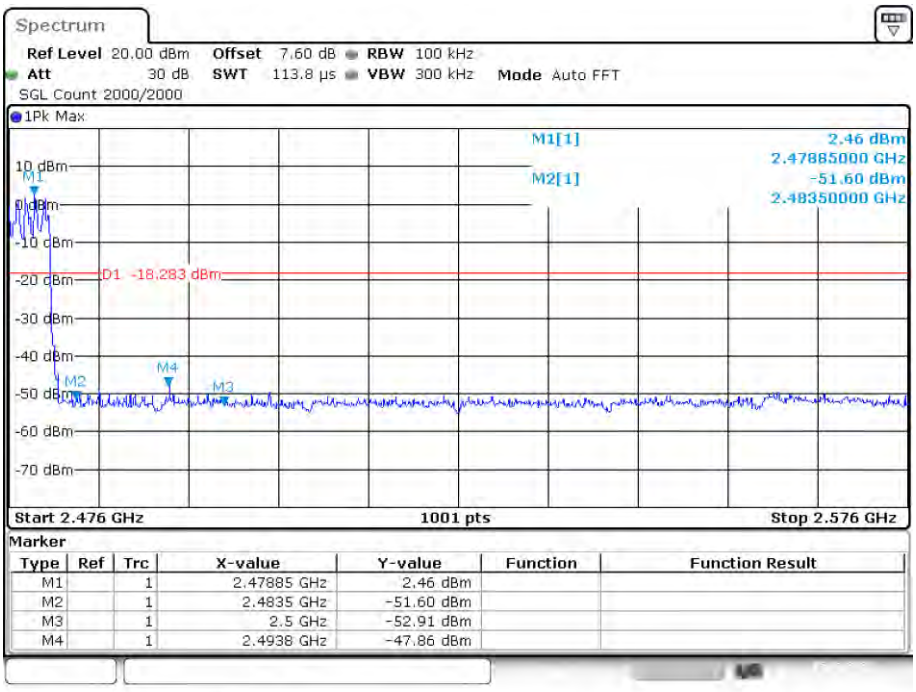
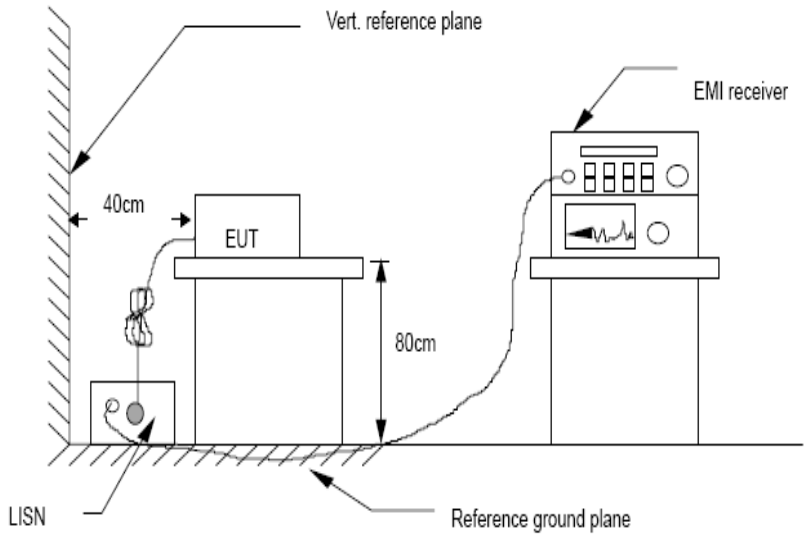
Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission



Date: 5.JAN.2022 05:08:45

10. Power Line Conducted Emissions

10.1. Block Diagram of Test Setup



10.2. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

10.3. Test Procedure

(1) The EUT was placed on a non-metallic table, 80cm above the ground plane.
(2) Setup the EUT and simulator as shown in 10.1
(3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N2), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10:2013on conducted Emission test.
(4) The bandwidth of test receiver is set at 10KHz.

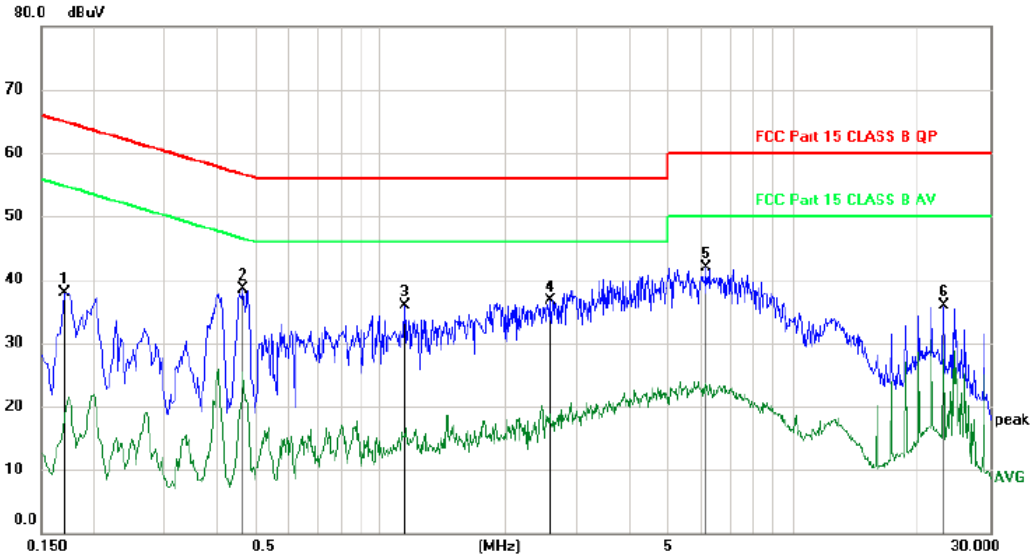
(5) The frequency range from 150 KHz to 30MHz is checked.

10.4.Test Result

PASS. (See below detailed test data)

Note: If peak Result comply with AV limit, QP and AV Result is deemed to comply with AV limit

Line:

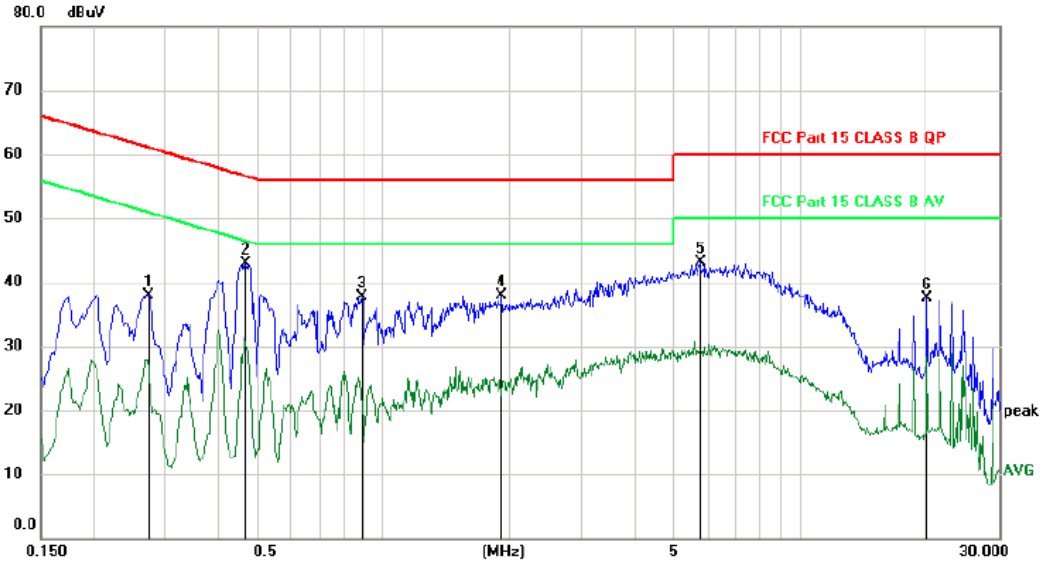


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1710	28.05	9.93	37.98	64.91	-26.93	peak	
2		0.4620	28.57	9.95	38.52	56.66	-18.14	peak	
3		1.1429	26.05	9.90	35.95	56.00	-20.05	peak	
4		2.5769	26.82	9.91	36.73	56.00	-19.27	peak	
5	*	6.1318	31.90	10.09	41.99	60.00	-18.01	peak	
6		23.1448	25.37	10.45	35.82	60.00	-24.18	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Neutral:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2730	28.05	9.95	38.00	61.03	-23.03	peak	
2	*	0.4680	32.95	9.95	42.90	56.55	-13.65	peak	
3		0.8850	27.72	9.97	37.69	56.00	-18.31	peak	
4		1.9229	28.03	9.89	37.92	56.00	-18.08	peak	
5		5.7510	33.13	10.07	43.20	60.00	-16.80	peak	
6		20.2500	26.98	10.46	37.44	60.00	-22.56	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Remark: All modes have been tested, and only worst data of 8-DPSK mode, Channel 2480MHz (AC 120V/ 60Hz) was listed in this report.

11. Antenna Requirements

11.1. Limit

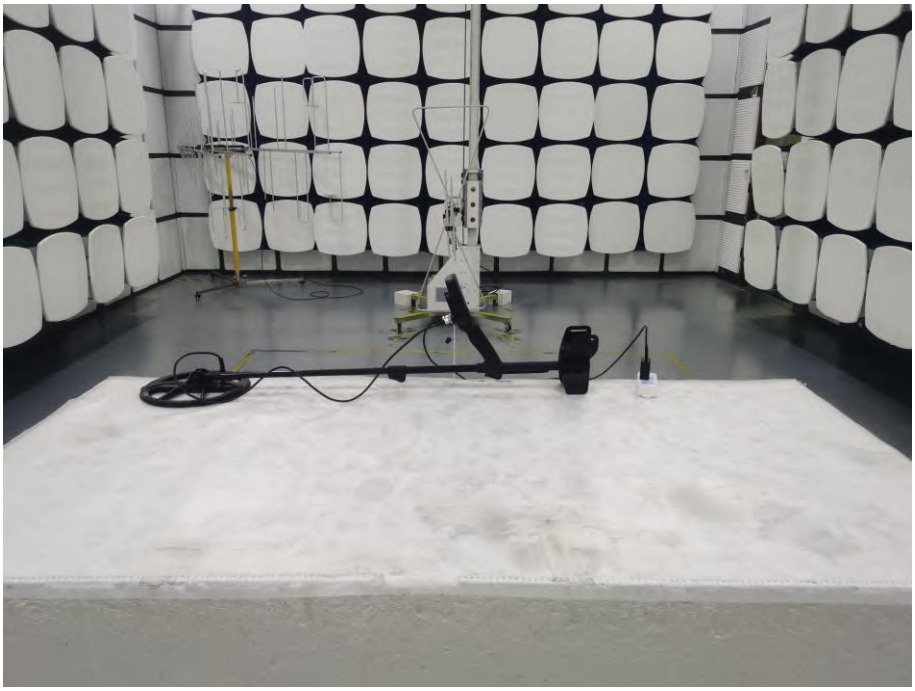
For intentional device, according to FCC 47 CFR Section 15.203 and RSS-GEN, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2. Result

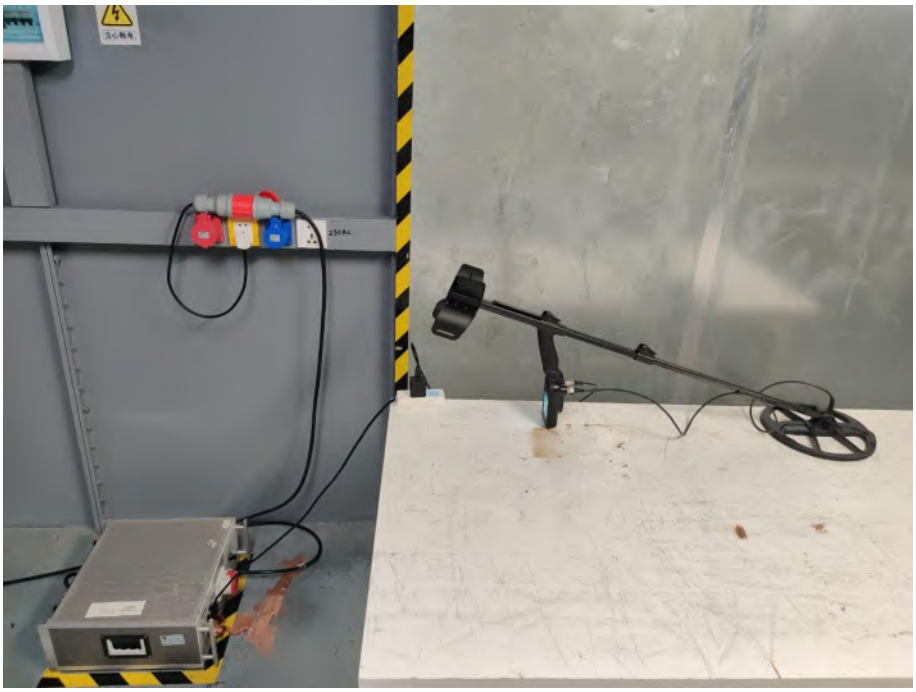
The EUT antenna is internal antenna. It complies with the standard requirement.

12. Photos of test setup

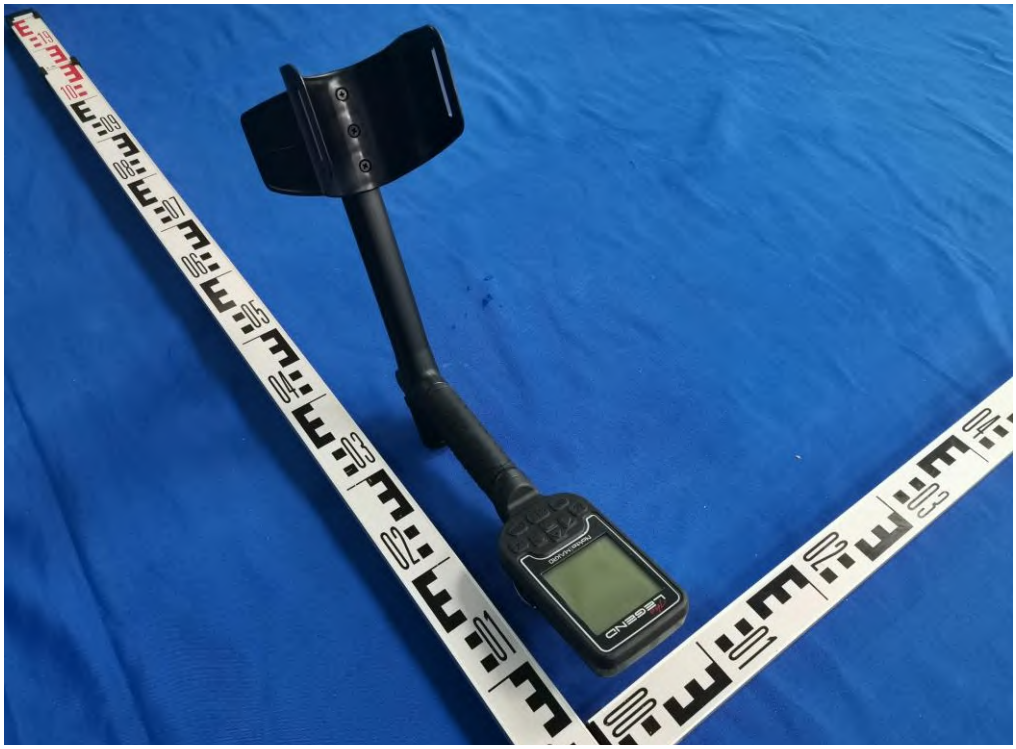
12.1. Photos of Radiated emission



12.2.Photos of Power Line Conducted Emission Test



13. Photos of EUT

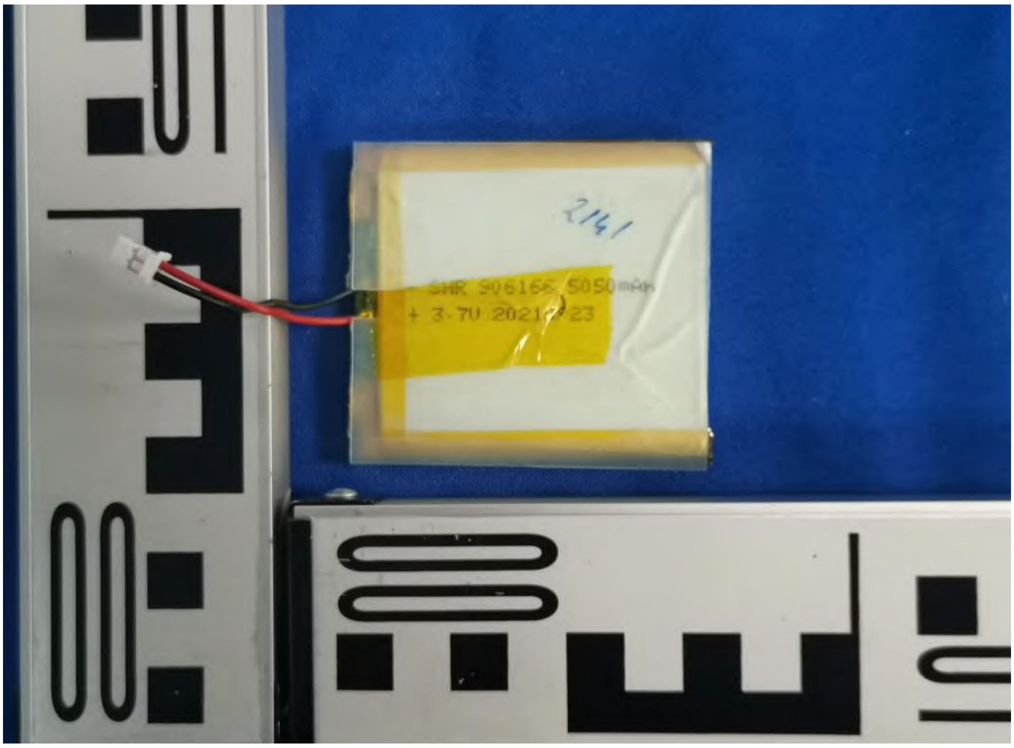


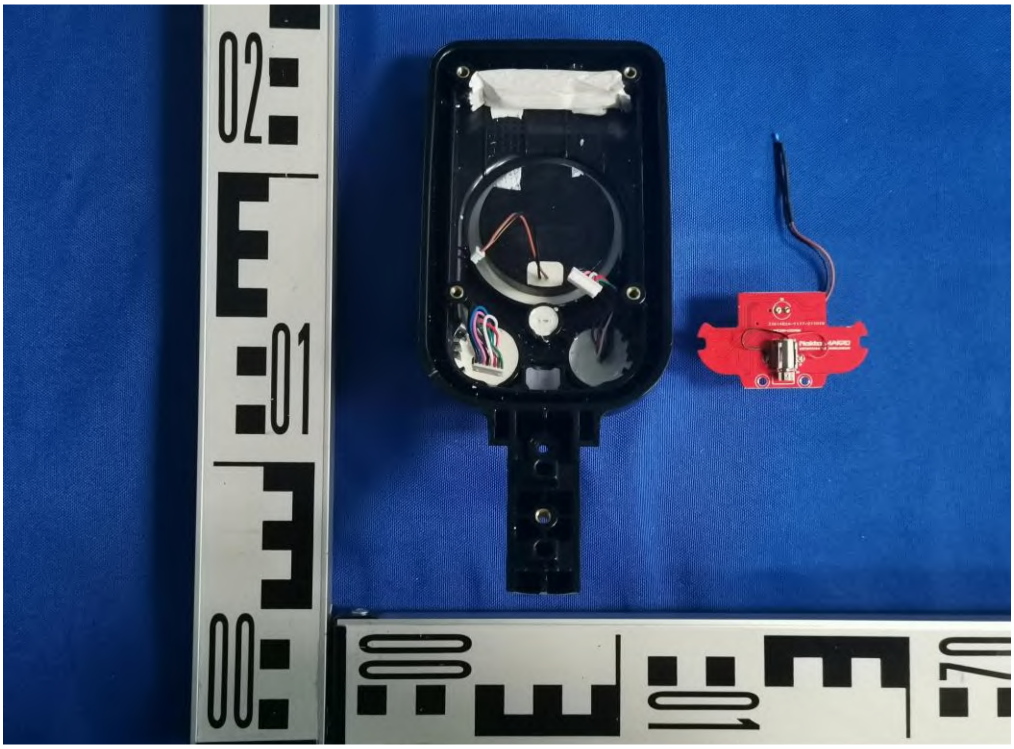

LEGEND

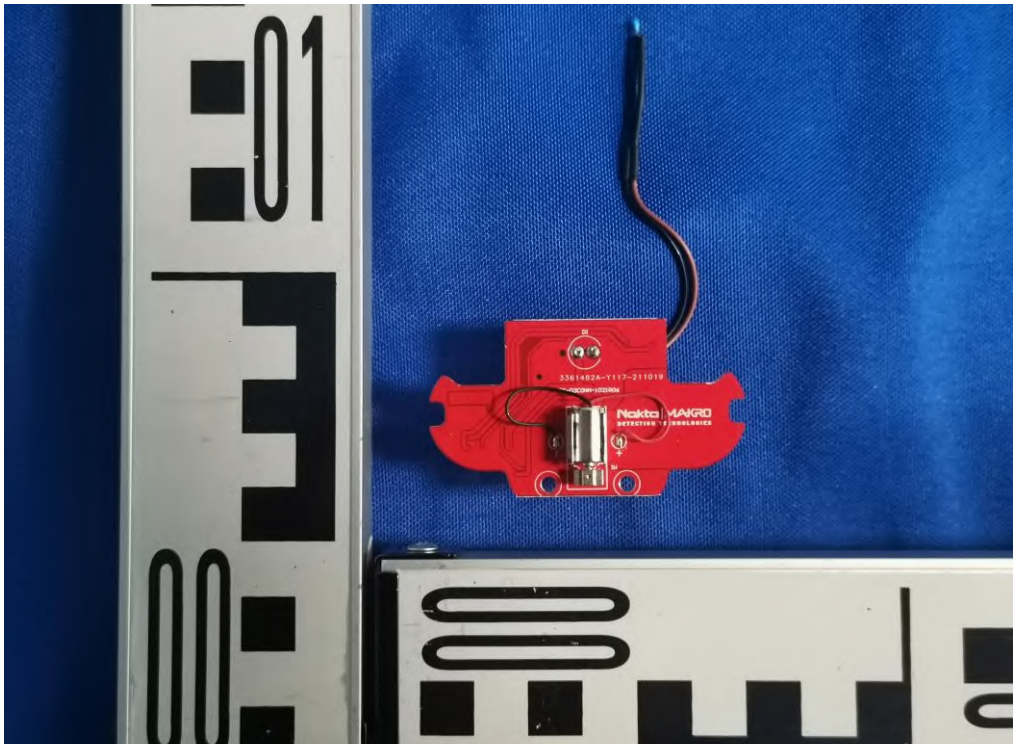

LEGEND
Nokta|MAKRO

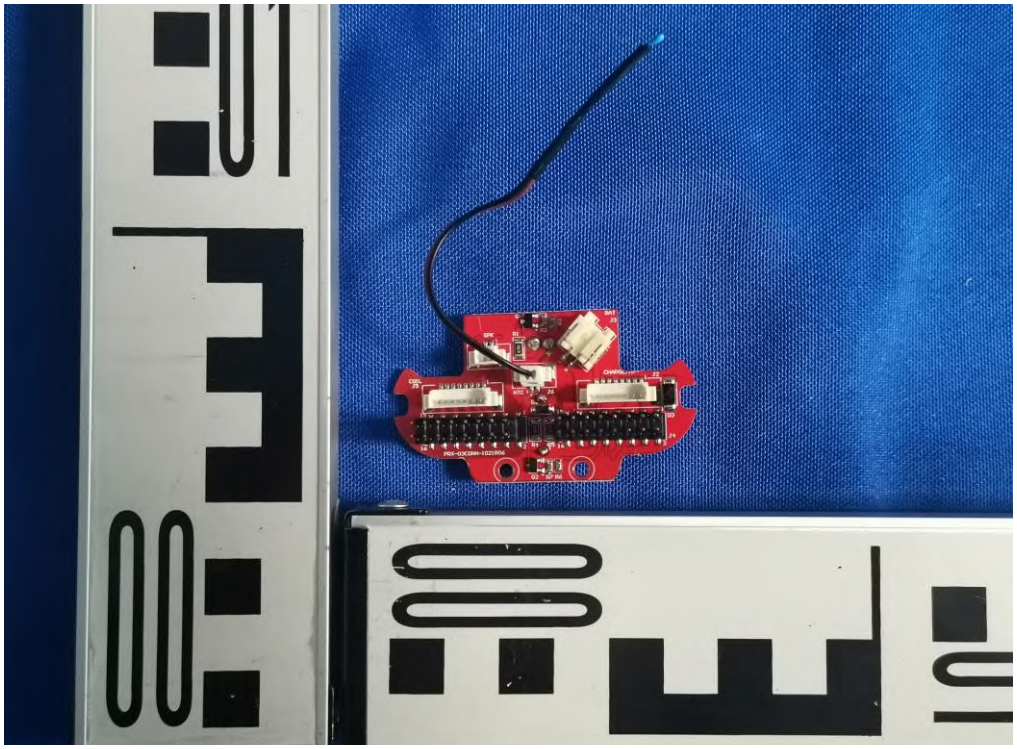

LEGEND
Nokta|MAKRO

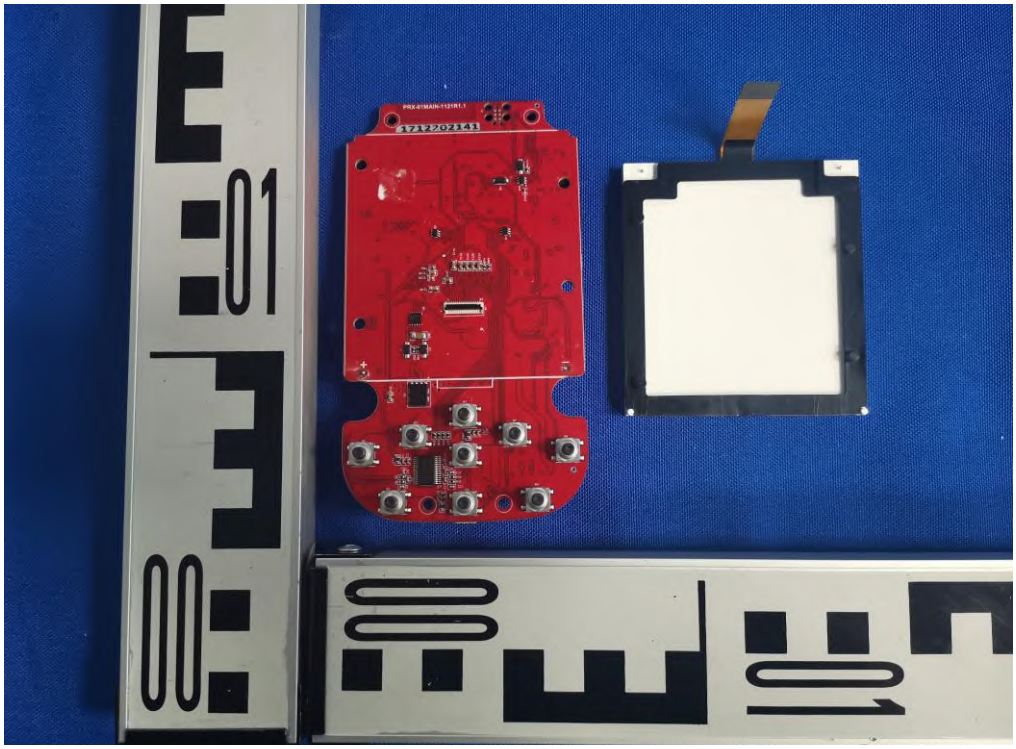

SAMPLE 21

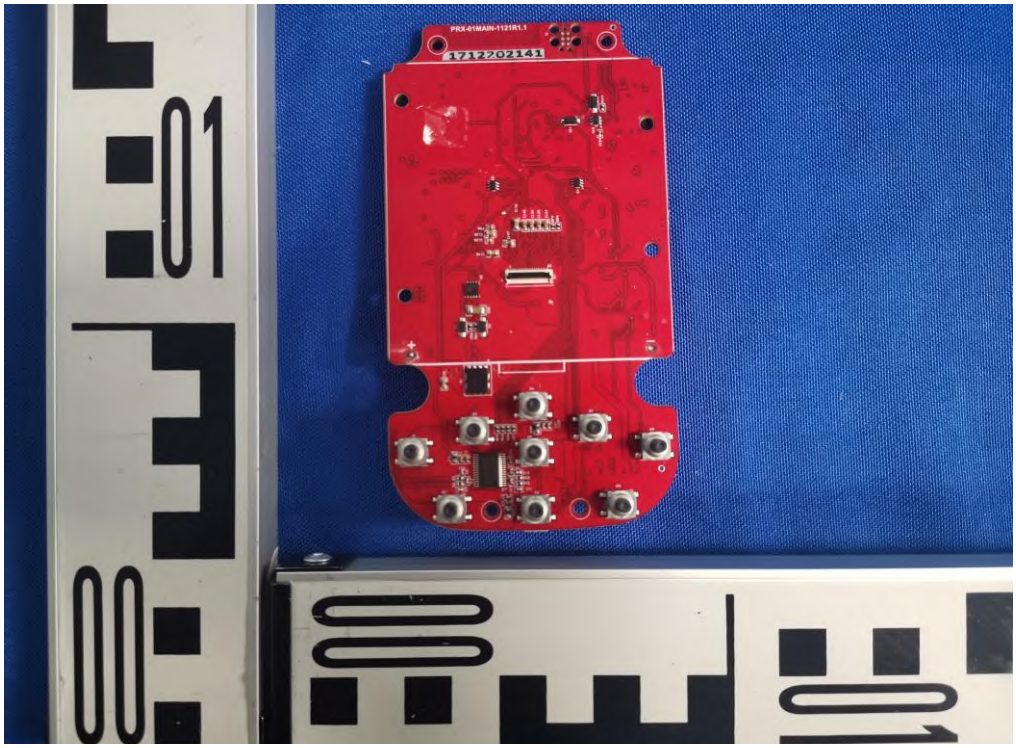

SHR 906166 5050mAh




Nokta MAKRO



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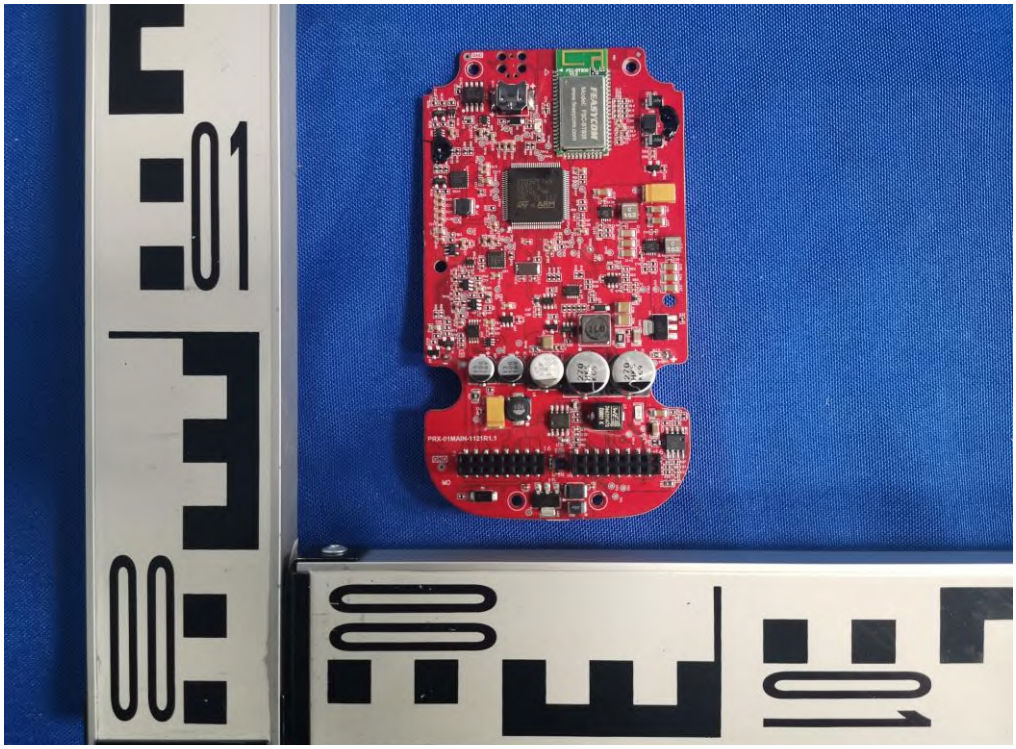
1712202141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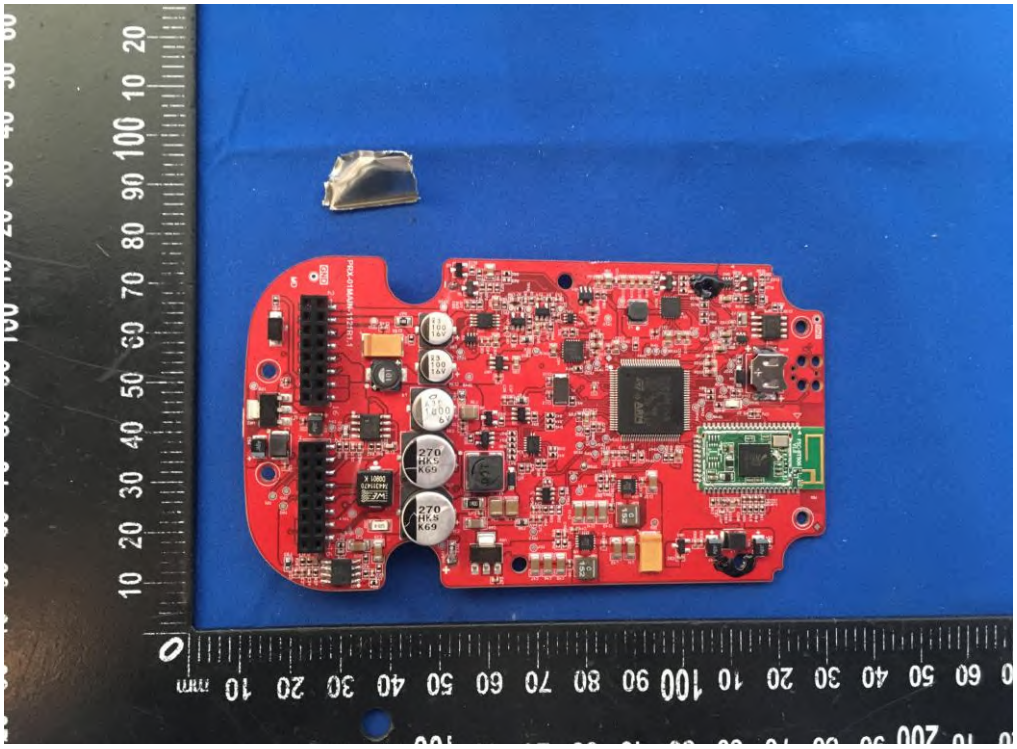

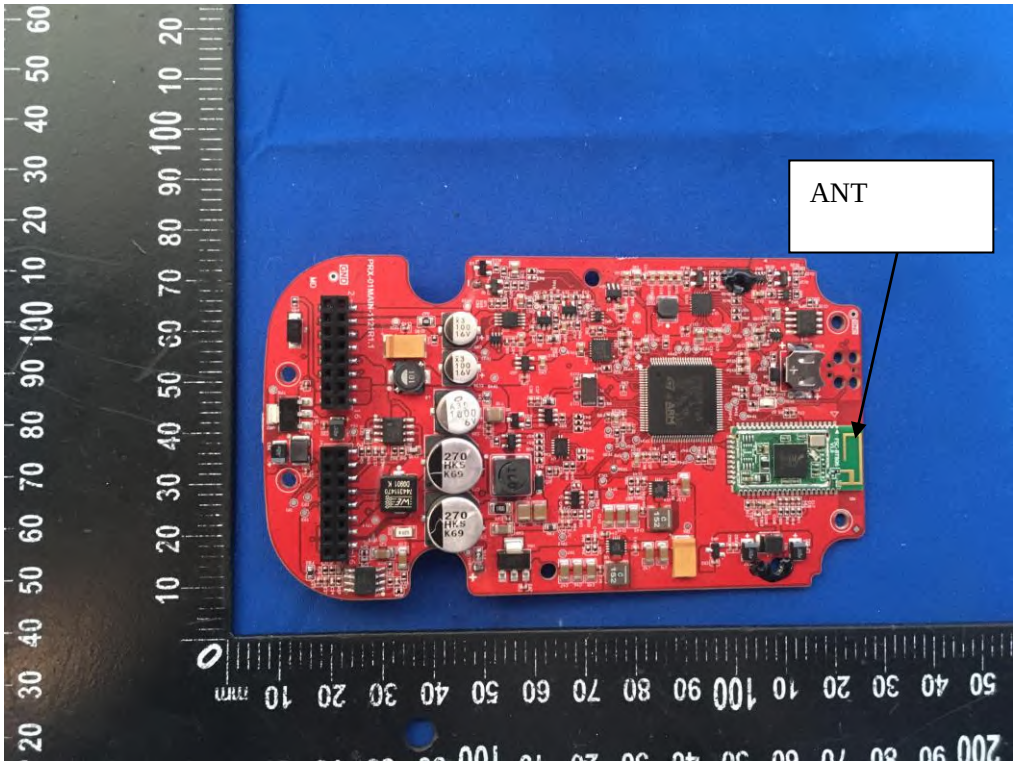
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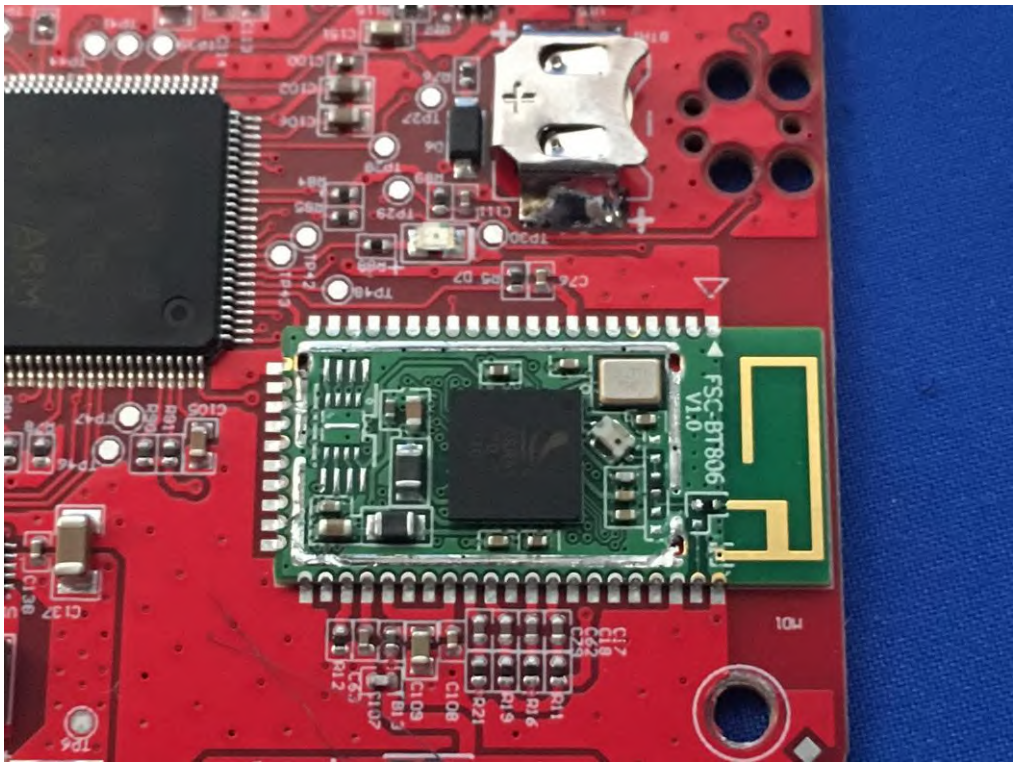

------END OF REPORT-------