



# FCC TEST REPORT

FCC ID: 2AZFE-AAOFTO

On Behalf of

Shenzhen Shadow Crown Technology Co., Ltd.

Projector

Model No.: YG431, YG221, YG231, YG251, YG261, YG271,  
YG331, YG351, YG361, YG381, YG461, YG471, YG521,  
YG620, YG651, YG661, YG671, YG681

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Shenzhen, Guangdong, China

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### TEST REPORT DECLARATION

Applicant : Shenzhen Shadow Crown Technology Co., Ltd.  
 Address : A9 East 5th Floor, Industrial Building, Longwang Miao, Fuyong District , Shenzhen, Guangdong, China.  
 Manufacturer : Shenzhen Shadow Crown Technology Co., Ltd.  
 Address : A9 East 5th Floor, Industrial Building, Longwang Miao, Fuyong District , Shenzhen, Guangdong, China.  
 EUT Description : Projector  
 (A) Model No. : YG431, YG221, YG231, YG251, YG261, YG271, YG331, YG351, YG361, YG381, YG461, YG471, YG521, YG620, YG651, YG661, YG671, YG681  
 (B) Trademark : N/A

Measurement Standard Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247**  
**ANSI C63.10:2013**

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. 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).....: Lucas Pang  
Project Engineer



Approved by (name + signature).....: Simple Guan  
Project Manager



Date of issue..... : April 19, 2021

**Revision History**

Revision	Issue Date	Revisions	Revised By
V0	April 19, 2021	Initial released Issue	Lucas Pang

## 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) ANSI C63.10 :2013	P
Bandwidth	FCC Part 15: 15.215 ANSI C63.10 :2013	P
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) ANSI C63.10 :2013	P
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2013	P
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2013	P
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10 :2013	P
Band Edge Compliance	FCC Part 15: 15.247(d) ANSI C63.10 :2013	P
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10 :2013	P
Antenna requirement	FCC Part 15: 15.203	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	: Projector
Trademark	: N/A
Model Number	: YG431, YG221, YG231, YG251, YG261, YG271, YG331, YG351, YG361, YG381, YG461, YG471, YG521, YG620, YG651, YG661, YG671, YG681
DIFF.	: The difference between the models is that the board and key components of each product are the same. Only the named will be a little different, so test model is: YG431.
Test Voltage	: AC 120V/60Hz
Radio Technology	: Bluetooth (EDR)
Operation frequency	: 2402-2480MHz
Channel No.	: 79 Channels
Modulation type	: GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type	: Internal antenna, Maximum Gain is -0.68dBi(This value is supplied by applicant).
Software version	: V1.0
Hardware version	: YT-23-MB-V2.3
Connector cable loss	: 0.5dB (This value is supplied by applicant).

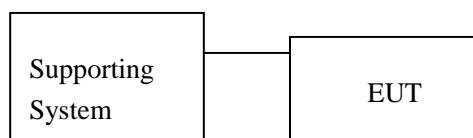
## 2.2. Accessories of Device (EUT)

Accessories1 : /  
 Manufacturer : /  
 Model : /  
 Ratings : /

## 2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1.	Notebook	N/A	N/A	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
$\pi$ /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°C	24°C
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

July 15, 2019 Certificated by IC  
 Registration Number: CN0085

## 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)	4.13dB(Polarize: H)
	4.16dB(Polarize: V)
Uncertainty for radio frequency	$5.4 \times 10^{-8}$
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2°C
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	1Year
Spectrum analyzer	ROHDE&SCHWARZ	FSU	1166.1660.26	2020.09.02	1Year
Spectrum analyzer	Agilent	N9020A	MY499100060	2020.09.02	1Year
Receiver	ROHDE&SCHWARZ	ESR	1316.3003K03-10208 2-Wa	2020.09.02	1Year
Receiver	R&S	ESCI	101165	2020.09.02	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2019.09.07	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2Year
Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2019.09.07	2Year
Cable	Resenberger	N/A	No.1	2020.09.02	1Year
Cable	SCHWARZBECK	N/A	No.2	2020.09.02	1Year
Cable	SCHWARZBECK	N/A	No.3	2020.09.02	1Year
Pre-amplifier	HP	HP8347A	2834A00455	2020.09.02	1Year
Pre-amplifier	Agilent	8449B	3008A02664	2020.09.02	1Year
Temperature controller	Terchy	MHQ	120	2020.09.02	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126-466	2020.09.02	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2020.09.02	1 Year
20db Attenuator	ICPROBING	IATS1	82347	2020.09.02	1 Year
Power meter	Agilent	E4419B	GB40202122	2020.09.02	1 Year

Software Information			
Test Item	Software Name	Manufacturer	Version
RE	EZ-EMC	EZ	Alpha-3A1
CE	EZ-EMC	EZ	Alpha-3A1
RF-CE	MTS 8310	MW	V2.0.0.0

### 3. Maximum Peak Output Power

#### 3.1.Limit

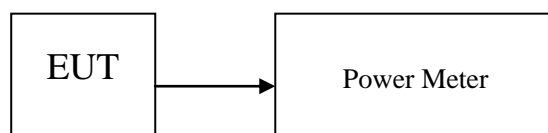
Please refer section 15.247.

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 RF Power Meter is set to the average power detection.

#### 3.3.Test Setup



#### 3.4.Test Result

Mode	Freq (MHz)	Average Output Power (dBm)	Limit (dBm)	Result
GFSK	2402	2.017	21	Pass
	2441	2.343	21	Pass
	2480	0.619	21	Pass
$\pi/4$ DQPSK	2402	0.827	21	Pass
	2441	1.487	21	Pass
	2480	-0.172	21	Pass
8- DPSK	2402	0.911	21	Pass
	2441	1.525	21	Pass
	2480	-0.258	21	Pass

Conclusion: PASS

## 4. Bandwidth

### 4.1.Limit

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.

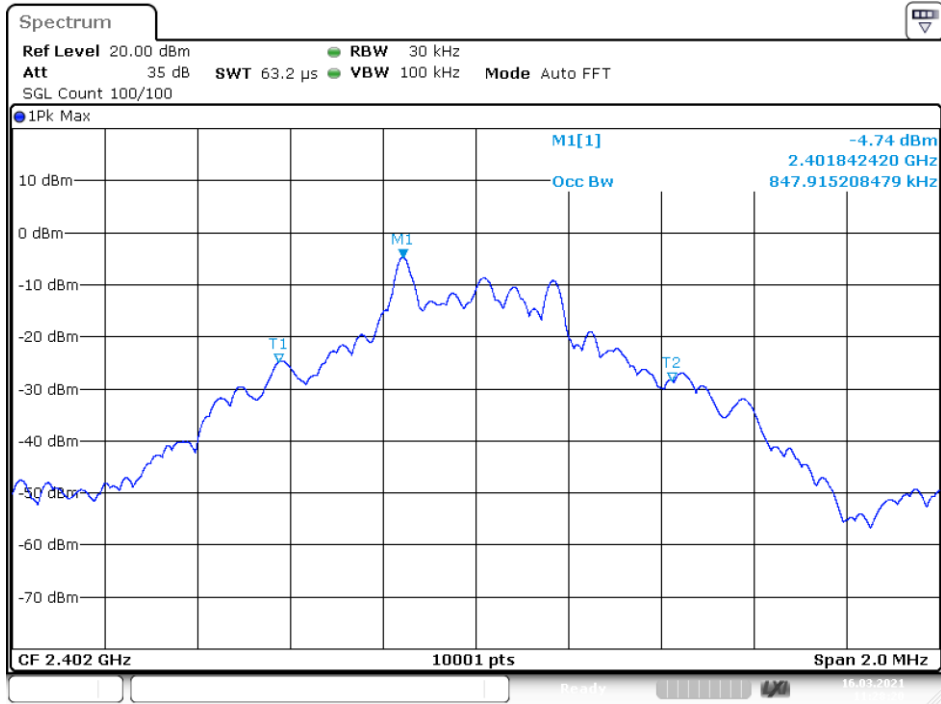
### 4.2.Test Procedure

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.

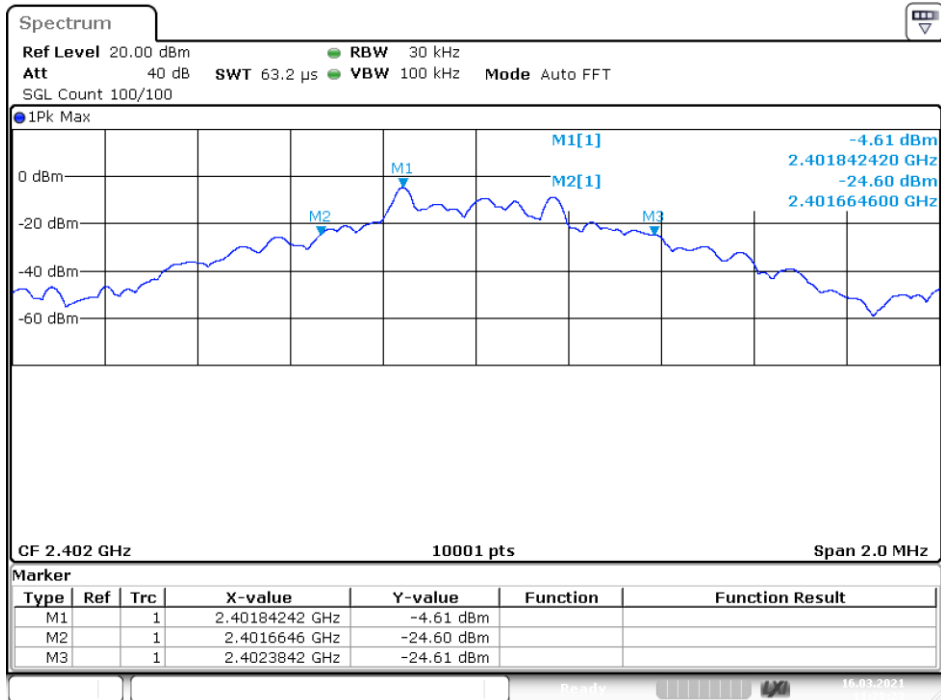
### 4.3.Test Result

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant 1	0.8479	0.7196	N/A	Pass
NVNT	1-DH1	2441	Ant 1	0.8597	0.7044	N/A	Pass
NVNT	1-DH1	2480	Ant 1	0.8165	0.771	N/A	Pass
NVNT	2-DH1	2402	Ant 1	1.0699	1.1006	N/A	Pass
NVNT	2-DH1	2441	Ant 1	1.0149	1.1074	N/A	Pass
NVNT	2-DH1	2480	Ant 1	1.0563	1.1056	N/A	Pass
NVNT	3-DH1	2402	Ant 1	1.1043	1.025	N/A	Pass
NVNT	3-DH1	2441	Ant 1	1.1045	1.154	N/A	Pass
NVNT	3-DH1	2480	Ant 1	1.0961	1.1552	N/A	Pass

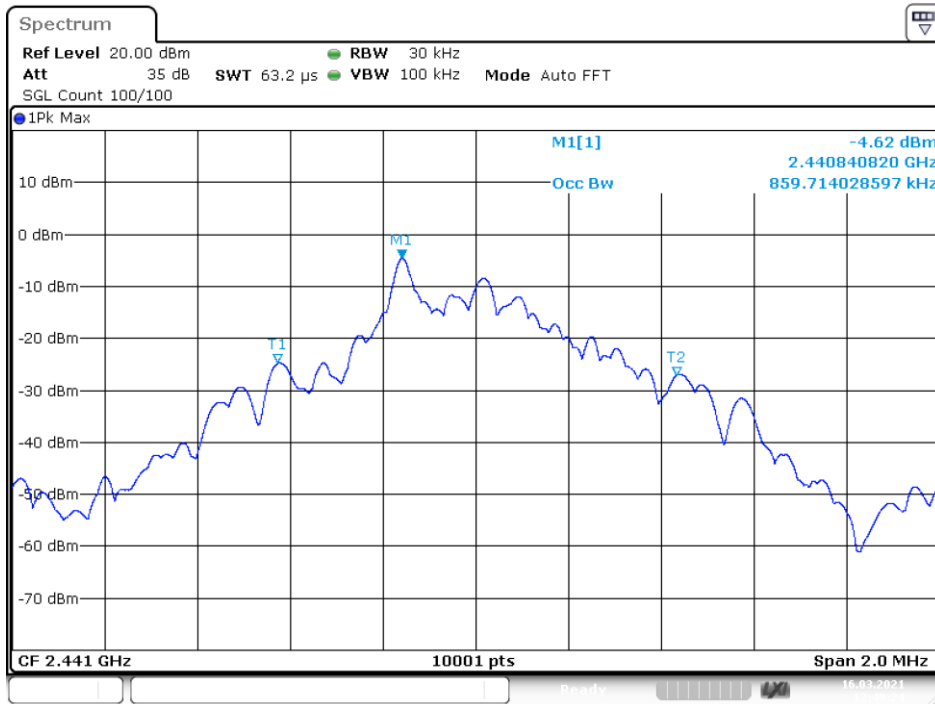
OBW NVNT 1-DH1 2402MHz Ant1



-20 dB BW NVNT 1-DH1 2402MHz Ant1

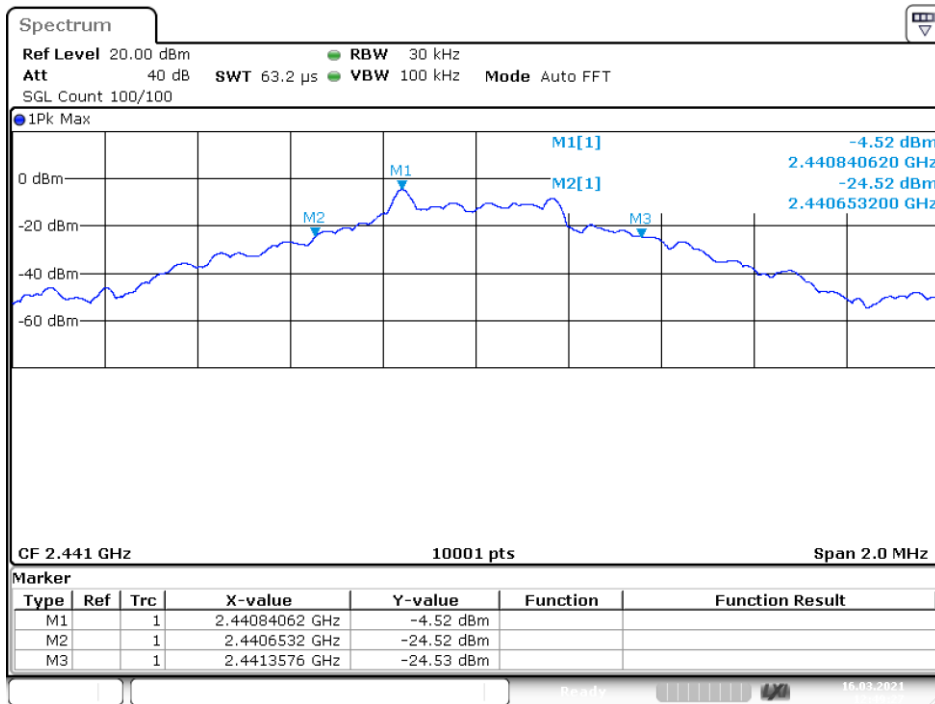


OBW NVNT 1-DH1 2441MHz Ant1



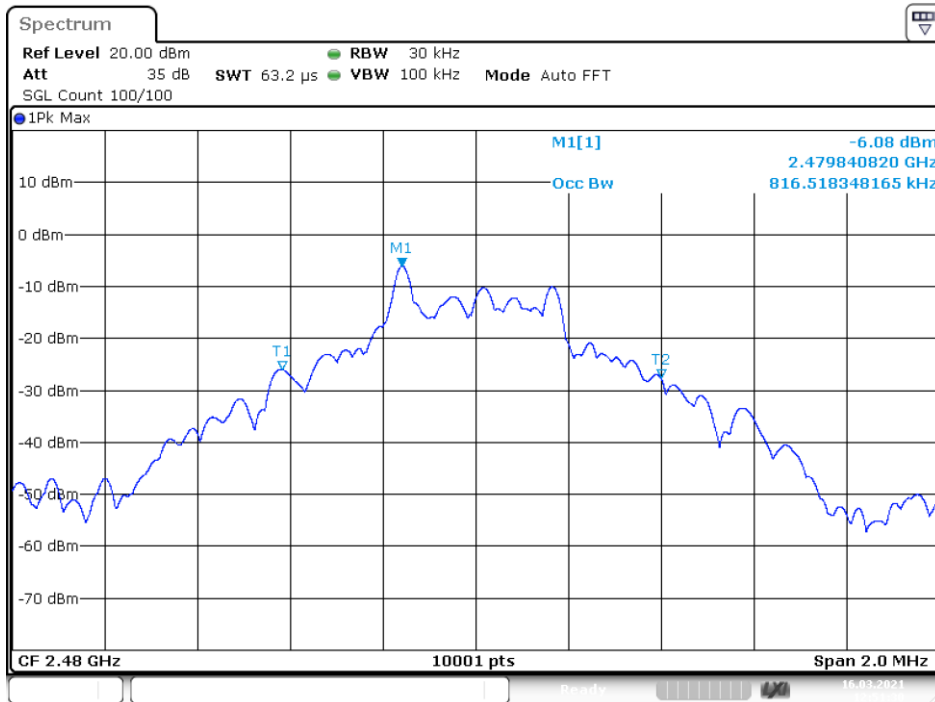
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-20 dB BW NVNT 1-DH1 2441MHz Ant1



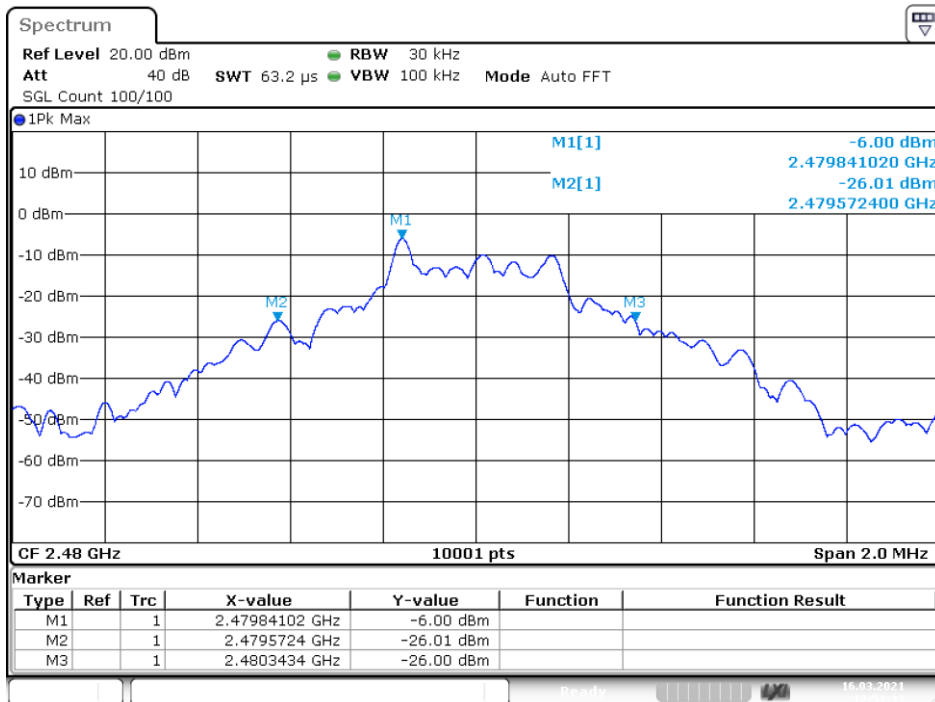
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OBW NVNT 1-DH1 2480MHz Ant1



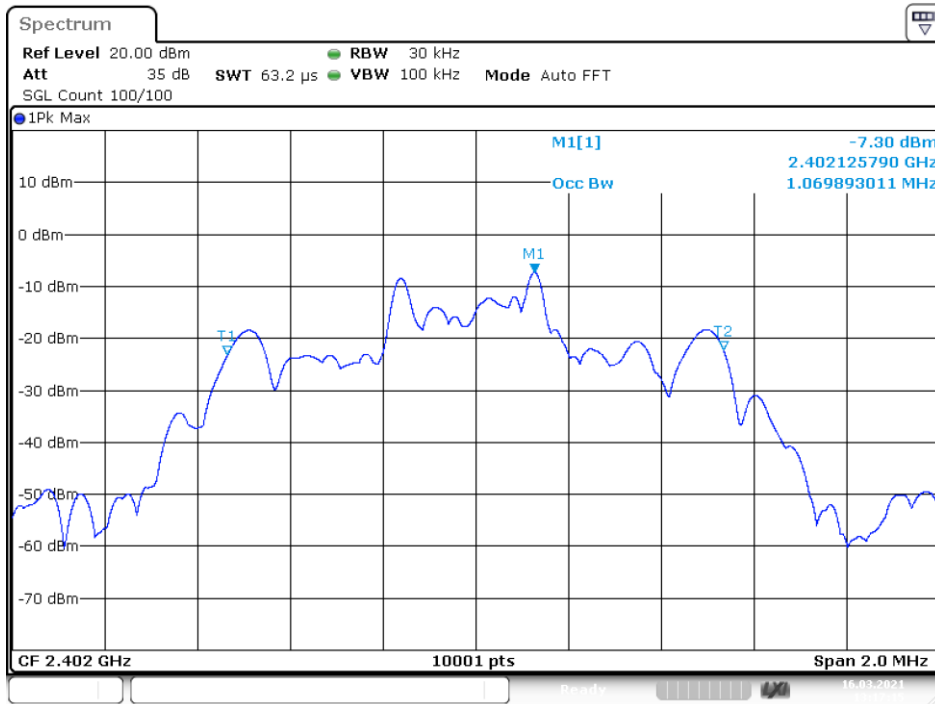
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-20 dB BW NVNT 1-DH1 2480MHz Ant1



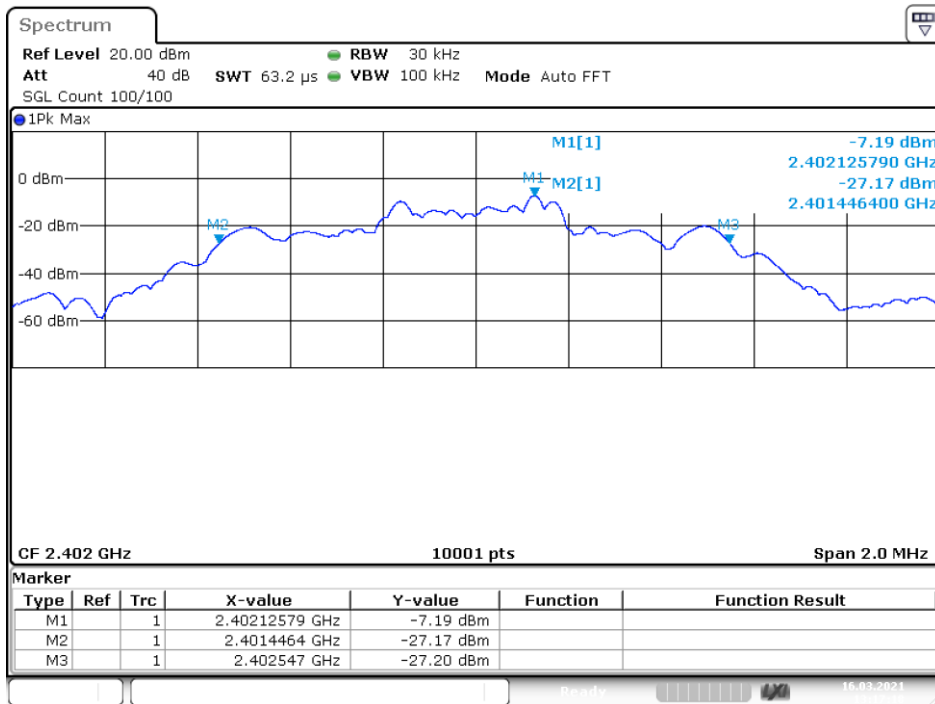
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OBW NVNT 2-DH1 2402MHz Ant1



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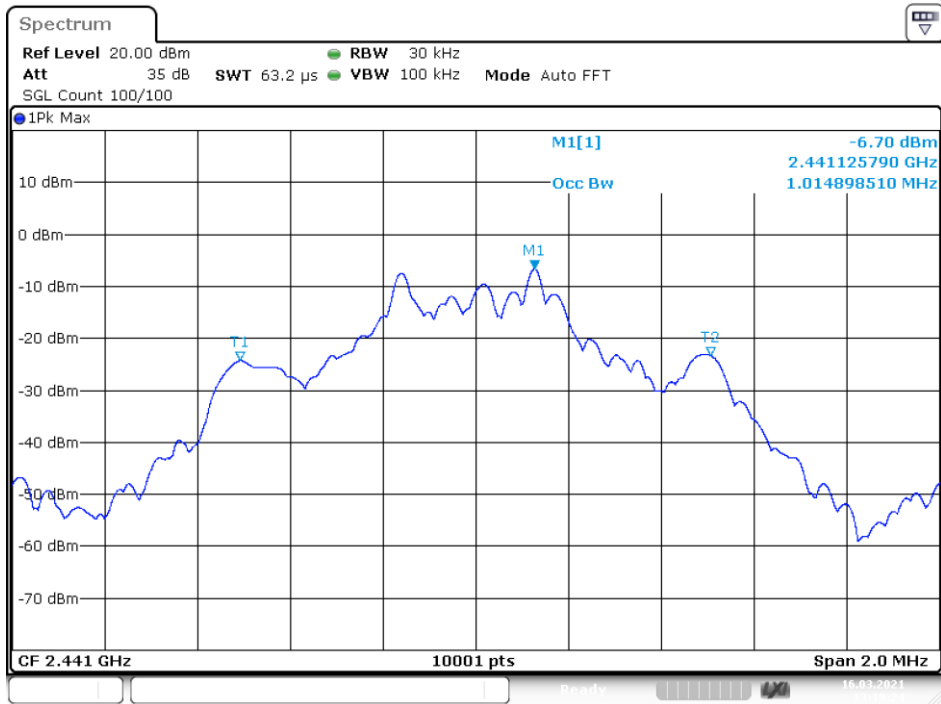
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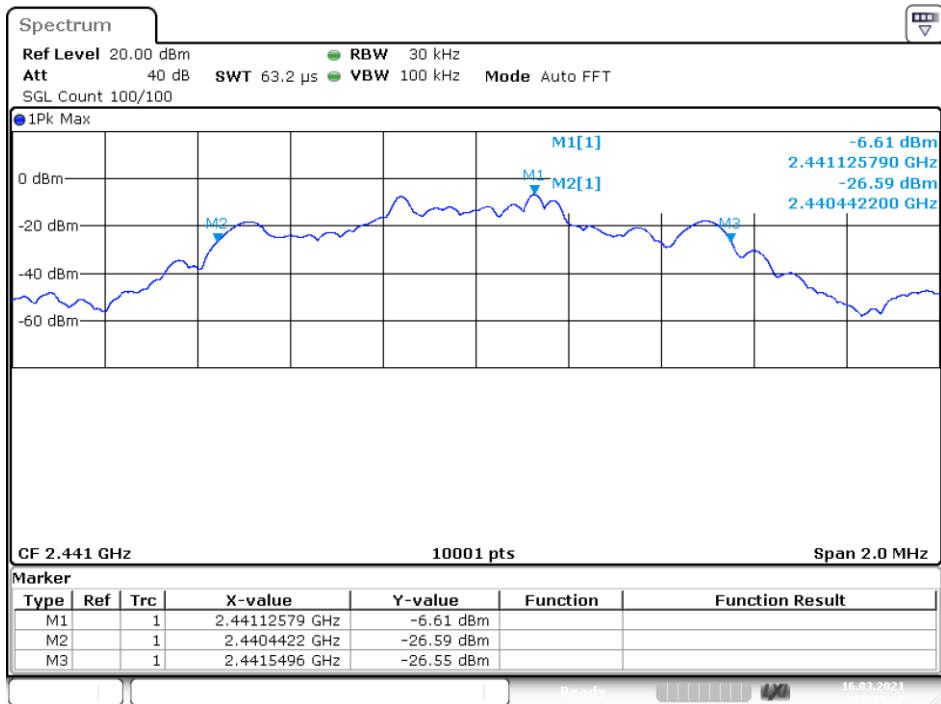


OBW NVNT 2-DH1 2441MHz Ant1



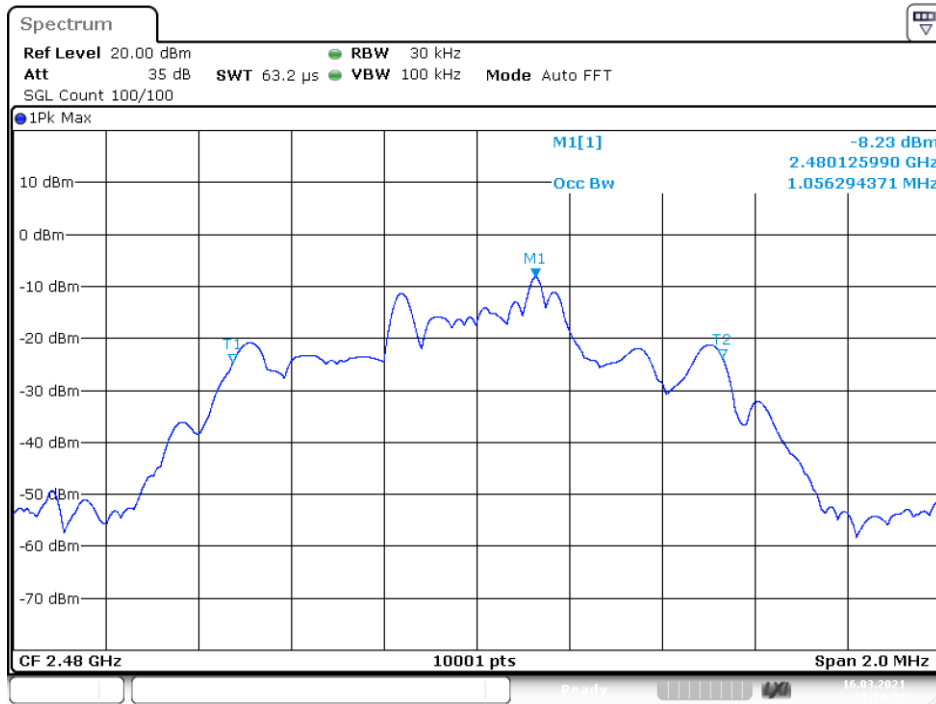
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-20 dB BW NVNT 2-DH1 2441MHz Ant1



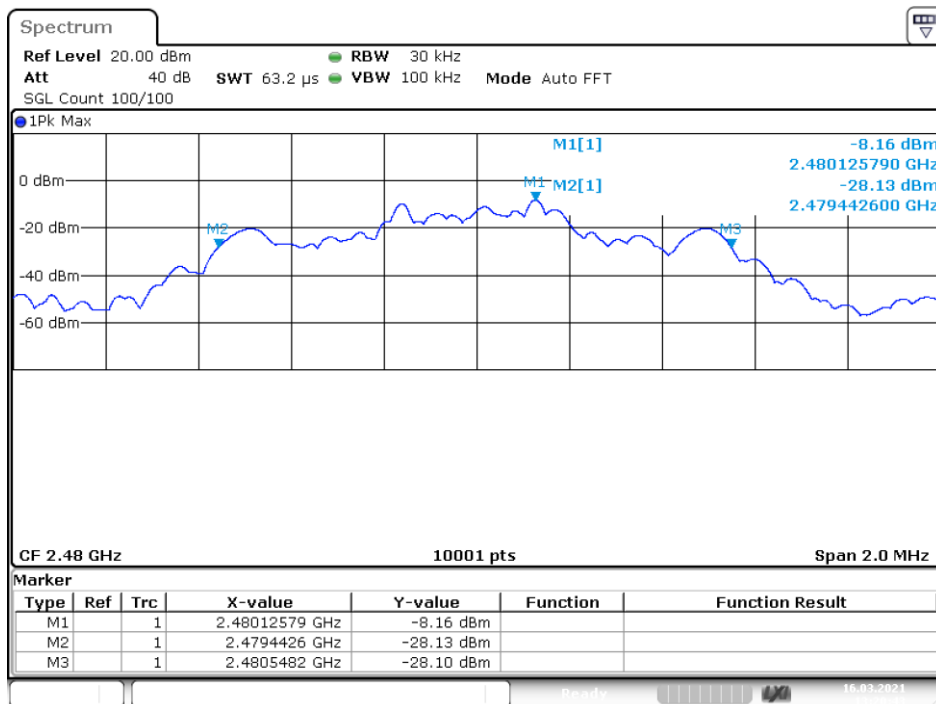
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OBW NVNT 2-DH1 2480MHz Ant1



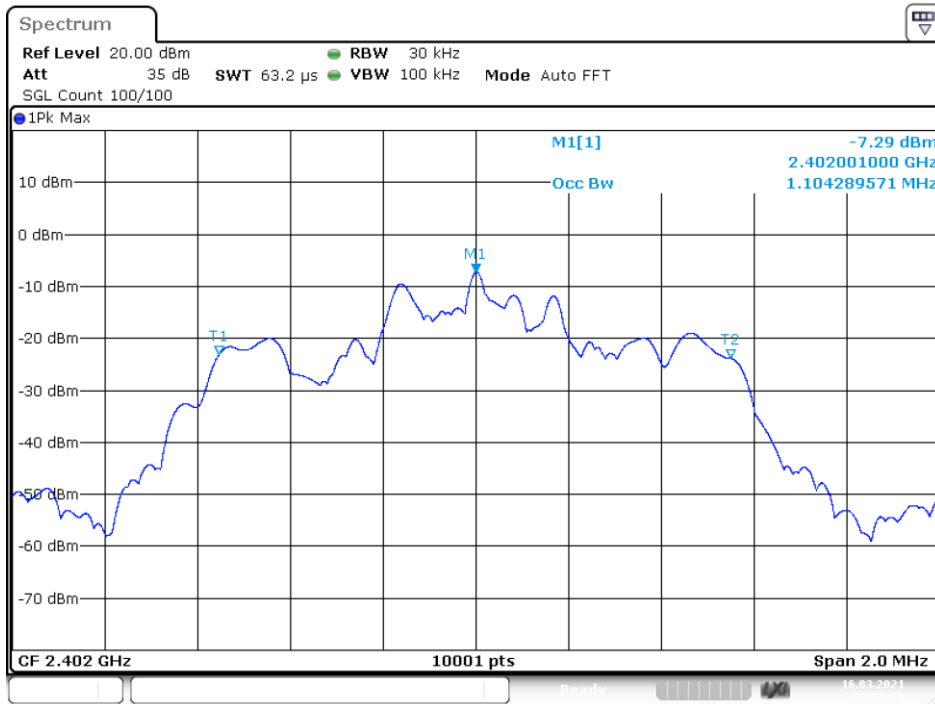
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-20 dB BW NVNT 2-DH1 2480MHz Ant1



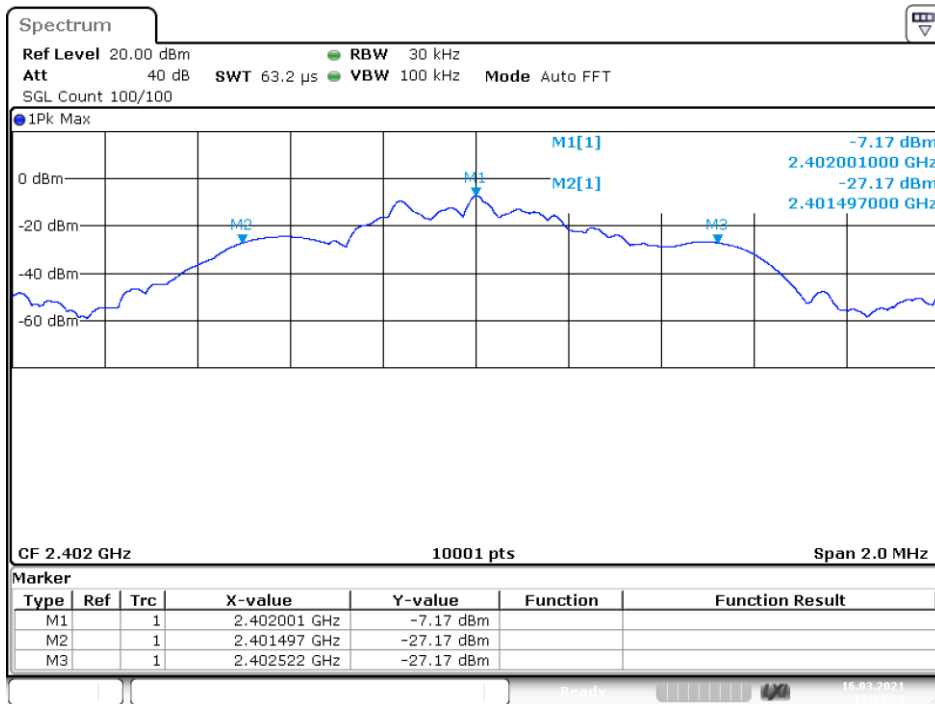
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OBW NVNT 3-DH1 2402MHz Ant1



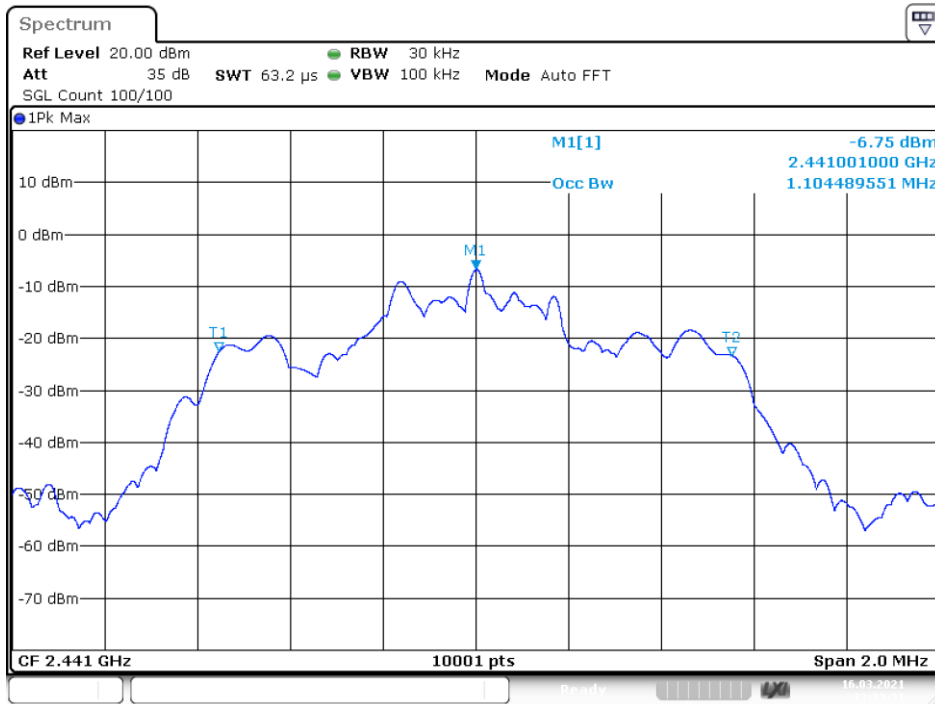
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-20 dB BW NVNT 3-DH1 2402MHz Ant1



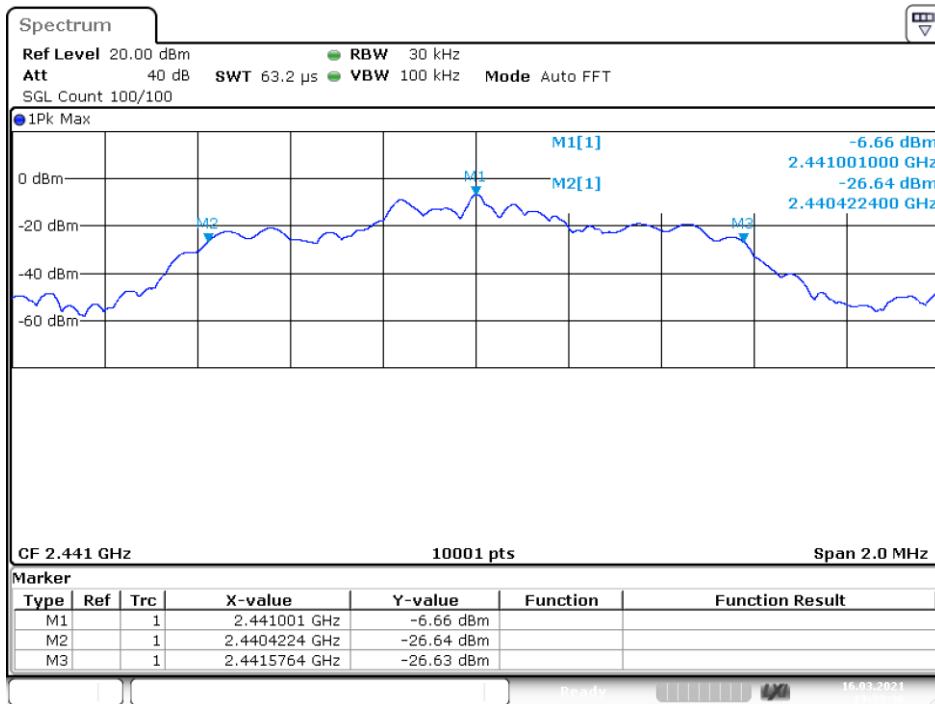
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OBW NVNT 3-DH1 2441MHz Ant1



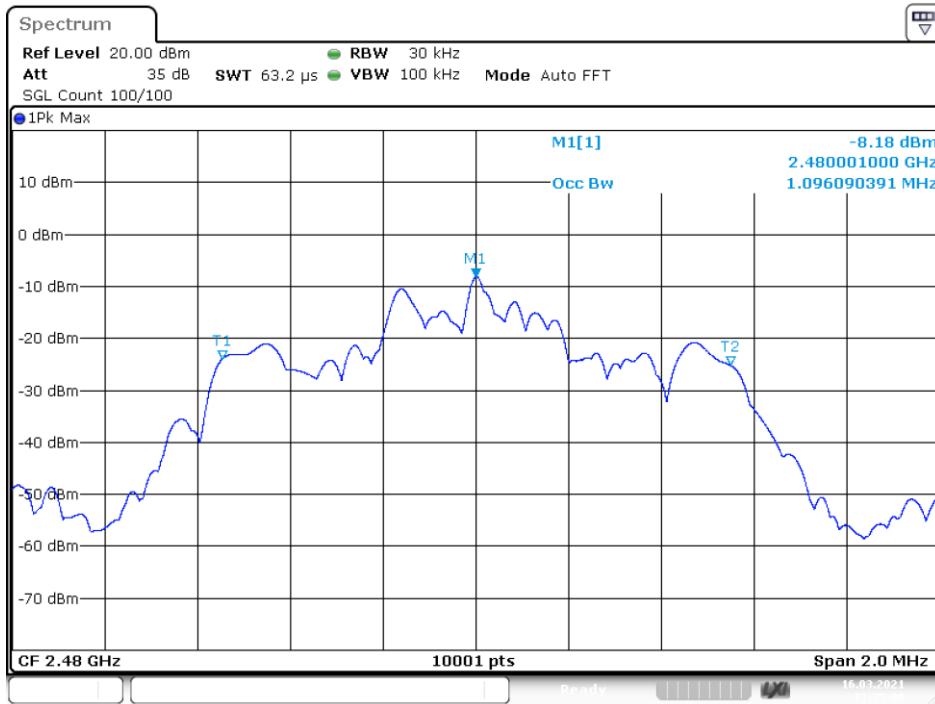
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-20 dB BW NVNT 3-DH1 2441MHz Ant1



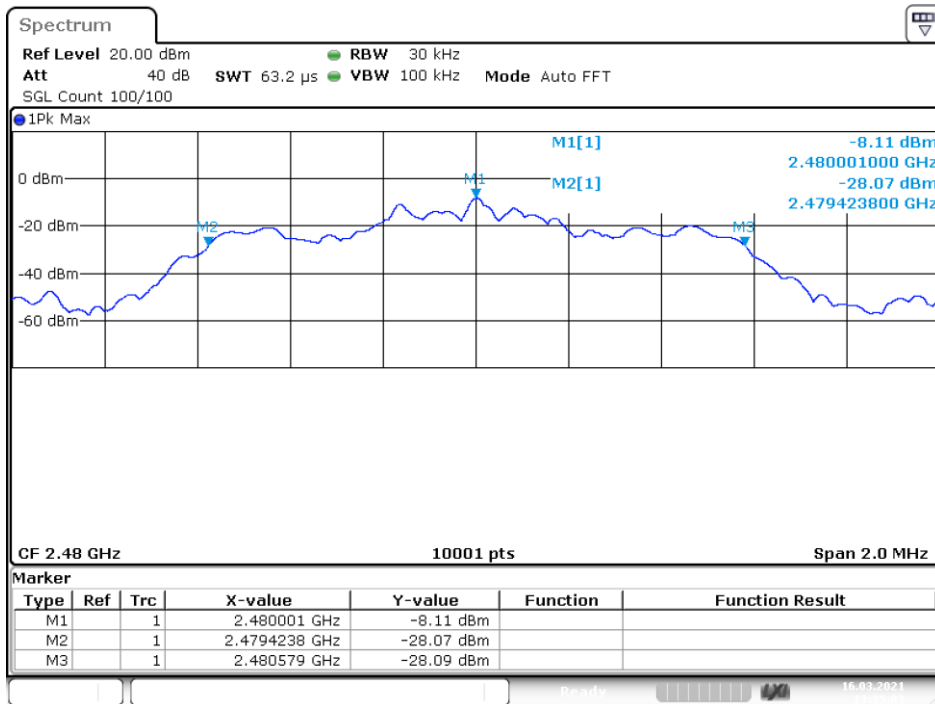
Date: 16.MAR.2021 13:33:35

OBW NVNT 3-DH1 2480MHz Ant1



Date: 16.MAR.2021 13:35:00

-20 dB BW NVNT 3-DH1 2480MHz Ant1



Date: 16.MAR.2021 13:35:03

## 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

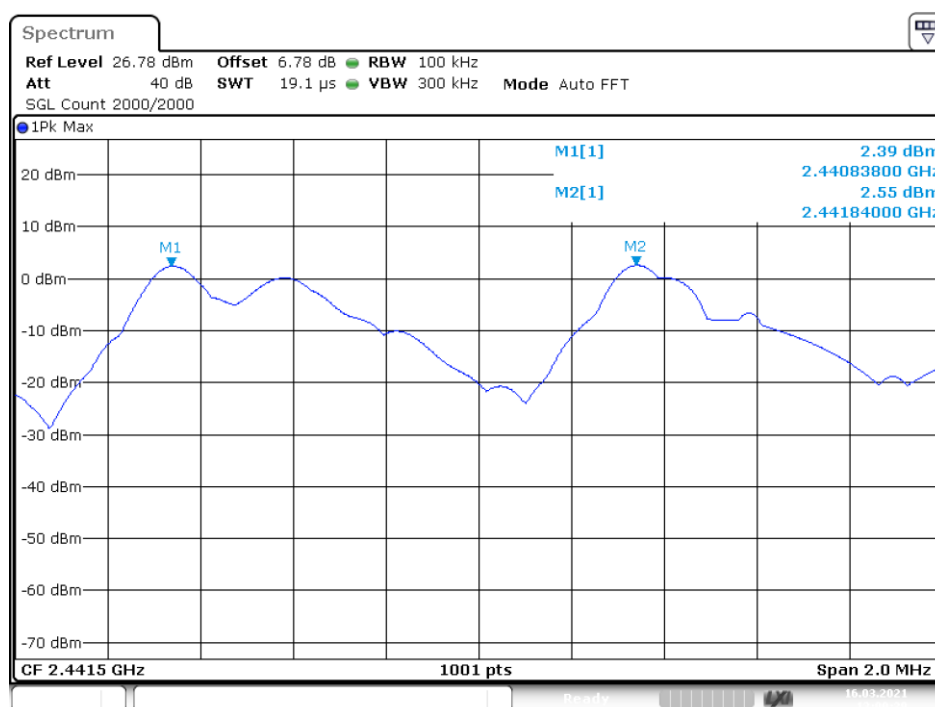
### 5.2.Test Procedure

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 20kHz RBW and 62kHz VBW.

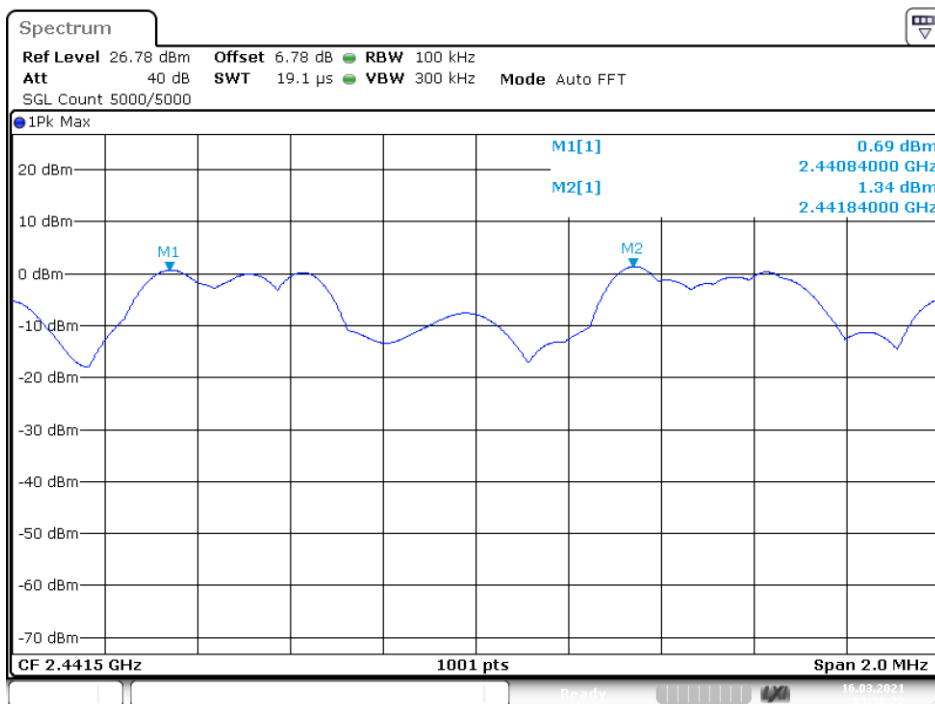
### 5.3.Test Result

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	2440.838	2441.84	1.002	0.514	Pass
NVNT	2-DH1	2440.84	2441.84	1	0.737	Pass
NVNT	3-DH1	2440.99	2442	1.01	0.77	Pass

CFS NVNT 1-DH1 2441MHz

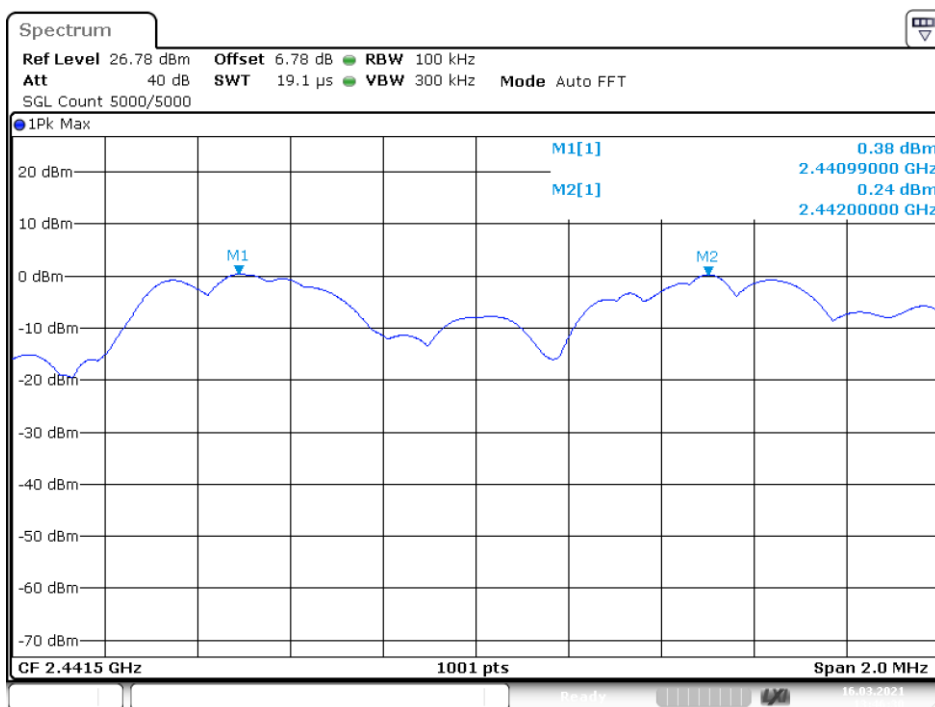


### CFS NVNT 2-DH1 2441MHz



Date: 16.MAR.2021 13:30:22

### CFS NVNT 3-DH1 2441MHz



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## 6. Number Of Hopping Channel

### 6.1.Limit

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

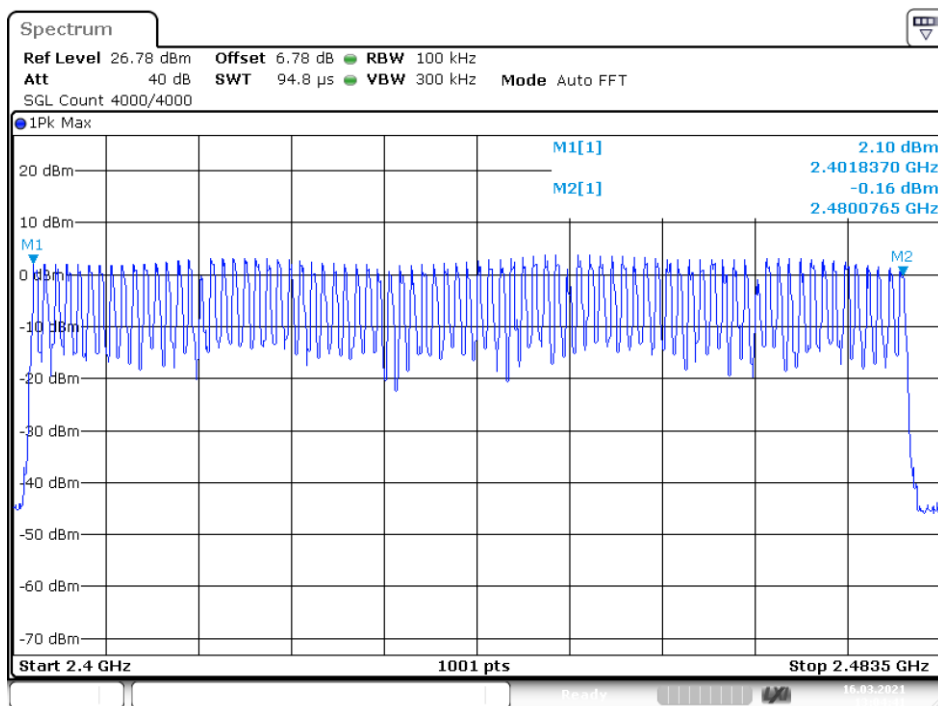
### 6.2.Test Procedure

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

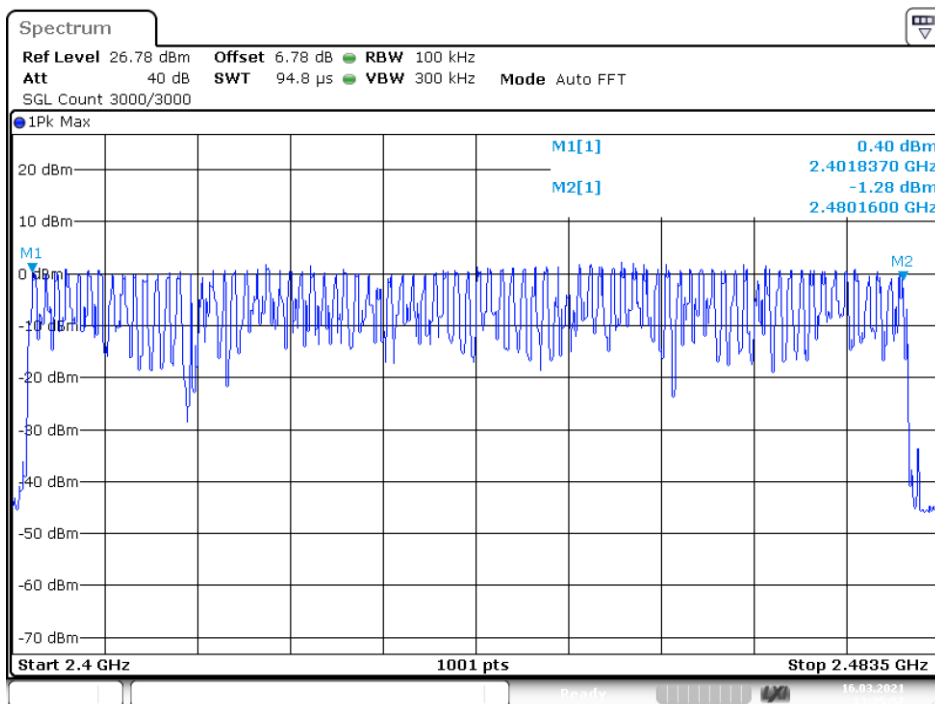
Hopping No. NVNT 1-DH1 2441MHz



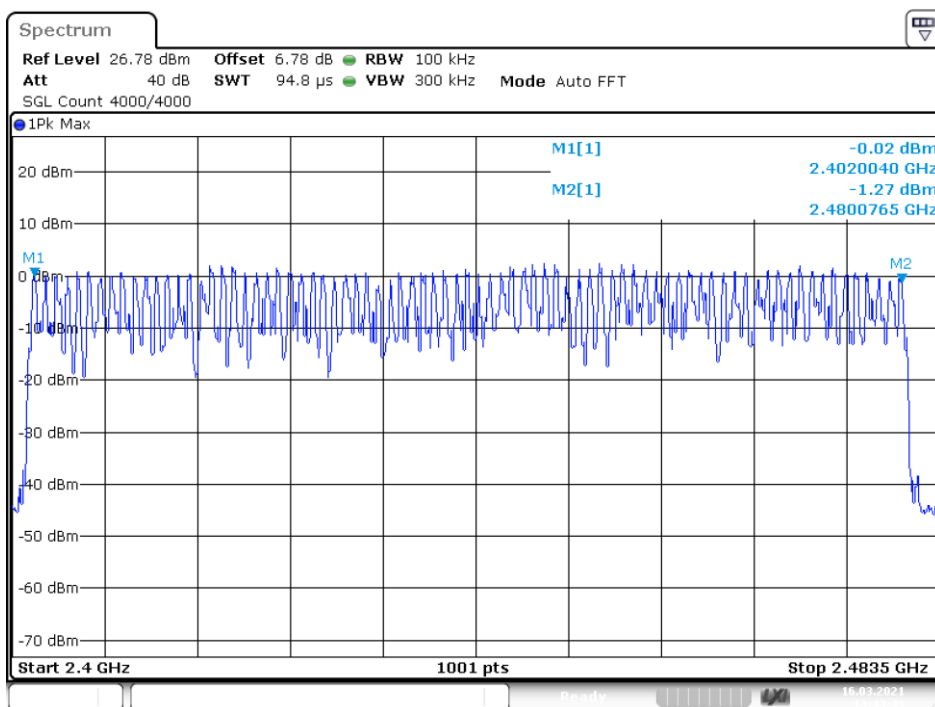
Date: 16.MAR.2021 13:04:41



### Hopping No. NVNT 2-DH1 2441MHz



### Hopping No. NVNT 3-DH1 2441MHz



## 7. Dwell Time

### 7.1. Test limit

Please refer section 15.247

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 s within period of 0.4 seconds multiplied by the number of hopping channels 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=1MHz, VBW=1MHz, Span = 0Hz, Sweep = auto.

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

### 7.3. Test Result

PASS.

Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	0.37	118.400	31600	400	Pass
NVNT	1-DH3	2441	1.622	259.520	31600	400	Pass
NVNT	1-DH5	2441	2.874	306.560	31600	400	Pass
NVNT	2-DH1	2441	0.375	120.000	31600	400	Pass
NVNT	2-DH3	2441	1.629	260.640	31600	400	Pass
NVNT	2-DH5	2441	2.877	306.880	31600	400	Pass
NVNT	3-DH1	2441	0.378	120.960	31600	400	Pass
NVNT	3-DH3	2441	1.625	260.000	31600	400	Pass
NVNT	3-DH5	2441	2.873	306.453	31600	400	Pass

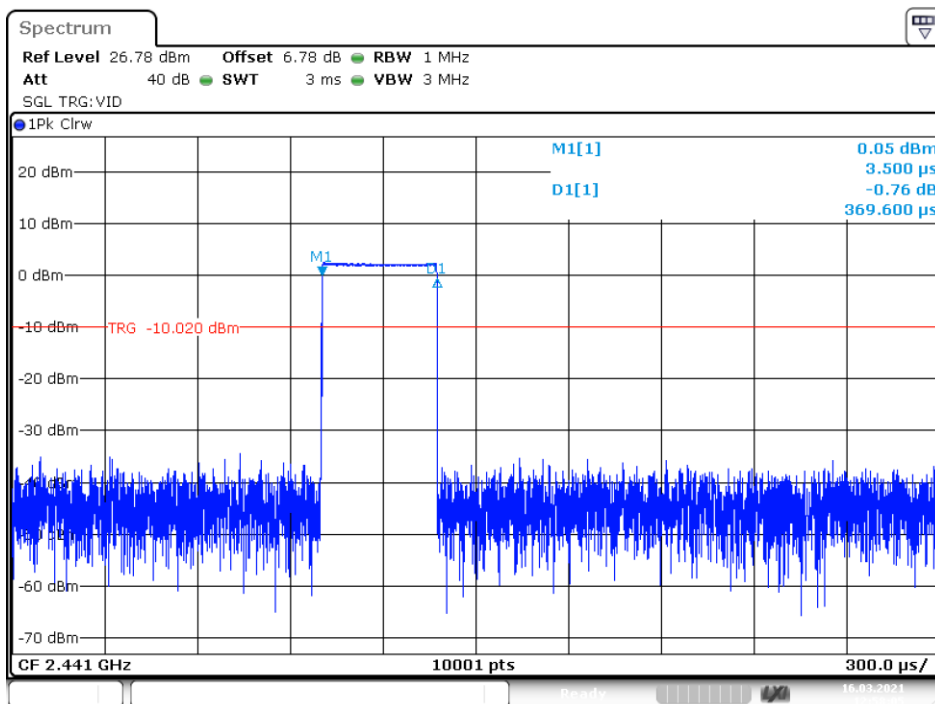
Note: 1 A period time = 0.4 (s) \* 79 = 31.6(s)

DH1 Dwell Time = Pulse Time \* (1600/(2\*79)) \* A period time

DH3 Dwell Time = Pulse Time \* (1600/(4\*79)) \* A period time

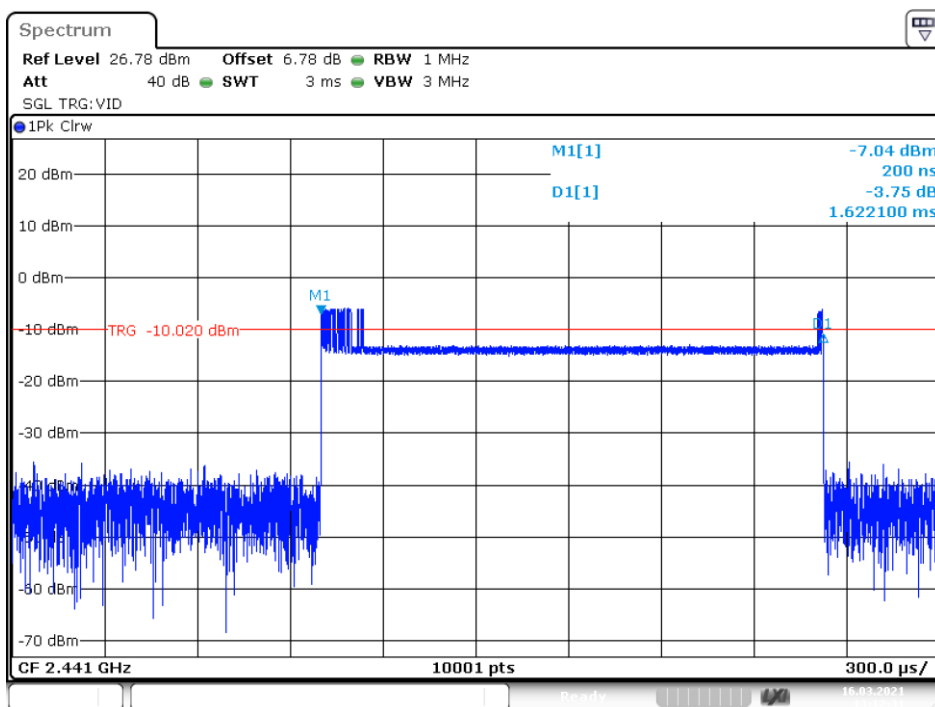
DH5 Dwell Time = Pulse Time \* (1600/(6\*79)) \* A period time

### Dwell NVNT 1-DH1 2441MHz



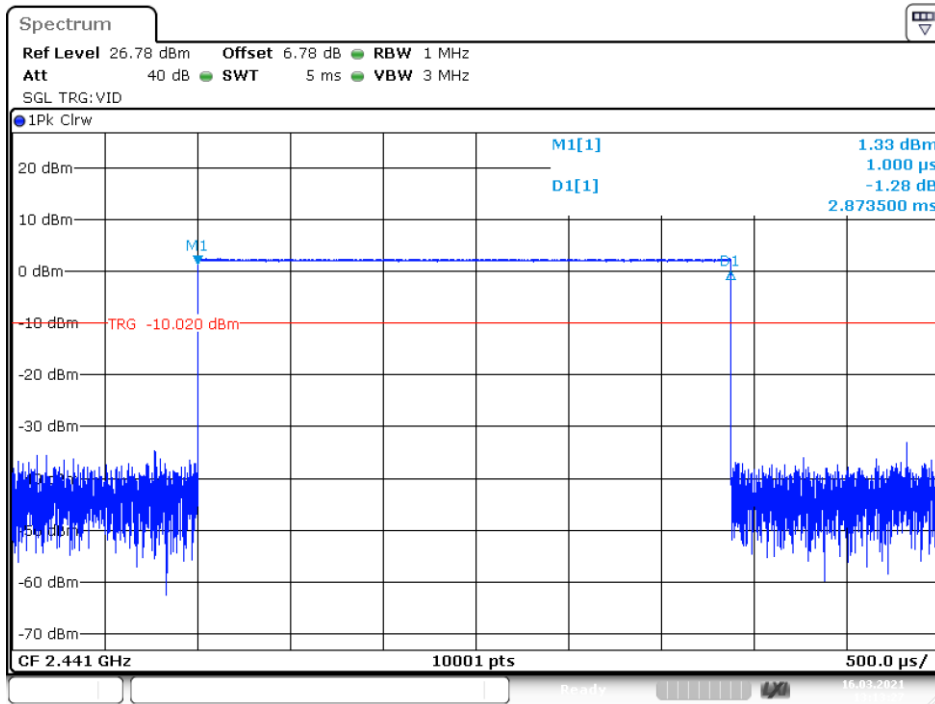
Date: 16.MAR.2021 12:58:05

### Dwell NVNT 1-DH3 2441MHz



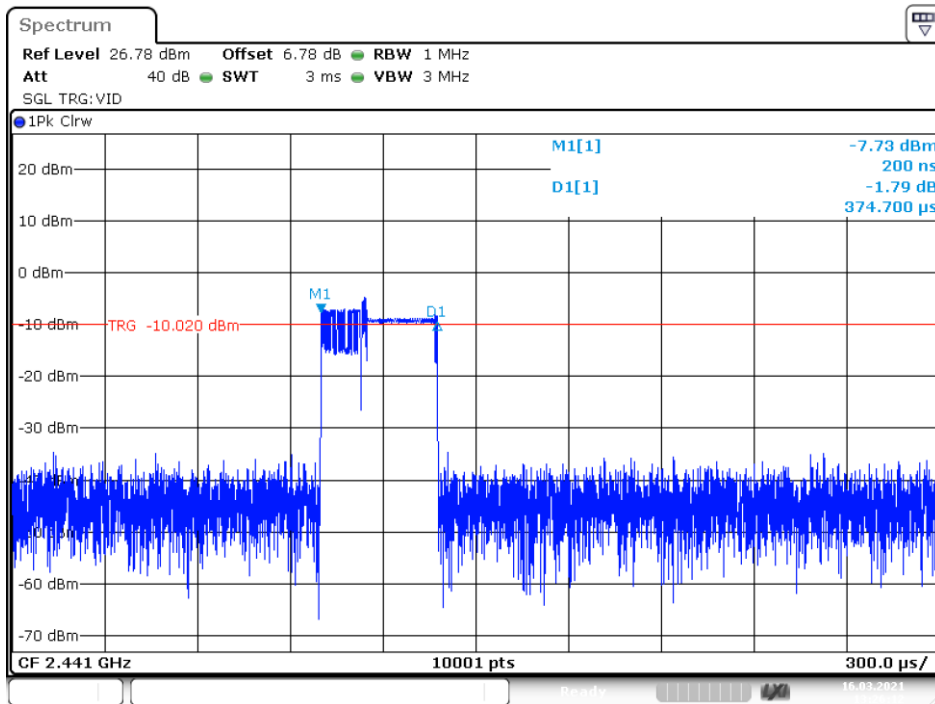
Date: 16.MAR.2021 13:12:30

Dwell NVNT 1-DH5 2441MHz



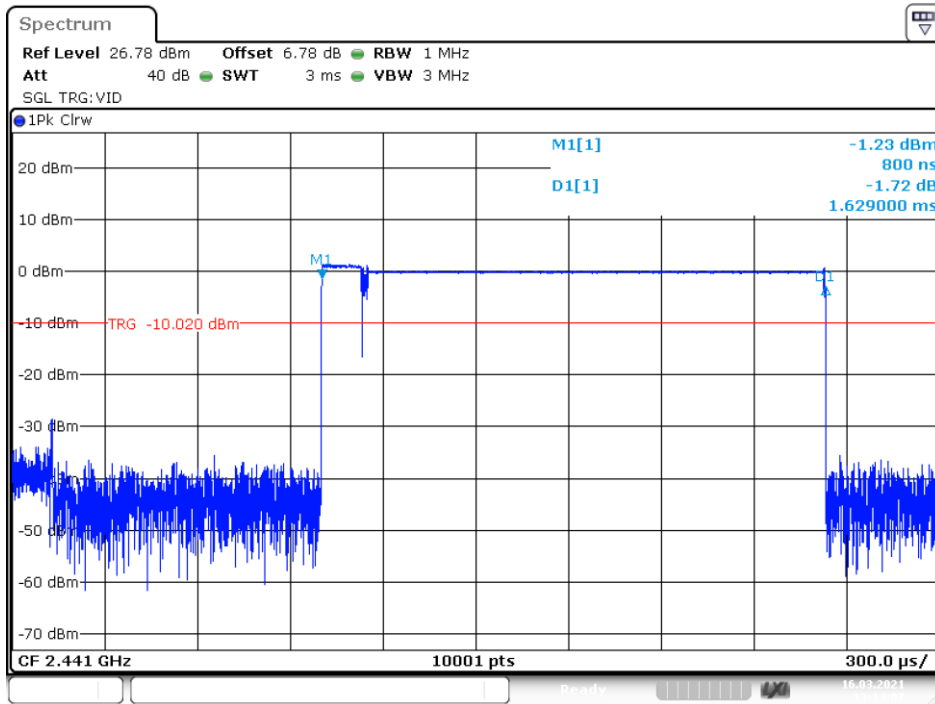
Date: 16.MAR.2021 13:13:27

Dwell NVNT 2-DH1 2441MHz



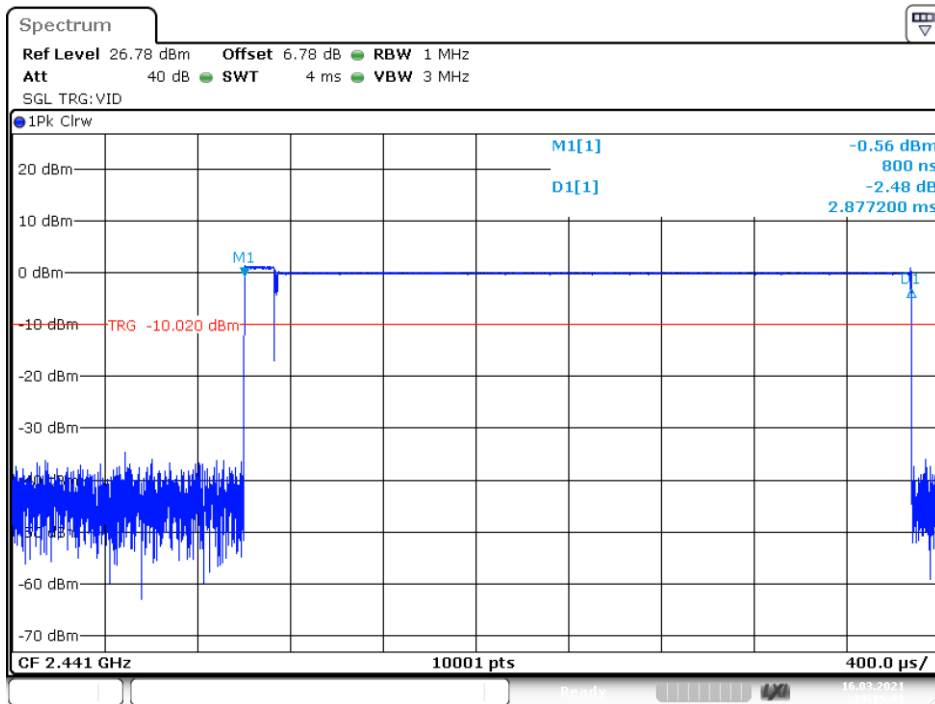
Date: 16.MAR.2021 13:26:12

Dwell NVNT 2-DH3 2441MHz



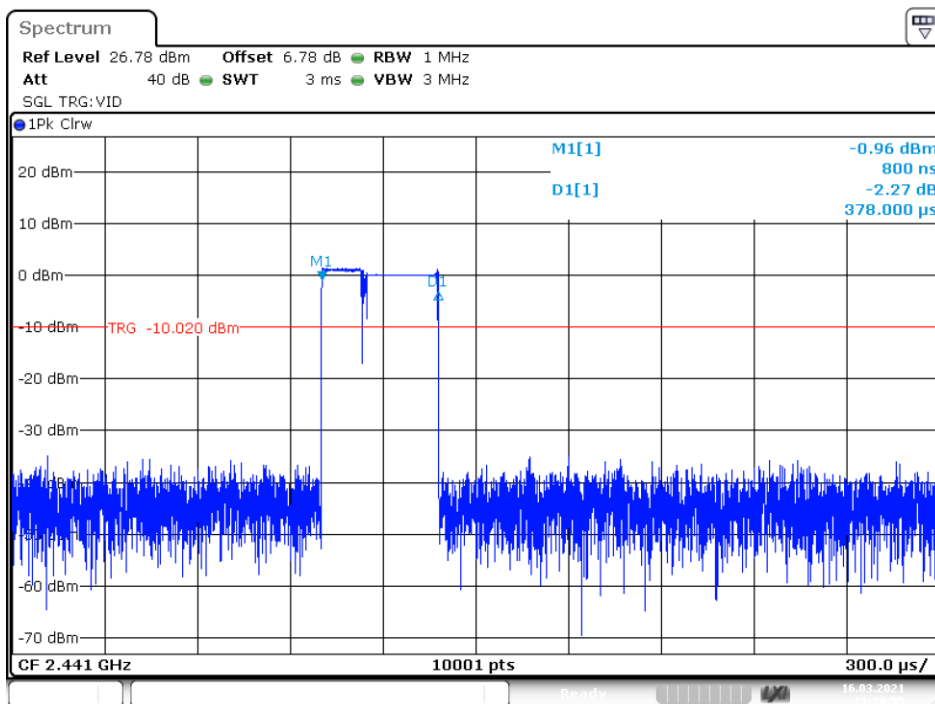
Date: 16.MAR.2021 13:14:07

Dwell NVNT 2-DH5 2441MHz



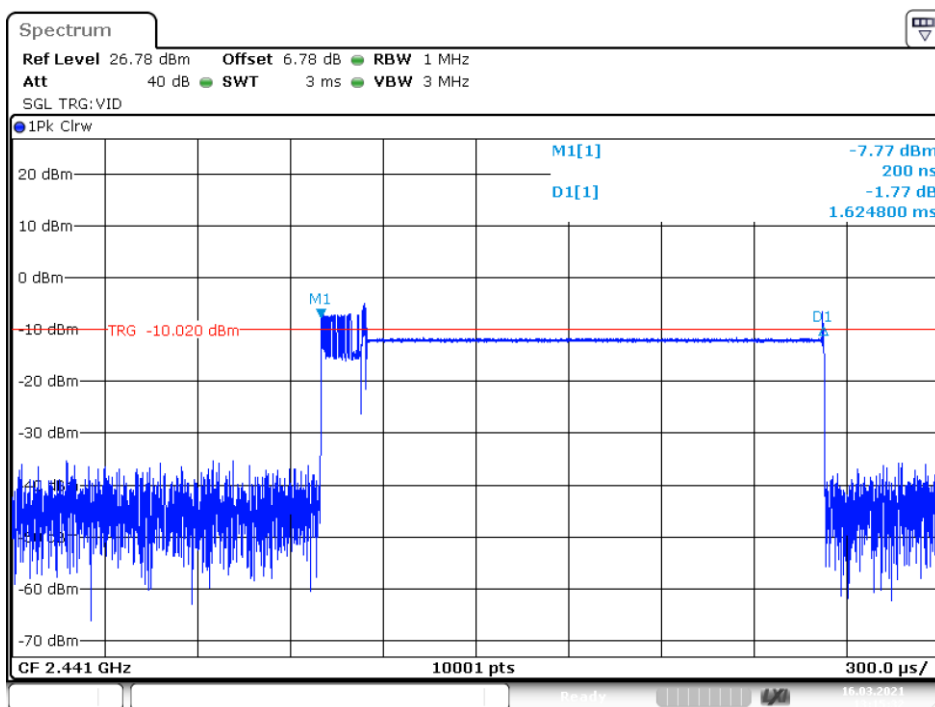
Date: 16.MAR.2021 13:15:04

### Dwell NVNT 3-DH1 2441MHz



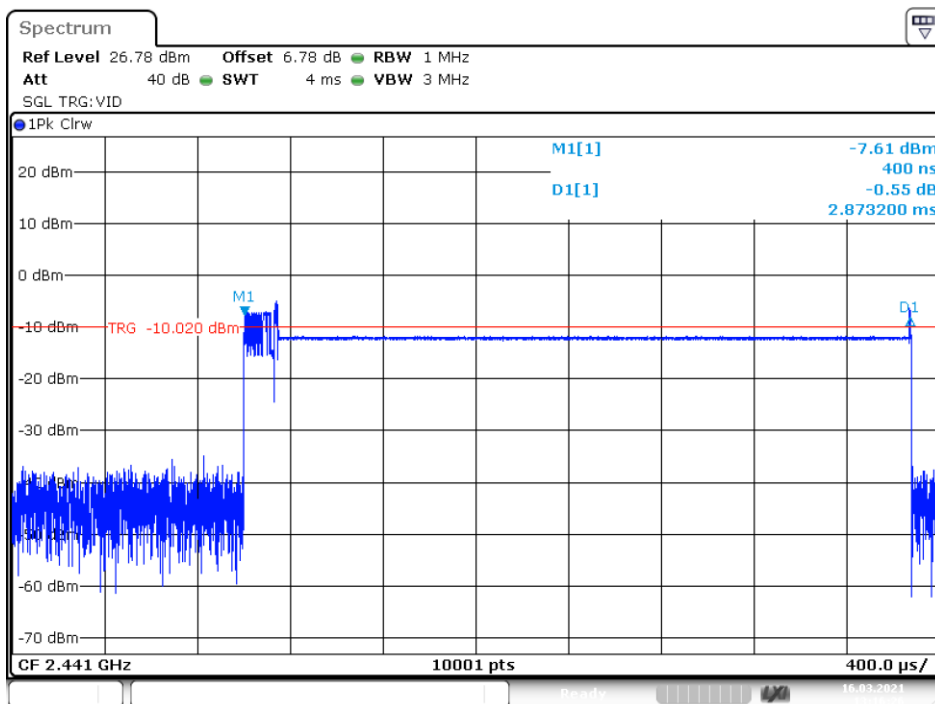
Date: 16.MAR.2021 13:39:54

### Dwell NVNT 3-DH3 2441MHz



Date: 16.MAR.2021 13:15:32

Dwell NVNT 3-DH5 2441MHz



Date: 16.MAR.2021 13:16:25

## 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
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	( <sup>2</sup> )

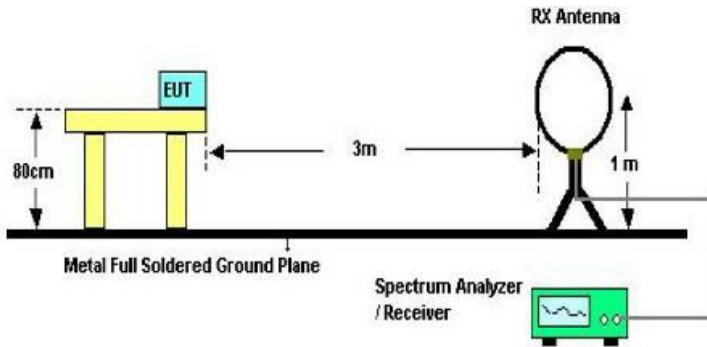
#### 15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
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( $\mu\text{V}$ )/m (Peak) 54.0 dB( $\mu\text{V}$ )/m (Average)	

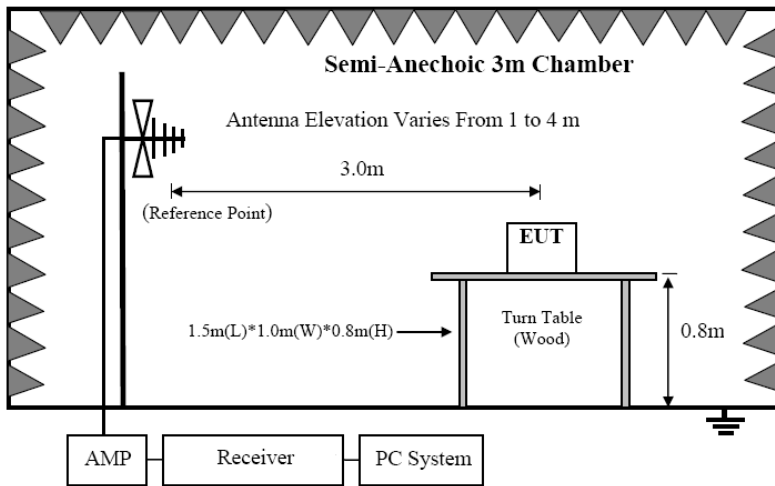


## 8.2. Block Diagram of Test setup

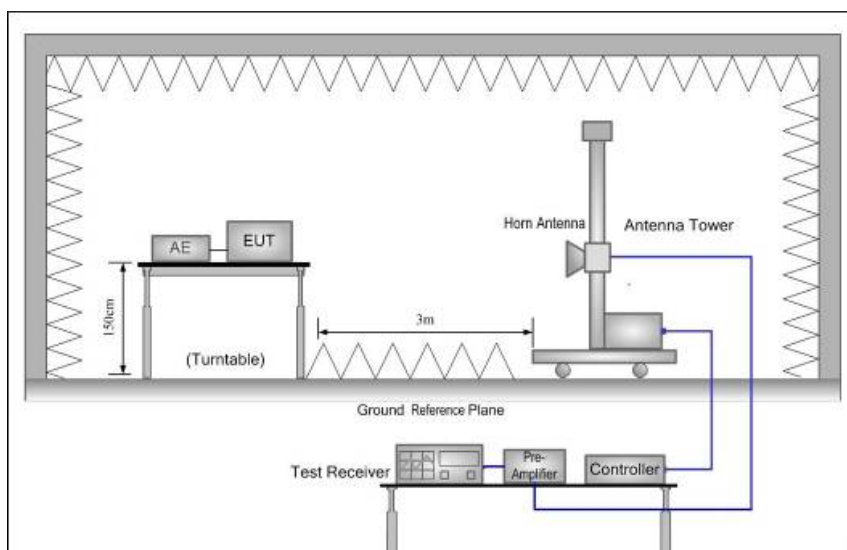
### 8.2.1 In 3m Anechoic Chamber Test Setup Diagram for below 30MHz



### 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, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and simulator as shown in section 1.4 and 6.1
- (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 the 10th harmonic from 9KHz to the EUT's highest frequency..  
Detailed information please see the following page.

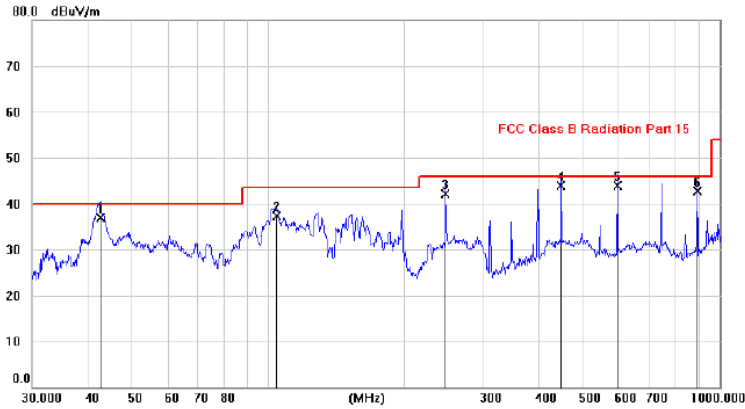
From 9KHz to 30MHz: Conclusion: PASS

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

Pol

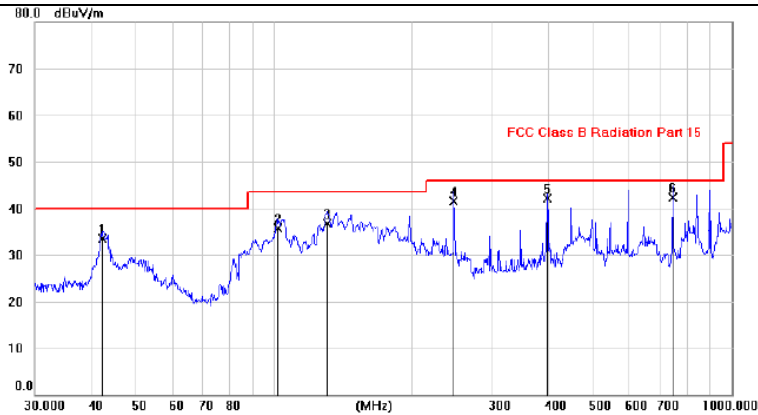
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		42.5053	22.55	14.29	36.84	40.00	-3.16	QP		
2		104.1701	26.00	11.26	37.26	43.50	-6.24	QP		
3		247.5082	29.44	12.71	42.15	46.00	-3.85	QP		
4		445.5279	26.38	17.46	43.84	46.00	-2.16	QP		
5	*	594.0208	23.87	20.10	43.97	46.00	-2.03	QP		
6		891.0401	18.70	23.92	42.62	46.00	-3.38	QP		

Pol

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		42.2034	19.16	14.32	33.48	40.00	-6.52	QP		
2		101.6918	24.60	11.02	35.62	43.50	-7.88	QP		
3		130.3484	23.10	13.61	36.71	43.50	-6.79	QP		
4		247.5082	28.82	12.71	41.53	46.00	-4.47	QP		
5		396.0100	25.84	16.18	42.02	46.00	-3.98	QP		
6	*	742.5190	20.06	22.31	42.37	46.00	-3.63	QP		

\*:Maximum data x:Over limit !:over margin

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 (GFSK) was listed in this report.

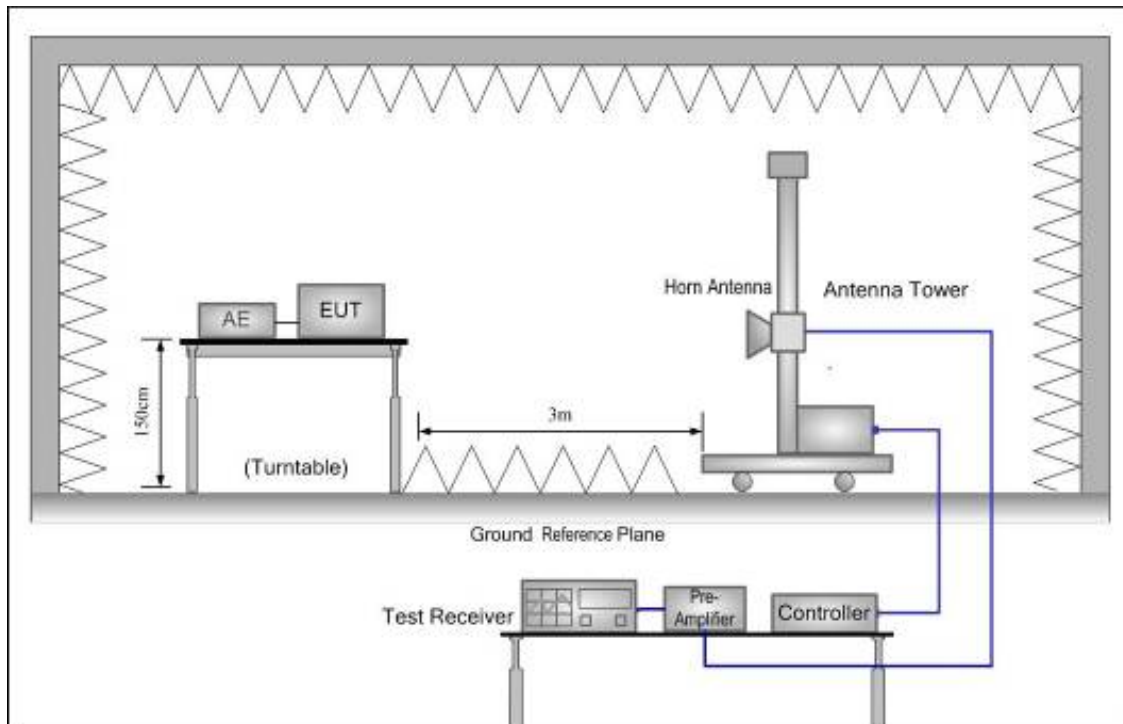
From 1G-25GHz

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	43.69	V	33.95	10.18	34.26	53.56	74	20.44	PK
4804	37.59	V	33.95	10.18	34.26	47.46	54	6.54	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
4824	46.38	H	33.95	10.18	34.26	56.25	74	17.75	PK
4824	36.74	H	33.95	10.18	34.26	46.61	54	7.39	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX Mid									
4882	44.61	V	33.93	10.2	34.29	54.45	74	19.55	PK
4882	33.50	V	33.93	10.2	34.29	43.34	54	10.66	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
4882	46.30	H	33.93	10.2	34.29	56.14	74	17.86	PK
4882	36.65	H	33.93	10.2	34.29	46.49	54	7.51	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX High									
4960	42.99	V	33.98	10.22	34.25	52.94	74	21.06	PK
4960	36.87	V	33.98	10.22	34.25	46.82	54	7.18	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
4960	44.93	H	33.98	10.22	34.25	54.88	74	19.12	PK
4960	33.27	H	33.98	10.22	34.25	43.22	54	10.78	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.									

Remark: All modes have been tested, and only worst data of (GFSK) was listed in this report.

## 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 15.209, all the other emissions outside operation shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 9.3. Test Procedure

All restriction band and non- restriction band have been tested, only worse case is reported.

### 9.4. Test Result

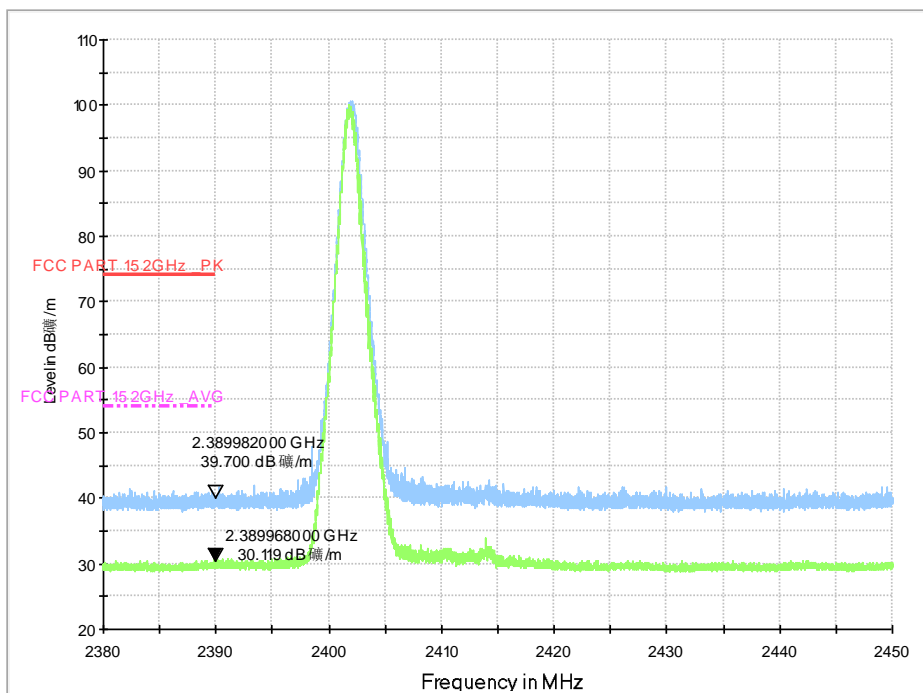
PASS. (See below detailed test data)

Radiated Method:

Hopping-off

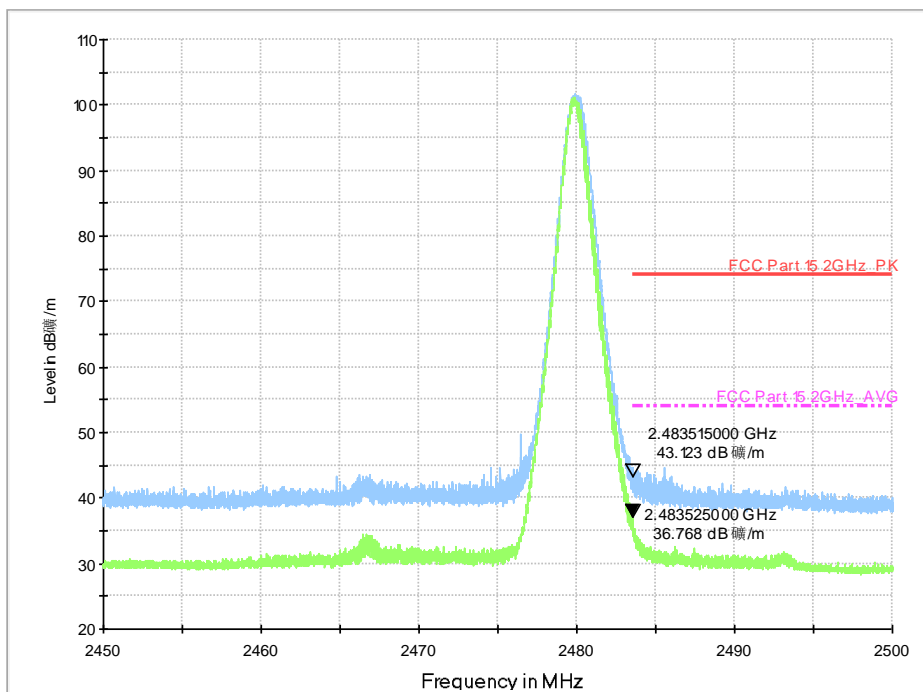
Test Mode:

GFSK-Low



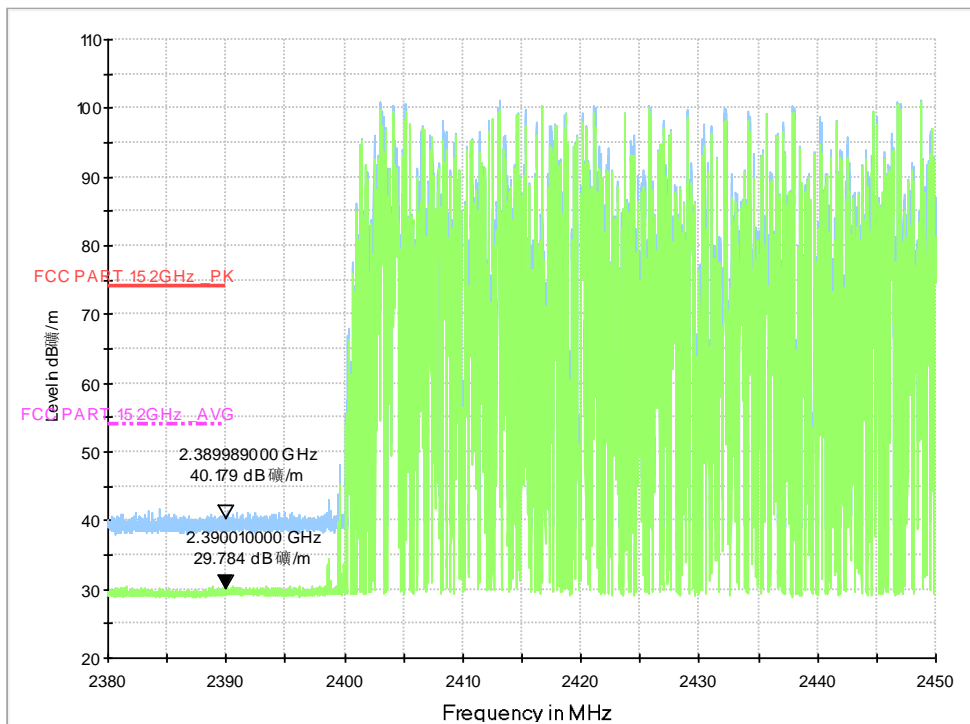
Test Mode:

GFSK-High

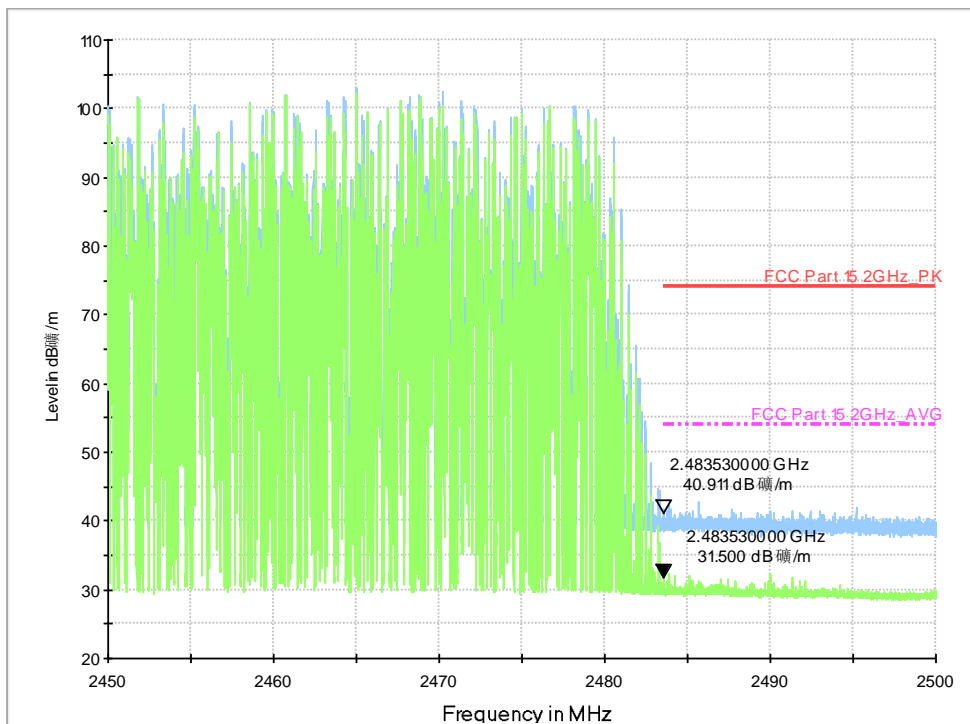


Hopping-on

Test Mode: GFSK-Low

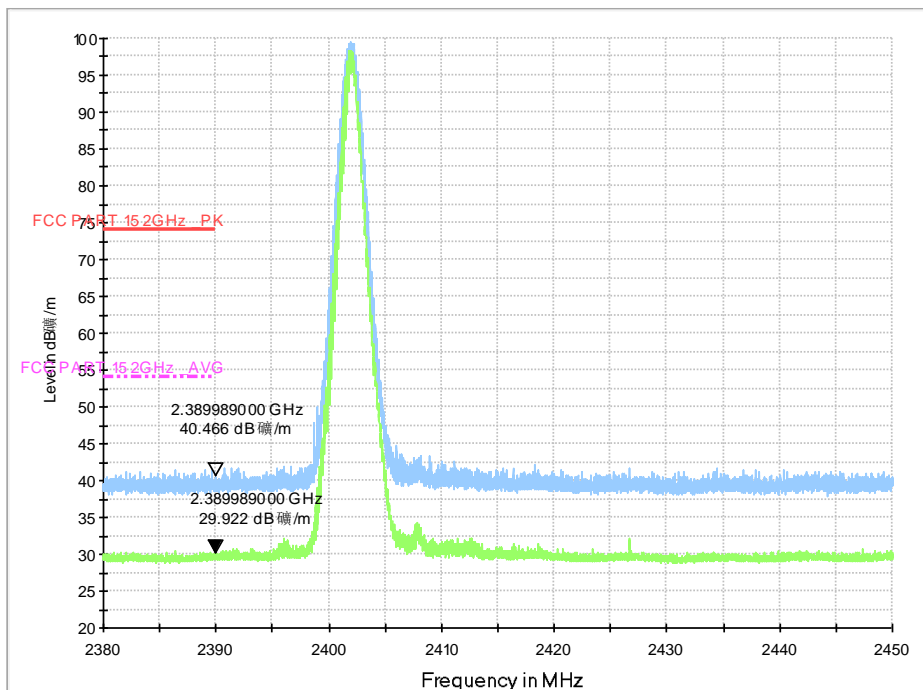


Test Mode: GFSK-High



### Hopping-off

Test Mode:  $\pi$  /4-DQPSK-Low



Test Mode:  $\pi$  /4-DQPSK-High

