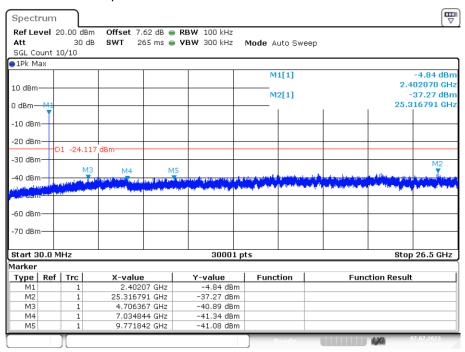
Conducted RF Spurious Emission



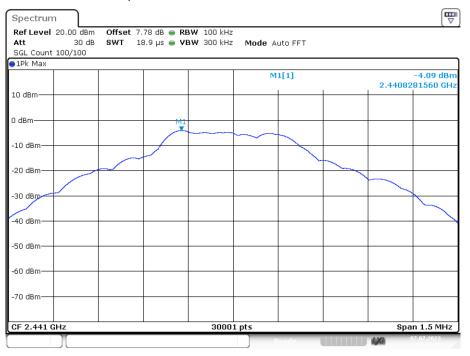
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref

Date: 7.JUL.2023 12:23:53



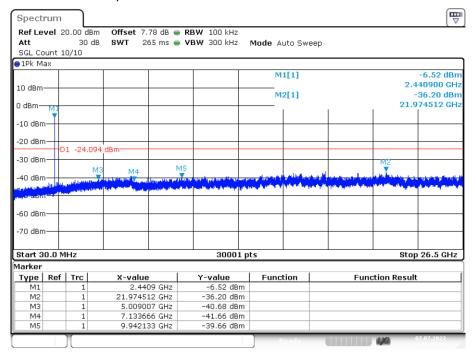
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission

Date: 7.JUL.2023 12:24:07



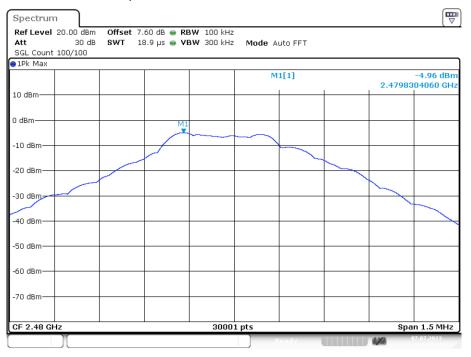
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref

Date: 7.JUL.2023 12:25:29



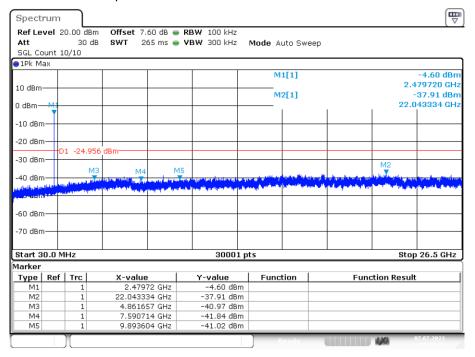
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission

Date: 7.JUL.2023 12:25:43



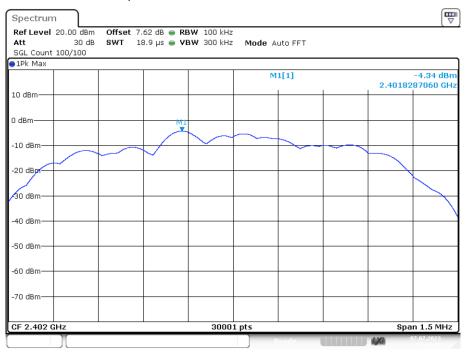
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref

Date: 7.JUL.2023 12:27:13



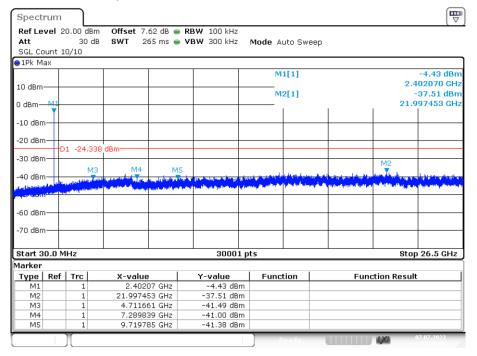
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

Date: 7.JUL.2023 12:27:27



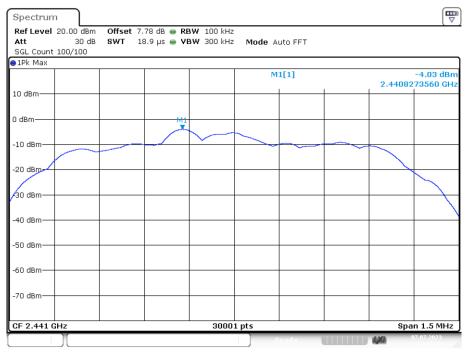
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref

Date: 7.JUL.2023 12:30:06



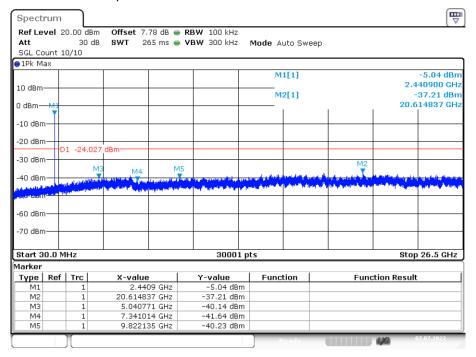
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

Date: 7.JUL.2023 12:30:19



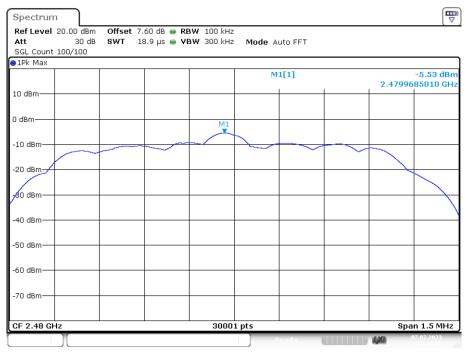
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref

Date: 7.JUL.2023 12:34:49



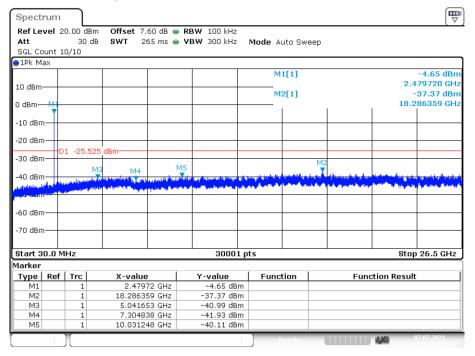
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission

Date: 7.JUL.2023 12:35:03



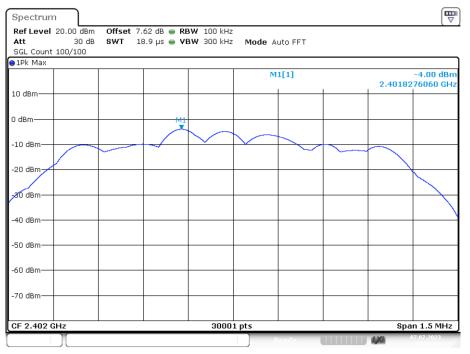
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref

Date: 7.JUL.2023 12:38:13



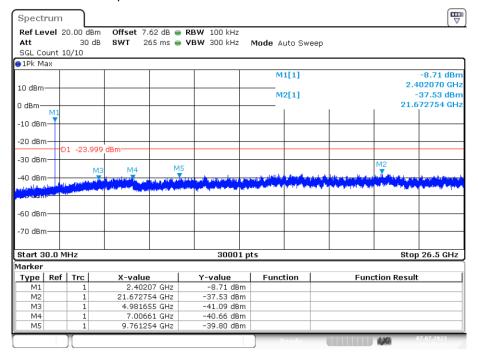
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

Date: 7.JUL.2023 12:38:27



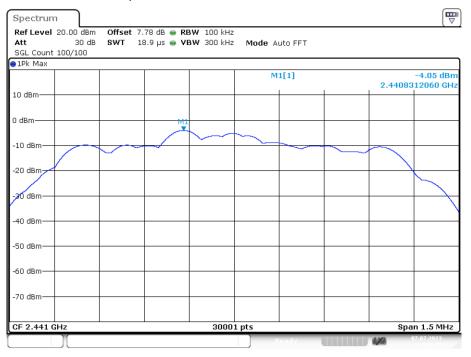
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref

Date: 7.JUL.2023 13:06:57



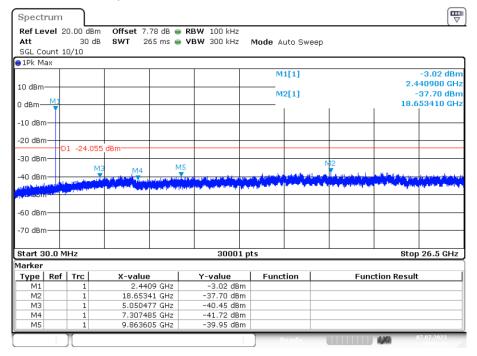
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

Date: 7.JUL.2023 13:07:10



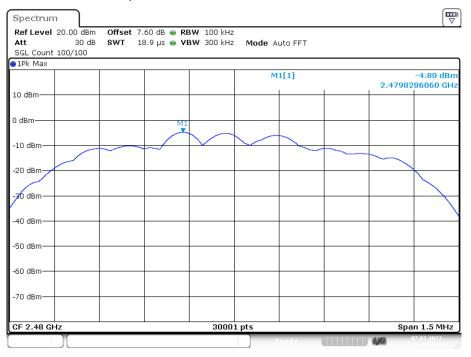
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref

Date: 7.JUL.2023 13:09:35



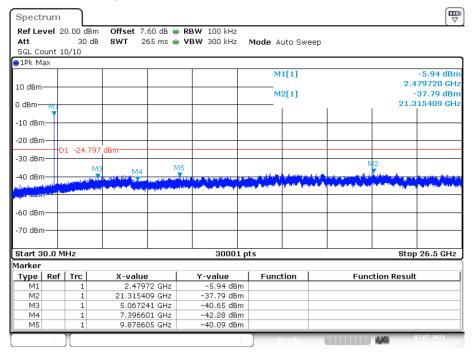
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission

Date: 7.JUL.2023 13:09:48



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref

Date: 7.JUL.2023 13:12:24

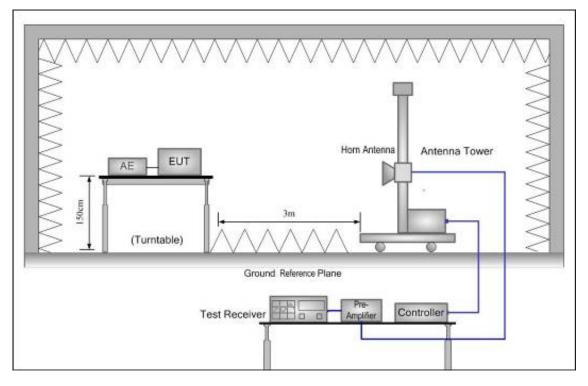


Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

Date: 7.JUL.2023 13:12:37

9. BAND EDGE COMPLIANCE

9.1. Block Diagram of Test Setup



9.2. Limit

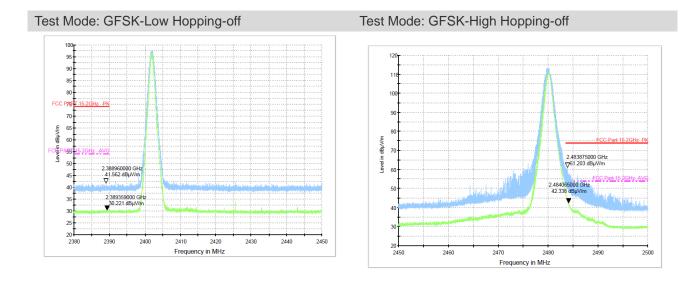
All the lower and upper band-edges emissions appearing within restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

9.3. Test Procedure

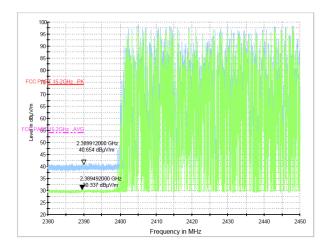
All restriction band and non- restriction band have been tested , only worse case is reported.

9.4. Test Result

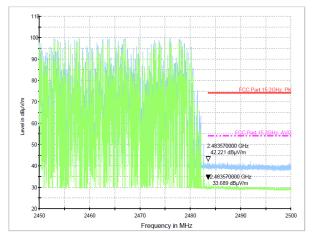
PASS. (See below detailed test data)



Test Mode: GFSK-Low Hopping-on



Test Mode: GFSK-High Hopping-on

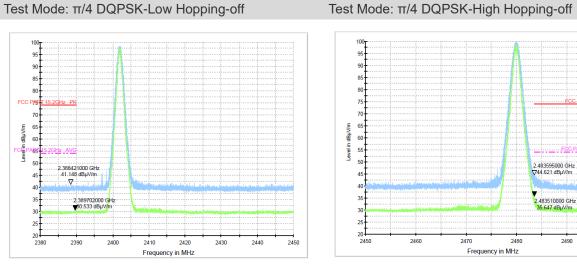


Note: 1. *:Maximum data; x:Over limit; !:over margin.

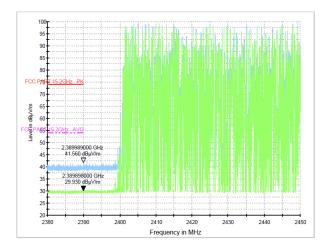
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

2490

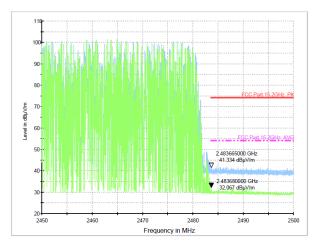
2500



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



Test Mode: π/4 DQPSK-High Hopping-on

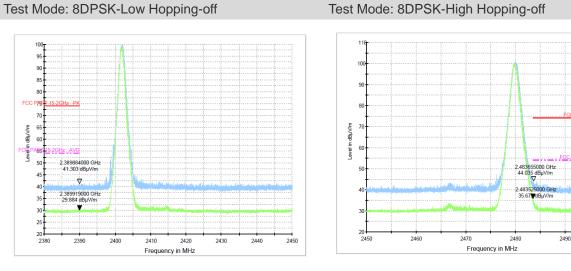


Note: 1. *:Maximum data; x:Over limit; !:over margin.

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

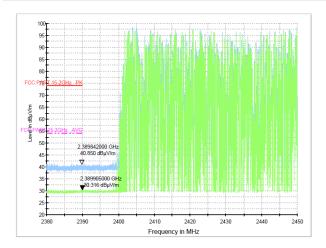
Test Mode: π/4 DQPSK-High Hopping-off

2500

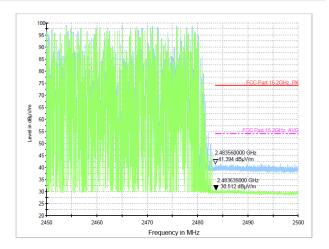


Test Mode: 8DPSK-High Hopping-off

Test Mode: 8DPSK-Low Hopping-on



Test Mode: 8DPSK-High Hopping-on

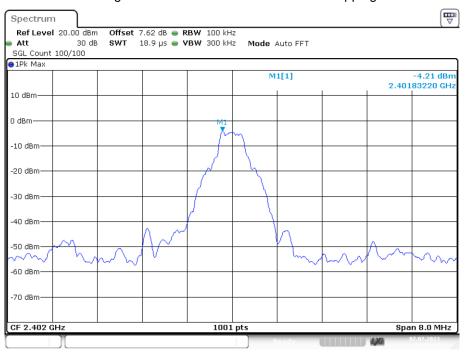


Note: 1. *:Maximum data; x:Over limit; !:over margin.

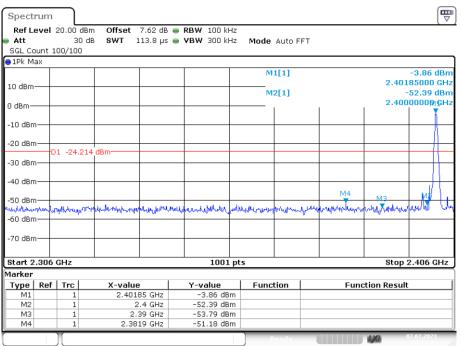
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Conducted Method

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

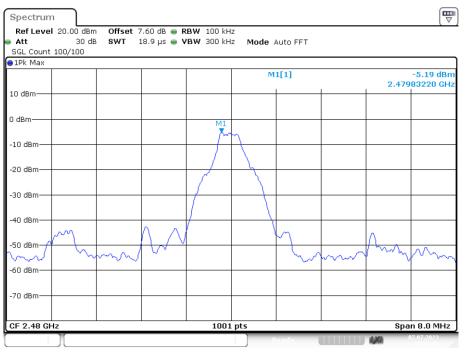


Date: 7.JUL.2023 12:23:38



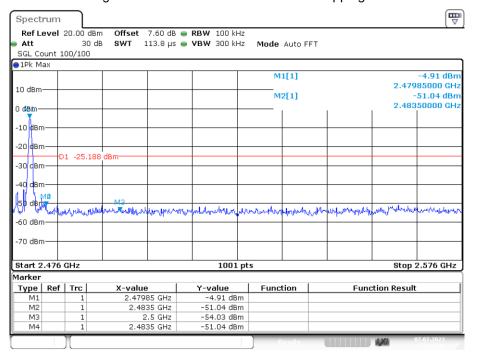


Date: 7.JUL.2023 12:23:43



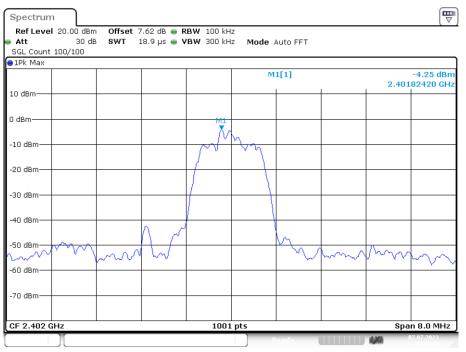
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

Date: 7.JUL.2023 12:26:57



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

Date: 7.JUL.2023 12:27:02



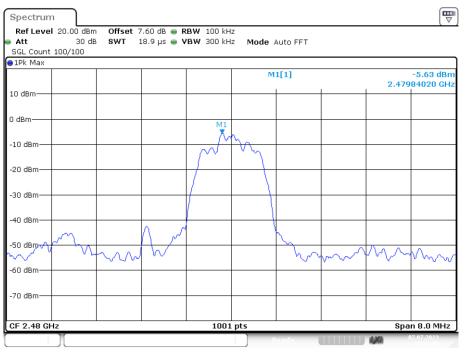
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref

Date: 7.JUL.2023 12:29:48

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

Ref Level 20.00 dBm Offset 7.62 dB RBW 100 kHz SGL SWT 113.8 µs VBW 300 kHz Mode Auto FT SGL Count 100/100 Image: SwT 113.8 µs VBW 300 kHz Mode Auto FT In dBm Image: SwT	Spectru	m)									
10 dBm	Att		30 dB		_			e Auto I	FFT			
10 dBm 2.40195000 GF 0 dBm 2.40090000 GF -10 dBm 2.40000000 GF -10 dBm 2.40000000 GF -10 dBm 2.40000000 GF -20 dBm -20 dBm -20 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm -40 dBm -30 dBm -50 dBm -30 dBm -70 dBm	1Pk Max											
-10 dBm	10 dBm—											195000 GH -55.94 dB
-20 dBm -20 dBm -30 dBm -40 dBm -50	0 dBm	+				+		1	1		2.40	DODOOMG
D1 -24.255 dBm Image: Constraint of the second of the sec	-10 dBm—											⊢ Å
-40 dBm -40 dBm -50 dBm -50 dBm -50 dBm -70	-20 dBm—	D1 -2	4.255	dBm								
Stort 2.306 GHz M4 Type Ref Trc X-value M1 1 2.40195 GHz -4.83 dBm M1 1 2.40195 GHz -55.94 dBm M1 1 2.40195 GHz -55.94 dBm M3 1 2.39 GHz -55.94 dBm	-30 dBm—	+										
۲۰۰۰ - ۲ - ۲۰۰۰۰ - ۲۰۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ - ۲۰۰۰ -		1					M4					
Start 2.306 GHz 1001 pts Stop 2.406 GHz Amarker 1001 pts Stop 2.406 GHz Marker 1001 pts Stop 2.406 GHz Marker 1 2.40195 GHz -4.83 dBm M1 1 2.40195 GHz -4.83 dBm M2 1 2.4 GHz -55.94 dBm M3 1 2.39 GHz -54.62 dBm	-50 dBm—	l a du		and a second	المر است. ا	بالعر بالمارينا العاري	a halaharan a		a . d. i	and an erest	M3	
Start 2.306 GHz 1001 pts Stop 2.406 GHz Marker Your Stop 2.401 Stop 2.400 GHz Function Result M1 1 2.40195 GHz -4.83 dBm M2 1 2.4 GHz -55.94 dBm M3 1 2.39 GHz -54.62 dBm	-60 dBm—	1 Alla Alahart	allen aver aver	www.www.he	harrefranke n		- U. C. Maalaace	adre word	1. April 10	alle Capana at	and have made	values 🔹 .
Marker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40195 GHz -4.83 dBm -	-70 dBm—	-										
Type Ref Trc X-value Y-value Function Function Result M1 1 2.40195 GHz -4.83 dBm - M2 1 2.4 GHz -55.94 dBm - M3 1 2.39 GHz -54.62 dBm -	Start 2.3	06 GHz				1001	l pts				Stop	2.406 GH
M1 1 2.40195 GHz -4.83 dBm M2 1 2.4 GHz -55.94 dBm M3 1 2.39 GHz -54.62 dBm	Marker											
M2 1 2.4 GHz -55.94 dBm M3 1 2.39 GHz -54.62 dBm	Type R	ef Tro	c	X-value	,	Y-value	Fun	ction		Fund	tion Resul	t
M3 1 2.39 GHz -54.62 dBm	M1		1	2.401	95 GHz	-4.83 dE	3m					
			-									
M4 1 2.36 GHZ -51.35 dBm			_									
	M4		1	2.	36 GHz	-51.35 dE	3m					

Date: 7.JUL.2023 12:29:54



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

Date: 7.JUL.2023 12:37:54

P Spectrum Ref Level 20.00 dBm Offset 7.60 dB 👄 RBW 100 kHz Att 30 dB SWT 113.8 µs 😑 VBW 300 kHz Mode Auto FFT SGL Count 100/100 ⊖1Pk Max M1[1] 4.97 dBn 2.47985000 GHz 10 dBm M2[1] -51.29 dBn 2.48350000 GHz 0 **d8t**n--10 dBm -20 dBm D1 -25.633 dBm -30 dBm--40 dBm∙ \ MO м4 50 dBin howard and flore read when the hold the word a ship he was all the way the state of the program to the state and the state of the stateo 13 united -60 dBm--70 dBm· Start 2.476 GHz 1001 pts Stop 2.576 GHz Marker Type Ref Trc M1 1 Function Result X-value Y-value Function -4.97 dBm -51.29 dBm 2.47985 GHz 2.4835 GHz 2.5 GHz M2 1 MЗ -56.24 dBm 1 2.4936 GHz M4 -51.18 dBm 1 4,44

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

Date: 7.JUL.2023 12:38:00



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

Date: 7.JUL.2023 13:06:37

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

Spectrum											
Ref Level				RBW 100 k							
Att	30 d	B SWT 1	L13.8 µs 😑	VBW 300 ki	Hz Mode	Auto F	FT				
SGL Count 1 1Pk Max	00/100										
				1		1[1]				-3.82	dDe
					1 M	1[1]			2.40	-3.82 185000	
10 dBm					M	2[1]			2.40	-53.35	
						2[1]			2 40	000000	
0 dBm						1	1		2.10	1	₹ T
-10 dBm											A.
-10 UBIII											n
-20 dBm											
	1 -23.893	3 dBm									μ.
-30 dBm										_	Ц_
-40 dBm						<u> </u>					Н-
					M4				мз		1
-50 dBm										12	1
withis they with	vynhar	where the states of the second	Public strates	nonunnun	montechnickense	Norm	Wardel and a light	whydry	the prover	Marrie 🖤	
-60 dBm										-	
70.40											
-70 dBm											
Start 2.306	GHz			1001	pts				Stop	2.406	GHz
larker											
Type Ref		X-value		Y-value	Func	tion		Fund	ction Resu	ılt	
M1	1		85 GHz	-3.82 dB							
M2	1		.4 GHz	-53.35 dB							
M3	1		39 GHz	-52.73 dB							
M4	1	2.36	25 GHz	-51.53 dB	m						

Date: 7.JUL.2023 13:06:43

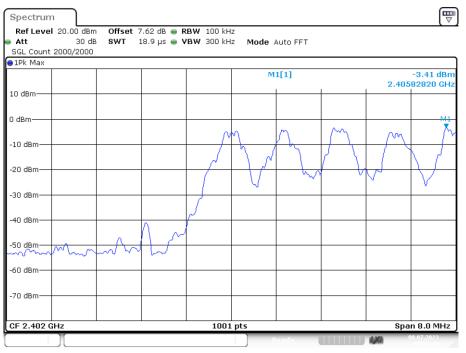


Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref

Date: 7.JUL.2023 13:12:02

Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission ₩ Spectrum Ref Level 20.00 dBm Offset 7.60 dB 👄 RBW 100 kHz Att 30 dB SWT 113.8 µs 😑 VBW 300 kHz Mode Auto FFT SGL Count 100/100 ⊖1Pk Max M1[1] 4.99 dBn 2.47985000 GHz 10 dBm M2[1] -52.39 dBn 2.48350000 GHz 0 **d8t**n--10 dBm -20 dBm D1 -24.850 dBm--30 dBm -40 dBm· to a M2 M4 M3 ۱I. mburnhappender W Web work Mart -70 dBm· Start 2.476 GHz 1001 pts Stop 2.576 GHz Marker Type Ref Trc M1 1 X-value Y-value Function Function Result -4.99 dBm -52.39 dBm -54.01 dBm 2.47985 GHz 2.4835 GHz 2.5 GHz M2 1 MЗ 1 2.4885 GHz M4 -52.05 dBm 1 4/4

Date: 7.JUL.2023 13:12:08



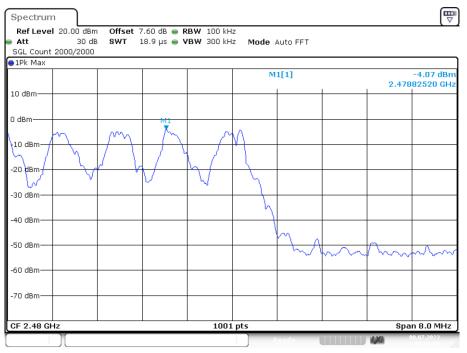
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

Date: 8.JUL.2023 04:53:39

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

Spectrum					Ę
Ref Level 20.00	dBm Offset 7.62	: dB 🖷 RBW 100 kHz			
Att 3	D dB SWT 113.8	3 μs 👄 VBW 300 kHz	Mode Auto F	FT	
SGL Count 1000/10	000				
1Pk Max					
			M1[1]		-3.45 dB
10 dBm					2.40185000 GF
TO UBIII			M2[1]		-51.58 dB
0 dBm					2.40000000 GH
o doni					
-10 dBm					
-20 dBm					
D1 -23.	412 dBm				
-30 dBm					
-40 dBm					
M4					МЗ М2
-50 abm	under monor hunder	regal good and an and a	washingthe who who	Manuf Marganet Margar	Leven march will
-60 dBm				*	V ·
-00 0011					
-70 dBm					
, o abiii					
Start 2.306 GHz		1001 p			Stop 2.406 GH
Jarker		1001			atup 2.400 GH
Type Ref Trc	X-value	Y-value	Function	Eun	ction Result
M1 1	2.40185 G			Fun	COULT RESUL
M2 1	2.40103 G				
M3 1	2.39 G				
M4 1	2.3107 G				
11				///////////////////////////////////////	08.07.2023

Date: 8.JUL.2023 04:54:09



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

Date: 8.JUL.2023 05:06:01

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

Spectrum										
Ref Level 3 Att SGL Count 1	30	dB SWT		 RBW 100 kH; VBW 300 kH; 	-	Auto F	FT			
∎1Pk Max										
10 dBm						1[1] 2[1]			-	-4.99 dBn 95000 GH: 51.93 dBn 50000 GH:
-30/dBm		71 dBm			down	hpshahati	Juneuski		lan Arthur faller	Welgert March 19
Start 2.476	GHz			1001	ots				Stop	2.576 GHz
4arker										
Type Ref	Trc	X-valu	e	Y-value	Func	tion		Functio	on Result	
M1	1		95 GHz	-4.99 dBm						
M2	1		35 GHz	-51.93 dBm						
M3	1		2.5 GHz	-53.18 dBm						
M4	1	2.49	64 GHz	-51.50 dBm	1					
						te ad y		4	XI	08.07.2023

Date: 8.JUL.2023 05:06:30



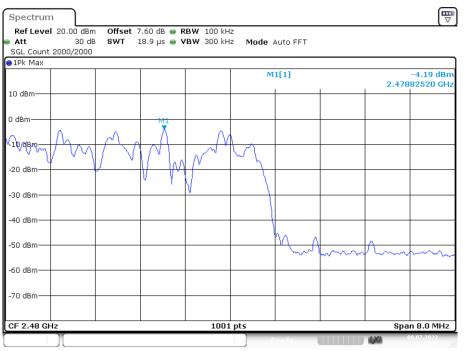
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

Date: 8.JUL.2023 04:34:06

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

Spectrum										
Ref Level Att SGL Count 1	30 d	B SWT 1		RBW 100 ki VBW 300 ki		Auto F	FT			
∋1Pk Max										
10 dBm						1[1]			2.40	-3.58 dBn 595000 GH -52.17 dBn
0 dBm						2[1]			2.40	000000 GH
-10 dBm										
-20 dBm)1 -23.166	5.dBm								
-30 dBm										
-40 dBm					M4				мз	Ma
I	, Martalal and	terman house	handnesserad	number	Marriakansha	mon	vertenun	menunhe		
-60 dBm										
Start 2.306	GHz			1001	. pts				Stop	2.406 GHz
larker	1 - 1				1		1			
Type Ref		X-value		Y-value	Fund	tion		Funct	ion Resu	lt
M1	1	2.4059		-3.58 dB						
M2	1		4 GHz	-52.17 dB						
M3 M4	1	2.3	9 GHz 1 GHz	-52.45 dB -51.09 dB						
	1					Ready			L)G	08.07.2023

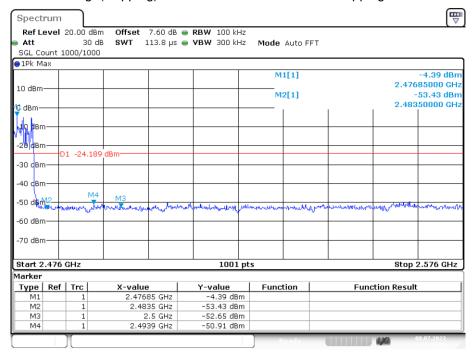
Date: 8.JUL.2023 04:34:25



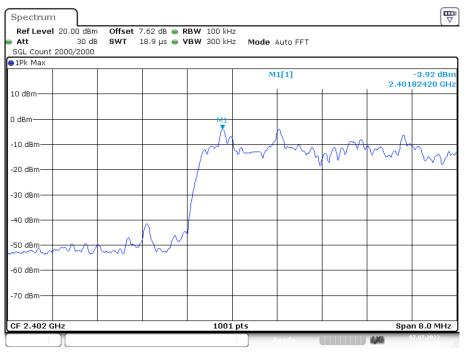
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref

Date: 8.JUL.2023 04:43:37

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



Date: 8.JUL.2023 04:44:06



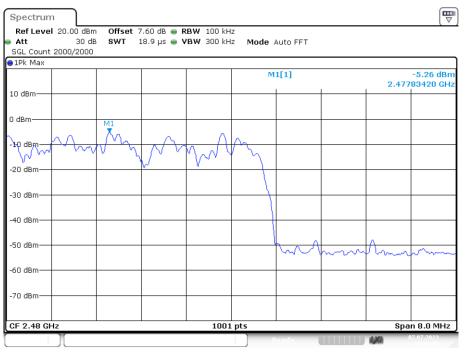
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref

Date: 7.JUL.2023 13:28:29

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

Spectrum										
Ref Level	20.00 dBr	m Offset	7.62 dB 🧉	• RBW 100 kHz						
Att	30 d	B SWT	113.8 µs 🧉	• VBW 300 kHz	Mode /	Auto FR	Τ			
SGL Count 1	.000/1000)								
∋1Pk Max										
					M1	[1]				-3.78 dBn
10 dBm									2.40	485000 GH
					M2	[1]				-53.60 dBn
0 dBm —									2.40	000000 GM
										1 1
-10 dBm										1.1
										1 114
-20 dBm	1 -23.915									
	1 -23.91;	o dBm								
-30 dBm										
-40 dBm										
-40 0611			M4							
-50 dBm			-						M3	M2
phone and a second	Alumber	verouter adverse	and man	manyawanaway	Montonitation	milledally	ويهره وبالمحرو الملاحظتي	mouthing	Jul Swamp	man
-60 dBm 🕂										
-70 dBm										
Start 2.306	GHz			1001 pt	s				Stop	2.406 GHz
Marker										
Type Ref	Trc	X-valu	e	Y-value	Funct	ion		Funct	tion Resu	lt
M1	1	2.404	85 GHz	-3.78 dBm						
M2	1		2.4 GHz	-53.60 dBm						
MЗ	1		39 GHz	-53.93 dBm						
M4	1	2.33	77 GHz	-50.89 dBm						
					Re	ady			100	07.07.2023

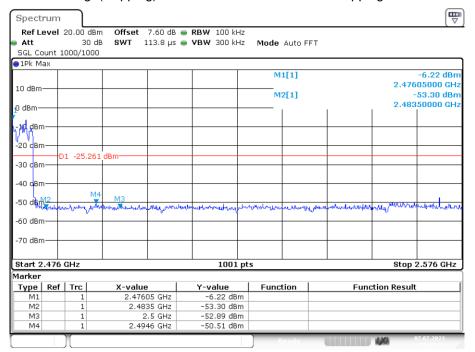
Date: 7.JUL.2023 13:28:58



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

Date: 7.JUL.2023 13:41:54

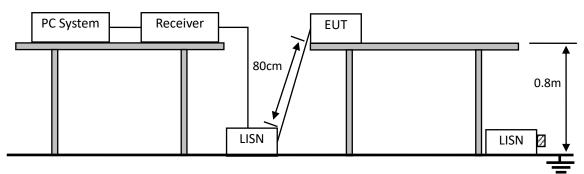
Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission



Date: 7.JUL.2023 13:42:23

10. POWER LINE CONDUCTED EMISSIONS

10.1.Block Diagram of Test Setup



 \blacksquare :50 Ω Terminator

10.2.Limit

	Maximum RF Line Voltage					
Frequency	Quasi-Peak Level	Average Level				
	dB(µV)	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.

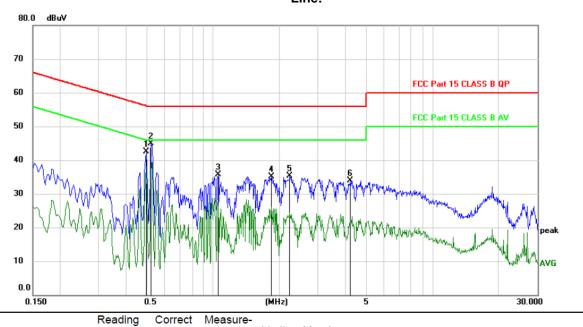
(4) The bandwidth of test receiver is set at 10KHz.

(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



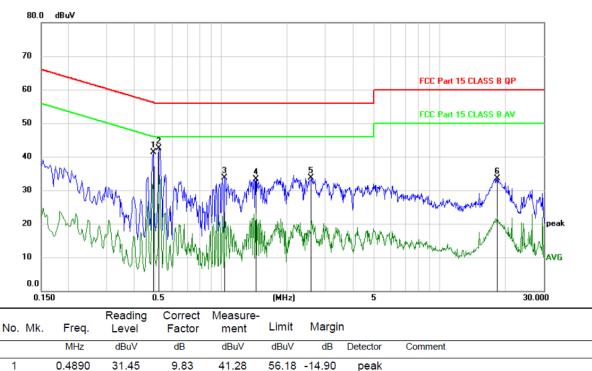
No.	Mk.	Freq.	Level	Factor	ment	Limit	Margir	ו		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1		0.4950	32.70	9.83	42.53	56.08	-13.55	peak		
2	*	0.5190	35.04	9.83	44.87	56.00	-11.13	peak		
3		1.0500	25.79	9.83	35.62	56.00	-20.38	peak		
4		1.8420	25.33	9.78	35.11	56.00	-20.89	peak		
5		2.2349	25.49	9.77	35.26	56.00	-20.74	peak		
6		4.2150	24.06	9.85	33.91	56.00	-22.09	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

Line:



56.00 -13.44

56.00 -22.20

56.00 -22.65

56.00 -22.24

60.00 -26.55

peak

peak

peak

peak

peak

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

2

3

4

5

6

0.5190

1.0410

1.4460

2.5830

18.3300

32.73

23.96

23.54

23.97

23.36

9.83

9.84

9.81

9.79

10.09

42.56

33.80

33.35

33.76

33.45

(Reference Only

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

Note: All modes and channels have been tested and only the GFSK 2402MHz mode with the worst data is listed.



11. ANTENNA REQUIREMENTS

11.1.Limit

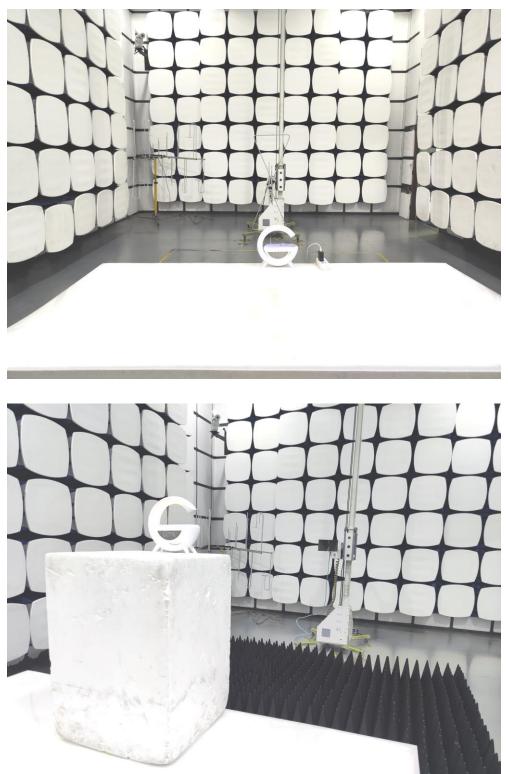
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional 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. TEST SETUP PHOTO

12.1.Photo of Radiated Emission test





12.2.Photo of Conducted Emission test

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