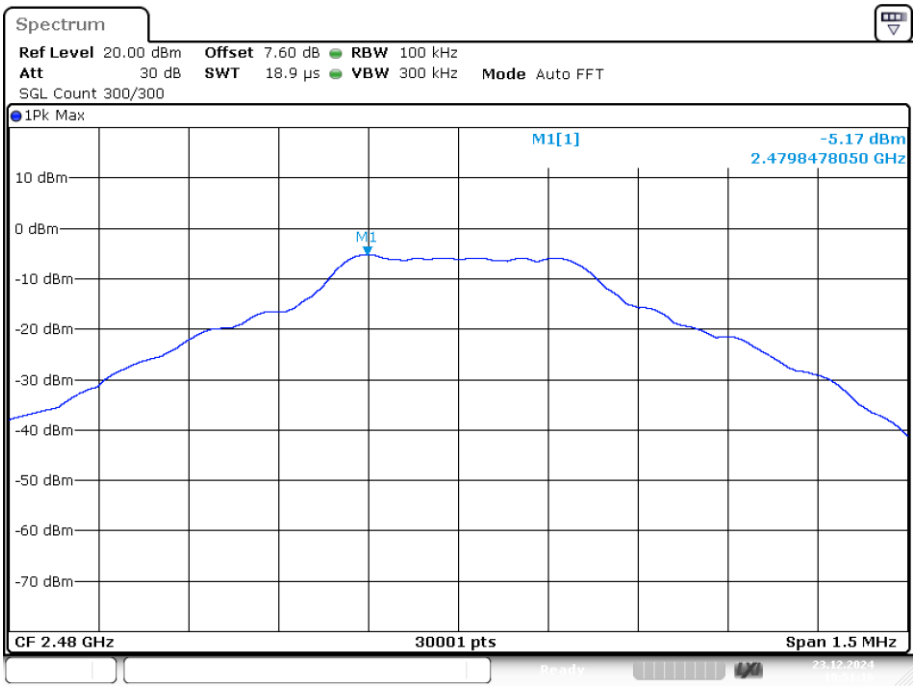
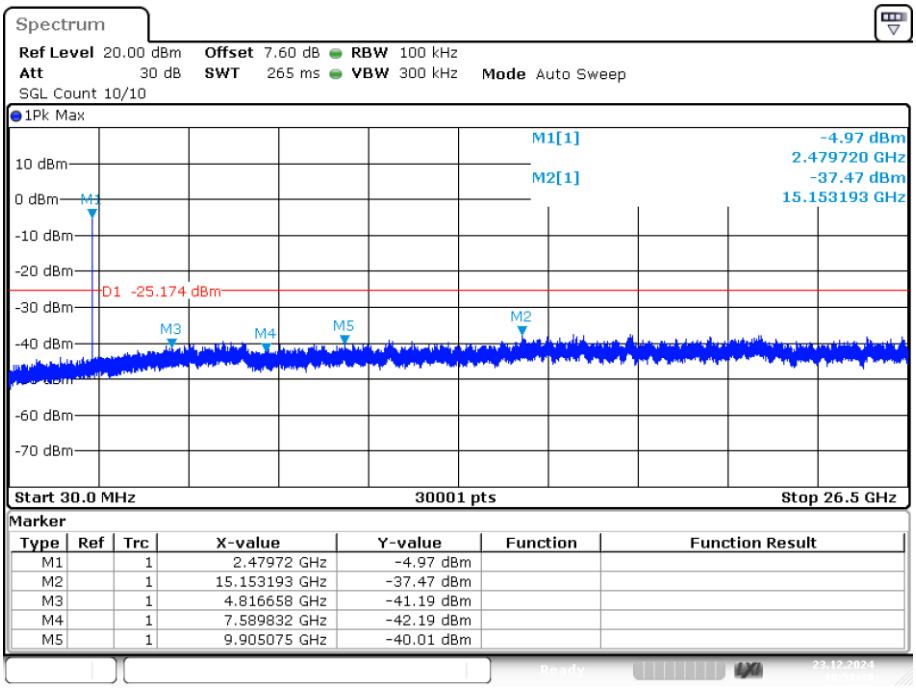
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



Date: 23.DEC.2024 10:51:16

Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

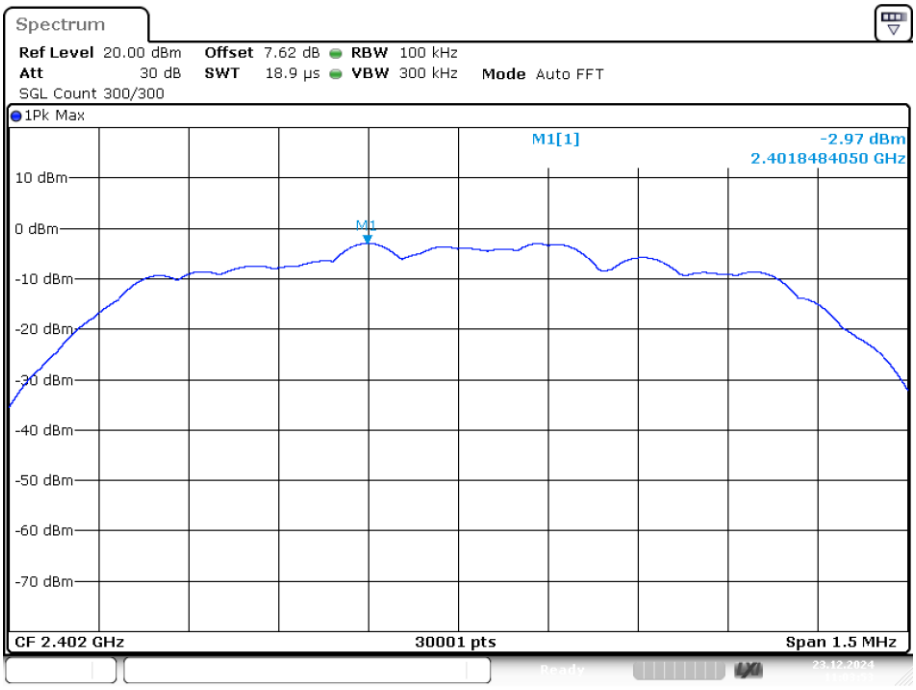


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47972 GHz	-4.97 dBm		
M2		1	15.153193 GHz	-37.47 dBm		
M3		1	4.816658 GHz	-41.19 dBm		
M4		1	7.589832 GHz	-42.19 dBm		
M5		1	9.905075 GHz	-40.01 dBm		

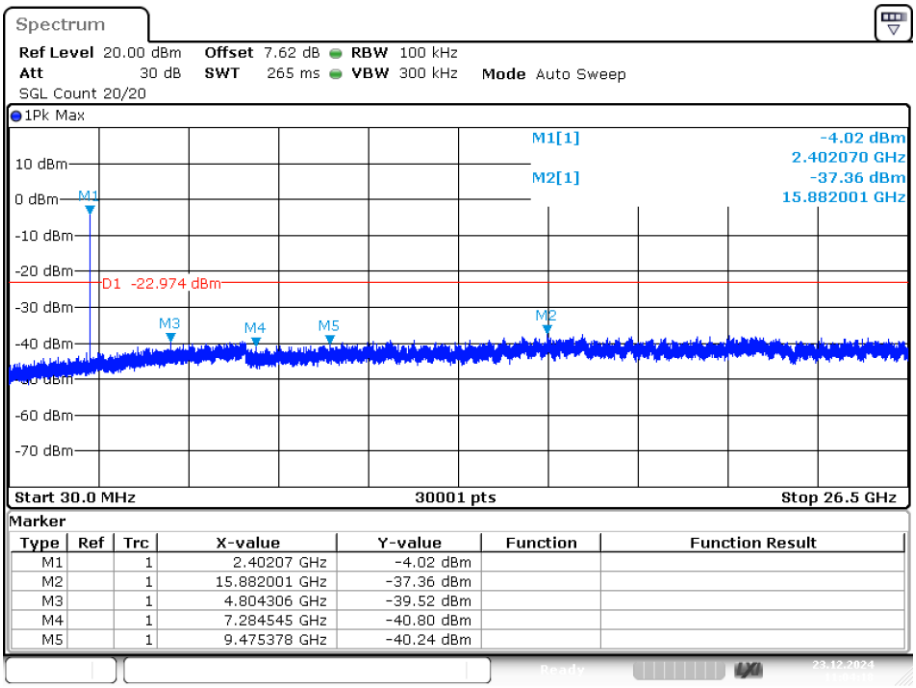
Date: 23.DEC.2024 10:51:30

Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



Date: 23.DEC.2024 11:03:53

Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

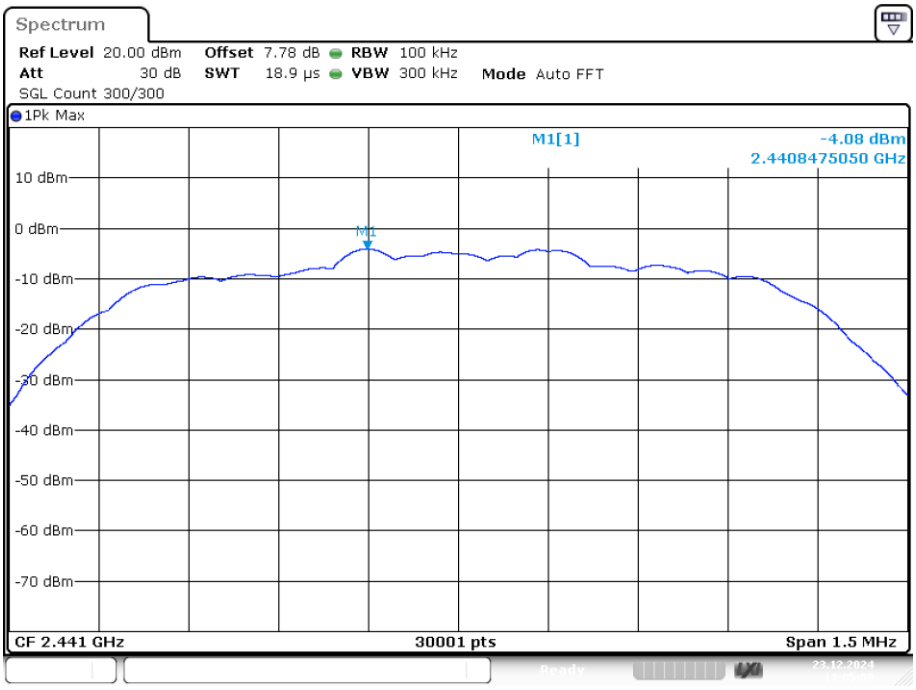


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40207 GHz	-4.02 dBm		
M2		1	15.882001 GHz	-37.36 dBm		
M3		1	4.804306 GHz	-39.52 dBm		
M4		1	7.284545 GHz	-40.80 dBm		
M5		1	9.475378 GHz	-40.24 dBm		

Date: 23.DEC.2024 11:04:18

Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



Date: 23.DEC.2024 11:05:09

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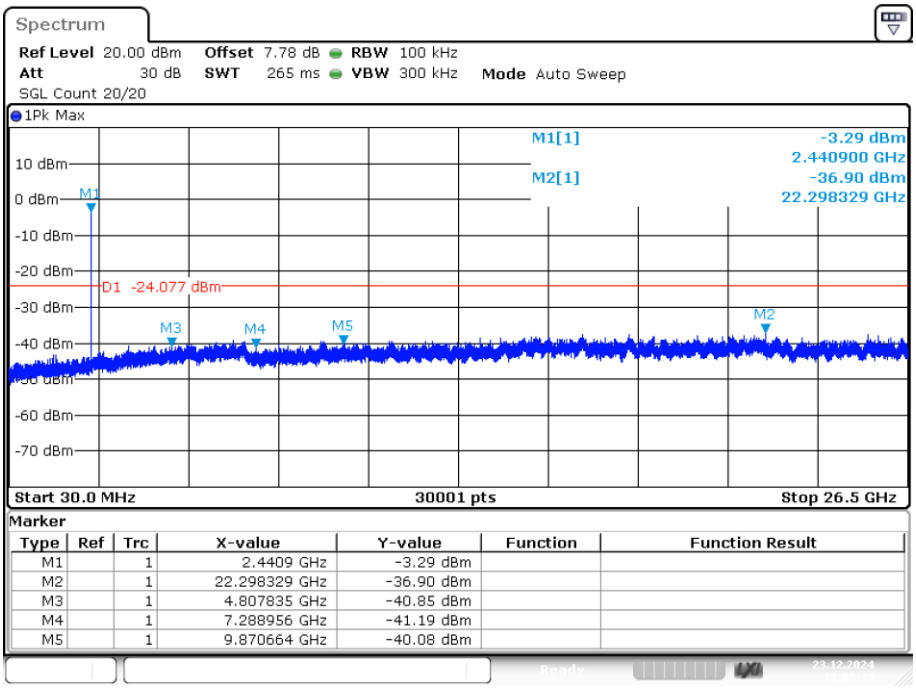
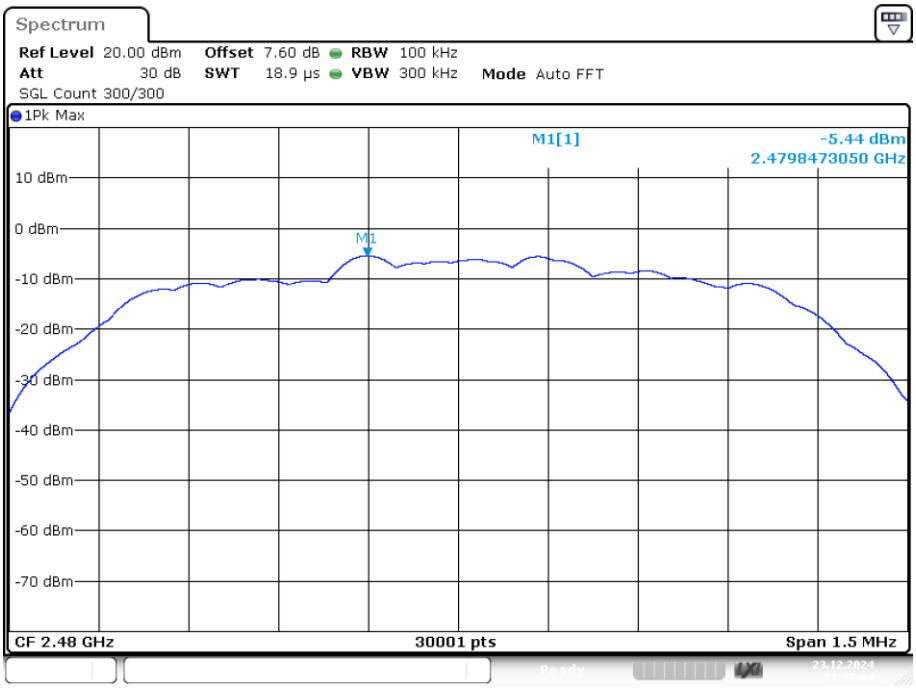


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4409 GHz	-3.29 dBm		
M2		1	22.298329 GHz	-36.90 dBm		
M3		1	4.807835 GHz	-40.85 dBm		
M4		1	7.288956 GHz	-41.19 dBm		
M5		1	9.870664 GHz	-40.08 dBm		

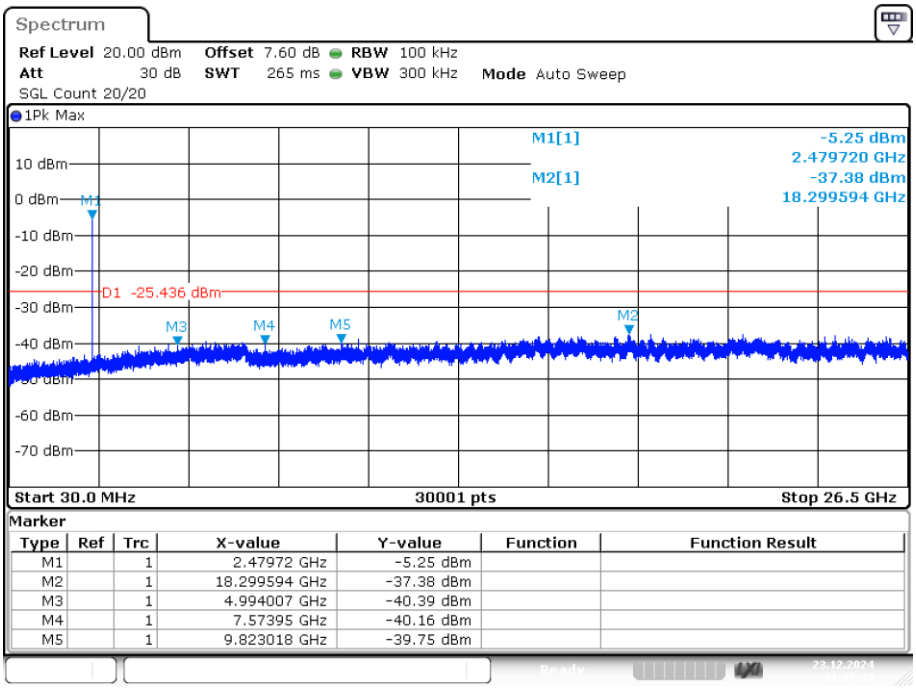
Date: 23.DEC.2024 11:05:33

Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Date: 23.DEC.2024 11:07:15

Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

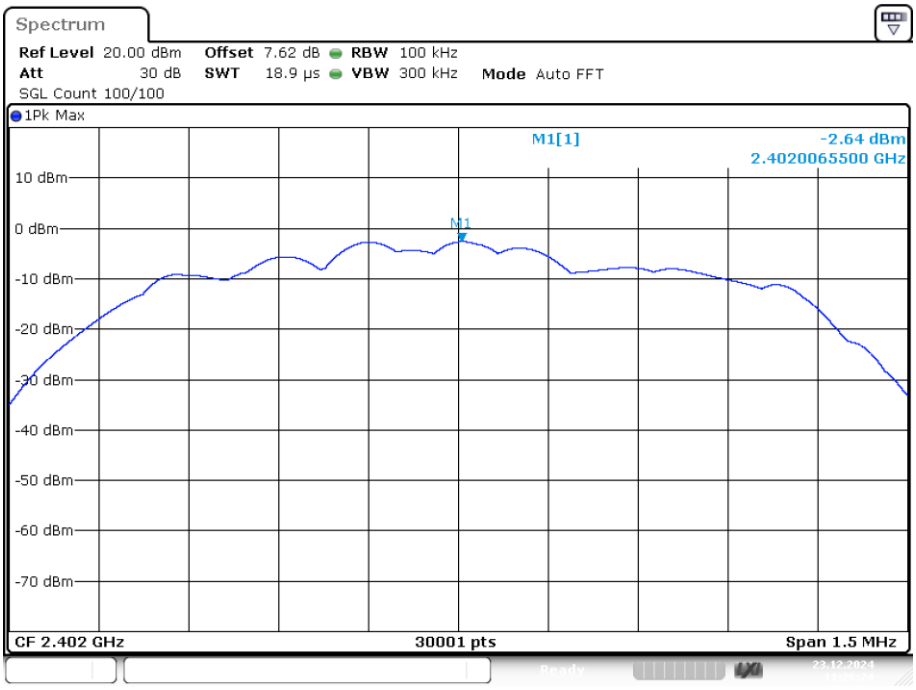


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47972 GHz	-5.25 dBm		
M2		1	18.299594 GHz	-37.38 dBm		
M3		1	4.994007 GHz	-40.39 dBm		
M4		1	7.57395 GHz	-40.16 dBm		
M5		1	9.823018 GHz	-39.75 dBm		

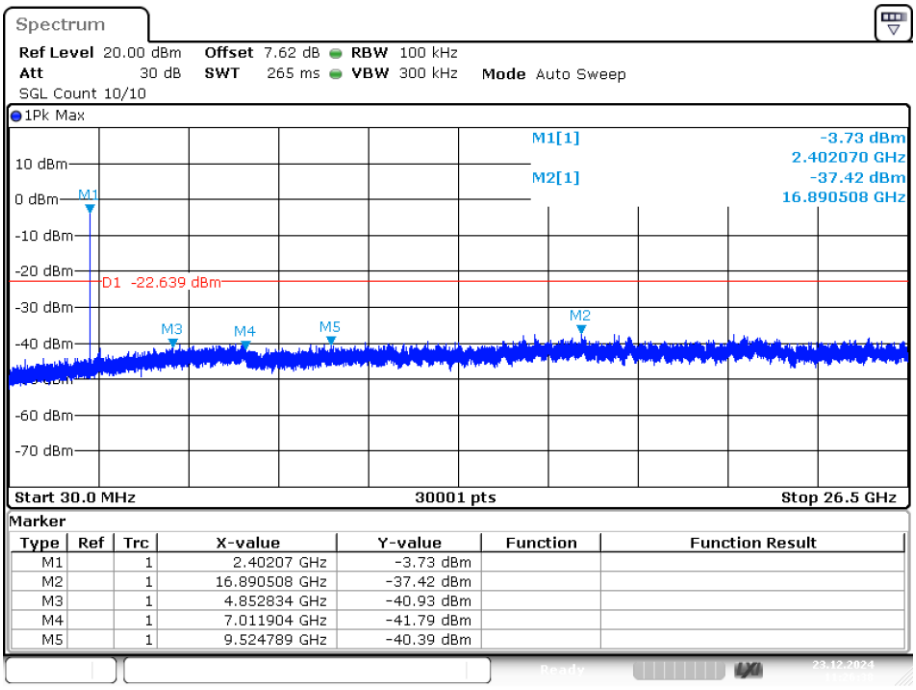
Date: 23.DEC.2024 11:07:39

Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



Date: 23.DEC.2024 11:26:23

Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

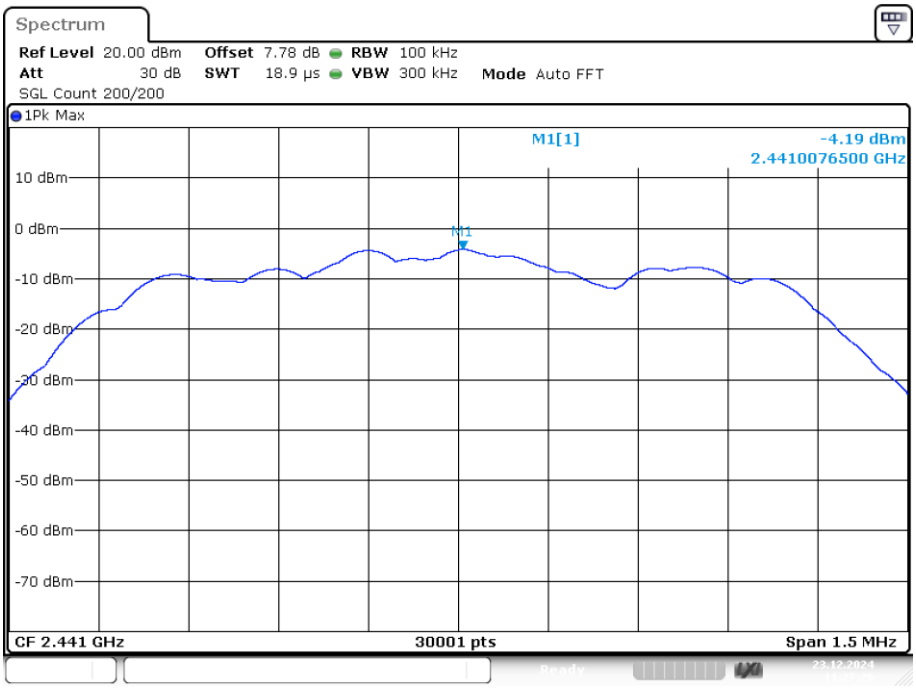


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40207 GHz	-3.73 dBm		
M2		1	16.890508 GHz	-37.42 dBm		
M3		1	4.852834 GHz	-40.93 dBm		
M4		1	7.011904 GHz	-41.79 dBm		
M5		1	9.524789 GHz	-40.39 dBm		

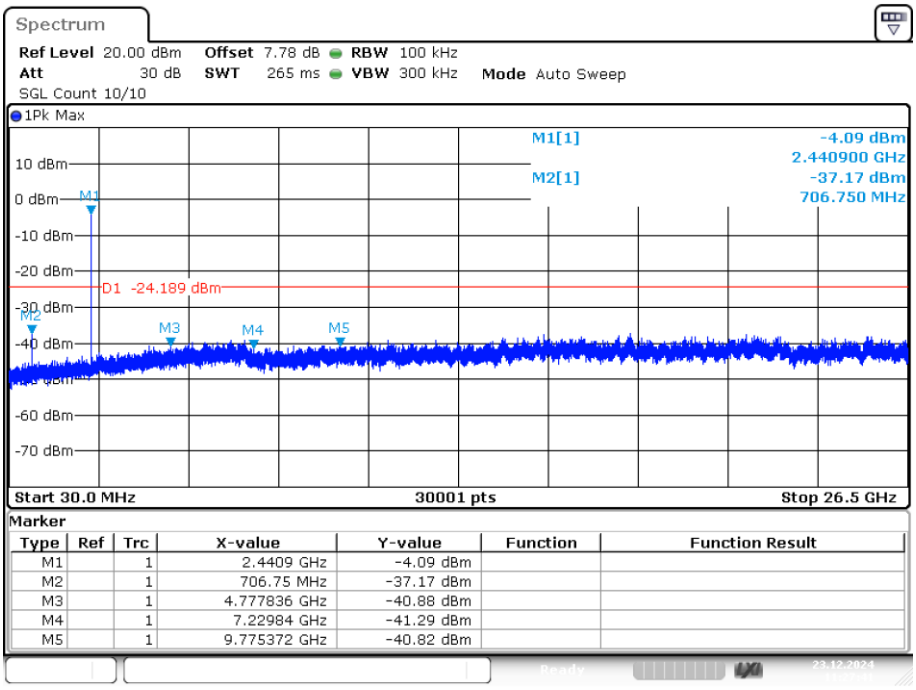
Date: 23.DEC.2024 11:26:37

Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



Date: 23.DEC.2024 11:27:27

Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission

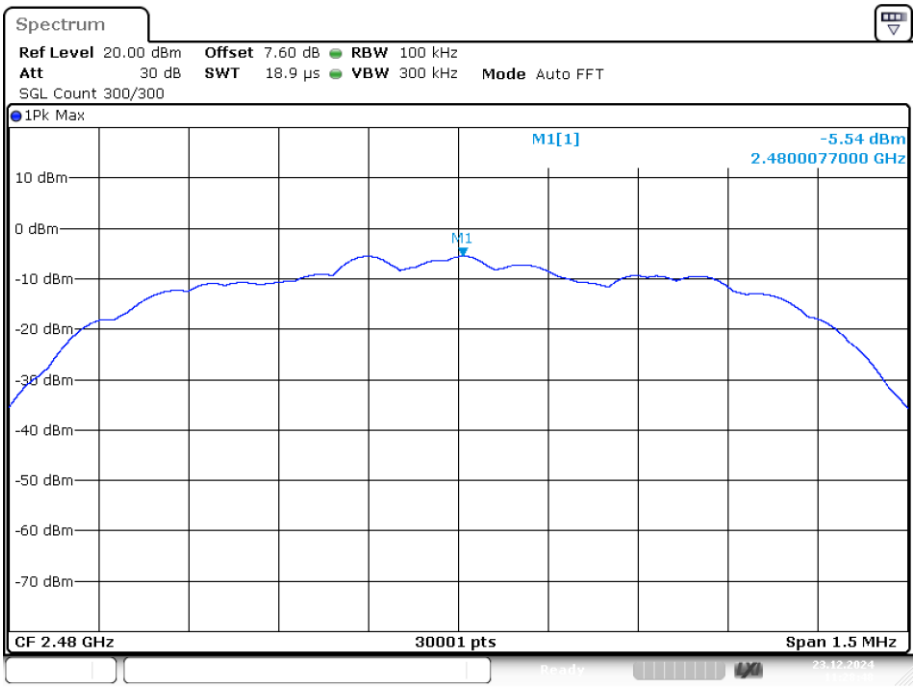


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4409 GHz	-4.09 dBm		
M2		1	706.75 MHz	-37.17 dBm		
M3		1	4.777836 GHz	-40.88 dBm		
M4		1	7.22984 GHz	-41.29 dBm		
M5		1	9.775372 GHz	-40.82 dBm		

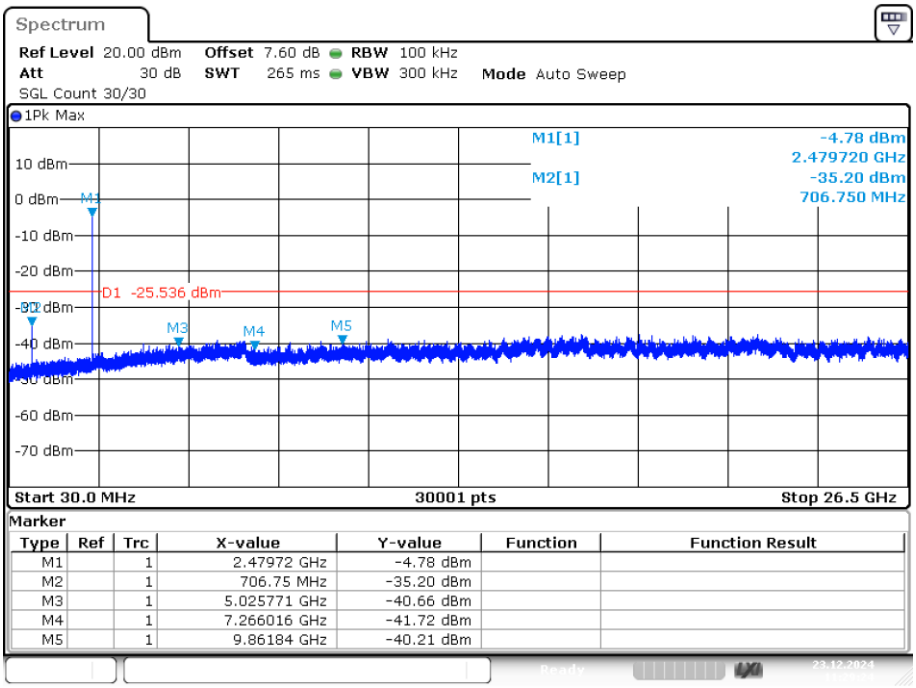
Date: 23.DEC.2024 11:27:41

Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Date: 23.DEC.2024 11:28:48

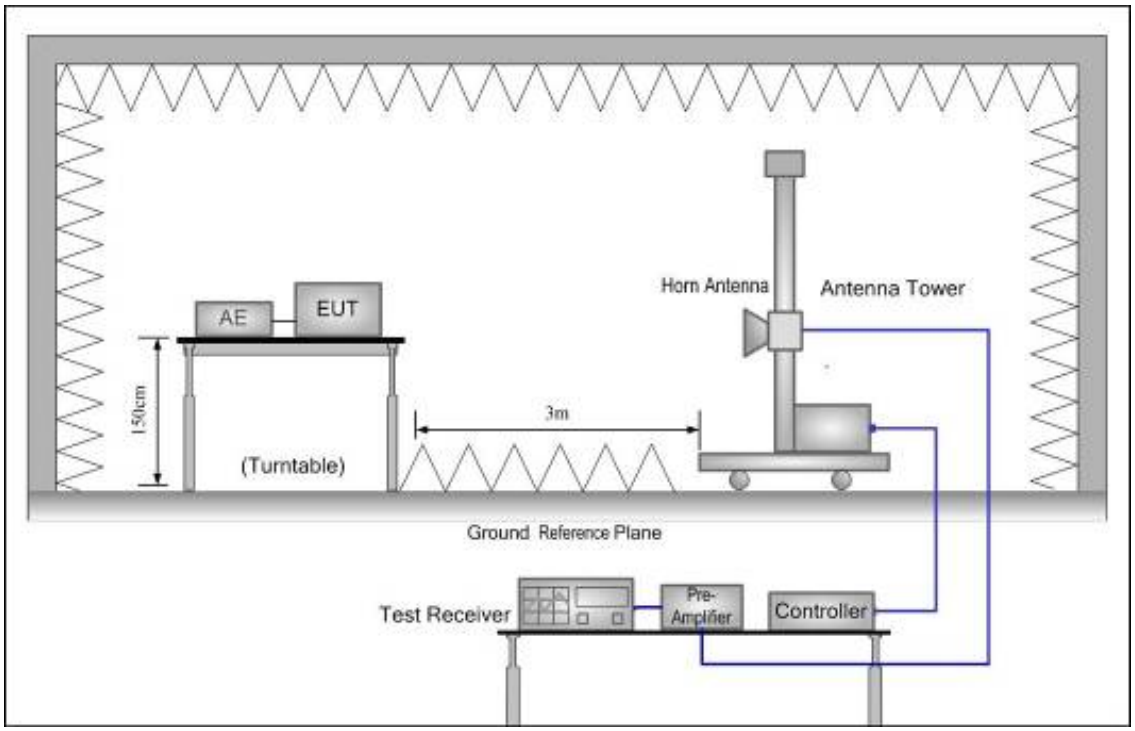
Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission



Date: 23.DEC.2024 11:29:23

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.

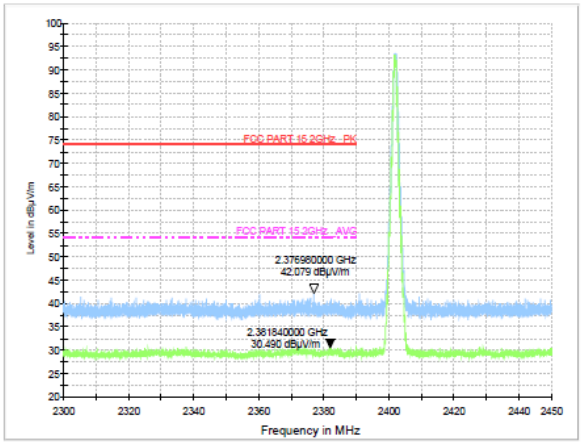
9.3. Test Procedure

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

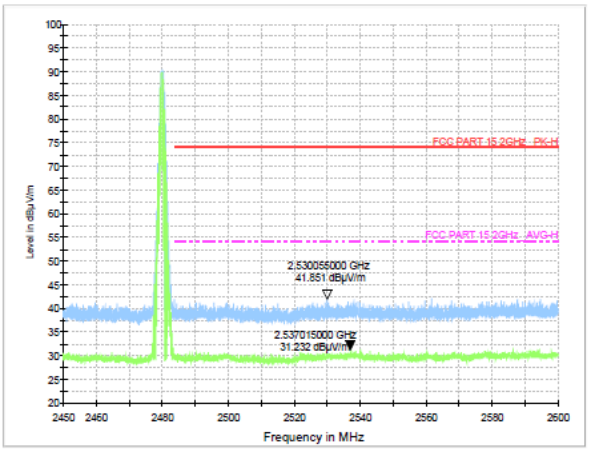
9.4. Test Result

PASS. (See below detailed test data)

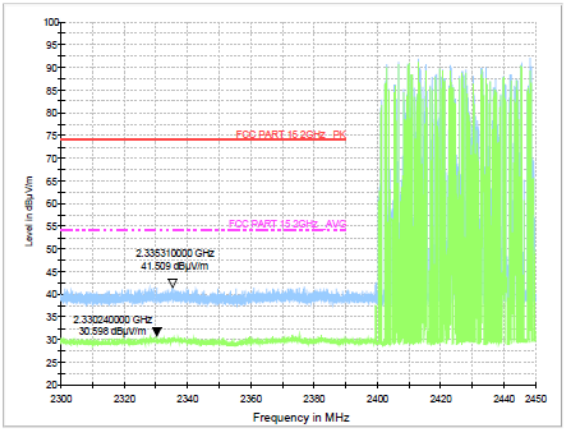
Test Mode: GFSK-Low Hopping-off



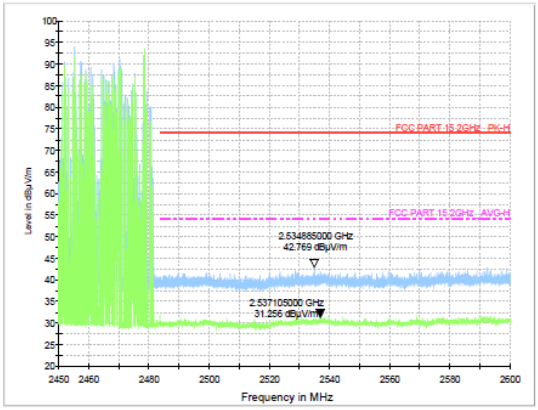
Test Mode: GFSK-High Hopping-off



Test Mode: GFSK-Low Hopping-on



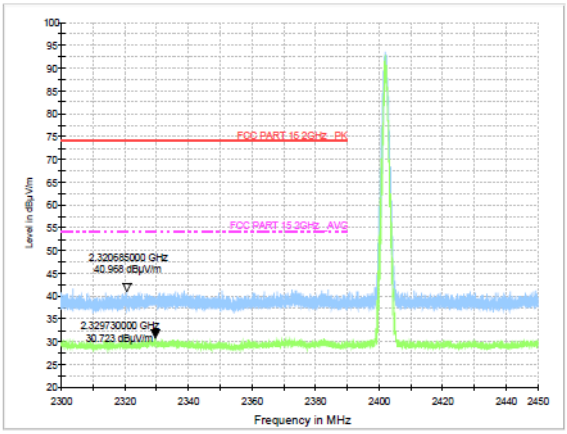
Test Mode: GFSK-High Hopping-on



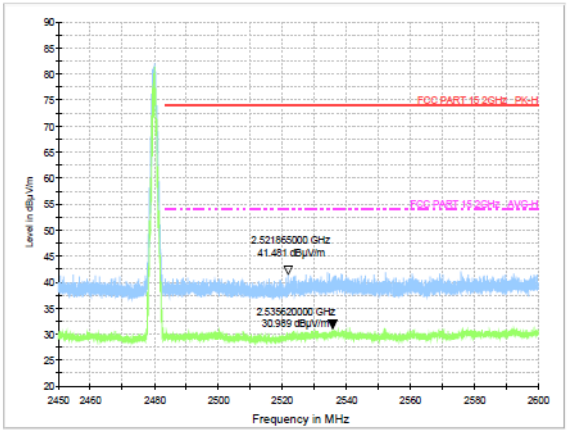
Note: 1. *:Maximum data; x:Over limit; !:over margin.

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

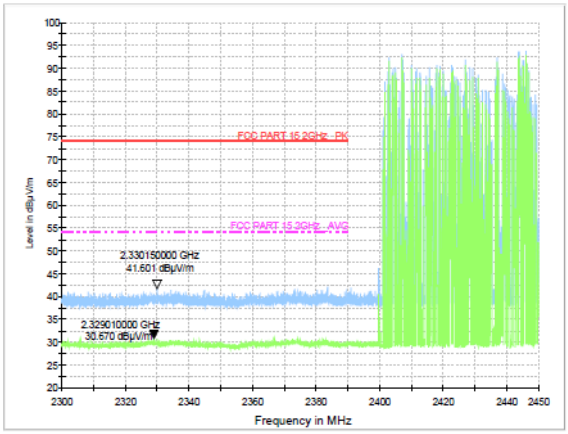
Test Mode: π/4 DQPSK-Low Hopping-off



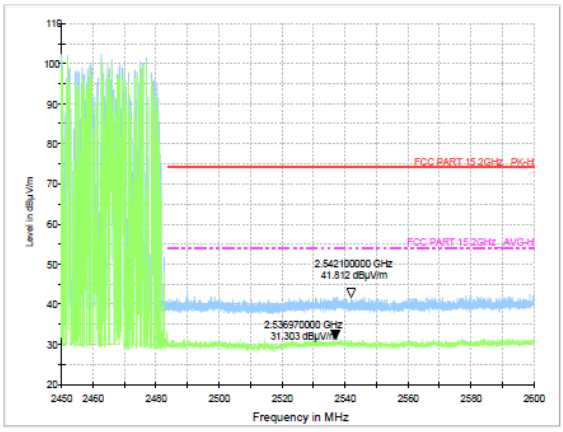
Test Mode: π/4 DQPSK-High Hopping-off



Test Mode: π/4 DQPSK-Low Hopping-on



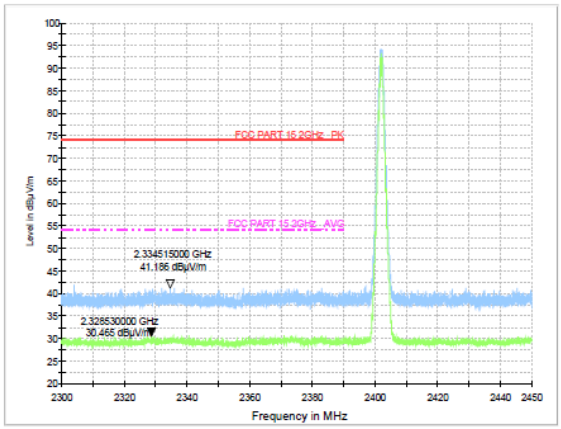
Test Mode: π/4 DQPSK-High Hopping-on



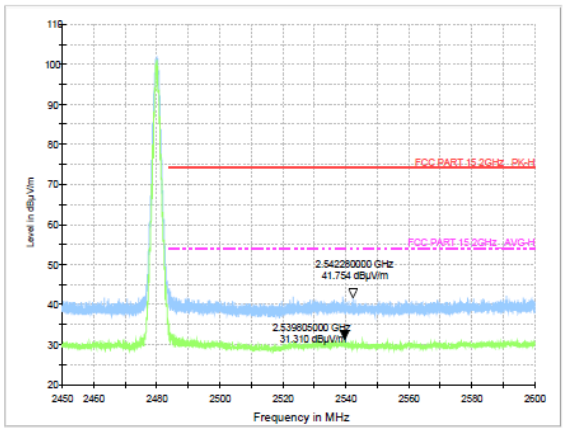
Note: 1. *:Maximum data; x:Over limit; !:over margin.

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

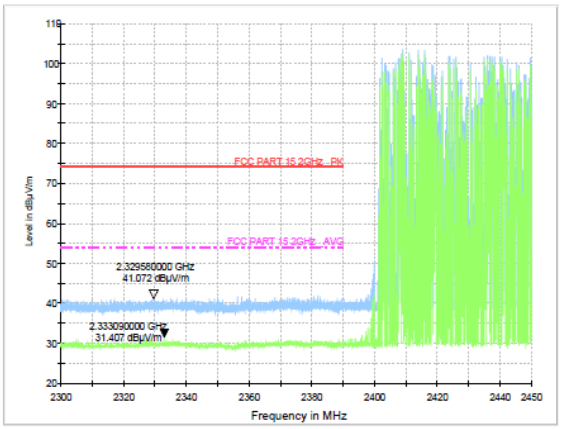
Test Mode: 8-DPSK -Low Hopping-off



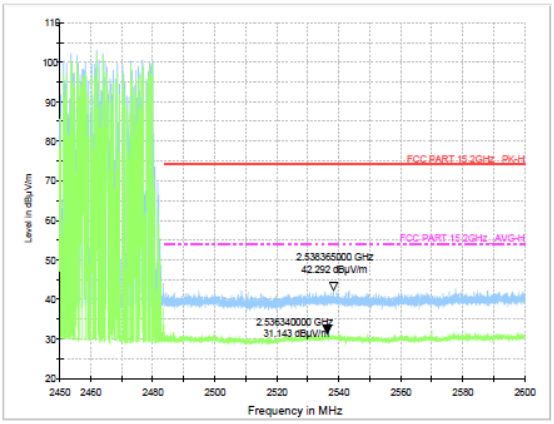
Test Mode: 8-DPSK -High Hopping-off



Test Mode: 8-DPSK-Low Hopping-on

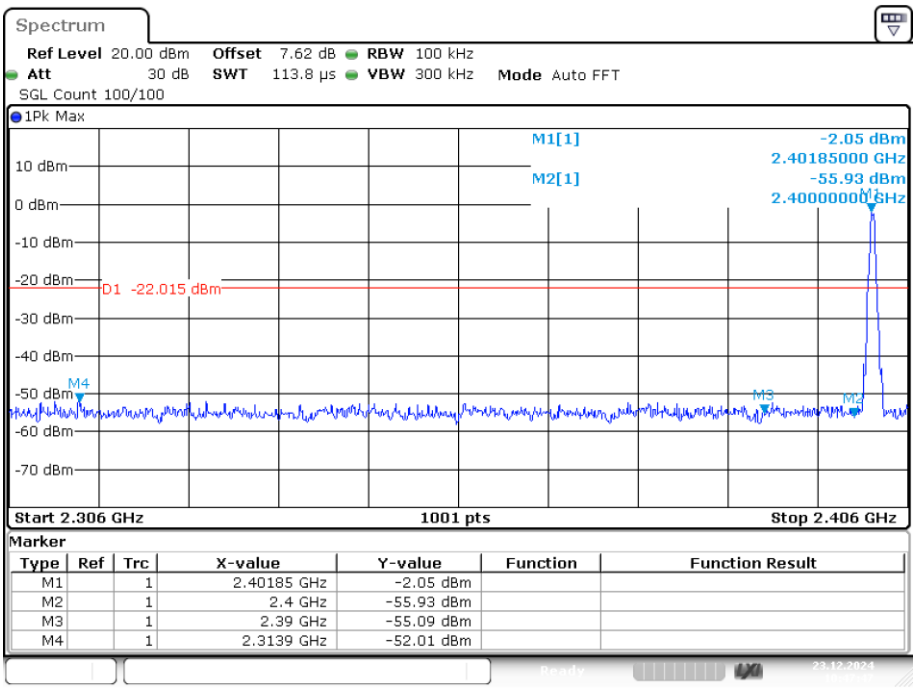


Test Mode: 8-DPSK -High Hopping-on



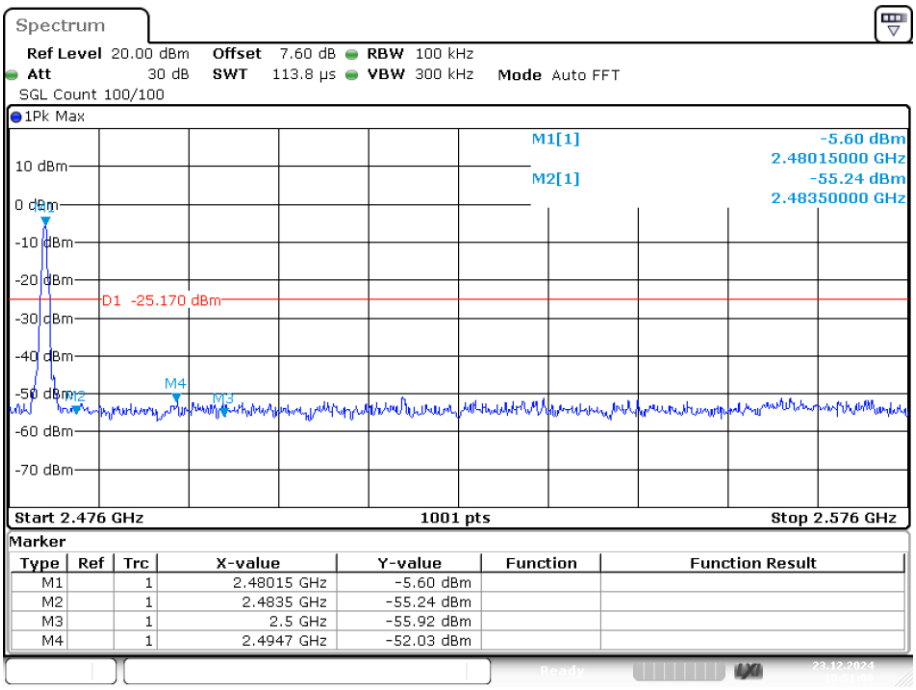
Conducted Method

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



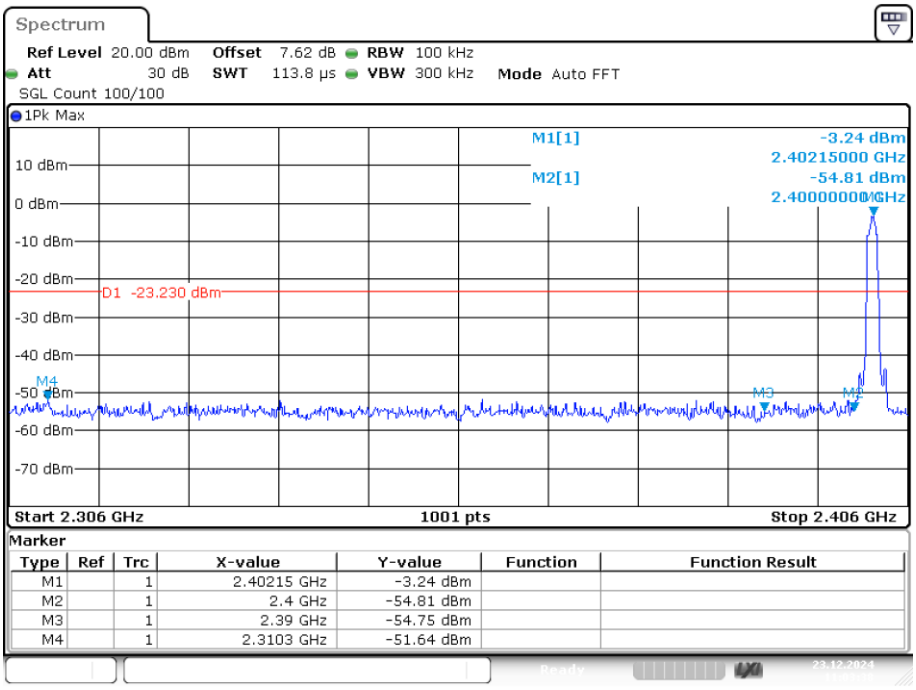
Date: 23.DEC.2024 10:47:47

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



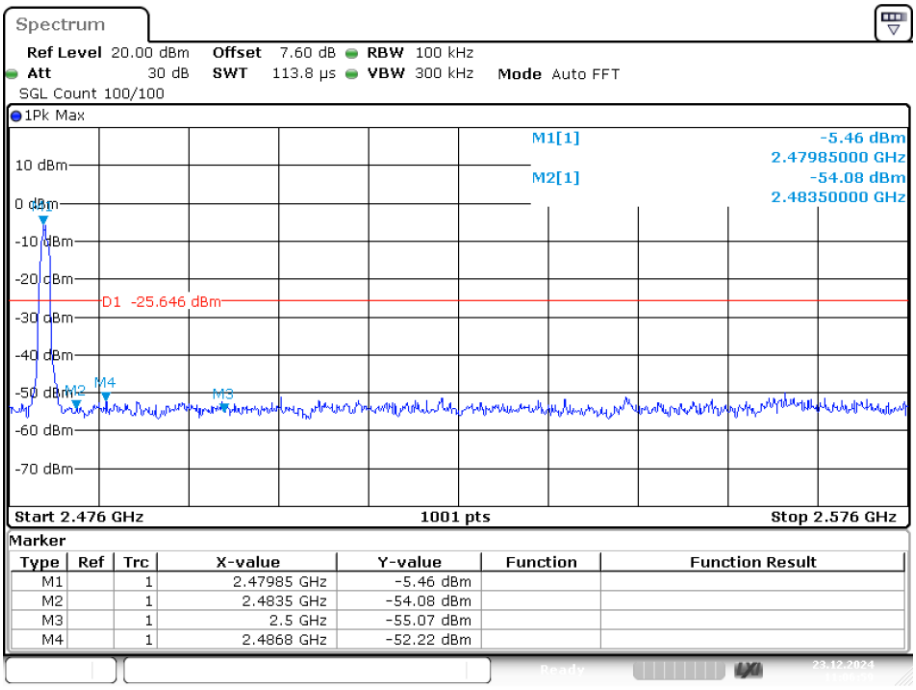
Date: 23.DEC.2024 10:51:01

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



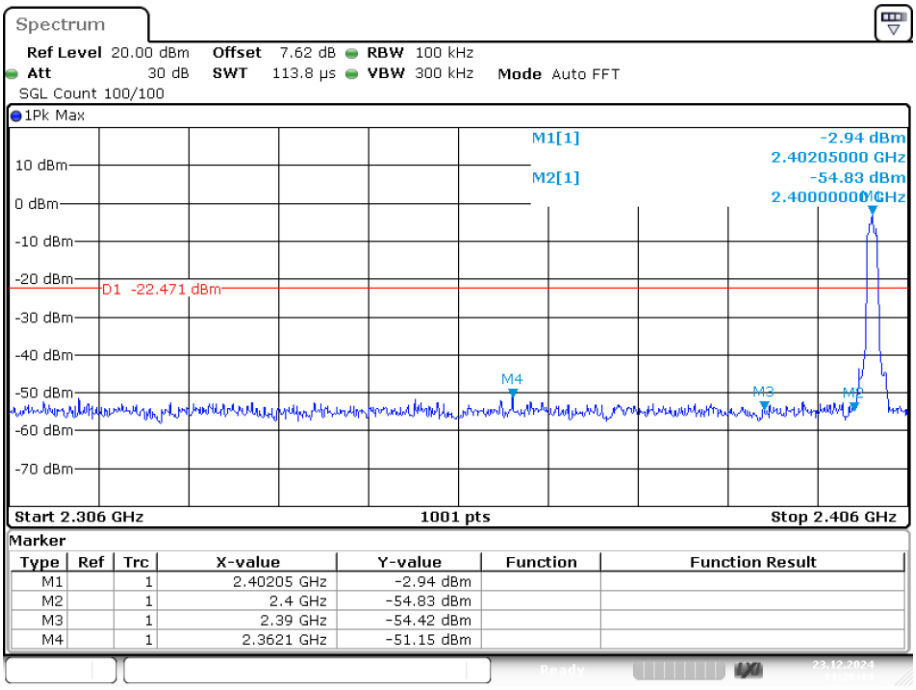
Date: 23.DEC.2024 11:03:38

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



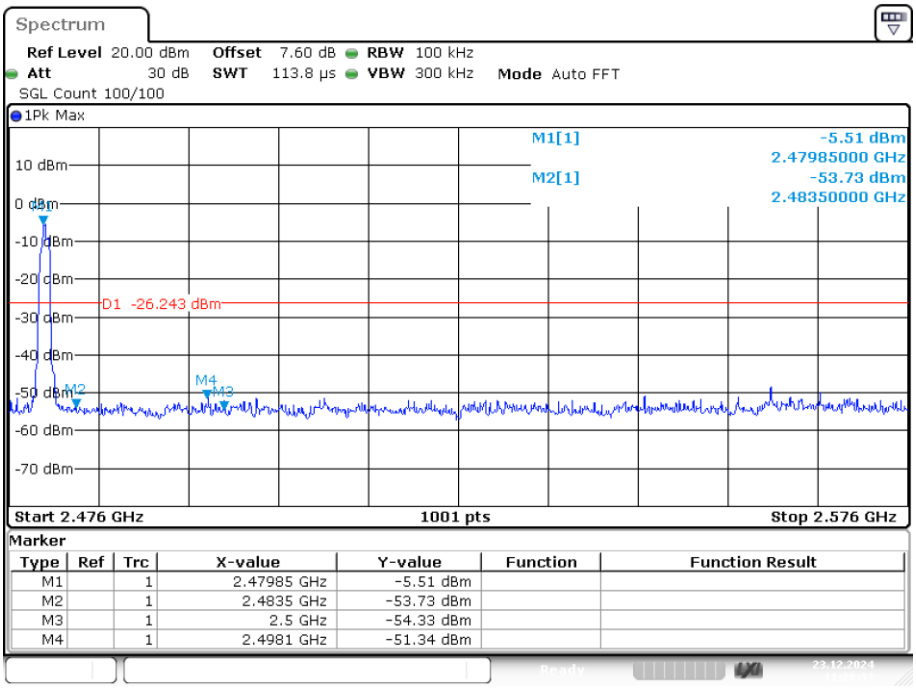
Date: 23.DEC.2024 11:06:59

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



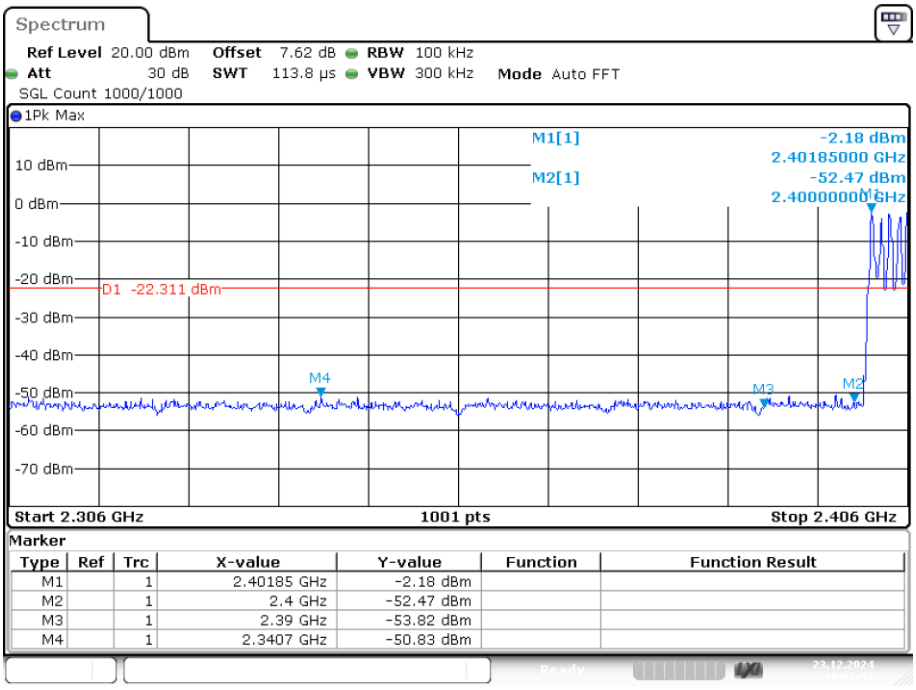
Date: 23.DEC.2024 11:26:14

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



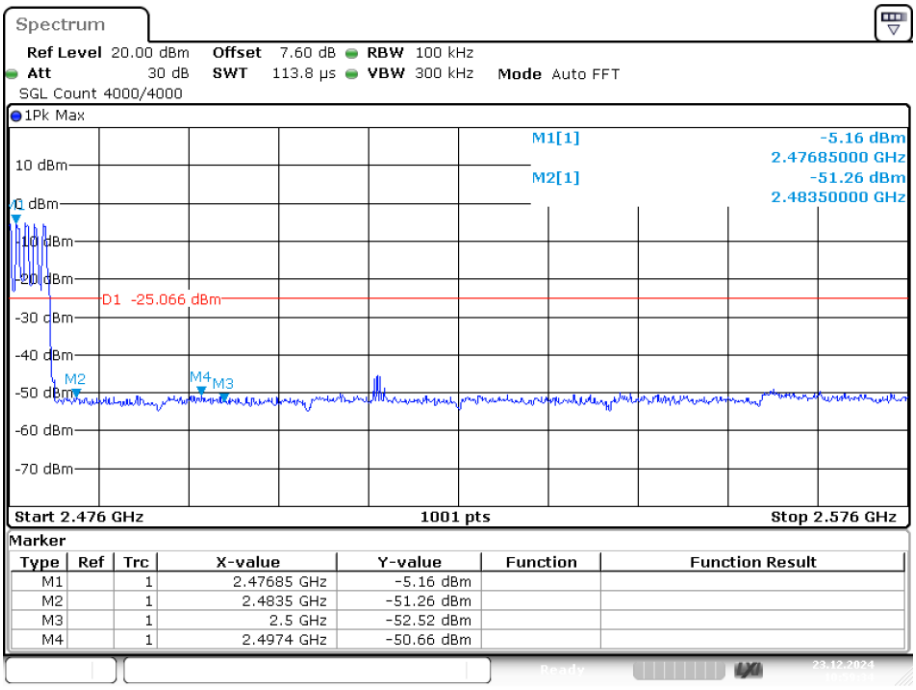
Date: 23.DEC.2024 11:28:33

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



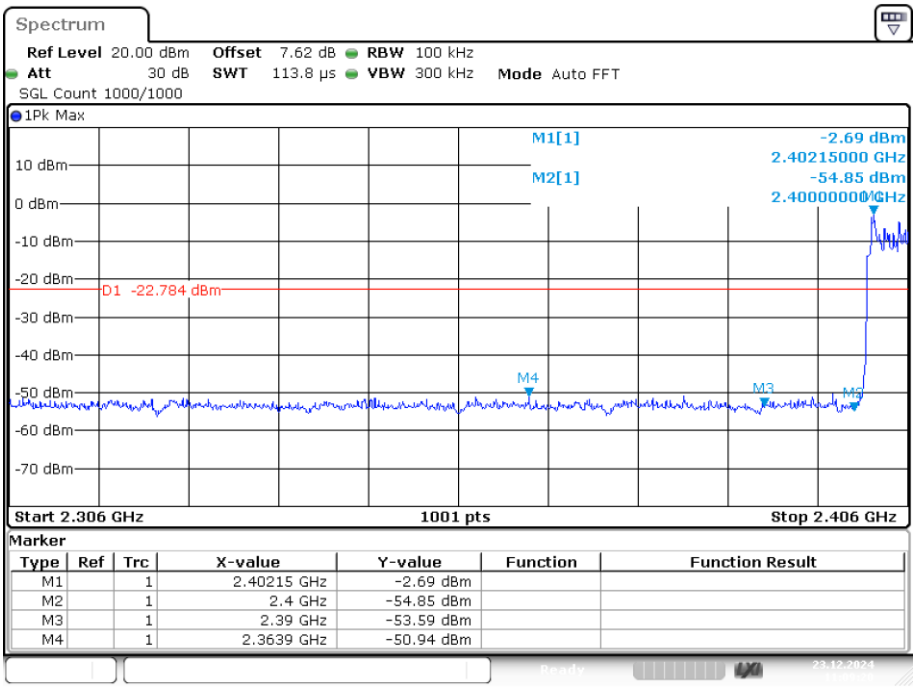
Date: 23.DEC.2024 10:52:57

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



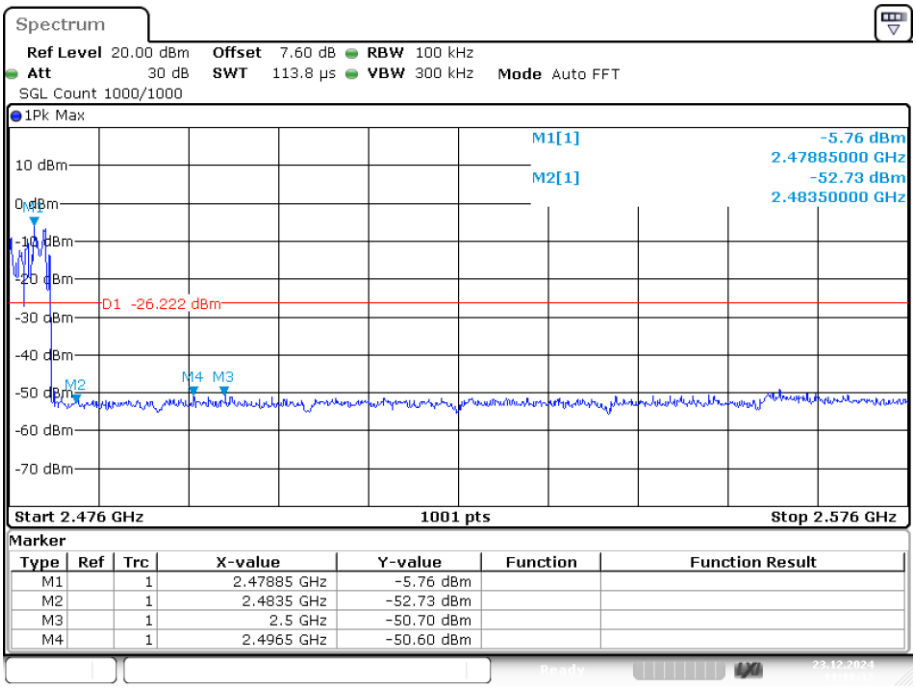
Date: 23.DEC.2024 10:59:34

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



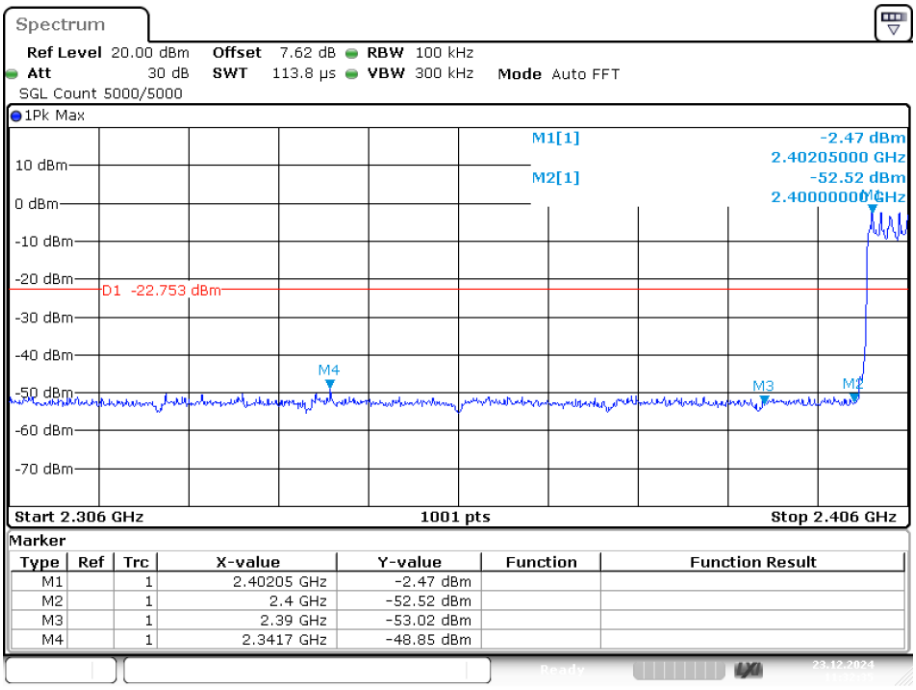
Date: 23.DEC.2024 11:09:20

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



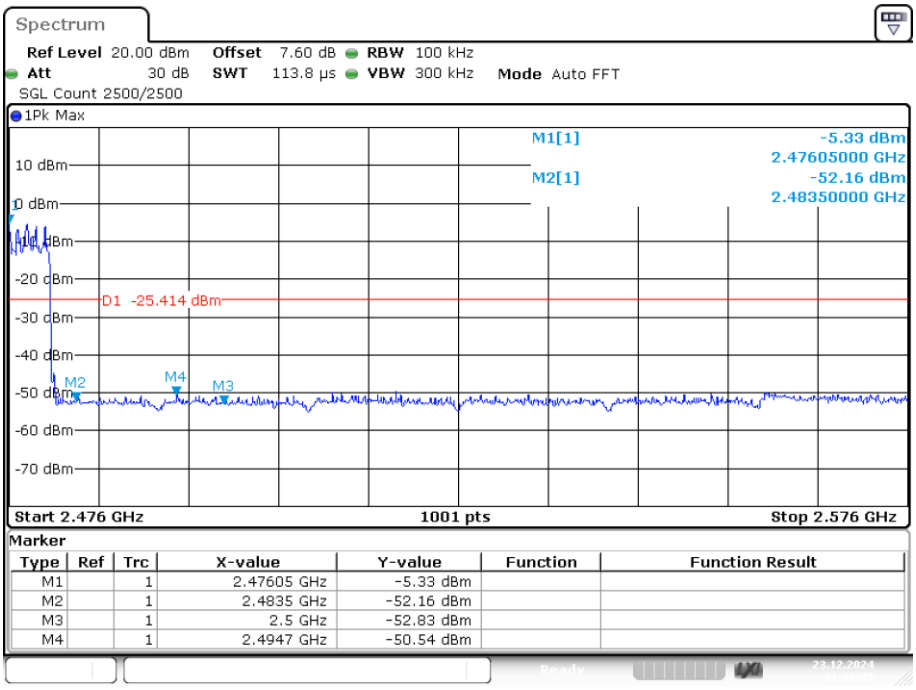
Date: 23.DEC.2024 11:16:32

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



Date: 23.DEC.2024 11:32:35

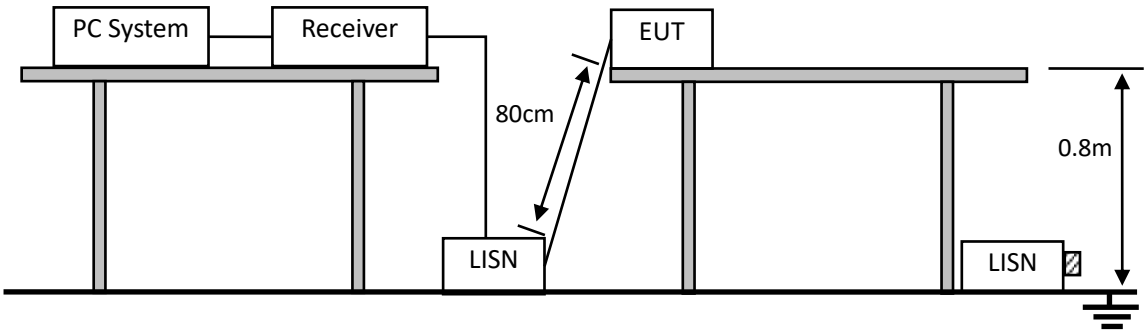
Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission



Date: 23.DEC.2024 11:36:34

10. POWER LINE CONDUCTED EMISSIONS

10.1.Block Diagram of Test Setup



:50Ω Terminator

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.

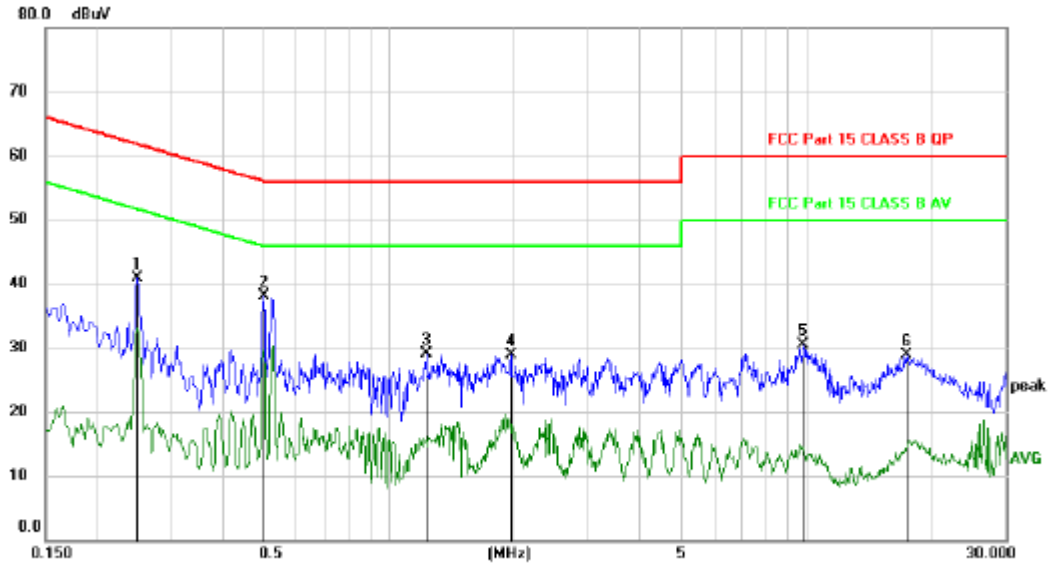
(5) The frequency range from 150 KHz to 30MHz is checked.

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:

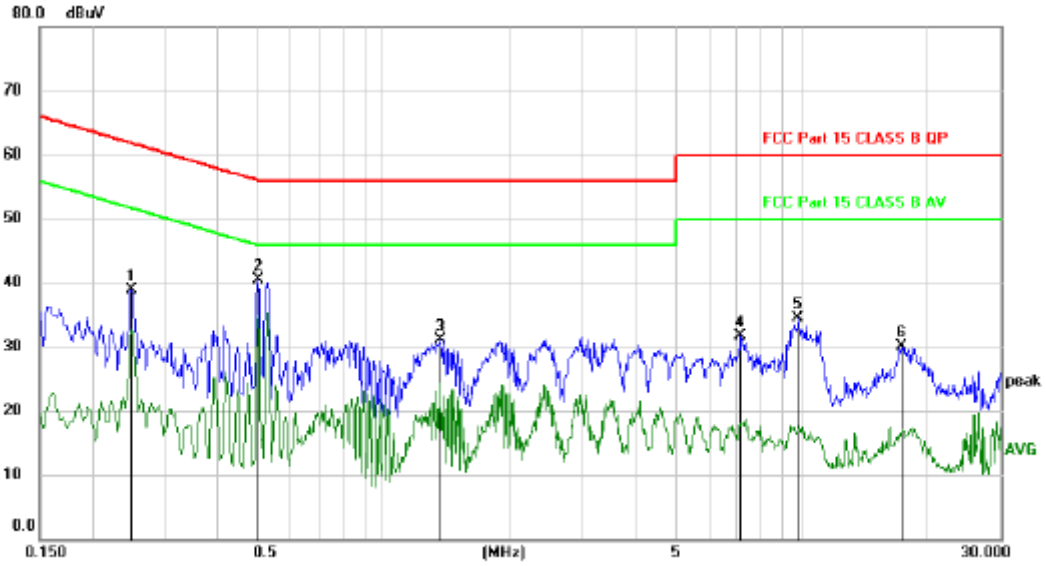


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2490	31.03	9.97	41.00	61.79	-20.79	peak	
2	*	0.5010	28.23	9.96	38.19	56.00	-17.81	peak	
3		1.2269	19.26	9.89	29.15	56.00	-26.85	peak	
4		1.9590	19.10	9.88	28.98	56.00	-27.02	peak	
5		9.8100	20.21	10.20	30.41	60.00	-29.59	peak	
6		17.3190	18.53	10.39	28.92	60.00	-31.08	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		0.2490	29.00	9.97	38.97	61.79	-22.82	peak	
2	*	0.5010	30.64	9.96	40.60	56.00	-15.40	peak	
3		1.3650	21.29	9.89	31.18	56.00	-24.82	peak	
4		7.1580	21.55	10.12	31.67	60.00	-28.33	peak	
5		9.8430	24.24	10.21	34.45	60.00	-25.55	peak	
6		17.3280	19.77	10.40	30.17	60.00	-29.83	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

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

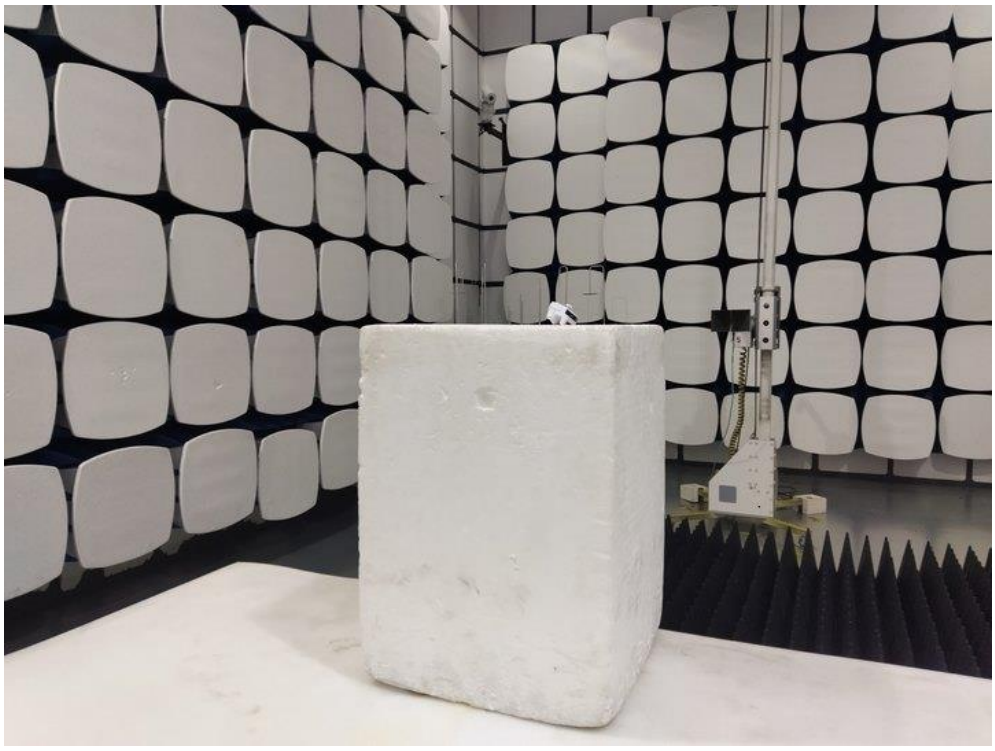
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional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

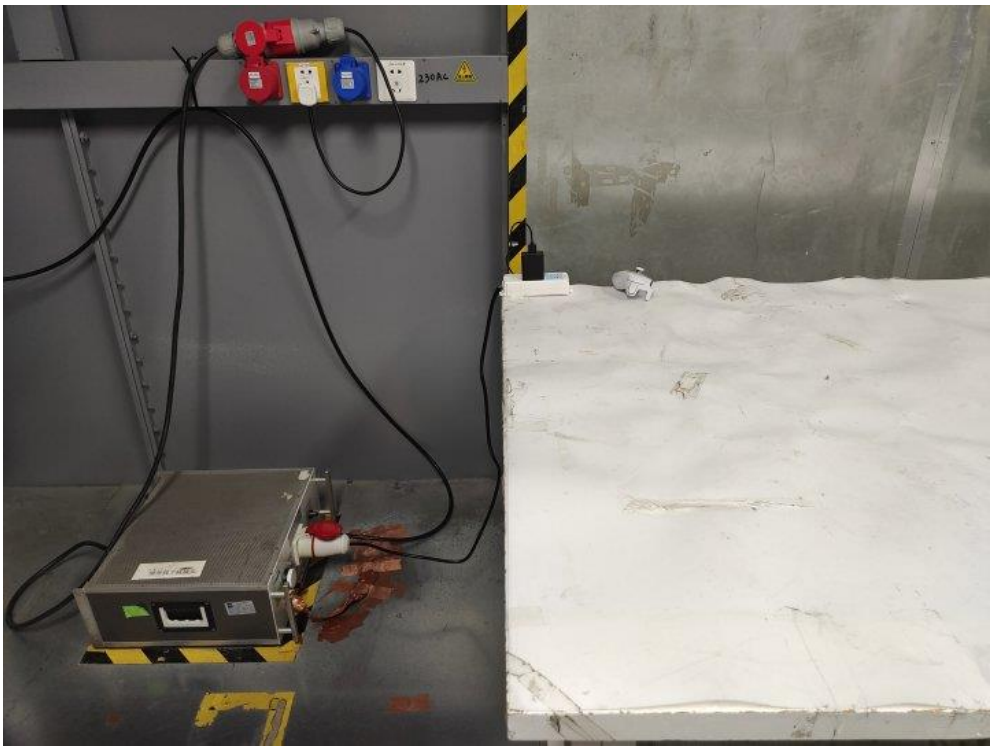
The EUT antenna is Internal Antenna. It complies with the standard requirement.

12. TEST SETUP PHOTO

12.1.Photo of Radiated Emission test



12.2.Photo of Conducted Emission test



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