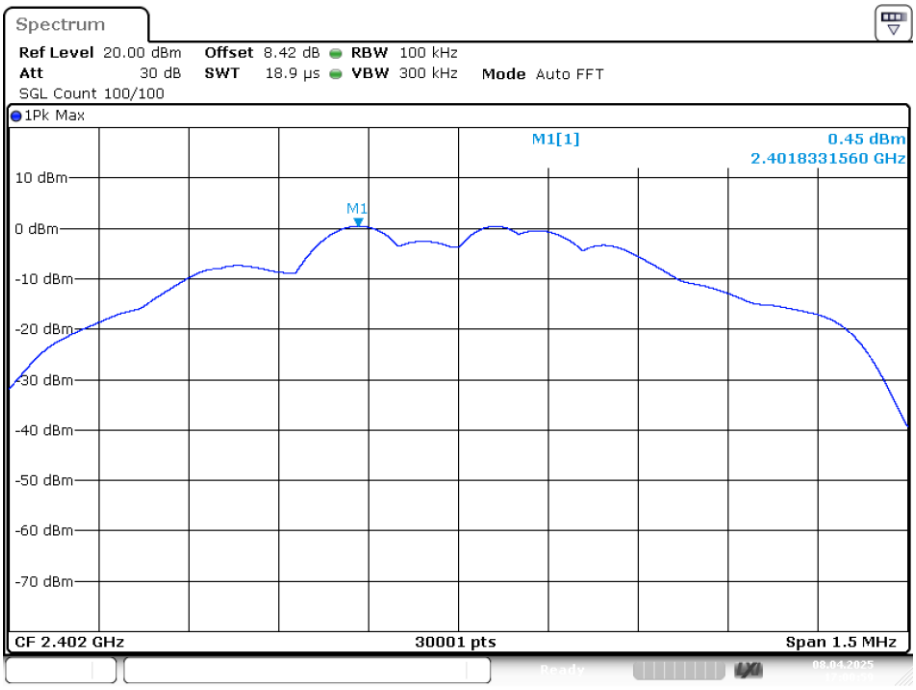
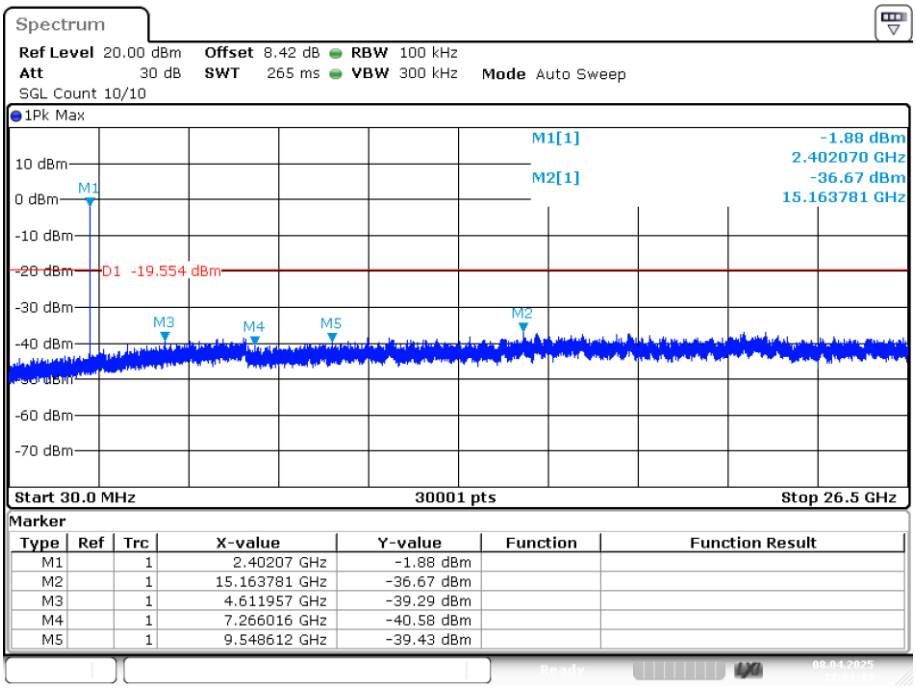
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



Date: 8.APR.2025 17:00:59

Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

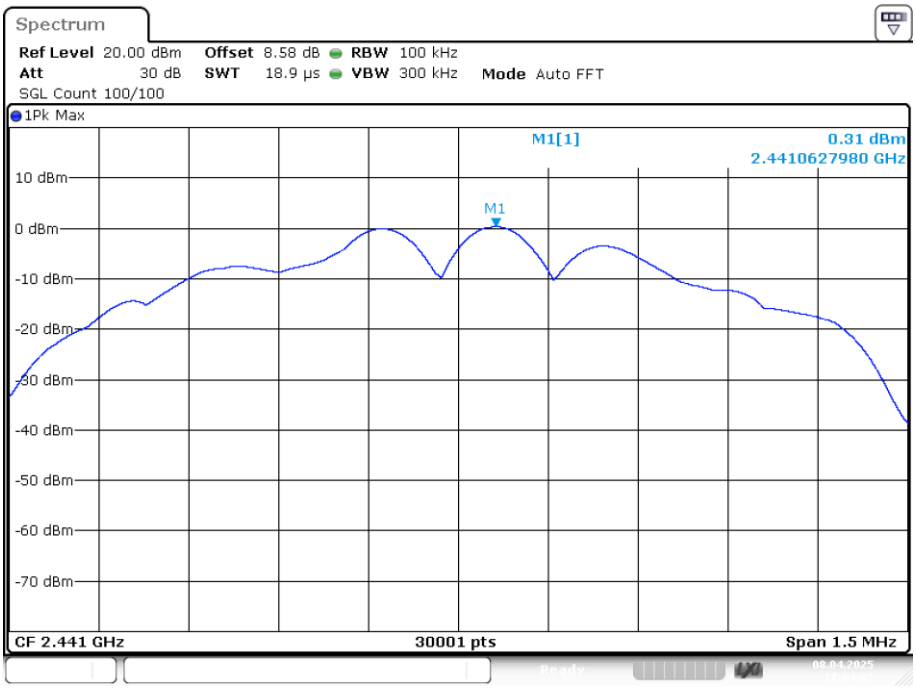


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40207 GHz	-1.88 dBm		
M2		1	15.163781 GHz	-36.67 dBm		
M3		1	4.611957 GHz	-39.29 dBm		
M4		1	7.266016 GHz	-40.58 dBm		
M5		1	9.548612 GHz	-39.43 dBm		

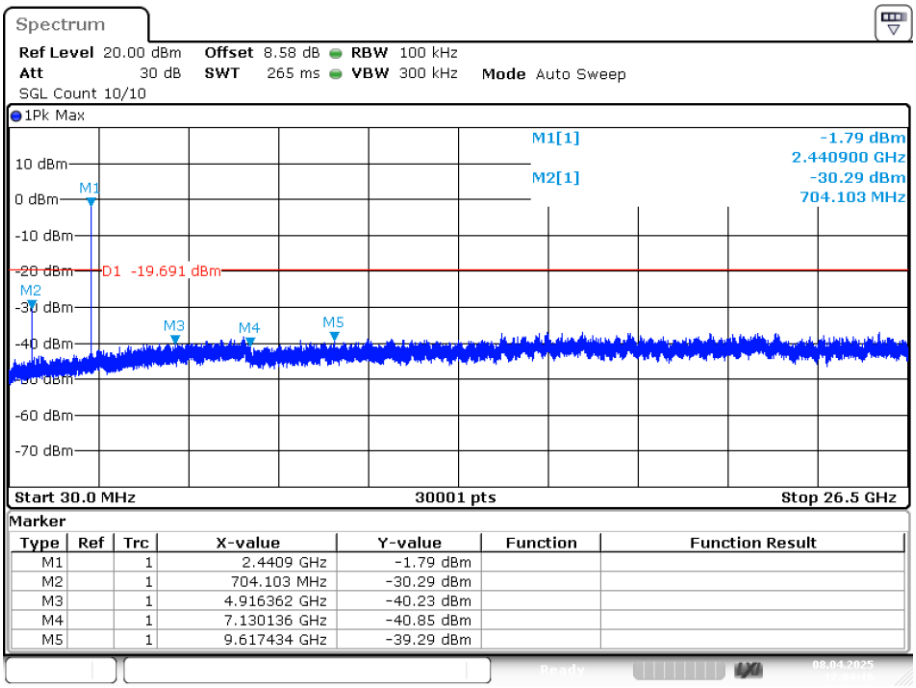
Date: 8.APR.2025 17:01:13

Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



Date: 8.APR.2025 17:04:02

Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

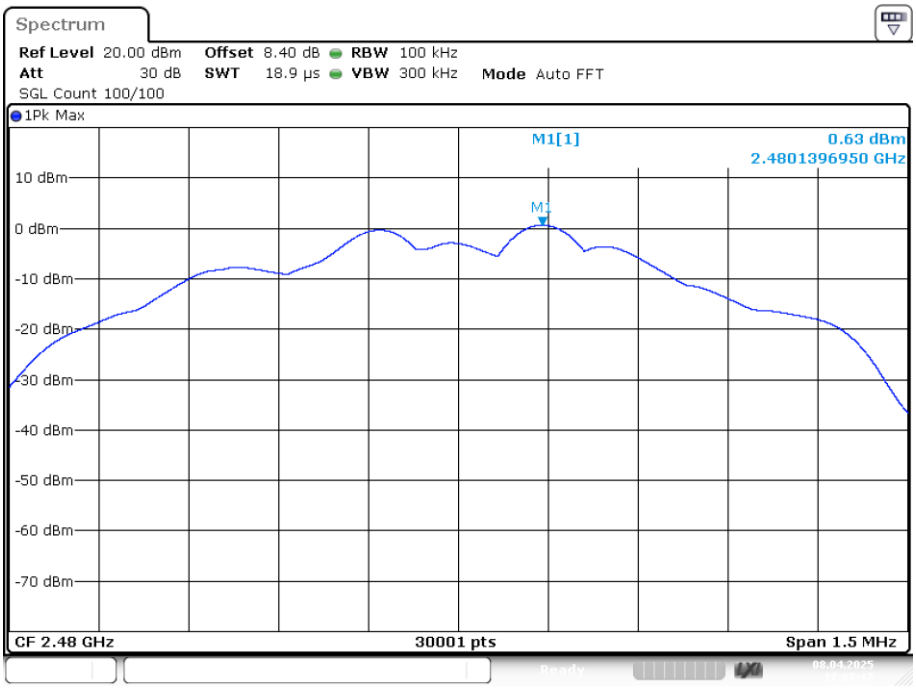


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4409 GHz	-1.79 dBm		
M2		1	704.103 MHz	-30.29 dBm		
M3		1	4.916362 GHz	-40.23 dBm		
M4		1	7.130136 GHz	-40.85 dBm		
M5		1	9.617434 GHz	-39.29 dBm		

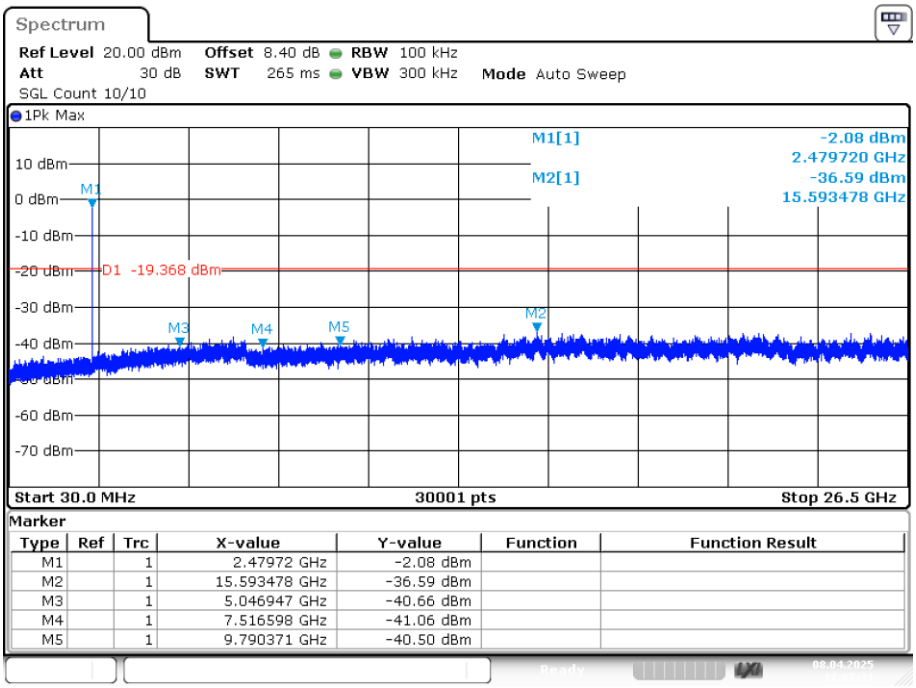
Date: 8.APR.2025 17:04:16

Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Date: 8.APR.2025 17:07:16

Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

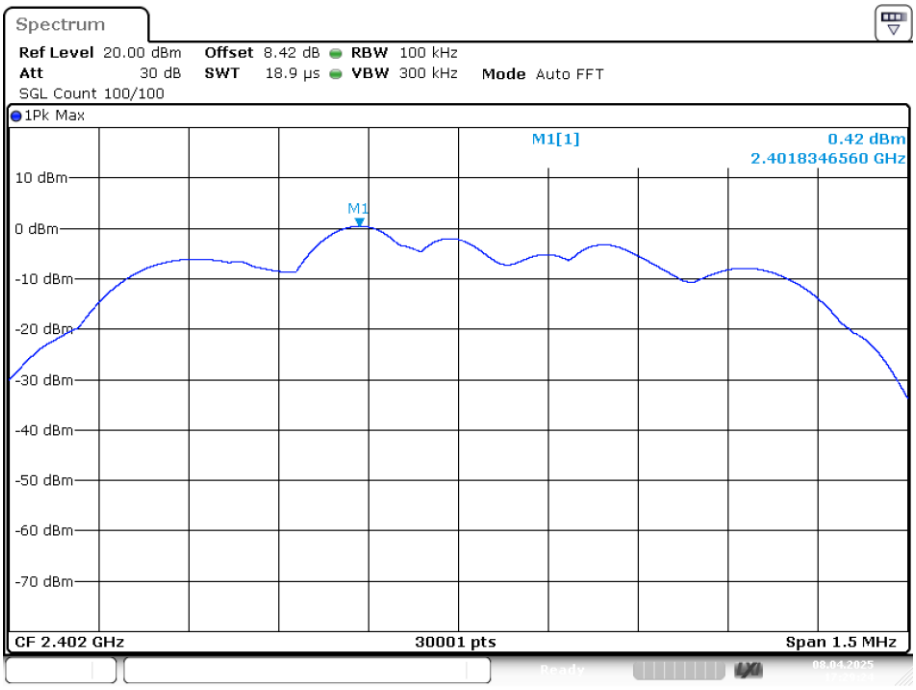


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47972 GHz	-2.08 dBm		
M2		1	15.593478 GHz	-36.59 dBm		
M3		1	5.046947 GHz	-40.66 dBm		
M4		1	7.516598 GHz	-41.06 dBm		
M5		1	9.790371 GHz	-40.50 dBm		

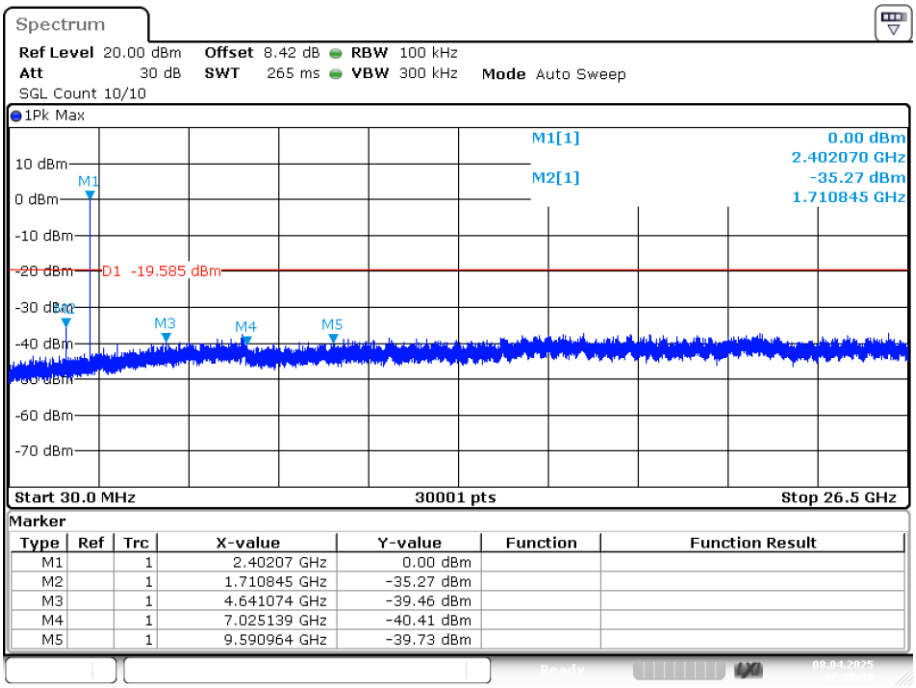
Date: 8.APR.2025 17:07:30

Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



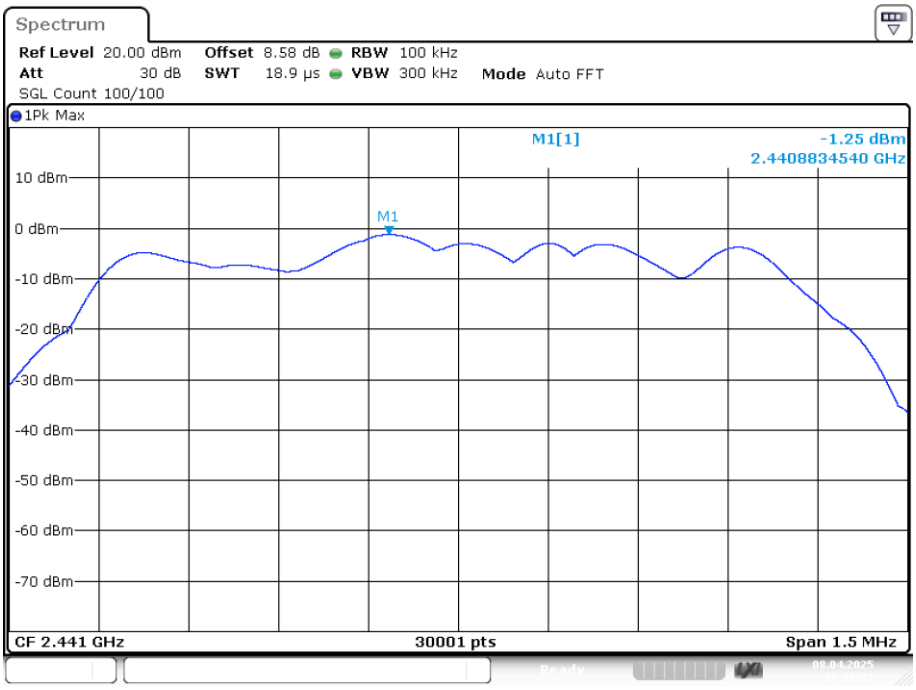
Date: 8.APR.2025 17:29:24

Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



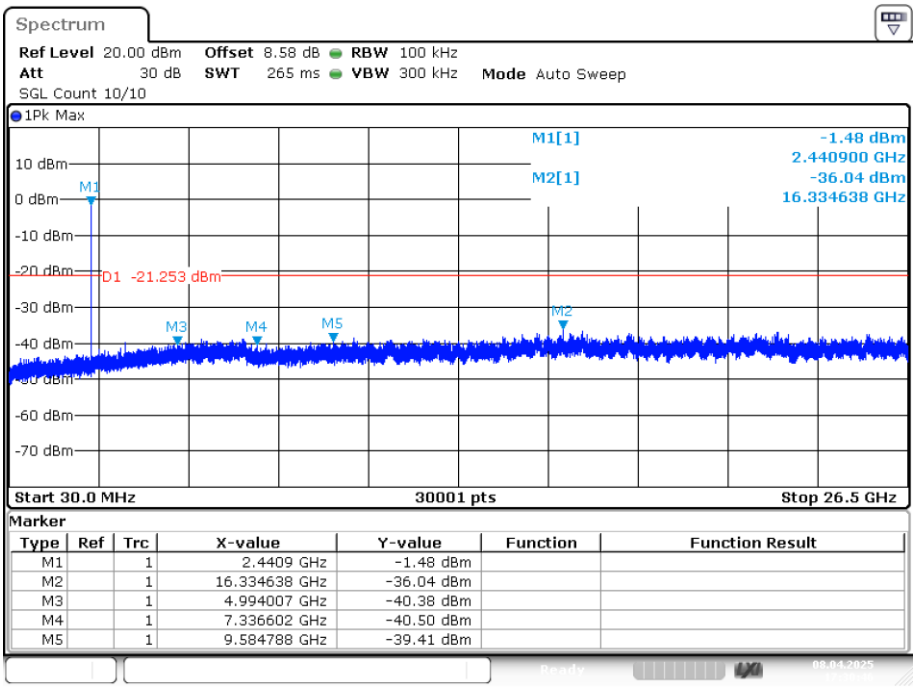
Date: 8.APR.2025 17:29:38

Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Date: 8.APR.2025 17:30:32

Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission

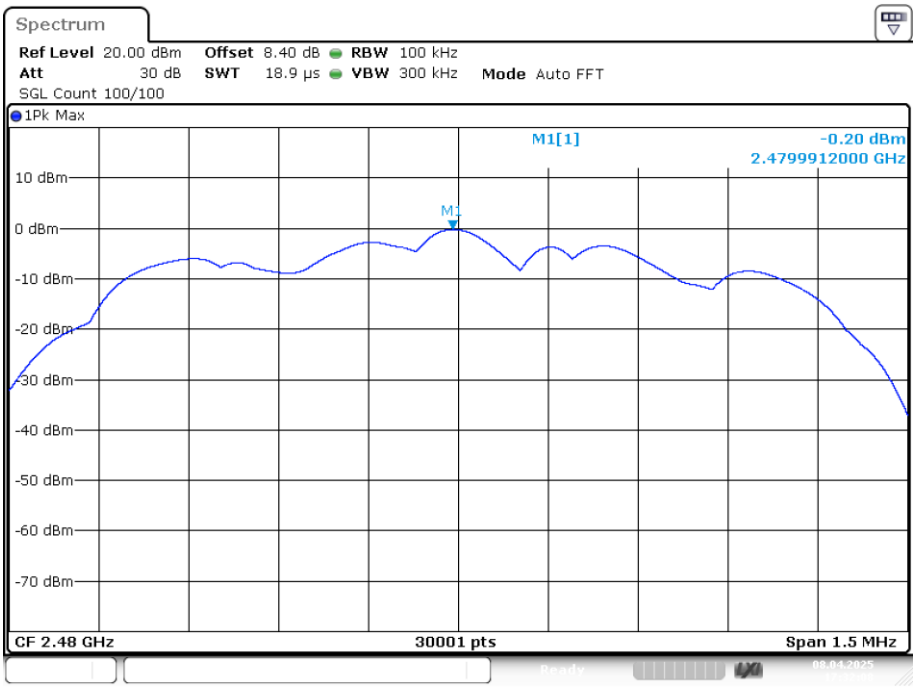


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4409 GHz	-1.48 dBm		
M2		1	16.334638 GHz	-36.04 dBm		
M3		1	4.994007 GHz	-40.38 dBm		
M4		1	7.336602 GHz	-40.50 dBm		
M5		1	9.584788 GHz	-39.41 dBm		

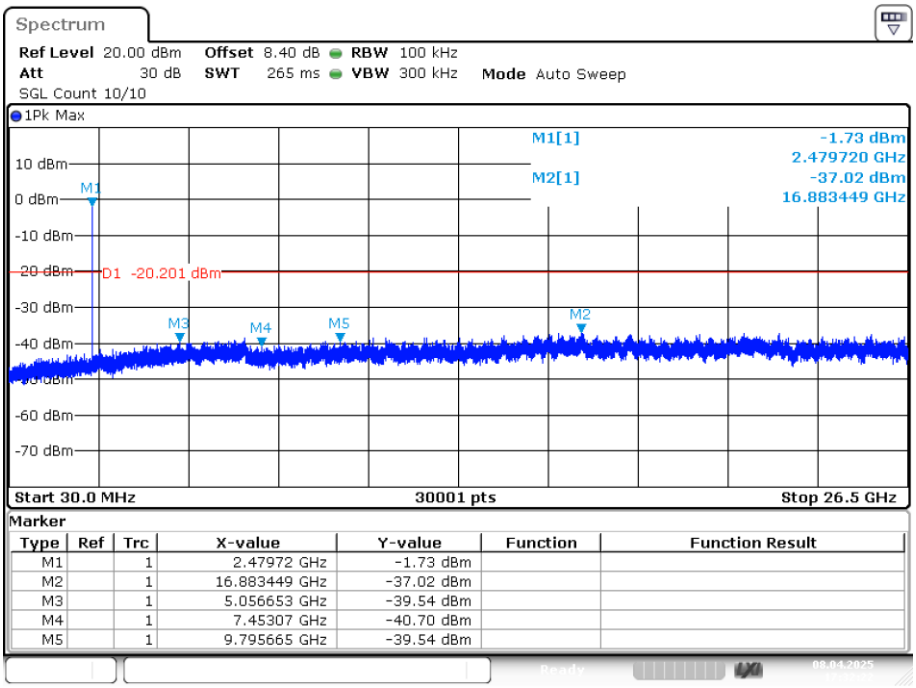
Date: 8.APR.2025 17:30:45

Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Date: 8.APR.2025 17:32:07

Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission



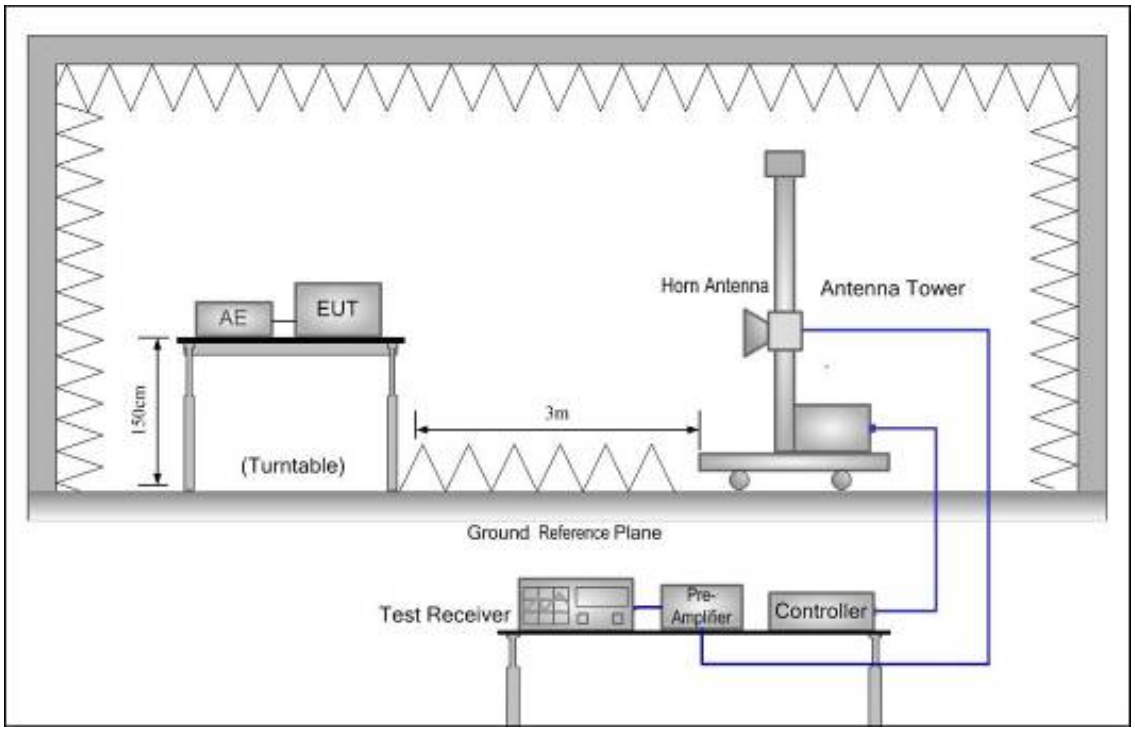
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47972 GHz	-1.73 dBm		
M2		1	16.883449 GHz	-37.02 dBm		
M3		1	5.056653 GHz	-39.54 dBm		
M4		1	7.45307 GHz	-40.70 dBm		
M5		1	9.795665 GHz	-39.54 dBm		

Date: 8.APR.2025 17:32:21

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.

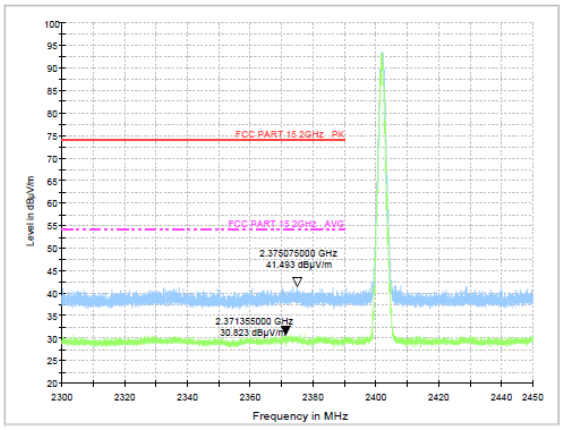
9.3. Test Procedure

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

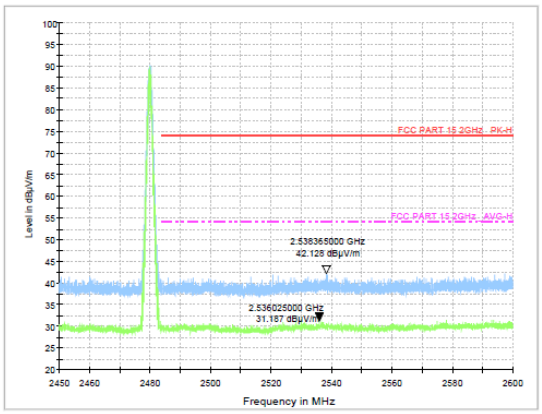
9.4. Test Result

PASS. (See below detailed test data)

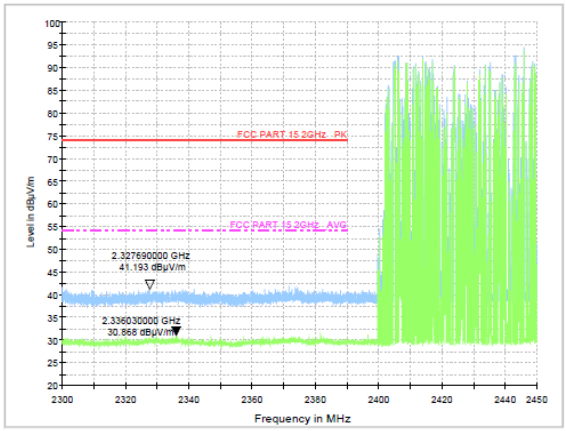
Test Mode: GFSK-Low Hopping-off



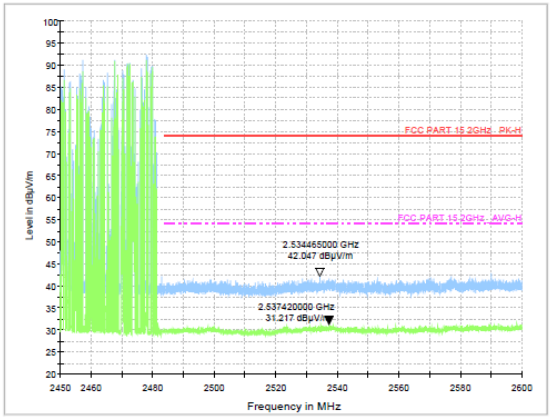
Test Mode: GFSK-High Hopping-off



Test Mode: GFSK-Low Hopping-on



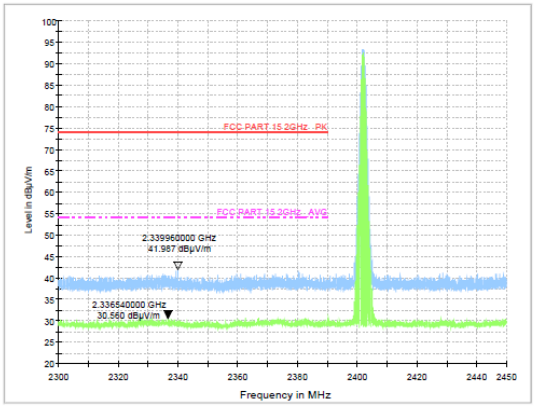
Test Mode: GFSK-High Hopping-on



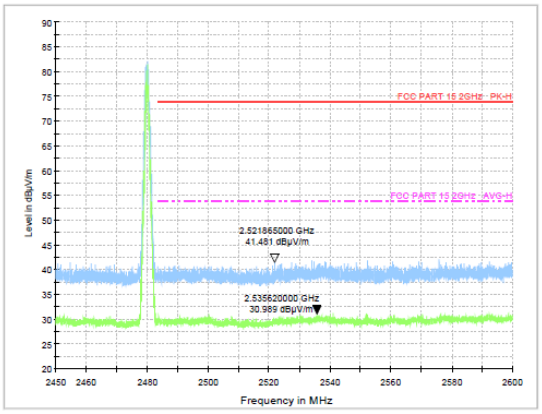
Note: 1. *:Maximum data; x:Over limit; !:over margin.

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

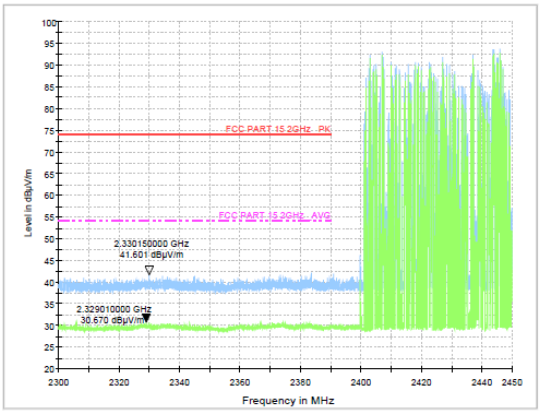
Test Mode: π/4 DQPSK-Low Hopping-off



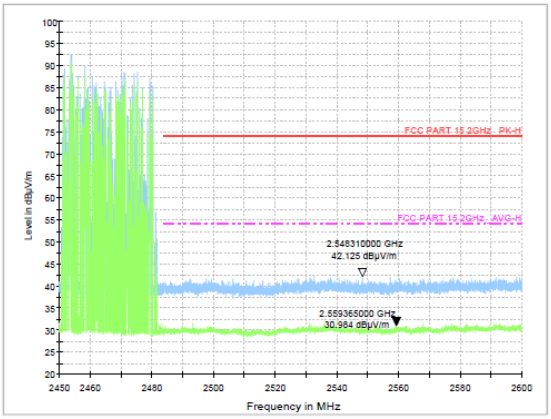
Test Mode: π/4 DQPSK-High Hopping-off



Test Mode: π/4 DQPSK-Low Hopping-on



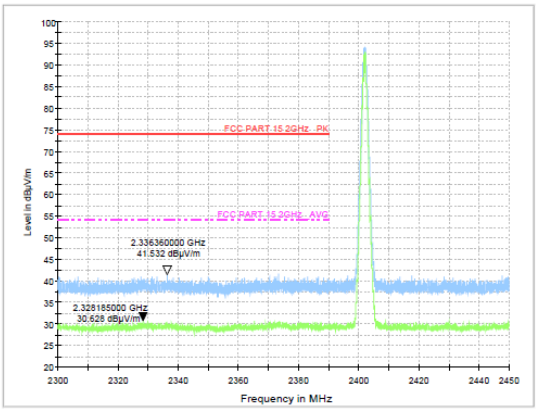
Test Mode: π/4 DQPSK-High Hopping-on



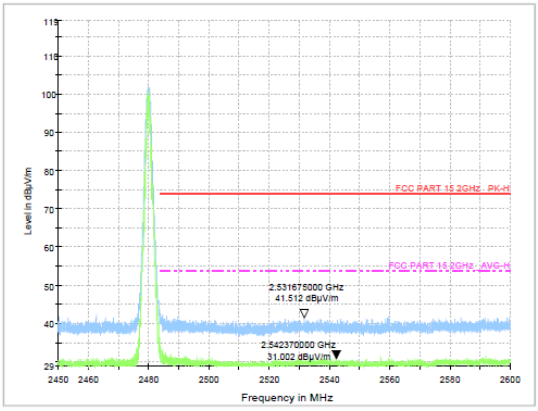
Note: 1. *:Maximum data; x:Over limit; !:over margin.

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

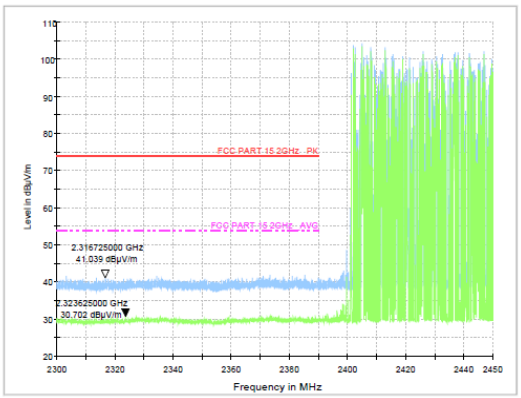
Test Mode: 8DPSKLow Hopping-off



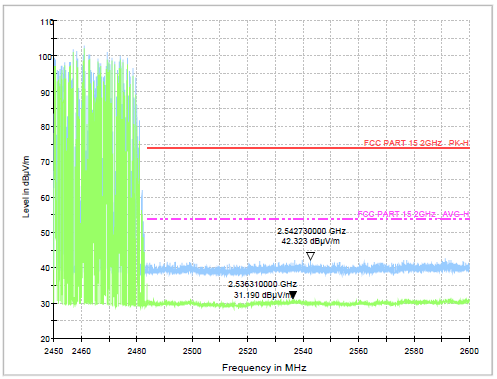
Test Mode: 8DPSK-High Hopping-off



Test Mode: 8DPSK-Low Hopping-on

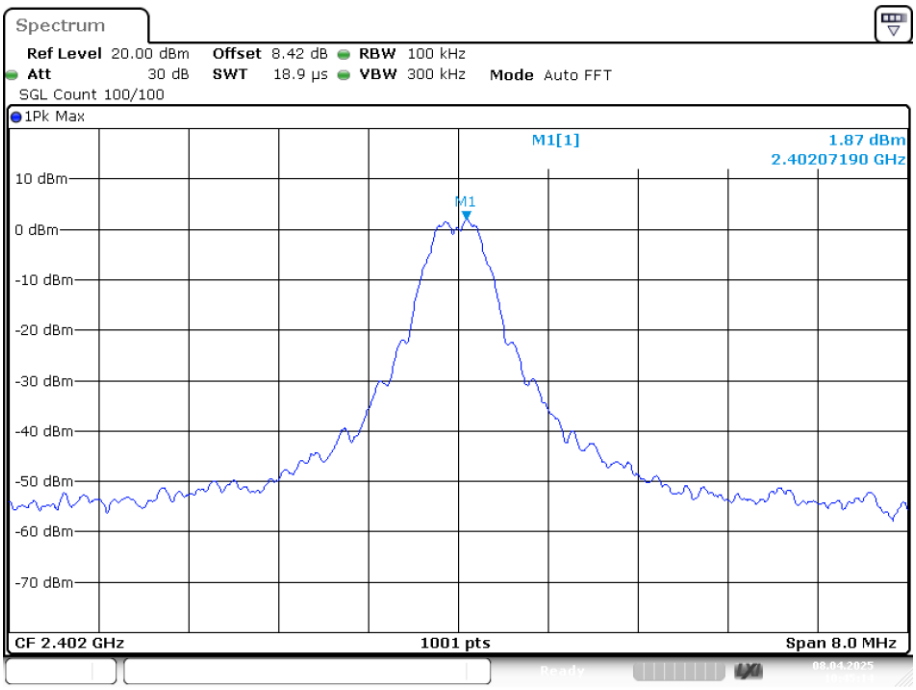


Test Mode: 8DPSK-High Hopping-on



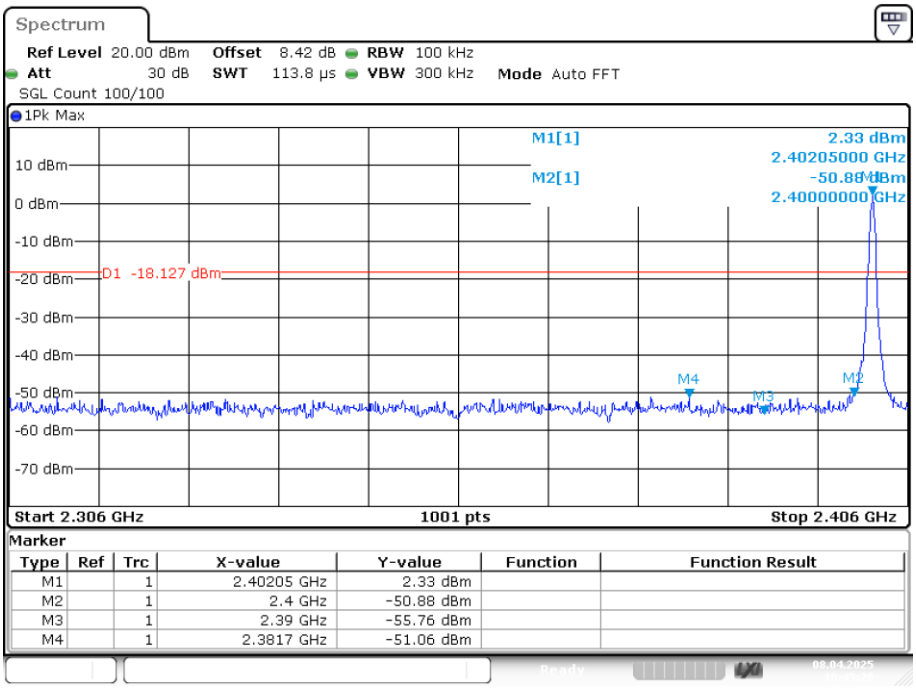
Conducted Method

Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



Date: 8.APR.2025 10:45:14

Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

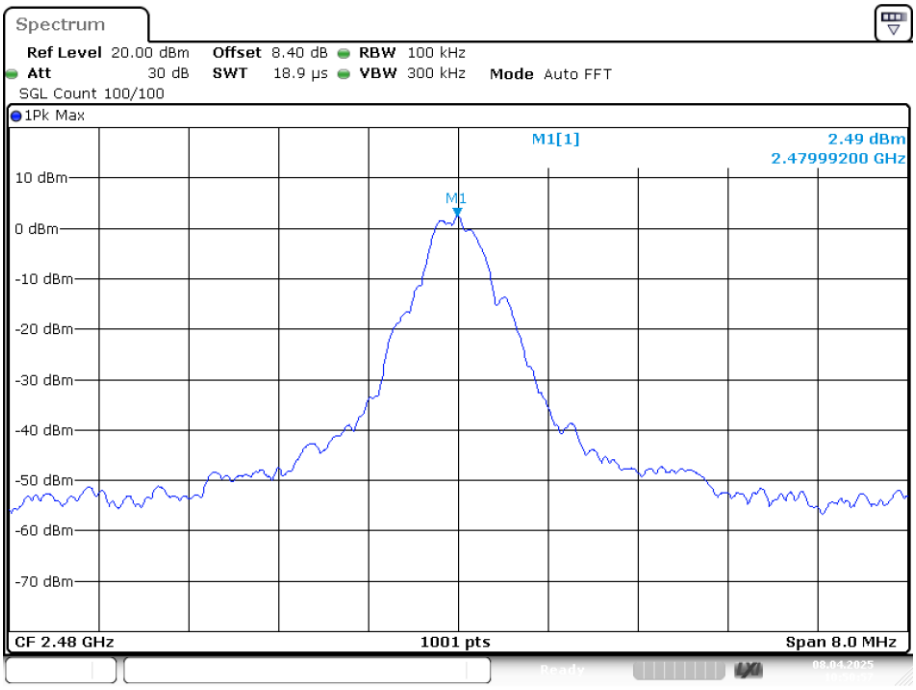


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40205 GHz	2.33 dBm		
M2		1	2.4 GHz	-50.88 dBm		
M3		1	2.39 GHz	-55.76 dBm		
M4		1	2.3817 GHz	-51.06 dBm		

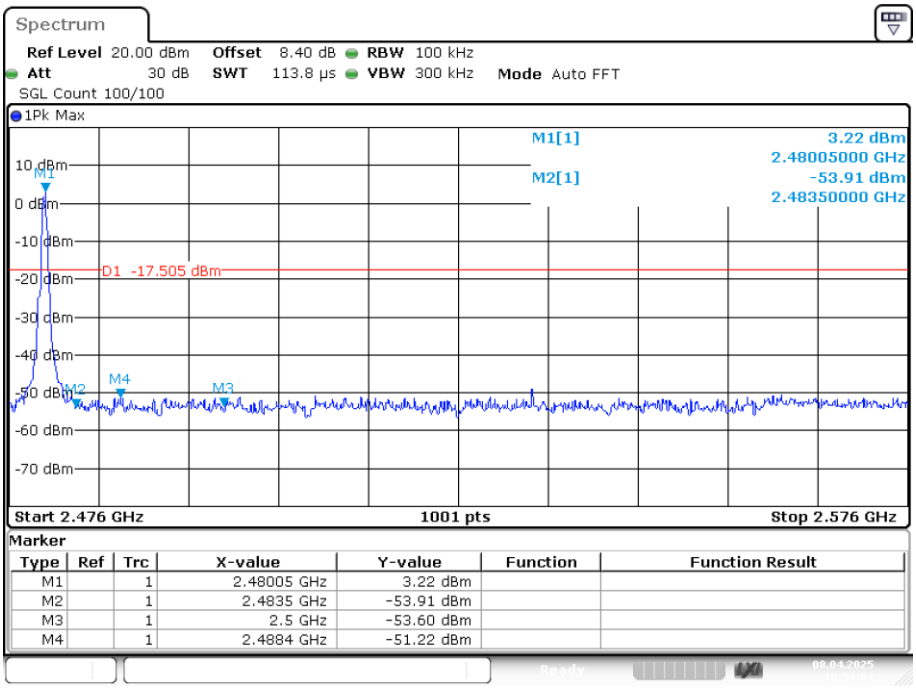
Date: 8.APR.2025 10:45:19

Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



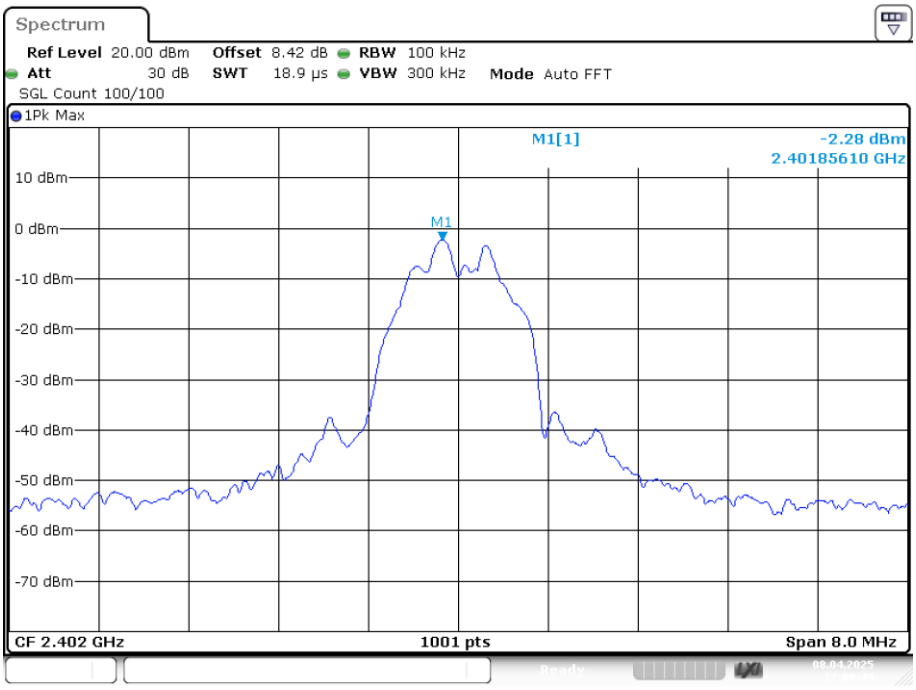
Date: 8.APR.2025 10:50:57

Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



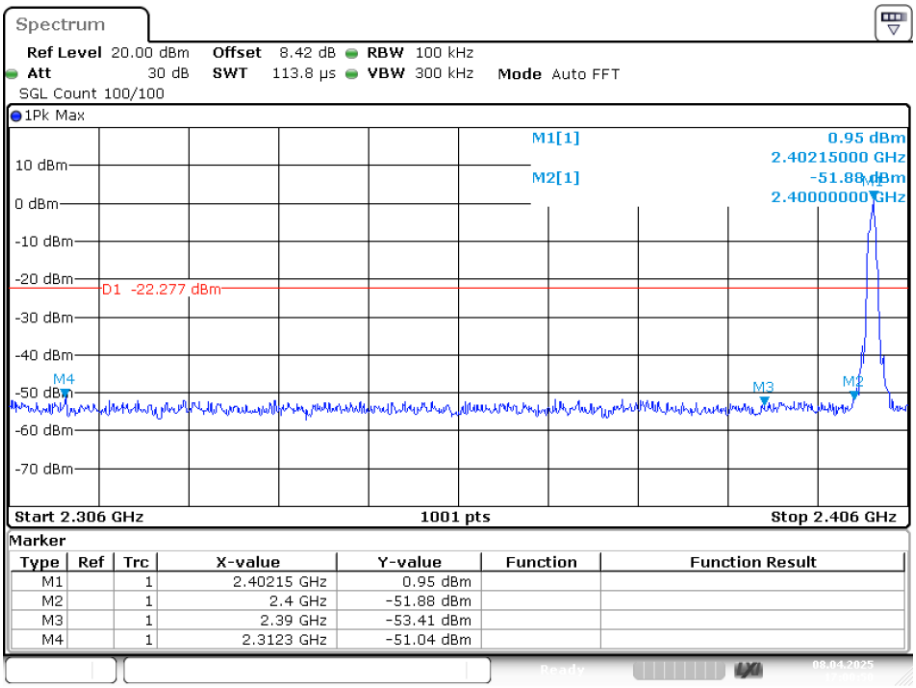
Date: 8.APR.2025 10:51:03

Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



Date: 8.APR.2025 17:00:44

Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

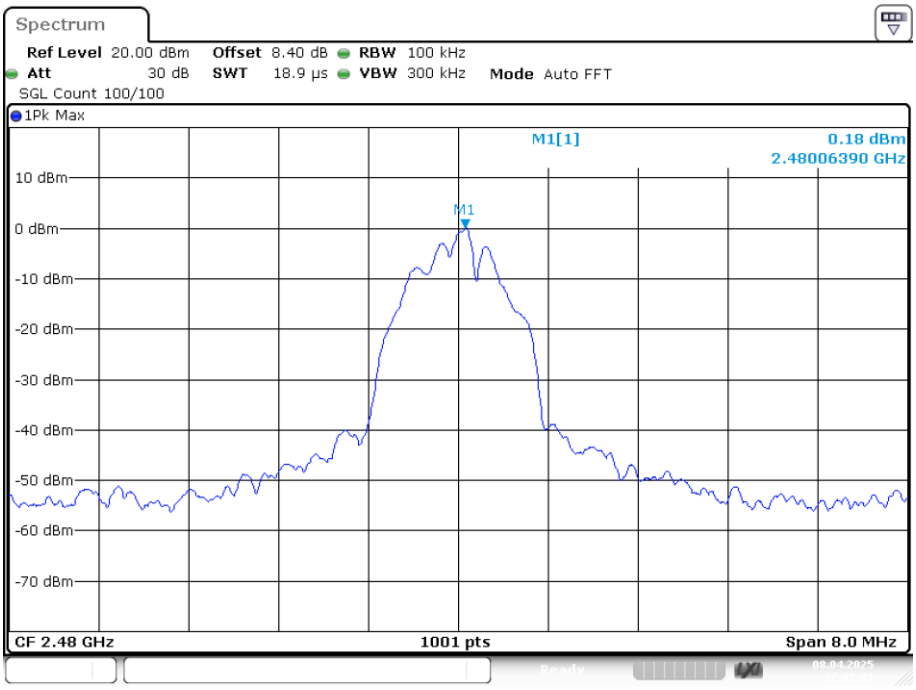


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40215 GHz	0.95 dBm		
M2		1	2.4 GHz	-51.88 dBm		
M3		1	2.39 GHz	-53.41 dBm		
M4		1	2.3123 GHz	-51.04 dBm		

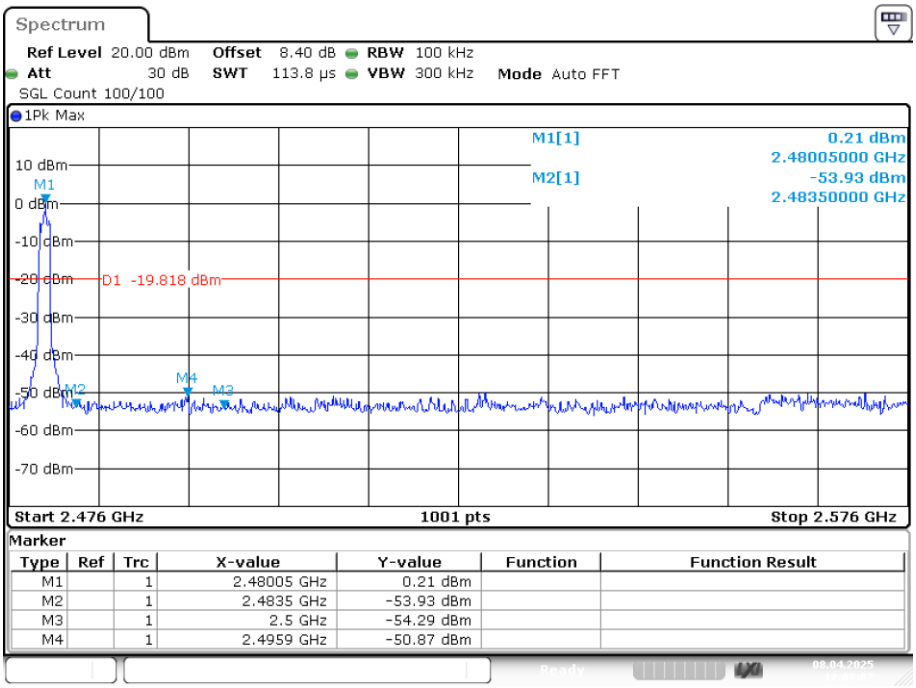
Date: 8.APR.2025 17:00:50

Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



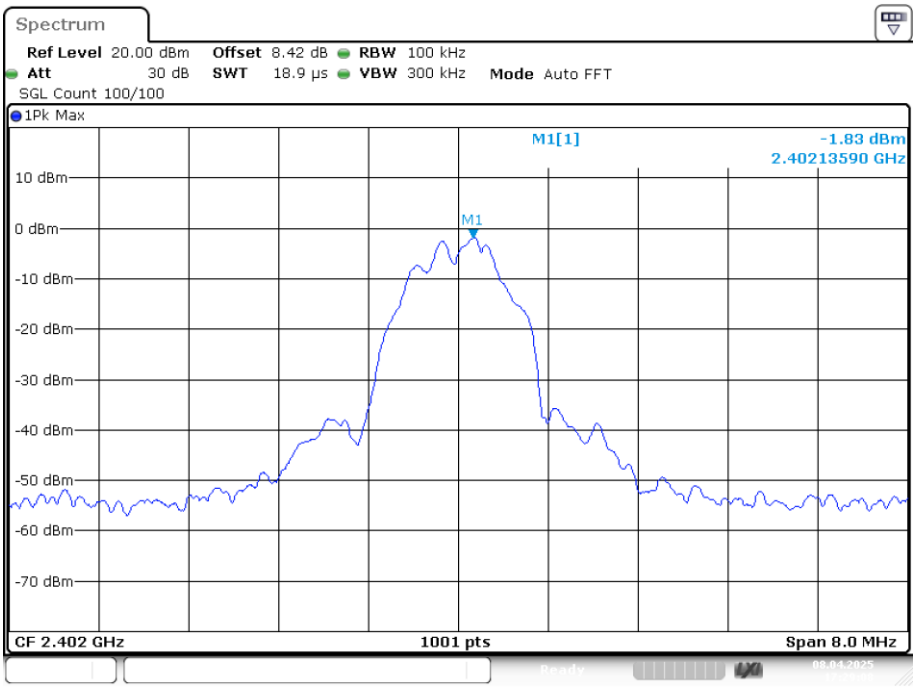
Date: 8.APR.2025 17:07:01

Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



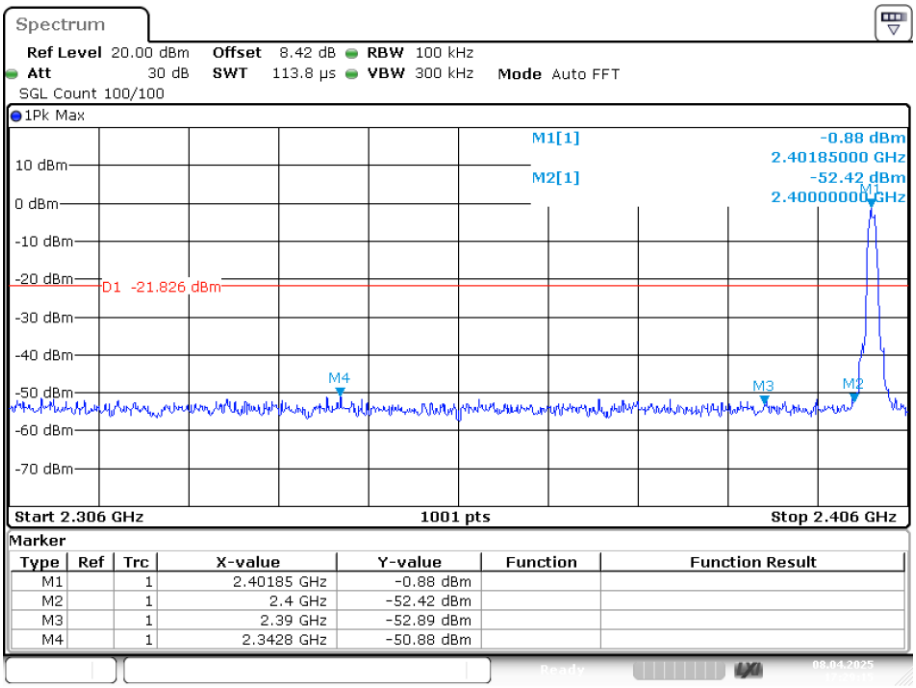
Date: 8.APR.2025 17:07:07

Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



Date: 8.APR.2025 17:29:08

Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

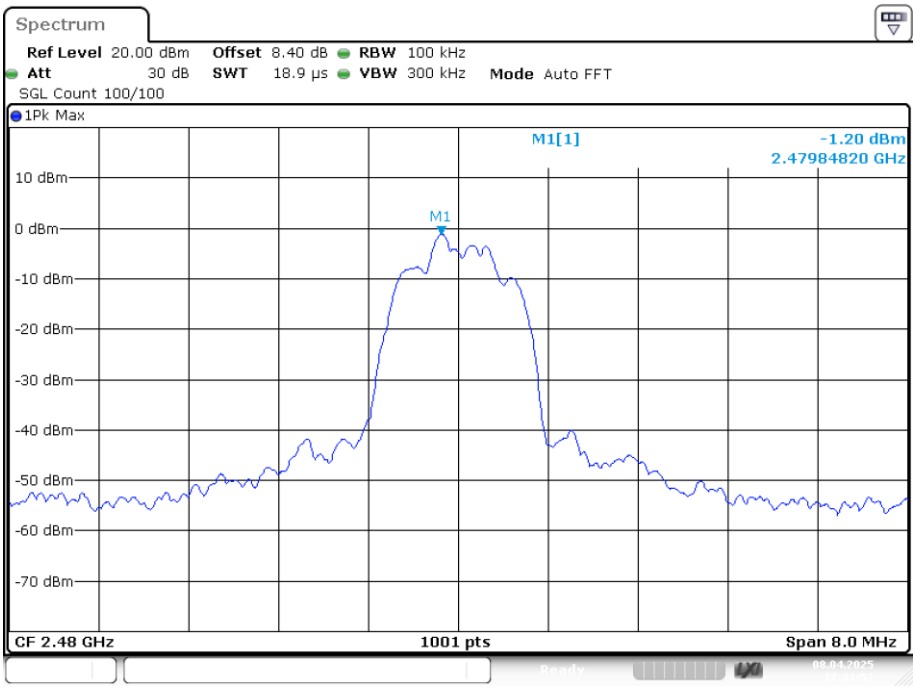


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40185 GHz	-0.88 dBm		
M2		1	2.4 GHz	-52.42 dBm		
M3		1	2.39 GHz	-52.89 dBm		
M4		1	2.3428 GHz	-50.88 dBm		

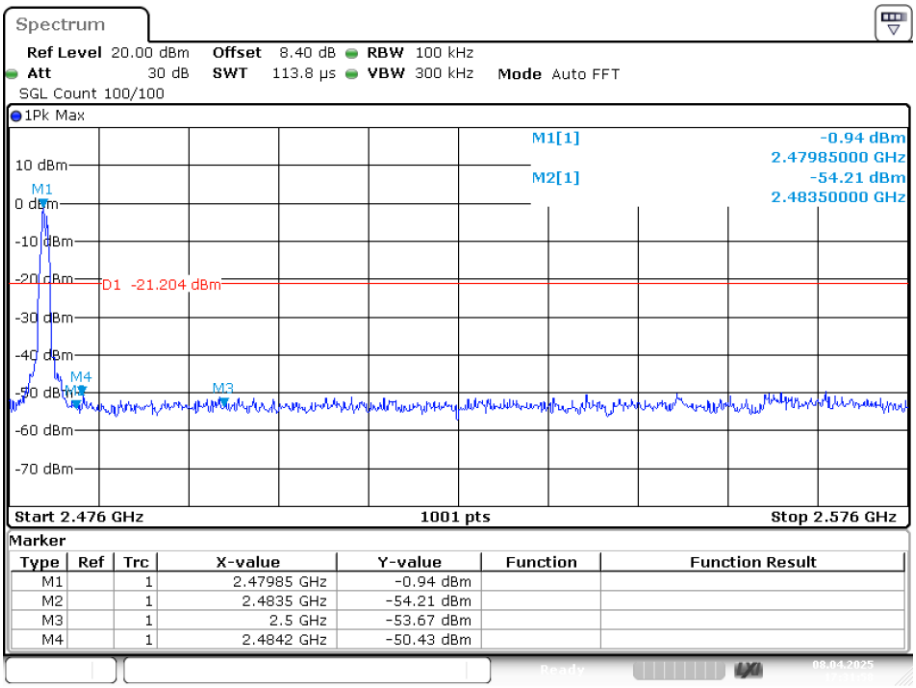
Date: 8.APR.2025 17:29:14

Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



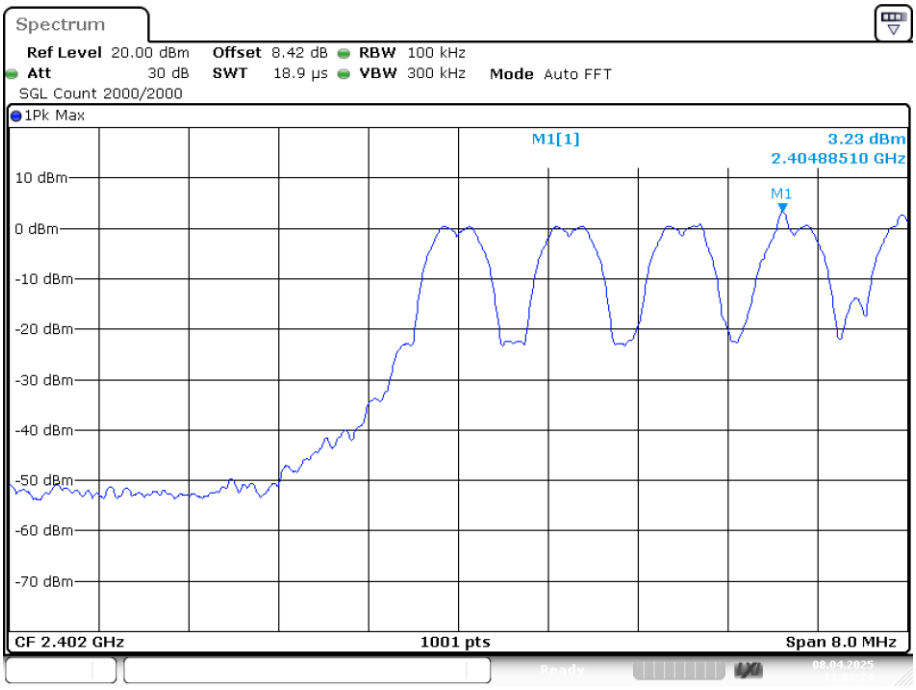
Date: 8.APR.2025 17:31:52

Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission



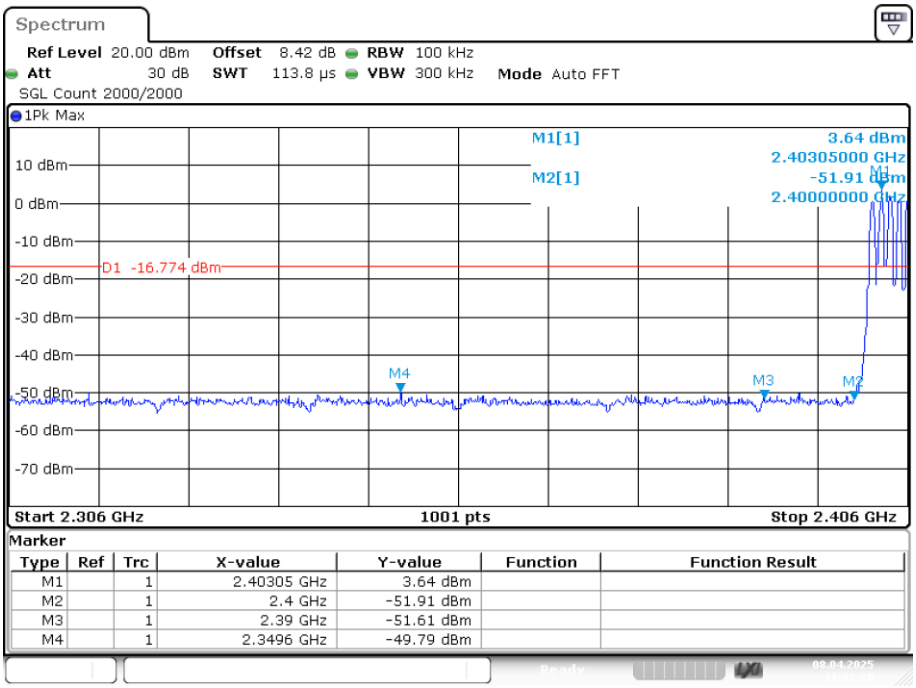
Date: 8.APR.2025 17:31:58

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



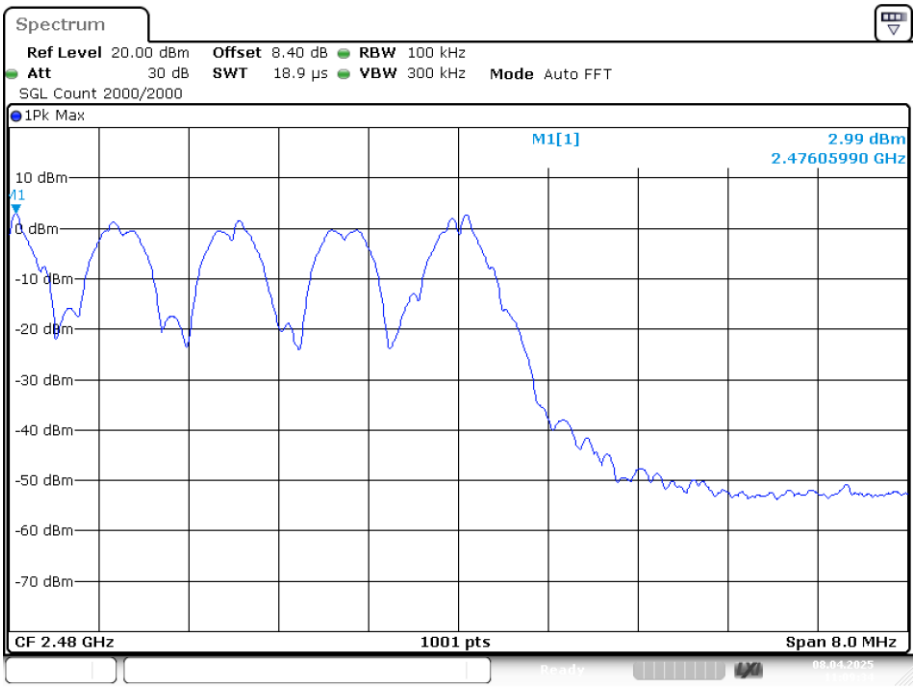
Date: 8.APR.2025 11:01:24

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



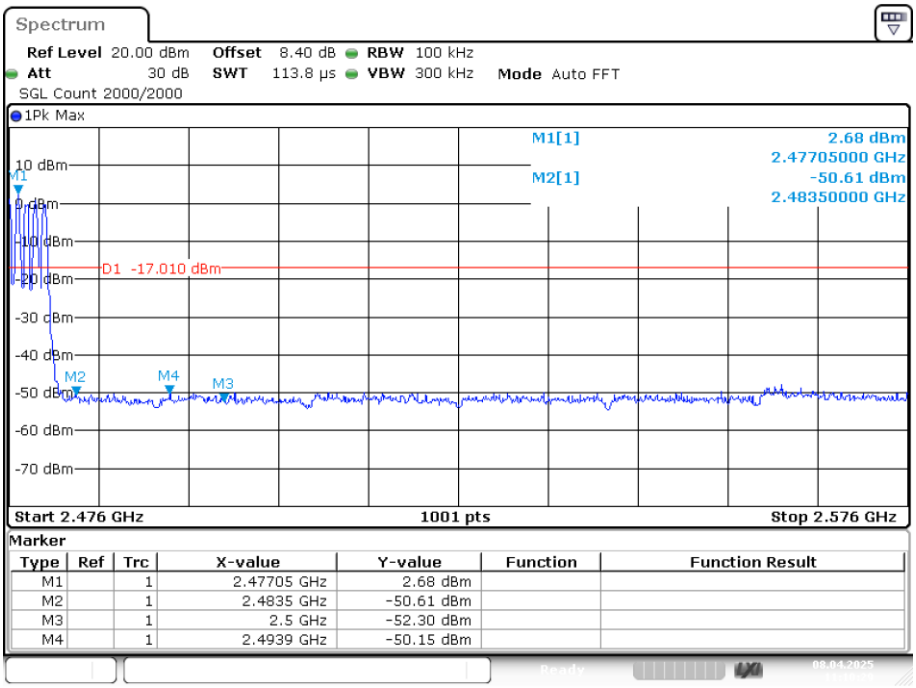
Date: 8.APR.2025 11:02:20

Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



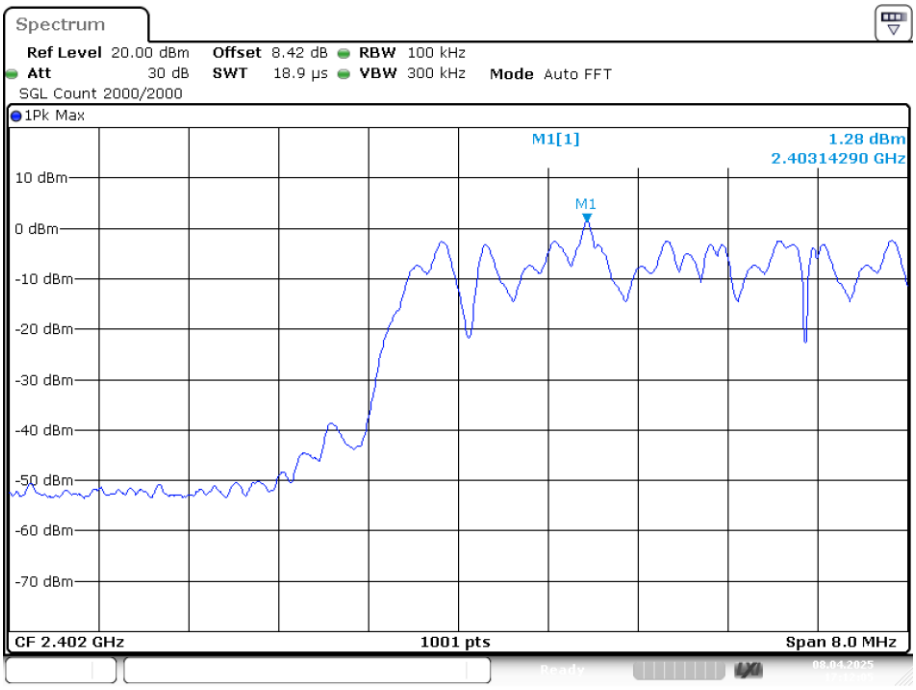
Date: 8.APR.2025 11:09:33

Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



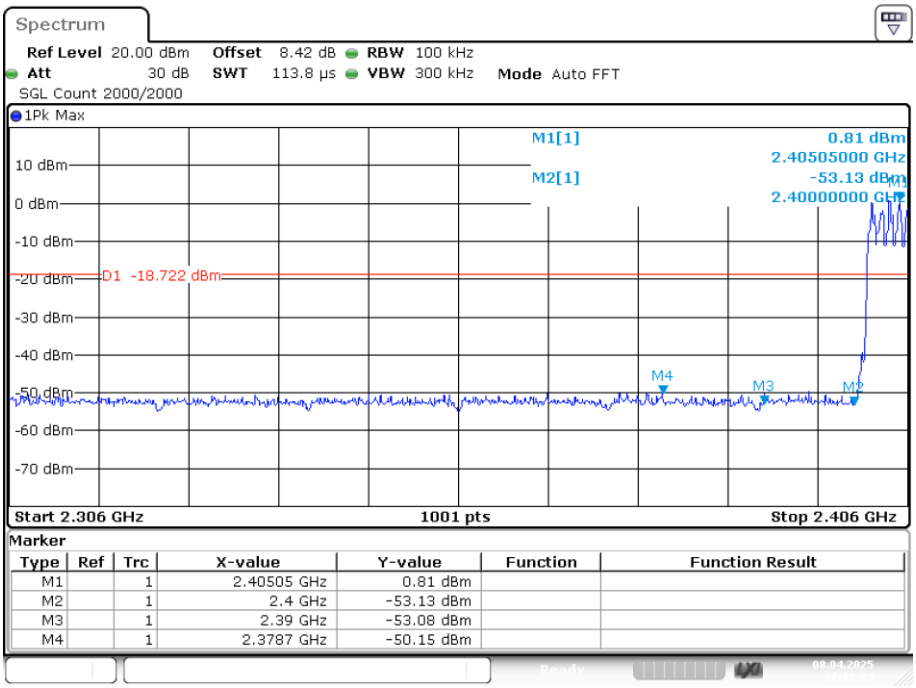
Date: 8.APR.2025 11:10:28

Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



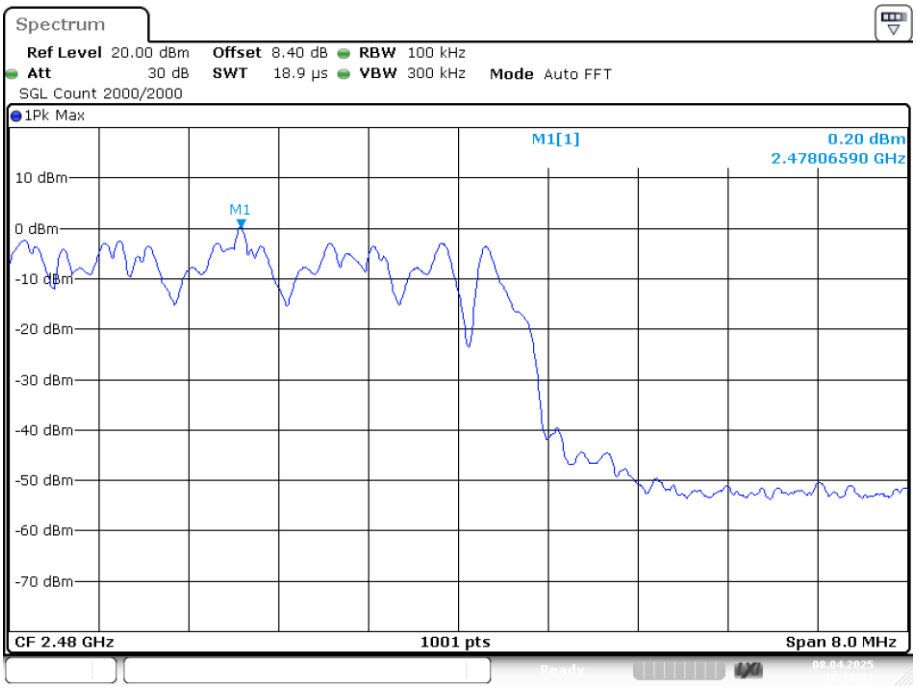
Date: 8.APR.2025 17:12:04

Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



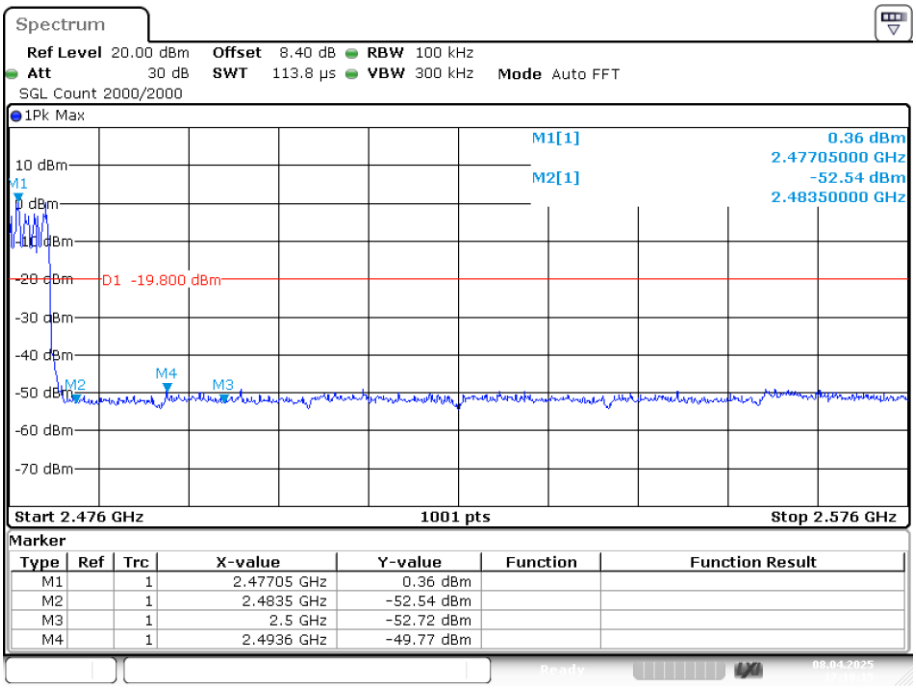
Date: 8.APR.2025 17:13:03

Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



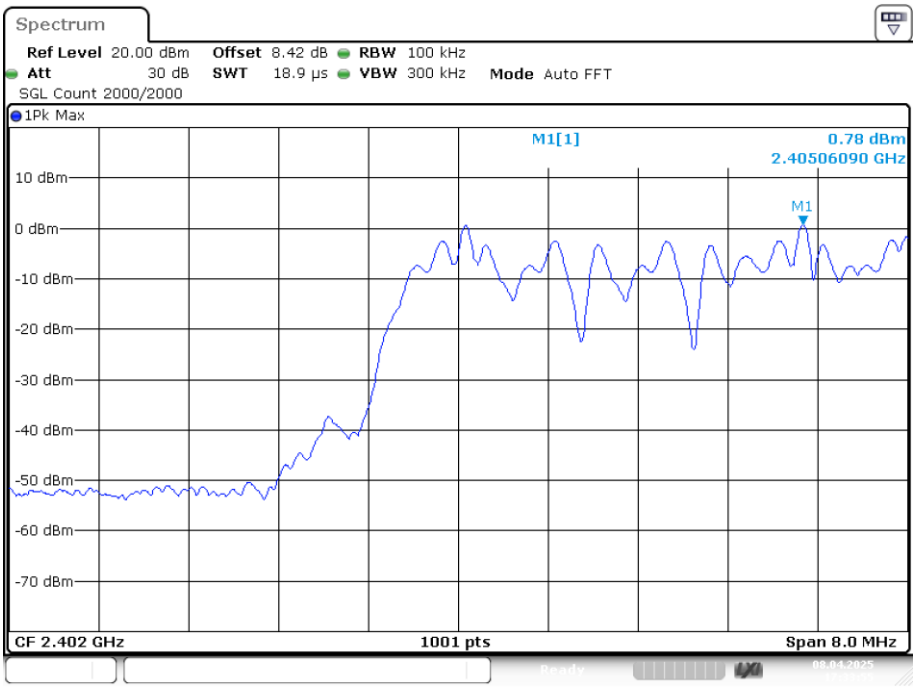
Date: 8.APR.2025 17:18:21

Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



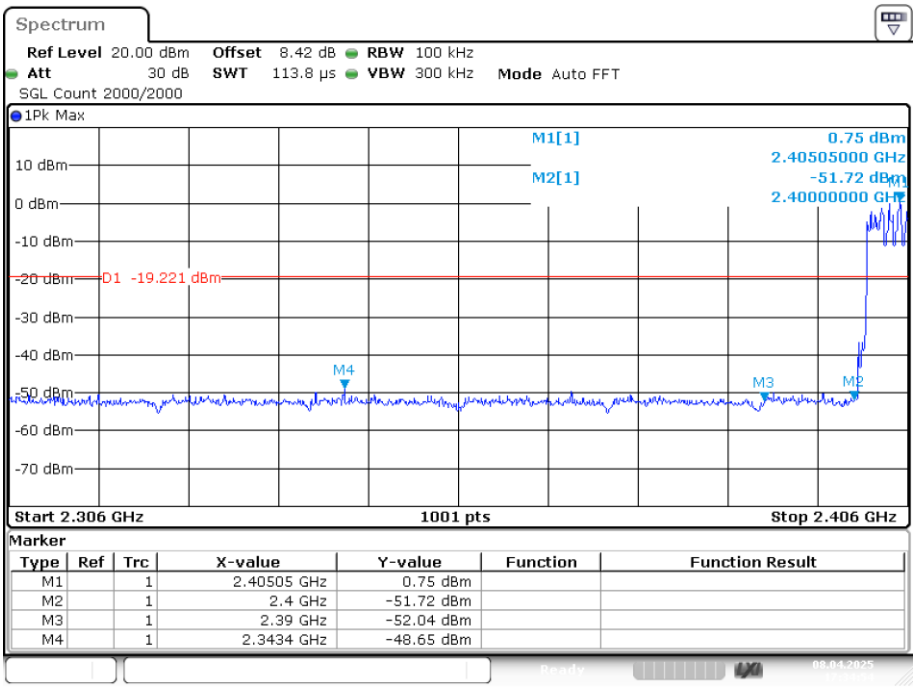
Date: 8.APR.2025 17:19:15

Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



Date: 8.APR.2025 17:33:55

Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission

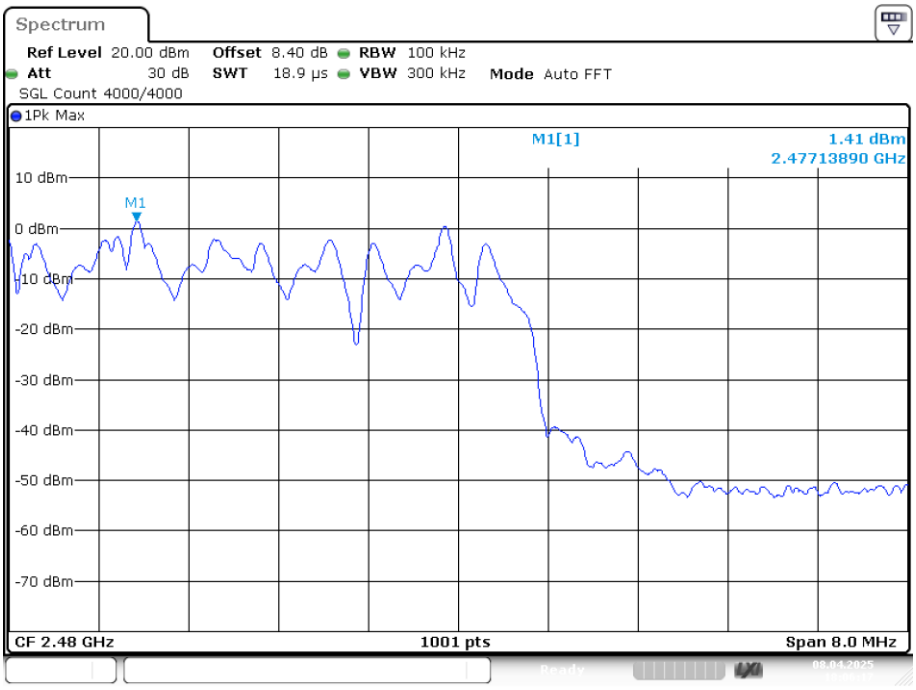


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40505 GHz	0.75 dBm		
M2		1	2.4 GHz	-51.72 dBm		
M3		1	2.39 GHz	-52.04 dBm		
M4		1	2.3434 GHz	-48.65 dBm		

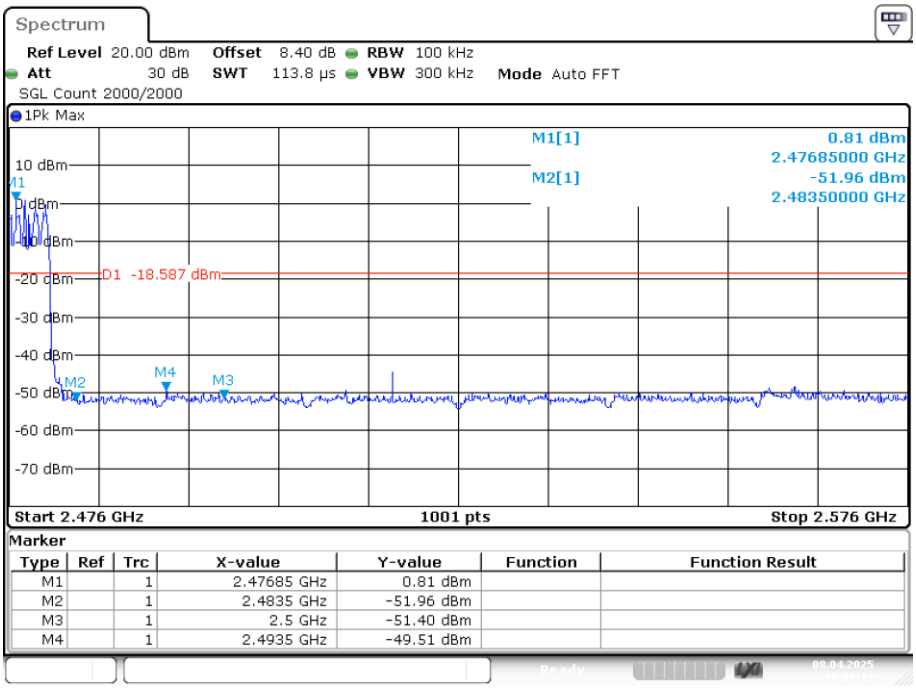
Date: 8.APR.2025 17:34:53

Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



Date: 8.APR.2025 18:06:17

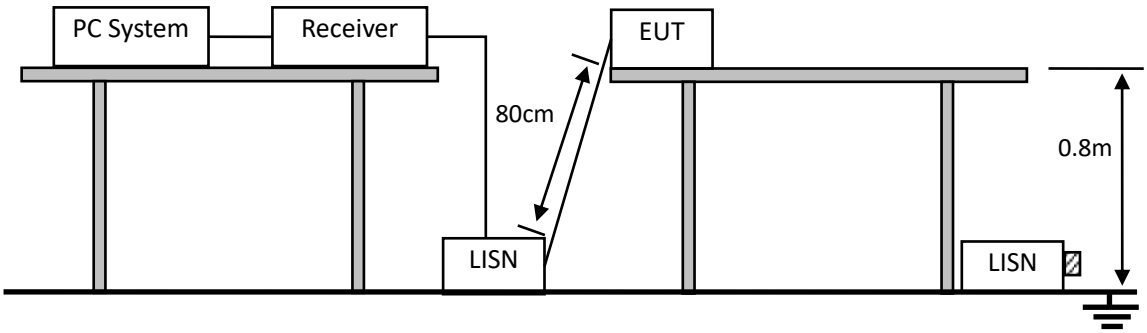
Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission



Date: 8.APR.2025 18:07:12

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.

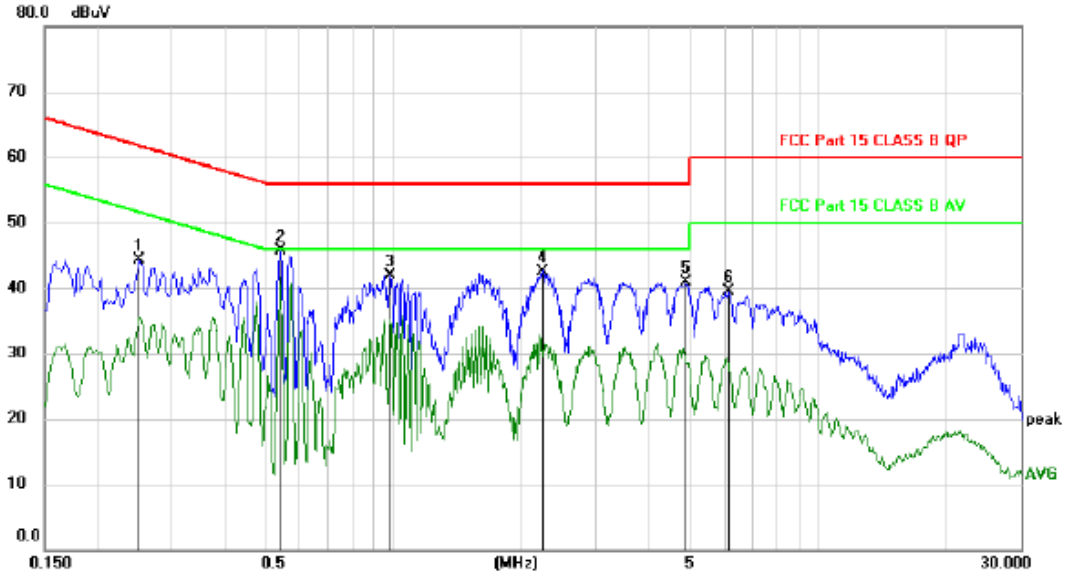
(5) The frequency range from 150 KHz to 30MHz is checked.

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:

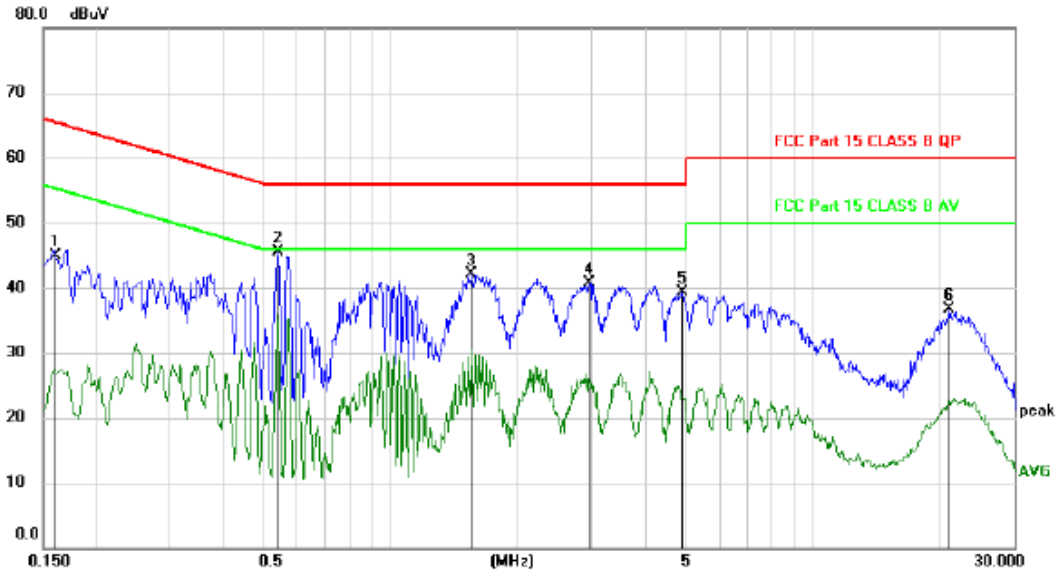


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2519	34.38	9.97	44.35	61.69	-17.34	peak	
2	*	0.5429	35.70	9.94	45.64	56.00	-10.36	peak	
3		0.9808	32.02	9.93	41.95	56.00	-14.05	peak	
4		2.2378	32.71	9.89	42.60	56.00	-13.40	peak	
5		4.8959	30.92	10.04	40.96	56.00	-15.04	peak	
6		6.1379	29.46	10.09	39.55	60.00	-20.45	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		0.1607	35.04	9.93	44.97	65.43	-20.46	peak	
2	*	0.5429	35.49	9.94	45.43	56.00	-10.57	peak	
3		1.5539	32.20	9.89	42.09	56.00	-13.91	peak	
4		2.9519	30.70	9.95	40.65	56.00	-15.35	peak	
5		4.9050	29.20	10.04	39.24	56.00	-16.76	peak	
6		21.1350	26.16	10.47	36.63	60.00	-23.37	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

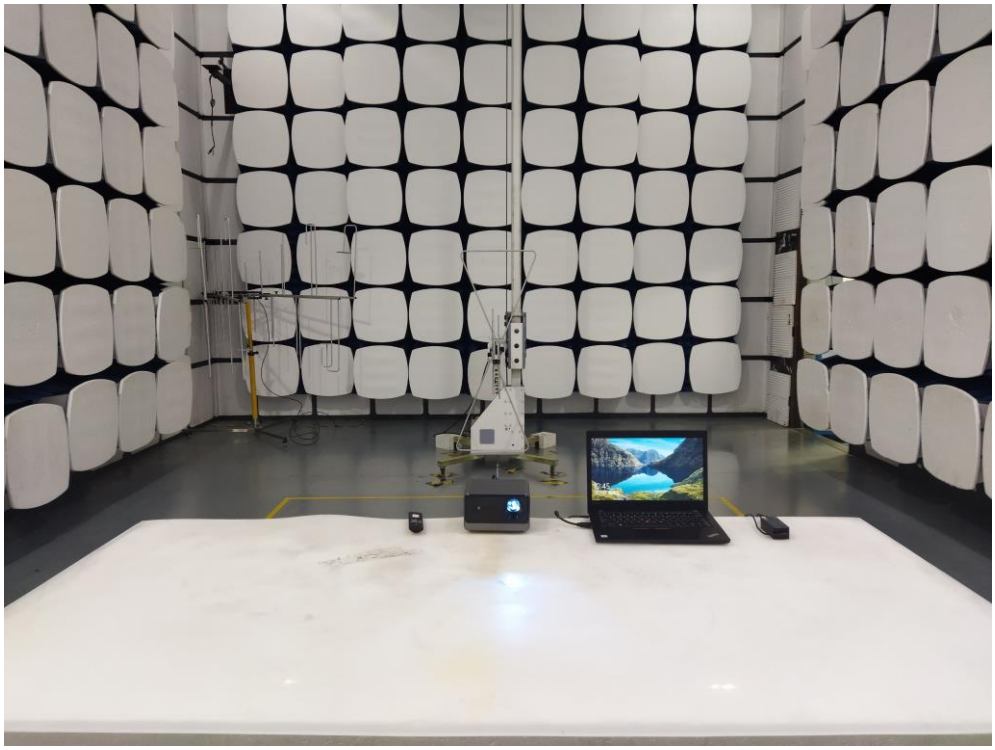
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional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

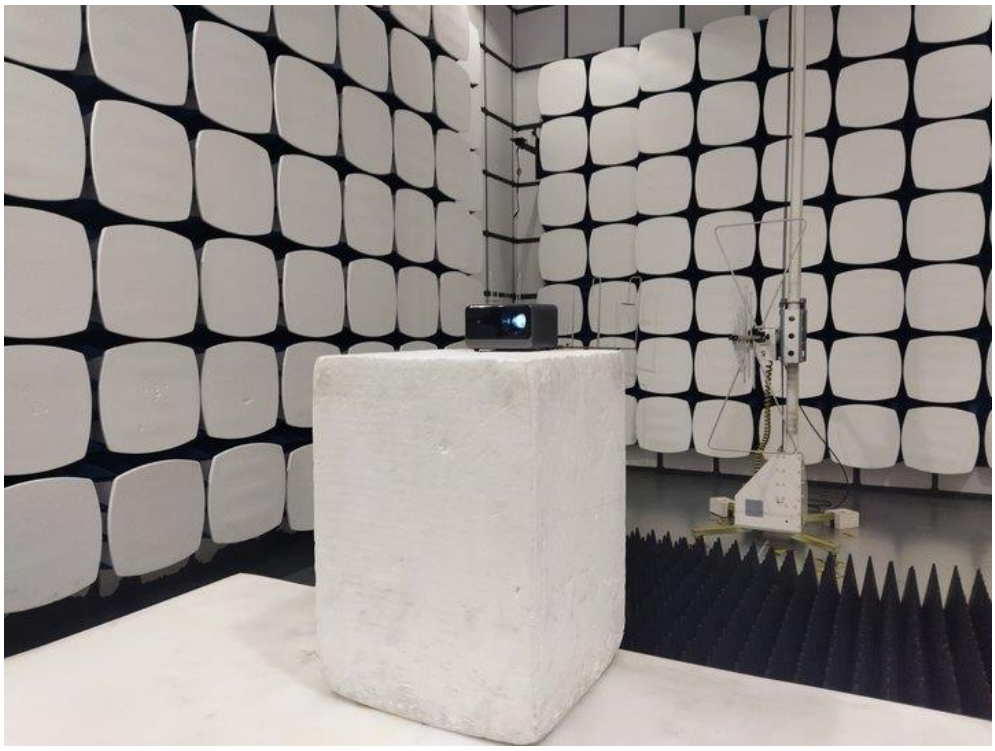
11.2.Result

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

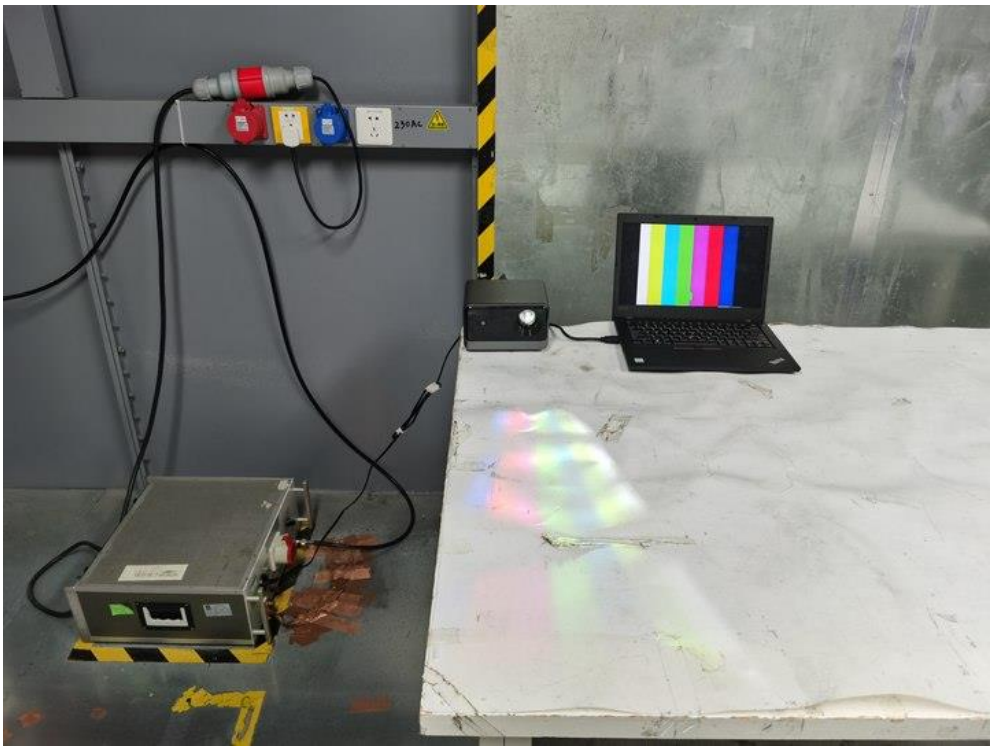
12. TEST SETUP PHOTO

12.1.Photo of Radiated Emission test





12.2.Photo of Conducted Emission test



13. PHOTOS OF EUT

Please refer to the report A2502222-C05-R01.

14. MODEL LIST

AC201	AC203	AC211	AC213	AC221	AC223	AC231	AC233
AC241	AC243	AC251	AC253	AC261	AC263	AC271	AC273
AC281	AC283	AC291	AC293	AC301	AC303	AC311	AC313
AC321	AC323	AC331	AC333	AC341	AC343	AC351	AC353
AC361	AC363	AC371	AC373	AC381	AC383	AC391	AC393
AC401	AC403	AC411	AC413	AC421	AC423	AC431	AC433
AC441	AC443	AC451	AC453	AC461	AC463	AC471	AC473
AC481	AC483	AC491	AC493	AC501	AC503	AC511	AC513
AC521	AC523	AC531	AC533	AC541	AC543	AC551	AC553
AC561	AC563	AC571	AC573	AC581	AC583	AC591	AC593

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