

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: LED PROJECTOR

Test Model: L018

Environmental Conditions

Temperature:	23.7°C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Jone Lee
Supervised by:	Fengliu Tang

A.1 -20dB Bandwidth

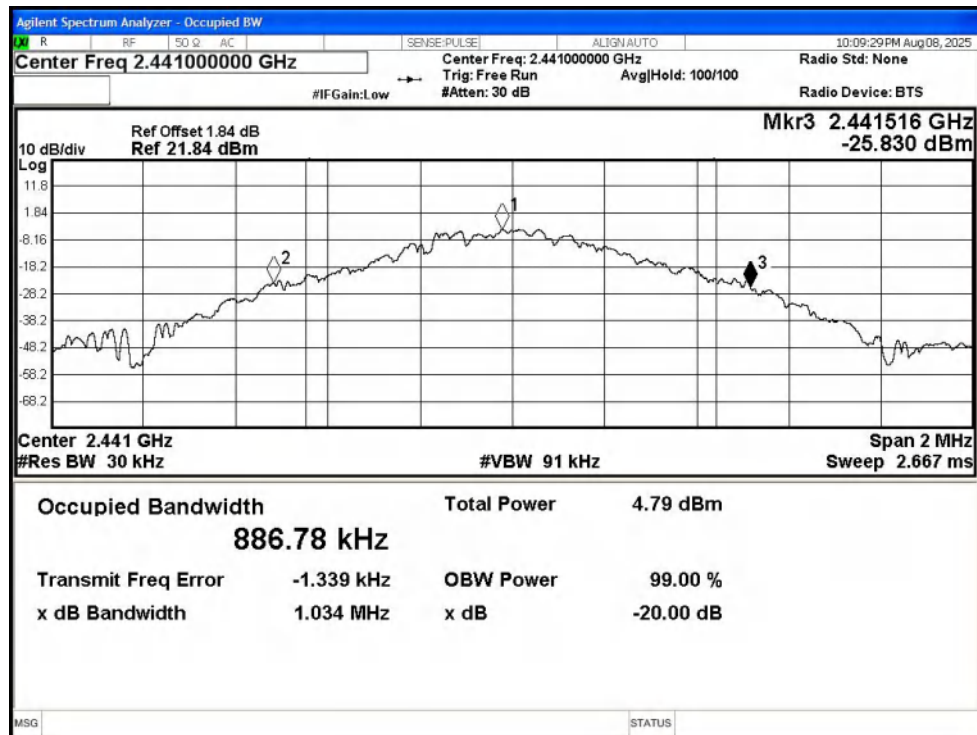
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.947	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.034	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.973	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.286	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.285	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.292	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.3	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.307	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.298	N/A	Pass

Test Graphs

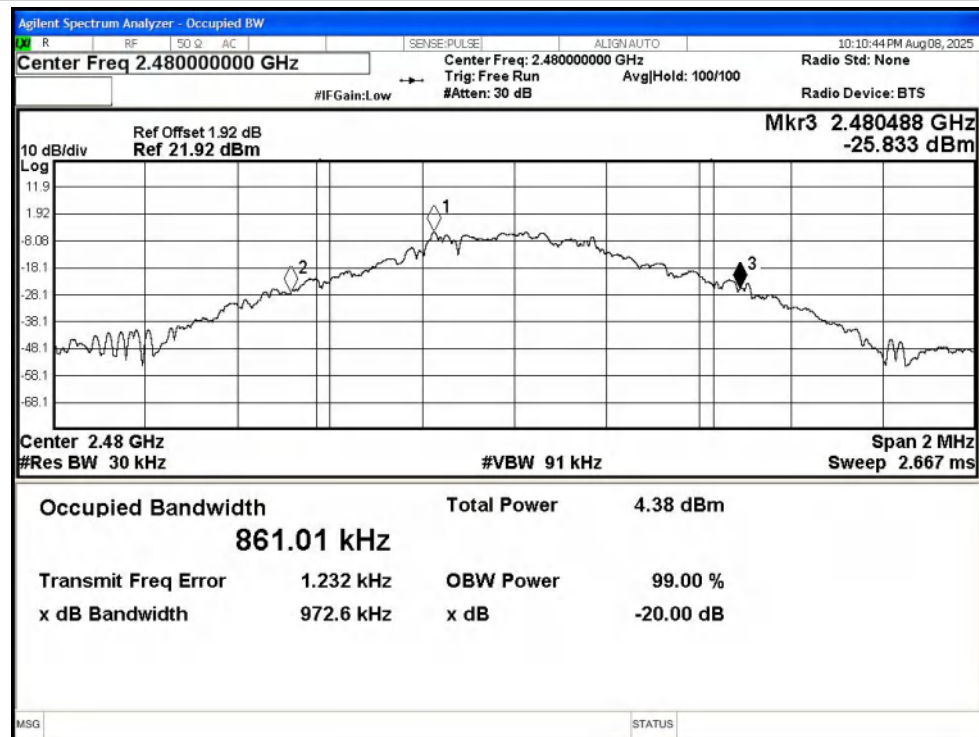
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



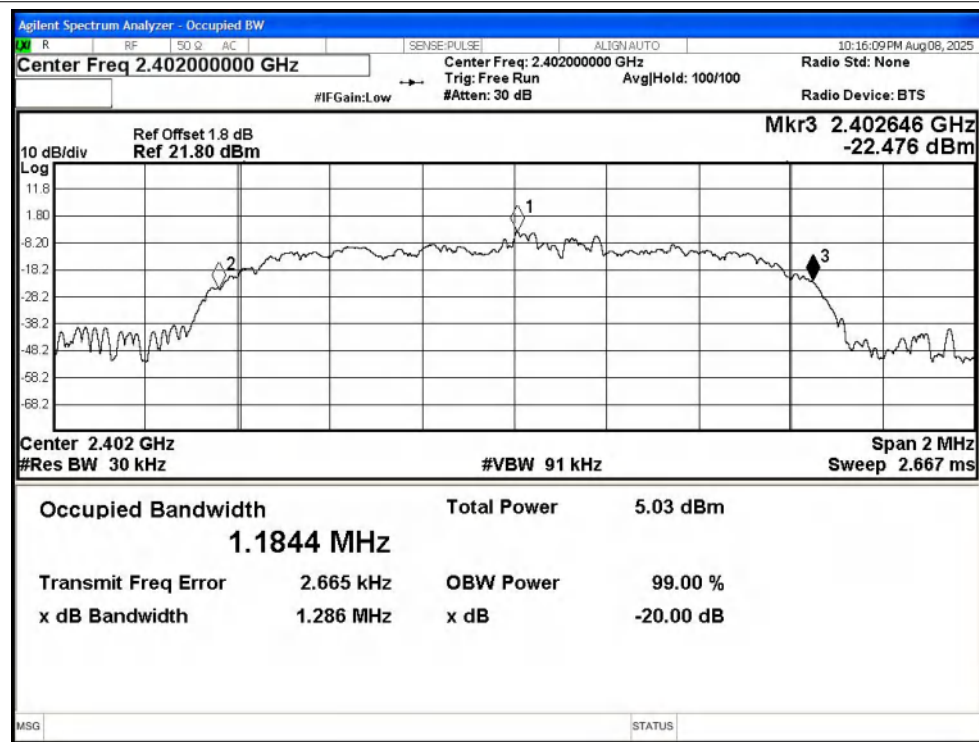
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



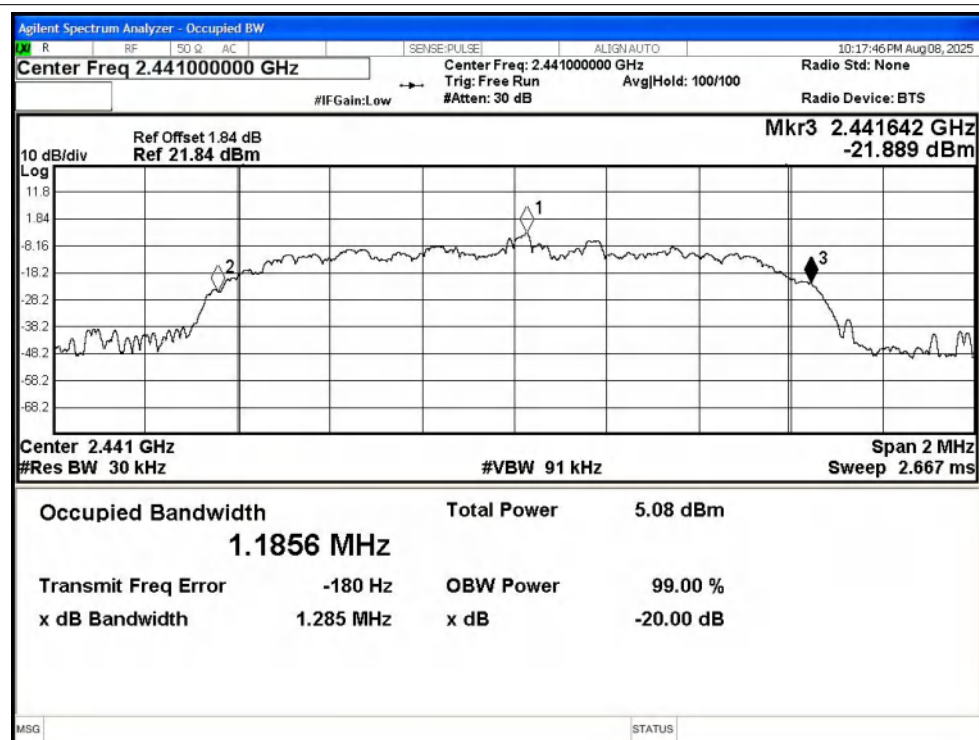
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



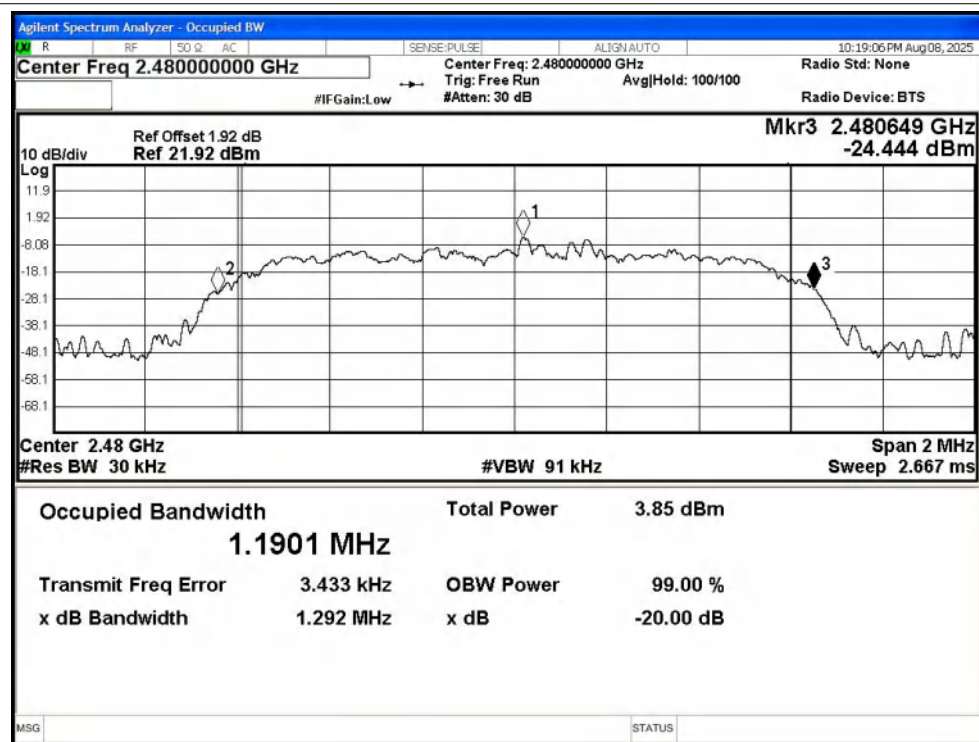
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



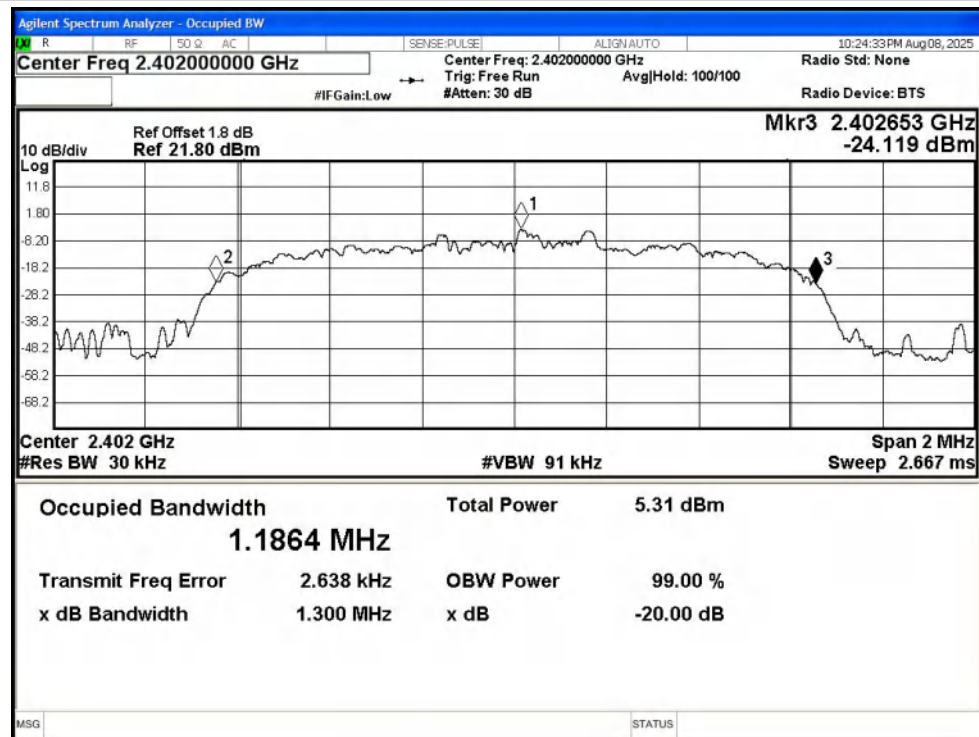
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



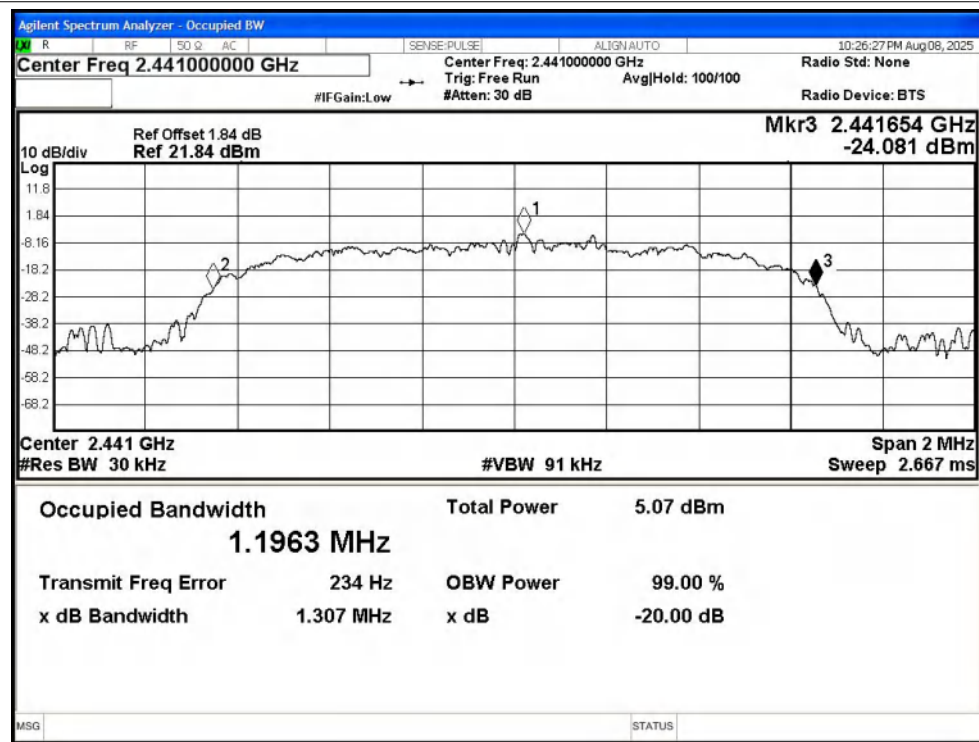
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



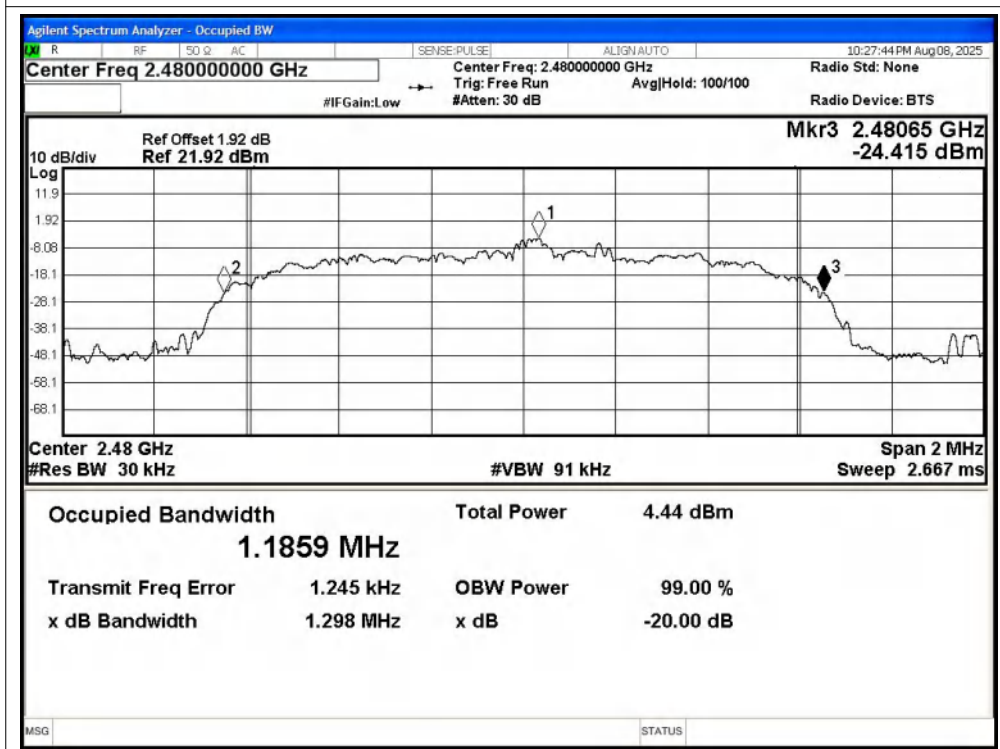
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

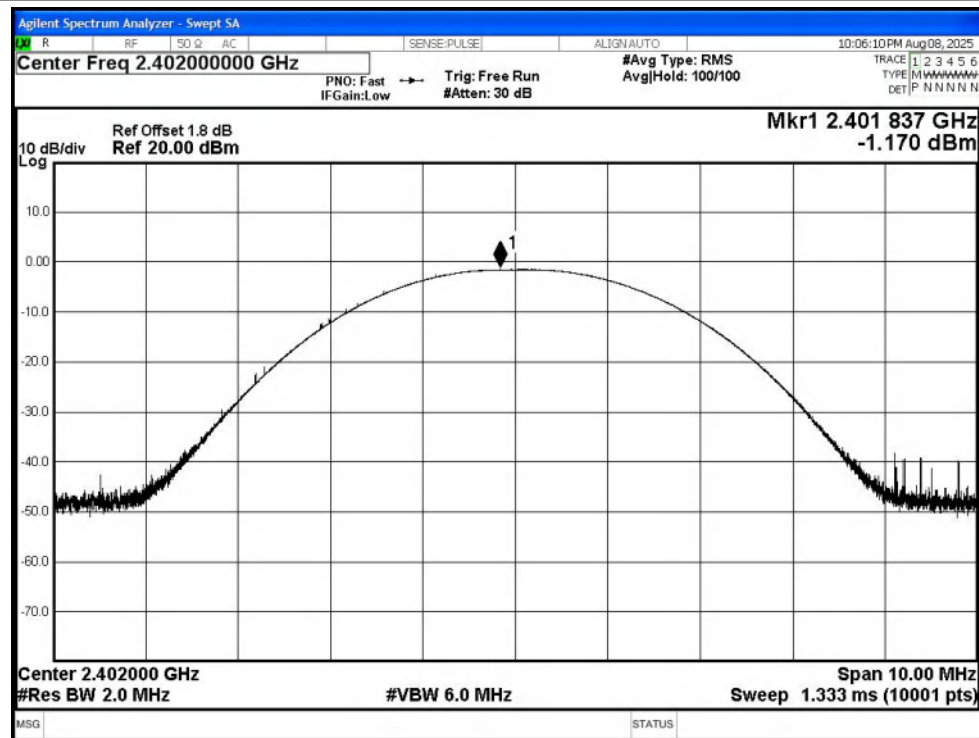


A.2 Maximum Peak Conducted Output Power

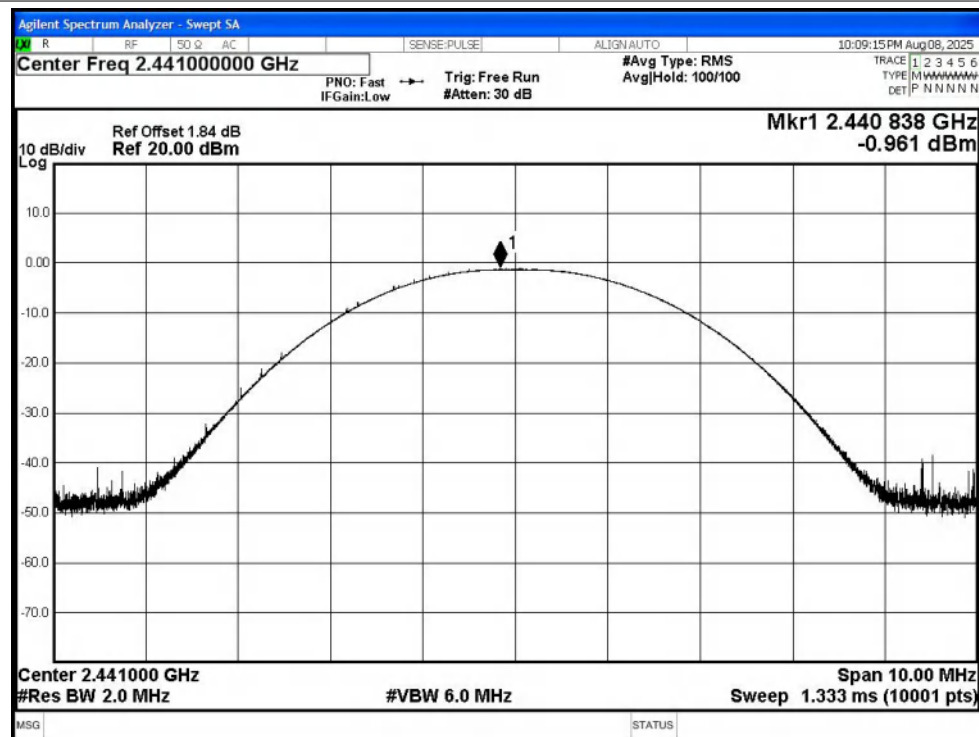
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-1.17	21	Pass
NVNT	1-DH5	2441	Ant1	-0.96	21	Pass
NVNT	1-DH5	2480	Ant1	-2.08	21	Pass
NVNT	2-DH5	2402	Ant1	0.62	21	Pass
NVNT	2-DH5	2441	Ant1	0.87	21	Pass
NVNT	2-DH5	2480	Ant1	-0.22	21	Pass
NVNT	3-DH5	2402	Ant1	1.06	21	Pass
NVNT	3-DH5	2441	Ant1	1.32	21	Pass
NVNT	3-DH5	2480	Ant1	0.24	21	Pass

Test Graphs

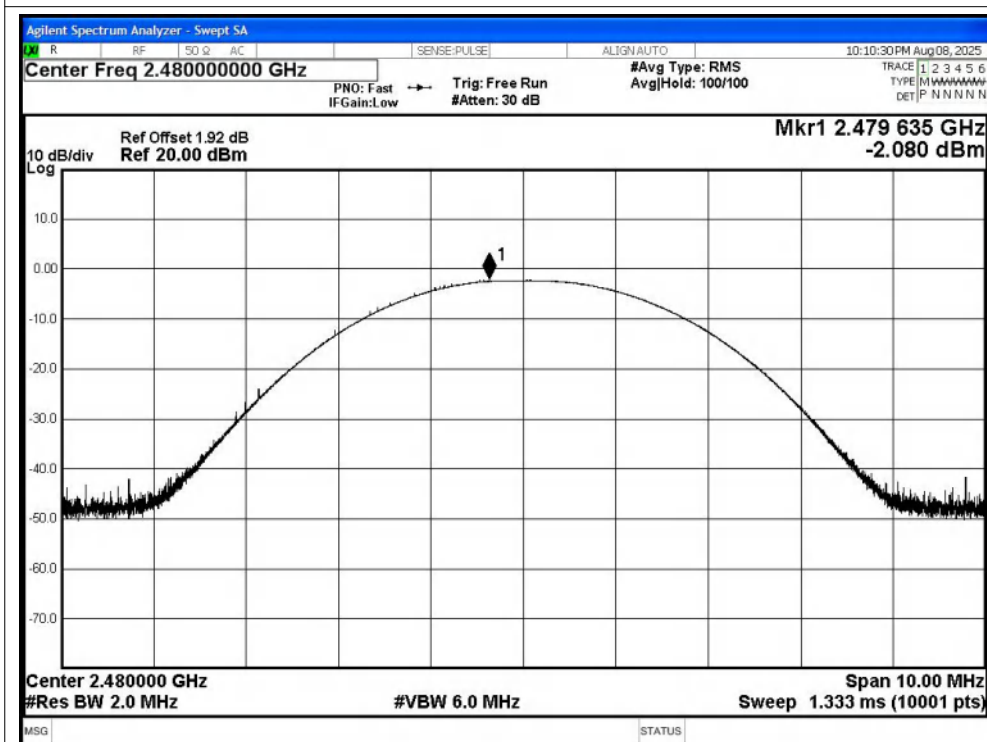
Power NVNT 1-DH5 2402MHz Ant1



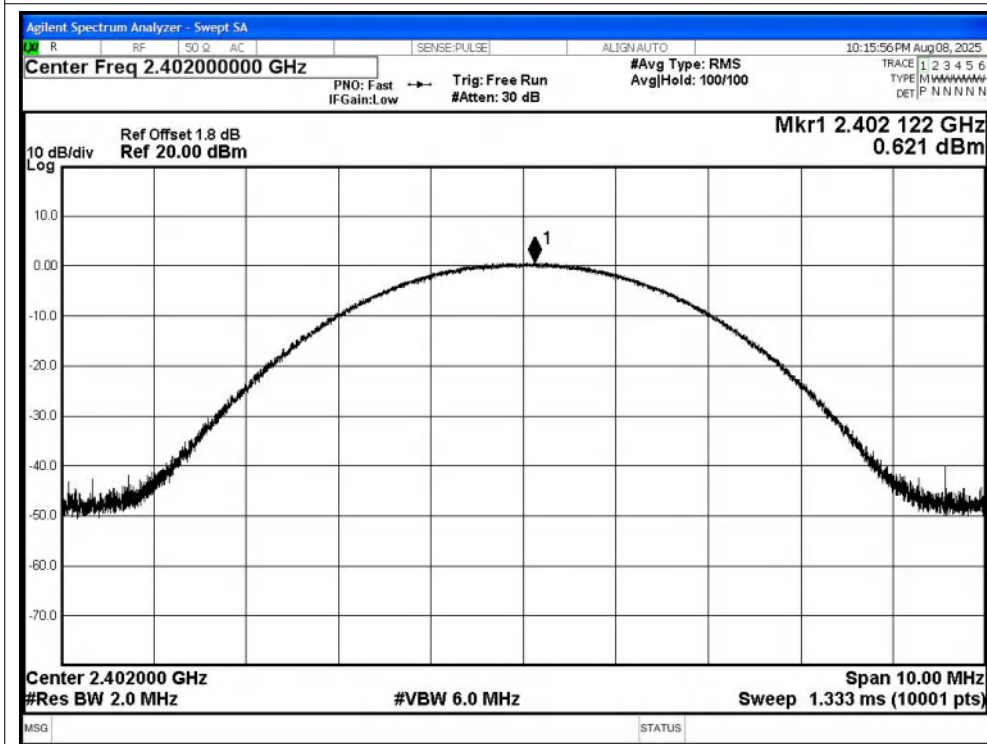
Power NVNT 1-DH5 2441MHz Ant1



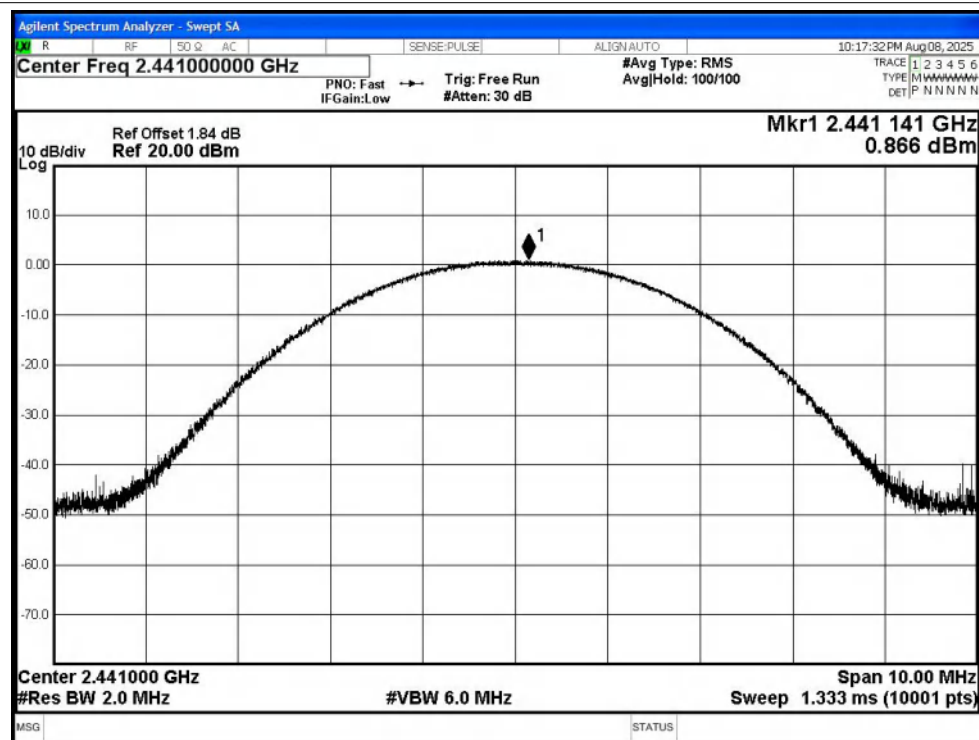
Power NVNT 1-DH5 2480MHz Ant1



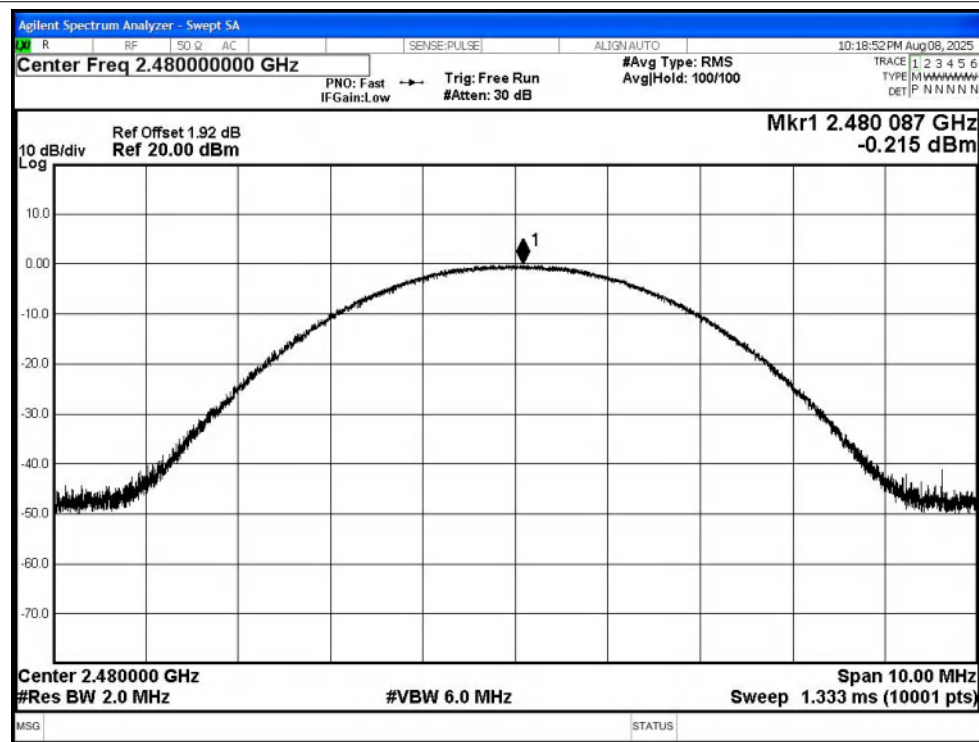
Power NVNT 2-DH5 2402MHz Ant1



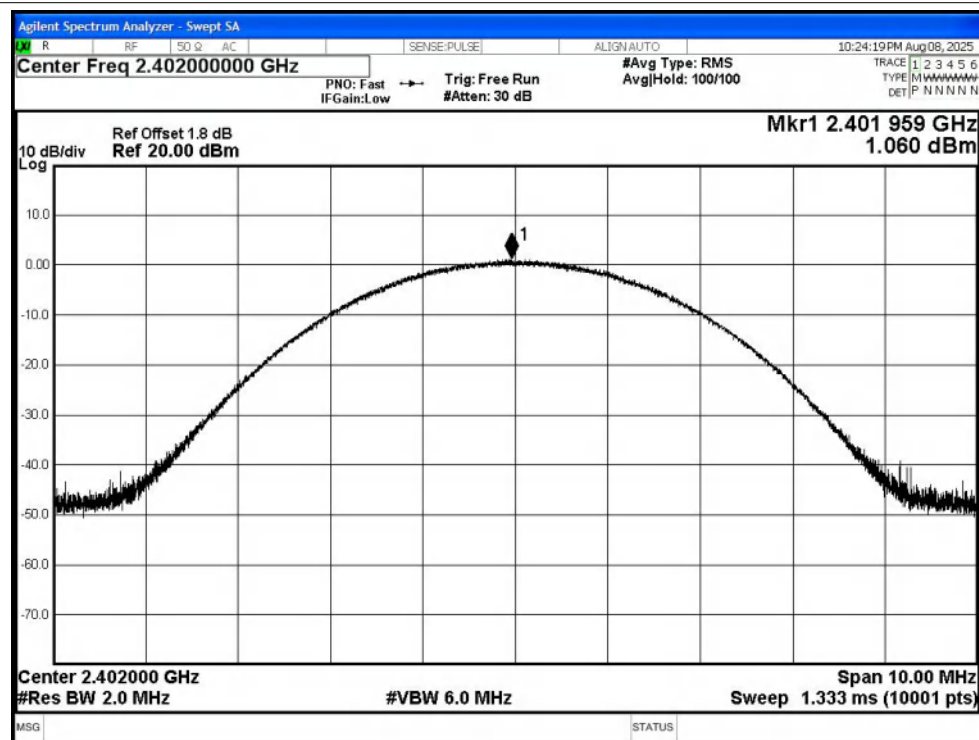
Power NVNT 2-DH5 2441MHz Ant1



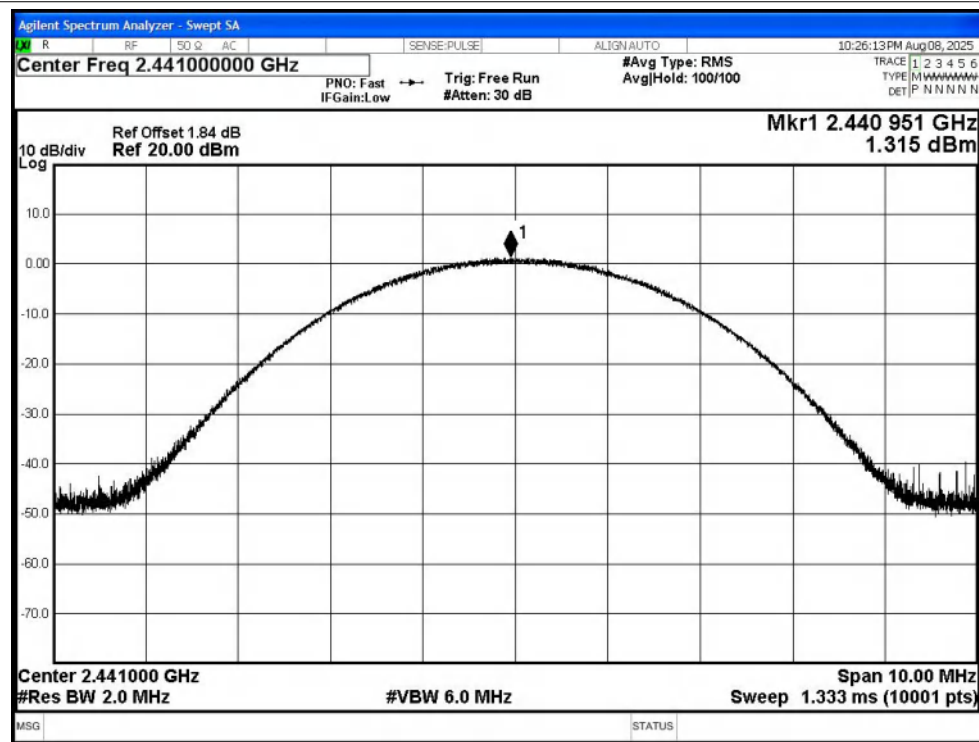
Power NVNT 2-DH5 2480MHz Ant1

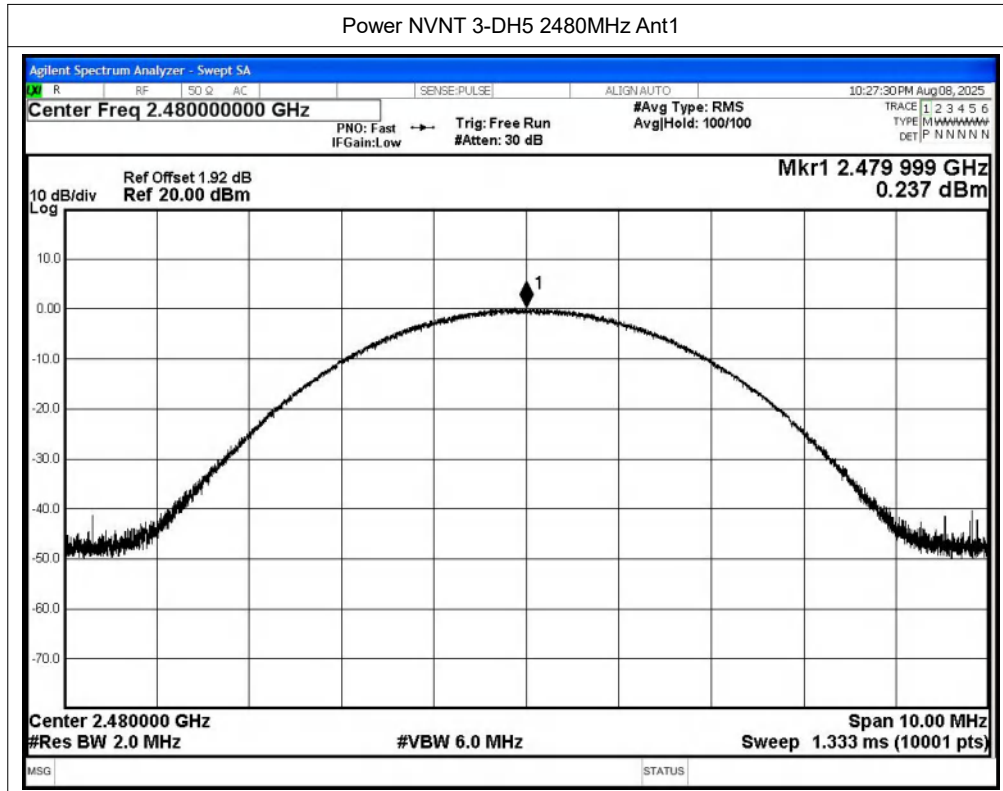


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



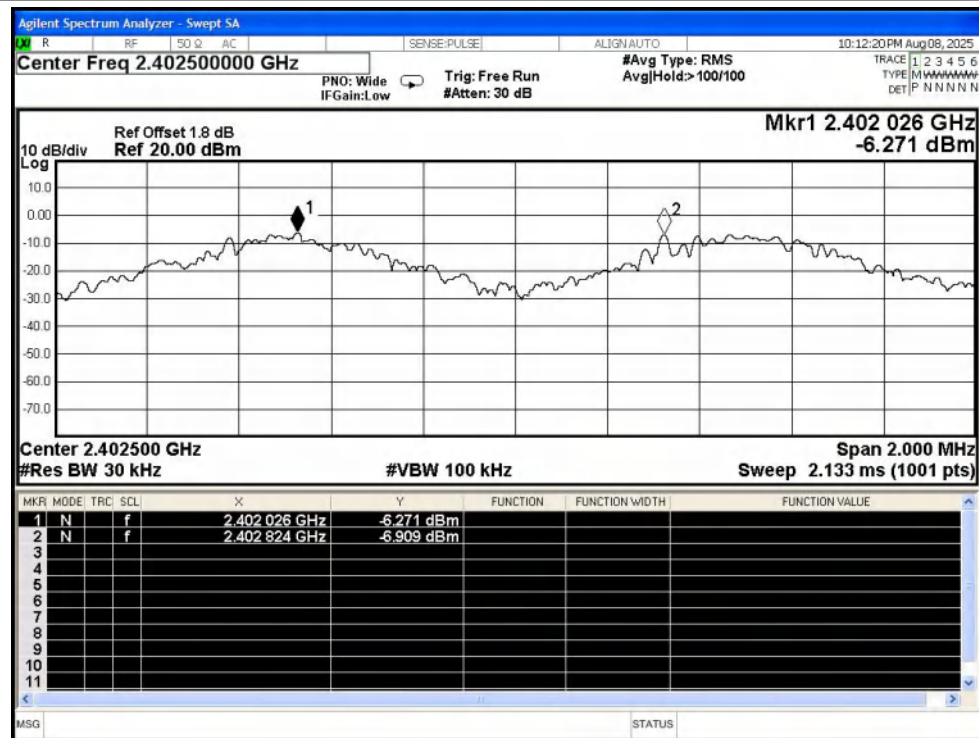


A.3 Carrier Frequencies Separation

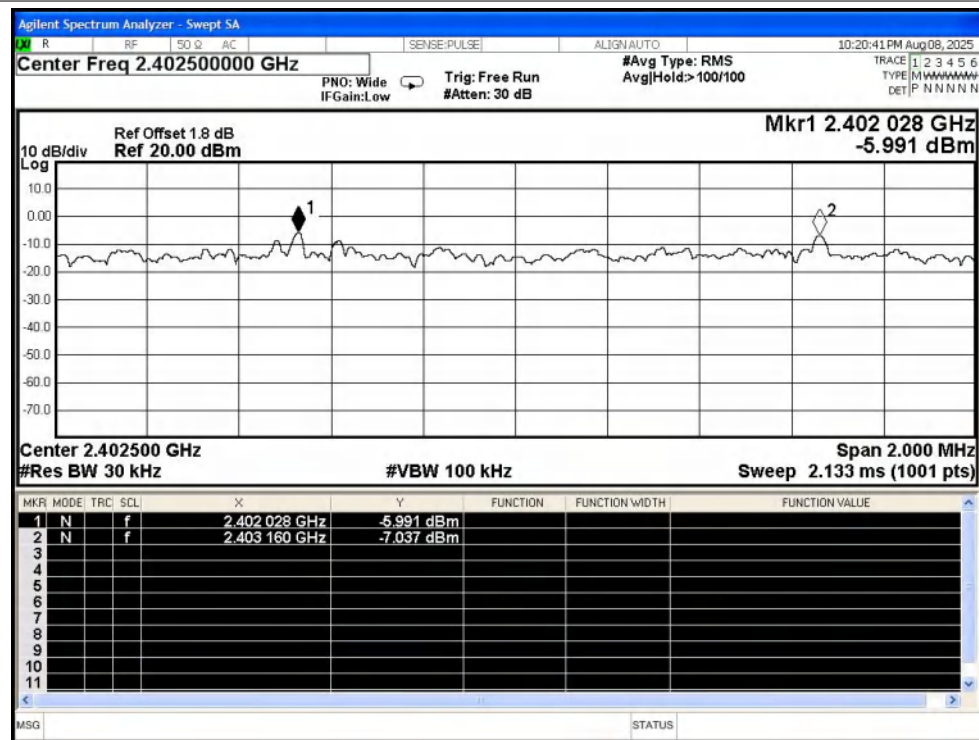
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.026	2402.824	0.798	0.631	Pass
NVNT	2-DH5	Ant1	2402.028	2403.16	1.132	0.857	Pass
NVNT	3-DH5	Ant1	2402.034	2403.028	0.994	0.867	Pass

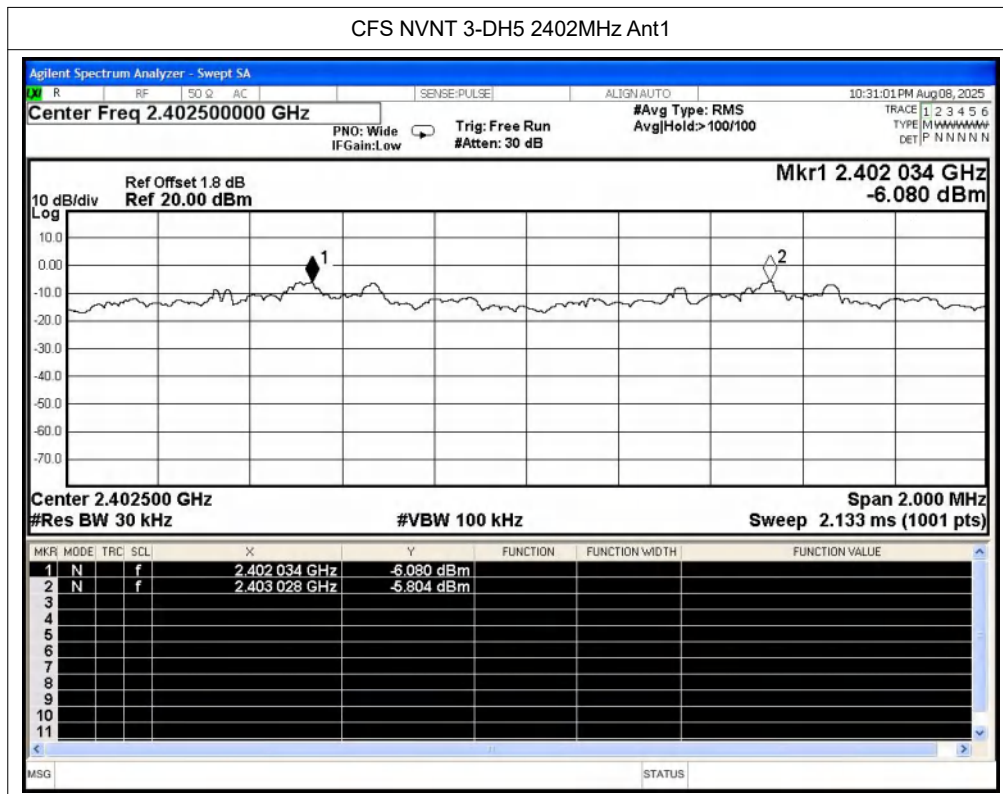
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1

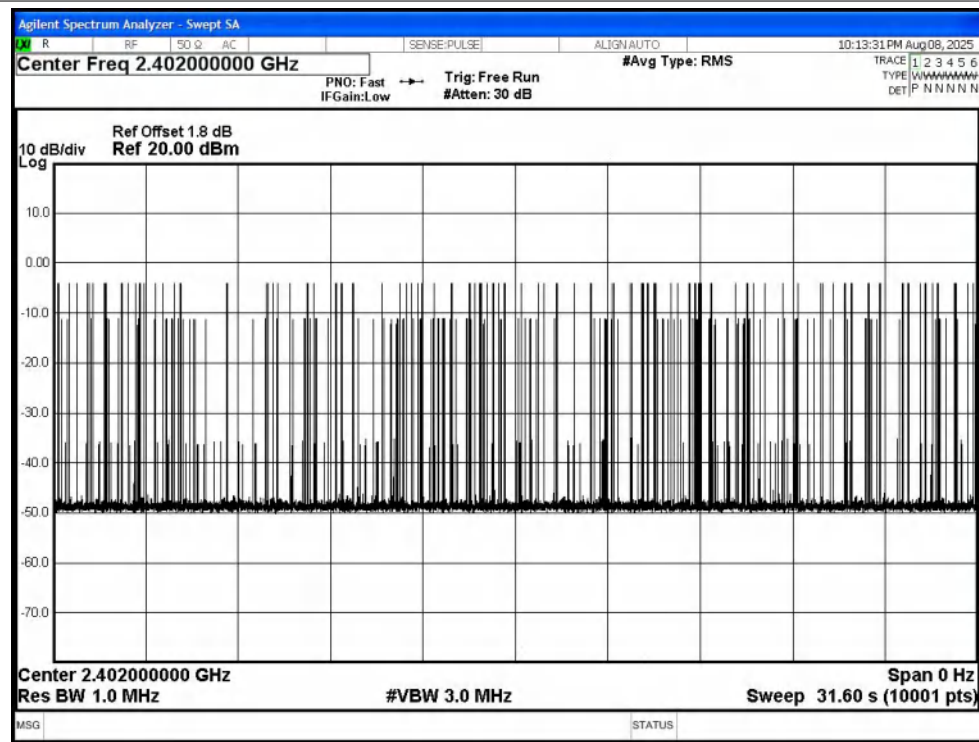
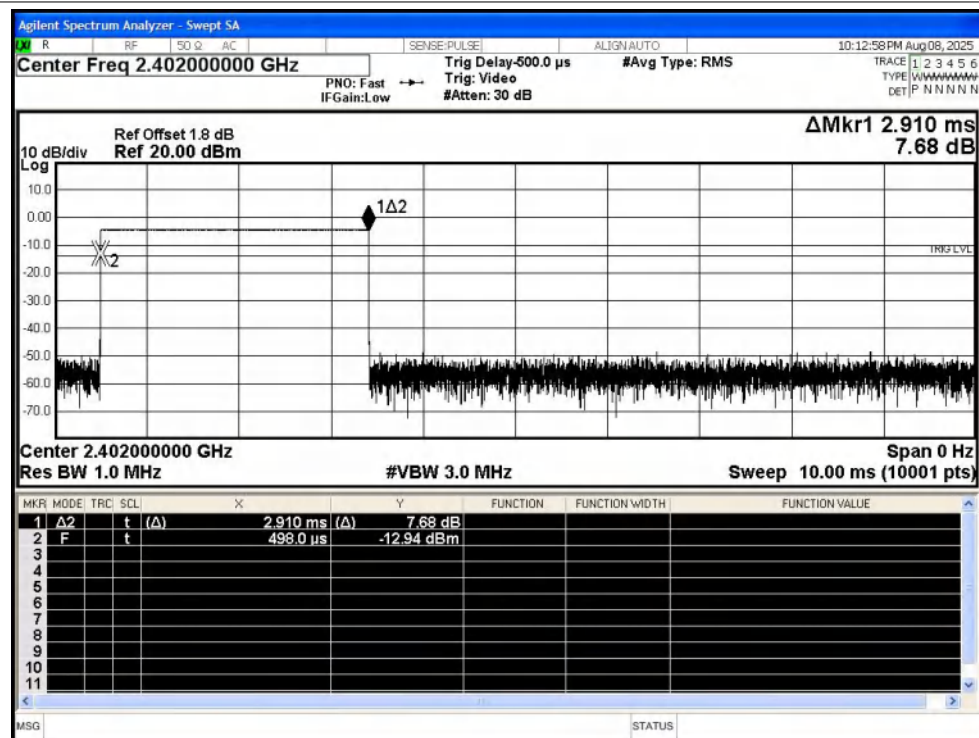




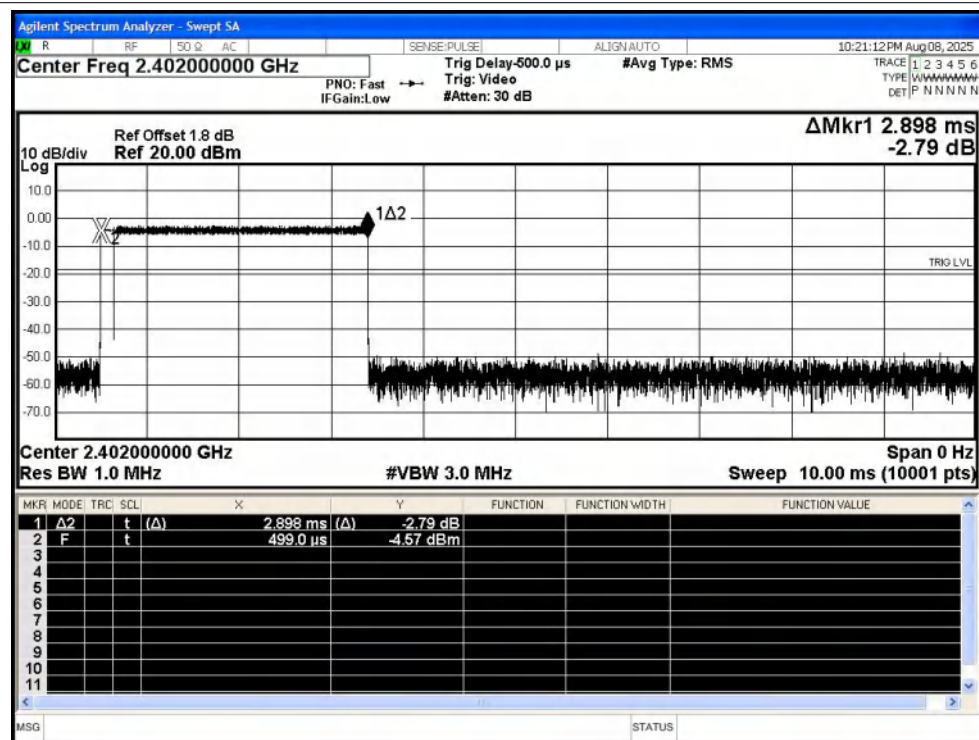
A.4 Dwell Time

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.91	308.46	106	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	336.168	116	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	318.67	110	31600	400	Pass

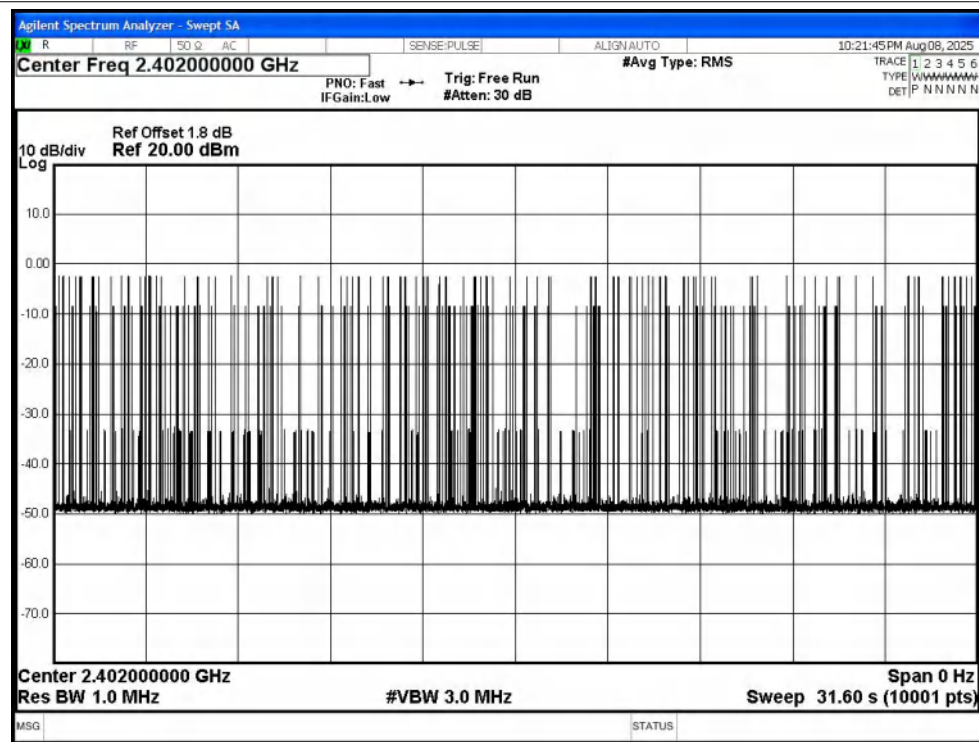
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



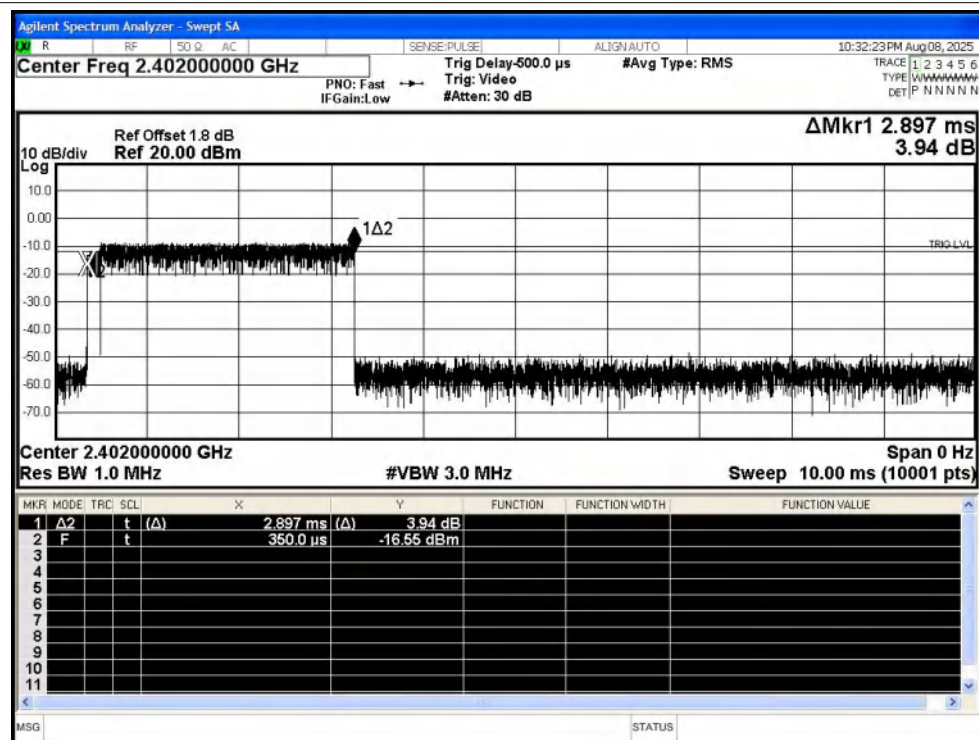
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



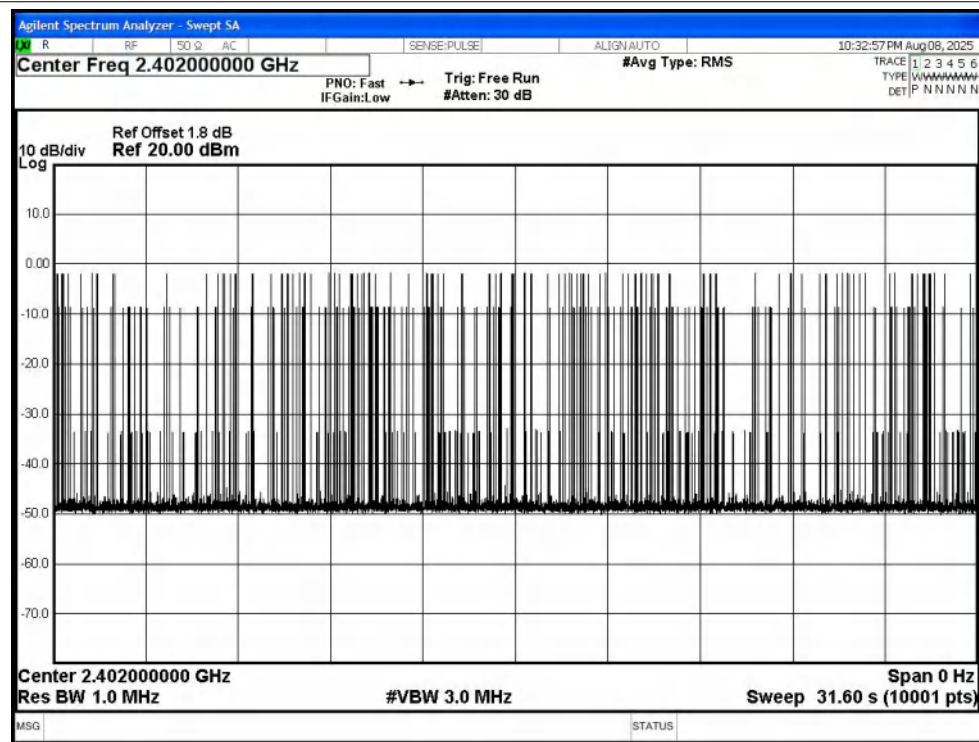
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

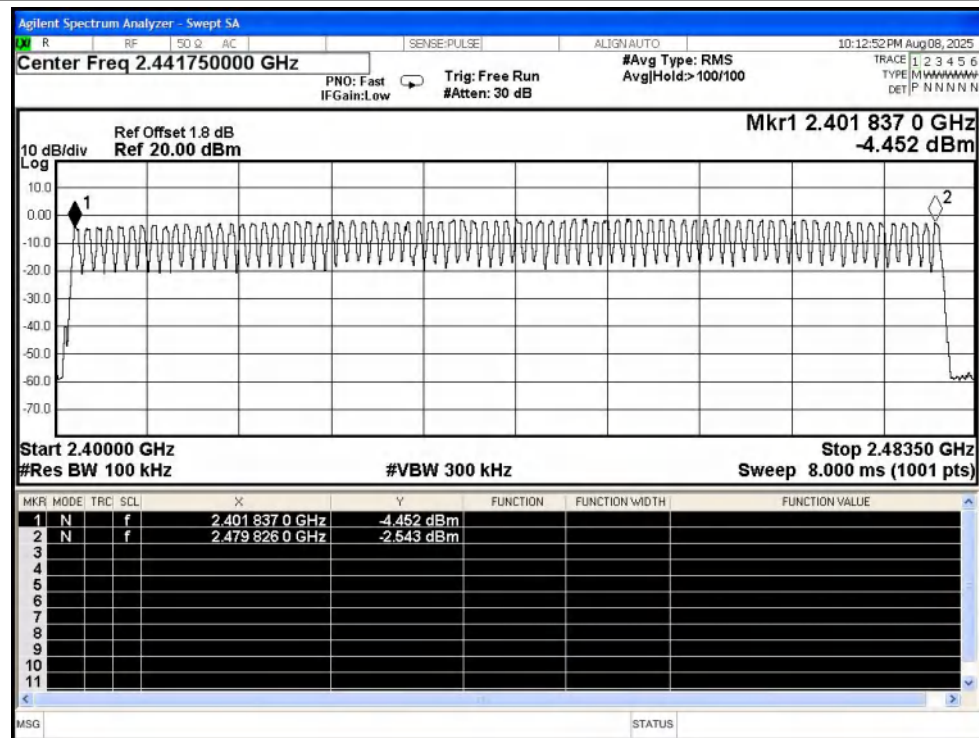


A.5 Number of Hopping Channel

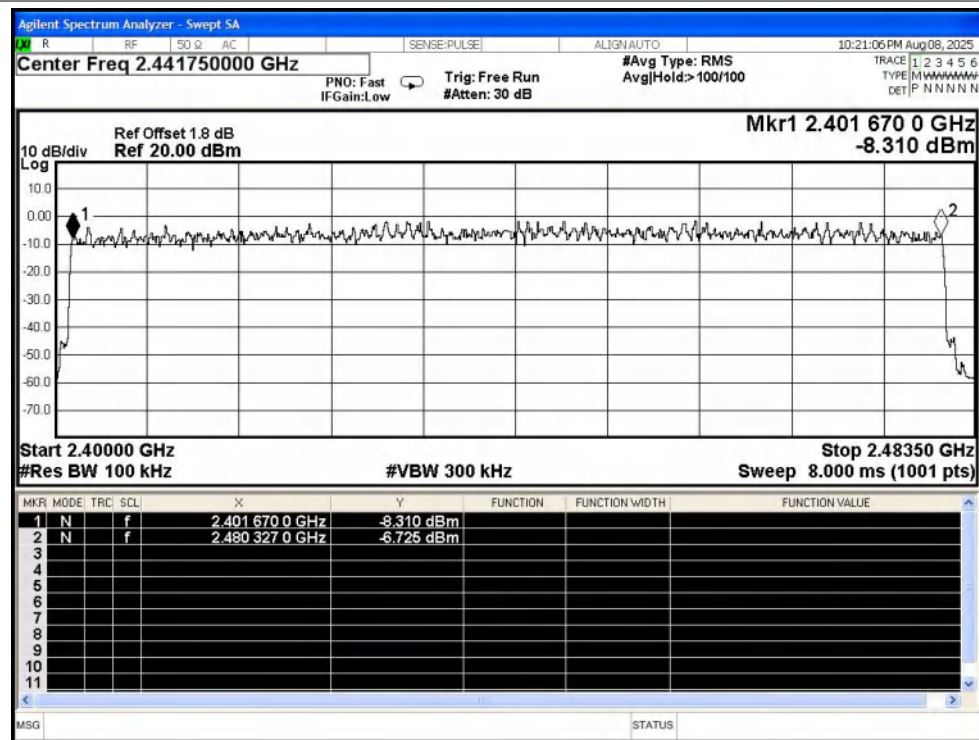
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

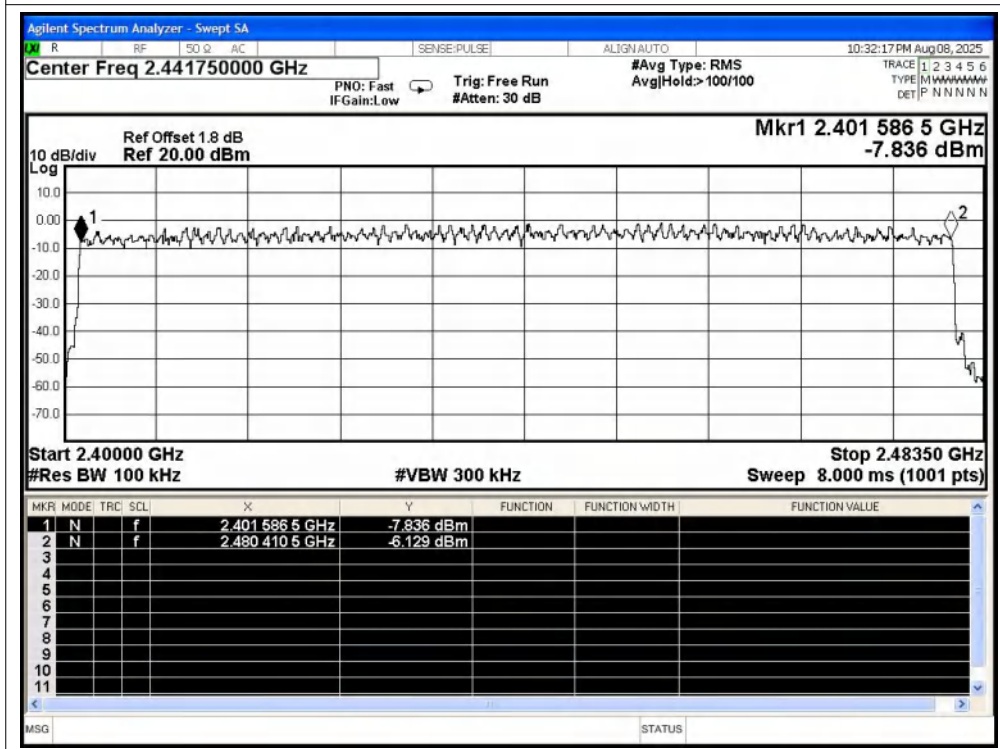
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

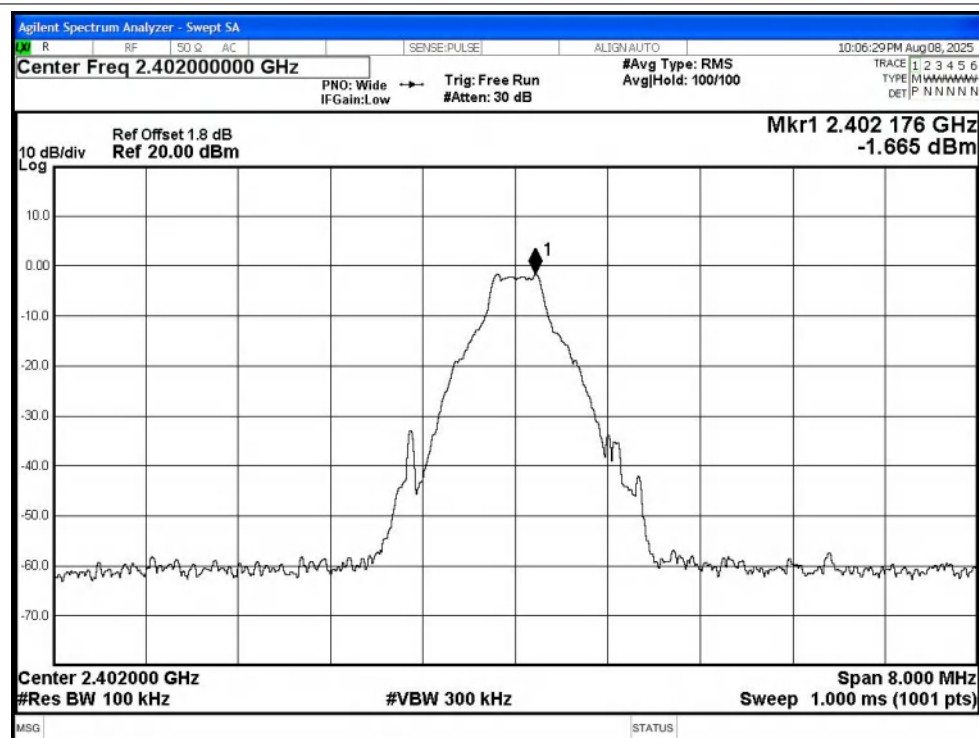


A.6 Band Edge

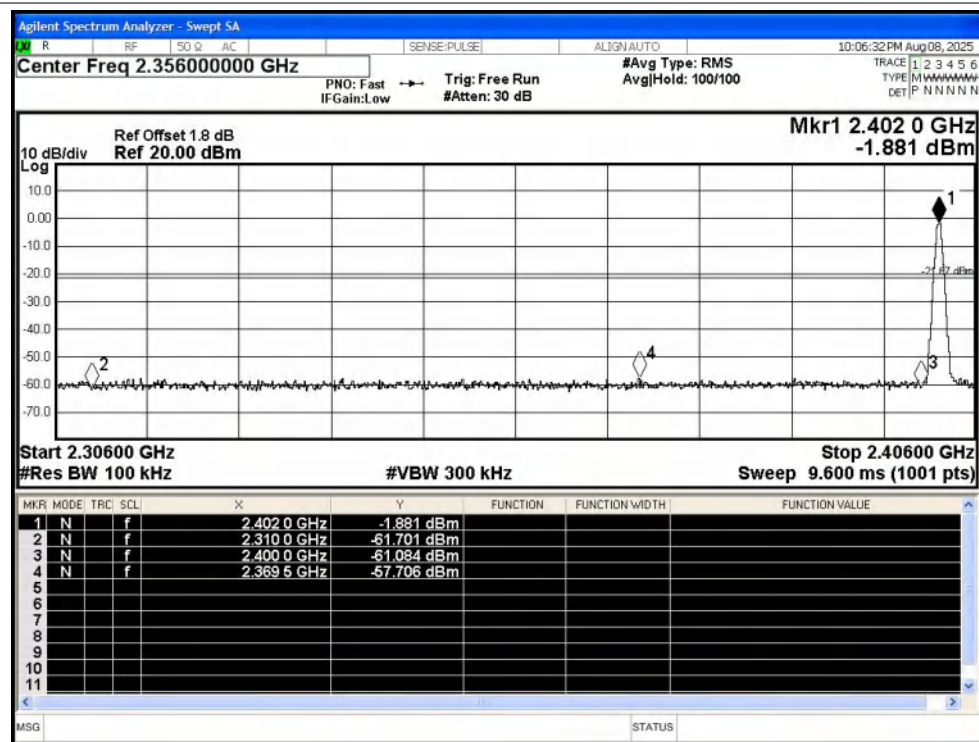
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.04	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.05	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-53.3	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-54.2	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-51.49	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-52.88	-20	Pass

Test Graphs

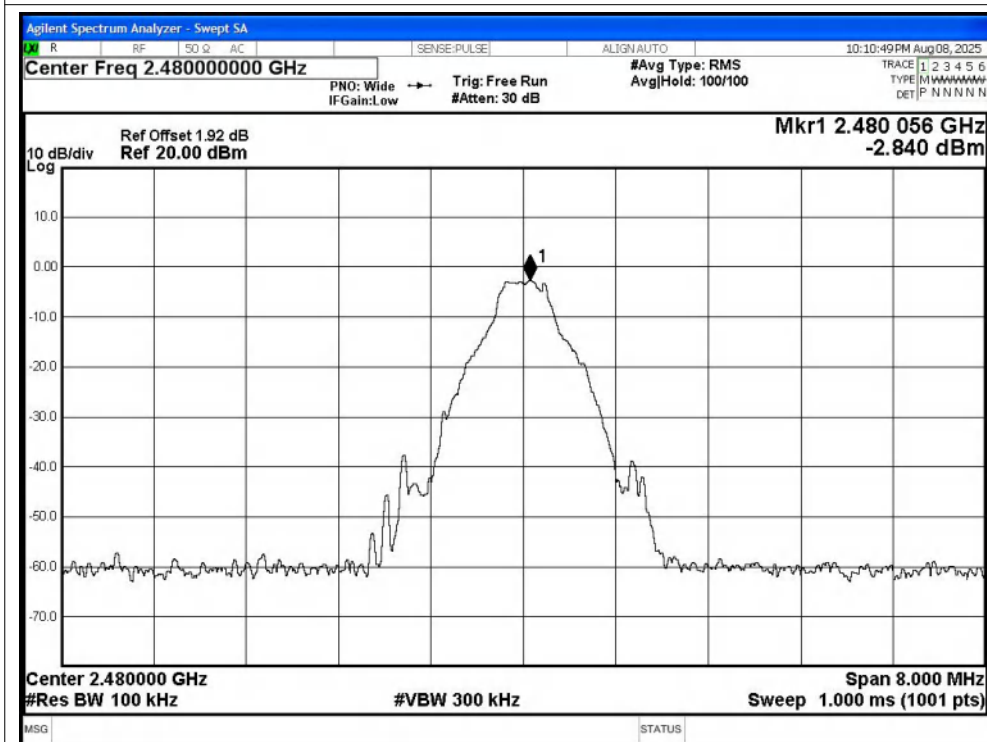
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



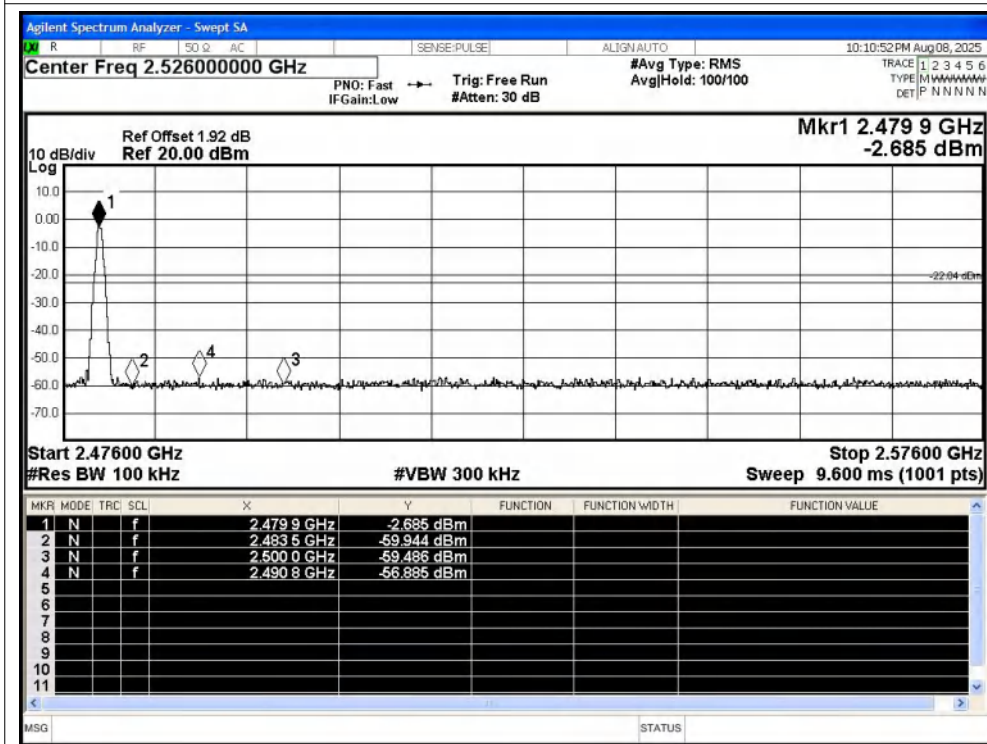
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



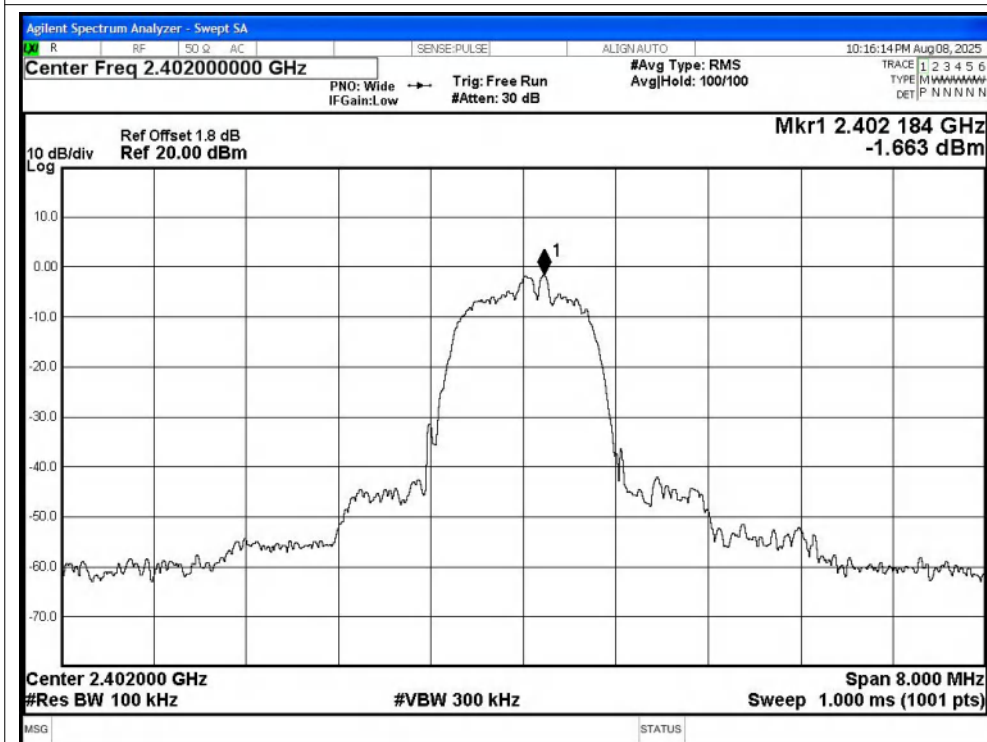
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



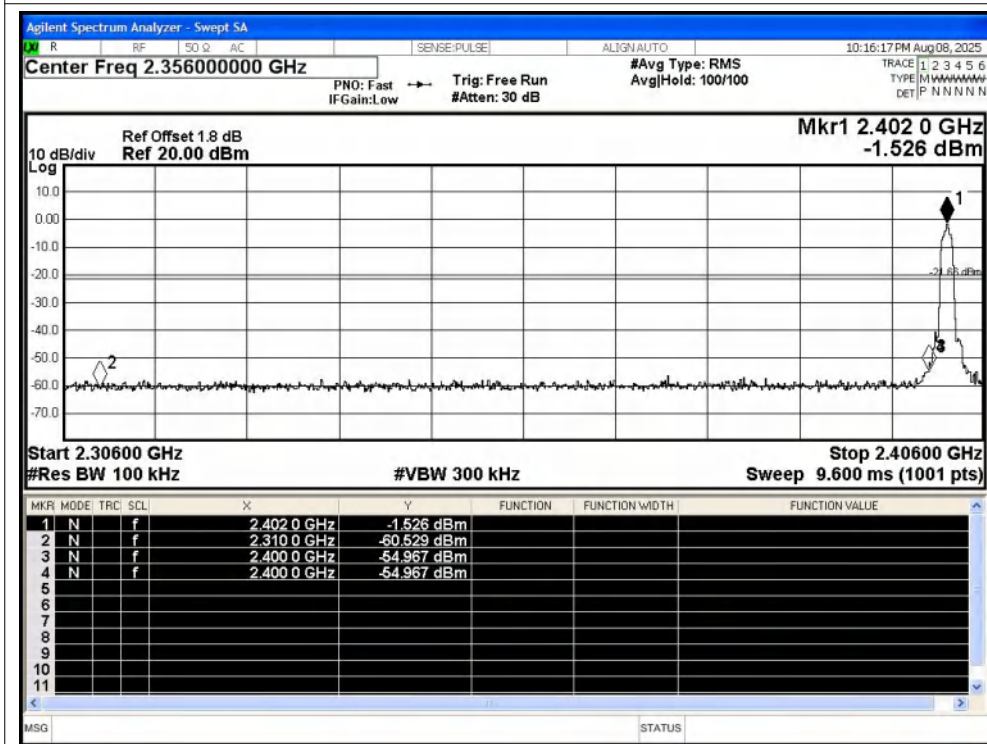
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



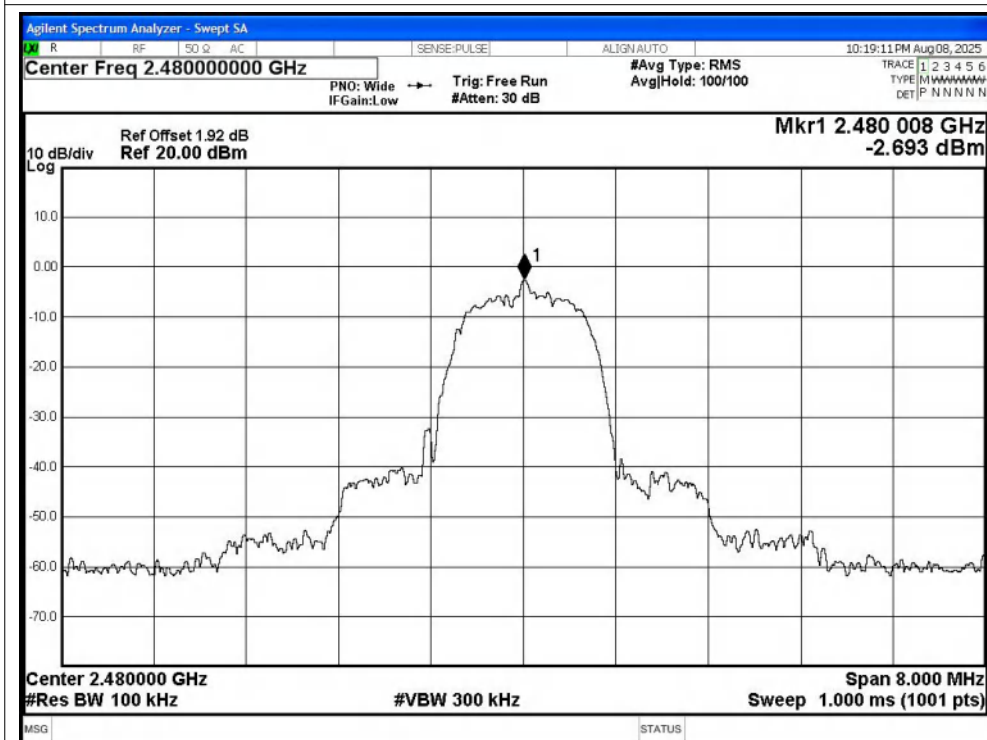
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



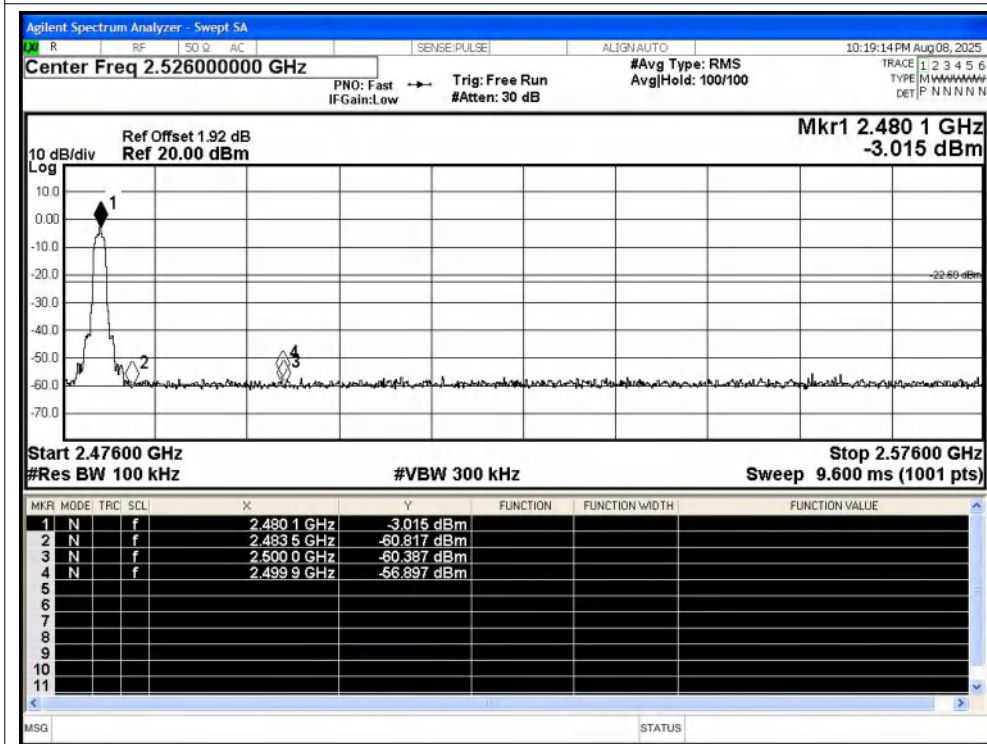
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



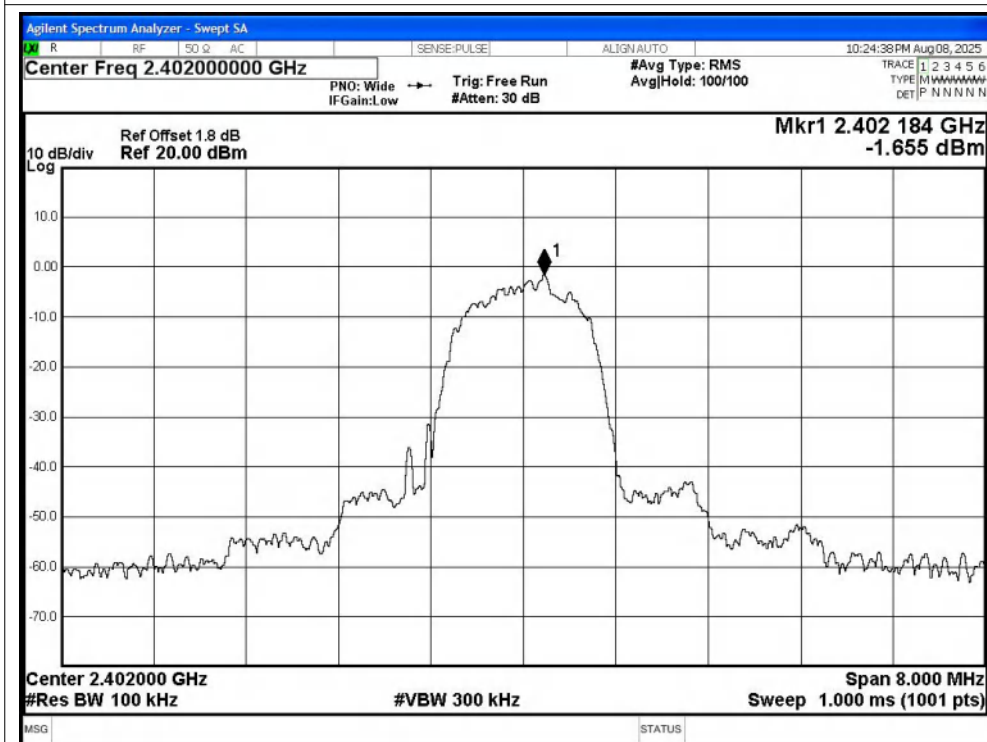
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



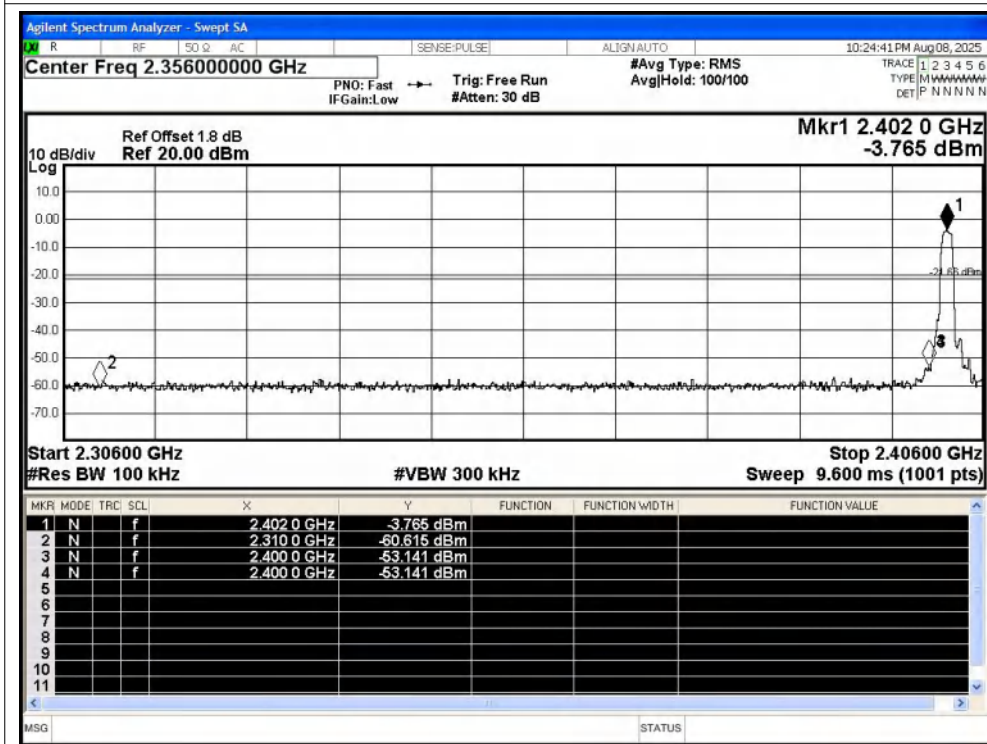
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



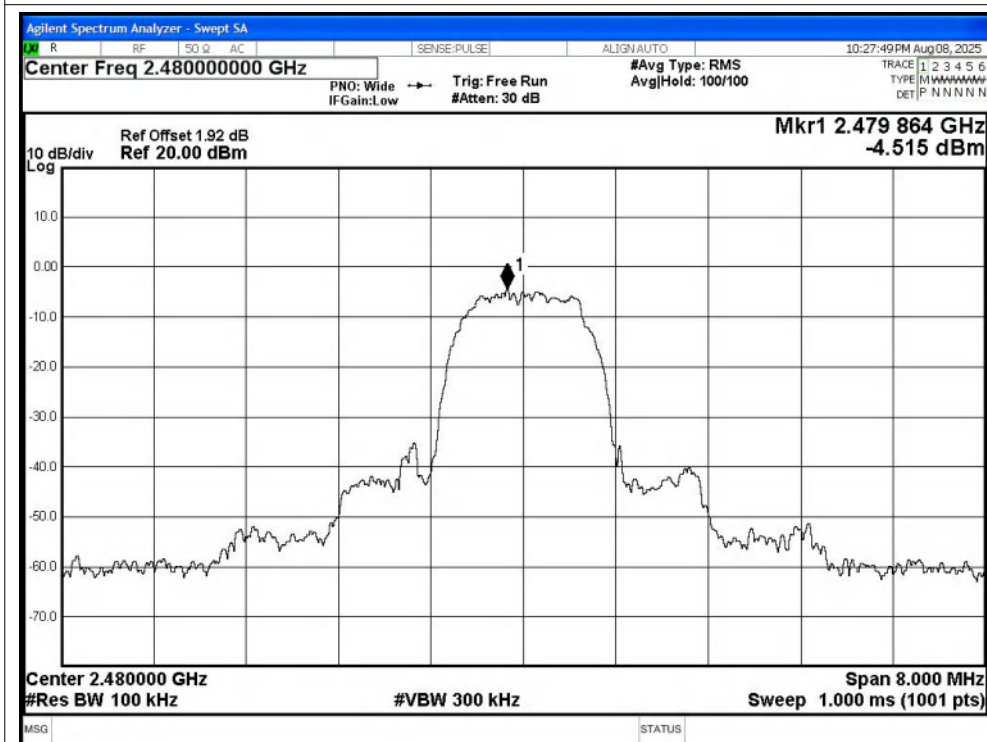
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



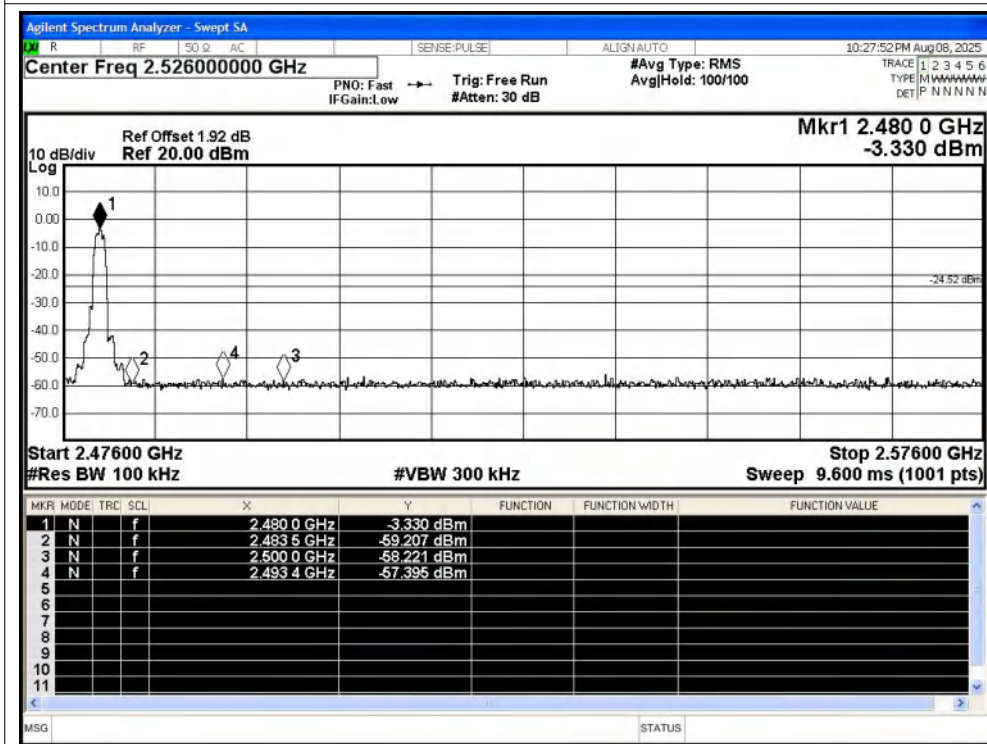
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

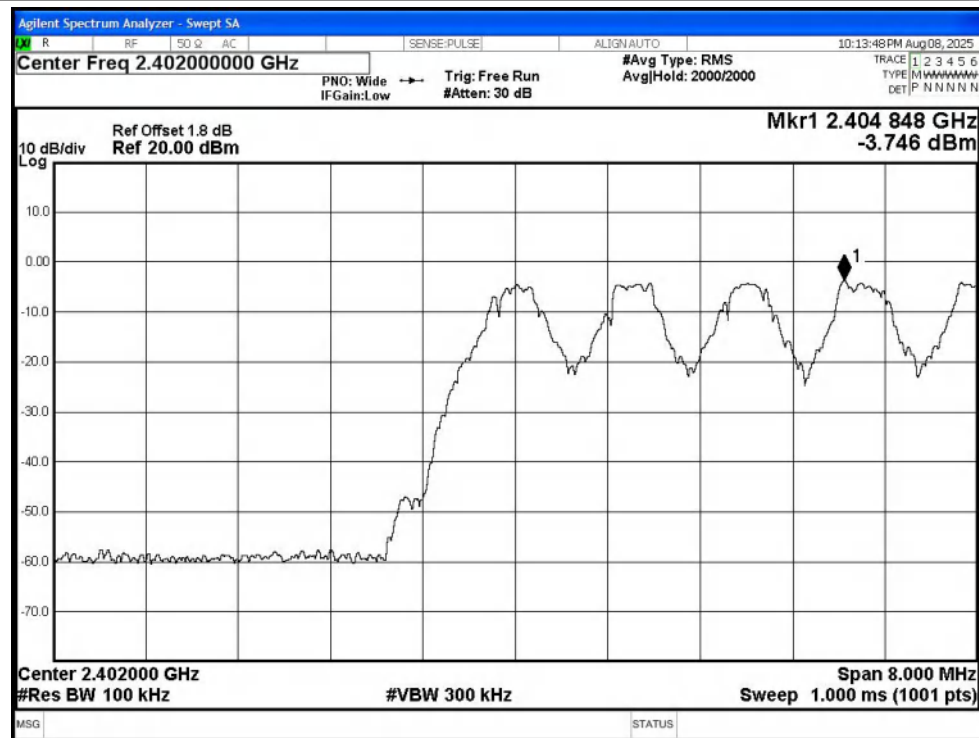


(Hopping)

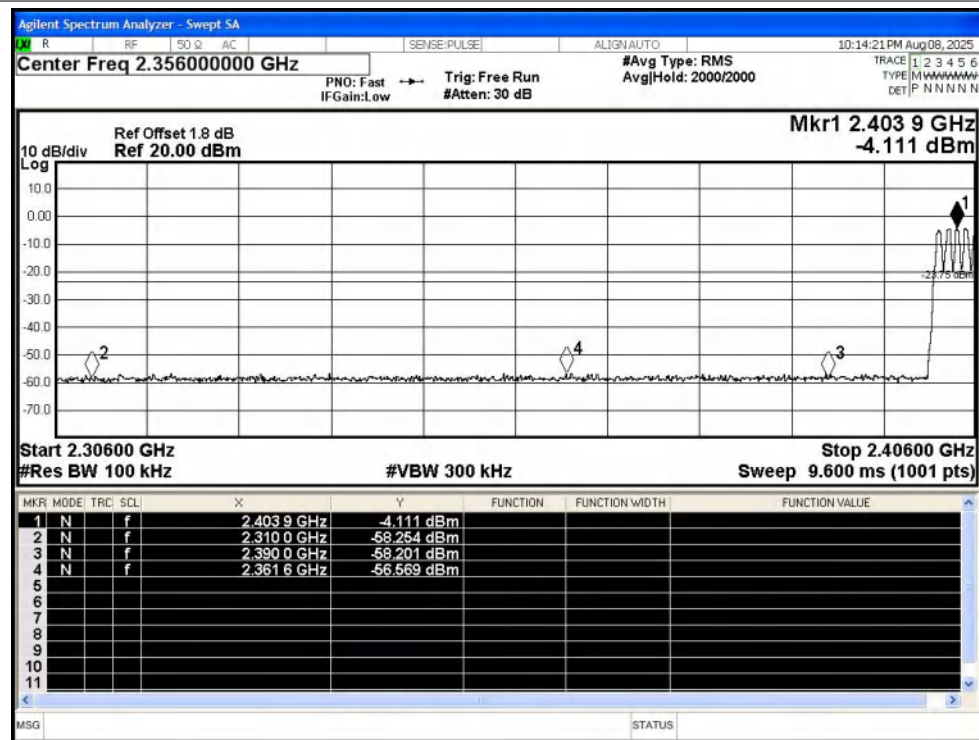
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-52.82	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-54.06	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-50.22	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.3	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-51.72	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-52.96	-20	Pass

Test Graphs

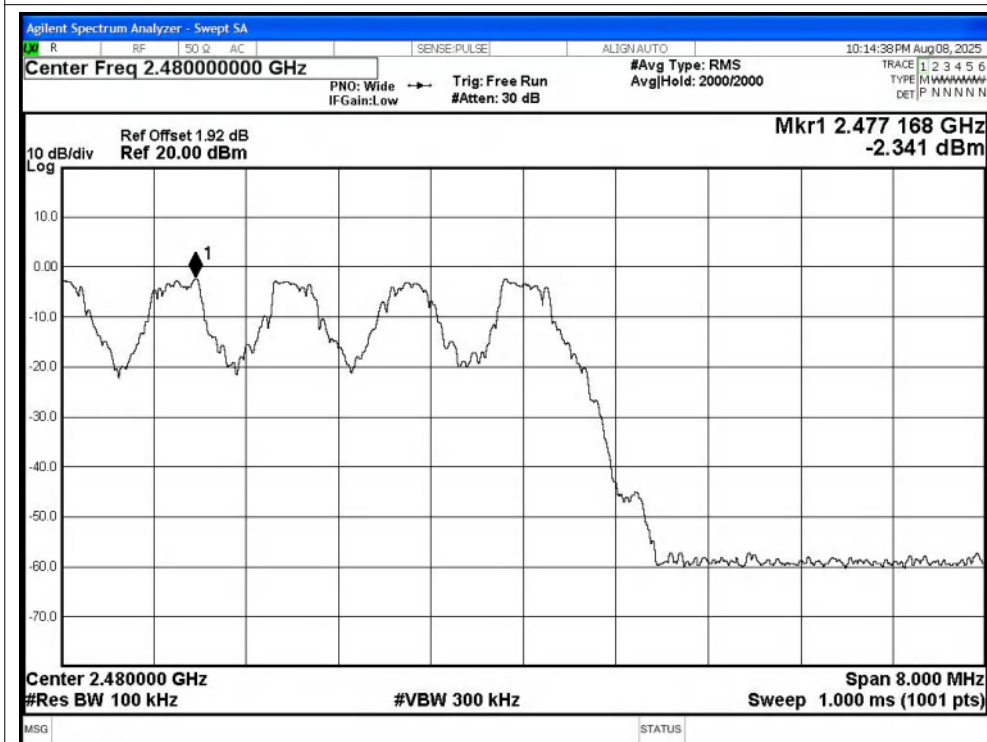
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



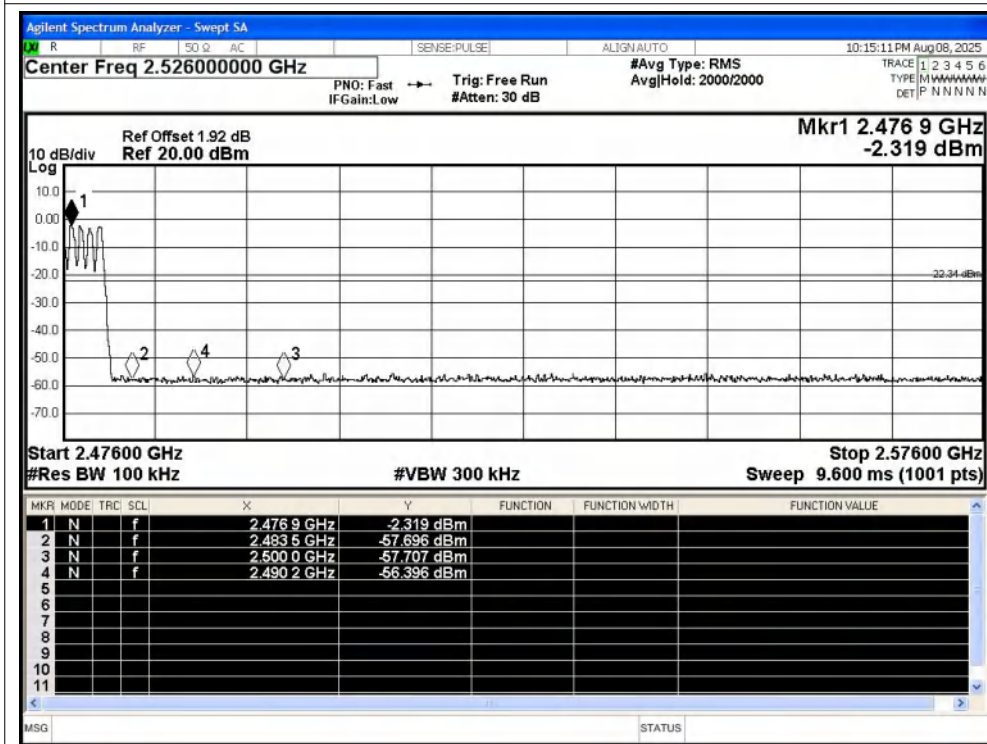
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



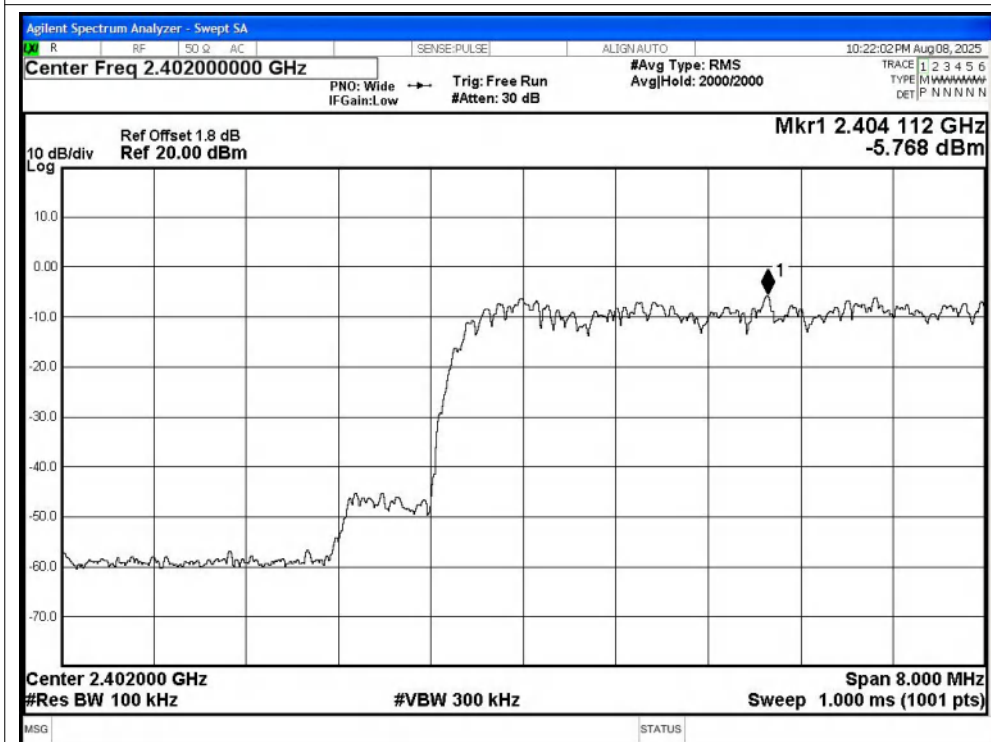
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



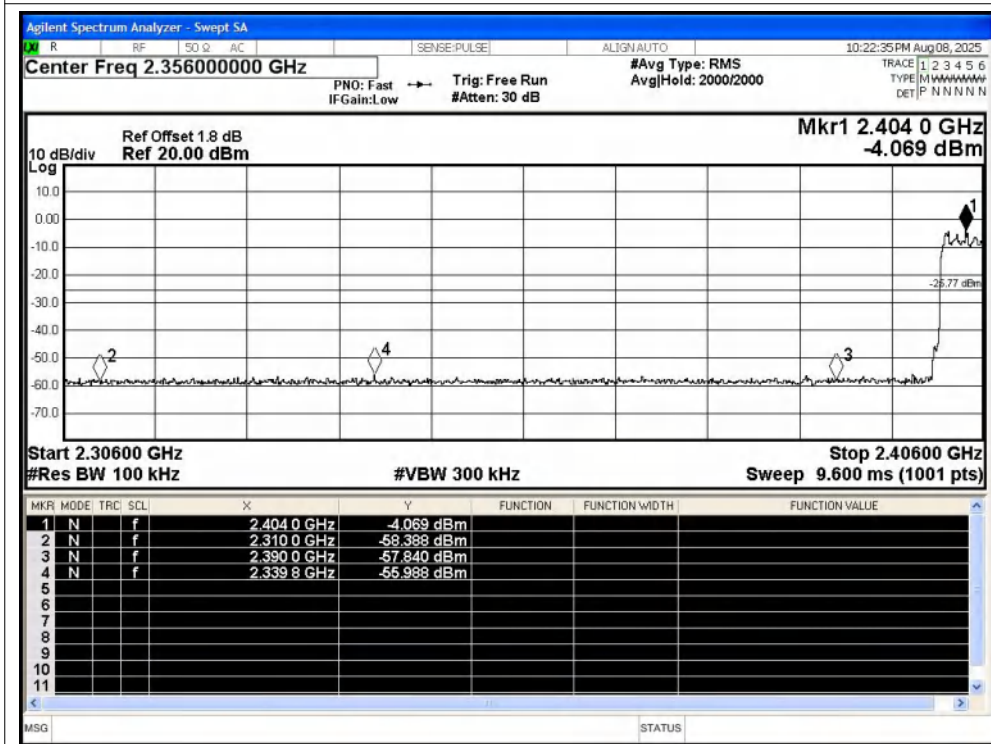
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



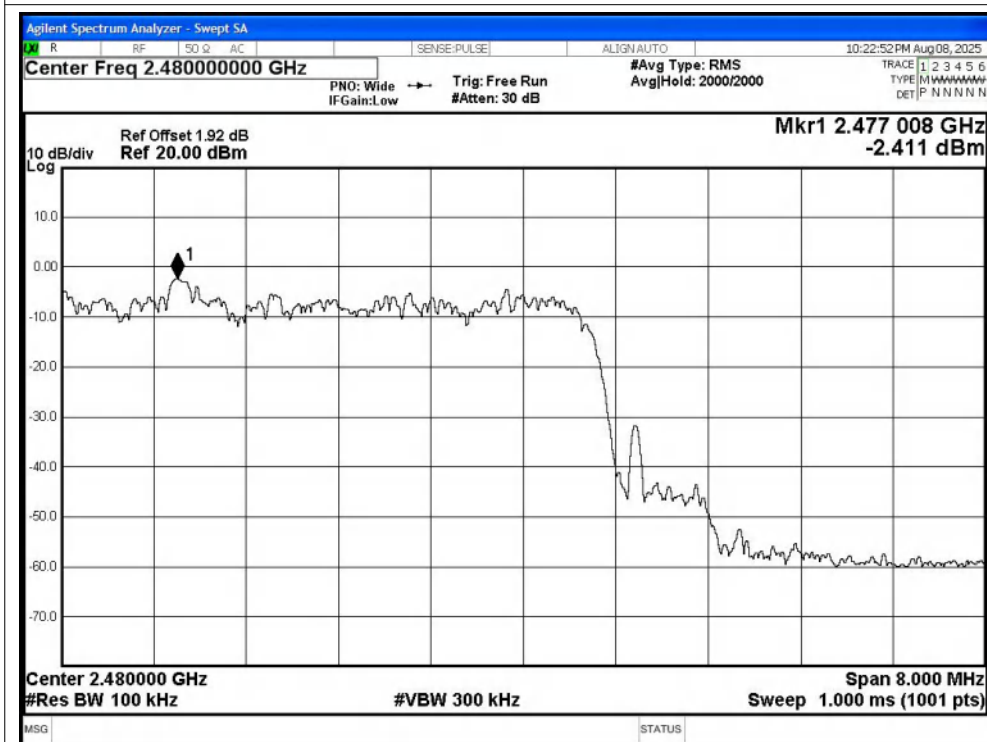
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



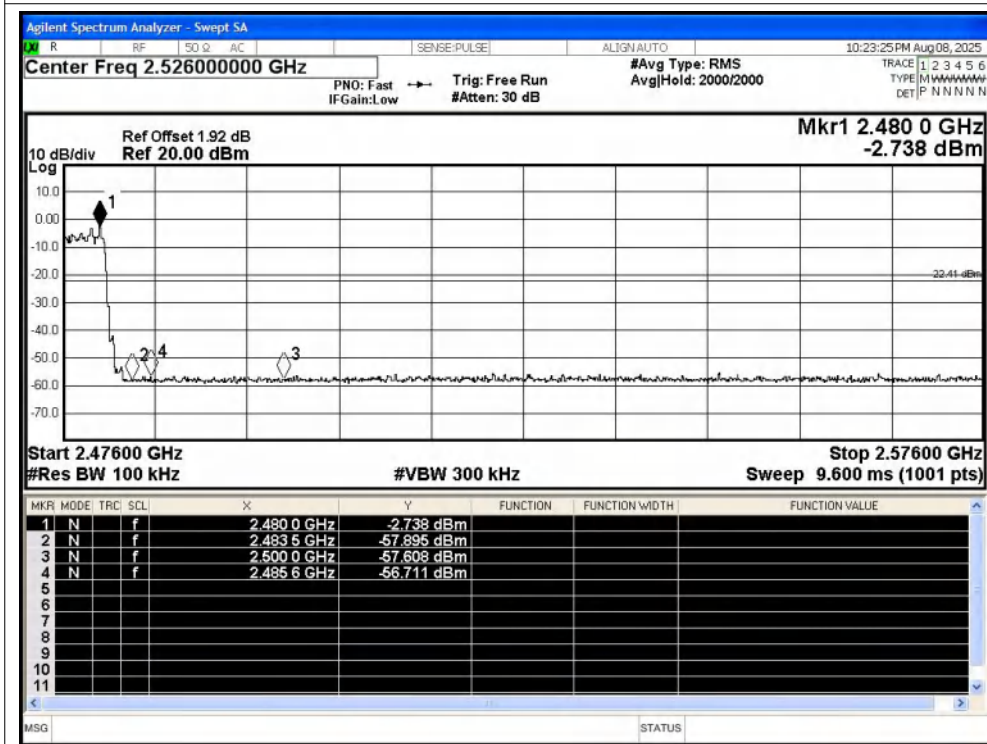
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



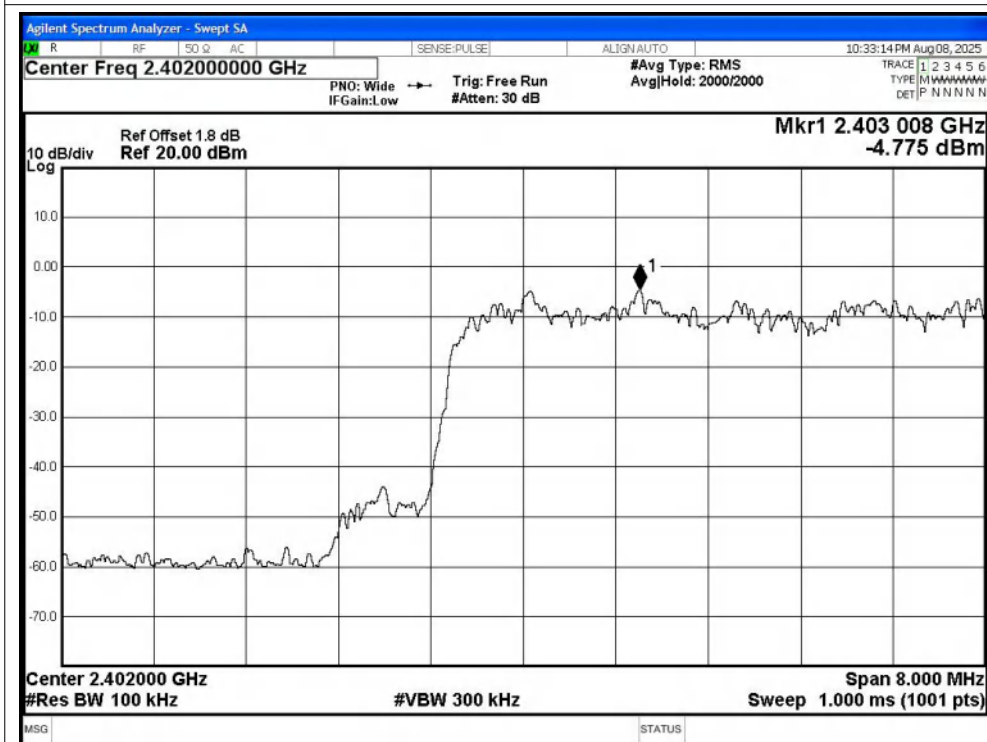
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



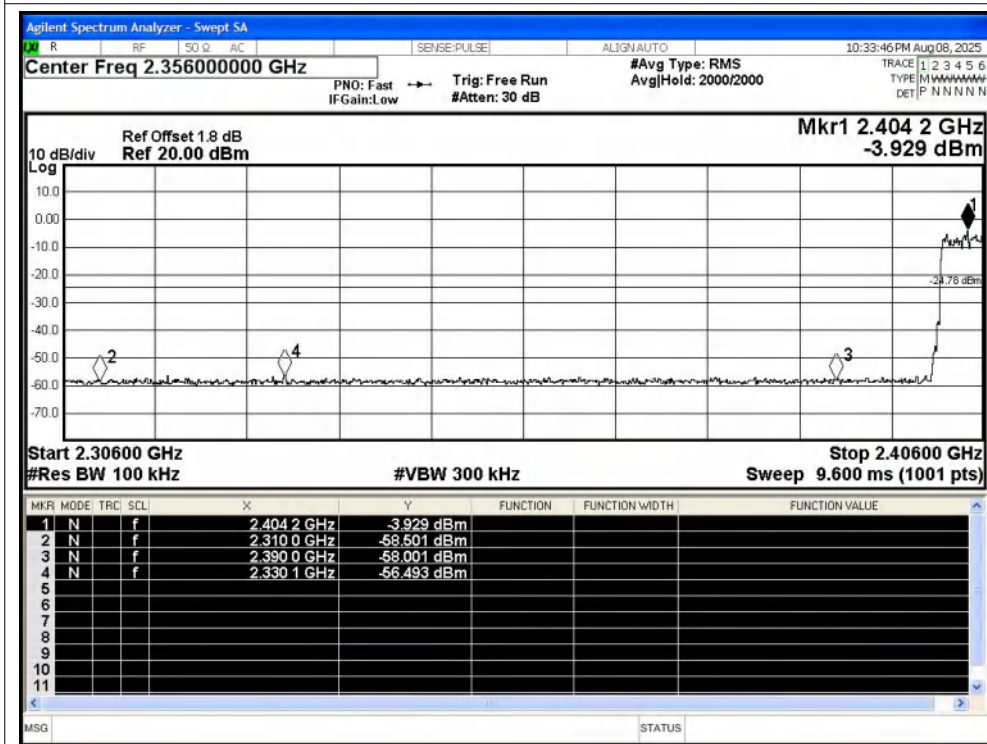
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



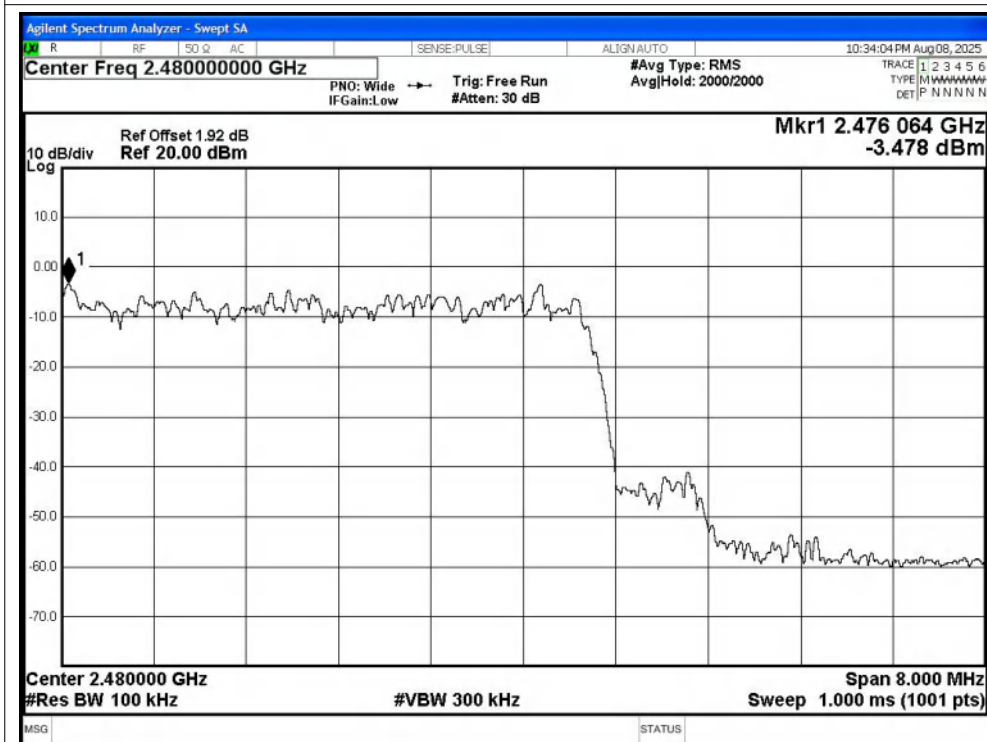
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



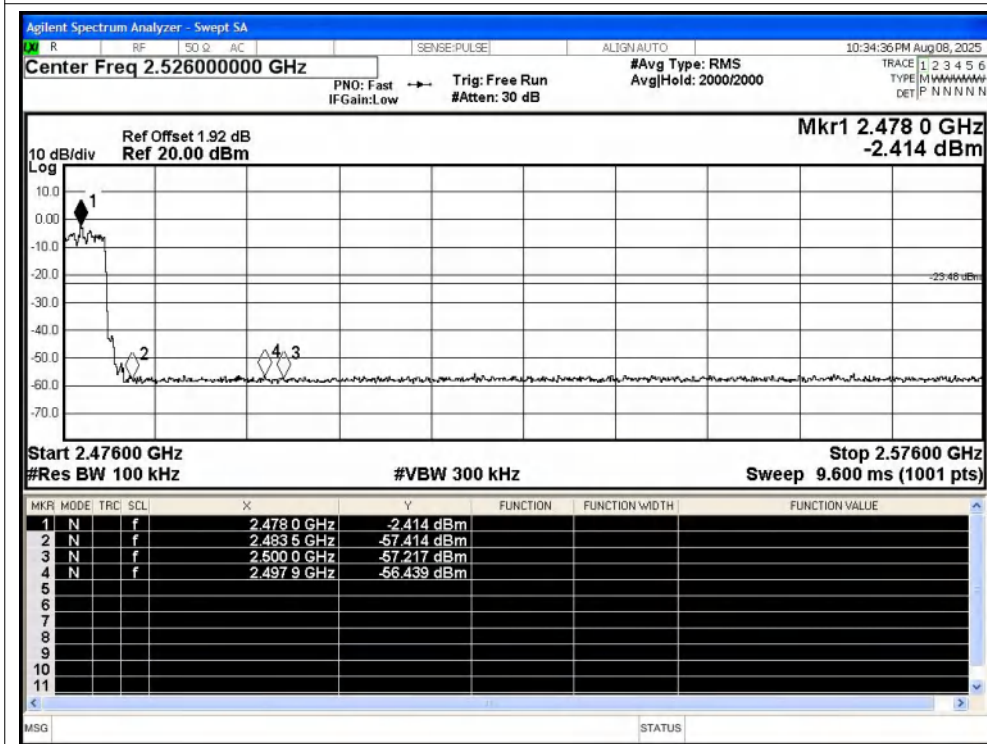
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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

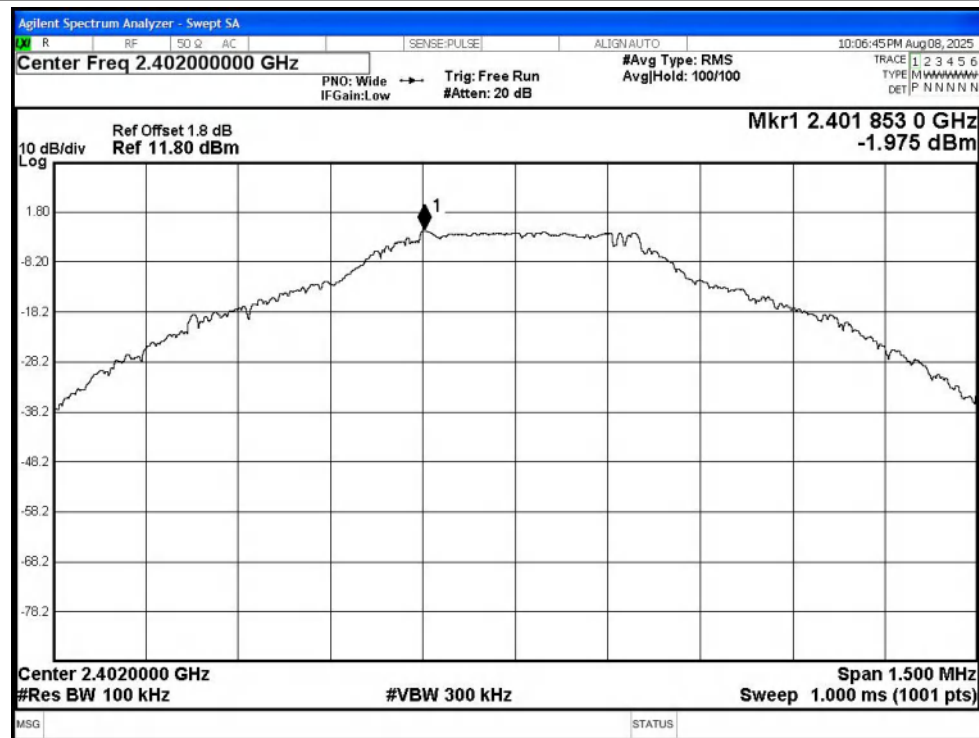


A.7 Conducted RF Spurious Emission

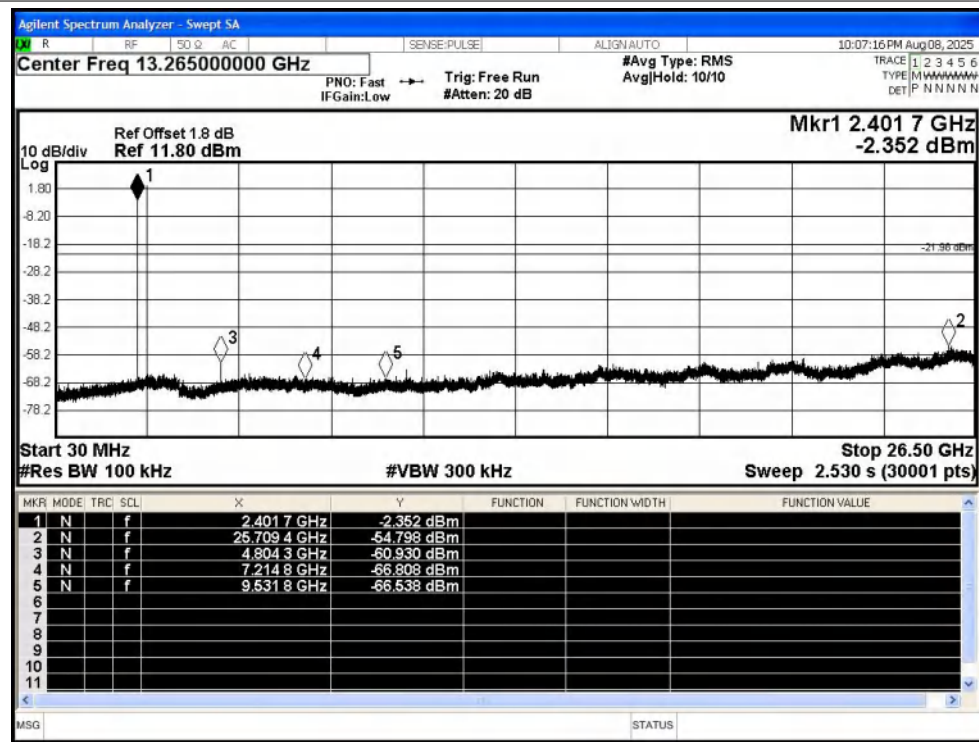
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-52.82	-20	Pass
NVNT	1-DH5	2441	Ant1	-52.27	-20	Pass
NVNT	1-DH5	2480	Ant1	-52.81	-20	Pass
NVNT	2-DH5	2402	Ant1	-53.13	-20	Pass
NVNT	2-DH5	2441	Ant1	-49.5	-20	Pass
NVNT	2-DH5	2480	Ant1	-52.24	-20	Pass
NVNT	3-DH5	2402	Ant1	-53.53	-20	Pass
NVNT	3-DH5	2441	Ant1	-53.65	-20	Pass
NVNT	3-DH5	2480	Ant1	-53.1	-20	Pass

Test Graphs

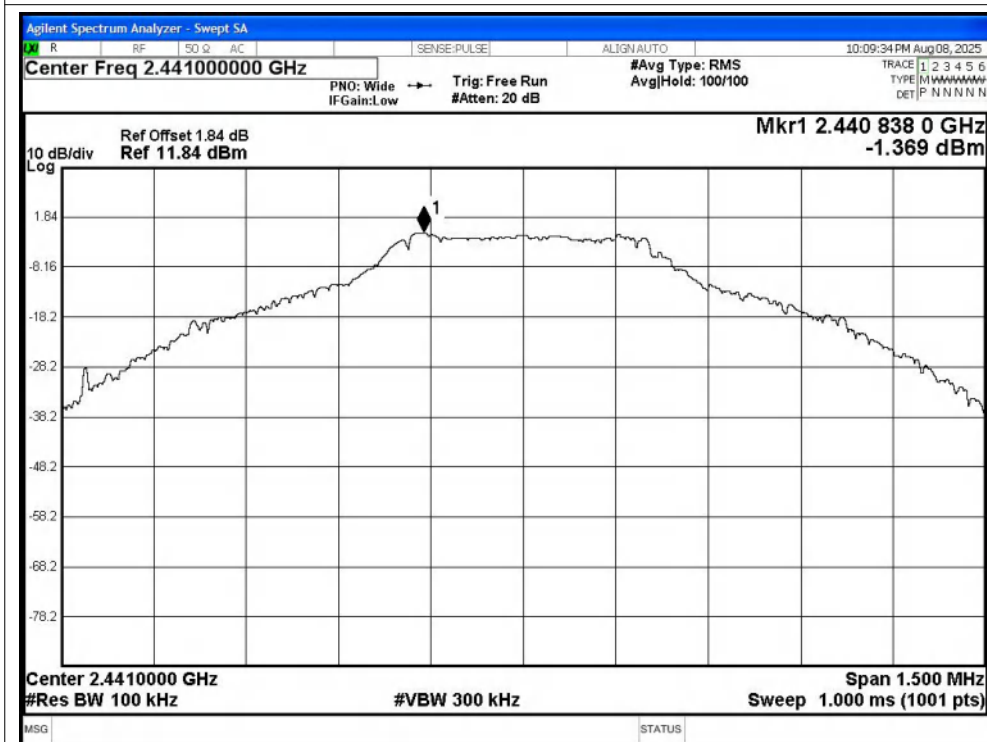
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



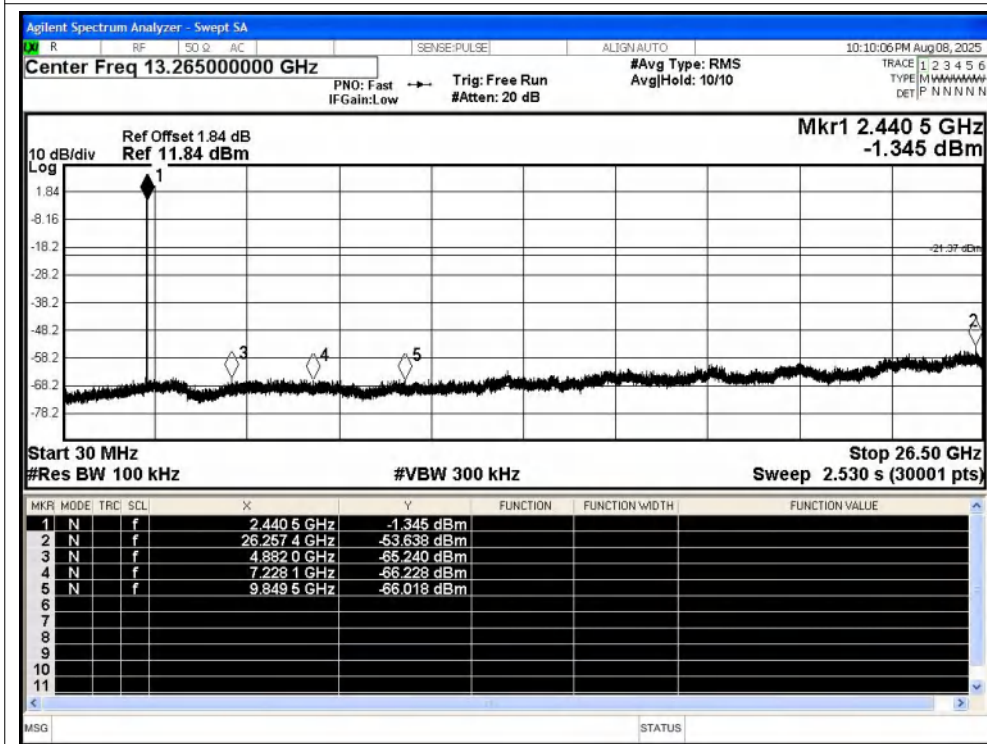
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



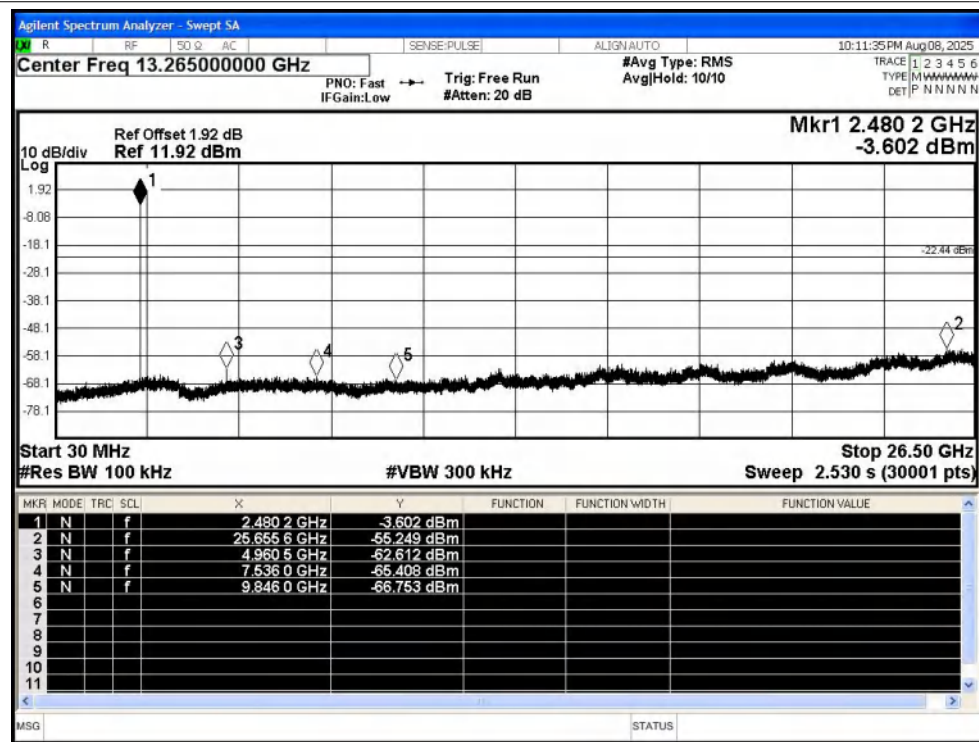
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



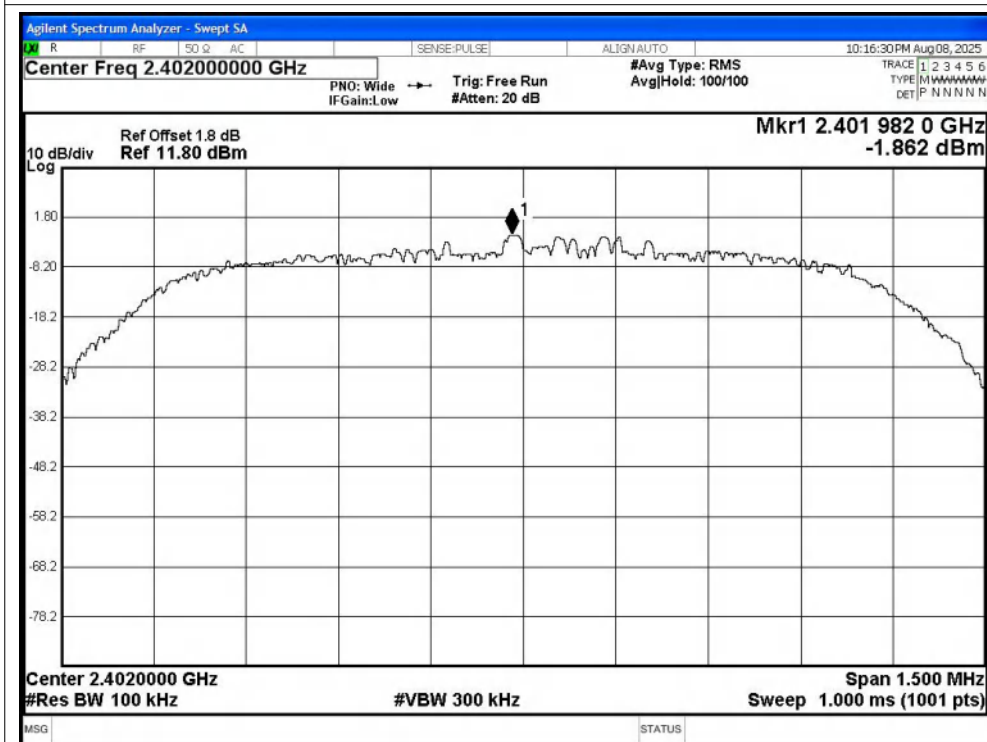
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



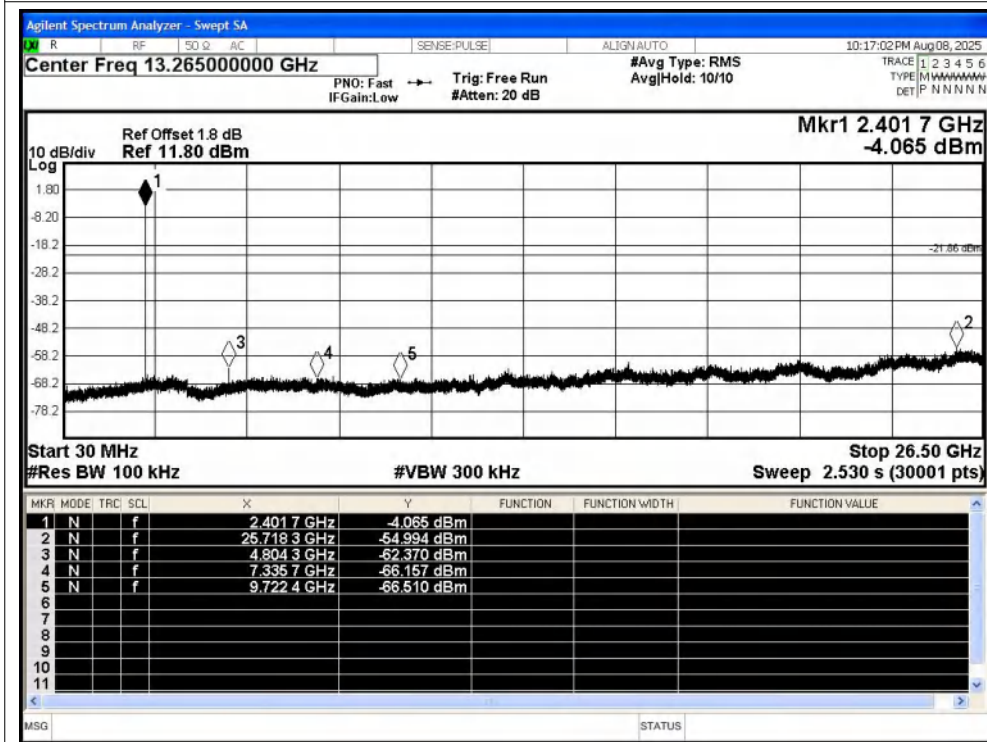
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



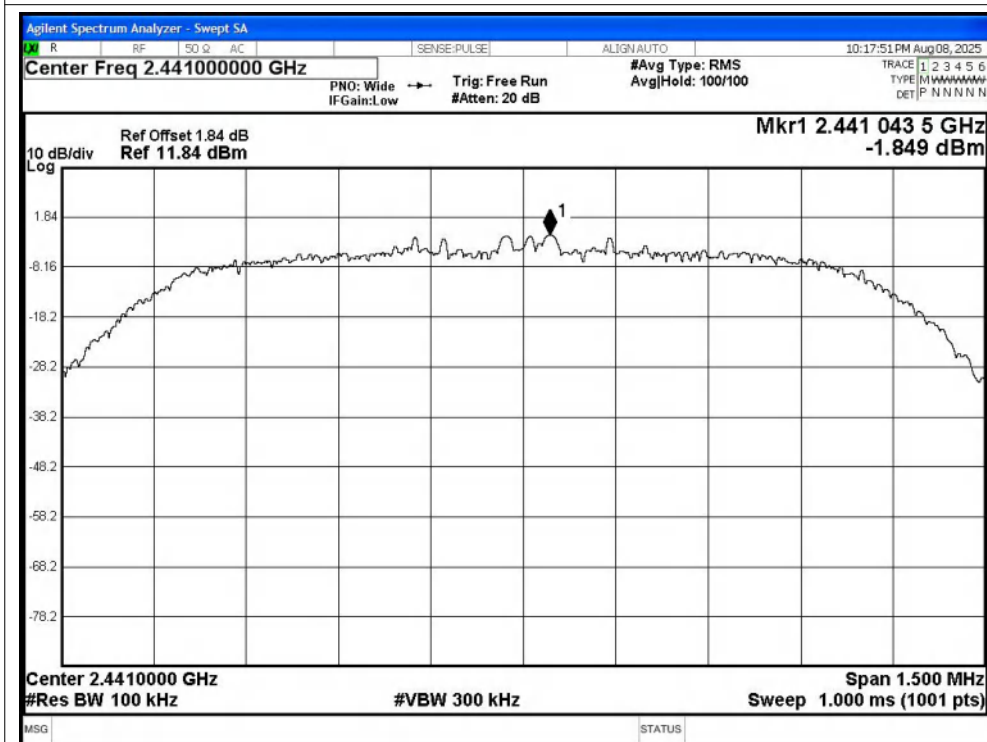
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



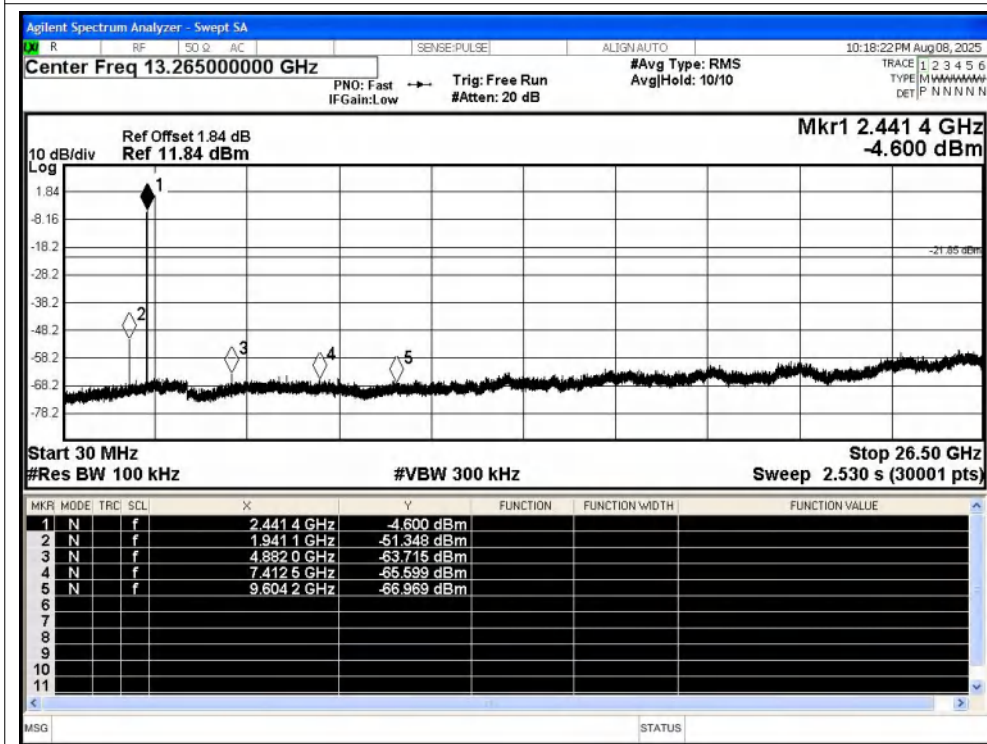
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



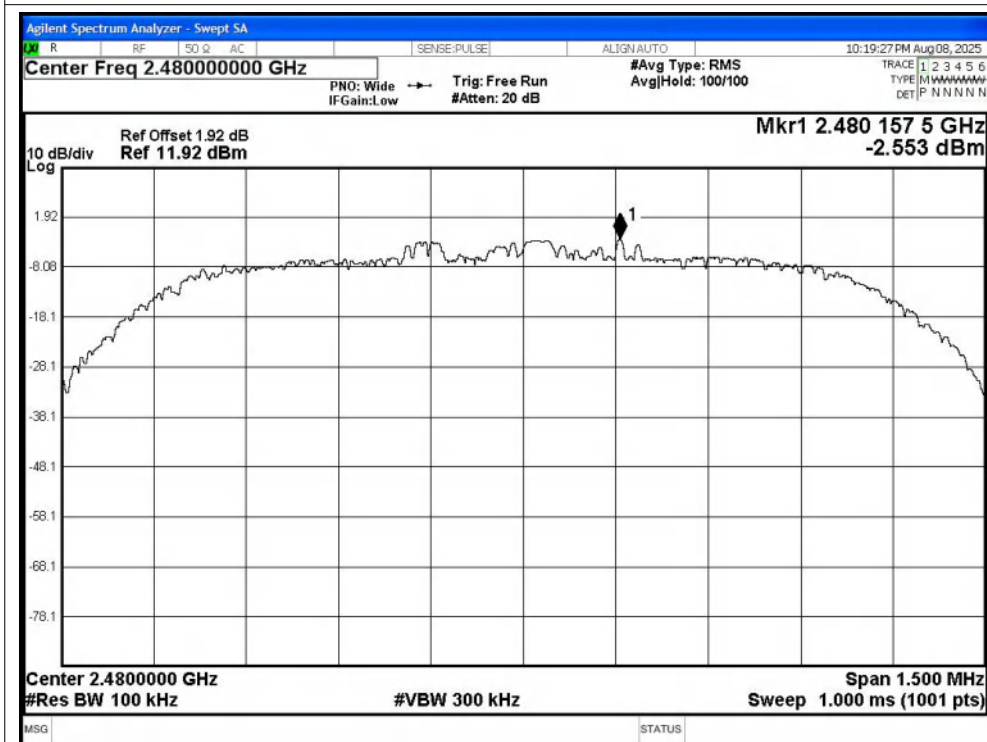
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



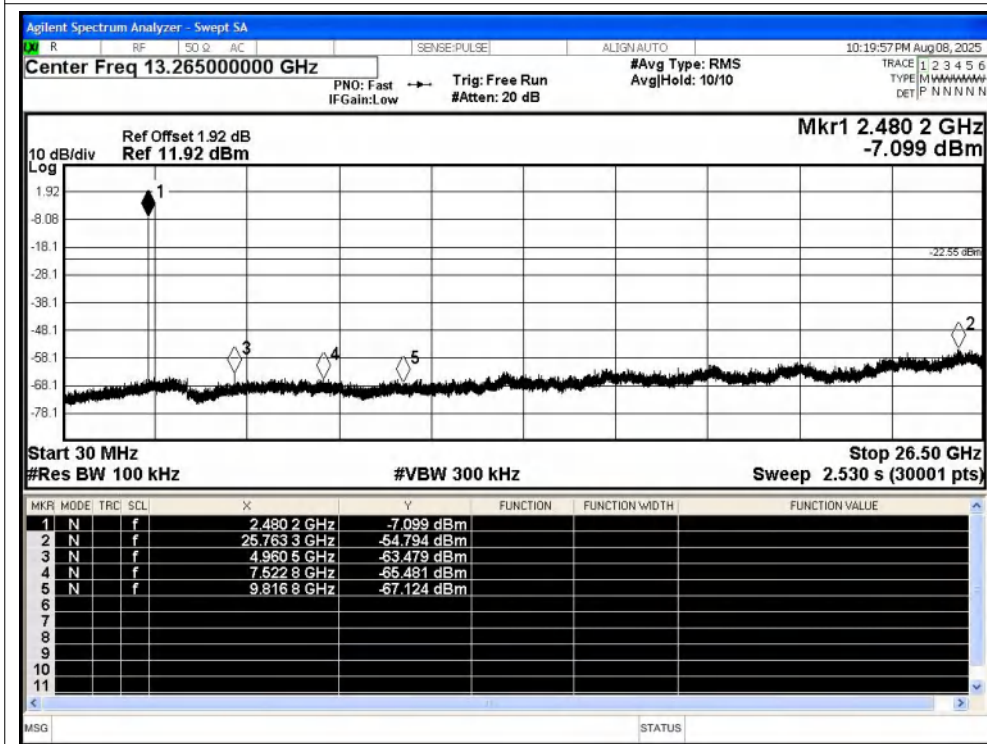
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



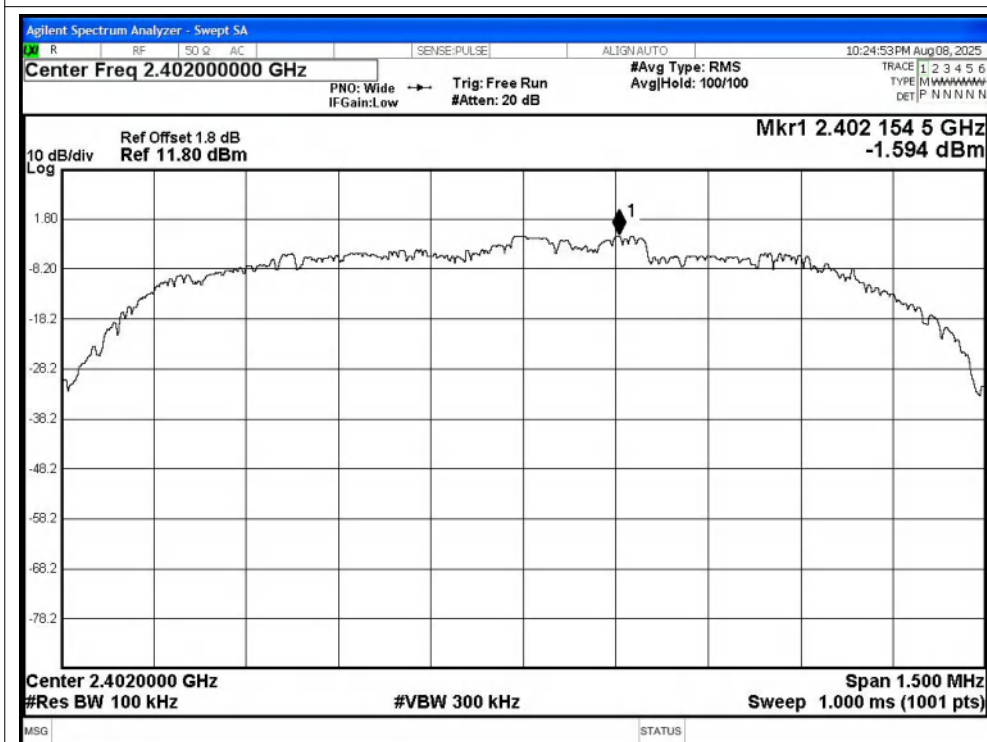
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



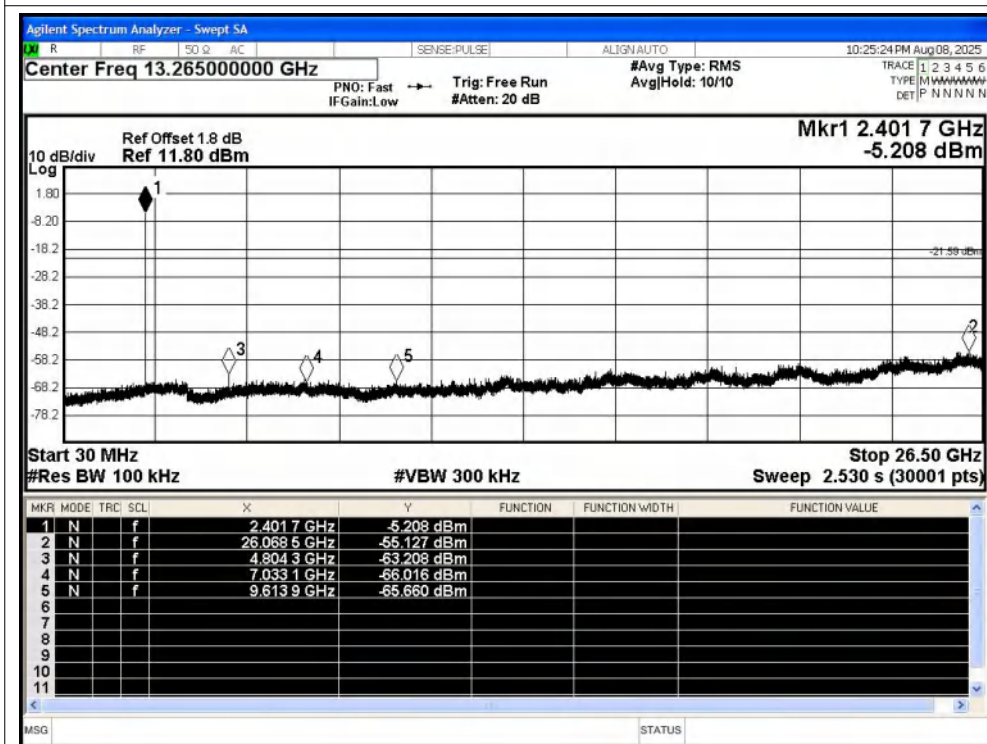
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



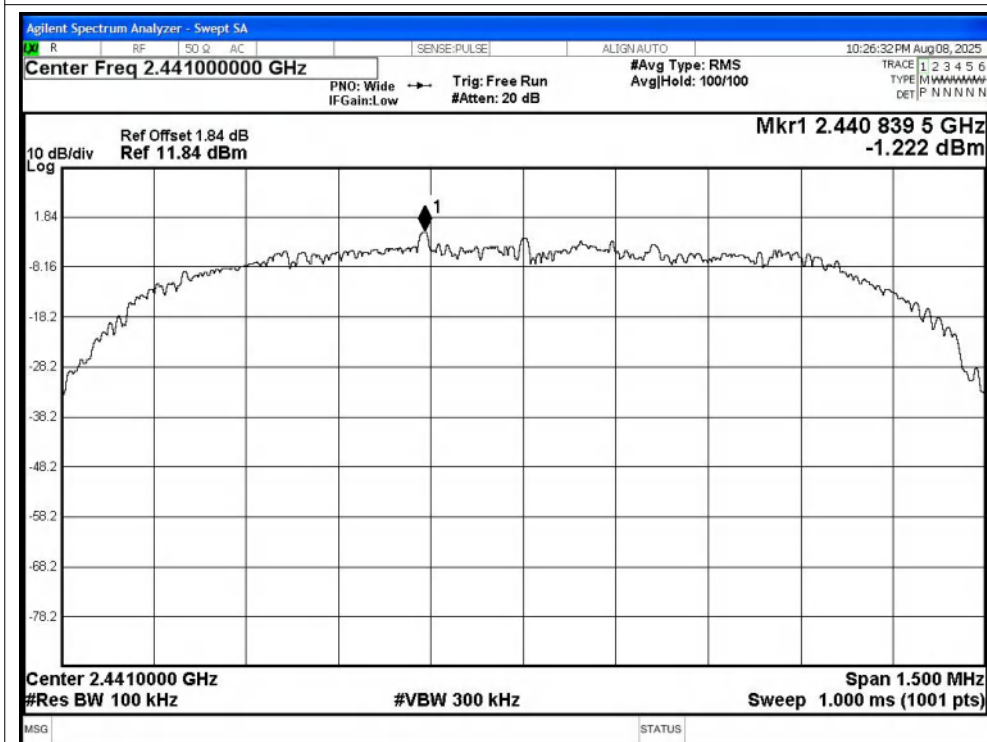
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



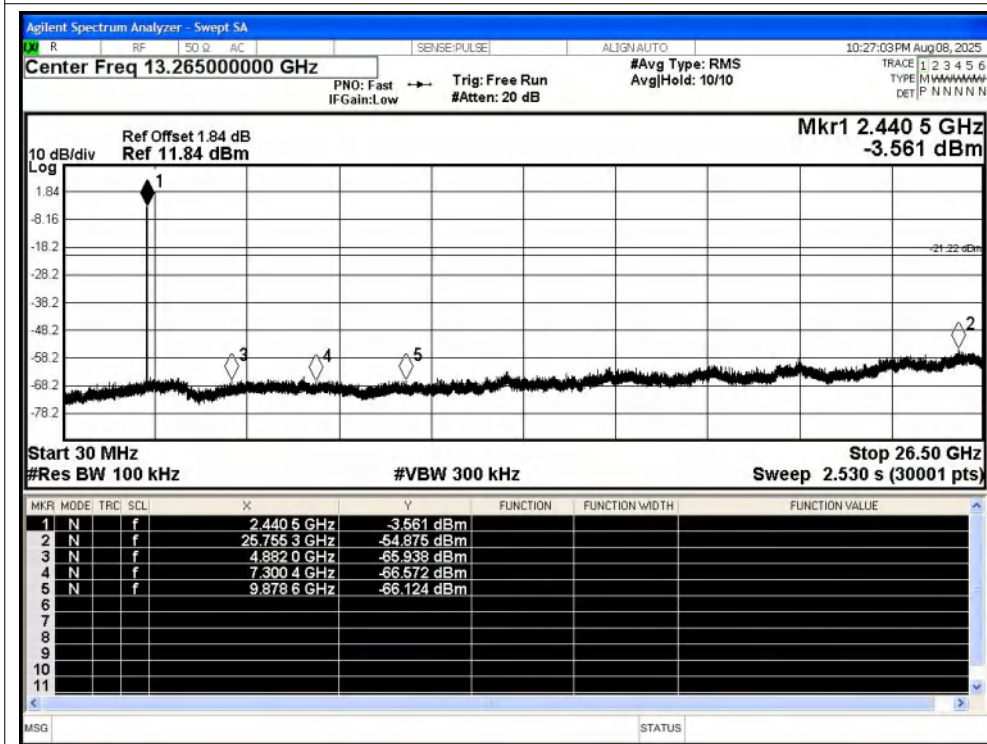
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



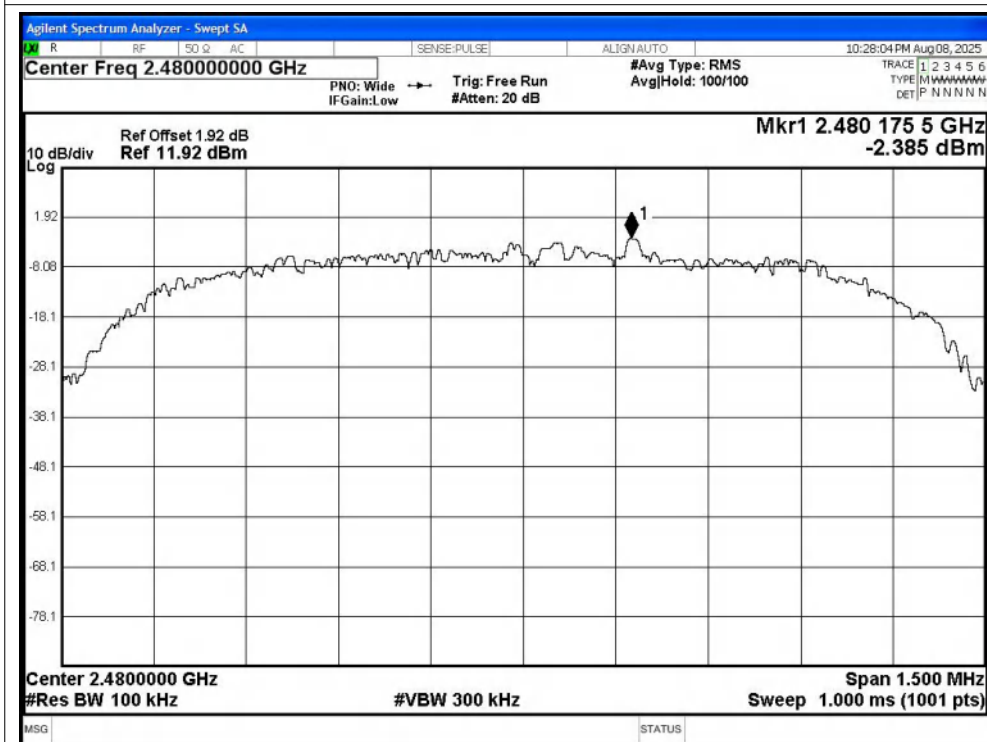
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



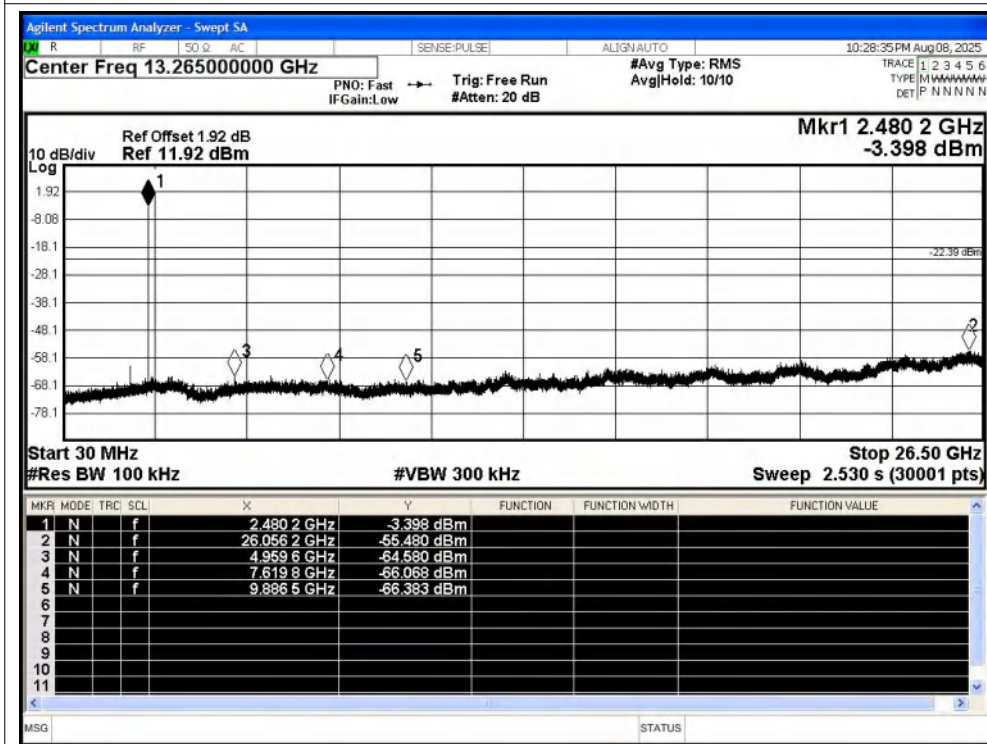
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

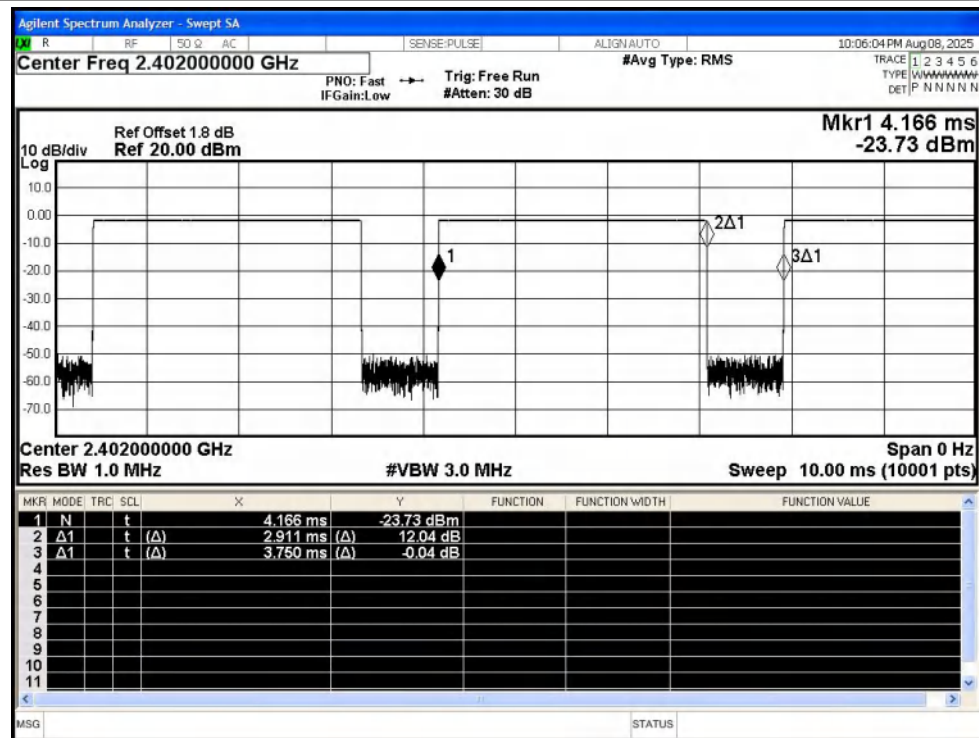


A.8 Duty Cycle

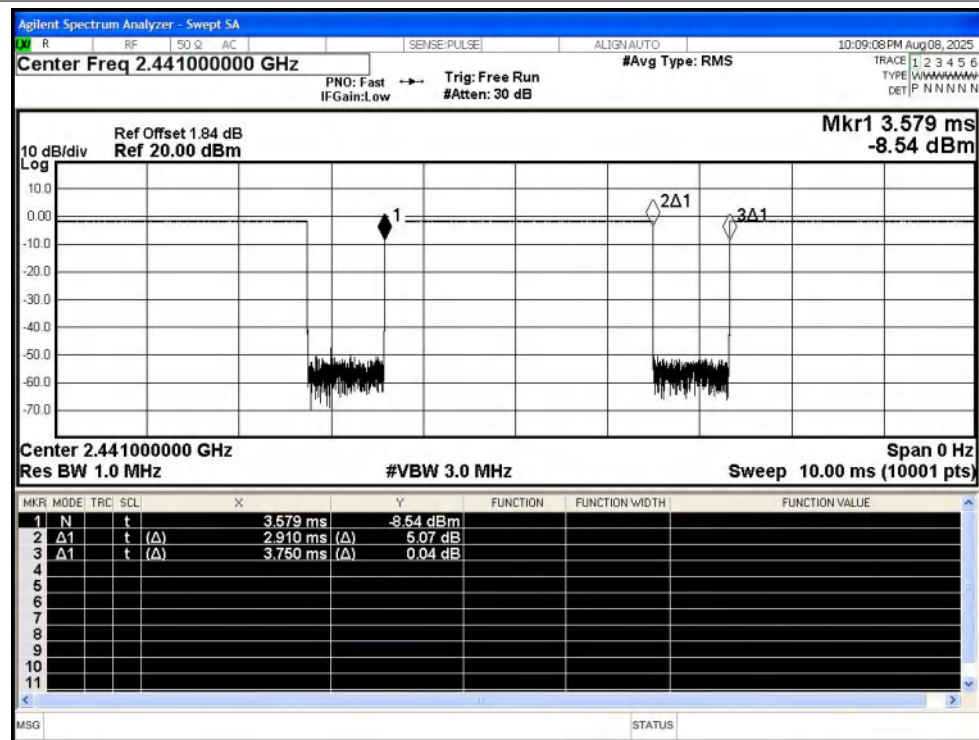
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.63	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2480	Ant1	77.28	1.12	0.35

Test Graphs

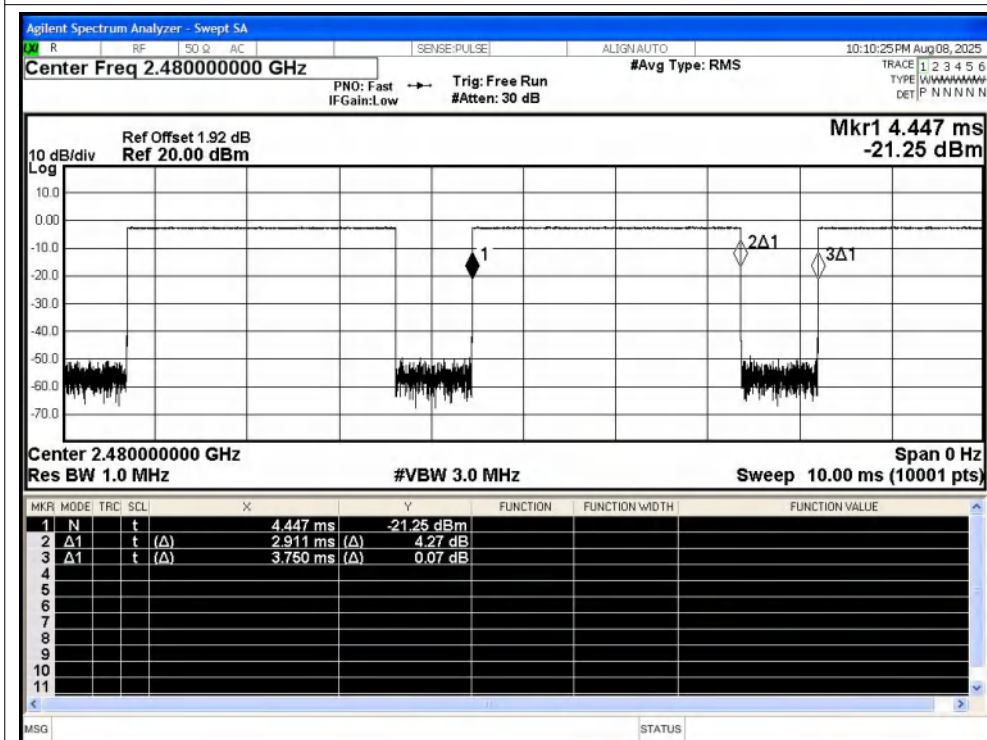
Duty Cycle NVNT 1-DH5 2402MHz Ant1



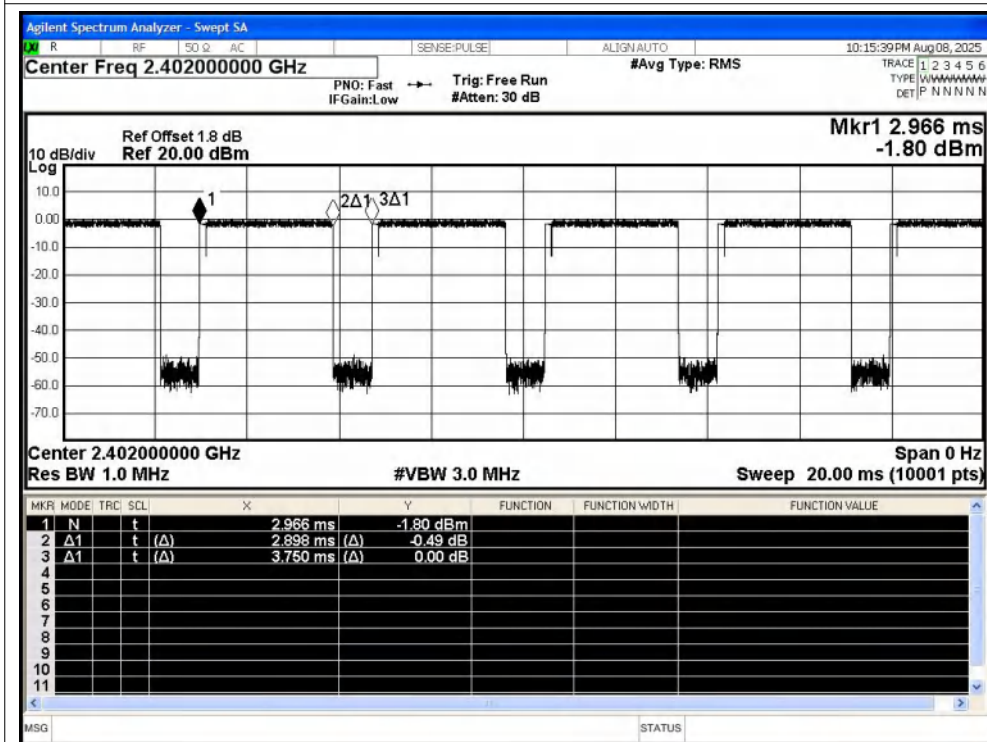
Duty Cycle NVNT 1-DH5 2441MHz Ant1



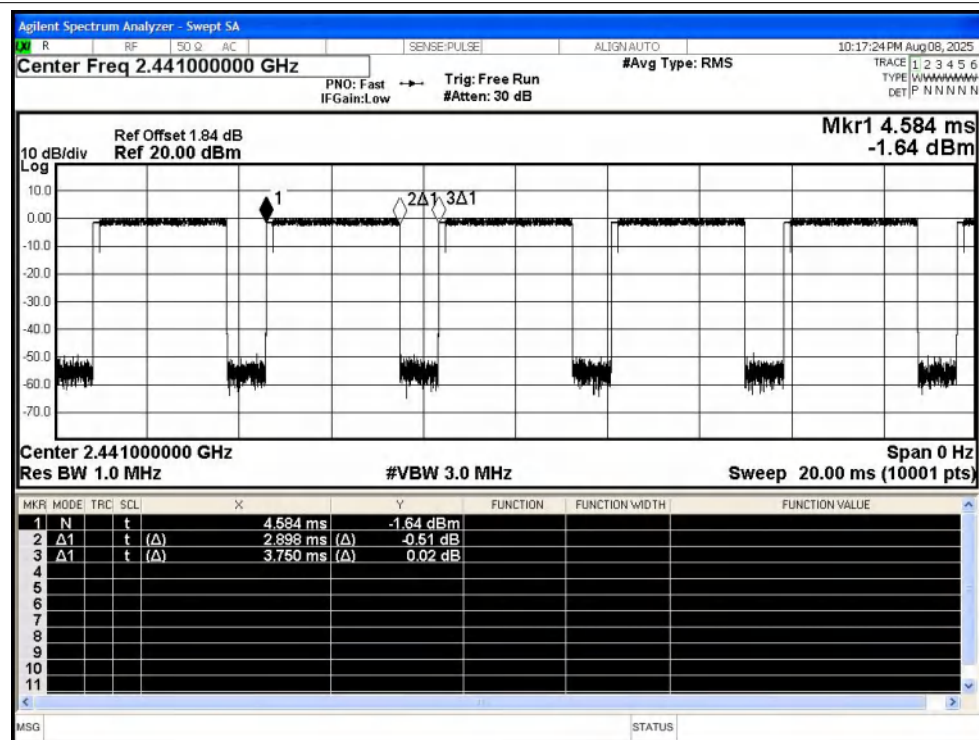
Duty Cycle NVNT 1-DH5 2480MHz Ant1



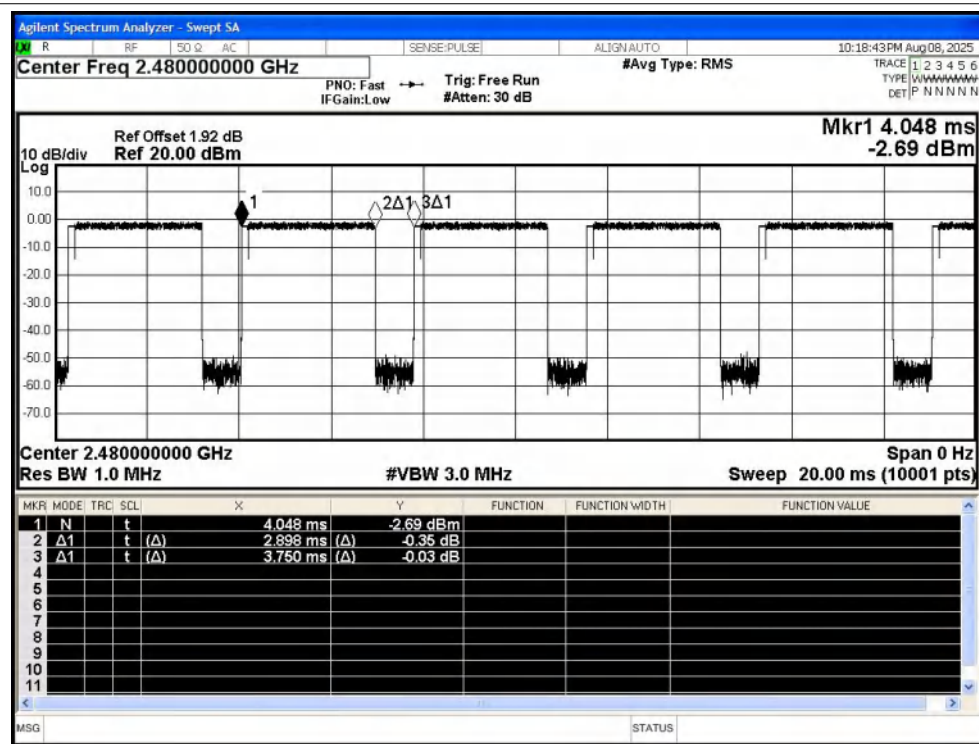
Duty Cycle NVNT 2-DH5 2402MHz Ant1



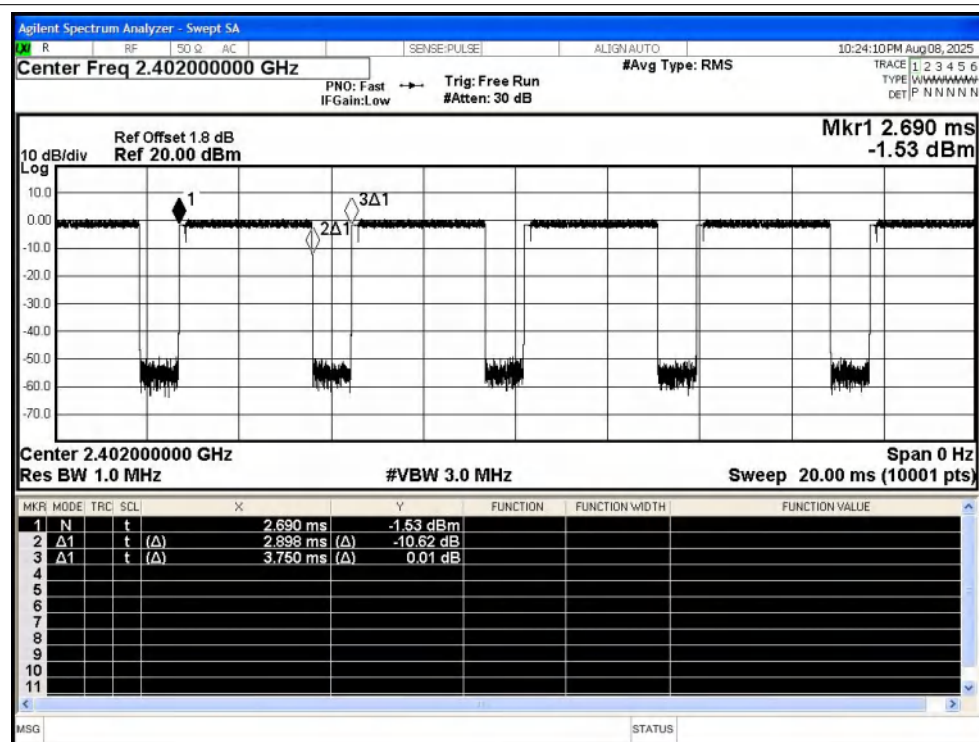
Duty Cycle NVNT 2-DH5 2441MHz Ant1



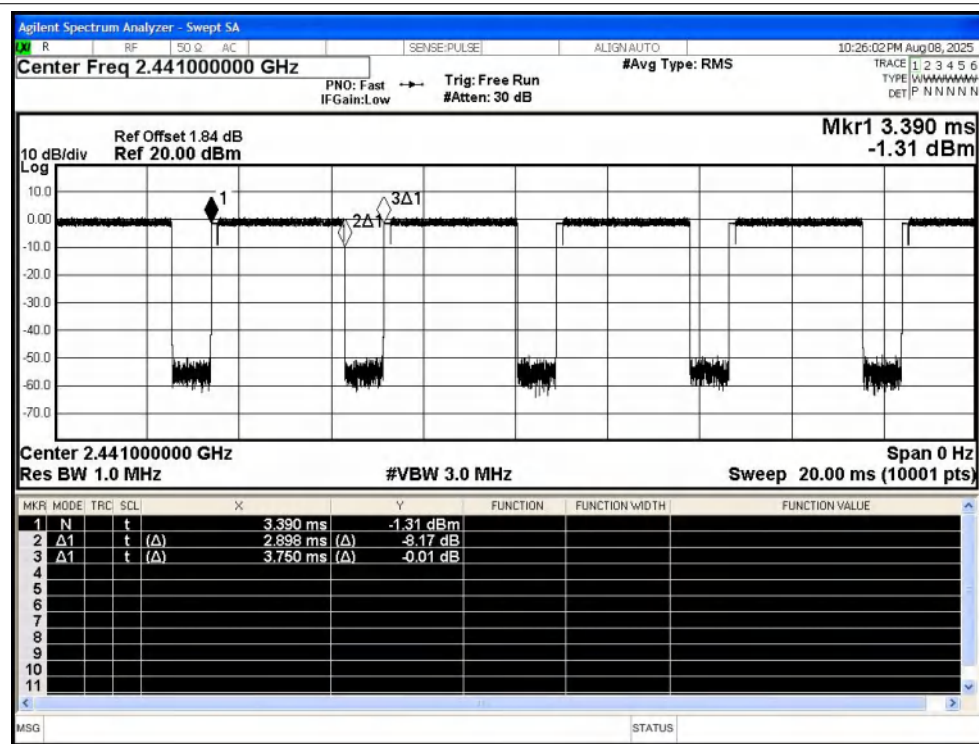
Duty Cycle NVNT 2-DH5 2480MHz Ant1



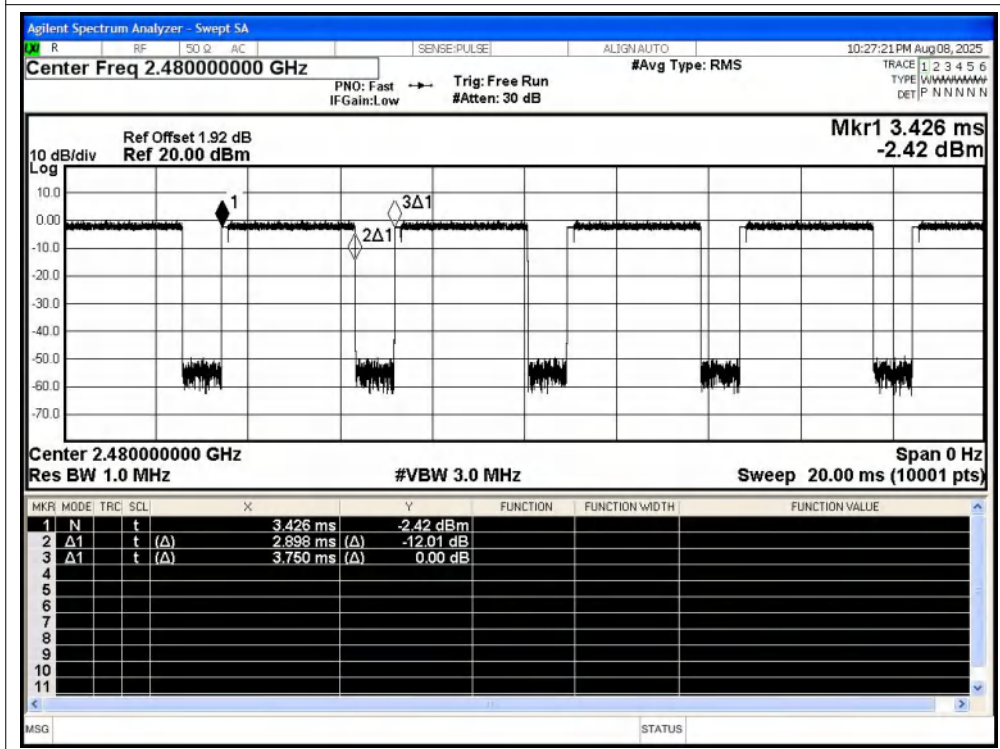
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

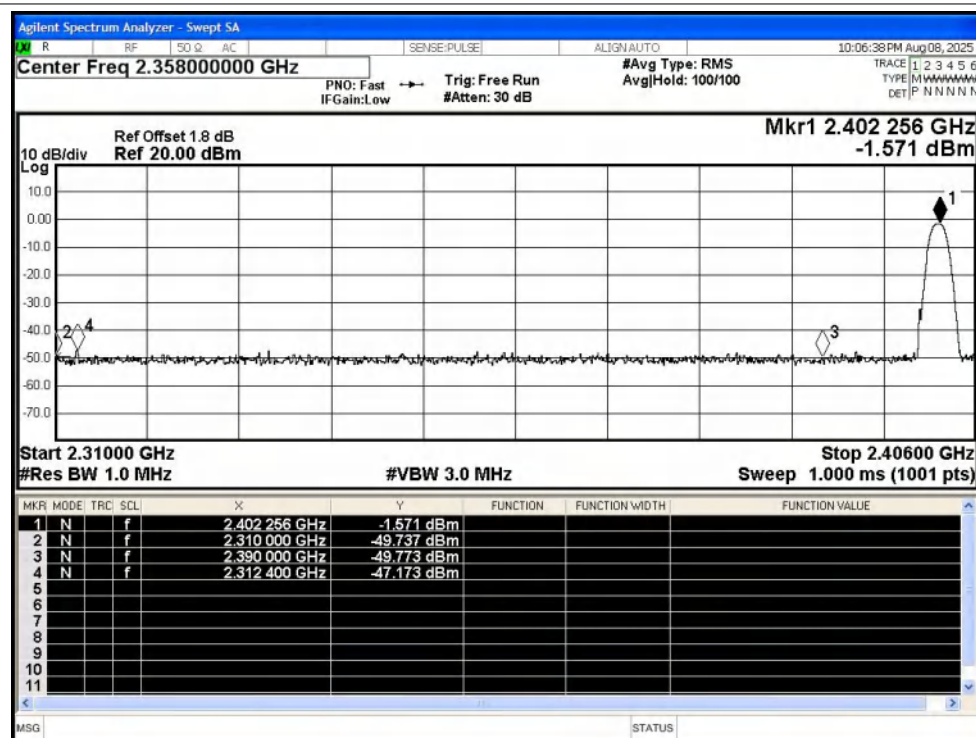


A.9 Restrict Band

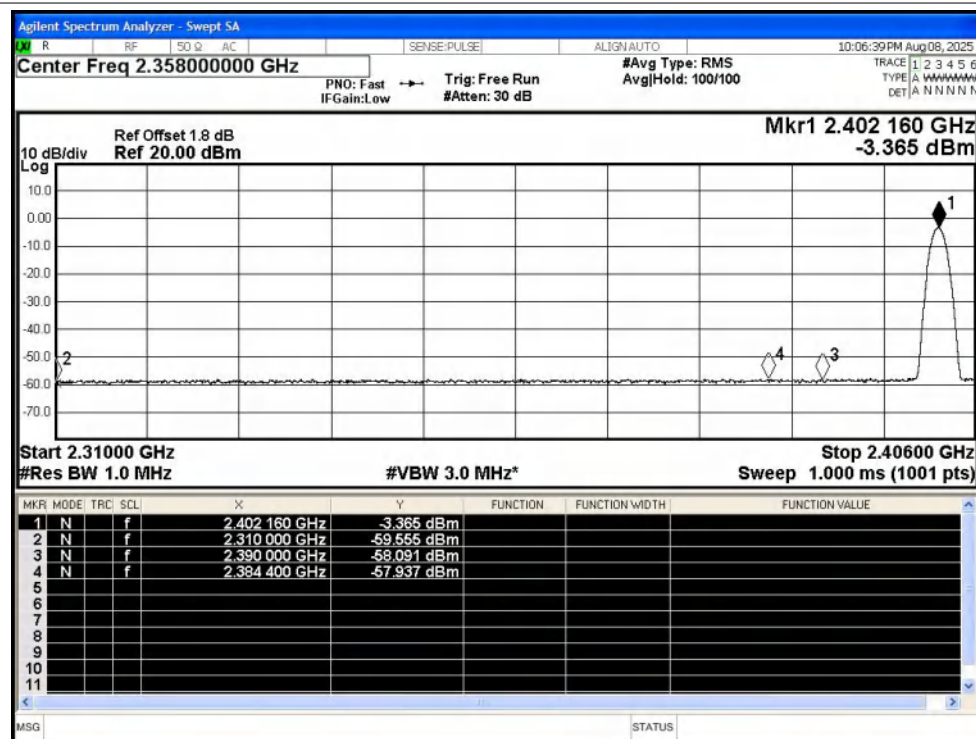
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.74	2.67	-	48.19	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.56	2.67	1.1	39.47	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2312.4	-47.17	2.67	-	50.76	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2384.4	-57.94	2.67	1.1	41.09	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.77	2.67	-	48.16	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.09	2.67	1.1	40.94	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.87	2.67	-	49.06	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.58	2.67	1.1	40.45	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2488.984	-46.79	2.67	-	51.14	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2484.304	-57.37	2.67	1.1	41.66	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.62	2.67	-	47.31	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.22	2.67	1.1	40.81	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.4	2.67	-	47.53	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.78	2.67	1.12	40.27	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2344.368	-47.81	2.67	-	50.12	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2383.824	-57.7	2.67	1.12	41.35	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.78	2.67	-	47.15	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.65	2.67	1.12	40.4	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.39	2.67	-	48.54	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.65	2.67	1.12	41.4	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.608	-47.29	2.67	-	50.64	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.08	-57.31	2.67	1.12	41.74	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-47.78	2.67	-	50.15	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.16	2.67	1.12	40.89	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-49.59	2.67	-	48.34	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-59.04	2.67	1.12	40.01	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2329.68	-47.63	2.67	-	50.3	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2354.832	-57.92	2.67	1.12	41.13	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.45	2.67	-	46.48	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.63	2.67	1.12	40.42	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-46.4	2.67	-	51.53	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.62	2.67	1.12	41.43	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.512	-46.4	2.67	-	51.53	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2497.912	-57.09	2.67	1.12	41.96	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.69	2.67	-	47.24	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.67	2.67	1.12	41.38	Average	54	Pass

Test Graphs

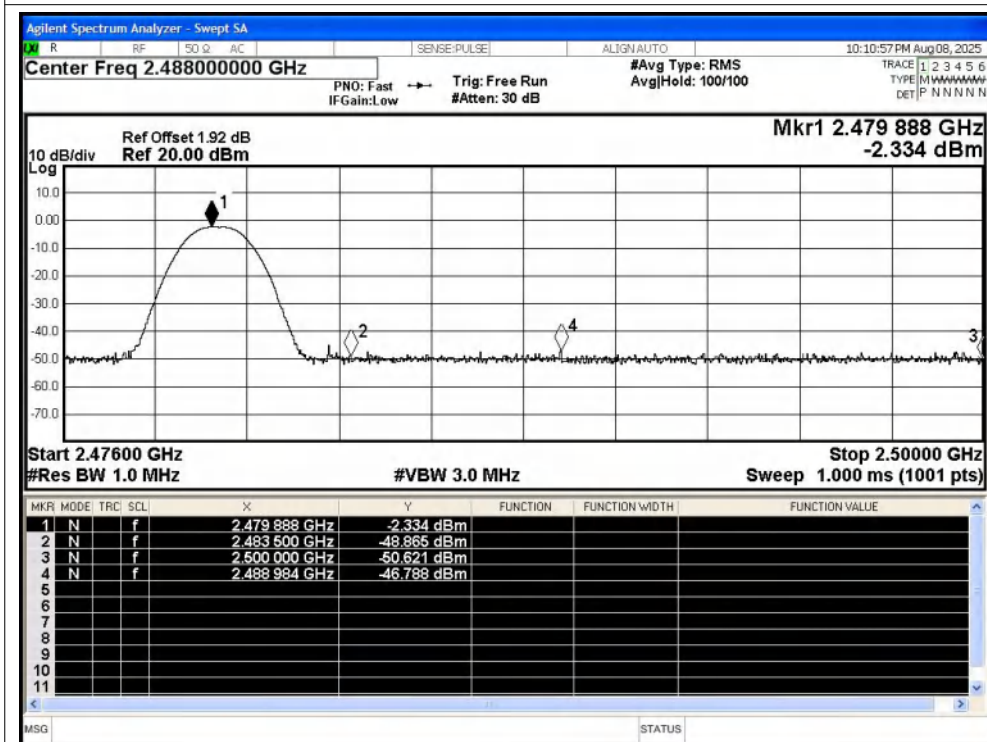
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



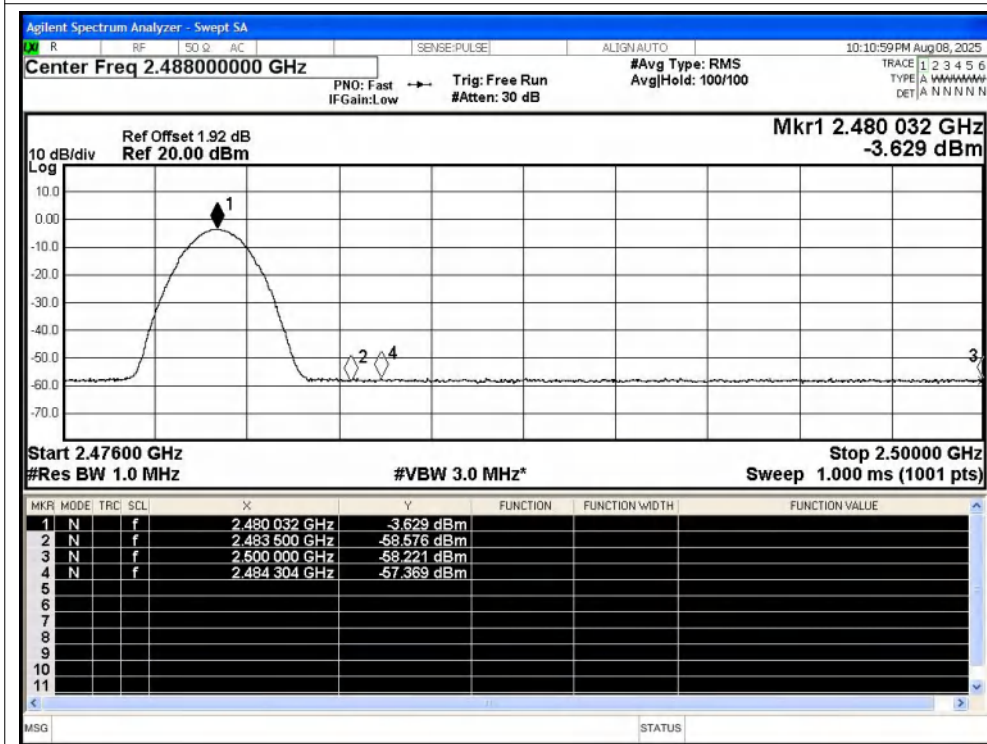
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



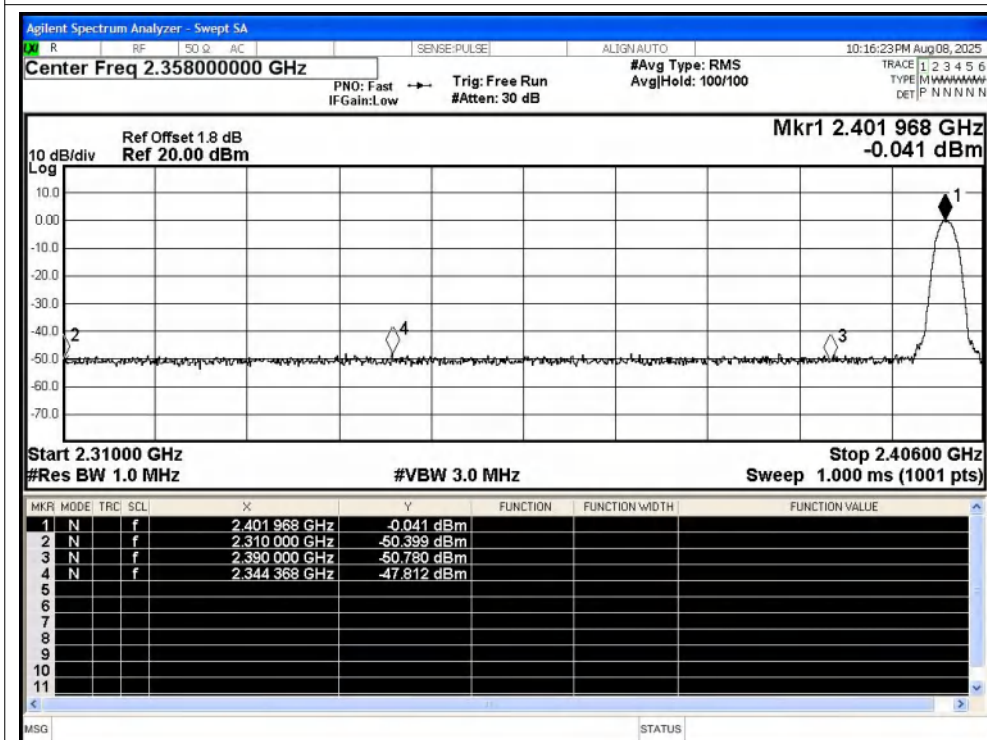
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



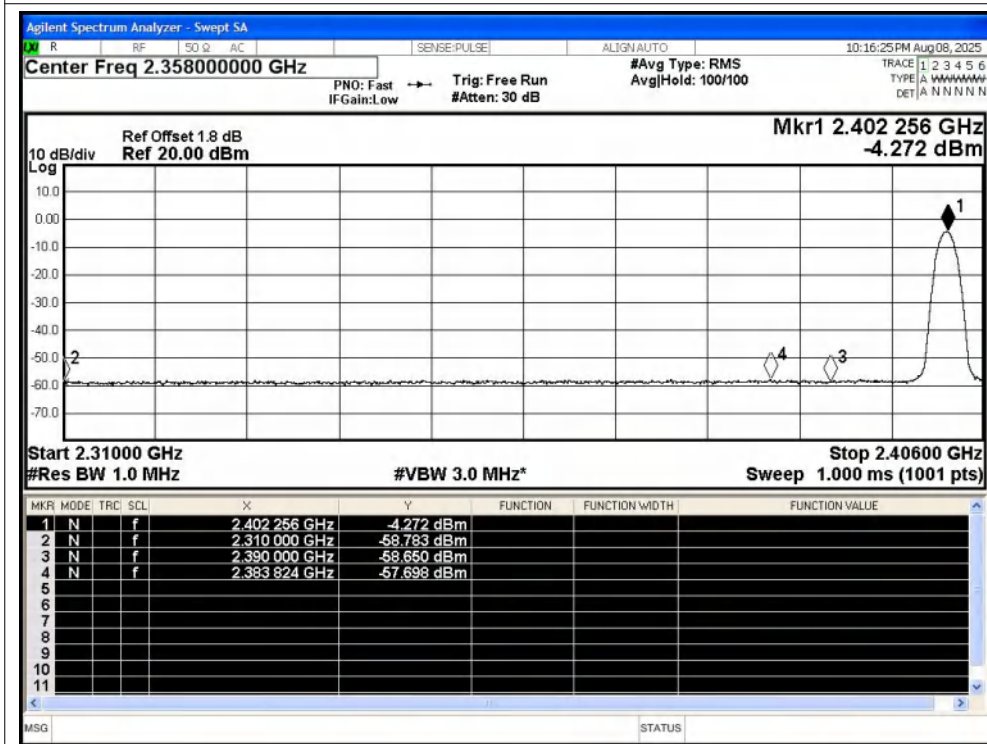
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



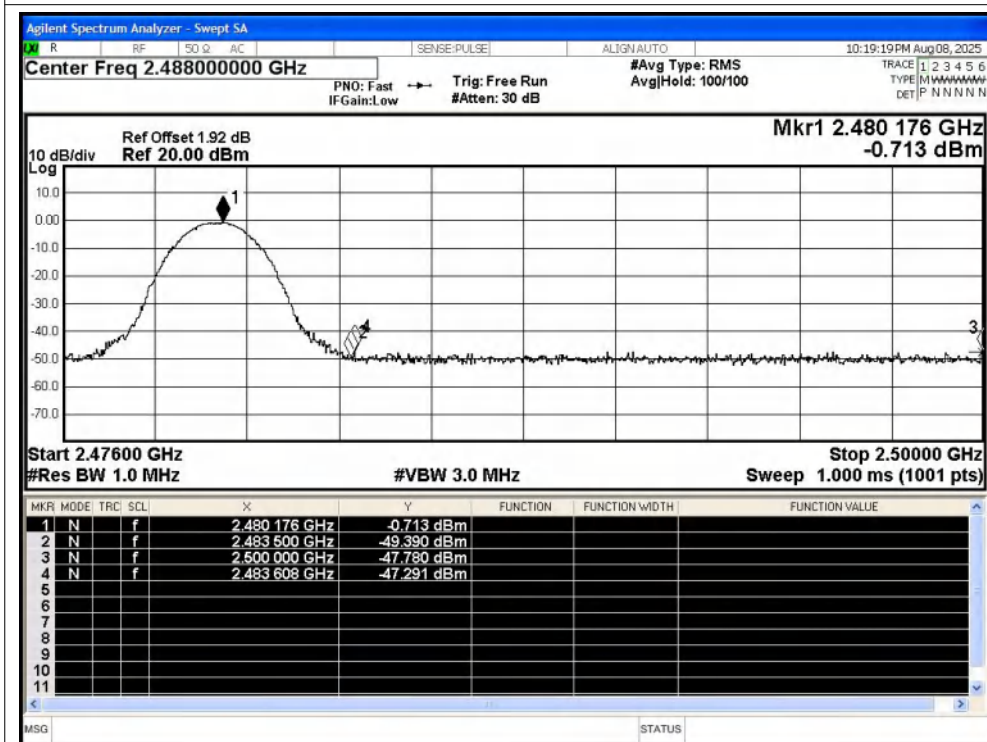
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



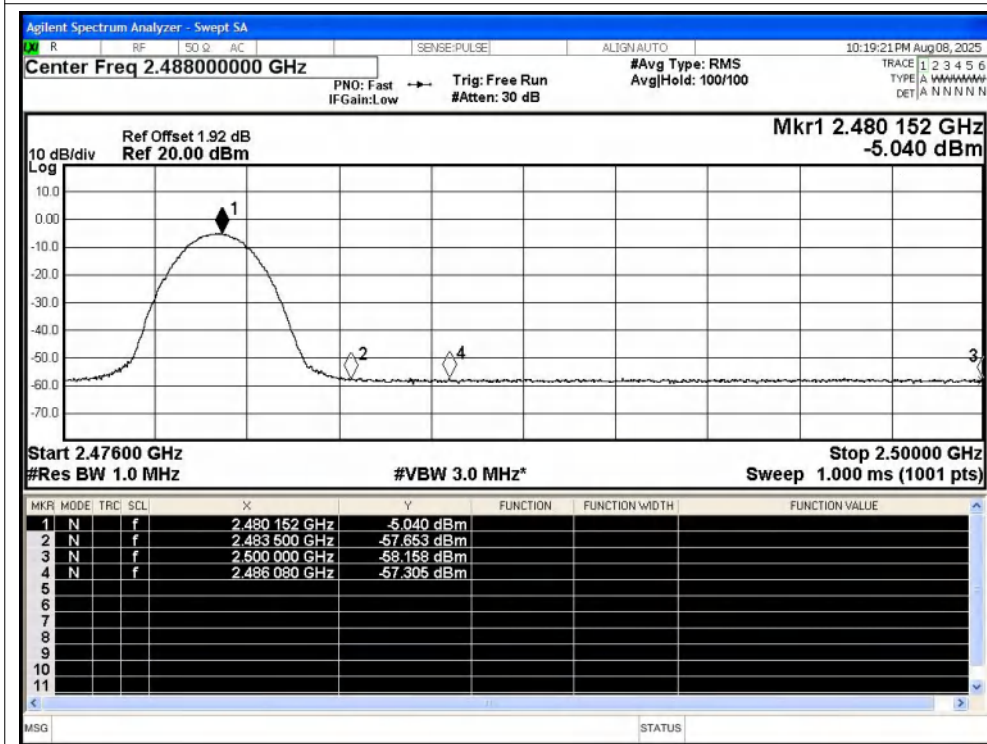
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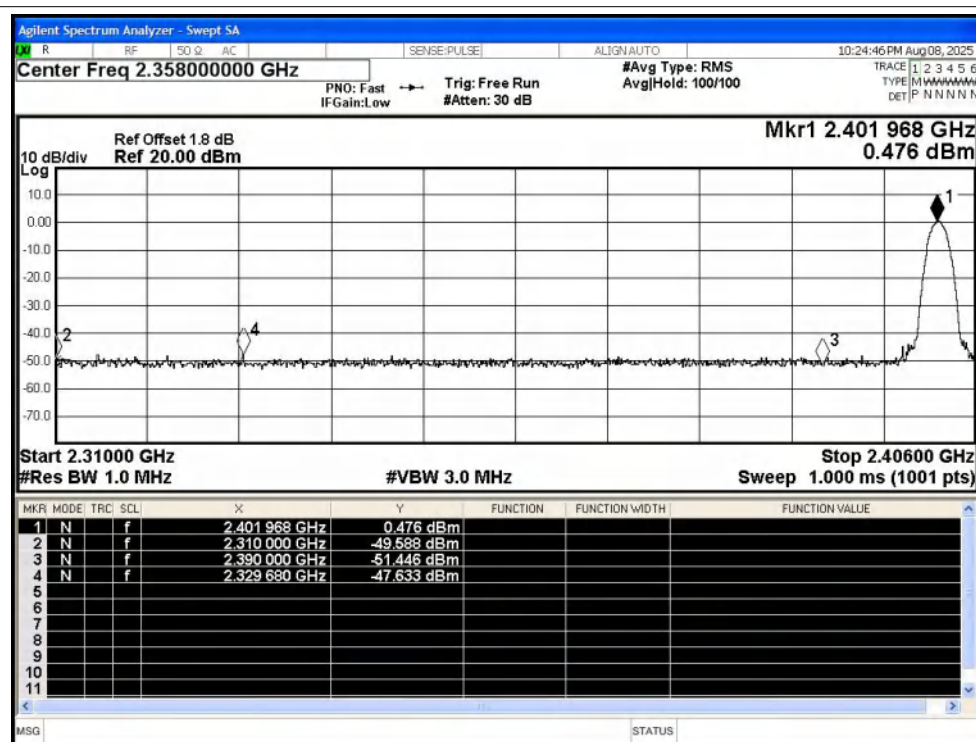
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



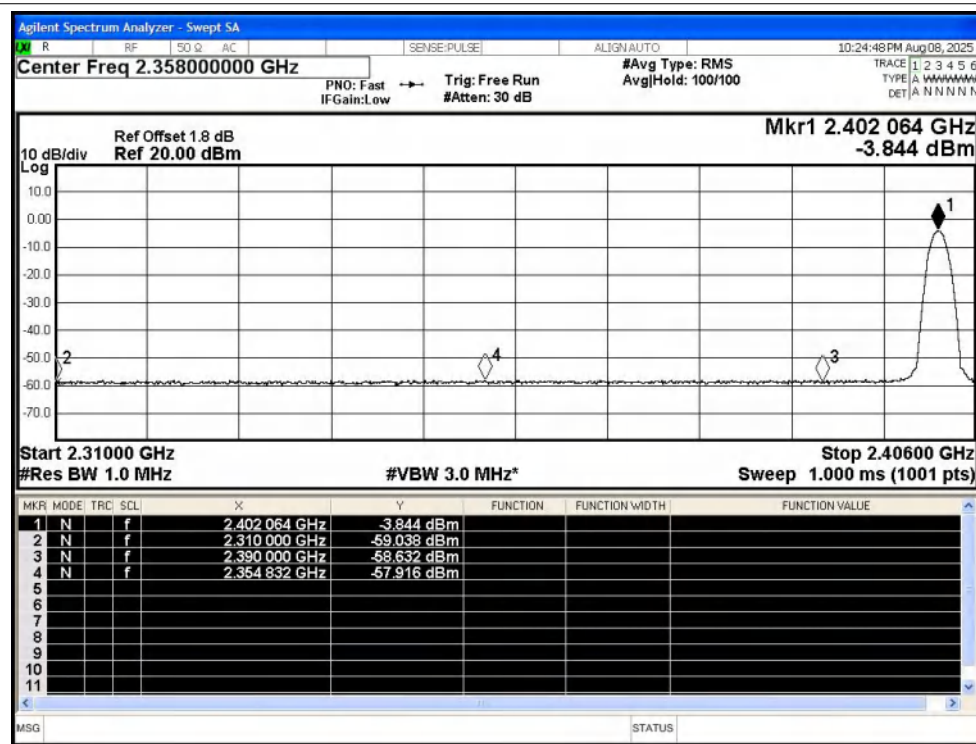
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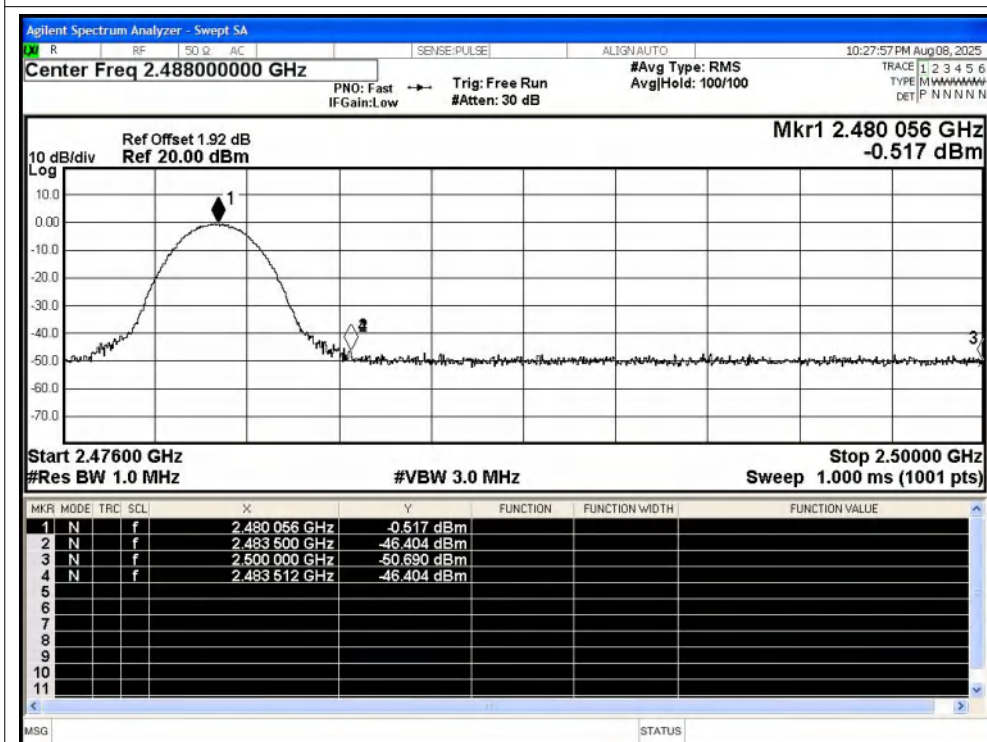
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average

