

ISED Appendix RF Test Data for BT

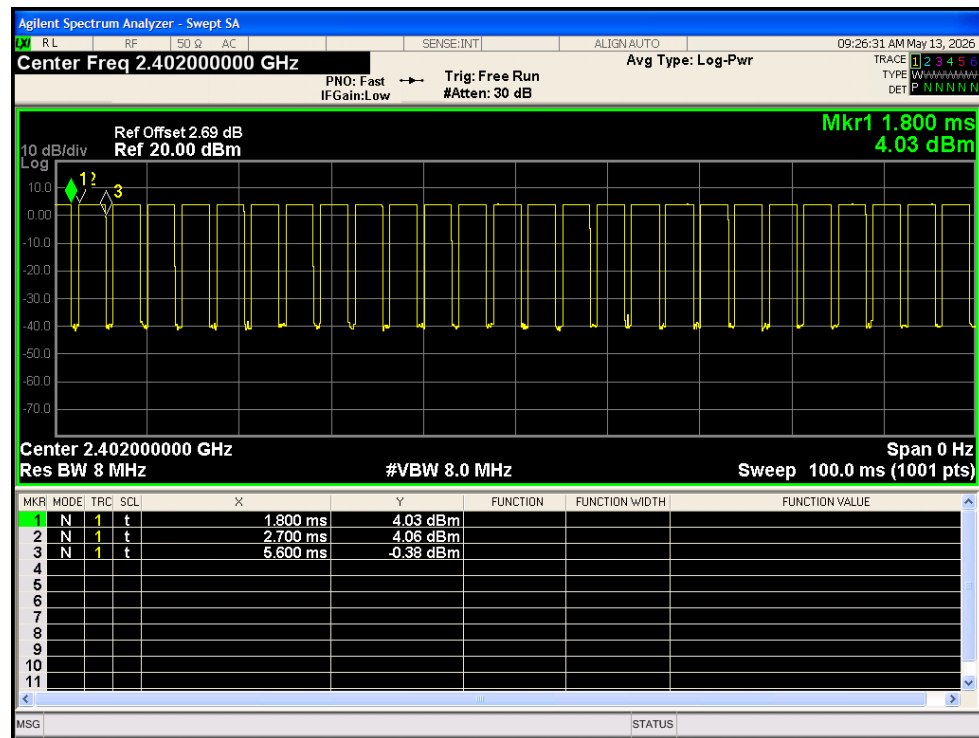
Company : Shenzhen Thousandshores Technology Co., Ltd.
EUT : Portable Wireless Speaker
Model Number : BTS58
Report No. : CTA26050901801
FCC ID : 2ALNA-BTS58
Reviewed By : Eric Wang

Duty Cycle

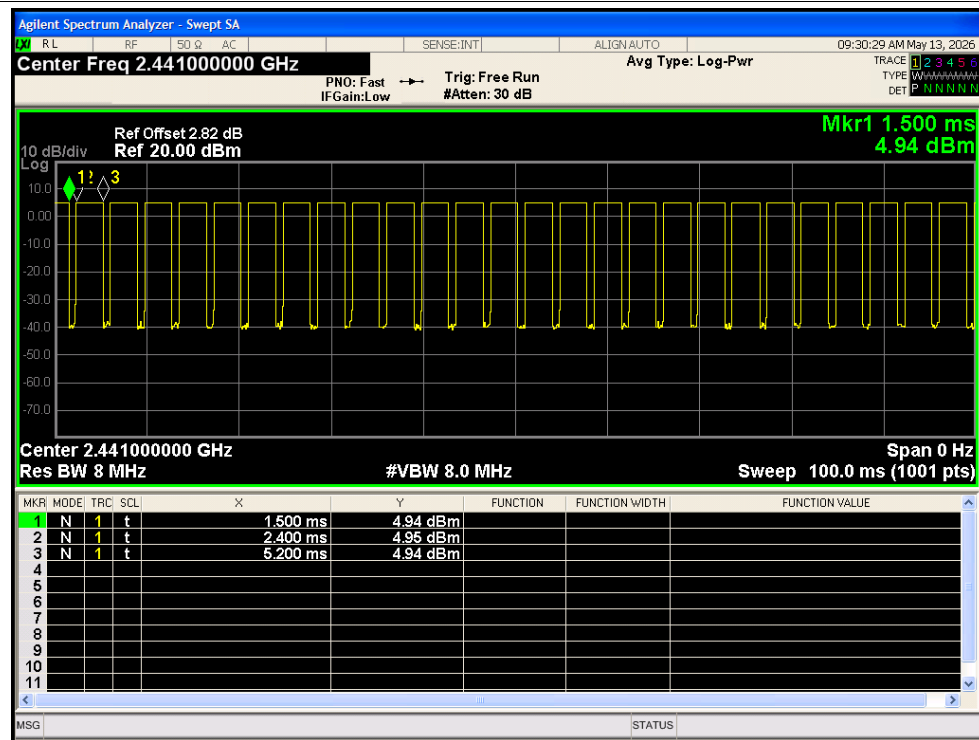
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	79.62	0.99	0.34
NVNT	1-DH5	2441	78.42	1.06	0.36
NVNT	1-DH5	2480	79.42	1.00	0.34
NVNT	2-DH5	2402	79.72	0.98	0.34
NVNT	2-DH5	2441	80.22	0.96	0.34
NVNT	2-DH5	2480	79.82	0.98	0.34
NVNT	3-DH5	2402	80.52	0.94	0.34
NVNT	3-DH5	2441	79.82	0.98	0.34
NVNT	3-DH5	2480	80.42	0.95	0.34

Test Graphs

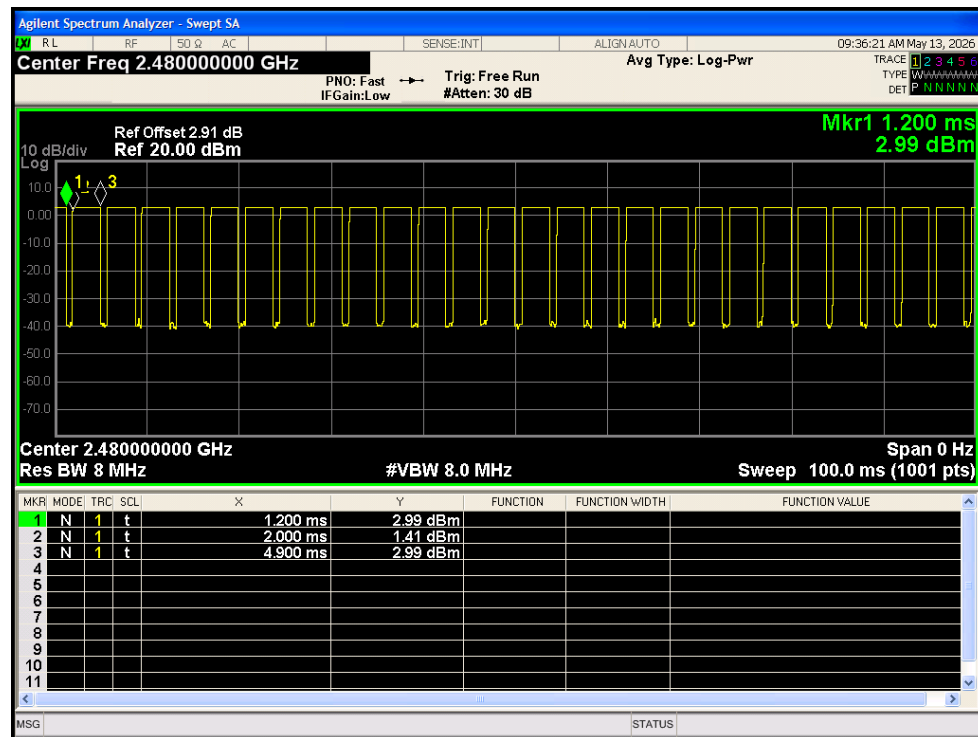
Duty Cycle NVNT 1-DH5 2402MHz



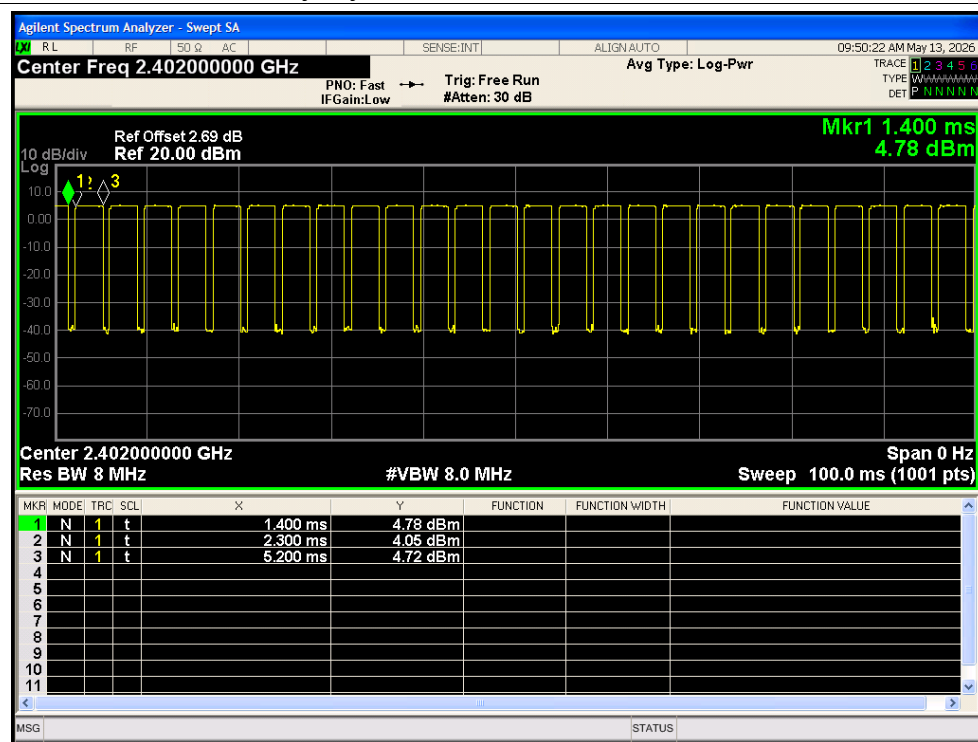
Duty Cycle NVNT 1-DH5 2441MHz



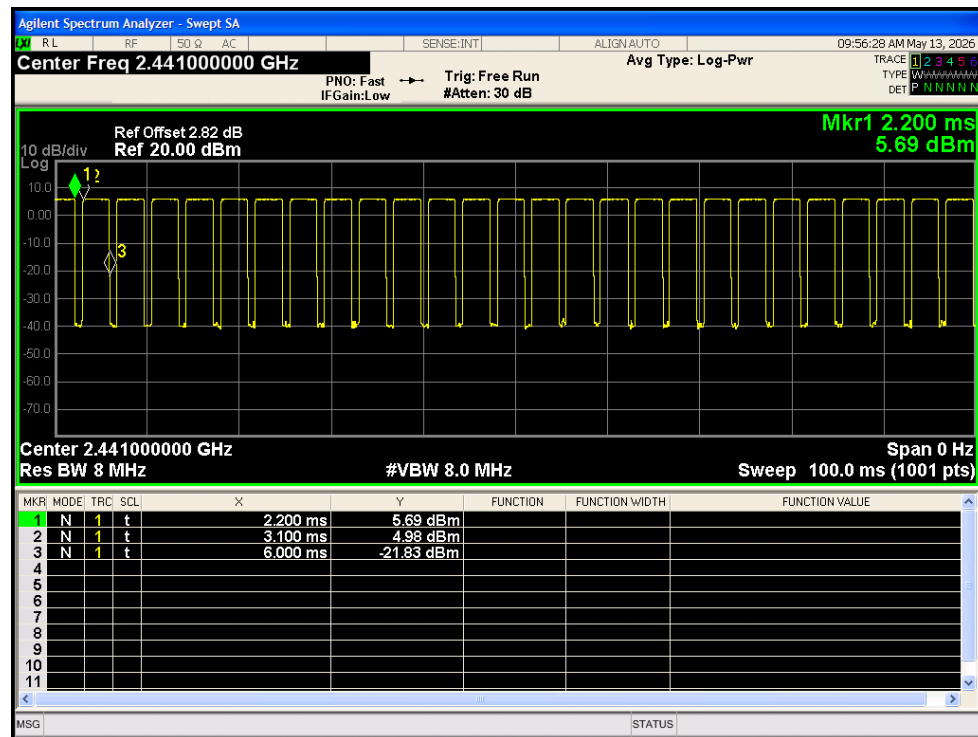
Duty Cycle NVNT 1-DH5 2480MHz



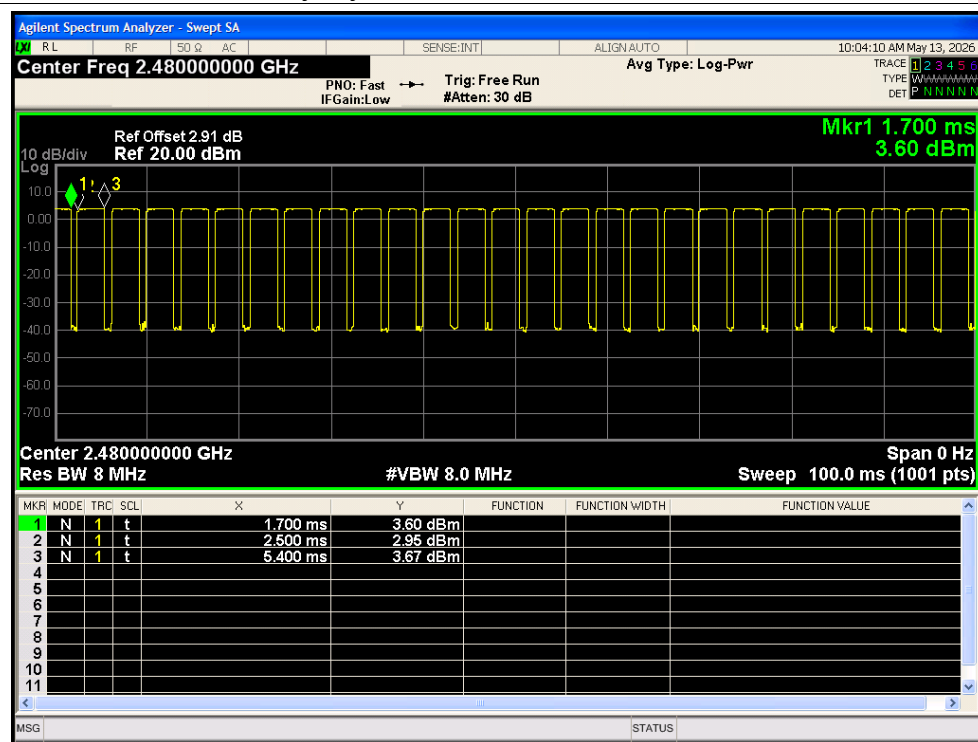
Duty Cycle NVNT 2-DH5 2402MHz



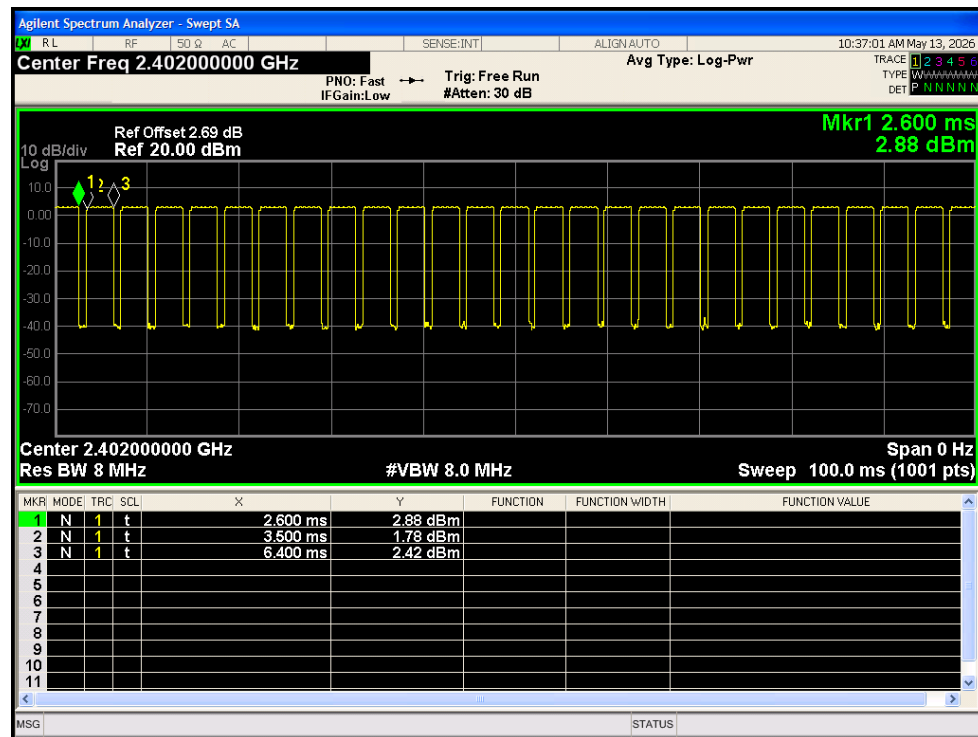
Duty Cycle NVNT 2-DH5 2441MHz



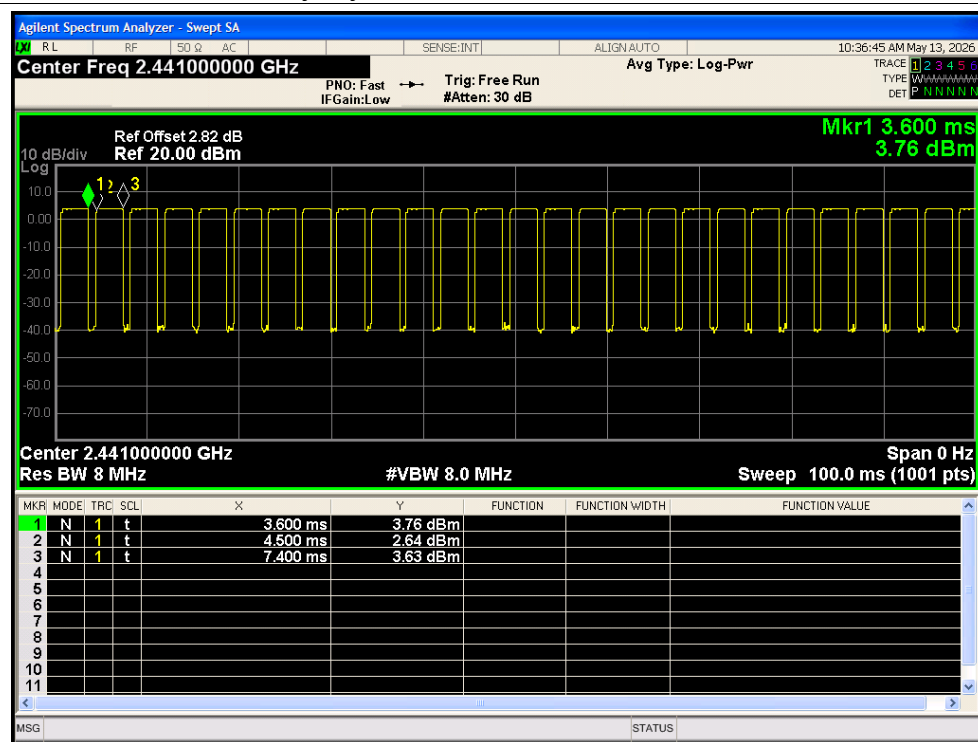
Duty Cycle NVNT 2-DH5 2480MHz



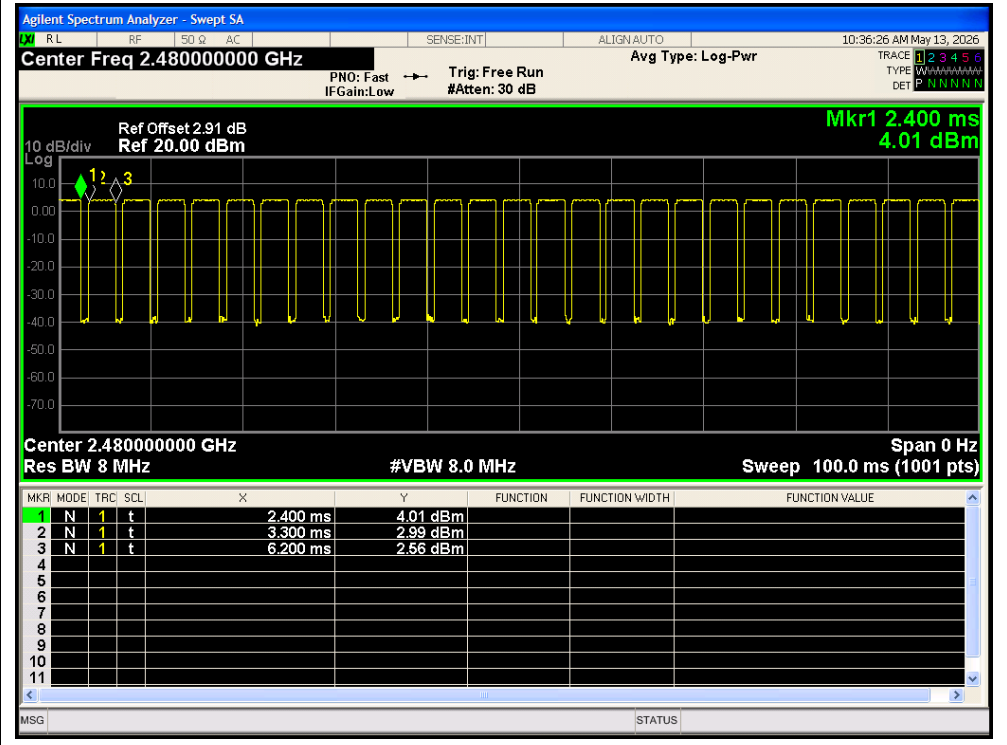
Duty Cycle NVNT 3-DH5 2402MHz



Duty Cycle NVNT 3-DH5 2441MHz



Duty Cycle NVNT 3-DH5 2480MHz

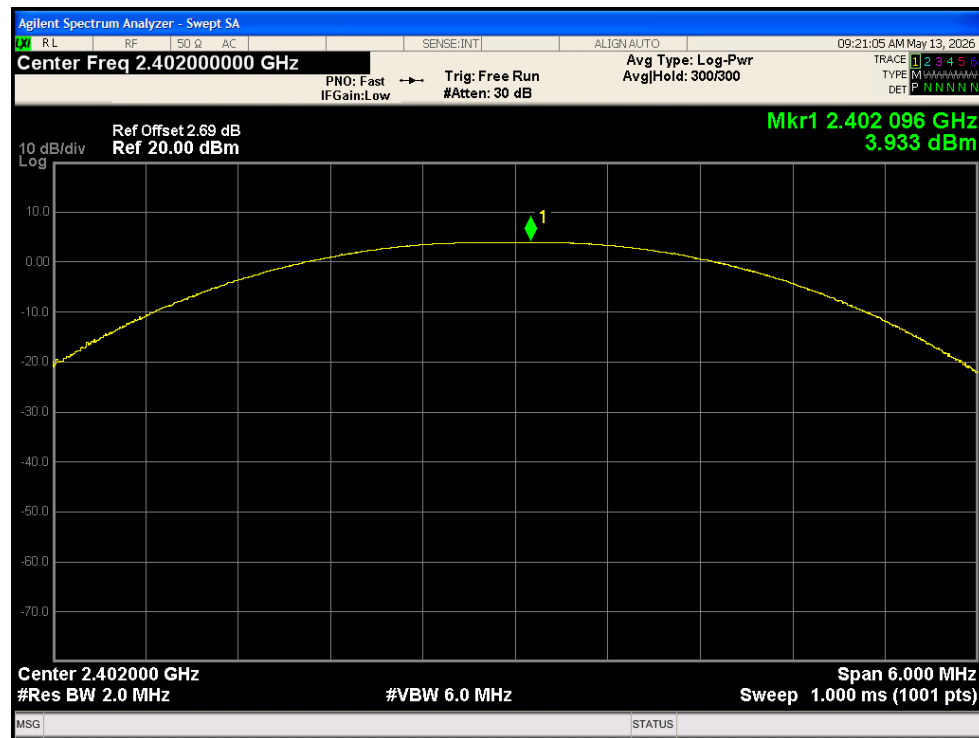


Maximum Conducted Output Power

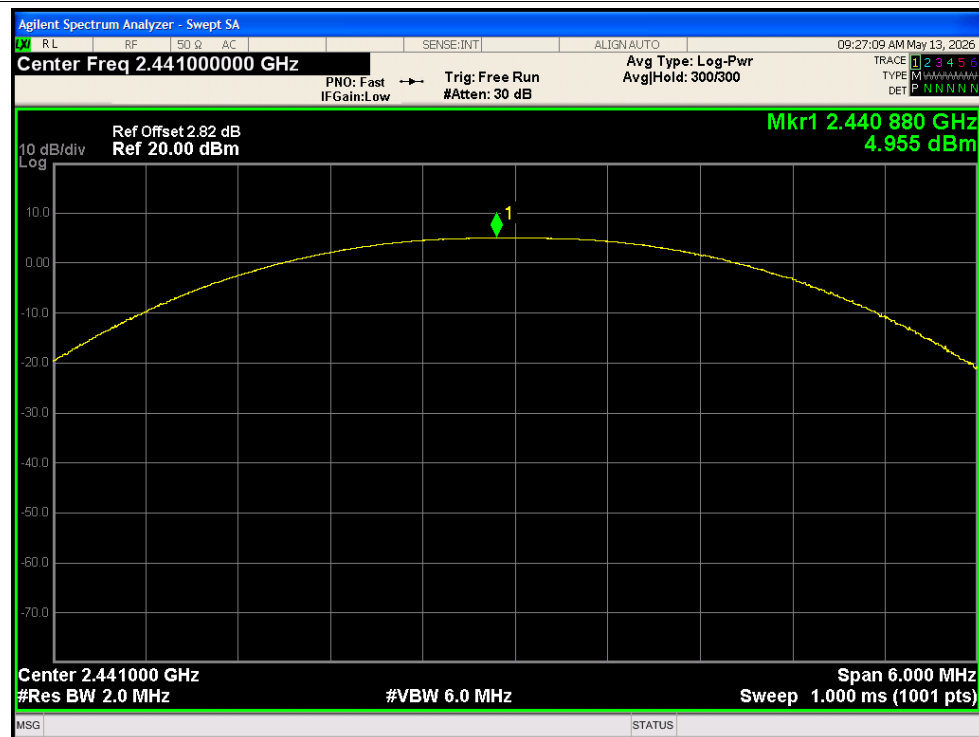
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	3.93	30	Pass
NVNT	1-DH1	2441	4.96	30	Pass
NVNT	1-DH1	2480	2.98	30	Pass
NVNT	2-DH1	2402	4.94	21	Pass
NVNT	2-DH1	2441	5.80	21	Pass
NVNT	2-DH1	2480	3.86	21	Pass
NVNT	3-DH1	2402	5.44	21	Pass
NVNT	3-DH1	2441	4.12	21	Pass
NVNT	3-DH1	2480	4.40	21	Pass

Test Graphs

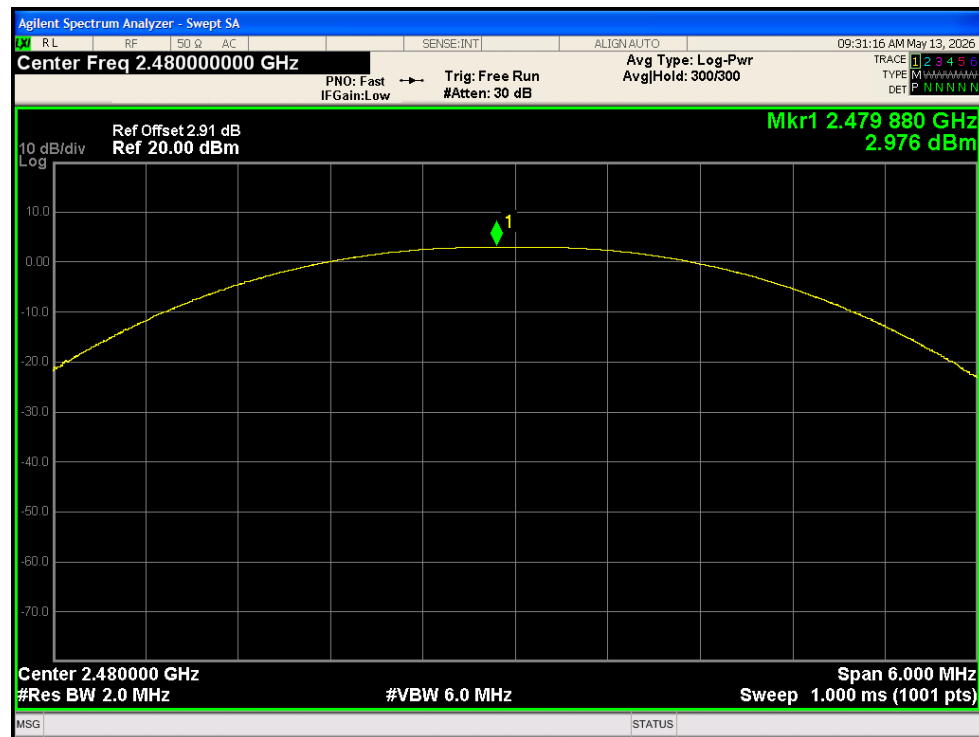
Power NVNT 1-DH1 2402MHz



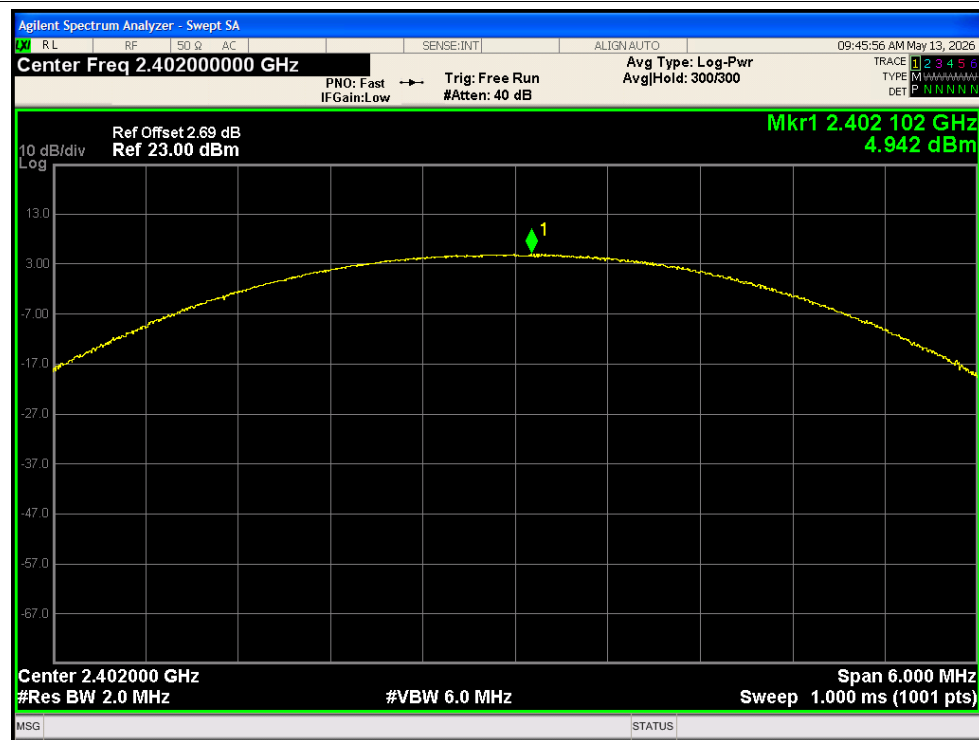
Power NVNT 1-DH1 2441MHz



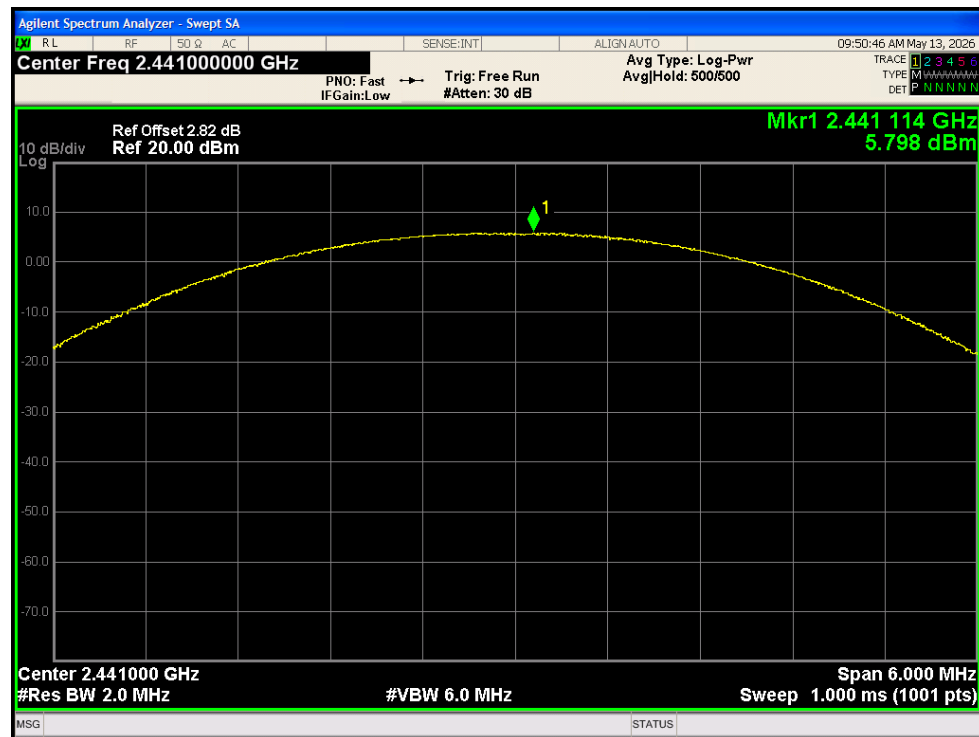
Power NVNT 1-DH1 2480MHz



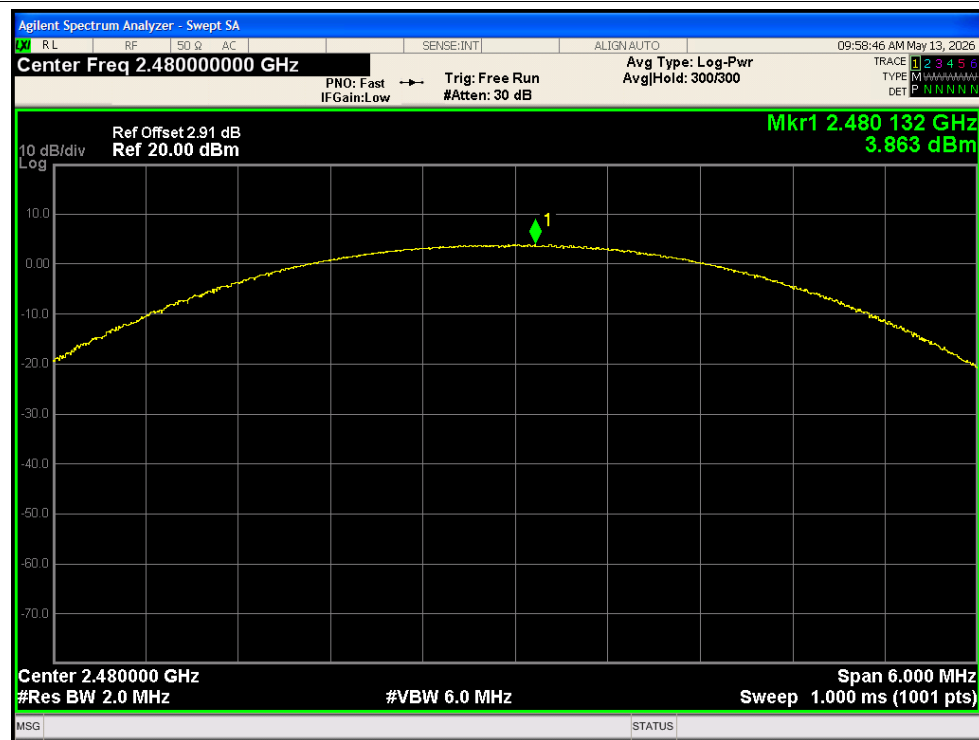
Power NVNT 2-DH1 2402MHz



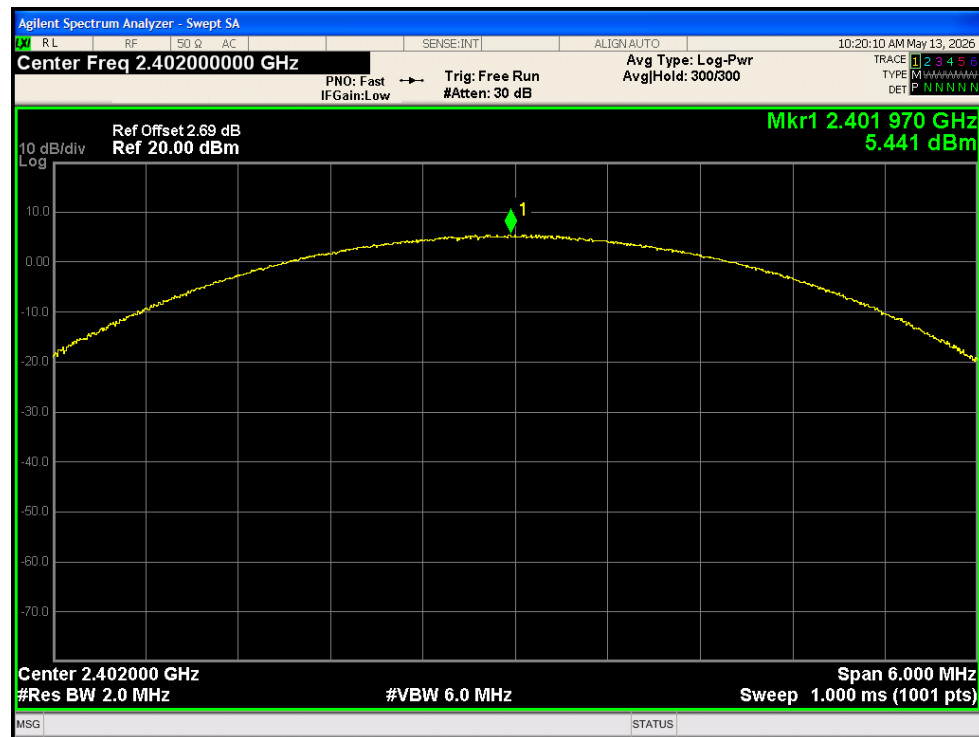
Power NVNT 2-DH1 2441MHz



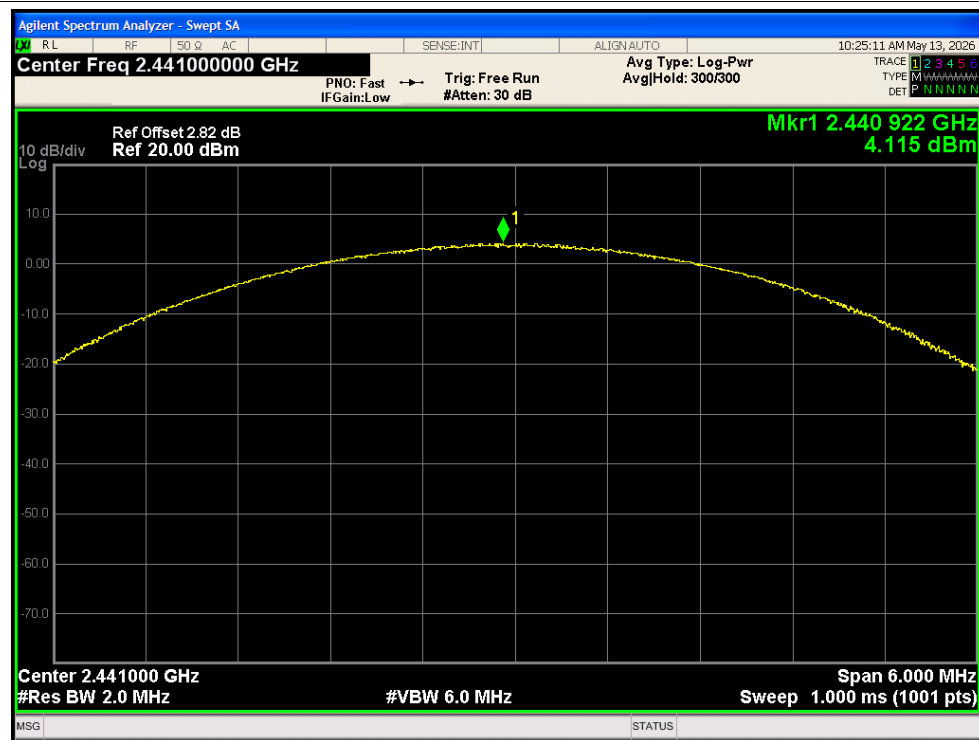
Power NVNT 2-DH1 2480MHz



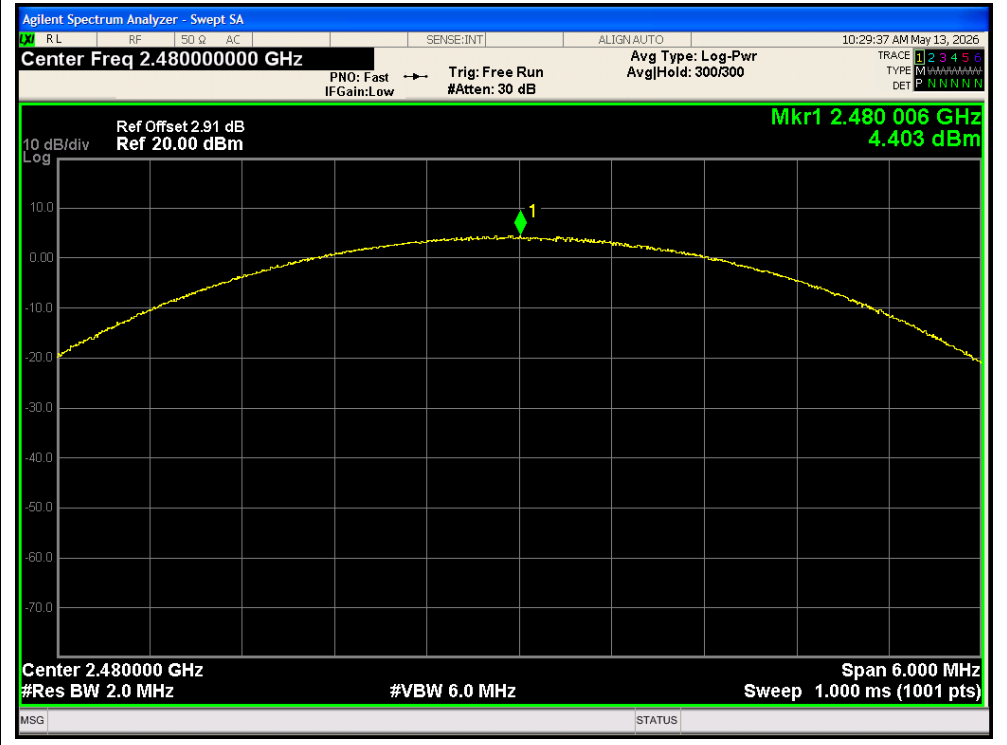
Power NVNT 3-DH1 2402MHz



Power NVNT 3-DH1 2441MHz



Power NVNT 3-DH1 2480MHz

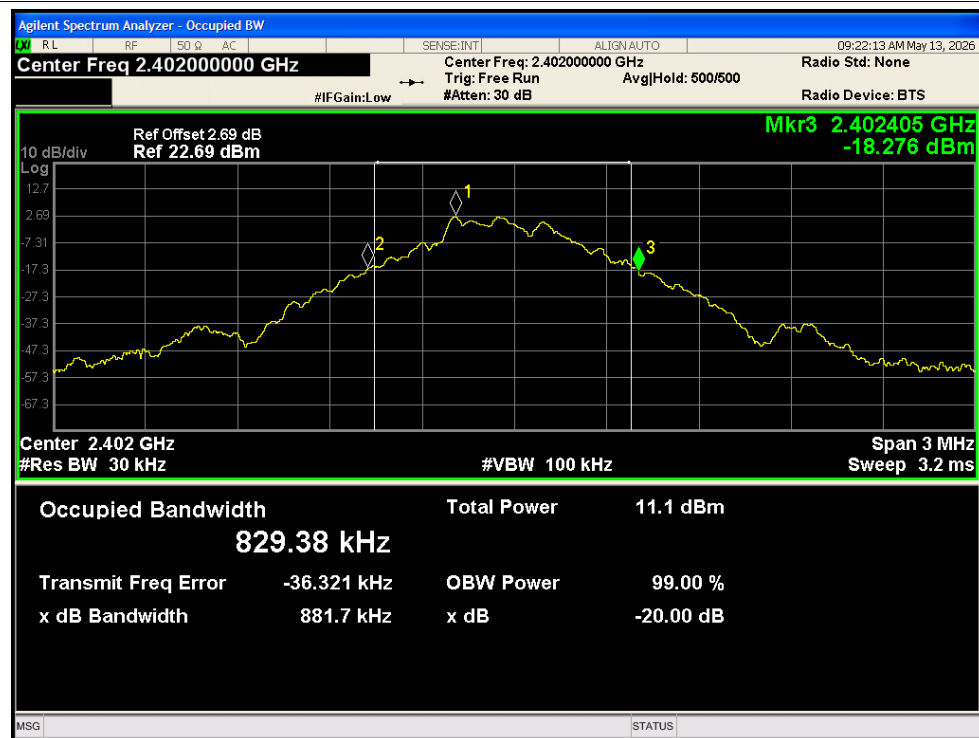


-20dB Bandwidth

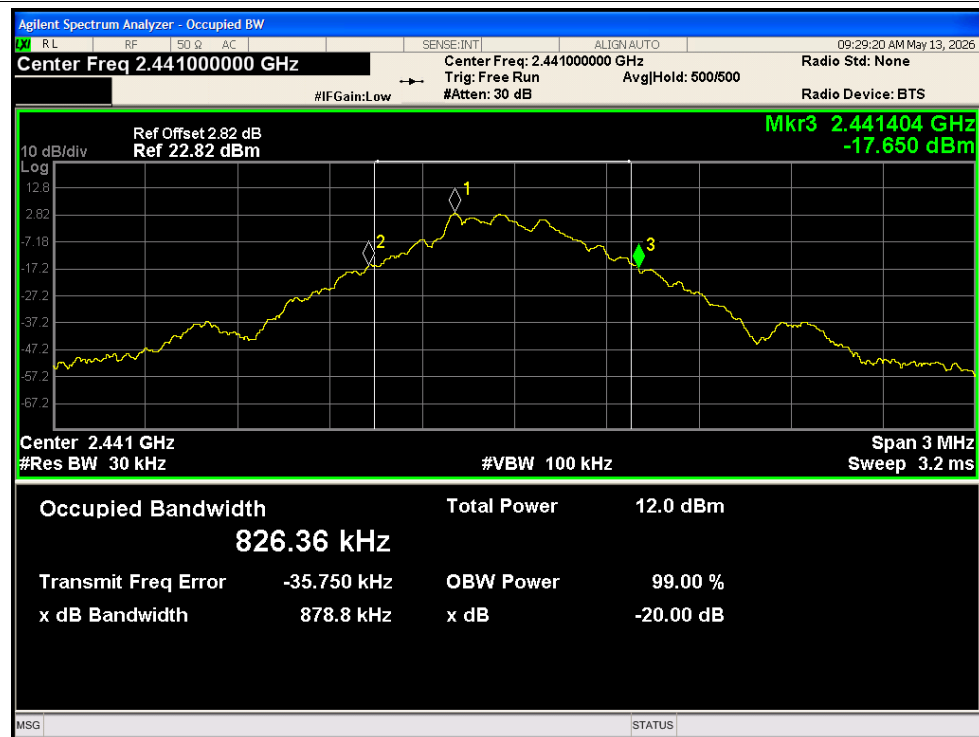
Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	0.882	Pass
NVNT	1-DH1	2441	0.879	Pass
NVNT	1-DH1	2480	0.879	Pass
NVNT	2-DH1	2402	1.252	Pass
NVNT	2-DH1	2441	1.260	Pass
NVNT	2-DH1	2480	1.260	Pass
NVNT	3-DH1	2402	1.220	Pass
NVNT	3-DH1	2441	1.223	Pass
NVNT	3-DH1	2480	1.220	Pass

Test Graphs

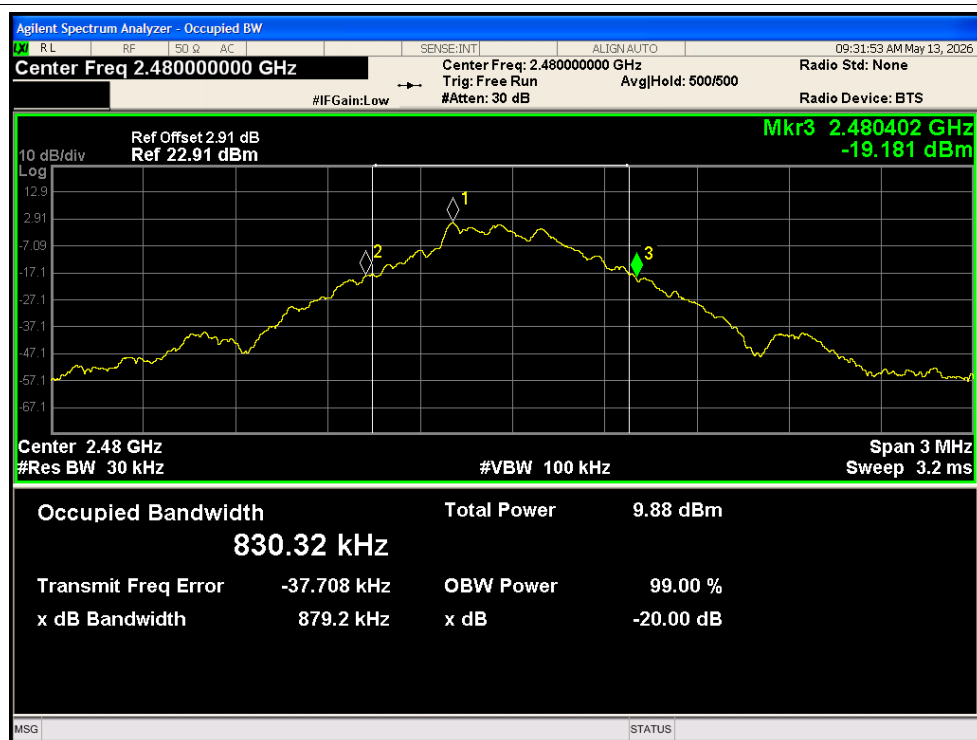
-20dB Bandwidth NVNT 1-DH1 2402MHz



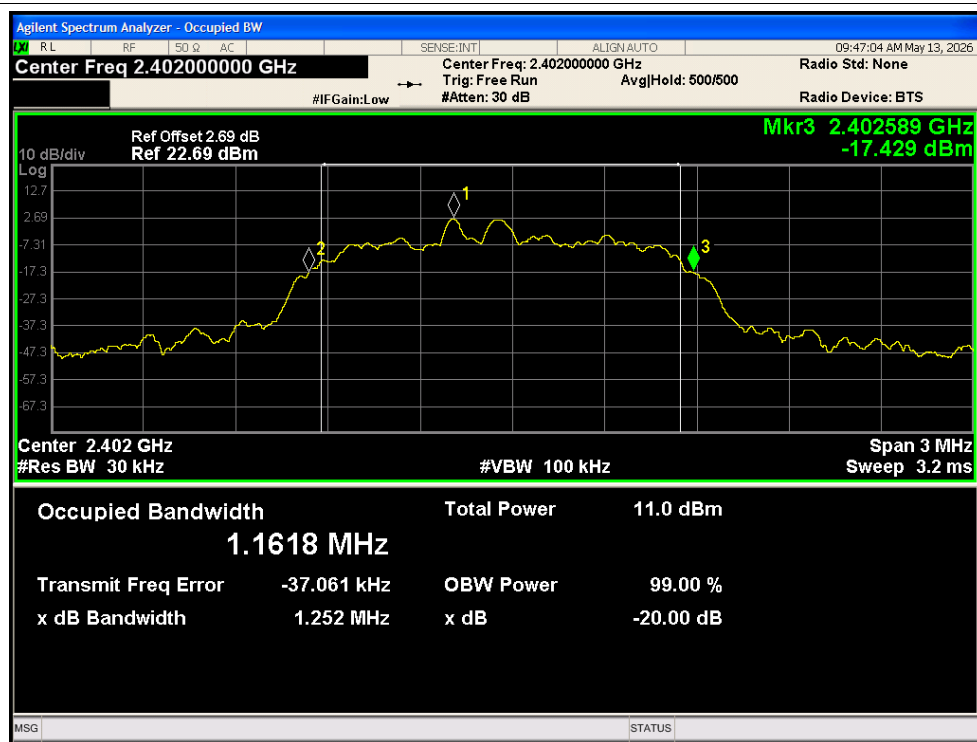
-20dB Bandwidth NVNT 1-DH1 2441MHz



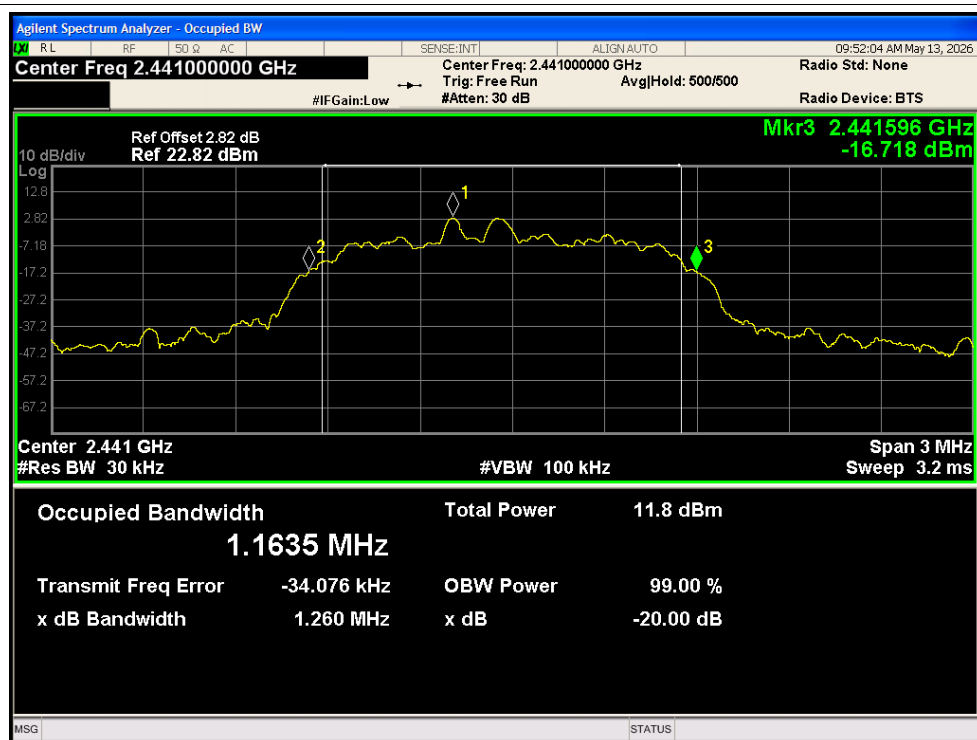
-20dB Bandwidth NVNT 1-DH1 2480MHz



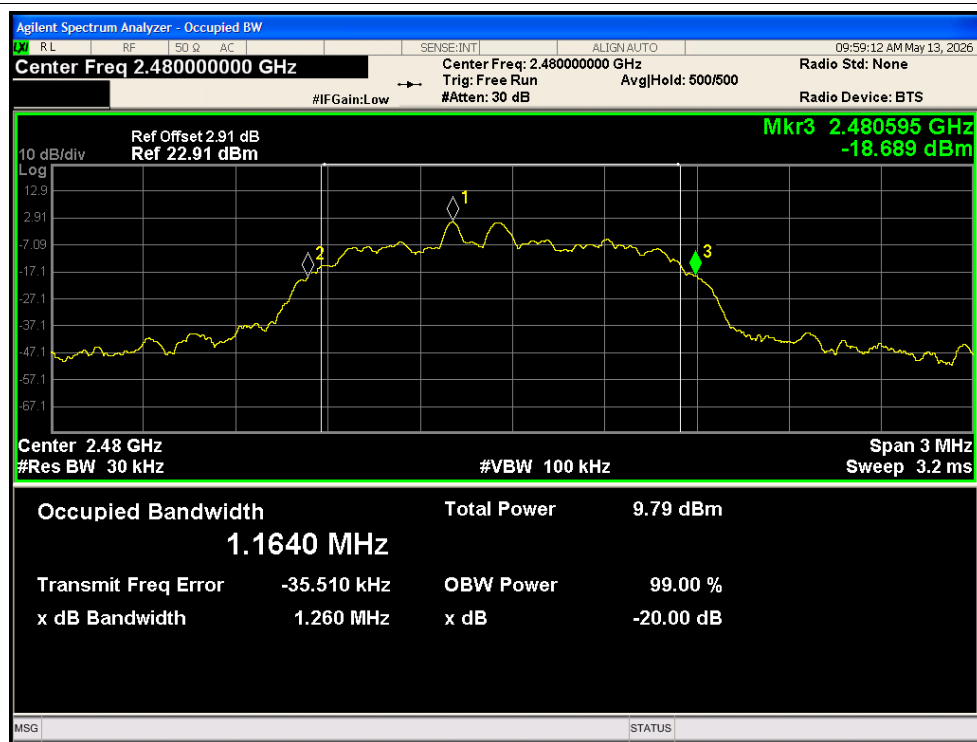
-20dB Bandwidth NVNT 2-DH1 2402MHz



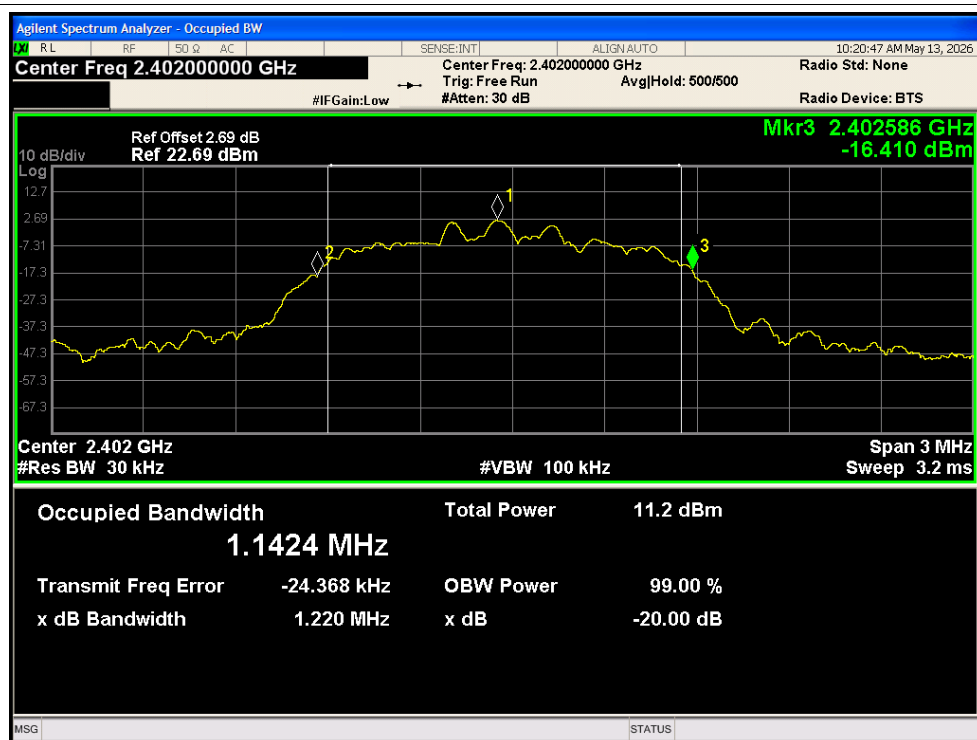
-20dB Bandwidth NVNT 2-DH1 2441MHz



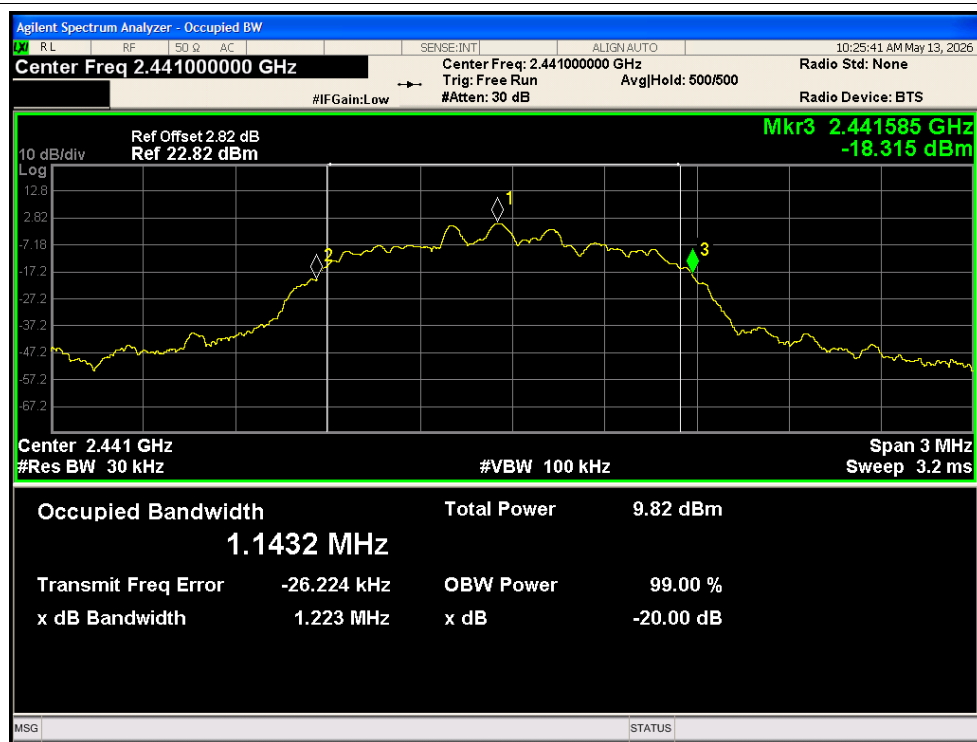
-20dB Bandwidth NVNT 2-DH1 2480MHz



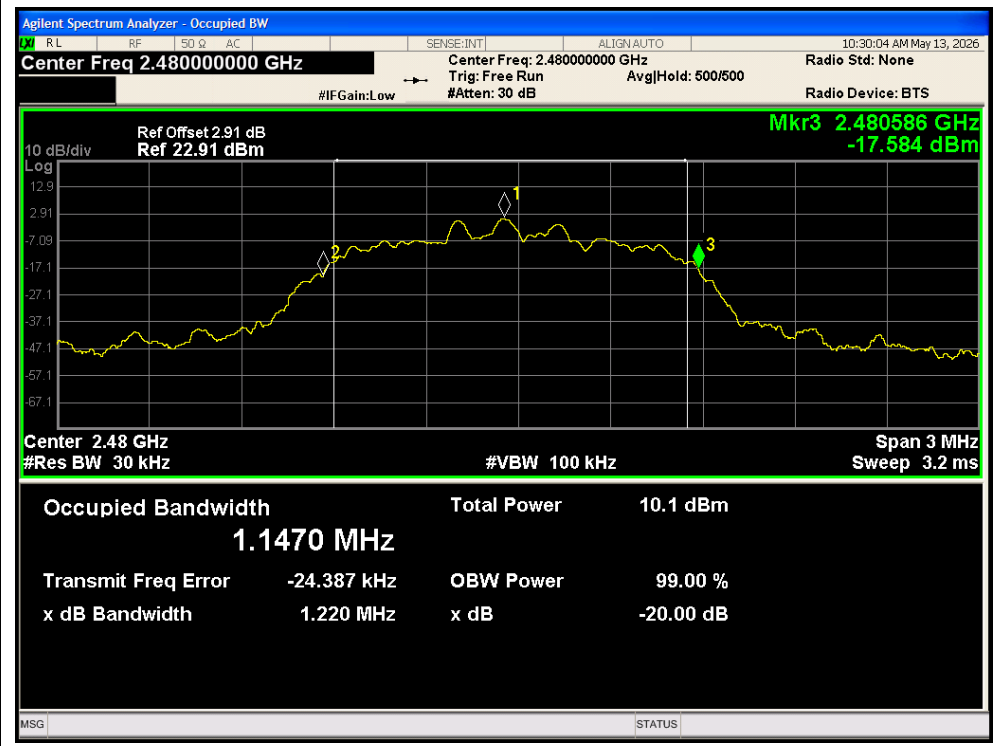
-20dB Bandwidth NVNT 3-DH1 2402MHz



-20dB Bandwidth NVNT 3-DH1 2441MHz



-20dB Bandwidth NVNT 3-DH1 2480MHz

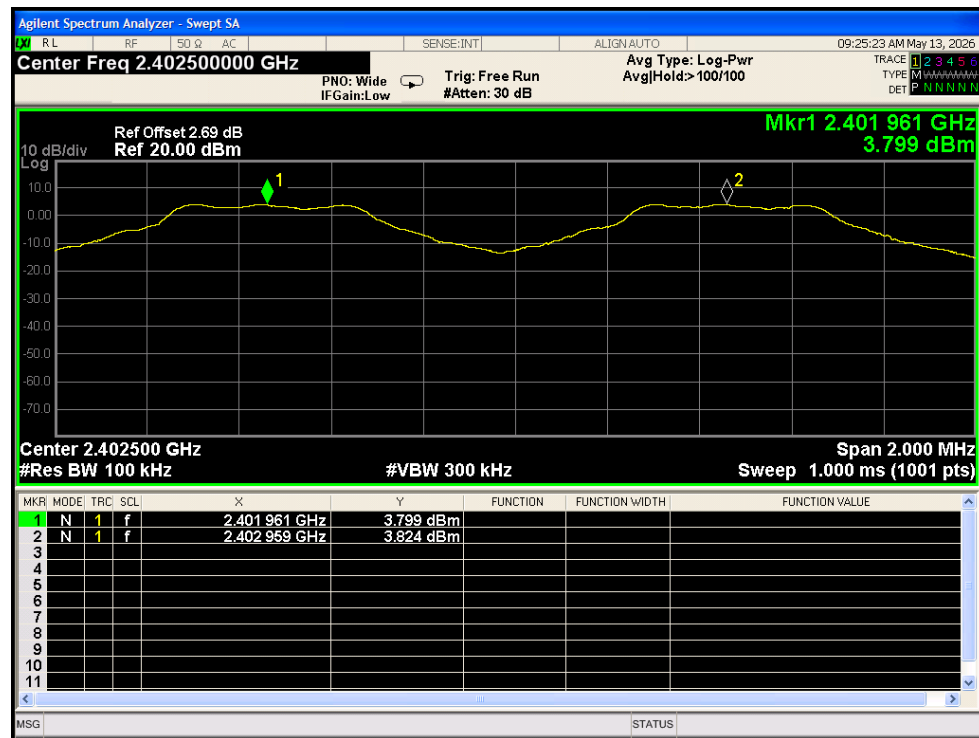


Carrier Frequencies Separation

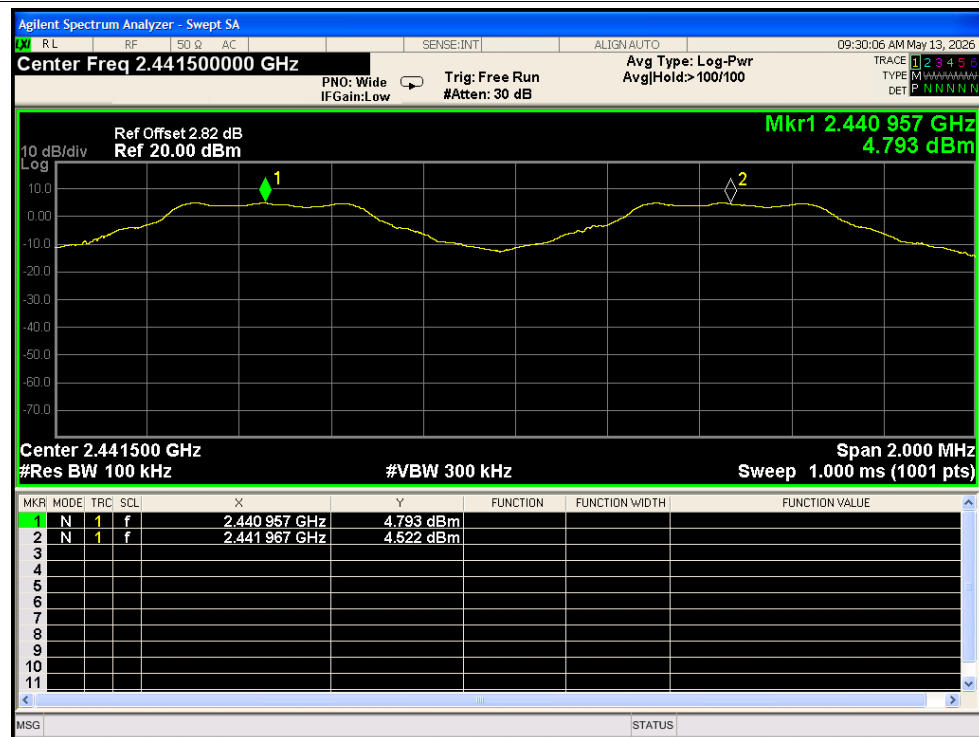
Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	2401.961	2402.959	0.998	0.882	Pass
NVNT	1-DH1	2440.957	2441.967	1.010	0.882	Pass
NVNT	1-DH1	2478.963	2479.961	0.998	0.882	Pass
NVNT	2-DH1	2401.955	2402.962	1.007	0.840	Pass
NVNT	2-DH1	2440.963	2441.964	1.001	0.840	Pass
NVNT	2-DH1	2479.030	2480.030	1.000	0.840	Pass
NVNT	3-DH1	2401.932	2402.923	0.991	0.815	Pass
NVNT	3-DH1	2440.920	2441.920	1.000	0.815	Pass
NVNT	3-DH1	2478.919	2479.919	1.000	0.815	Pass

Test Graphs

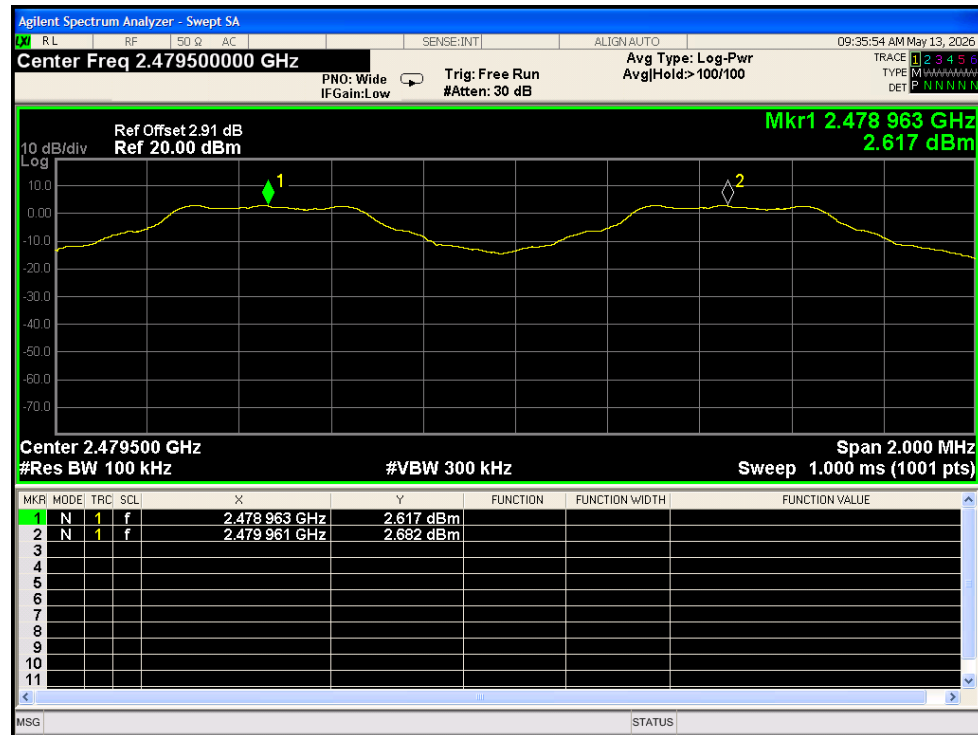
CFS NVNT 1-DH1 2402MHz



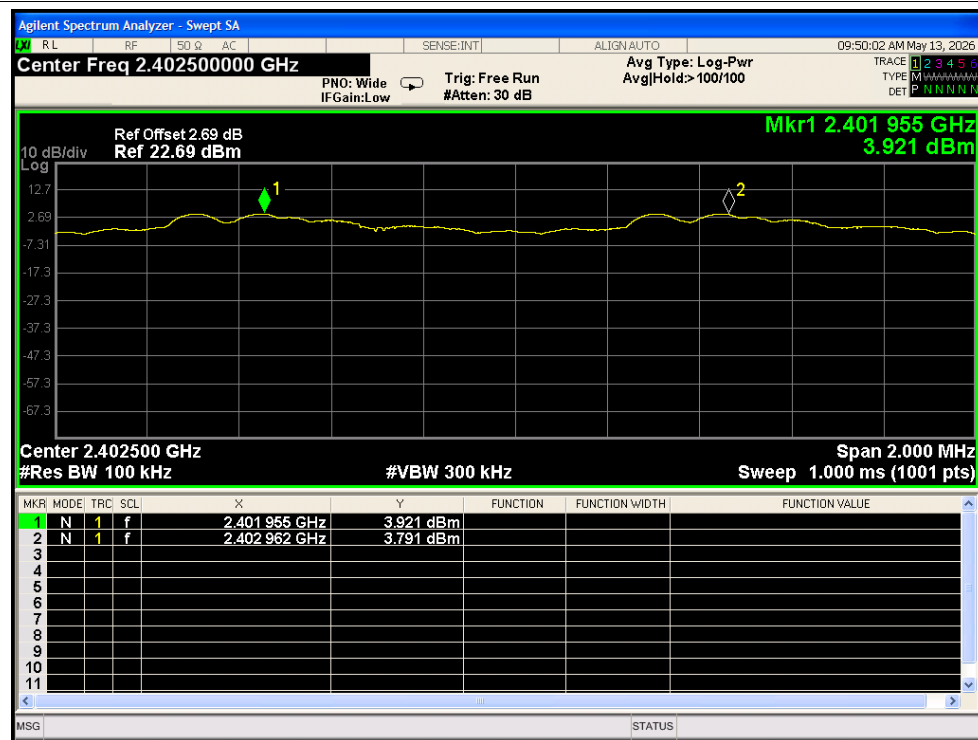
CFS NVNT 1-DH1 2441MHz



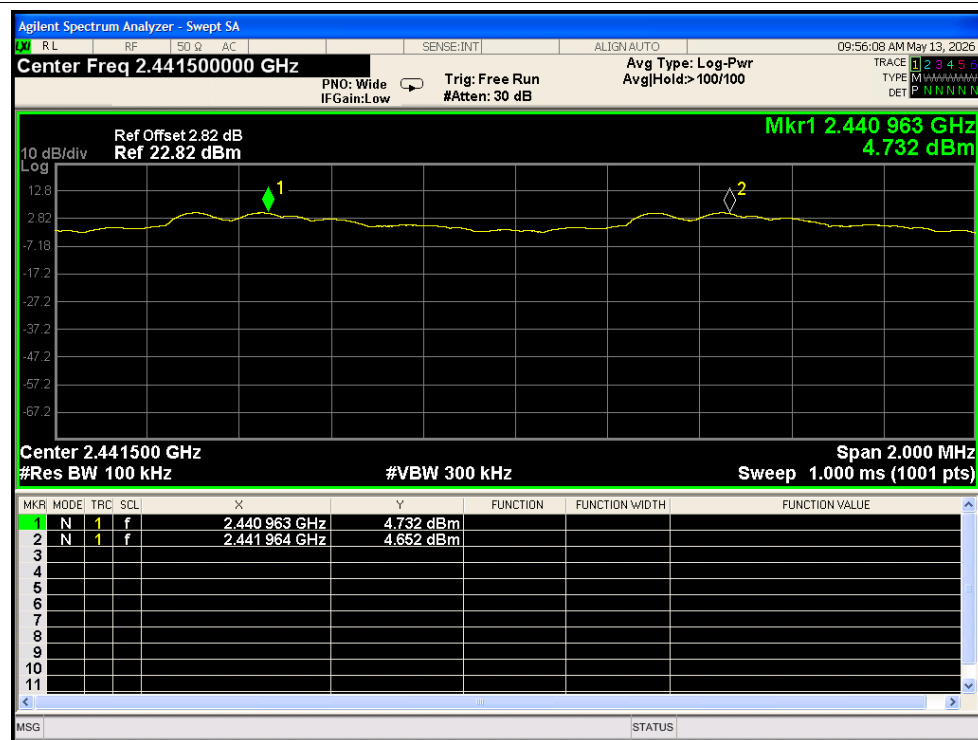
CFS NVNT 1-DH1 2480MHz



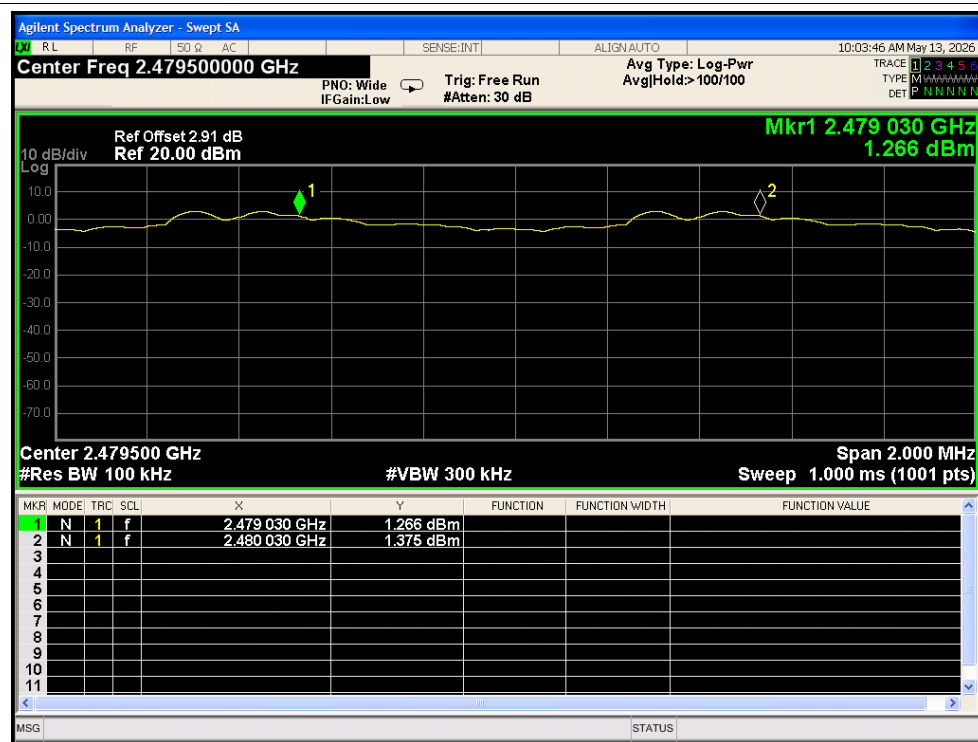
CFS NVNT 2-DH1 2402MHz



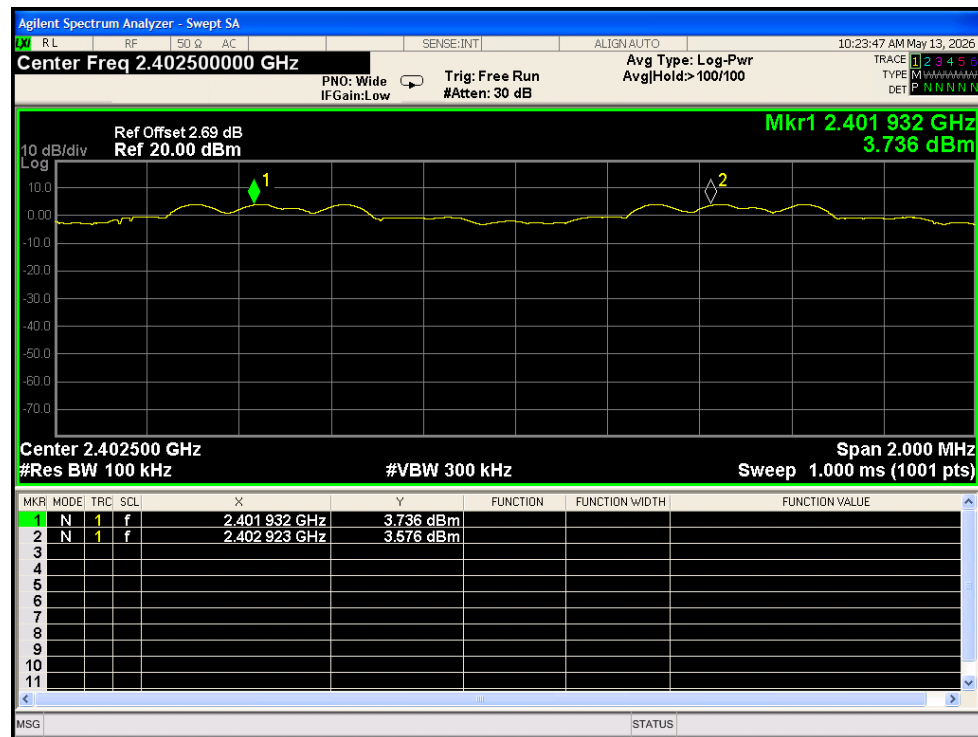
CFS NVNT 2-DH1 2441MHz



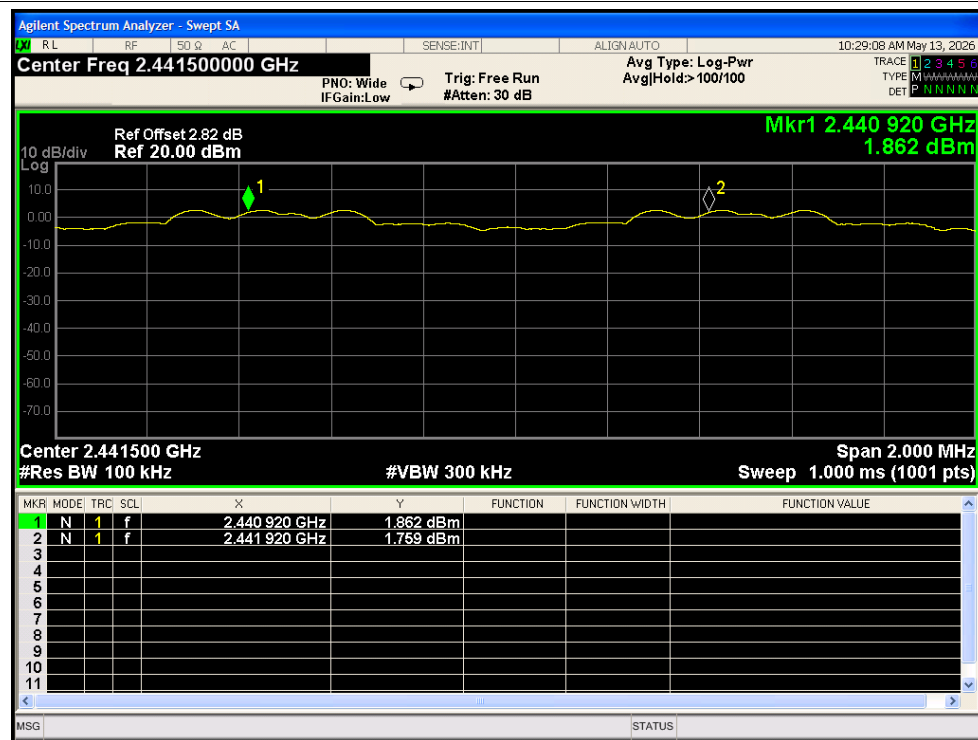
CFS NVNT 2-DH1 2480MHz



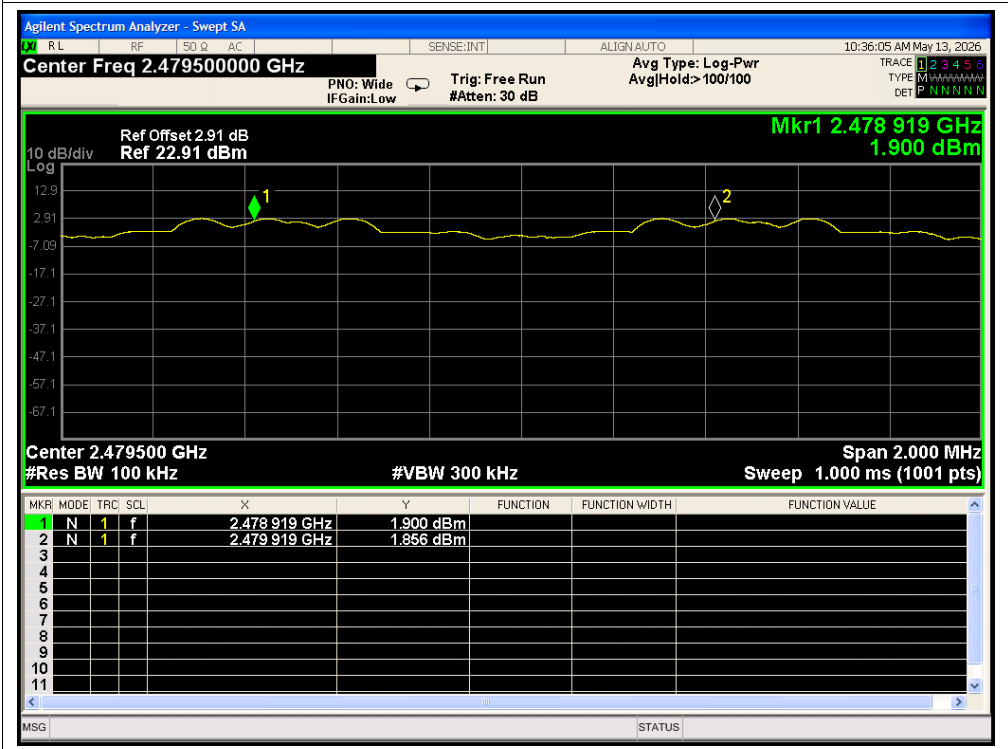
CFS NVNT 3-DH1 2402MHz



CFS NVNT 3-DH1 2441MHz



CFS NVNT 3-DH1 2480MHz

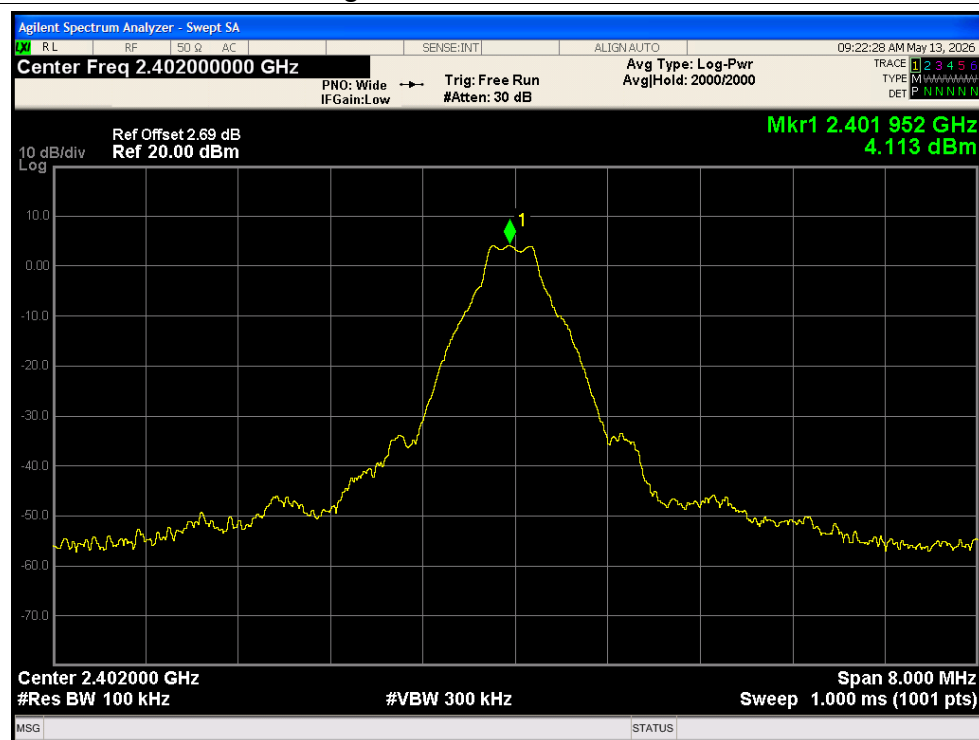


Band Edge

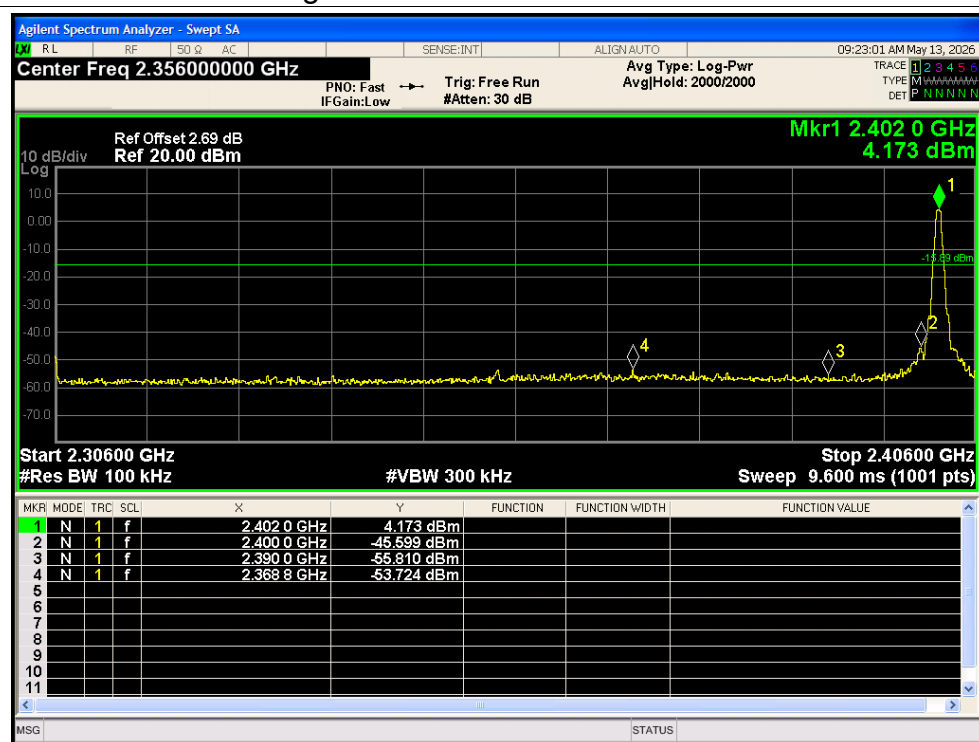
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	-57.83	-20	Pass
NVNT	1-DH1	2480	-57.41	-20	Pass
NVNT	2-DH1	2402	-57.15	-20	Pass
NVNT	2-DH1	2480	-56.38	-20	Pass
NVNT	3-DH1	2402	-57.75	-20	Pass
NVNT	3-DH1	2480	-57.07	-20	Pass

Test Graphs

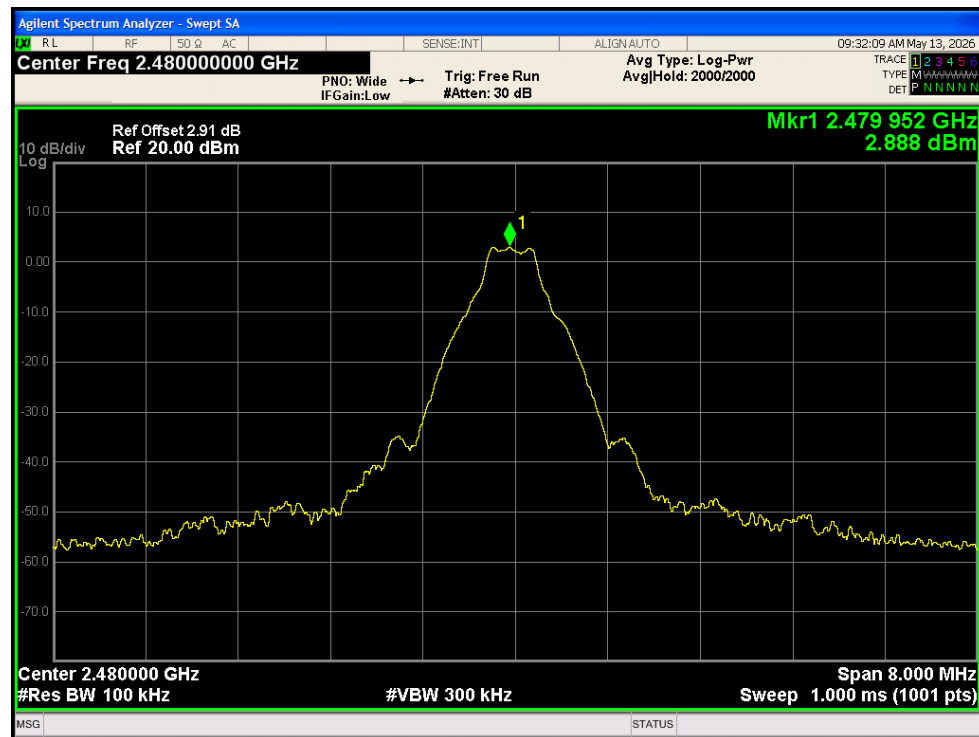
Band Edge NVNT 1-DH1 2402MHz Ref



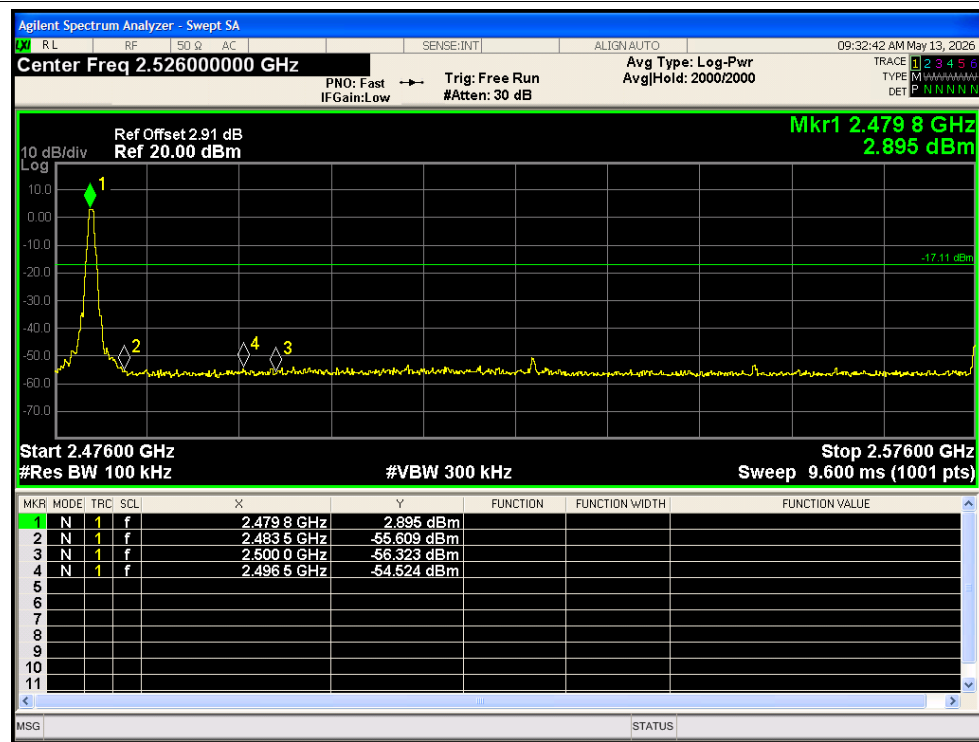
Band Edge NVNT 1-DH1 2402MHz Emission



Band Edge NVNT 1-DH1 2480MHz Ref



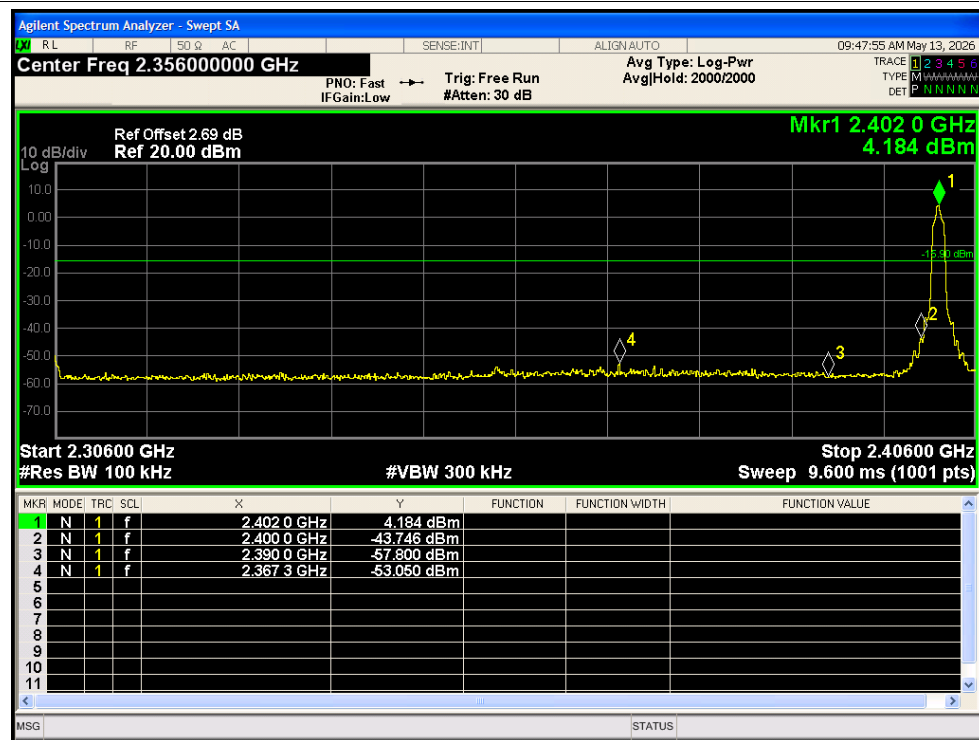
Band Edge NVNT 1-DH1 2480MHz Emission



Band Edge NVNT 2-DH1 2402MHz Ref



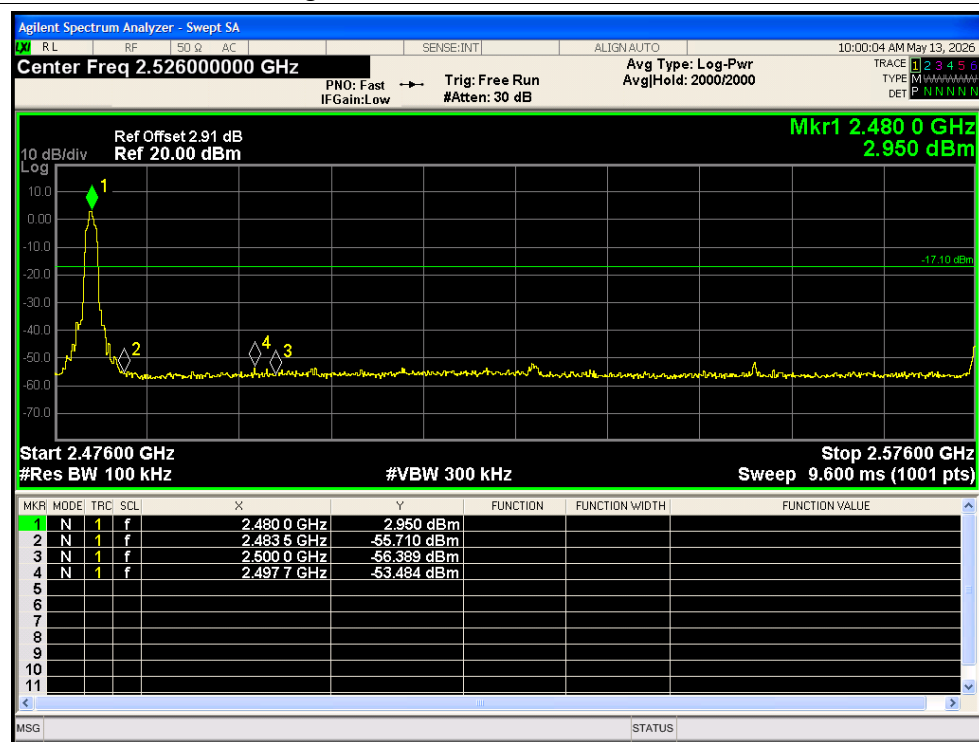
Band Edge NVNT 2-DH1 2402MHz Emission



Band Edge NVNT 2-DH1 2480MHz Ref



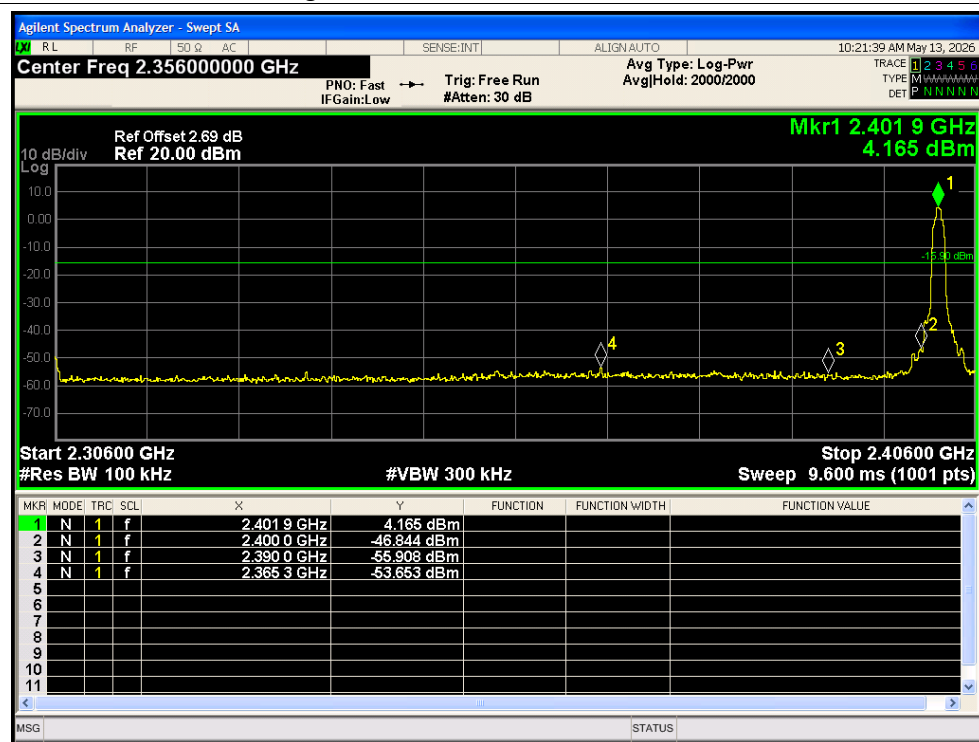
Band Edge NVNT 2-DH1 2480MHz Emission



Band Edge NVNT 3-DH1 2402MHz Ref



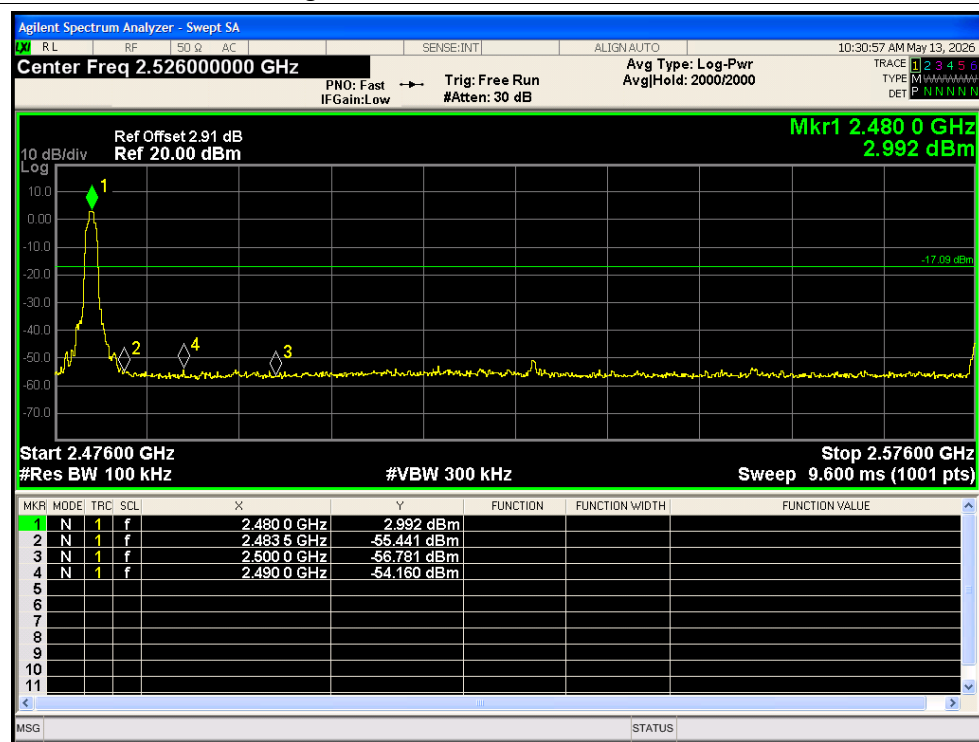
Band Edge NVNT 3-DH1 2402MHz Emission



Band Edge NVNT 3-DH1 2480MHz Ref



Band Edge NVNT 3-DH1 2480MHz Emission

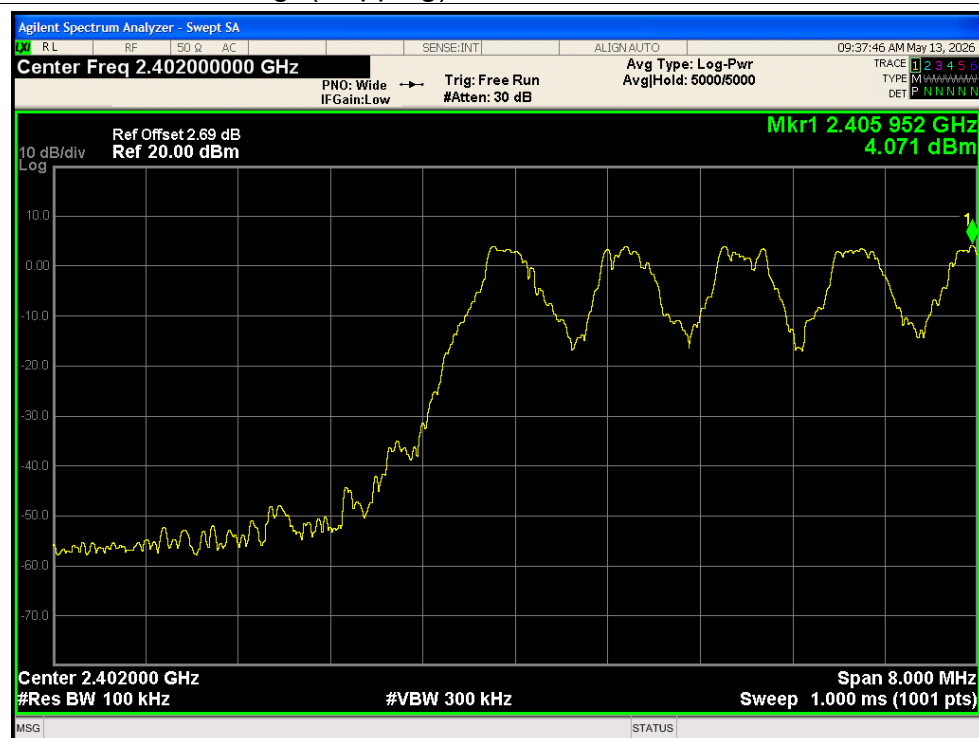


Band Edge(Hopping)

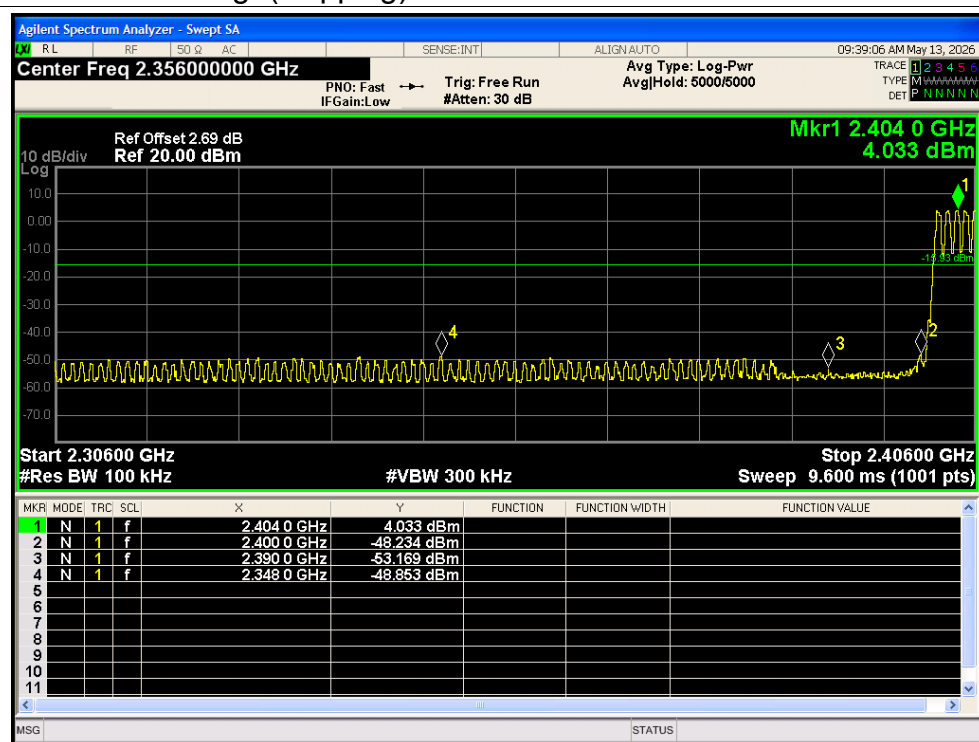
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	-52.92	-20	Pass
NVNT	1-DH1	2480	-49.62	-20	Pass
NVNT	2-DH1	2402	-52.87	-20	Pass
NVNT	2-DH1	2480	-49.04	-20	Pass
NVNT	3-DH1	2402	-52.32	-20	Pass
NVNT	3-DH1	2480	-49.83	-20	Pass

Test Graphs

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



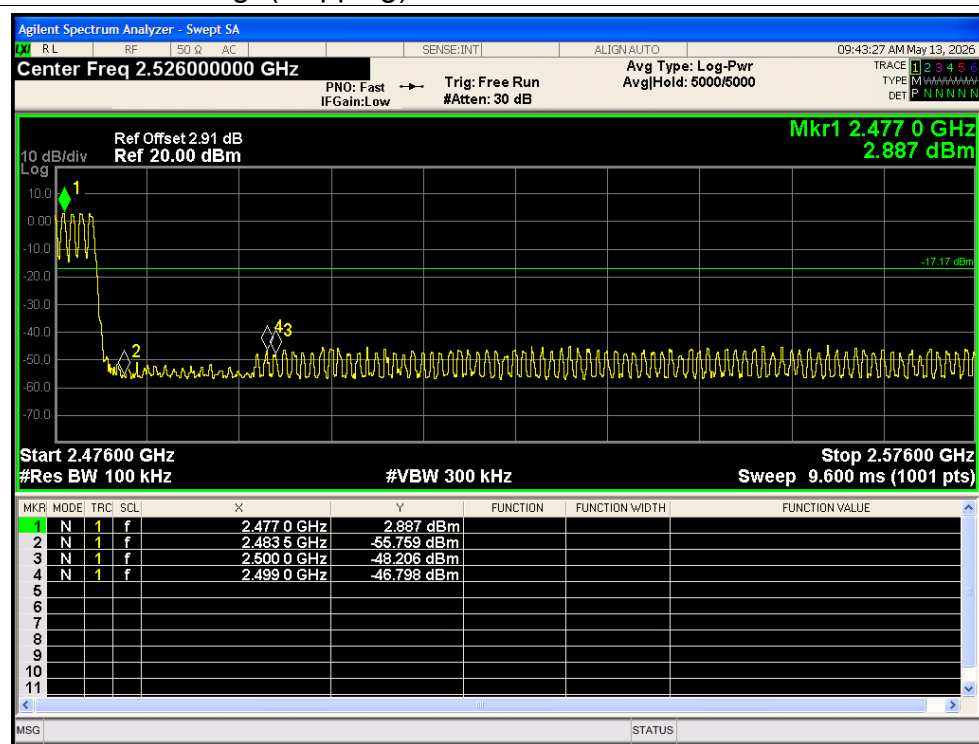
Band Edge(Hopping) NVNT 1-DH1 2402MHz Emission



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



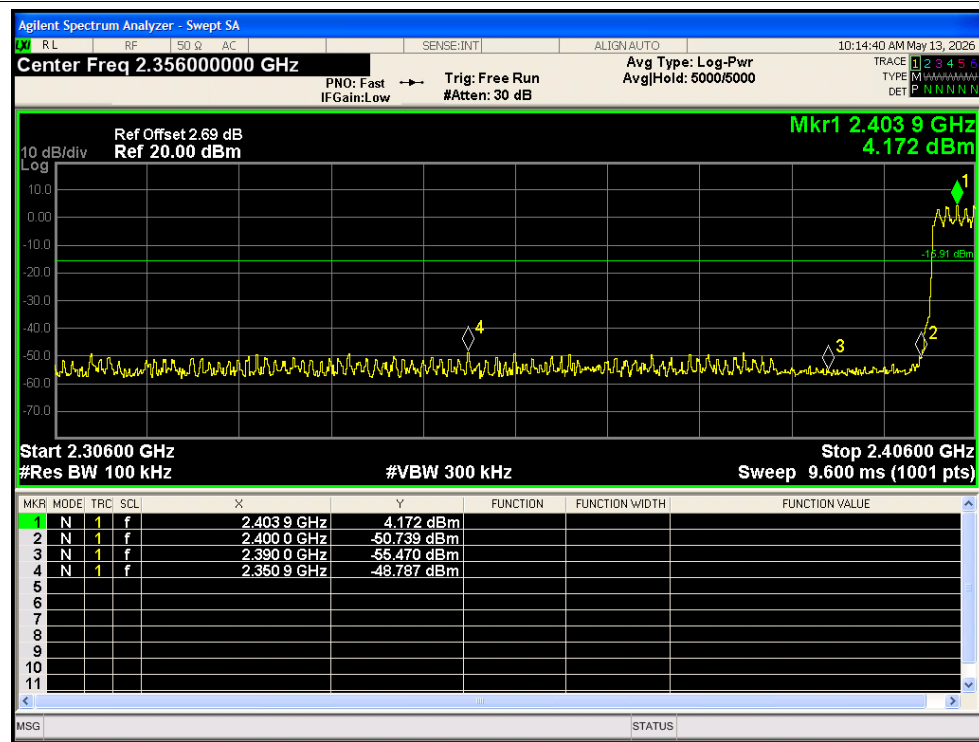
Band Edge(Hopping) NVNT 1-DH1 2480MHz Emission



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



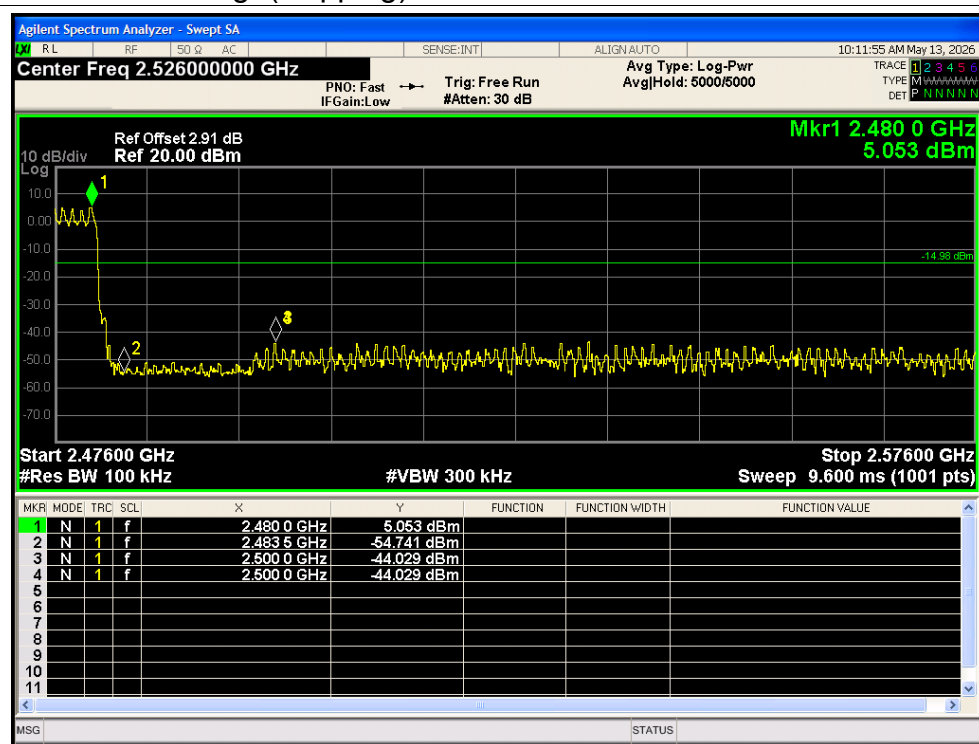
Band Edge(Hopping) NVNT 2-DH1 2402MHz Emission



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



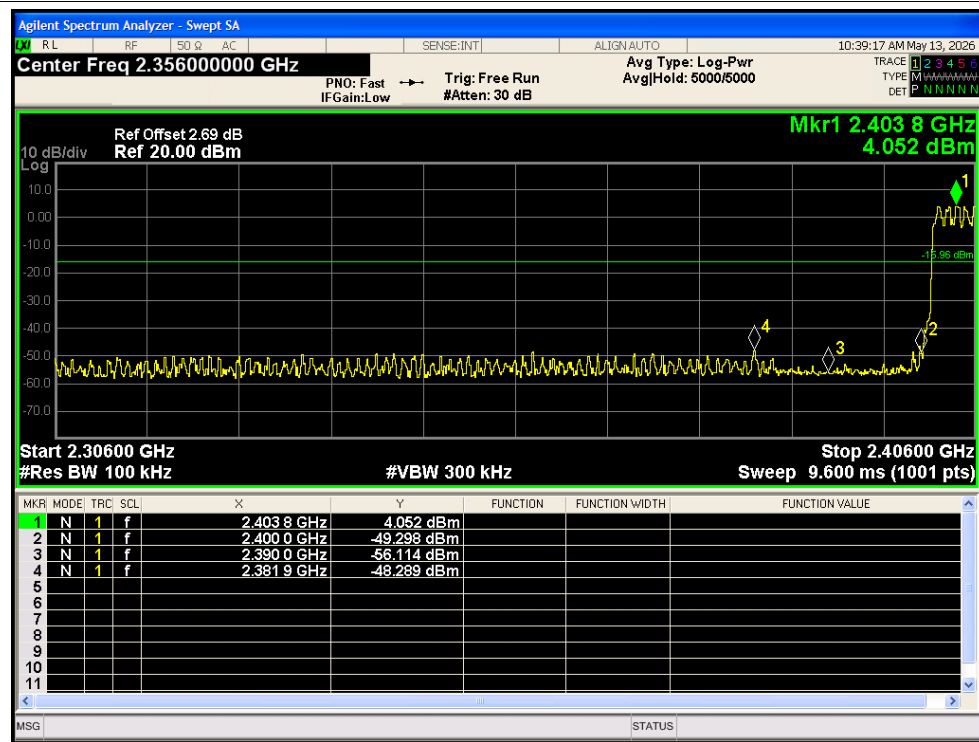
Band Edge(Hopping) NVNT 2-DH1 2480MHz Emission



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



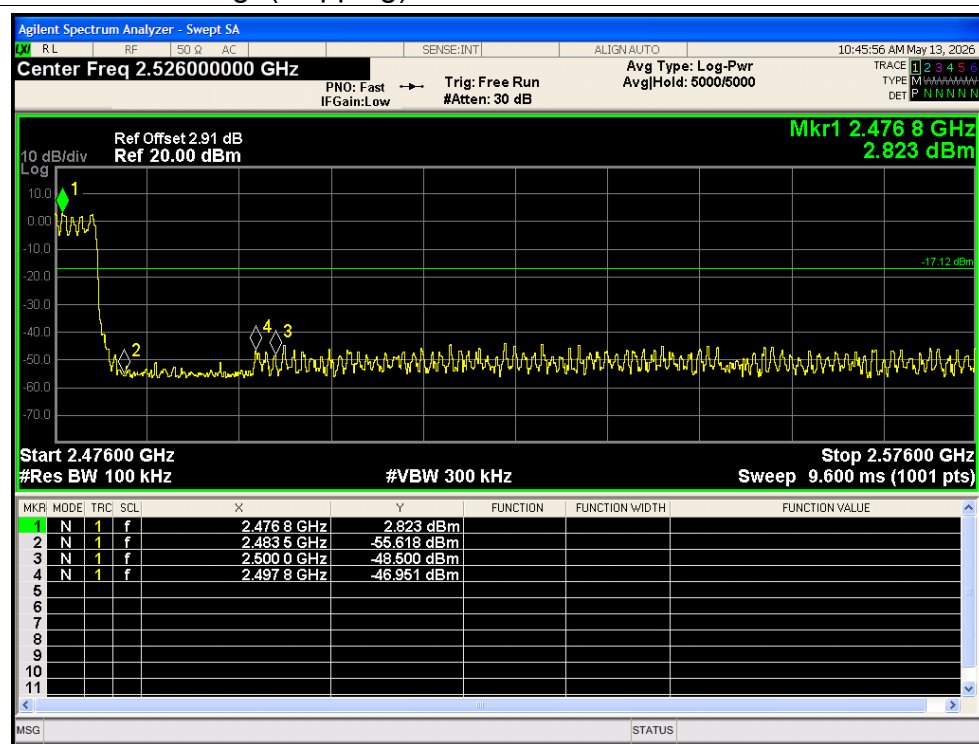
Band Edge(Hopping) NVNT 3-DH1 2402MHz Emission



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



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

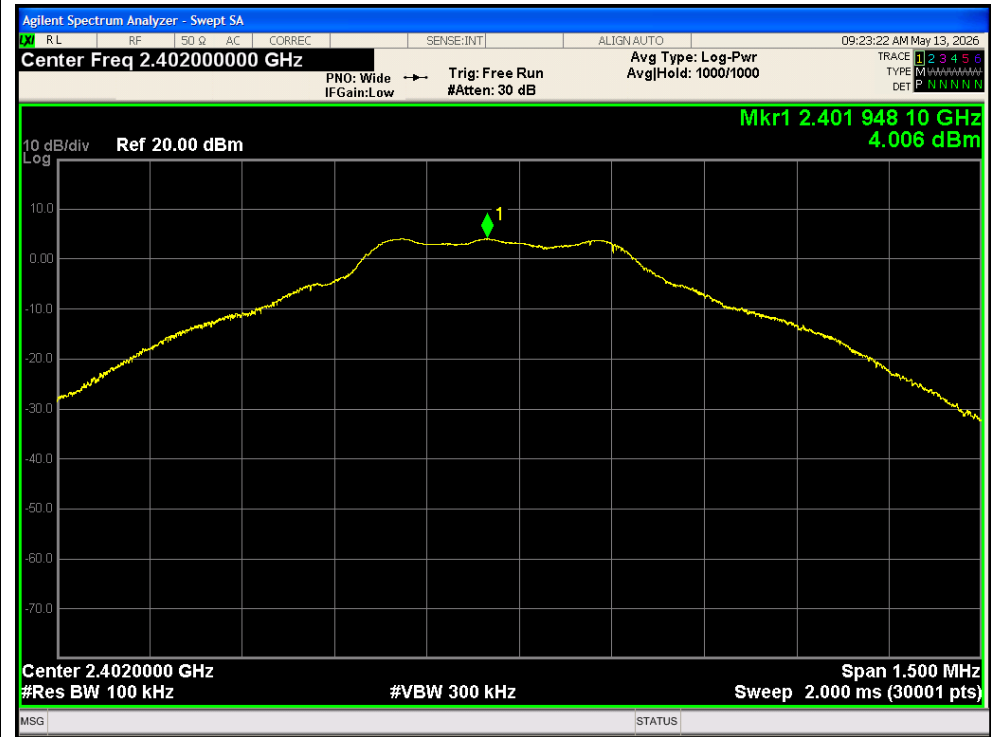


Conducted RF Spurious Emission

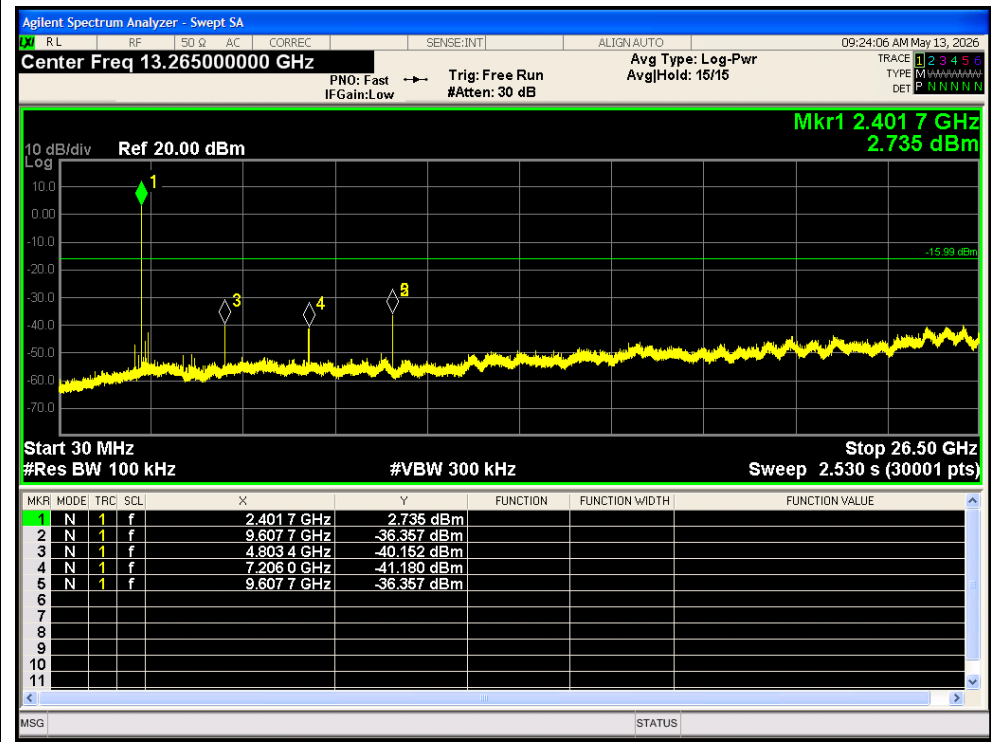
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	-40.36	-20	Pass
NVNT	1-DH1	2441	-40.83	-20	Pass
NVNT	1-DH1	2480	-38.83	-20	Pass
NVNT	2-DH1	2402	-39.96	-20	Pass
NVNT	2-DH1	2441	-41.13	-20	Pass
NVNT	2-DH1	2480	-39.06	-20	Pass
NVNT	3-DH1	2402	-40.51	-20	Pass
NVNT	3-DH1	2441	-39.83	-20	Pass
NVNT	3-DH1	2480	-38.98	-20	Pass

Test Graphs

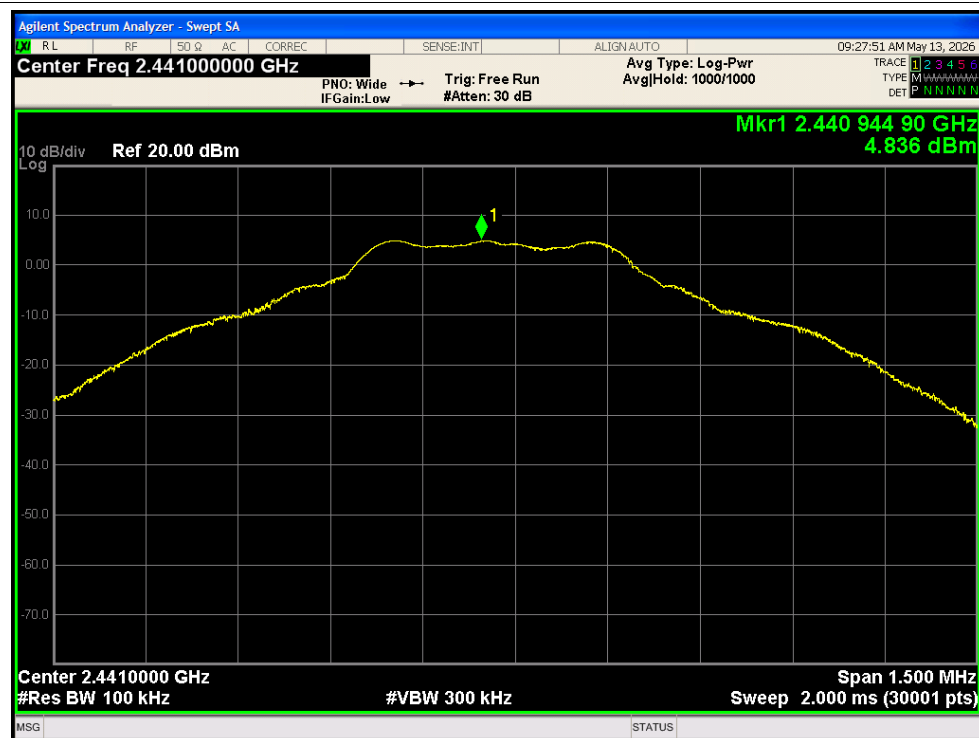
Tx. Spurious NVNT 1-DH1 2402MHz Ref



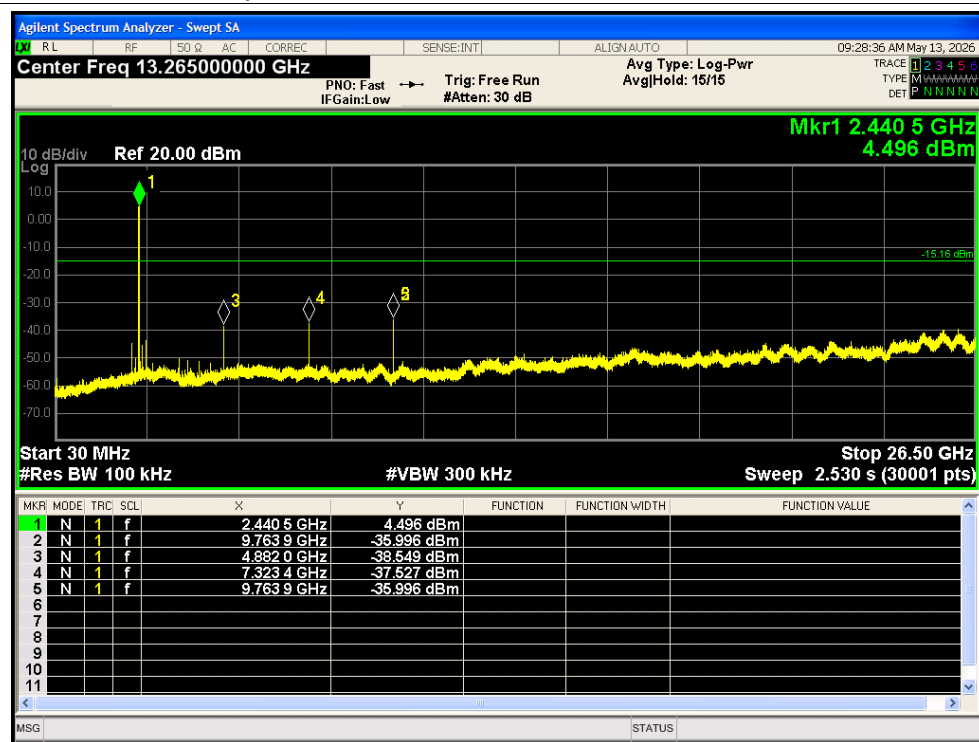
Tx. Spurious NVNT 1-DH1 2402MHz Emission



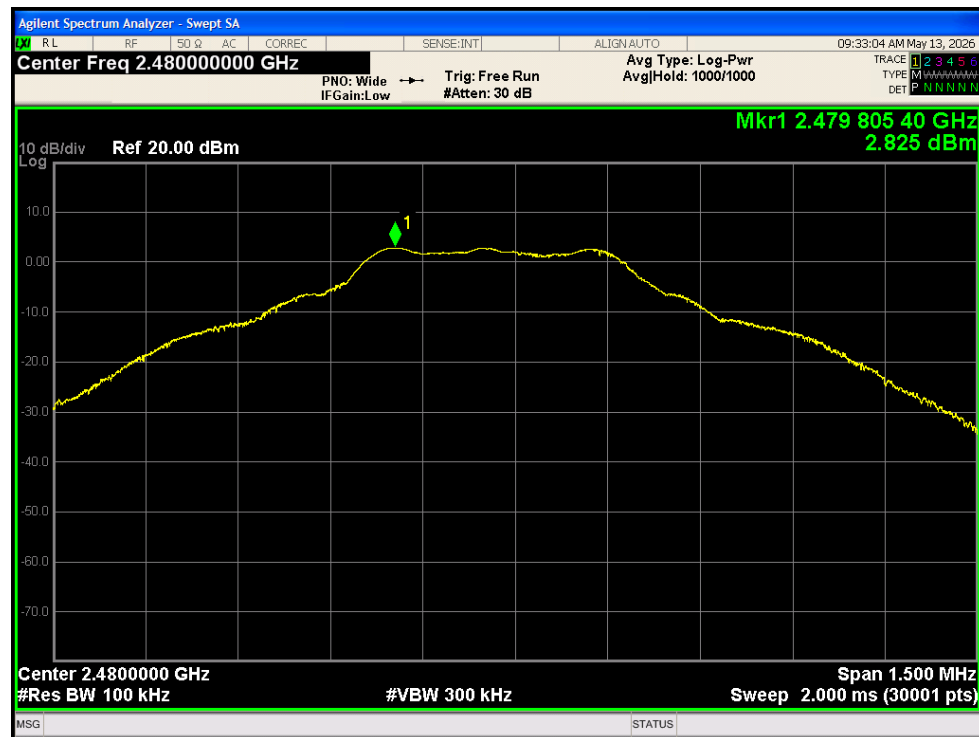
Tx. Spurious NVNT 1-DH1 2441MHz Ref



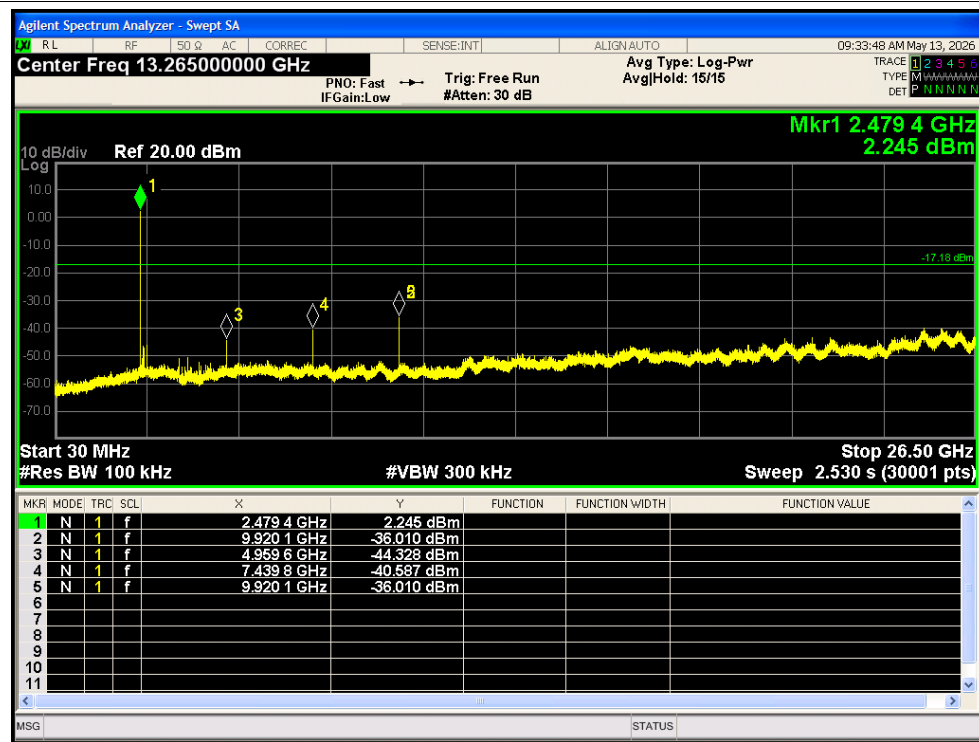
Tx. Spurious NVNT 1-DH1 2441MHz Emission



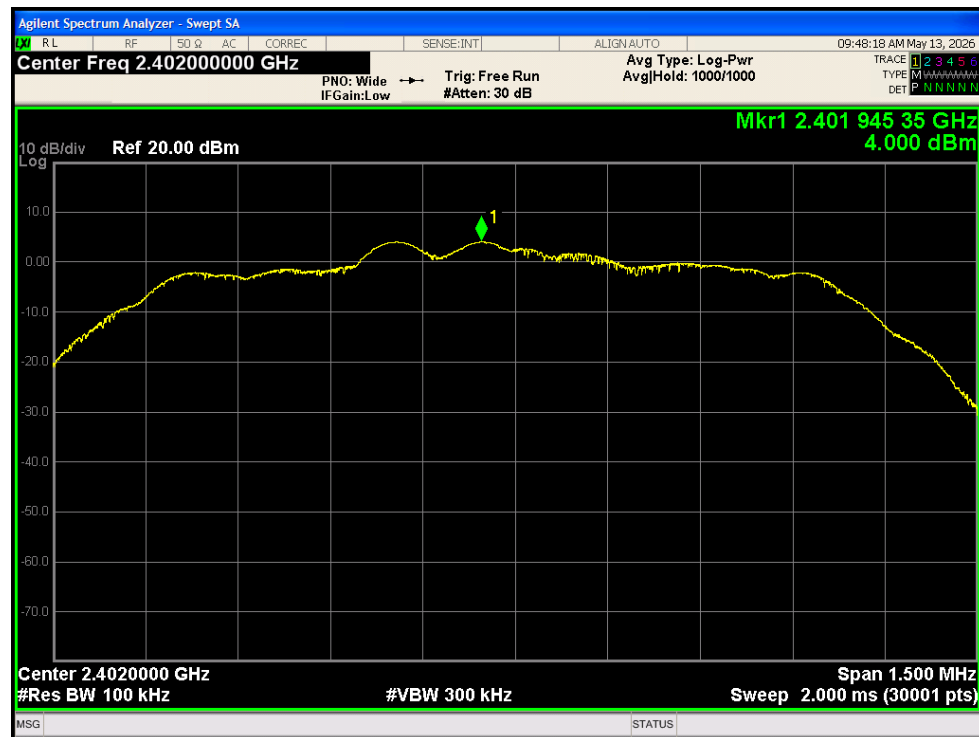
Tx. Spurious NVNT 1-DH1 2480MHz Ref



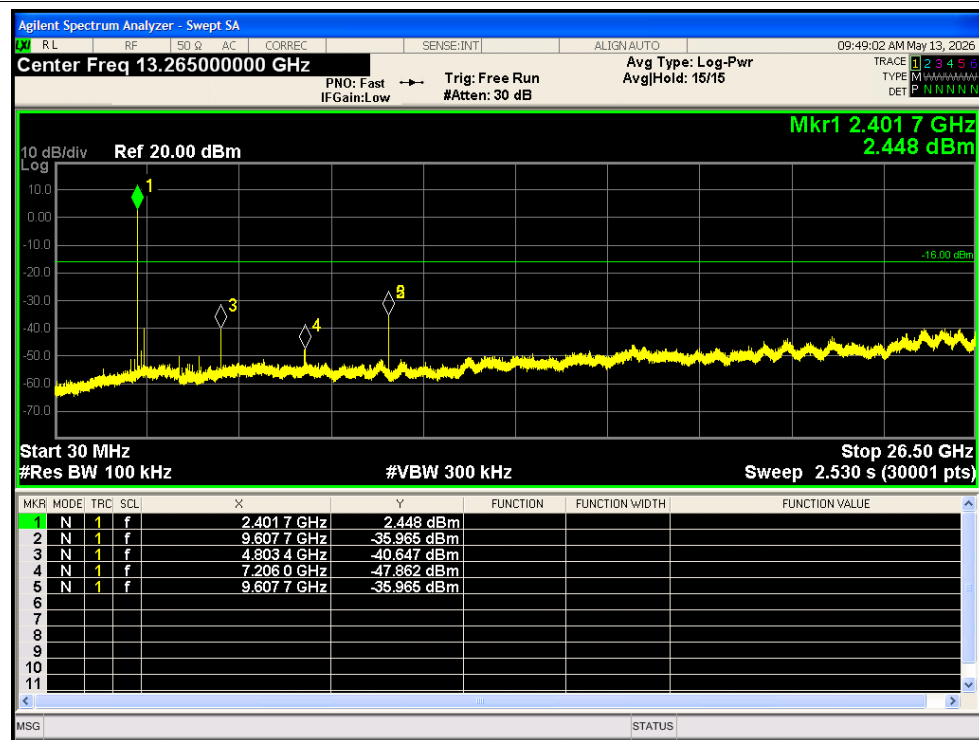
Tx. Spurious NVNT 1-DH1 2480MHz Emission



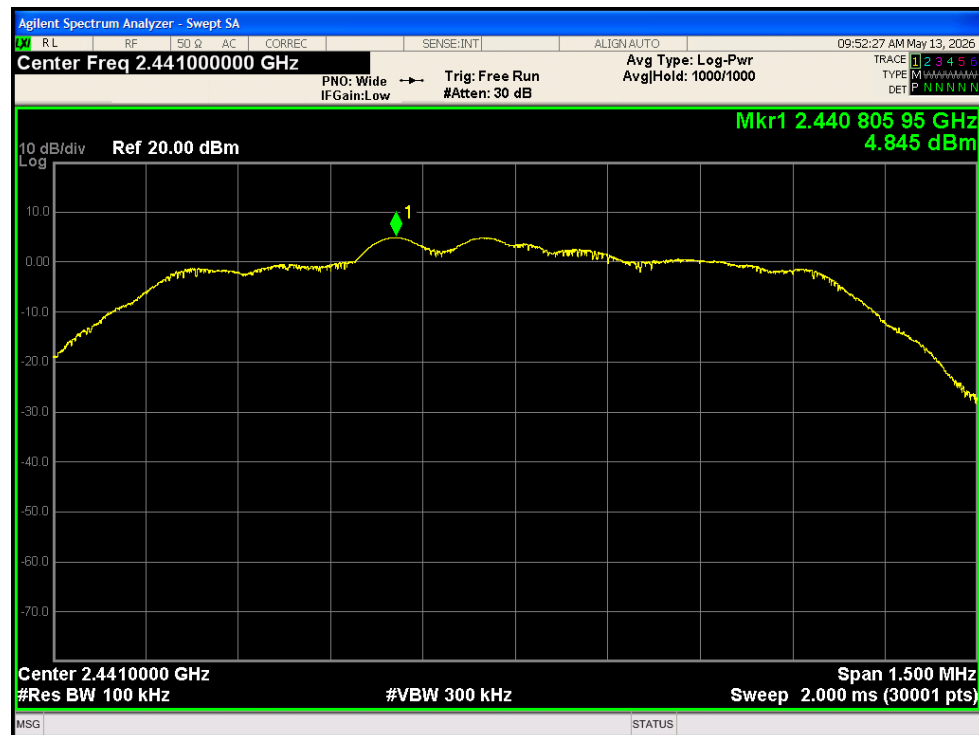
Tx. Spurious NVNT 2-DH1 2402MHz Ref



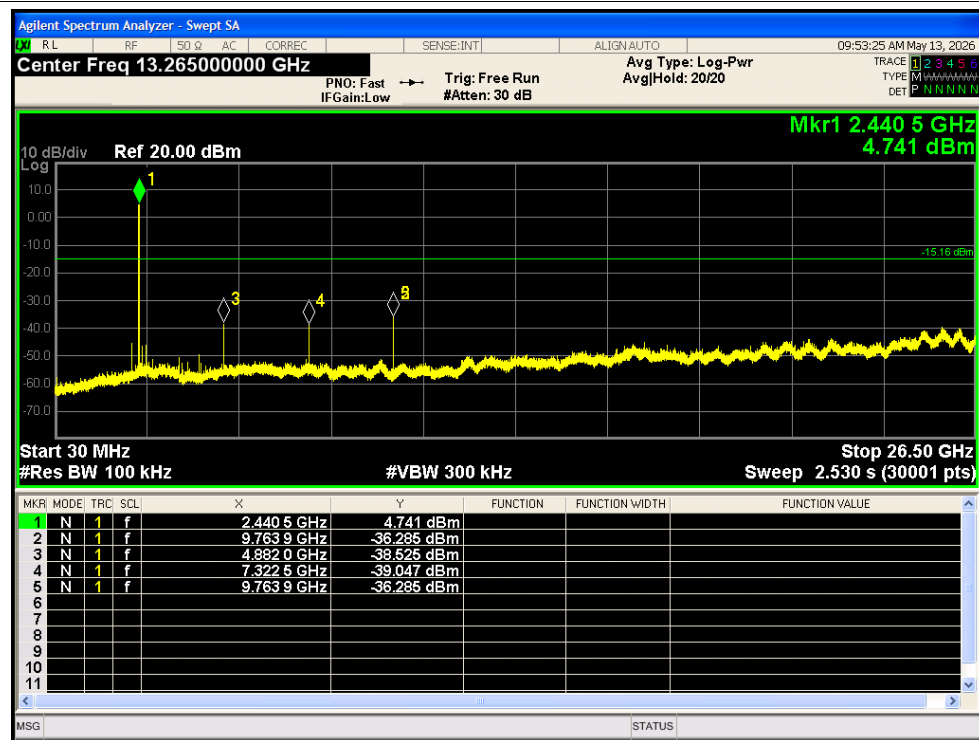
Tx. Spurious NVNT 2-DH1 2402MHz Emission



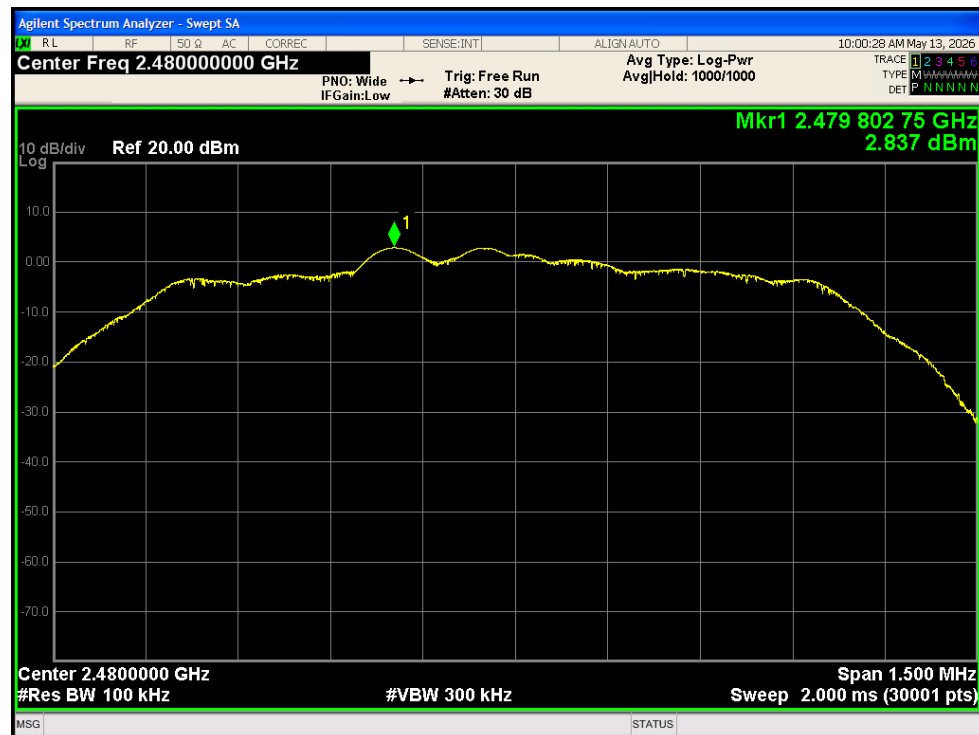
Tx. Spurious NVNT 2-DH1 2441MHz Ref



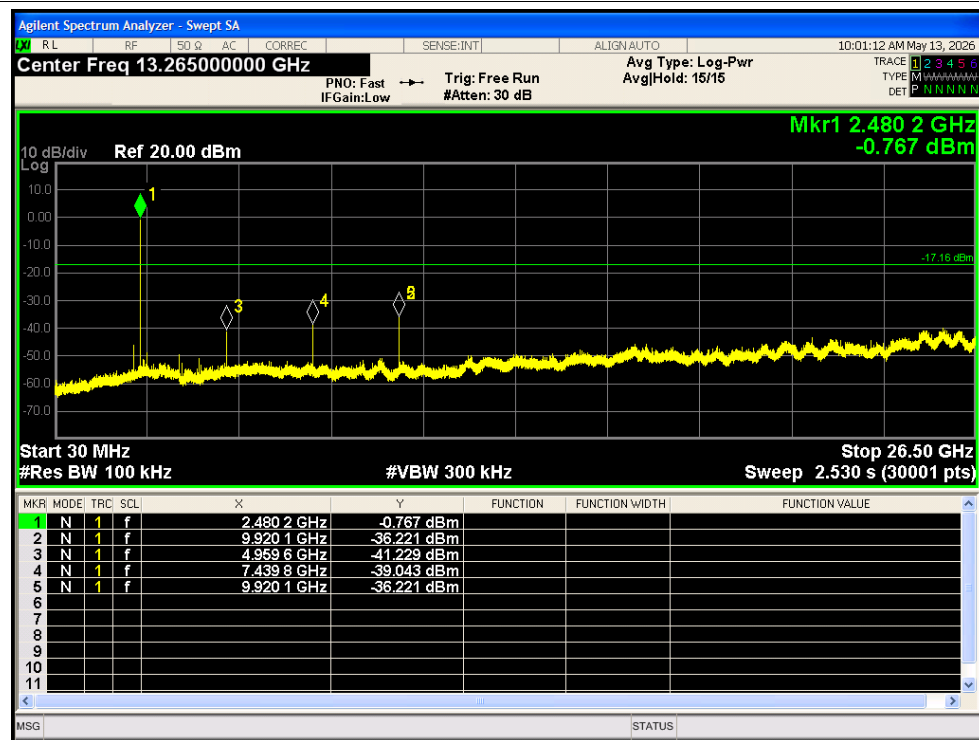
Tx. Spurious NVNT 2-DH1 2441MHz Emission



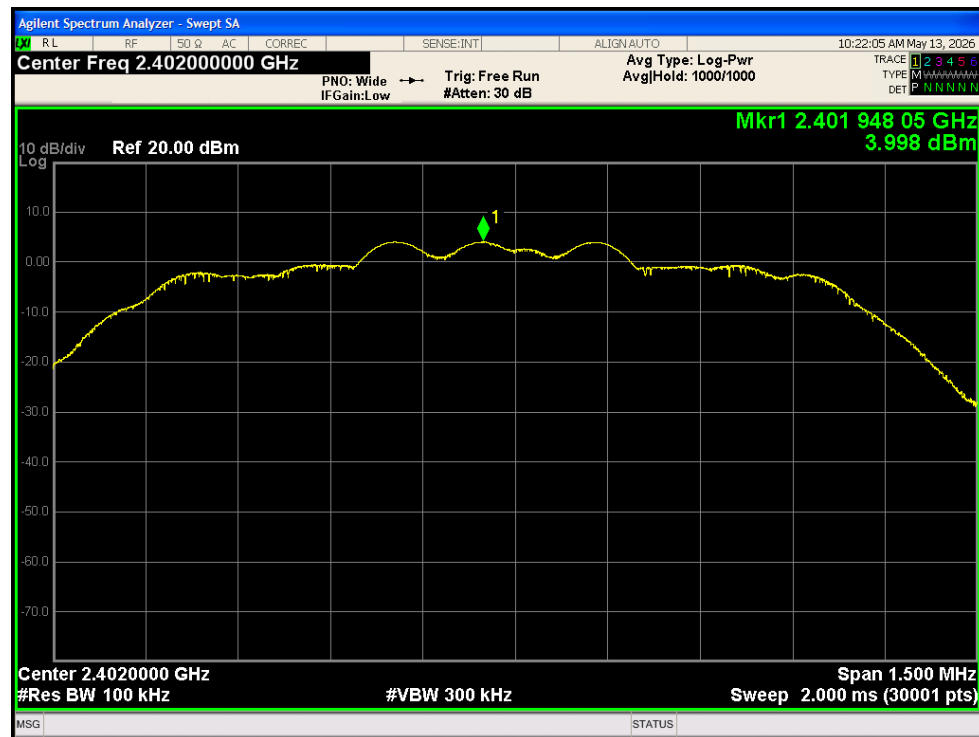
Tx. Spurious NVNT 2-DH1 2480MHz Ref



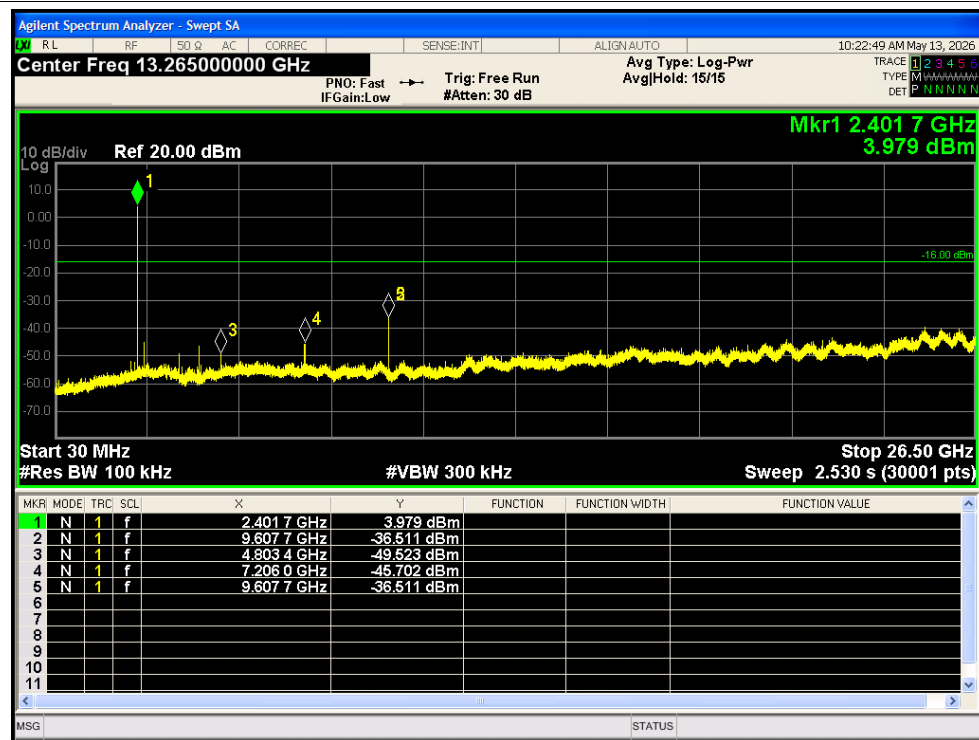
Tx. Spurious NVNT 2-DH1 2480MHz Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ref



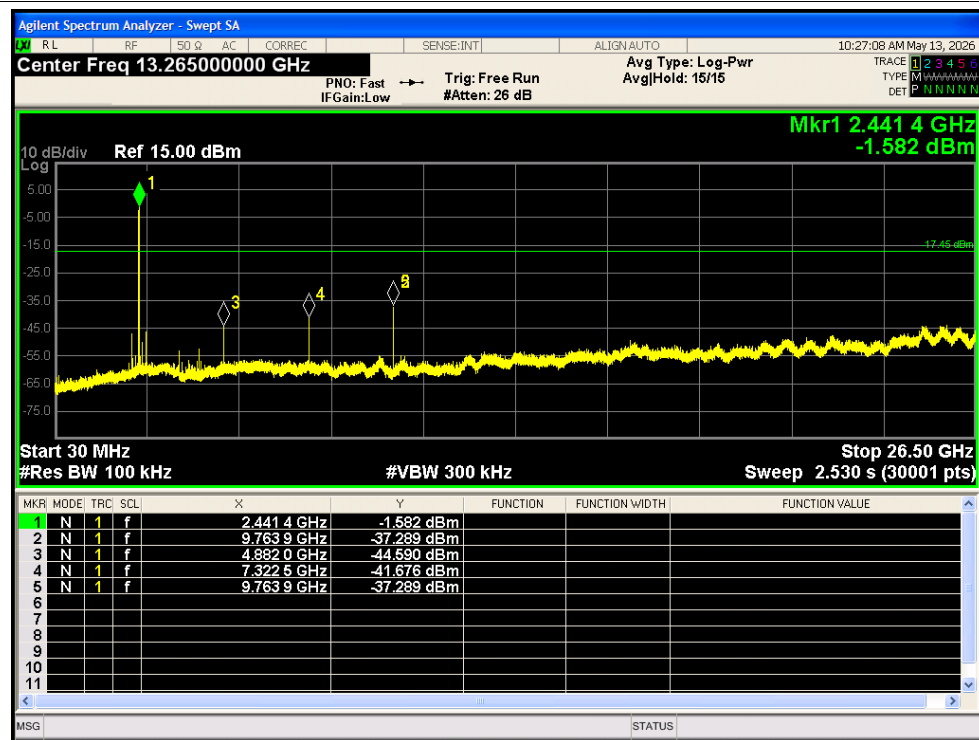
Tx. Spurious NVNT 3-DH1 2402MHz Emission



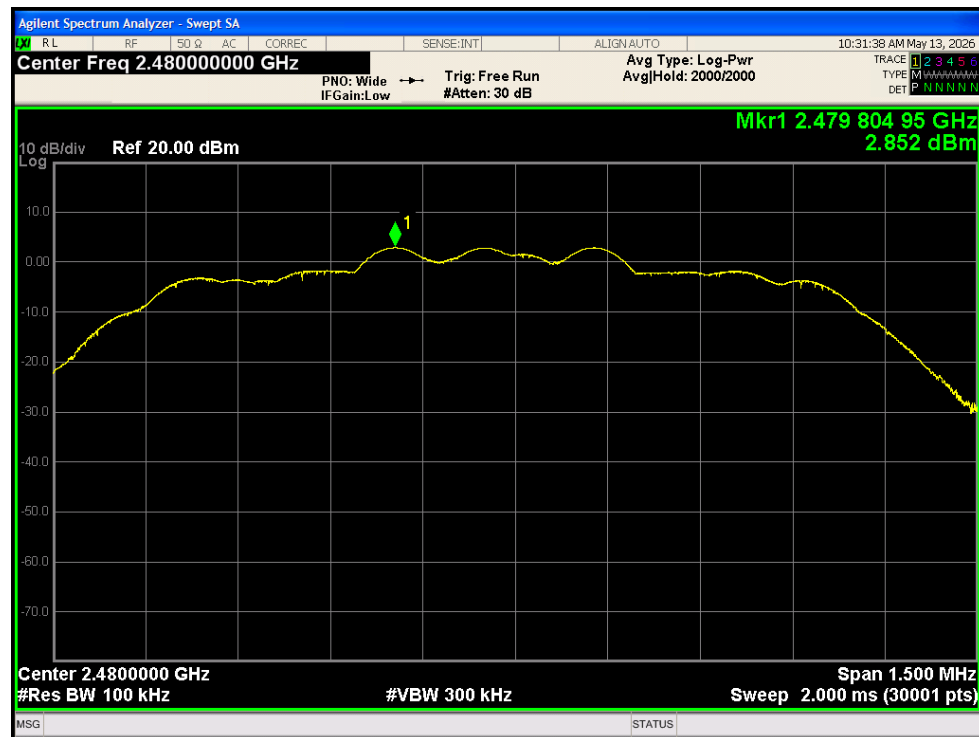
Tx. Spurious NVNT 3-DH1 2441MHz Ref



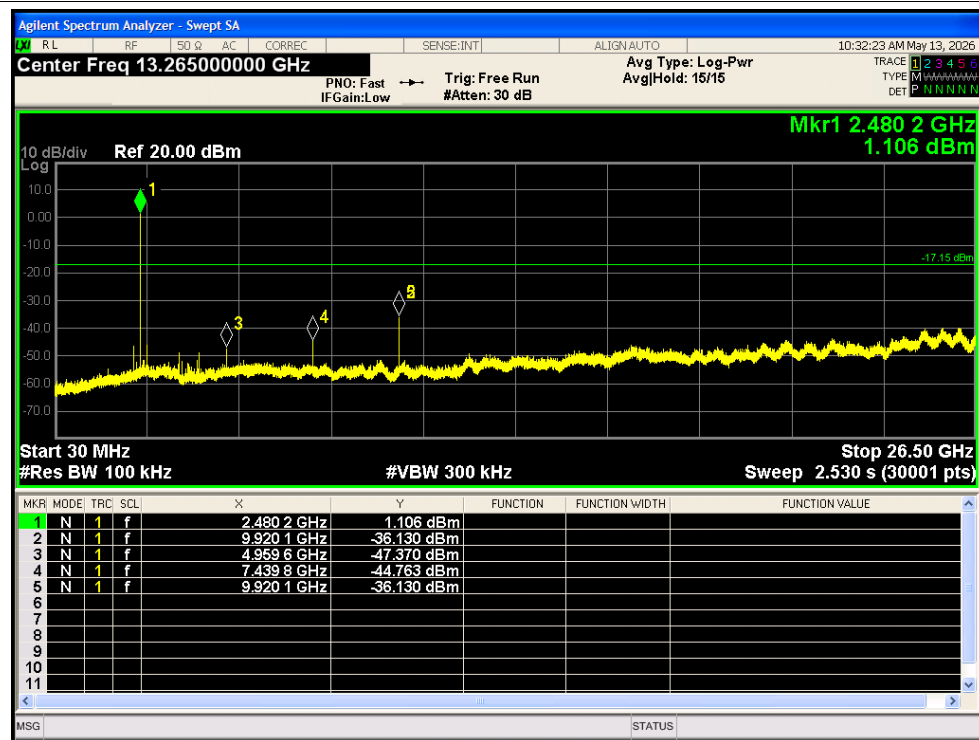
Tx. Spurious NVNT 3-DH1 2441MHz Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ref



Tx. Spurious NVNT 3-DH1 2480MHz Emission

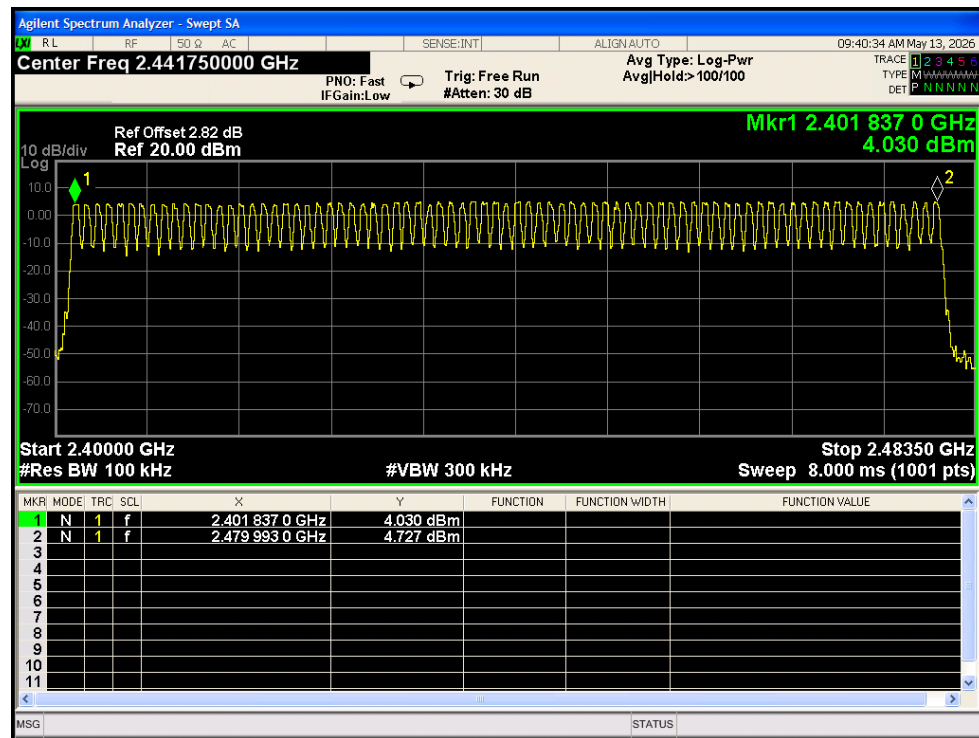


Number of Hopping Channel

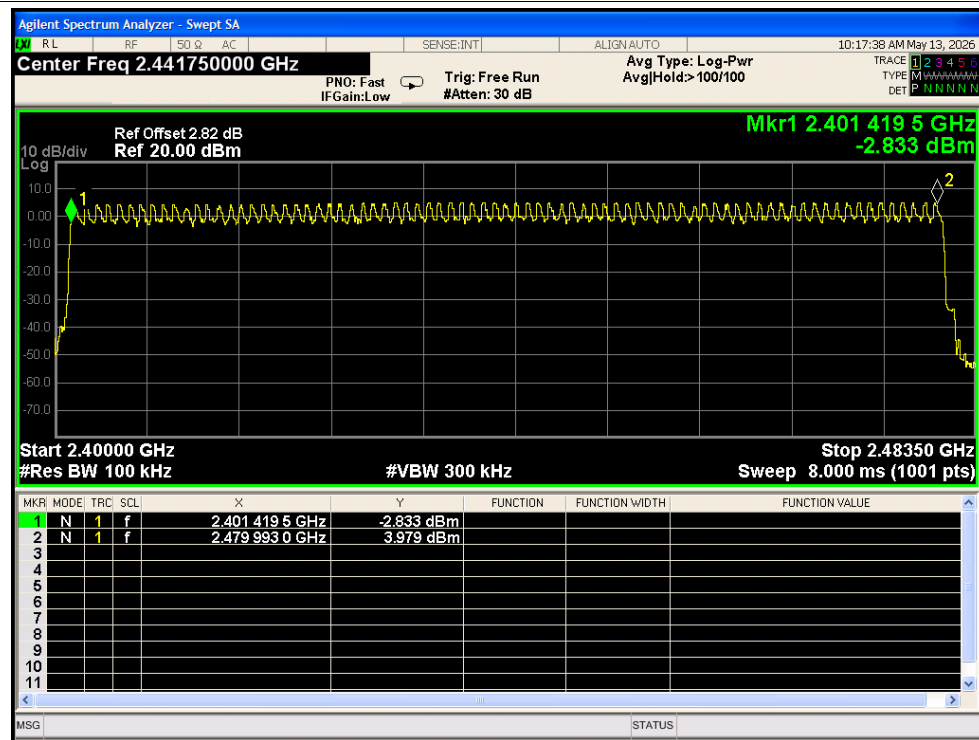
Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH1	79	15	Pass
NVNT	2-DH1	79	15	Pass
NVNT	3-DH1	79	15	Pass

Test Graphs

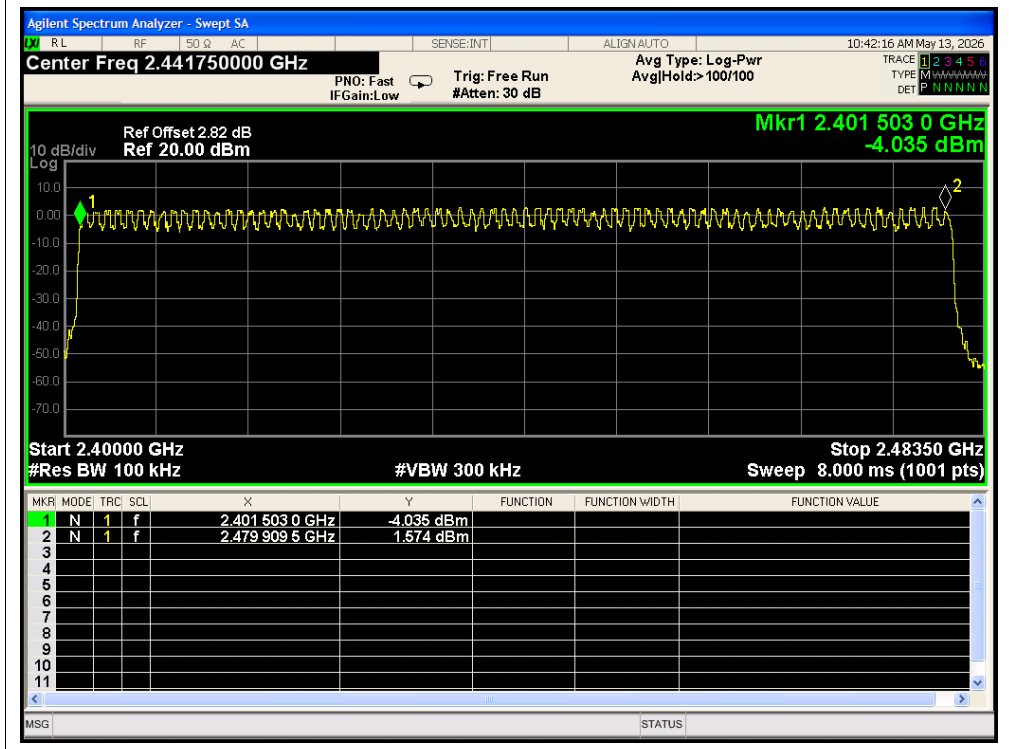
Hopping No. NVNT 1-DH1 2441MHz



Hopping No. NVNT 2-DH1 2441MHz



Hopping No. NVNT 3-DH1 2441MHz

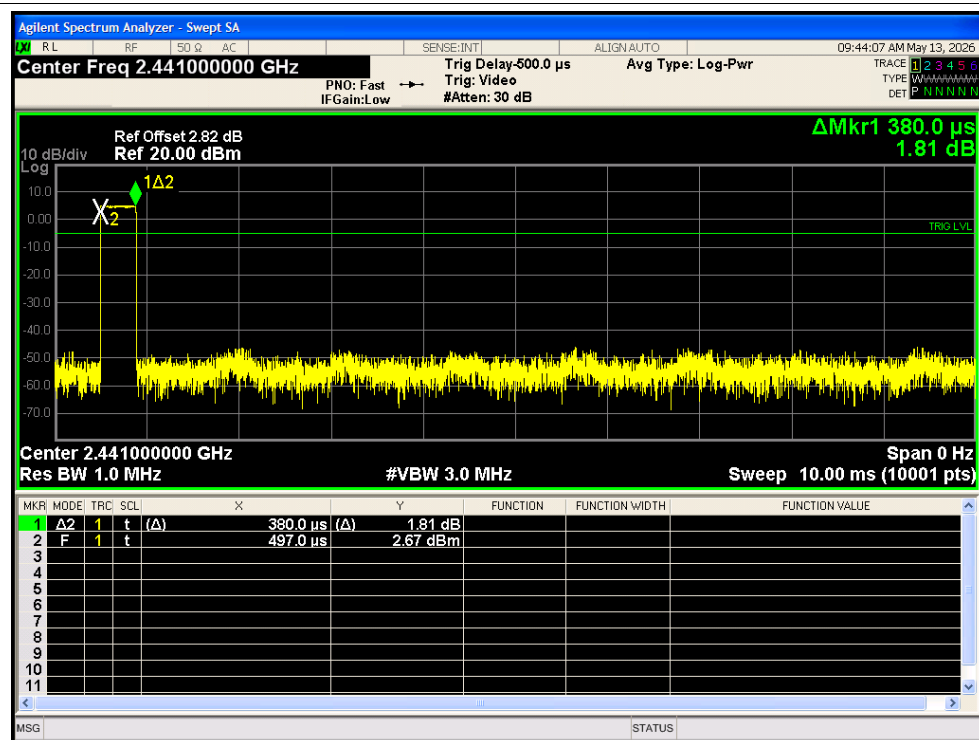


Dwell Time

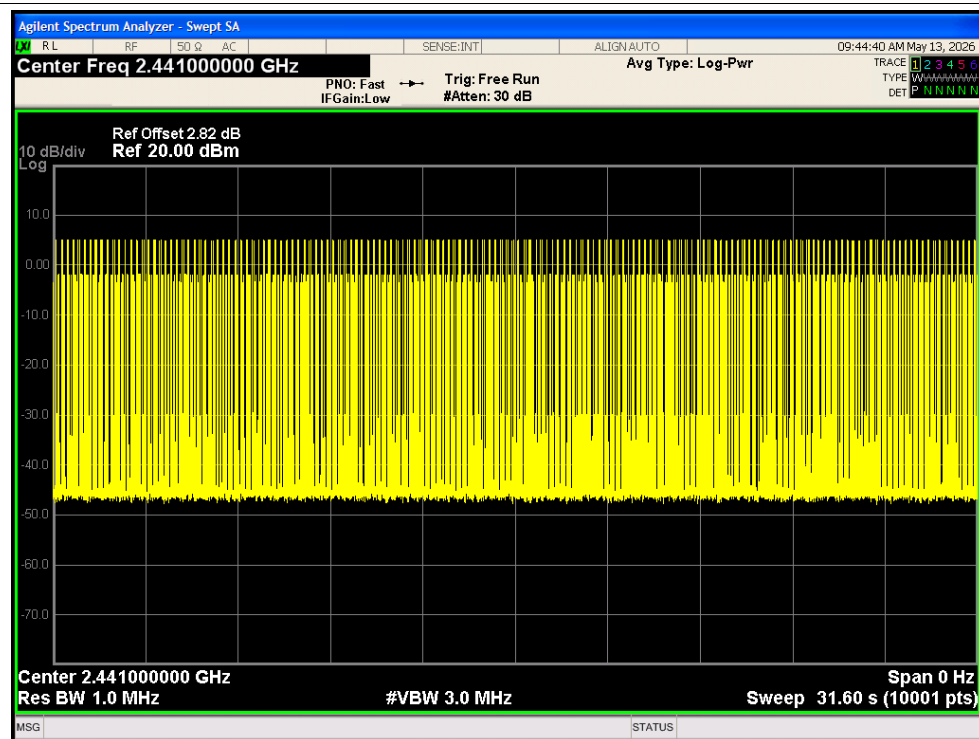
Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	0.38	119.7	315	31600	400	Pass
NVNT	1-DH3	2441	1.64	268.96	164	31600	400	Pass
NVNT	1-DH5	2441	2.89	343.91	119	31600	400	Pass
NVNT	2-DH1	2441	0.39	124.8	320	31600	400	Pass
NVNT	2-DH3	2441	1.64	259.12	158	31600	400	Pass
NVNT	2-DH5	2441	2.89	338.13	117	31600	400	Pass
NVNT	3-DH1	2441	0.39	124.41	319	31600	400	Pass
NVNT	3-DH3	2441	1.64	260.76	159	31600	400	Pass
NVNT	3-DH5	2441	2.89	283.22	98	31600	400	Pass

Test Graphs

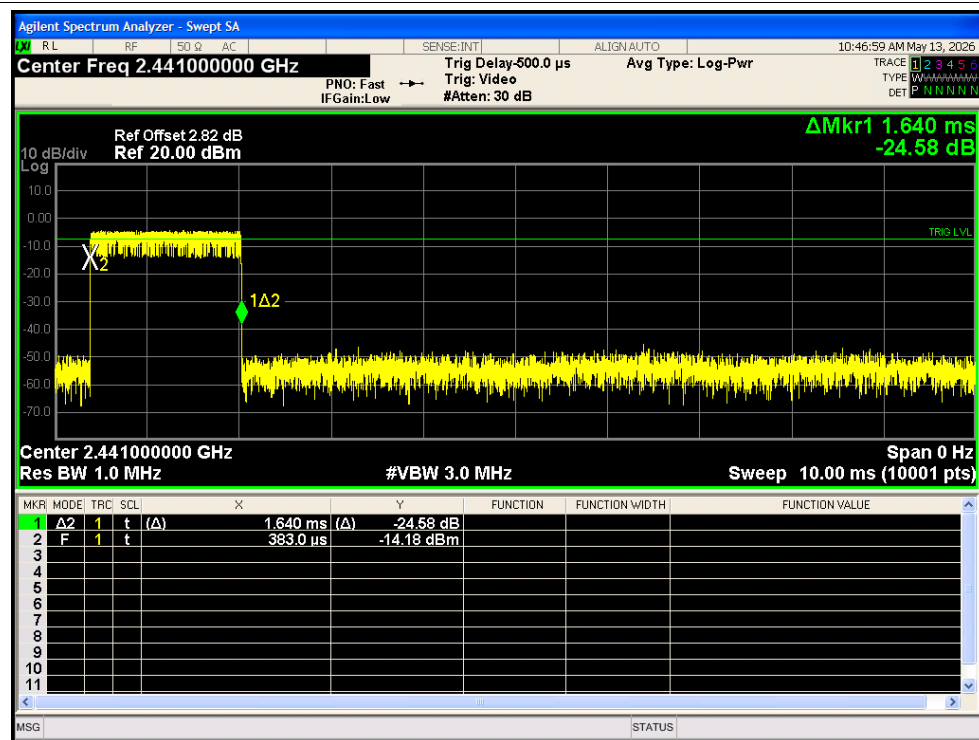
Dwell NVNT 1-DH1 2441MHz One Burst



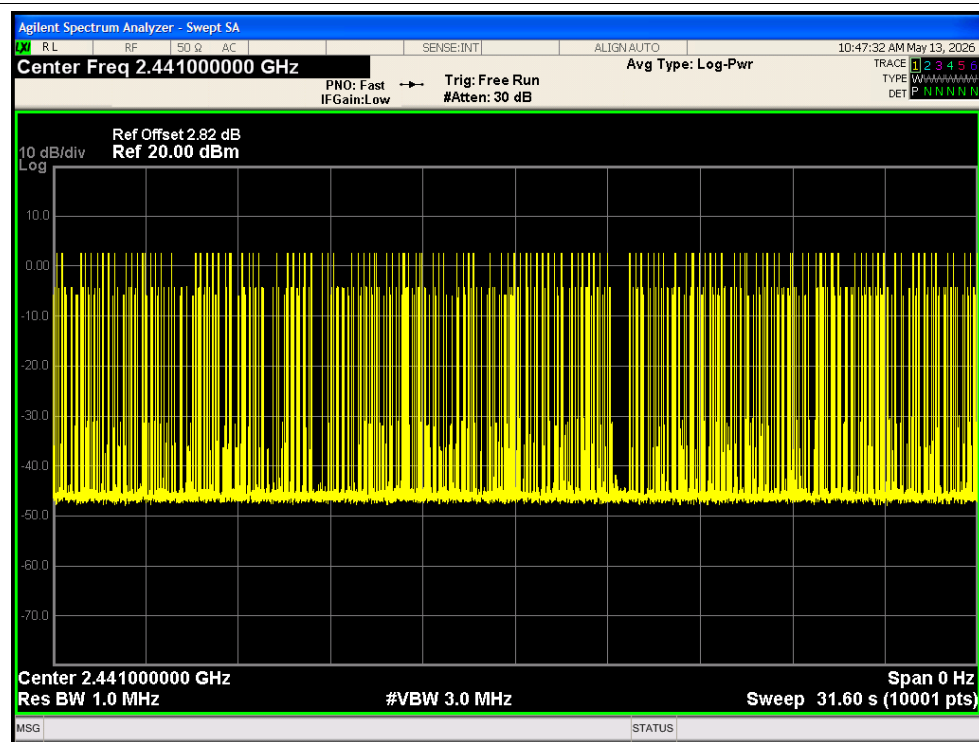
Dwell NVNT 1-DH1 2441MHz Accumulated



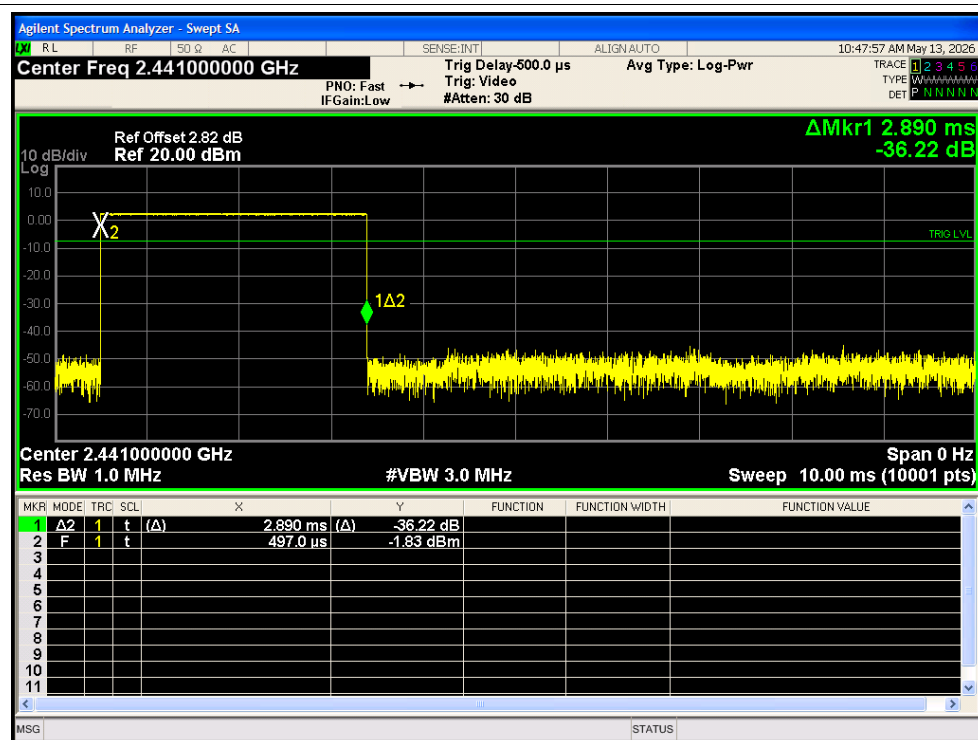
Dwell NVNT 1-DH3 2441MHz One Burst



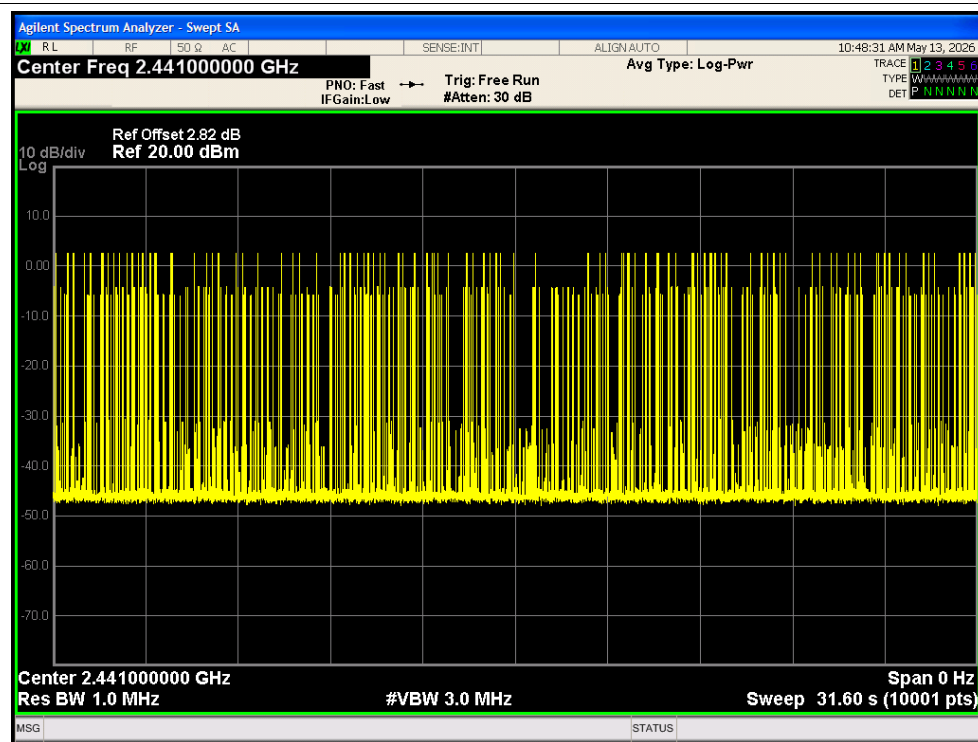
Dwell NVNT 1-DH3 2441MHz Accumulated



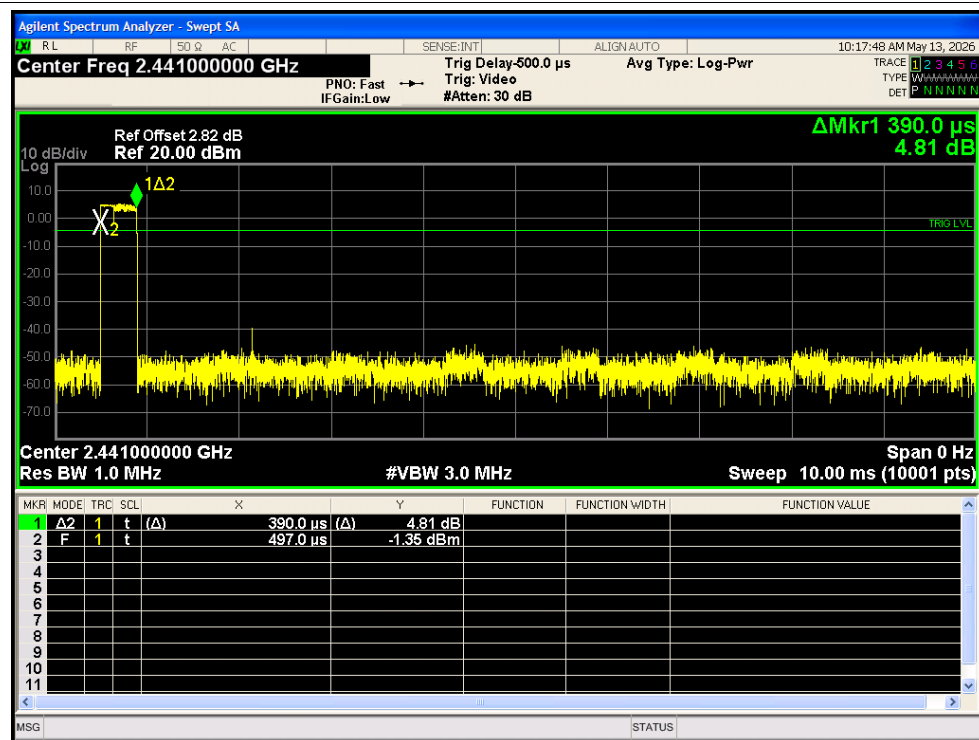
Dwell NVNT 1-DH5 2441MHz One Burst



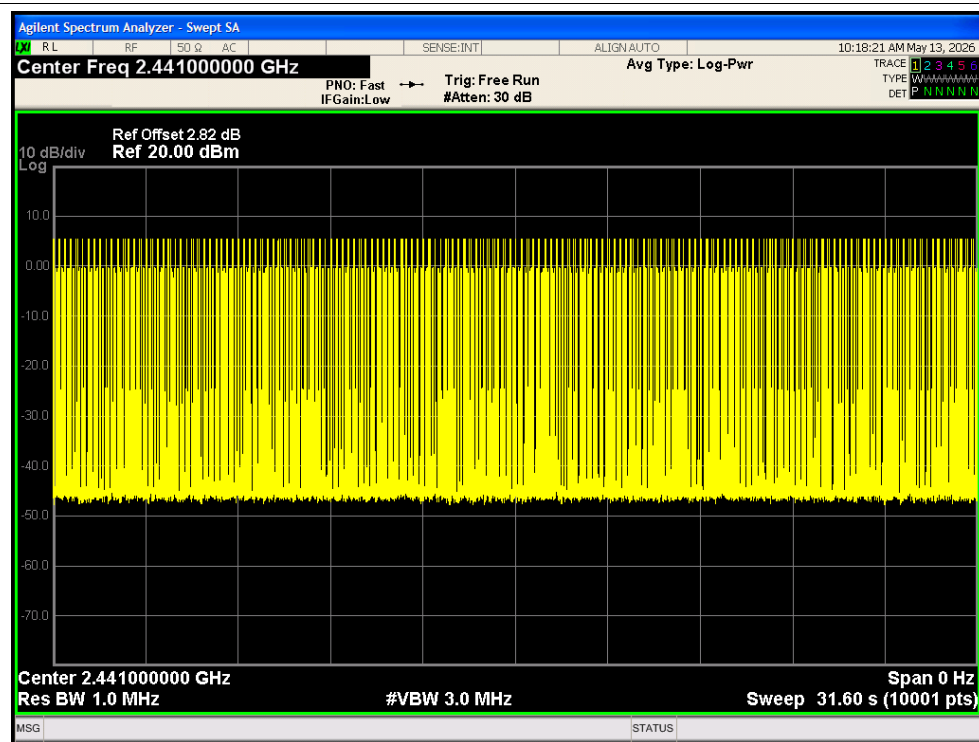
Dwell NVNT 1-DH5 2441MHz Accumulated



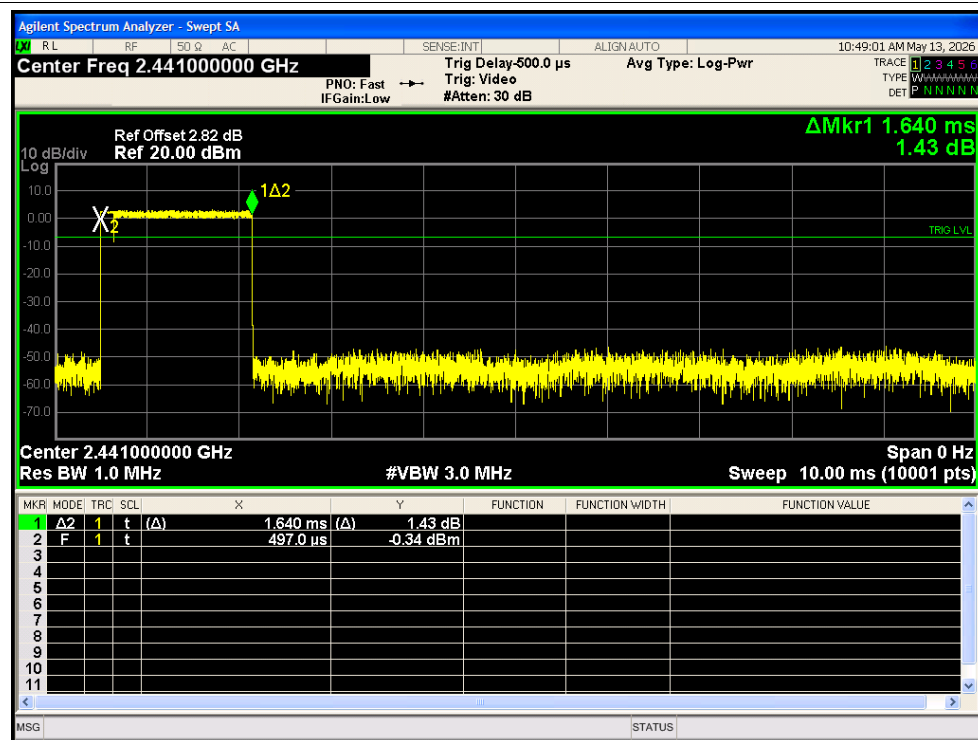
Dwell NVNT 2-DH1 2441MHz One Burst



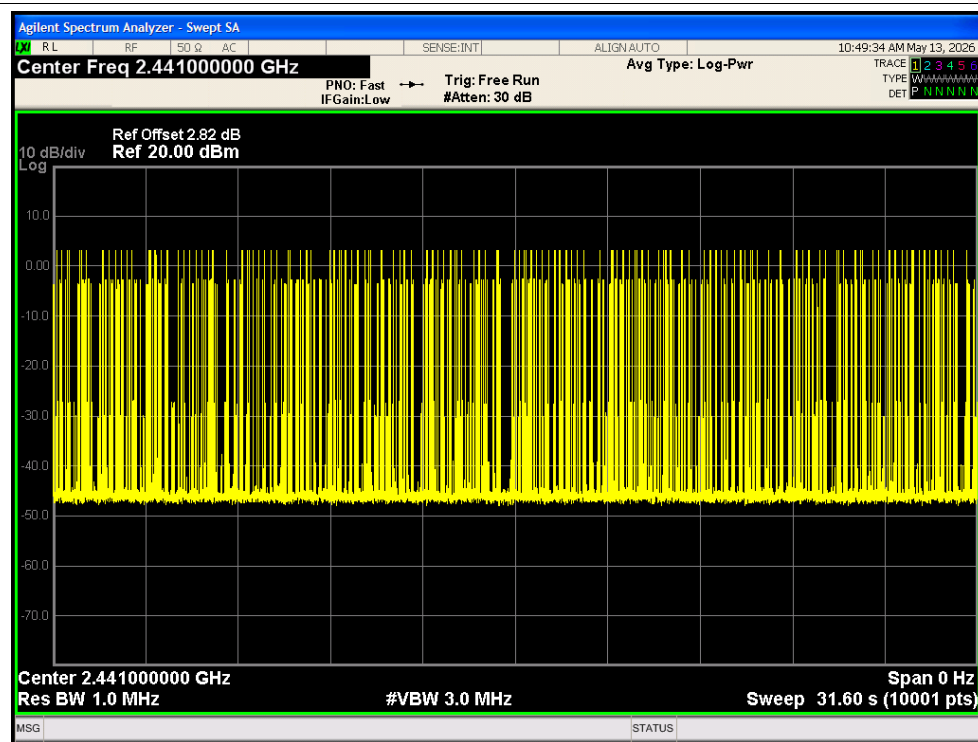
Dwell NVNT 2-DH1 2441MHz Accumulated



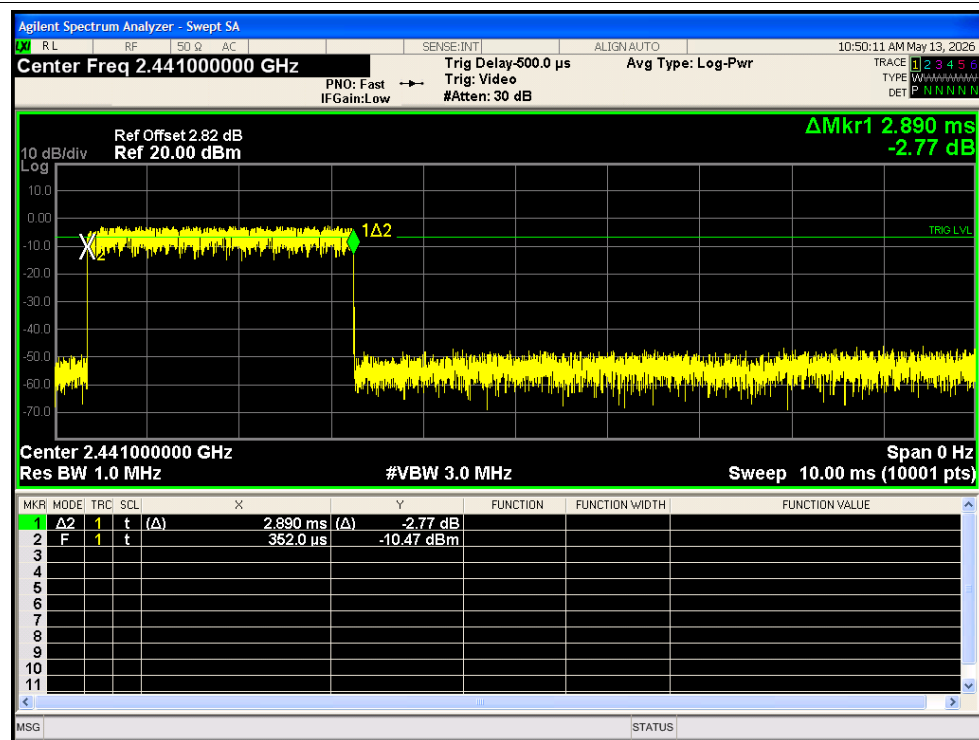
Dwell NVNT 2-DH3 2441MHz One Burst



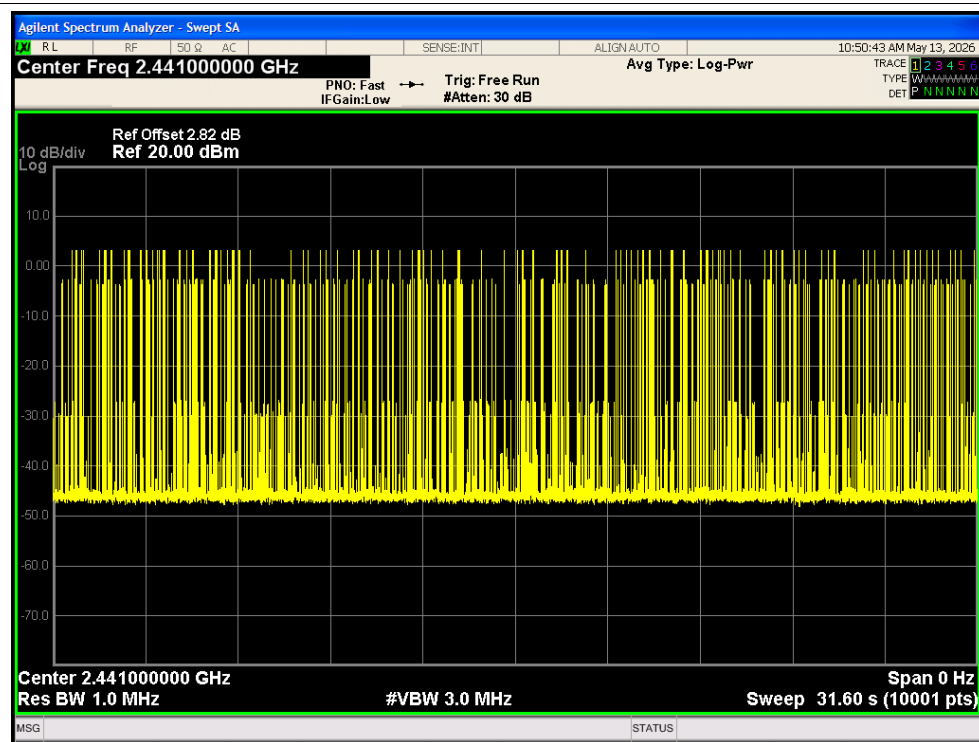
Dwell NVNT 2-DH3 2441MHz Accumulated



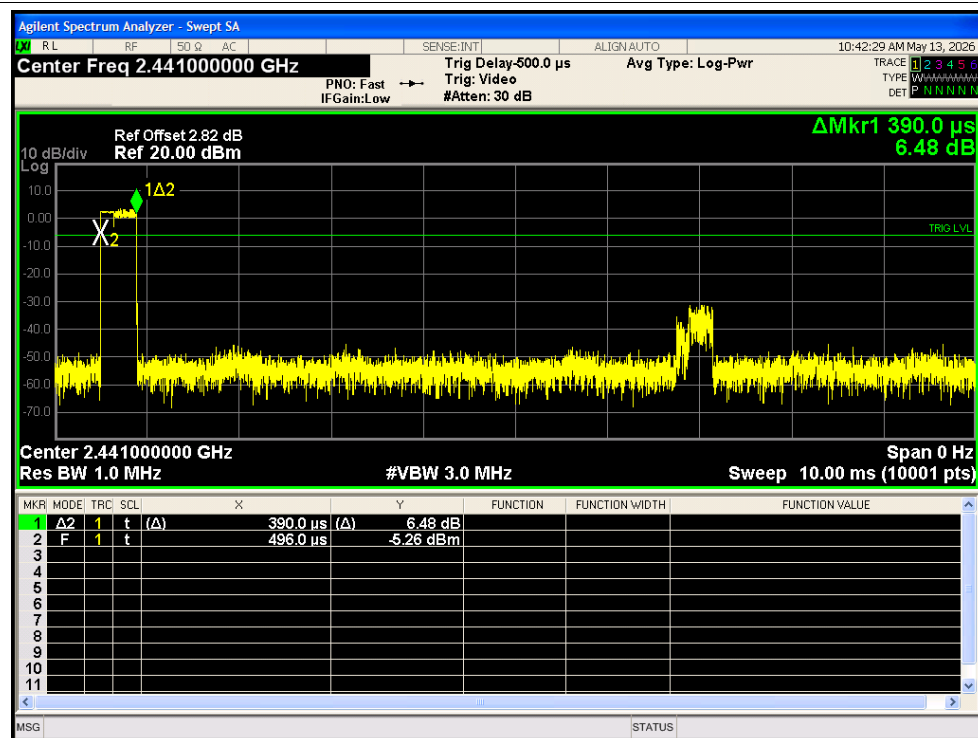
Dwell NVNT 2-DH5 2441MHz One Burst



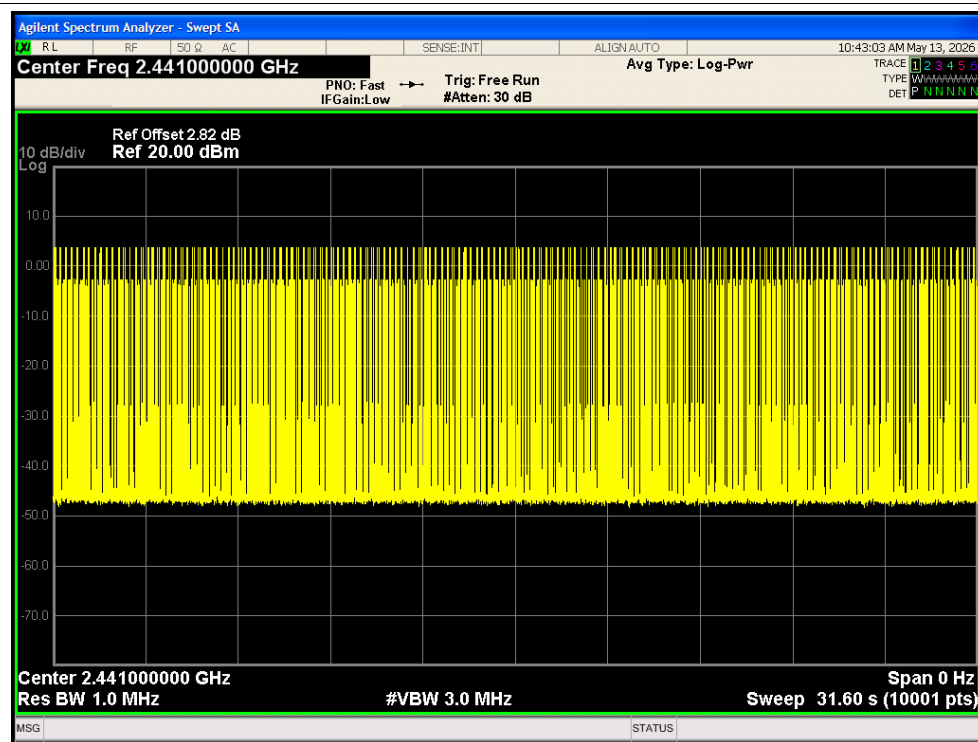
Dwell NVNT 2-DH5 2441MHz Accumulated



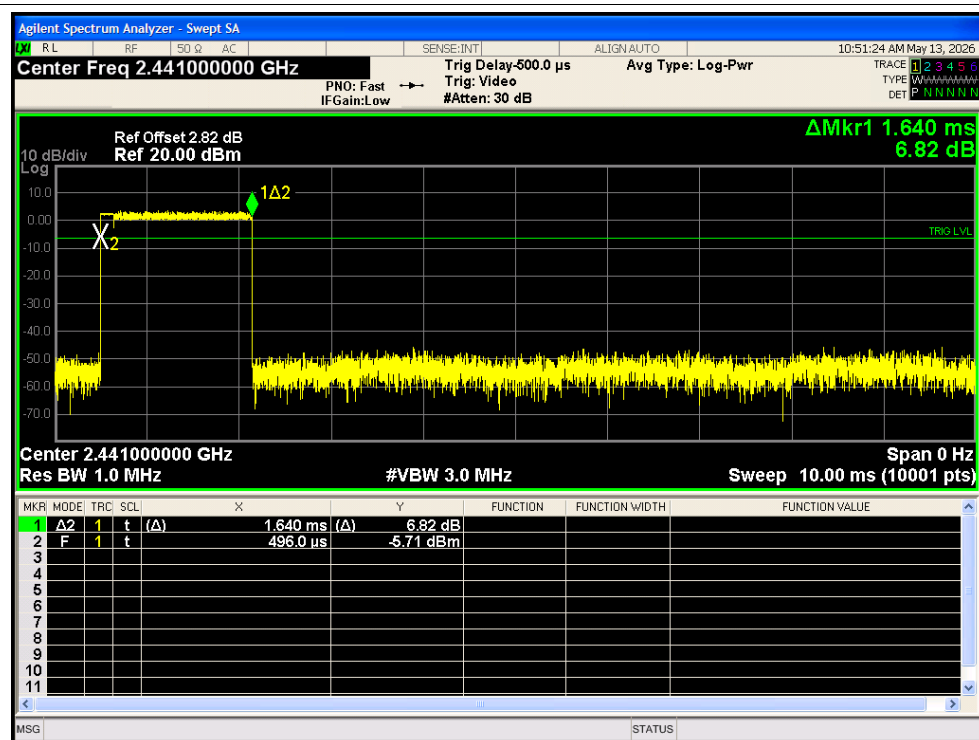
Dwell NVNT 3-DH1 2441MHz One Burst



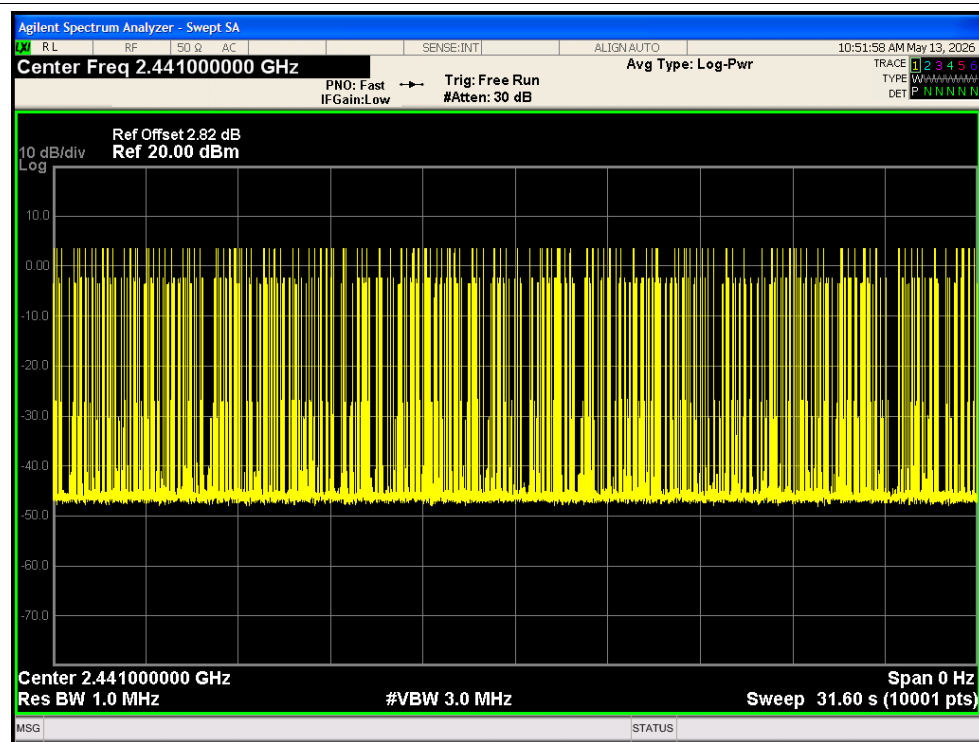
Dwell NVNT 3-DH1 2441MHz Accumulated



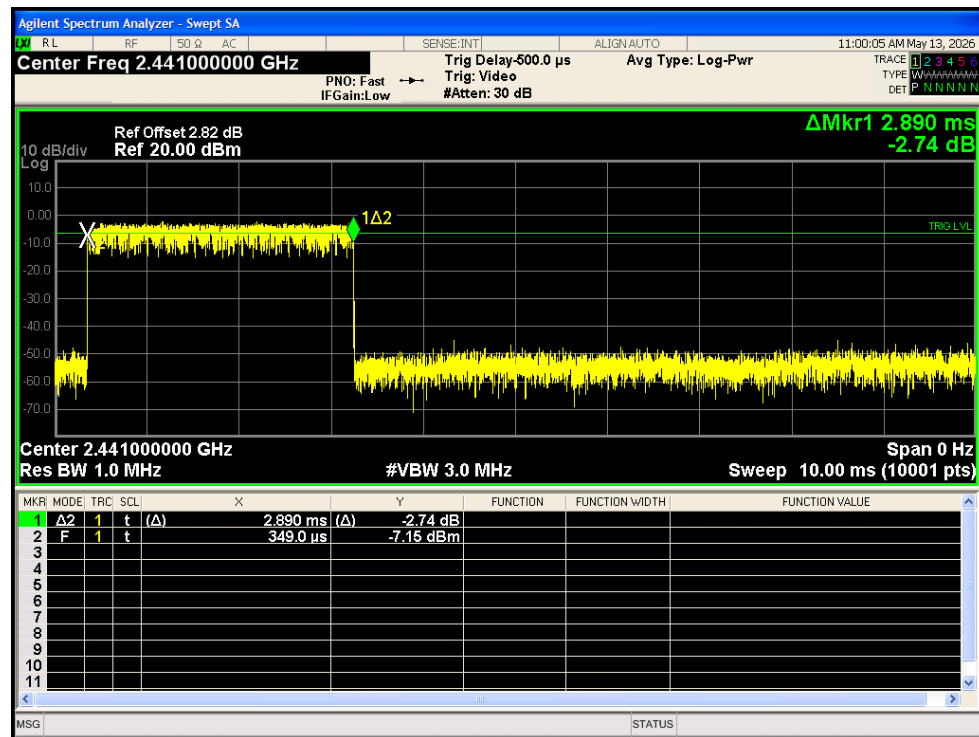
Dwell NVNT 3-DH3 2441MHz One Burst



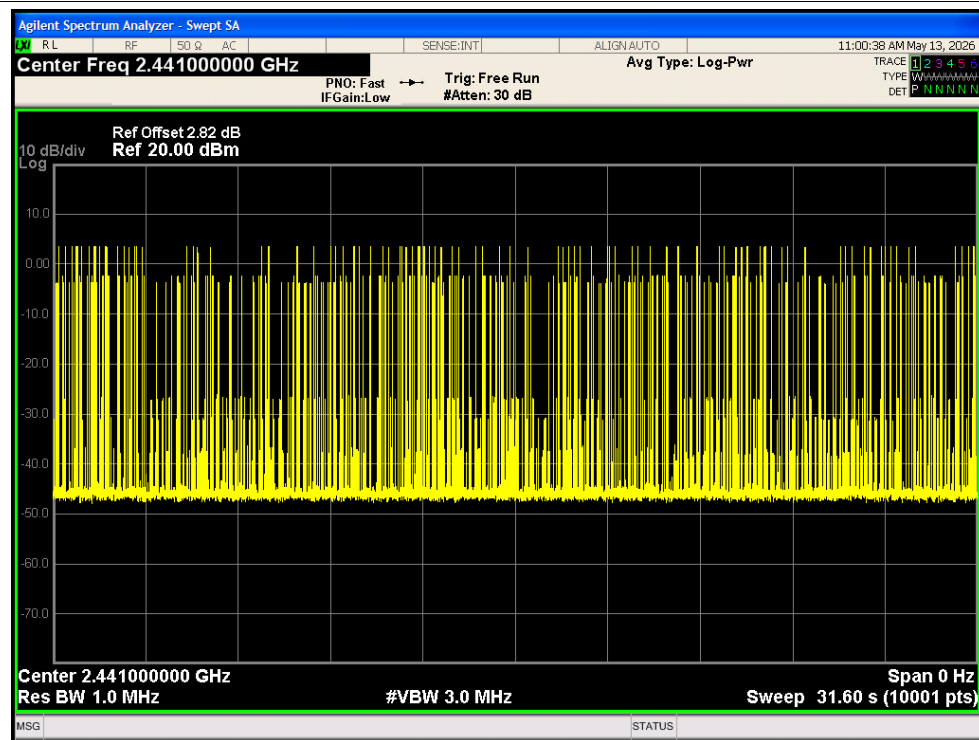
Dwell NVNT 3-DH3 2441MHz Accumulated



Dwell NVNT 3-DH5 2441MHz One Burst



Dwell NVNT 3-DH5 2441MHz Accumulated



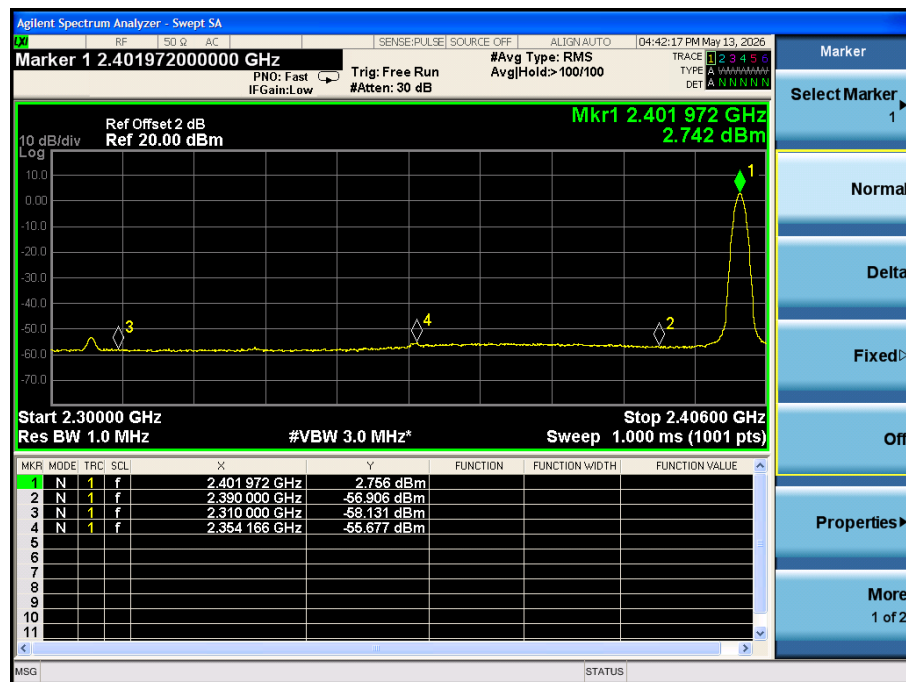
Emissions in Restricted Bands

Test Mode	Ch	Freq (MHz)	Detector	Freq [MHz]	Result [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
GFSK	Low	2402	AV	2310.000	-58.13	2.338	0.99	40.398	≤54	PASS
			AV	2354.166	-55.68	2.338	0.99	42.848	≤54	PASS
			AV	2390.000	-56.91	2.338	0.99	41.618	≤54	PASS
			Peak	2310.000	-48.36	2.338	0	49.178	≤74	PASS
			Peak	2354.378	-44.01	2.338	0	53.528	≤74	PASS
			Peak	2390.000	-46.01	2.338	0	51.528	≤74	PASS
	High	2480	AV	2483.500	-55.28	2.338	1.00	43.258	≤54	PASS
			AV	2490.700	-57.37	2.338	1.00	41.168	≤54	PASS
			AV	2500.000	-56.67	2.338	1.00	41.868	≤54	PASS
			Peak	2483.500	-39.23	2.338	0	58.308	≤74	PASS
			Peak	2487.000	-43.20	2.338	0	54.338	≤74	PASS
			Peak	2500.000	-45.90	2.338	0	51.638	≤74	PASS
π /4DQPSK	Low	2402	AV	2310.000	-58.18	2.338	0.98	40.338	≤54	PASS
			AV	2354.272	-55.96	2.338	0.98	42.558	≤54	PASS
			AV	2390.000	-57.38	2.338	0.98	41.138	≤54	PASS
			Peak	2310.000	-47.68	2.338	0	49.858	≤74	PASS
			Peak	2357.452	-44.19	2.338	0	53.348	≤74	PASS
			Peak	2390.000	-46.12	2.338	0	51.418	≤74	PASS
	High	2480	AV	2483.500	-56.03	2.338	0.98	42.488	≤54	PASS
			AV	2492.600	-56.74	2.338	0.98	41.778	≤54	PASS
			AV	2500.000	-56.38	2.338	0.98	42.138	≤54	PASS
			Peak	2483.500	-40.35	2.338	0	57.188	≤74	PASS
			Peak	2486.500	-42.16	2.338	0	55.378	≤74	PASS
			Peak	2500.000	-45.97	2.338	0	51.568	≤74	PASS
8DPSK	Low	2402	AV	2310.000	-58.73	2.338	0.94	39.748	≤54	PASS
			AV	2353.636	-55.86	2.338	0.94	42.618	≤54	PASS
			AV	2390.000	-57.16	2.338	0.94	41.318	≤54	PASS
			Peak	2310.000	-47.54	2.338	0	49.998	≤74	PASS
			Peak	2359.572	-44.51	2.338	0	53.028	≤74	PASS
			Peak	2390.000	-47.01	2.338	0	50.528	≤74	PASS
	High	2480	AV	2483.500	-56.26	2.338	0.95	42.228	≤54	PASS
			AV	2488.600	-57.51	2.338	0.95	40.978	≤54	PASS
			AV	2500.000	-56.60	2.338	0.95	41.888	≤54	PASS
			Peak	2483.500	-45.46	2.338	0	52.078	≤74	PASS
			Peak	2484.600	-44.46	2.338	0	53.078	≤74	PASS
			Peak	2500.000	-46.68	2.338	0	50.858	≤74	PASS

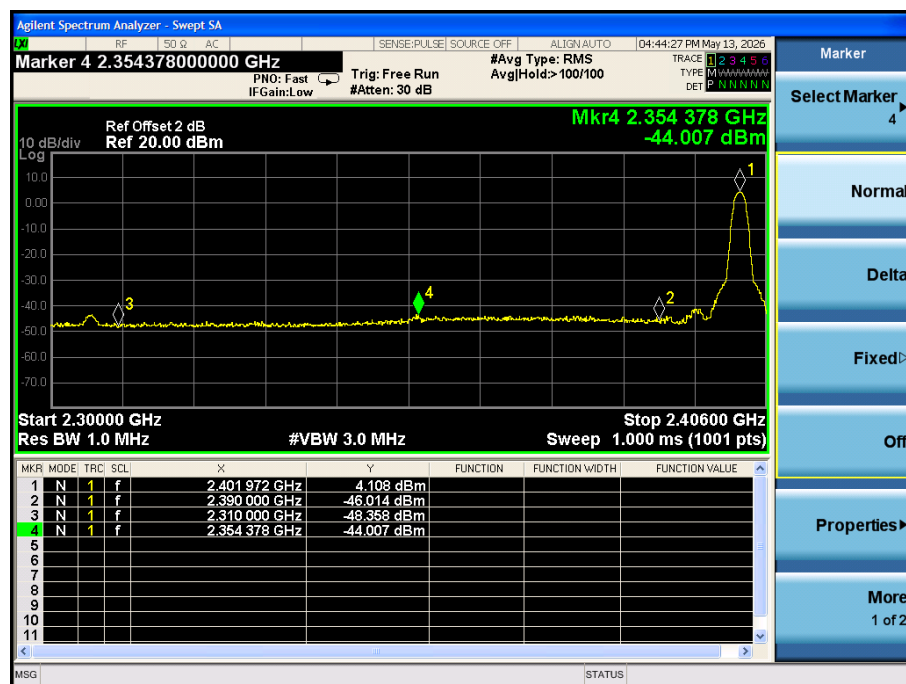
Note: The limit in dBm for average detector is conversion from 54dBuV/m, according to RSS-Gen. The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

NVNT GFSK 2402MHz AV



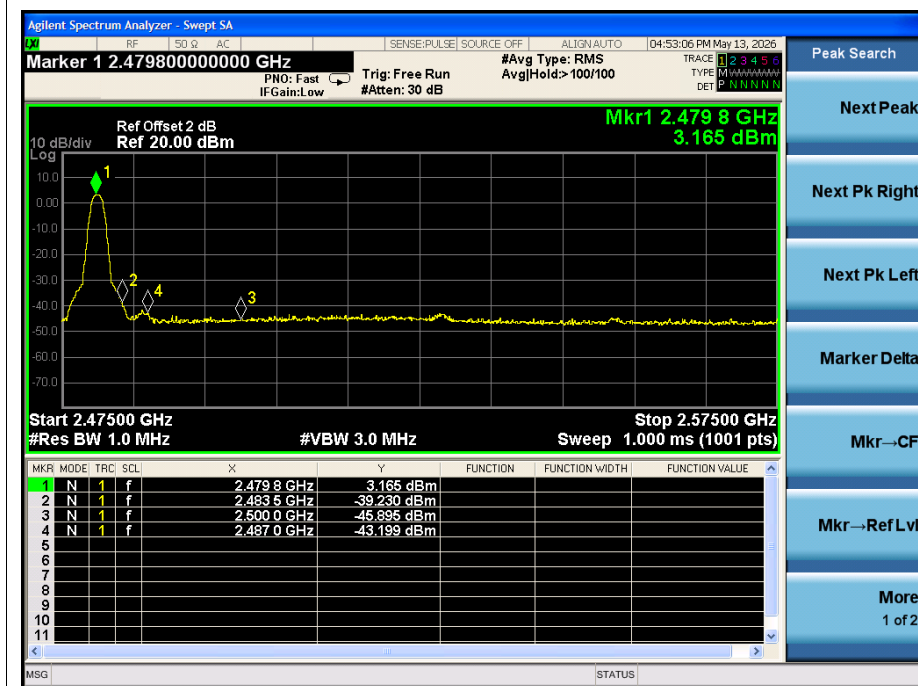
NVNT GFSK 2402MHz PK



NVNT GFSK 2480MHz AV



NVNT GFSK 2480MHz PK

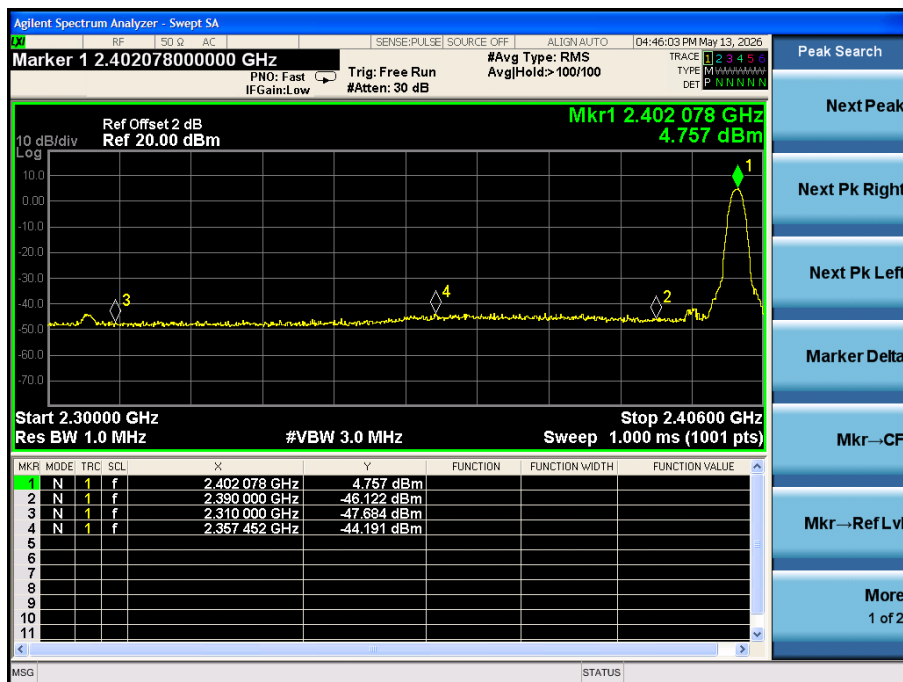


Test Graphs

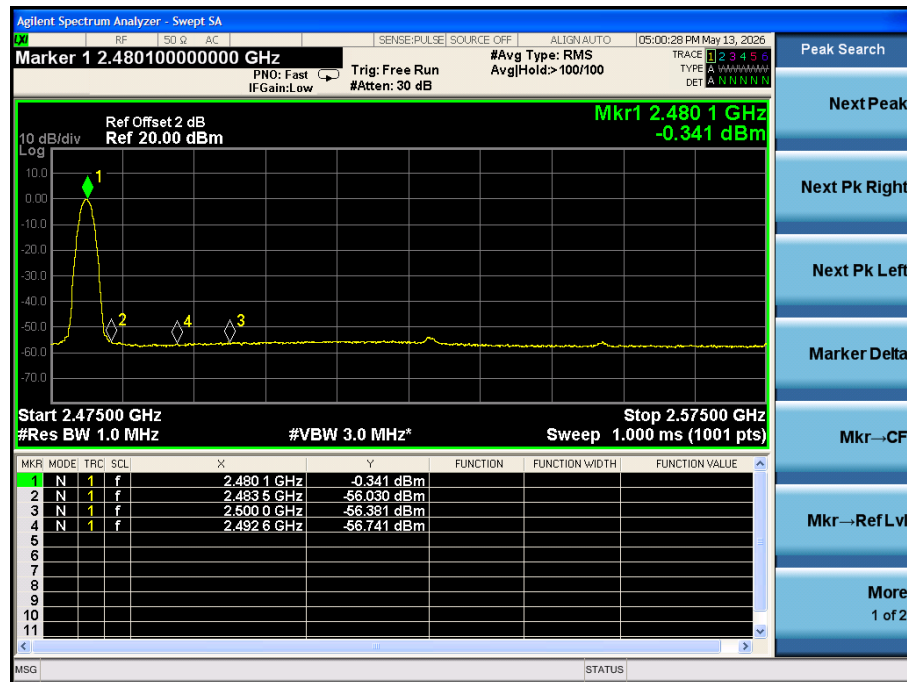
NVNT π /4DQPSK 2402MHz AV



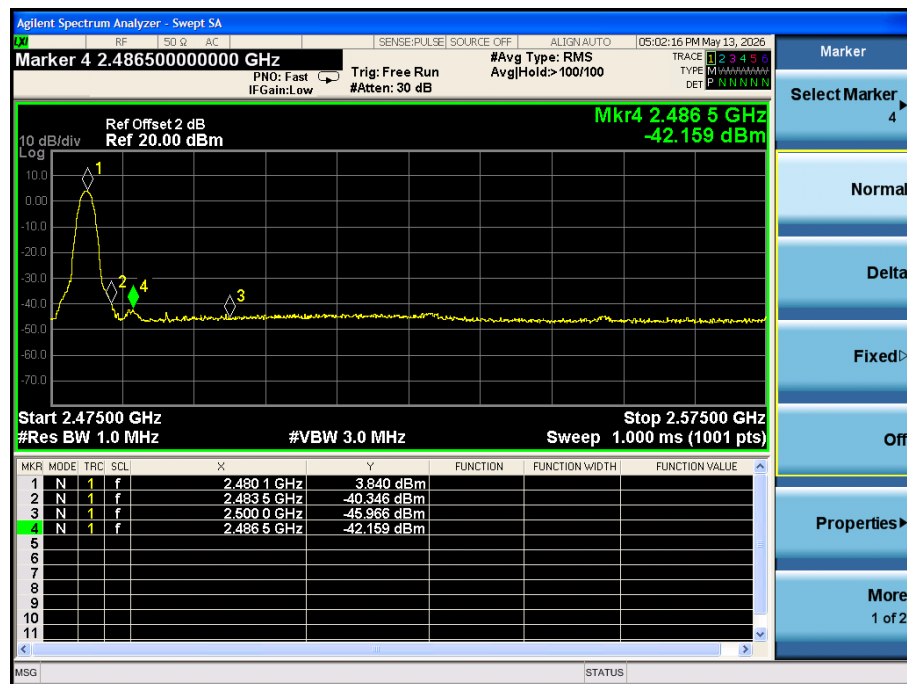
NVNT π /4DQPSK 2402MHz PK



NVNT π /4DQPSK 2480MHz AV

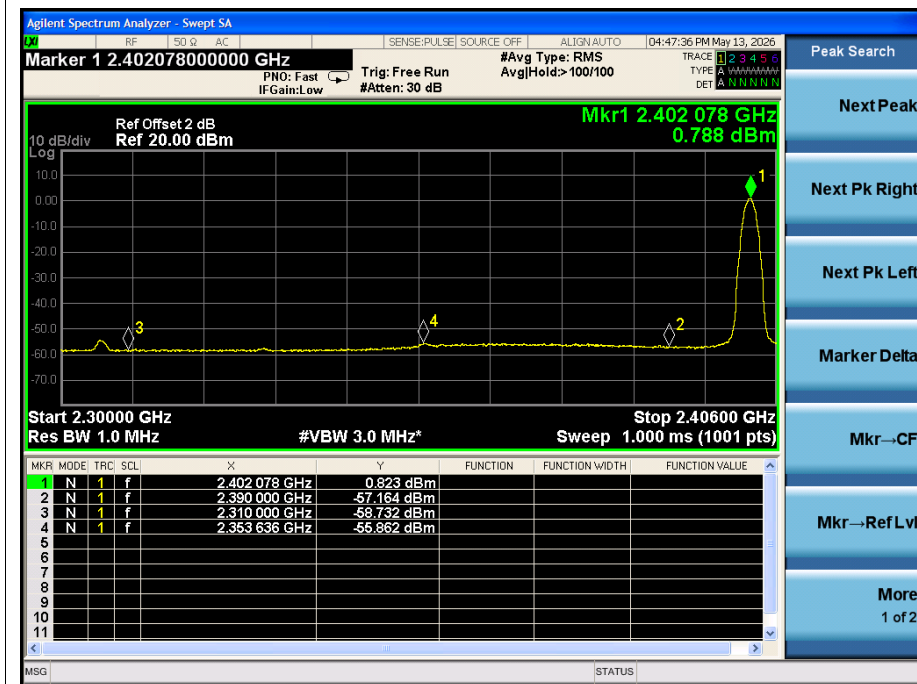


NVNT π /4DQPSK 2480MHz PK

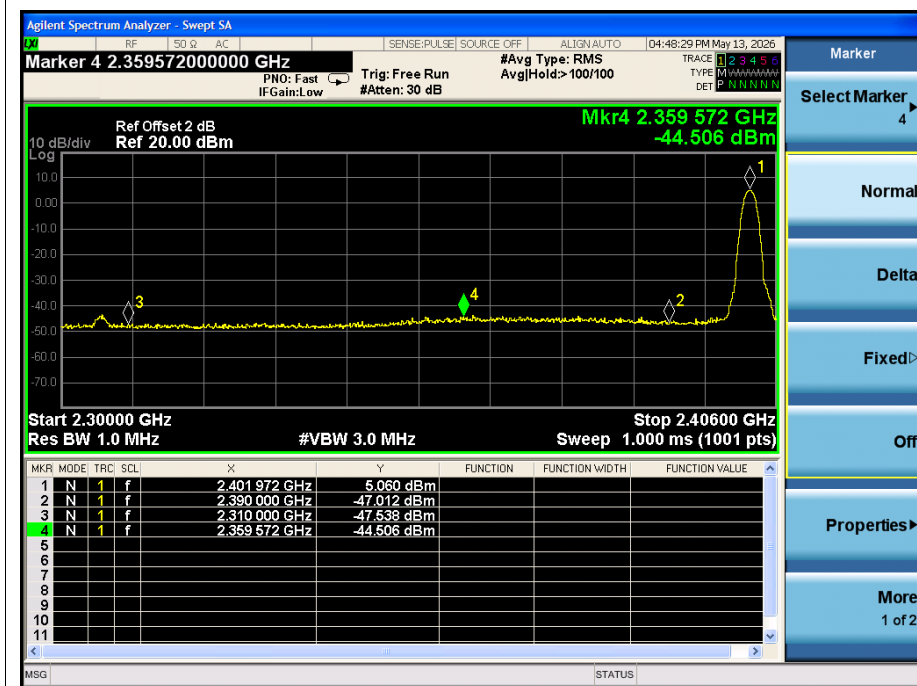


Test Graphs

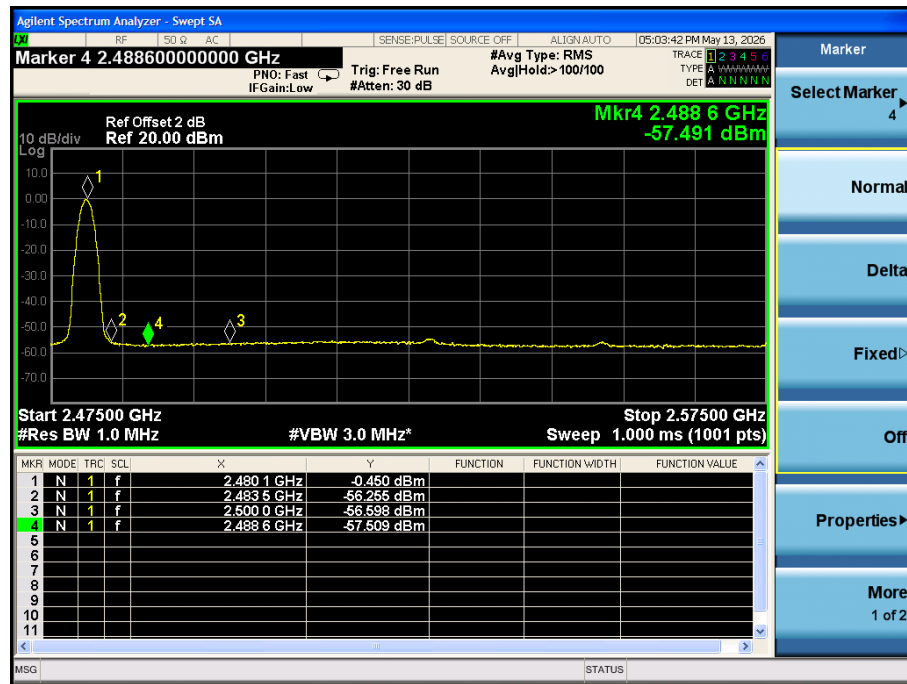
NVNT 8DPSK 2402MHz AV



NVNT 8DPSK 2402MHz PK



NVNT 8DPSK 2480MHz AV



NVNT 8DPSK 2480MHz PK

