Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Portable Karaoke Bluetooth Speaker

Test Model: RM-666PIUS

Environmental Conditions

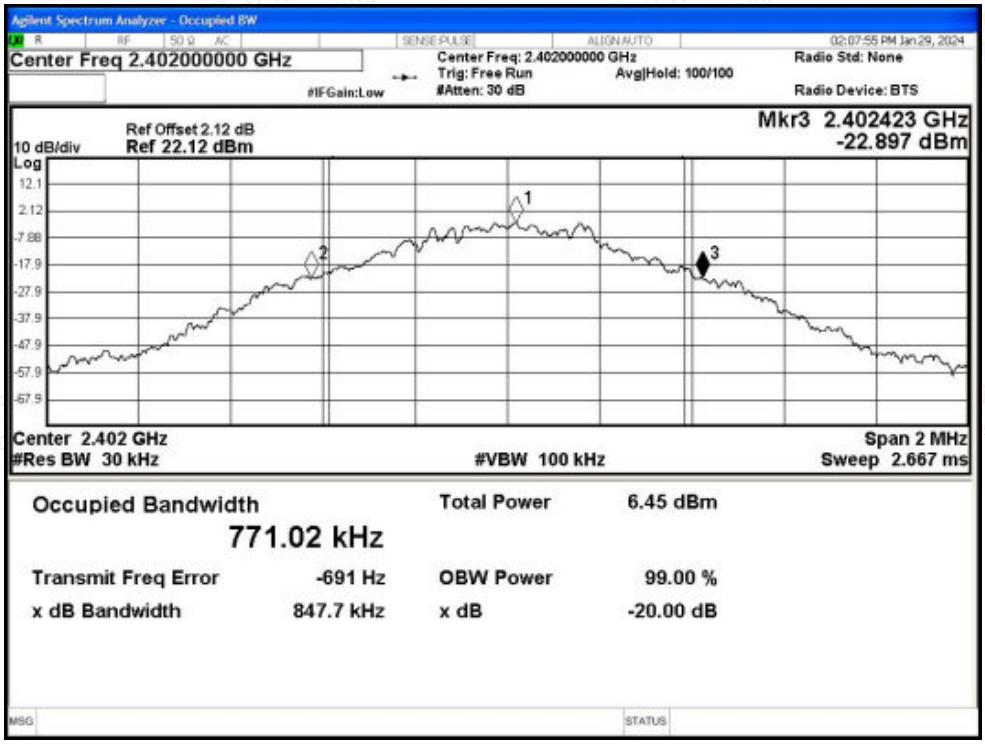
Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng Nick Peng
Supervised by:	Eason Zhou Eason Zhou

A.1 -20dB Bandwidth

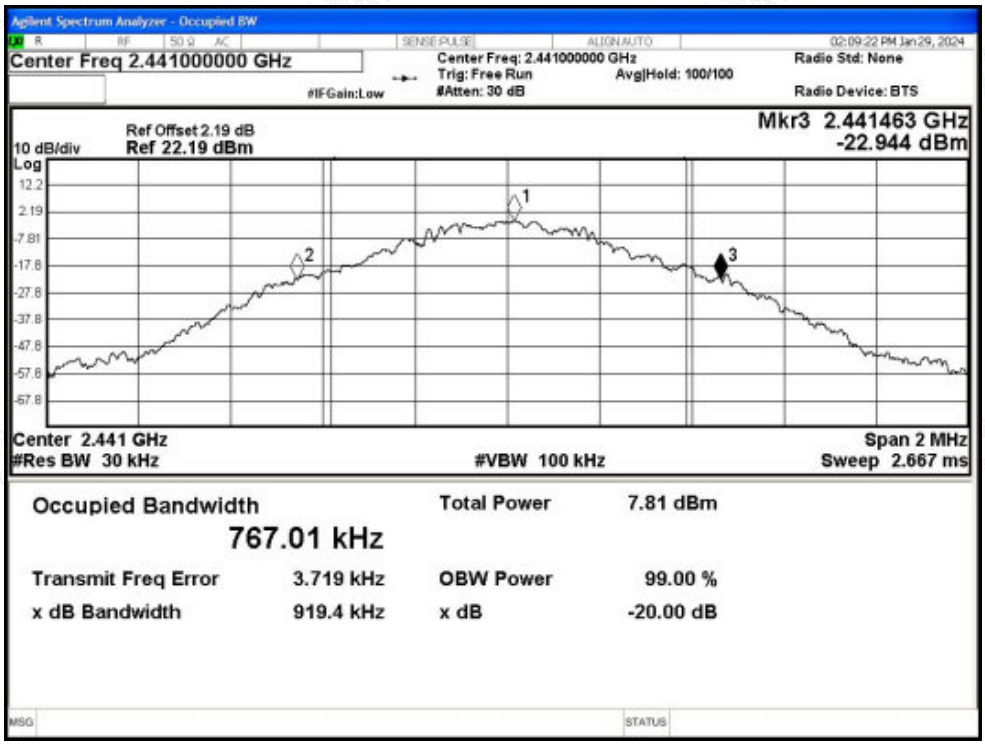
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.848	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.919	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.857	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.307	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.28	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.28	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.296	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.291	N/A	Pass

Test Graphs

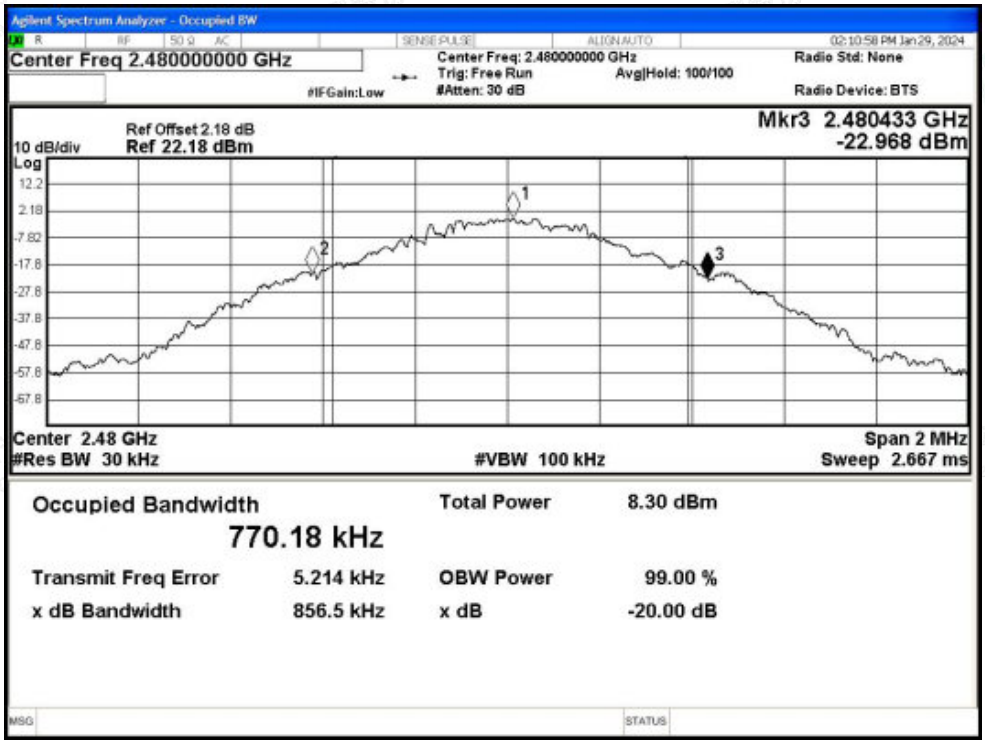
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



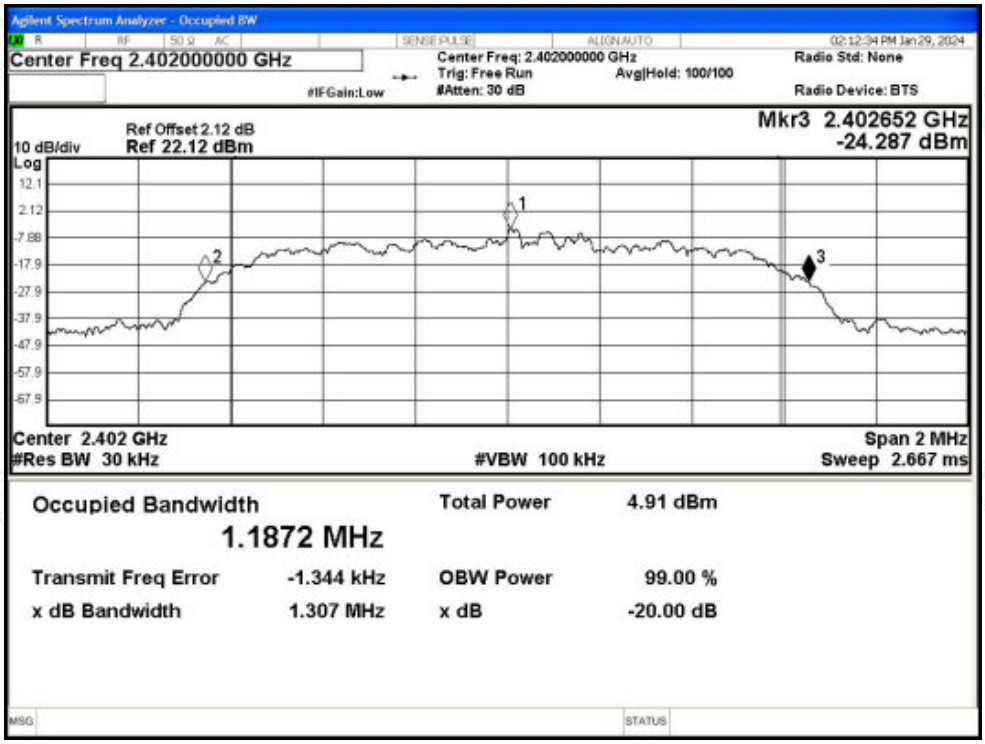
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



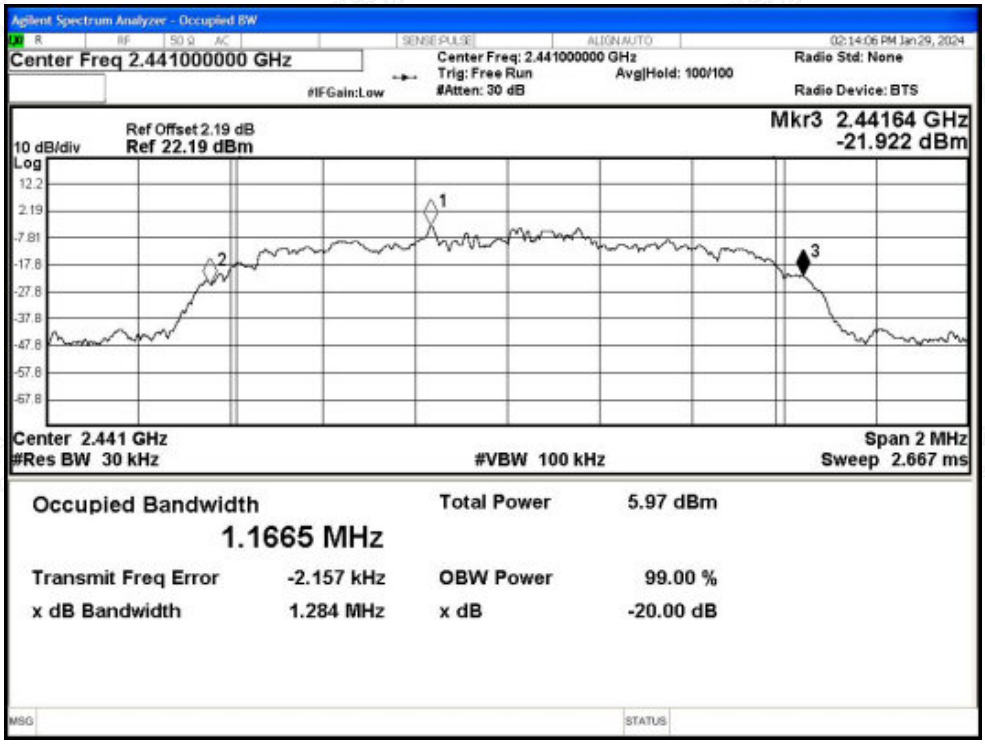
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



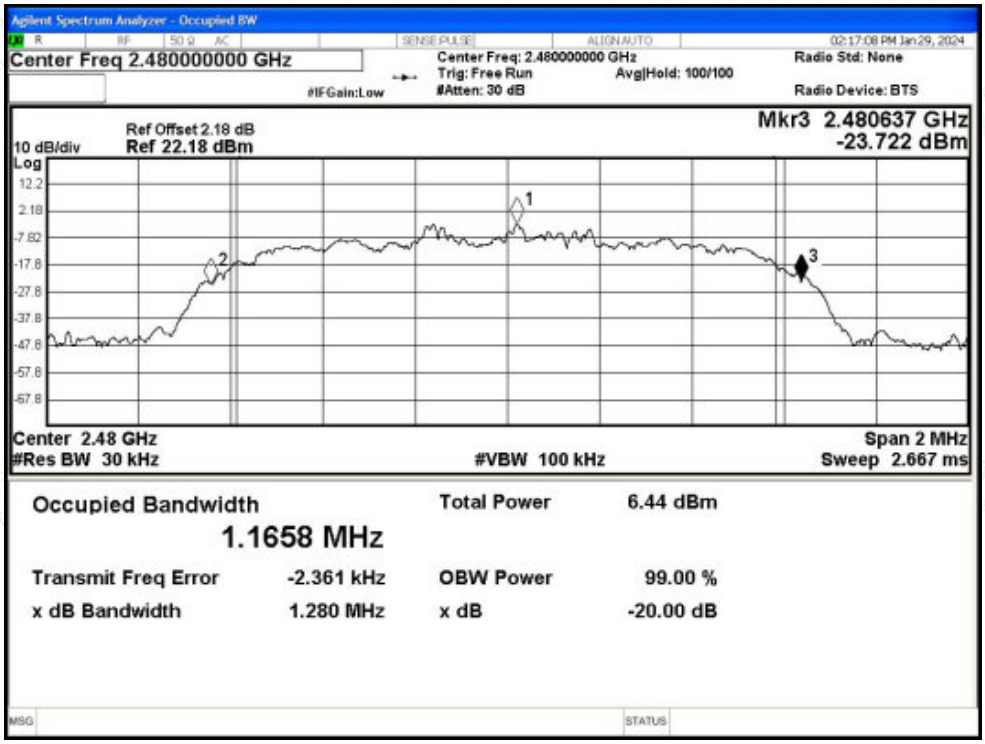
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



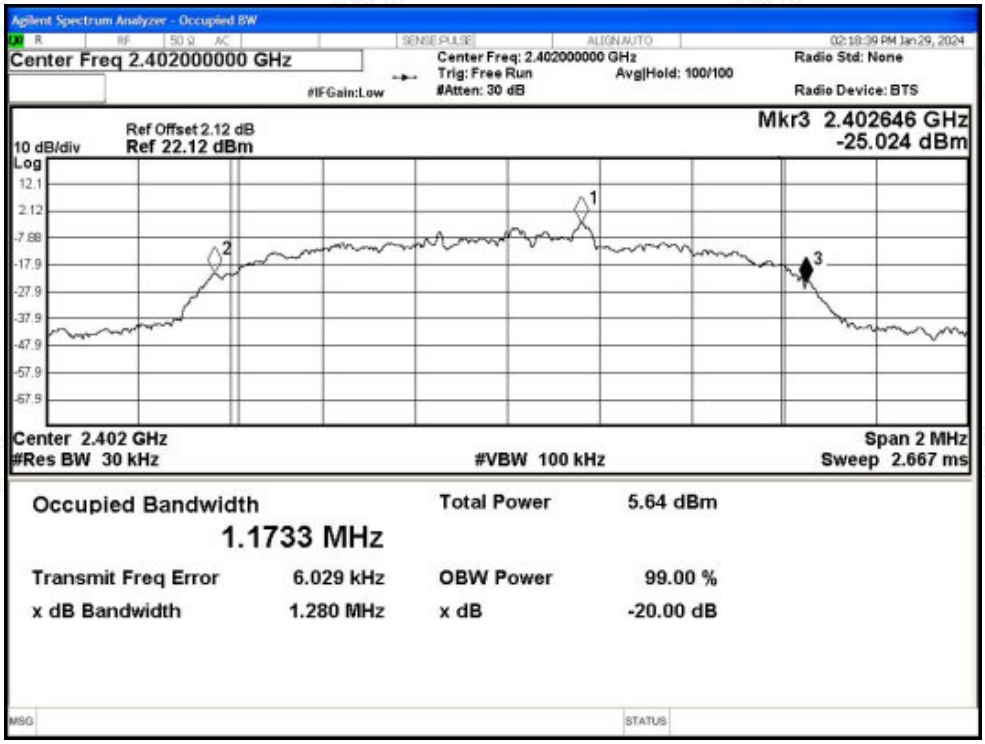
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



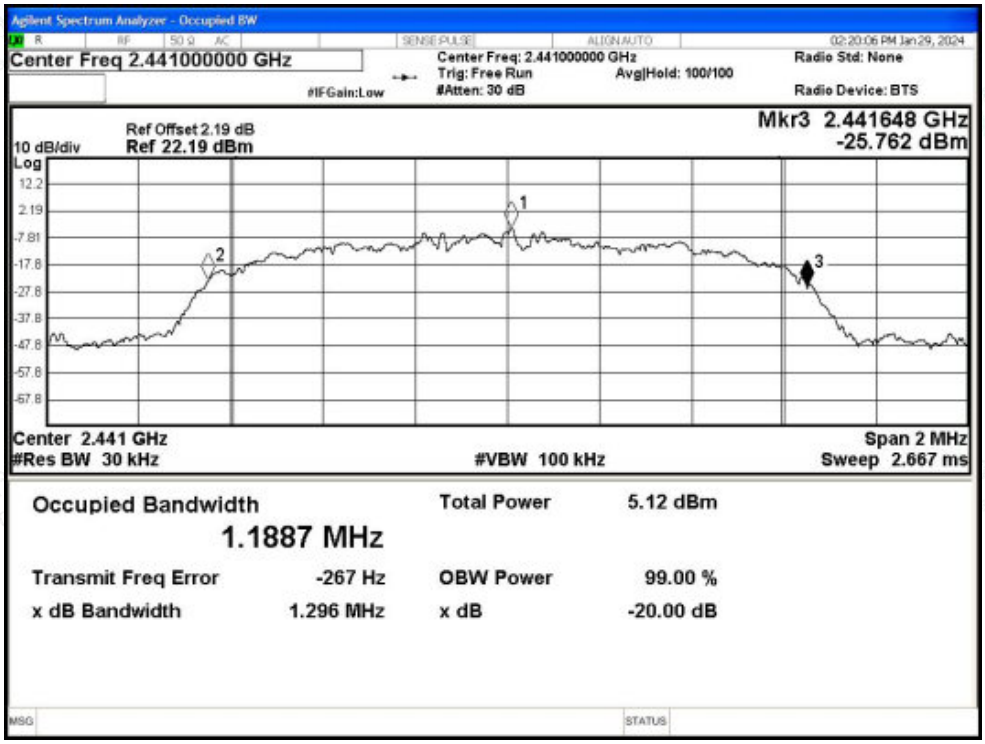
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



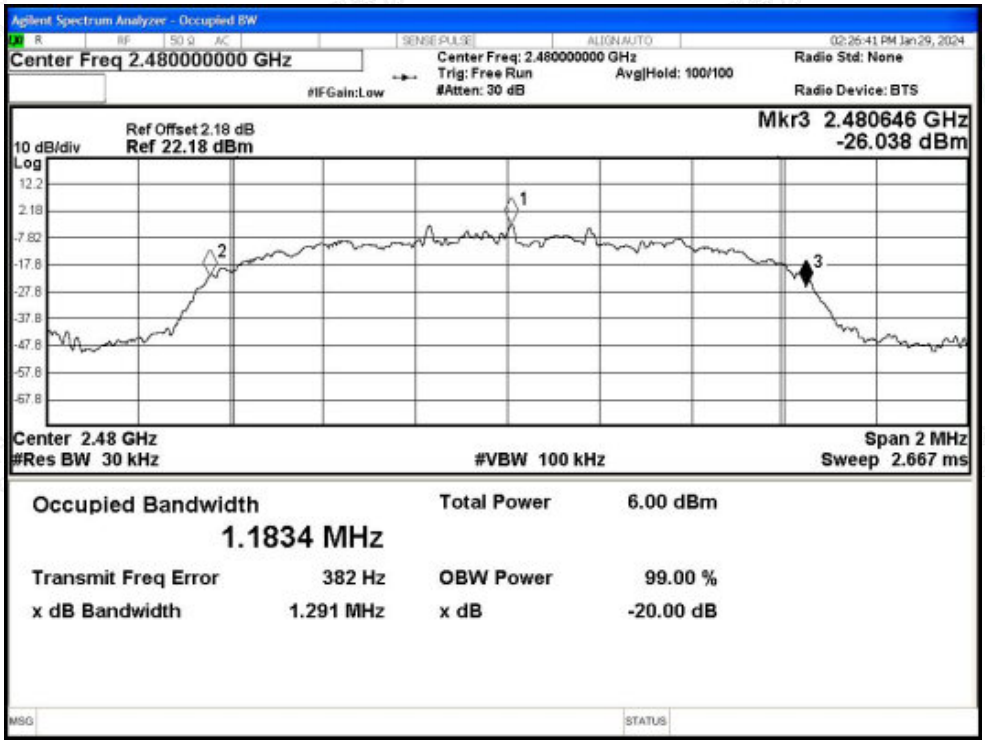
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

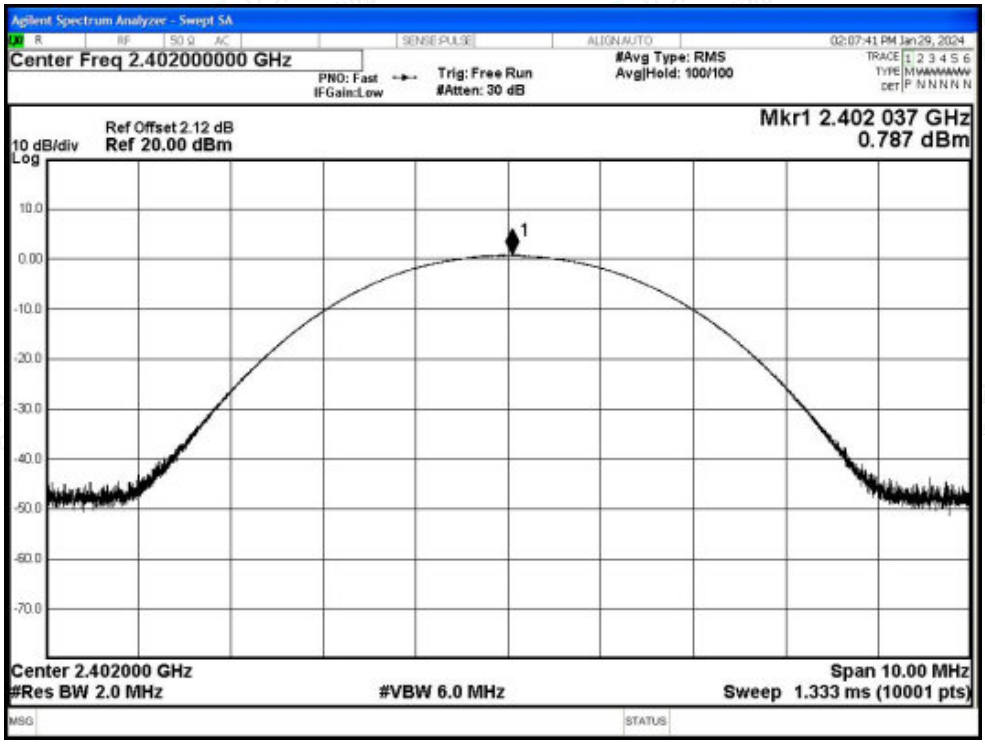


A.2 Maximum Conducted Output Power

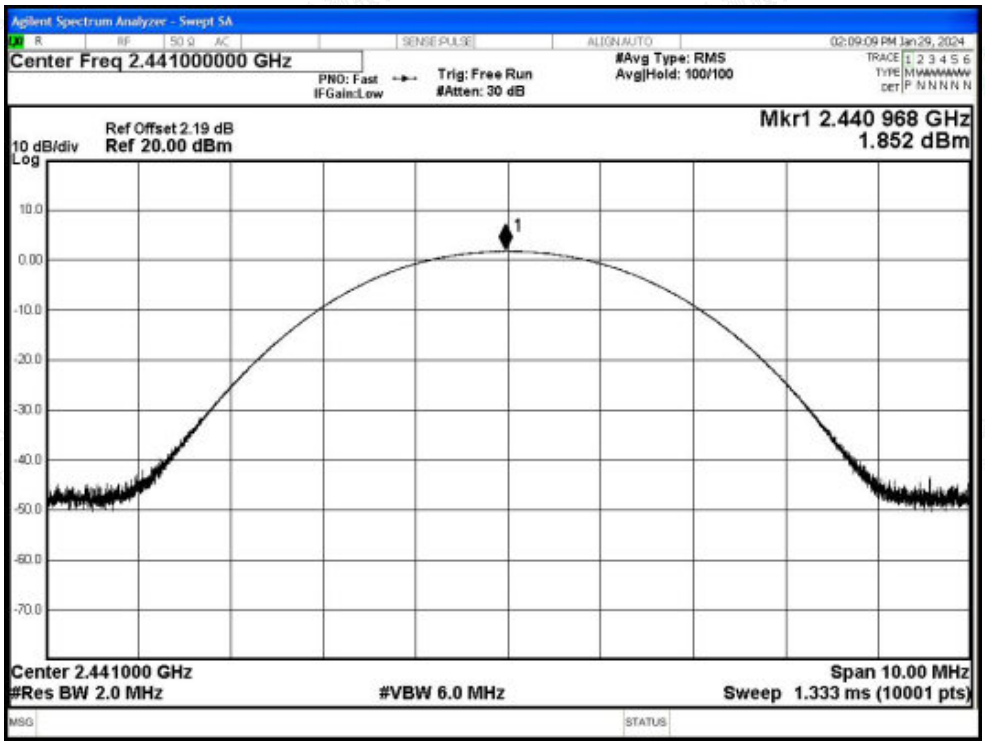
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.79	21	Pass
NVNT	1-DH5	2441	Ant1	1.85	21	Pass
NVNT	1-DH5	2480	Ant1	2.44	21	Pass
NVNT	2-DH5	2402	Ant1	0.24	21	Pass
NVNT	2-DH5	2441	Ant1	1.05	21	Pass
NVNT	2-DH5	2480	Ant1	1.73	21	Pass
NVNT	3-DH5	2402	Ant1	0.41	21	Pass
NVNT	3-DH5	2441	Ant1	0.72	21	Pass
NVNT	3-DH5	2480	Ant1	1.73	21	Pass

Test Graphs

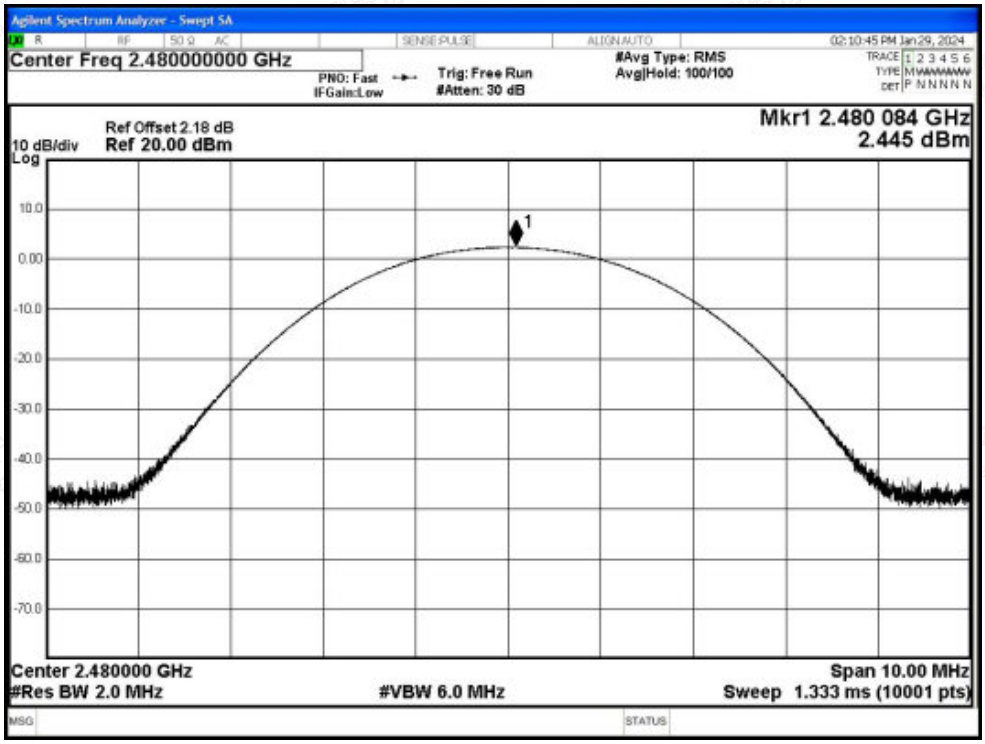
Power NVNT 1-DH5 2402MHz Ant1



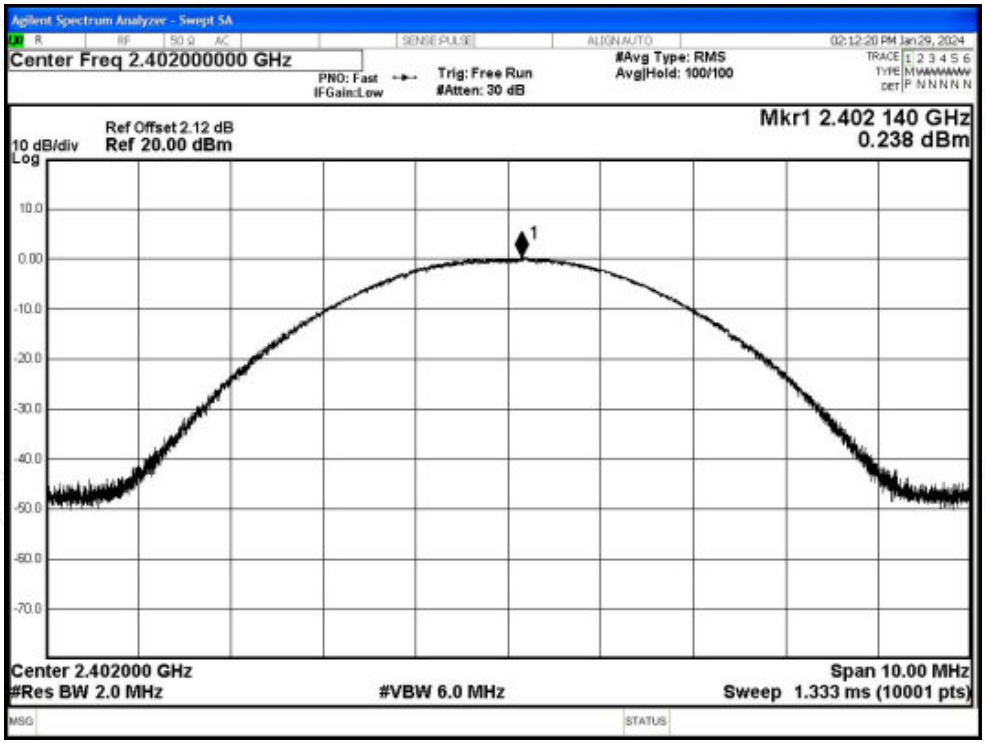
Power NVNT 1-DH5 2441MHz Ant1



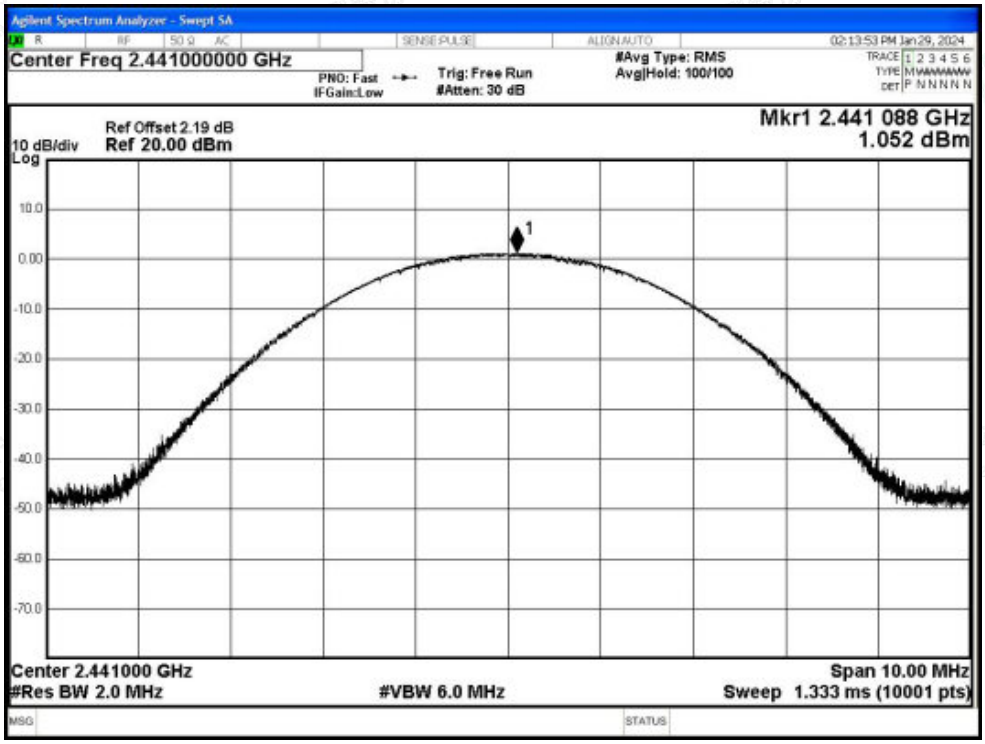
Power NVNT 1-DH5 2480MHz Ant1



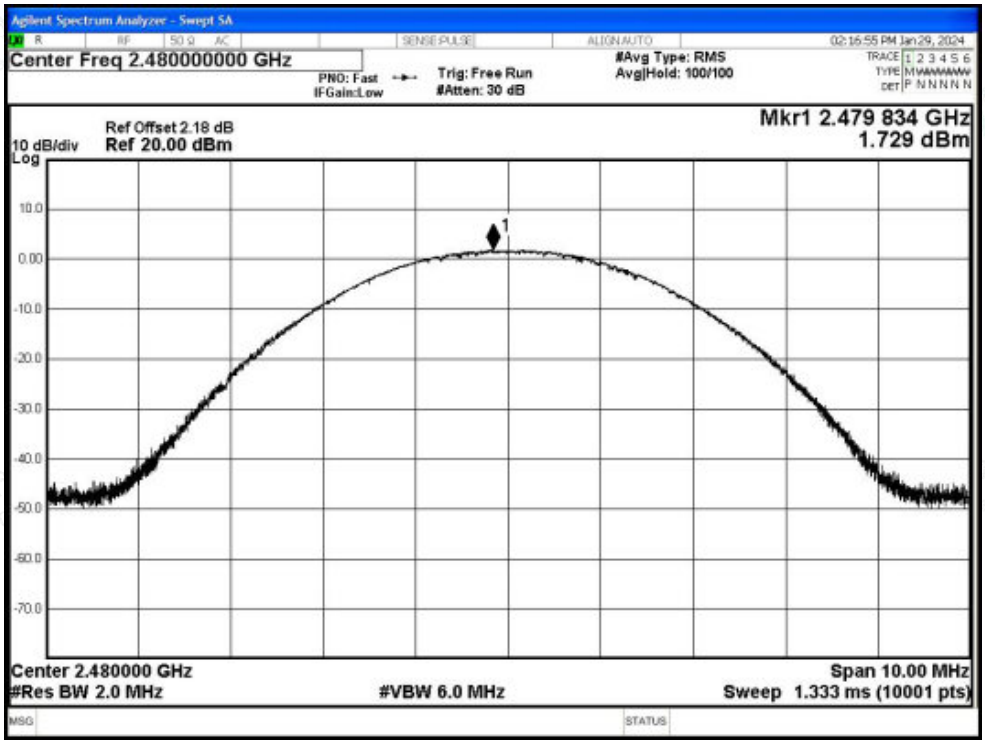
Power NVNT 2-DH5 2402MHz Ant1



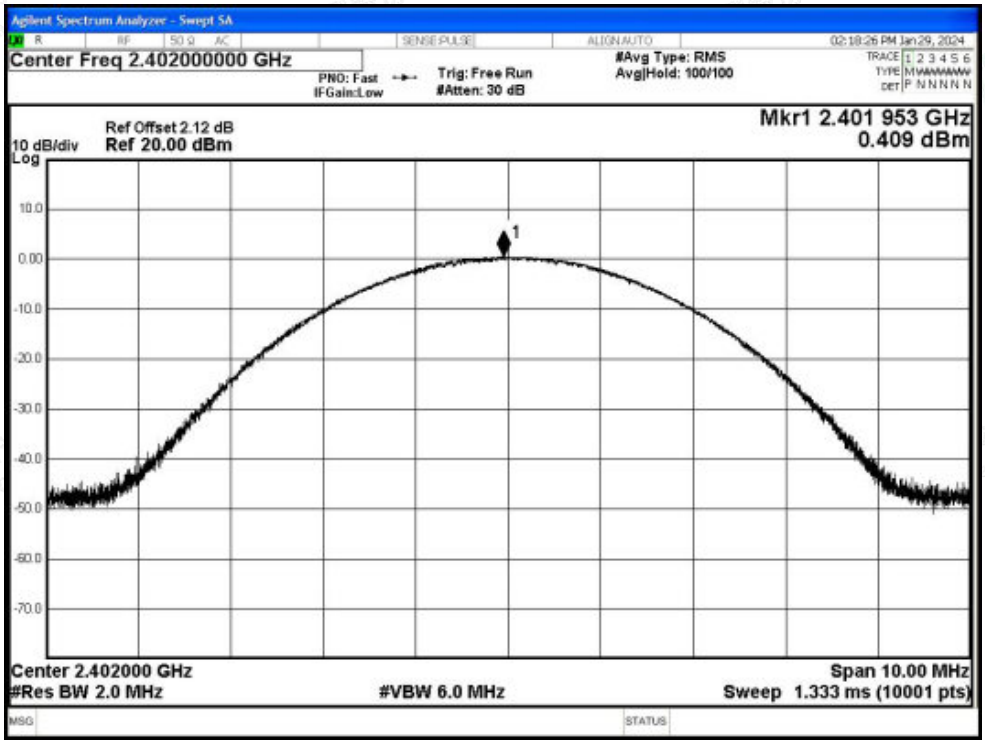
Power NVNT 2-DH5 2441MHz Ant1



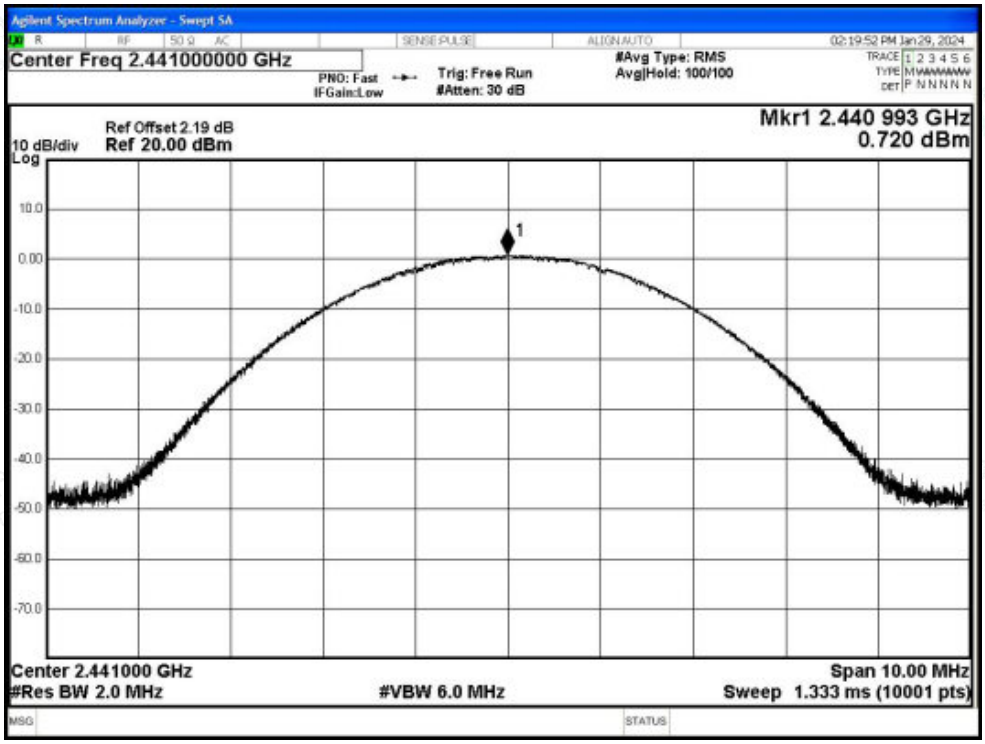
Power NVNT 2-DH5 2480MHz Ant1



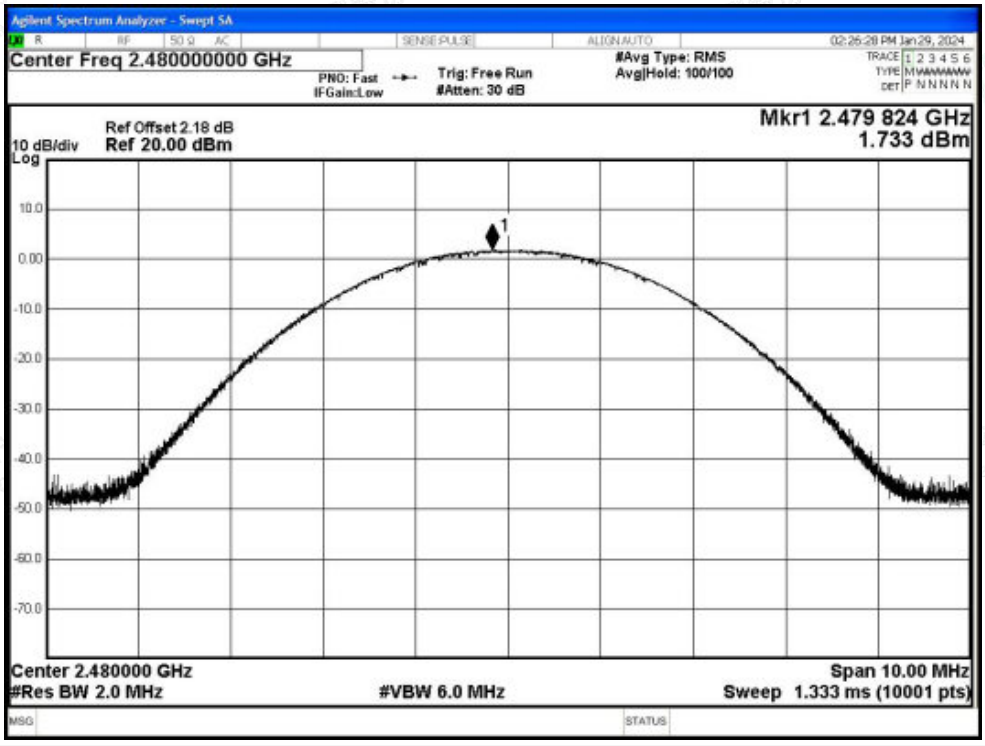
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1

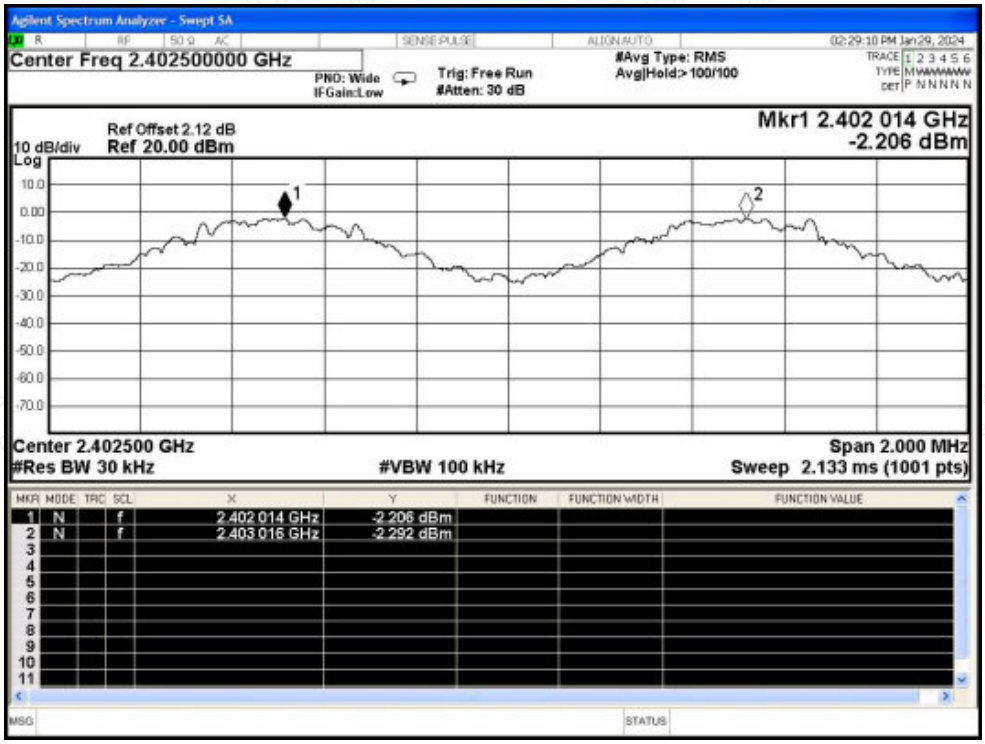


A.3 Carrier Frequencies Separation

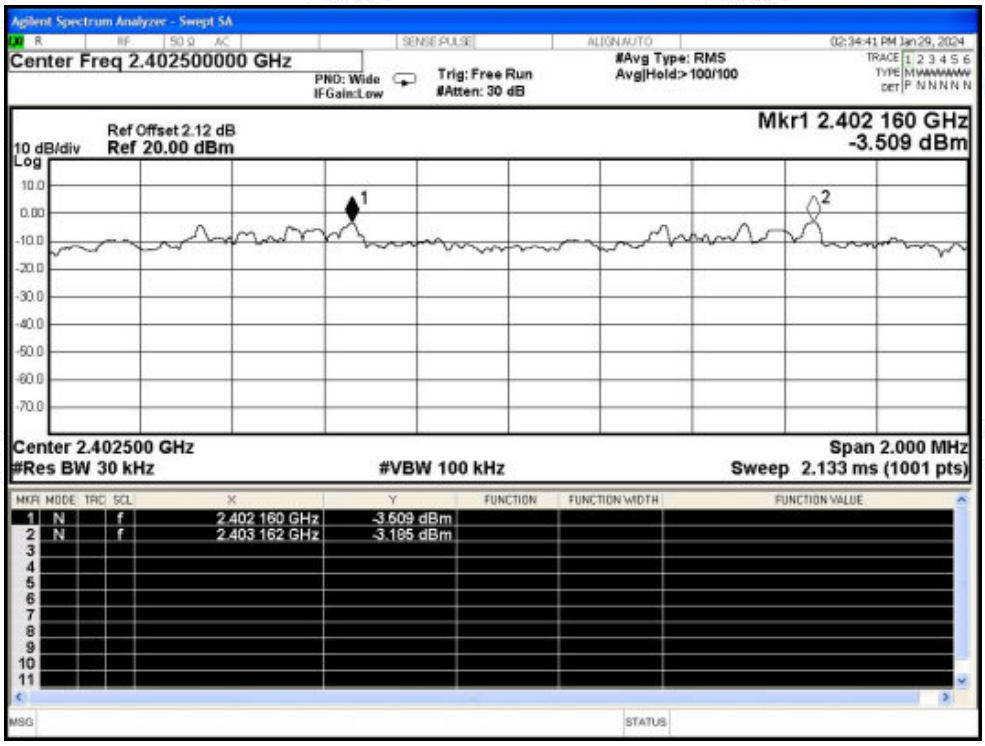
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.014	2403.016	1.002	0.613	Pass
NVNT	2-DH5	Ant1	2402.16	2403.162	1.002	0.871	Pass
NVNT	3-DH5	Ant1	2402.152	2403.16	1.008	0.864	Pass

Test Graphs

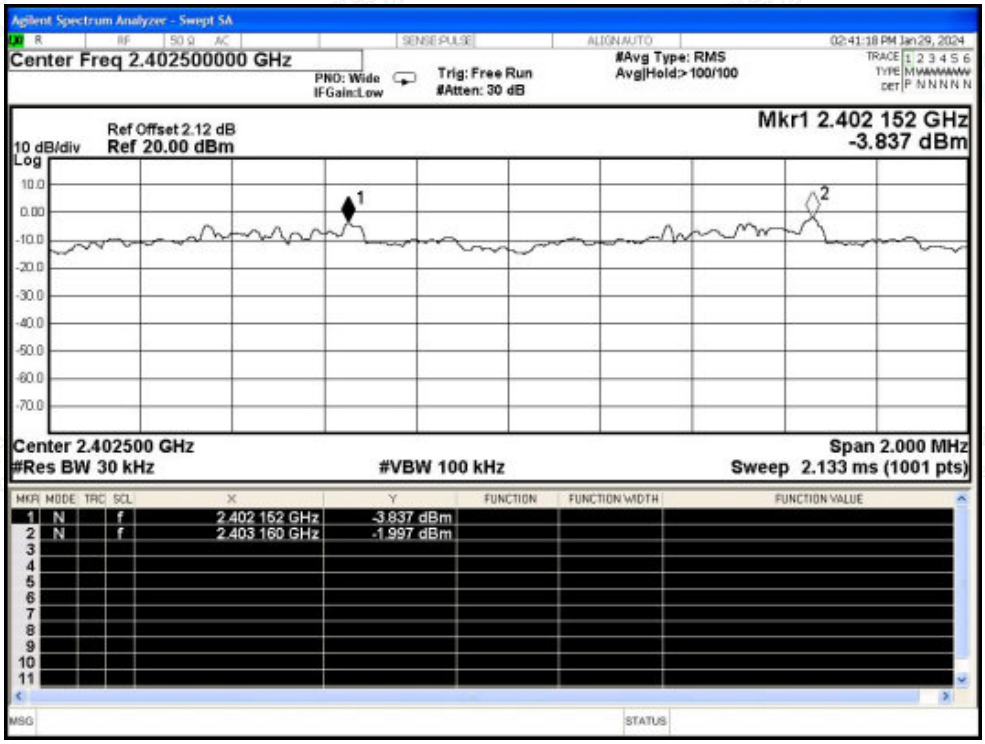
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

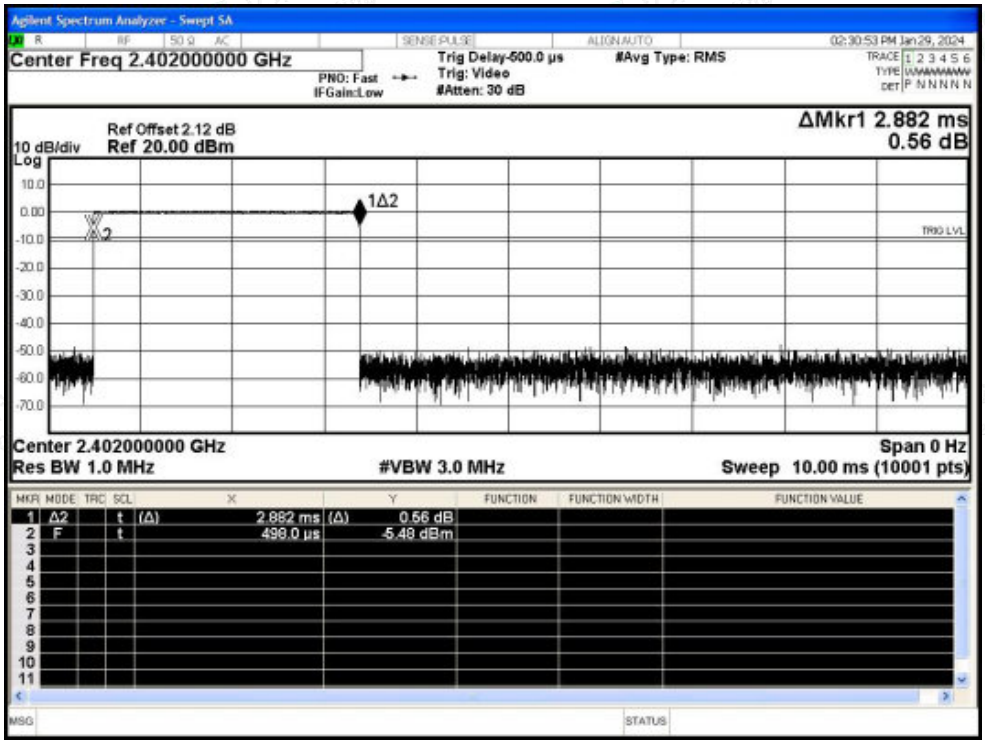


A.4 Dwell Time

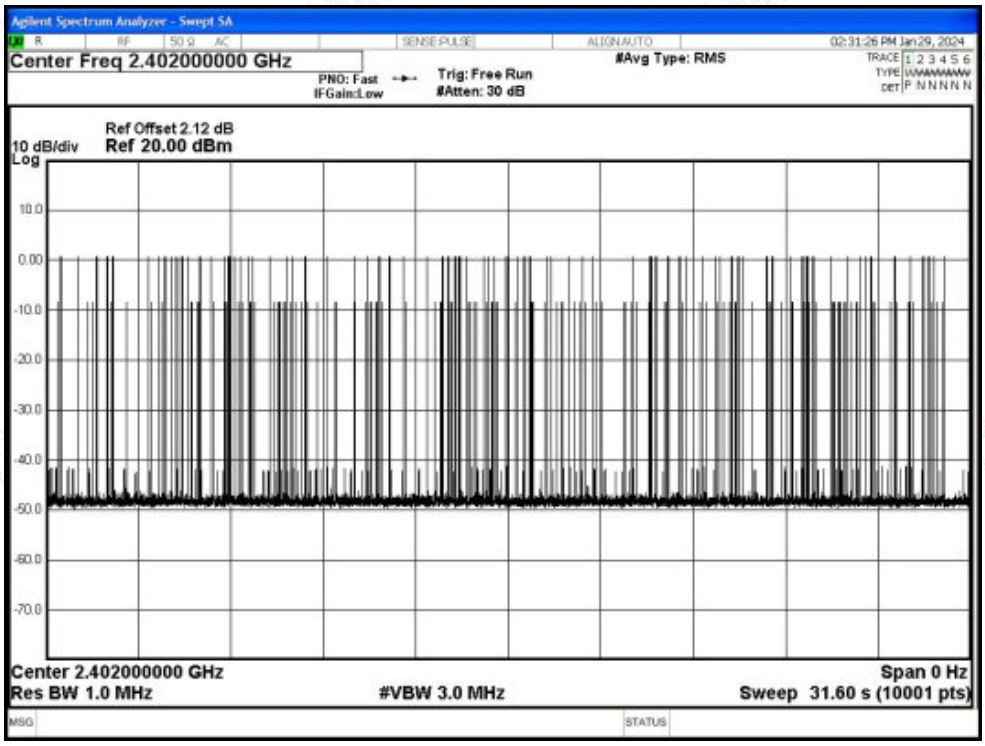
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.882	282.436	98	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.881	299.624	104	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.886	279.942	97	31600	400	Pass

Test Graphs

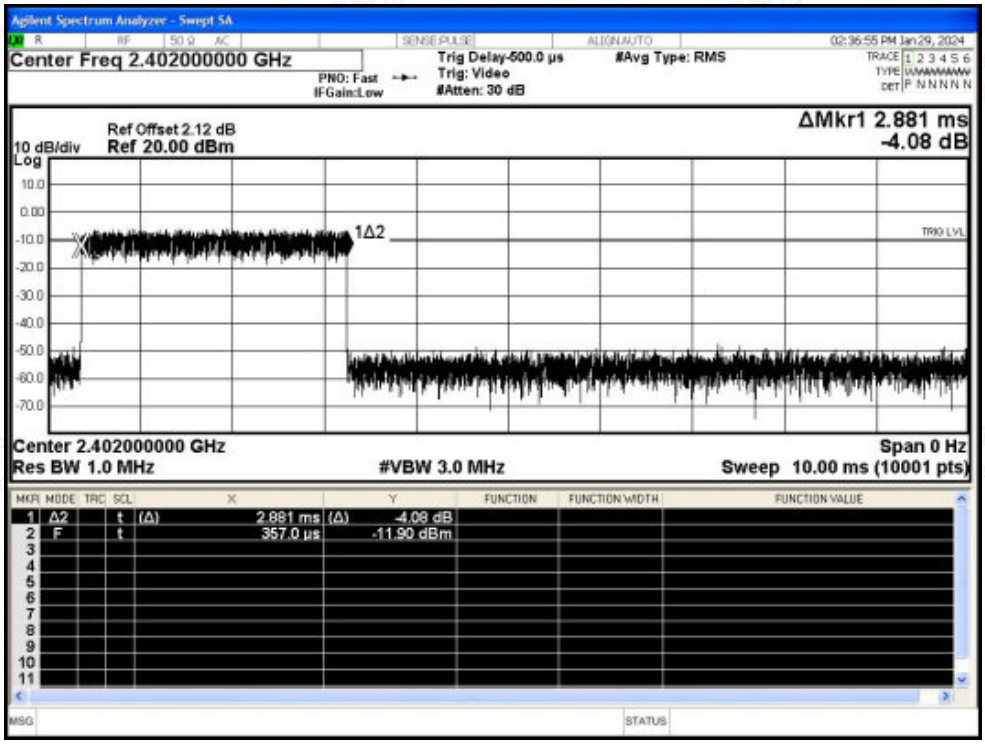
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



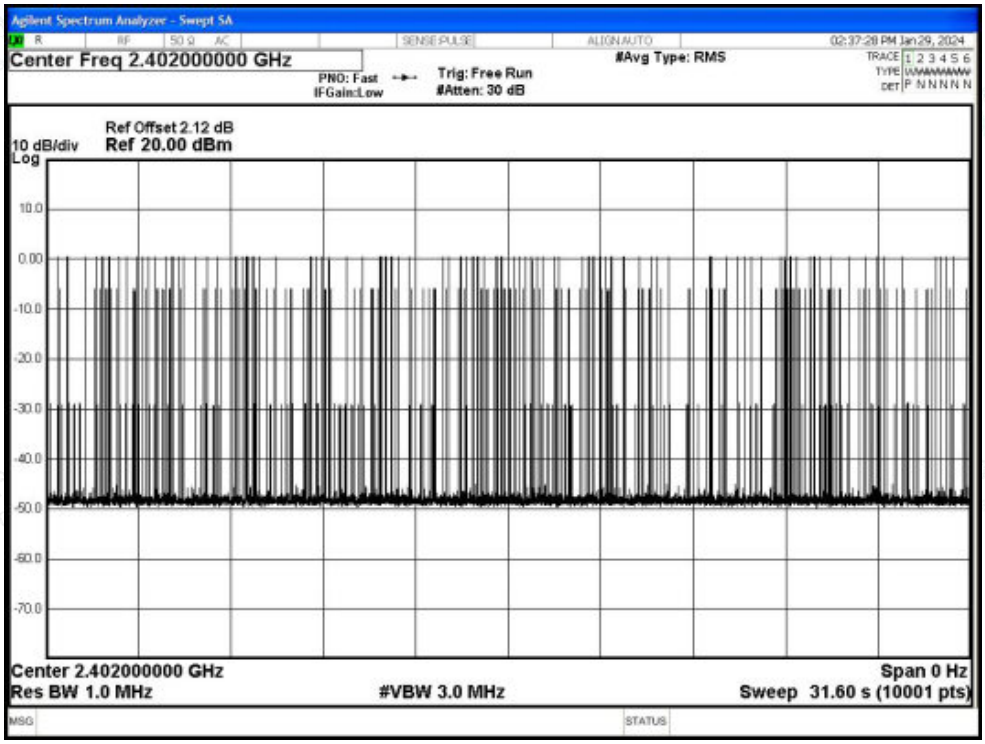
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



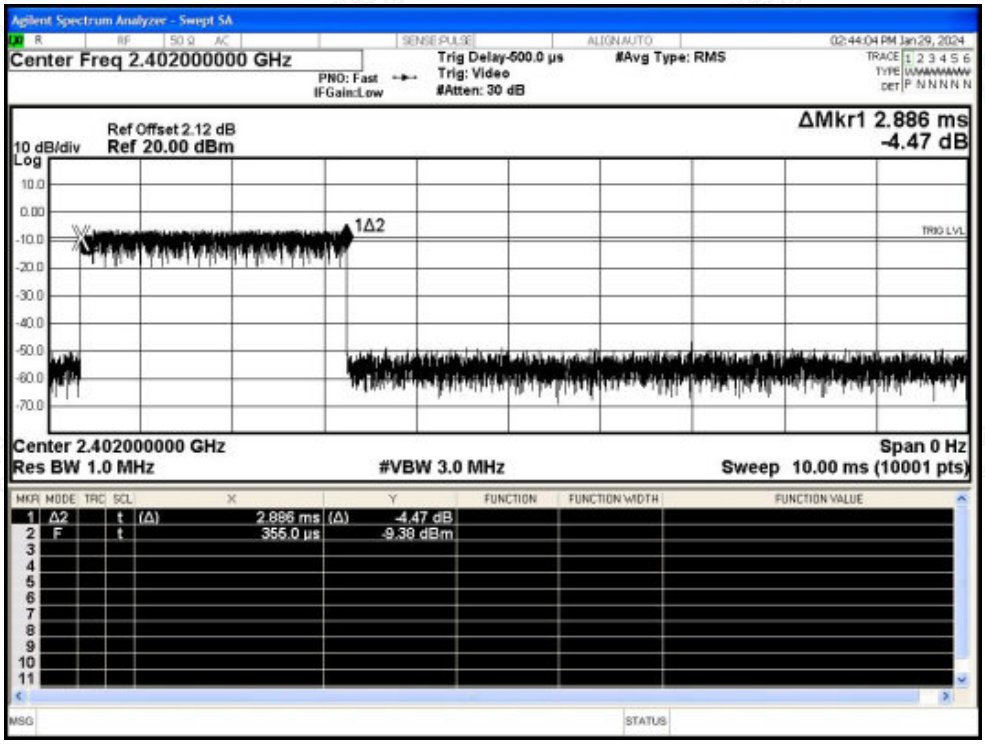
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



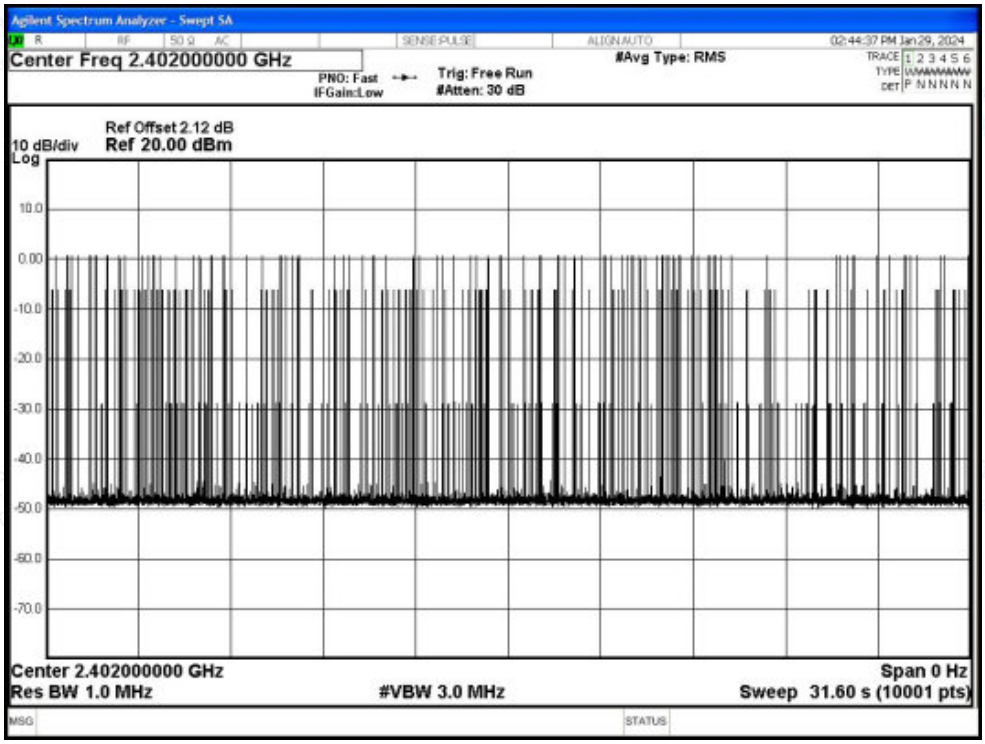
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

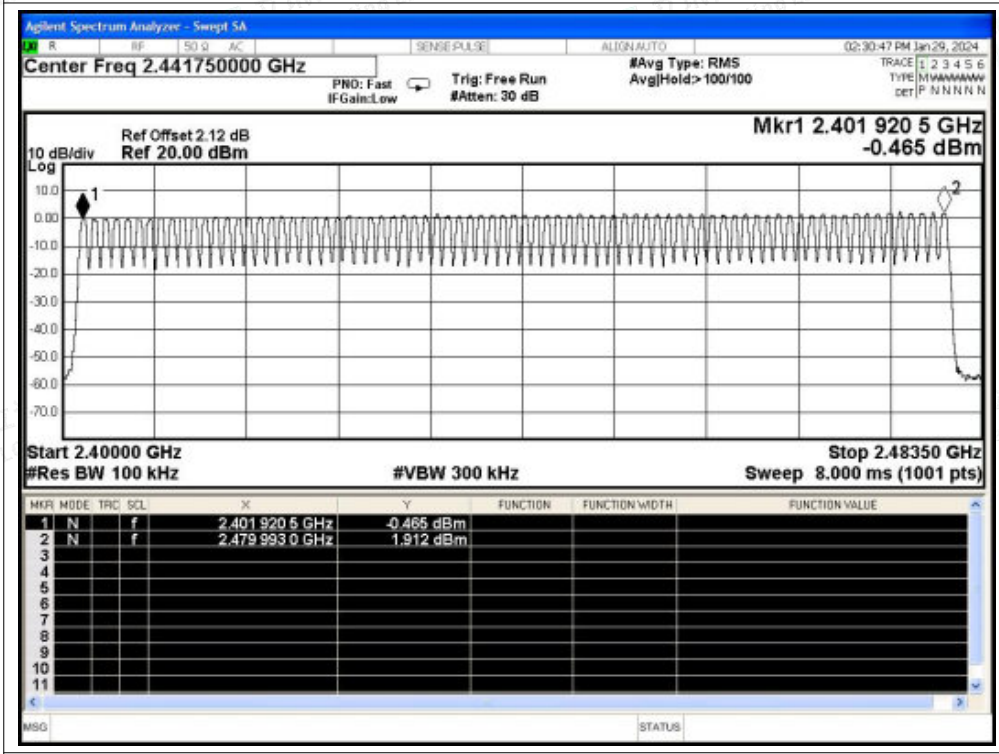


A.5 Number of Hopping Channel

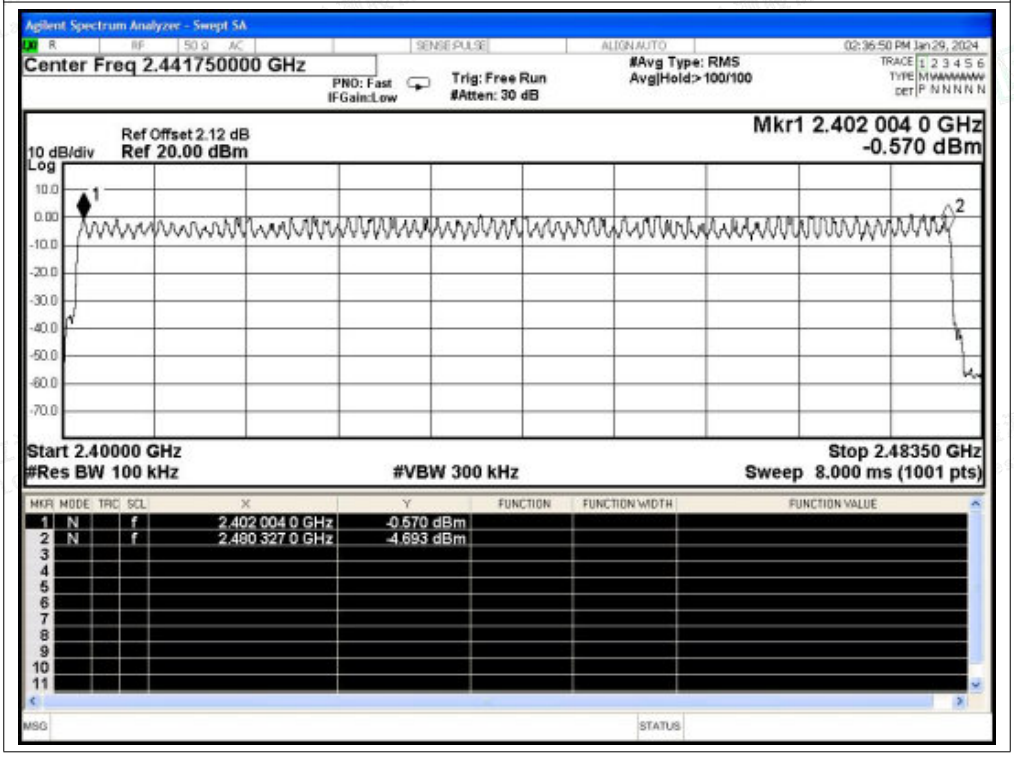
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

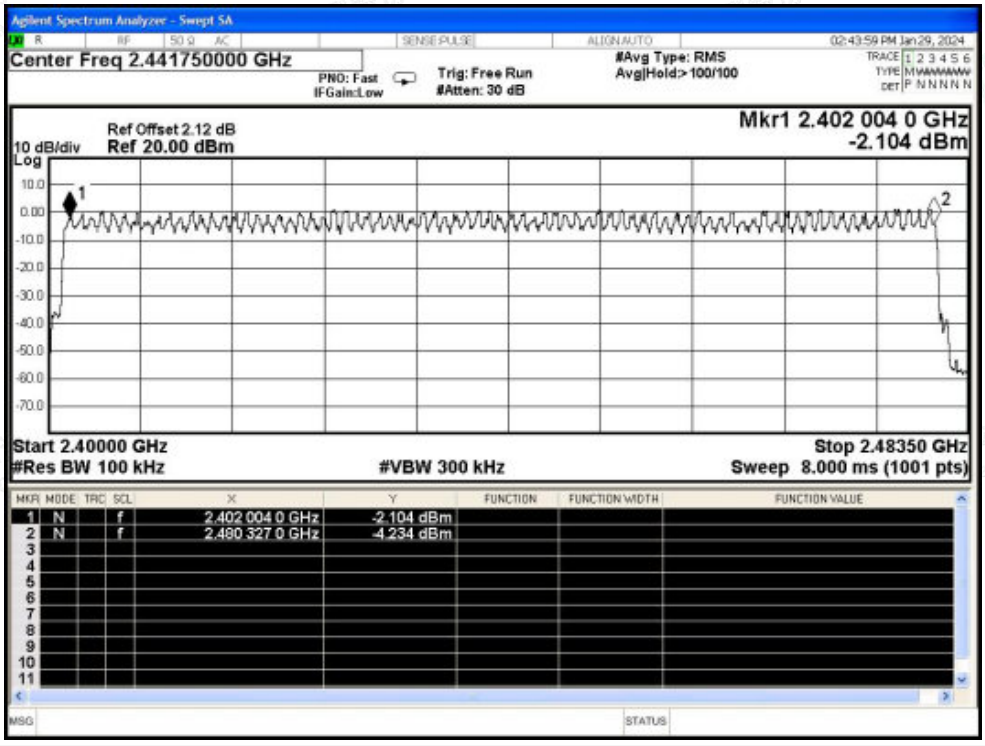
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

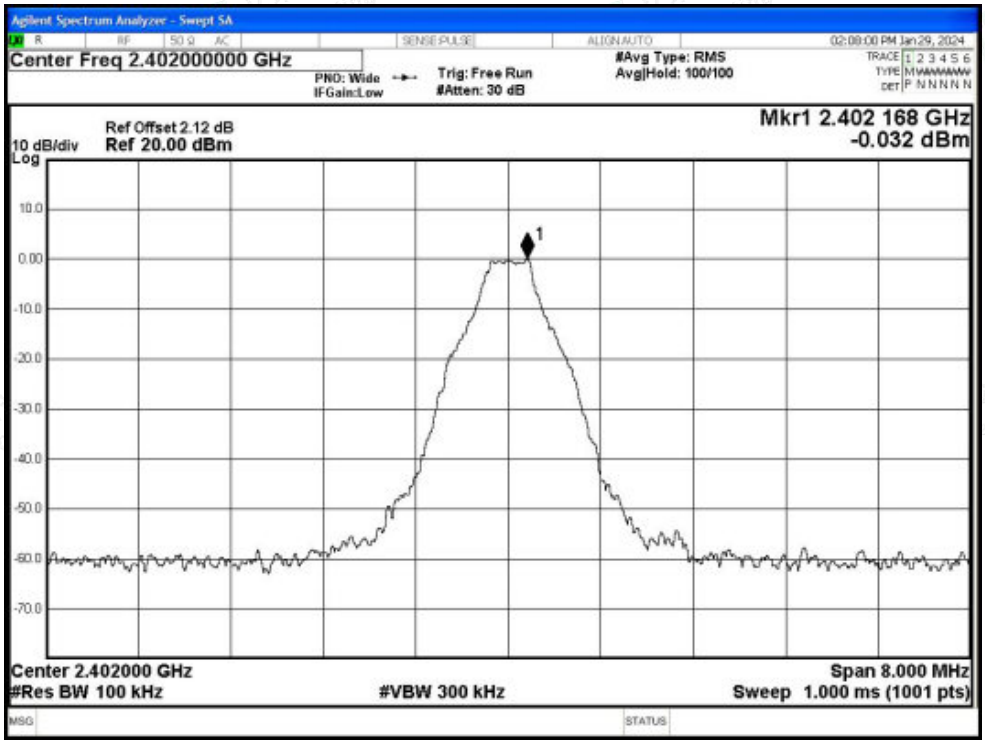


A.6 Band Edge

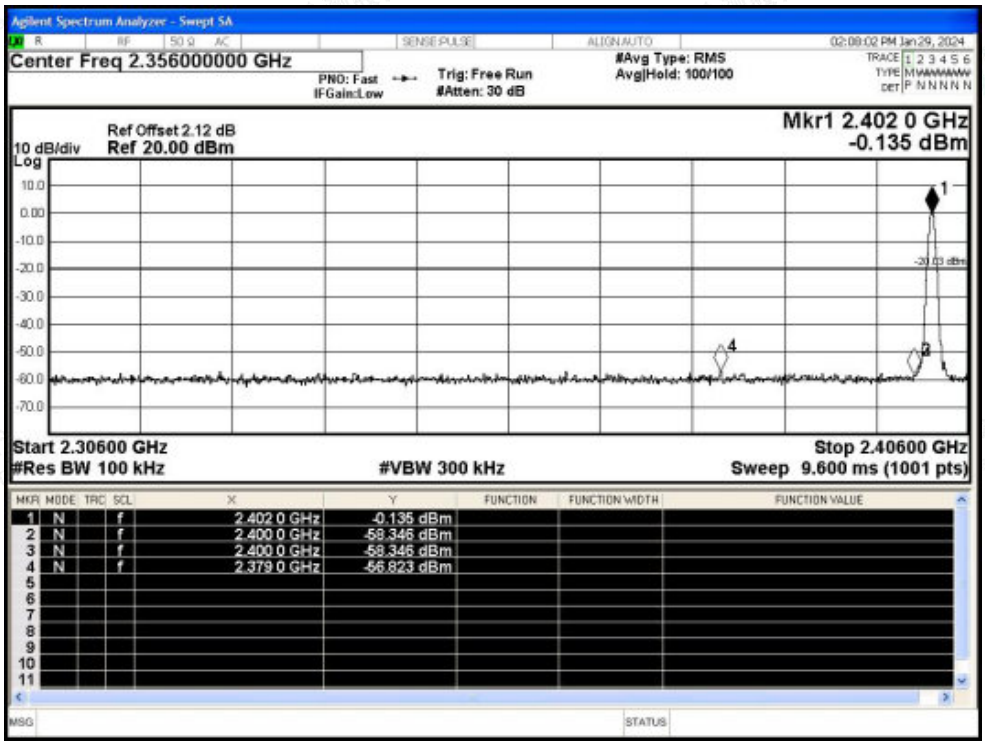
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.79	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-57.98	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-52.24	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-57.84	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-52.66	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-55.29	-20	Pass

Test Graphs

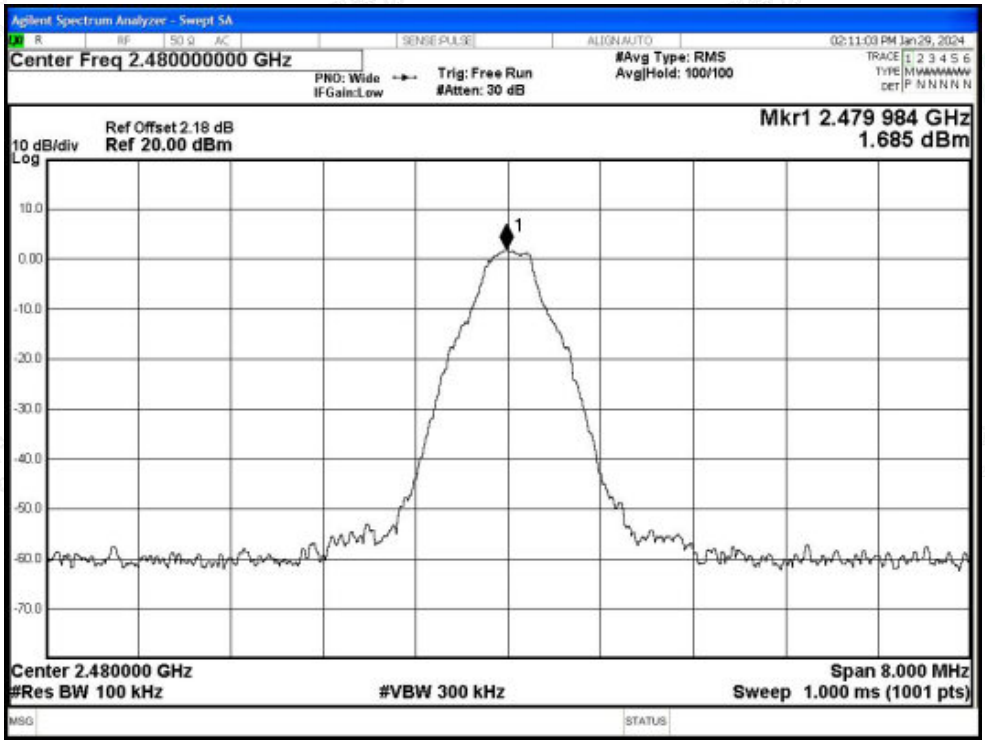
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



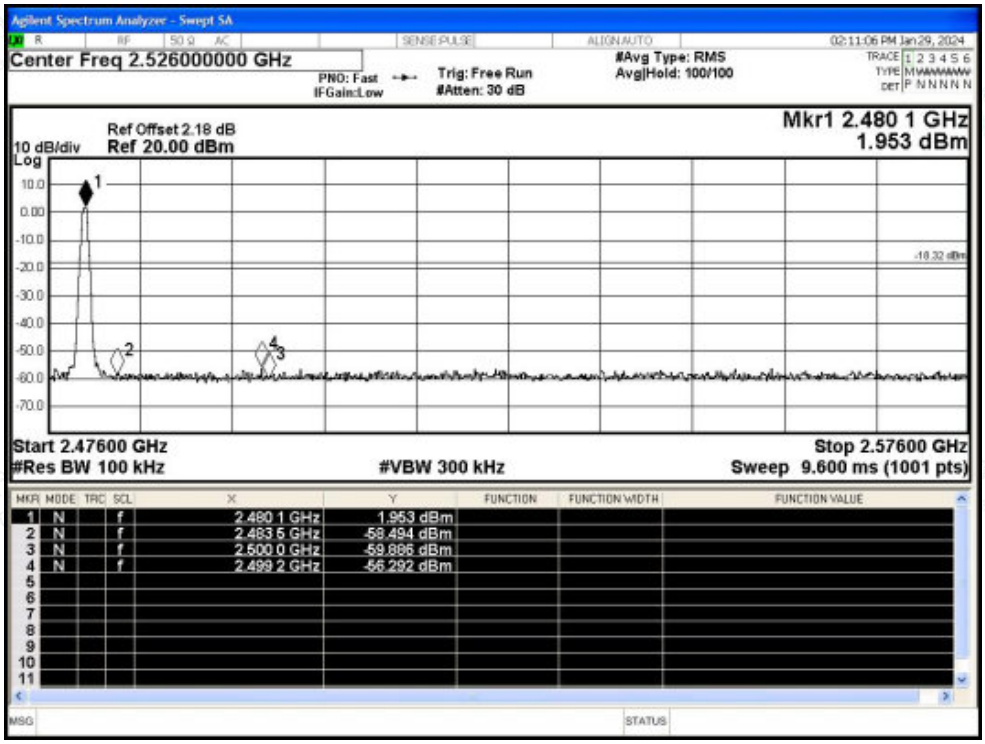
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



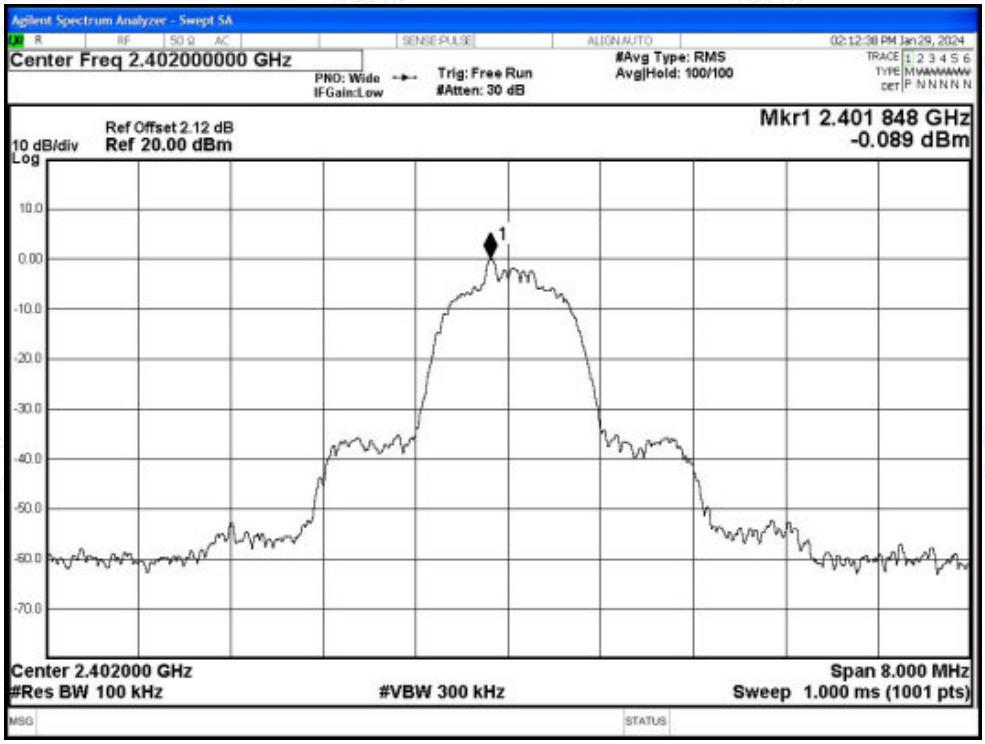
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



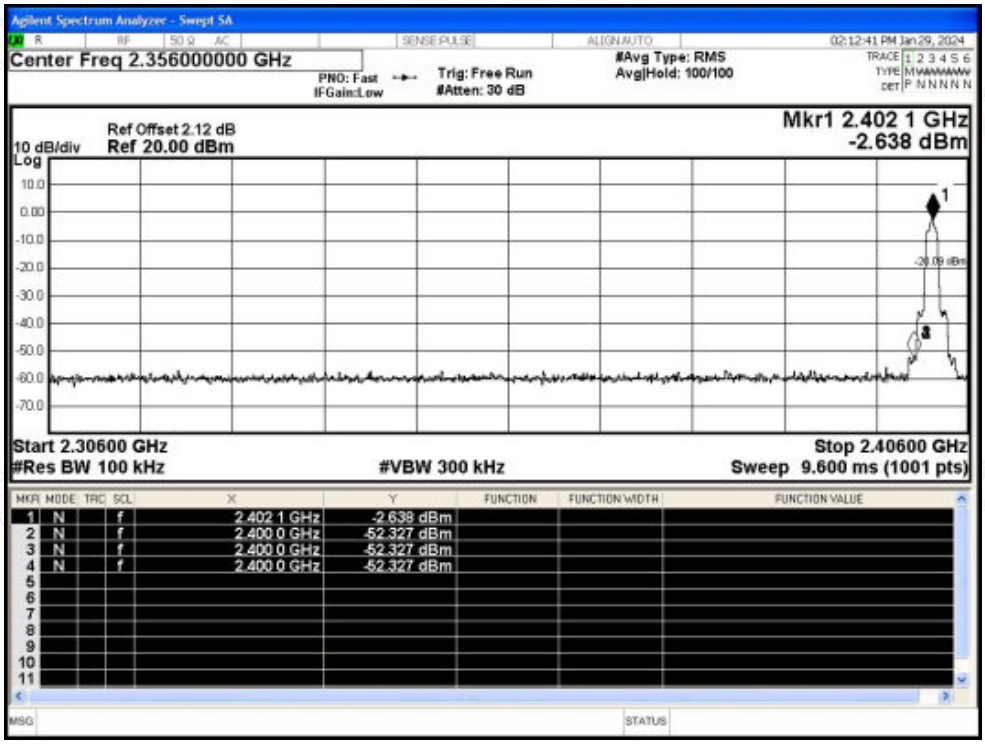
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



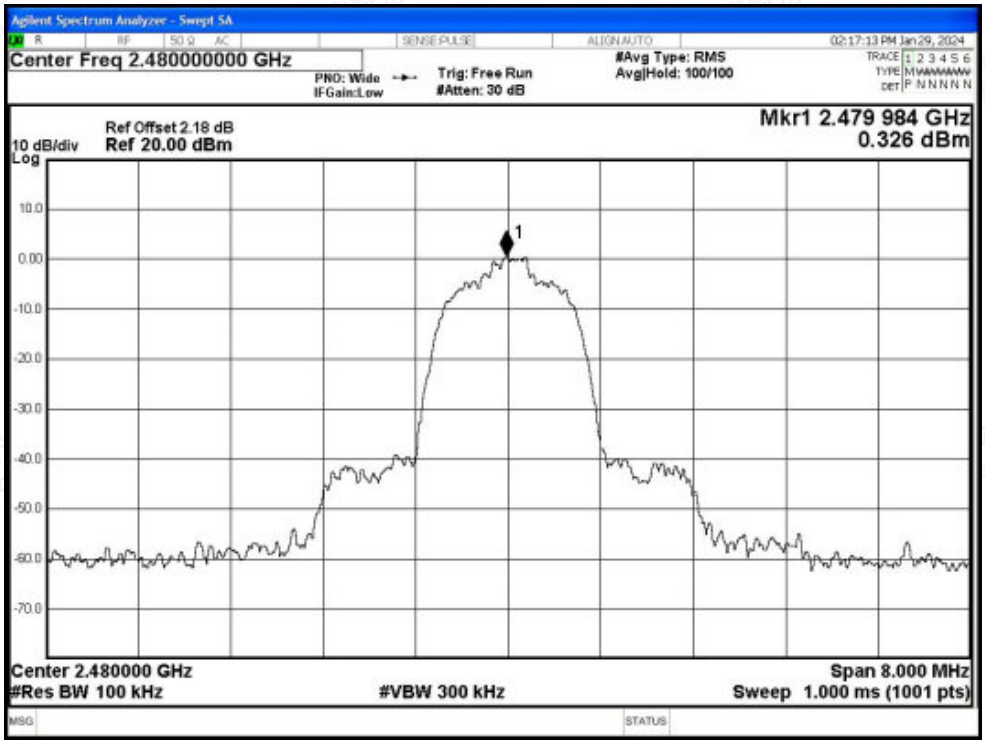
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



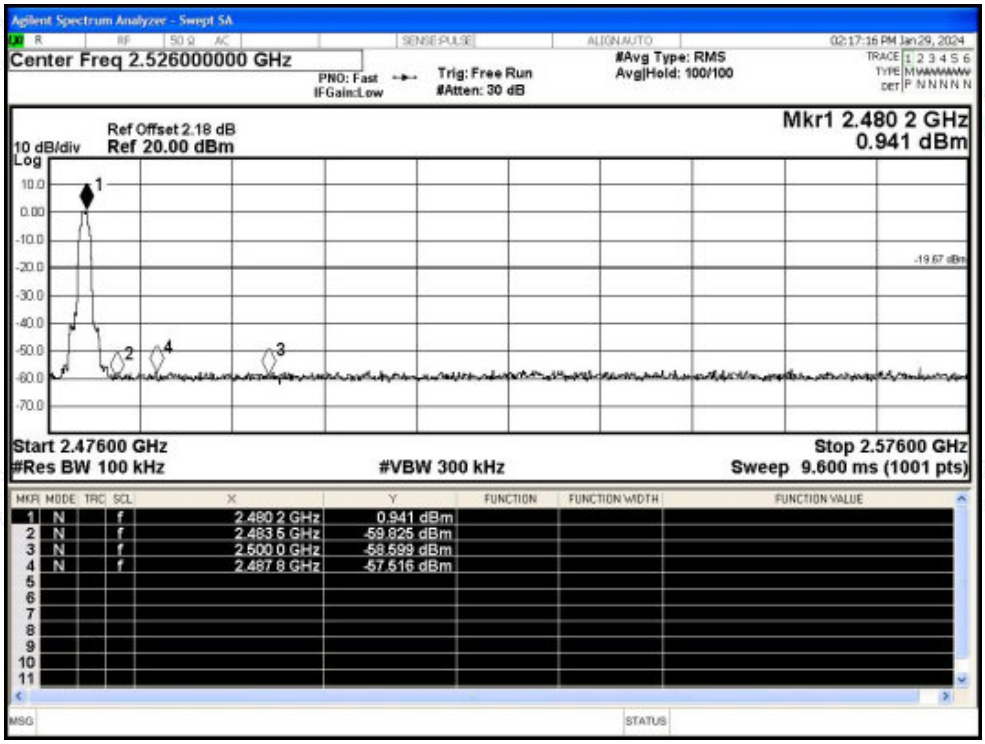
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



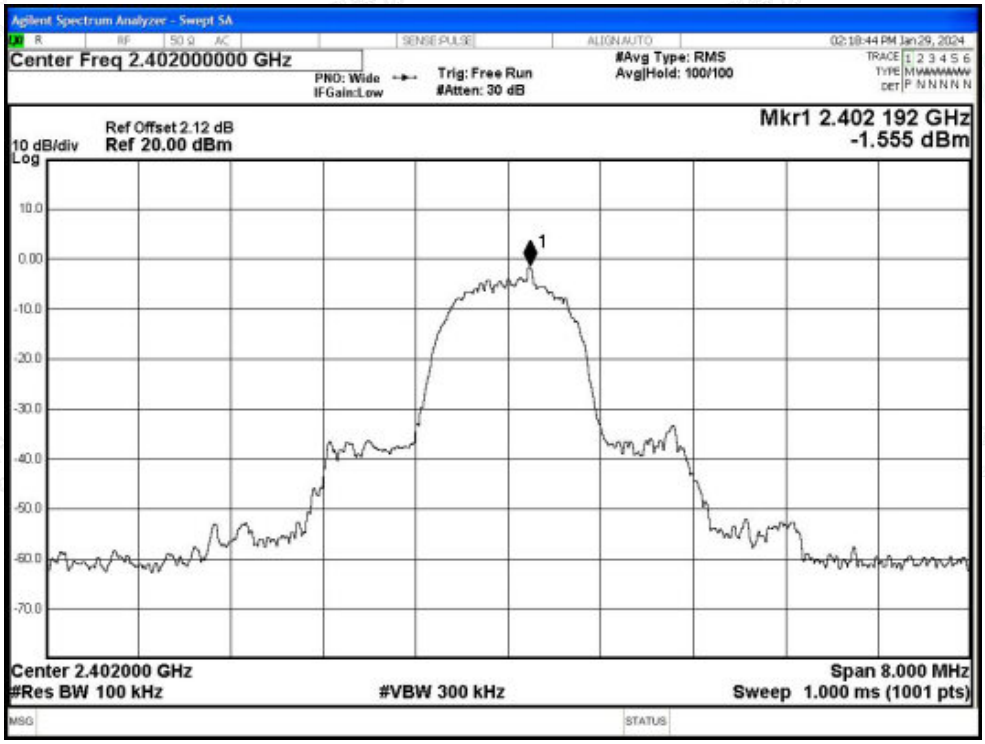
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



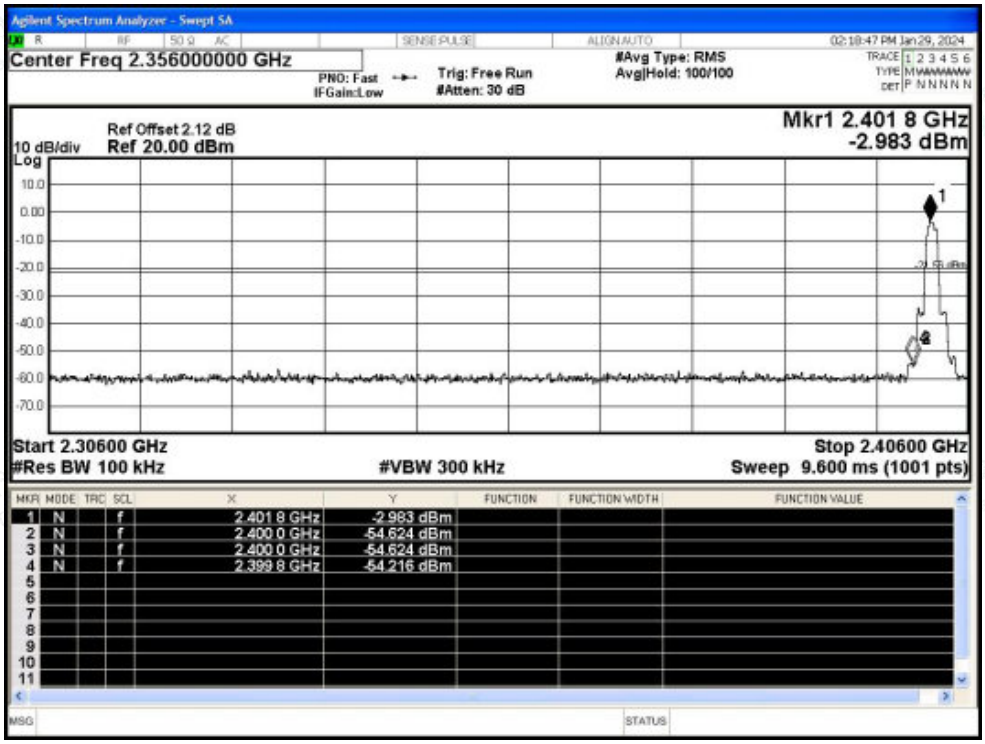
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



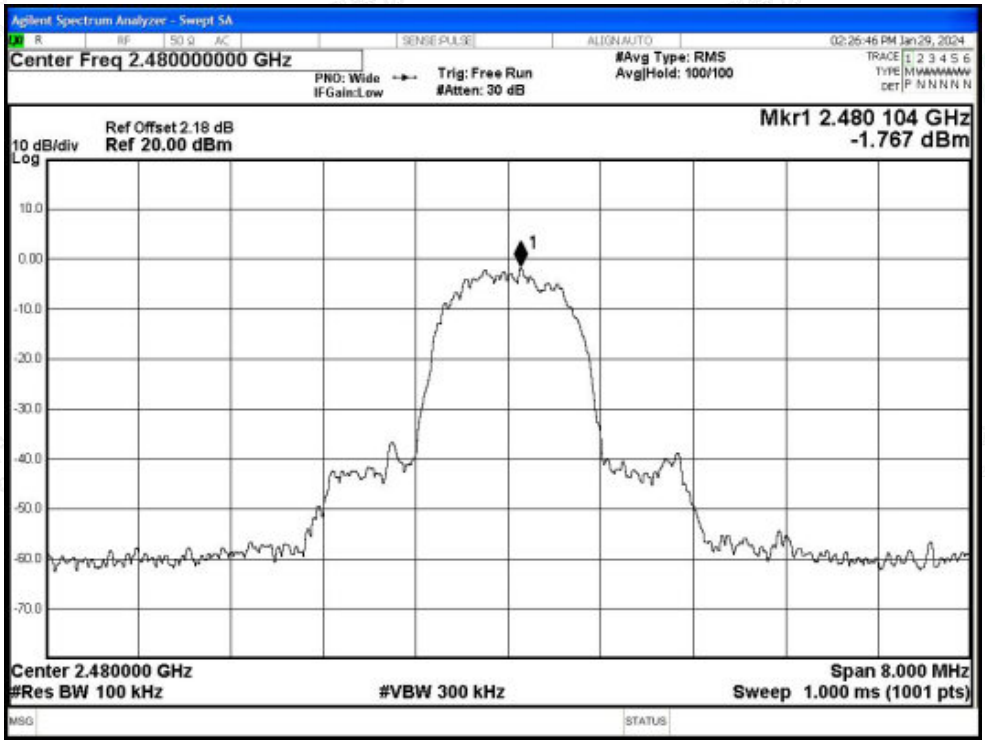
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



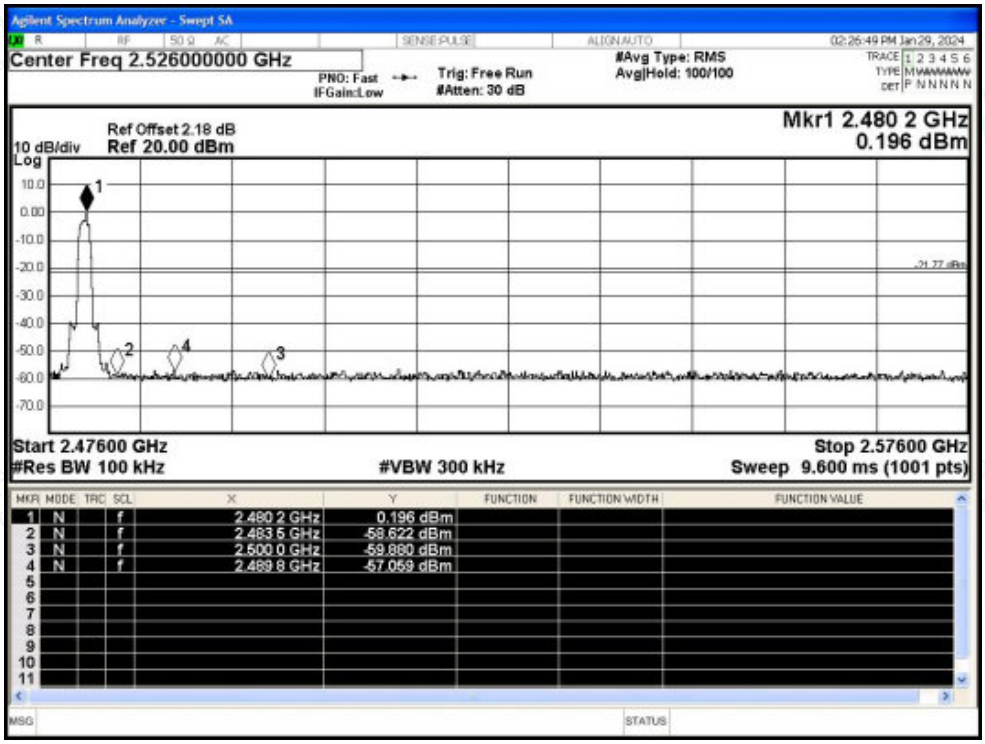
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

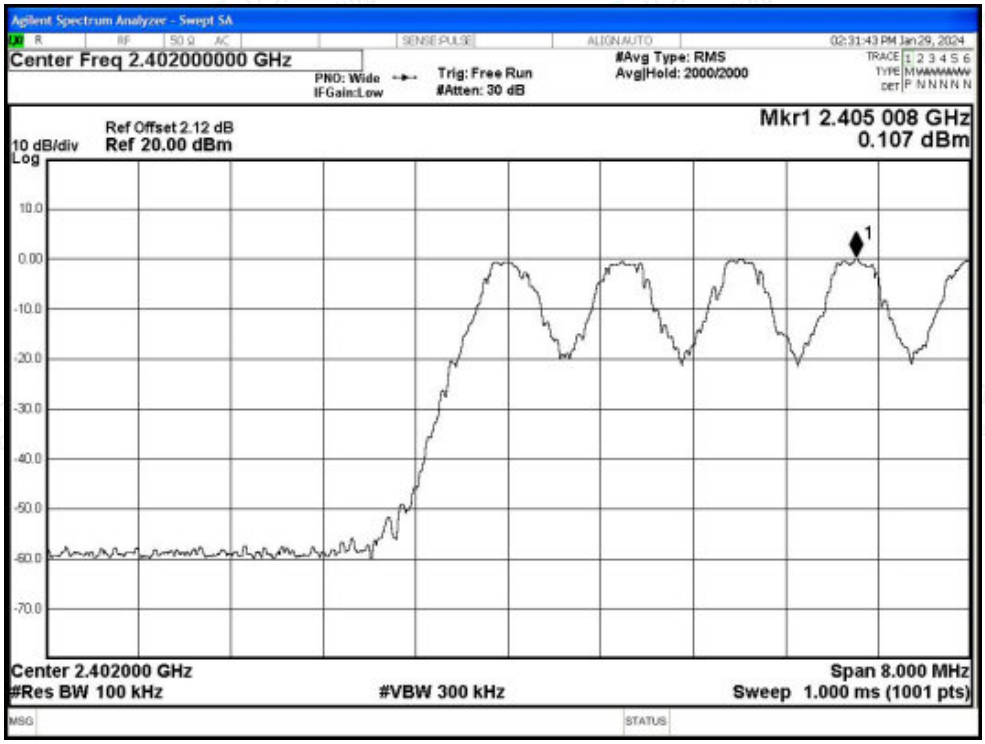


(Hopping)

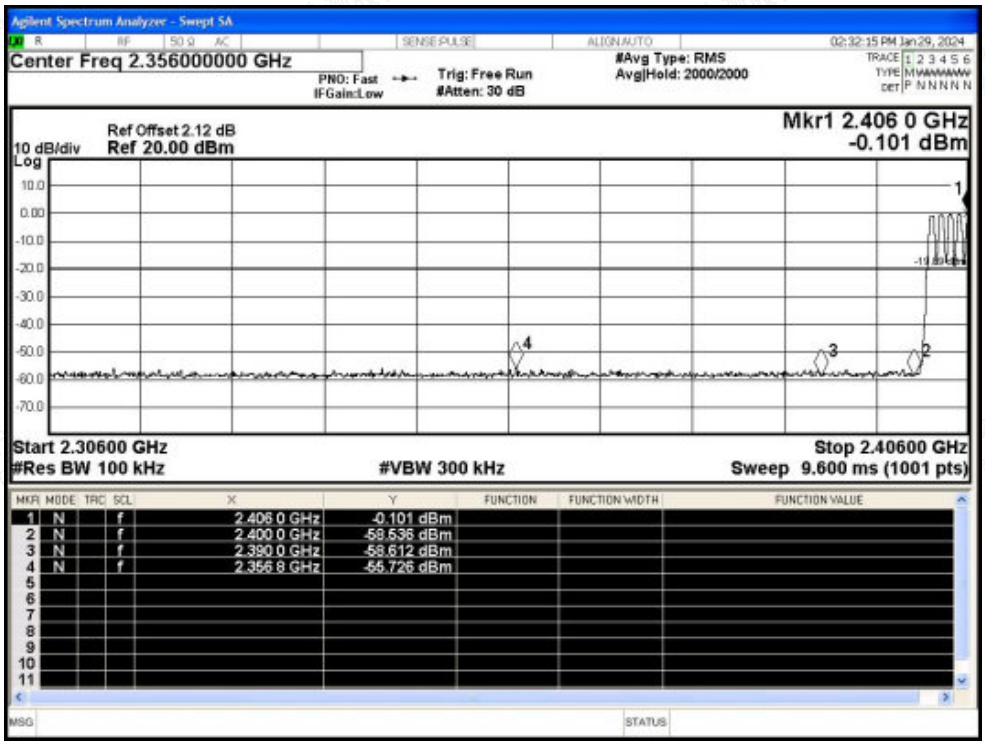
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-55.83	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-58.03	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-55.57	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-56.15	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-54.49	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-56.42	-20	Pass

Test Graphs

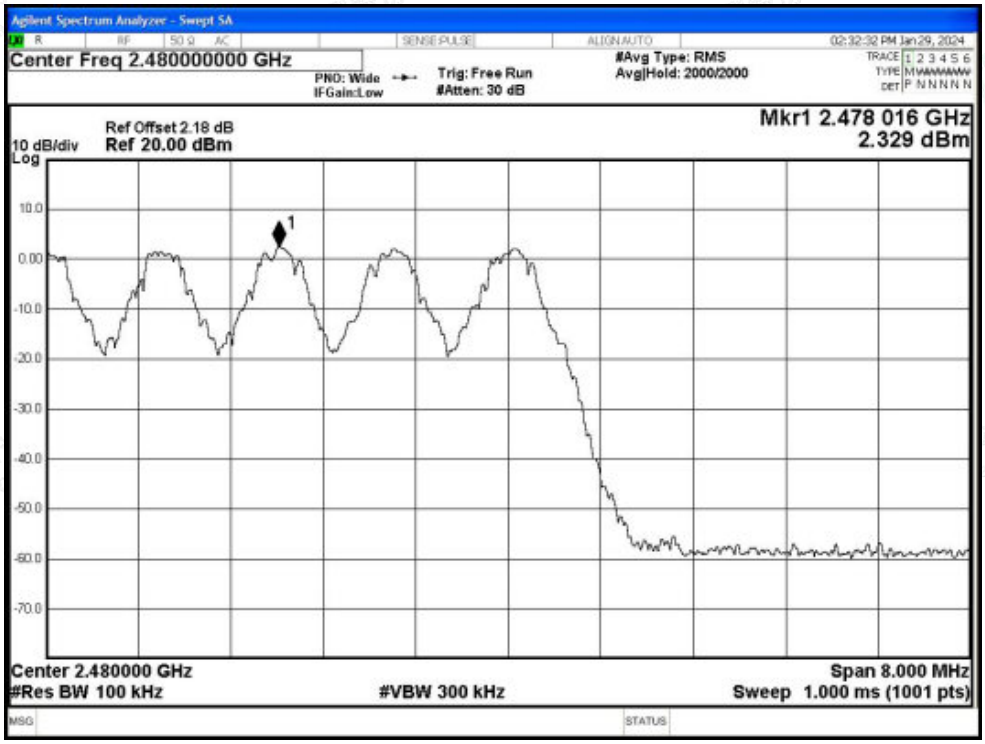
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



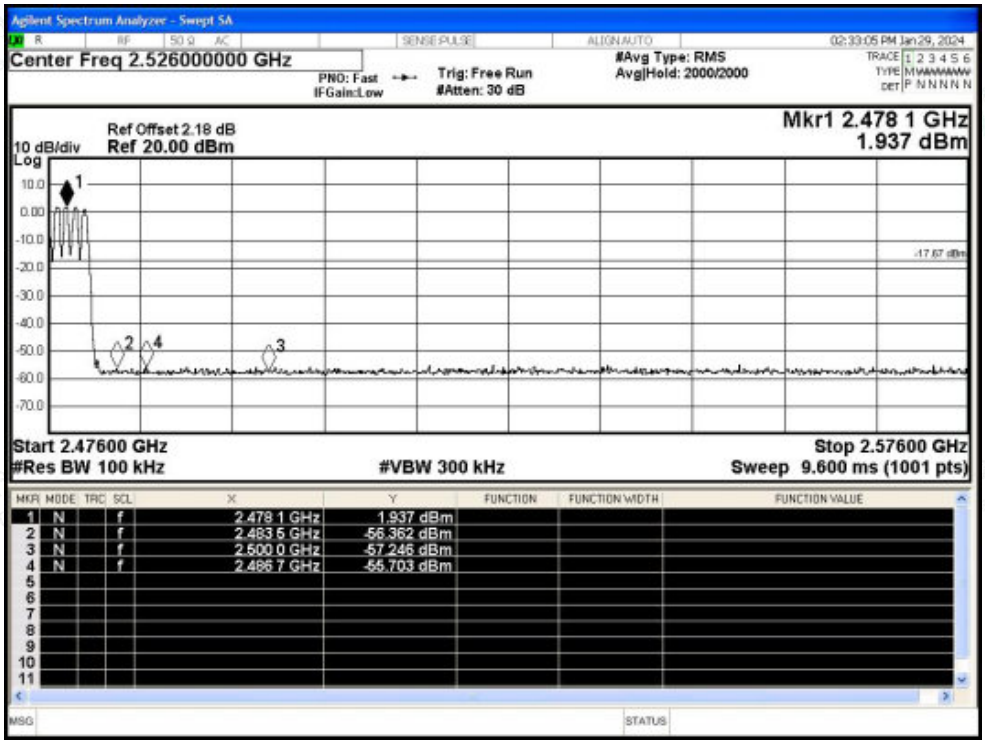
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



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

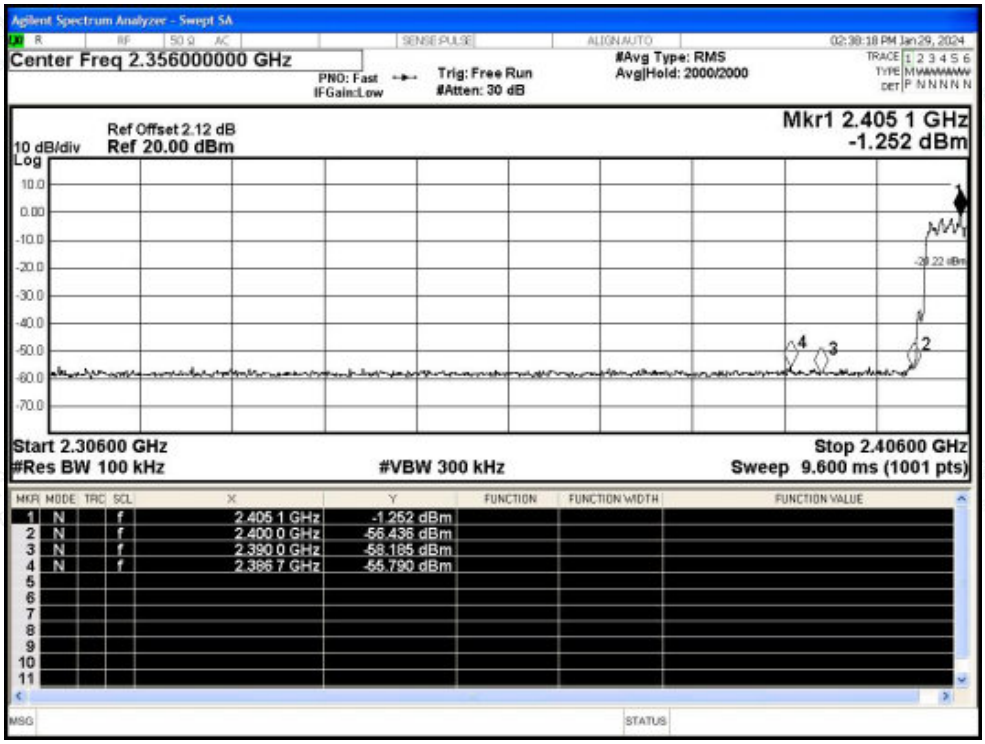


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission

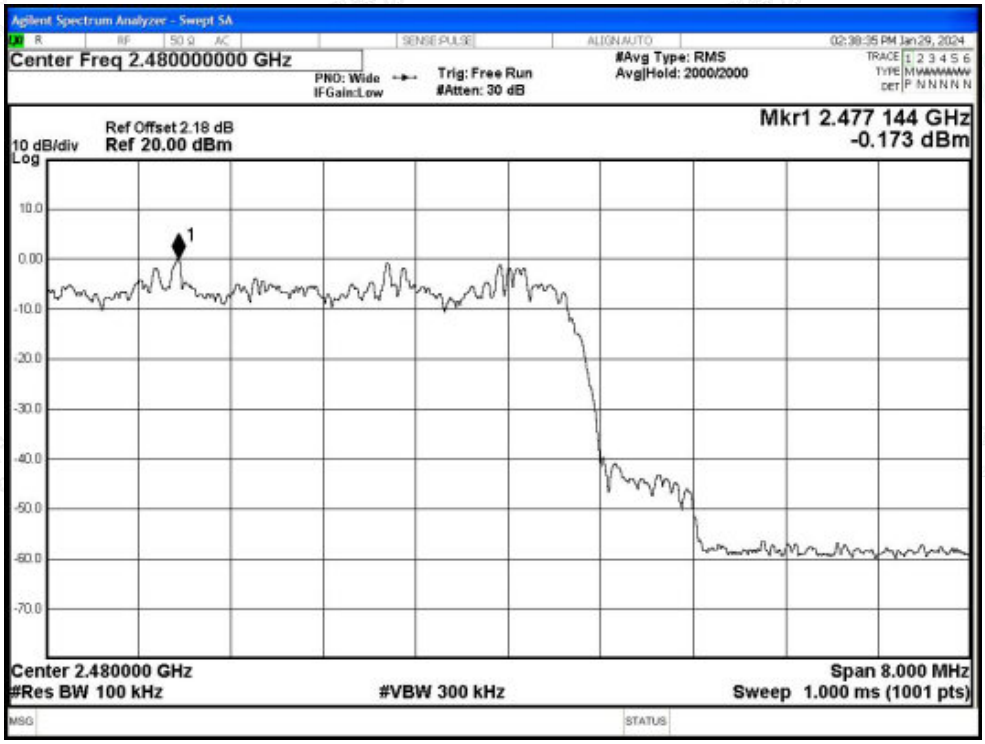


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

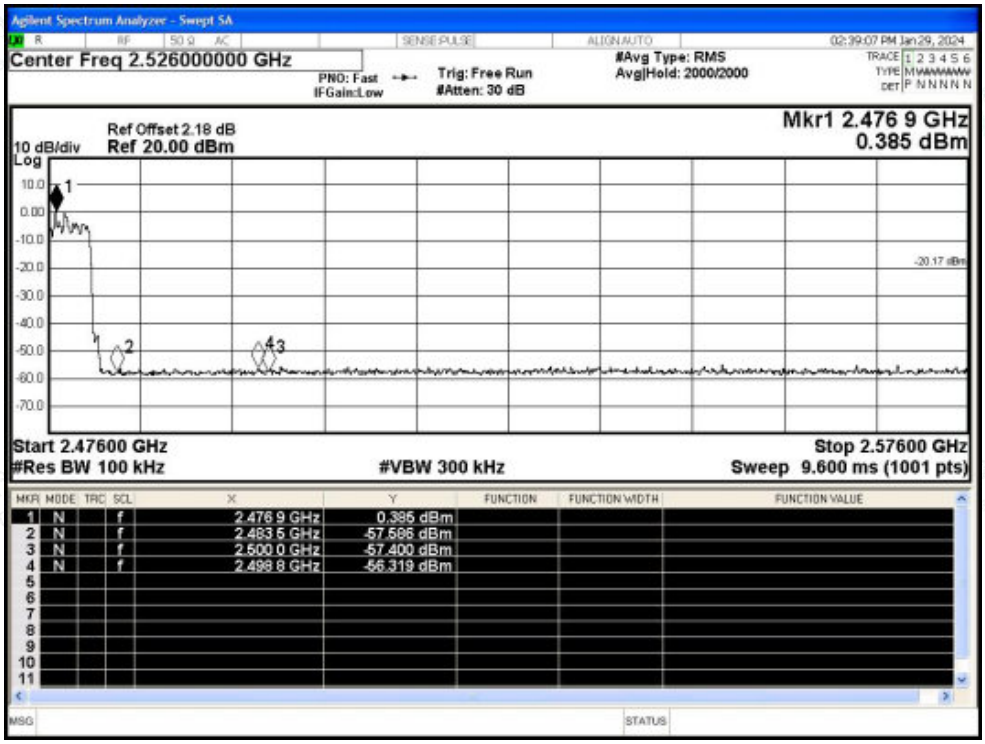
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



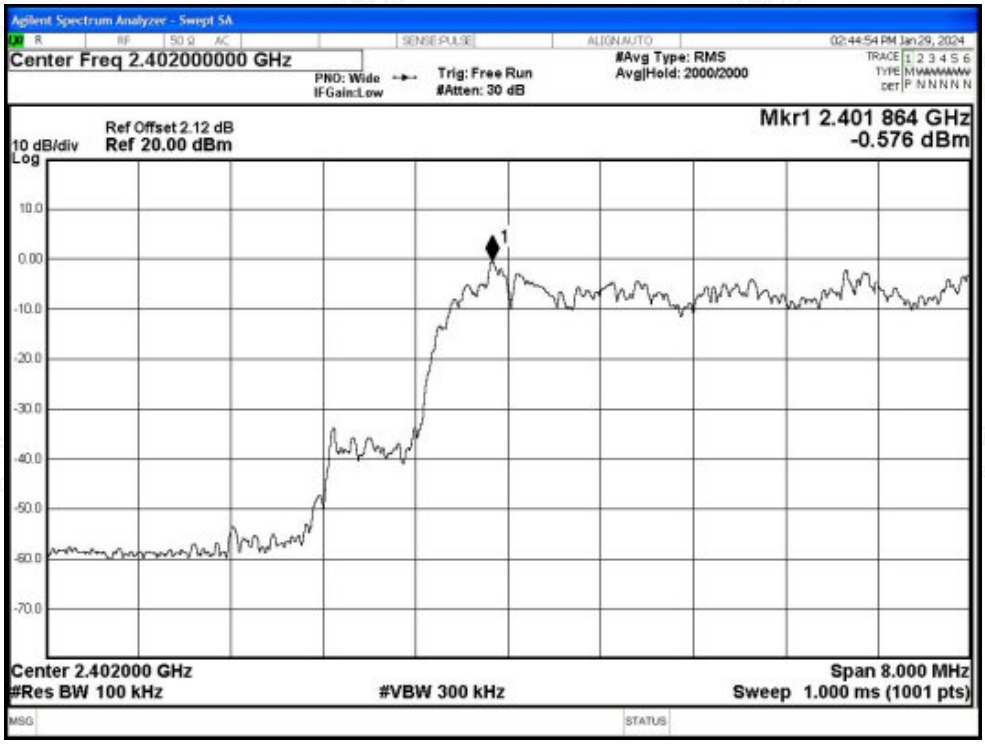
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



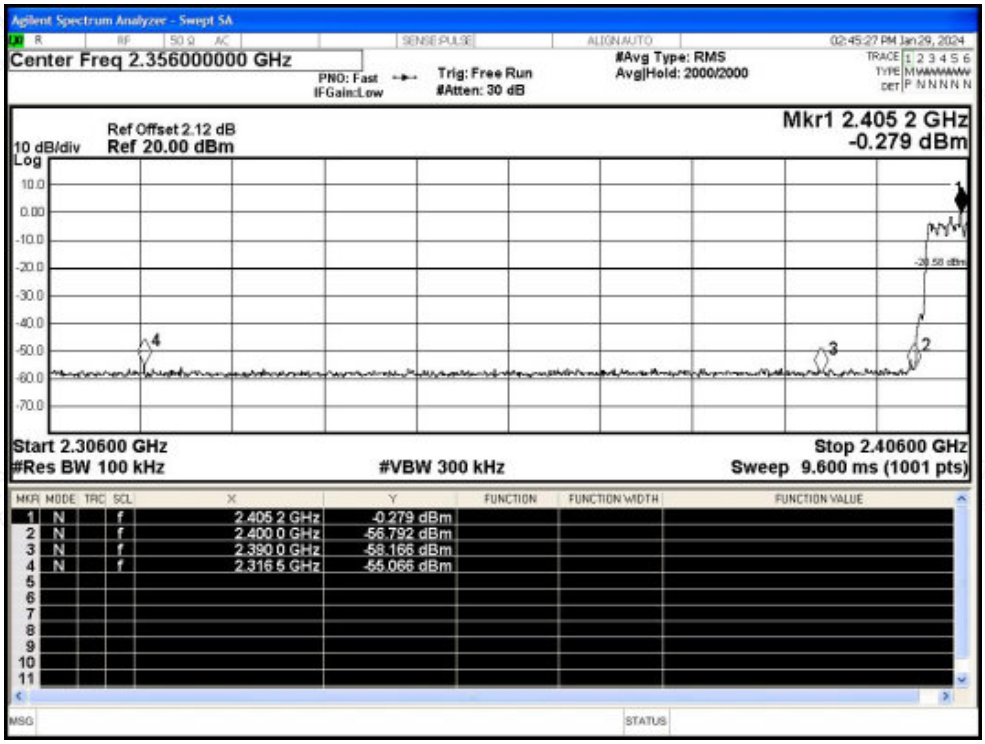
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



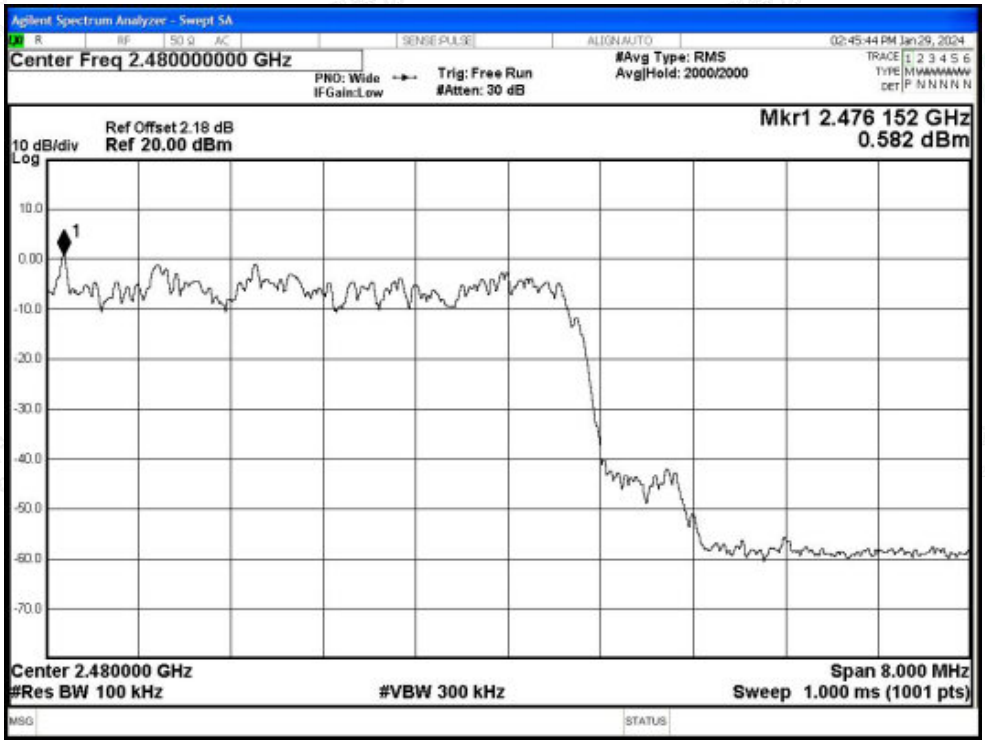
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



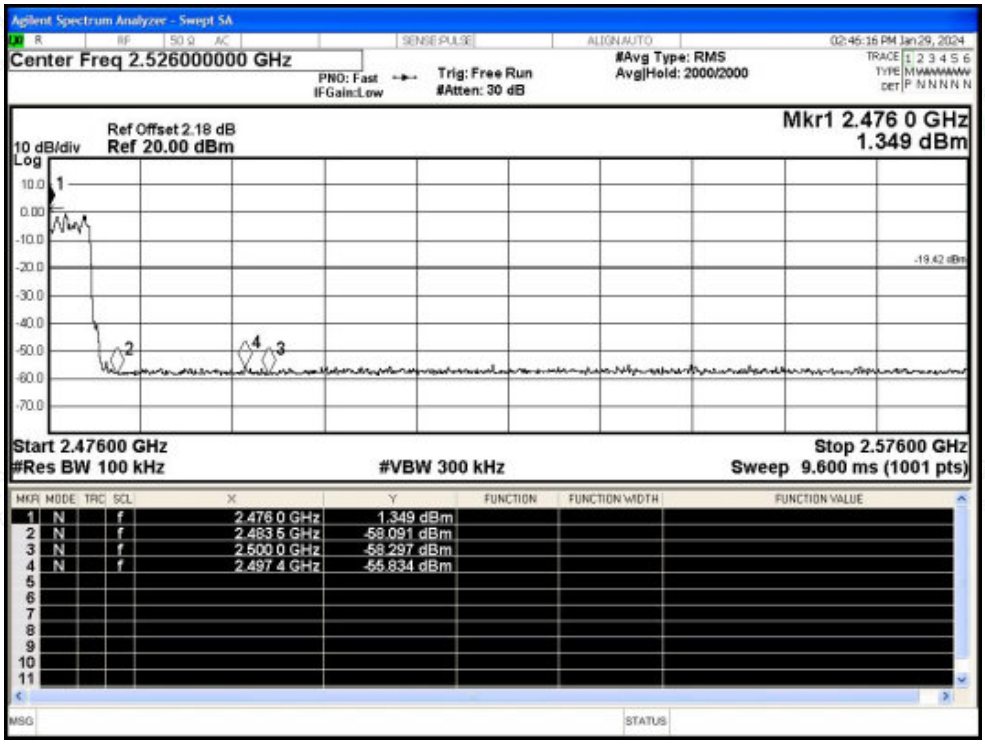
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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

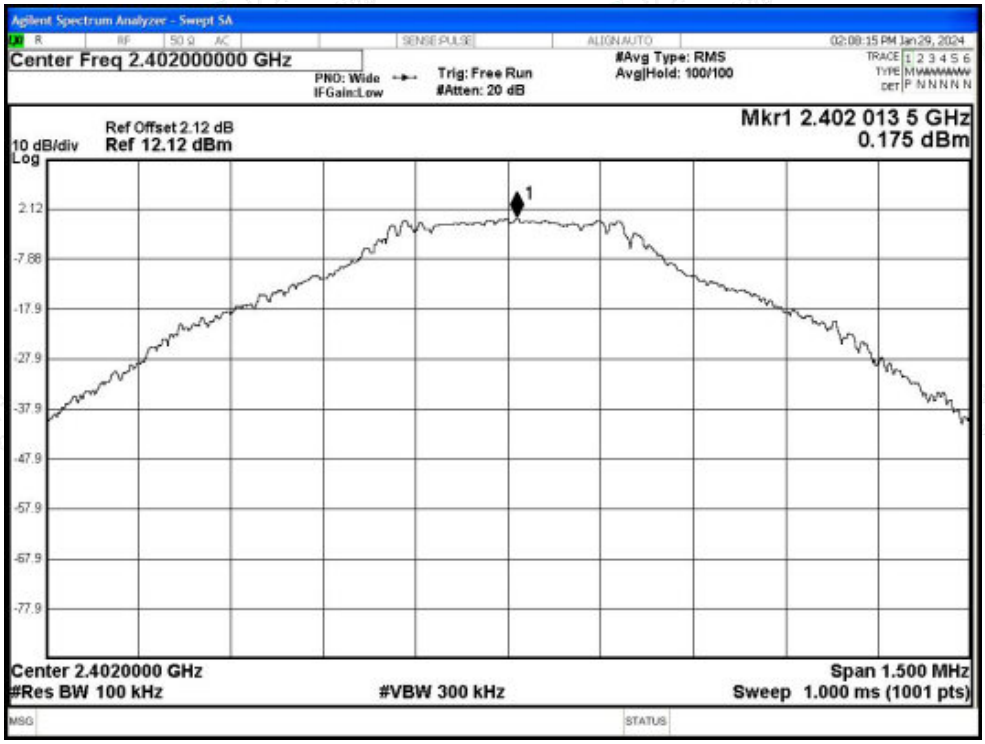


A.7 Conducted RF Spurious Emission

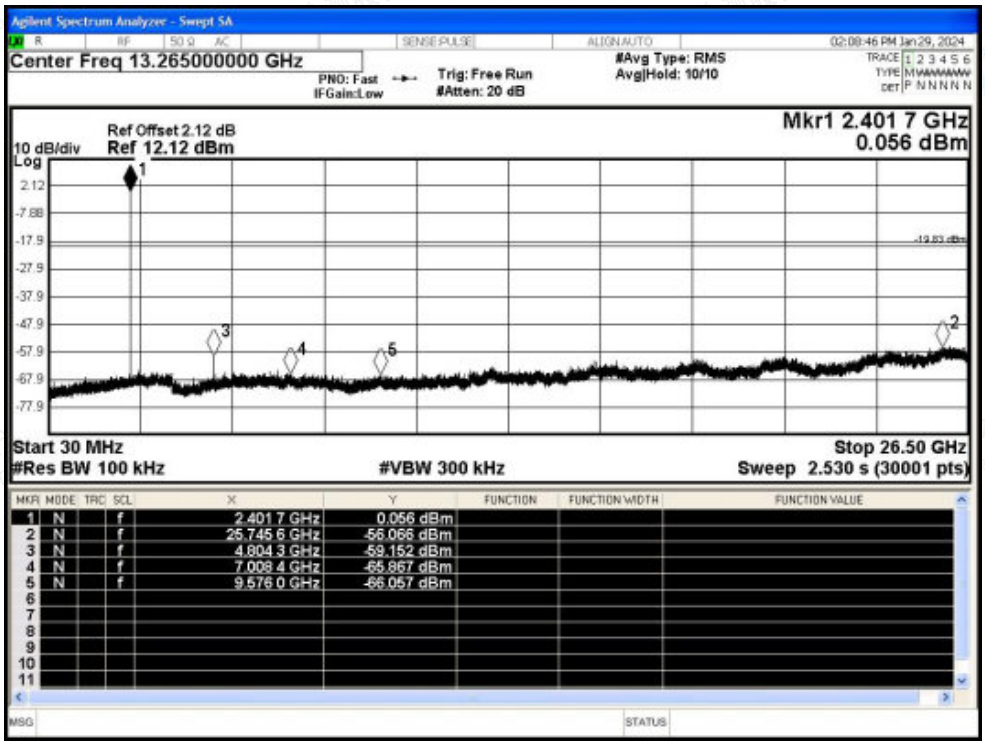
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-56.24	-20	Pass
NVNT	1-DH5	2441	Ant1	-55.44	-20	Pass
NVNT	1-DH5	2480	Ant1	-57.3	-20	Pass
NVNT	2-DH5	2402	Ant1	-55.35	-20	Pass
NVNT	2-DH5	2441	Ant1	-55.73	-20	Pass
NVNT	2-DH5	2480	Ant1	-56.5	-20	Pass
NVNT	3-DH5	2402	Ant1	-55.5	-20	Pass
NVNT	3-DH5	2441	Ant1	-55.35	-20	Pass
NVNT	3-DH5	2480	Ant1	-55.62	-20	Pass

Test Graphs

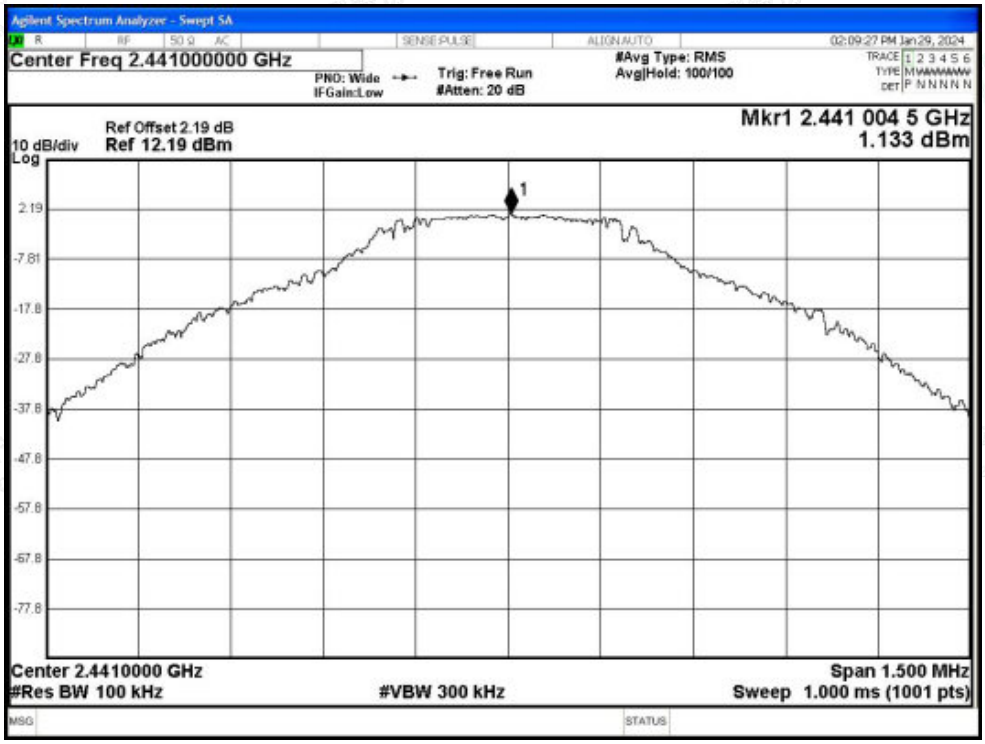
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



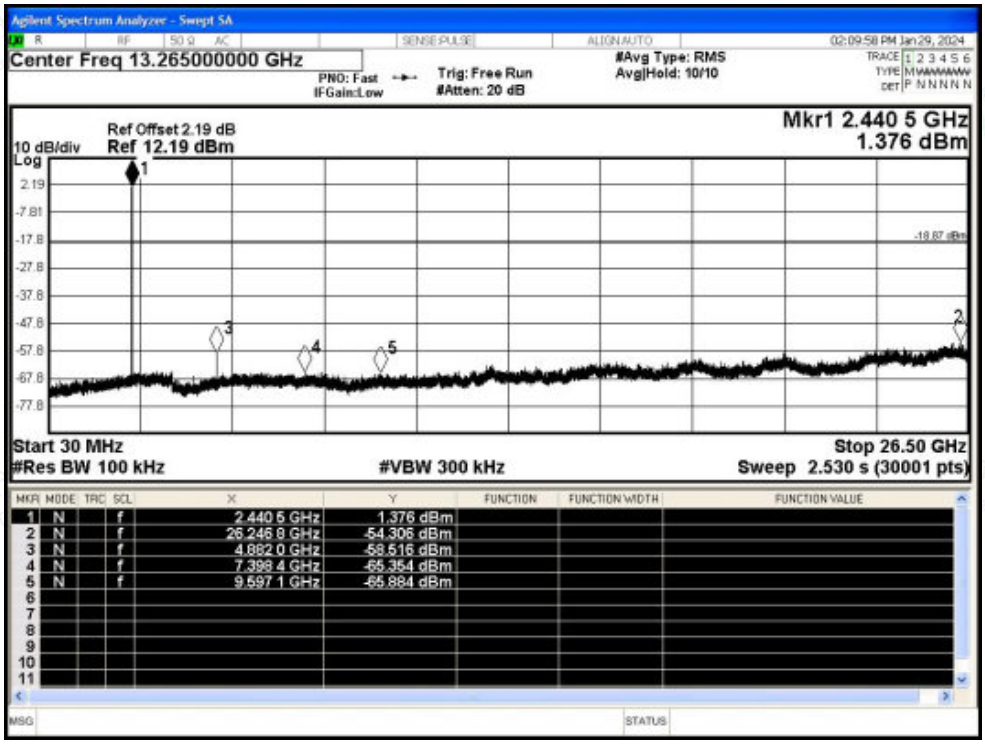
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



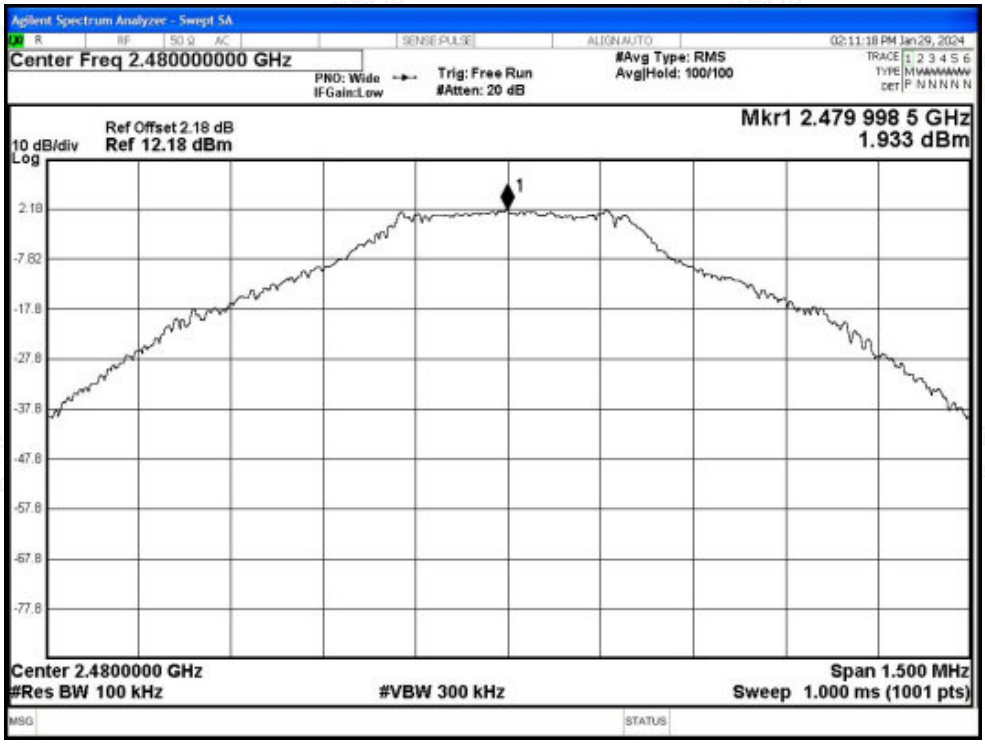
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



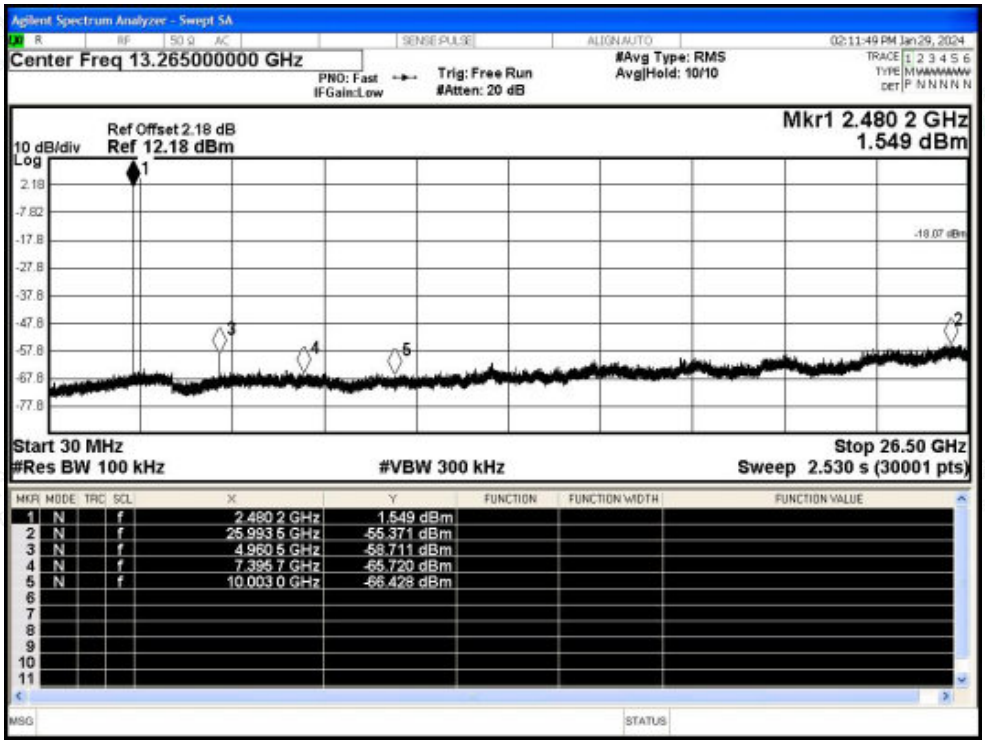
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



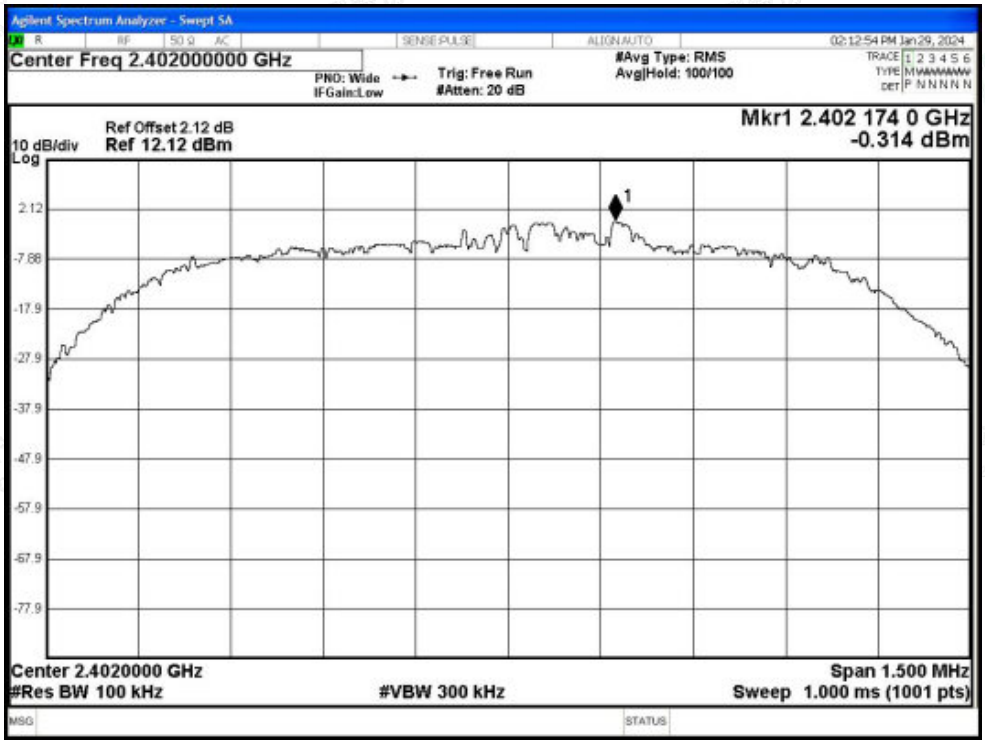
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



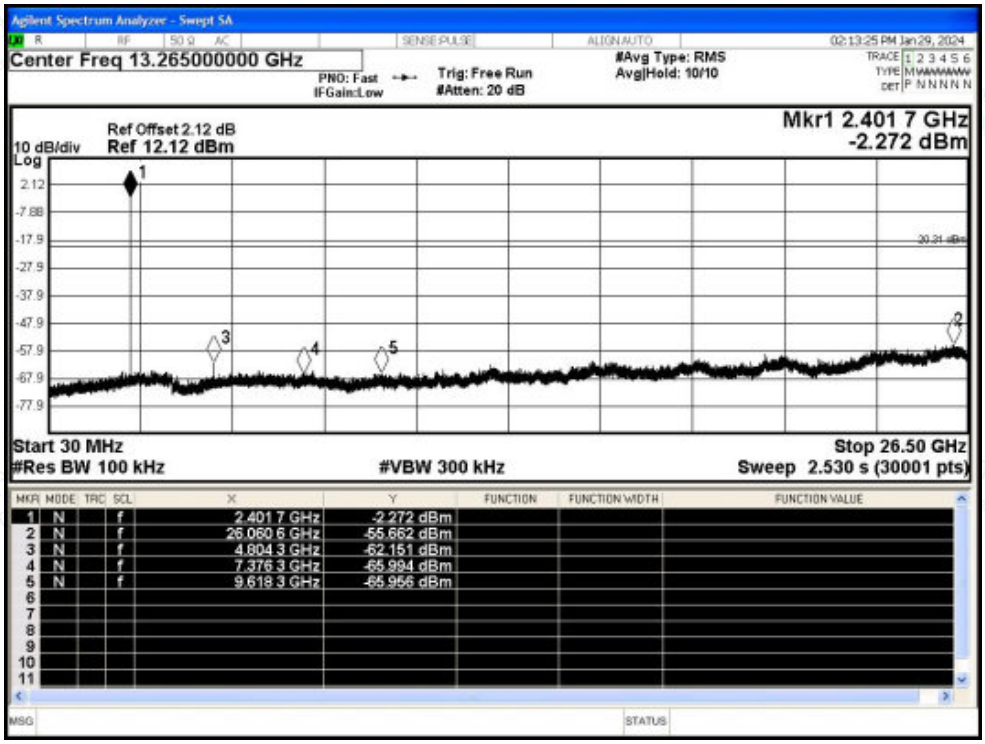
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



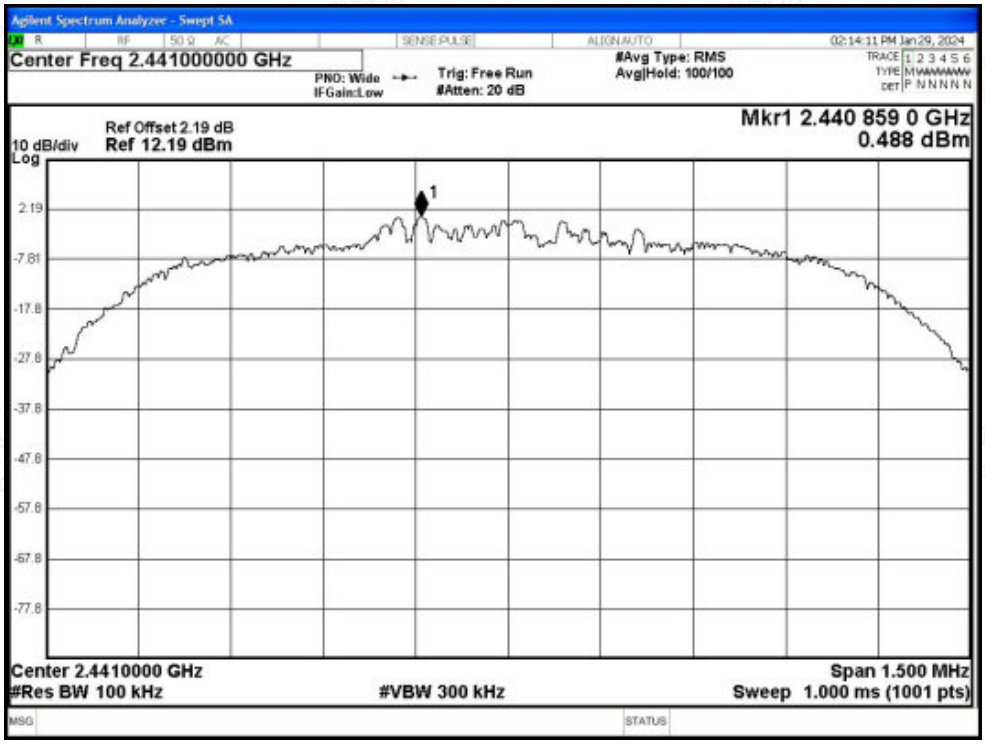
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



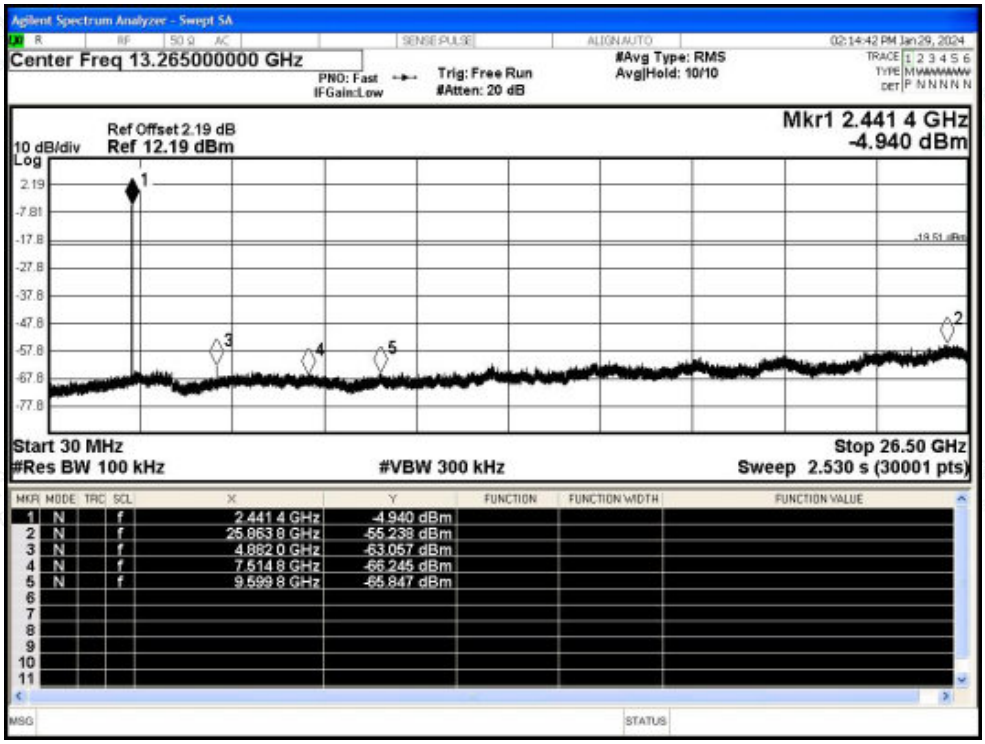
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



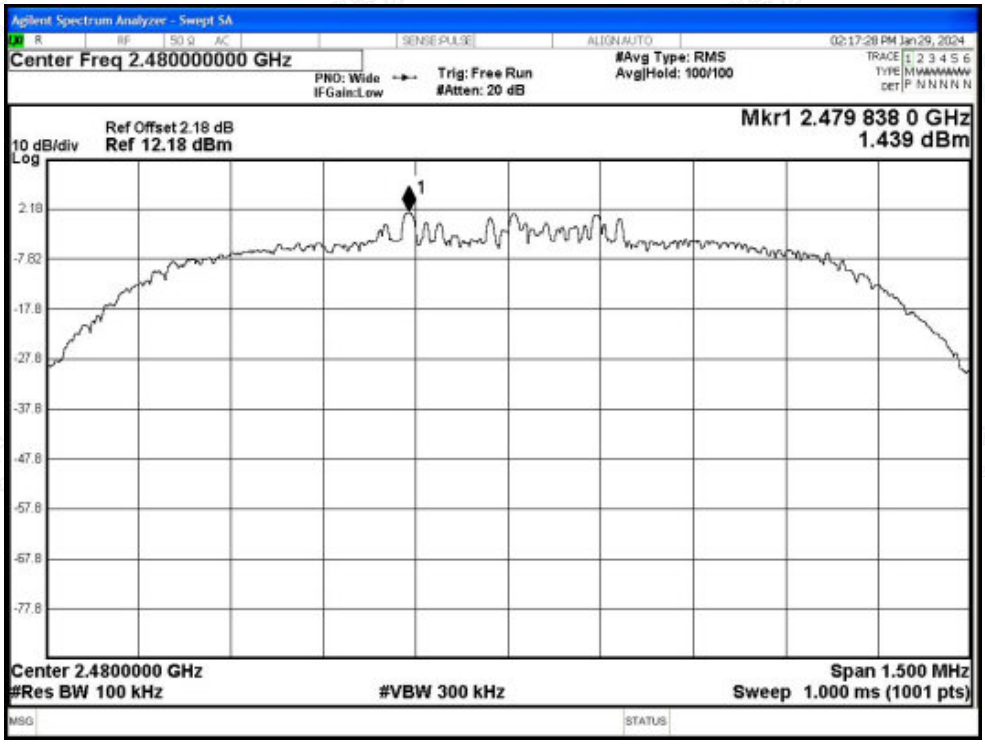
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



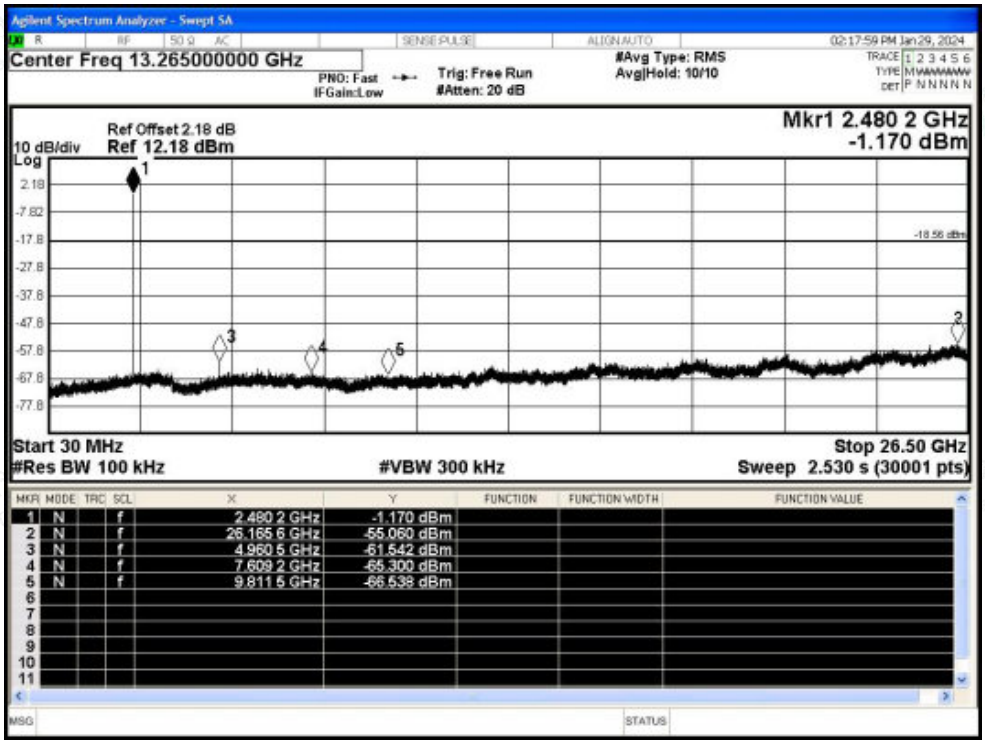
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



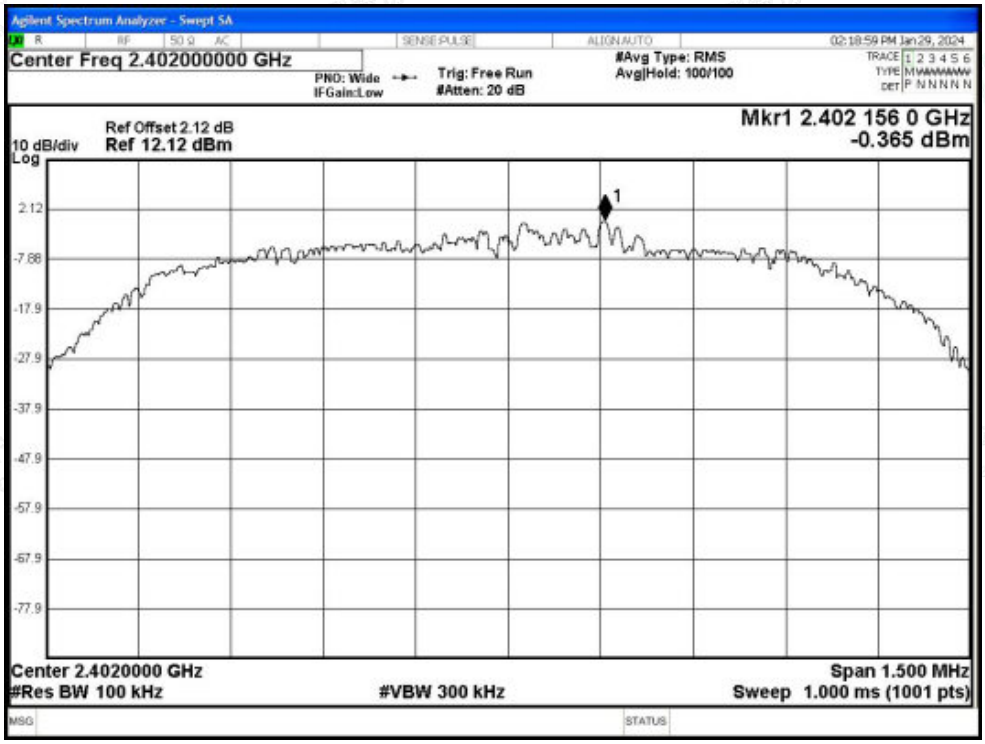
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



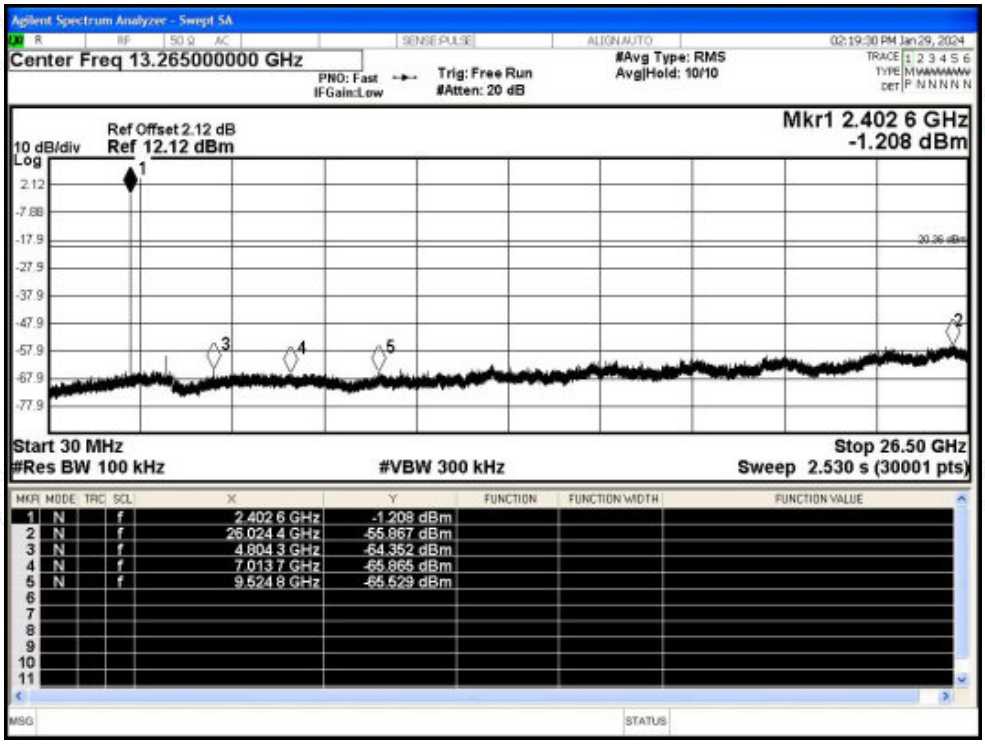
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



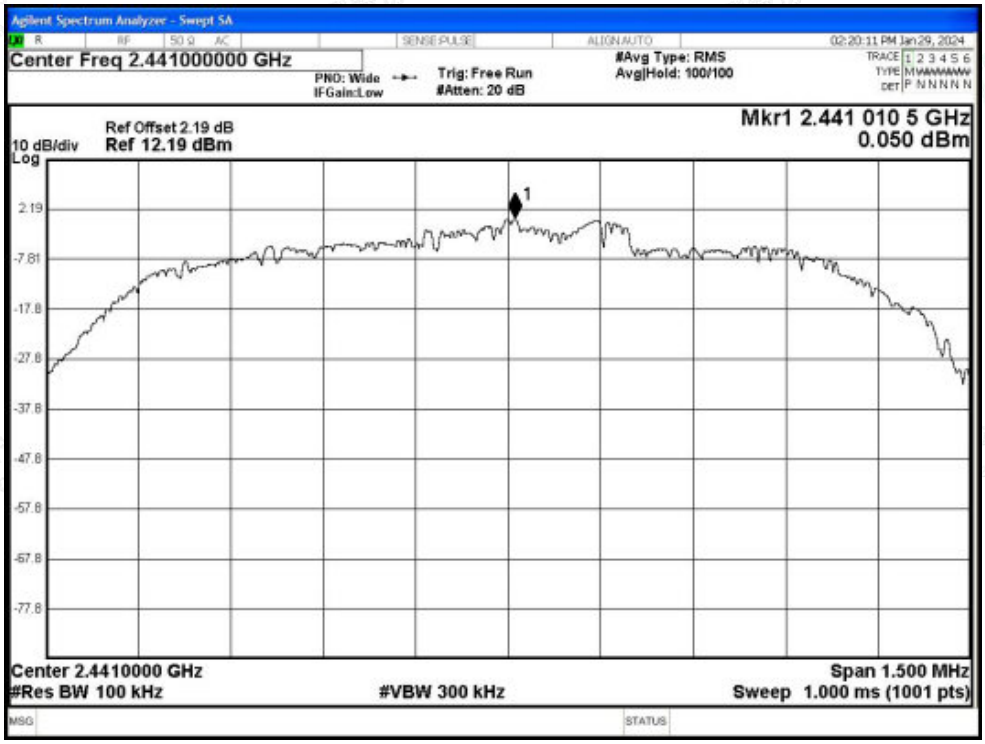
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



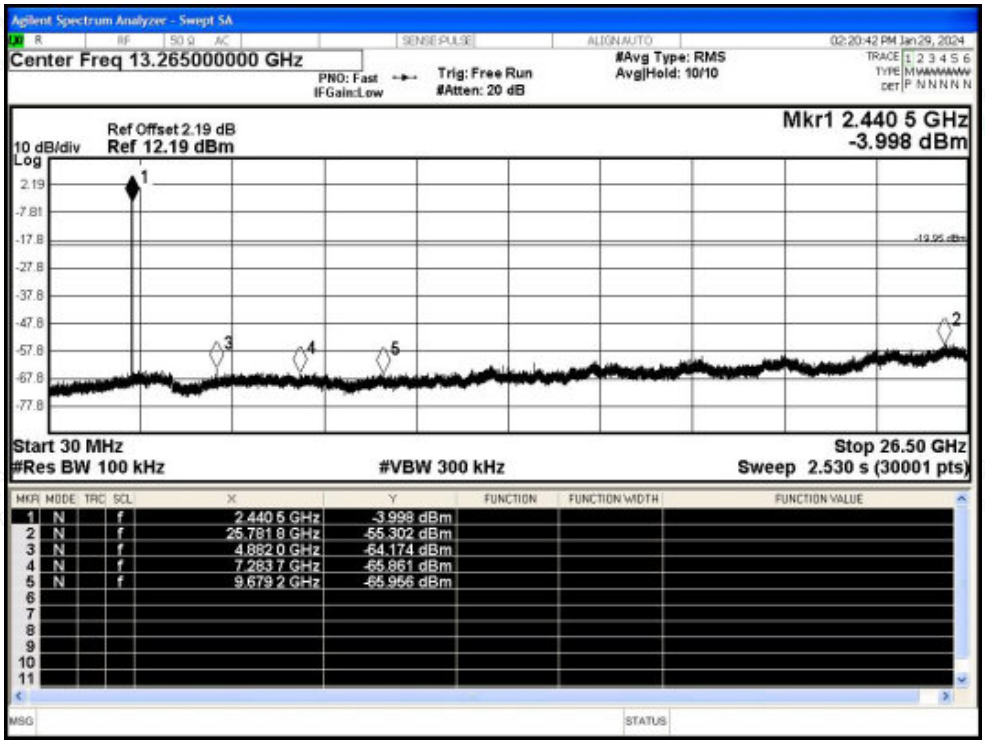
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



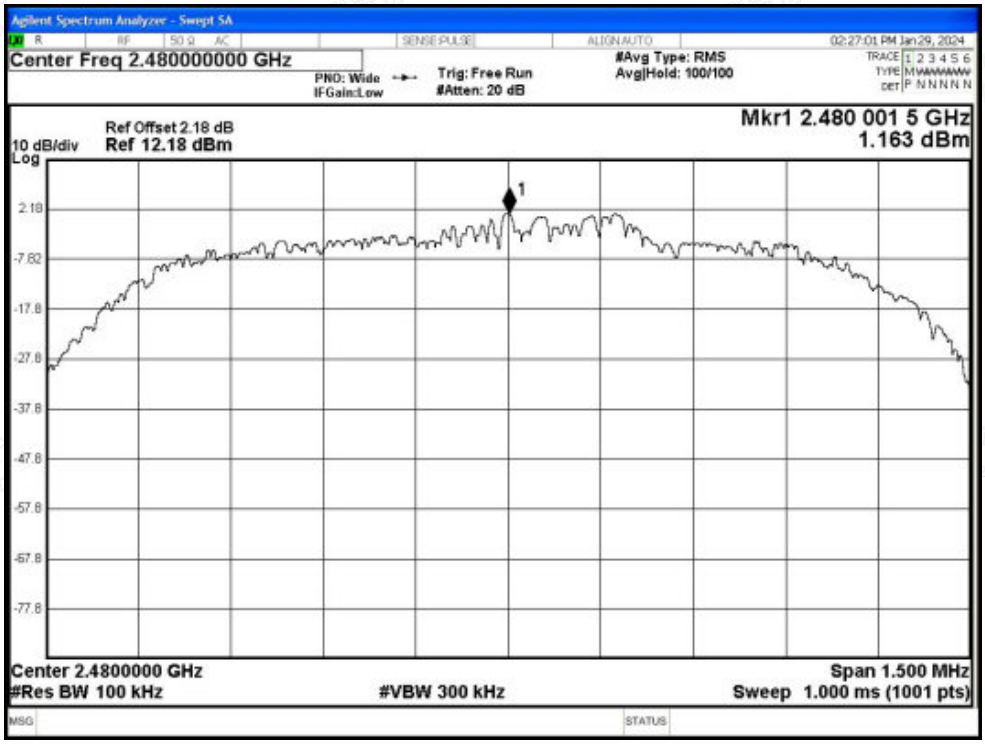
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



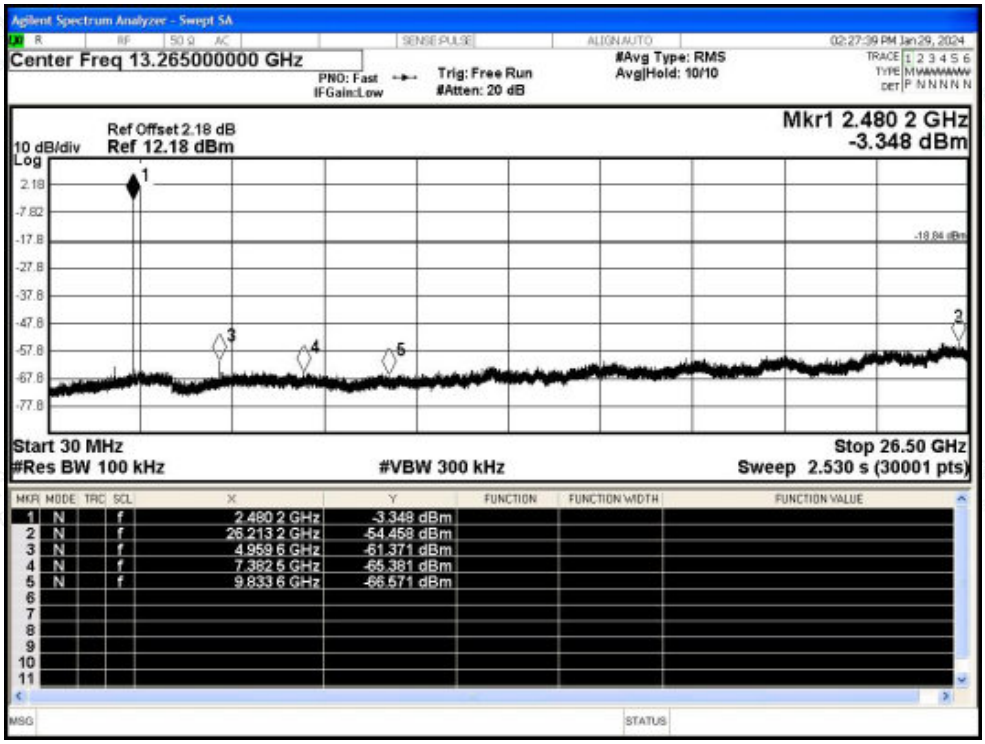
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

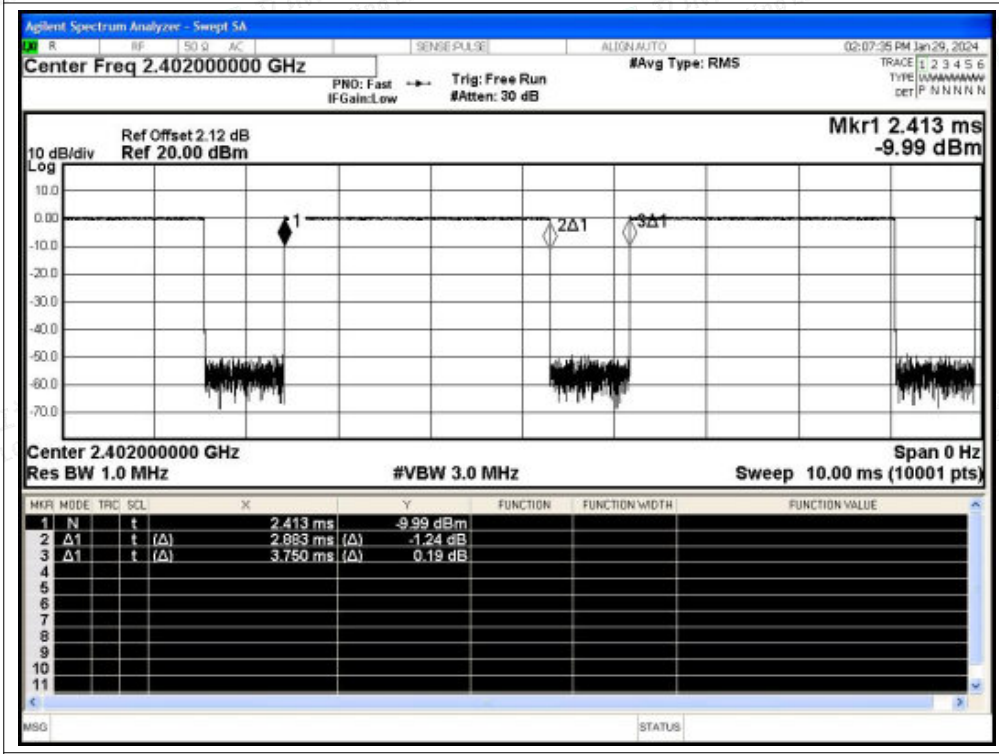


A.8 Duty Cycle

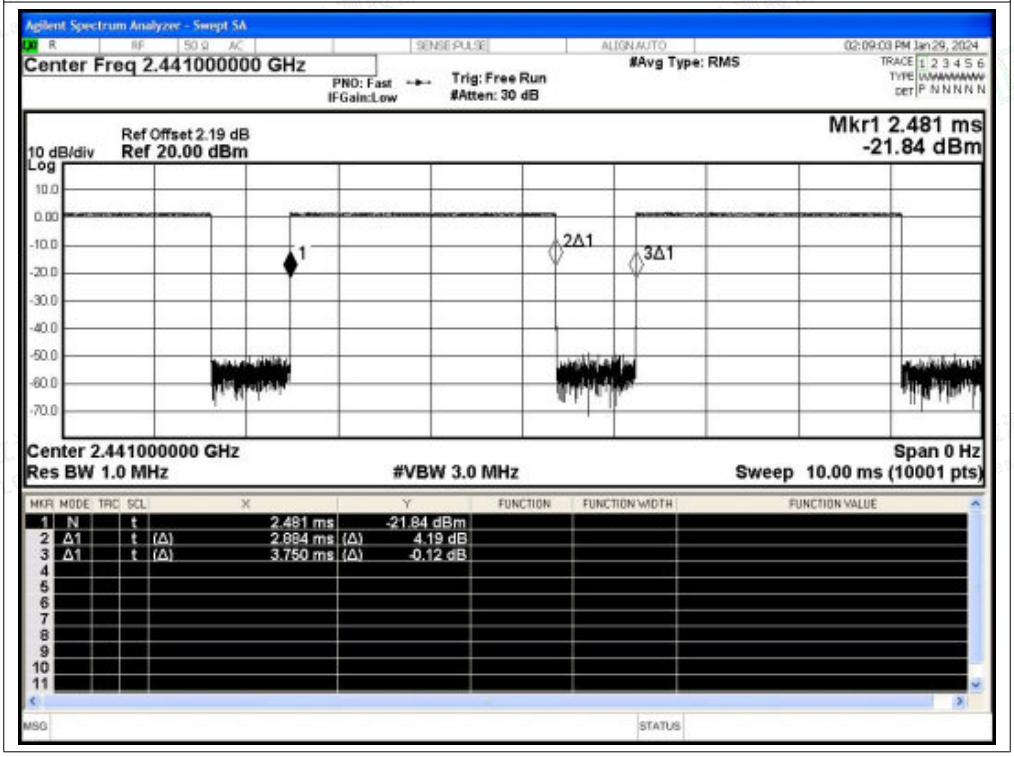
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.91	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.88	1.14	0.35
NVNT	2-DH5	2402	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2441	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.99	1.14	0.35
NVNT	3-DH5	2402	Ant1	77.04	1.13	0.35
NVNT	3-DH5	2441	Ant1	77.01	1.13	0.35
NVNT	3-DH5	2480	Ant1	77.01	1.13	0.35

Test Graphs

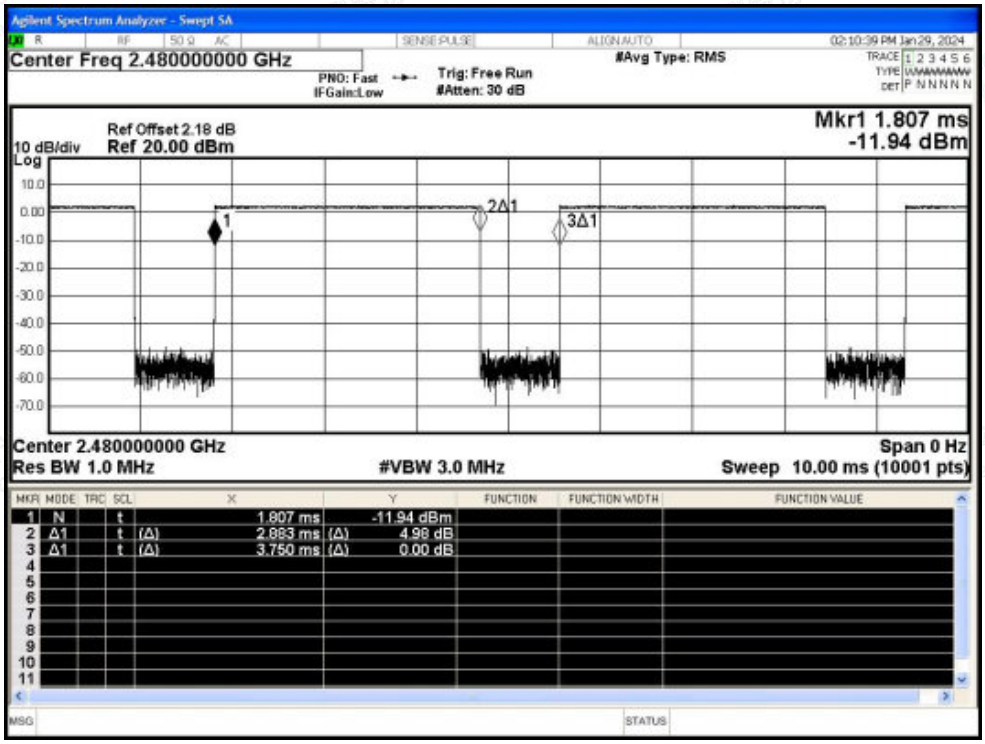
Duty Cycle NVNT 1-DH5 2402MHz Ant1



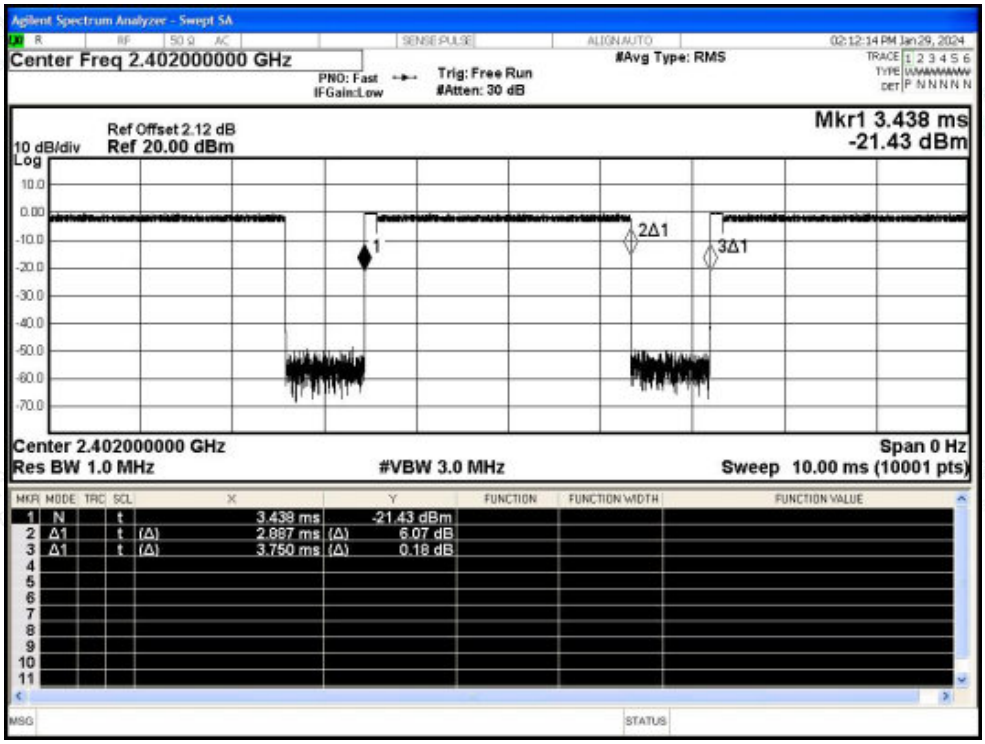
Duty Cycle NVNT 1-DH5 2441MHz Ant1



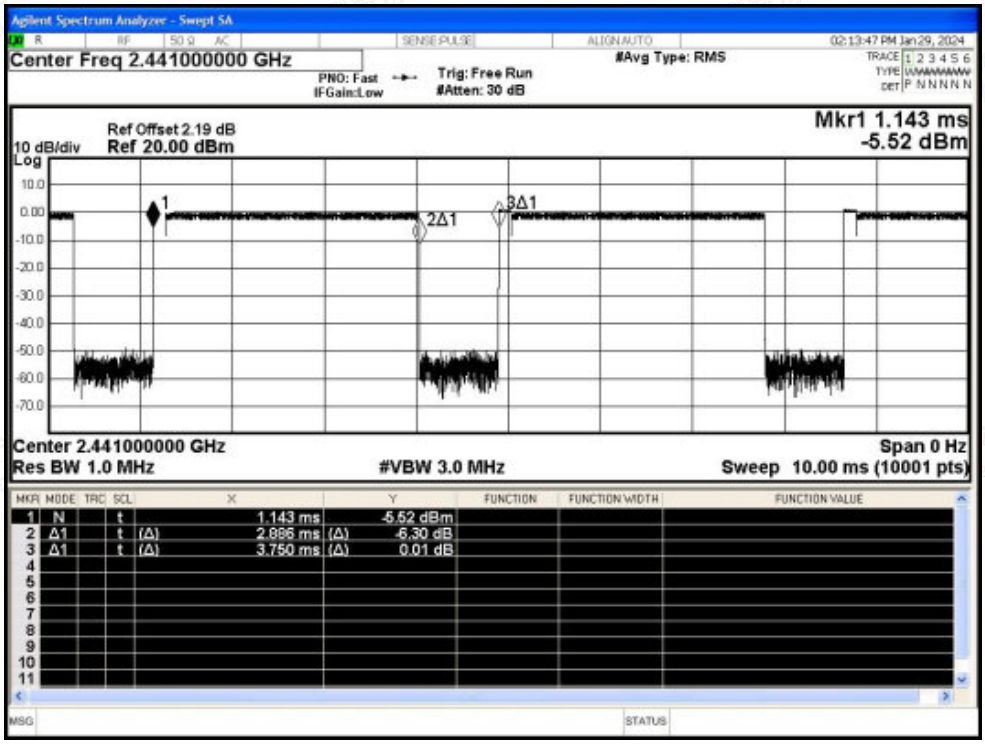
Duty Cycle NVNT 1-DH5 2480MHz Ant1



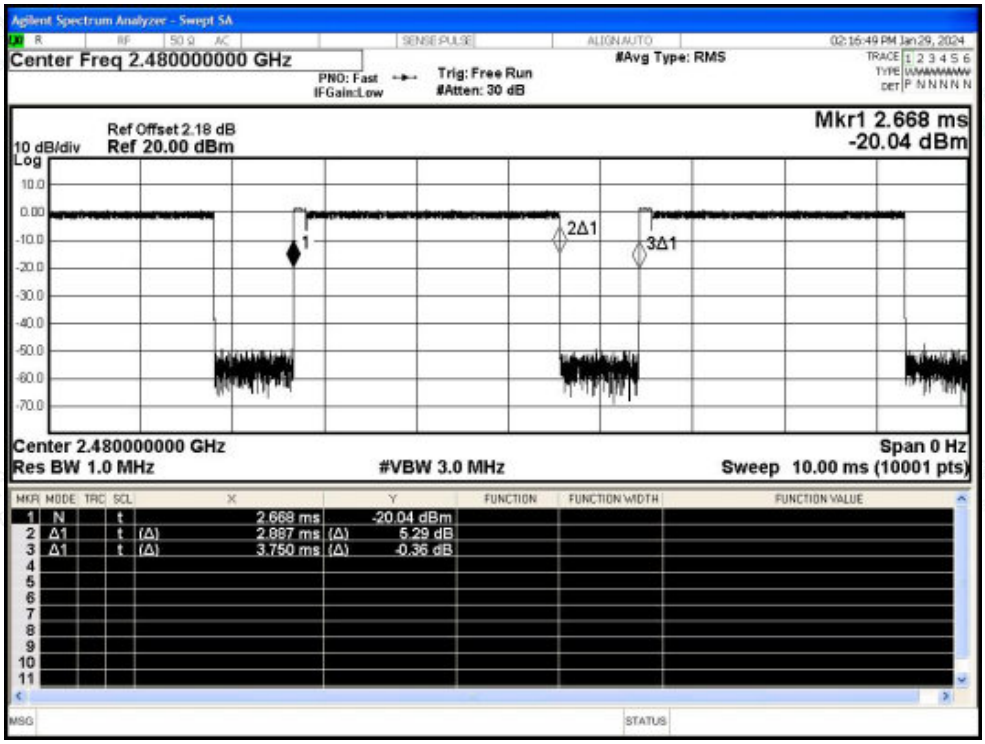
Duty Cycle NVNT 2-DH5 2402MHz Ant1



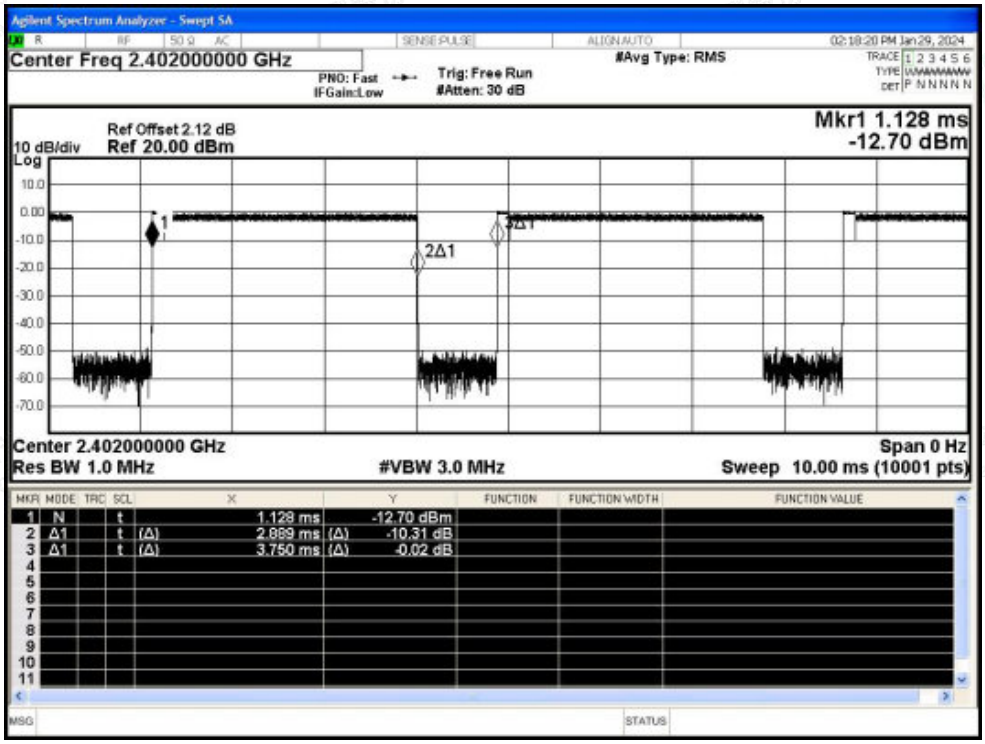
Duty Cycle NVNT 2-DH5 2441MHz Ant1



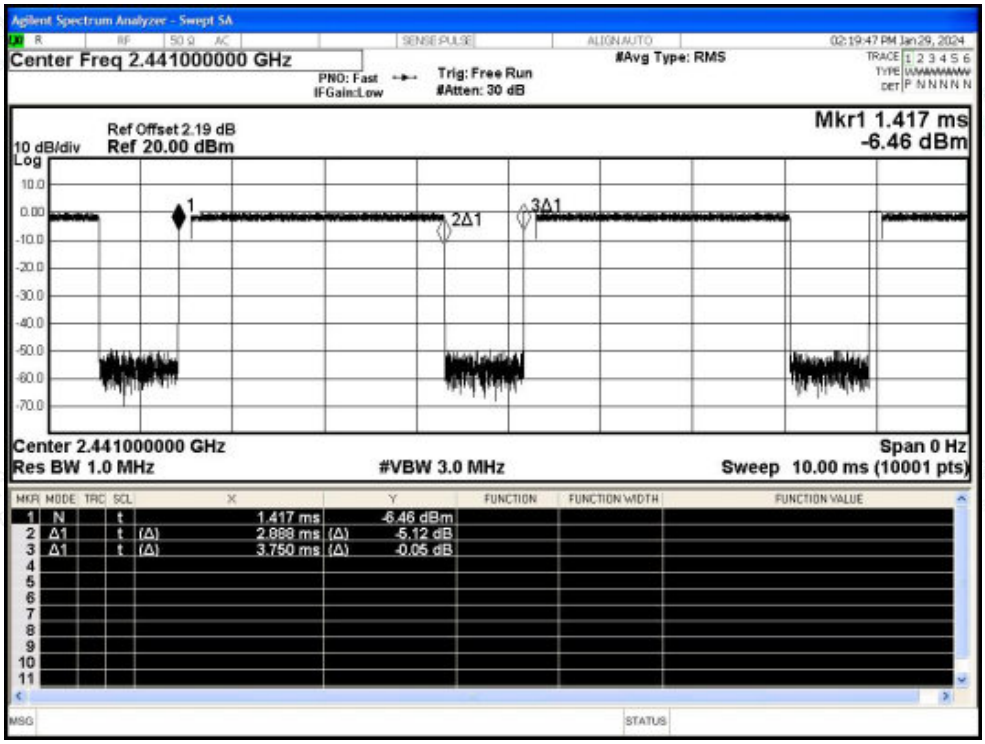
Duty Cycle NVNT 2-DH5 2480MHz Ant1



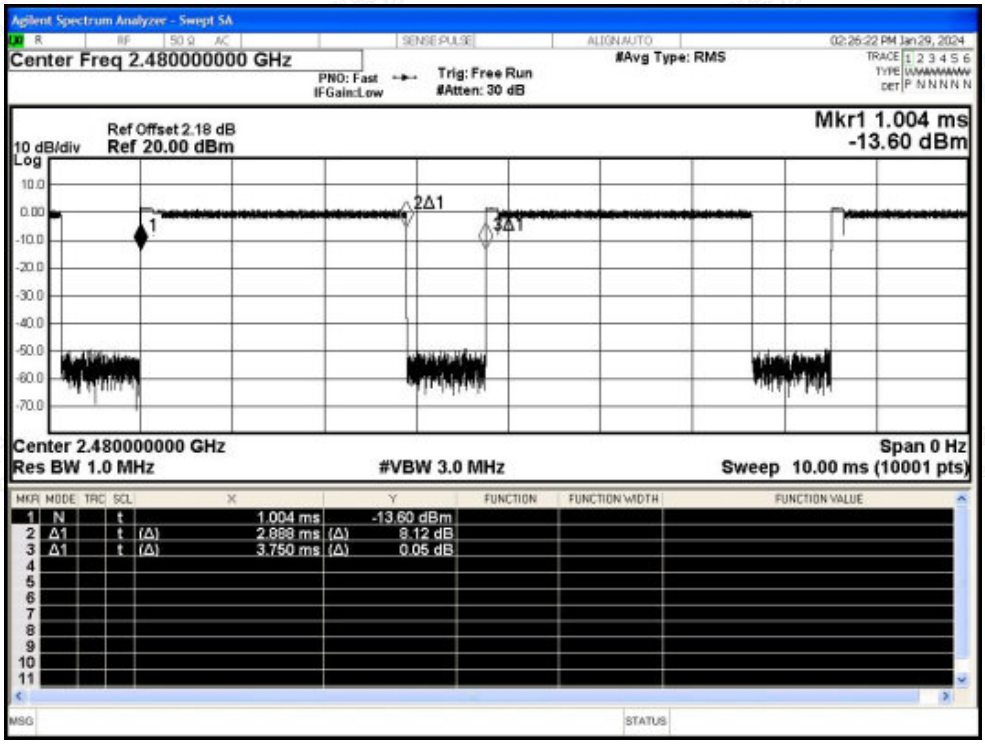
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

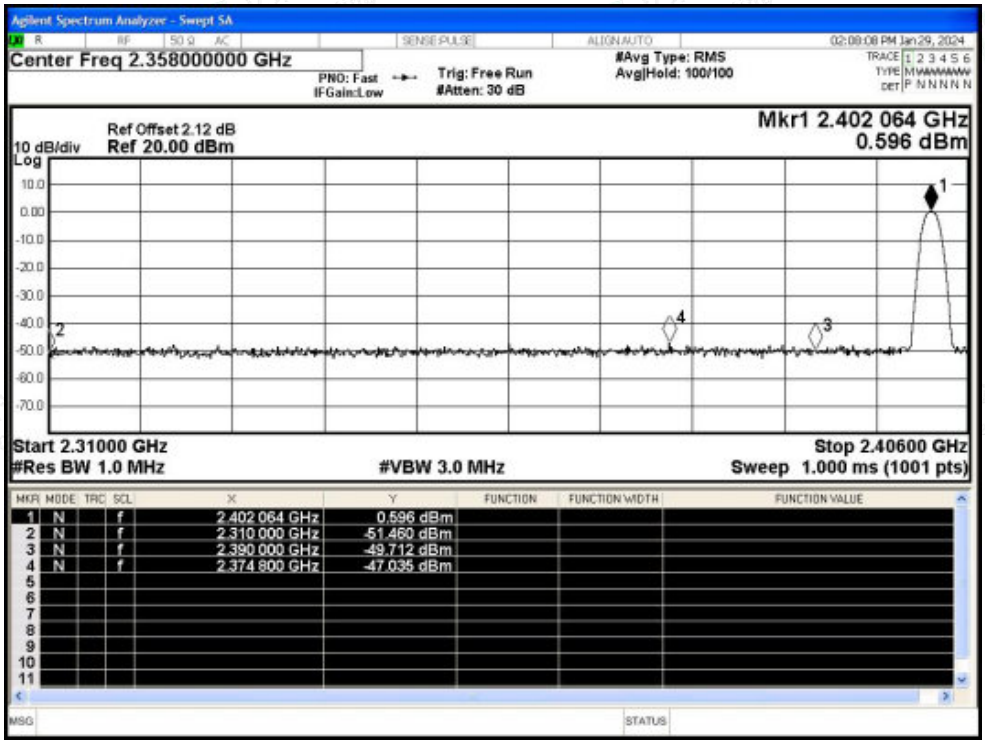


A.9 Restrict Band

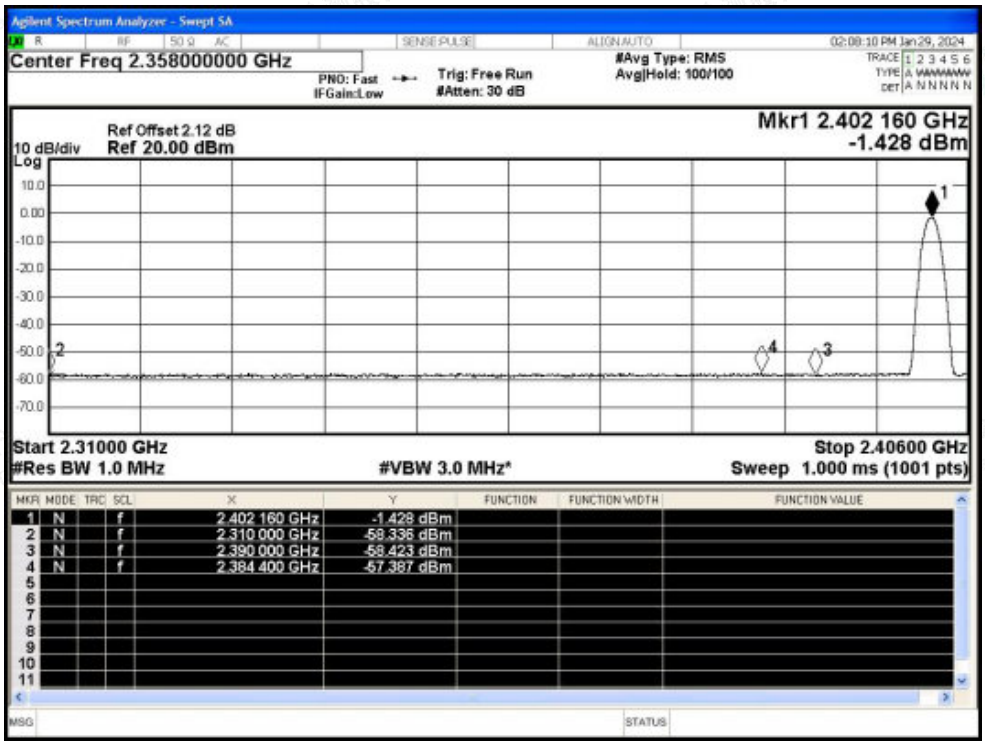
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-51.46	2	-	45.8	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.34	2	1.14	40.06	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2374.8	-47.04	2	-	50.22	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2384.4	-57.39	2	1.14	41.01	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.71	2	-	47.55	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.42	2	1.14	39.98	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.74	2	-	48.52	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.66	2	1.14	40.74	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2491.816	-46.52	2	-	50.74	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2487.28	-56.93	2	1.14	41.47	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.22	2	-	47.04	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.37	2	1.14	40.03	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.02	2	-	46.24	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.6	2	1.14	39.8	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2329.584	-47.68	2	-	49.58	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2385.648	-57.29	2	1.14	41.11	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-48.67	2	-	48.59	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.22	2	1.14	40.18	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-47.61	2	-	49.65	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.94	2	1.14	40.46	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2489.776	-46.59	2	-	50.67	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.128	-57.04	2	1.14	41.36	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.78	2	-	47.48	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.03	2	1.14	40.37	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.88	2	-	45.38	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.82	2	1.13	39.57	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2326.704	-47.48	2	-	49.78	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2386.416	-57.66	2	1.13	40.73	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-49.89	2	-	47.37	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-59.09	2	1.13	39.3	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.09	2	-	48.17	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.97	2	1.13	40.42	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2488.216	-46.85	2	-	50.41	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2488.36	-57.13	2	1.13	41.26	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.84	2	-	46.42	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.99	2	1.13	40.4	Average	54	Pass

Test Graphs

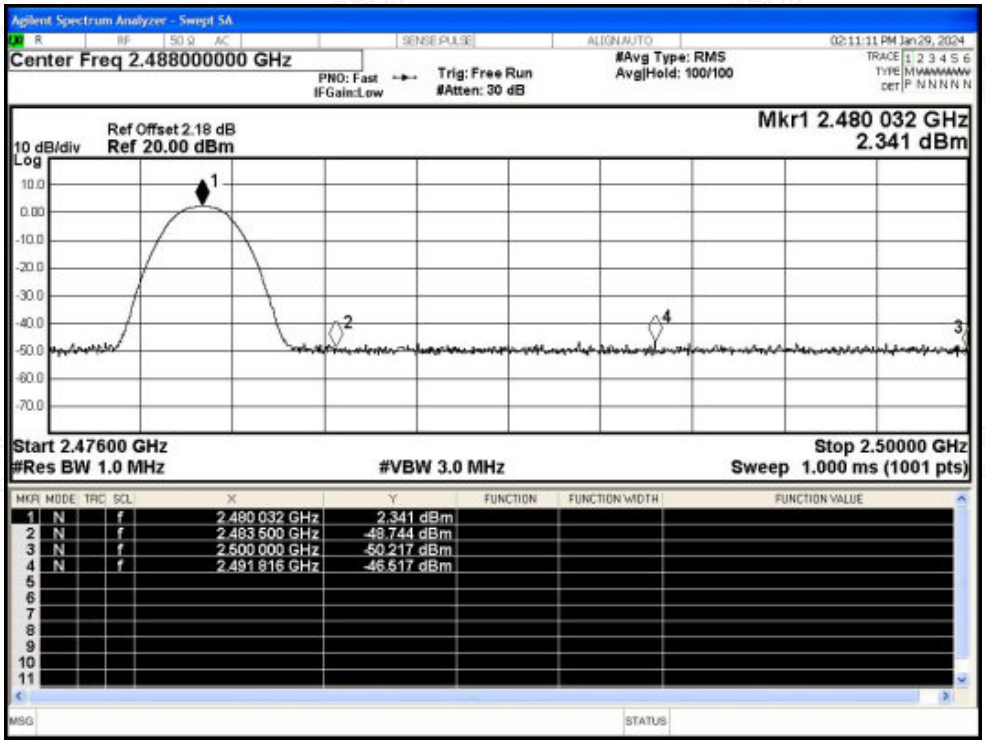
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



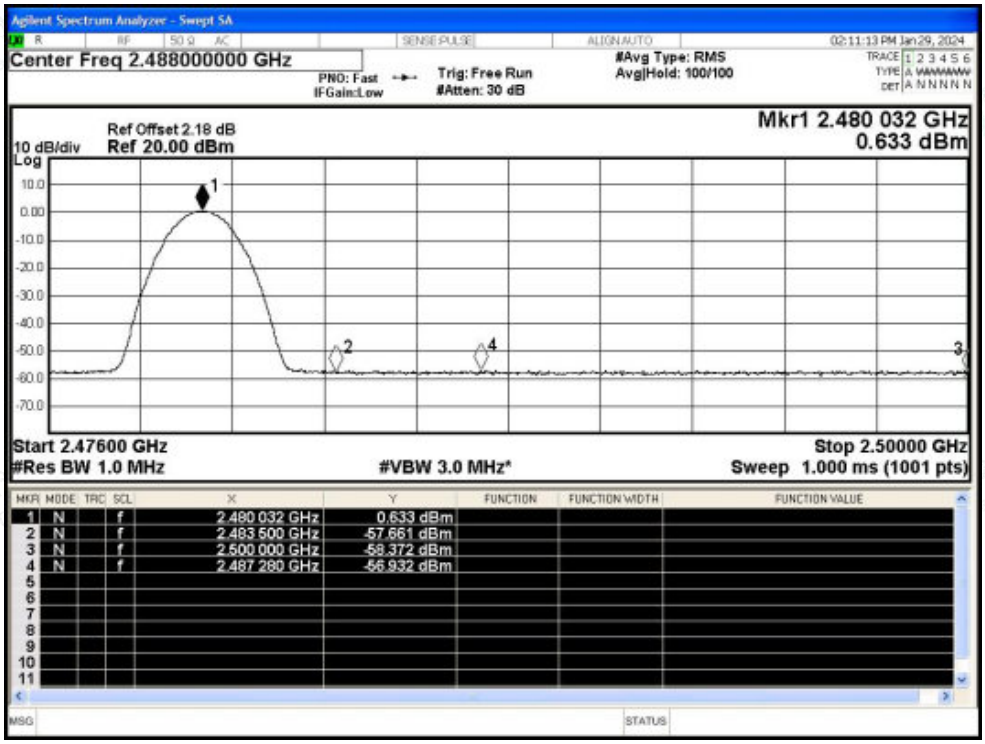
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



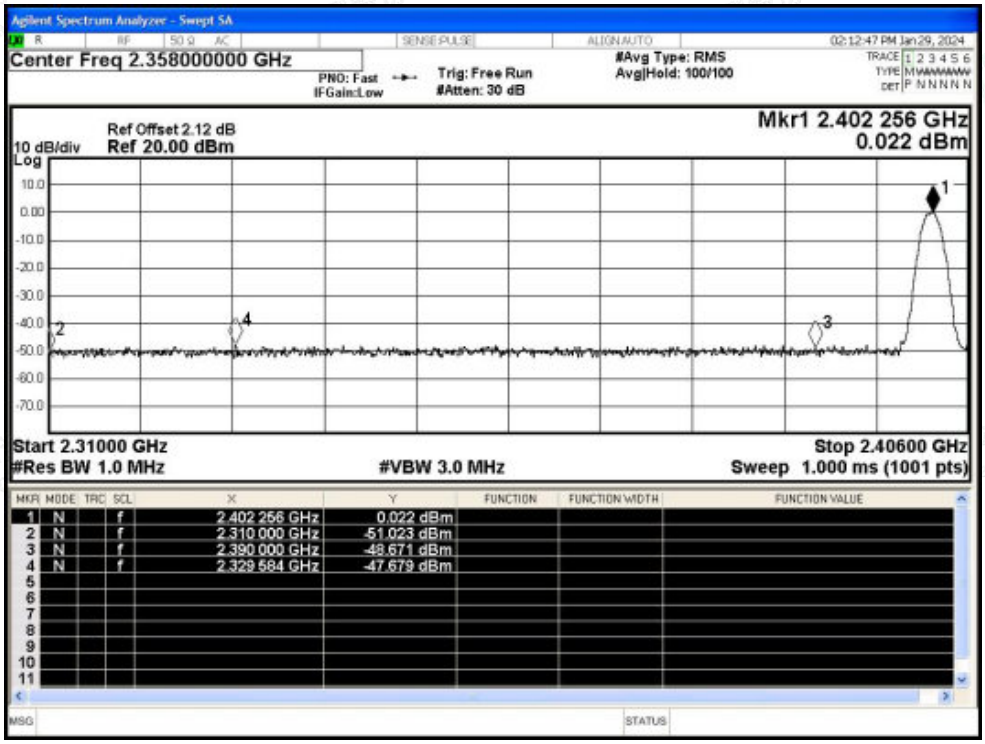
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



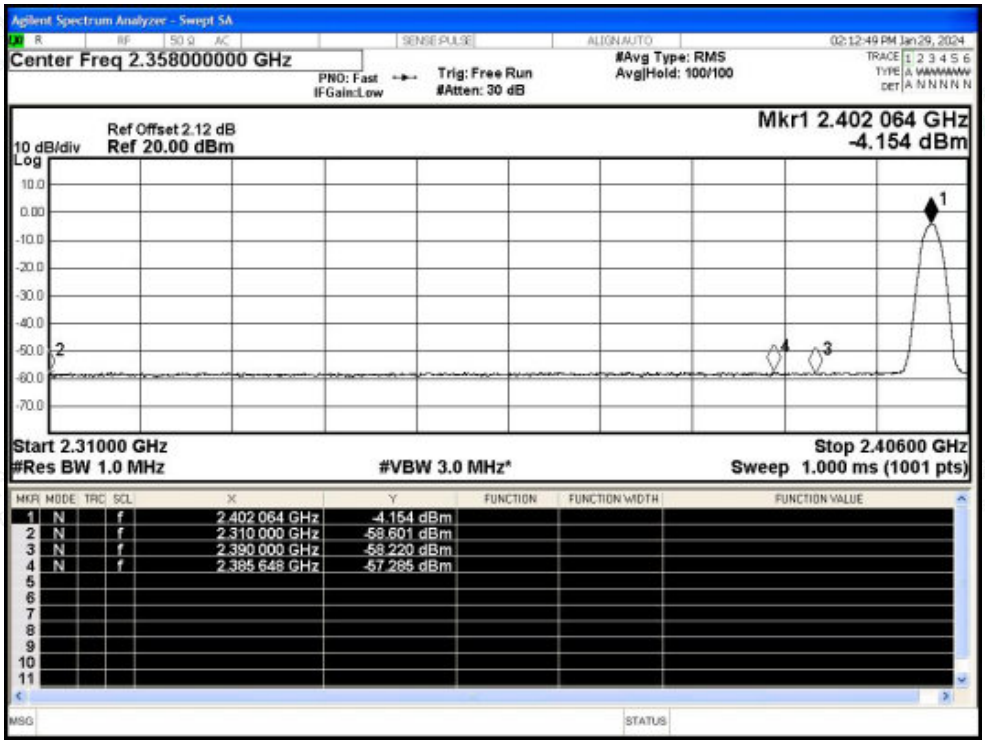
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



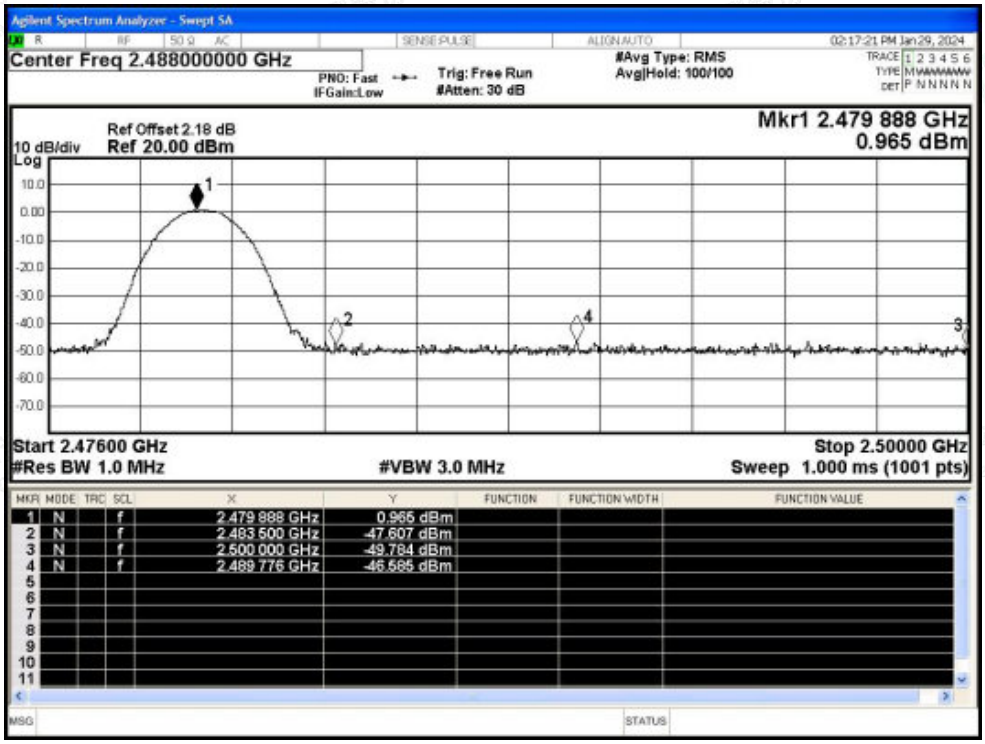
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



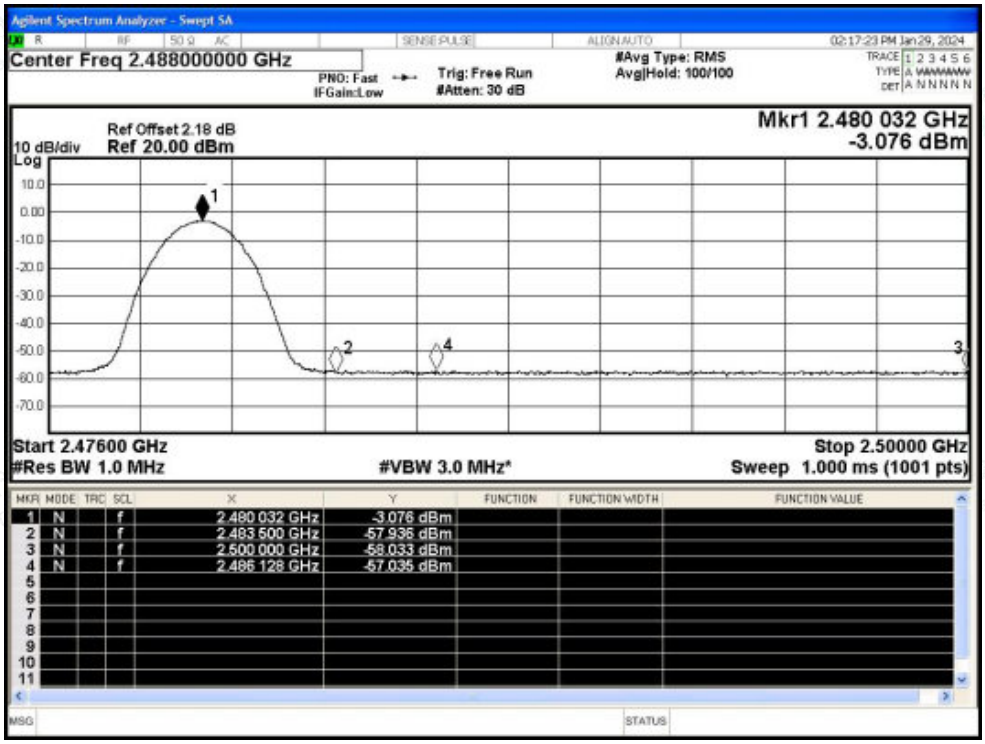
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



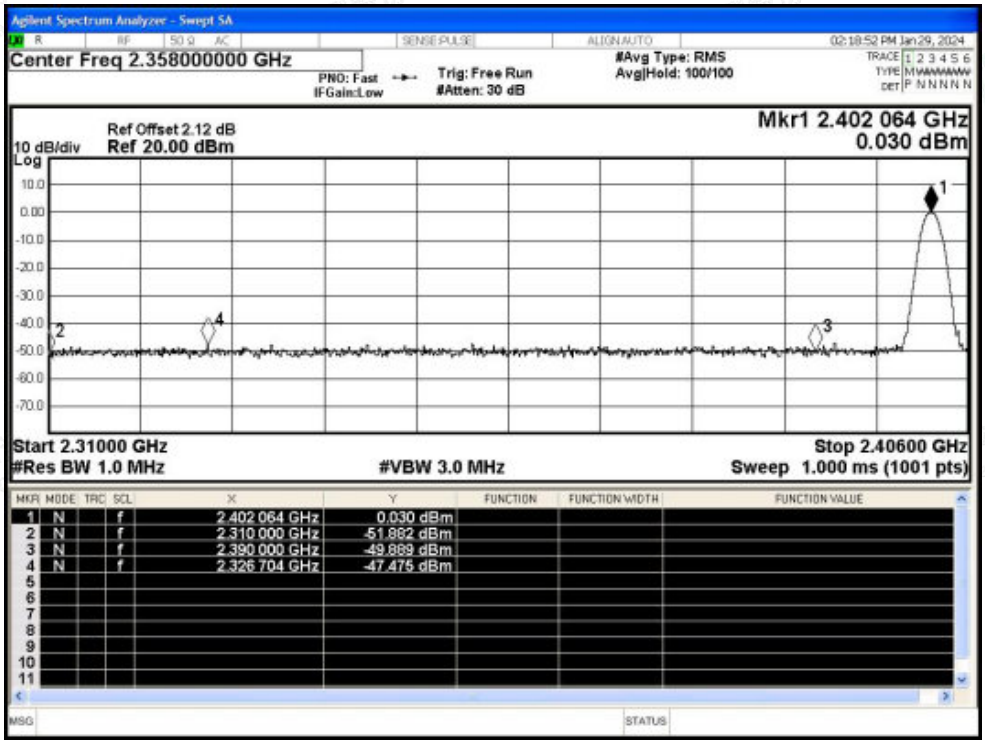
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



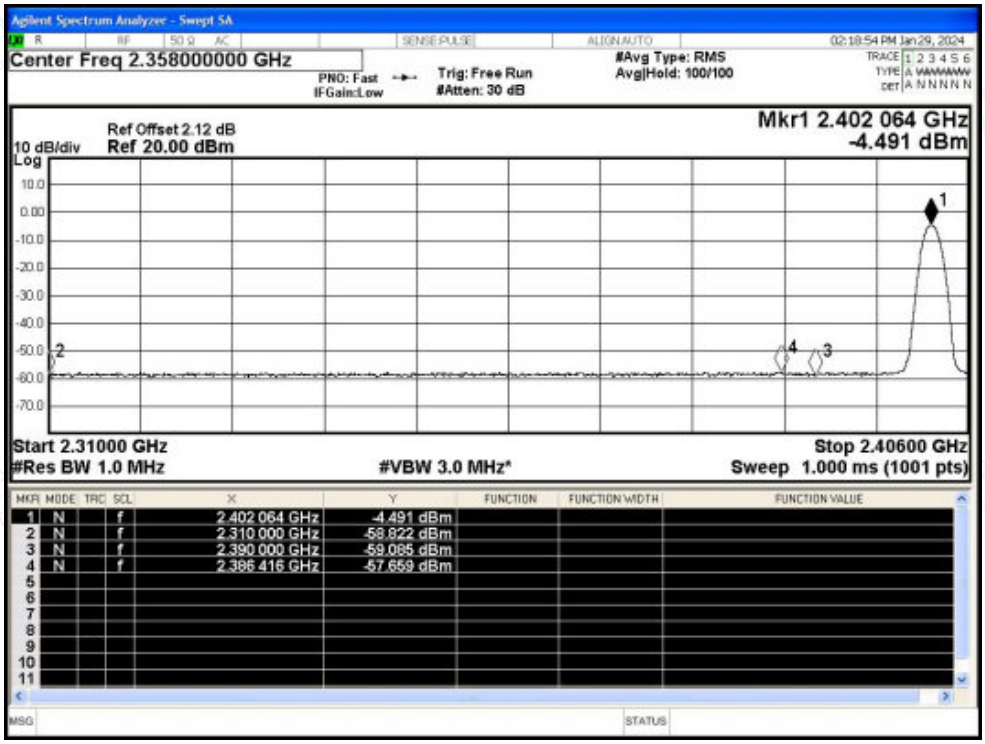
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



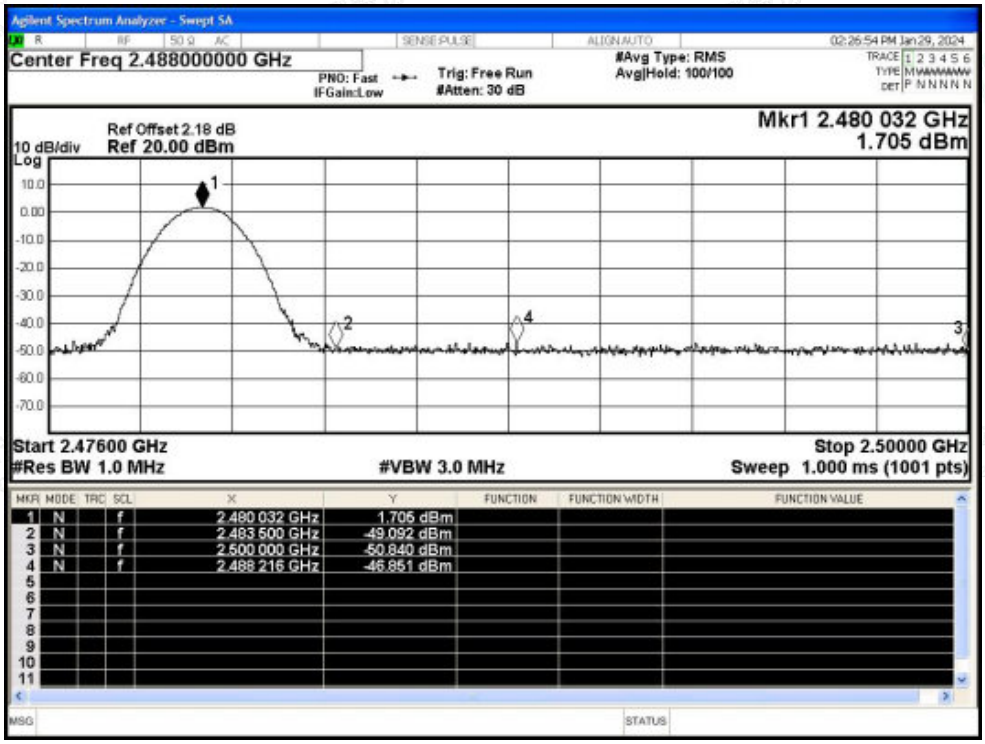
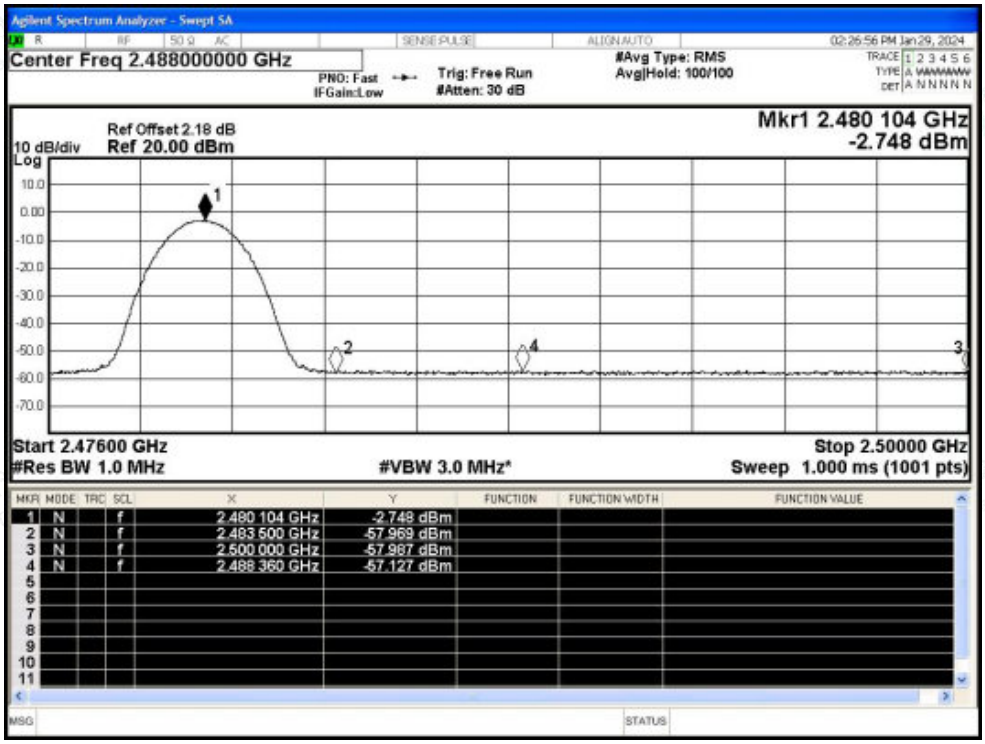
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



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