RF Test Data for BT (Conducted Measurement)

Product Name: KC-493S Series

Test Model: KC-493S

Environmental Conditions

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

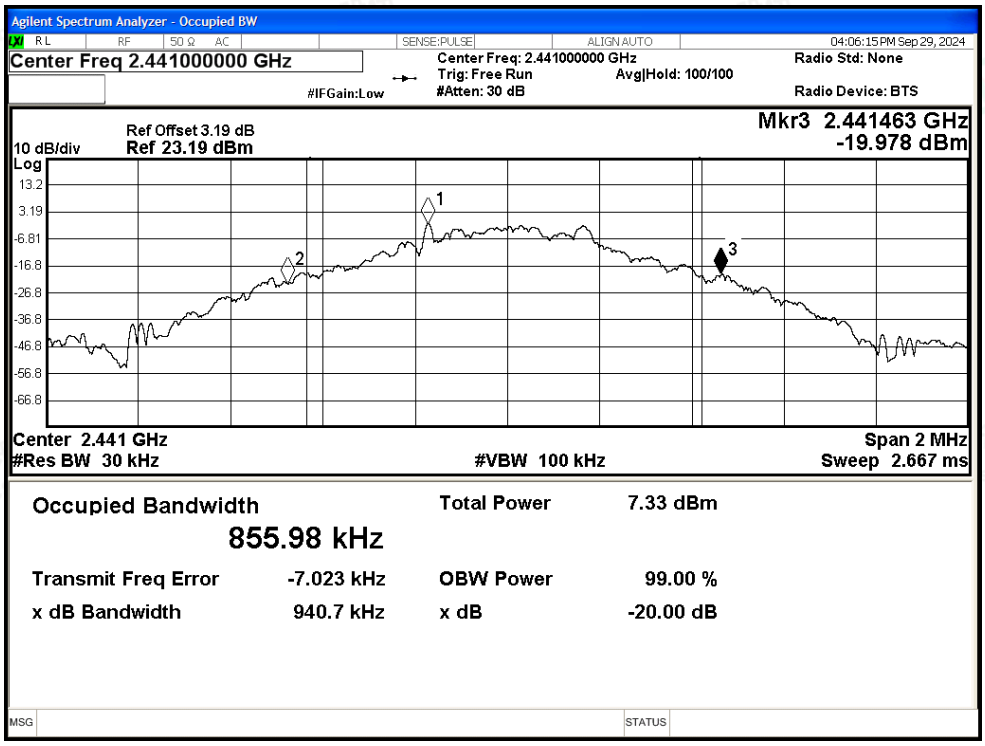
A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.942	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.941	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.026	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.288	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.288	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.285	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.314	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.292	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.306	N/A	Pass

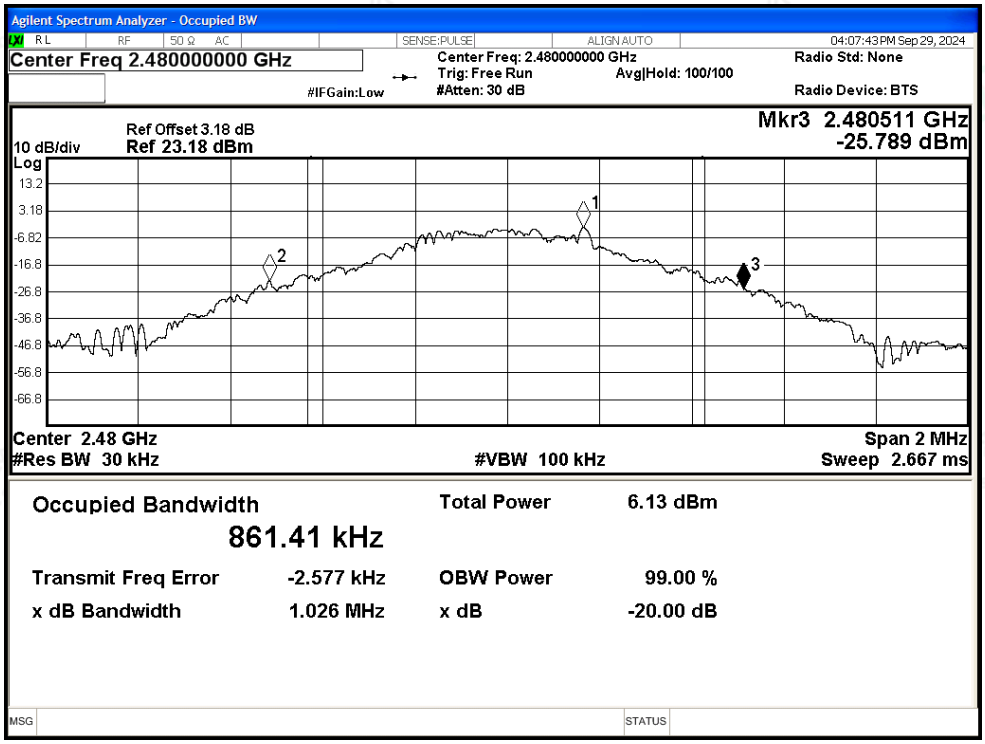
Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

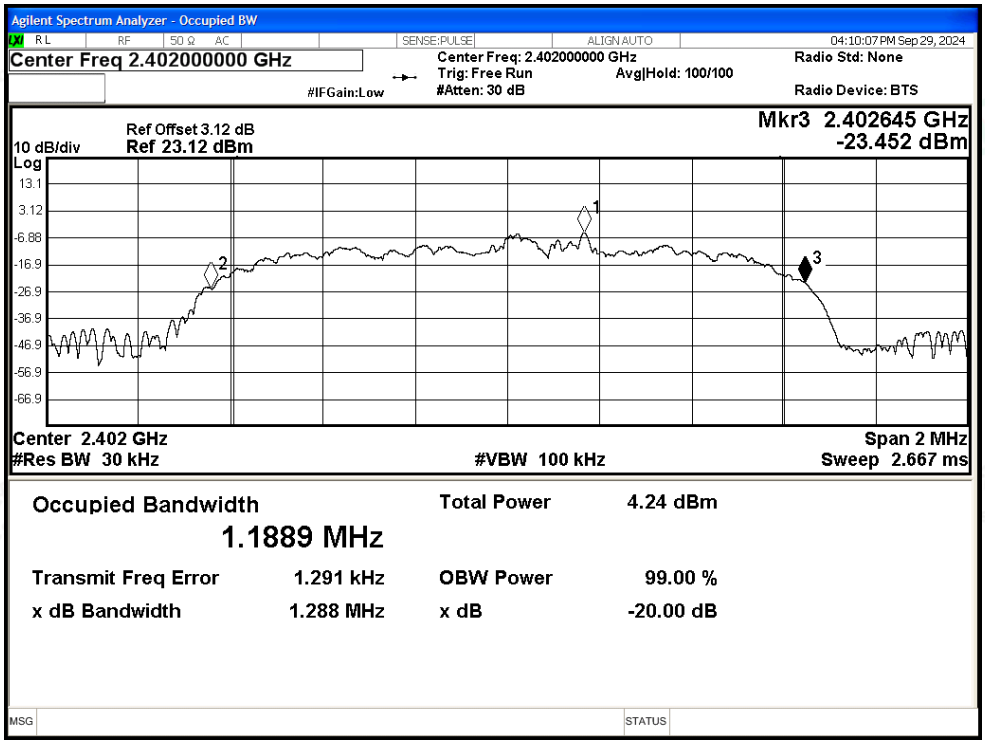
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



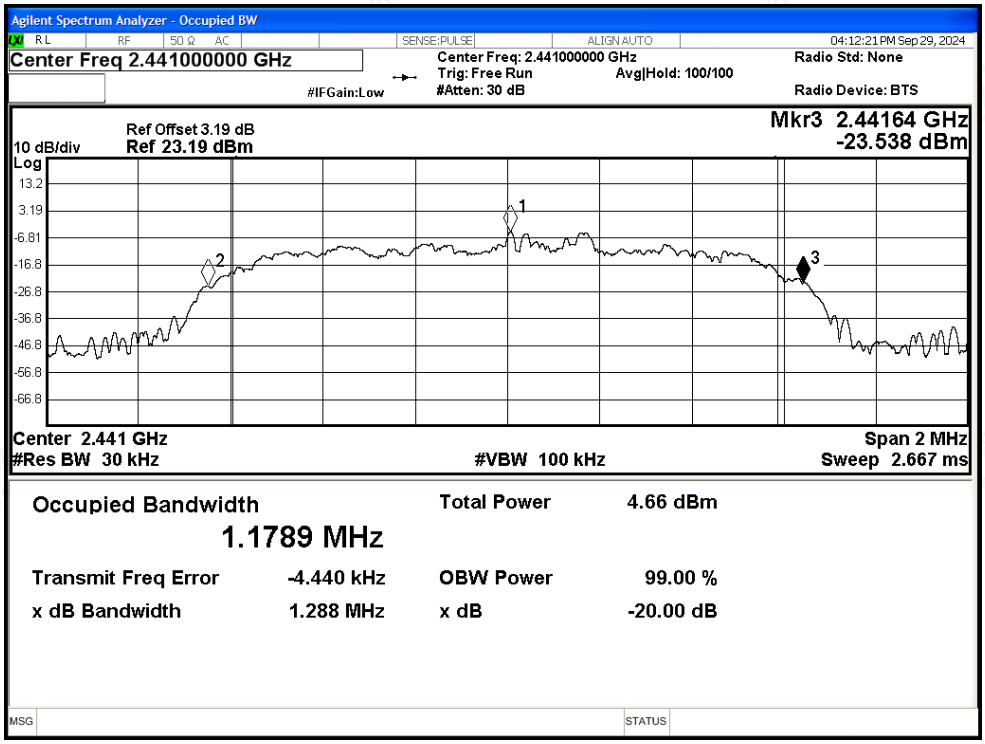
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



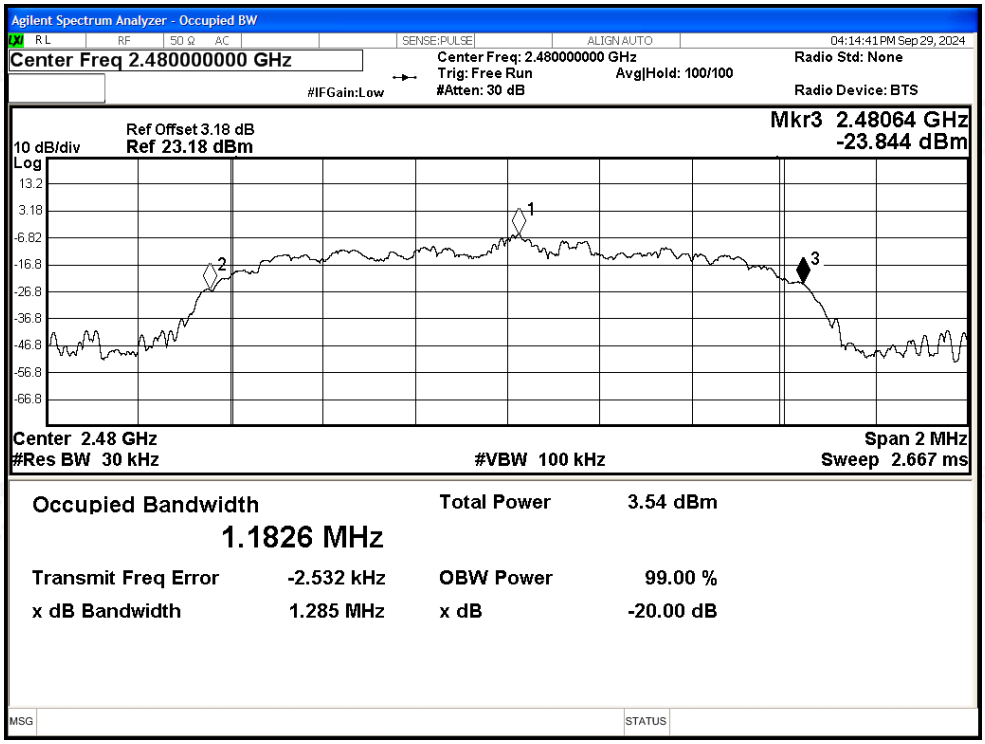
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



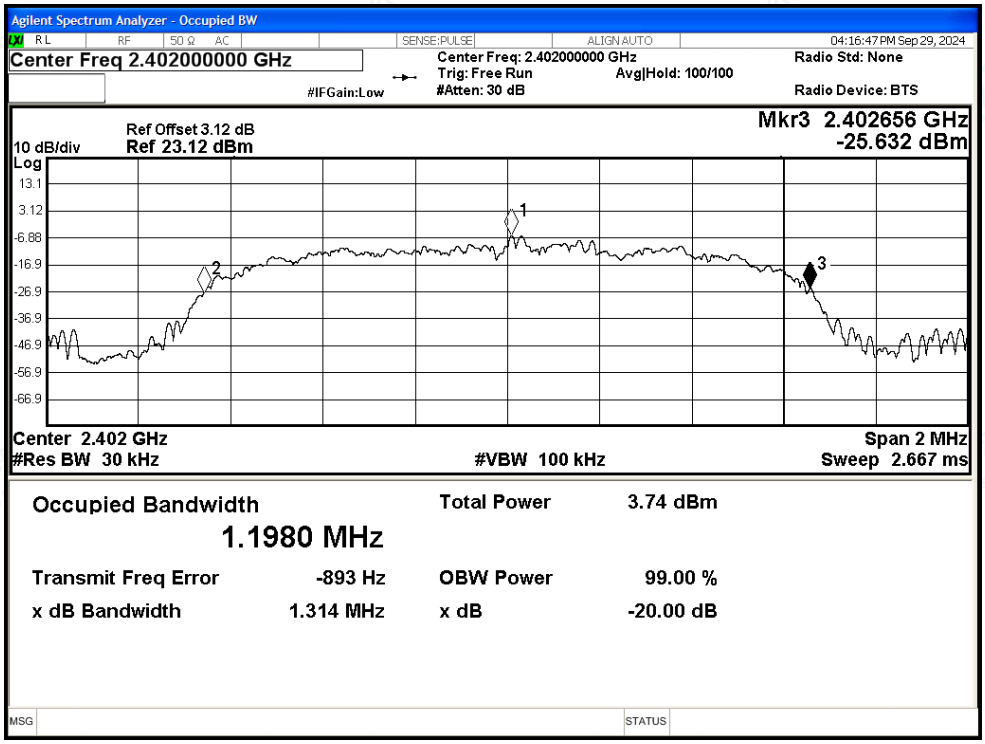
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



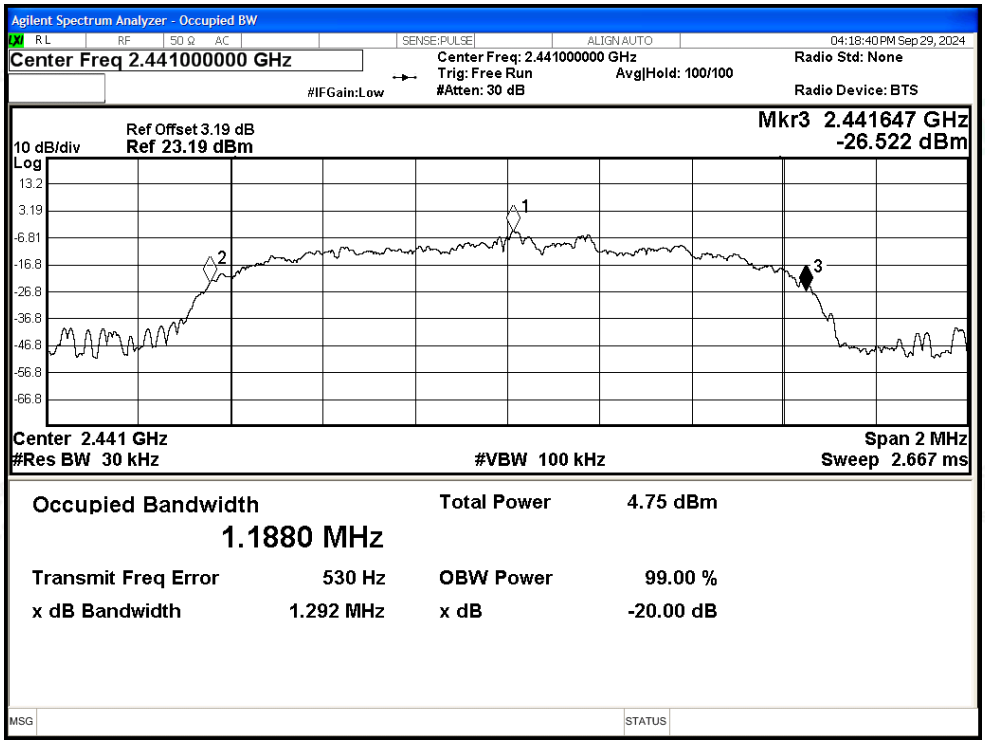
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



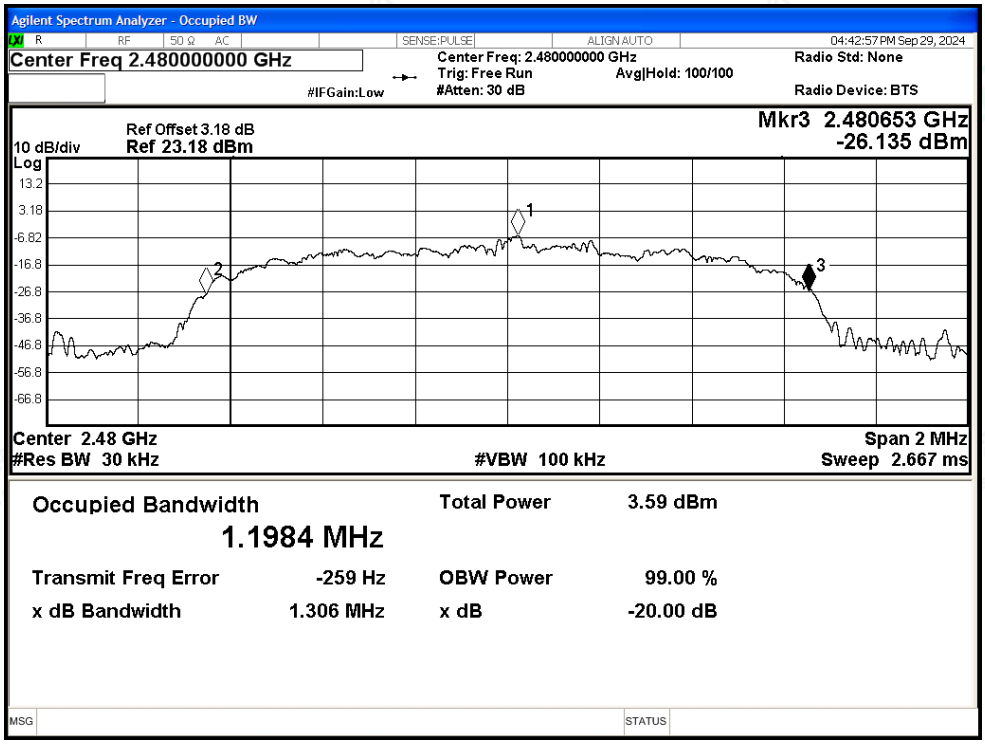
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

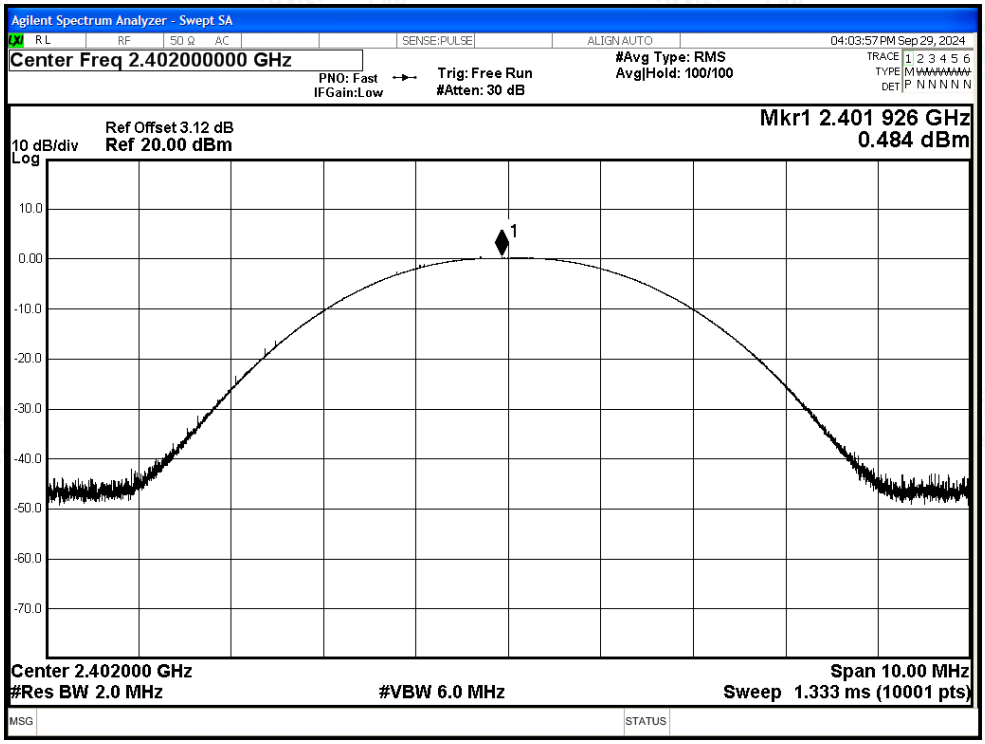


A.2 Maximum Peak Conducted Output Power

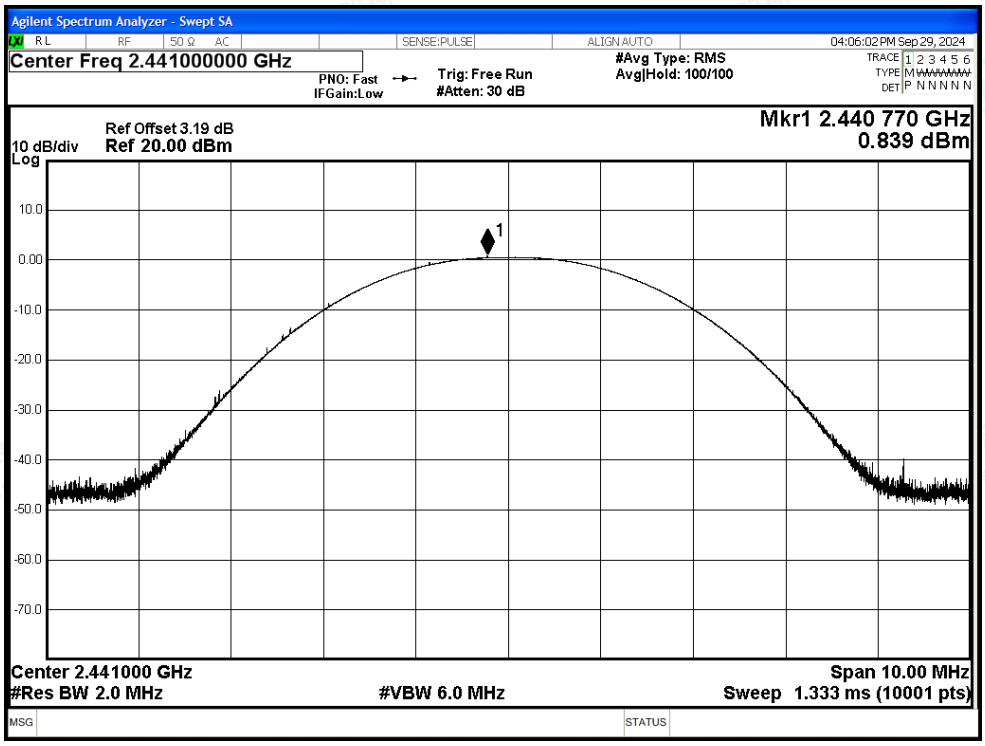
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.48	21	Pass
NVNT	1-DH5	2441	Ant1	**0.84**	21	Pass
NVNT	1-DH5	2480	Ant1	-0.25	21	Pass
NVNT	2-DH5	2402	Ant1	-0.23	21	Pass
NVNT	2-DH5	2441	Ant1	0.15	21	Pass
NVNT	2-DH5	2480	Ant1	-0.98	21	Pass
NVNT	3-DH5	2402	Ant1	0.07	21	Pass
NVNT	3-DH5	2441	Ant1	0.53	21	Pass
NVNT	3-DH5	2480	Ant1	-0.45	21	Pass

Test Graphs

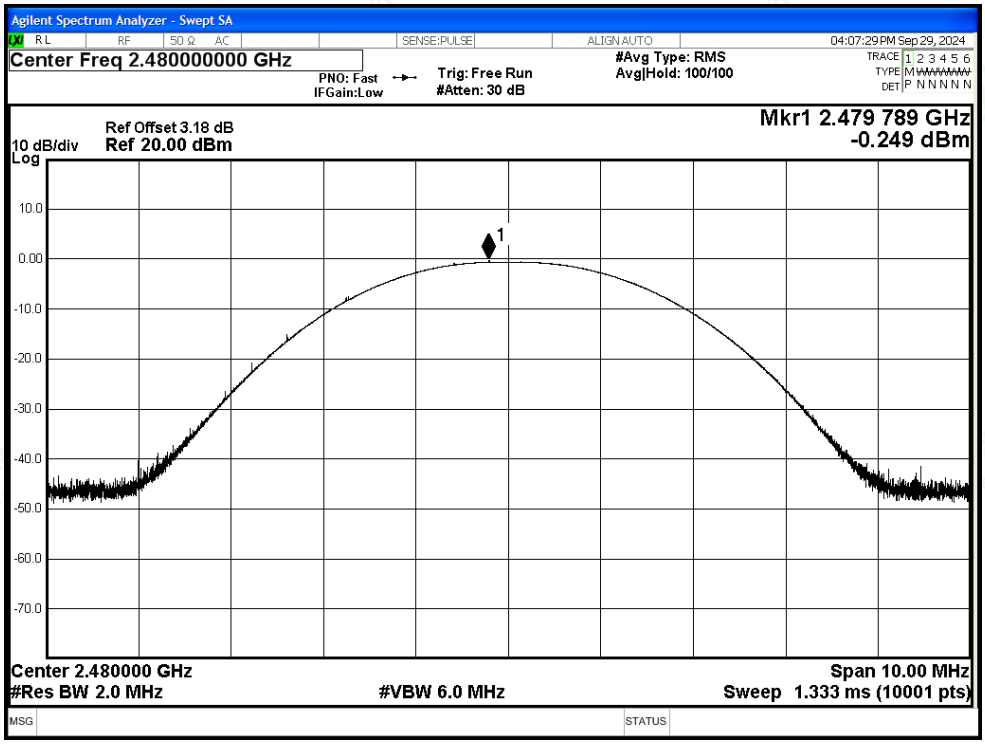
Power NVNT 1-DH5 2402MHz Ant1



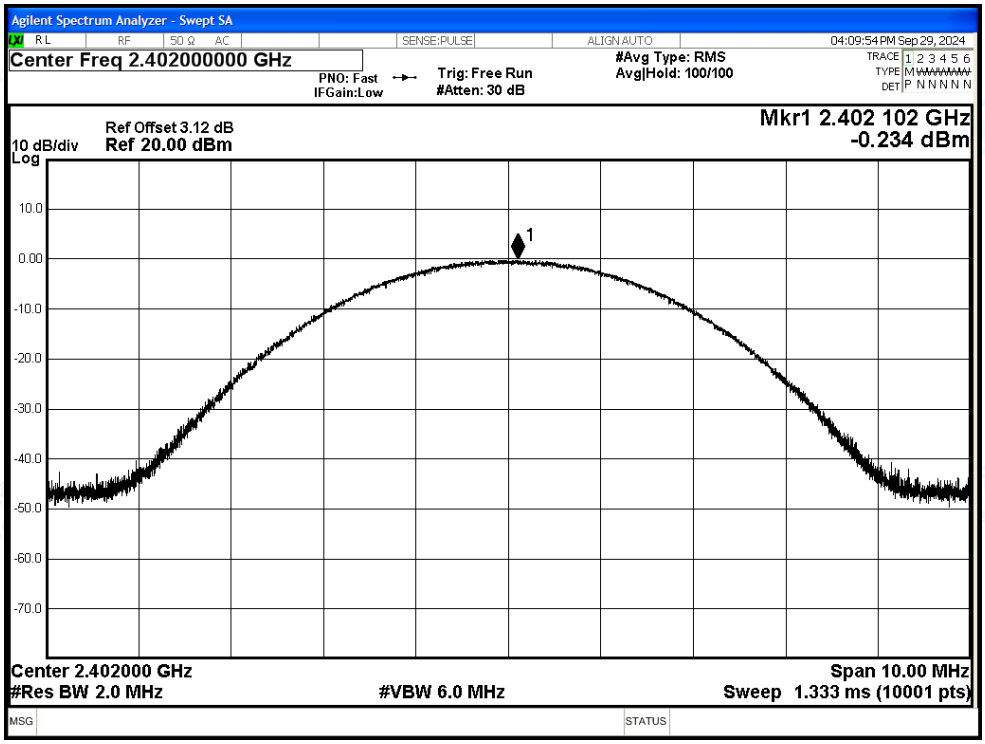
Power NVNT 1-DH5 2441MHz Ant1



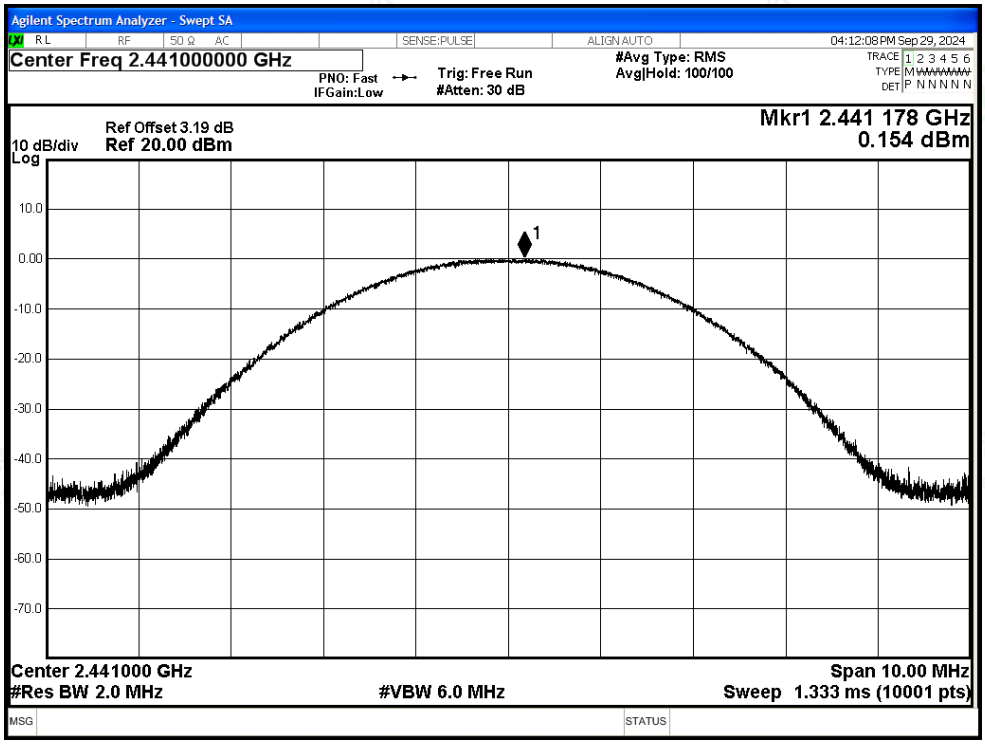
Power NVNT 1-DH5 2480MHz Ant1



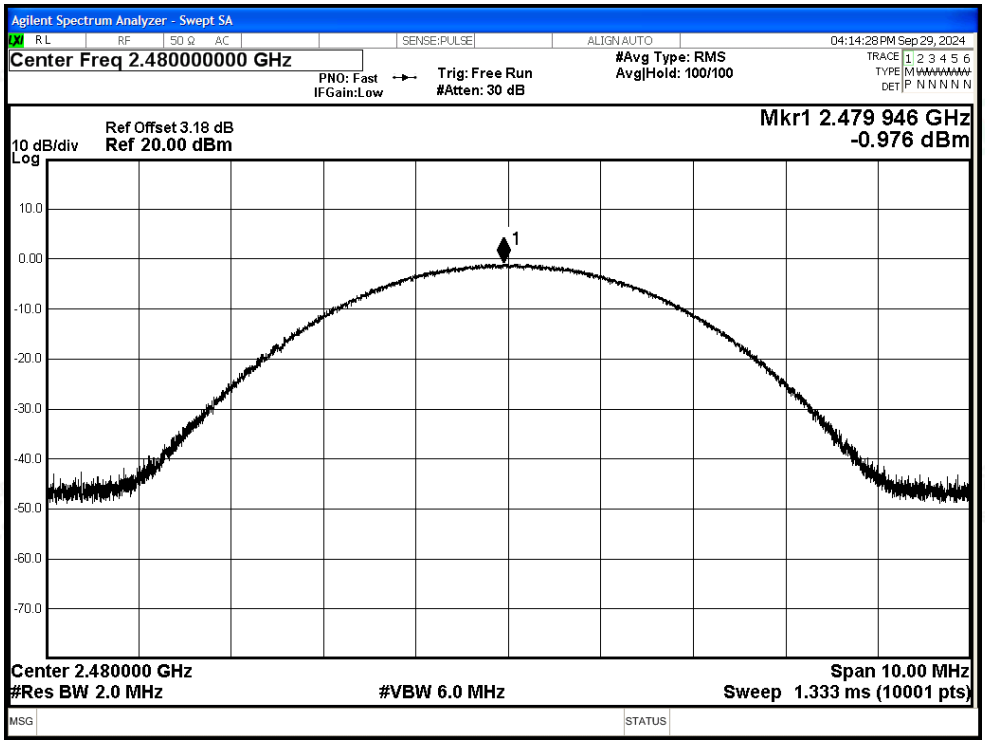
Power NVNT 2-DH5 2402MHz Ant1



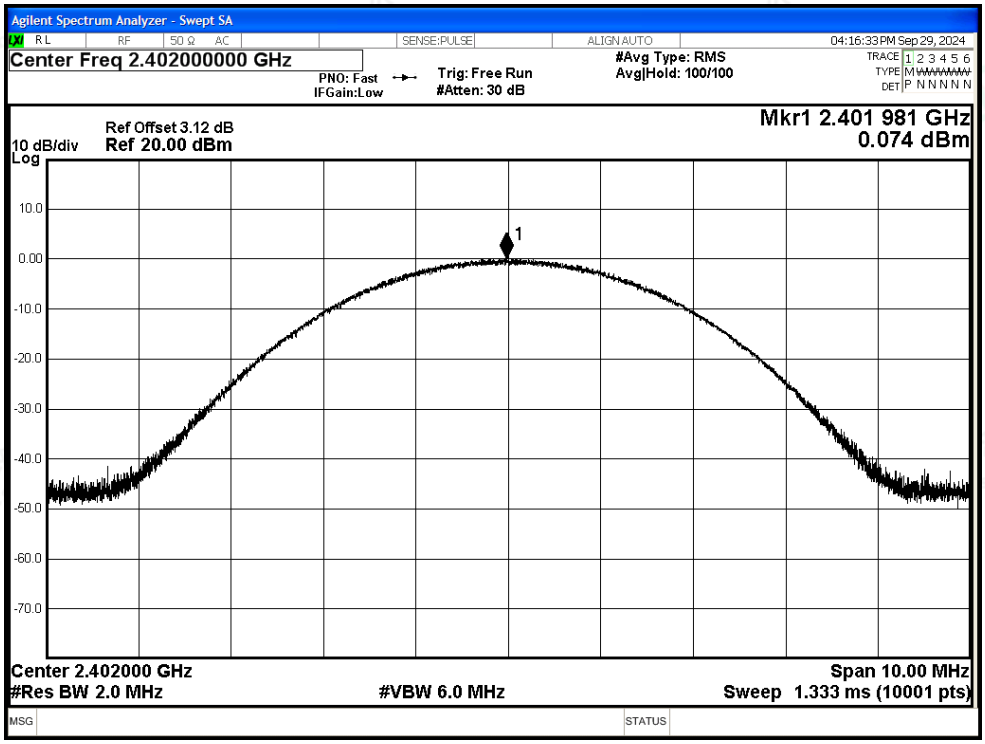
Power NVNT 2-DH5 2441MHz Ant1



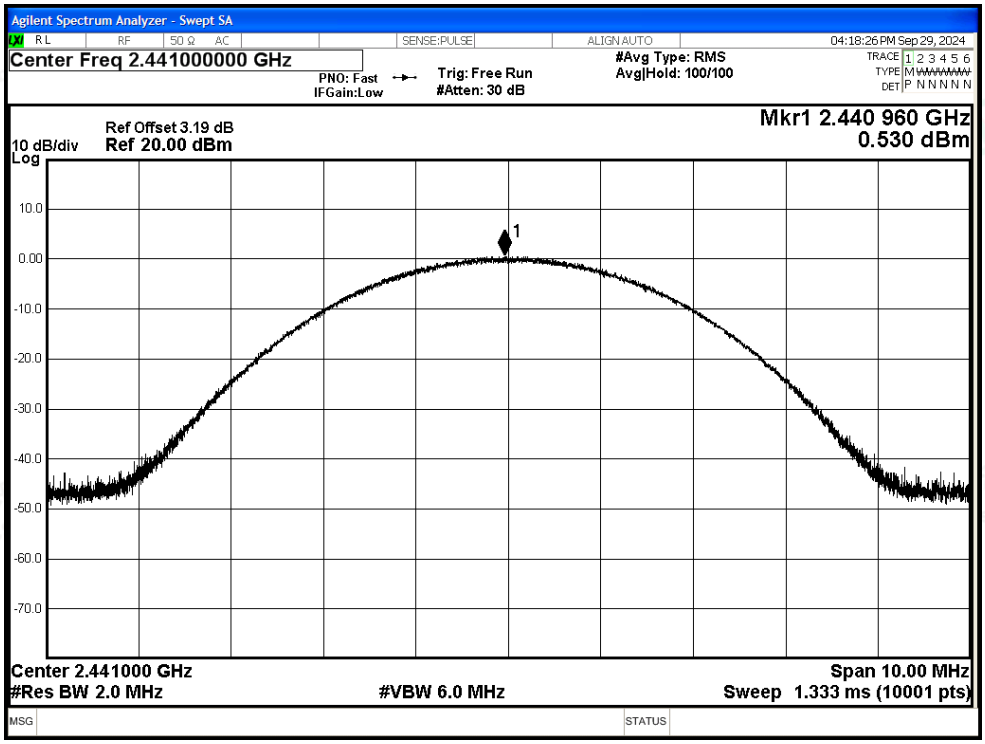
Power NVNT 2-DH5 2480MHz Ant1



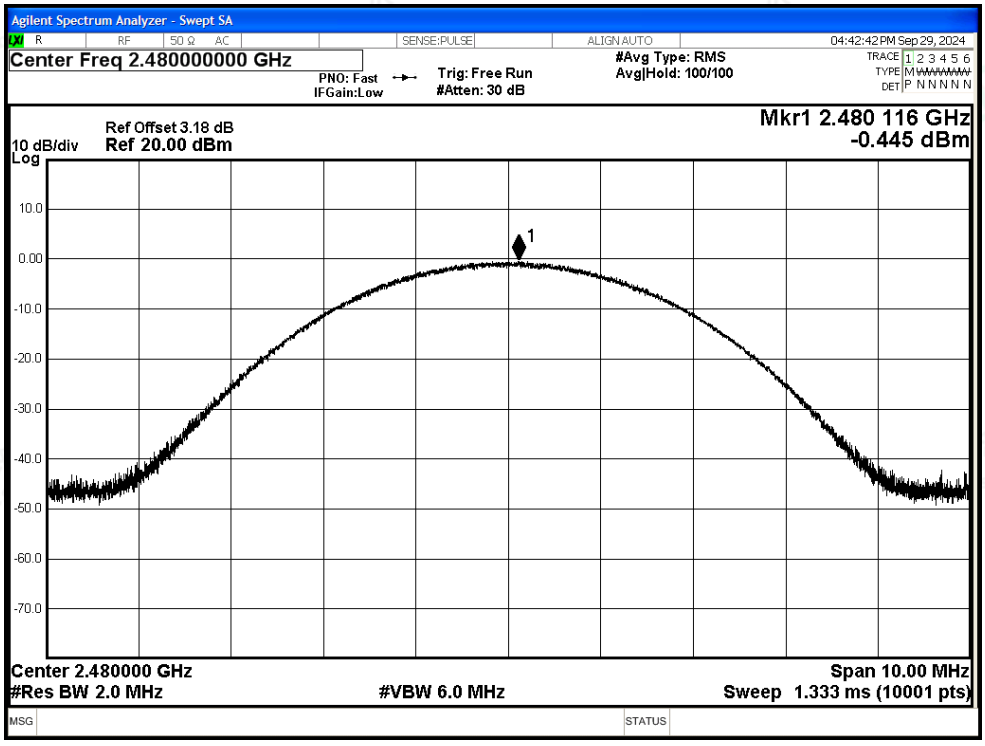
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1

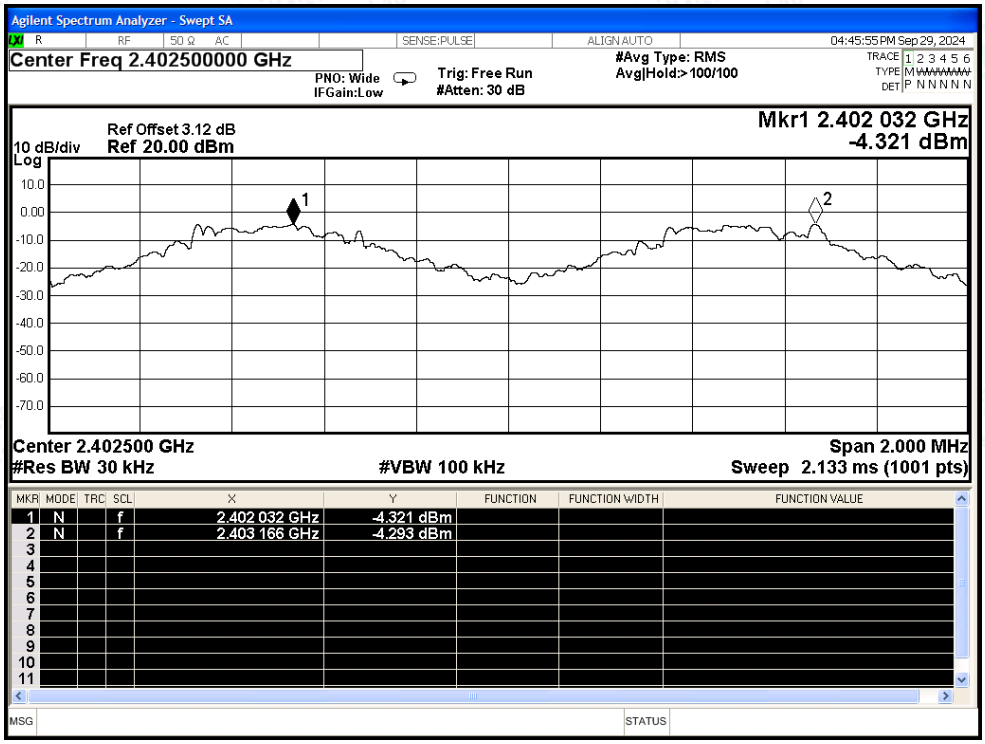


A.3 Carrier Frequencies Separation

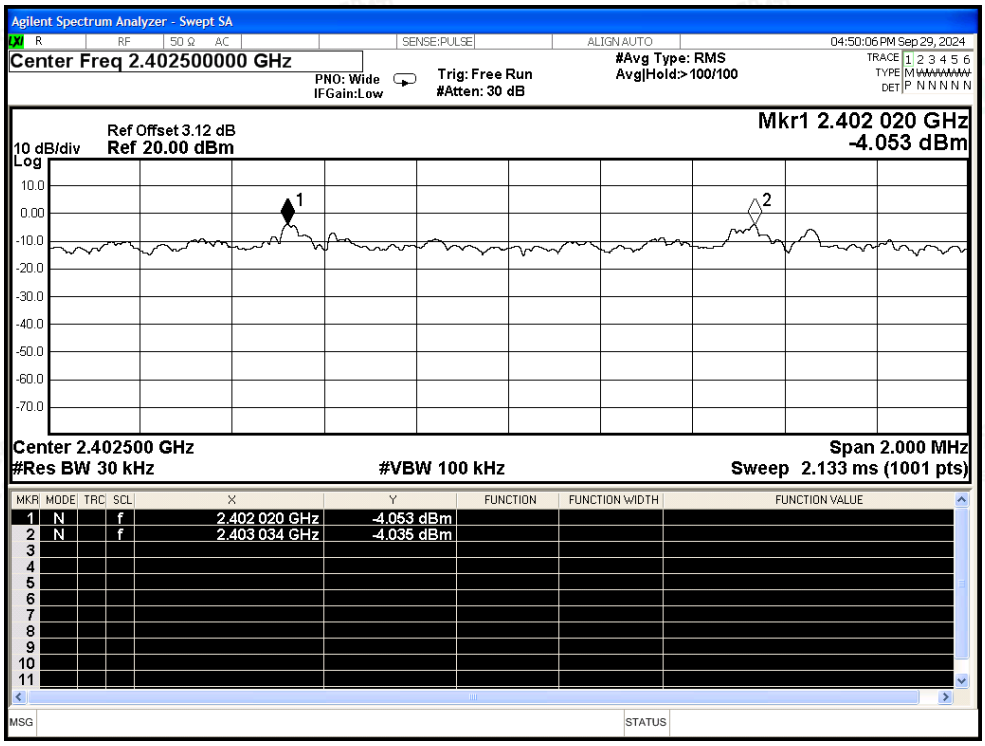
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.032	2403.166	1.134	0.684	Pass
NVNT	2-DH5	Ant1	2402.02	2403.034	1.014	0.859	Pass
NVNT	3-DH5	Ant1	2402.034	2403.034	1	0.876	Pass

Test Graphs

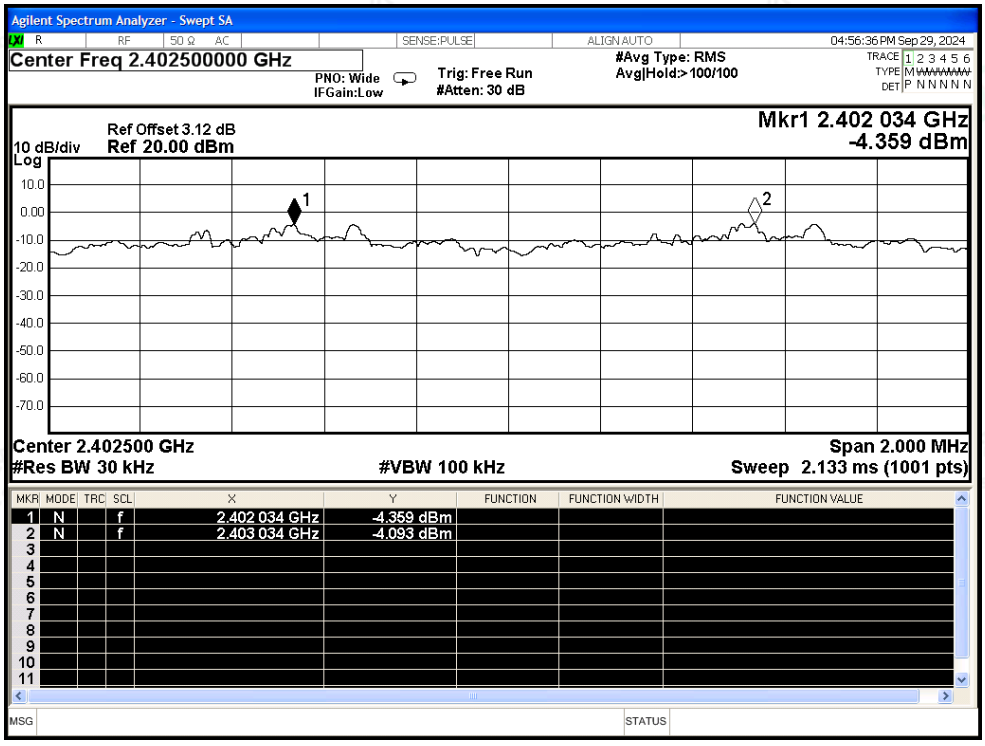
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

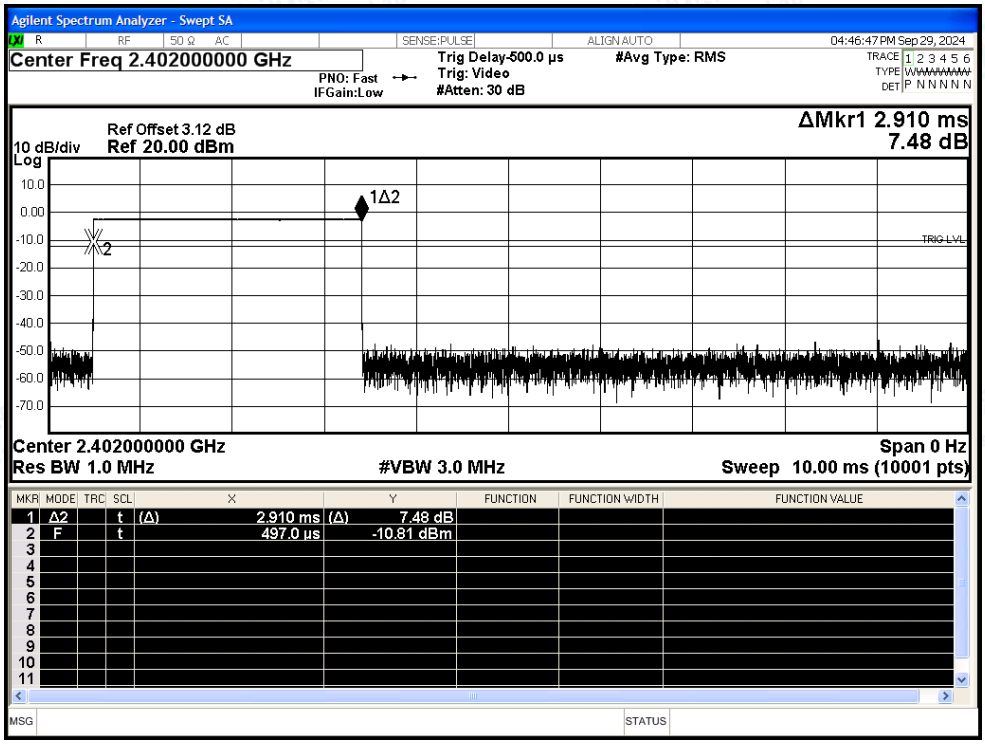


A.4 Dwell Time

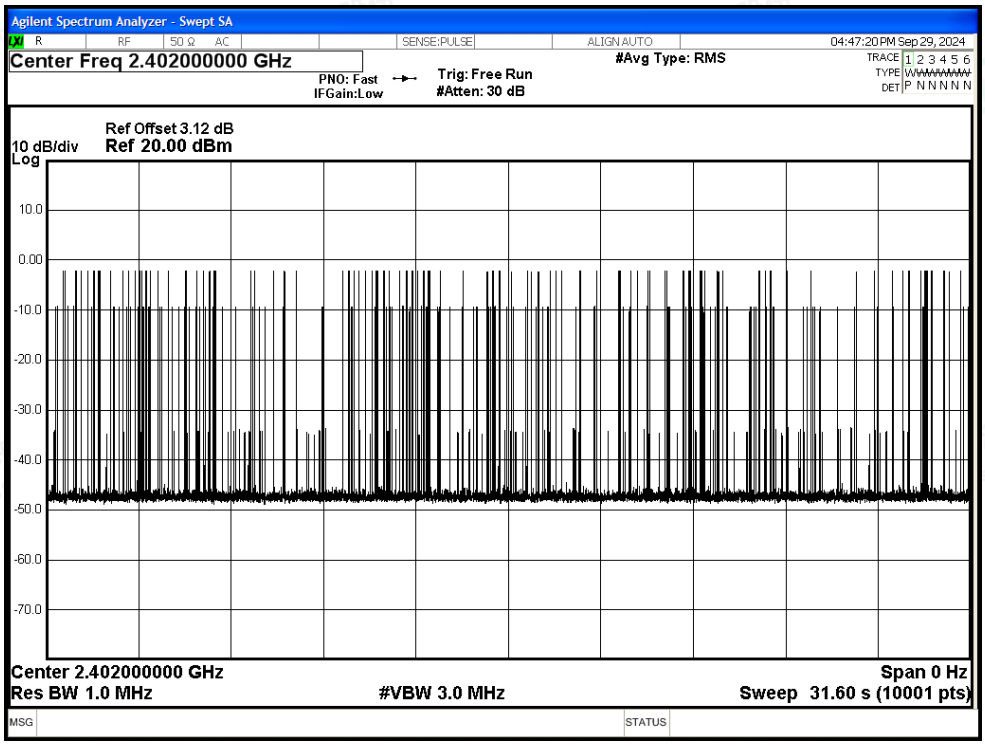
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.91	320.1	110	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	275.31	95	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	292.597	101	31600	400	Pass

Test Graphs

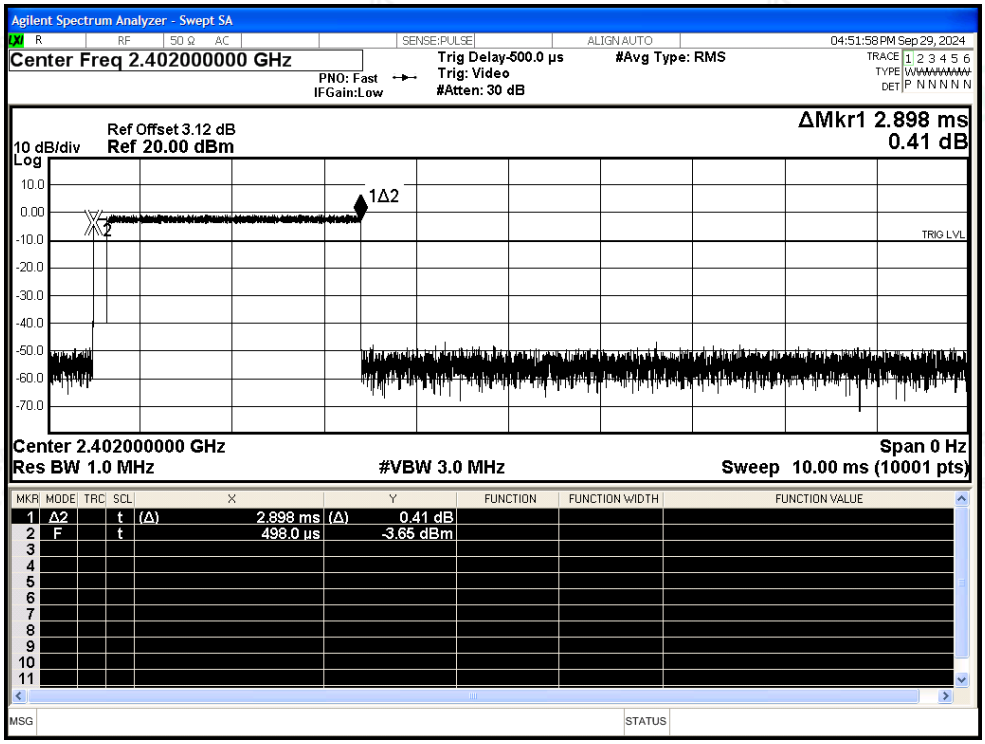
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



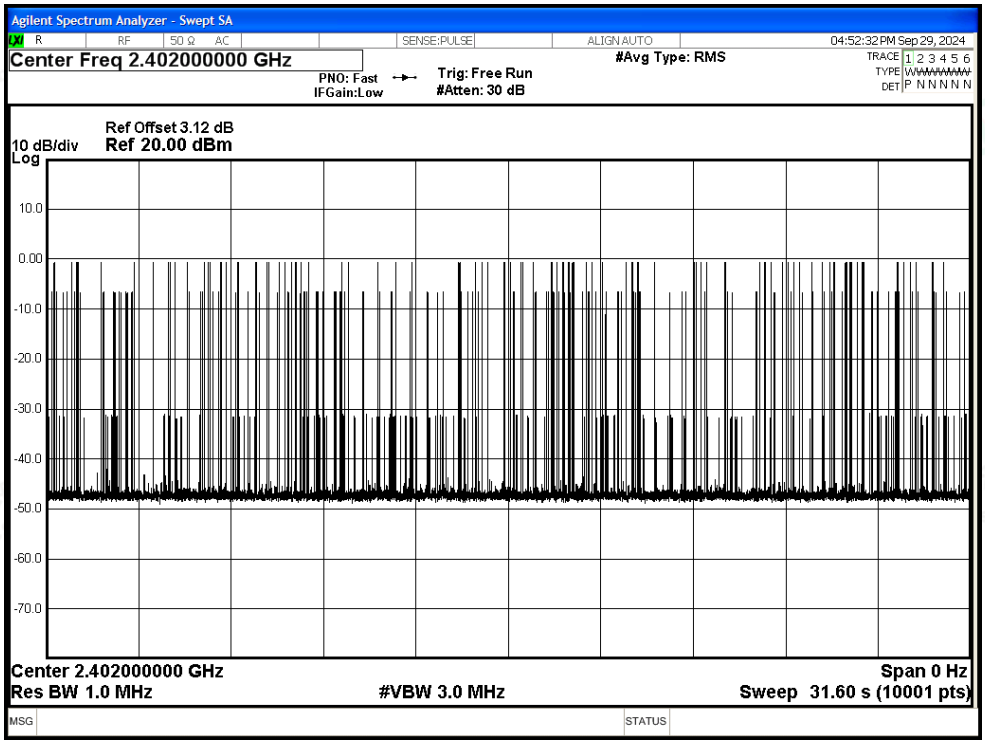
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



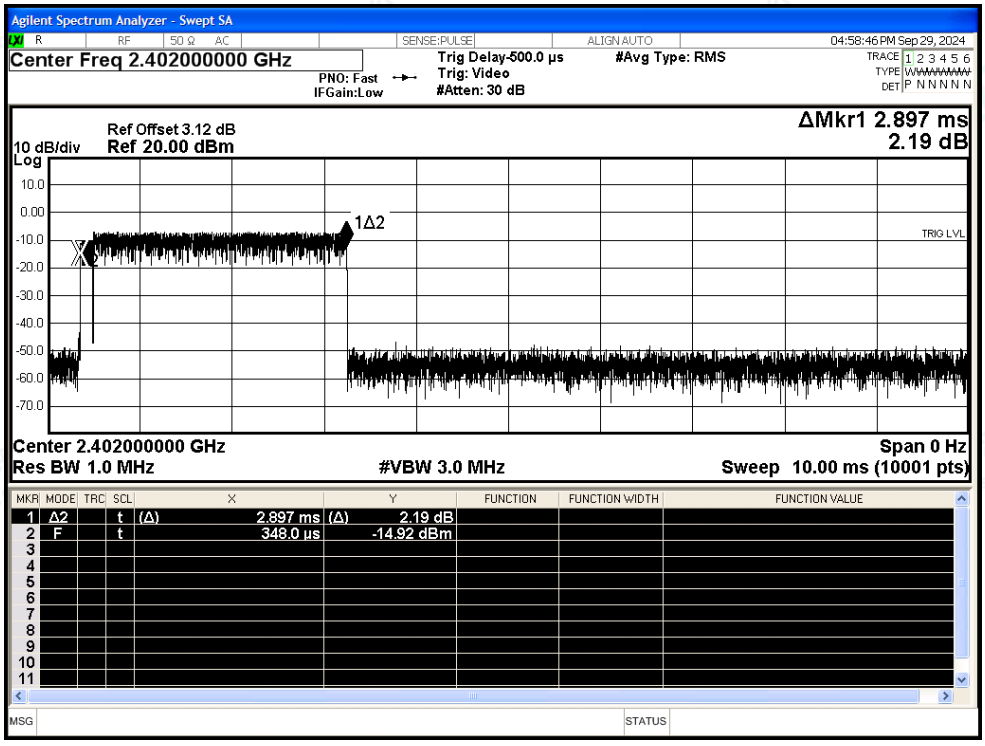
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



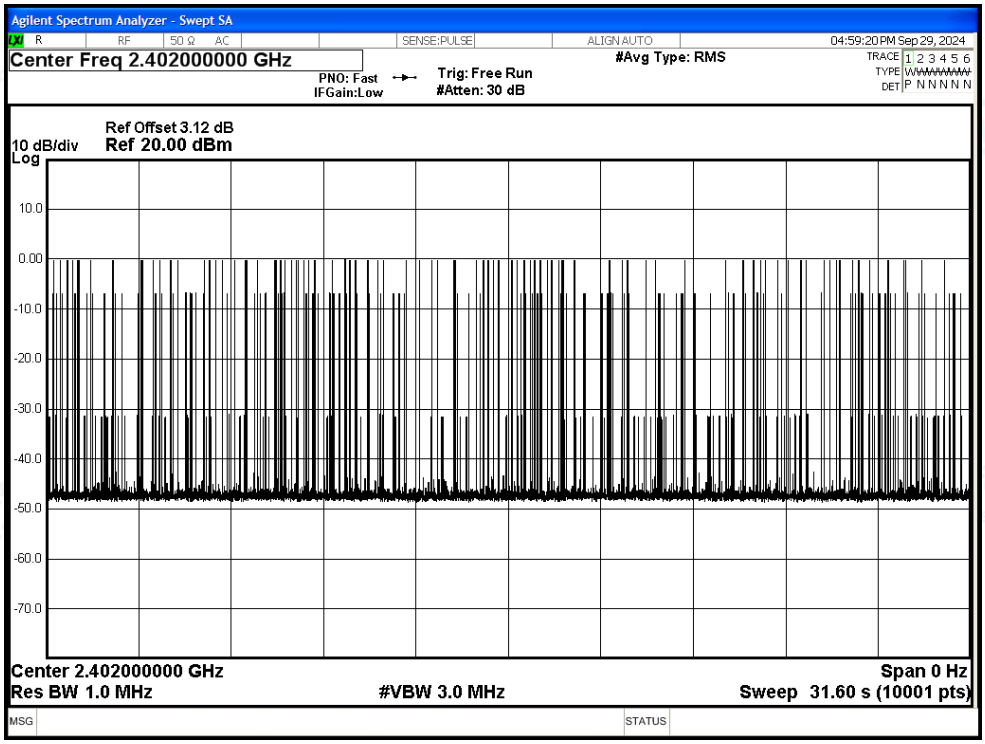
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

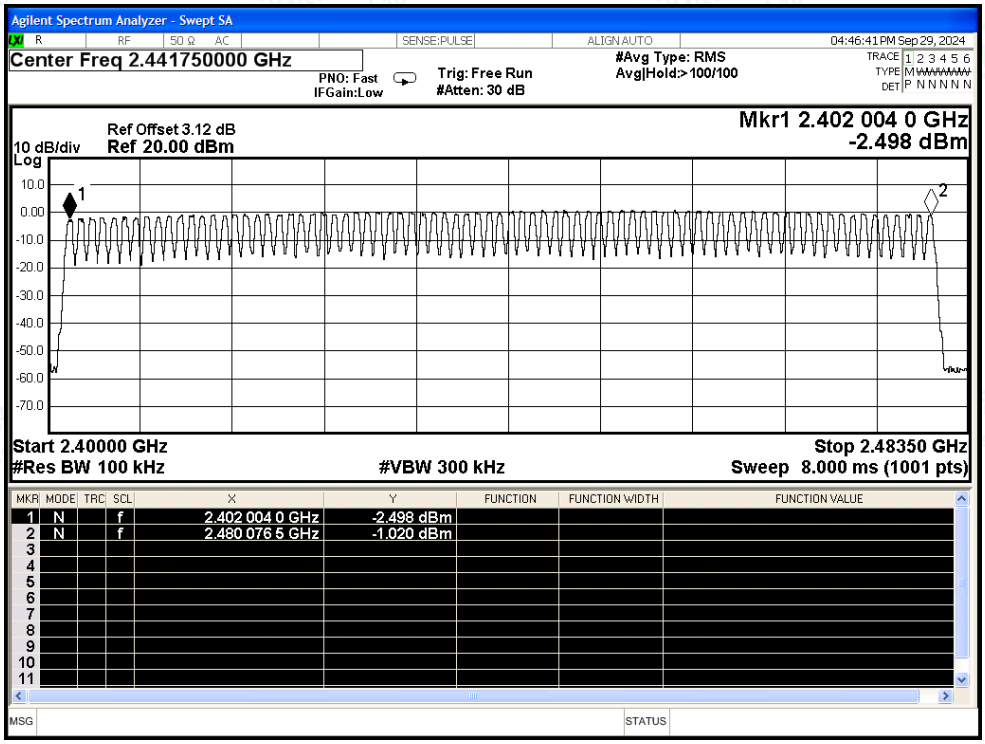


A.5 Number of Hopping Channel

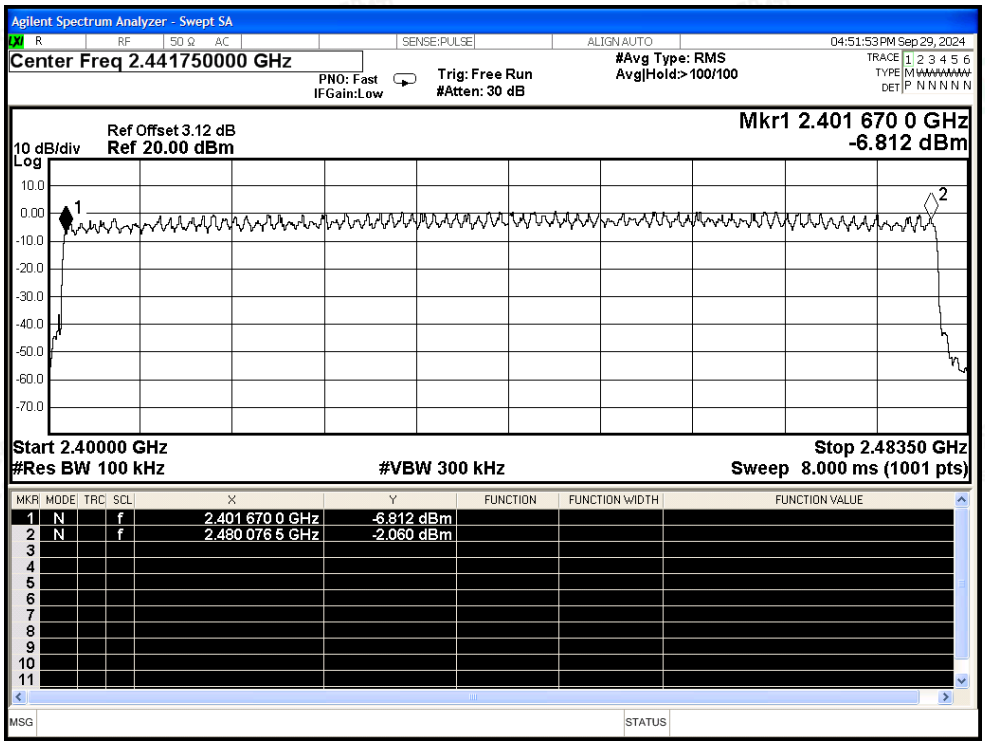
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

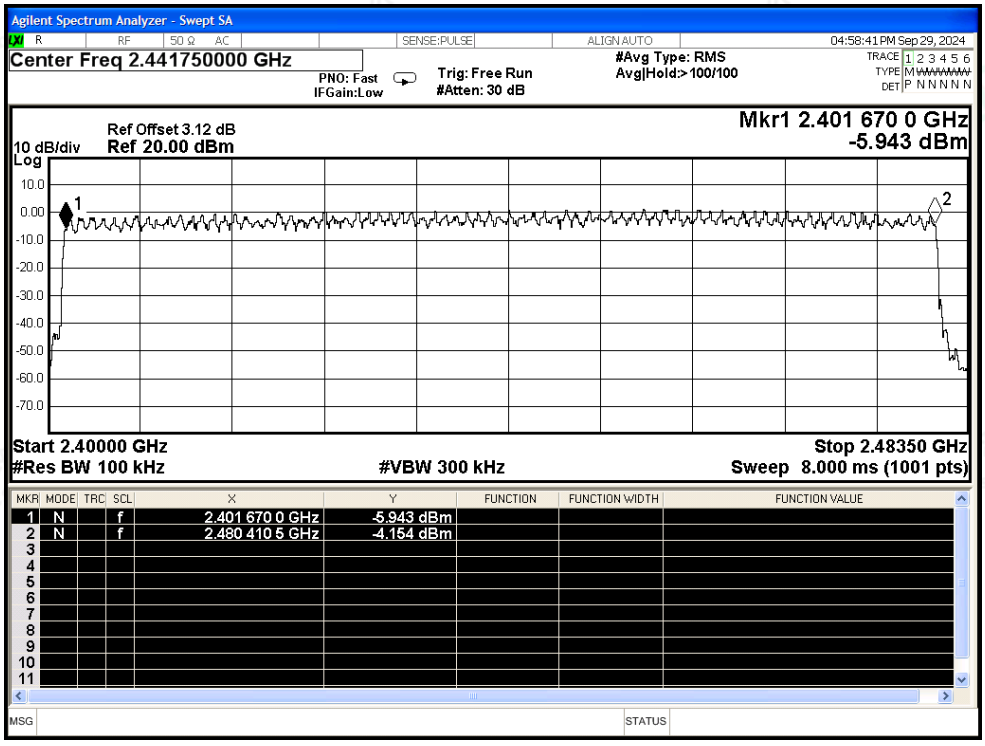
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

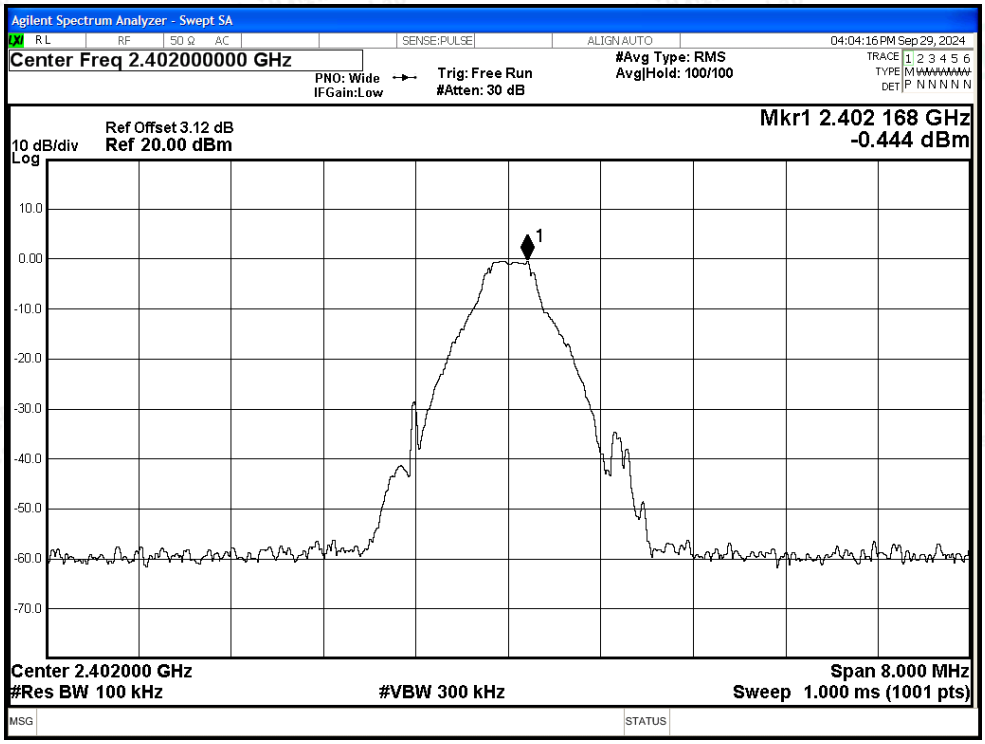


A.6 Band Edge

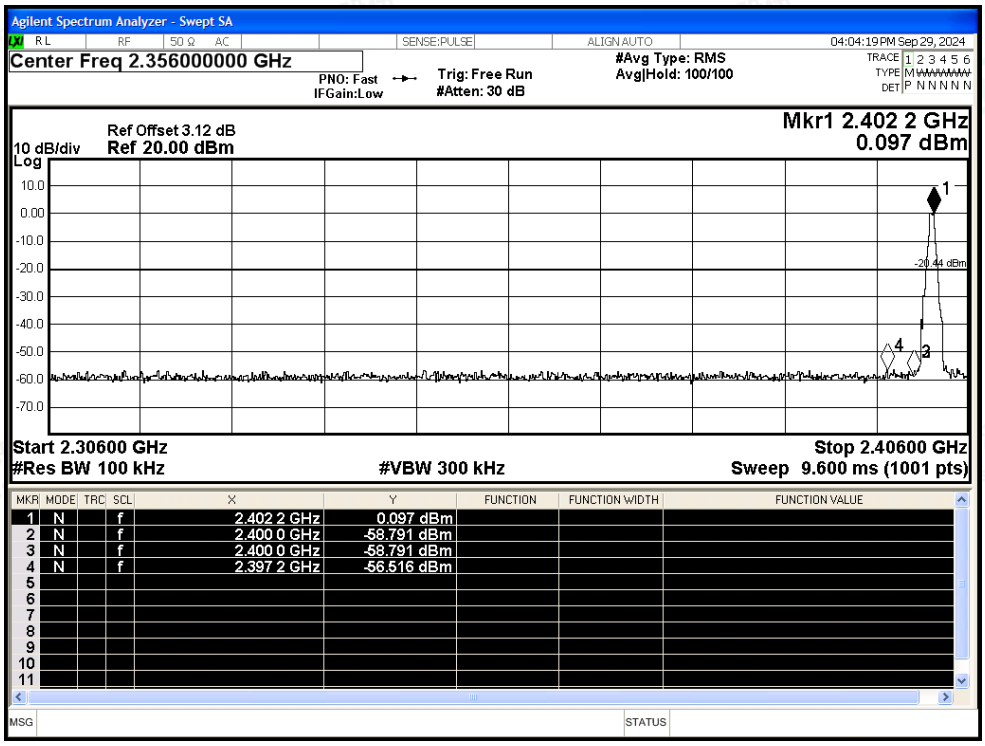
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.07	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.63	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-52.02	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-51.25	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-49.65	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-52.29	-20	Pass

Test Graphs

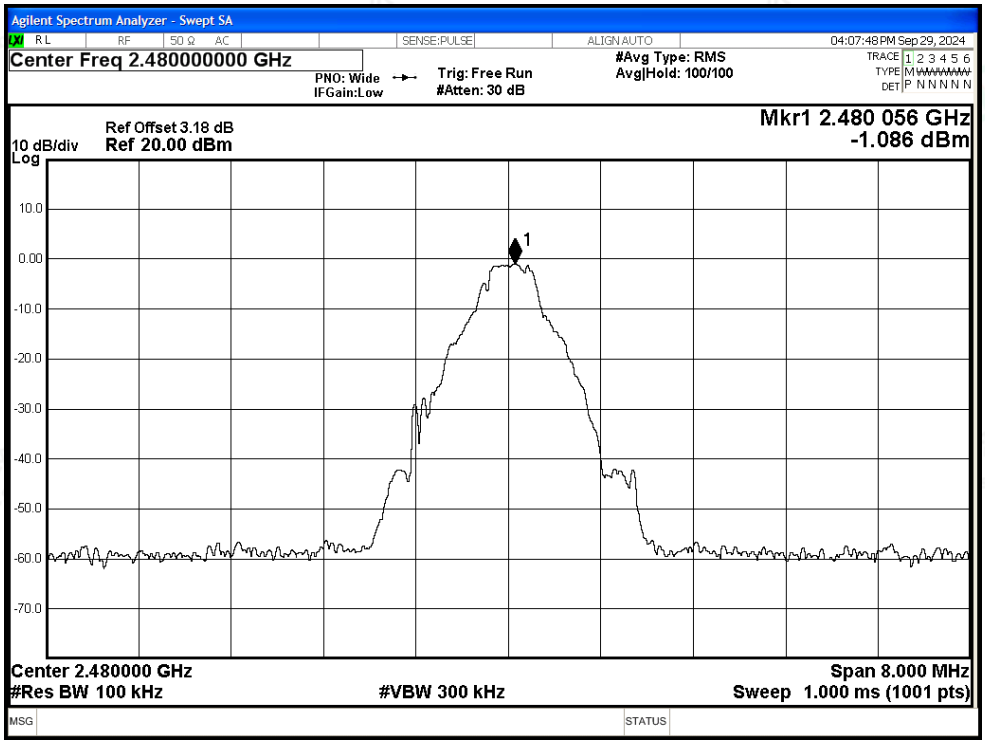
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



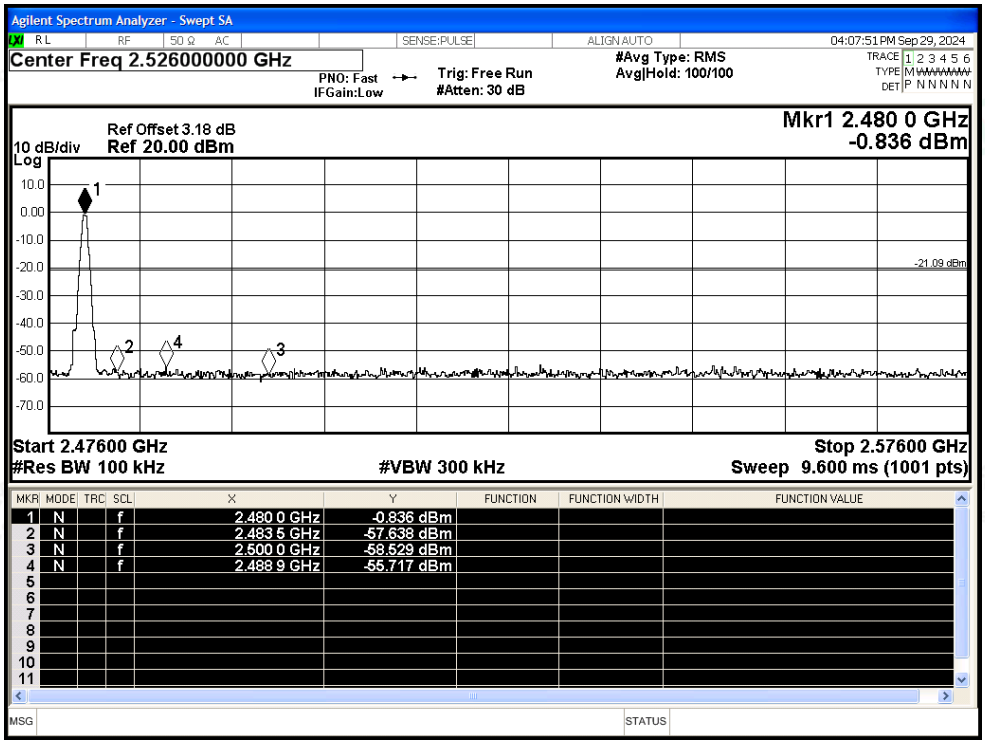
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



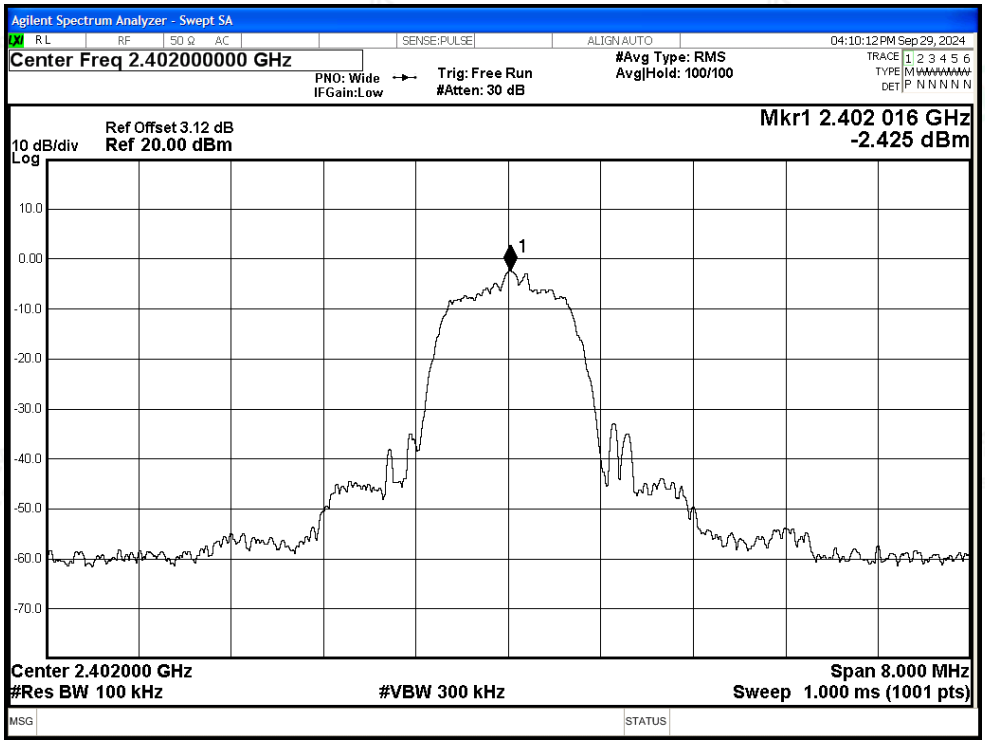
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



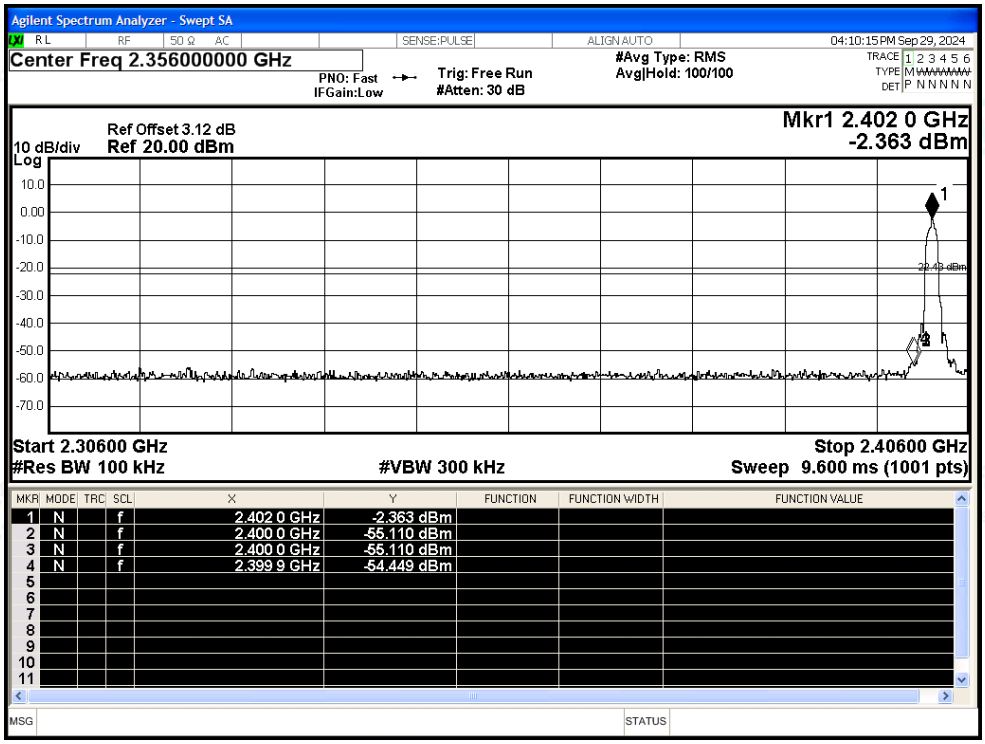
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



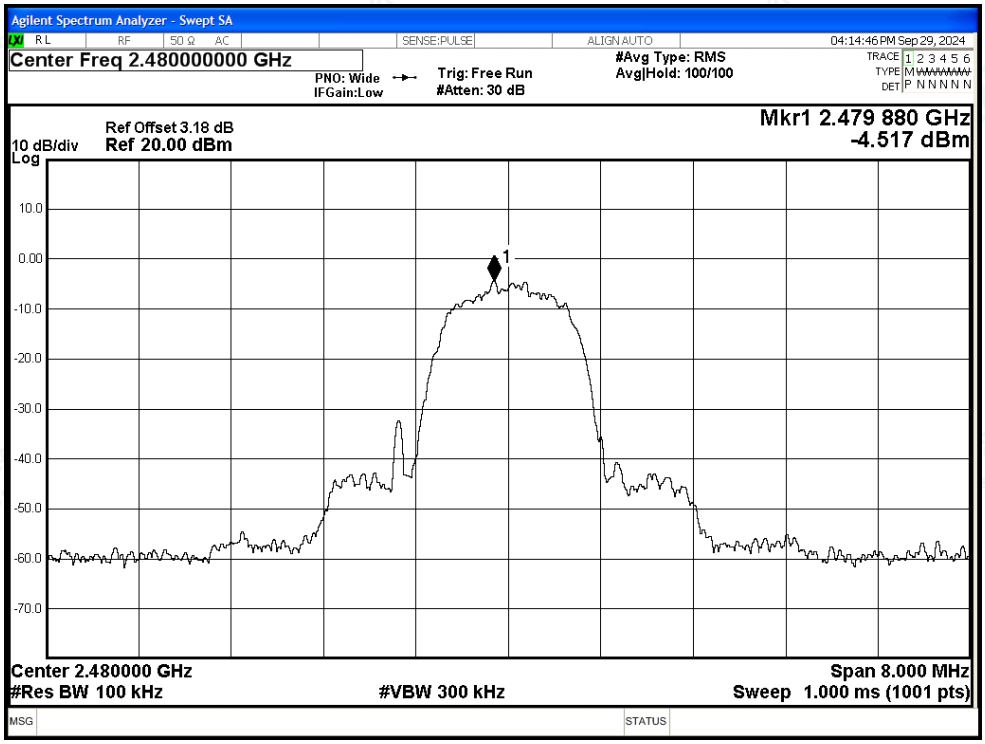
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



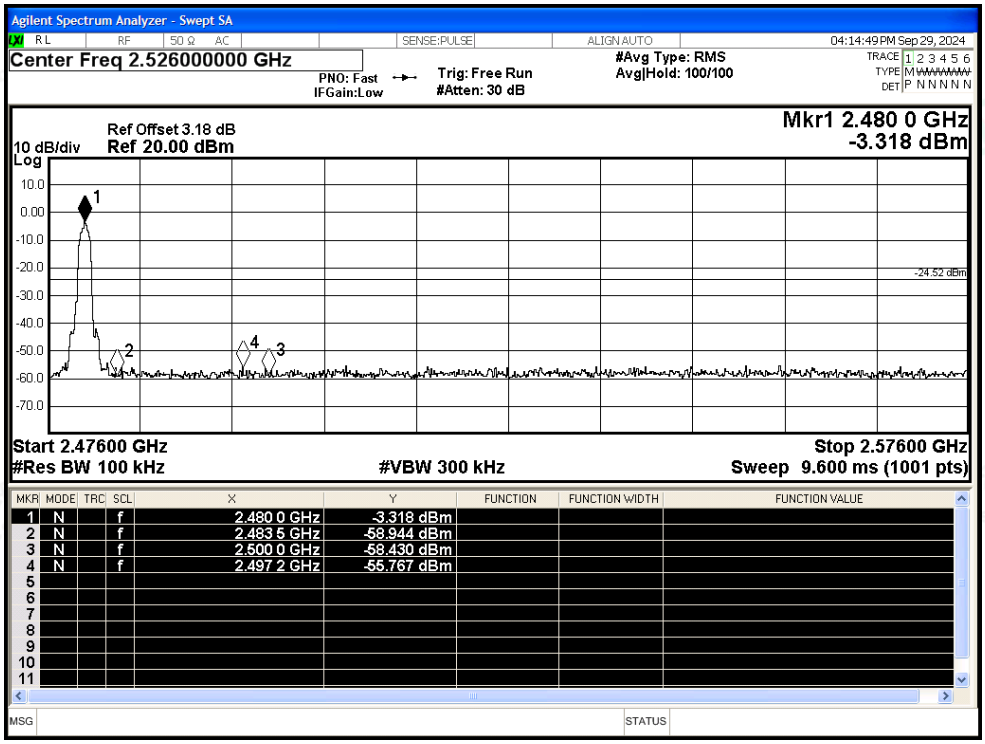
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



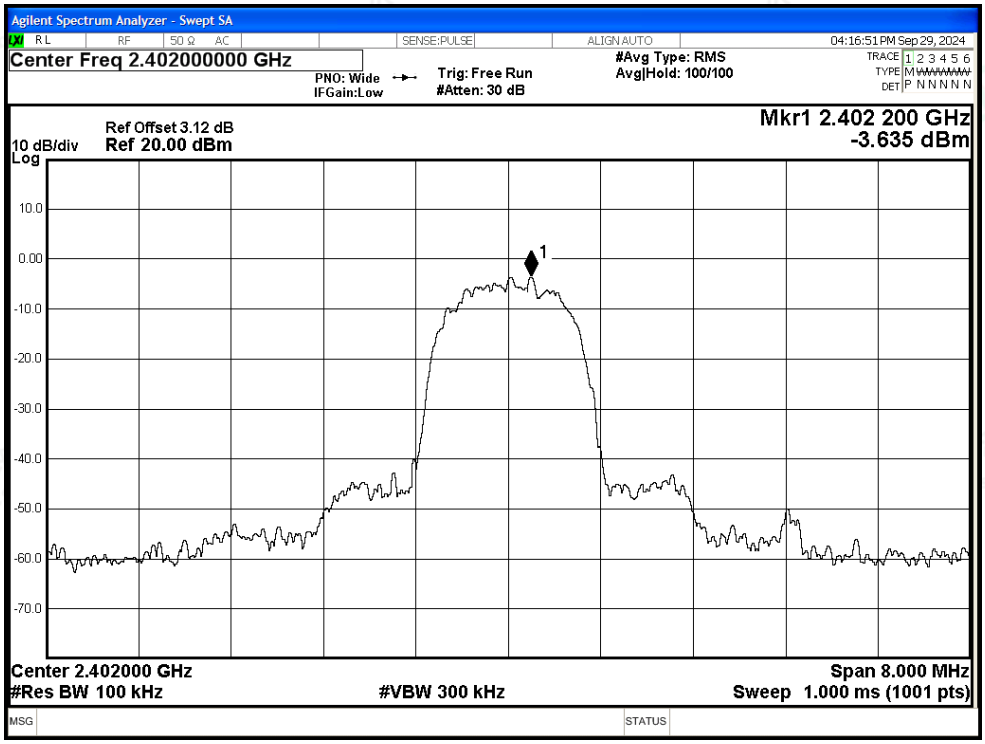
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



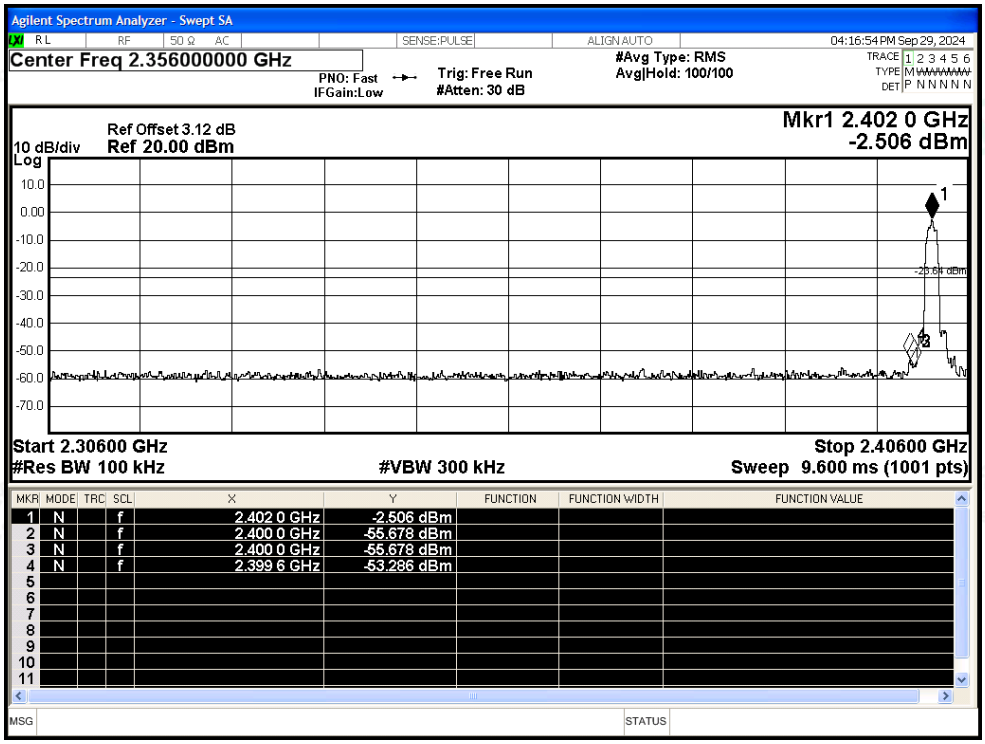
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



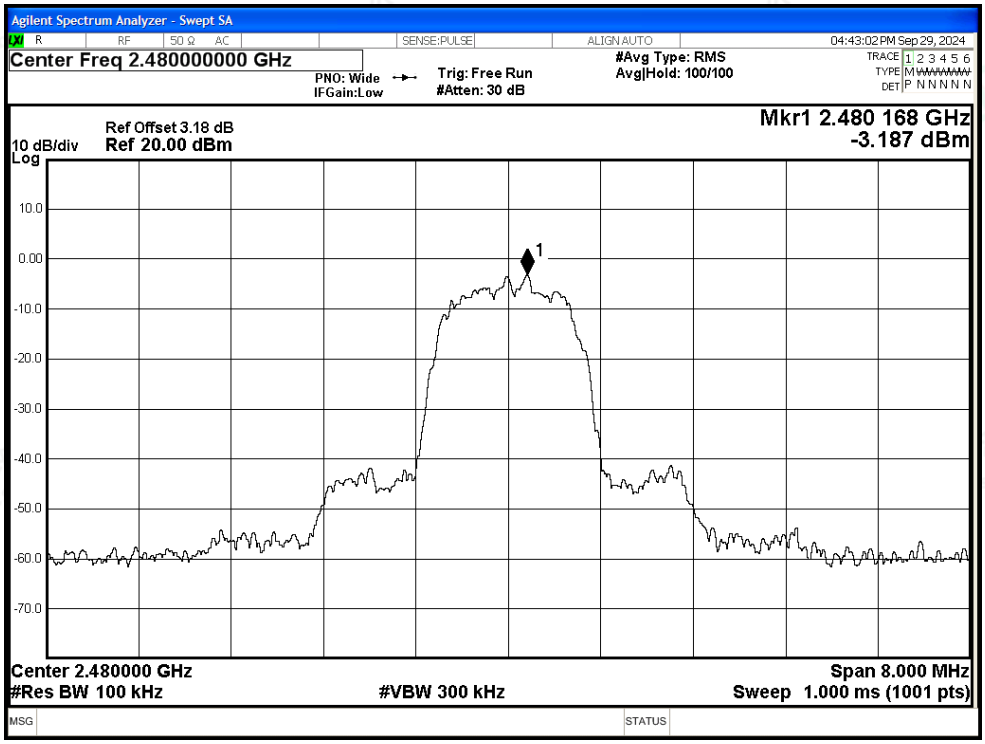
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



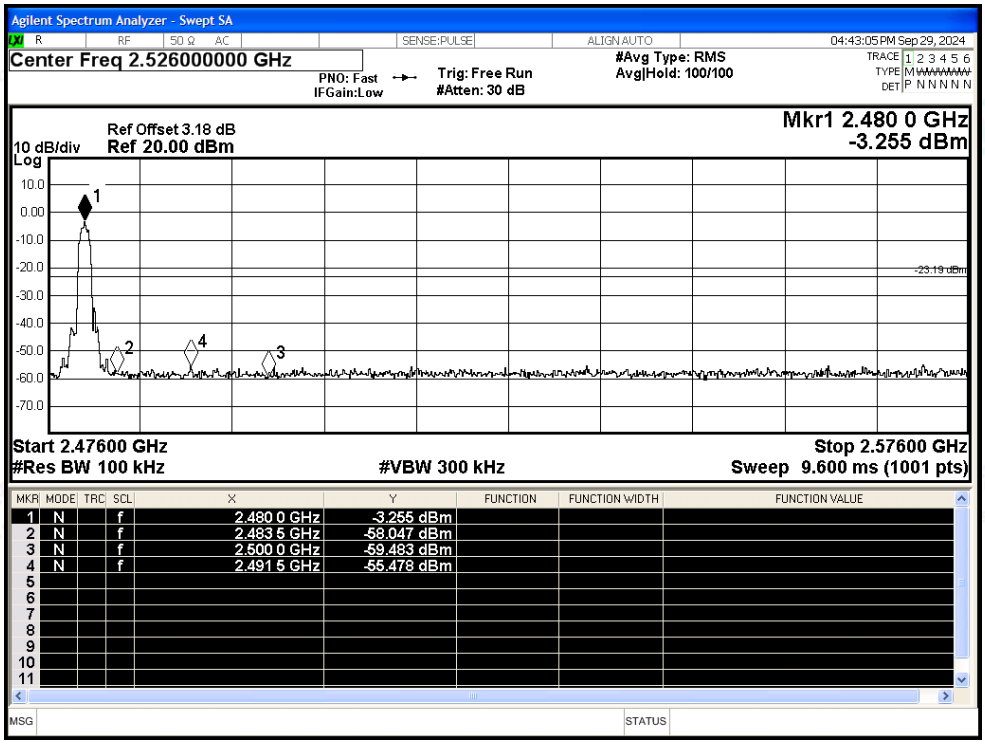
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

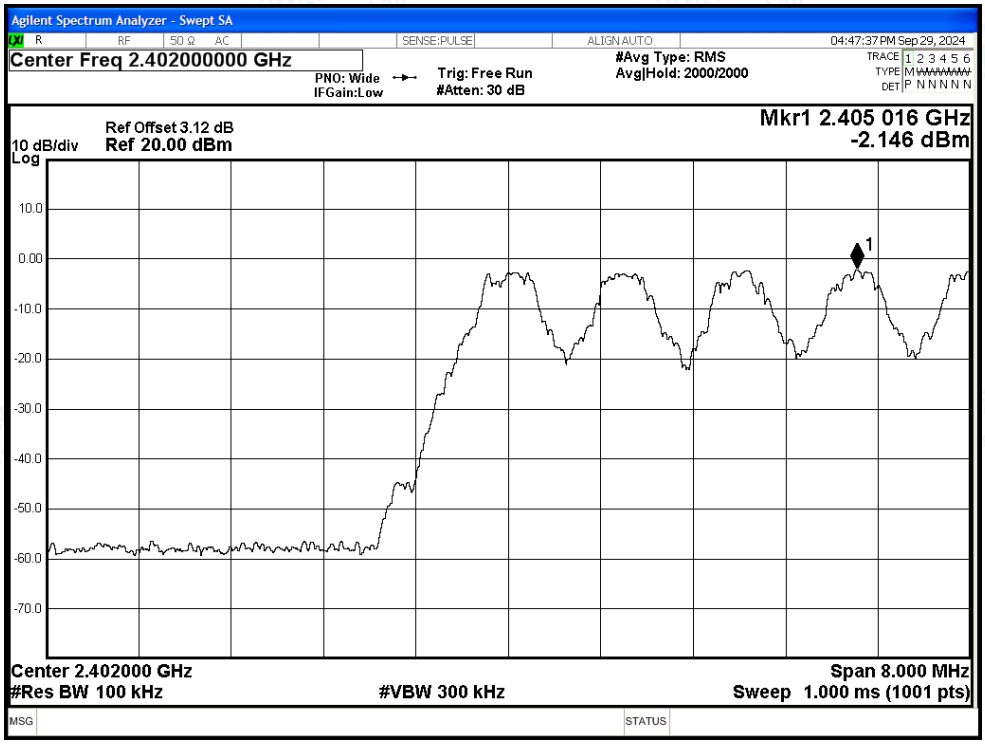


(Hopping)

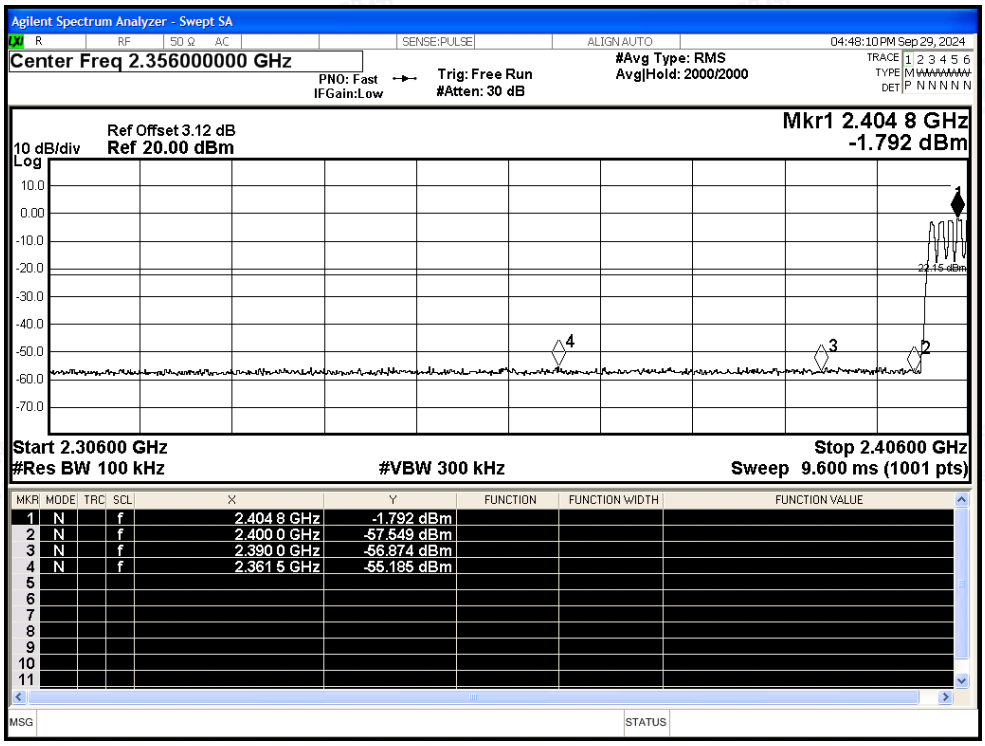
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-53.04	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-54.12	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.58	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.27	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-53.52	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.13	-20	Pass

Test Graphs

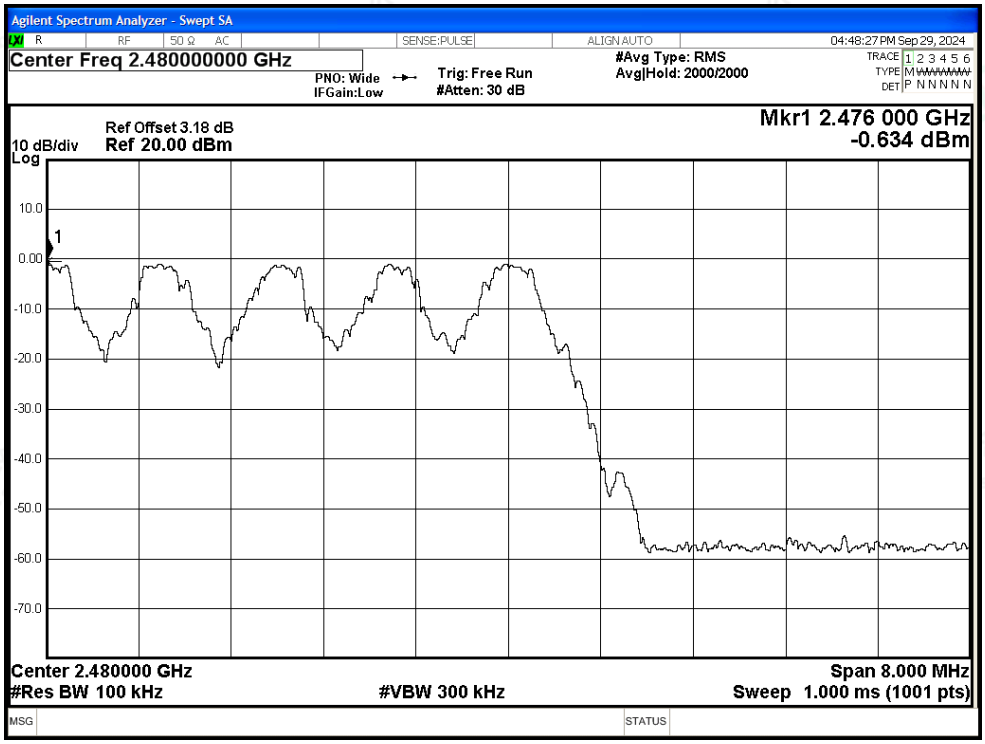
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



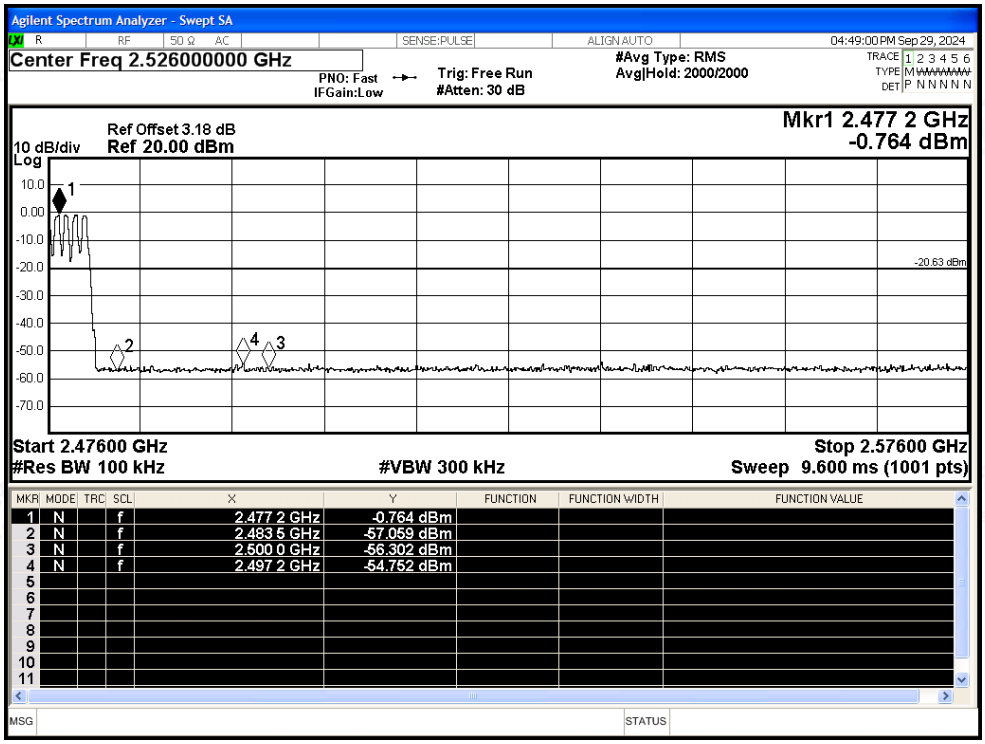
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



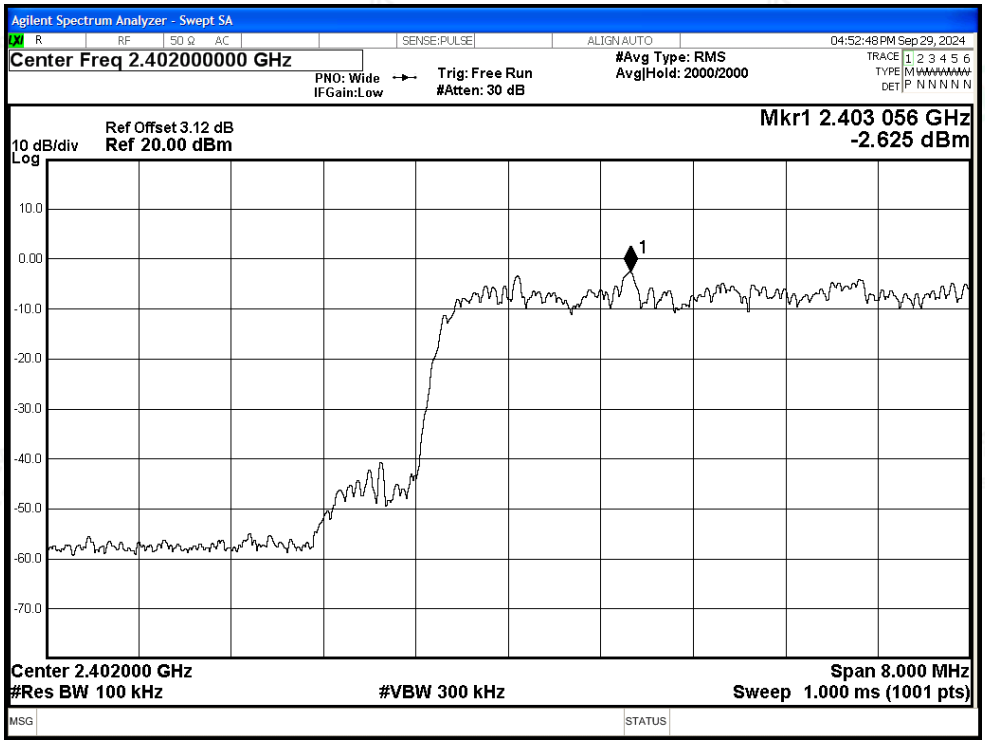
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



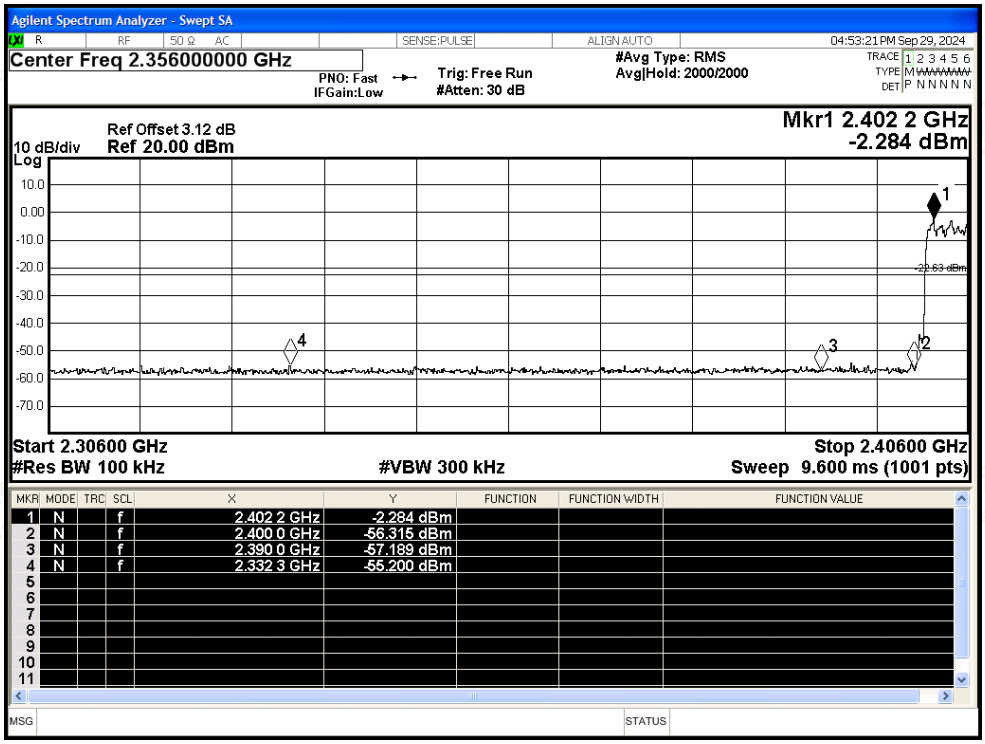
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



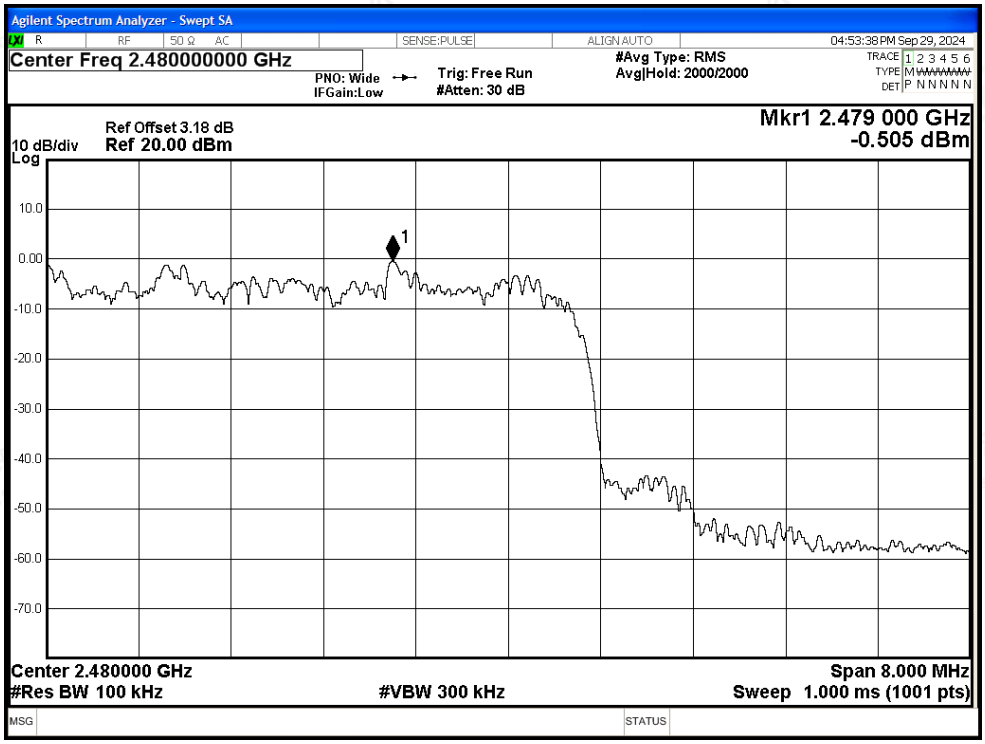
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



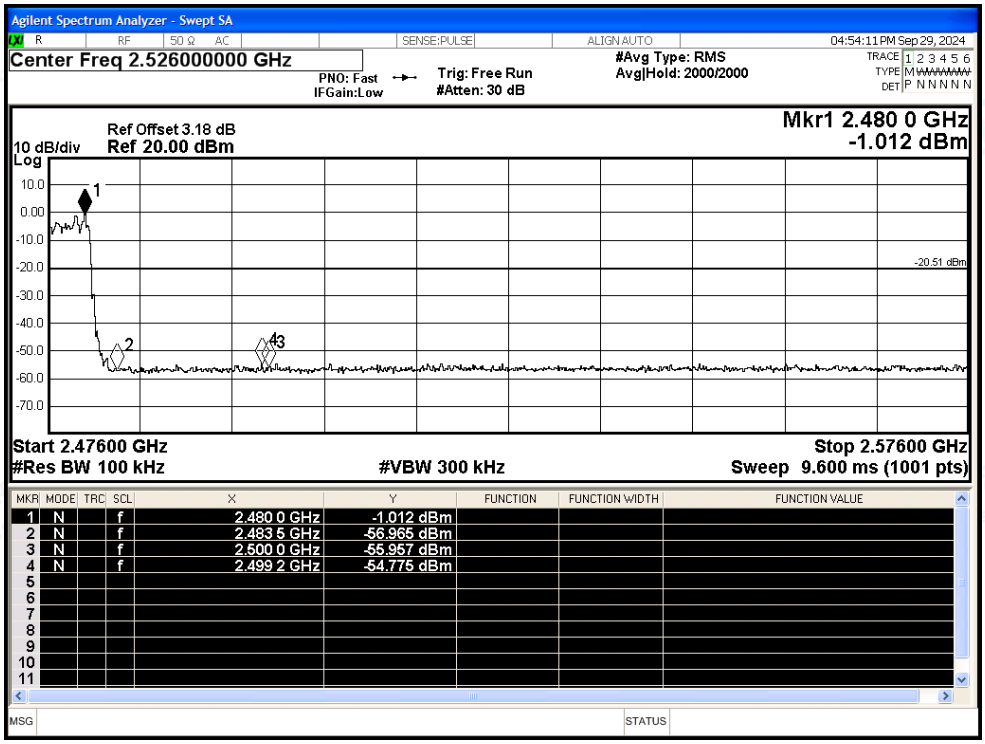
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



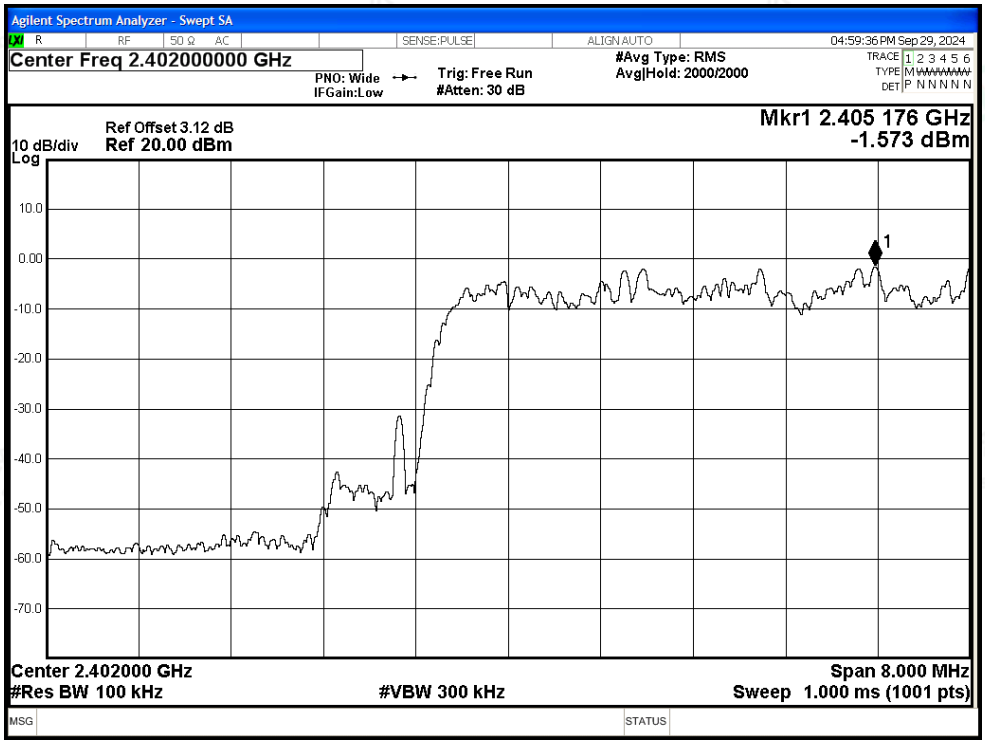
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



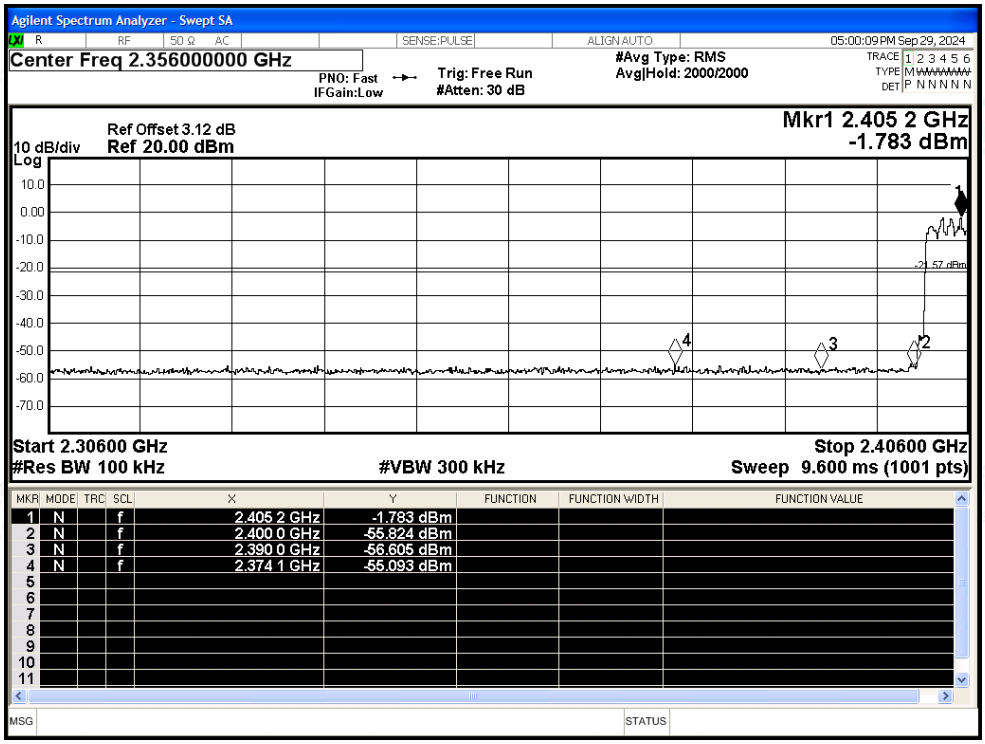
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



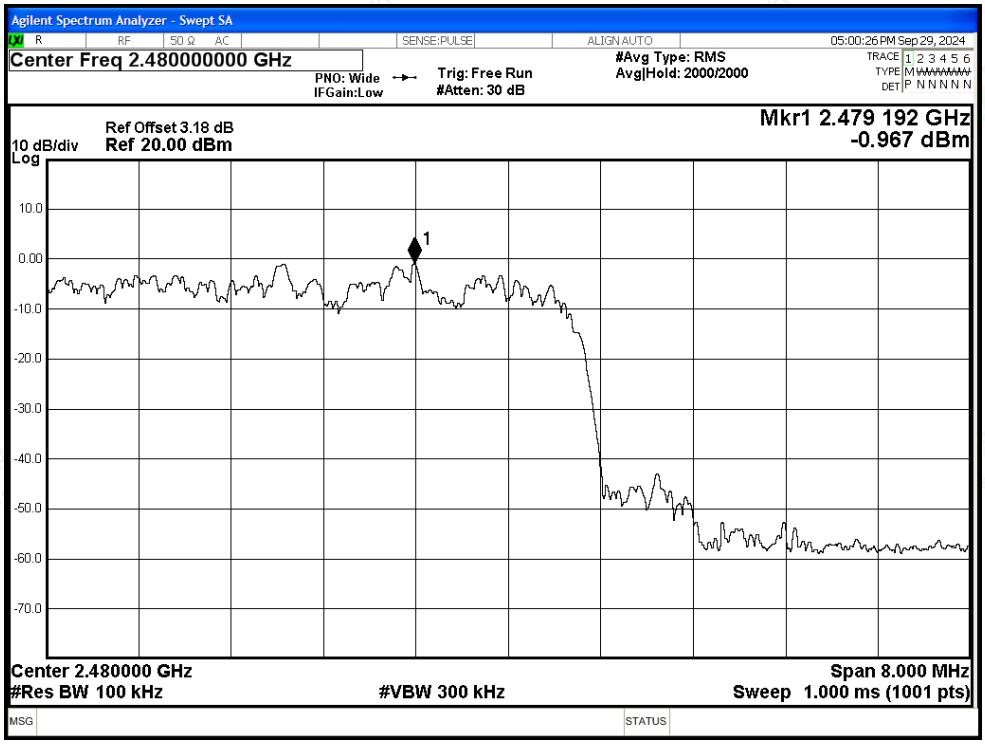
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



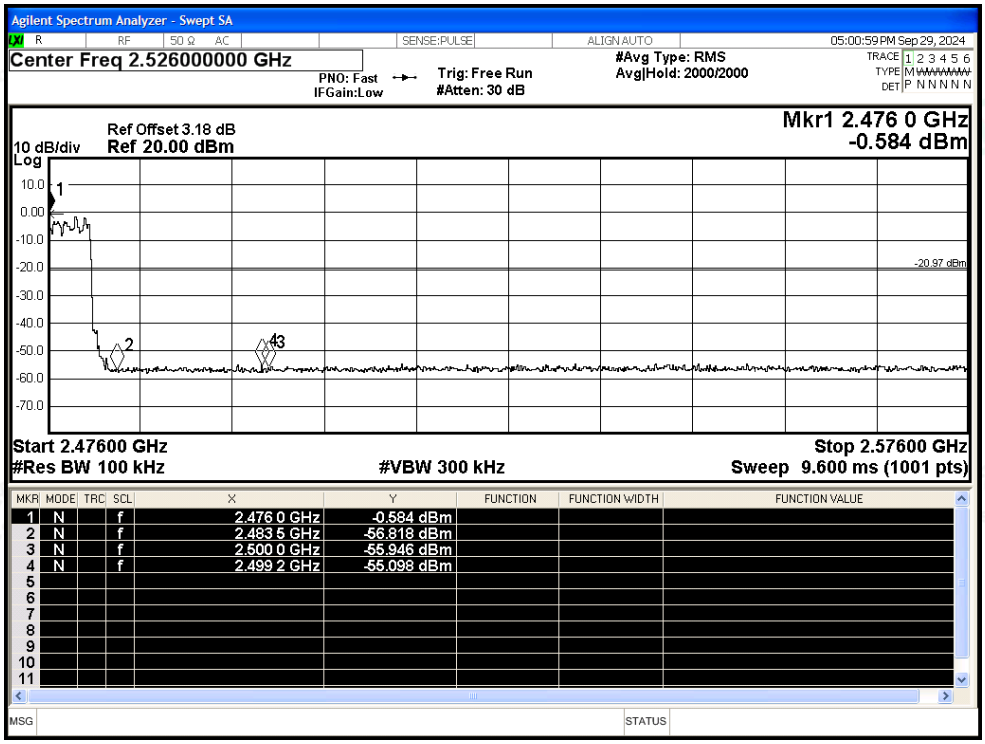
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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

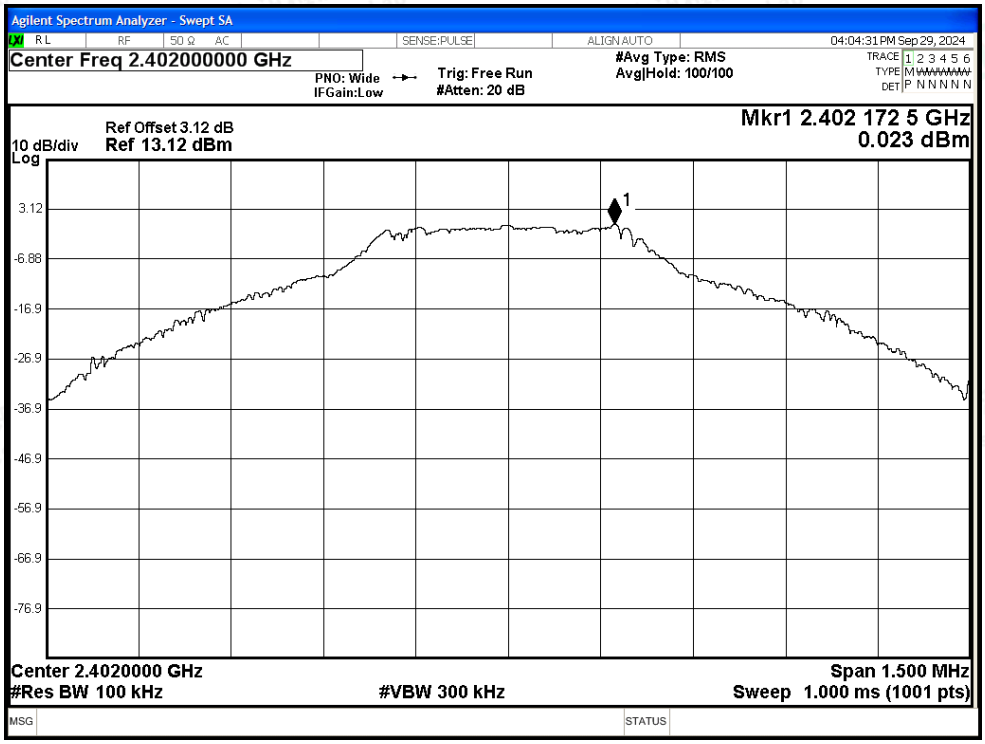


A.7 Conducted RF Spurious Emission

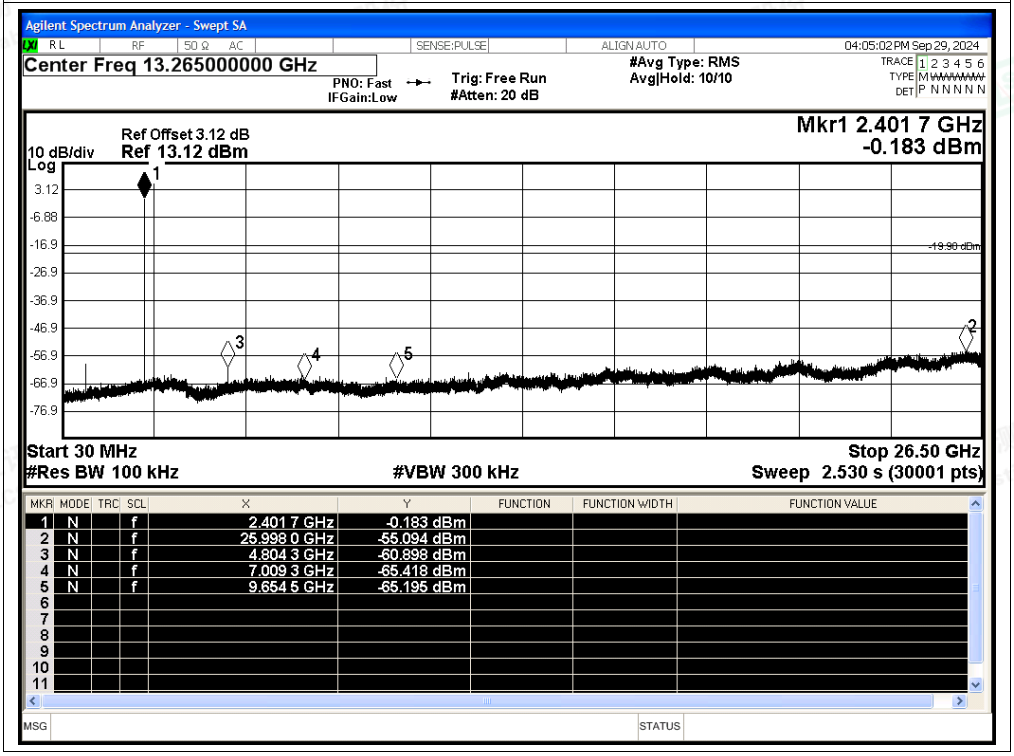
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-55.12	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.92	-20	Pass
NVNT	1-DH5	2480	Ant1	-53.02	-20	Pass
NVNT	2-DH5	2402	Ant1	-51.84	-20	Pass
NVNT	2-DH5	2441	Ant1	-52.43	-20	Pass
NVNT	2-DH5	2480	Ant1	-50.24	-20	Pass
NVNT	3-DH5	2402	Ant1	-52.26	-20	Pass
NVNT	3-DH5	2441	Ant1	-51.29	-20	Pass
NVNT	3-DH5	2480	Ant1	-50.25	-20	Pass

Test Graphs

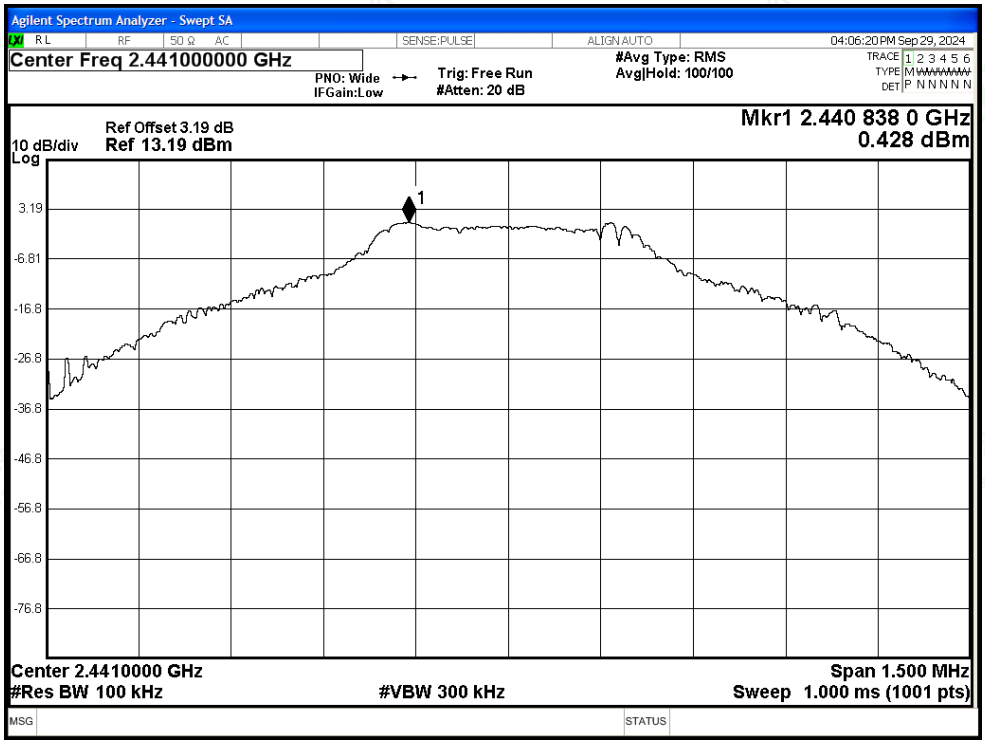
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



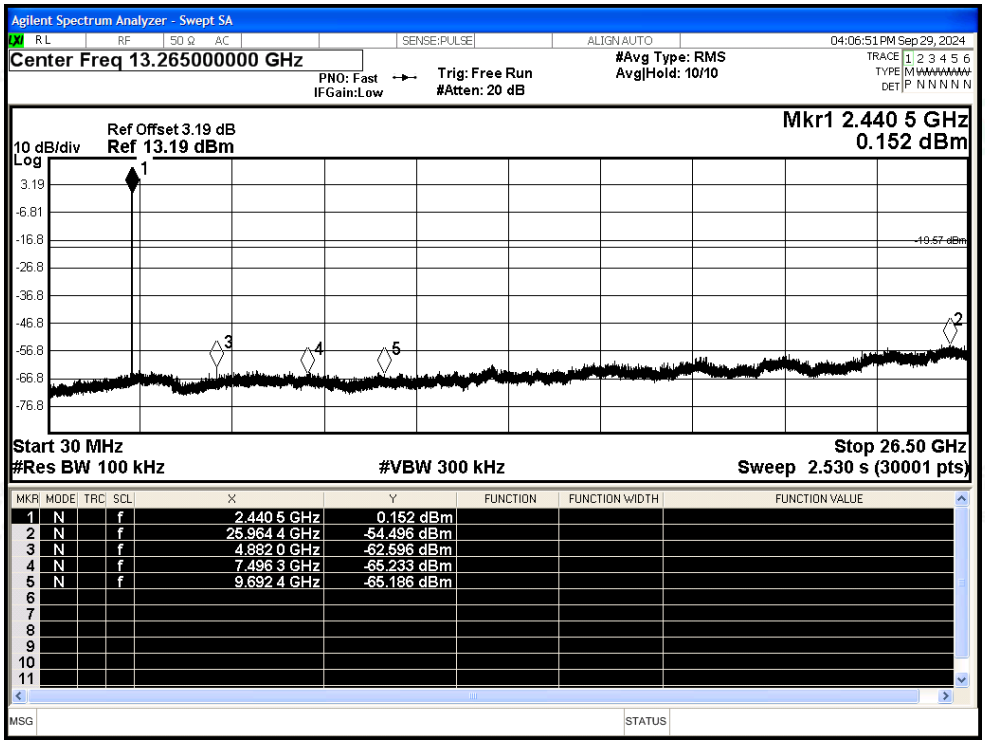
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



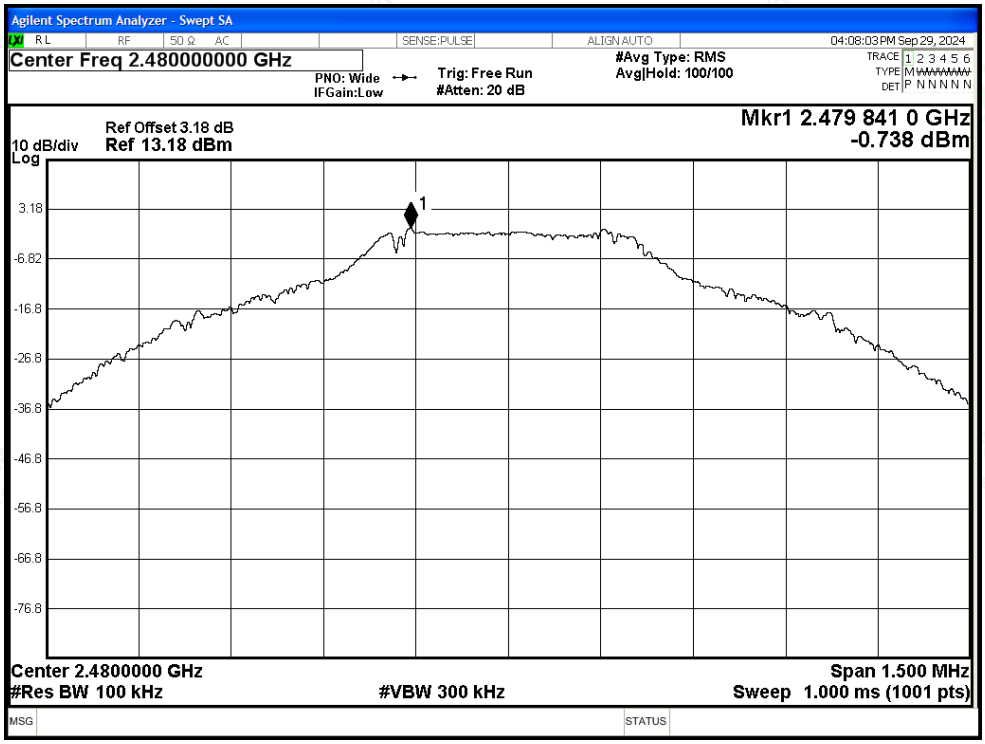
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



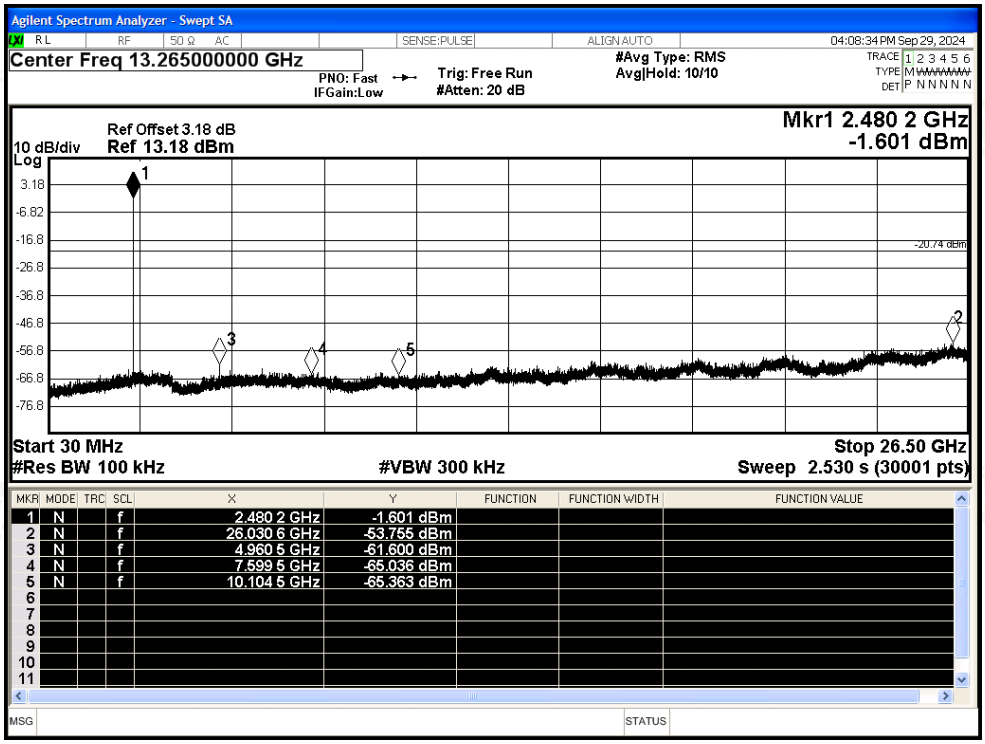
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



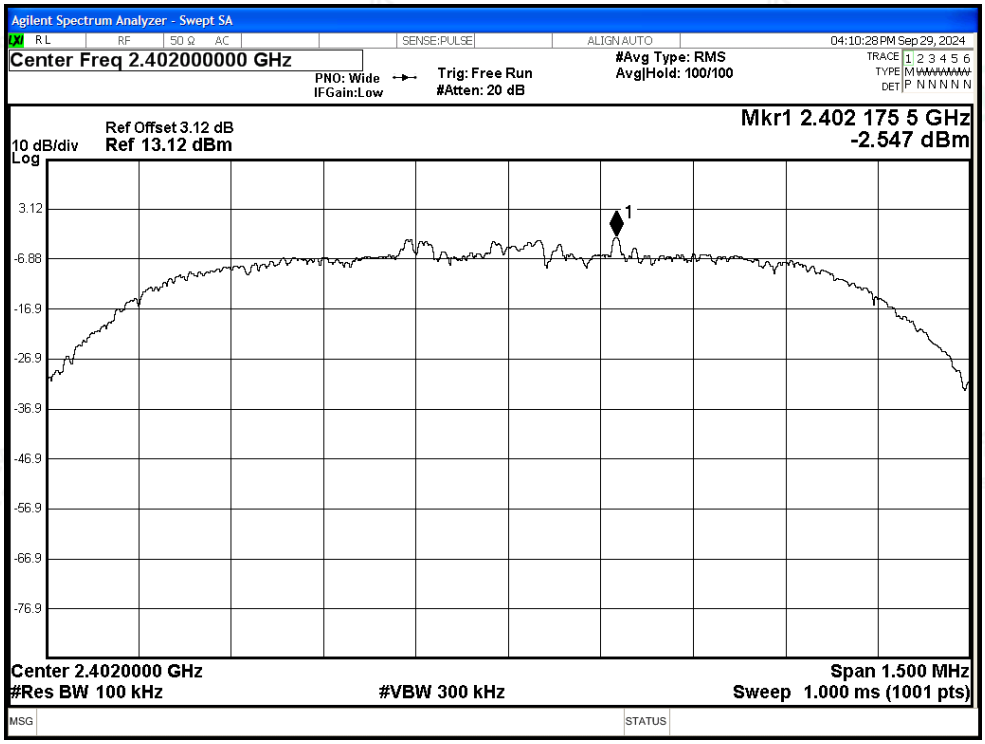
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



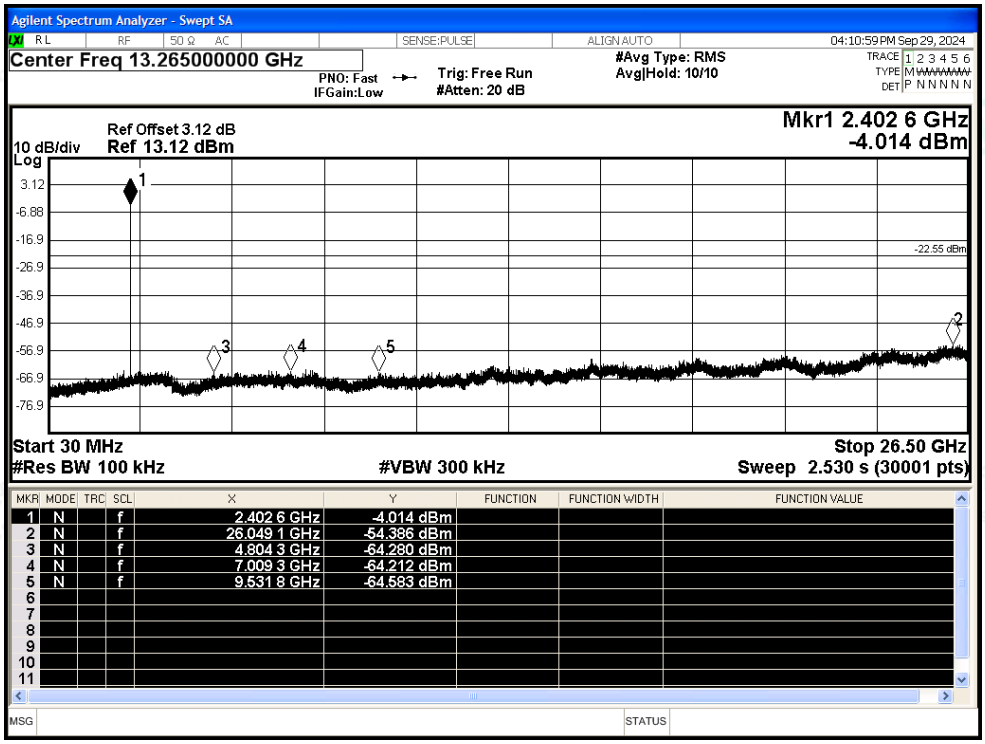
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



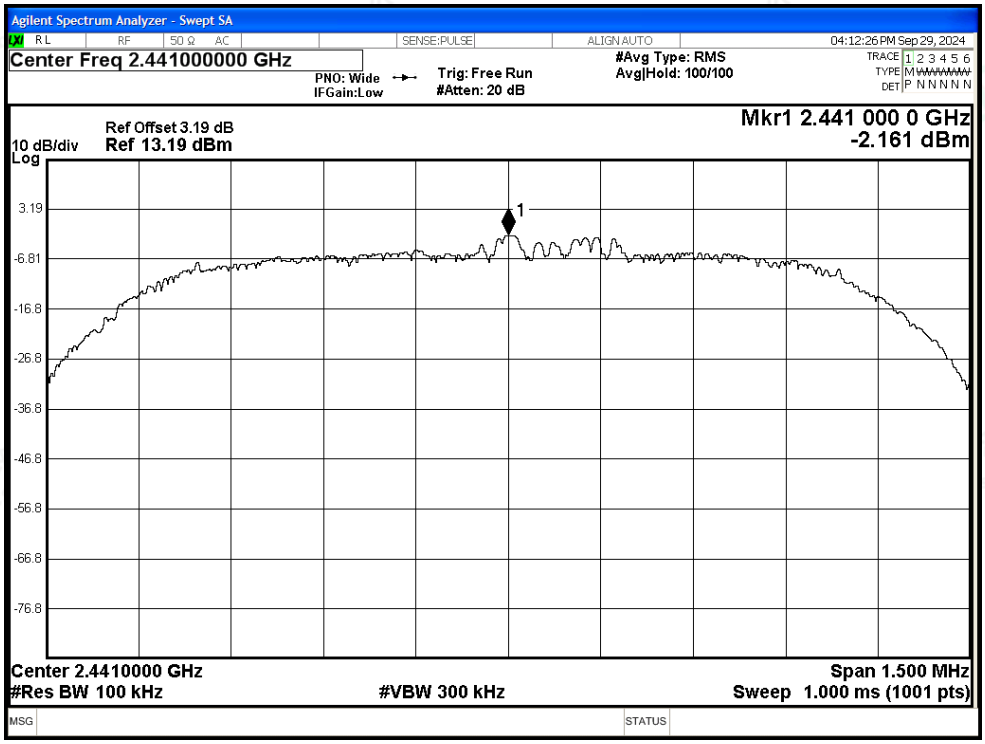
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



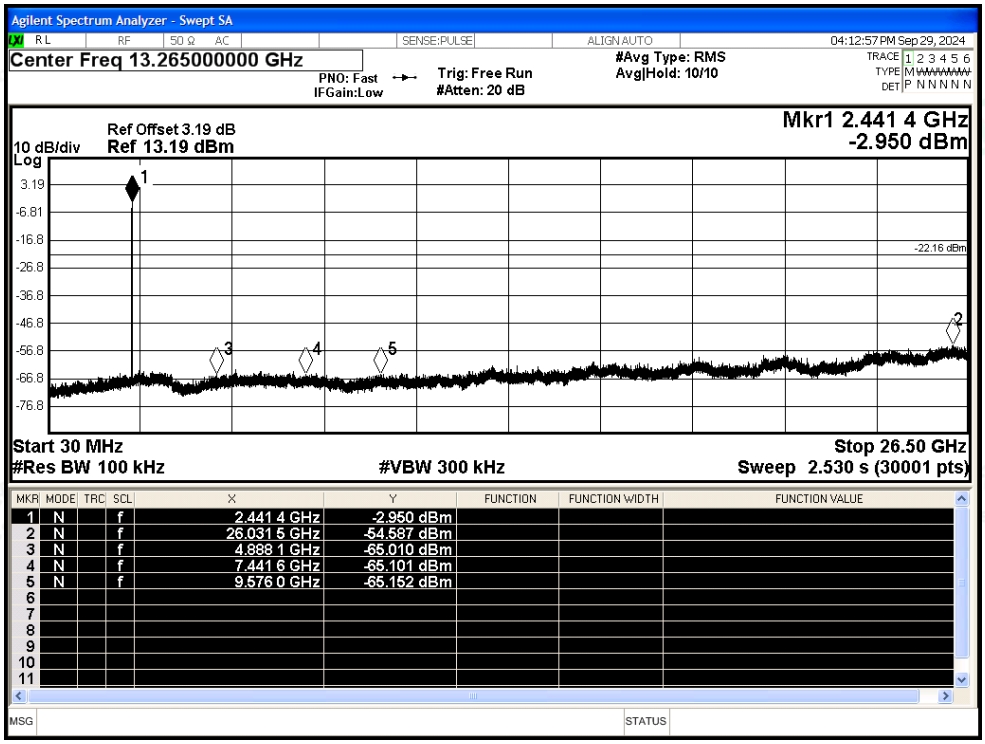
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



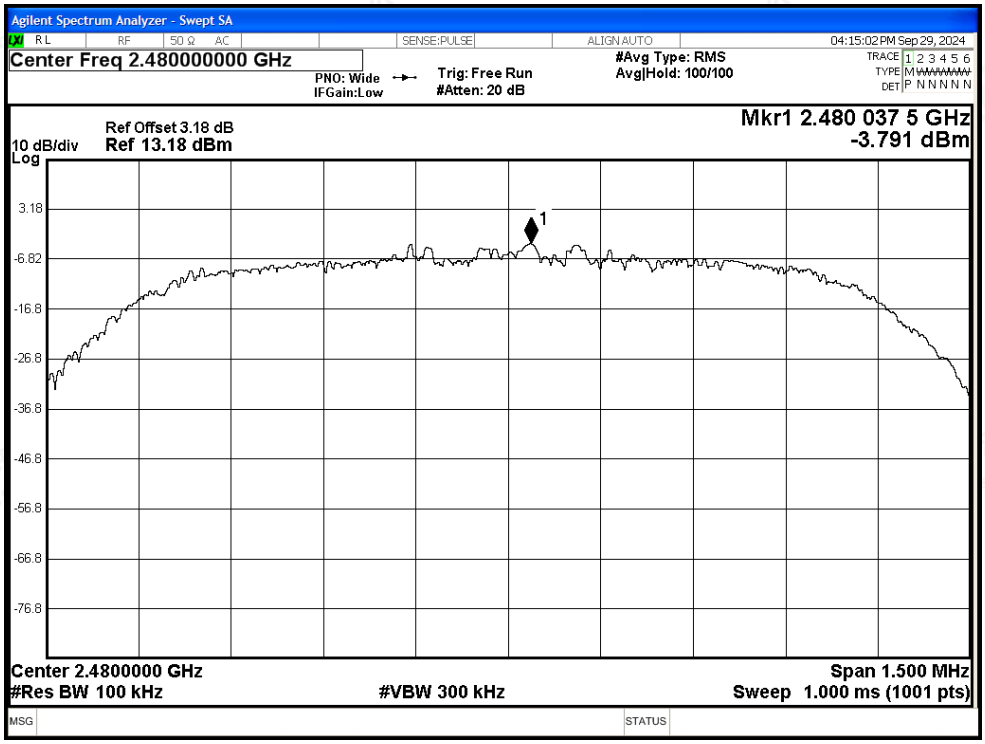
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



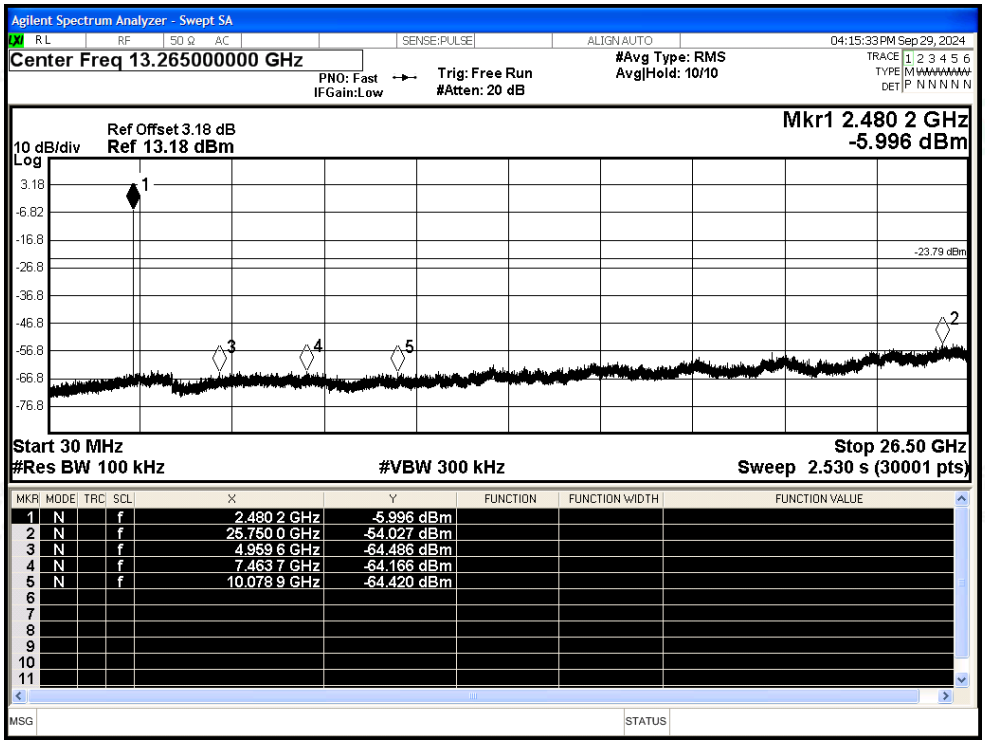
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



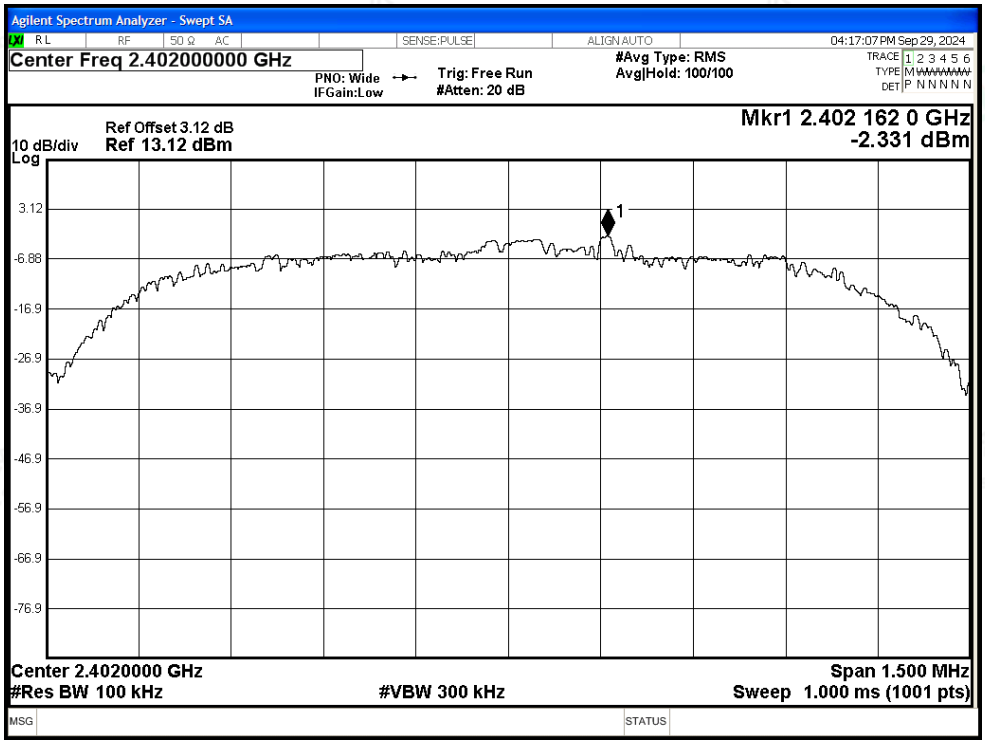
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



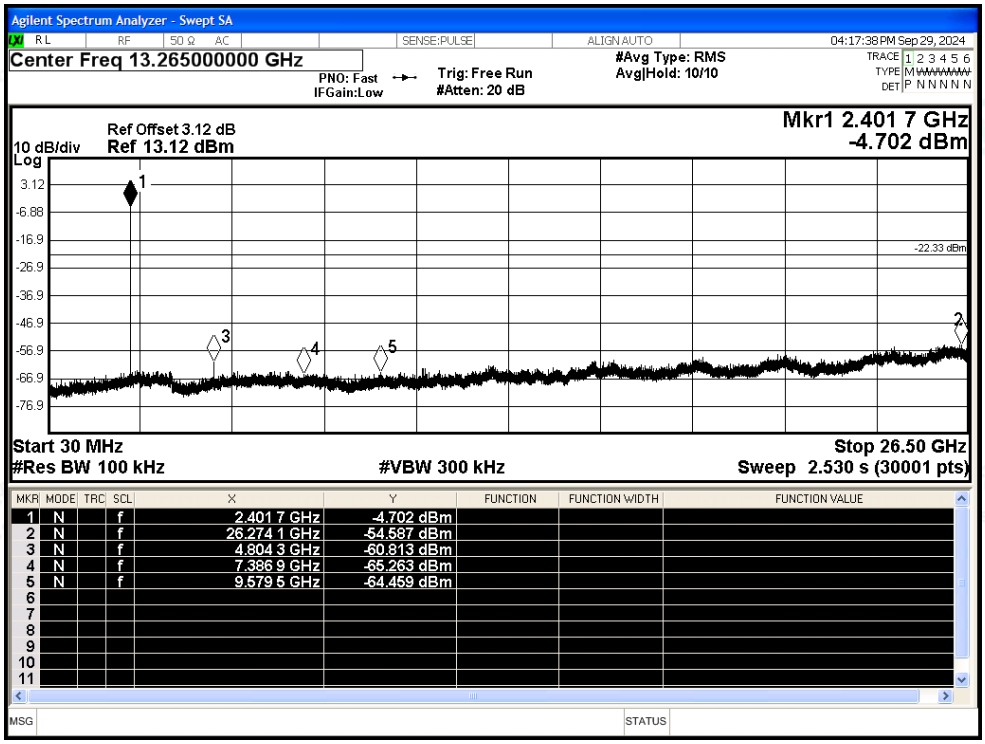
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



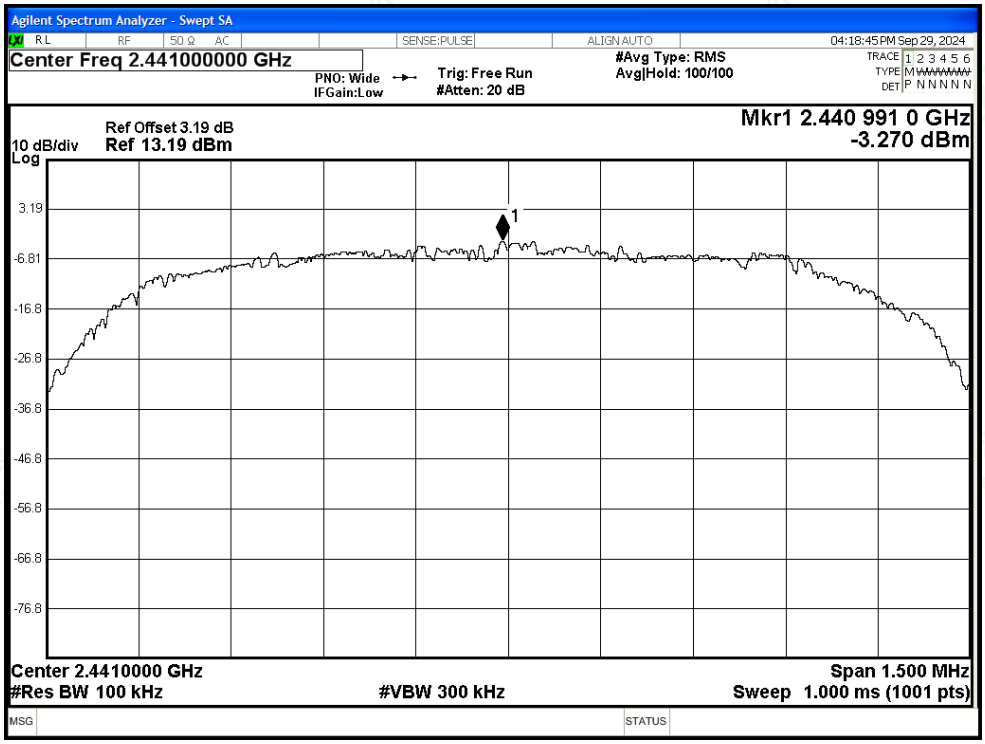
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



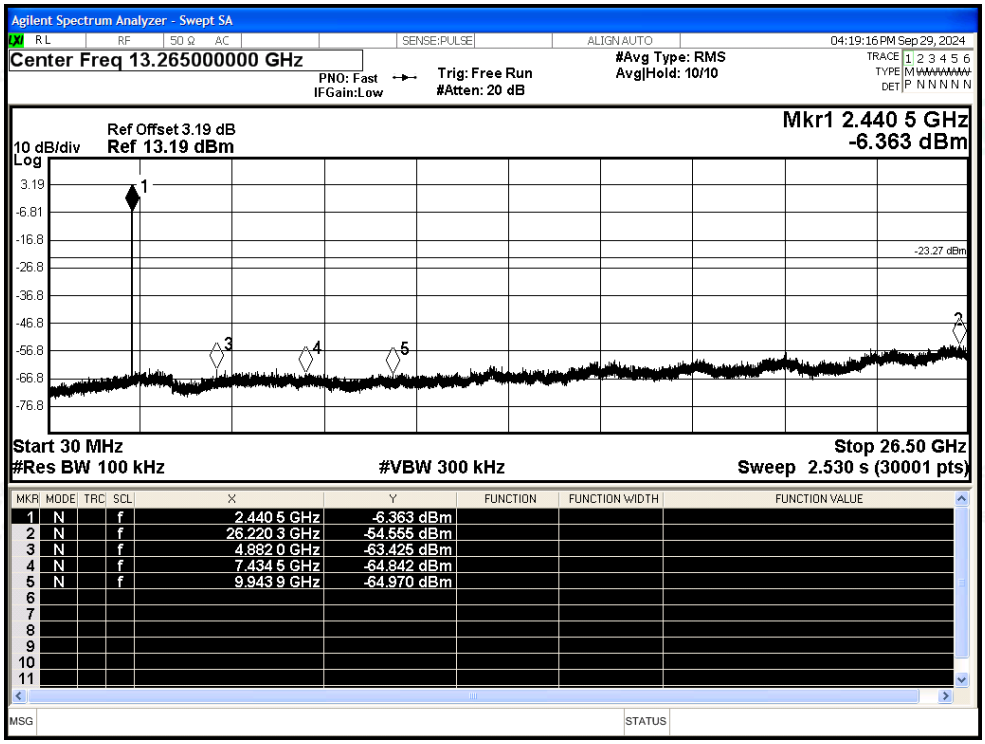
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



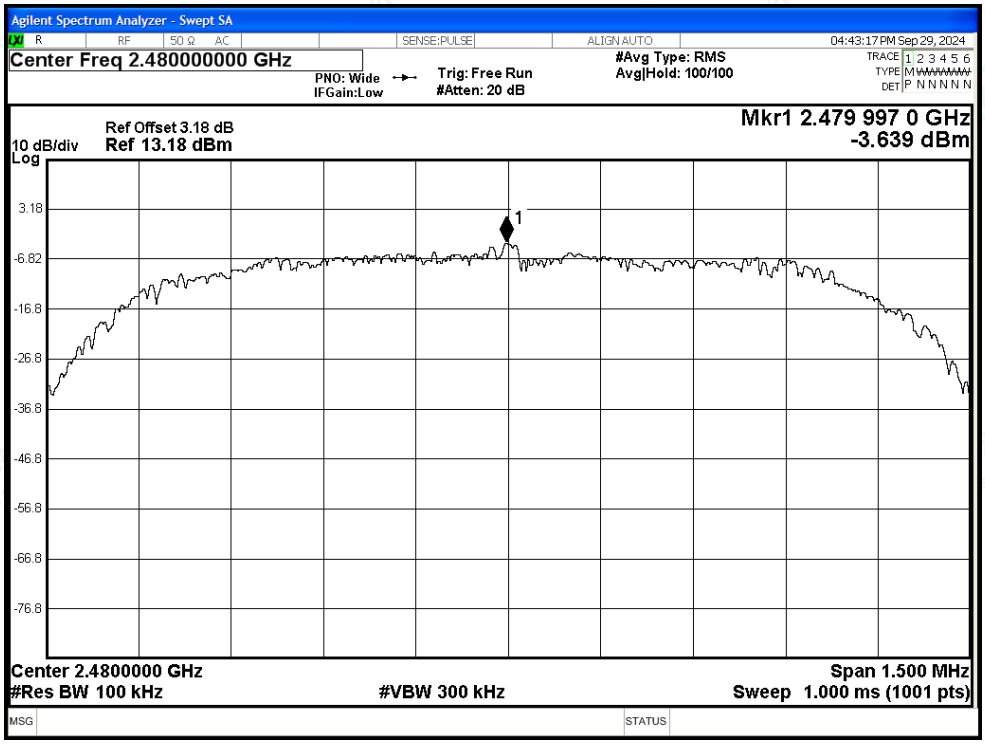
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



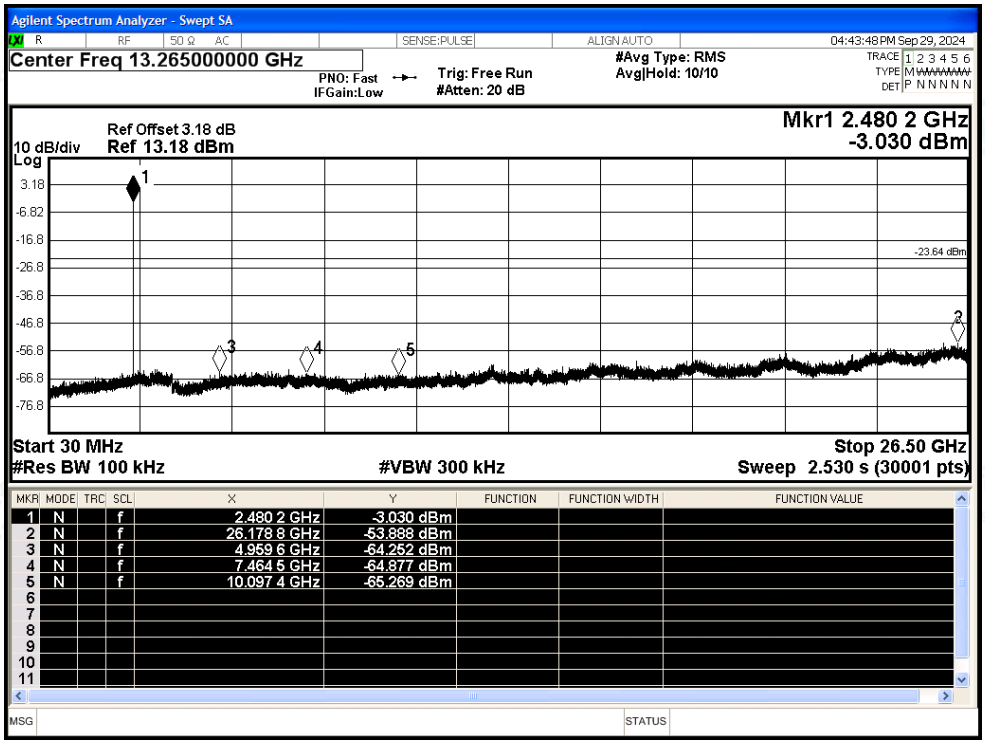
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

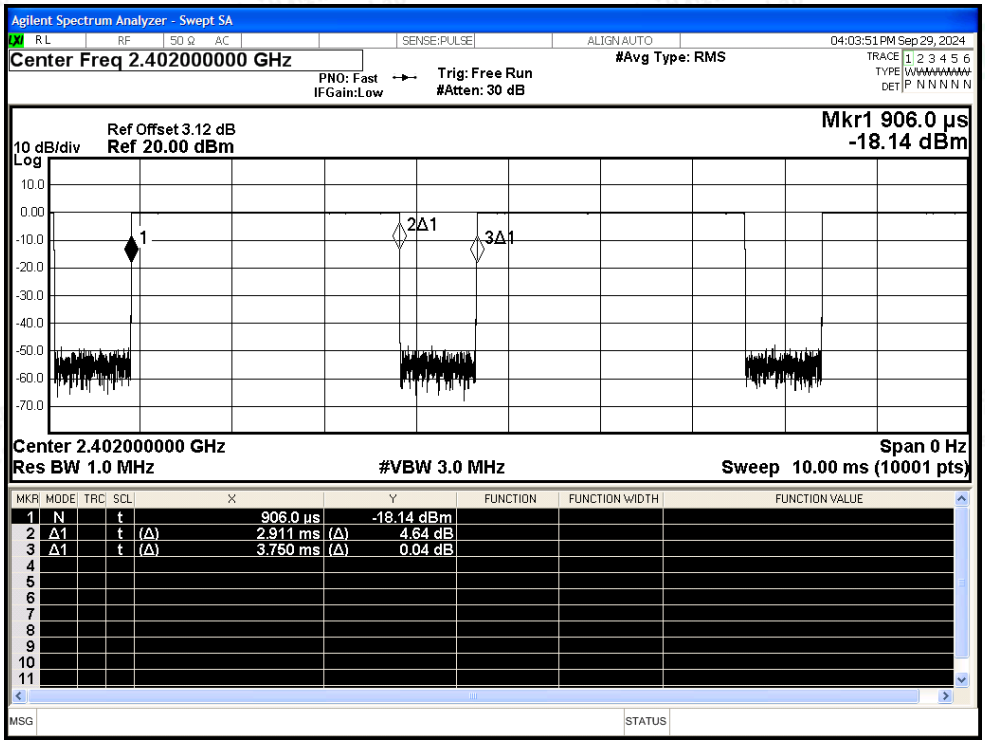


A.8 Duty Cycle

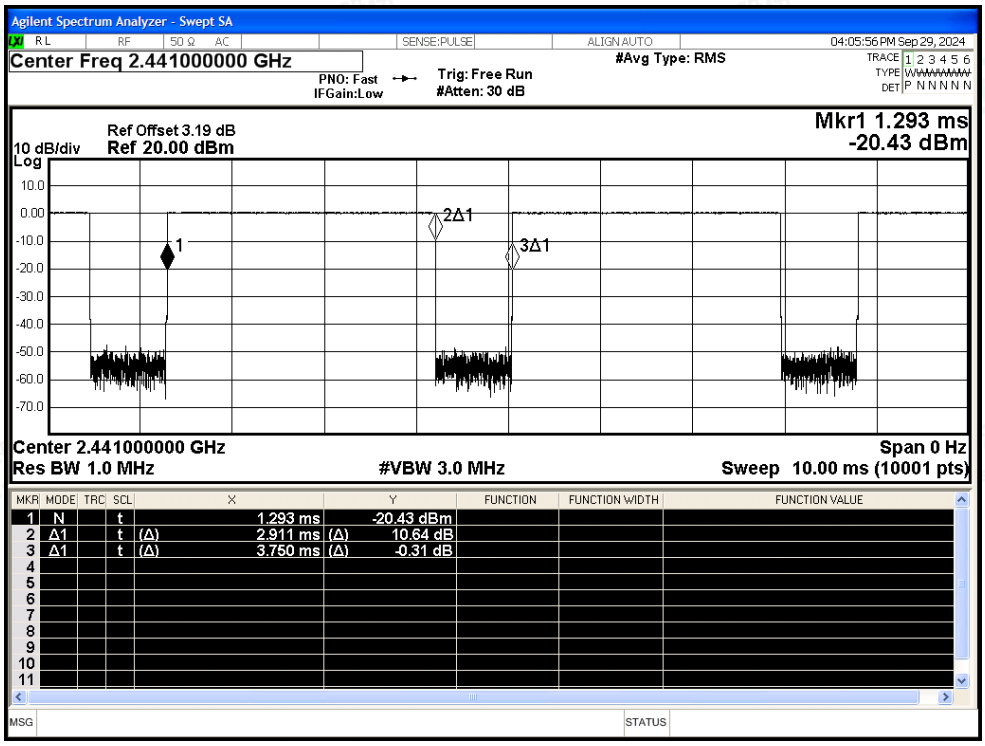
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2480	Ant1	77.33	1.12	0.34
NVNT	3-DH5	2402	Ant1	77.33	1.12	0.34
NVNT	3-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2480	Ant1	77.28	1.12	0.35

Test Graphs

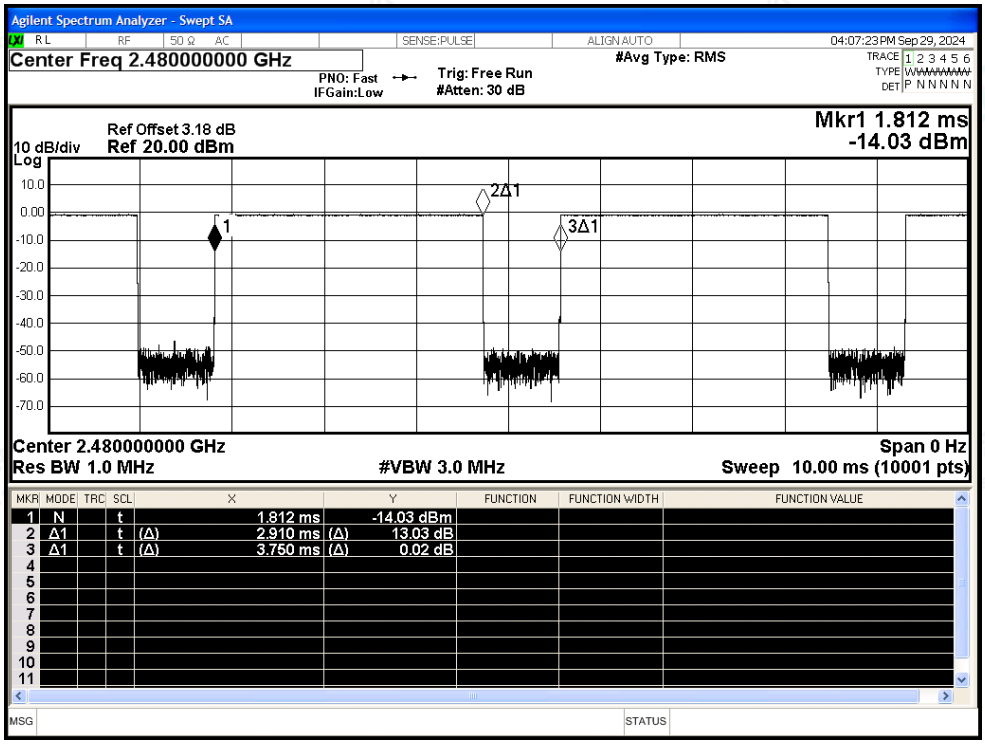
Duty Cycle NVNT 1-DH5 2402MHz Ant1



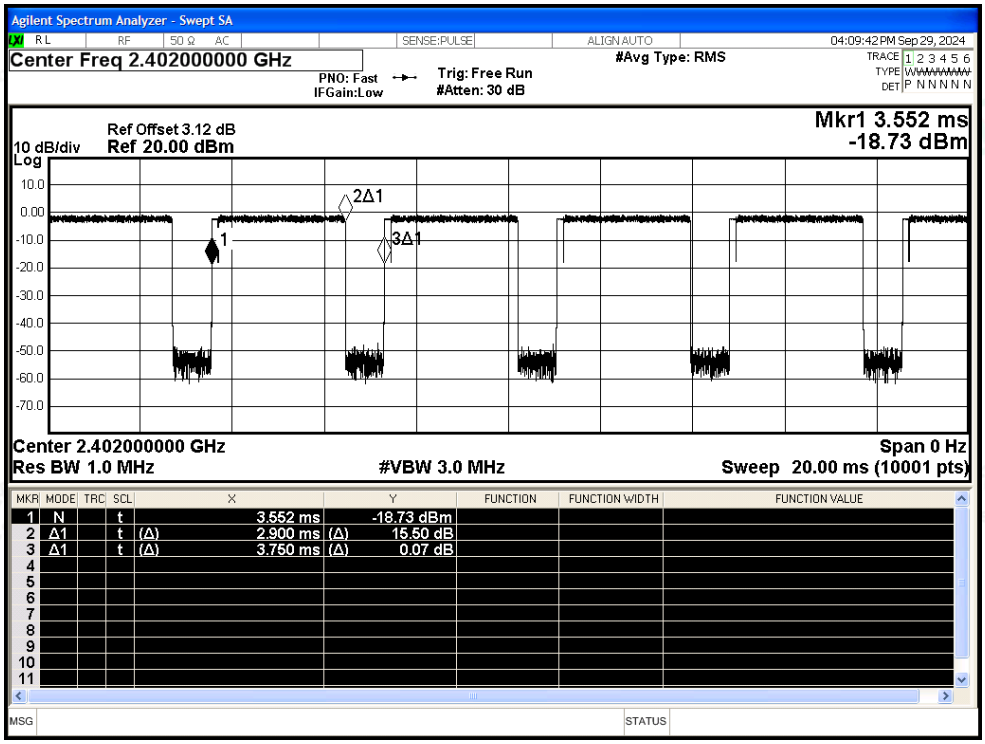
Duty Cycle NVNT 1-DH5 2441MHz Ant1



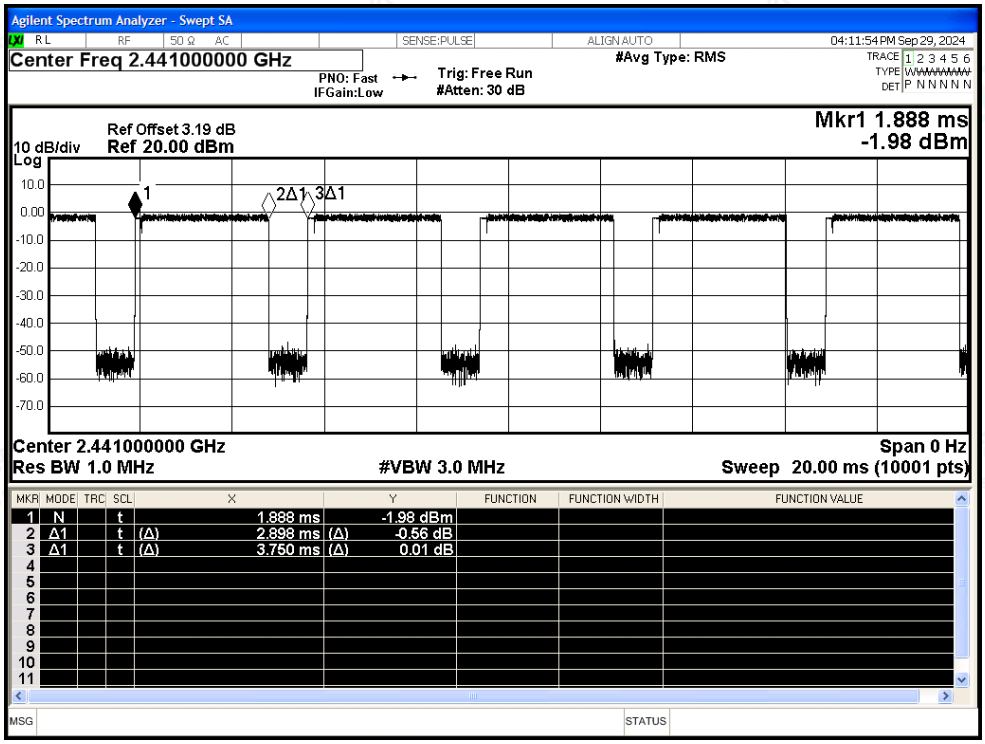
Duty Cycle NVNT 1-DH5 2480MHz Ant1



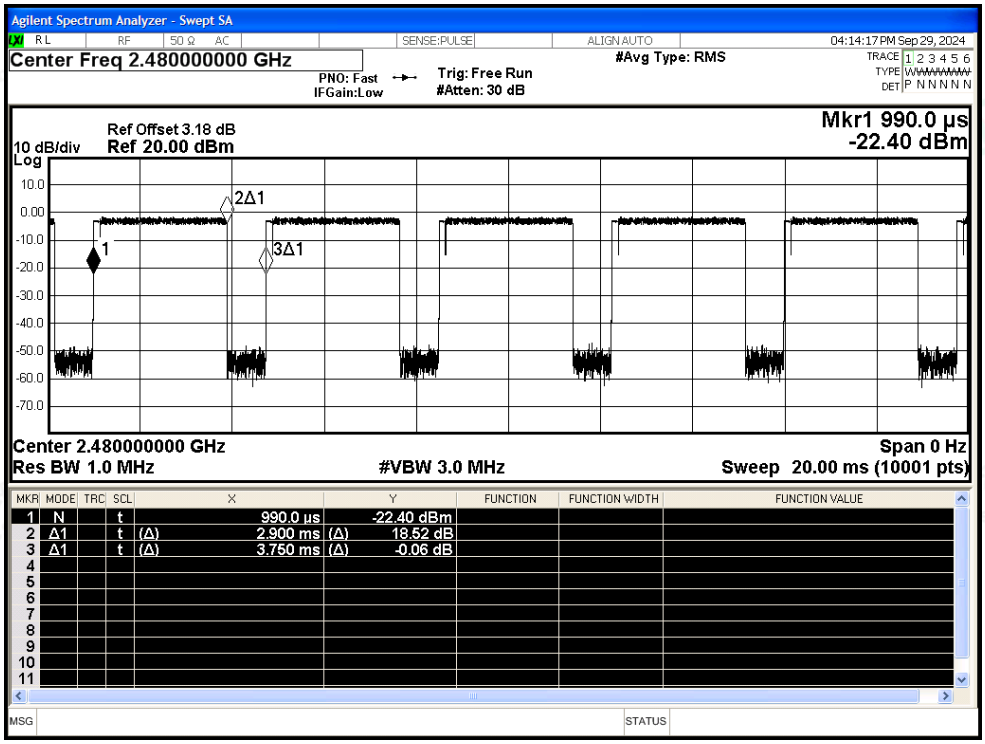
Duty Cycle NVNT 2-DH5 2402MHz Ant1



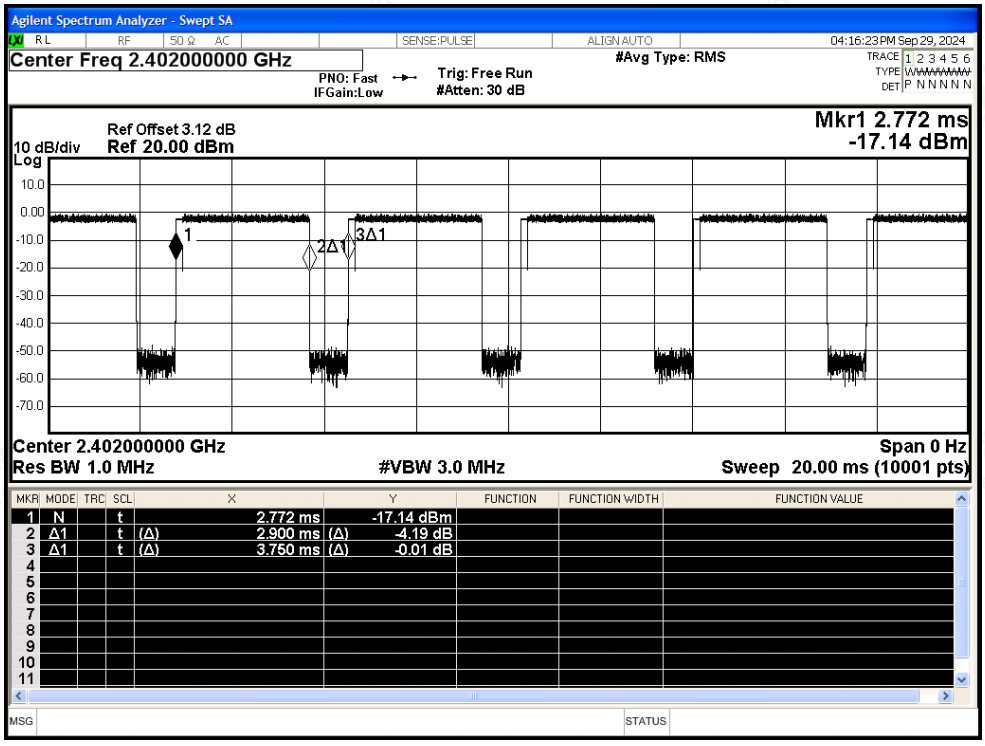
Duty Cycle NVNT 2-DH5 2441MHz Ant1



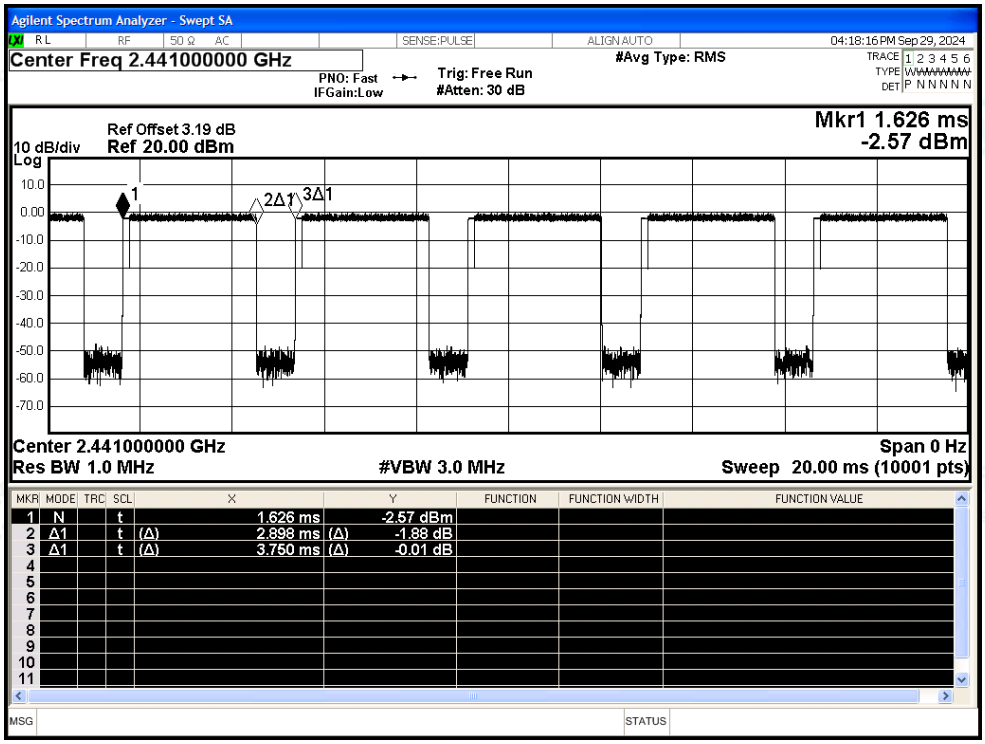
Duty Cycle NVNT 2-DH5 2480MHz Ant1



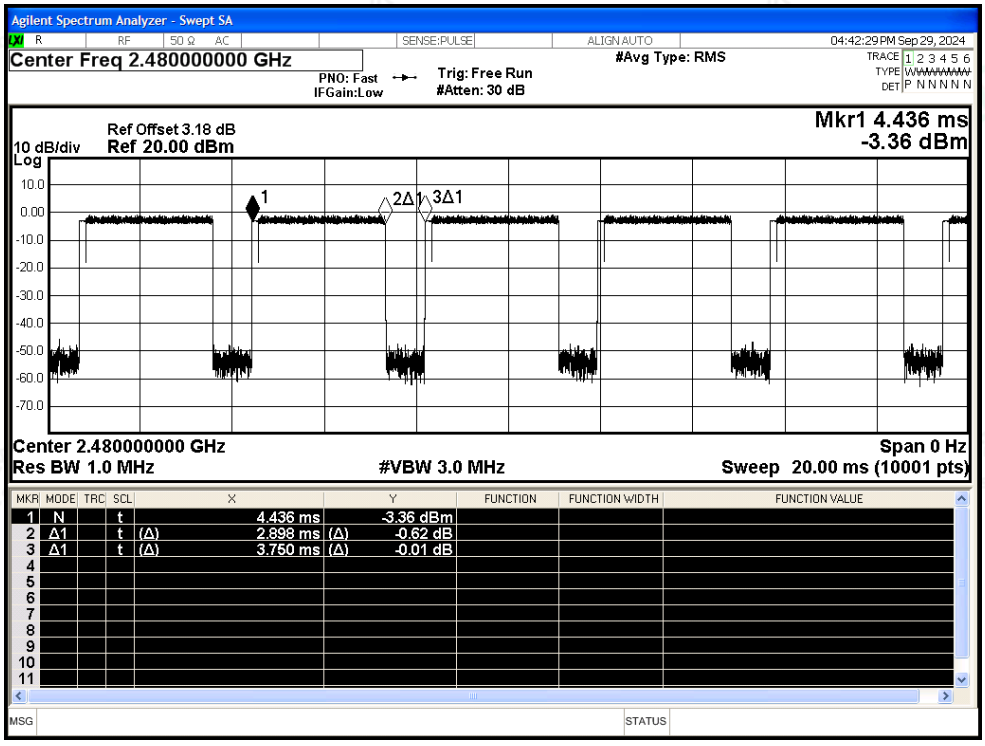
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

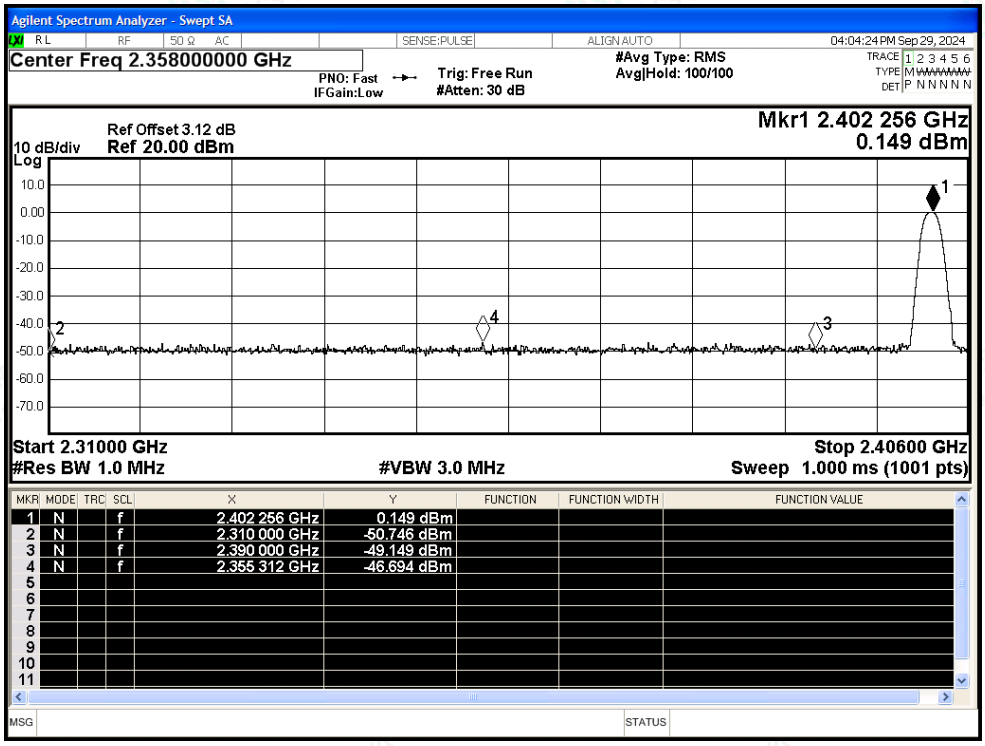


A.9 Restrict Band

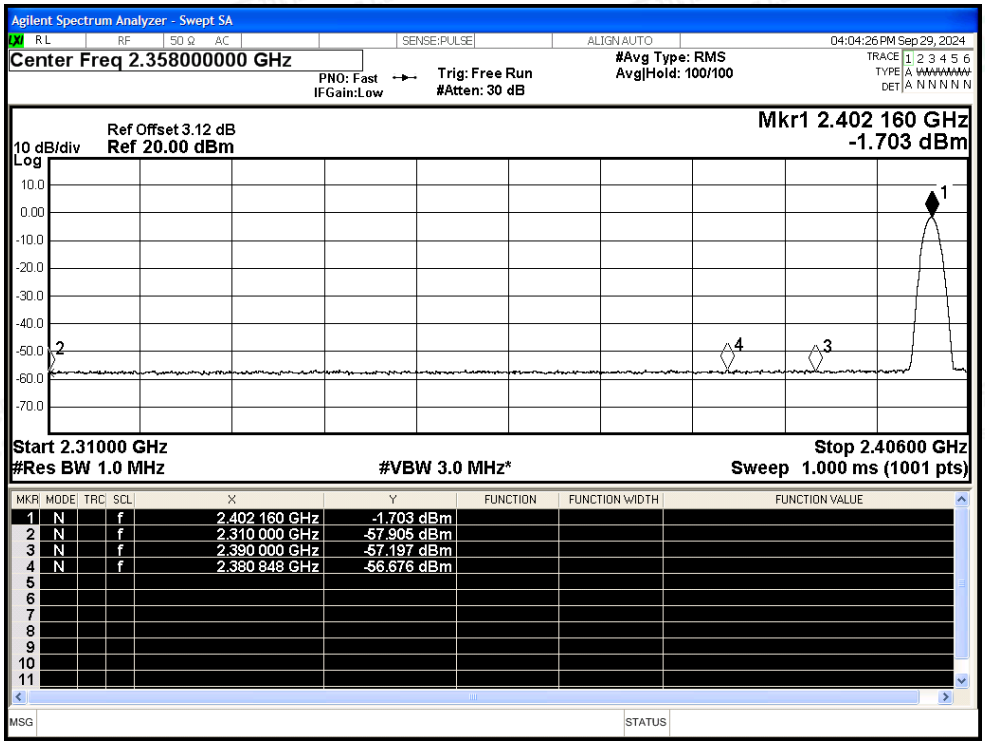
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50.75	2	-	46.51	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57.91	2	1.1	40.45	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2355.312	-46.69	2	-	50.57	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2380.848	-56.68	2	1.1	41.68	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.15	2	-	48.11	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-57.2	2	1.1	41.16	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.24	2	-	48.02	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-56.36	2	1.1	42	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2498.824	-46.14	2	-	51.12	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2497.024	-55.98	2	1.1	42.38	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-48.82	2	-	48.44	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-56.77	2	1.1	41.59	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.23	2	-	47.03	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-57.41	2	1.12	40.97	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2381.808	-45.98	2	-	51.28	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2379.12	-56.59	2	1.12	41.79	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.62	2	-	46.64	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-57.25	2	1.12	41.13	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.18	2	-	48.08	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-56.86	2	1.12	41.52	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2491.672	-45.41	2	-	51.85	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2497.384	-56.25	2	1.12	42.13	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-47.87	2	-	49.39	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-56.5	2	1.12	41.88	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-48.63	2	-	48.63	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-57.27	2	1.12	41.11	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2358.96	-46.72	2	-	50.54	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2372.208	-56.46	2	1.12	41.92	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-49.01	2	-	48.25	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-57.5	2	1.12	40.88	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-48.34	2	-	48.92	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-56.82	2	1.12	41.56	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2494.408	-46.21	2	-	51.05	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2490.52	-56.2	2	1.12	42.18	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-47.61	2	-	49.65	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.04	2	1.12	41.34	Average	54	Pass

Test Graphs

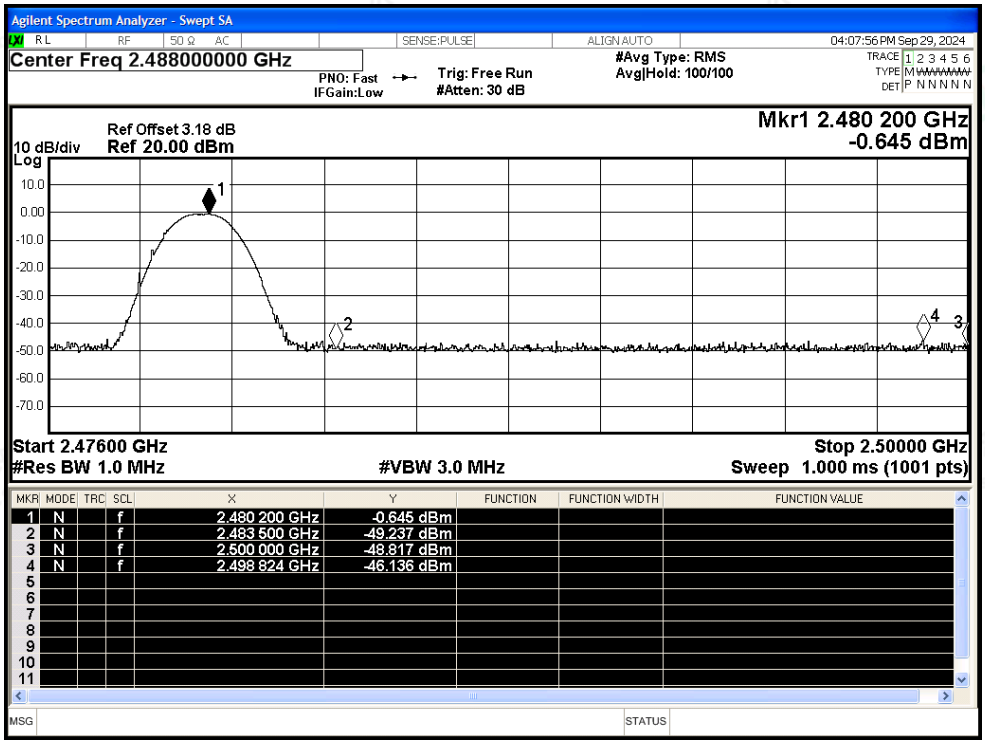
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



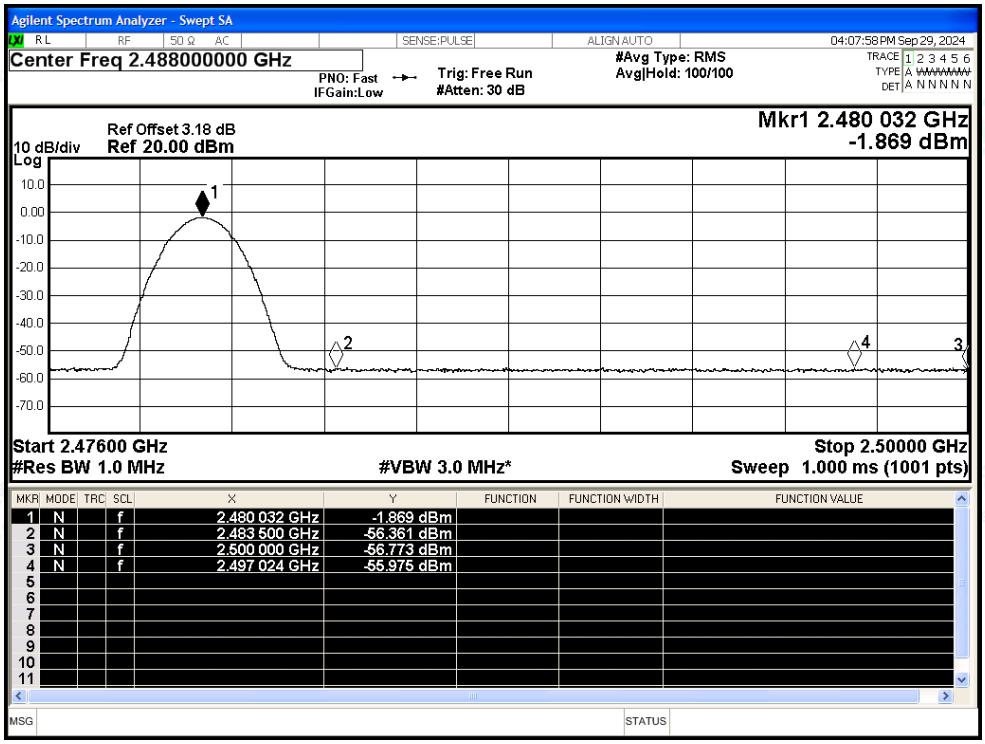
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



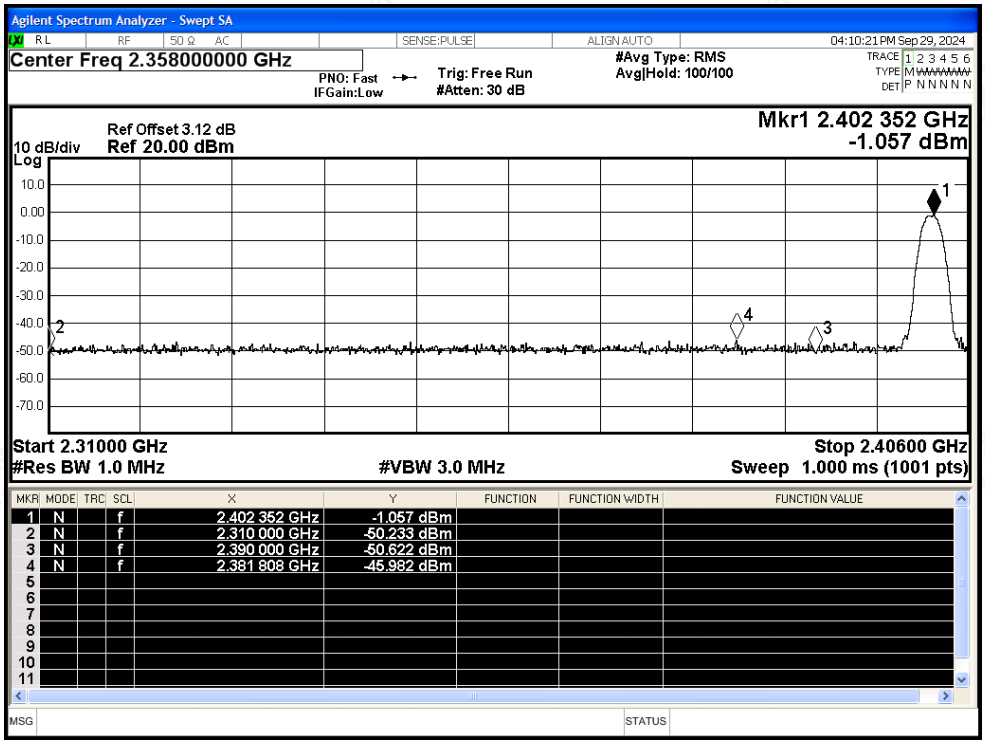
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



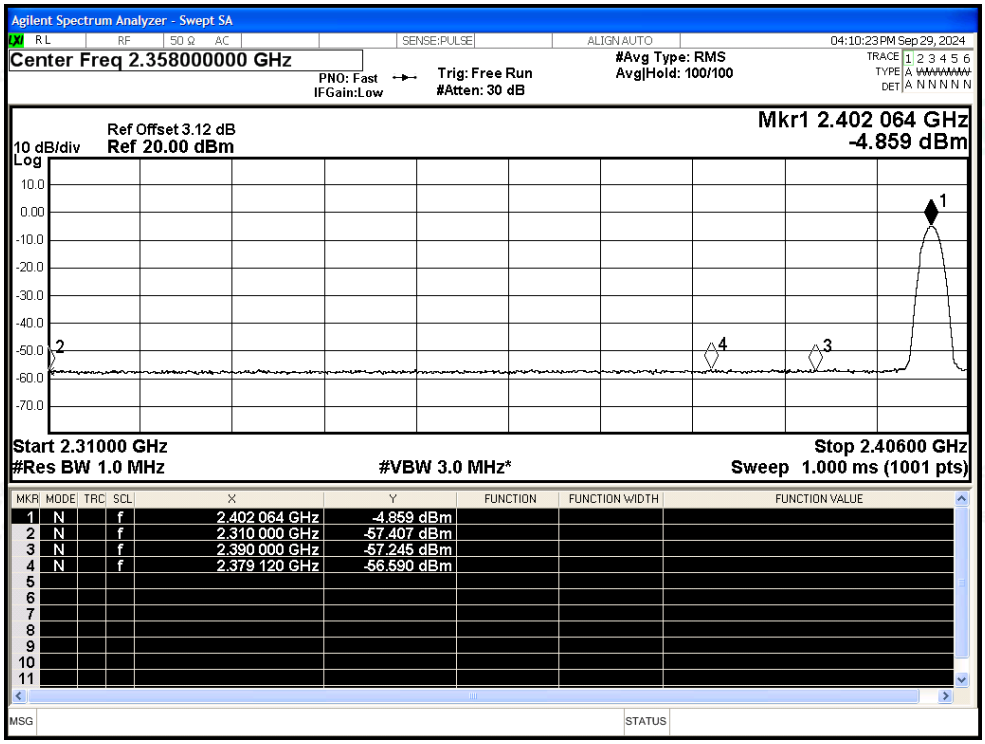
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



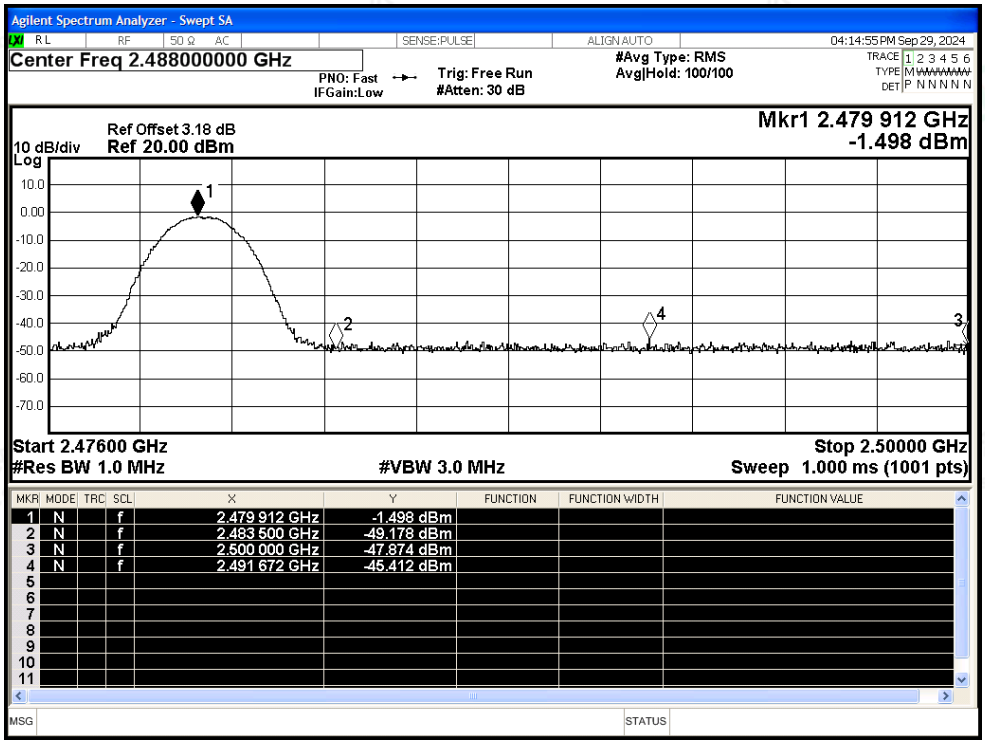
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



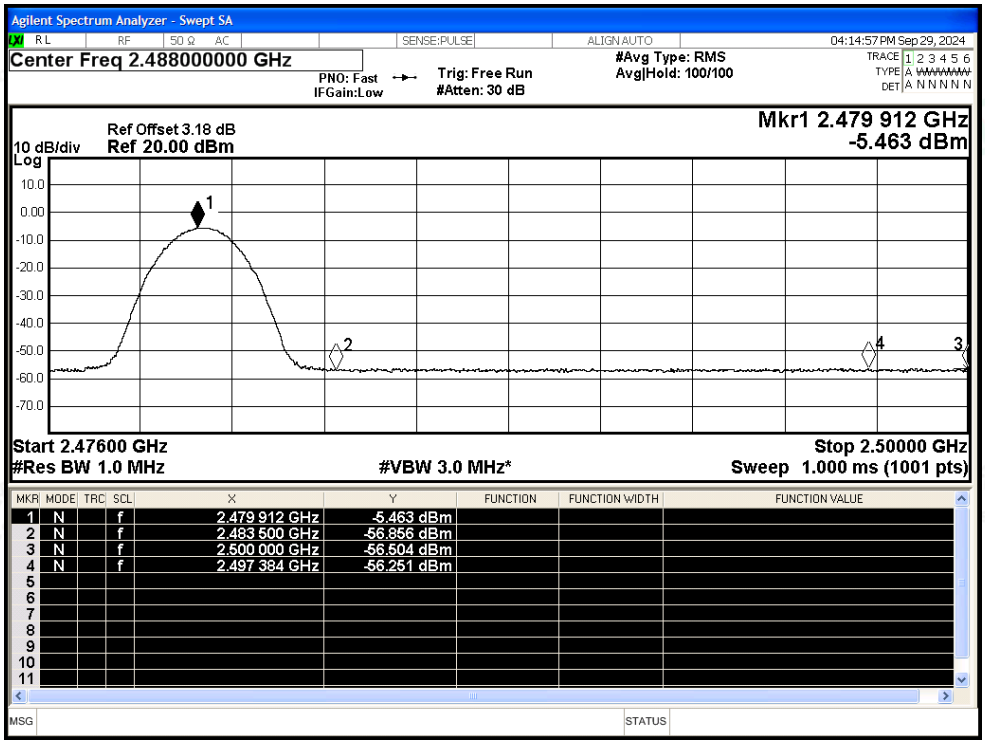
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



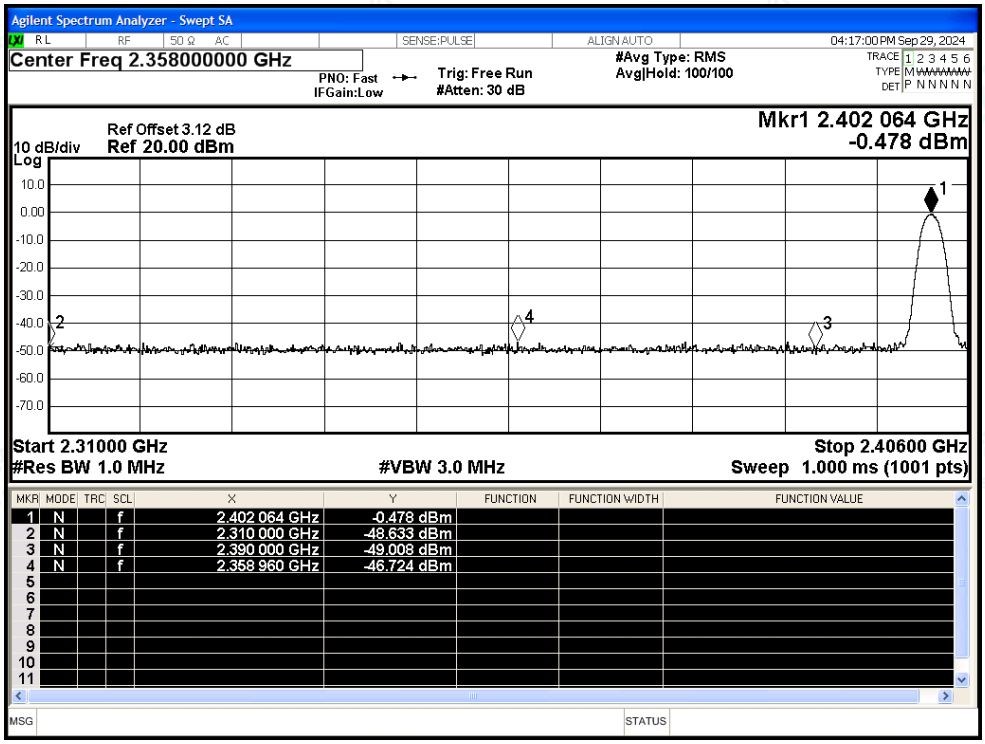
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



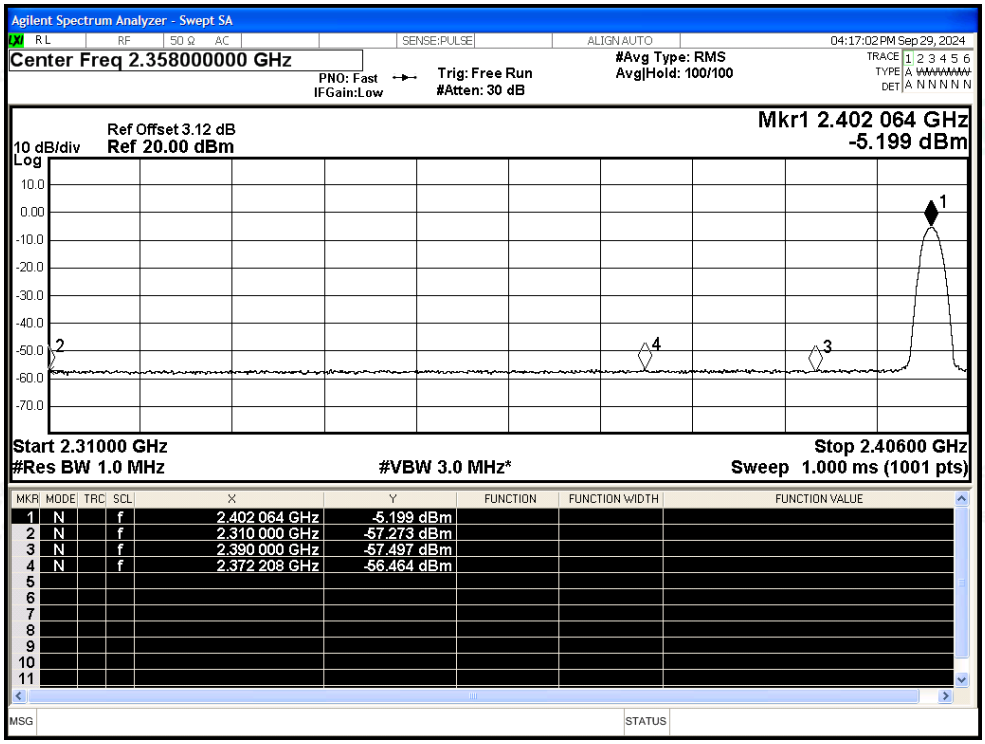
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



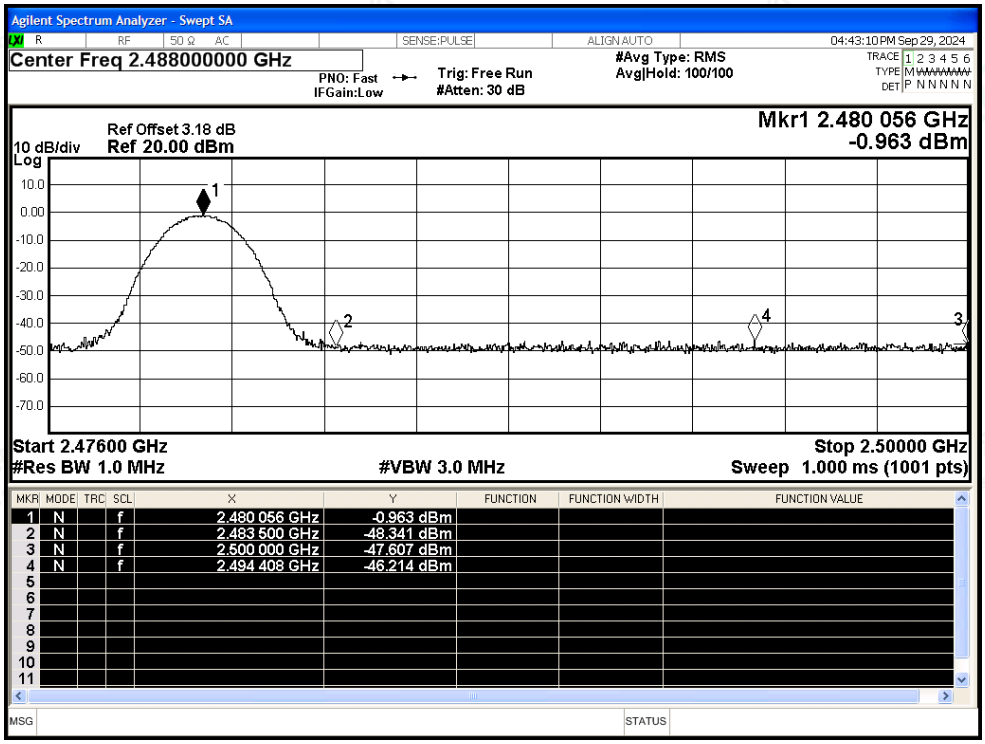
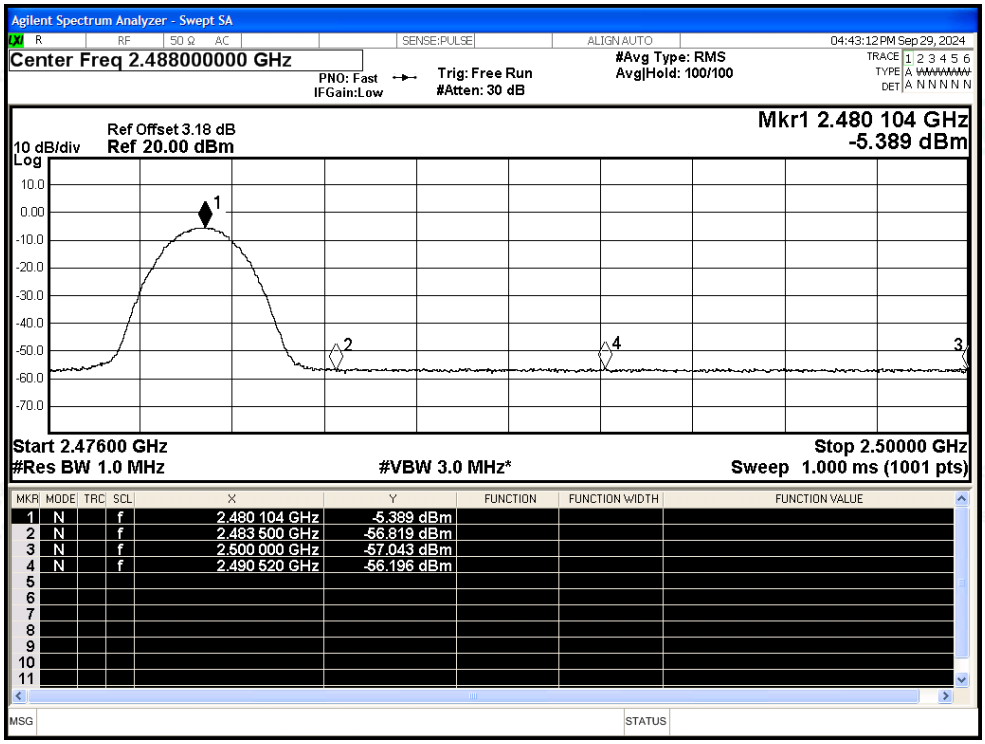
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



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