





Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: TWS Bluetooth Headset

Test Model: AUTREBITS MetaBuds

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Monkey Li
Supervised by:	 Li Huan



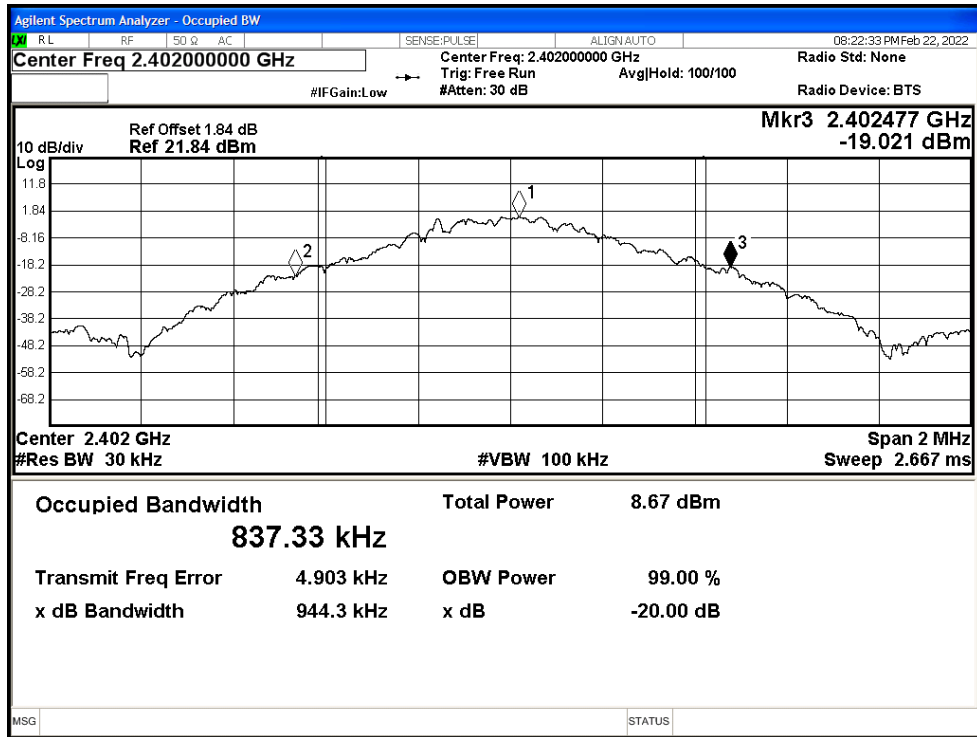
A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.944	No Limit	Pass
NVNT	1-DH5	2441	Ant1	0.947	No Limit	Pass
NVNT	1-DH5	2480	Ant1	0.931	No Limit	Pass
NVNT	2-DH5	2402	Ant1	1.326	No Limit	Pass
NVNT	2-DH5	2441	Ant1	1.311	No Limit	Pass
NVNT	2-DH5	2480	Ant1	1.302	No Limit	Pass
NVNT	3-DH5	2402	Ant1	1.298	No Limit	Pass
NVNT	3-DH5	2441	Ant1	1.307	No Limit	Pass
NVNT	3-DH5	2480	Ant1	1.292	No Limit	Pass

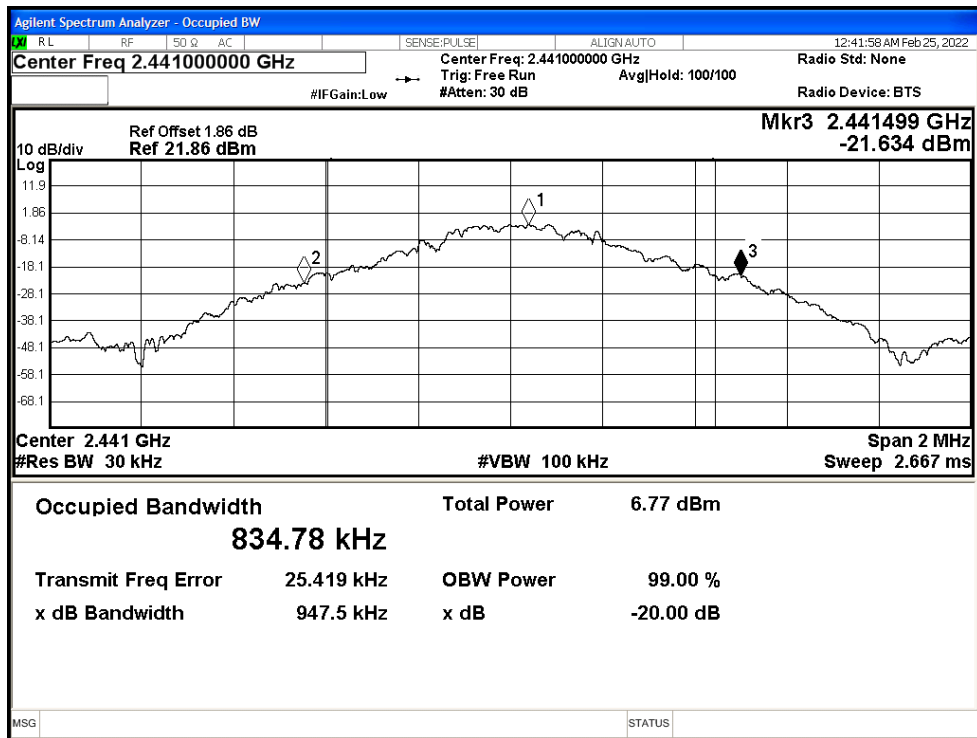


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

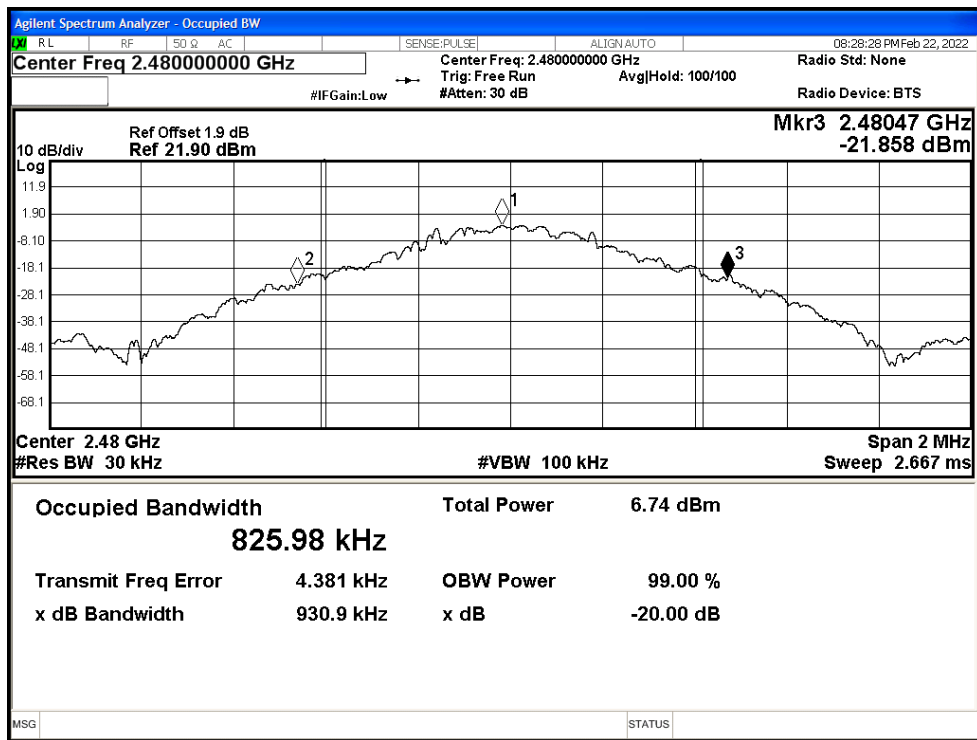


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

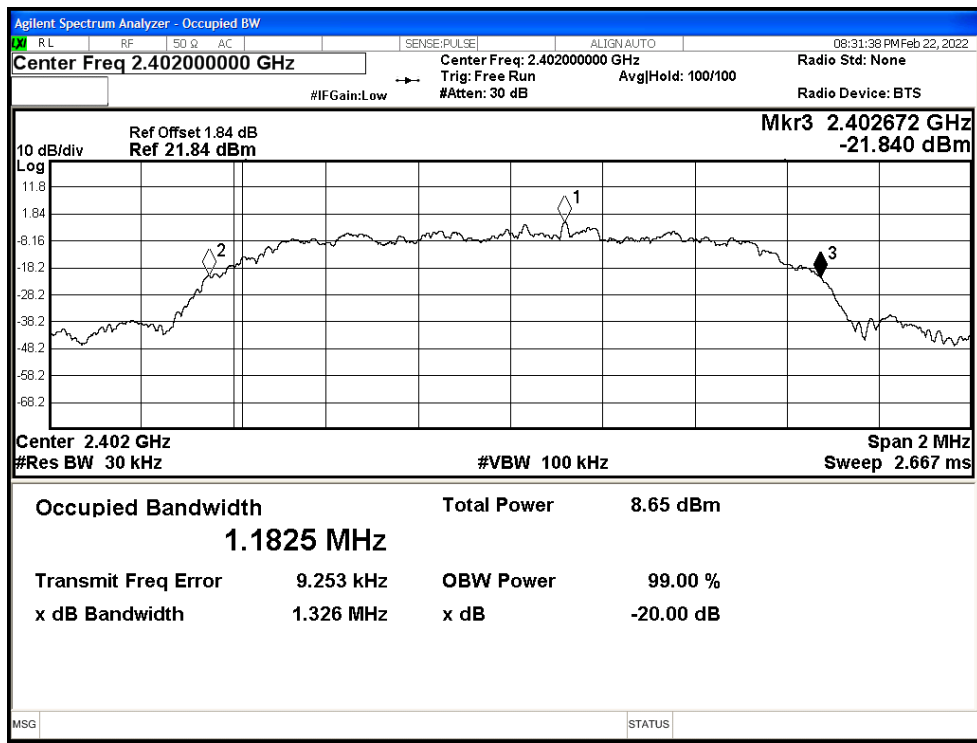




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

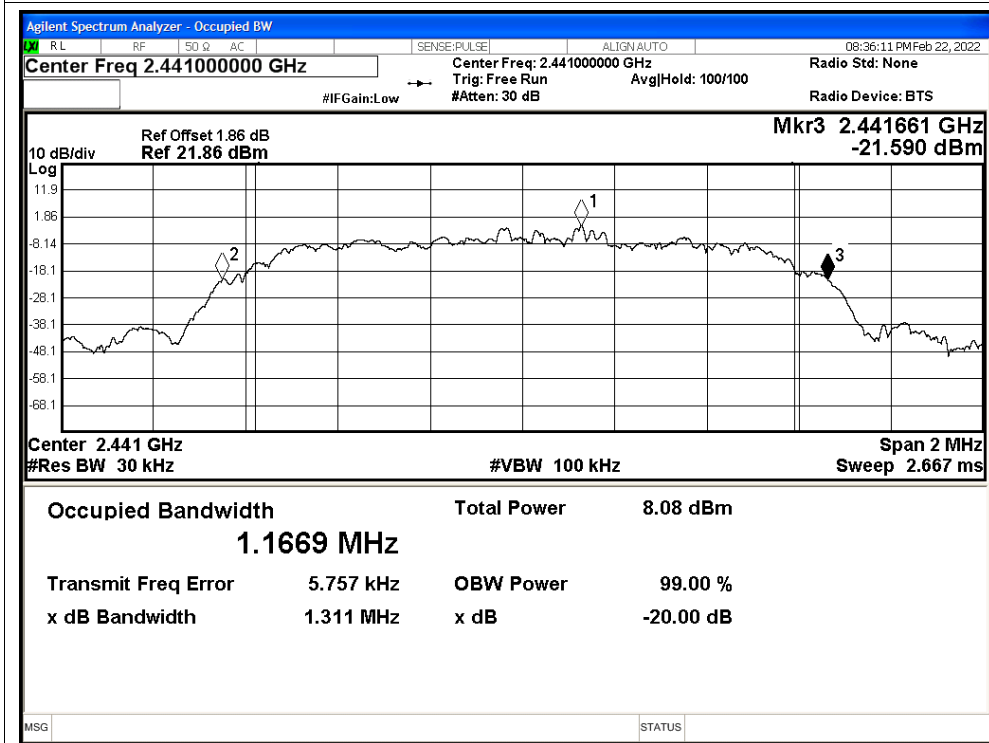


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

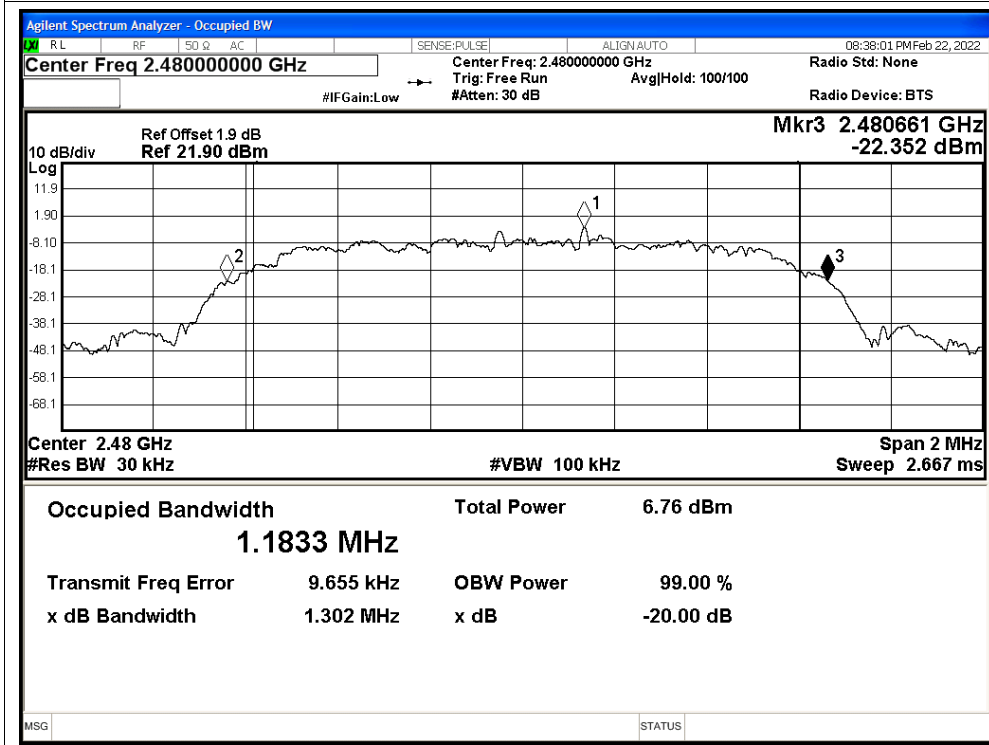




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

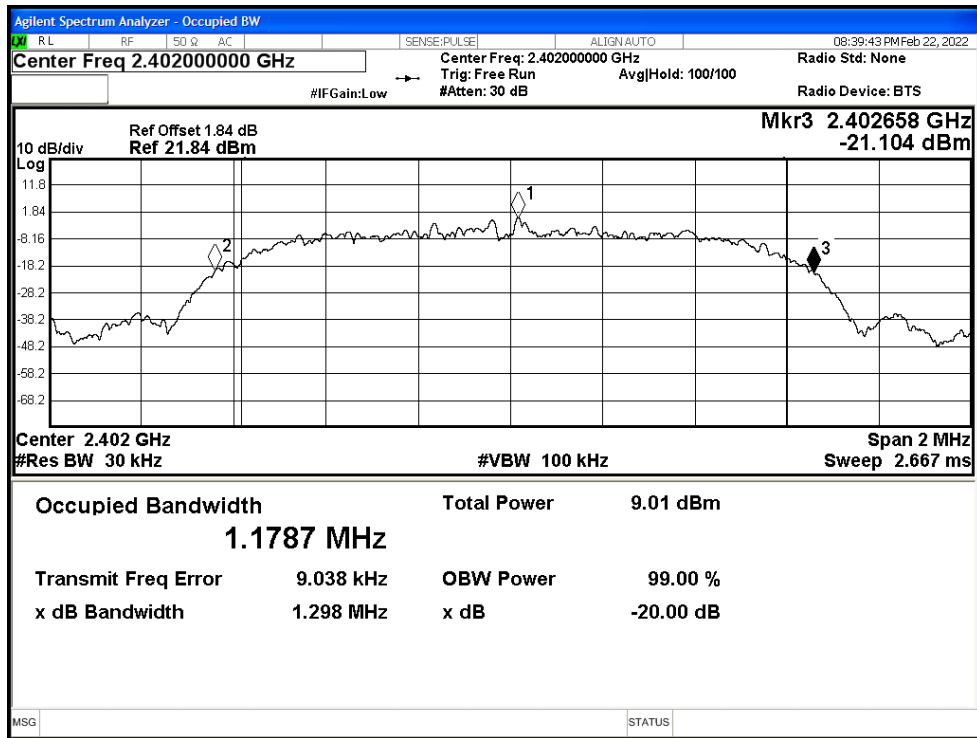


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

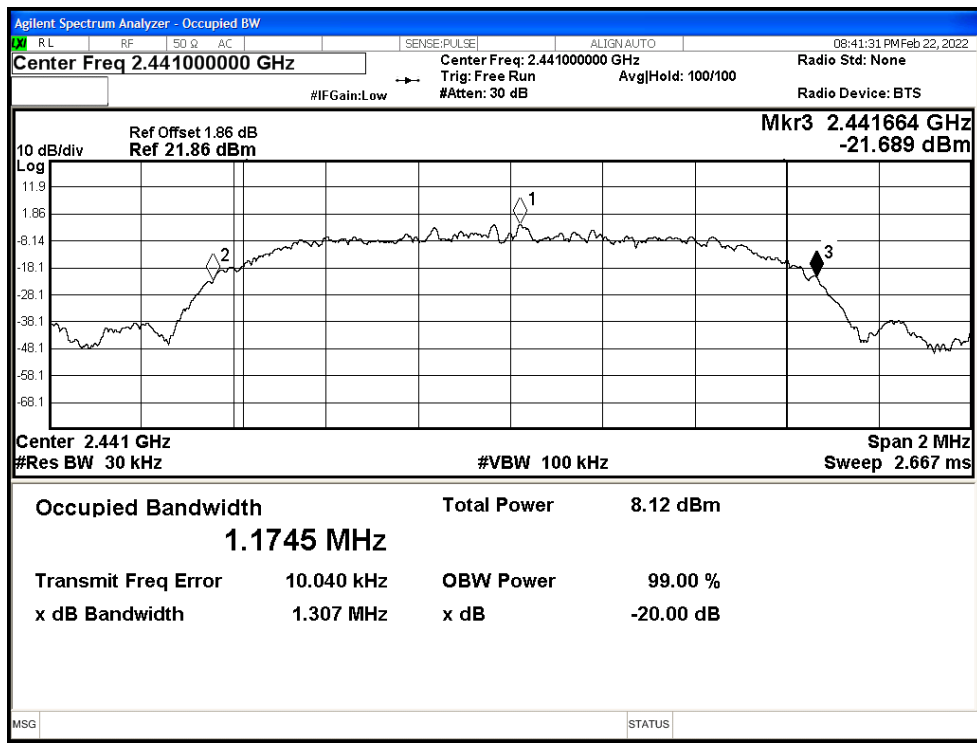


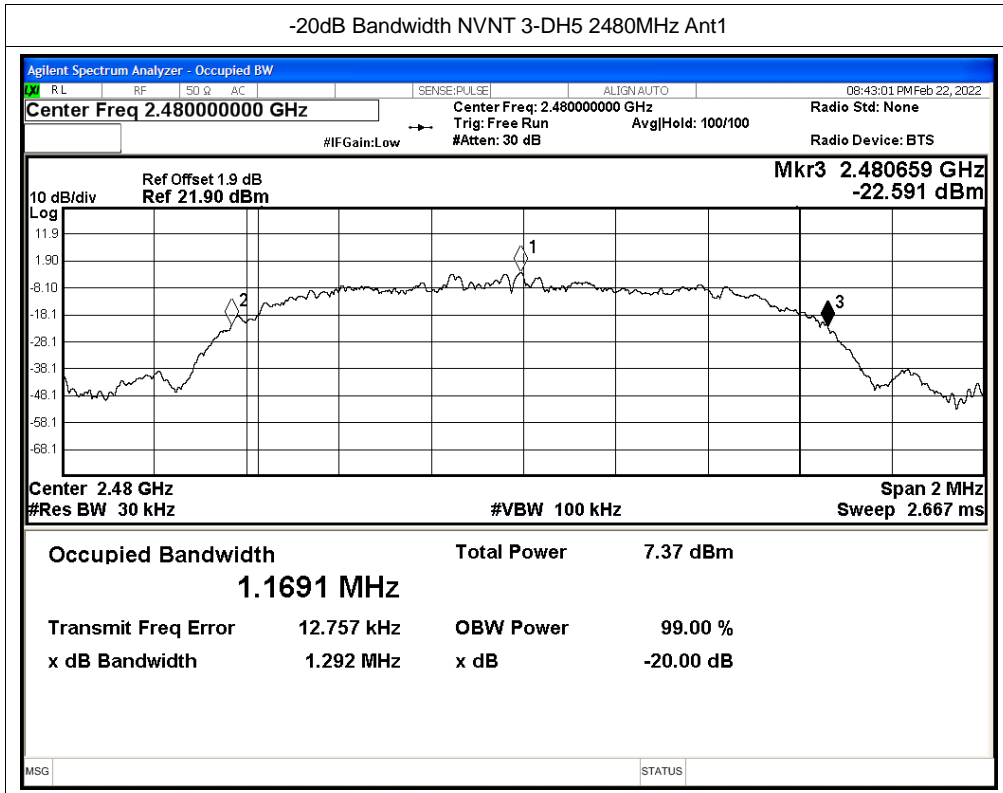


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1







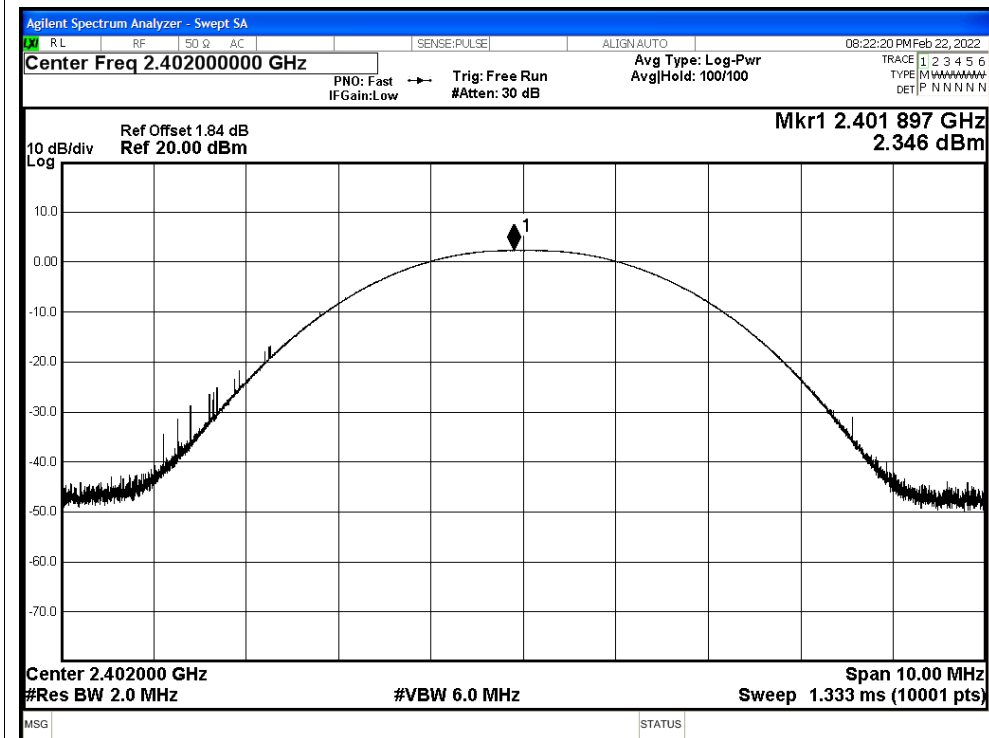
A.2 Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	2.35	0	2.35	21	Pass
NVNT	1-DH5	2441	Ant1	0.36	0	0.36	21	Pass
NVNT	1-DH5	2480	Ant1	0.4	0	0.4	21	Pass
NVNT	2-DH5	2402	Ant1	4.78	0	4.78	21	Pass
NVNT	2-DH5	2441	Ant1	3.74	0	3.74	21	Pass
NVNT	2-DH5	2480	Ant1	2.78	0	2.78	21	Pass
NVNT	3-DH5	2402	Ant1	5.39	0	5.39	21	Pass
NVNT	3-DH5	2441	Ant1	4.33	0	4.33	21	Pass
NVNT	3-DH5	2480	Ant1	3.28	0	3.28	21	Pass

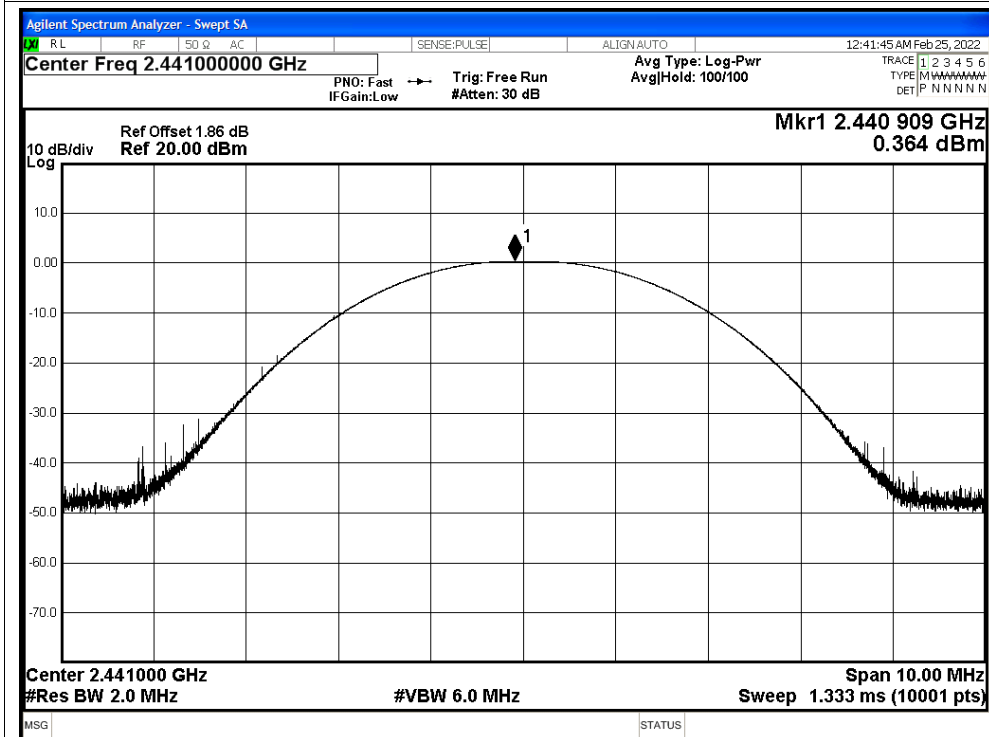


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

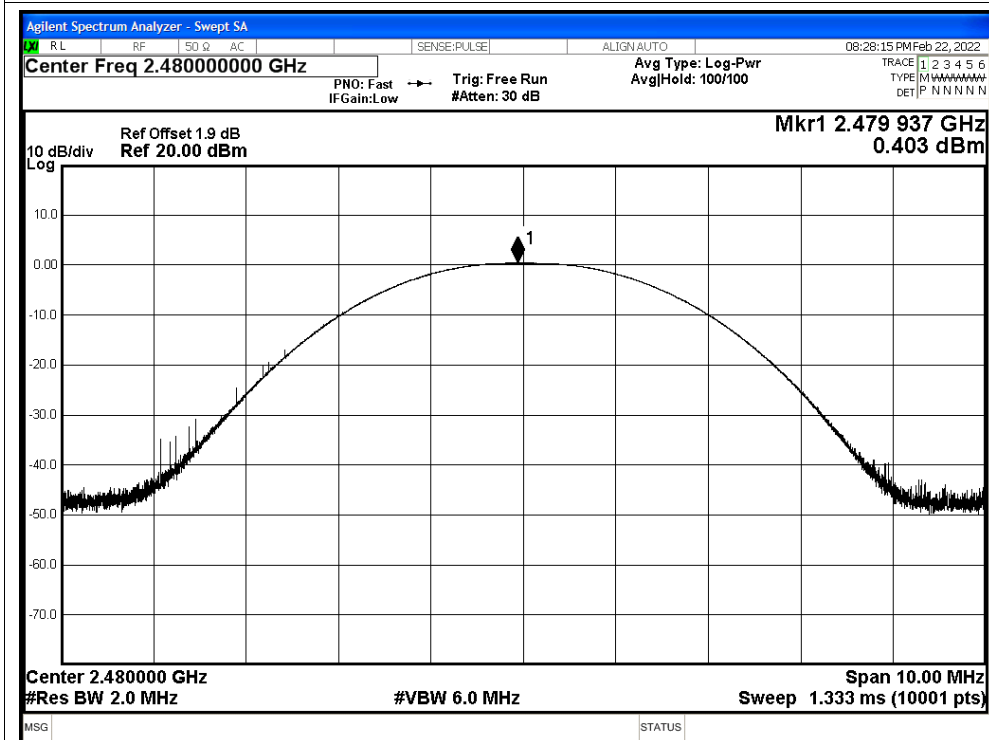


Power NVNT 1-DH5 2441MHz Ant1

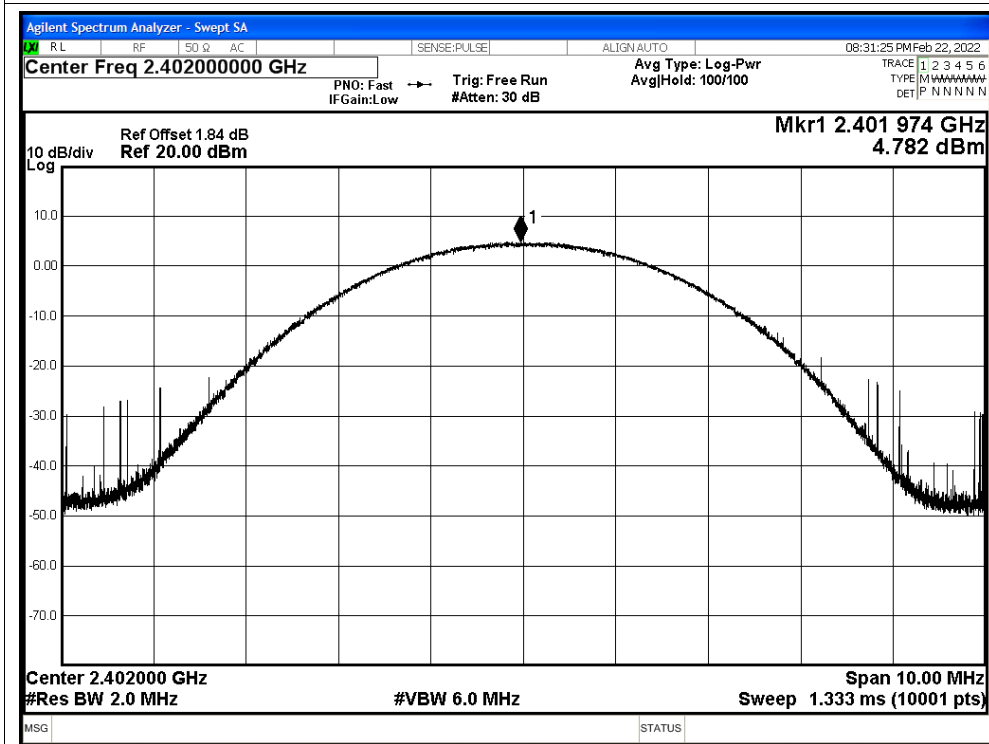




Power NVNT 1-DH5 2480MHz Ant1

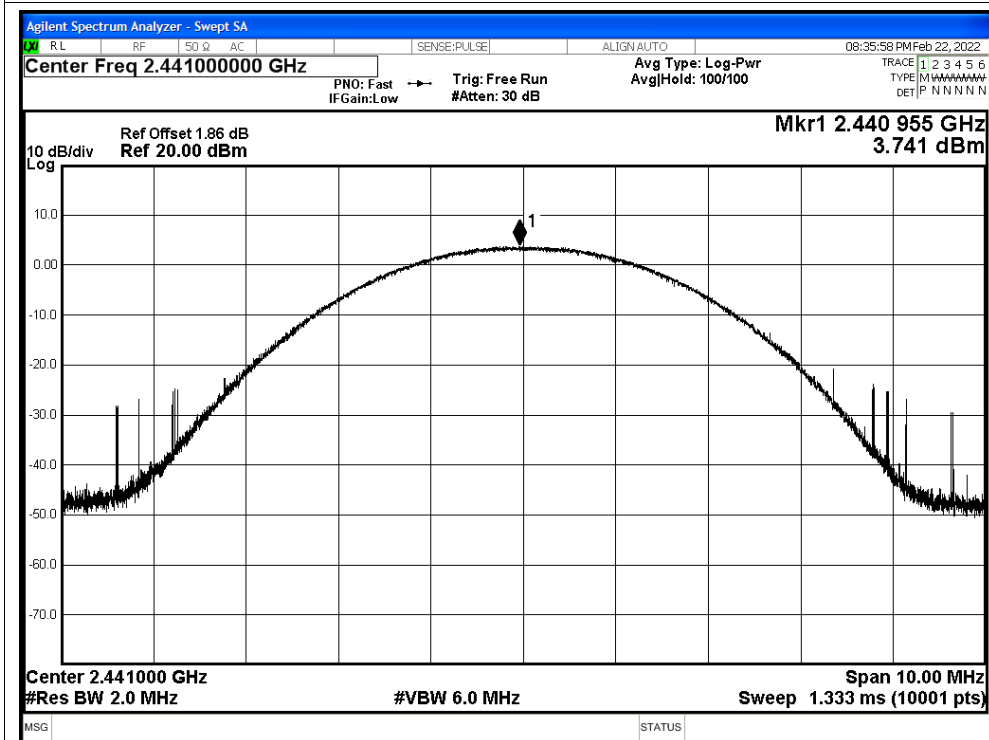


Power NVNT 2-DH5 2402MHz Ant1

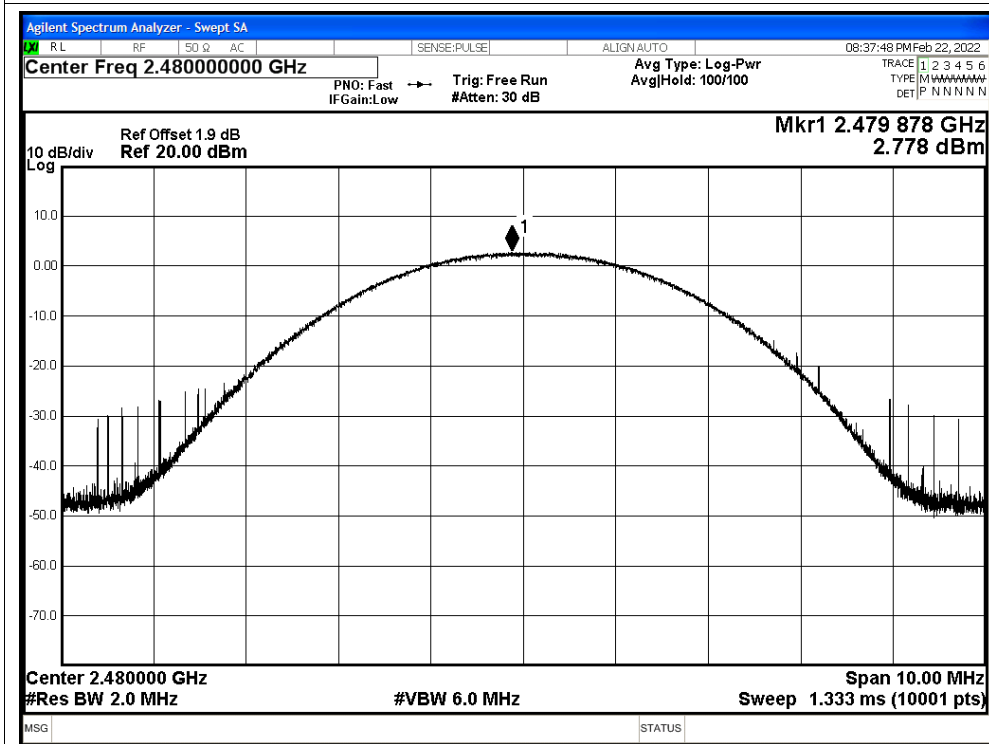


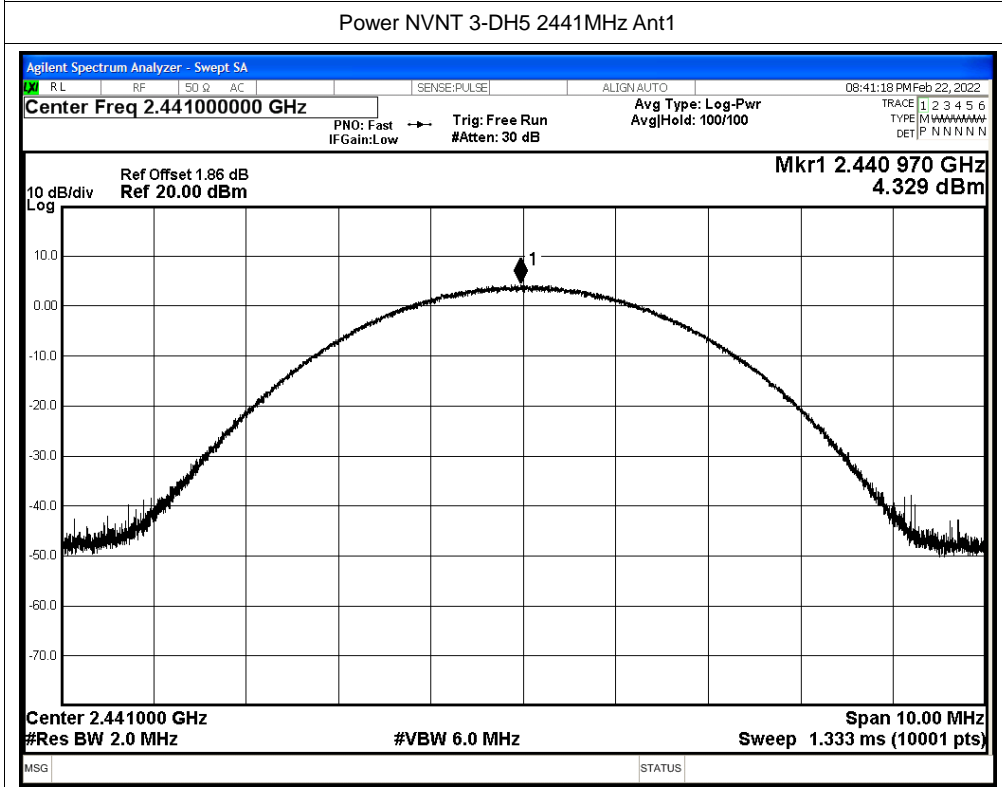
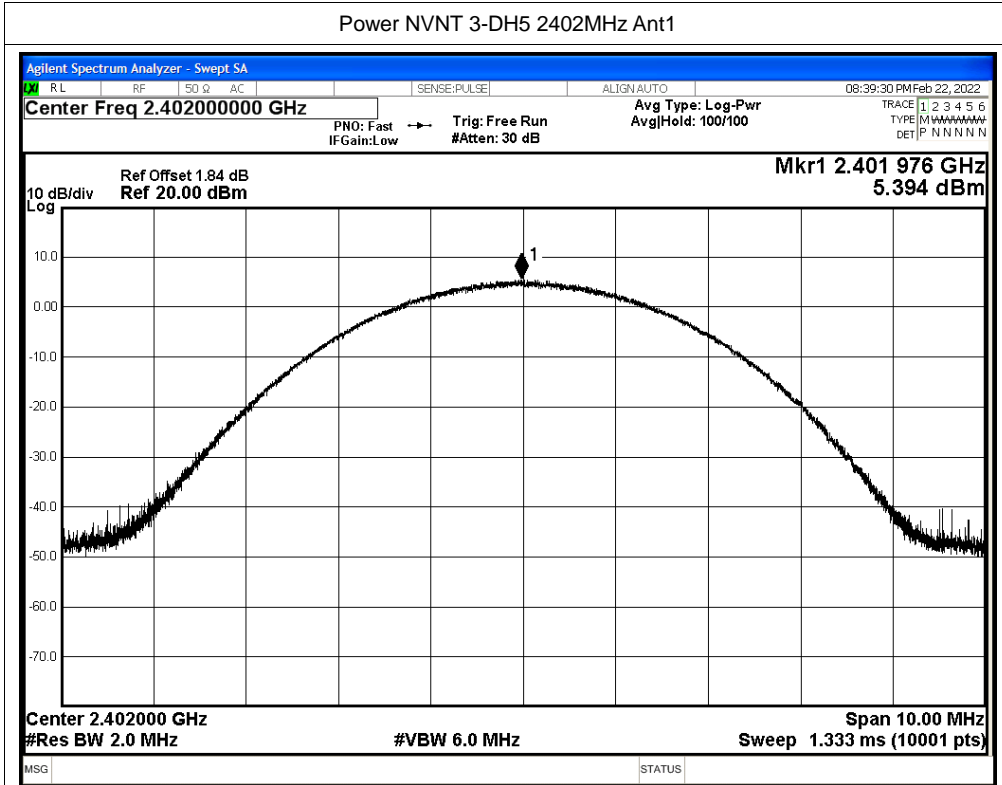


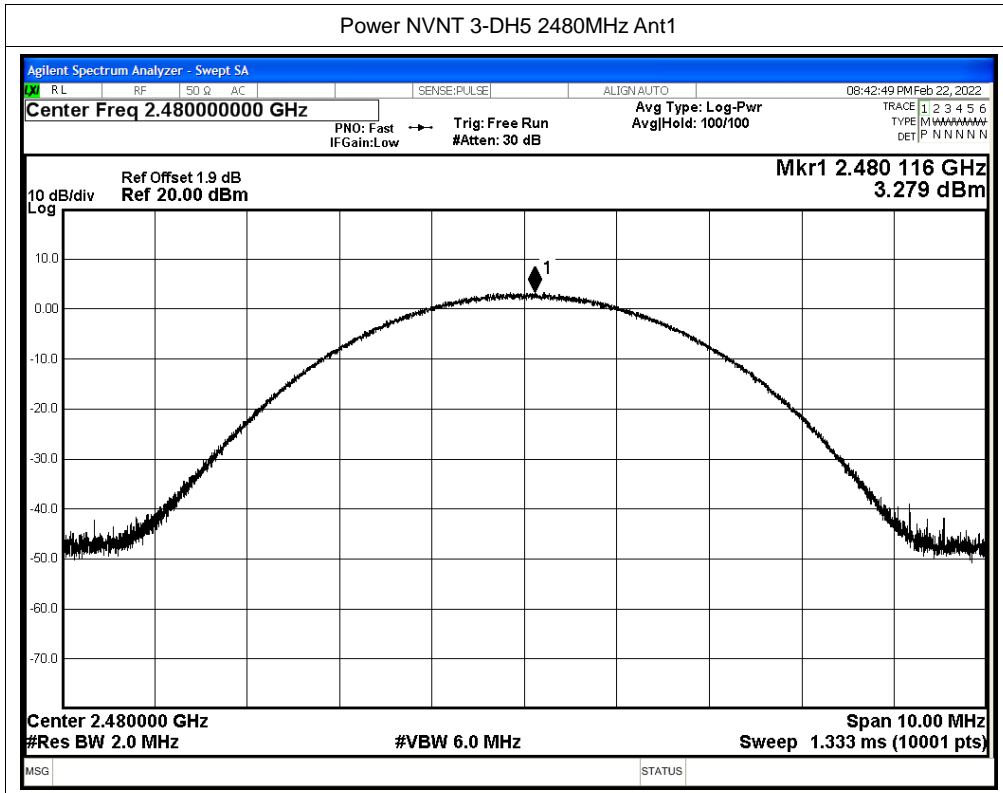
Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1









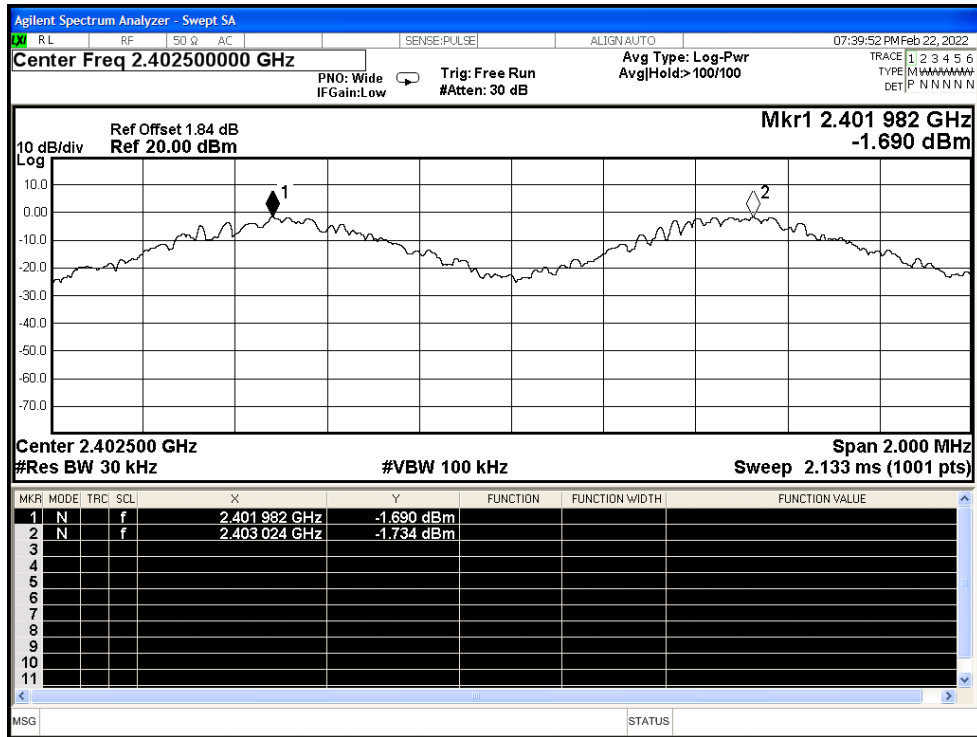
A.3 Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.982	2403.024	1.042	0.628	Pass
NVNT	1-DH5	Ant1	2440.944	2442.018	1.074	0.025	Pass
NVNT	1-DH5	Ant1	2478.98	2479.954	0.974	0.025	Pass
NVNT	2-DH5	Ant1	2402.018	2403.042	1.024	0.025	Pass
NVNT	2-DH5	Ant1	2441.024	2442.054	1.03	0.025	Pass
NVNT	2-DH5	Ant1	2479.046	2480.026	0.98	0.025	Pass
NVNT	3-DH5	Ant1	2401.996	2403.032	1.036	0.025	Pass
NVNT	3-DH5	Ant1	2440.84	2442.01	1.17	0.025	Pass
NVNT	3-DH5	Ant1	2479.002	2480.012	1.01	0.025	Pass

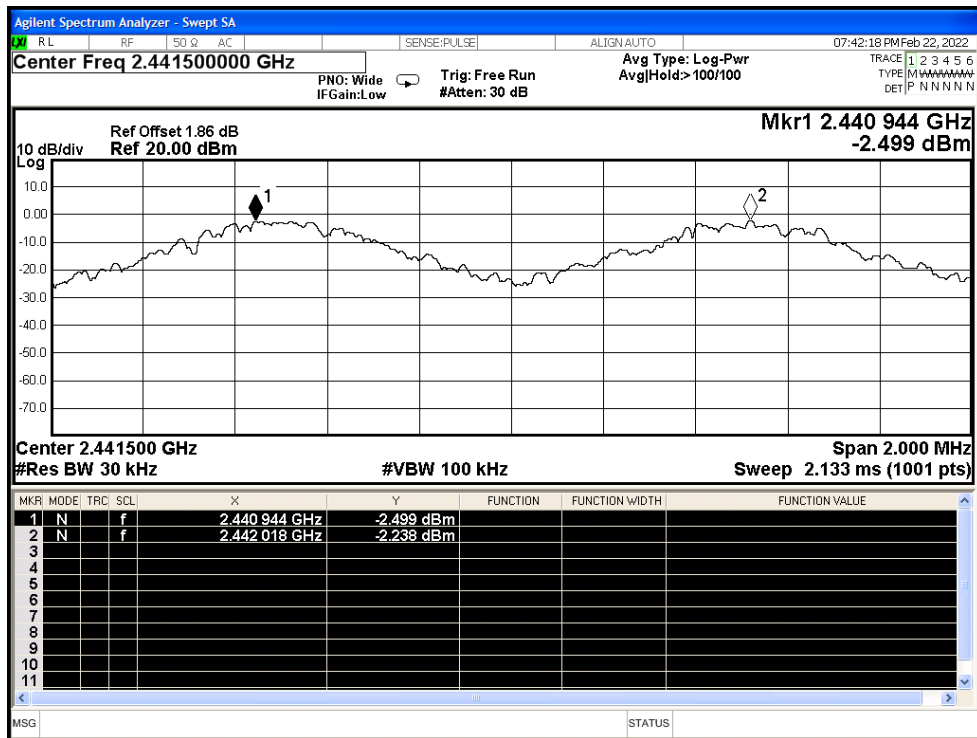


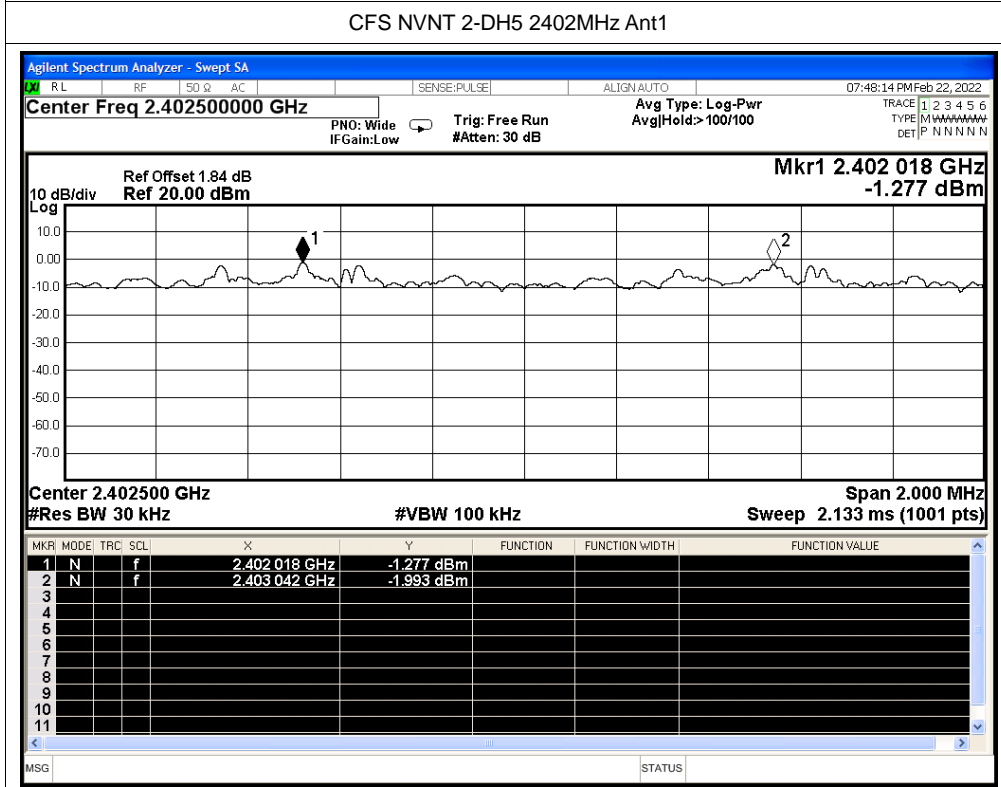
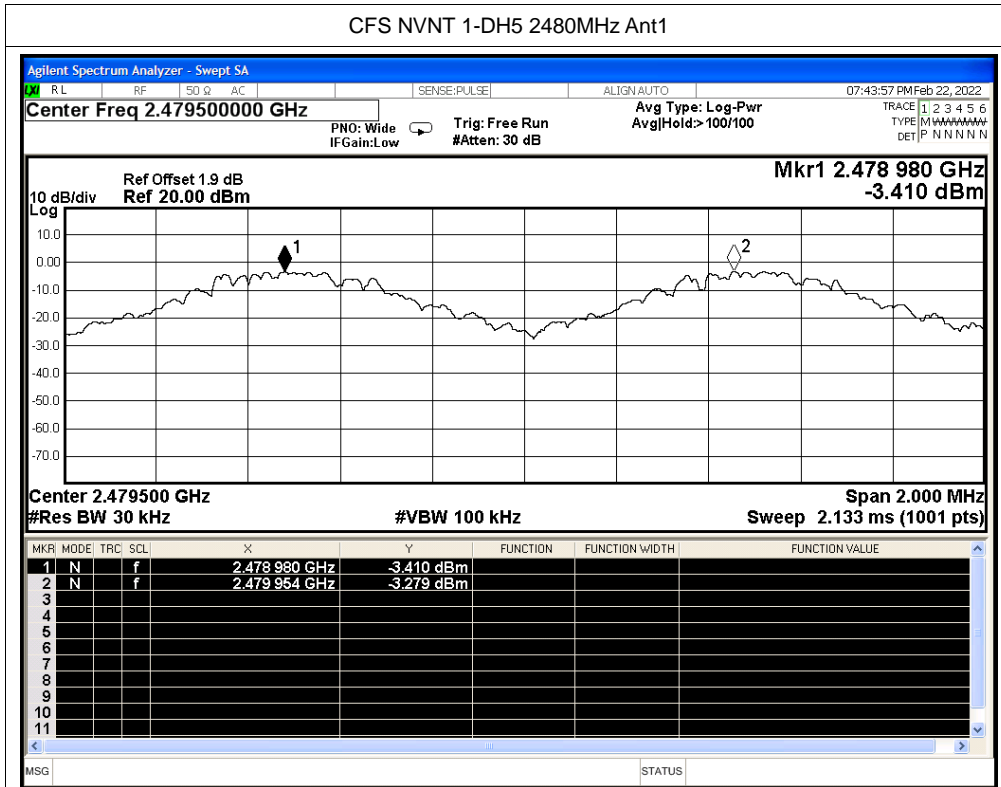
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



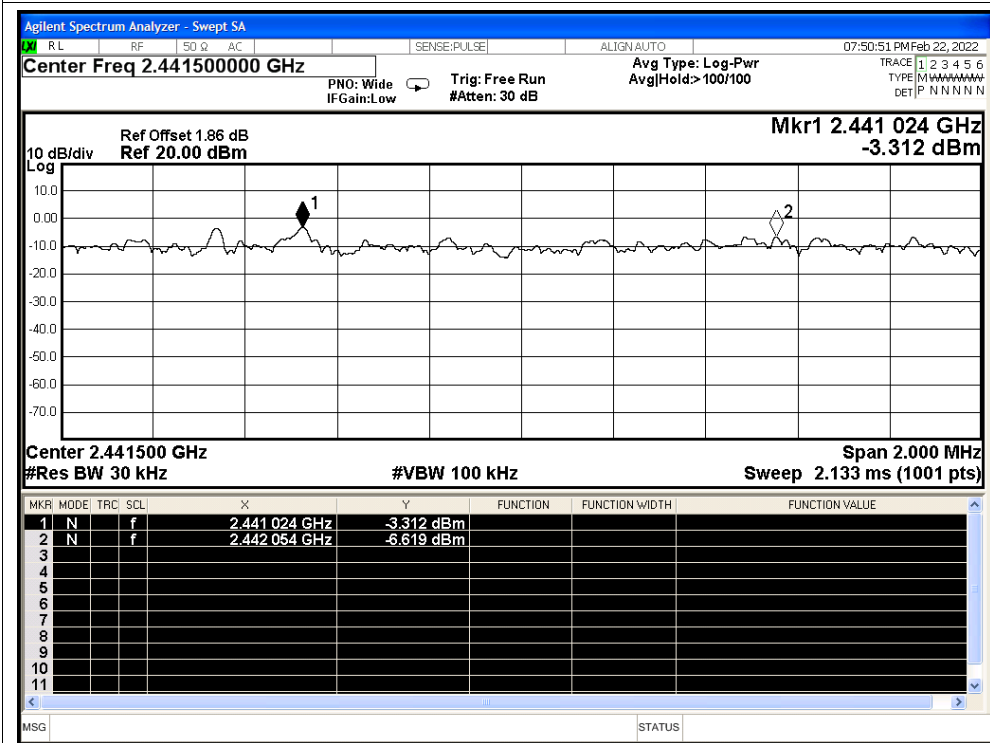
CFS NVNT 1-DH5 2441MHz Ant1



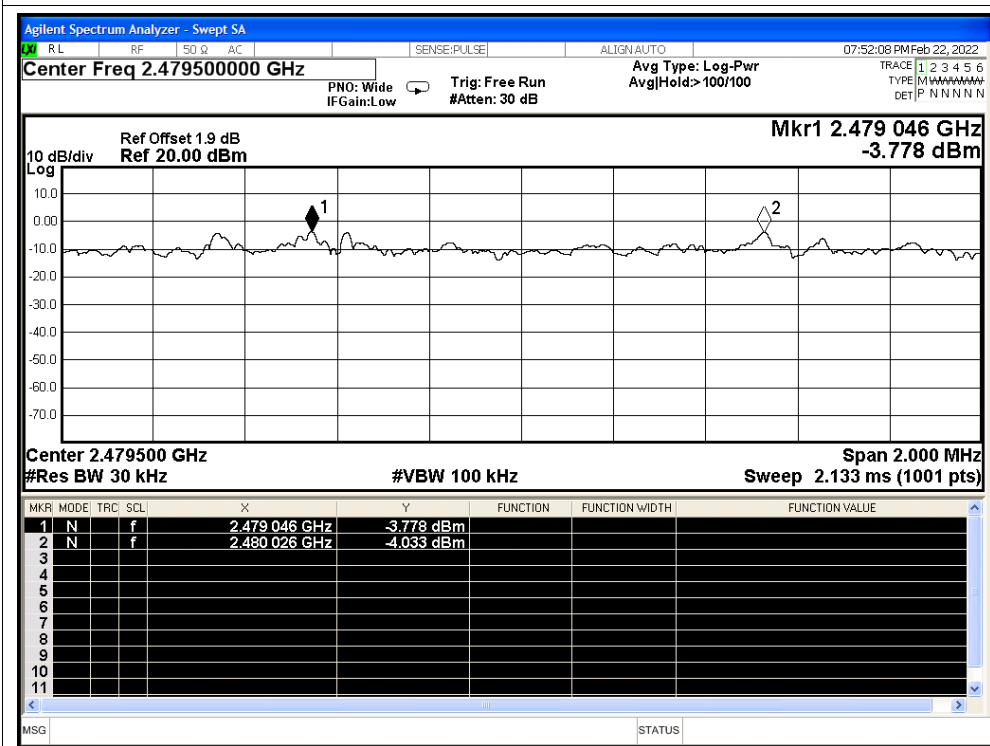




CFS NVNT 2-DH5 2441MHz Ant1

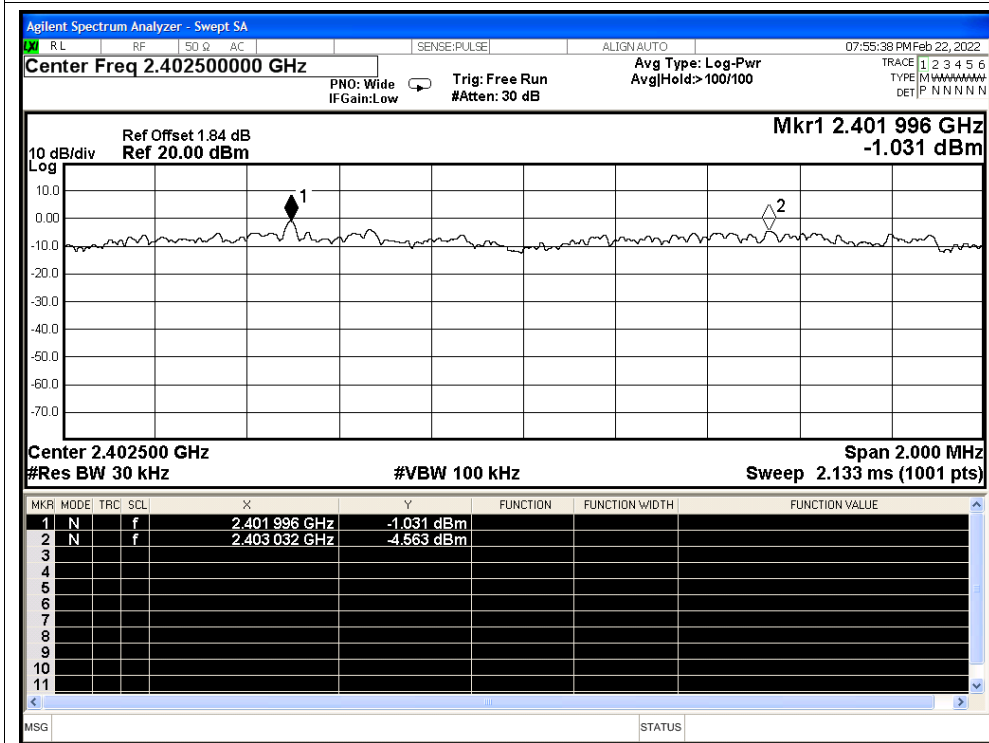


CFS NVNT 2-DH5 2480MHz Ant1

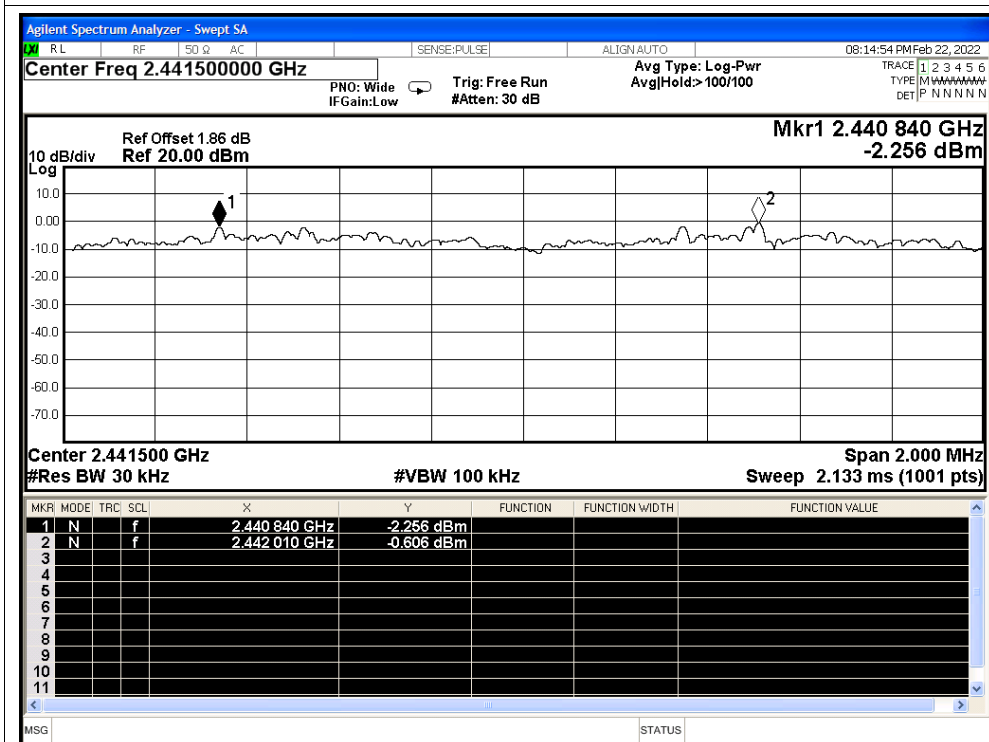


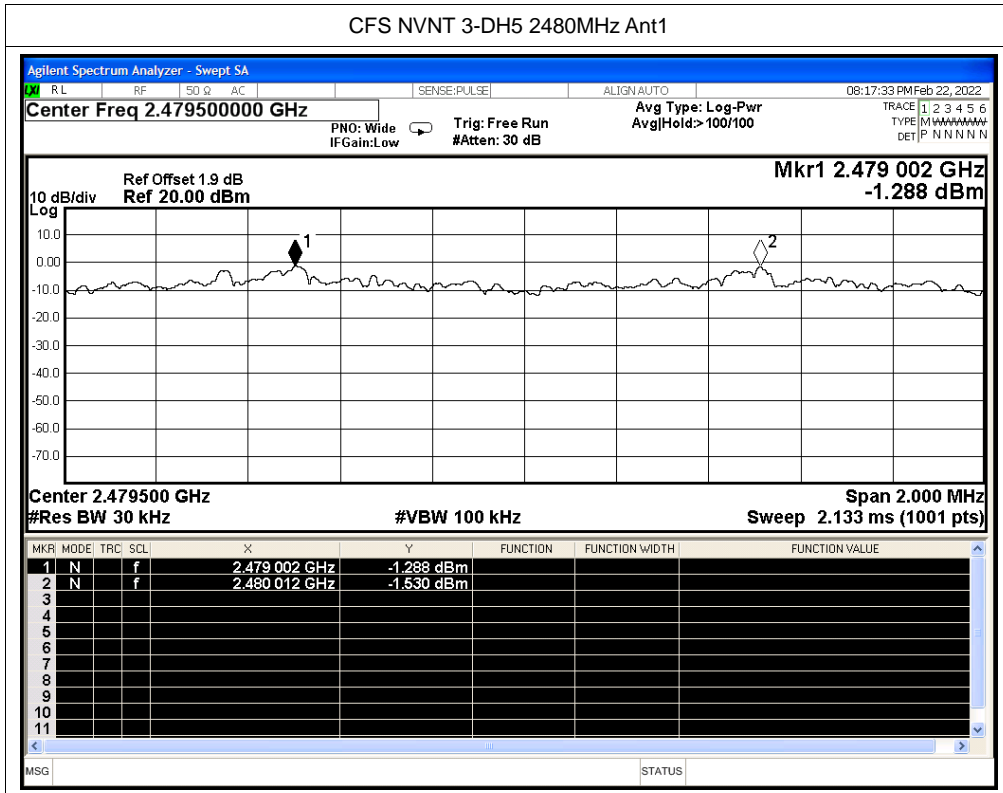


CFS NVNT 3-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2441MHz Ant1







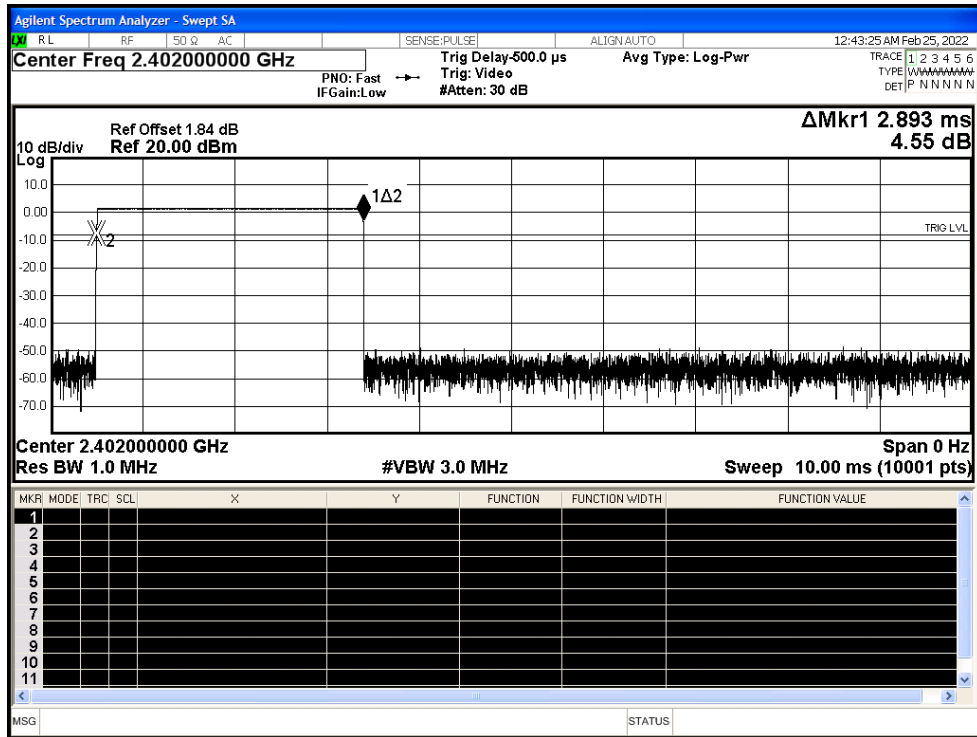
A.4 Dwell Time

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	2.893	295.086	102	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.89	286.11	99	31600	400	Pass
NVNT	1-DH5	2480	Ant1	2.893	341.374	118	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.897	312.876	108	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.897	321.567	111	31600	400	Pass
NVNT	2-DH5	2480	Ant1	2.894	338.598	117	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	301.288	104	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.897	301.288	104	31600	400	Pass
NVNT	3-DH5	2480	Ant1	2.897	309.979	107	31600	400	Pass

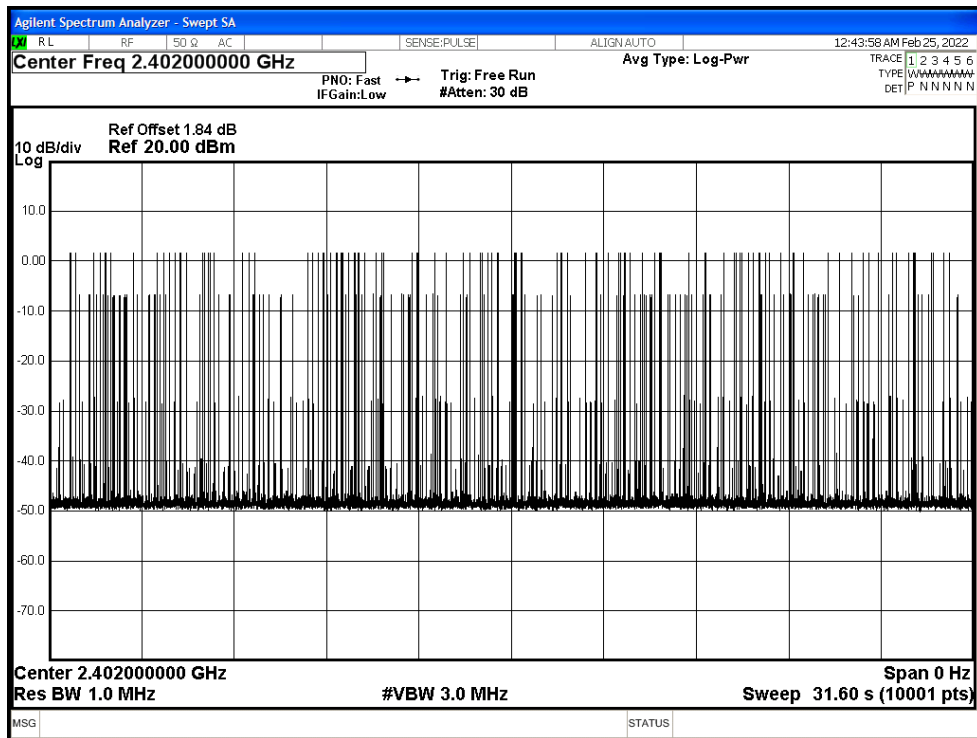


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

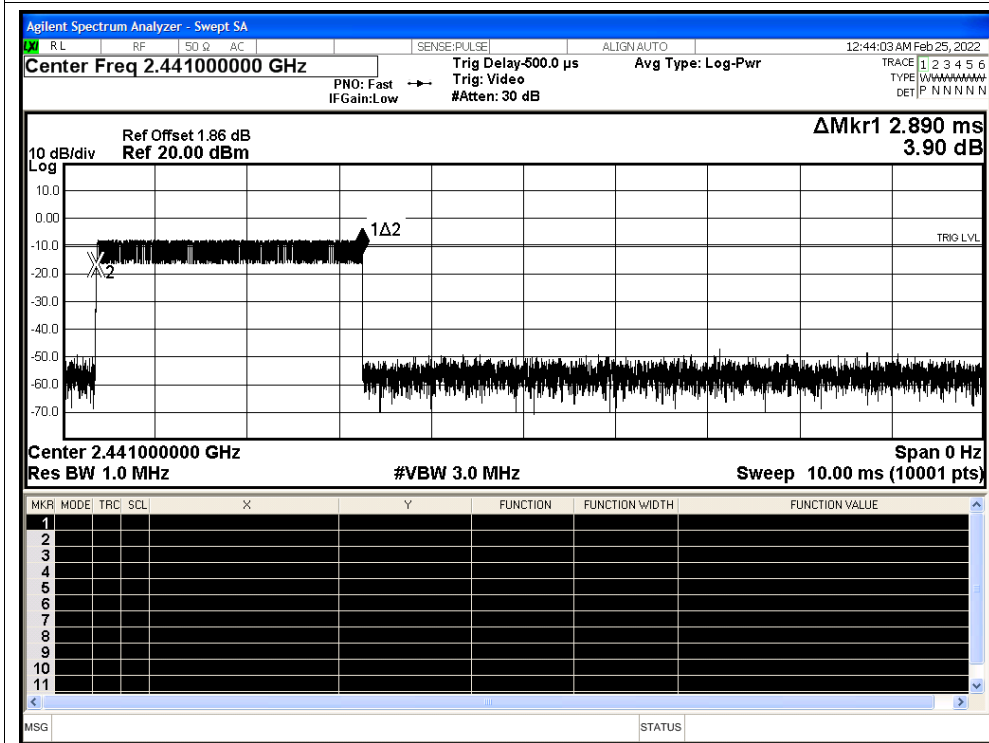


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

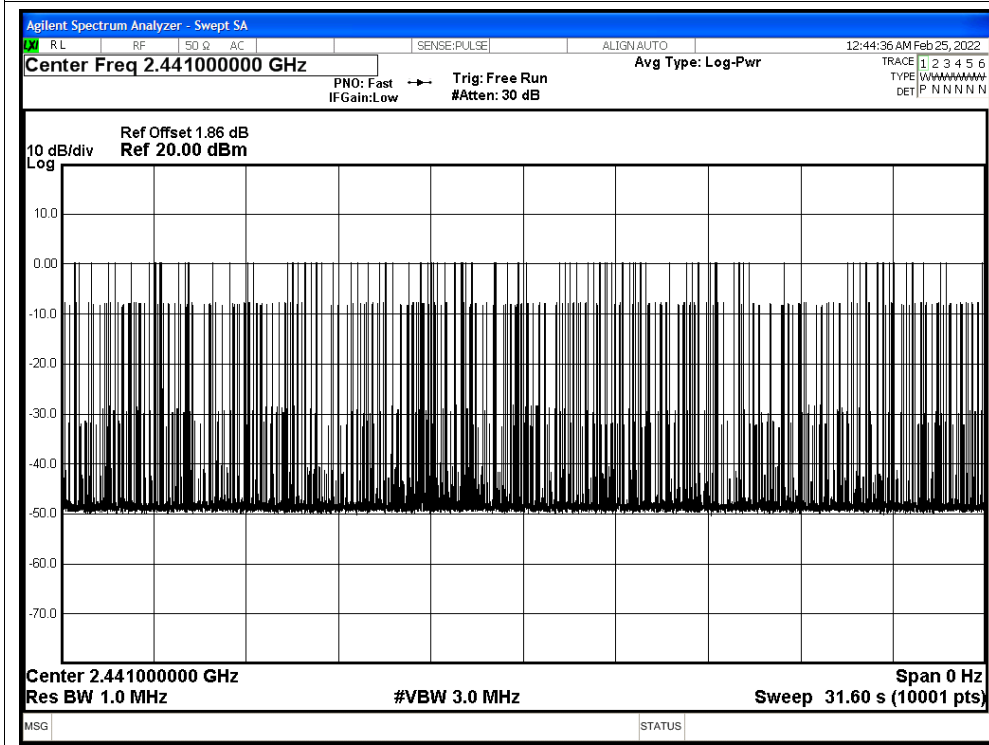




Dwell NVNT 1-DH5 2441MHz Ant1 One Burst

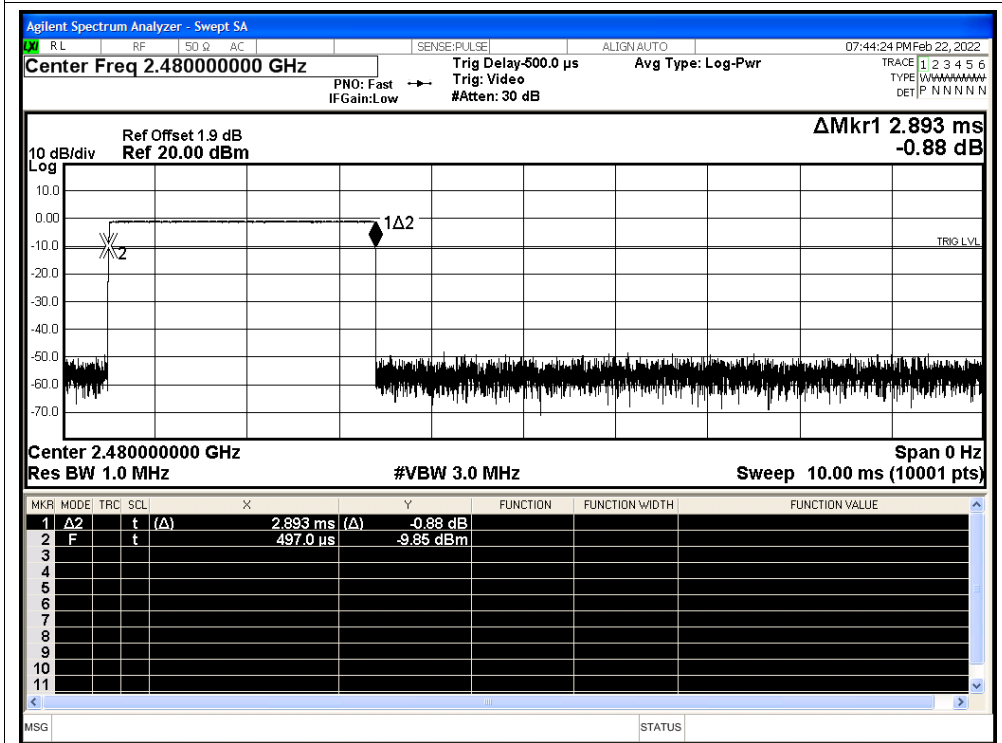


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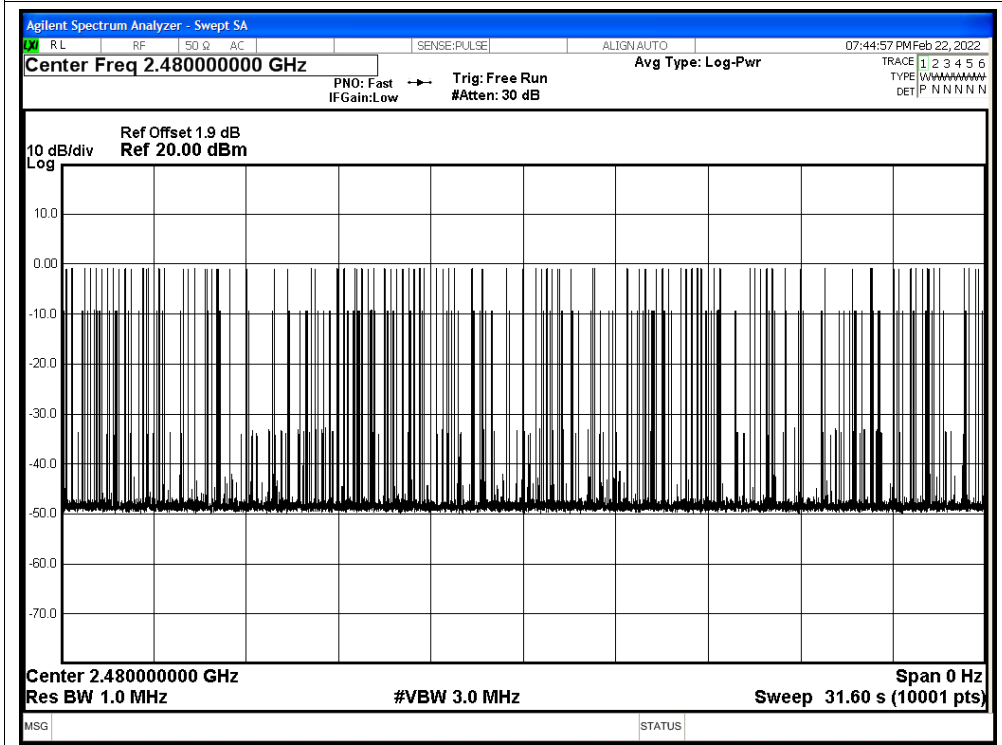




Dwell NVNT 1-DH5 2480MHz Ant1 One Burst

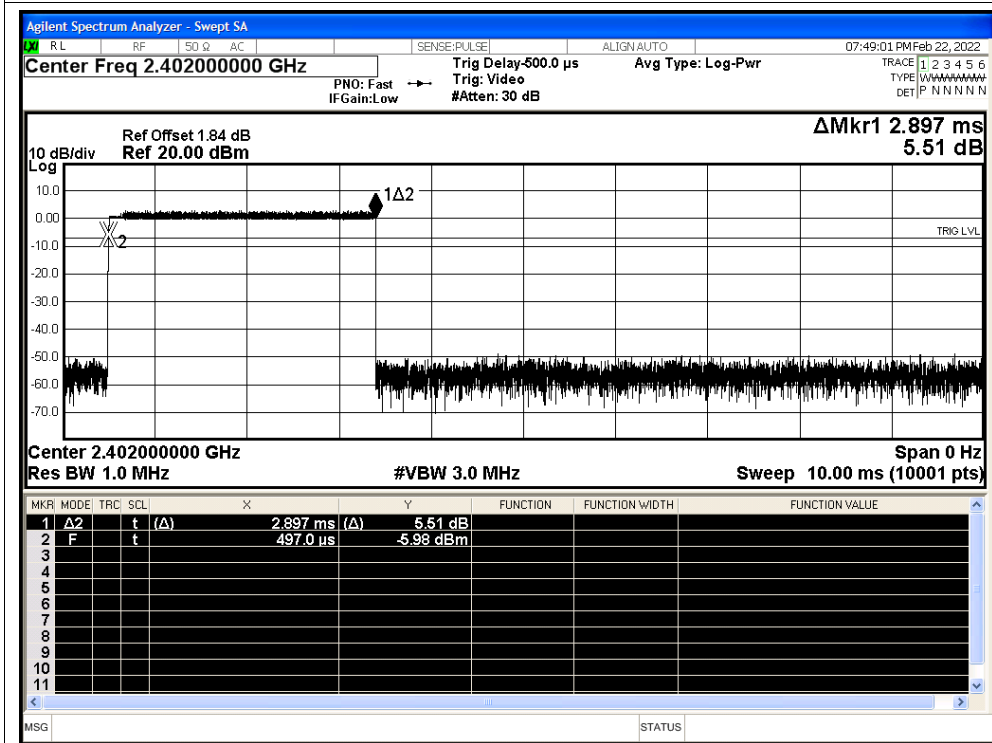


Dwell NVNT 1-DH5 2480MHz Ant1 Accumulated

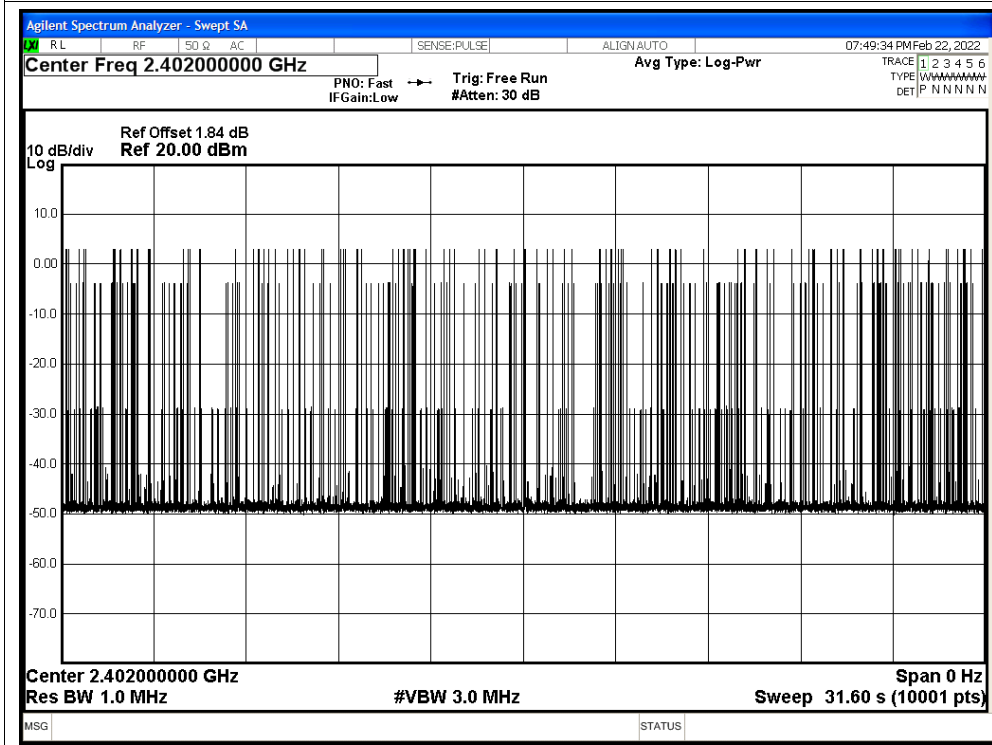




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

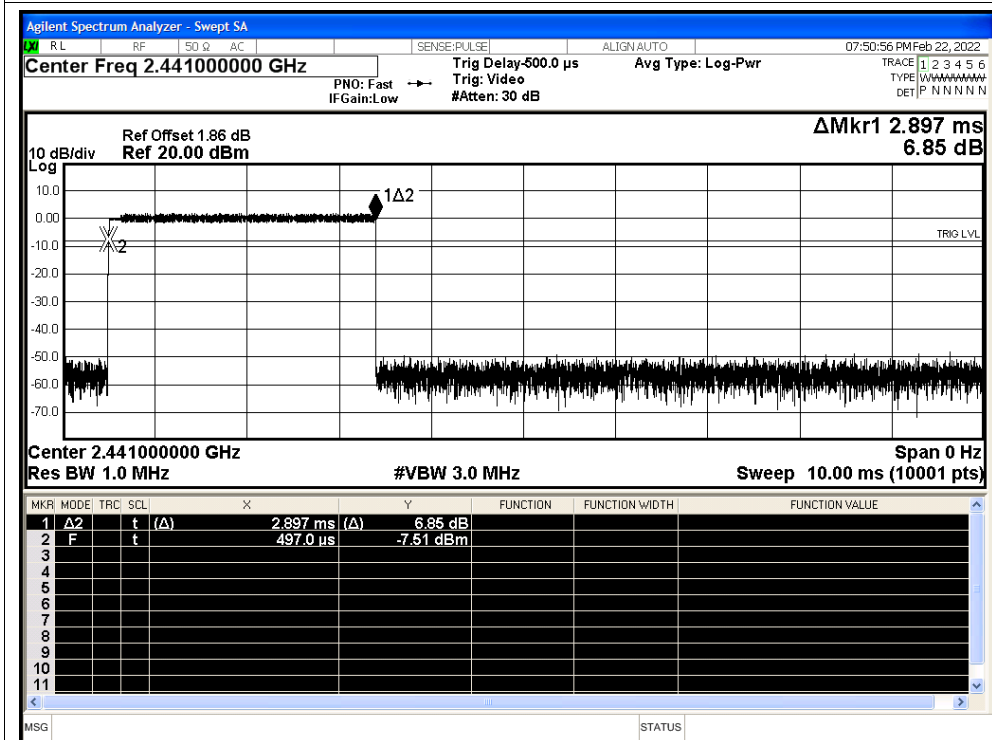


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

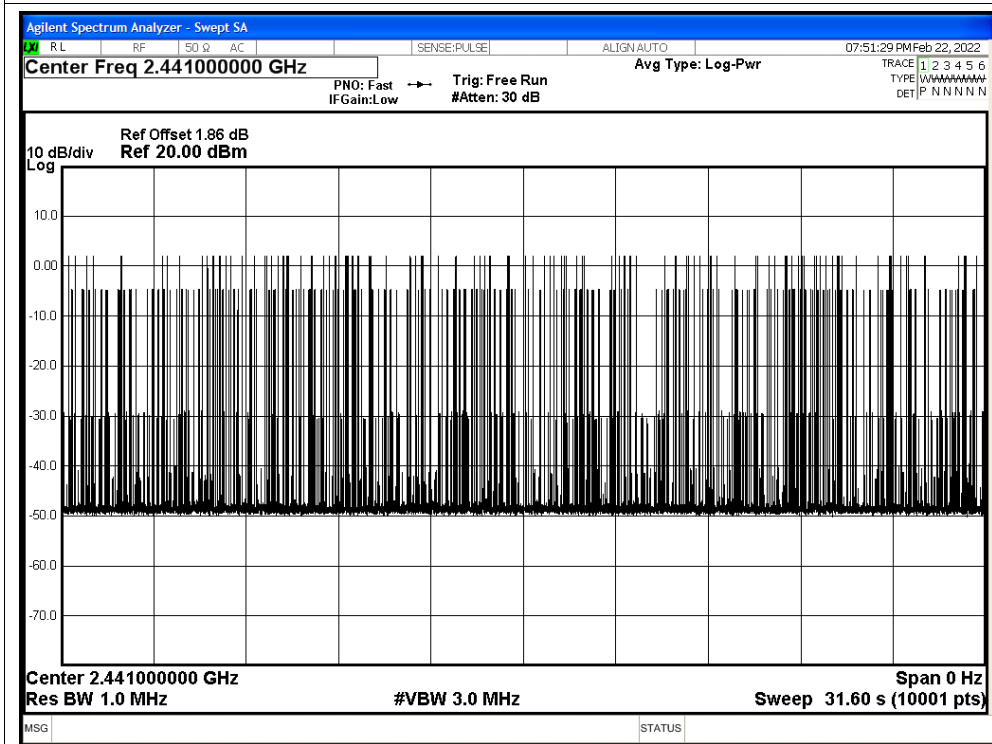




Dwell NVNT 2-DH5 2441MHz Ant1 One Burst

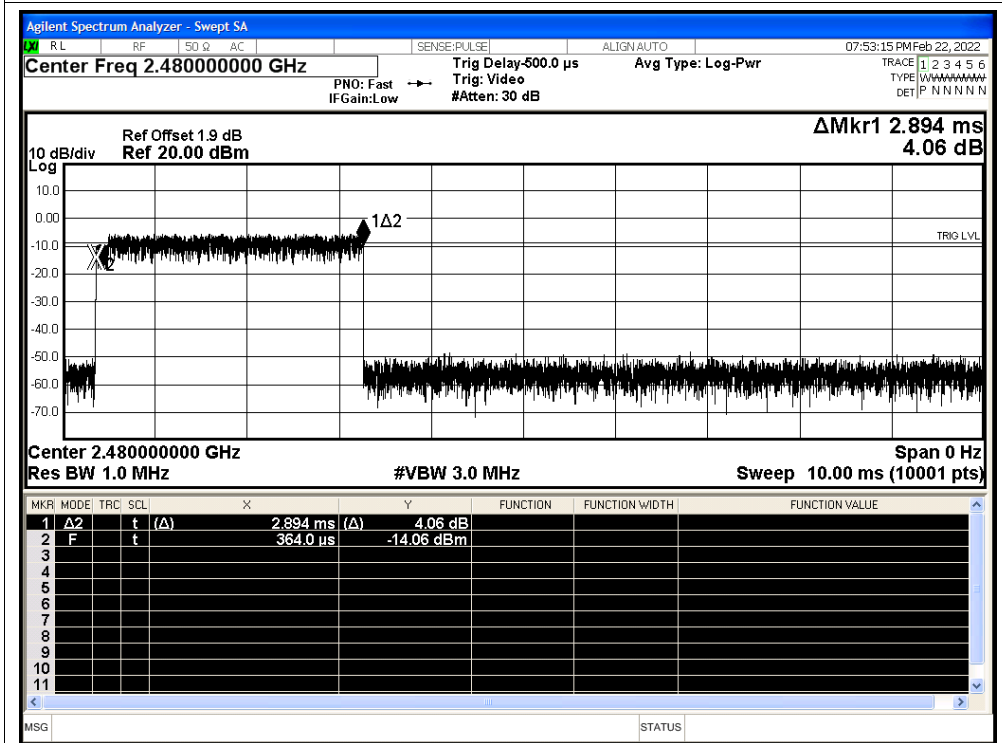


Dwell NVNT 2-DH5 2441MHz Ant1 Accumulated

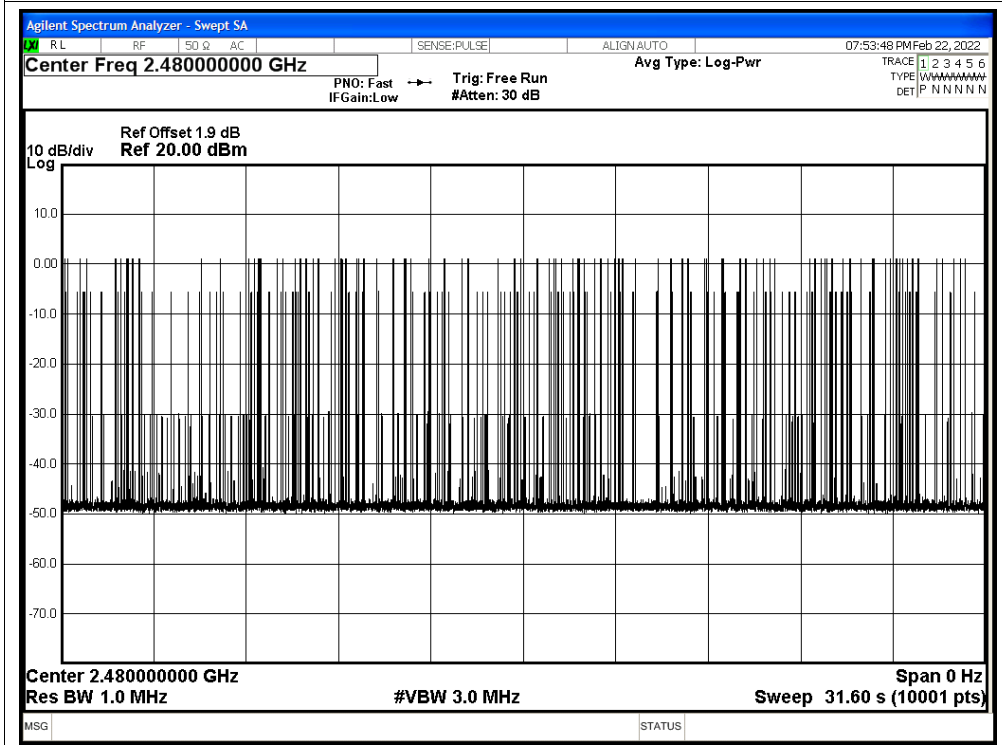




Dwell NVNT 2-DH5 2480MHz Ant1 One Burst

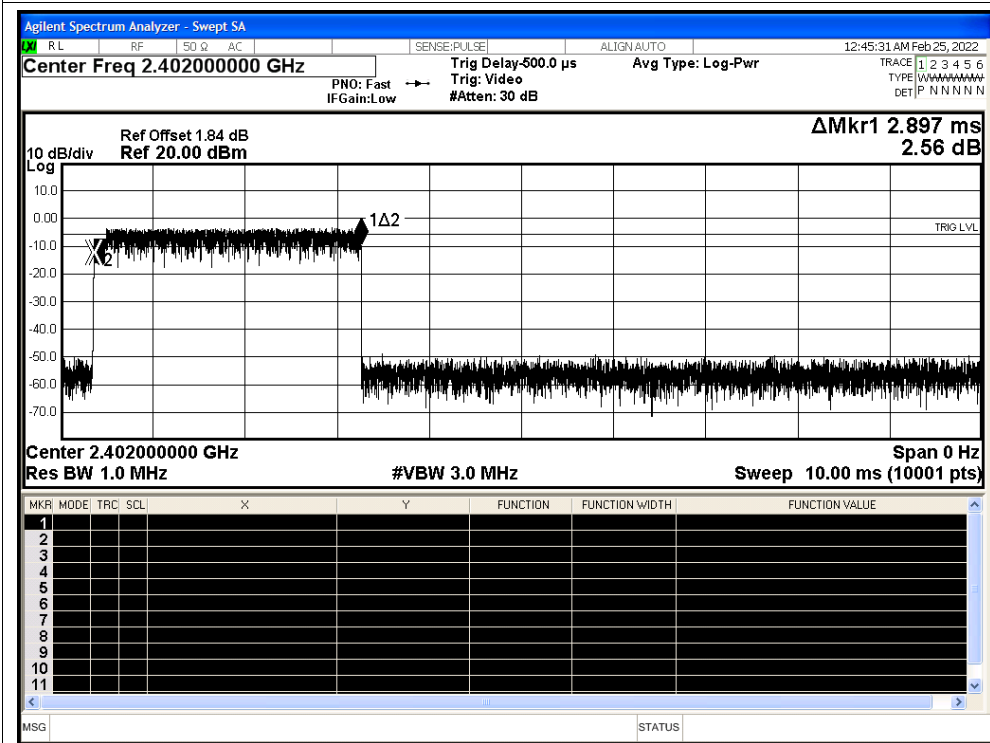


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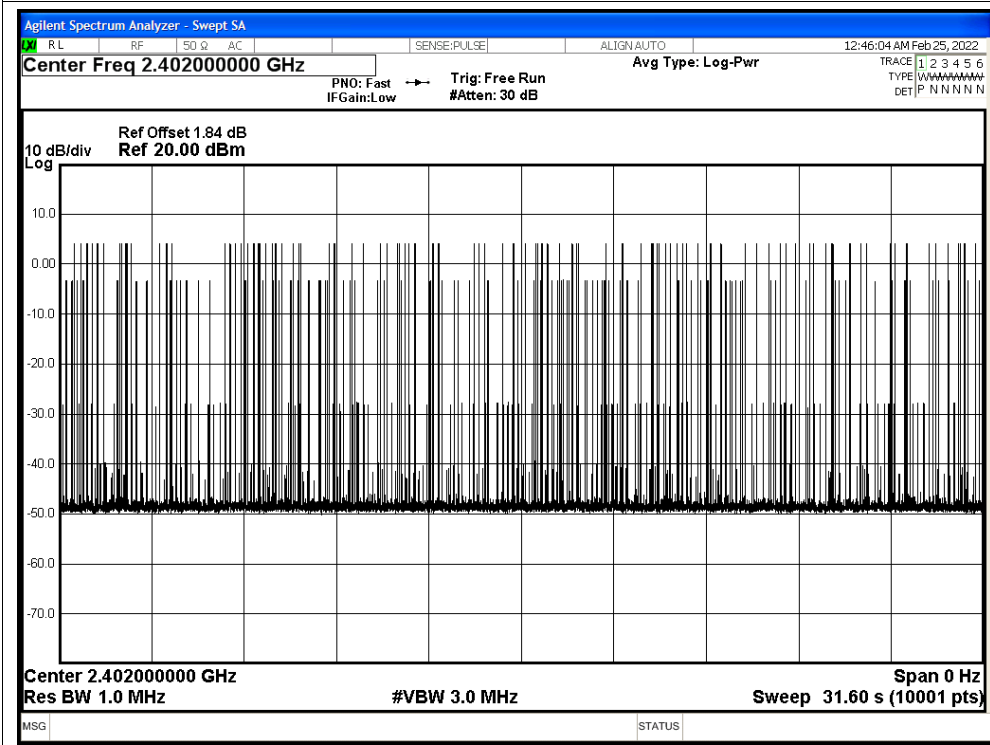




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst

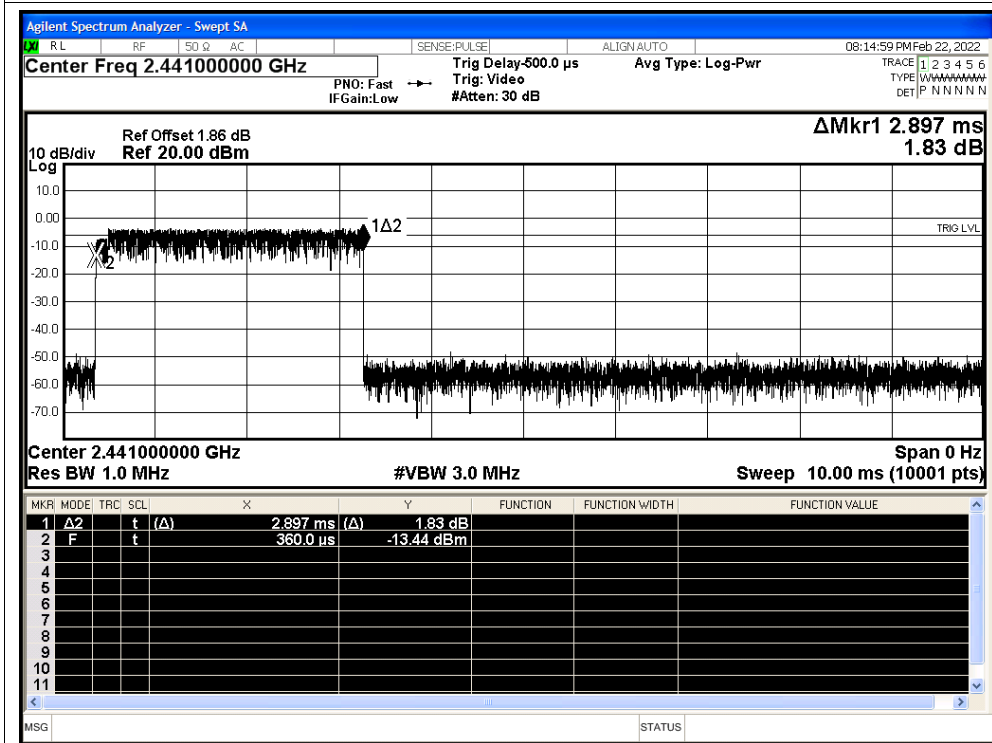


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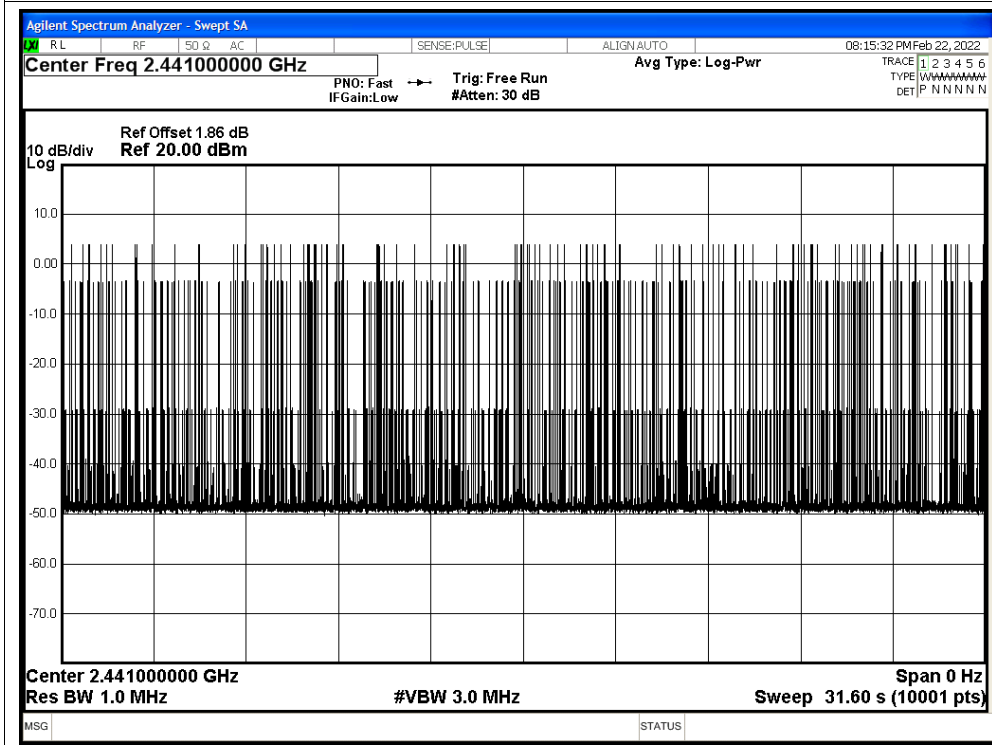




Dwell NVNT 3-DH5 2441MHz Ant1 One Burst

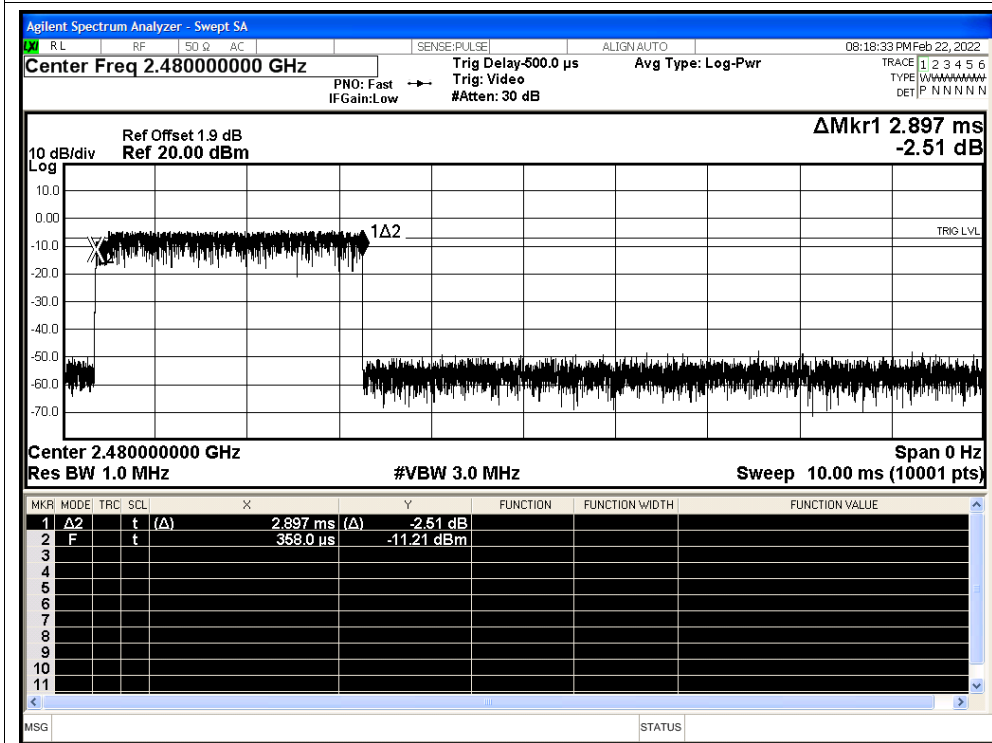


Dwell NVNT 3-DH5 2441MHz Ant1 Accumulated

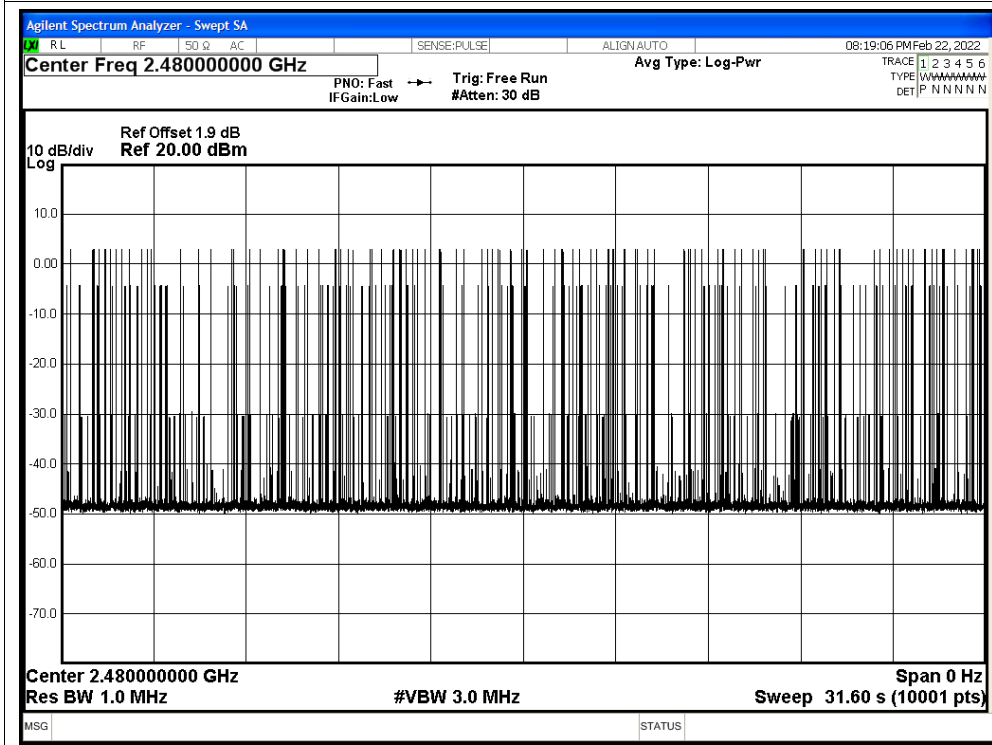




Dwell NVNT 3-DH5 2480MHz Ant1 One Burst



Dwell NVNT 3-DH5 2480MHz Ant1 Accumulated





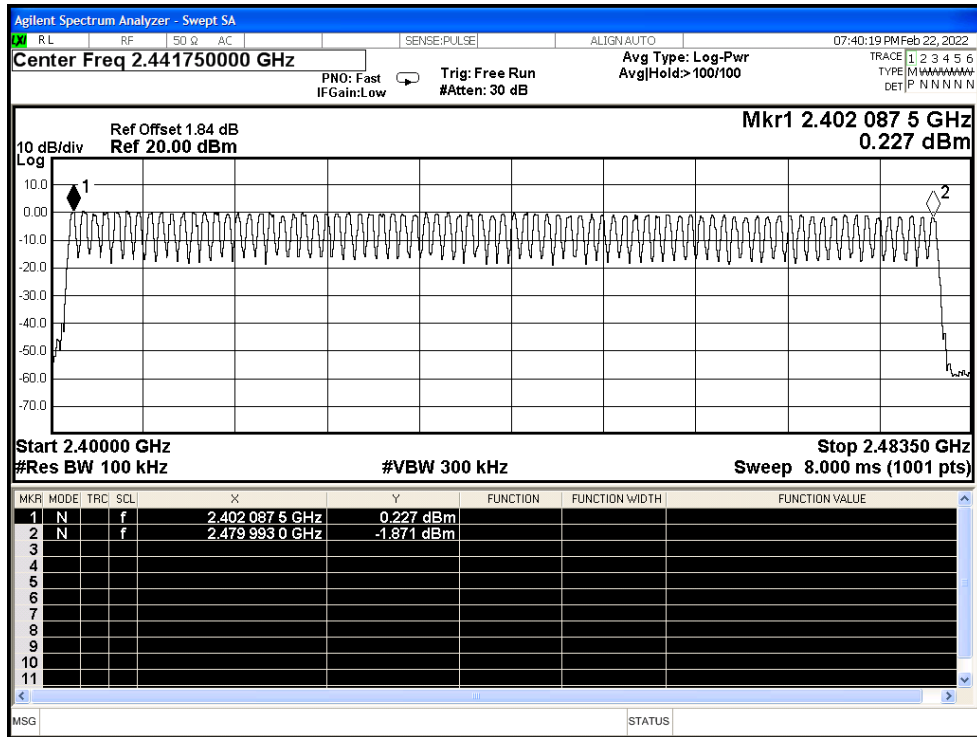
A.5 Number of Hopping Channel

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

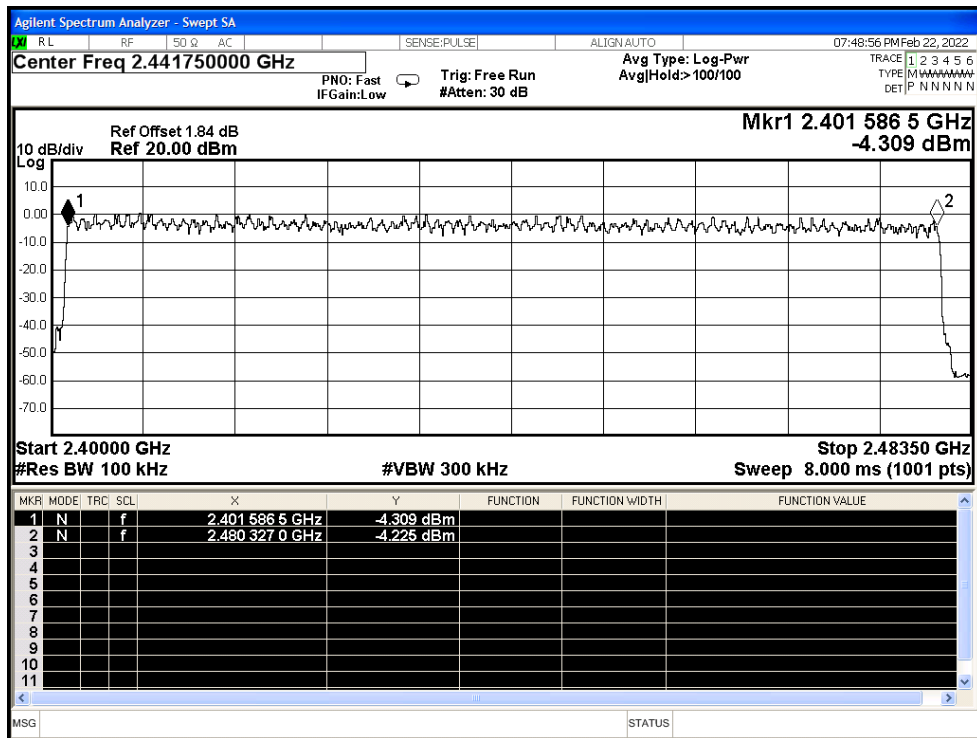


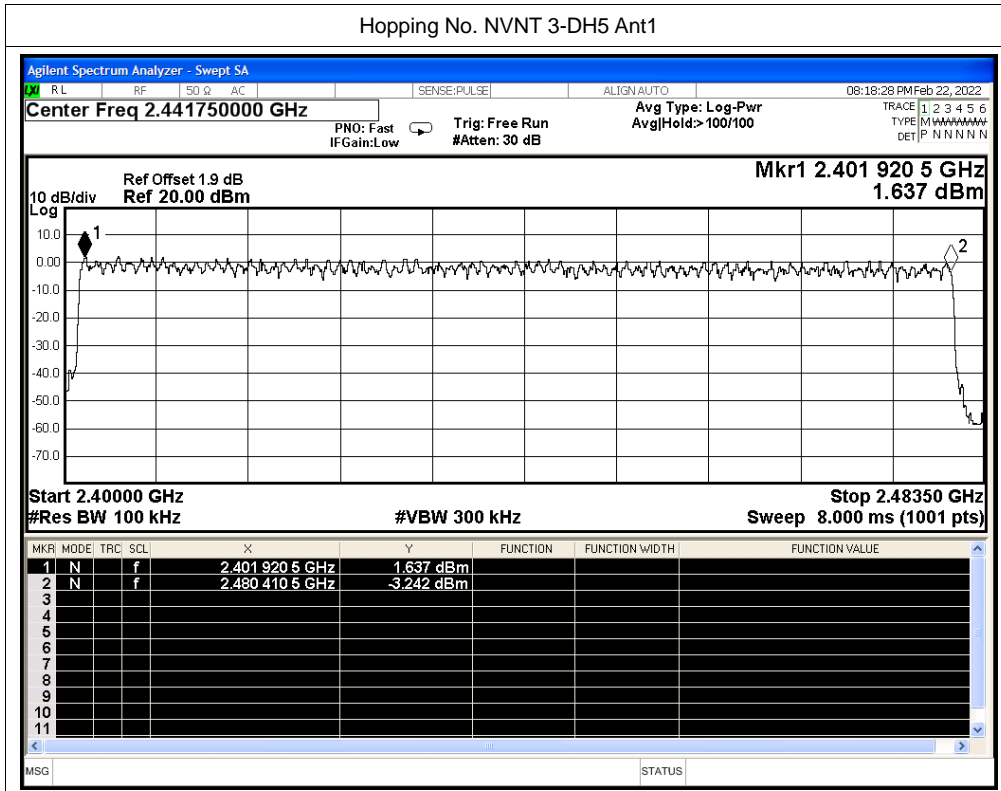
Test Graphs

Hopping No. NVNT 1-DH5 Ant1



Hopping No. NVNT 2-DH5 Ant1







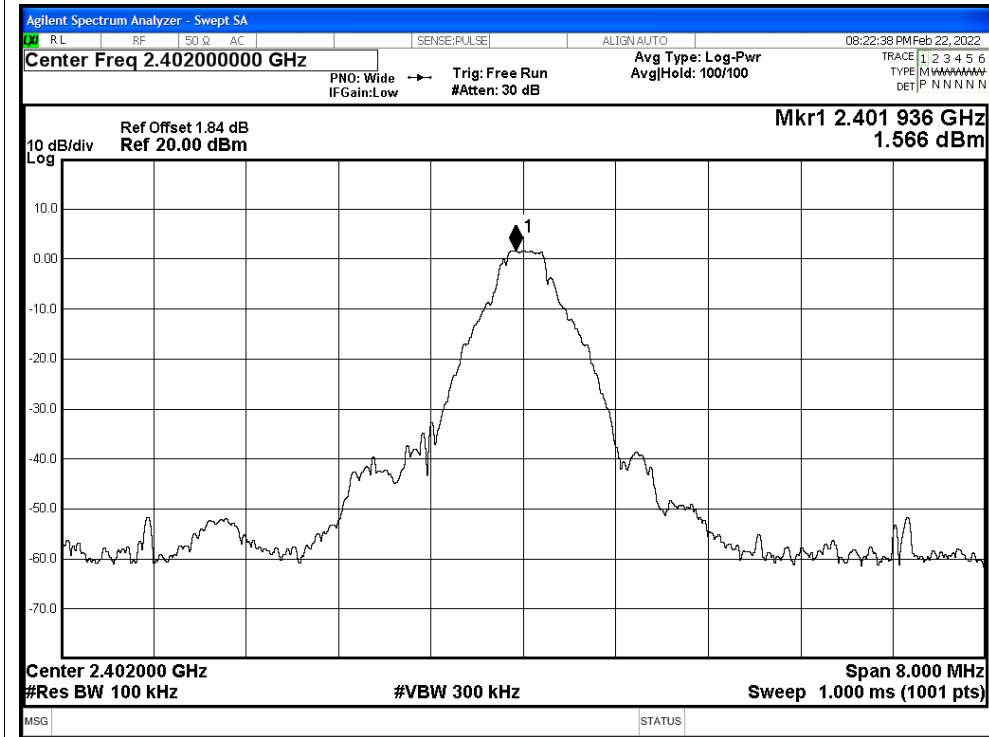
A.6 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-52.71	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-57.32	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-46.85	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-50.53	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-55.14	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-57.54	-20	Pass

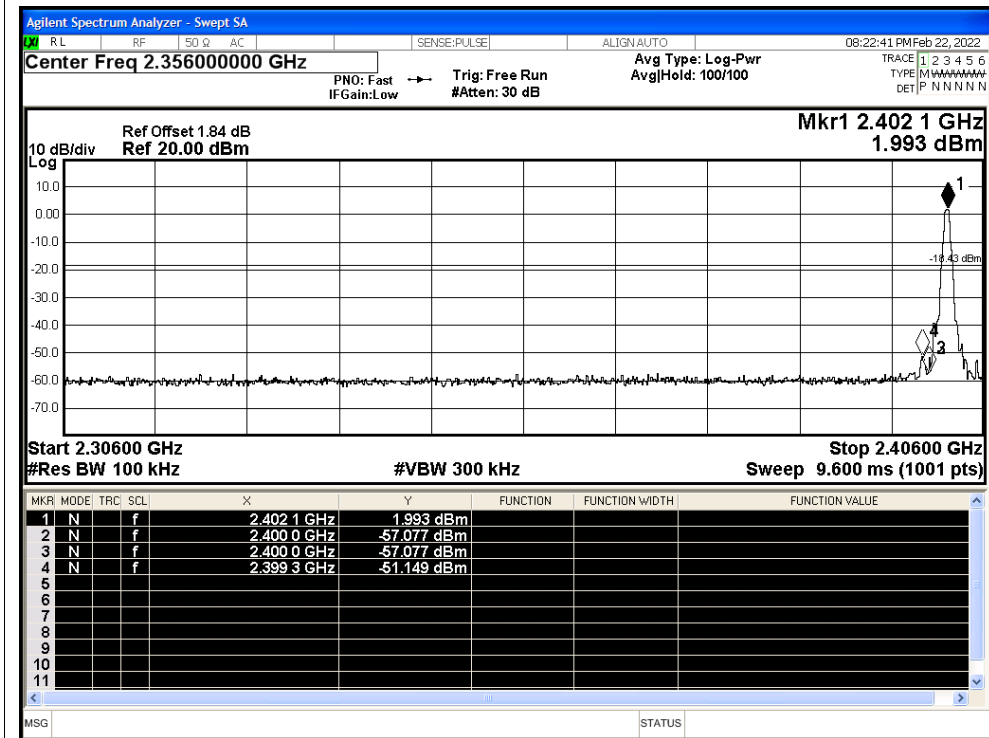


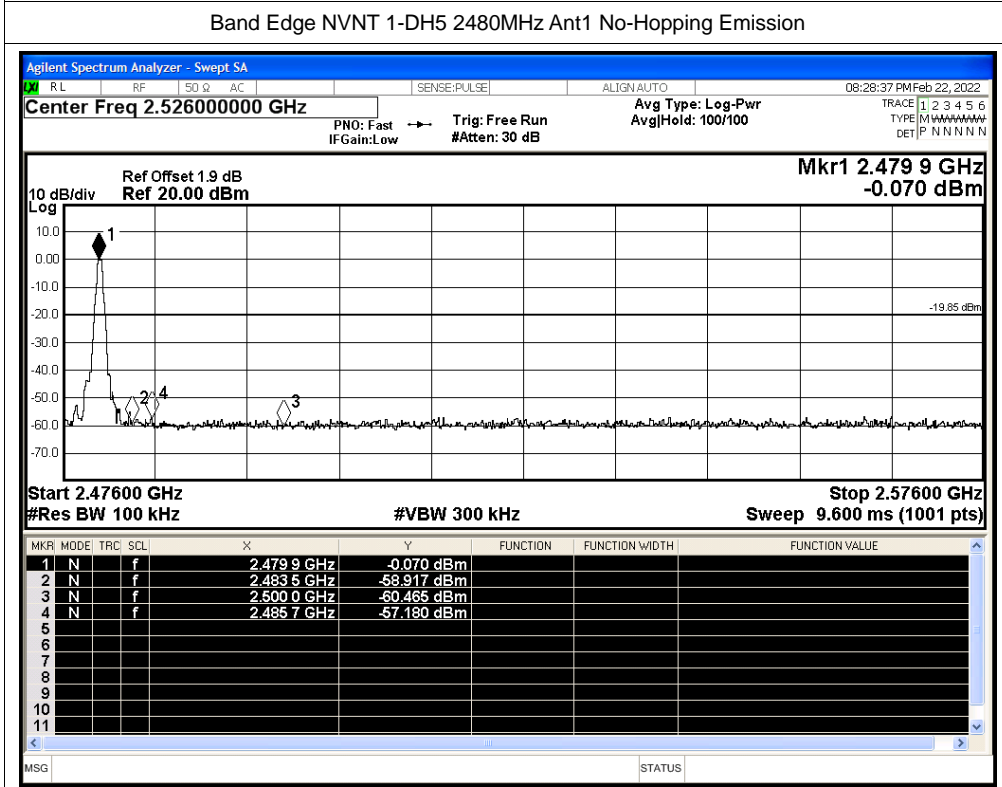
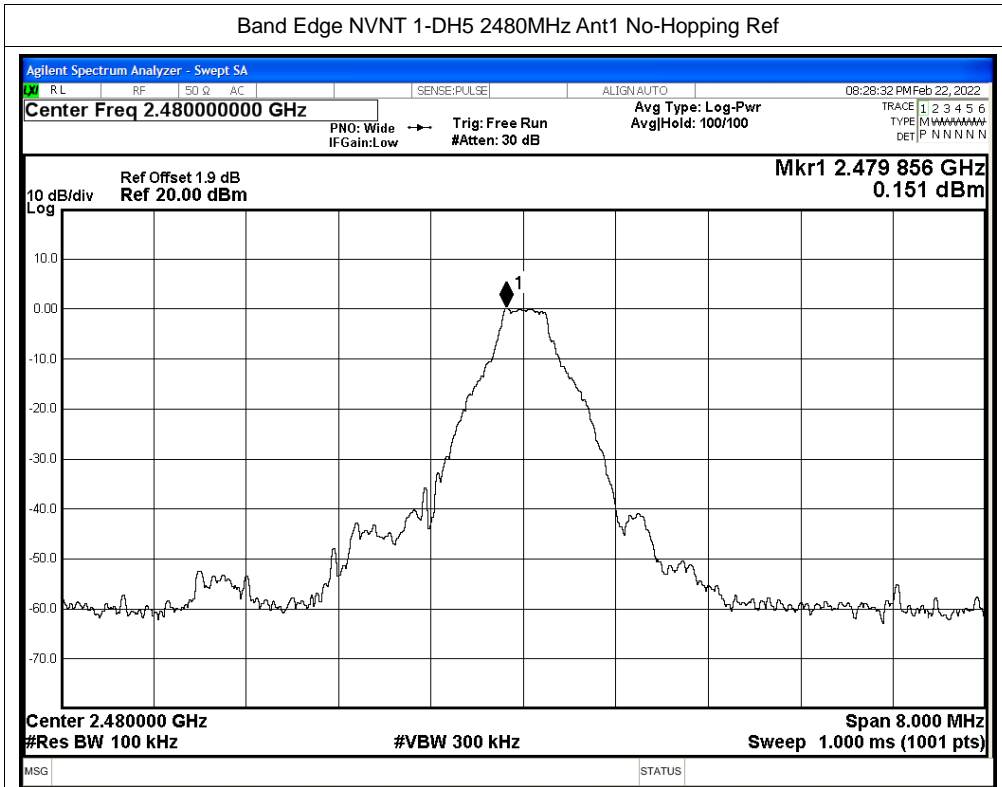
Test Graphs

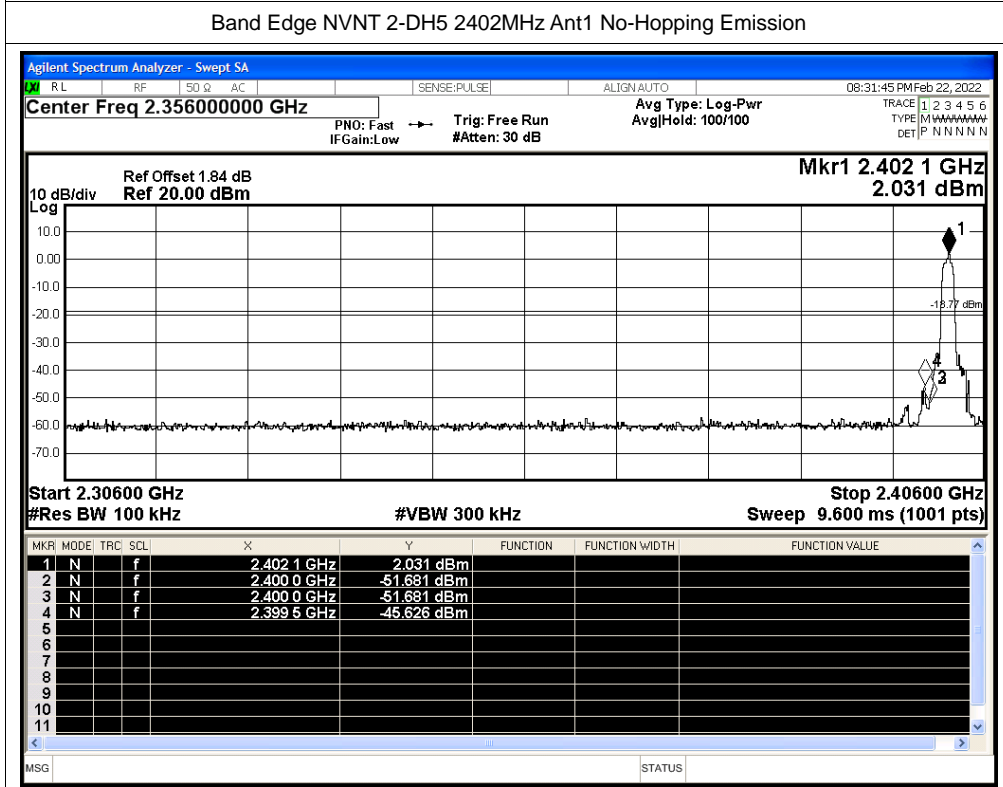
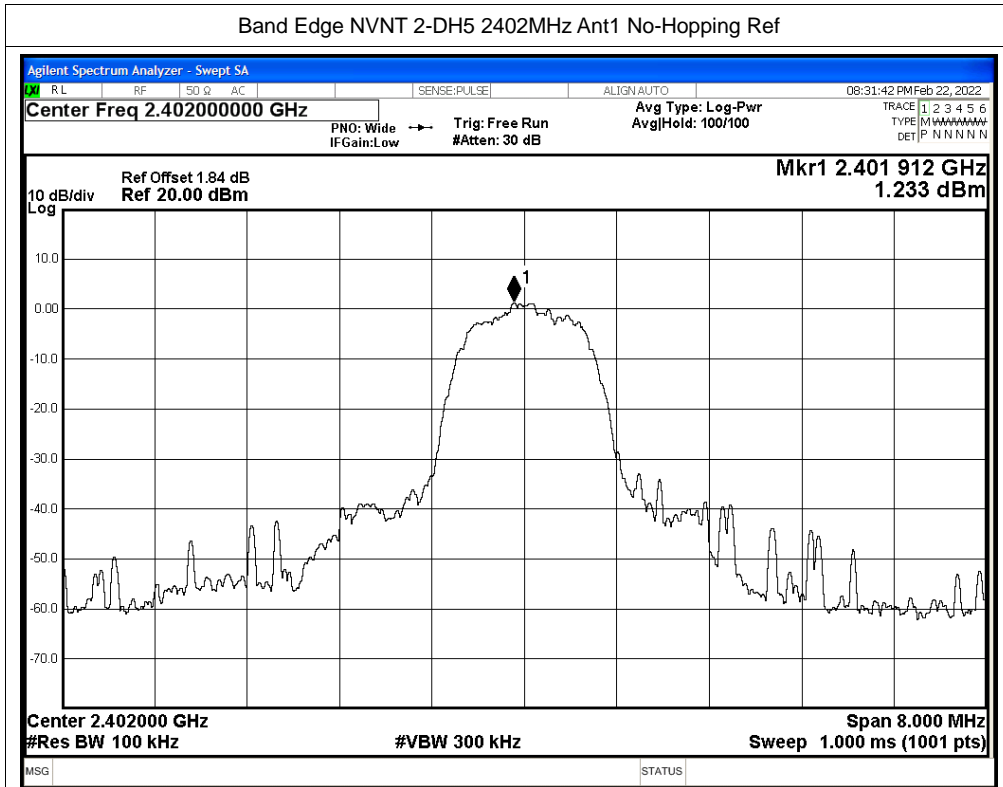
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref

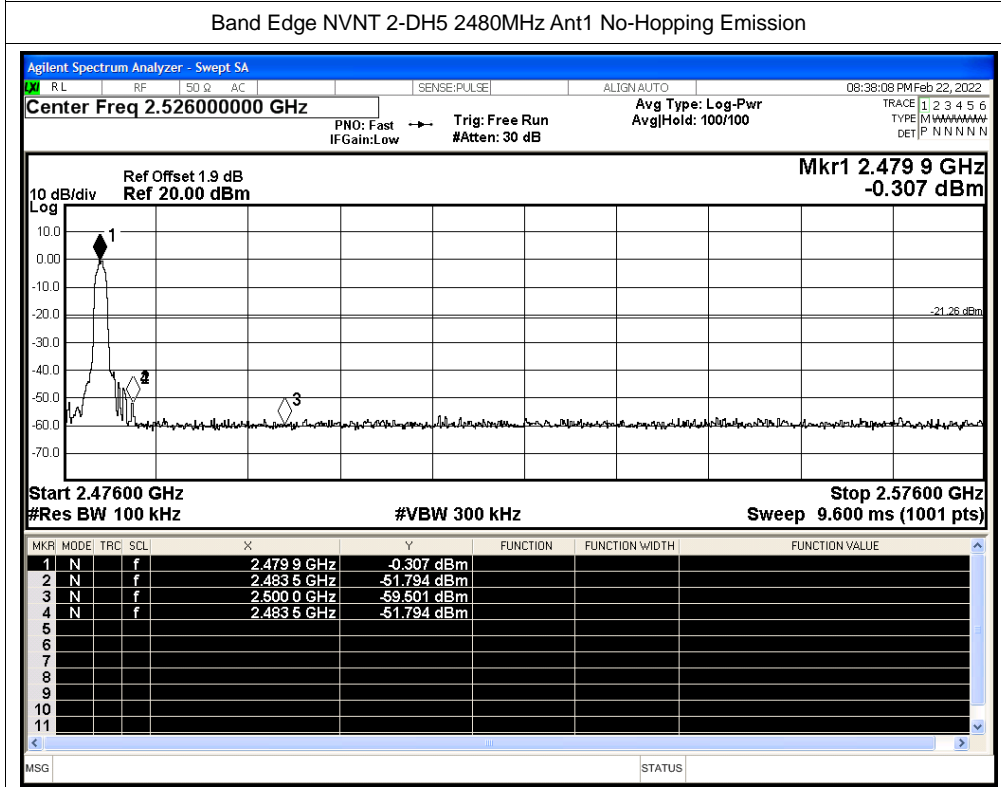
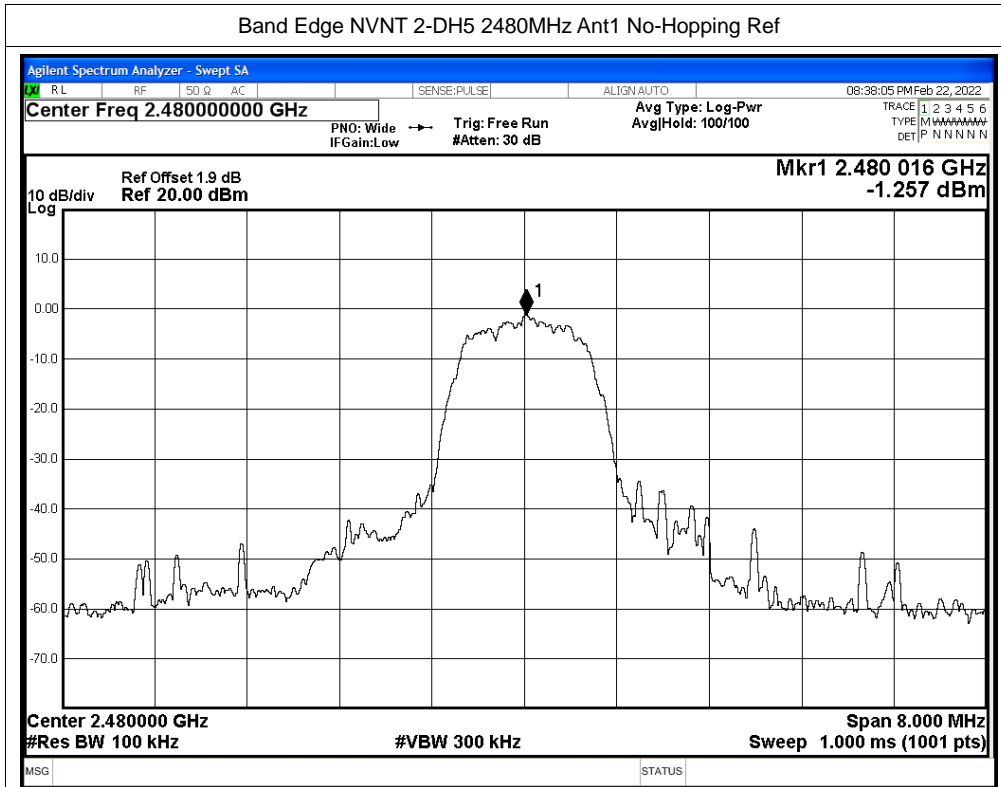


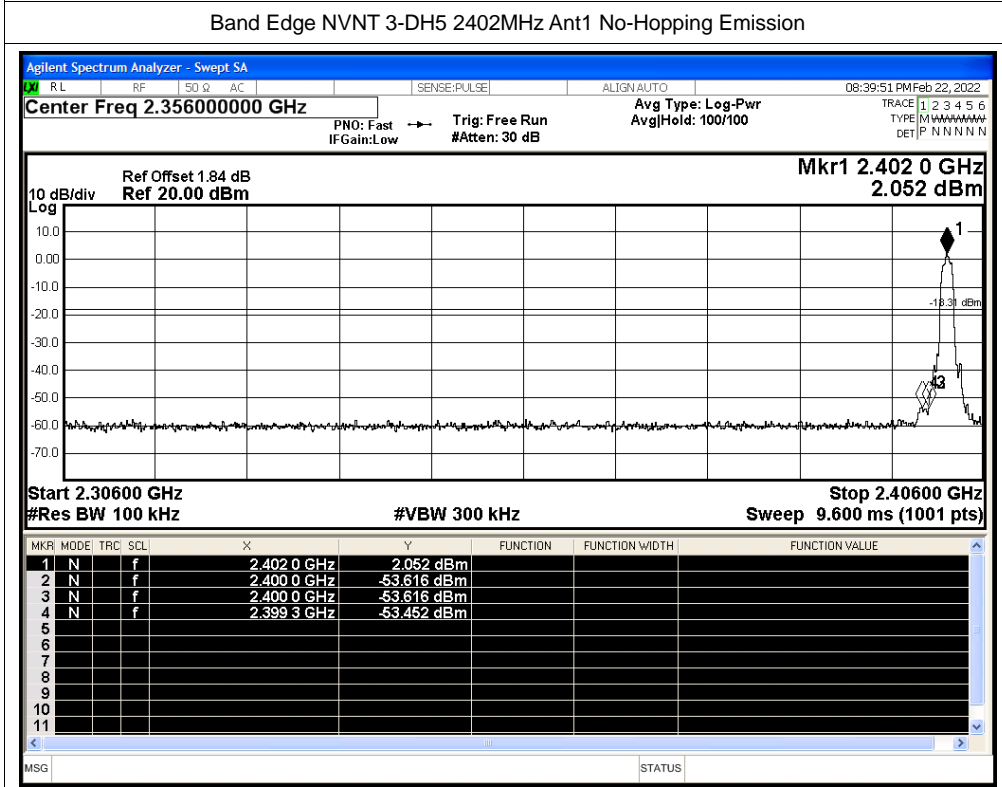
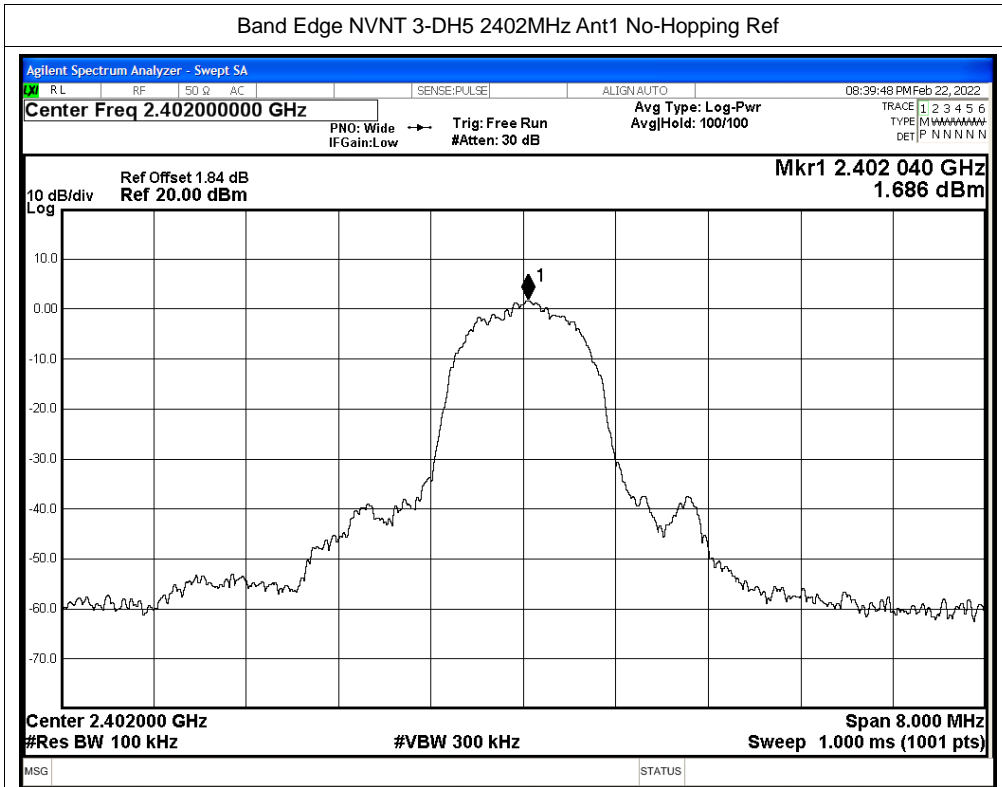
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

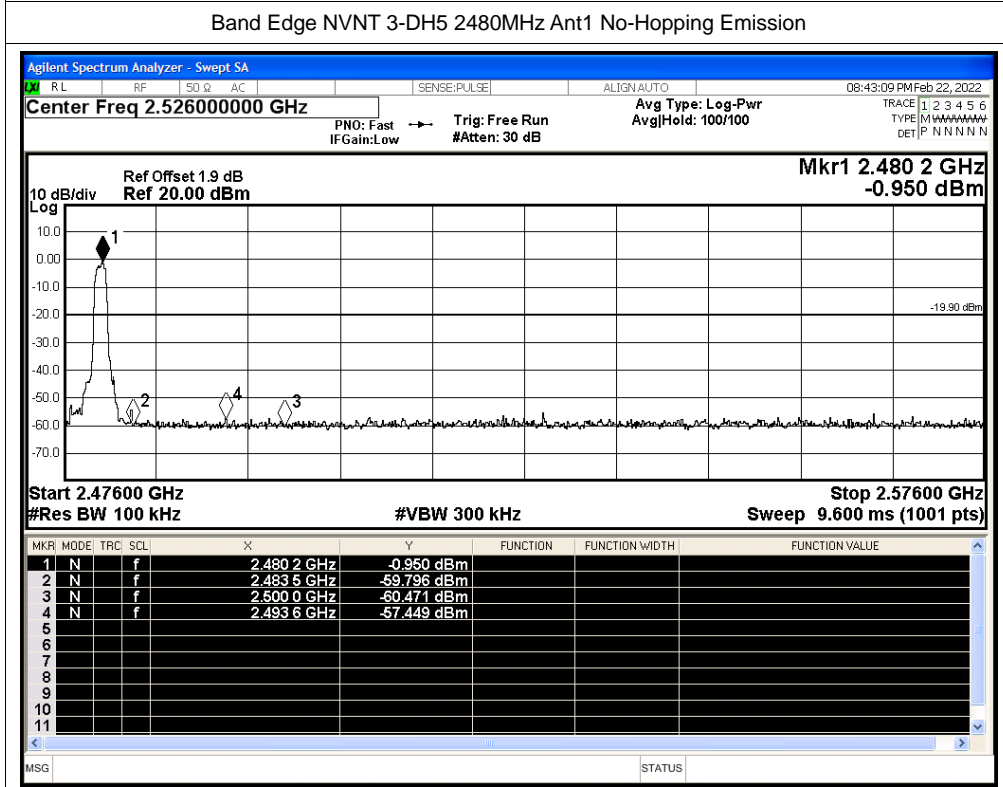
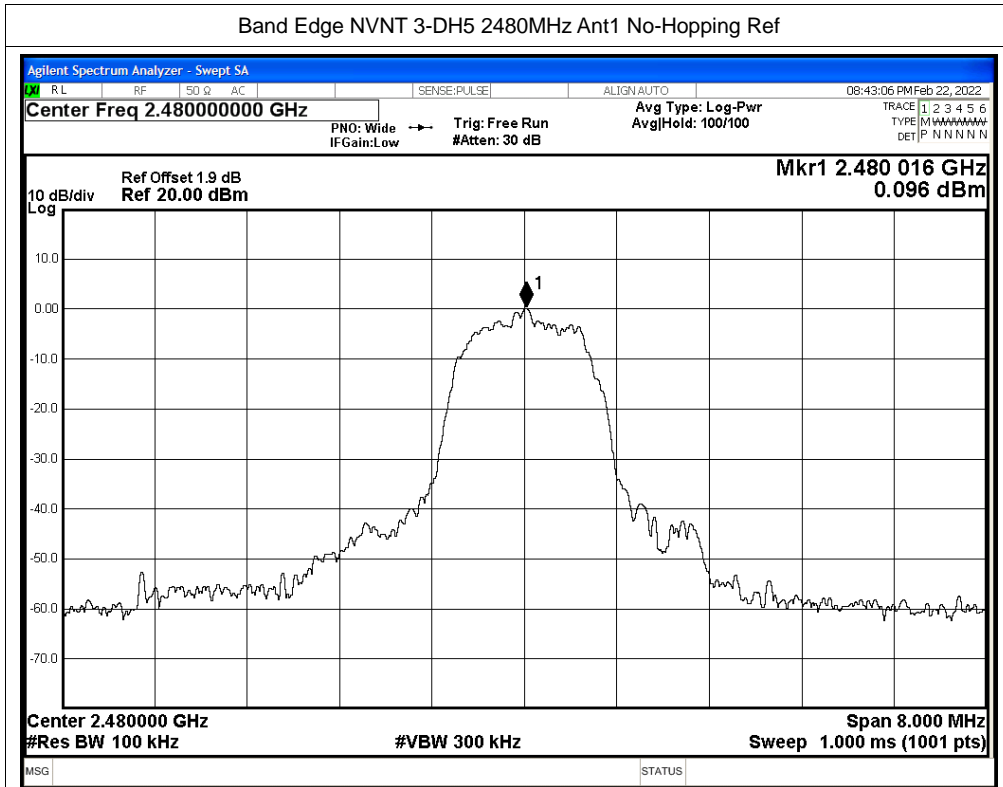














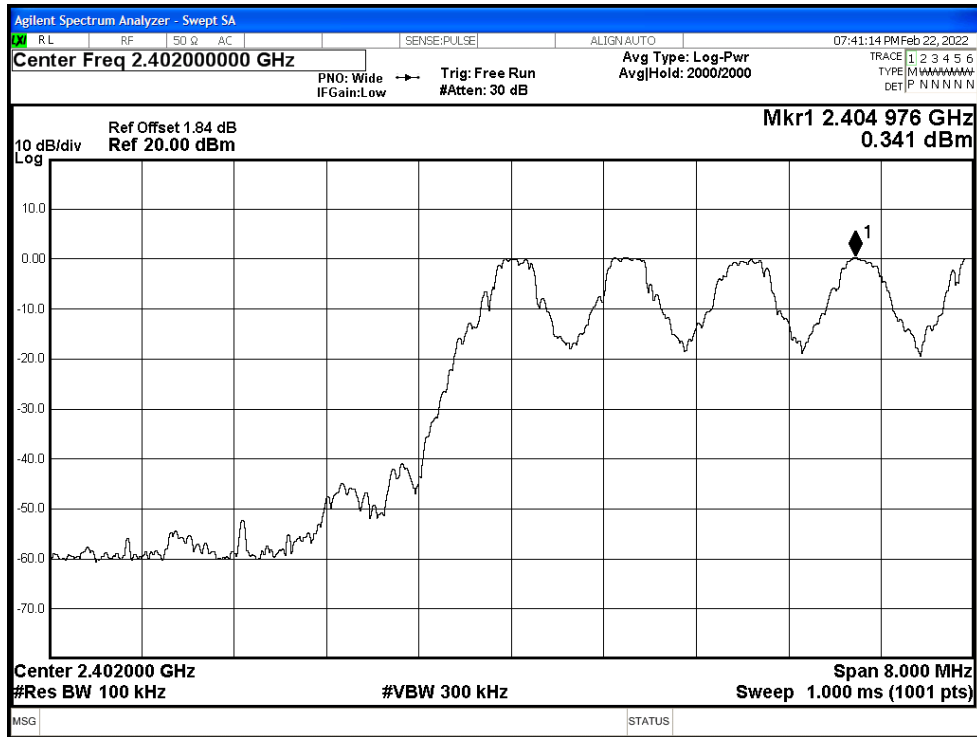
(Hopping)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-56.17	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-55.12	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-56.65	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.83	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-56.58	-20	Pass
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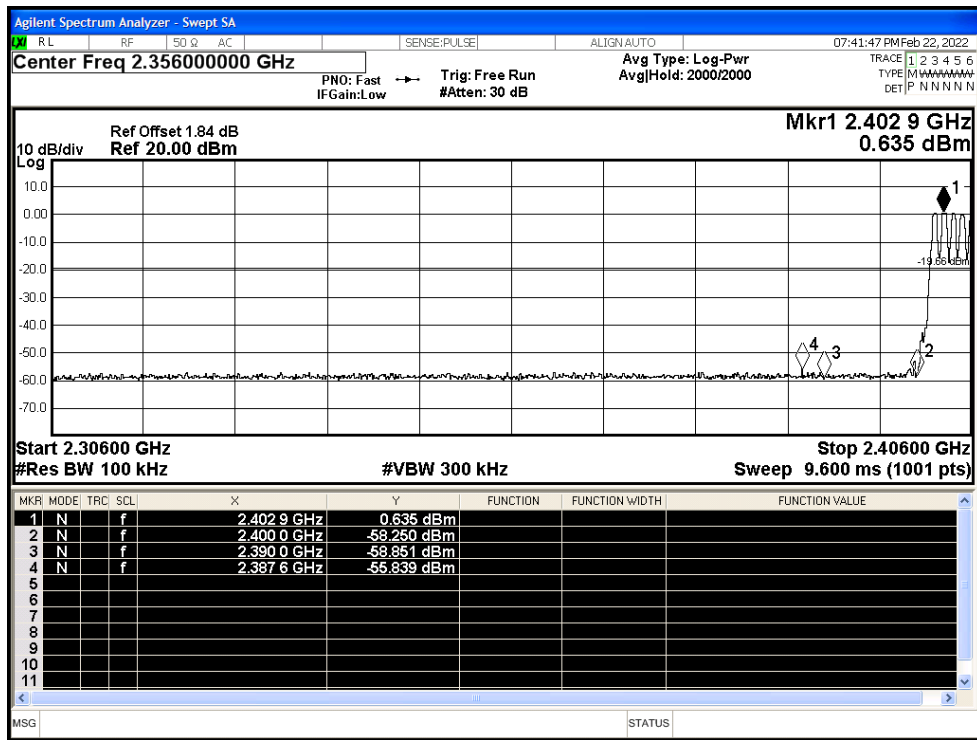


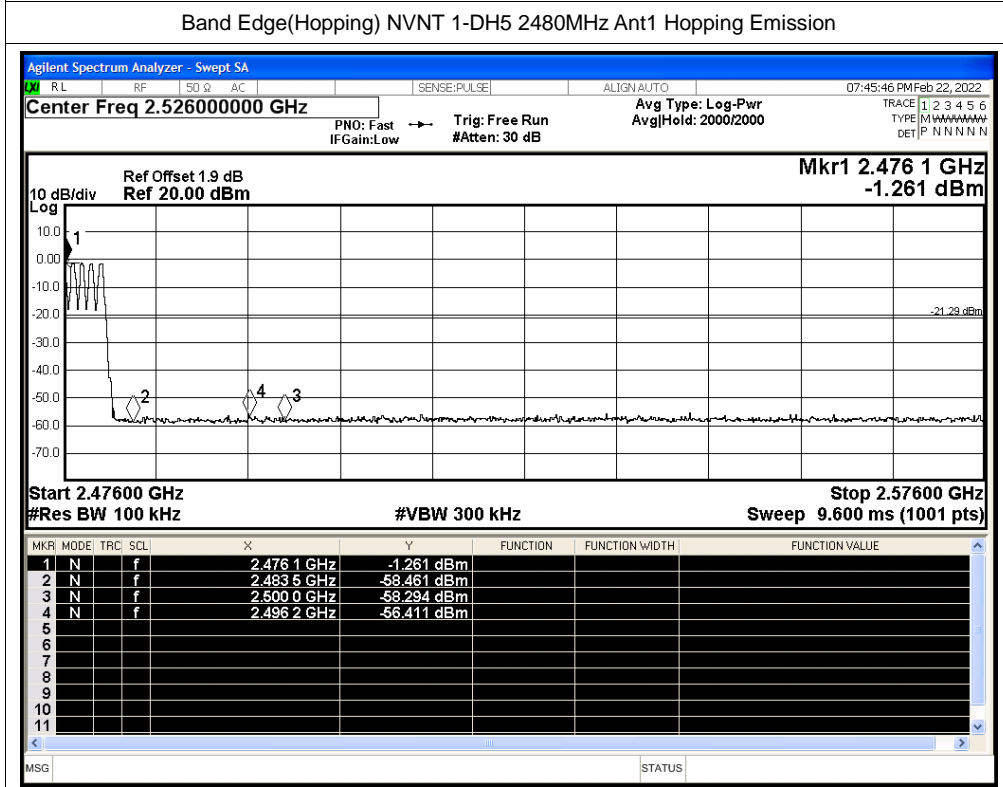
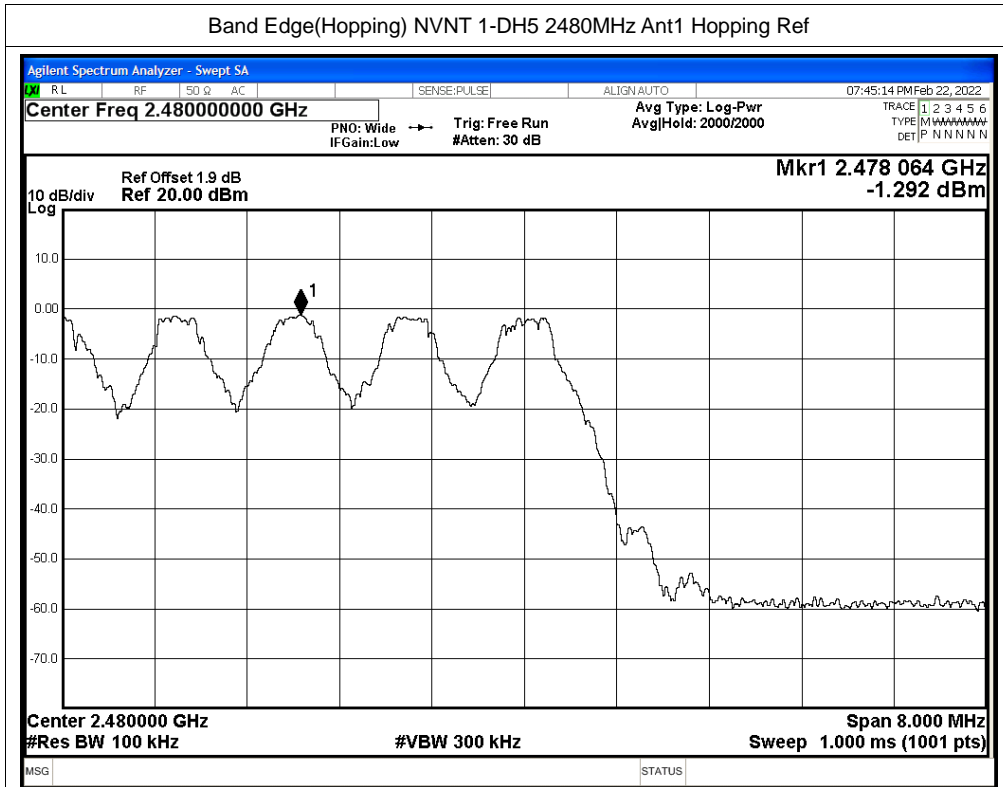
Test Graphs

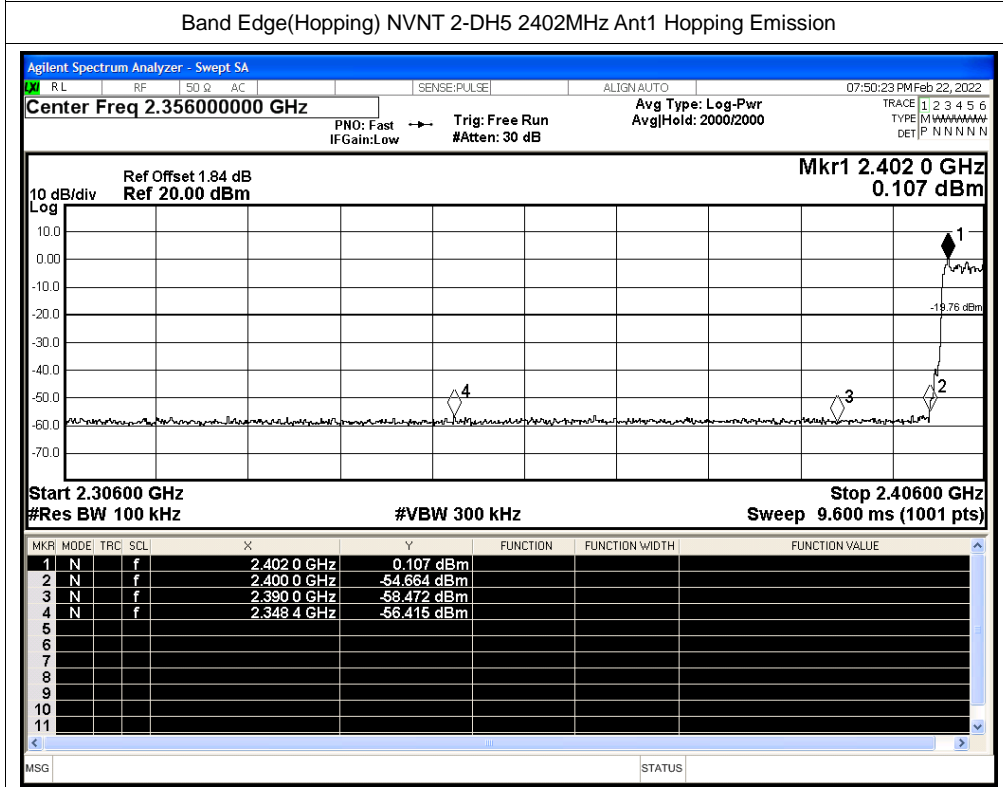
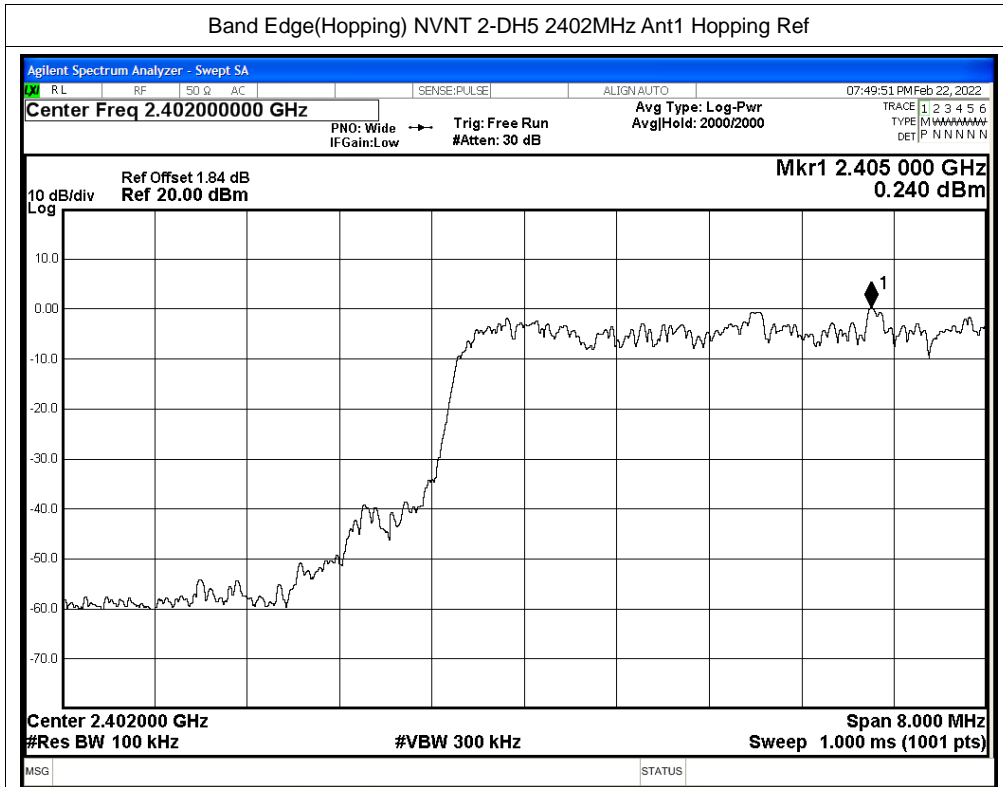
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

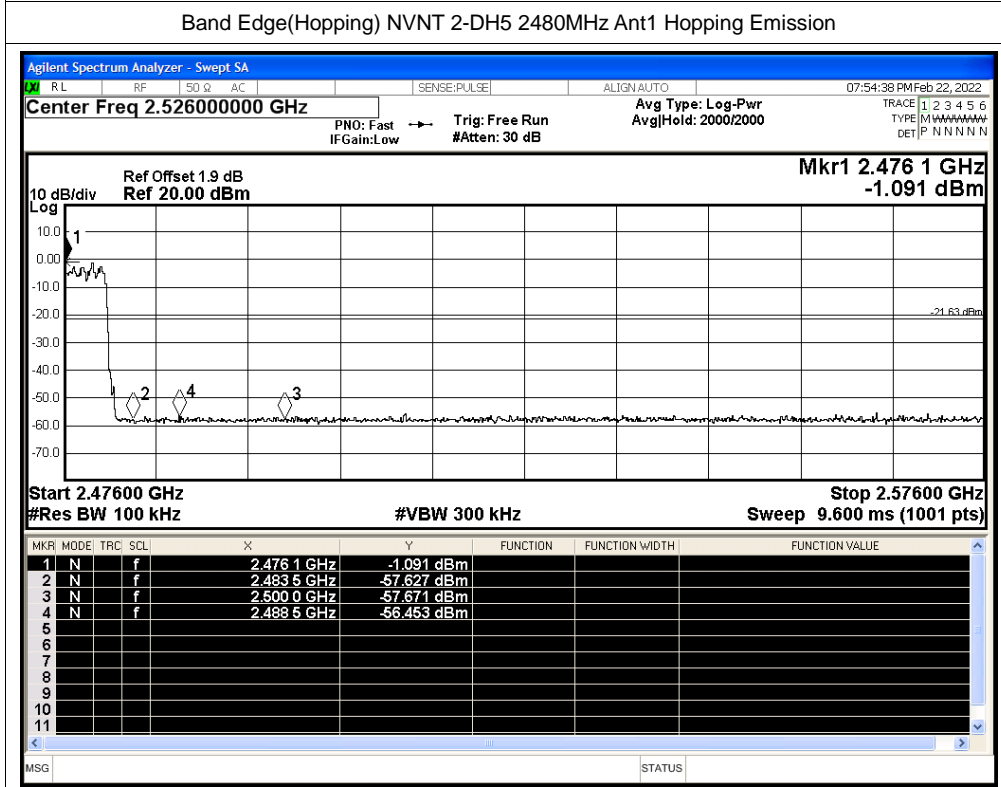
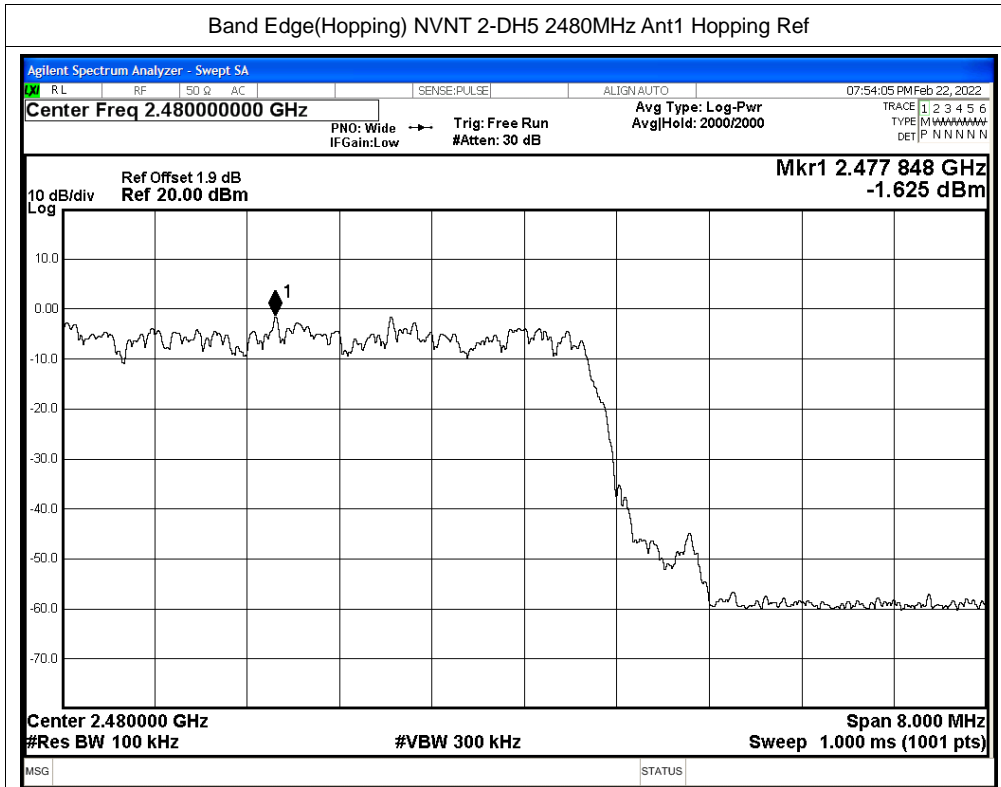


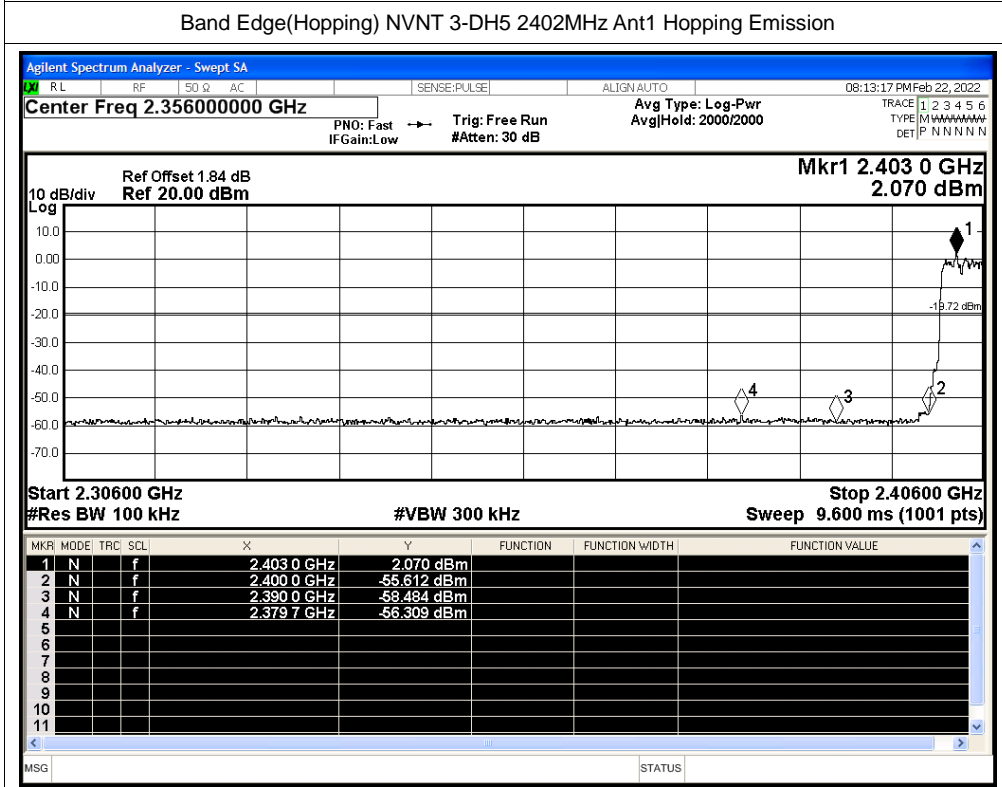
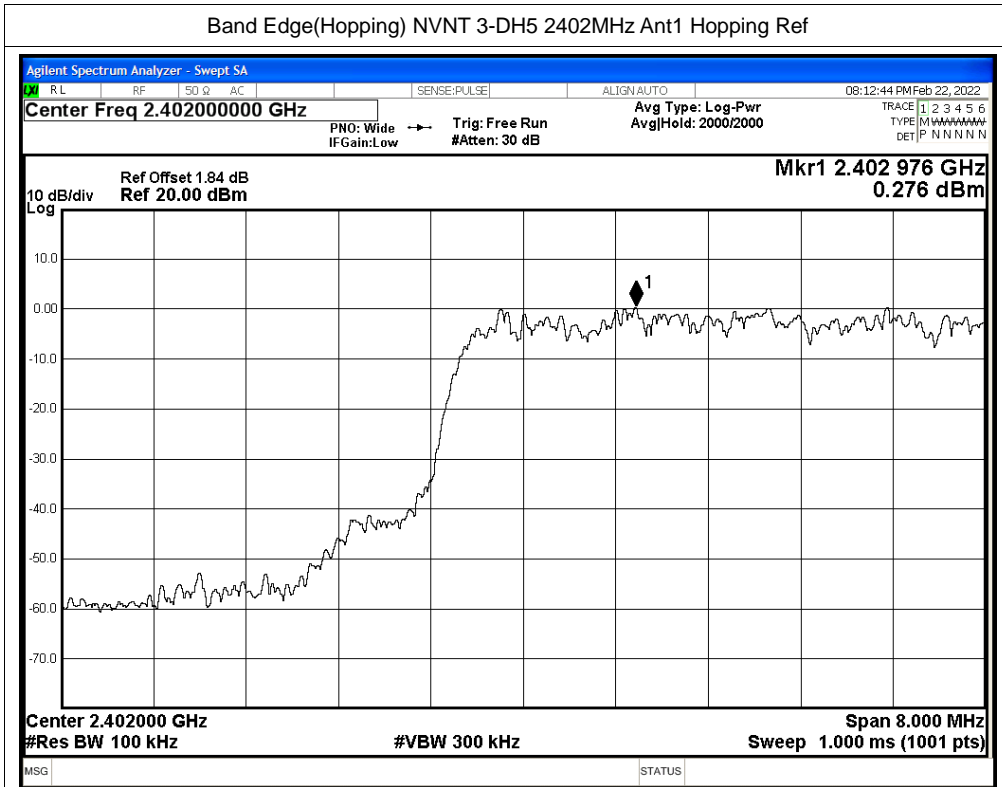
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

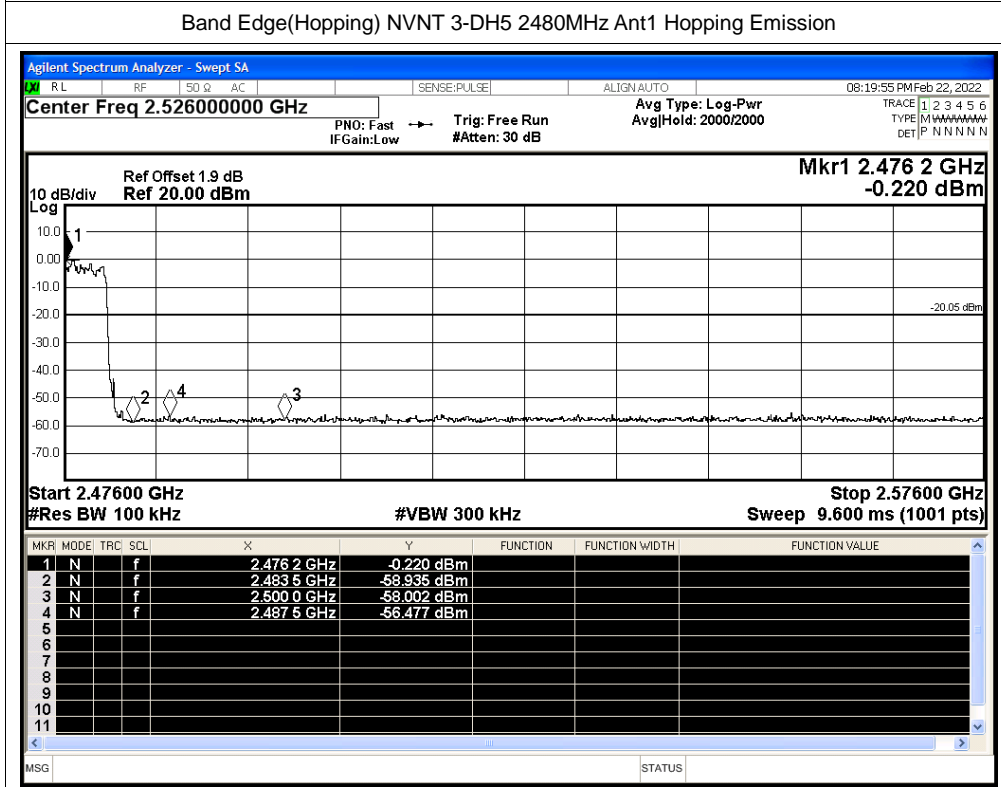
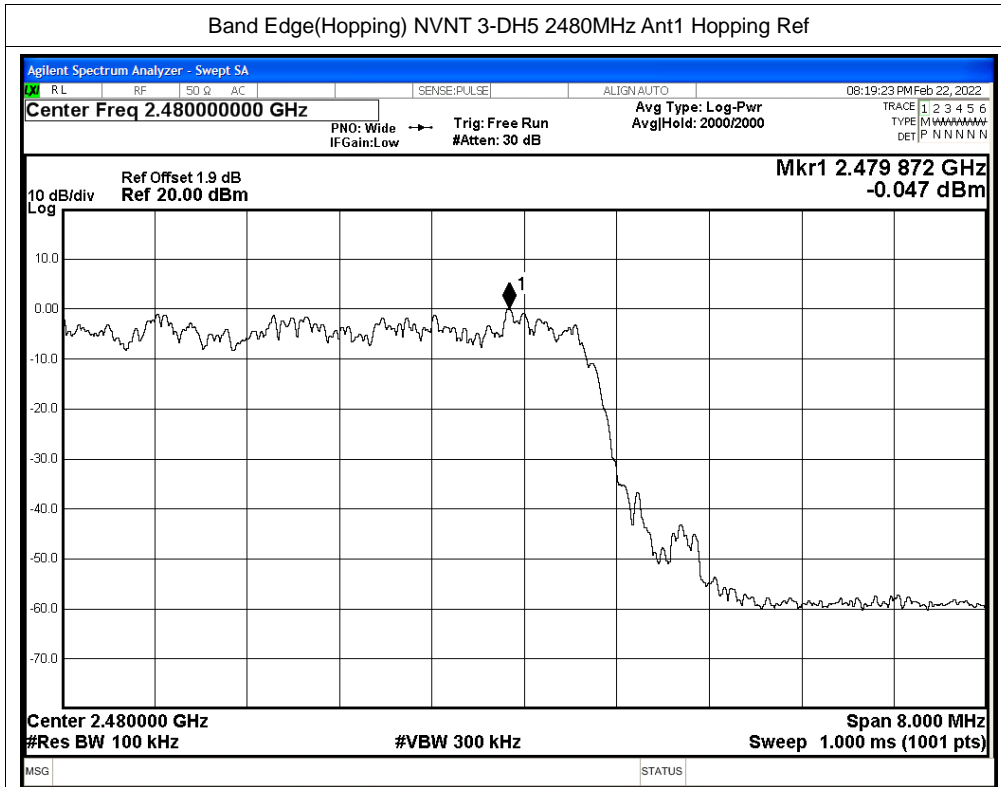














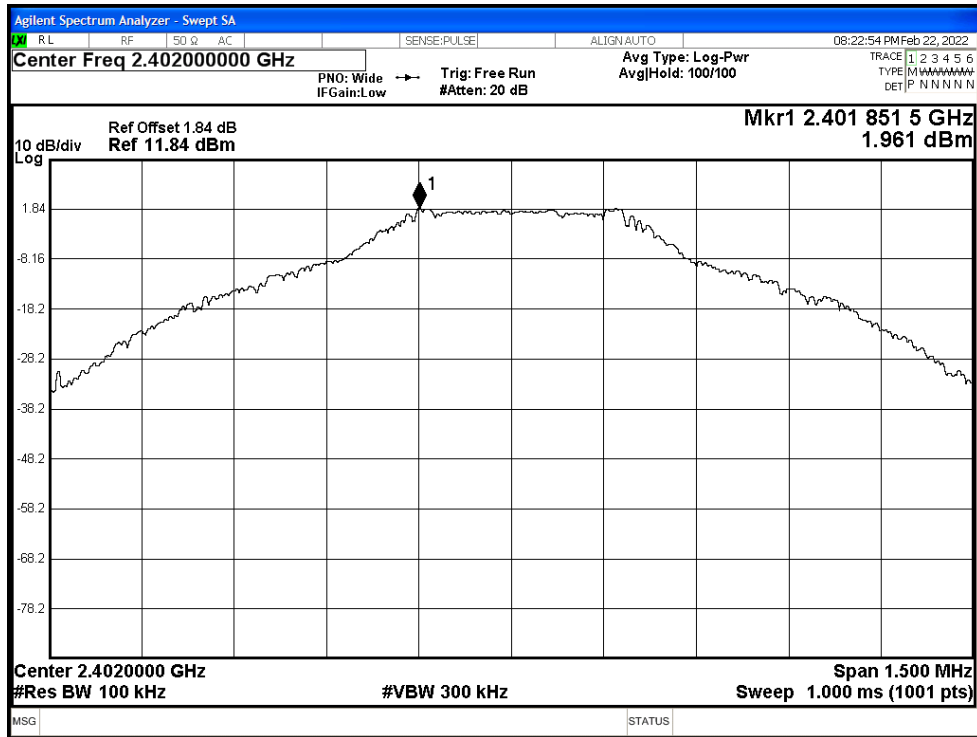
A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-50.16	-20	Pass
NVNT	1-DH5	2441	Ant1	-49.22	-20	Pass
NVNT	1-DH5	2480	Ant1	-50.03	-20	Pass
NVNT	2-DH5	2402	Ant1	-51.45	-20	Pass
NVNT	2-DH5	2441	Ant1	-50.33	-20	Pass
NVNT	2-DH5	2480	Ant1	-50.2	-20	Pass
NVNT	3-DH5	2402	Ant1	-50.65	-20	Pass
NVNT	3-DH5	2441	Ant1	-50.94	-20	Pass
NVNT	3-DH5	2480	Ant1	-49.55	-20	Pass

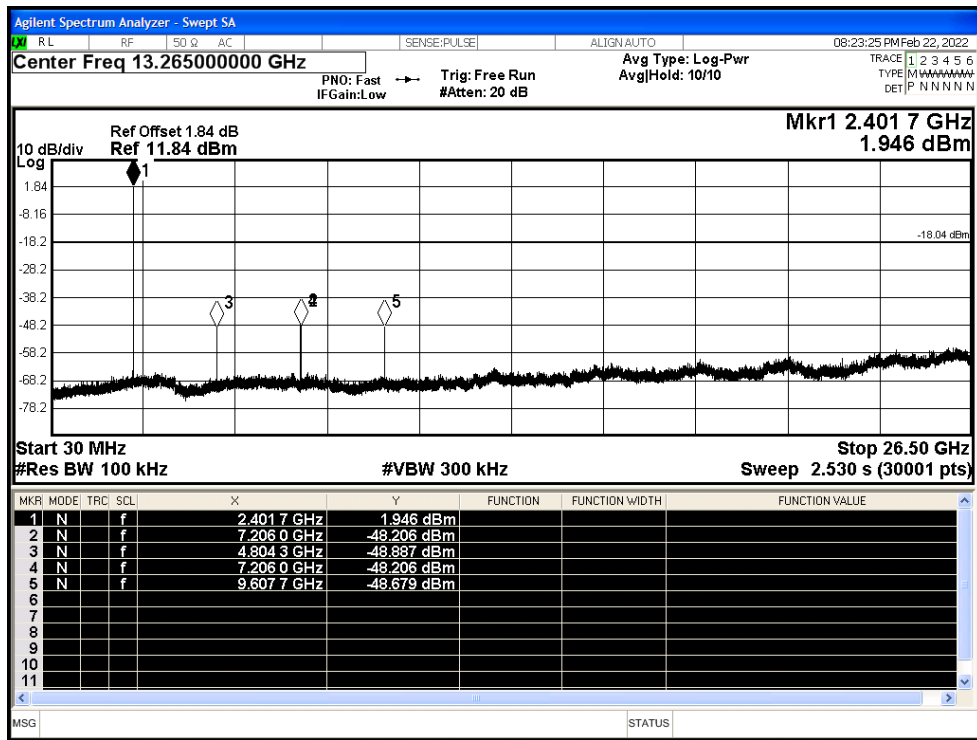


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

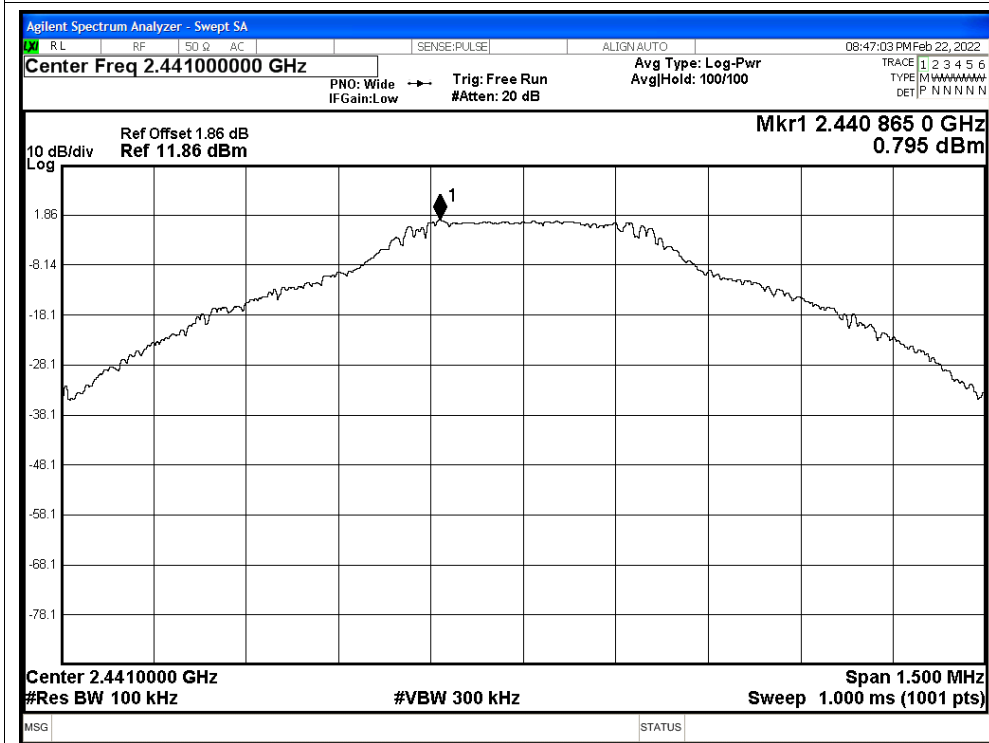


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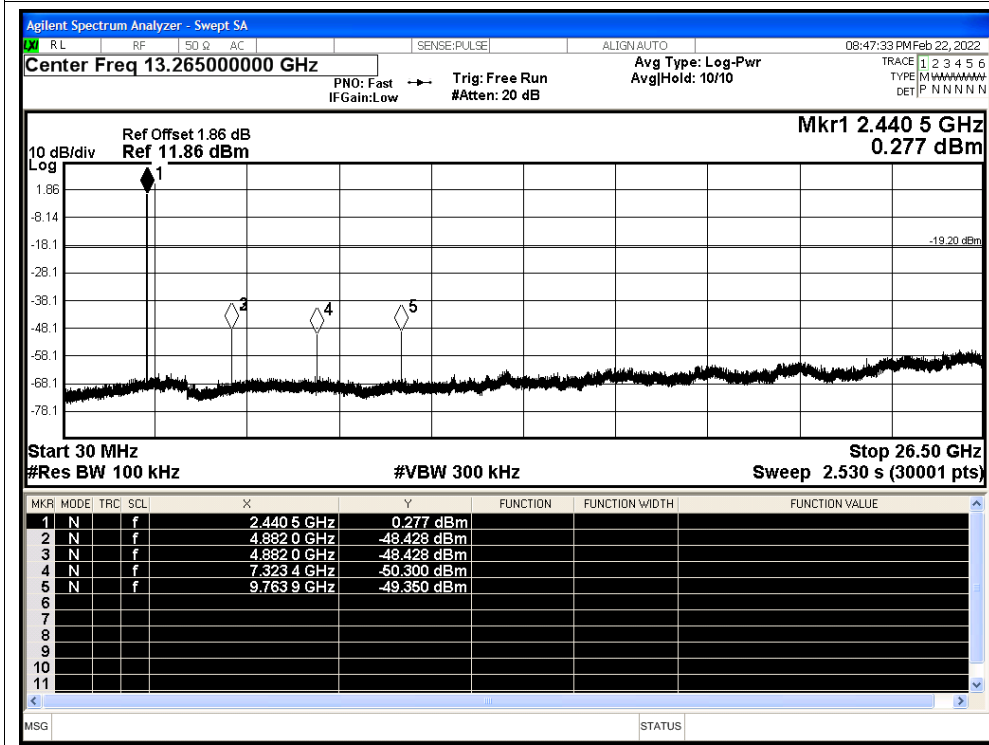




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

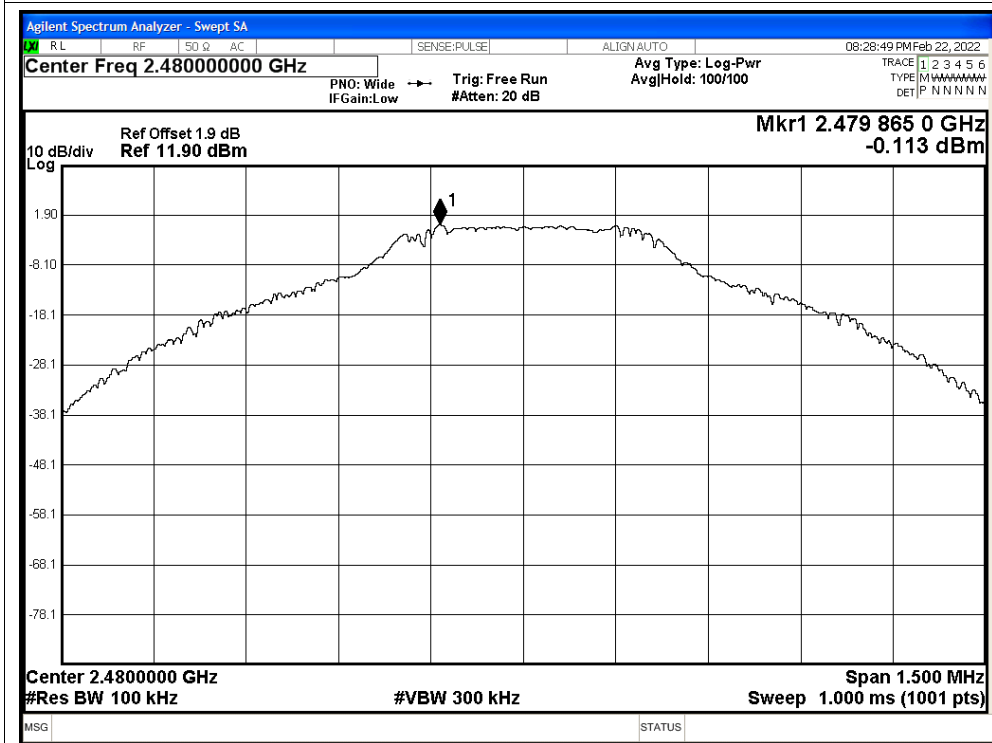


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

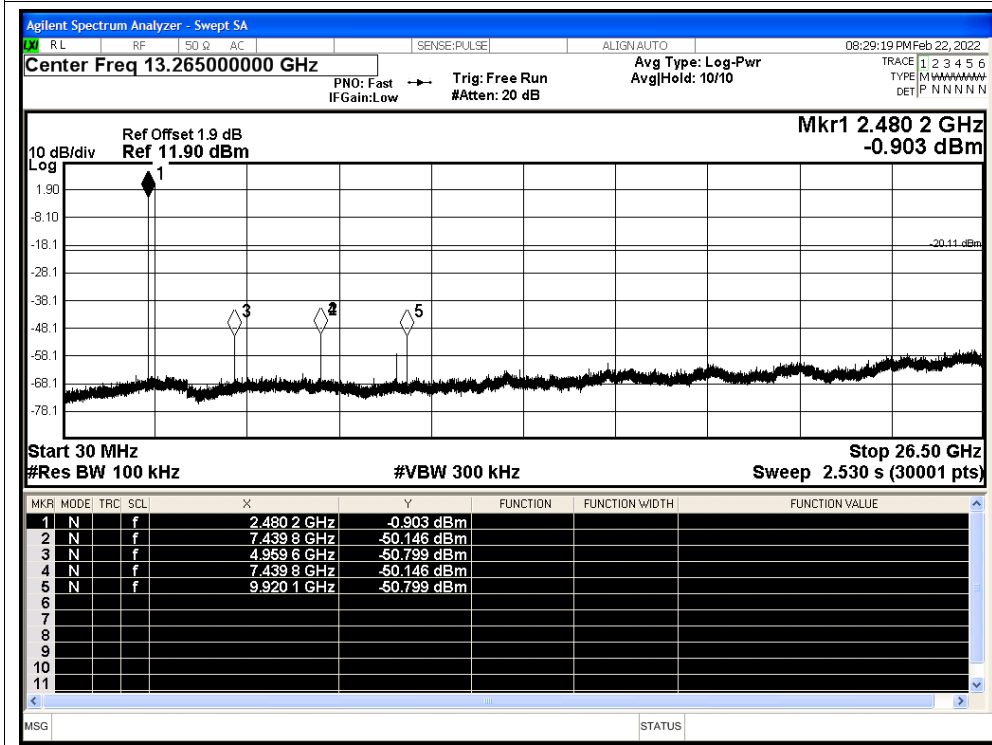




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

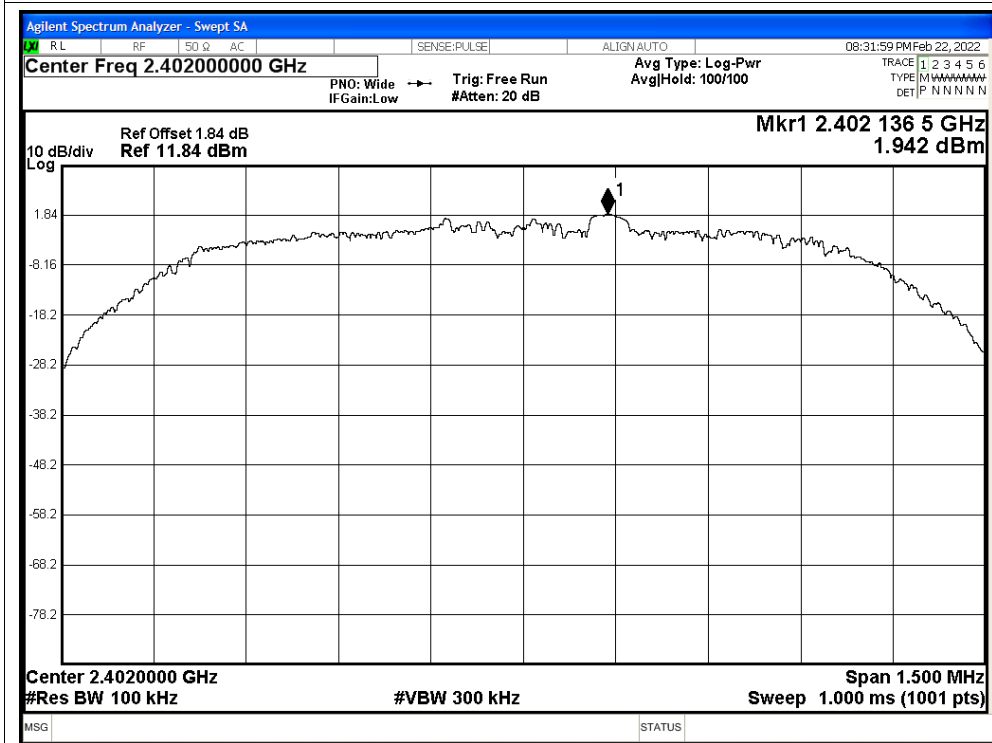


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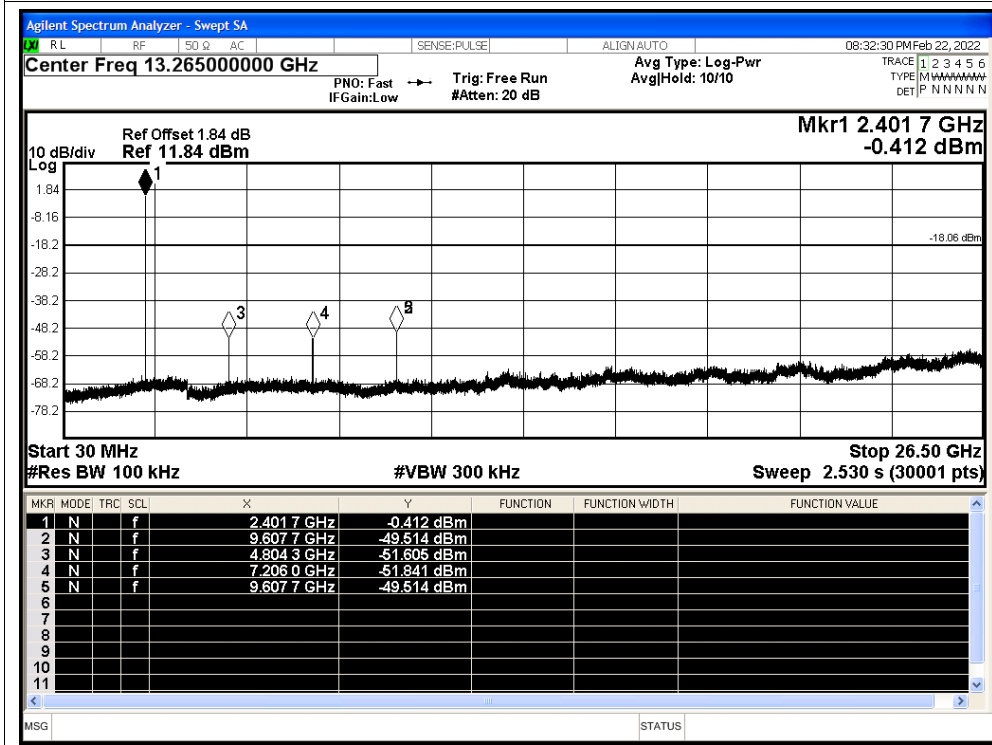




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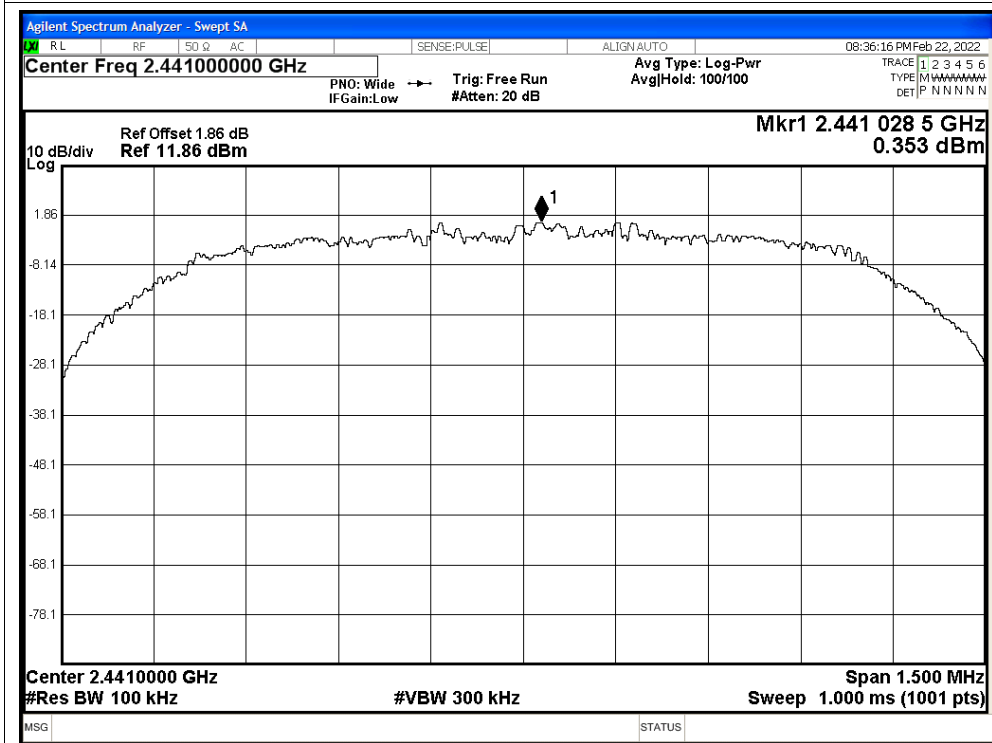


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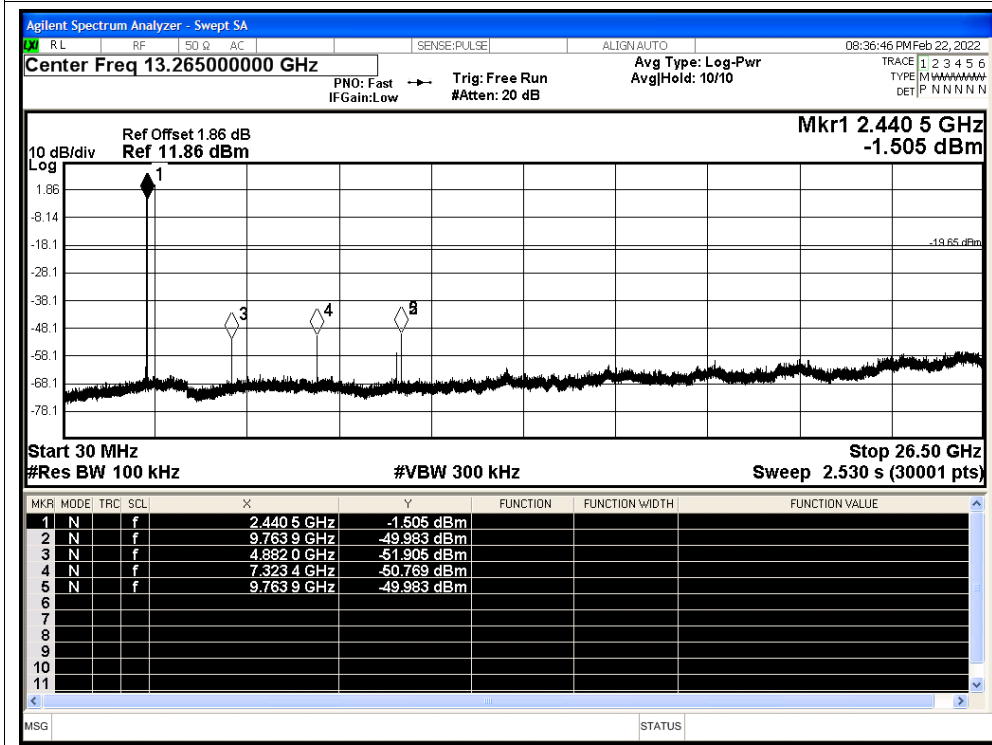




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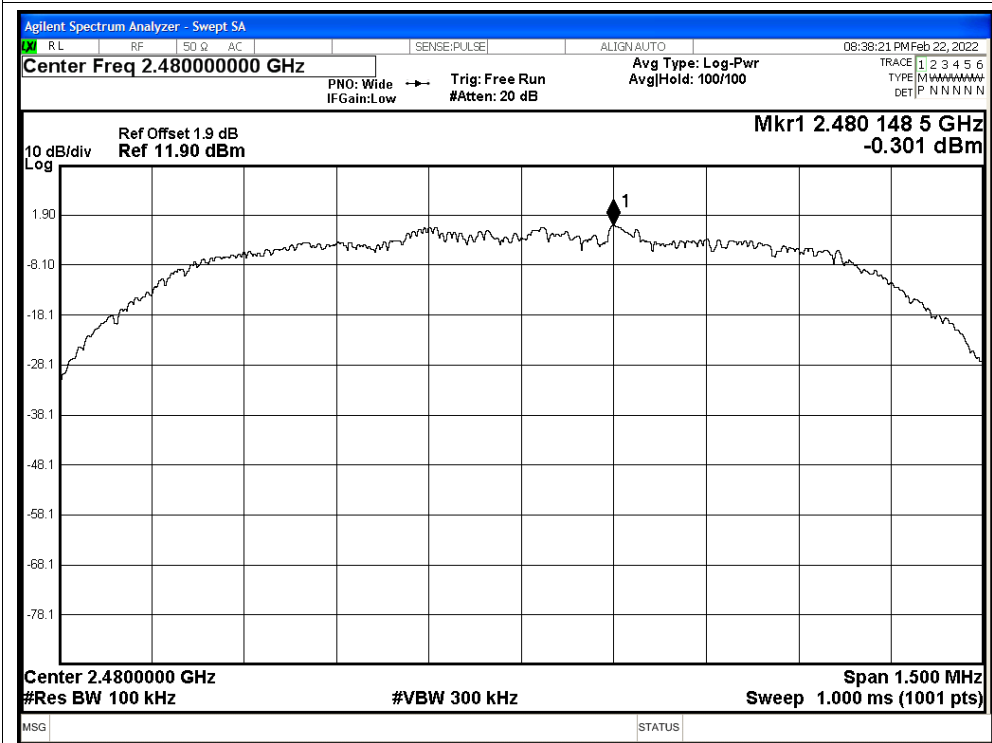


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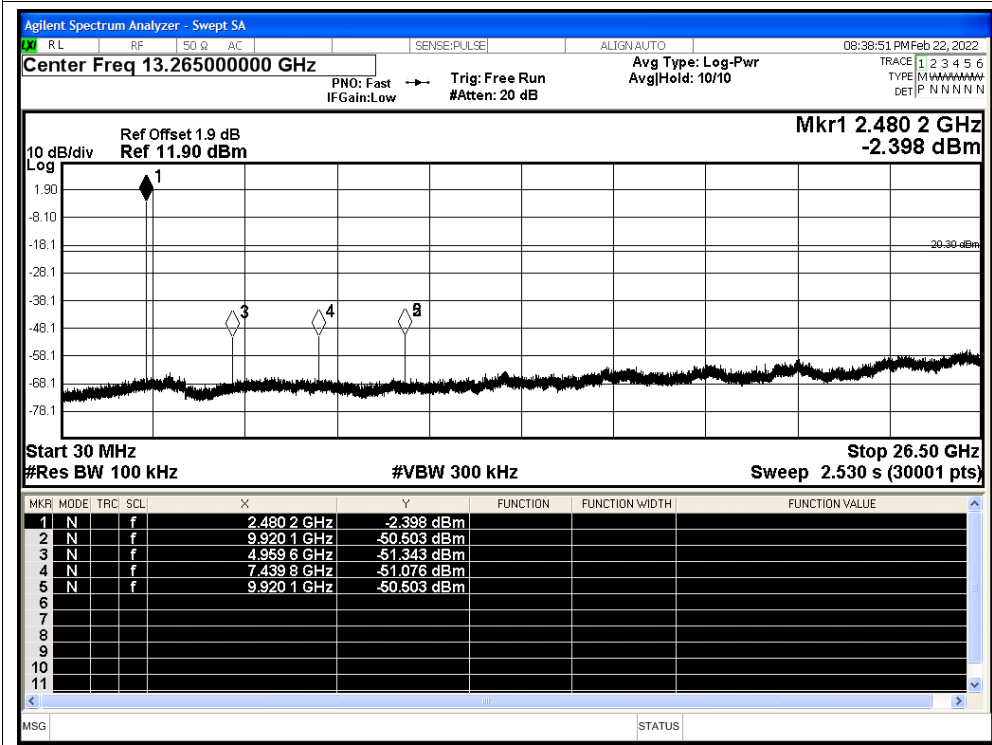




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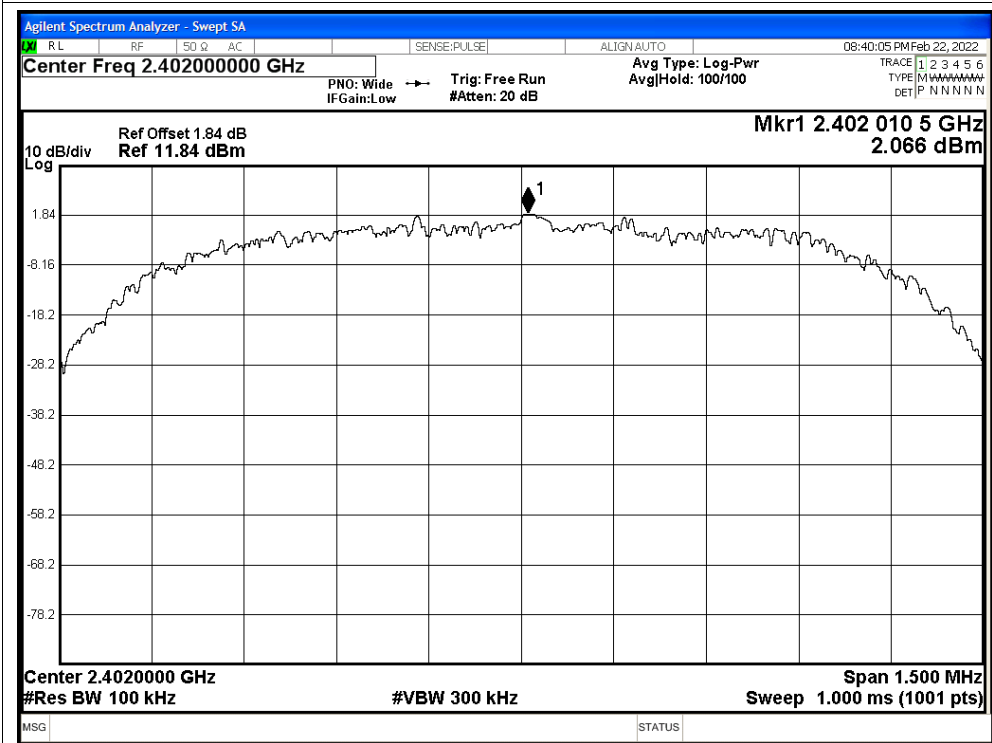


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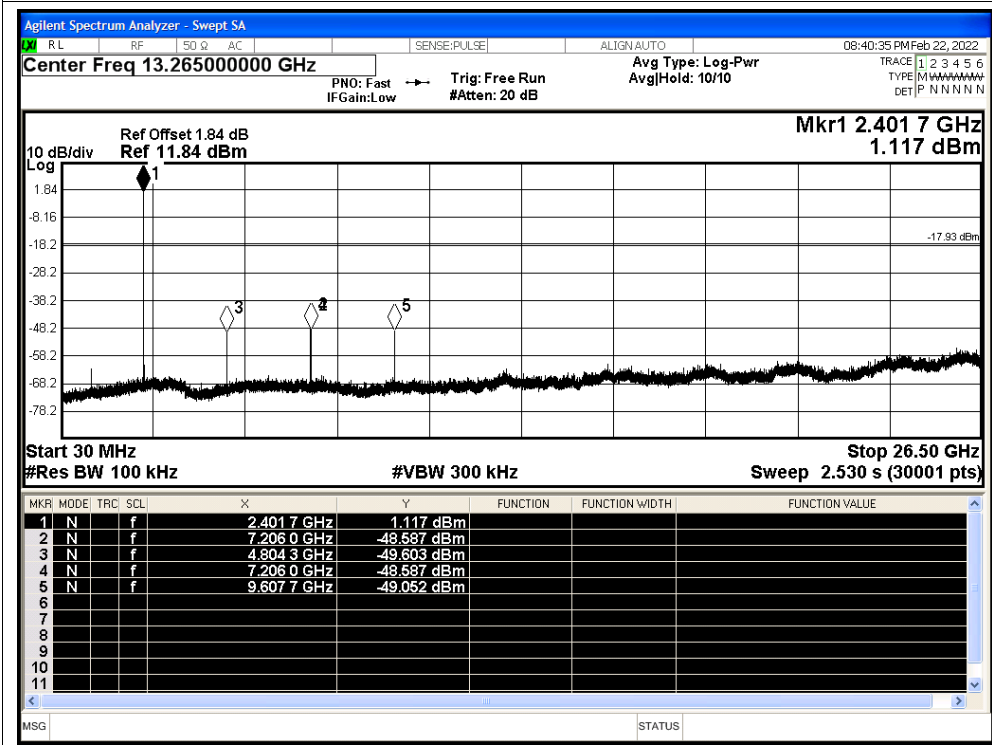




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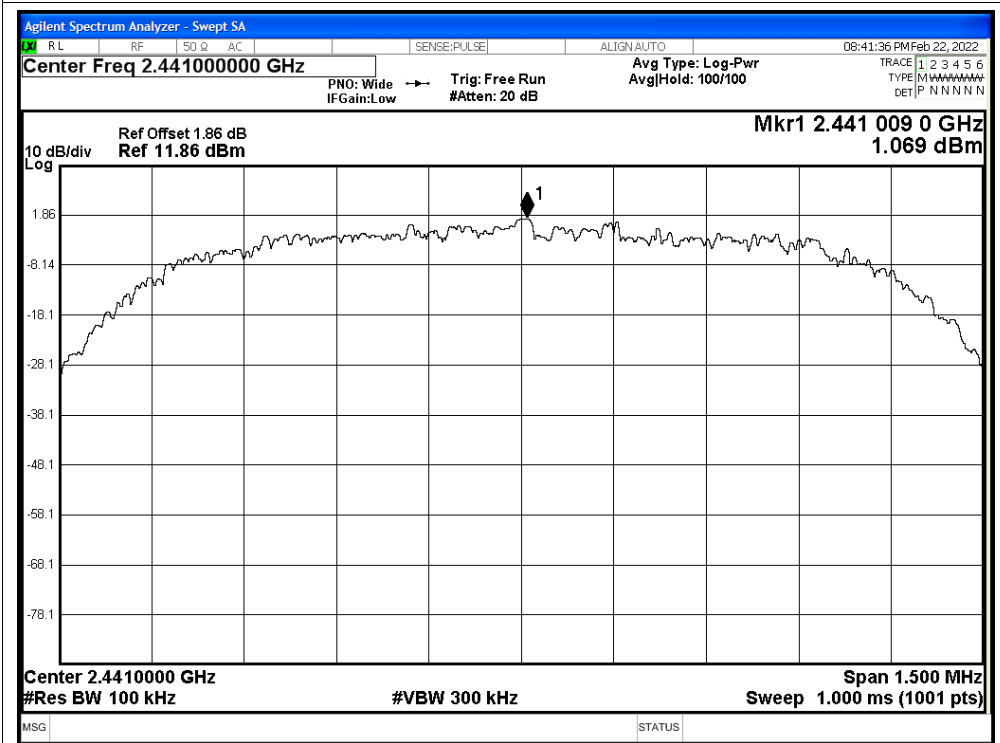


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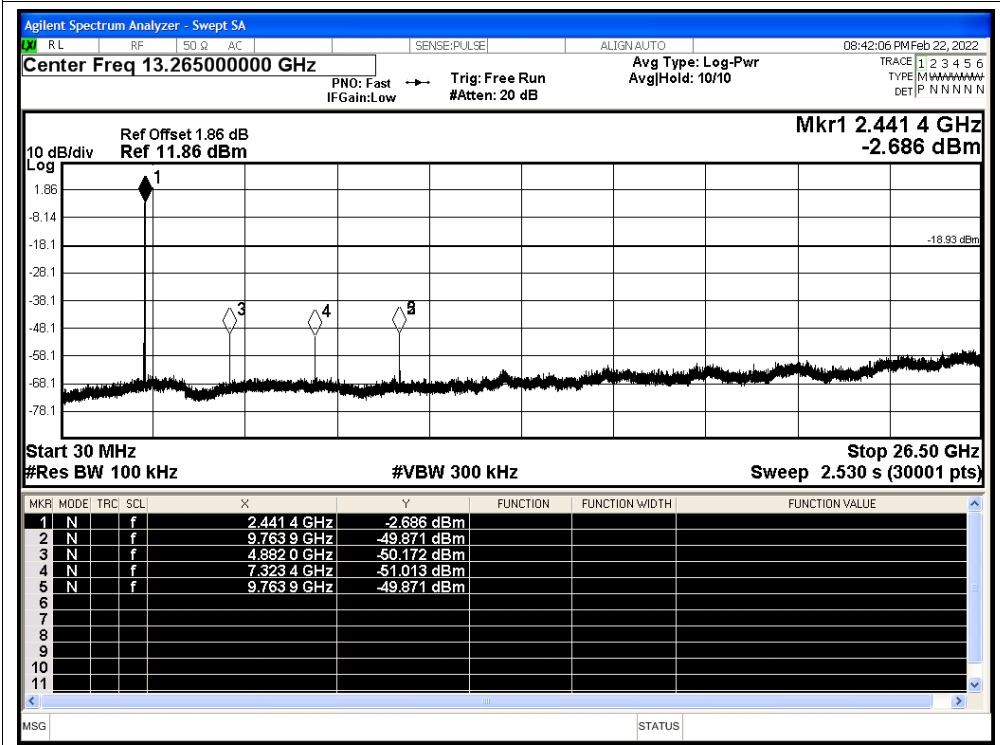




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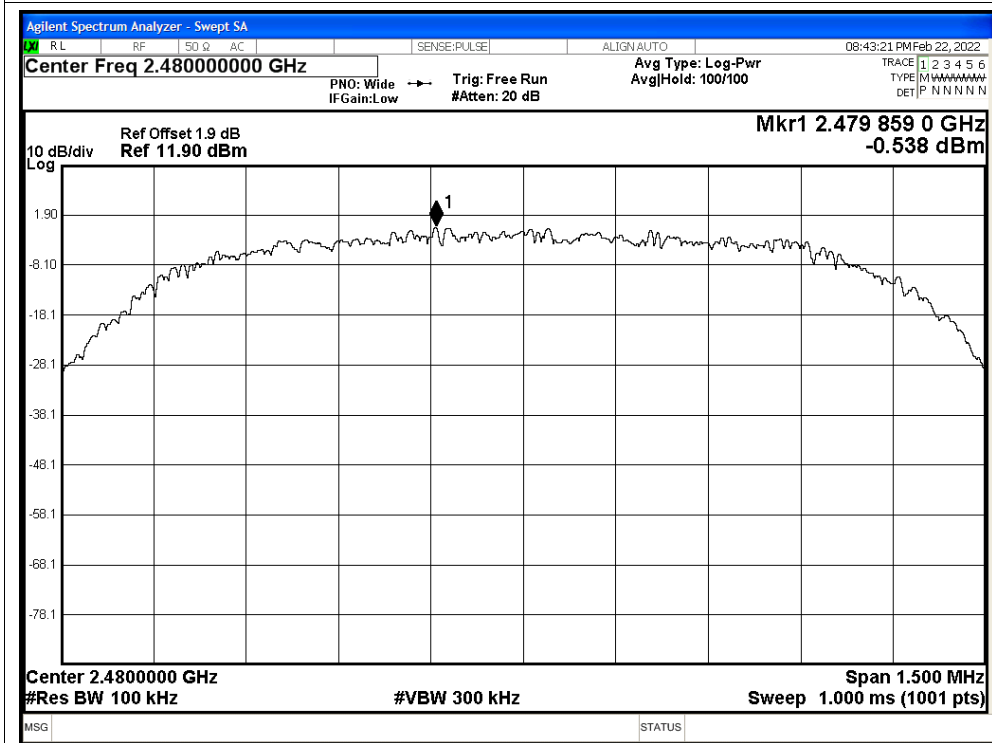


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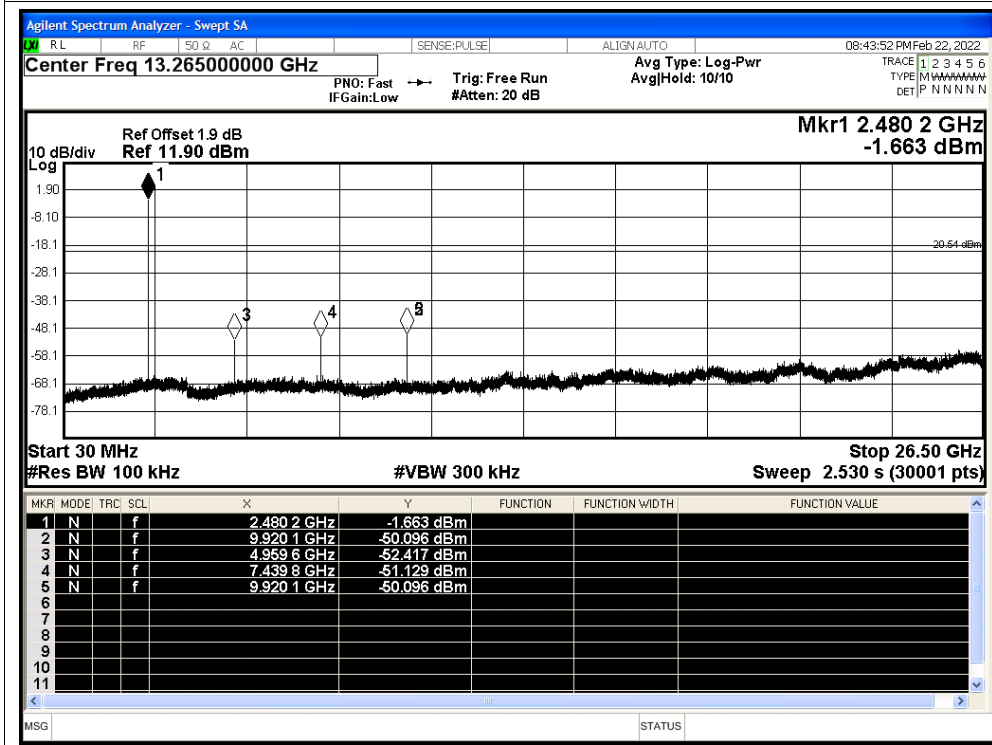




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission





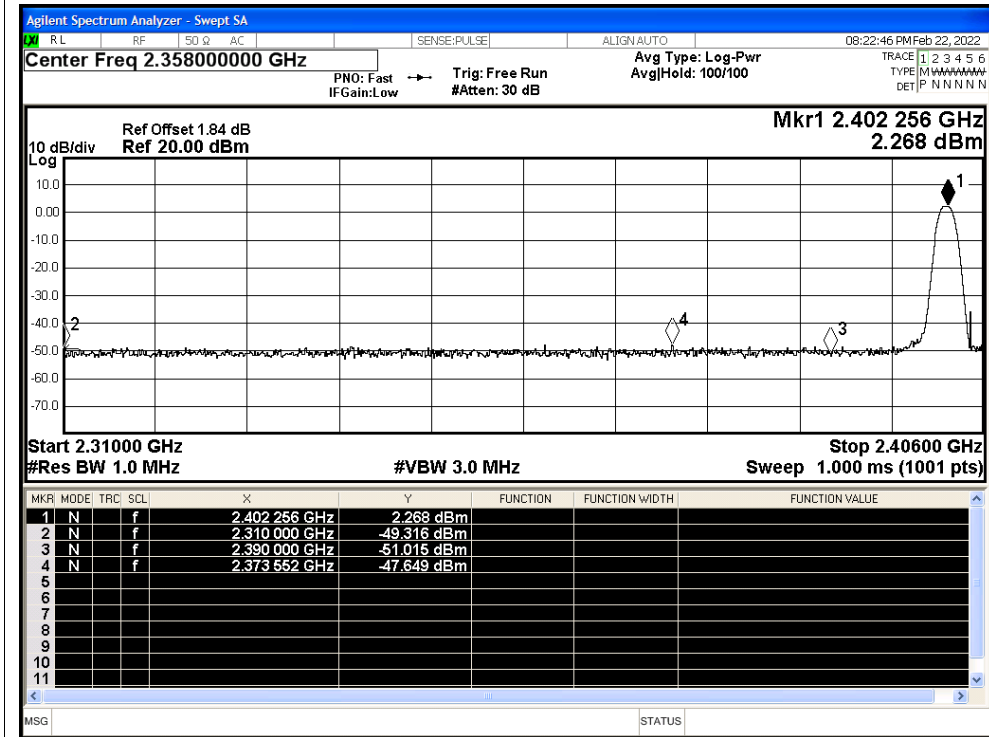
A.8 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.31	2	47.95	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-60.63	2	36.63	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2373.552	-47.64	2	49.62	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2376.048	-60.15	2	37.11	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-51.89	2	45.37	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-60.23	2	37.03	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.59	2	48.67	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-59.17	2	38.09	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.92	-46.56	2	50.7	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.656	-59.02	2	38.24	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-48.85	2	48.41	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-59.88	2	37.38	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.65	2	47.61	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-60.62	2	36.64	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310.672	-47.96	2	49.3	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2376.24	-59.91	2	37.35	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-51.17	2	46.09	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-60.37	2	36.89	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-48.79	2	48.47	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-59.4	2	37.86	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.632	-44.1	2	53.16	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-59.4	2	37.86	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-50.74	2	46.52	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-60.16	2	37.1	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.83	2	45.43	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-60.56	2	36.7	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2385.552	-47	2	50.26	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2385.936	-60.09	2	37.17	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.9	2	46.36	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-60.37	2	36.89	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-48.15	2	49.11	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-59.39	2	37.87	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2497.84	-47.09	2	50.17	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.8	-59.28	2	37.98	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.13	2	47.13	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-59.94	2	37.32	Average	54	Pass

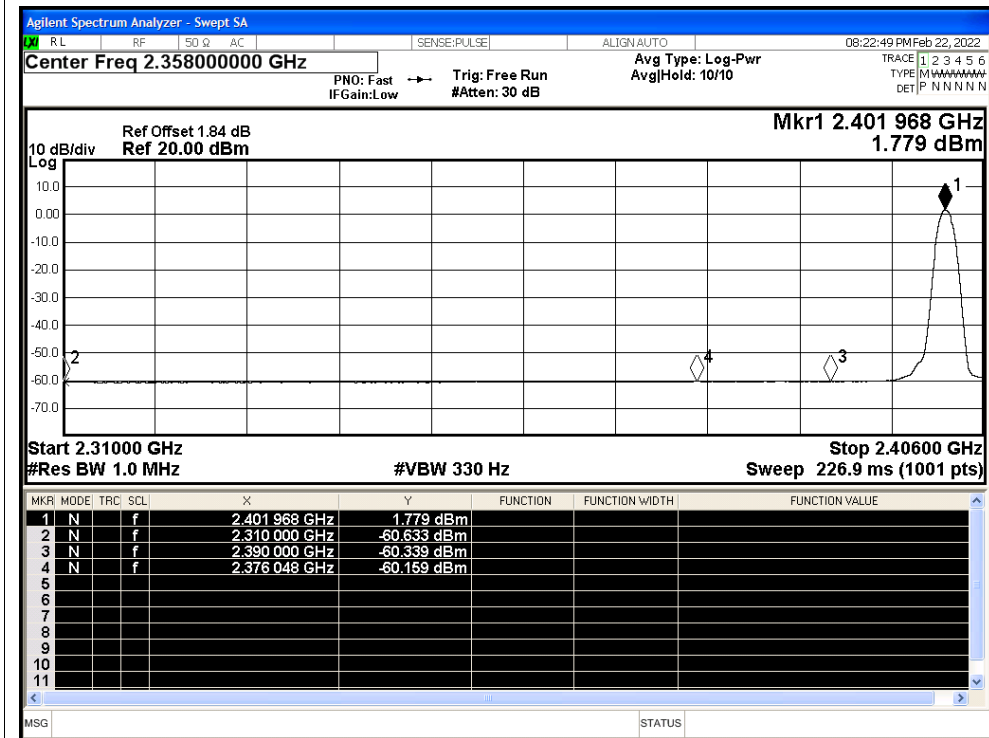


Test Graphs

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

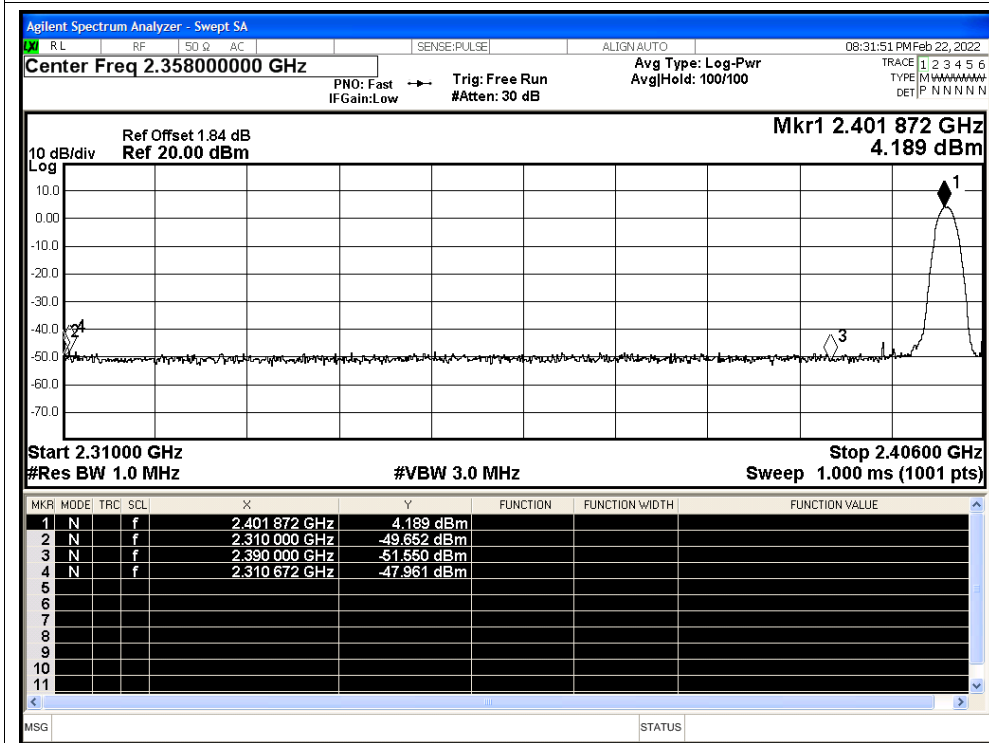


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average





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



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

