



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Smart TV Box

Test Model: Q1

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
	<i>Nick Peng</i>
Supervised by:	Jack Cheng
	<i>Jack cheng</i>





A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant	0.954	N/A	Pass
NVNT	1-DH5	2441	Ant	0.959	N/A	Pass
NVNT	1-DH5	2480	Ant	0.943	N/A	Pass
NVNT	2-DH5	2402	Ant	1.289	N/A	Pass
NVNT	2-DH5	2441	Ant	1.287	N/A	Pass
NVNT	2-DH5	2480	Ant	1.283	N/A	Pass
NVNT	3-DH5	2402	Ant	1.311	N/A	Pass
NVNT	3-DH5	2441	Ant	1.298	N/A	Pass
NVNT	3-DH5	2480	Ant	1.299	N/A	Pass





Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant



-20dB Bandwidth NVNT 1-DH5 2441MHz Ant

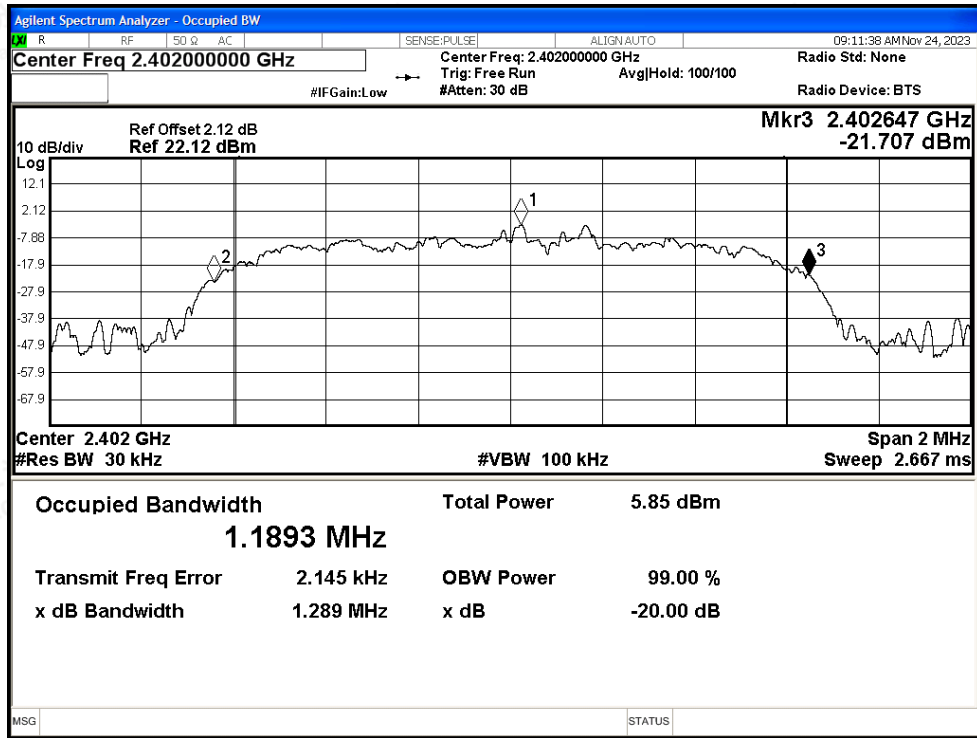




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant

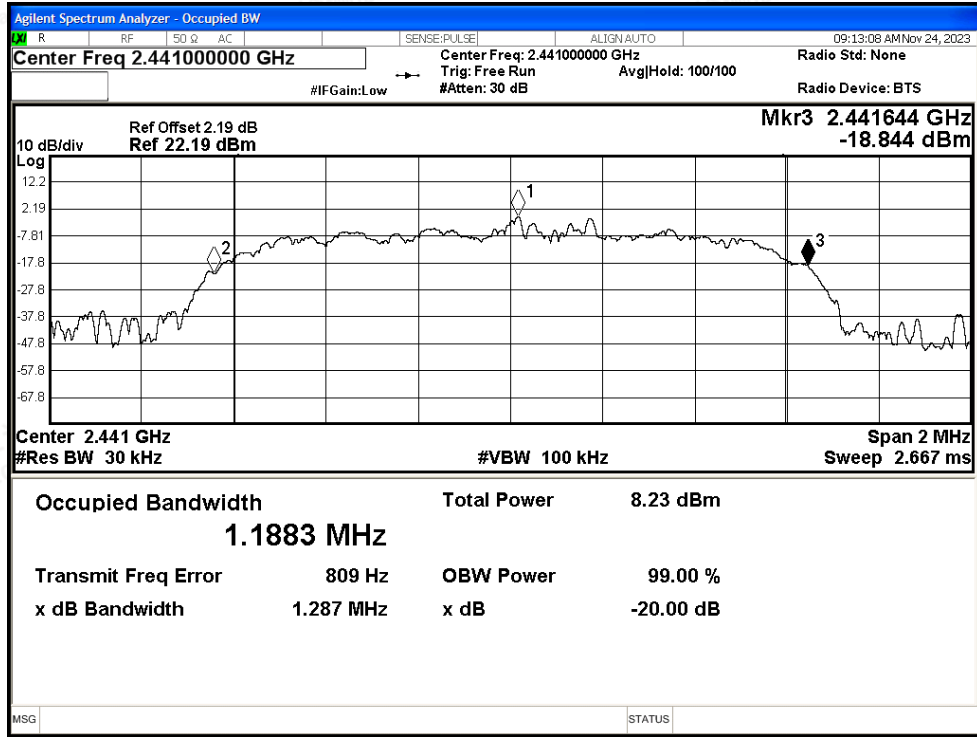


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant





-20dB Bandwidth NVNT 2-DH5 2441MHz Ant

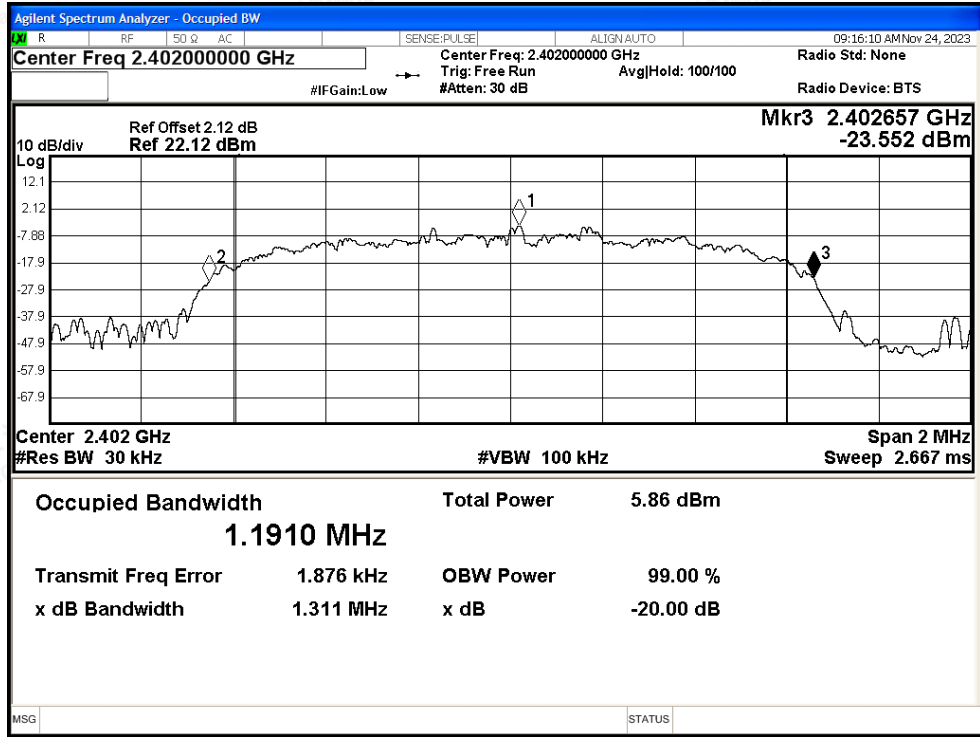


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant

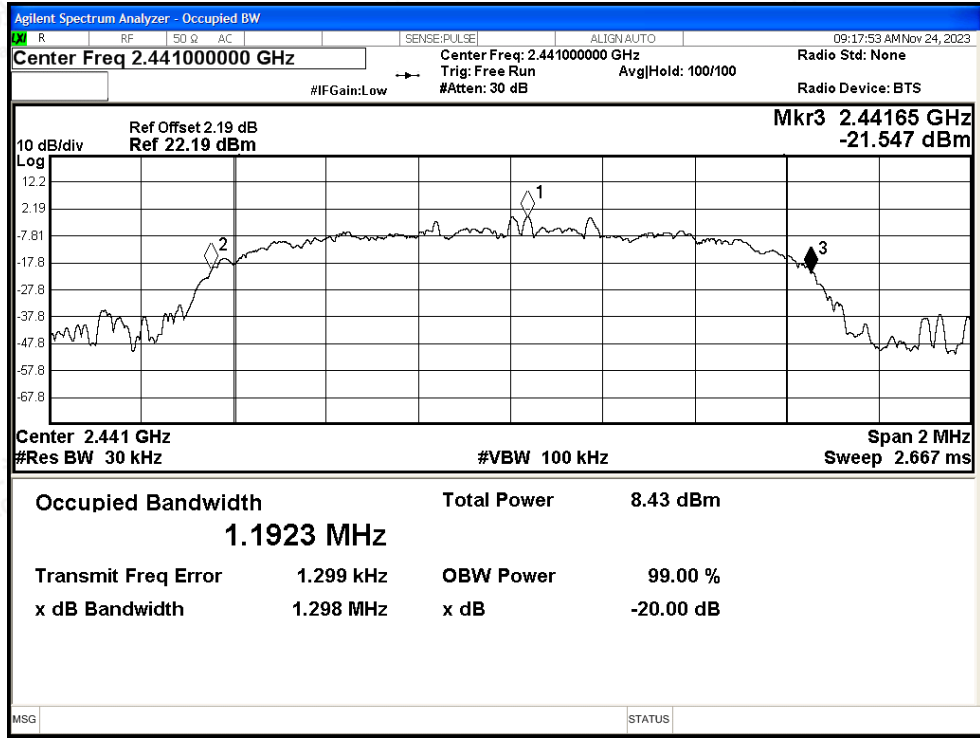


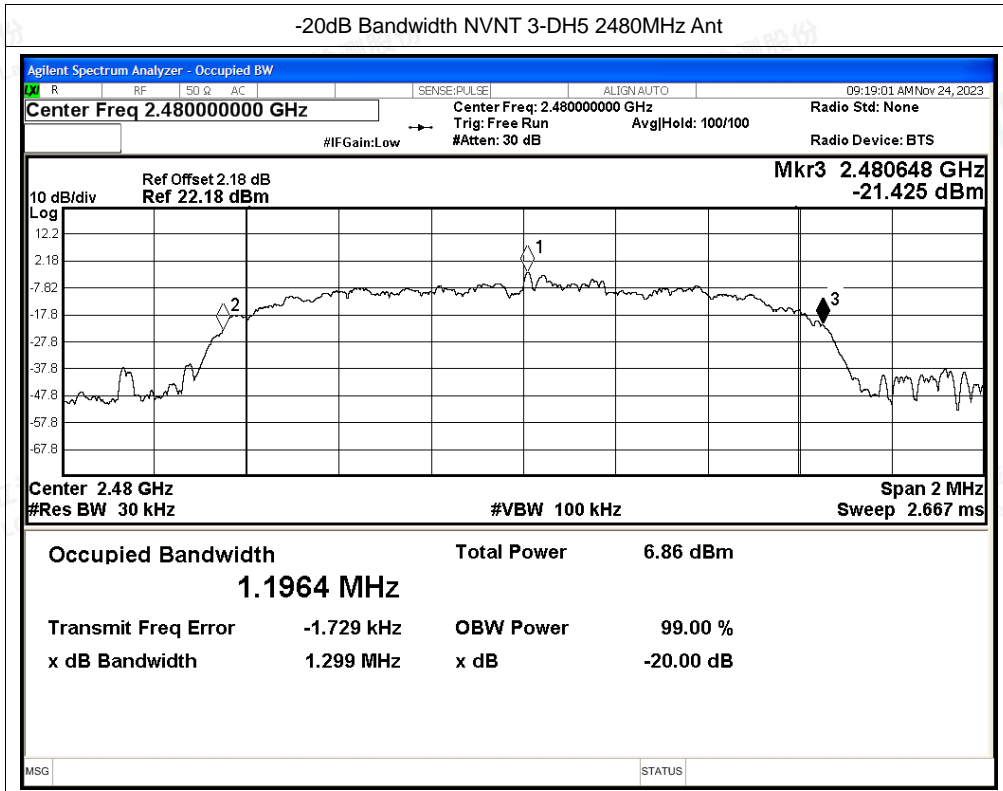


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant







A.2 Maximum Conducted Output Power

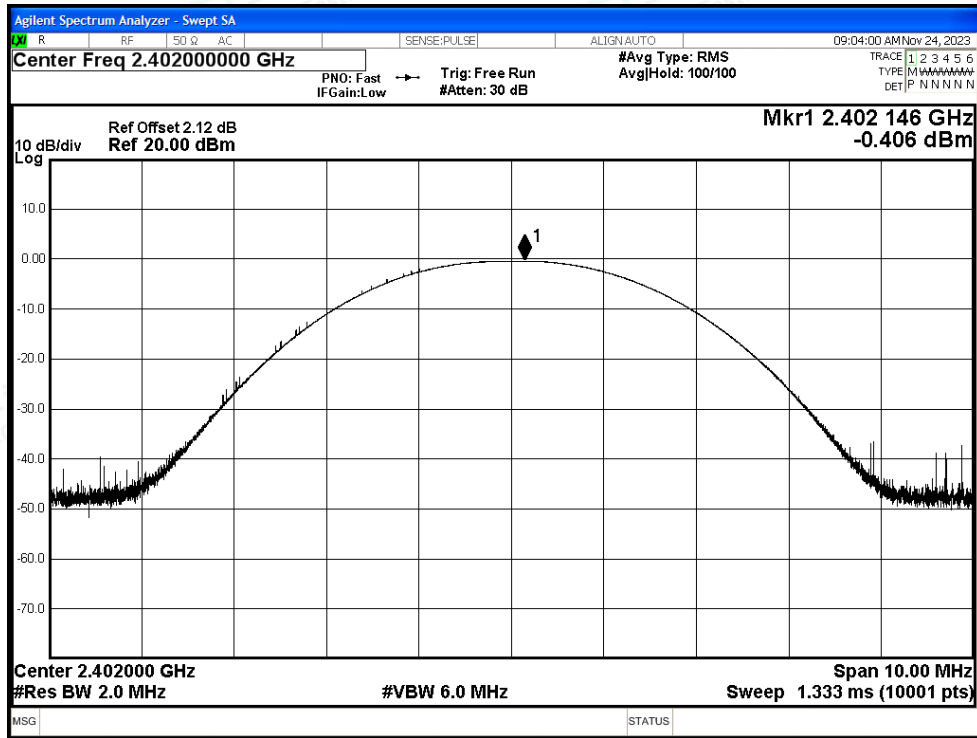
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant	-0.41	21	Pass
NVNT	1-DH5	2441	Ant	2.24	21	Pass
NVNT	1-DH5	2480	Ant	0.66	21	Pass
NVNT	2-DH5	2402	Ant	1.6	21	Pass
NVNT	2-DH5	2441	Ant	3.92	21	Pass
NVNT	2-DH5	2480	Ant	2.39	21	Pass
NVNT	3-DH5	2402	Ant	2.01	21	Pass
NVNT	3-DH5	2441	Ant	4.25	21	Pass
NVNT	3-DH5	2480	Ant	2.68	21	Pass



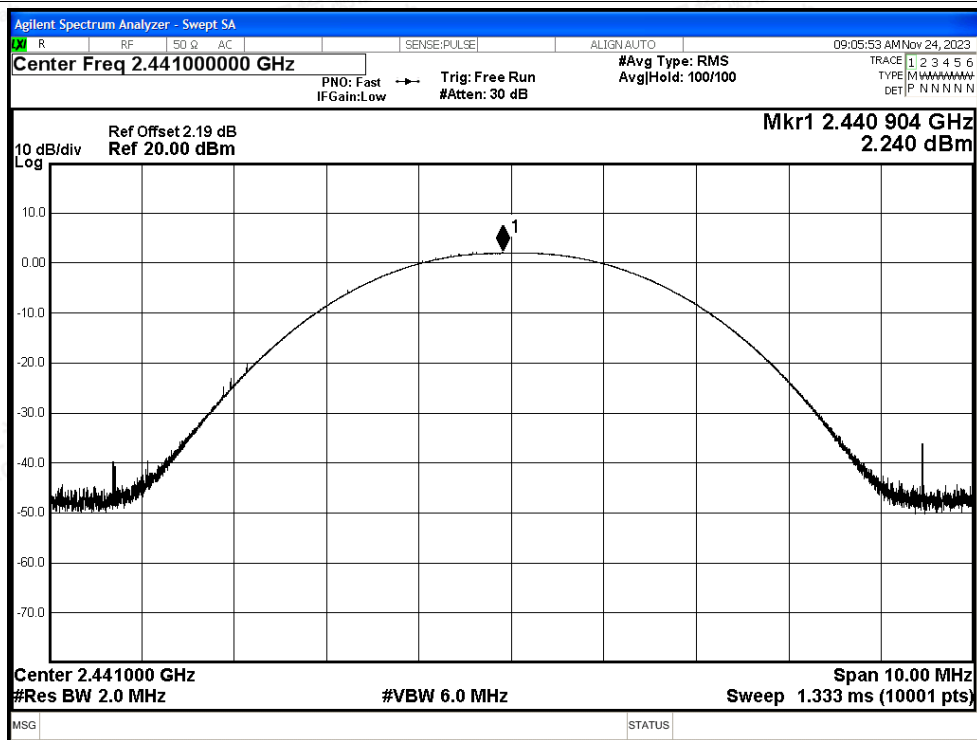


Test Graphs

Power NVNT 1-DH5 2402MHz Ant

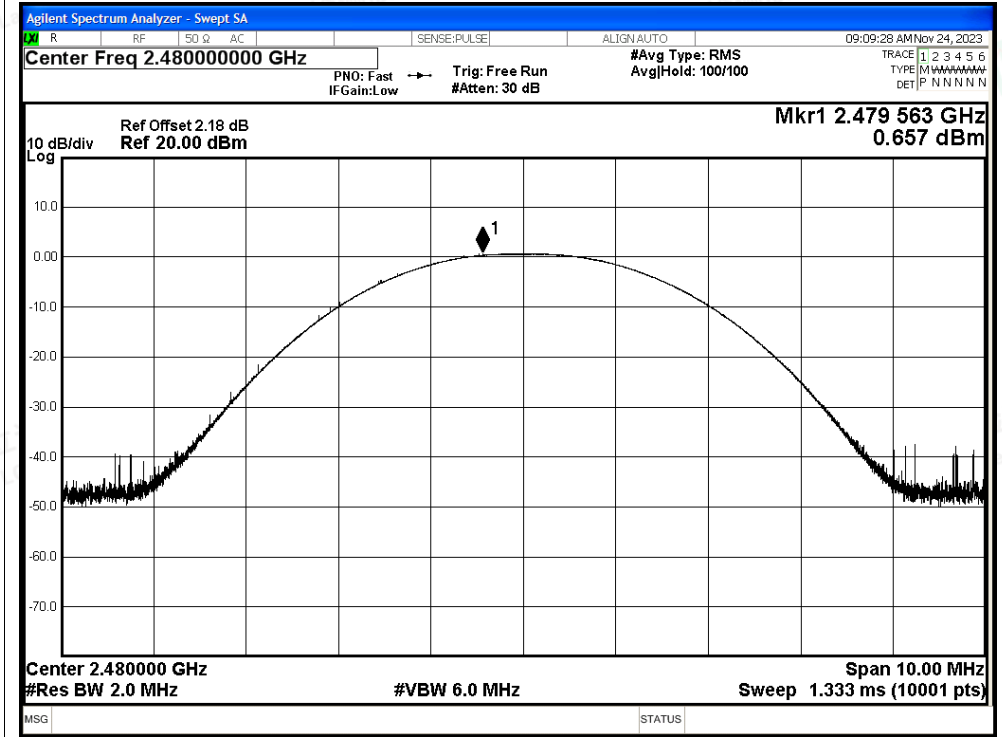


Power NVNT 1-DH5 2441MHz Ant

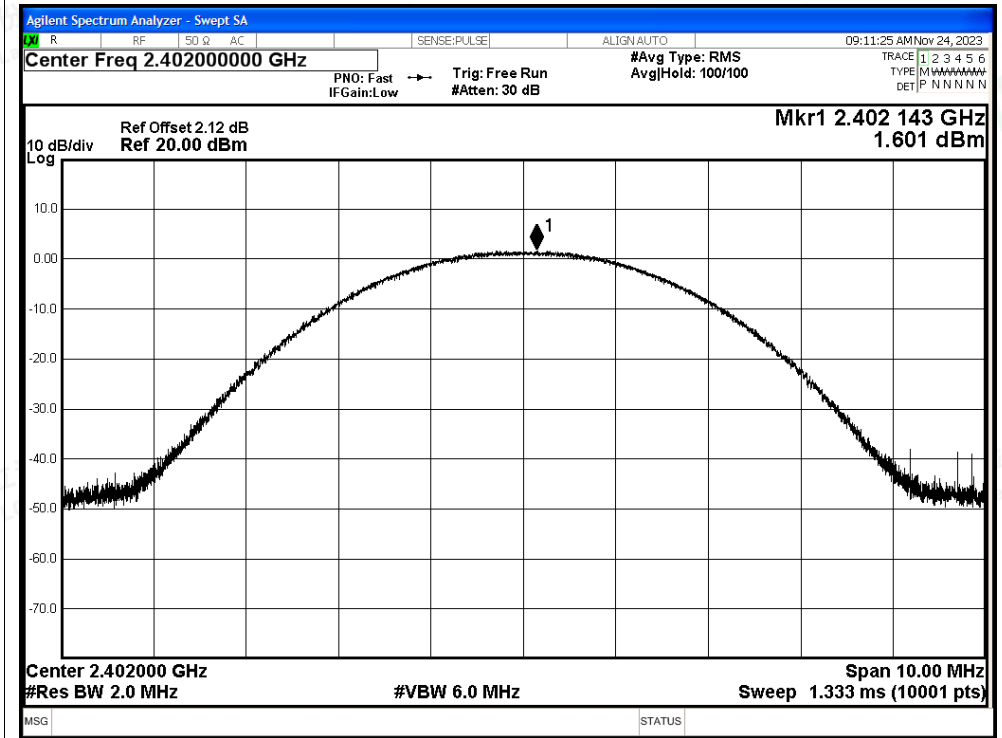




Power NVNT 1-DH5 2480MHz Ant

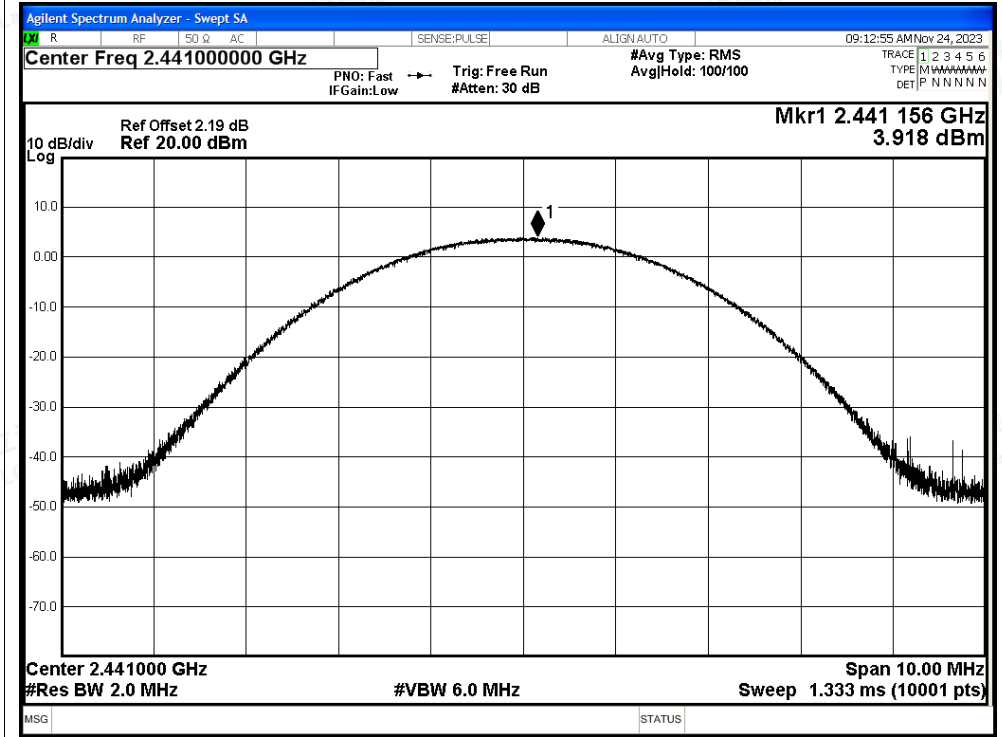


Power NVNT 2-DH5 2402MHz Ant

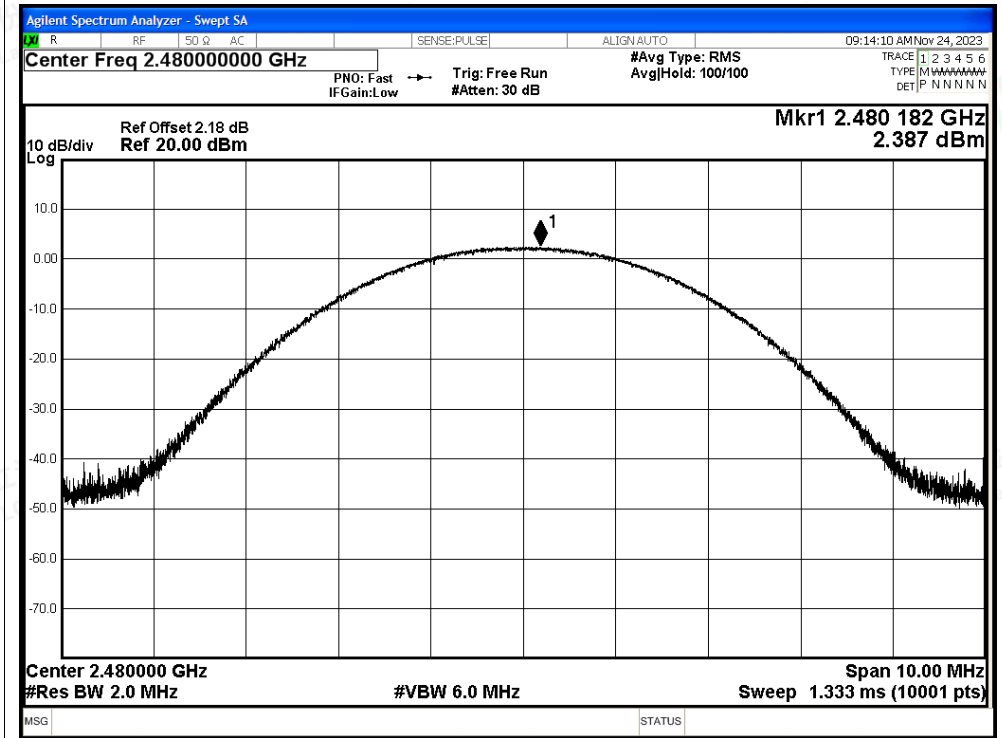




Power NVNT 2-DH5 2441MHz Ant

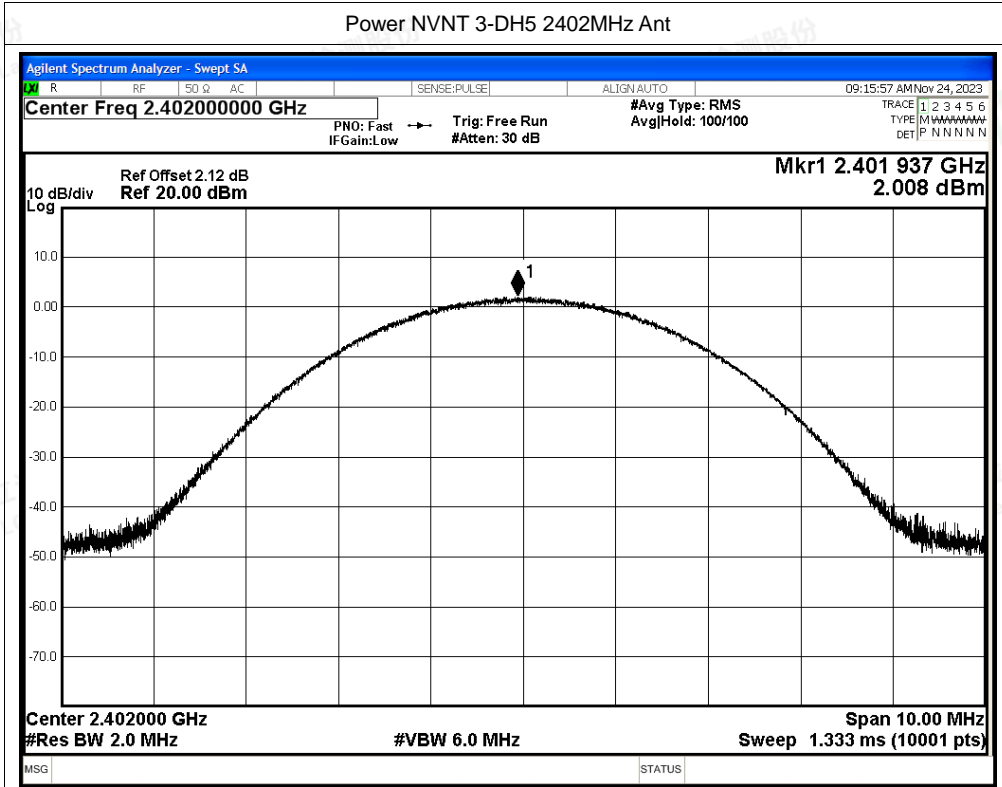


Power NVNT 2-DH5 2480MHz Ant

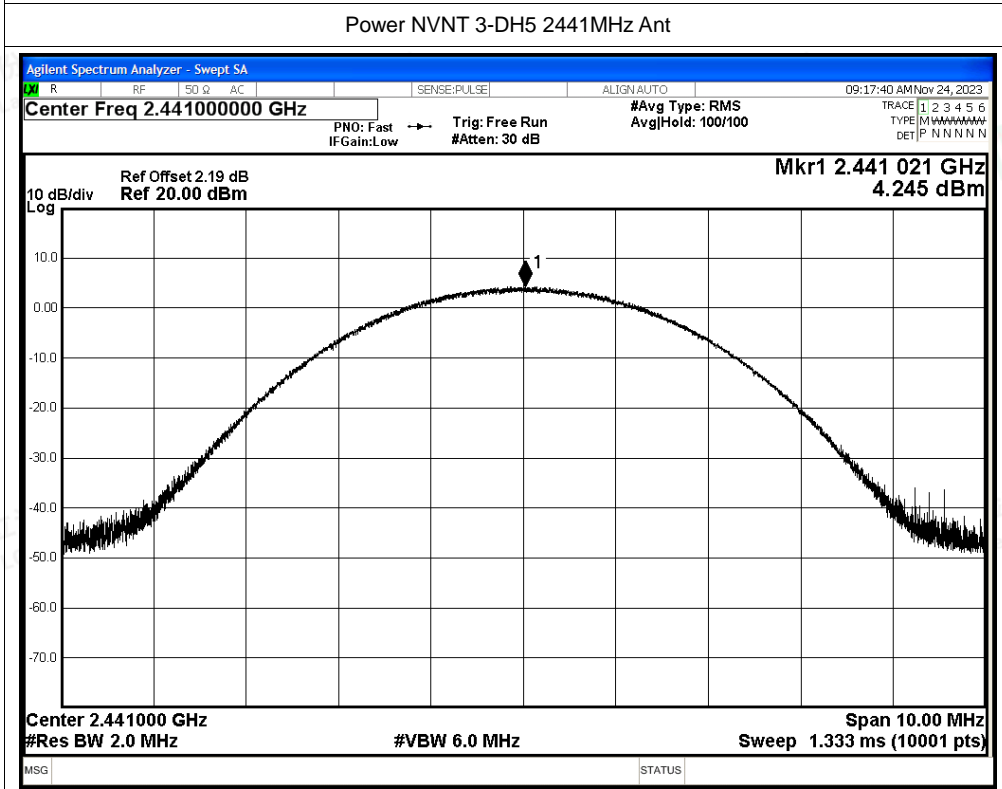


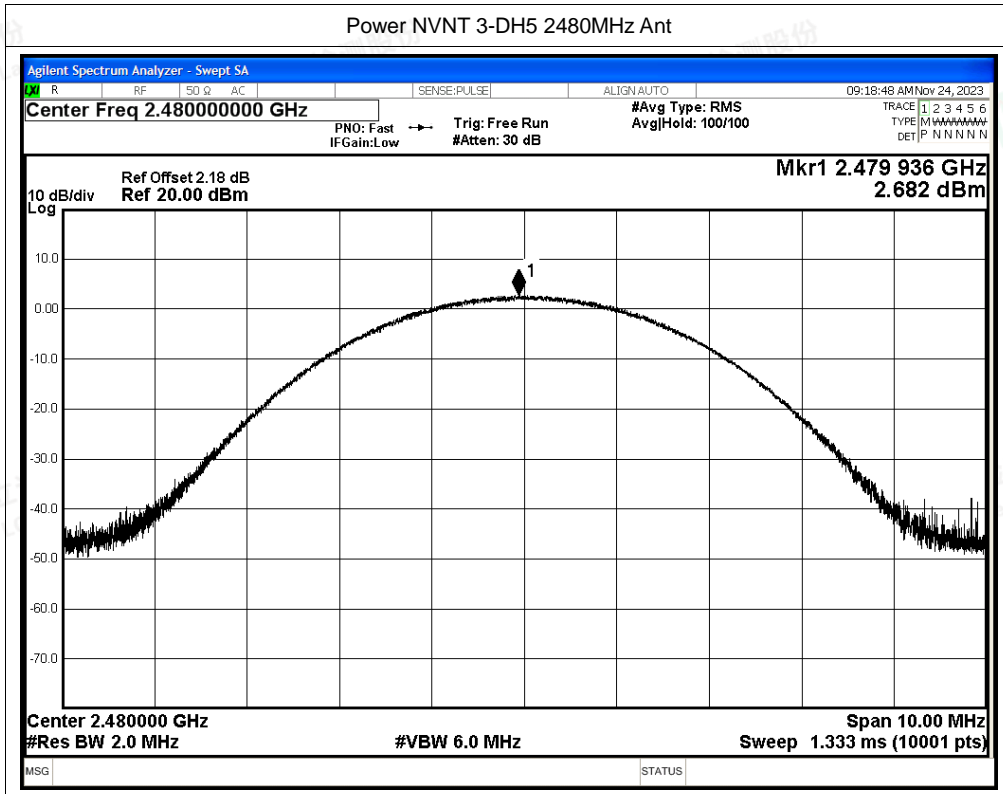


Power NVNT 3-DH5 2402MHz Ant



Power NVNT 3-DH5 2441MHz Ant







A.3 Carrier Frequencies Separation

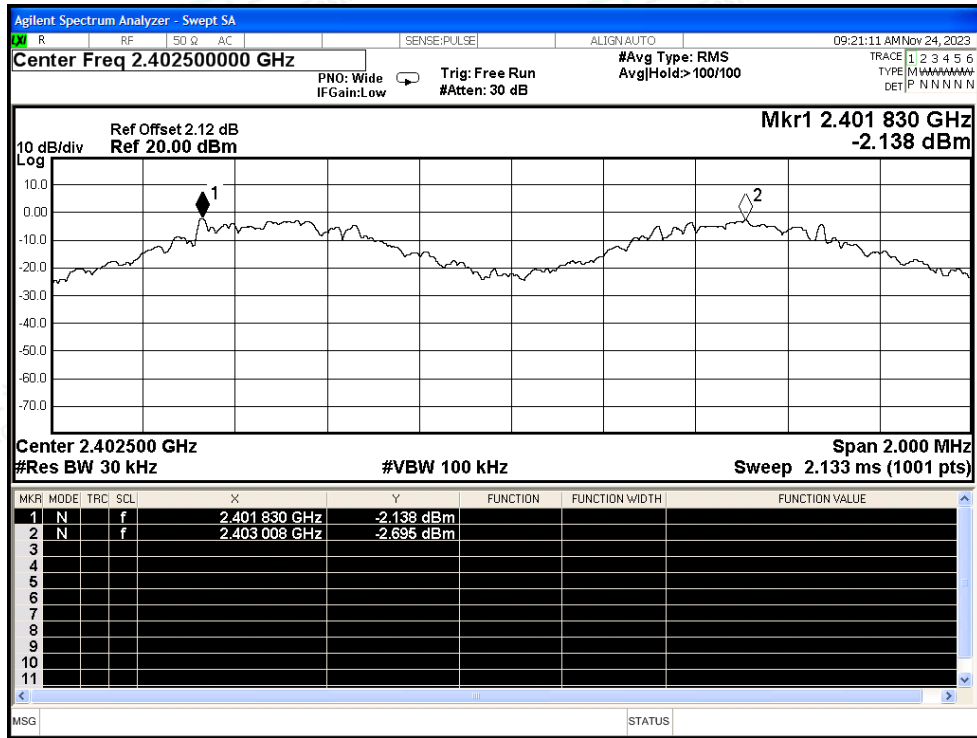
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant	2401.83	2403.008	1.178	0.639	Pass
NVNT	2-DH5	Ant	2402.028	2403.018	0.99	0.859	Pass
NVNT	3-DH5	Ant	2402.026	2403.166	1.14	0.874	Pass



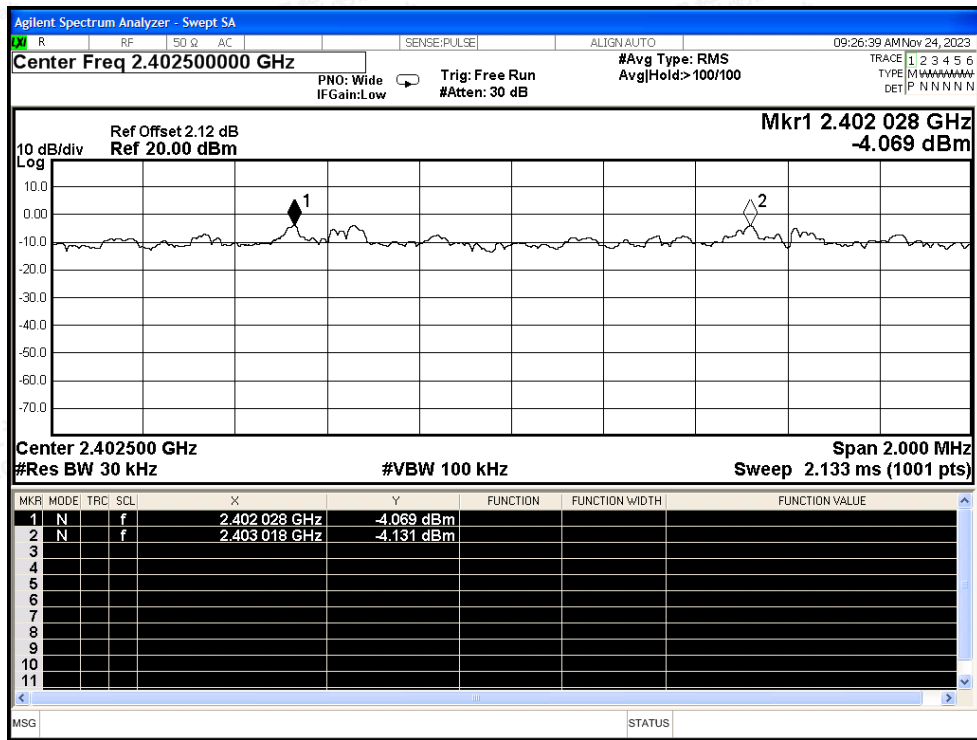


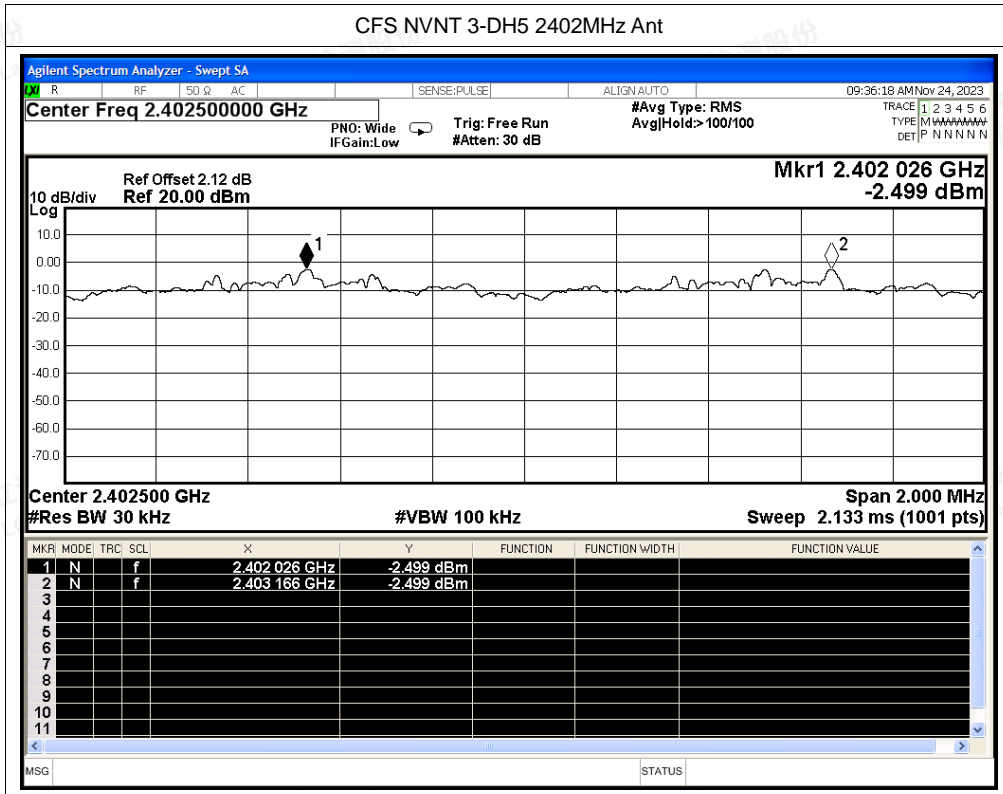
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant



CFS NVNT 2-DH5 2402MHz Ant







A.4 Dwell Time

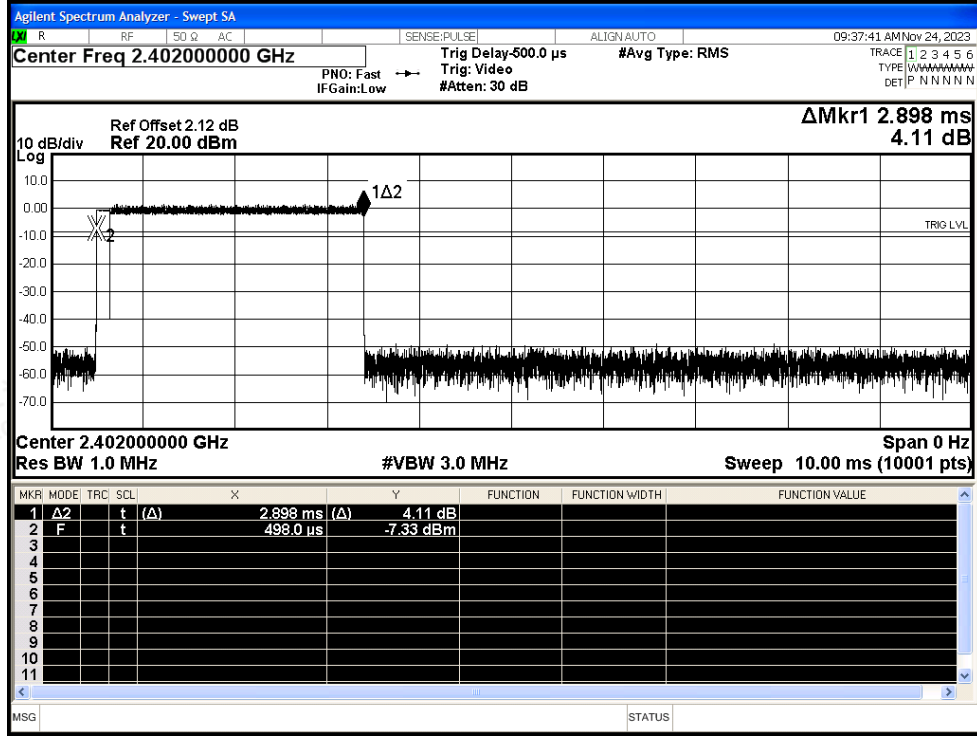
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant	2.898	321.68	111	31600	400	Pass
NVNT	2-DH5	2402	Ant	2.898	333.27	115	31600	400	Pass
NVNT	3-DH5	2402	Ant	2.898	327.474	113	31600	400	Pass



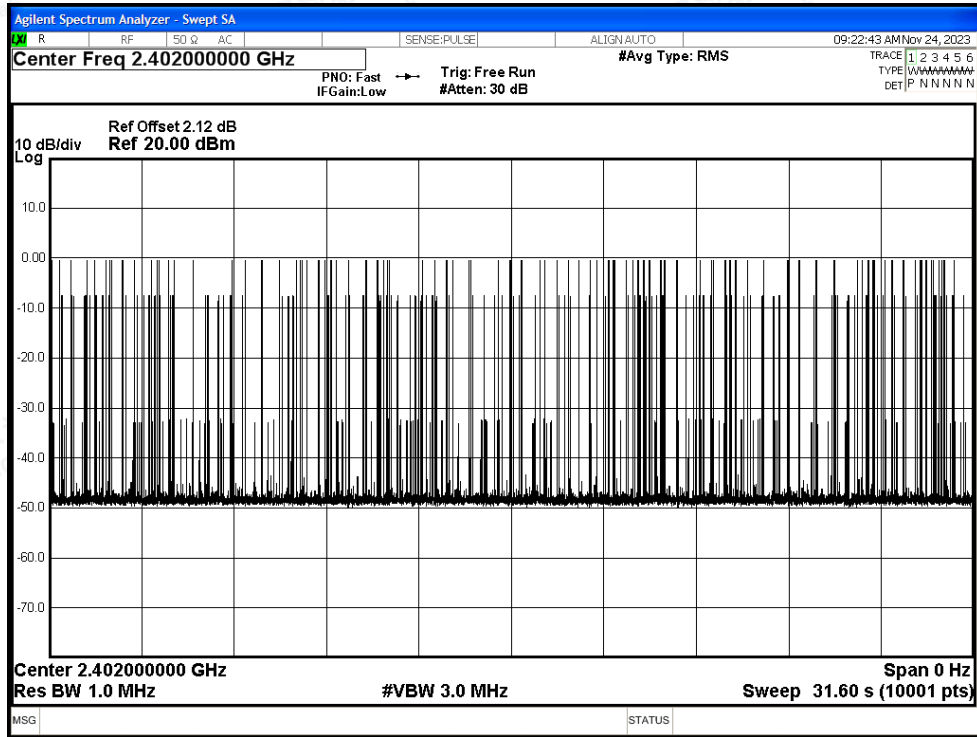


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant One Burst

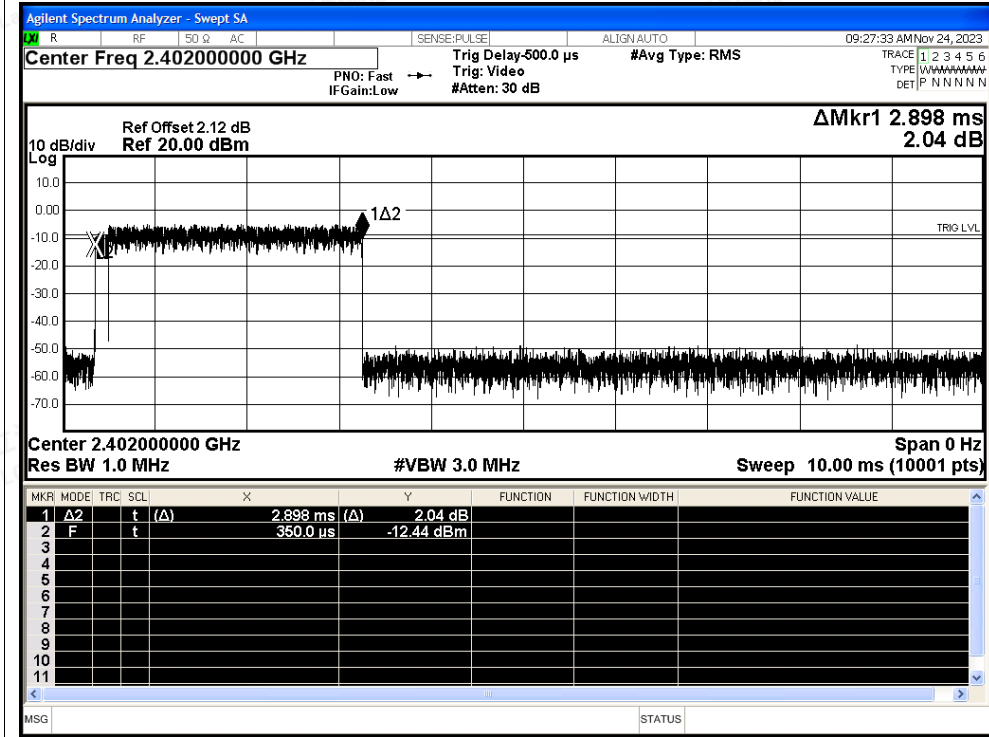


Dwell NVNT 1-DH5 2402MHz Ant Accumulated

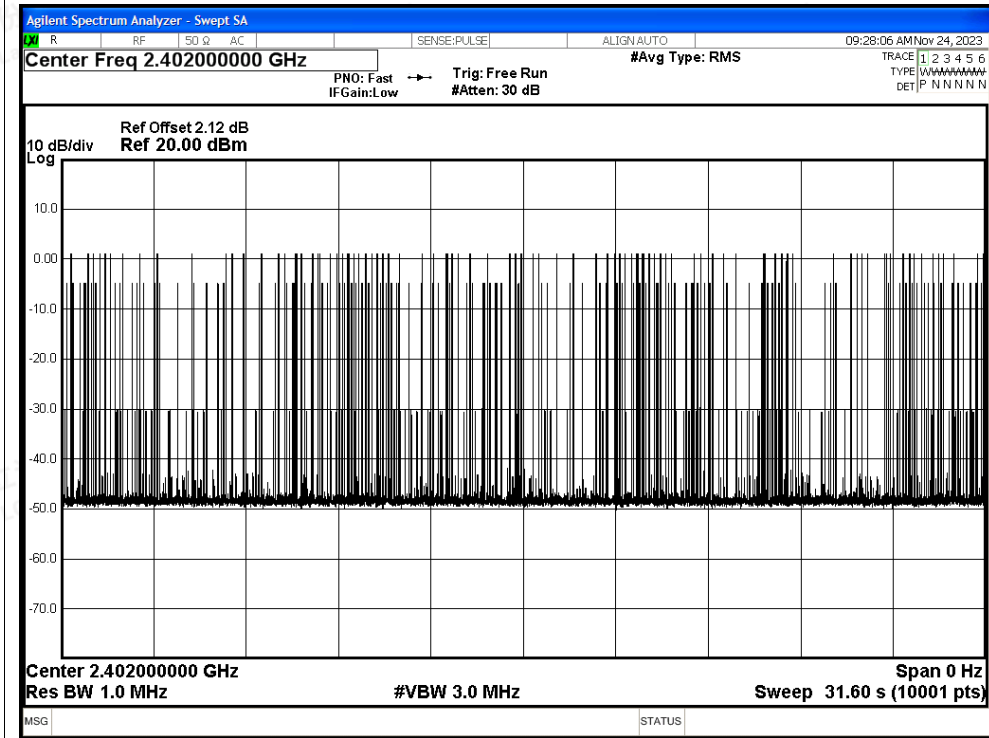




Dwell NVNT 2-DH5 2402MHz Ant One Burst

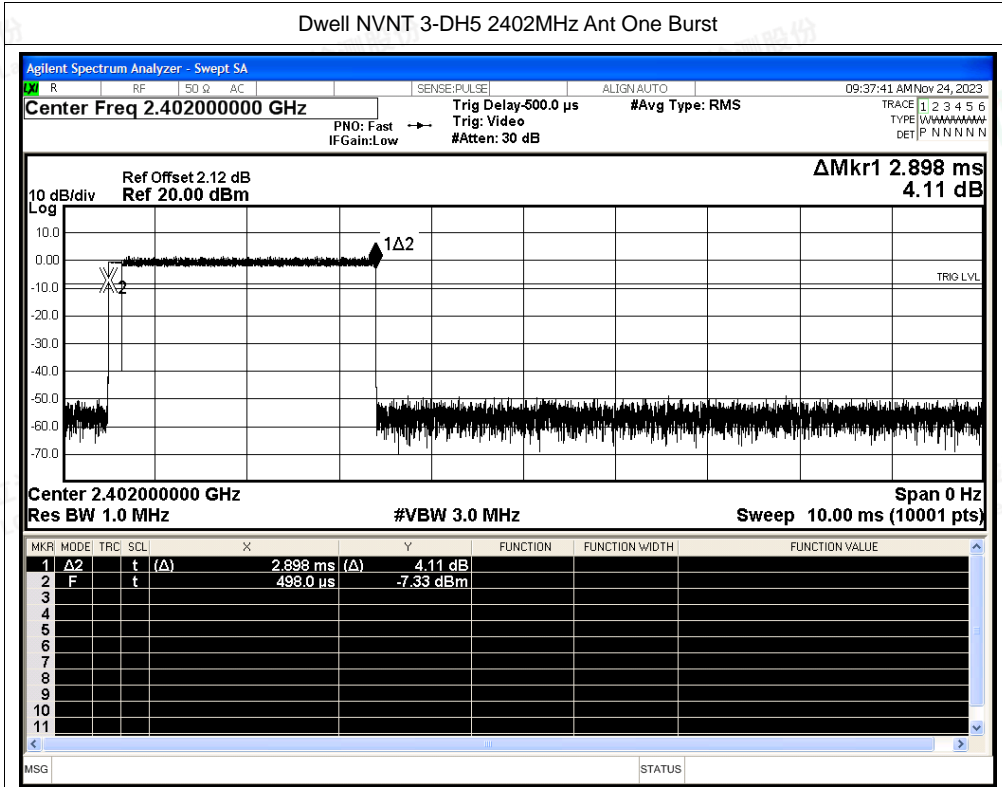


Dwell NVNT 2-DH5 2402MHz Ant Accumulated

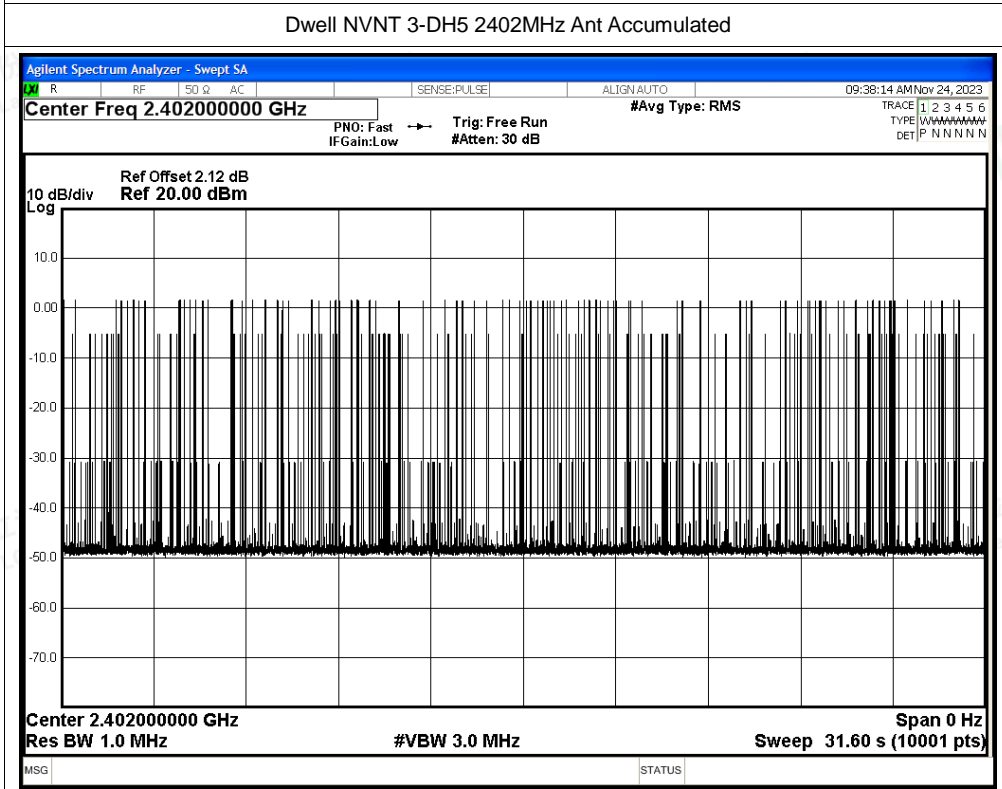




Dwell NVNT 3-DH5 2402MHz Ant One Burst



Dwell NVNT 3-DH5 2402MHz Ant Accumulated





A.5 Number of Hopping Channel

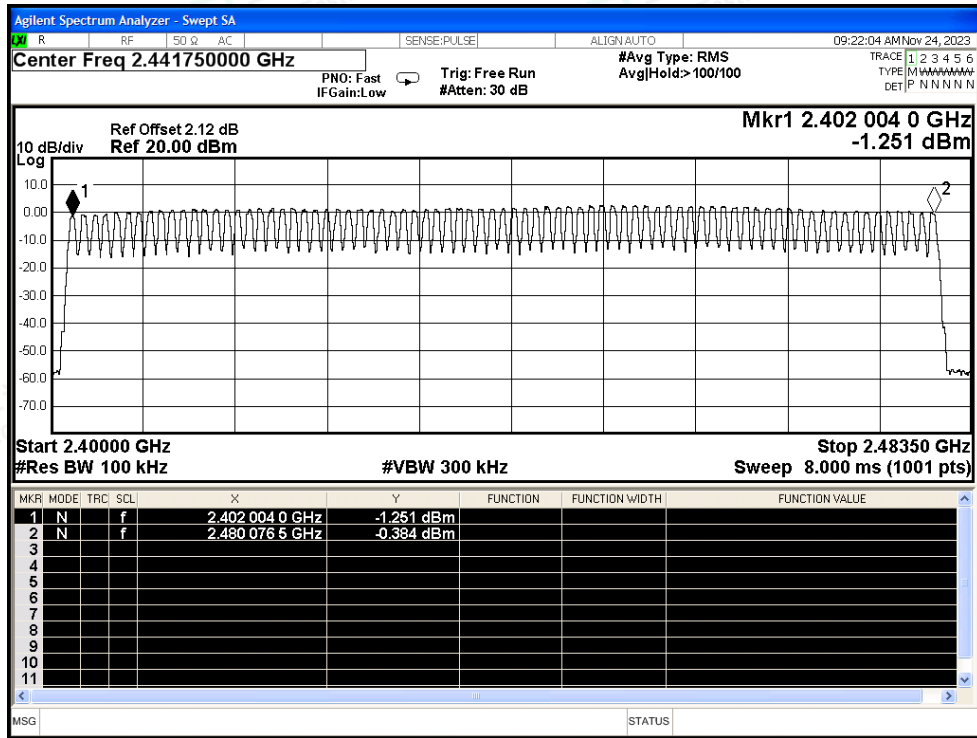
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant	79	15	Pass
NVNT	2-DH5	Ant	79	15	Pass
NVNT	3-DH5	Ant	79	15	Pass



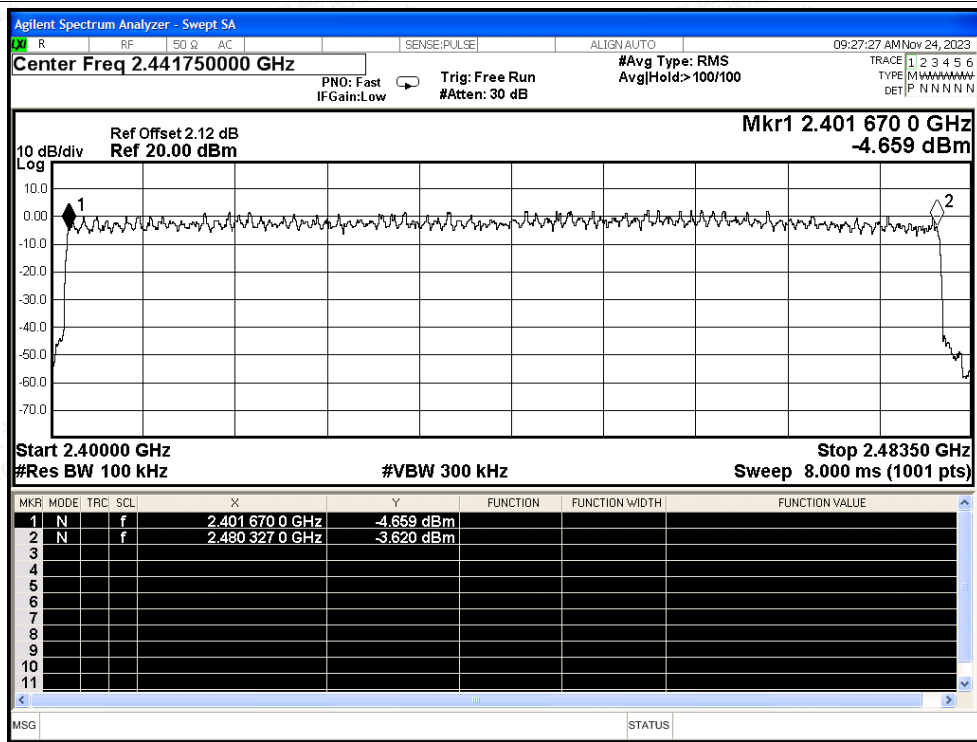


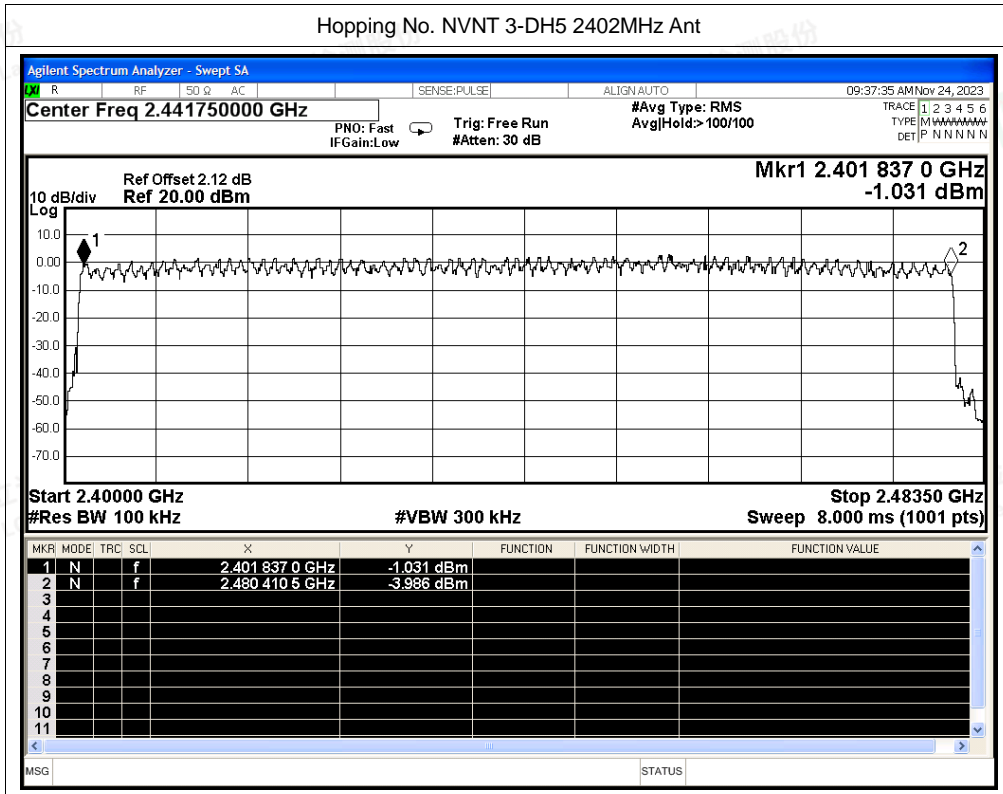
Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant



Hopping No. NVNT 2-DH5 2402MHz Ant







A.6 Band Edge

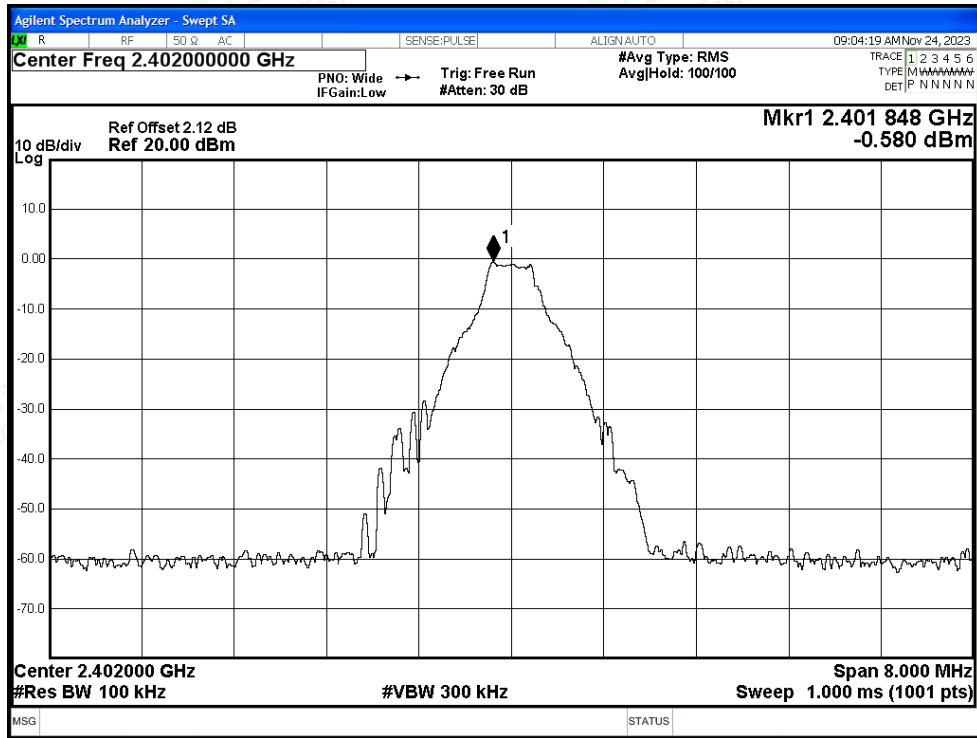
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	No-Hopping	-56.15	-20	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	-57.07	-20	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	-51.44	-20	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	-54.23	-20	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	-51.79	-20	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	-56.55	-20	Pass



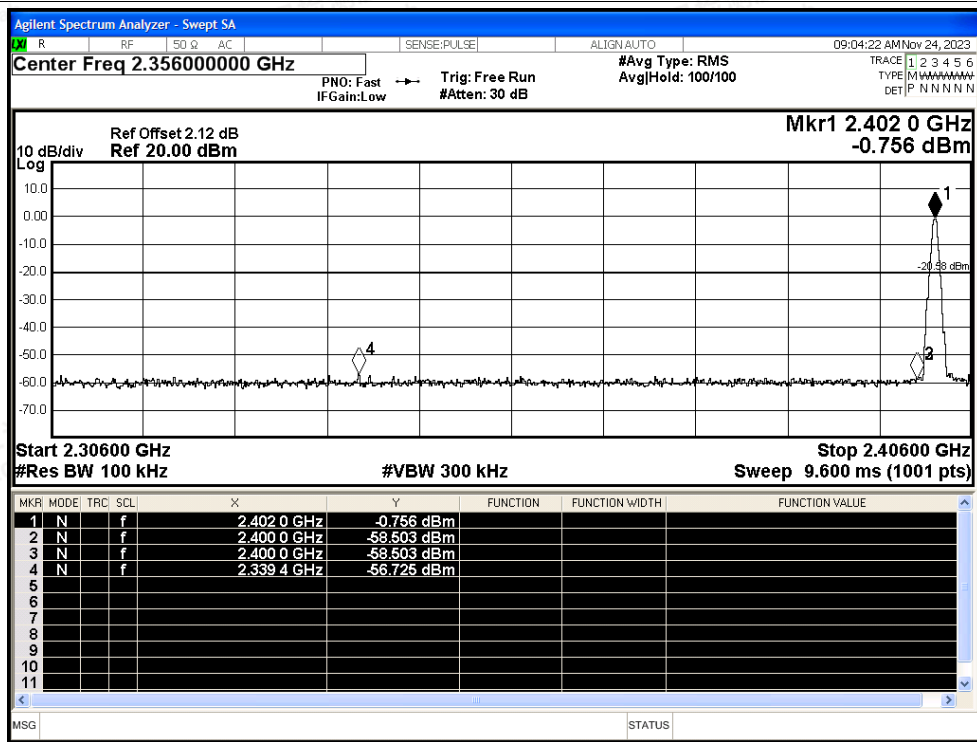


Test Graphs

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

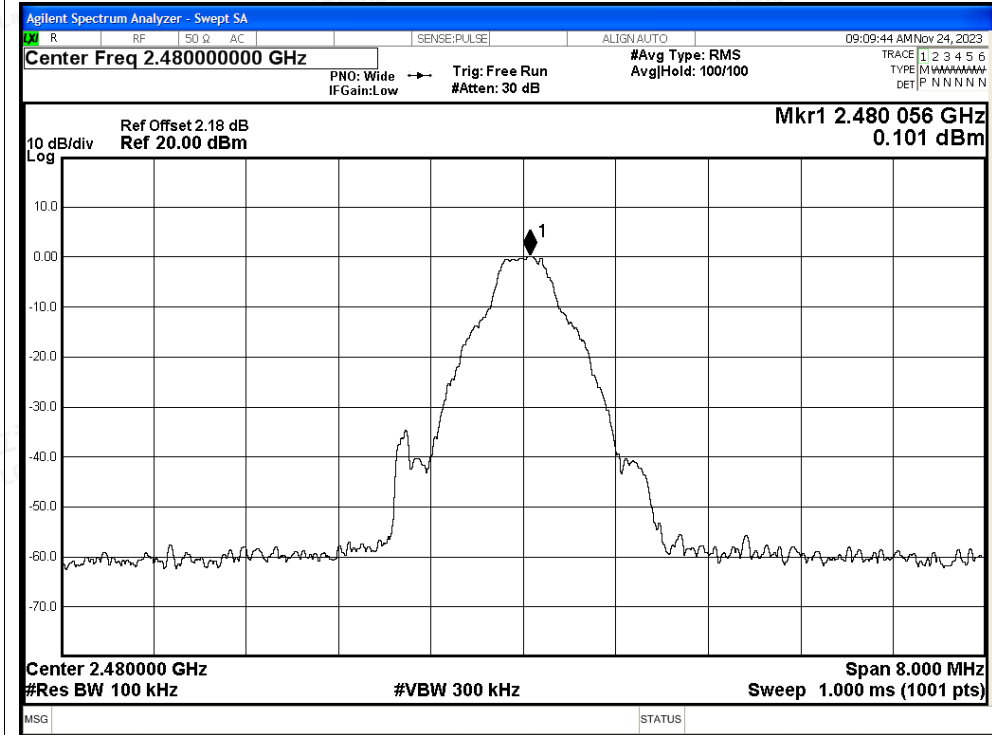


Band Edge NVNT 1-DH5 2402MHz Ant No-Hopping Emission

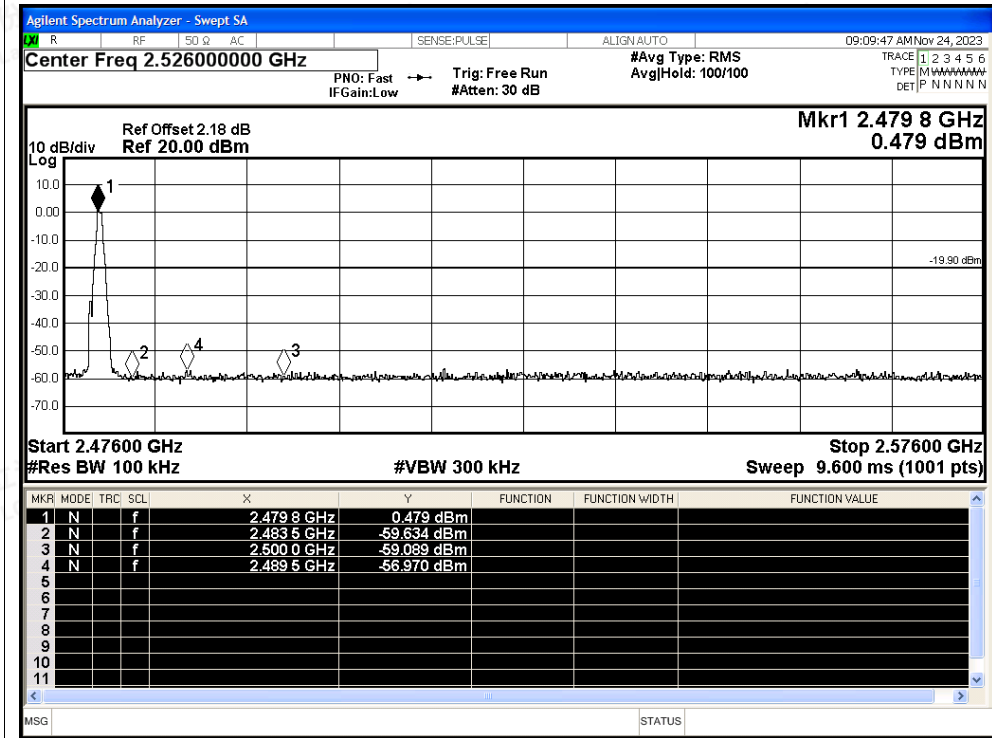




Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Ref

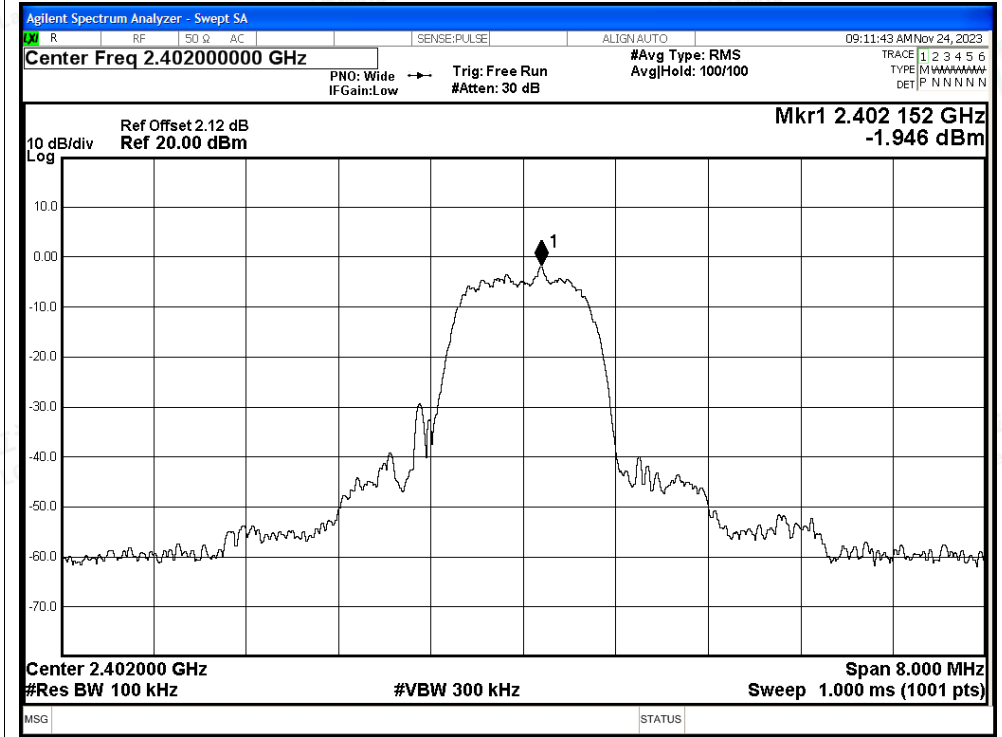


Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Emission

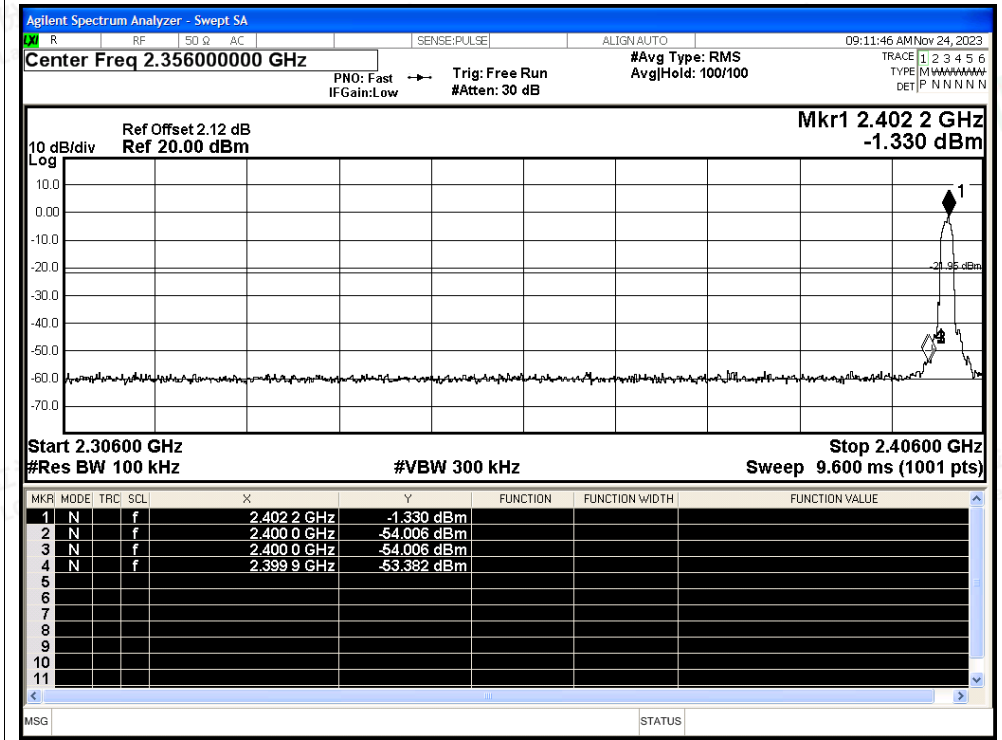




Band Edge NVNT 2-DH5 2402MHz Ant No-Hopping Ref

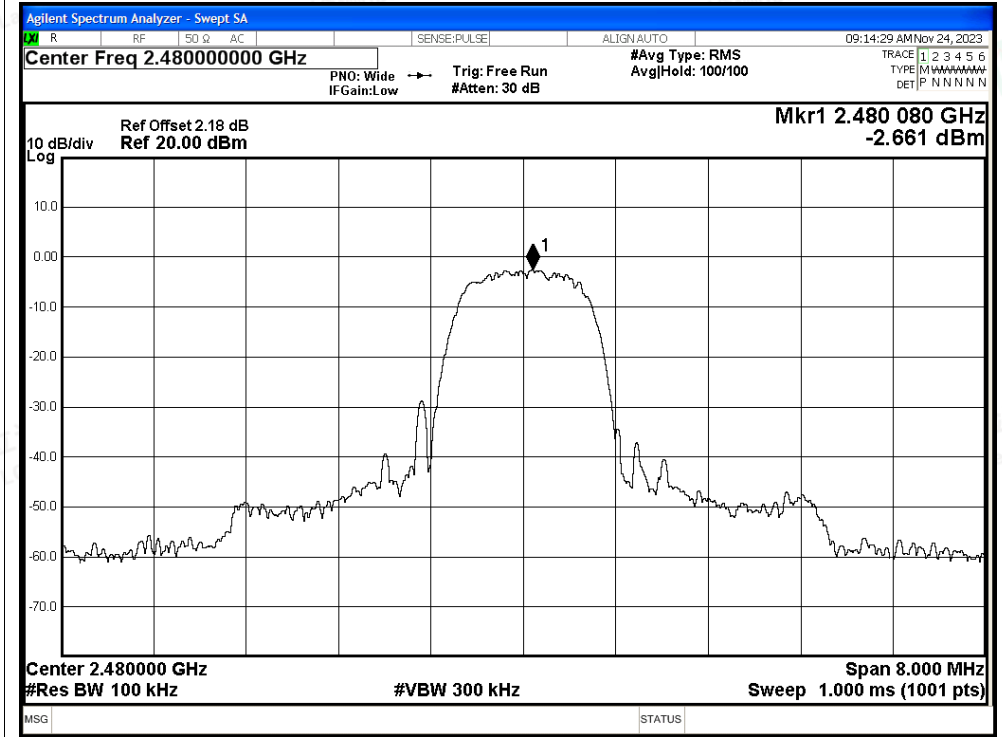


Band Edge NVNT 2-DH5 2402MHz Ant No-Hopping Emission

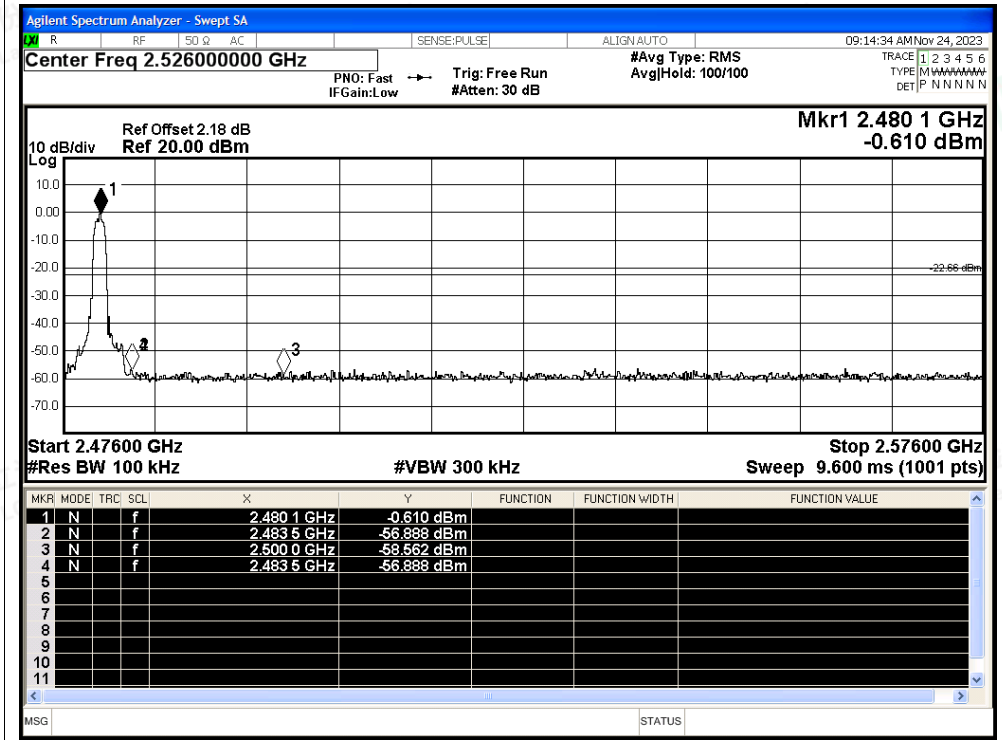




Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Ref

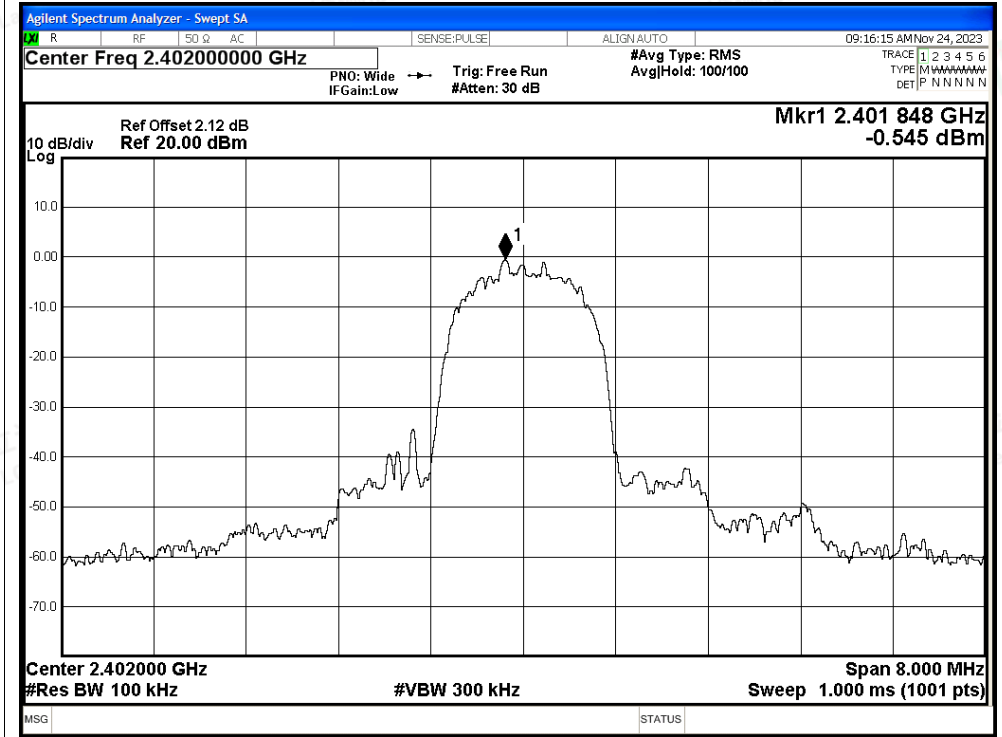


Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Emission

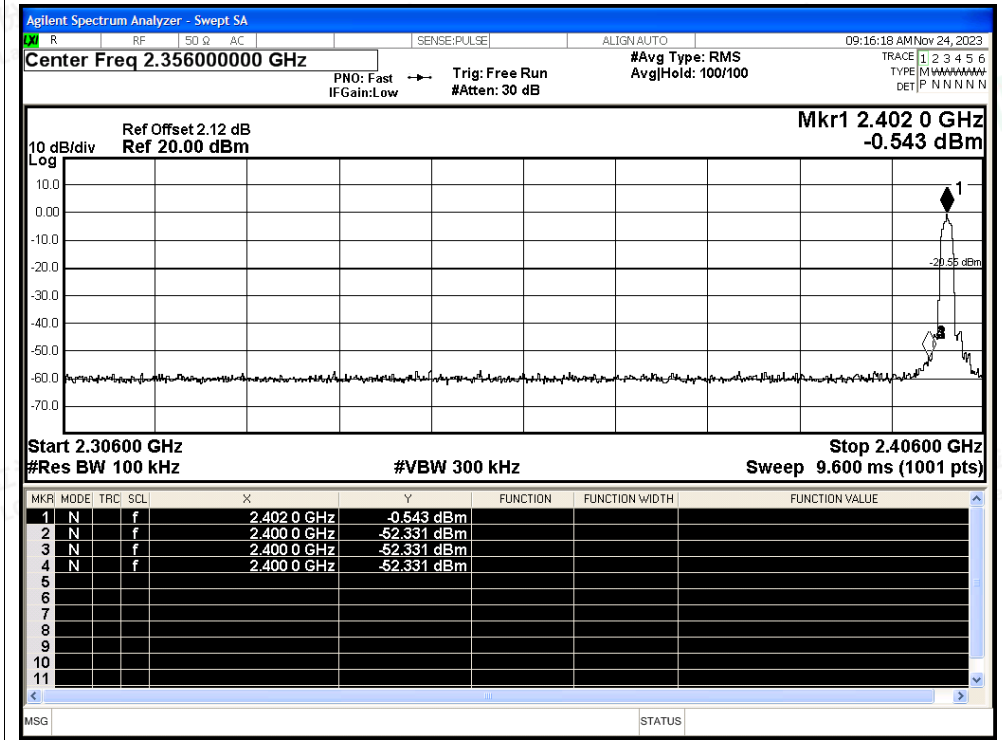




Band Edge NVNT 3-DH5 2402MHz Ant No-Hopping Ref

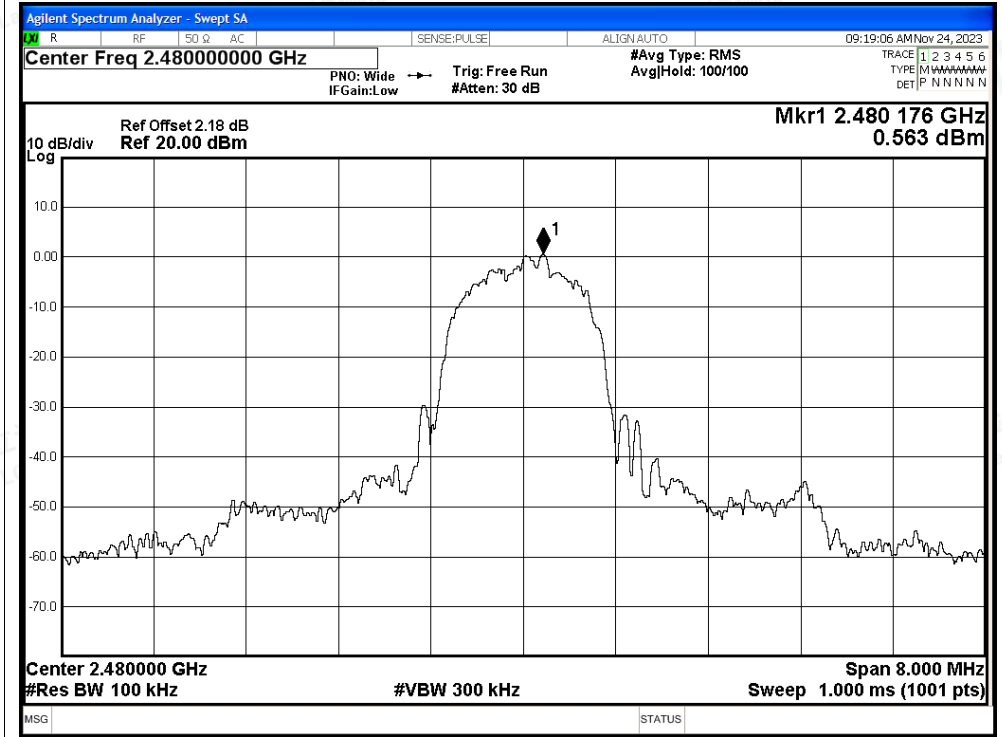


Band Edge NVNT 3-DH5 2402MHz Ant No-Hopping Emission

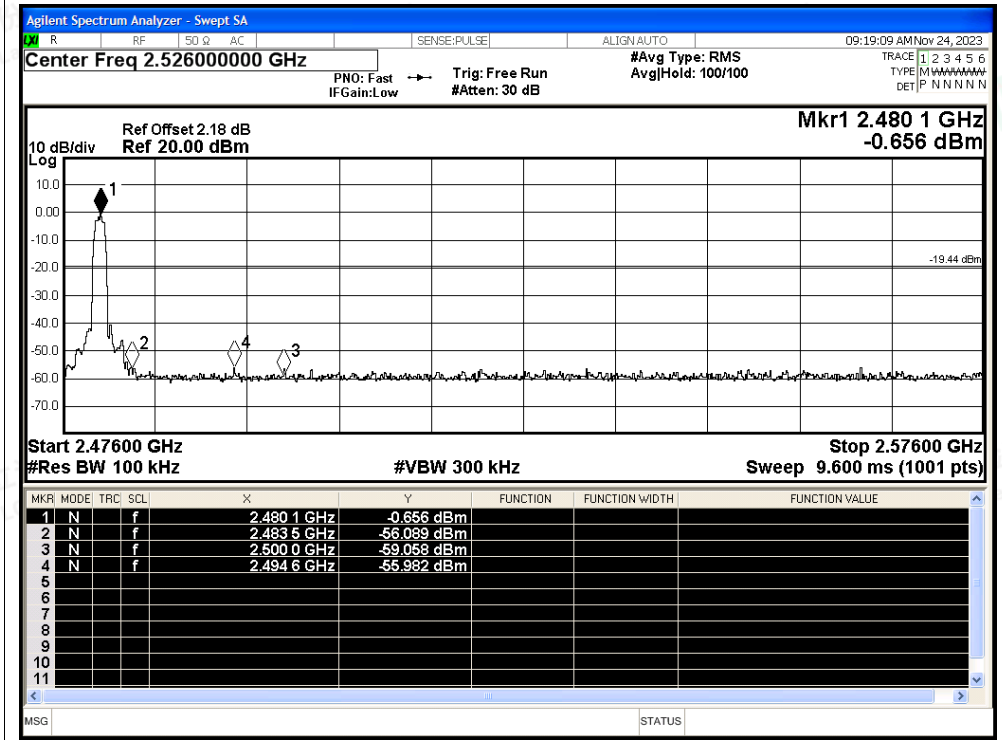




Band Edge NVNT 3-DH5 2480MHz Ant No-Hopping Ref



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





(Hopping)

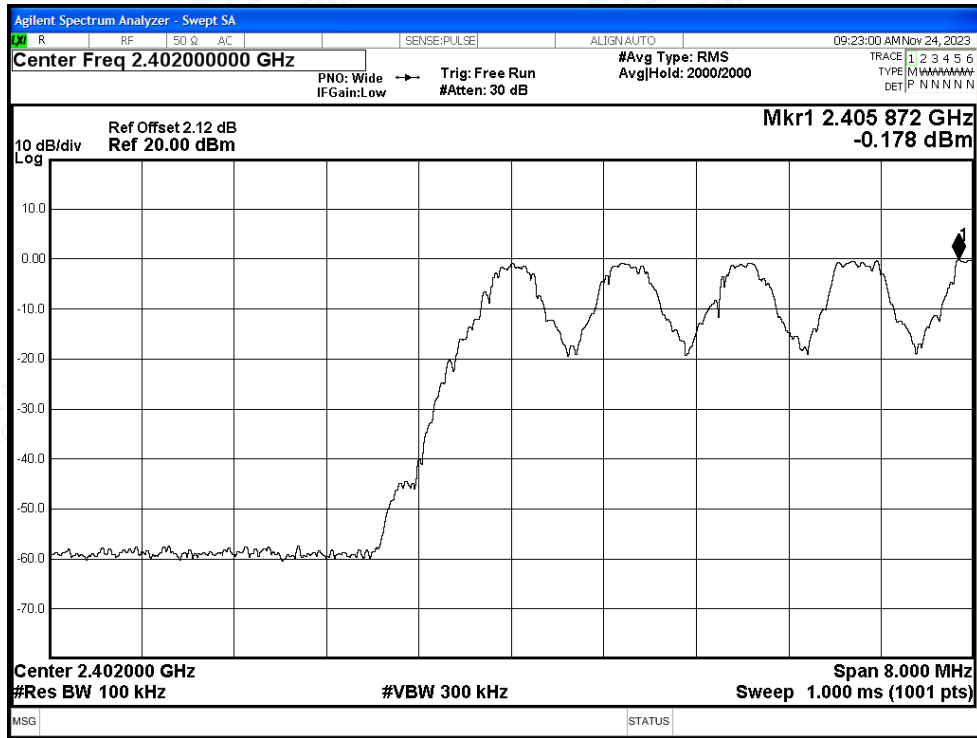
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	Hopping	-56.43	-20	Pass
NVNT	1-DH5	2480	Ant	Hopping	-57.07	-20	Pass
NVNT	2-DH5	2402	Ant	Hopping	-54.95	-20	Pass
NVNT	2-DH5	2480	Ant	Hopping	-55.9	-20	Pass
NVNT	3-DH5	2402	Ant	Hopping	-55.43	-20	Pass
NVNT	3-DH5	2480	Ant	Hopping	-55.92	-20	Pass



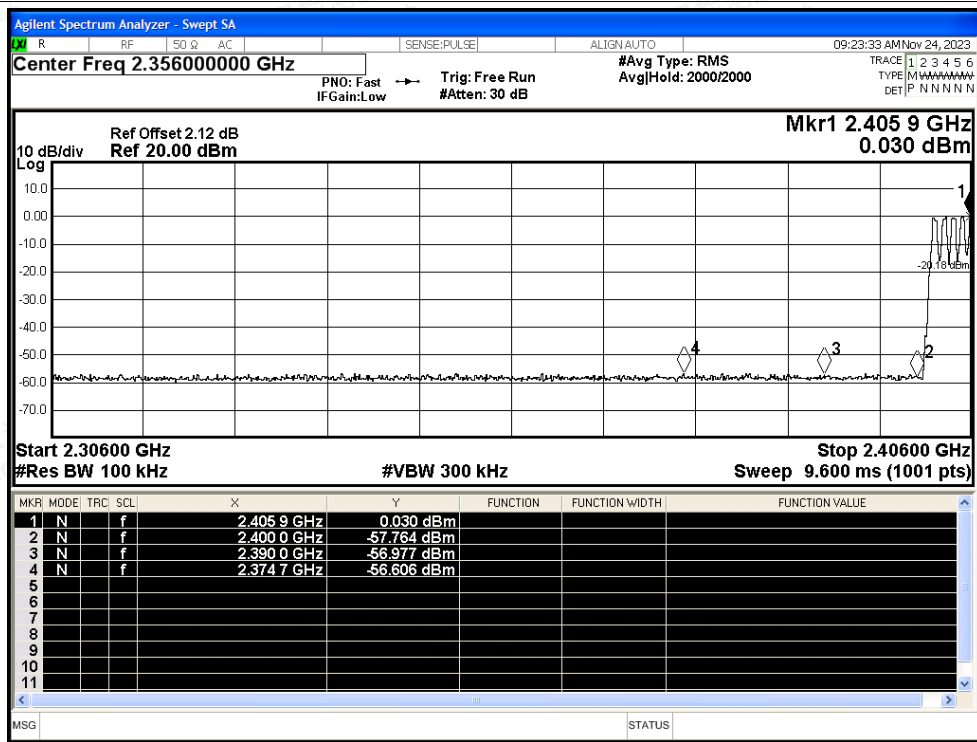


Test Graphs

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

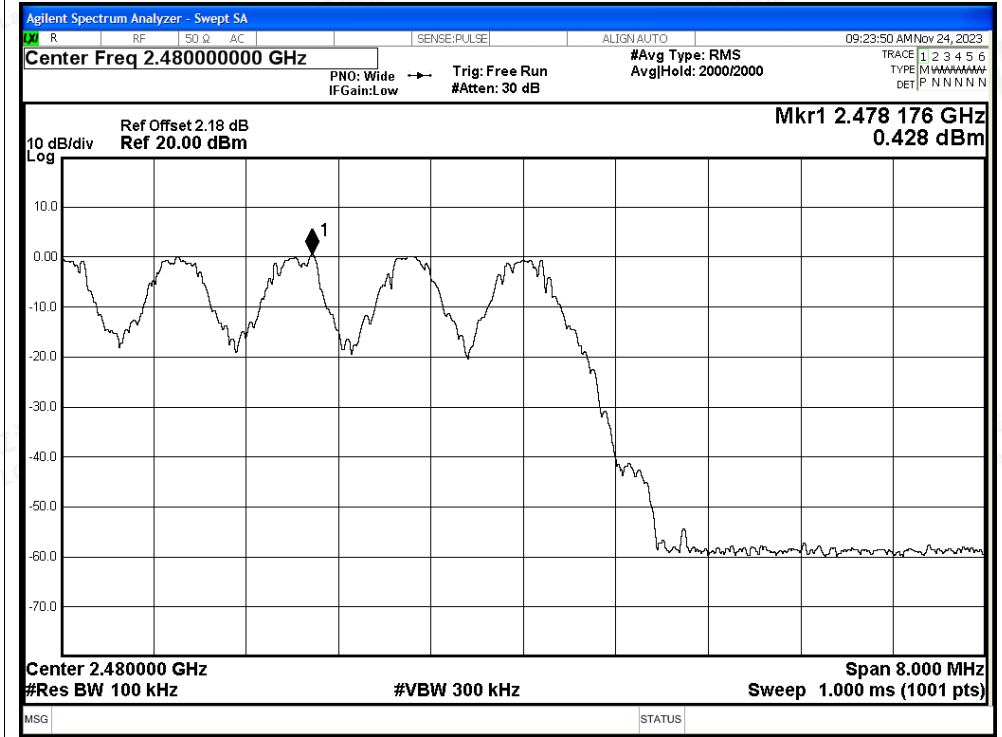


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant Hopping Emission

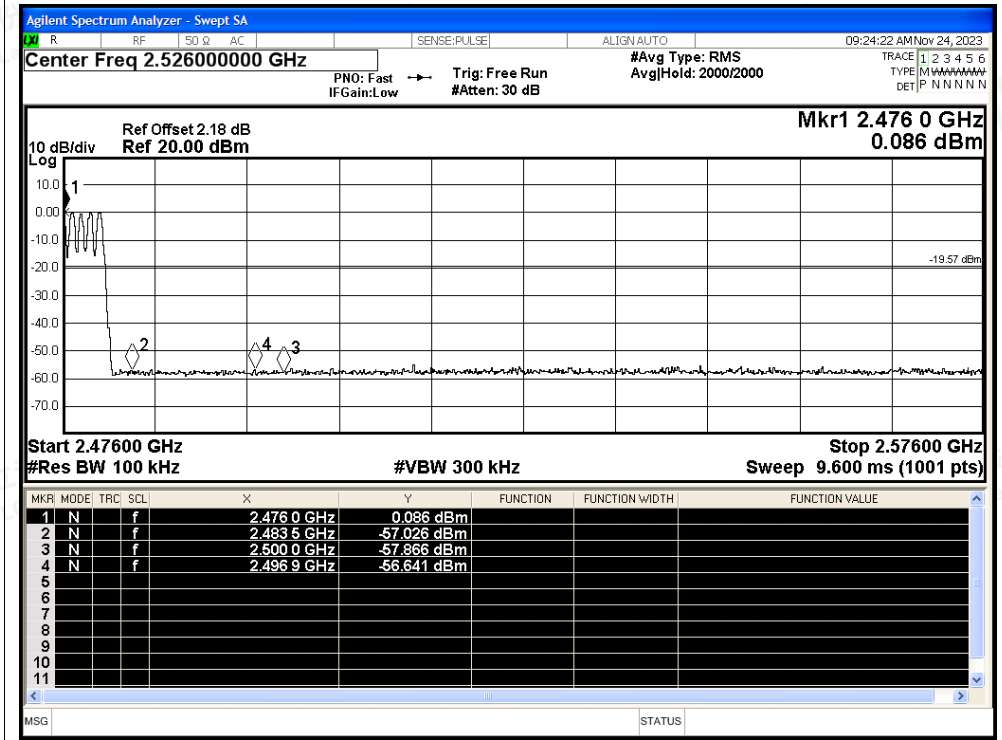




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant Hopping Ref

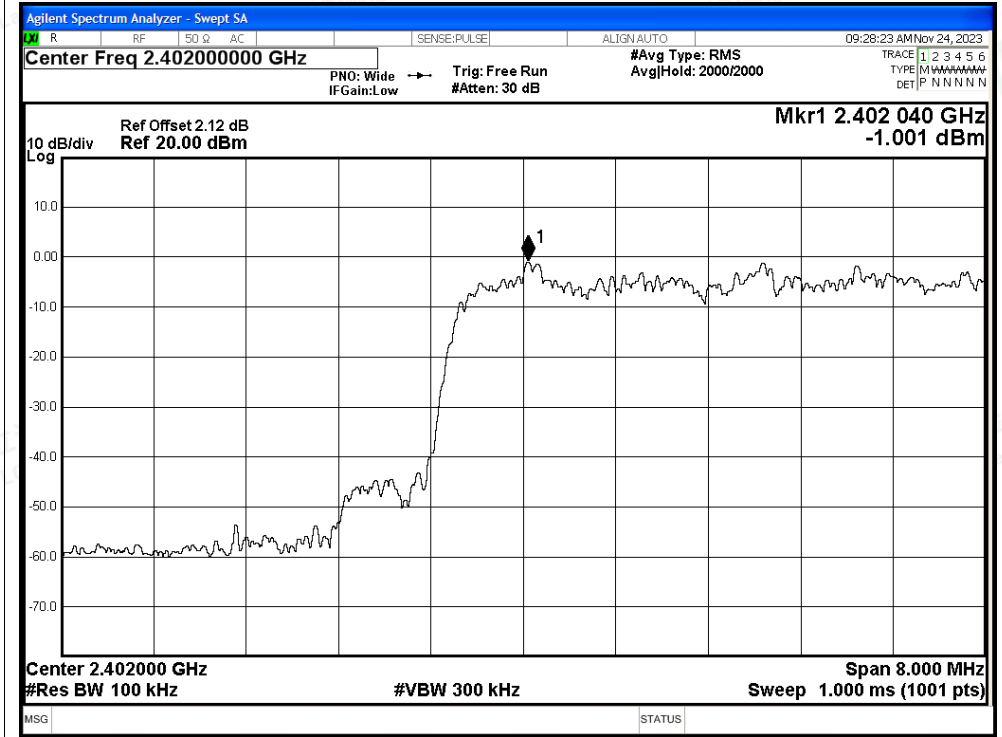


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant Hopping Emission

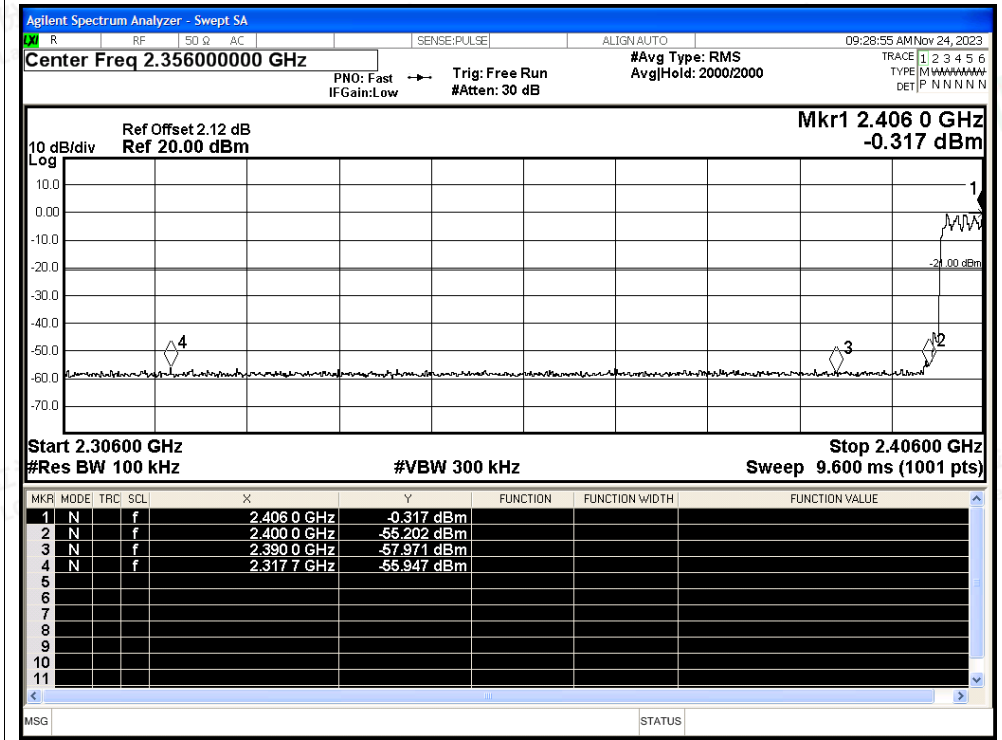




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Ref

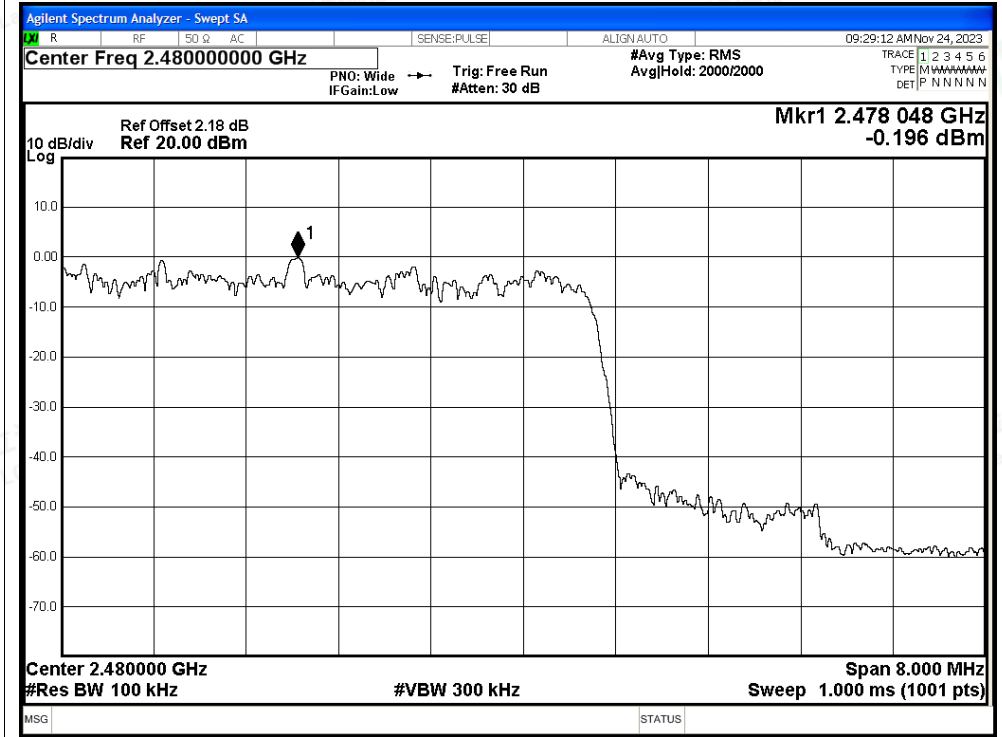


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Emission

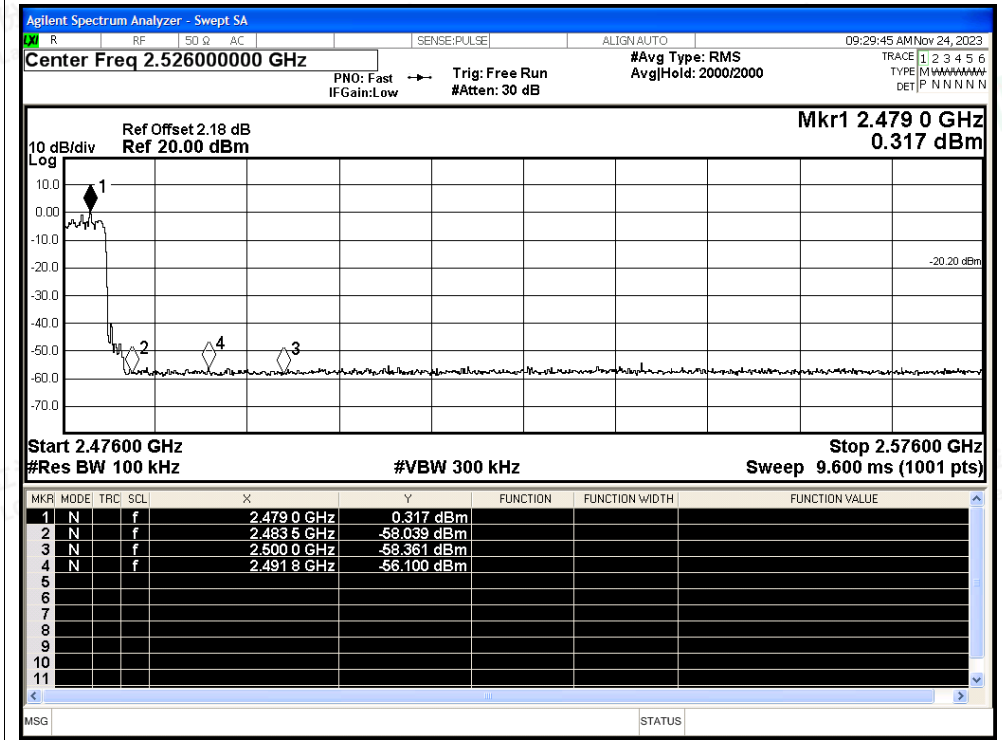




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant Hopping Ref

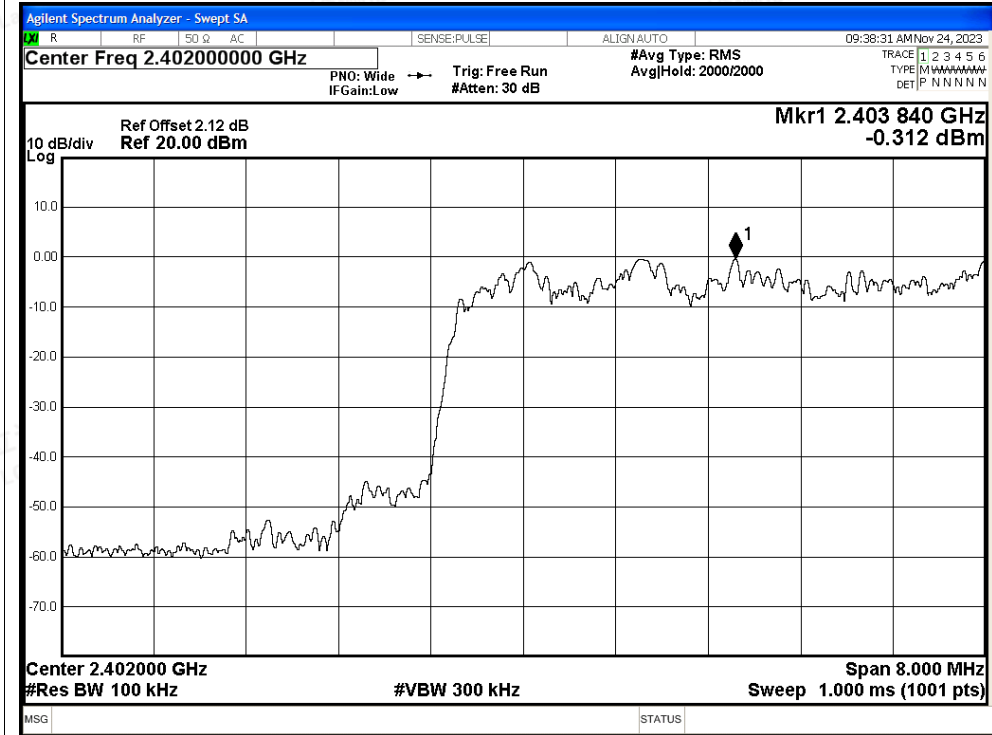


Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant Hopping Emission

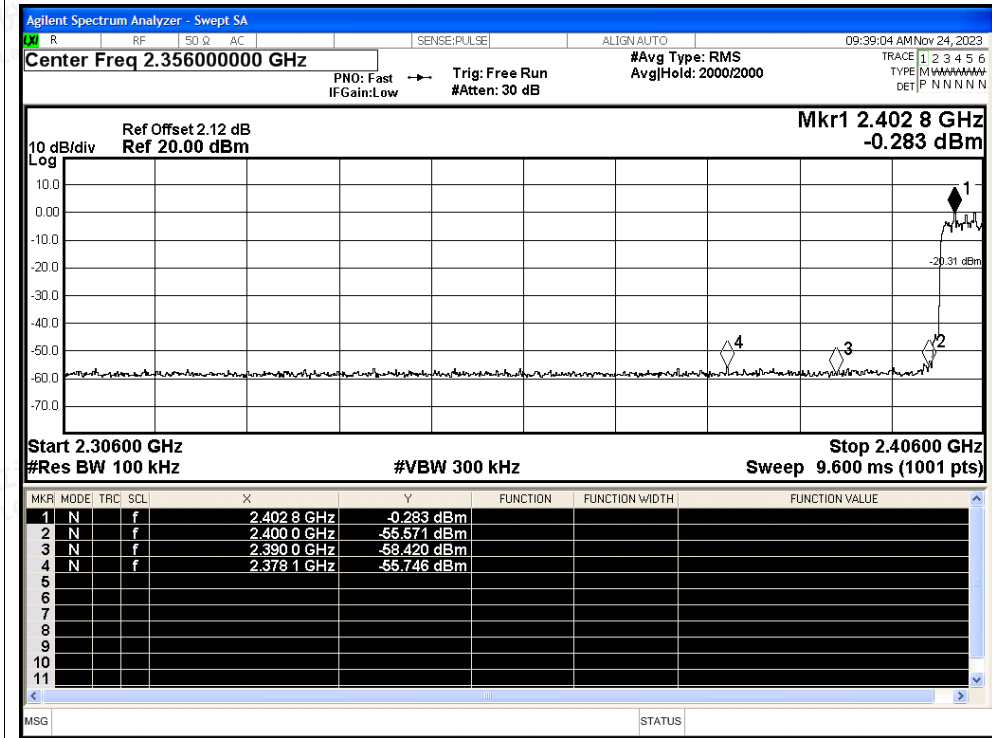




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Ref

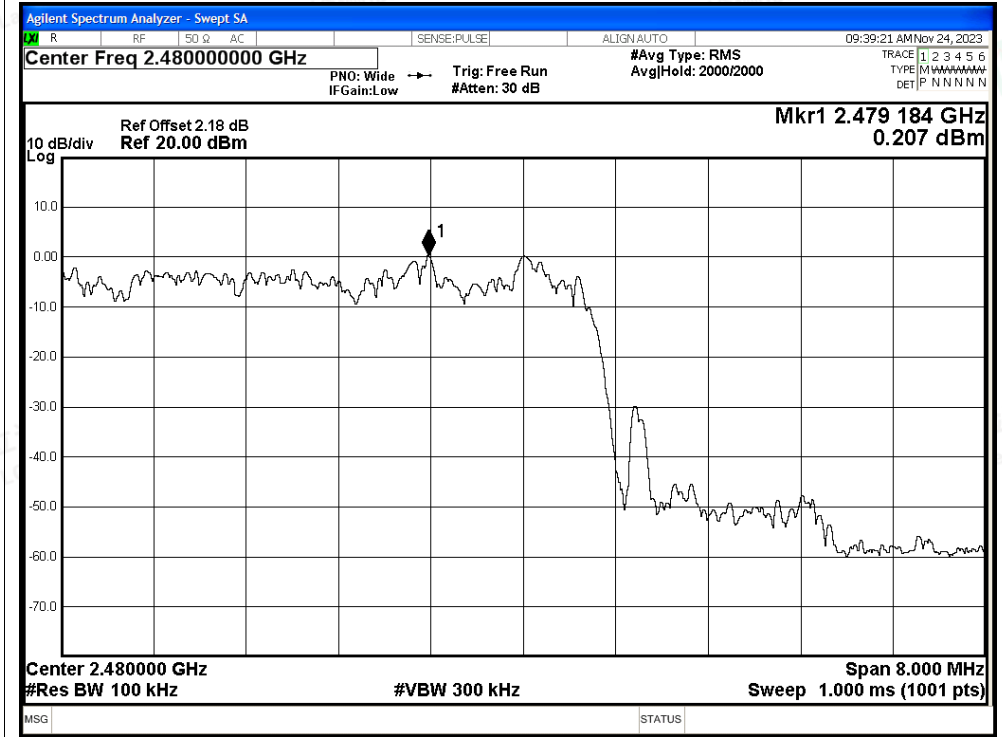


Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Emission

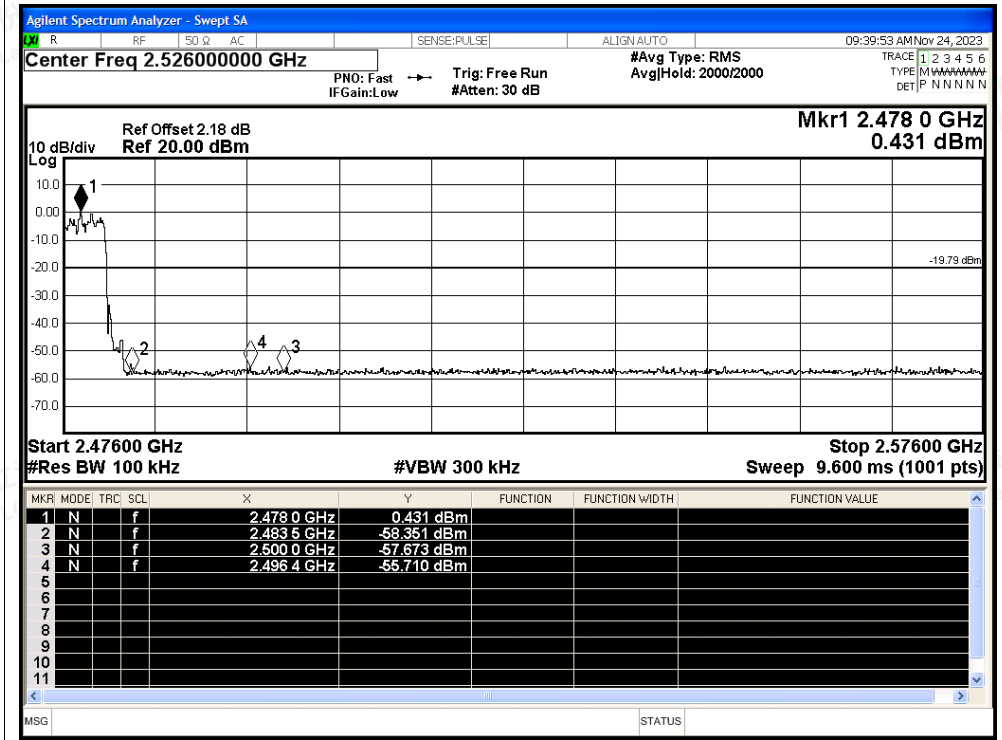




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant Hopping Ref



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





A.7 Conducted RF Spurious Emission

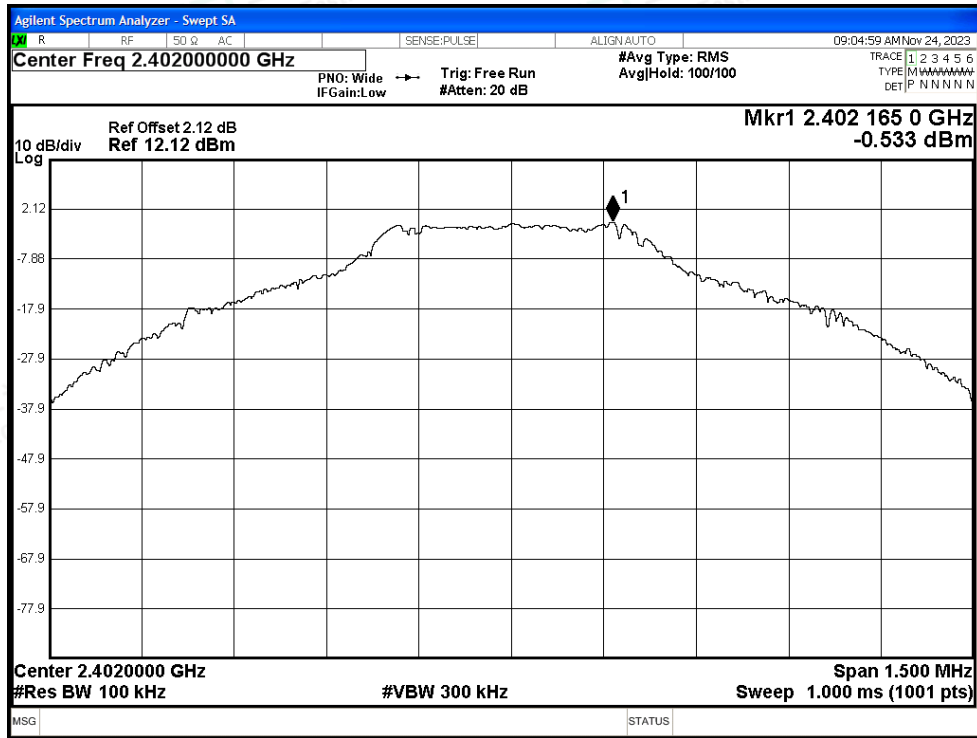
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	-55.23	-20	Pass
NVNT	1-DH5	2441	Ant	-56.44	-20	Pass
NVNT	1-DH5	2480	Ant	-55.15	-20	Pass
NVNT	2-DH5	2402	Ant	-54.54	-20	Pass
NVNT	2-DH5	2441	Ant	-56.57	-20	Pass
NVNT	2-DH5	2480	Ant	-55.66	-20	Pass
NVNT	3-DH5	2402	Ant	-55.09	-20	Pass
NVNT	3-DH5	2441	Ant	-56.57	-20	Pass
NVNT	3-DH5	2480	Ant	-55.16	-20	Pass



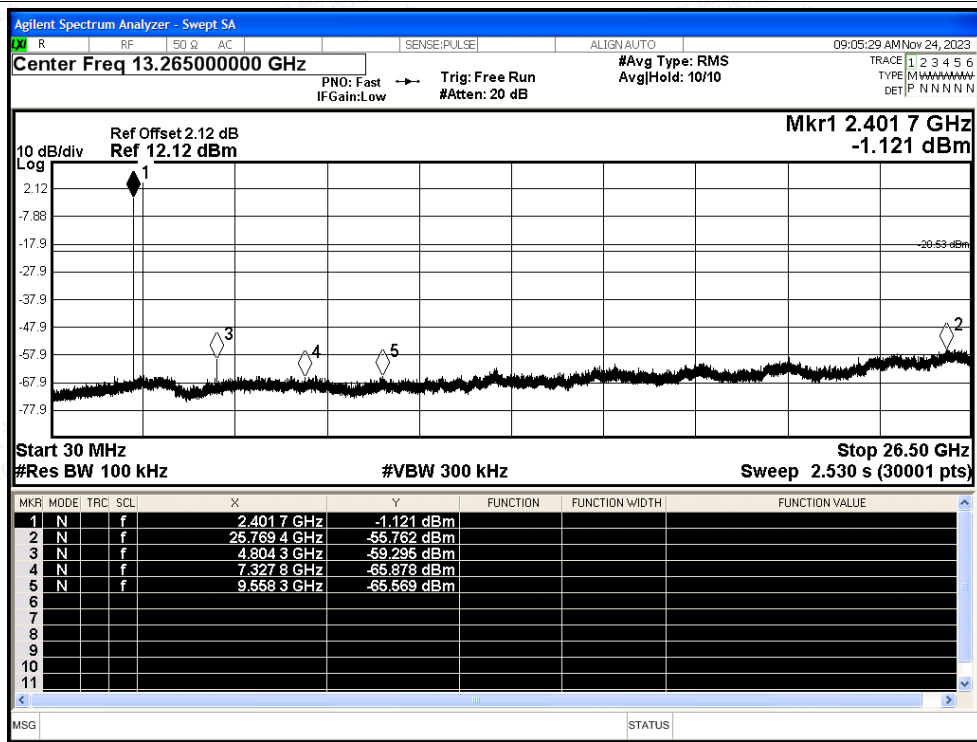


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant Ref

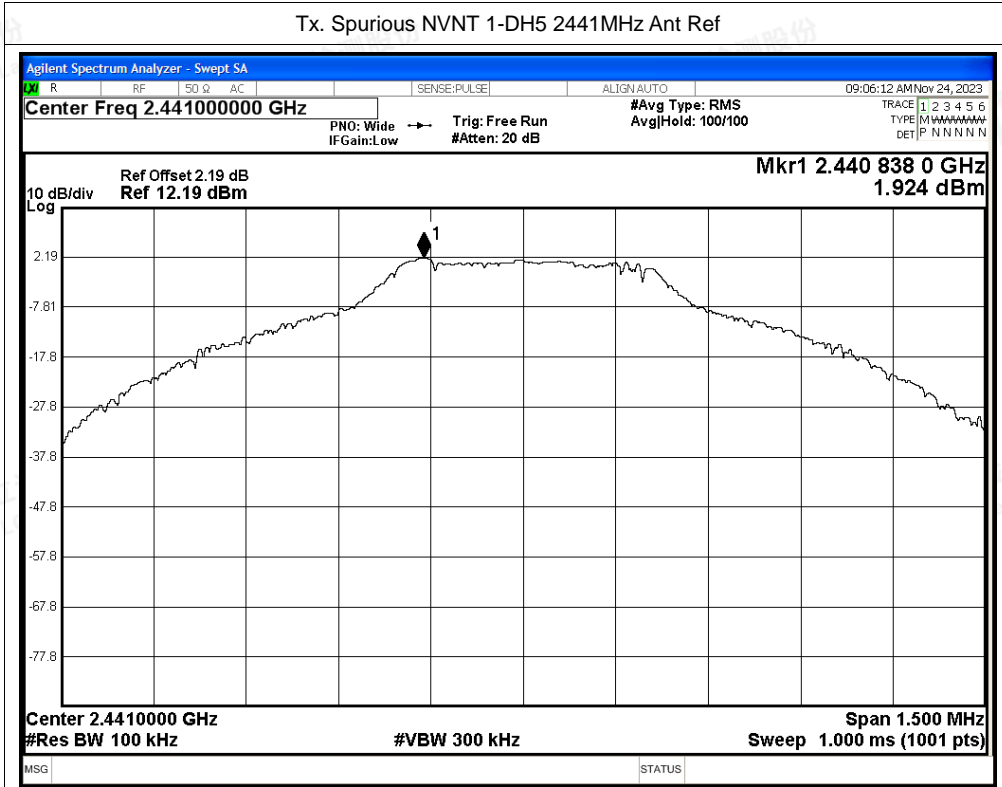


Tx. Spurious NVNT 1-DH5 2402MHz Ant Emission

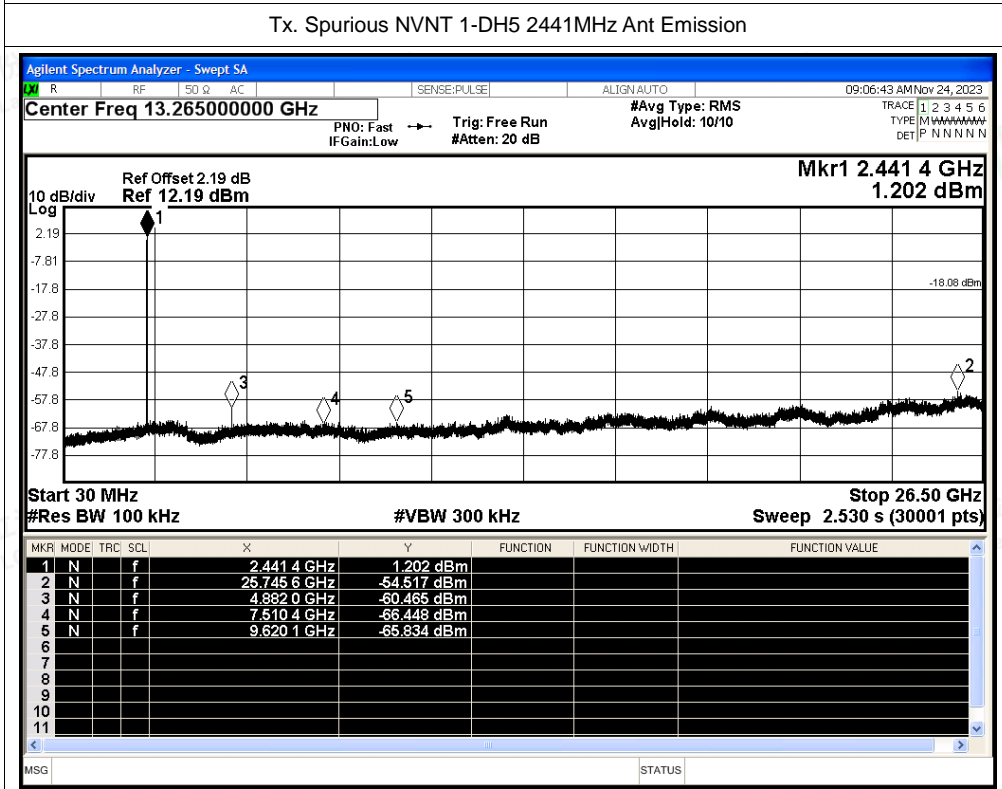




Tx. Spurious NVNT 1-DH5 2441MHz Ant Ref

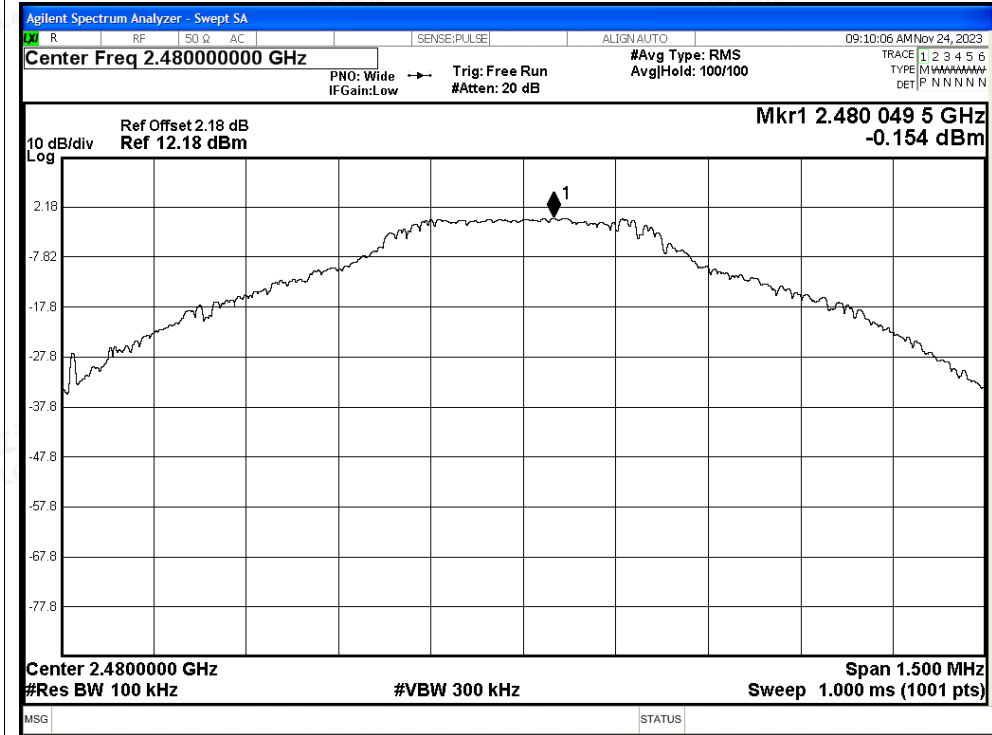


Tx. Spurious NVNT 1-DH5 2441MHz Ant Emission

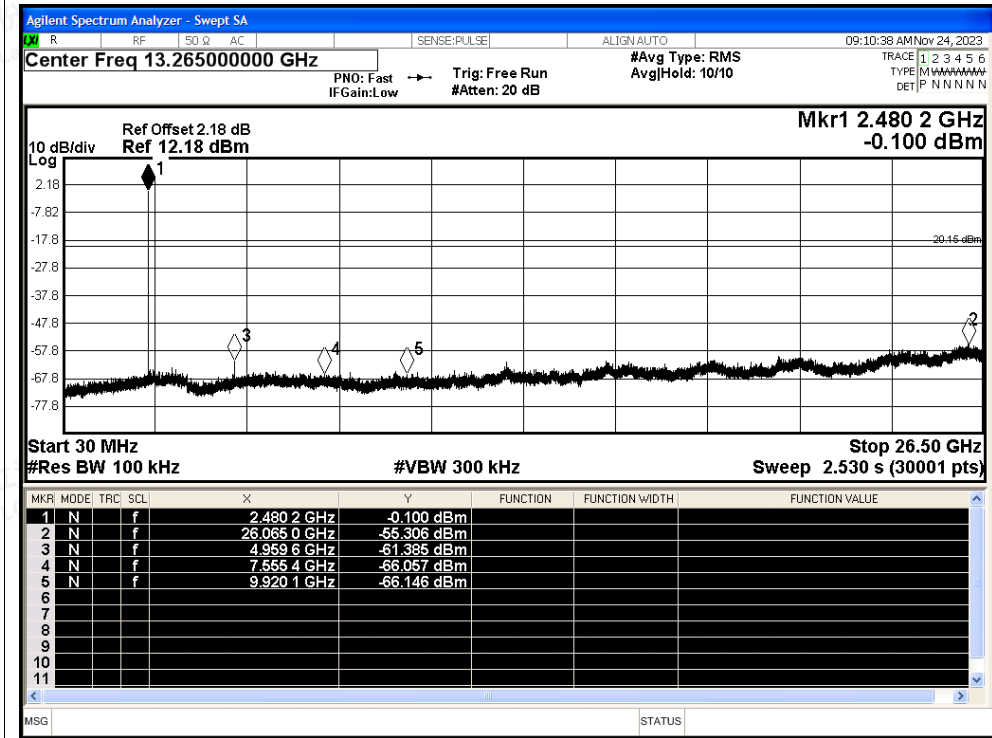




Tx. Spurious NVNT 1-DH5 2480MHz Ant Ref

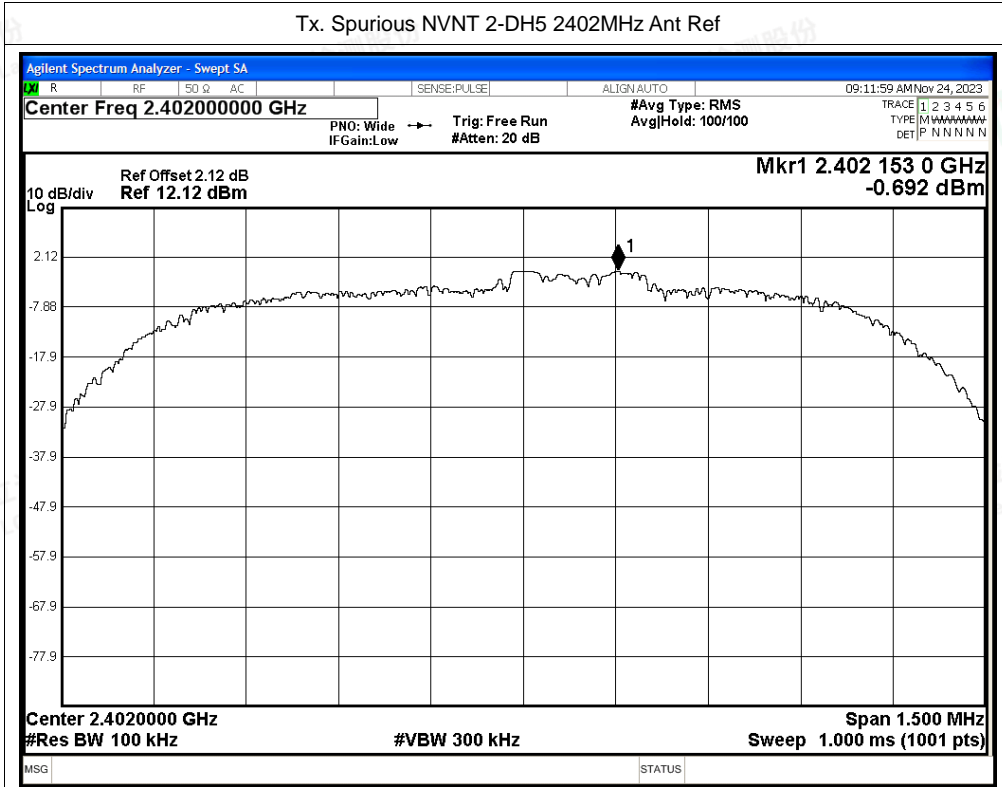


Tx. Spurious NVNT 1-DH5 2480MHz Ant Emission

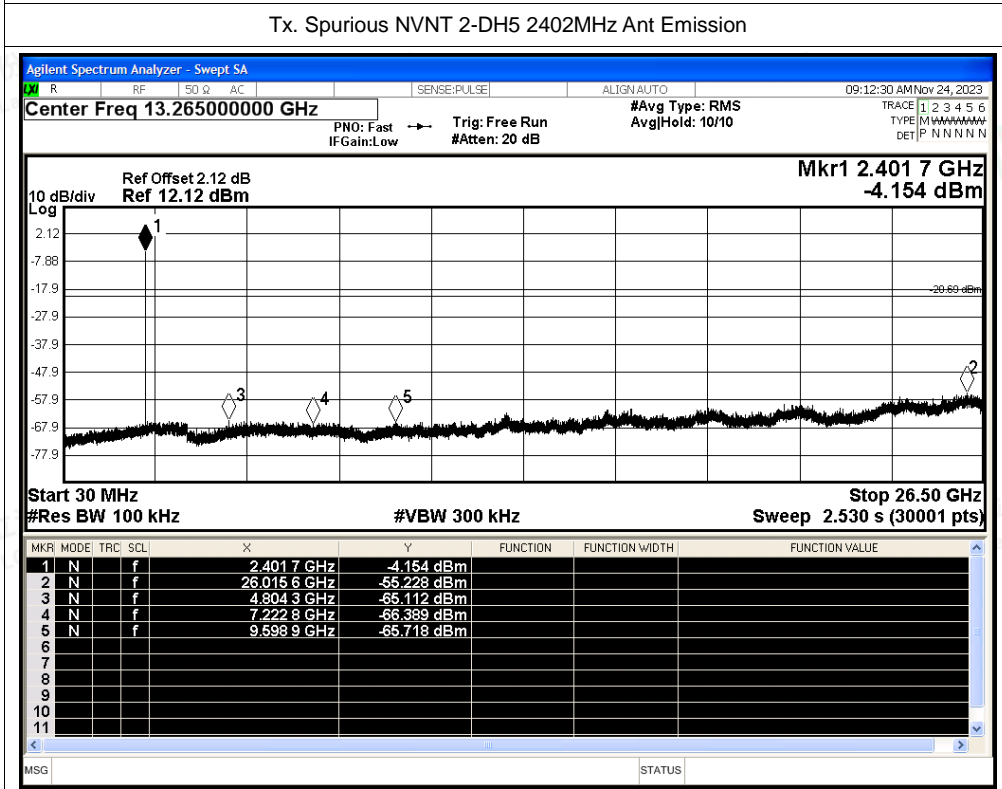




Tx. Spurious NVNT 2-DH5 2402MHz Ant Ref

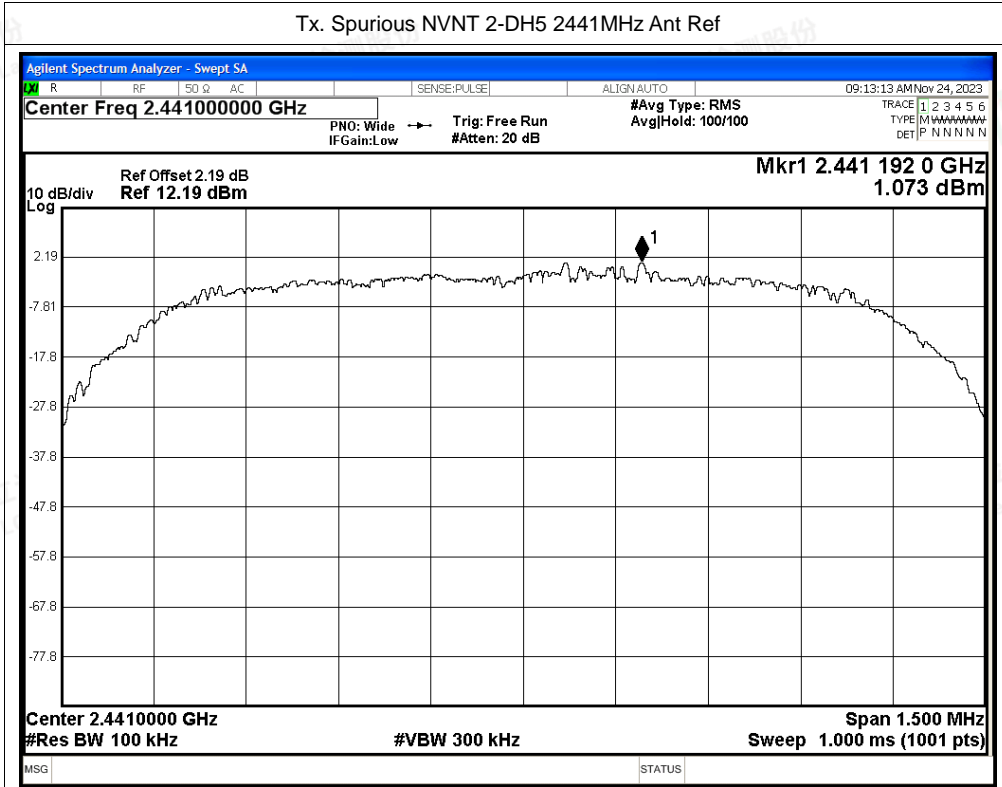


Tx. Spurious NVNT 2-DH5 2402MHz Ant Emission

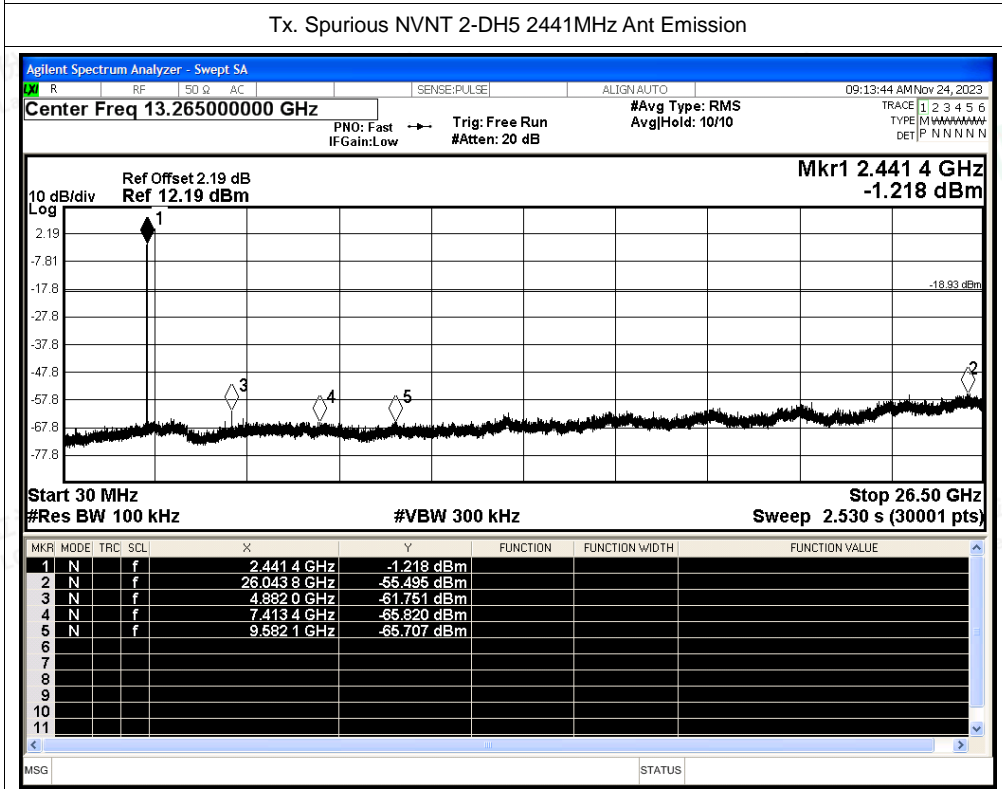




Tx. Spurious NVNT 2-DH5 2441MHz Ant Ref

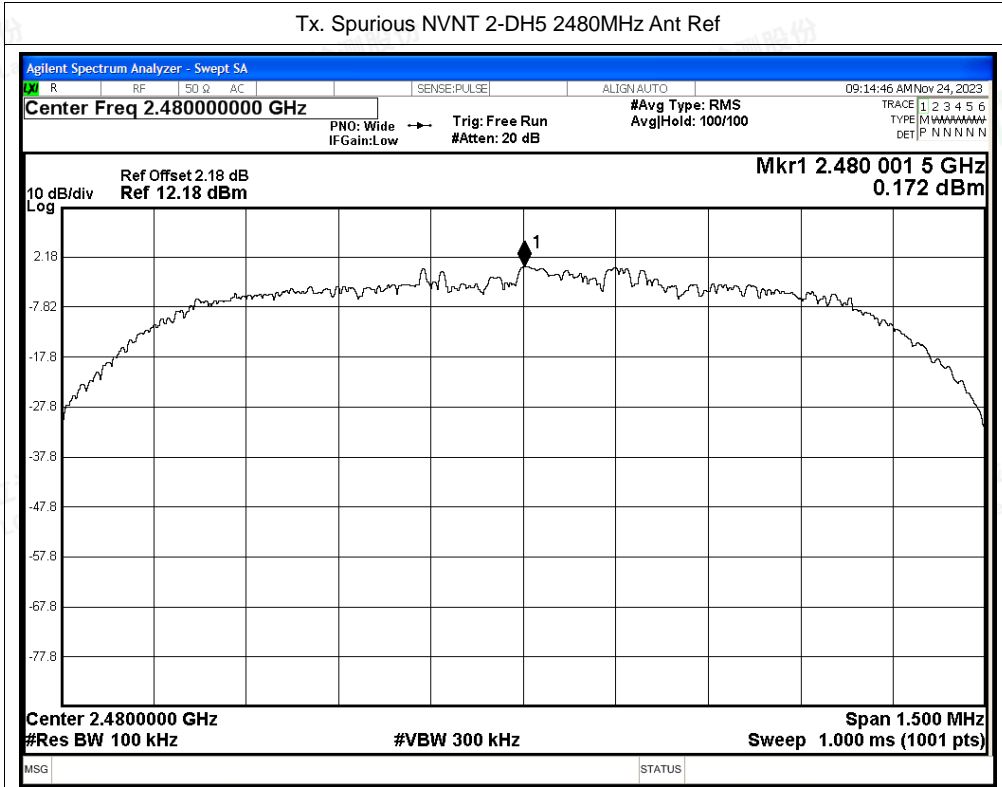


Tx. Spurious NVNT 2-DH5 2441MHz Ant Emission

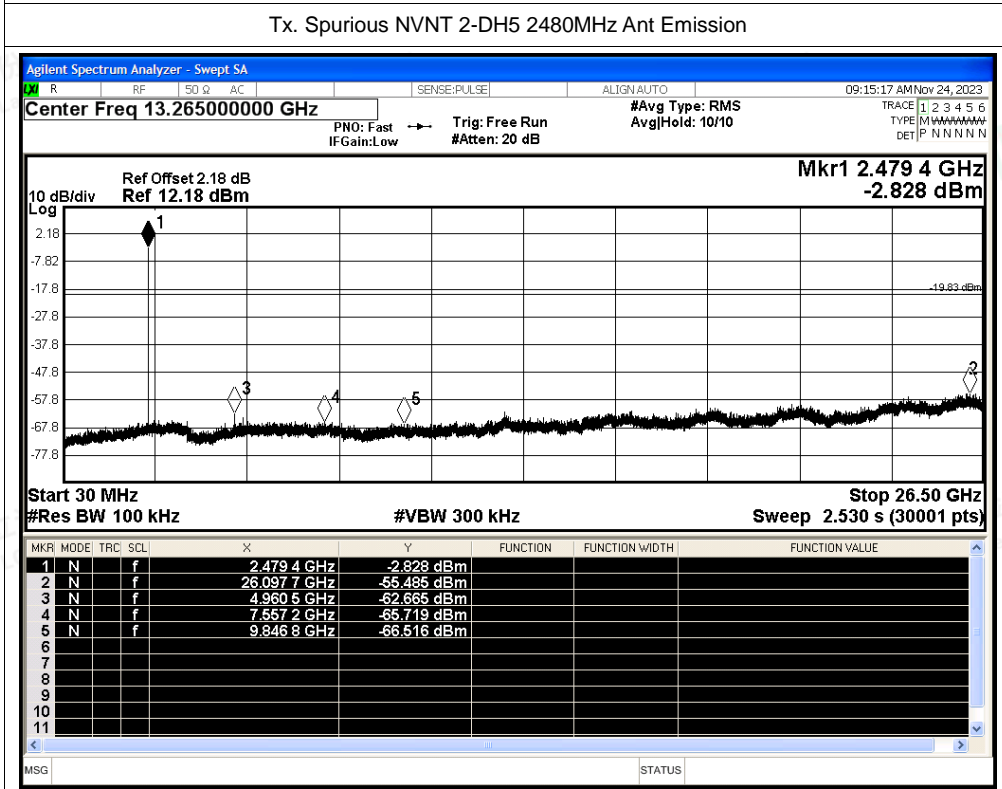




Tx. Spurious NVNT 2-DH5 2480MHz Ant Ref

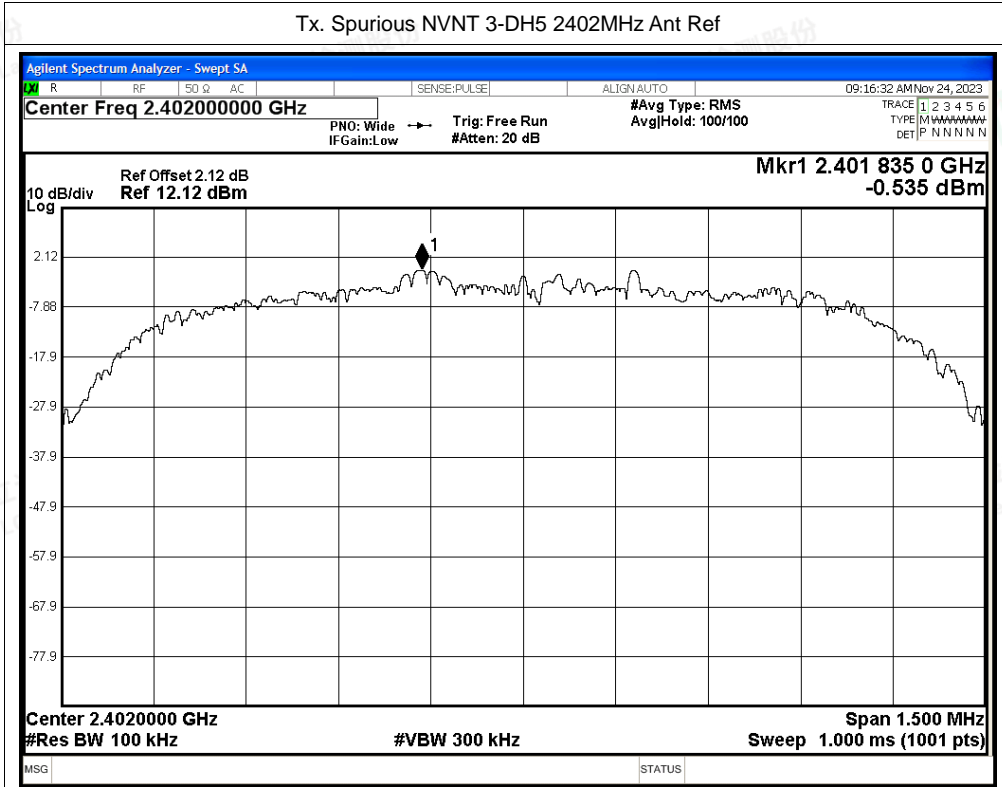


Tx. Spurious NVNT 2-DH5 2480MHz Ant Emission

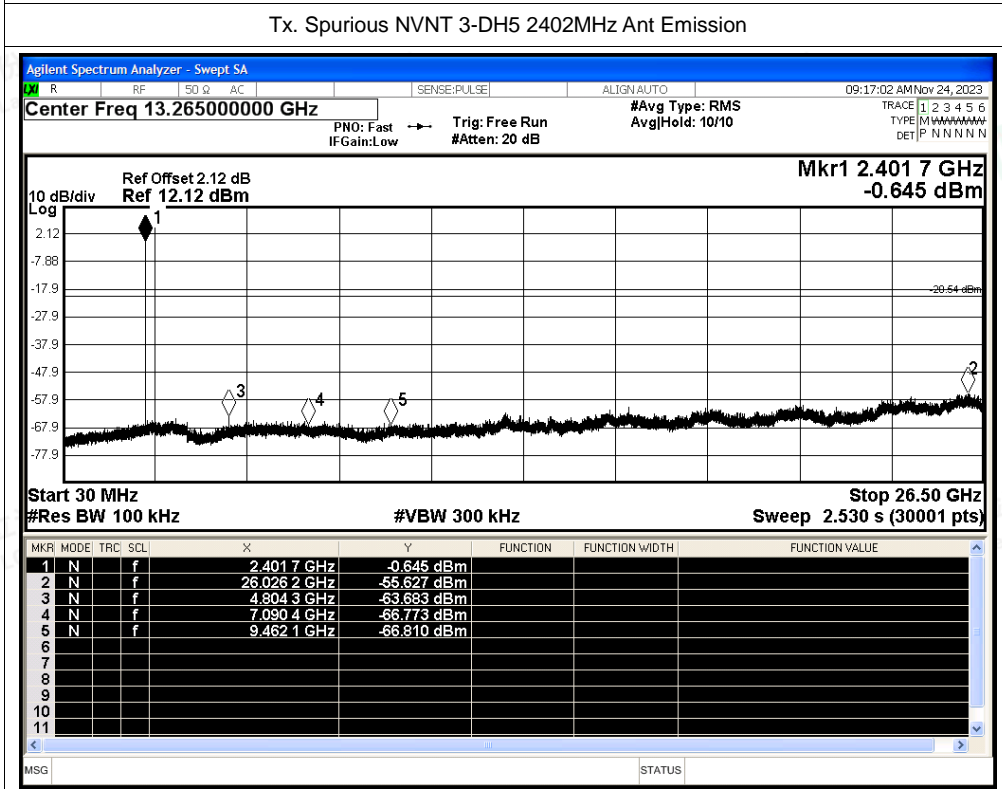




Tx. Spurious NVNT 3-DH5 2402MHz Ant Ref

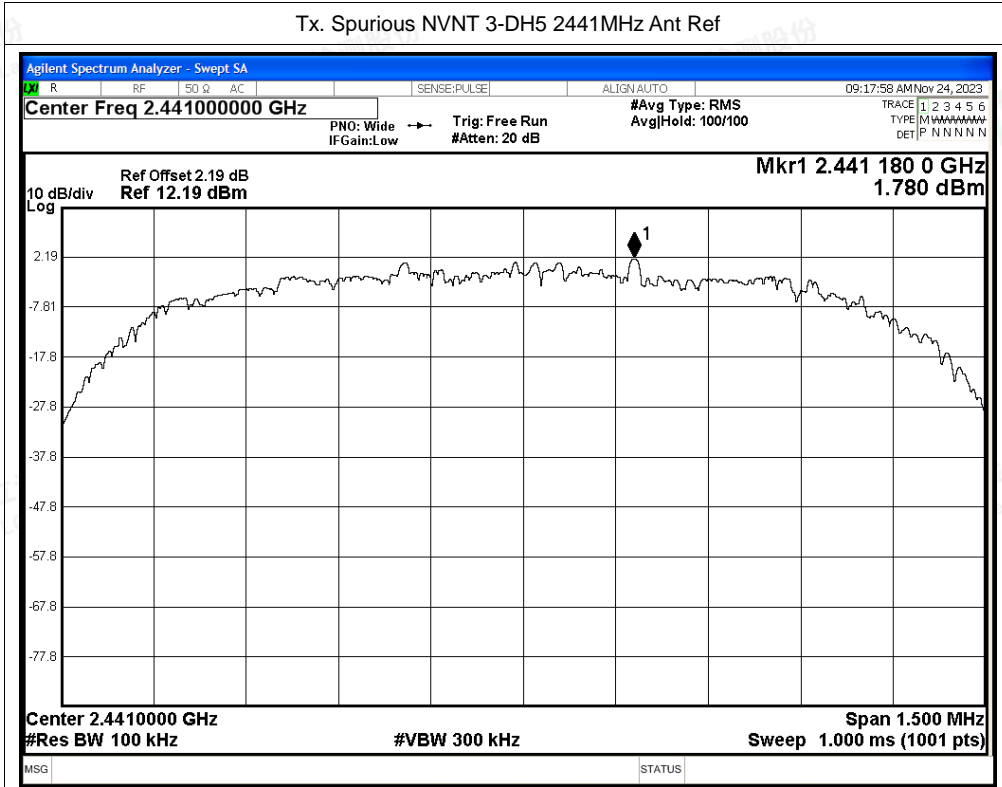


Tx. Spurious NVNT 3-DH5 2402MHz Ant Emission

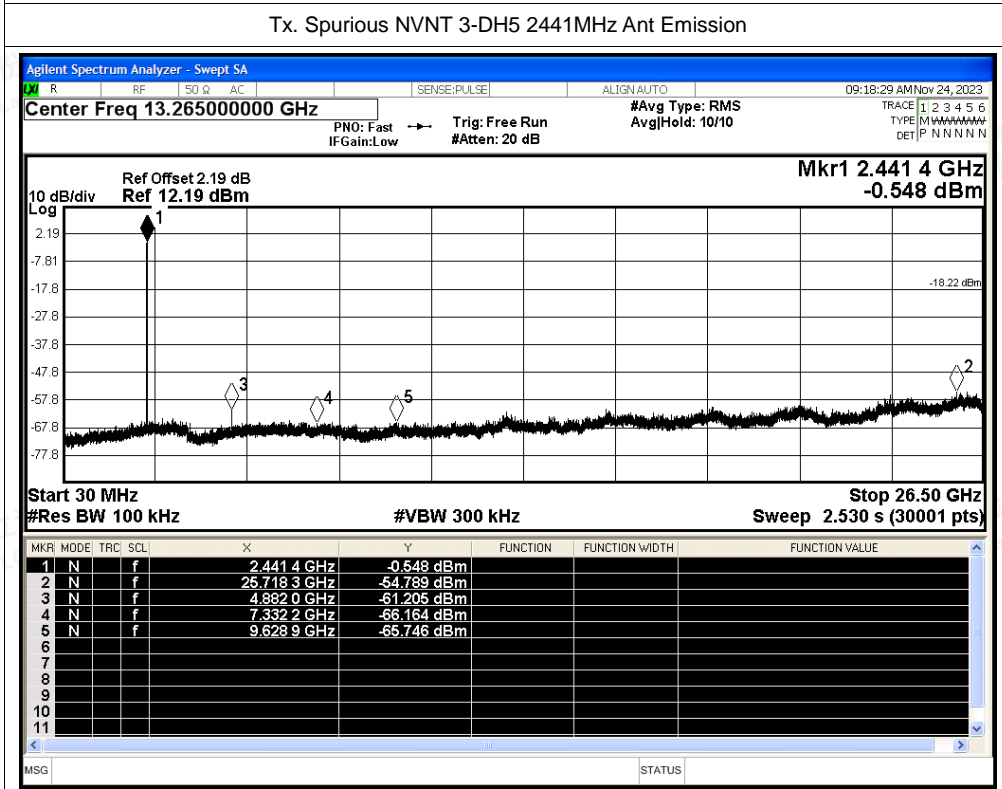




Tx. Spurious NVNT 3-DH5 2441MHz Ant Ref

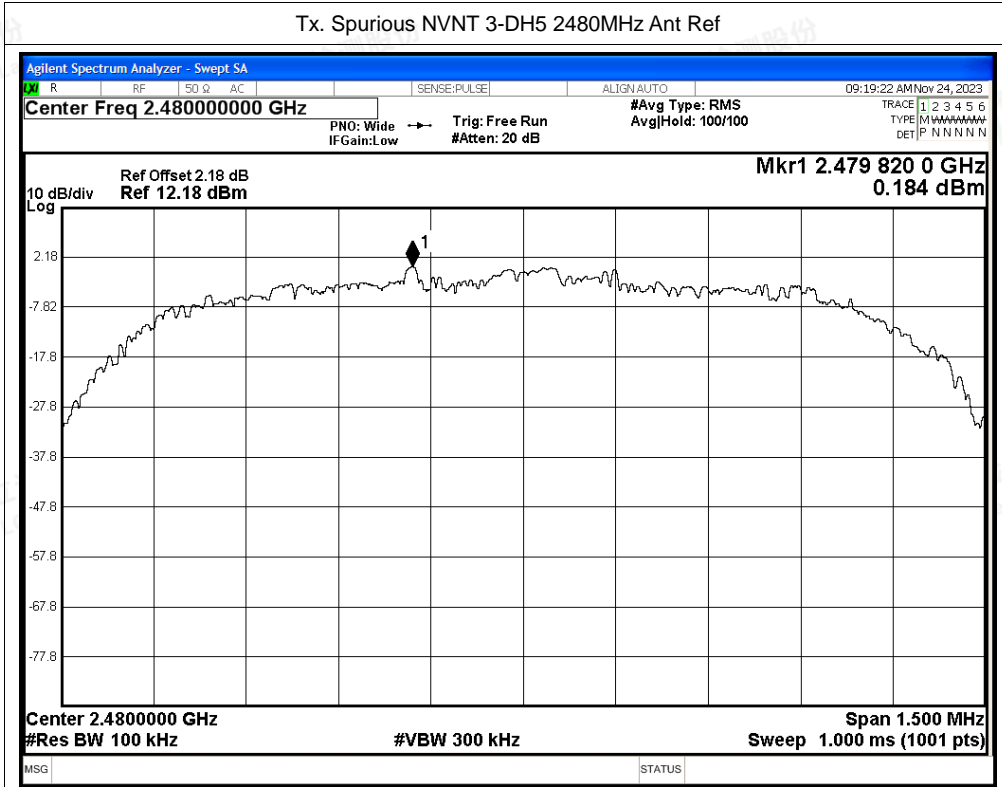


Tx. Spurious NVNT 3-DH5 2441MHz Ant Emission

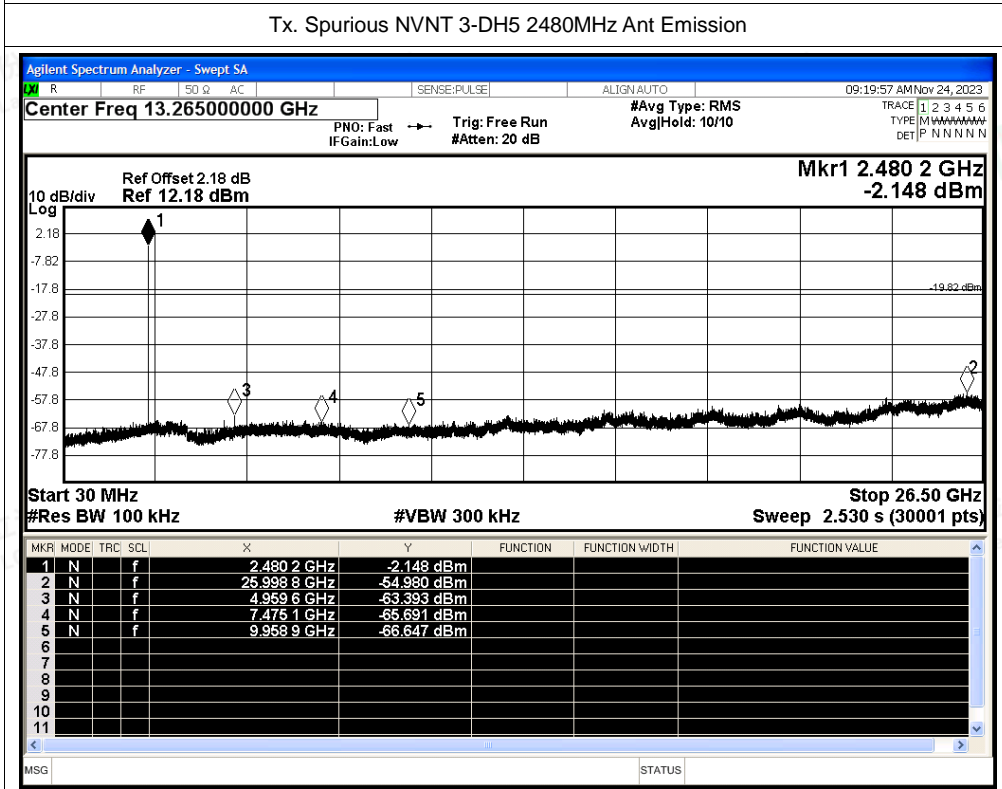




Tx. Spurious NVNT 3-DH5 2480MHz Ant Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant Emission





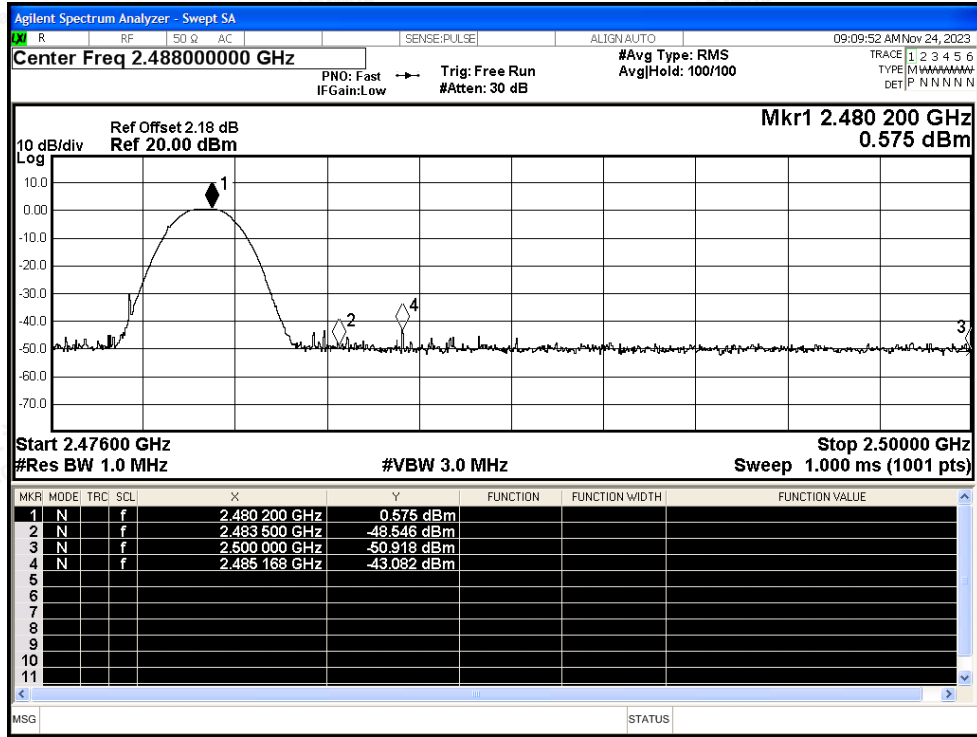
A.8 Restrict Band

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	Ant	No-Hopping	2310	-49.06	2	48.2	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2310	-57.92	2	39.34	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2373.264	-46.83	2	50.43	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2386.416	-57.44	2	39.82	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-50.28	2	46.98	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-57.64	2	39.62	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-48.55	2	48.71	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-55.52	2	41.74	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2485.168	-43.08	2	54.18	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.512	-55.52	2	41.74	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-50.92	2	46.34	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-57.12	2	40.14	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-49.51	2	47.75	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-56.57	2	40.69	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2345.328	-47.54	2	49.72	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2375.664	-55.38	2	41.88	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-51.1	2	46.16	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-56.4	2	40.86	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-47.28	2	49.98	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-52.76	2	44.5	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.56	-45.33	2	51.93	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.512	-52.76	2	44.5	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-50.46	2	46.8	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-56.32	2	40.94	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-51.24	2	46.02	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-56.62	2	40.64	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310.768	-47.4	2	49.86	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2373.456	-55.69	2	41.57	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-51.73	2	45.53	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-55.93	2	41.33	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-45.22	2	52.04	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-51.3	2	45.96	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.536	-43.56	2	53.7	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.512	-51.3	2	45.96	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-50.66	2	46.6	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-56.22	2	41.04	Average	54	Pass

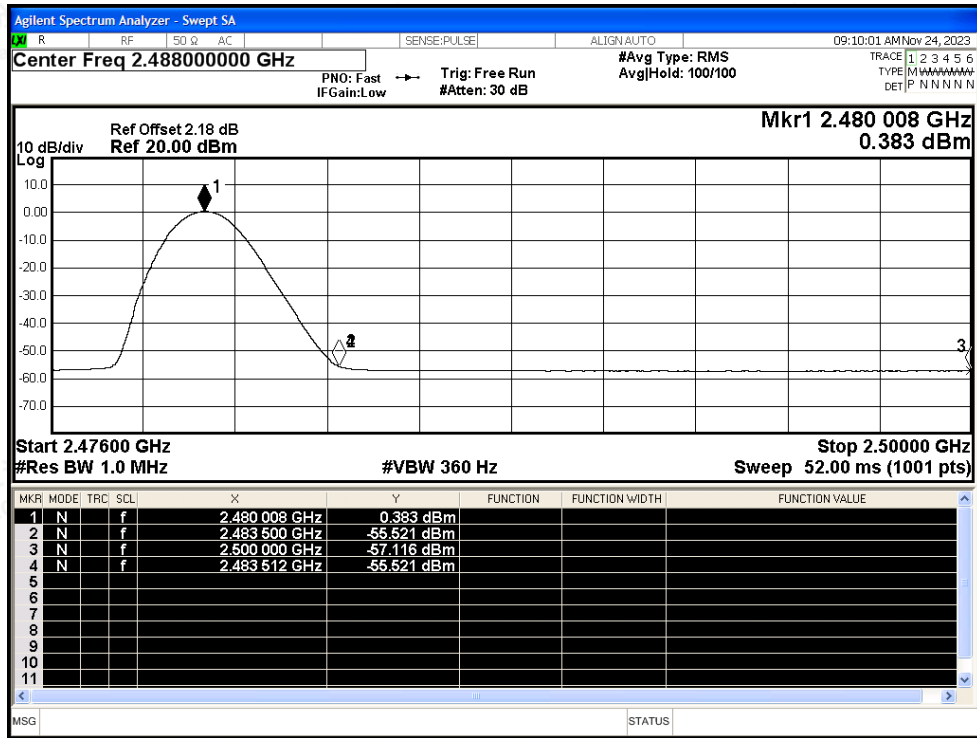




Restrict Band NVNT 1-DH5 2480MHz Ant No-Hopping Peak

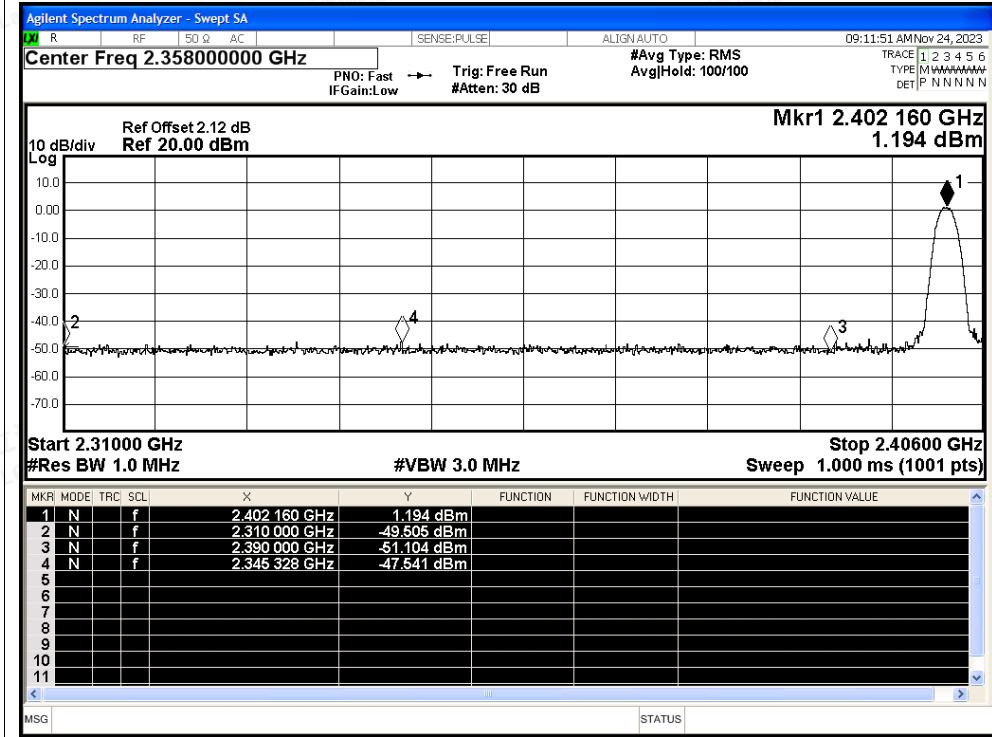


Restrict Band NVNT 1-DH5 2480MHz Ant No-Hopping Average

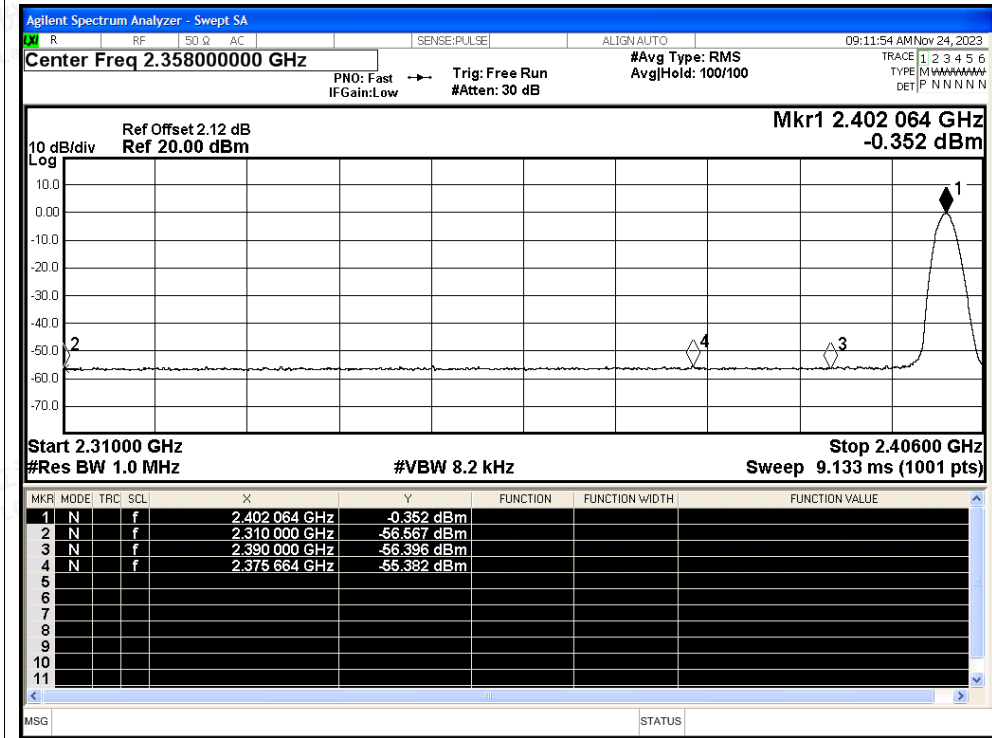




Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Peak

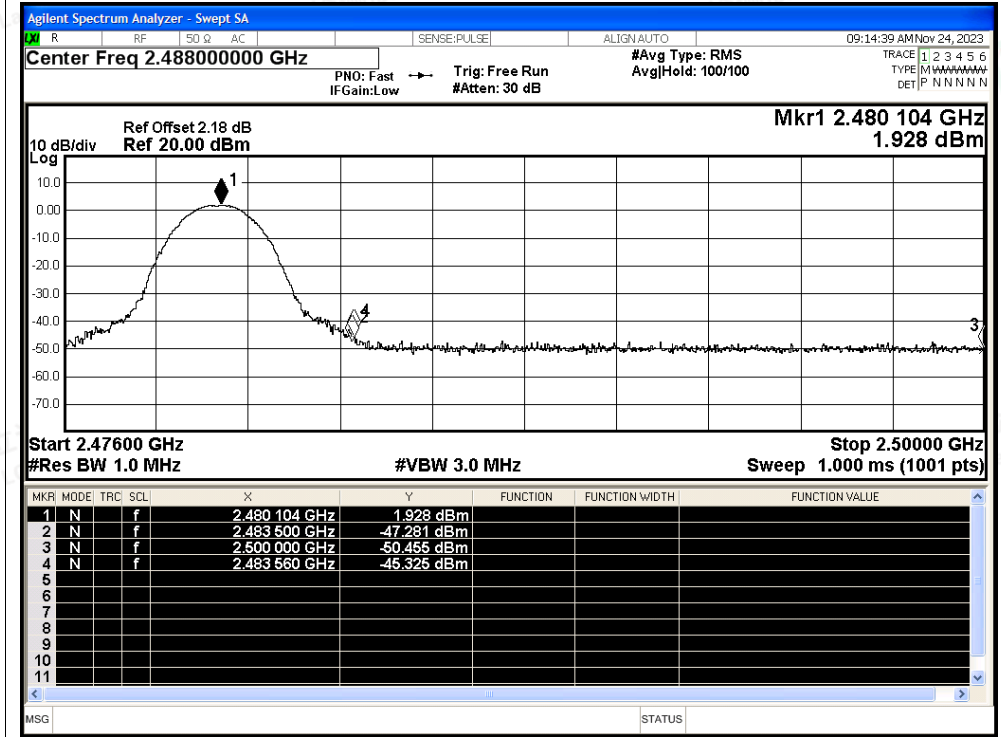


Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Average

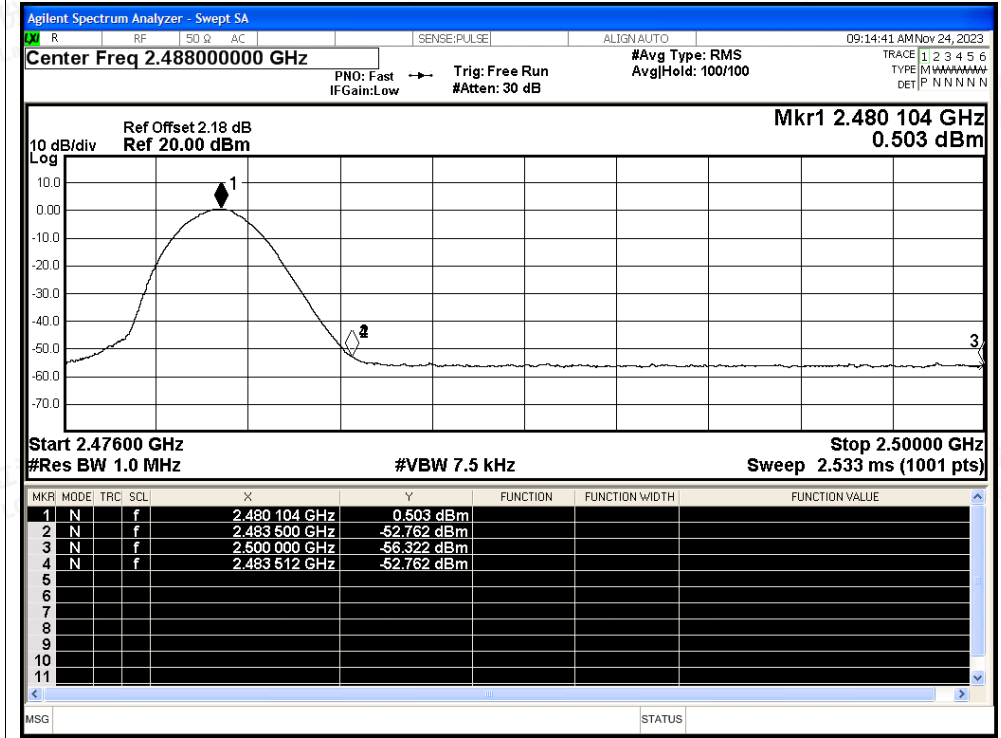




Restrict Band NVNT 2-DH5 2480MHz Ant No-Hopping Peak

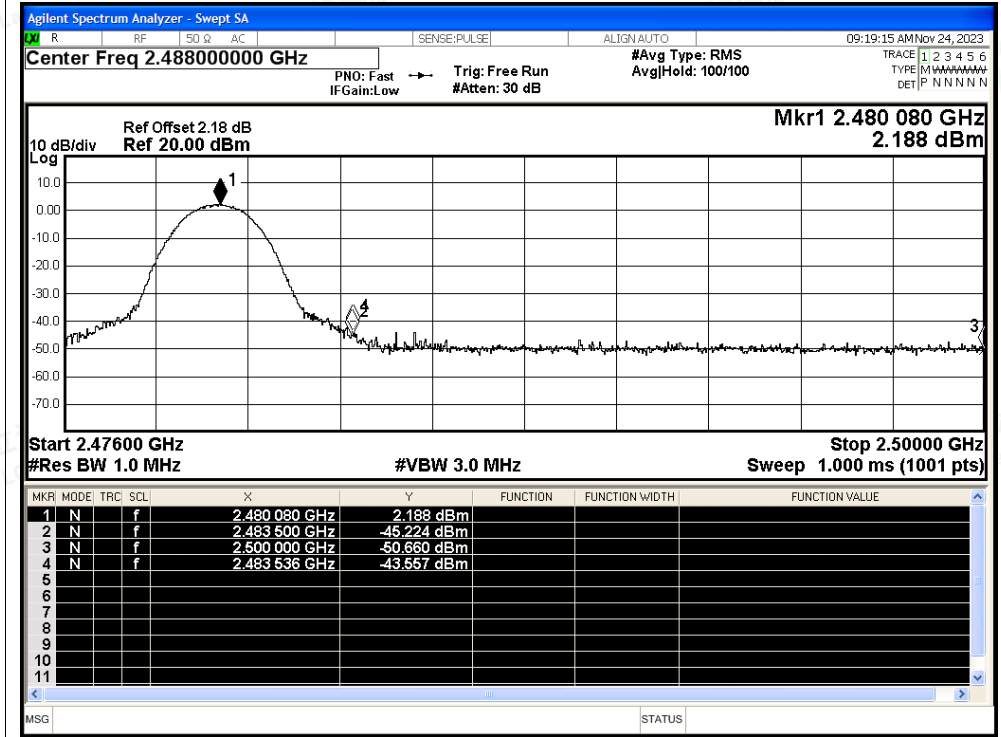


Restrict Band NVNT 2-DH5 2480MHz Ant No-Hopping Average





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



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

