



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Wireless Speaker

Test Model: ELLC-BTBOX01

Environmental Conditions

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





A.1 -20dB Bandwidth

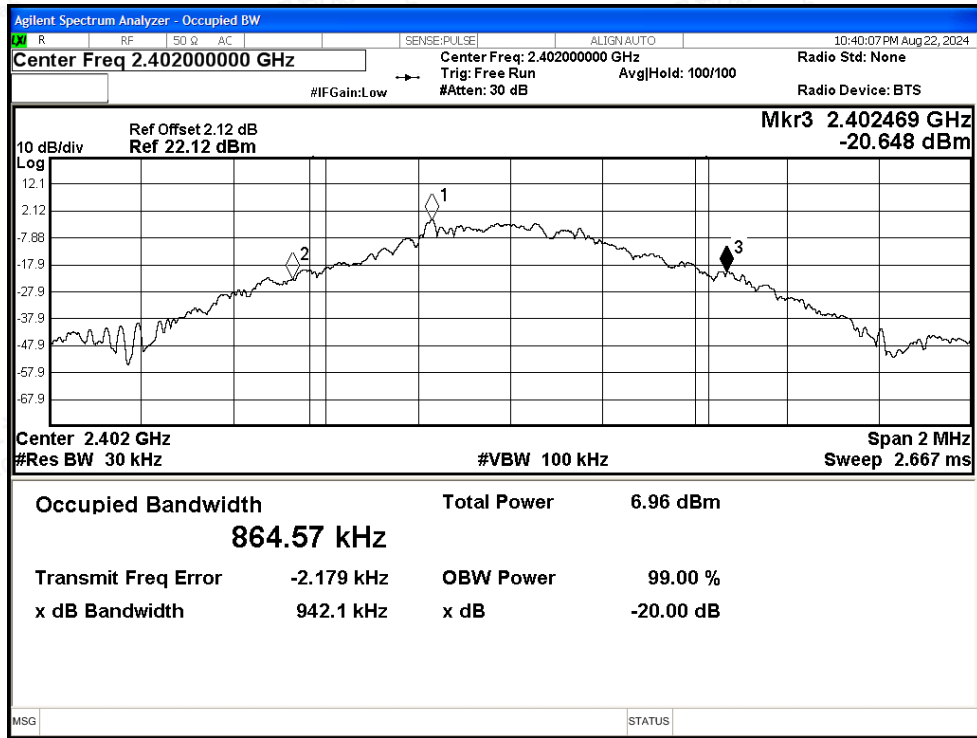
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.942	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.95	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.953	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.302	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.281	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.316	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.309	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.315	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.299	N/A	Pass



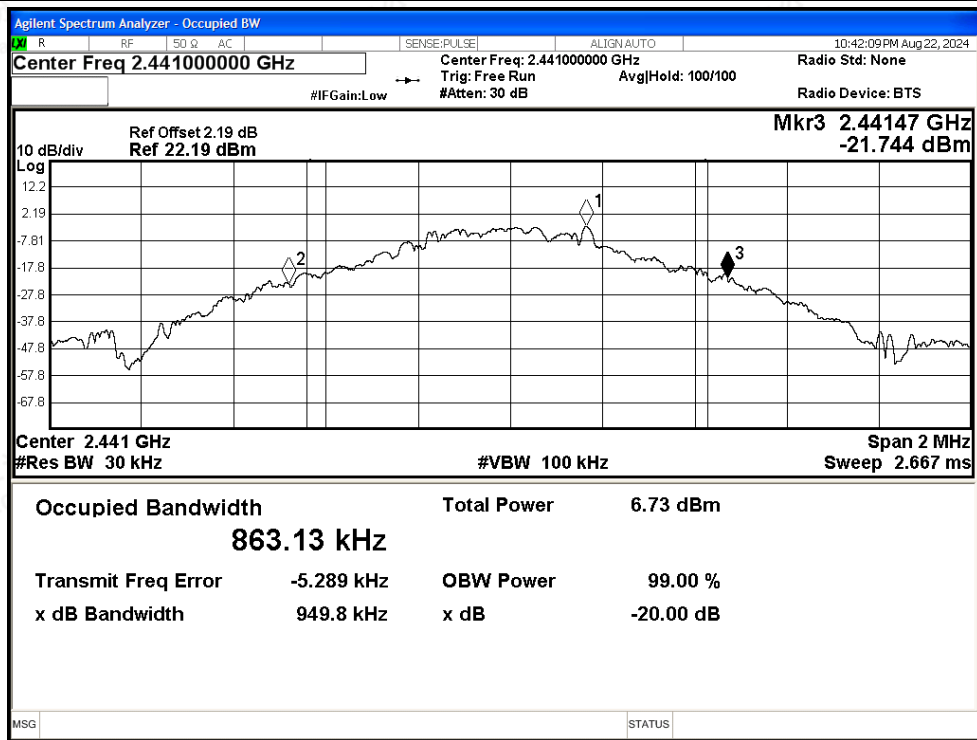


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

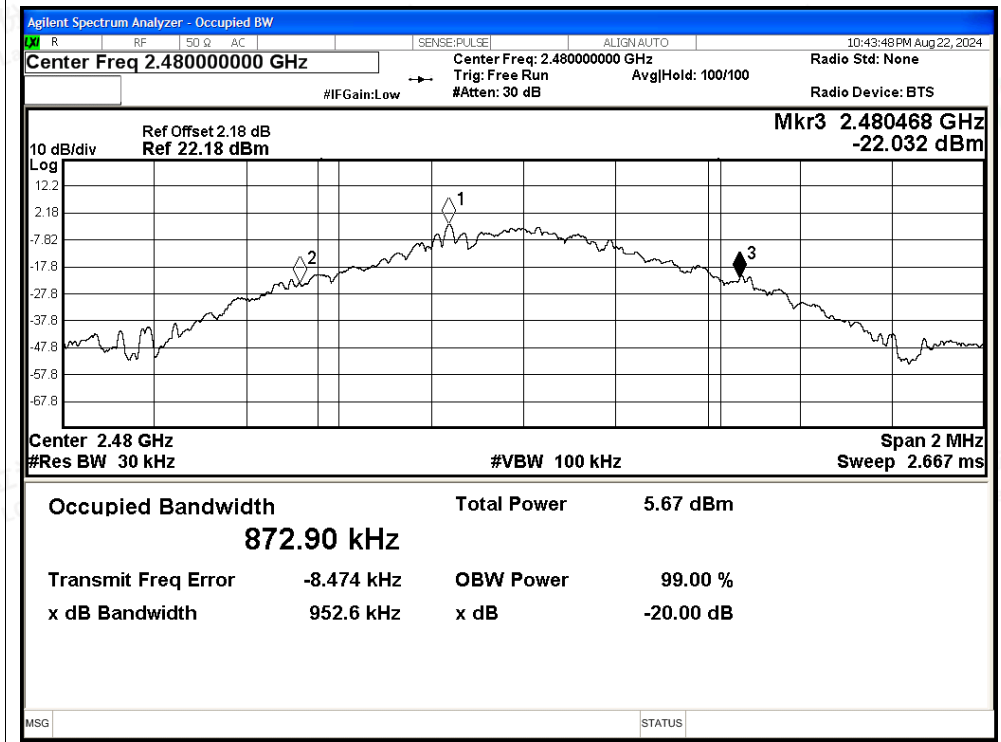


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

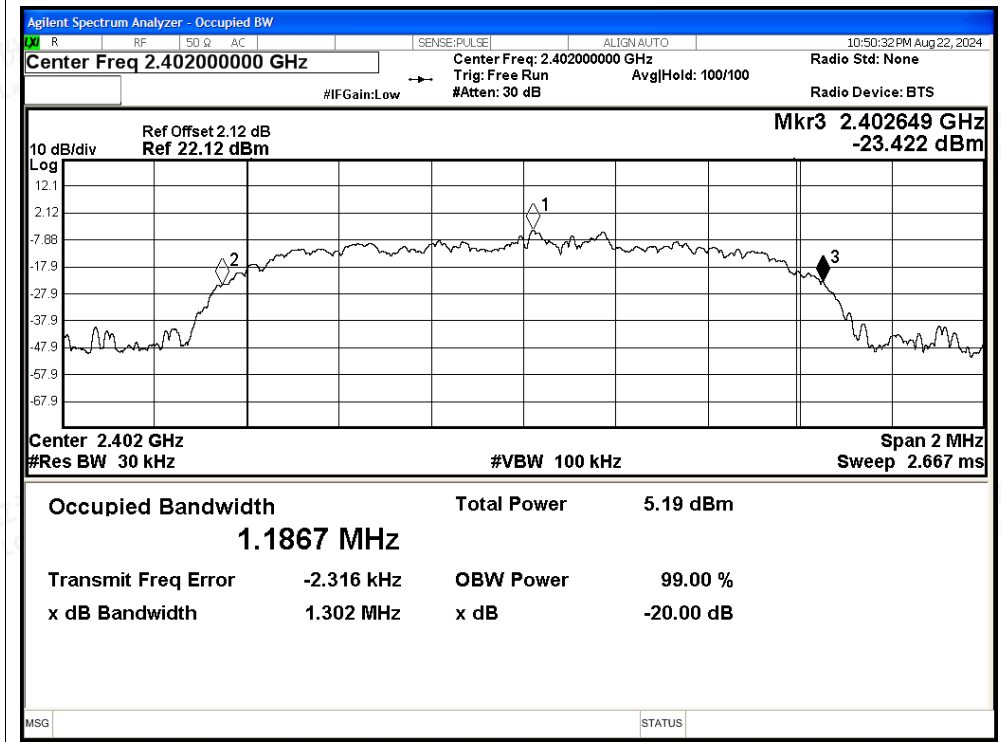




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

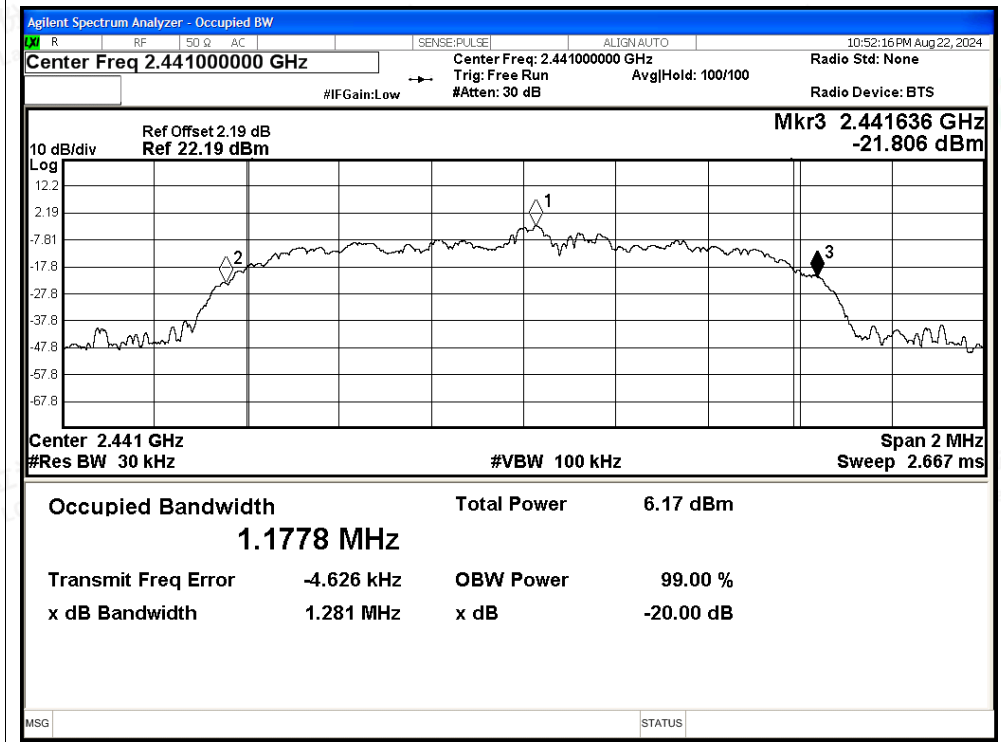


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

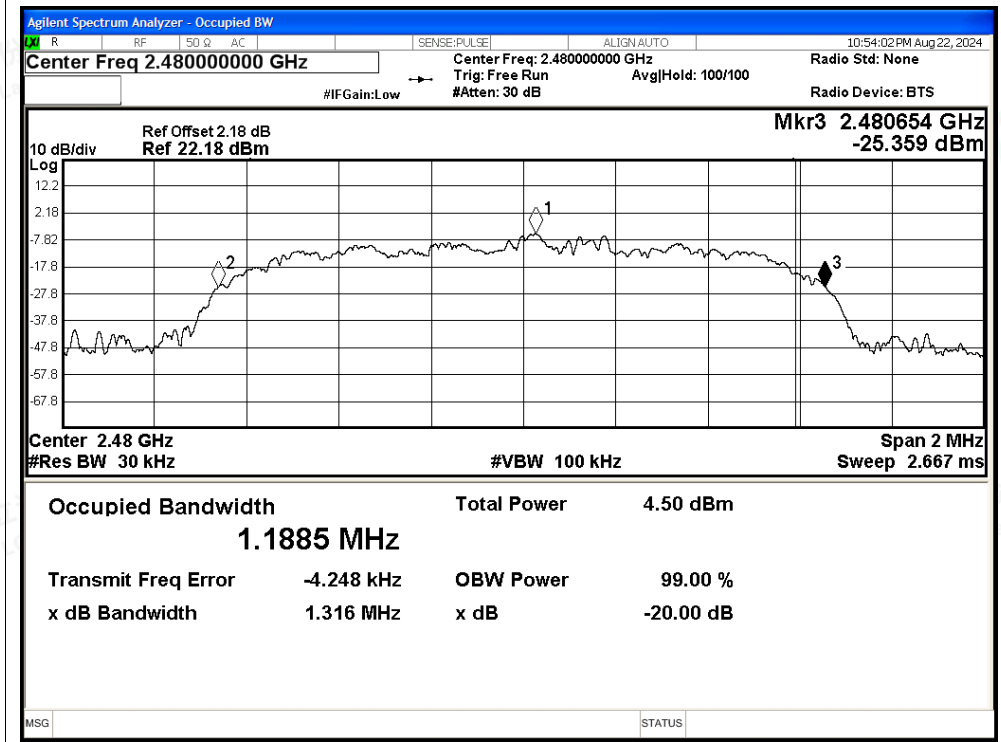




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

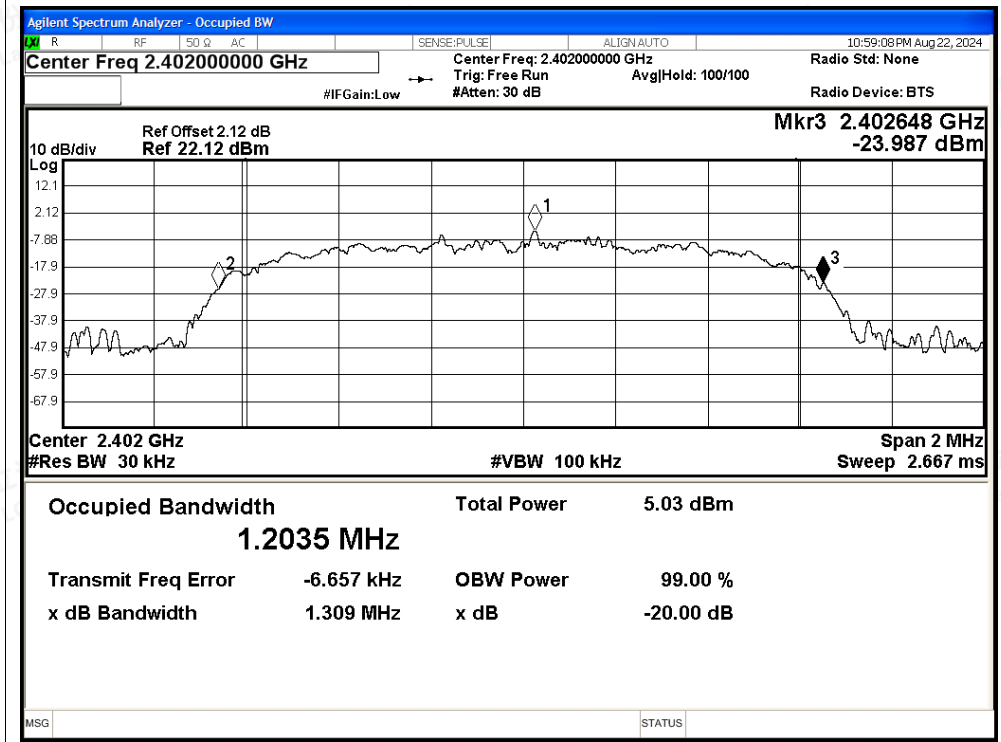


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

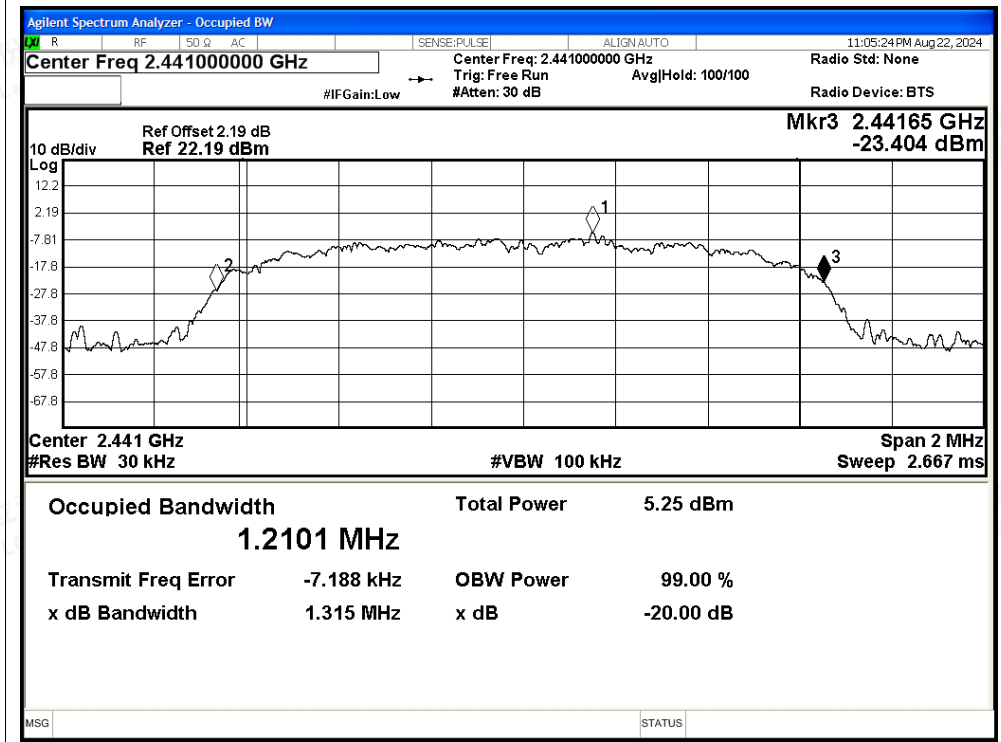


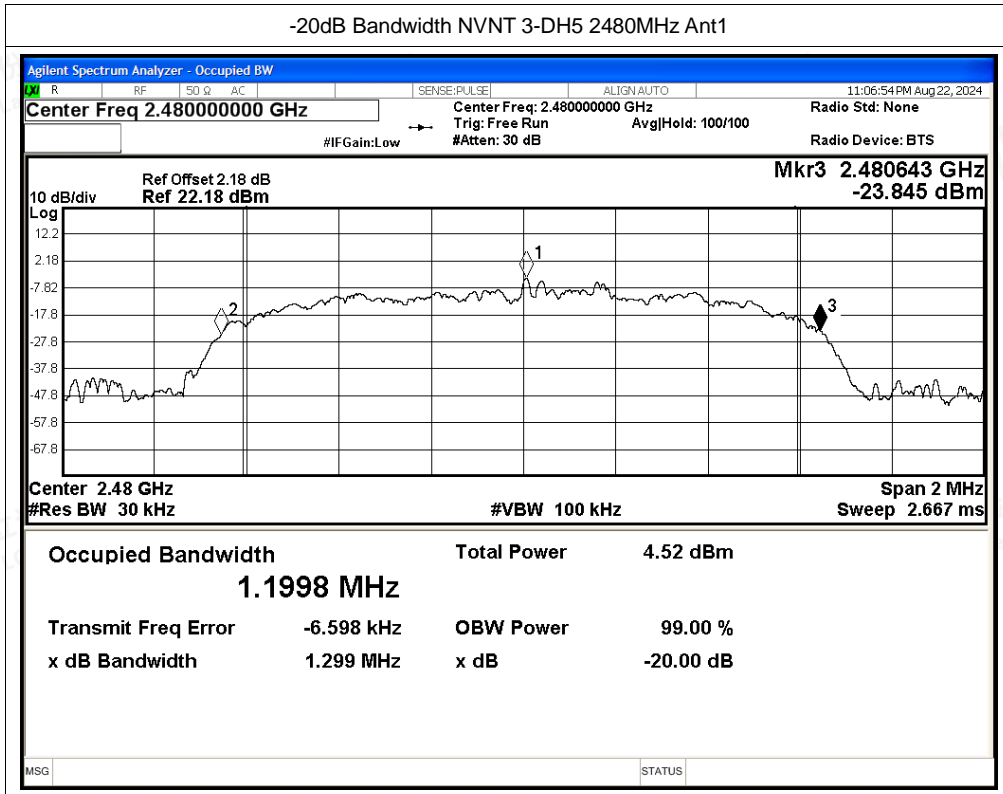


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1







A.2 Maximum Peak Conducted Output Power

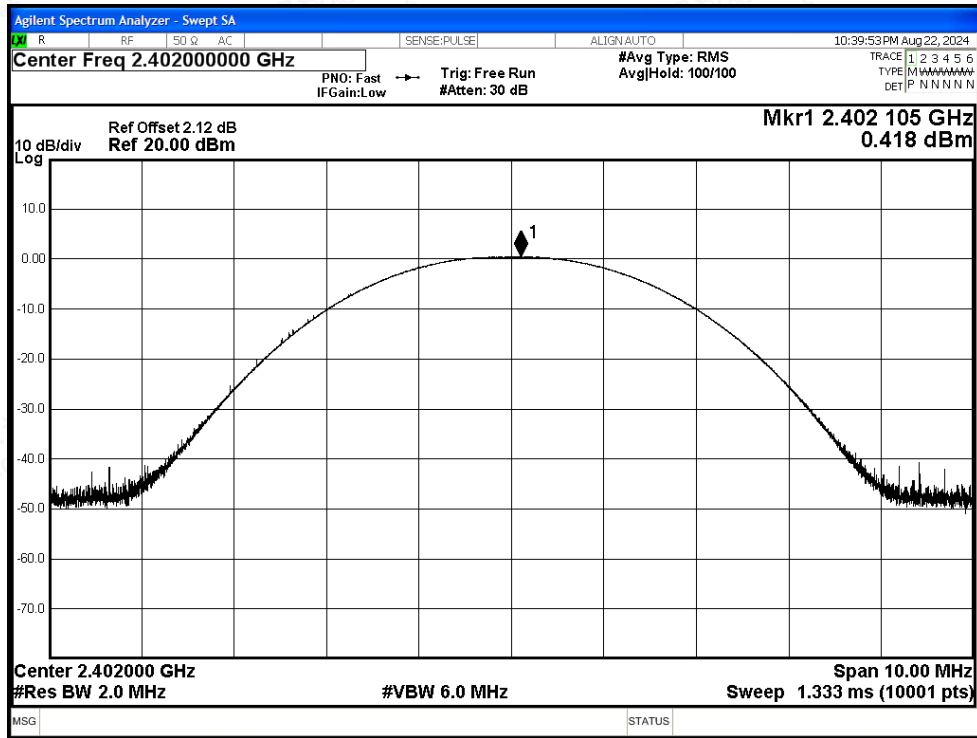
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.42	21	Pass
NVNT	1-DH5	2441	Ant1	0.24	21	Pass
NVNT	1-DH5	2480	Ant1	-0.5	21	Pass
NVNT	2-DH5	2402	Ant1	0.83	21	Pass
NVNT	2-DH5	2441	Ant1	1.32	21	Pass
NVNT	2-DH5	2480	Ant1	0.18	21	Pass
NVNT	3-DH5	2402	Ant1	1.07	21	Pass
NVNT	3-DH5	2441	Ant1	1.59	21	Pass
NVNT	3-DH5	2480	Ant1	0.28	21	Pass



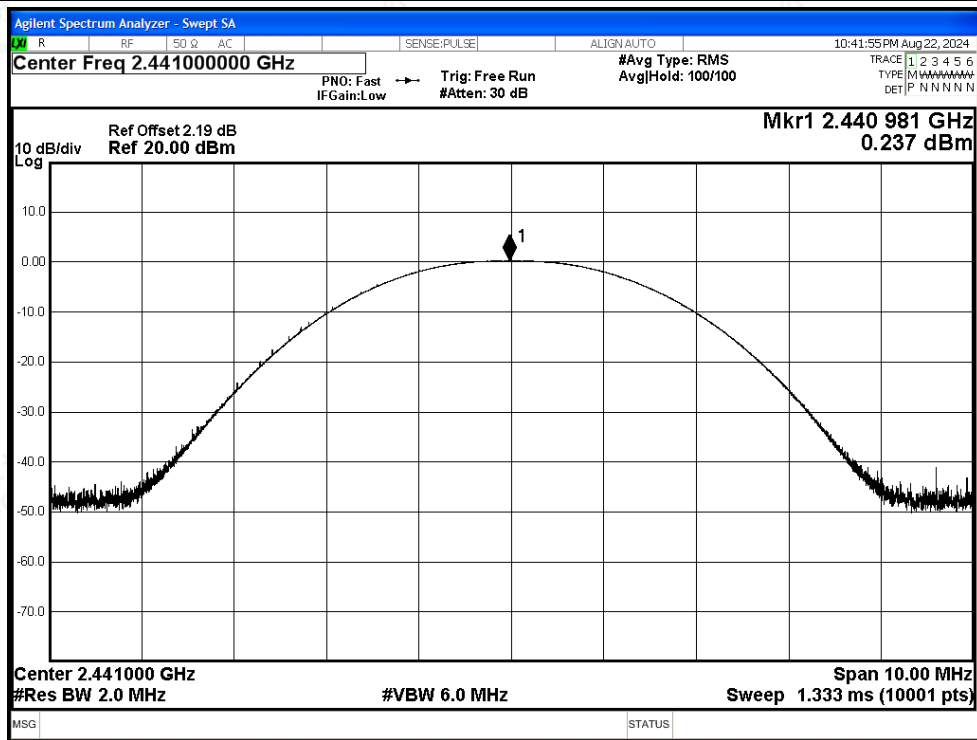


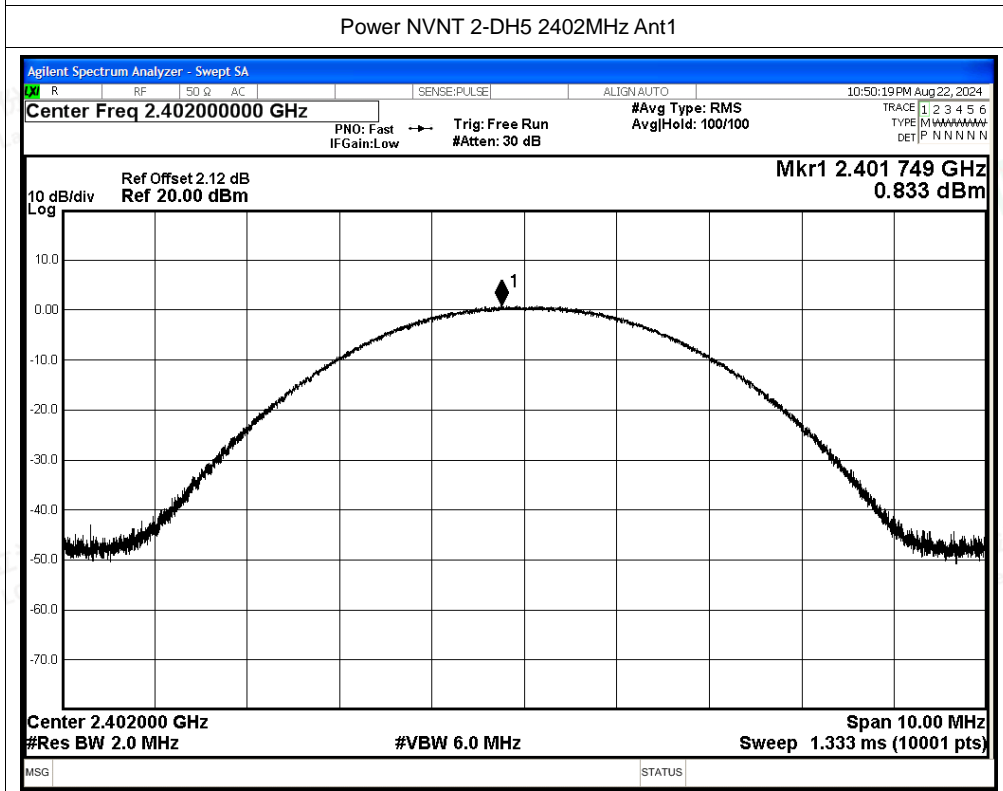
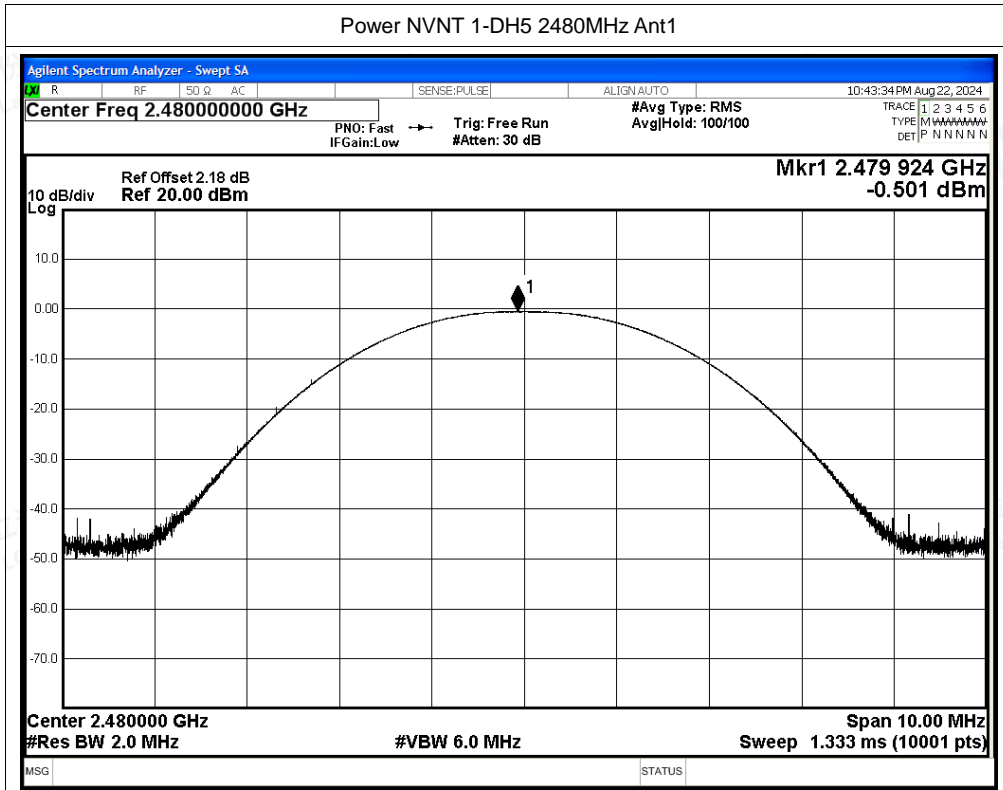
Test Graphs

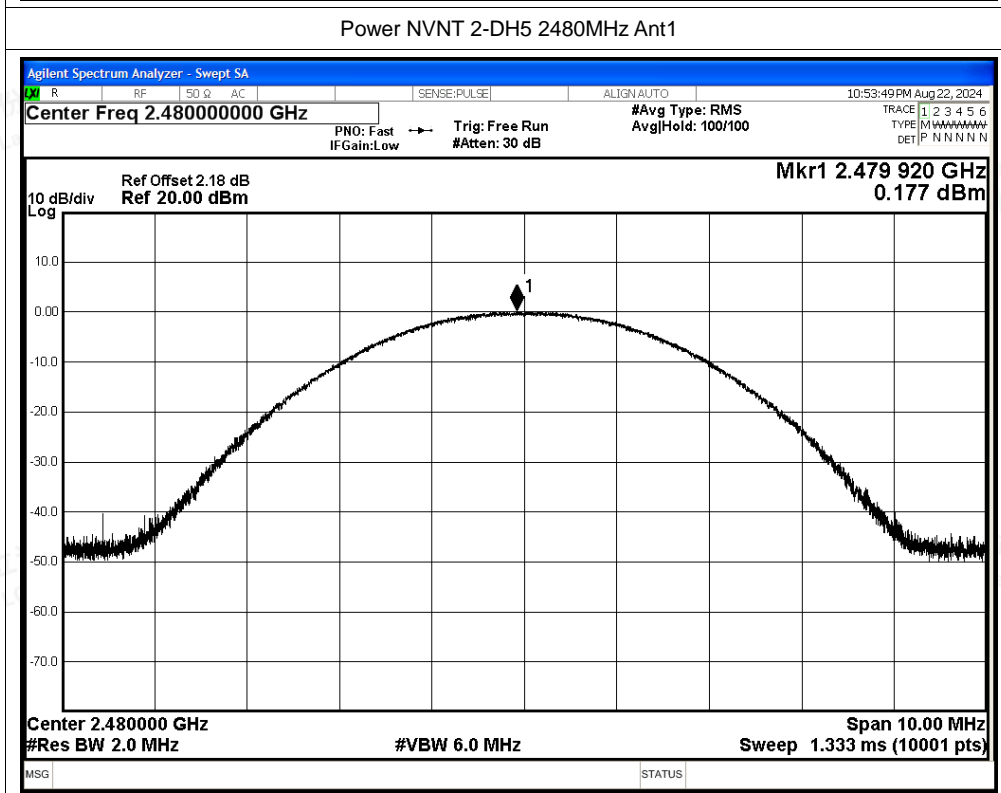
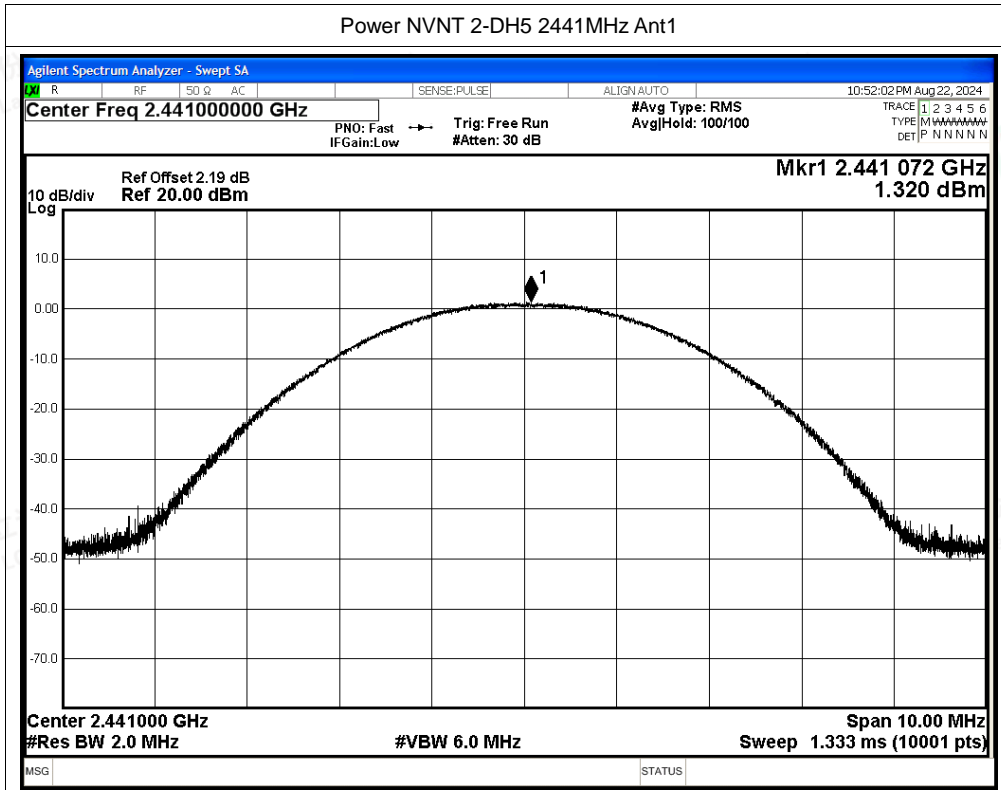
Power NVNT 1-DH5 2402MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1

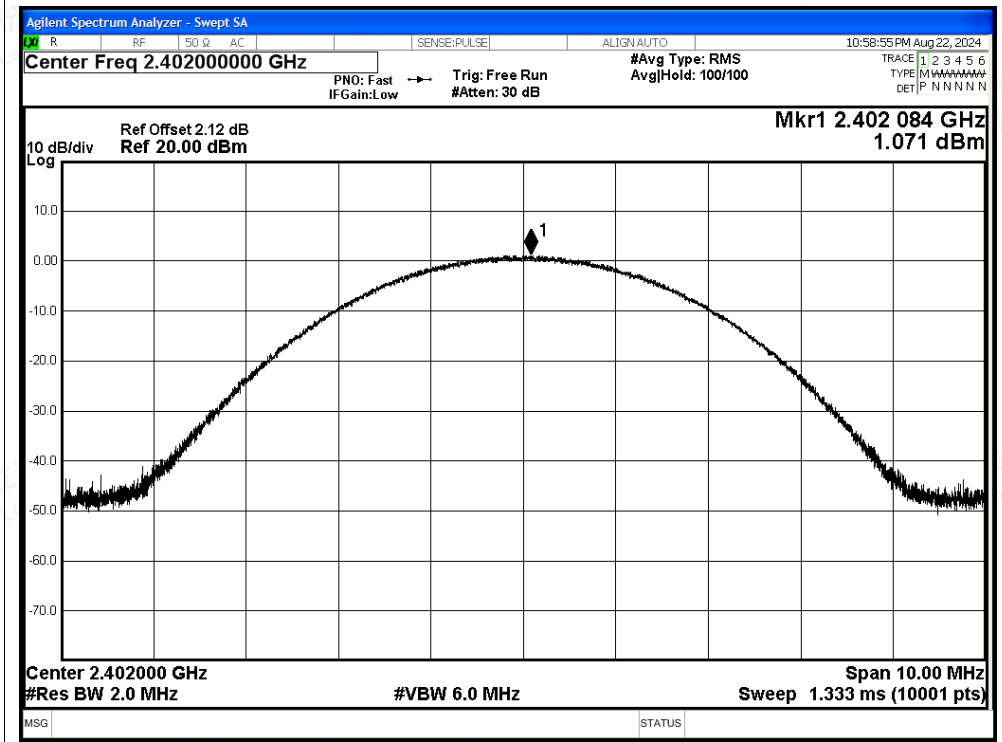




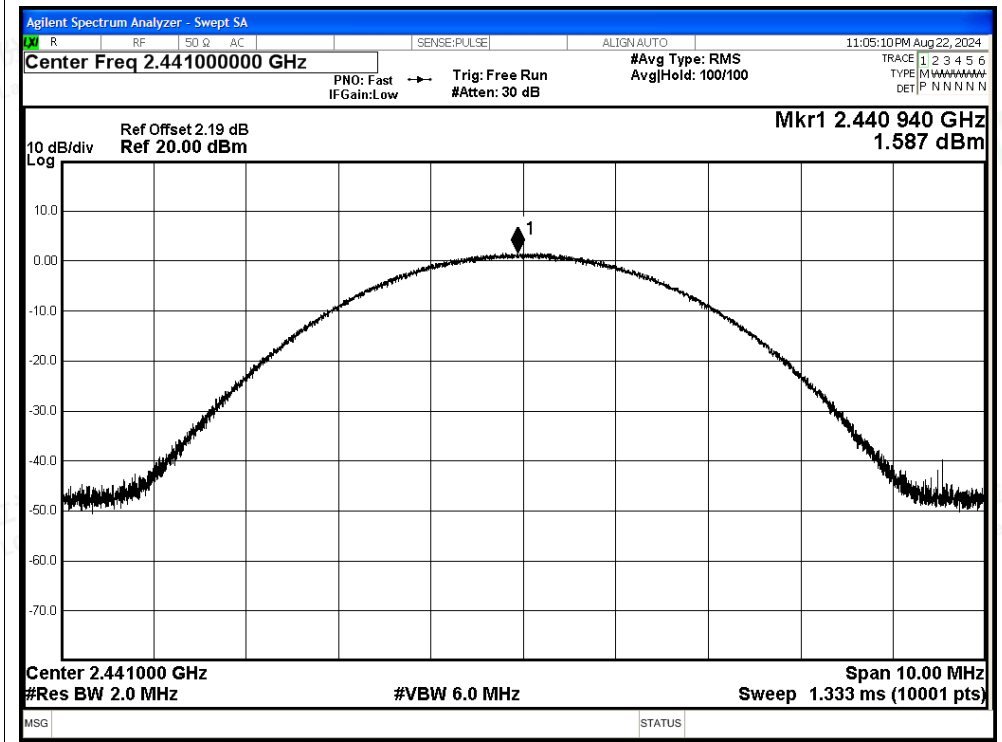


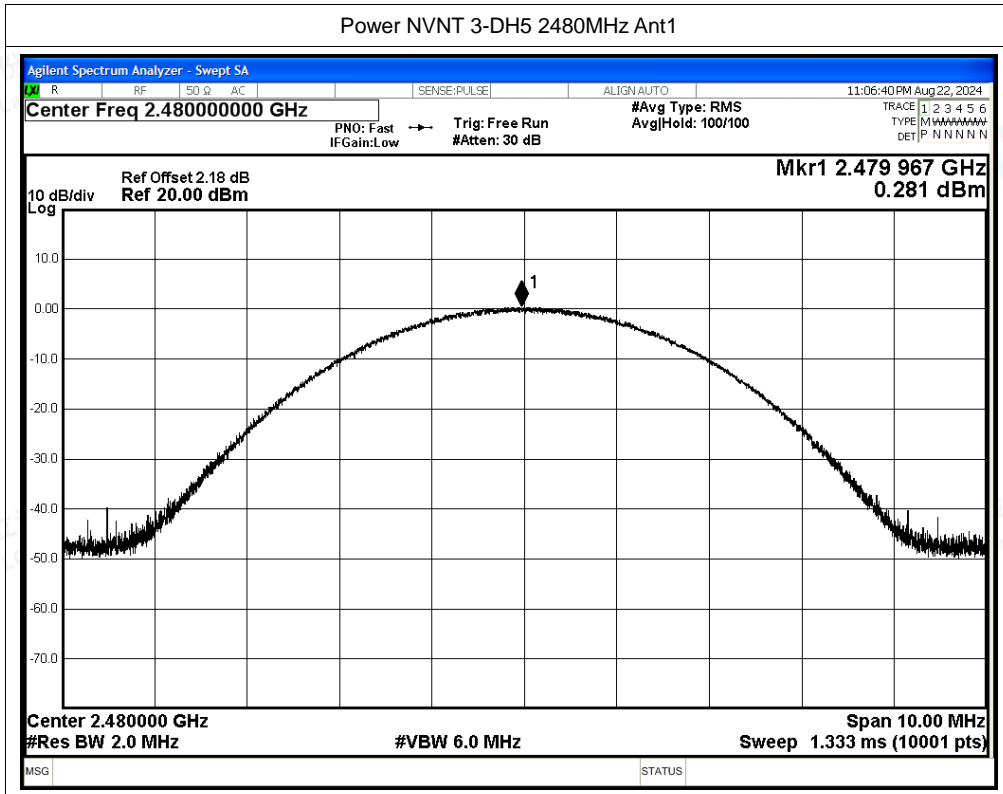


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1







A.3 Carrier Frequencies Separation

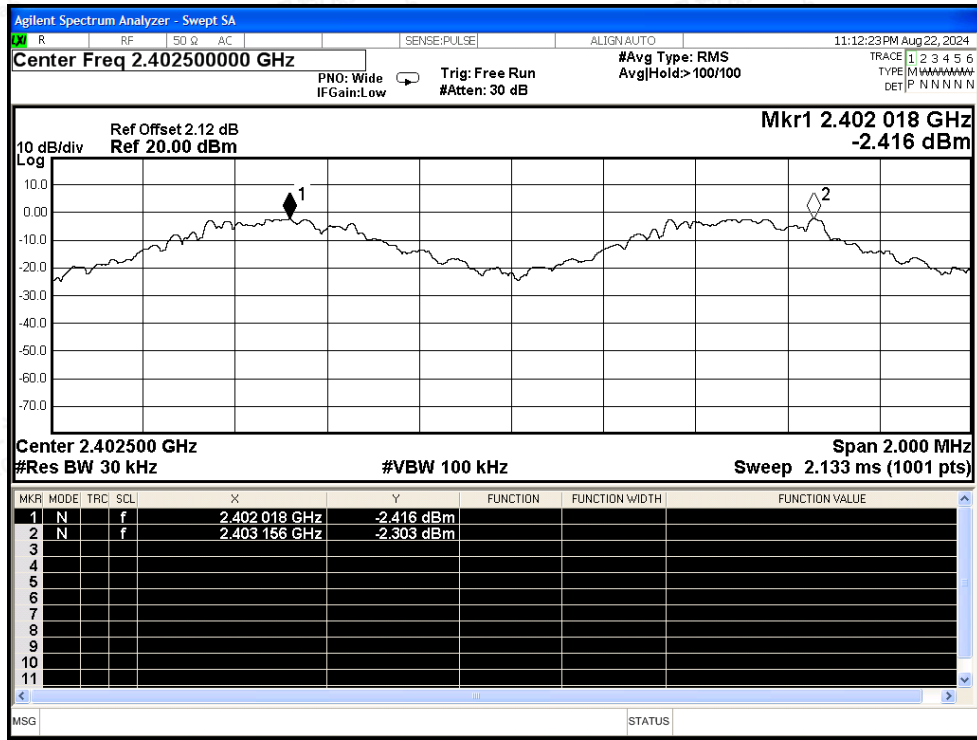
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.018	2403.156	1.138	0.635	Pass
NVNT	2-DH5	Ant1	2402.006	2403.03	1.024	0.877	Pass
NVNT	3-DH5	Ant1	2402.01	2403.02	1.01	0.877	Pass



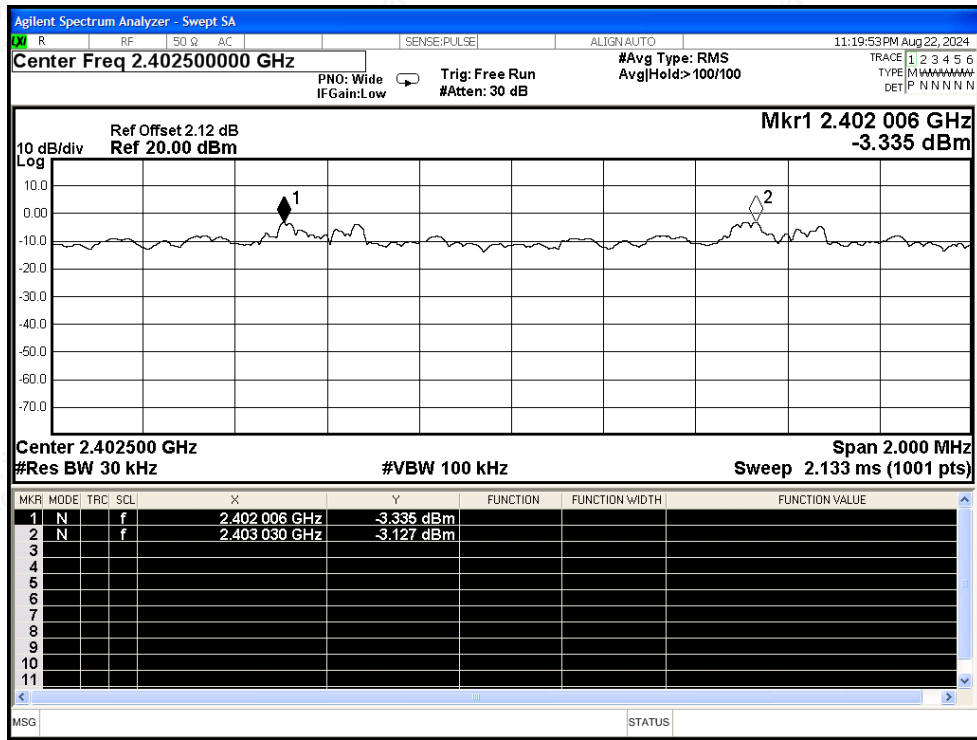


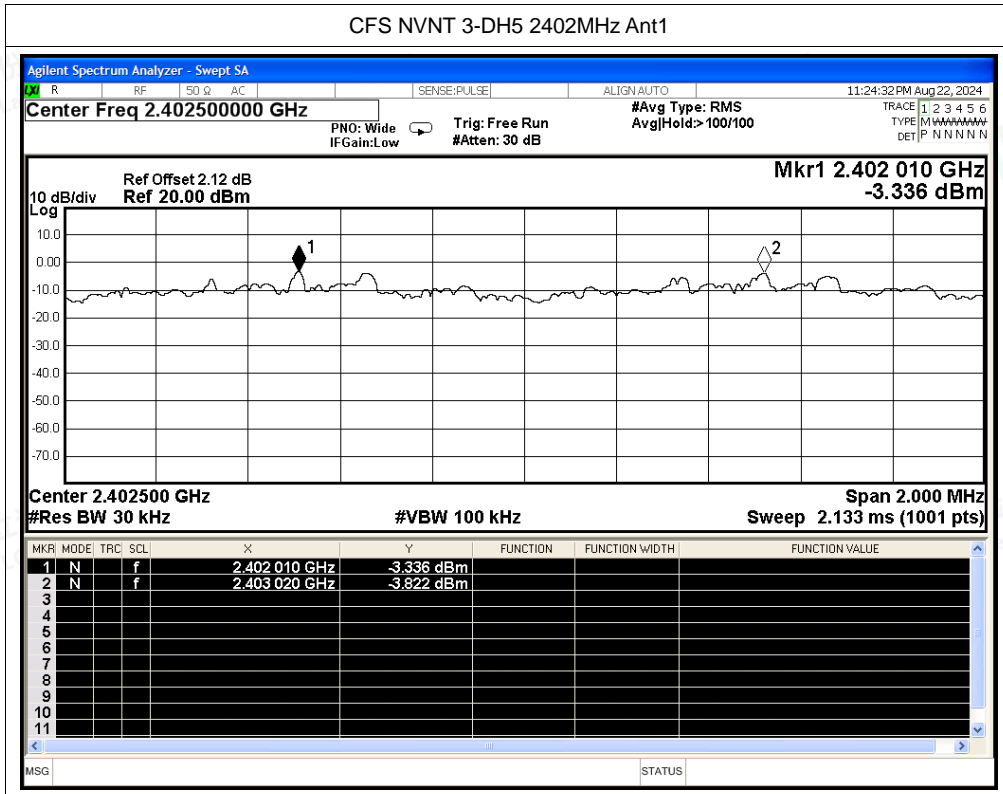
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1







A.4 Dwell Time

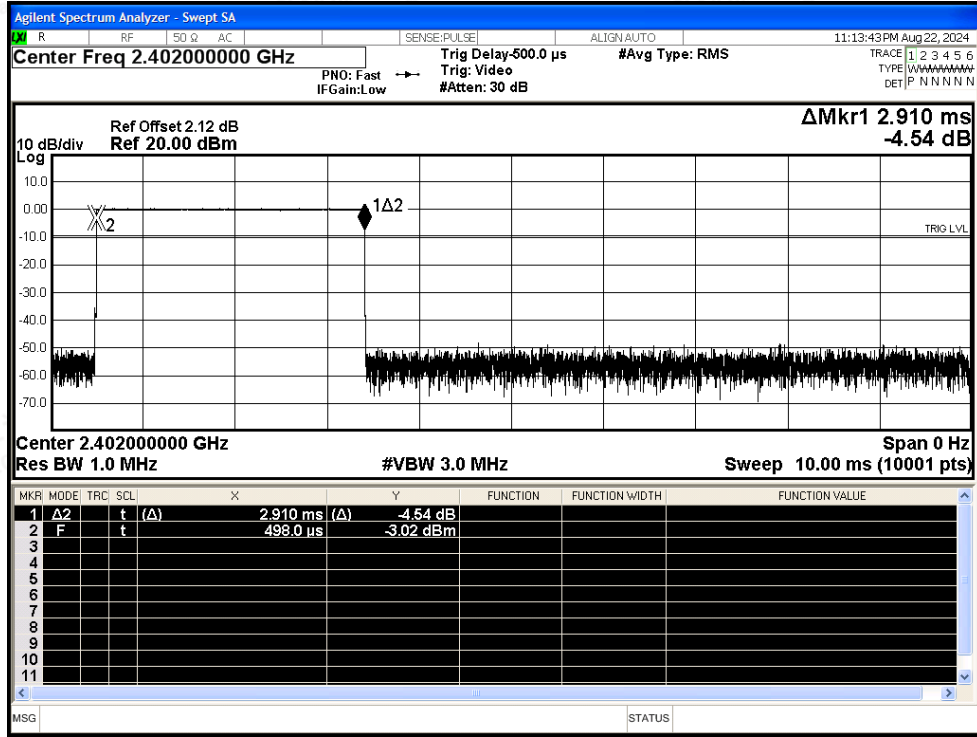
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.91	317.19	109	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.899	344.981	119	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	324.464	112	31600	400	Pass



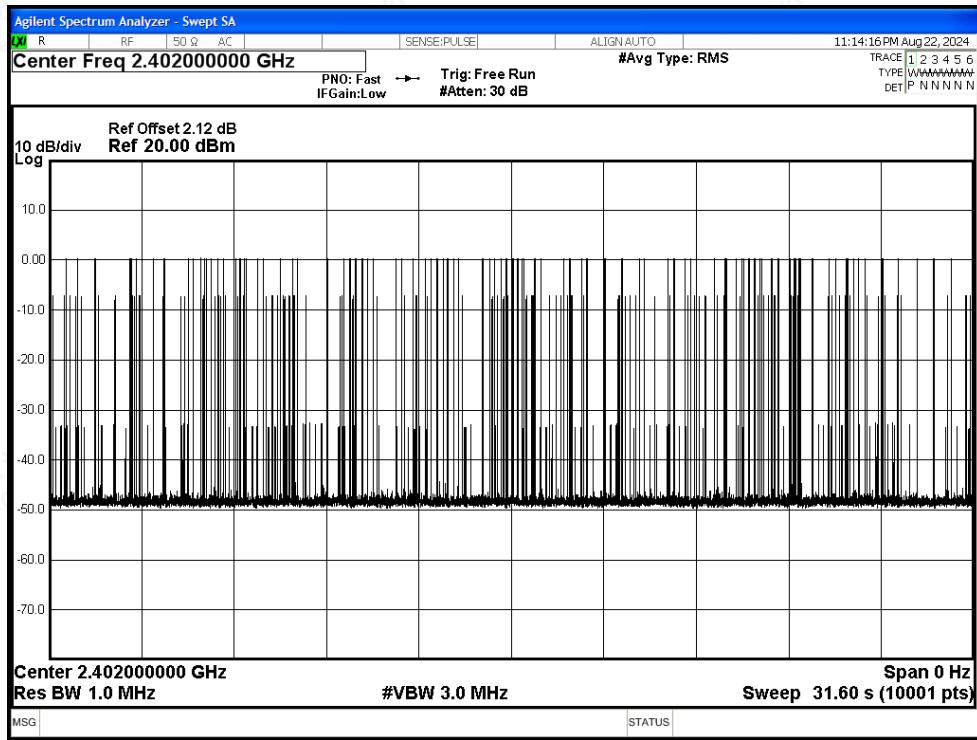


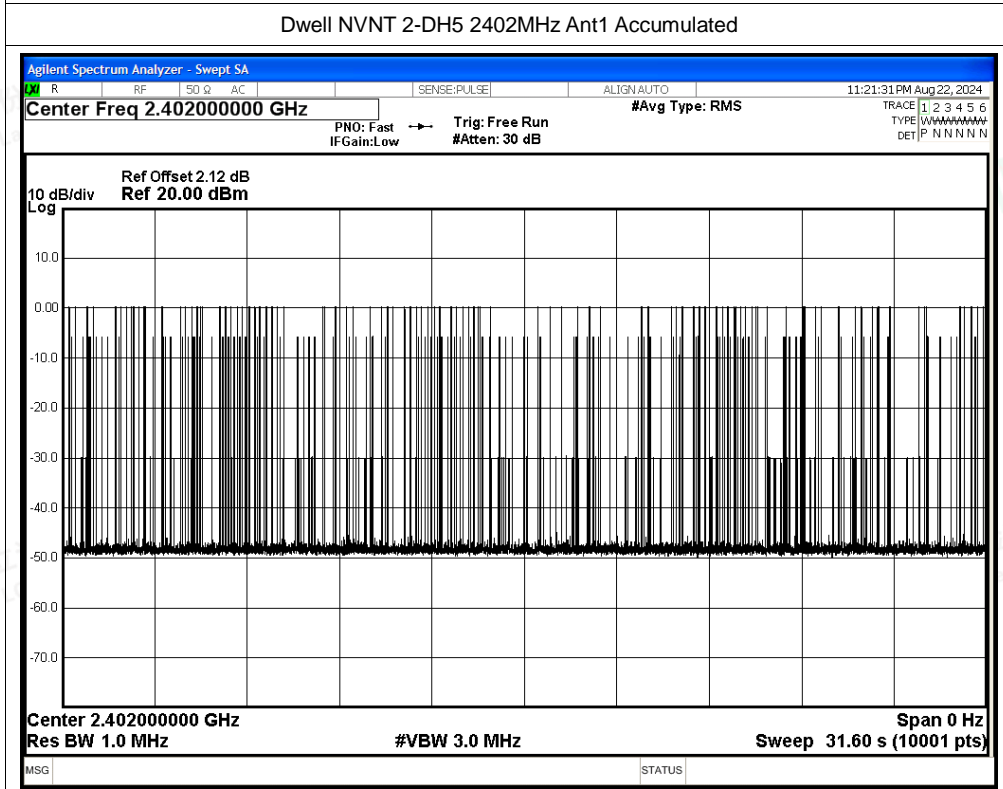
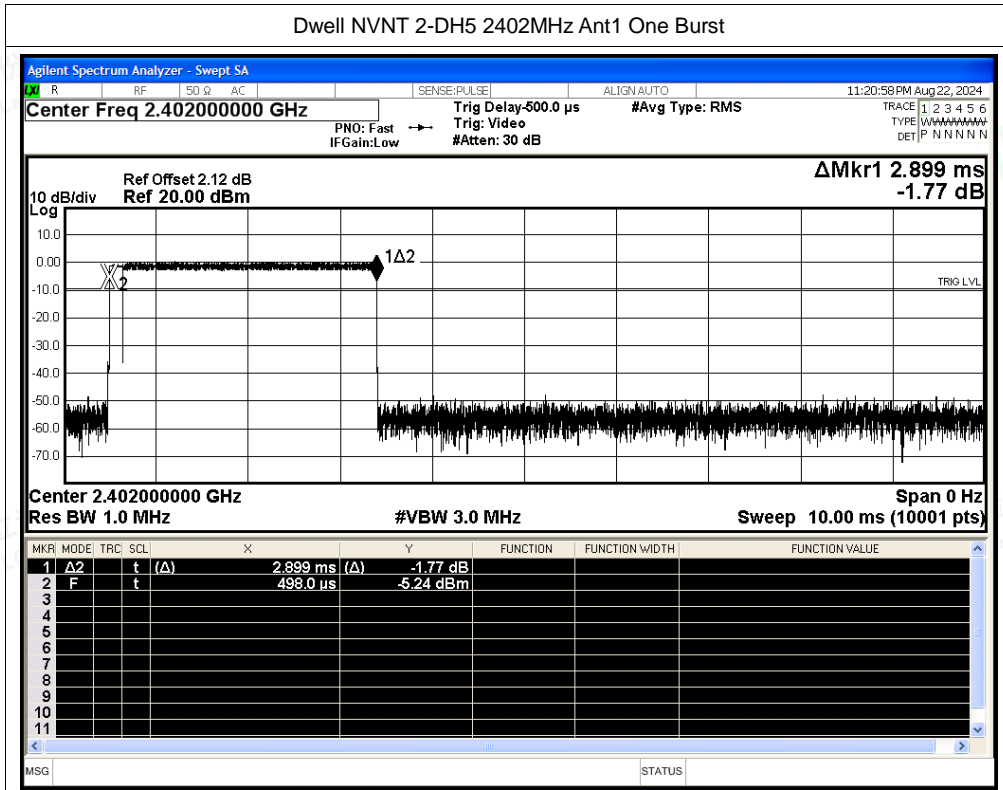
Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



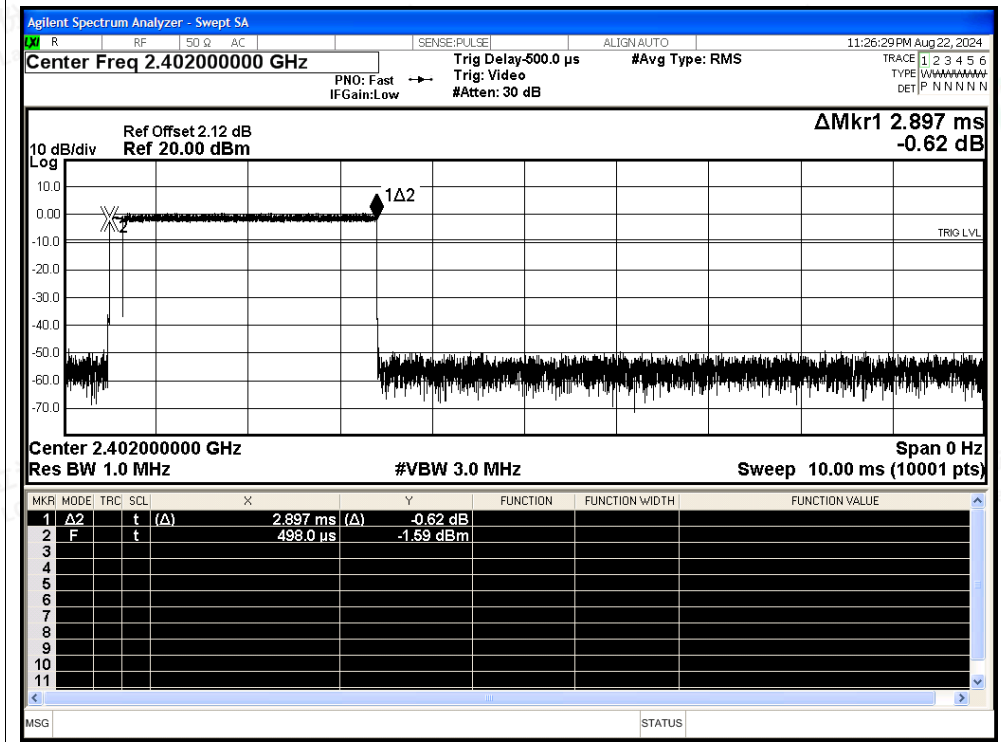
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



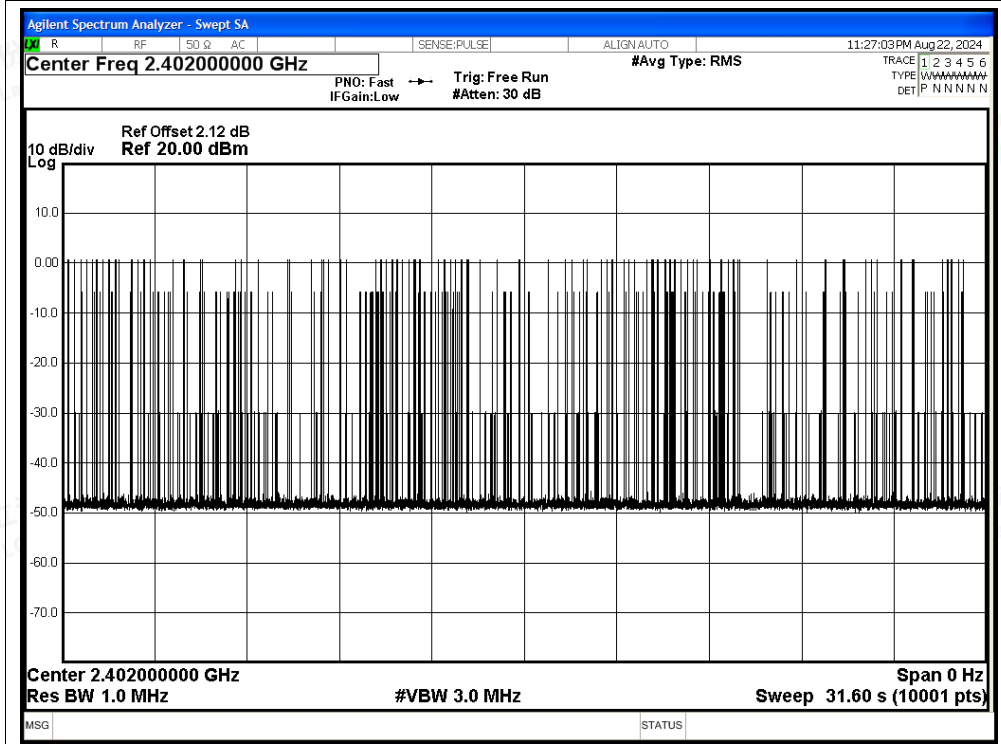




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated





A.5 Number of Hopping Channel

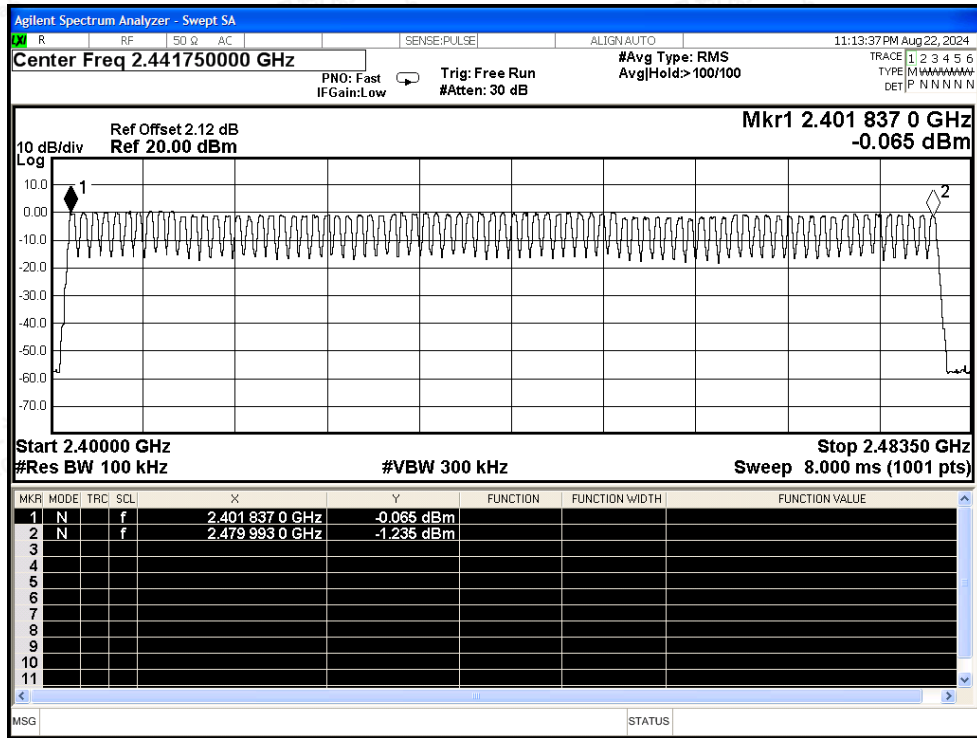
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass



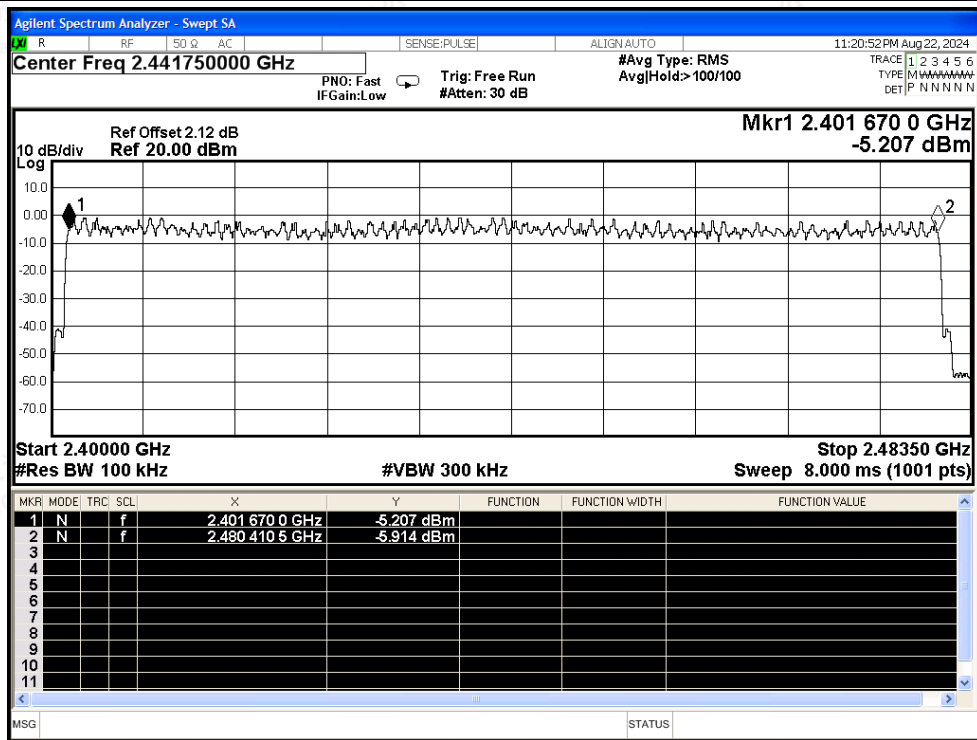


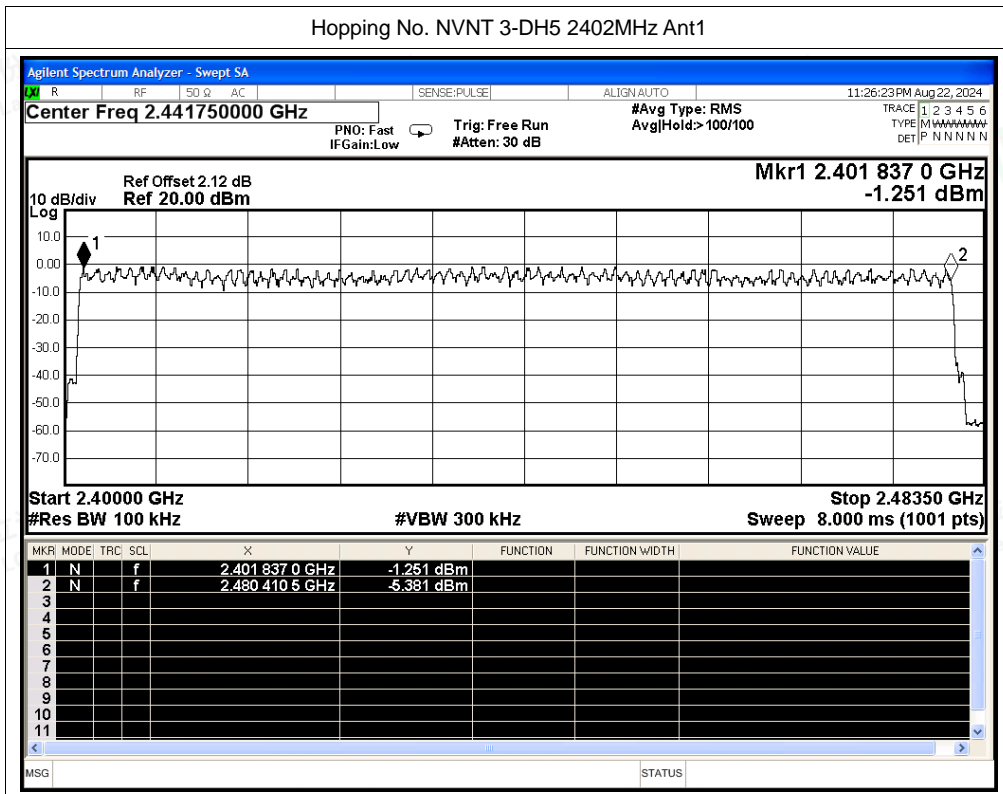
Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1







A.6 Band Edge

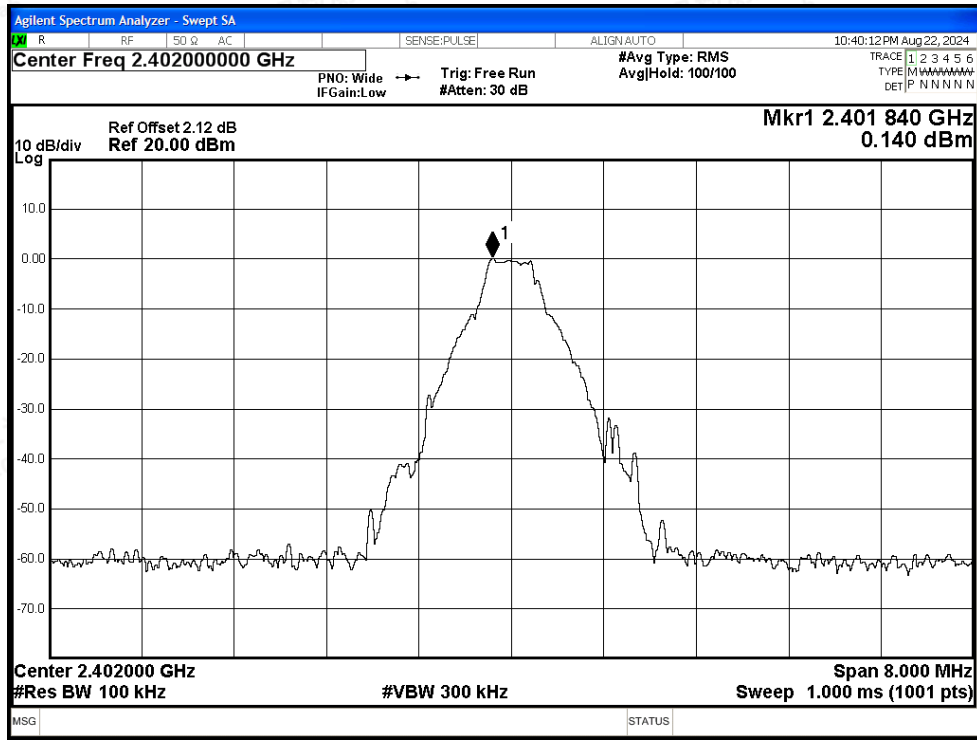
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.28	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.48	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-55.08	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-53.74	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-54.11	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-52.05	-20	Pass



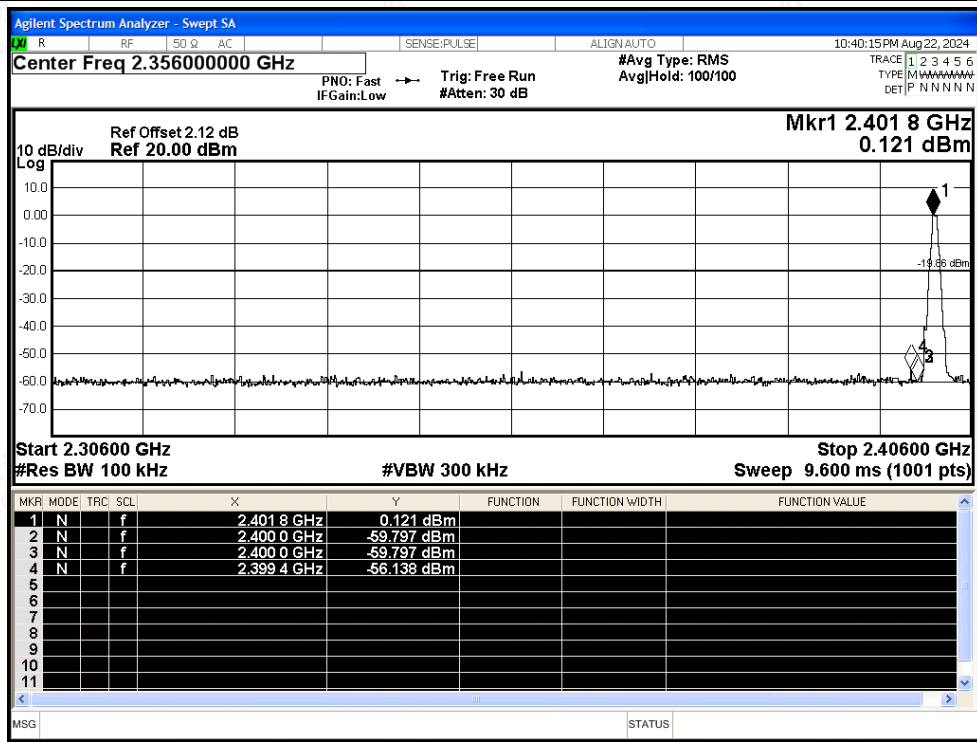


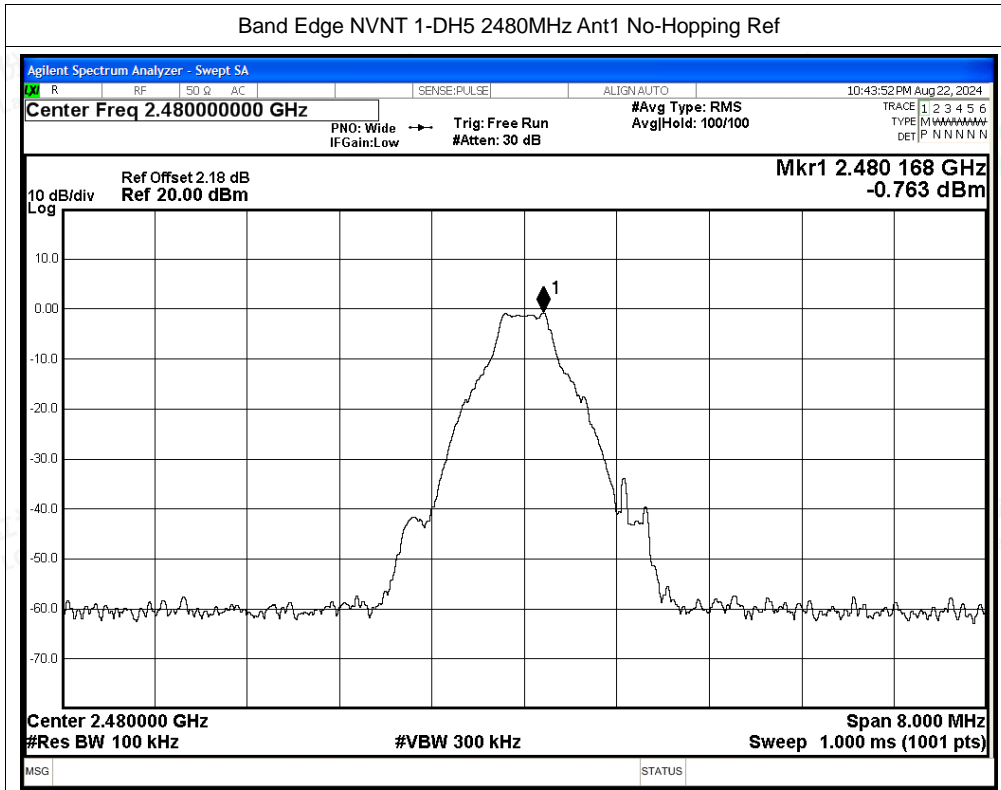
Test Graphs

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

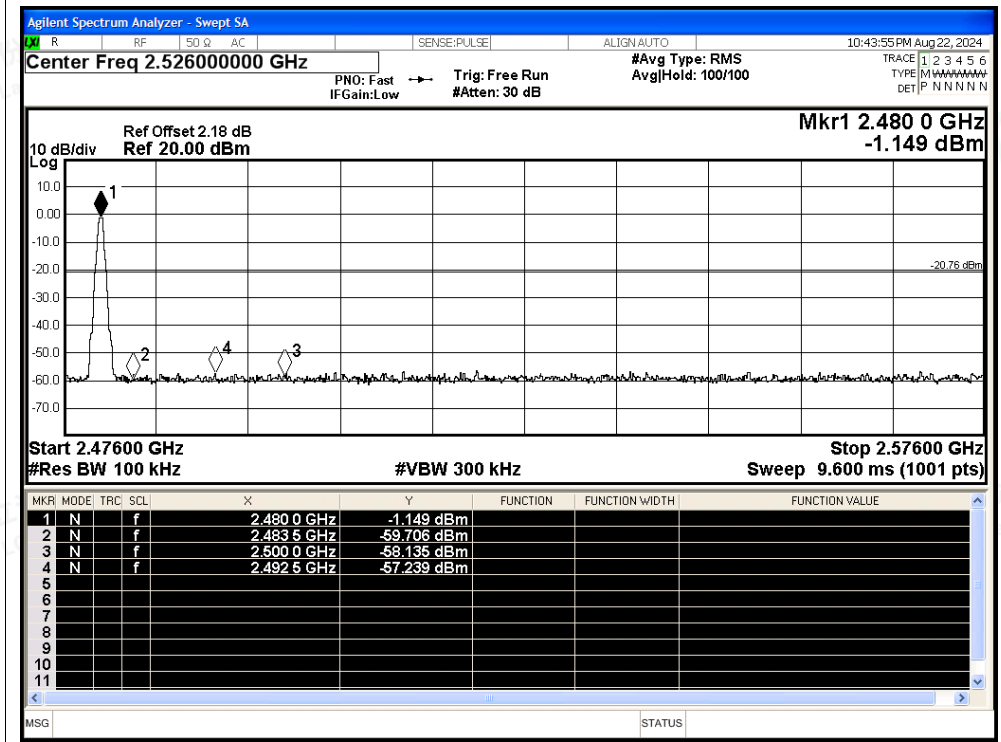


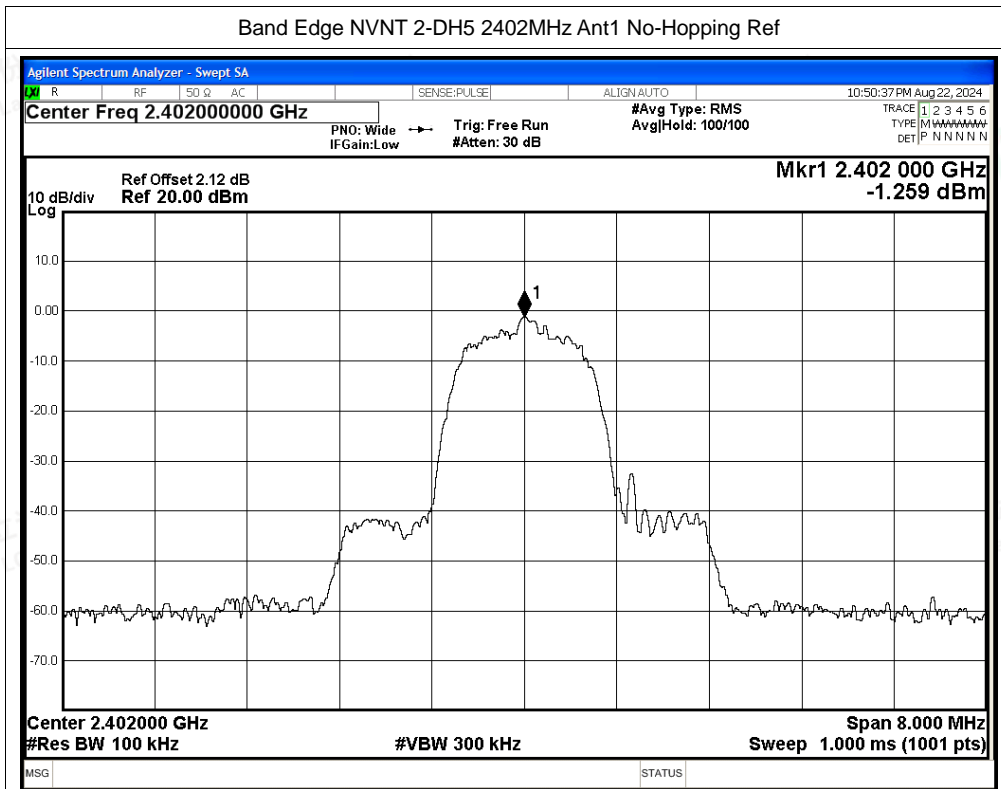
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



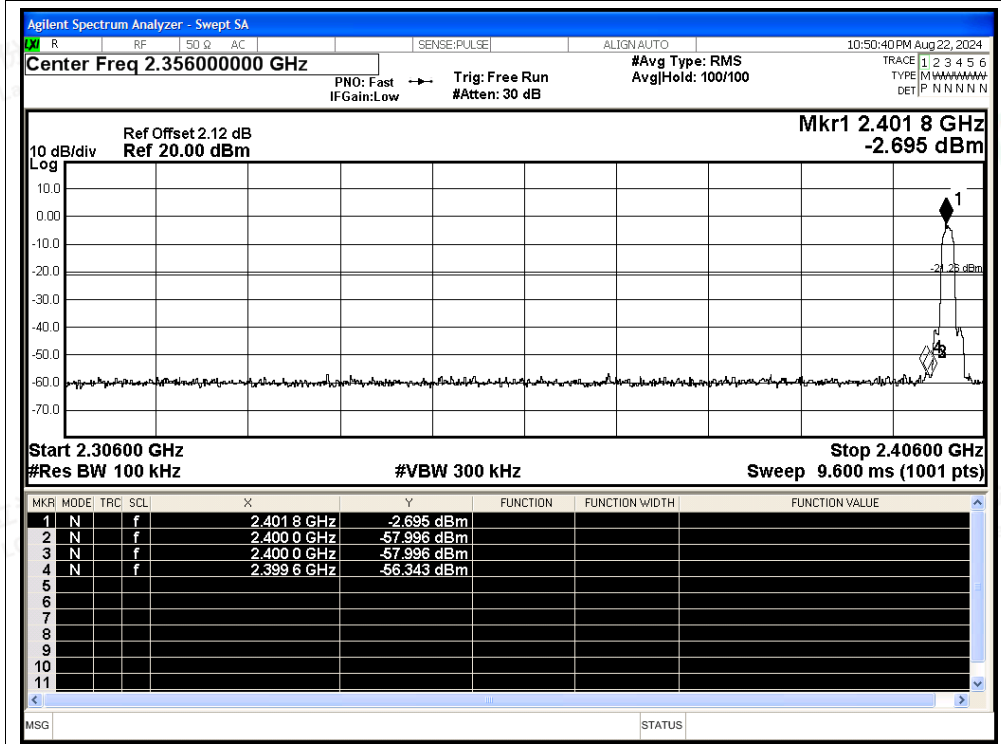


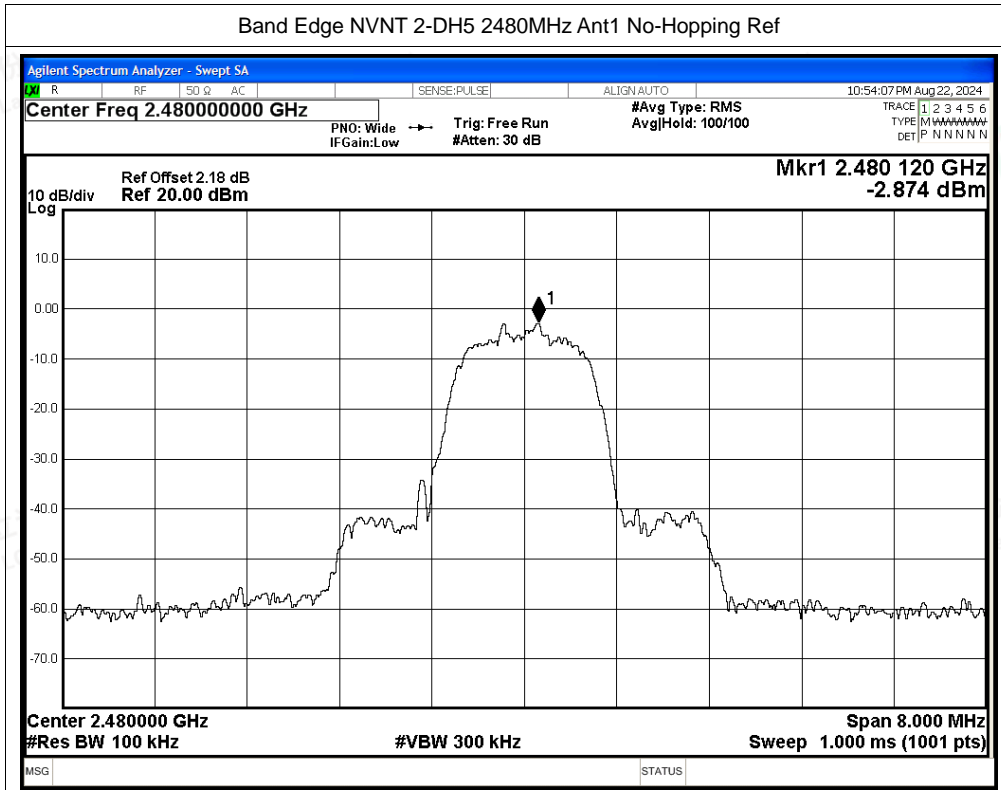
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



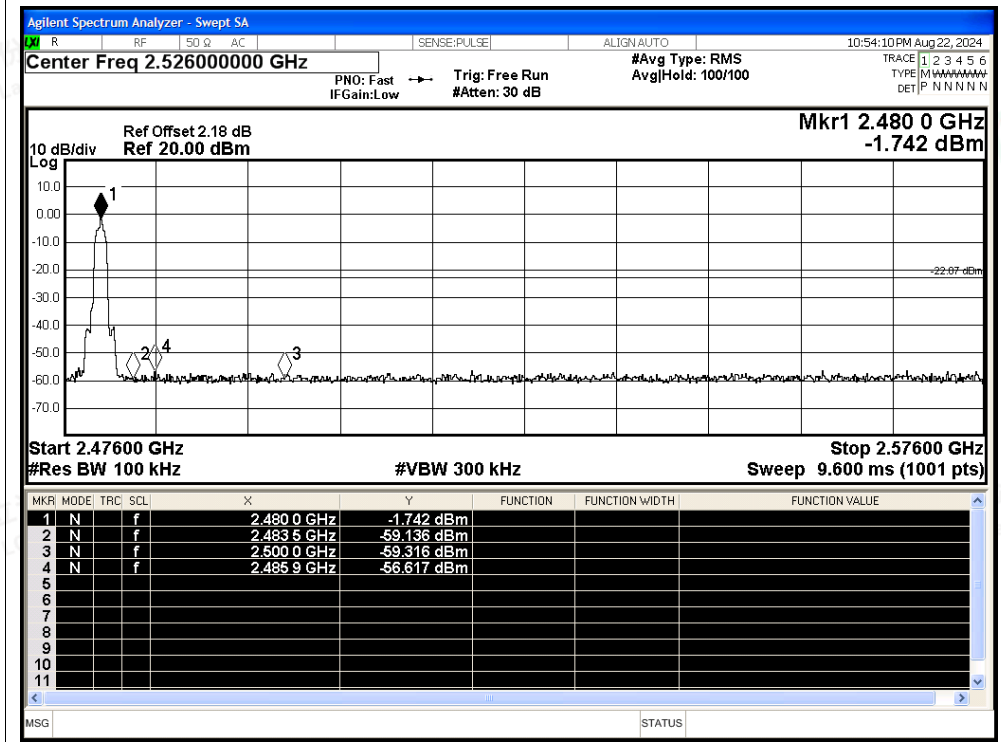


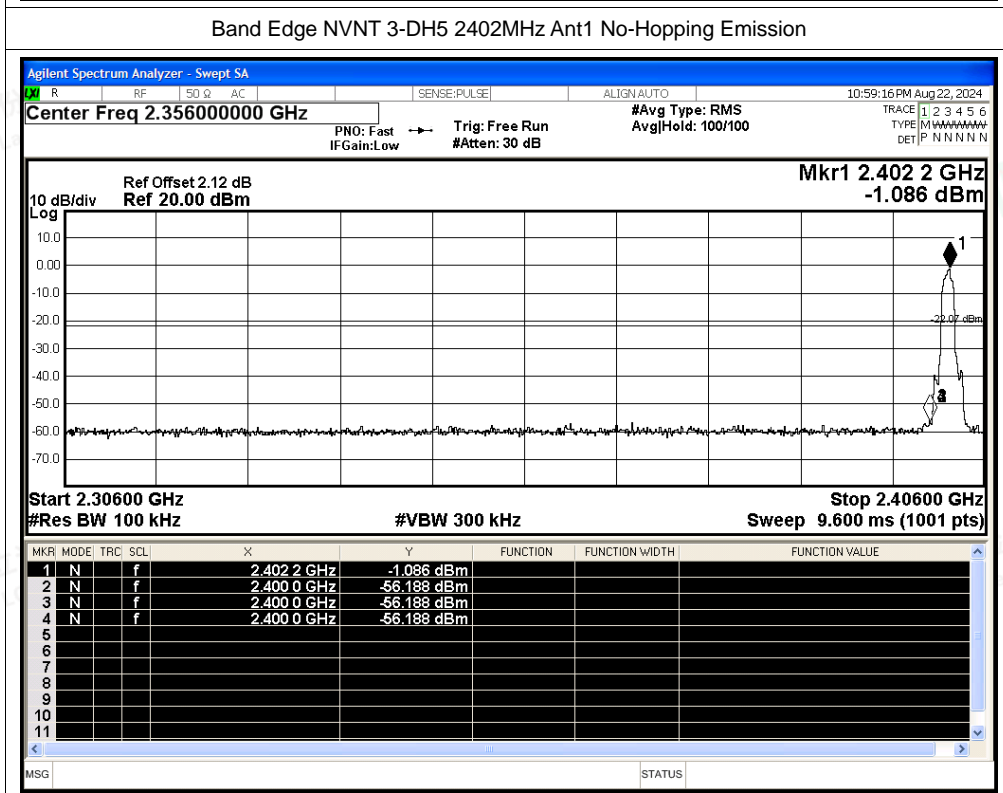
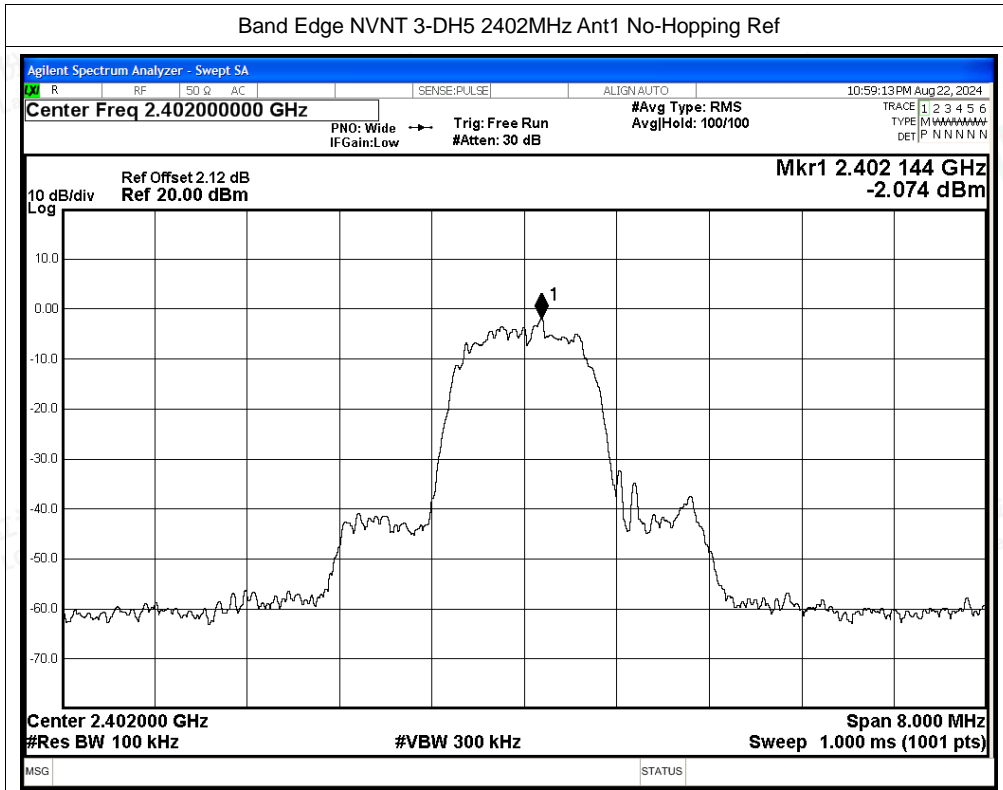
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

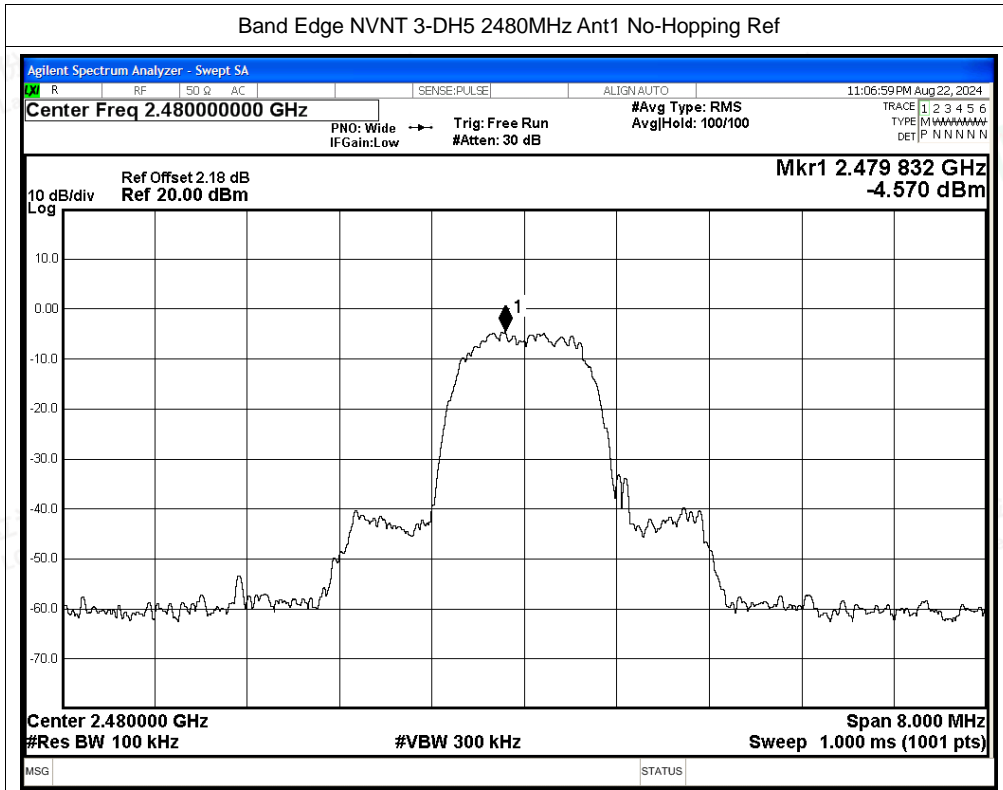




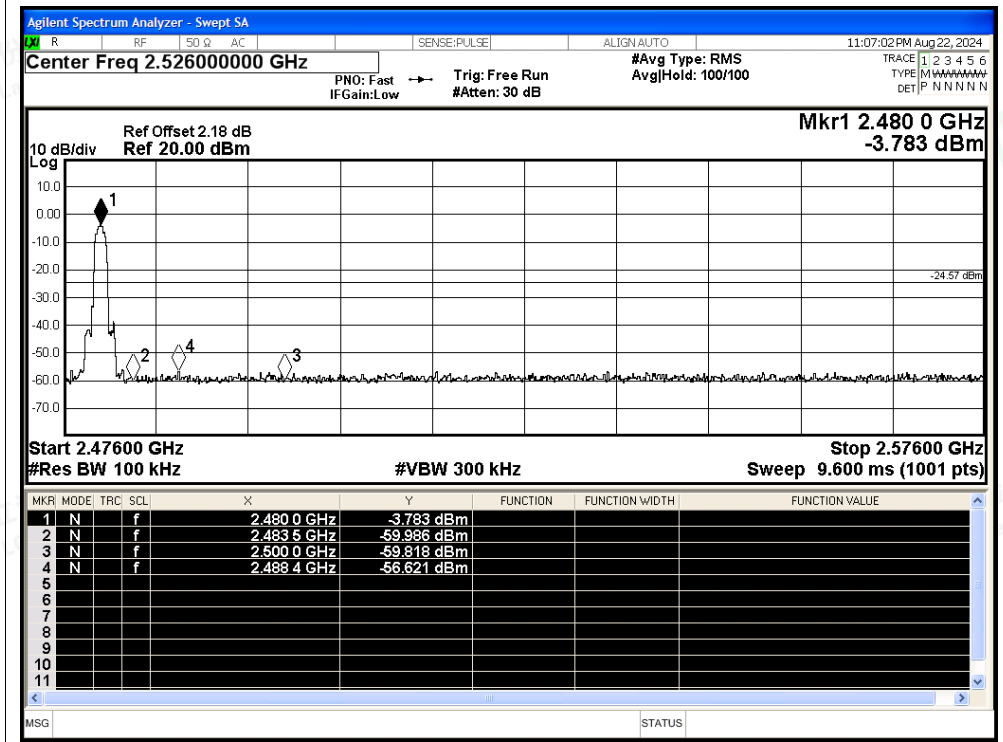
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission







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





(Hopping)

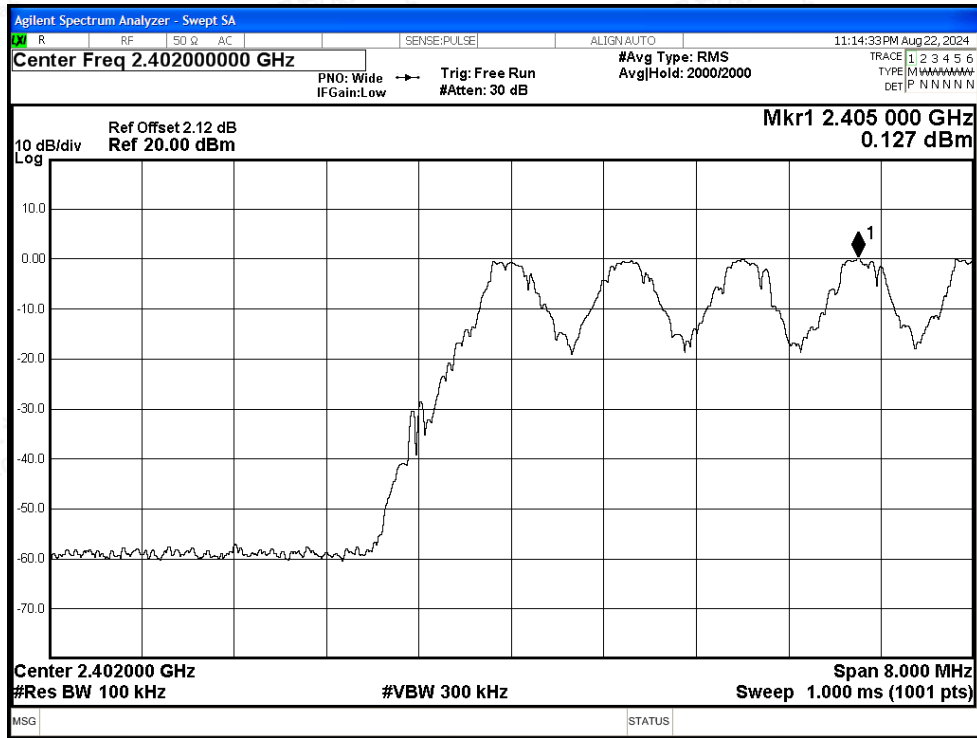
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-55.83	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-55.58	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-55	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.45	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-53.85	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-53.69	-20	Pass



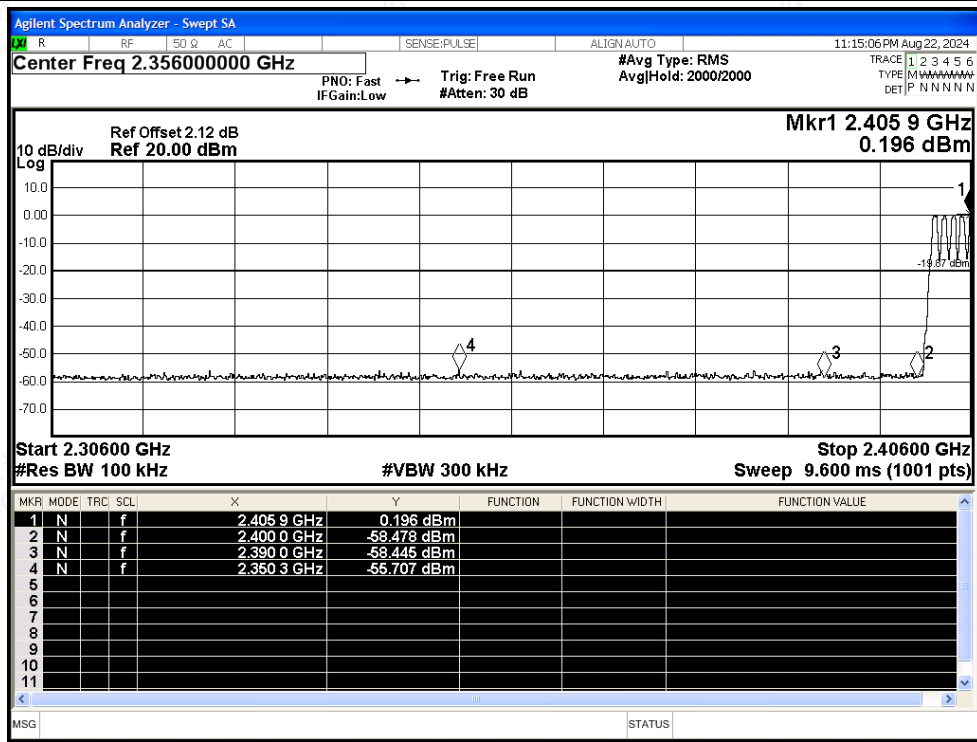


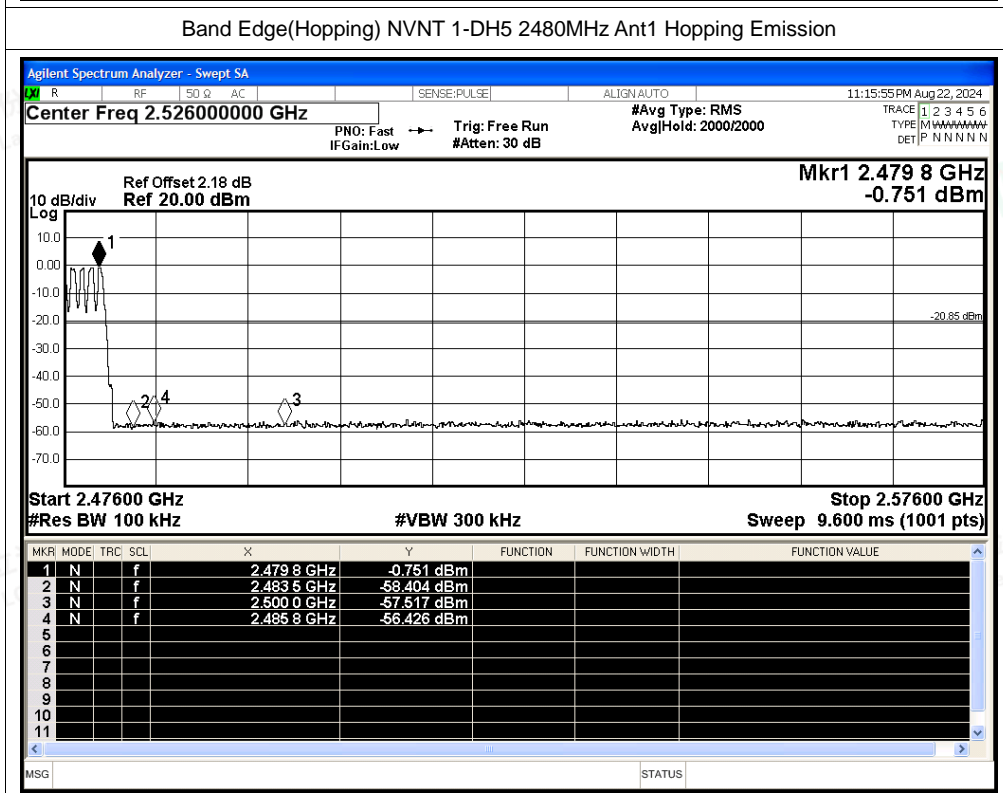
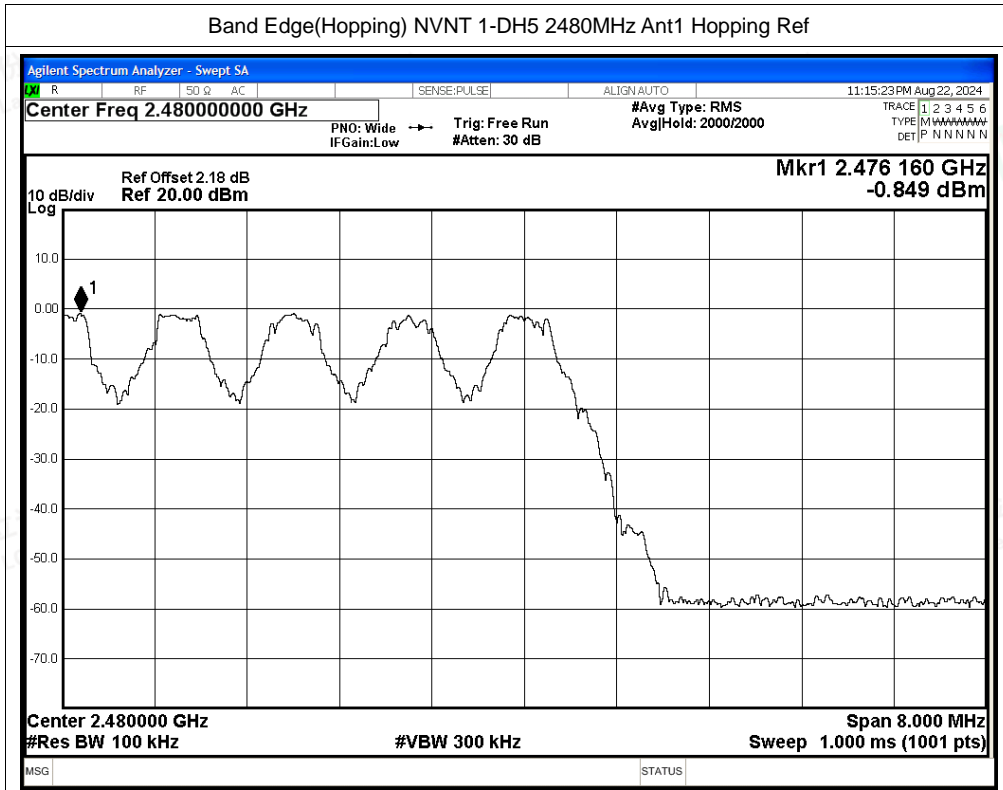
Test Graphs

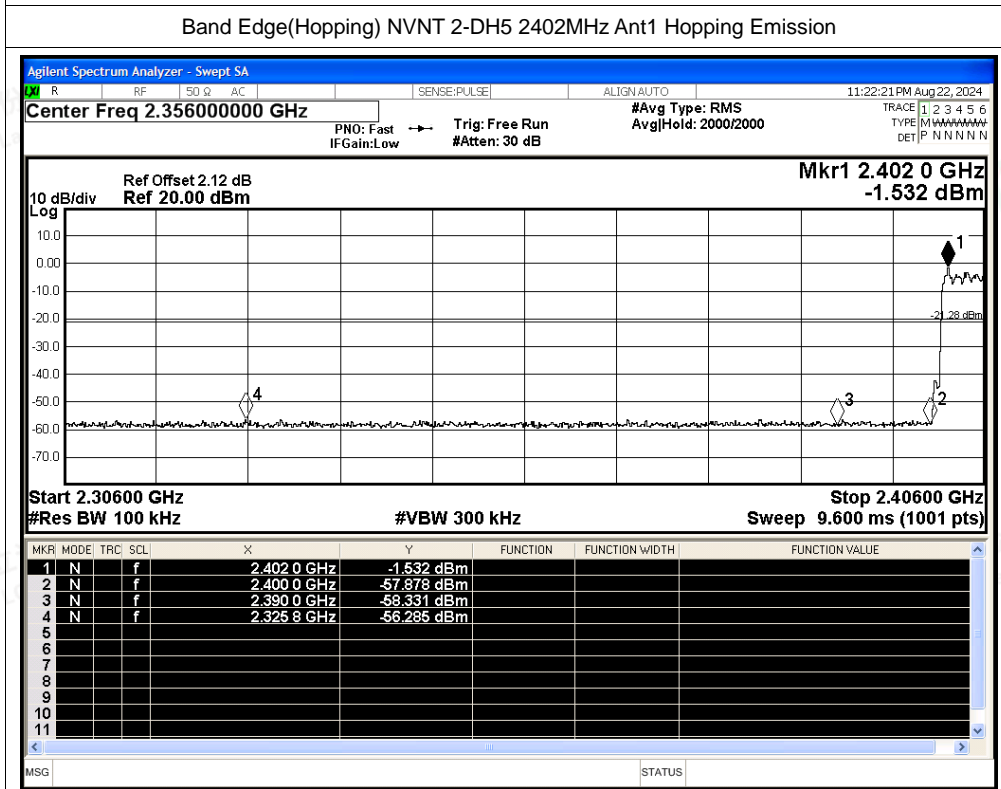
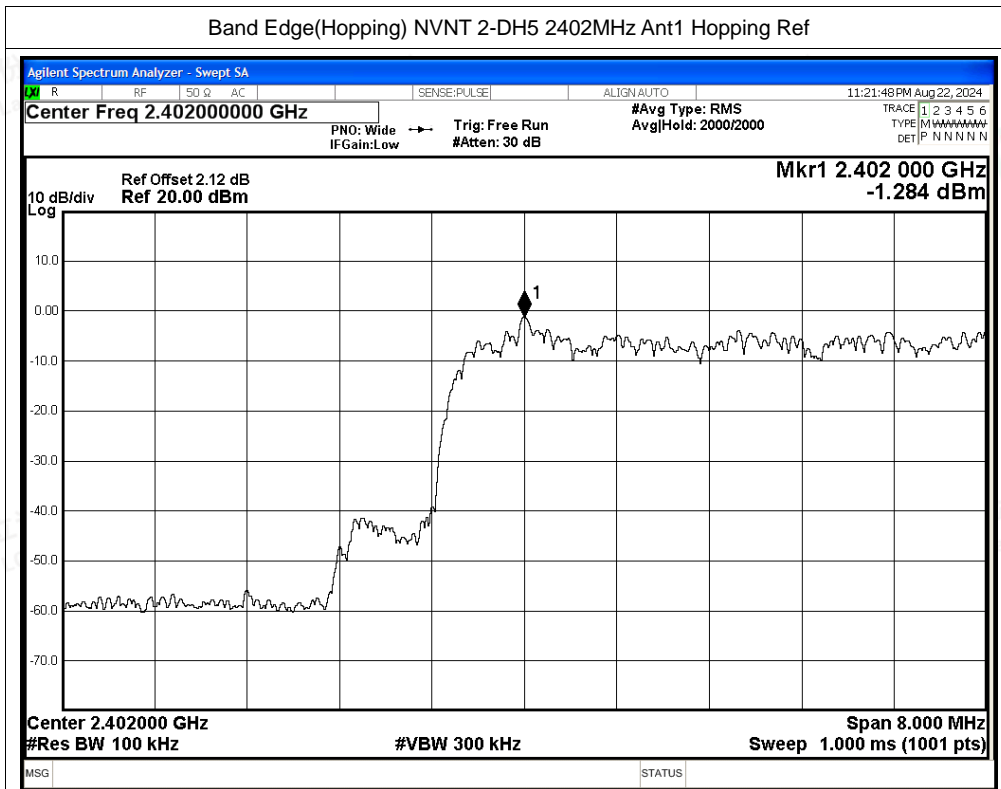
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



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

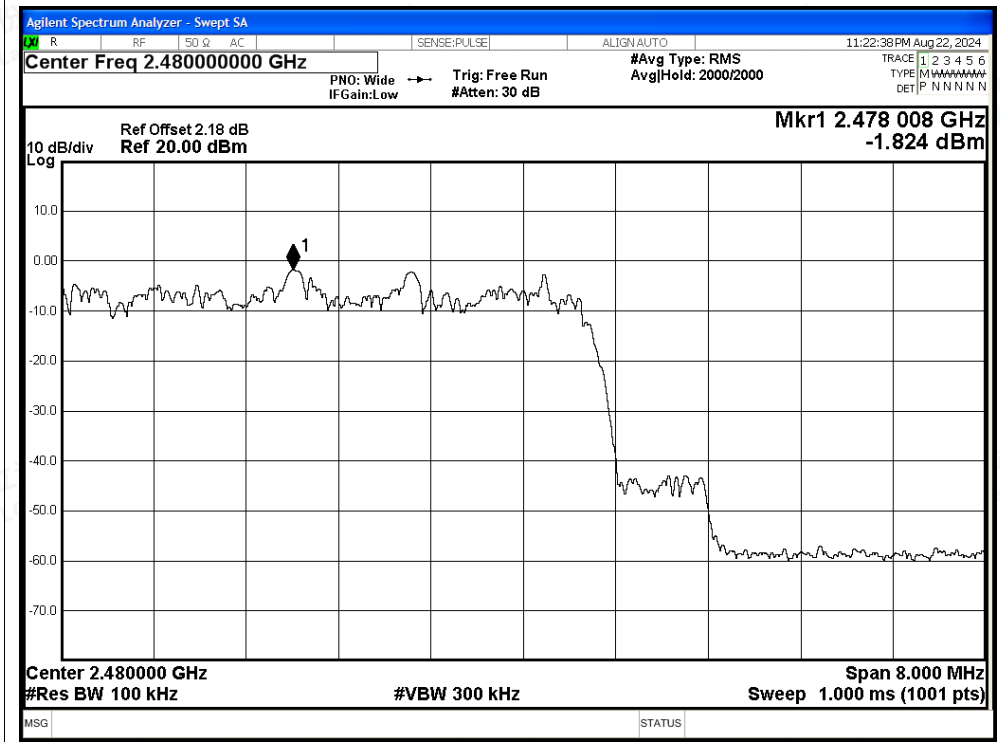




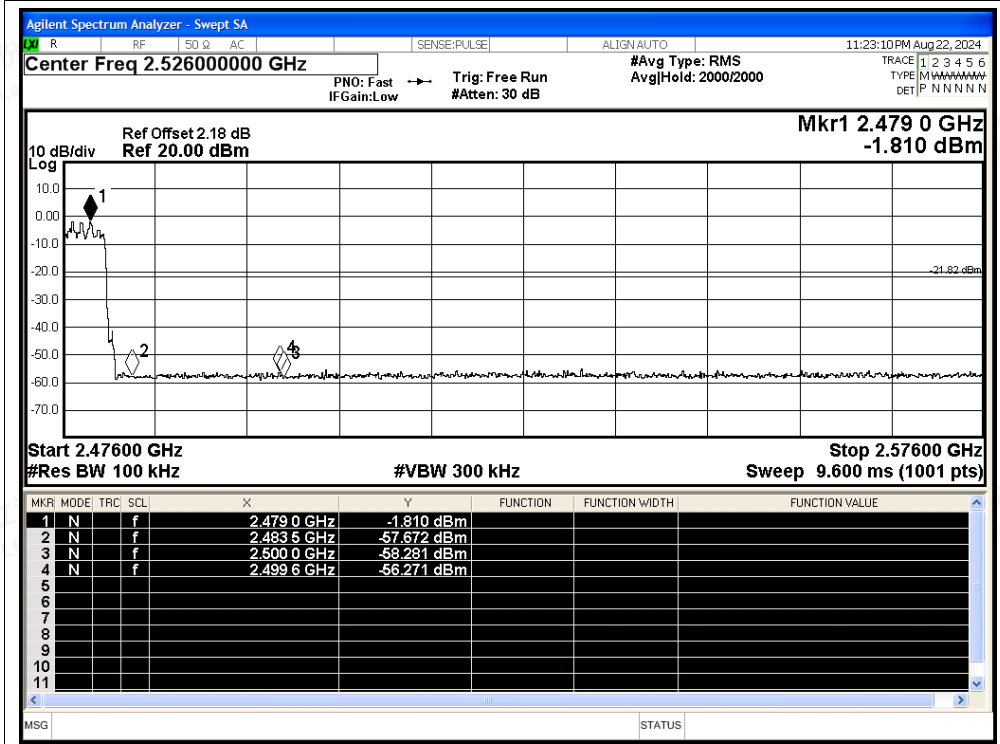




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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

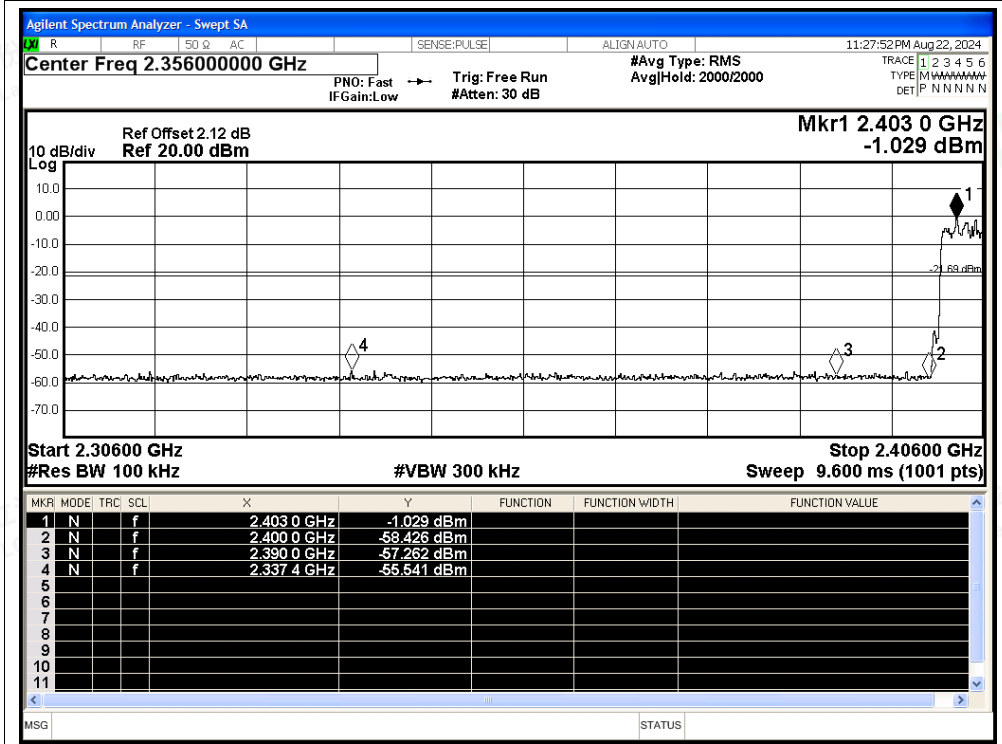




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref

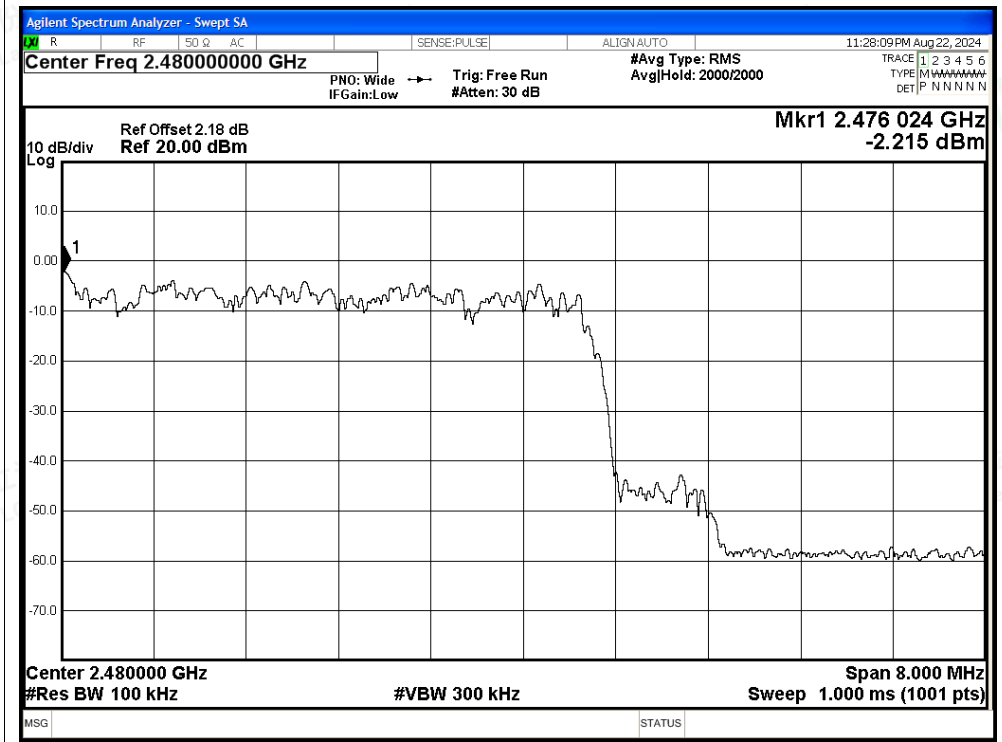


Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission

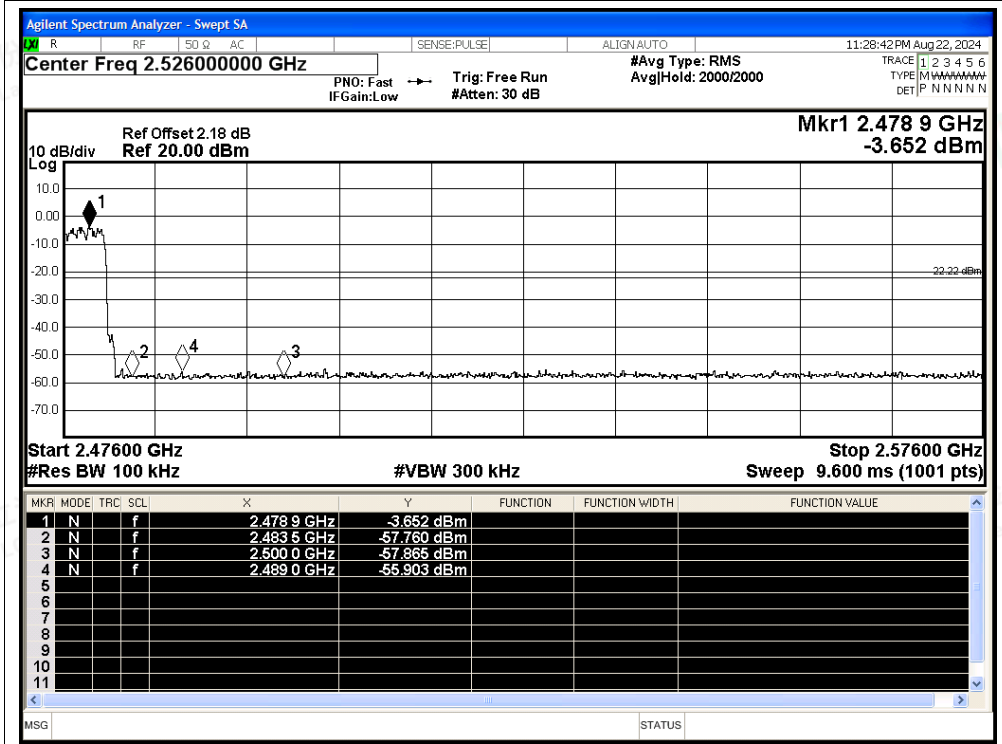




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



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





A.7 Conducted RF Spurious Emission

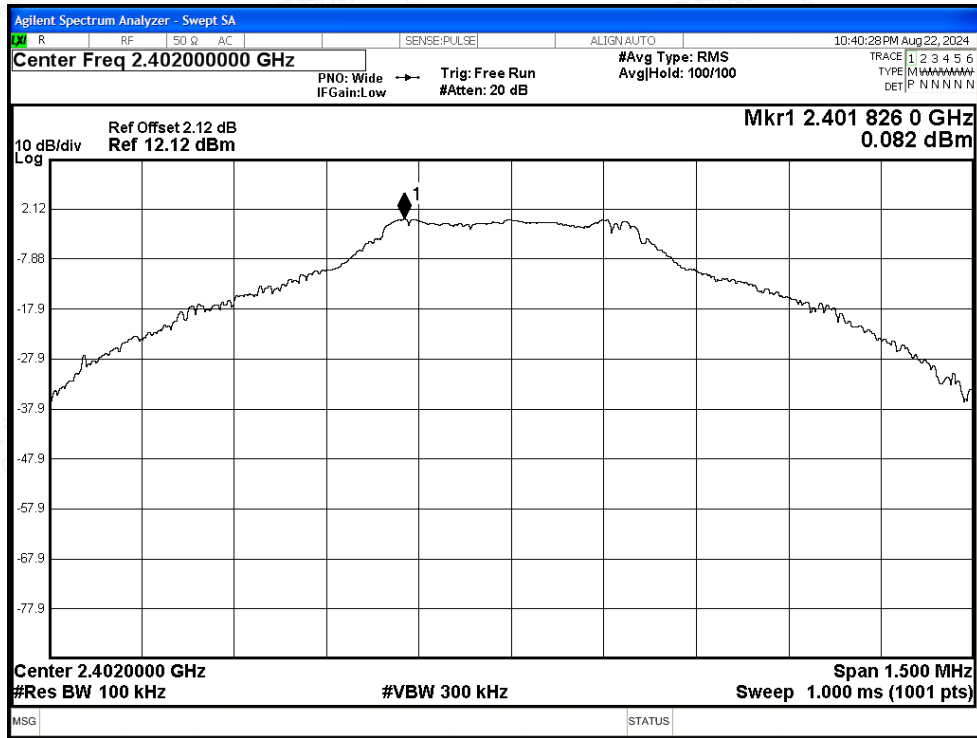
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-55.57	-20	Pass
NVNT	1-DH5	2441	Ant1	-55.37	-20	Pass
NVNT	1-DH5	2480	Ant1	-54.16	-20	Pass
NVNT	2-DH5	2402	Ant1	-53.21	-20	Pass
NVNT	2-DH5	2441	Ant1	-55.26	-20	Pass
NVNT	2-DH5	2480	Ant1	-53.35	-20	Pass
NVNT	3-DH5	2402	Ant1	-52.46	-20	Pass
NVNT	3-DH5	2441	Ant1	-53.48	-20	Pass
NVNT	3-DH5	2480	Ant1	-53.51	-20	Pass



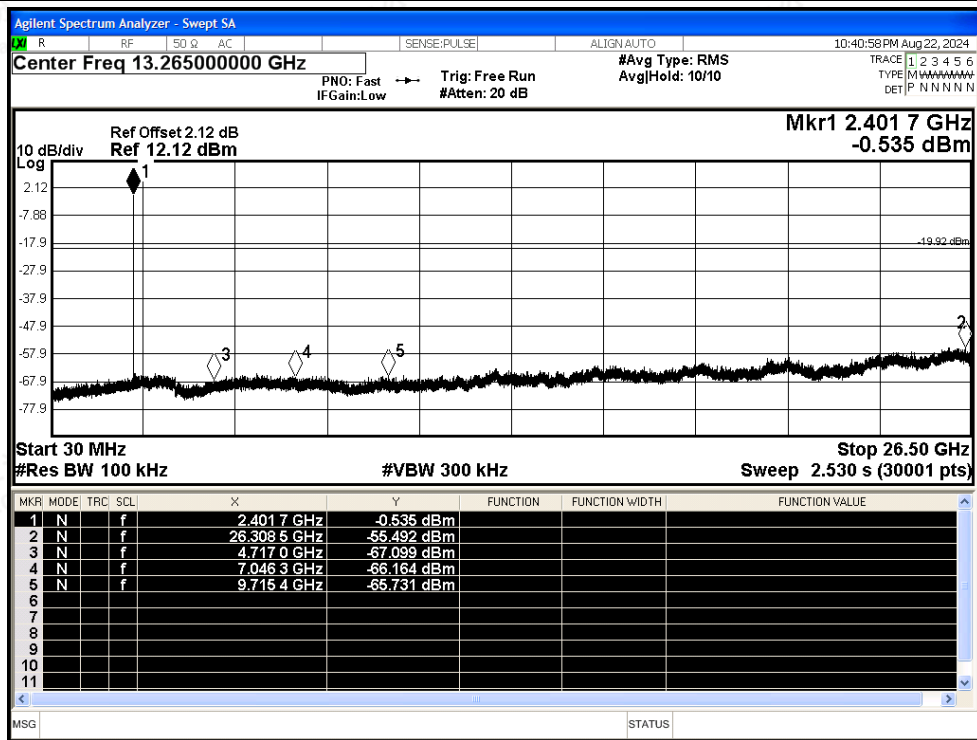


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

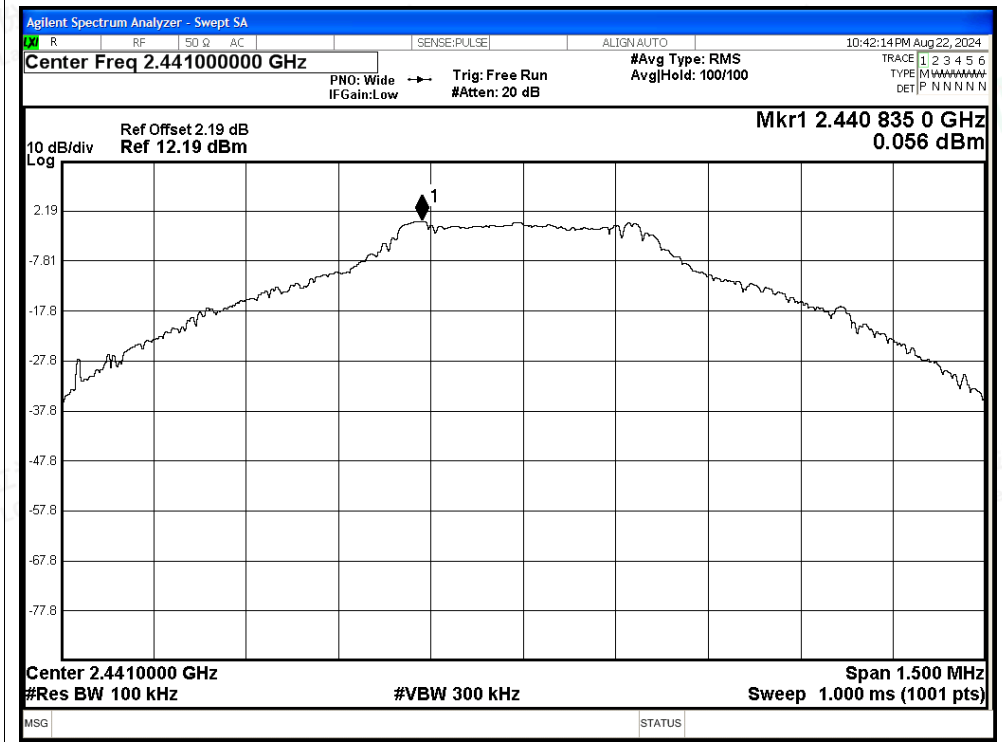


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

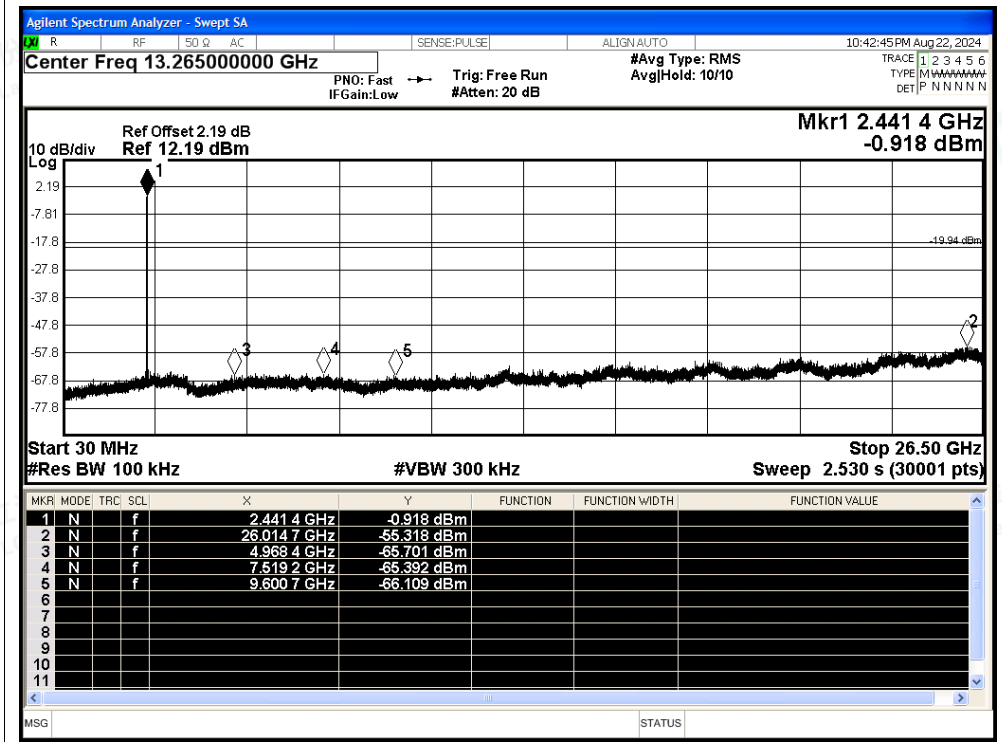




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

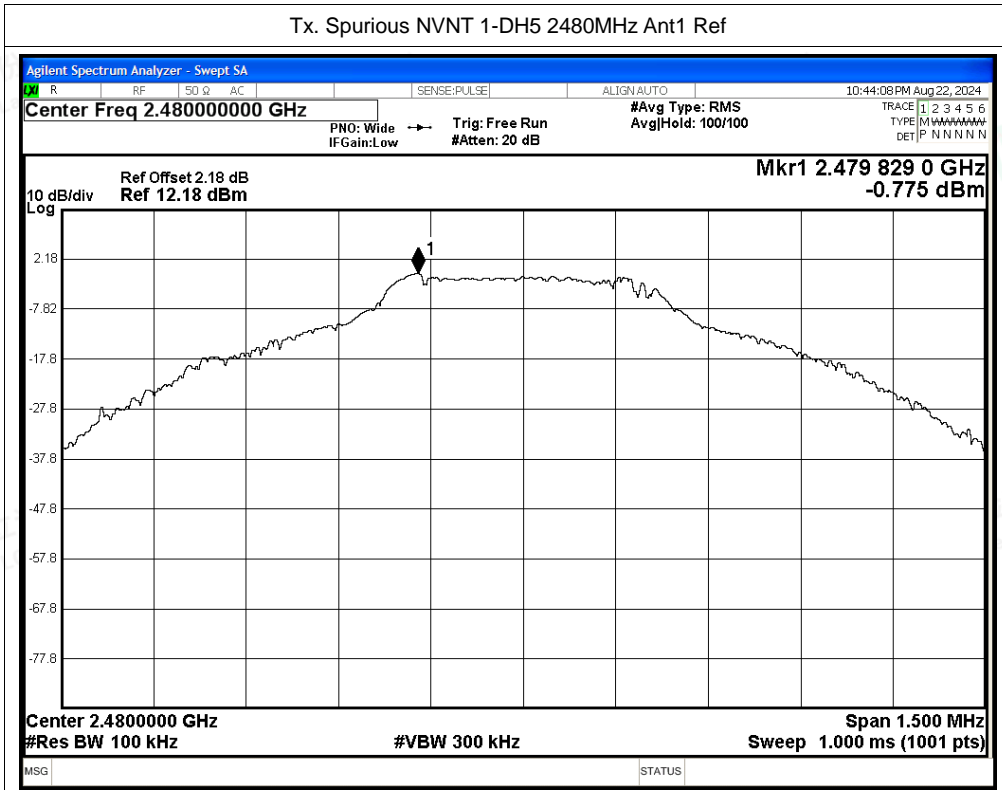


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

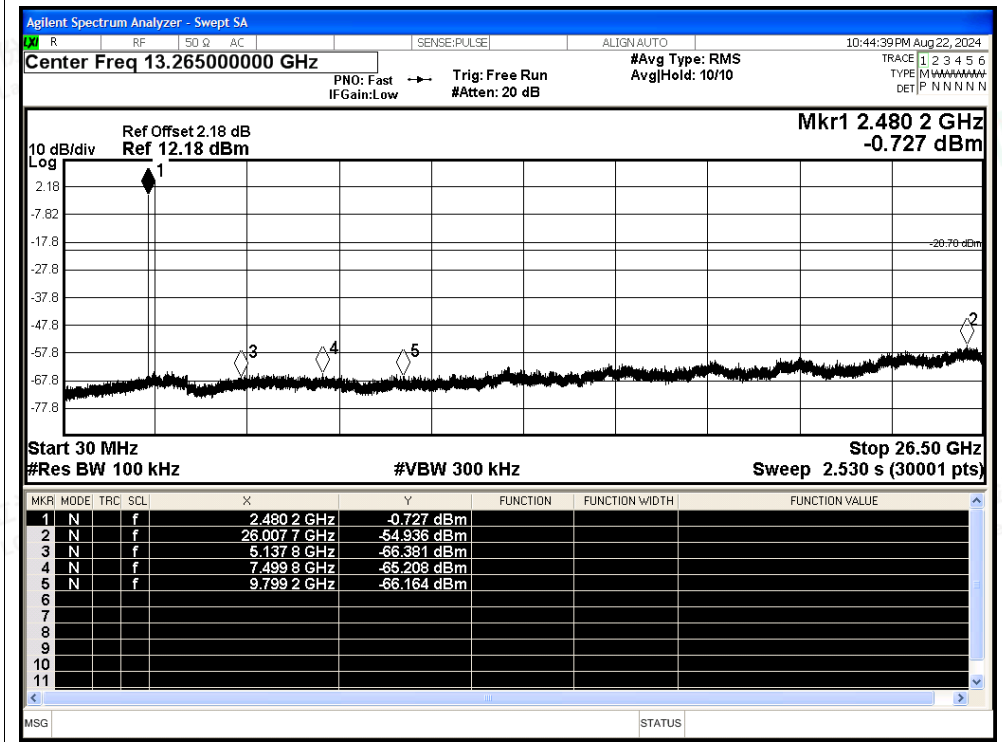




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

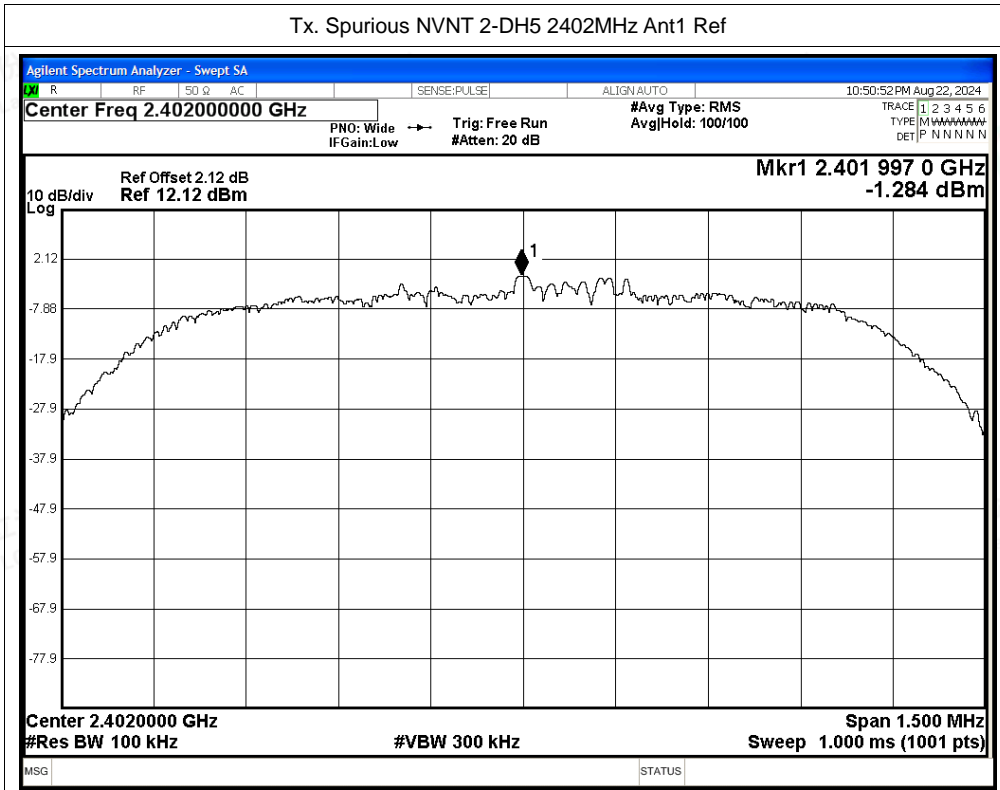


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

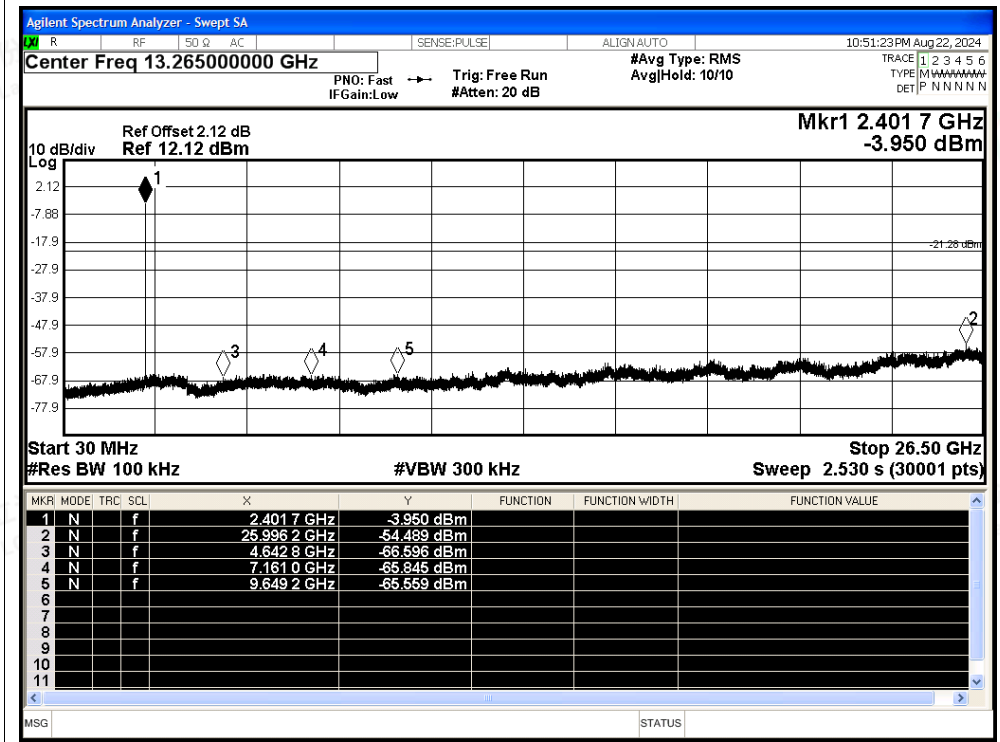




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

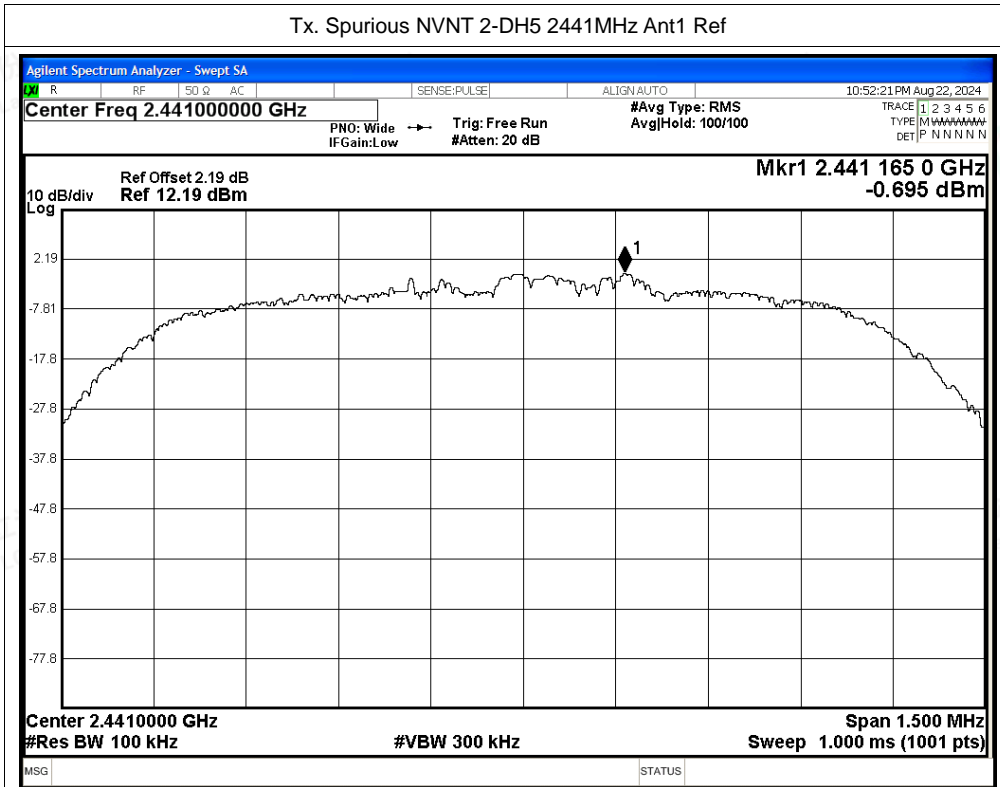


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

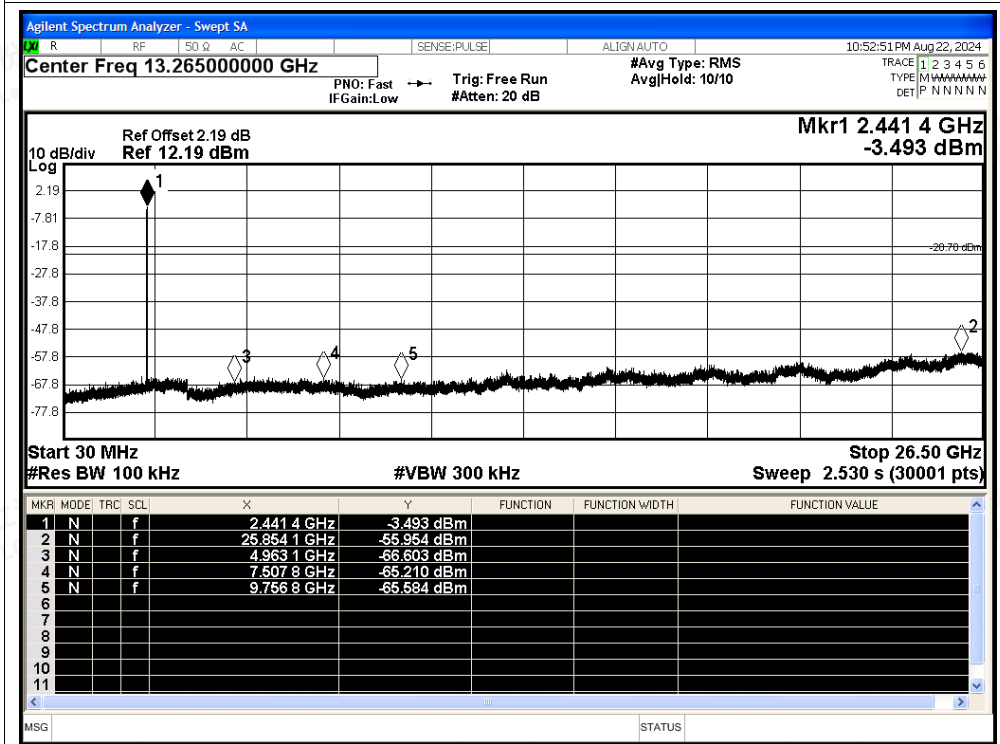




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

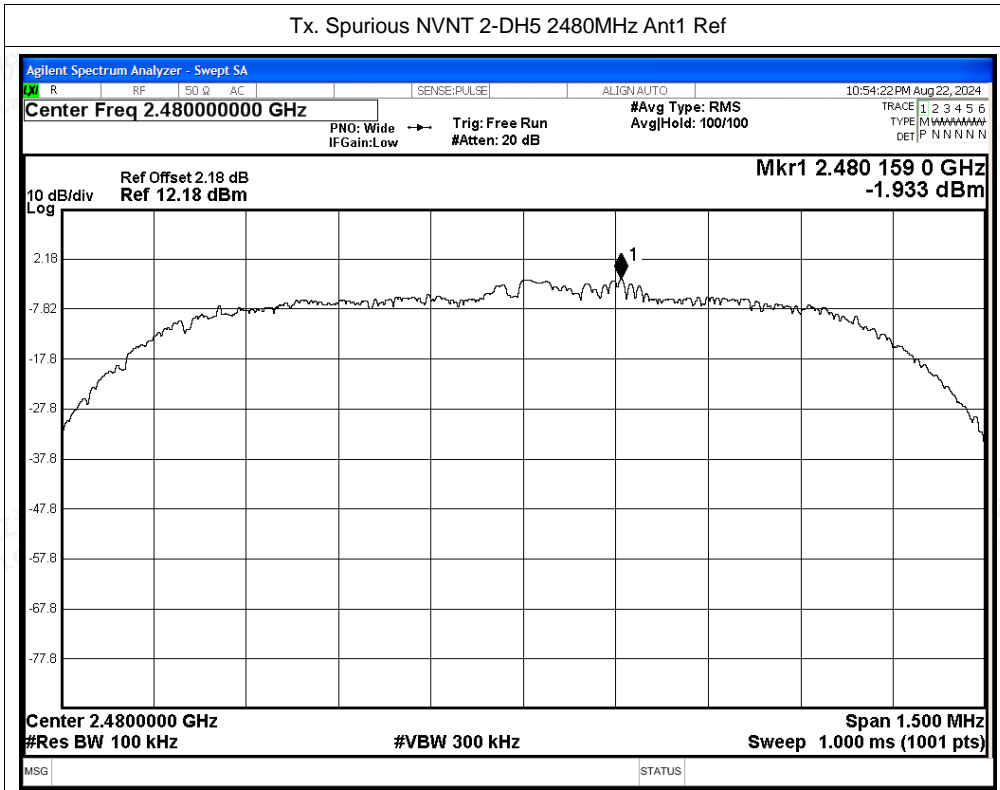


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

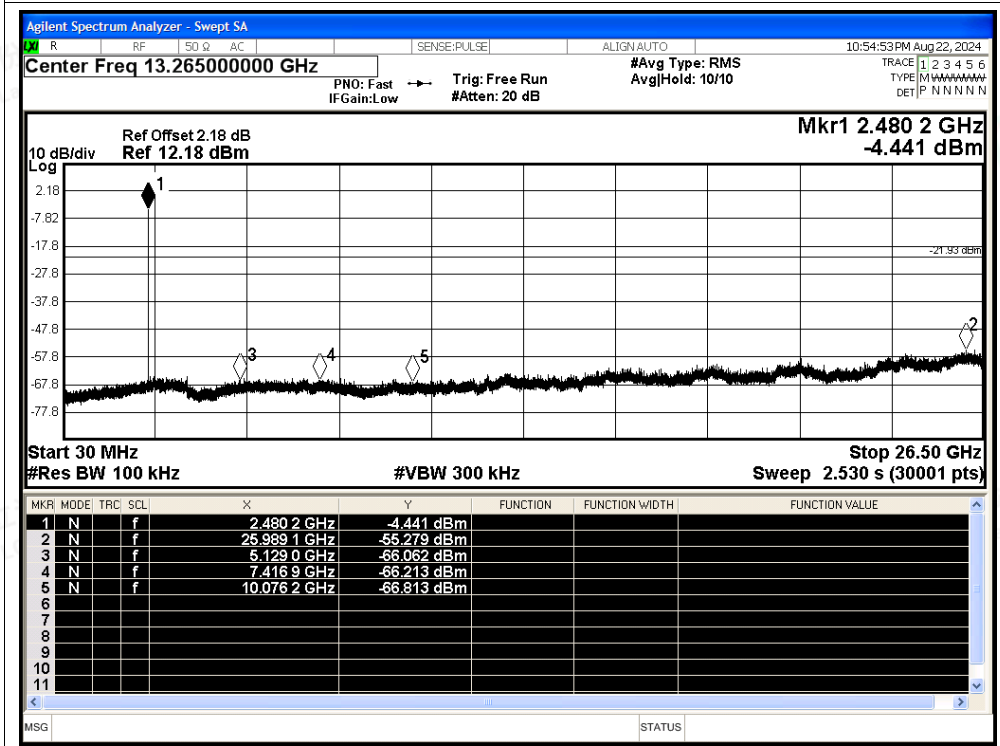




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref

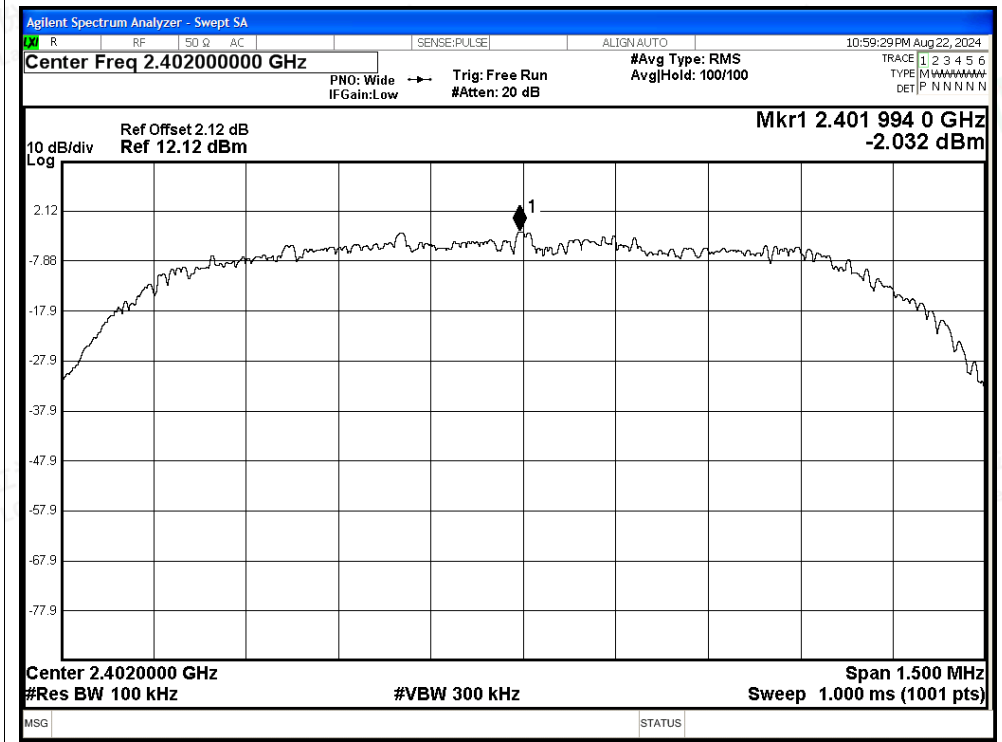


Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

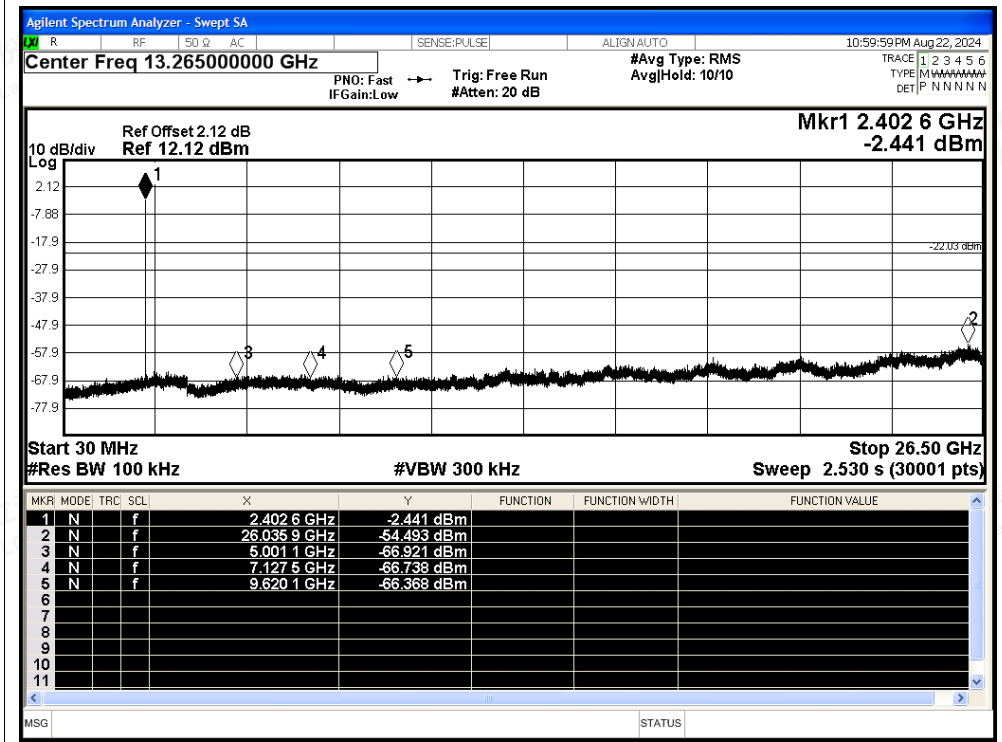




Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref

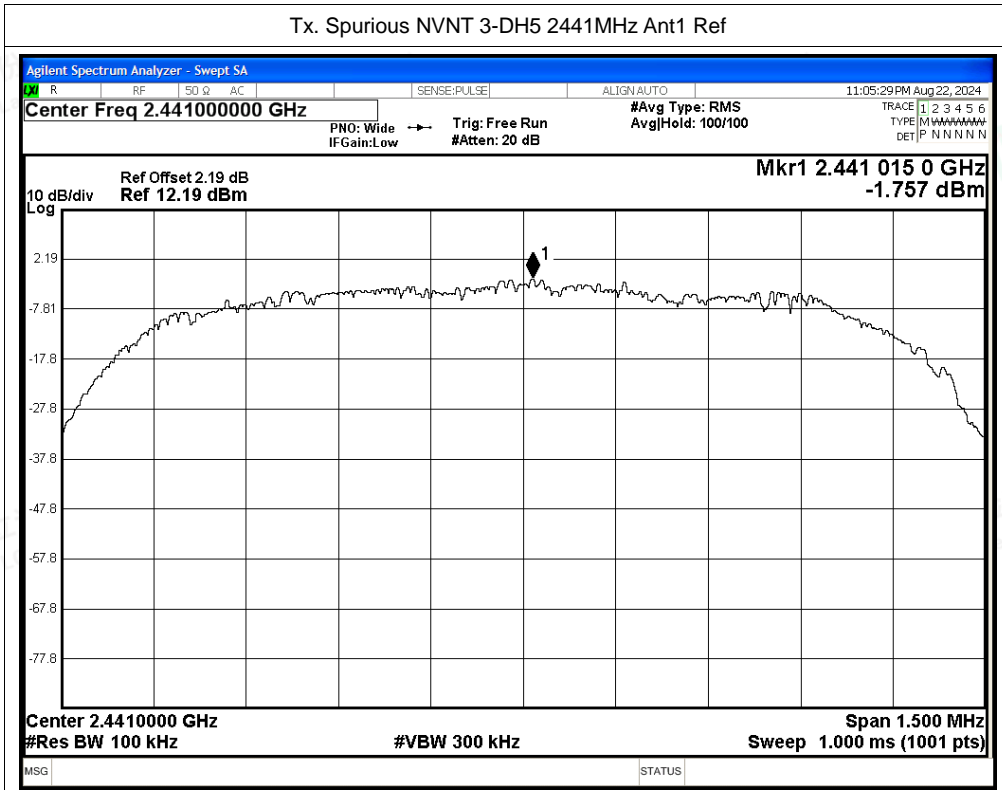


Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

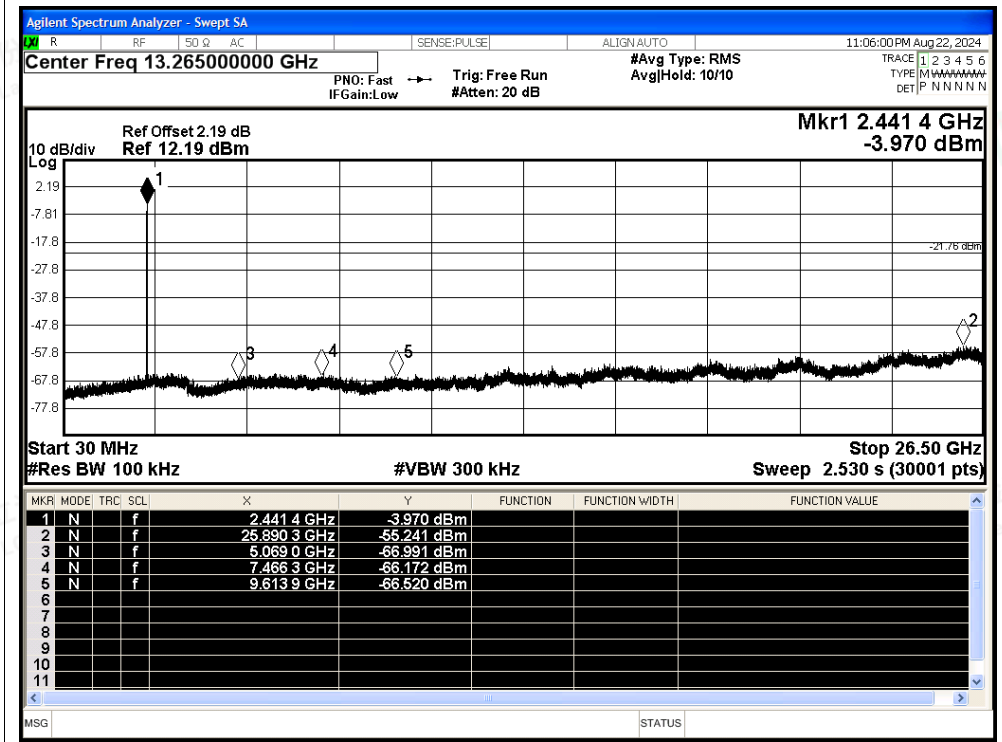




Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref

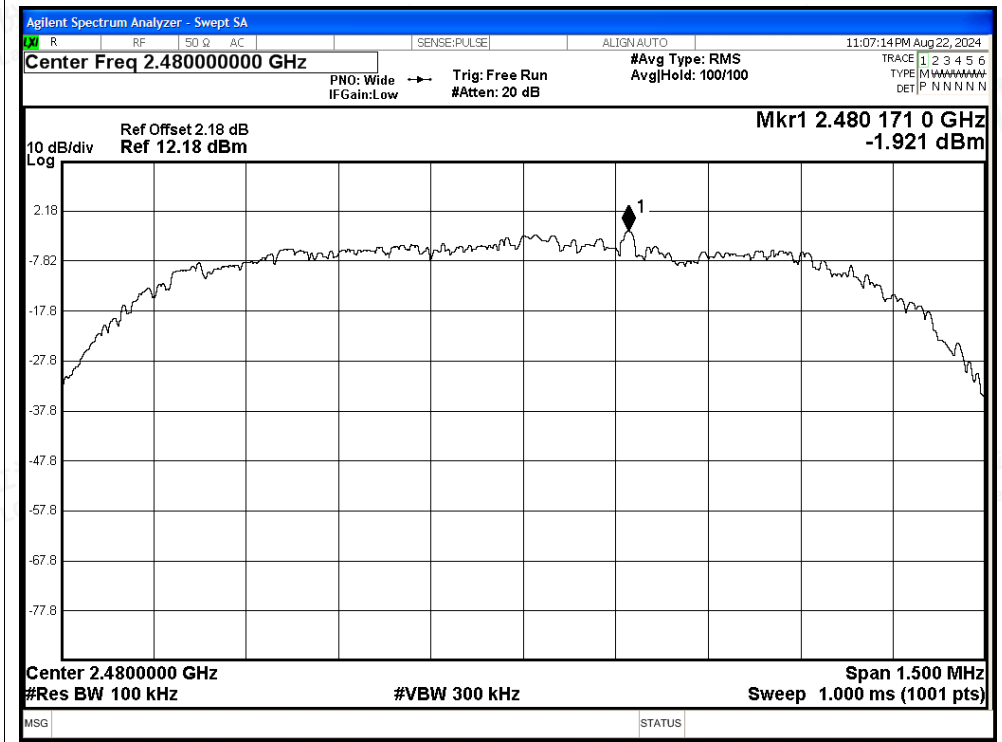


Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission

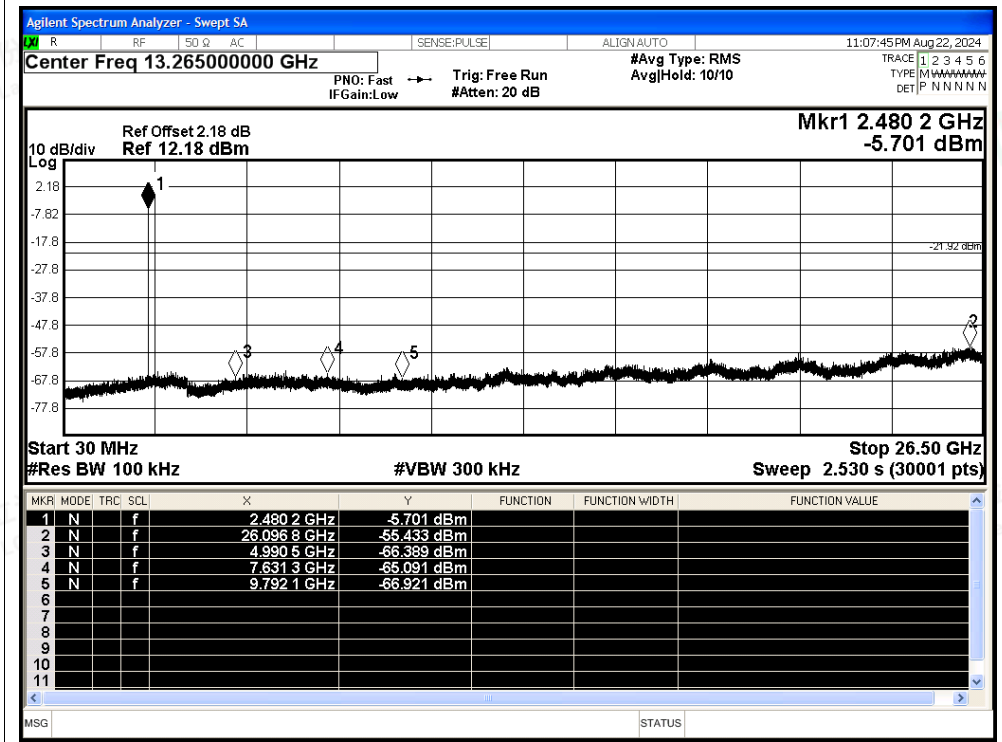




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission





A.8 Duty Cycle

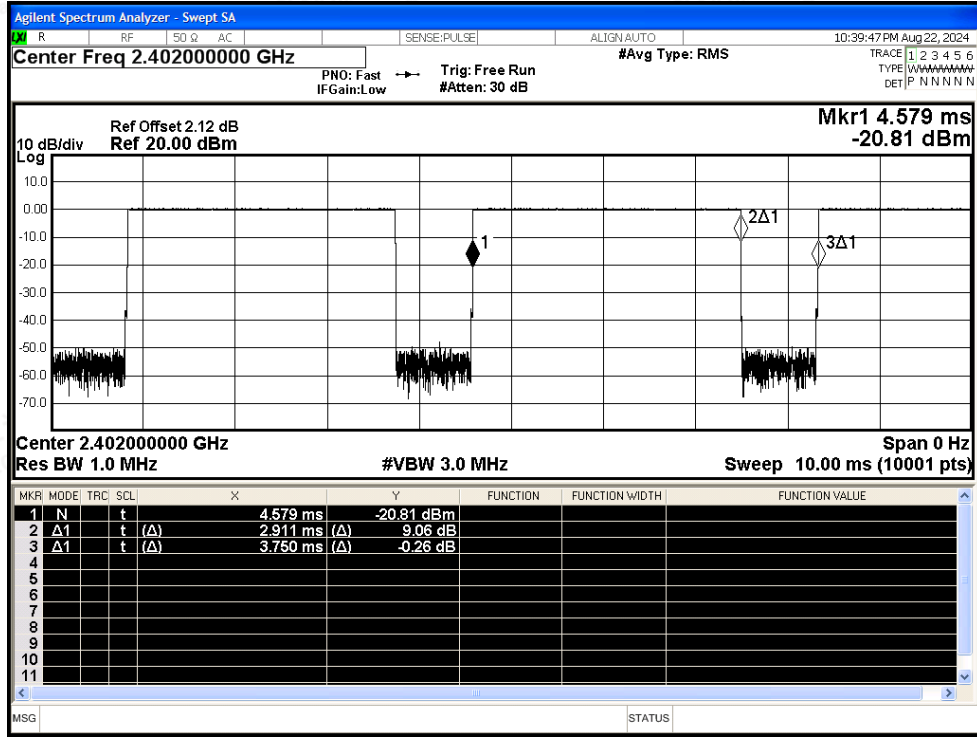
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.63	1.1	0.34
NVNT	2-DH5	2402	Ant1	76.43	1.17	0.36
NVNT	2-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2402	Ant1	97.9	0.09	7.14
NVNT	3-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2480	Ant1	76.37	1.17	0.36



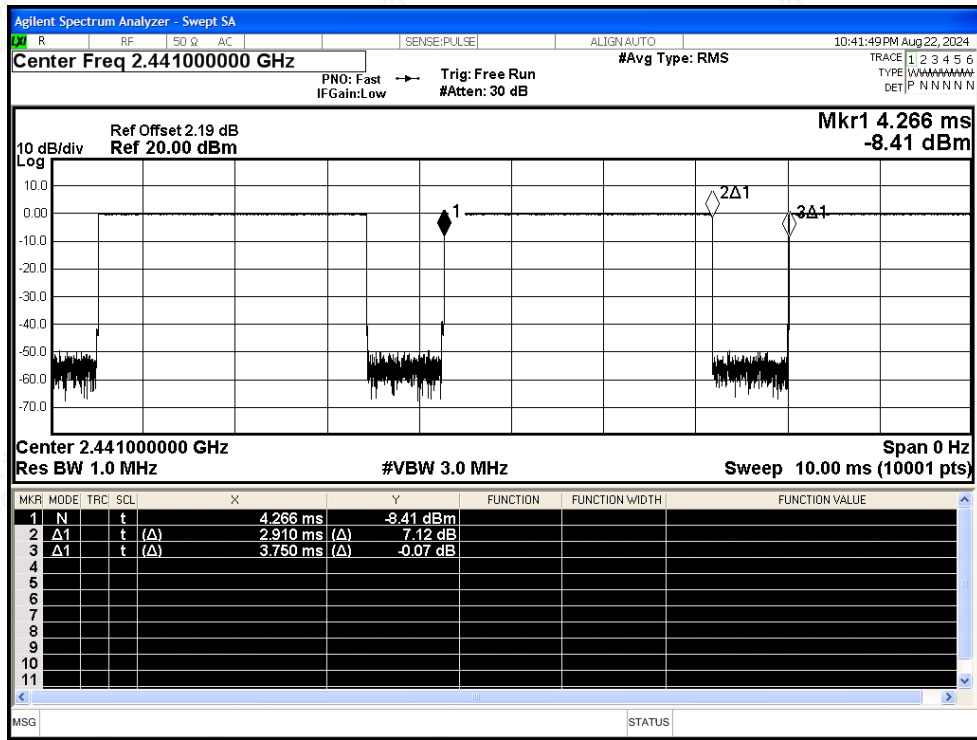


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

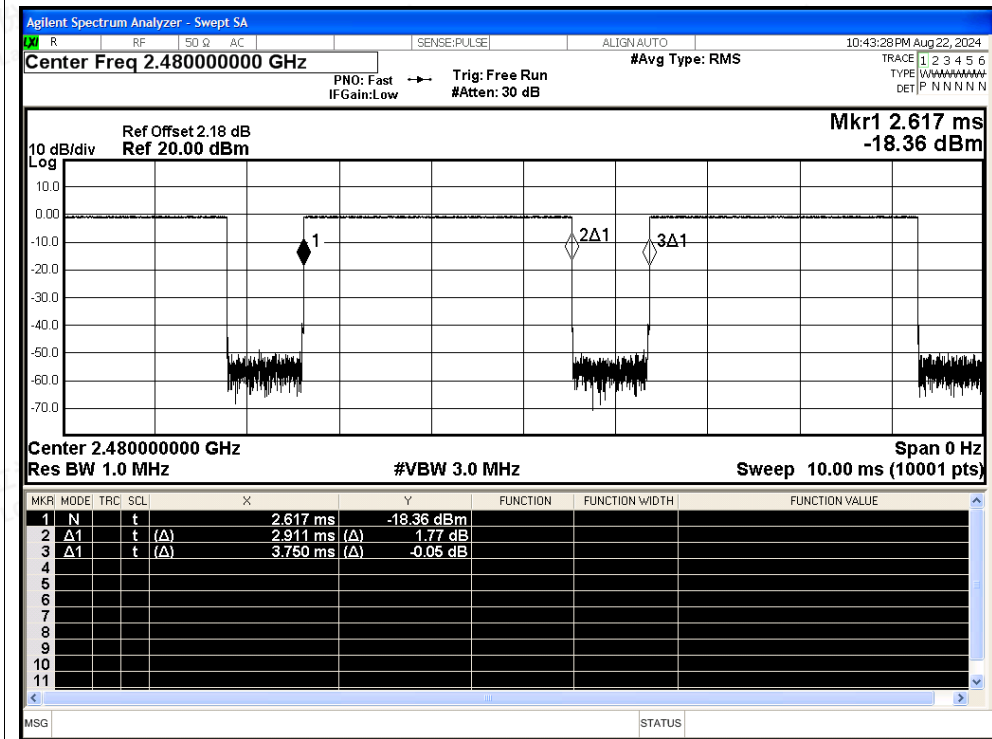


Duty Cycle NVNT 1-DH5 2441MHz Ant1

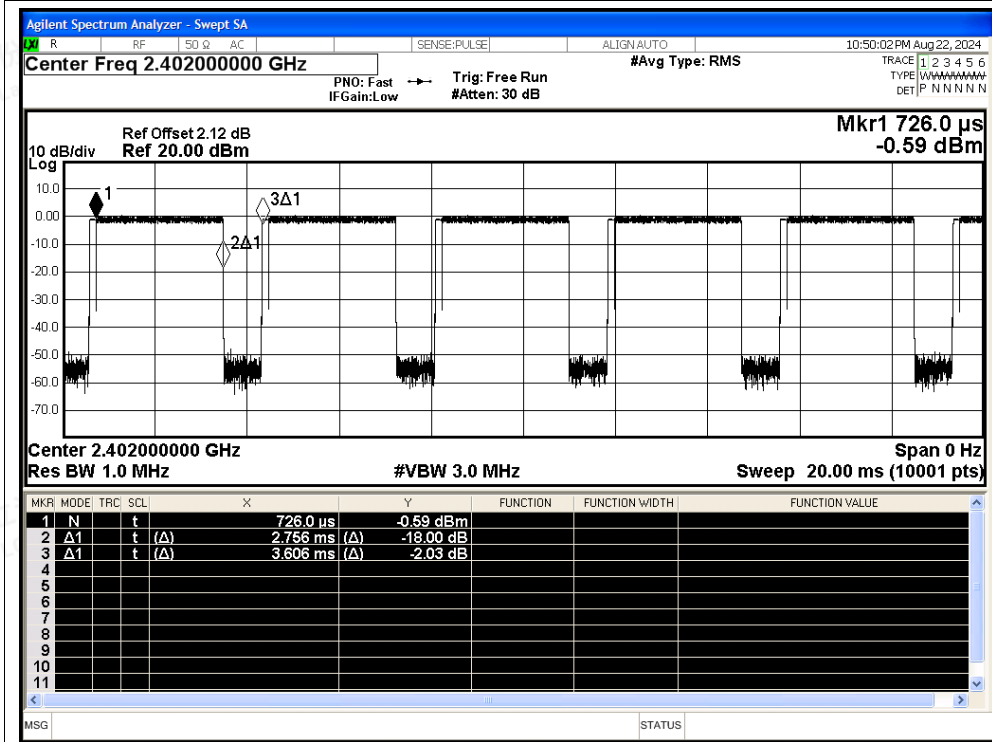




Duty Cycle NVNT 1-DH5 2480MHz Ant1

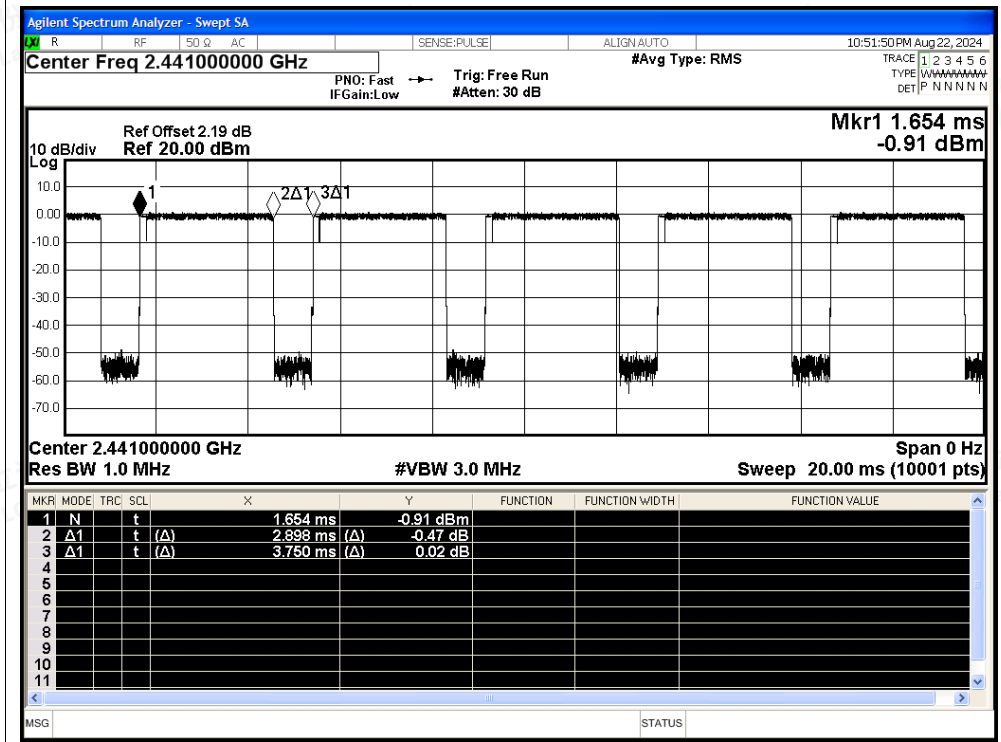


Duty Cycle NVNT 2-DH5 2402MHz Ant1

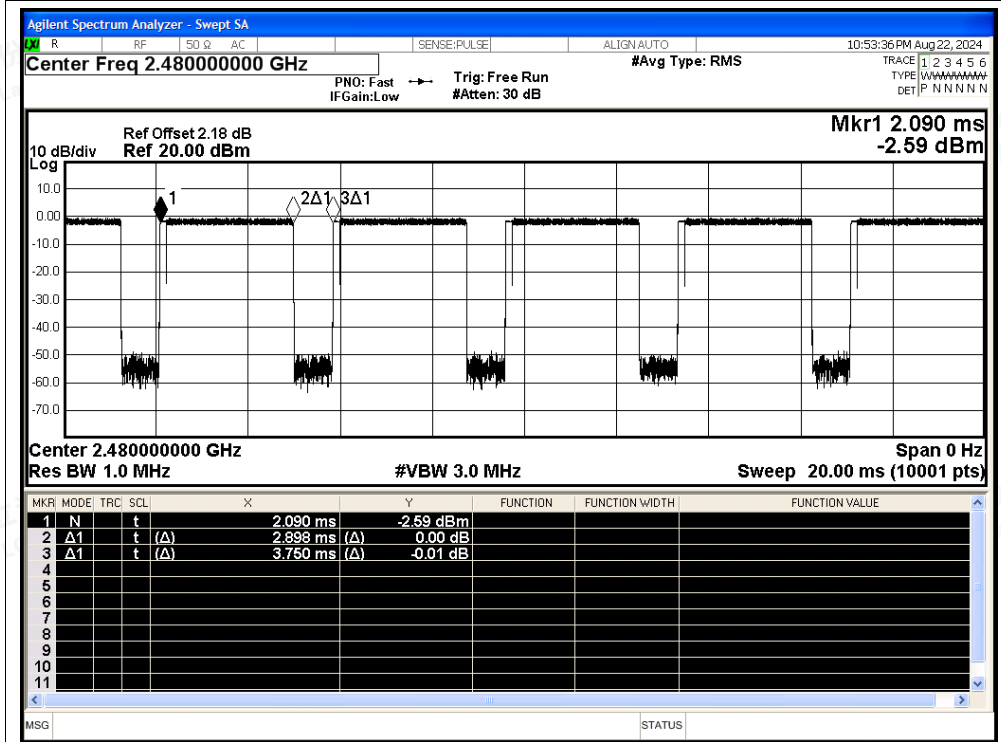




Duty Cycle NVNT 2-DH5 2441MHz Ant1

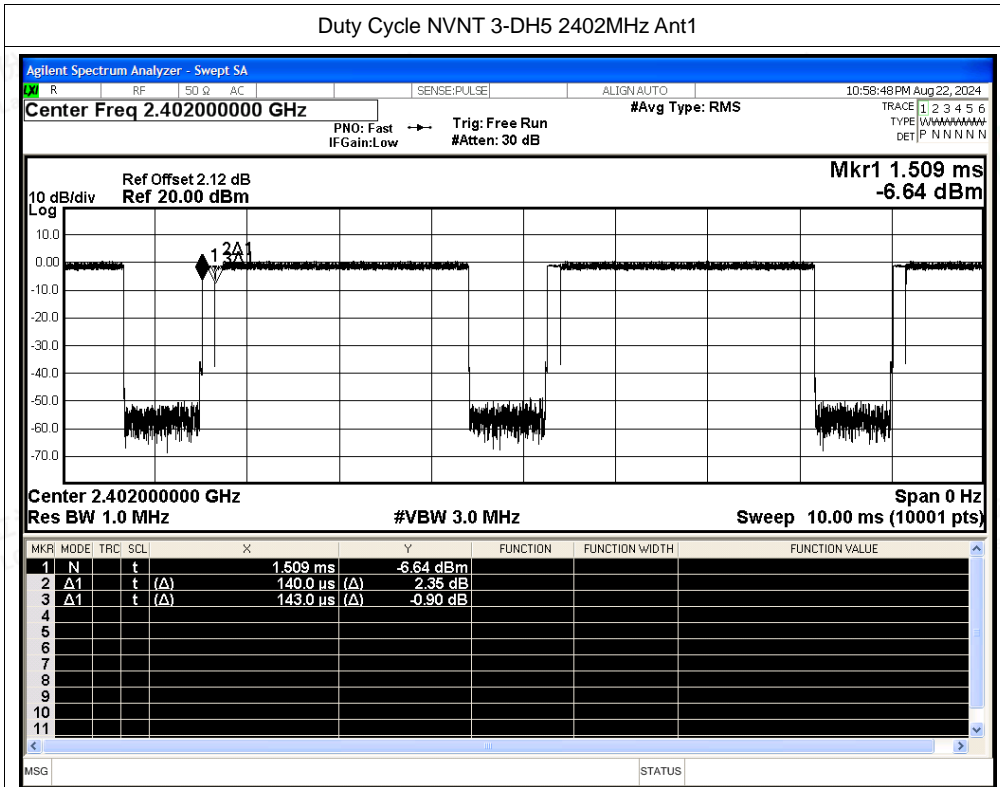


Duty Cycle NVNT 2-DH5 2480MHz Ant1

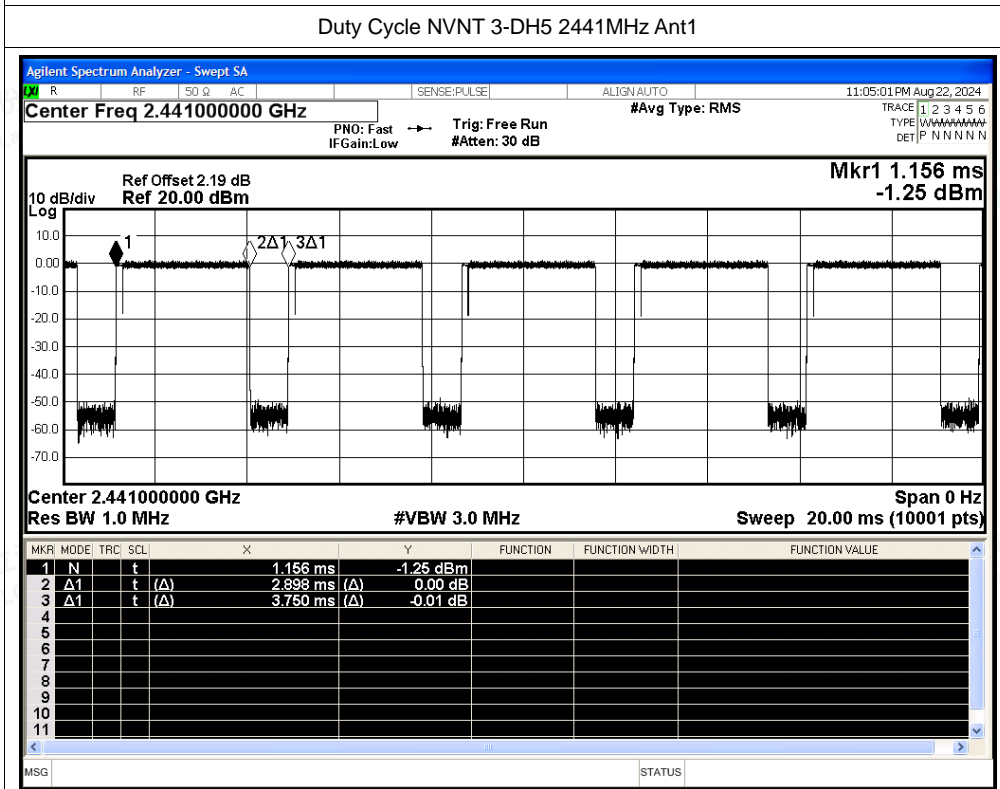


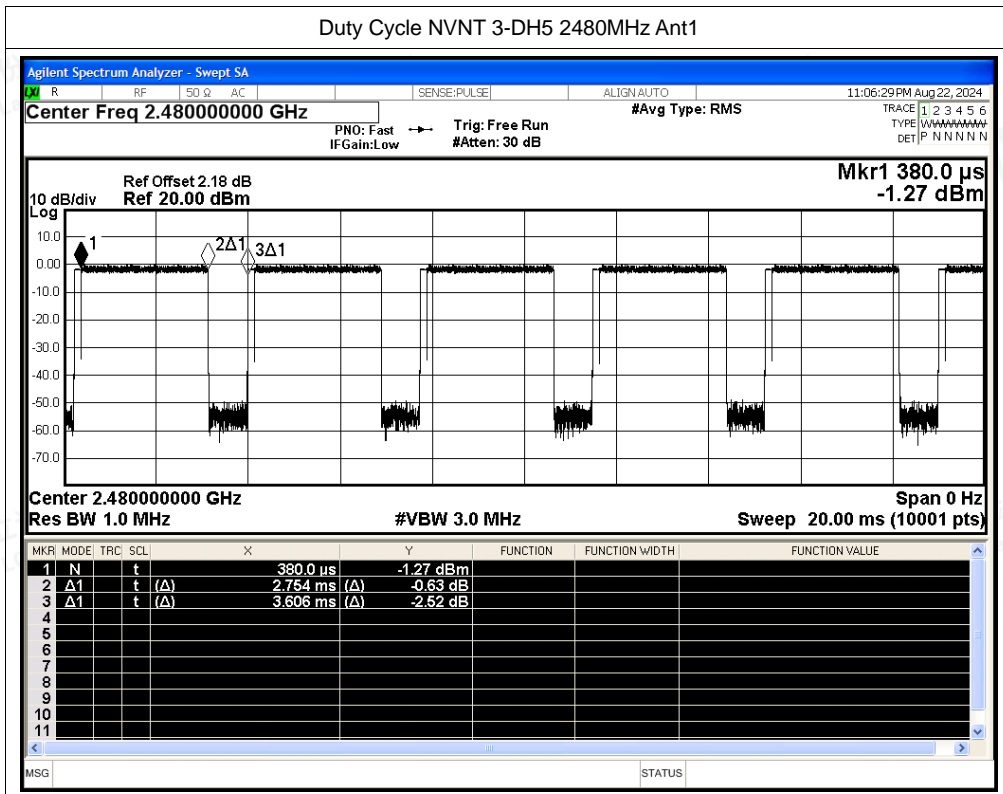


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1







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	-50.87	2	-	46.39	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.5	2	1.1	39.86	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2330.928	-47.65	2	-	49.61	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2380.272	-57.61	2	1.1	40.75	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.49	2	-	46.77	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.6	2	1.1	39.76	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.1	2	-	48.16	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.18	2	1.1	40.18	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.704	-45.34	2	-	51.92	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2490.496	-57.17	2	1.1	41.19	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.34	2	-	47.92	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.26	2	1.1	40.1	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.47	2	-	47.79	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.62	2	1.17	39.81	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2345.136	-47.22	2	-	50.04	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2379.024	-57.63	2	1.17	40.8	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.41	2	-	46.85	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.15	2	1.17	40.28	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.51	2	-	47.75	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.9	2	1.12	40.48	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2487.712	-46.03	2	-	51.23	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2495.128	-56.93	2	1.12	41.45	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.81	2	-	47.45	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.96	2	1.12	40.42	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.43	2	-	46.83	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.38	2	0.09	38.97	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2353.968	-46.91	2	-	50.35	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2375.28	-57.59	2	0.09	39.76	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.59	2	-	45.67	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.29	2	0.09	39.06	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-50.24	2	-	47.02	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-58.25	2	1.17	40.18	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2495.728	-47.22	2	-	50.04	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2493.184	-56.93	2	1.17	41.5	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-49.18	2	-	48.08	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.62	2	1.17	40.81	Average	54	Pass



Shenzhen LCS Compliance Testing Laboratory Ltd.

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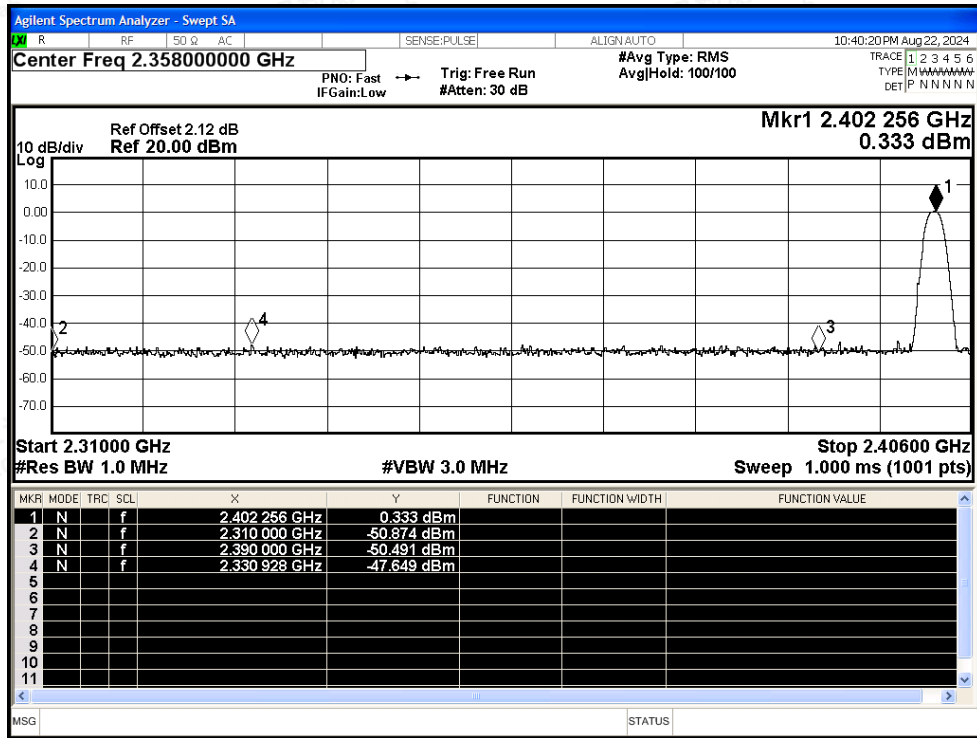
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

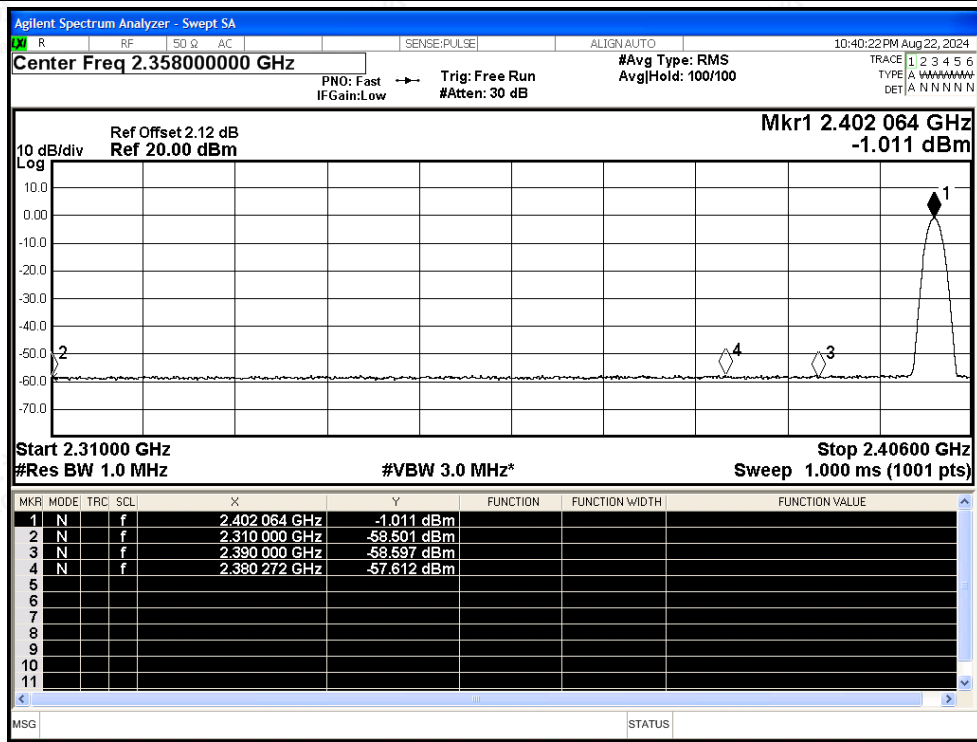


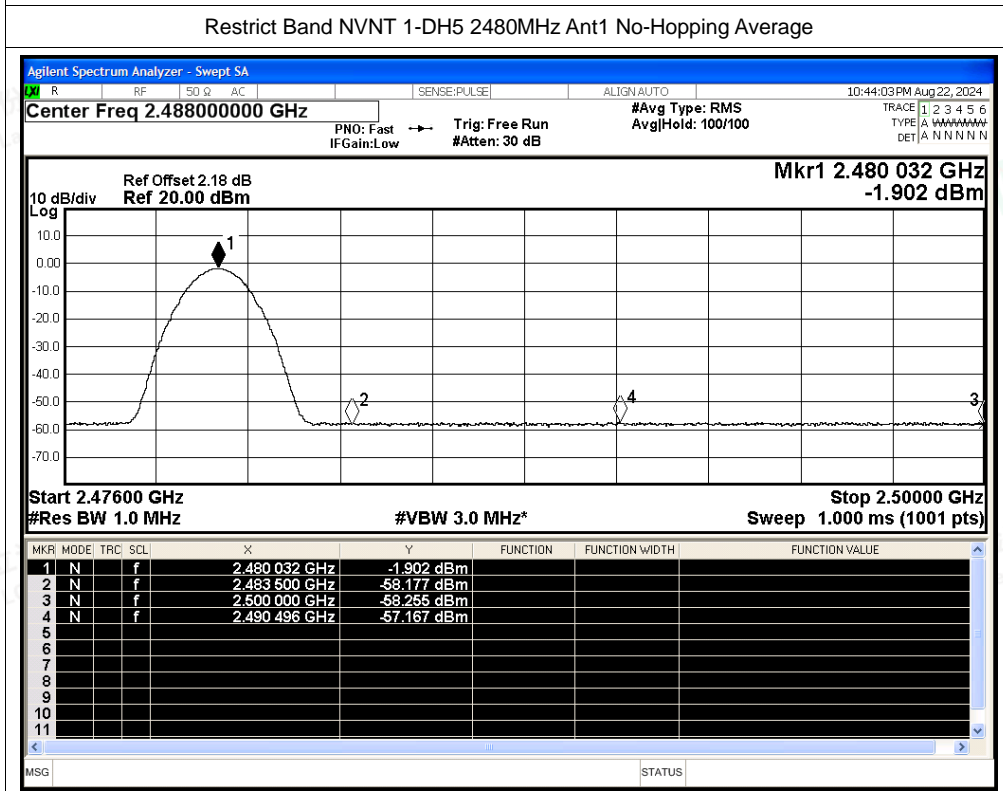
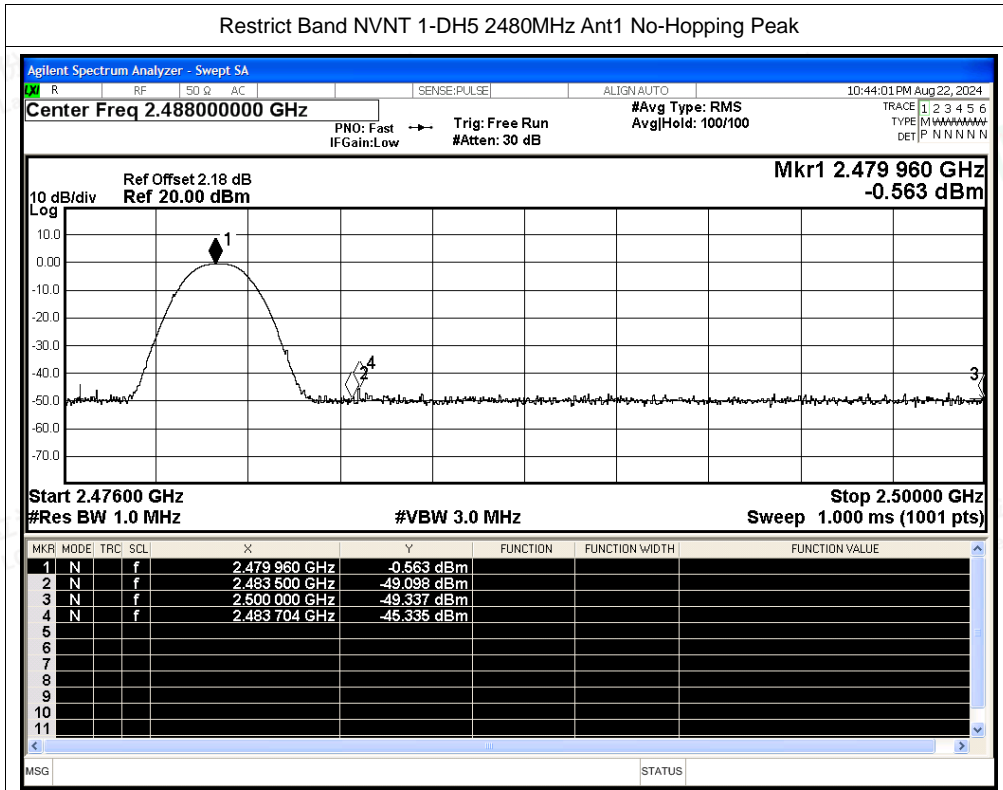
Test Graphs

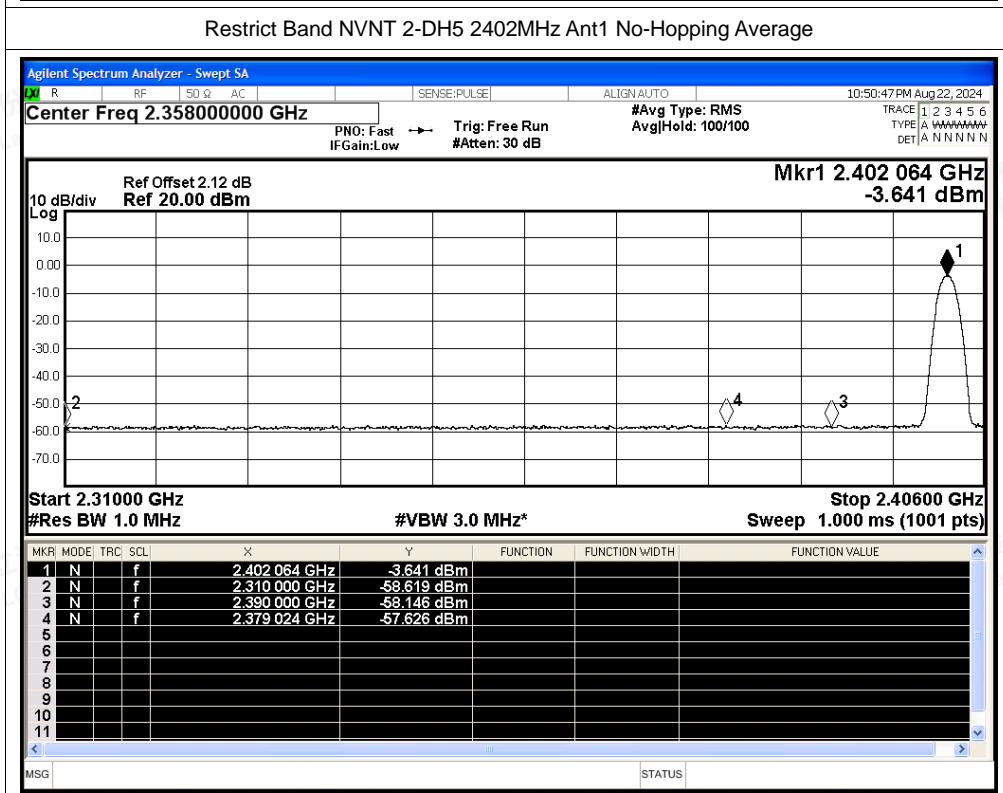
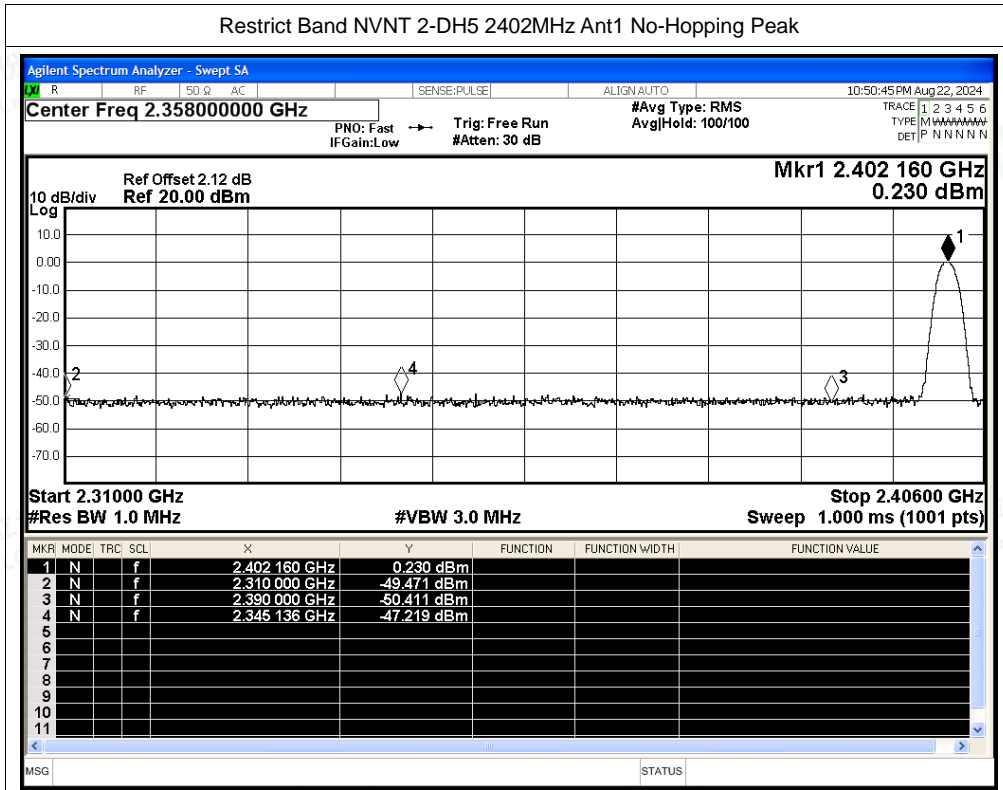
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



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

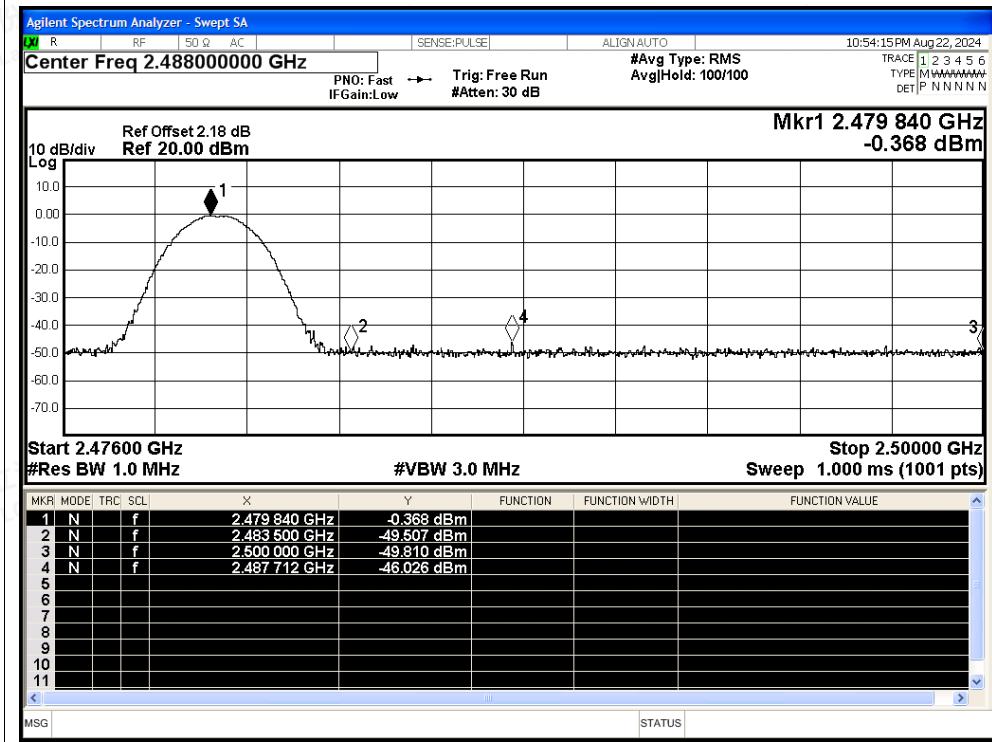








Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



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

