



Appendix A

RF Test Data for BT(Conducted Measurement)

Product Name: Smart Phone

Test Model: HPPL67A

Environmental Conditions

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





A.1 -20dB Bandwidth

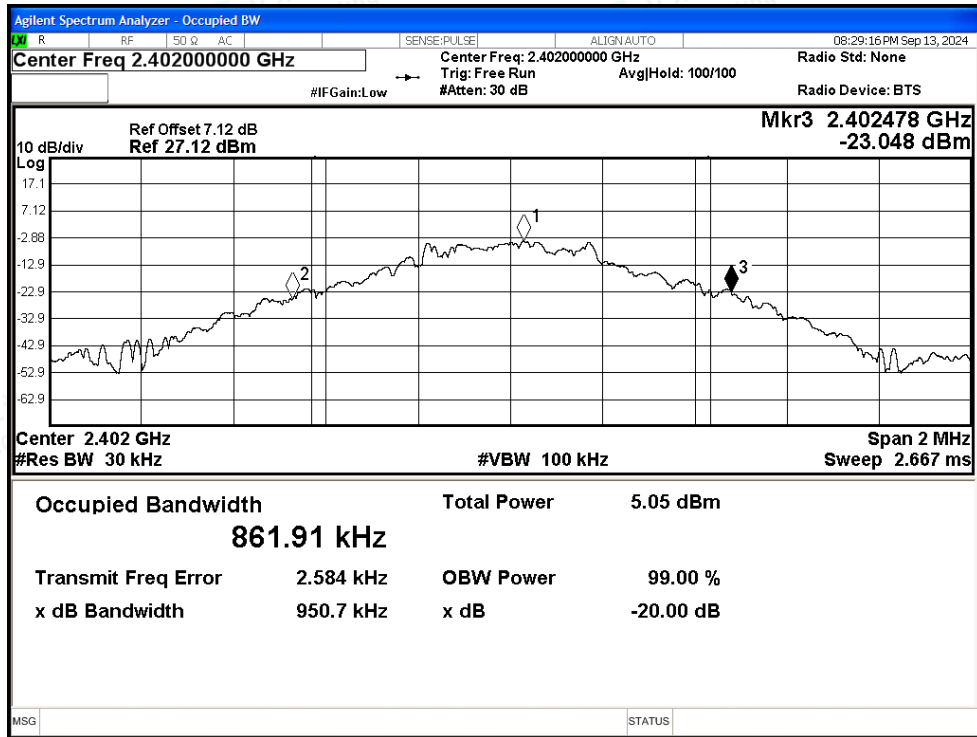
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant	0.951	N/A	Pass
NVNT	1-DH5	2441	Ant	0.948	N/A	Pass
NVNT	1-DH5	2480	Ant	0.955	N/A	Pass
NVNT	2-DH5	2402	Ant	1.285	N/A	Pass
NVNT	2-DH5	2441	Ant	1.29	N/A	Pass
NVNT	2-DH5	2480	Ant	1.288	N/A	Pass
NVNT	3-DH5	2402	Ant	1.294	N/A	Pass
NVNT	3-DH5	2441	Ant	1.287	N/A	Pass
NVNT	3-DH5	2480	Ant	1.311	N/A	Pass





Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant

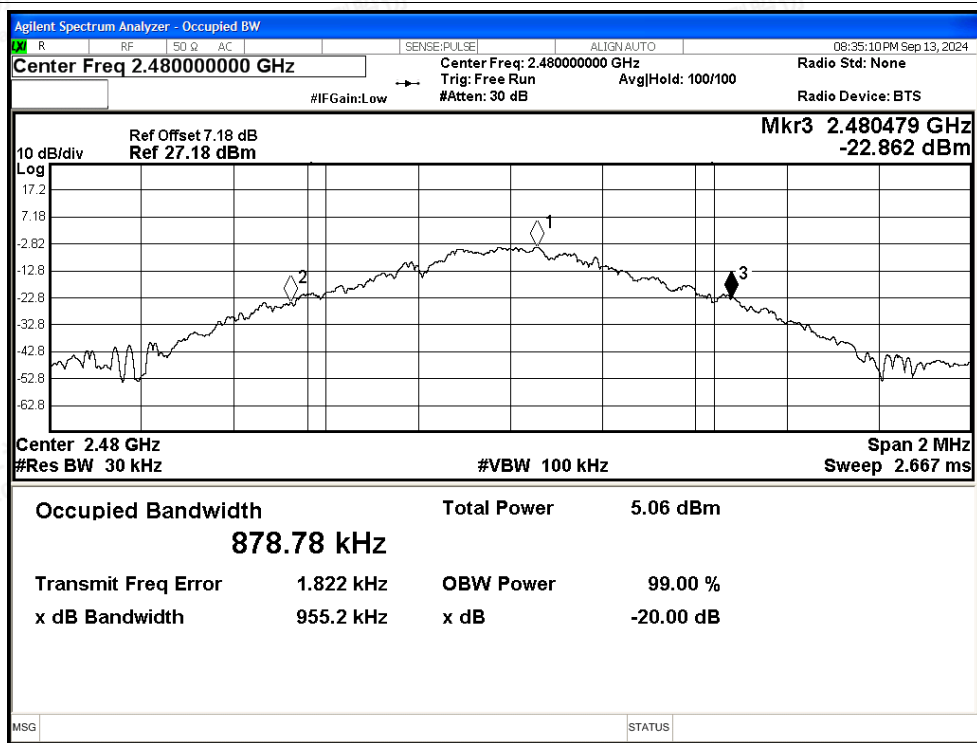


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant

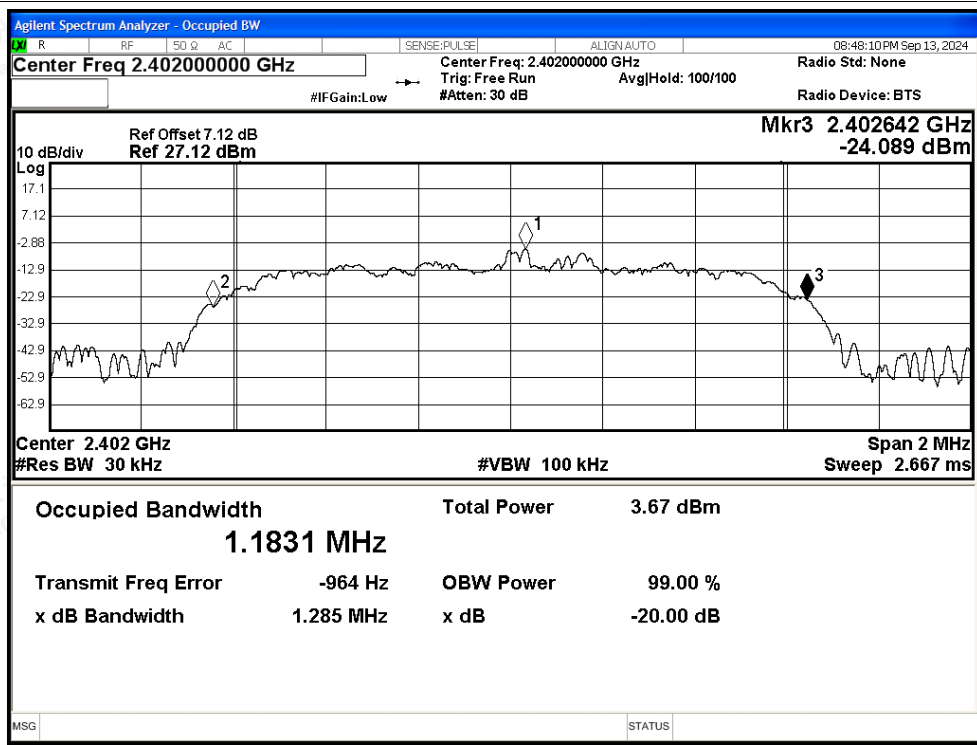




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant

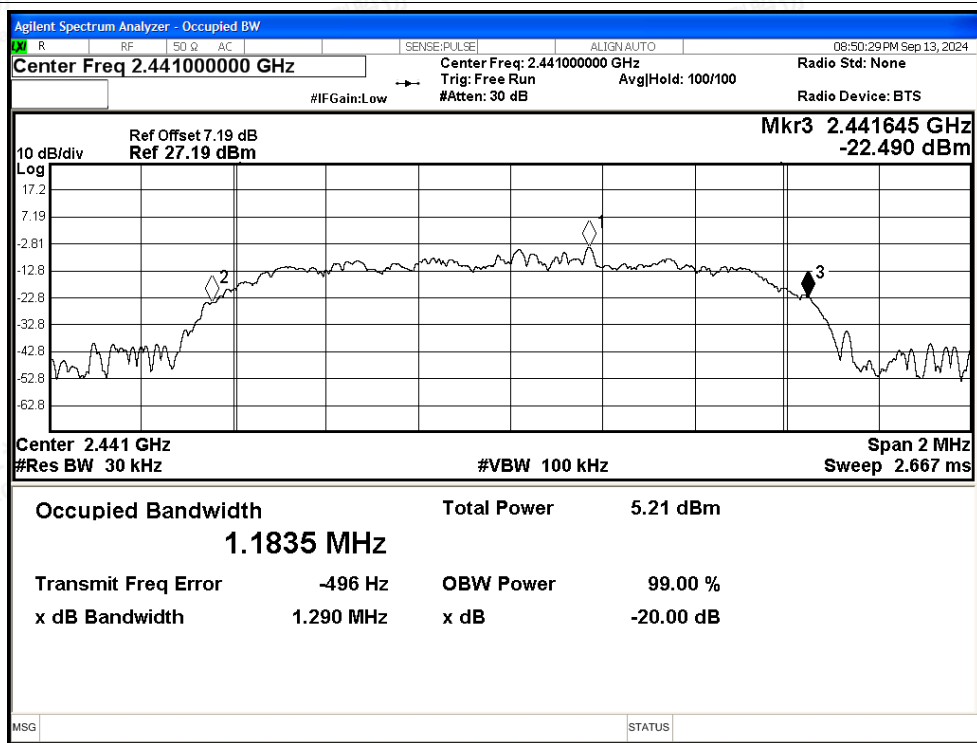


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant

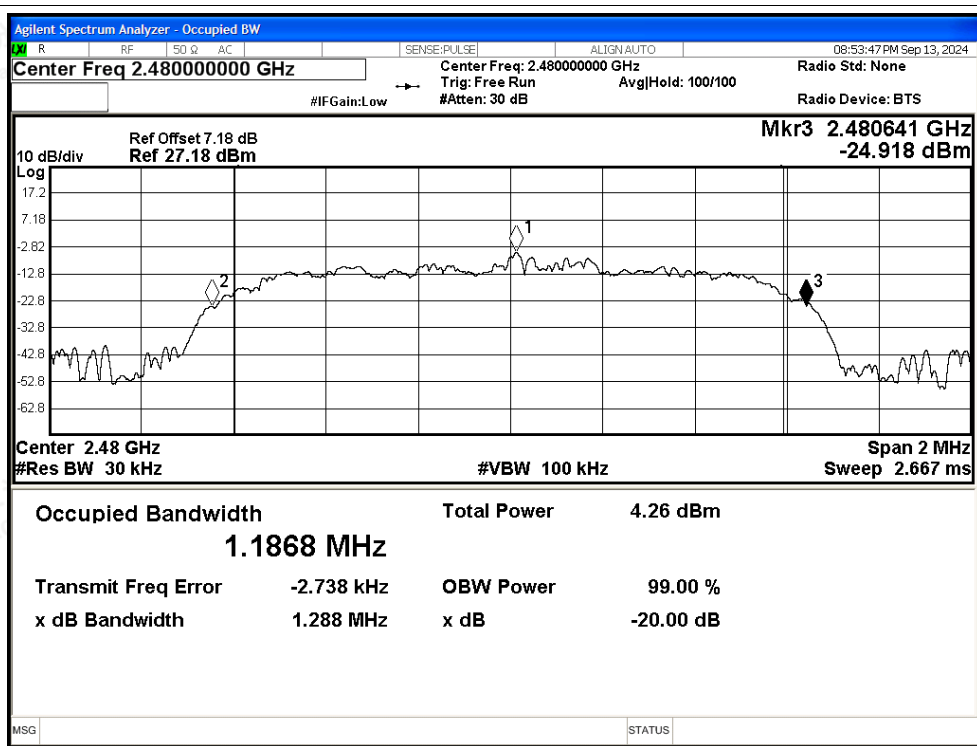




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant

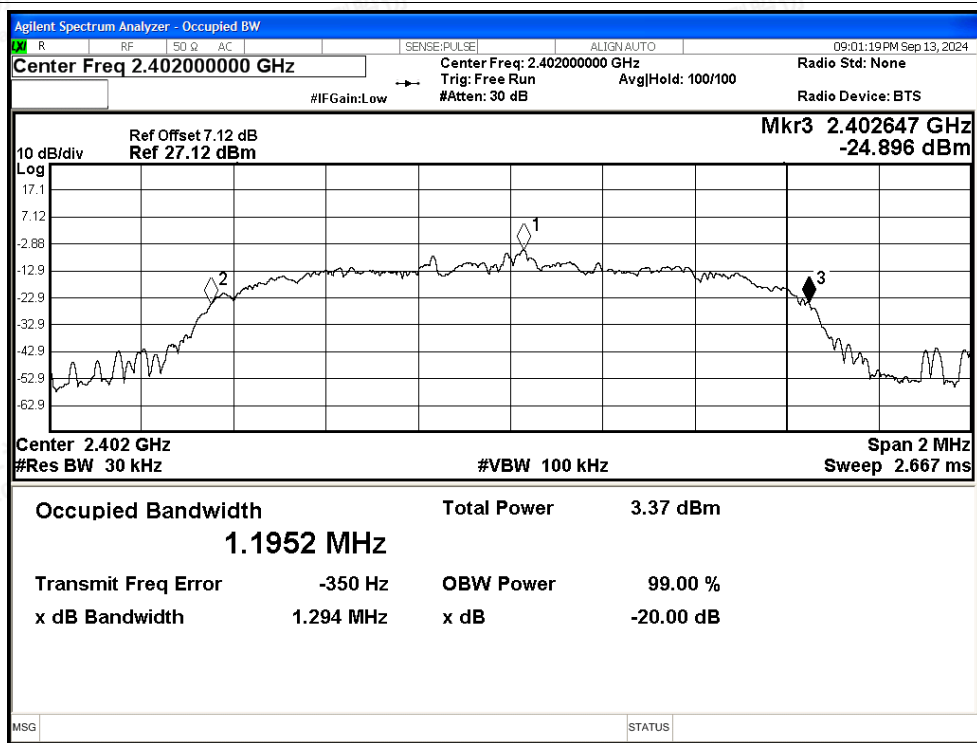


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant

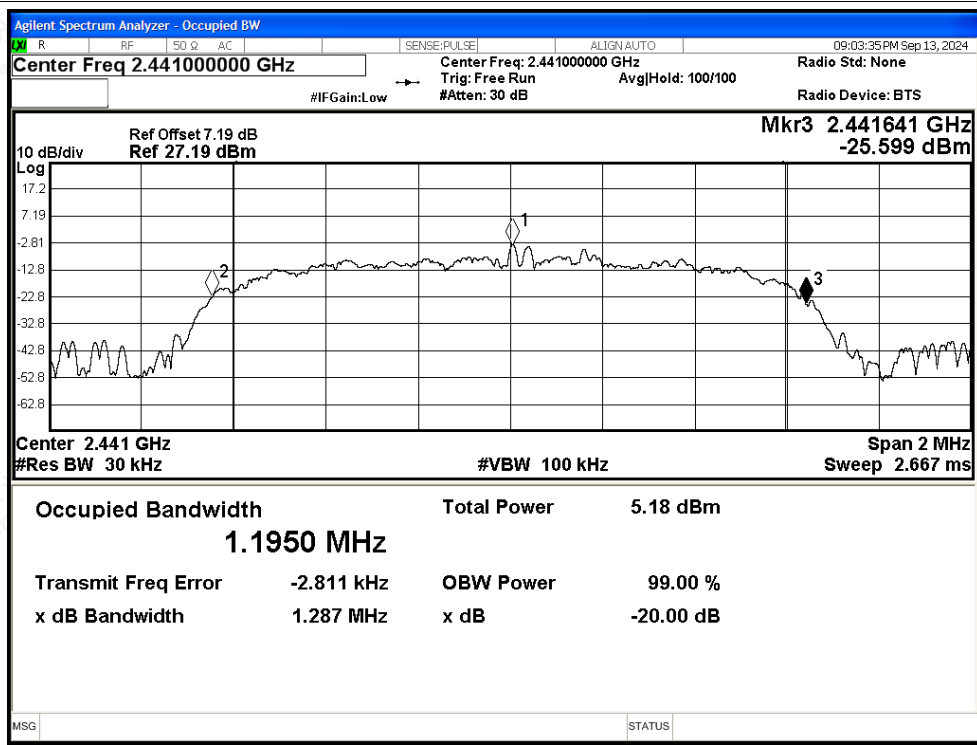


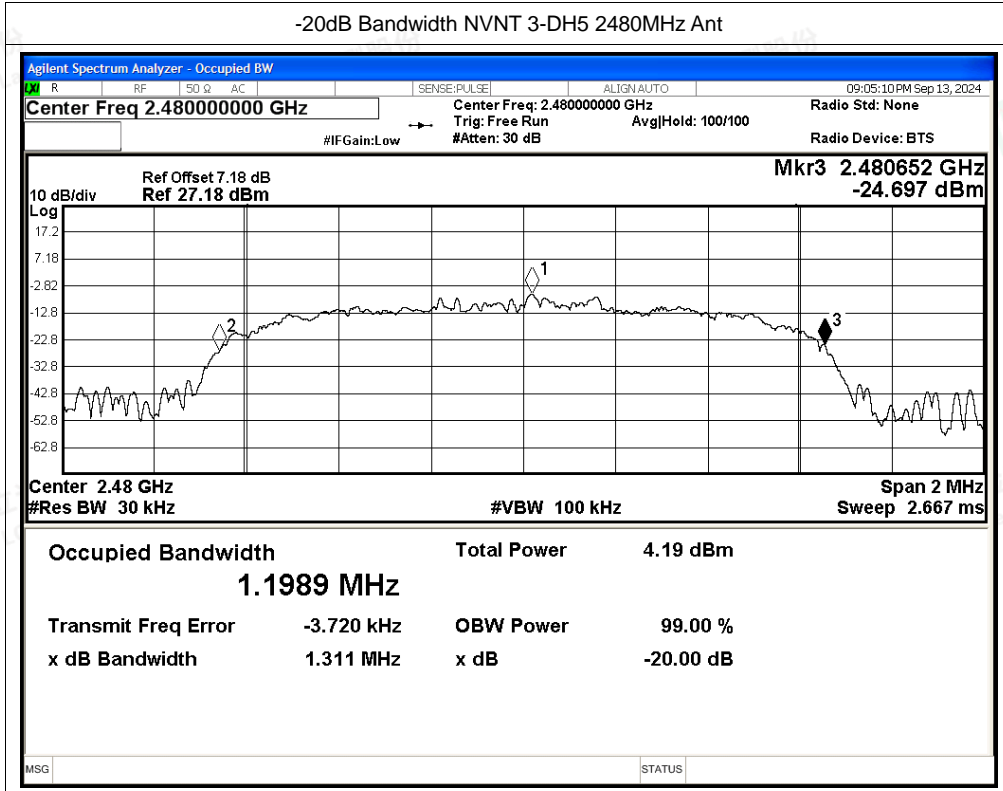


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant







A.2 Maximum Peak Conducted Output Power

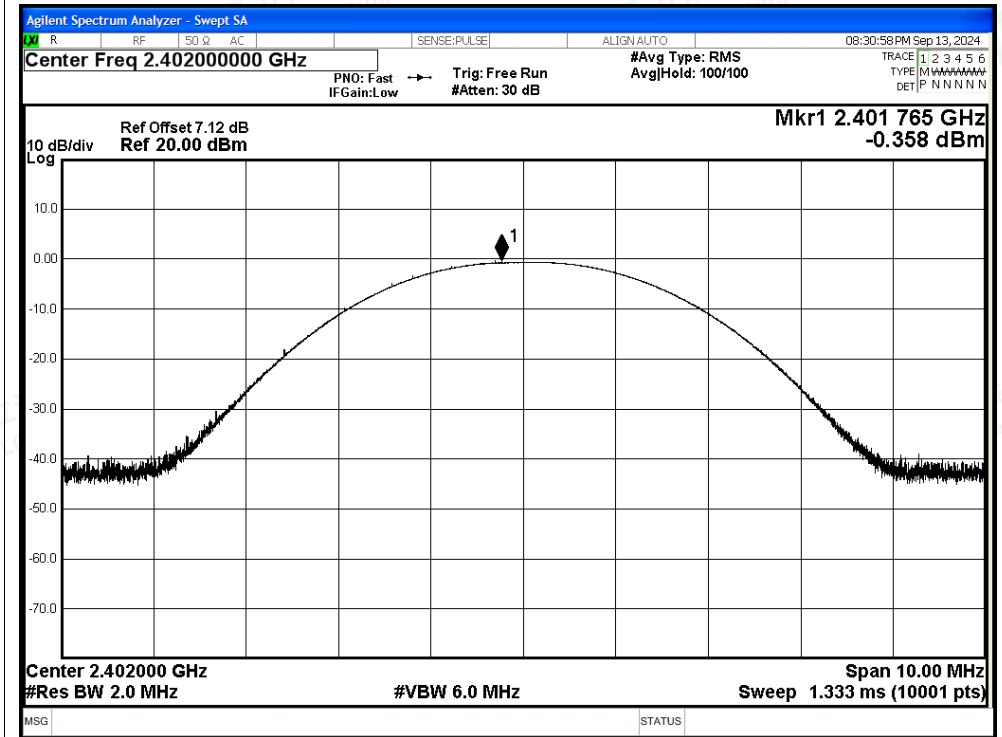
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant	-0.36	21	Pass
NVNT	1-DH5	2441	Ant	0.22	21	Pass
NVNT	1-DH5	2480	Ant	-0.86	21	Pass
NVNT	2-DH5	2402	Ant	-0.81	21	Pass
NVNT	2-DH5	2441	Ant	0.95	21	Pass
NVNT	2-DH5	2480	Ant	-0.15	21	Pass
NVNT	3-DH5	2402	Ant	-0.63	21	Pass
NVNT	3-DH5	2441	Ant	1.24	21	Pass
NVNT	3-DH5	2480	Ant	0.13	21	Pass



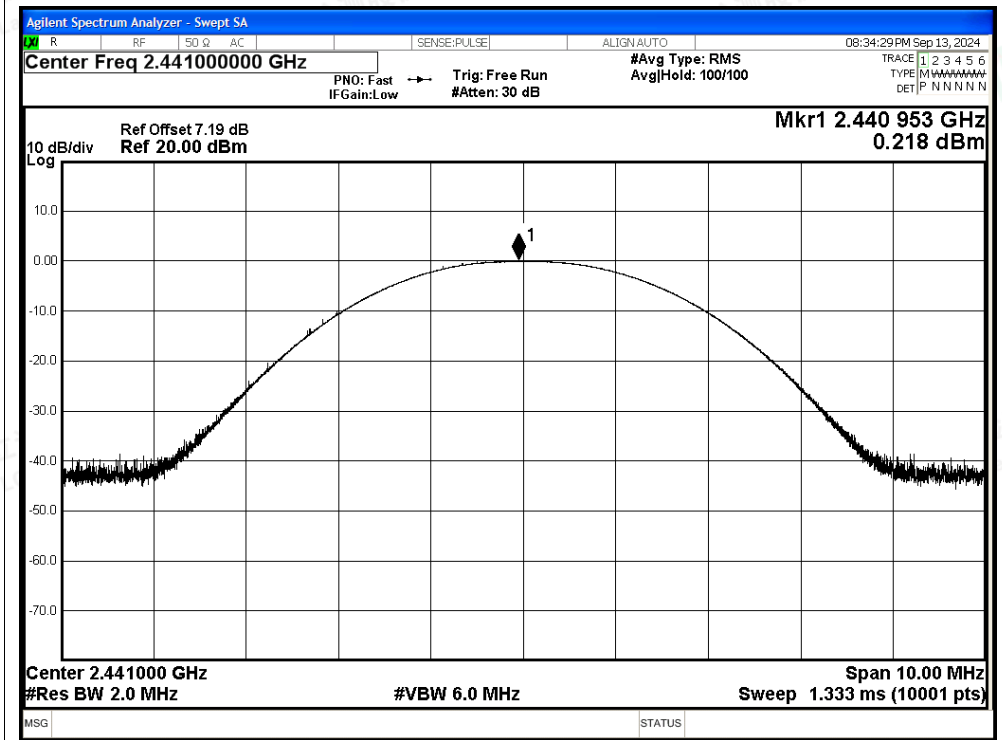


Test Graphs

Power NVNT 1-DH5 2402MHz Ant

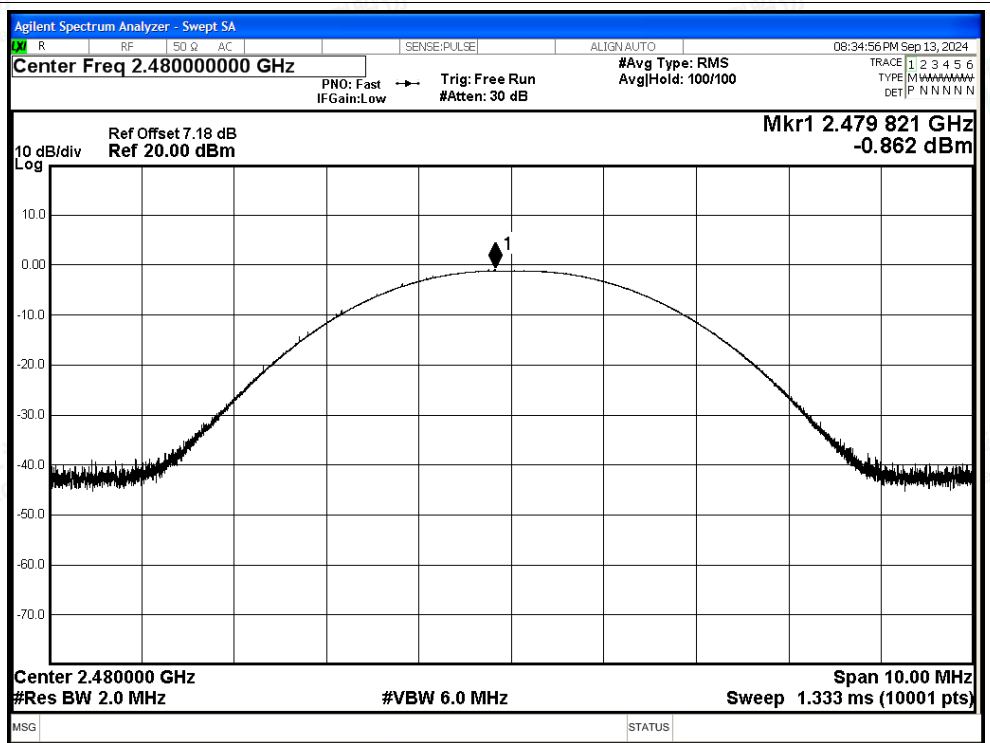


Power NVNT 1-DH5 2441MHz Ant

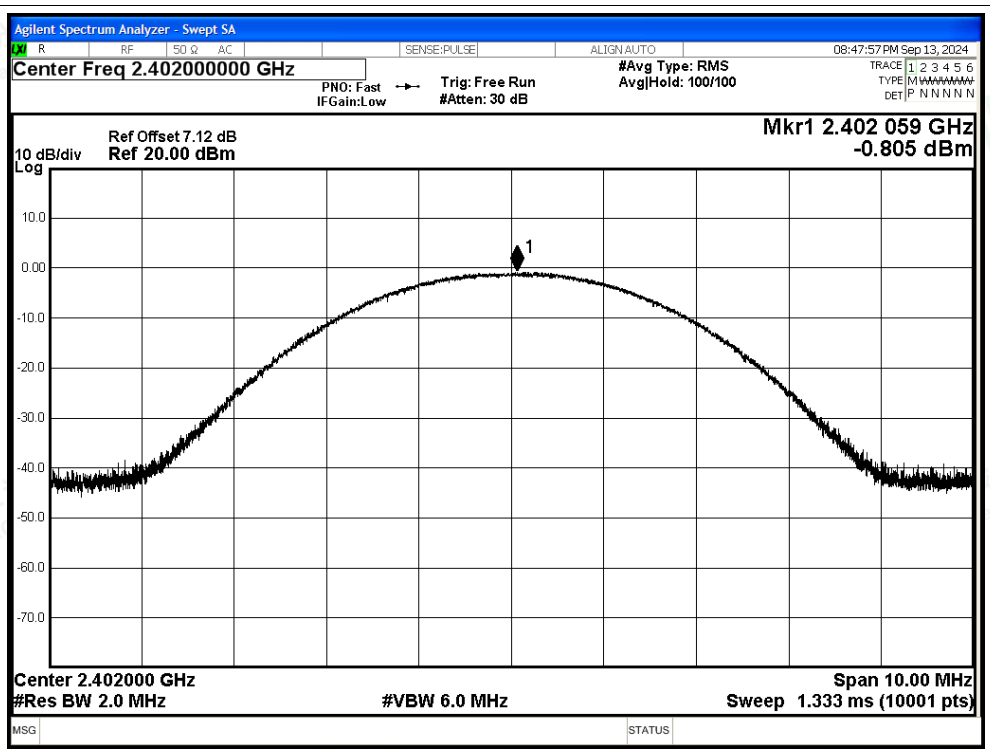


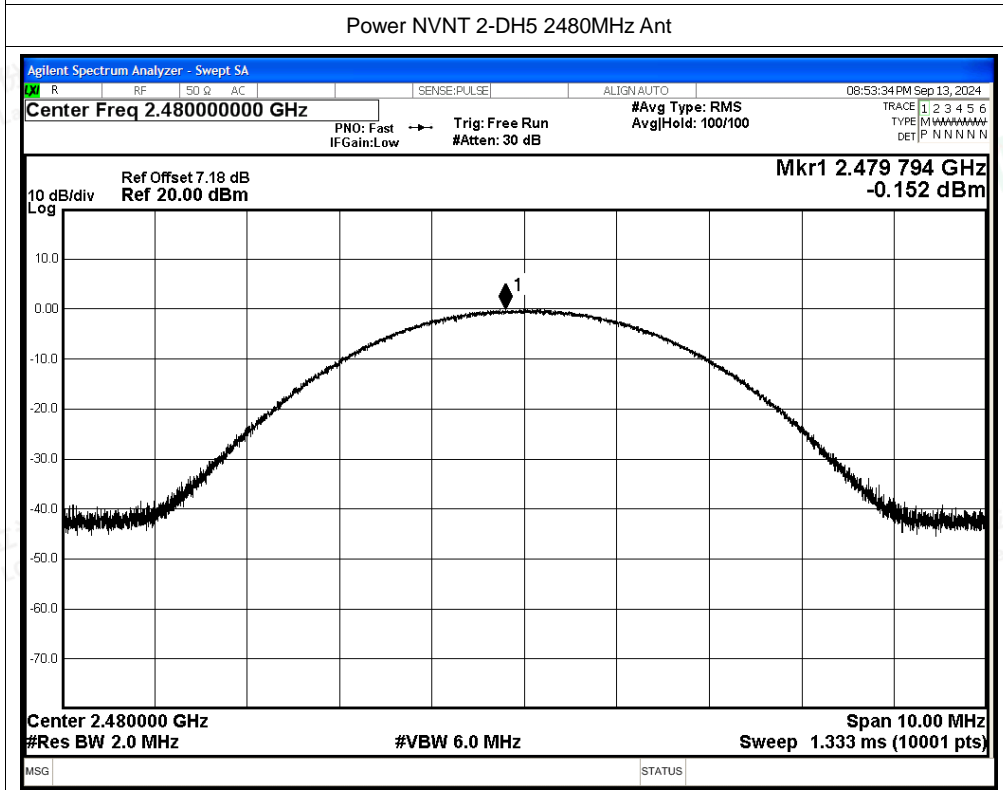
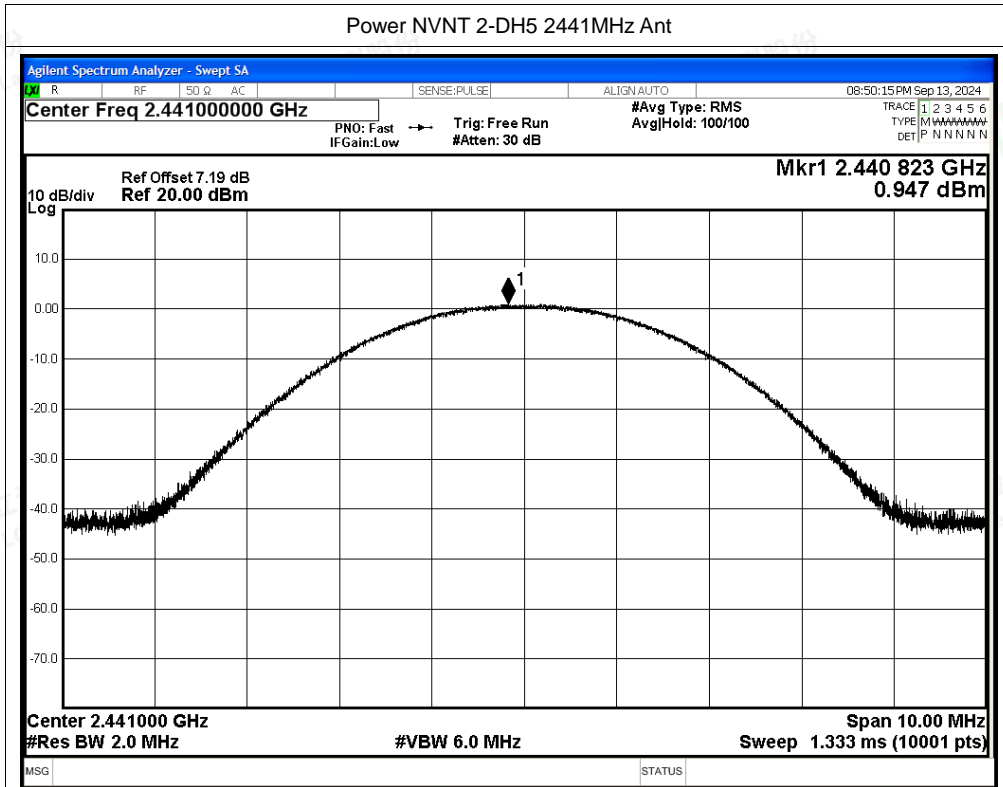


Power NVNT 1-DH5 2480MHz Ant



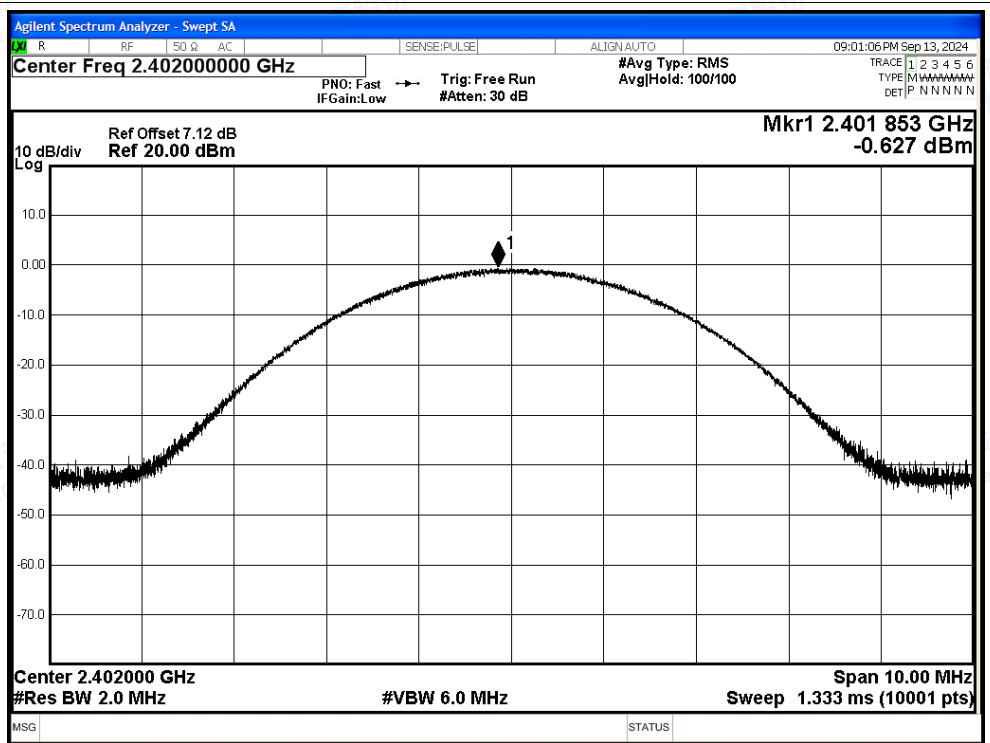
Power NVNT 2-DH5 2402MHz Ant



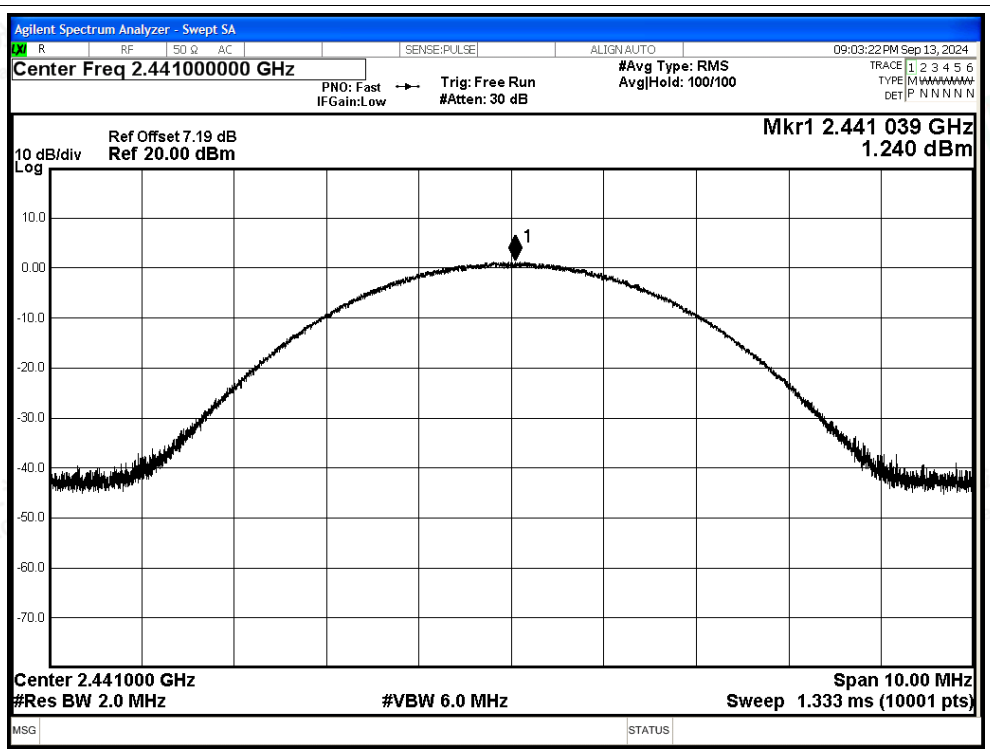


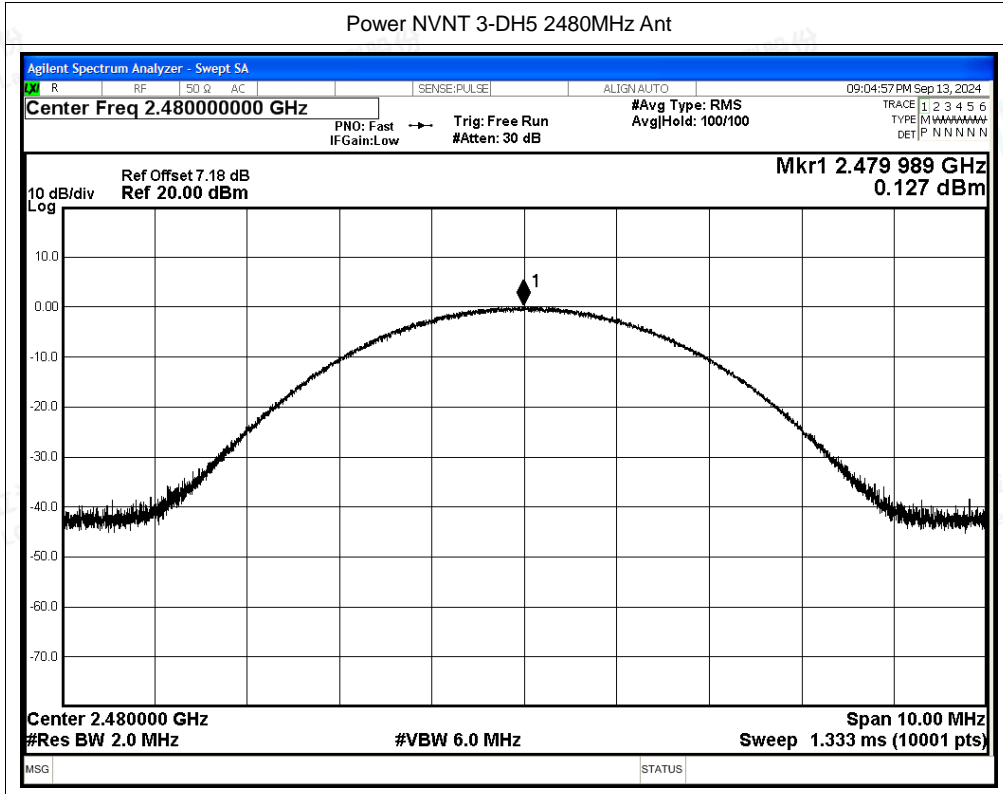


Power NVNT 3-DH5 2402MHz Ant



Power NVNT 3-DH5 2441MHz Ant







A.3 Carrier Frequencies Separation

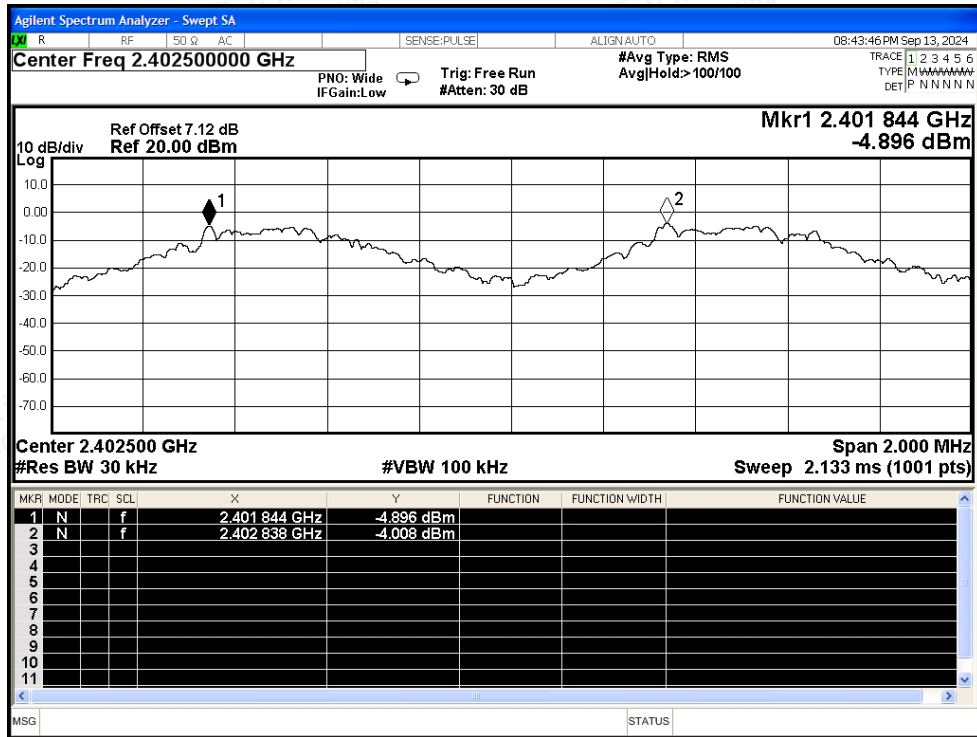
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant	2401.844	2402.838	0.994	0.637	Pass
NVNT	2-DH5	Ant	2402.018	2403.028	1.01	0.860	Pass
NVNT	3-DH5	Ant	2402.032	2403.036	1.004	0.874	Pass



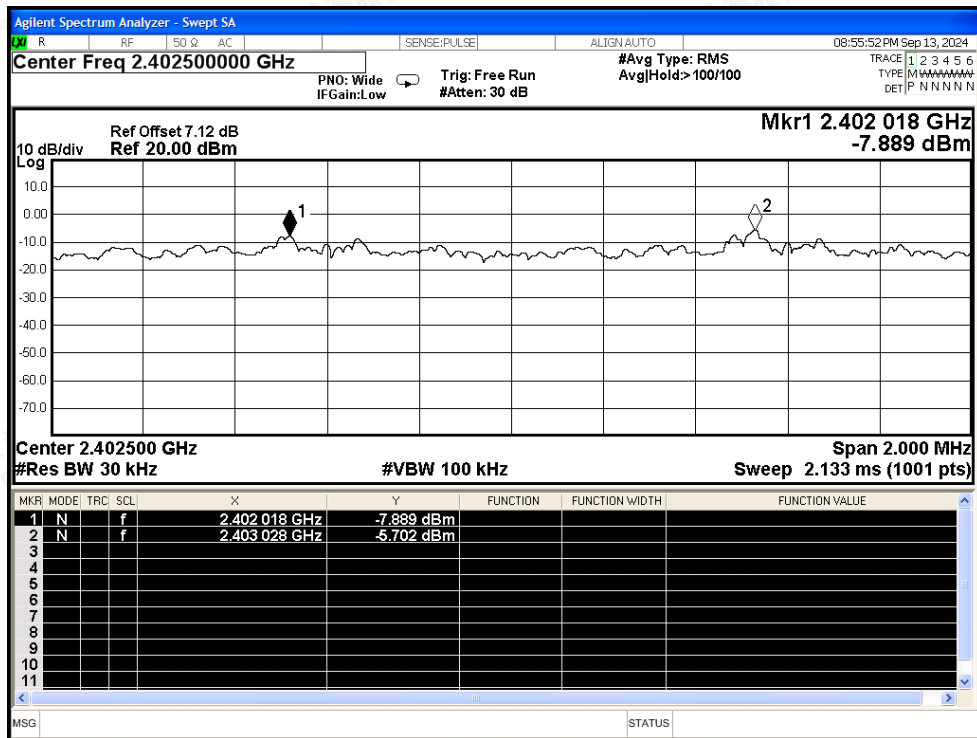


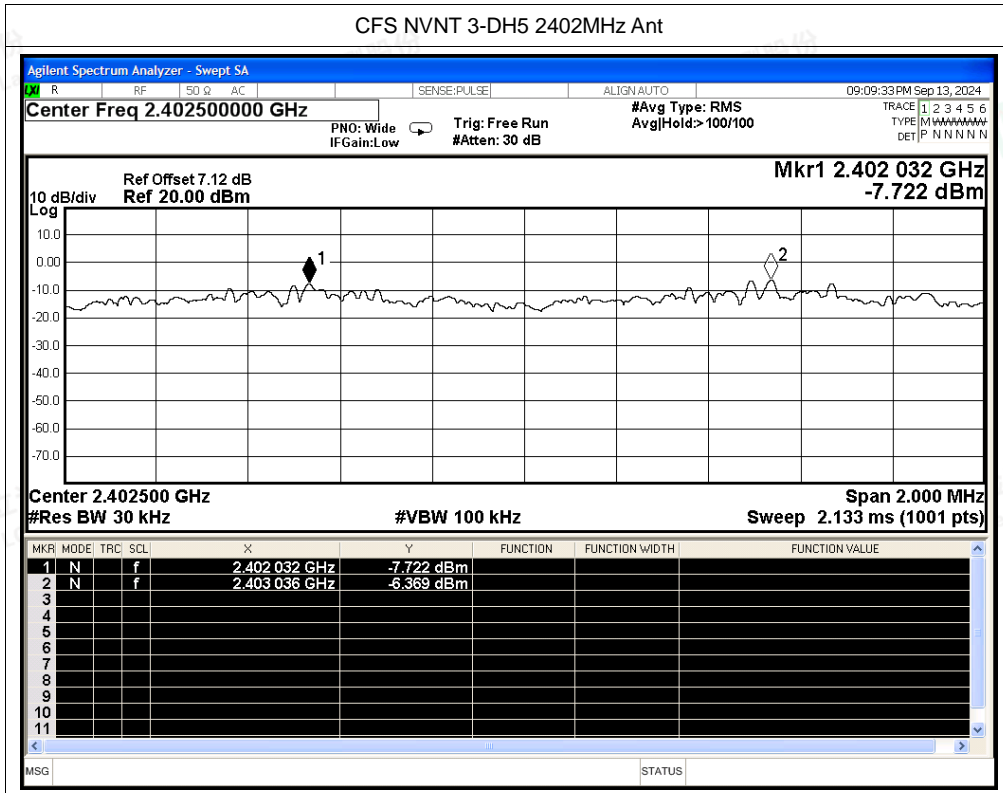
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant



CFS NVNT 2-DH5 2402MHz Ant







A.4 Dwell Time

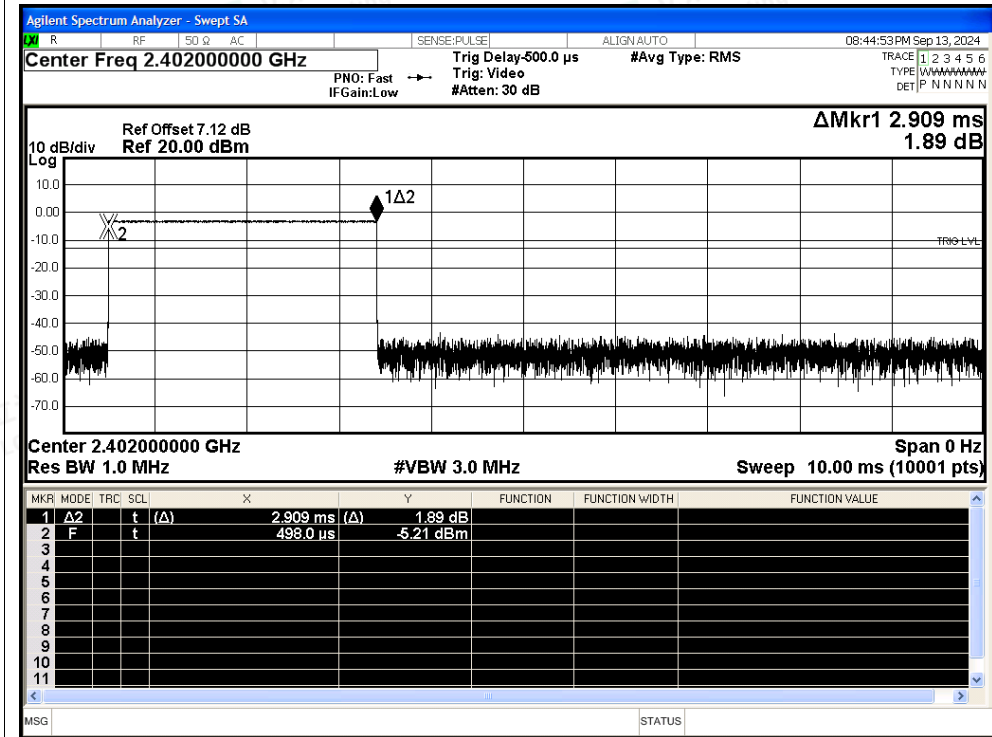
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant	2.909	319.99	110	31600	400	Pass
NVNT	2-DH5	2402	Ant	2.898	330.372	114	31600	400	Pass
NVNT	3-DH5	2402	Ant	2.897	336.052	116	31600	400	Pass



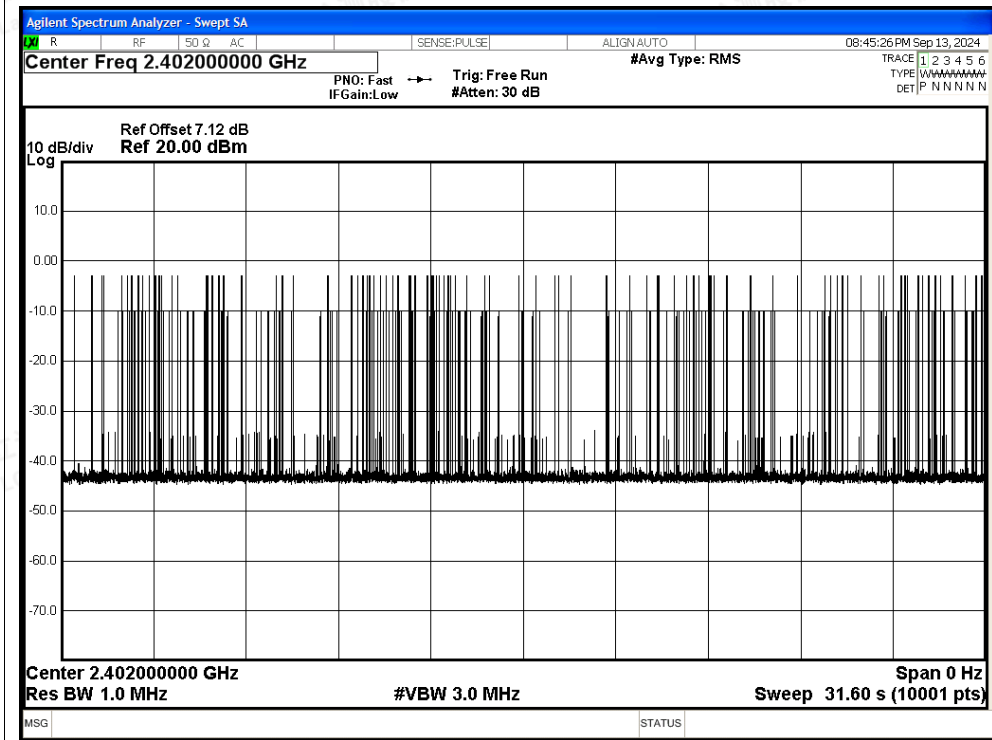


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant One Burst

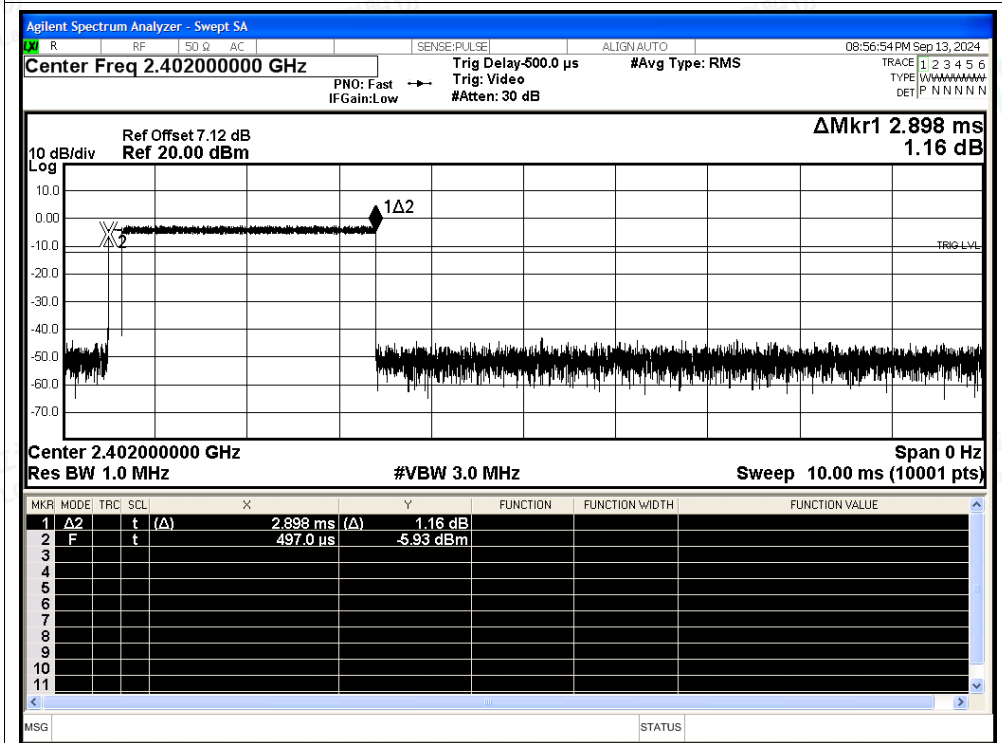


Dwell NVNT 1-DH5 2402MHz Ant Accumulated

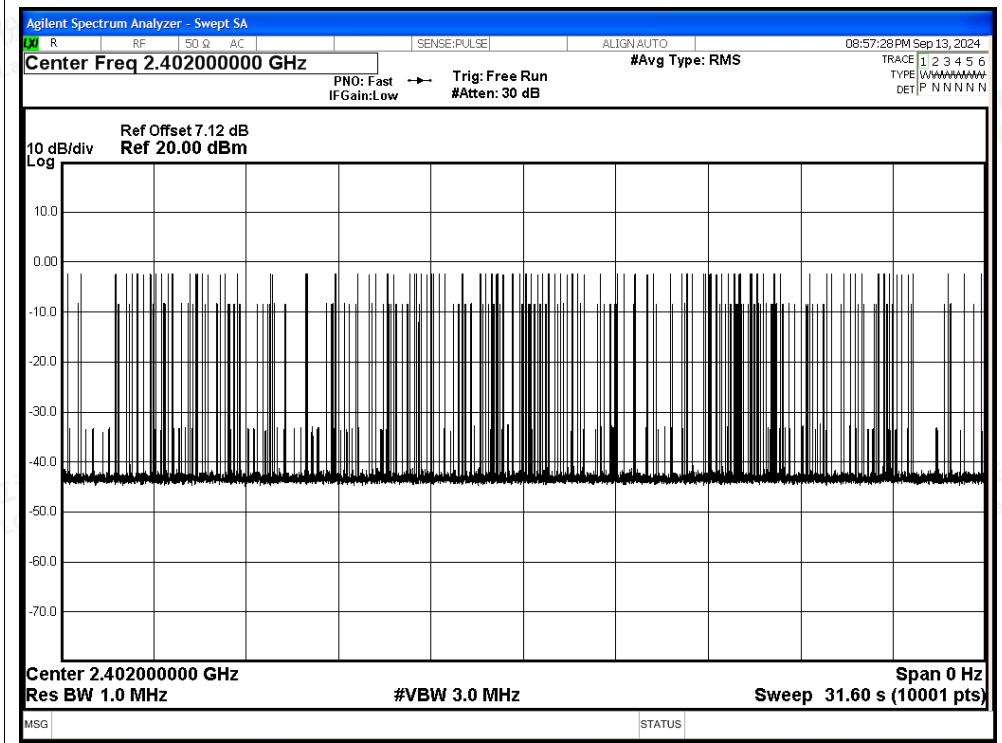




Dwell NVNT 2-DH5 2402MHz Ant One Burst

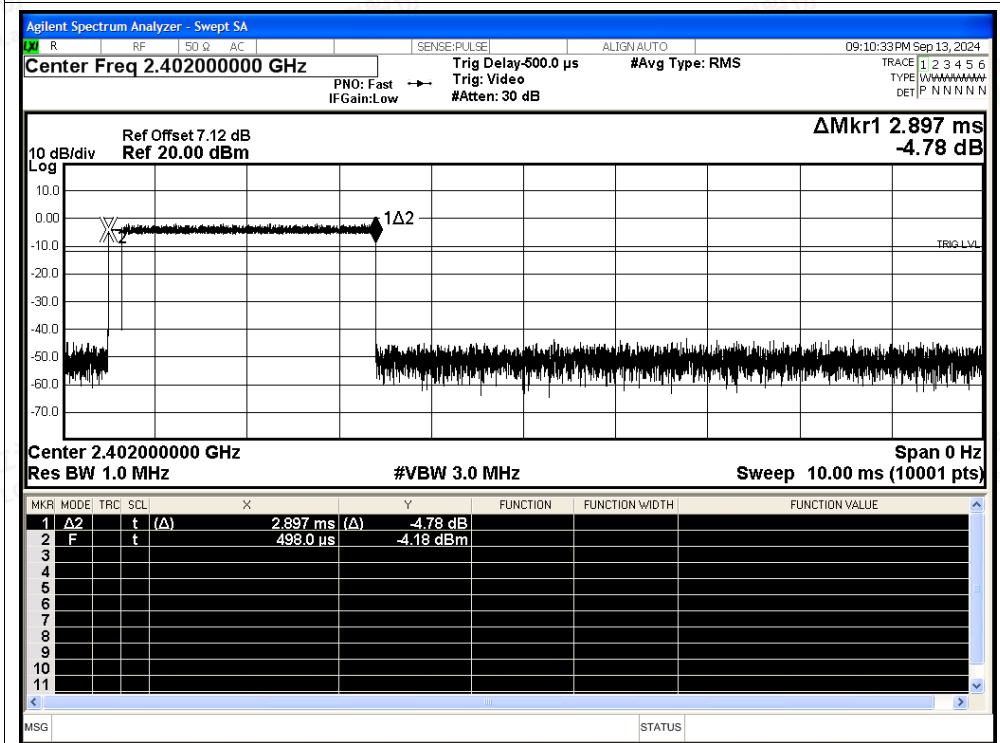


Dwell NVNT 2-DH5 2402MHz Ant Accumulated

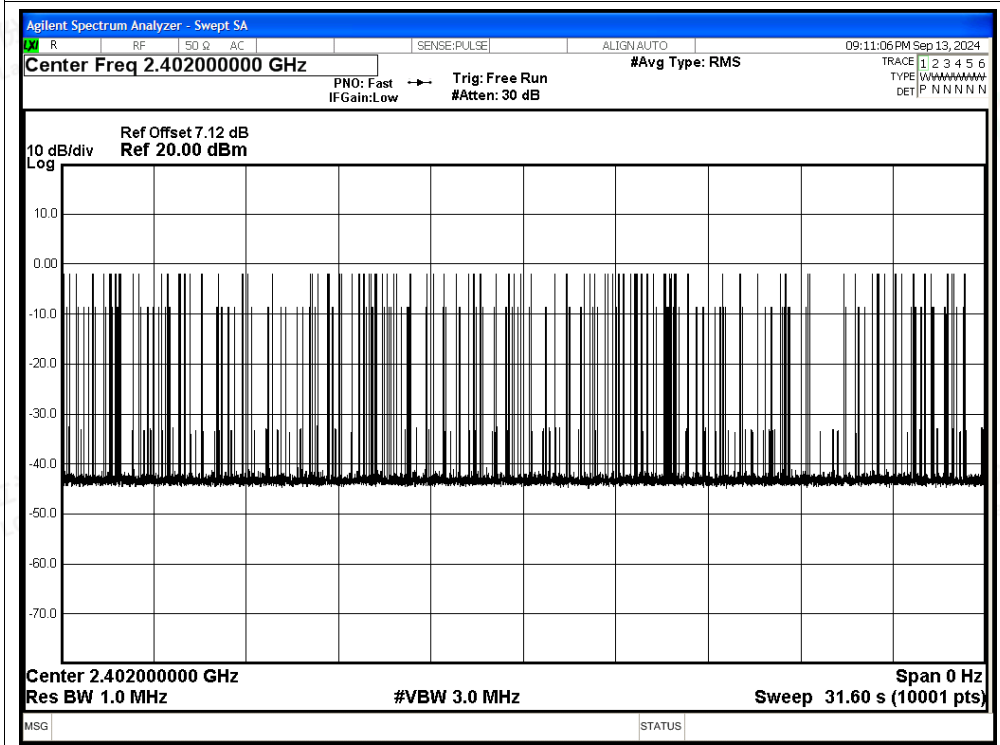




Dwell NVNT 3-DH5 2402MHz Ant One Burst



Dwell NVNT 3-DH5 2402MHz Ant Accumulated





A.5 Number of Hopping Channel

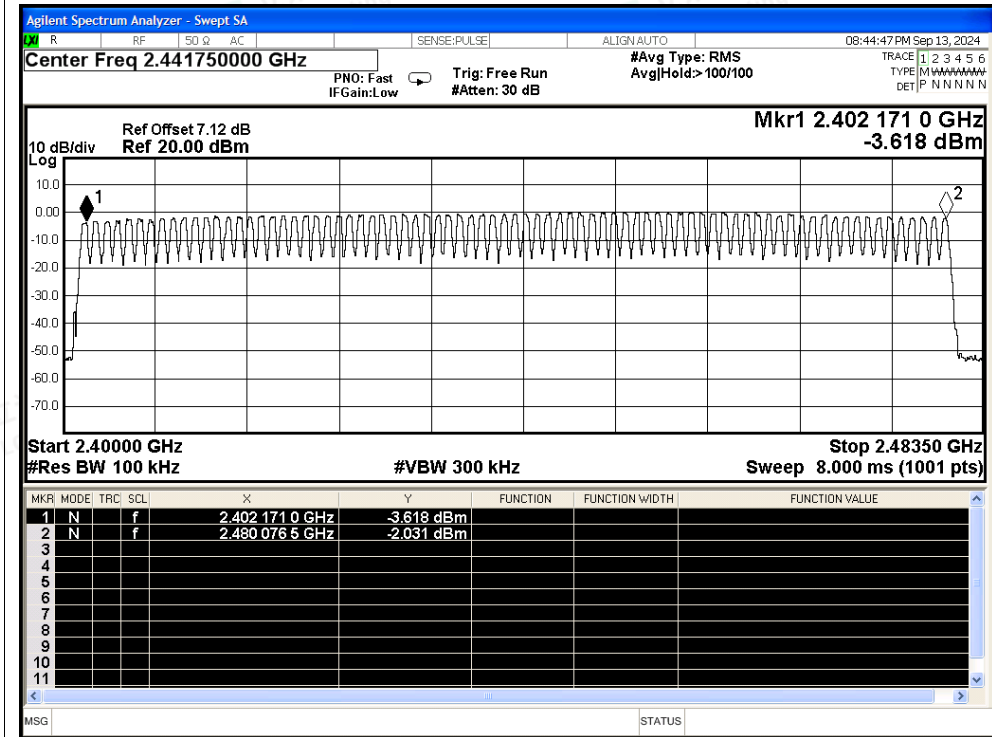
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant	79	15	Pass
NVNT	2-DH5	Ant	79	15	Pass
NVNT	3-DH5	Ant	79	15	Pass



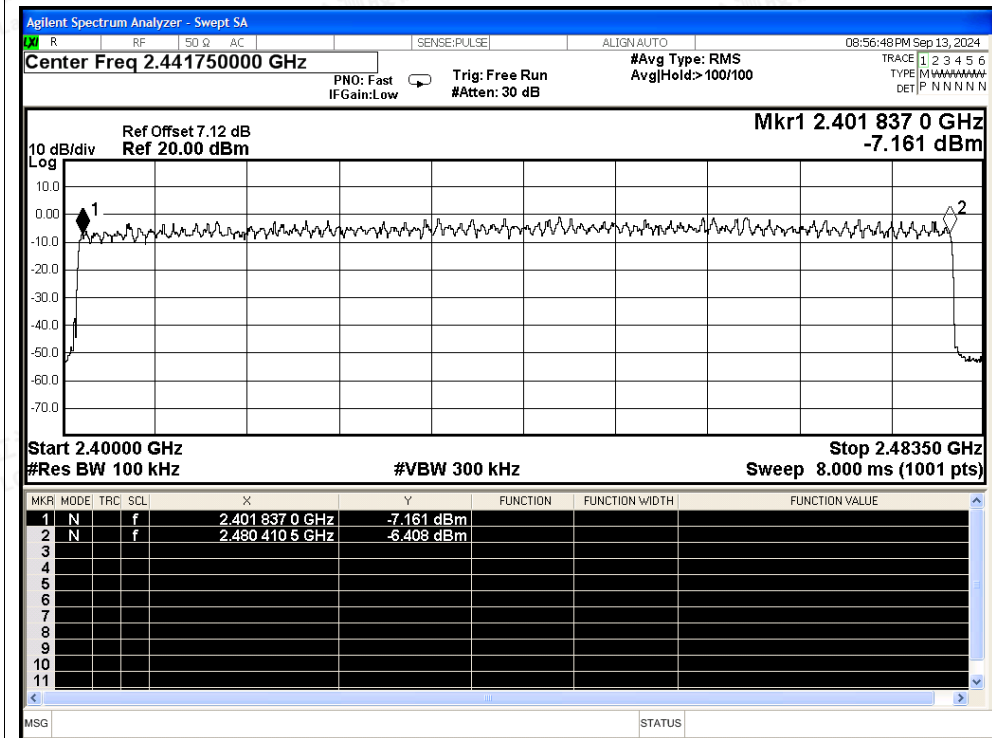


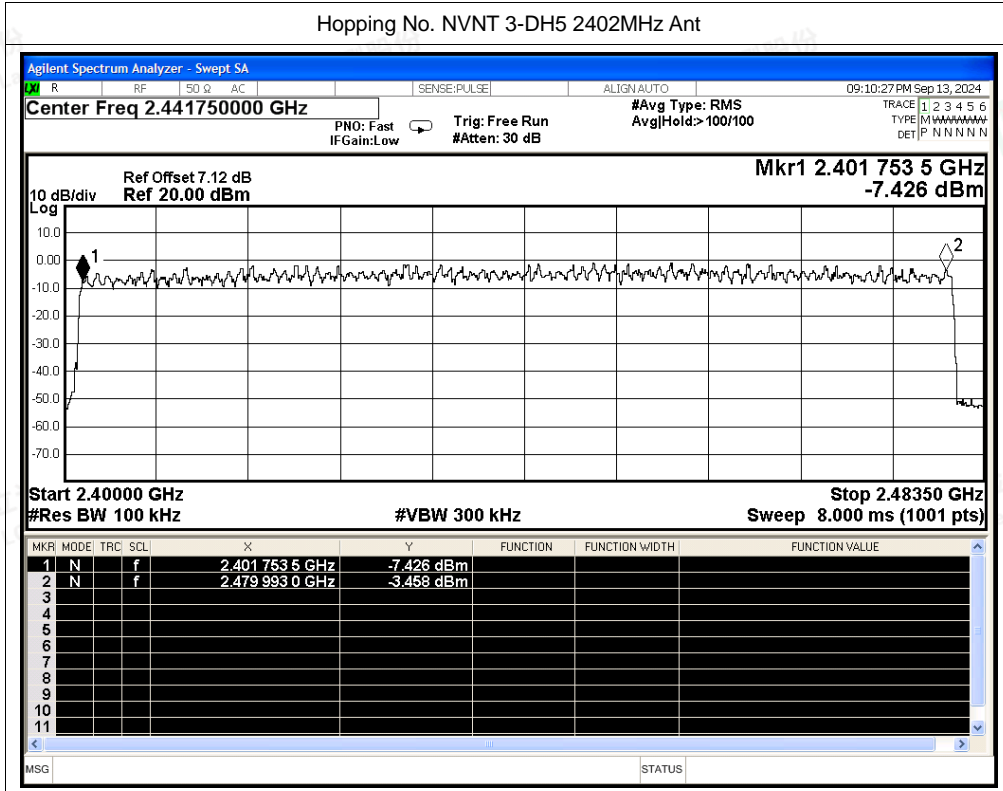
Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant



Hopping No. NVNT 2-DH5 2402MHz Ant







A.6 Band Edge

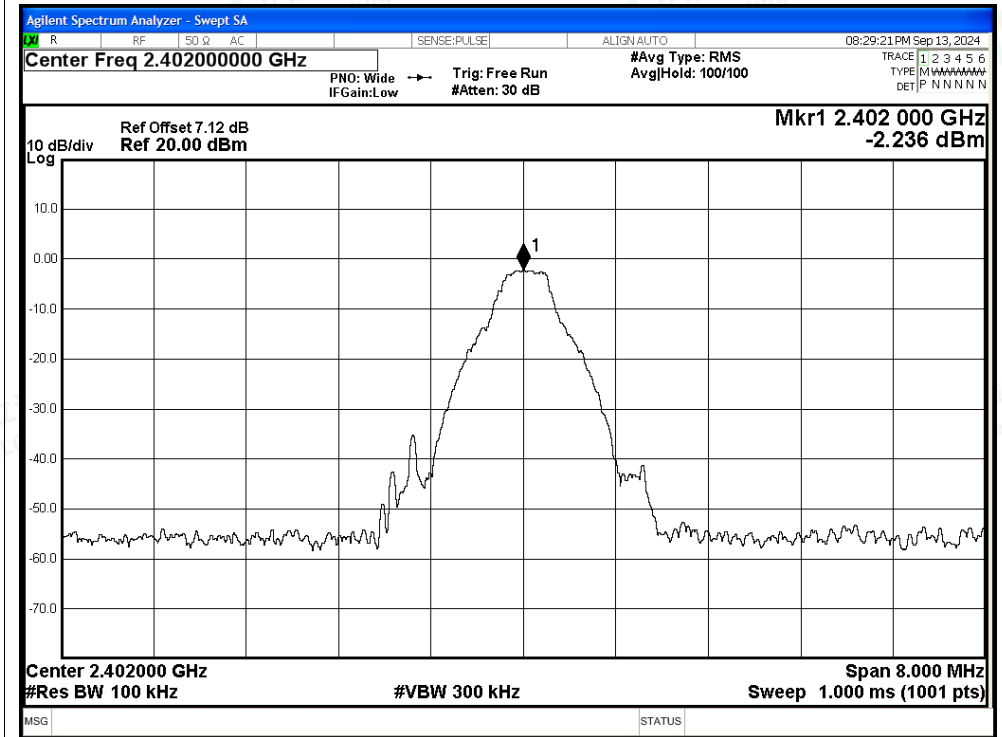
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	No-Hopping	-49.81	-20	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	-50.95	-20	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	-48.16	-20	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	-49.91	-20	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	-48.61	-20	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	-49.18	-20	Pass



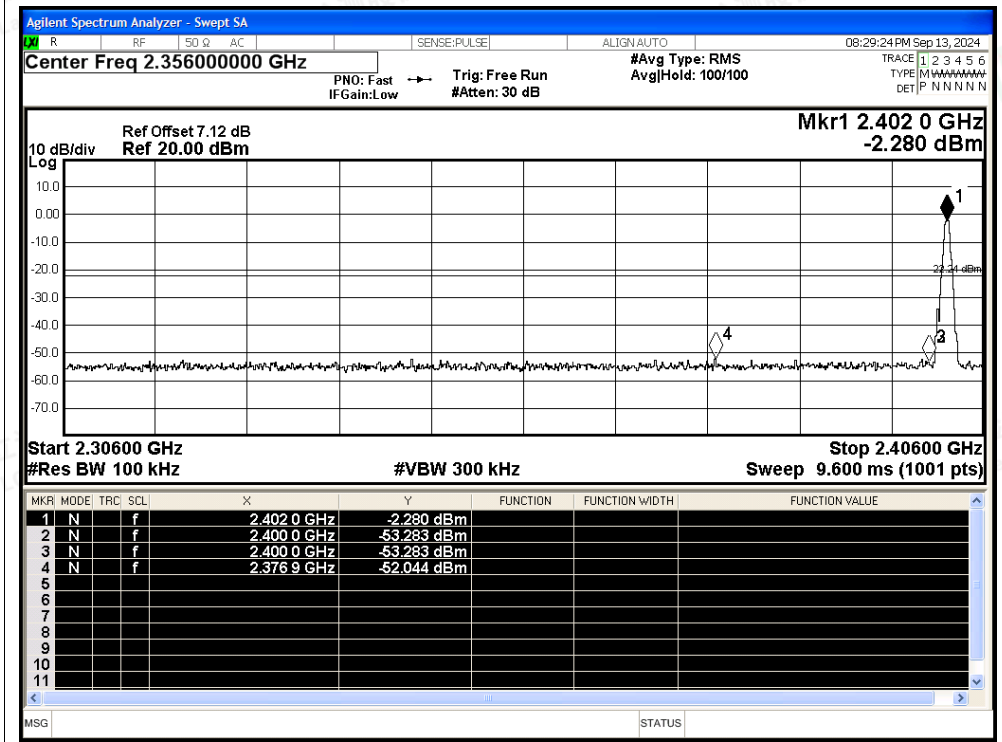


Test Graphs

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

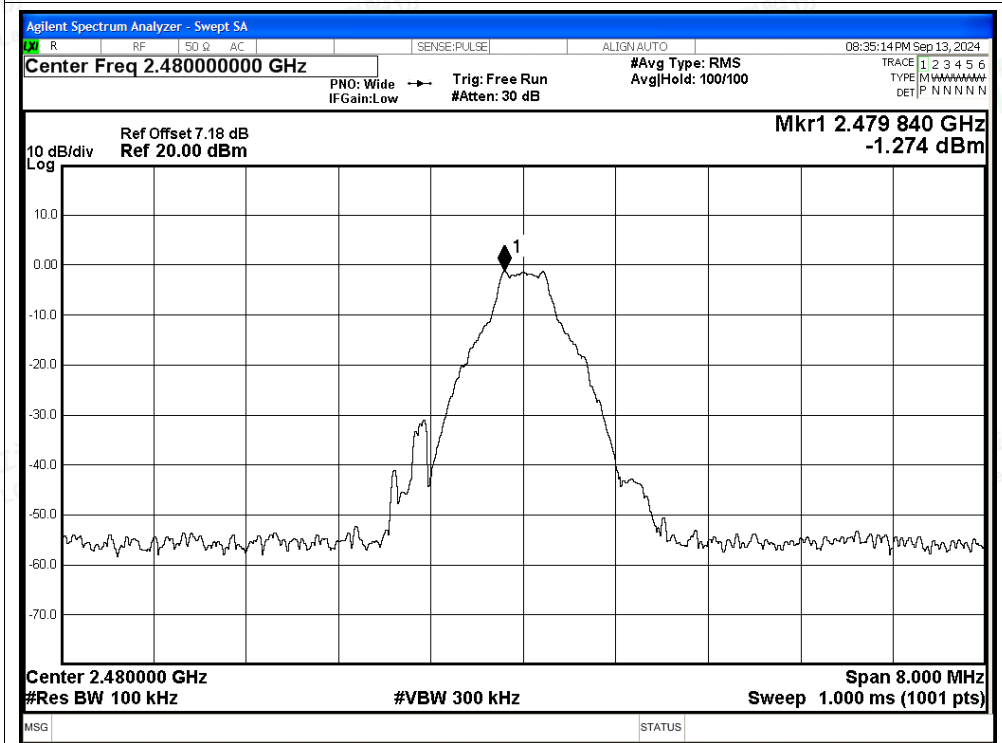


Band Edge NVNT 1-DH5 2402MHz Ant No-Hopping Emission

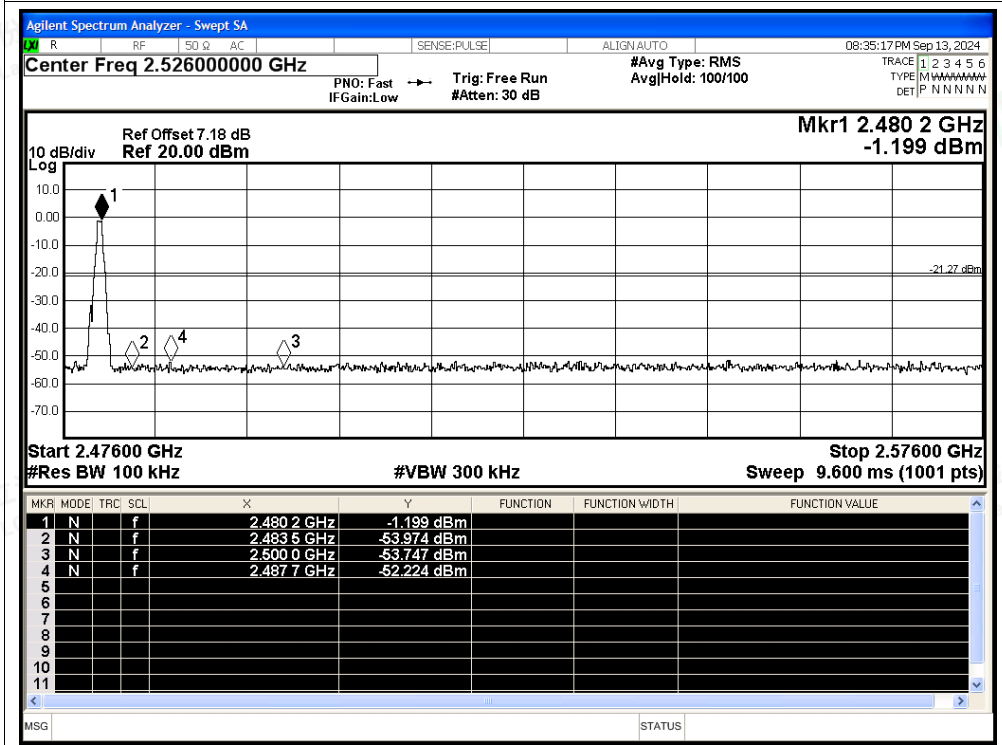




Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Ref

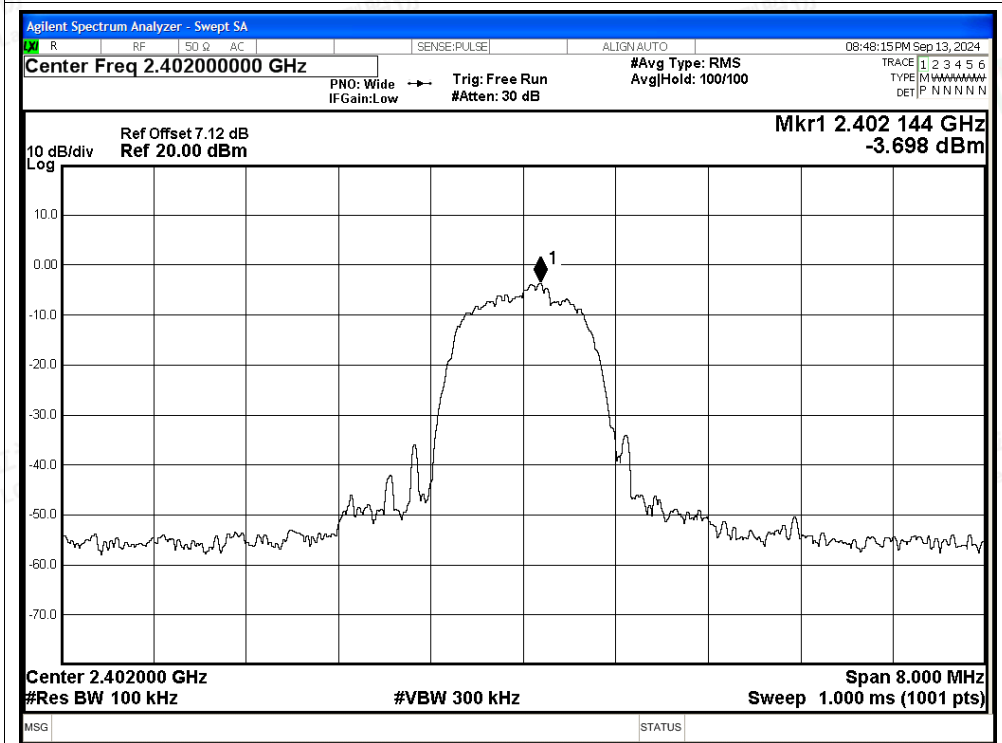


Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Emission

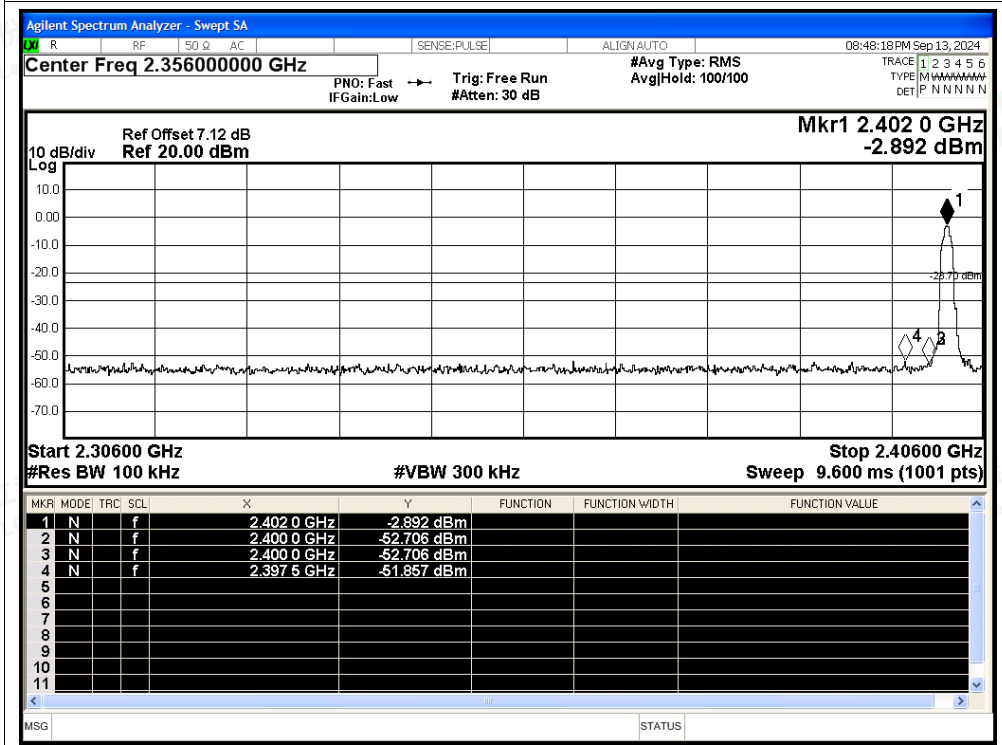




Band Edge NVNT 2-DH5 2402MHz Ant No-Hopping Ref

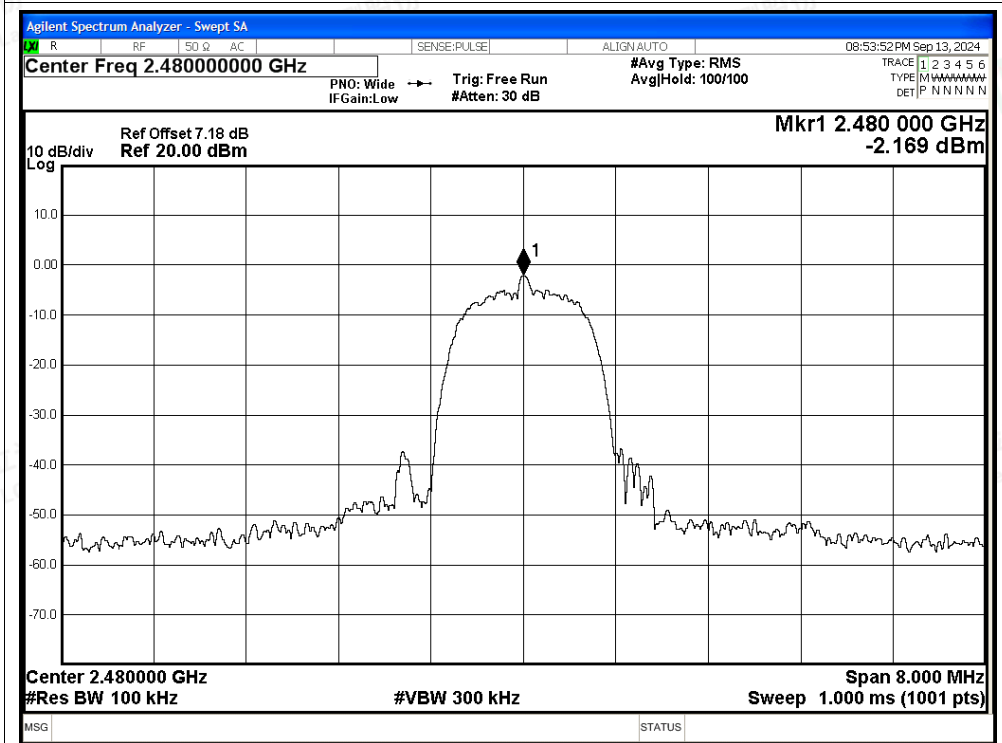


Band Edge NVNT 2-DH5 2402MHz Ant No-Hopping Emission

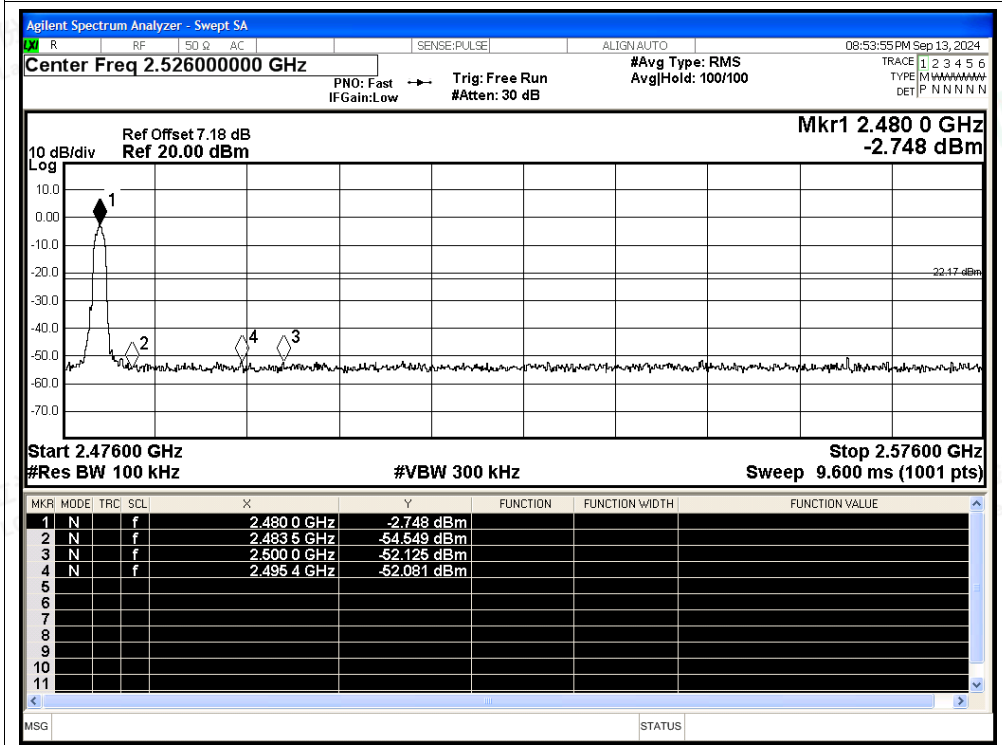




Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Ref

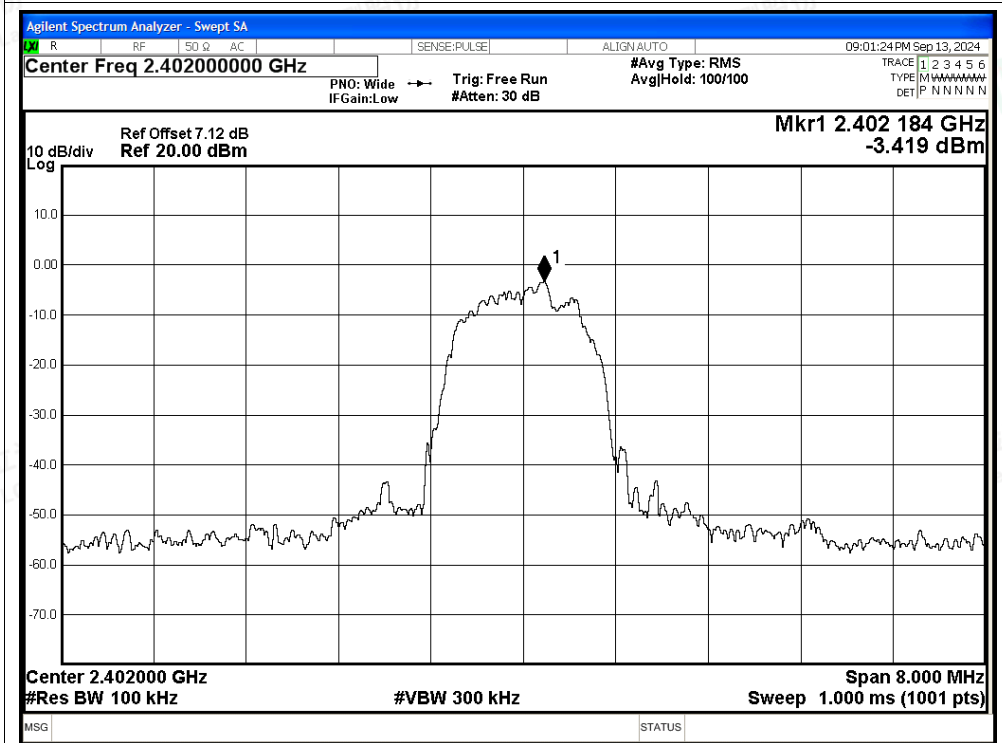


Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Emission

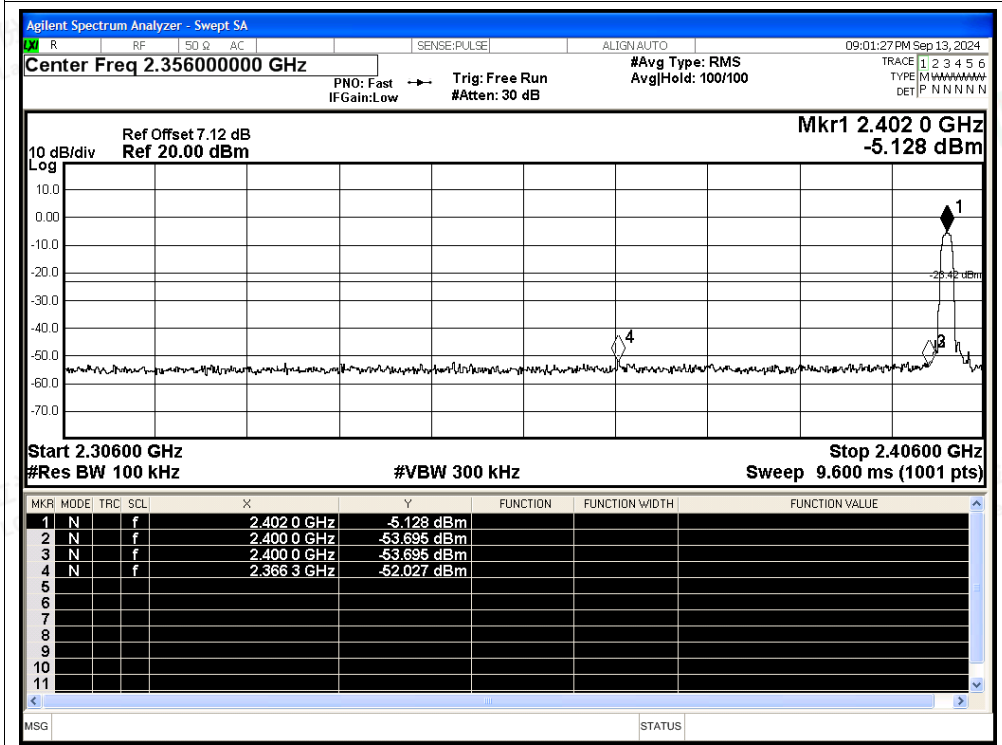




Band Edge NVNT 3-DH5 2402MHz Ant No-Hopping Ref

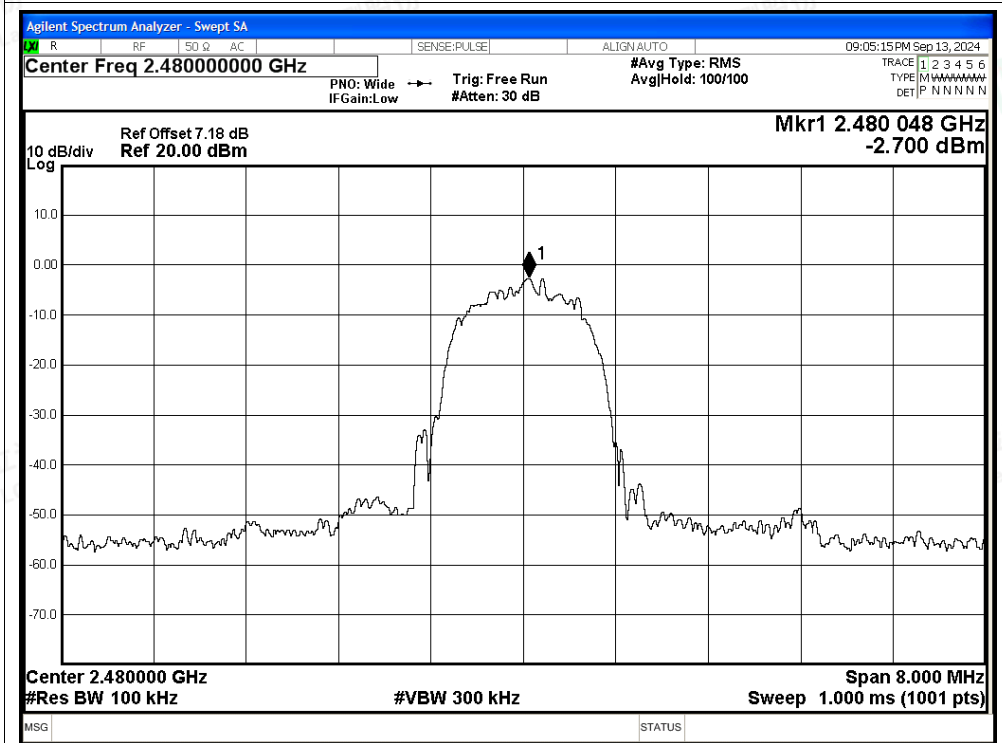


Band Edge NVNT 3-DH5 2402MHz Ant No-Hopping Emission

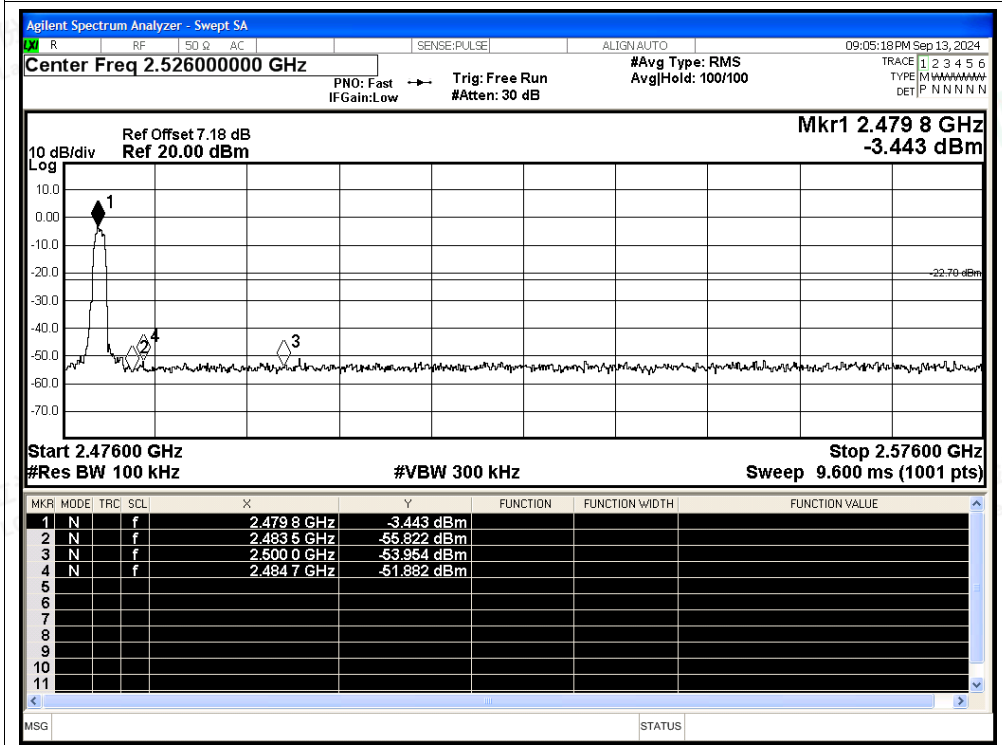




Band Edge NVNT 3-DH5 2480MHz Ant No-Hopping Ref



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





(Hopping)

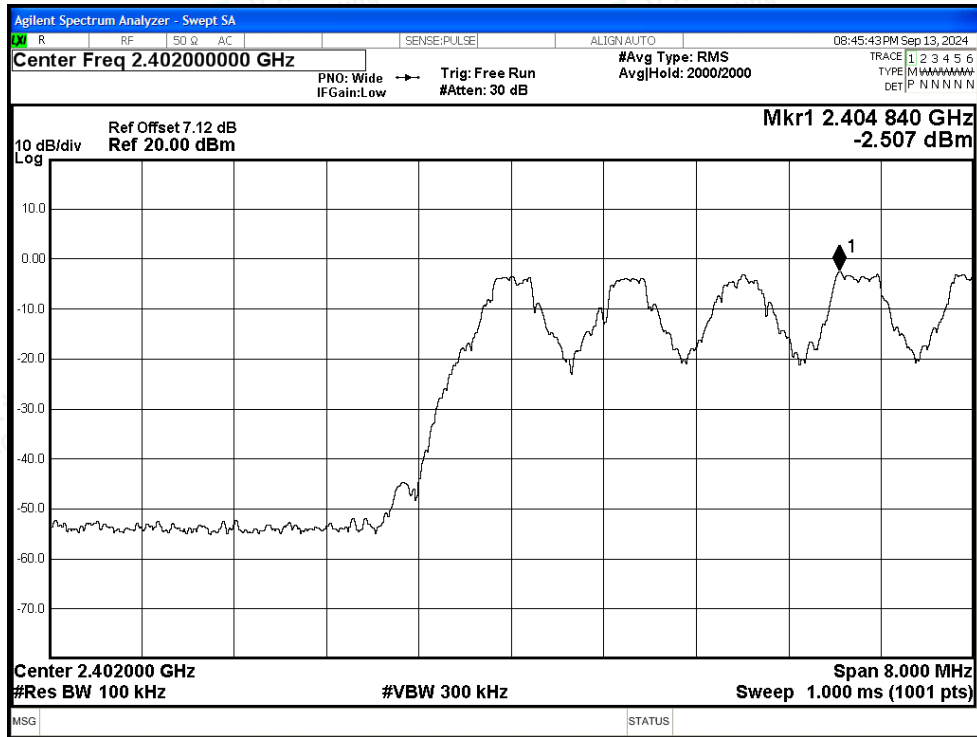
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	Hopping	-48.74	-20	Pass
NVNT	1-DH5	2480	Ant	Hopping	-49.68	-20	Pass
NVNT	2-DH5	2402	Ant	Hopping	-47.55	-20	Pass
NVNT	2-DH5	2480	Ant	Hopping	-48.5	-20	Pass
NVNT	3-DH5	2402	Ant	Hopping	-44.94	-20	Pass
NVNT	3-DH5	2480	Ant	Hopping	-49.1	-20	Pass



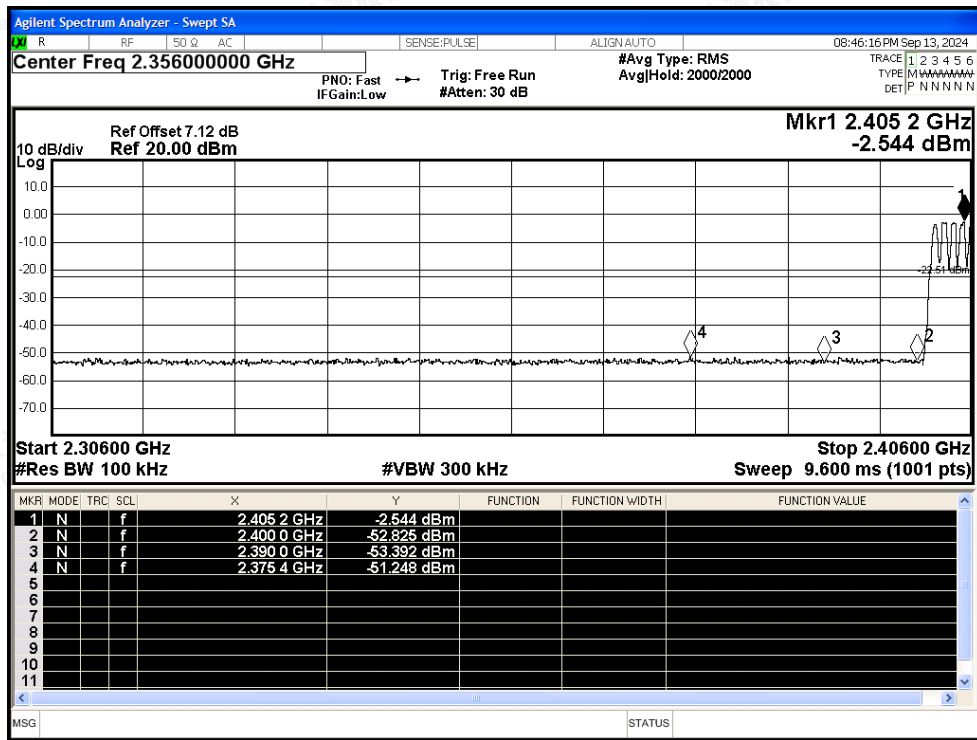


Test Graphs

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

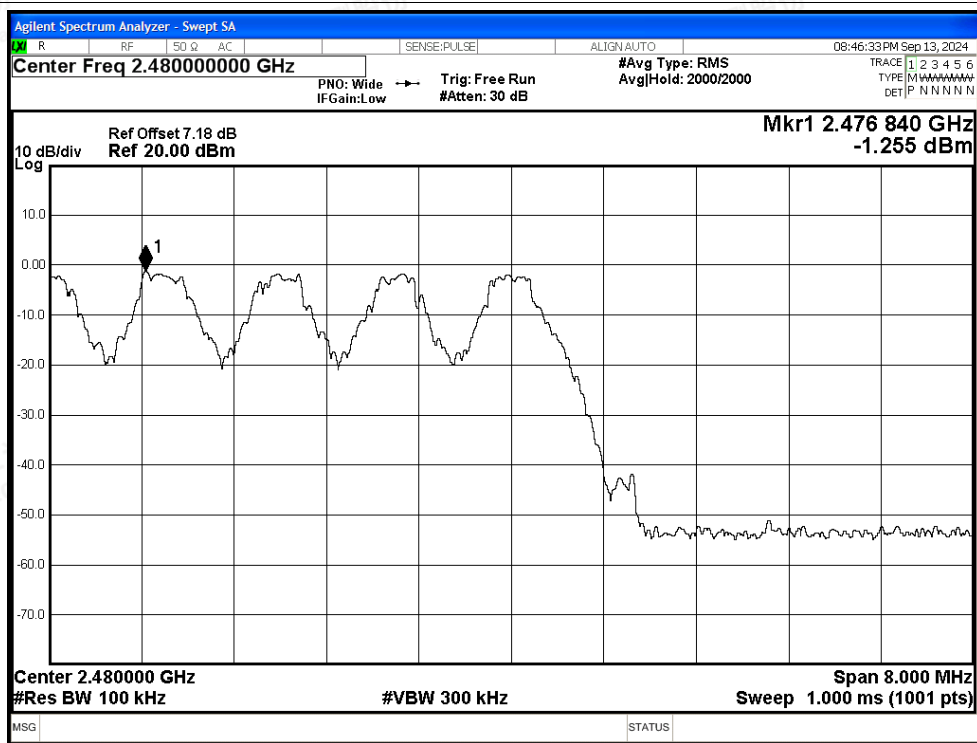


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant Hopping Emission

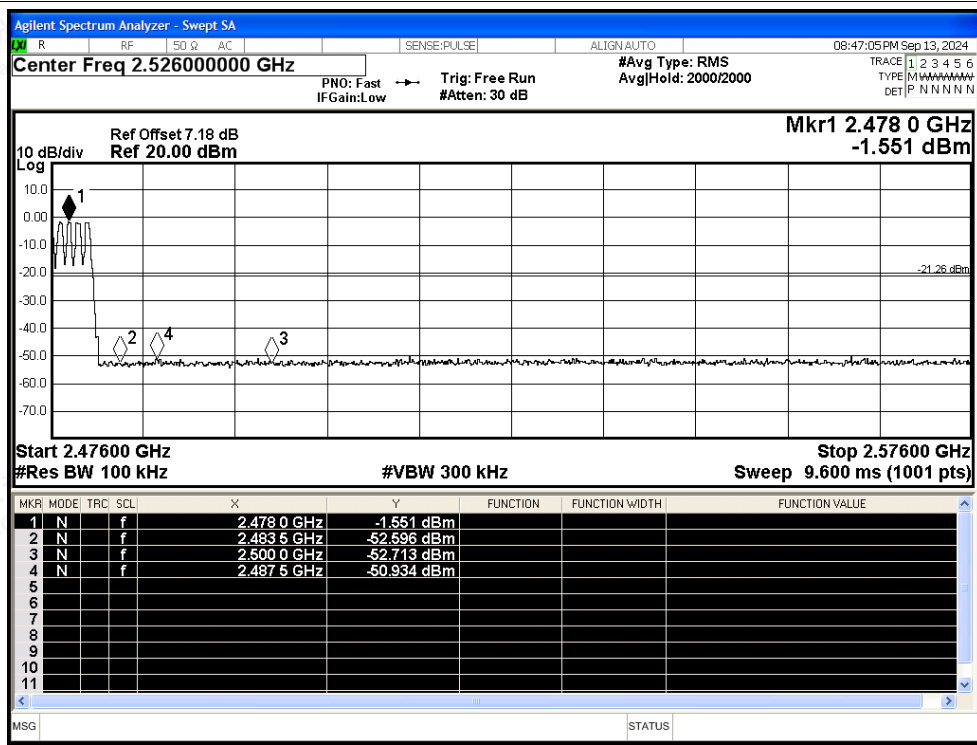




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant Hopping Ref



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

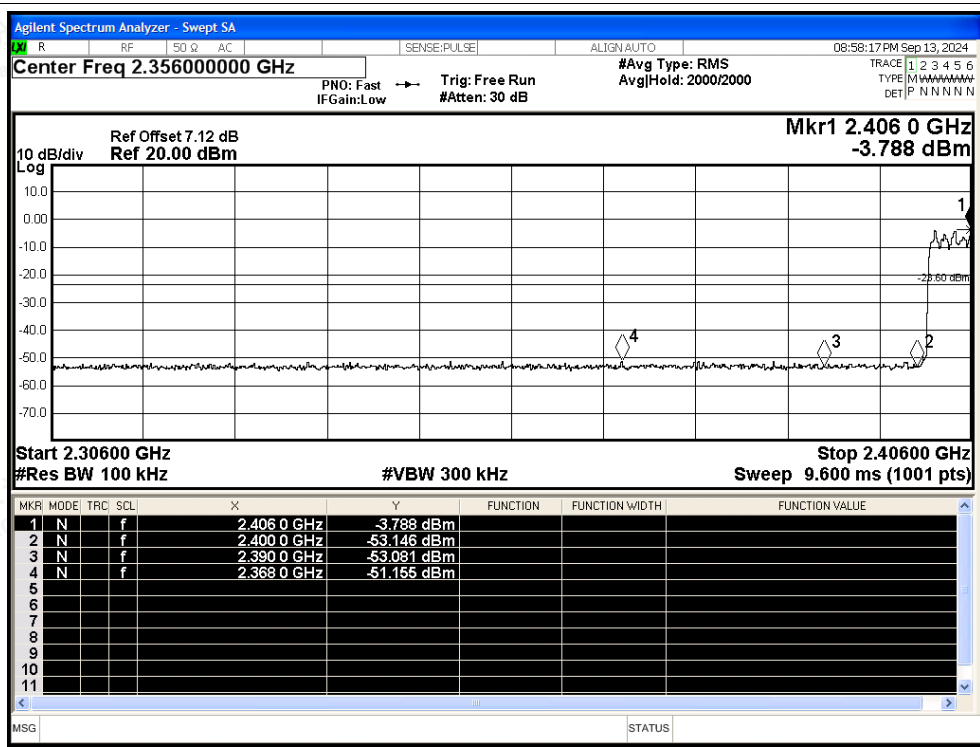




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Ref

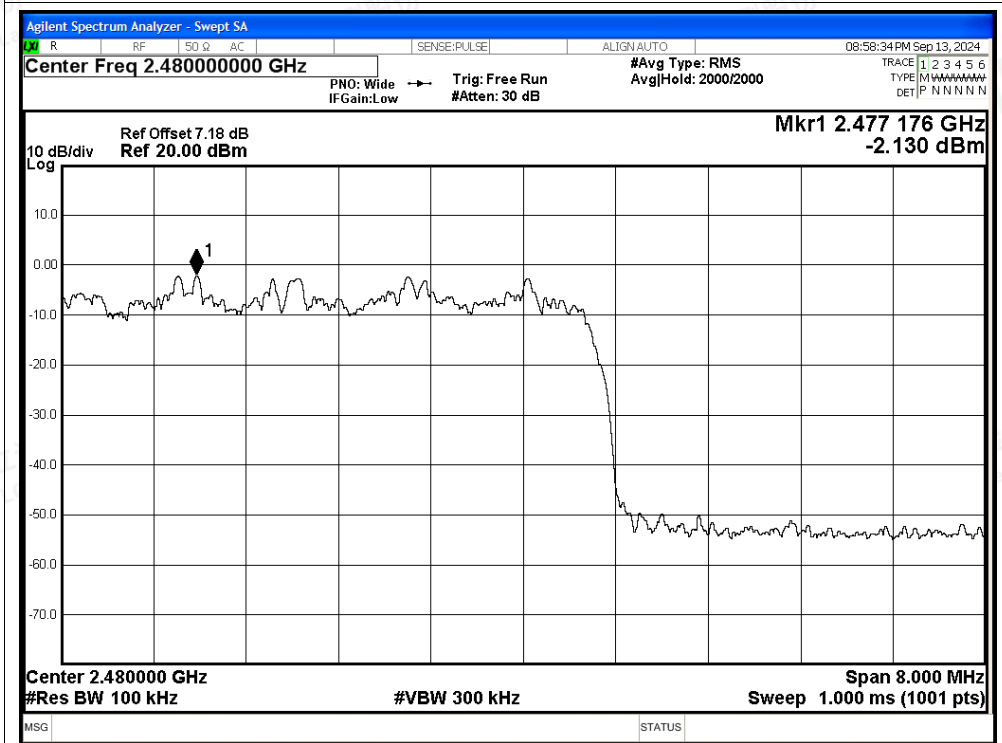


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Emission

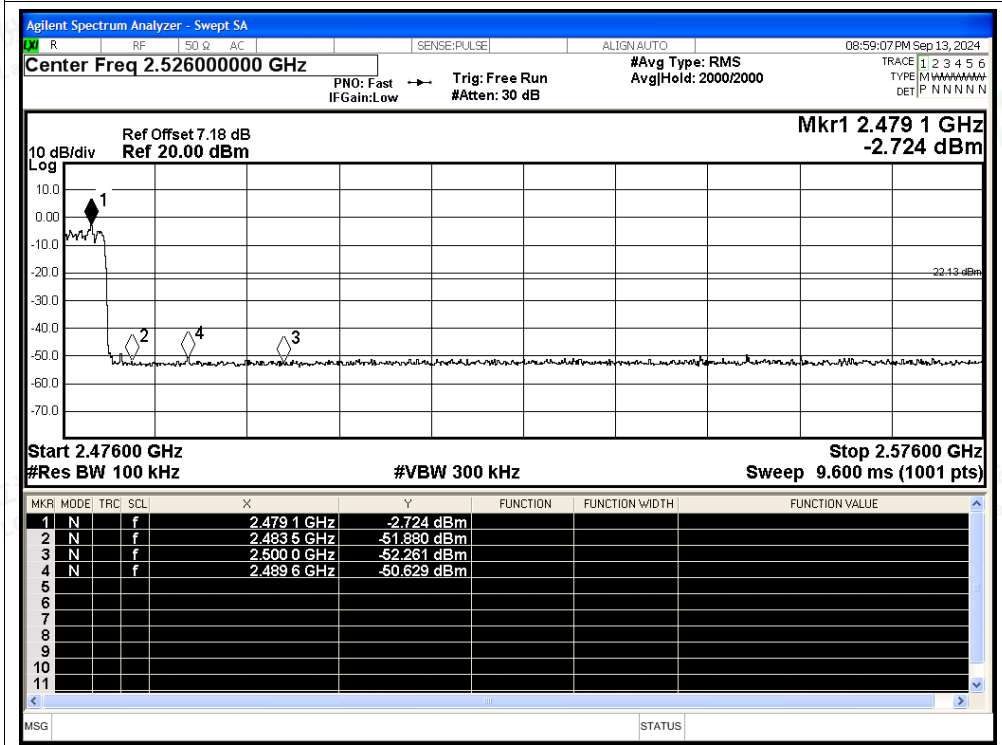




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant Hopping Ref



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

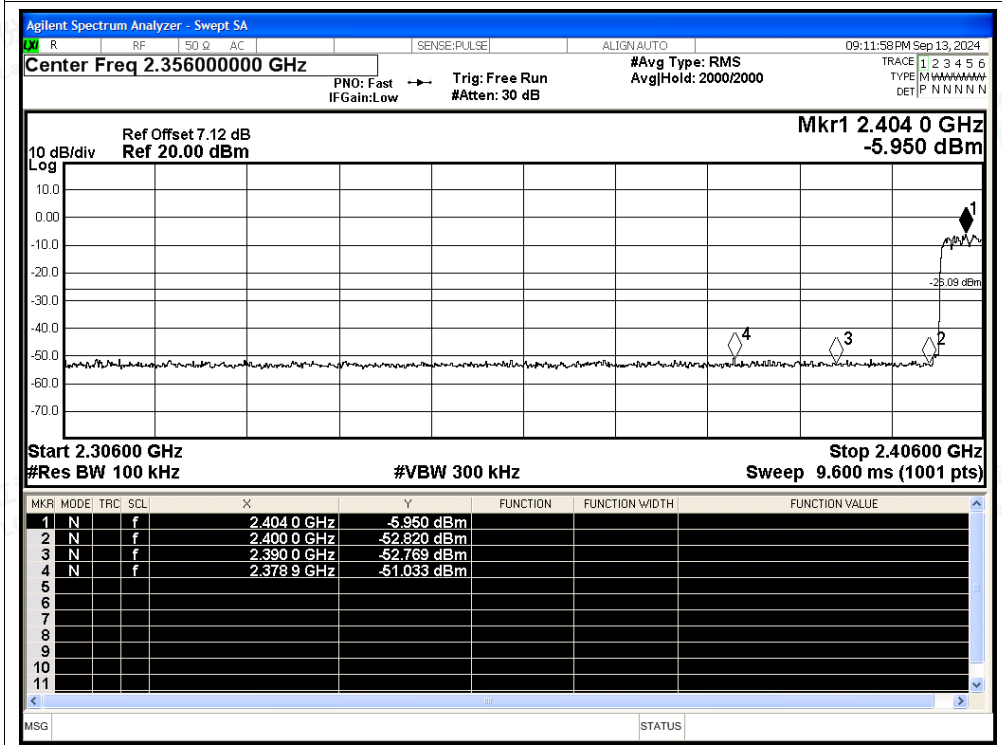




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Ref

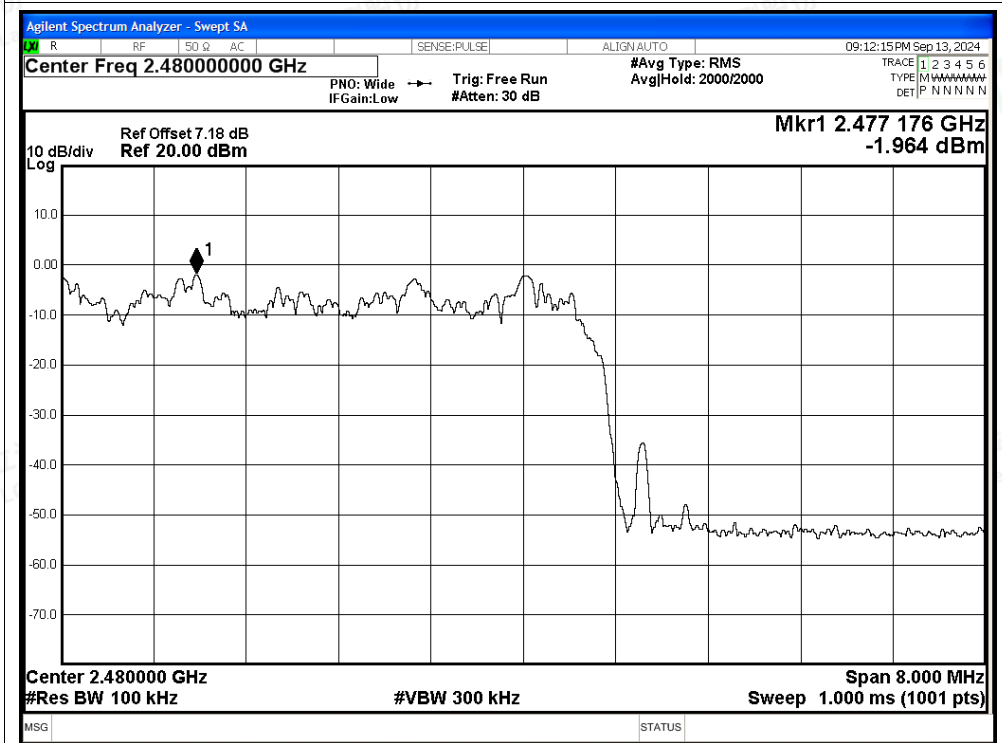


Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Emission

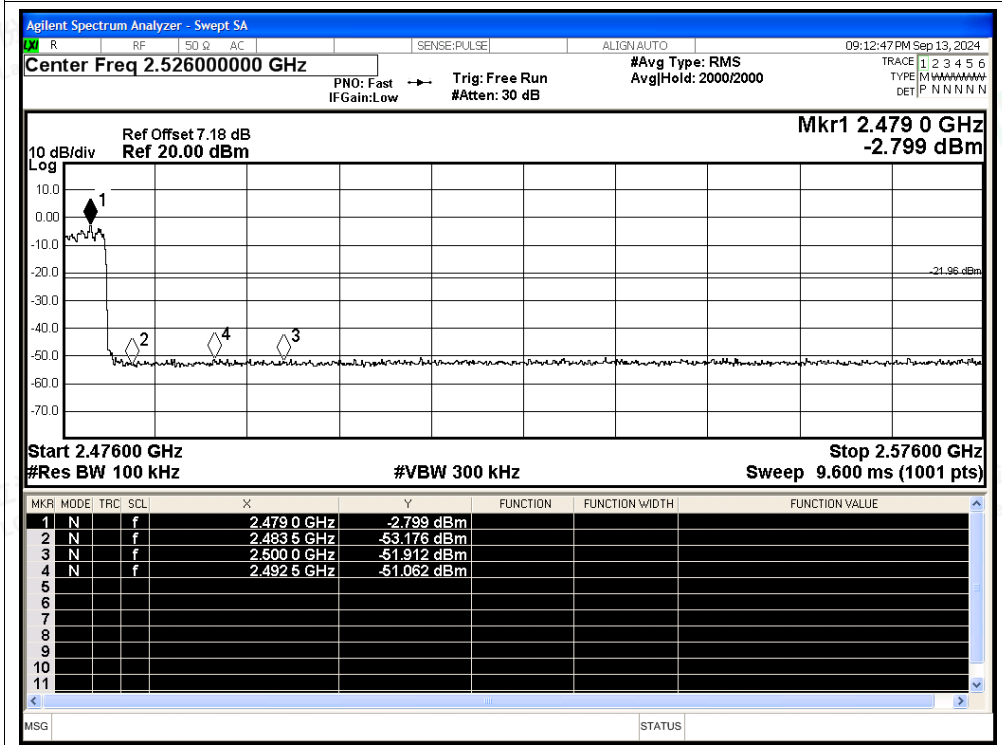




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant Hopping Ref



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





A.7 Conducted RF Spurious Emission

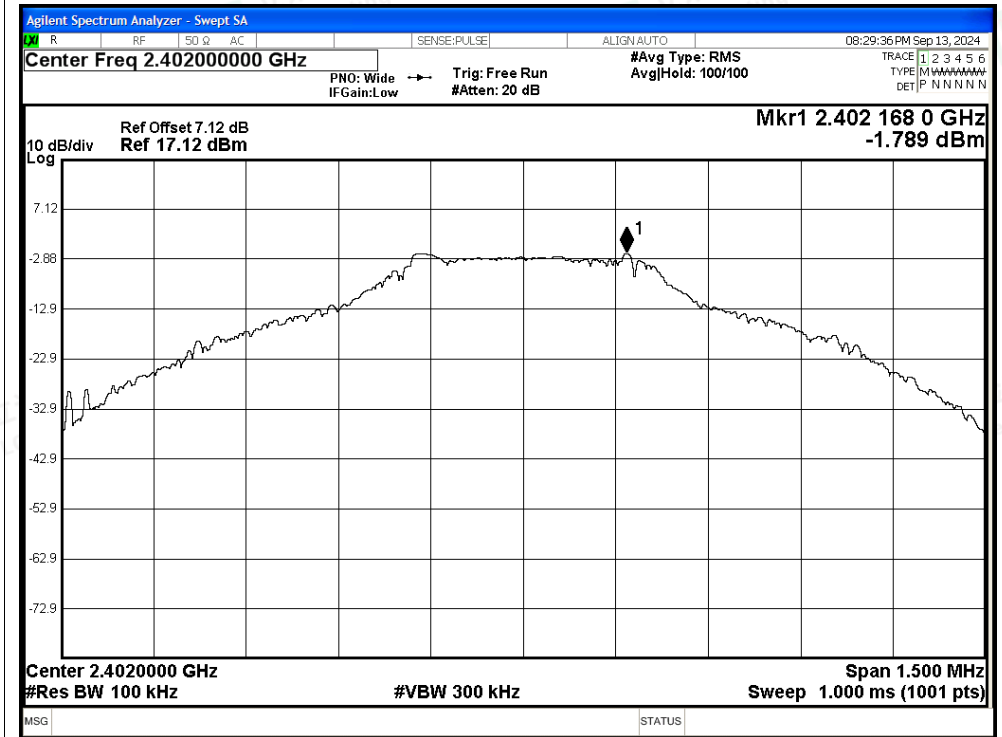
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	-48.44	-20	Pass
NVNT	1-DH5	2441	Ant	-52.42	-20	Pass
NVNT	1-DH5	2480	Ant	-48.62	-20	Pass
NVNT	2-DH5	2402	Ant	-46.46	-20	Pass
NVNT	2-DH5	2441	Ant	-48.24	-20	Pass
NVNT	2-DH5	2480	Ant	-46.99	-20	Pass
NVNT	3-DH5	2402	Ant	-45.46	-20	Pass
NVNT	3-DH5	2441	Ant	-49.13	-20	Pass
NVNT	3-DH5	2480	Ant	-47.33	-20	Pass



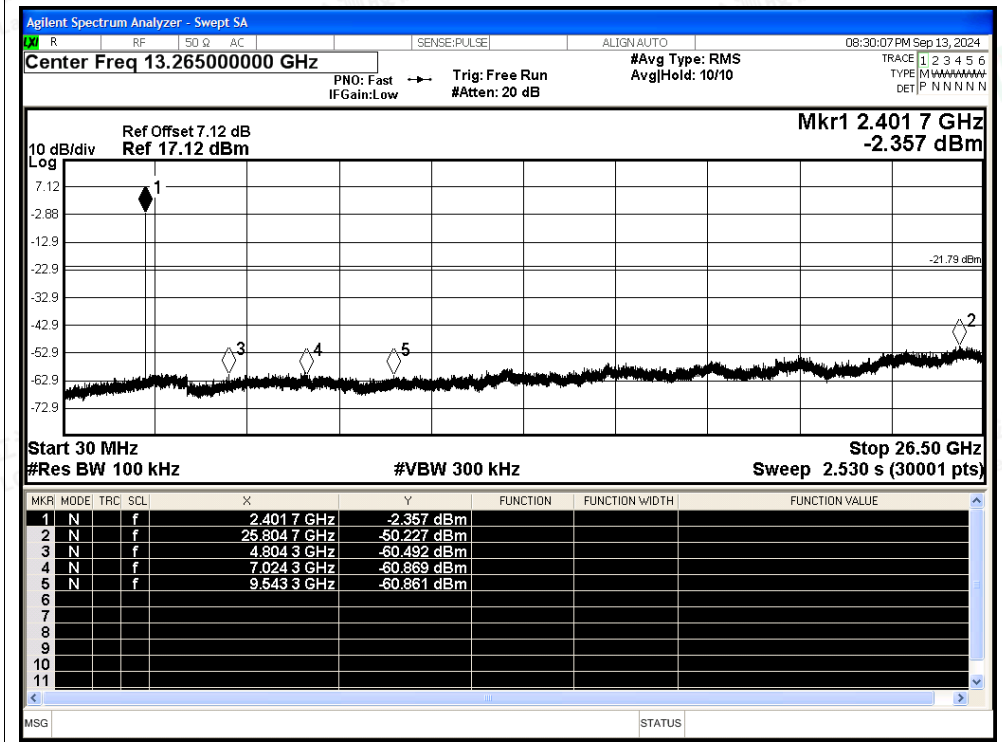


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant Ref

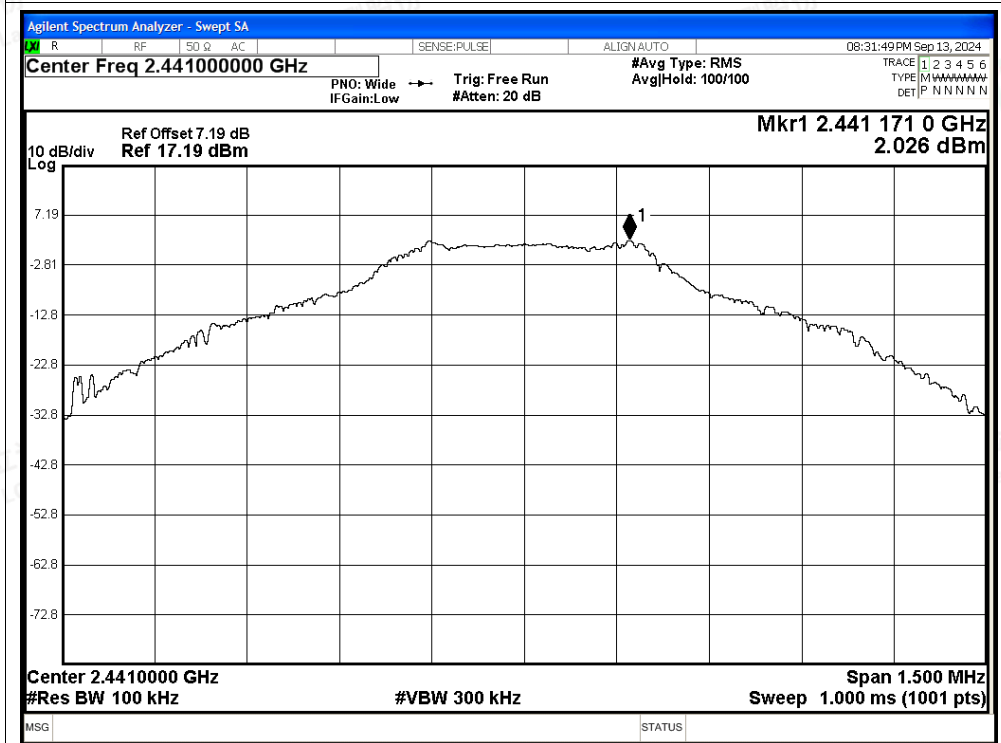


Tx. Spurious NVNT 1-DH5 2402MHz Ant Emission

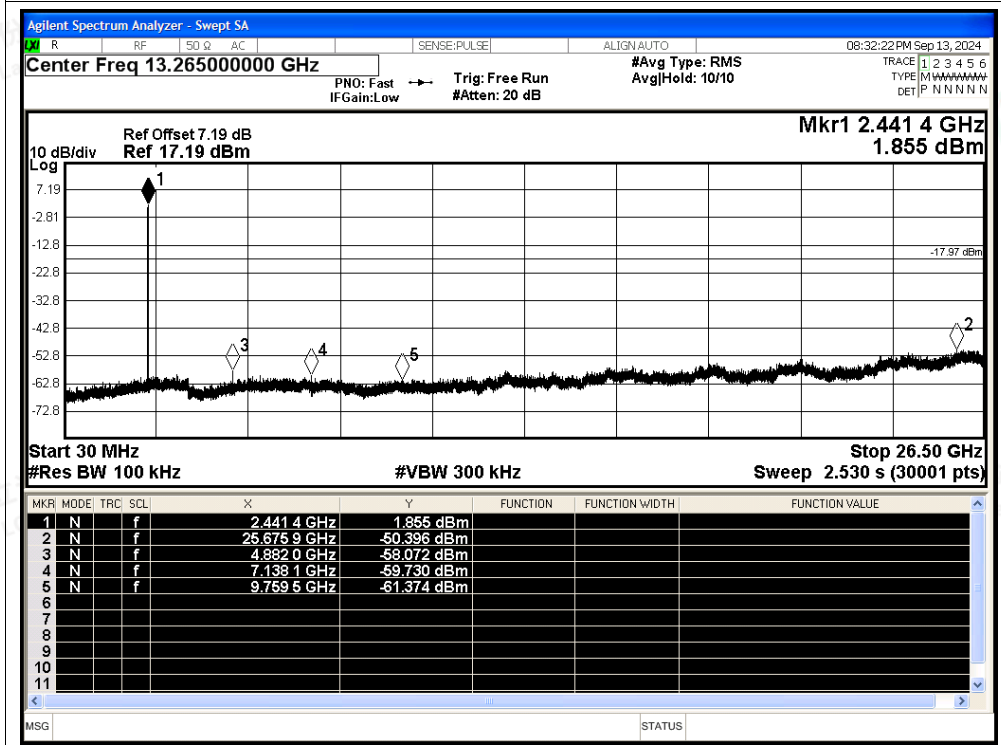




Tx. Spurious NVNT 1-DH5 2441MHz Ant Ref

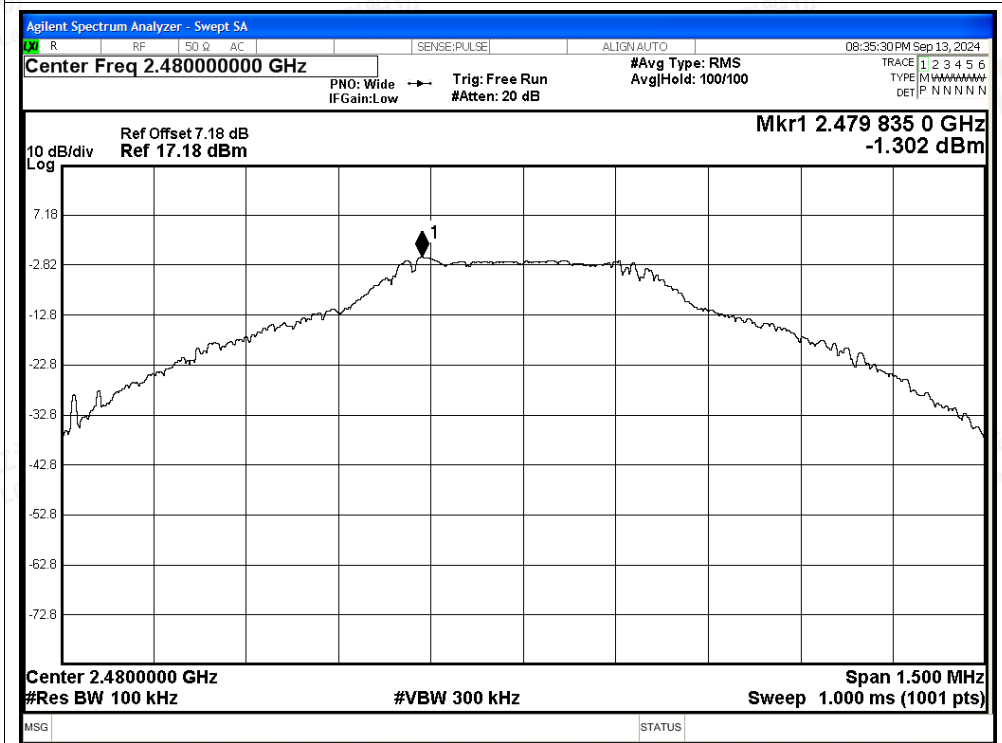


Tx. Spurious NVNT 1-DH5 2441MHz Ant Emission

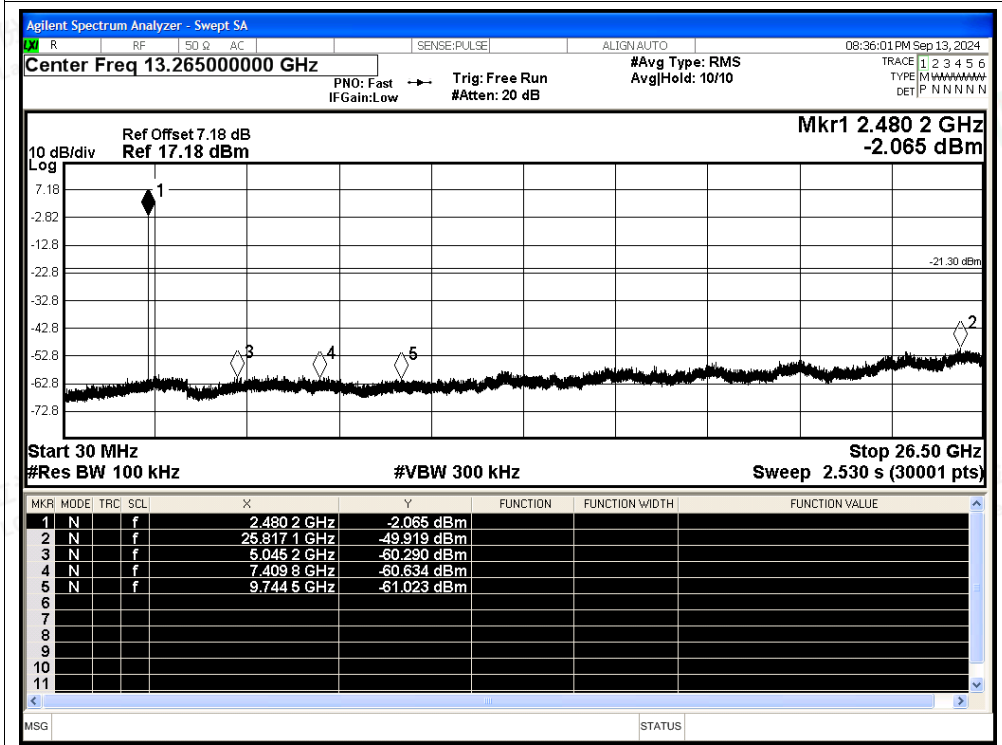




Tx. Spurious NVNT 1-DH5 2480MHz Ant Ref

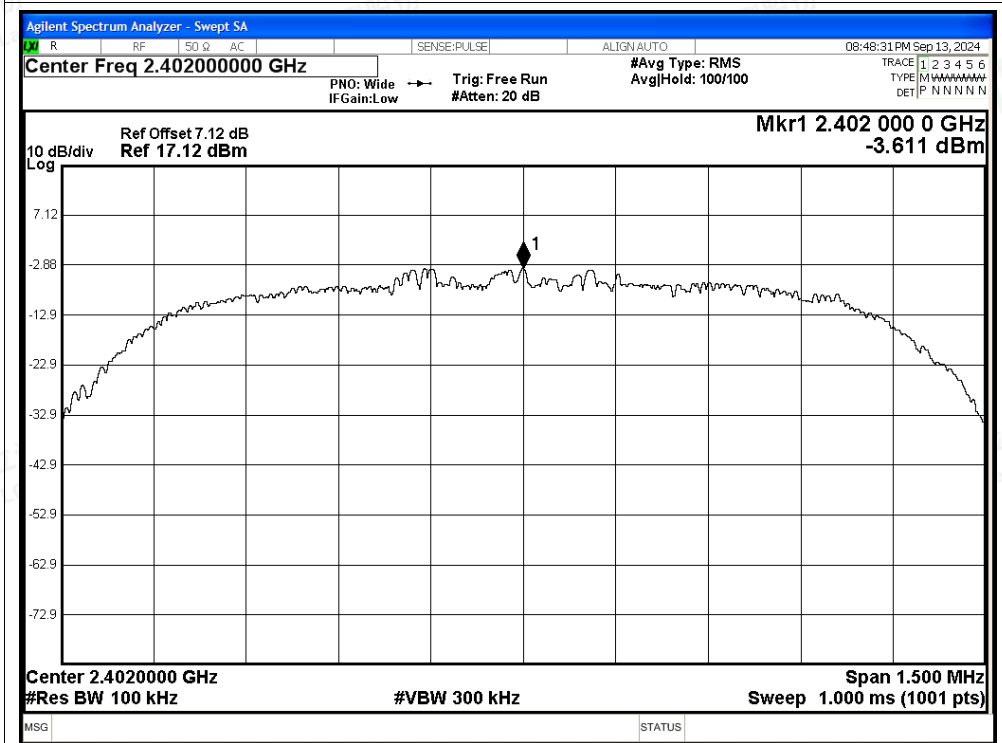


Tx. Spurious NVNT 1-DH5 2480MHz Ant Emission

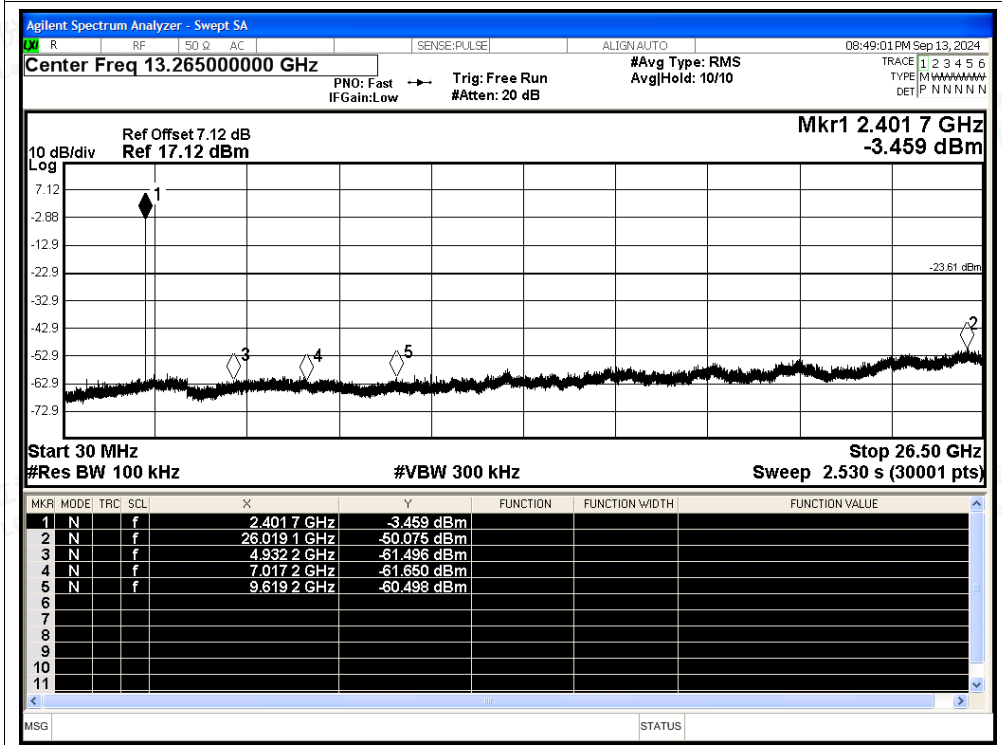




Tx. Spurious NVNT 2-DH5 2402MHz Ant Ref

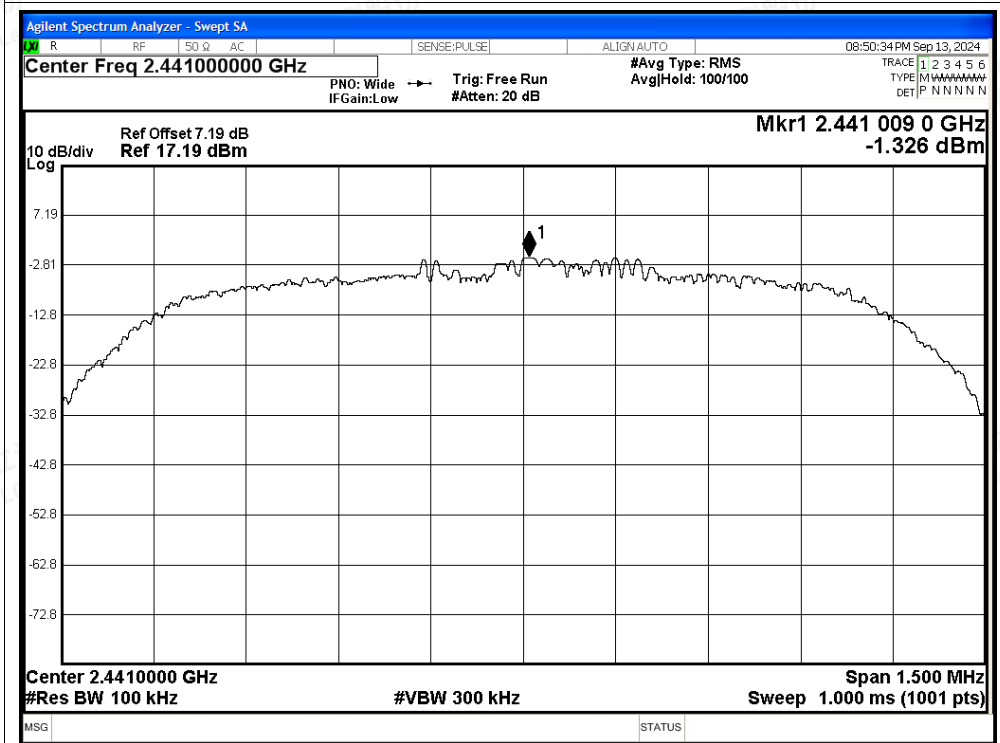


Tx. Spurious NVNT 2-DH5 2402MHz Ant Emission

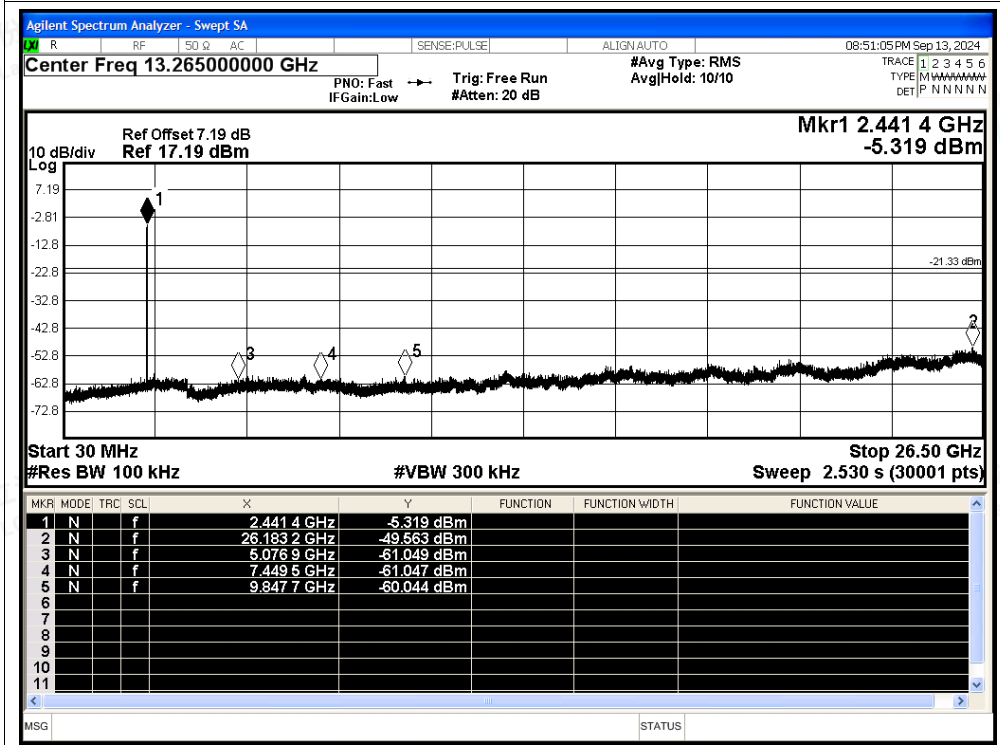




Tx. Spurious NVNT 2-DH5 2441MHz Ant Ref

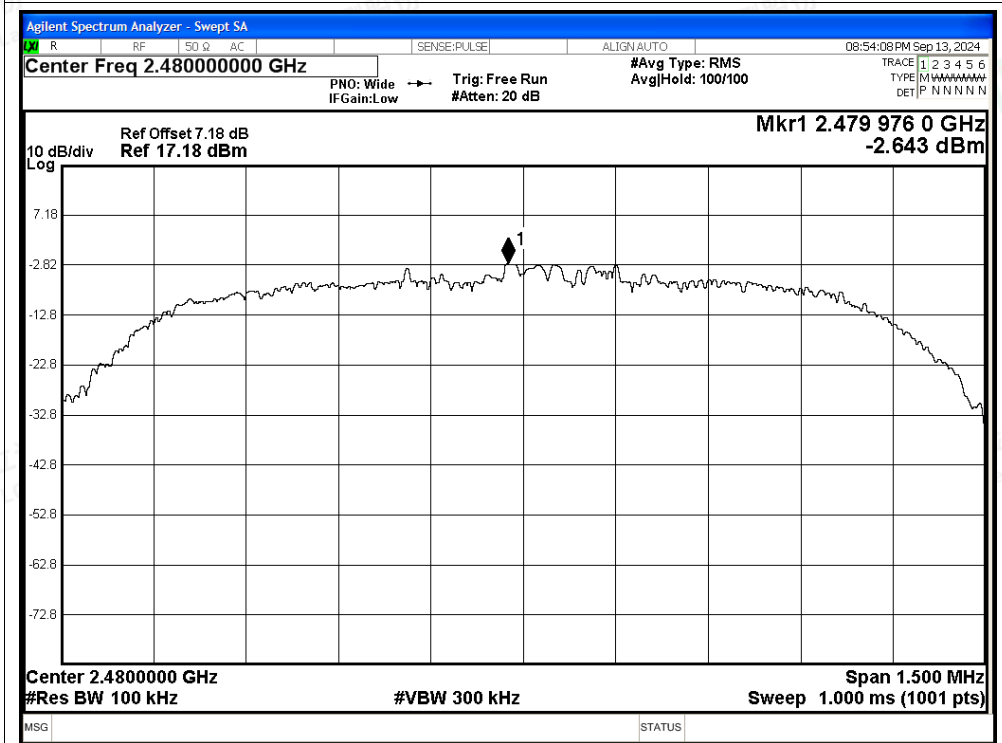


Tx. Spurious NVNT 2-DH5 2441MHz Ant Emission

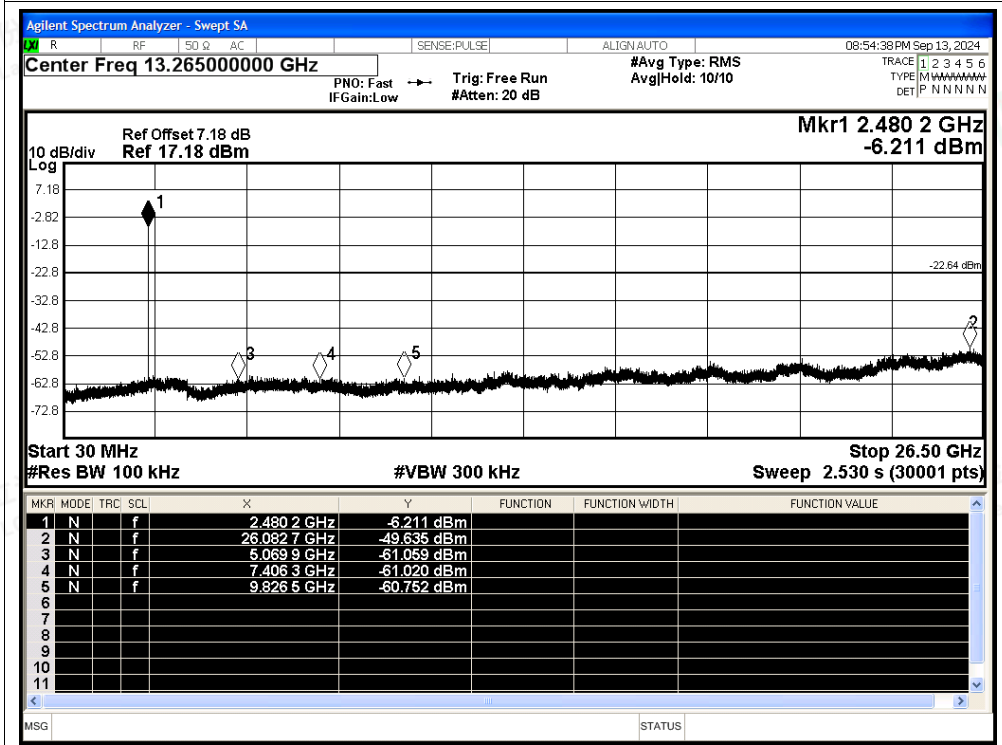




Tx. Spurious NVNT 2-DH5 2480MHz Ant Ref

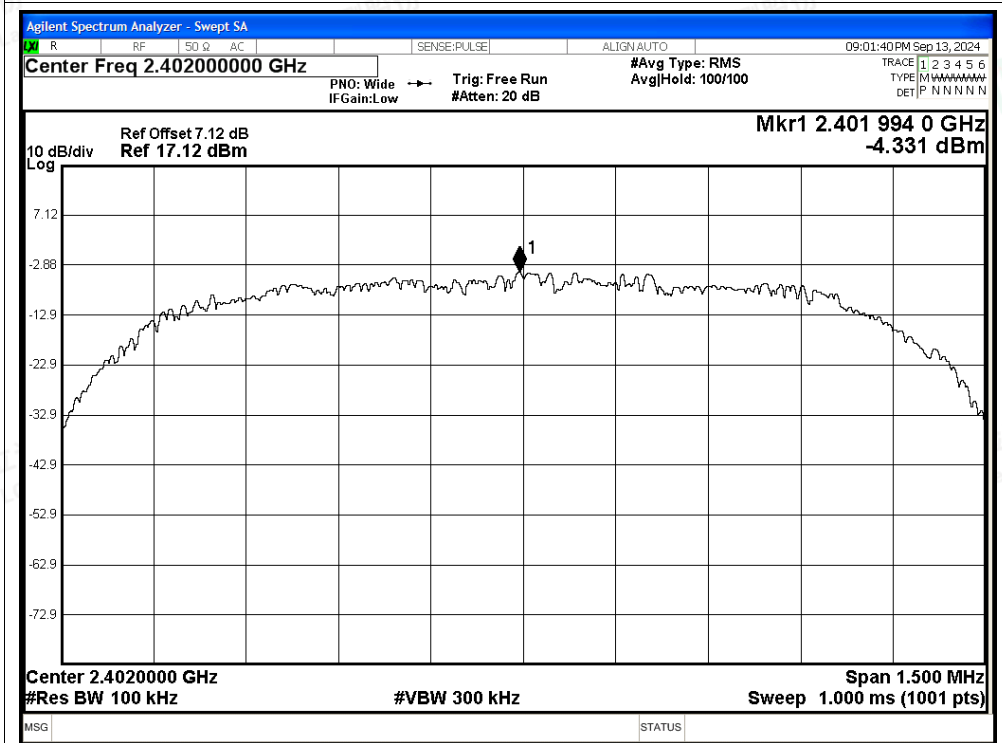


Tx. Spurious NVNT 2-DH5 2480MHz Ant Emission

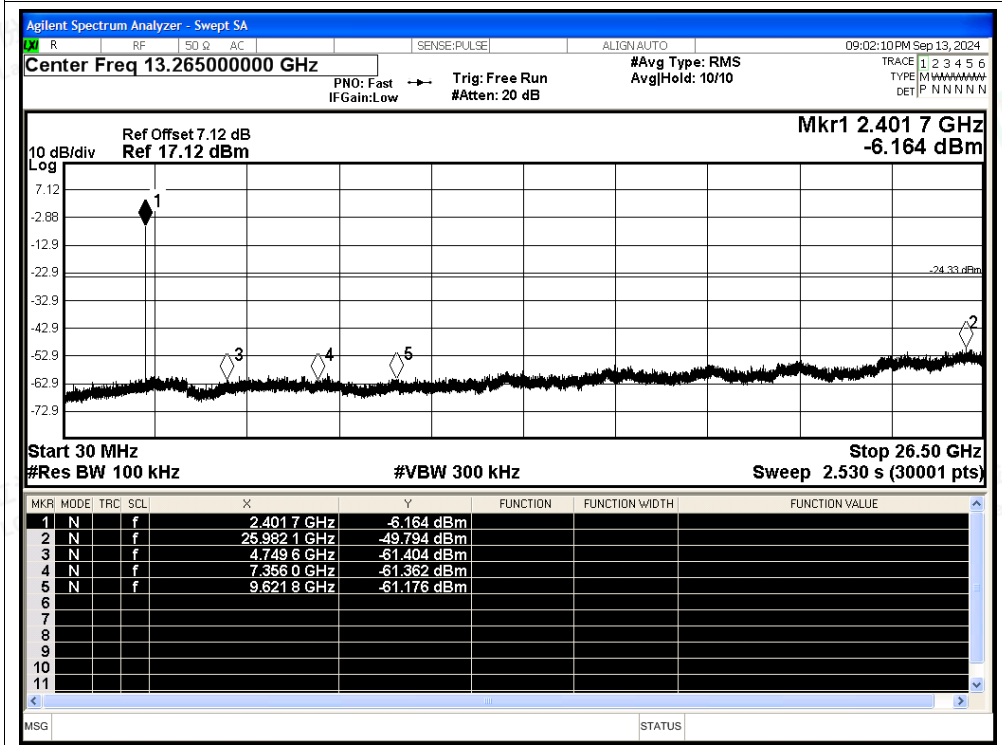




Tx. Spurious NVNT 3-DH5 2402MHz Ant Ref

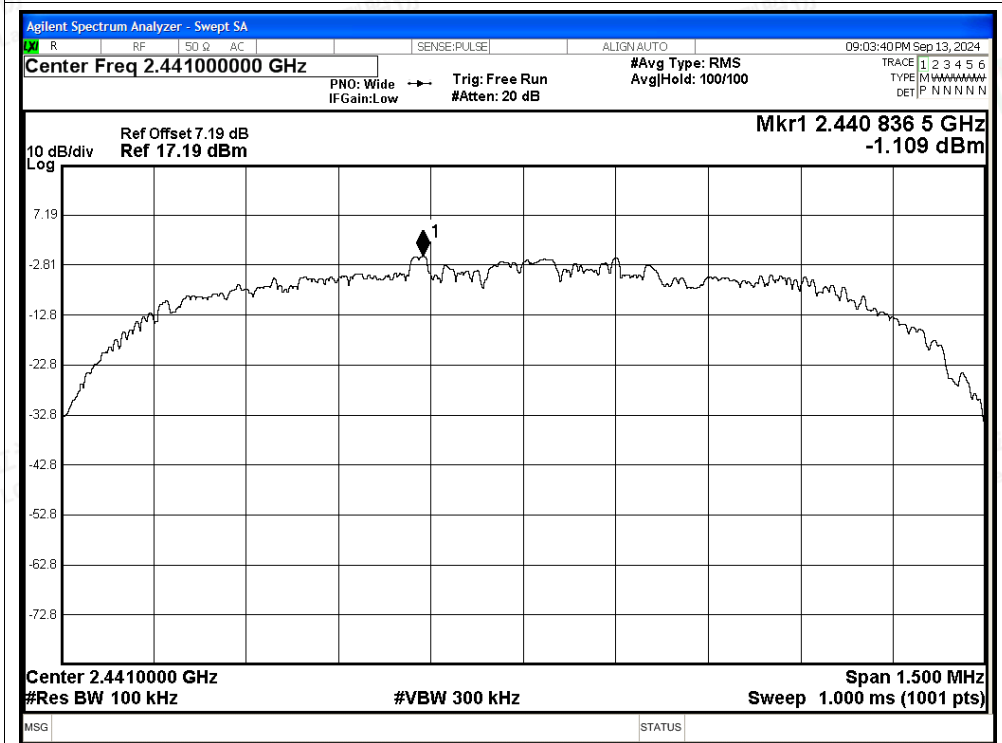


Tx. Spurious NVNT 3-DH5 2402MHz Ant Emission

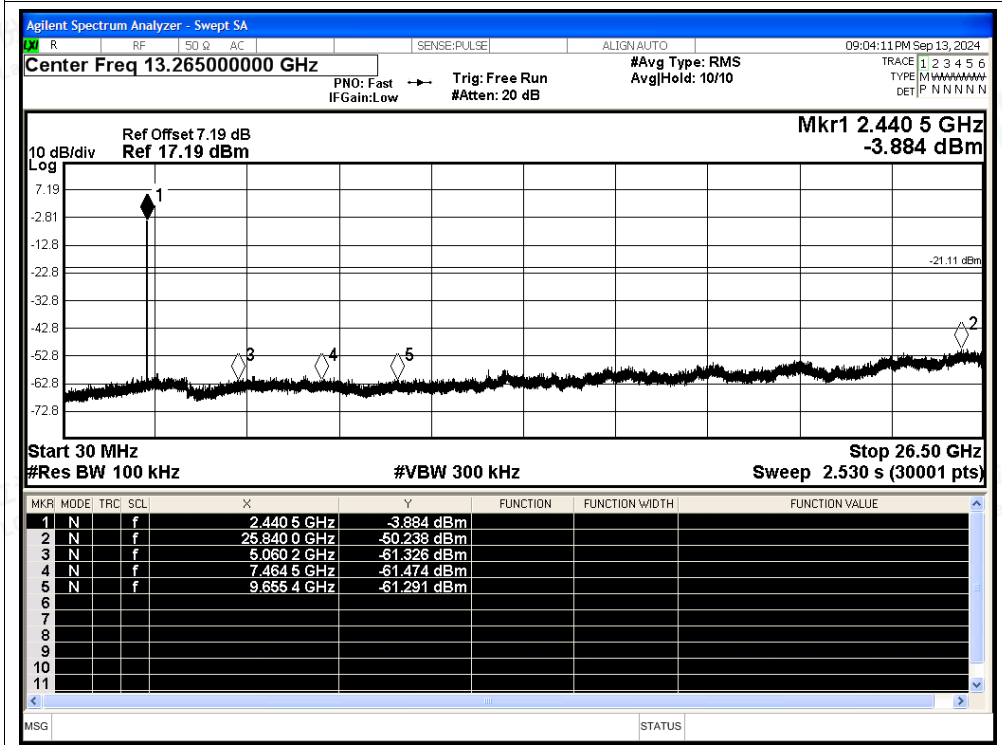




Tx. Spurious NVNT 3-DH5 2441MHz Ant Ref

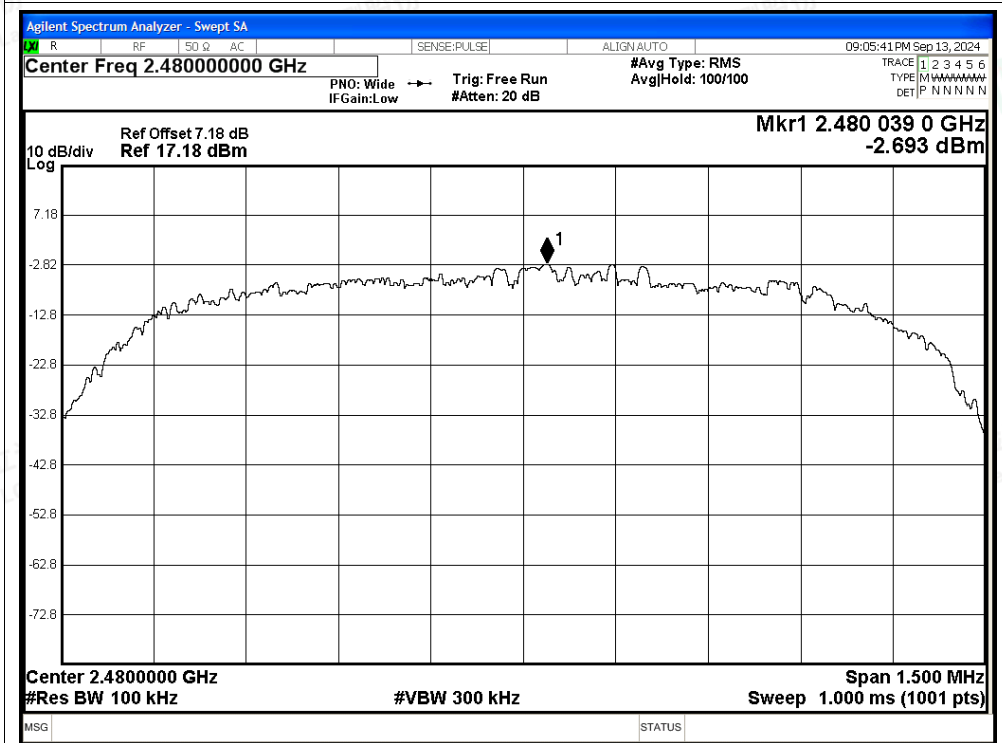


Tx. Spurious NVNT 3-DH5 2441MHz Ant Emission

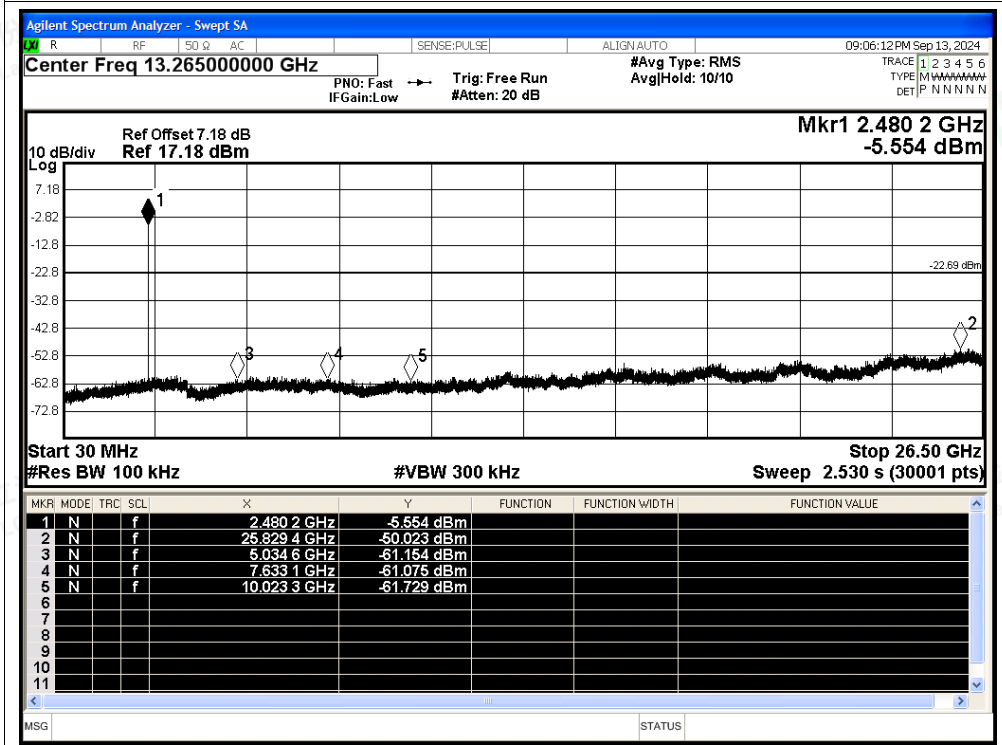




Tx. Spurious NVNT 3-DH5 2480MHz Ant Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant Emission





A.8 Duty Cycle

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

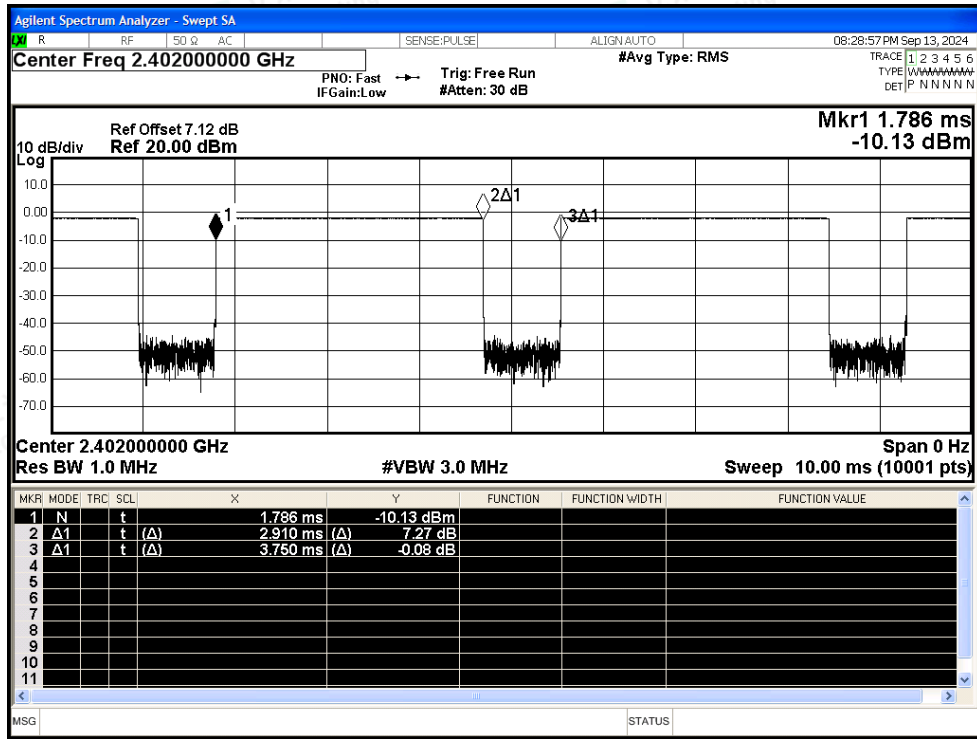


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 Scan code to check authenticity

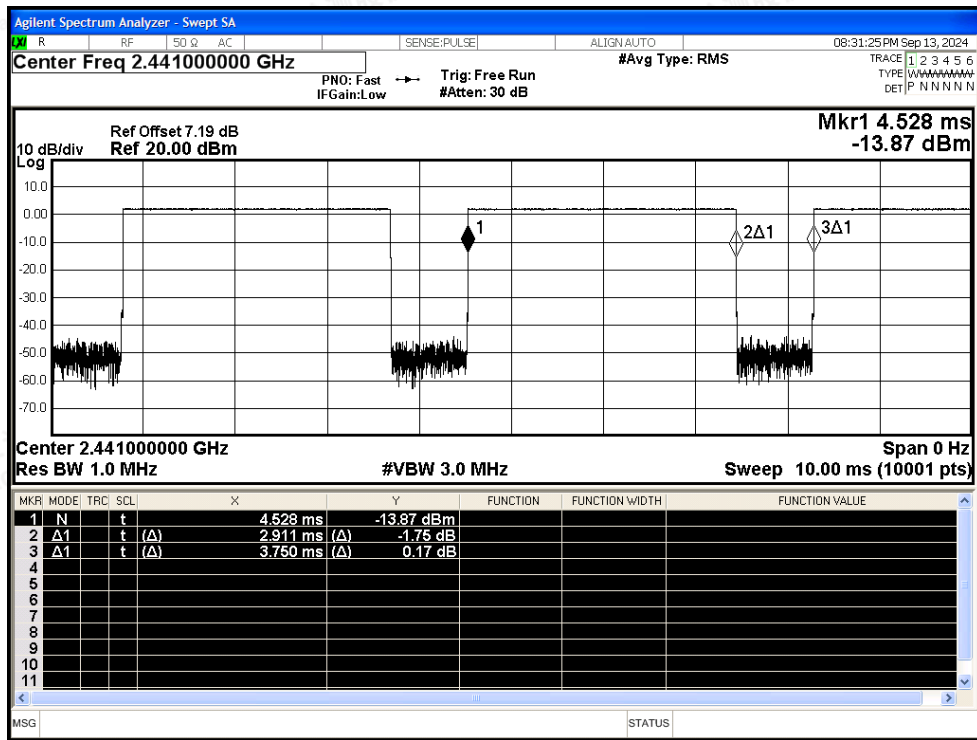


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant

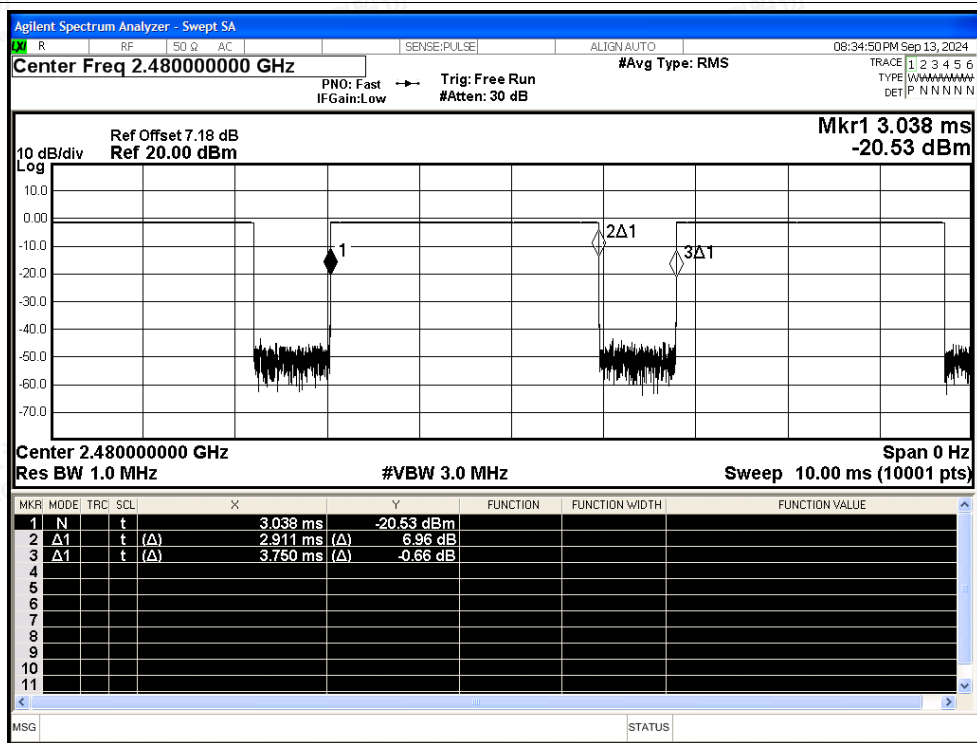


Duty Cycle NVNT 1-DH5 2441MHz Ant

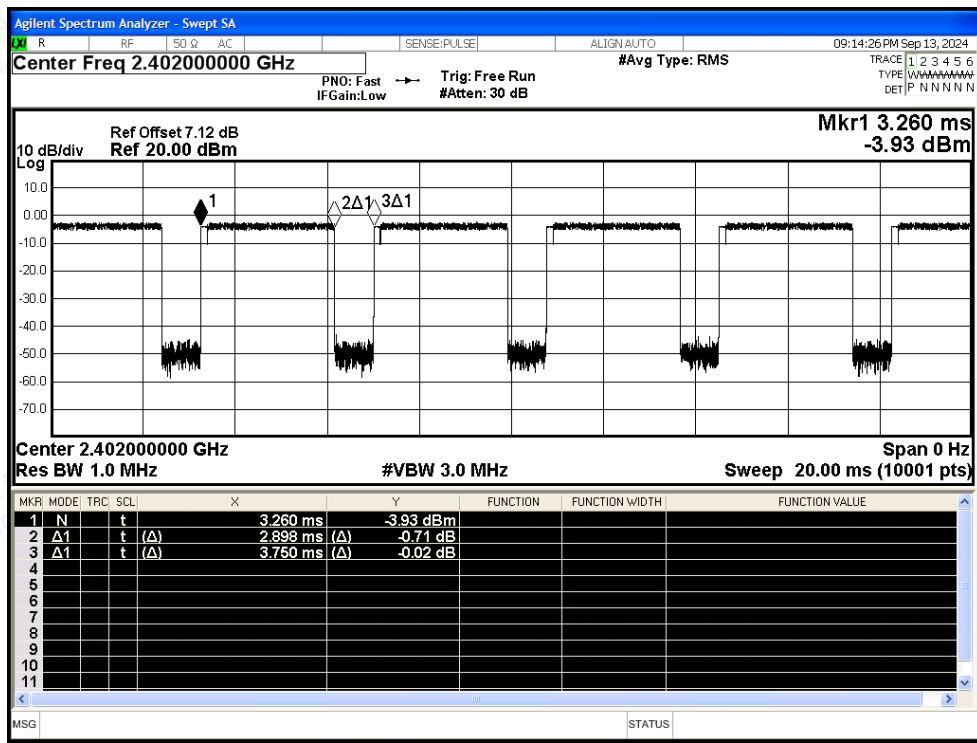




Duty Cycle NVNT 1-DH5 2480MHz Ant

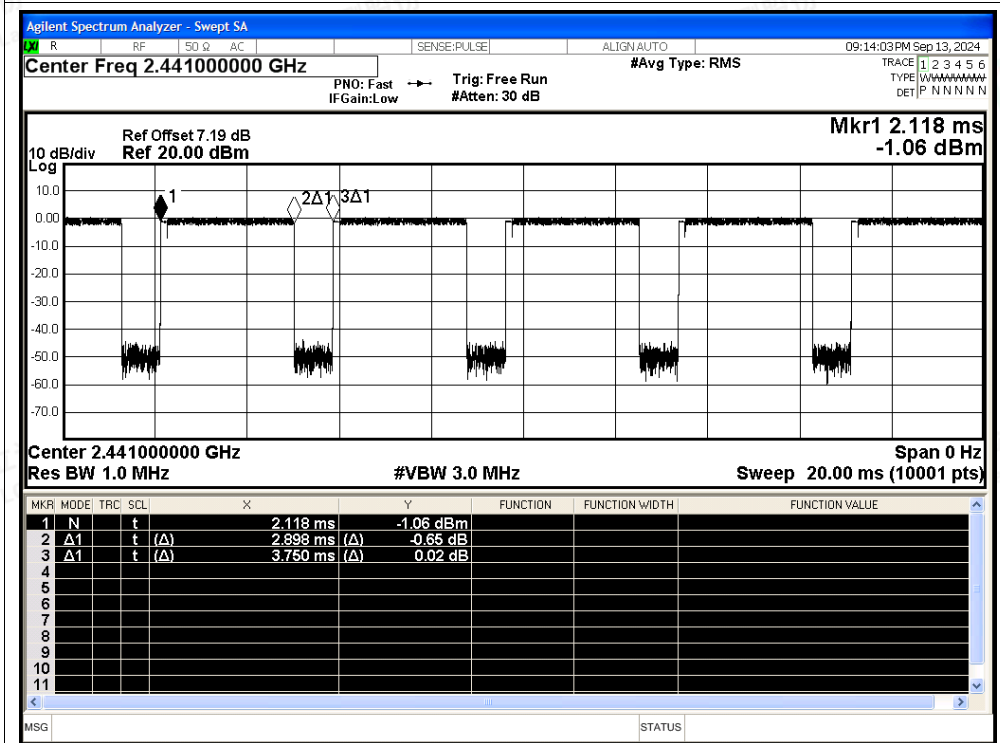


Duty Cycle NVNT 2-DH5 2402MHz Ant

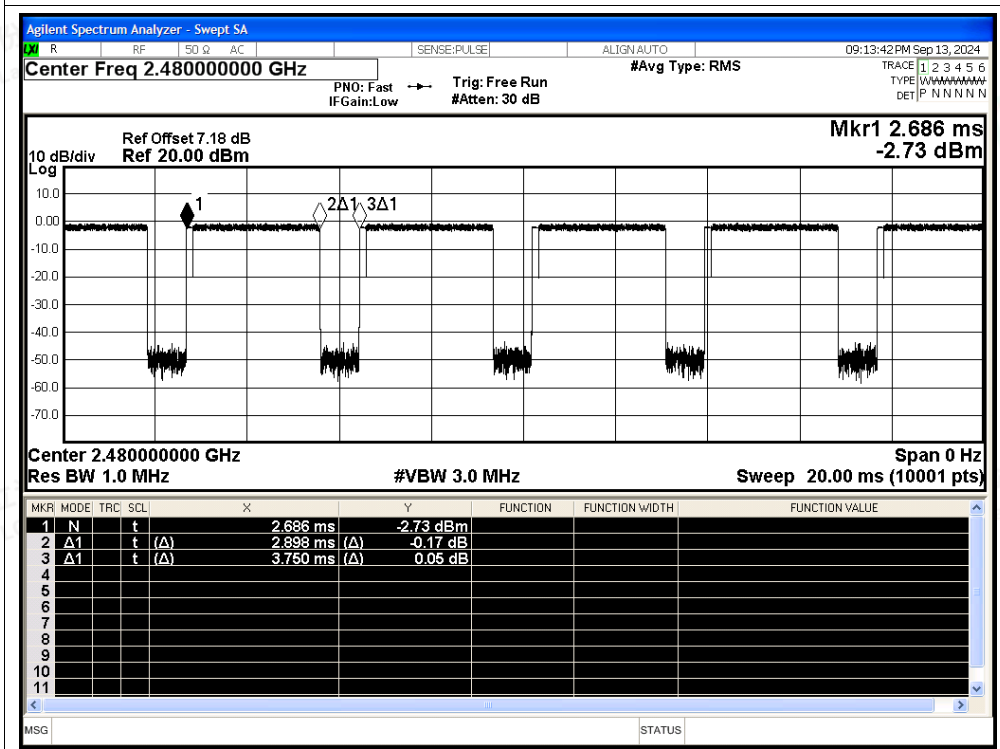




Duty Cycle NVNT 2-DH5 2441MHz Ant

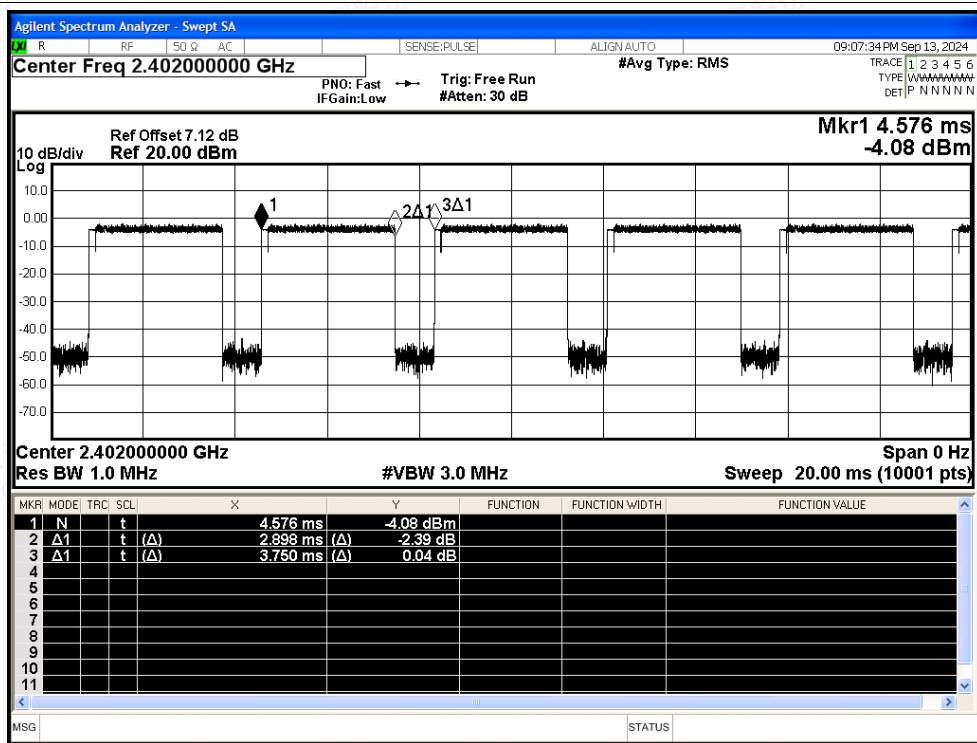


Duty Cycle NVNT 2-DH5 2480MHz Ant

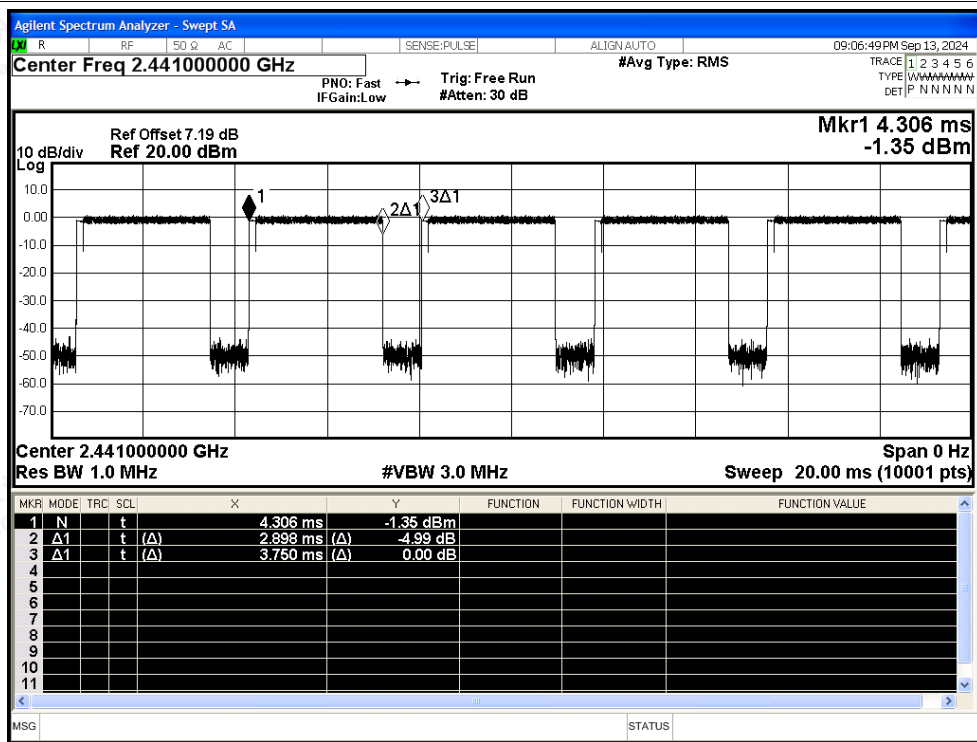


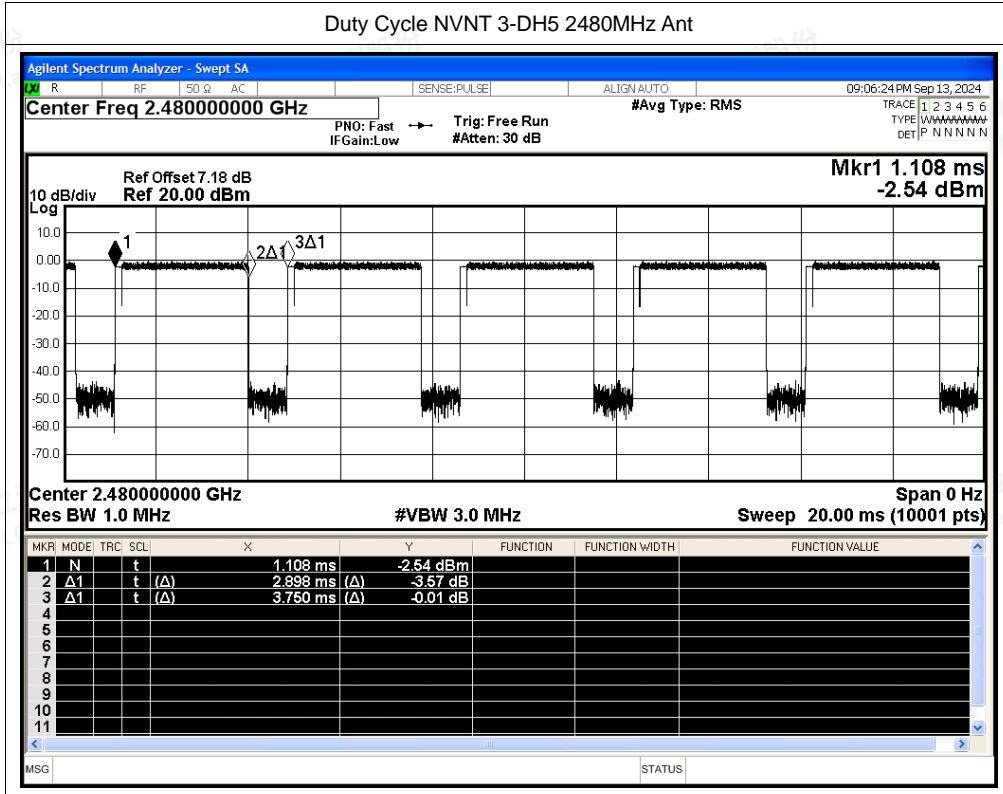


Duty Cycle NVNT 3-DH5 2402MHz Ant



Duty Cycle NVNT 3-DH5 2441MHz Ant







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	Ant	No-Hopping	2310	-45.26	2	-	52.00	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2310	-53.36	2	1.1	45.00	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2348.112	-42.48	2	-	54.78	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2386.704	-52.38	2	1.1	45.98	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-42.56	2	-	54.70	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-53.44	2	1.1	44.92	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-44.7	2	-	52.56	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-52.62	2	1.1	45.74	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2484.16	-41.27	2	-	55.99	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2486.272	-52.19	2	1.1	46.17	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-45.74	2	-	51.52	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-52.63	2	1.1	45.73	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-46	2	-	51.26	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-53.29	2	0.09	44.06	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2389.584	-42	2	-	55.26	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2381.328	-52.52	2	0.09	44.83	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-43.73	2	-	53.53	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-53.66	2	0.09	43.69	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-44.65	2	-	52.61	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-52.75	2	0.09	44.60	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2497.288	-42.13	2	-	55.13	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2496.568	-52.09	2	0.09	45.26	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-44.74	2	-	52.52	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-52.97	2	0.09	44.38	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-46.2	2	-	51.06	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-53.54	2	0.09	43.81	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2357.904	-42.22	2	-	55.04	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2384.592	-52.66	2	0.09	44.69	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-44.49	2	-	52.77	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-53.58	2	0.09	43.77	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-45	2	-	52.26	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-52.36	2	0.12	45.02	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2491.288	-41.48	2	-	55.78	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2492.008	-52.14	2	0.12	45.24	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-45.5	2	-	51.76	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-52.61	2	0.12	44.77	Average	54	Pass

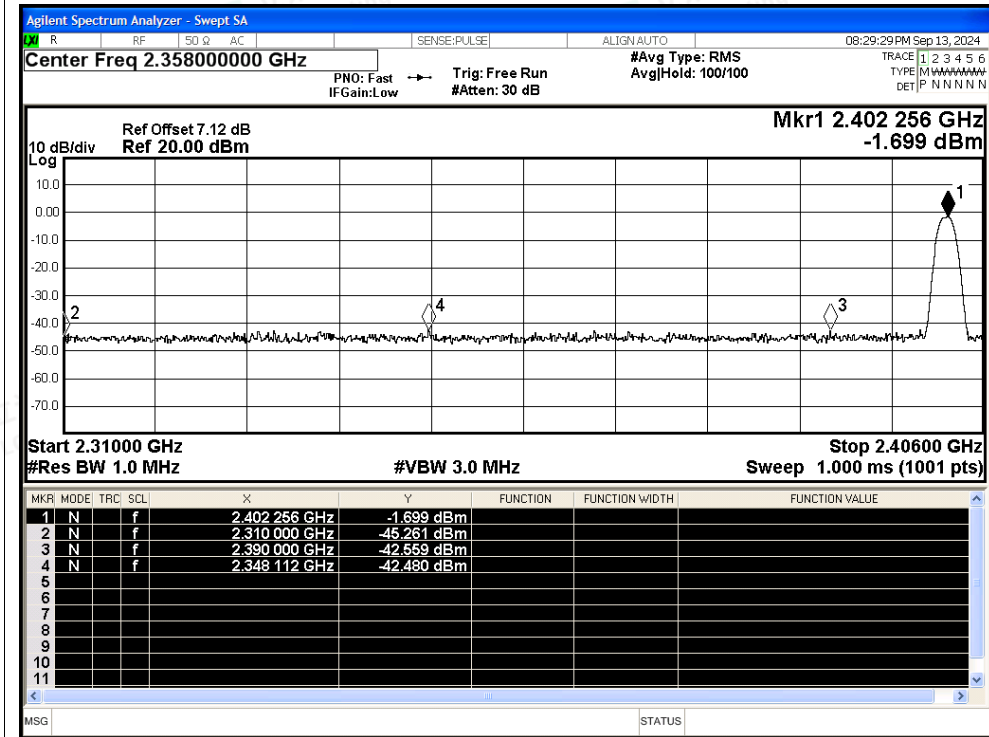


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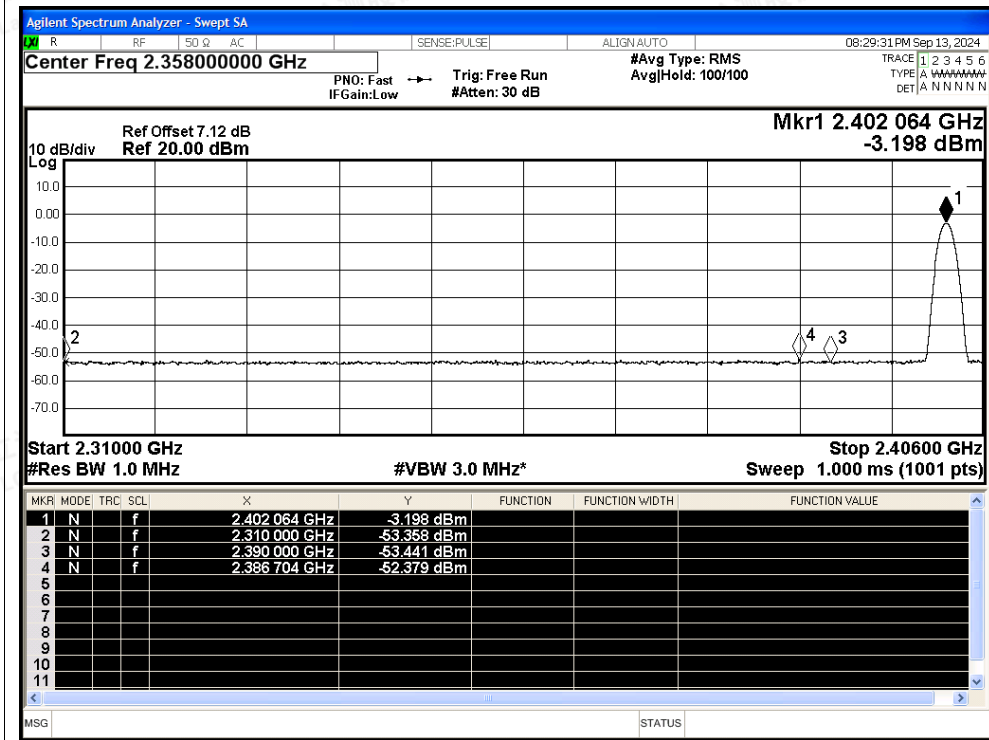


Test Graphs

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

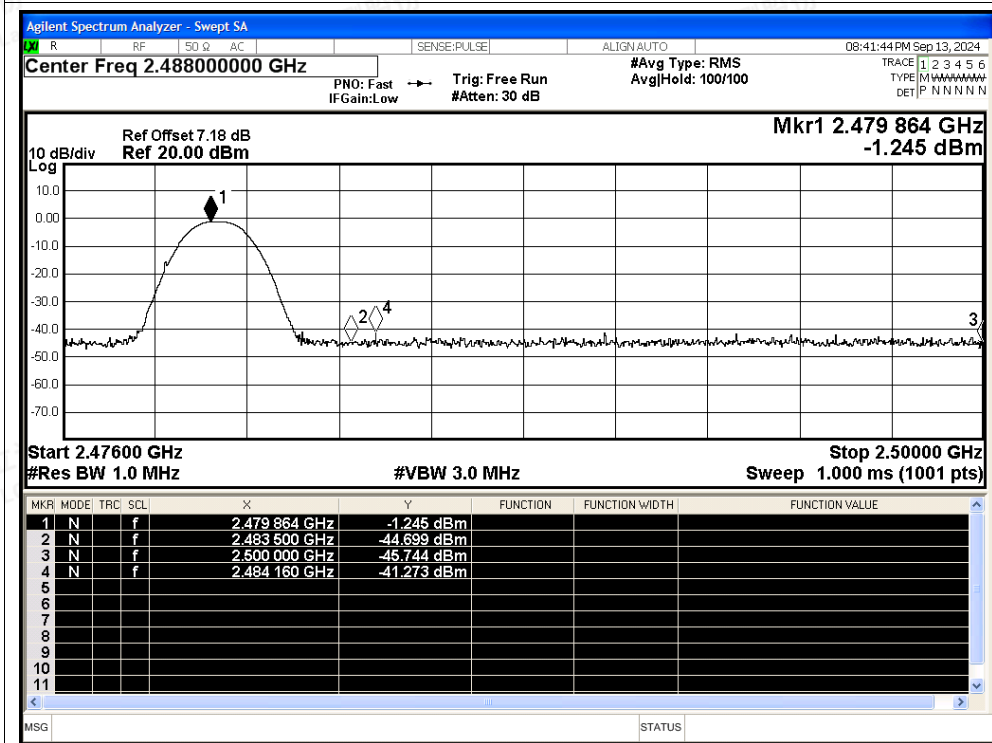


Restrict Band NVNT 1-DH5 2402MHz Ant No-Hopping Average

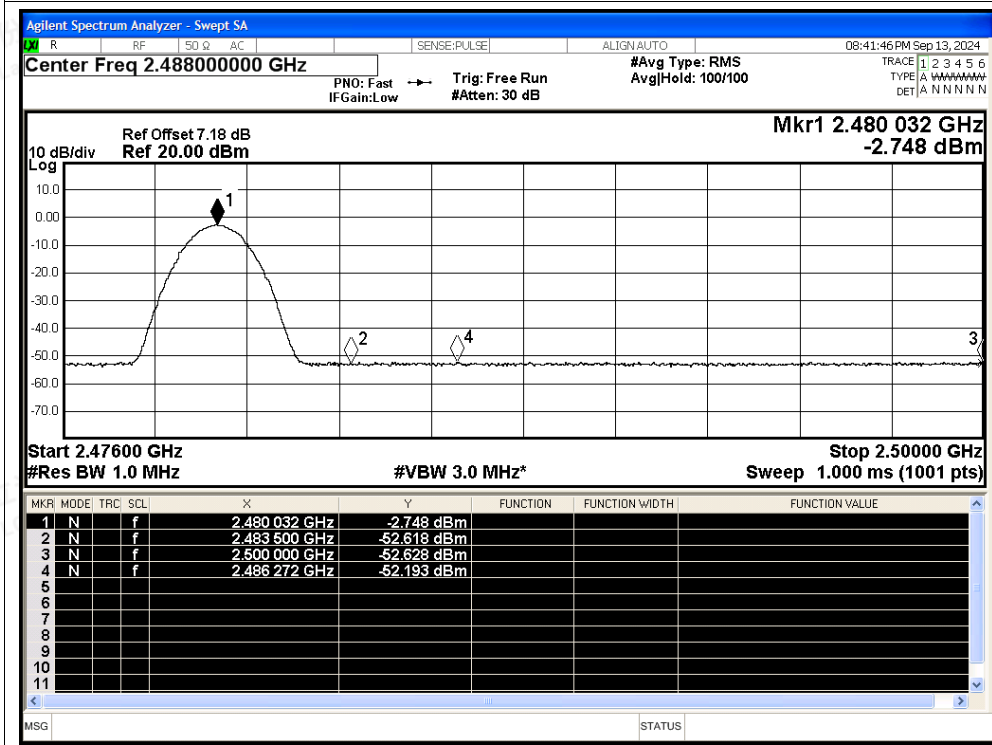




Restrict Band NVNT 1-DH5 2480MHz Ant No-Hopping Peak

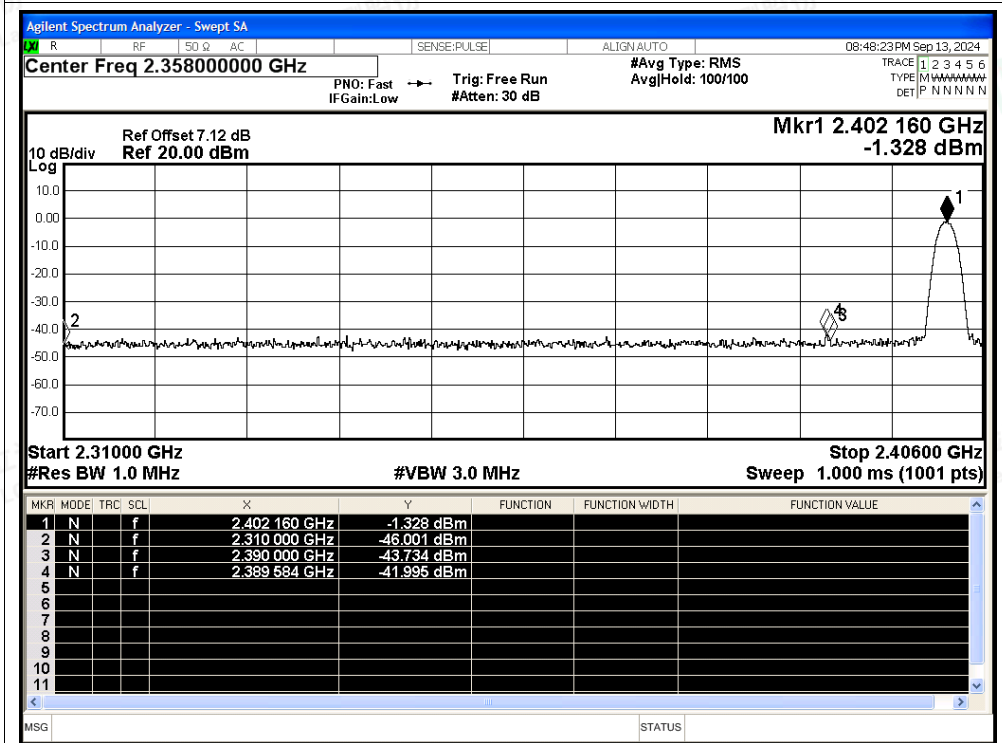


Restrict Band NVNT 1-DH5 2480MHz Ant No-Hopping Average

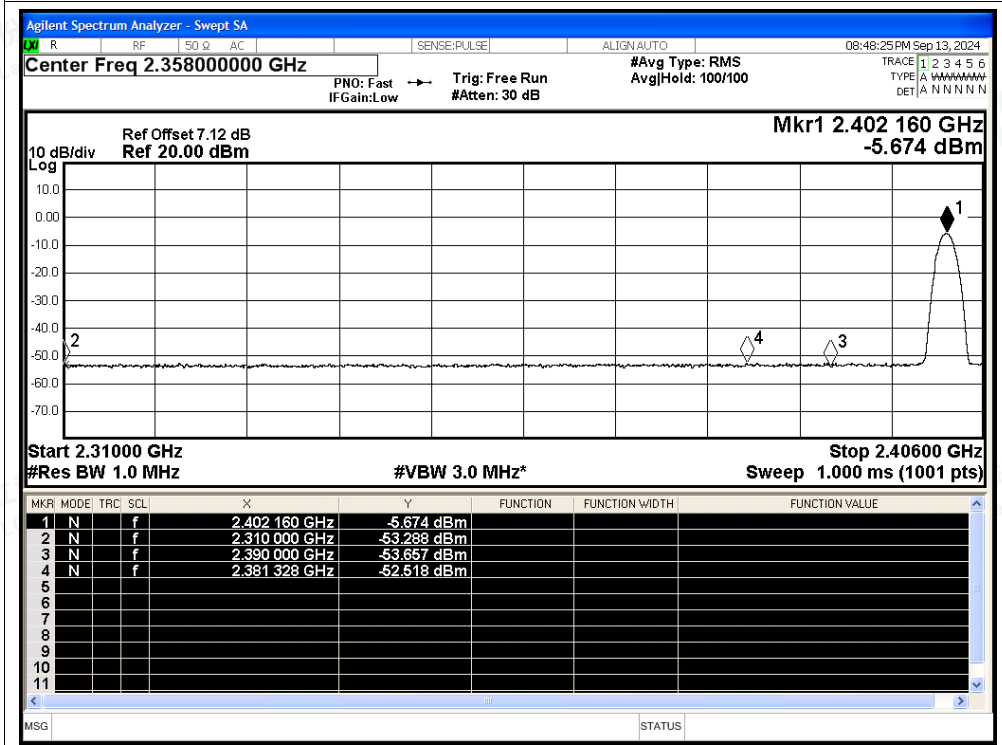




Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Peak

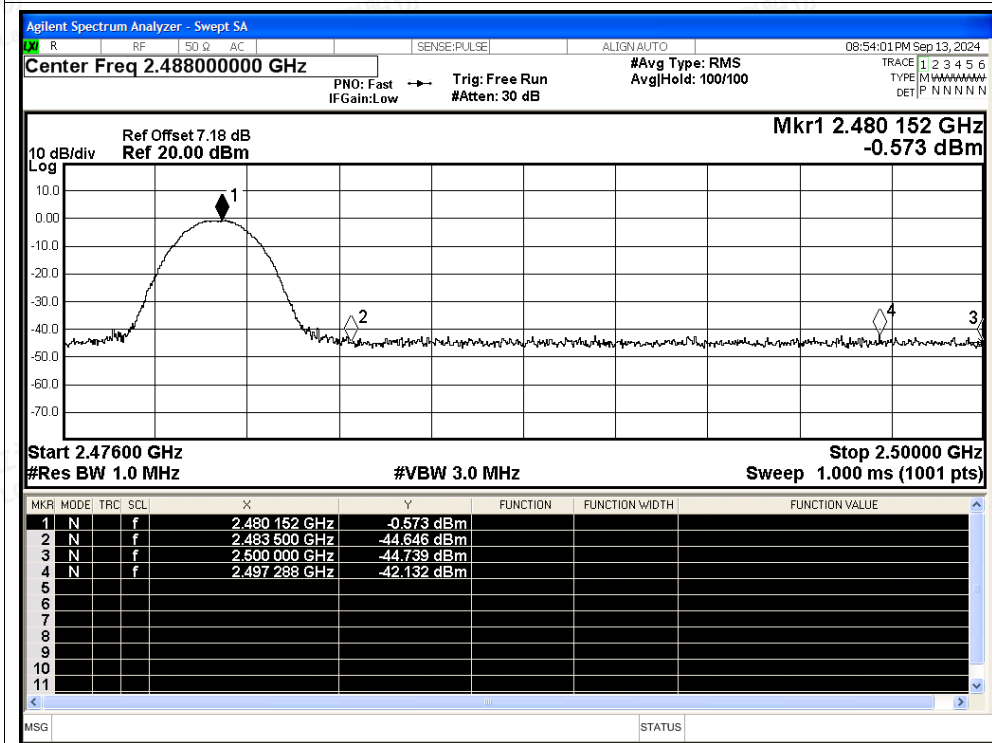


Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Average

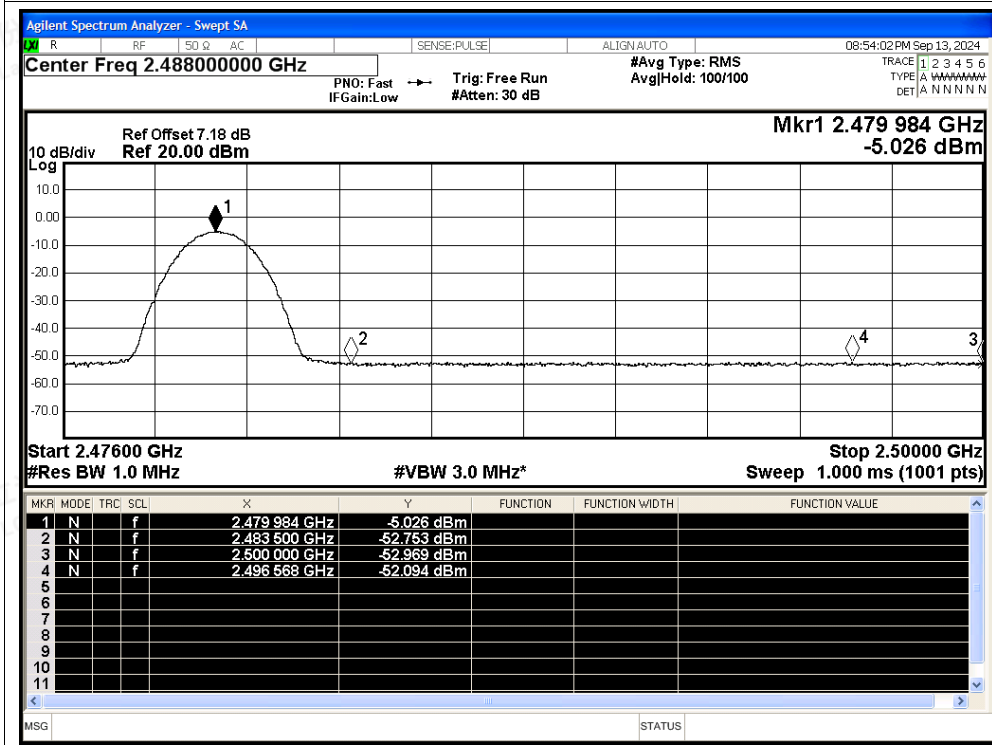




Restrict Band NVNT 2-DH5 2480MHz Ant No-Hopping Peak

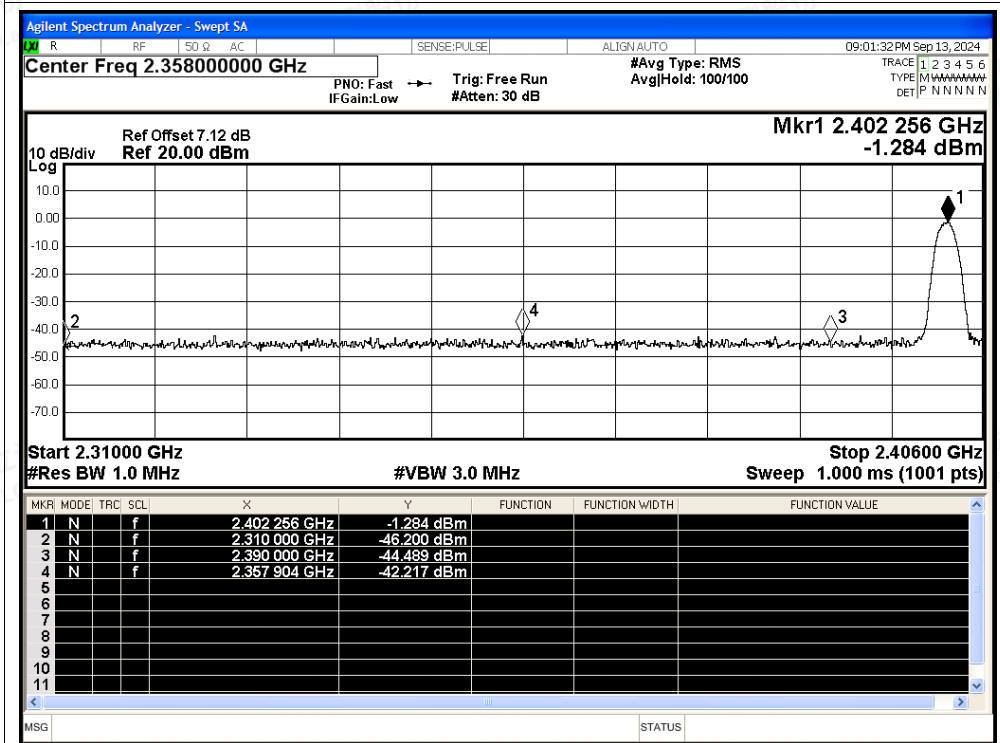


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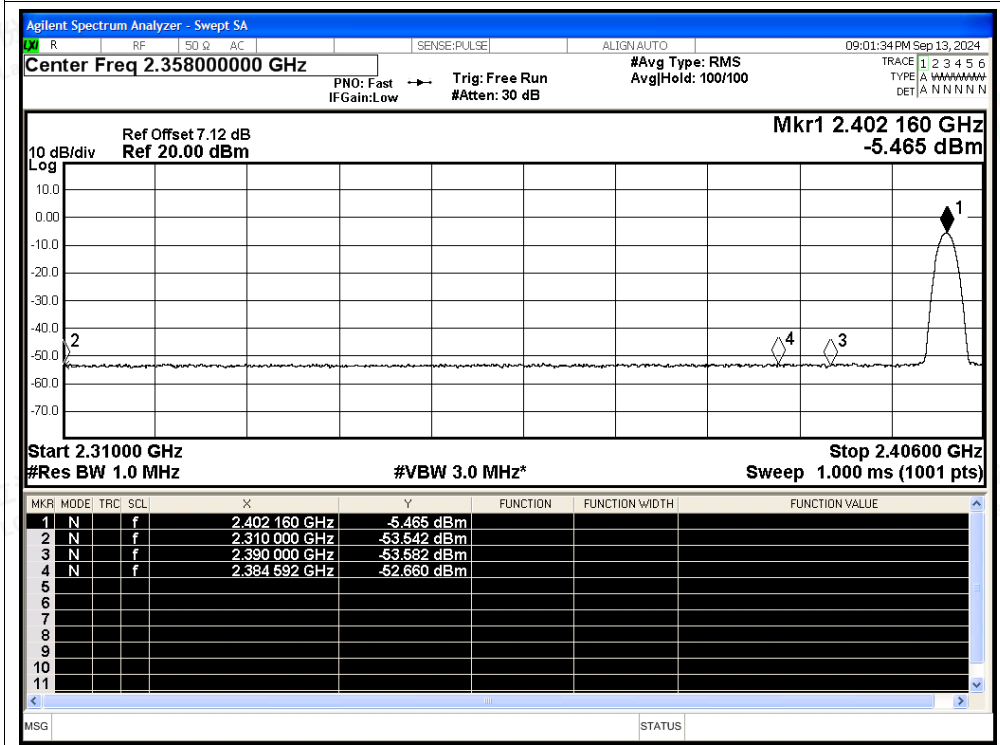




Restrict Band NVNT 3-DH5 2402MHz Ant No-Hopping Peak

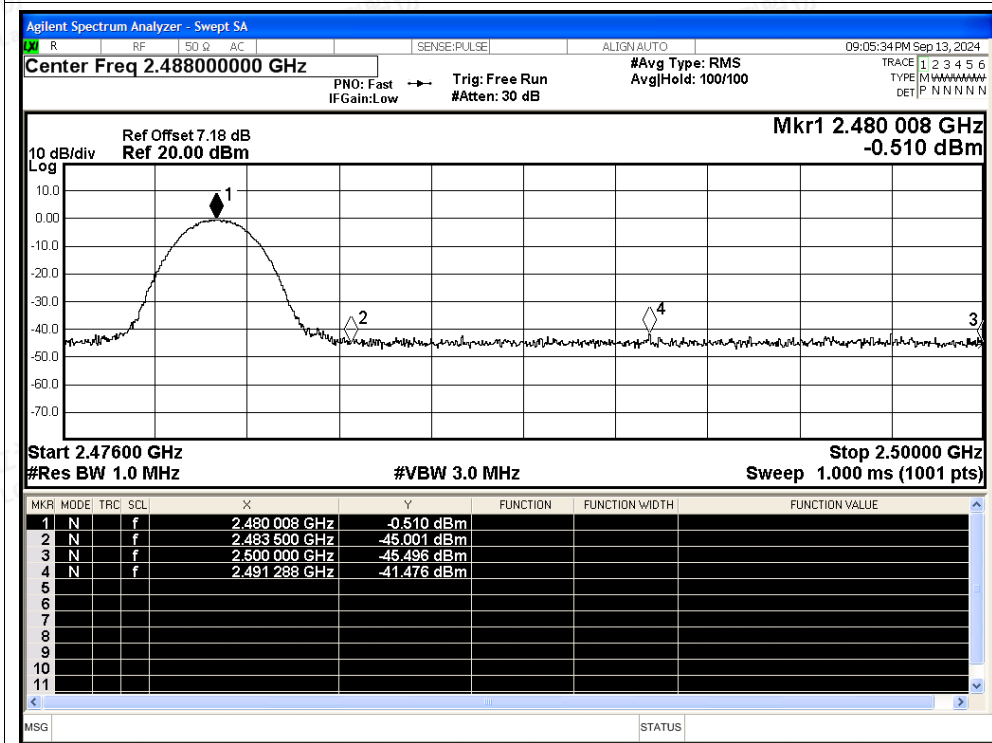


Restrict Band NVNT 3-DH5 2402MHz Ant No-Hopping Average





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



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

