



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: ILLUMINATED WIRELESS SPEAKER

Test Model: EPS-02

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
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	0.947	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.009	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.939	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.289	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.286	N/A	Pass





Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

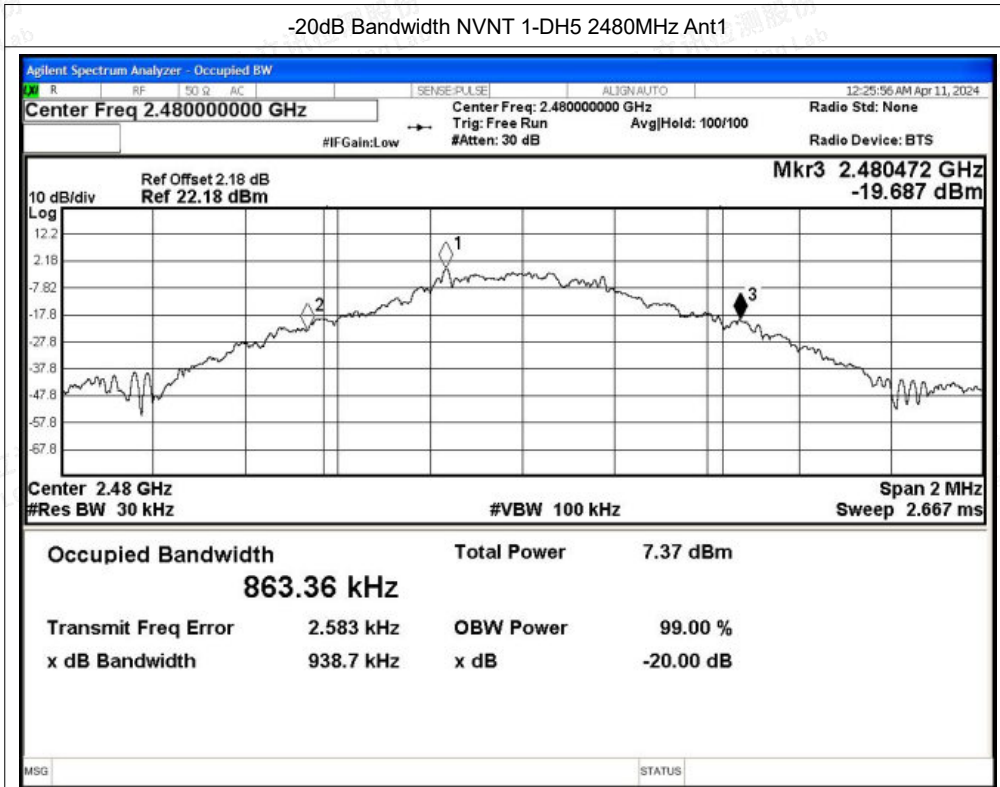


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

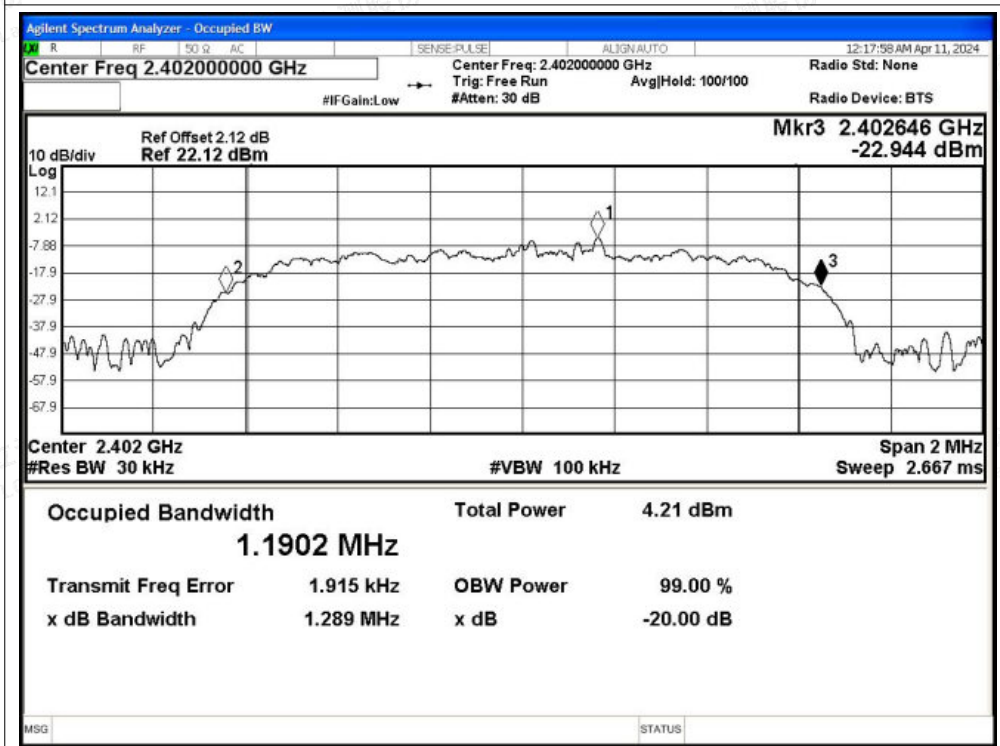




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

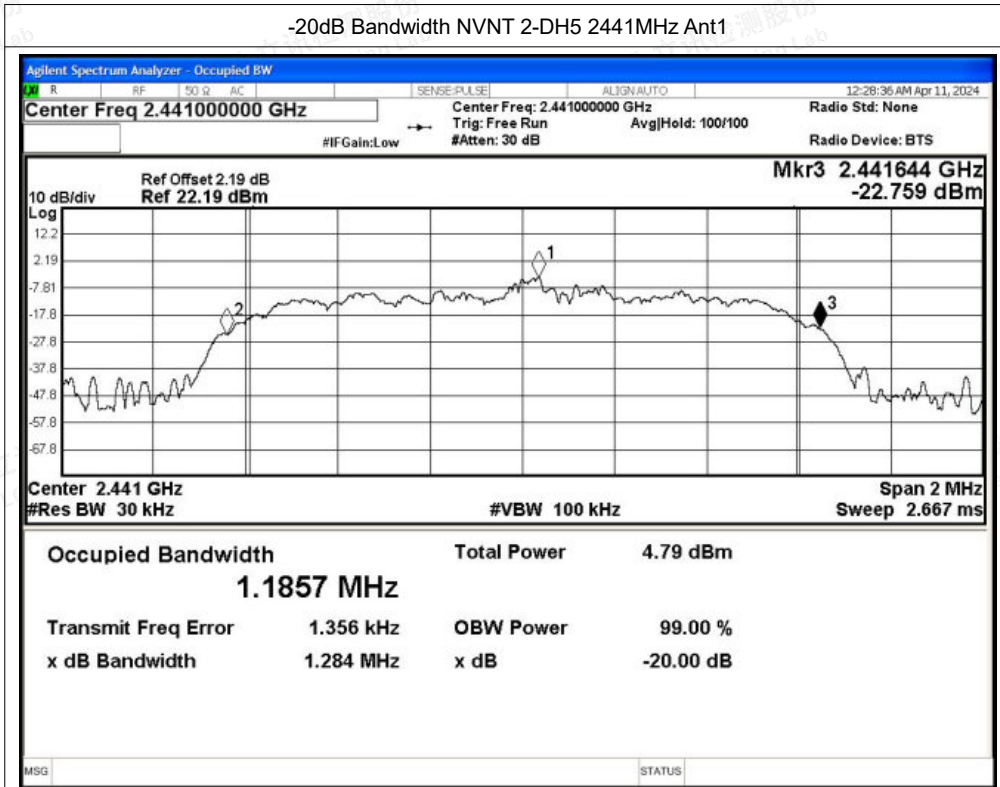


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

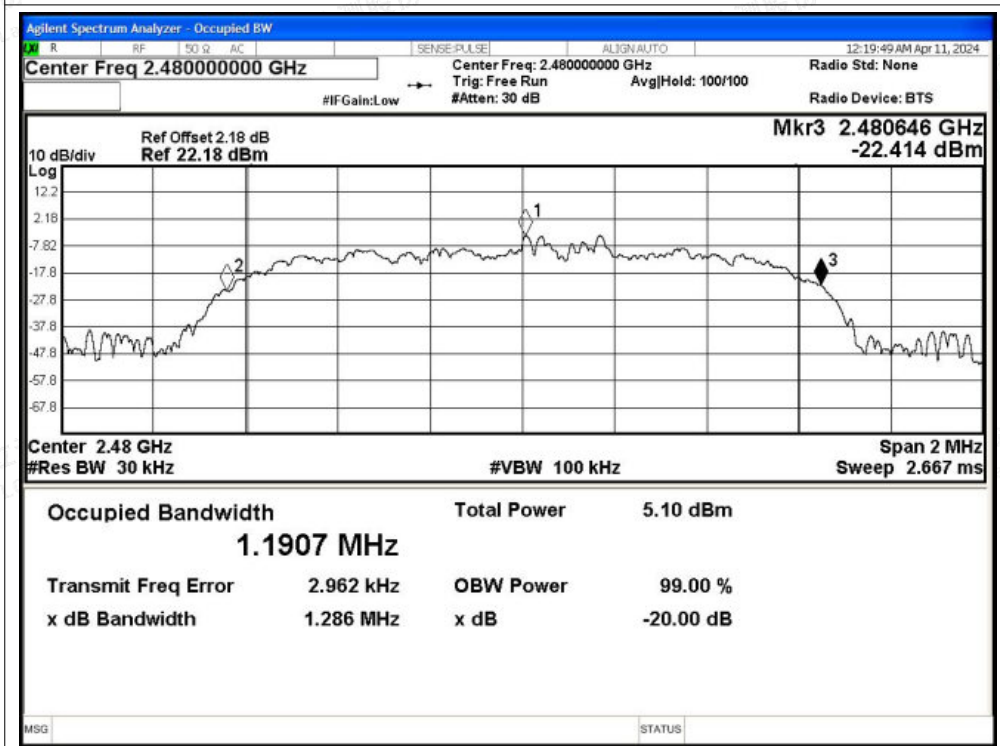




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1





A.2 Maximum Conducted Output Power

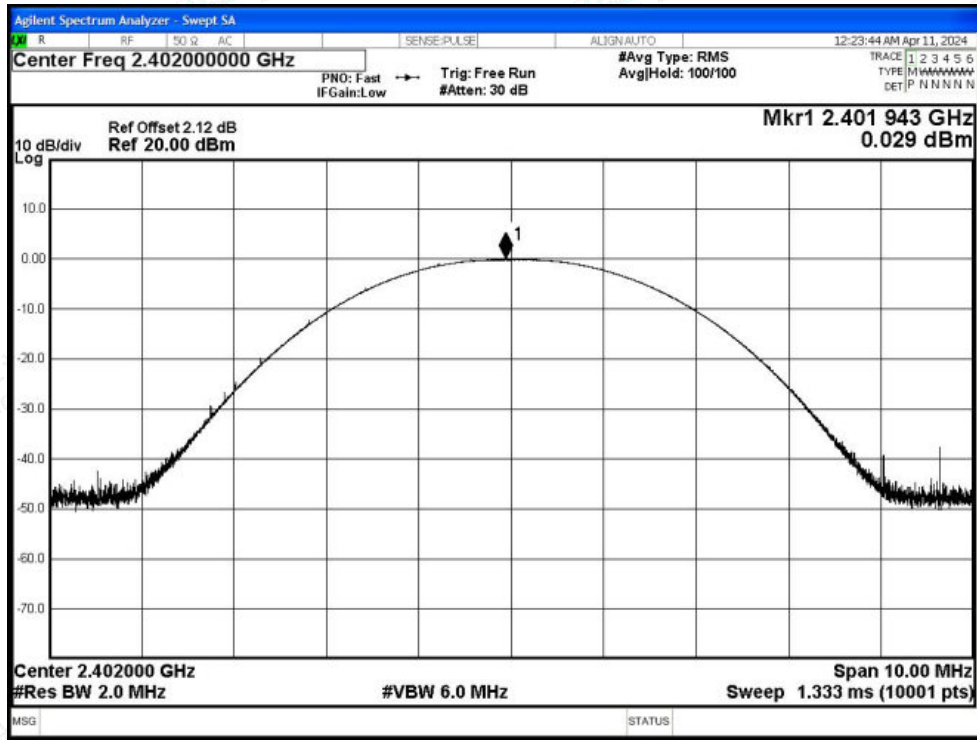
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.03	21	Pass
NVNT	1-DH5	2441	Ant1	-0.45	21	Pass
NVNT	1-DH5	2480	Ant1	0.86	21	Pass
NVNT	2-DH5	2402	Ant1	-0.28	21	Pass
NVNT	2-DH5	2441	Ant1	0.04	21	Pass
NVNT	2-DH5	2480	Ant1	0.25	21	Pass



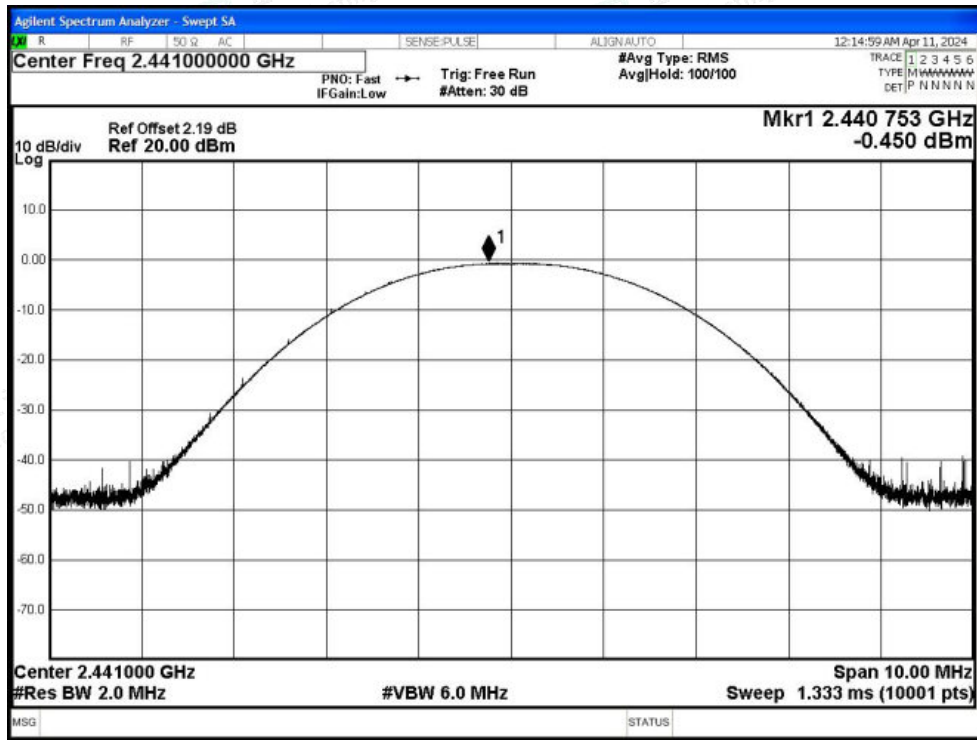


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

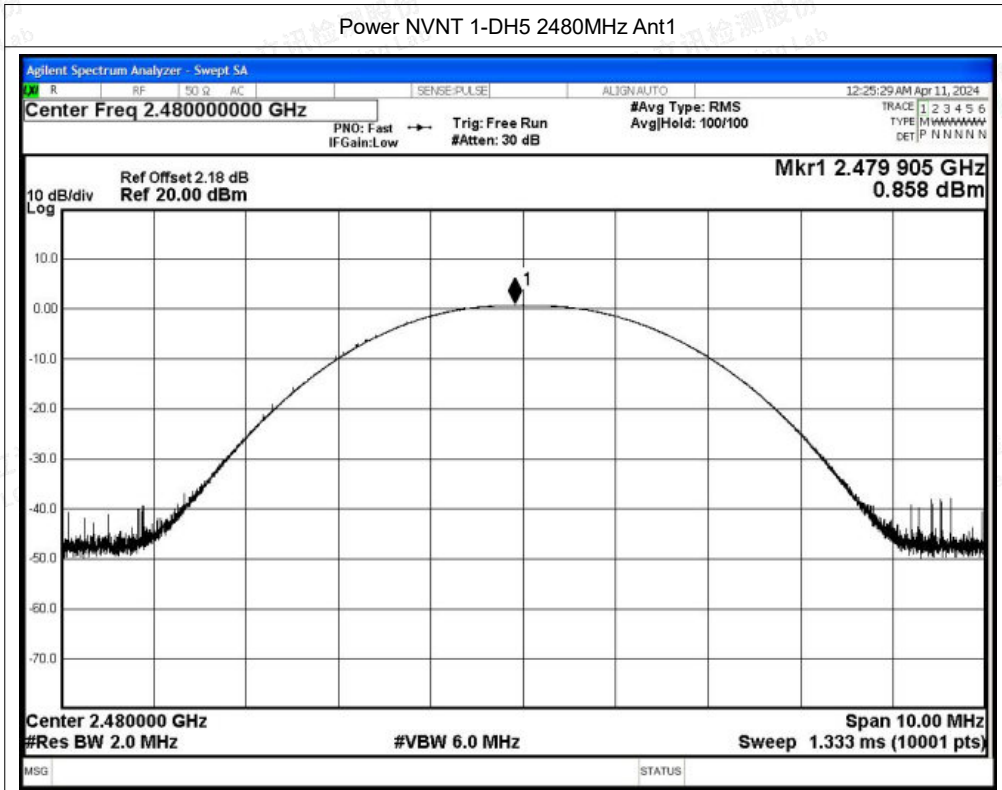


Power NVNT 1-DH5 2441MHz Ant1

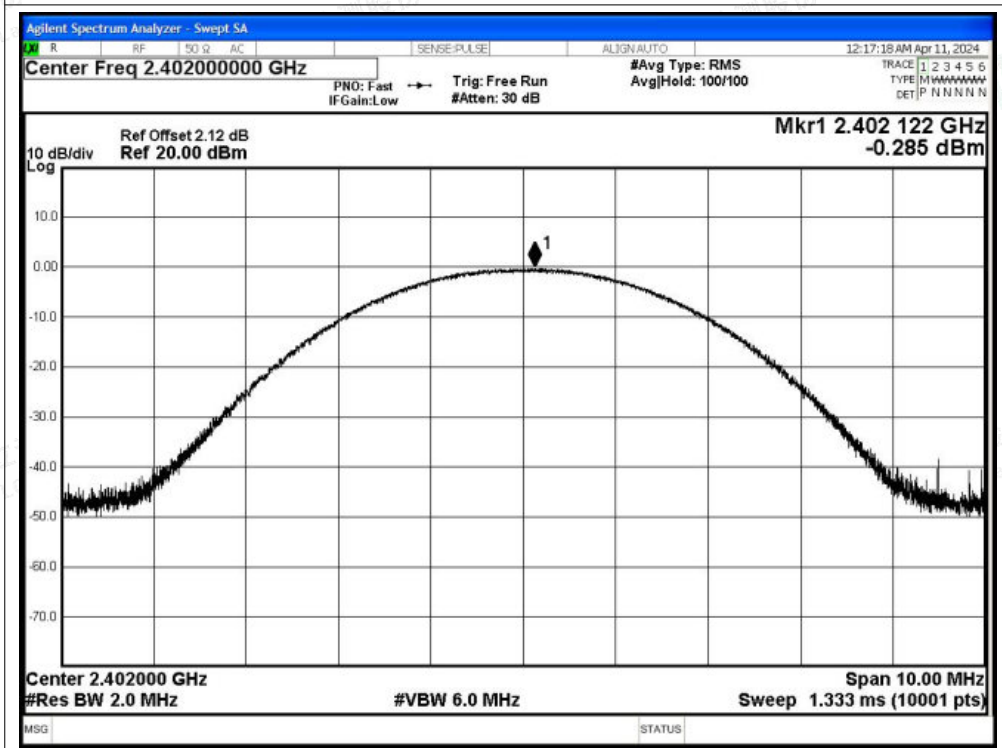




Power NVNT 1-DH5 2480MHz Ant1

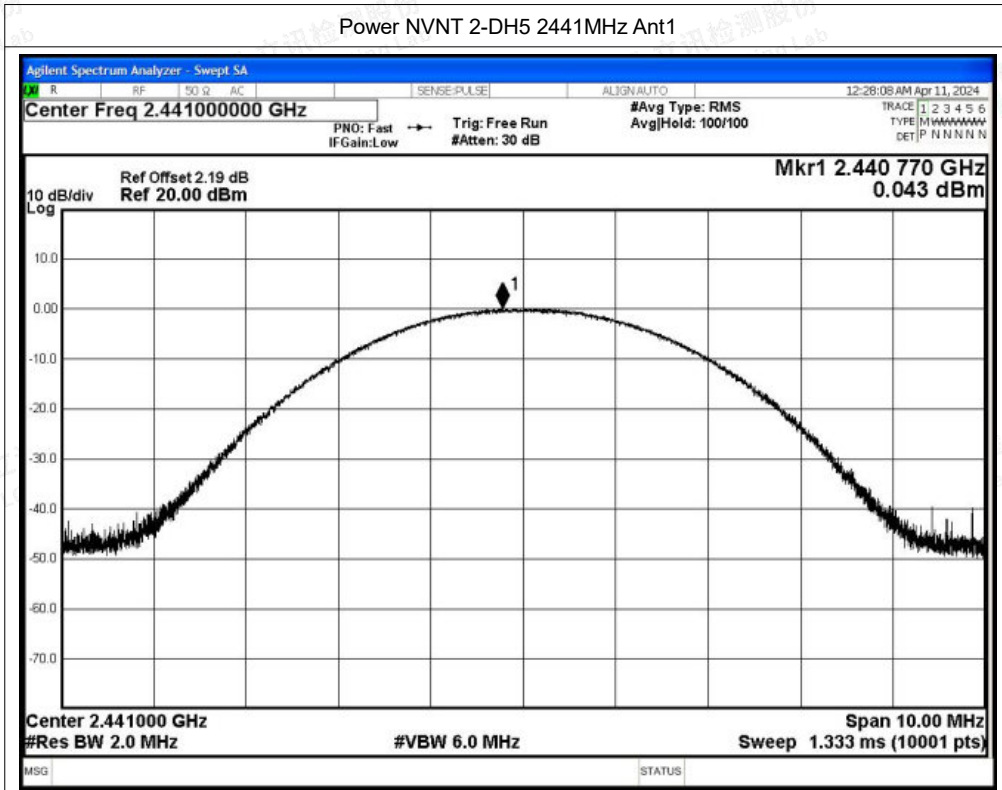


Power NVNT 2-DH5 2402MHz Ant1

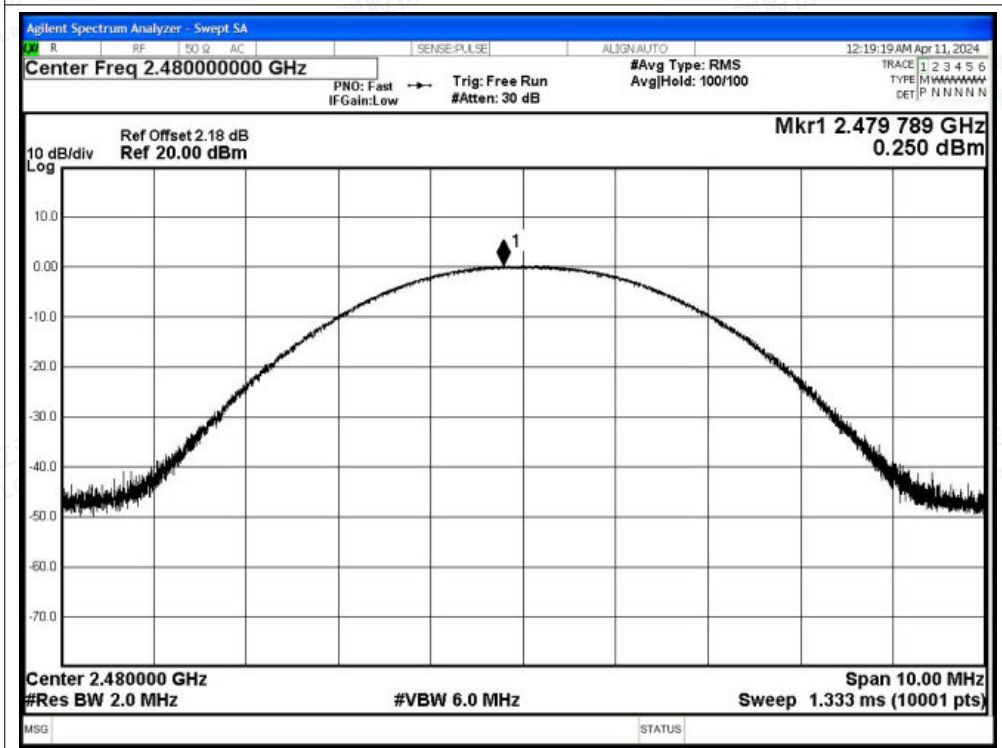




Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1





A.3 Carrier Frequencies Separation

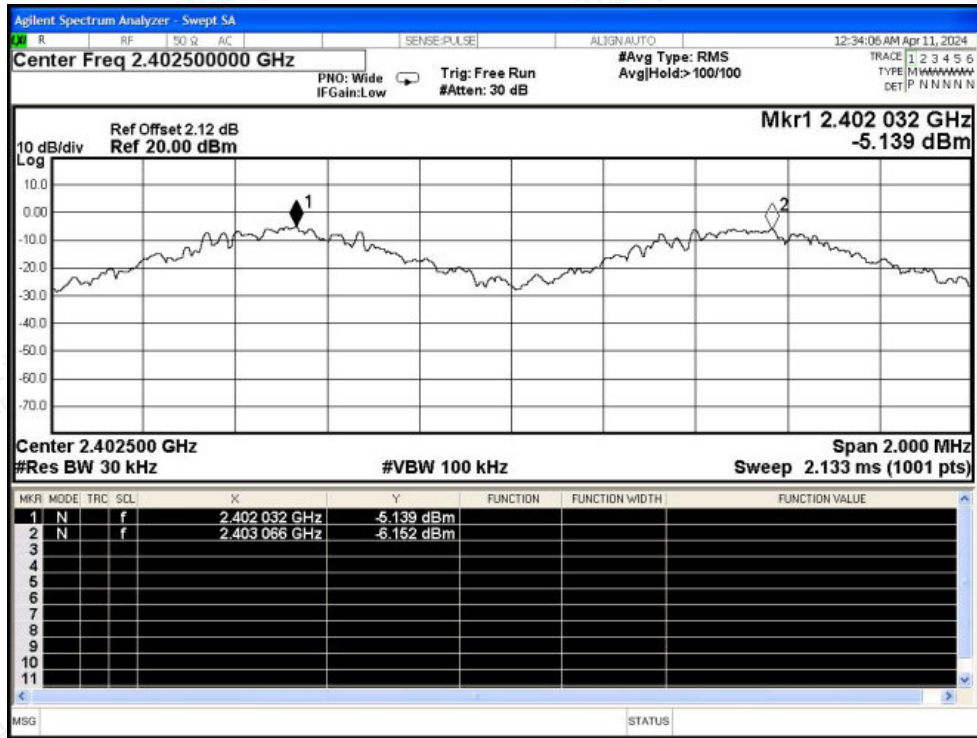
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.032	2403.066	1.034	0.673	Pass
NVNT	2-DH5	Ant1	2402.028	2403.164	1.136	0.859	Pass



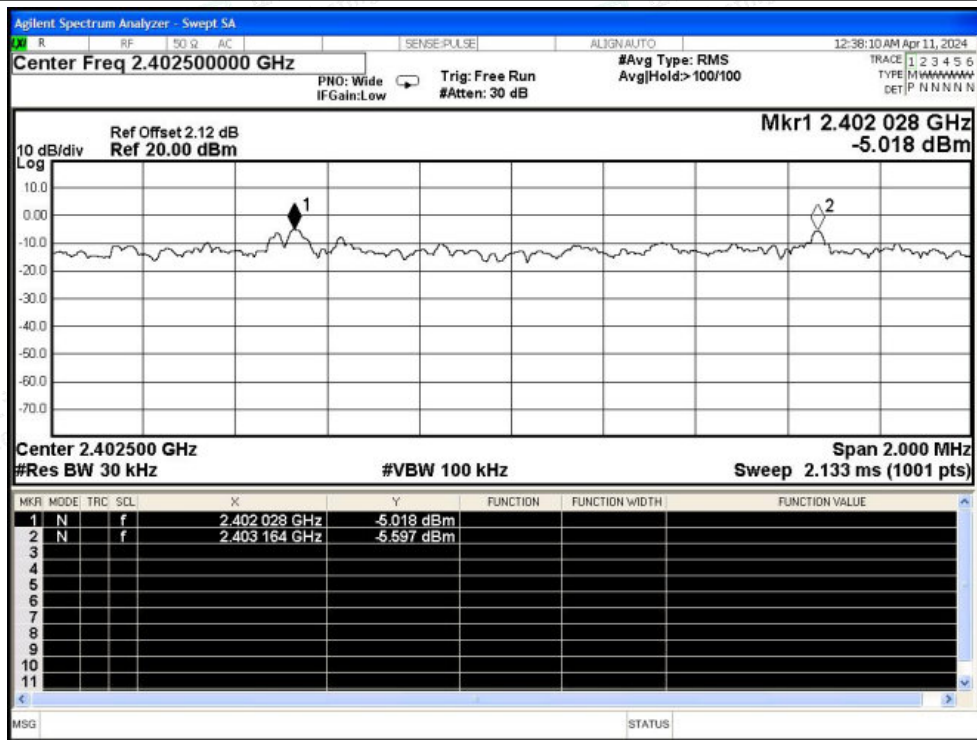


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1





A.4 Dwell Time

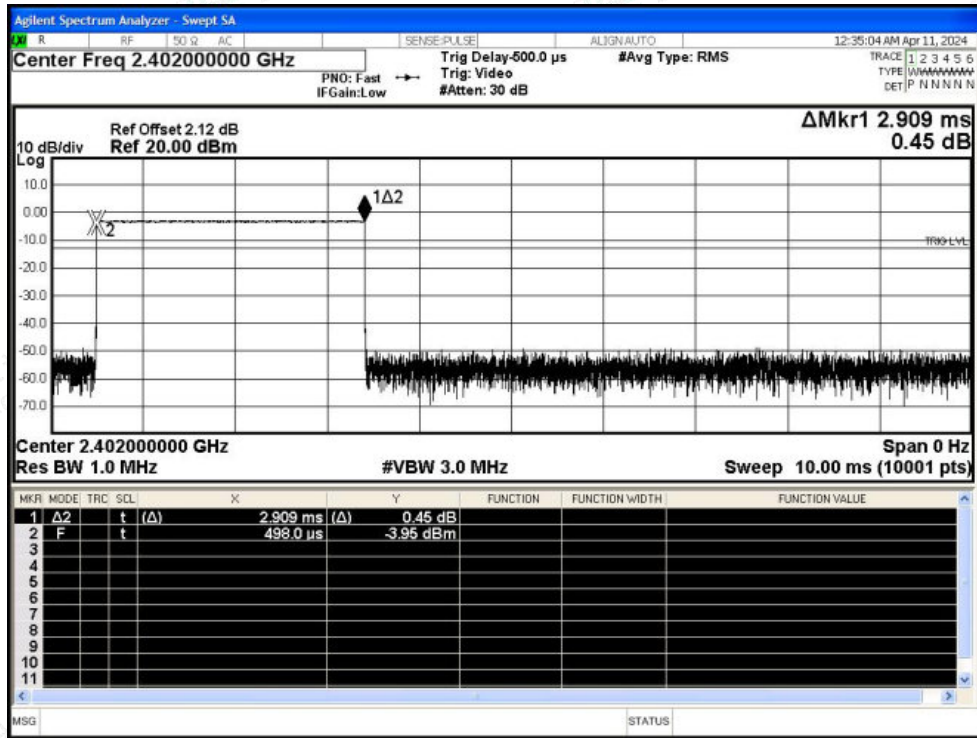
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.909	317.081	109	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	284.004	98	31600	400	Pass



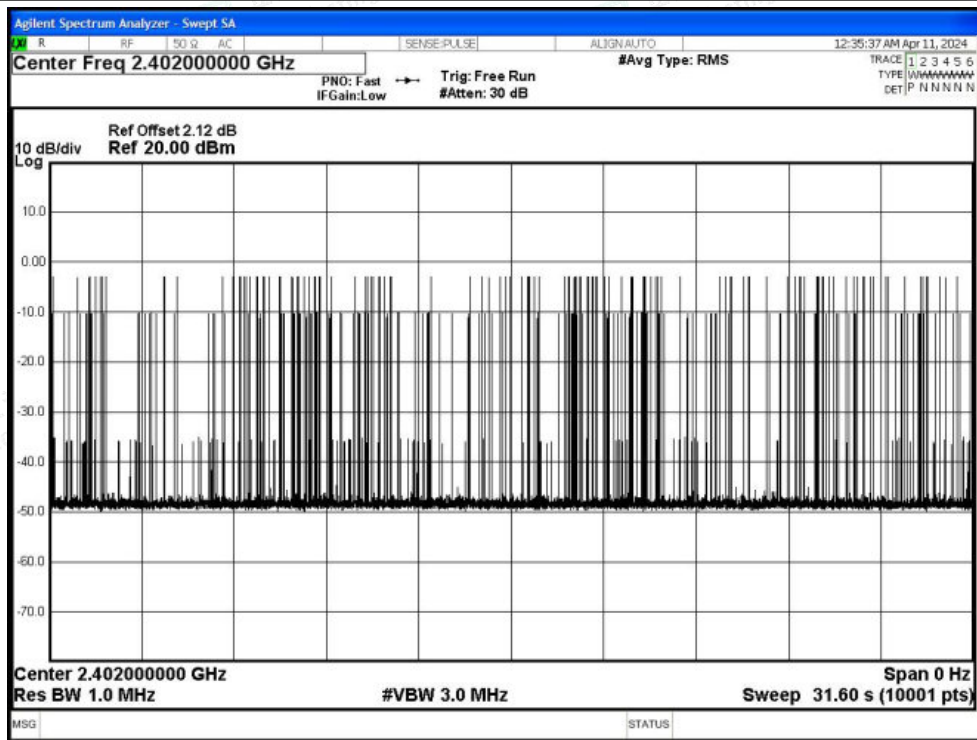


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

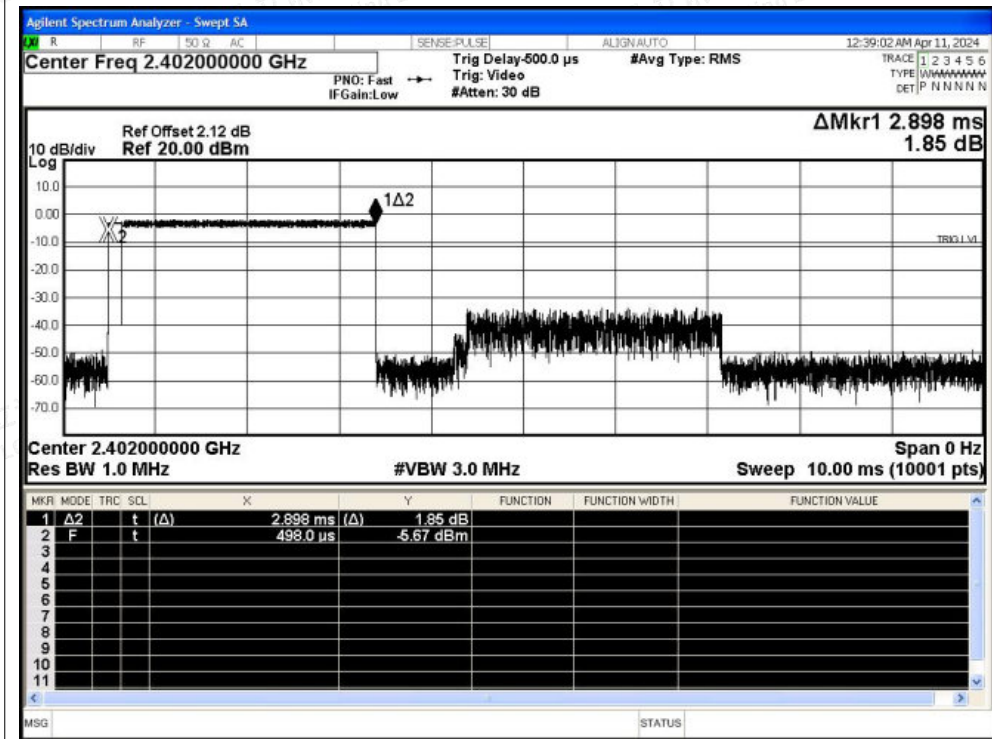


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

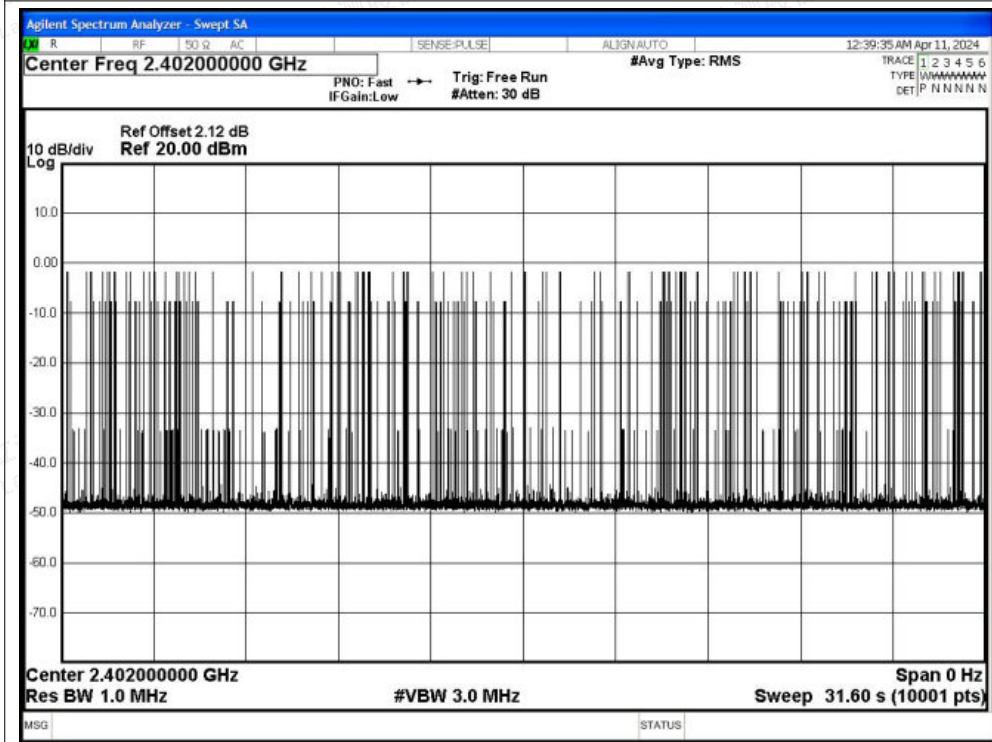




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated





A.5 Number of Hopping Channel

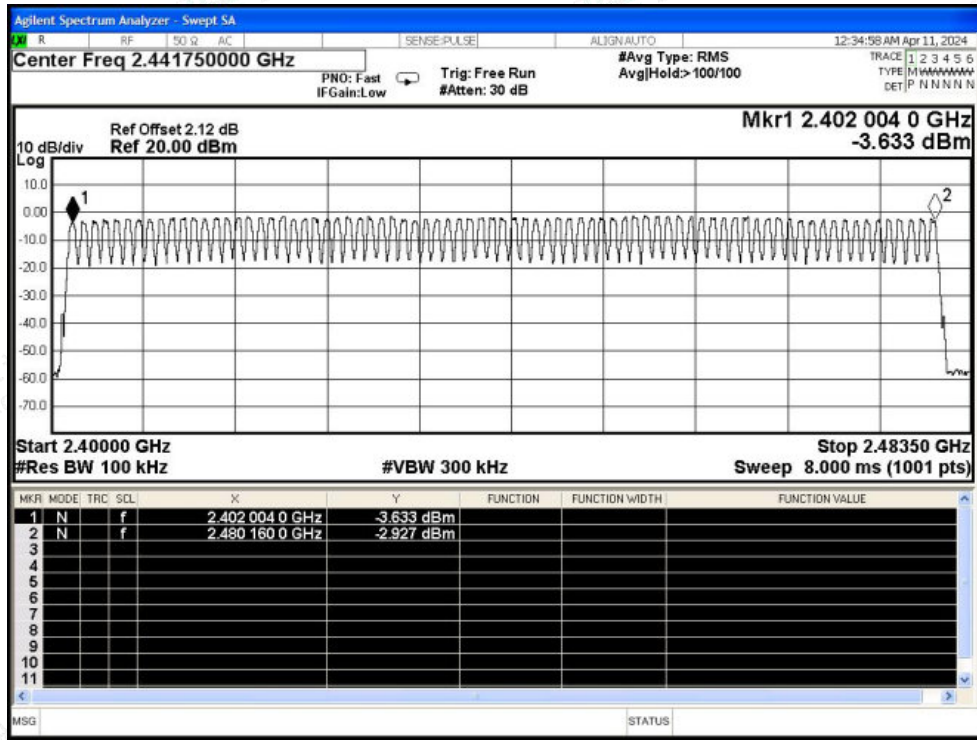
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass



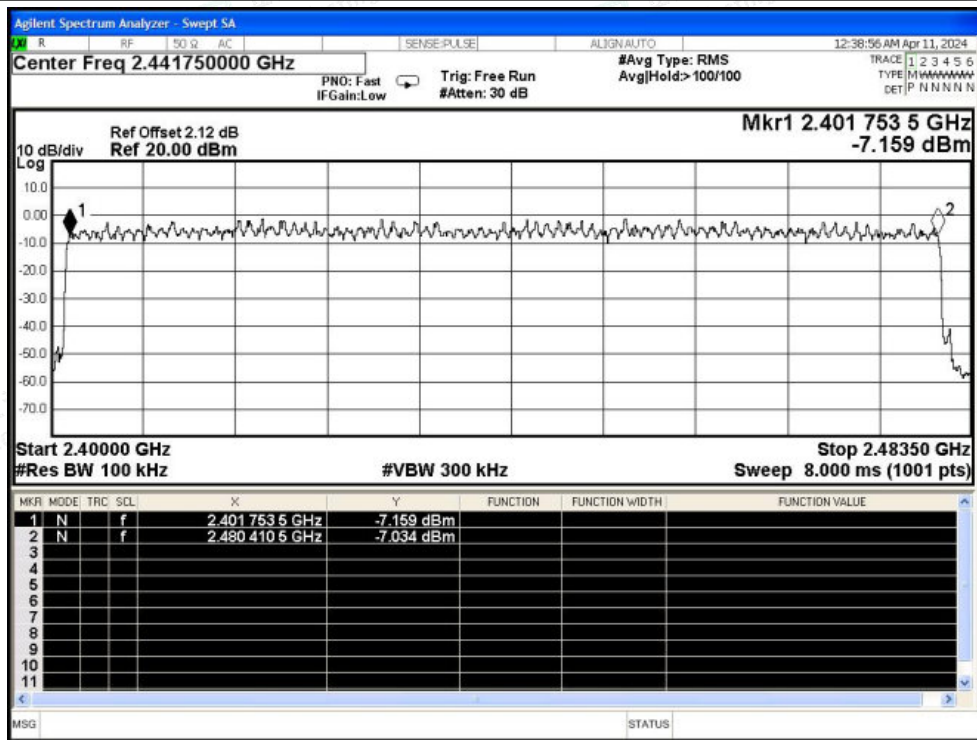


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1





A.6 Band Edge

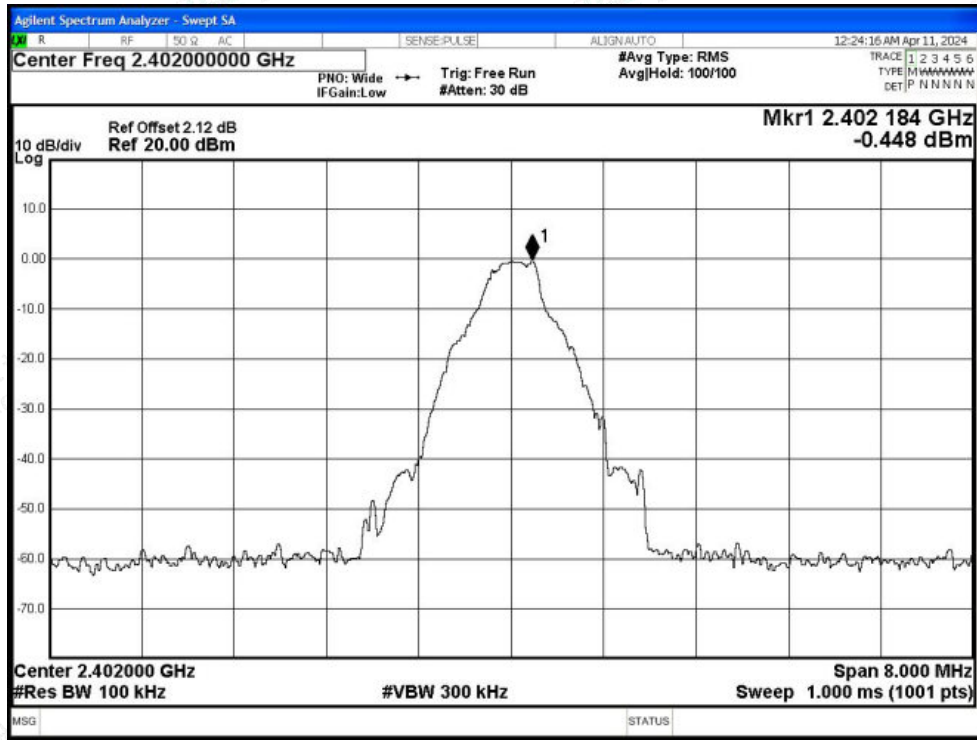
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.34	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.77	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-52.67	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-54.76	-20	Pass



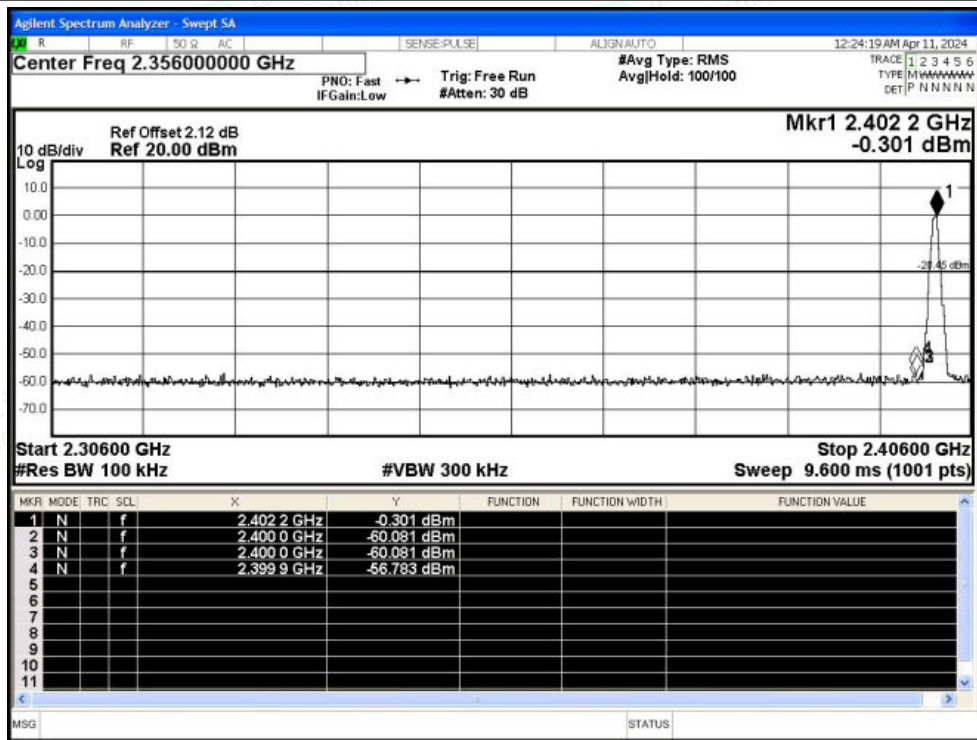


Test Graphs

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

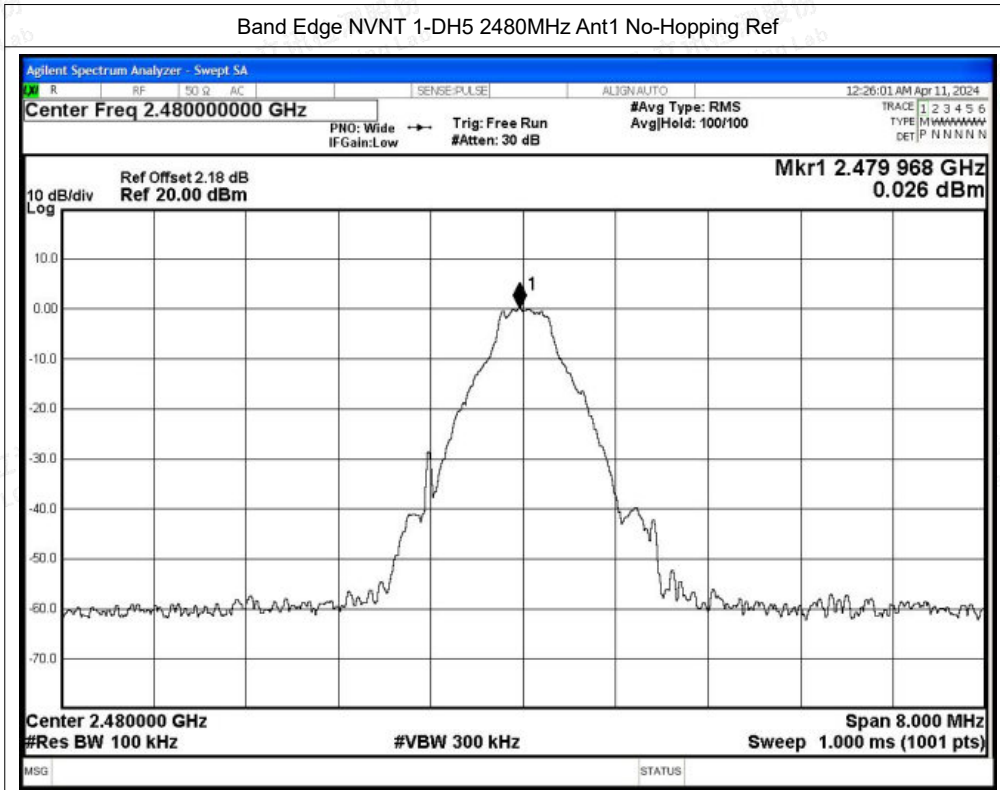


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

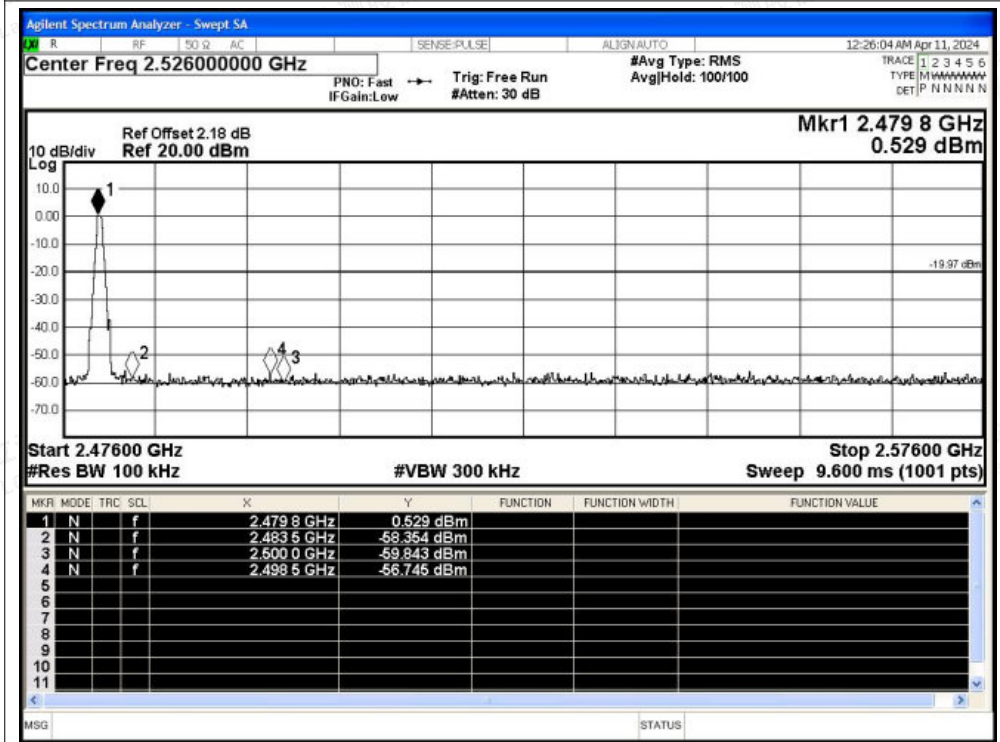




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

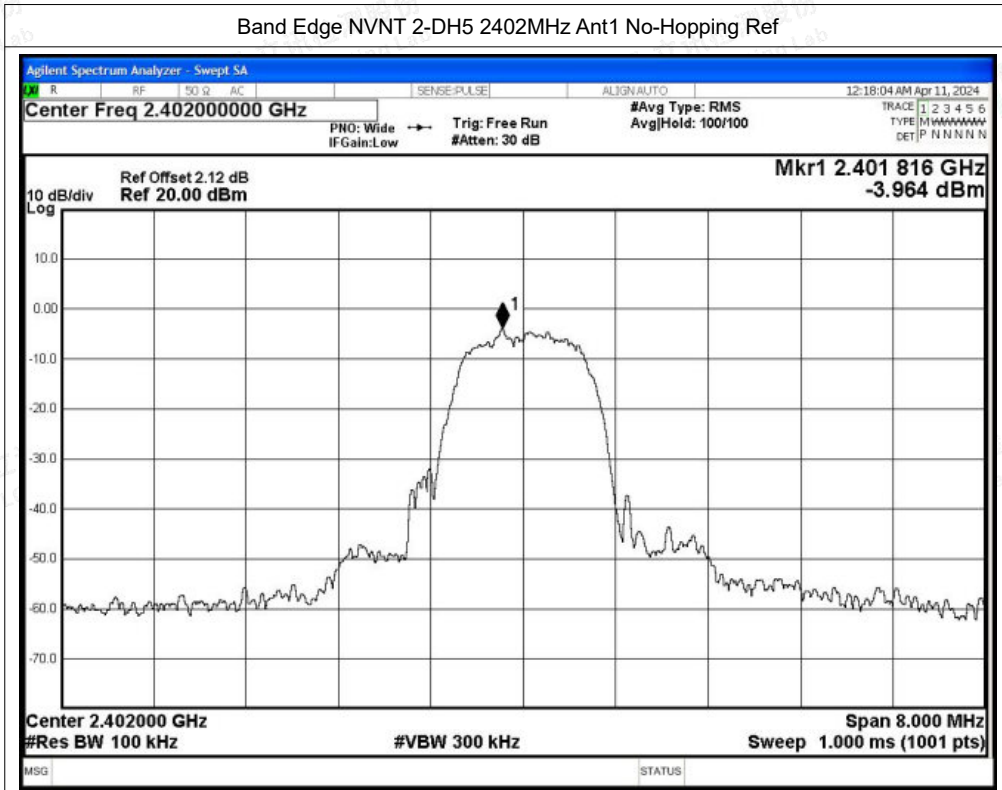


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

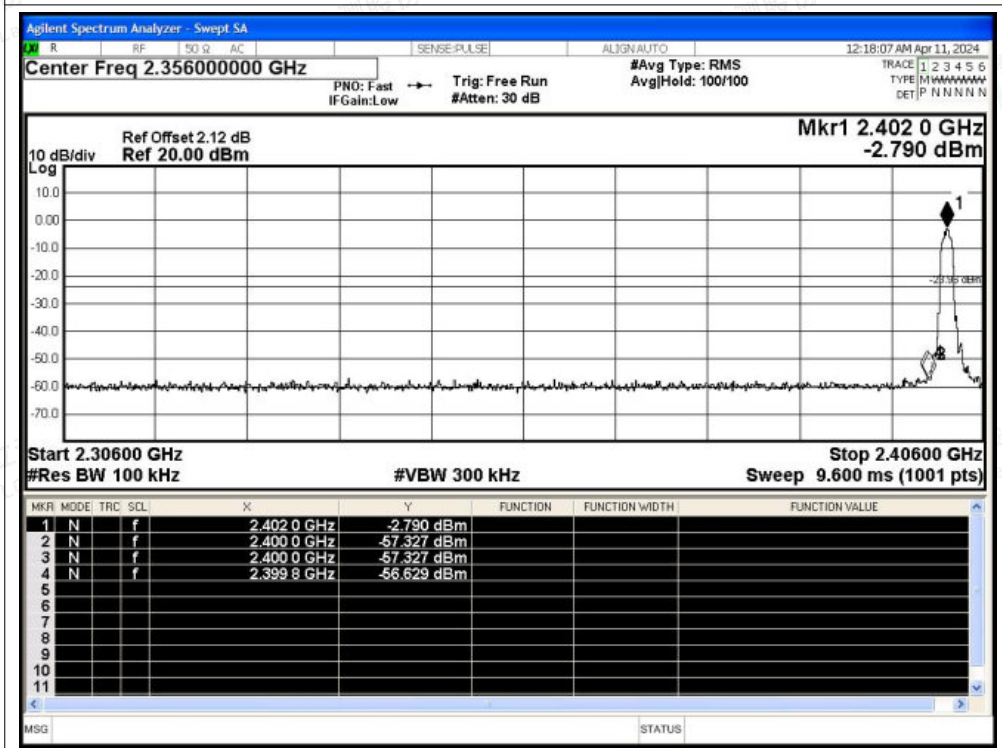




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

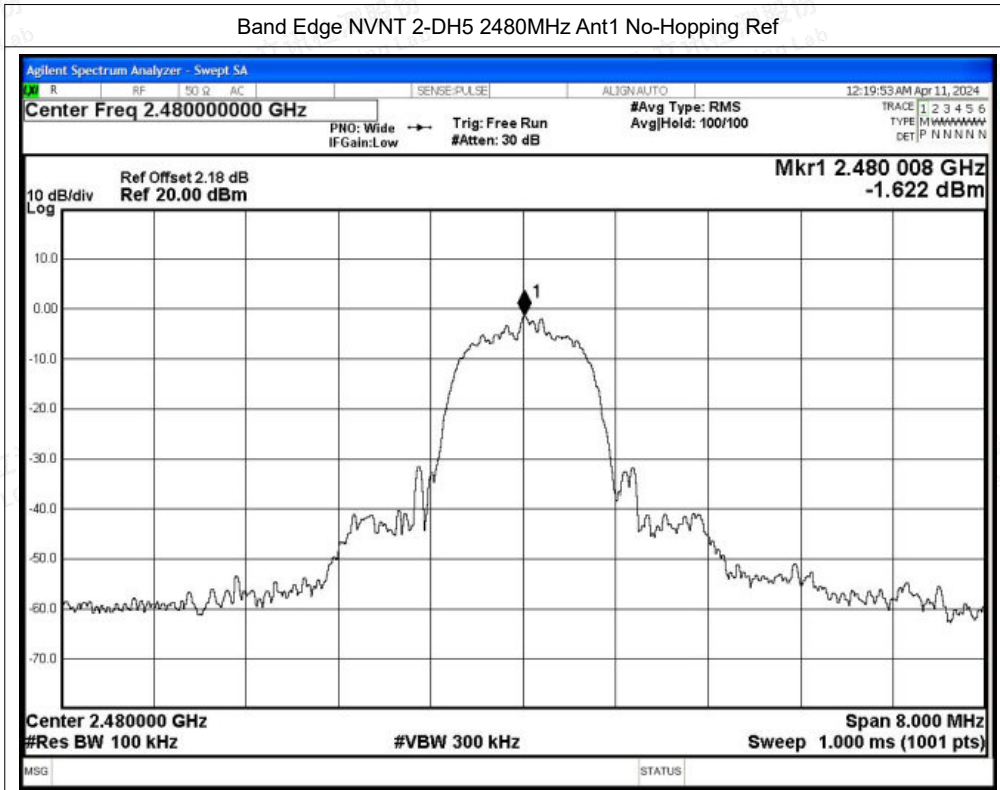


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

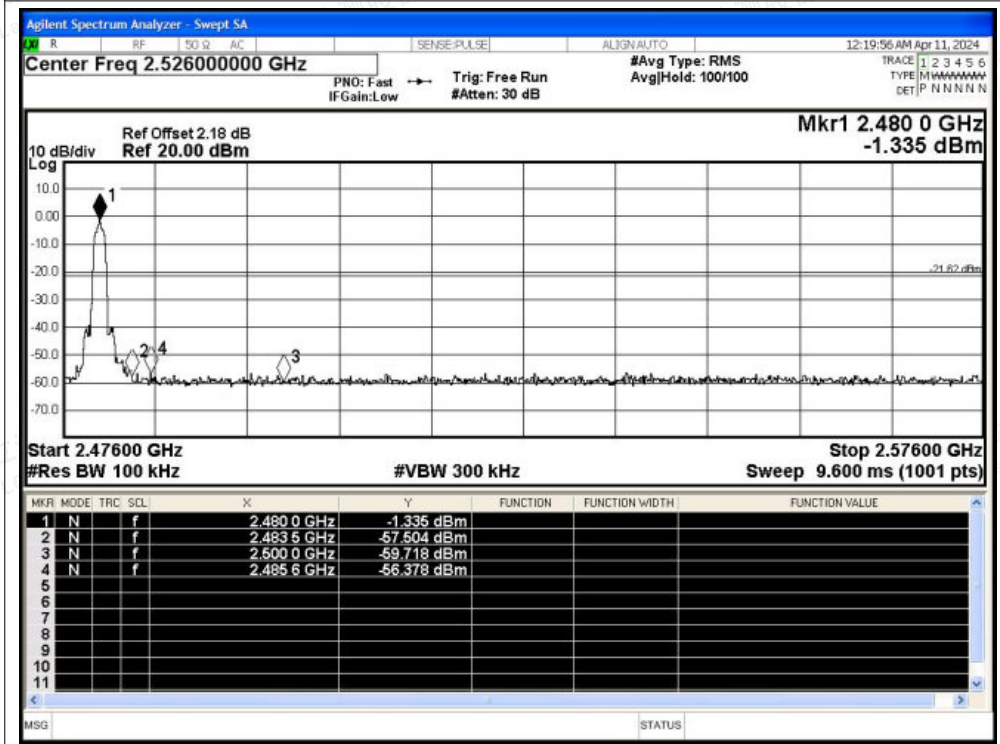




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



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





(Hopping)

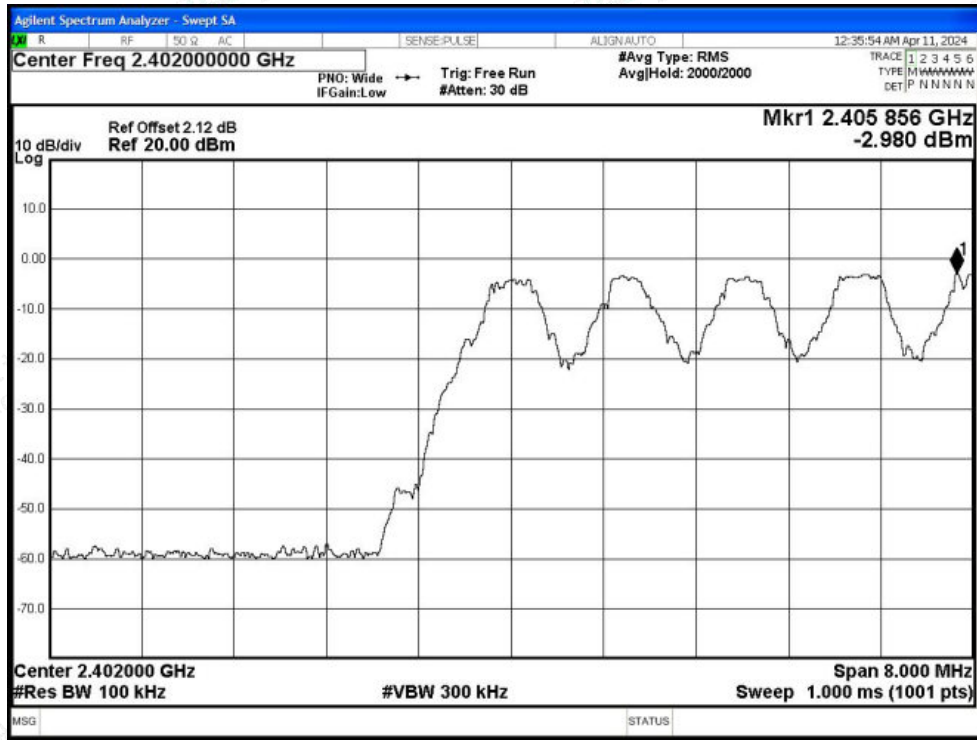
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-53.44	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-52.68	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.72	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.04	-20	Pass



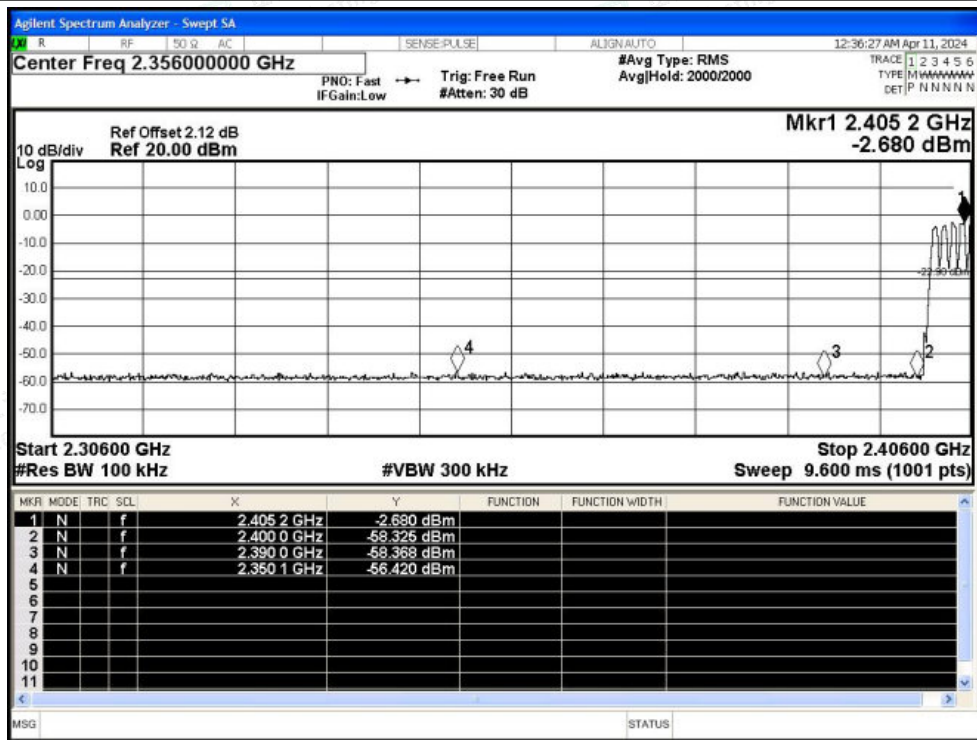


Test Graphs

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

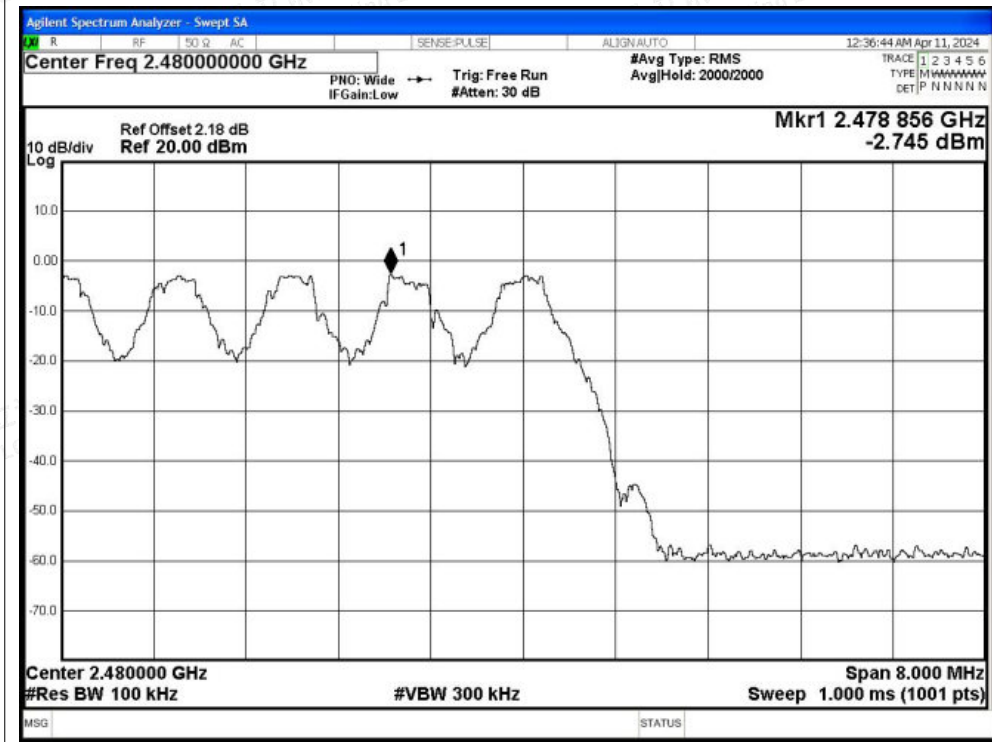


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

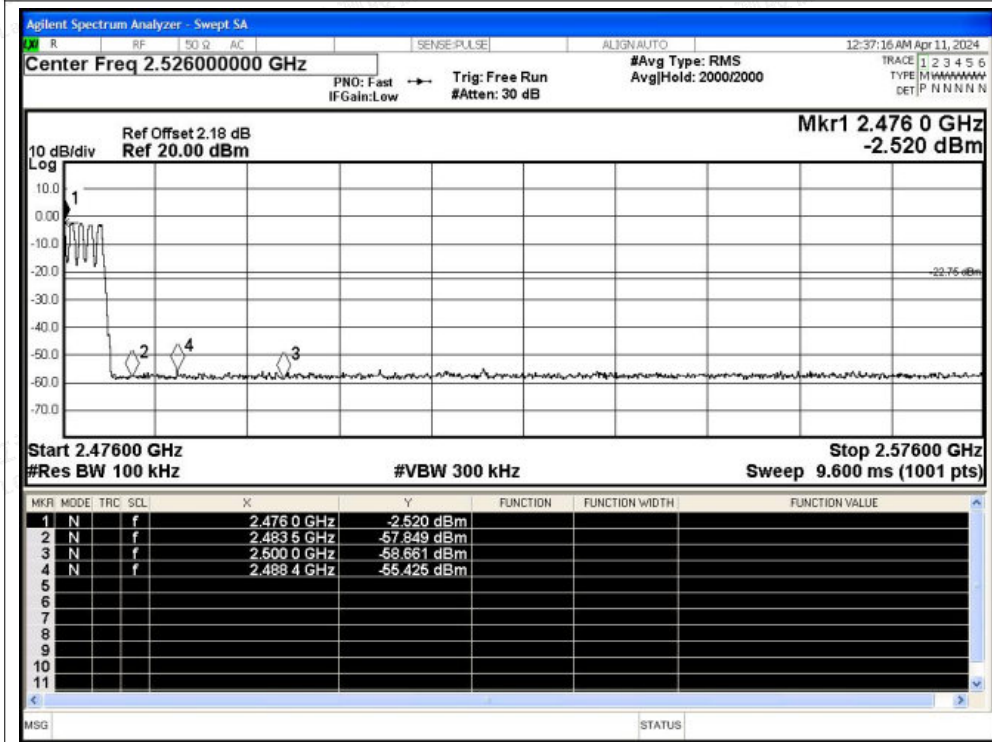




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref

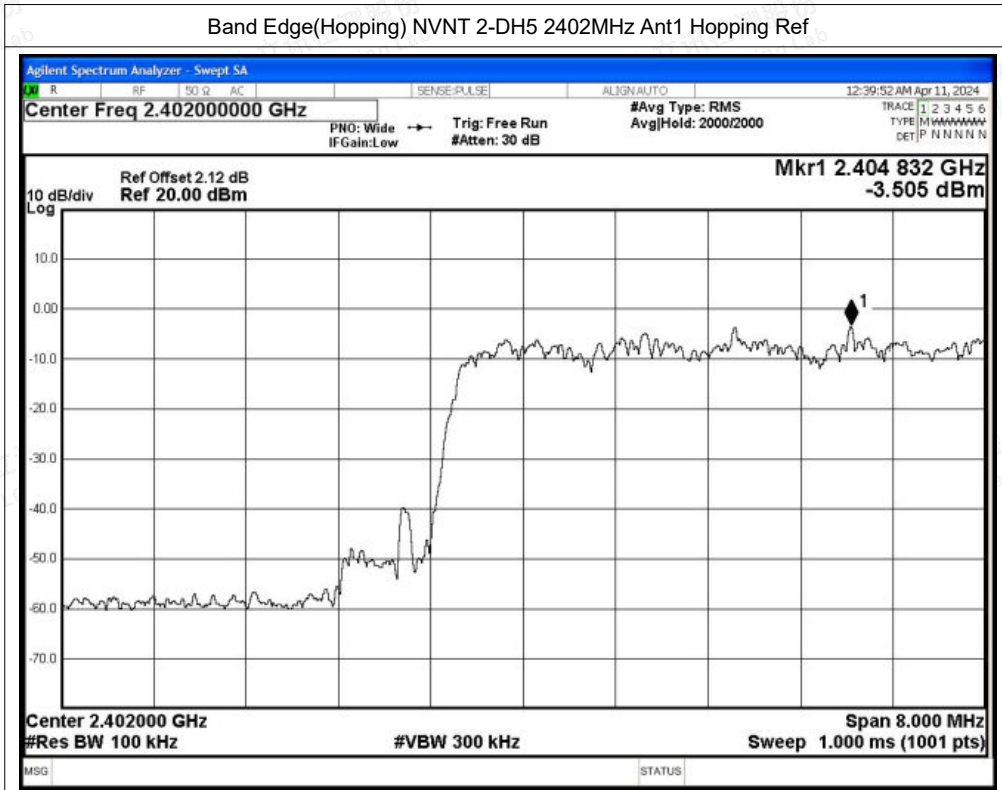


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission

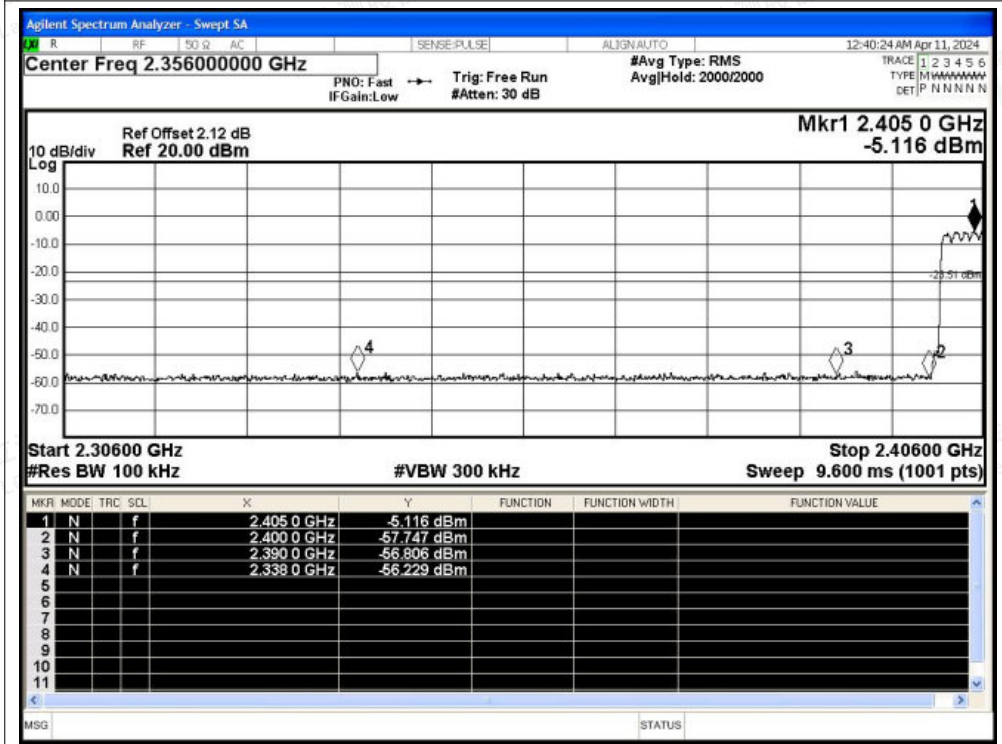




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

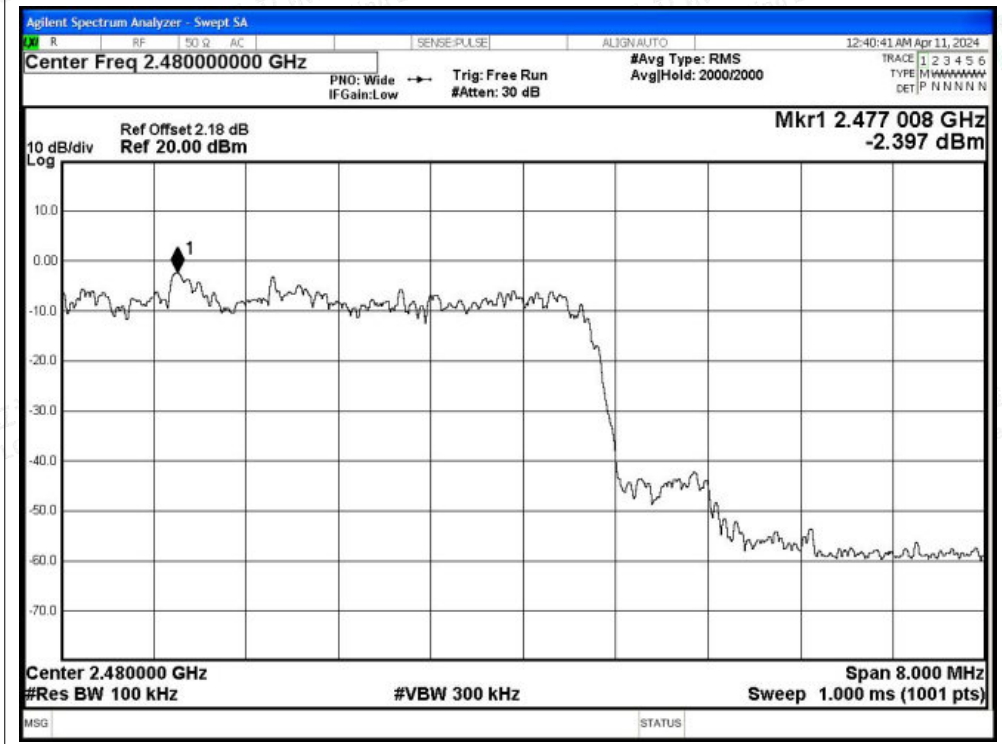


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

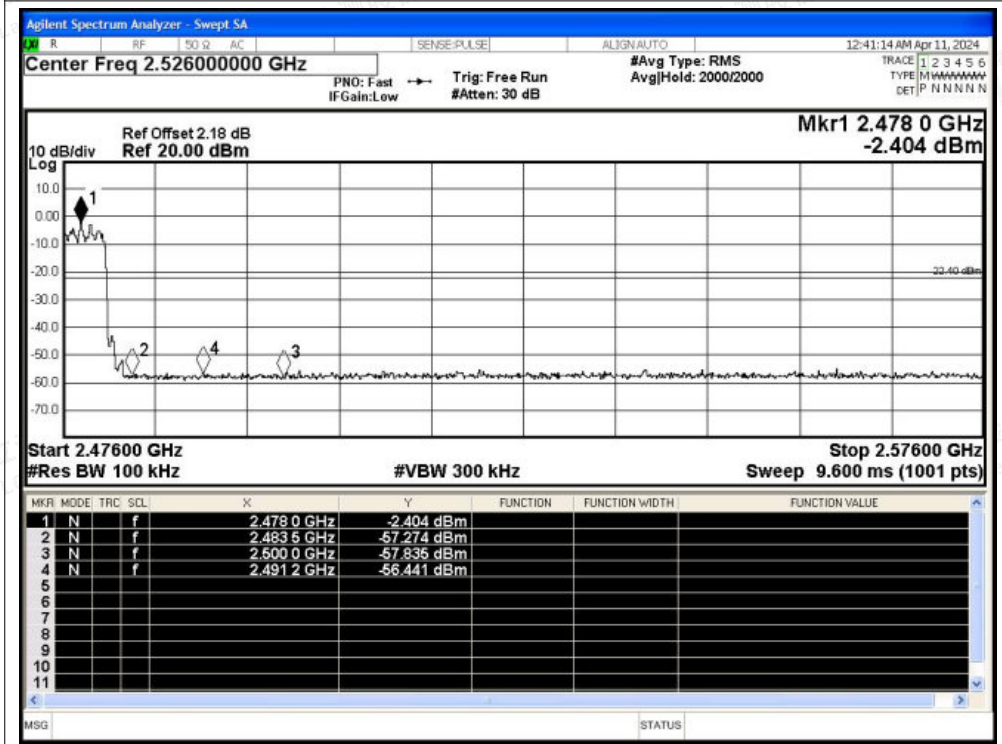




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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





A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-54.03	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.25	-20	Pass
NVNT	1-DH5	2480	Ant1	-56.63	-20	Pass
NVNT	2-DH5	2402	Ant1	-52.77	-20	Pass
NVNT	2-DH5	2441	Ant1	-52.65	-20	Pass
NVNT	2-DH5	2480	Ant1	-52.25	-20	Pass



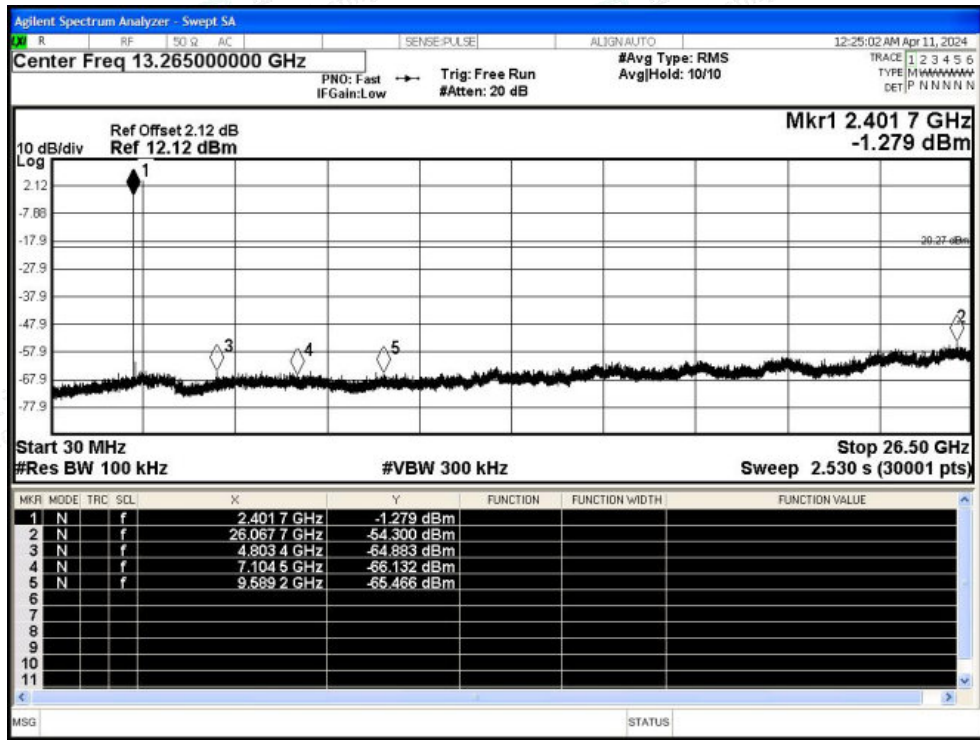


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

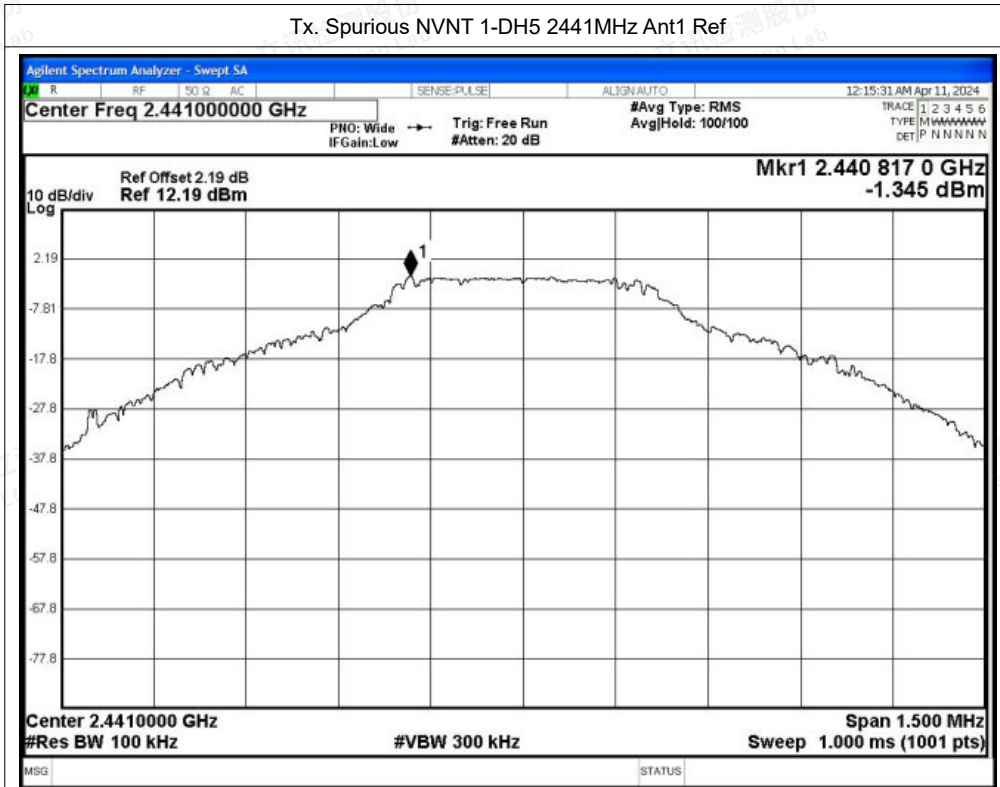


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

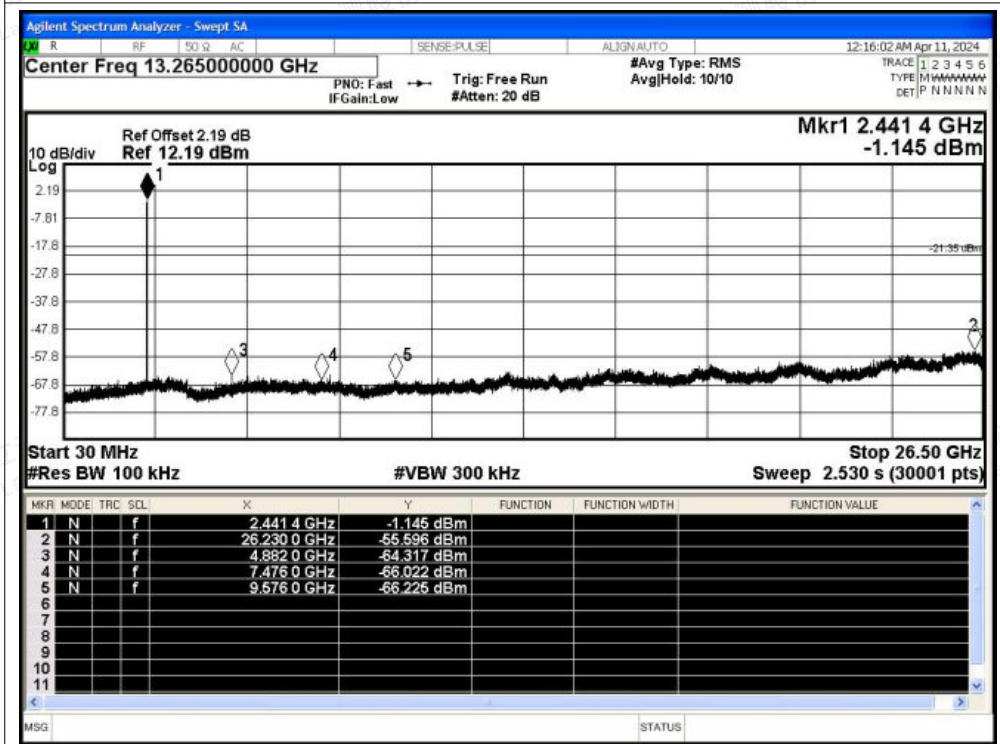




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

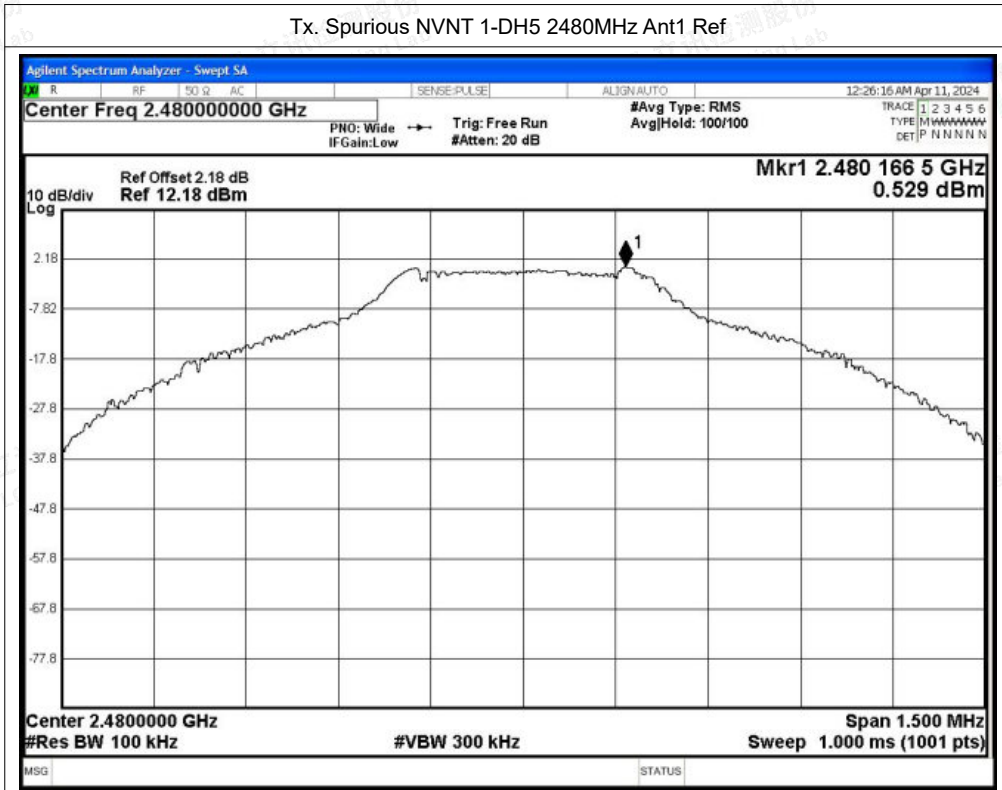


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

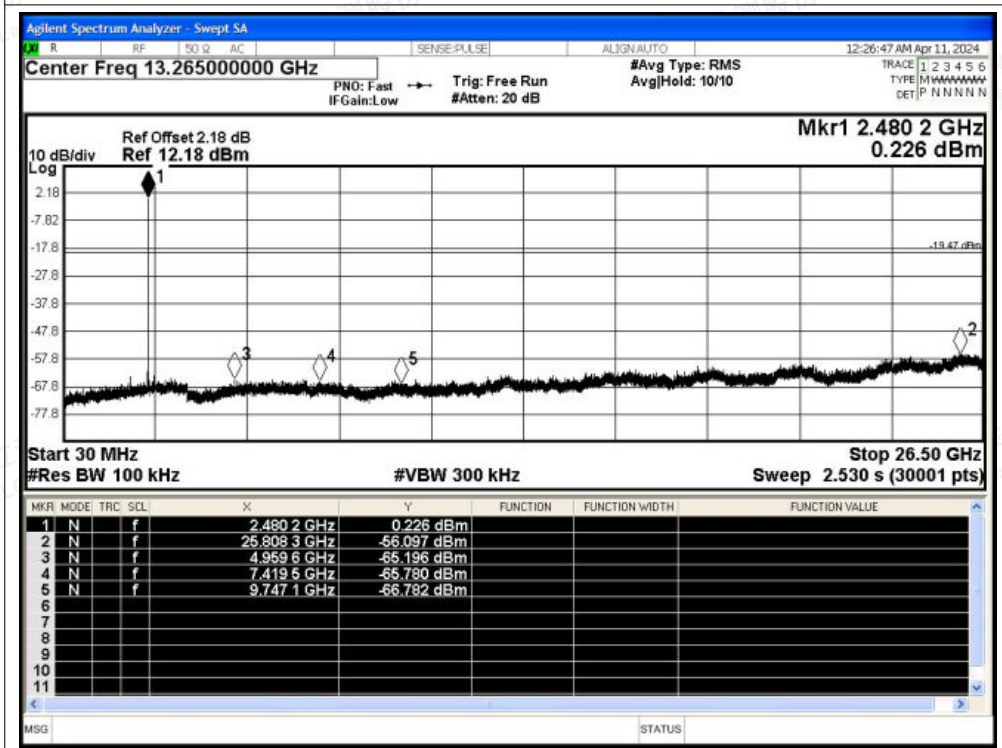




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

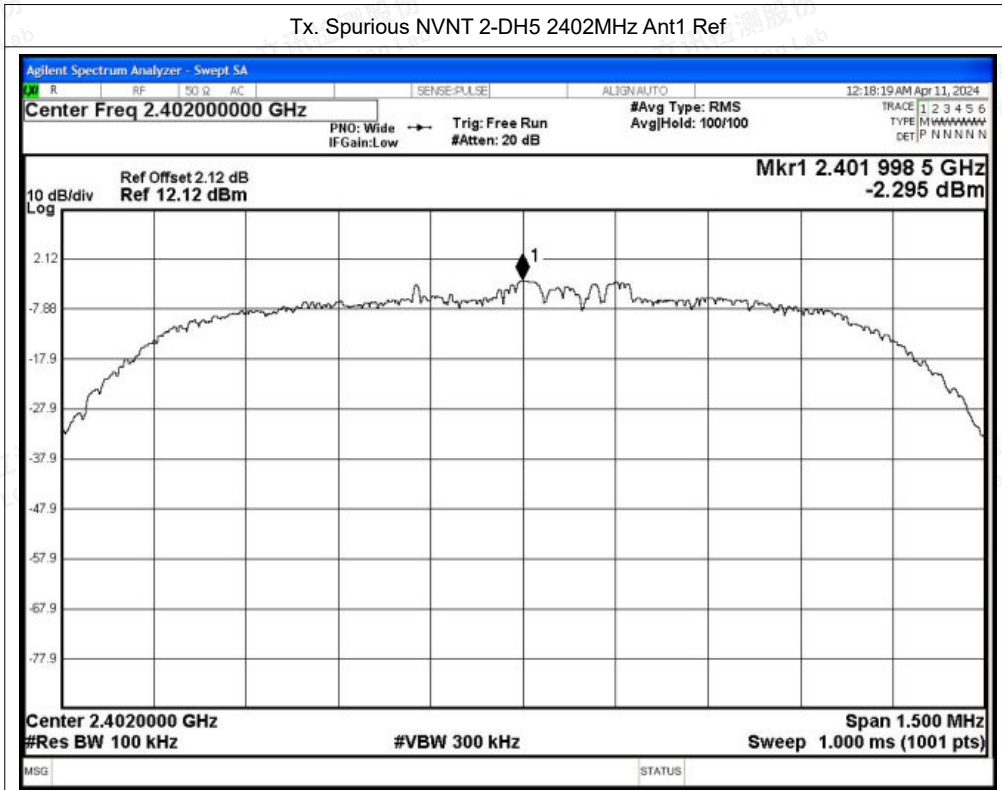


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

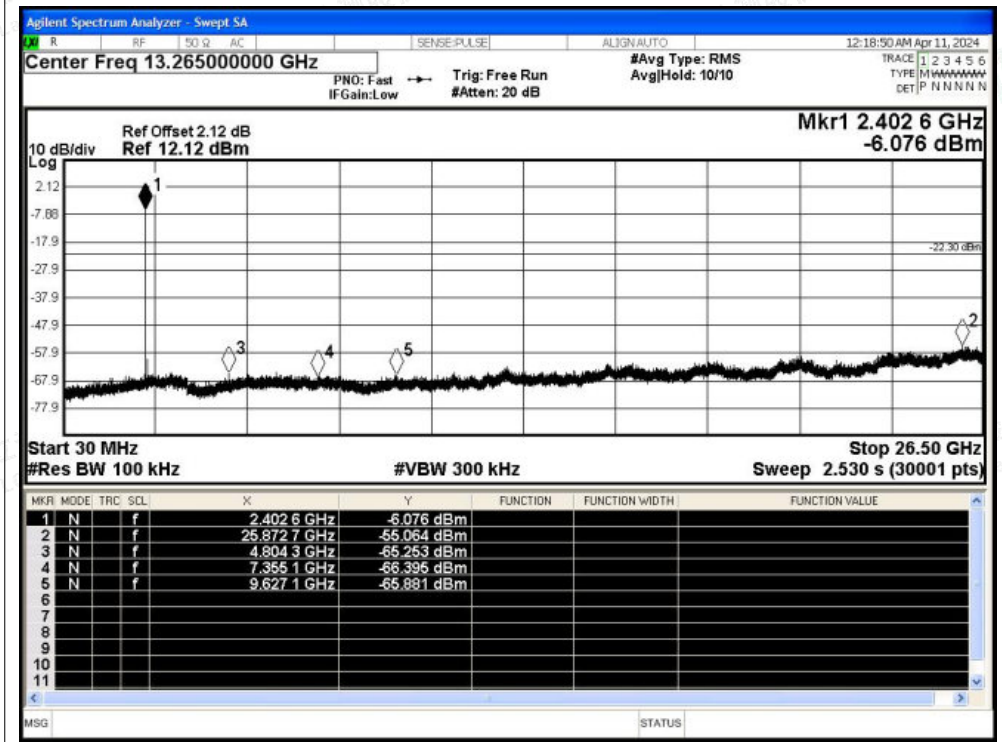




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

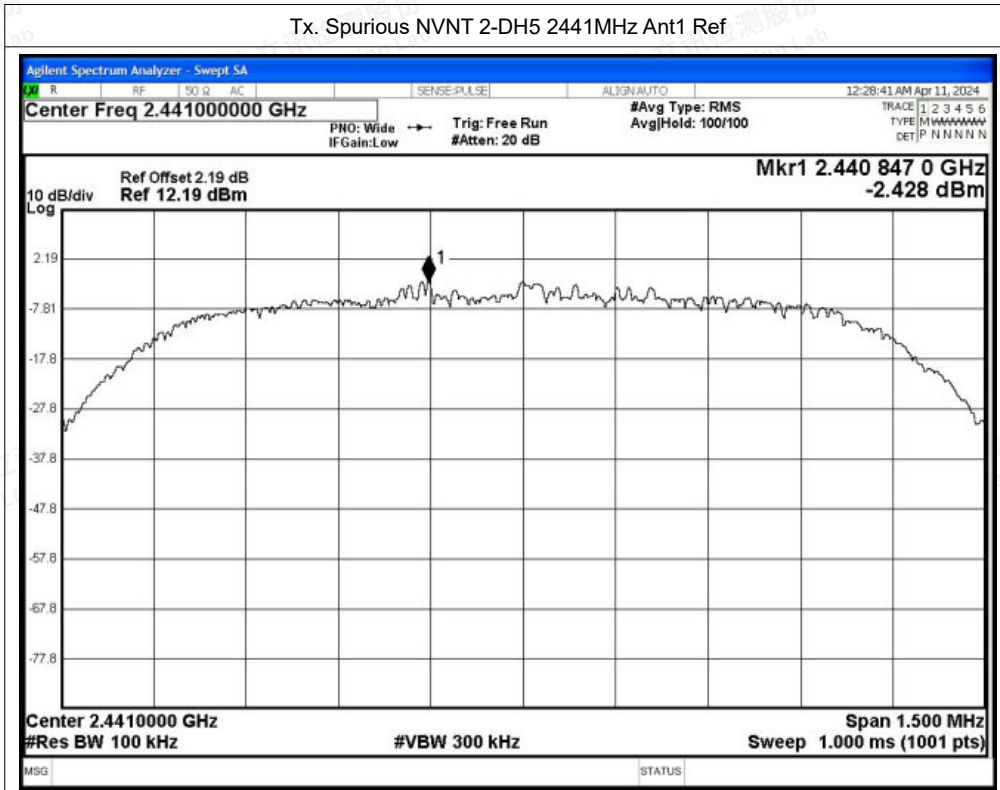


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

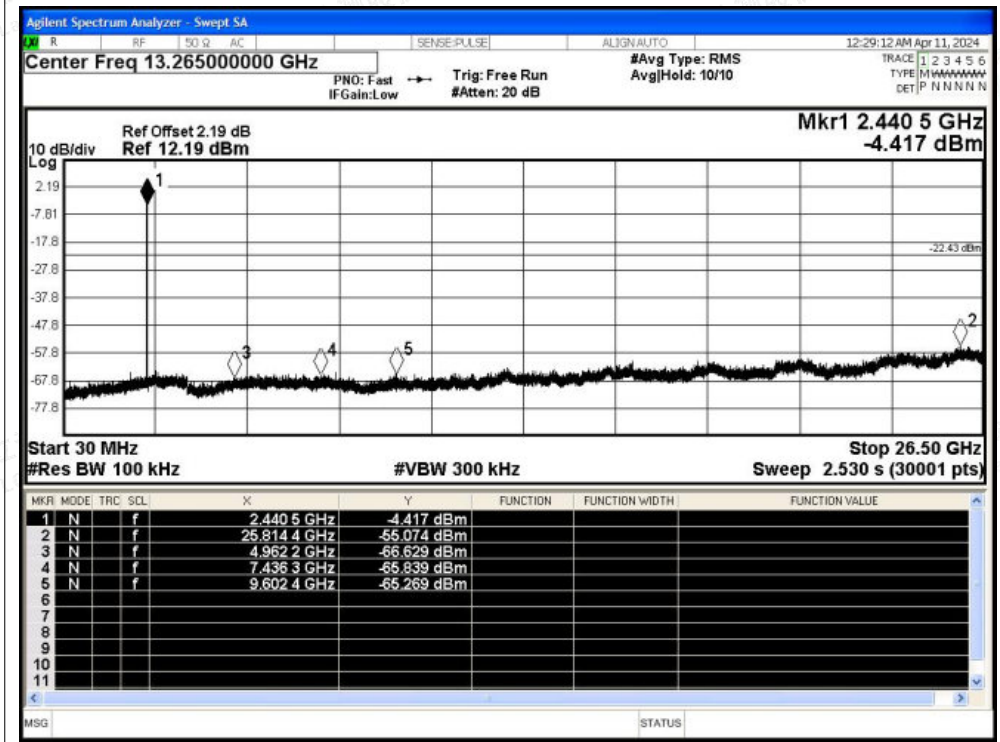




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

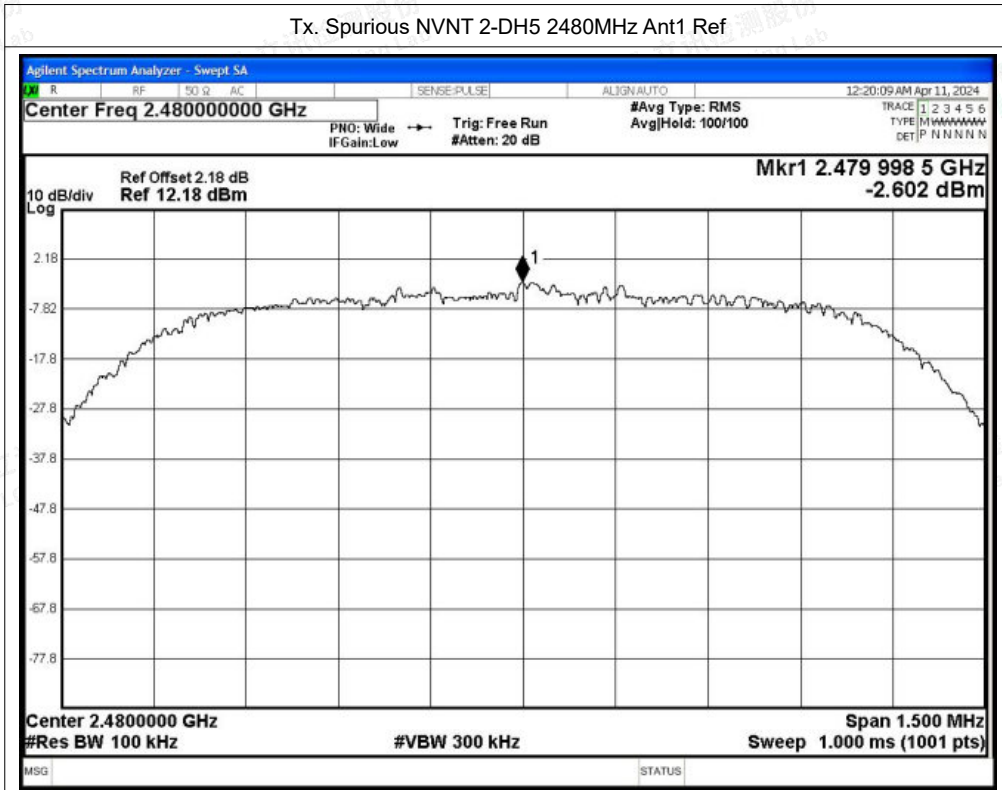


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

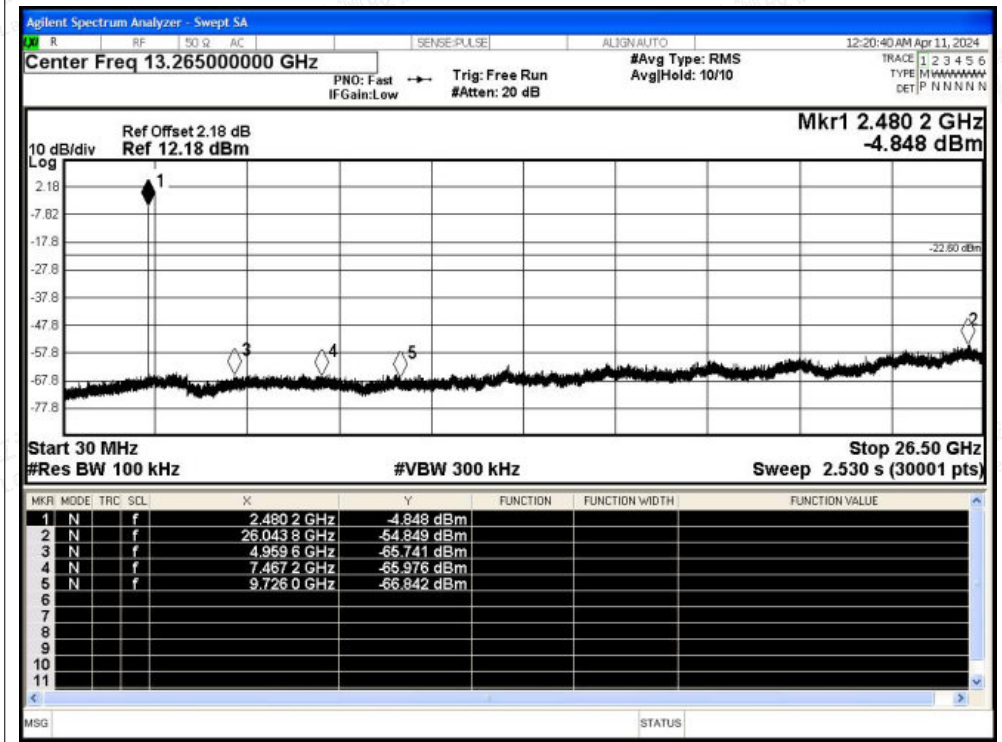




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission





A.8 Duty Cycle

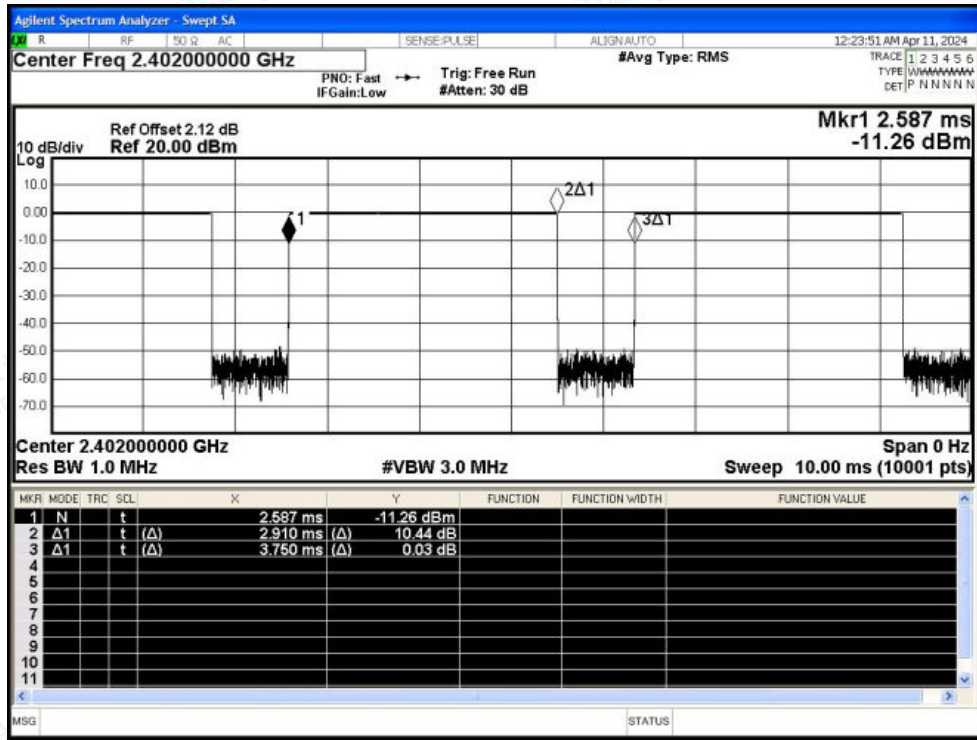
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	76.4	1.17	0.36
NVNT	2-DH5	2441	Ant1	76.41	1.17	0.36
NVNT	2-DH5	2480	Ant1	76.4	1.17	0.36



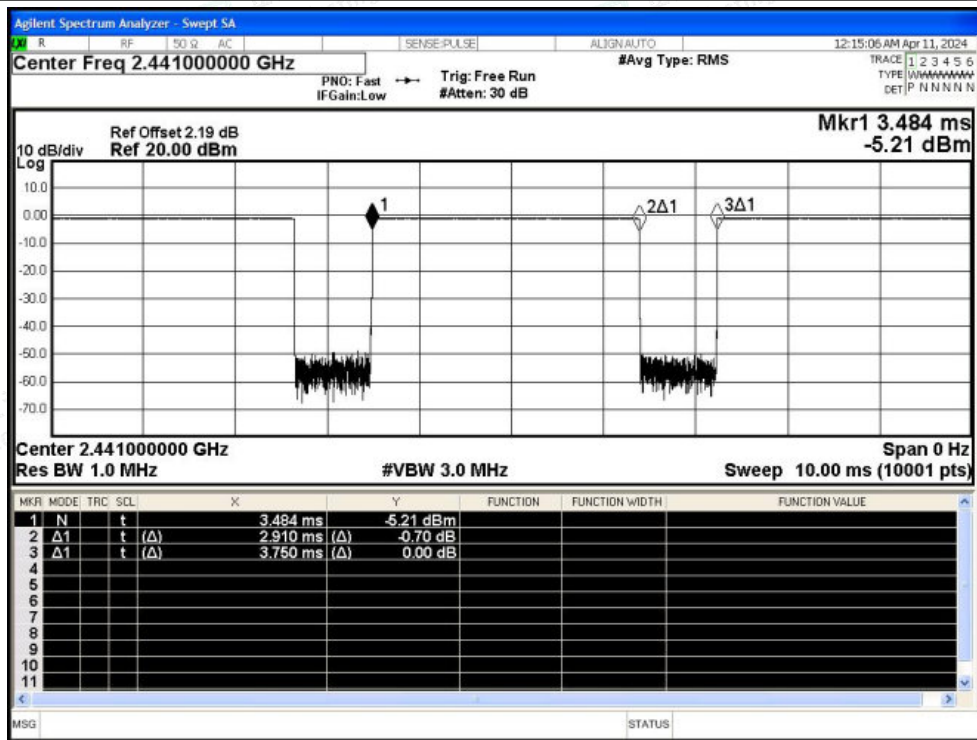


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

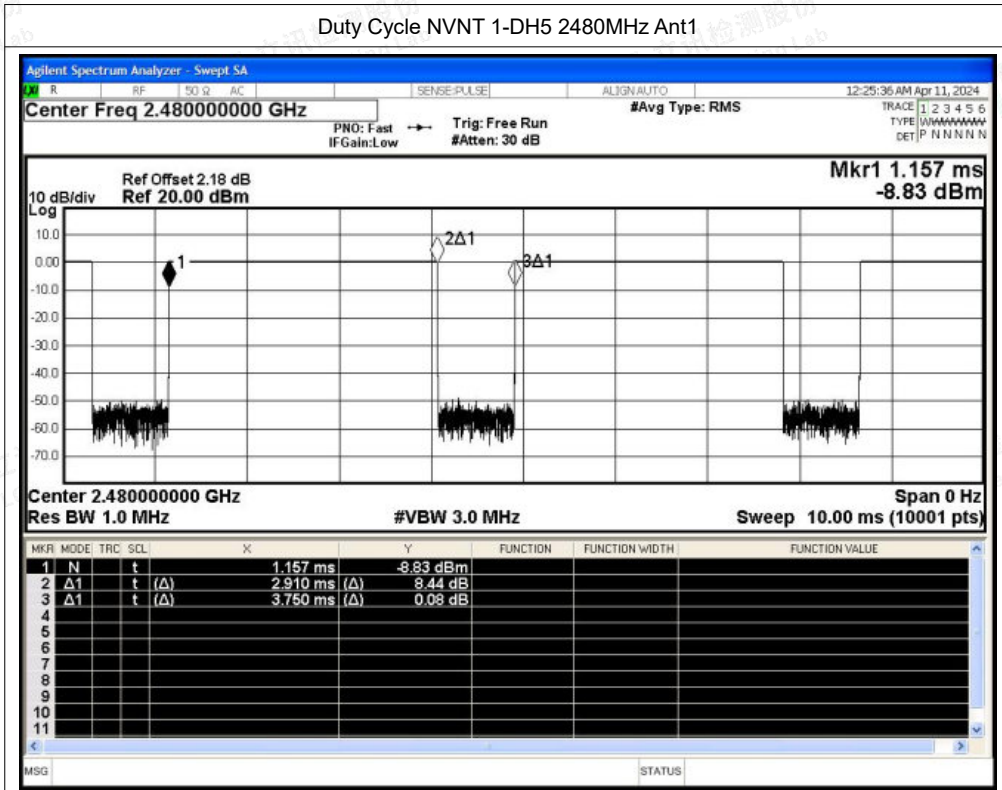


Duty Cycle NVNT 1-DH5 2441MHz Ant1

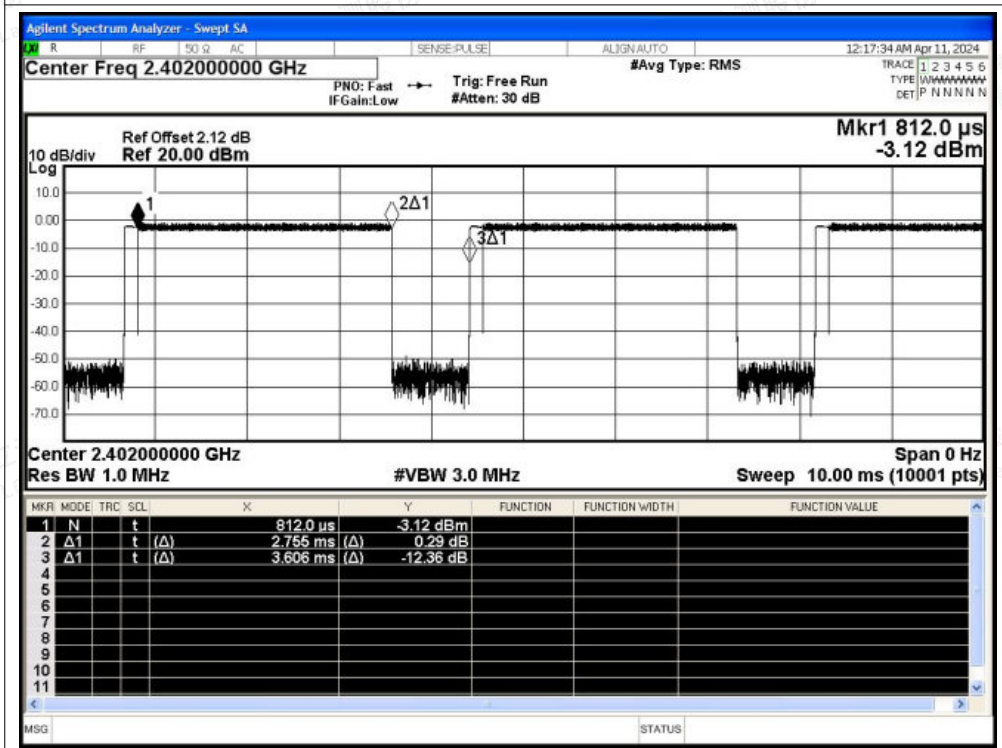




Duty Cycle NVNT 1-DH5 2480MHz Ant1

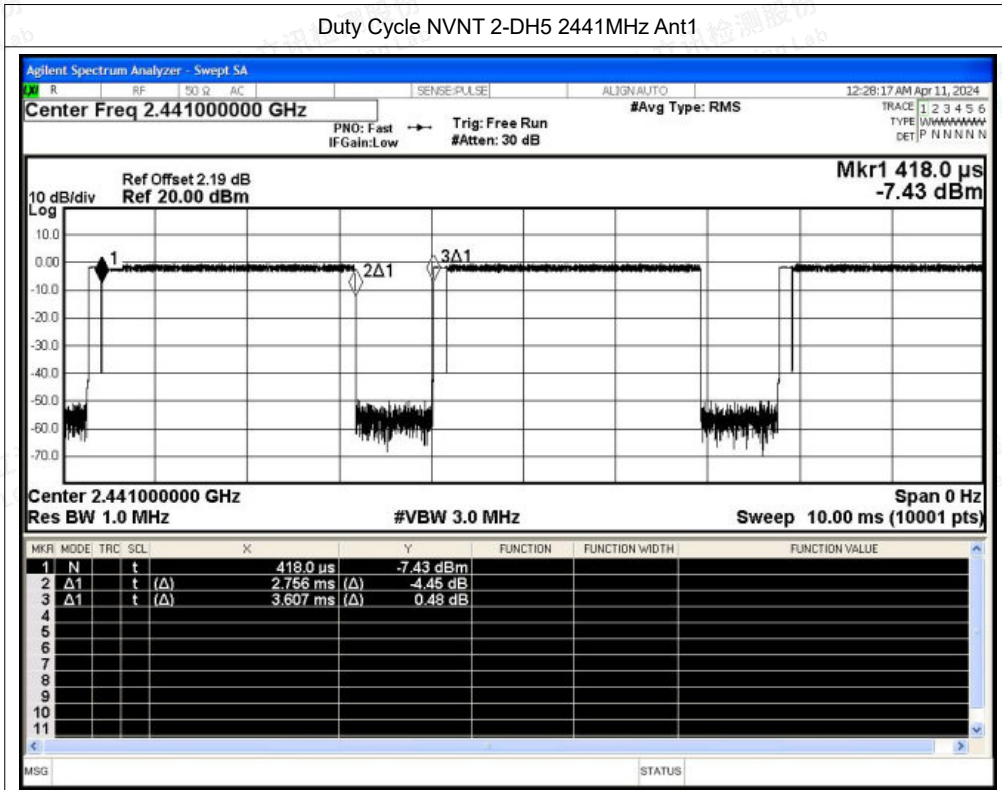


Duty Cycle NVNT 2-DH5 2402MHz Ant1

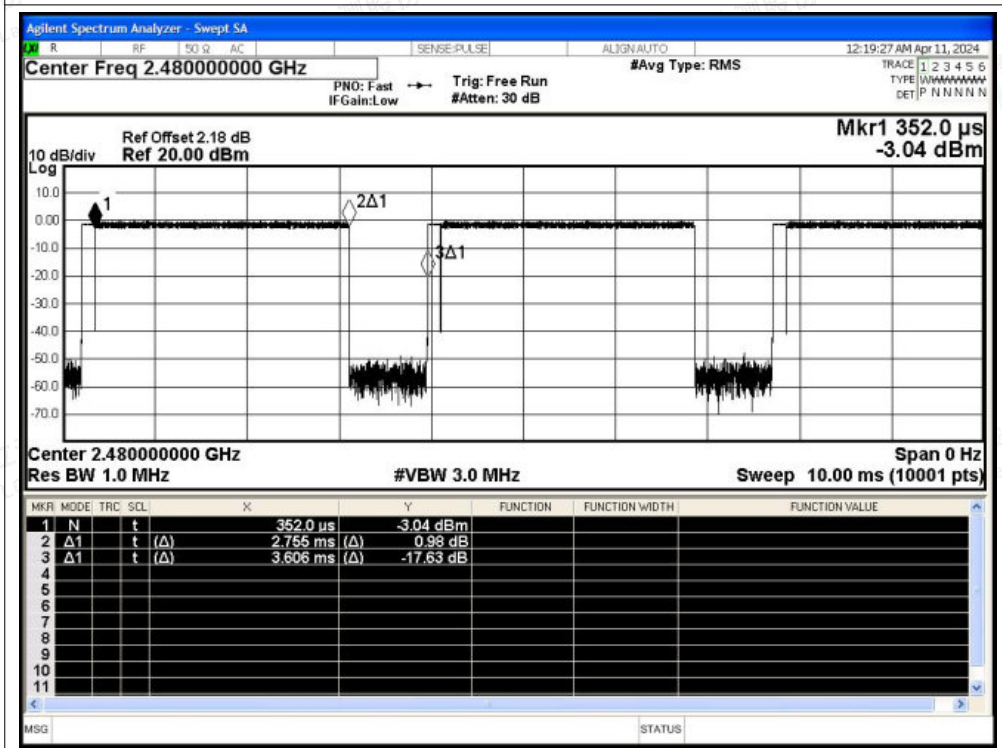




Duty Cycle NVNT 2-DH5 2441MHz Ant1



Duty Cycle NVNT 2-DH5 2480MHz Ant1





A.9 Restrict Band

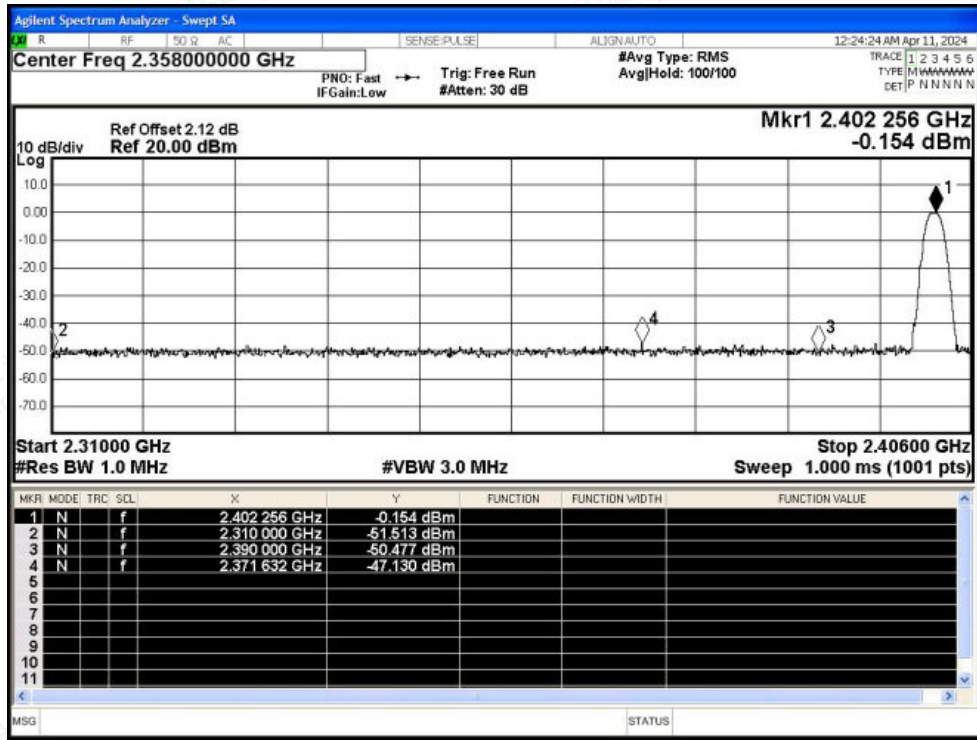
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-51.51	2	-	45.75	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.34	2	1.1	39.02	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2371.632	-47.13	2	-	50.13	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2382.384	-57.59	2	1.1	40.77	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.48	2	-	46.78	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.5	2	1.1	39.86	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.04	2	-	47.22	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.44	2	1.1	39.92	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2485.24	-44.82	2	-	52.44	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2488.576	-57.19	2	1.1	41.17	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.74	2	-	46.52	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.2	2	1.1	40.16	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.82	2	-	47.44	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.3	2	1.17	40.13	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2367.408	-46.61	2	-	50.65	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2374.8	-57.56	2	1.17	40.87	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-51.77	2	-	45.49	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.08	2	1.17	40.35	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-46.83	2	-	50.43	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-56.6	2	1.17	41.83	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.56	-44.89	2	-	52.37	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.608	-56.46	2	1.17	41.97	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-48.69	2	-	48.57	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.83	2	1.17	40.6	Average	54	Pass



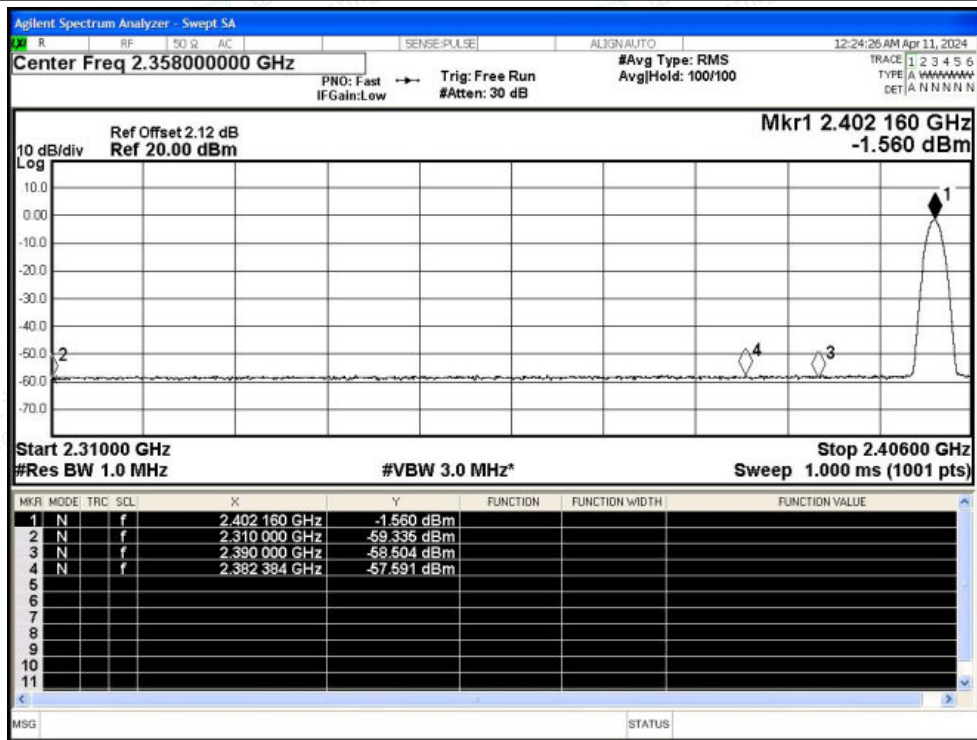


Test Graphs

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

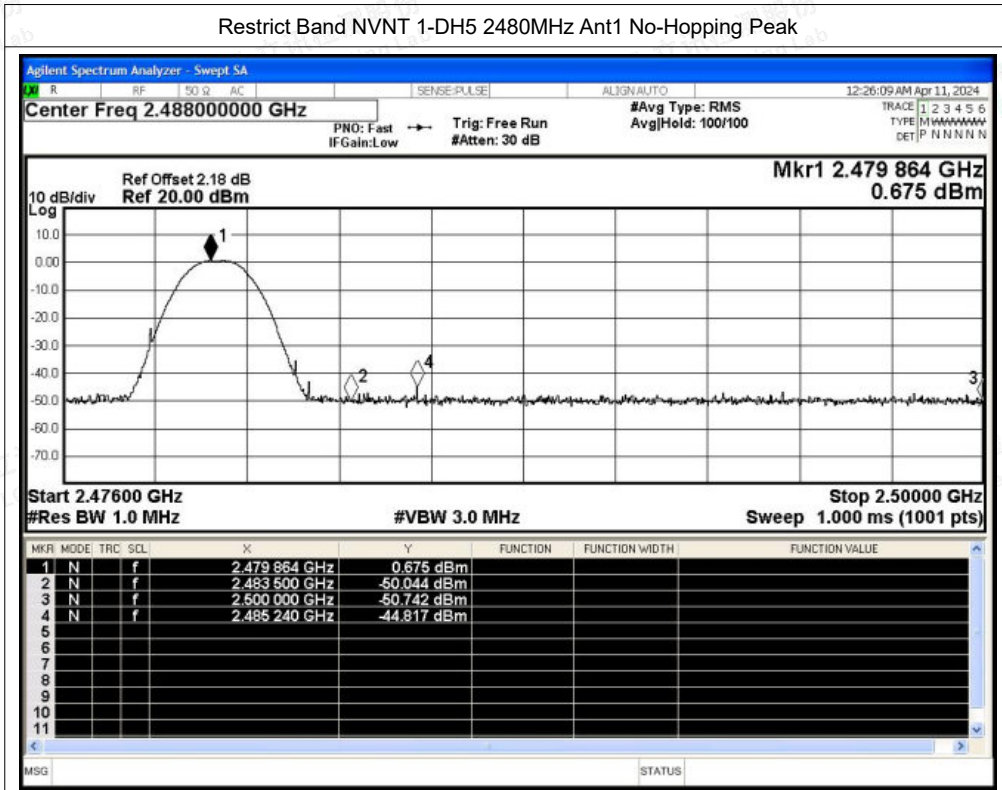


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

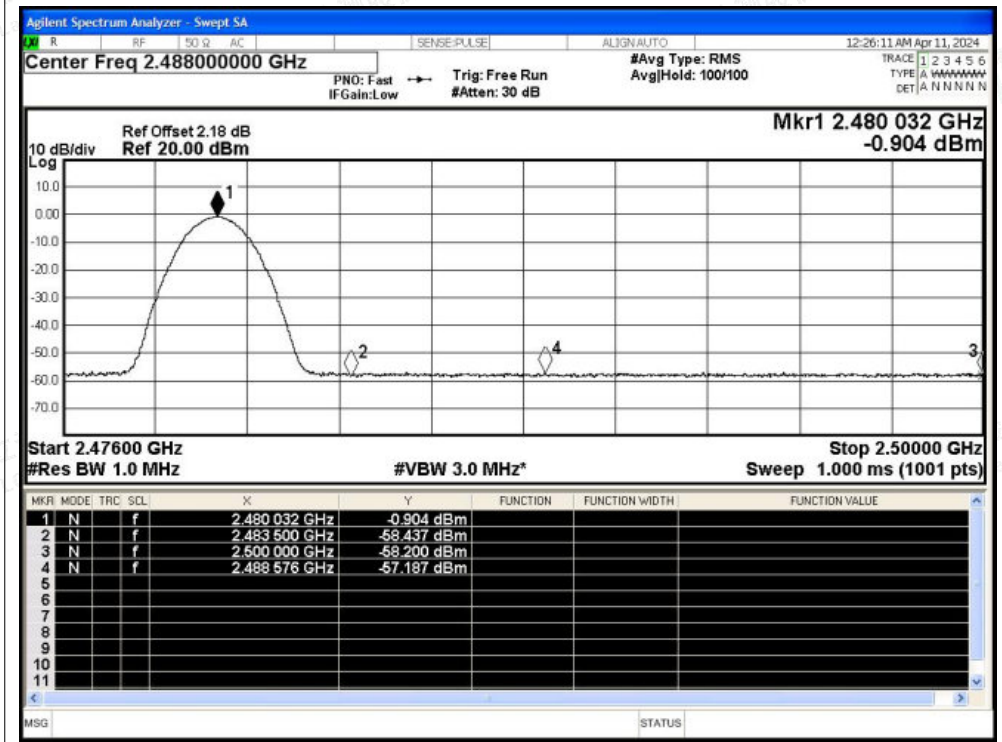




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

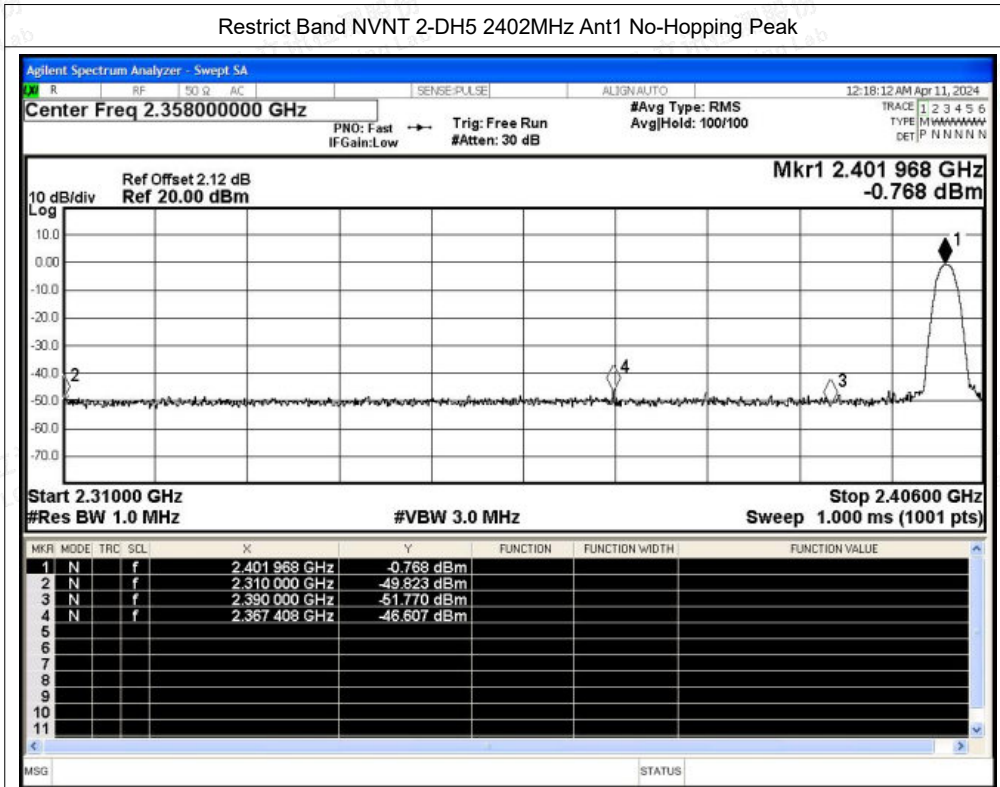


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

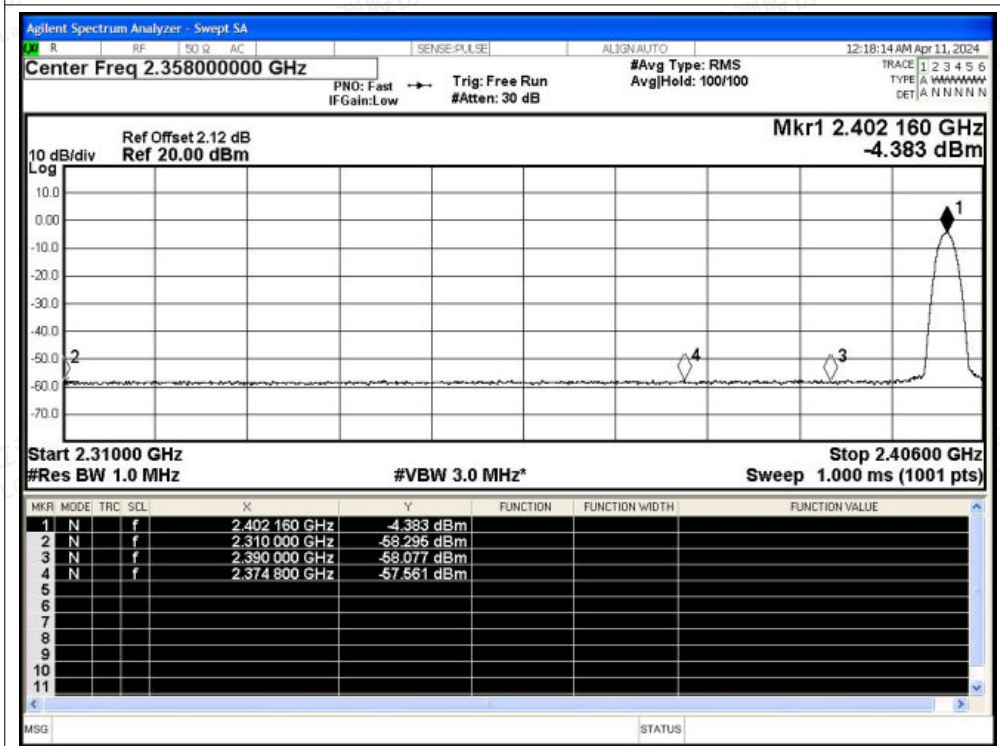




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

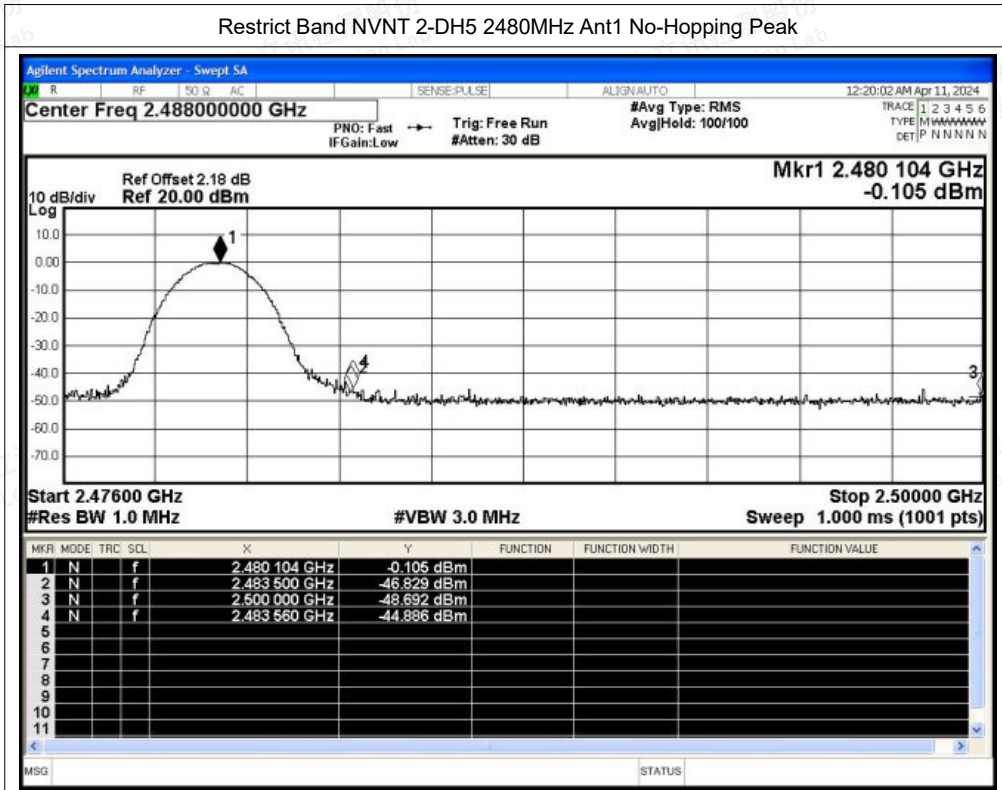


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average





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



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

