



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: ROBOTIC POOL CLEANER

Test Model: OS7010

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen
Supervised by:	Nick Peng



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A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.918	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.914	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.841	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.262	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.27	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.277	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.287	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.278	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.276	N/A	Pass

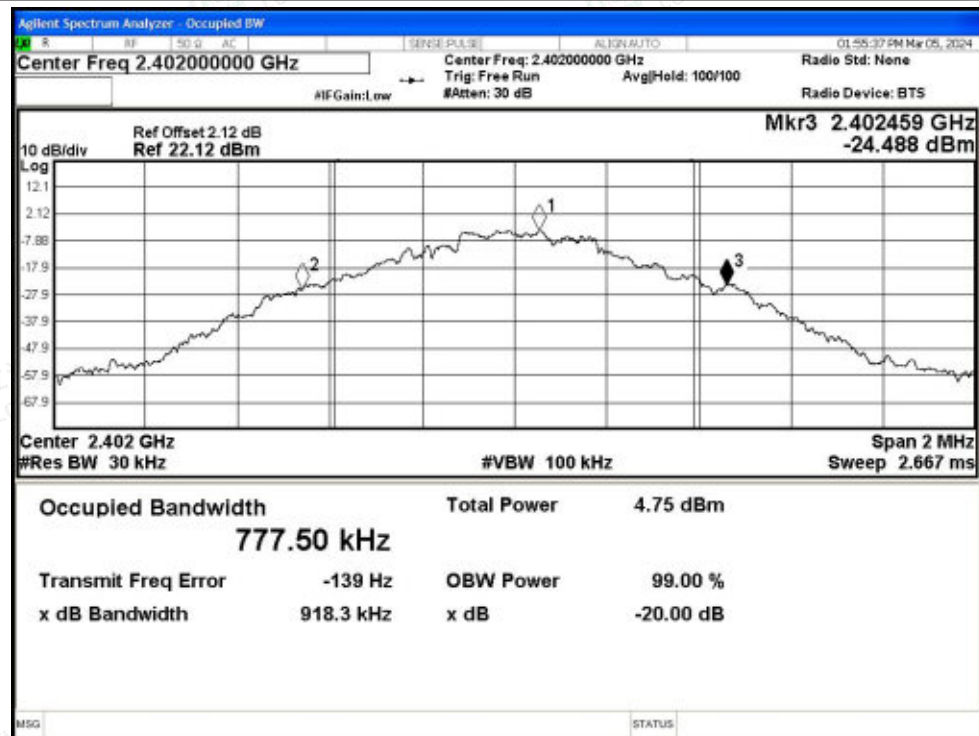


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Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

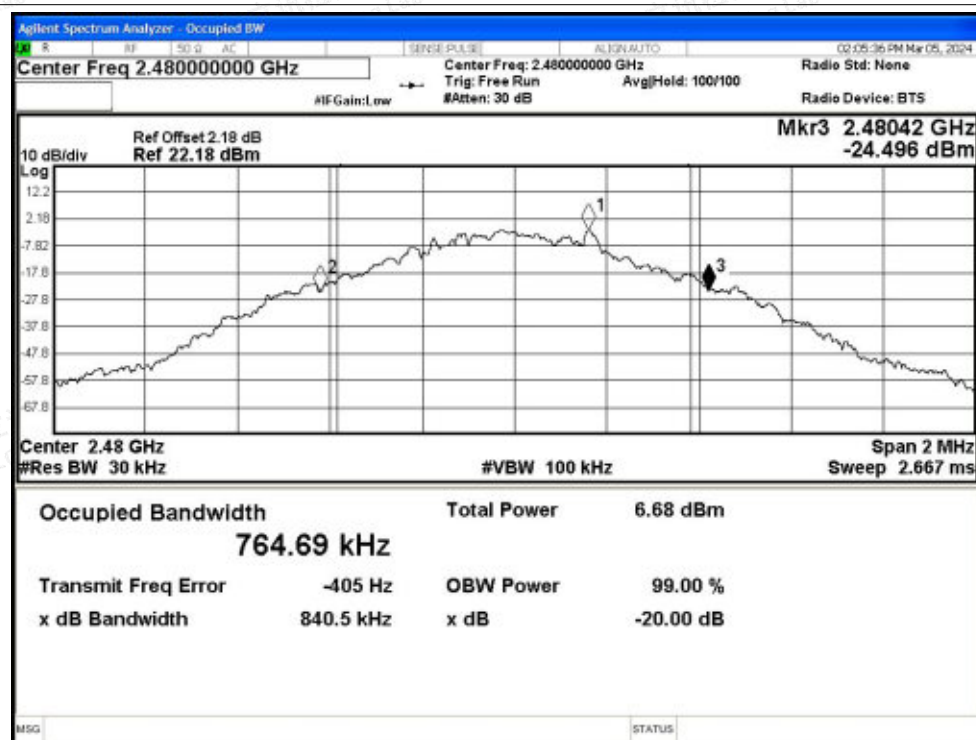


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

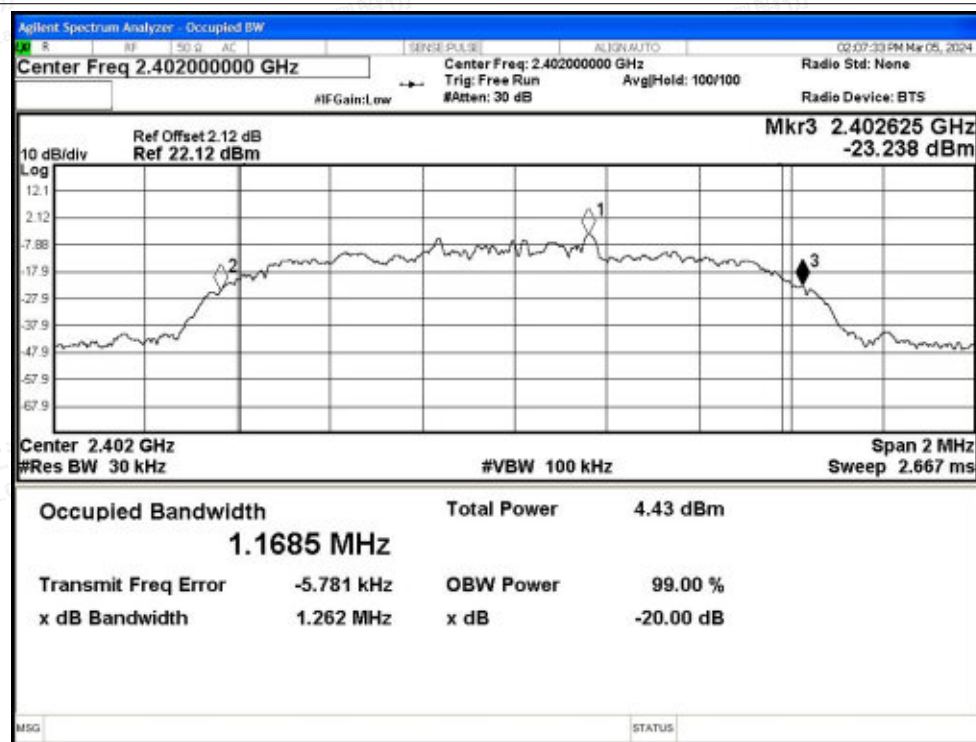




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

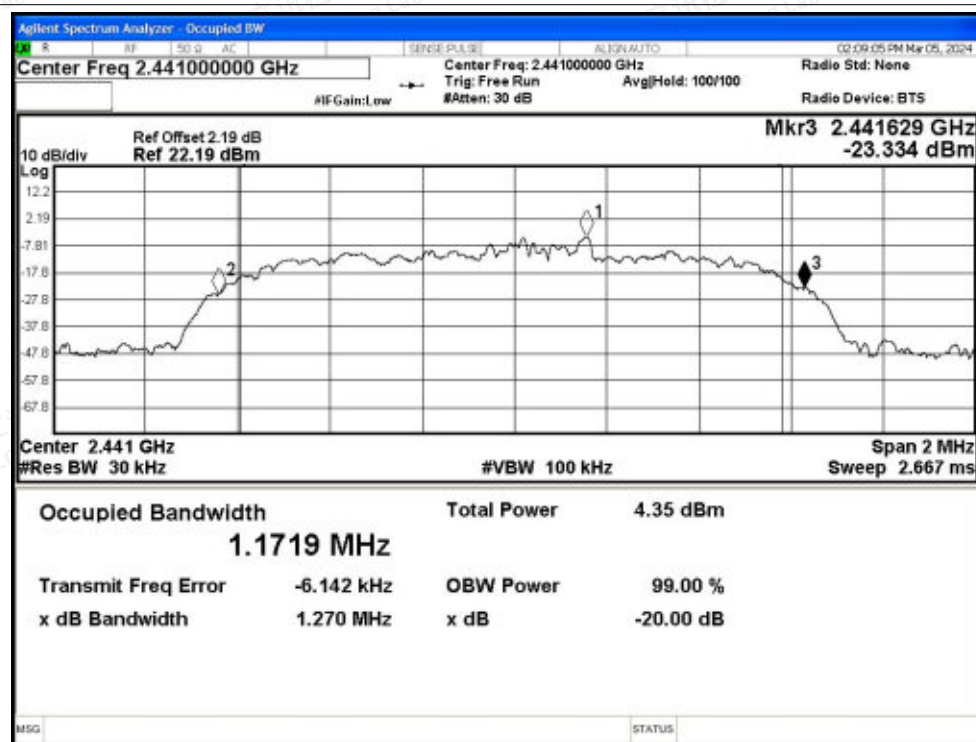


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1





-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

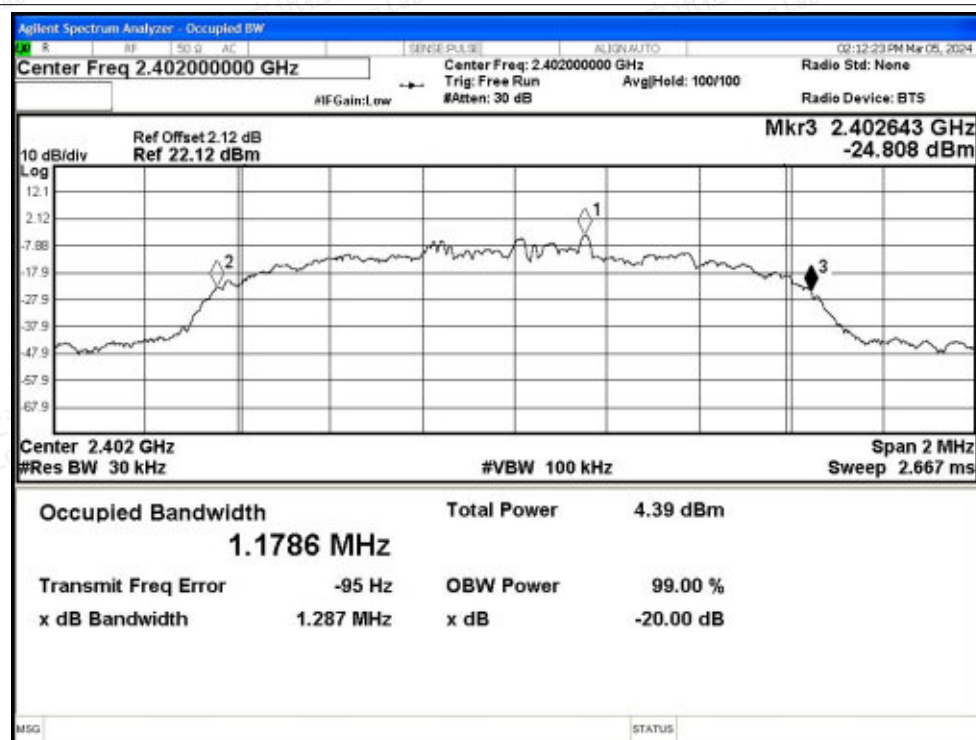


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

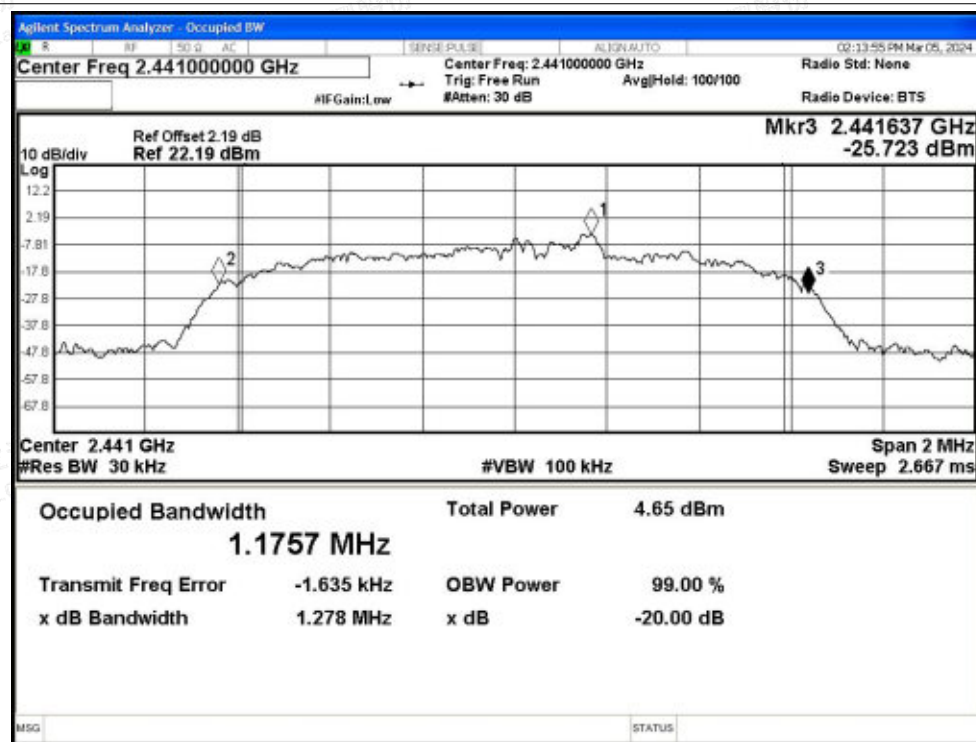


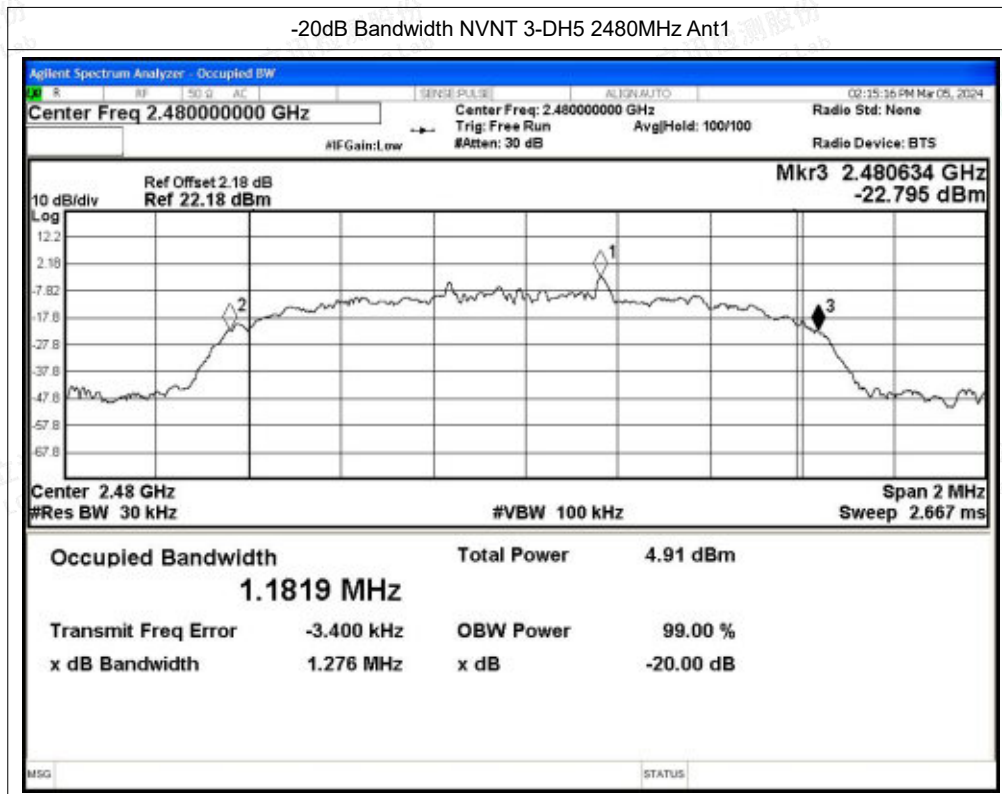


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1







A.2 Maximum Peak Conducted Output Power

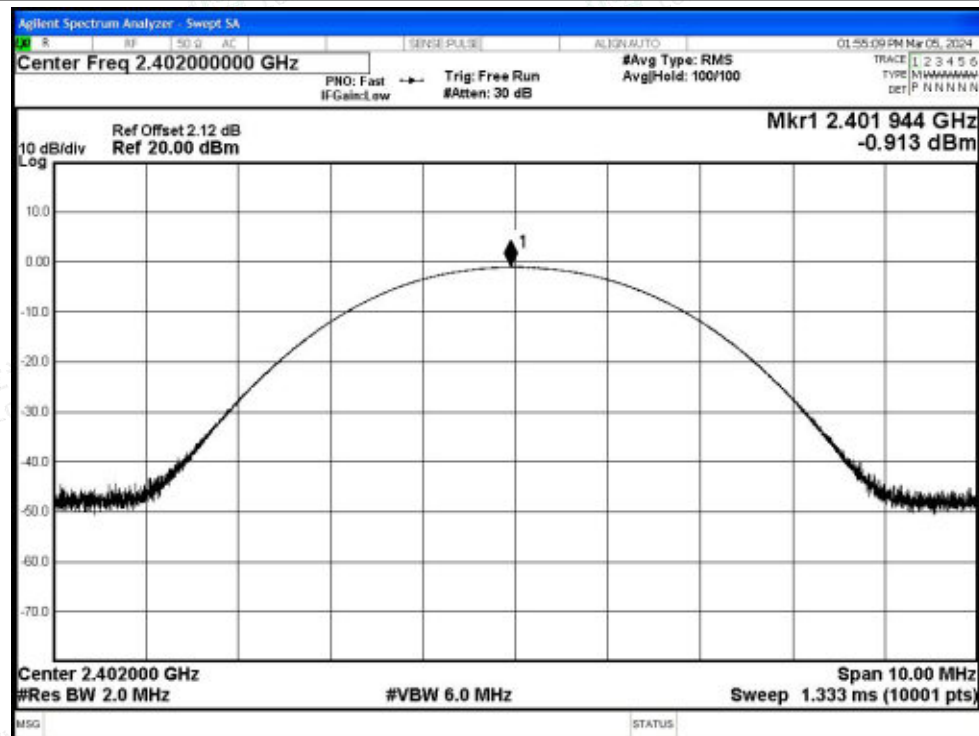
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.91	21	Pass
NVNT	1-DH5	2441	Ant1	0.24	21	Pass
NVNT	1-DH5	2480	Ant1	0.97	21	Pass
NVNT	2-DH5	2402	Ant1	-0.78	21	Pass
NVNT	2-DH5	2441	Ant1	-0.37	21	Pass
NVNT	2-DH5	2480	Ant1	0.32	21	Pass
NVNT	3-DH5	2402	Ant1	-0.68	21	Pass
NVNT	3-DH5	2441	Ant1	-0.34	21	Pass
NVNT	3-DH5	2480	Ant1	0.25	21	Pass



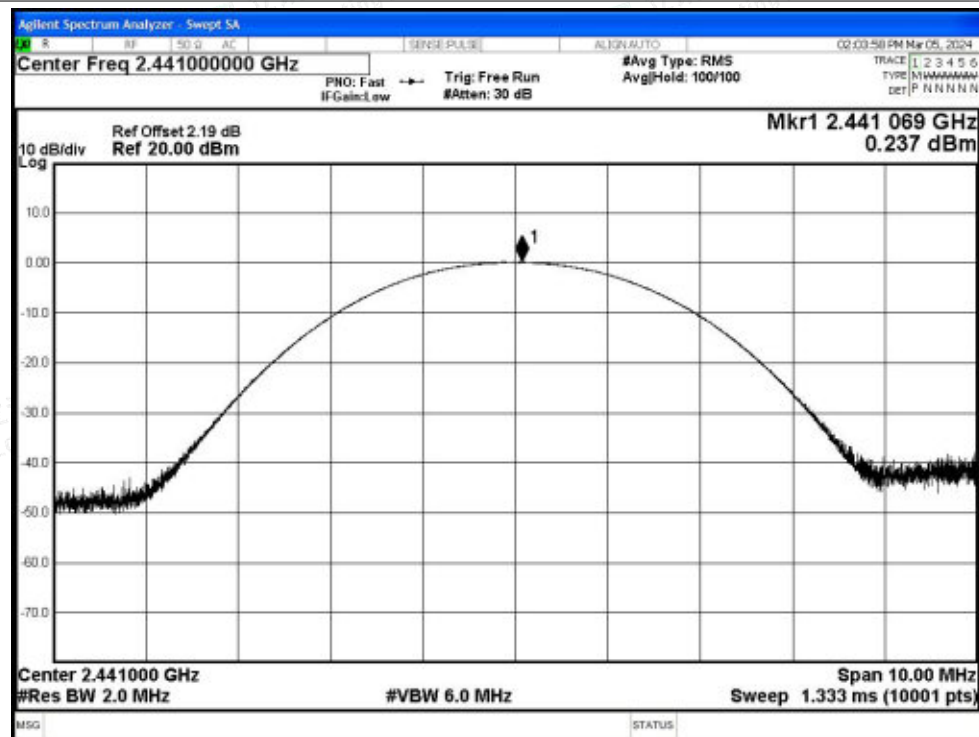


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

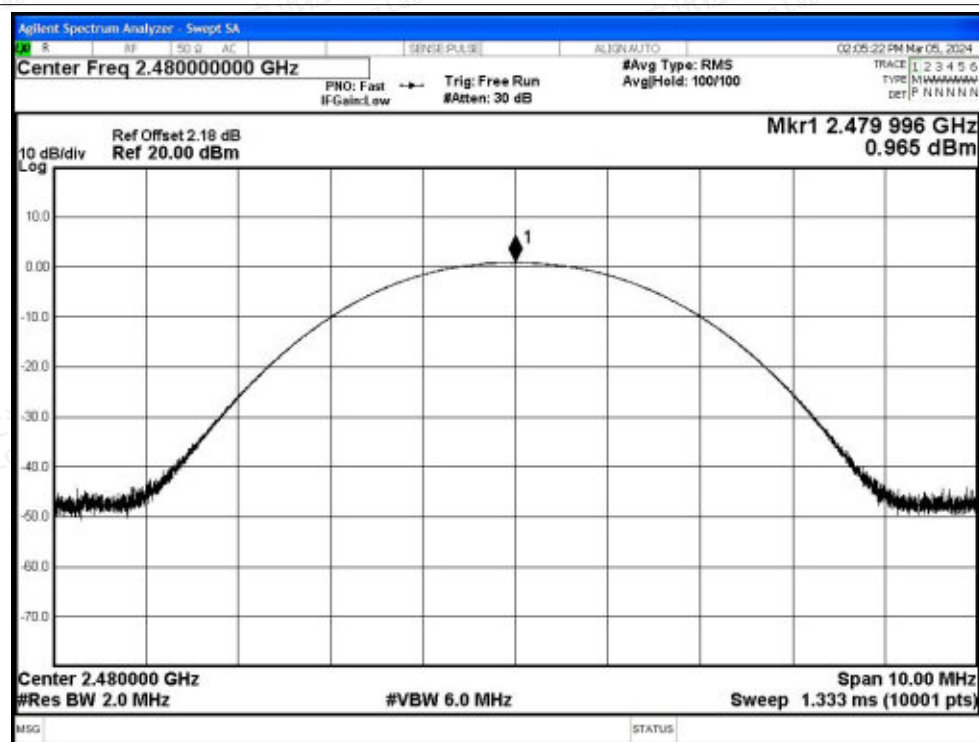


Power NVNT 1-DH5 2441MHz Ant1

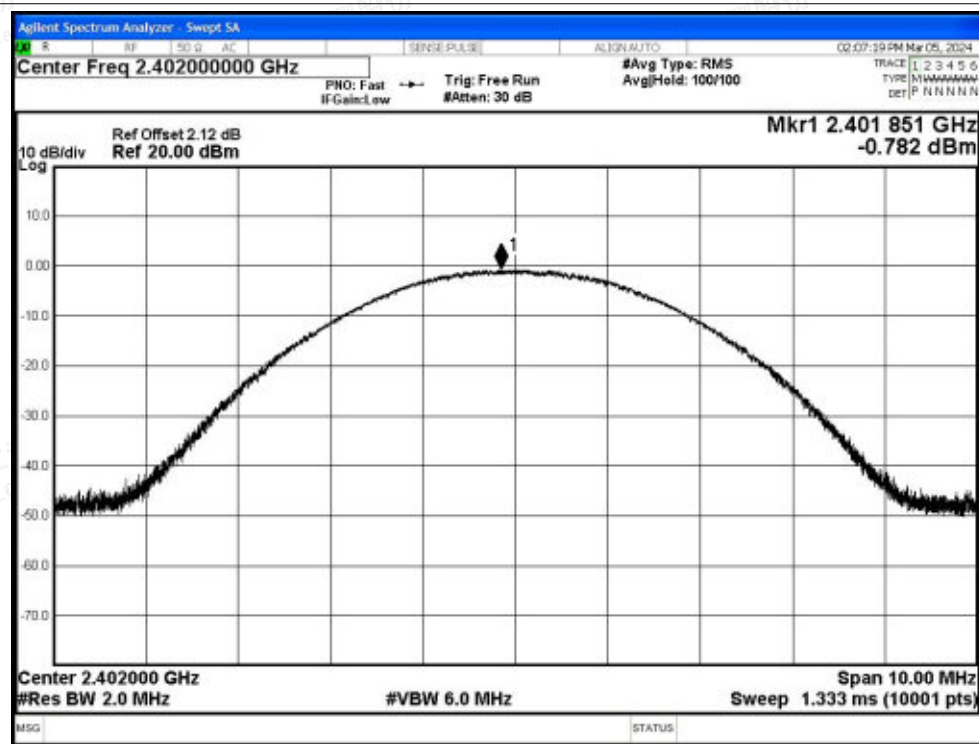




Power NVNT 1-DH5 2480MHz Ant1

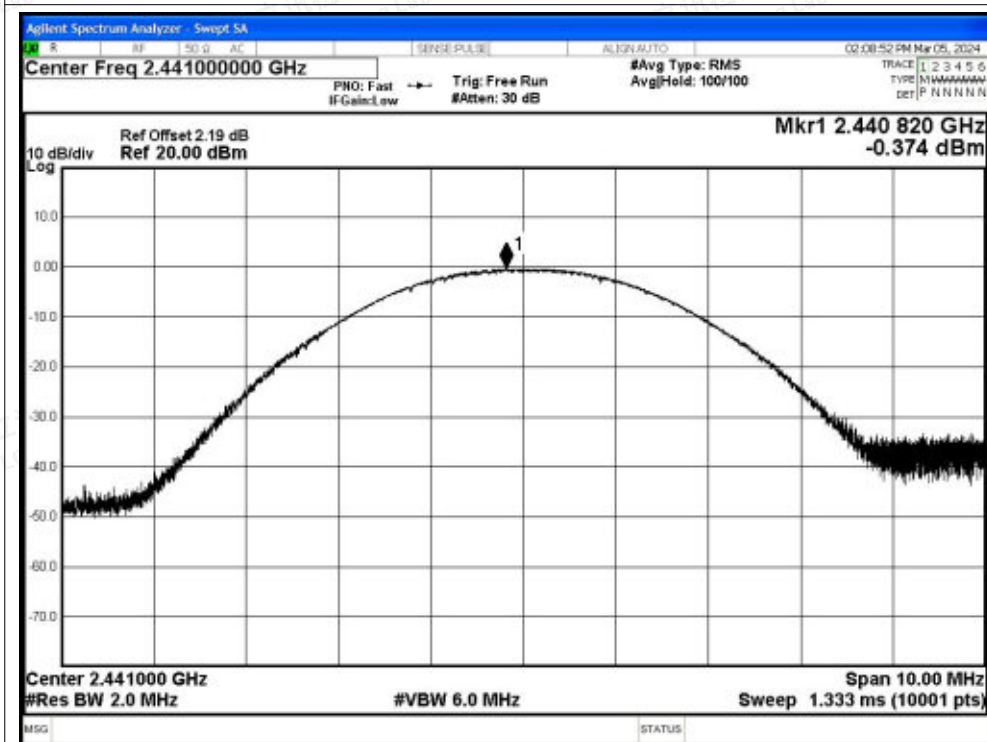


Power NVNT 2-DH5 2402MHz Ant1

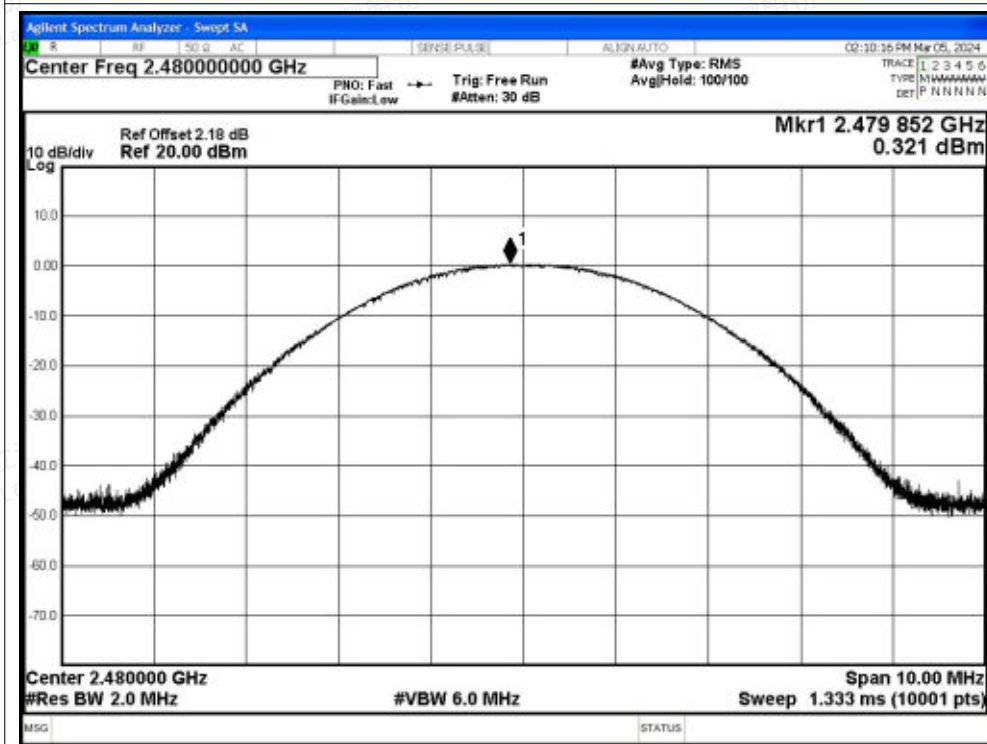




Power NVNT 2-DH5 2441MHz Ant1

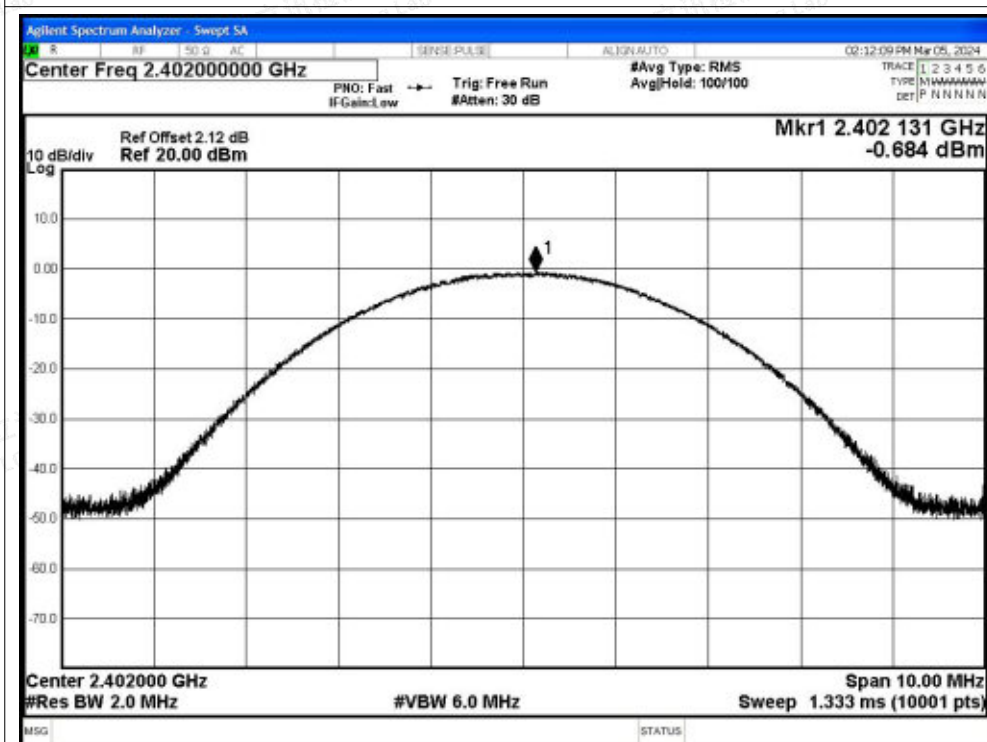


Power NVNT 2-DH5 2480MHz Ant1

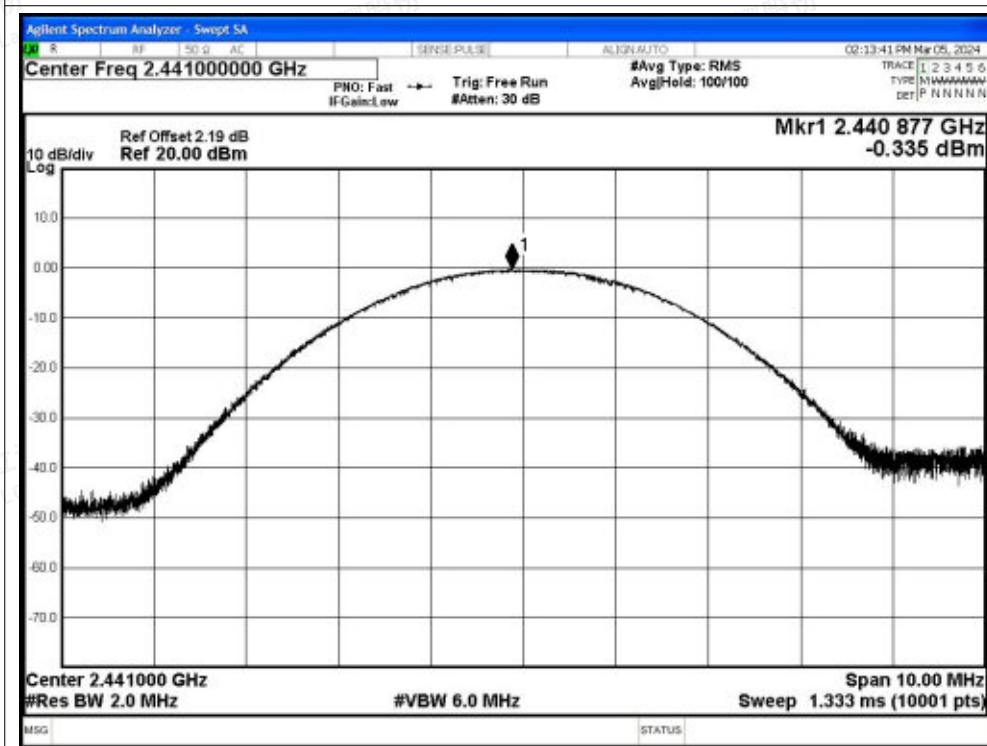


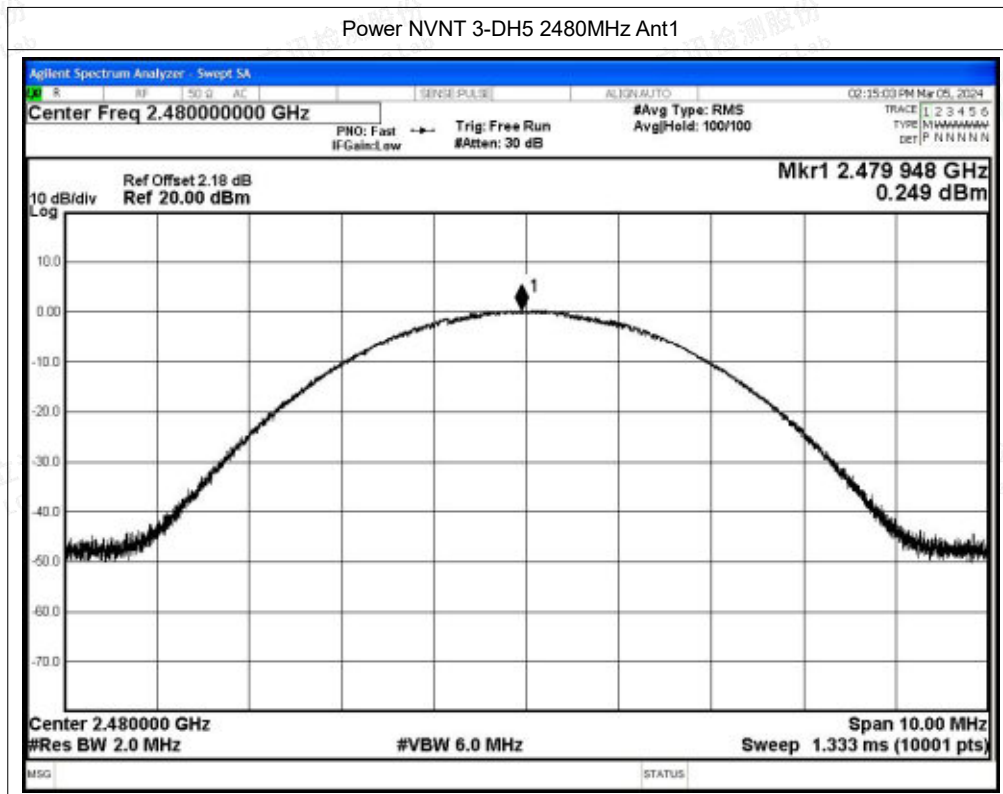


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1







A.3 Carrier Frequencies Separation

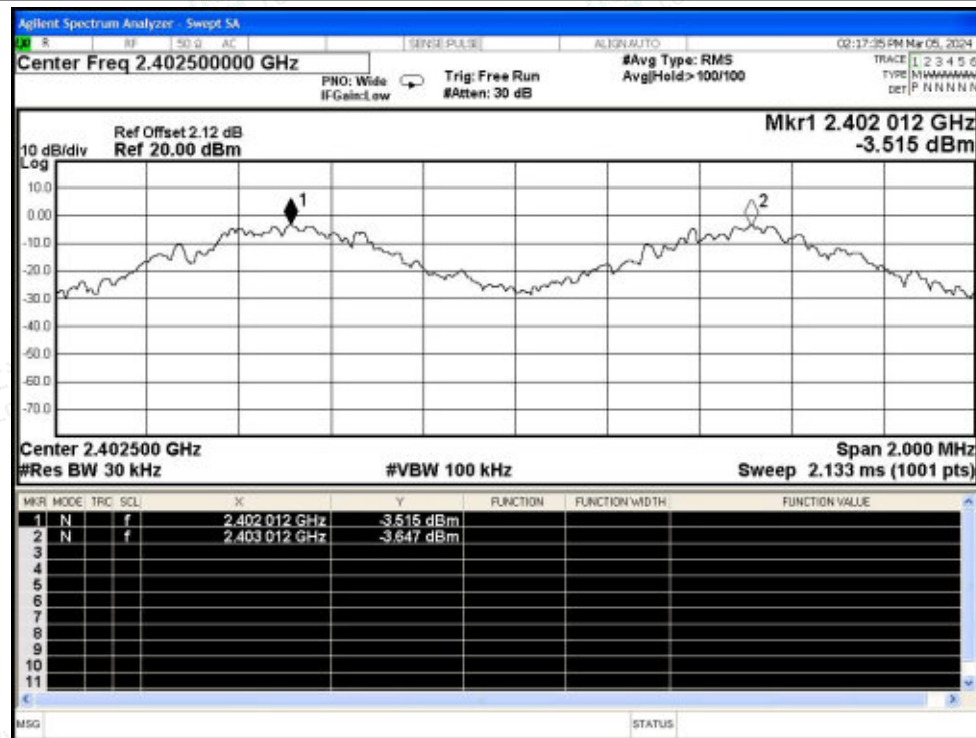
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.012	2403.012	1	0.612	Pass
NVNT	2-DH5	Ant1	2402.01	2403.17	1.16	0.851	Pass
NVNT	3-DH5	Ant1	2402.176	2403.038	0.862	0.858	Pass



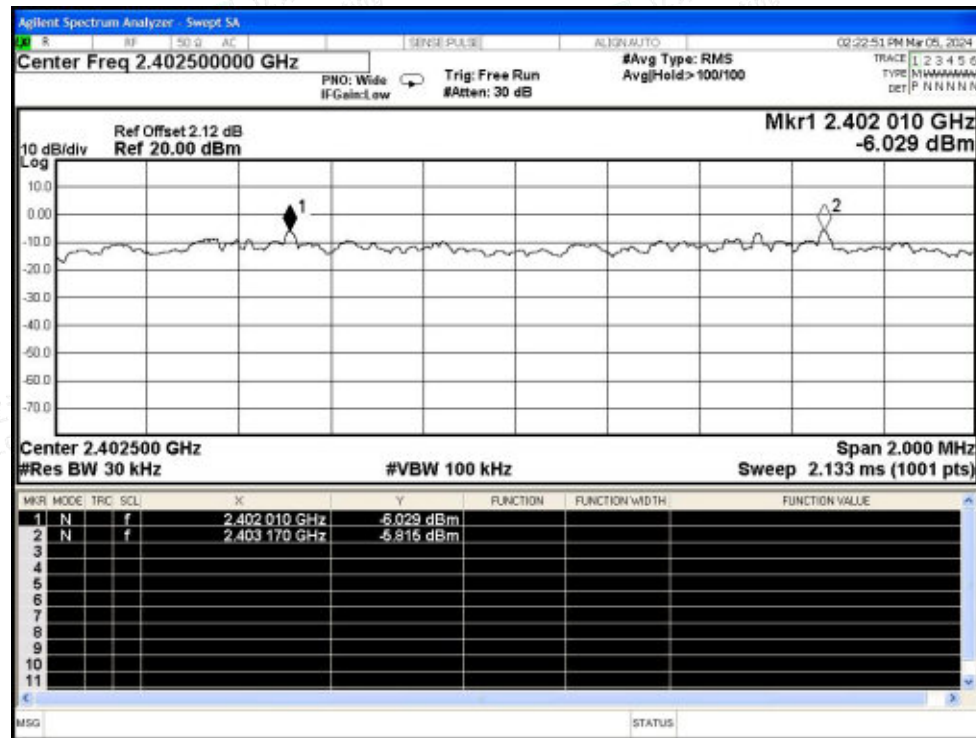


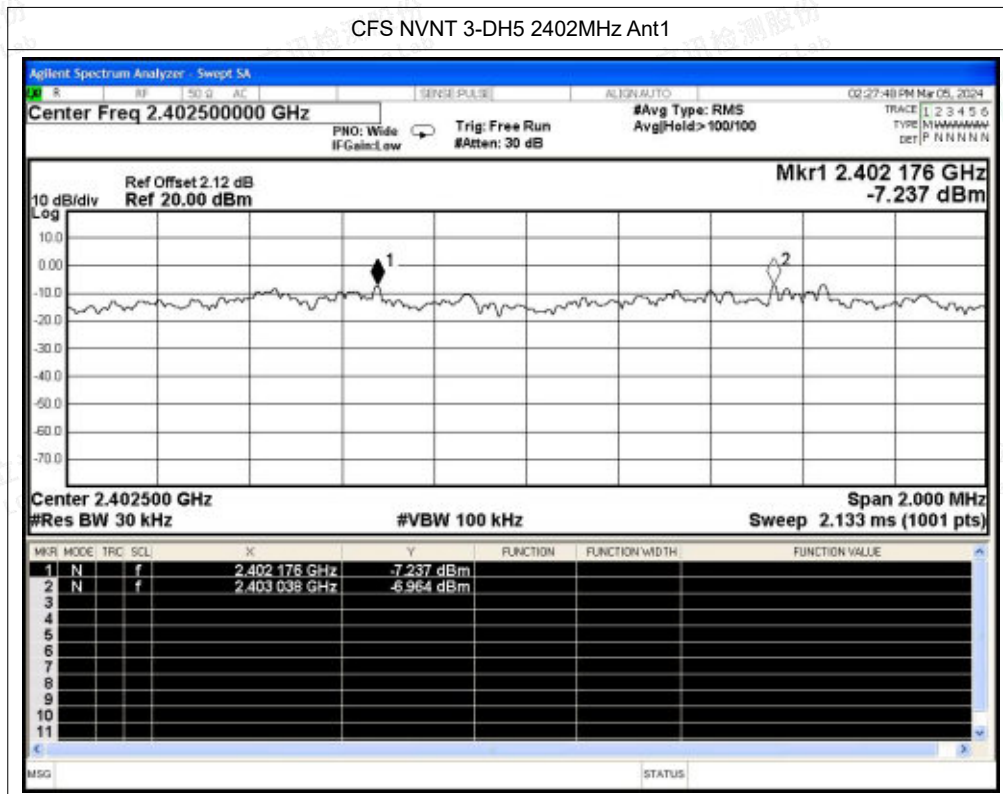
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1







A.4 Number of Hopping Channel

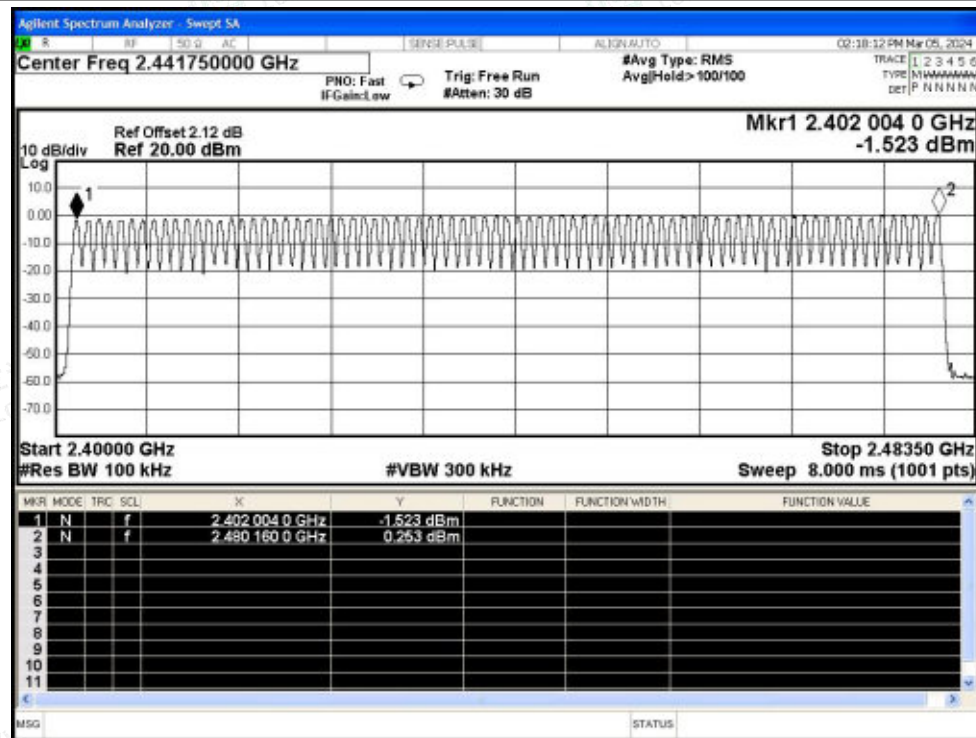
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass



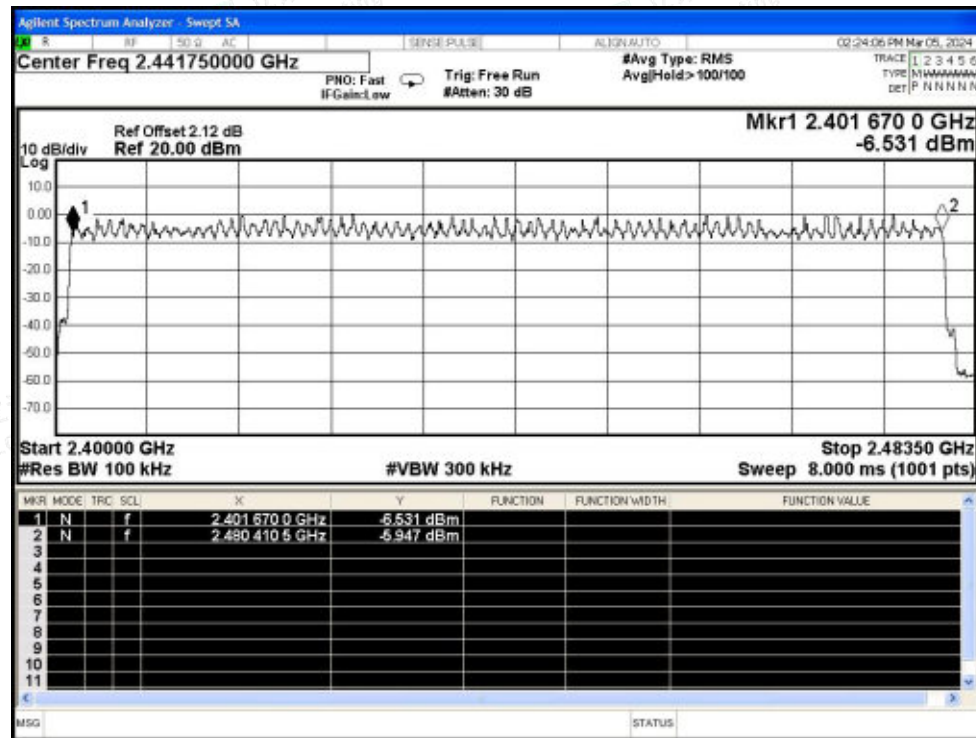


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1

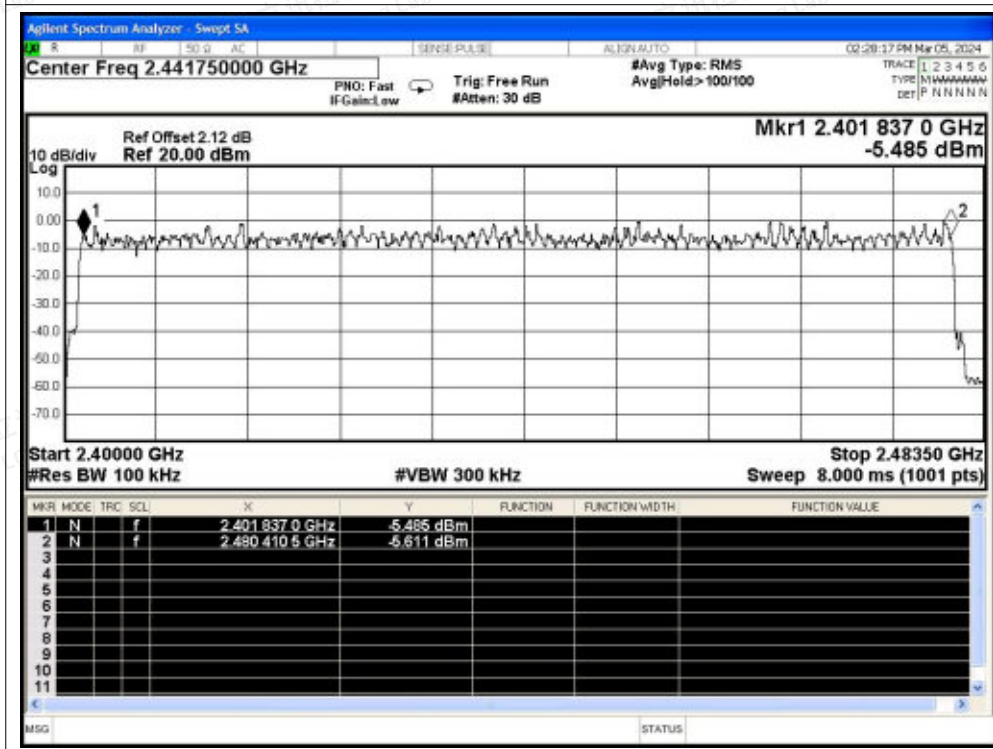


Hopping No. NVNT 2-DH5 2402MHz Ant1





Hopping No. NVNT 3-DH5 2402MHz Ant1





A.5 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	2.882	305.492	106	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.882	288.2	100	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.887	300.248	104	31600	400	Pass

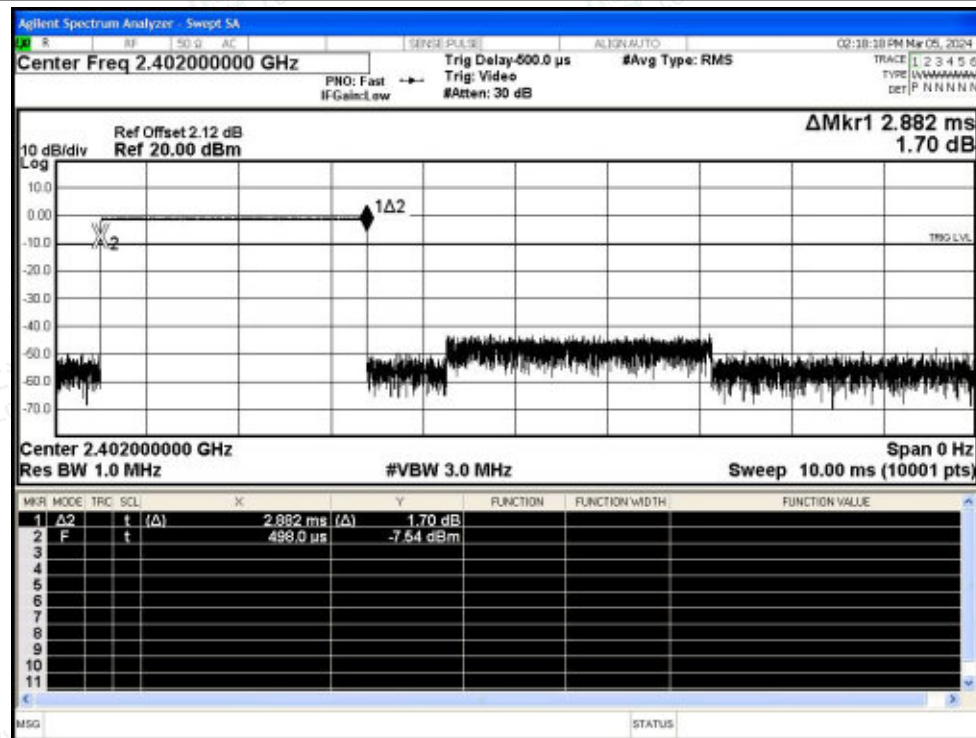


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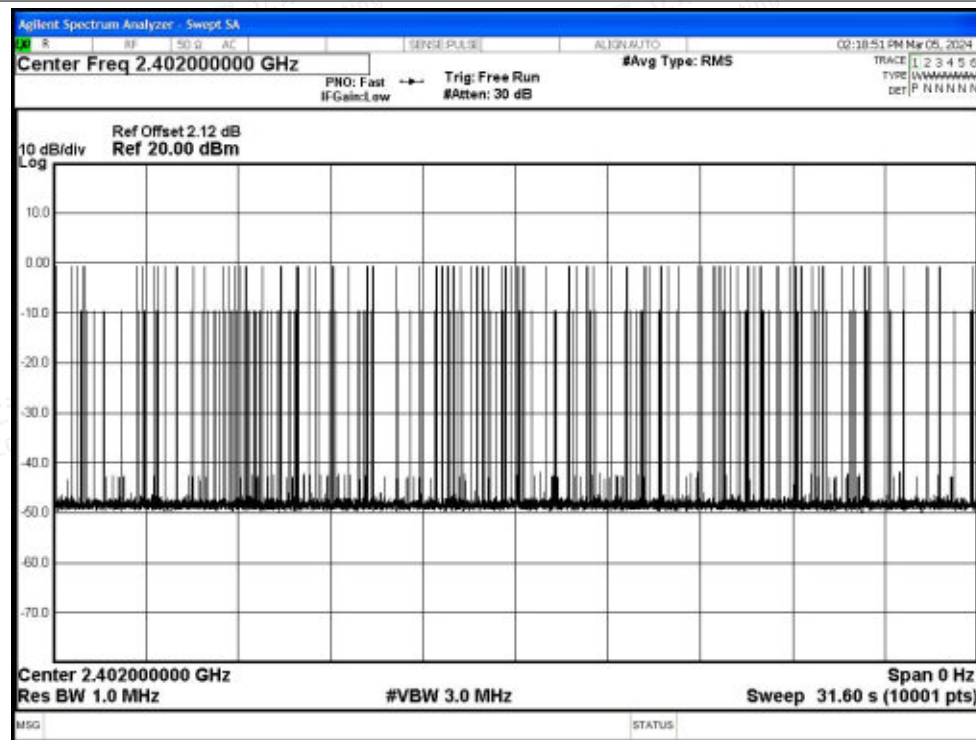


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

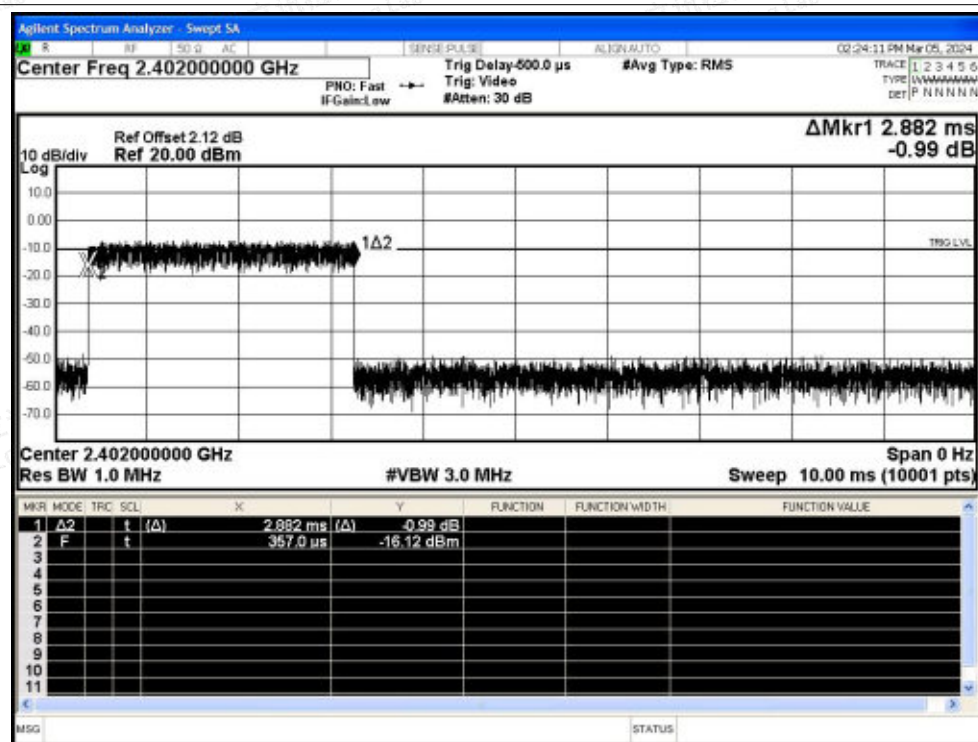


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

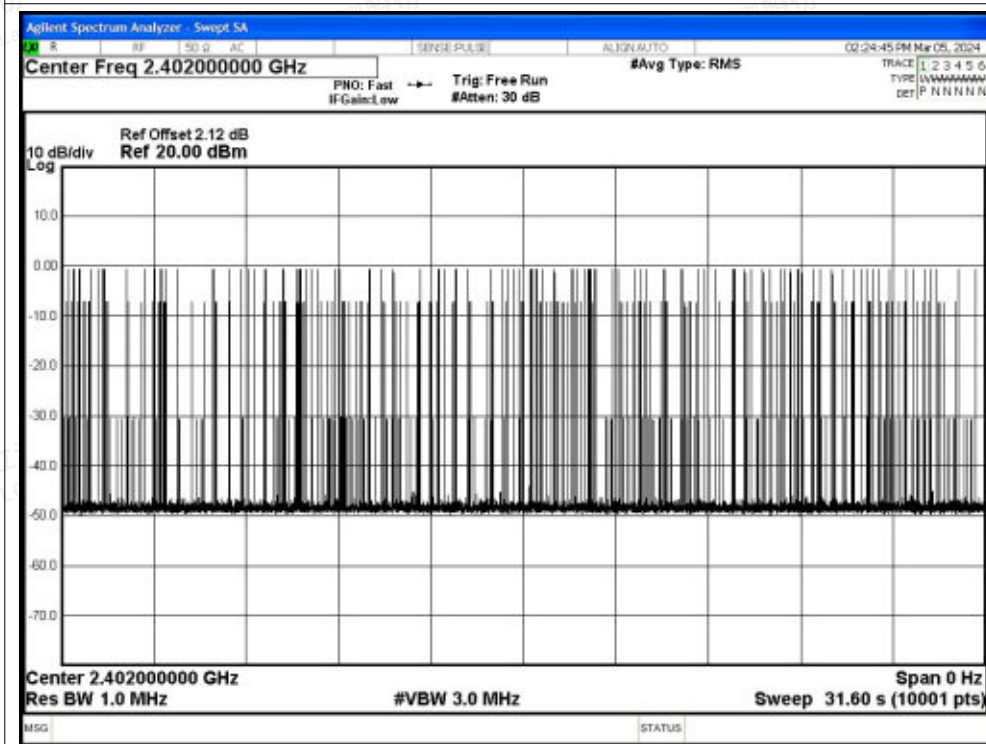




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

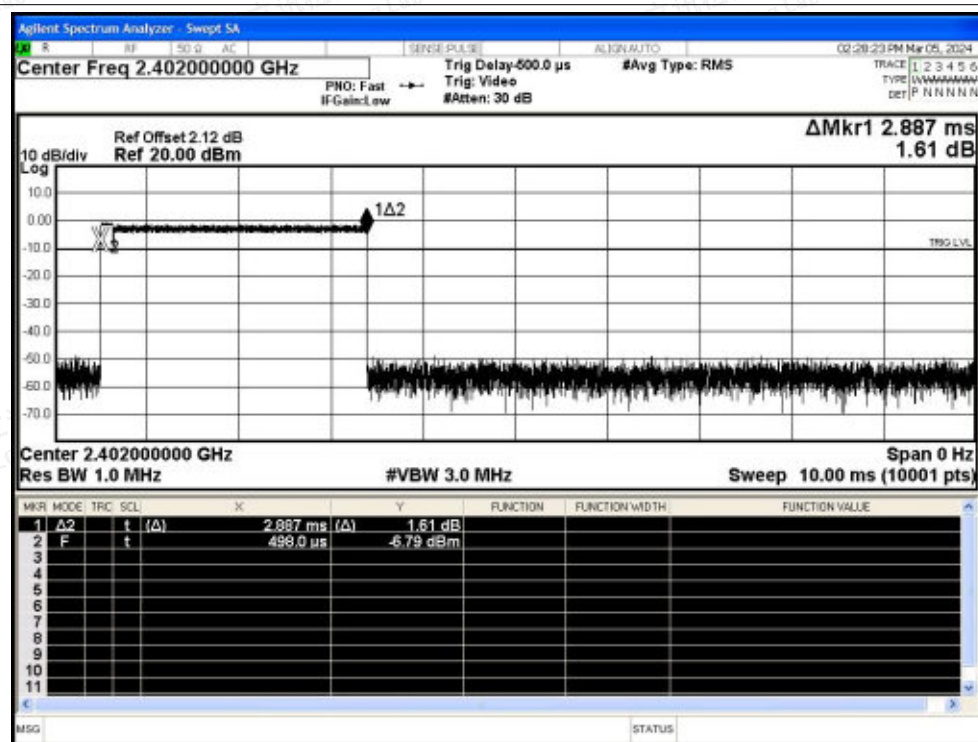


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

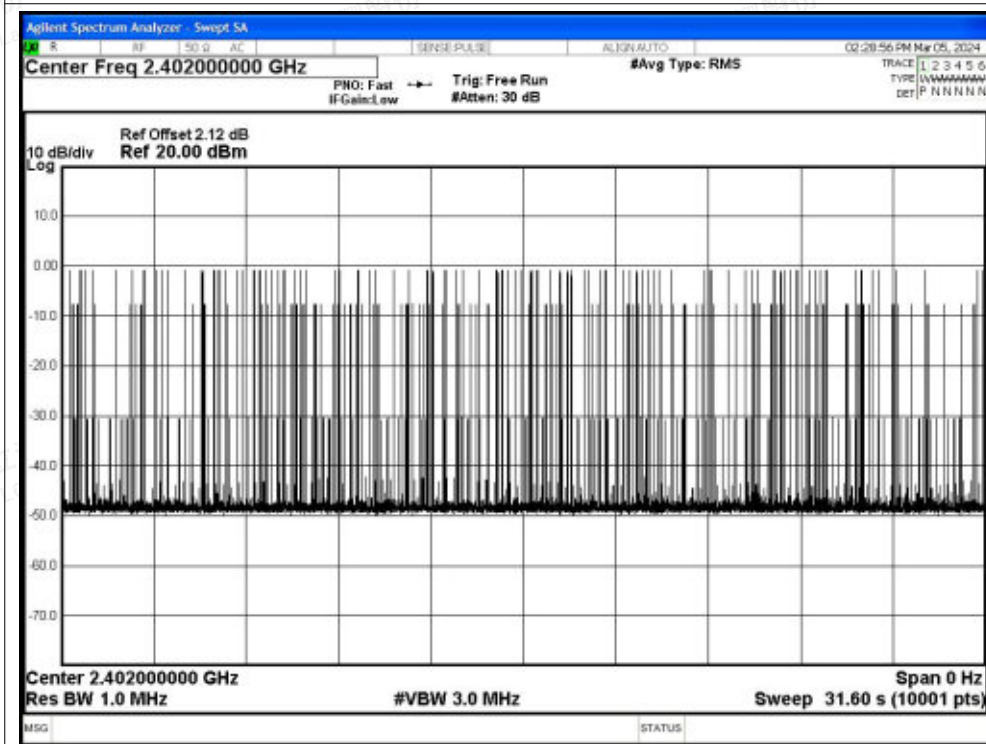




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated





A.6 Band Edge

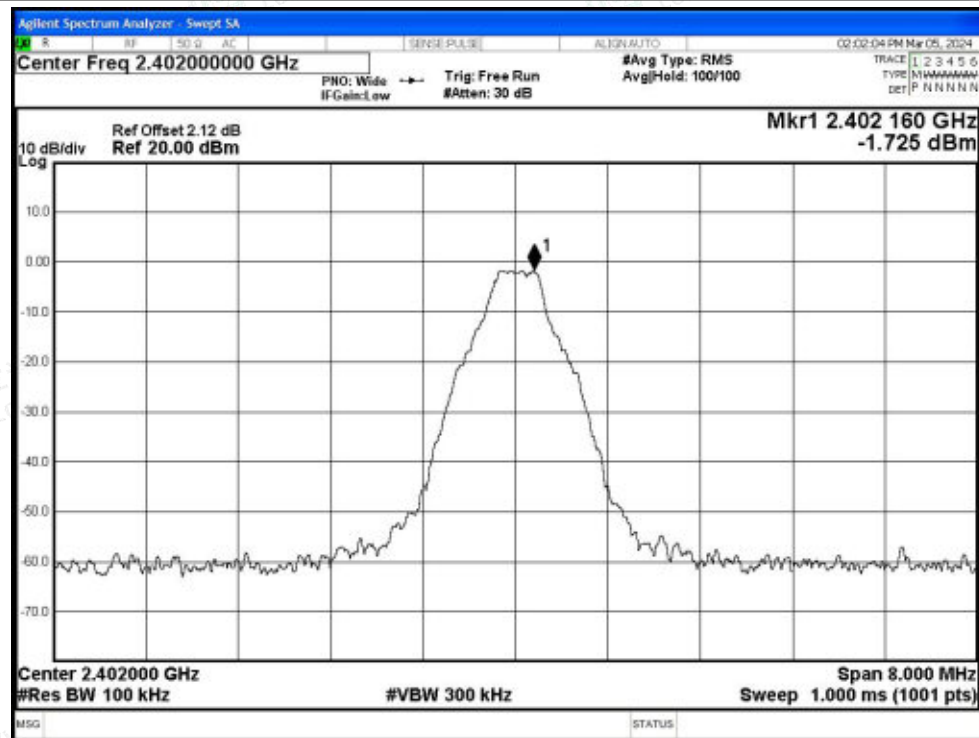
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-55.5	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-57.26	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-53.81	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-56.28	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-54.11	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-57.35	-20	Pass



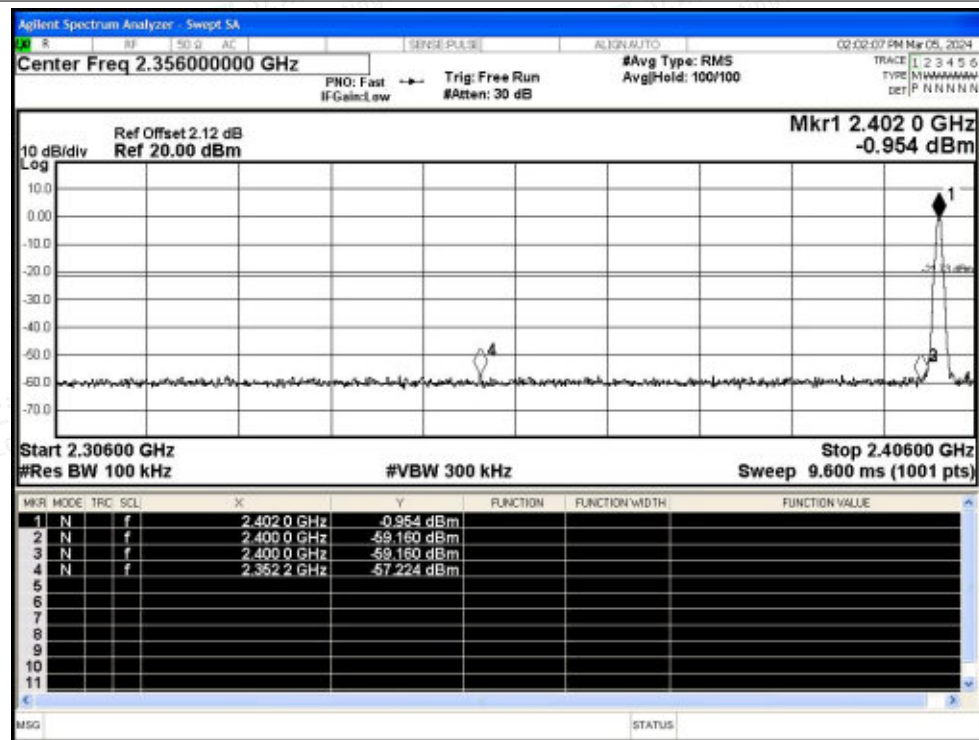


Test Graphs

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

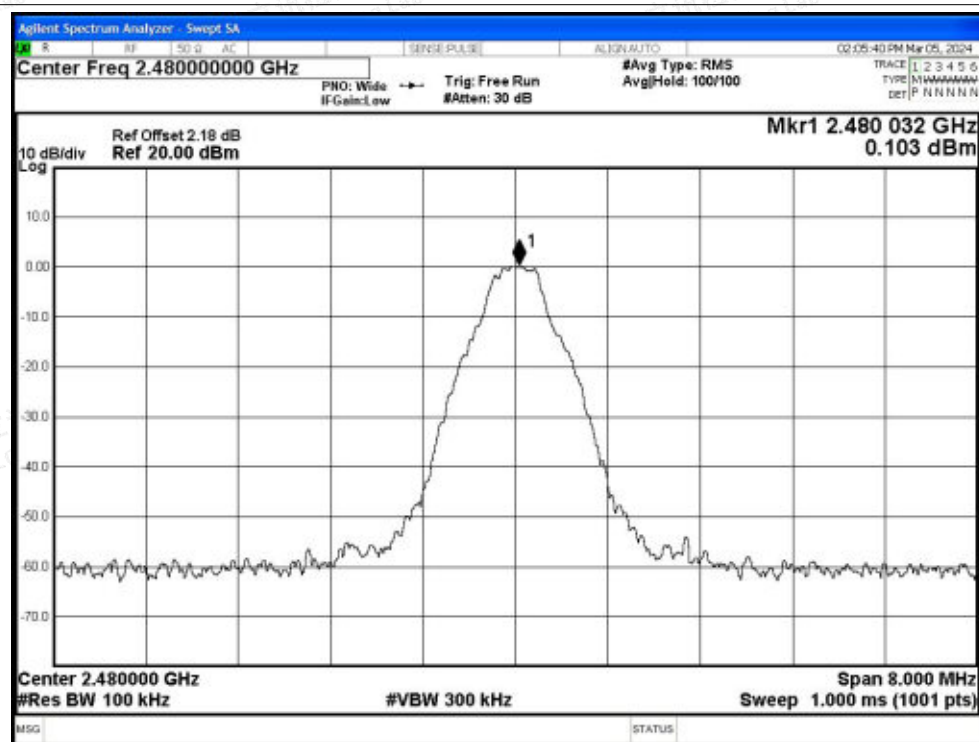


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

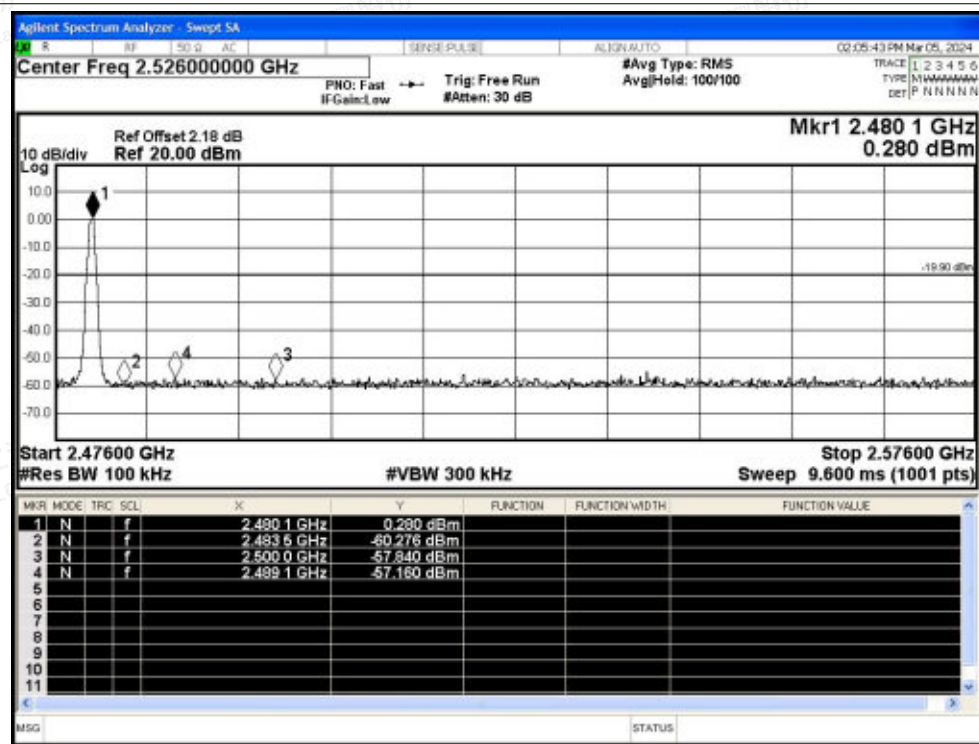




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

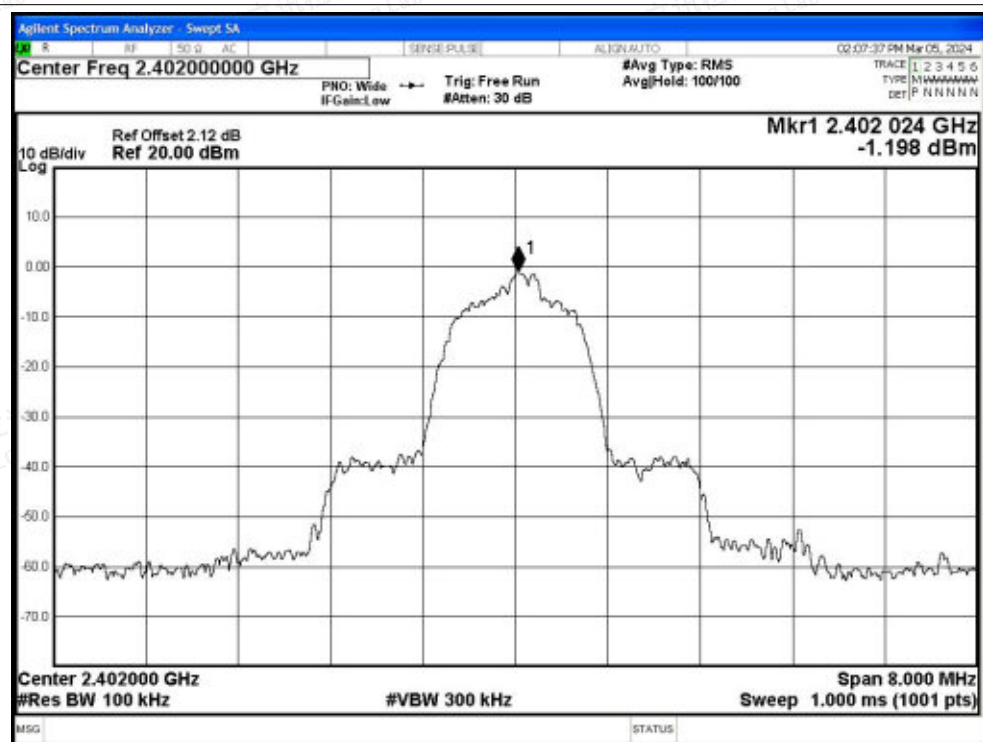


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

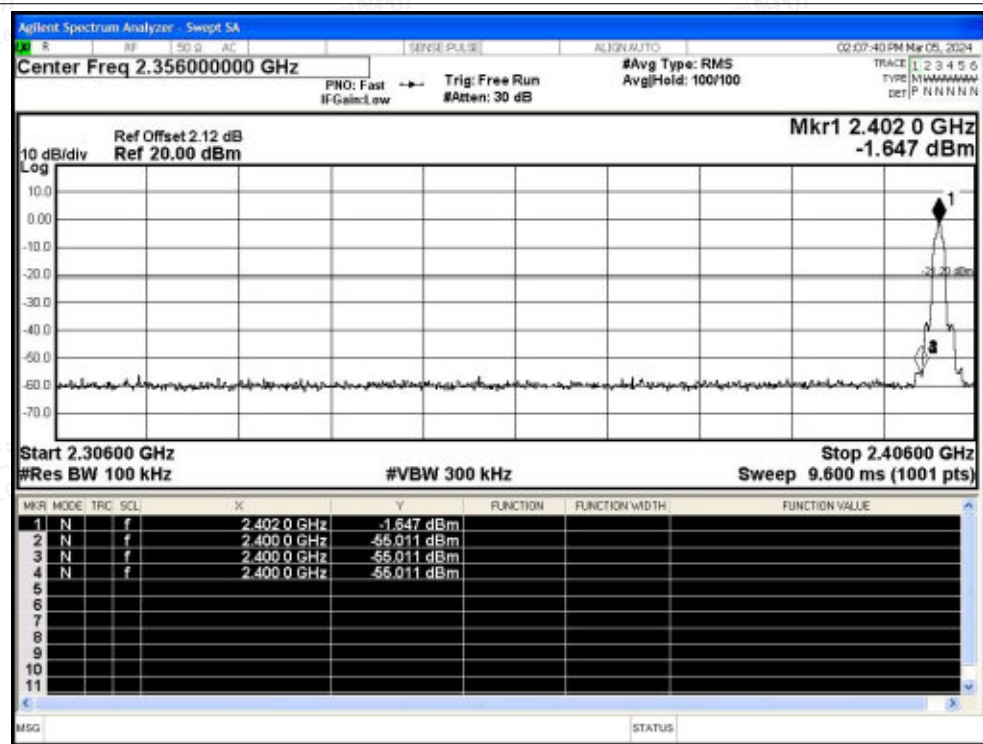




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

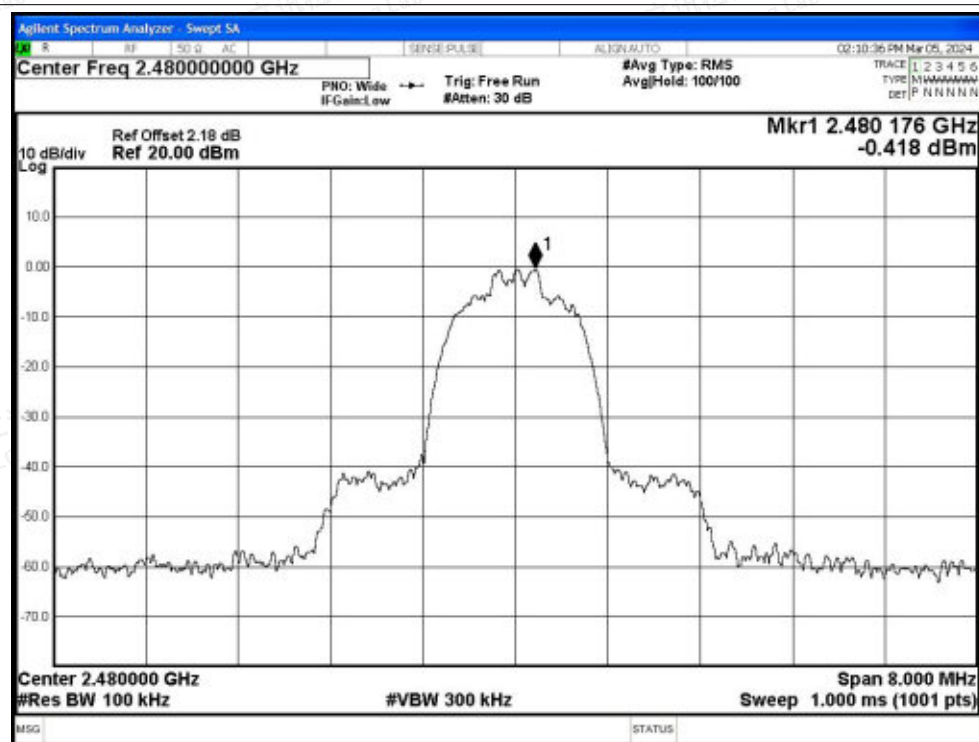


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

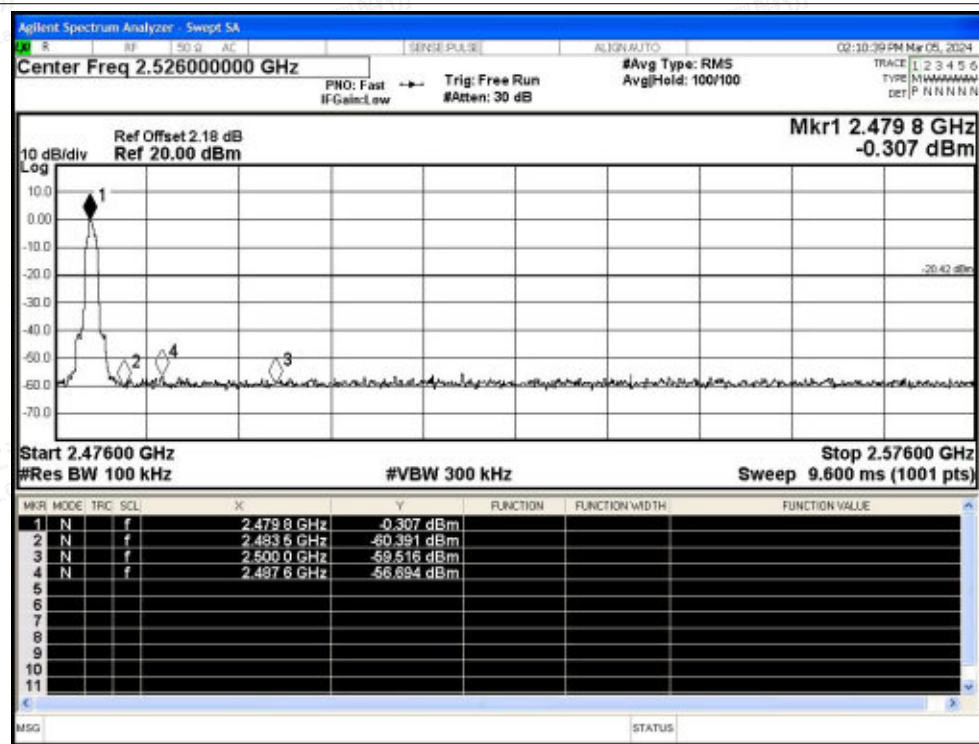




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

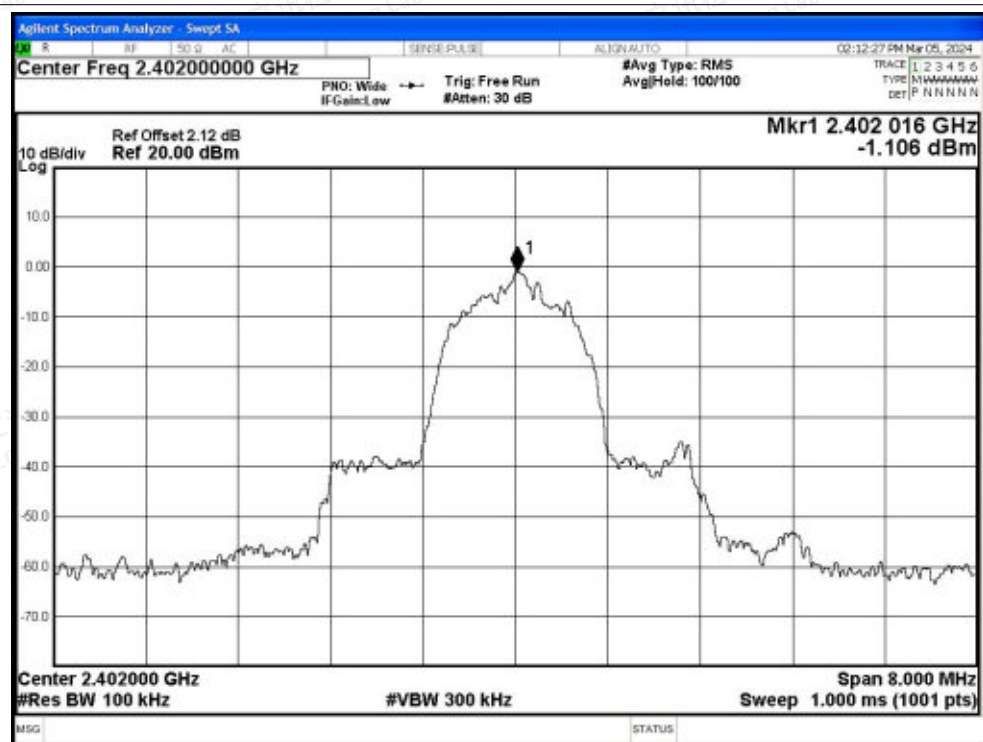


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

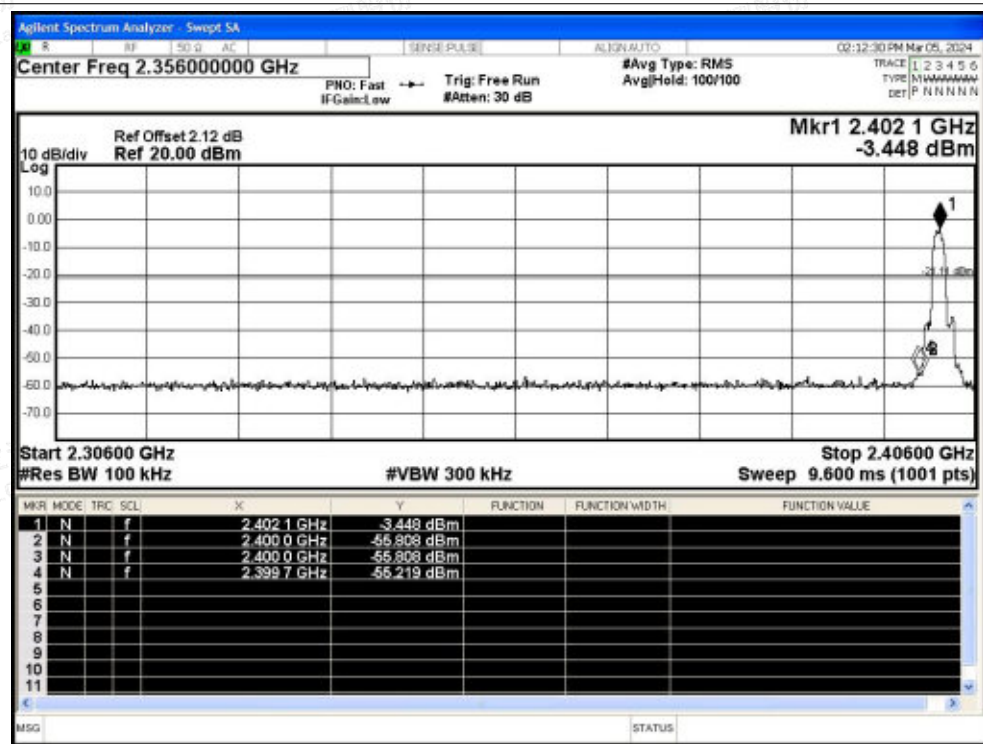




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

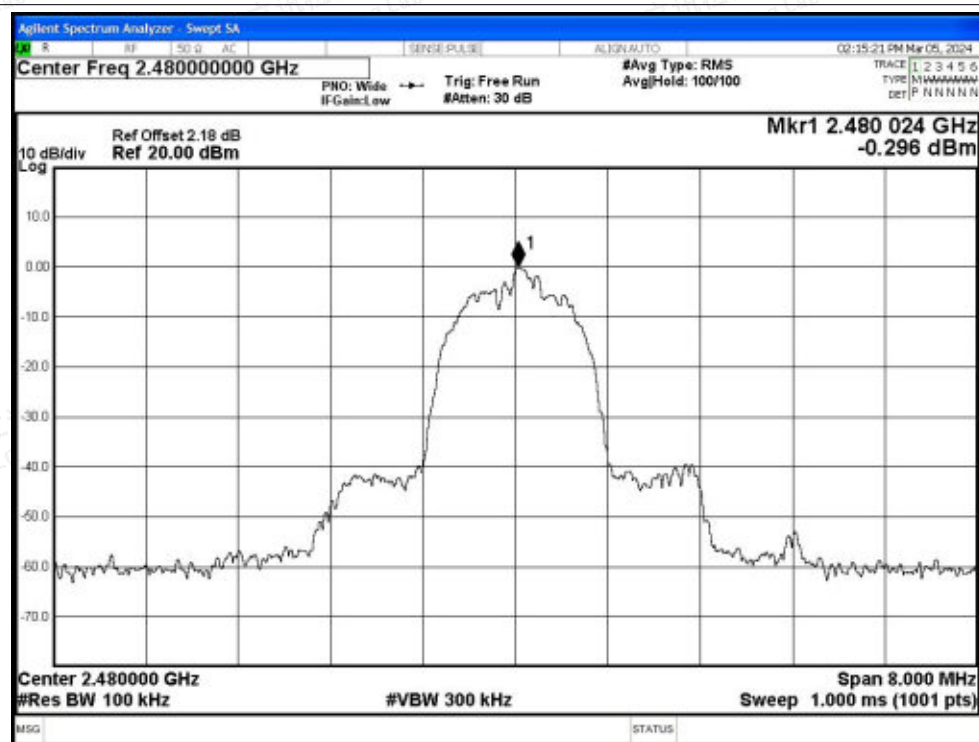


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

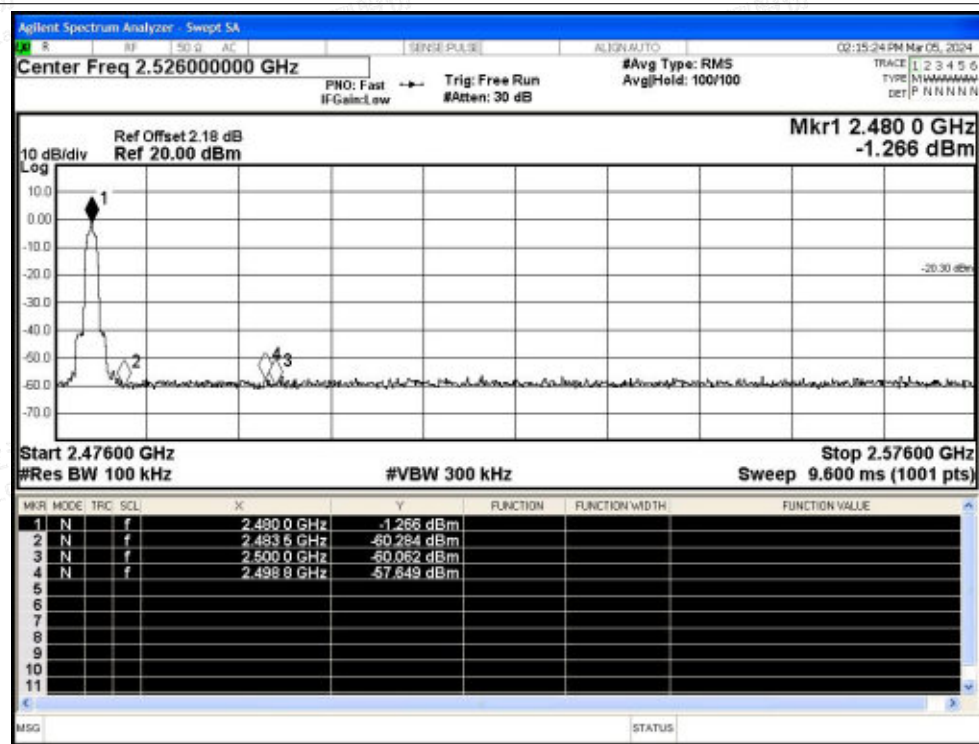




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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





(Hopping)

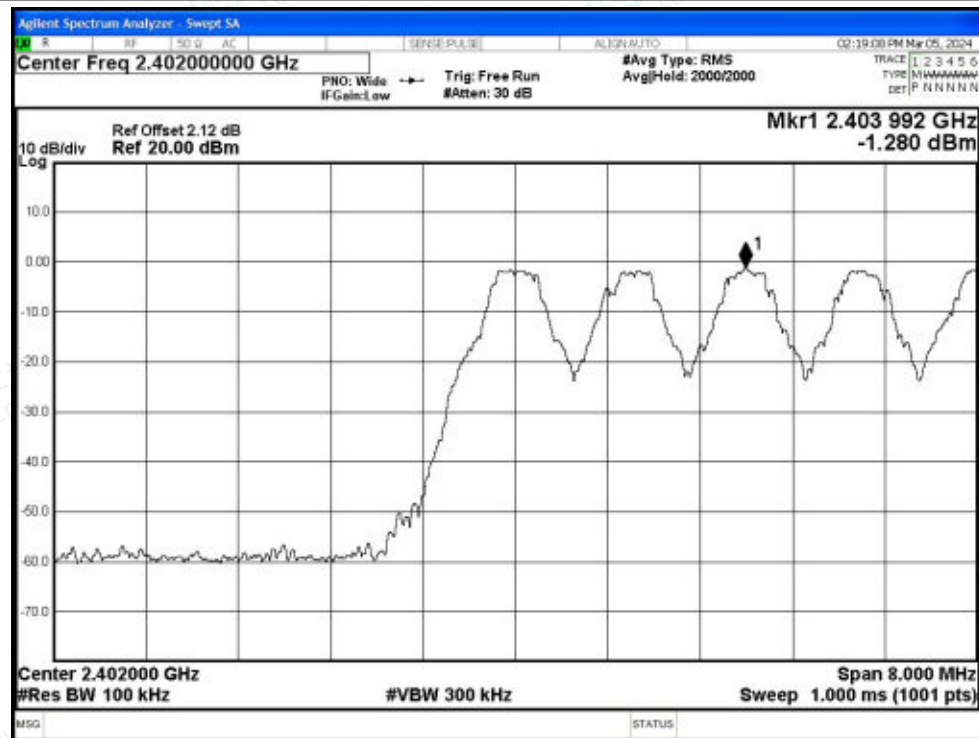
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-54.59	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-56.73	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-54.12	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-55.67	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-52.96	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.09	-20	Pass



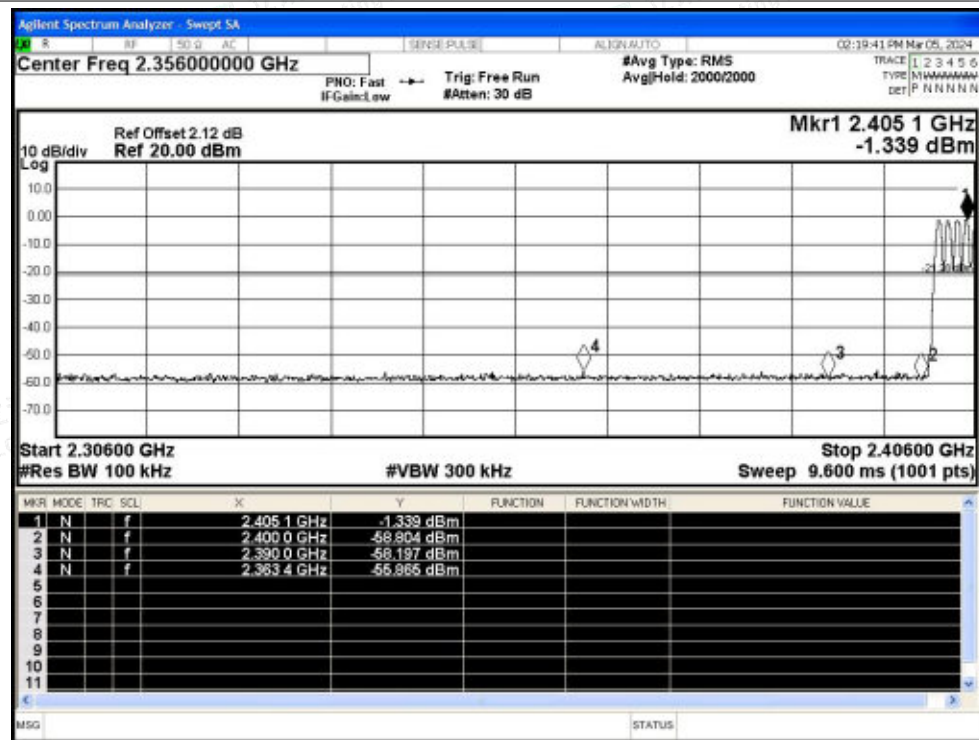


Test Graphs

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

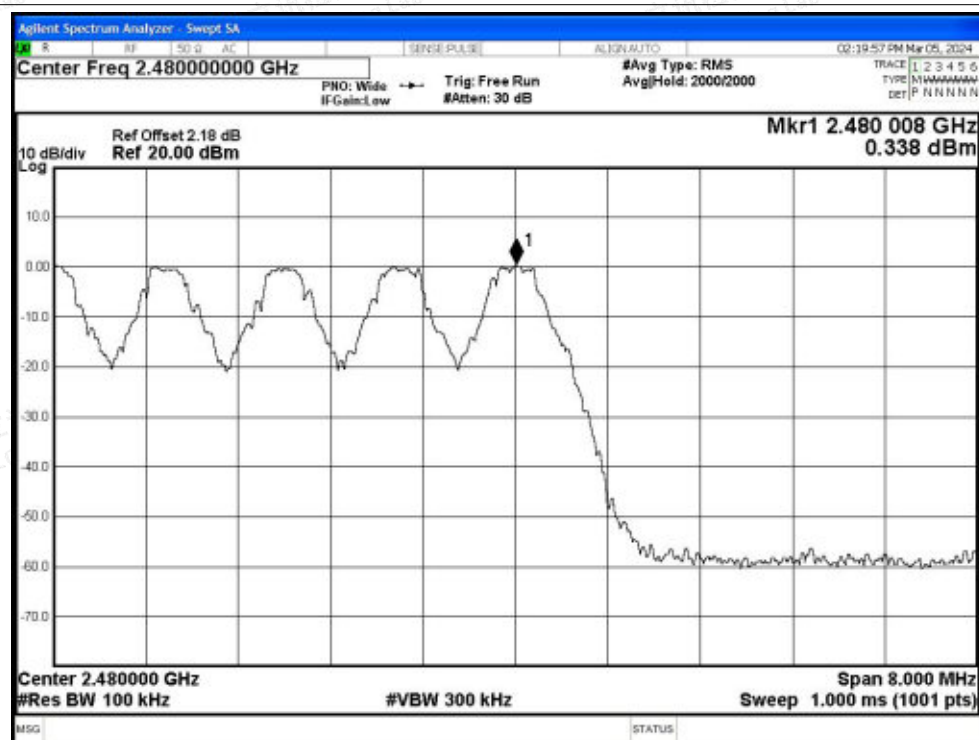


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

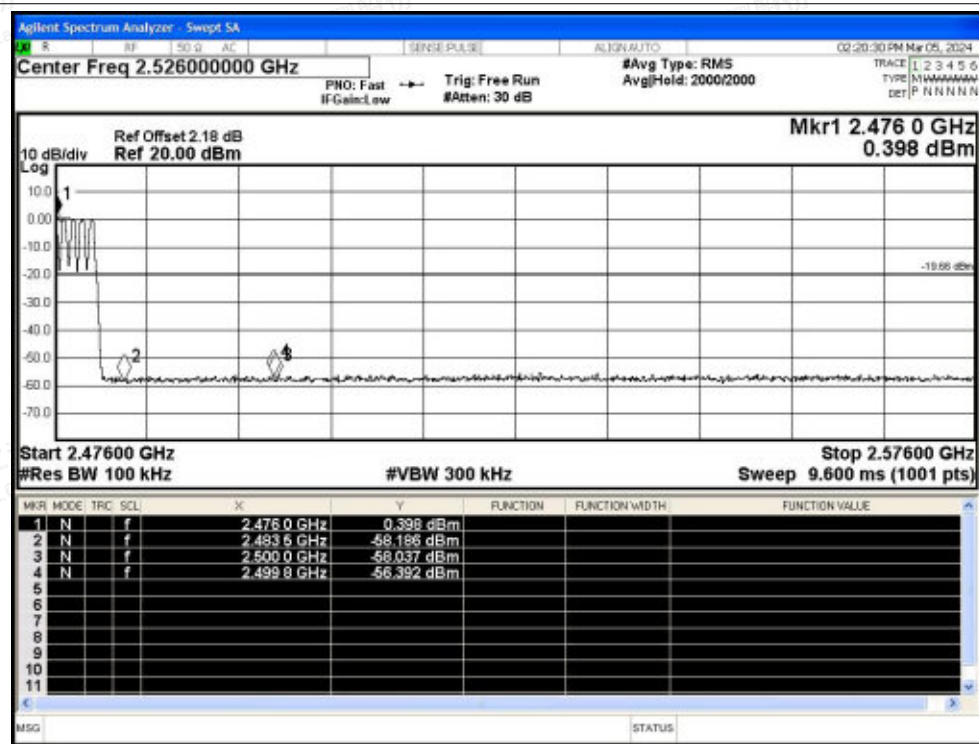




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



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

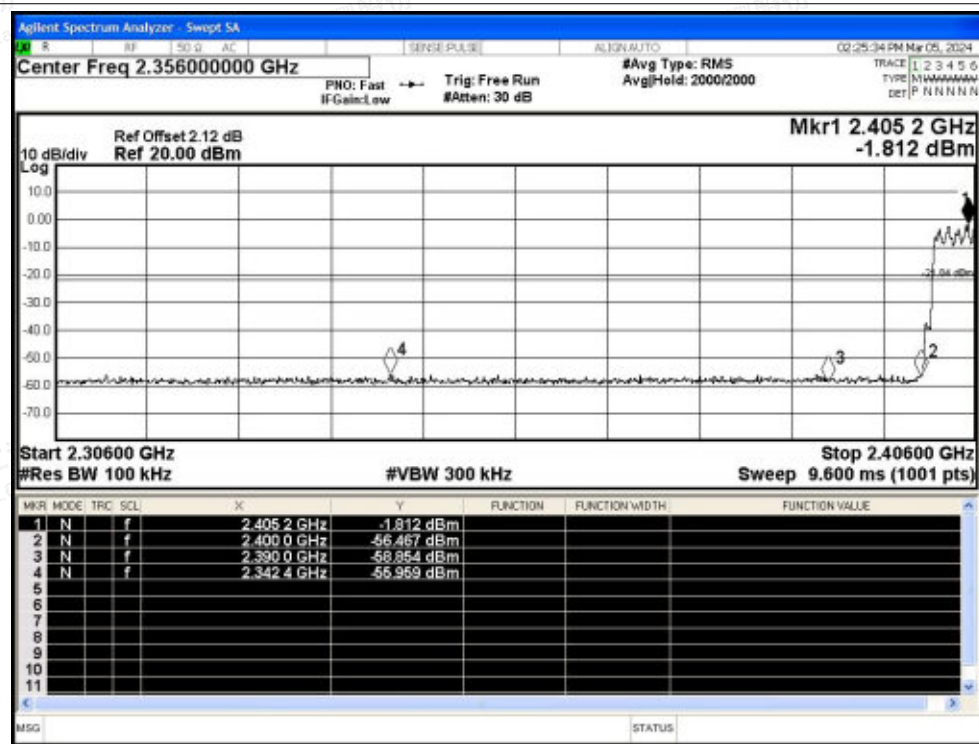




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

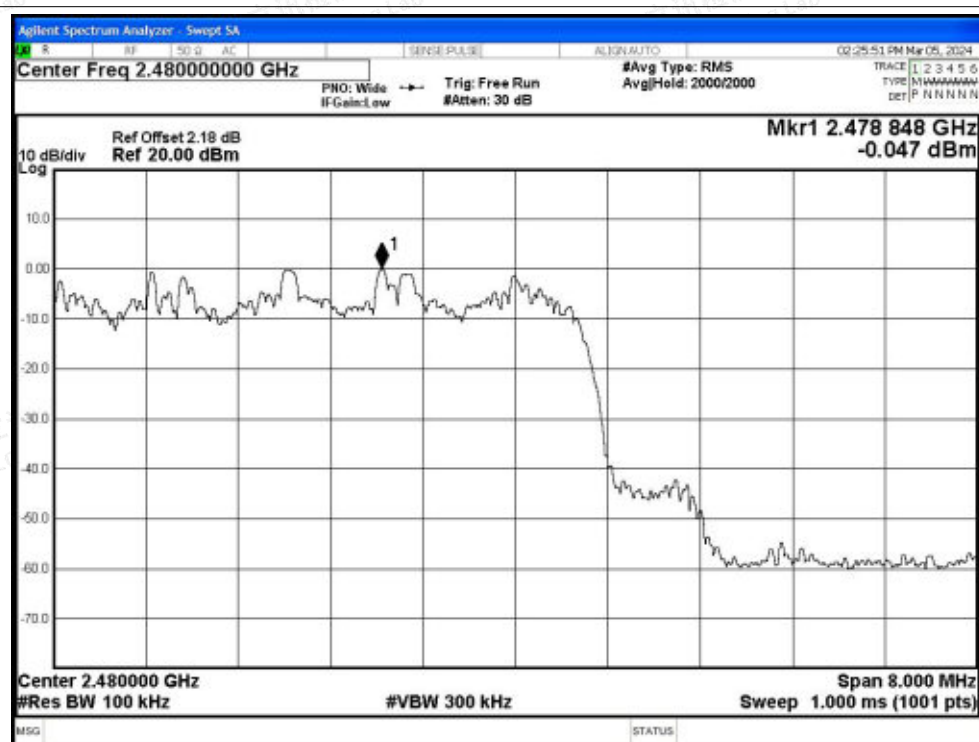


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

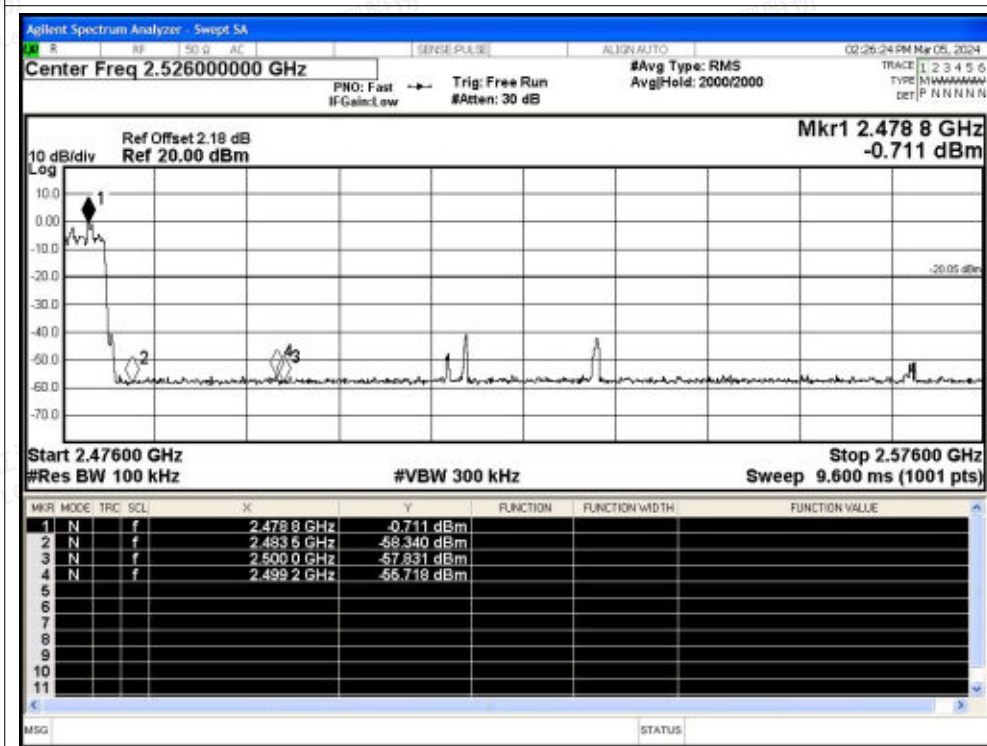




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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

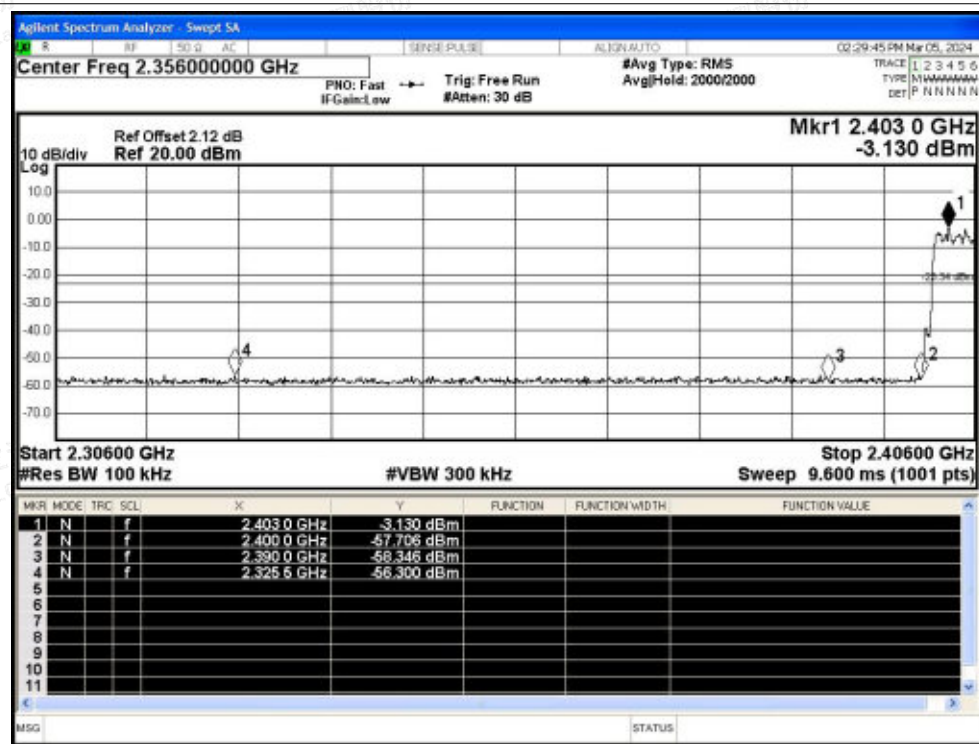




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



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

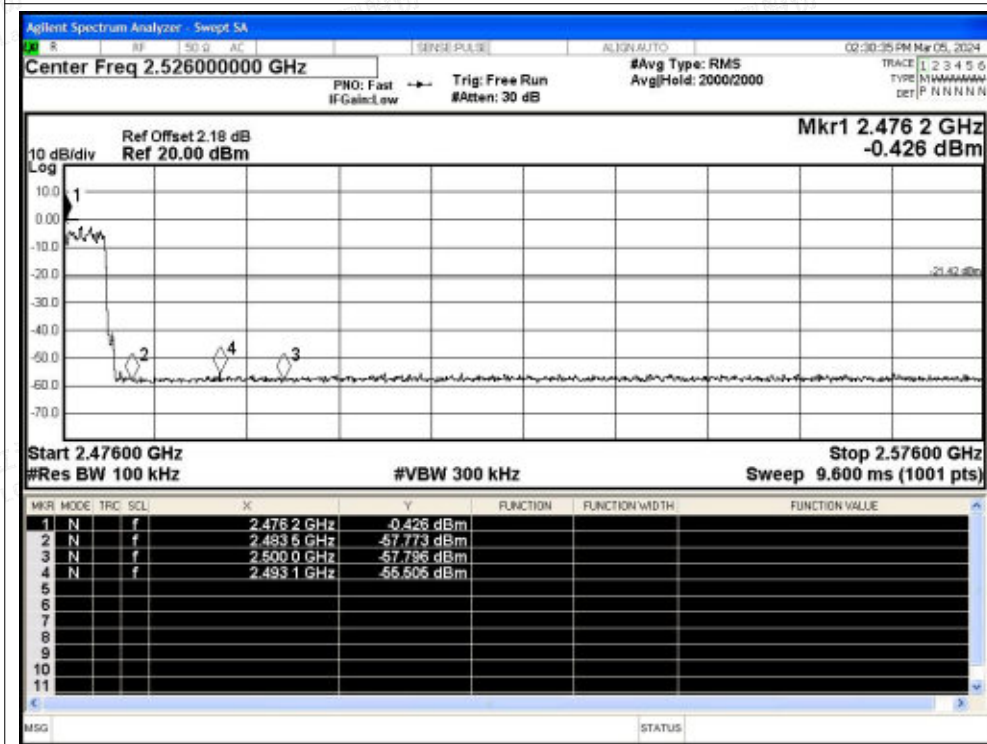




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



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	-49.98	-20	Pass
NVNT	1-DH5	2441	Ant1	-52.86	-20	Pass
NVNT	1-DH5	2480	Ant1	-48.98	-20	Pass
NVNT	2-DH5	2402	Ant1	-45.94	-20	Pass
NVNT	2-DH5	2441	Ant1	-54.36	-20	Pass
NVNT	2-DH5	2480	Ant1	-54.89	-20	Pass
NVNT	3-DH5	2402	Ant1	-53.58	-20	Pass
NVNT	3-DH5	2441	Ant1	-54.59	-20	Pass
NVNT	3-DH5	2480	Ant1	-53.98	-20	Pass

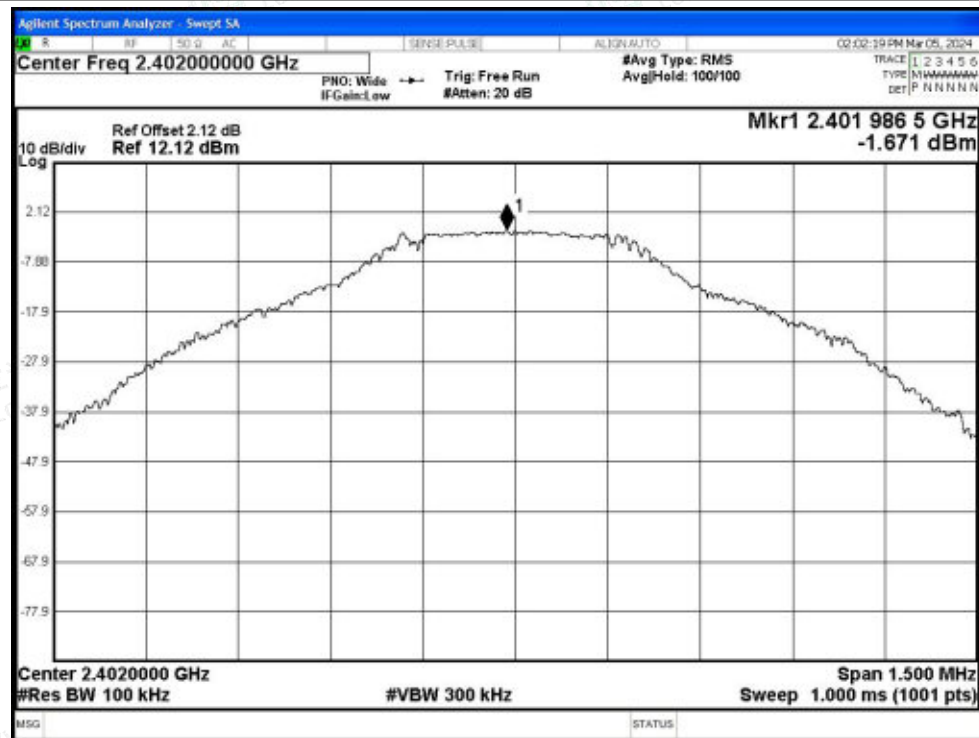


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Scan code to check authenticity

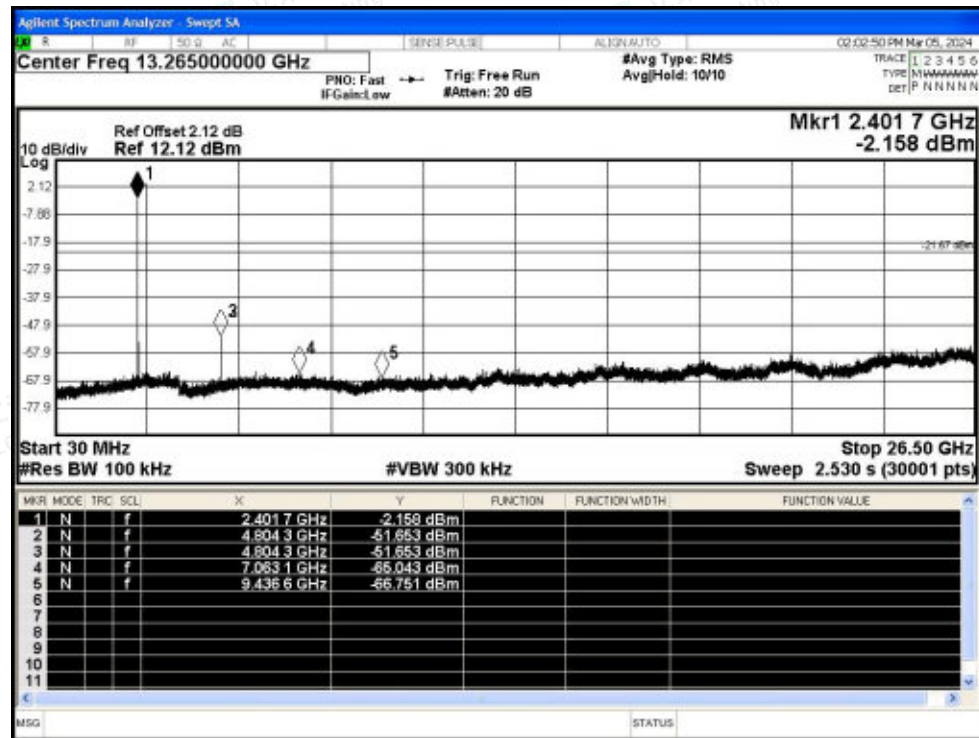


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

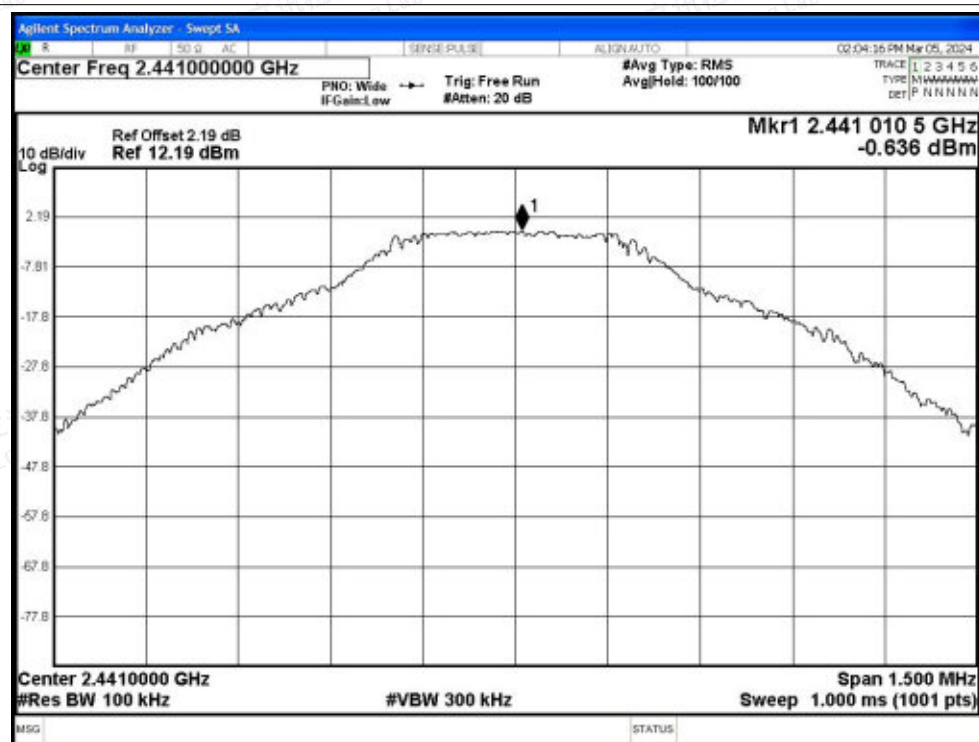


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

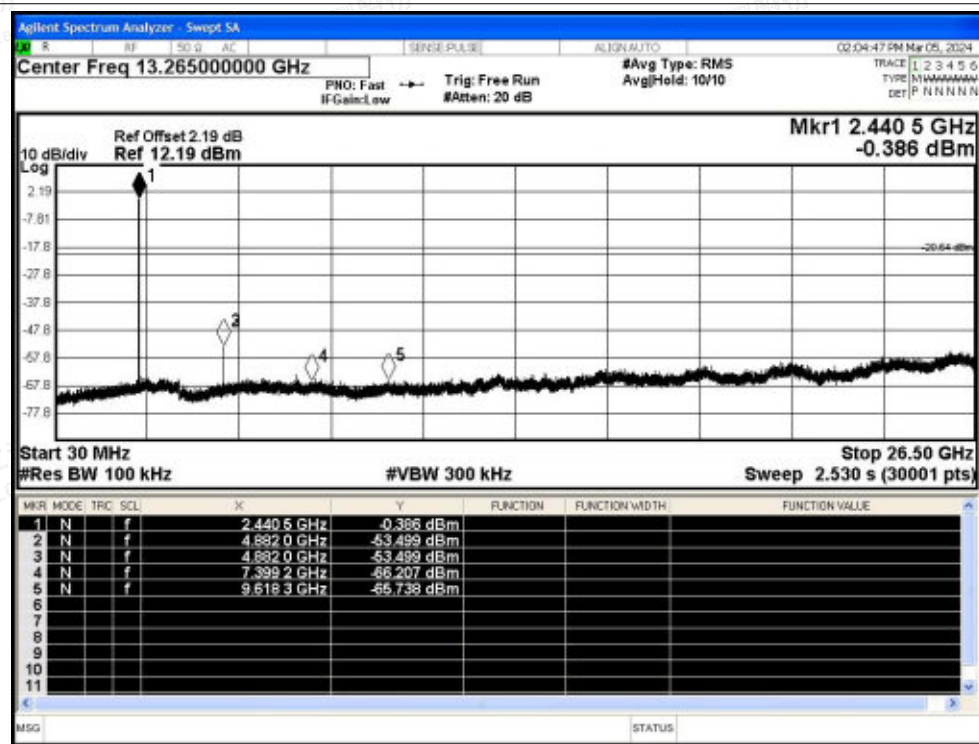




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

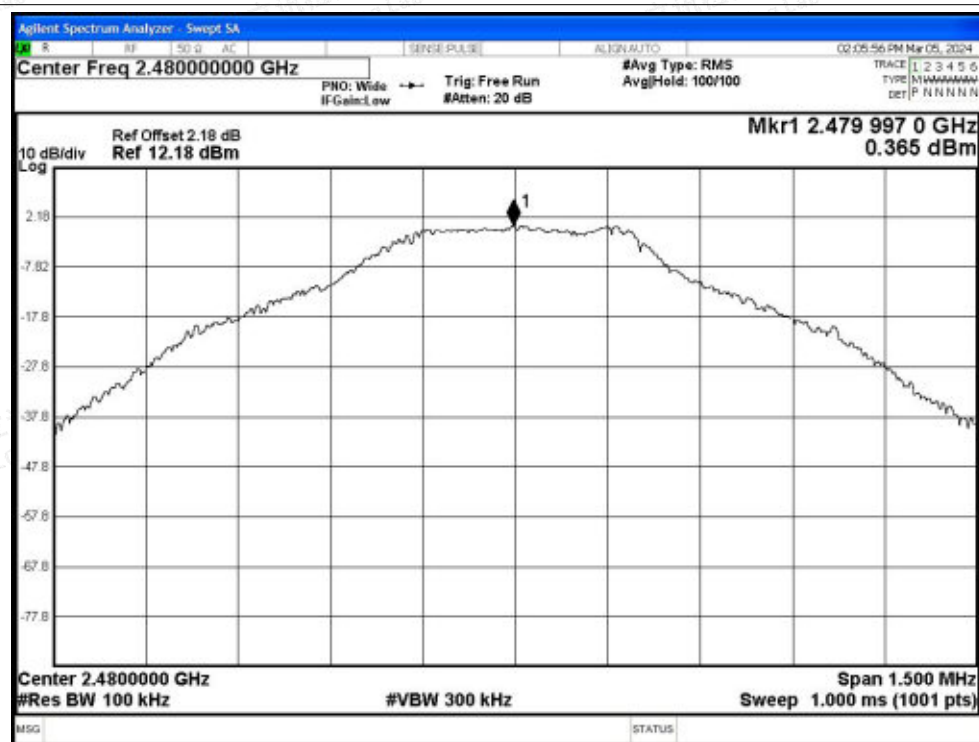


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

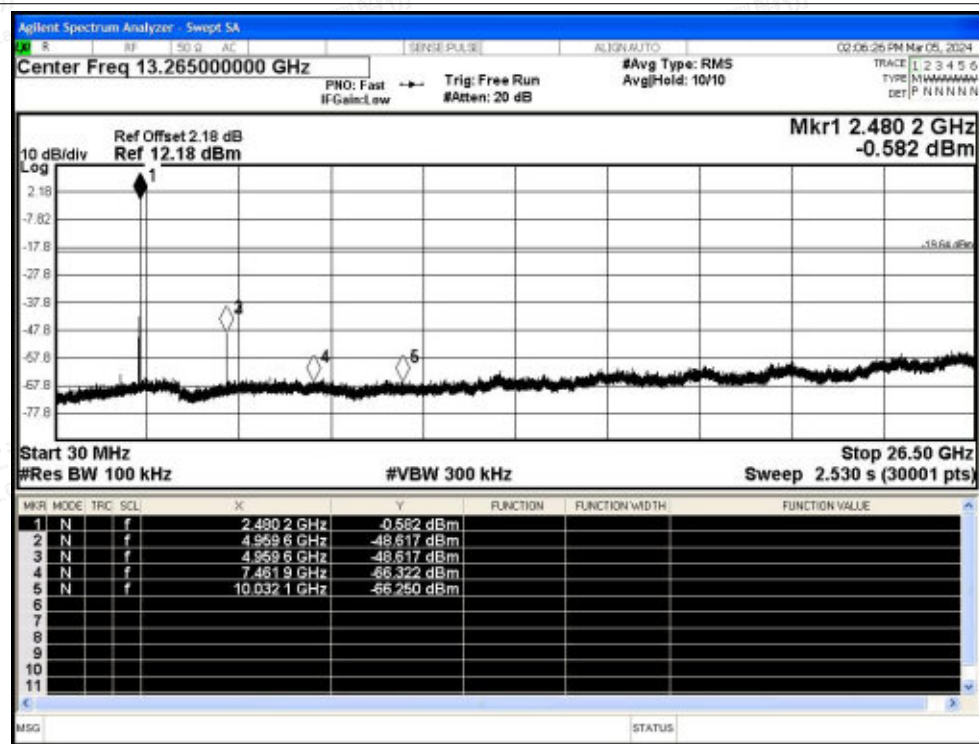




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

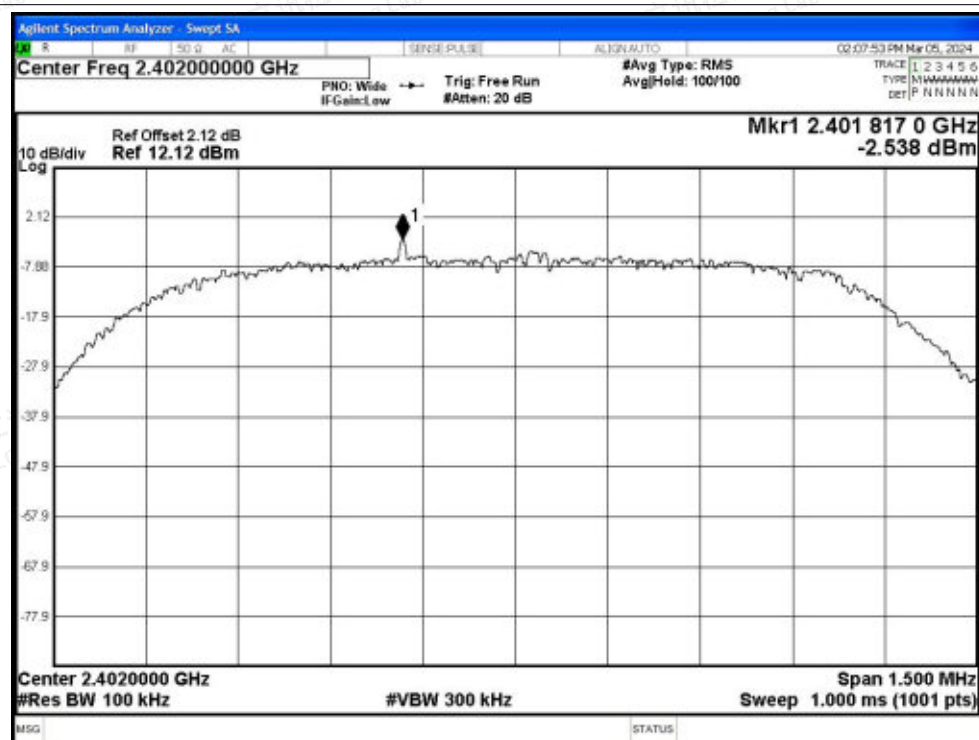


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

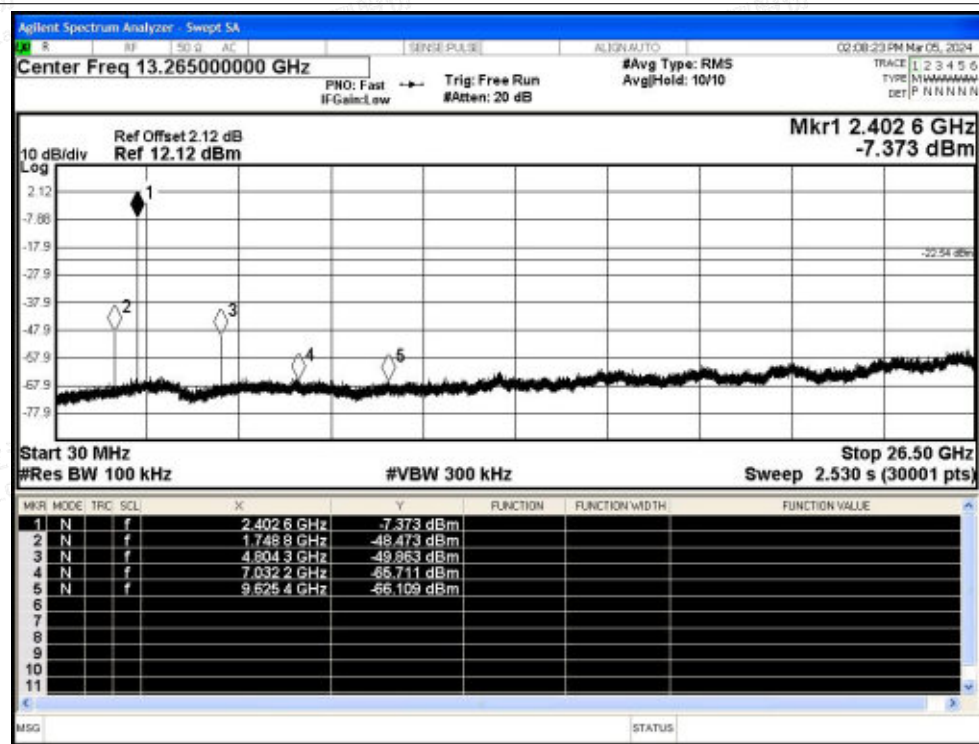




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

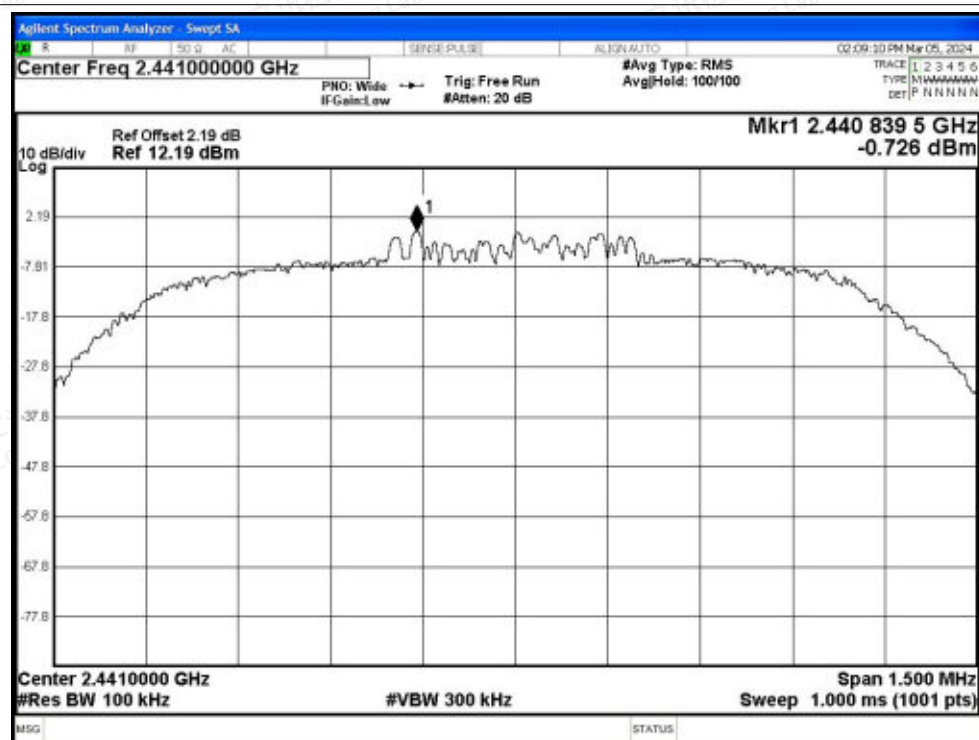


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

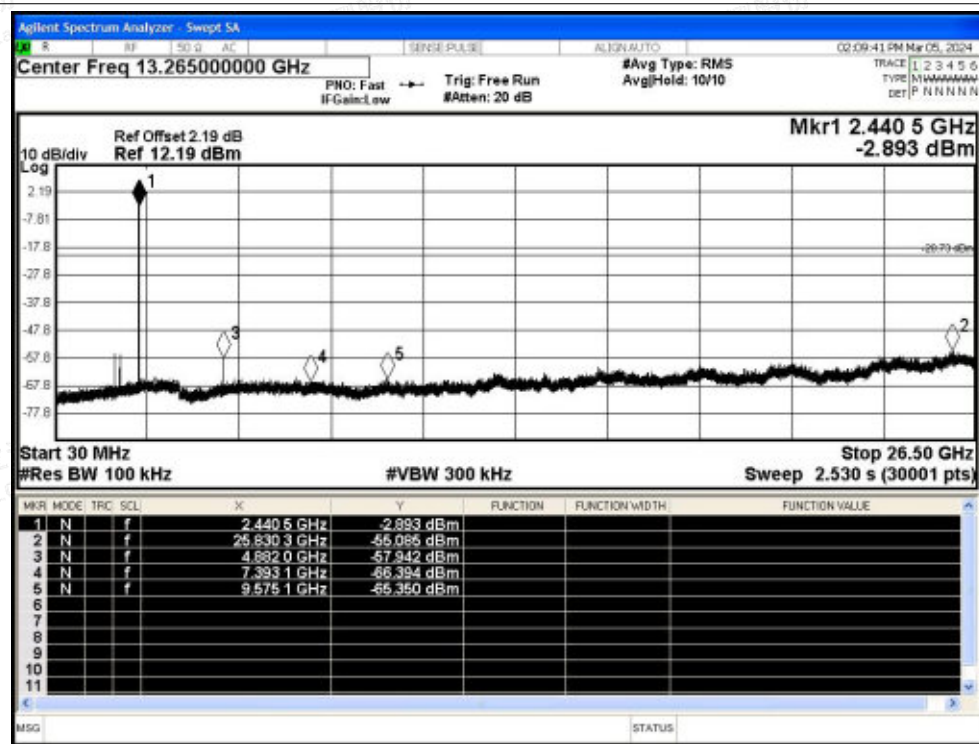




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

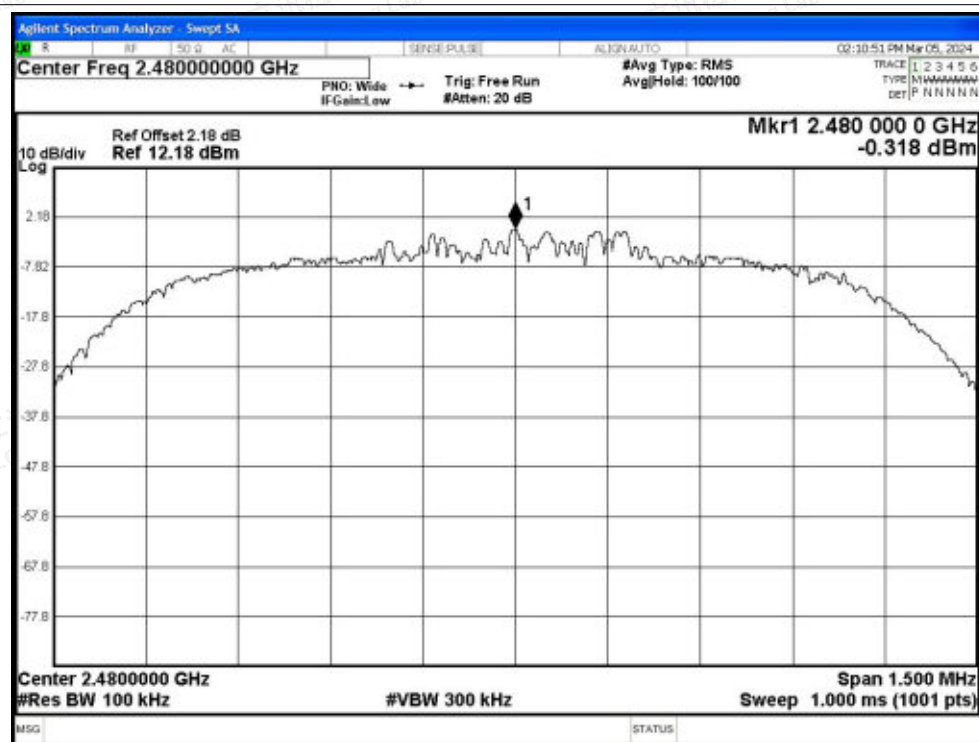


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

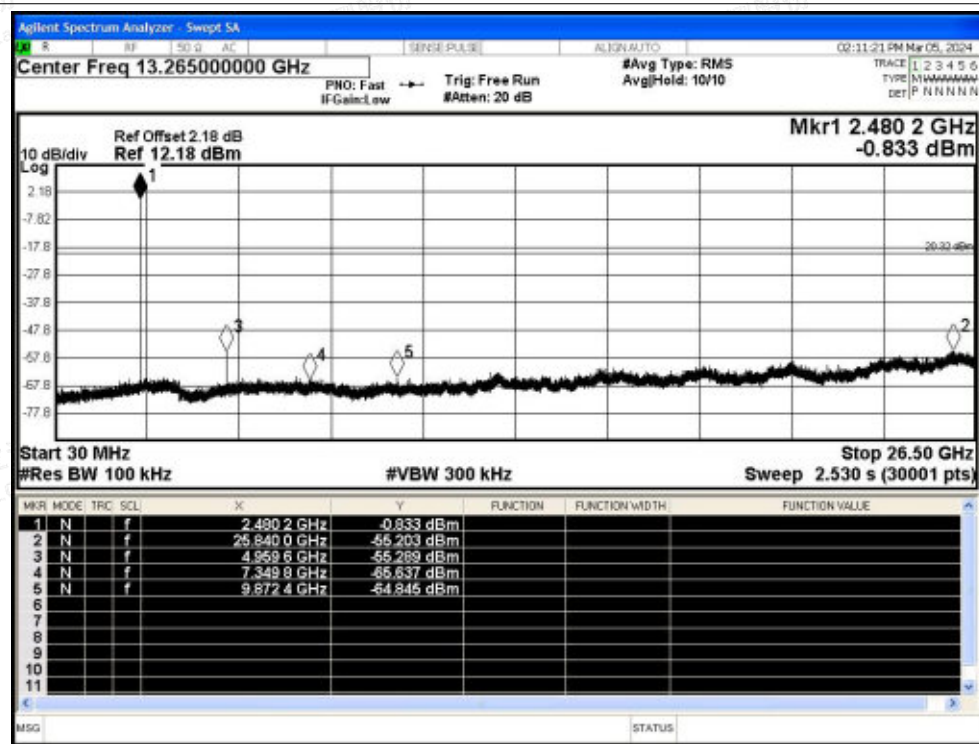




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref

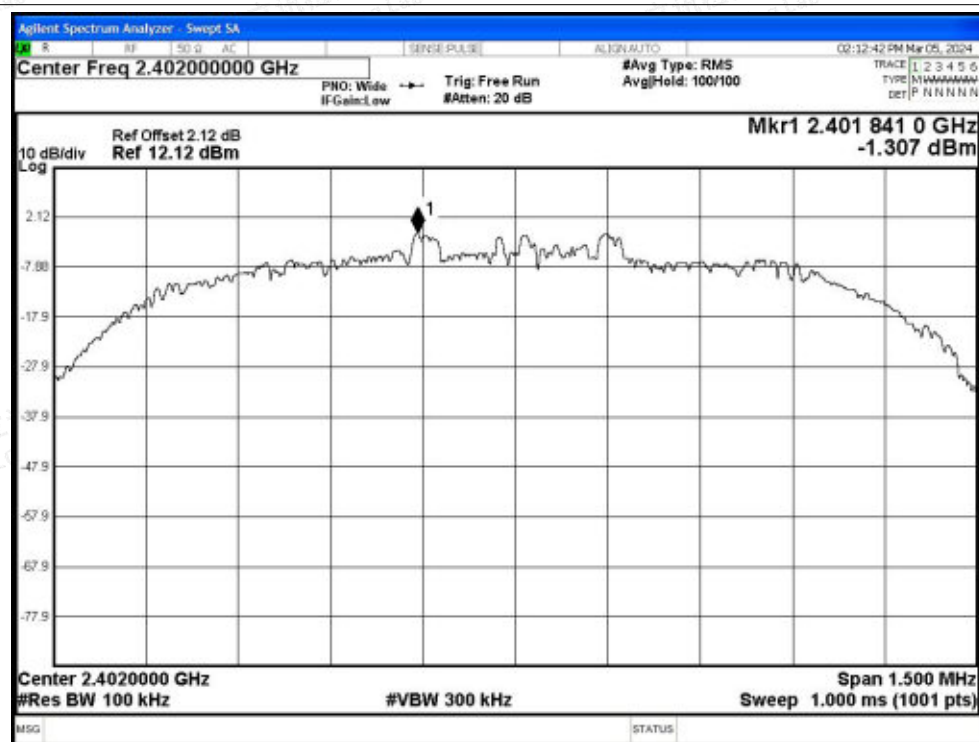


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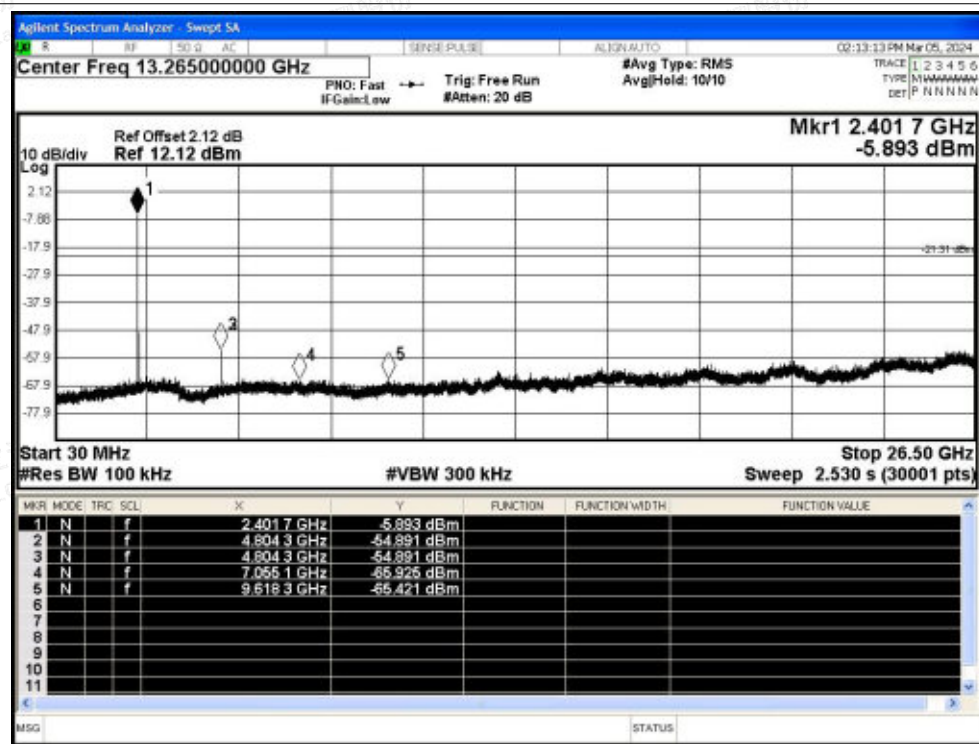




Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref

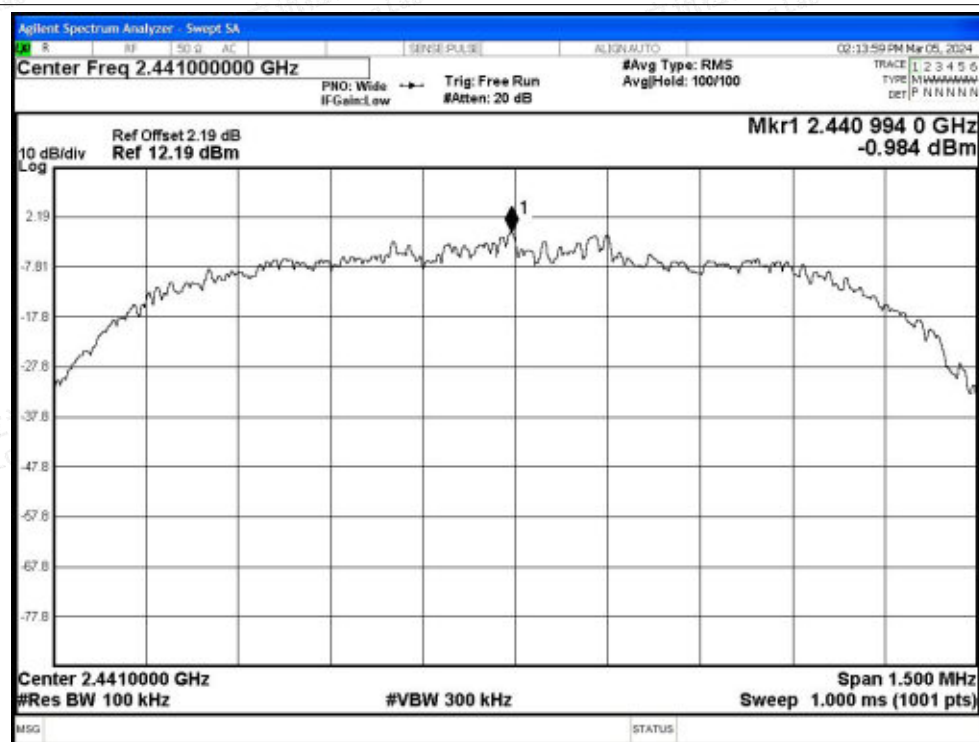


Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

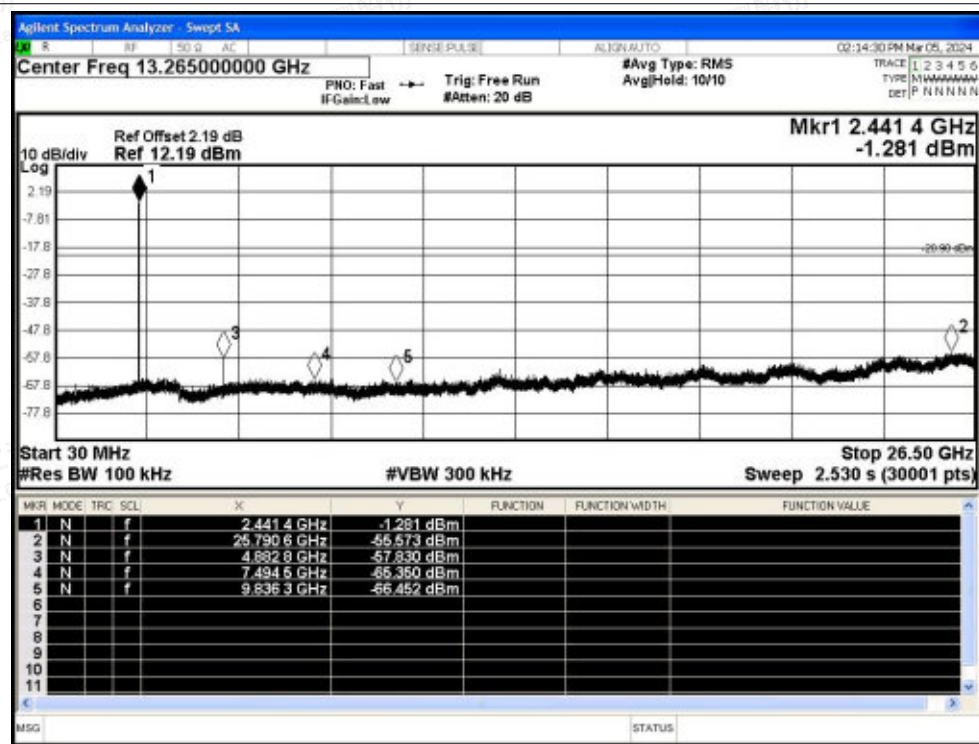




Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission

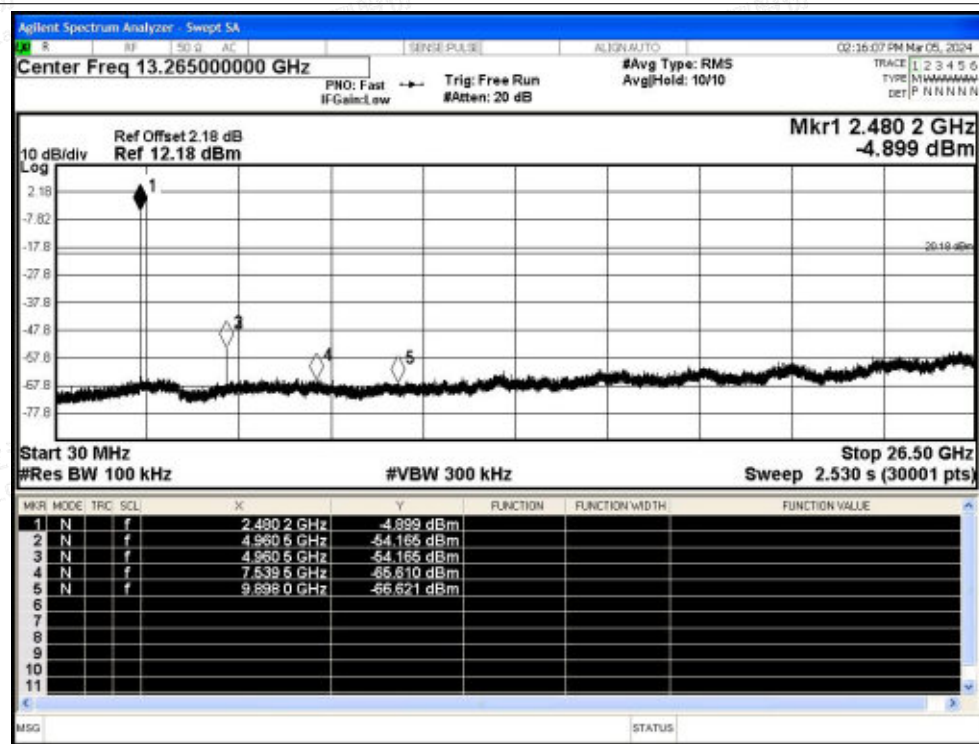




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



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	76.91	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.91	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.91	1.14	0.35
NVNT	2-DH5	2402	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2441	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.96	1.14	0.35
NVNT	3-DH5	2402	Ant1	77.01	1.13	0.35
NVNT	3-DH5	2441	Ant1	77.01	1.13	0.35
NVNT	3-DH5	2480	Ant1	77.01	1.13	0.35

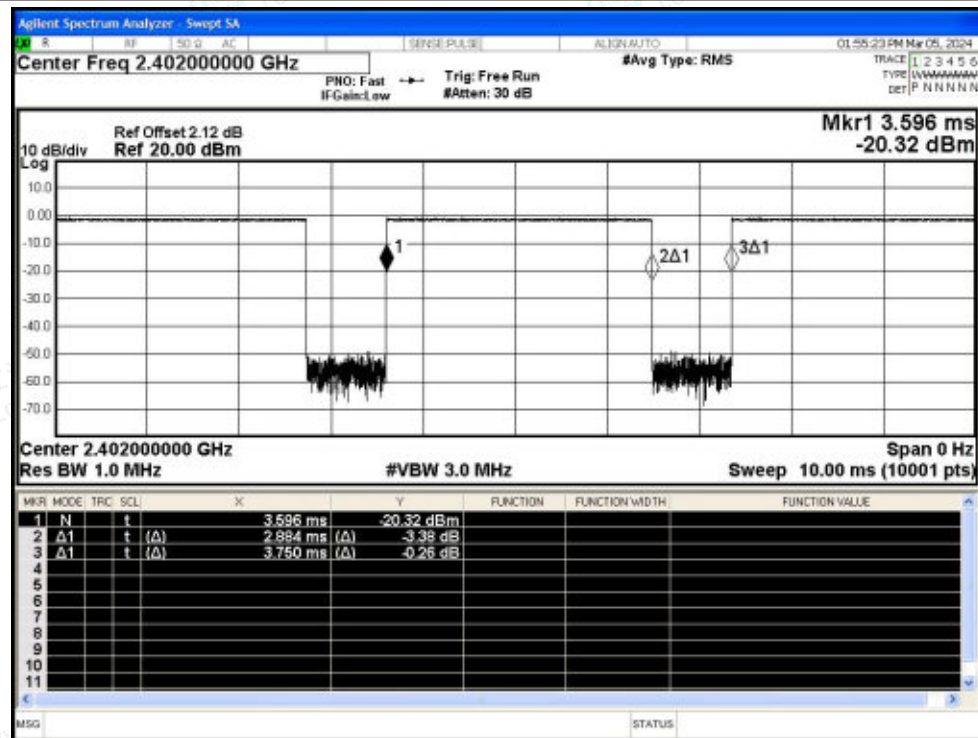


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Scan code to check authenticity

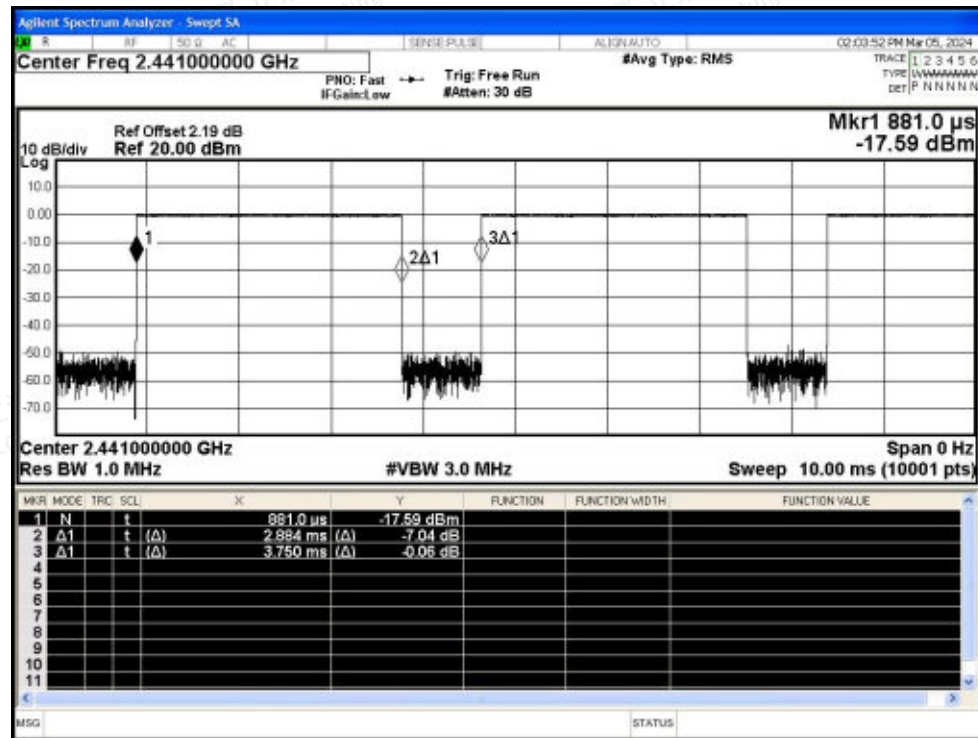


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

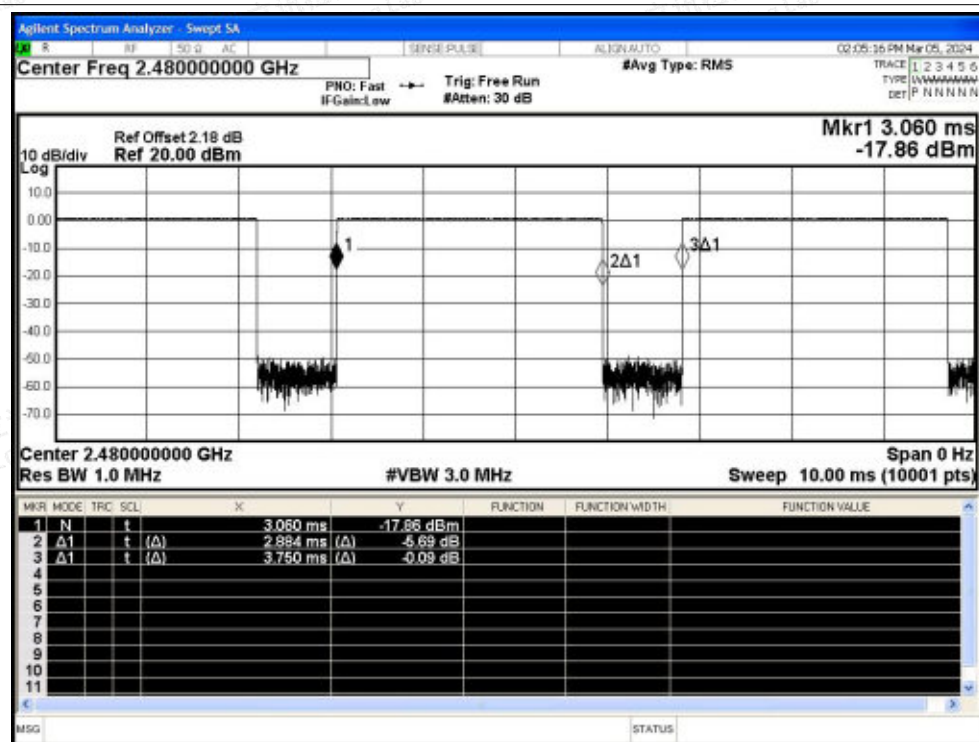


Duty Cycle NVNT 1-DH5 2441MHz Ant1

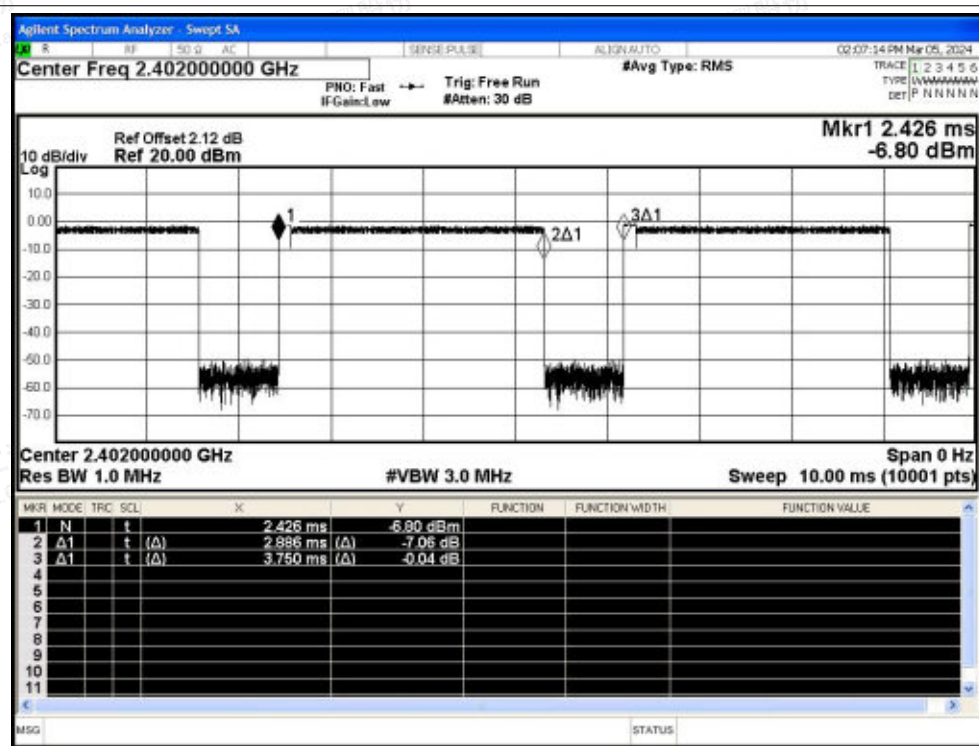




Duty Cycle NVNT 1-DH5 2480MHz Ant1

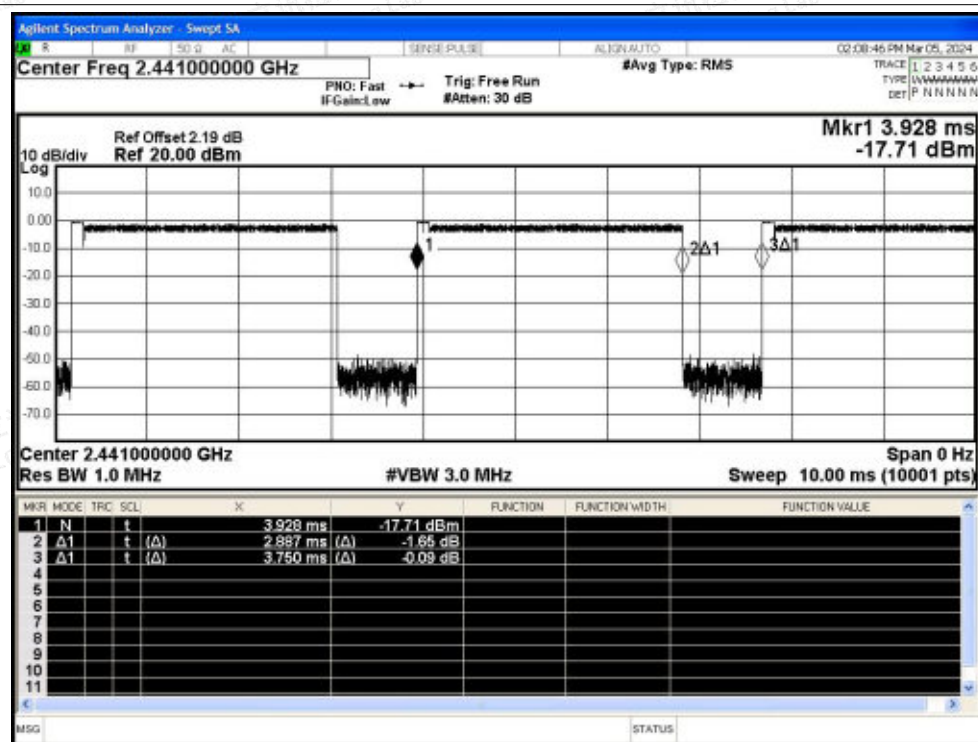


Duty Cycle NVNT 2-DH5 2402MHz Ant1

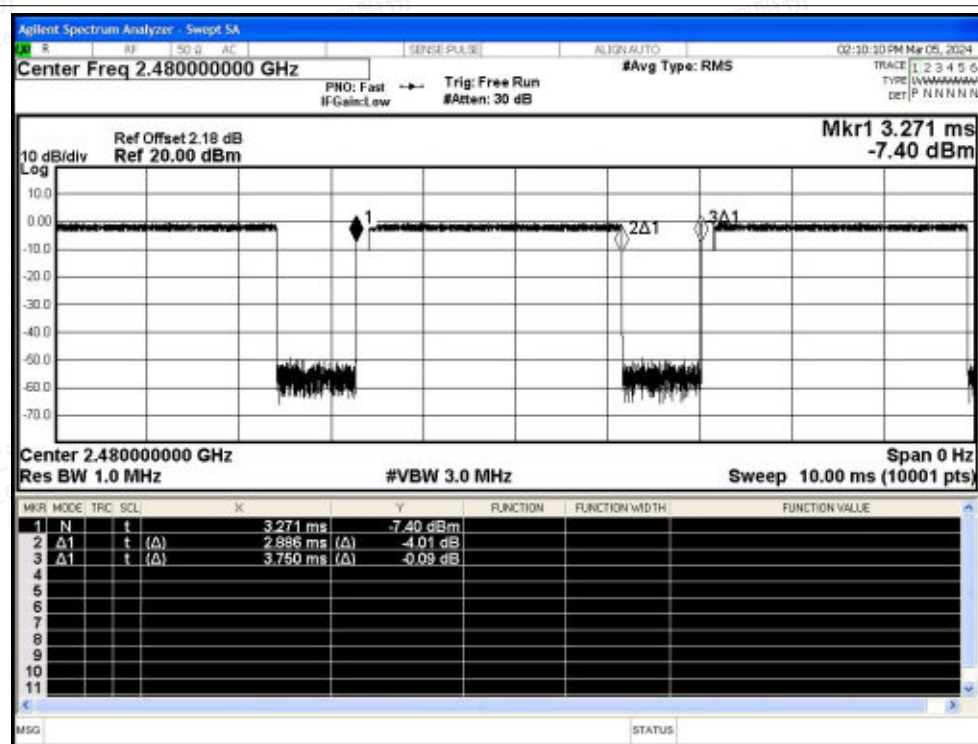




Duty Cycle NVNT 2-DH5 2441MHz Ant1

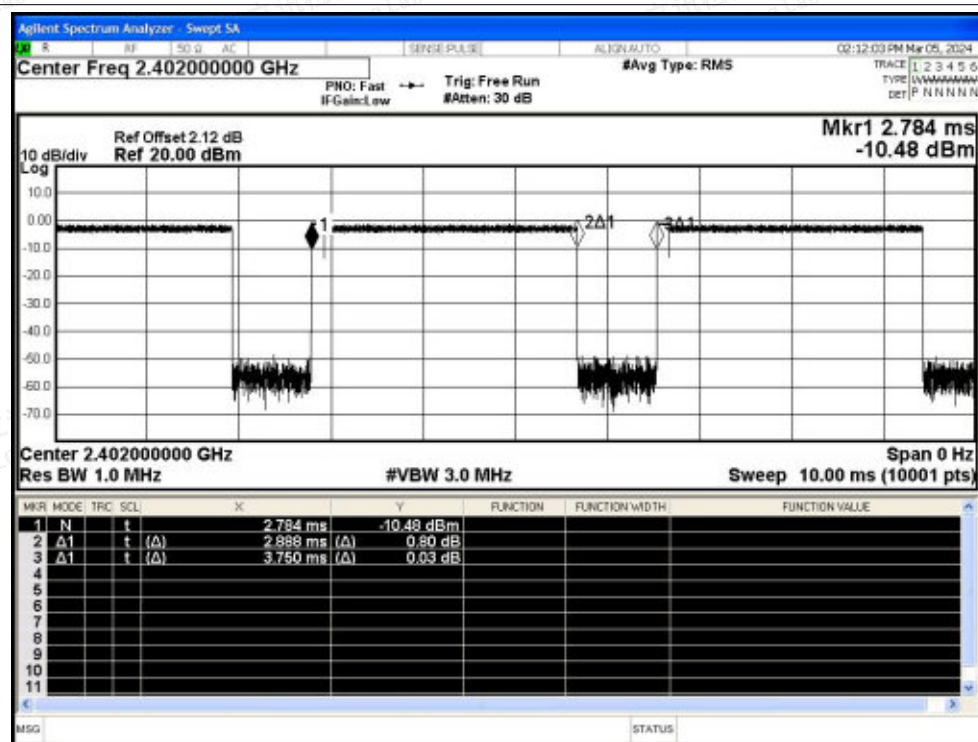


Duty Cycle NVNT 2-DH5 2480MHz Ant1

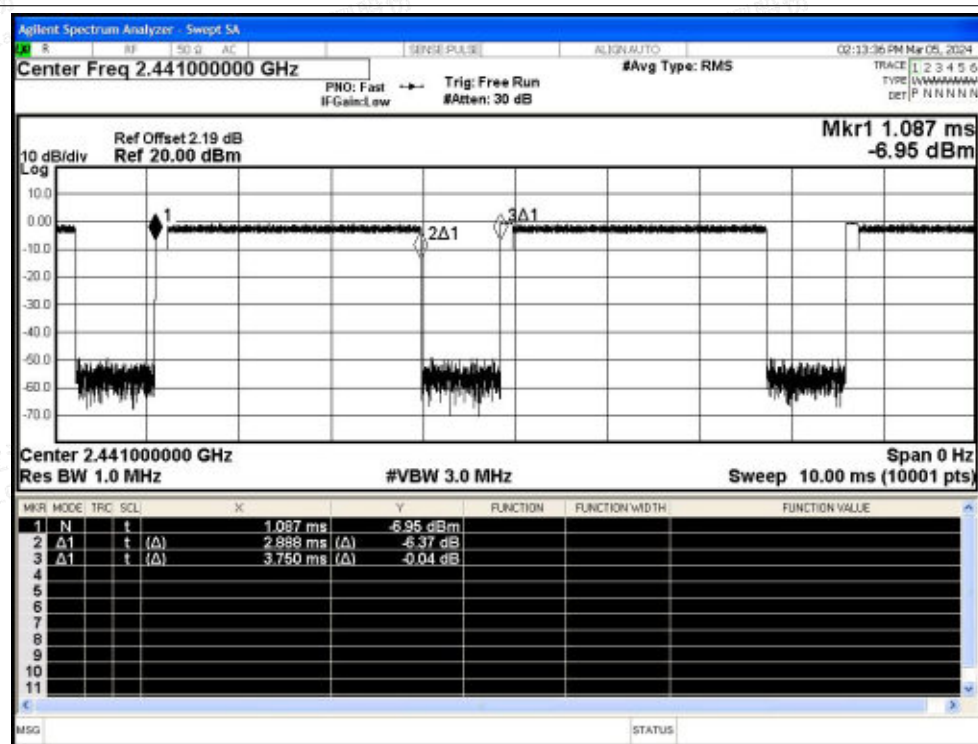


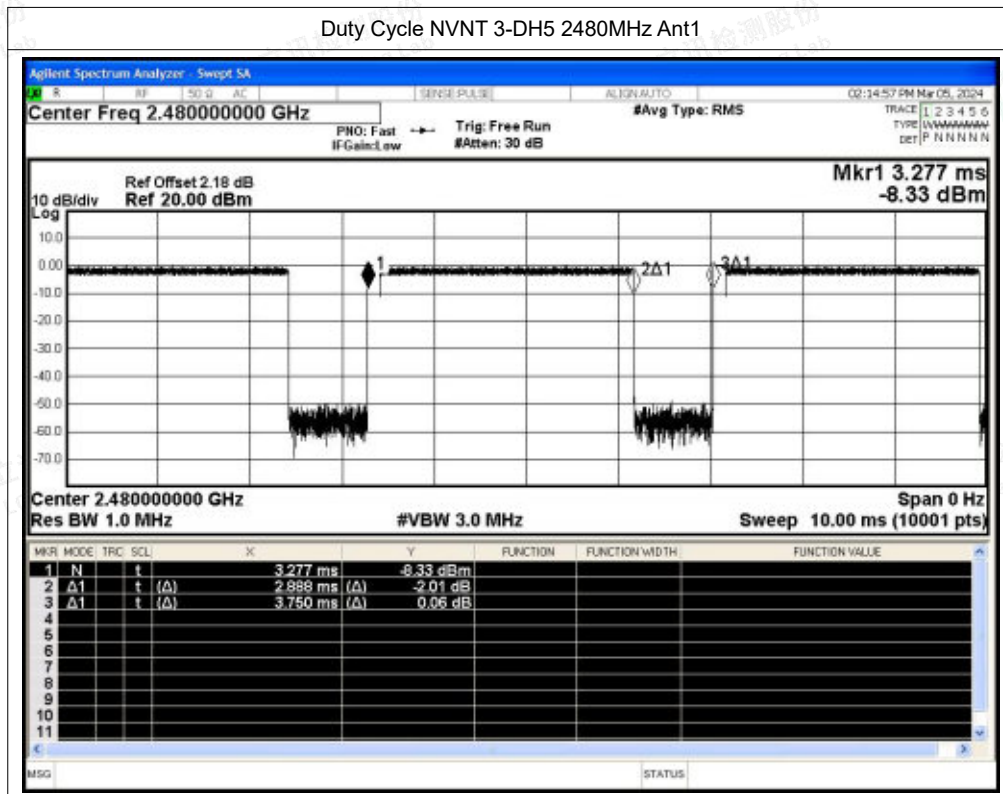


Duty Cycle NVNT 3-DH5 2402MHz Ant1



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	-50.39	4.16	-	49.03	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.29	4.16	1.14	41.27	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2332.08	-46.99	4.16	-	52.43	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2379.6	-57.6	4.16	1.14	42.96	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.12	4.16	-	49.30	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.23	4.16	1.14	42.33	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.02	4.16	-	50.40	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.27	4.16	1.14	42.29	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2485.6	-47.38	4.16	-	52.04	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2489.944	-57.1	4.16	1.14	43.46	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.31	4.16	-	49.11	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.75	4.16	1.14	42.81	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.26	4.16	-	49.16	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.74	4.16	1.14	41.82	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2386.992	-47.77	4.16	-	51.65	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2389.488	-57.68	4.16	1.14	42.88	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.13	4.16	-	49.29	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.79	4.16	1.14	41.77	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-50.21	4.16	-	49.21	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-58.06	4.16	1.14	42.50	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2488.312	-46.43	4.16	-	52.99	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2497.144	-57.14	4.16	1.14	43.42	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.76	4.16	-	49.66	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.89	4.16	1.14	42.67	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-49.88	4.16	-	49.54	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.27	4.16	1.13	42.28	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2352.72	-47.63	4.16	-	51.79	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2385.36	-57.34	4.16	1.13	43.21	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.78	4.16	-	48.64	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.09	4.16	1.13	42.46	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.81	4.16	-	49.61	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.73	4.16	1.13	42.82	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2499.592	-46.98	4.16	-	52.44	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2496.64	-57.14	4.16	1.13	43.41	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.8	4.16	-	48.62	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.95	4.16	1.13	42.60	Average	54	Pass

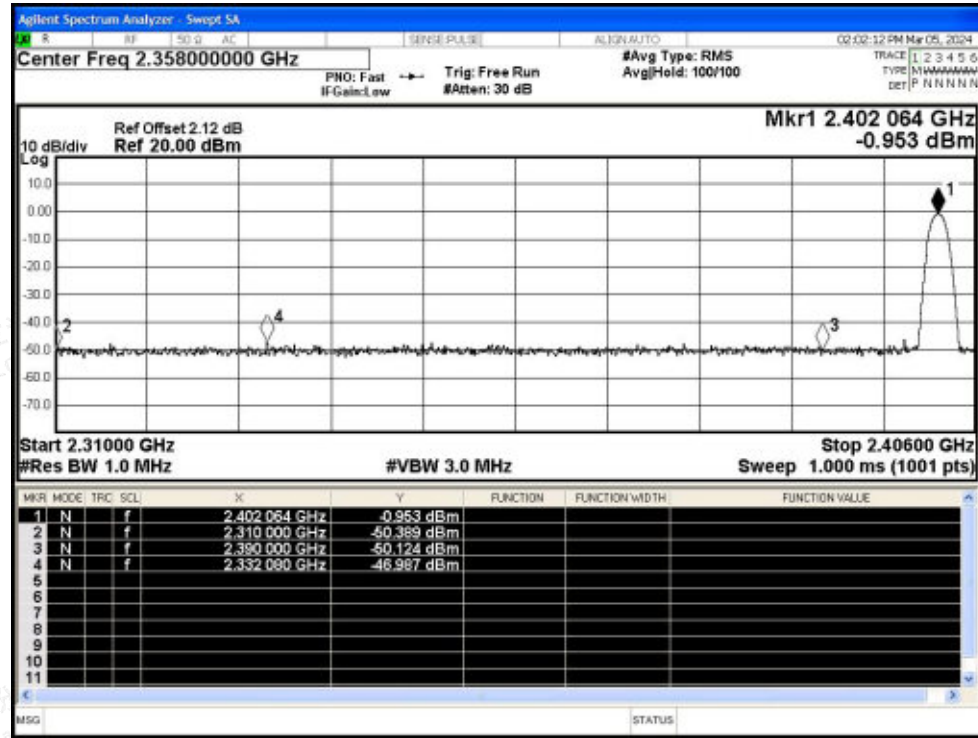


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Scan code to check authenticity

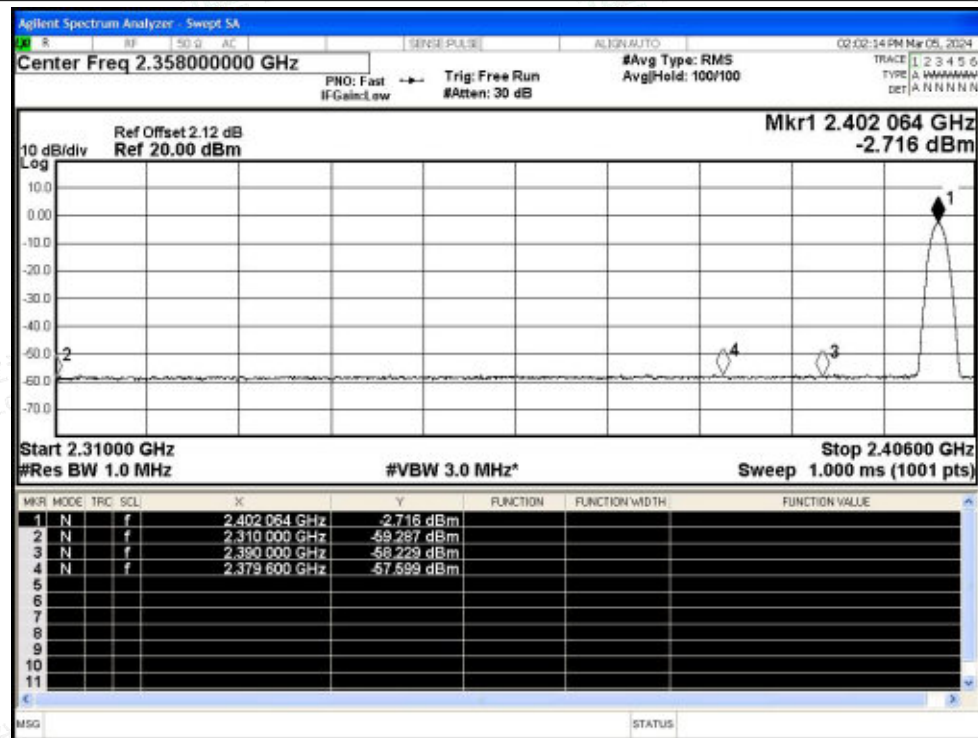


Test Graphs

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

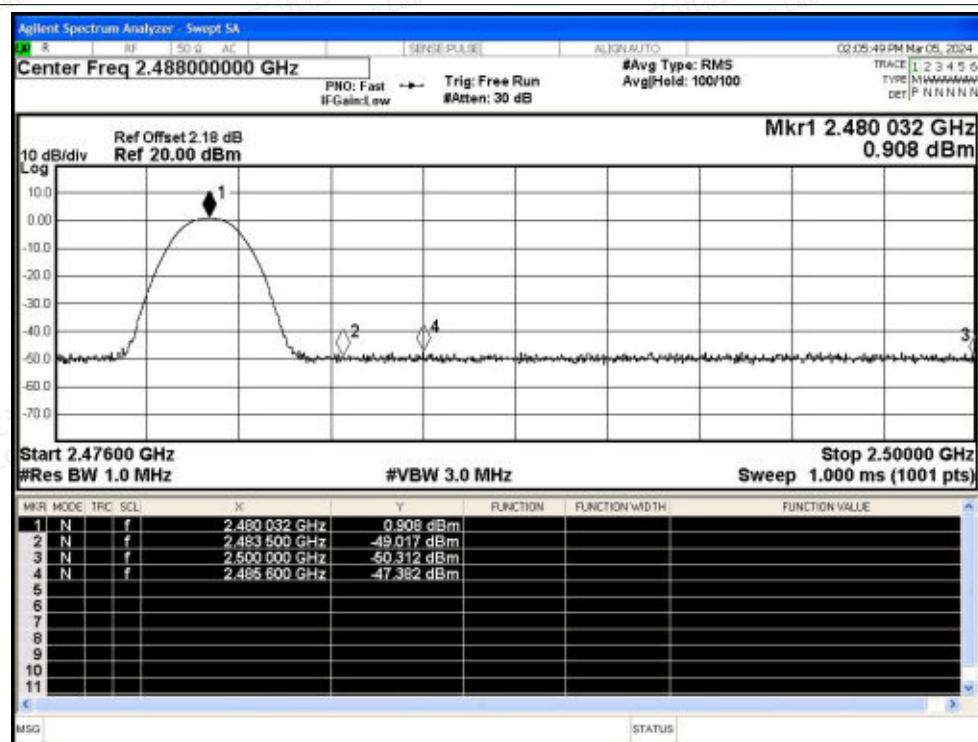


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

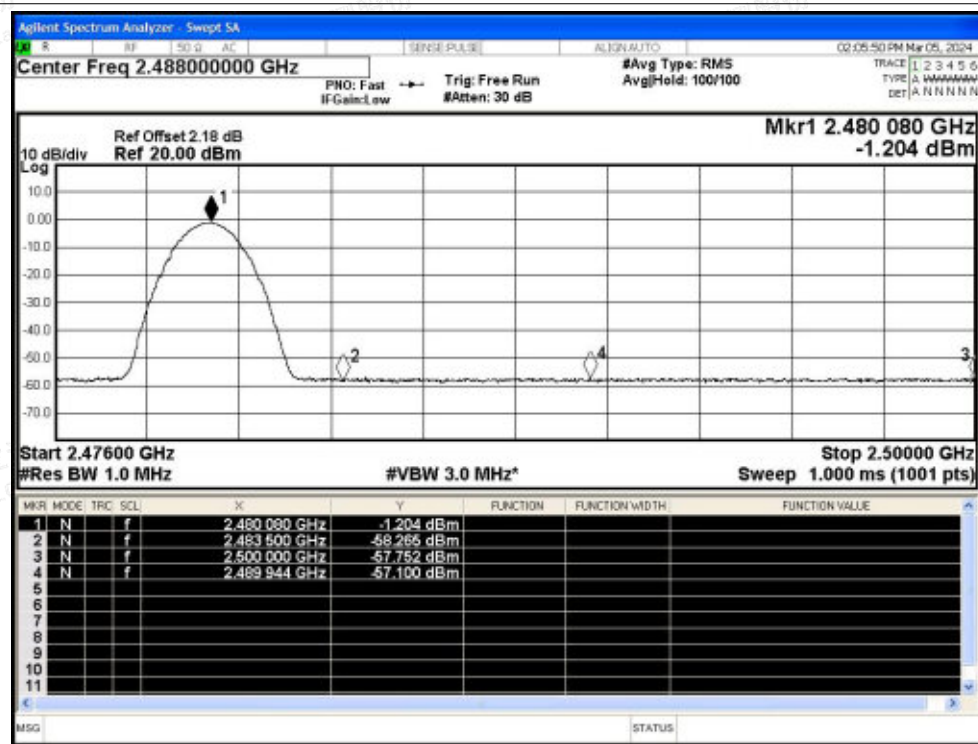




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

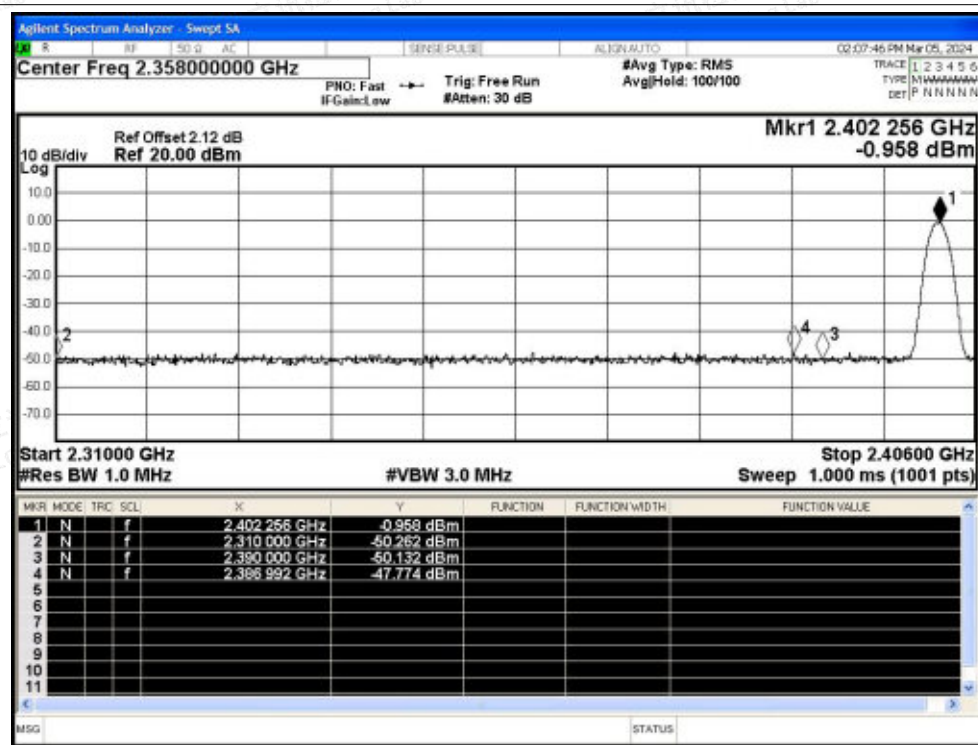


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

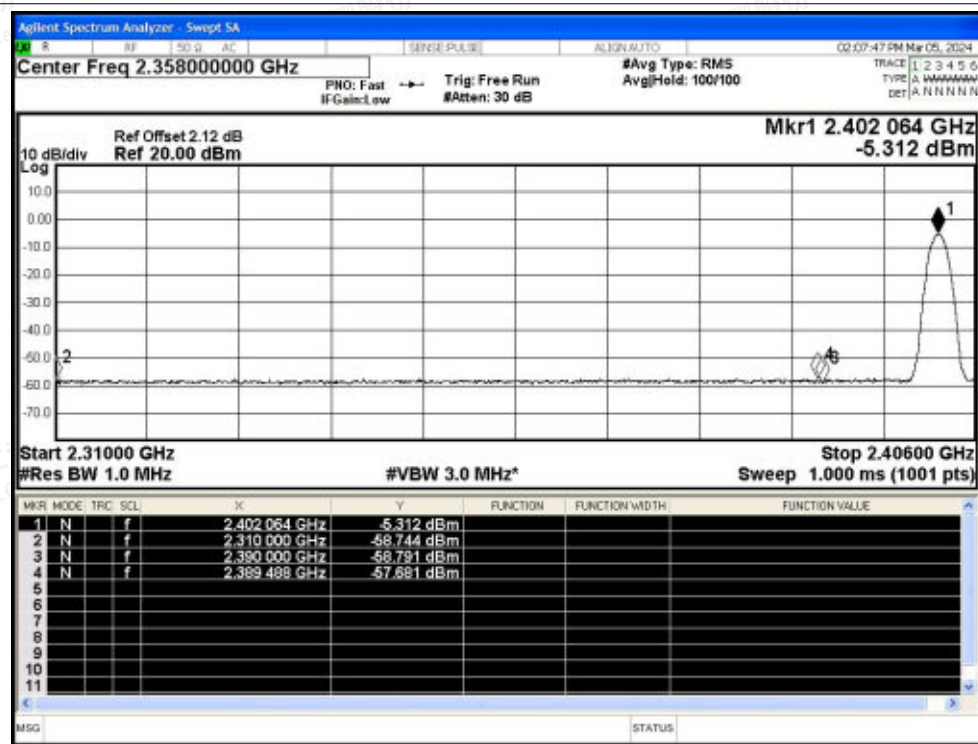




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

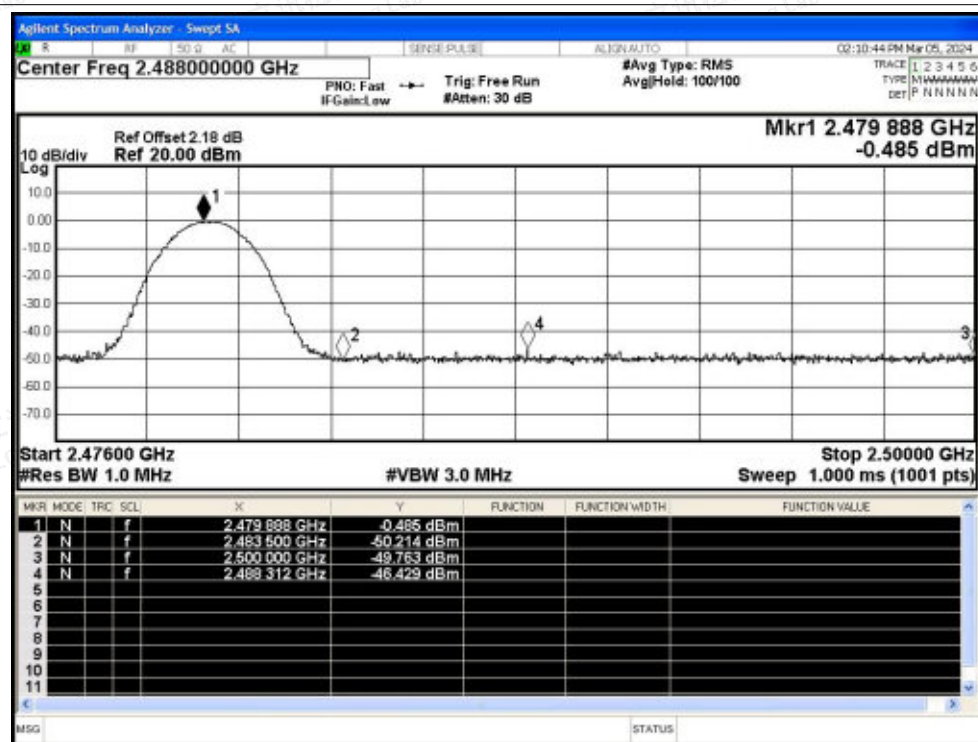


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average

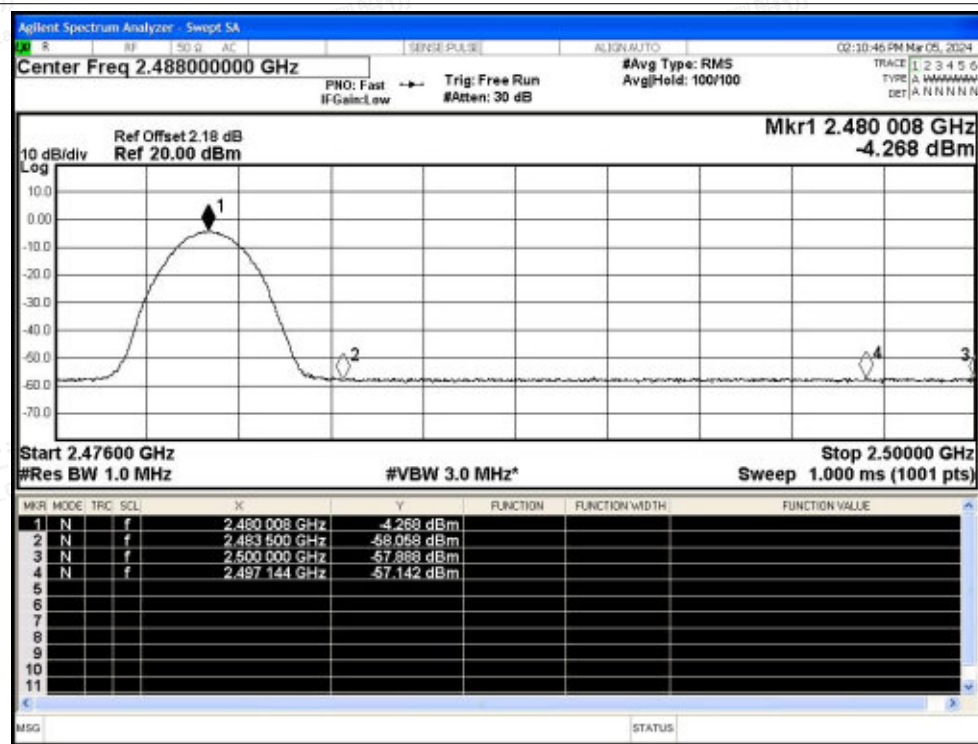




Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak

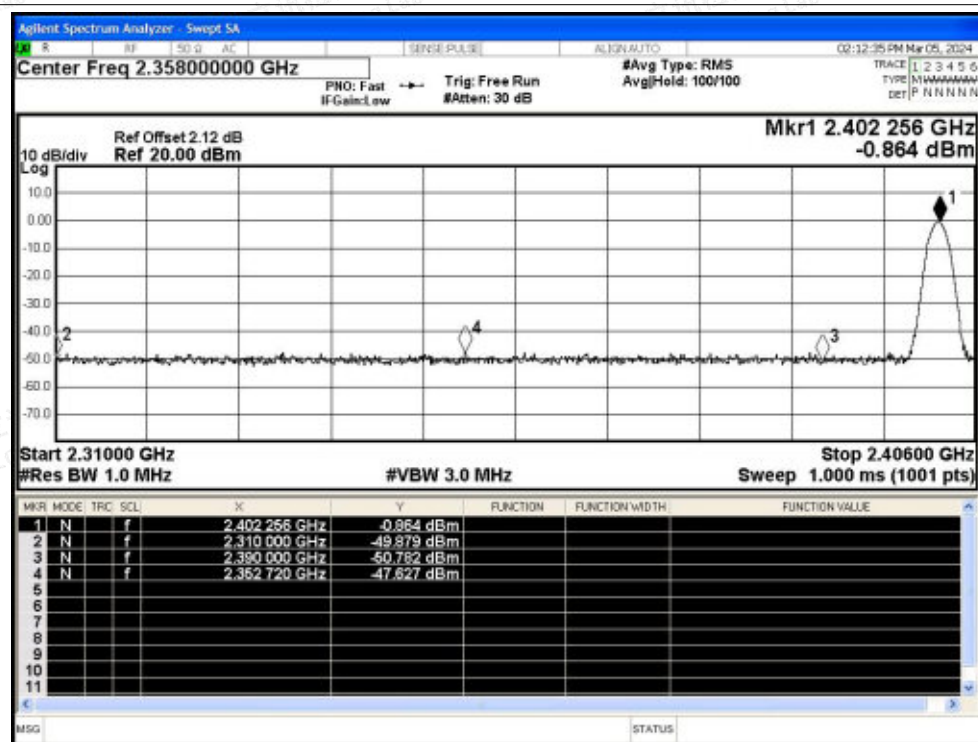


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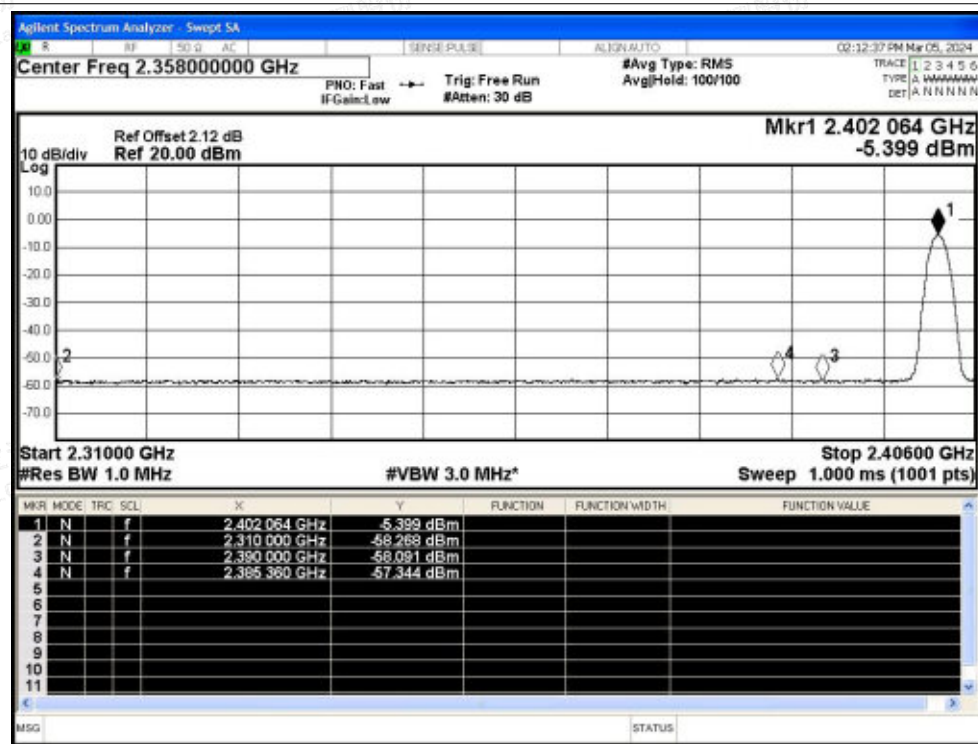




Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak

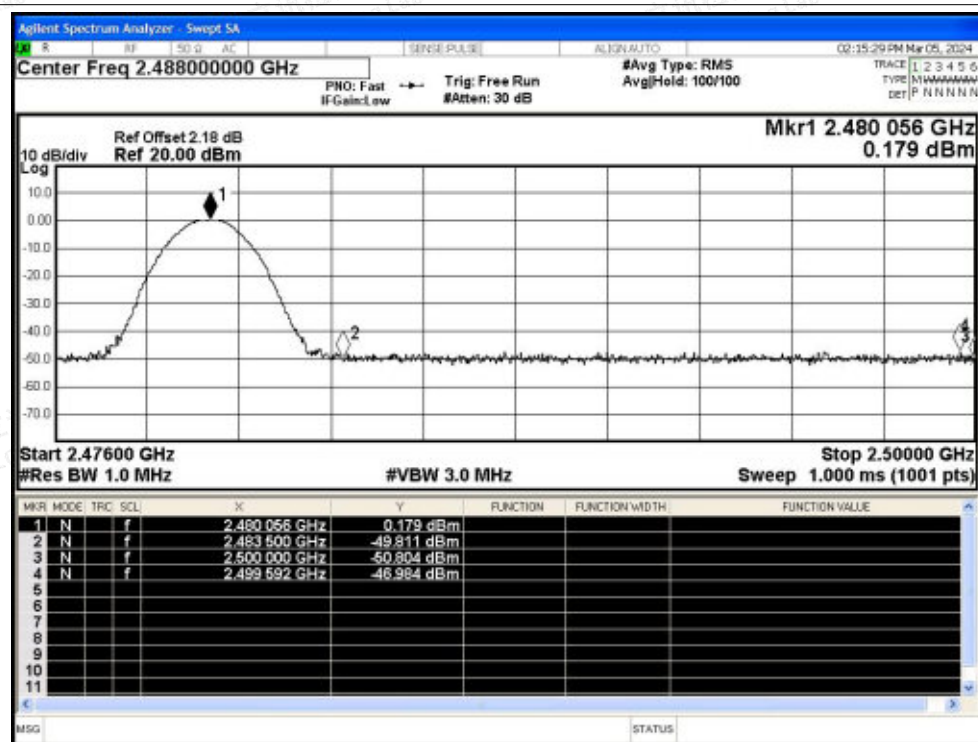


Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average





Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average

