

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth Speaker

Test Model: OS-1523



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	0.953	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.007	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.009	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.281	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.282	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.287	N/A	Pass



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Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

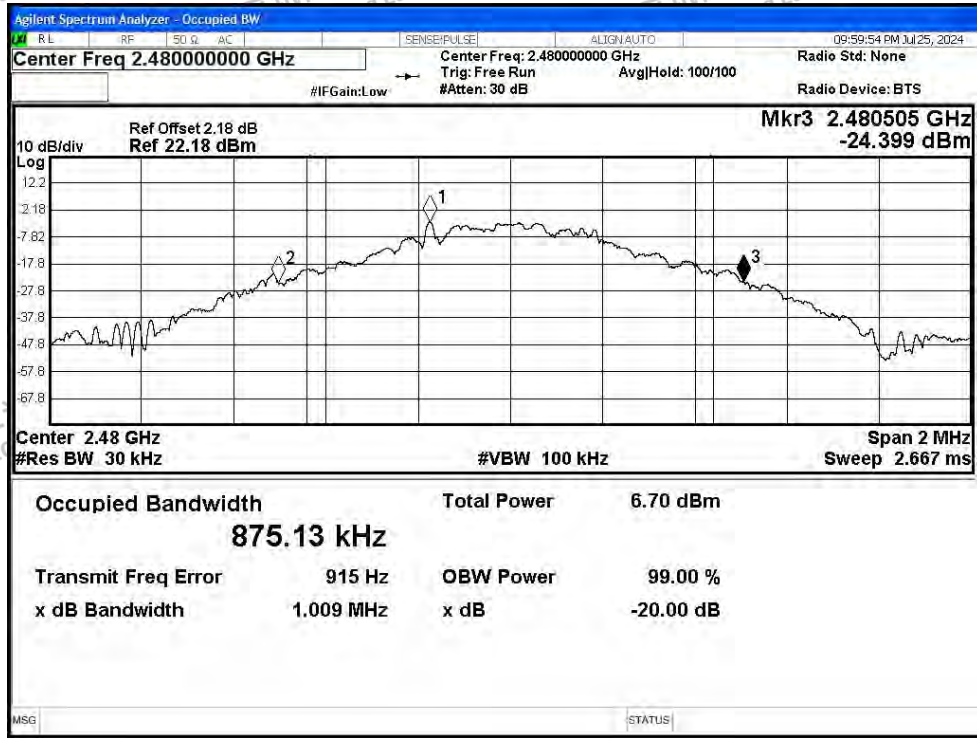


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

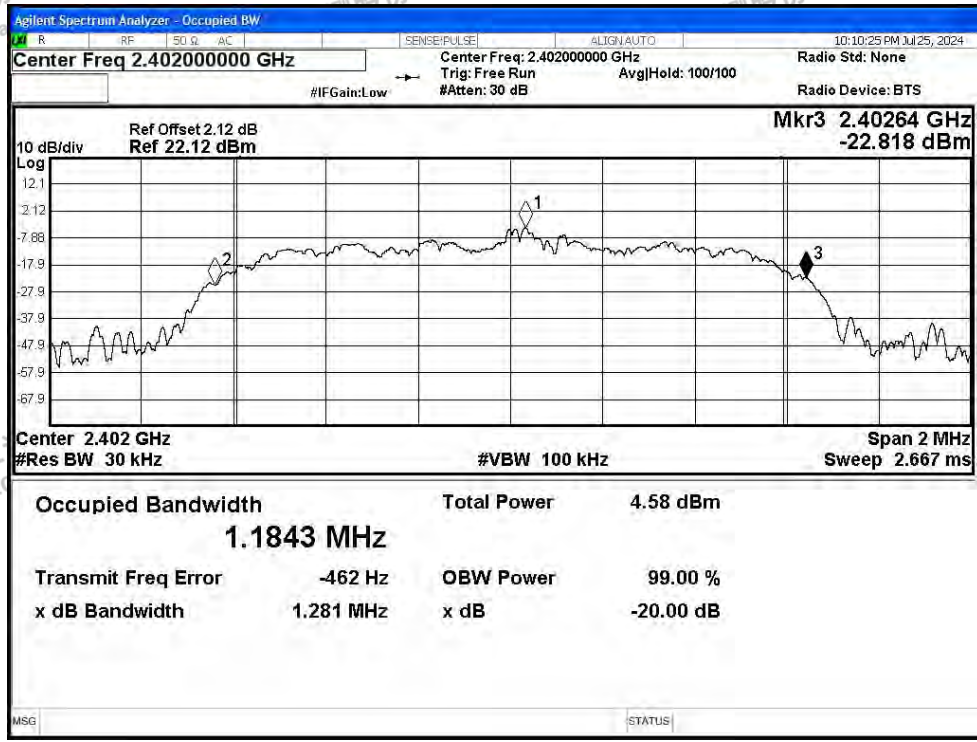




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

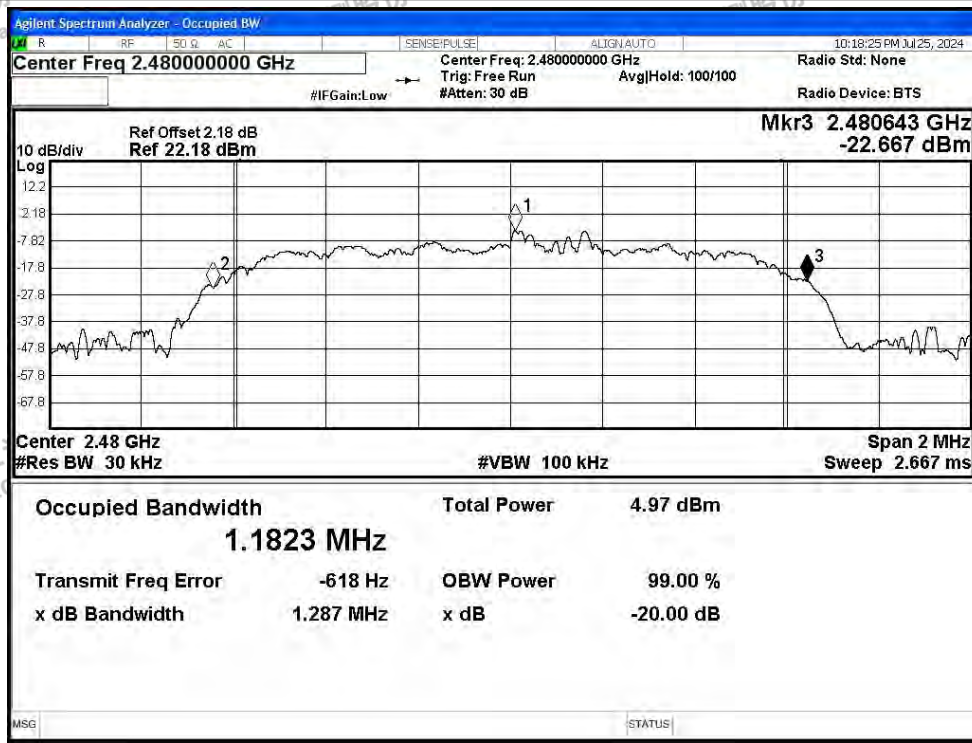




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1





A.2 Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.7	21	Pass
NVNT	1-DH5	2441	Ant1	0.74	21	Pass
NVNT	1-DH5	2480	Ant1	0.4	21	Pass
NVNT	2-DH5	2402	Ant1	0.03	21	Pass
NVNT	2-DH5	2441	Ant1	0.76	21	Pass
NVNT	2-DH5	2480	Ant1	0.16	21	Pass

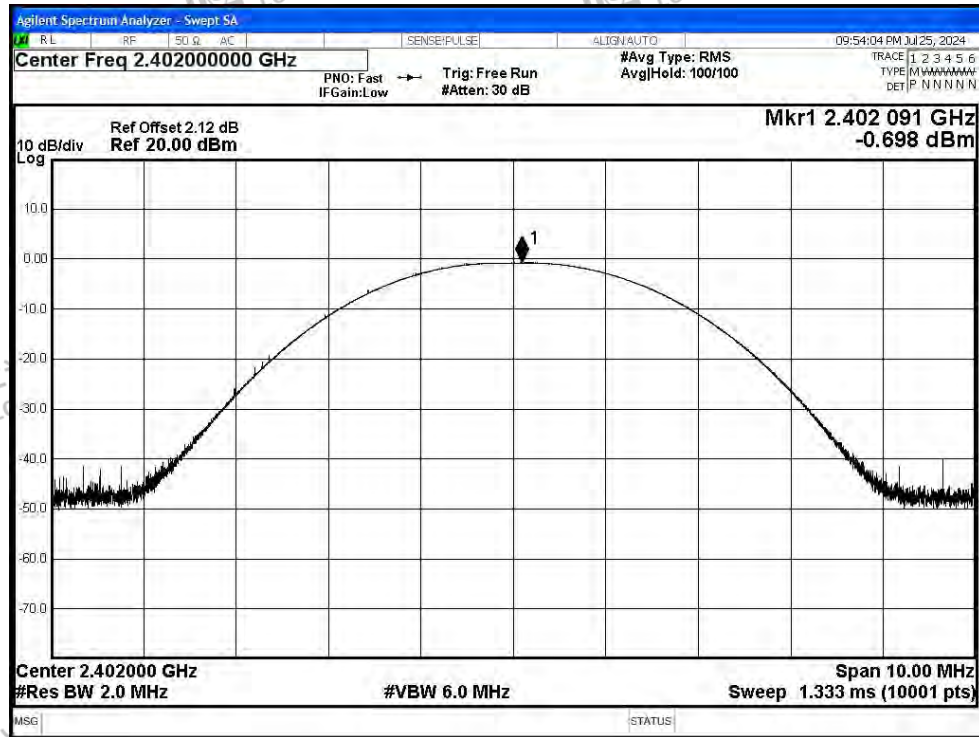


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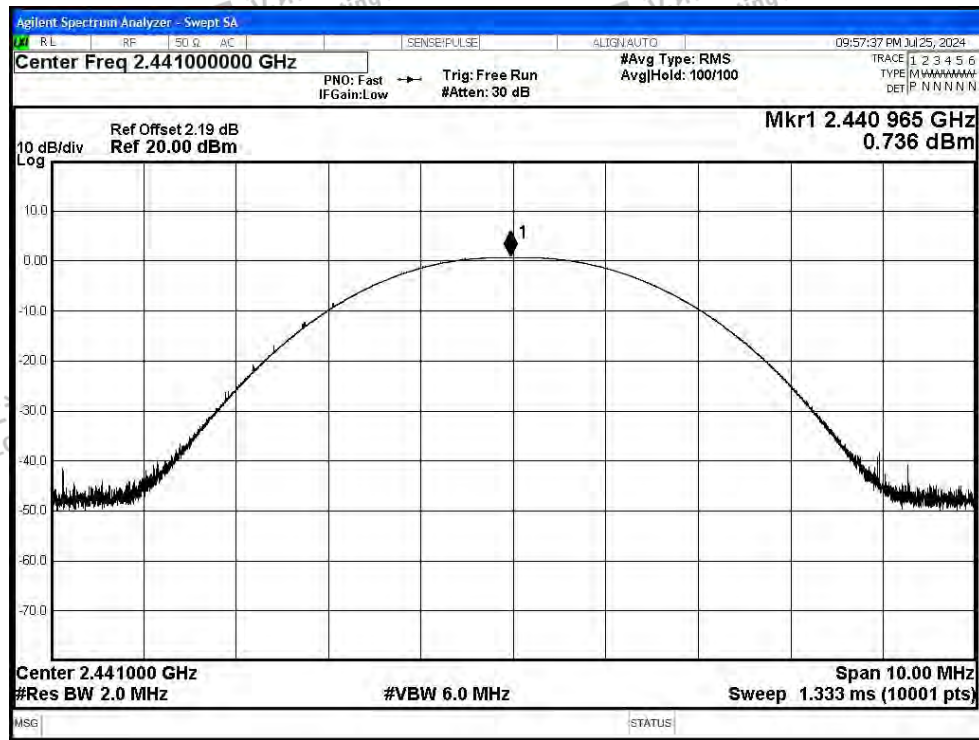


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

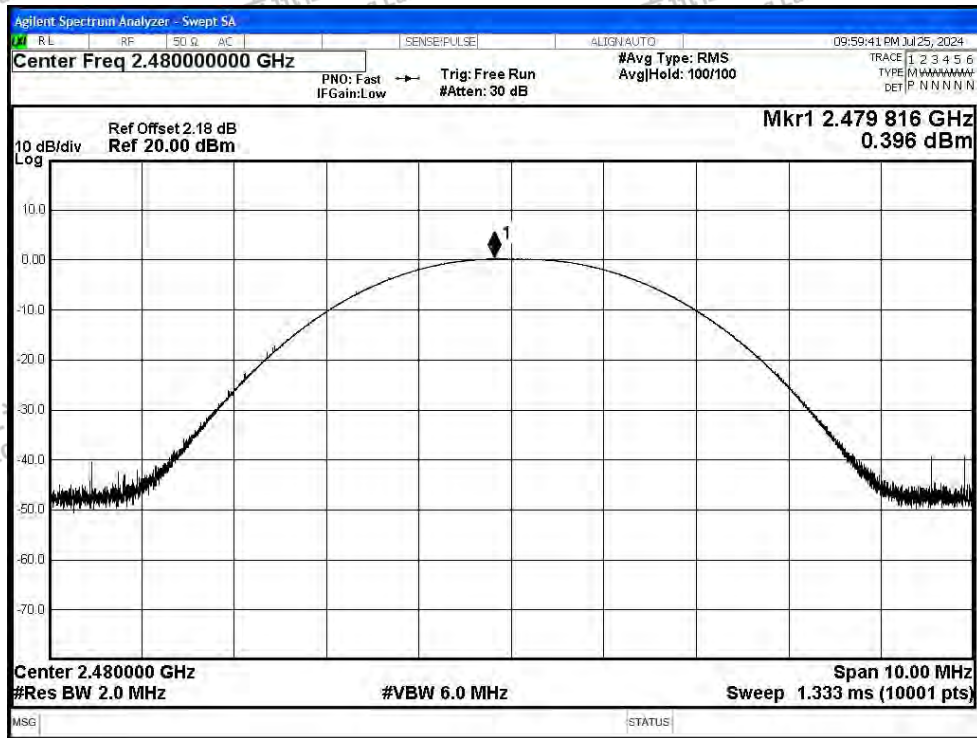


Power NVNT 1-DH5 2441MHz Ant1

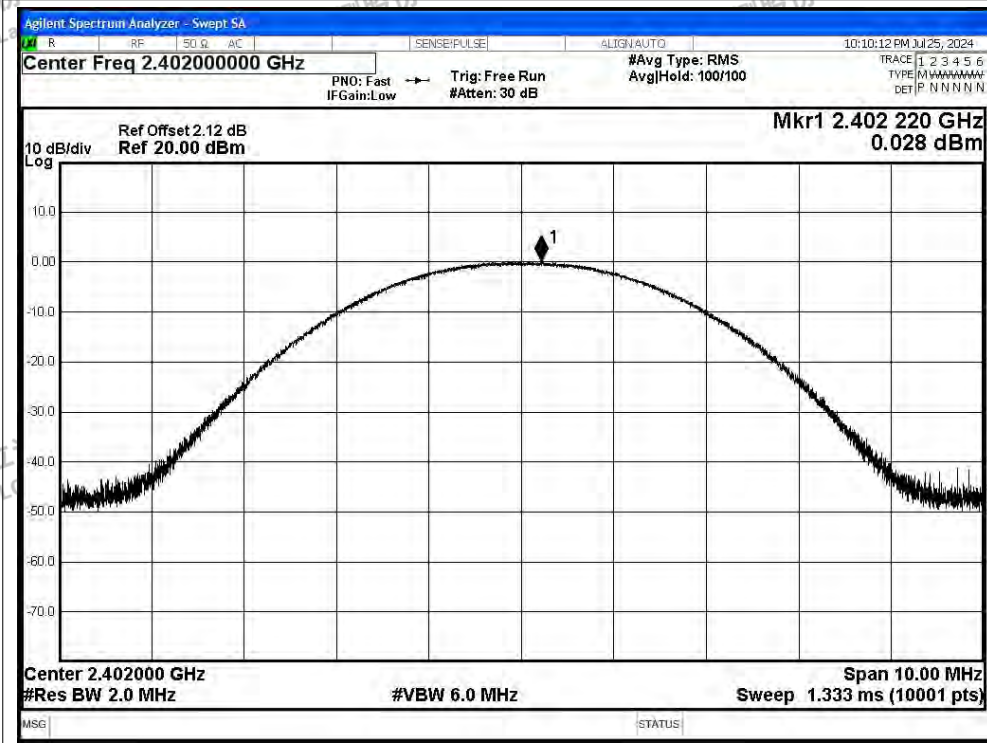




Power NVNT 1-DH5 2480MHz Ant1

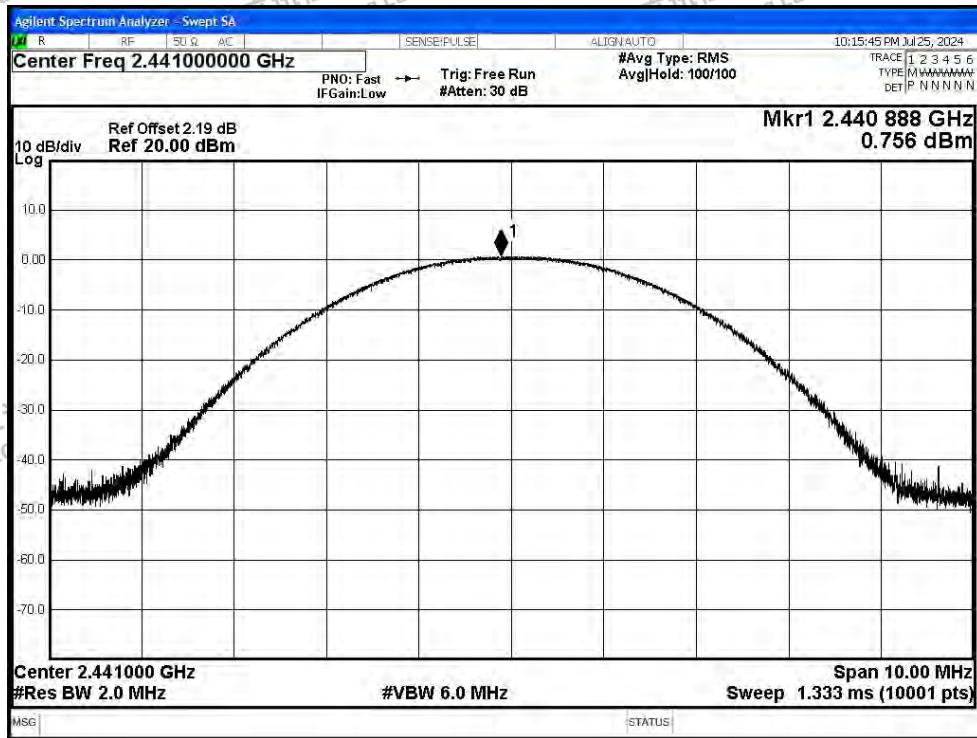


Power NVNT 2-DH5 2402MHz Ant1

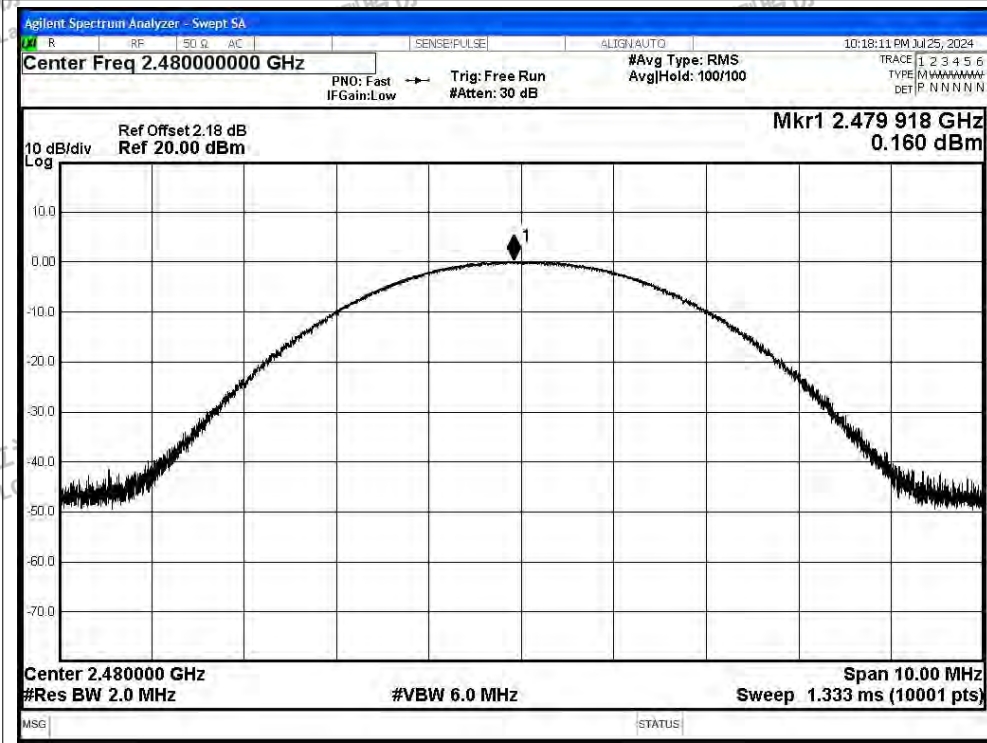




Power NVNT 2-DH5 2441MHz Ant1



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	2401.84	2402.836	0.996	0.673	Pass
NVNT	2-DH5	Ant1	2402.032	2403.03	0.998	0.858	Pass



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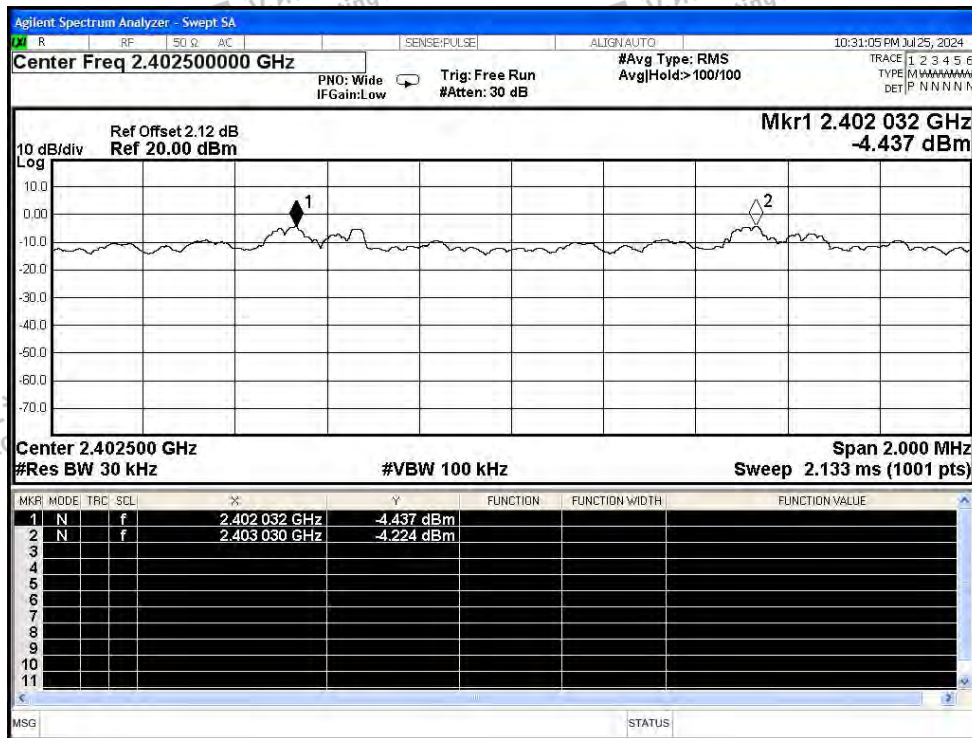


Test Graphs

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	325.92	112	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	292.698	101	31600	400	Pass

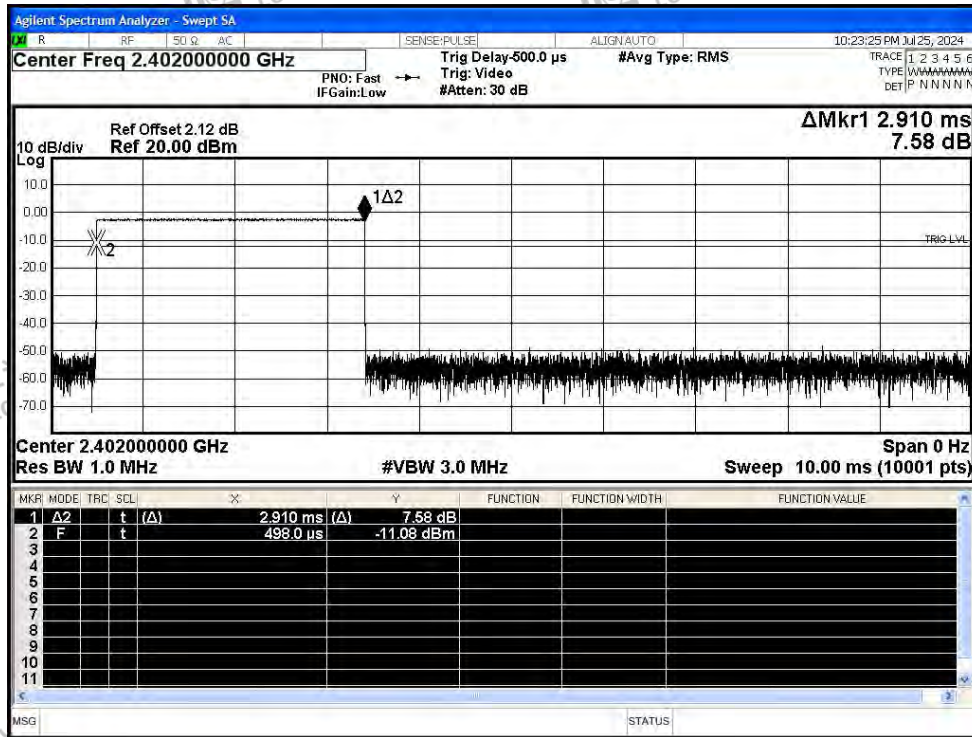


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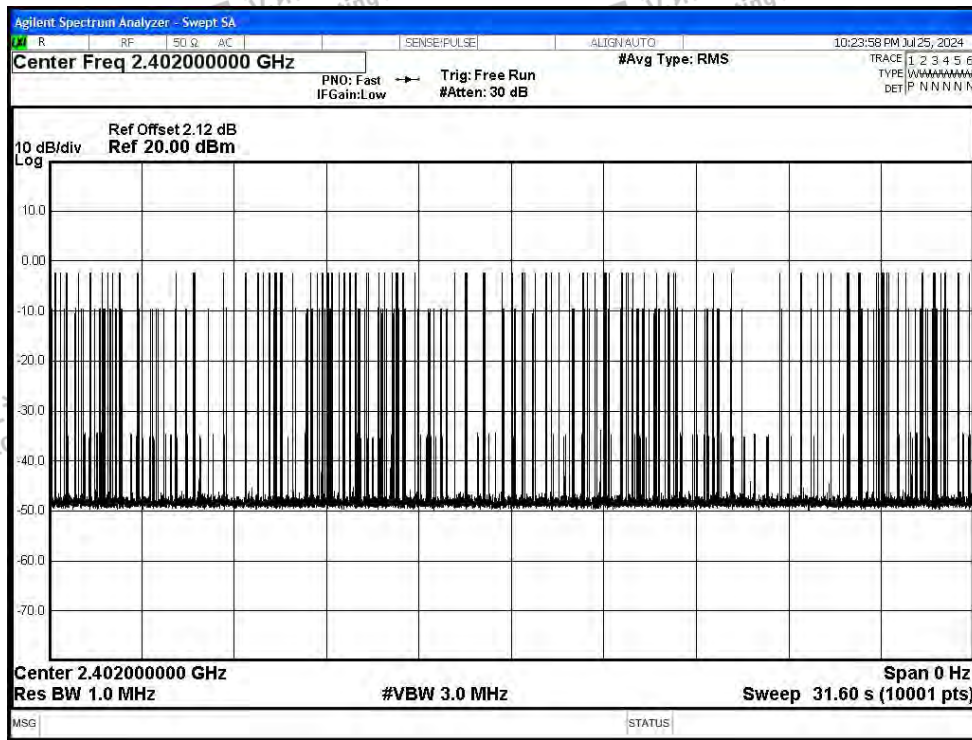


Test Graphs

Dwell-NVNT 1-DH5 2402MHz Ant1 One Burst

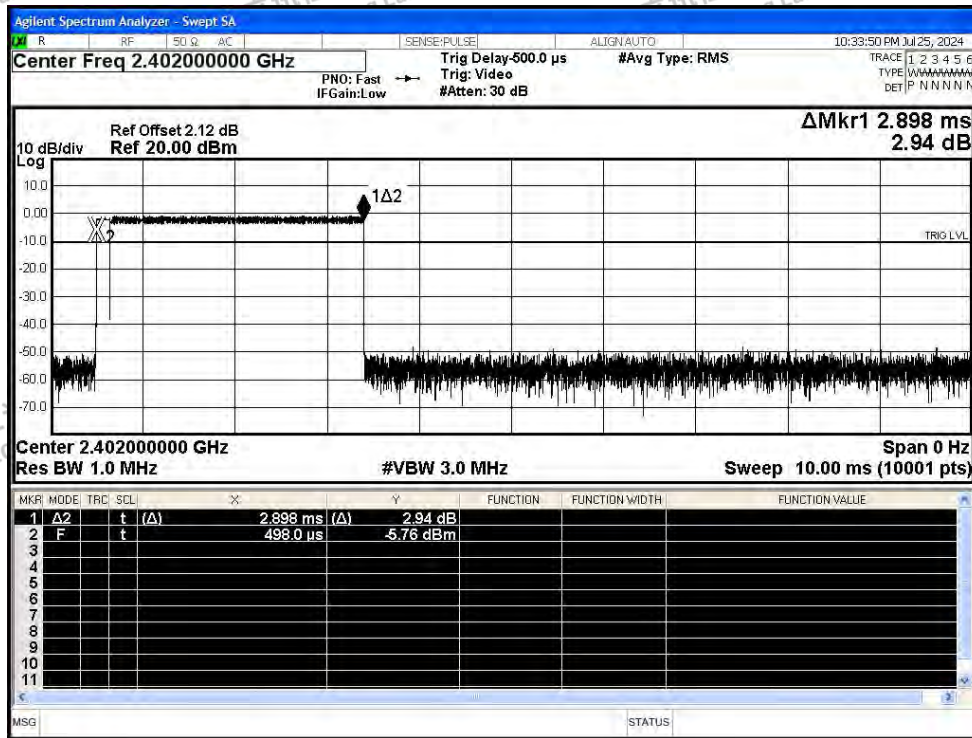


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

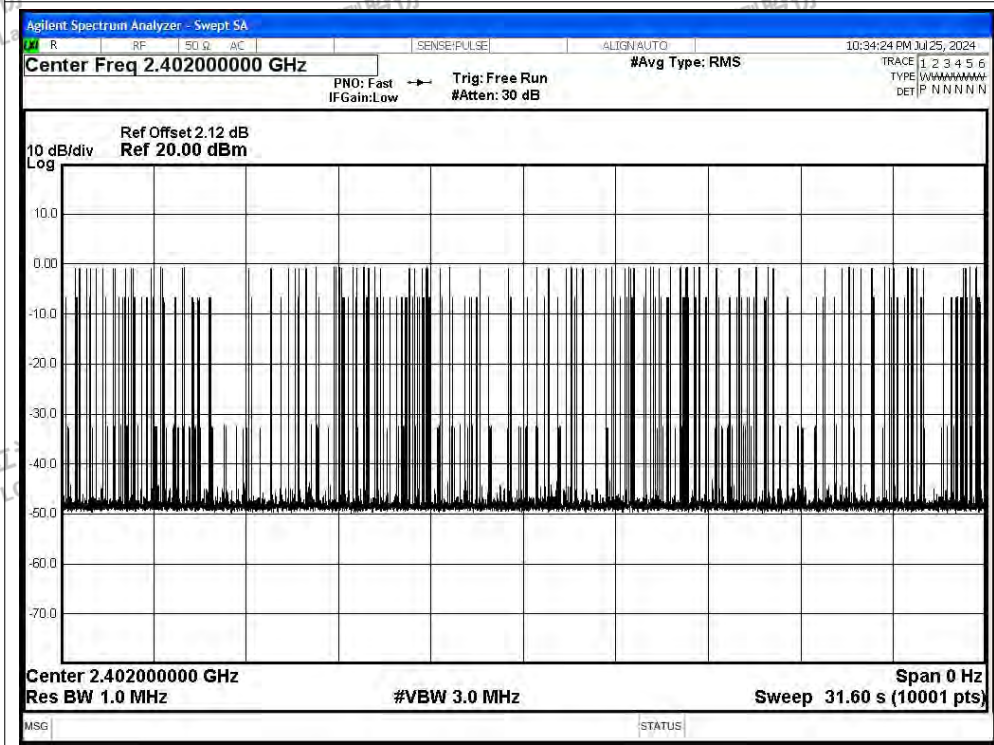




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated





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

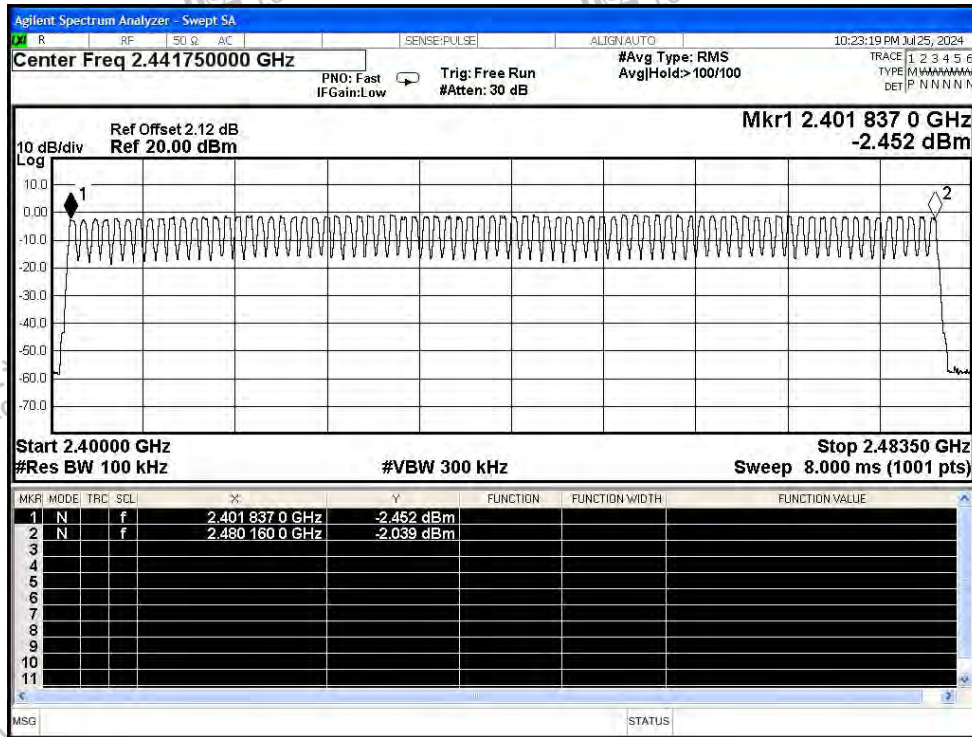


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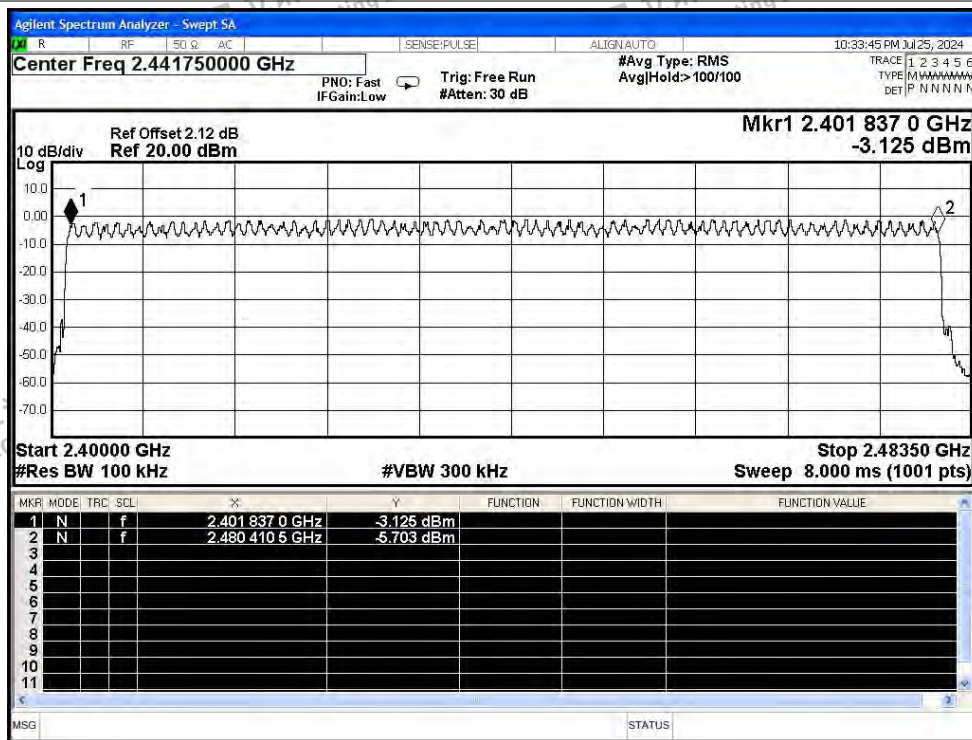


Test Graphs

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	-55.64	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-57.3	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-54.53	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-53.85	-20	Pass

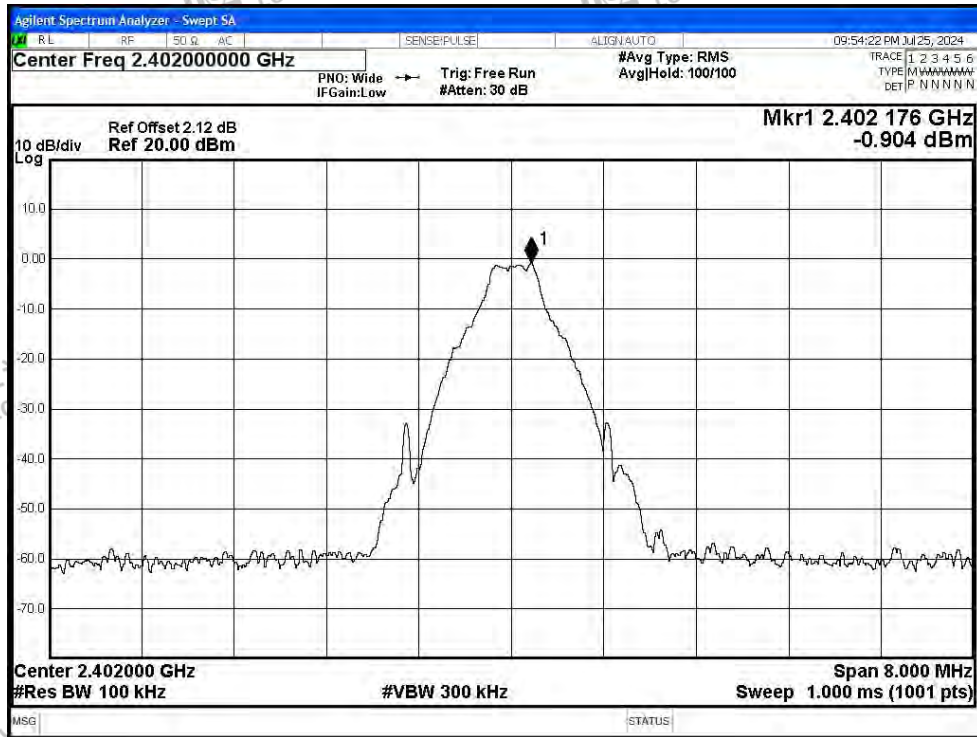


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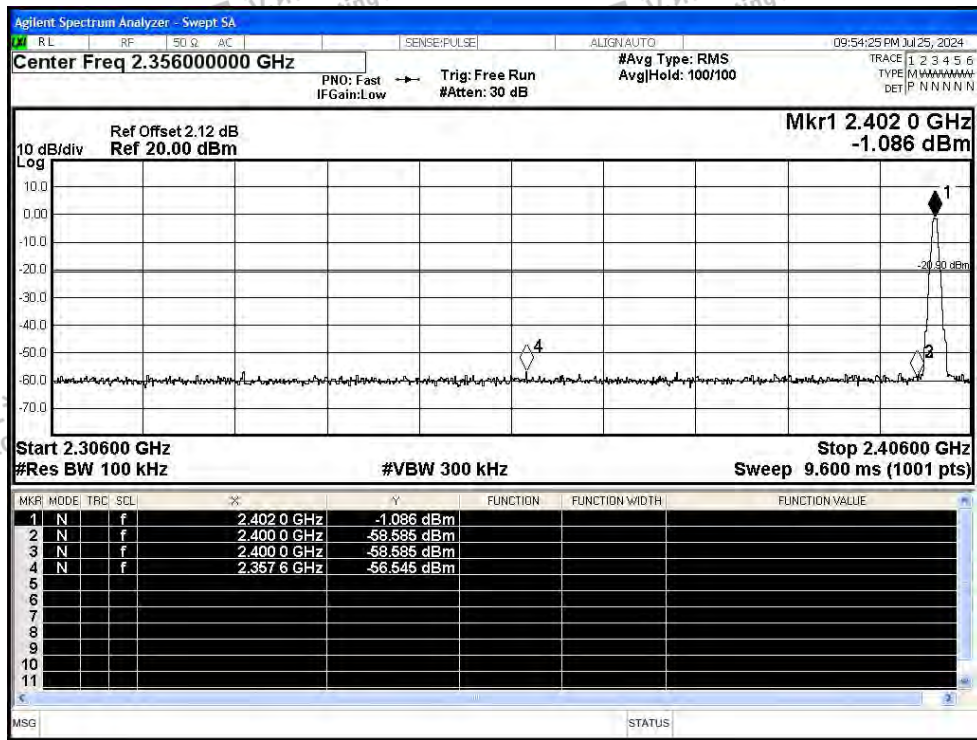


Test Graphs

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

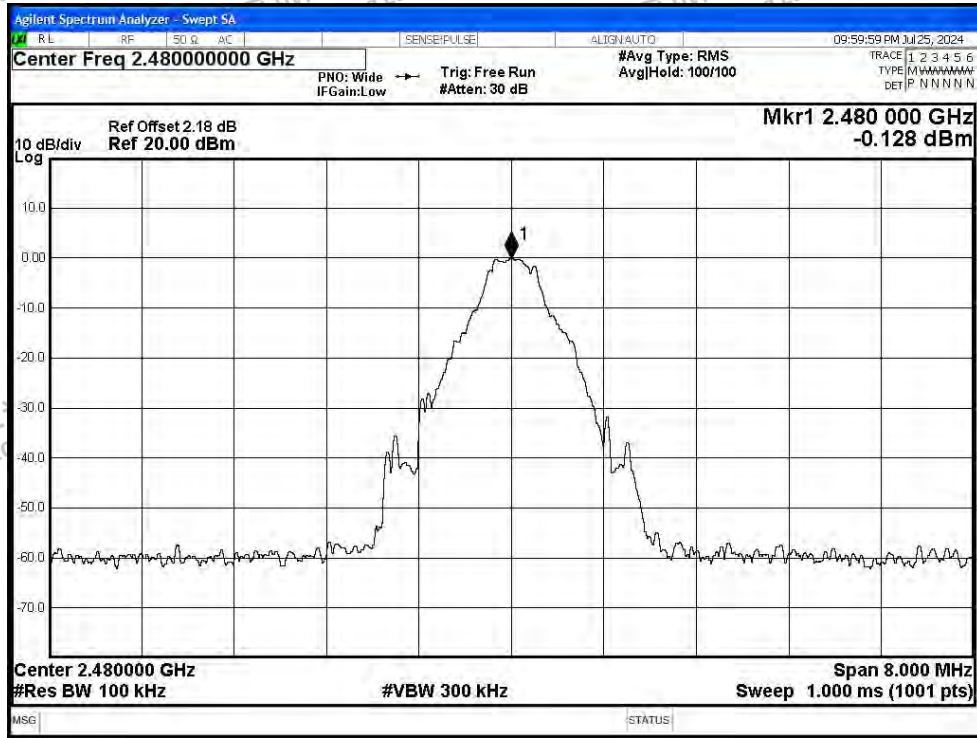


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

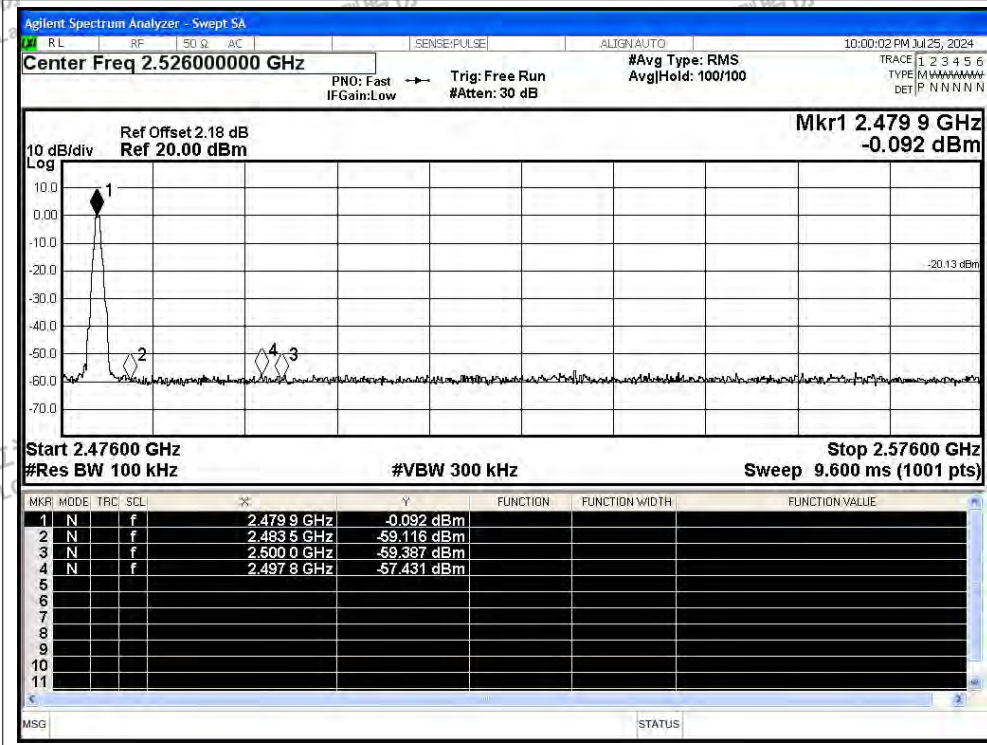




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

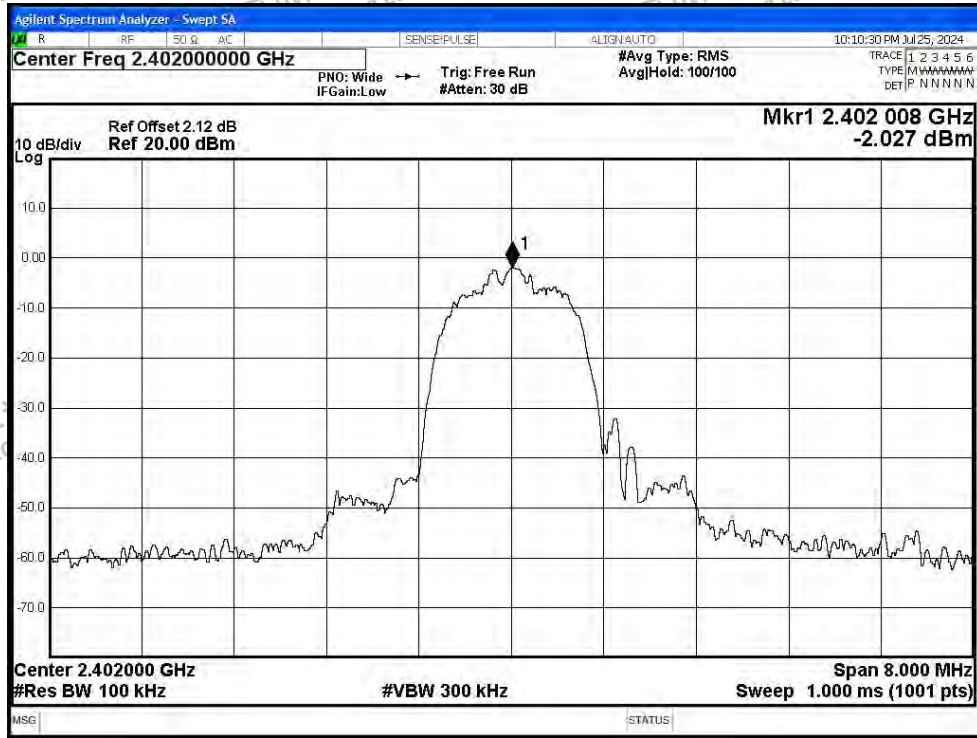


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

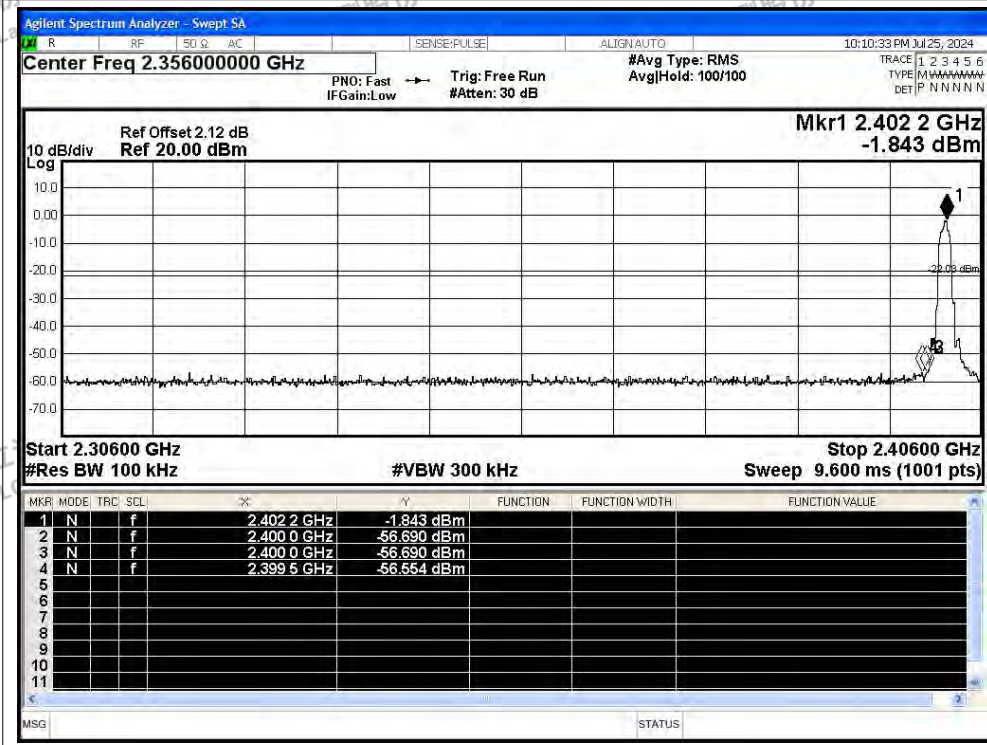




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

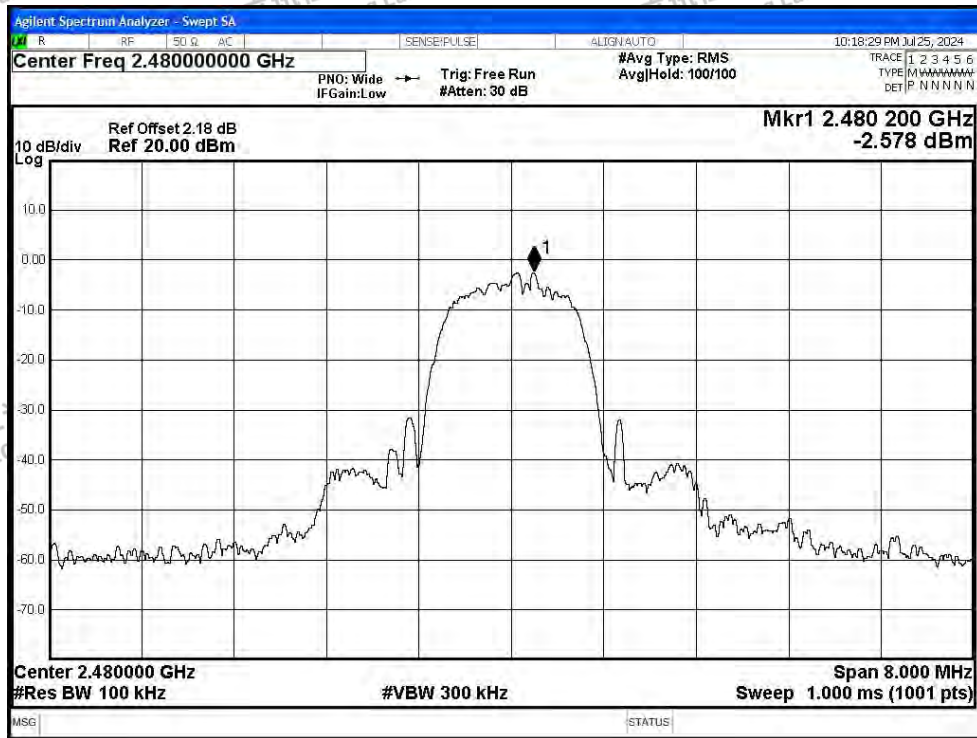


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

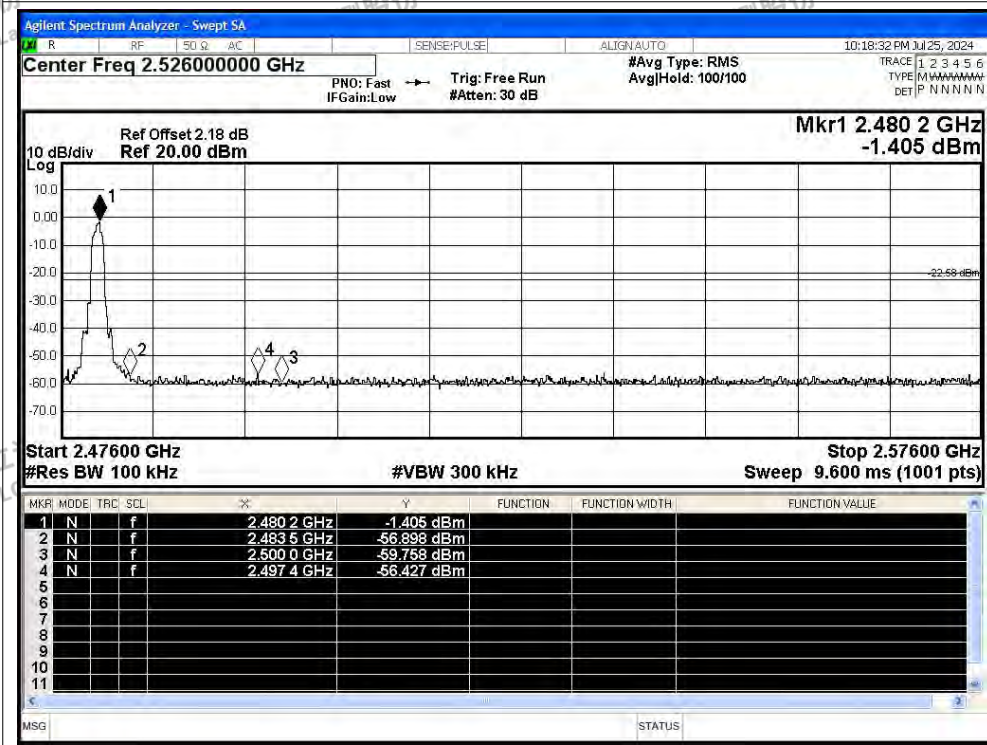




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



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	-53.46	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-53.98	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-53.88	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.25	-20	Pass

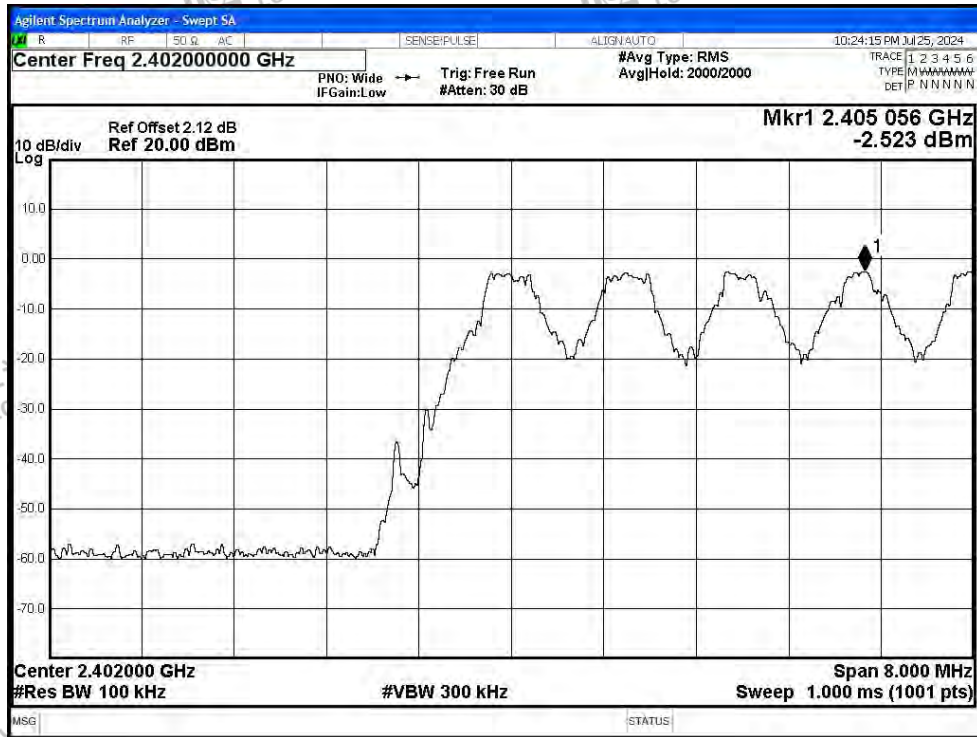


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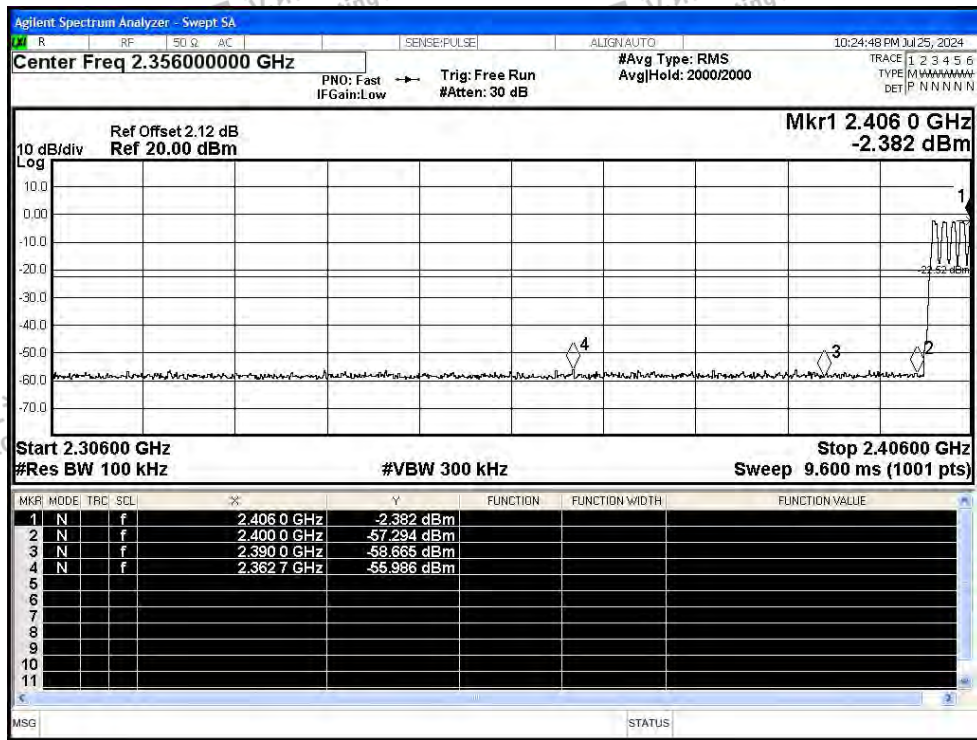


Test Graphs

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

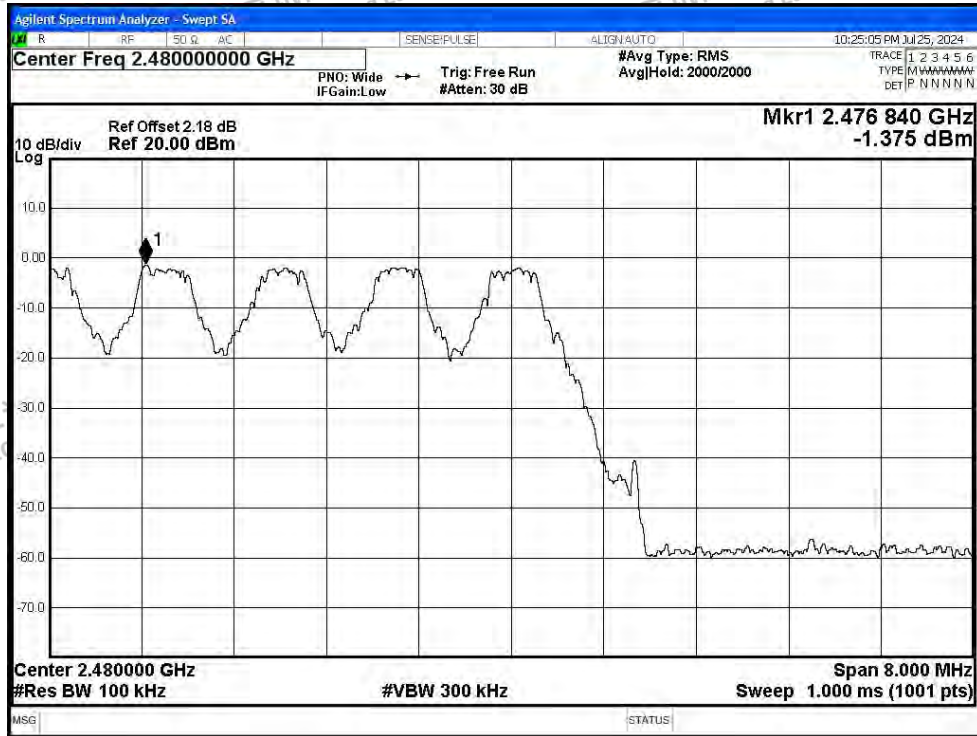


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

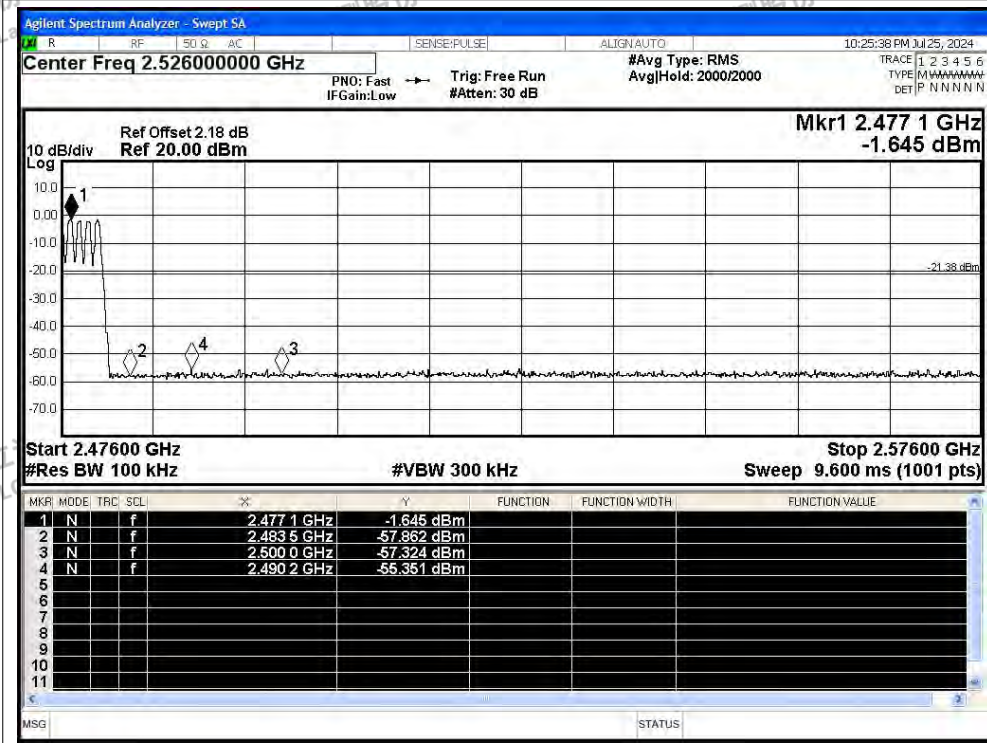




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref

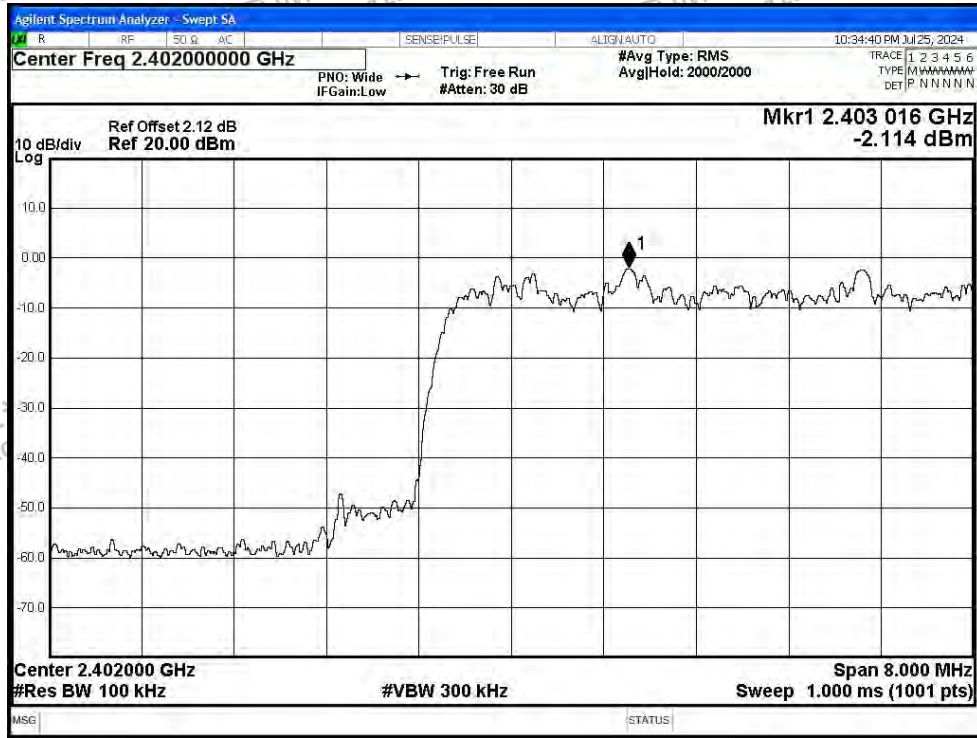


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission

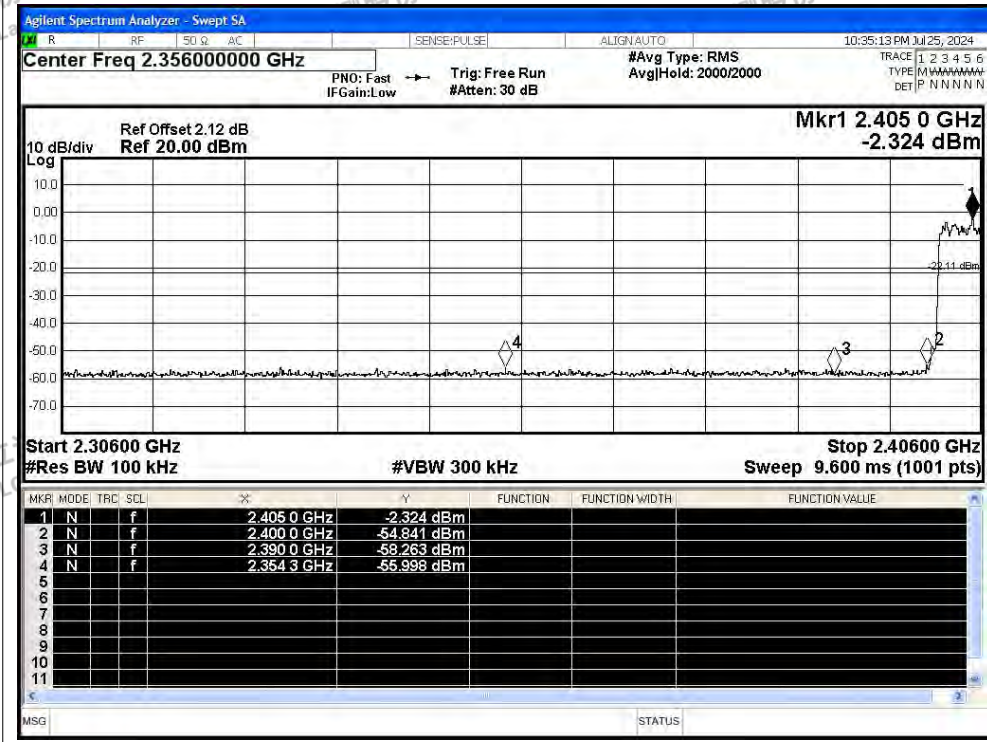




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



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

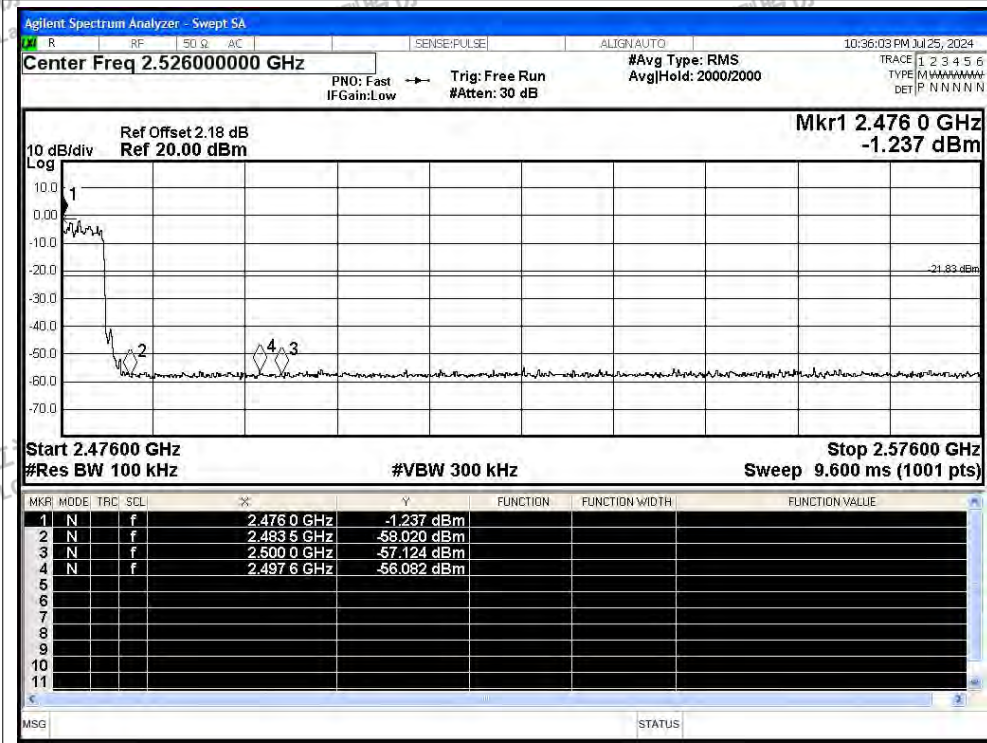




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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	-53.24	-20	Pass
NVNT	1-DH5	2441	Ant1	-55.69	-20	Pass
NVNT	1-DH5	2480	Ant1	-54.43	-20	Pass
NVNT	2-DH5	2402	Ant1	-52.75	-20	Pass
NVNT	2-DH5	2441	Ant1	-53.39	-20	Pass
NVNT	2-DH5	2480	Ant1	-53.62	-20	Pass



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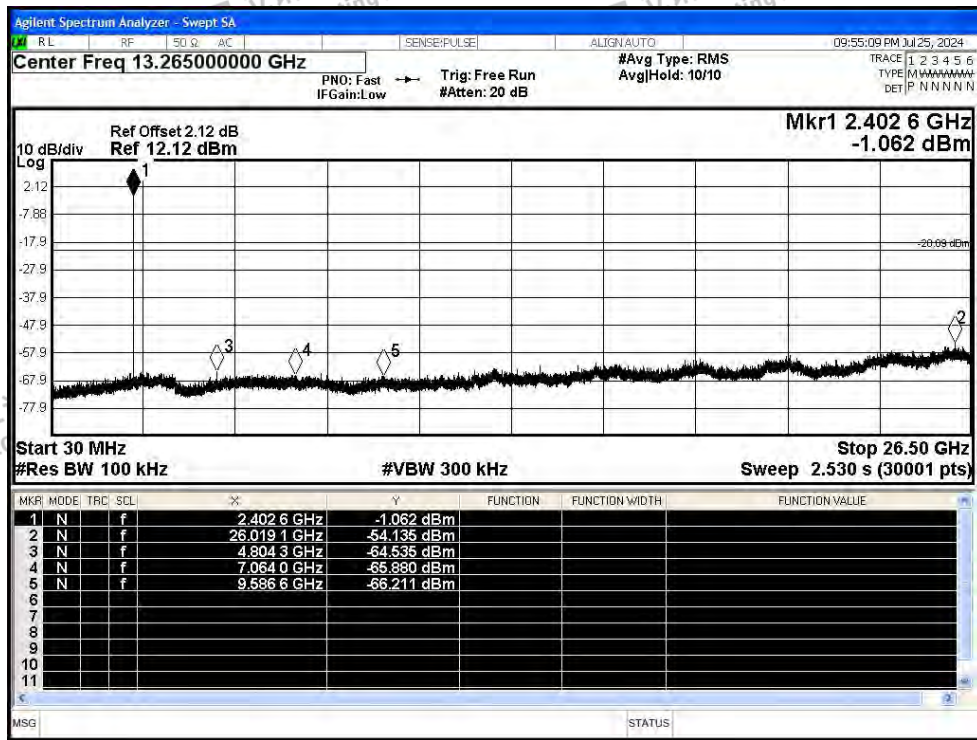


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

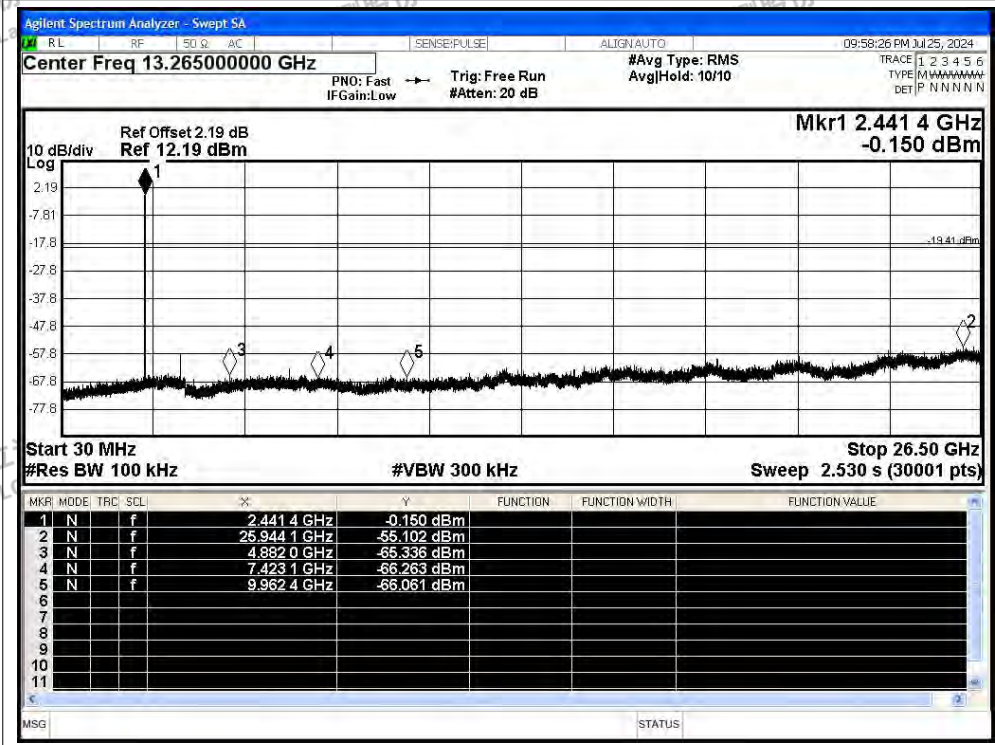




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

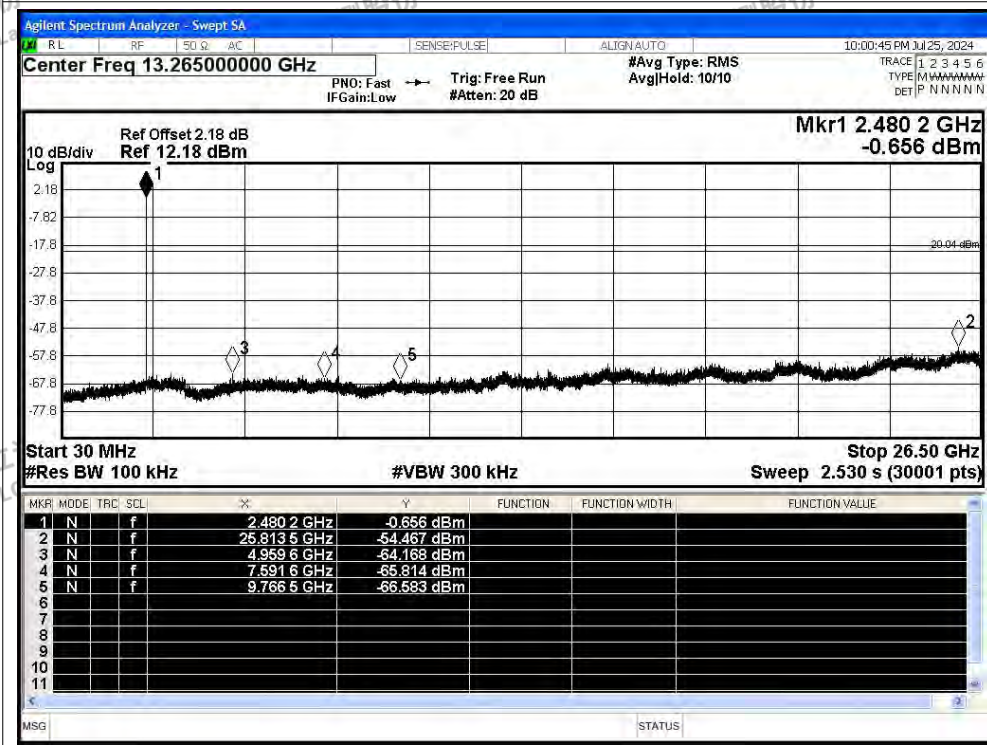




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

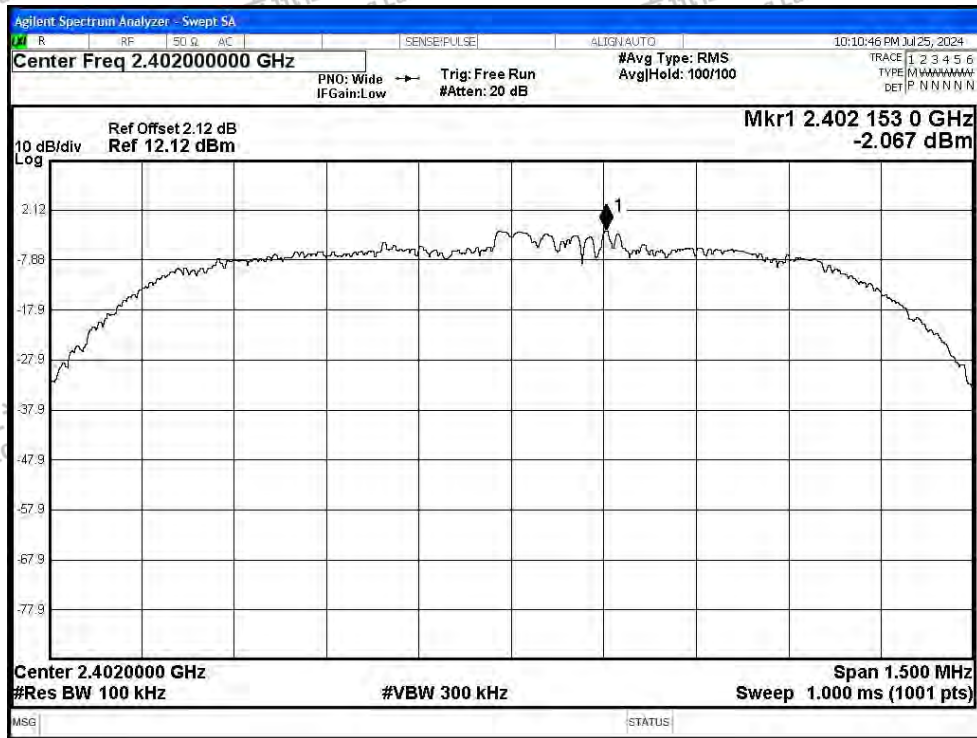


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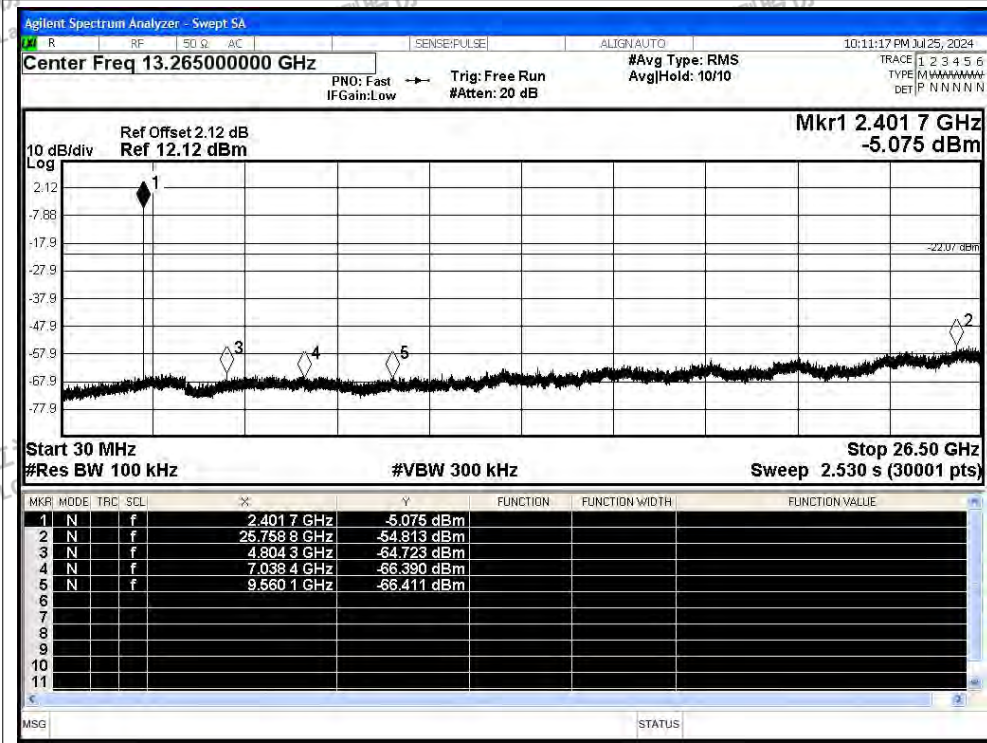




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

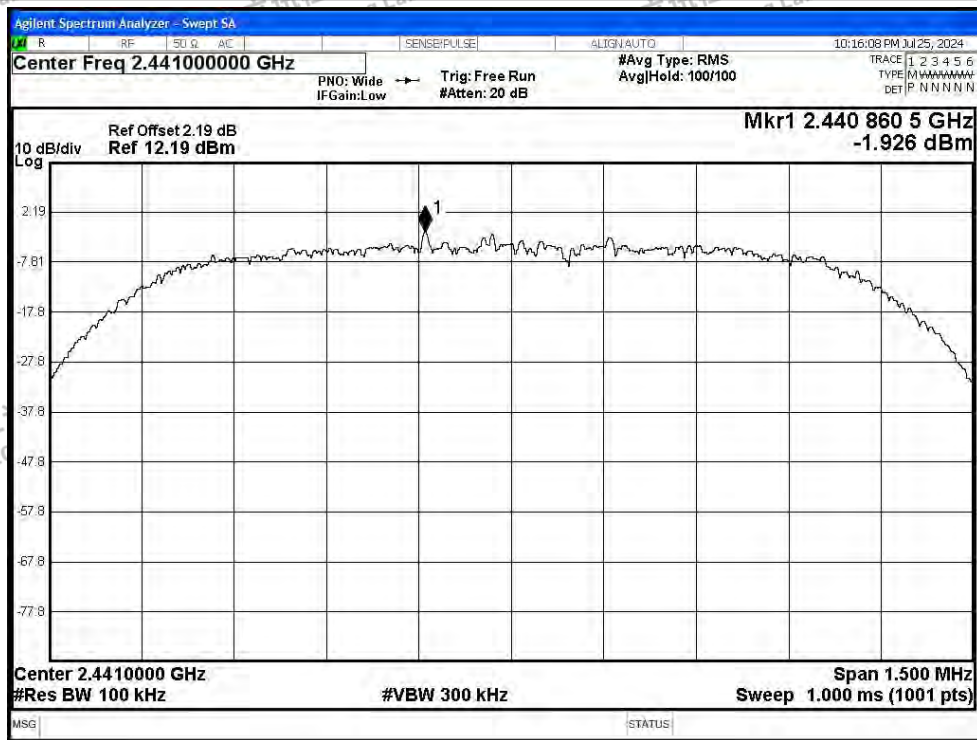


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

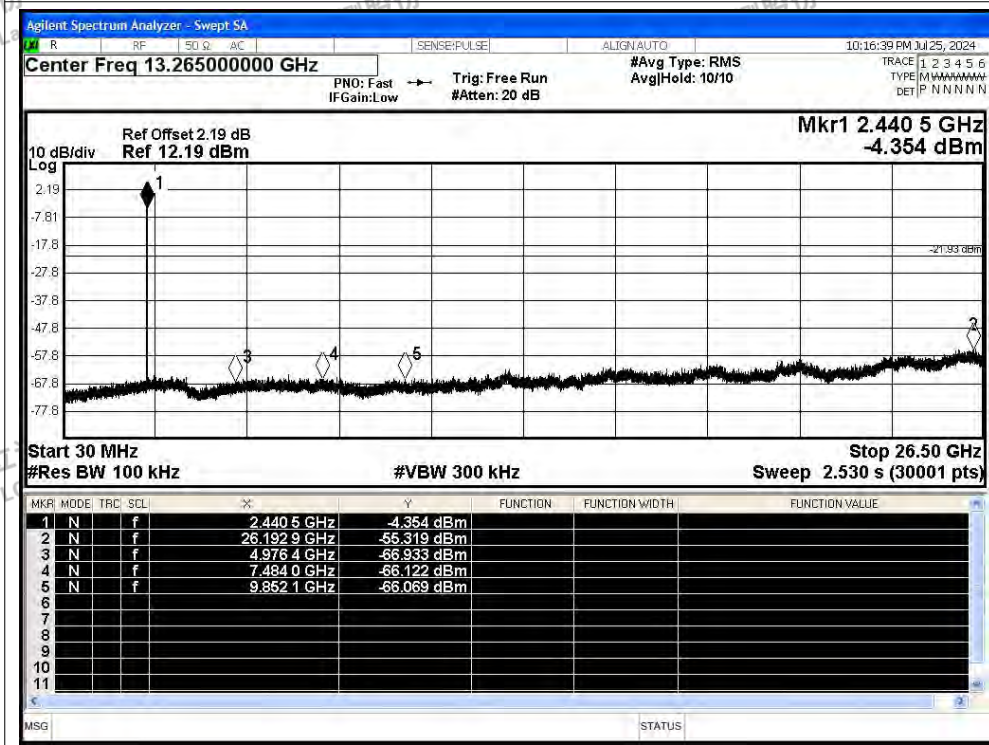




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

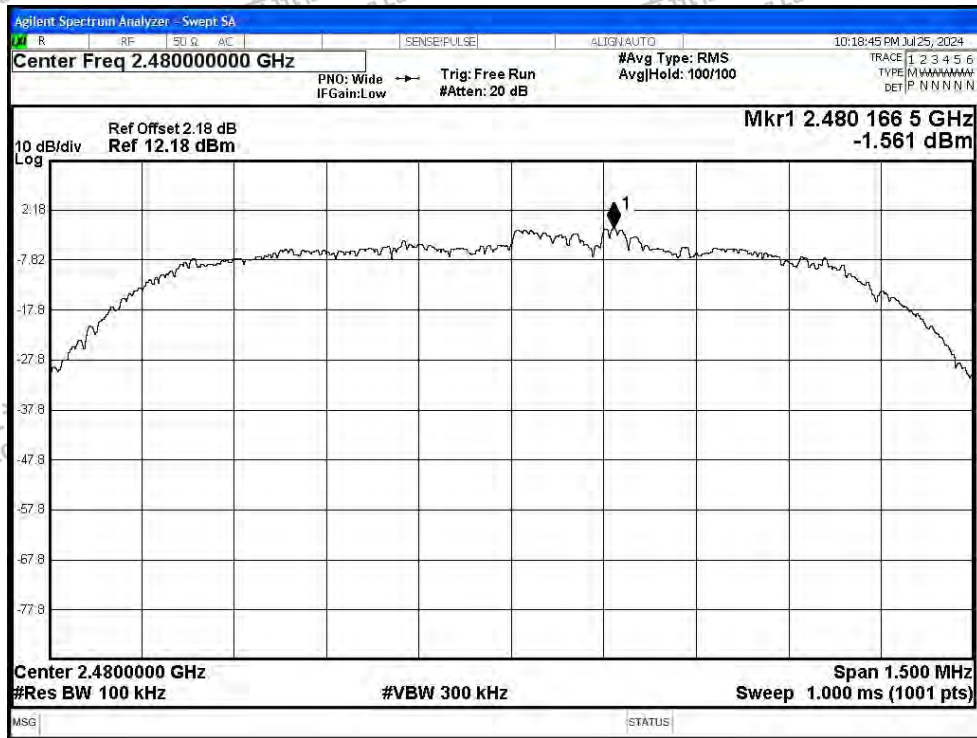


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

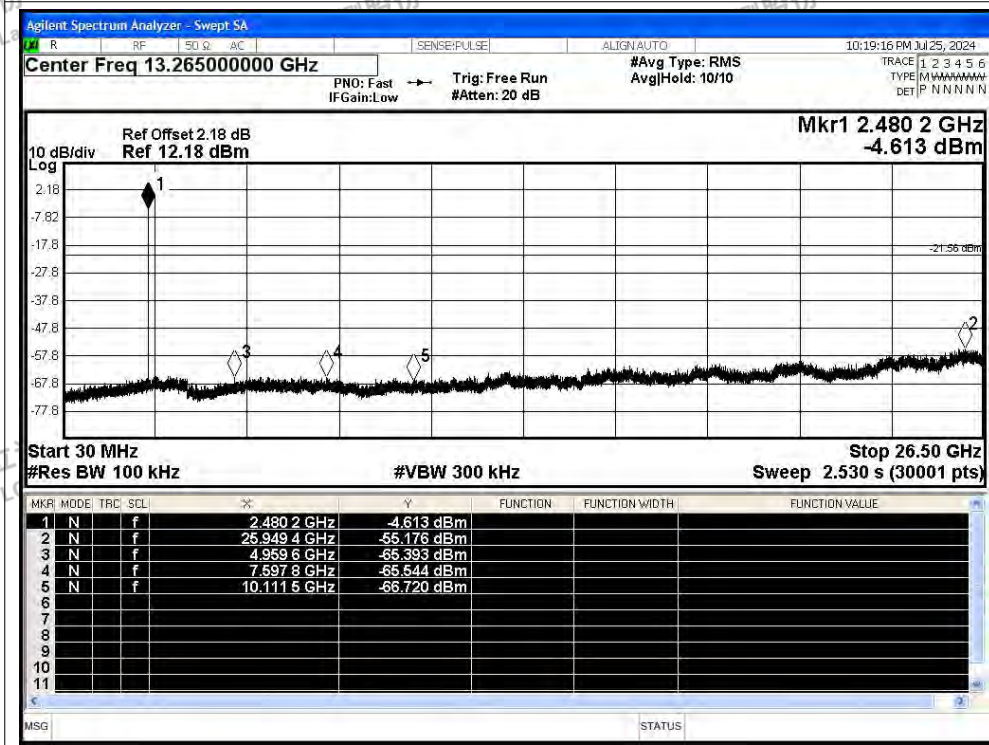




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



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	77.63	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2441	Ant1	76.43	1.17	0.36
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35

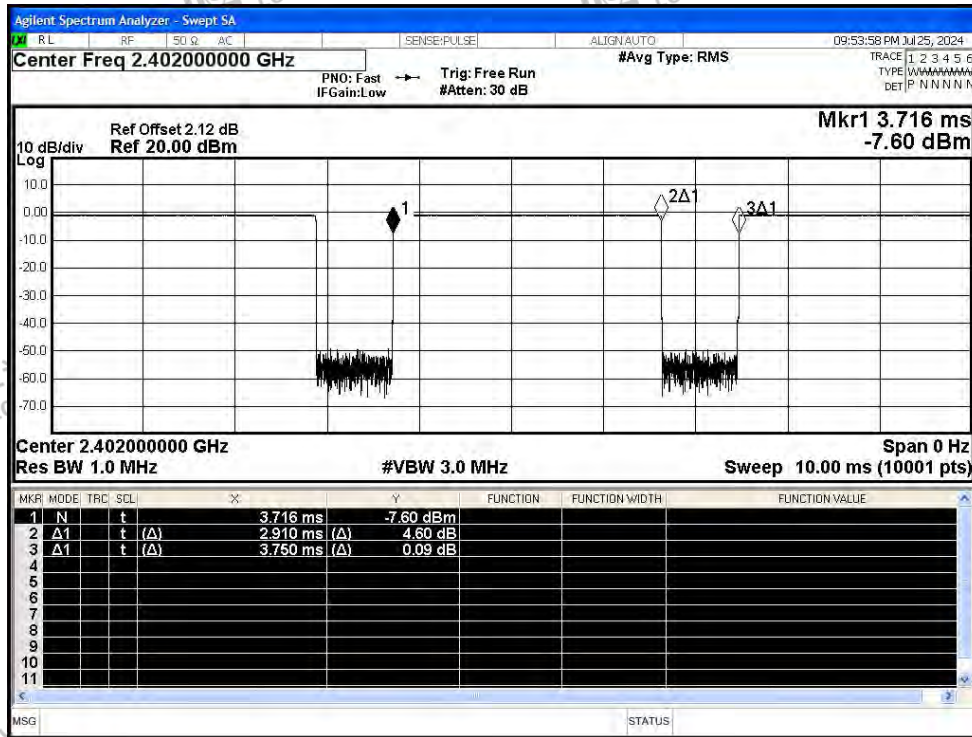


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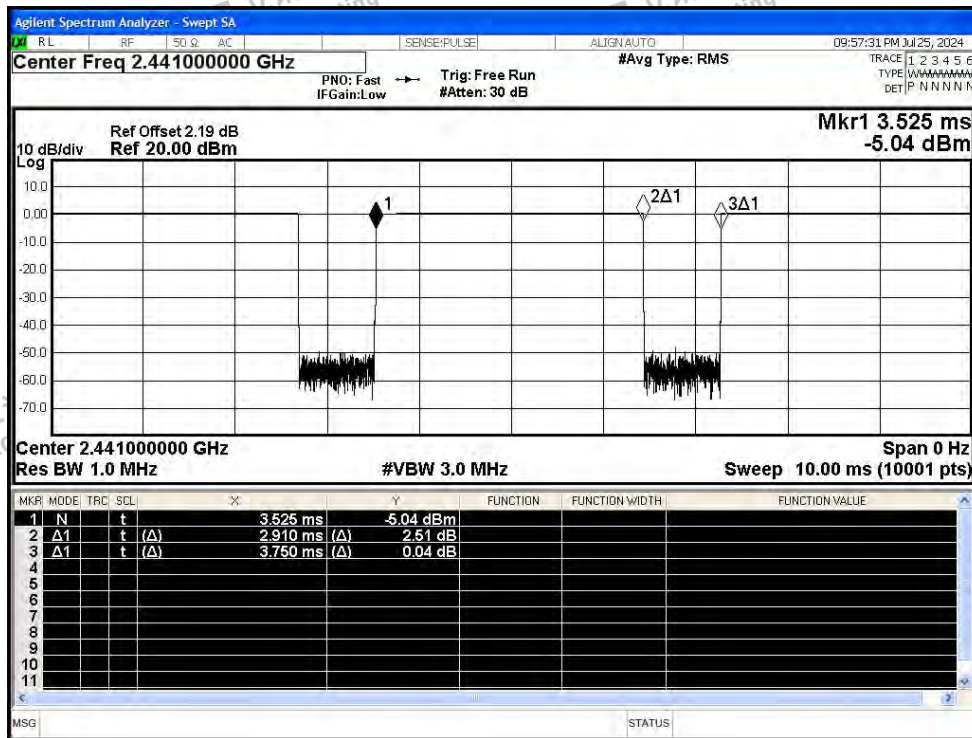


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

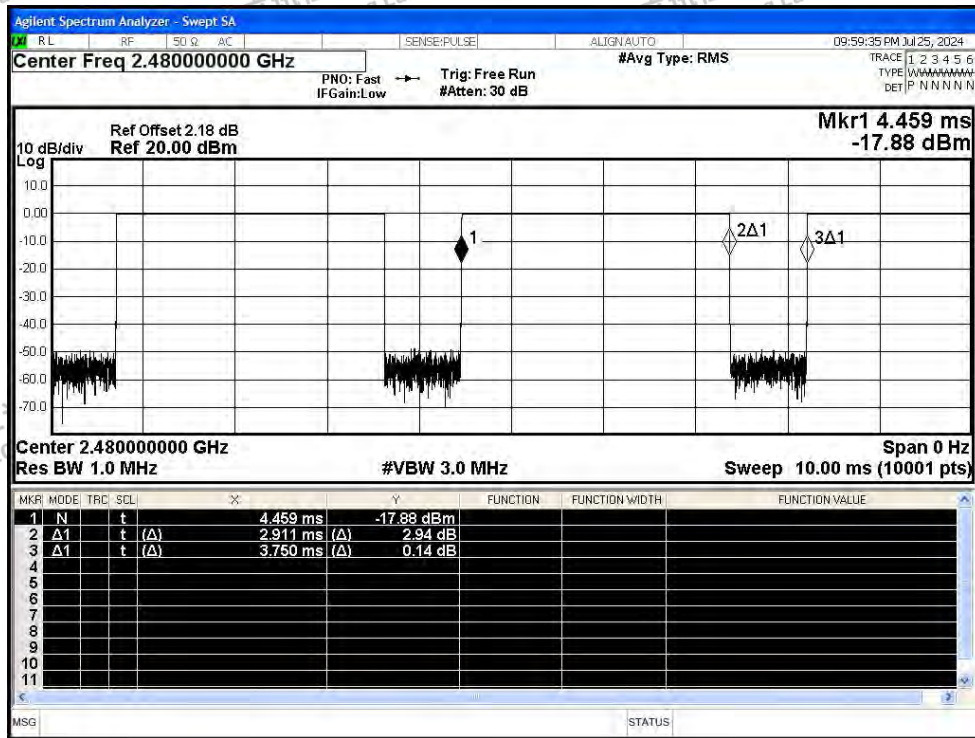


Duty Cycle NVNT 1-DH5 2441MHz Ant1

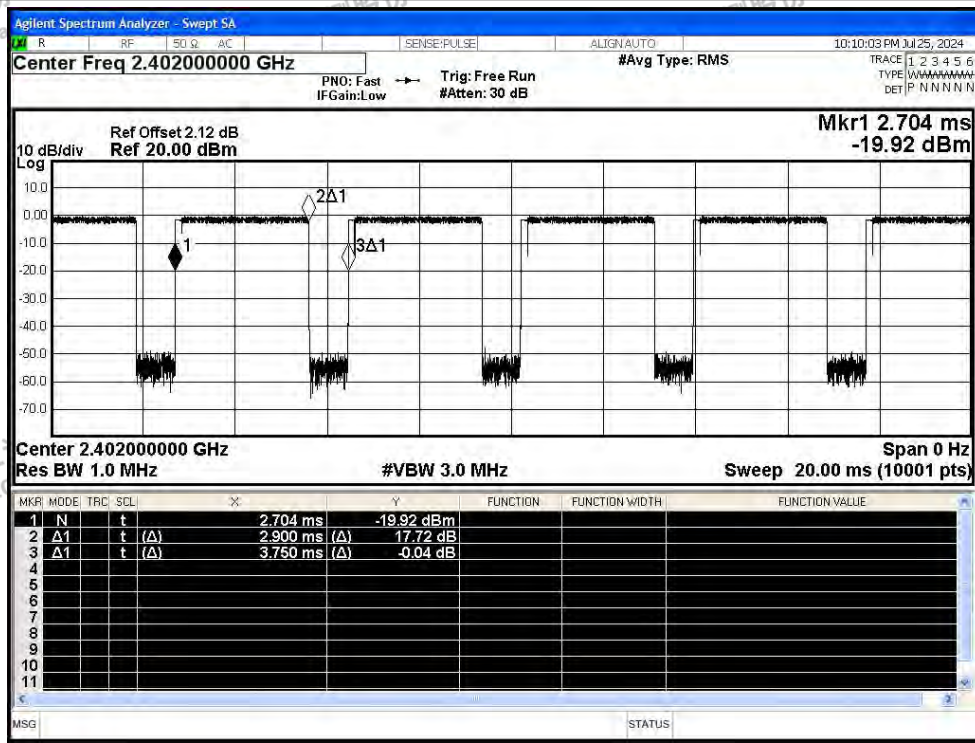




Duty Cycle NVNT 1-DH5 2480MHz Ant1

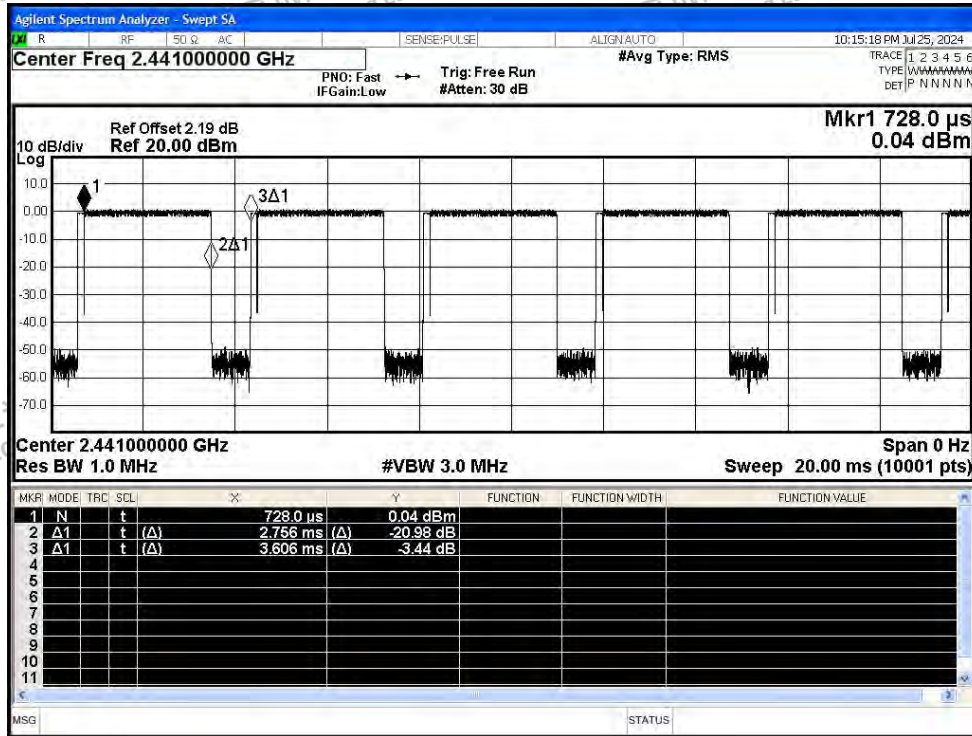


Duty Cycle NVNT 2-DH5 2402MHz Ant1

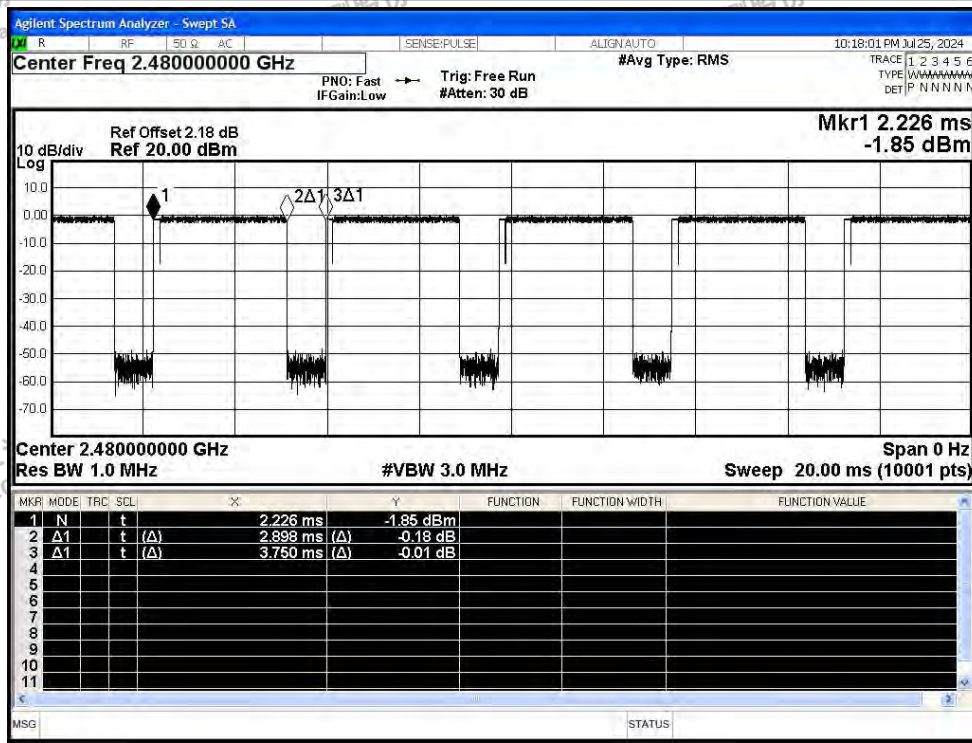




Duty Cycle NVNT 2-DH5 2441MHz Ant1



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	-47.95	2	-	49.31	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.62	2	1.1	39.74	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2384.112	-47.67	2	-	49.59	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2385.744	-57.61	2	1.1	40.75	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.52	2	-	46.74	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.34	2	1.1	40.02	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	-57.94	2	1.1	40.42	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2486.08	-45.83	2	-	51.43	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2488.816	-56.98	2	1.1	41.38	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-51.51	2	-	45.75	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.76	2	1.1	40.6	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.46	2	-	47.8	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.75	2	1.12	39.63	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2389.008	-46.43	2	-	50.83	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2357.616	-57.62	2	1.12	40.76	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.03	2	-	47.23	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.55	2	1.12	39.83	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-46.24	2	-	51.02	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-56.22	2	1.12	42.16	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.968	-46.09	2	-	51.17	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-56.22	2	1.12	42.16	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.09	2	-	48.17	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.79	2	1.12	40.59	Average	54	Pass

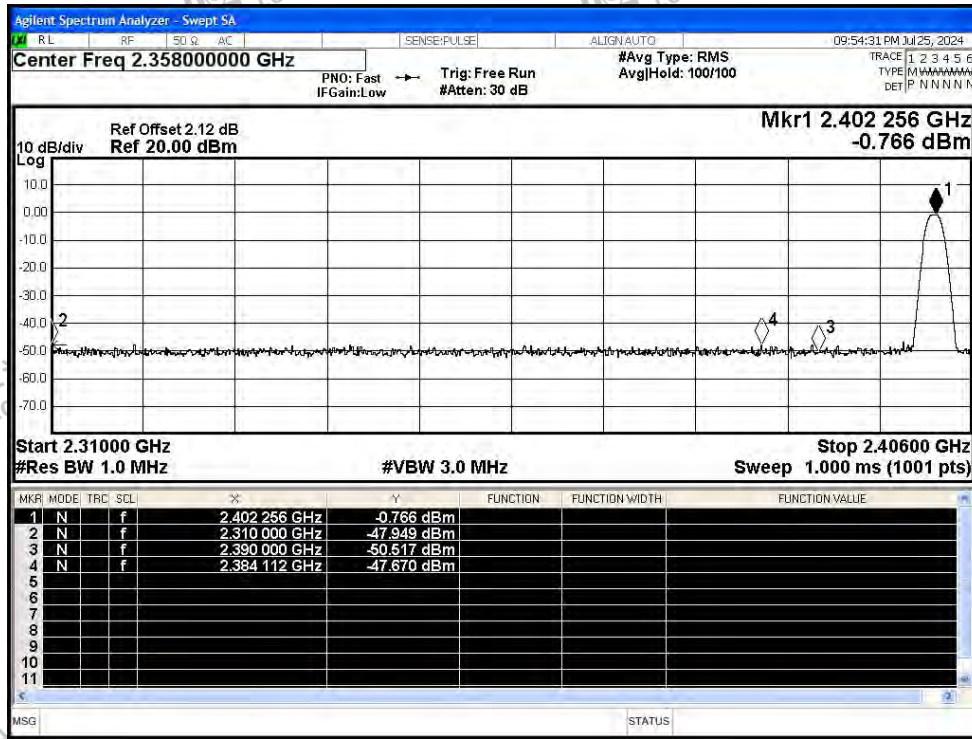


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 Scan code to check authenticity

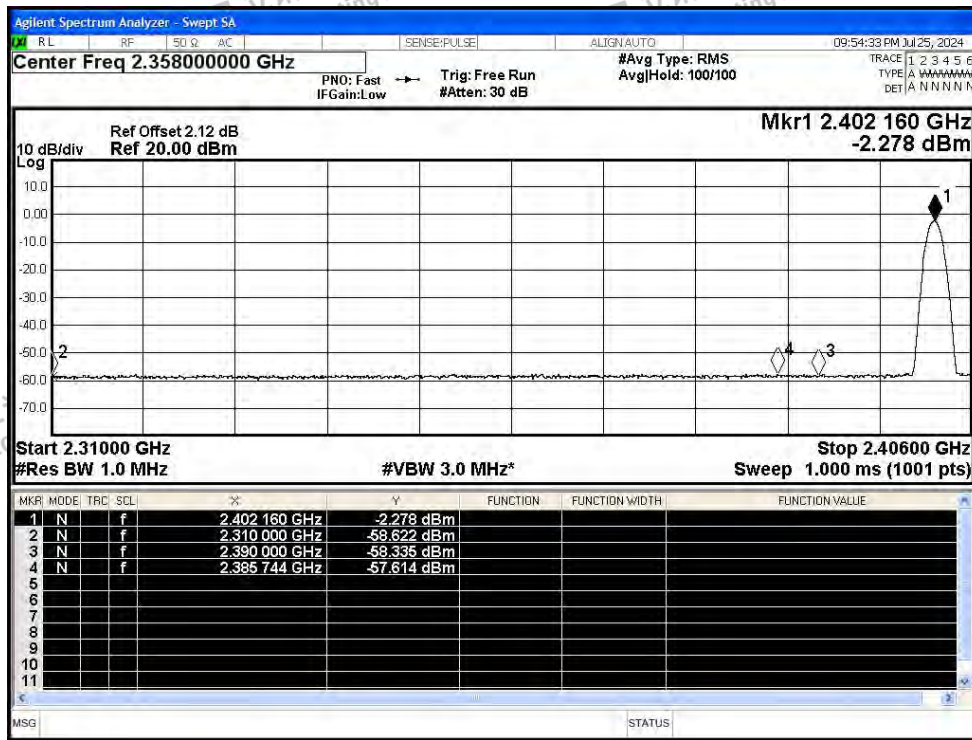


Test Graphs

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

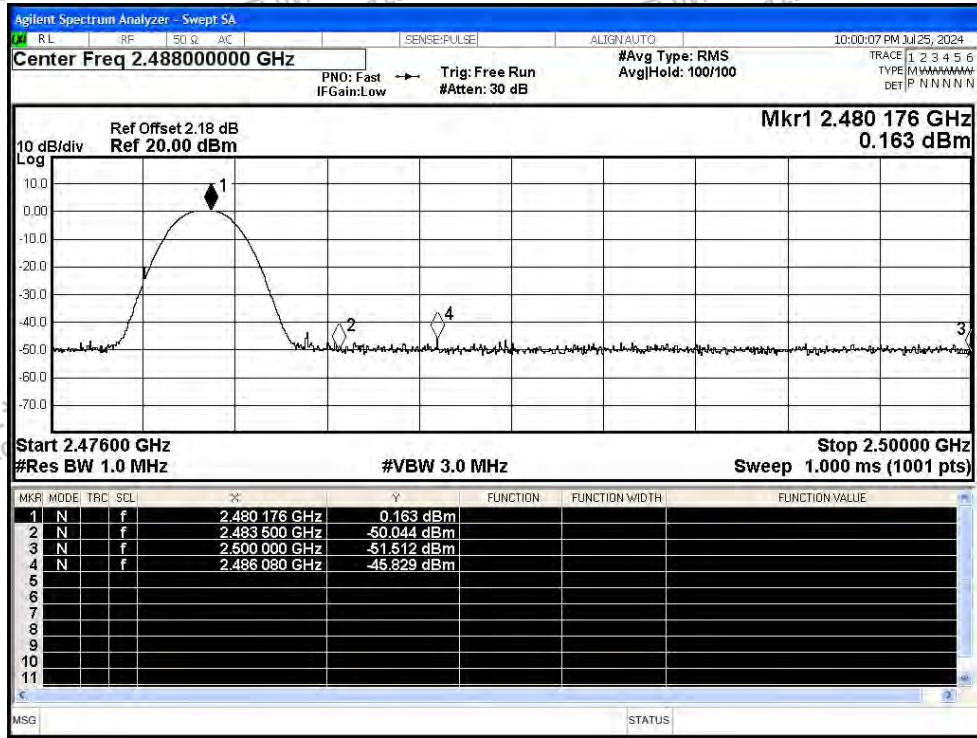


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

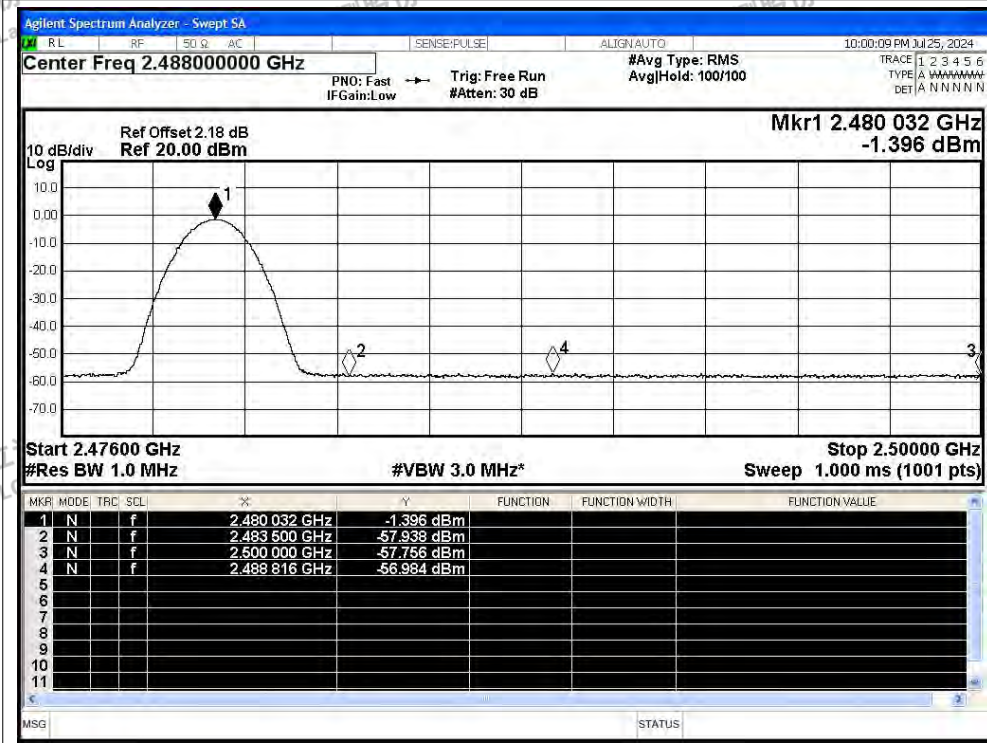




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

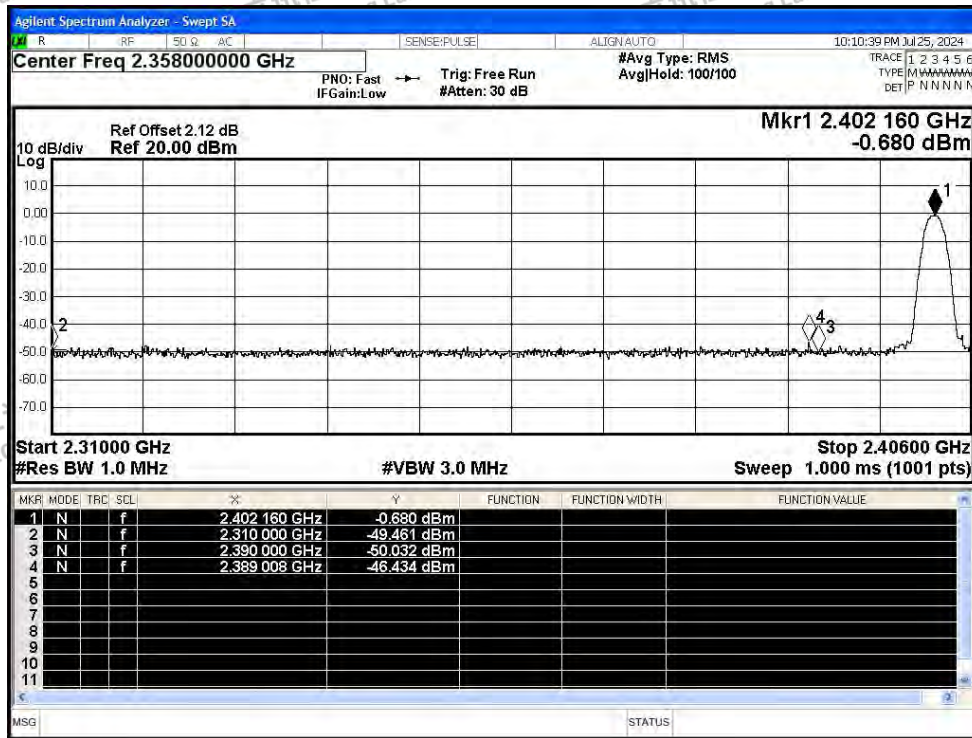


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

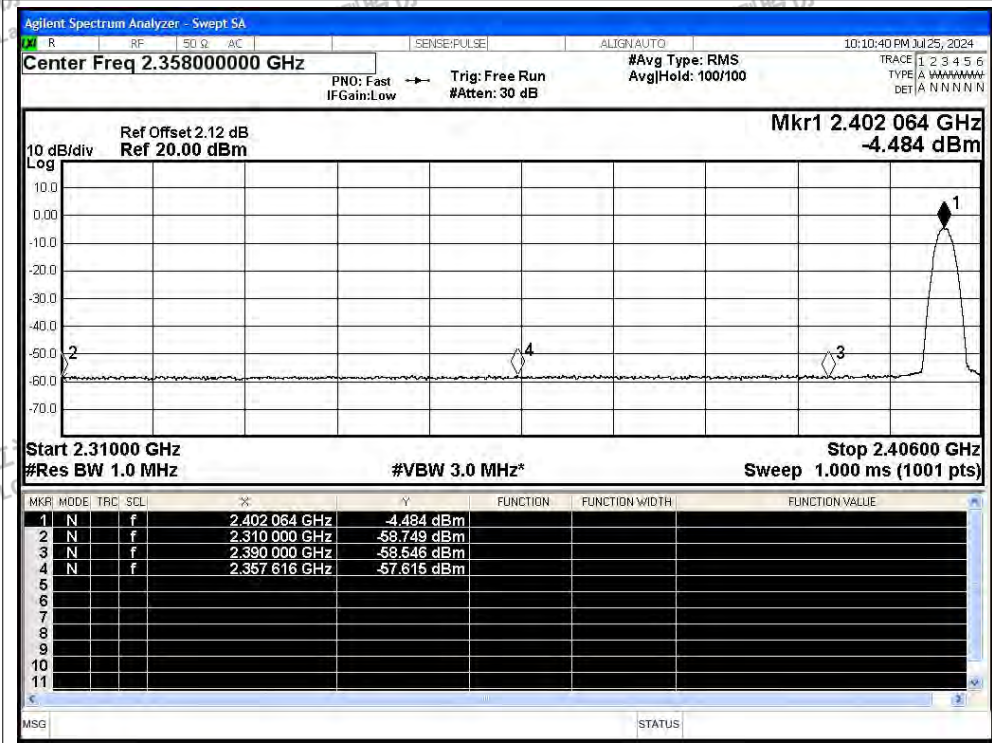




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

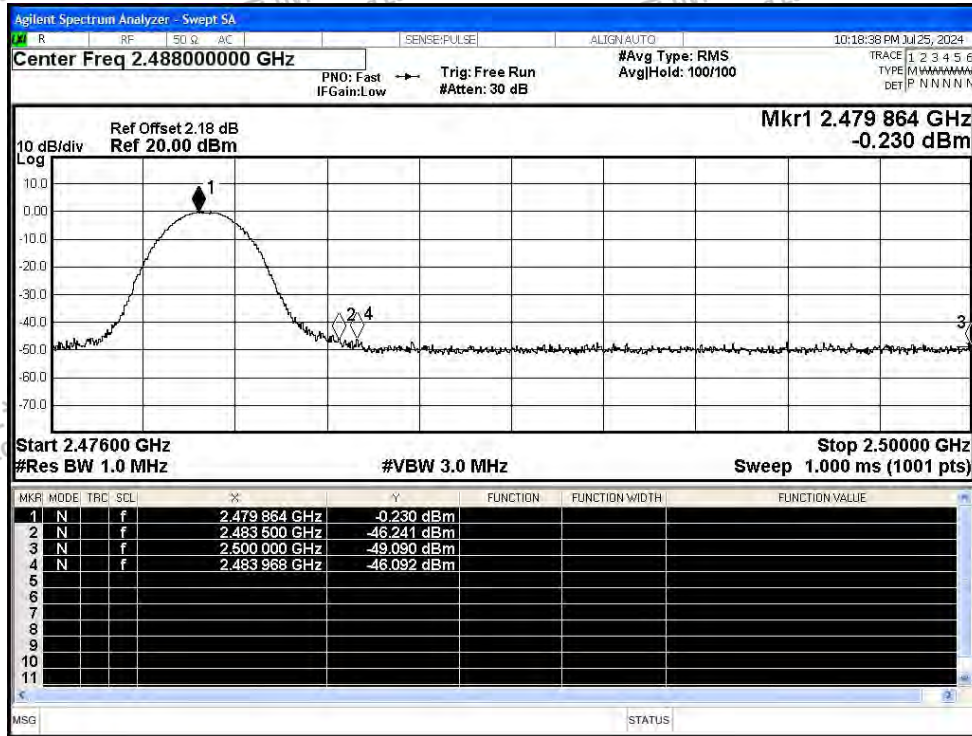


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average





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



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

