



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth Network Adapters

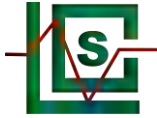
Test Model: HBT541

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
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	0.946	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.941	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.933	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.269	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.316	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.304	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



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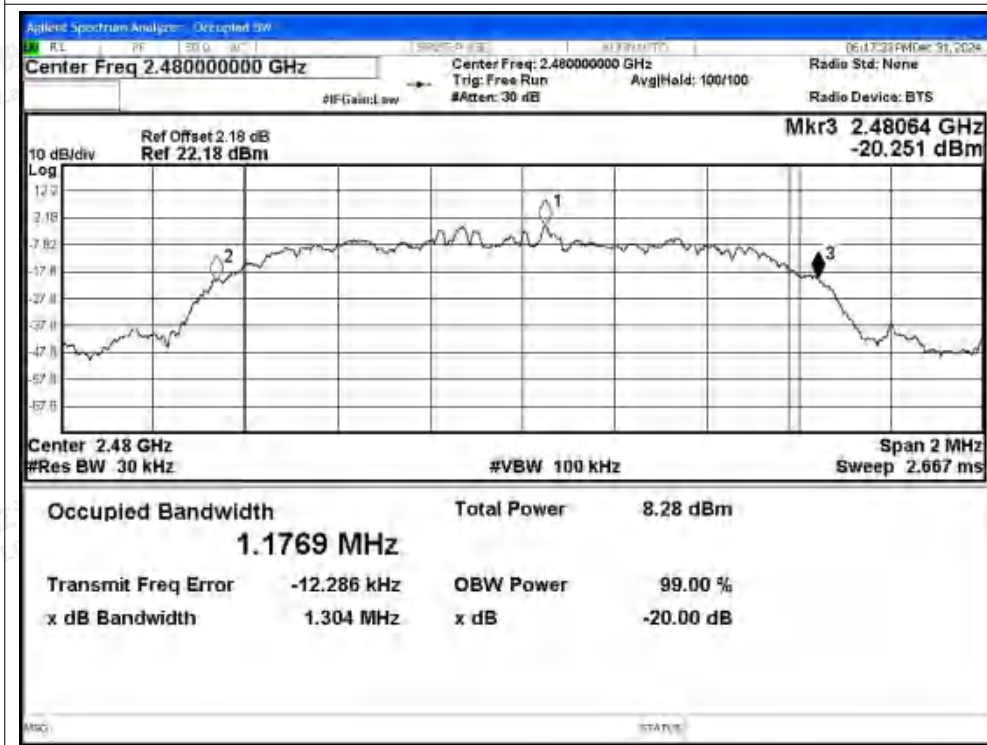
Scan code to check authenticity



-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	1.36	21	Pass
NVNT	1-DH5	2441	Ant1	1.2	21	Pass
NVNT	1-DH5	2480	Ant1	0.64	21	Pass
NVNT	2-DH5	2402	Ant1	2.42	21	Pass
NVNT	2-DH5	2441	Ant1	2.38	21	Pass
NVNT	2-DH5	2480	Ant1	1.77	21	Pass

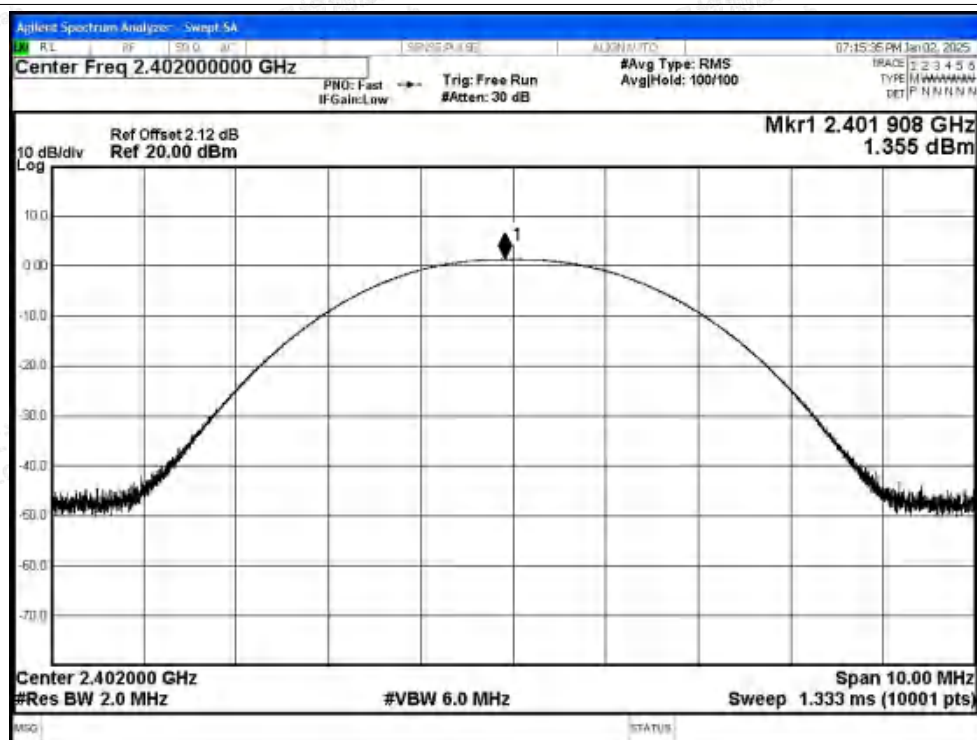


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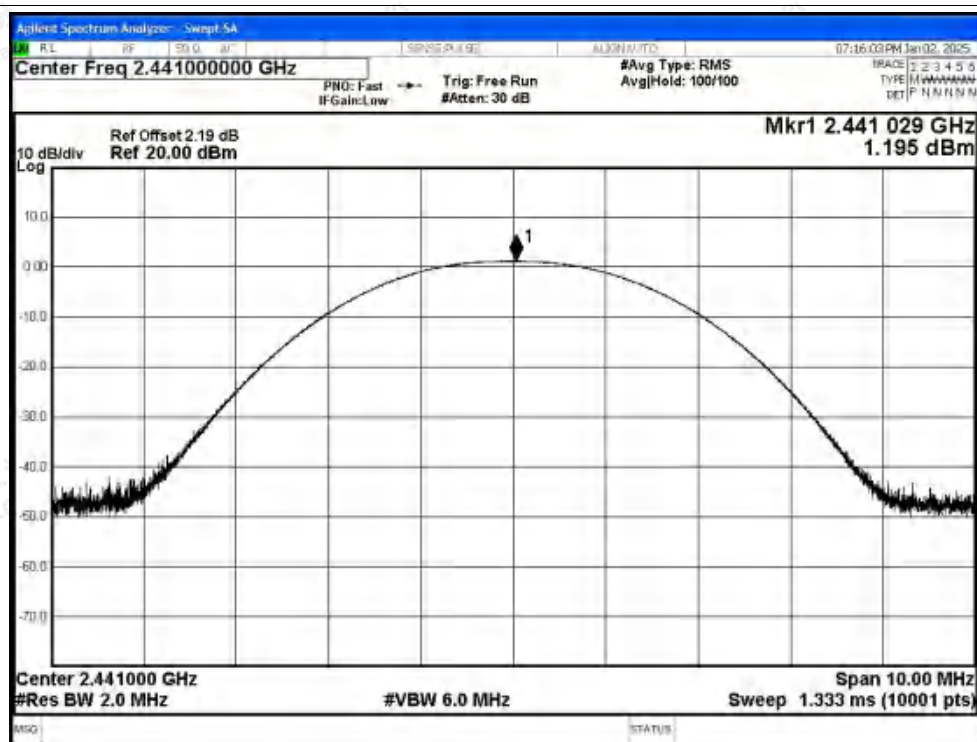


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

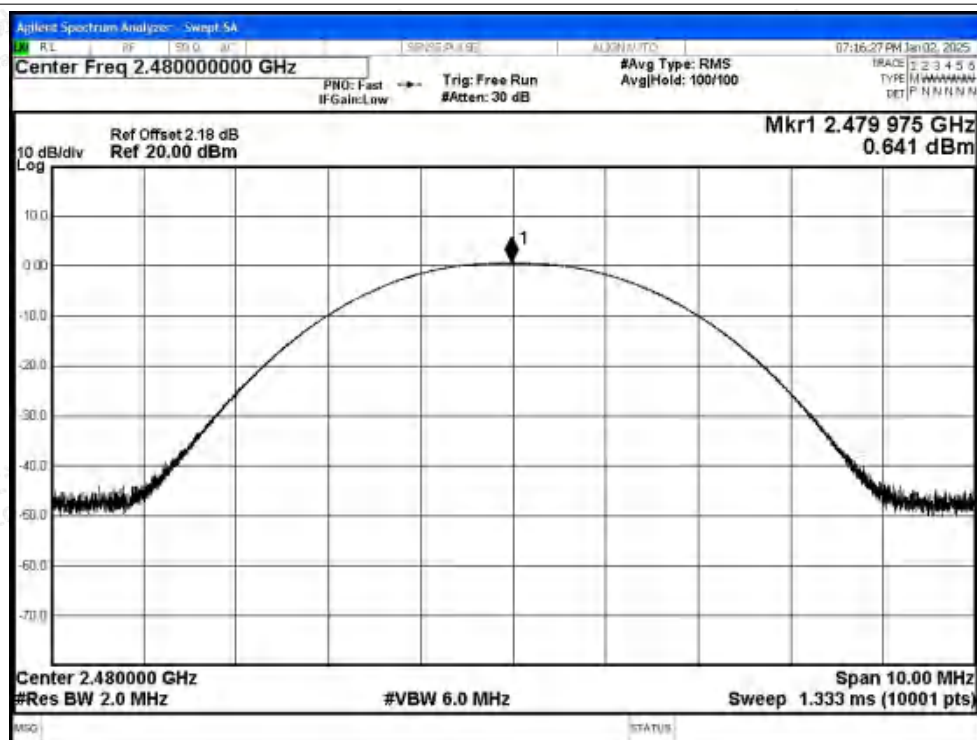


Power NVNT 1-DH5 2441MHz Ant1

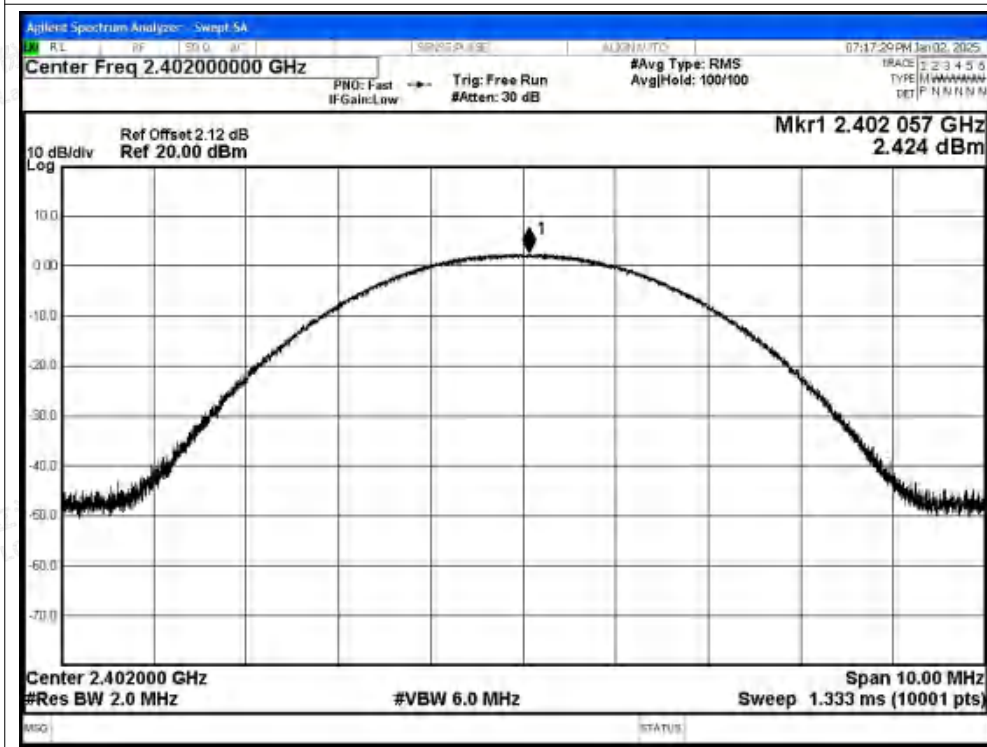




Power NVNT 1-DH5 2480MHz Ant1

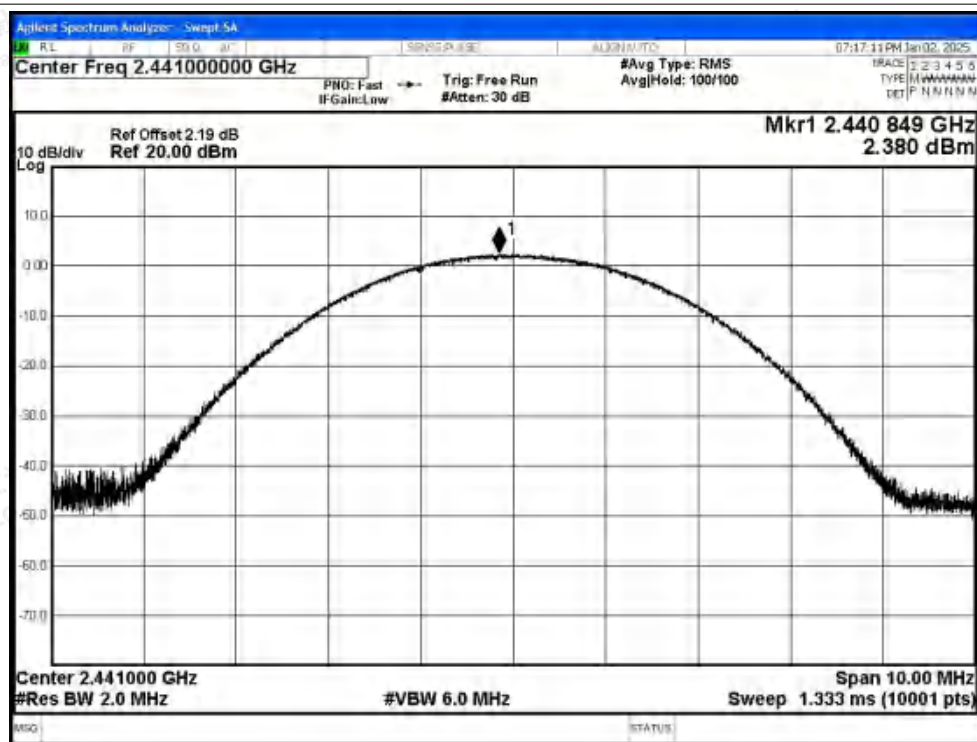


Power NVNT 2-DH5 2402MHz Ant1

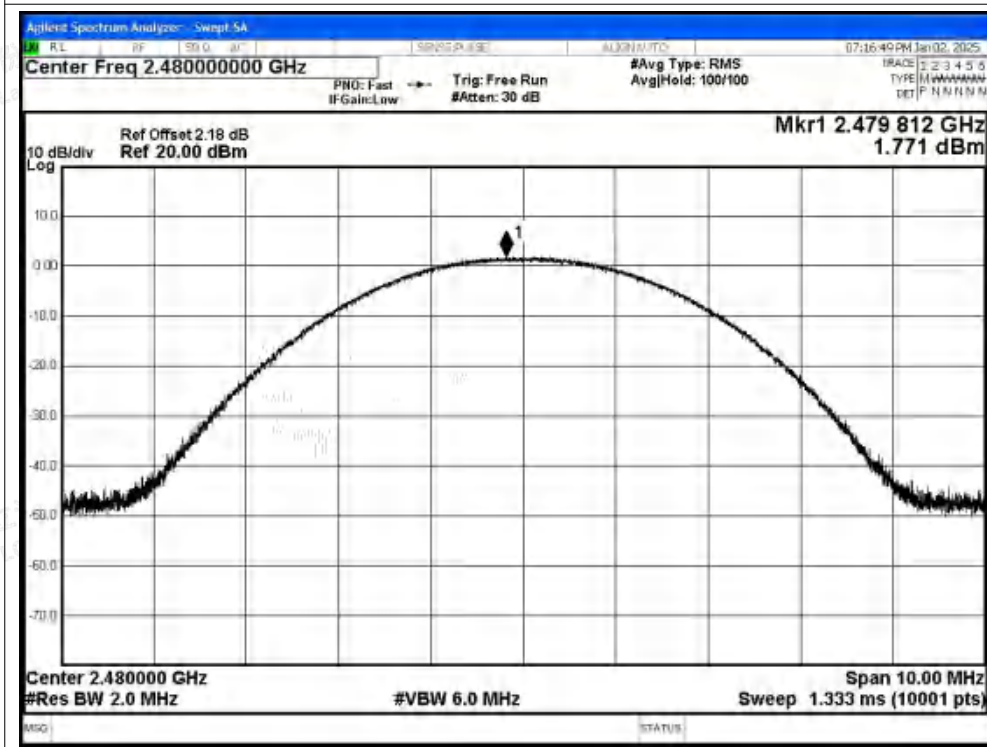


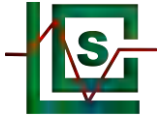


Power NVNT 2-DH5 2441MHz Ant1



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	2401.822	2402.82	0.998	0.631	Pass
NVNT	2-DH5	Ant1	2402.052	2403.042	0.99	0.877	Pass



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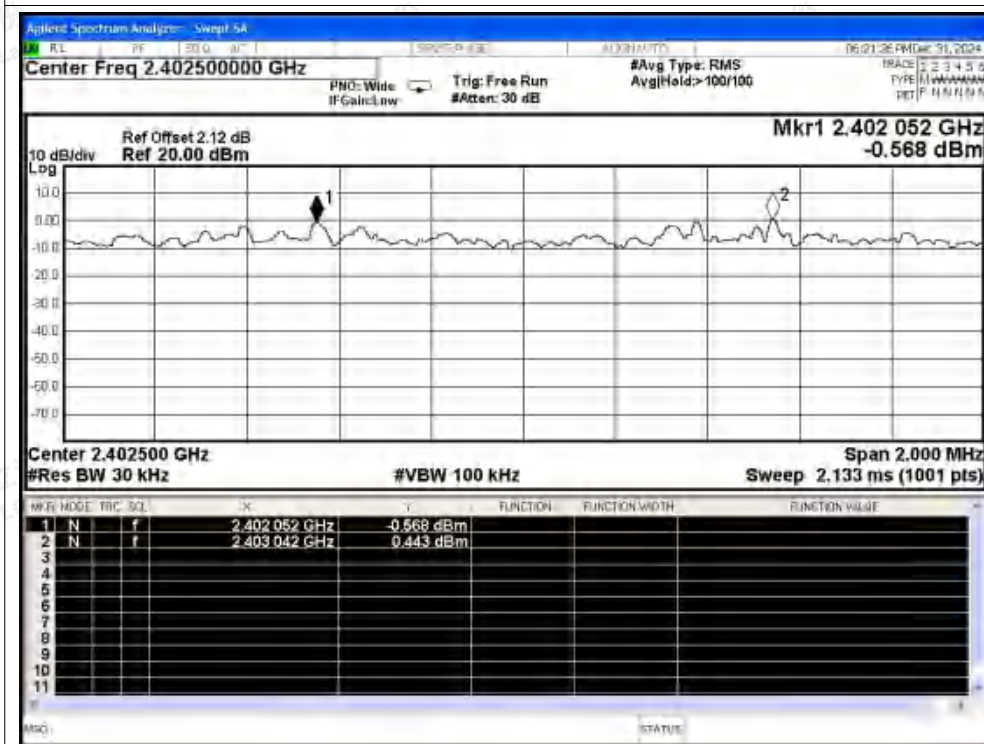


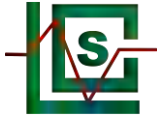
Test Graphs

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	2.883	204.693	71	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.89	242.76	84	31600	400	Pass

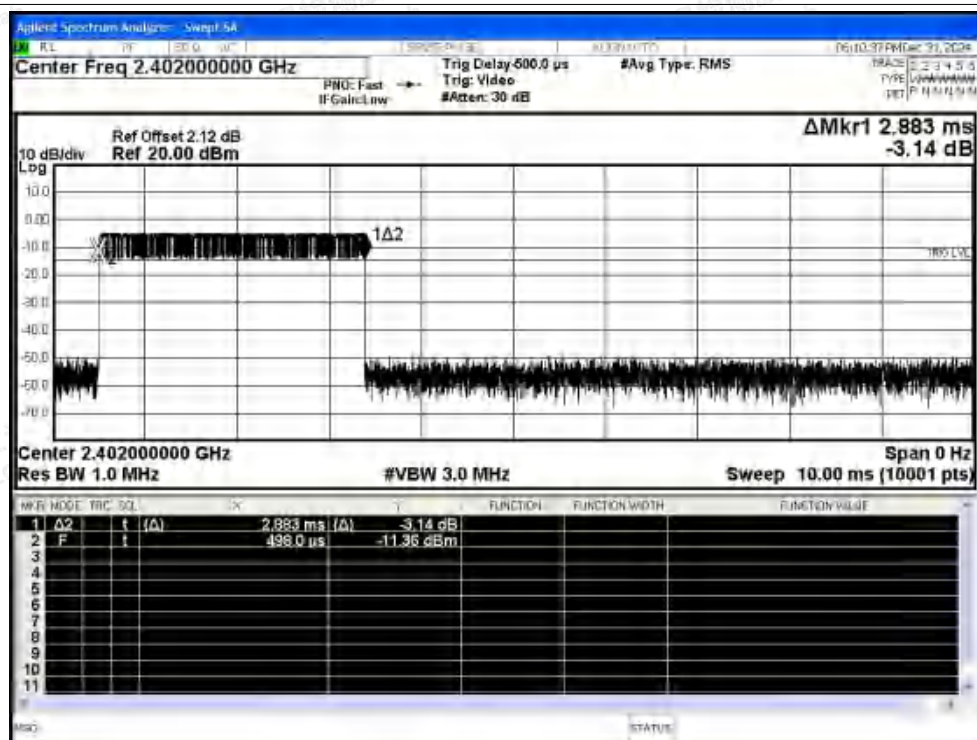


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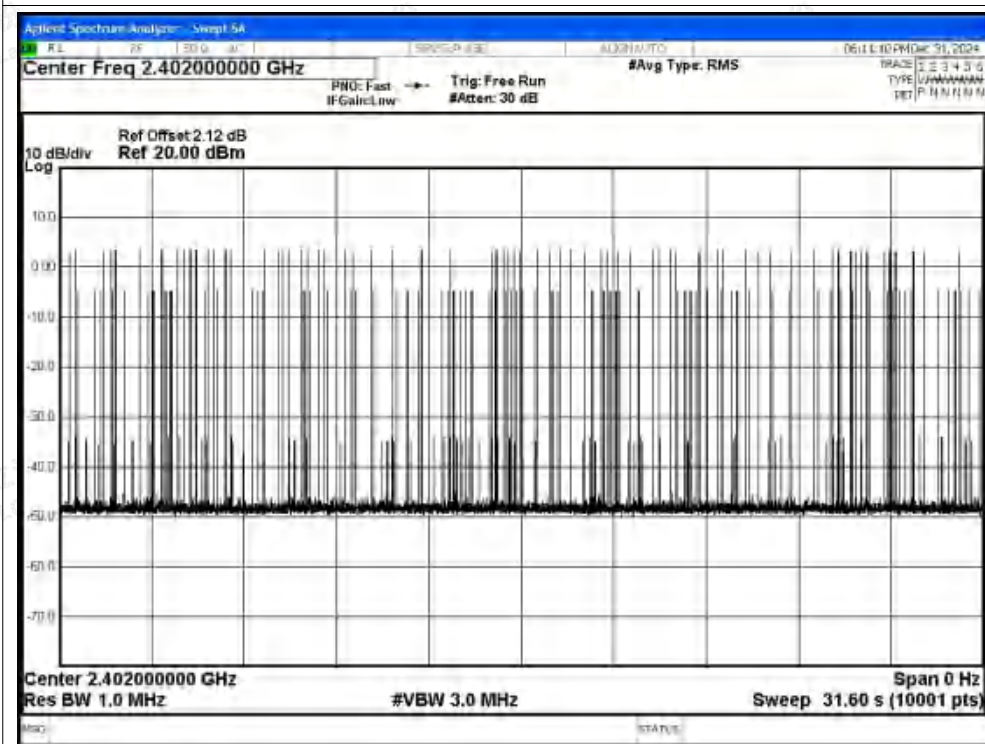


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

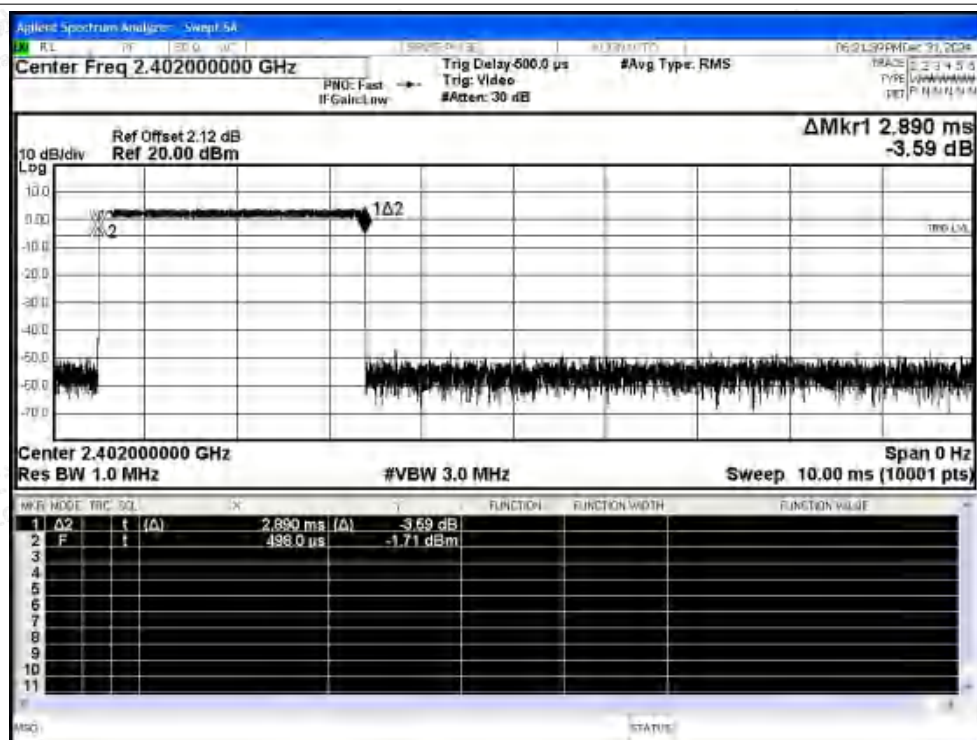


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

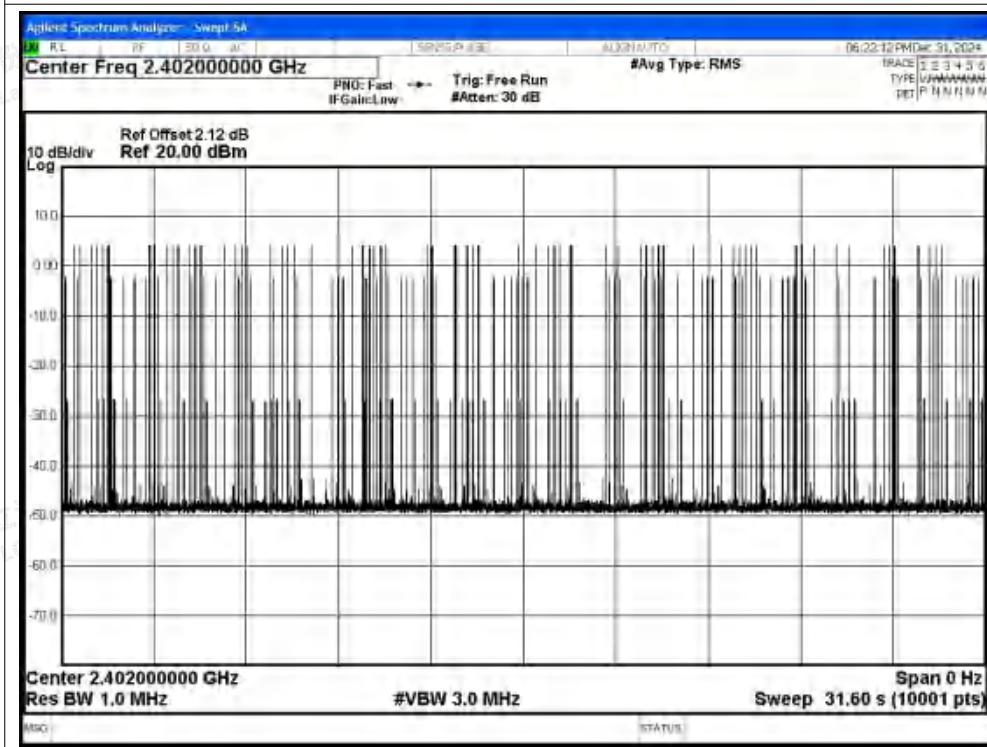




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



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

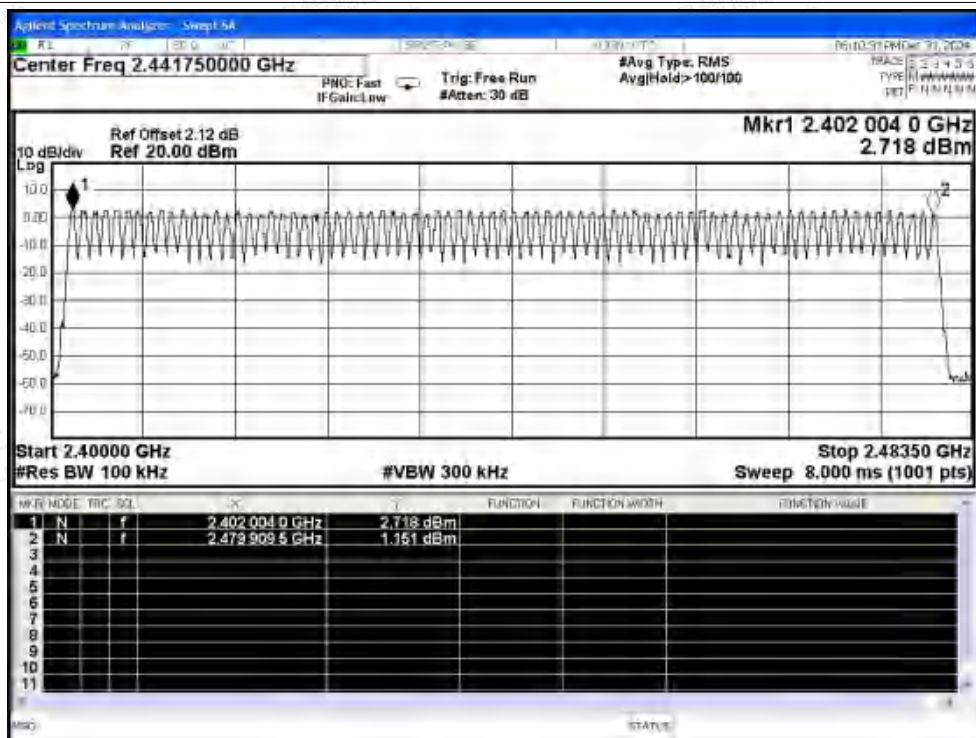


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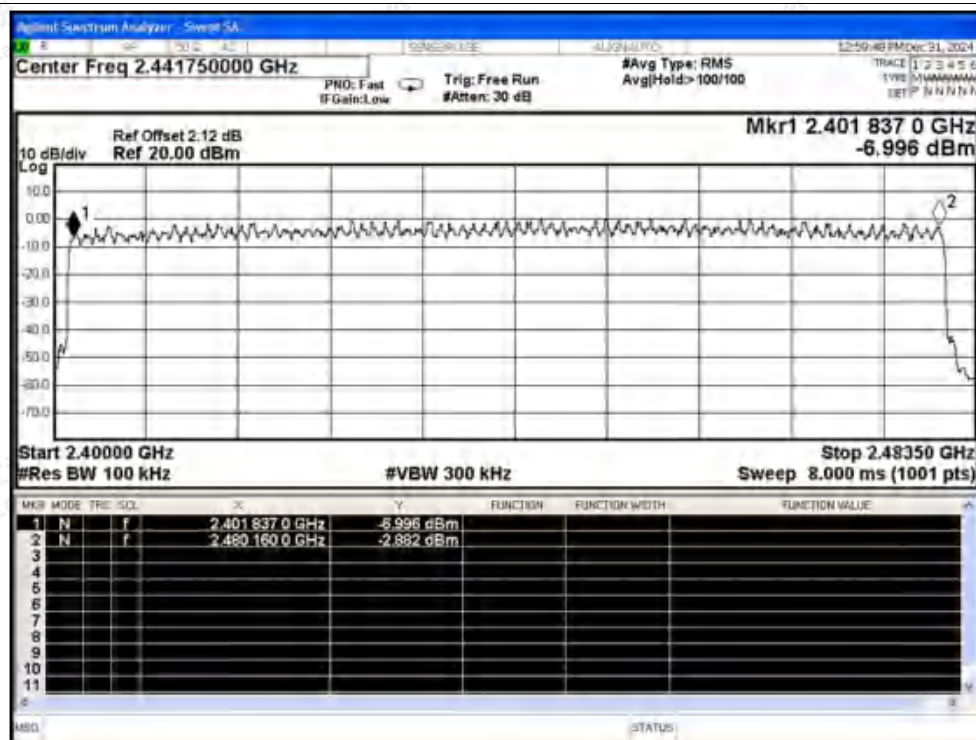


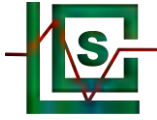
Test Graphs

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	-58.49	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-58.82	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-56.36	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-58.6	-20	Pass

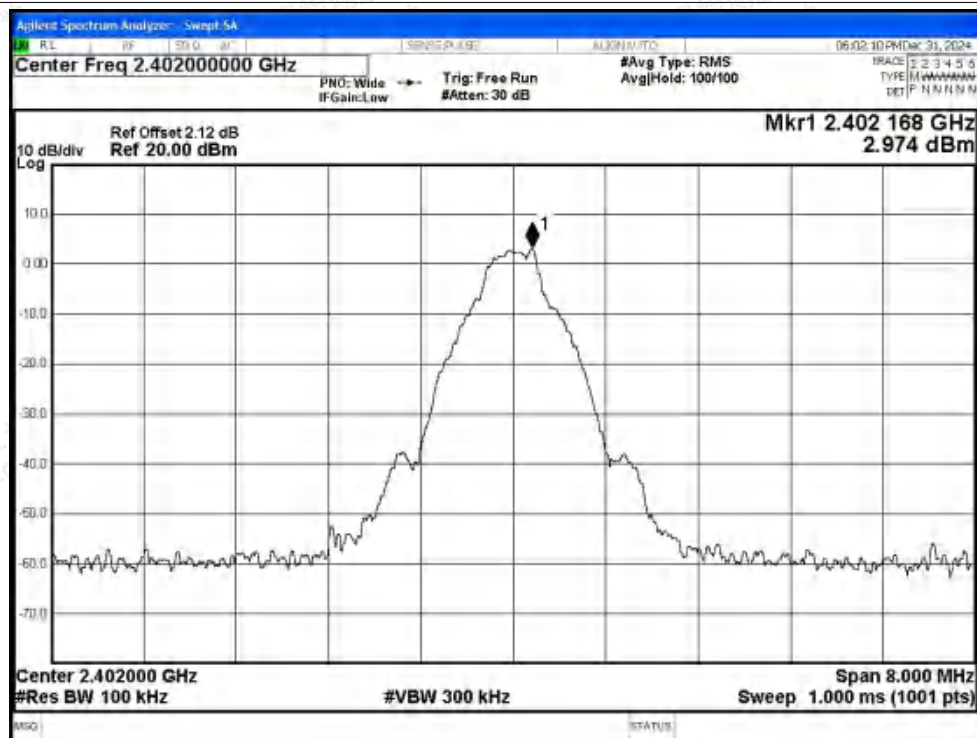


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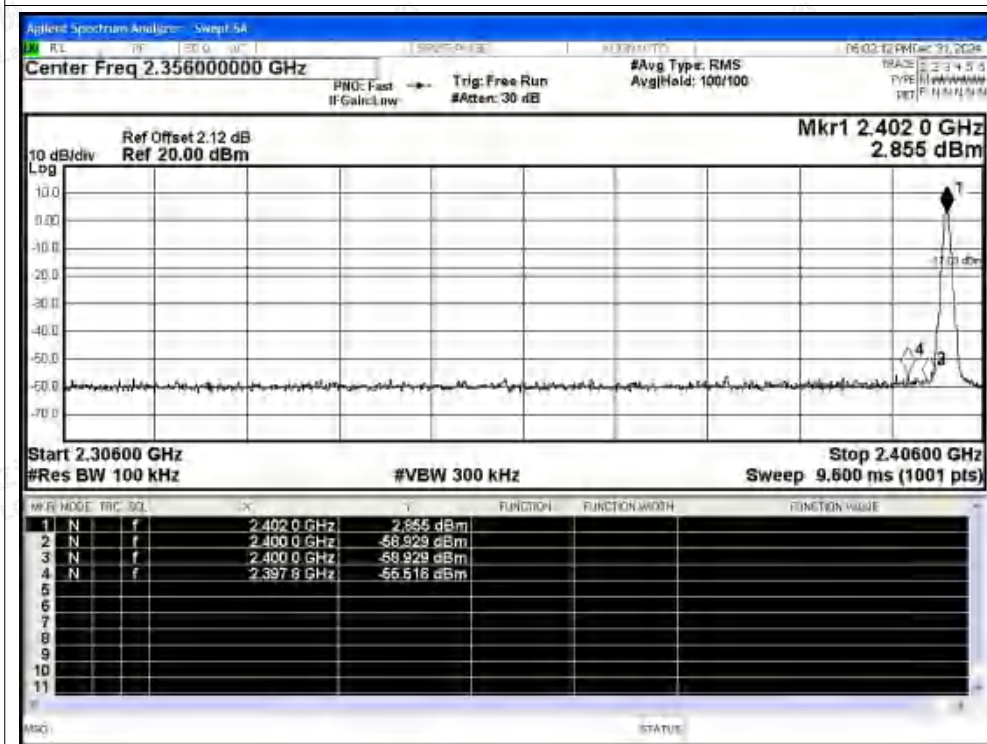


Test Graphs

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

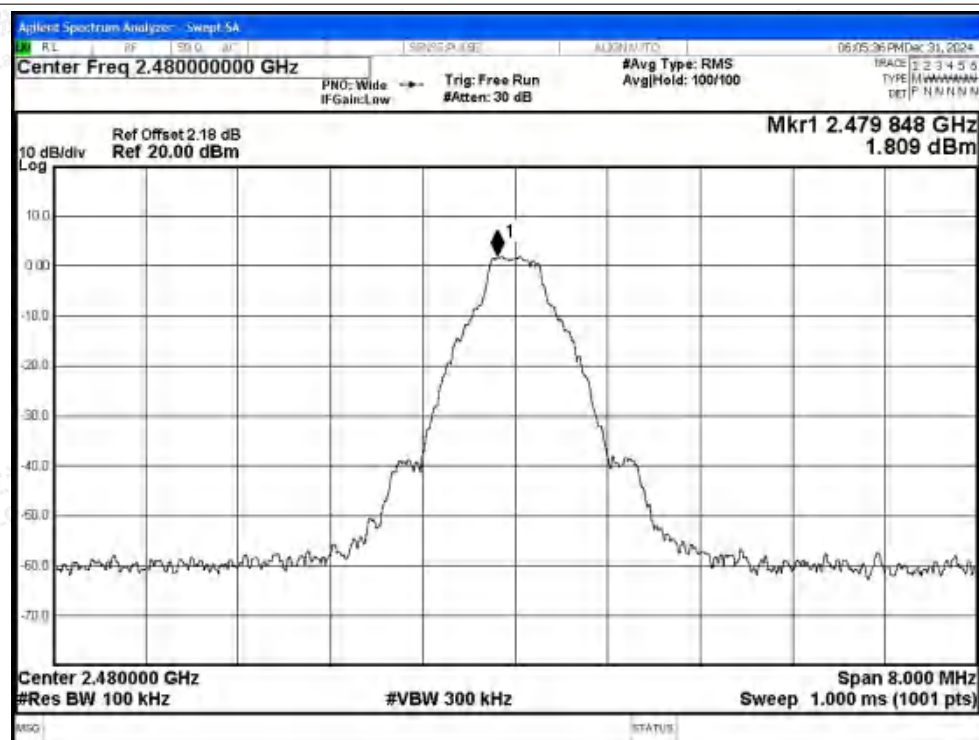


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

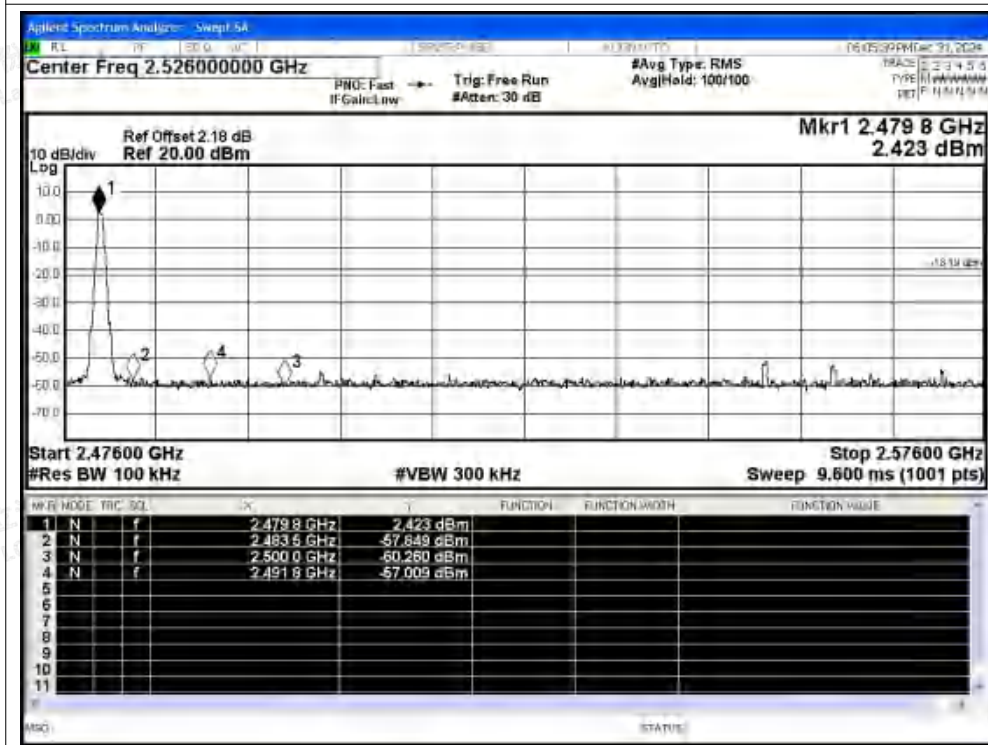




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

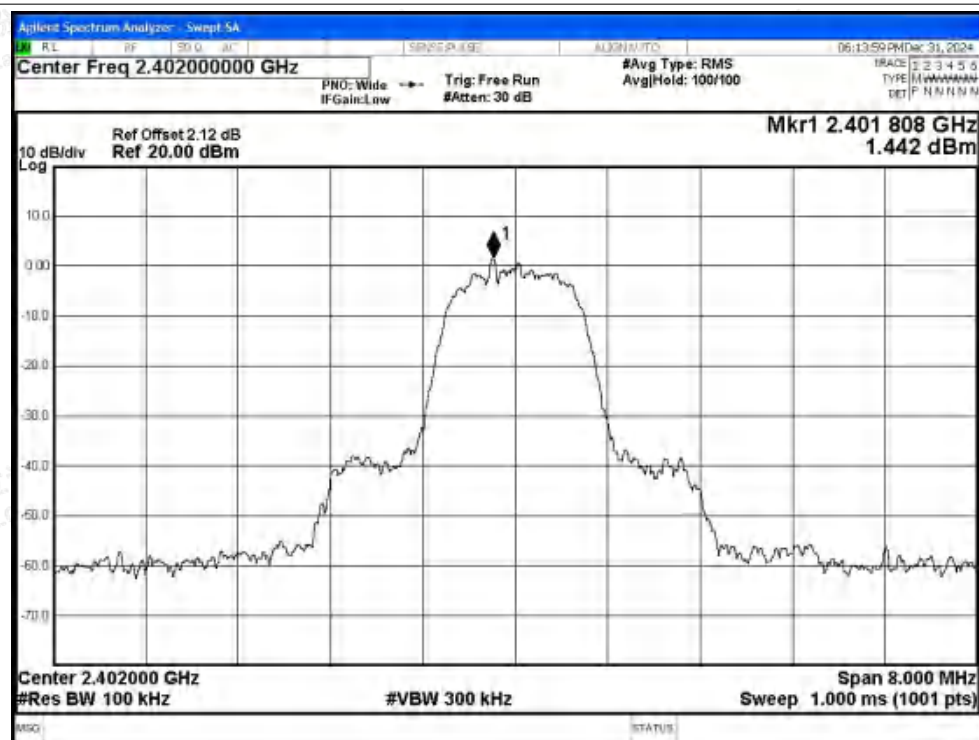


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

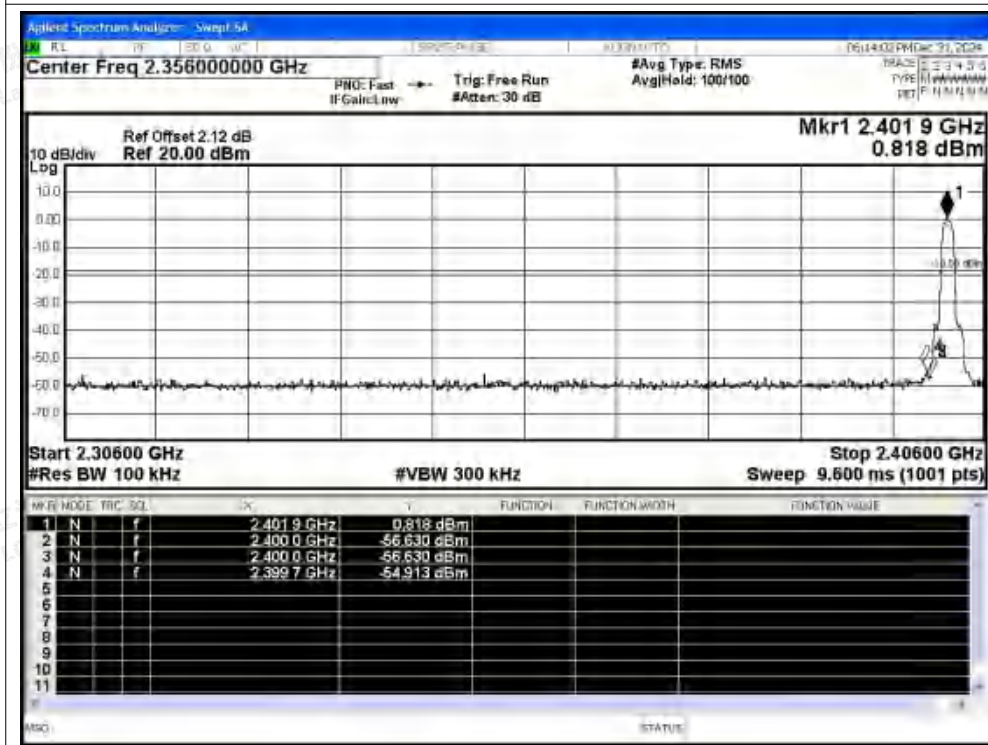




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

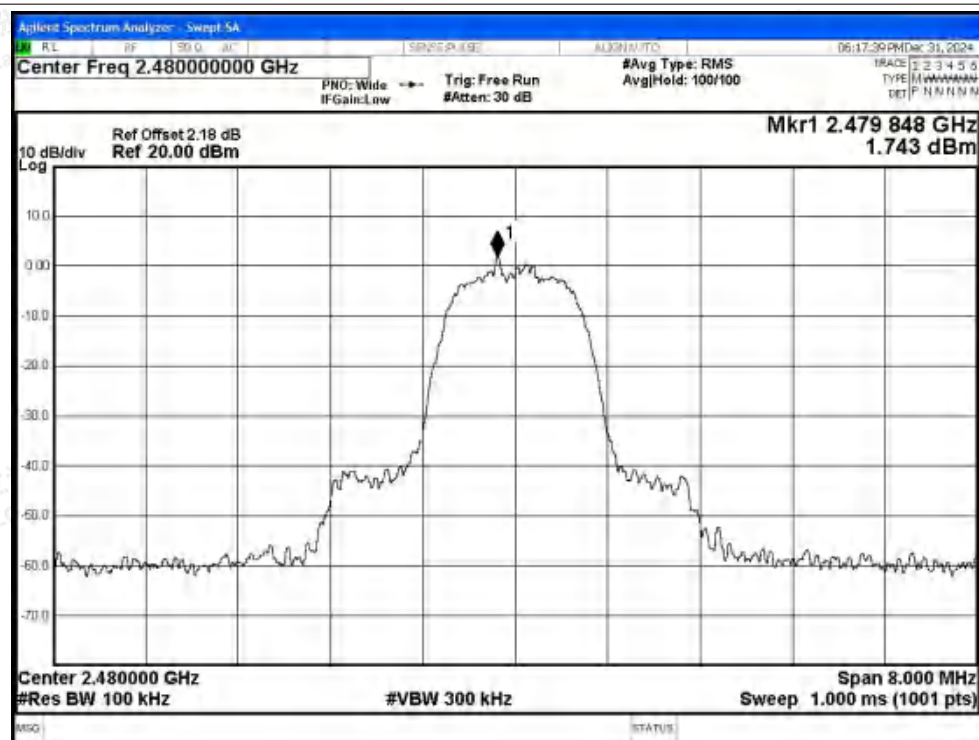


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

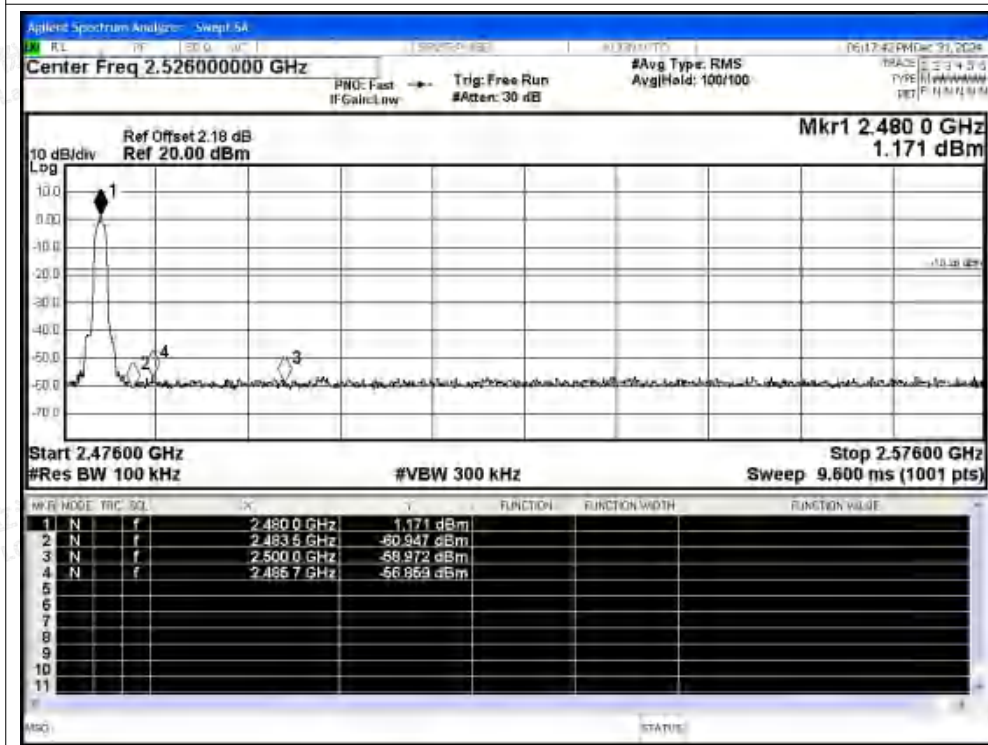


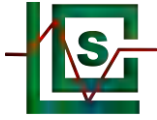


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



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	-58.09	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-56.68	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-58.37	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-56.46	-20	Pass

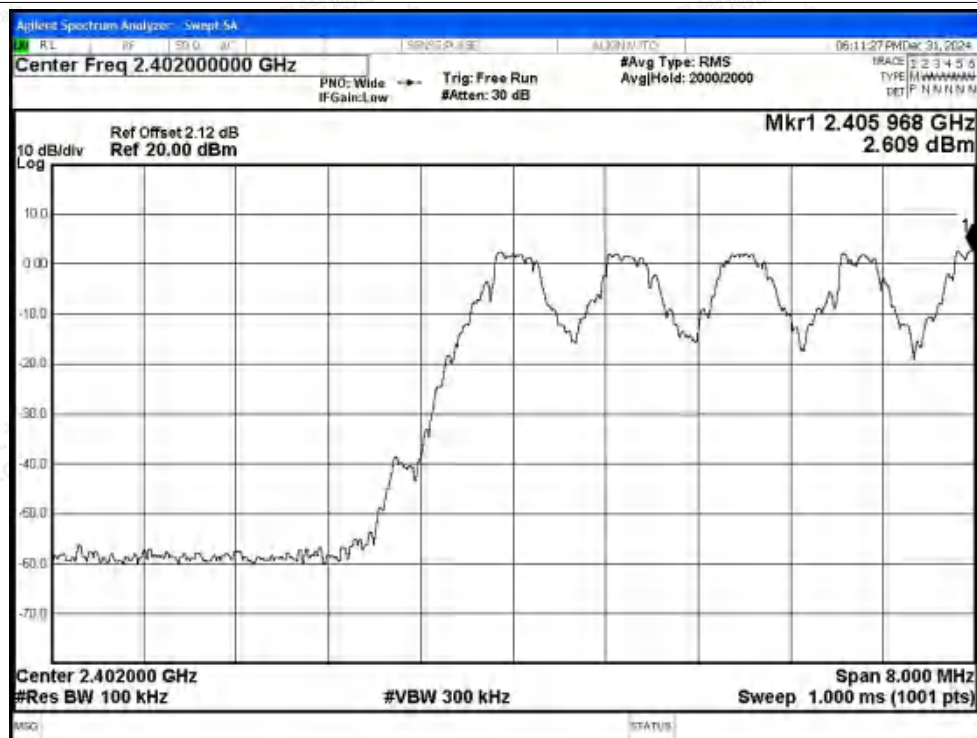


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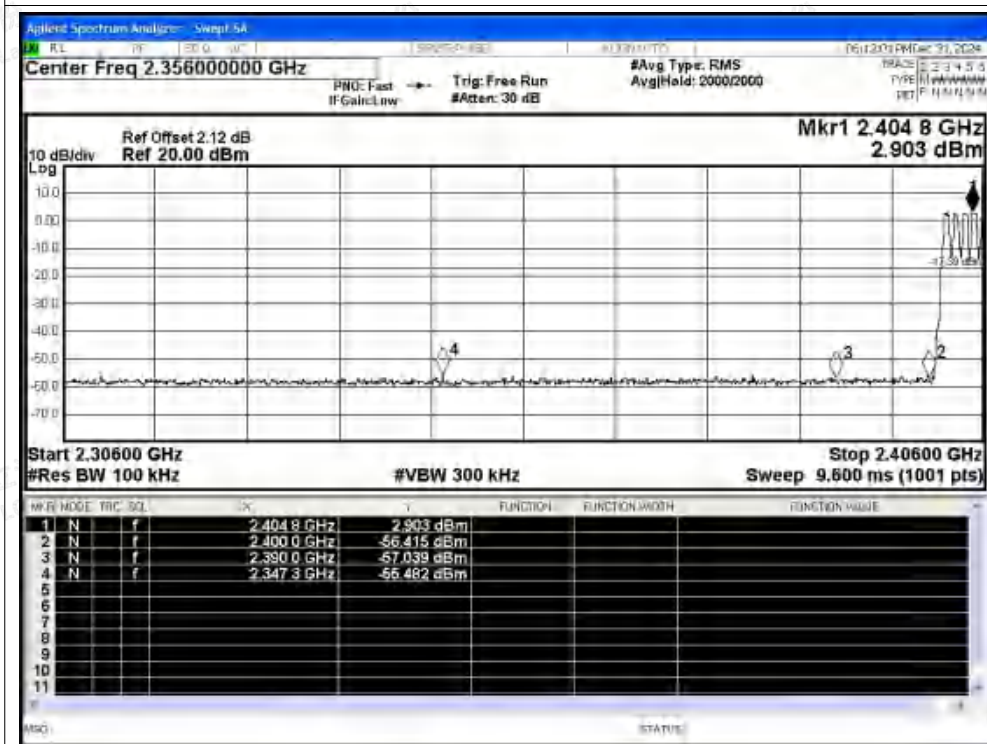


Test Graphs

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



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



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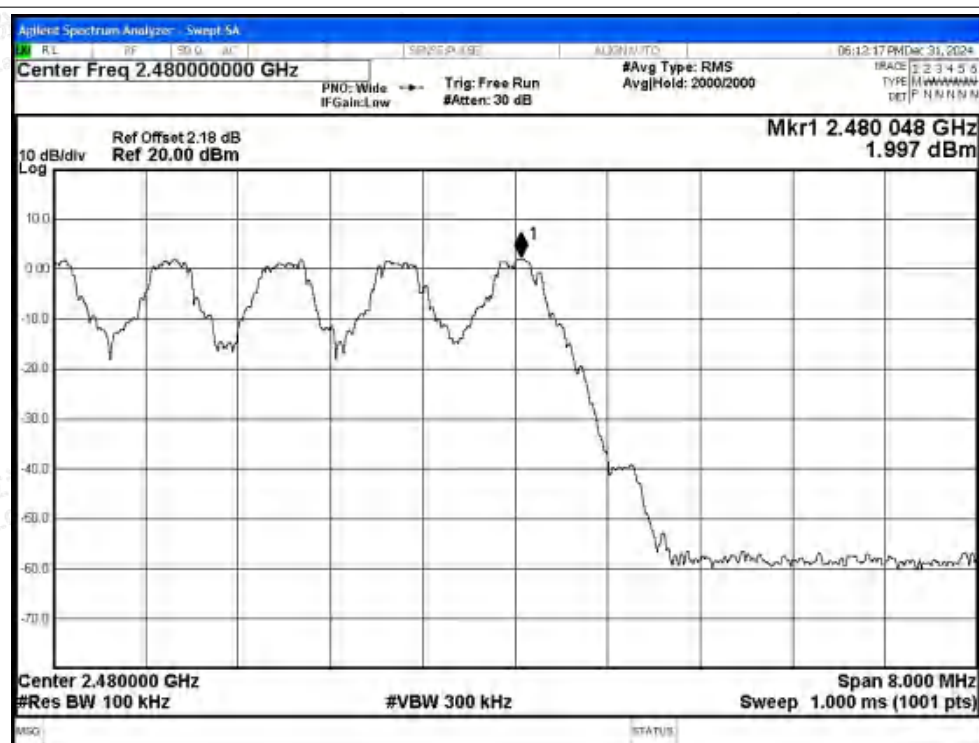
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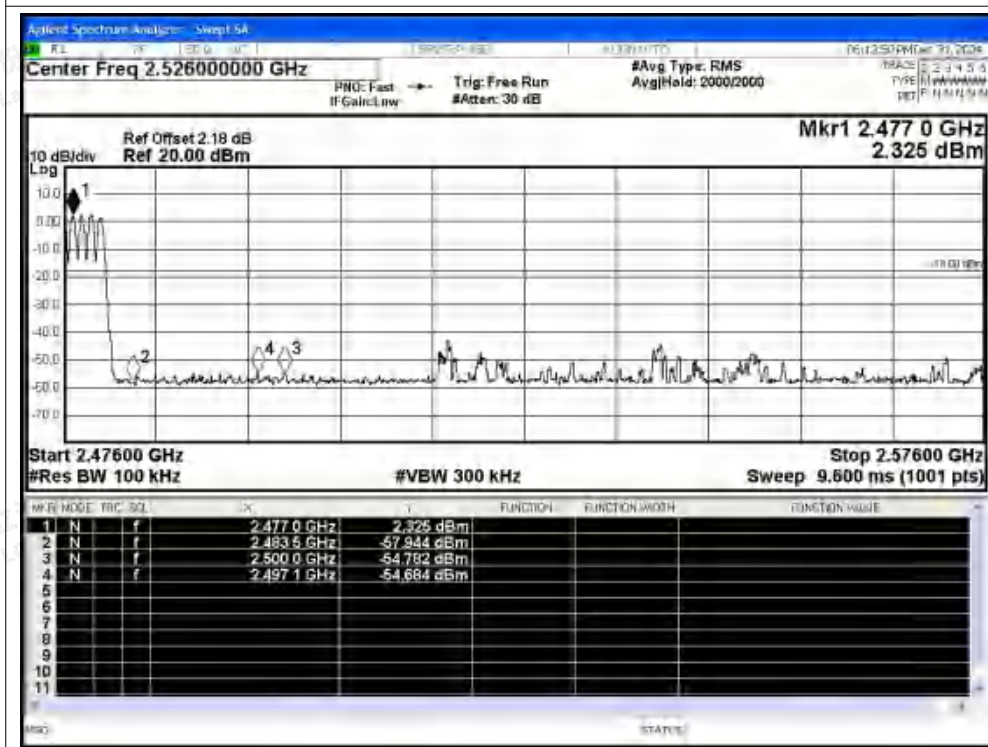
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Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



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

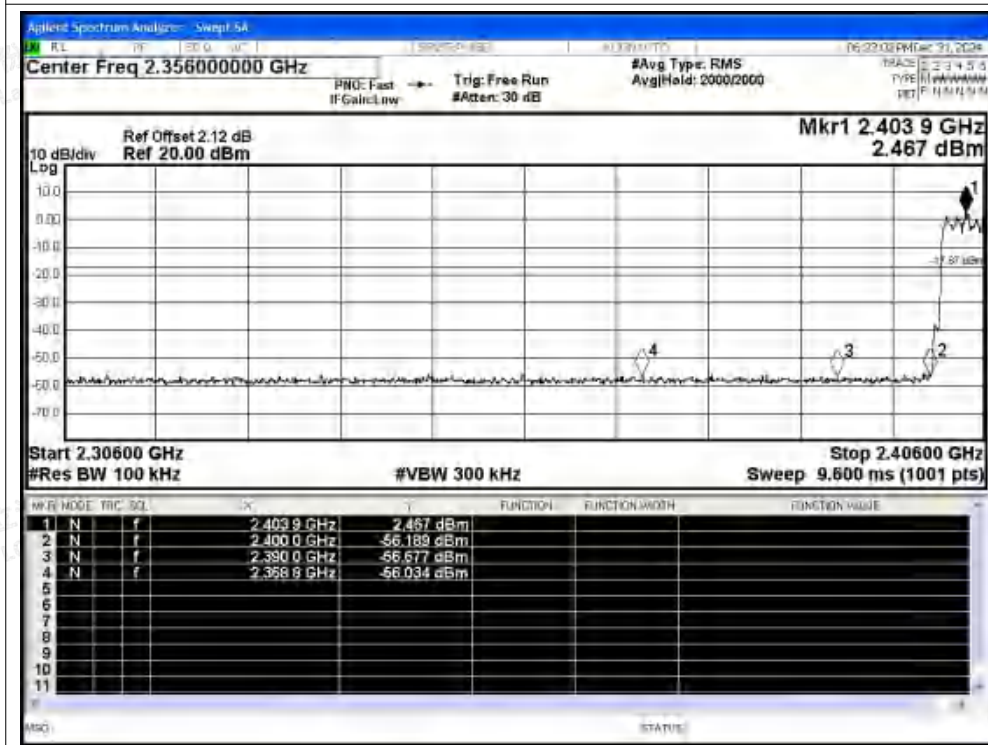




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

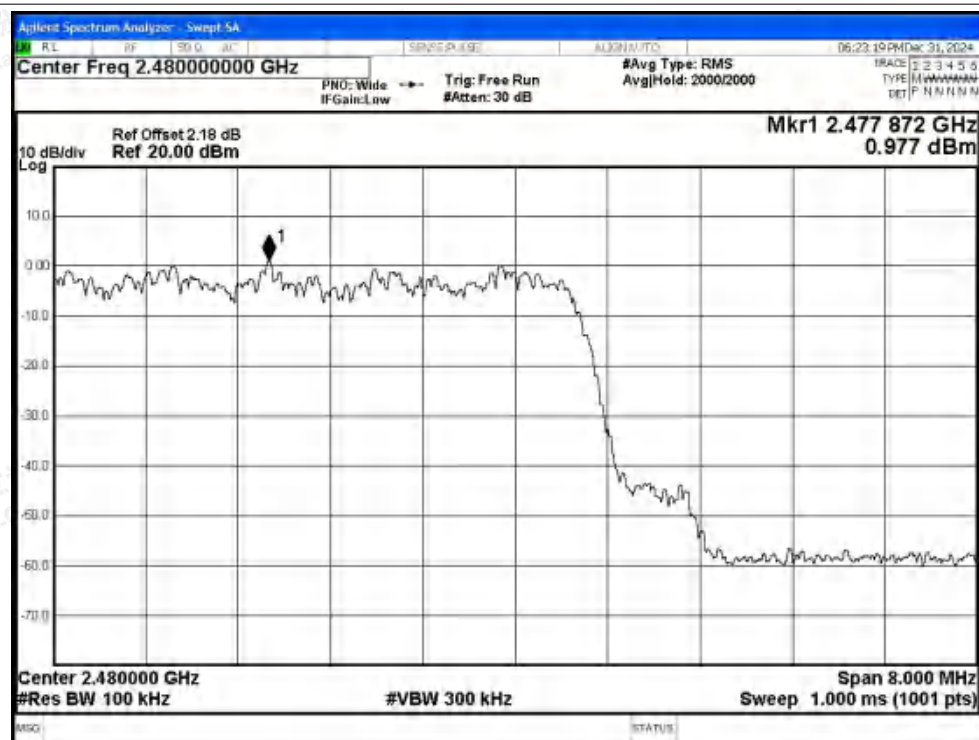


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

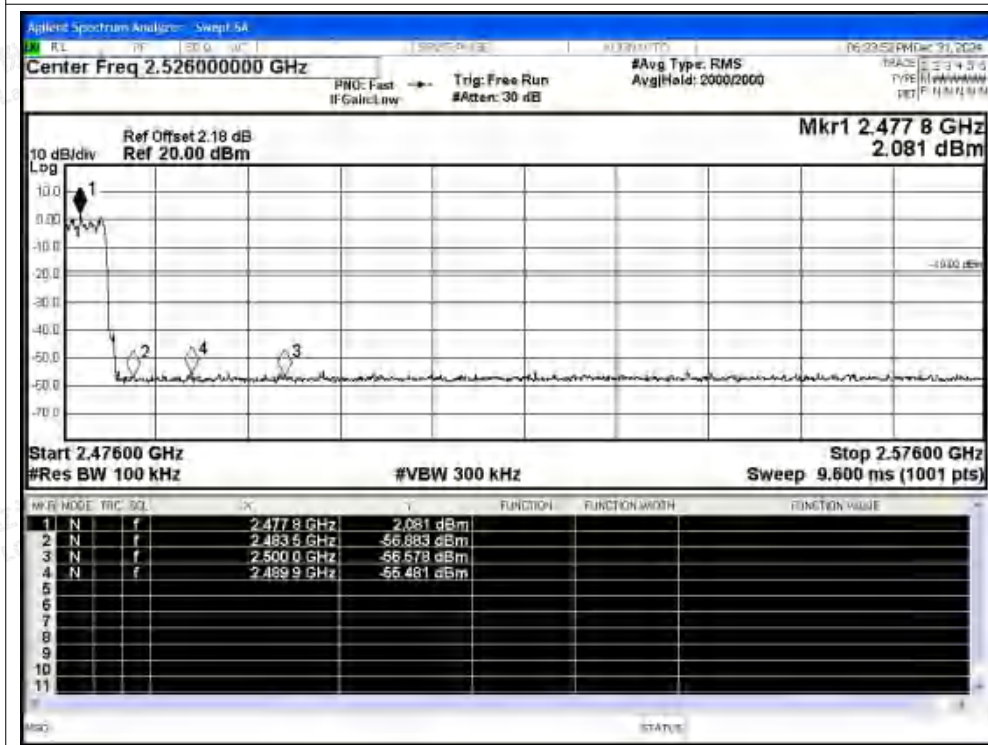




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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	-38.91	-20	Pass
NVNT	1-DH5	2441	Ant1	-38.72	-20	Pass
NVNT	1-DH5	2480	Ant1	-36.11	-20	Pass
NVNT	2-DH5	2402	Ant1	-41.56	-20	Pass
NVNT	2-DH5	2441	Ant1	-41.94	-20	Pass
NVNT	2-DH5	2480	Ant1	-41.4	-20	Pass

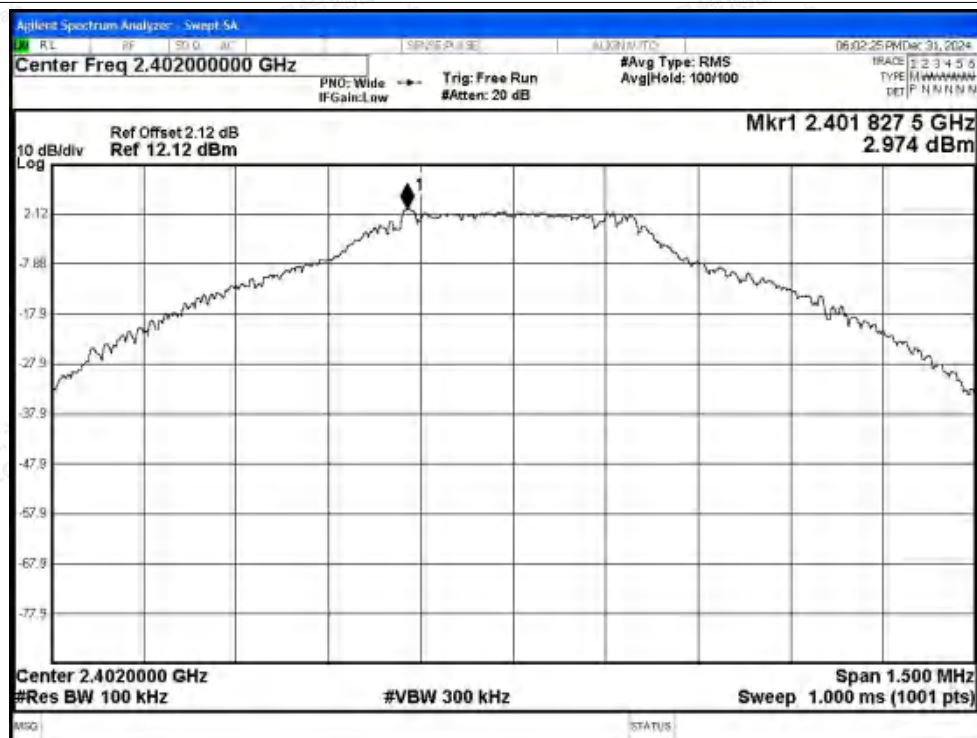


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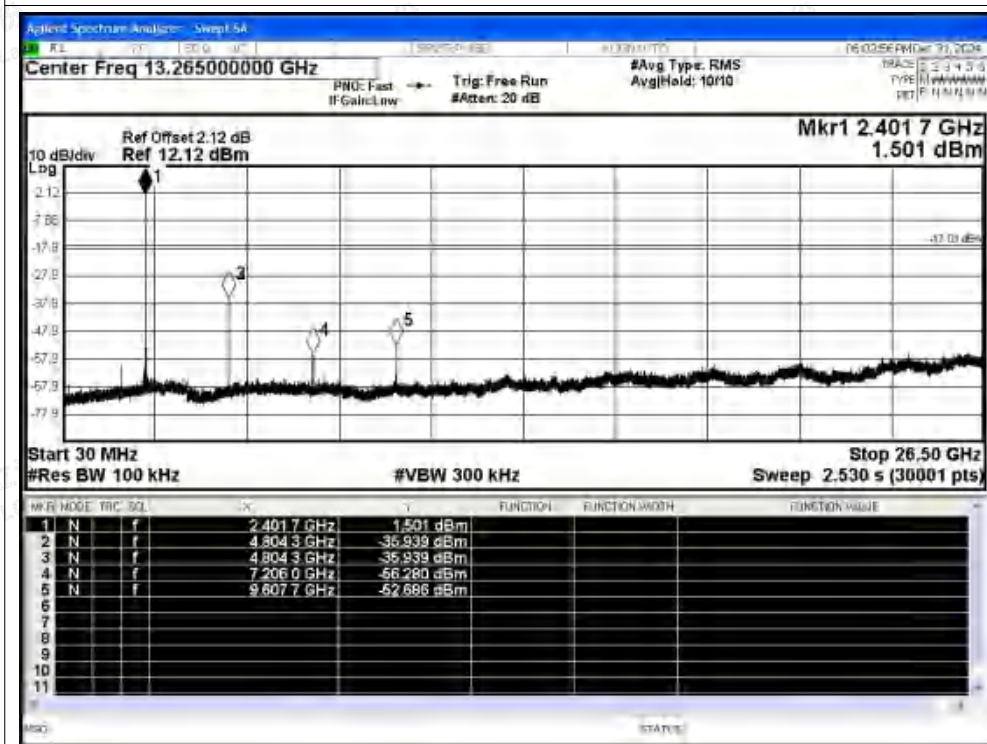


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

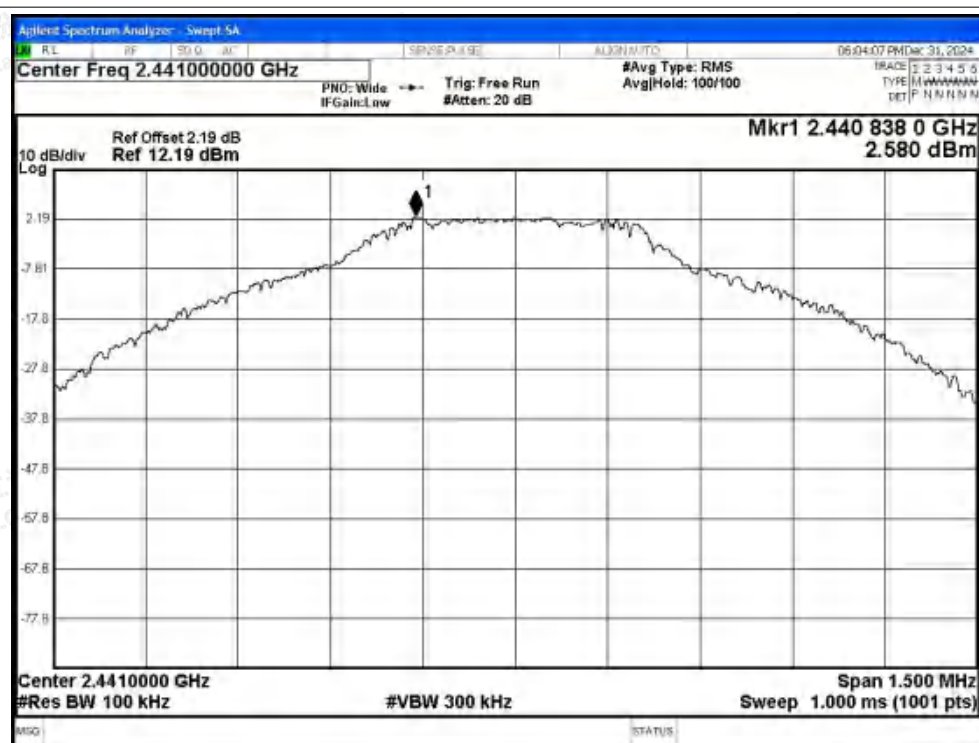


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

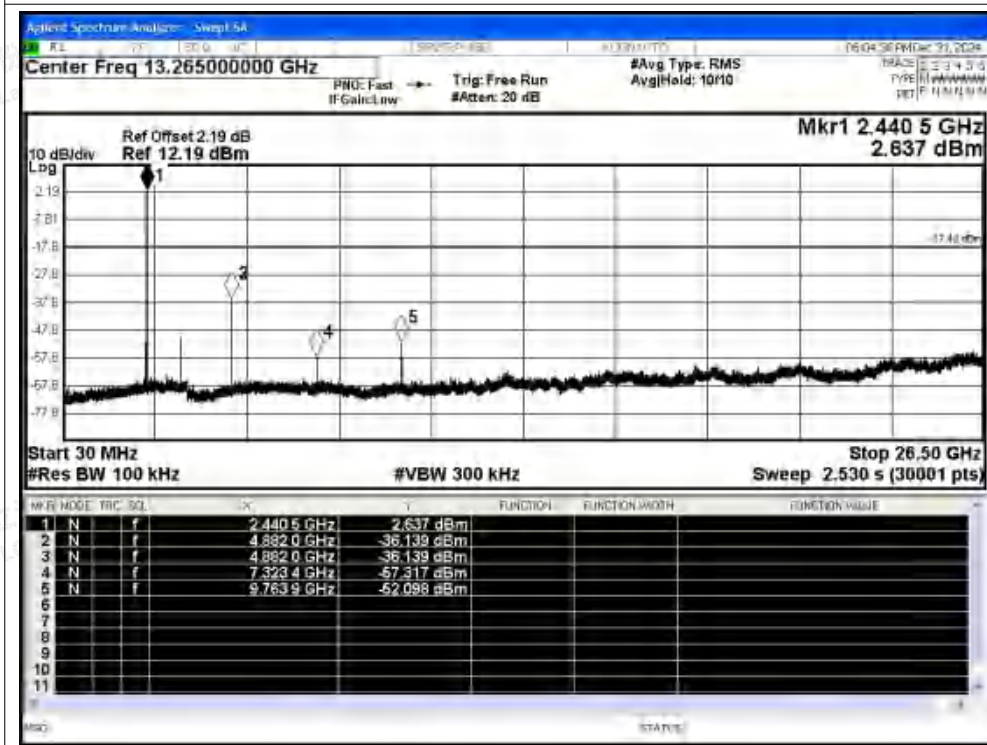




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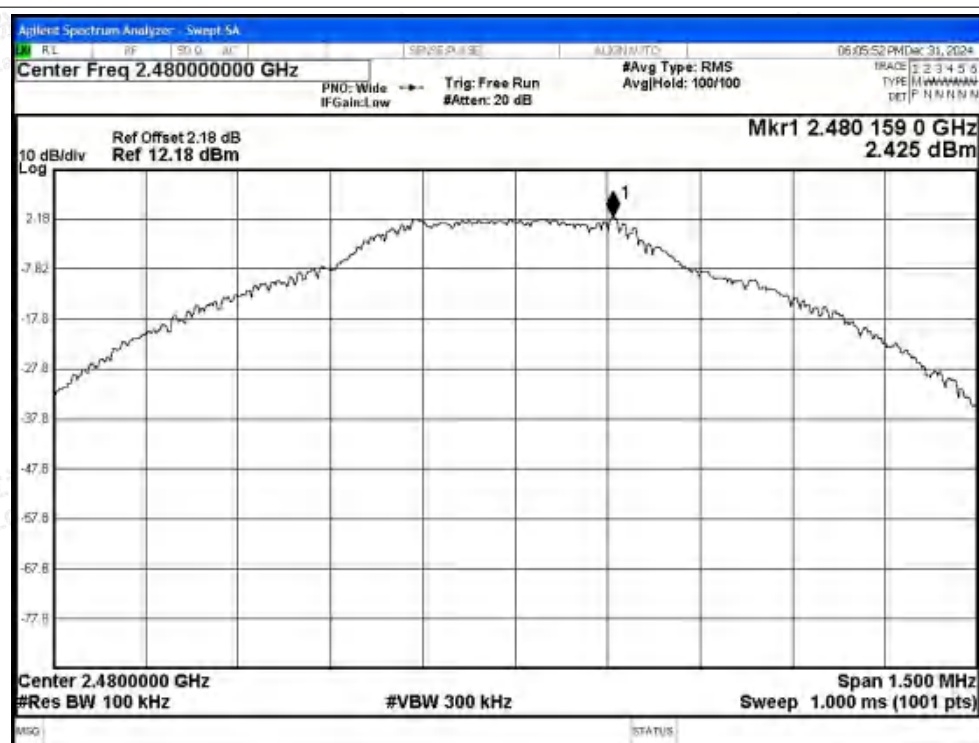


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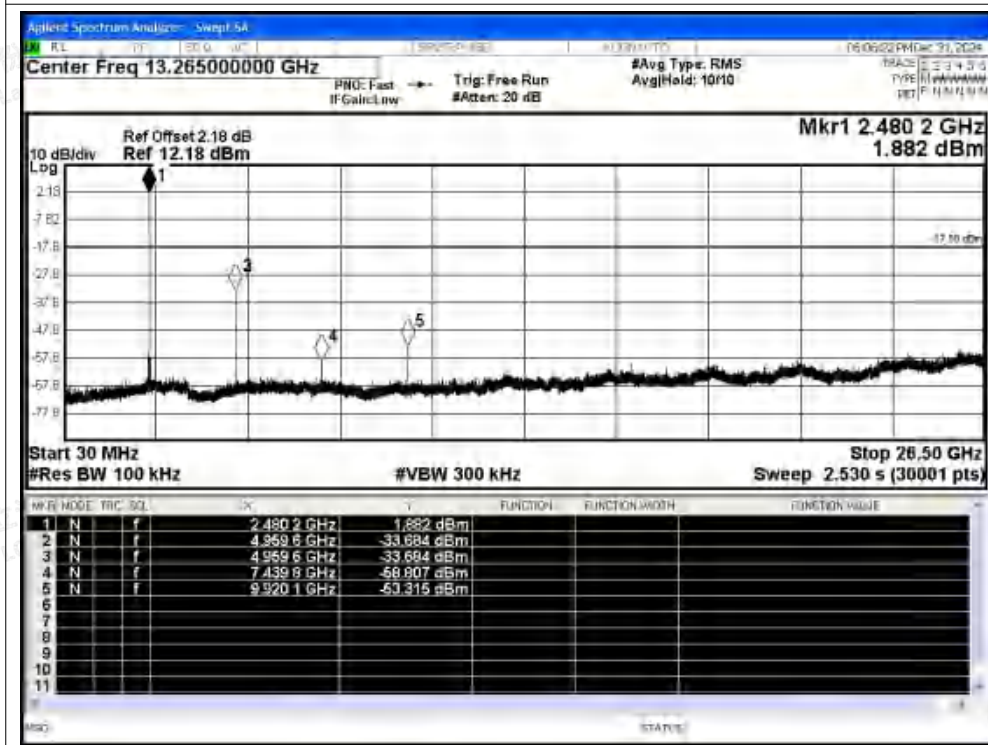




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

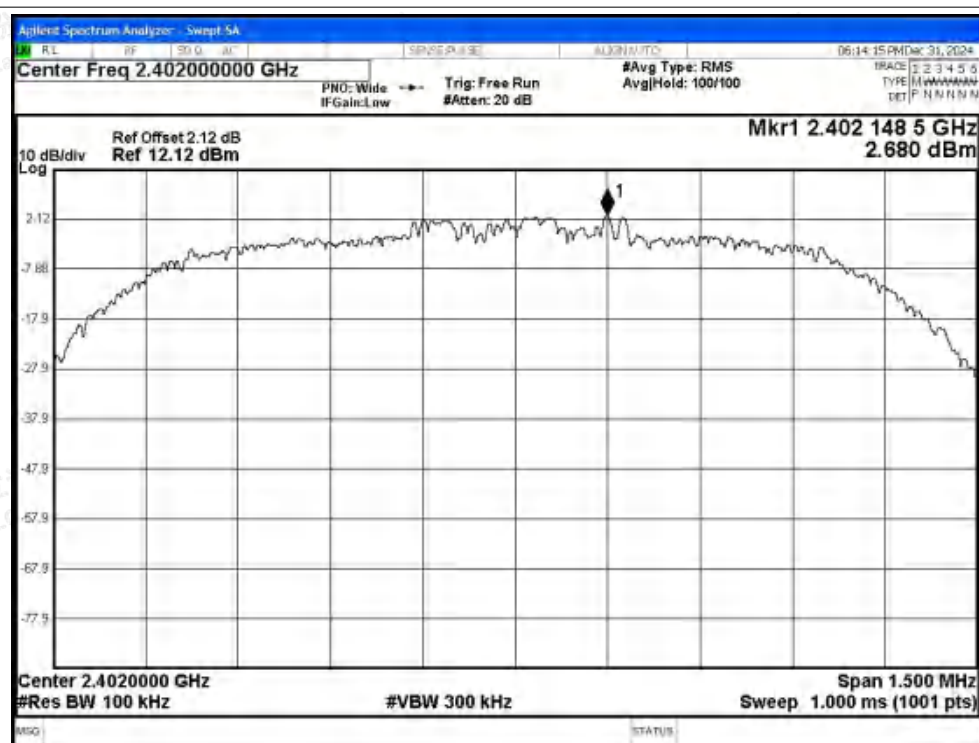


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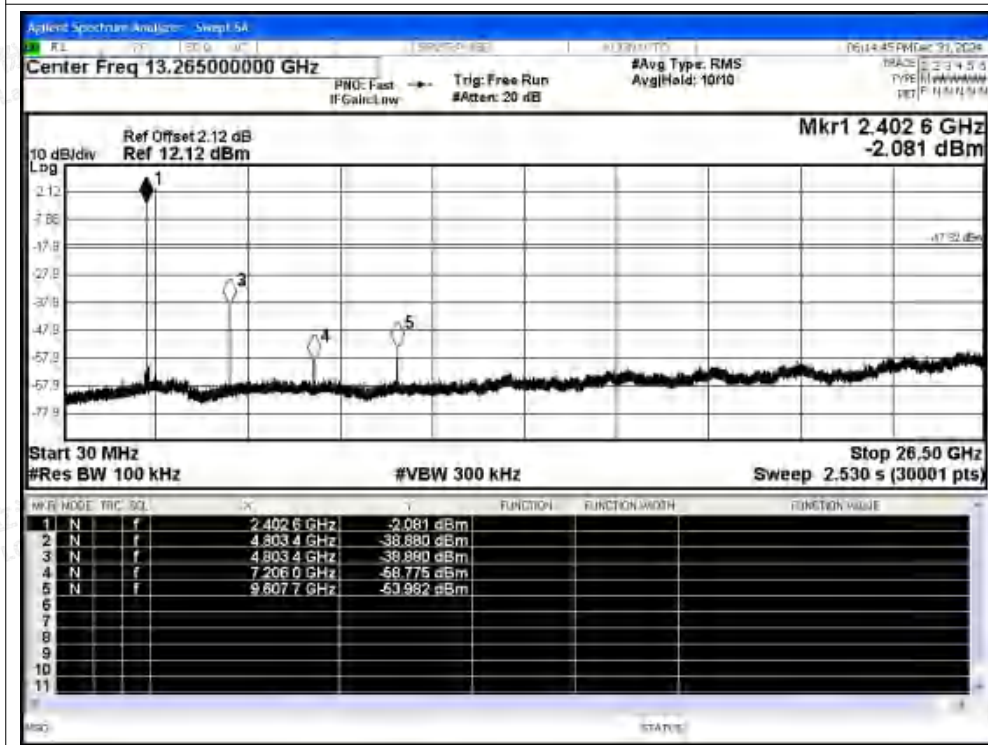




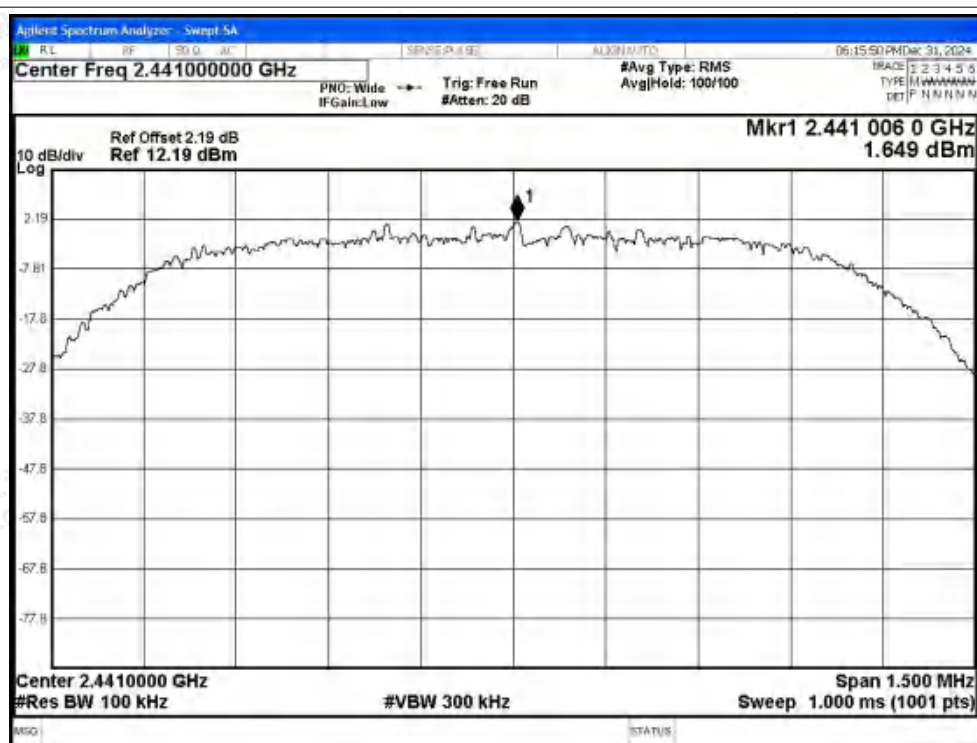
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



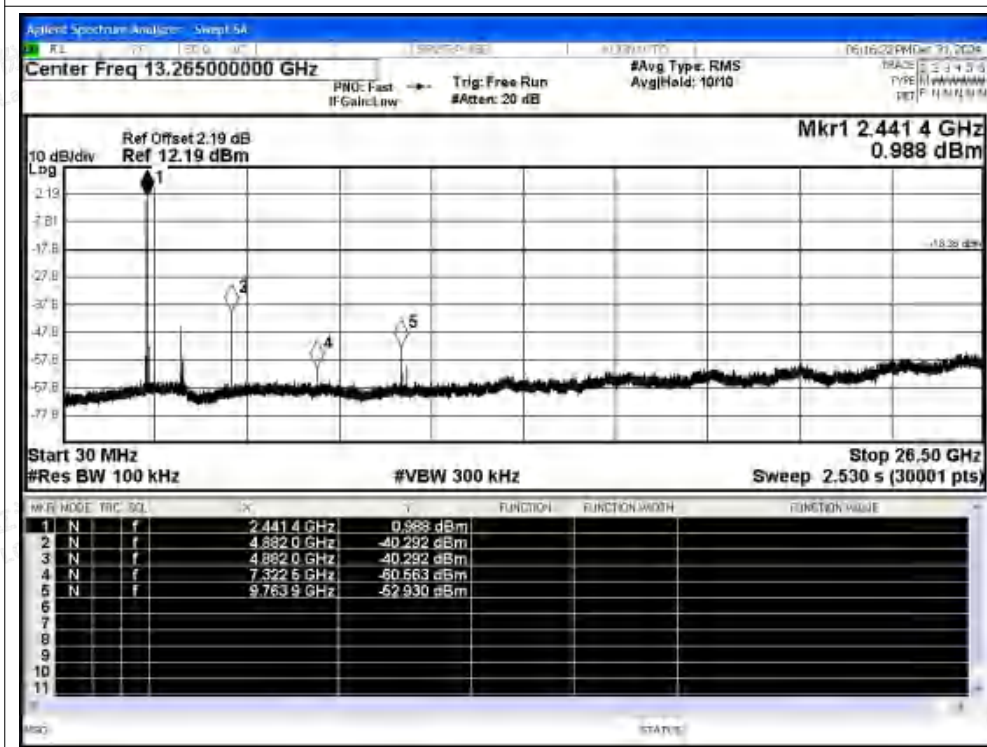
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



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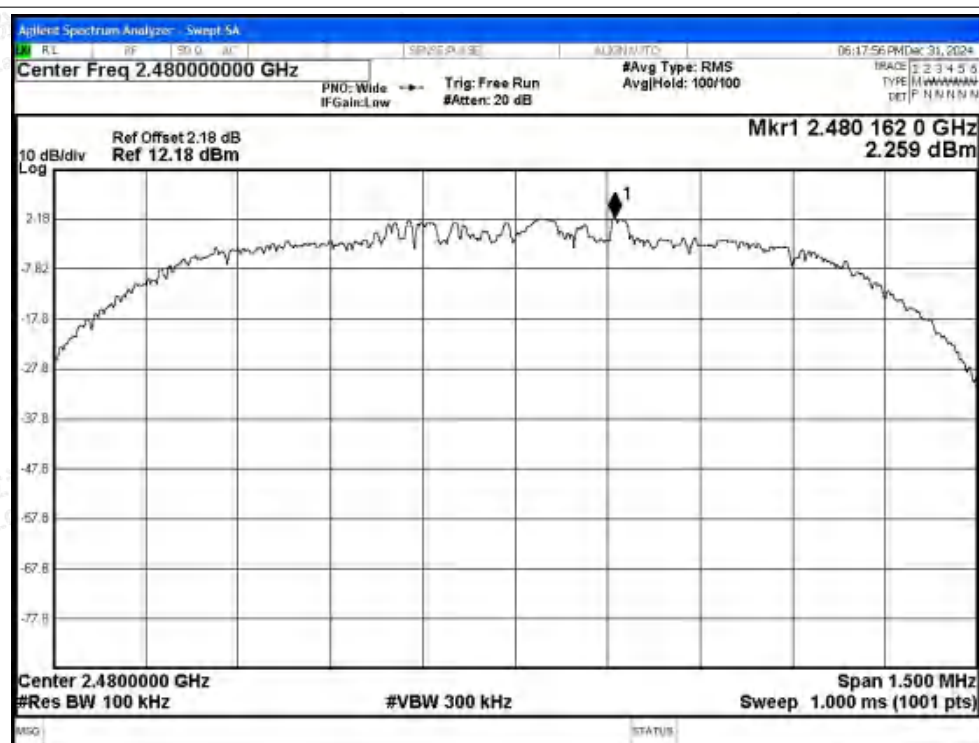
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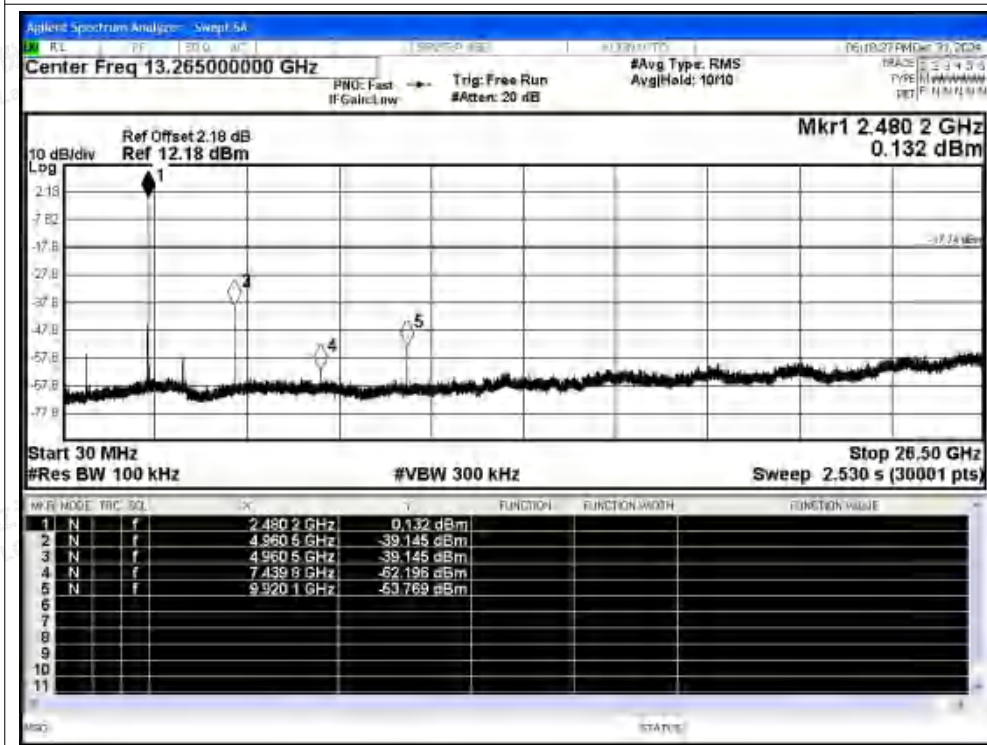
Scan code to check authenticity



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	57.74	2.39	0.35
NVNT	1-DH5	2441	Ant1	57.74	2.39	0.35
NVNT	1-DH5	2480	Ant1	57.72	2.39	0.35
NVNT	2-DH5	2402	Ant1	57.88	2.37	0.35
NVNT	2-DH5	2441	Ant1	57.88	2.37	0.35
NVNT	2-DH5	2480	Ant1	57.88	2.37	0.35

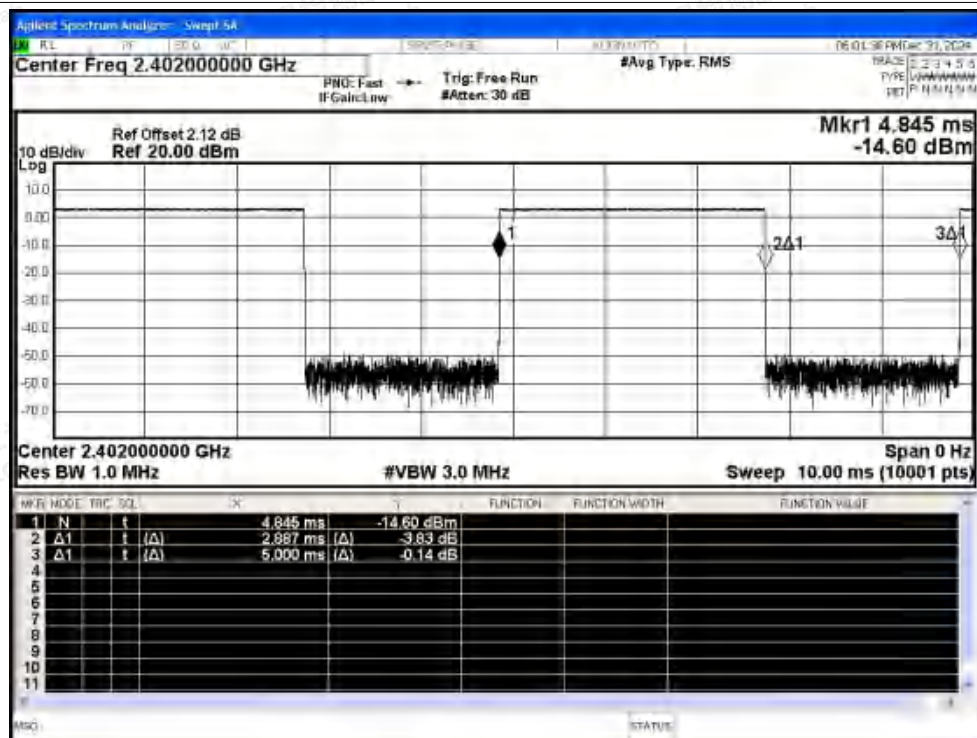


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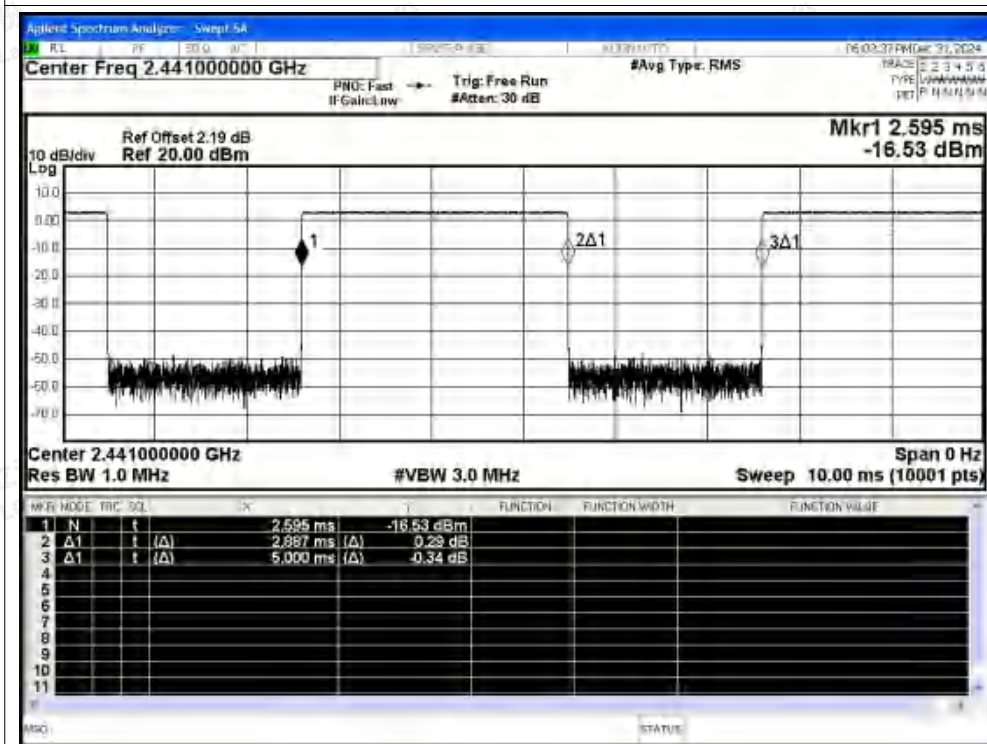


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

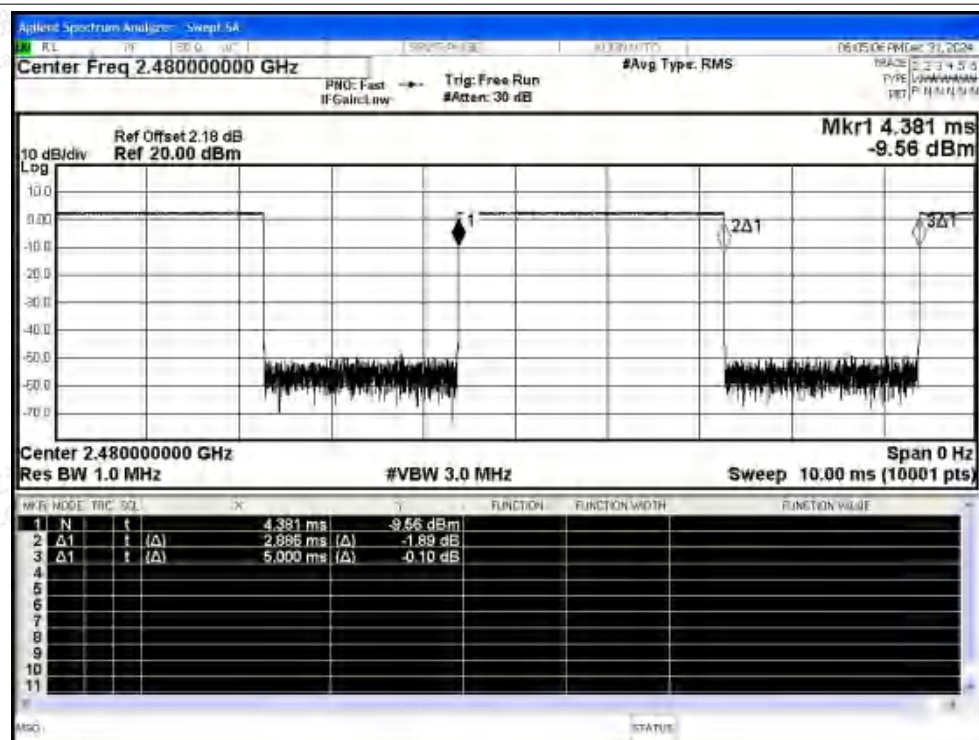


Duty Cycle NVNT 1-DH5 2441MHz Ant1

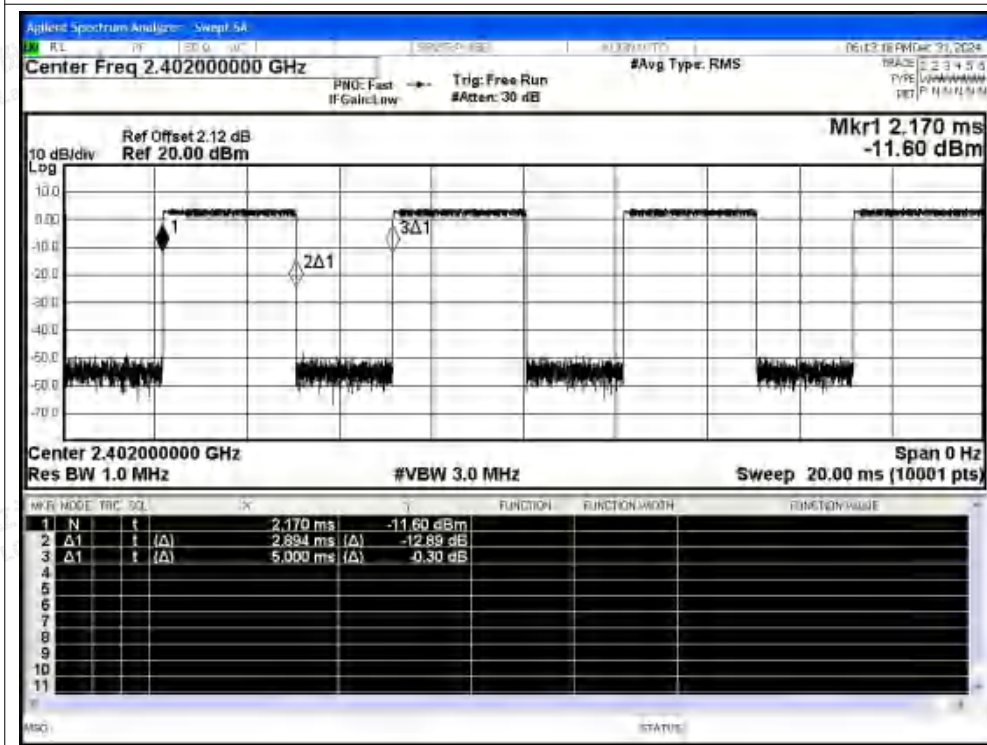




Duty Cycle NVNT 1-DH5 2480MHz Ant1

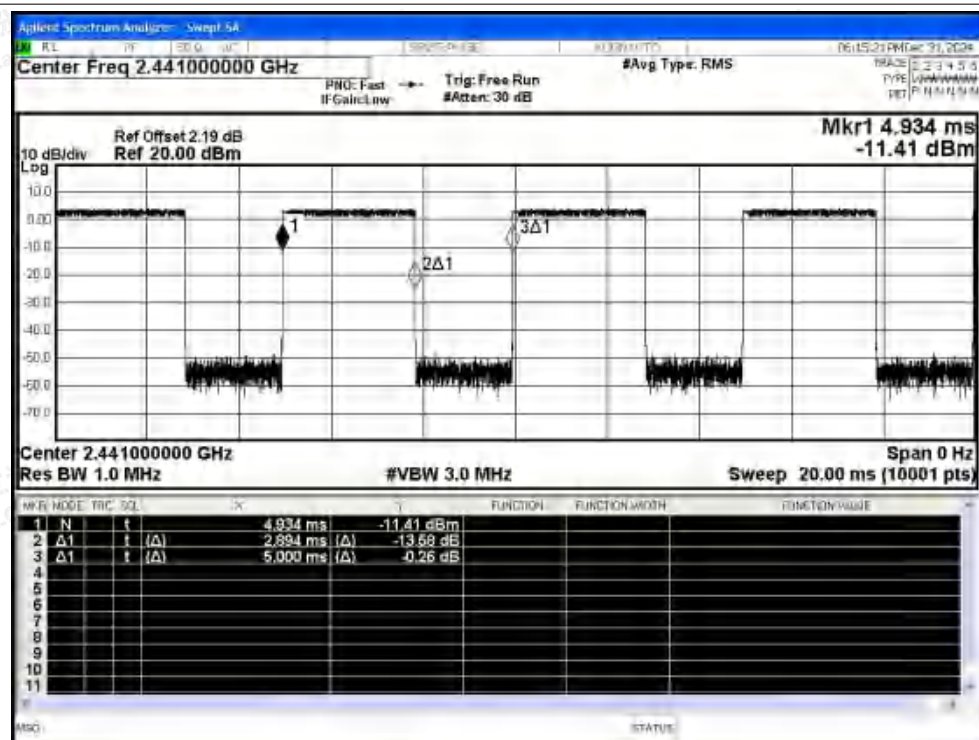


Duty Cycle NVNT 2-DH5 2402MHz Ant1

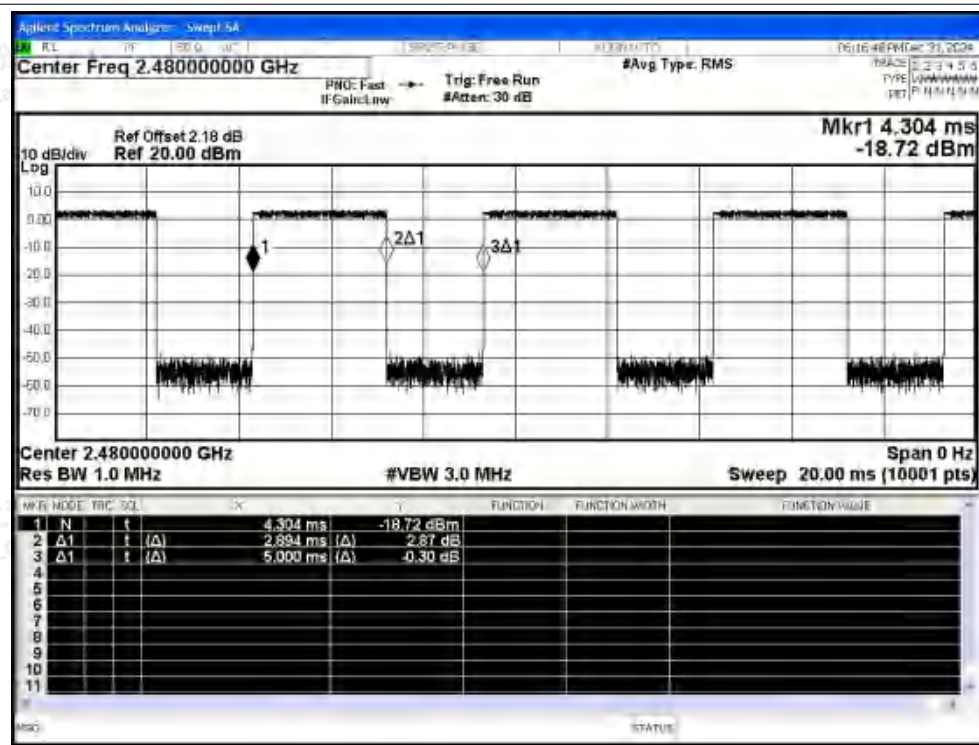


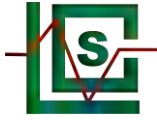


Duty Cycle NVNT 2-DH5 2441MHz Ant1



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	-48.43	2	-	48.83	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.16	2	2.39	40.49	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2341.872	-46.34	2	-	50.92	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2378.16	-57.3	2	2.39	42.35	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-51.79	2	-	45.47	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.62	2	2.39	41.03	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.39	2	-	46.87	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.98	2	2.39	41.67	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2484.208	-46.47	2	-	50.79	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.848	-56.83	2	2.39	42.82	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.84	2	-	47.42	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.85	2	2.39	41.8	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.71	2	-	46.55	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.65	2	2.37	40.98	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2380.848	-47.47	2	-	49.79	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2384.304	-57.46	2	2.37	42.17	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.26	2	-	48	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.28	2	2.37	41.35	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.9	2	-	47.36	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-58.08	2	2.37	41.55	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2499.856	-46.99	2	-	50.27	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.56	-56.99	2	2.37	42.64	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.13	2	-	48.13	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.03	2	2.37	41.6	Average	54	Pass

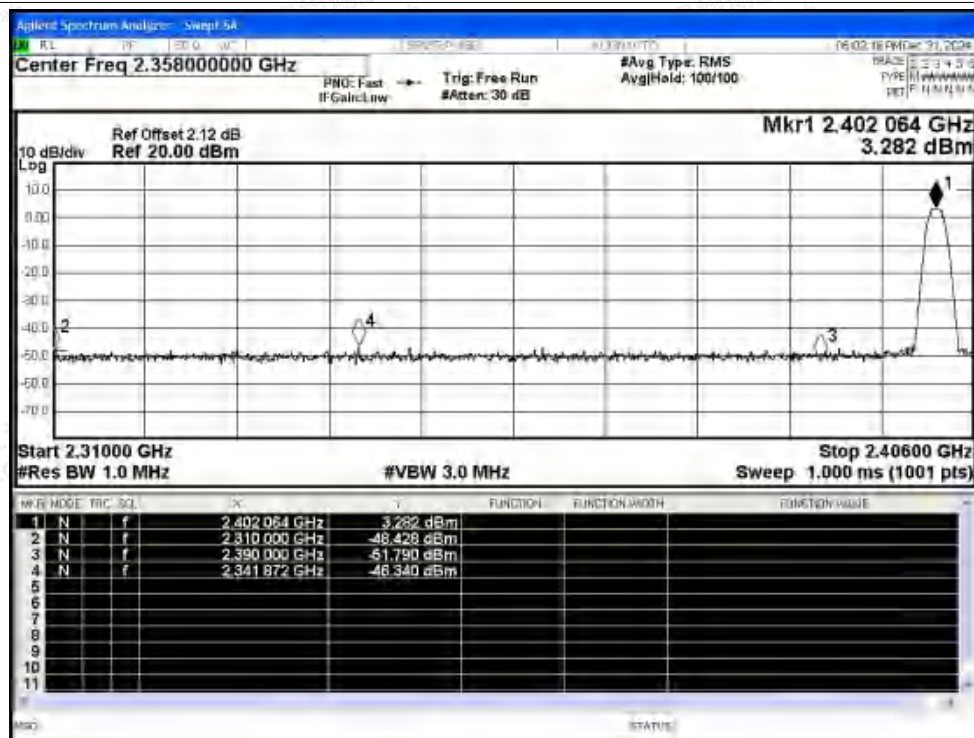


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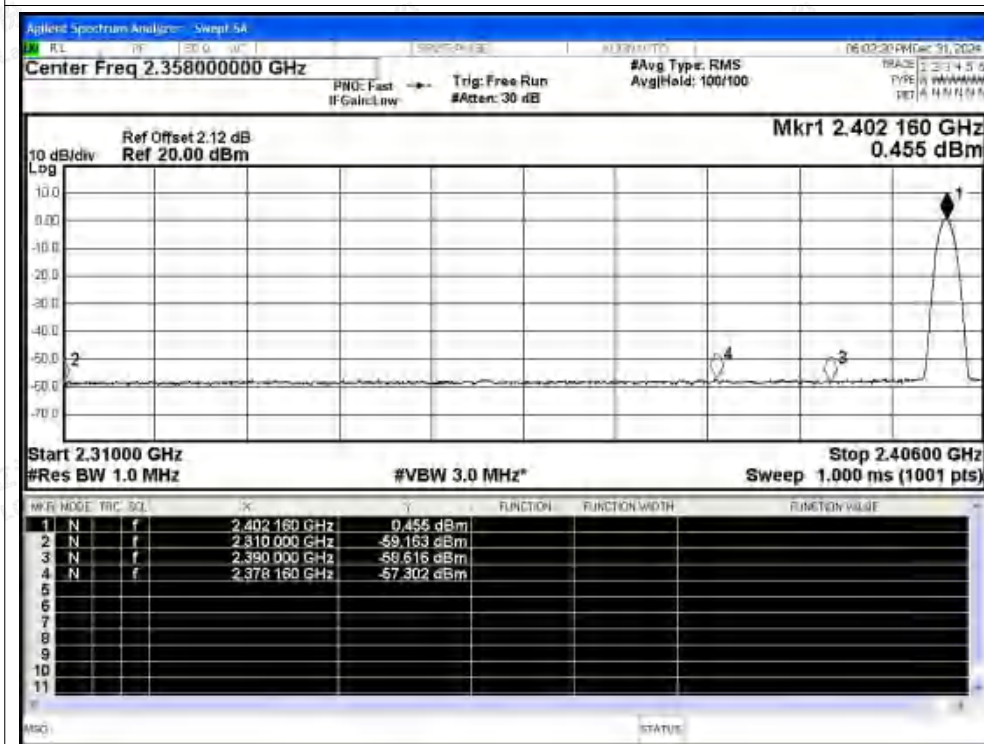


Test Graphs

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

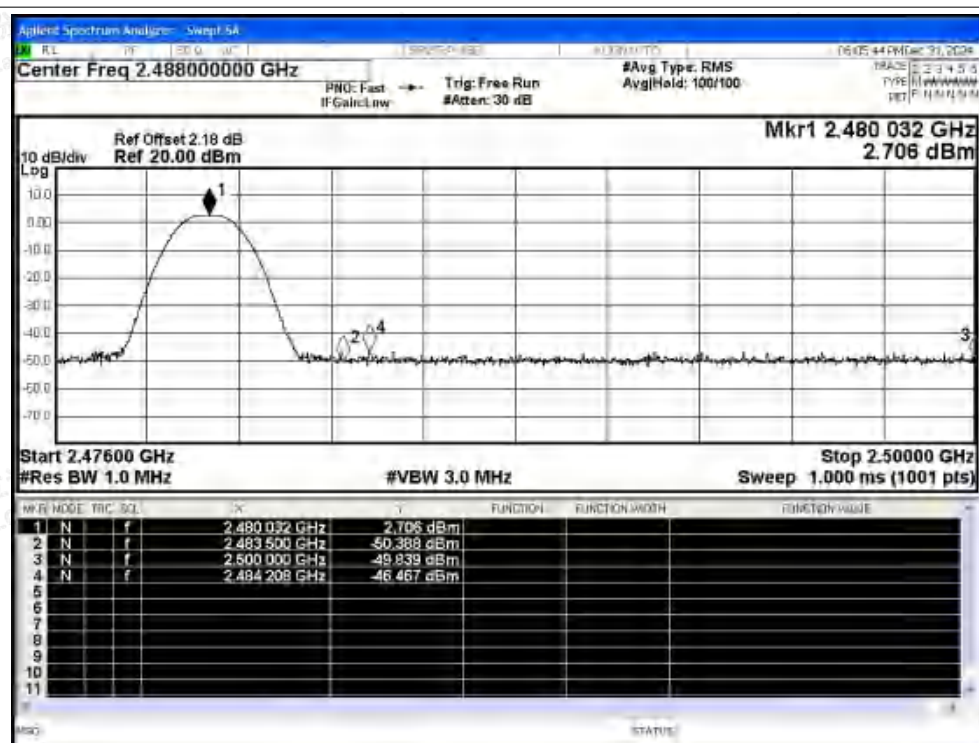


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

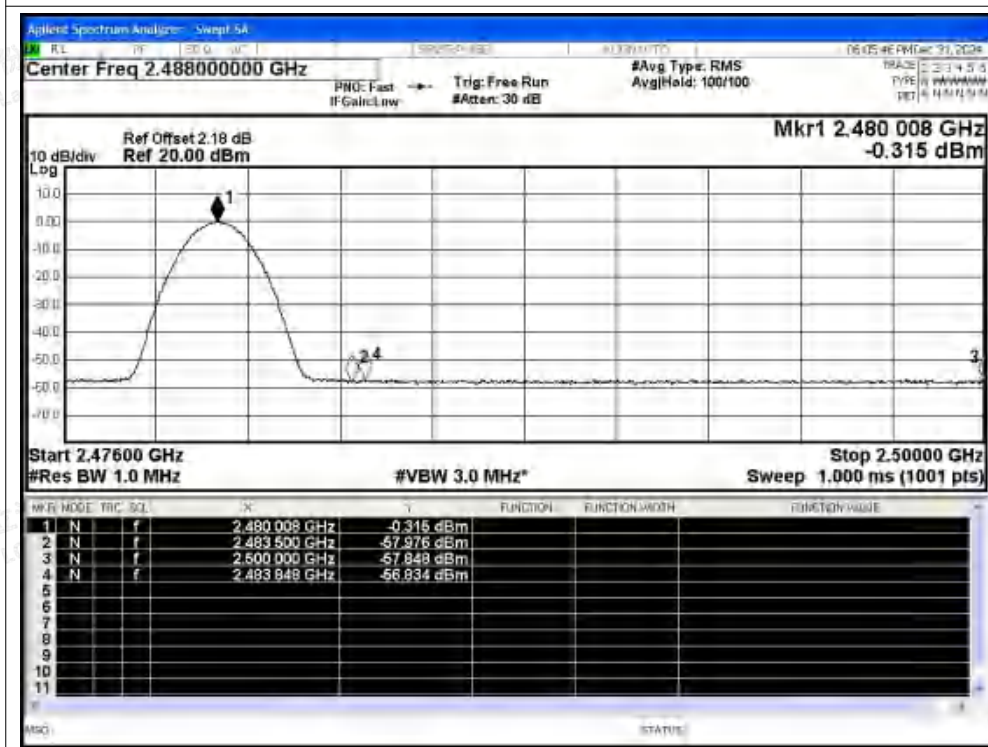




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

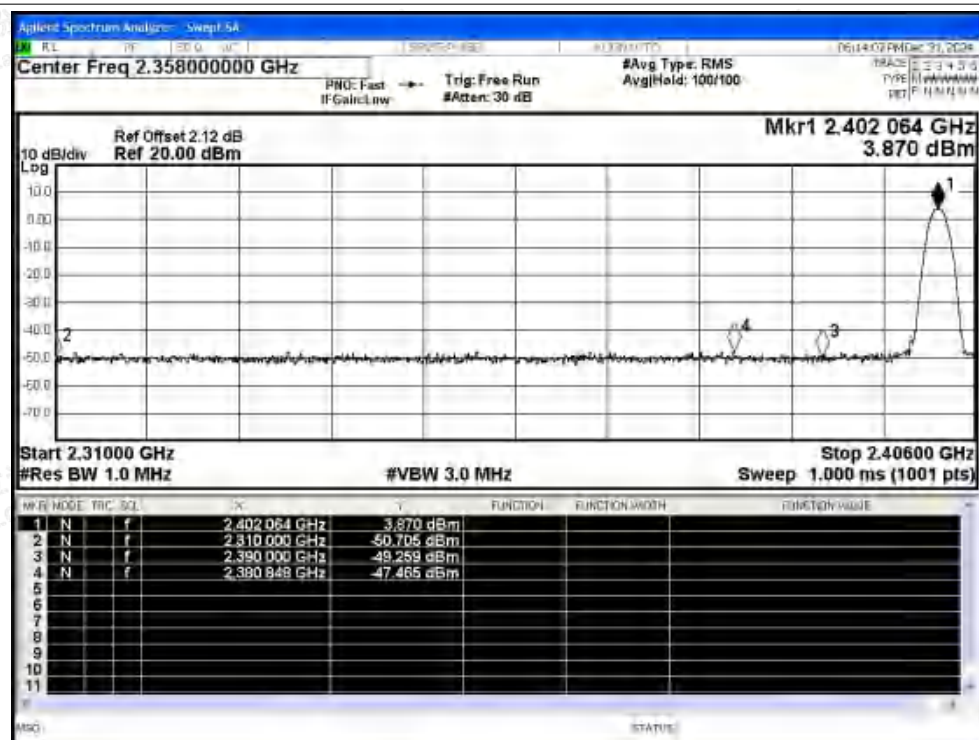


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

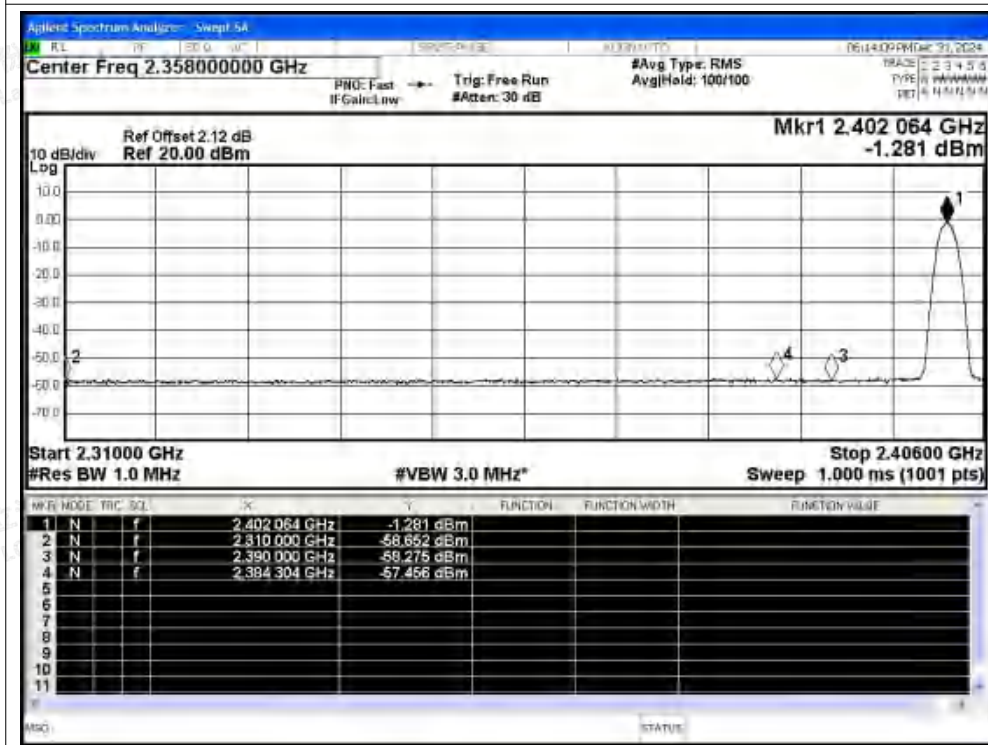




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

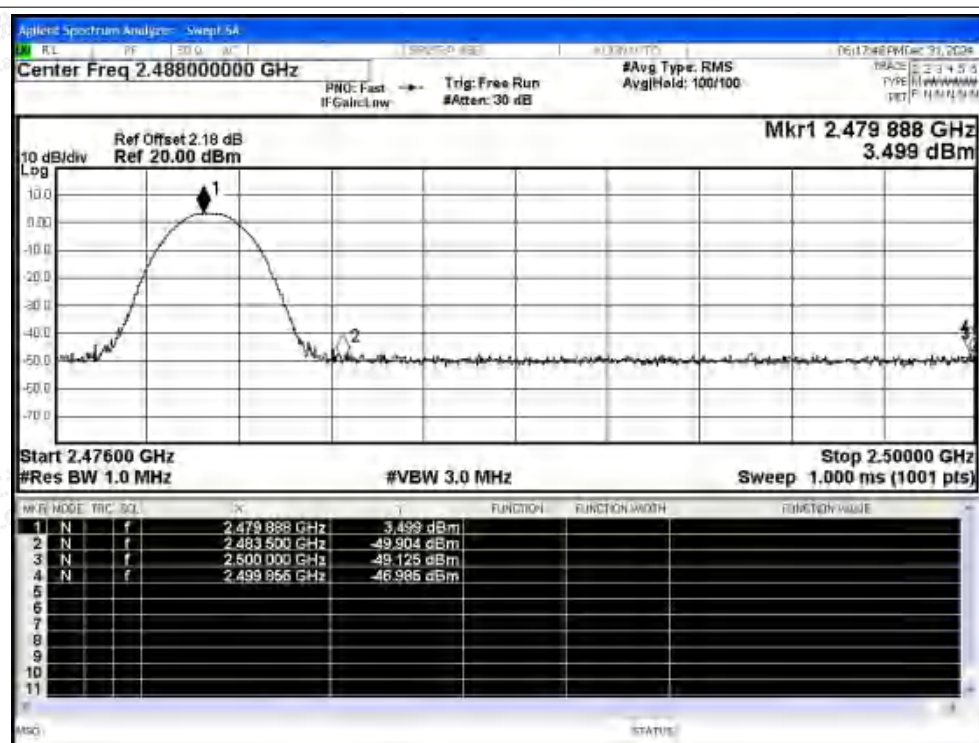


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average





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



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

