



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Smart Lock with Camera

Test Model: P150 C

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen
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	1.017	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.031	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.016	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.293	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.356	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.284	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.306	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.271	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.31	N/A	Pass

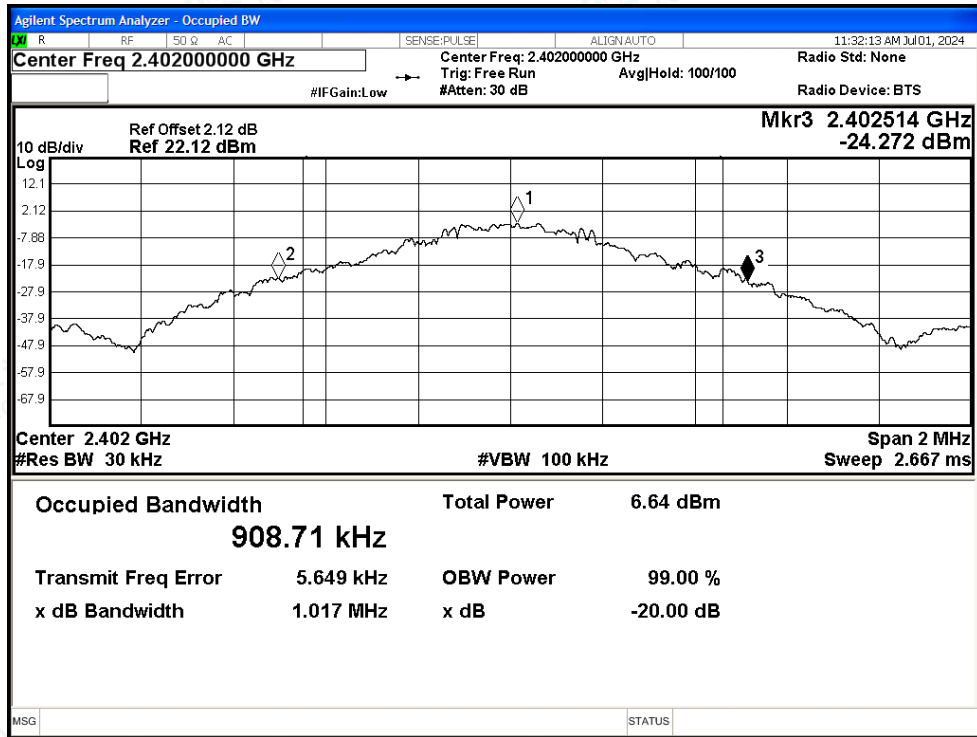


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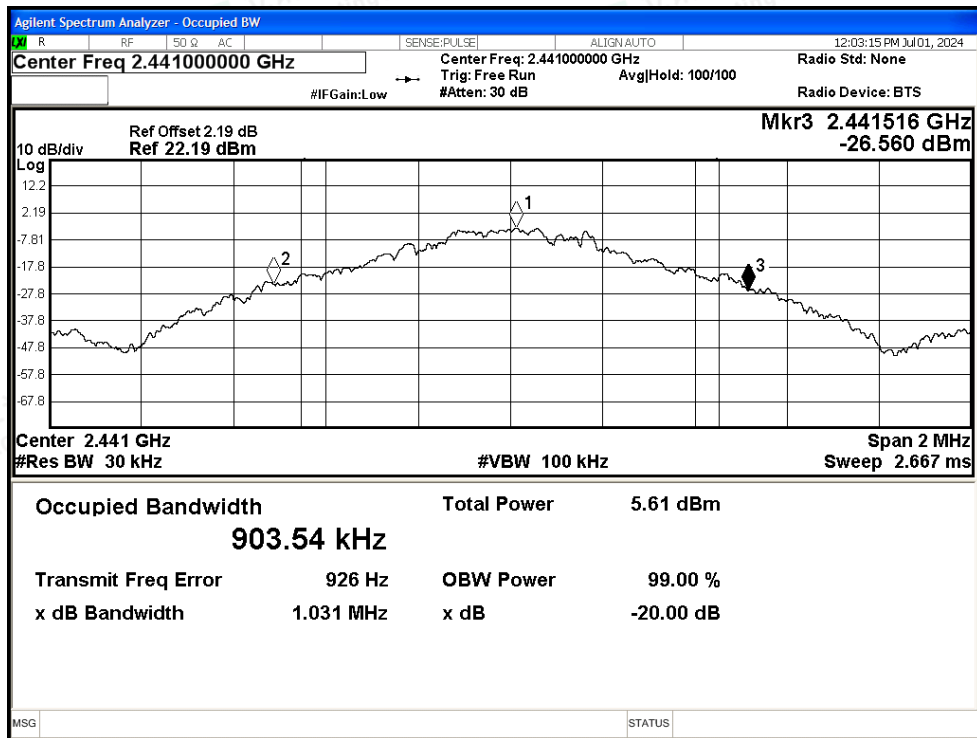


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

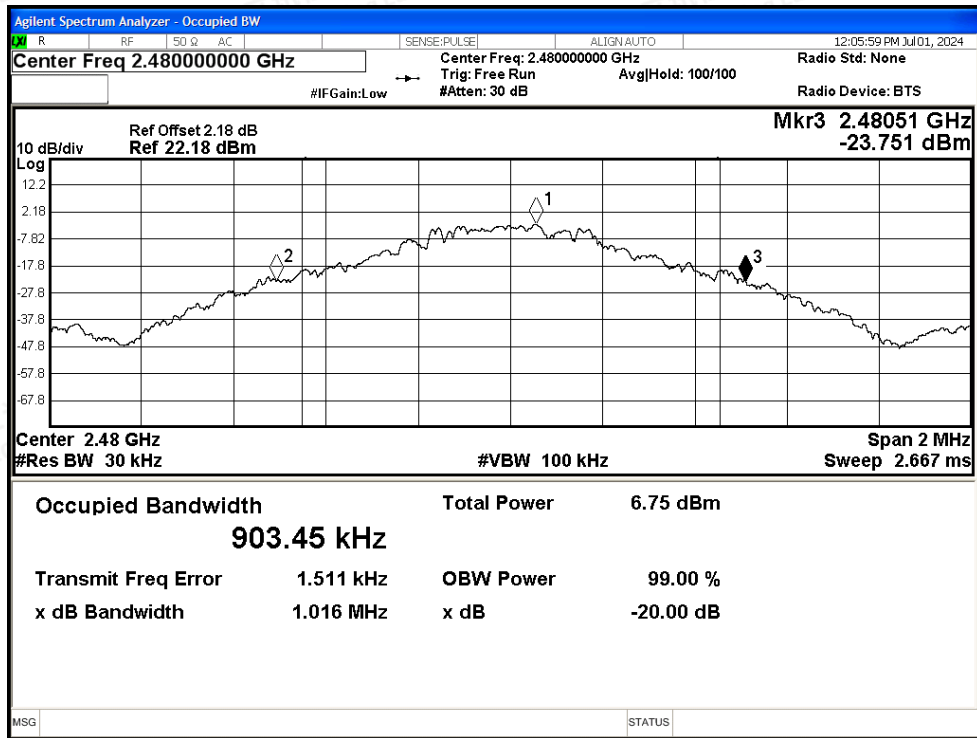


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

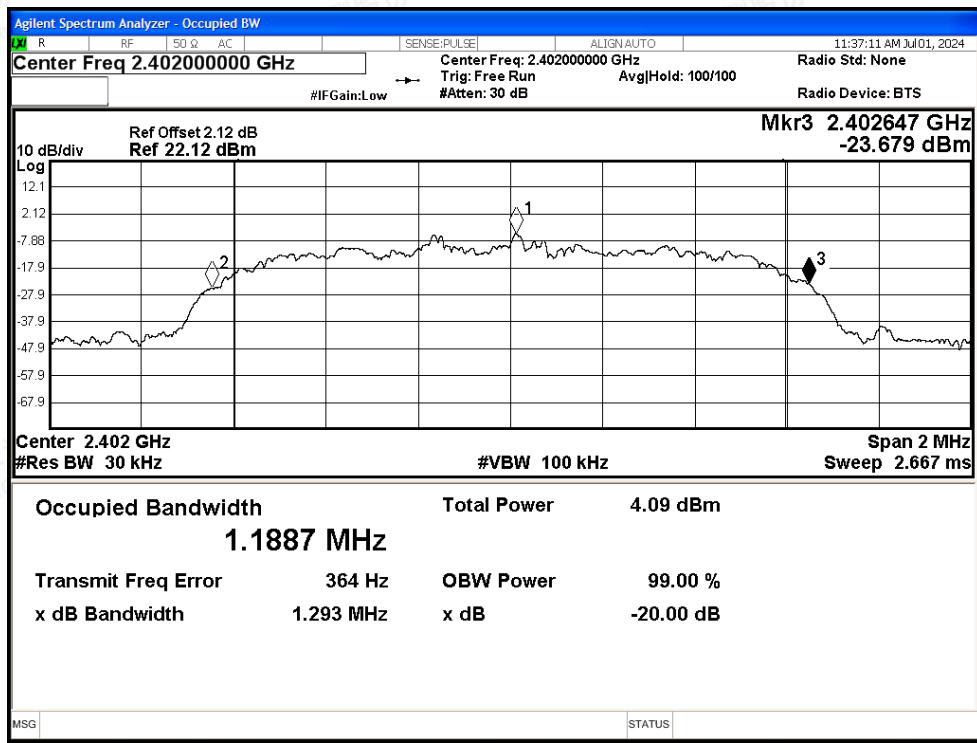




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

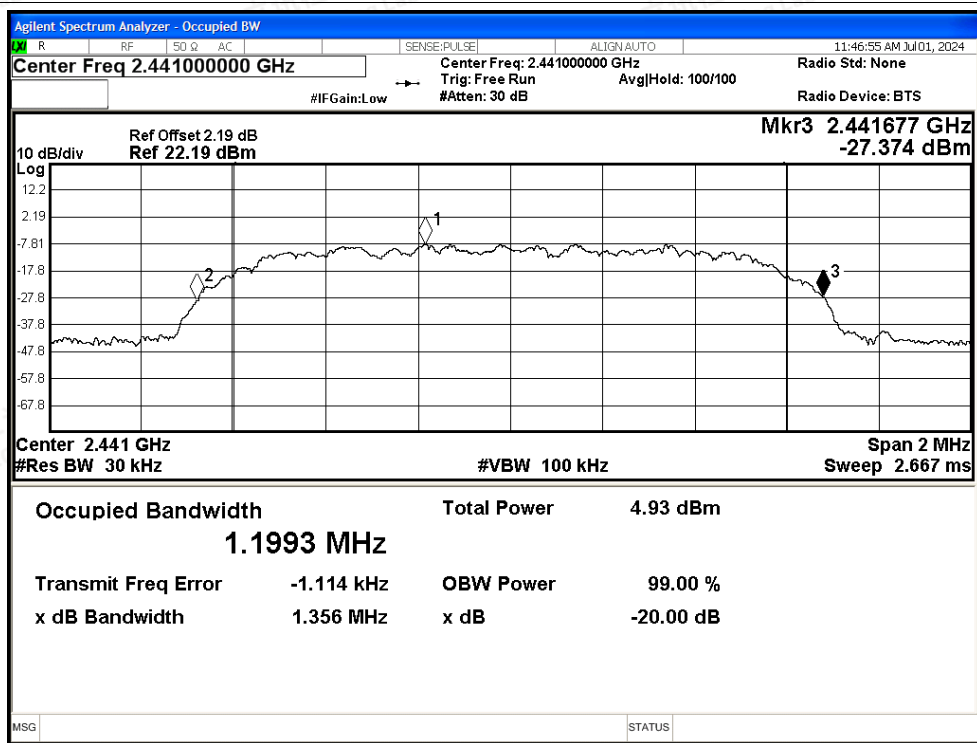


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

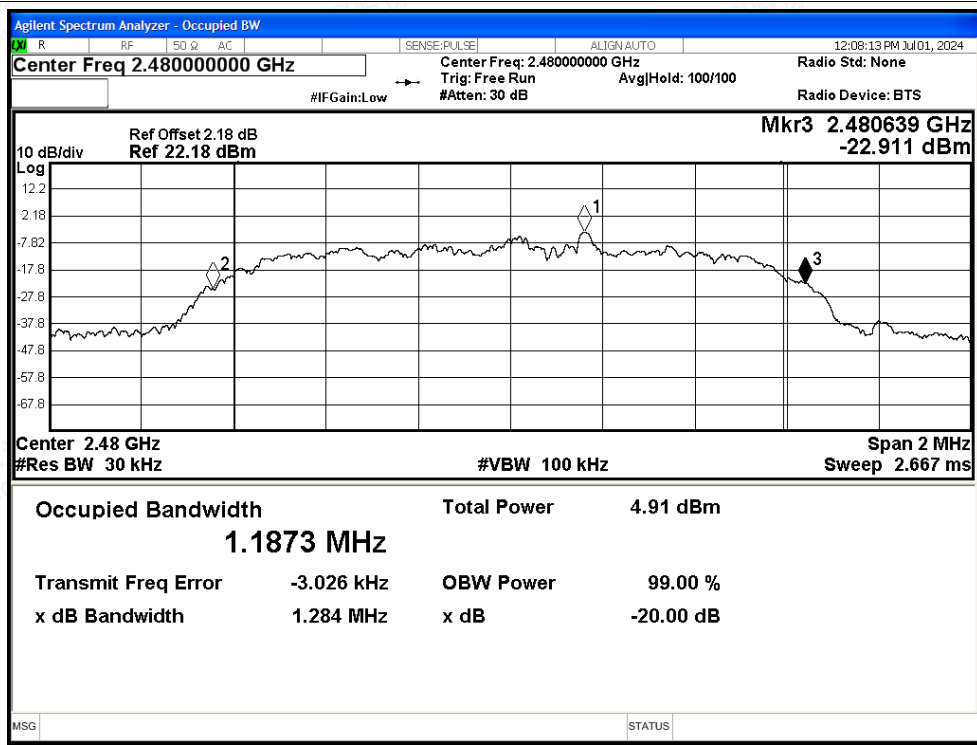




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

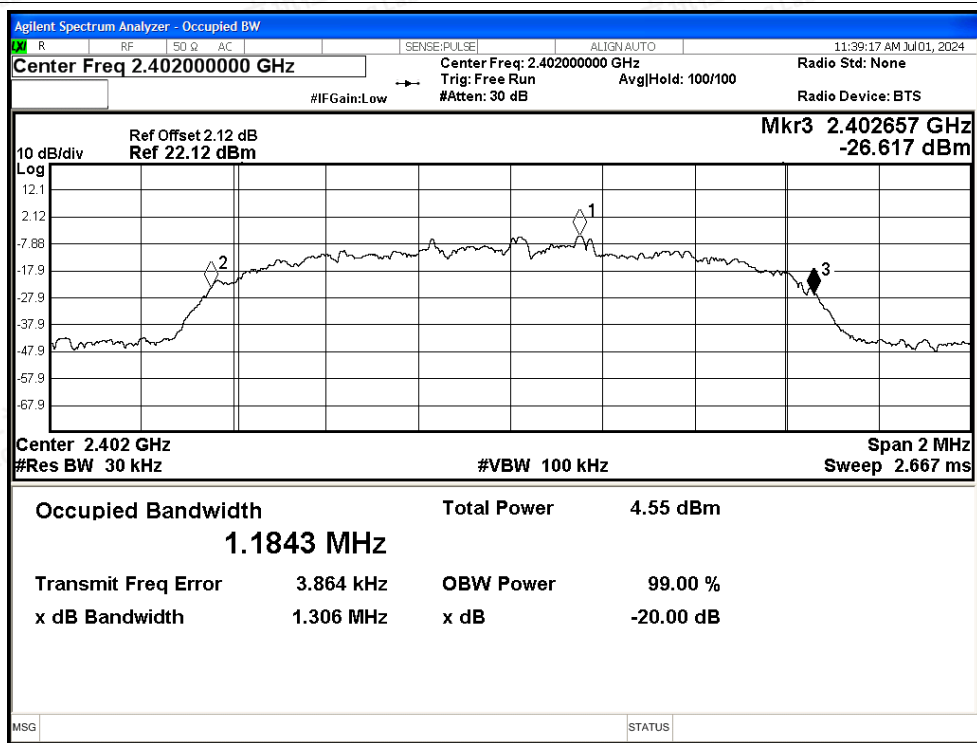


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

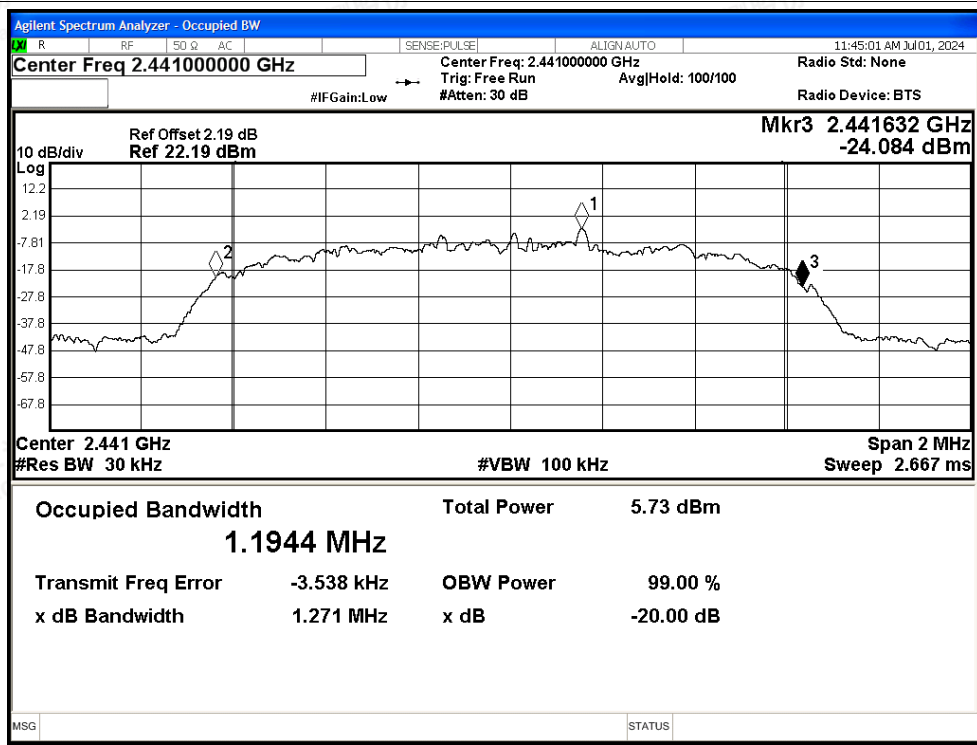


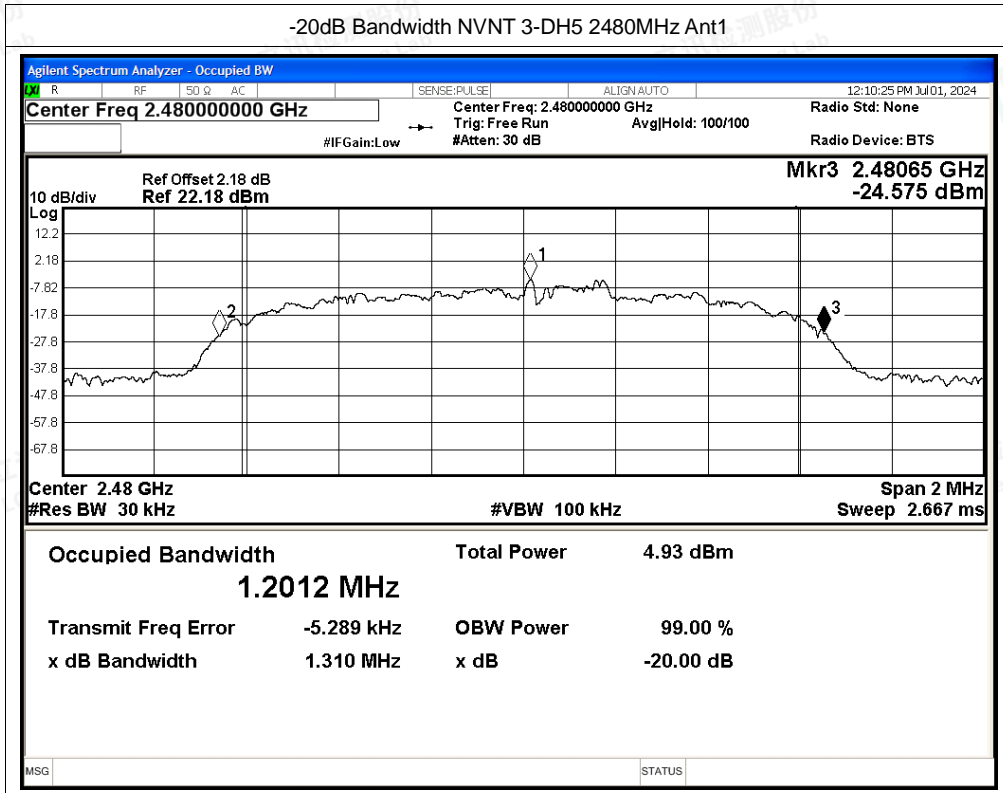


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-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	0.46	21	Pass
NVNT	1-DH5	2441	Ant1	-0.61	21	Pass
NVNT	1-DH5	2480	Ant1	0.34	21	Pass
NVNT	2-DH5	2402	Ant1	-0.57	21	Pass
NVNT	2-DH5	2441	Ant1	0.84	21	Pass
NVNT	2-DH5	2480	Ant1	-0.25	21	Pass
NVNT	3-DH5	2402	Ant1	-0.31	21	Pass
NVNT	3-DH5	2441	Ant1	0.99	21	Pass
NVNT	3-DH5	2480	Ant1	-0.15	21	Pass

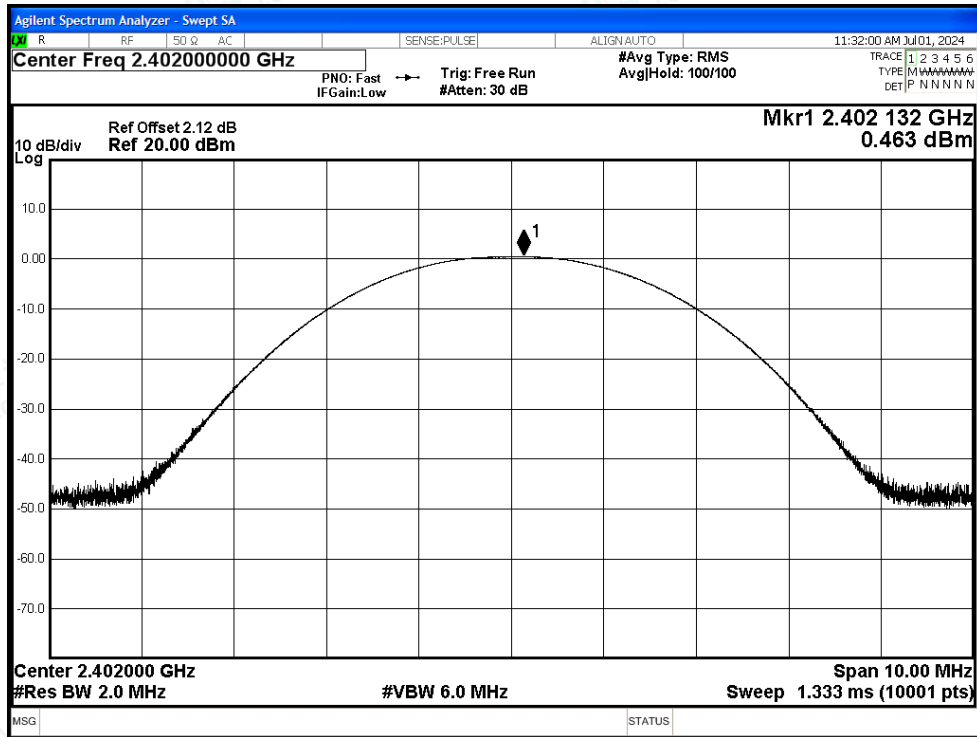


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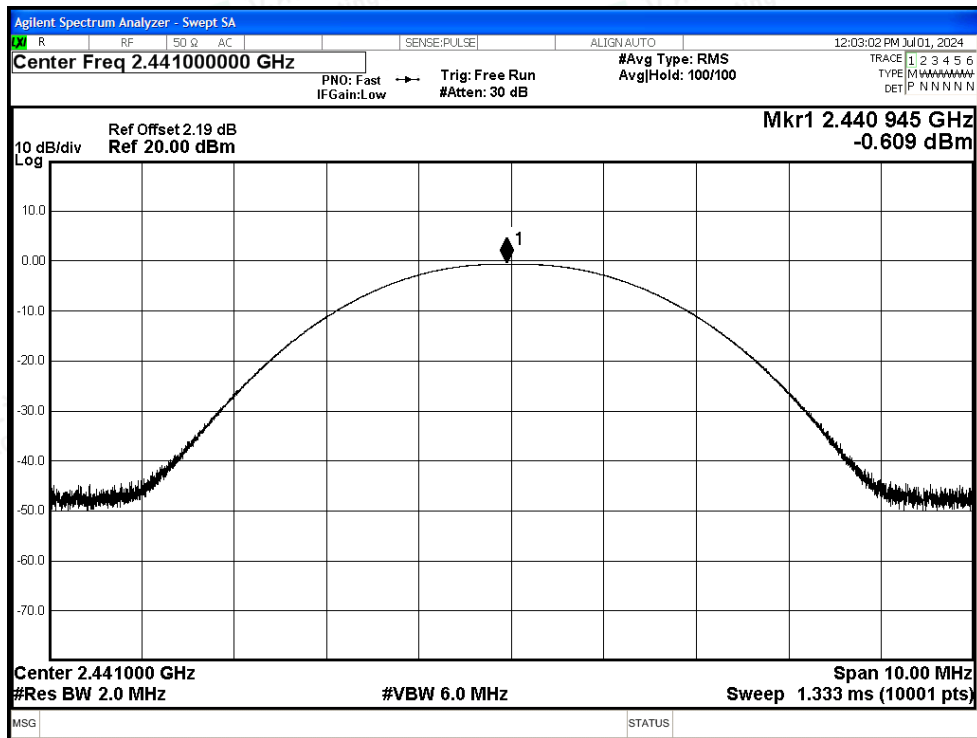


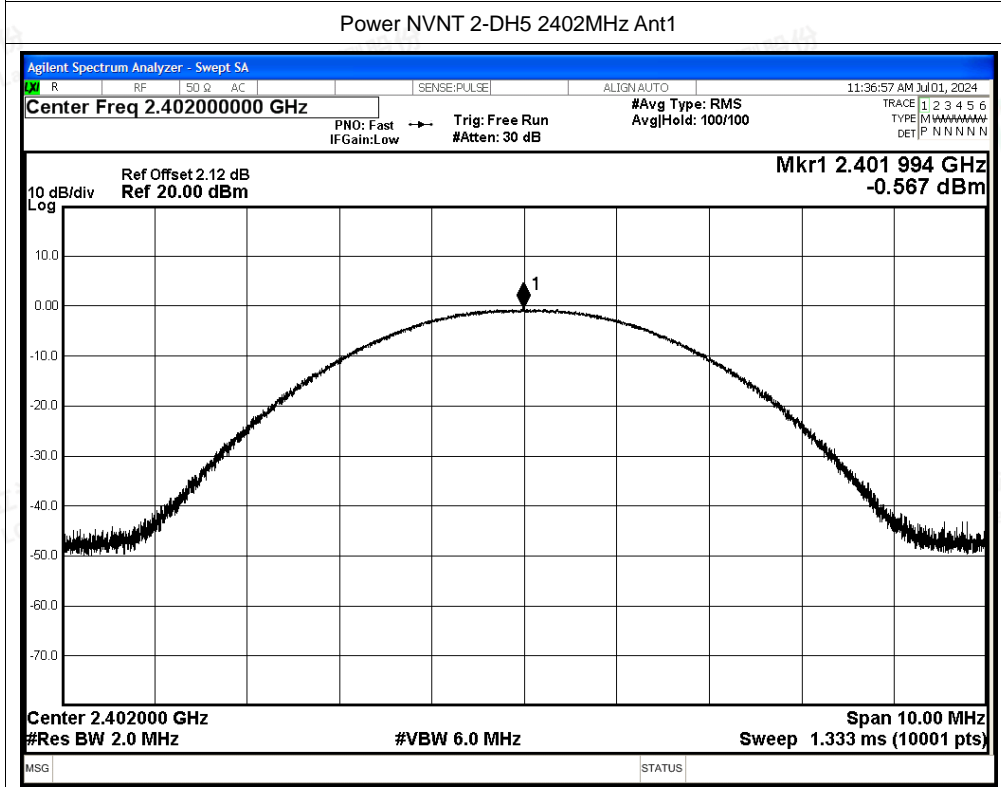
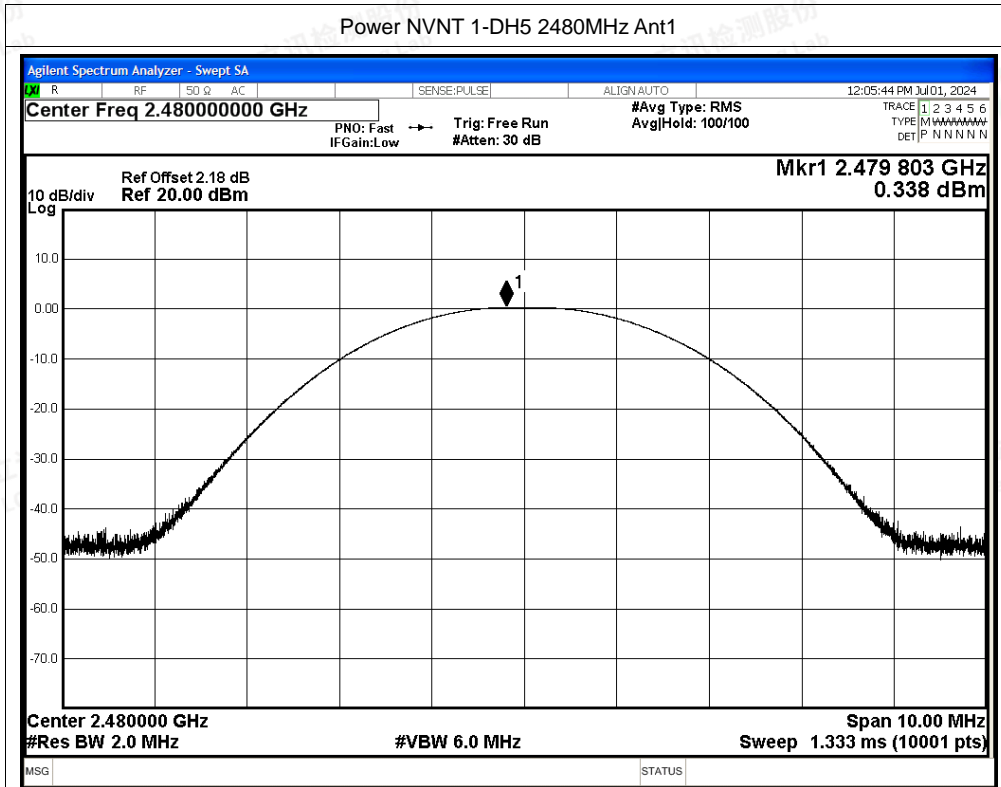
Test Graphs

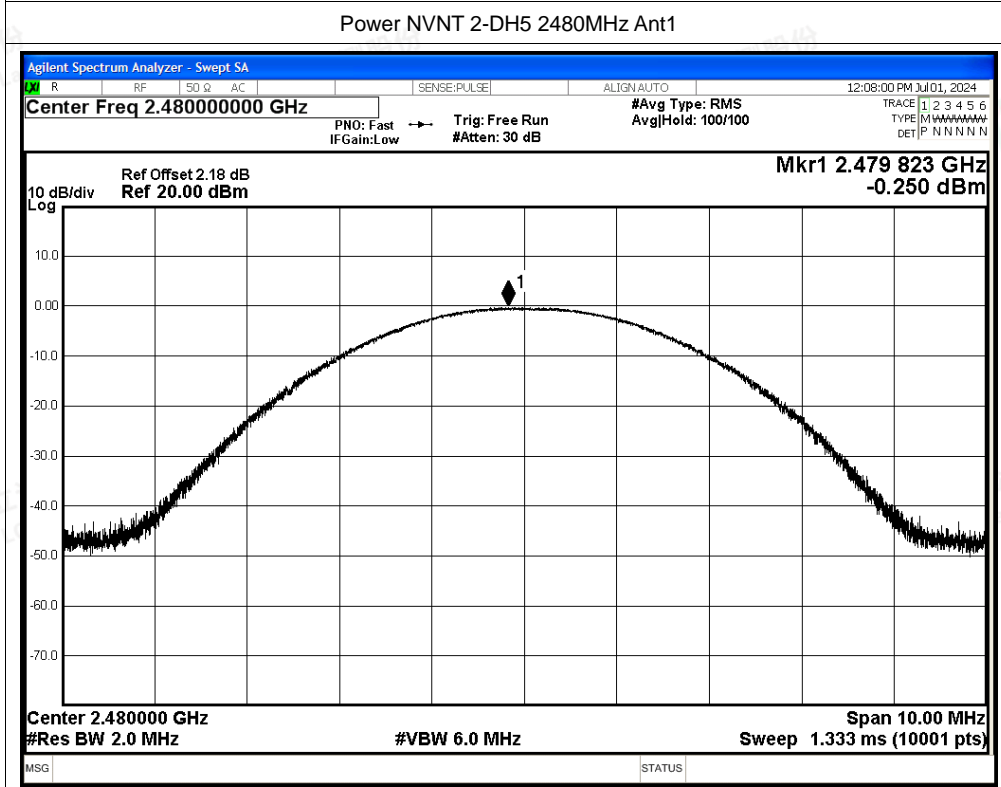
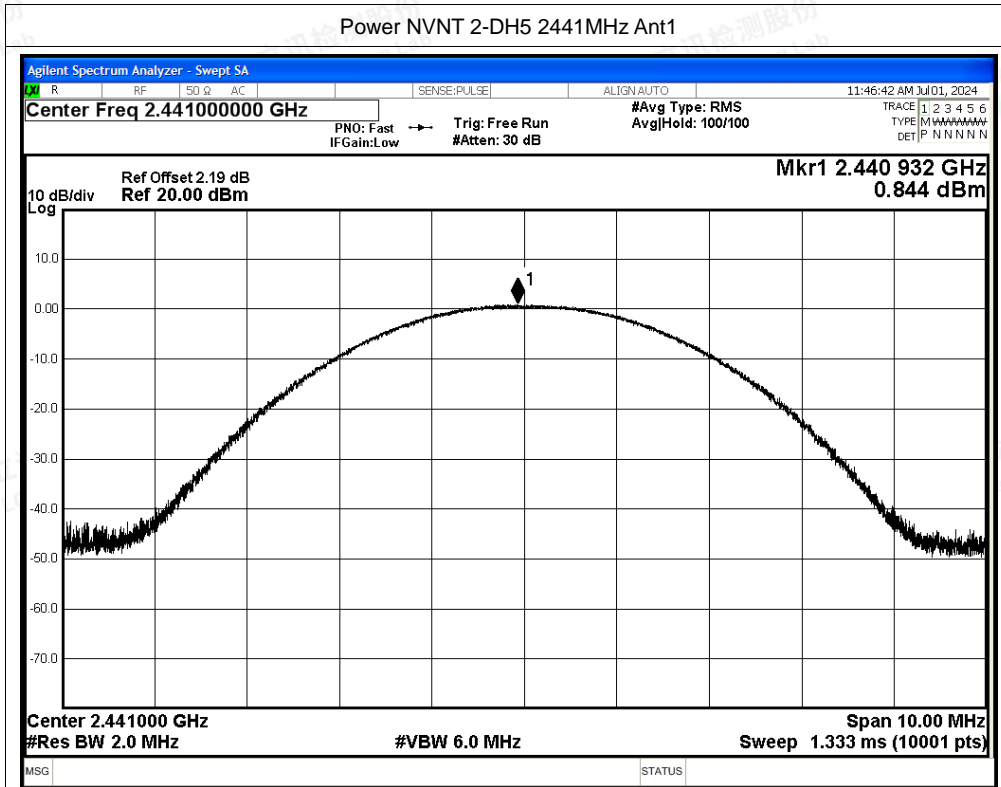
Power NVNT 1-DH5 2402MHz Ant1

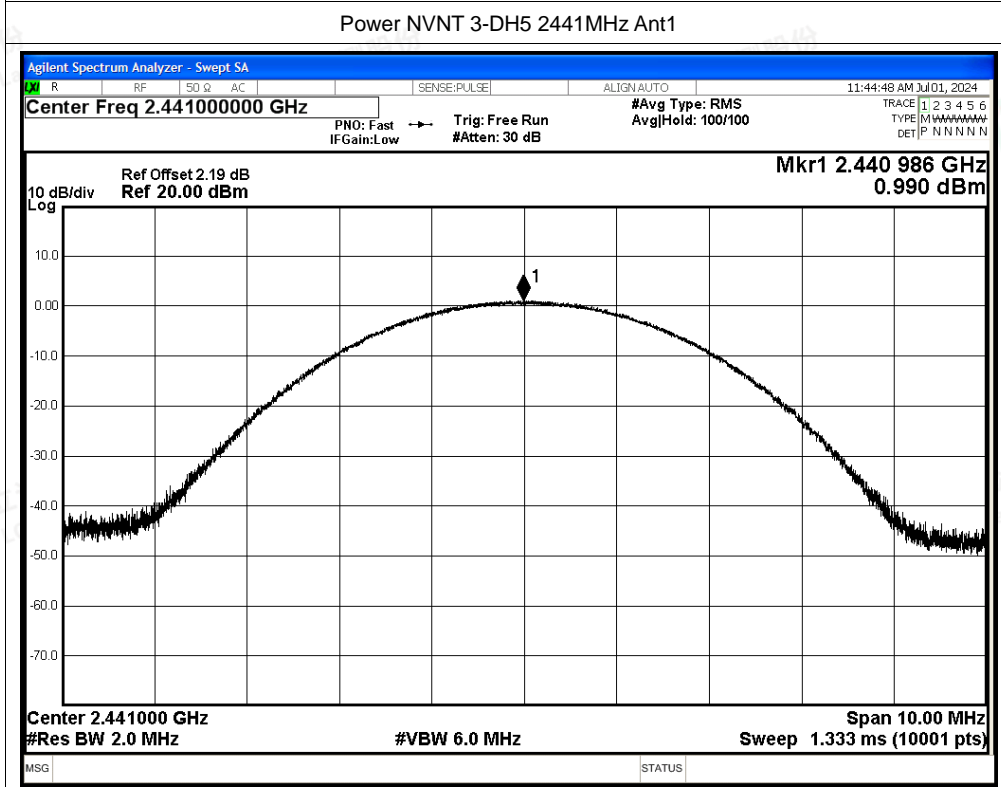
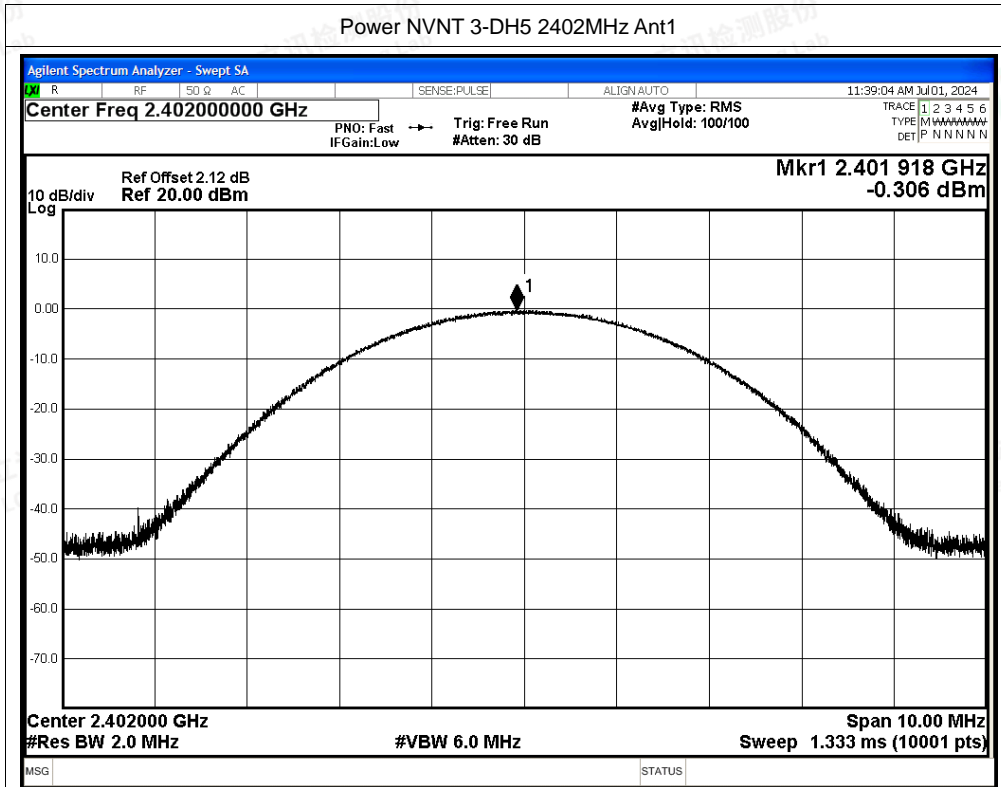


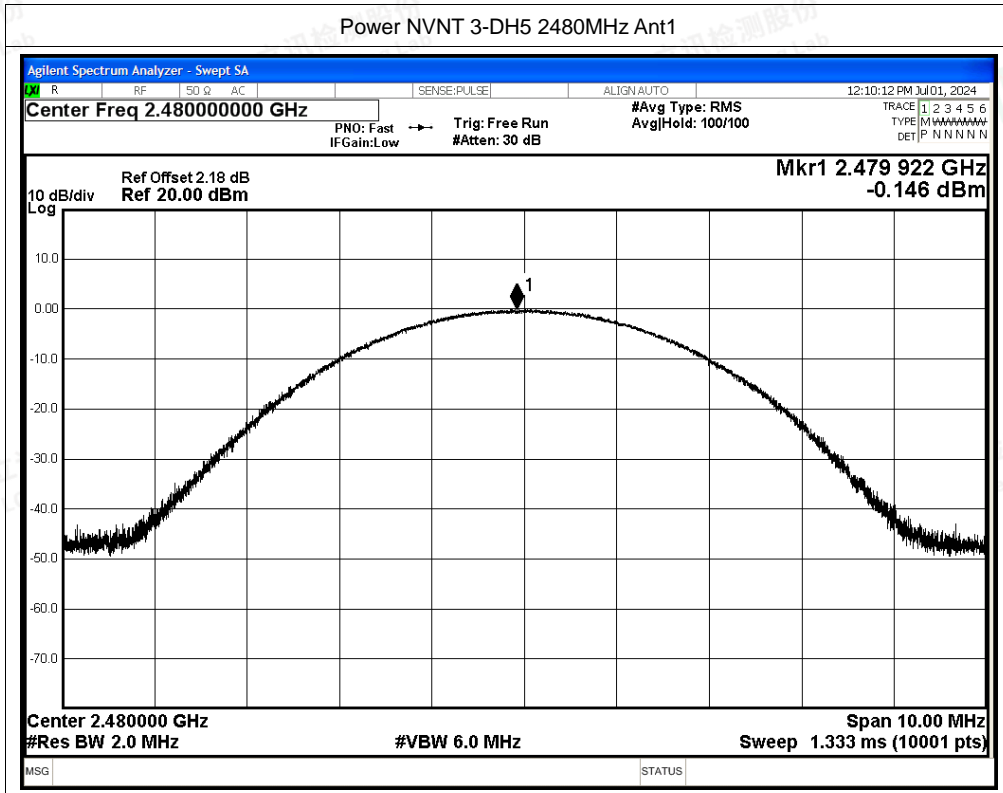
Power NVNT 1-DH5 2441MHz Ant1











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A.3 Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.16	2403.012	0.852	0.687	Pass
NVNT	2-DH5	Ant1	2401.82	2402.834	1.014	0.904	Pass
NVNT	3-DH5	Ant1	2402.02	2403.016	0.996	0.871	Pass

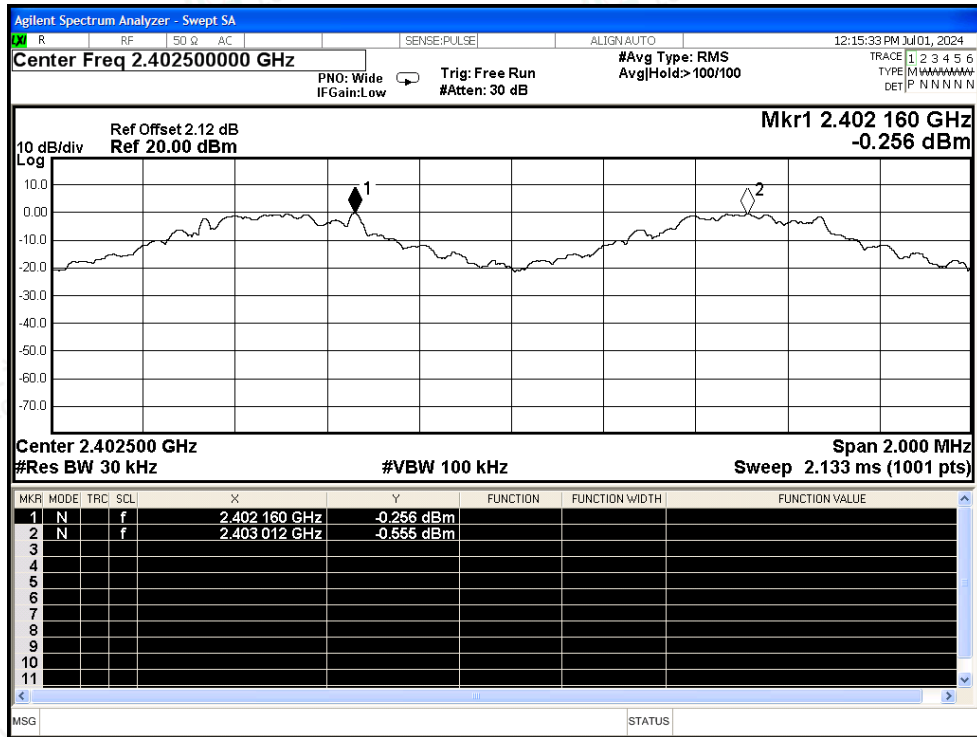


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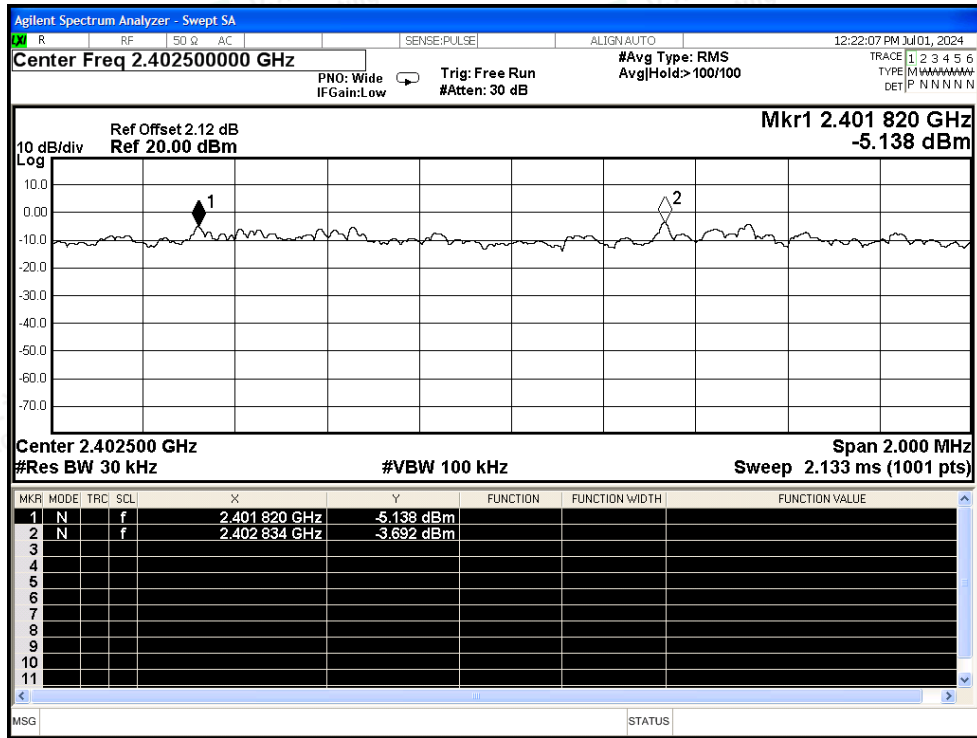


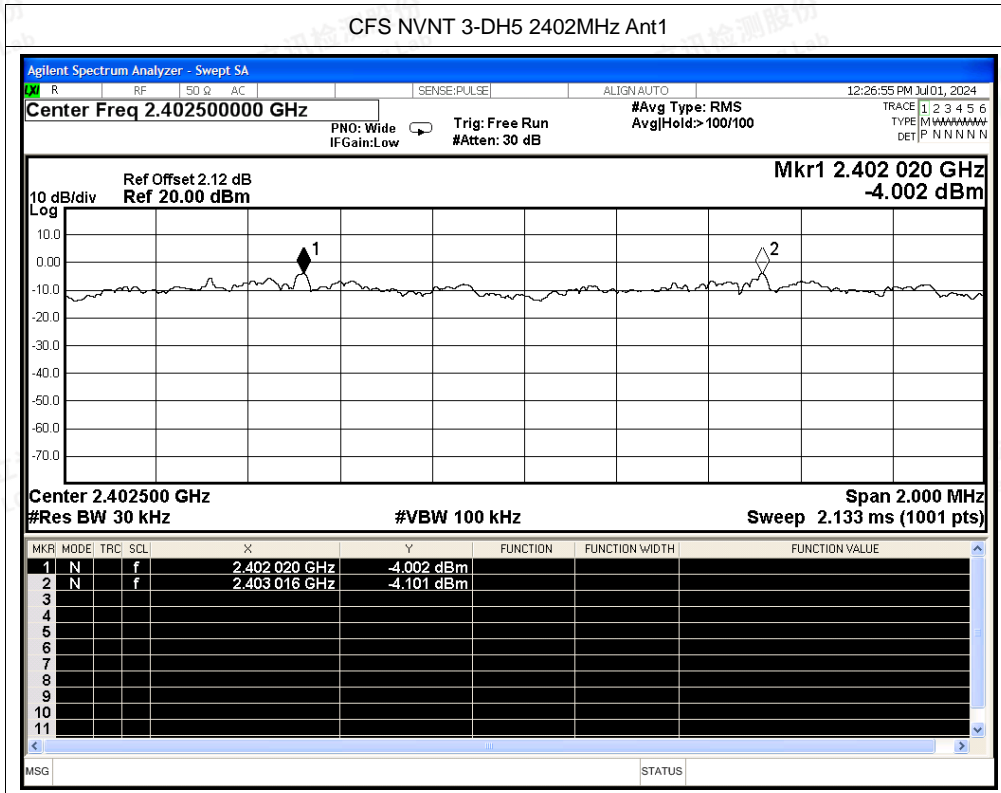
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1





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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	2.882	319.902	111	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.881	299.624	104	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.886	300.144	104	31600	400	Pass

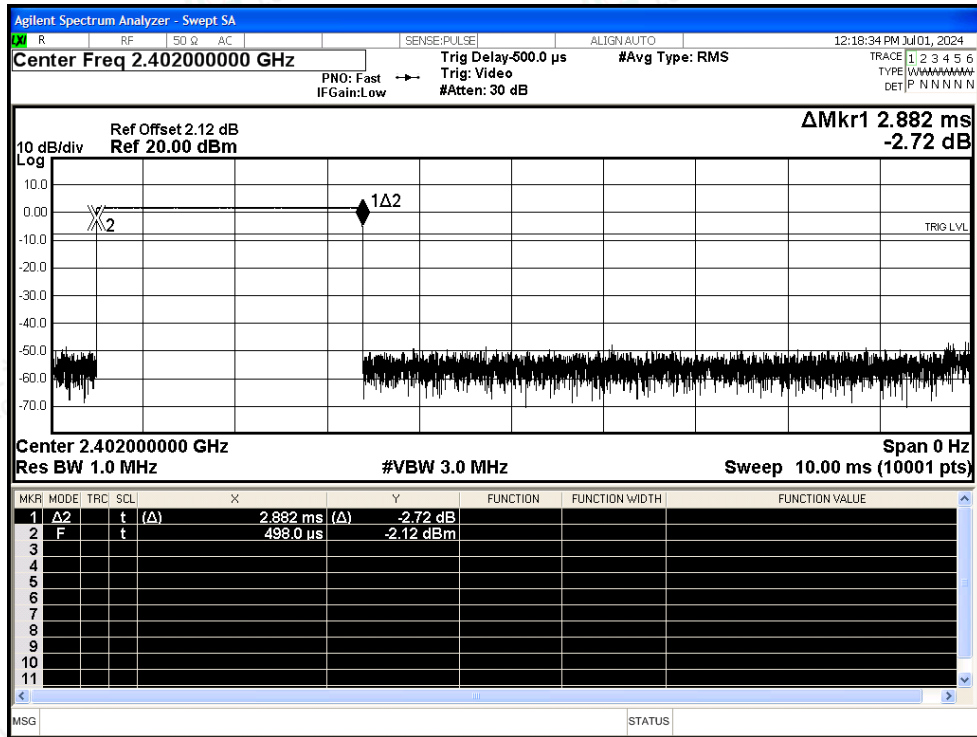


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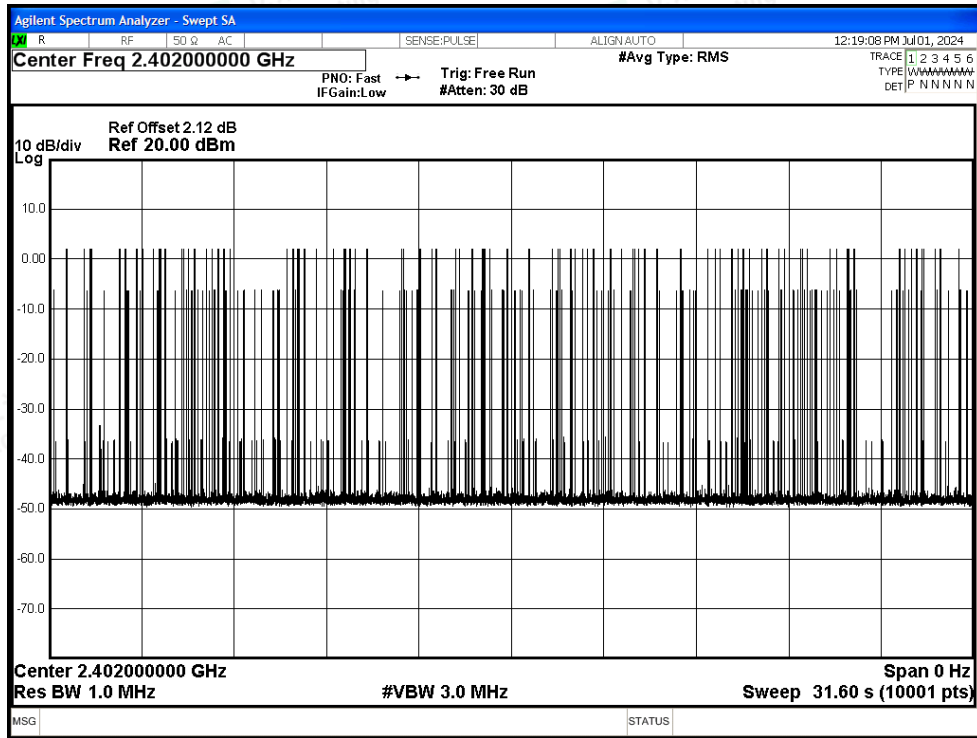


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

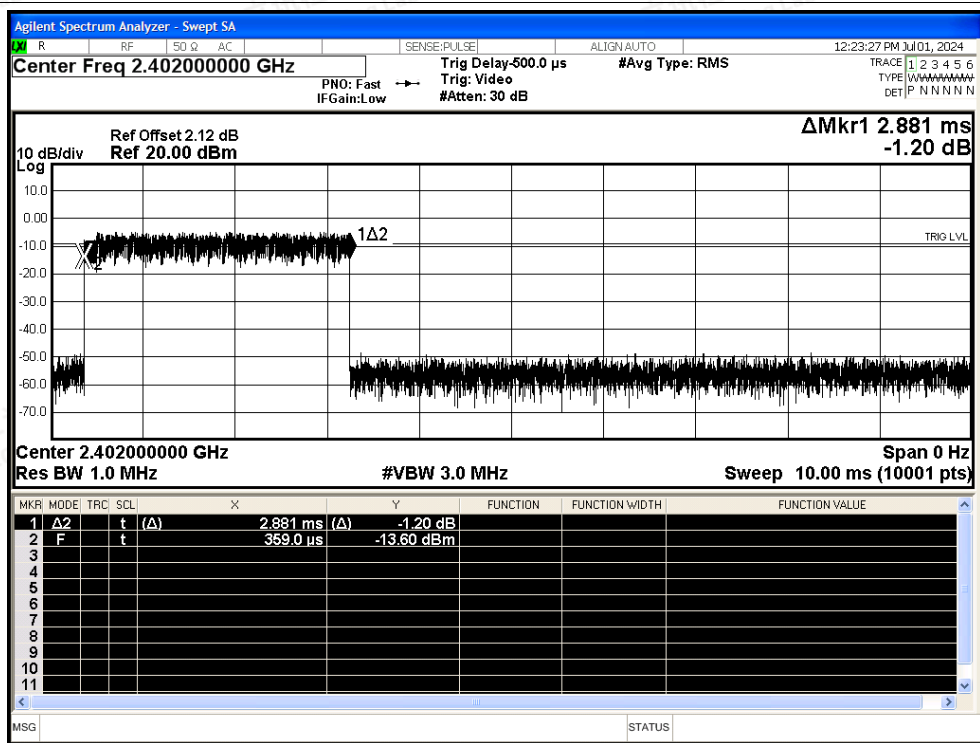


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

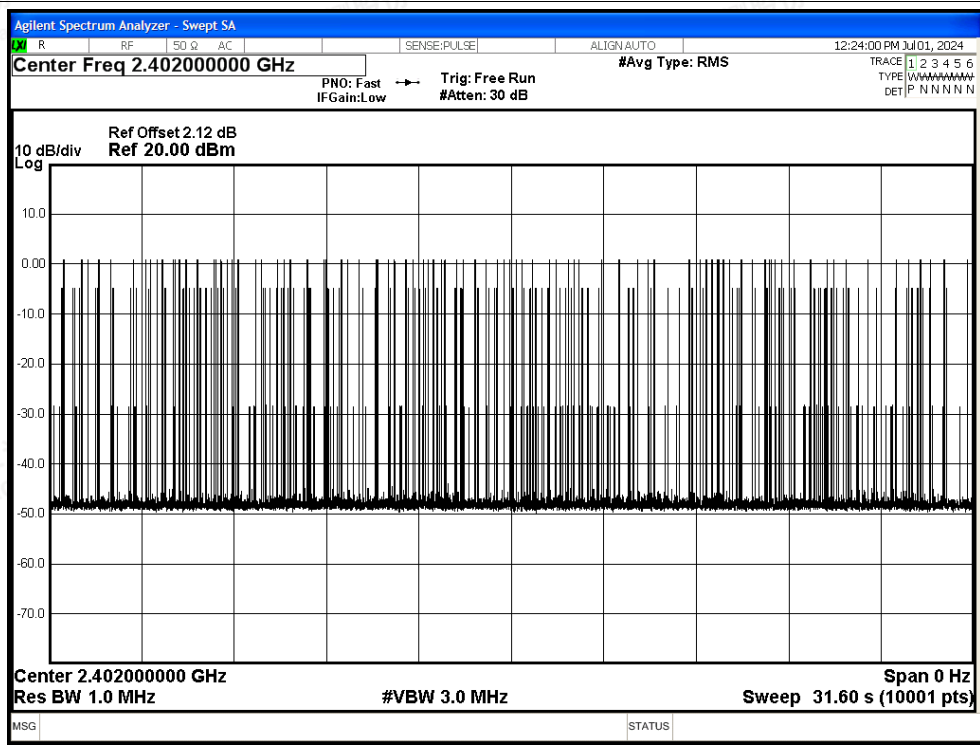




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

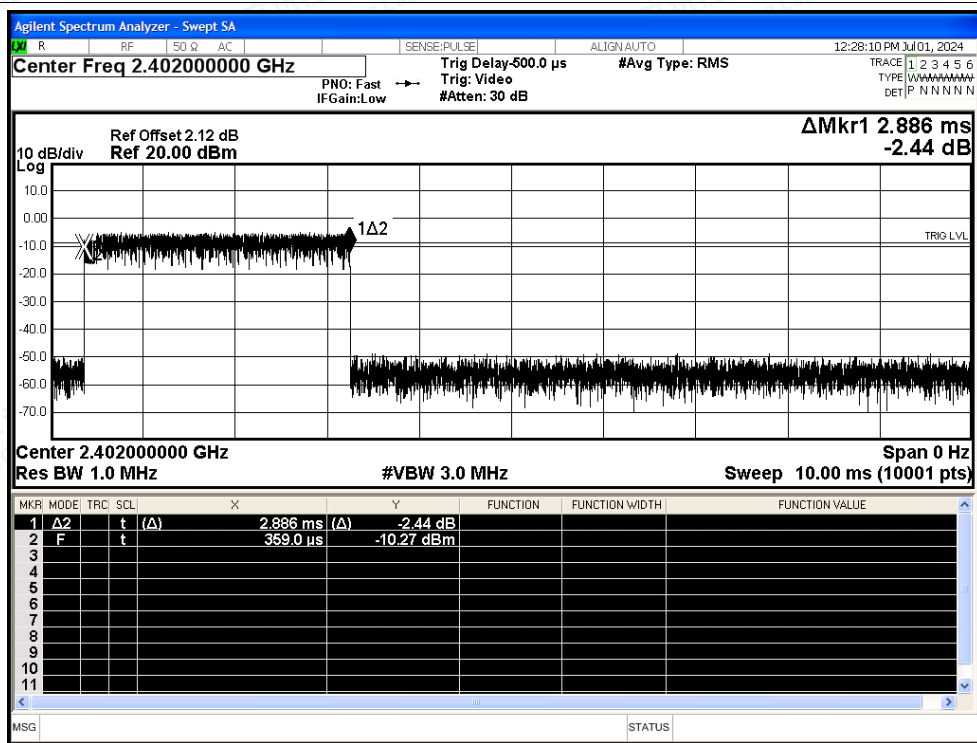


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

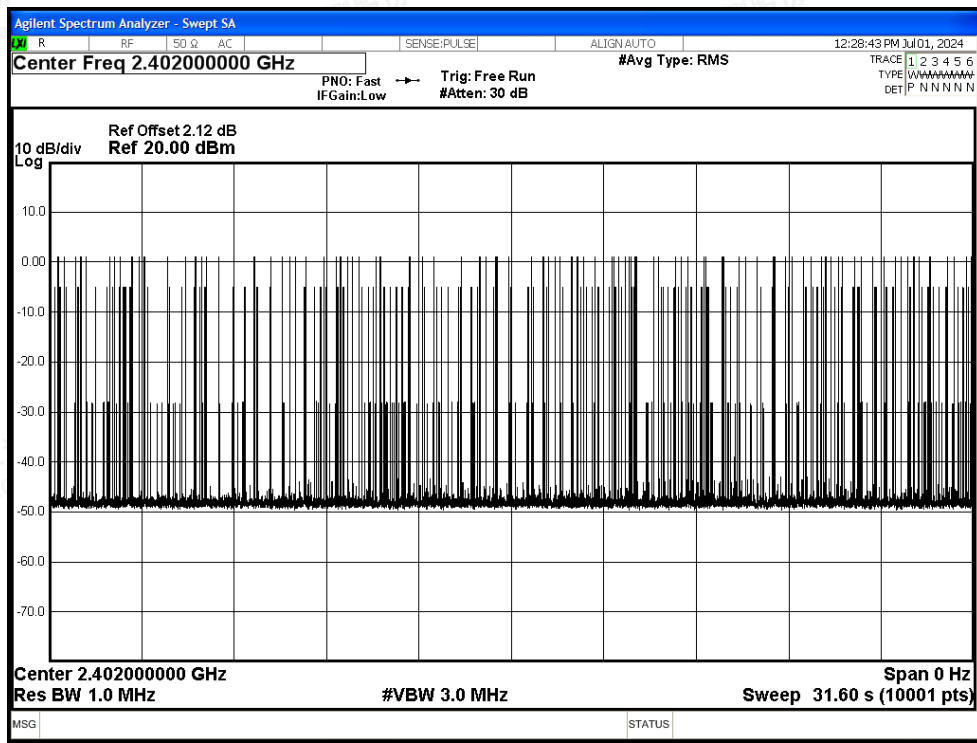




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated





A.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
NVNT	3-DH5	Ant1	79	15	Pass

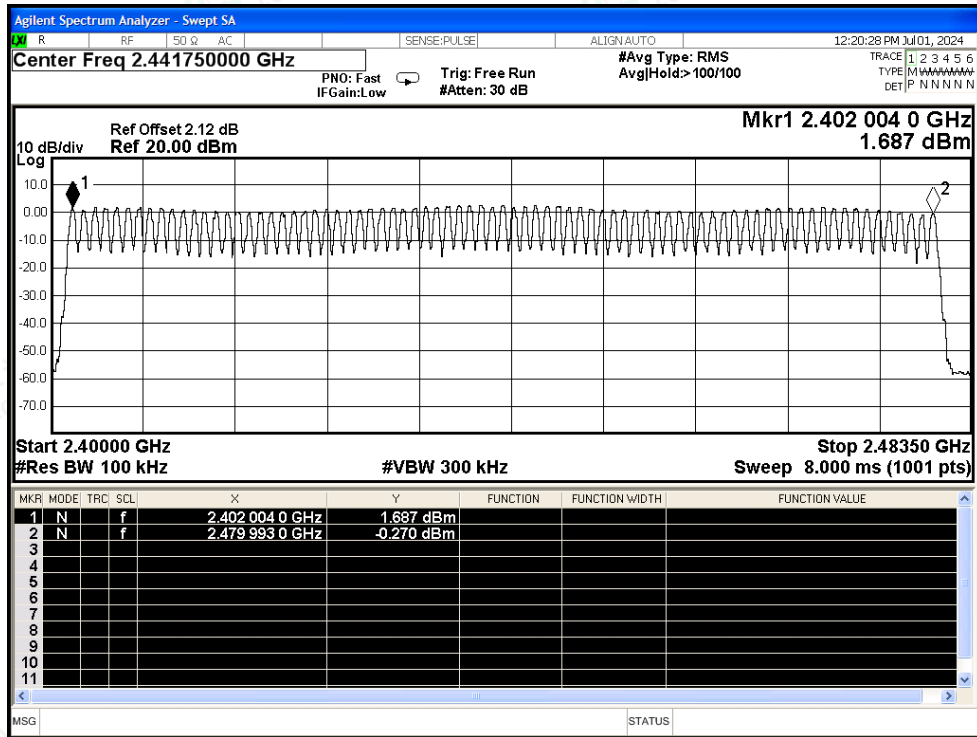


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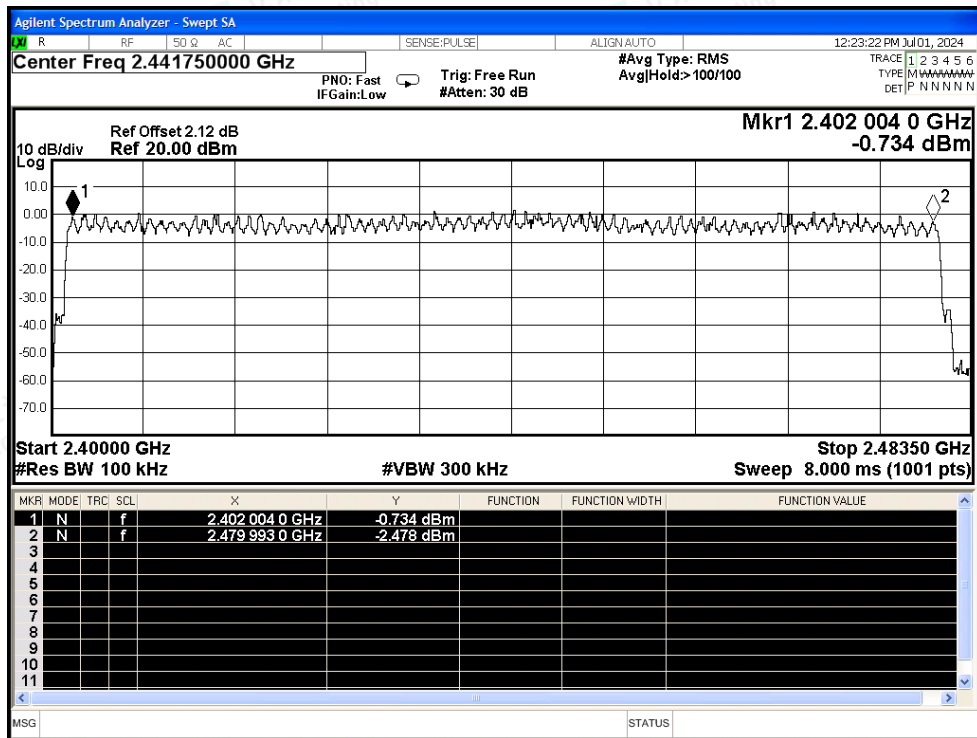


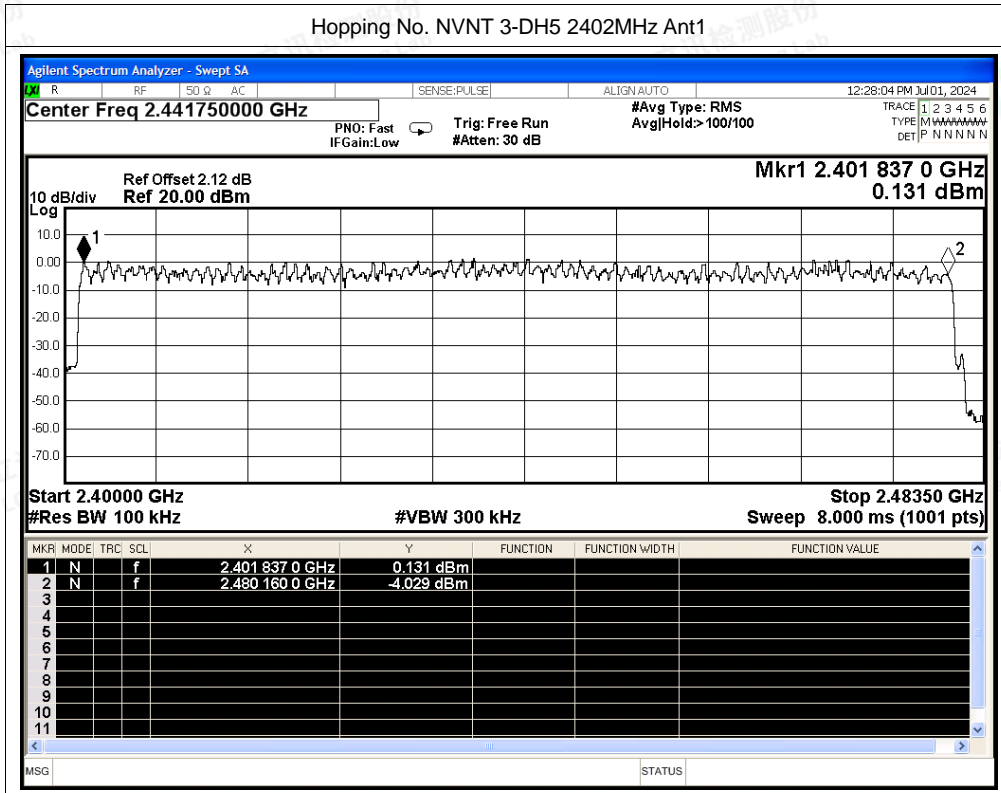
Test Graphs

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	-57.08	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.64	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-54.03	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.89	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-54.61	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-54.98	-20	Pass

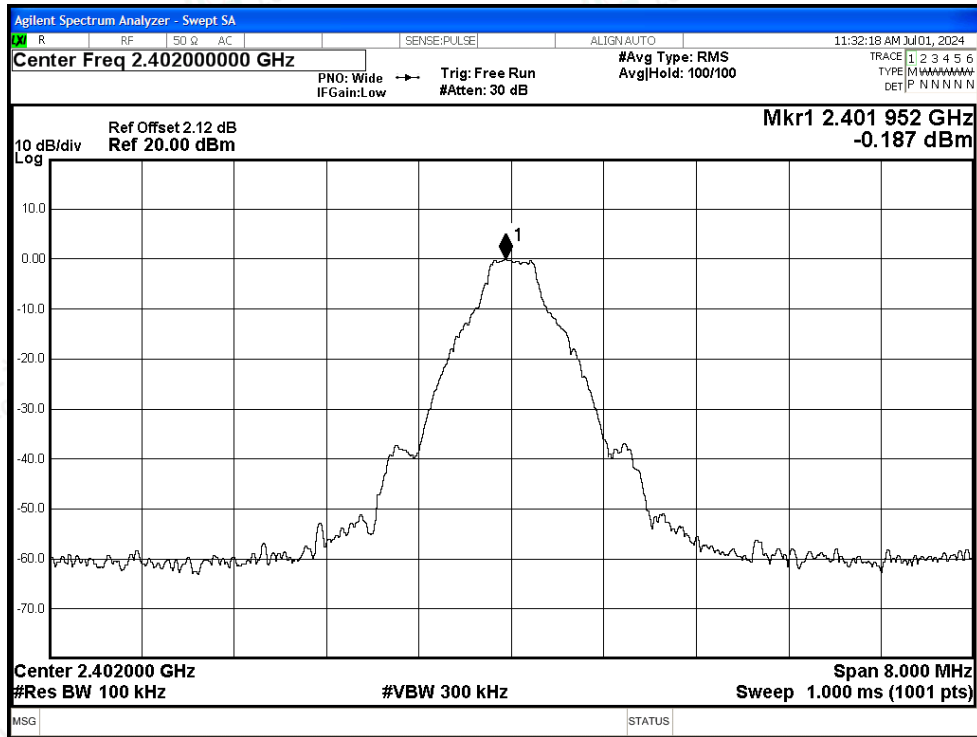


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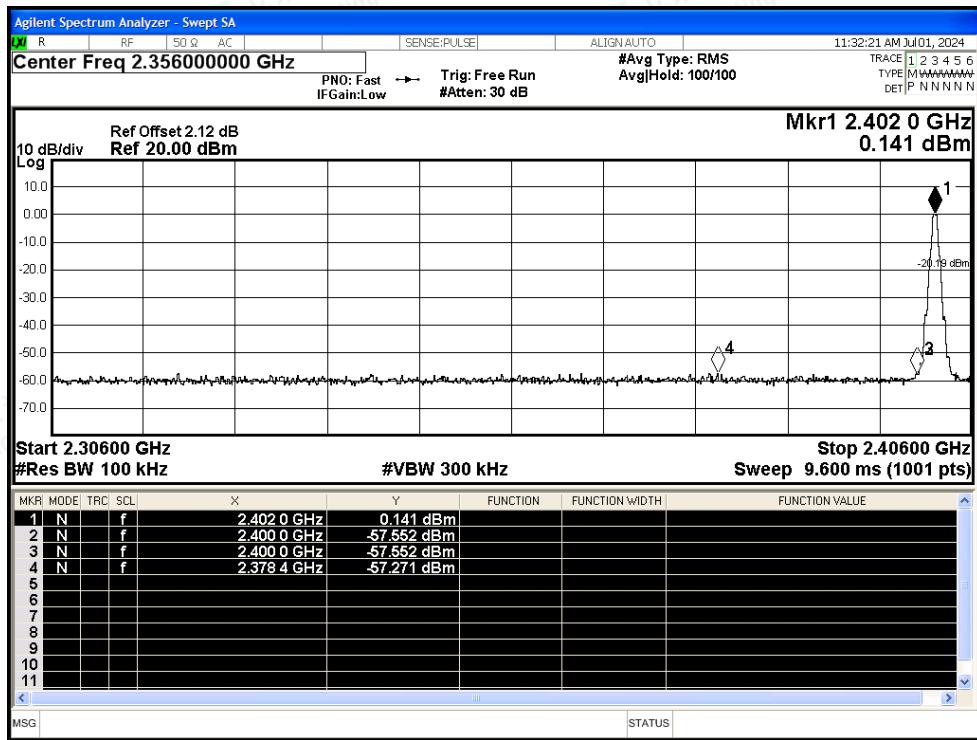


Test Graphs

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

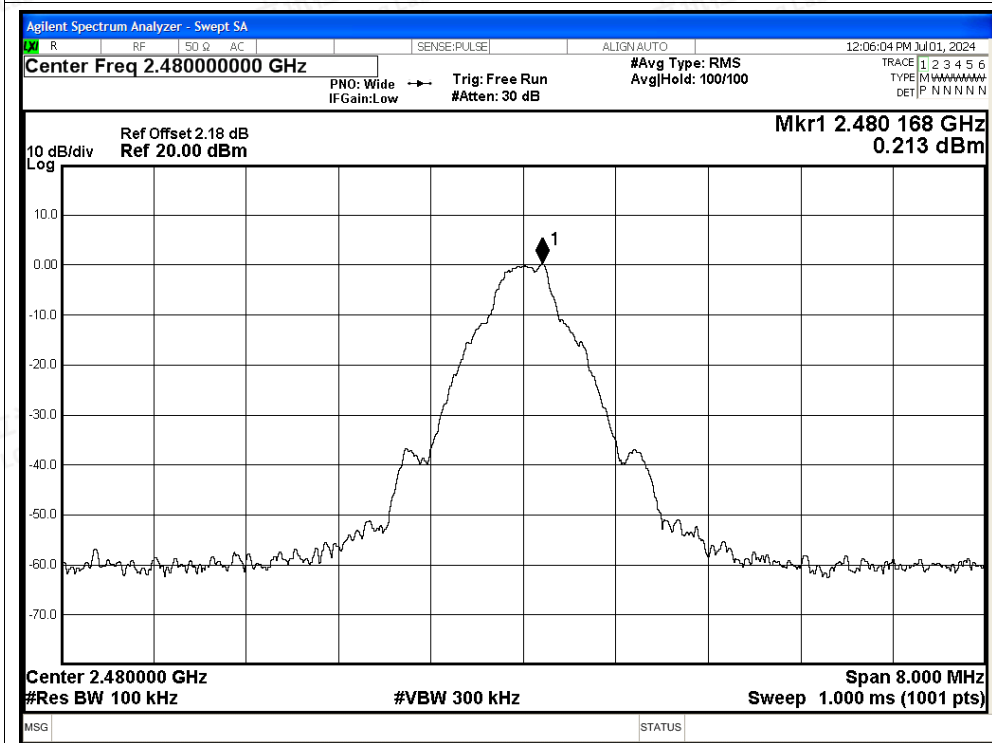


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

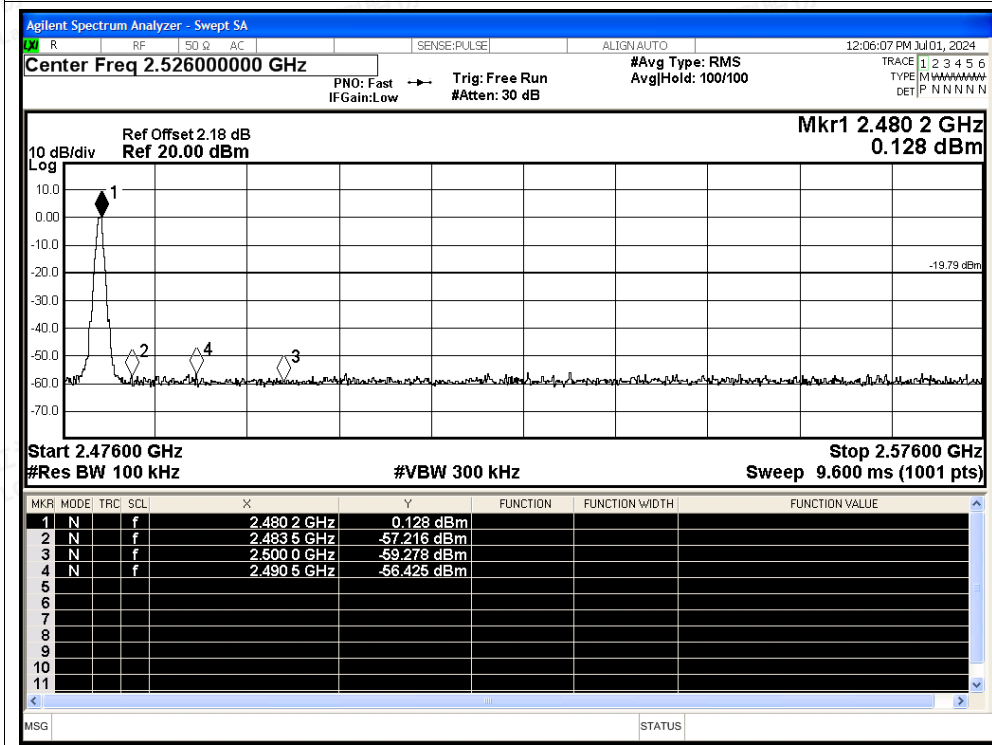




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

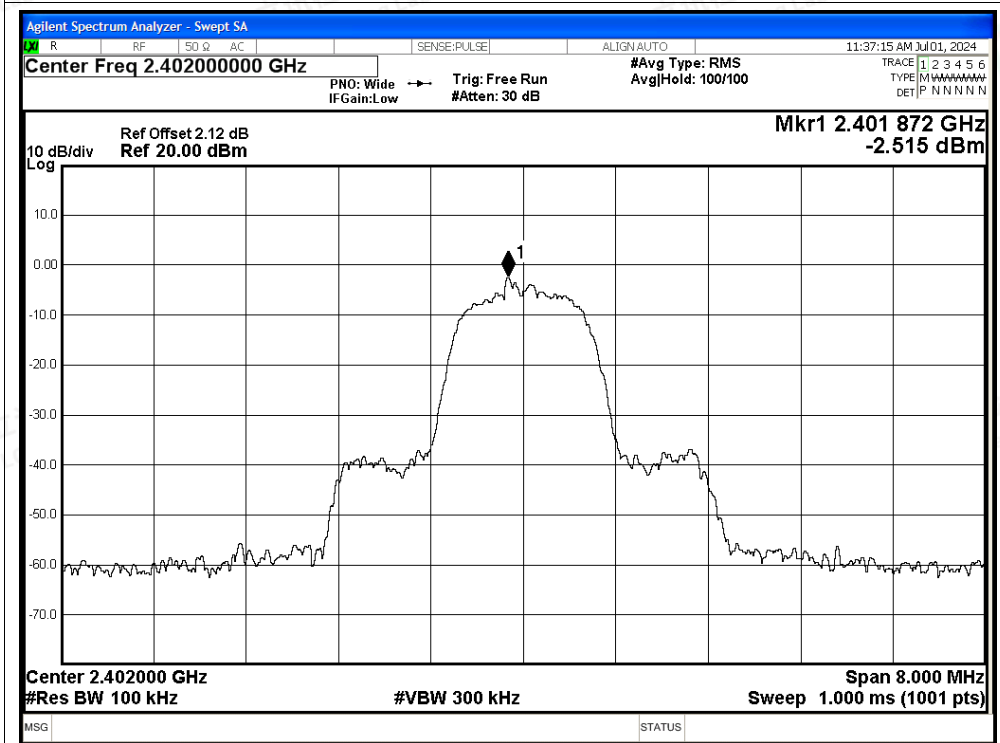


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

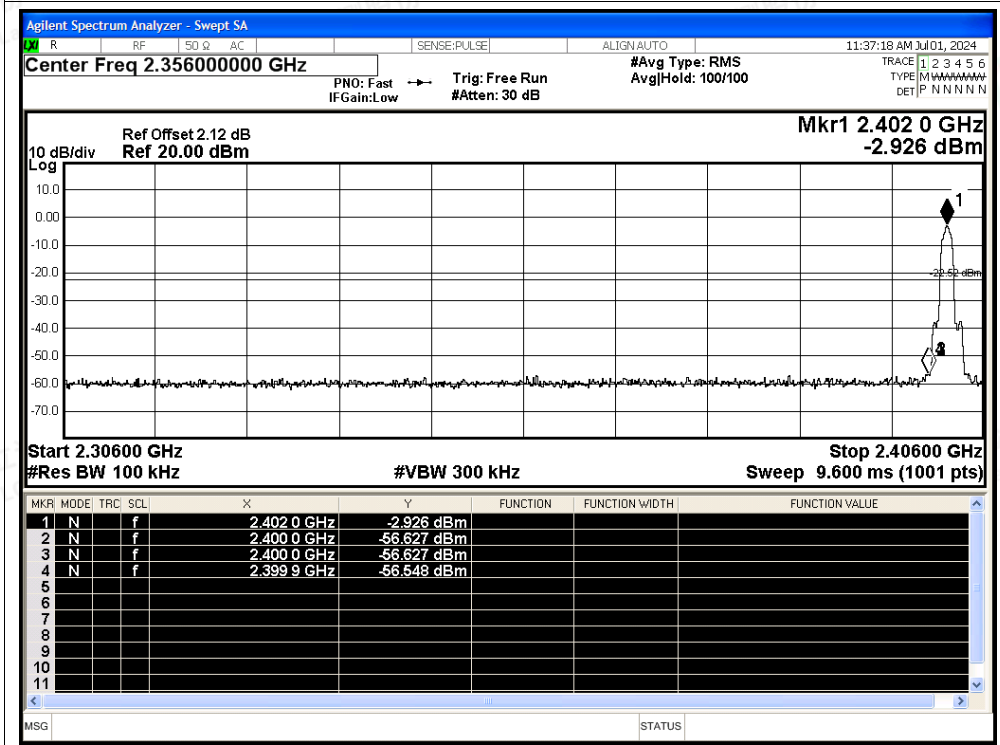




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

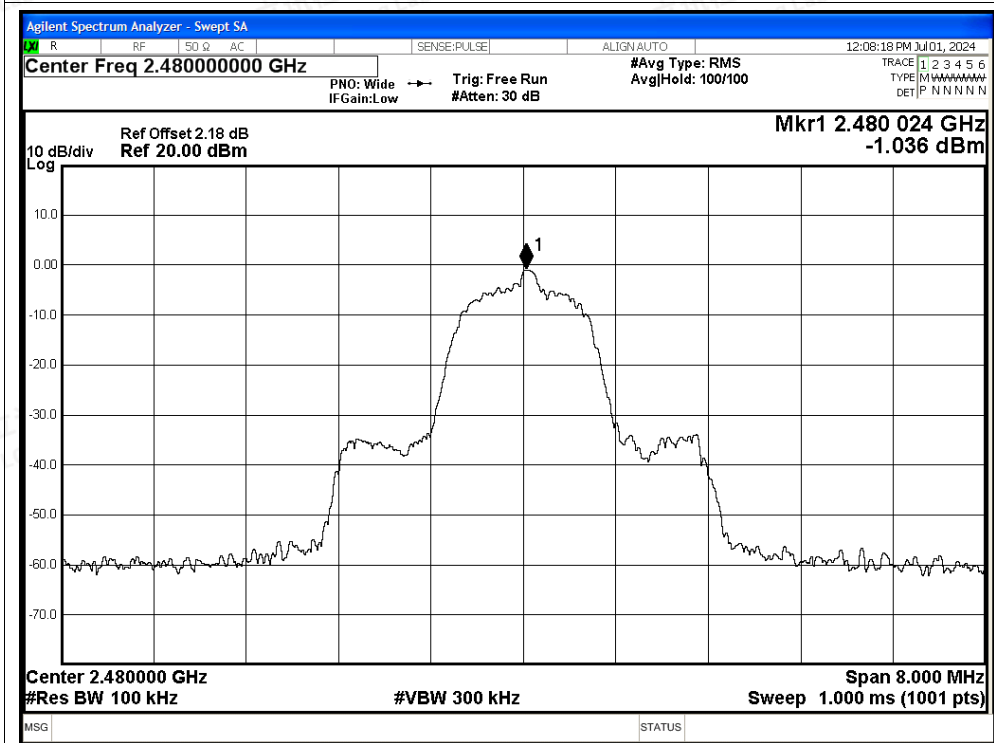


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

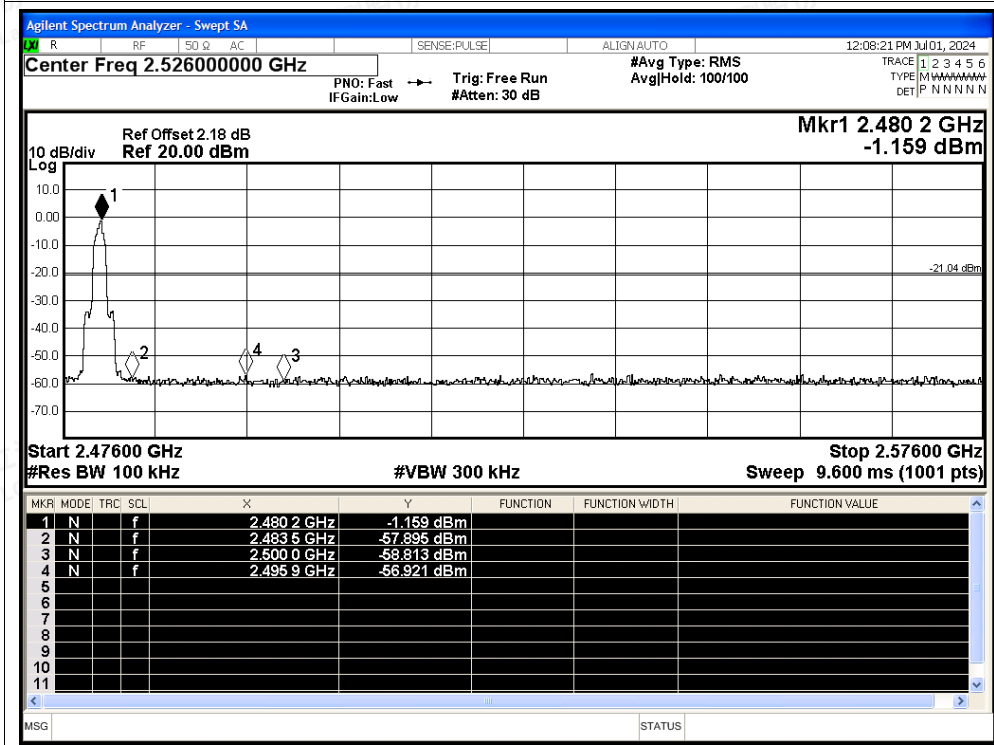




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

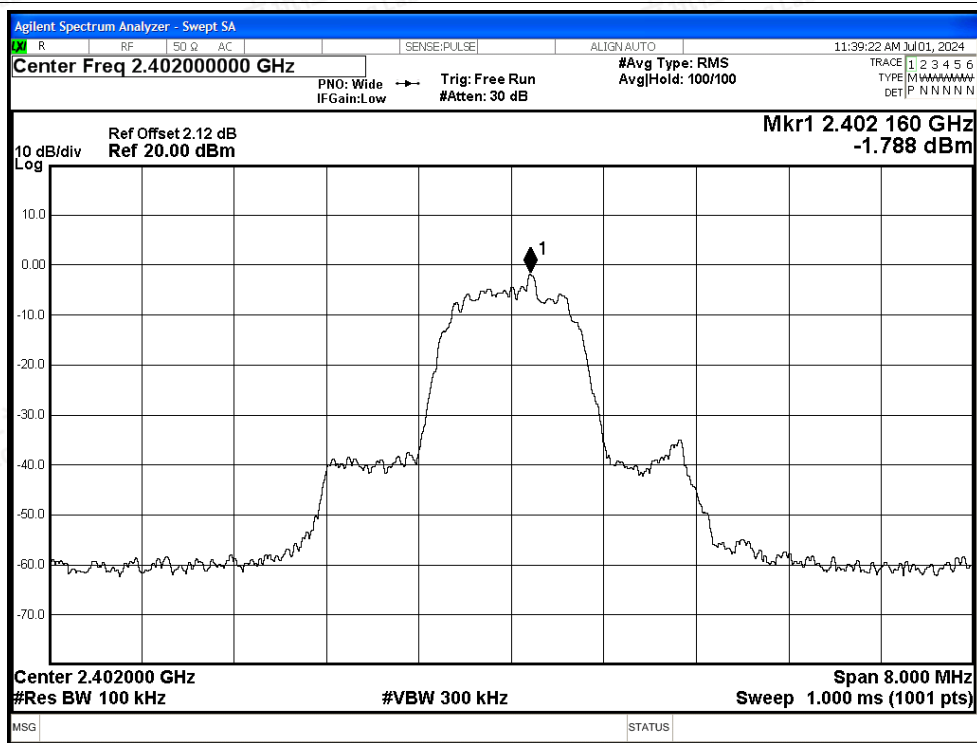


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

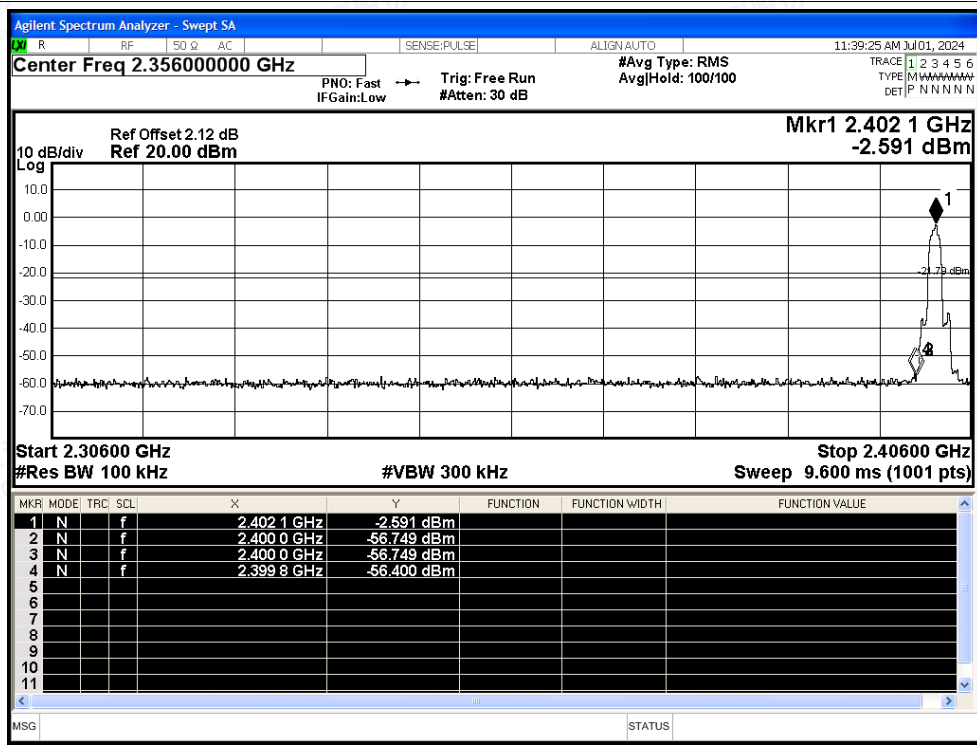




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

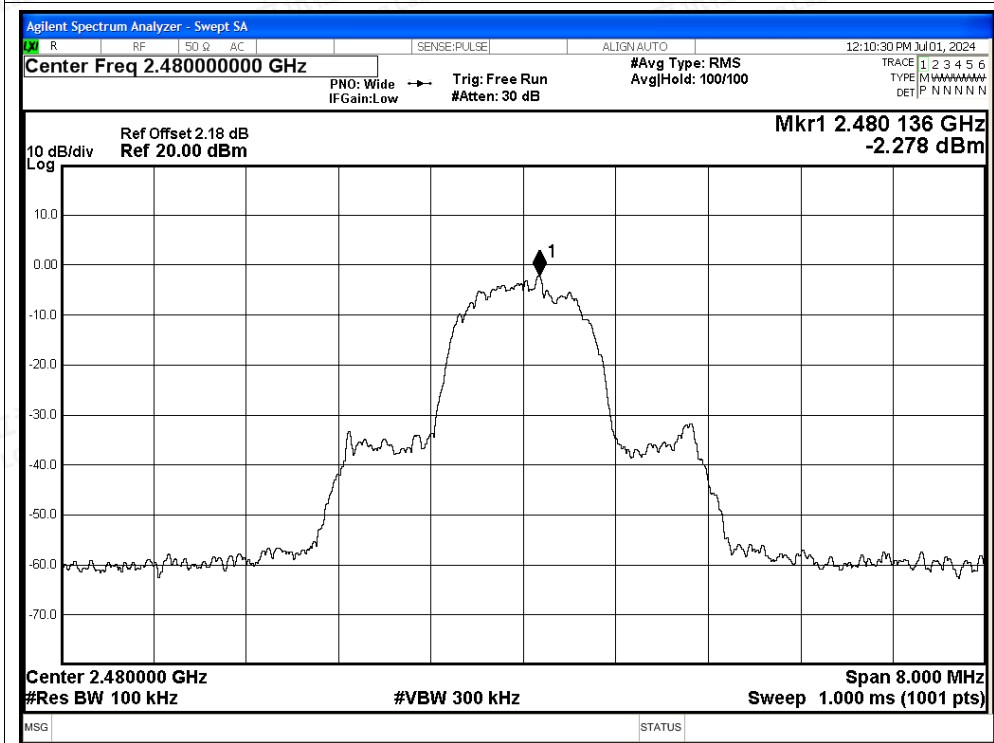


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

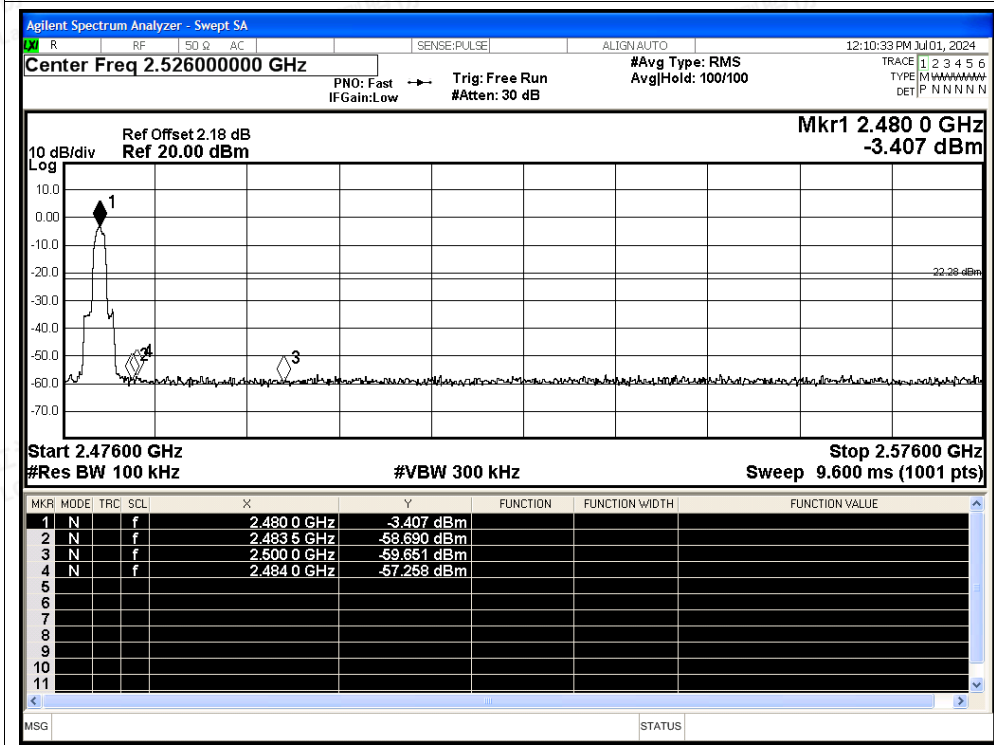




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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	-45.48	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-56.36	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-55.49	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.58	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-56.47	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.86	-20	Pass

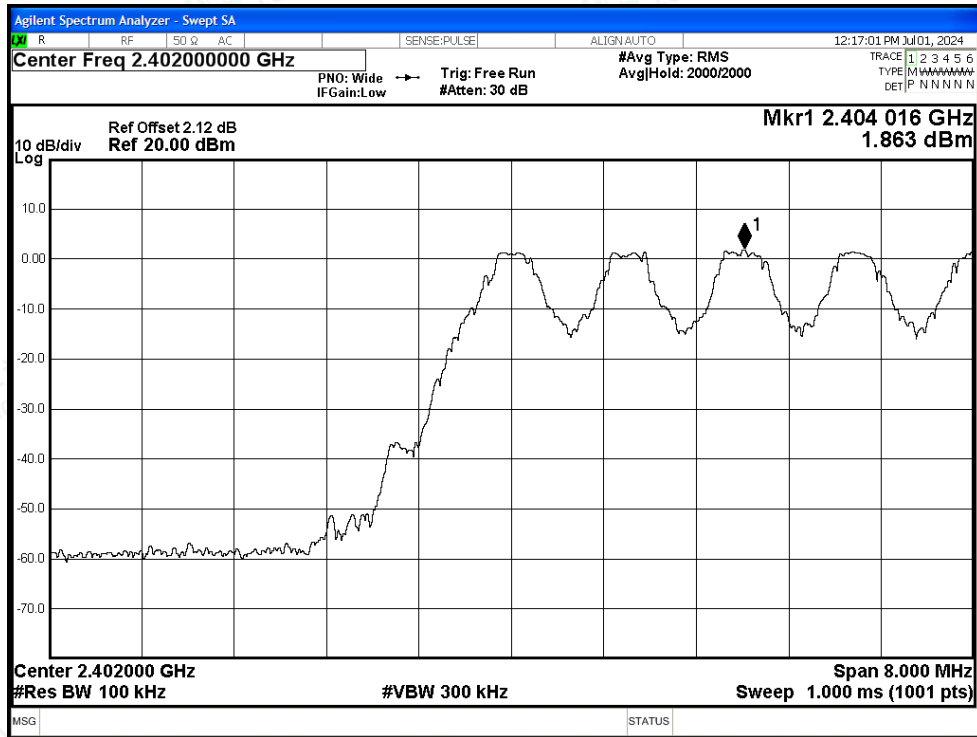


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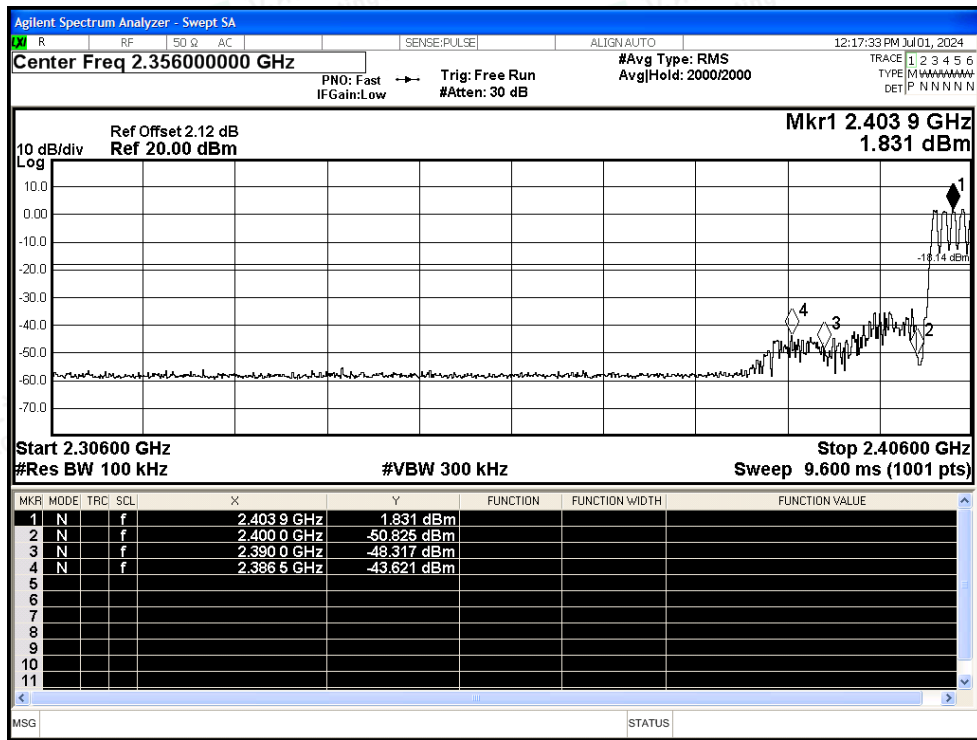


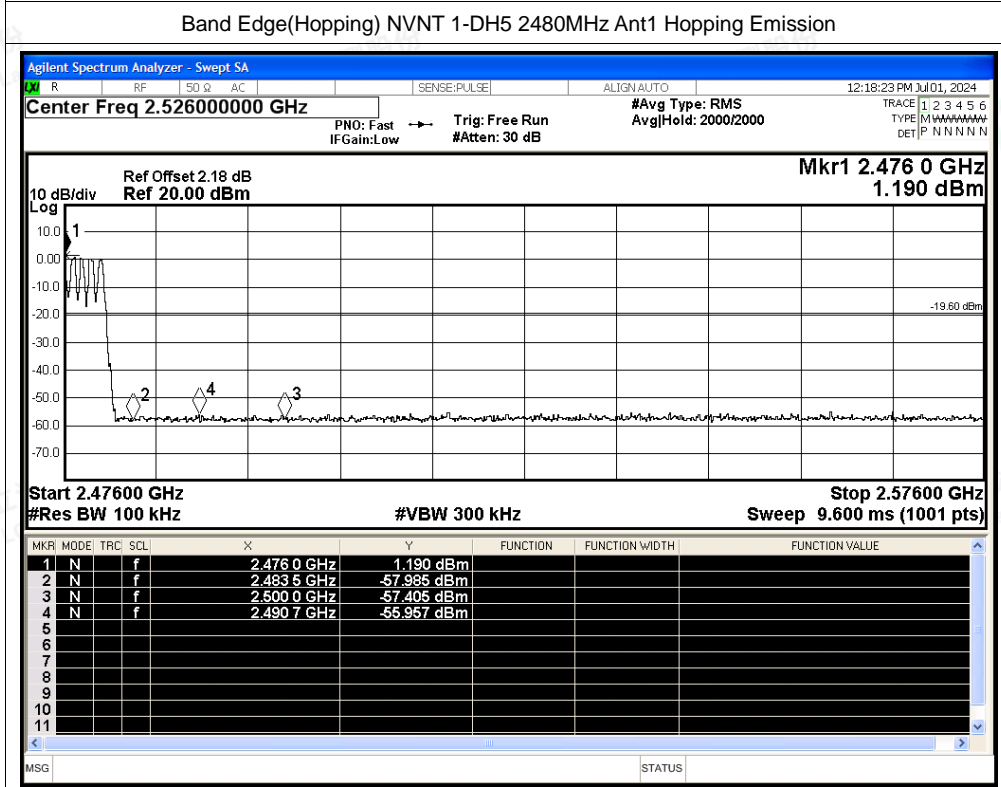
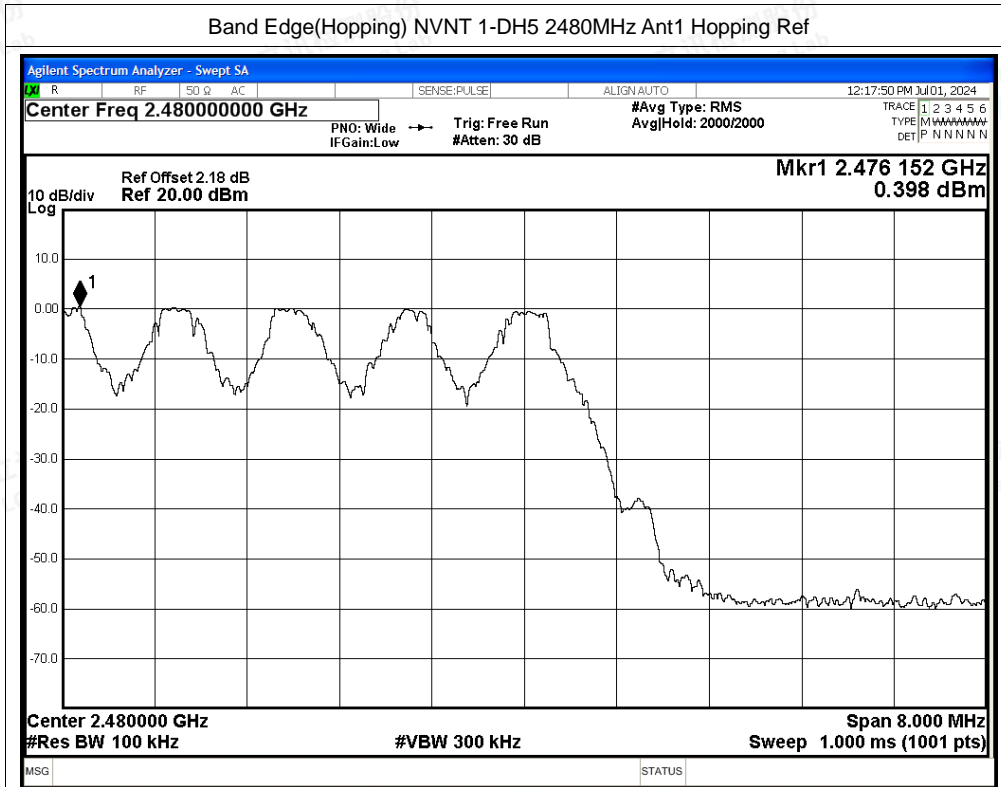
Test Graphs

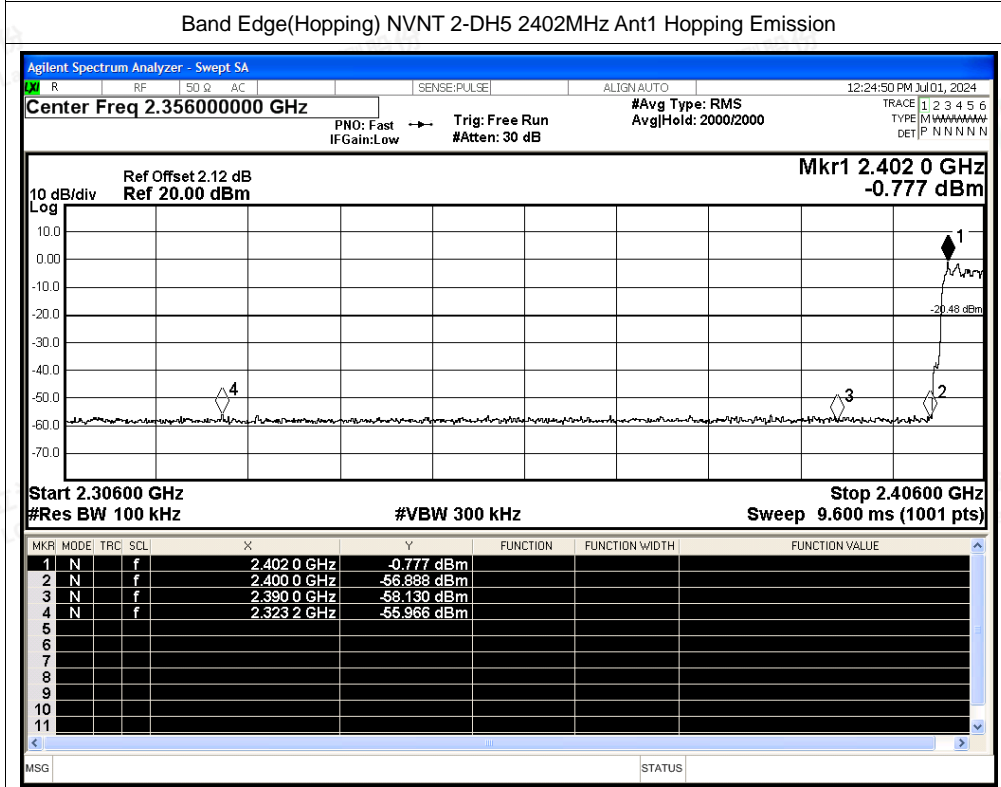
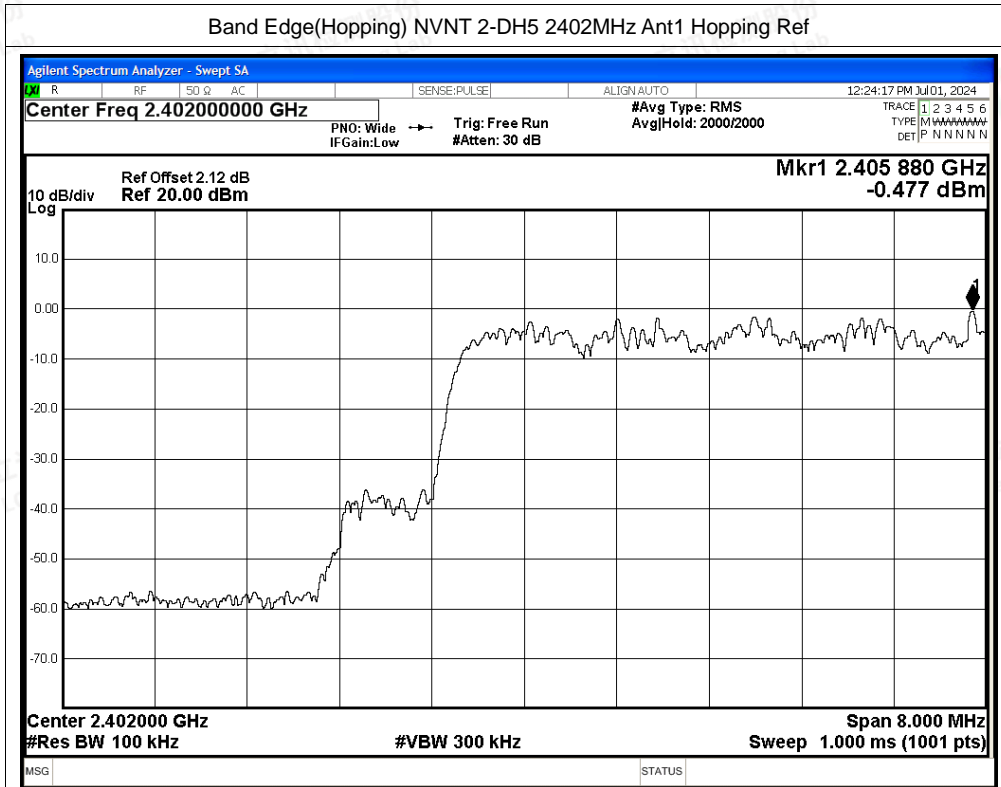
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

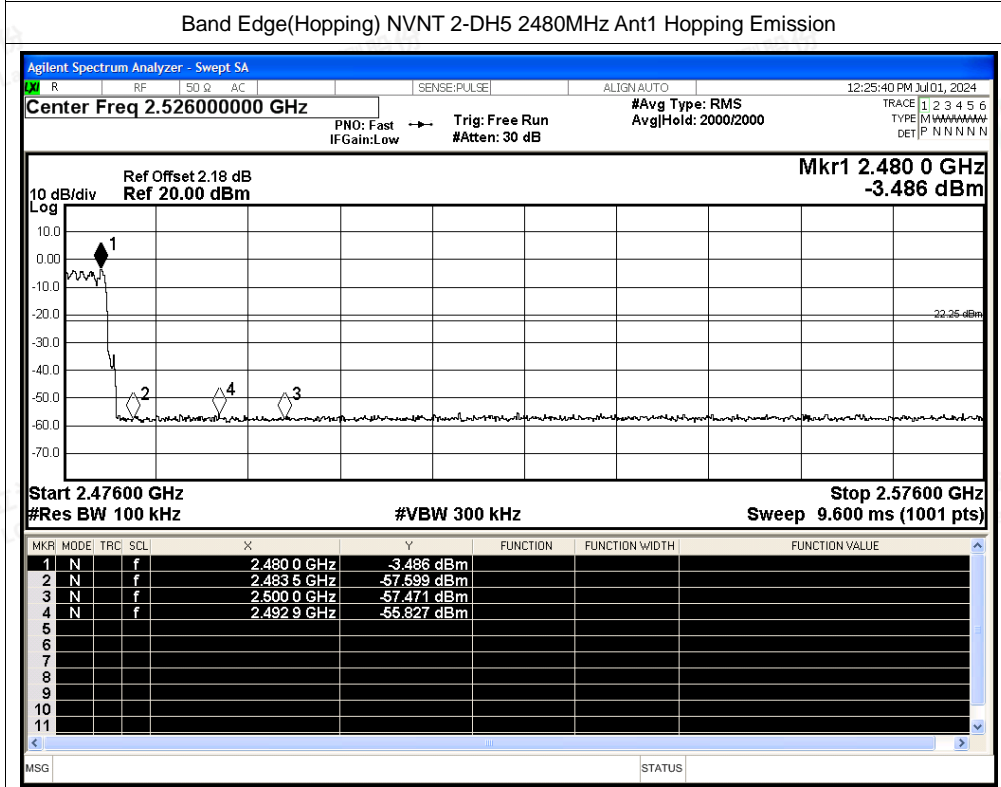
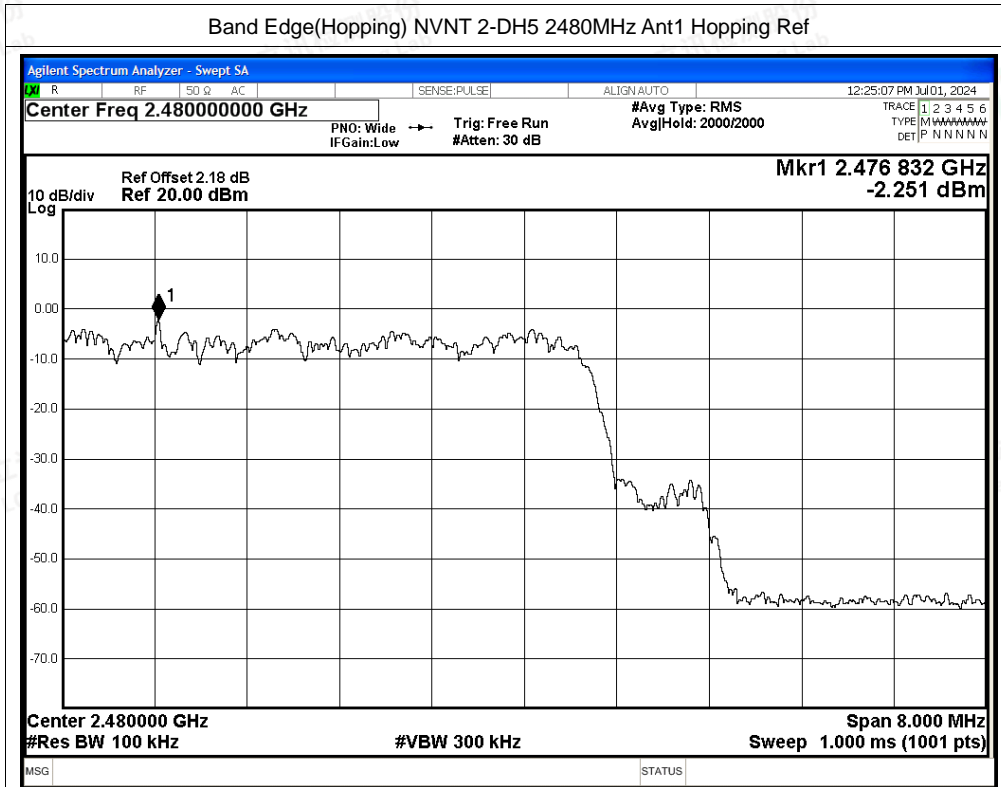


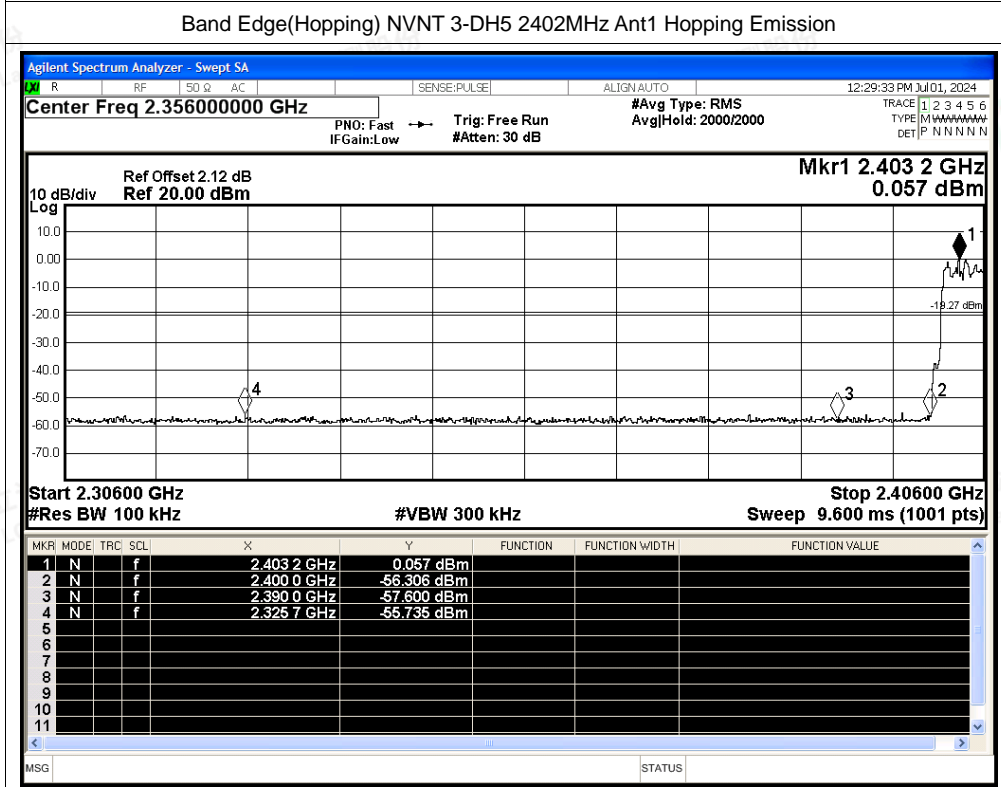
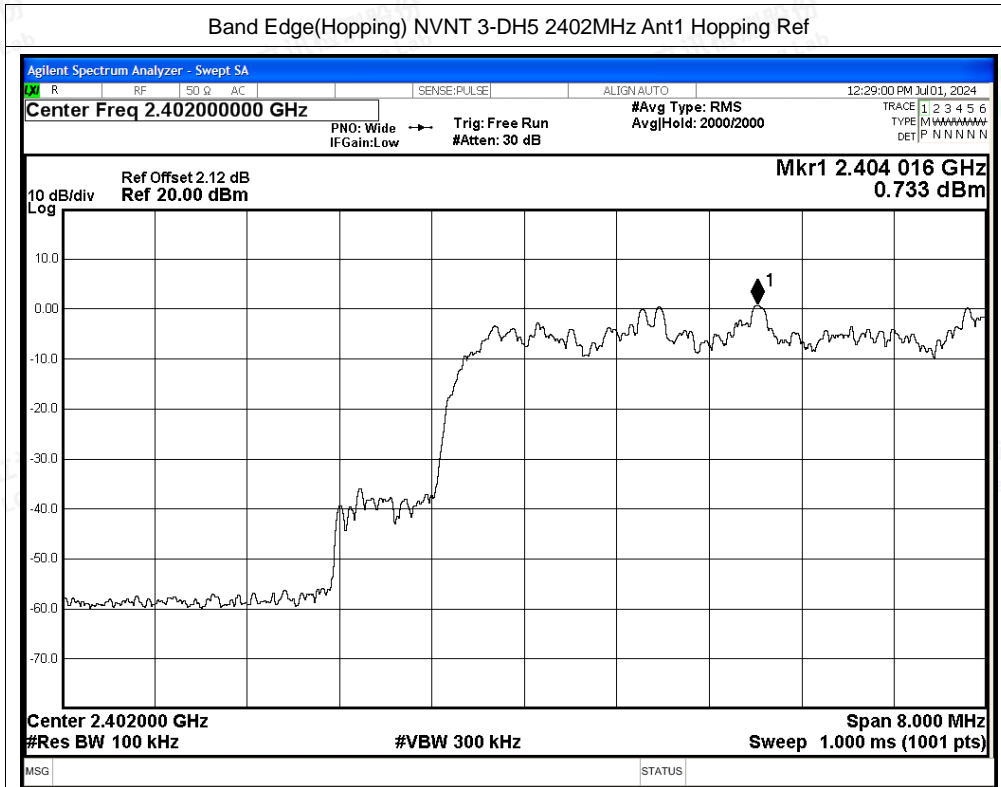
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

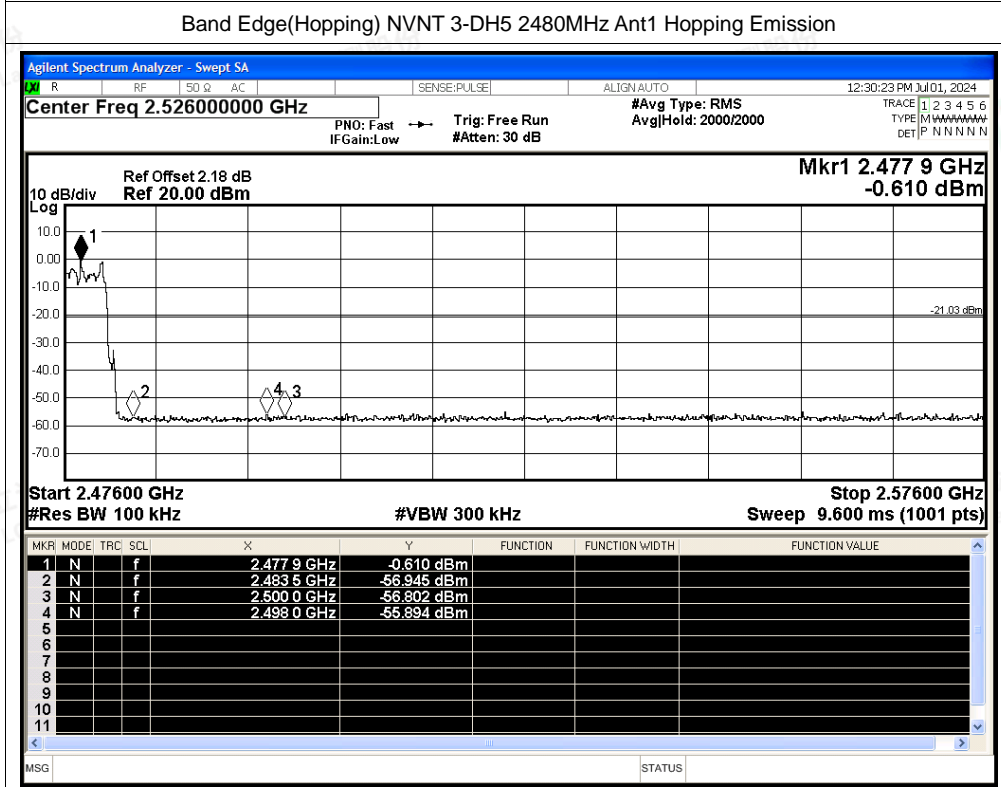
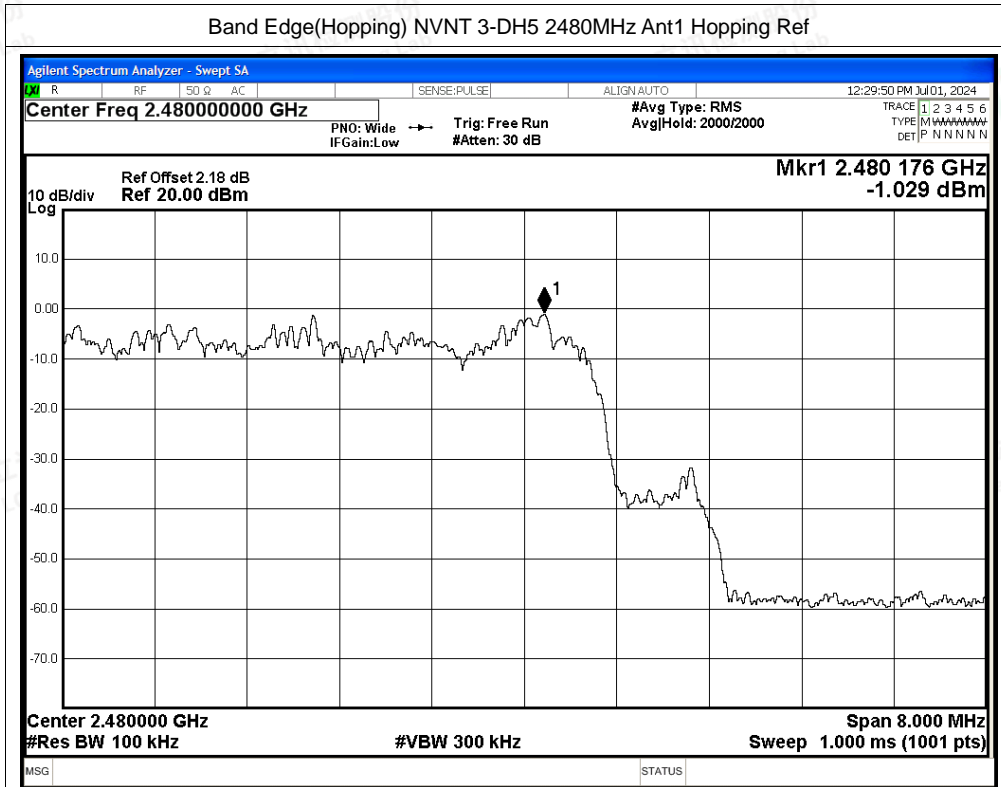














A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-54.04	-20	Pass
NVNT	1-DH5	2441	Ant1	-53.09	-20	Pass
NVNT	1-DH5	2480	Ant1	-49.94	-20	Pass
NVNT	2-DH5	2402	Ant1	-44.14	-20	Pass
NVNT	2-DH5	2441	Ant1	-53.88	-20	Pass
NVNT	2-DH5	2480	Ant1	-50.28	-20	Pass
NVNT	3-DH5	2402	Ant1	-53.66	-20	Pass
NVNT	3-DH5	2441	Ant1	-53.29	-20	Pass
NVNT	3-DH5	2480	Ant1	-49.42	-20	Pass

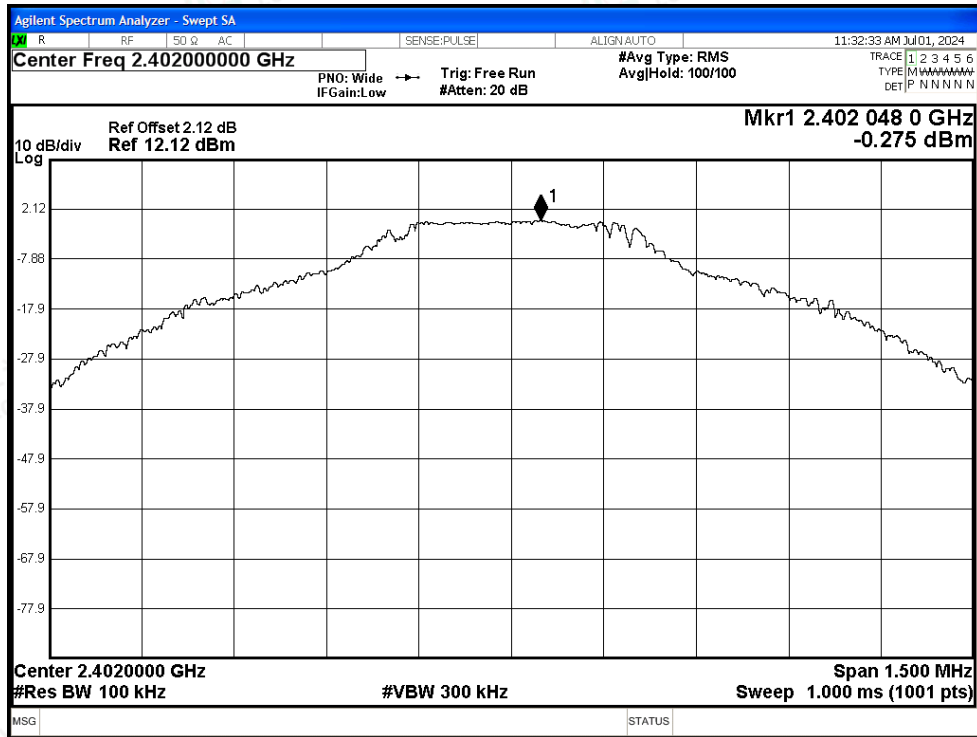


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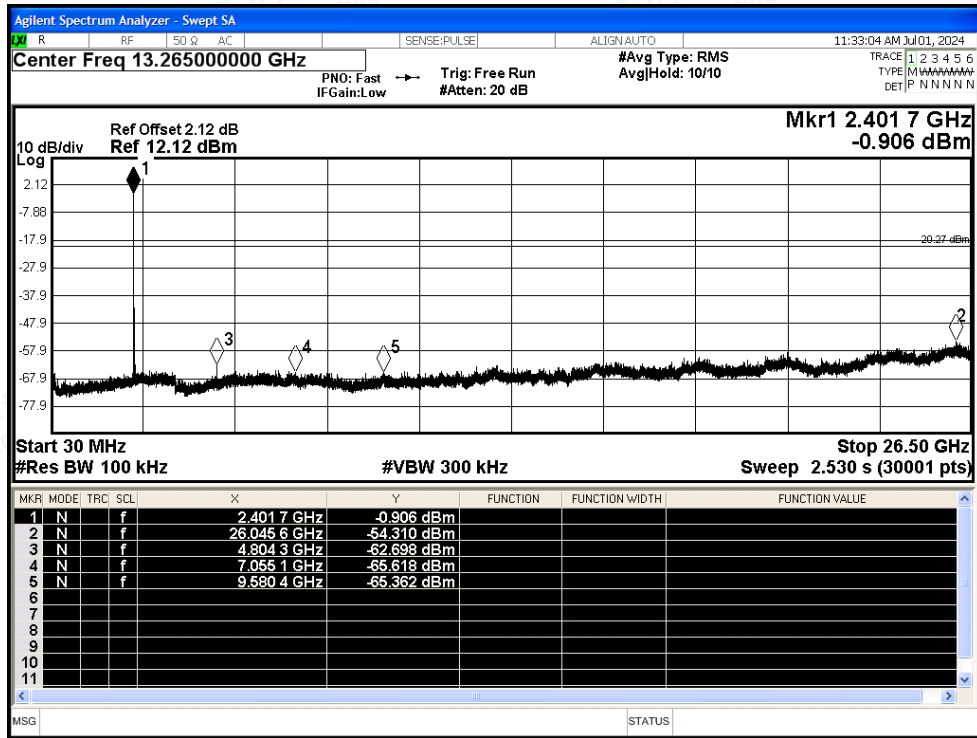


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

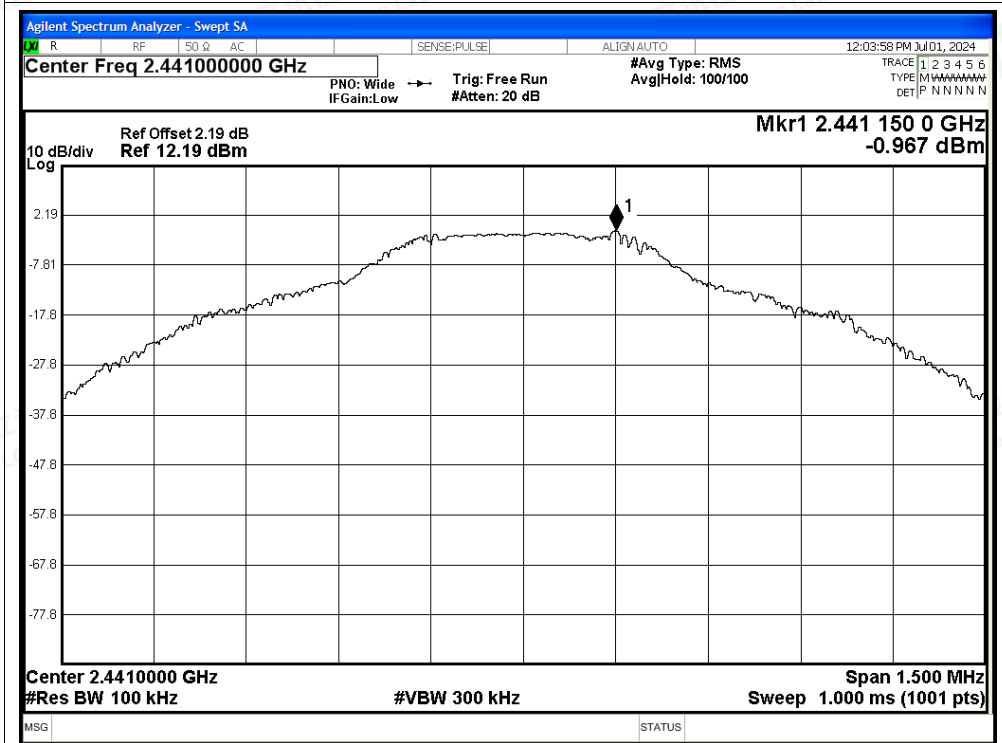


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

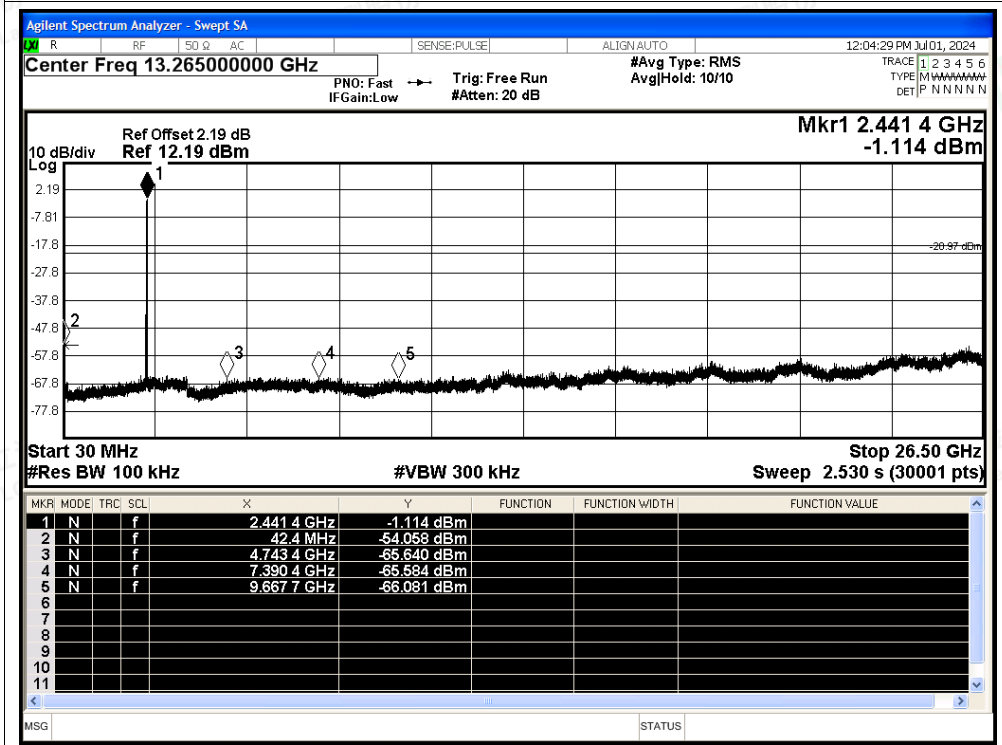




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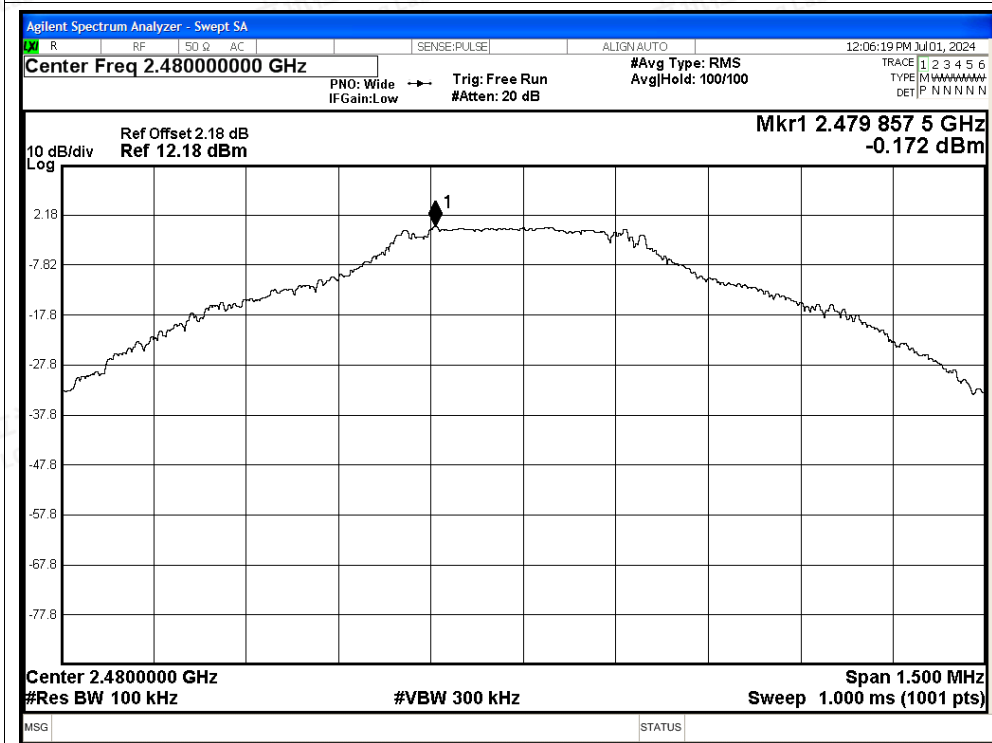


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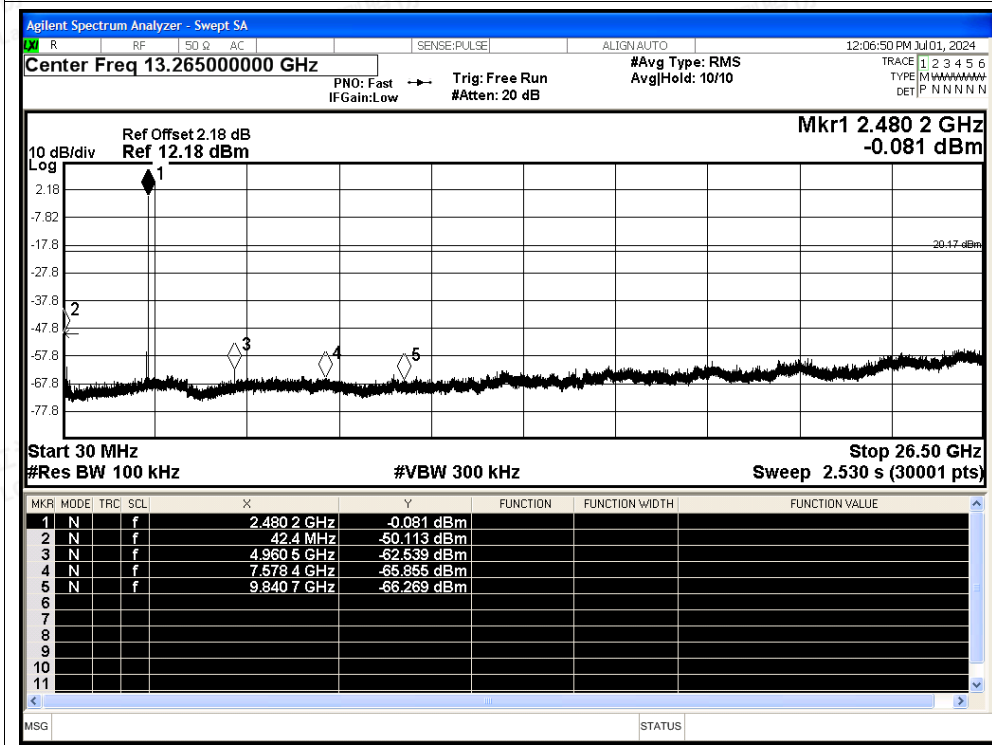




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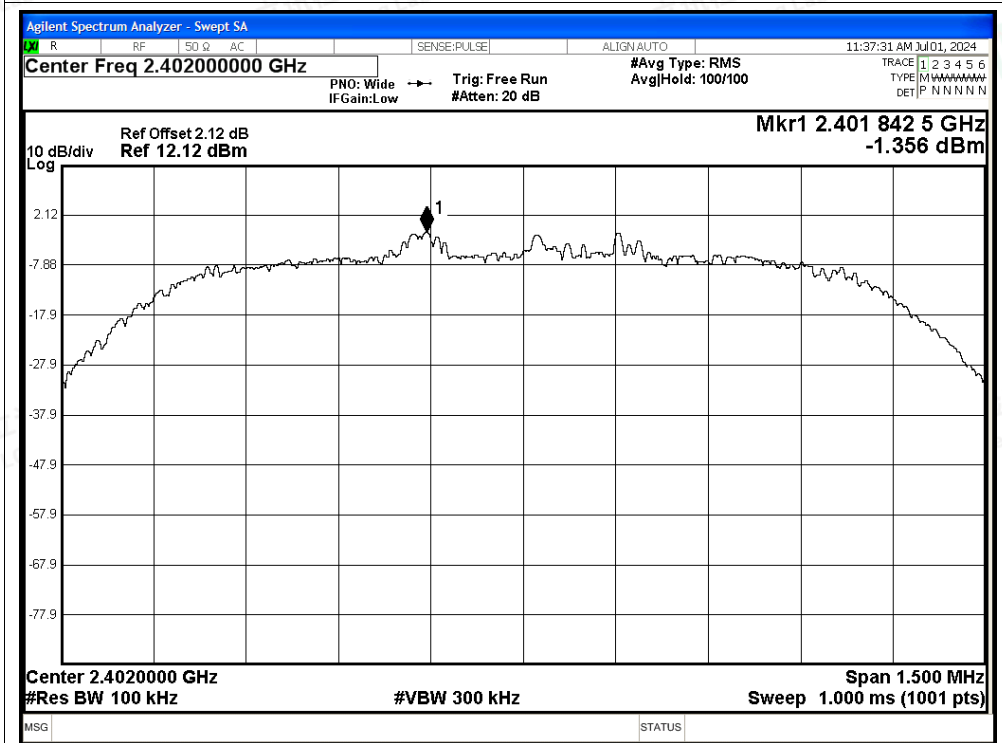


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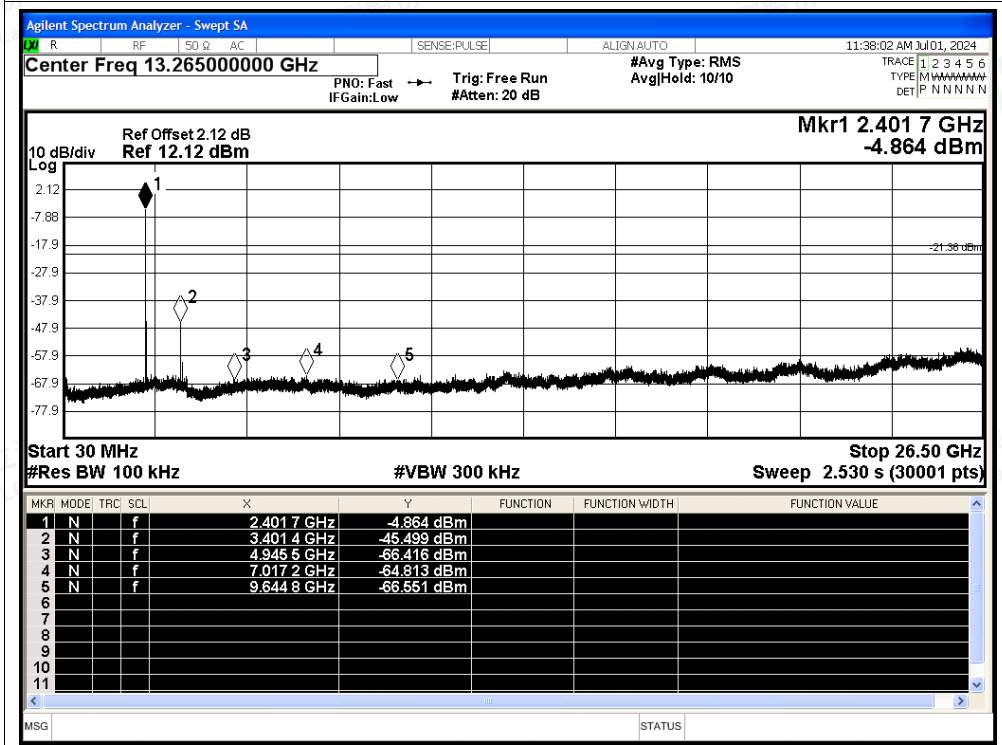




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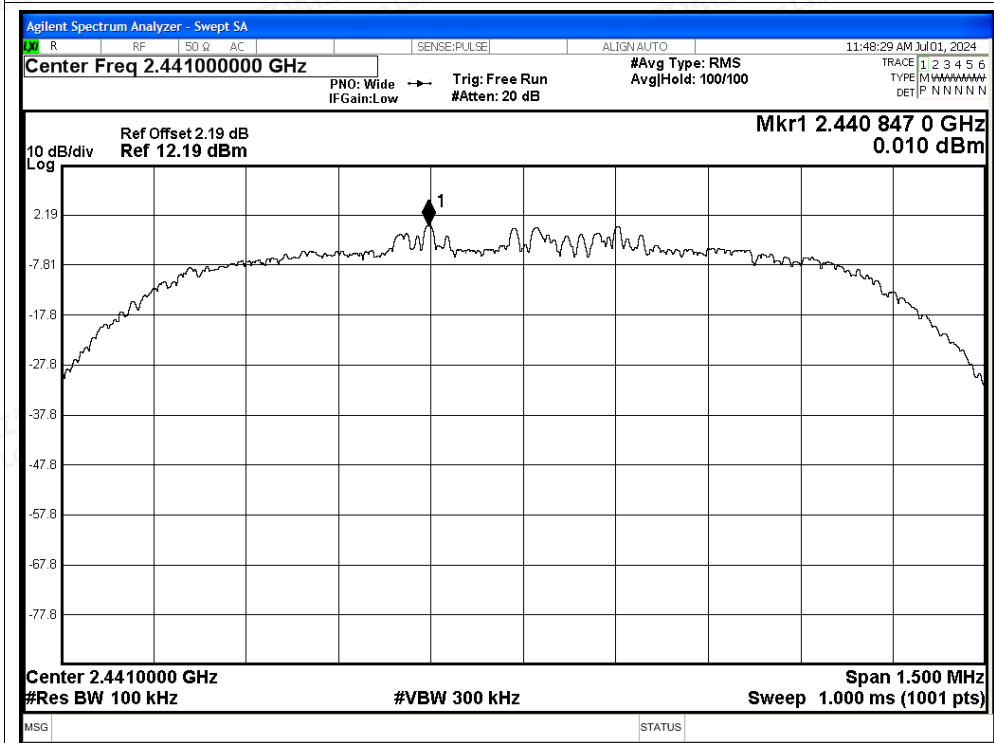


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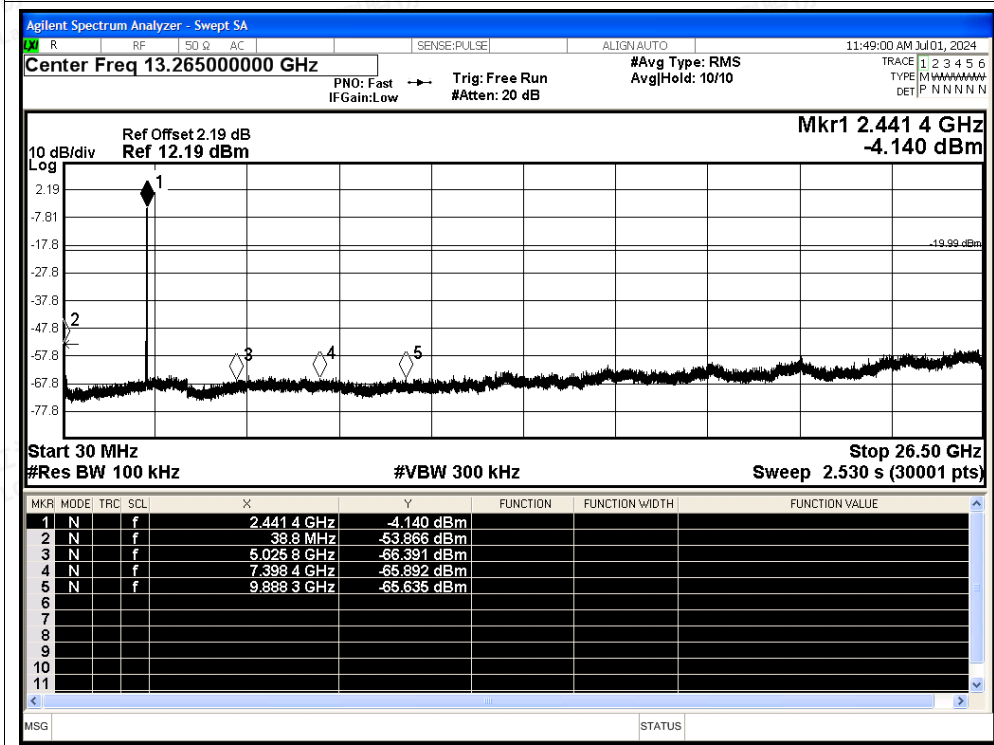




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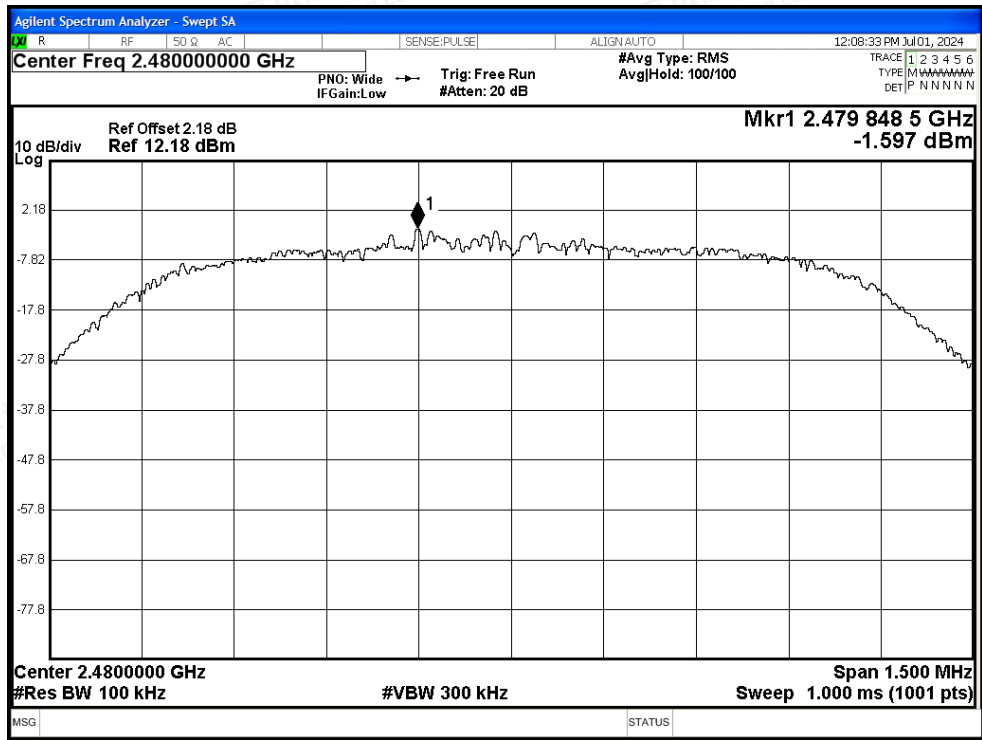


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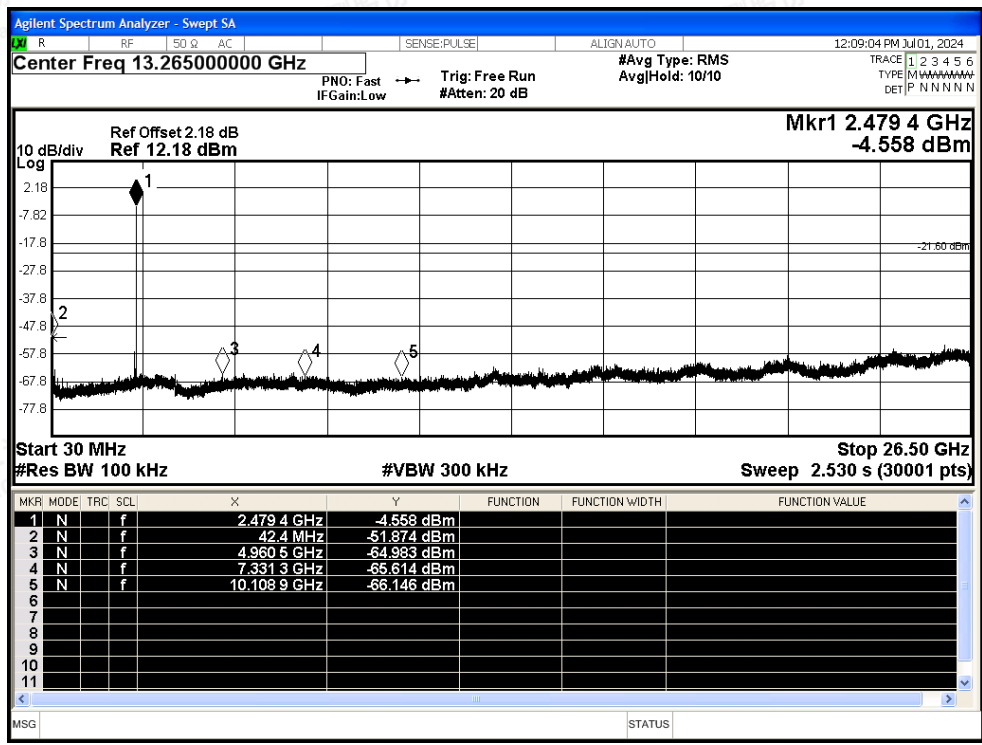




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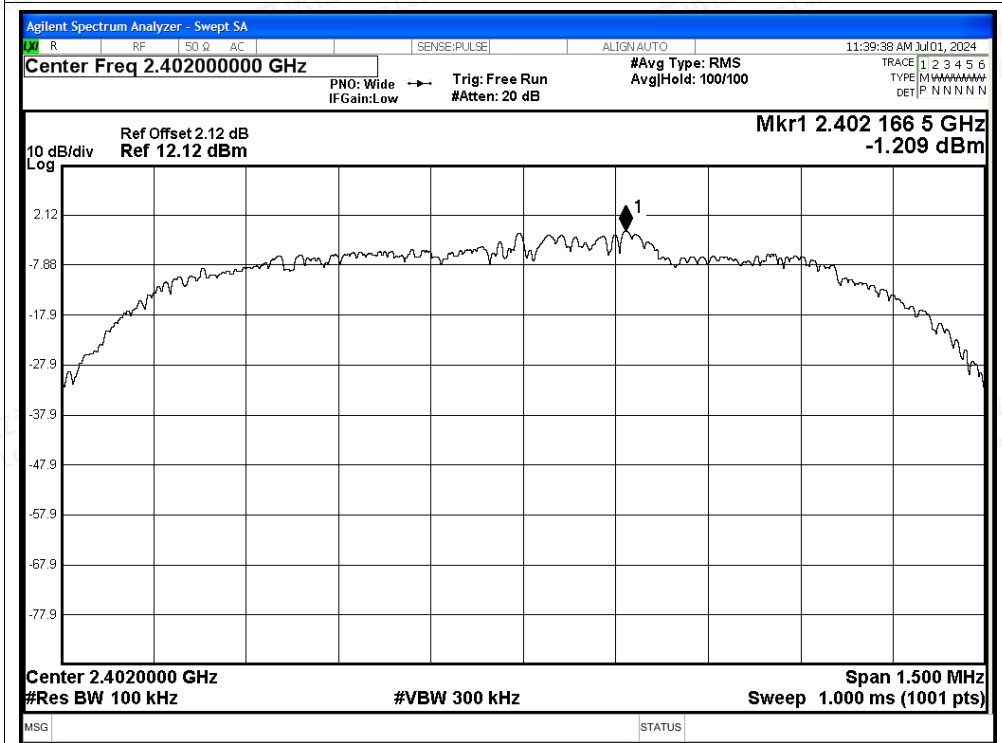


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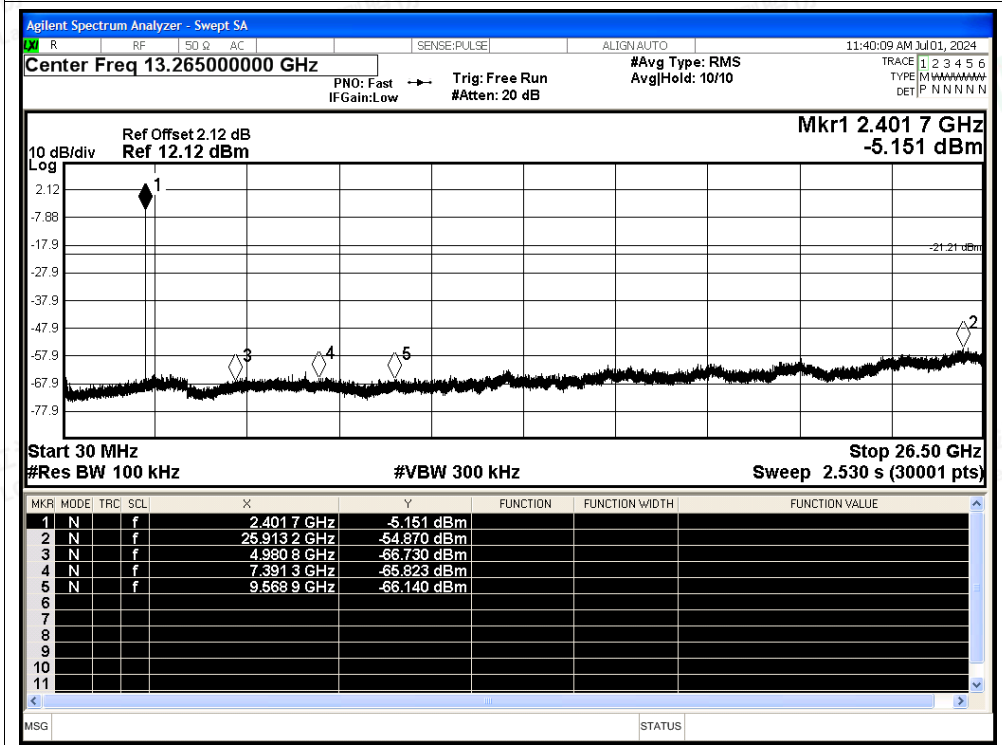




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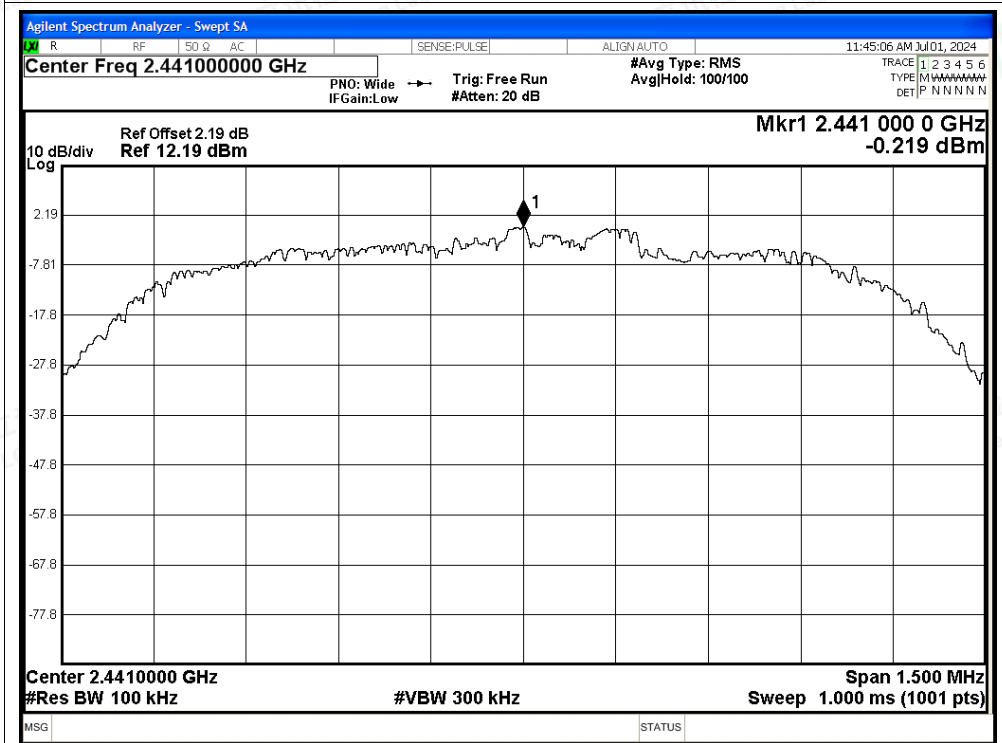


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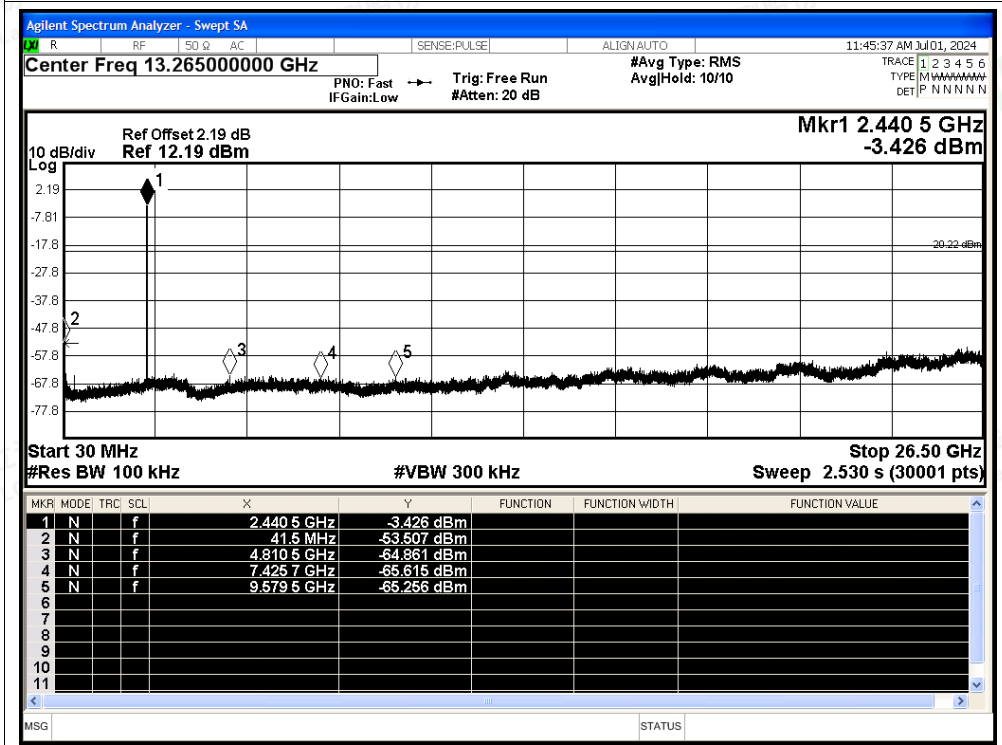




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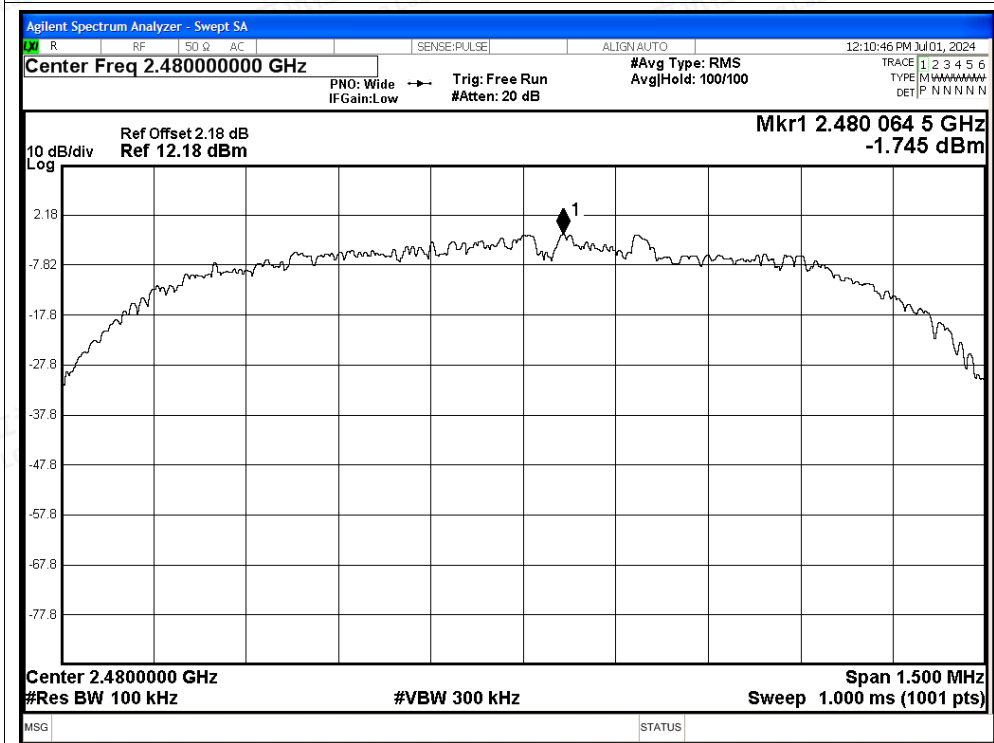


Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission

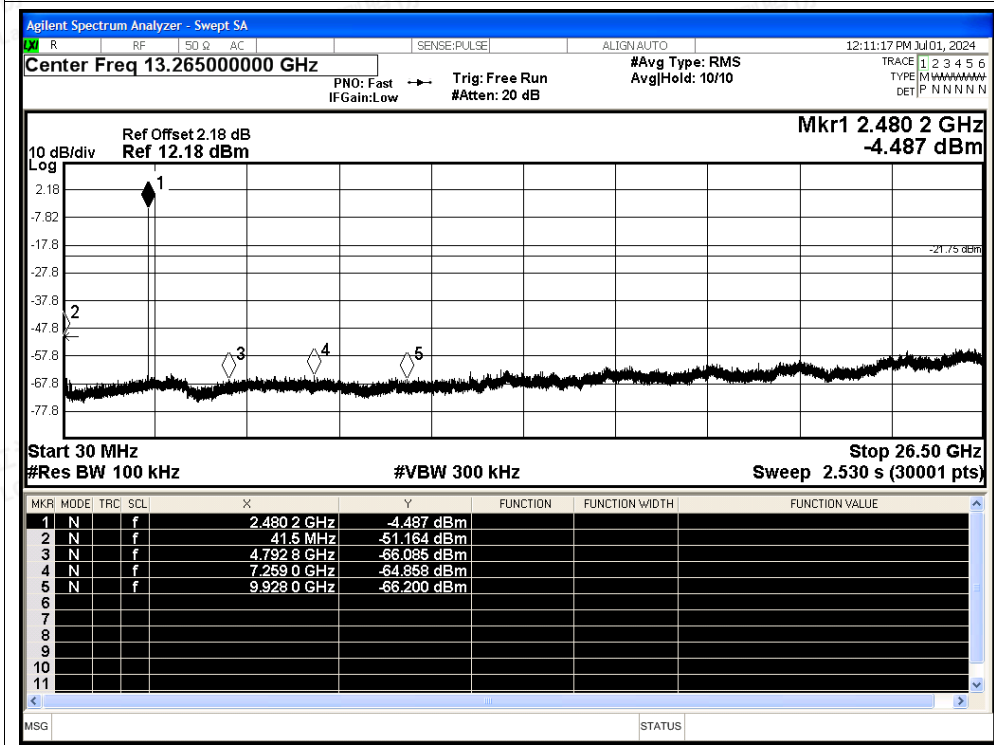




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



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	76.88	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.88	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	76.99	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

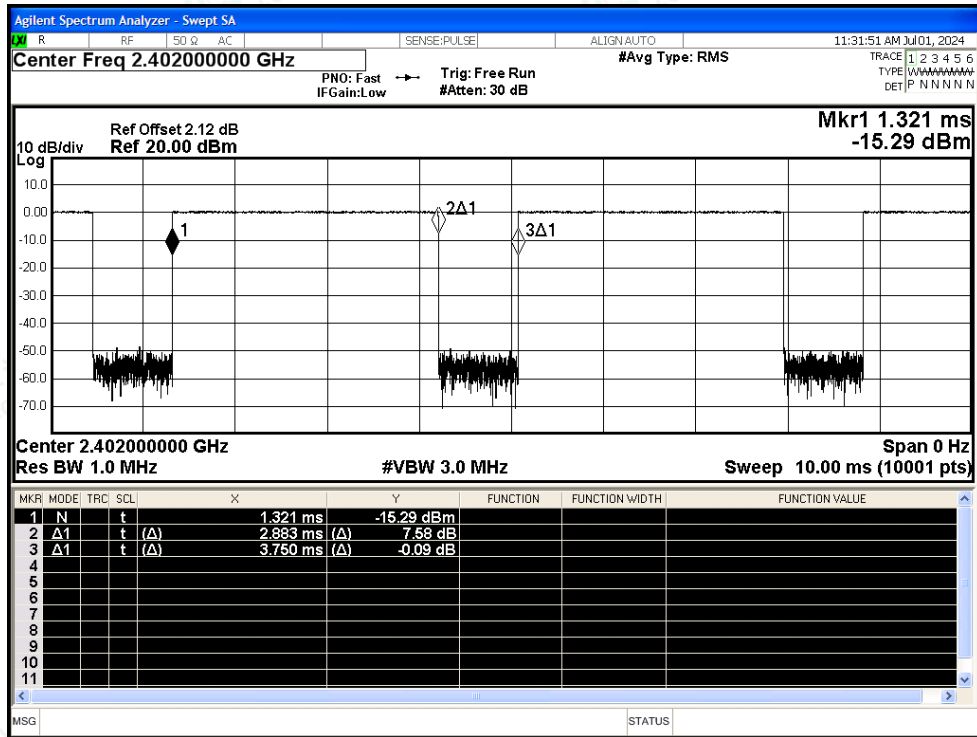


Shenzhen LCS Compliance Testing Laboratory Ltd.
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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

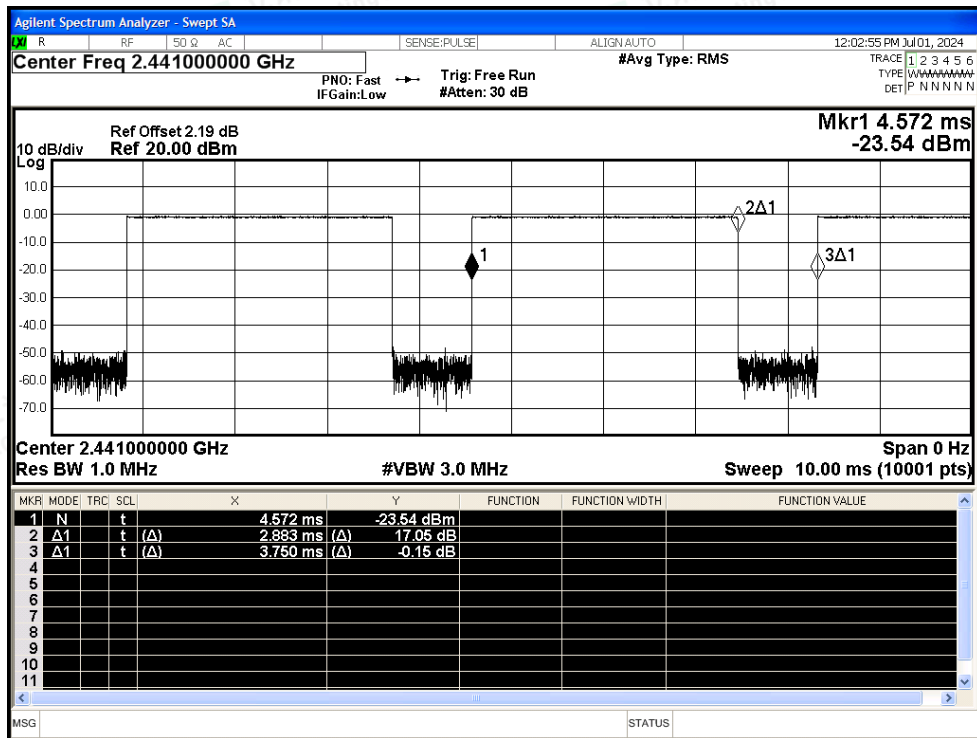


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

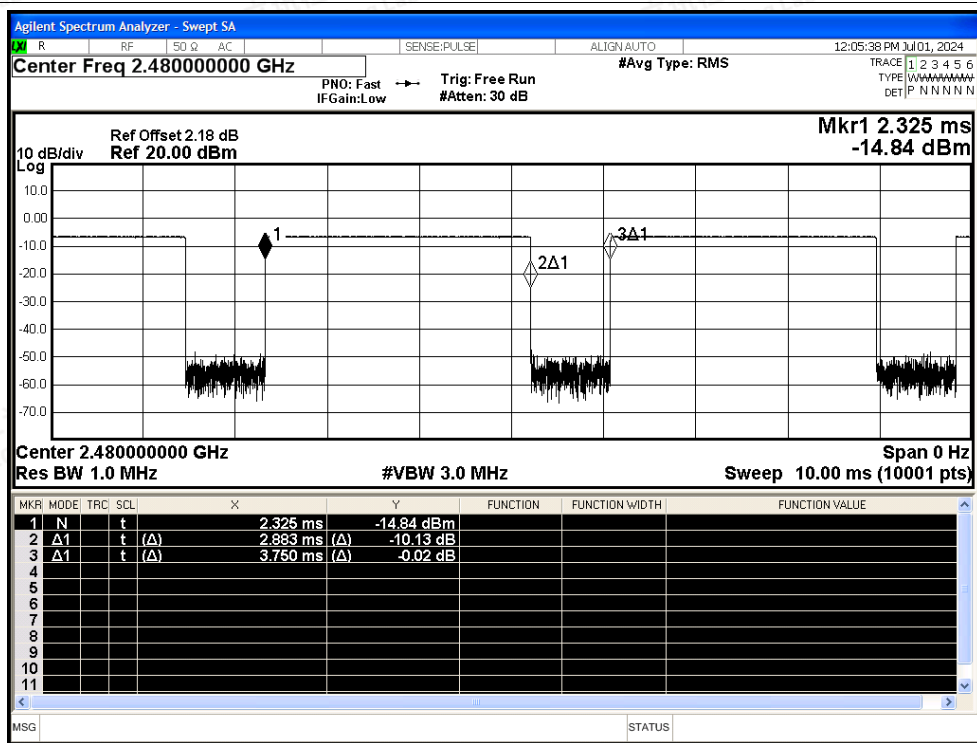


Duty Cycle NVNT 1-DH5 2441MHz Ant1

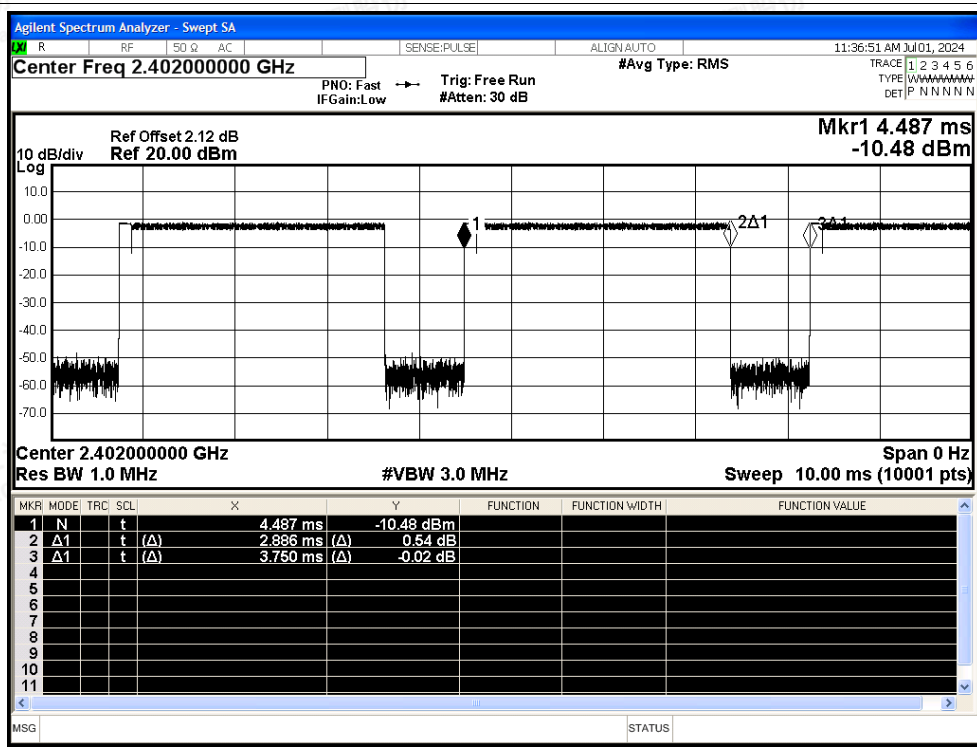




Duty Cycle NVNT 1-DH5 2480MHz Ant1

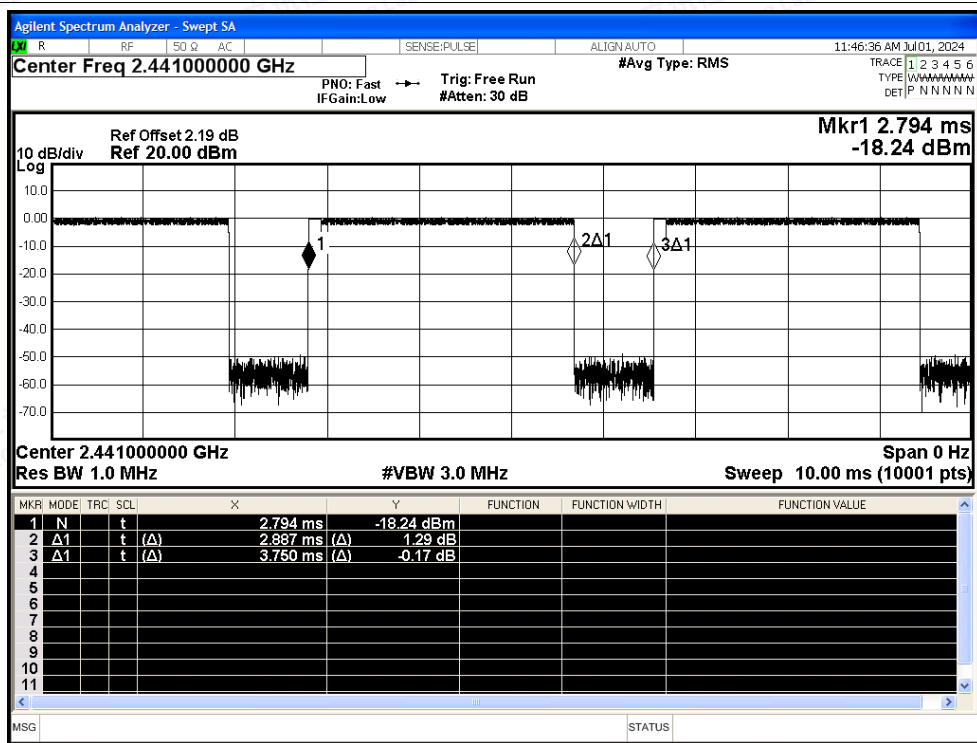


Duty Cycle NVNT 2-DH5 2402MHz Ant1

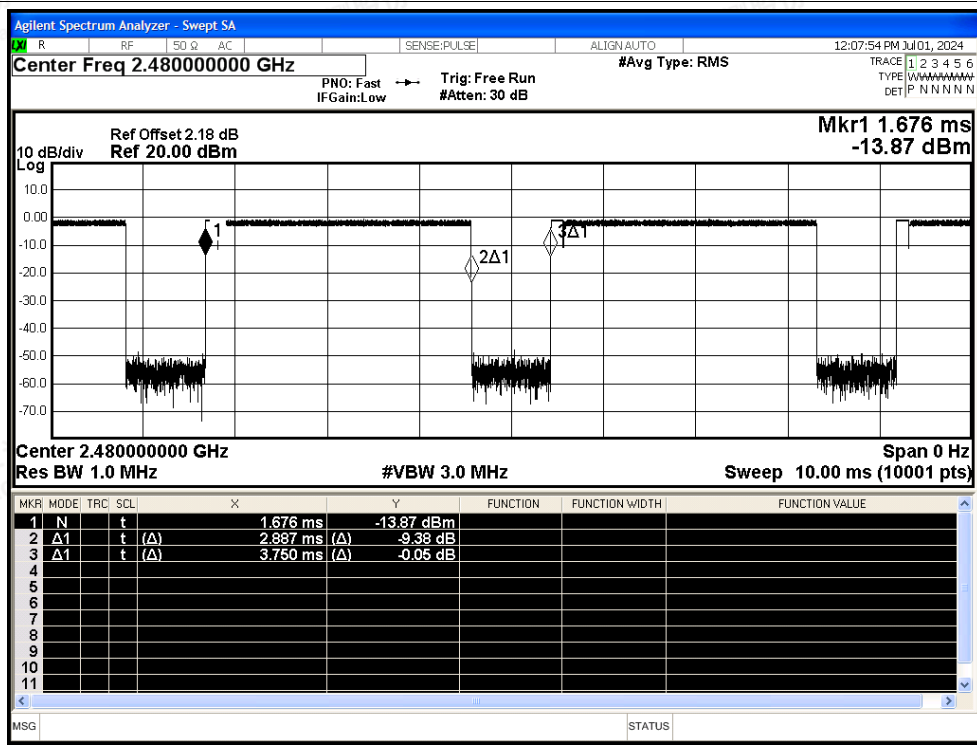




Duty Cycle NVNT 2-DH5 2441MHz Ant1

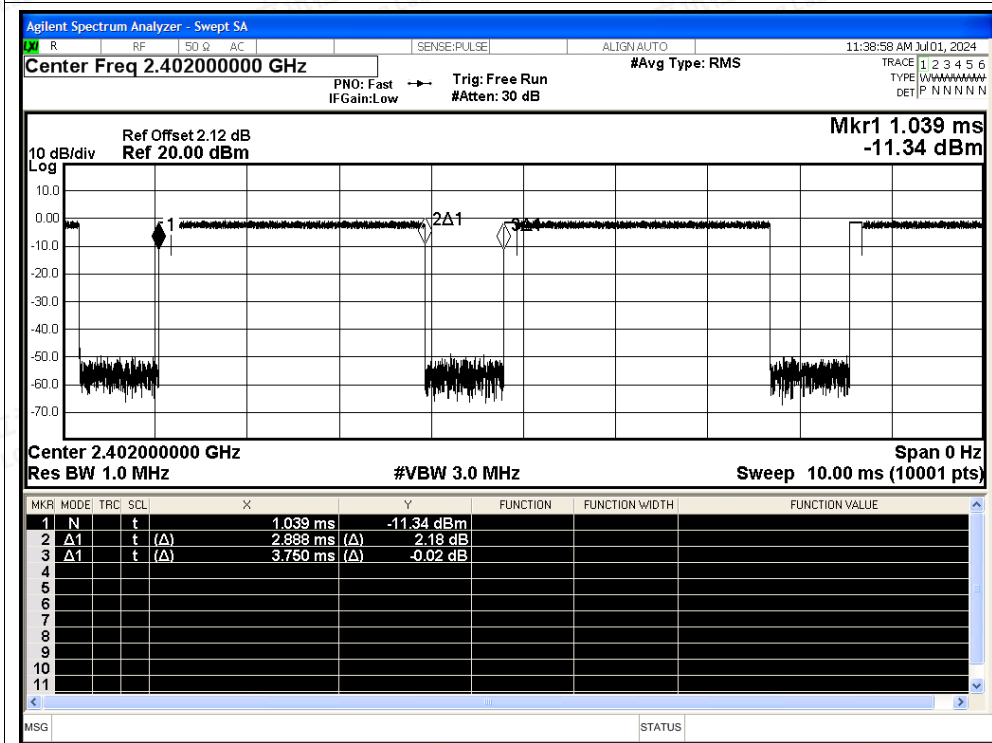


Duty Cycle NVNT 2-DH5 2480MHz Ant1

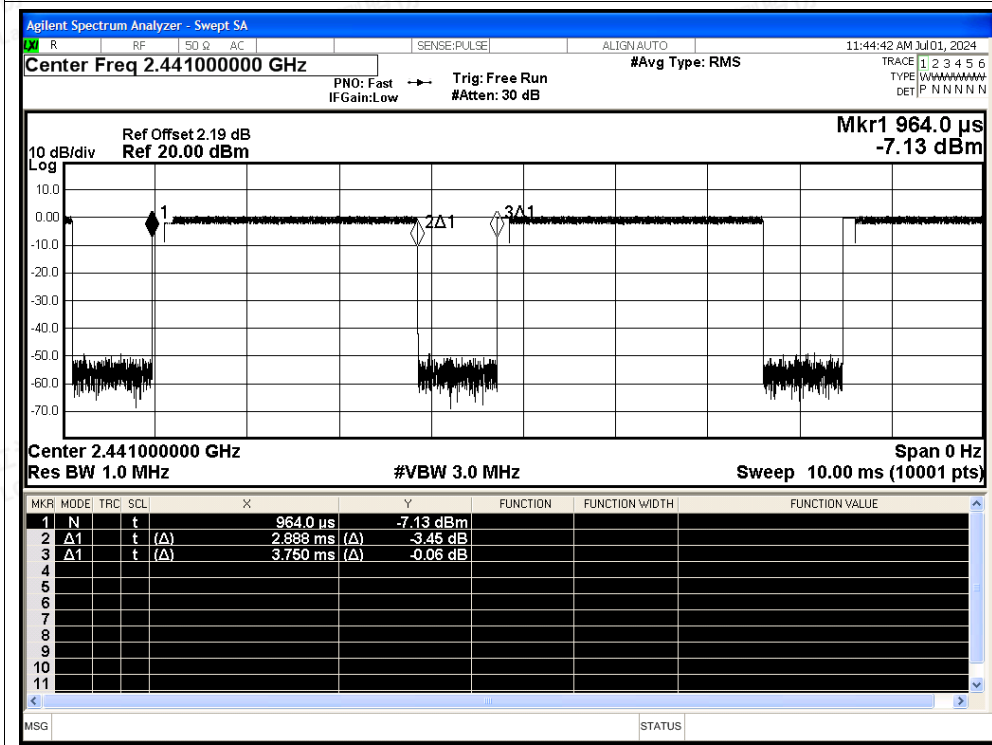


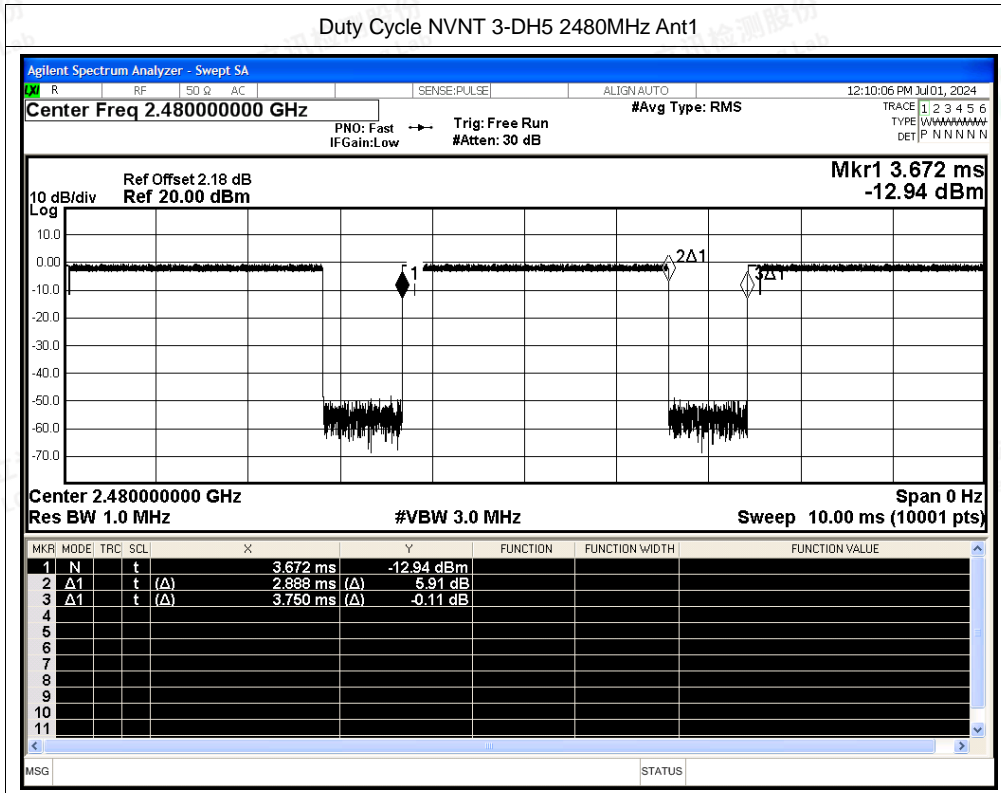


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1







A.9 Restrict Band

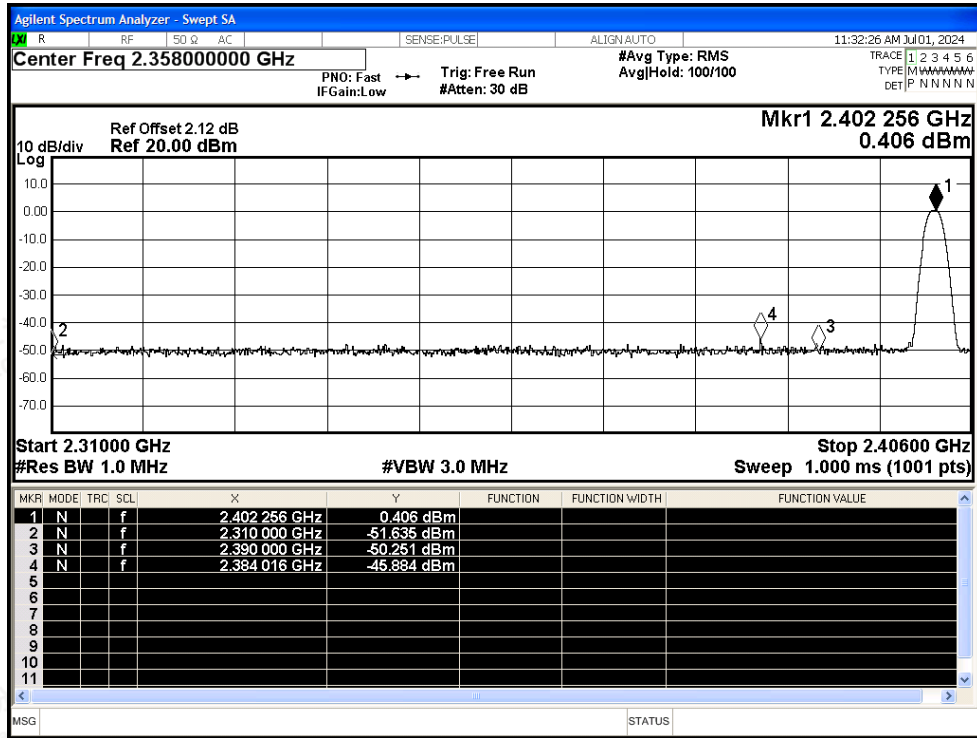
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-51.64	2.05	-	45.67	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.04	2.05	1.14	39.41	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2384.016	-45.88	2.05	-	51.43	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2384.976	-57.64	2.05	1.14	40.81	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.25	2.05	-	47.06	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-57.98	2.05	1.14	40.47	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.9	2.05	-	47.41	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.34	2.05	1.14	41.11	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2495.224	-46.17	2.05	-	51.14	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2494.48	-56.95	2.05	1.14	41.5	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-48.39	2.05	-	48.92	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.63	2.05	1.14	40.82	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.02	2.05	-	47.29	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.62	2.05	1.14	39.83	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2369.328	-47.63	2.05	-	49.68	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2380.752	-57.54	2.05	1.14	40.91	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-51.21	2.05	-	46.1	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.17	2.05	1.14	40.28	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-50.23	2.05	-	47.08	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.16	2.05	1.14	41.29	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2492.488	-47.06	2.05	-	50.25	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2485.36	-56.81	2.05	1.14	41.64	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.77	2.05	-	47.54	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.12	2.05	1.14	40.33	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-48.43	2.05	-	48.88	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-59.12	2.05	1.13	39.32	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2330.64	-47.25	2.05	-	50.06	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2363.952	-57.38	2.05	1.13	41.06	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-49.35	2.05	-	47.96	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-59.32	2.05	1.13	39.12	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-48.42	2.05	-	48.89	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.14	2.05	1.13	41.3	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.992	-47.04	2.05	-	50.27	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.728	-56.7	2.05	1.13	41.74	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-48.51	2.05	-	48.8	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.37	2.05	1.13	40.07	Average	54	Pass



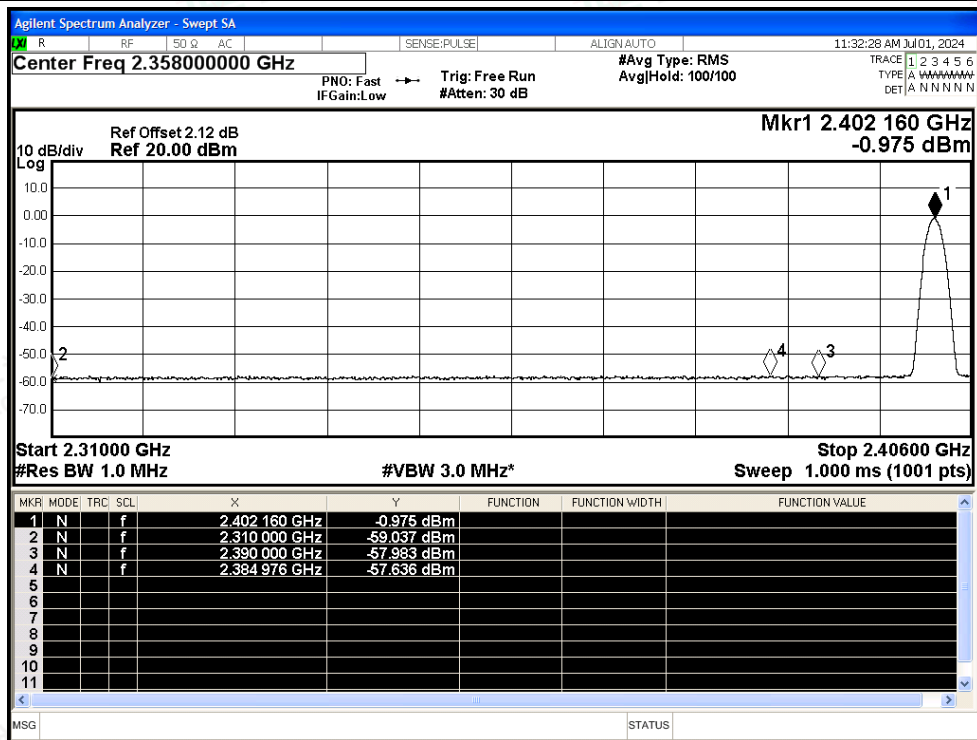


Test Graphs

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

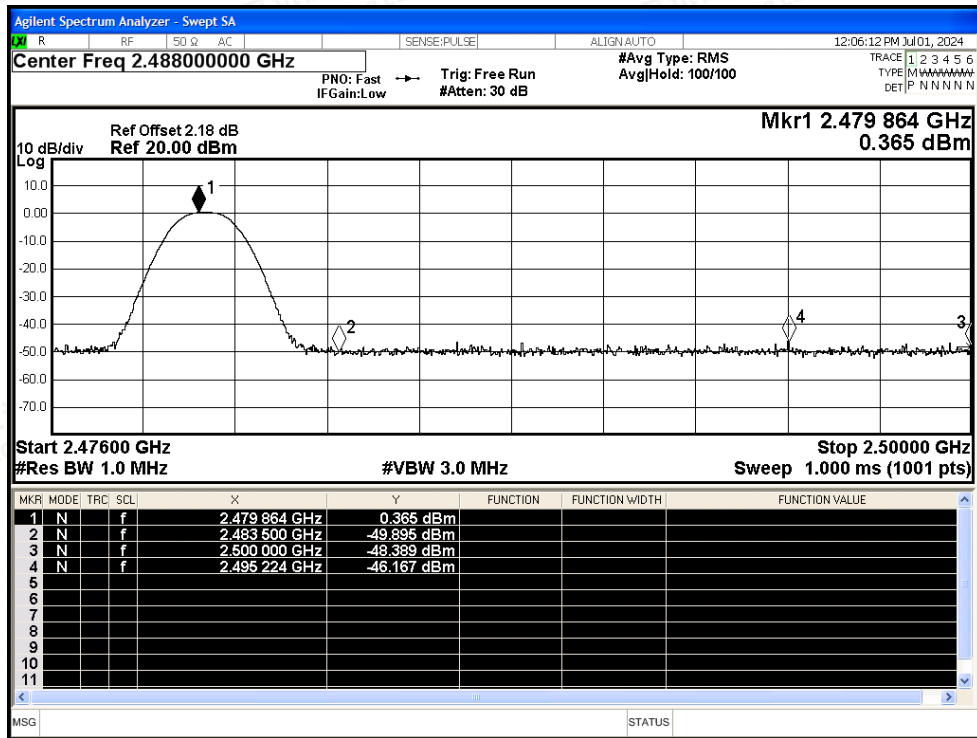


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

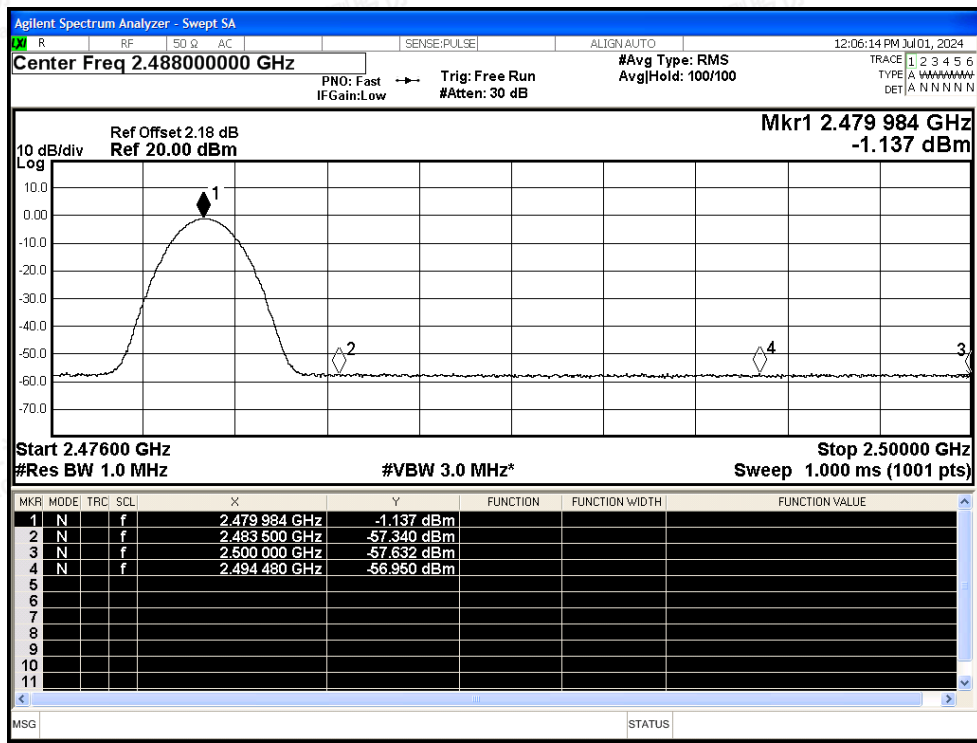




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

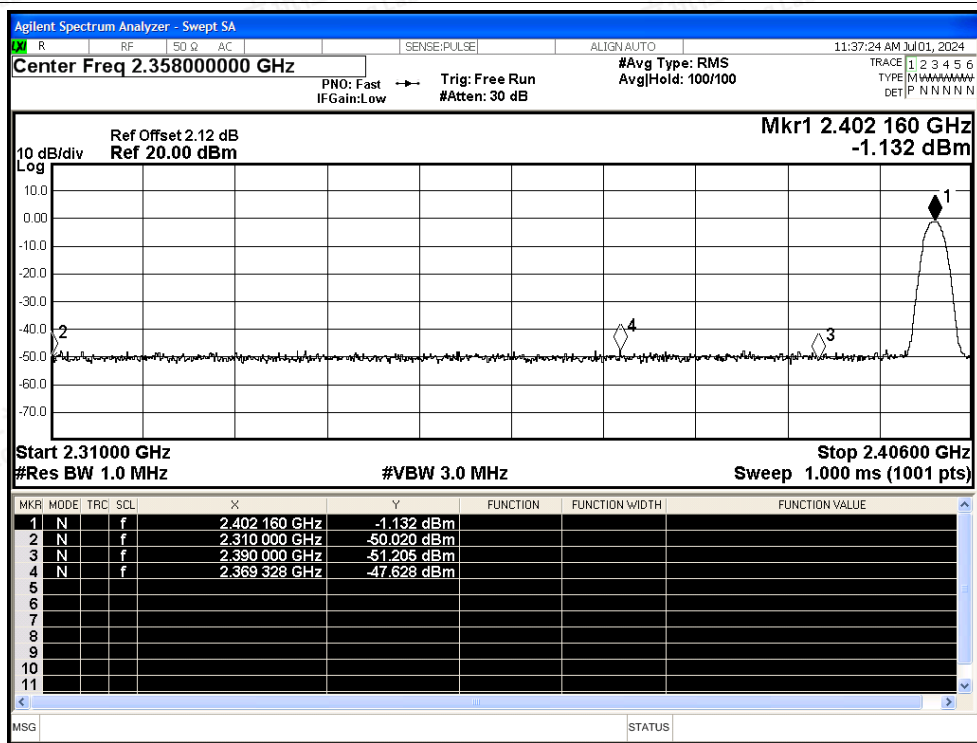


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

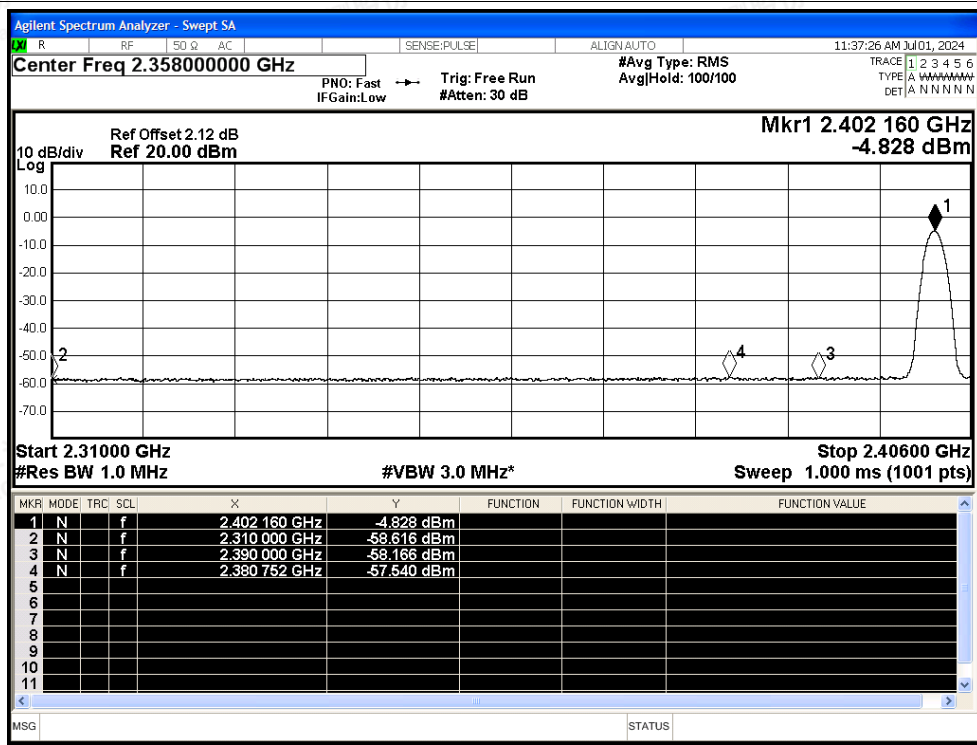




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

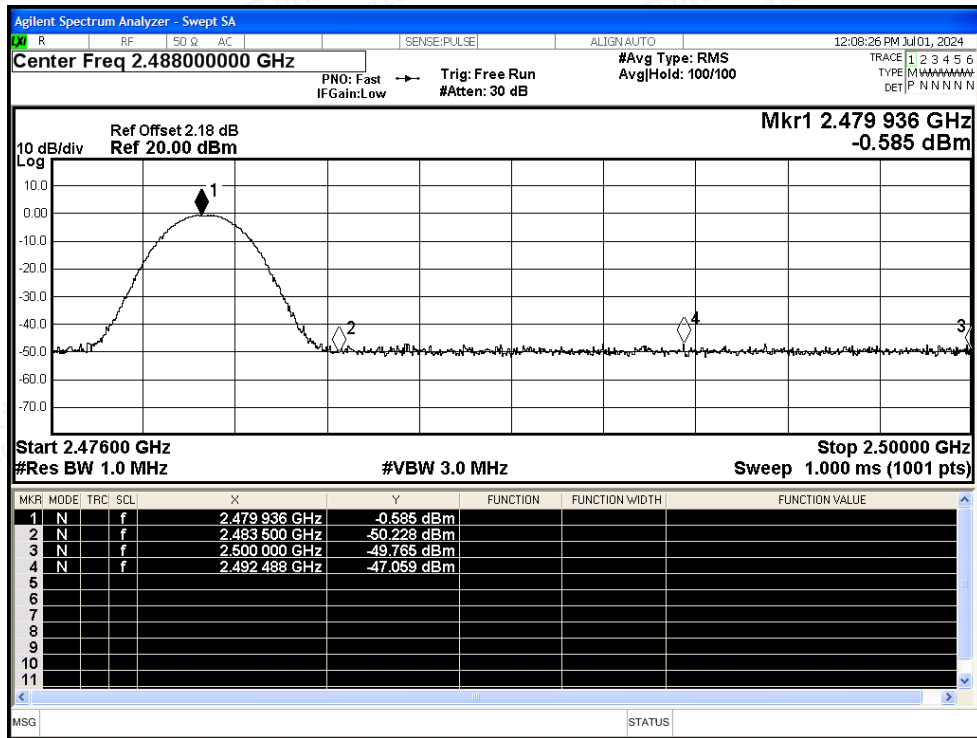


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average

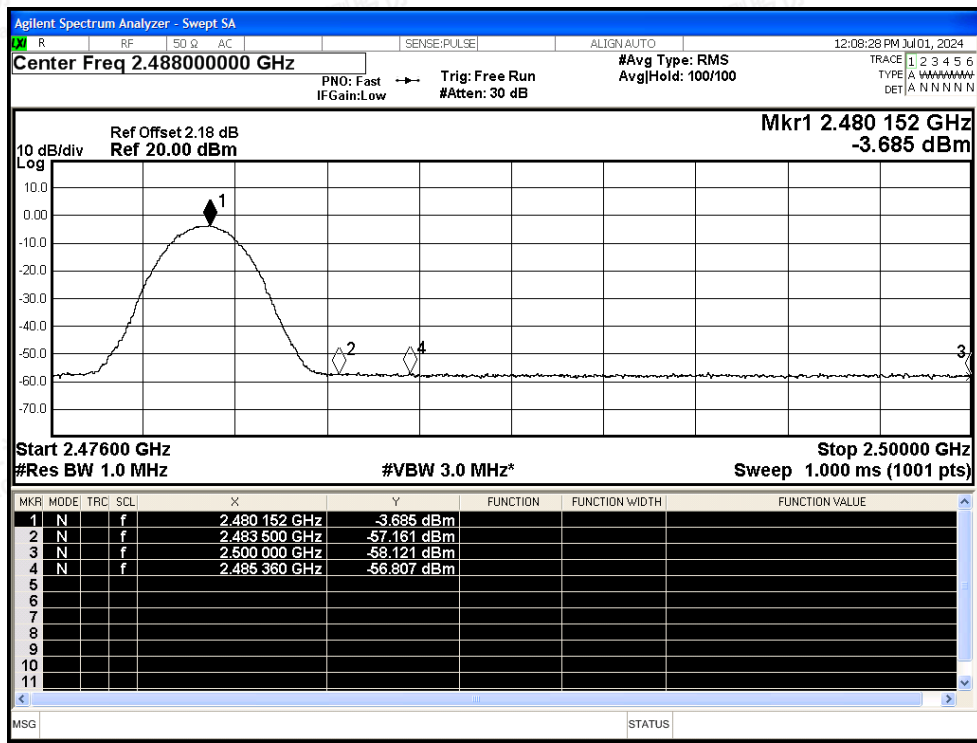




Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak

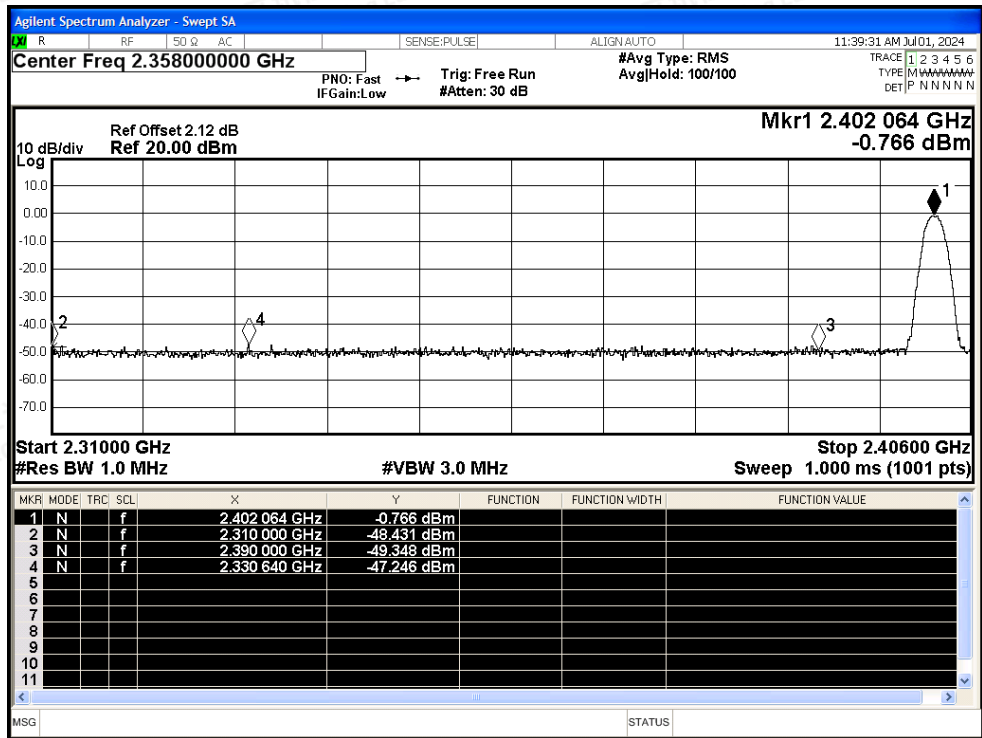


Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average

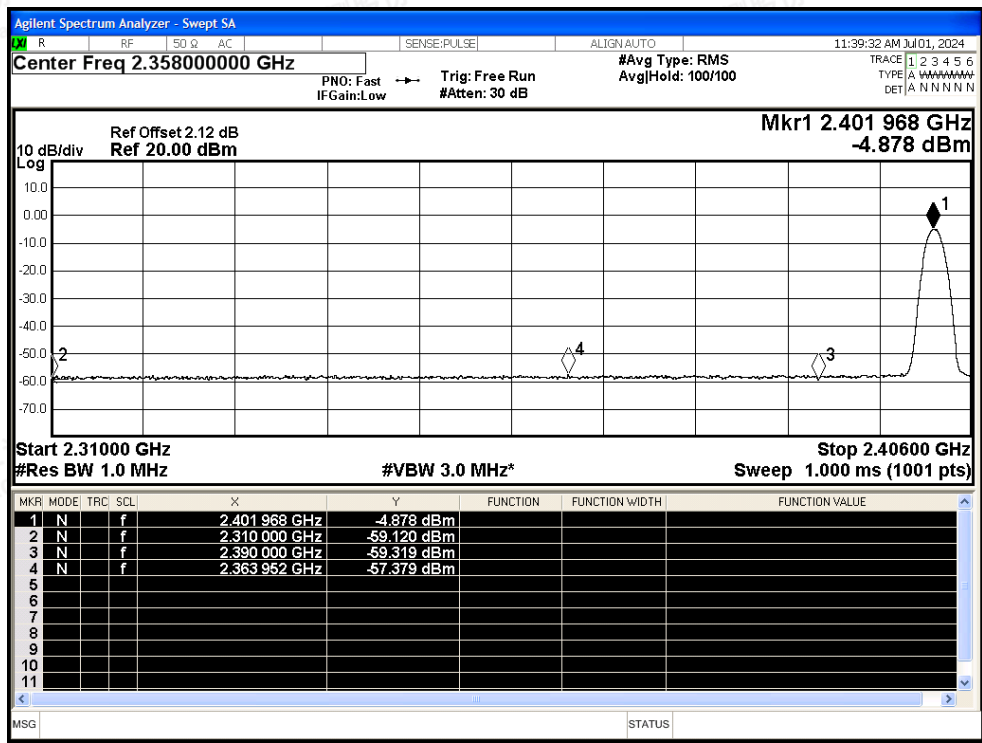




Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak

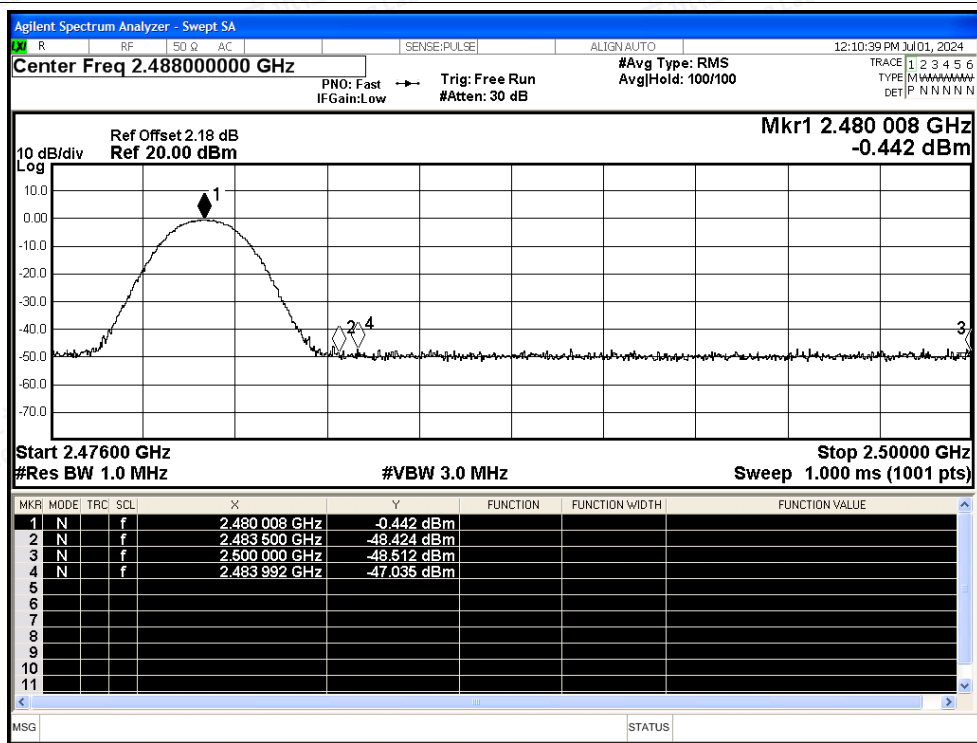


Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average





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



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

