



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: TRAILGATOR 120 Bluetooth SPEAKER

Test Model: XS-S612PB

Environmental Conditions

Temperature:	23.8 °C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu



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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	0.848	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.849	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.841	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.258	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.285	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.272	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.296	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.299	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.275	N/A	Pass

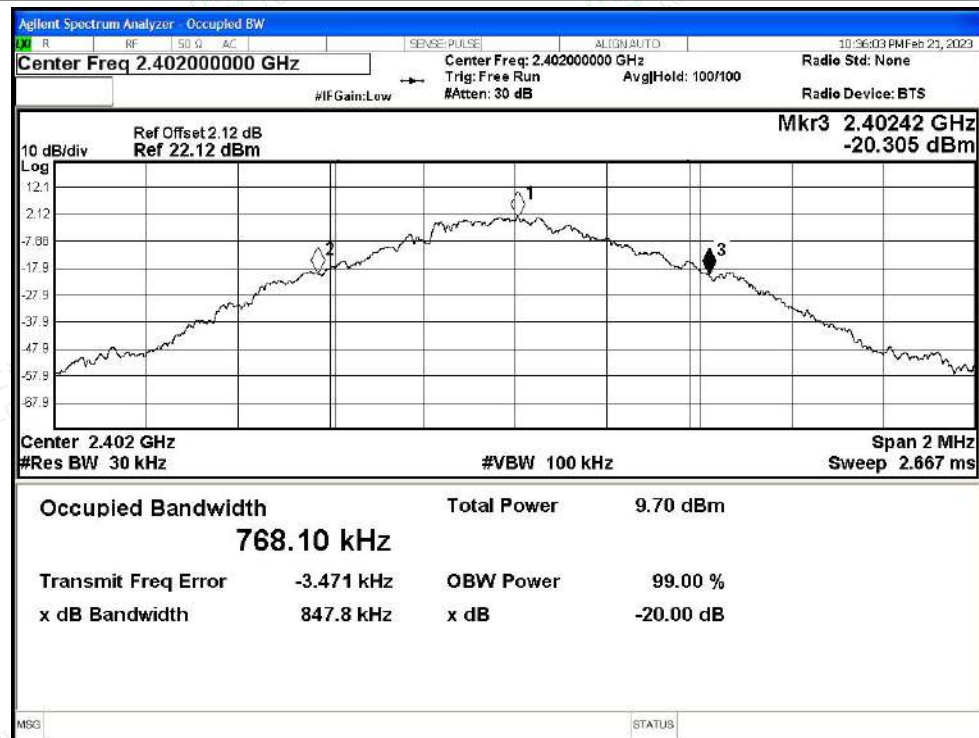


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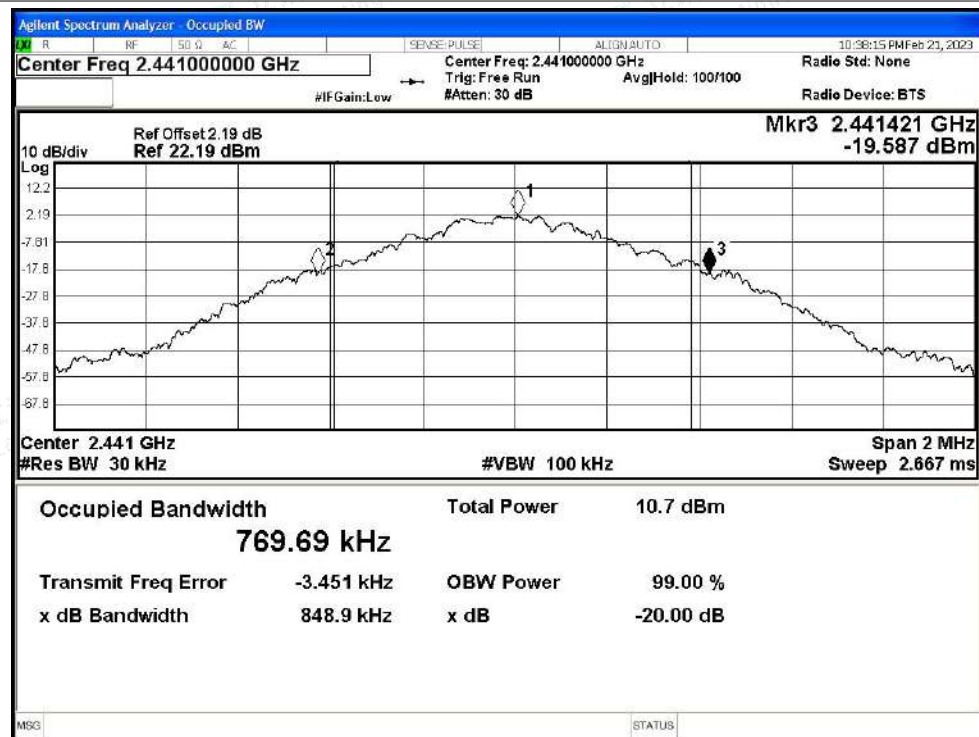


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

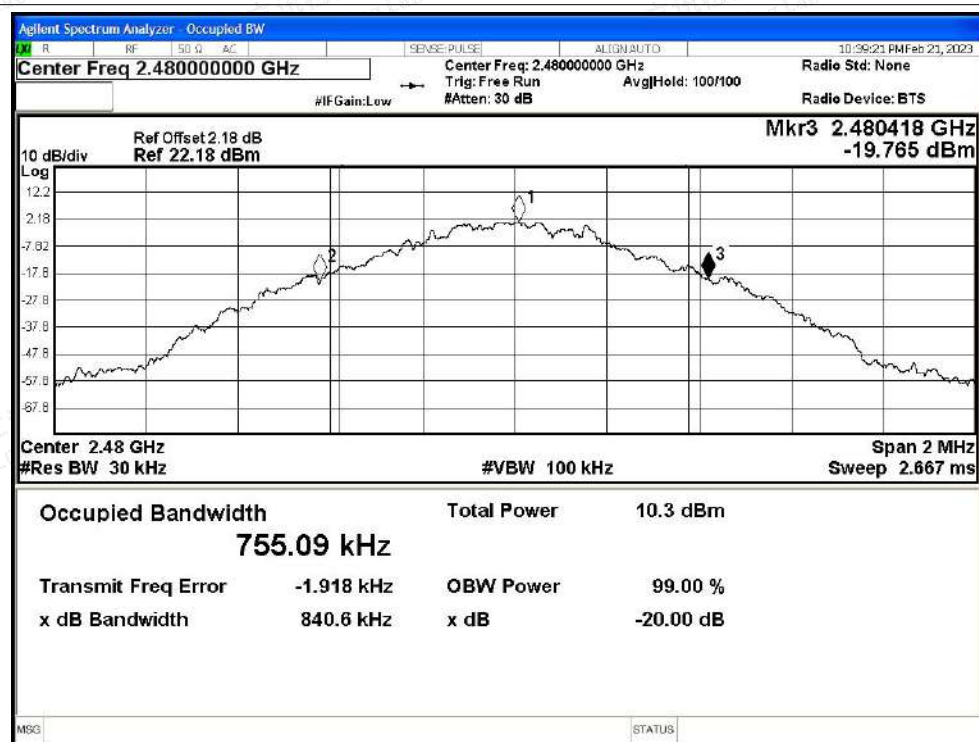


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

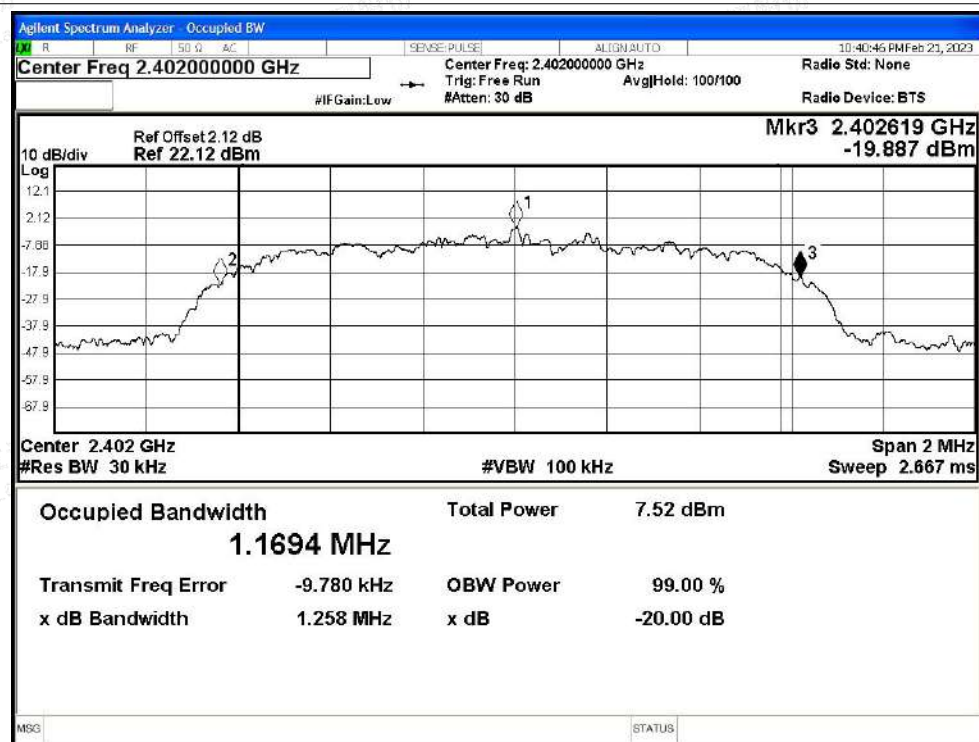




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

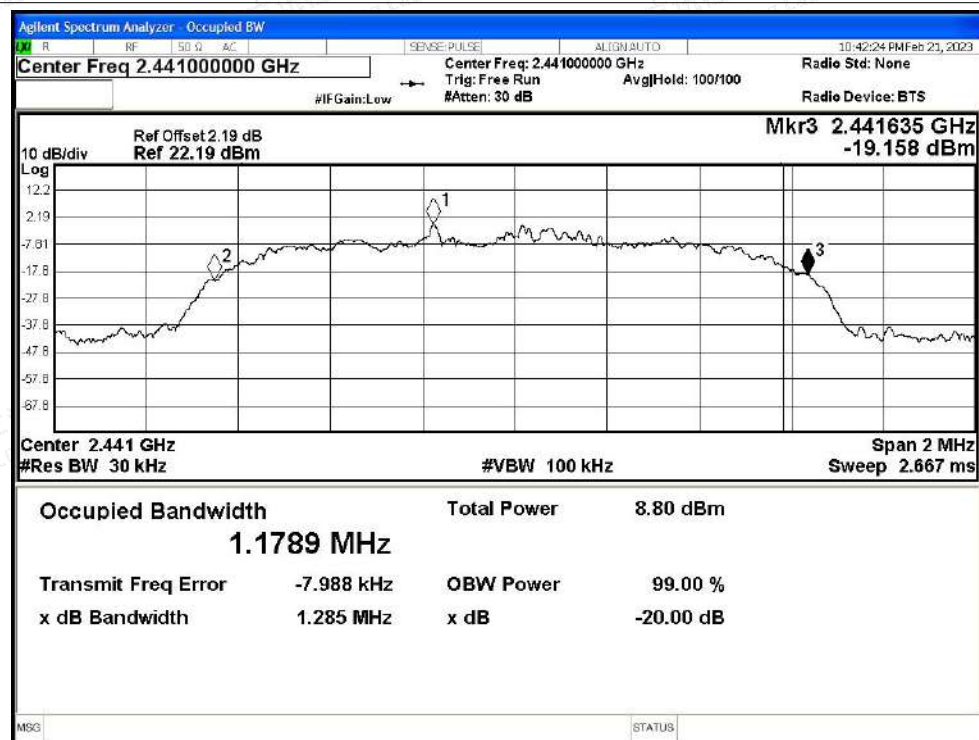


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

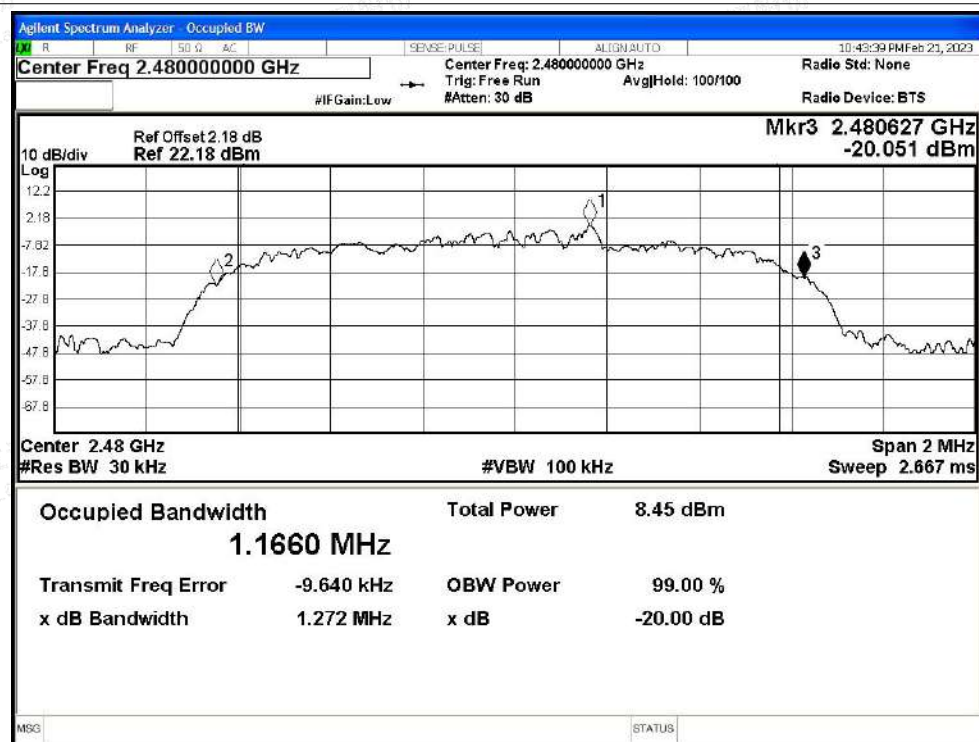




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

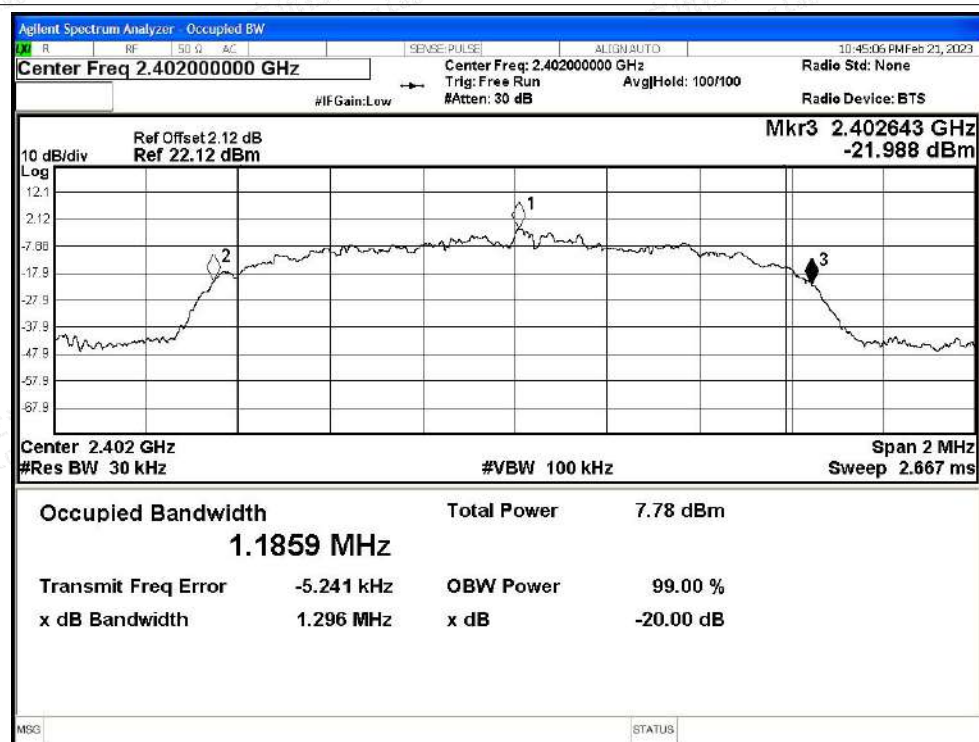


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

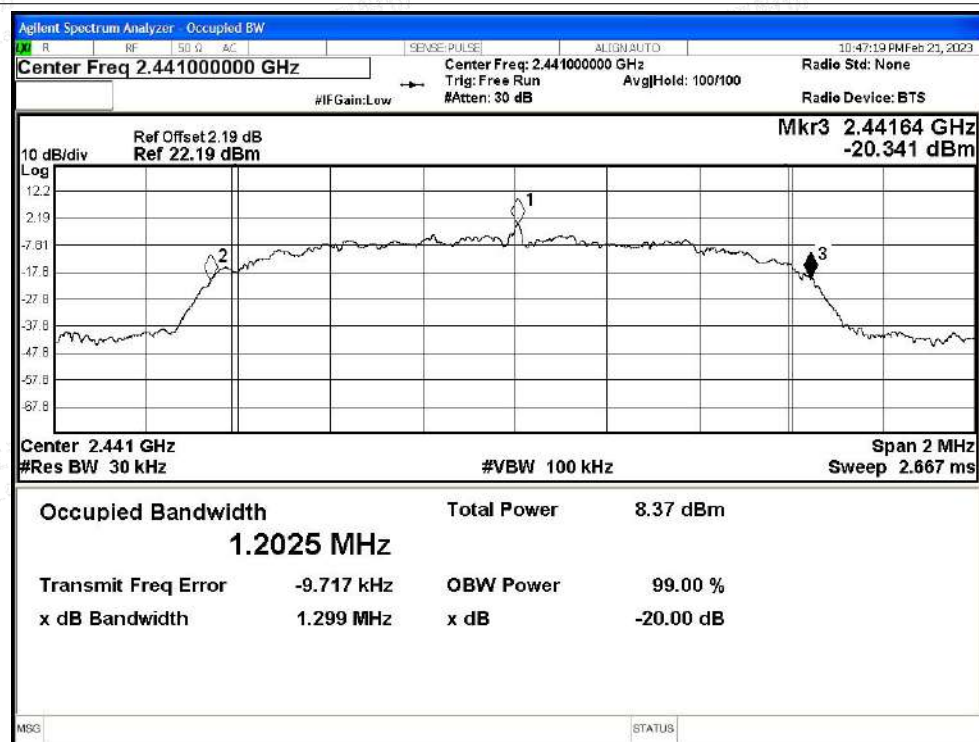


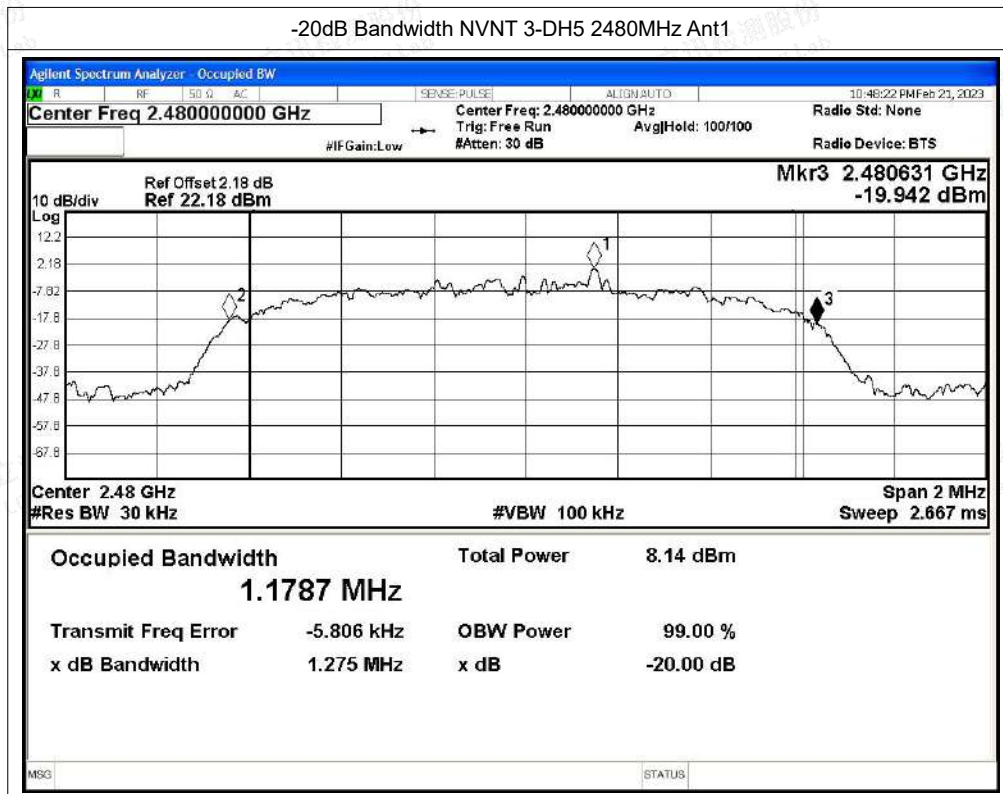


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1







A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	3.80	0	3.80	21	Pass
NVNT	1-DH5	2441	Ant1	4.84	0	4.84	21	Pass
NVNT	1-DH5	2480	Ant1	4.21	0	4.21	21	Pass
NVNT	2-DH5	2402	Ant1	3.04	0	3.04	21	Pass
NVNT	2-DH5	2441	Ant1	4.28	0	4.28	21	Pass
NVNT	2-DH5	2480	Ant1	3.50	0	3.50	21	Pass
NVNT	3-DH5	2402	Ant1	3.07	0	3.07	21	Pass
NVNT	3-DH5	2441	Ant1	4.31	0	4.31	21	Pass
NVNT	3-DH5	2480	Ant1	3.52	0	3.52	21	Pass

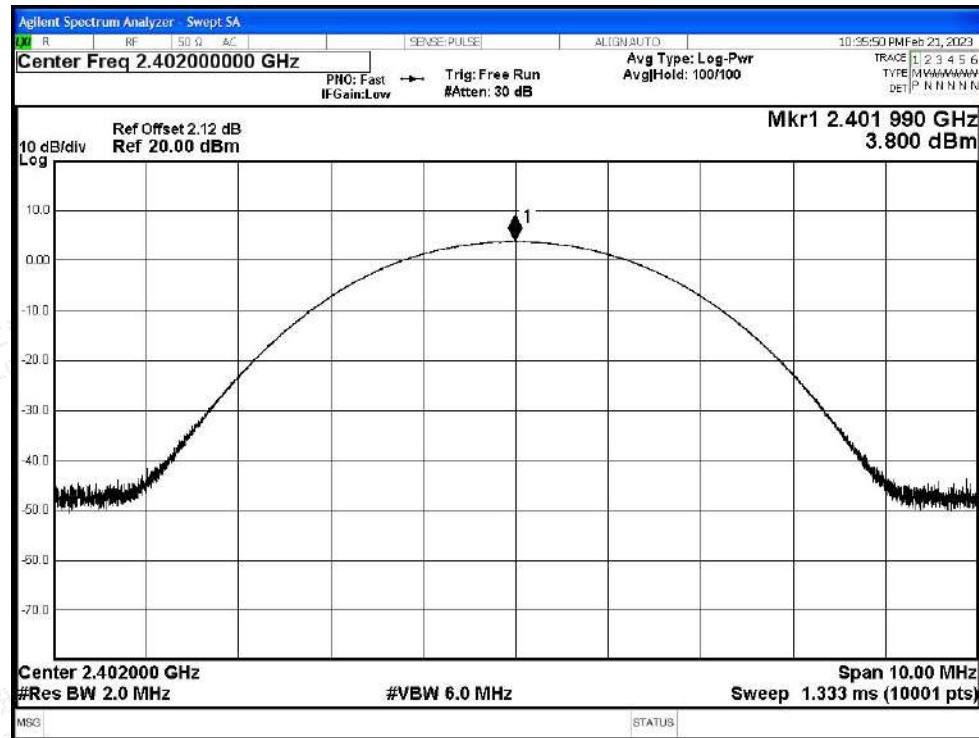


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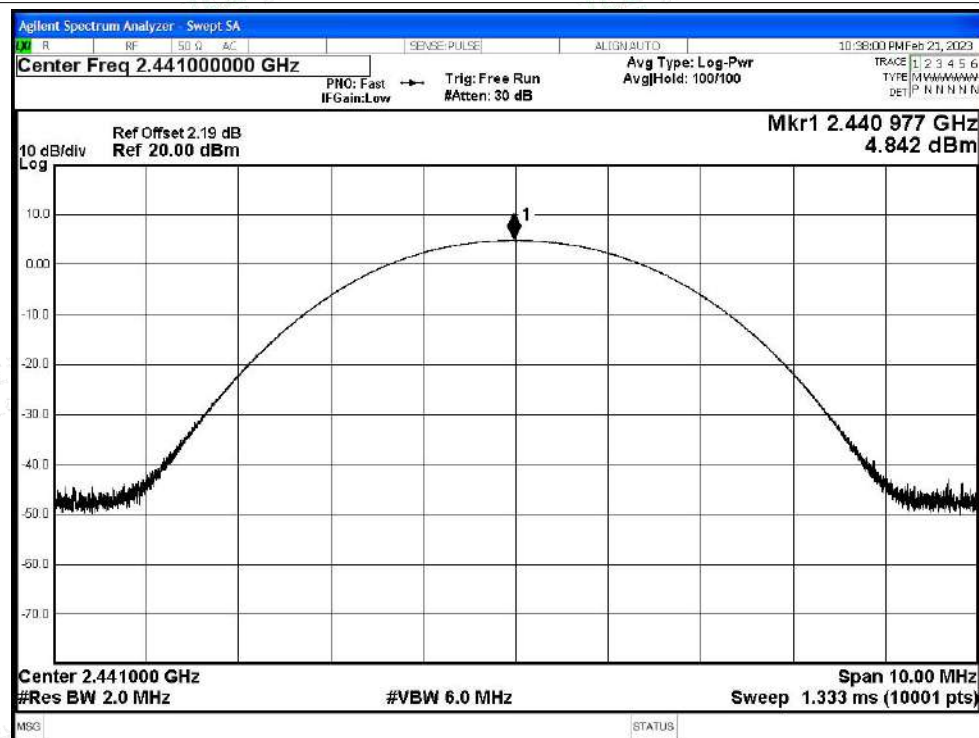


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

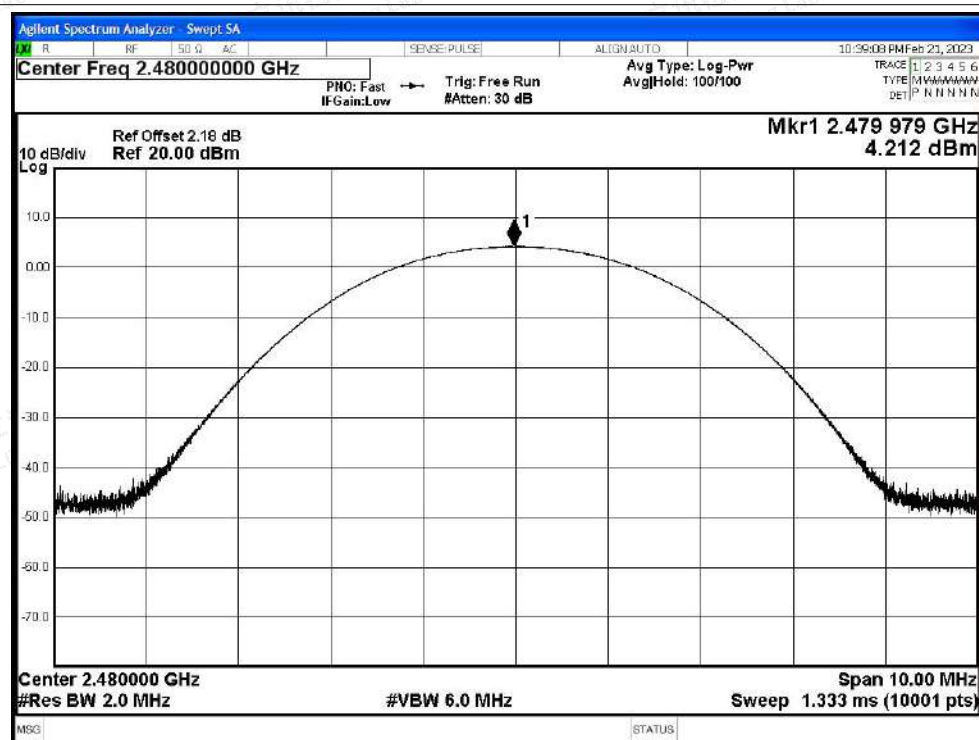


Power NVNT 1-DH5 2441MHz Ant1

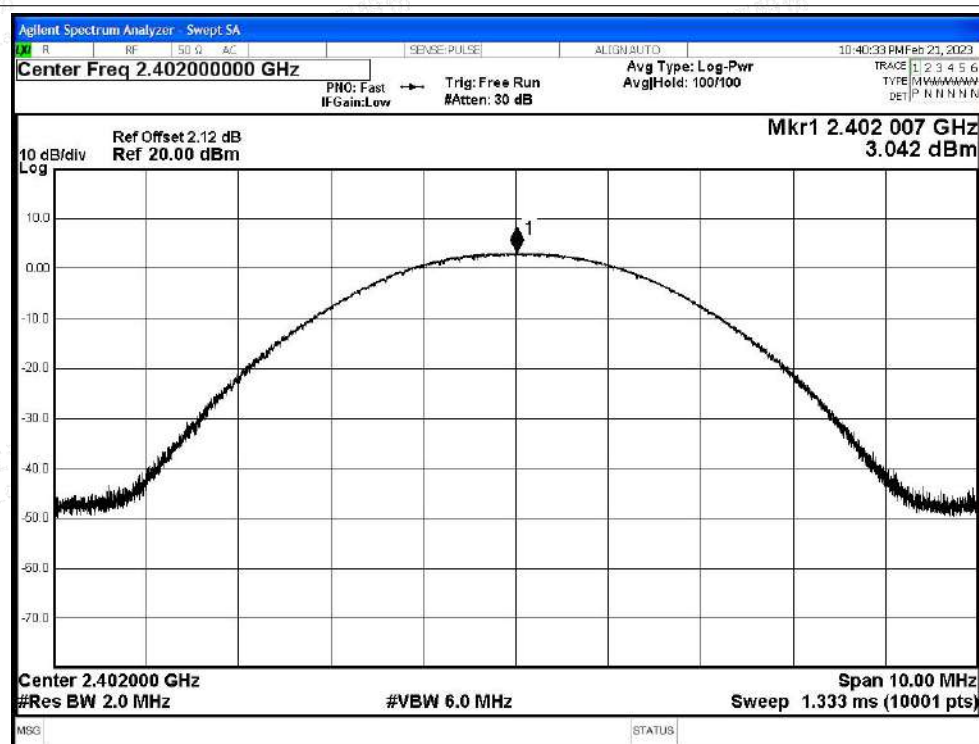




Power NVNT 1-DH5 2480MHz Ant1

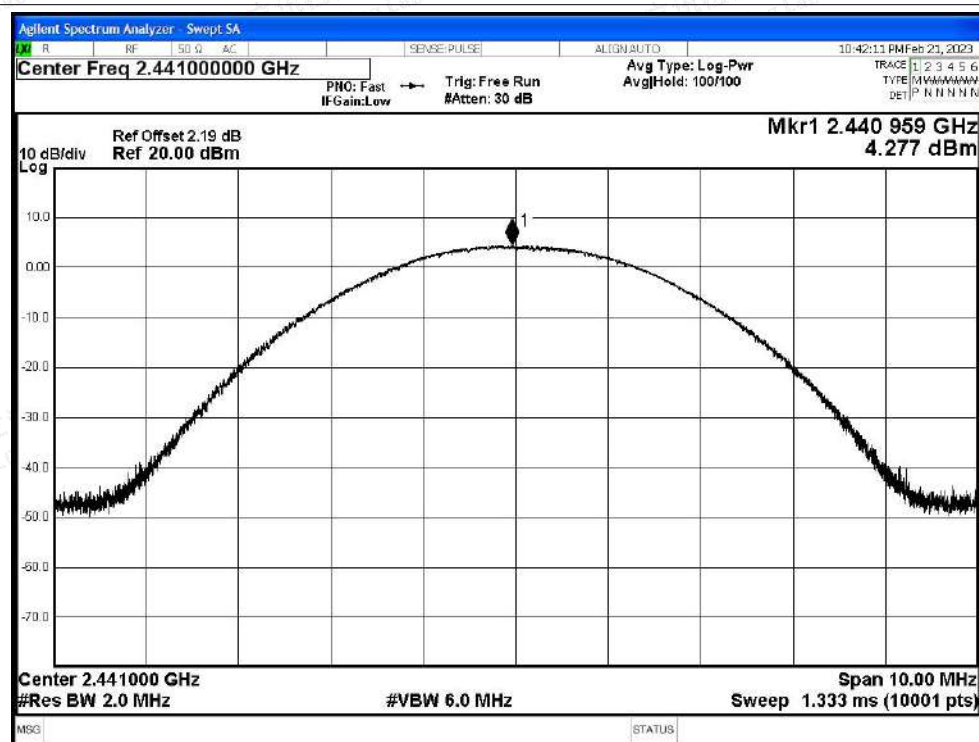


Power NVNT 2-DH5 2402MHz Ant1

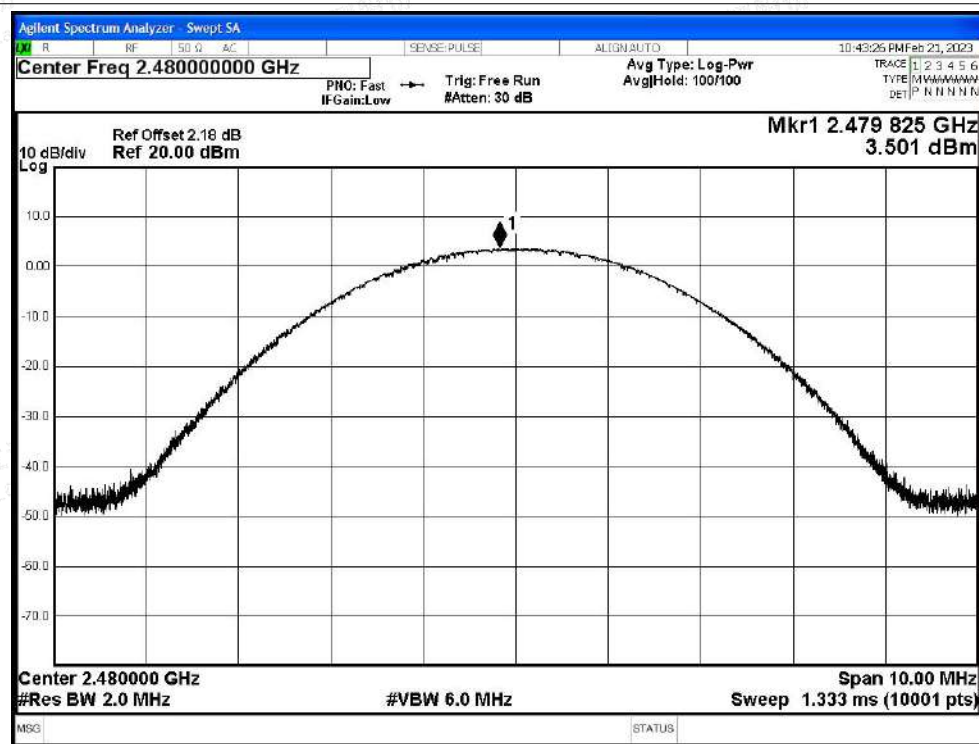




Power NVNT 2-DH5 2441MHz Ant1

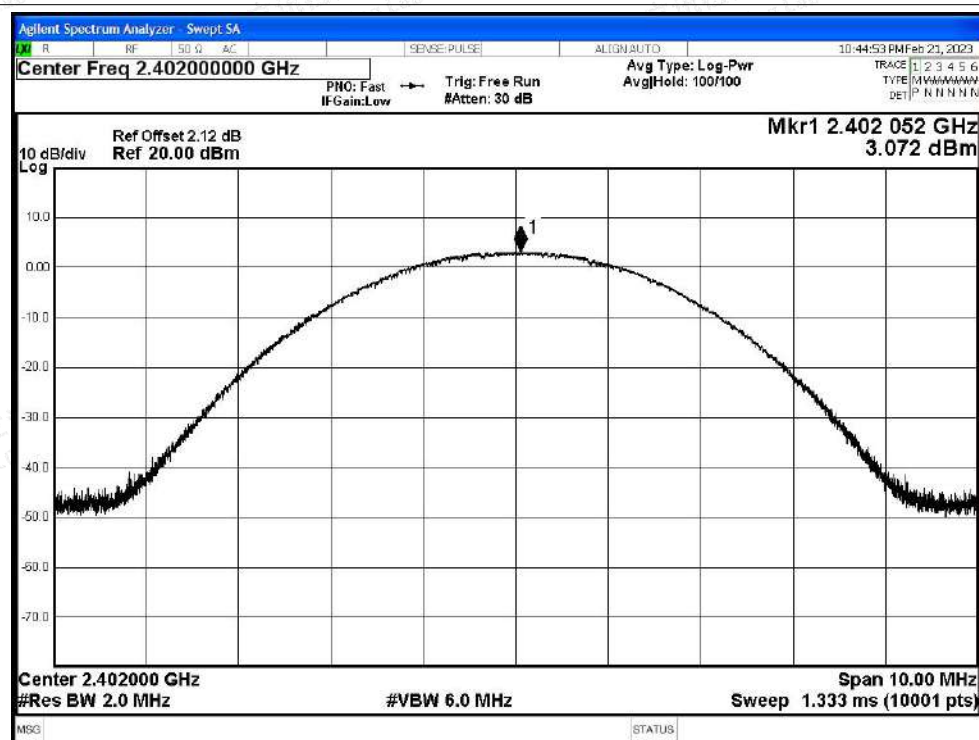


Power NVNT 2-DH5 2480MHz Ant1

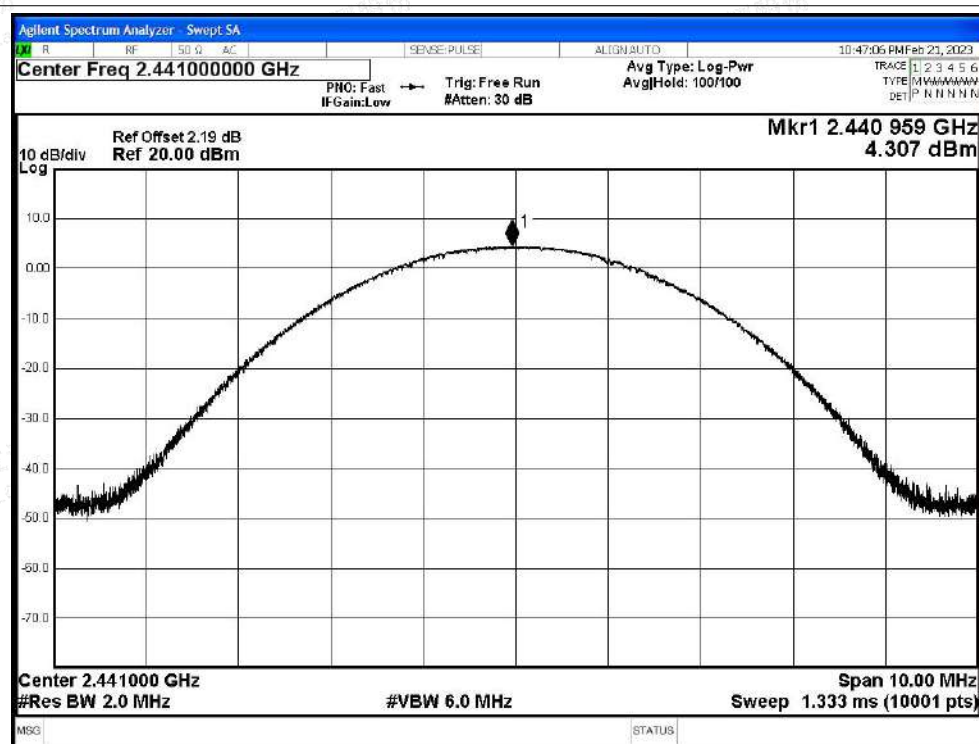


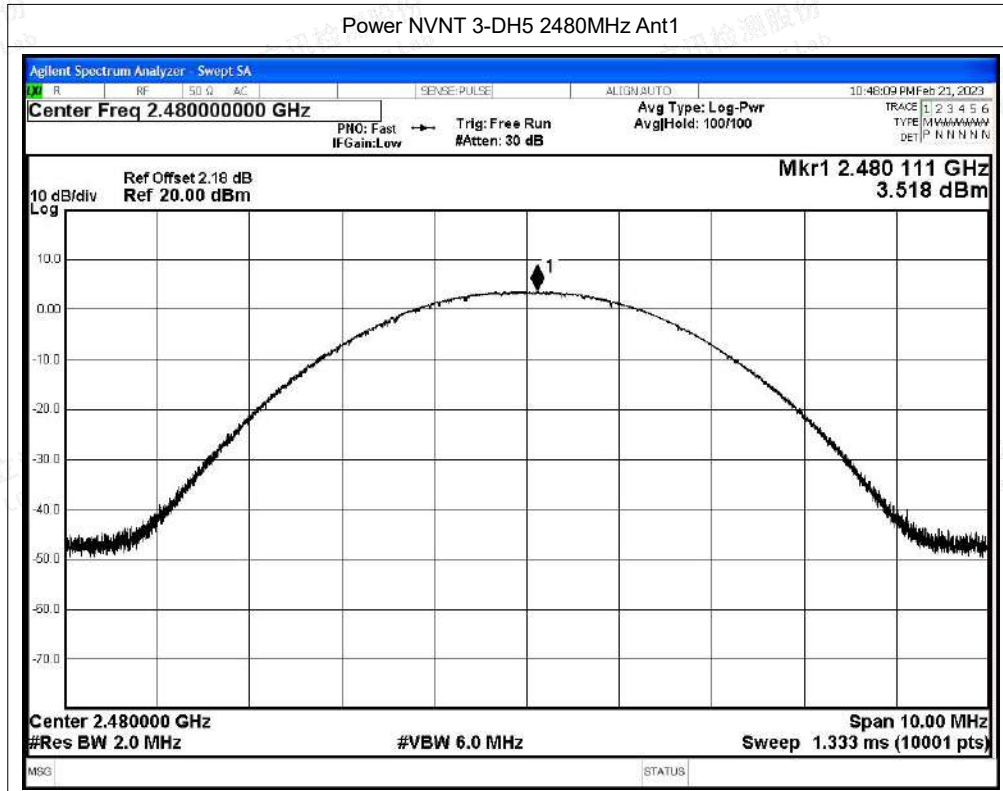


Power NVNT 3-DH5 2402MHz Ant1



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	2402.01	2403.052	1.042	0.565	Pass
NVNT	2-DH5	Ant1	2402.15	2403.158	1.008	0.839	Pass
NVNT	3-DH5	Ant1	2402.022	2403.032	1.01	0.864	Pass



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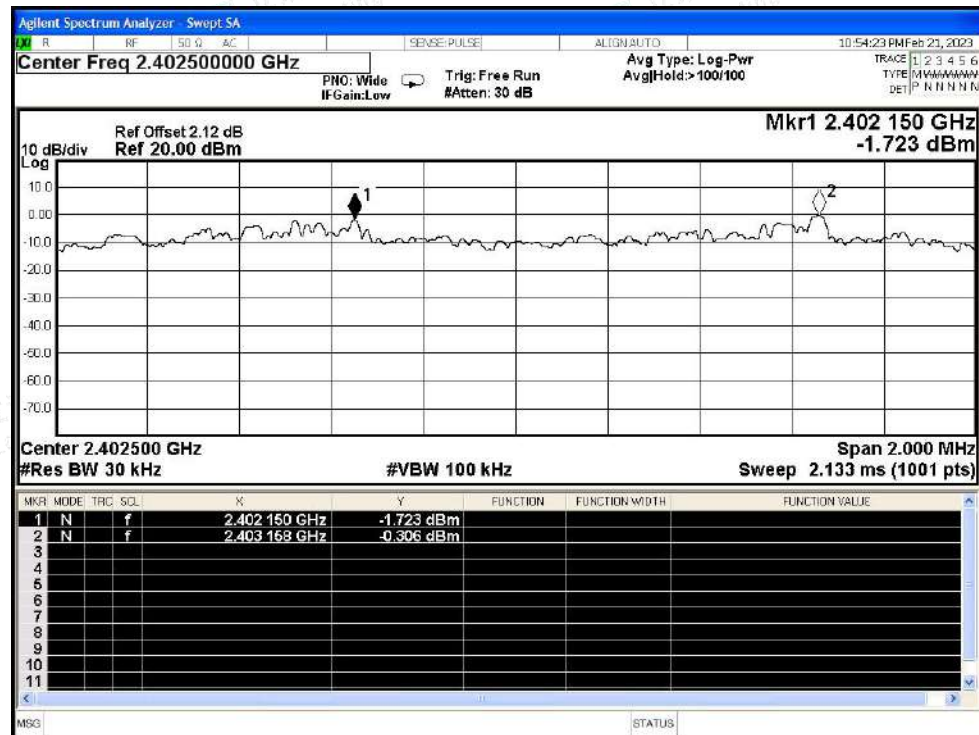


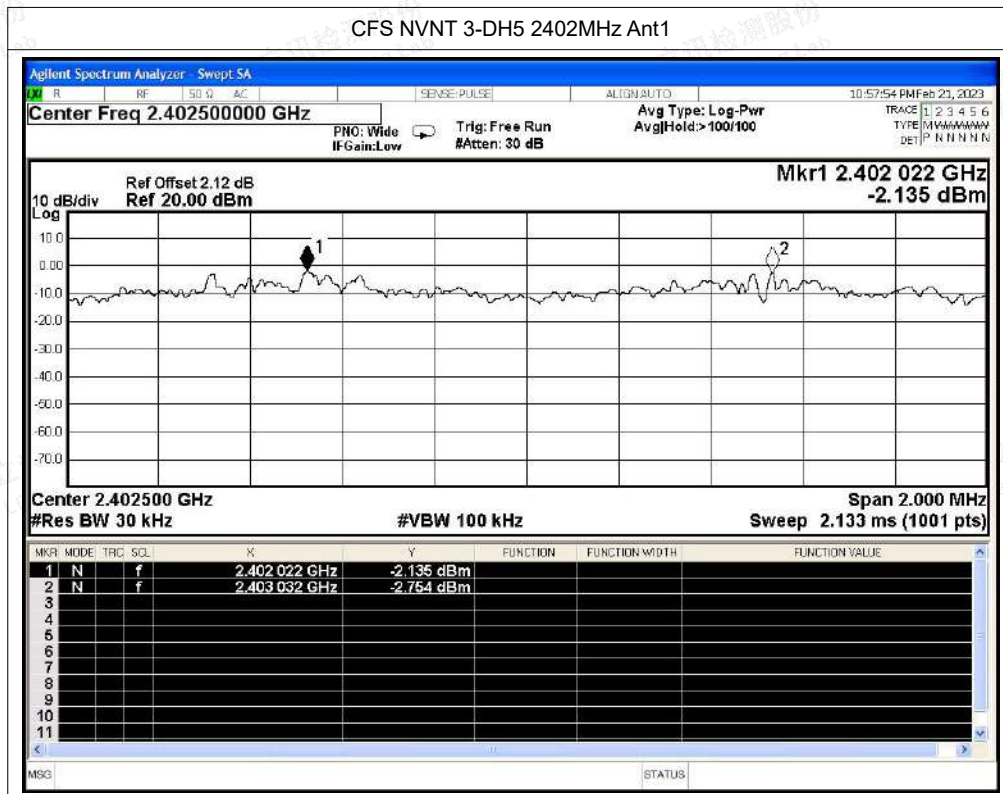
Test Graphs

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	2.882	299.728	104	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.88	279.36	97	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.887	265.604	92	31600	400	Pass

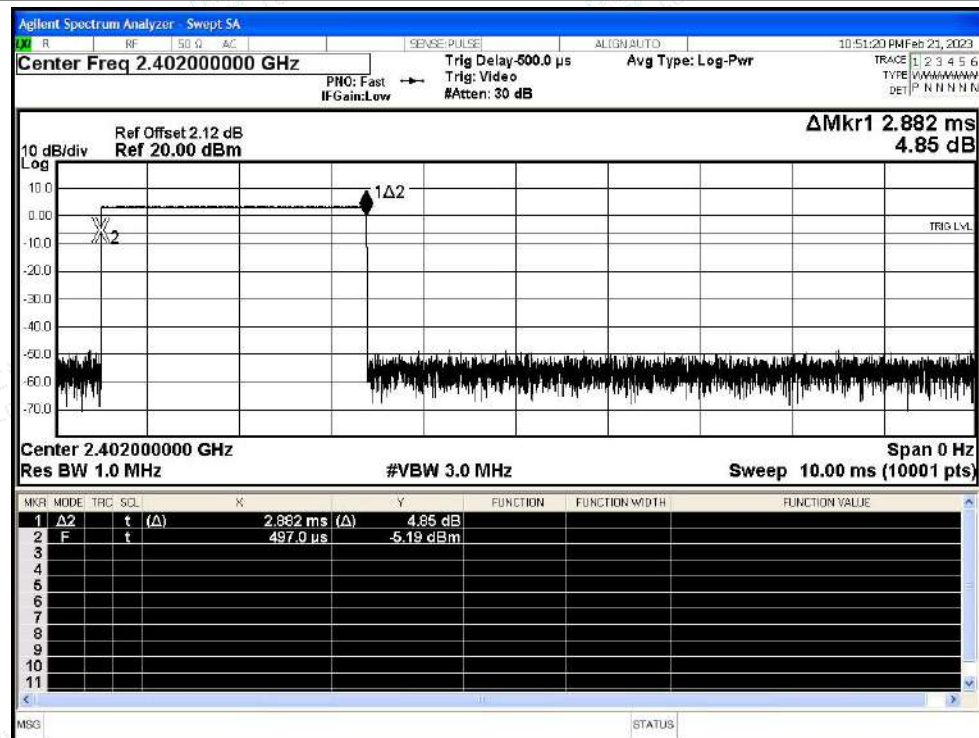


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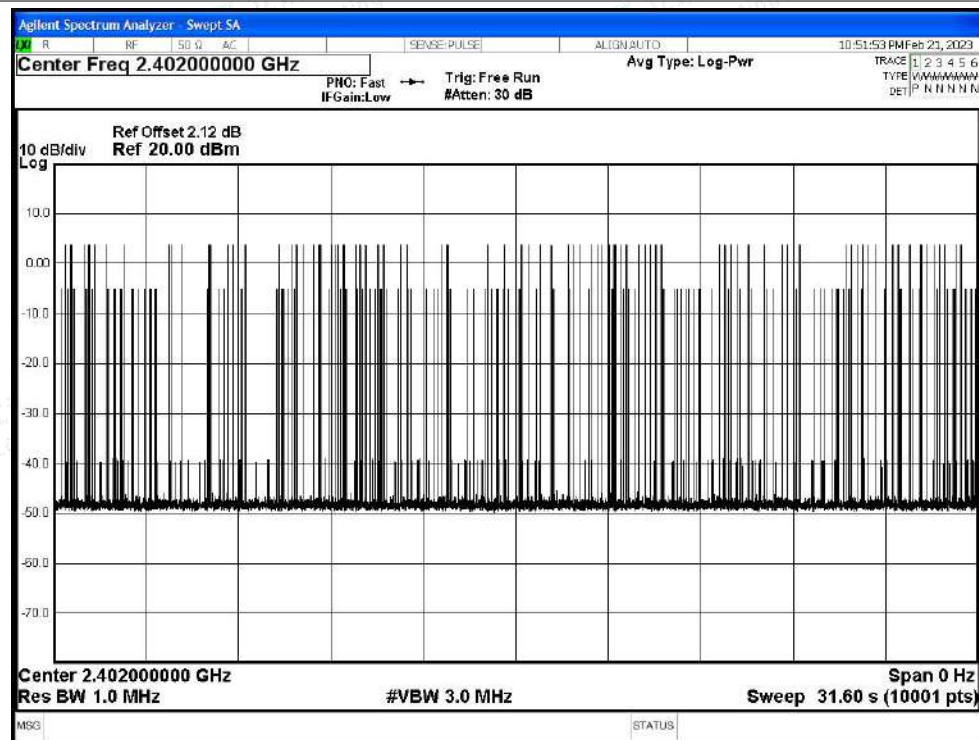


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

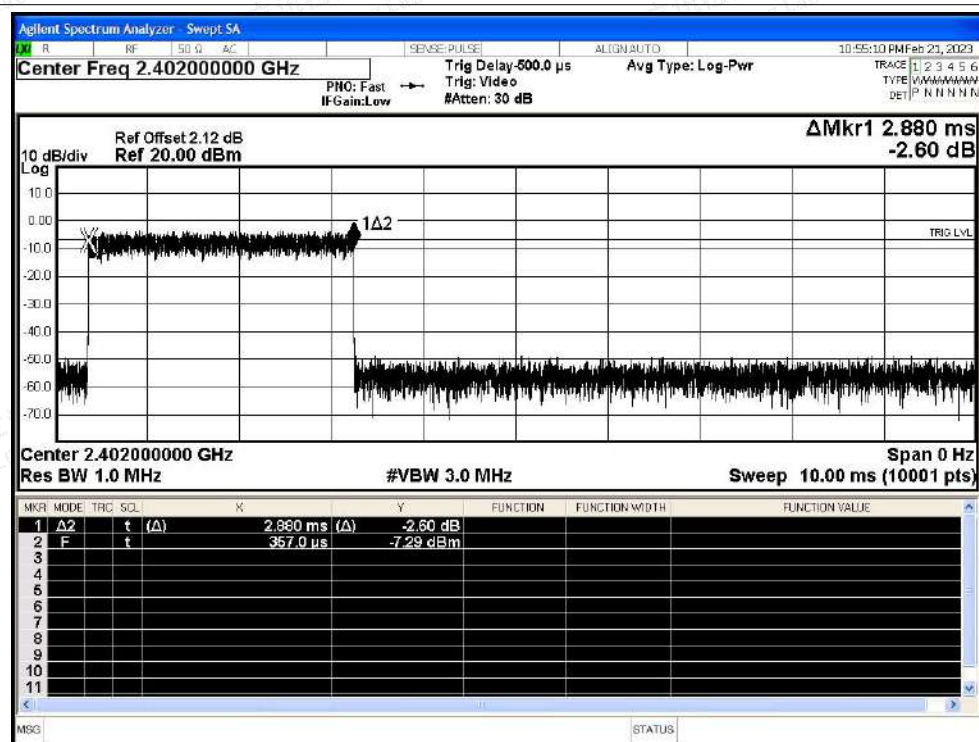


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

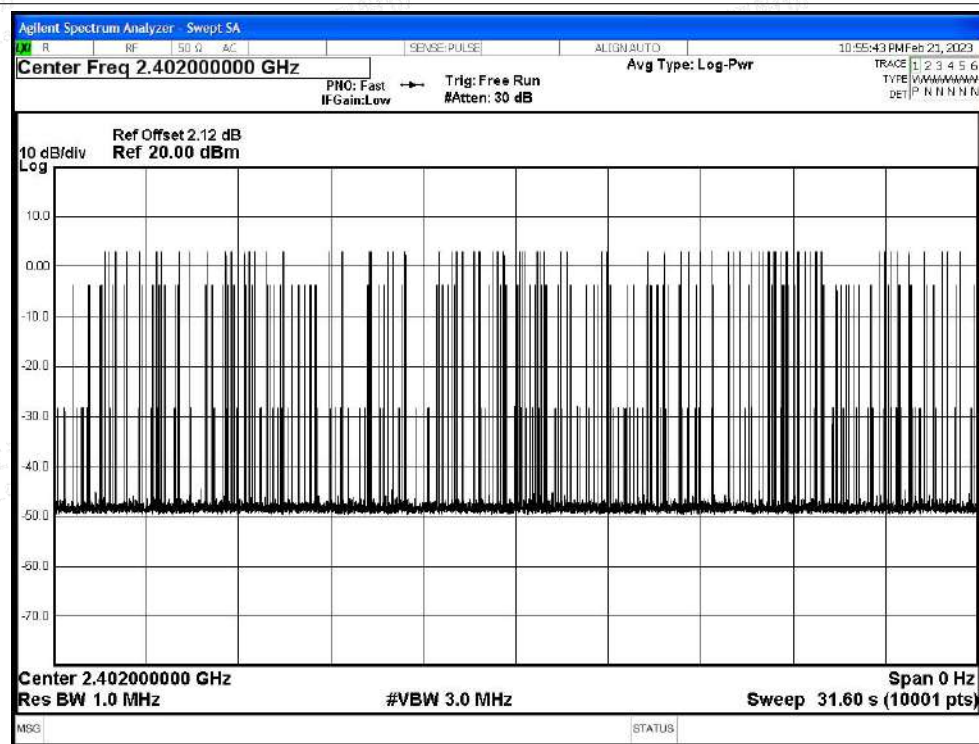




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

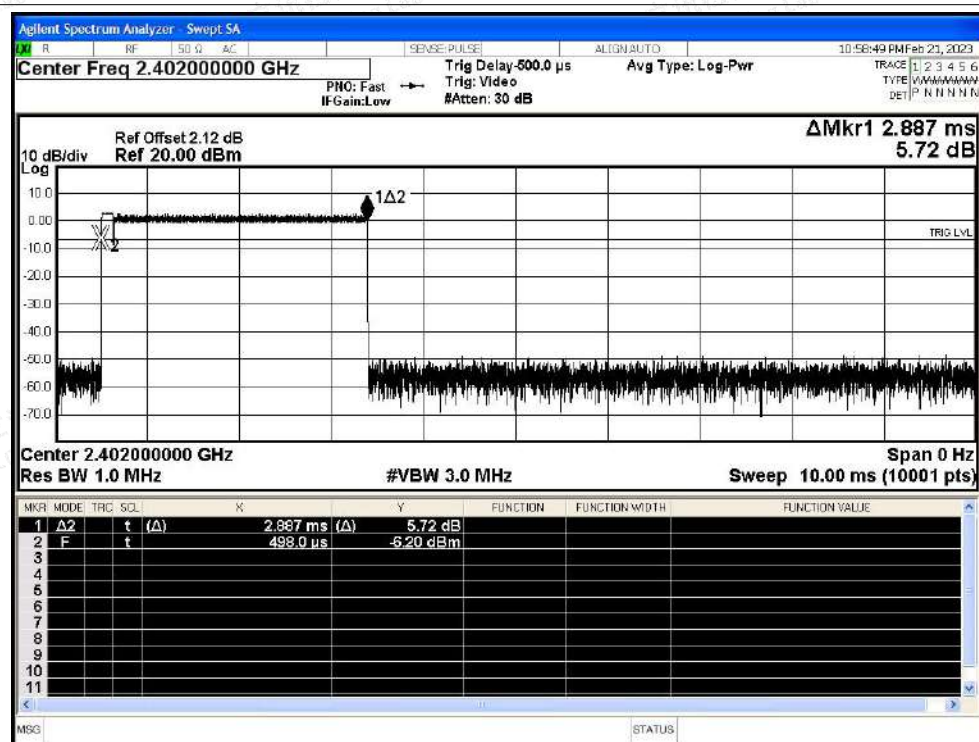


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

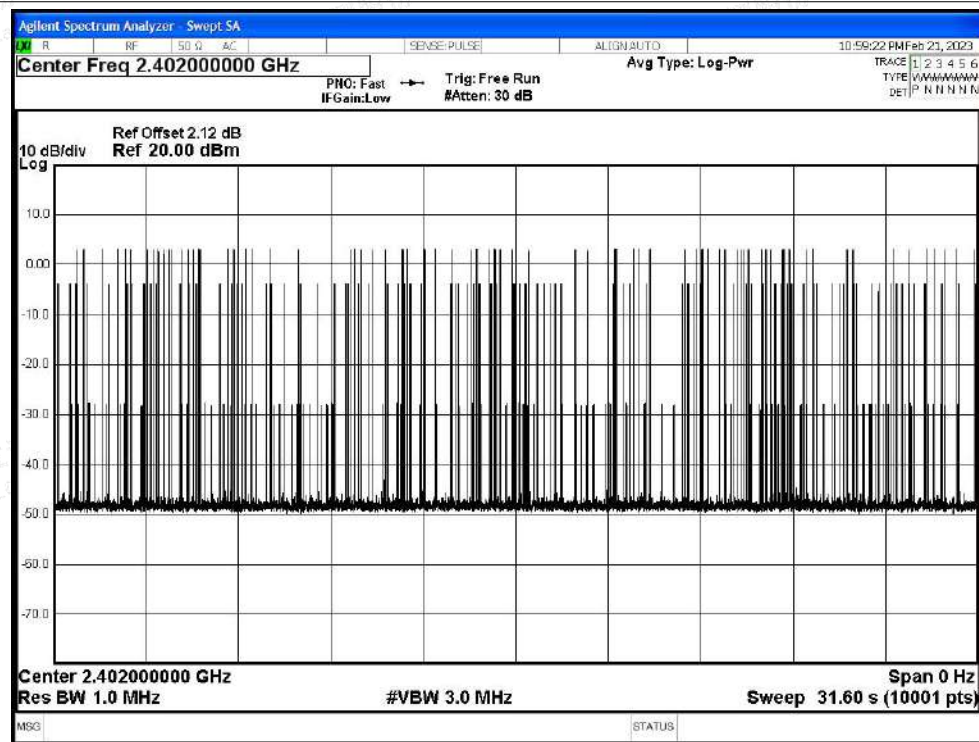




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



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

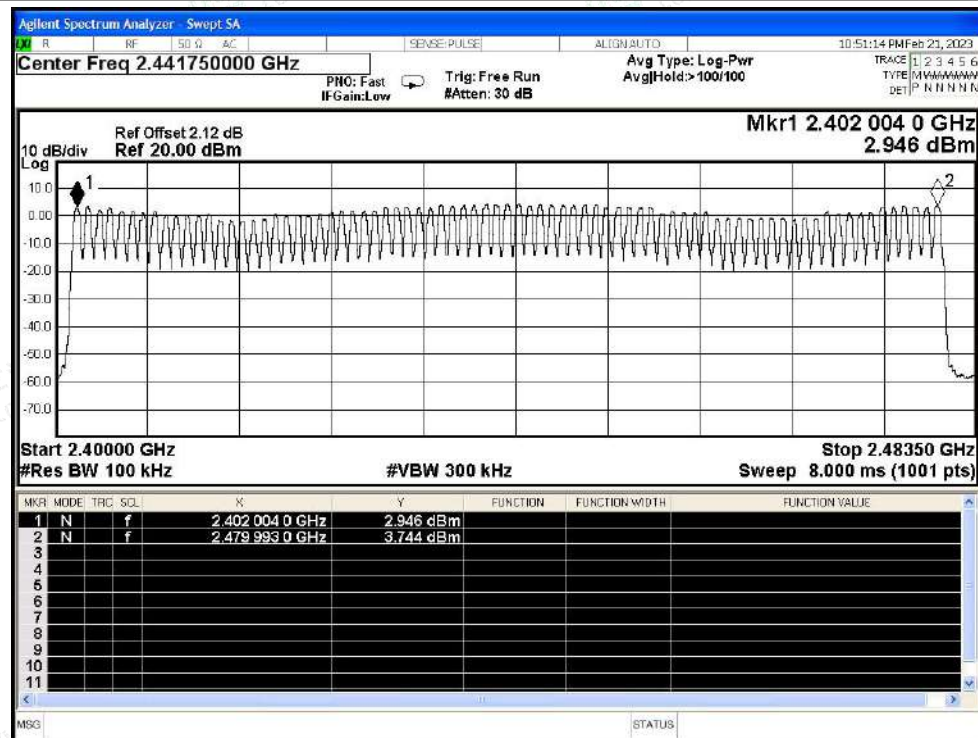


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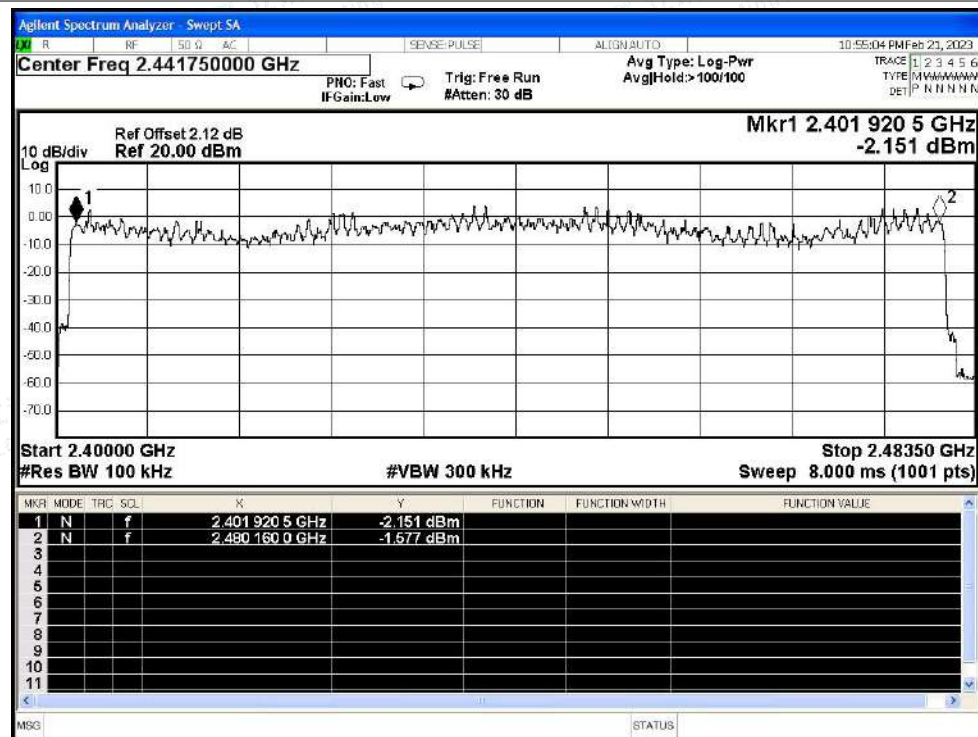


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



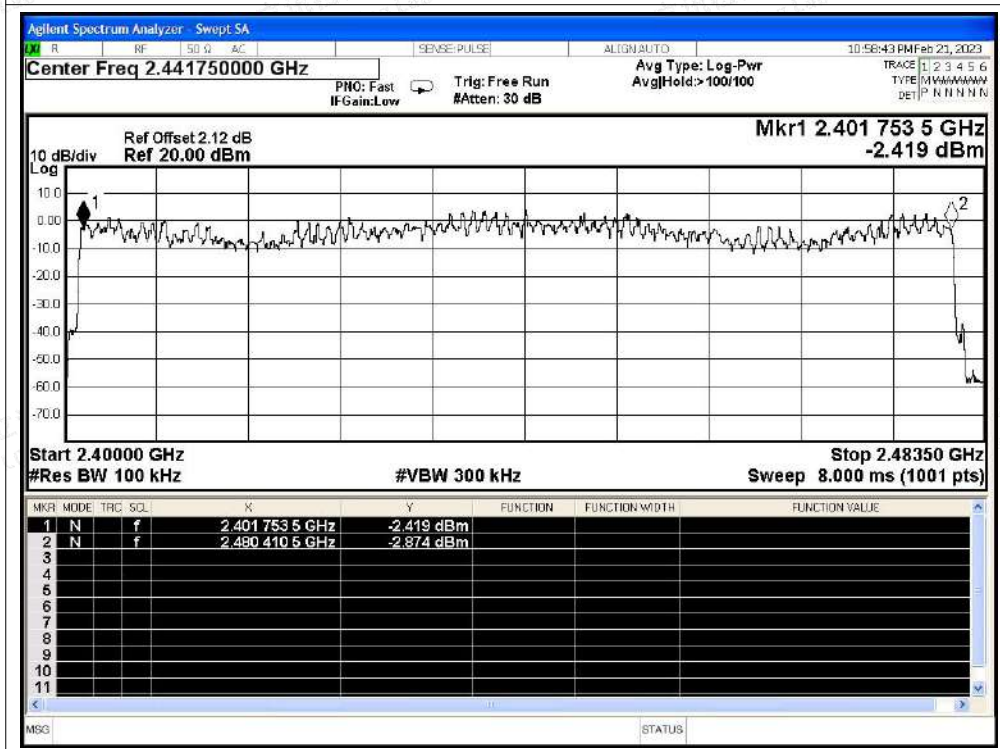
Hopping No. NVNT 2-DH5 2402MHz Ant1



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A.6 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-58.92	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-60.35	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-58.08	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-59.34	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-54.55	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-59.95	-20	Pass

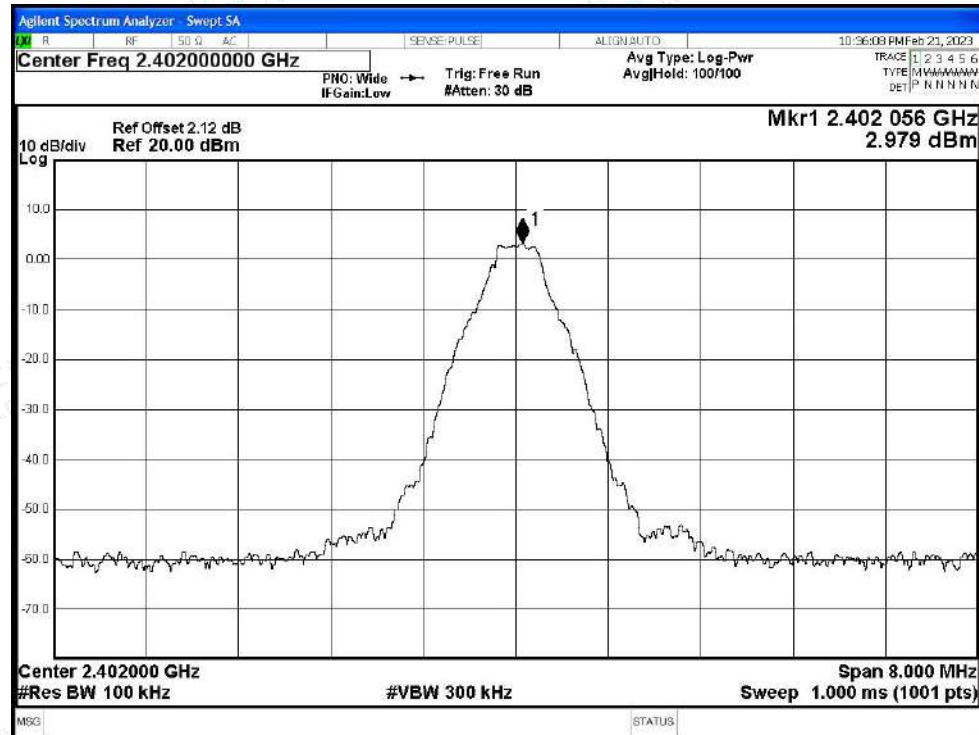


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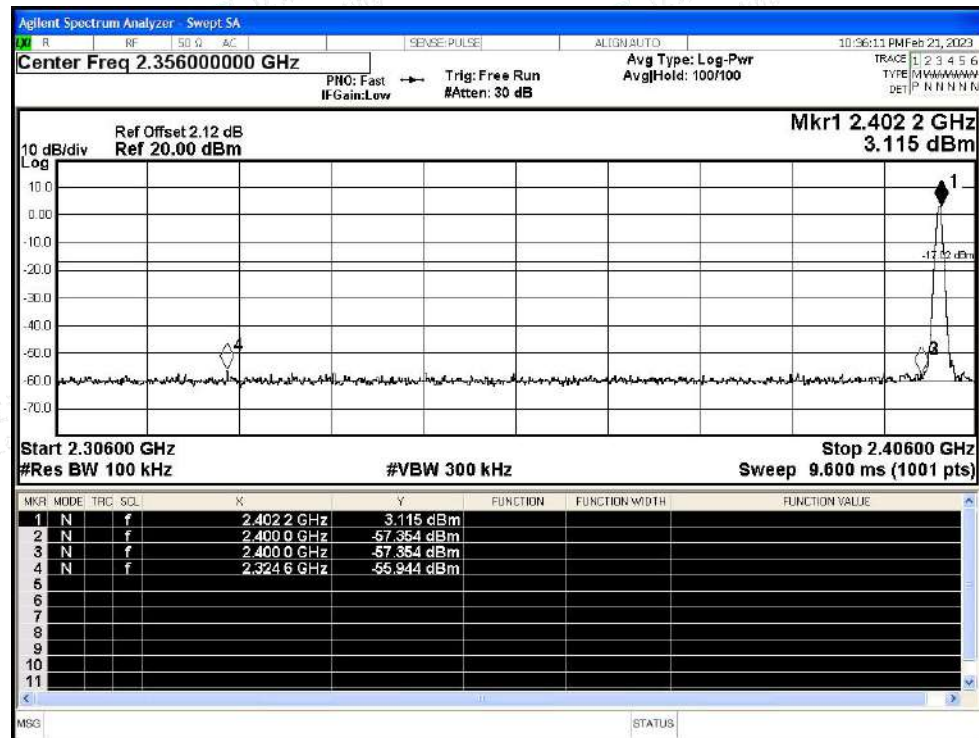


Test Graphs

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

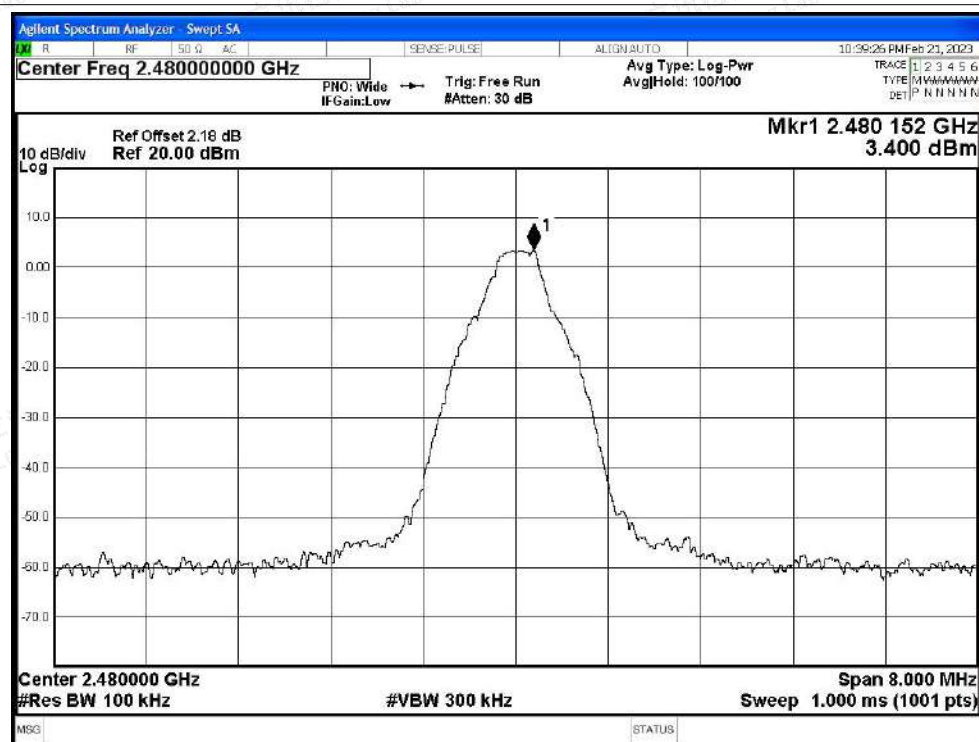


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

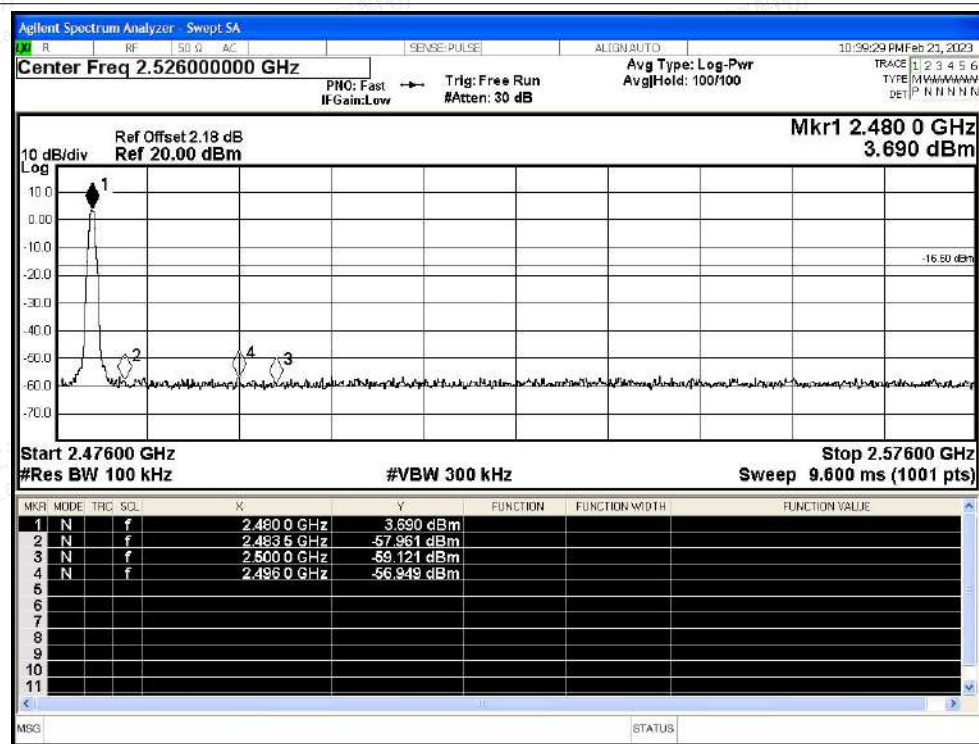




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

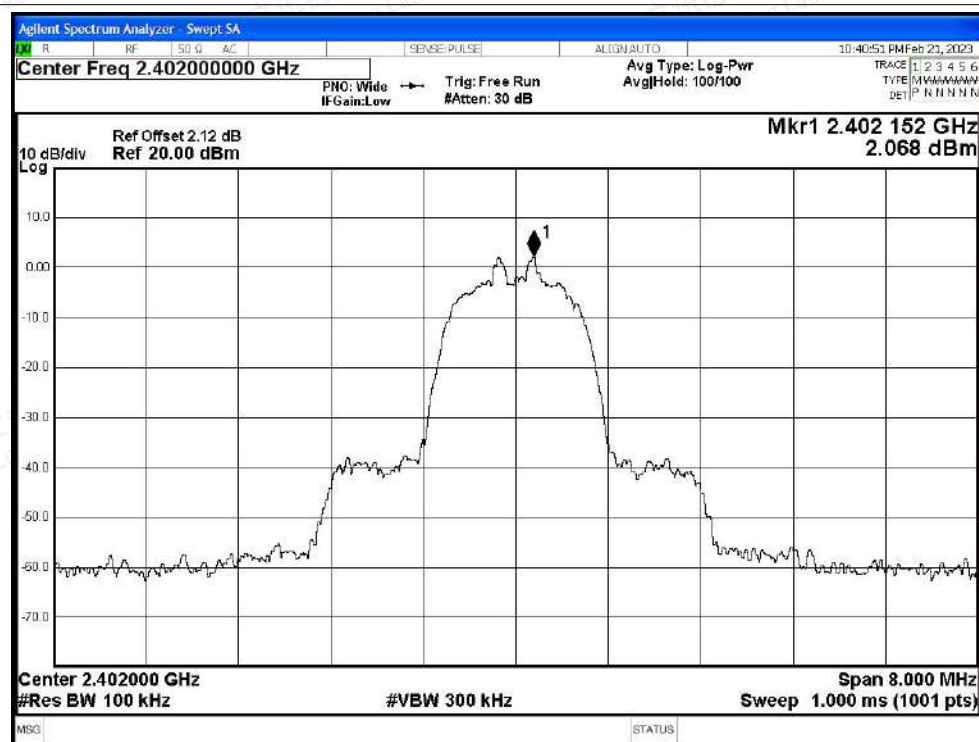


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

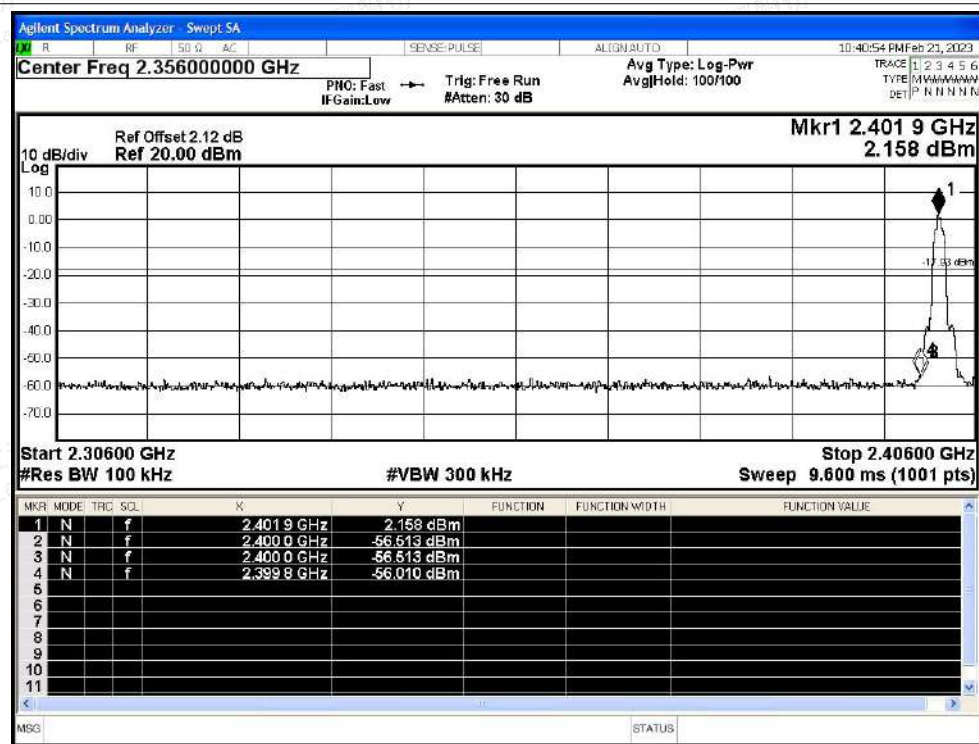




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

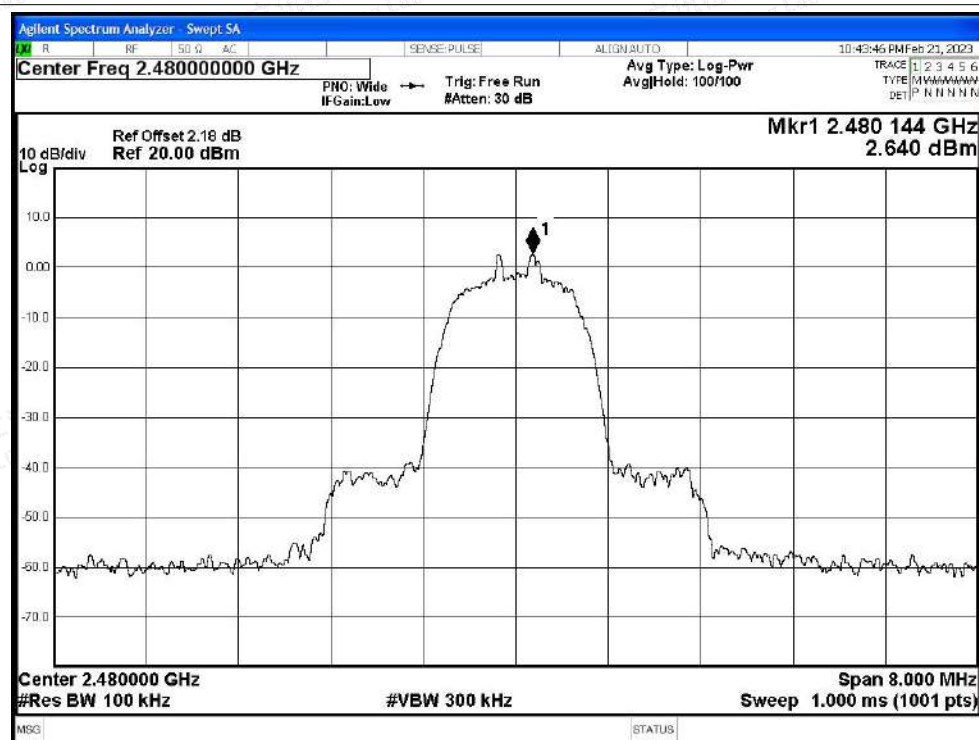


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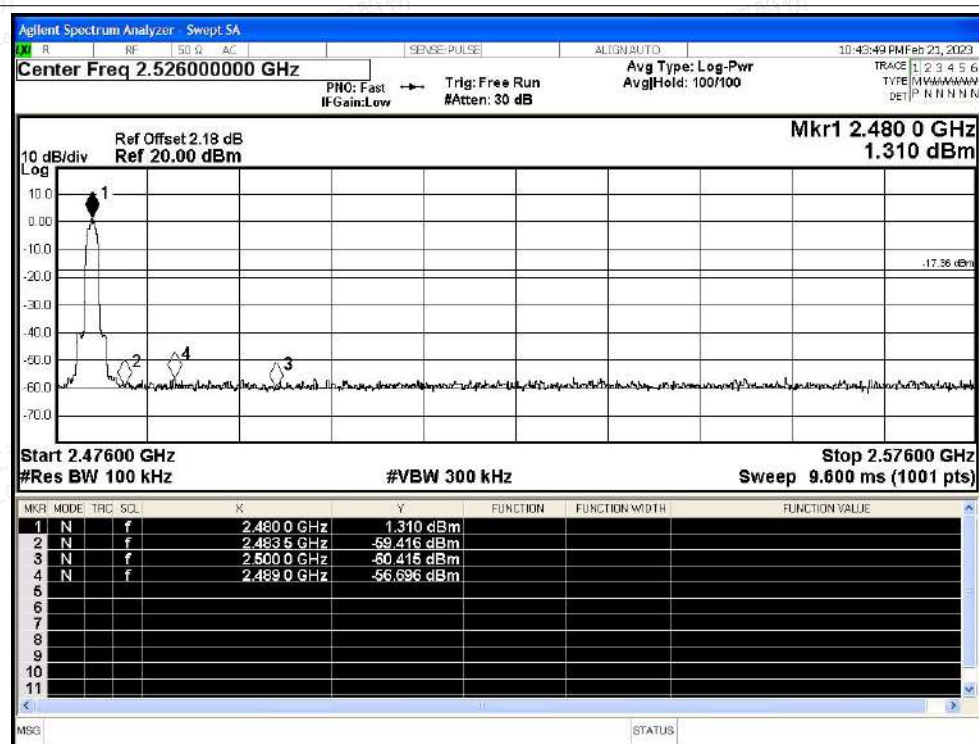




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

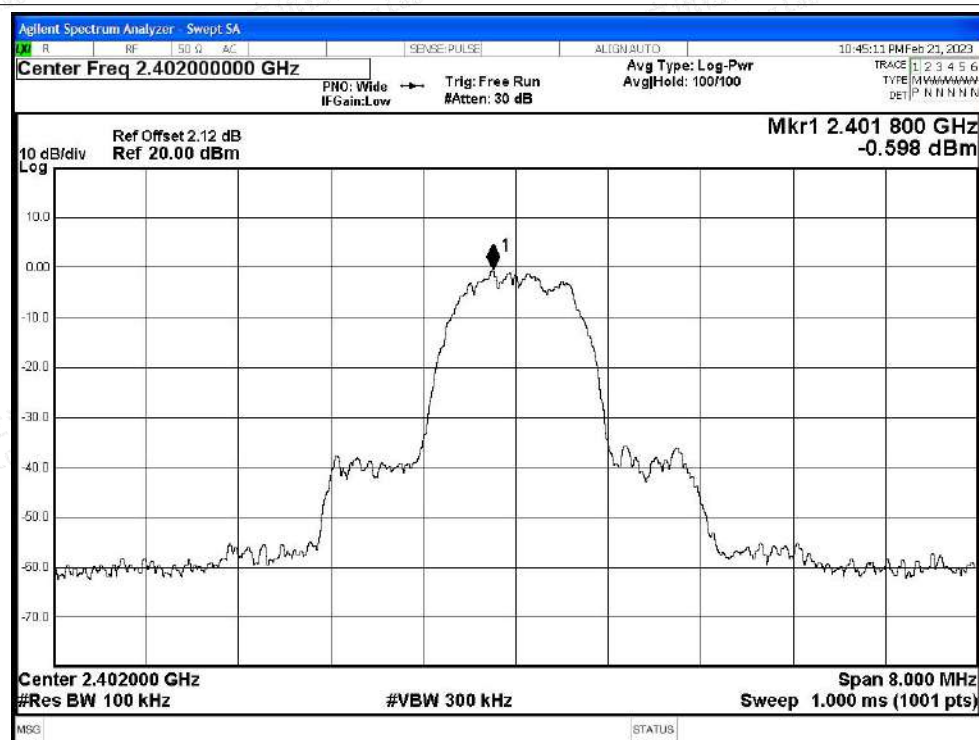


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

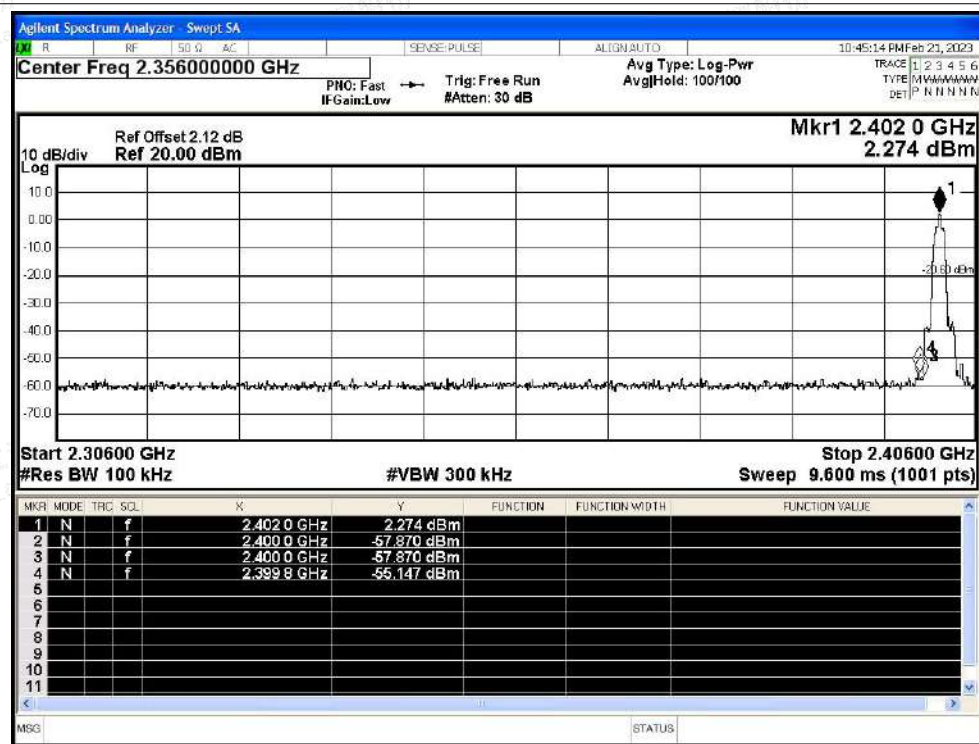




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

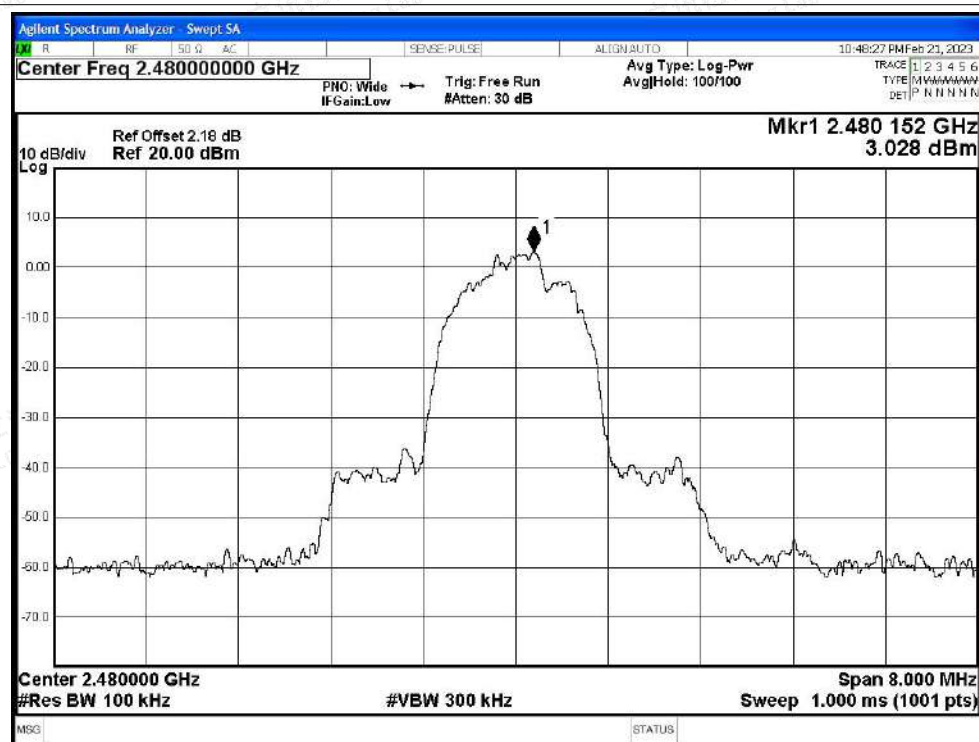


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

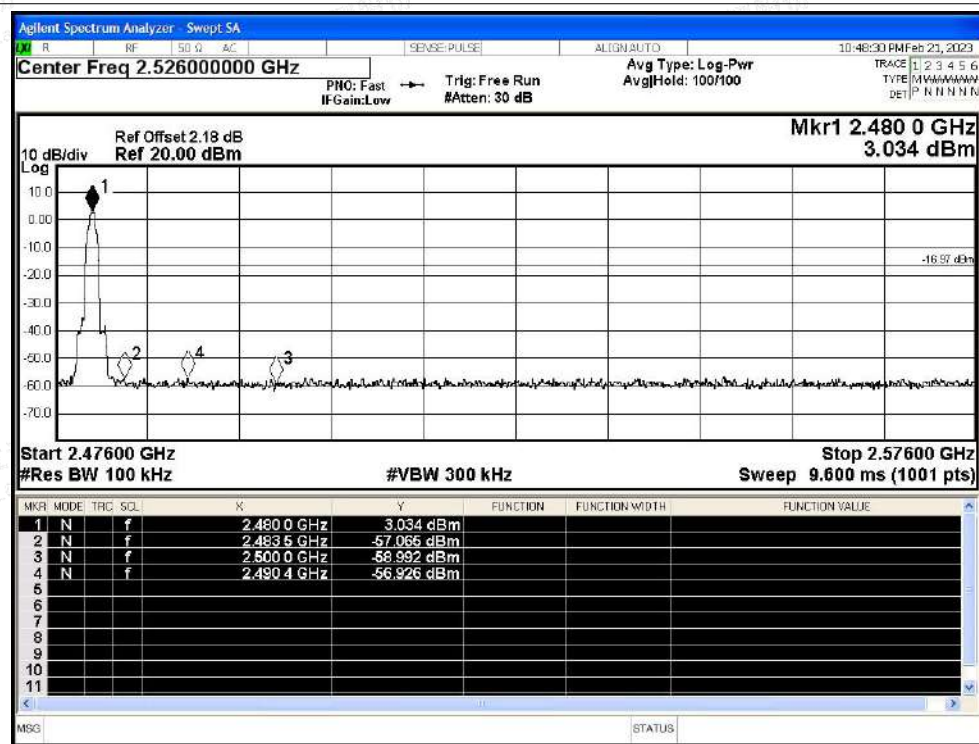




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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	-58.59	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-59.39	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-56.26	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-58.83	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-57.75	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-56.35	-20	Pass

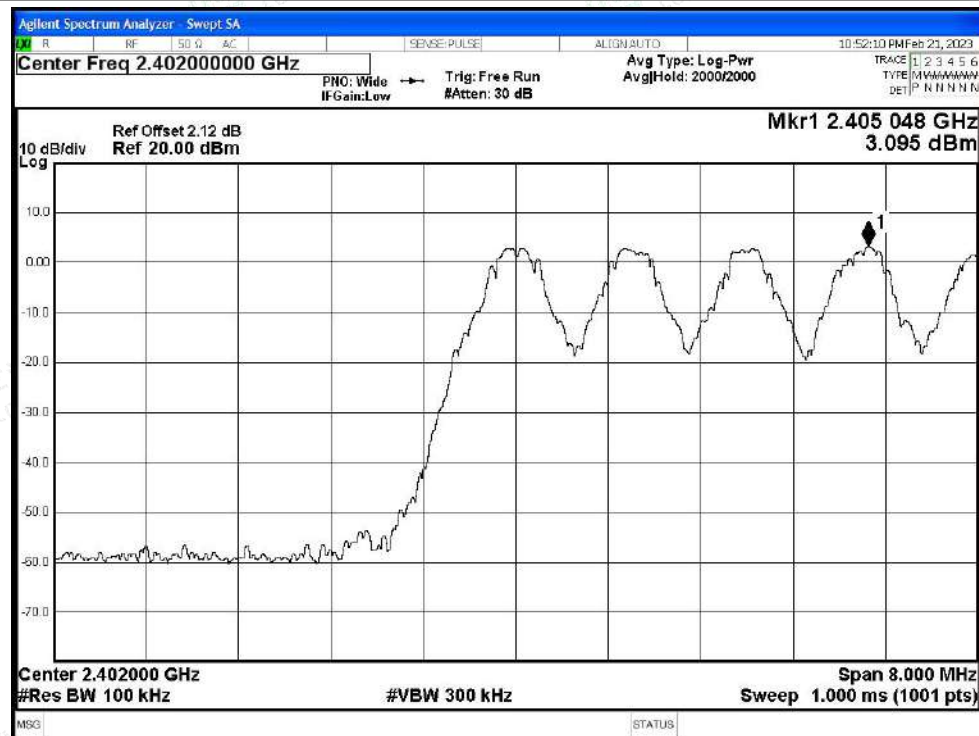


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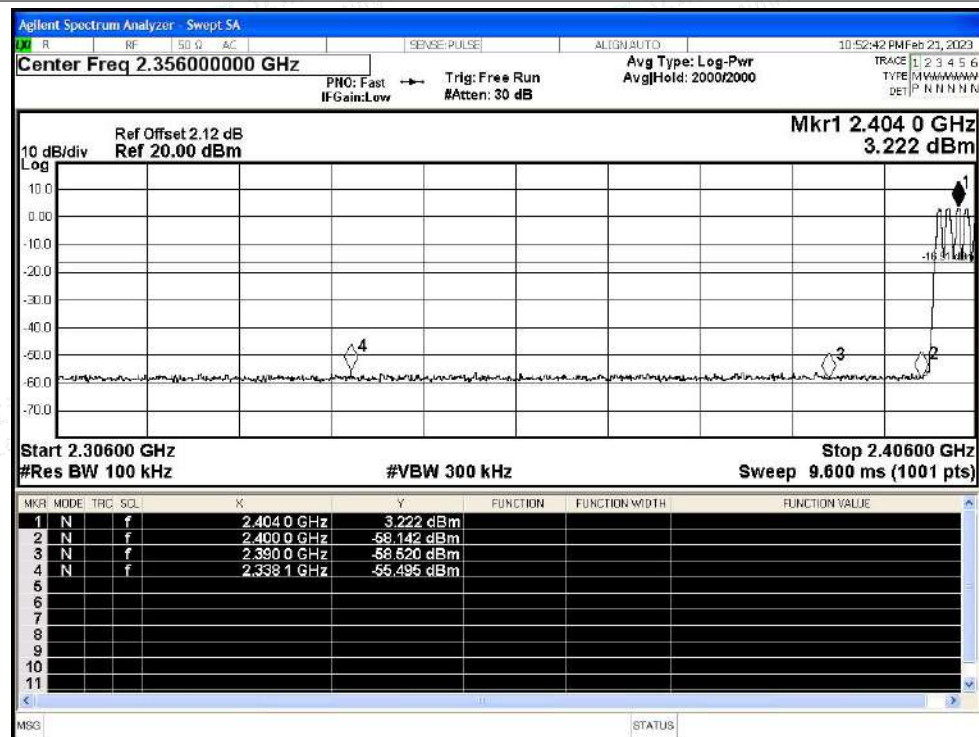


Test Graphs

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

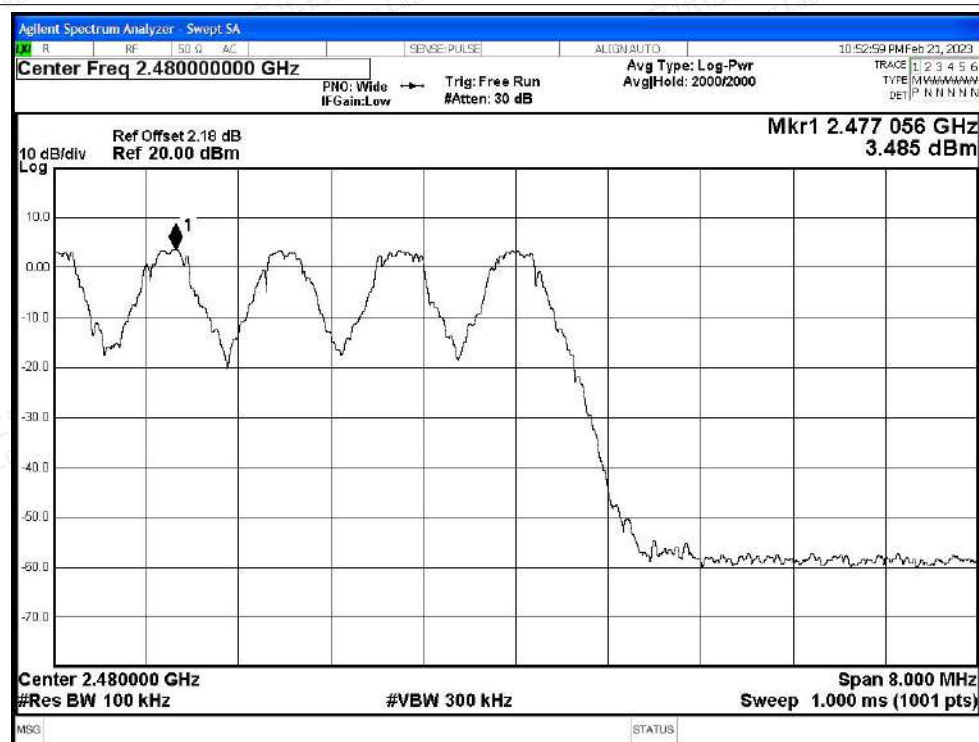


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

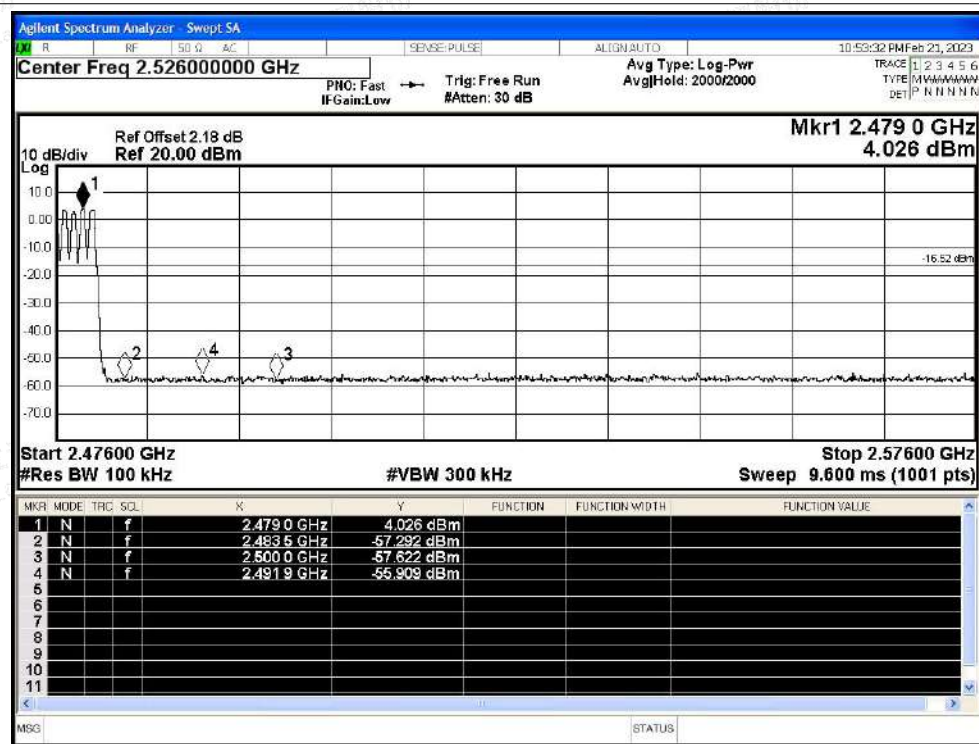




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



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

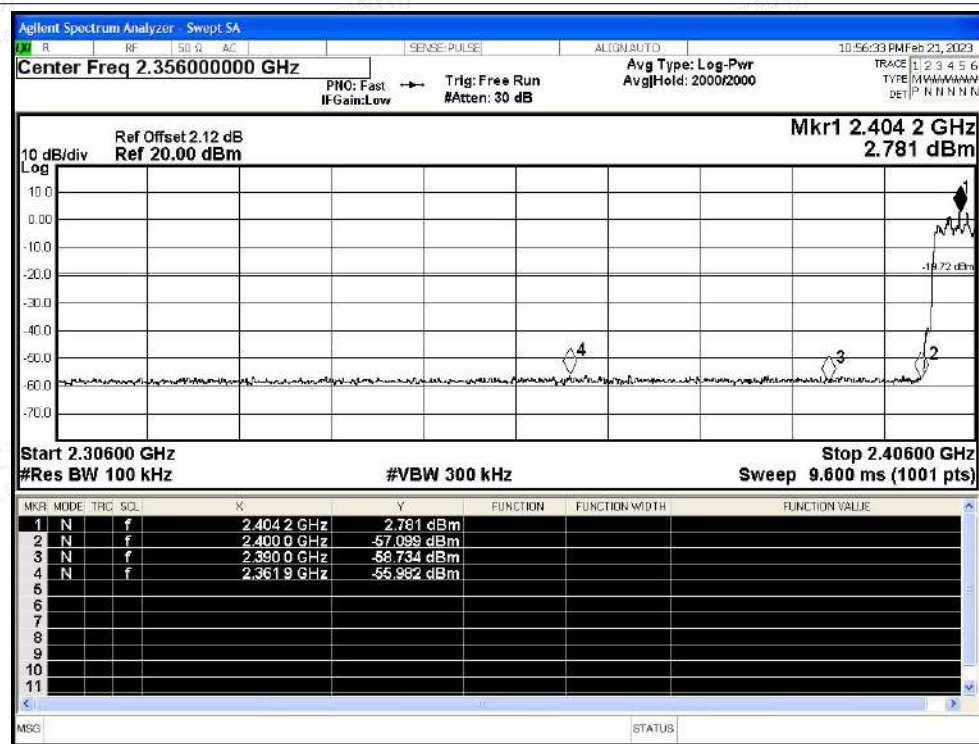




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

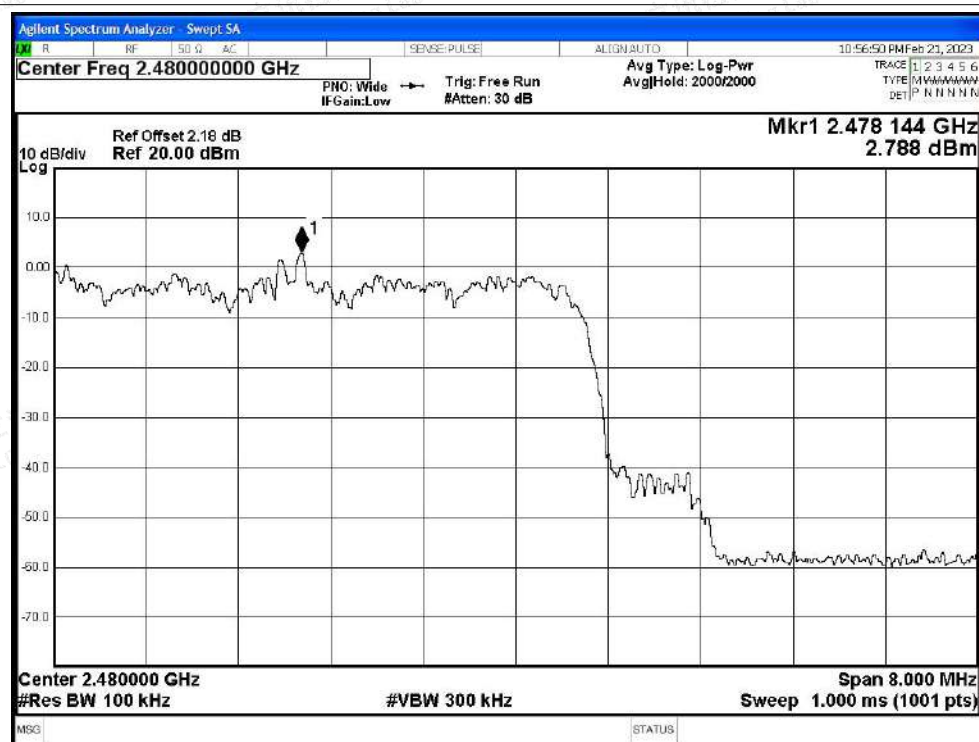


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

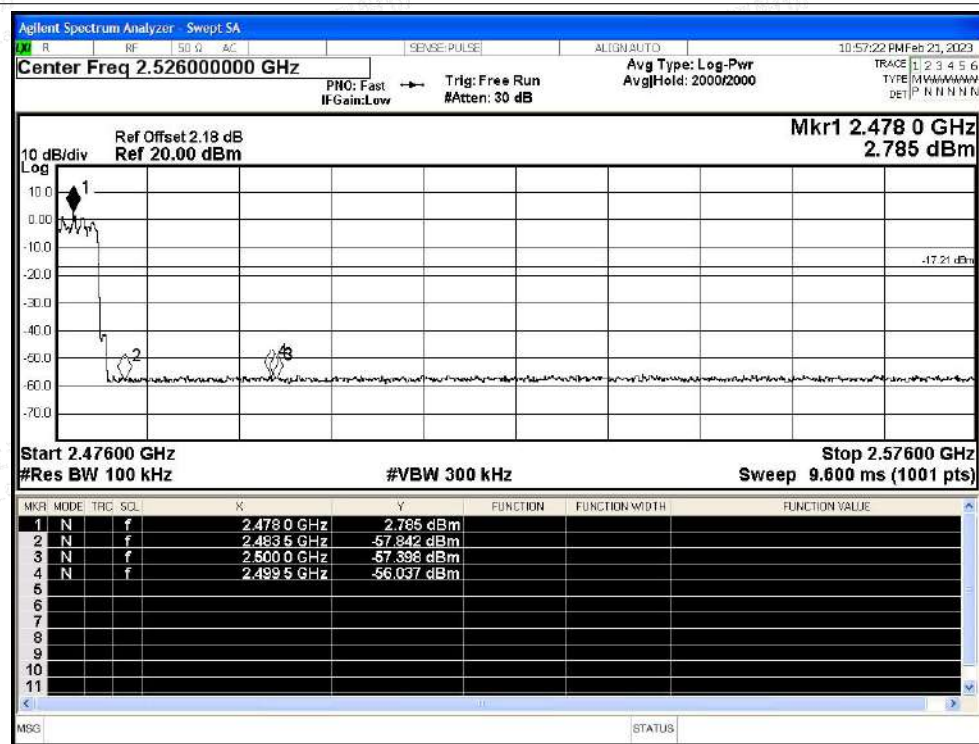




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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

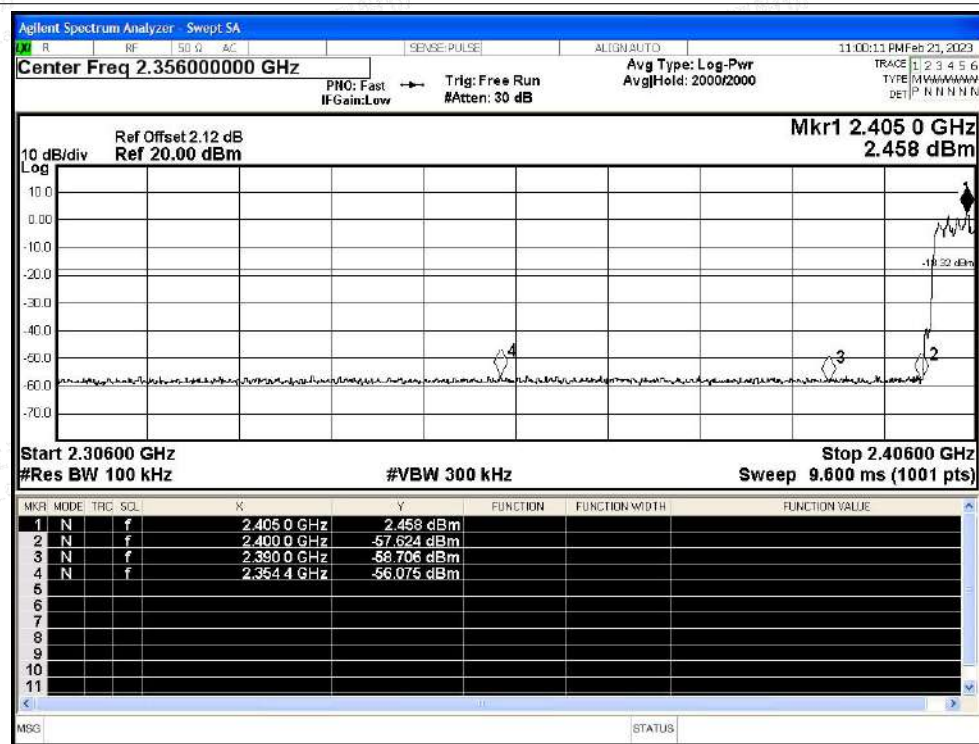




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



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

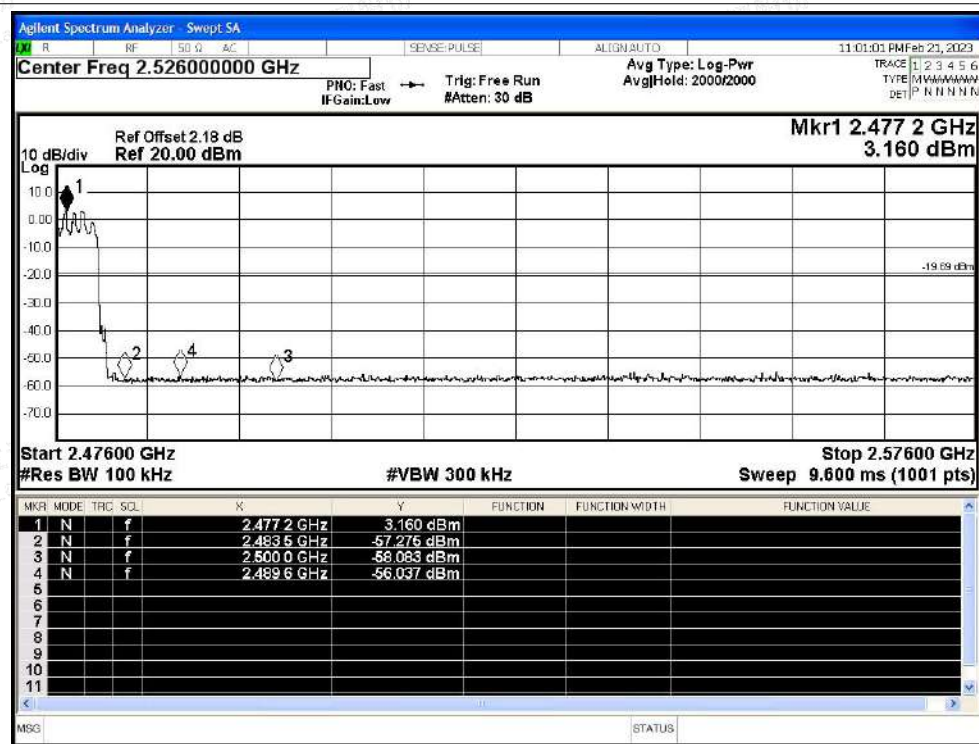




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



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	-57.64	-20	Pass
NVNT	1-DH5	2441	Ant1	-58.59	-20	Pass
NVNT	1-DH5	2480	Ant1	-58.9	-20	Pass
NVNT	2-DH5	2402	Ant1	-58.12	-20	Pass
NVNT	2-DH5	2441	Ant1	-58.23	-20	Pass
NVNT	2-DH5	2480	Ant1	-58.09	-20	Pass
NVNT	3-DH5	2402	Ant1	-58.45	-20	Pass
NVNT	3-DH5	2441	Ant1	-58.68	-20	Pass
NVNT	3-DH5	2480	Ant1	-58.37	-20	Pass

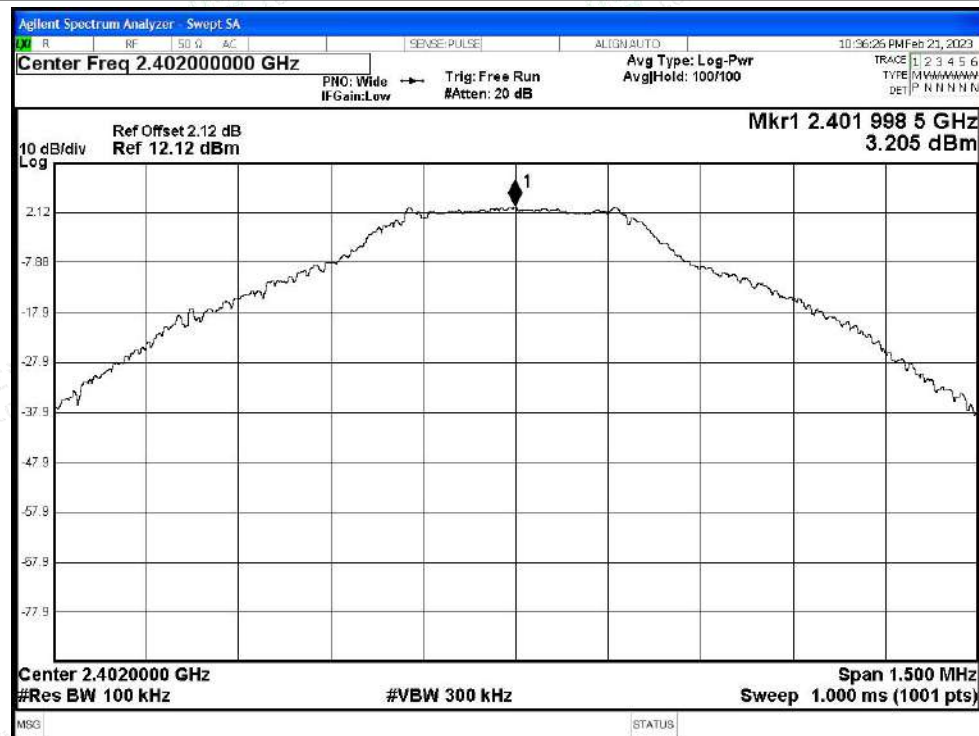


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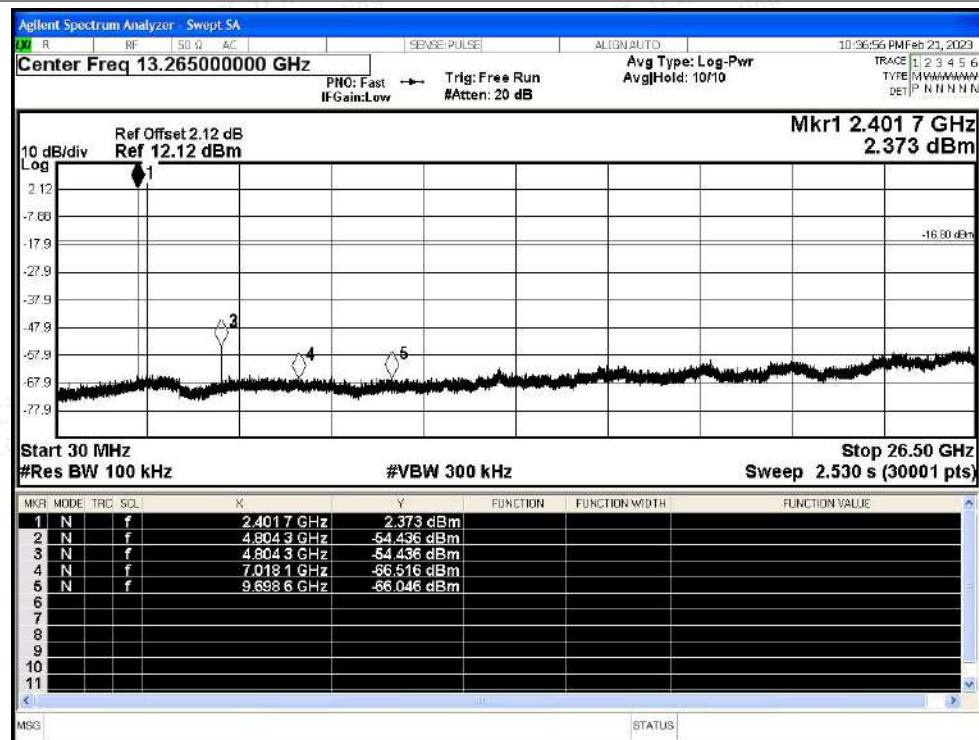


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

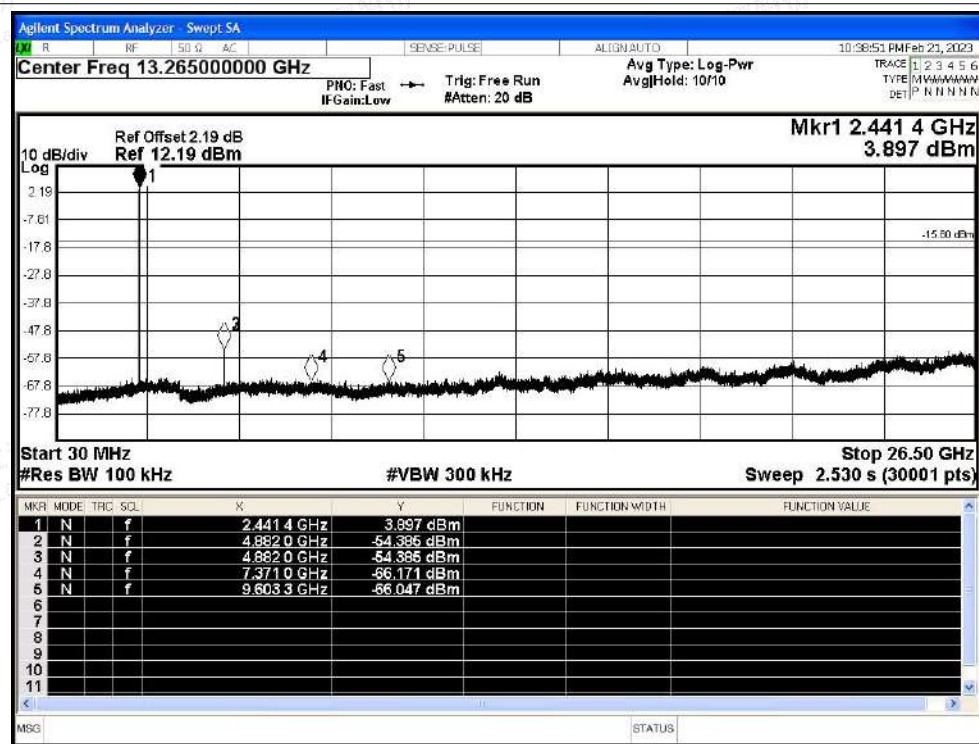




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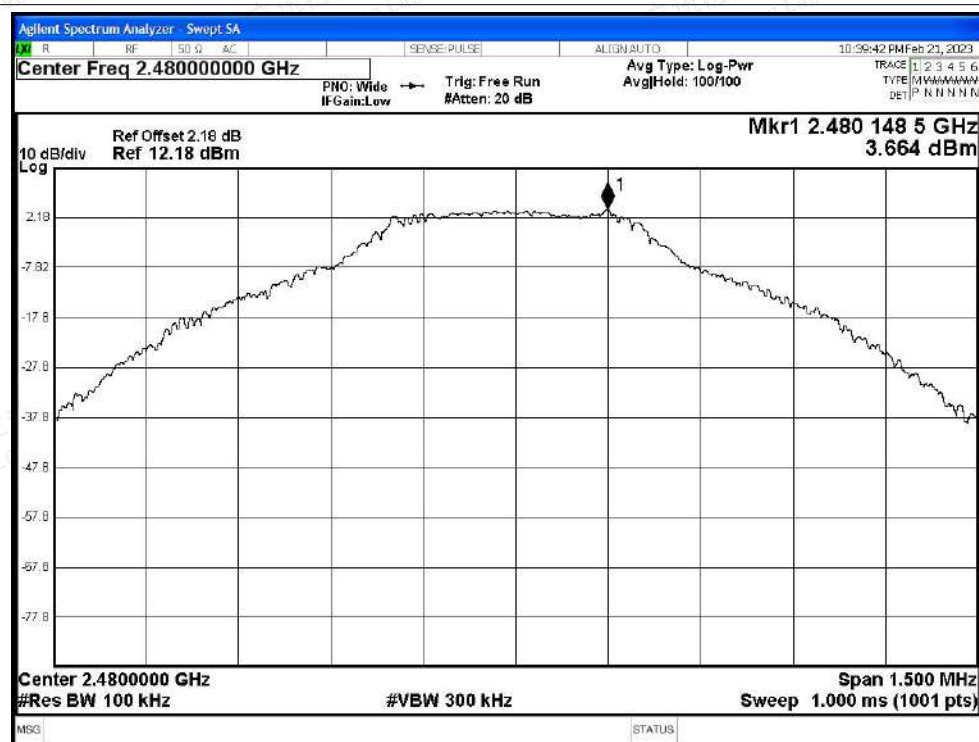


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

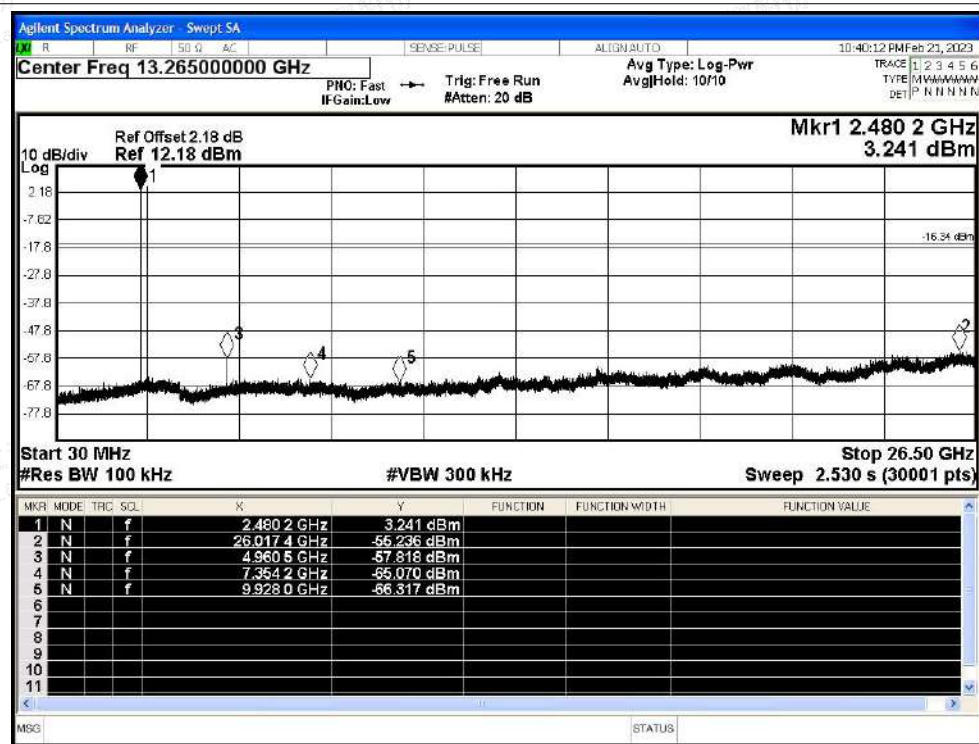




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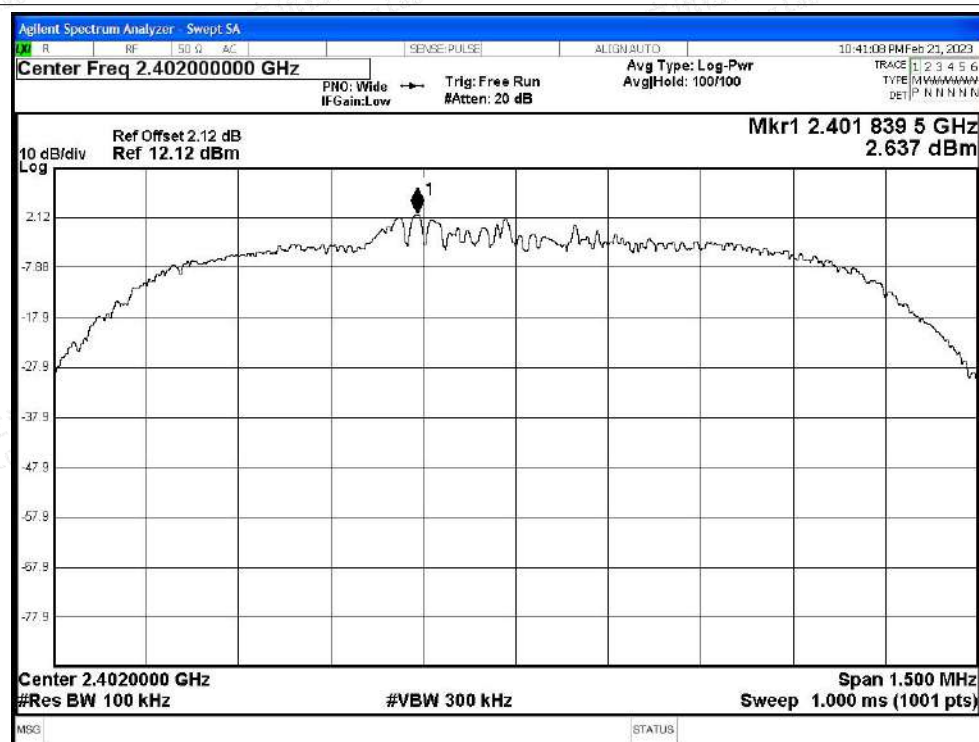


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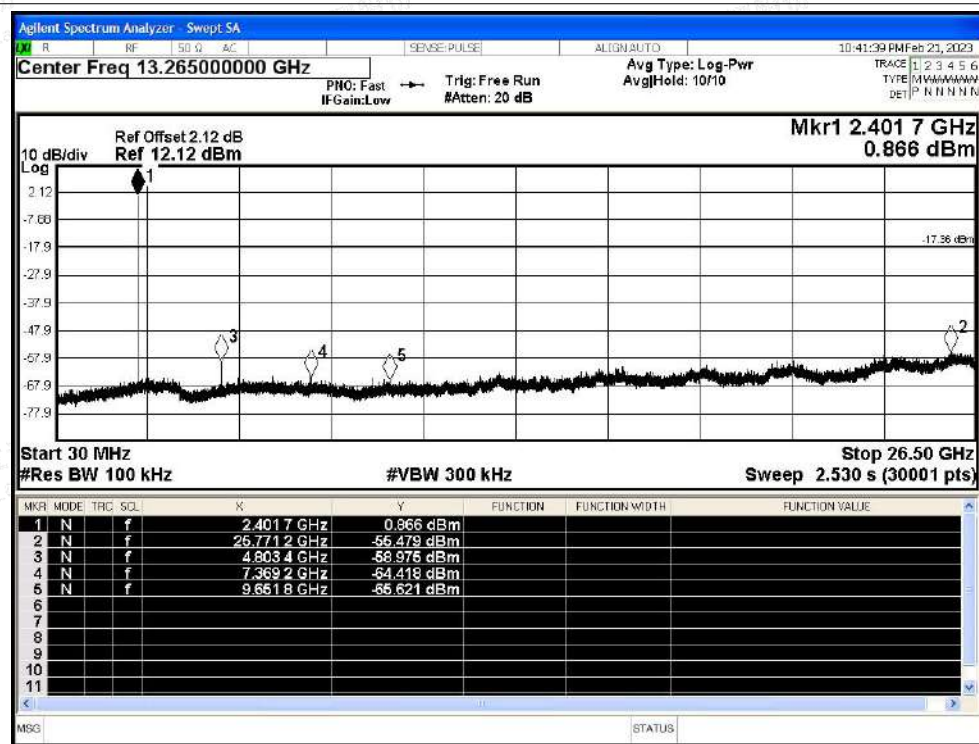




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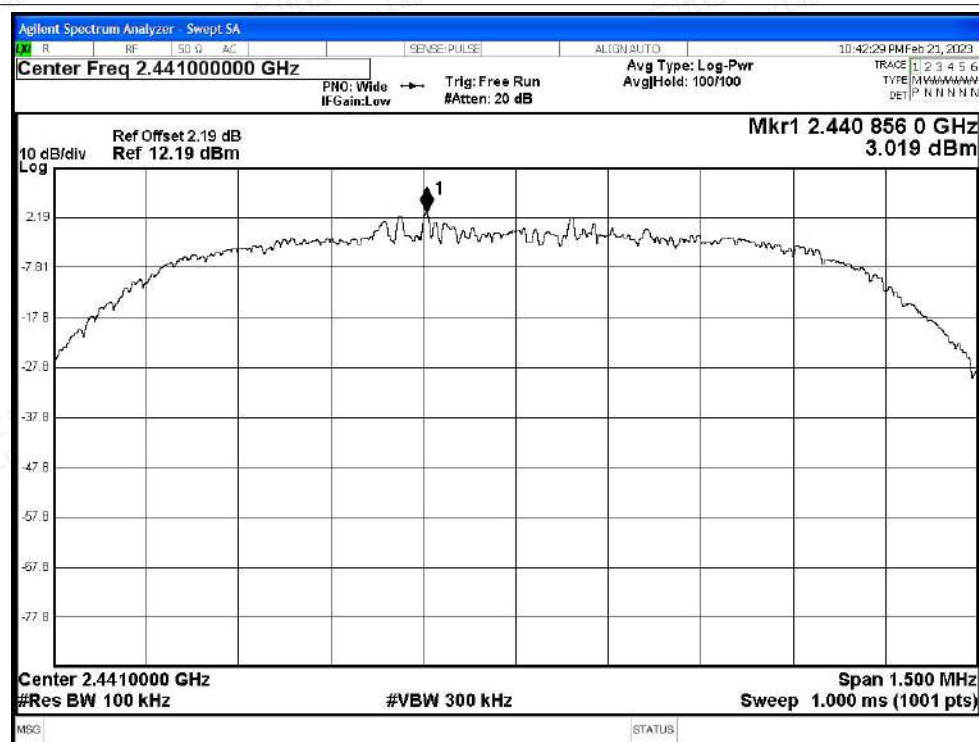


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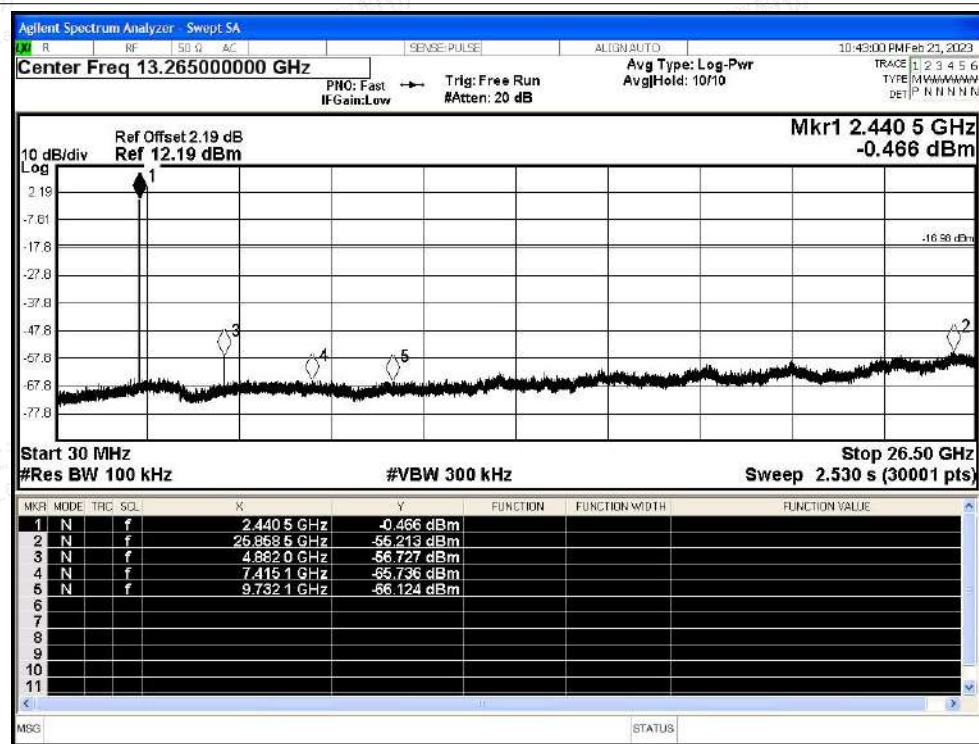




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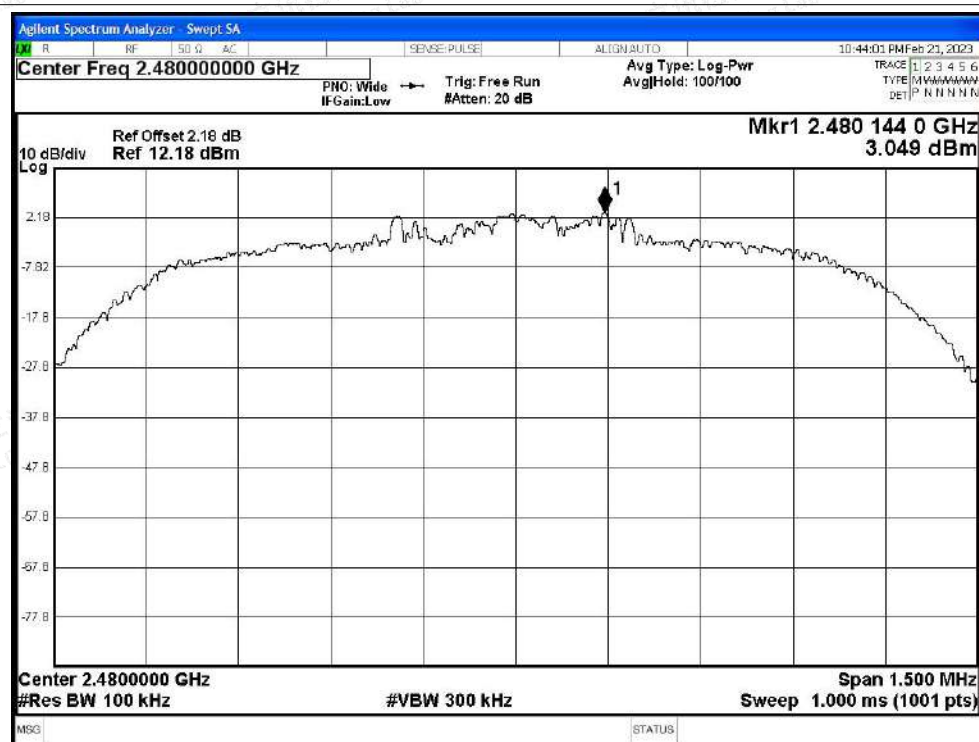


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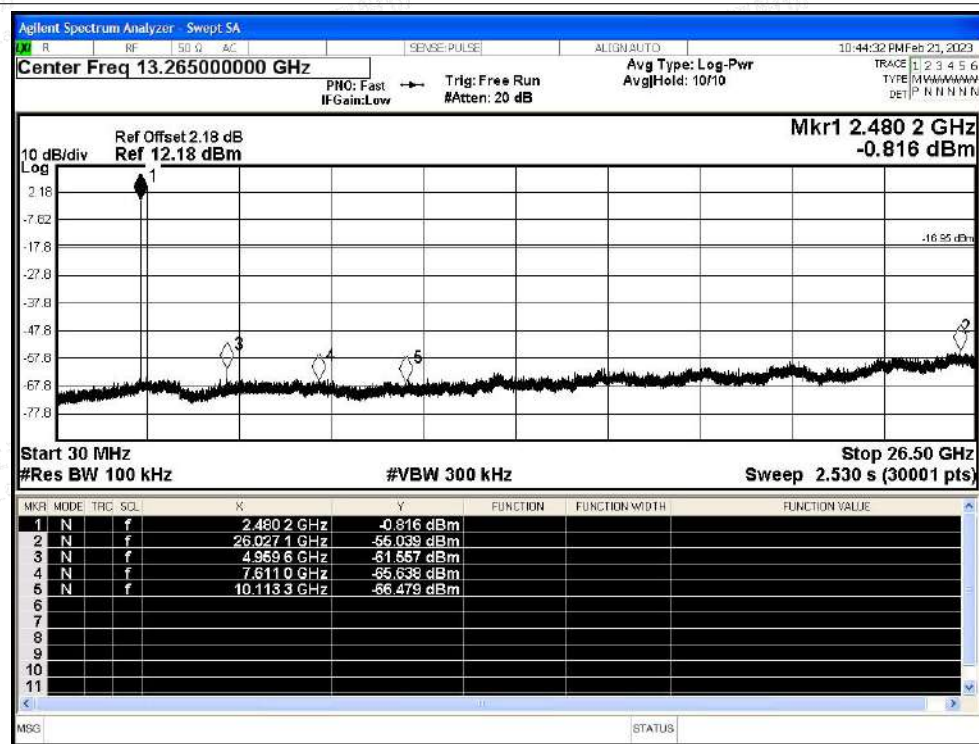




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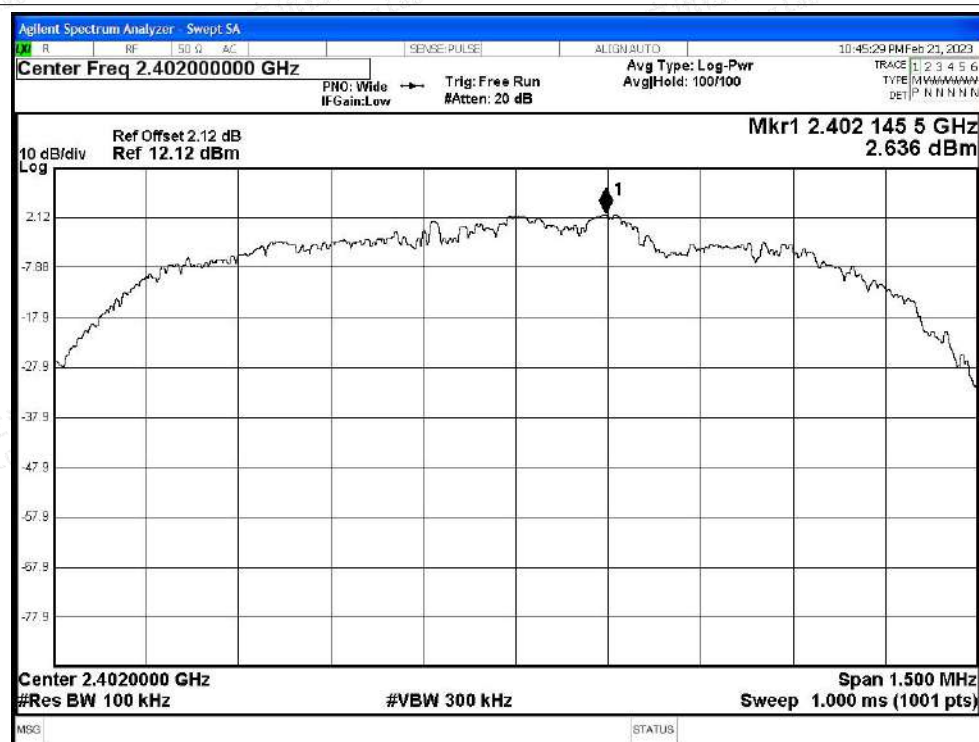


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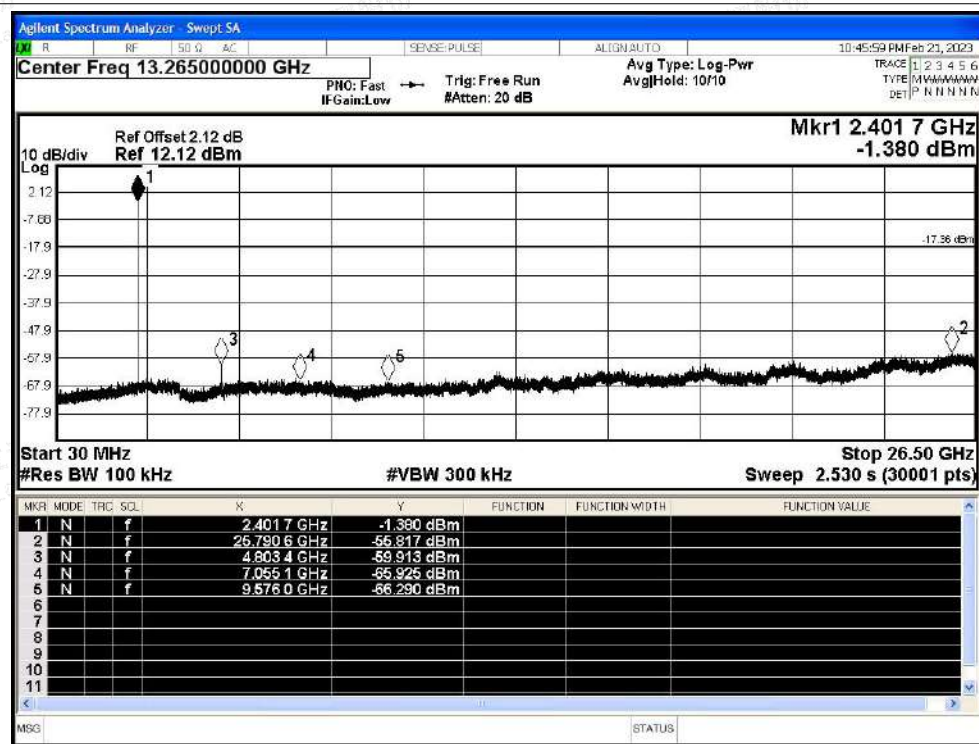




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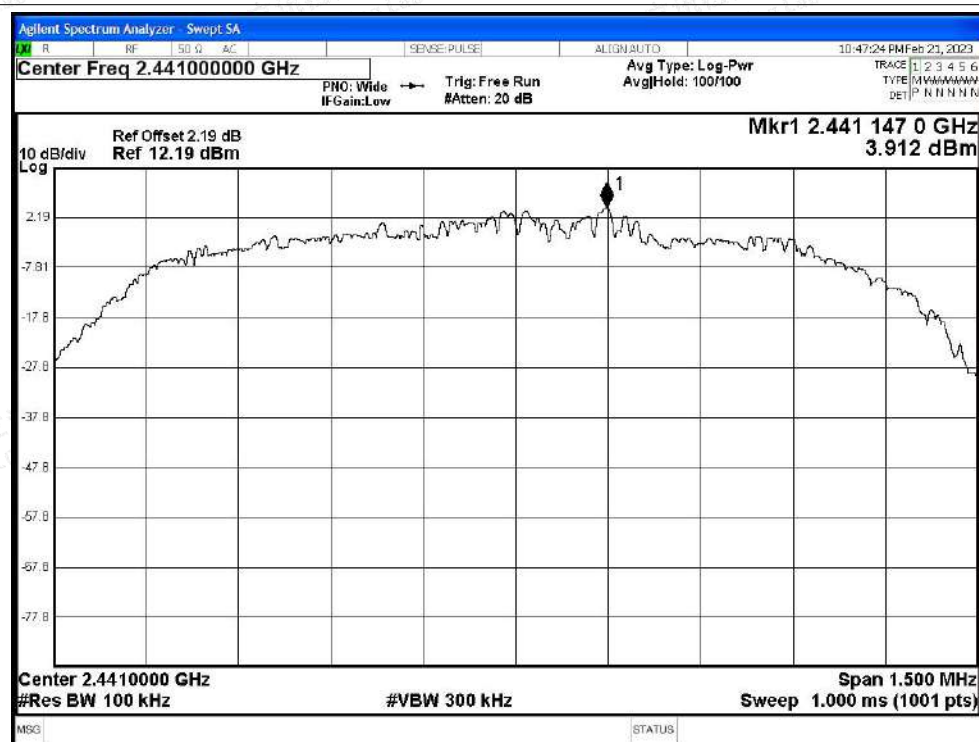


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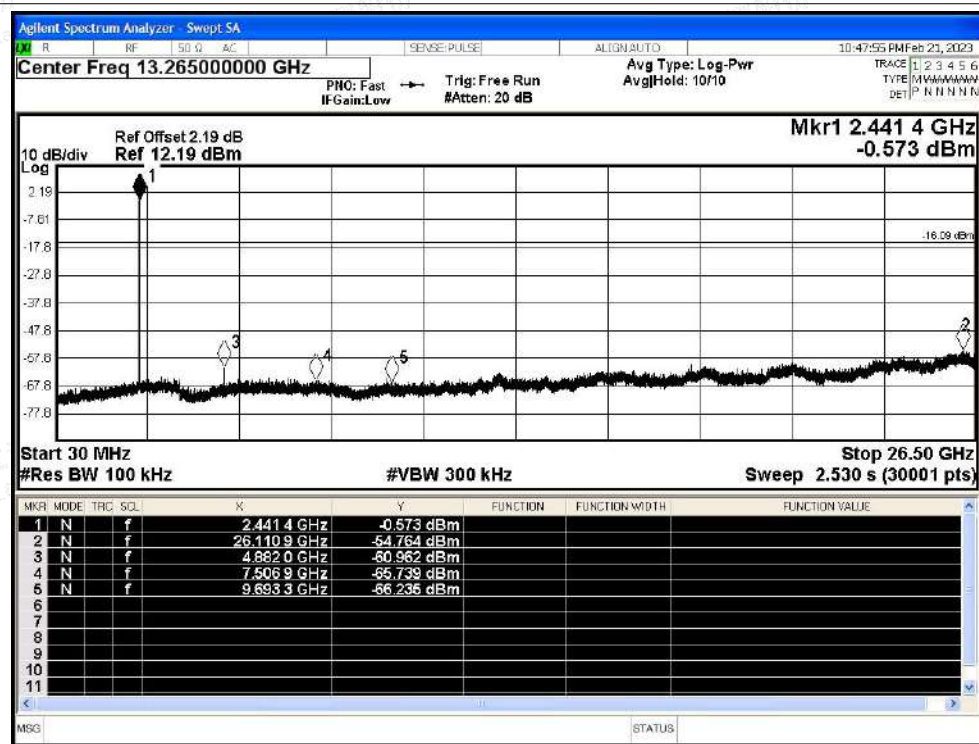




Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref

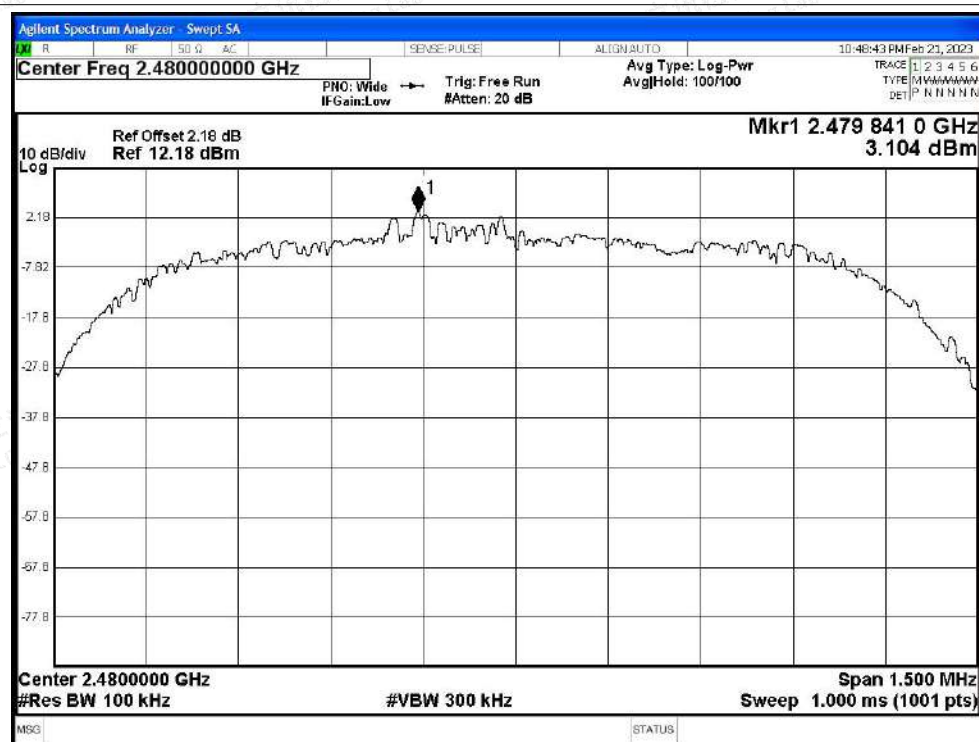


Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission

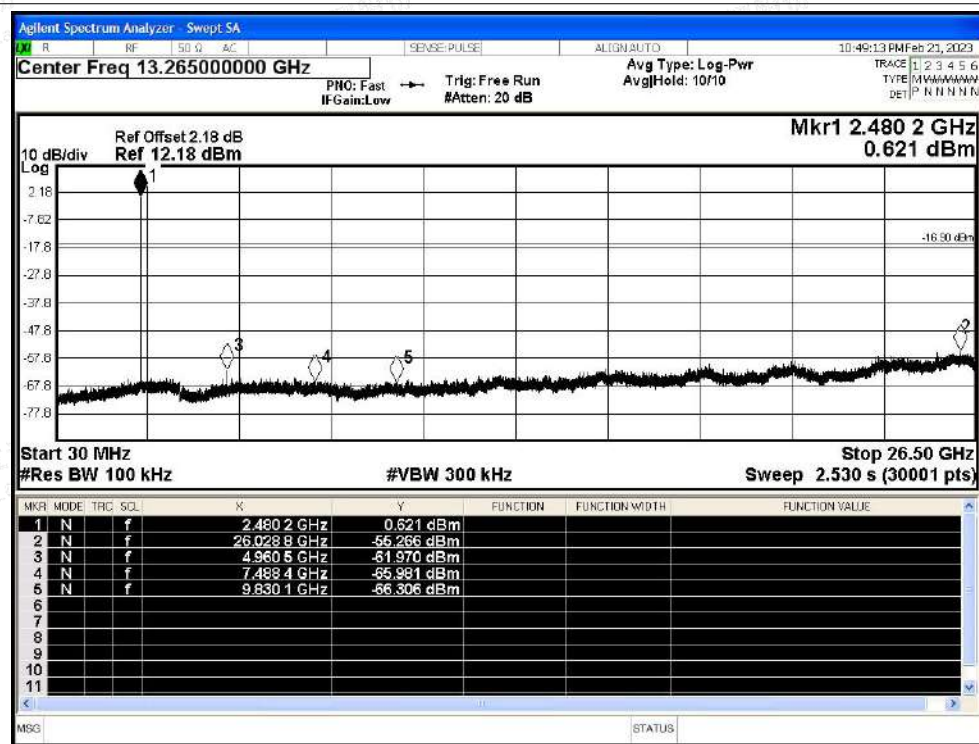




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission





A.8 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.45	1.68	47.81	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-60.38	1.68	36.88	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2311.92	-47.15	1.68	50.11	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2383.728	-59.73	1.68	37.53	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.83	1.68	47.43	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-59.92	1.68	37.34	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.86	1.68	47.4	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-59.1	1.68	38.16	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.872	-46.32	1.68	50.94	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.752	-58.99	1.68	38.27	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.22	1.68	48.04	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-59.76	1.68	37.5	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.18	1.68	46.08	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-60.39	1.68	36.87	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2381.04	-47.43	1.68	49.83	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2389.488	-59.82	1.68	37.44	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.32	1.68	47.94	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-59.99	1.68	37.27	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-48.63	1.68	48.63	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-58.93	1.68	38.33	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2495.68	-46.45	1.68	50.81	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.752	-58.91	1.68	38.35	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.69	1.68	47.57	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-59.69	1.68	37.57	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.02	1.68	46.24	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-60.25	1.68	37.01	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2357.136	-46.75	1.68	50.51	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2387.28	-59.71	1.68	37.55	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.26	1.68	46	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-59.78	1.68	37.48	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.22	1.68	48.04	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-58.93	1.68	38.33	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2494.504	-46.56	1.68	50.7	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.608	-58.89	1.68	38.37	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-48.69	1.68	48.57	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-59.66	1.68	37.6	Average	54	Pass

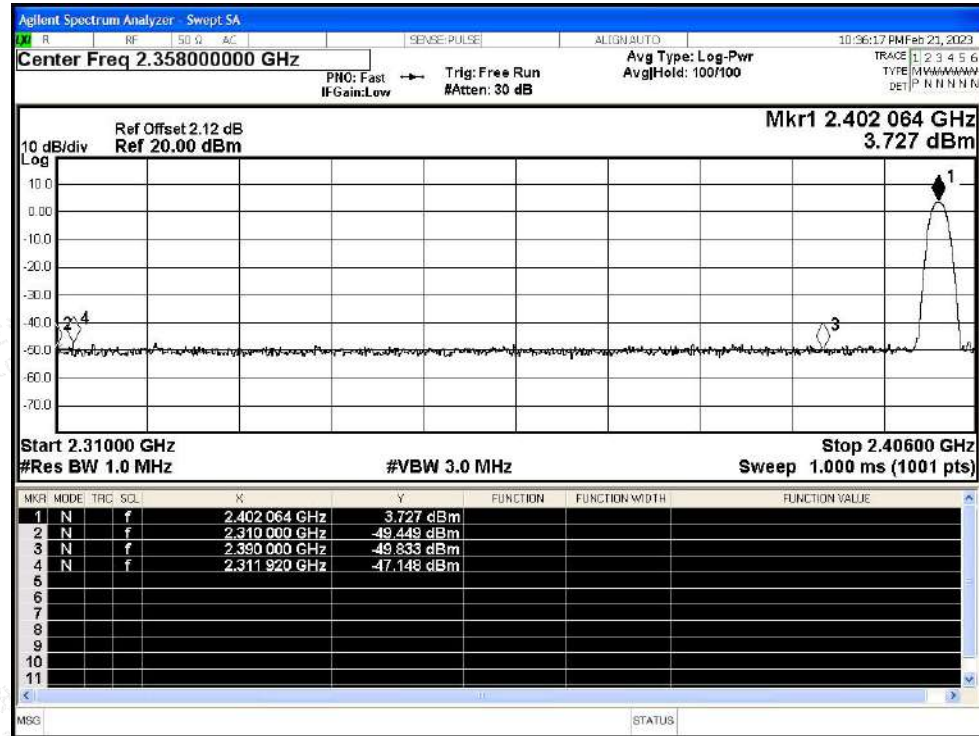


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Scan code to check authenticity

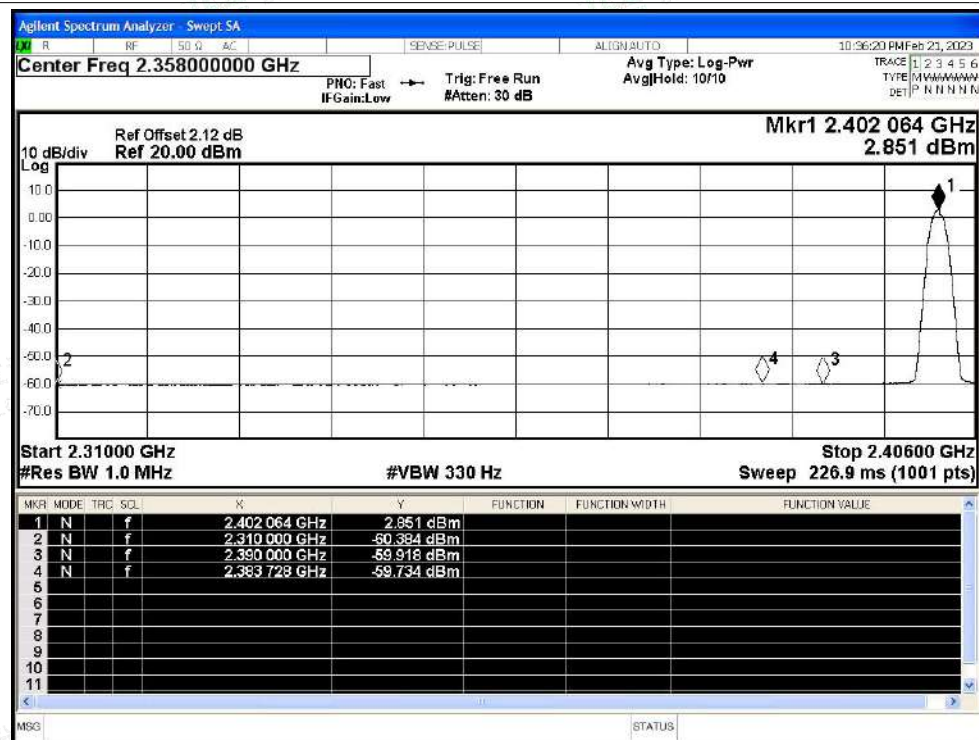


Test Graphs

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

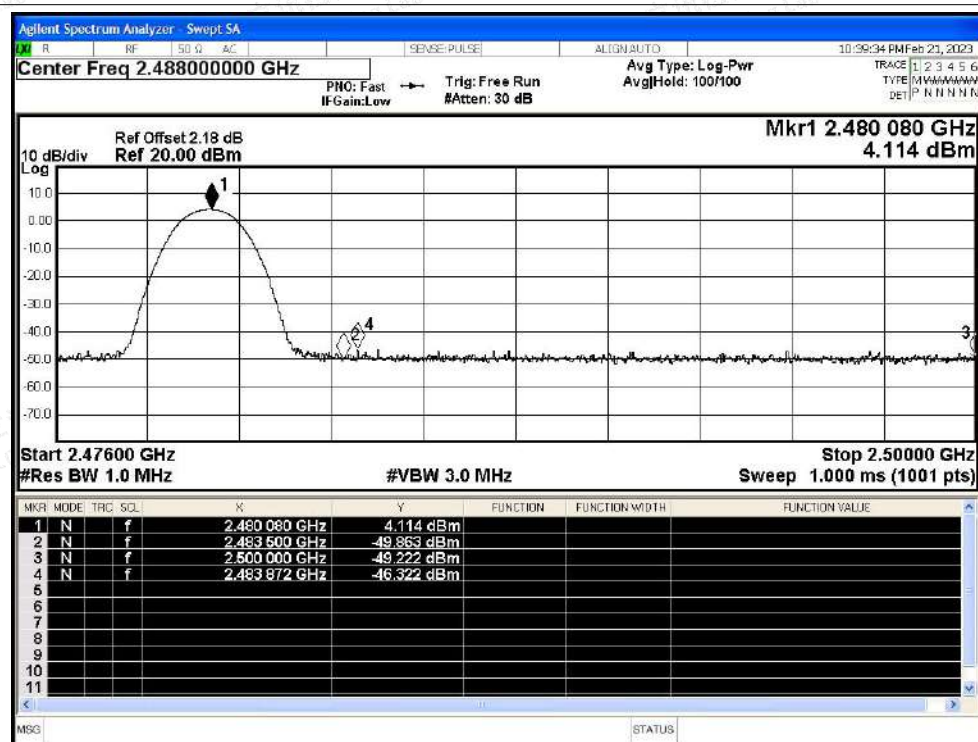


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

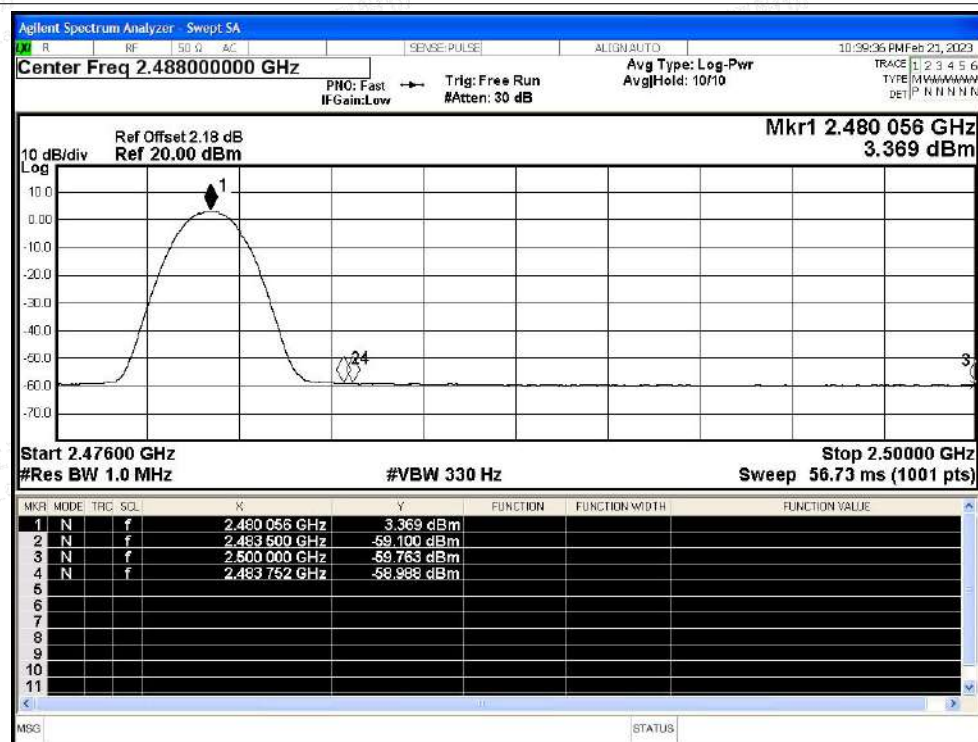




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

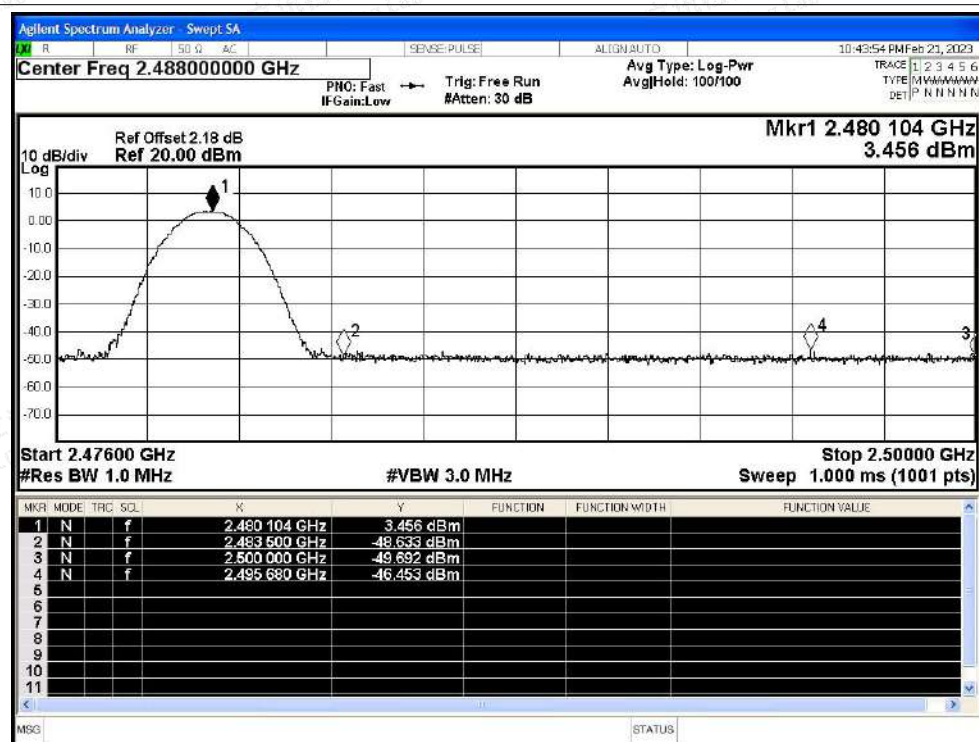


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

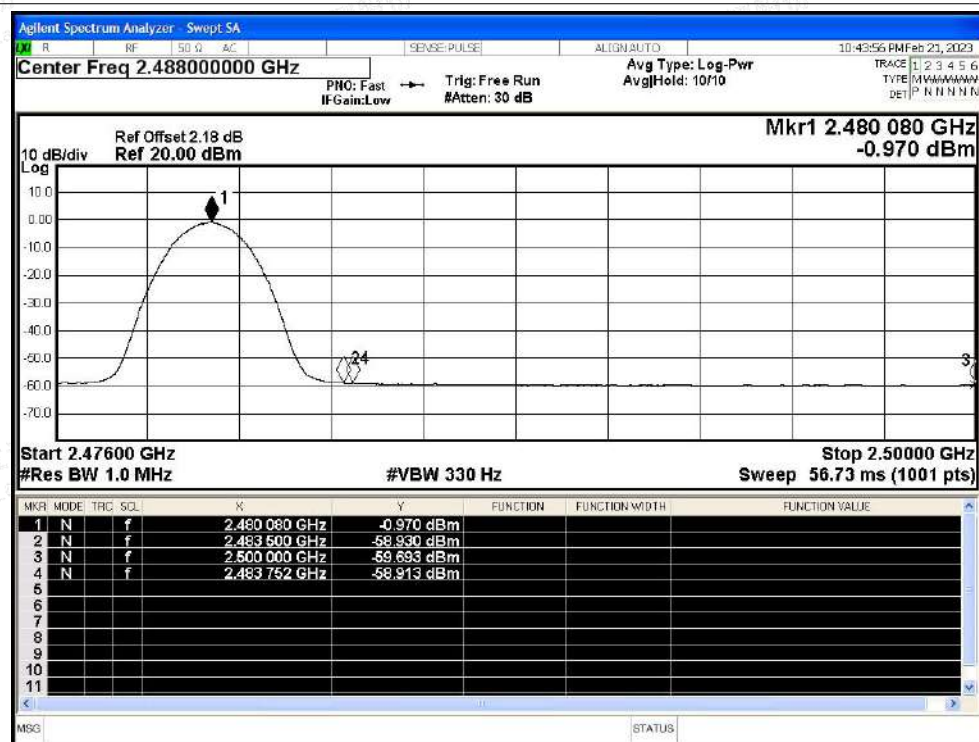




Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak

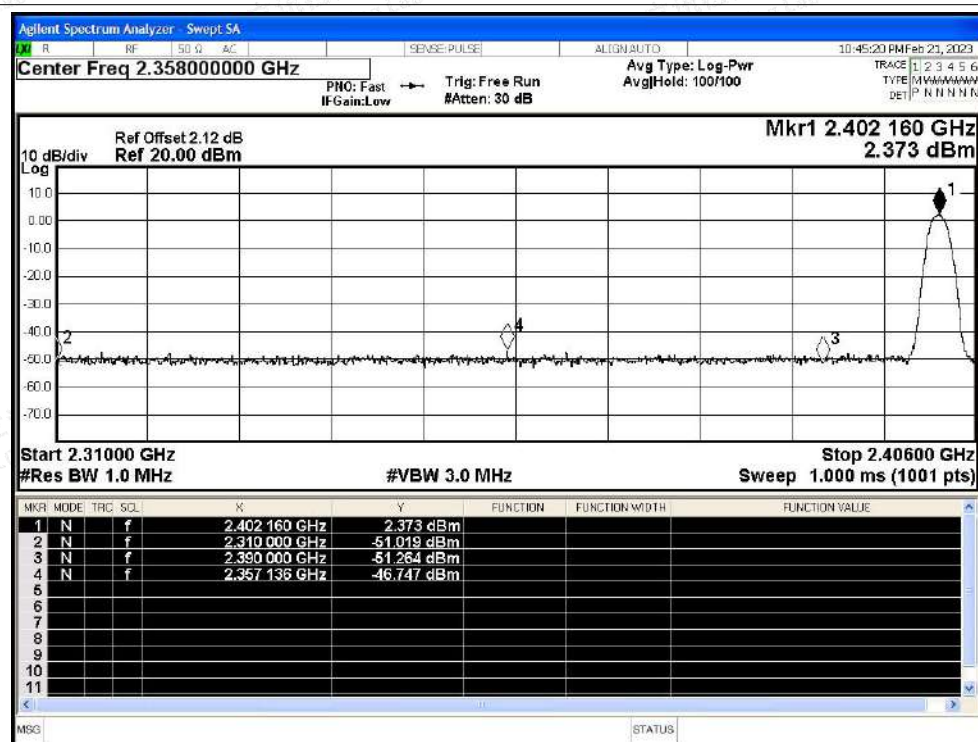


Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average

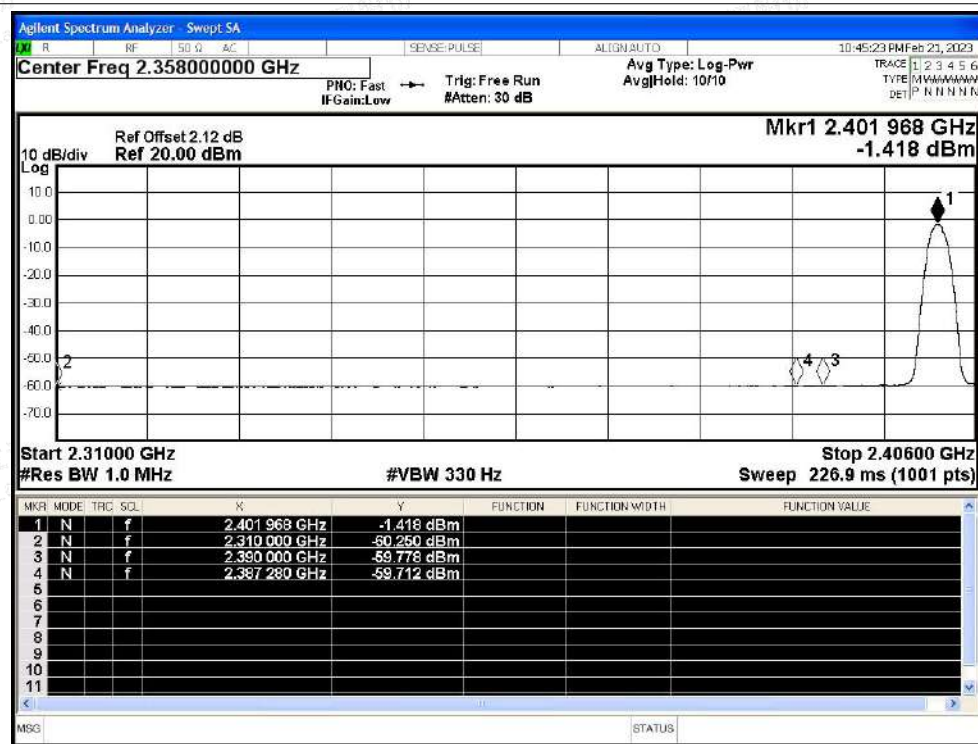




Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak

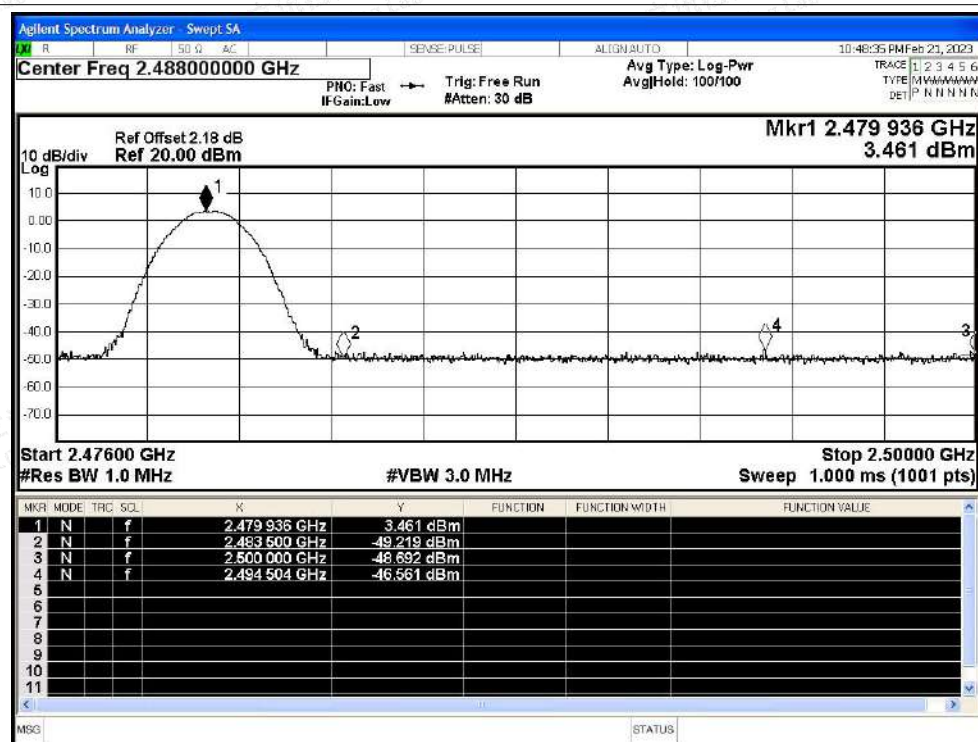


Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average





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



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

