



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: VTS-2000 Sample

Test Model: VTS-2000

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	1.046	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.025	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.024	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.355	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.366	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.359	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.293	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.292	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.331	N/A	Pass

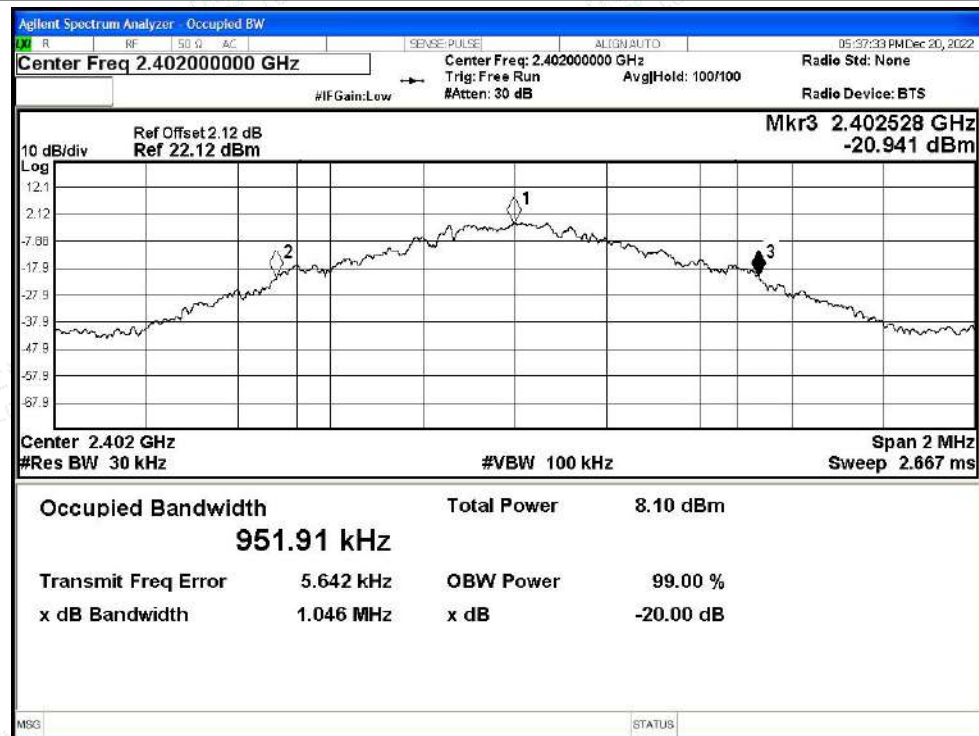


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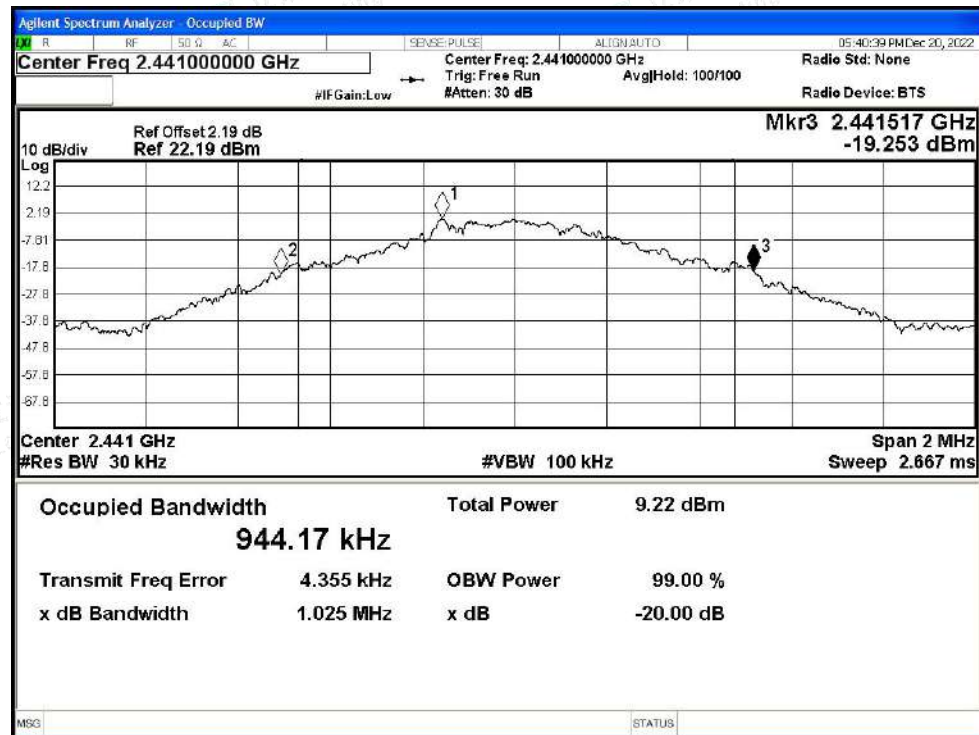


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

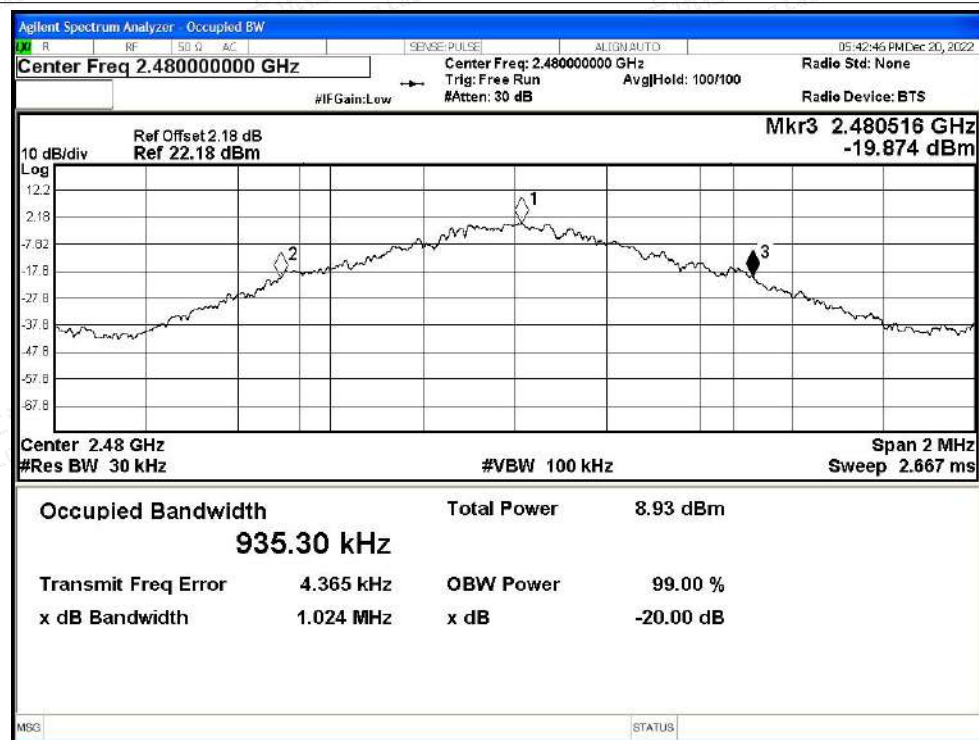


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1





-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

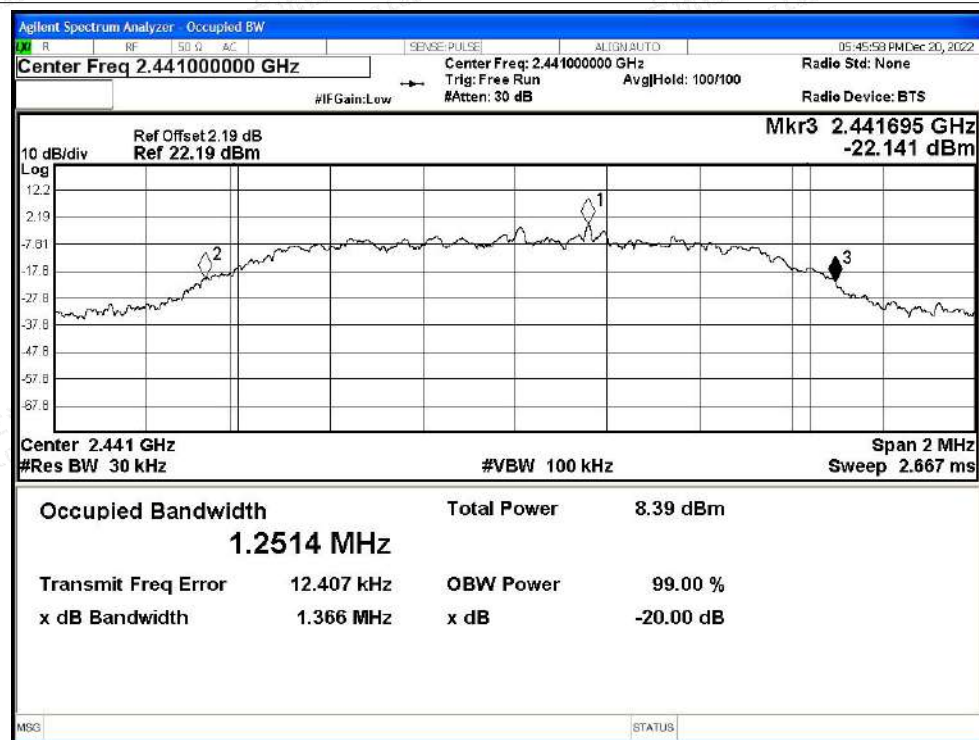


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

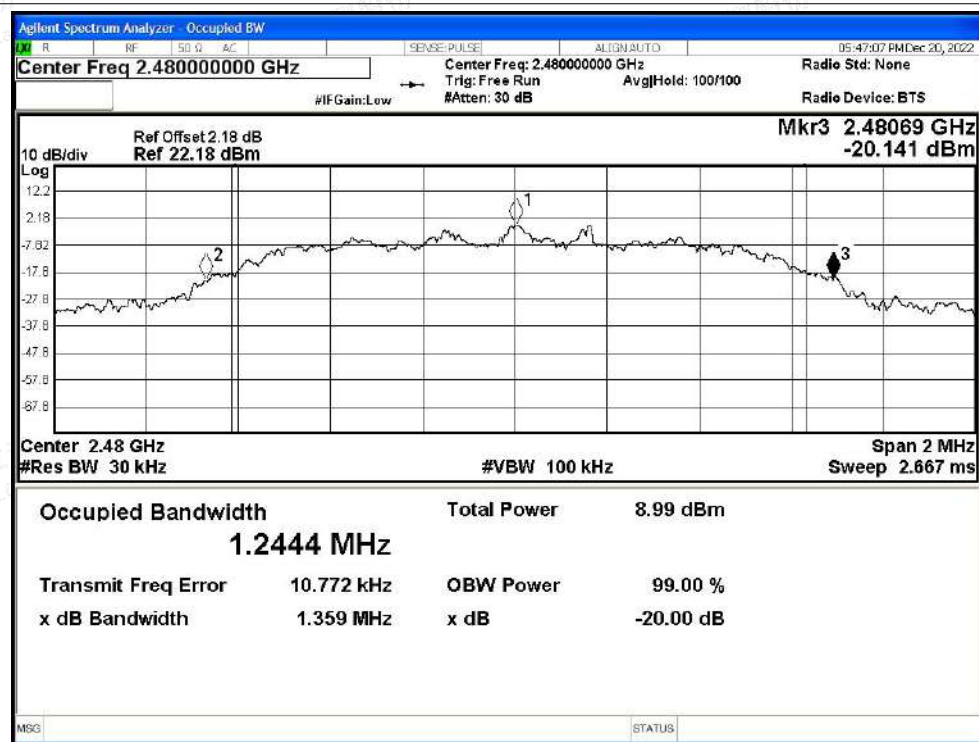




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

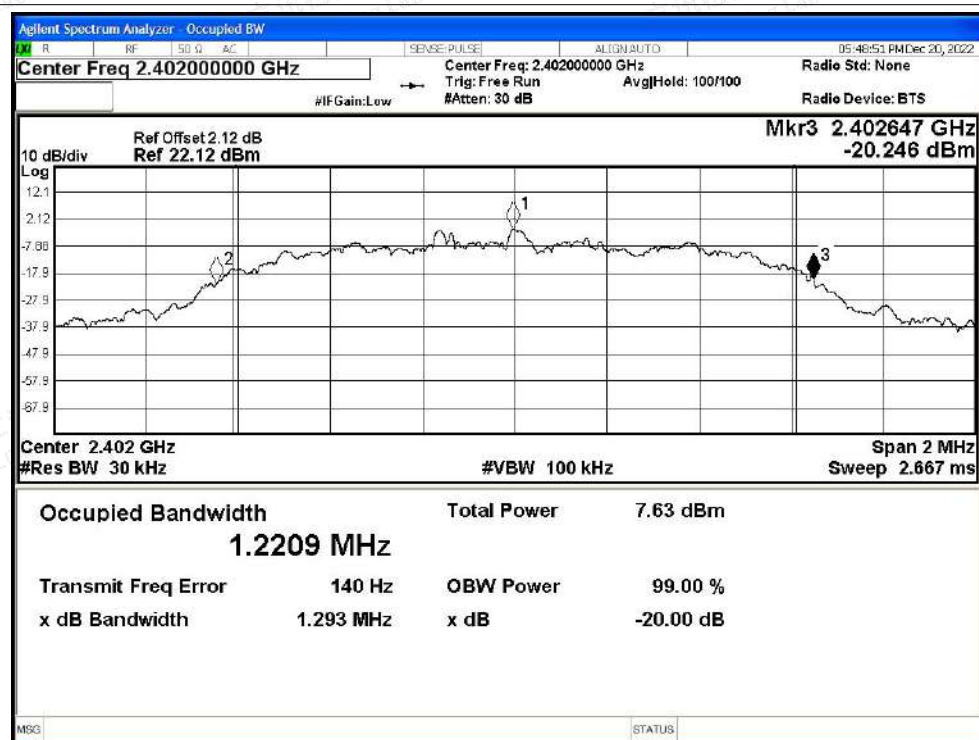


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

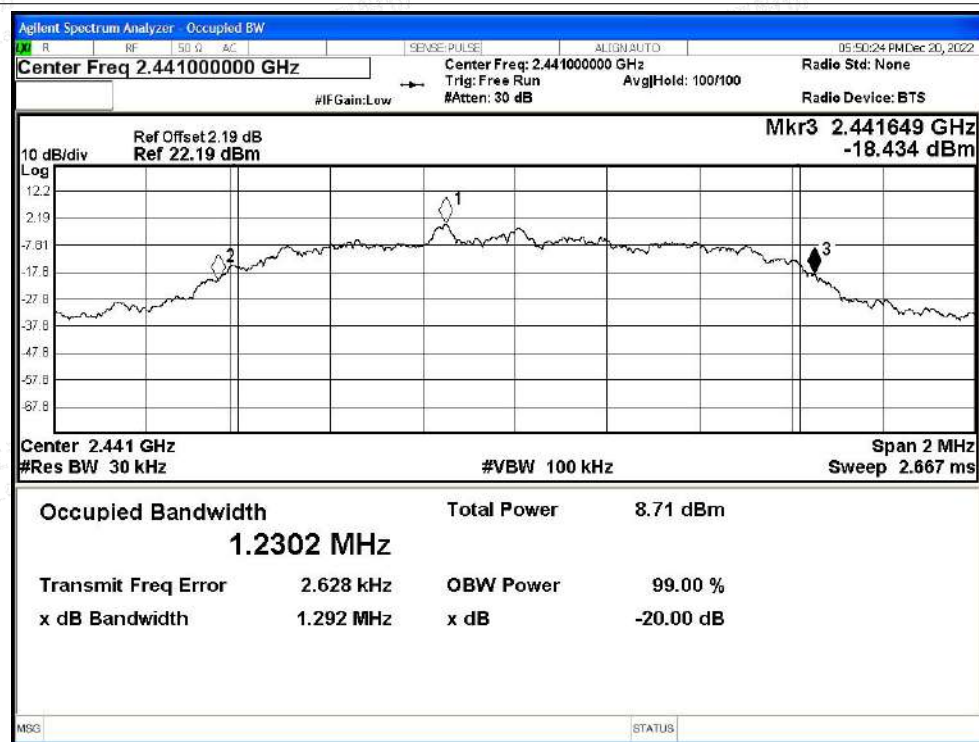


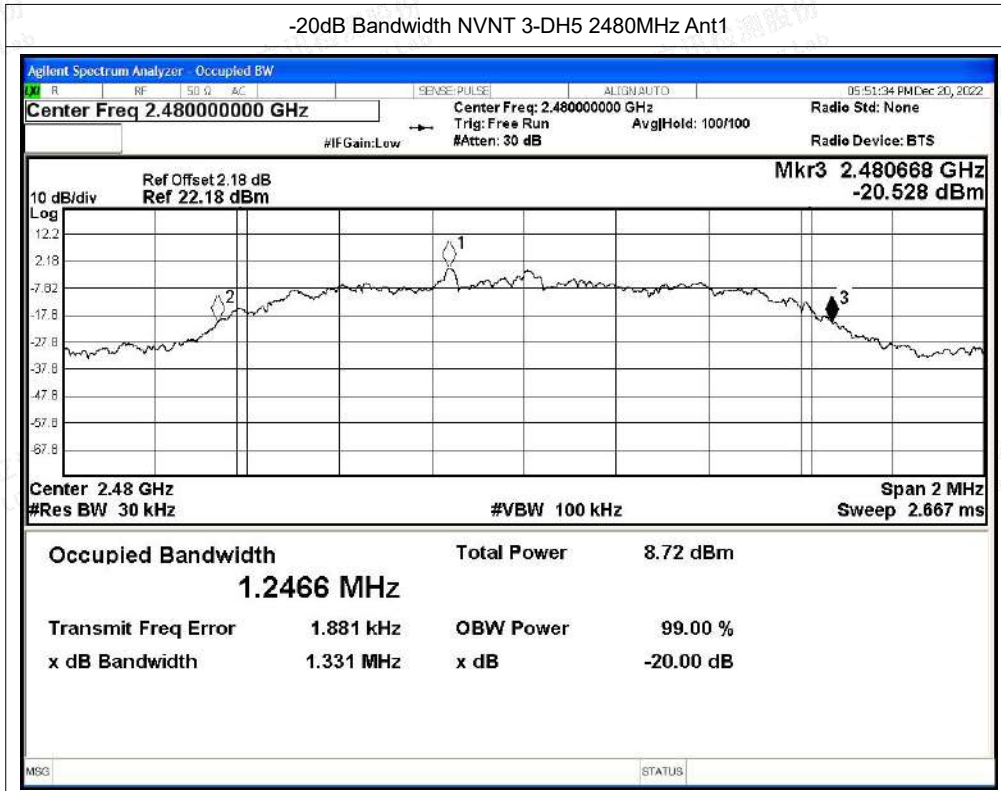


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-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	1.62	0	1.62	21	Pass
NVNT	1-DH5	2441	Ant1	2.62	0	2.62	21	Pass
NVNT	1-DH5	2480	Ant1	2.76	0	2.76	21	Pass
NVNT	2-DH5	2402	Ant1	2.21	0	2.21	21	Pass
NVNT	2-DH5	2441	Ant1	2.46	0	2.46	21	Pass
NVNT	2-DH5	2480	Ant1	2.13	0	2.13	21	Pass
NVNT	3-DH5	2402	Ant1	2.81	0	2.81	21	Pass
NVNT	3-DH5	2441	Ant1	2.73	0	2.73	21	Pass
NVNT	3-DH5	2480	Ant1	2.17	0	2.17	21	Pass

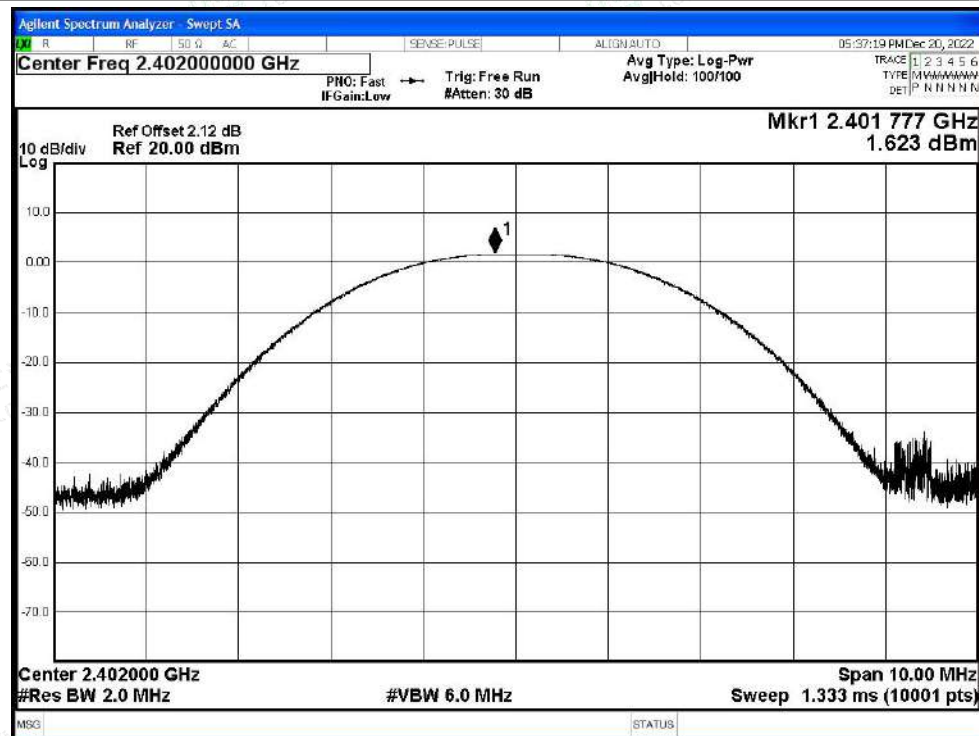


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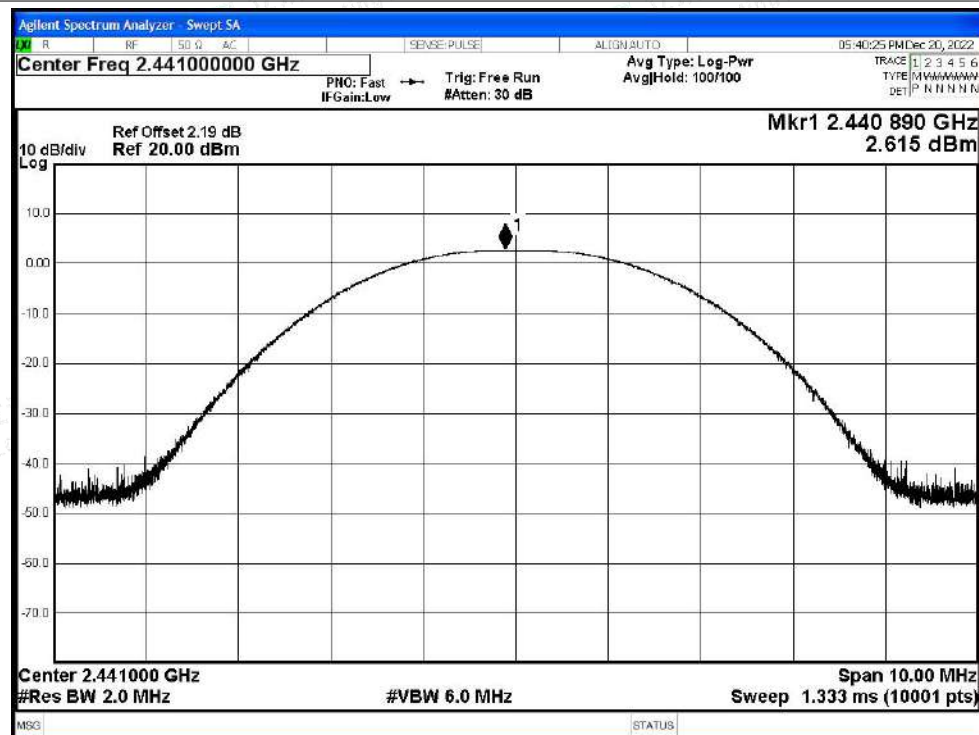


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

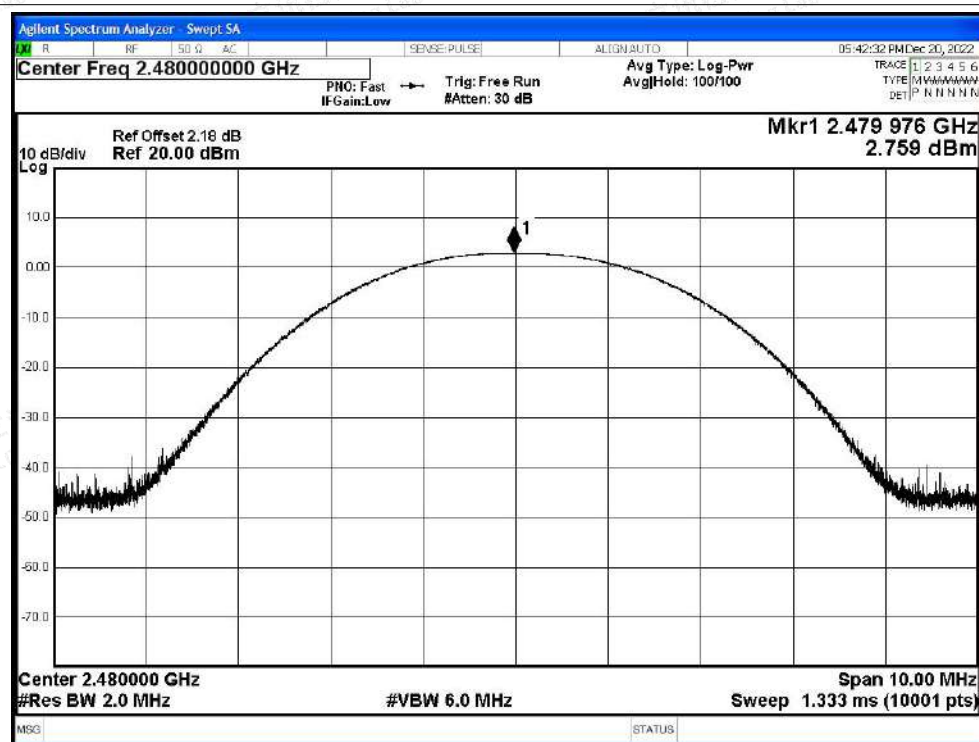


Power NVNT 1-DH5 2441MHz Ant1

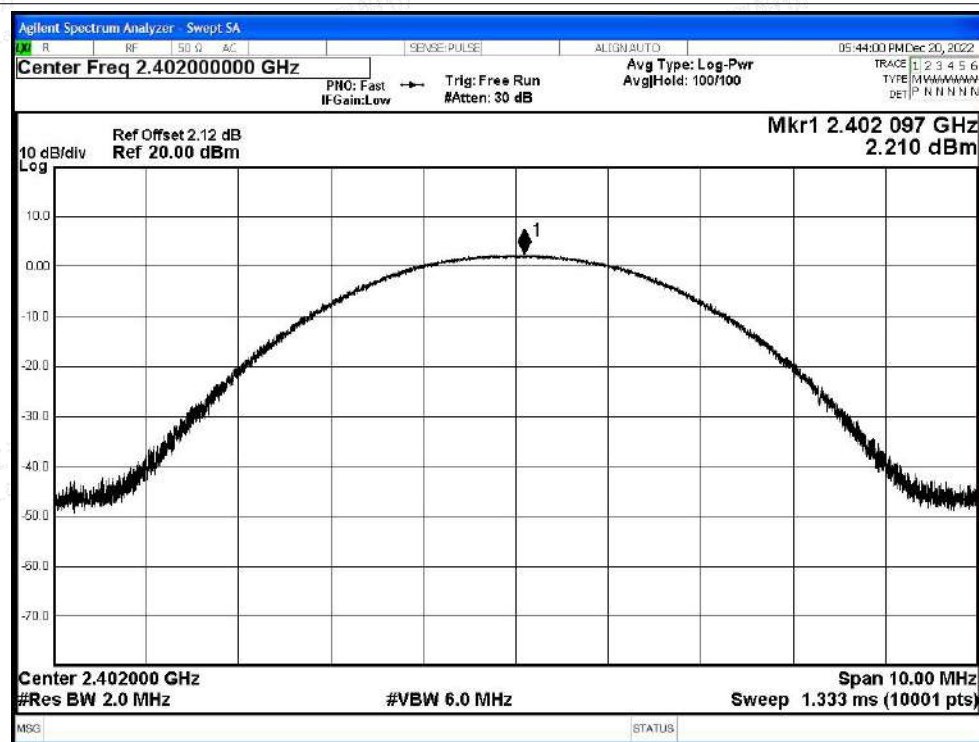




Power NVNT 1-DH5 2480MHz Ant1

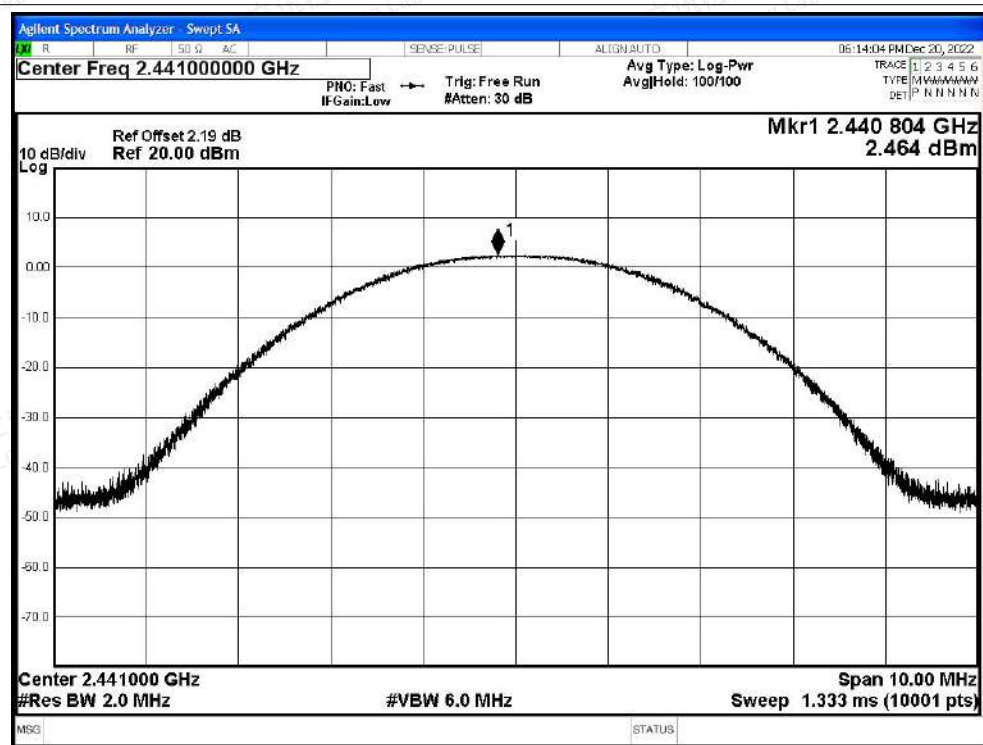


Power NVNT 2-DH5 2402MHz Ant1

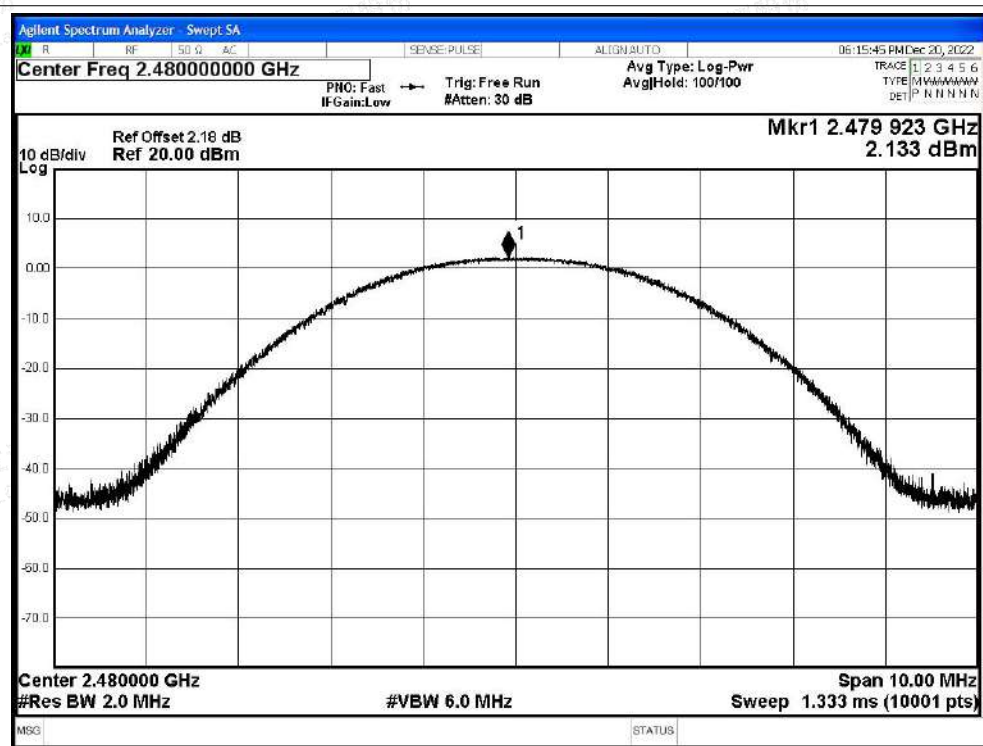




Power NVNT 2-DH5 2441MHz Ant1

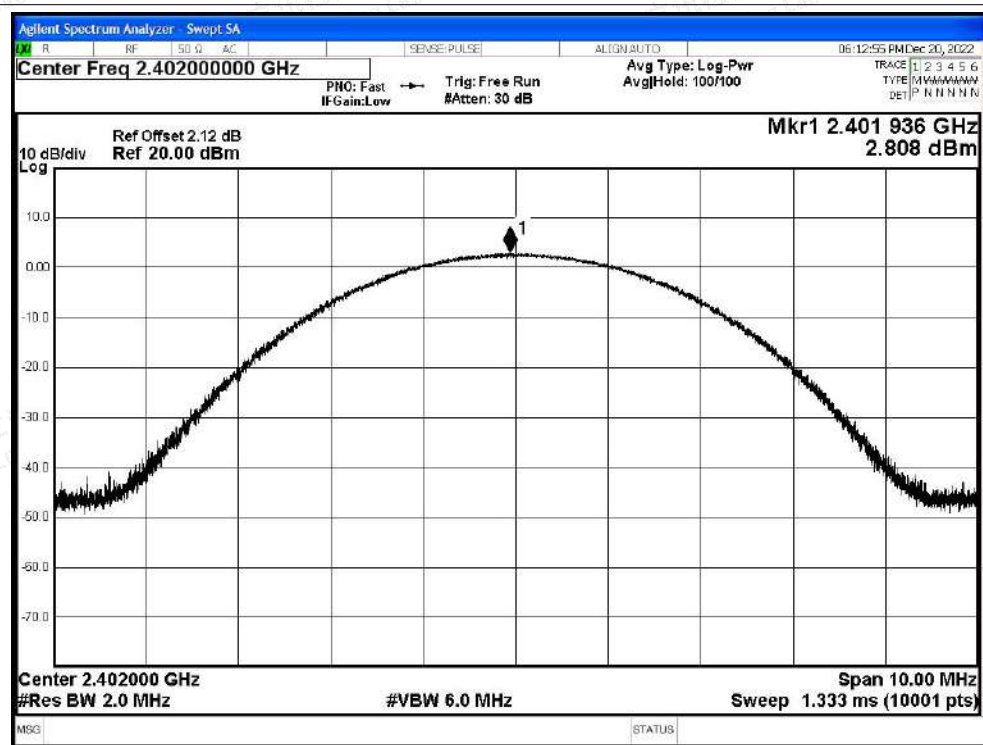


Power NVNT 2-DH5 2480MHz Ant1

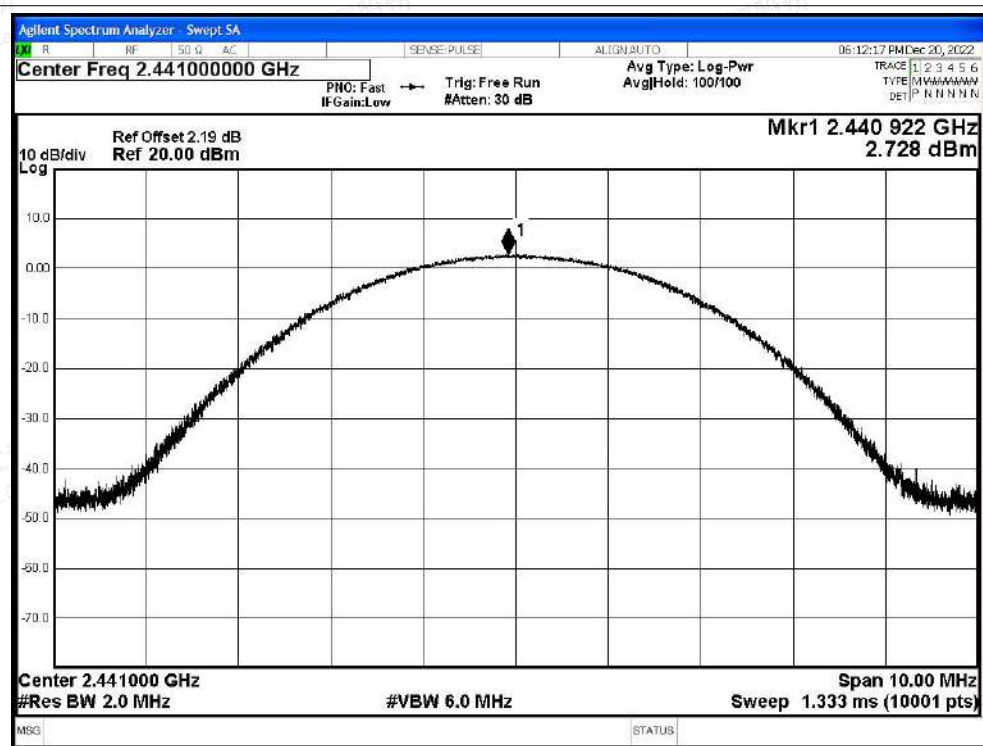


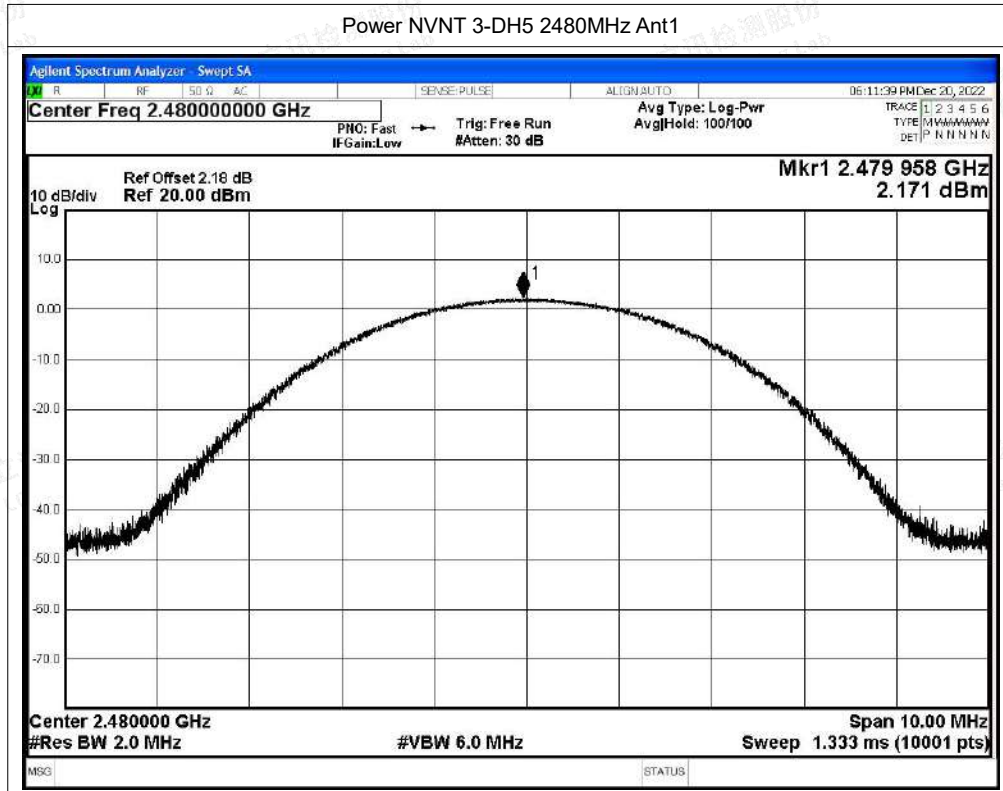


Power NVNT 3-DH5 2402MHz Ant1



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	2402.004	2402.982	0.978	0.697	Pass
NVNT	2-DH5	Ant1	2402.002	2403.166	1.164	0.903	Pass
NVNT	3-DH5	Ant1	2402.008	2403.018	1.01	0.862	Pass

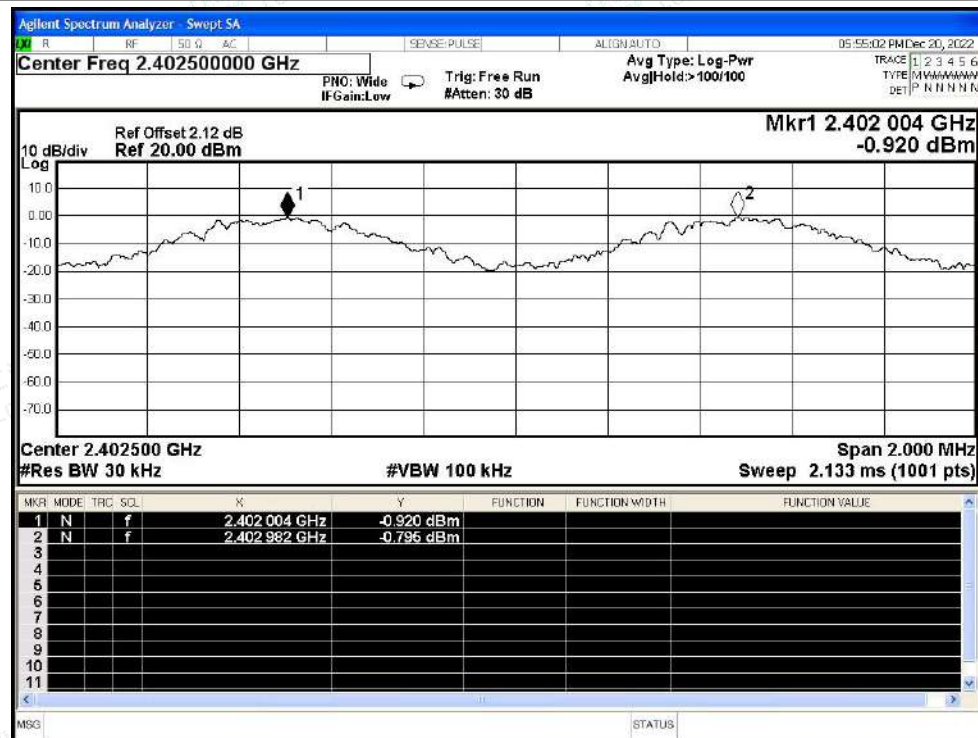


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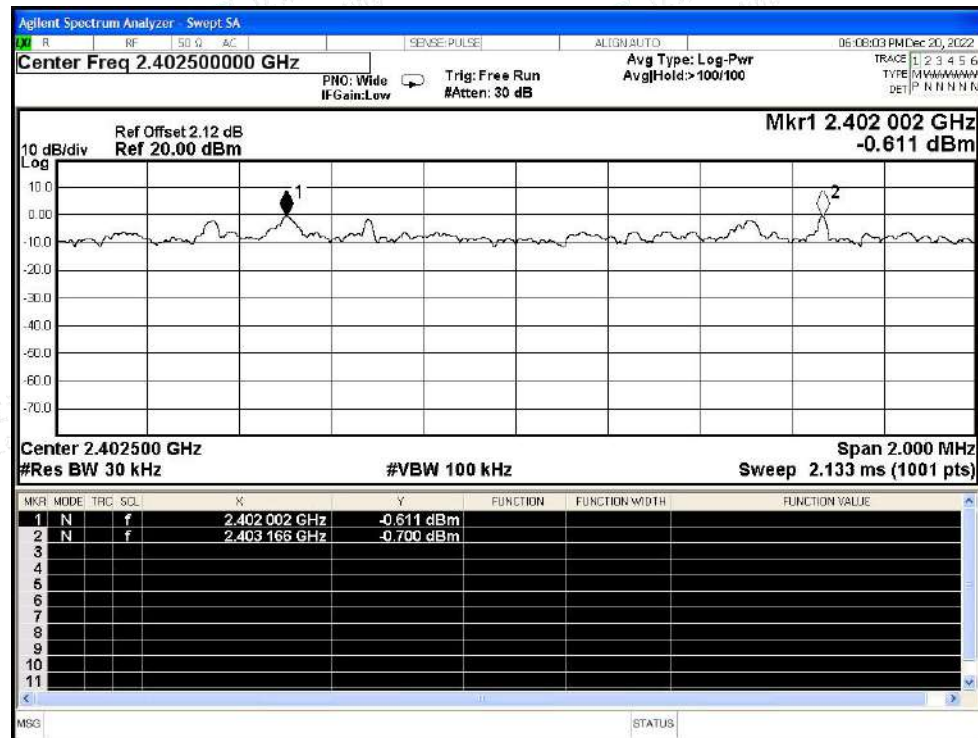


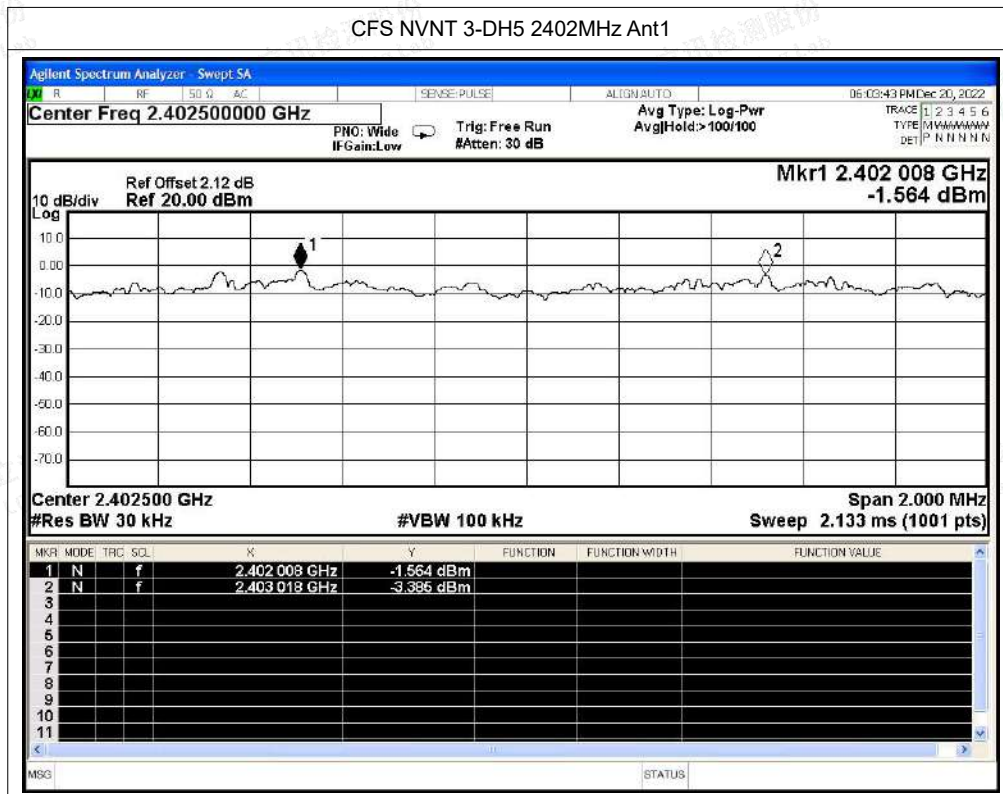
Test Graphs

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	2.88	285.12	99	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.883	325.779	113	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.888	285.912	99	31600	400	Pass

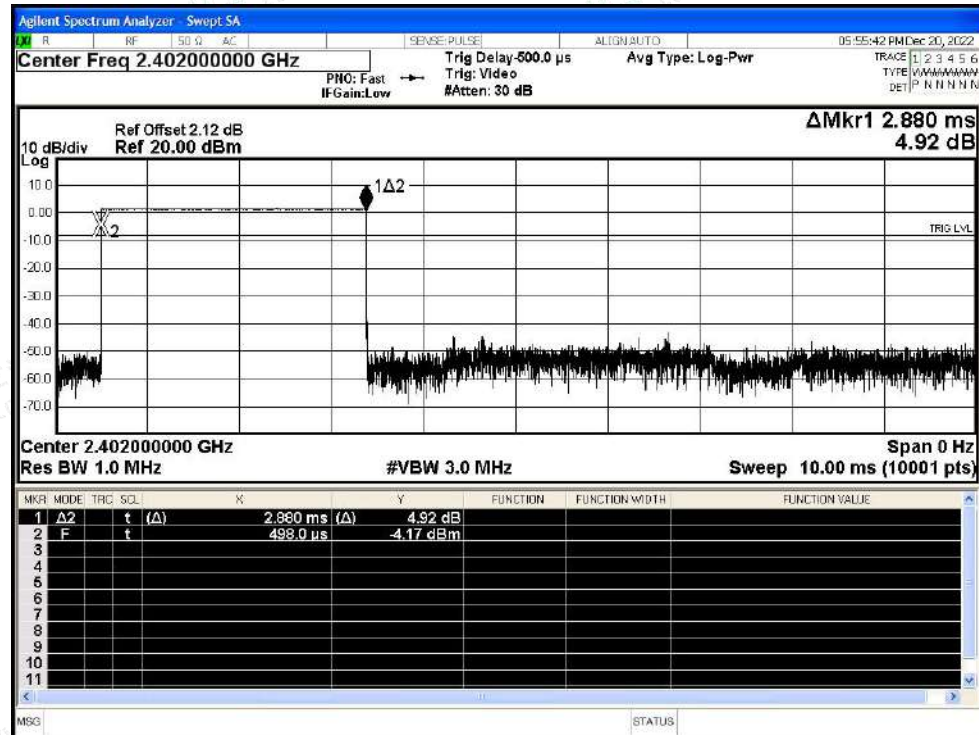


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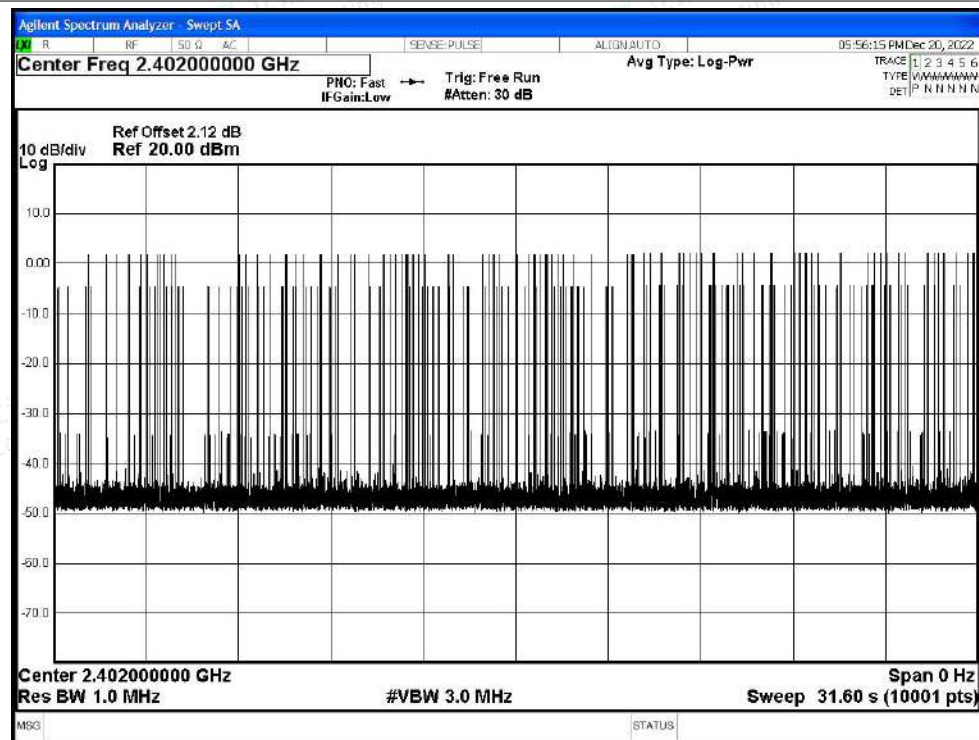


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

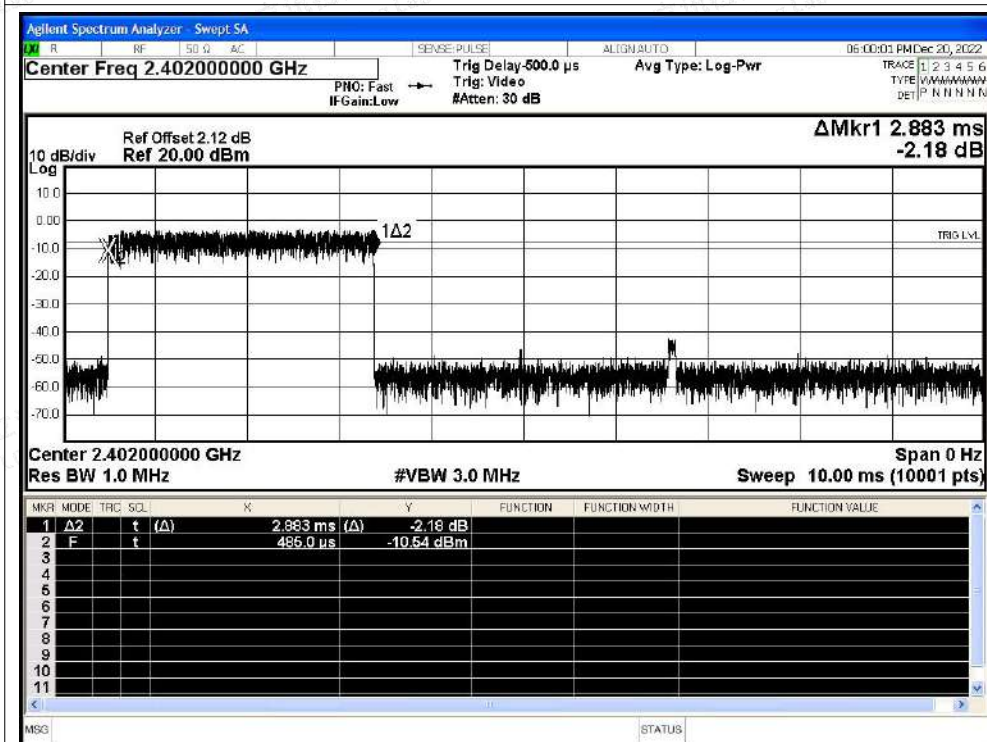


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

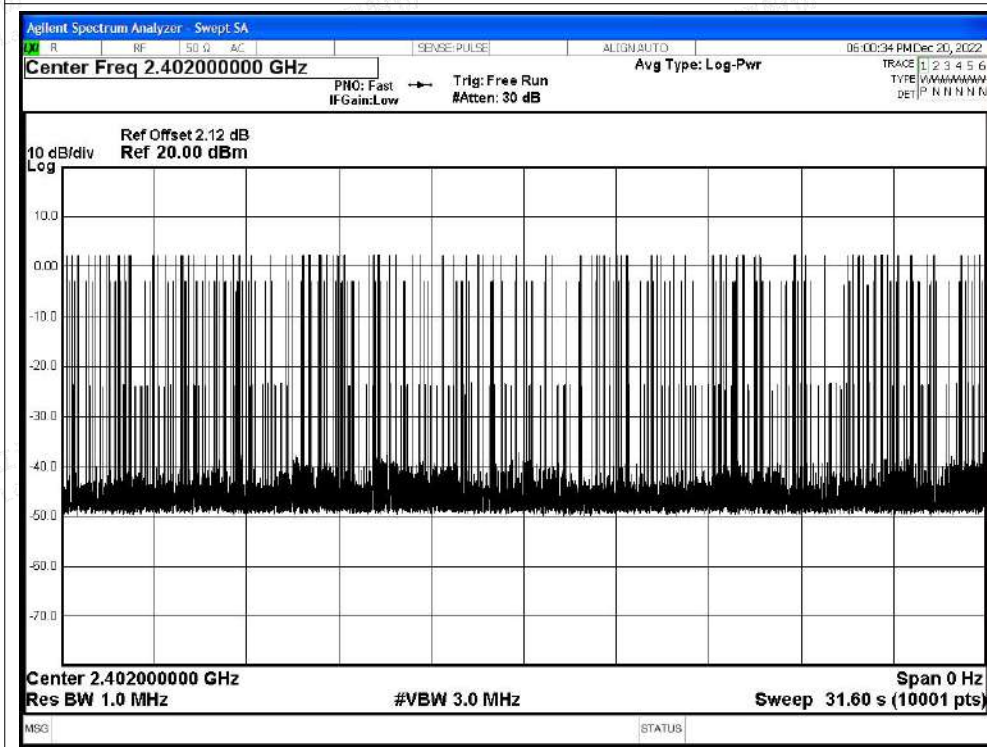




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

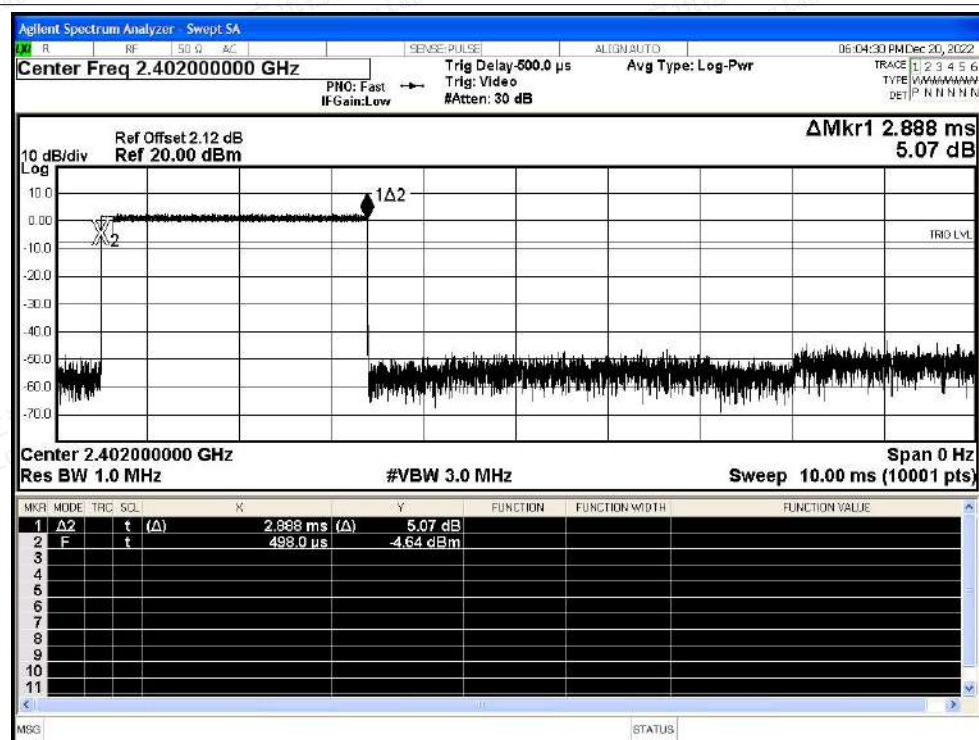


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

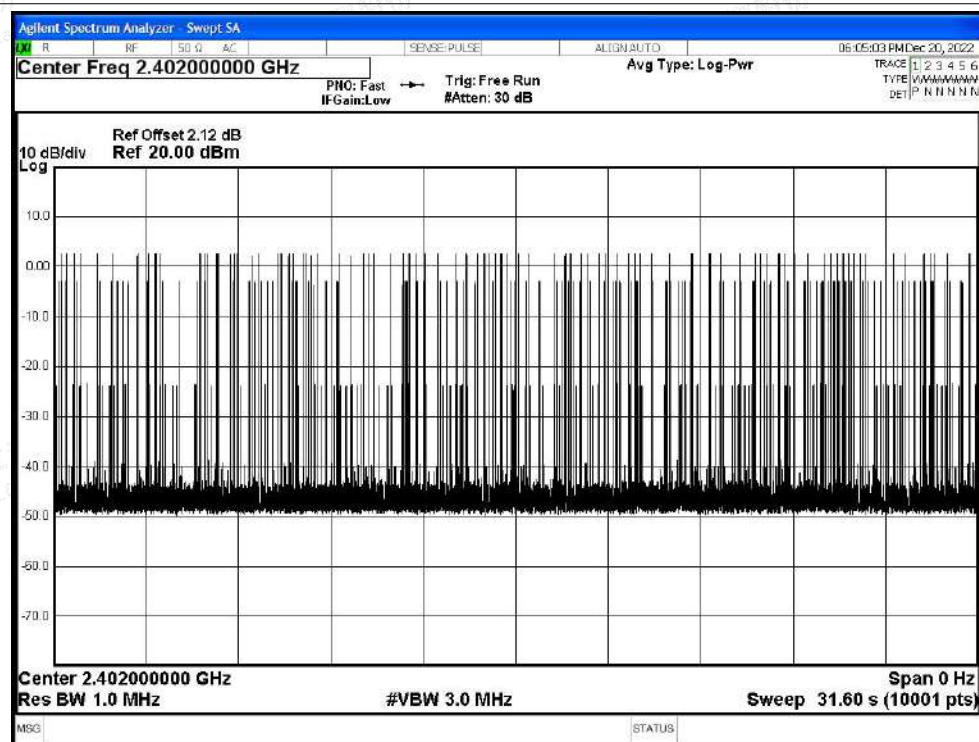




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



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

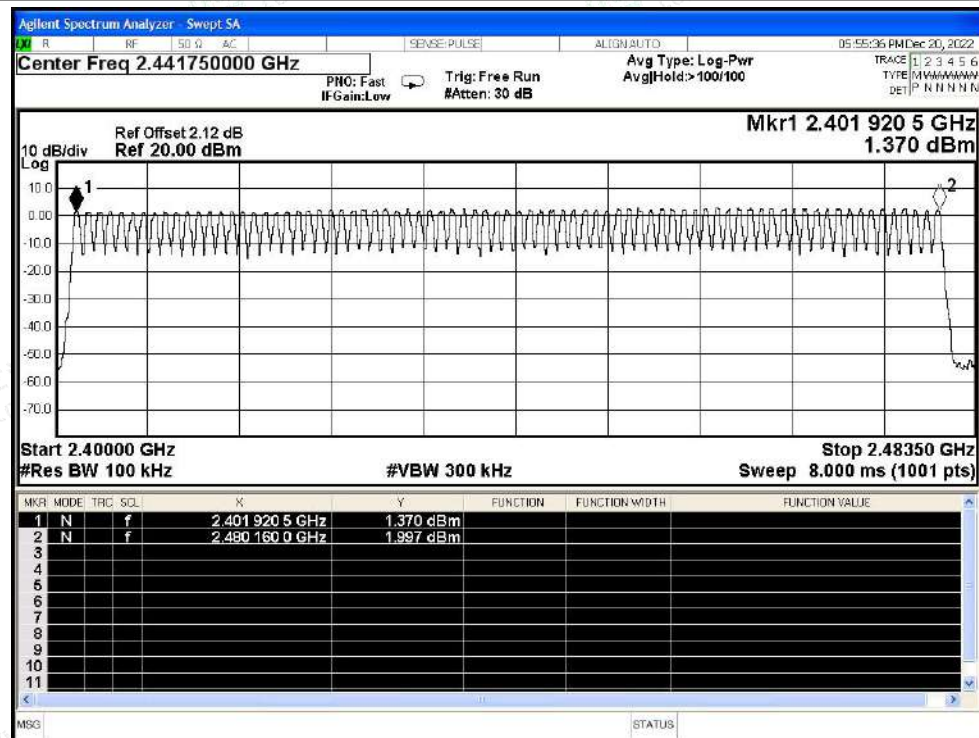


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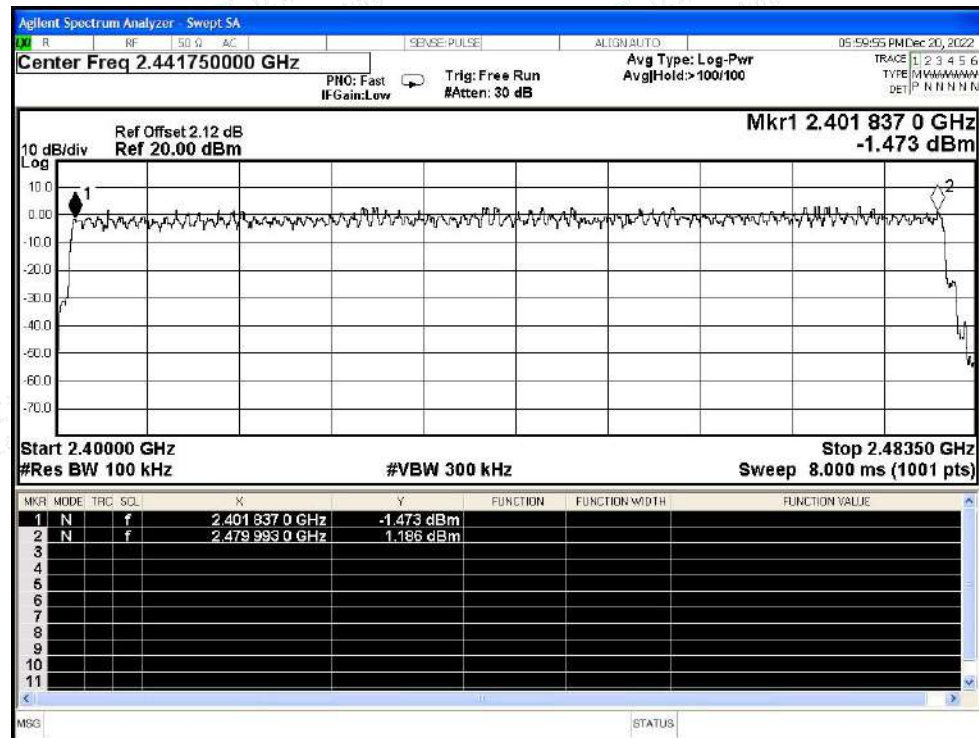


Test Graphs

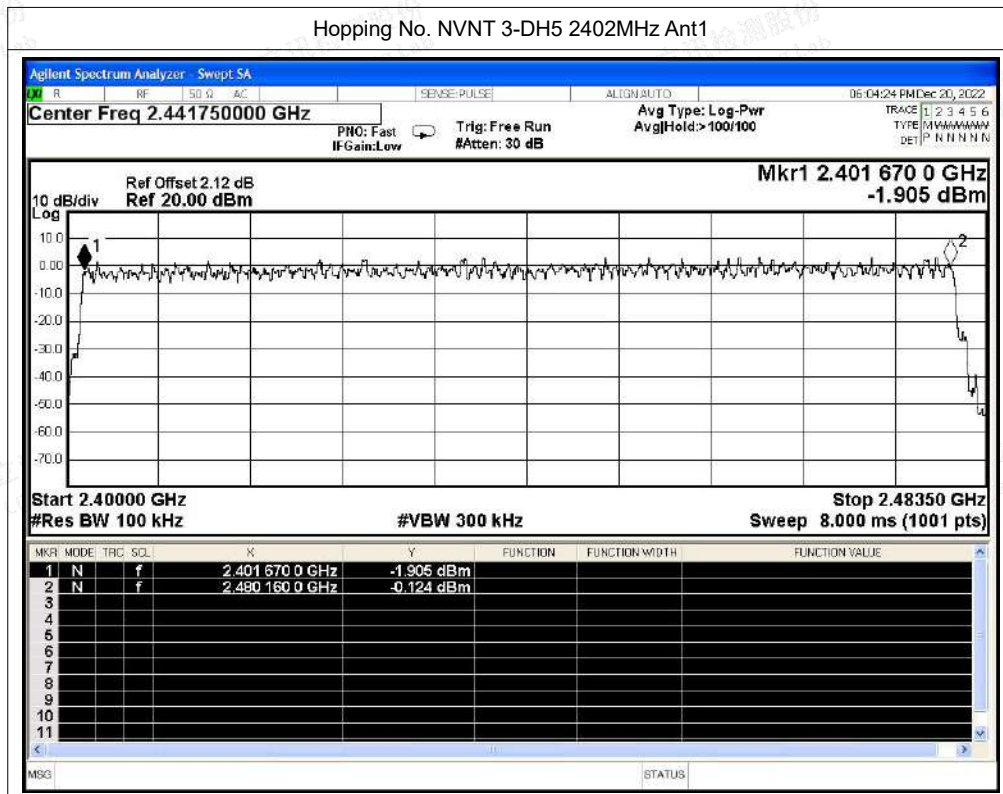
Hopping No. NVNT 1-DH5 2402MHz Ant1



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	-52.7	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.85	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-47.91	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-53.3	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-49.73	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-53.44	-20	Pass

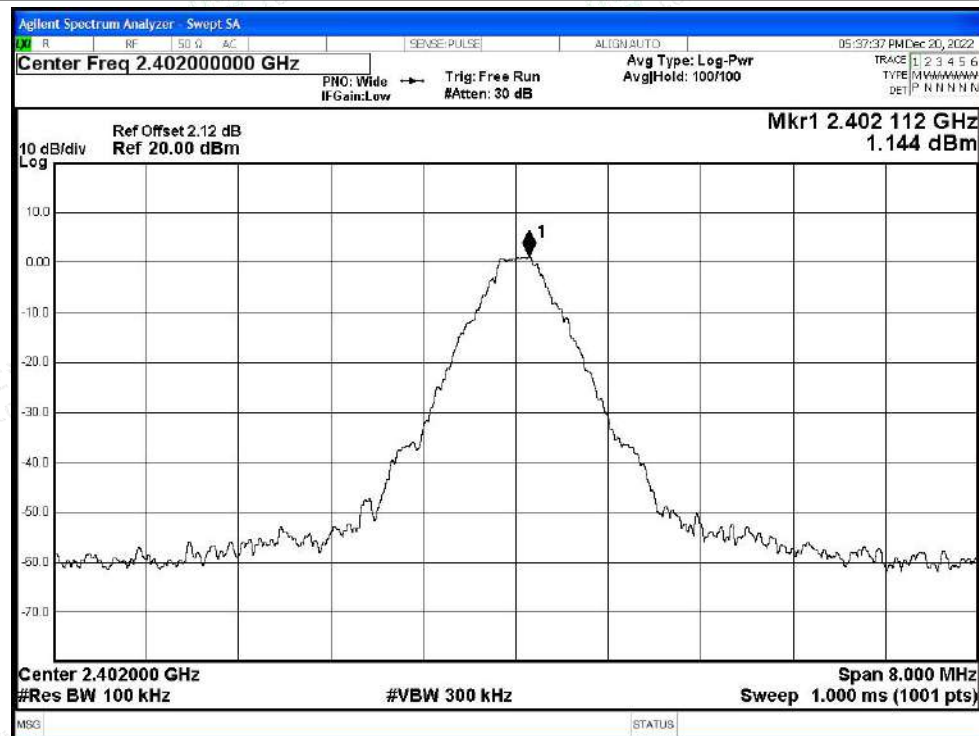


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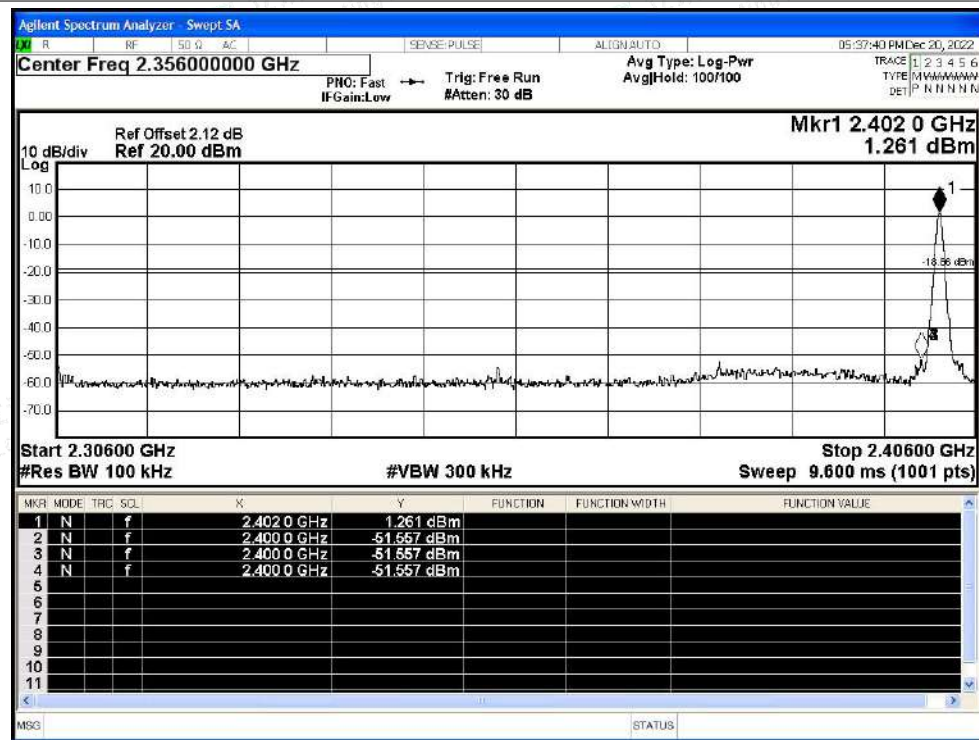


Test Graphs

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

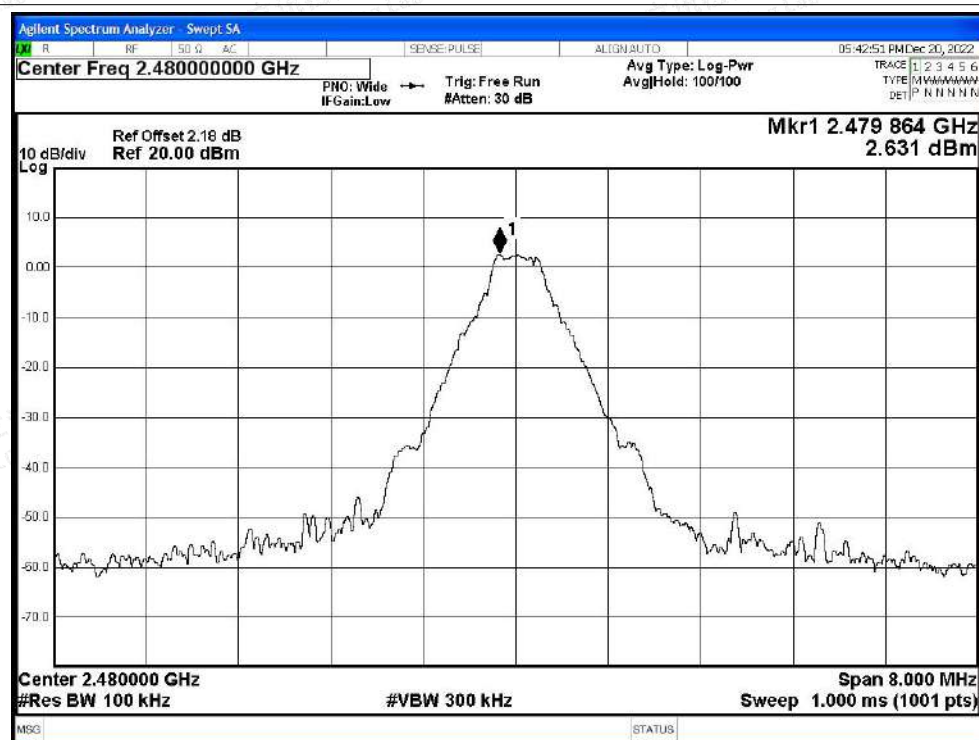


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

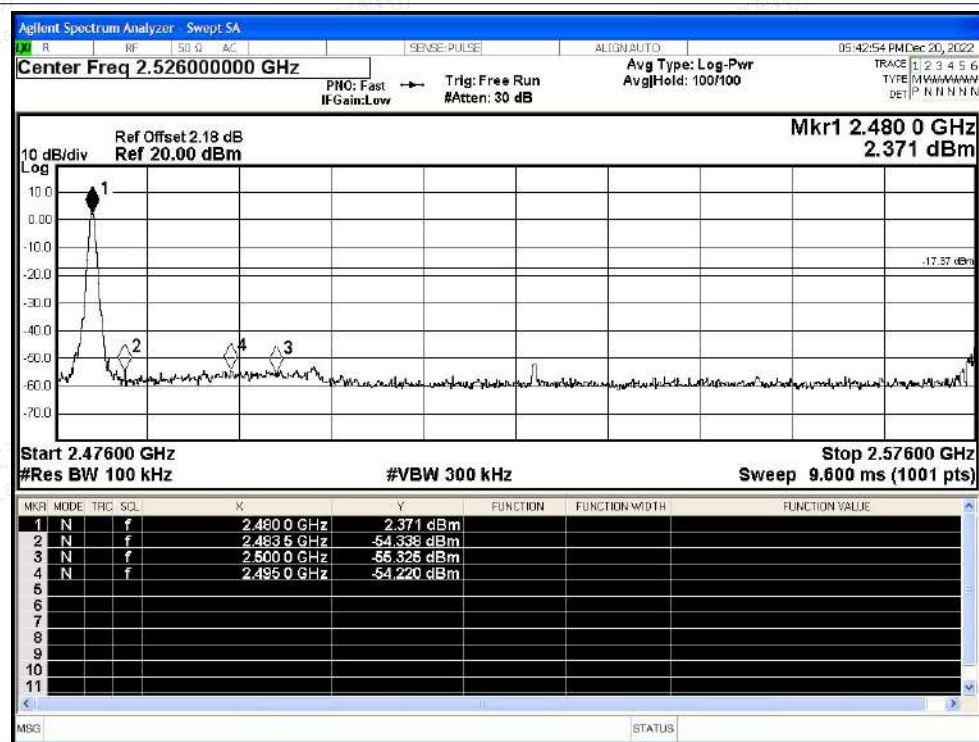




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

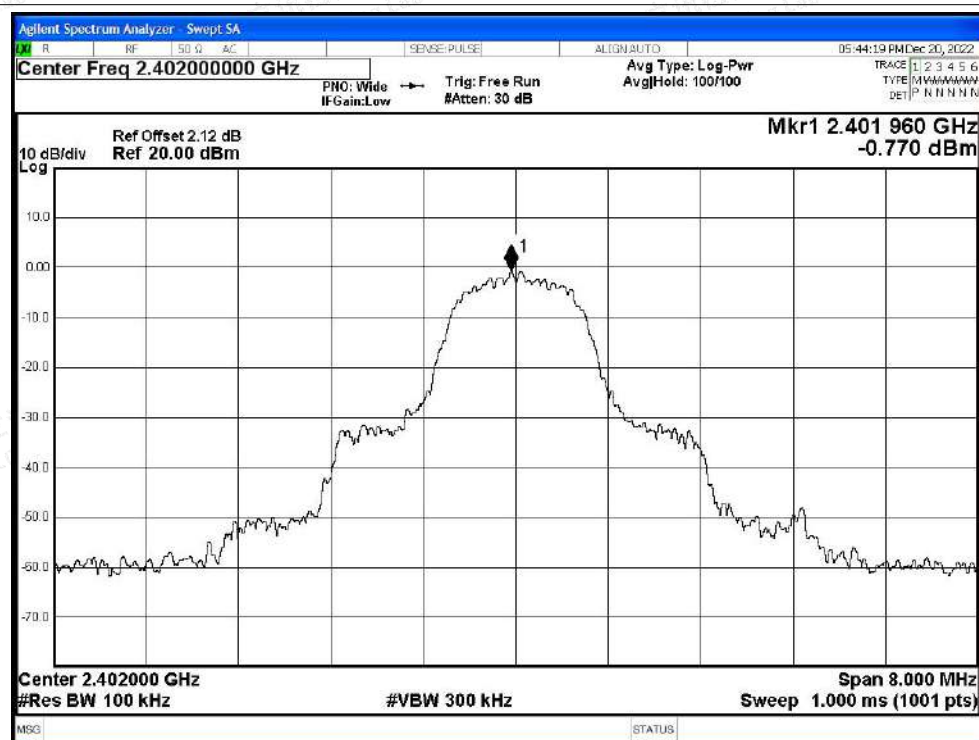


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

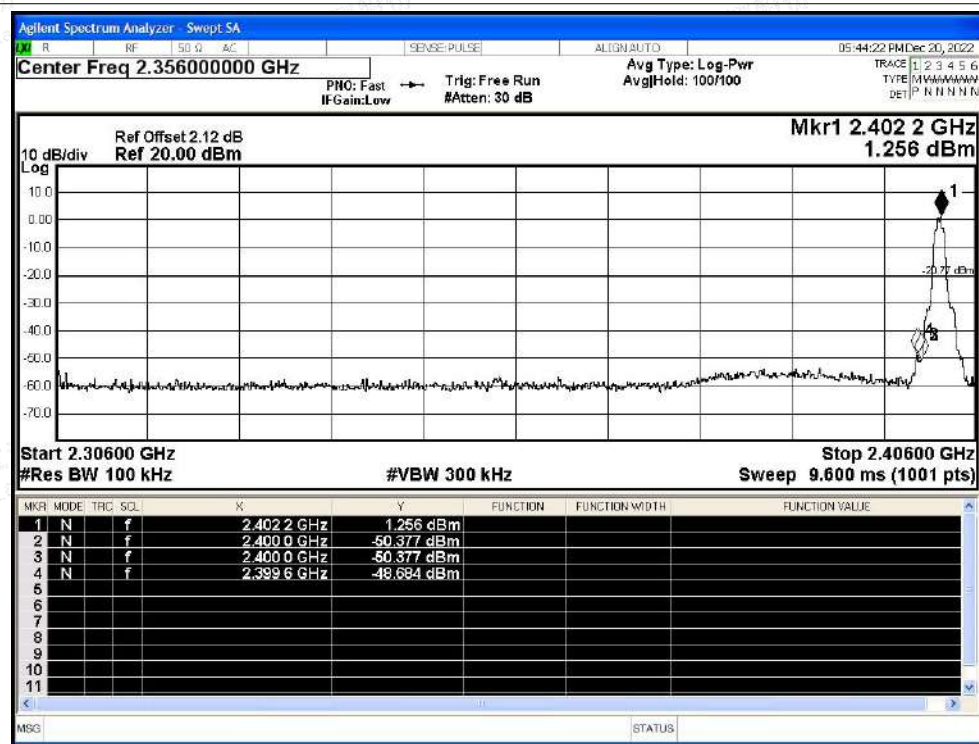




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

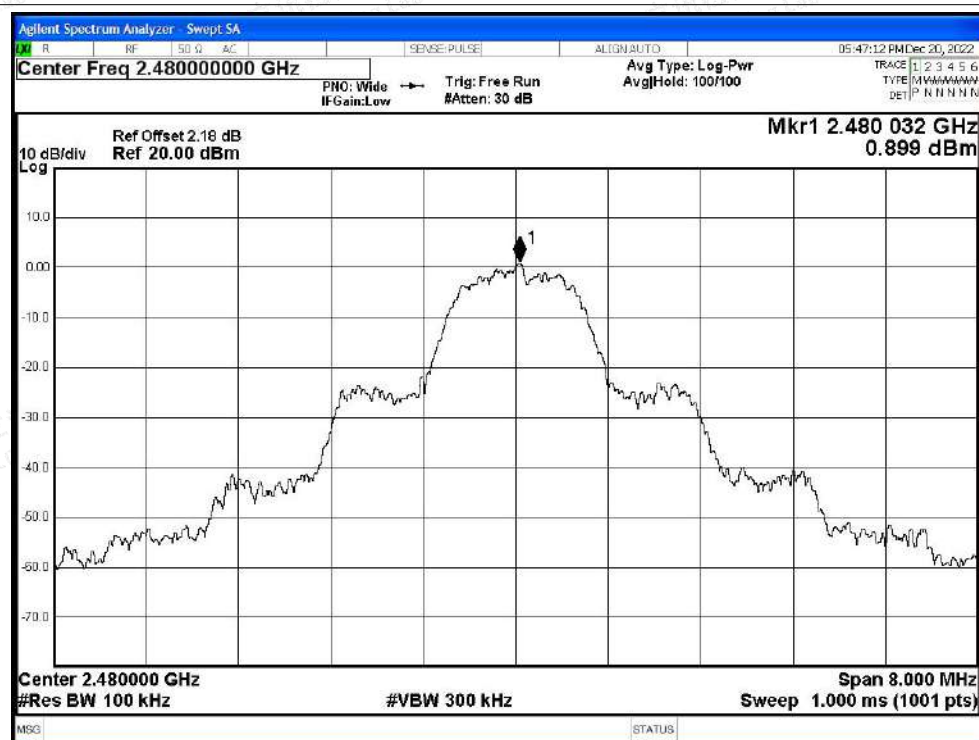


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

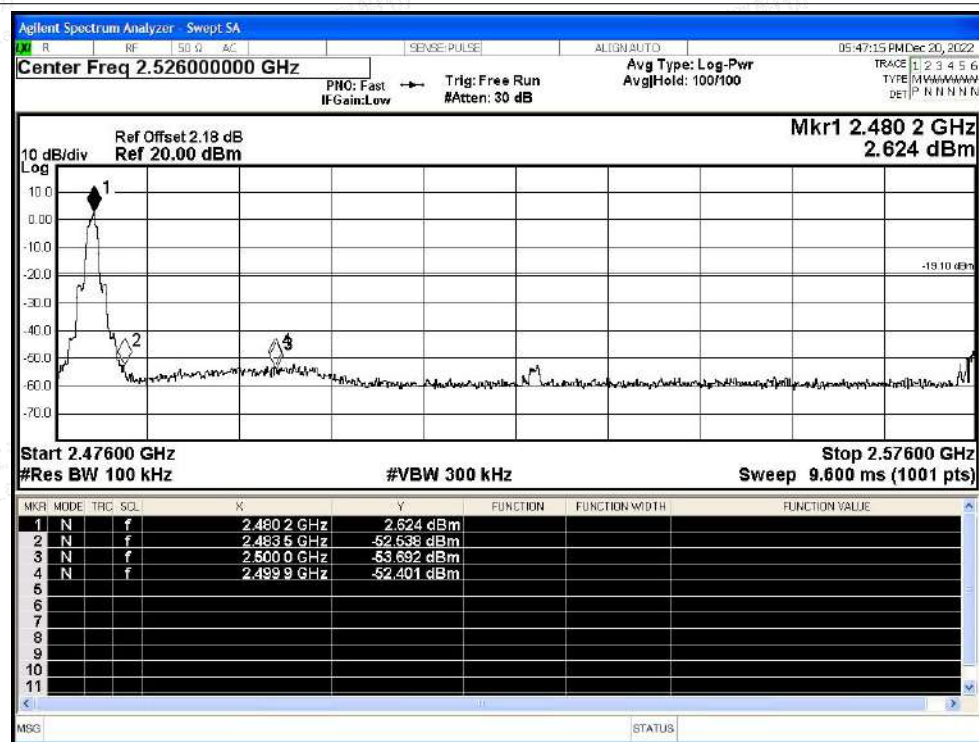




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

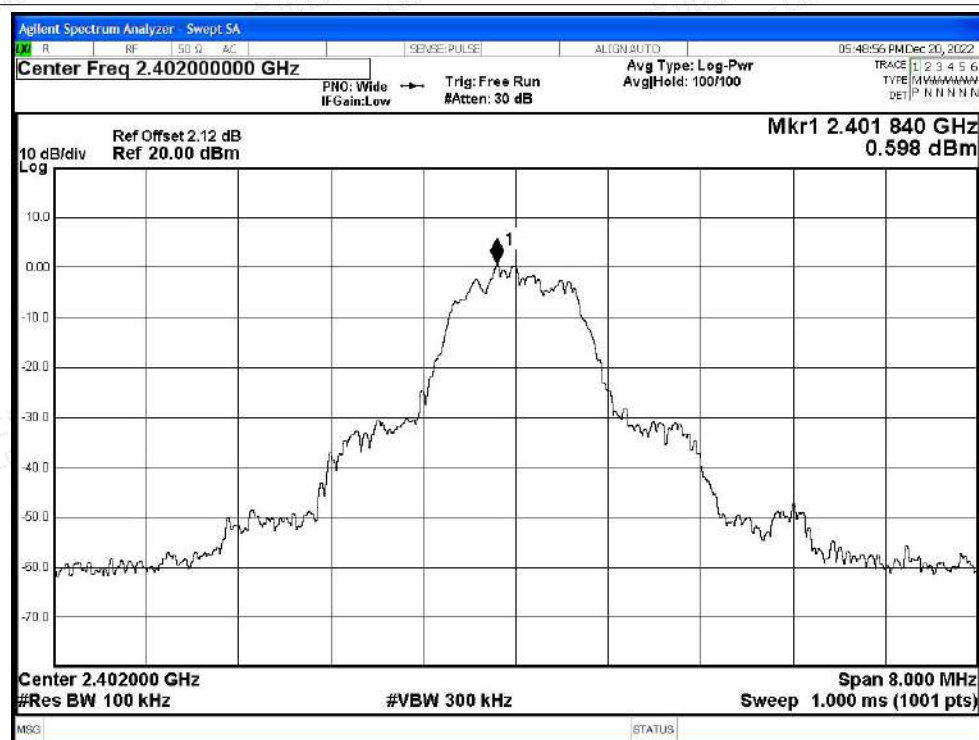


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

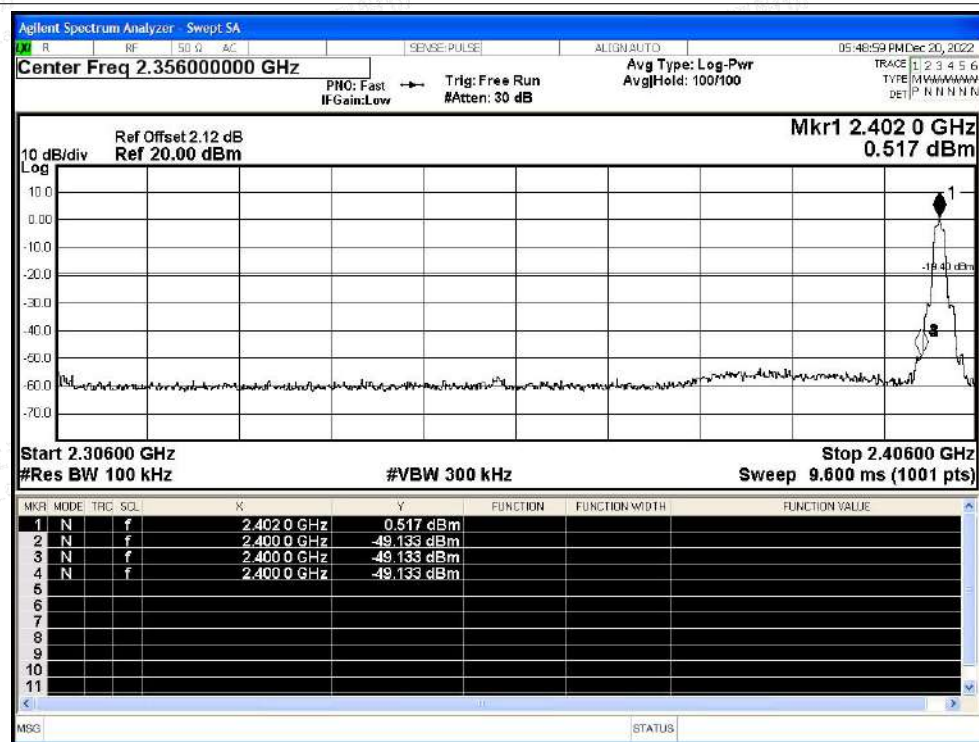




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

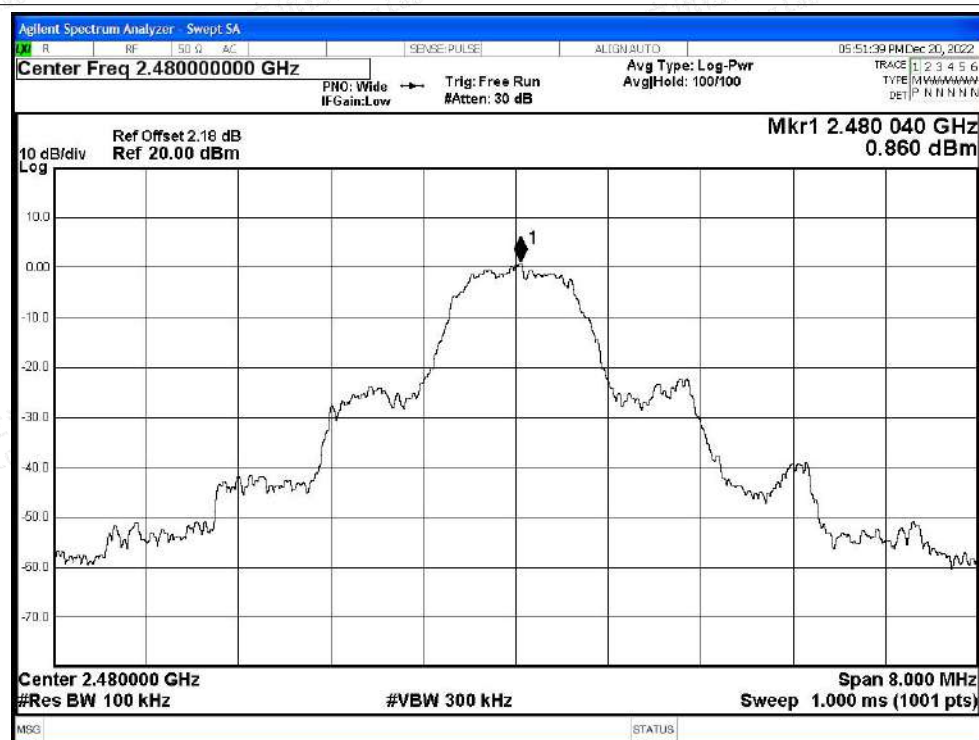


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

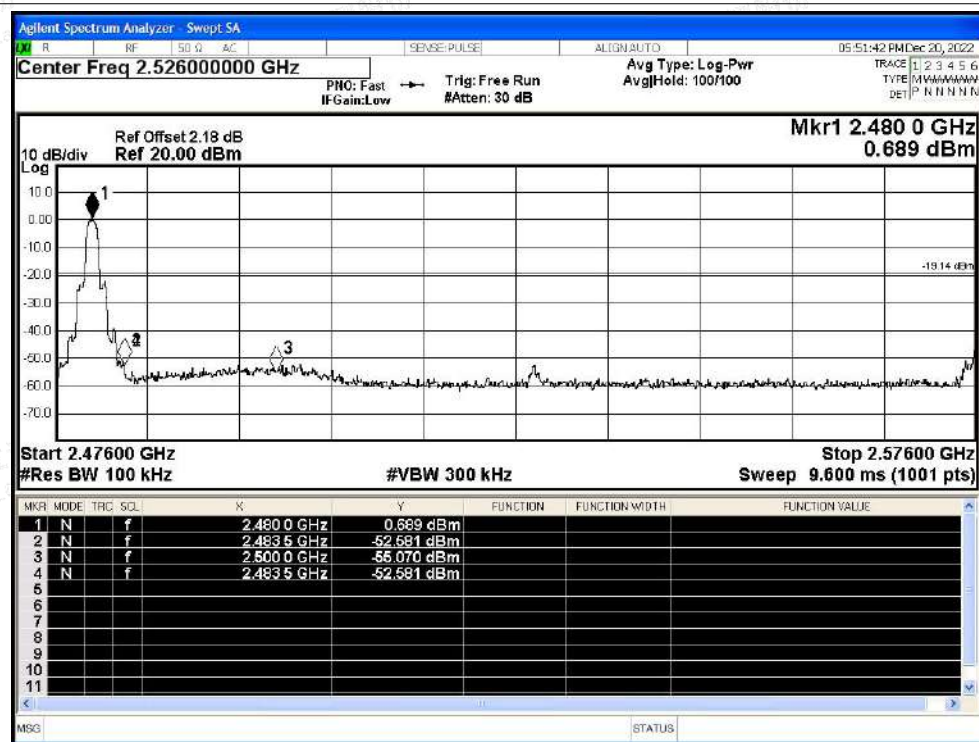




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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	-49.24	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-45.9	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-49.33	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-48.25	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-49.18	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-47.62	-20	Pass



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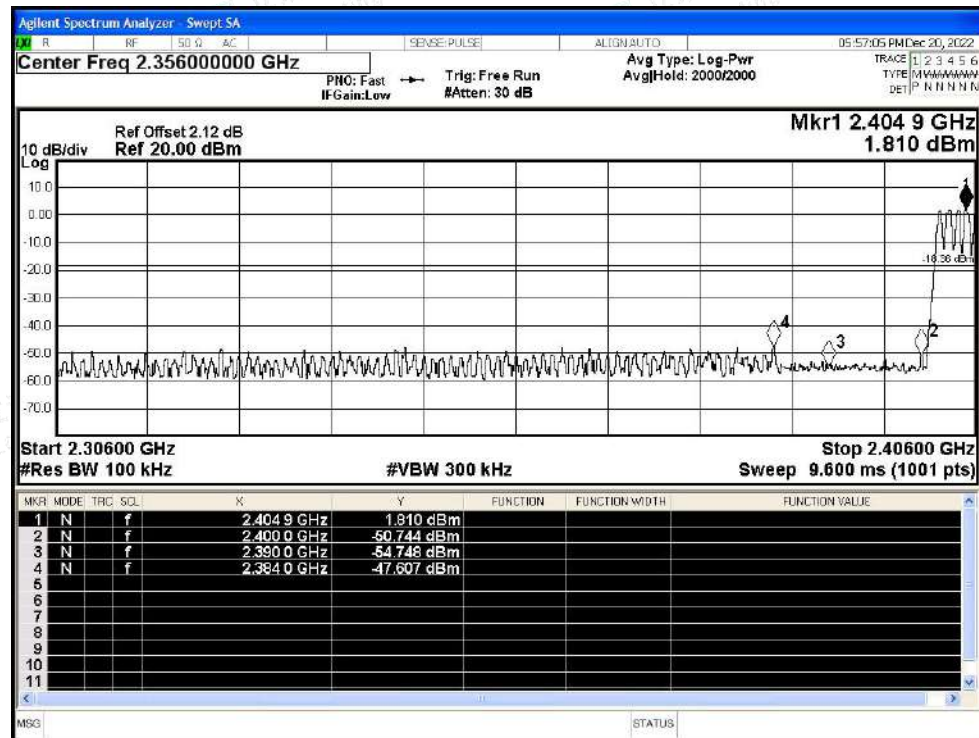


Test Graphs

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

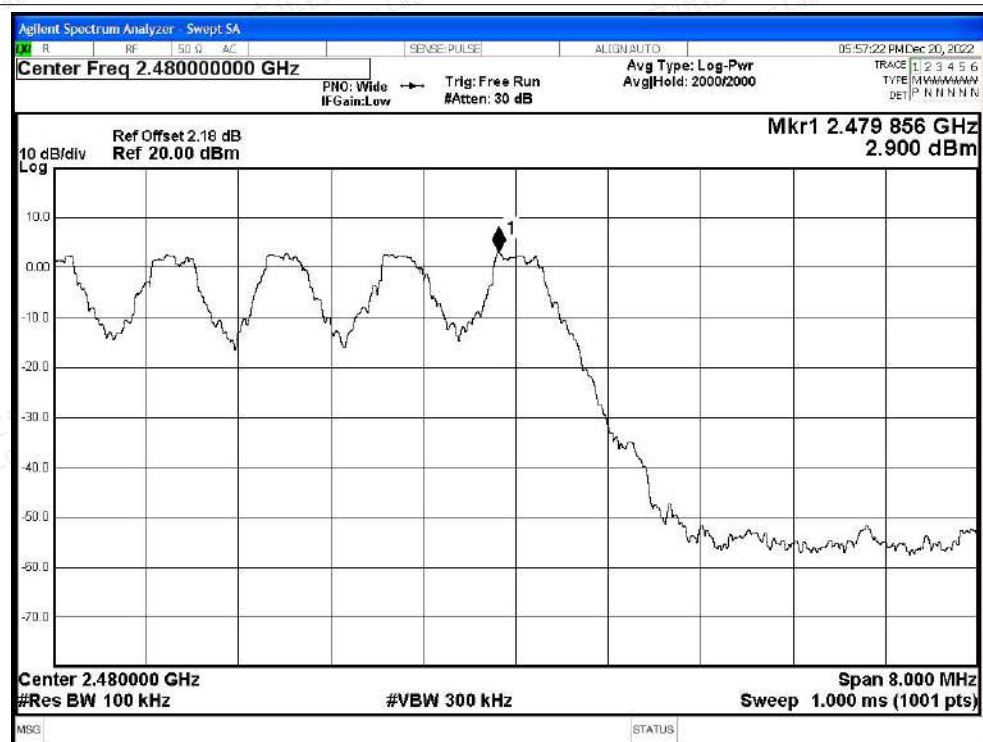


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

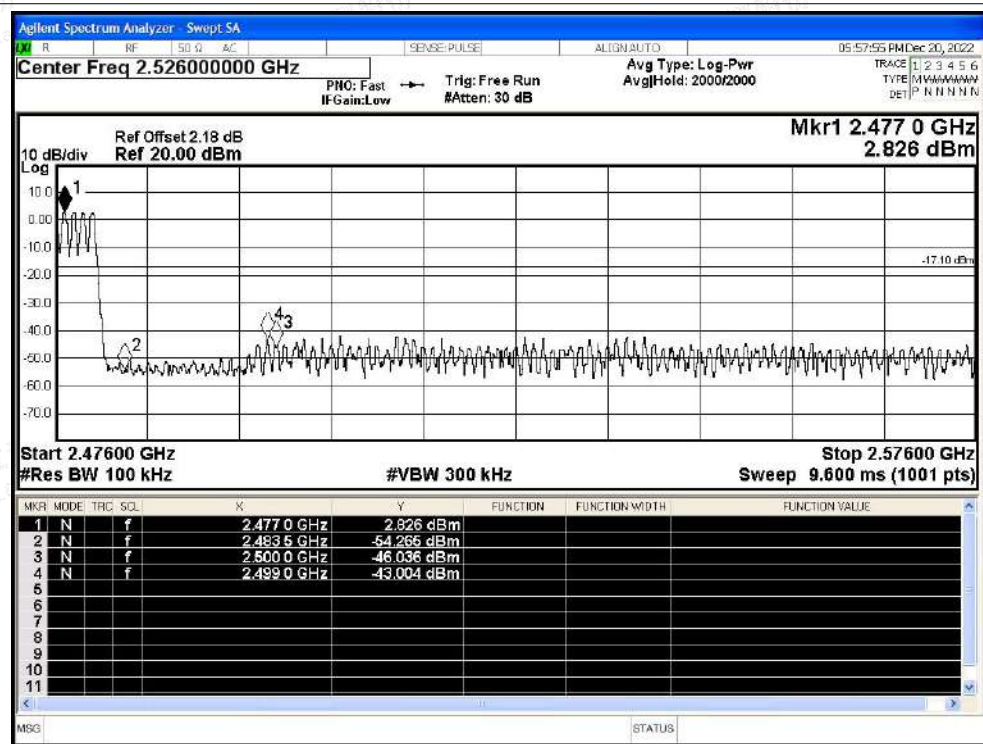




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



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

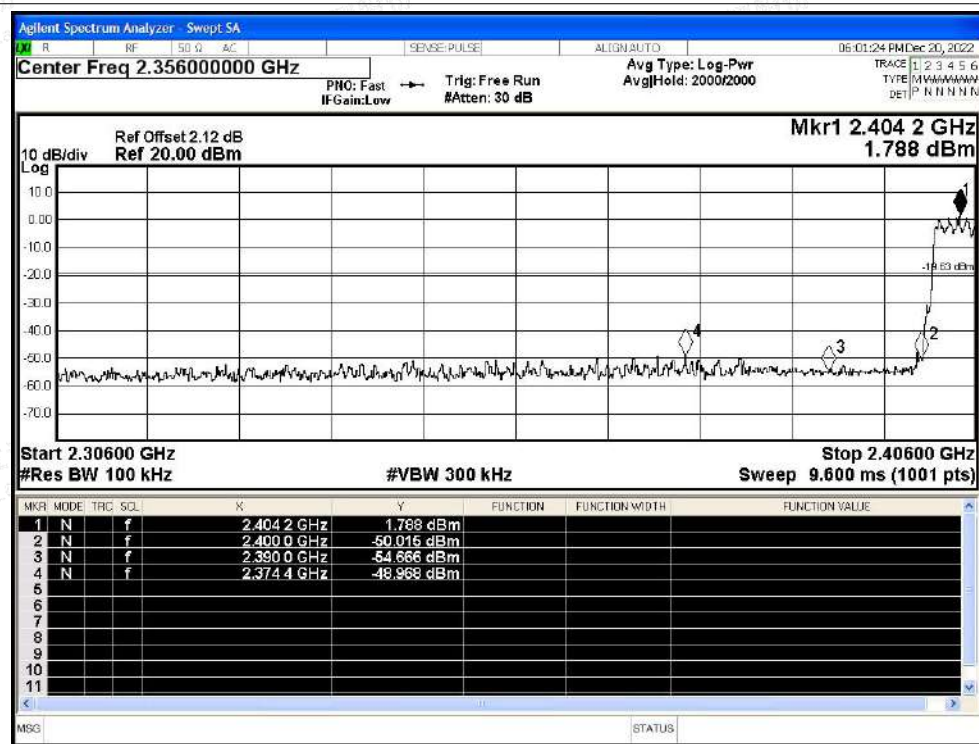


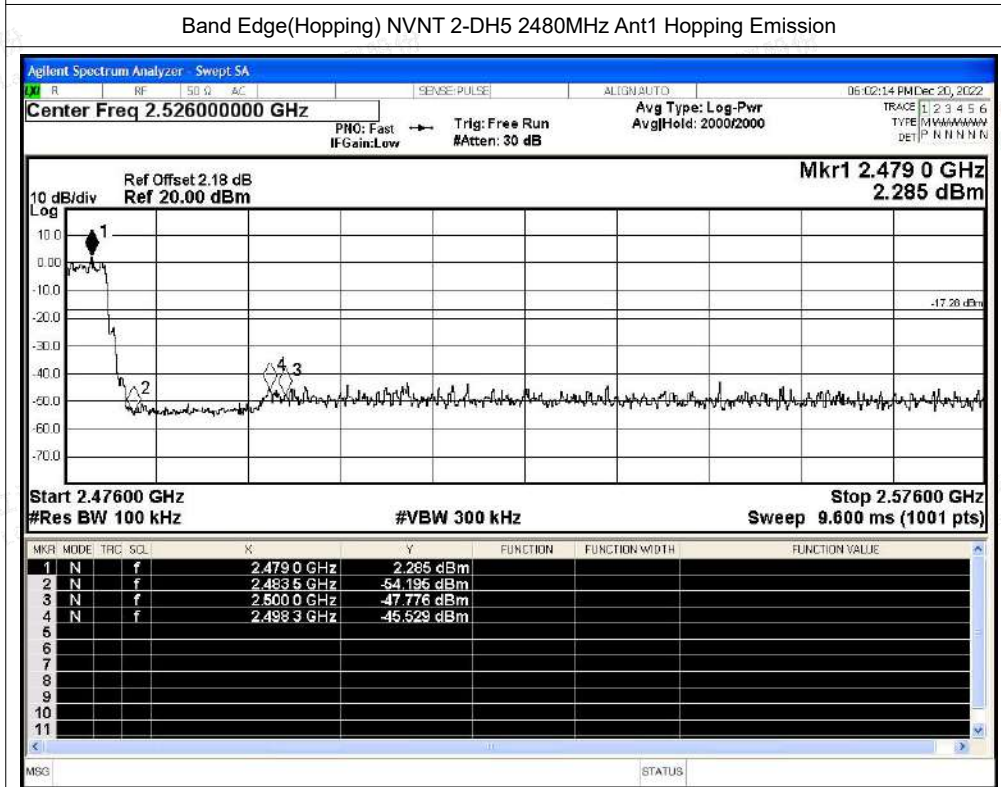
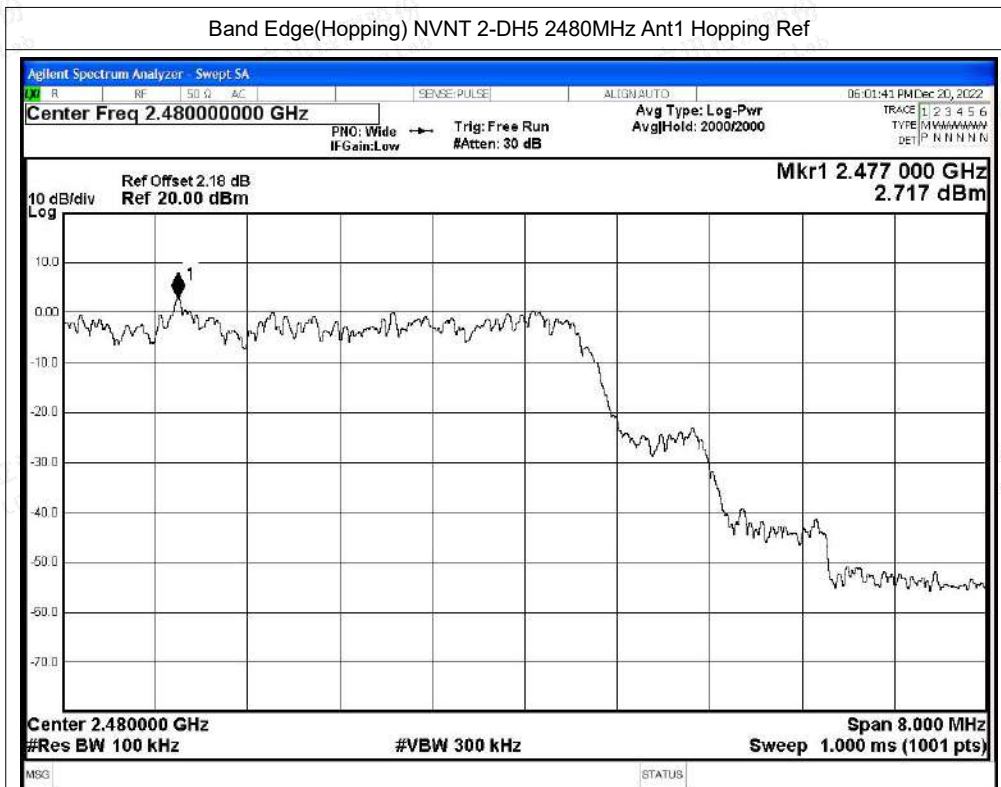


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



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



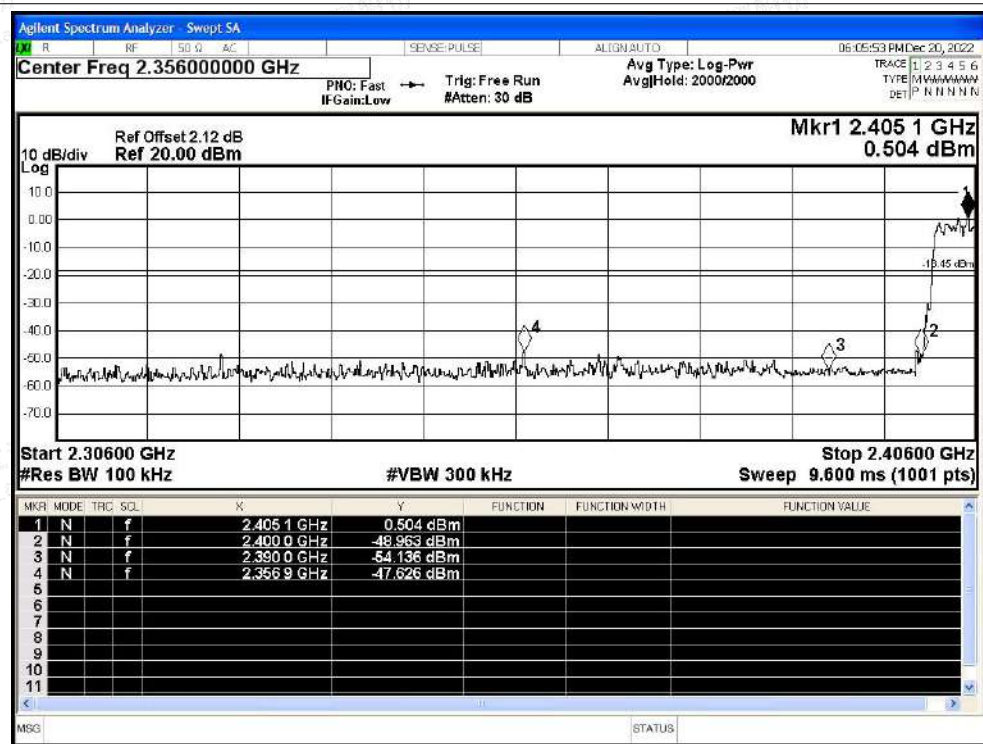


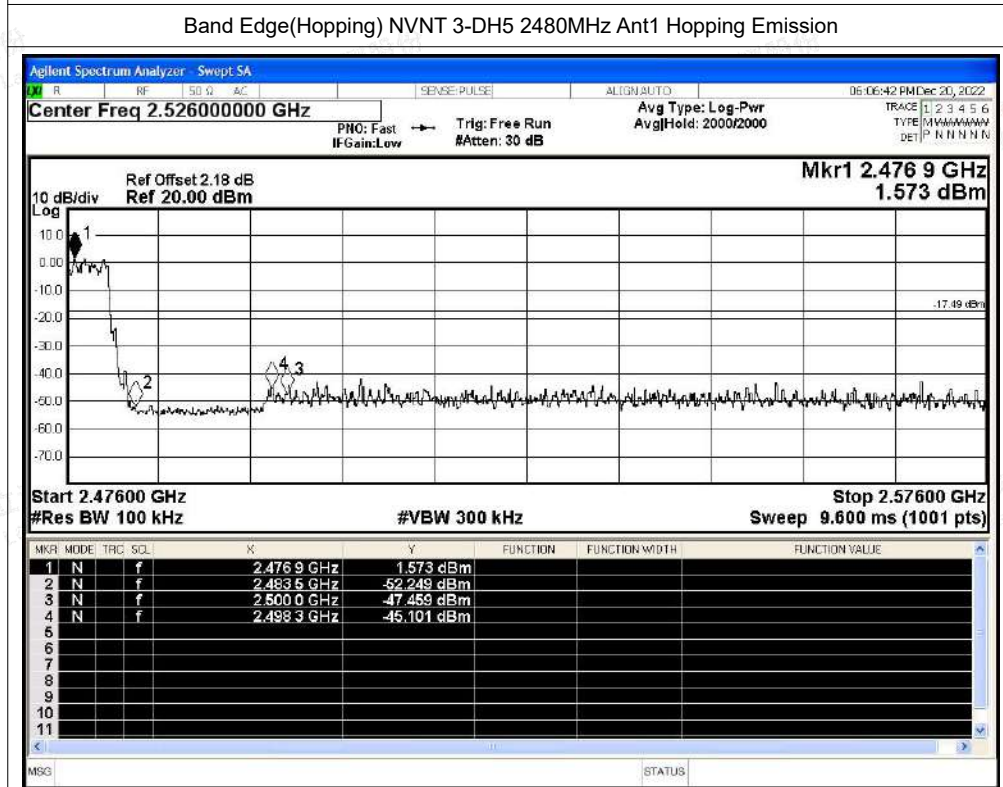
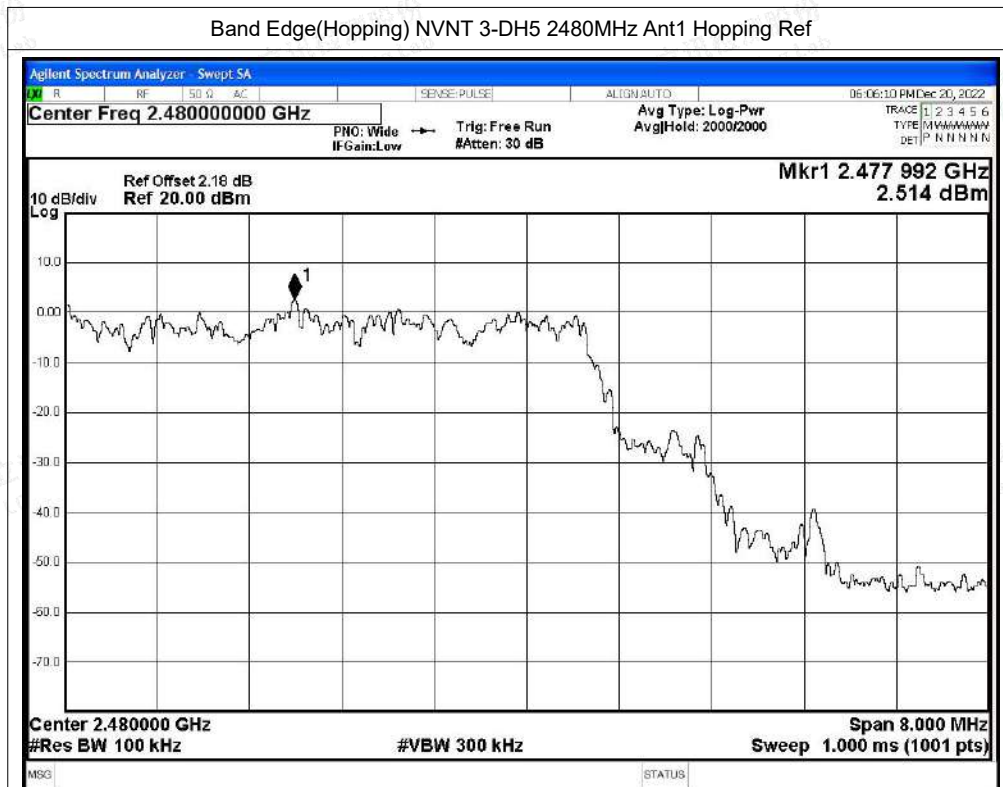


Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-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	-44.4	-20	Pass
NVNT	1-DH5	2441	Ant1	-31.84	-20	Pass
NVNT	1-DH5	2480	Ant1	-36.39	-20	Pass
NVNT	2-DH5	2402	Ant1	-45.07	-20	Pass
NVNT	2-DH5	2441	Ant1	-46.8	-20	Pass
NVNT	2-DH5	2480	Ant1	-46.4	-20	Pass
NVNT	3-DH5	2402	Ant1	-28.8	-20	Pass
NVNT	3-DH5	2441	Ant1	-27.96	-20	Pass
NVNT	3-DH5	2480	Ant1	-23.87	-20	Pass

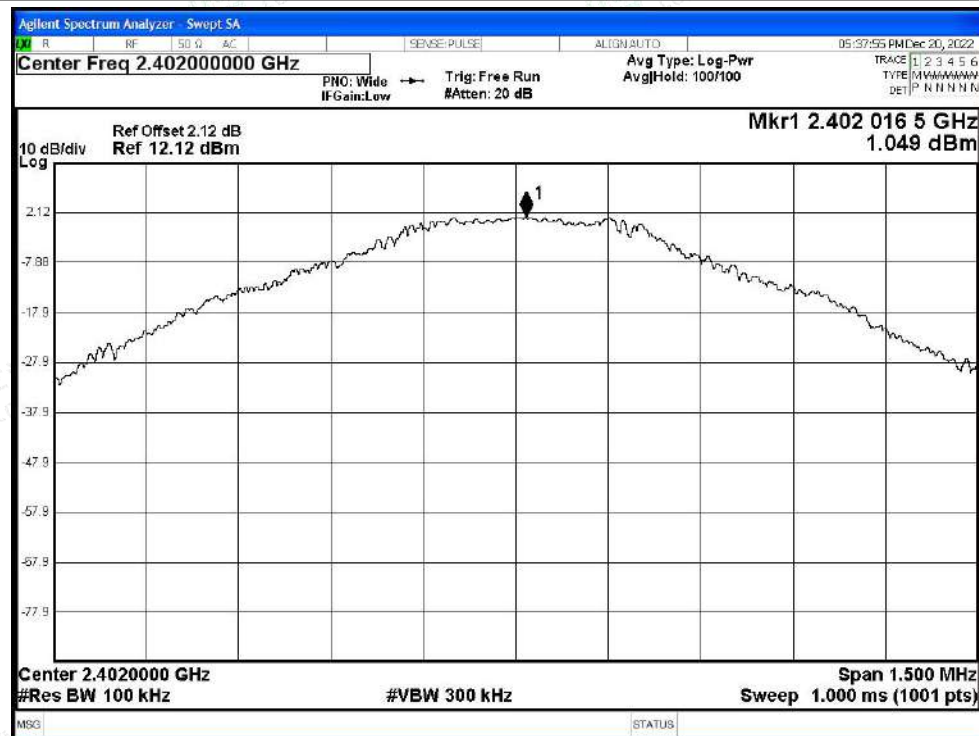


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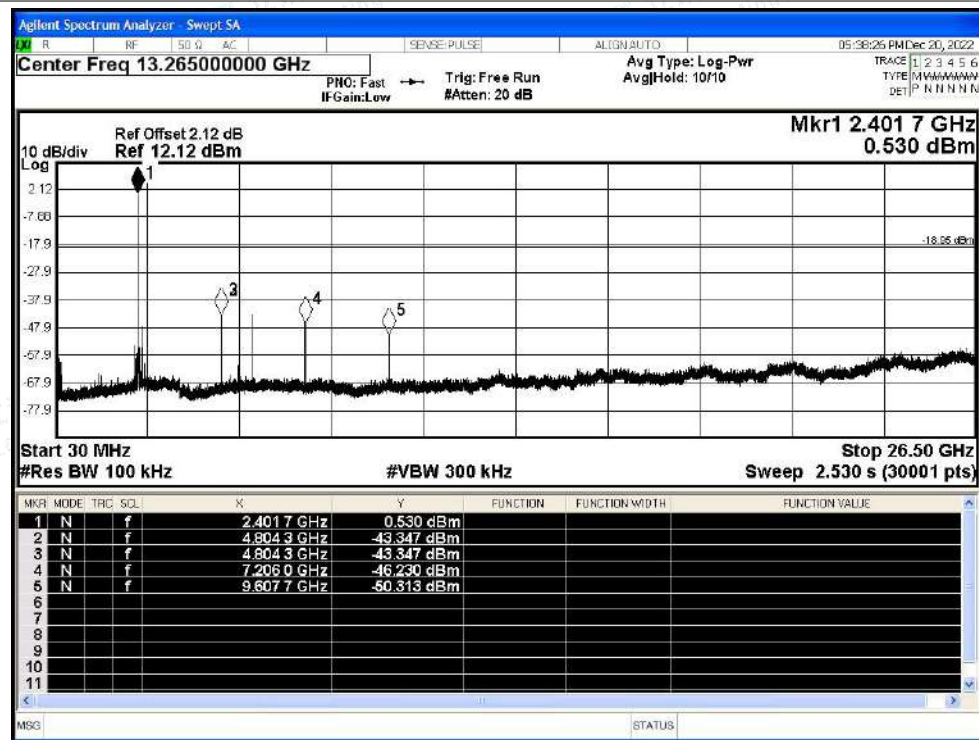


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

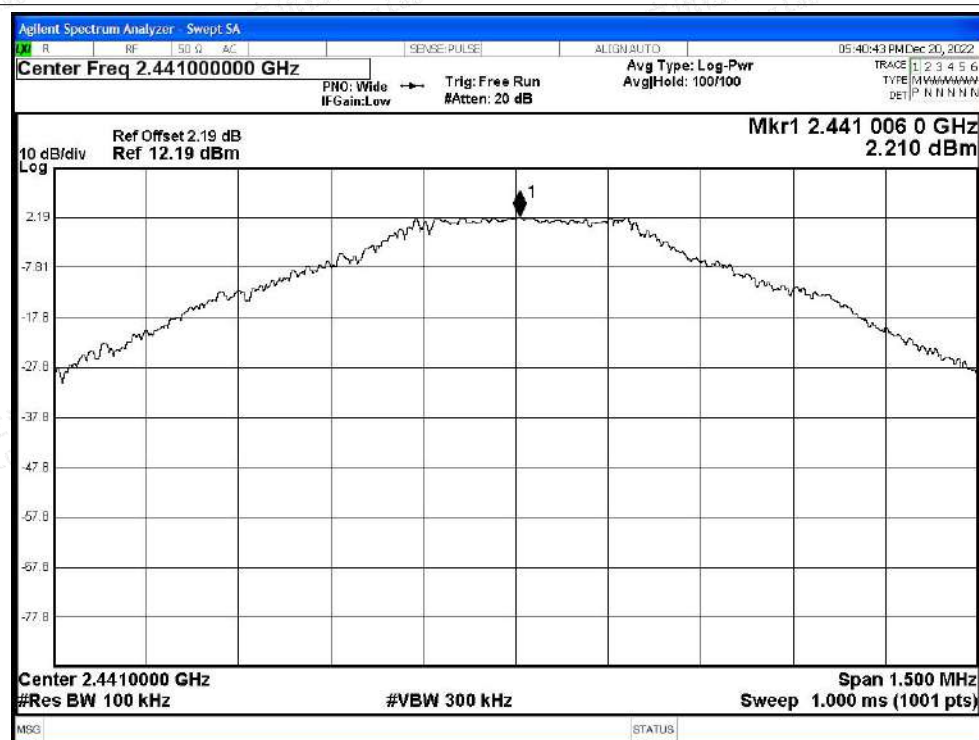


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

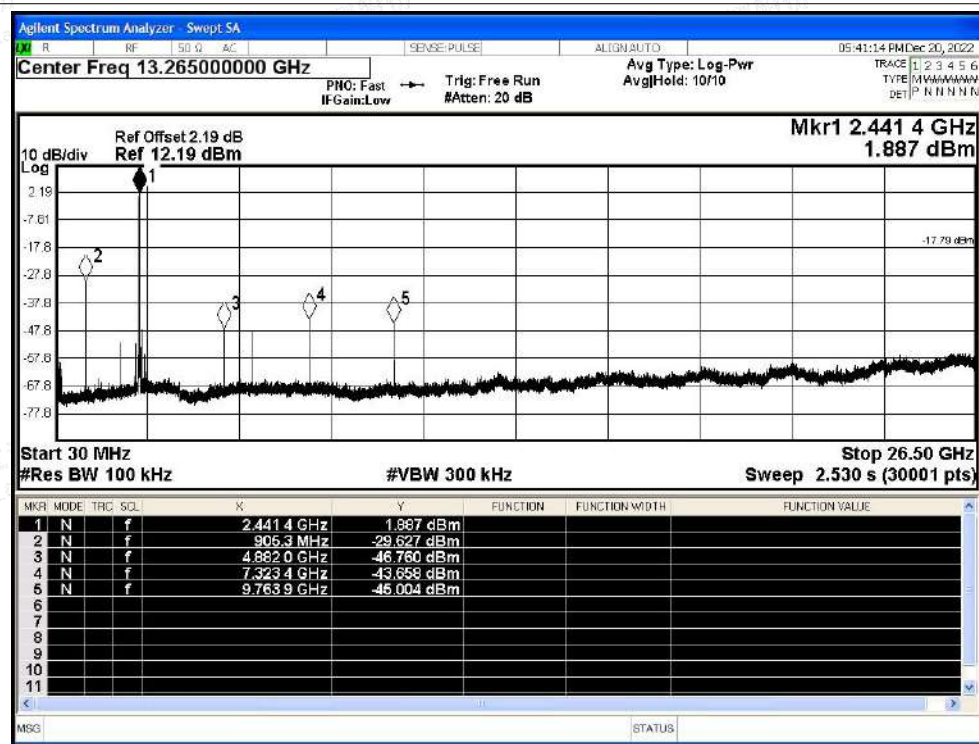




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

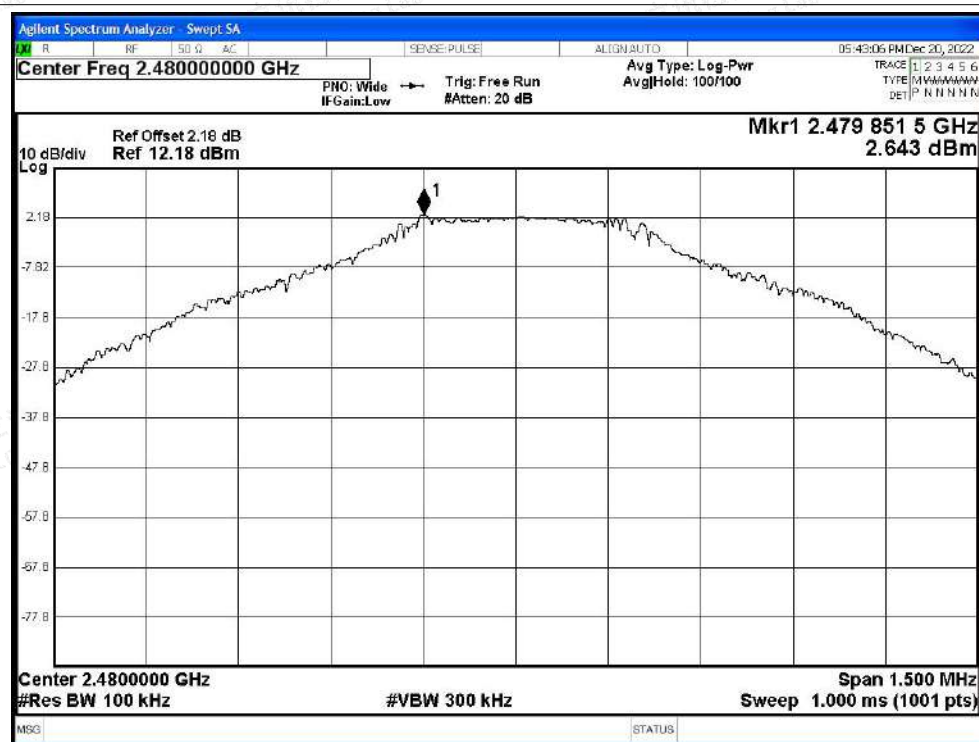


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

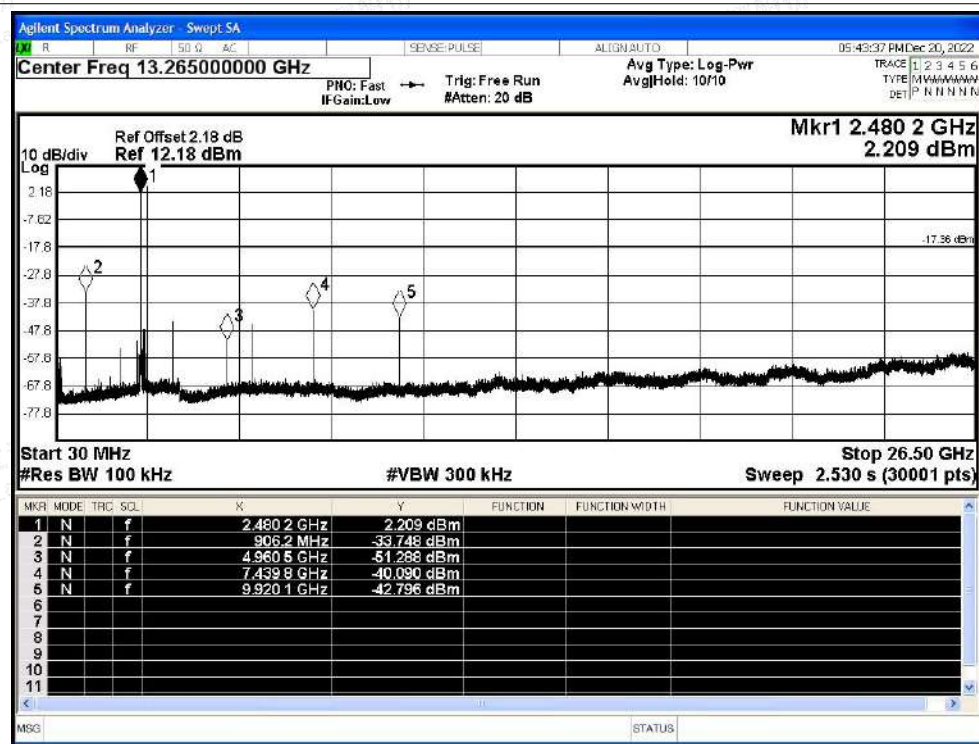




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

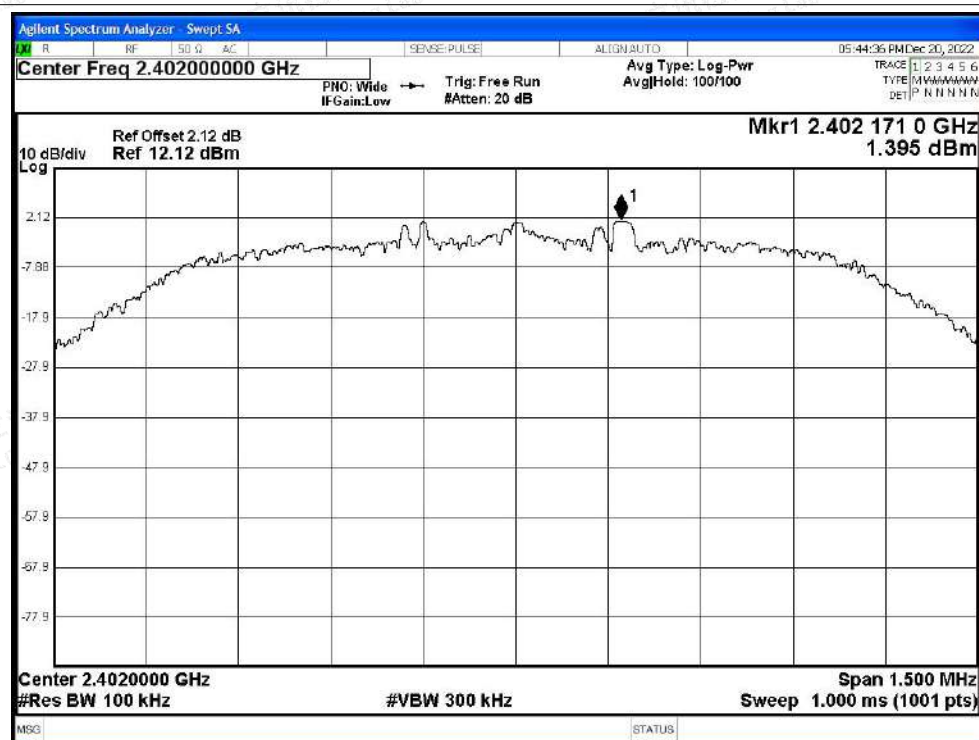


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

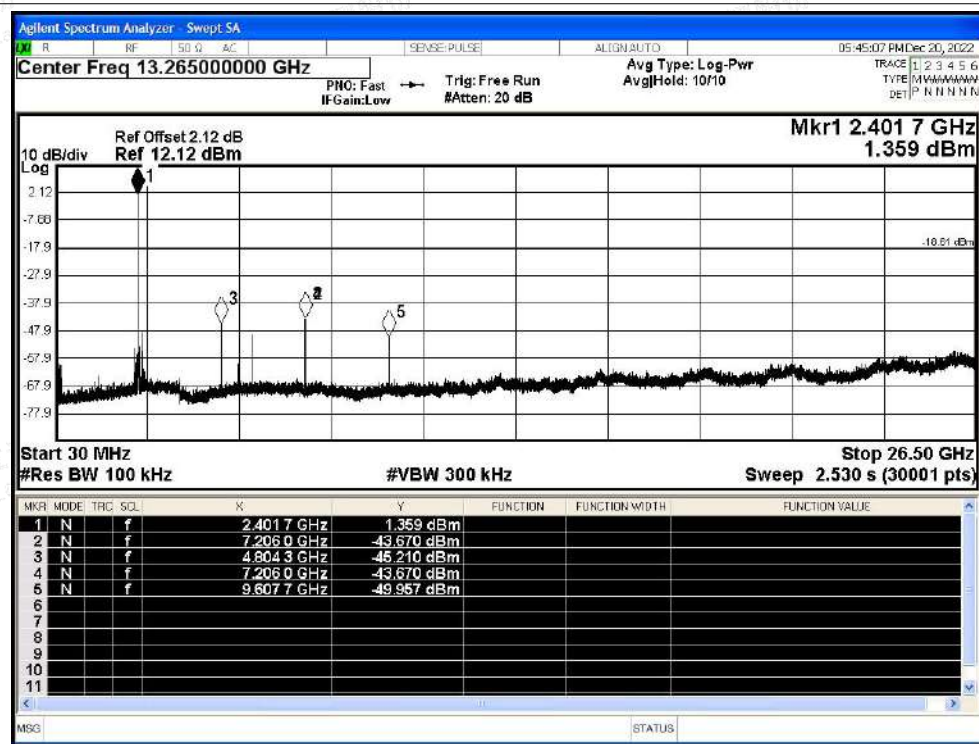




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

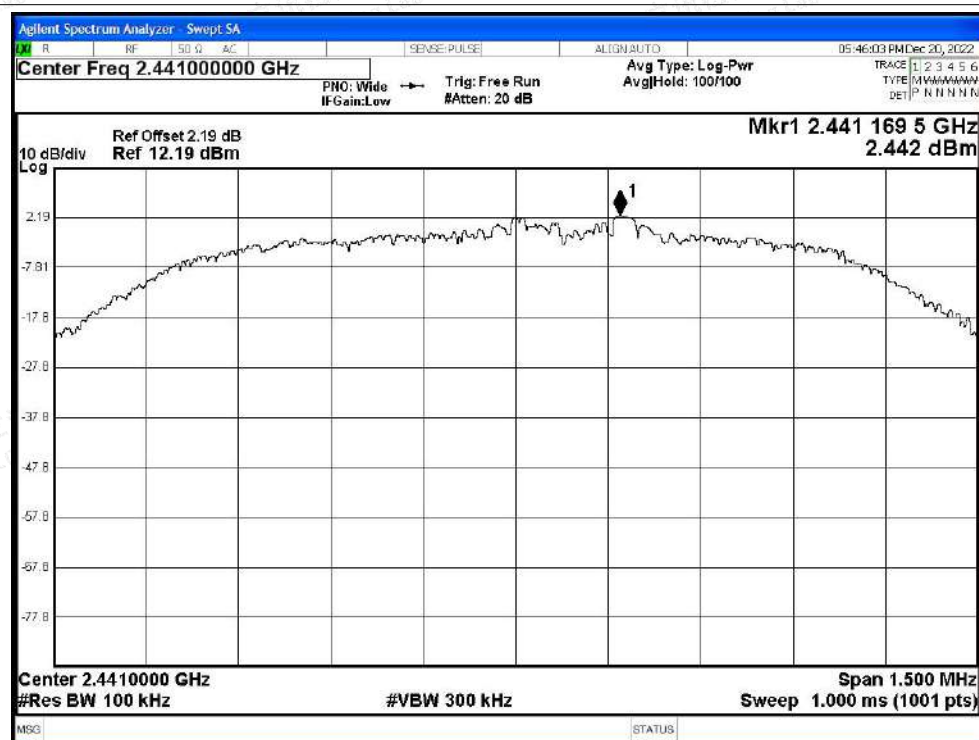


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

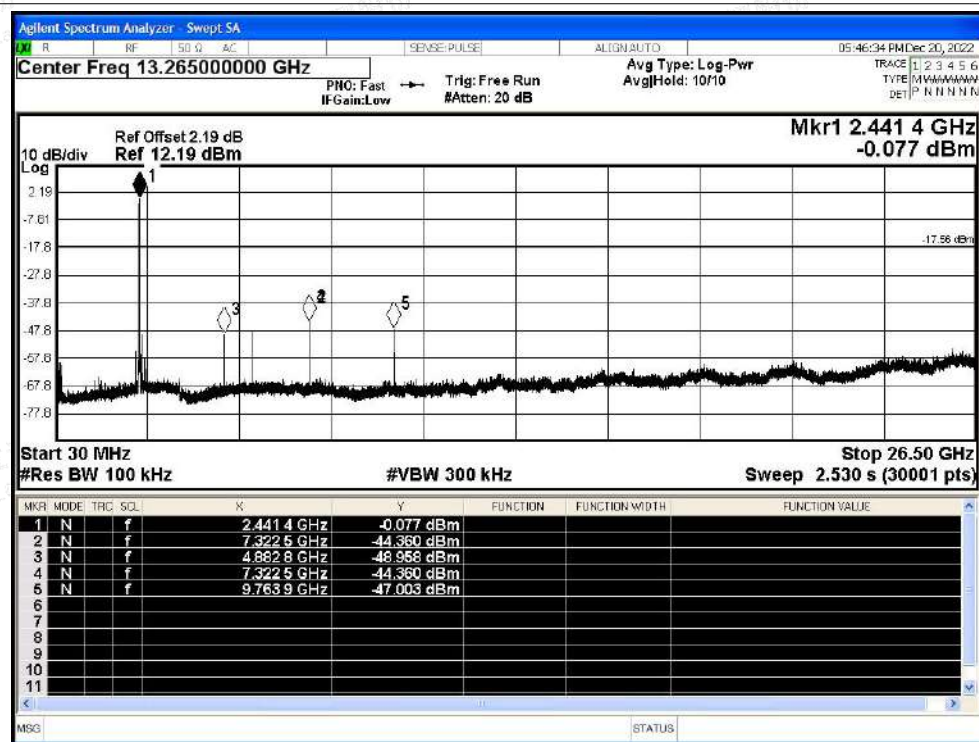




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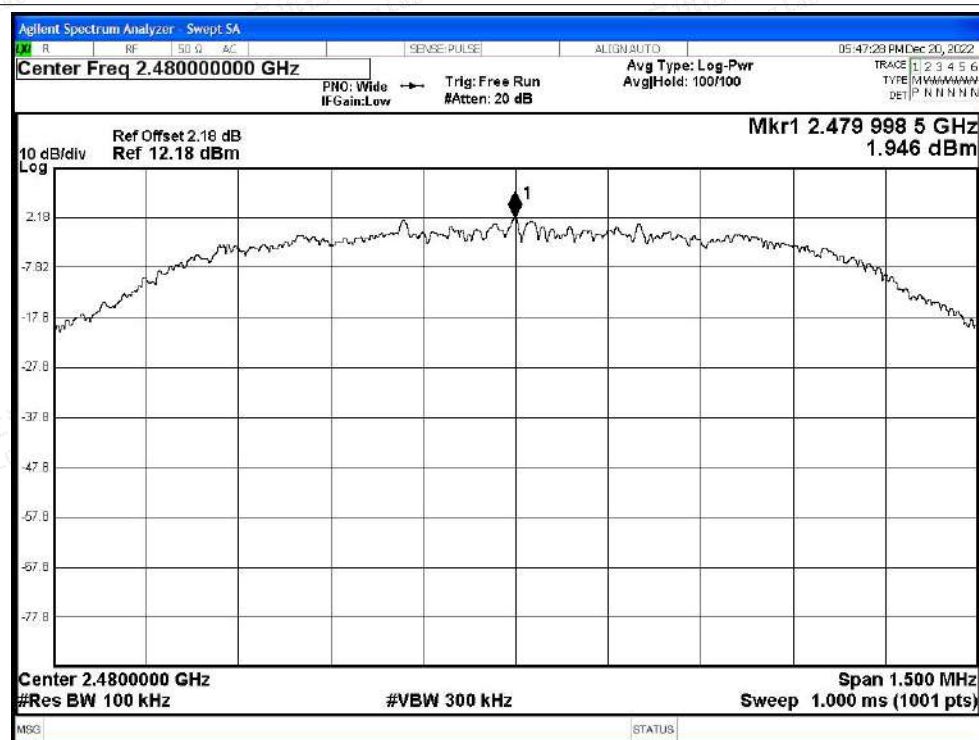


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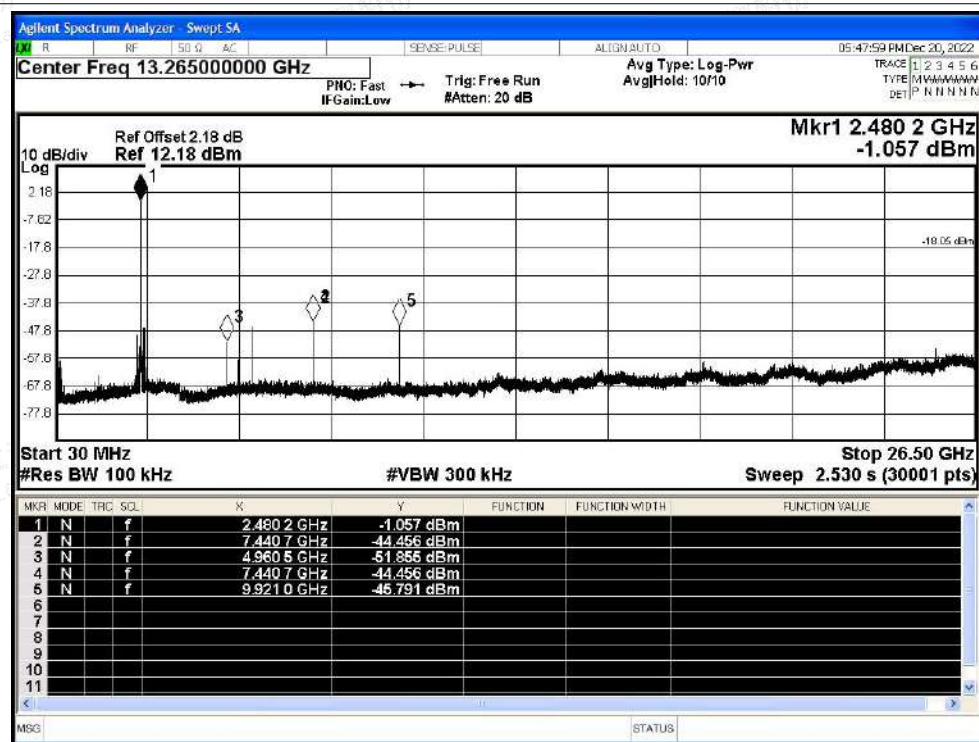




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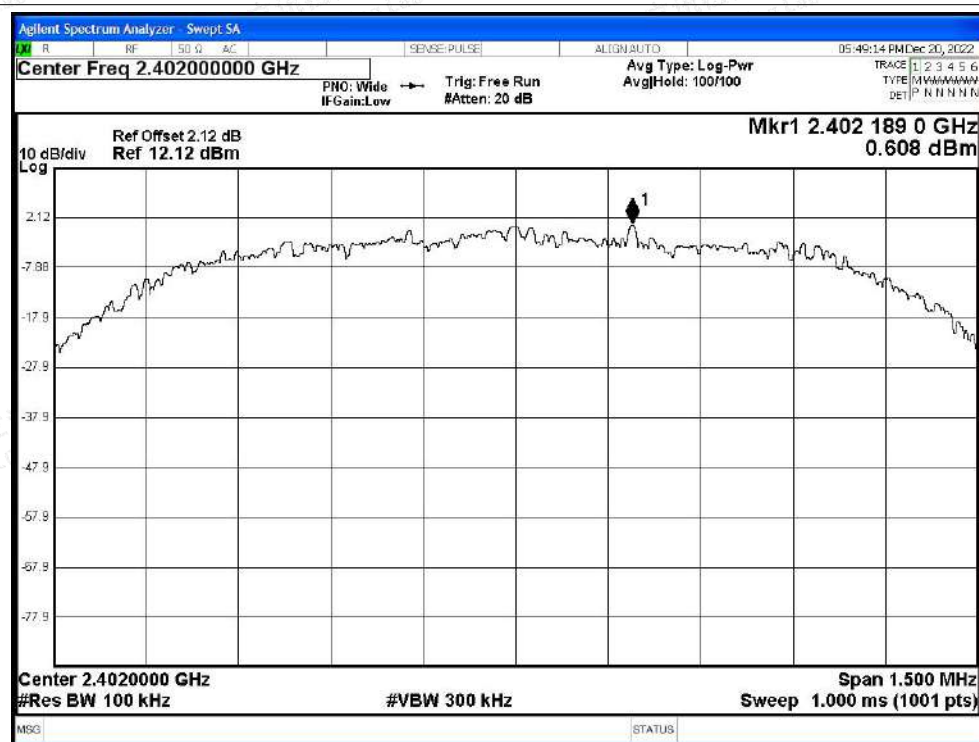


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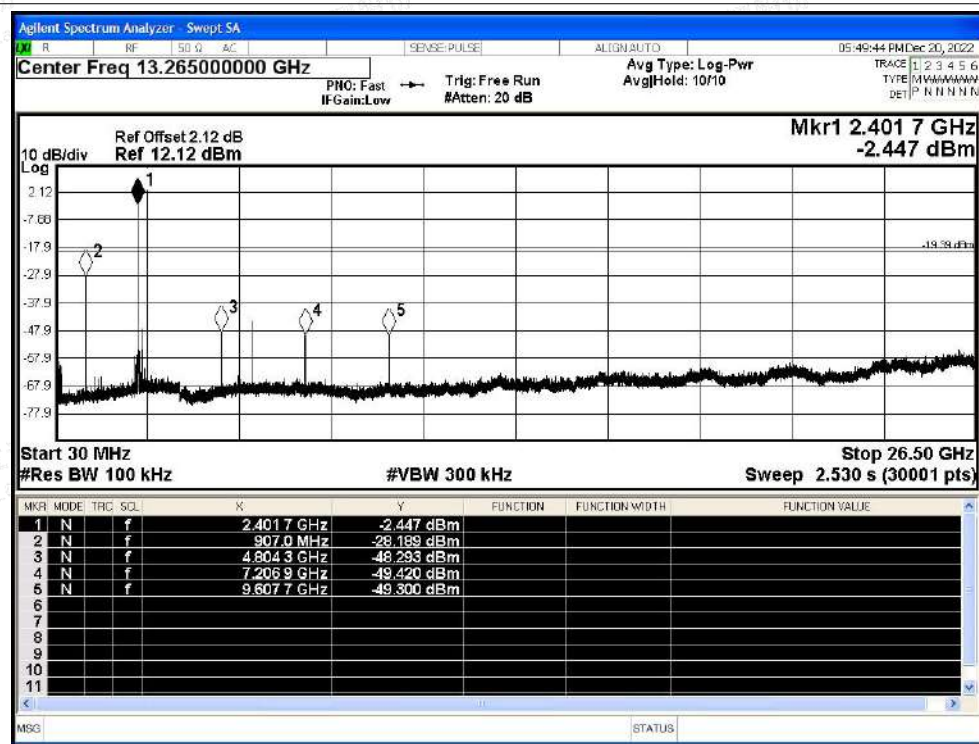




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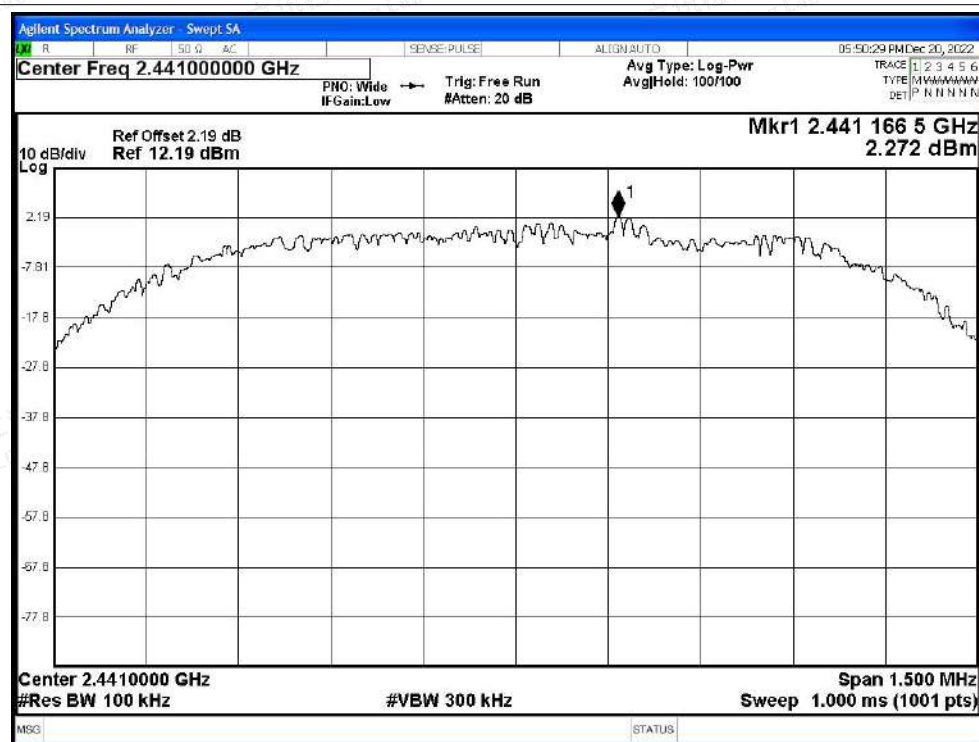


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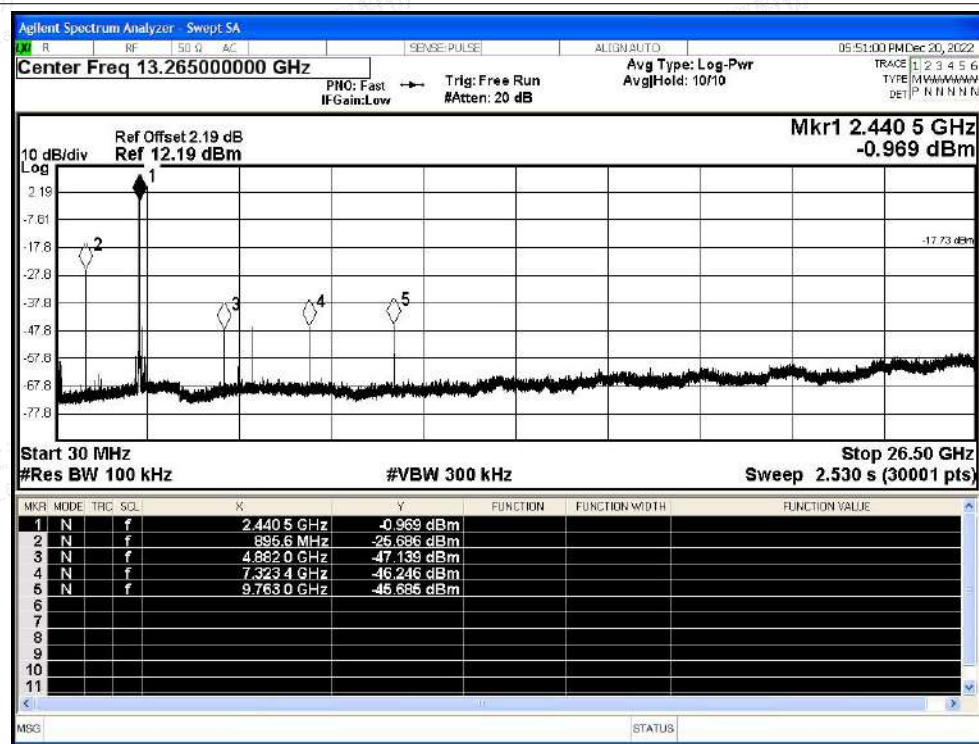




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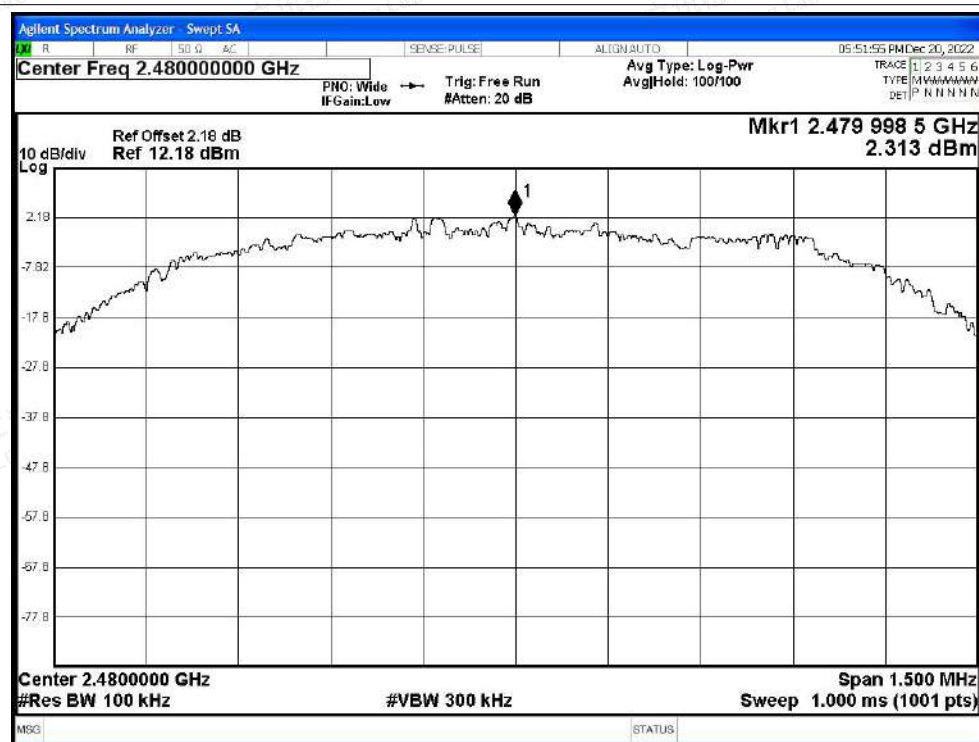


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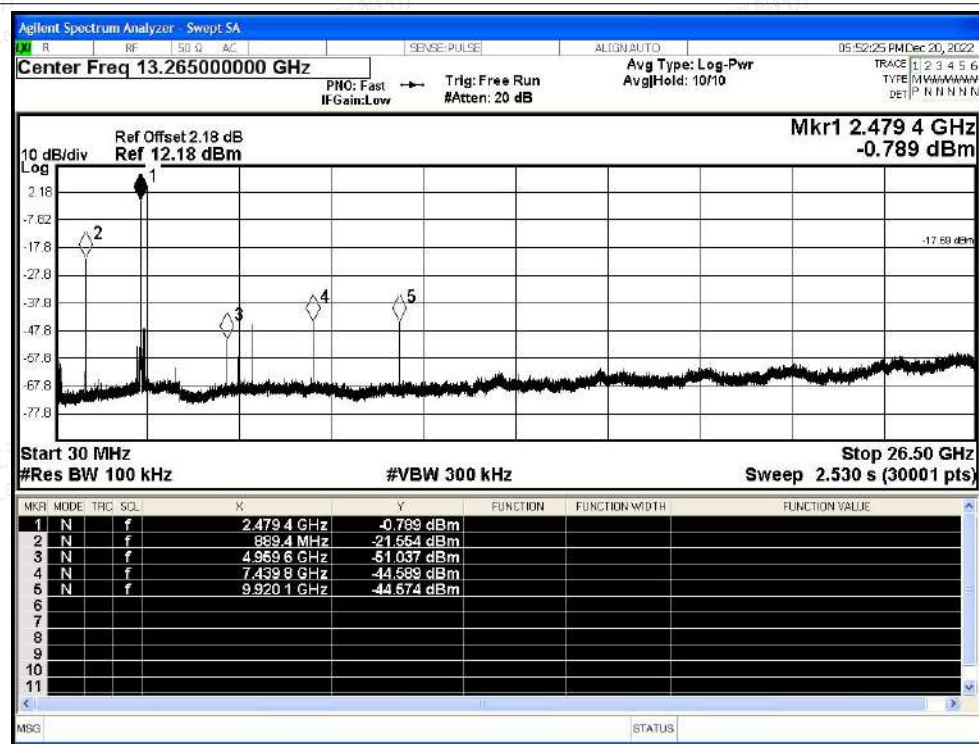




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



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	-50.72	2	46.54	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-60.42	2	36.84	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2387.184	-45.01	2	52.25	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2378.064	-55.92	2	41.34	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-46.86	2	50.4	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-57.07	2	40.19	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-46.4	2	50.86	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.31	2	38.95	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2496.28	-42.33	2	54.93	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2498.992	-55.94	2	41.32	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-45.67	2	51.59	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-56.09	2	41.17	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.64	2	46.62	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-60.41	2	36.85	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2379.216	-44.47	2	52.79	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2382.288	-55.77	2	41.49	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-48.03	2	49.23	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-56.56	2	40.7	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-41.19	2	56.07	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-55.47	2	41.79	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.656	-40.52	2	56.74	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2499.4	-54.65	2	42.61	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-42.55	2	54.71	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-54.8	2	42.46	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.21	2	47.05	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-60.54	2	36.72	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2379.792	-42.93	2	54.33	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2384.112	-55.83	2	41.43	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-46.76	2	50.5	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-56.51	2	40.75	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-40.4	2	56.86	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-55.46	2	41.8	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.56	-40.36	2	56.9	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2499.88	-54.66	2	42.6	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-43.18	2	54.08	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-54.85	2	42.41	Average	54	Pass

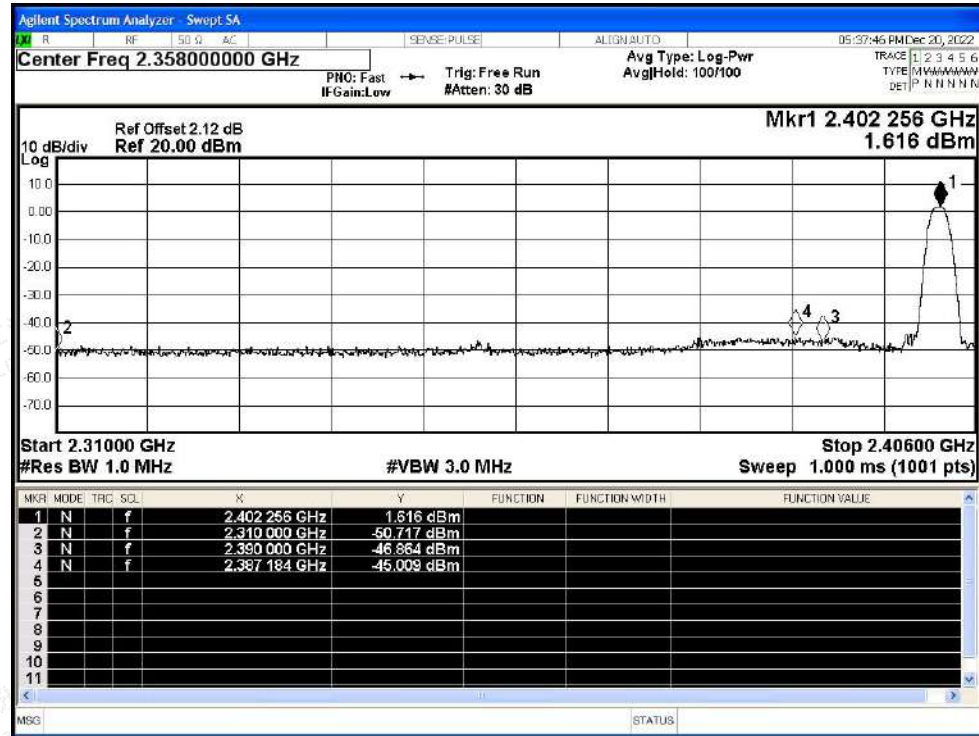


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Scan code to check authenticity

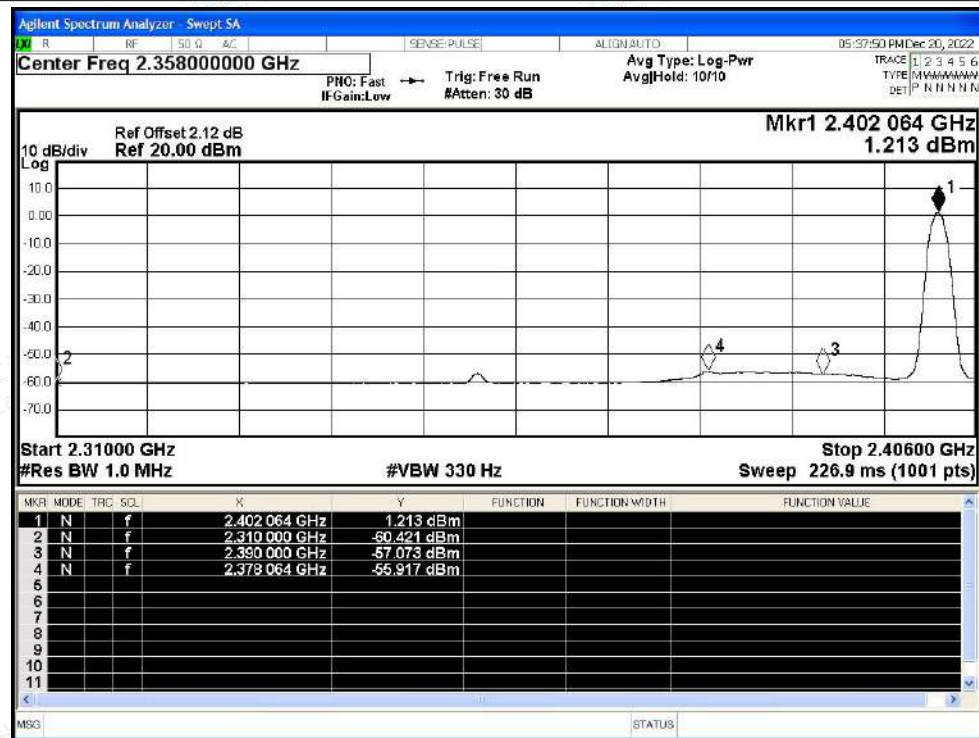


Test Graphs

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

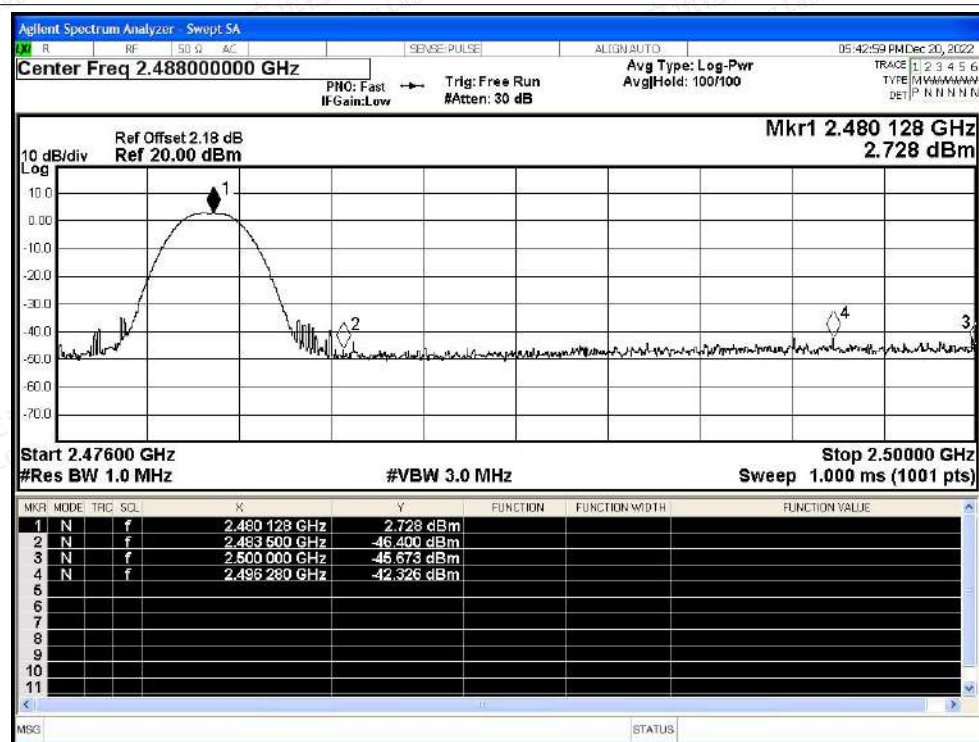


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

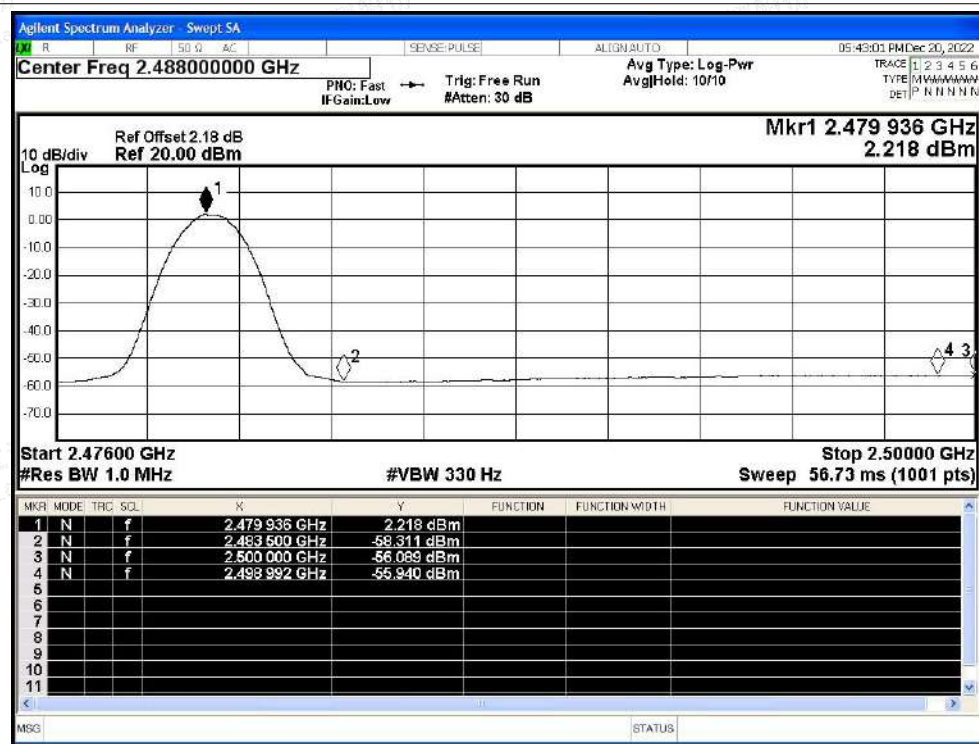




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

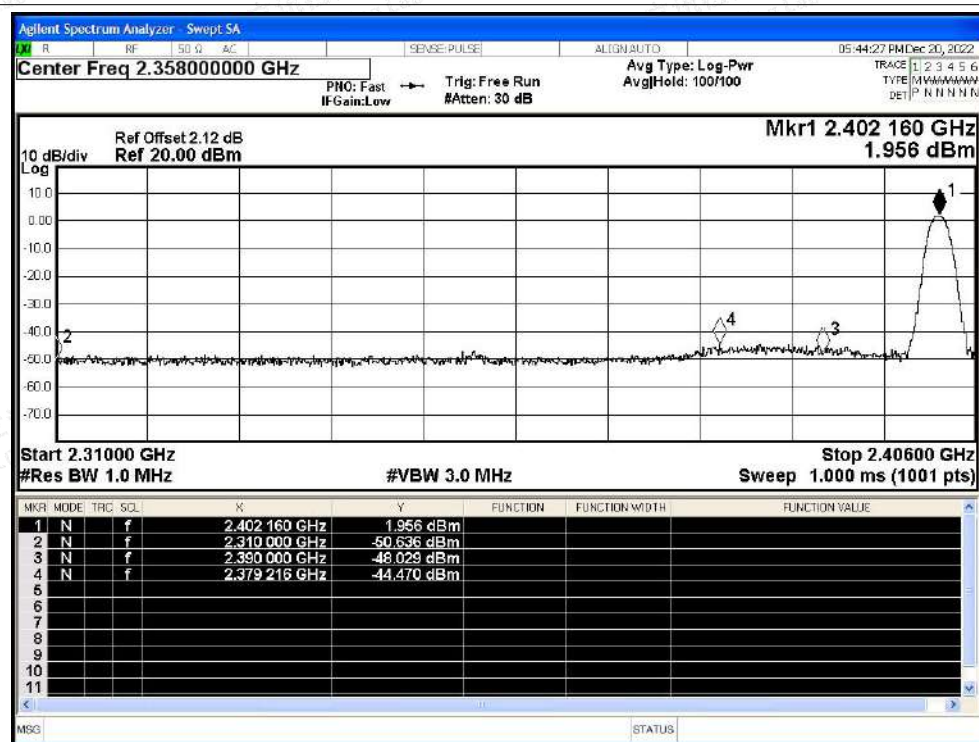


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

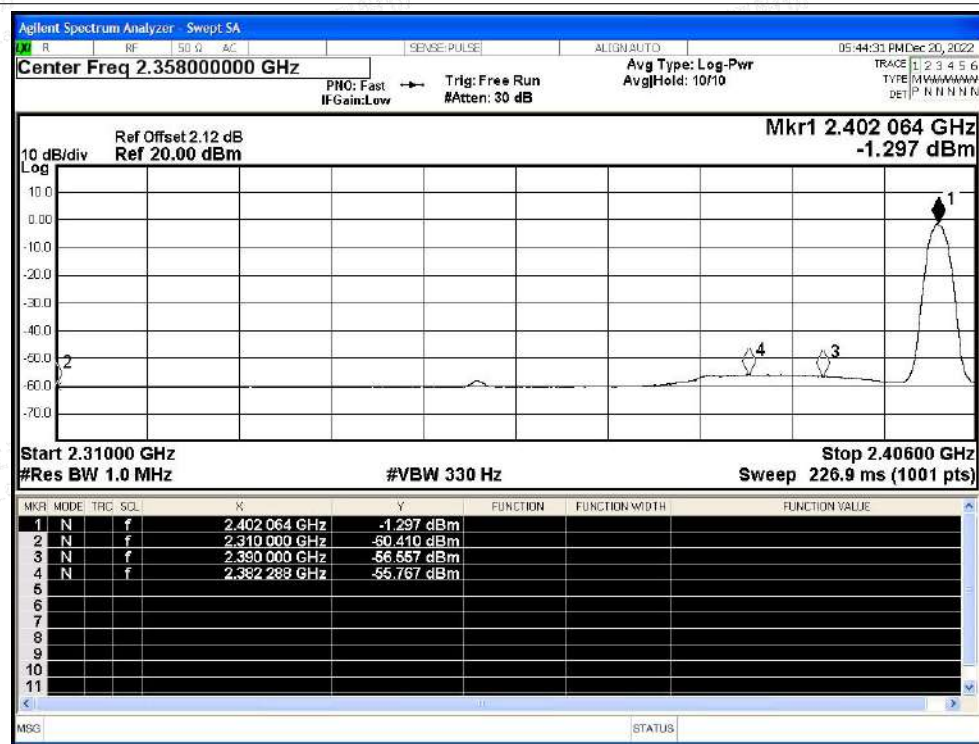




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

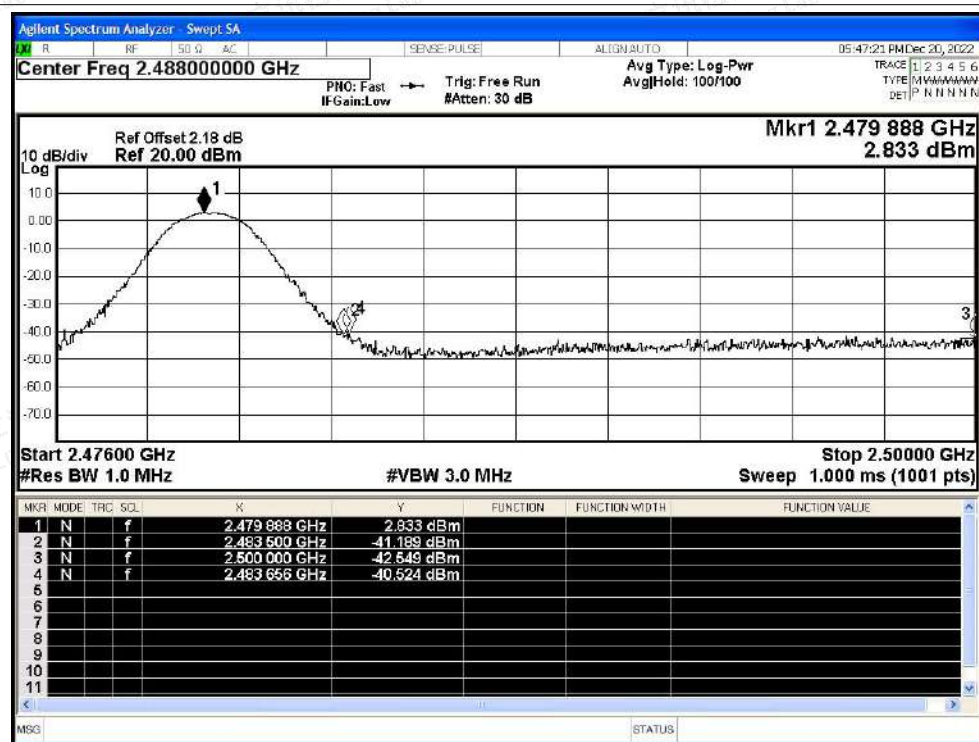


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average

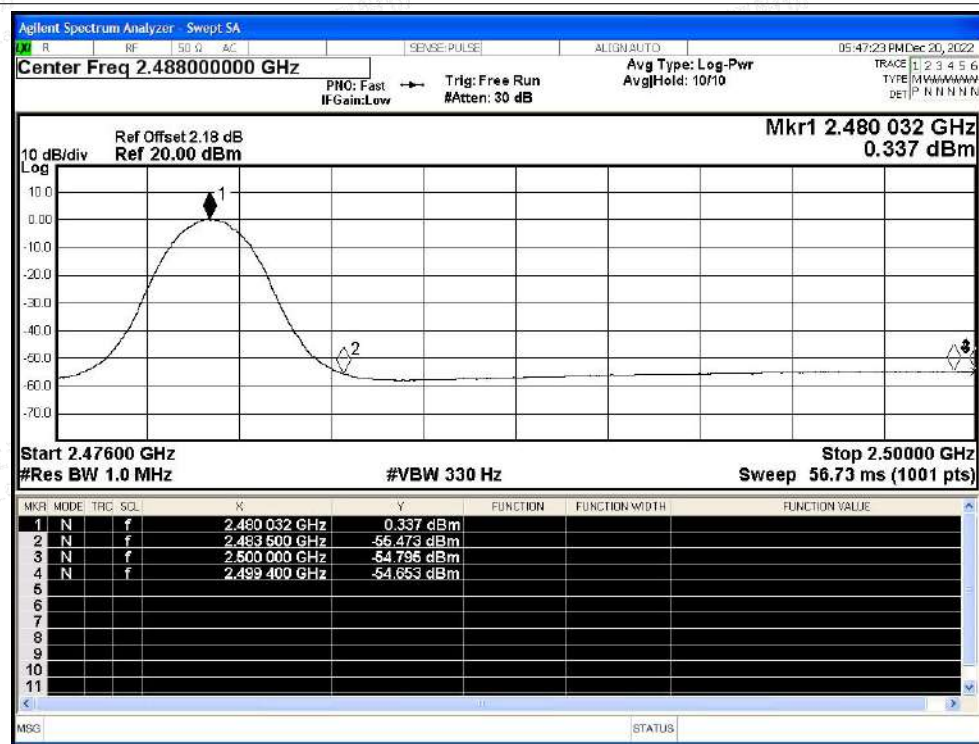




Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak

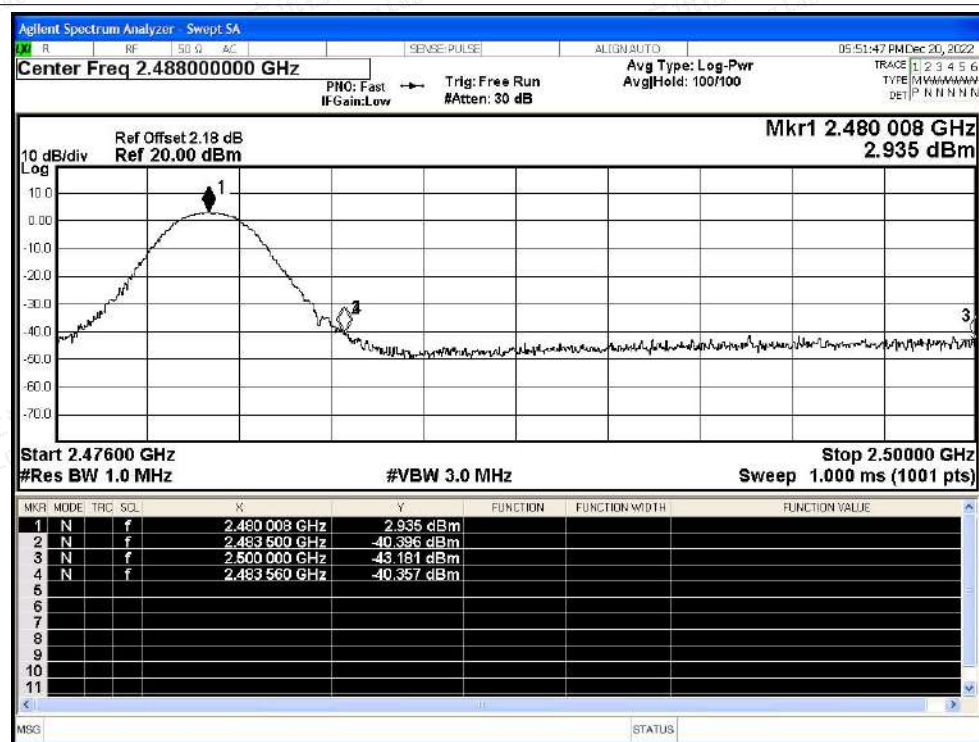


Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average





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



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

