



## Appendix A

### RF Test Data for BT (Conducted Measurement)

Product Name: LED patio umbrella light+speaker

Test Model: AT1894

#### Environmental Conditions

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





## A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1.048	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.032	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.044	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.317	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.343	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.336	N/A	Pass





Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

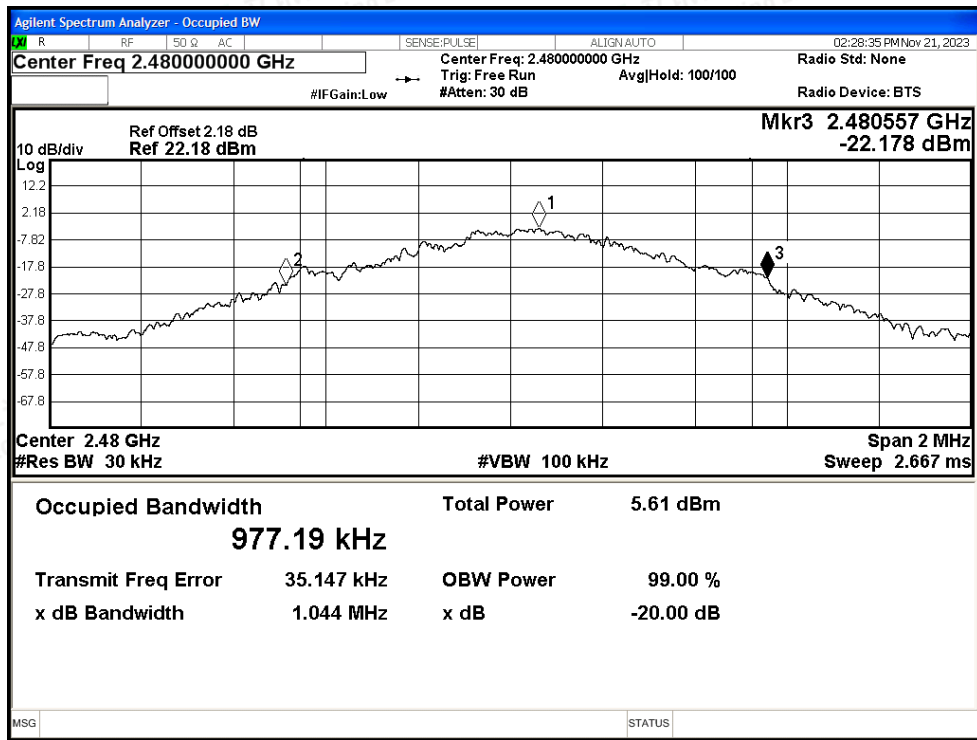


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

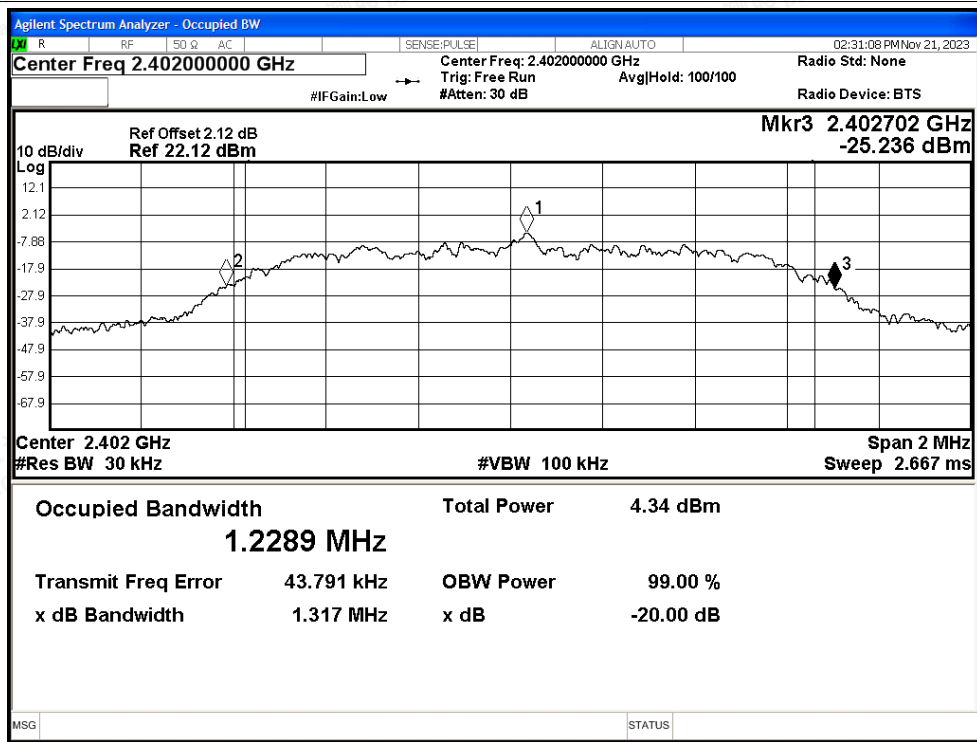




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

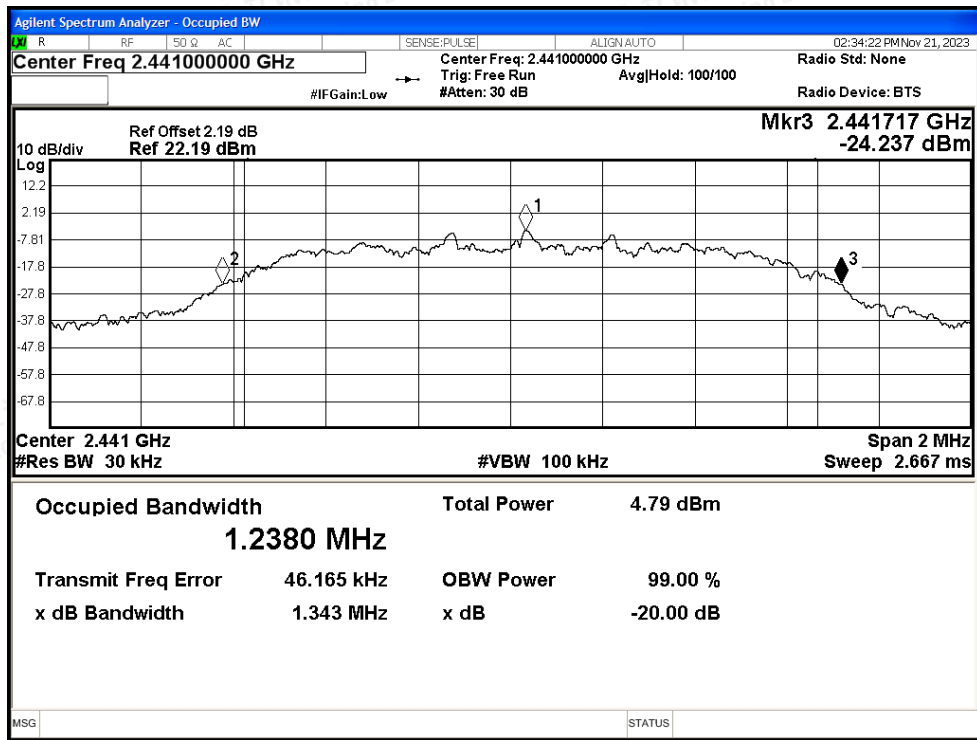


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

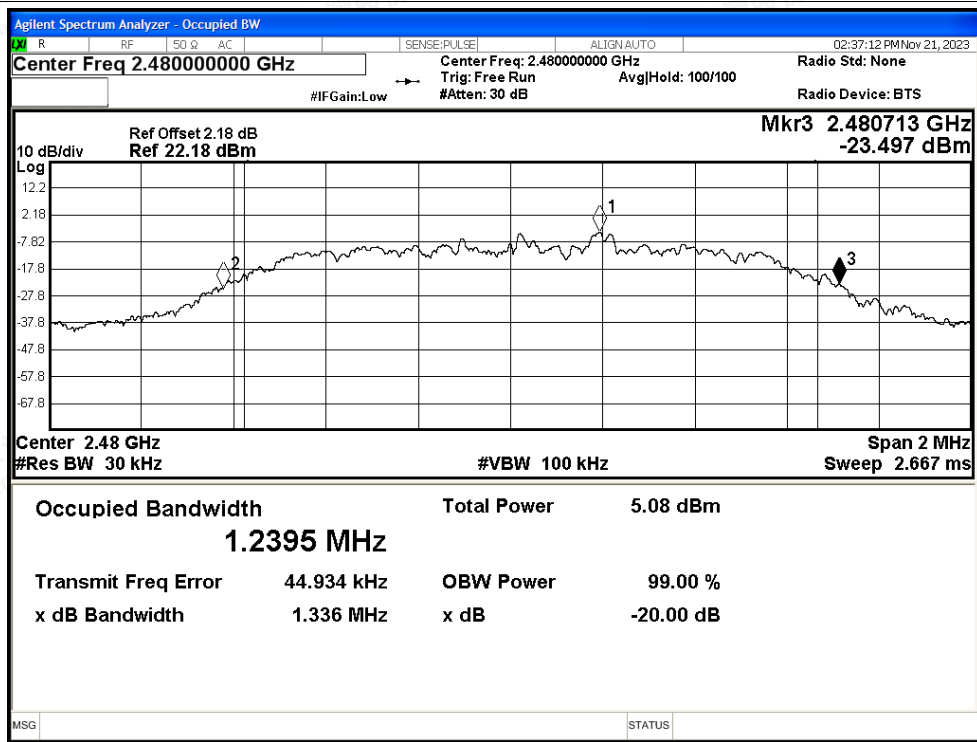




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1





## A.2 Maximum Peak Conducted Output Power

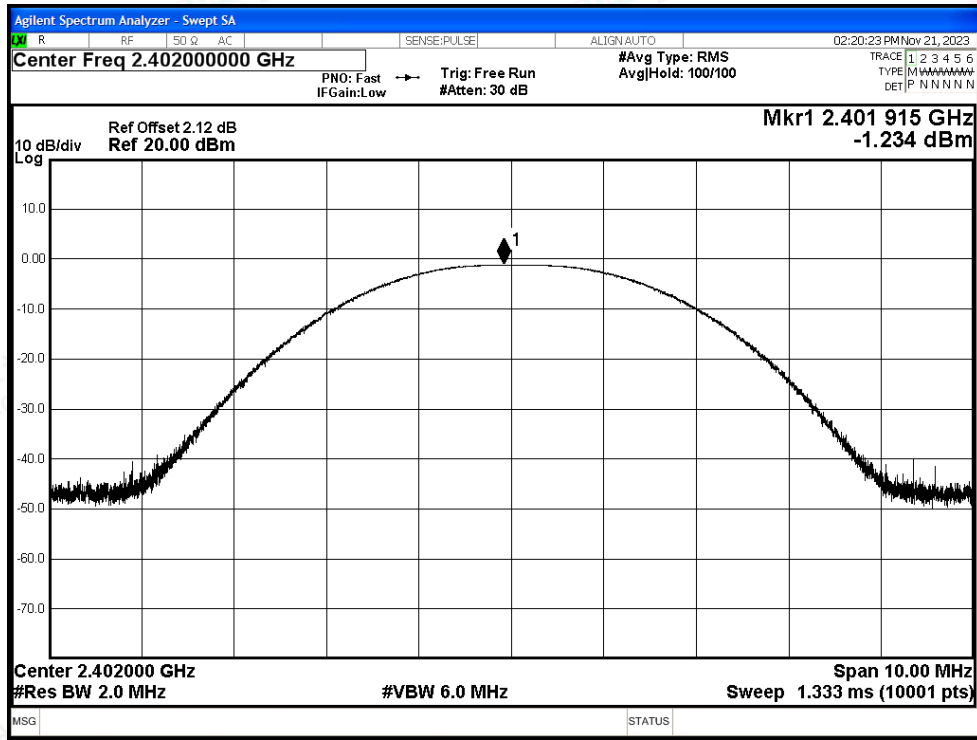
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-1.23	21	Pass
NVNT	1-DH5	2441	Ant1	-0.89	21	Pass
NVNT	1-DH5	2480	Ant1	-0.71	21	Pass
NVNT	2-DH5	2402	Ant1	-0.37	21	Pass
NVNT	2-DH5	2441	Ant1	0.02	21	Pass
NVNT	2-DH5	2480	Ant1	0.06	21	Pass



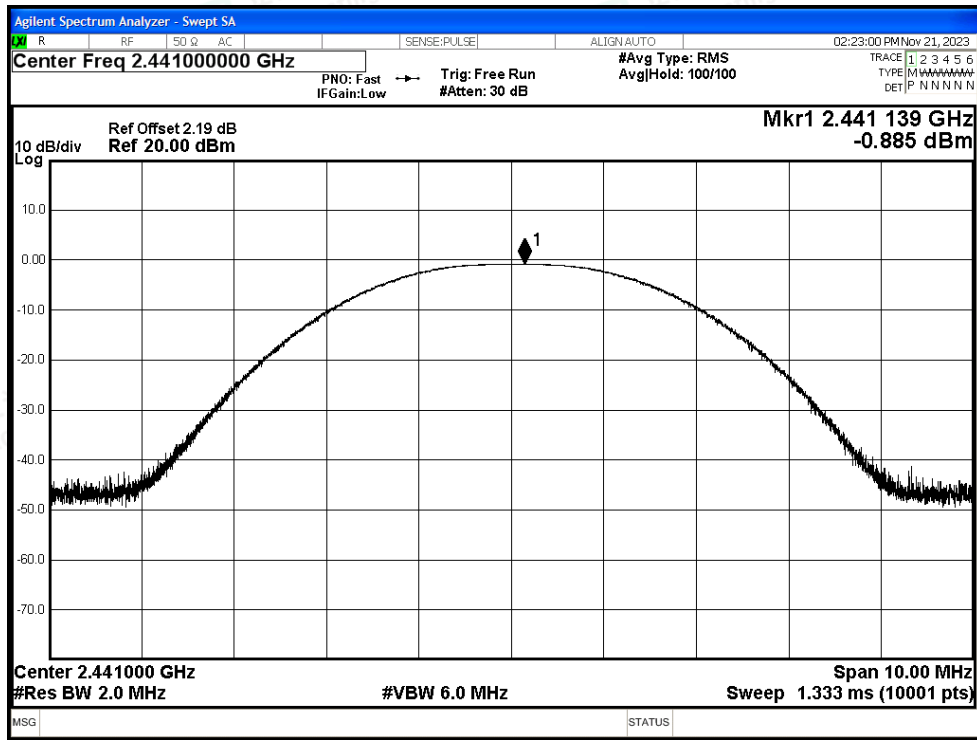


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

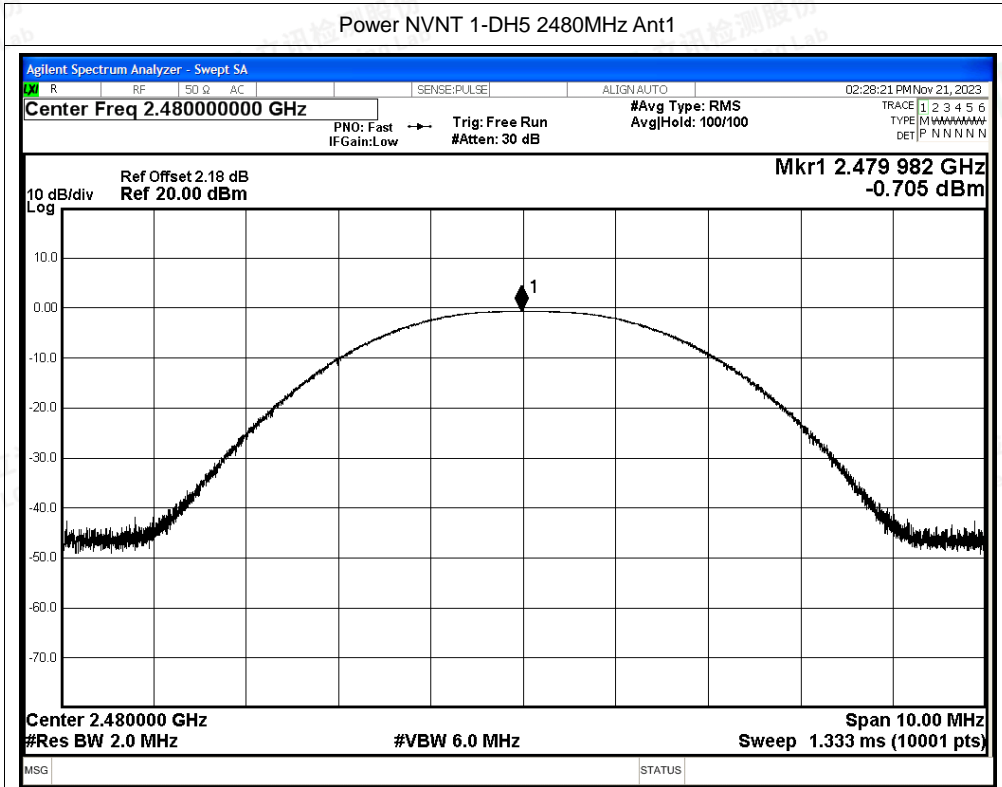


Power NVNT 1-DH5 2441MHz Ant1

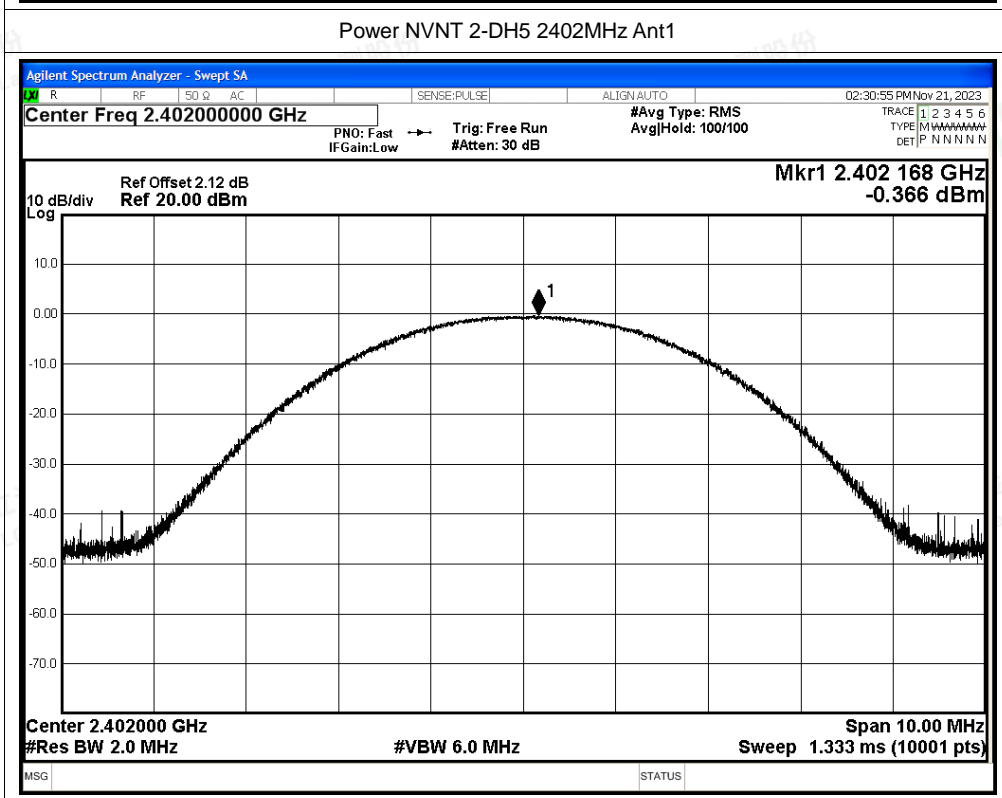




Power NVNT 1-DH5 2480MHz Ant1



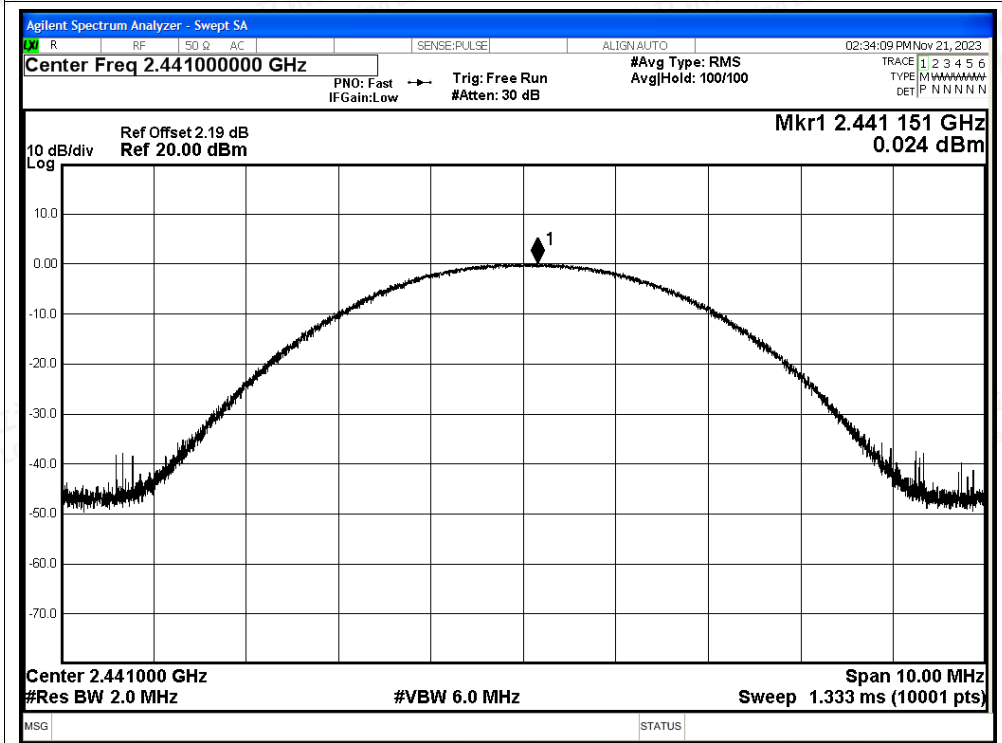
Power NVNT 2-DH5 2402MHz Ant1



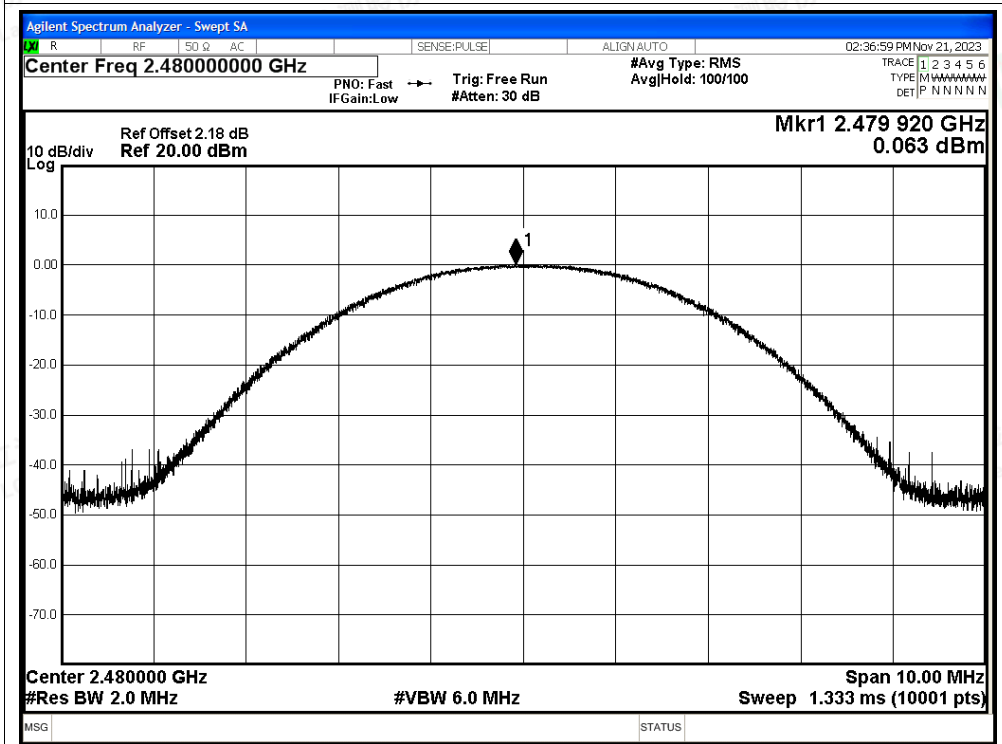




Power NVNT 2-DH5 2441MHz Ant1



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	2402.016	2402.874	0.858	0.699	Pass
NVNT	2-DH5	Ant1	2402.198	2403.192	0.994	0.878	Pass

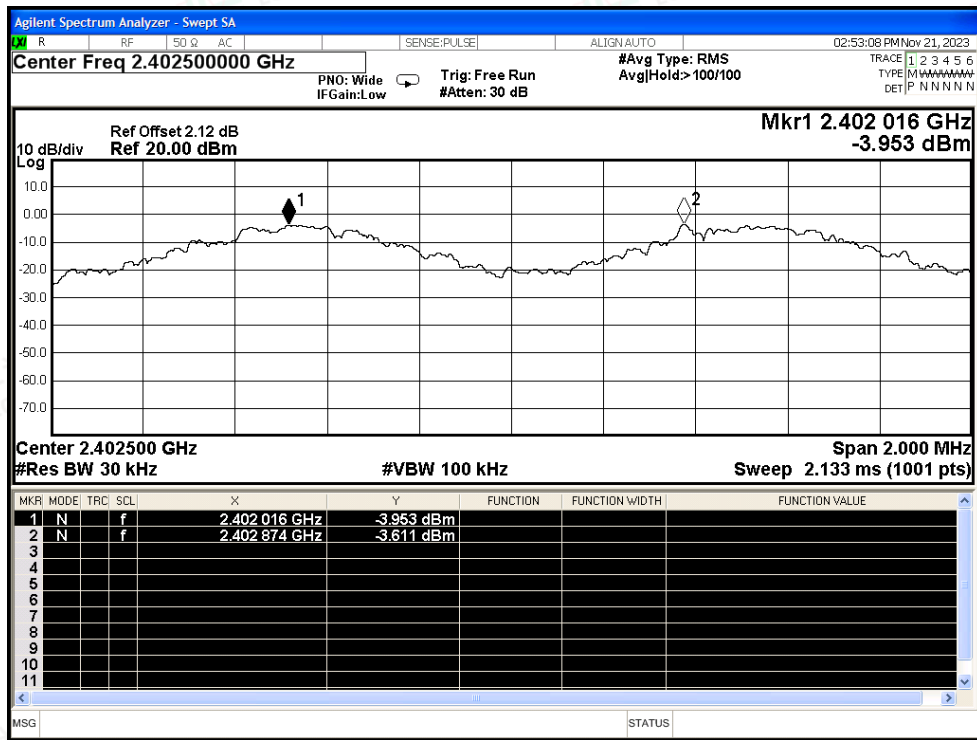


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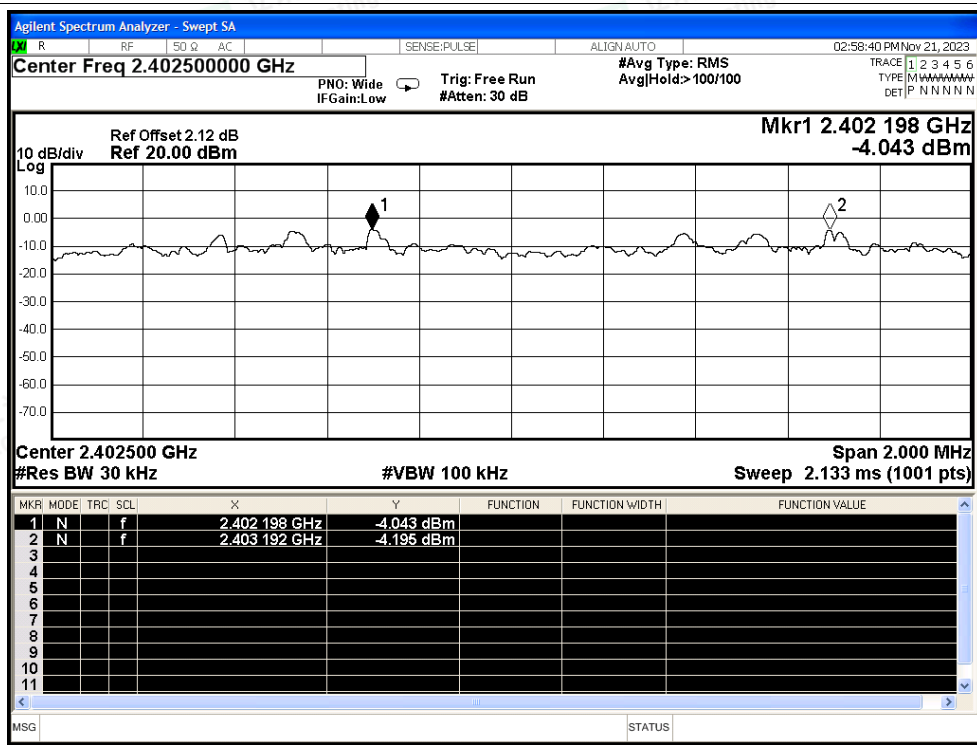


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1





### A.4 Dwell Time

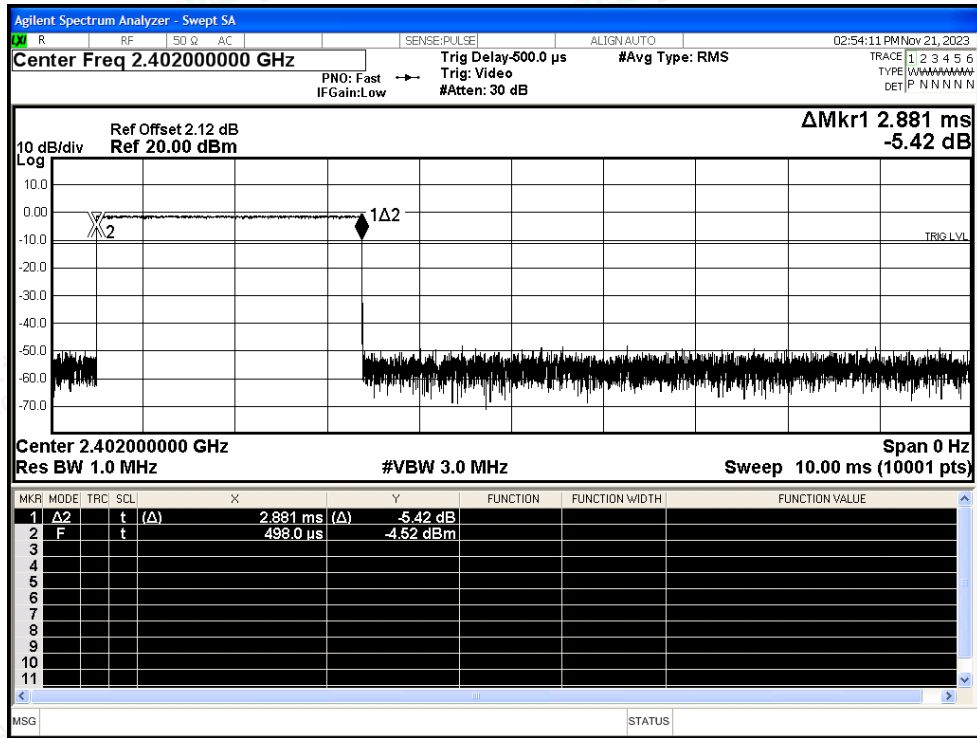
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.881	311.148	108	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	269.514	93	31600	400	Pass



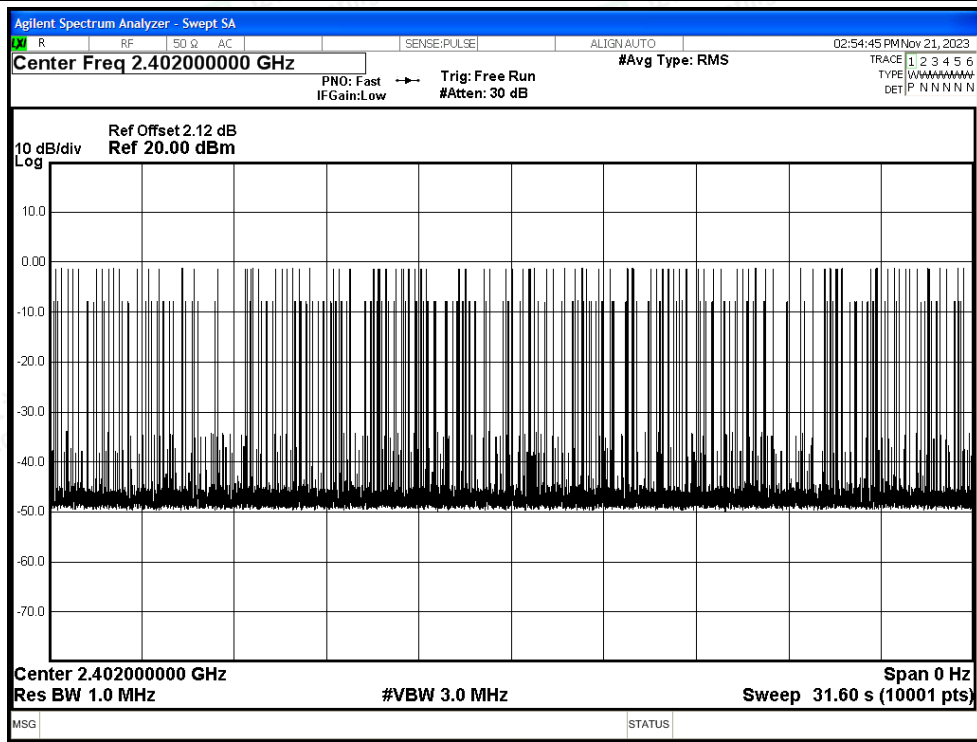


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

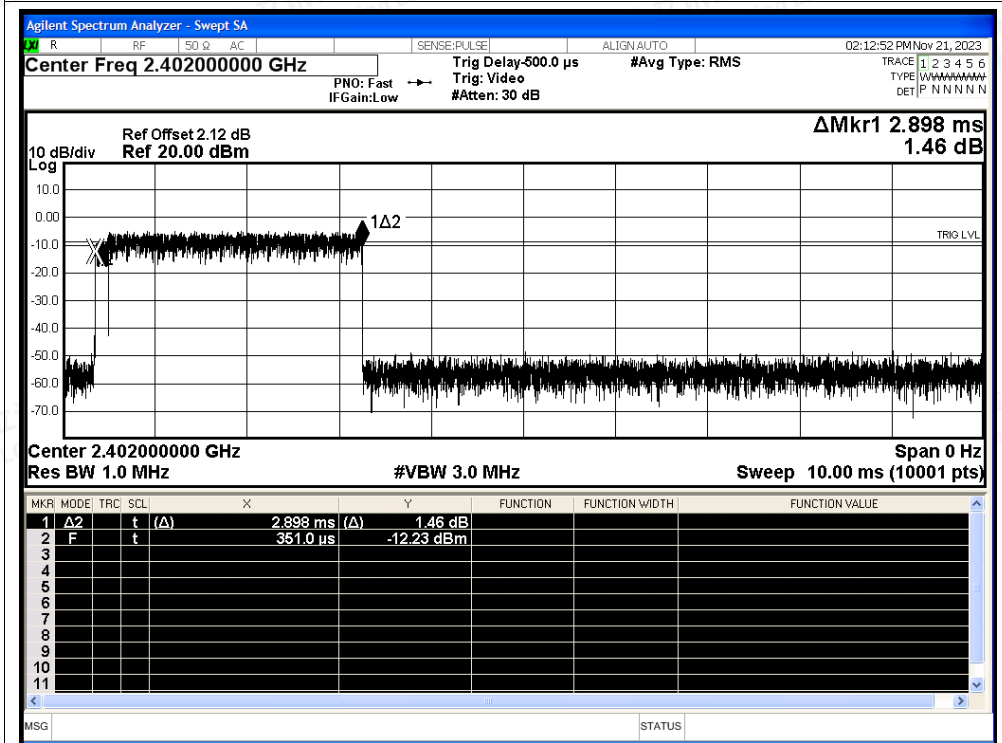


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

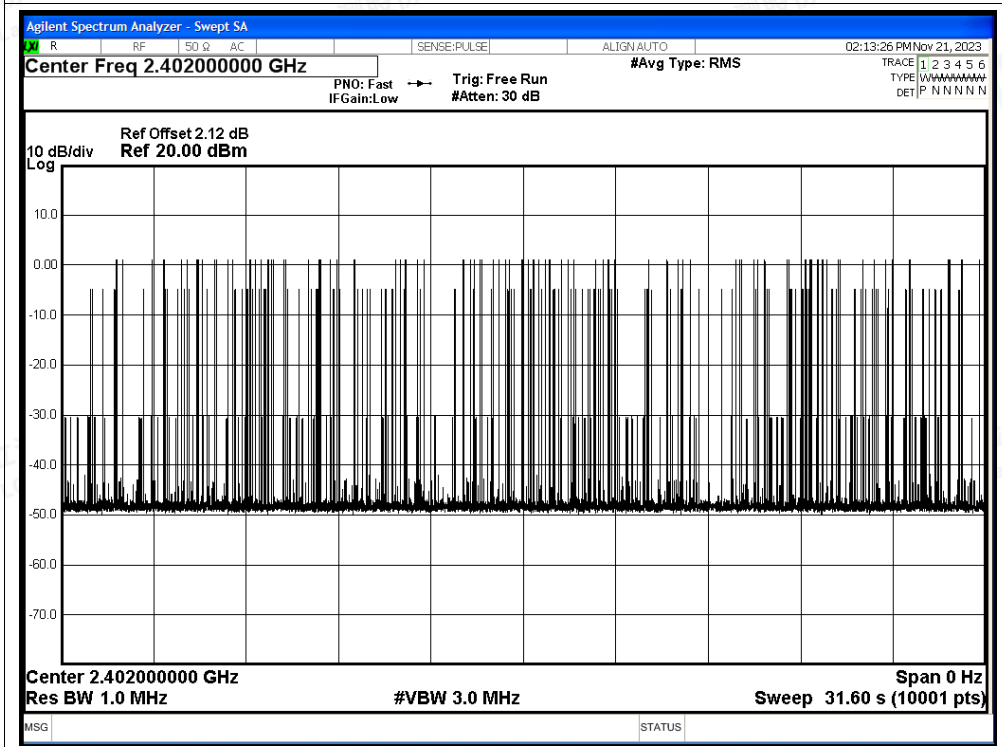




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



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

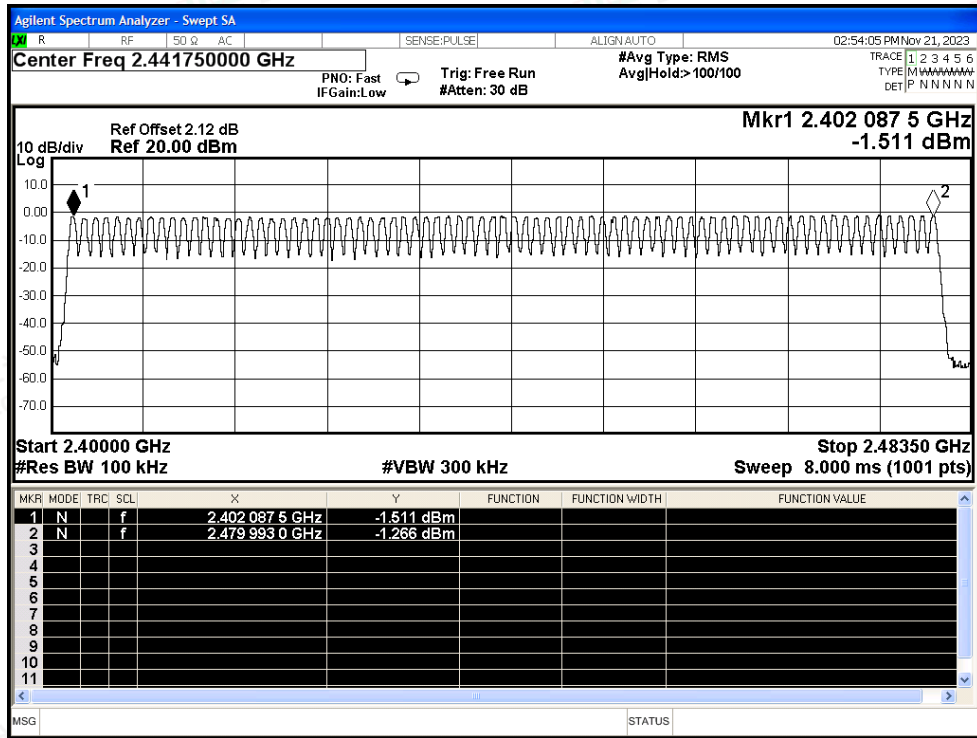


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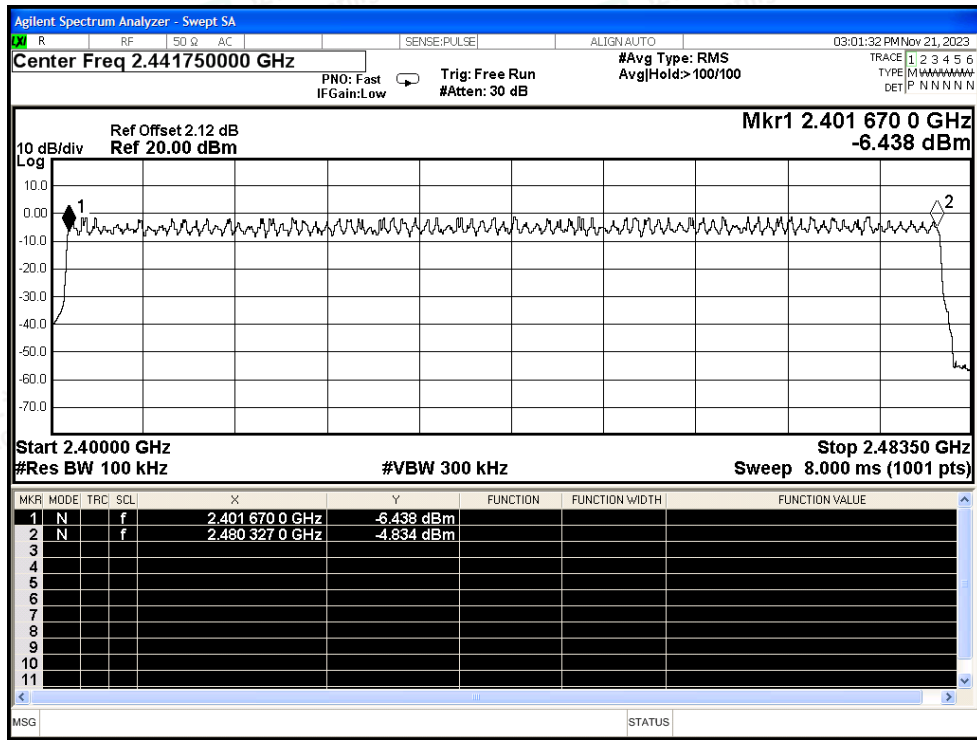


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1







## A.6 Band Edge

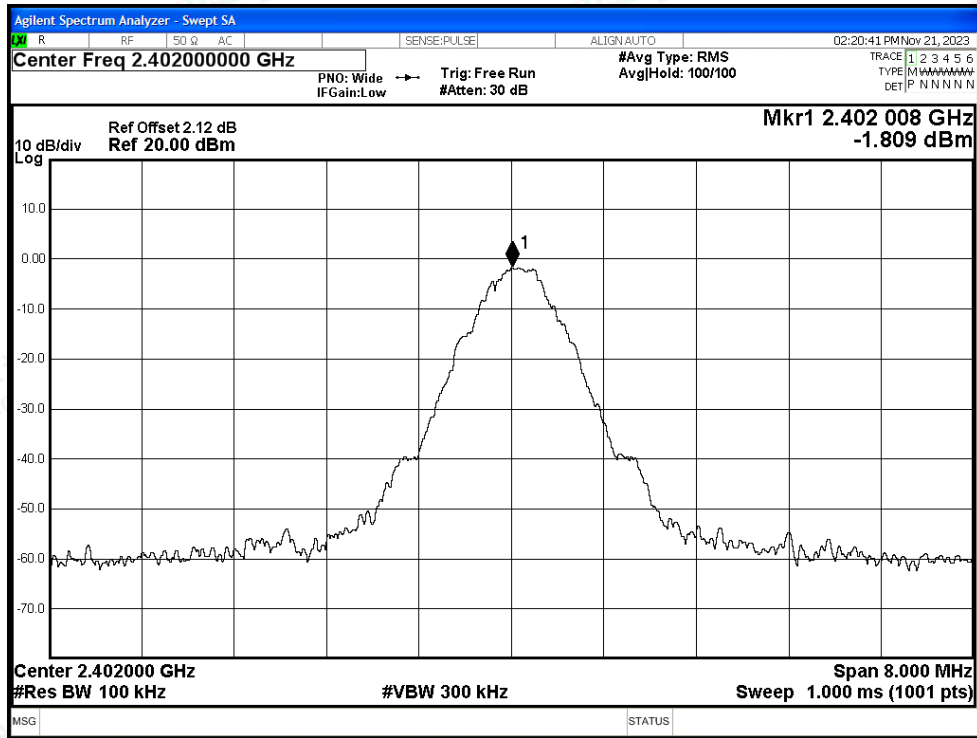
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-50.98	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.04	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-53.11	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-53.09	-20	Pass



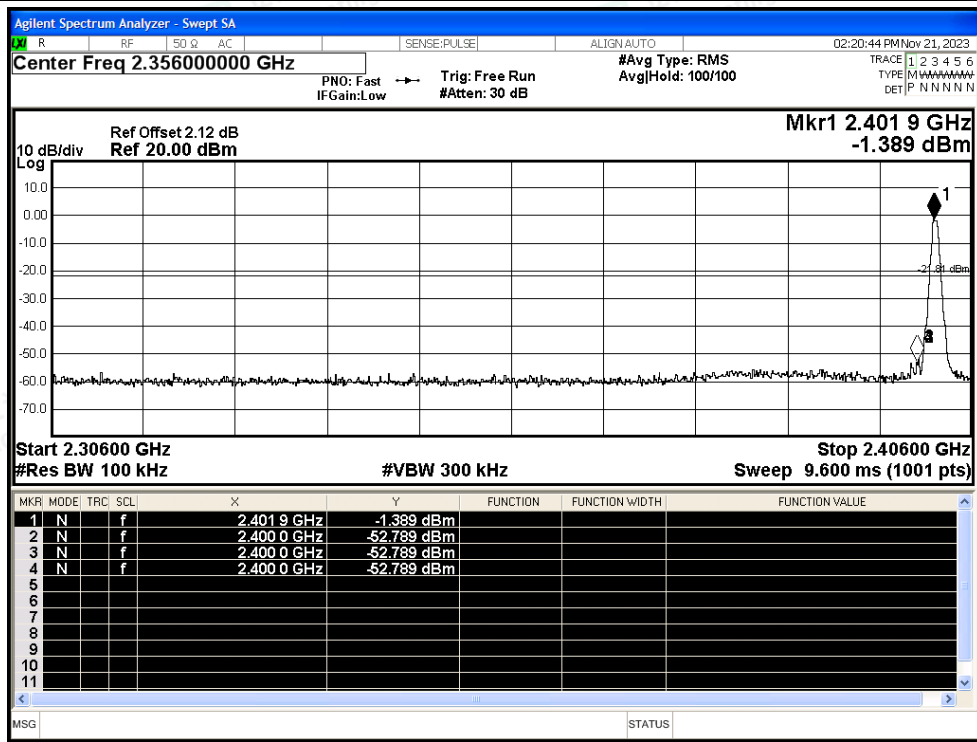


Test Graphs

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

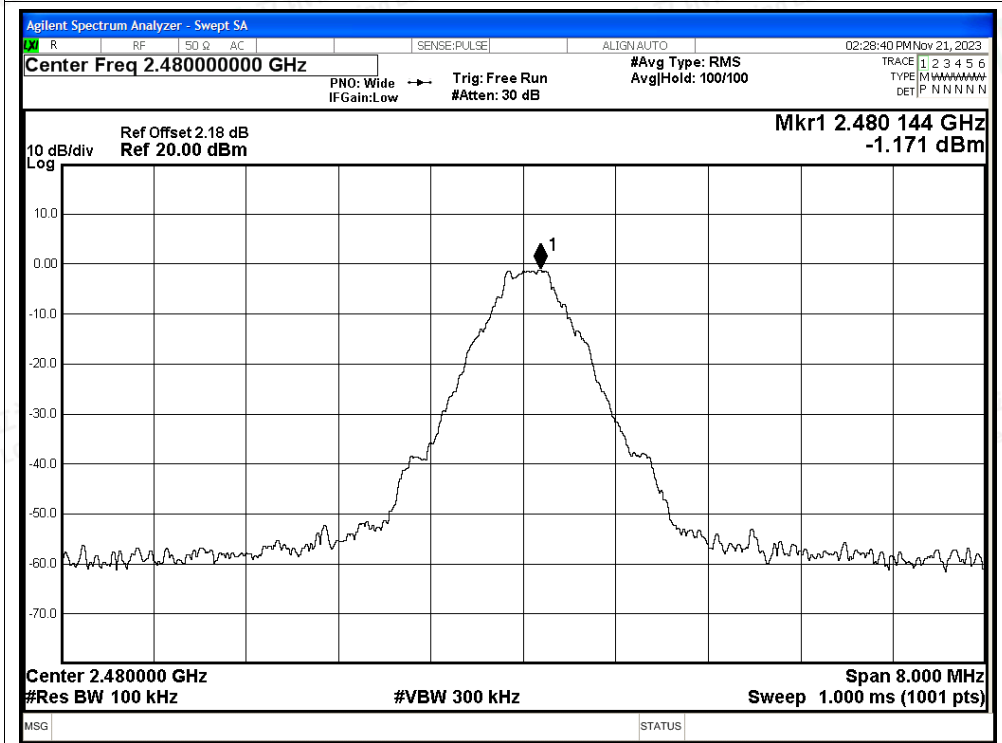


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

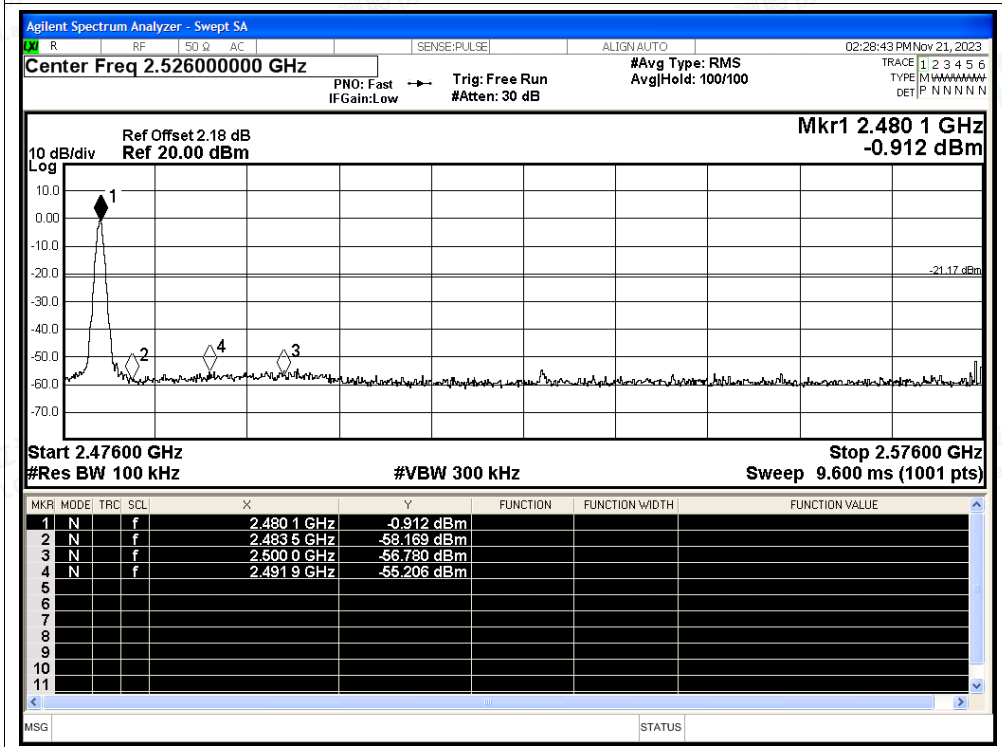




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

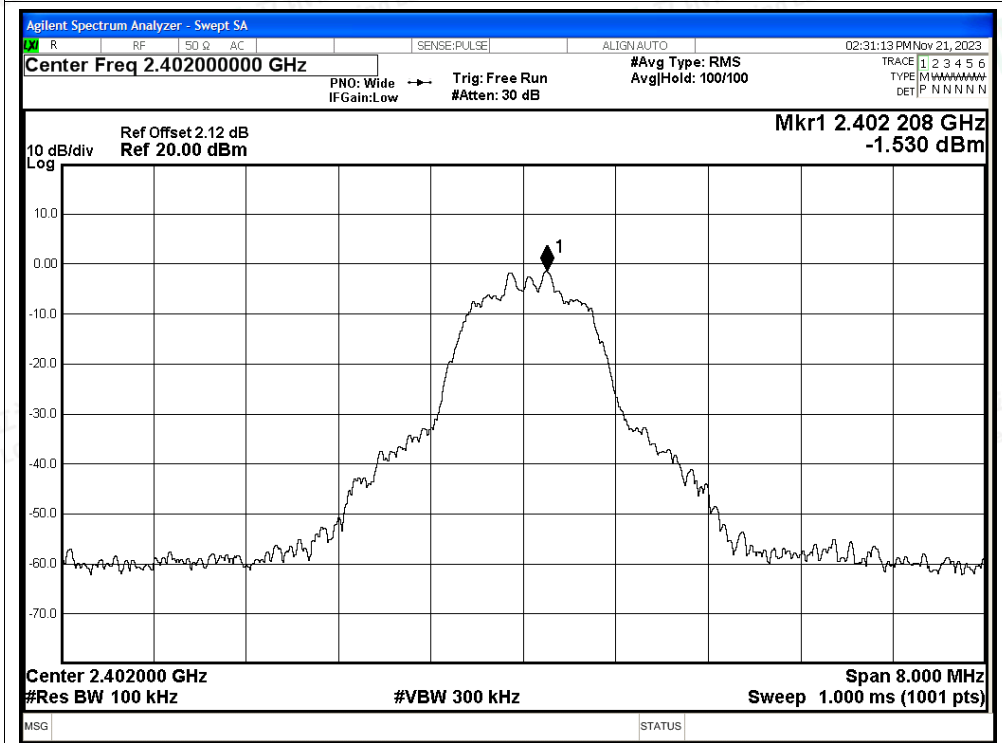


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

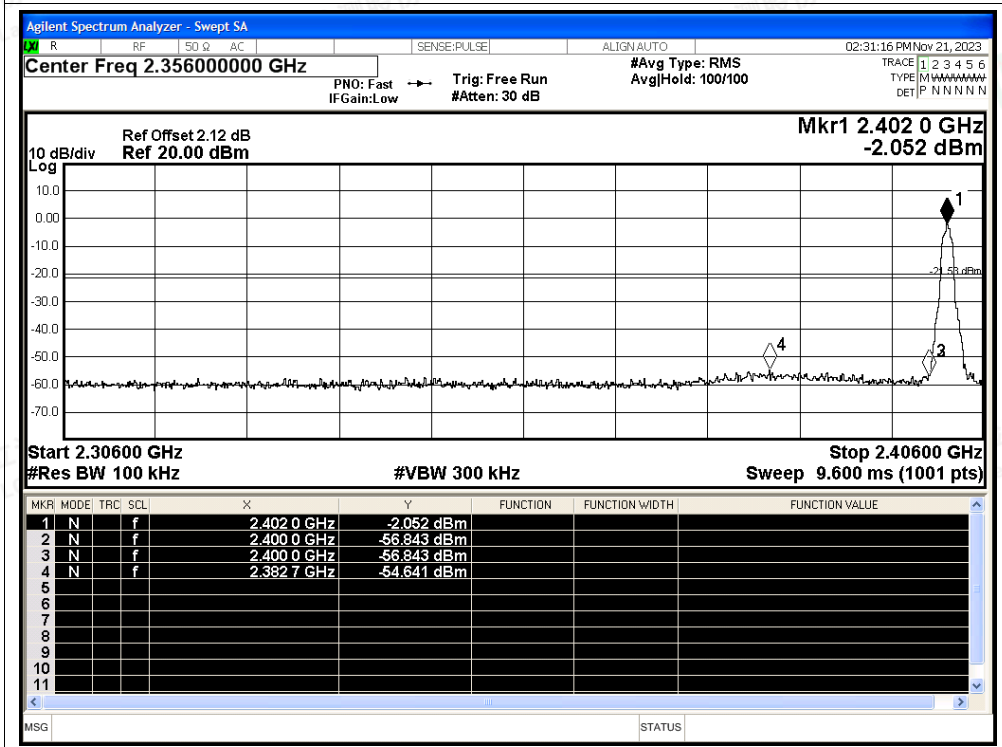




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

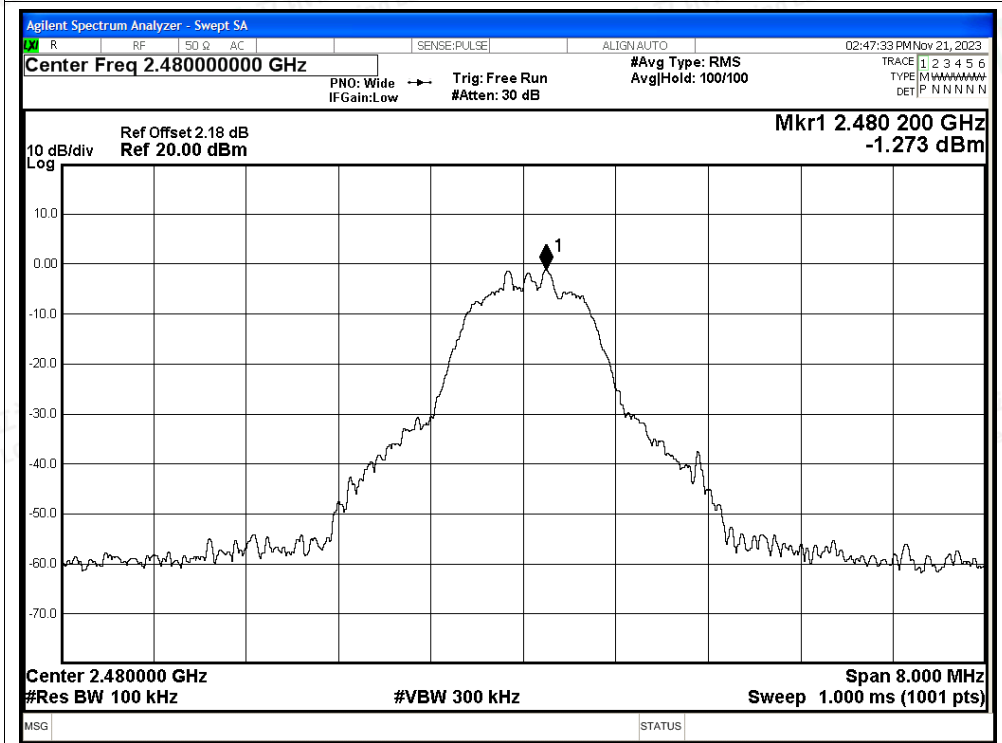


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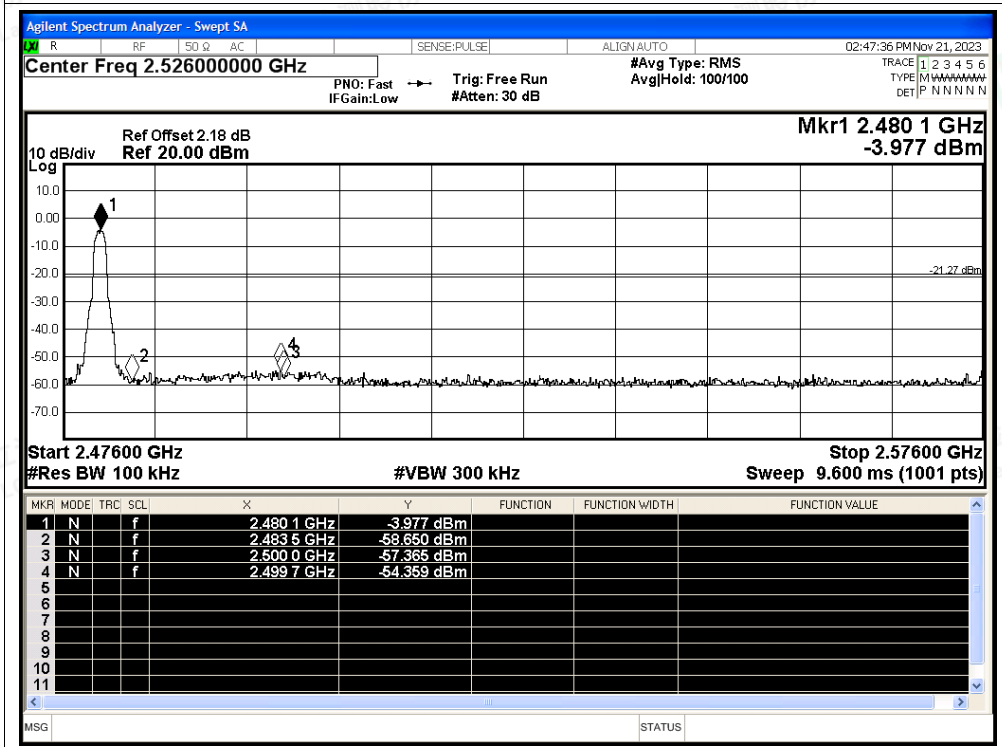




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



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





### Band Edge(Hopping)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-51.62	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-56.3	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-55.51	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-52.56	-20	Pass

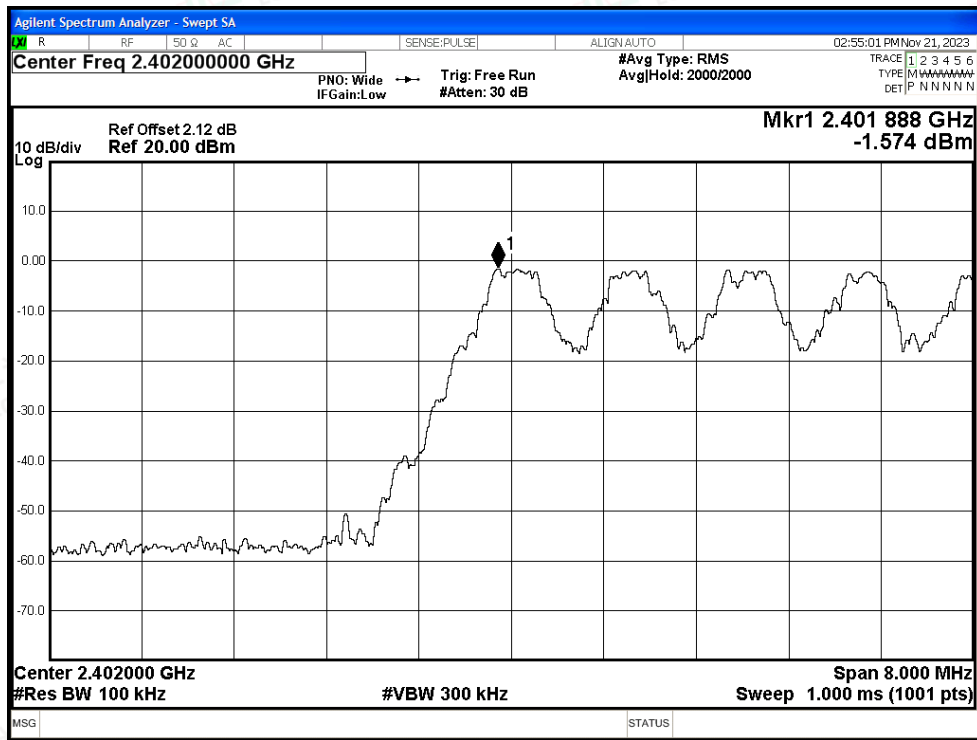


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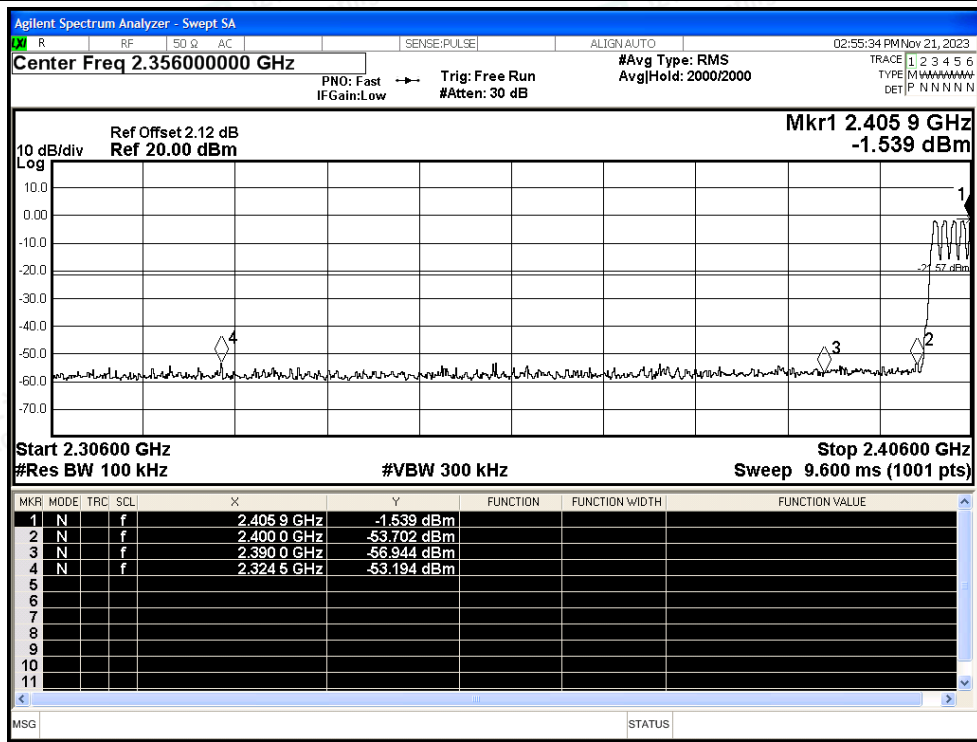


Test Graphs

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

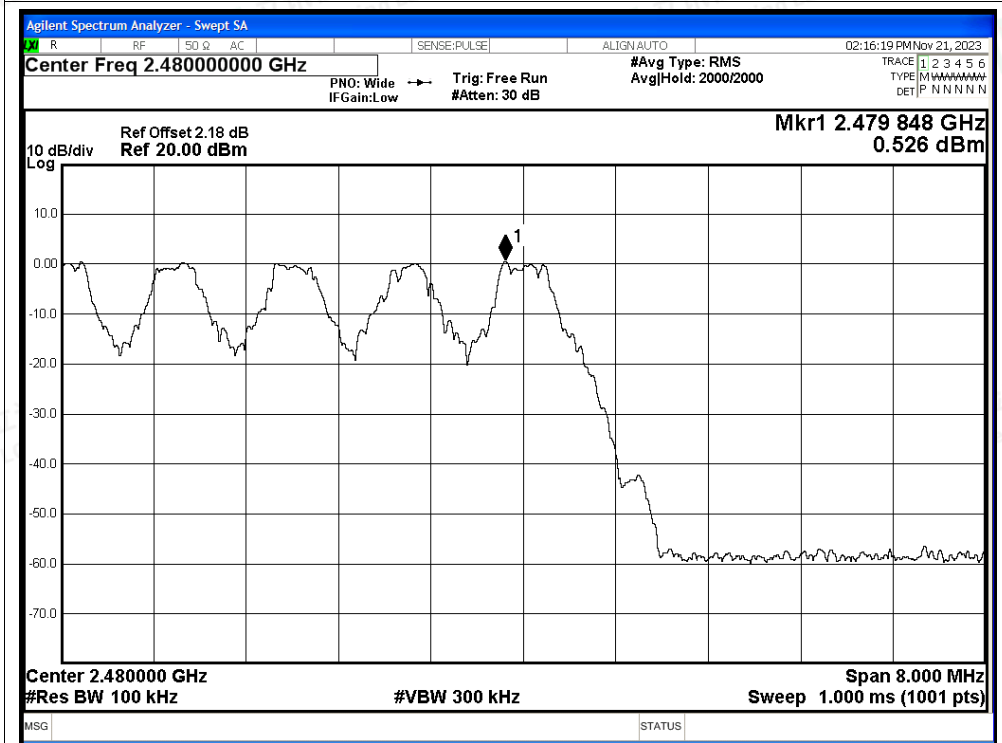


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

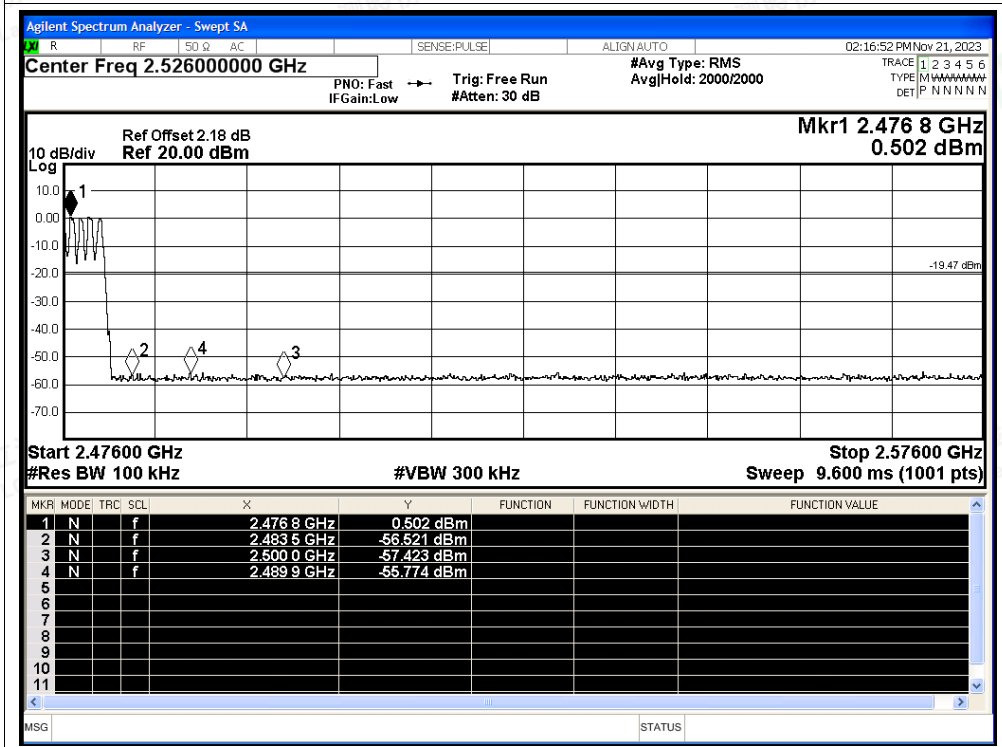




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



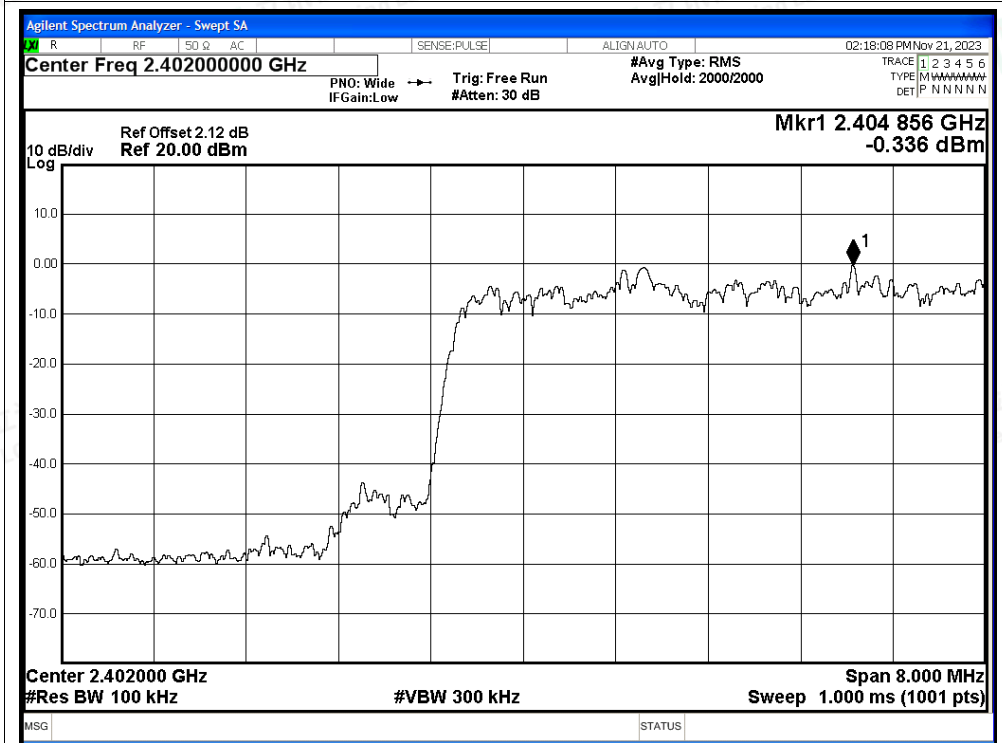
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



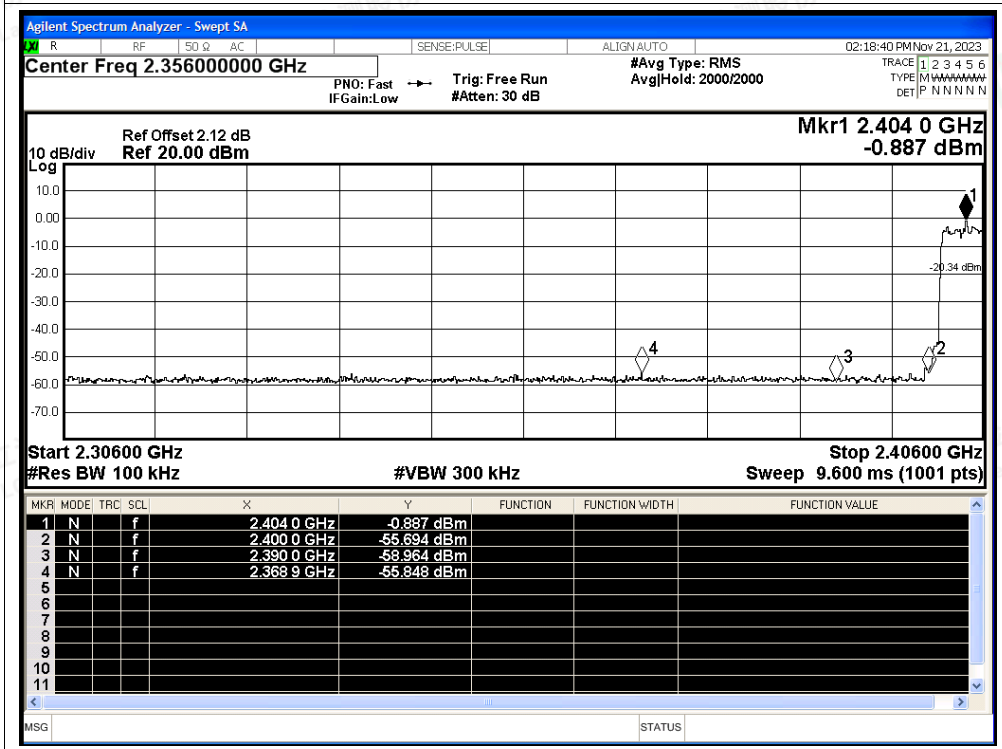




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

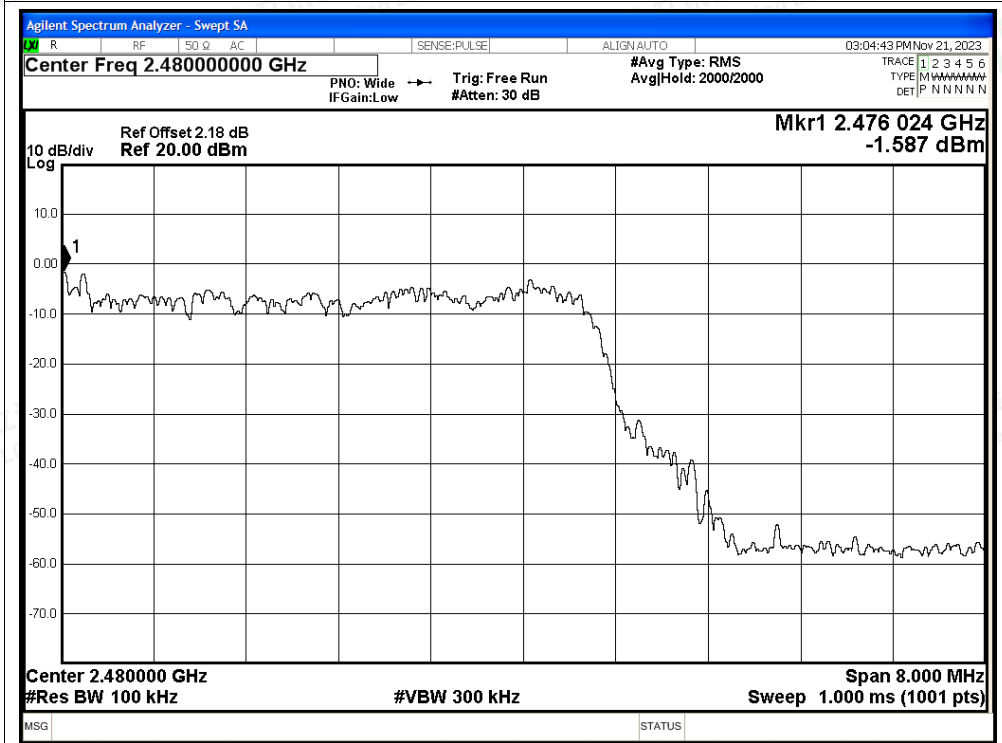


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

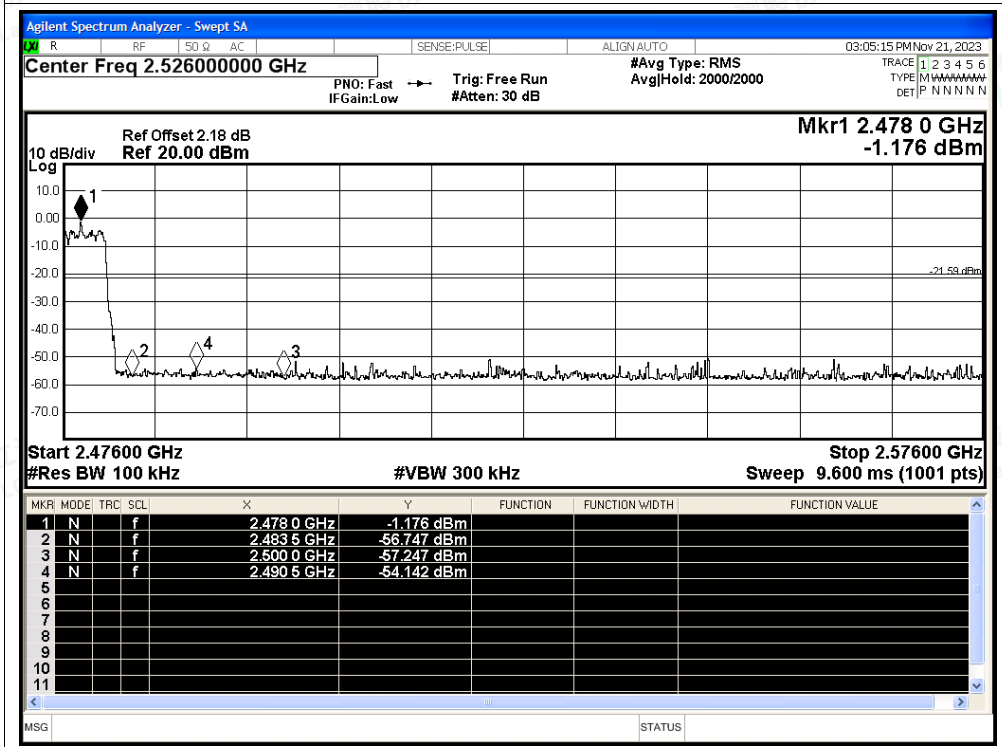




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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





## A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-52.12	-20	Pass
NVNT	1-DH5	2441	Ant1	-49.54	-20	Pass
NVNT	1-DH5	2480	Ant1	-47.63	-20	Pass
NVNT	2-DH5	2402	Ant1	-50.07	-20	Pass
NVNT	2-DH5	2441	Ant1	-47.05	-20	Pass
NVNT	2-DH5	2480	Ant1	-46.22	-20	Pass

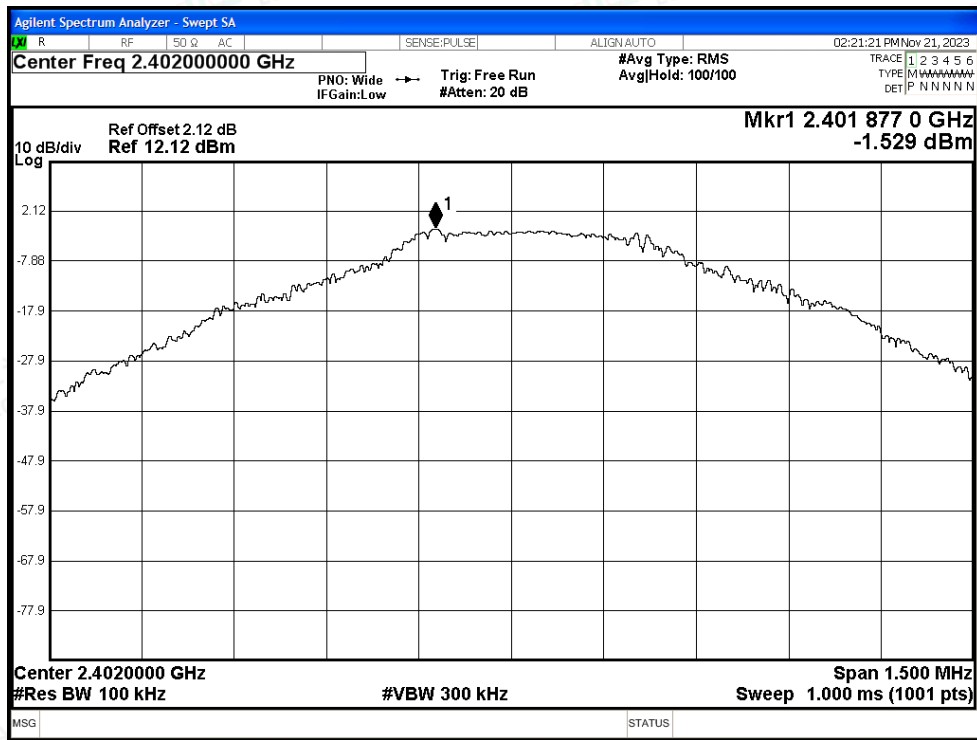


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Scan code to check authenticity

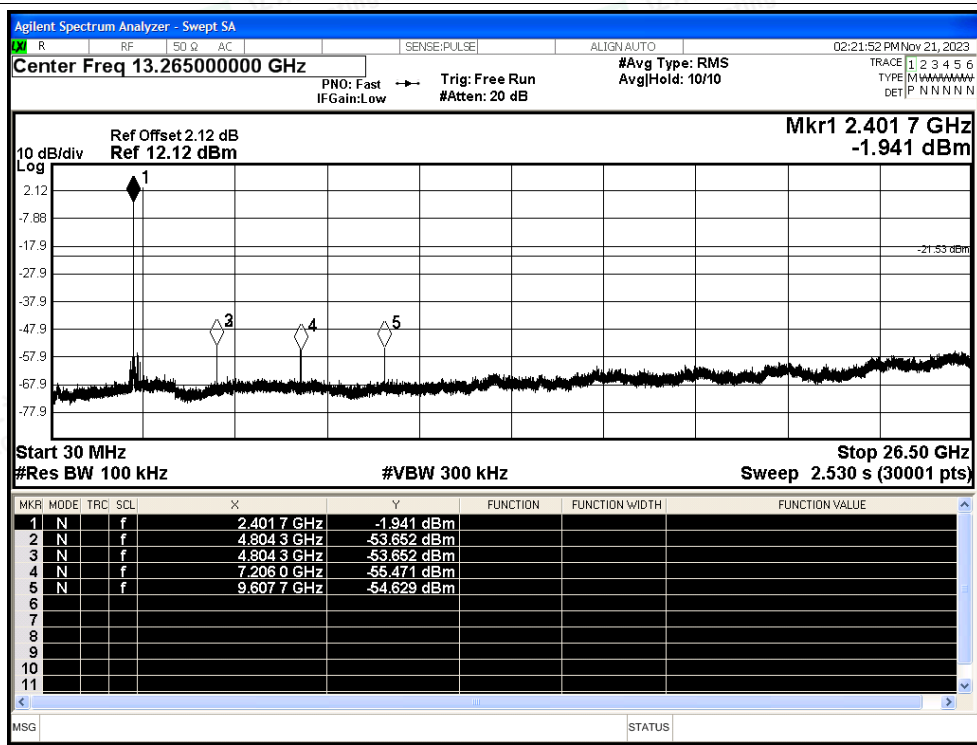


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

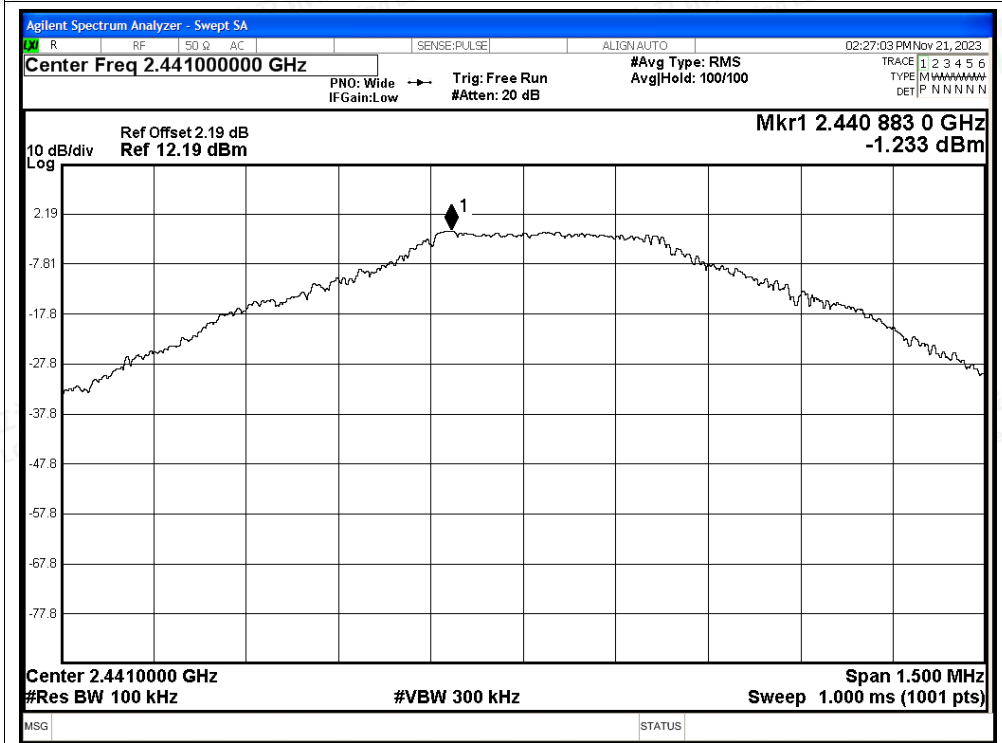


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

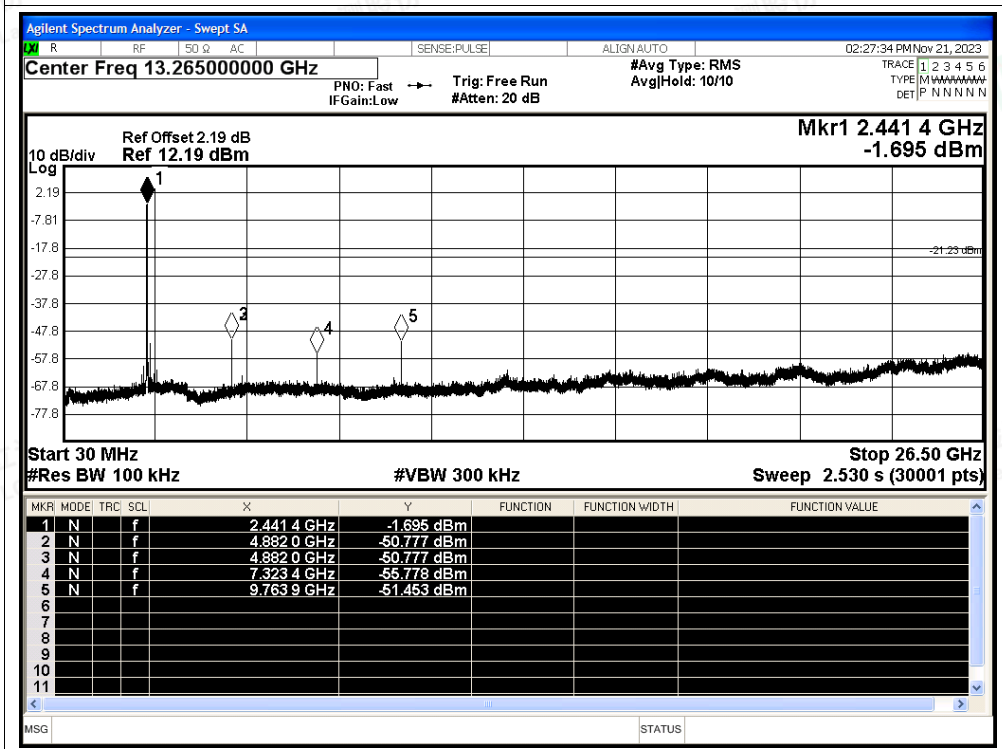




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

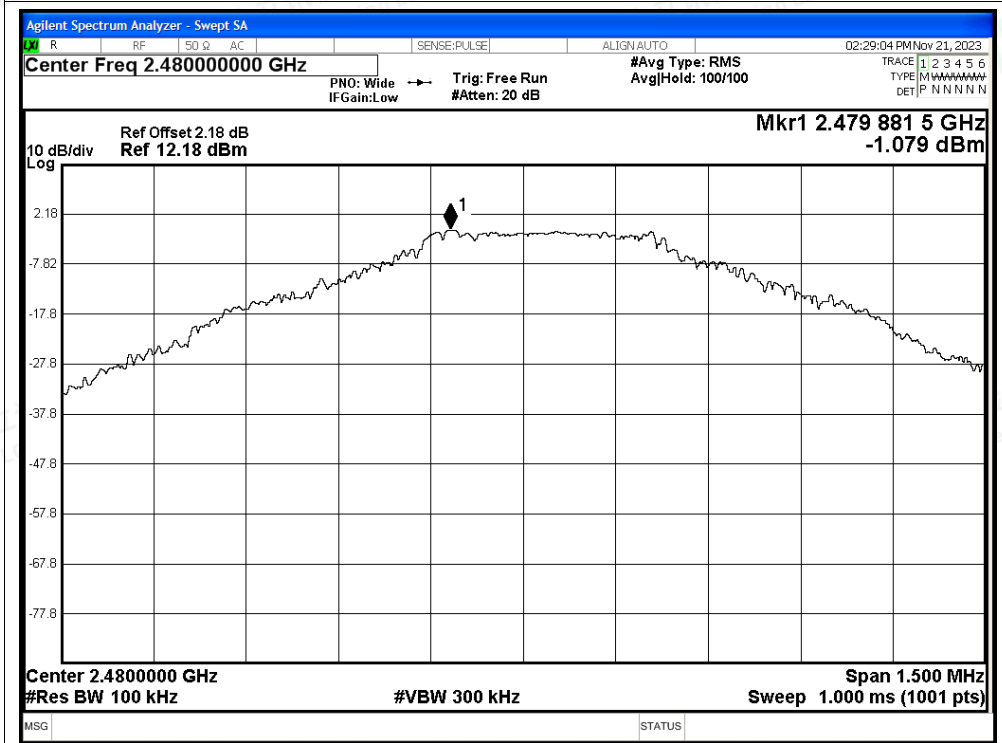


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

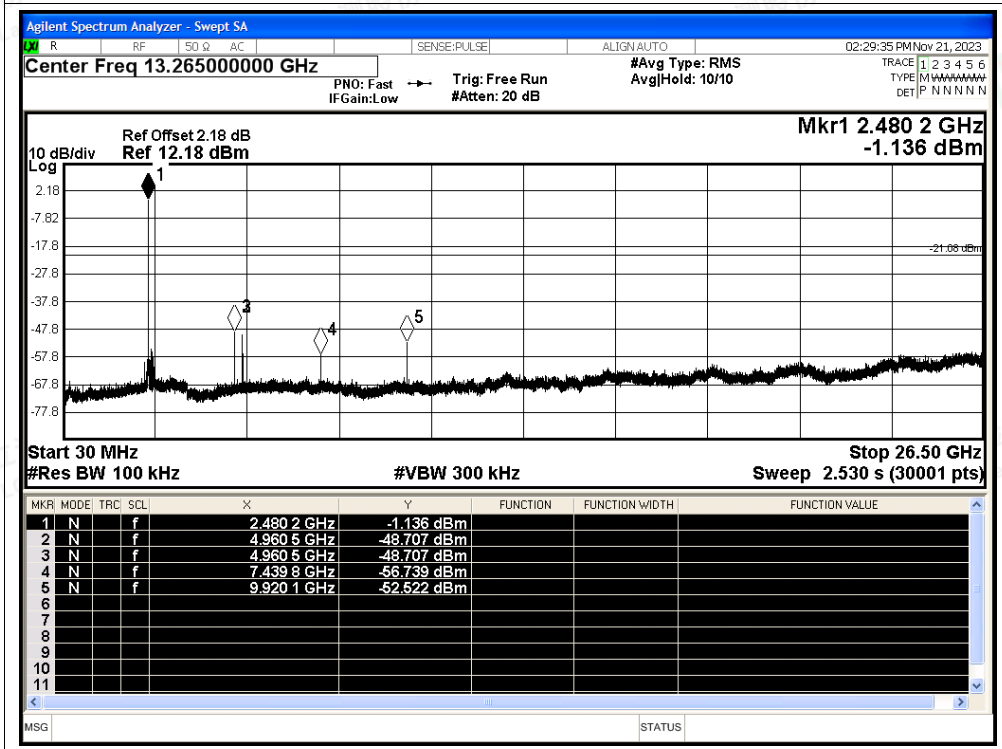




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

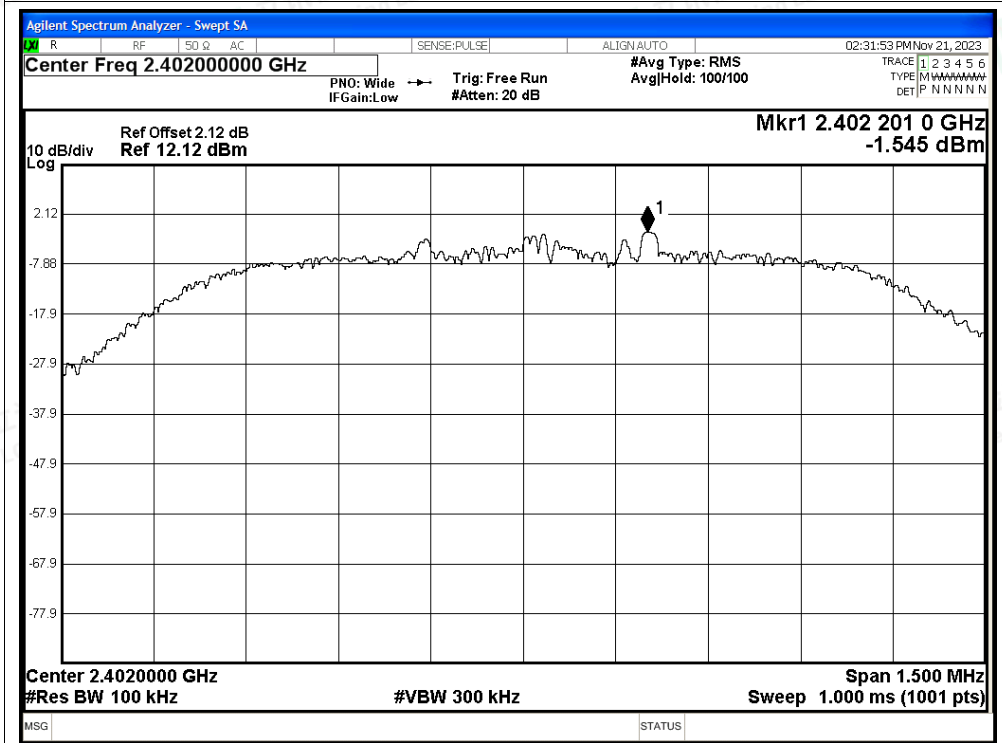


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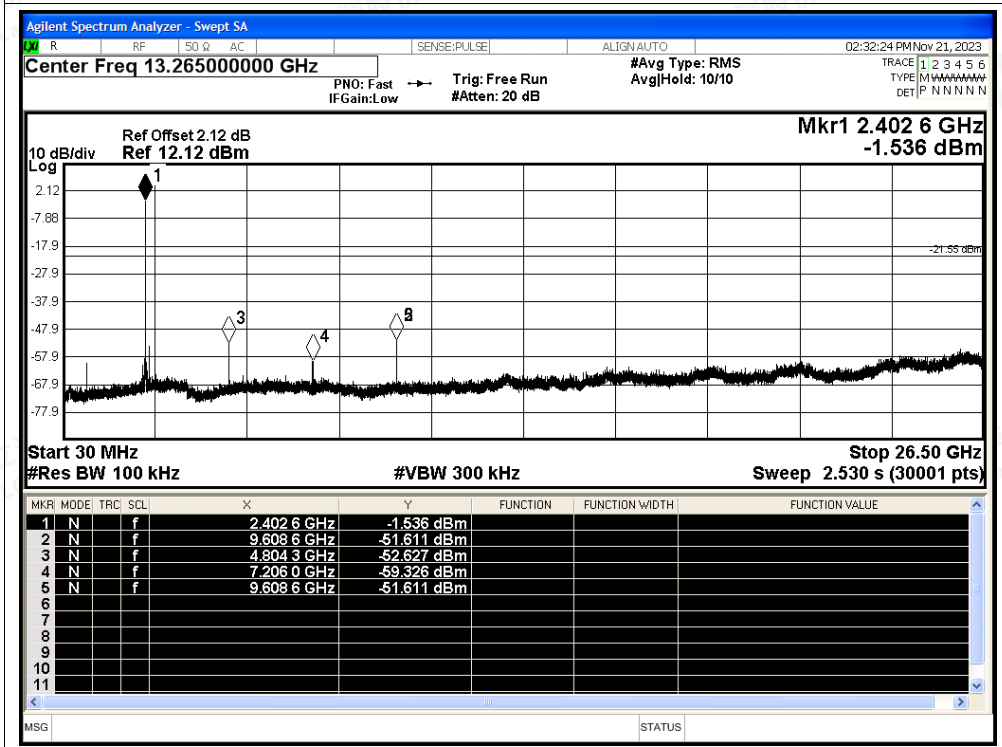




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

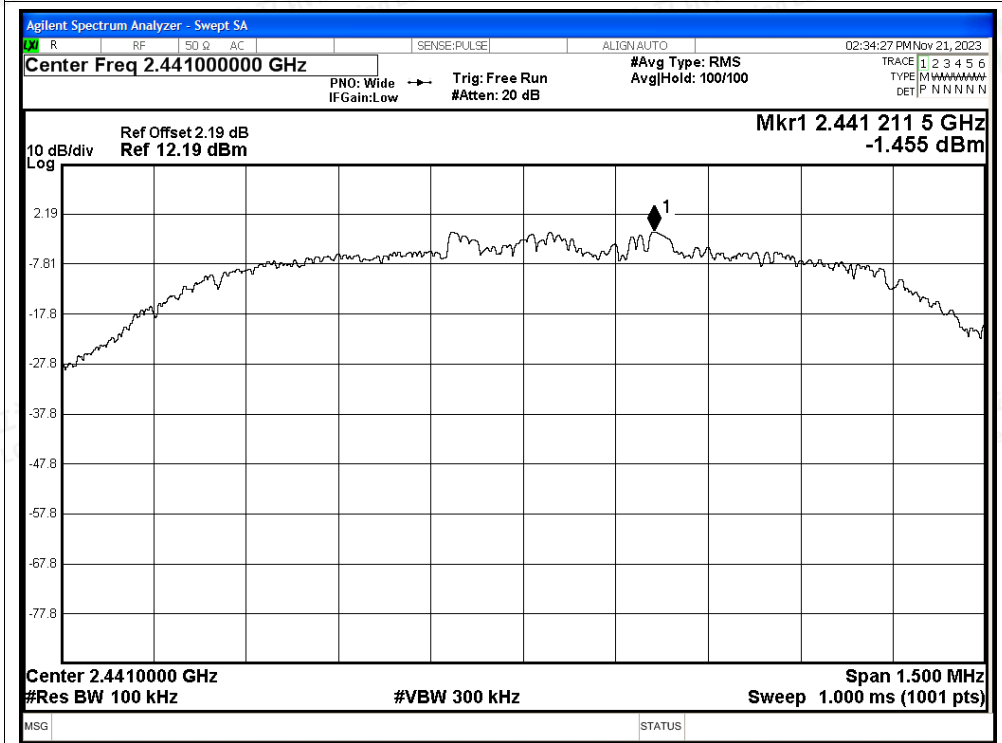


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

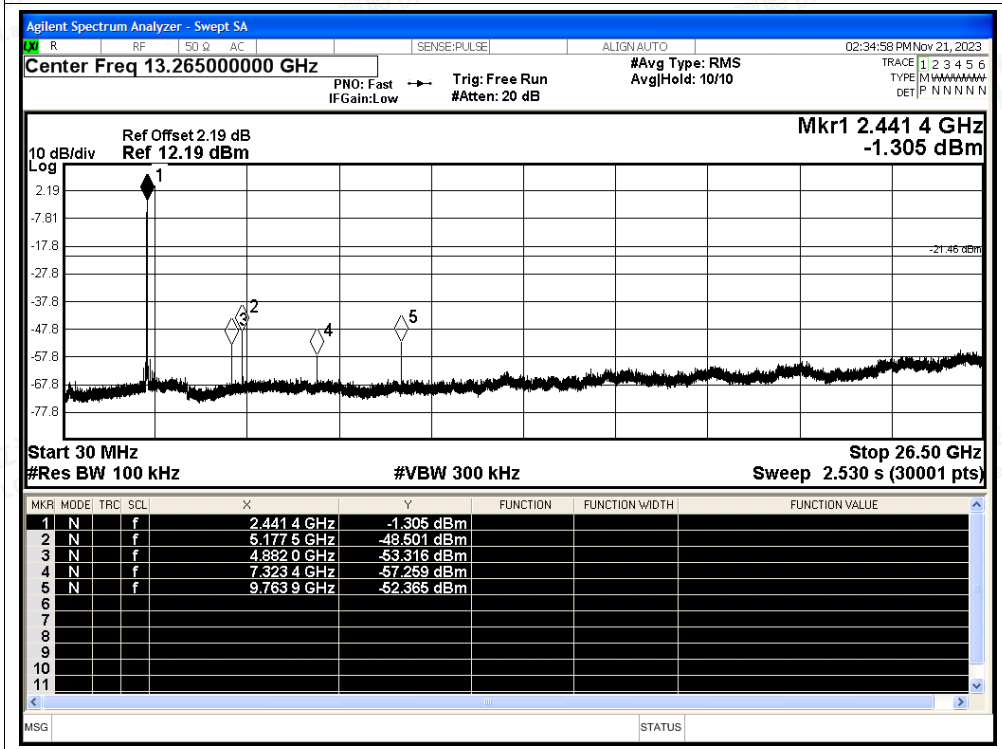




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



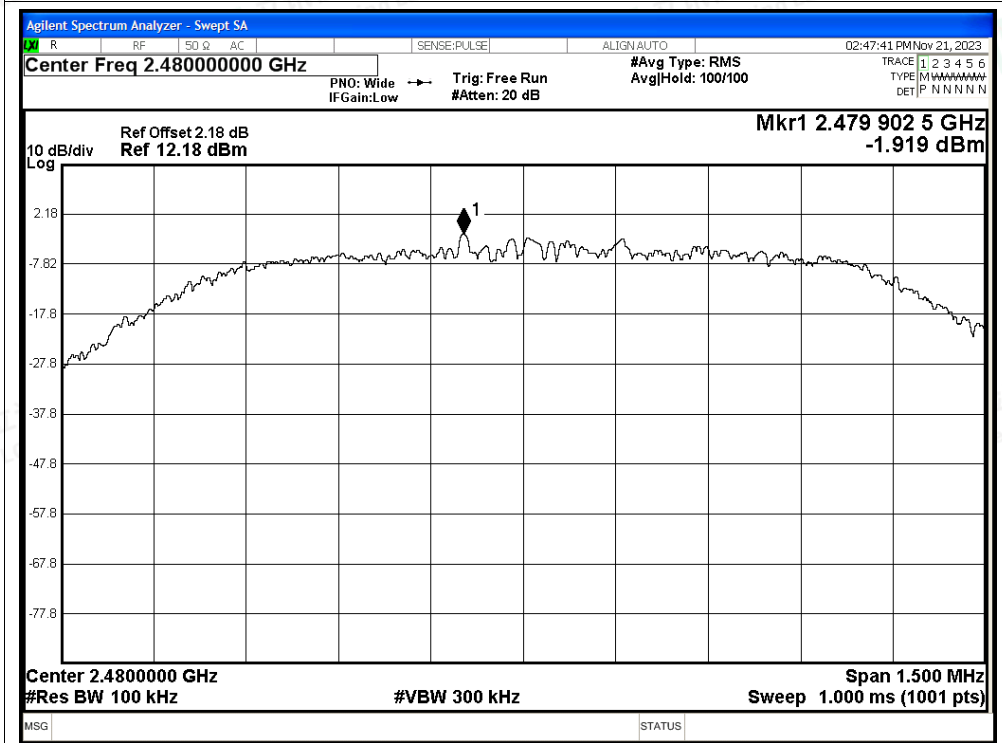
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



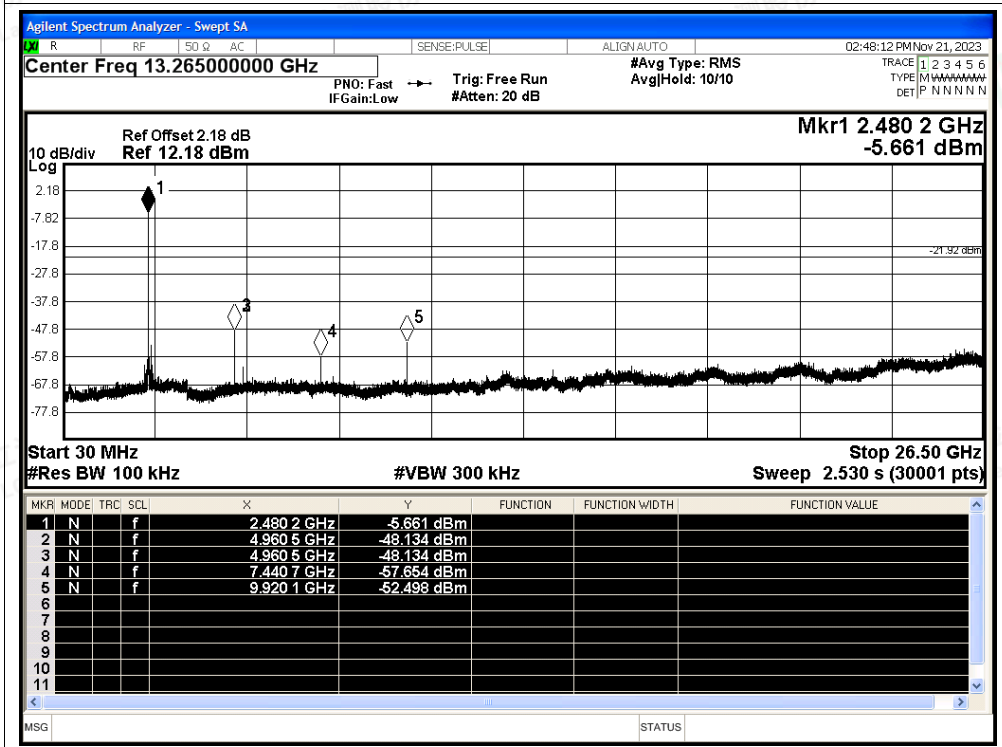




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission





### A.8 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	-49.73	2	47.53	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57.81	2	39.45	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2384.208	-44.55	2	52.71	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2381.136	-54.54	2	42.72	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.08	2	48.18	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-55.3	2	41.96	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.66	2	47.6	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-54.78	2	42.48	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2494.984	-43.88	2	53.38	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2498.608	-54.22	2	43.04	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-47.33	2	49.93	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-54.35	2	42.91	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.3	2	46.96	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-57.7	2	39.56	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2388.528	-45.82	2	51.44	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2383.344	-54.52	2	42.74	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-47	2	50.26	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-55.16	2	42.1	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.27	2	47.99	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-54.51	2	42.75	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2498.944	-44.64	2	52.62	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2496.52	-54.17	2	43.09	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-47.94	2	49.32	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-54.36	2	42.9	Average	54	Pass

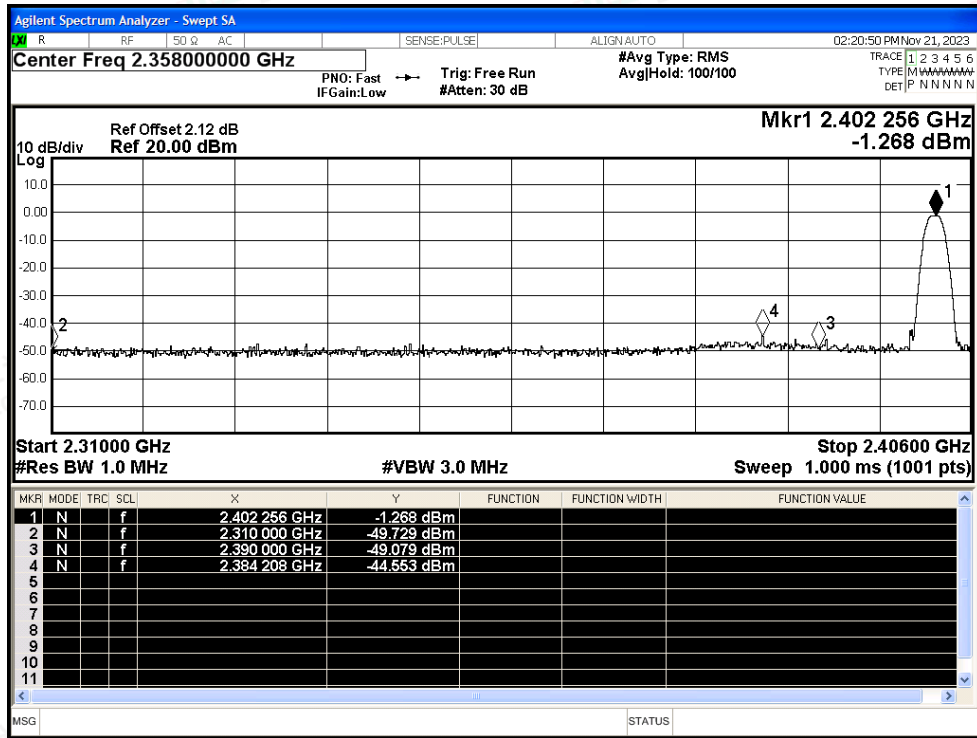


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 Scan code to check authenticity

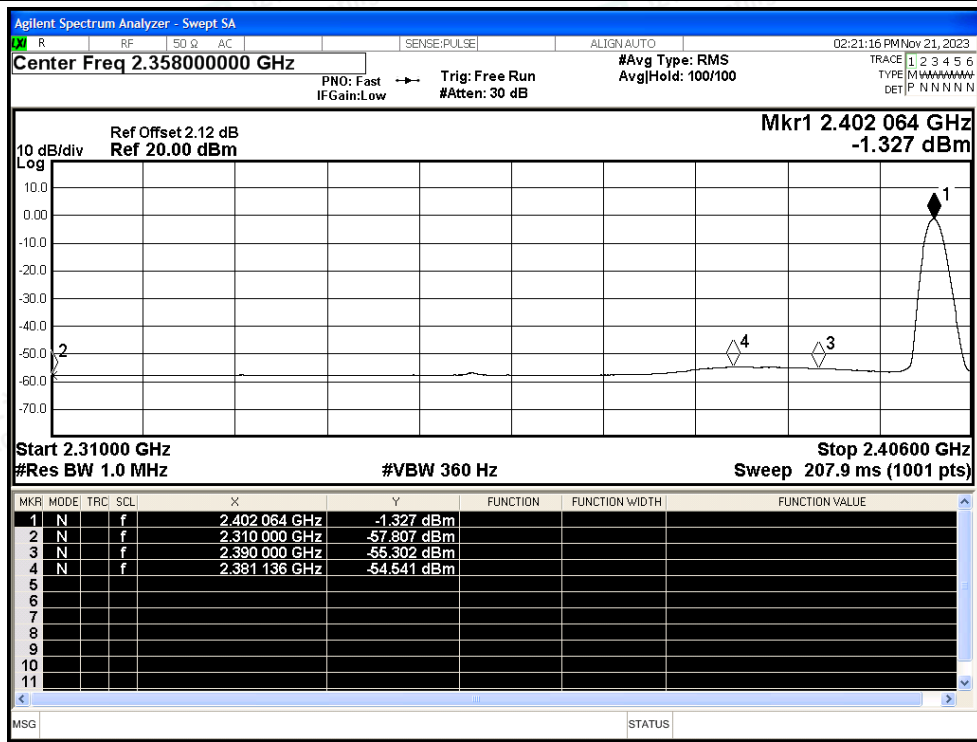


Test Graphs

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

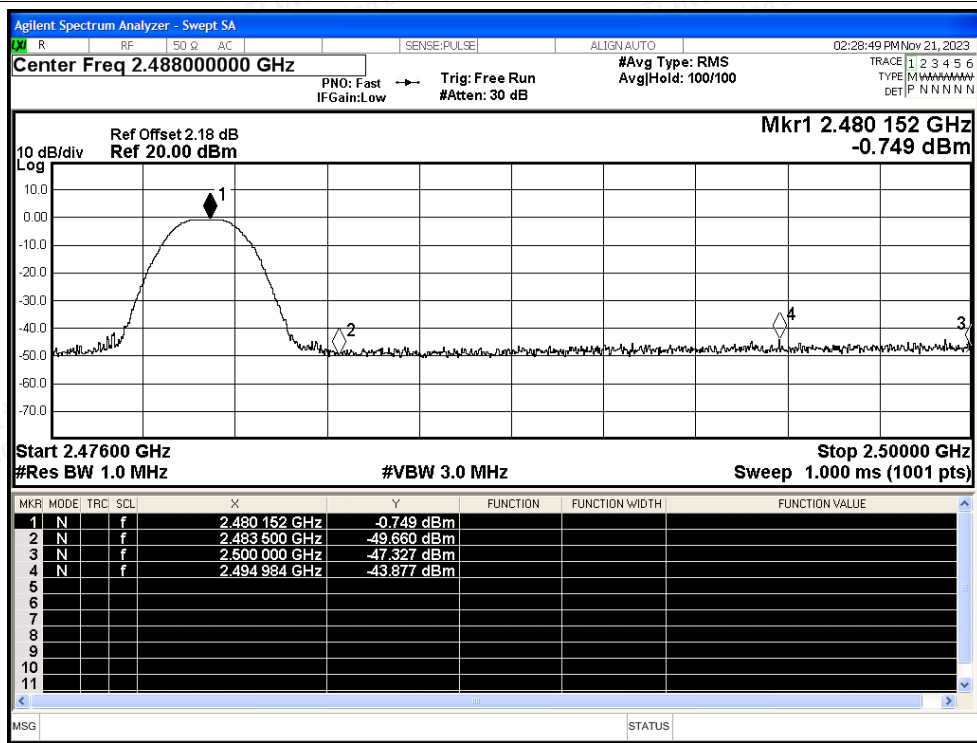


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

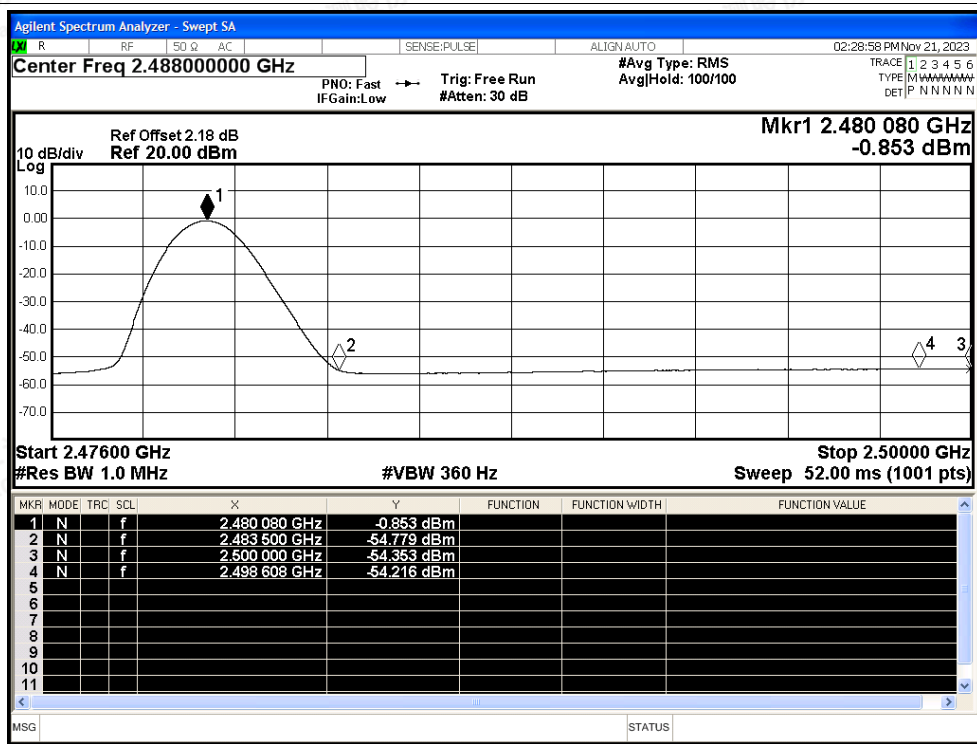




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

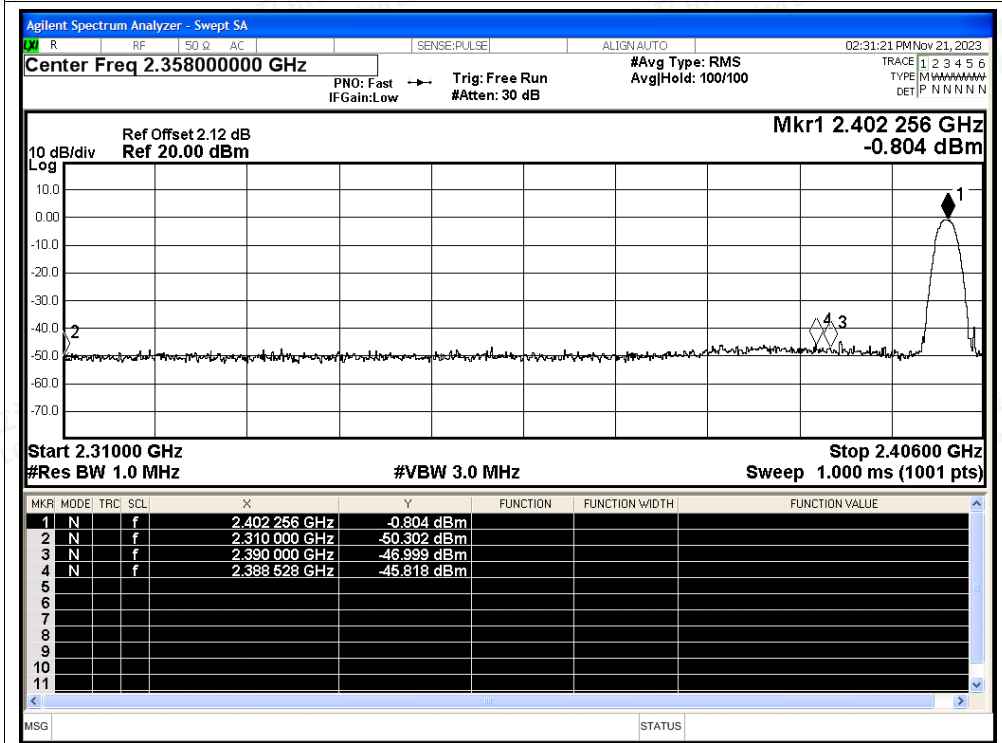


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

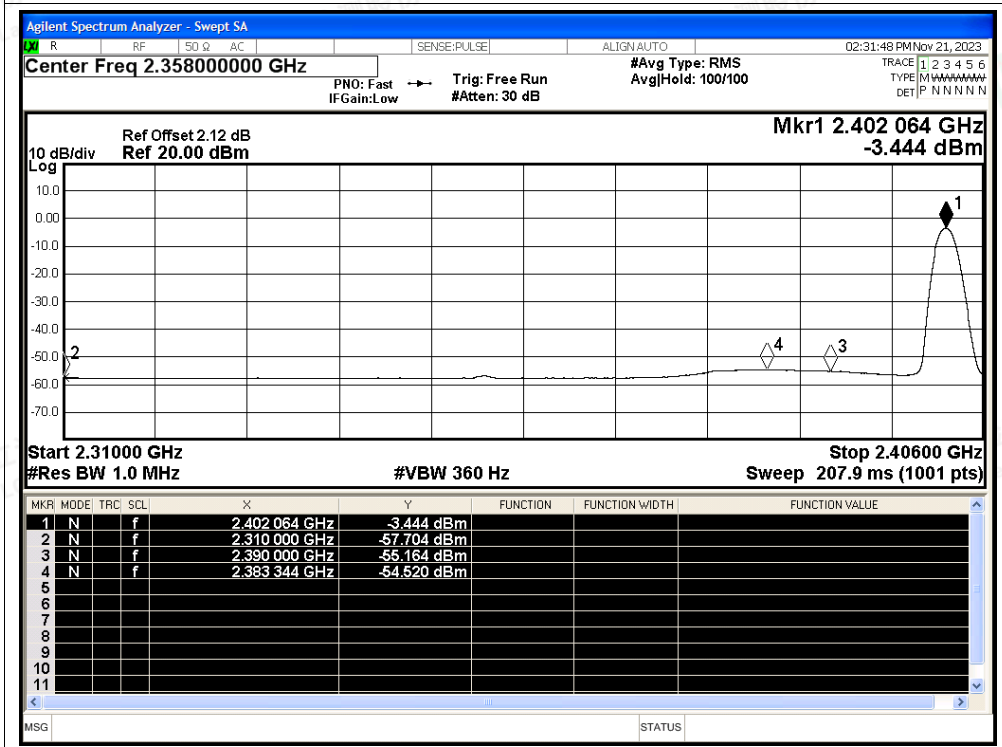




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

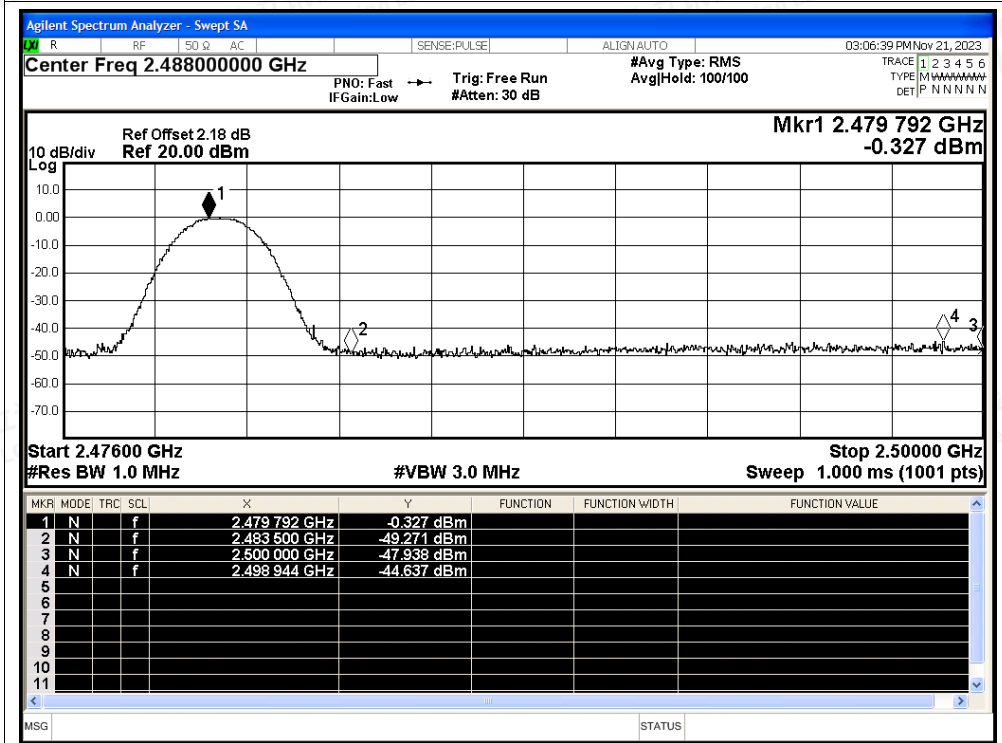


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average





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



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

