



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Portable Bluetooth Speaker with Wireless Charging

Test Model: WJ202B

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Bill Zhu
Supervised by:	 Li Huan





A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant	1.032	Pass
NVNT	1-DH5	2441	Ant	0.961	Pass
NVNT	1-DH5	2480	Ant	1.017	Pass
NVNT	2-DH5	2402	Ant	1.318	Pass
NVNT	2-DH5	2441	Ant	1.289	Pass
NVNT	2-DH5	2480	Ant	1.31	Pass
NVNT	3-DH5	2402	Ant	1.301	Pass
NVNT	3-DH5	2441	Ant	1.275	Pass
NVNT	3-DH5	2480	Ant	1.279	Pass

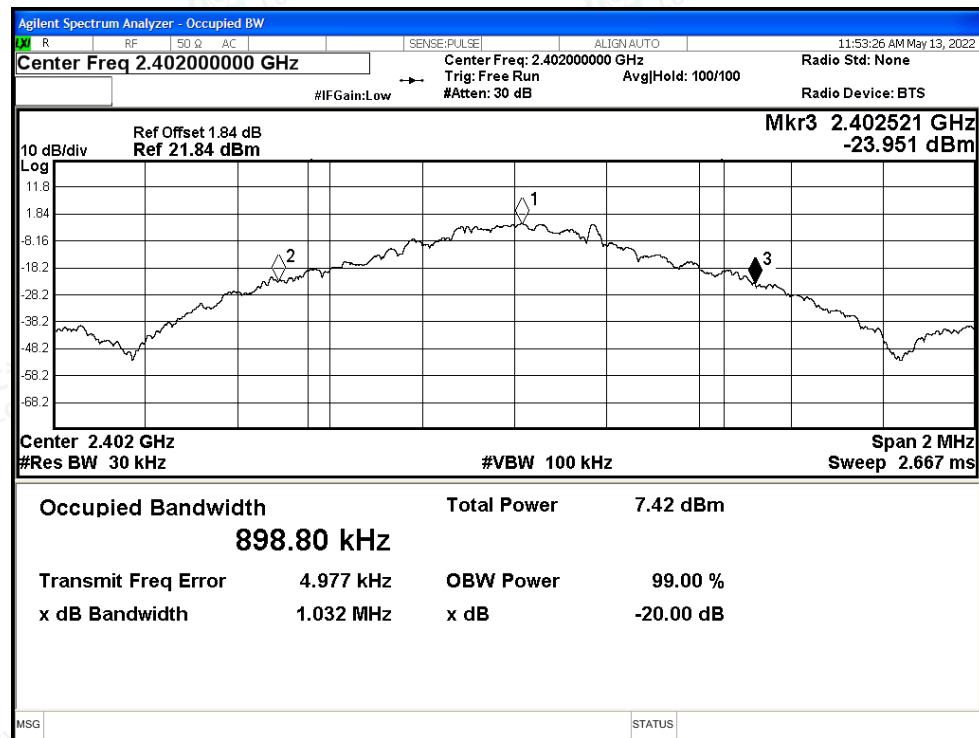


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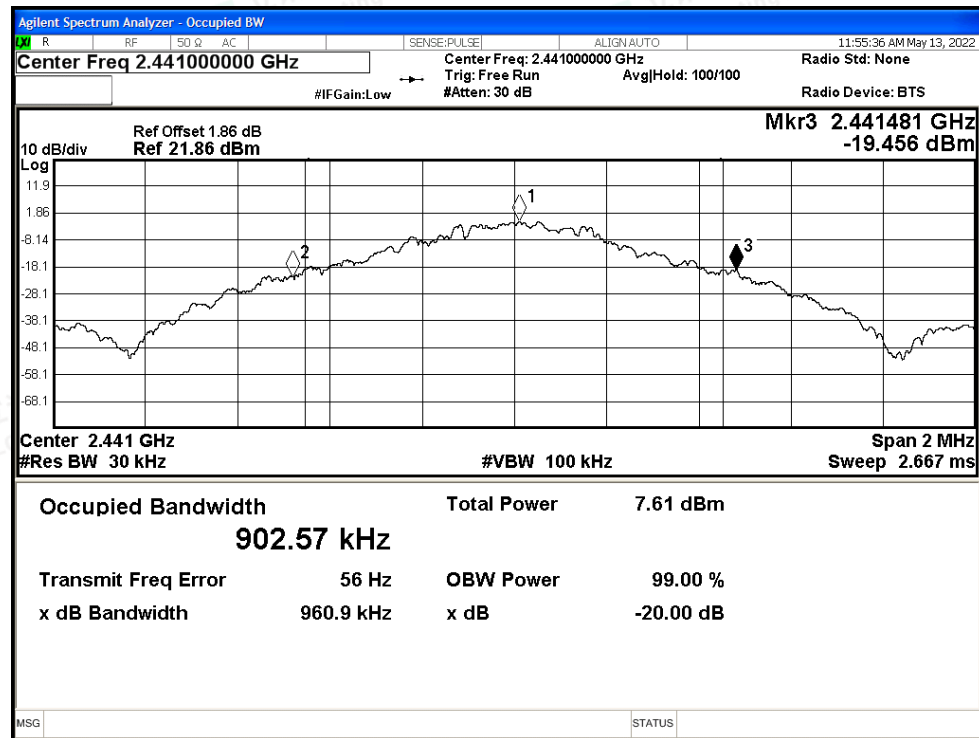


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant

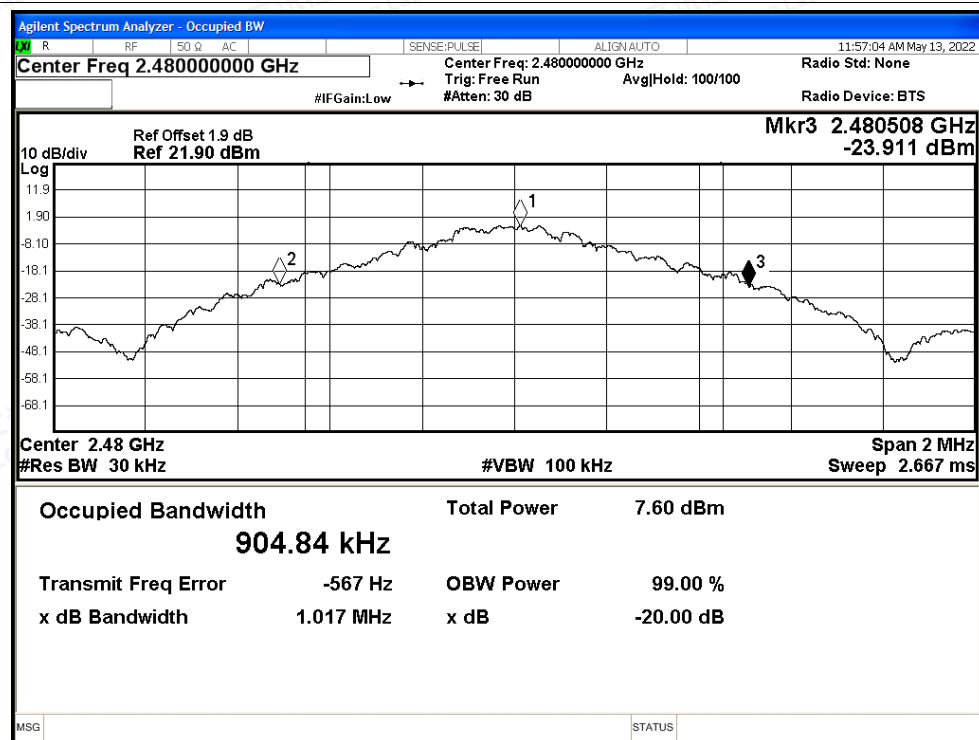


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant

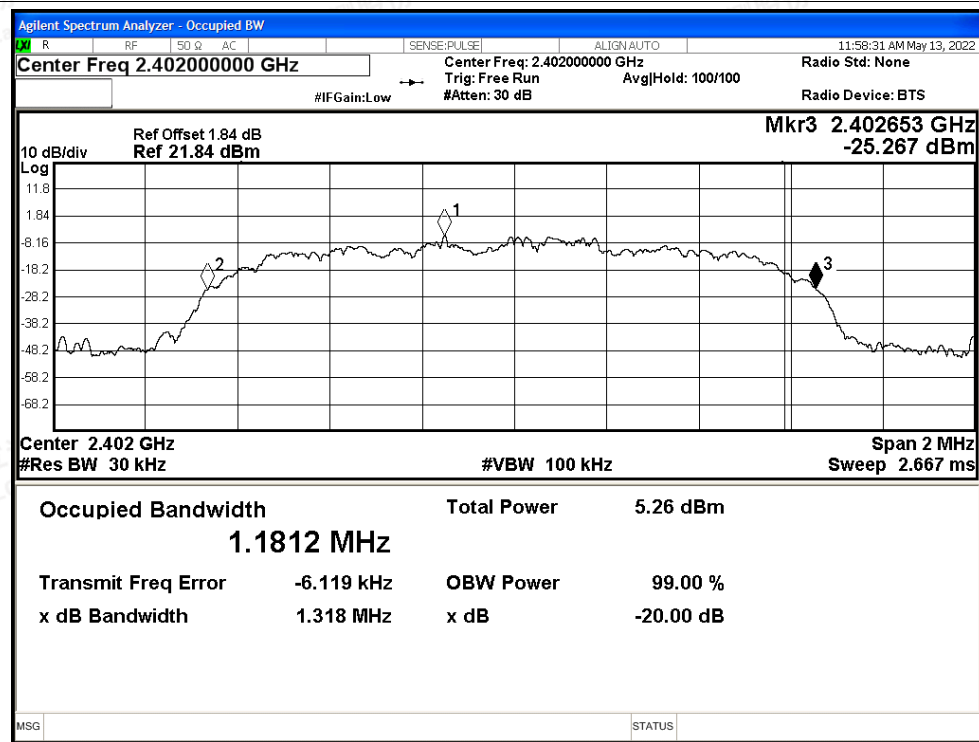




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant

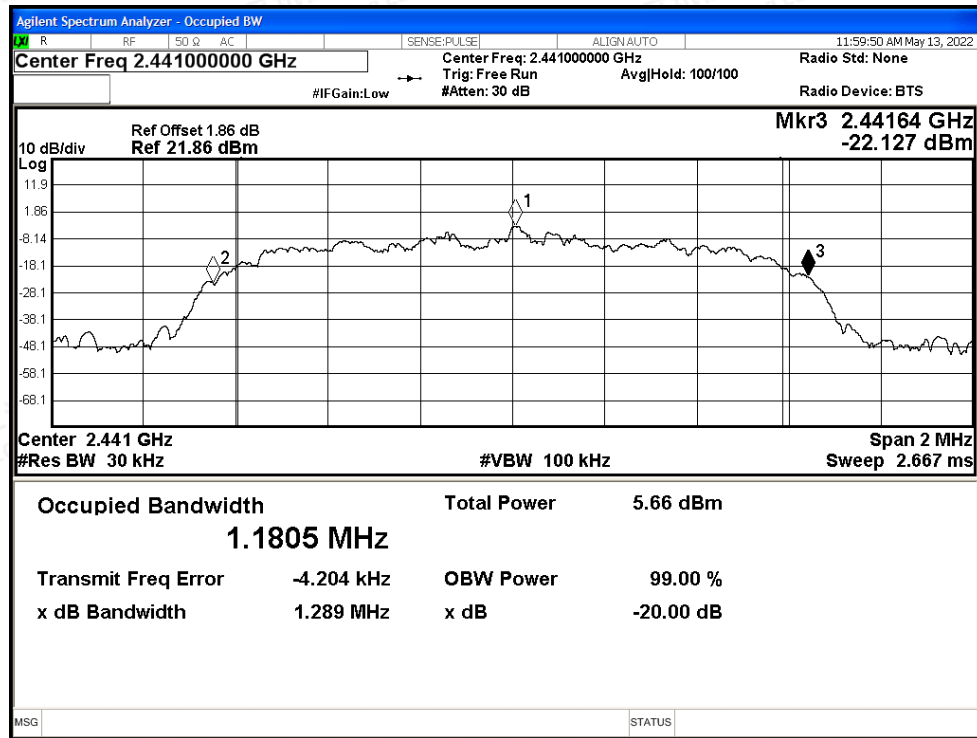


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant

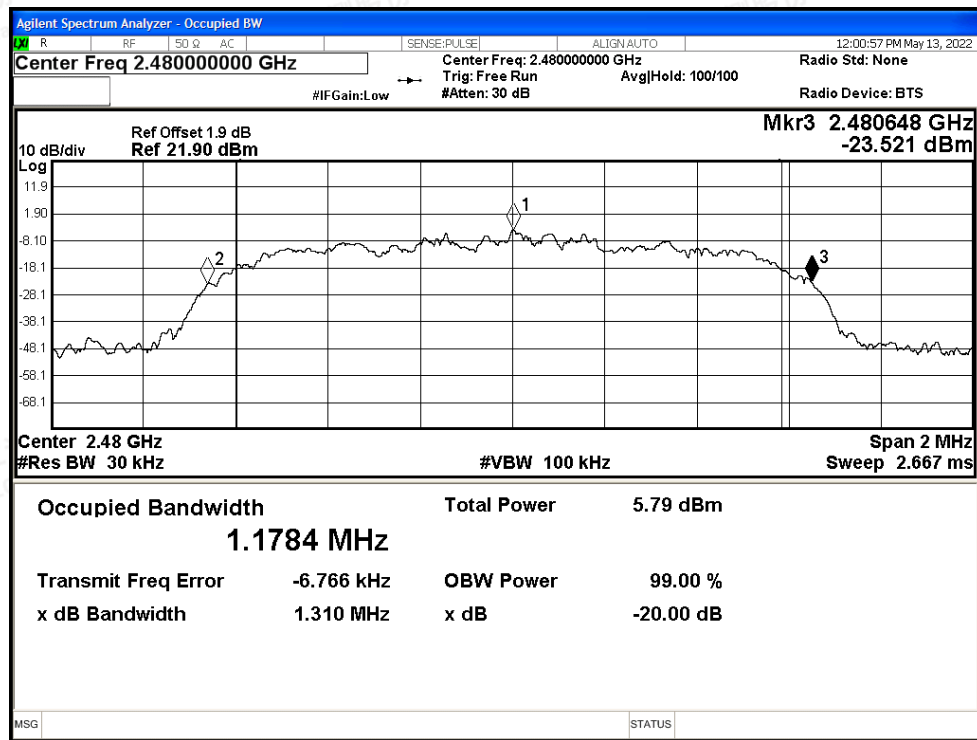




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant

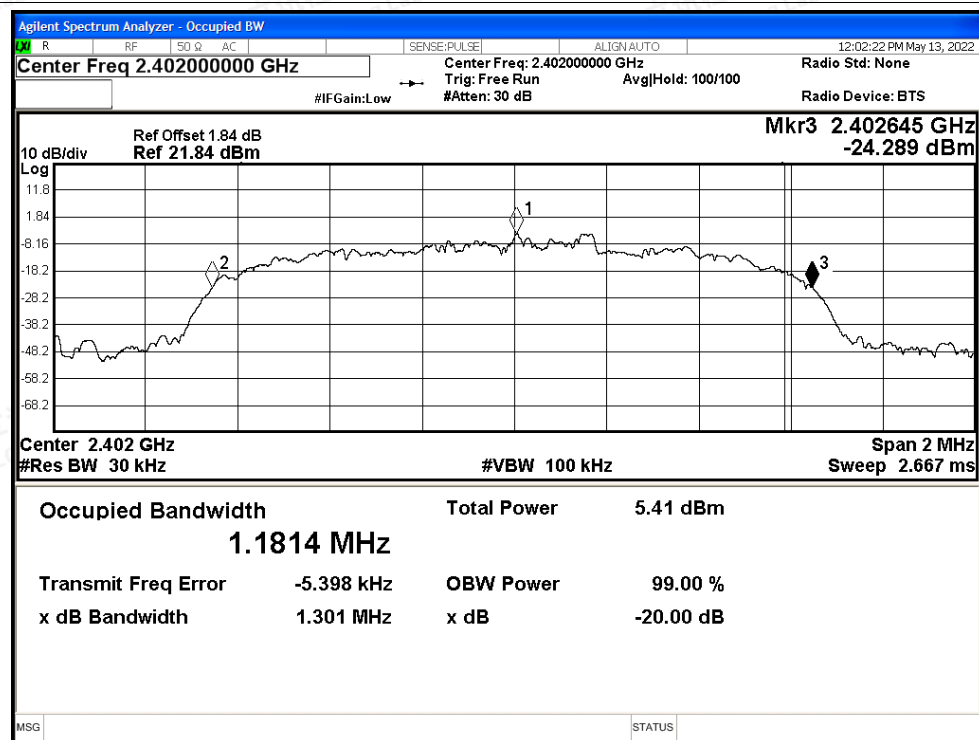


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant

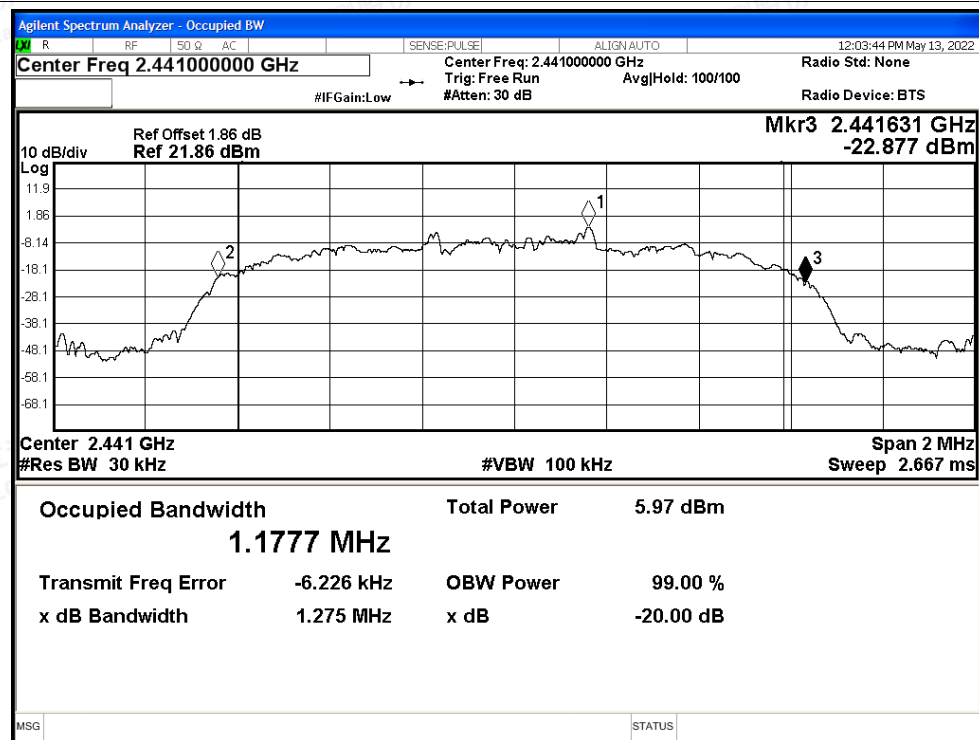


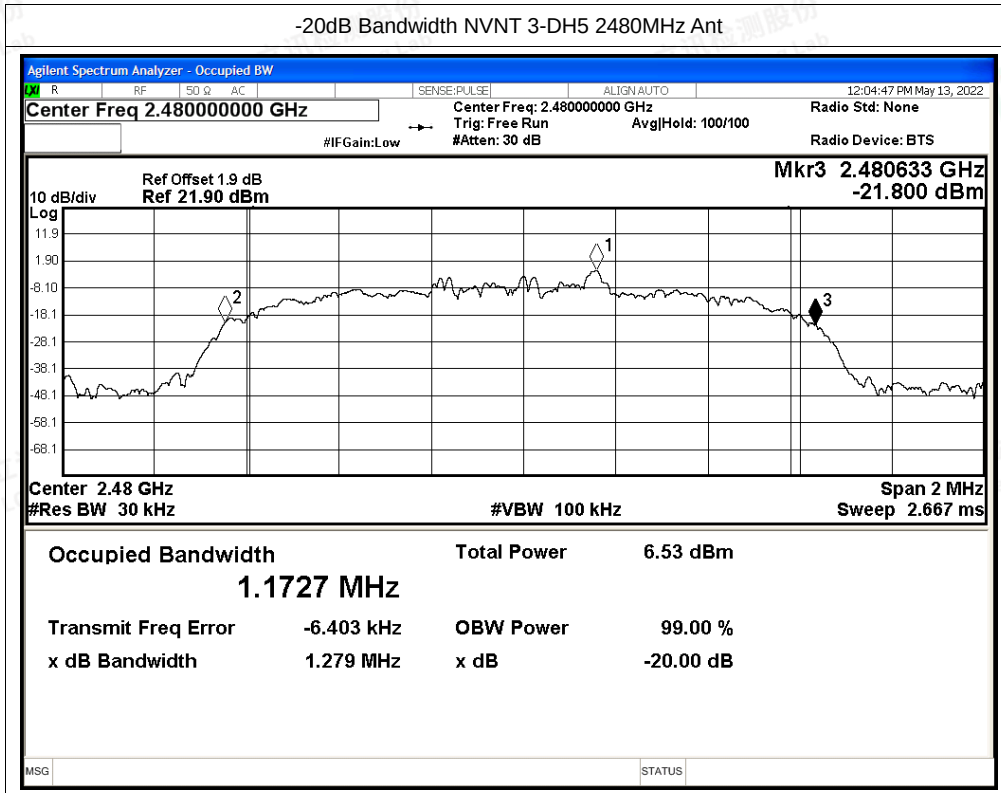


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant







A.2 Maximum Peak Conducted Output Power

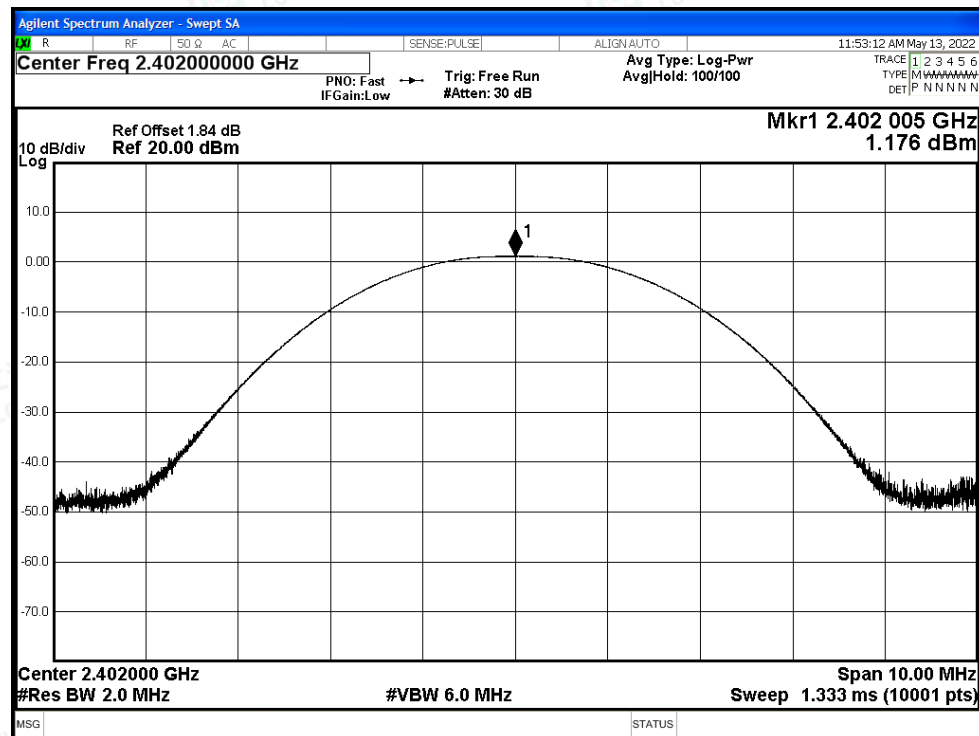
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant	1.18	21	Pass
NVNT	1-DH5	2441	Ant	1.6	21	Pass
NVNT	1-DH5	2480	Ant	1.57	21	Pass
NVNT	2-DH5	2402	Ant	0.76	21	Pass
NVNT	2-DH5	2441	Ant	1.27	21	Pass
NVNT	2-DH5	2480	Ant	1.27	21	Pass
NVNT	3-DH5	2402	Ant	1.17	21	Pass
NVNT	3-DH5	2441	Ant	1.68	21	Pass
NVNT	3-DH5	2480	Ant	1.72	21	Pass



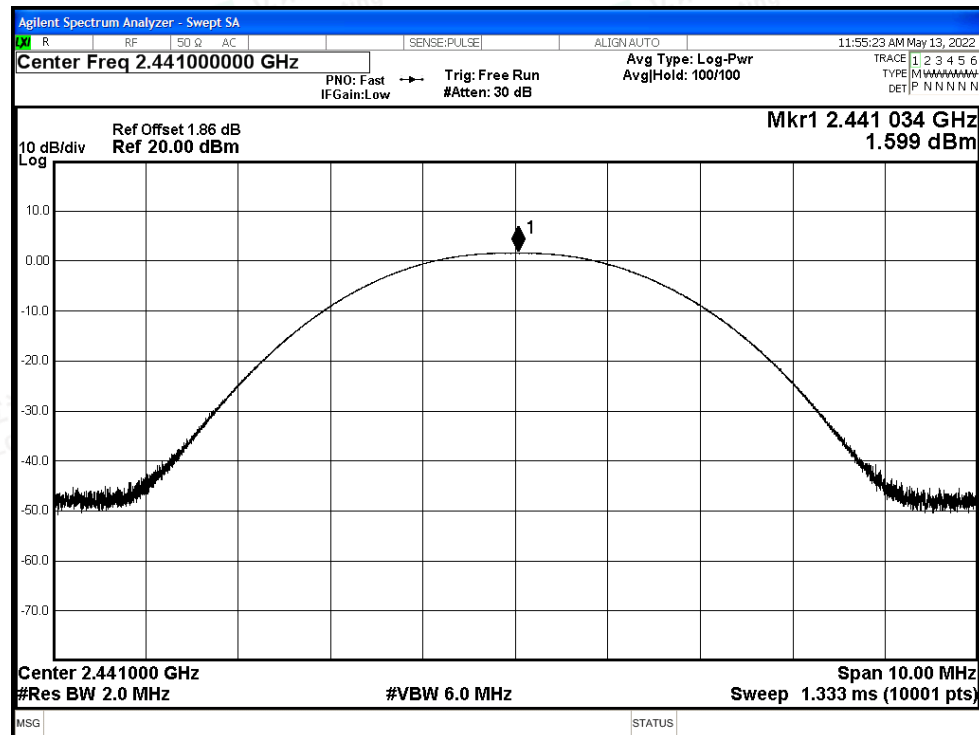


Test Graphs

Power NVNT 1-DH5 2402MHz Ant

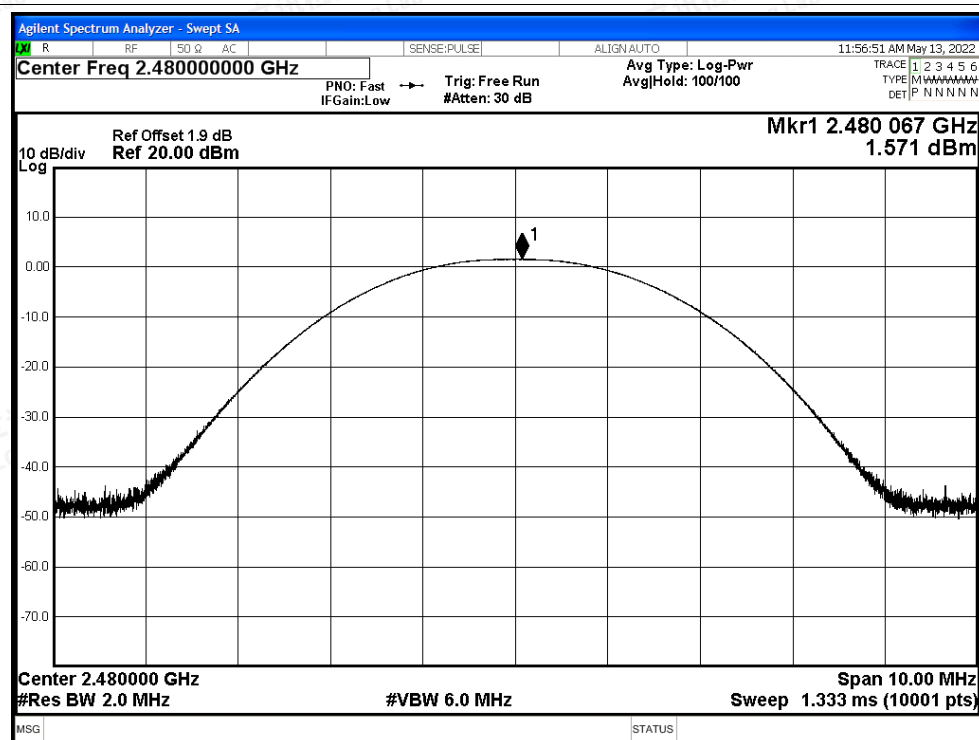


Power NVNT 1-DH5 2441MHz Ant

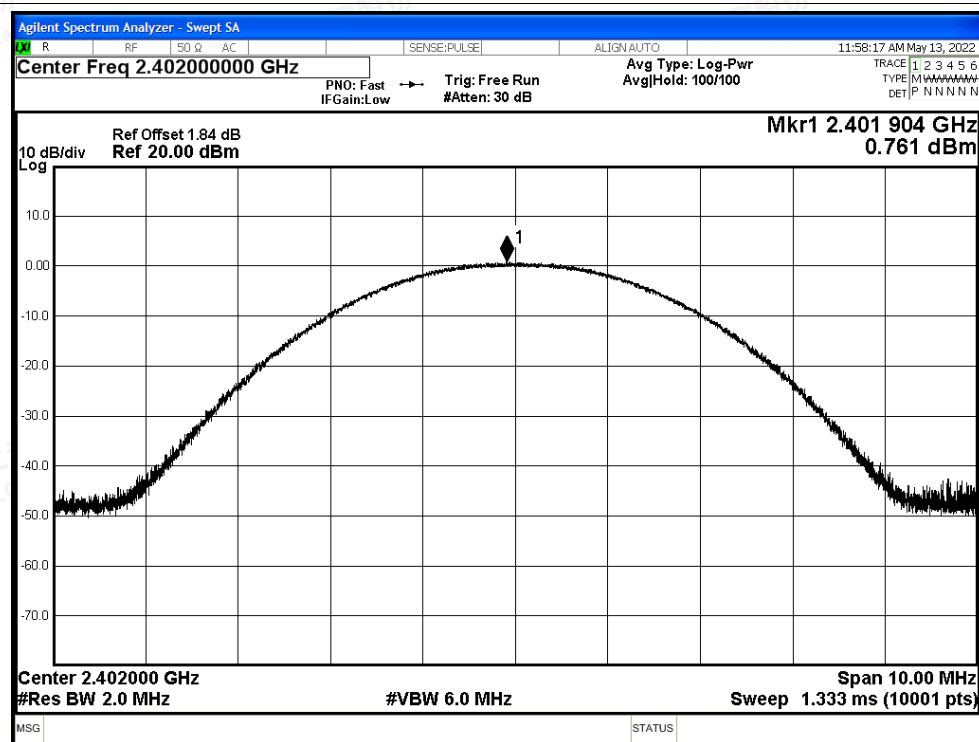




Power NVNT 1-DH5 2480MHz Ant

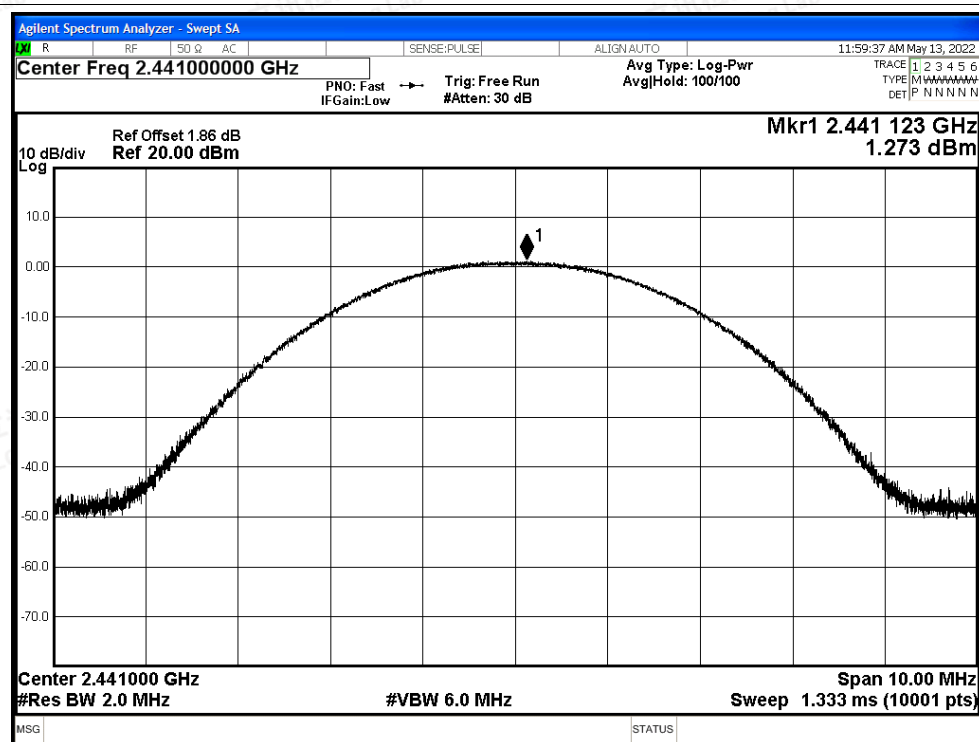


Power NVNT 2-DH5 2402MHz Ant

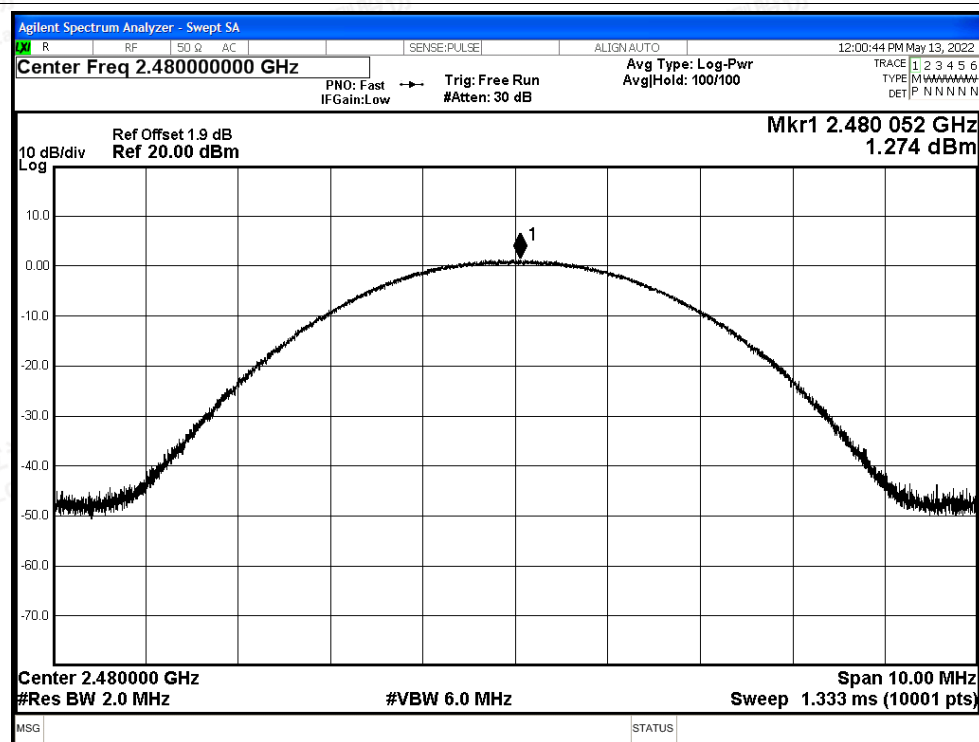




Power NVNT 2-DH5 2441MHz Ant

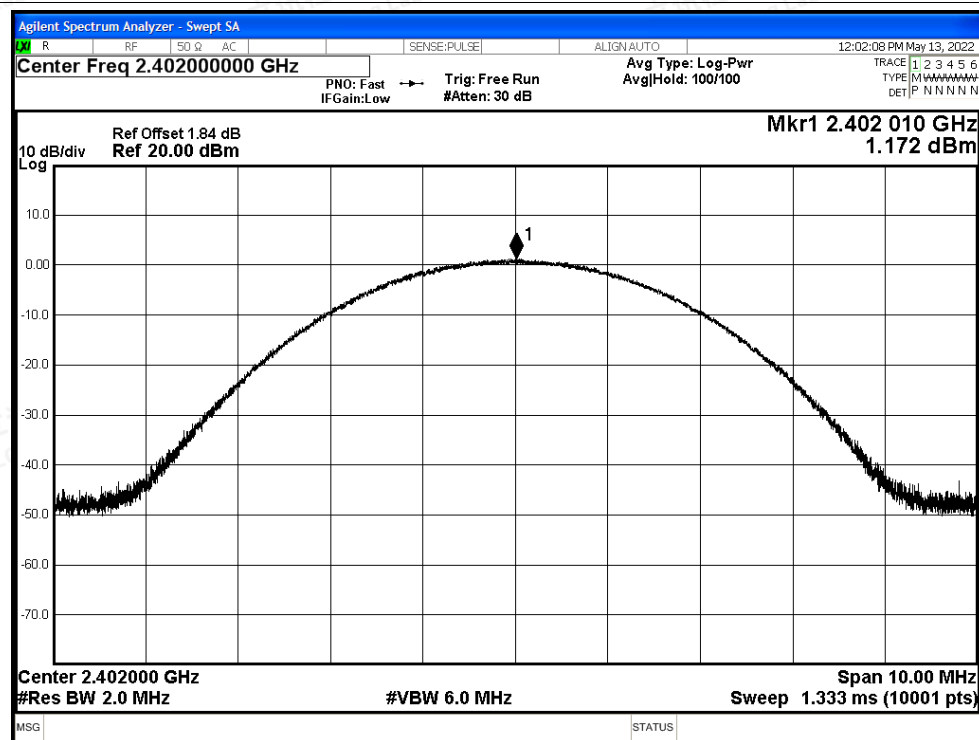


Power NVNT 2-DH5 2480MHz Ant

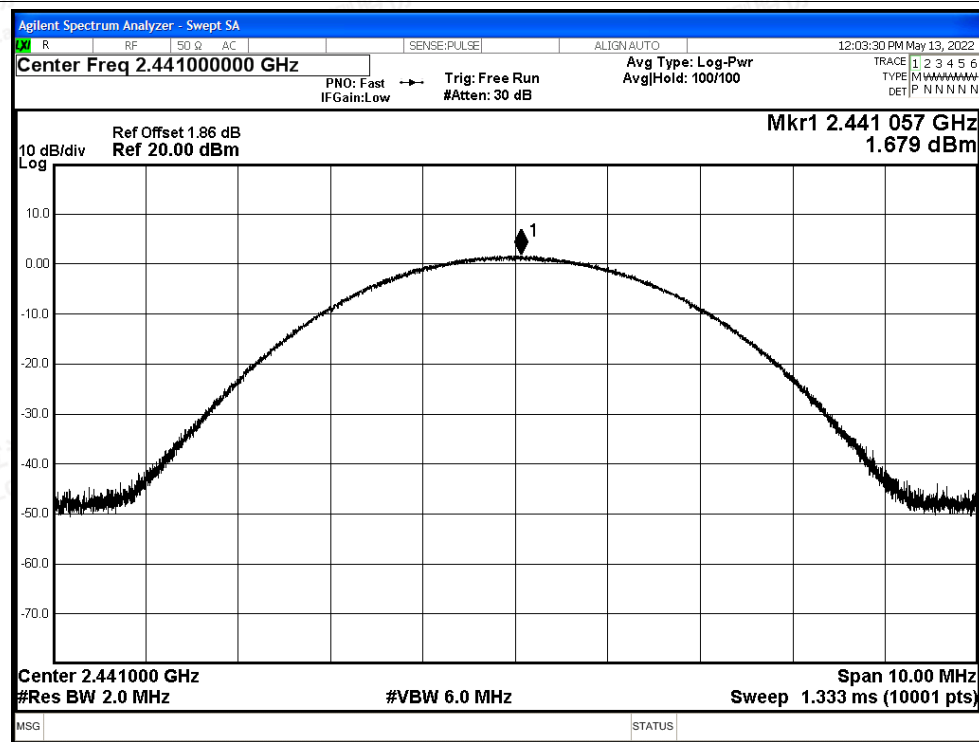


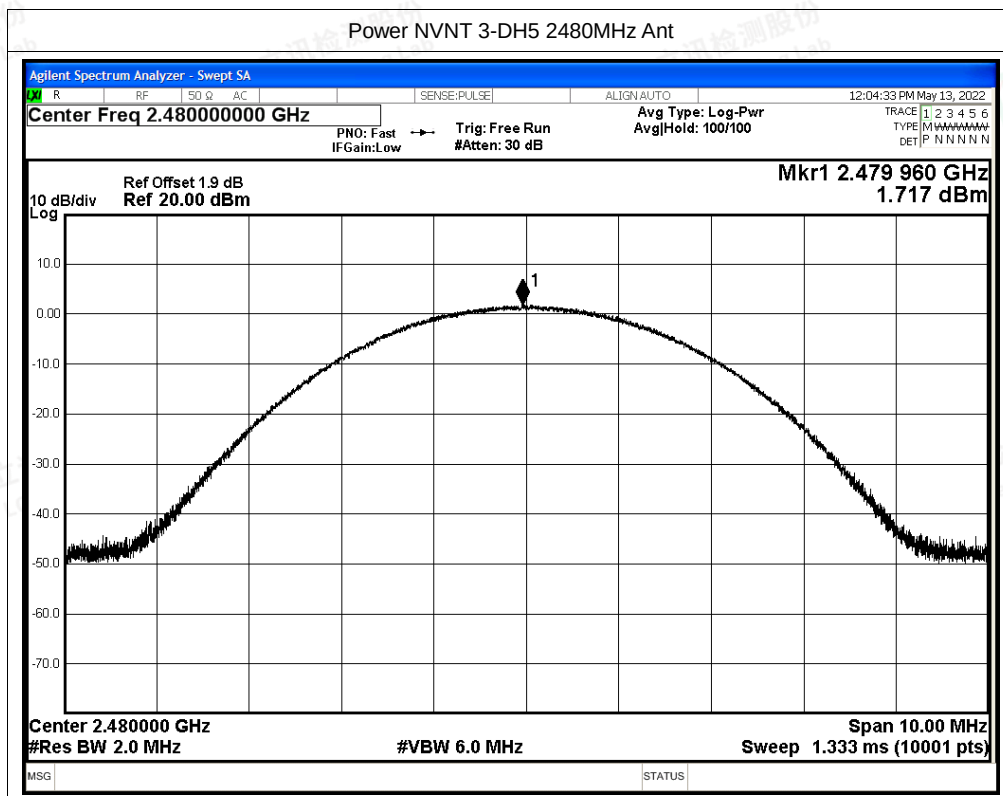


Power NVNT 3-DH5 2402MHz Ant



Power NVNT 3-DH5 2441MHz Ant







A.3 Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant	2402.15	2403.01	0.86	0.688	Pass
NVNT	2-DH5	Ant	2402.004	2403.156	1.152	0.879	Pass
NVNT	3-DH5	Ant	2402.152	2403.15	0.998	0.867	Pass

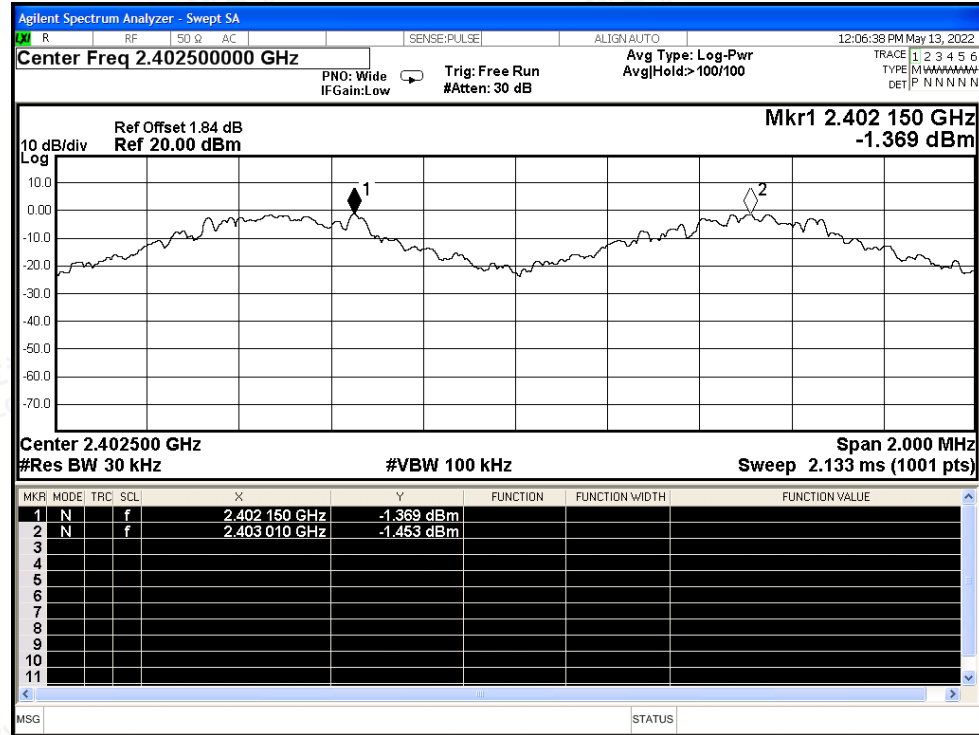


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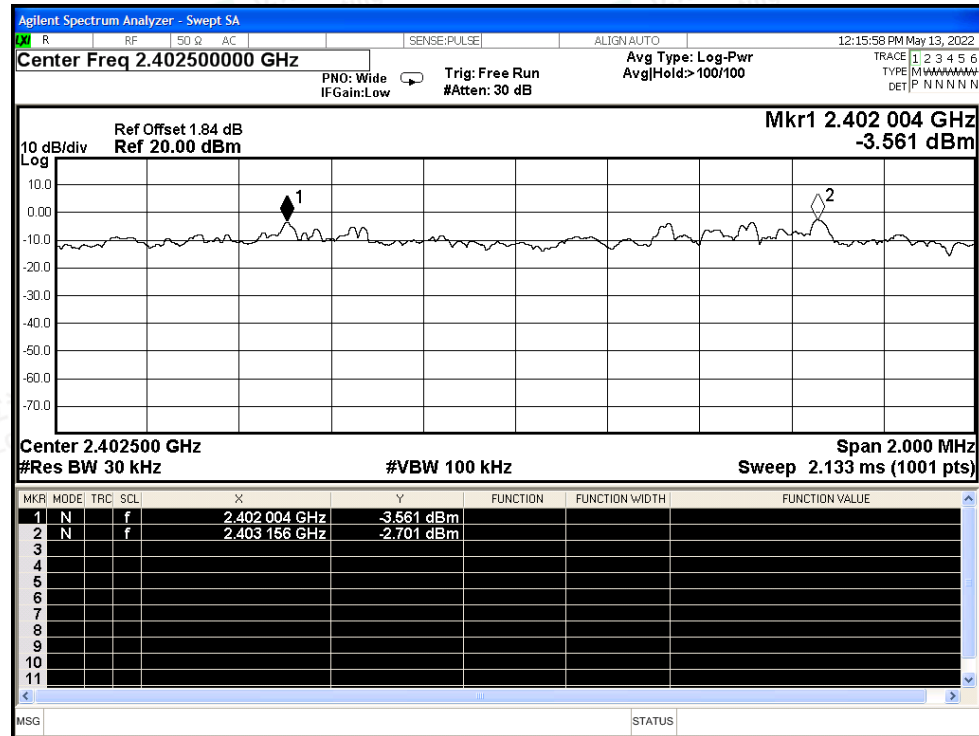


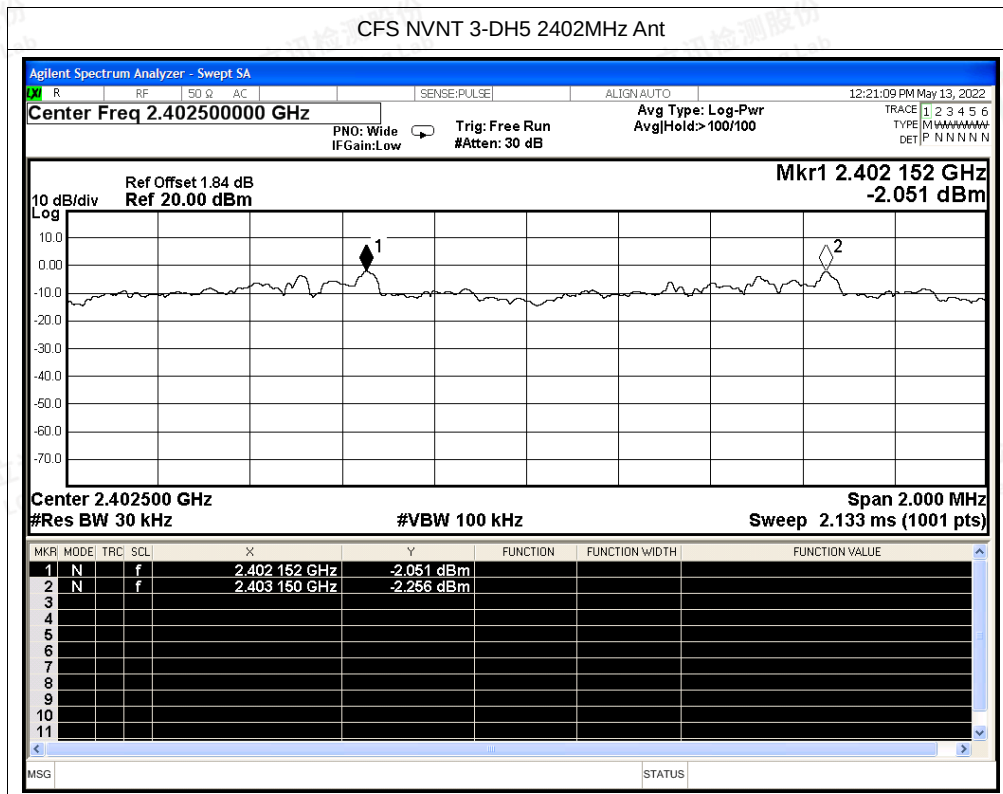
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant



CFS NVNT 2-DH5 2402MHz Ant







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	Ant	2.882	291.082	101	31600	400	Pass
NVNT	1-DH5	2441	Ant	2.882	302.61	105	31600	400	Pass
NVNT	1-DH5	2480	Ant	2.881	273.695	95	31600	400	Pass
NVNT	2-DH5	2402	Ant	2.885	308.695	107	31600	400	Pass
NVNT	2-DH5	2441	Ant	2.88	293.76	102	31600	400	Pass
NVNT	2-DH5	2480	Ant	2.882	314.138	109	31600	400	Pass
NVNT	3-DH5	2402	Ant	2.886	331.89	115	31600	400	Pass
NVNT	3-DH5	2441	Ant	2.887	282.926	98	31600	400	Pass
NVNT	3-DH5	2480	Ant	2.884	299.936	104	31600	400	Pass

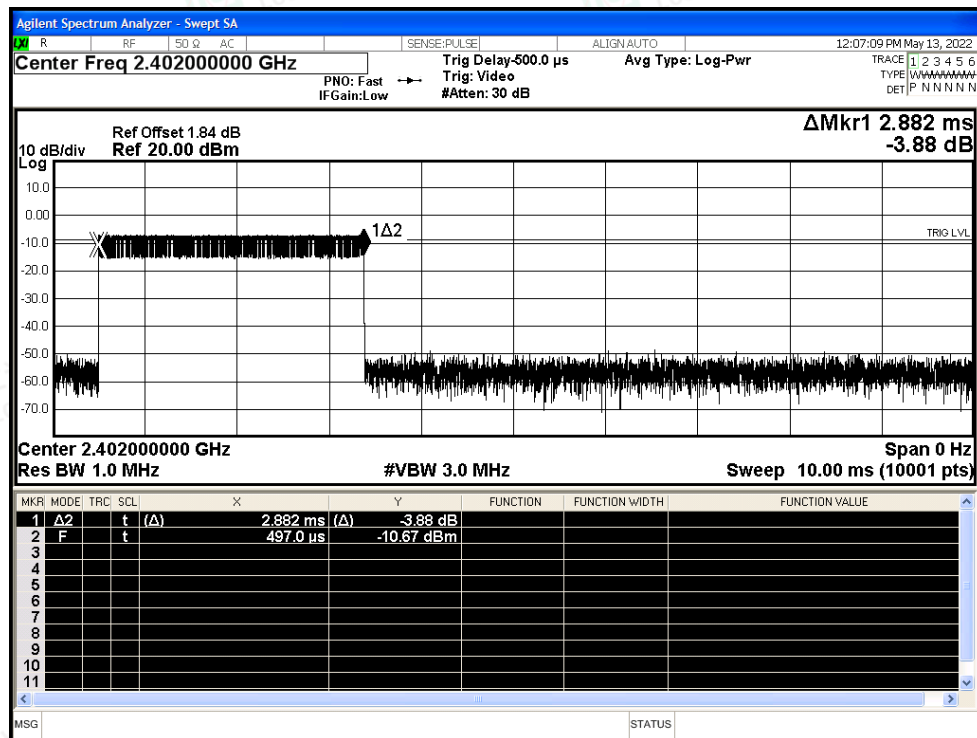


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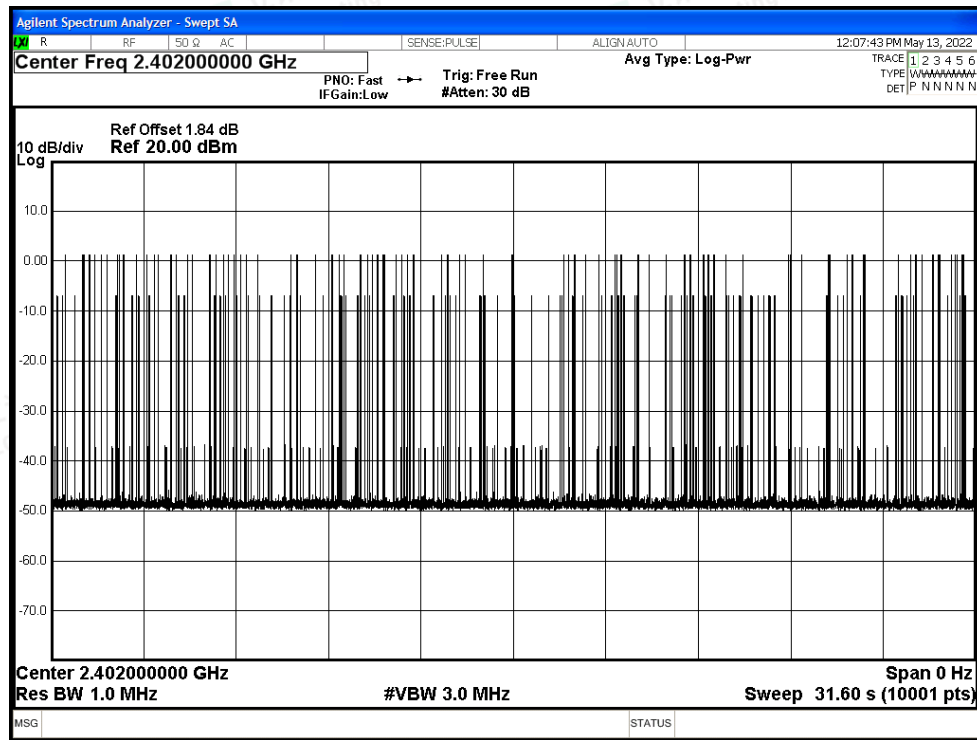


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant One Burst



Dwell NVNT 1-DH5 2402MHz Ant Accumulated



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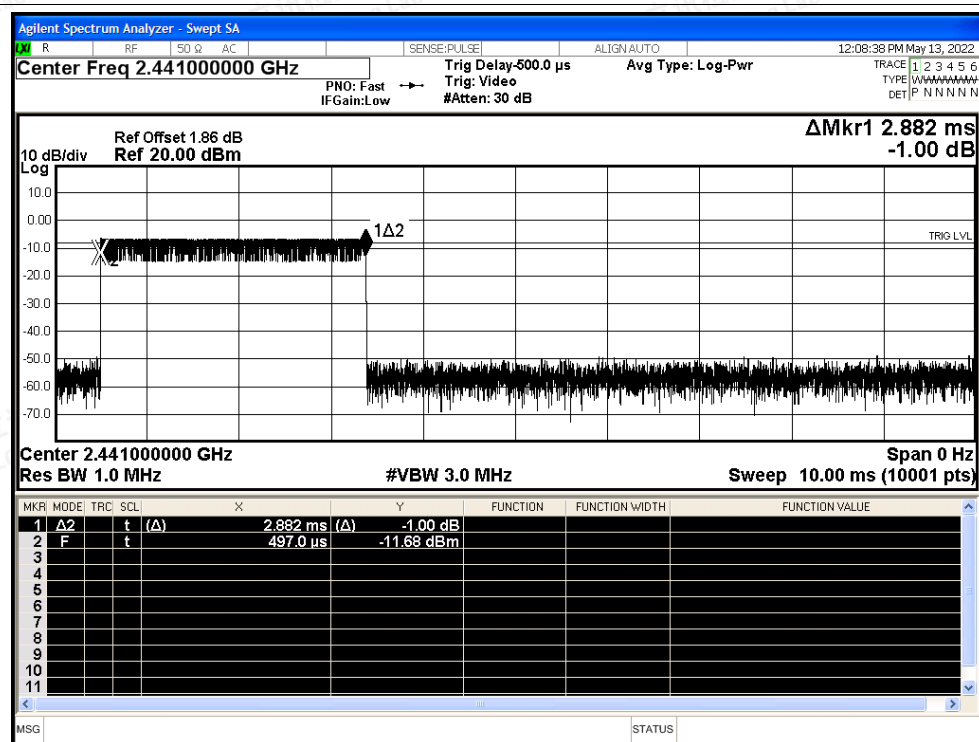
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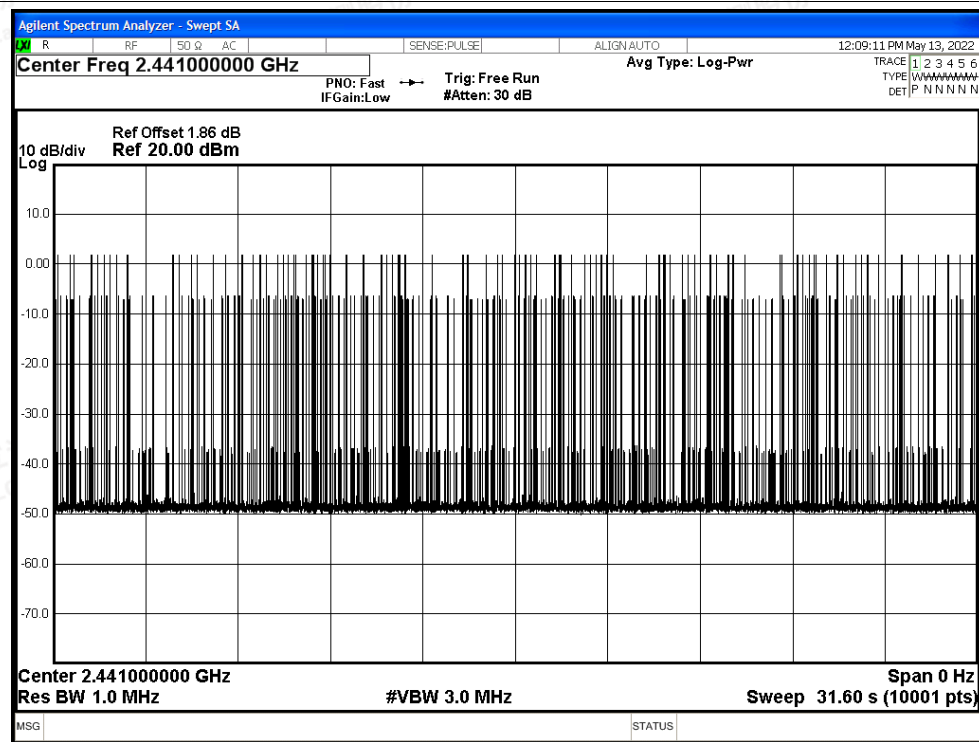
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Dwell NVNT 1-DH5 2441MHz Ant One Burst

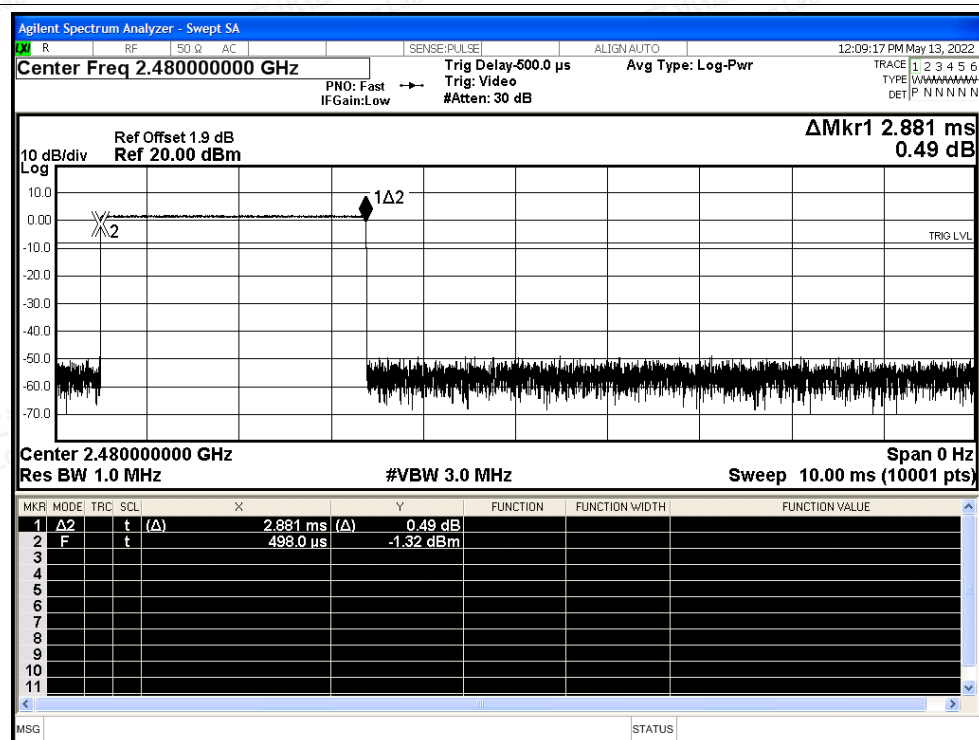


Dwell NVNT 1-DH5 2441MHz Ant Accumulated

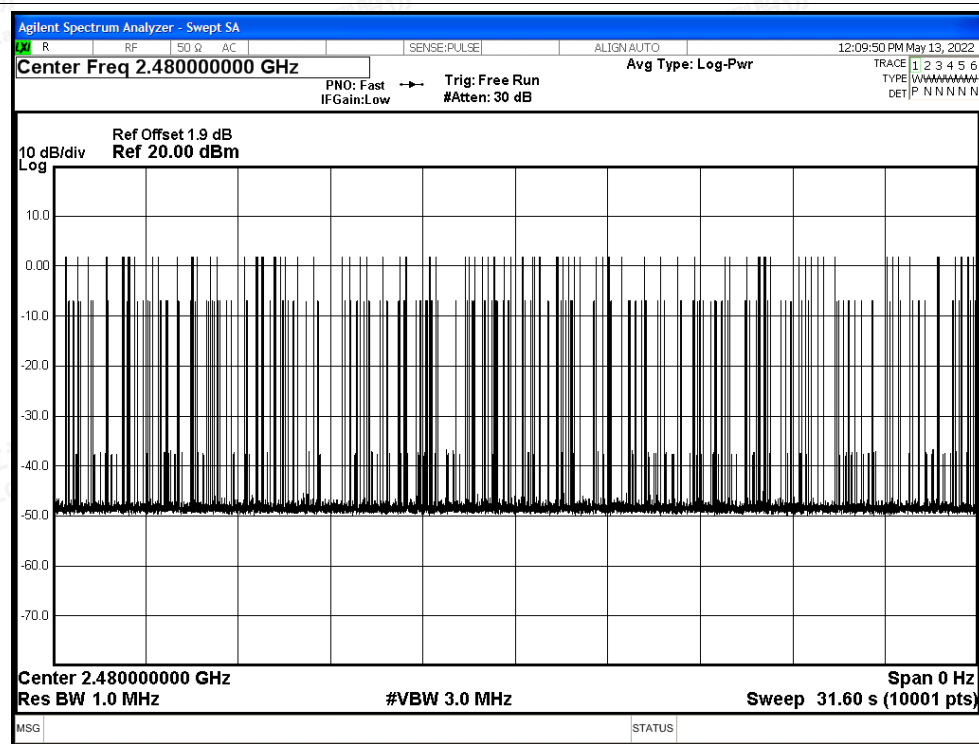




Dwell NVNT 1-DH5 2480MHz Ant One Burst

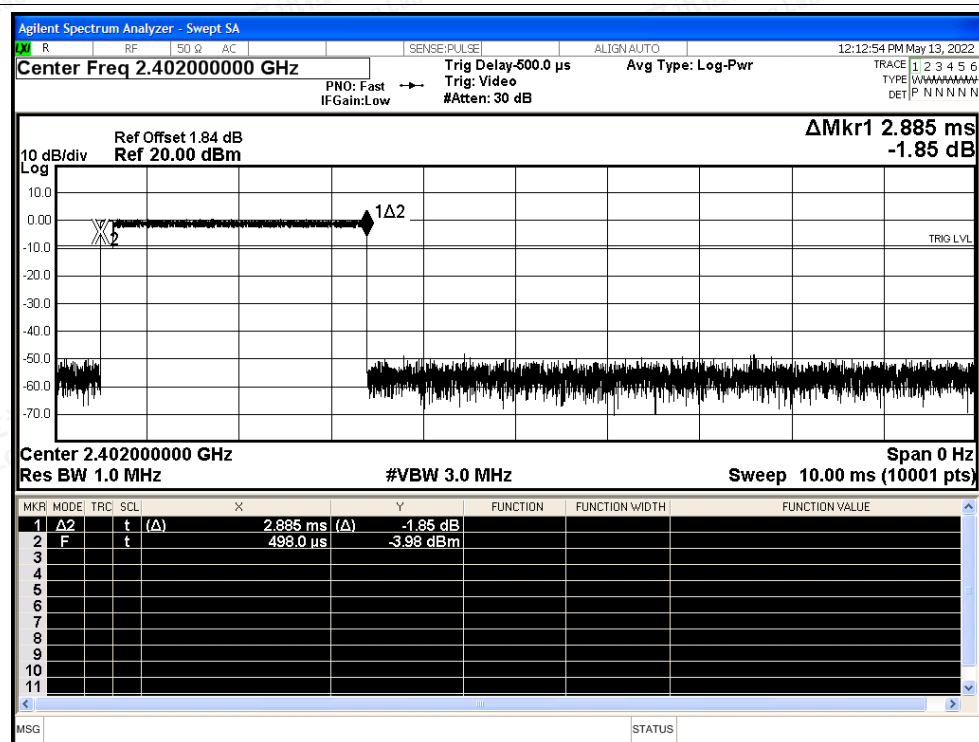


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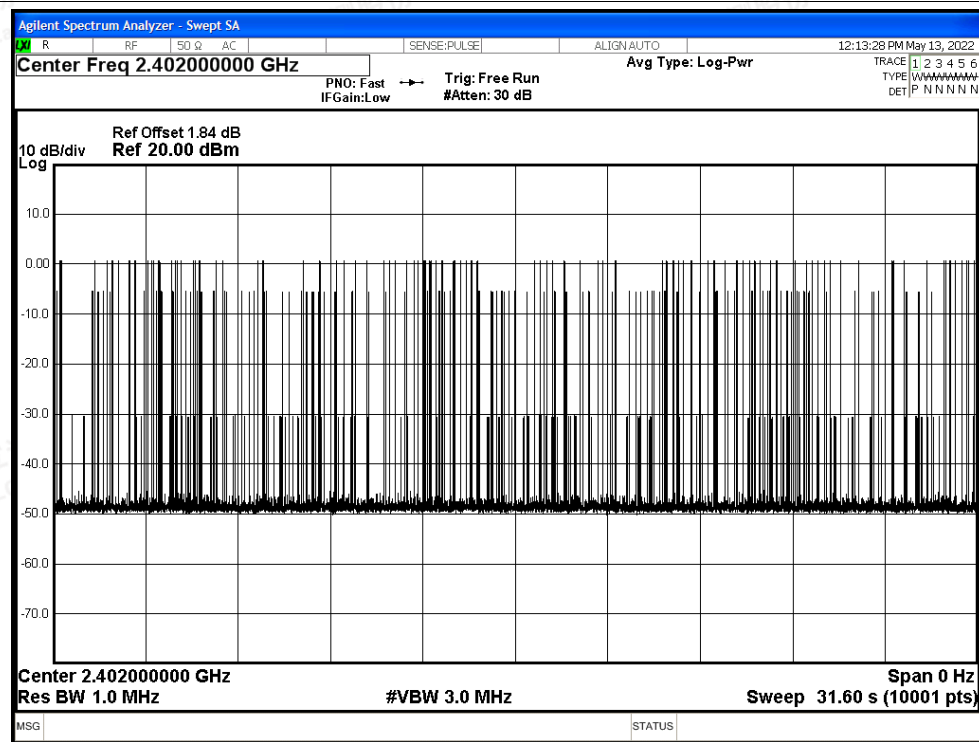




Dwell NVNT 2-DH5 2402MHz Ant One Burst

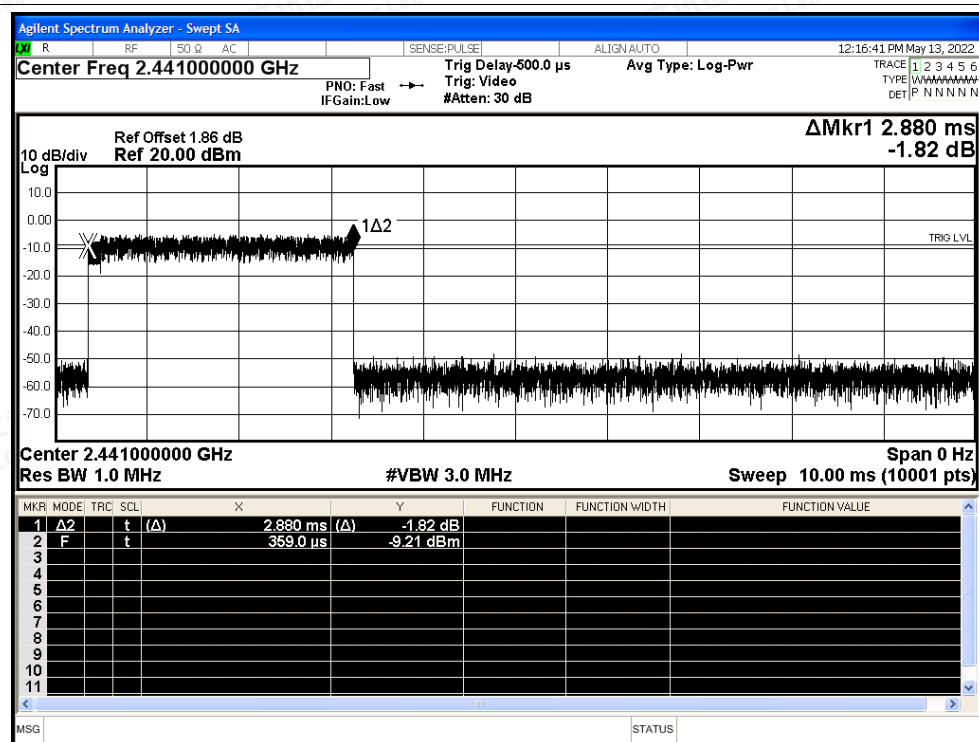


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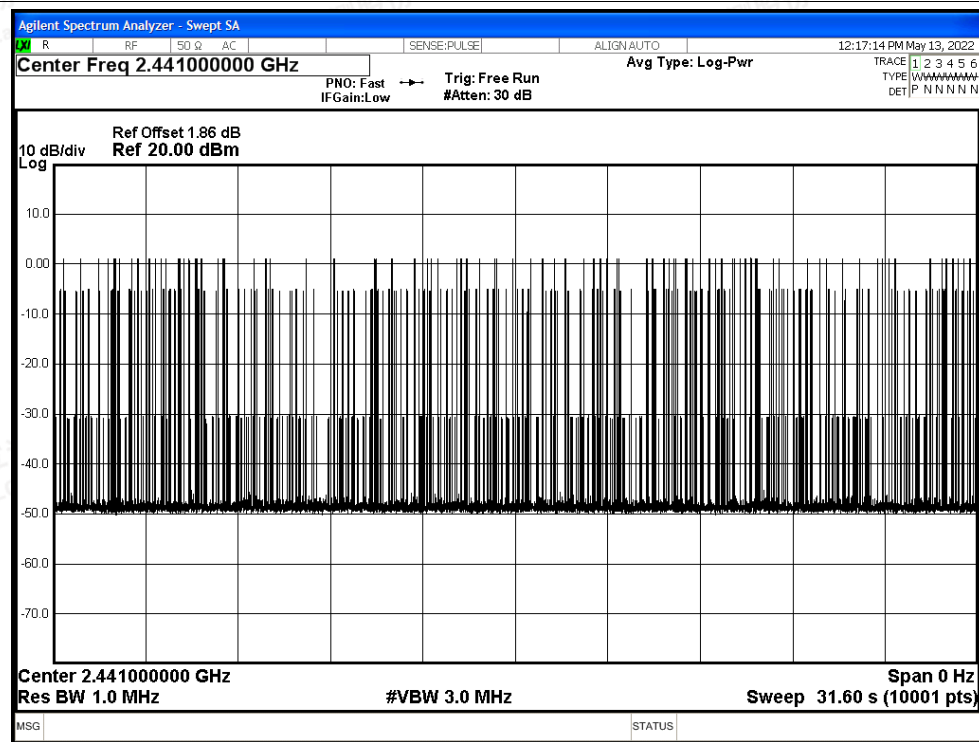




Dwell NVNT 2-DH5 2441MHz Ant One Burst

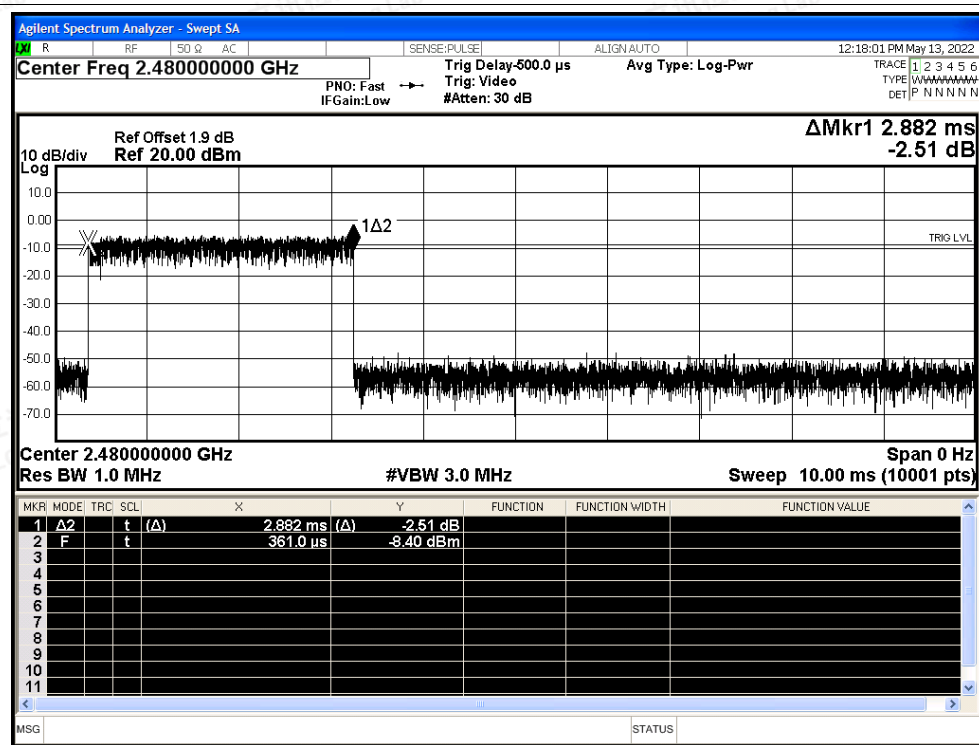


Dwell NVNT 2-DH5 2441MHz Ant Accumulated

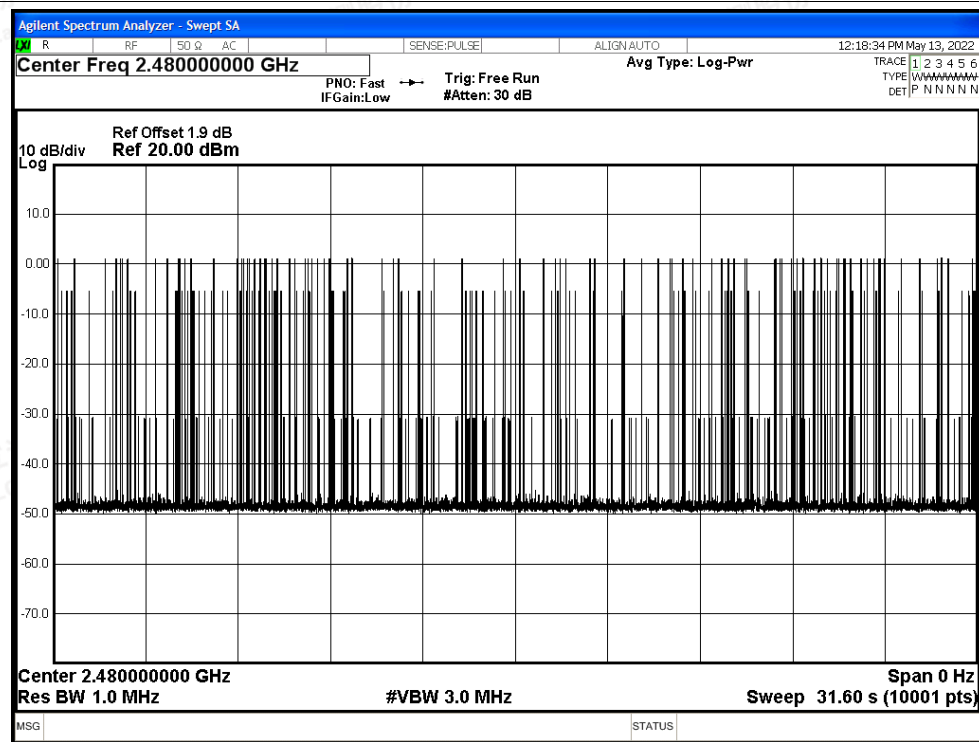




Dwell NVNT 2-DH5 2480MHz Ant One Burst

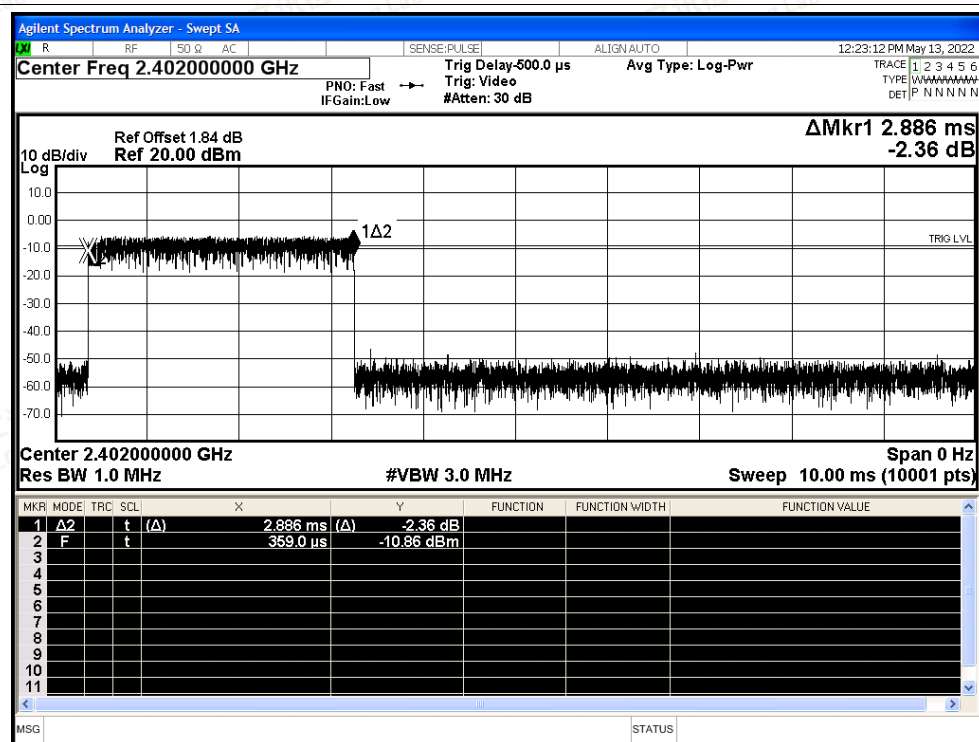


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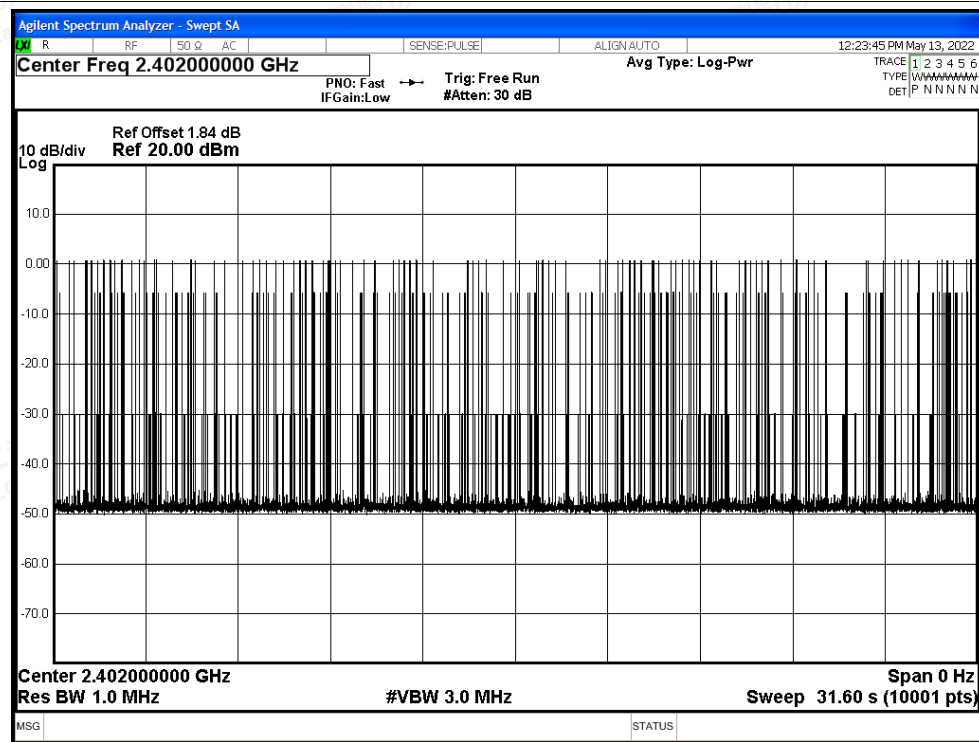




Dwell NVNT 3-DH5 2402MHz Ant One Burst

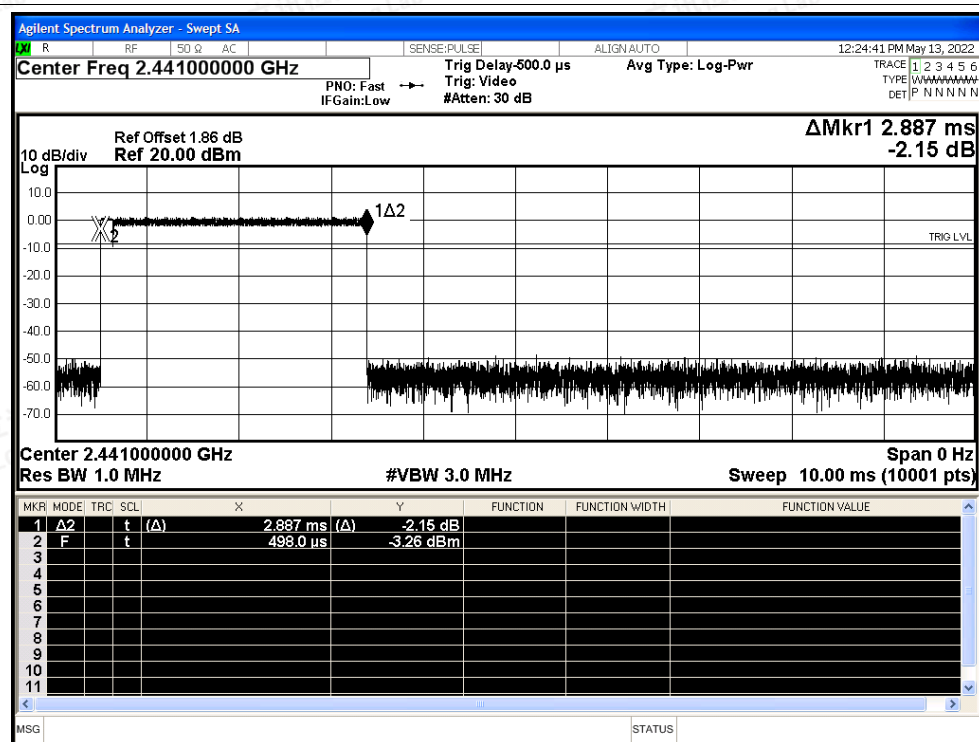


Dwell NVNT 3-DH5 2402MHz Ant Accumulated

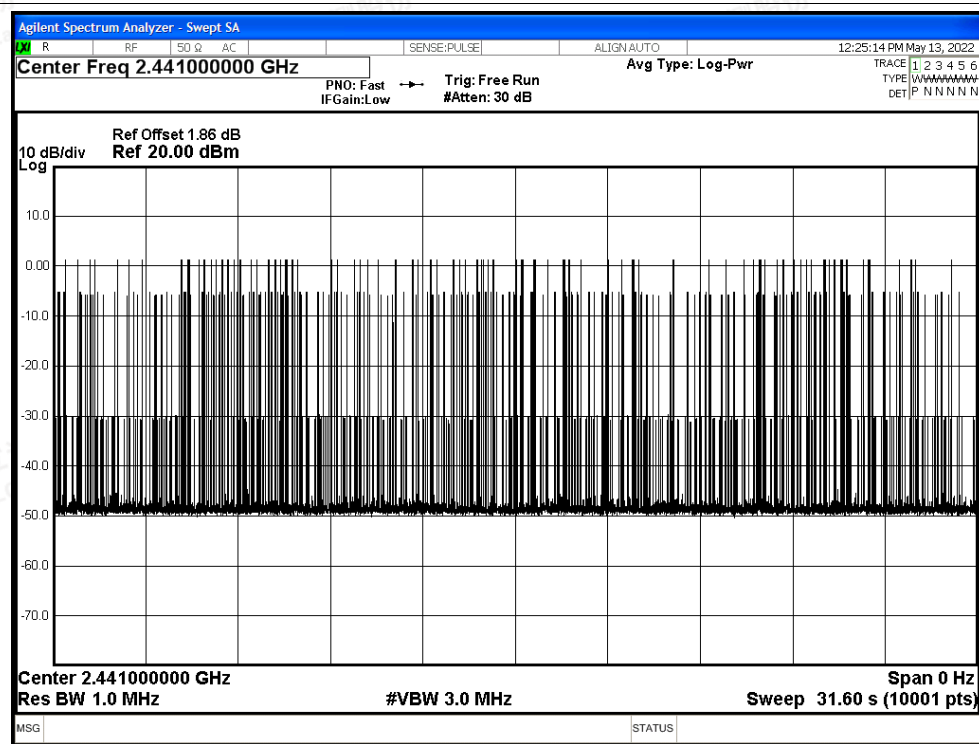




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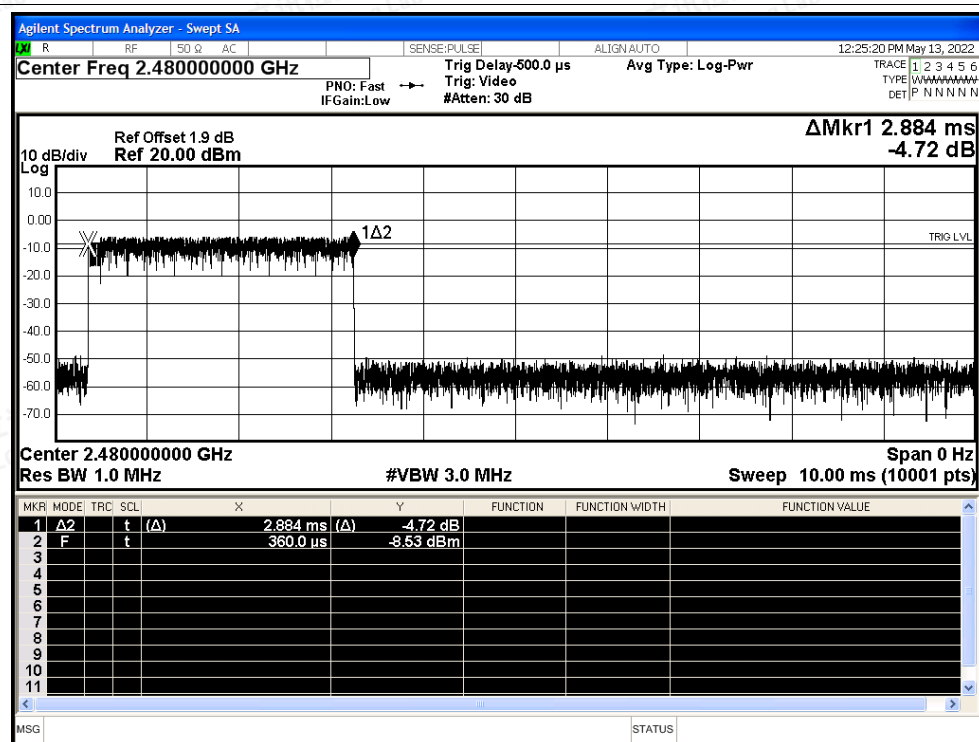


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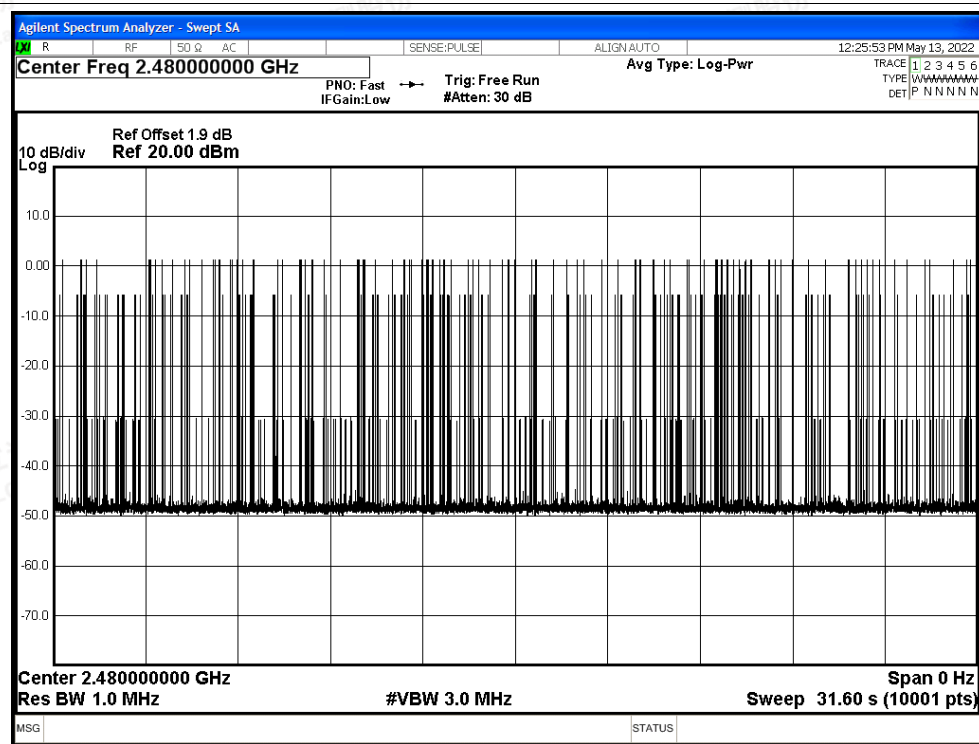




Dwell NVNT 3-DH5 2480MHz Ant One Burst



Dwell NVNT 3-DH5 2480MHz Ant Accumulated





A.5 Number of Hopping Channel

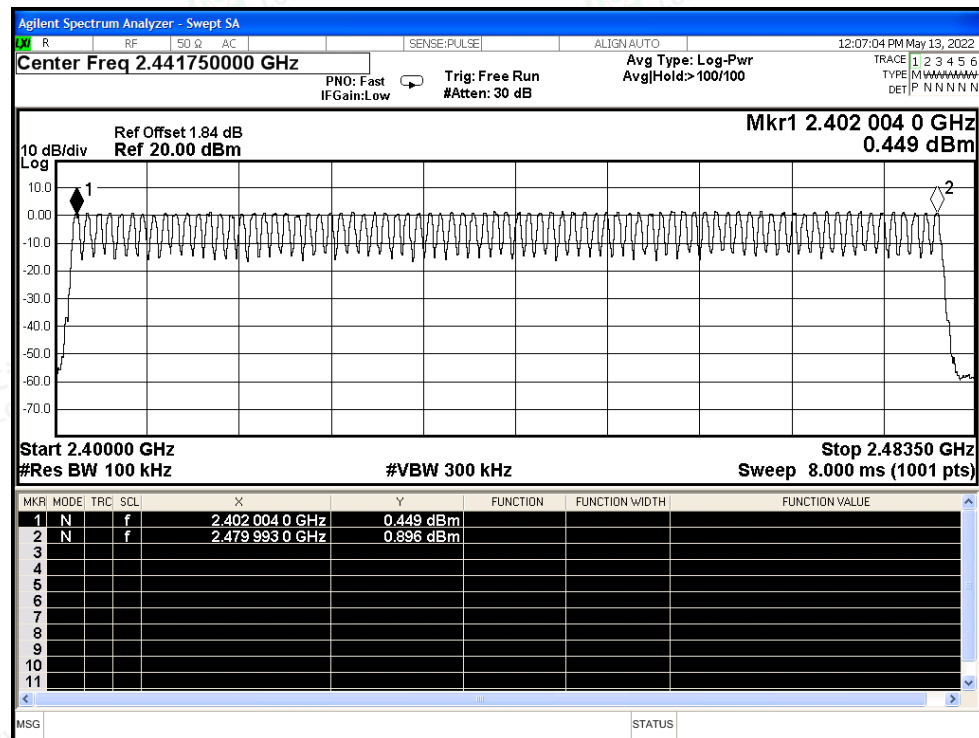
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant	79	15	Pass
NVNT	2-DH5	Ant	79	15	Pass
NVNT	3-DH5	Ant	79	15	Pass



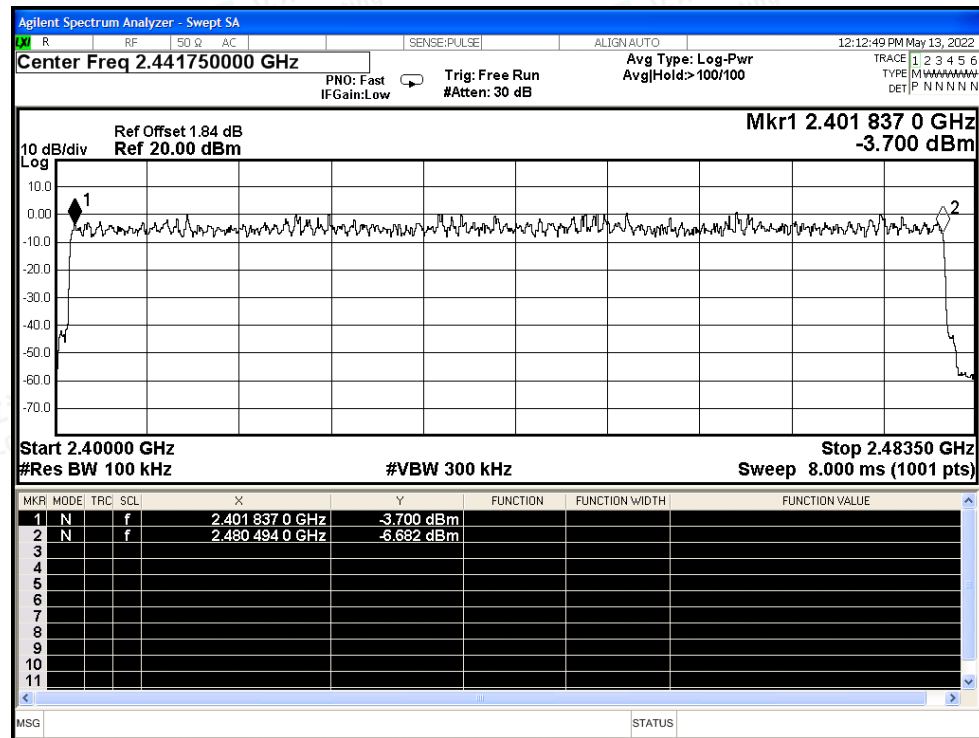


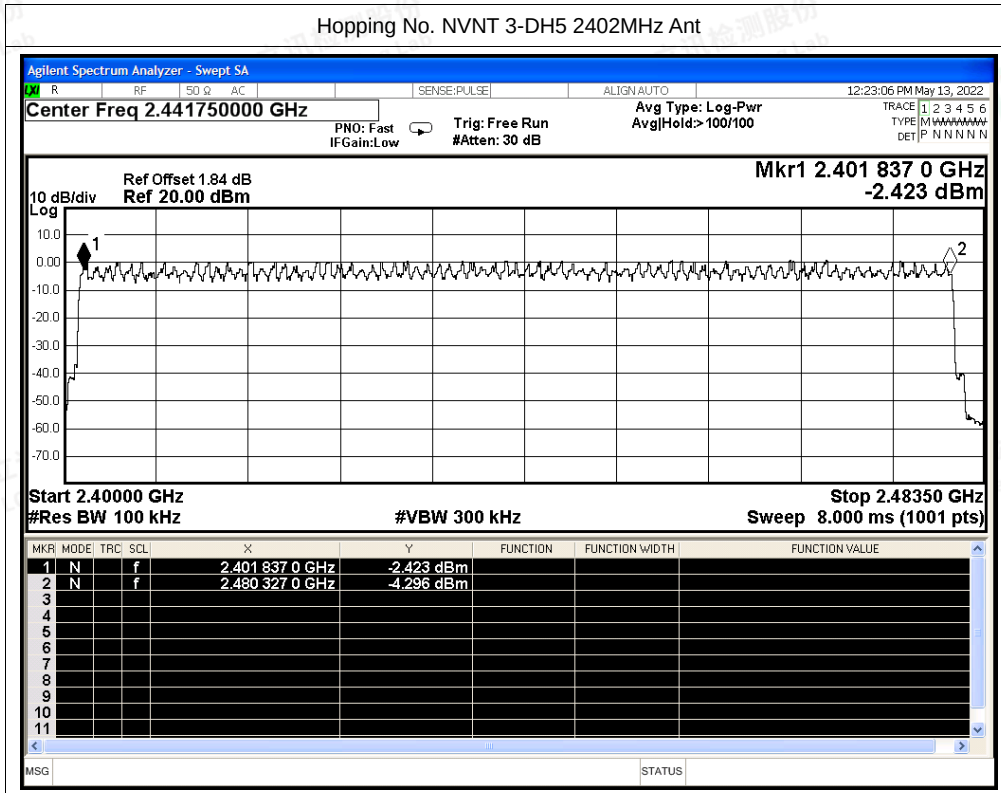
Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant



Hopping No. NVNT 2-DH5 2402MHz Ant







A.6 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	No-Hopping	-55.7	-20	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	-58.47	-20	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	-51.62	-20	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	-53.83	-20	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	-54.14	-20	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	-57.74	-20	Pass

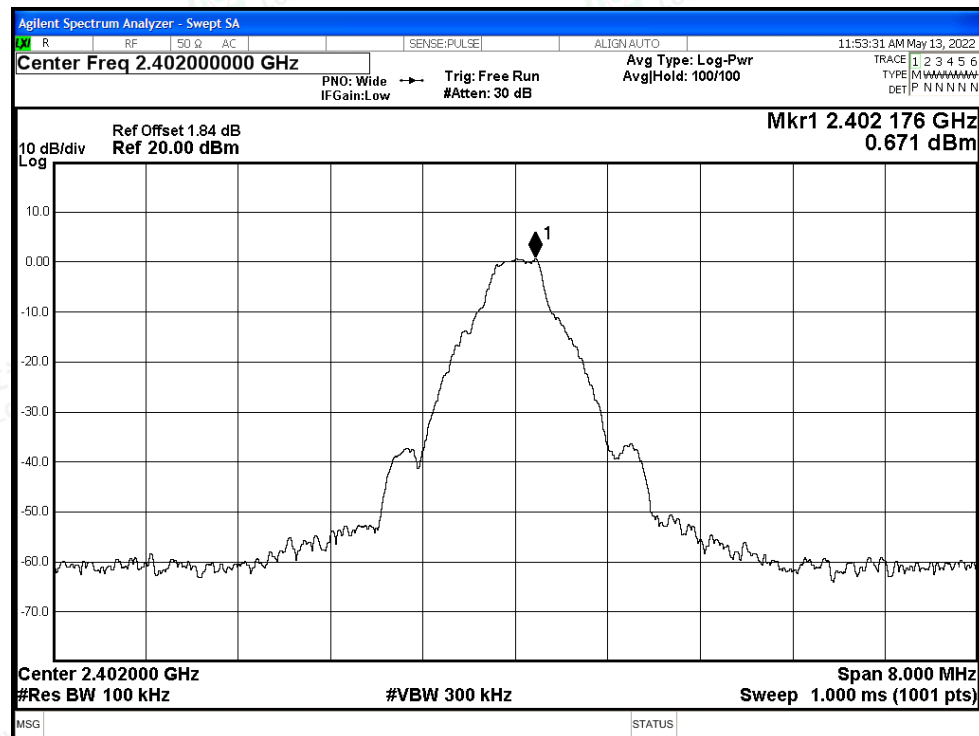


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Scan code to check authenticity

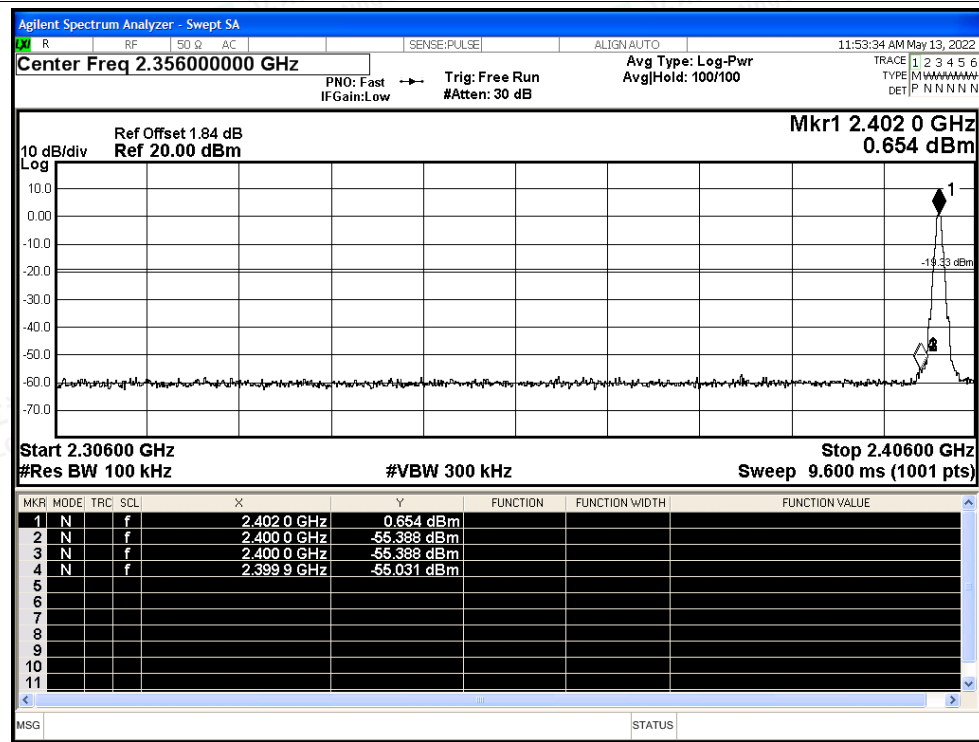


Test Graphs

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

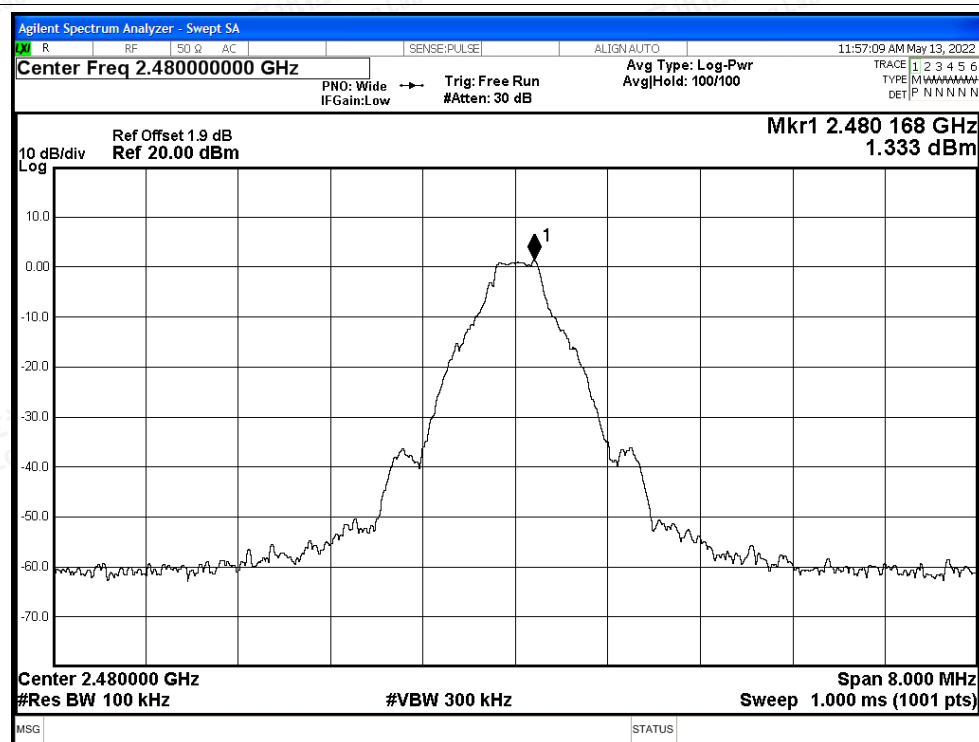


Band Edge NVNT 1-DH5 2402MHz Ant No-Hopping Emission

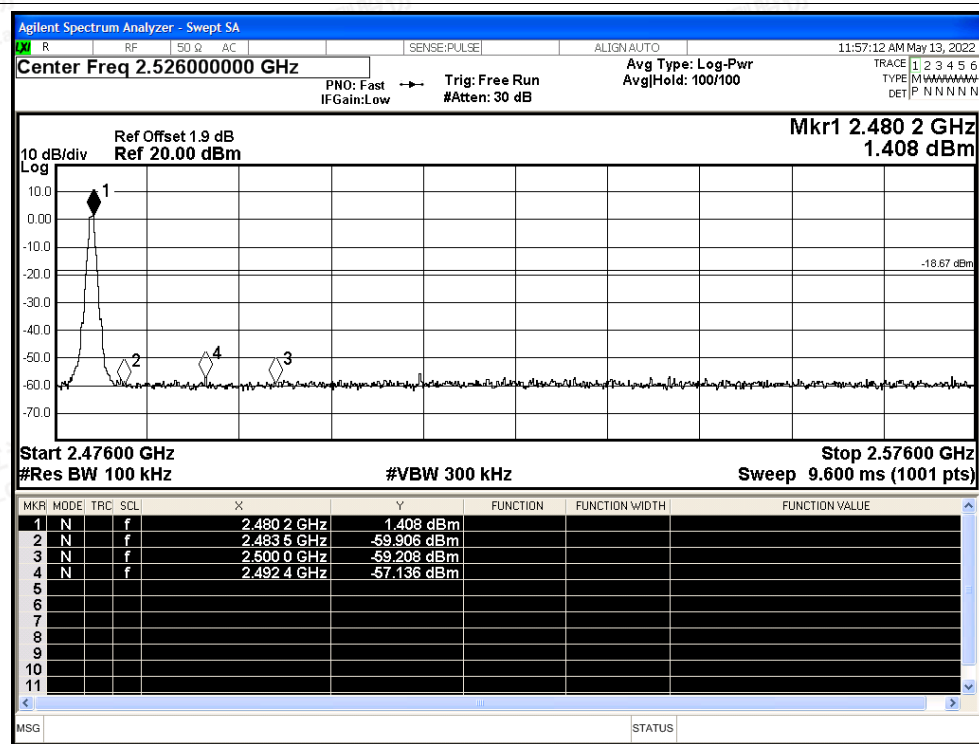




Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Ref

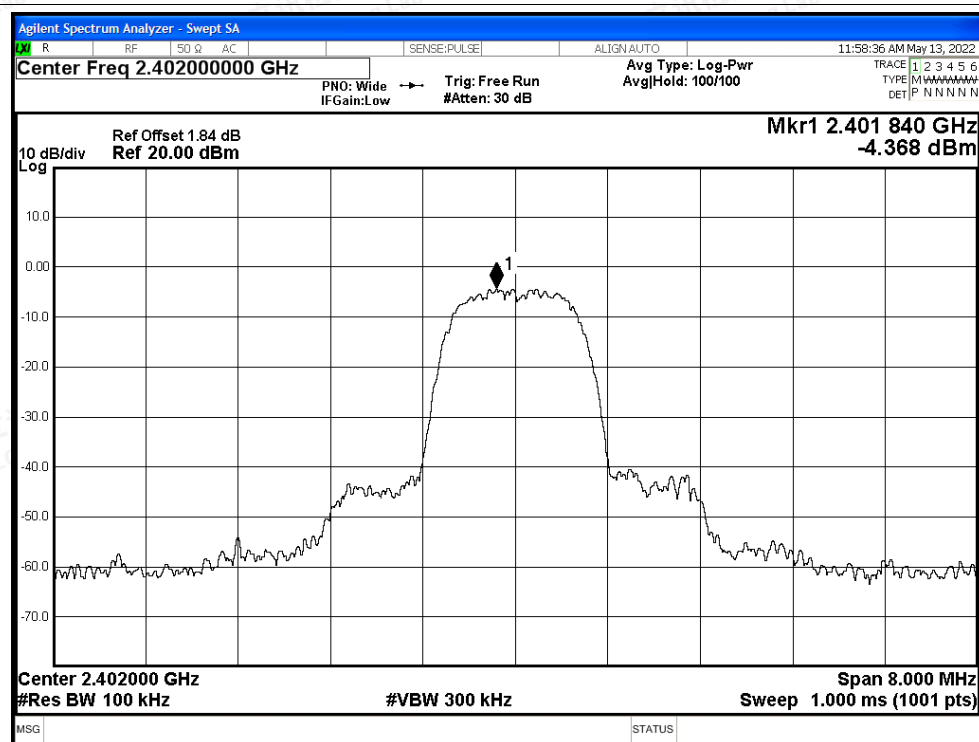


Band Edge NVNT 1-DH5 2480MHz Ant No-Hopping Emission

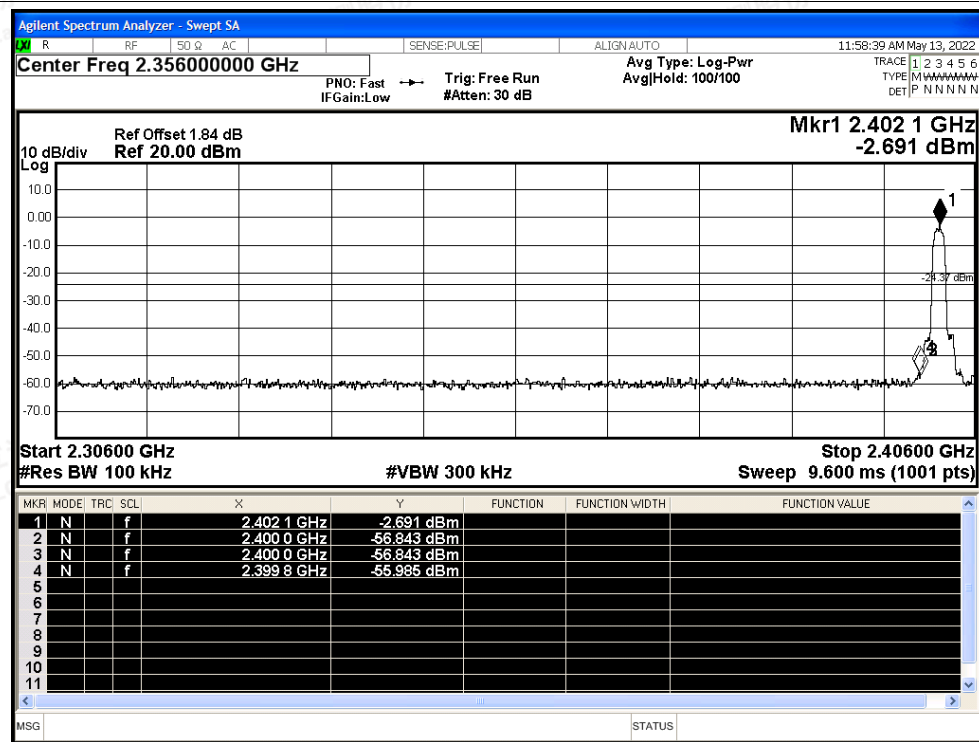




Band Edge NVNT 2-DH5 2402MHz Ant No-Hopping Ref

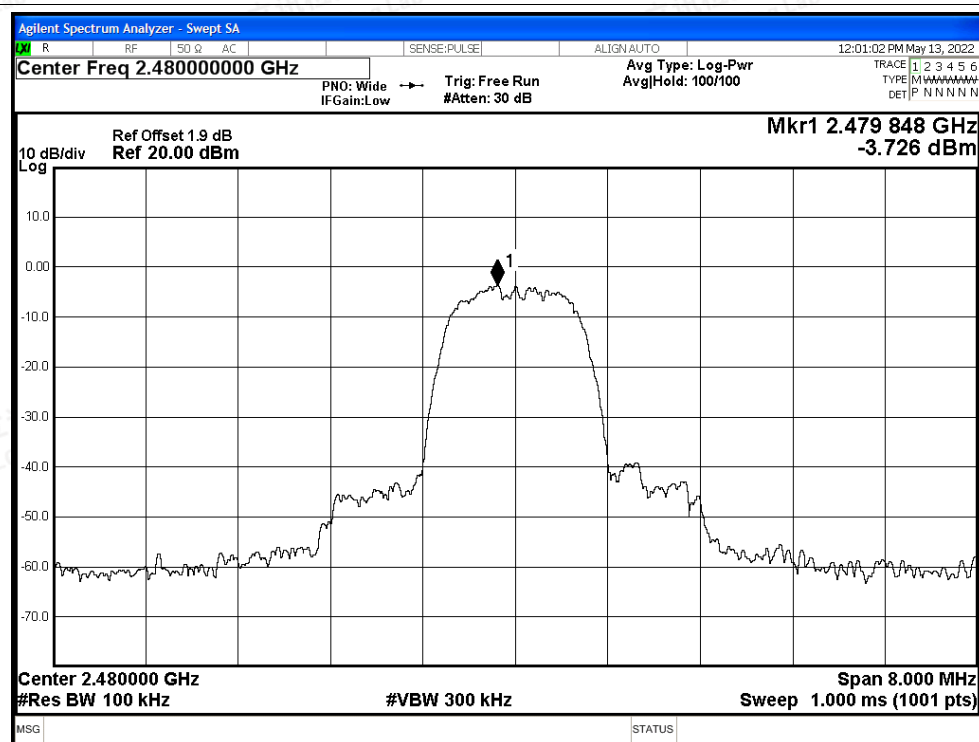


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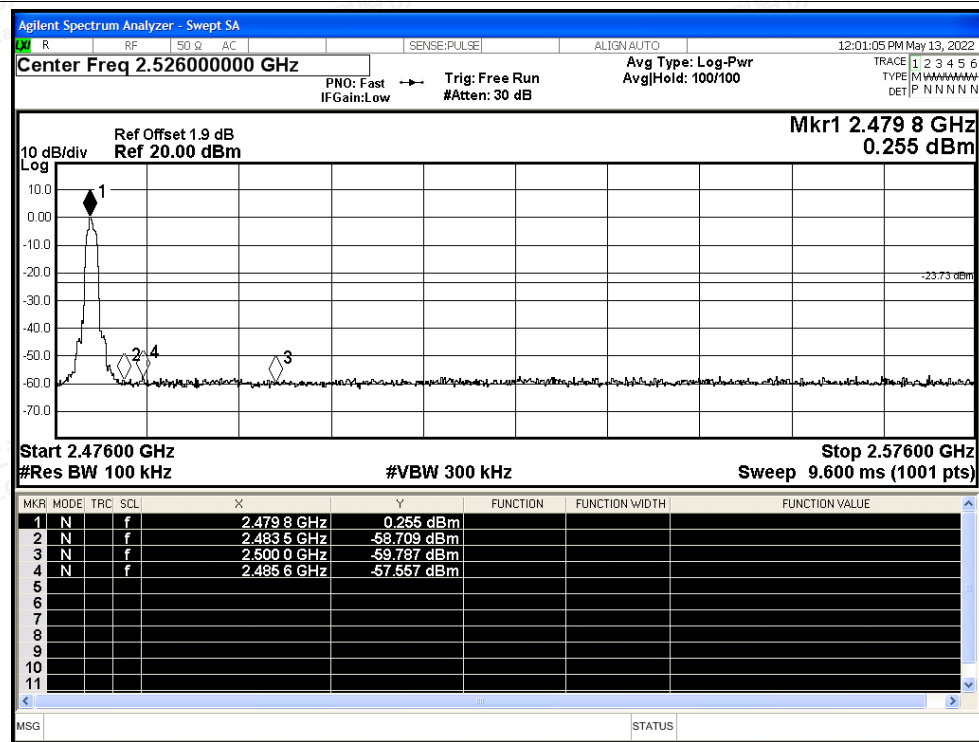




Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Ref

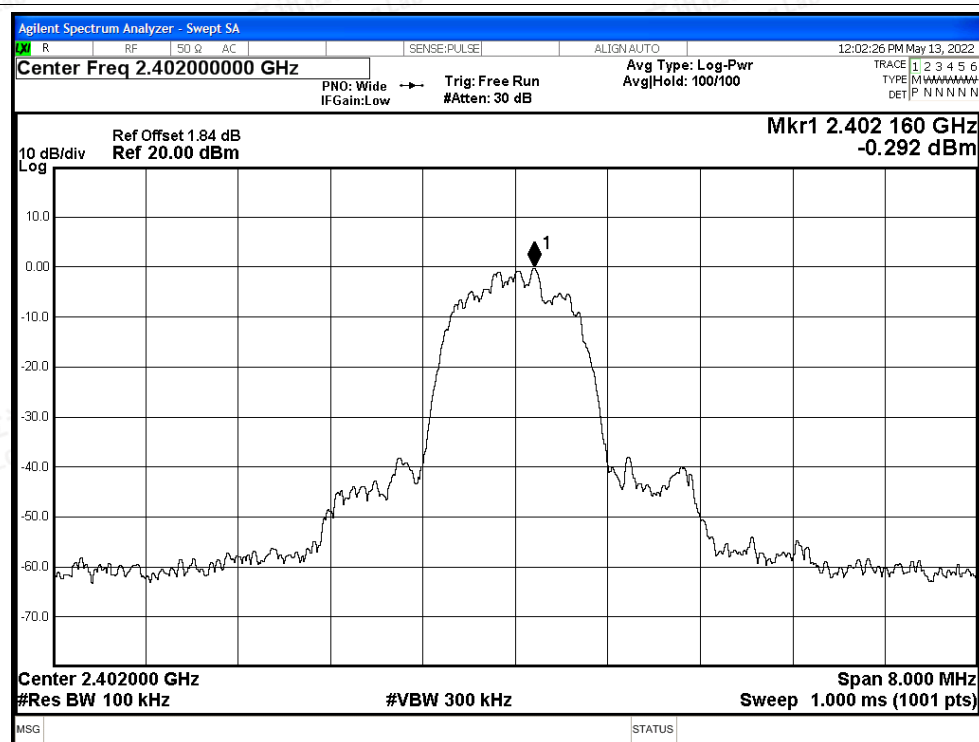


Band Edge NVNT 2-DH5 2480MHz Ant No-Hopping Emission

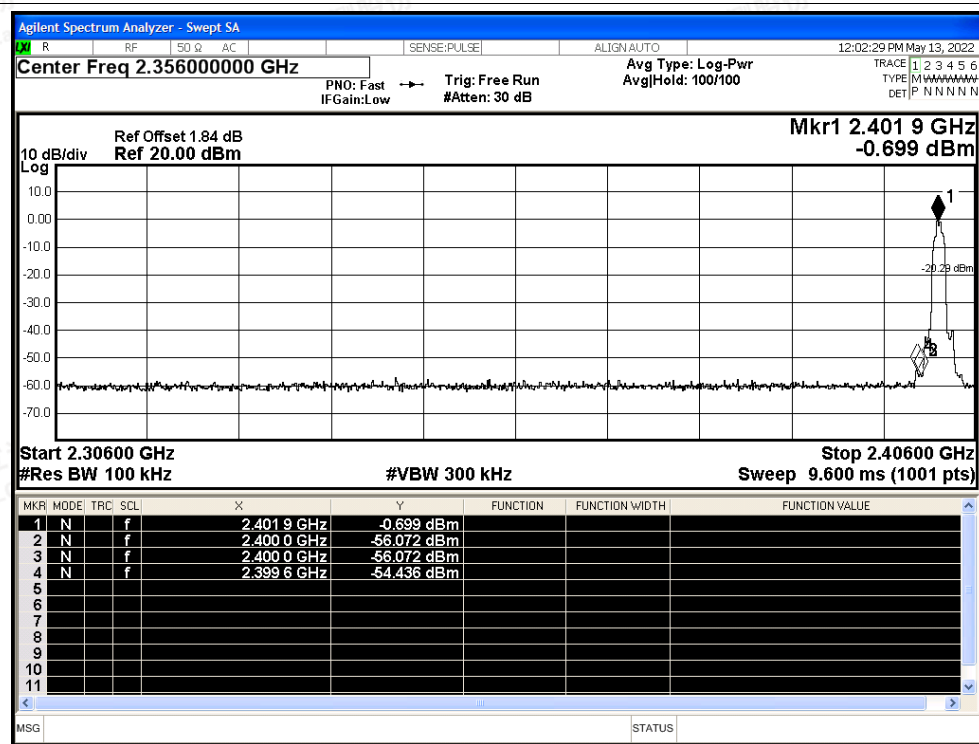




Band Edge NVNT 3-DH5 2402MHz Ant No-Hopping Ref

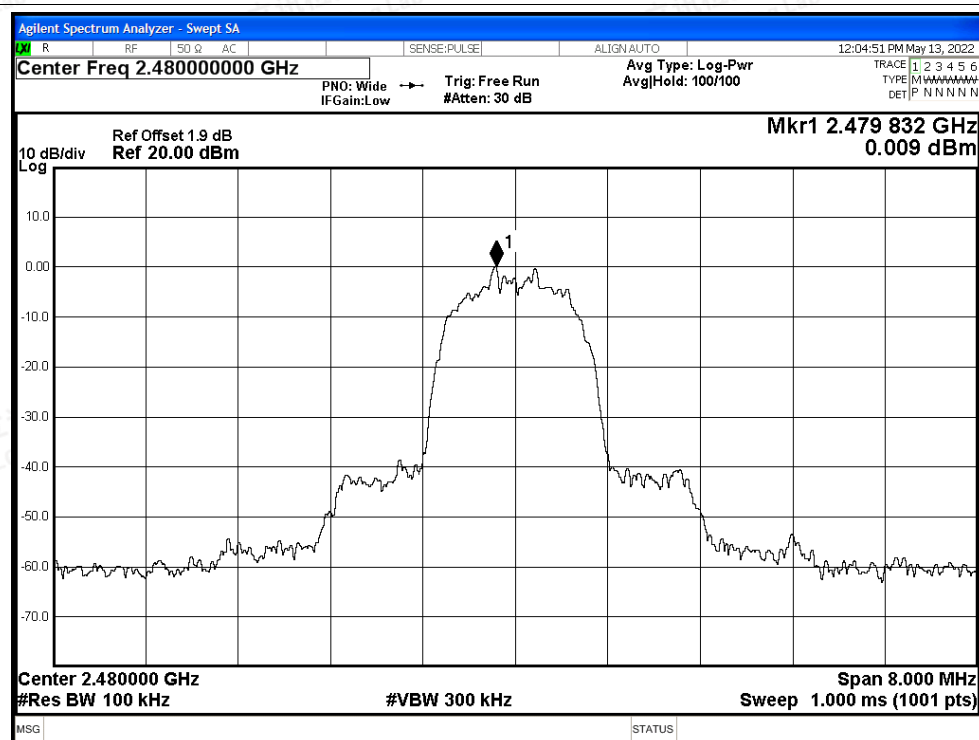


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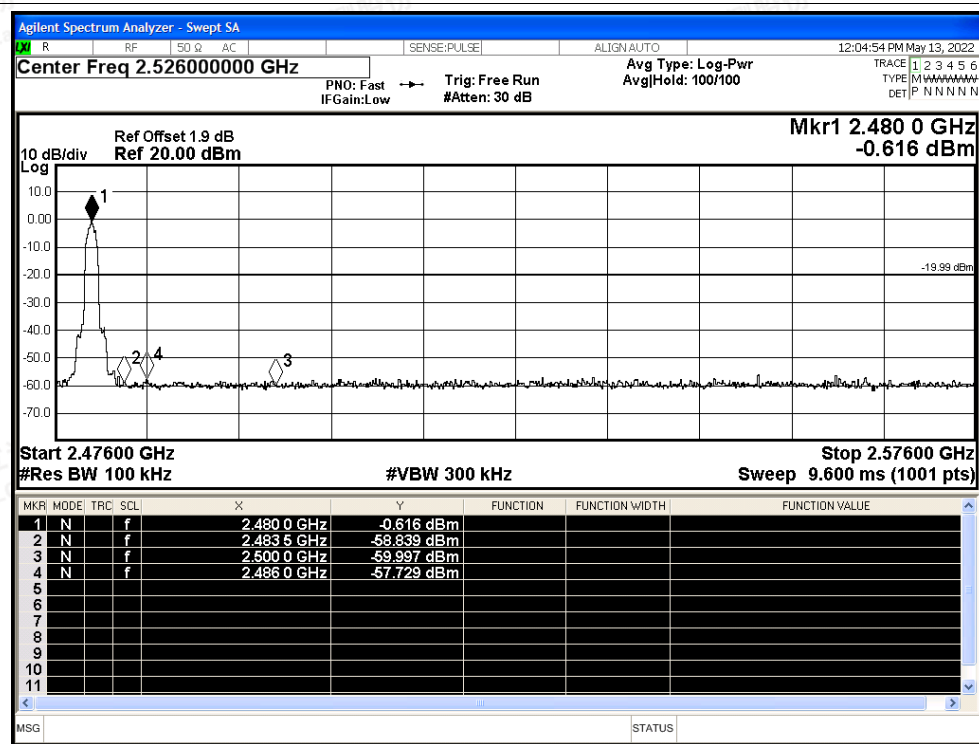




Band Edge NVNT 3-DH5 2480MHz Ant No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant No-Hopping Emission





(Hopping)

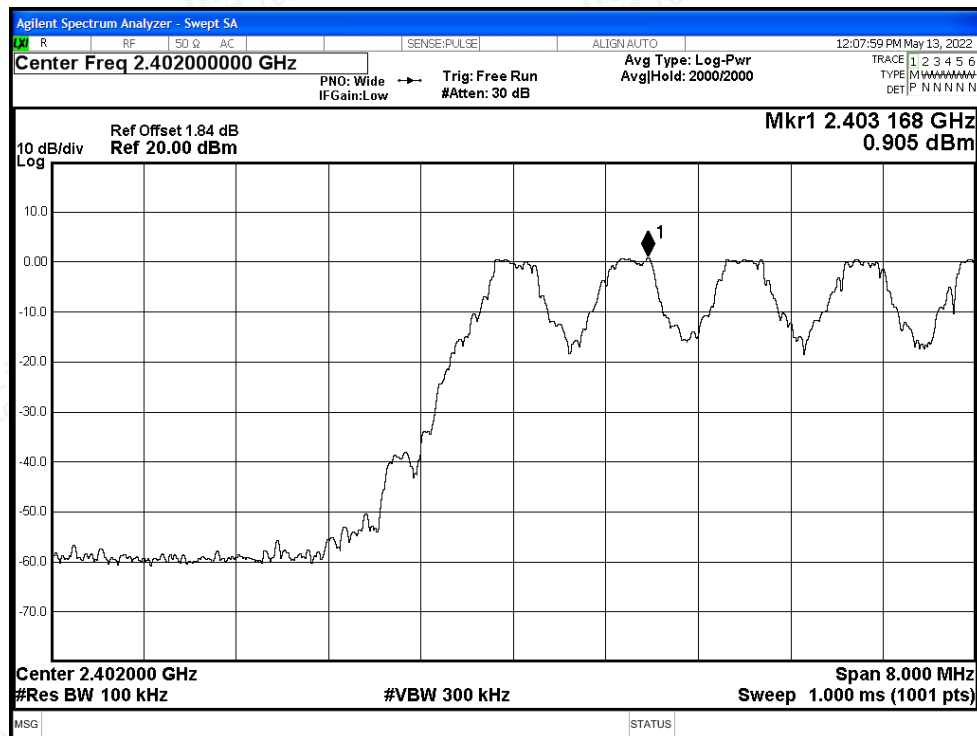
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	Hopping	-57	-20	Pass
NVNT	1-DH5	2480	Ant	Hopping	-56.95	-20	Pass
NVNT	2-DH5	2402	Ant	Hopping	-55.47	-20	Pass
NVNT	2-DH5	2480	Ant	Hopping	-56.59	-20	Pass
NVNT	3-DH5	2402	Ant	Hopping	-56.17	-20	Pass
NVNT	3-DH5	2480	Ant	Hopping	-56.25	-20	Pass



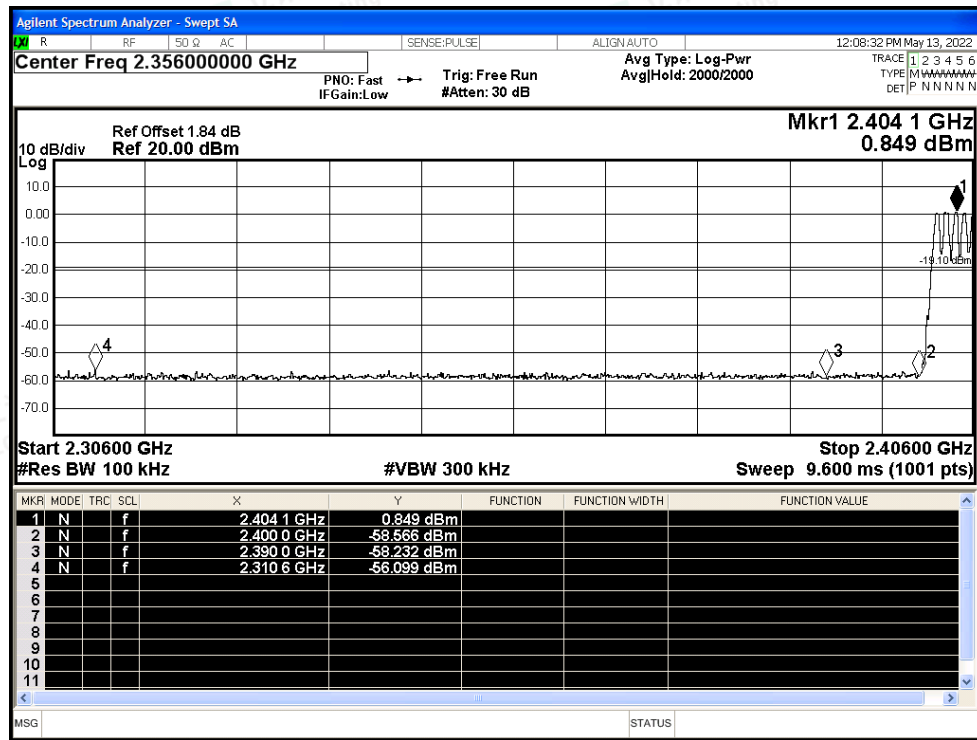


Test Graphs

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

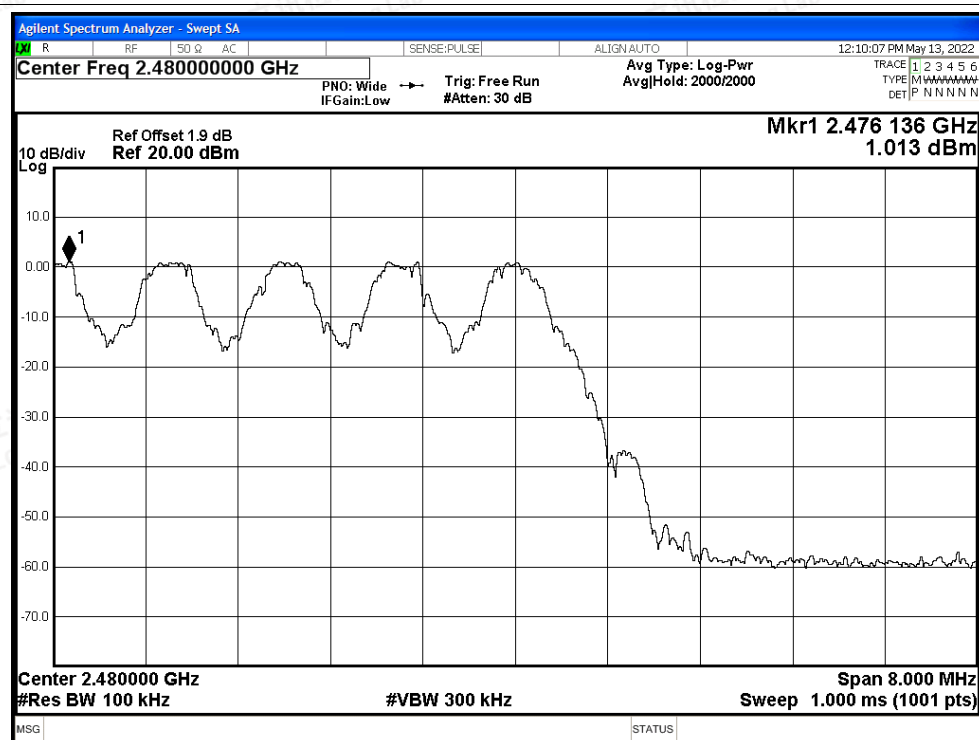


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant Hopping Emission

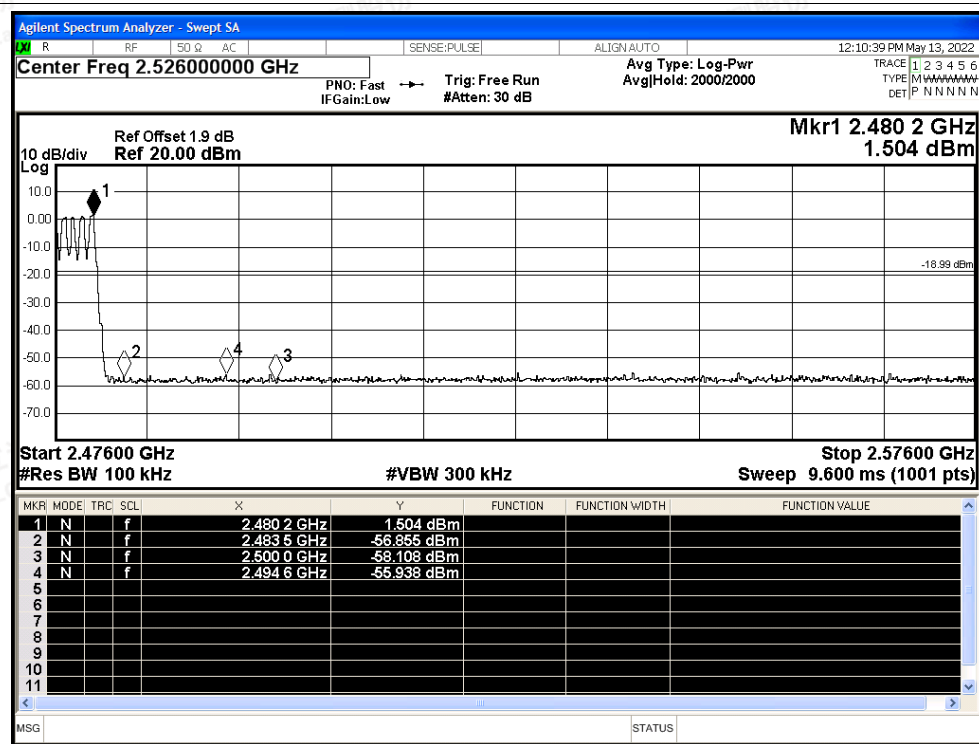




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant Hopping Ref

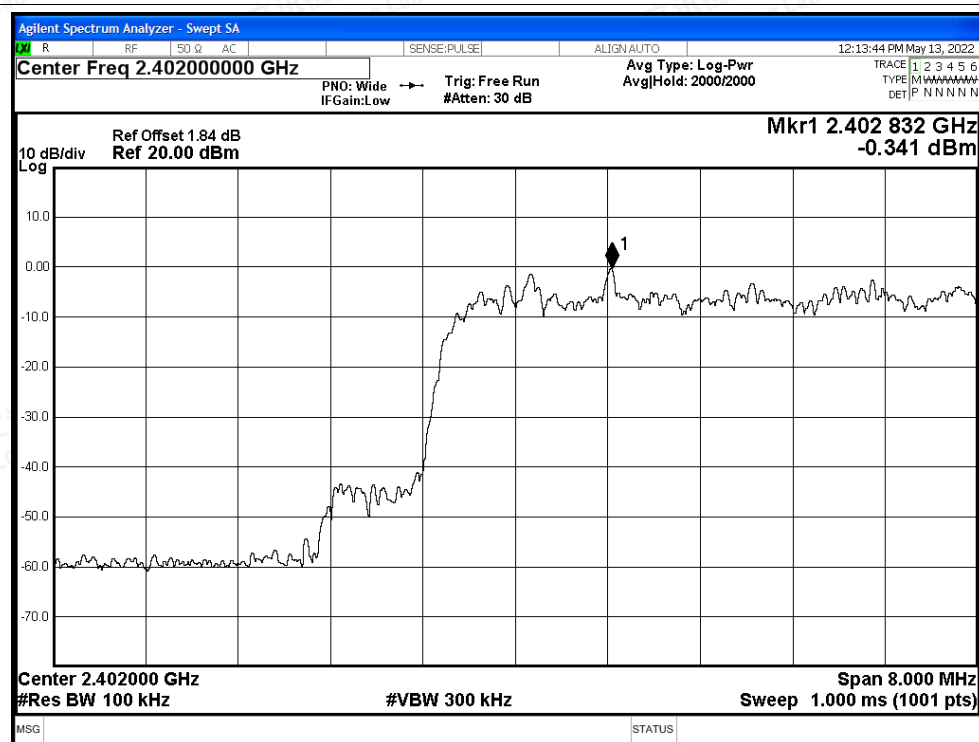


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant Hopping Emission

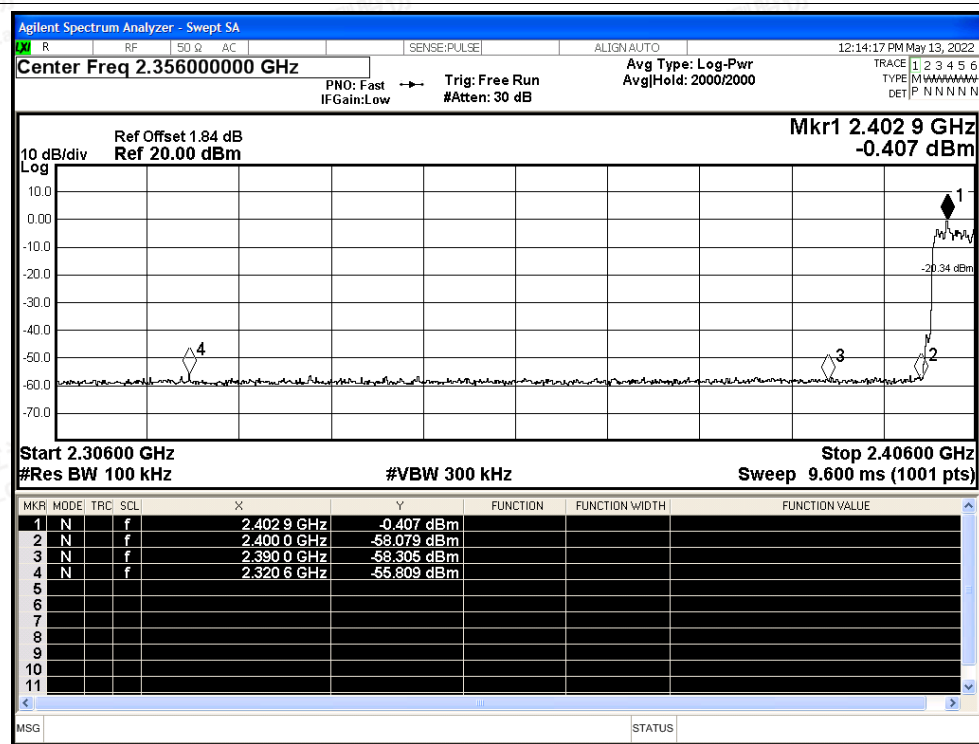




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Ref

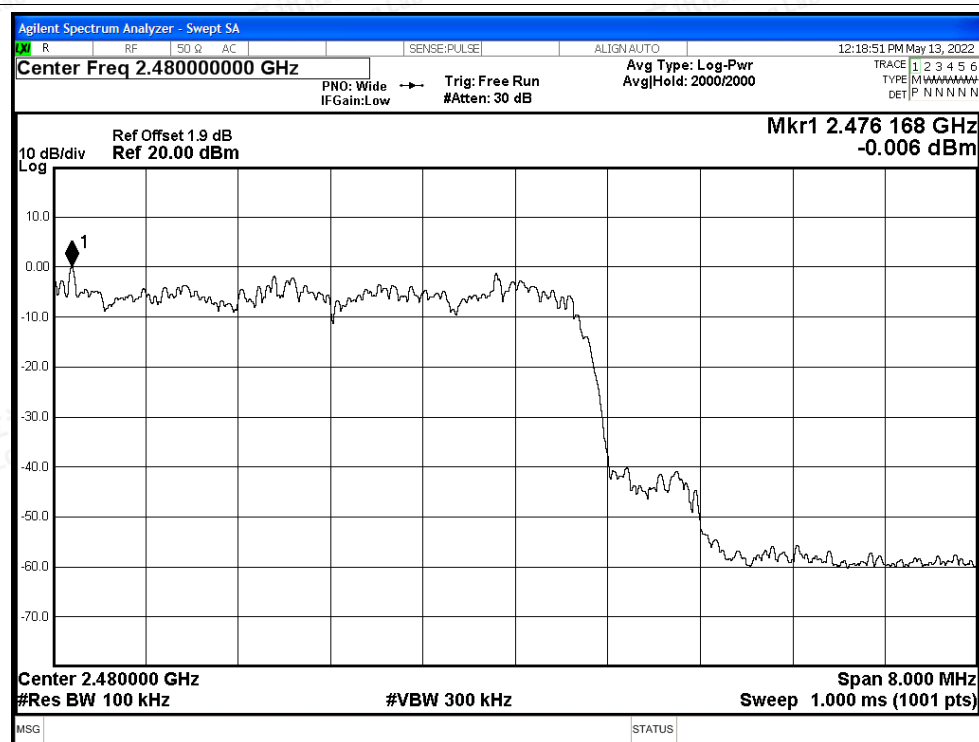


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant Hopping Emission

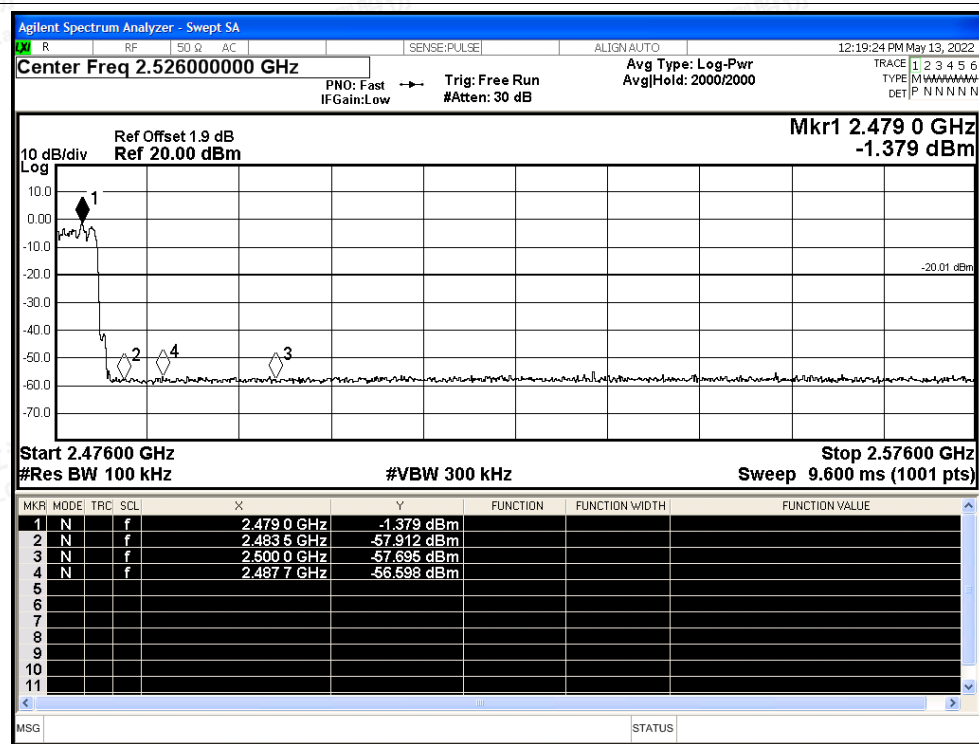




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant Hopping Ref



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

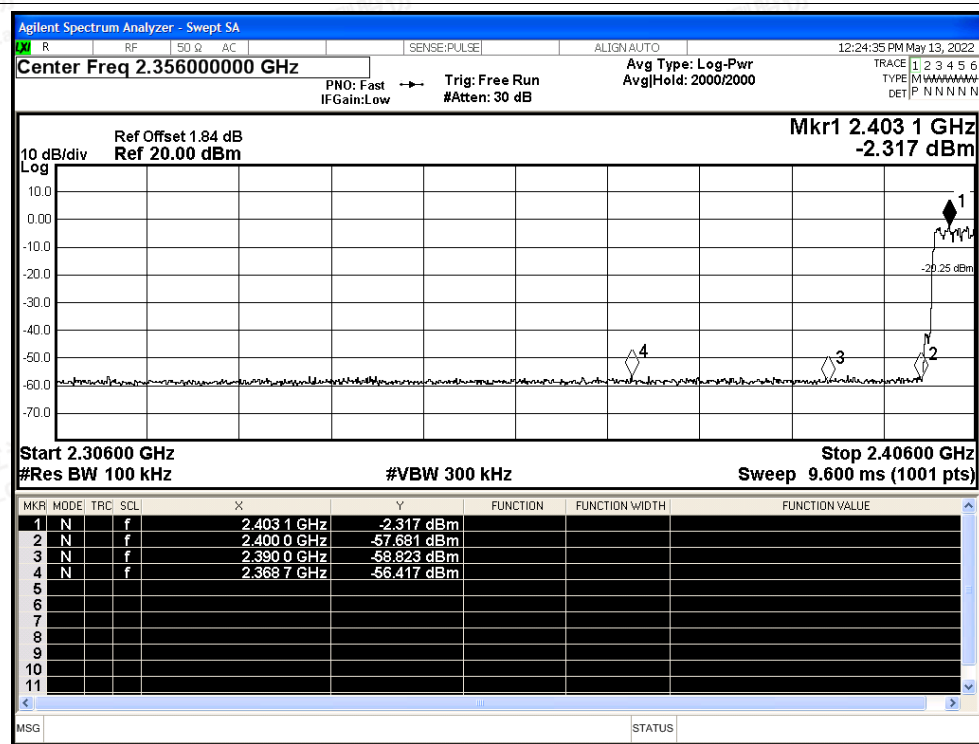




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Ref

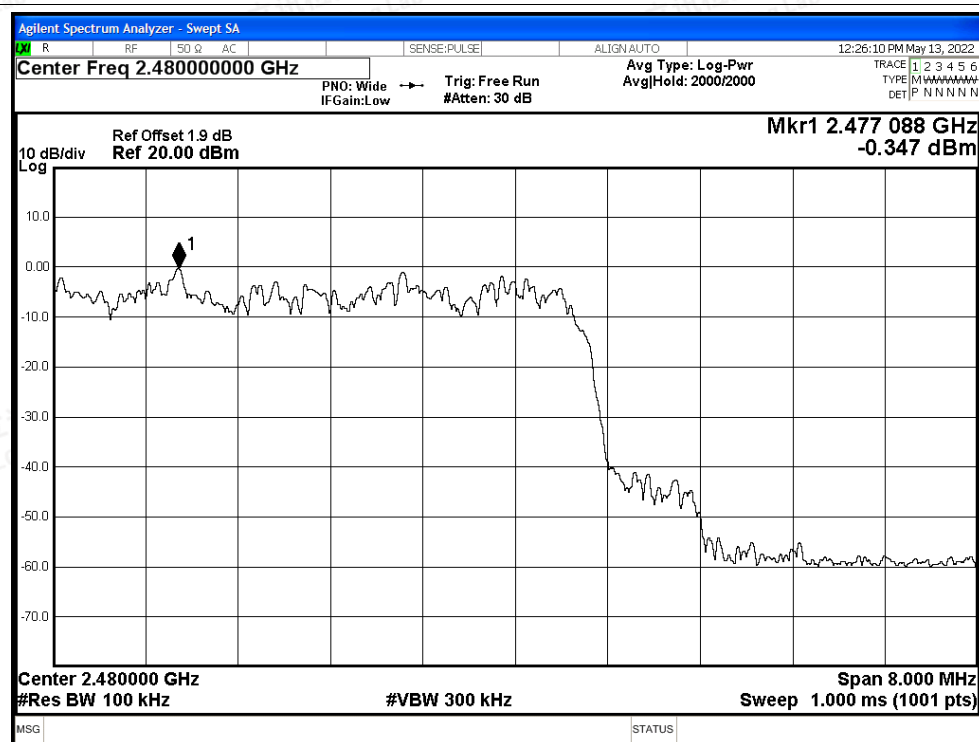


Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant Hopping Emission

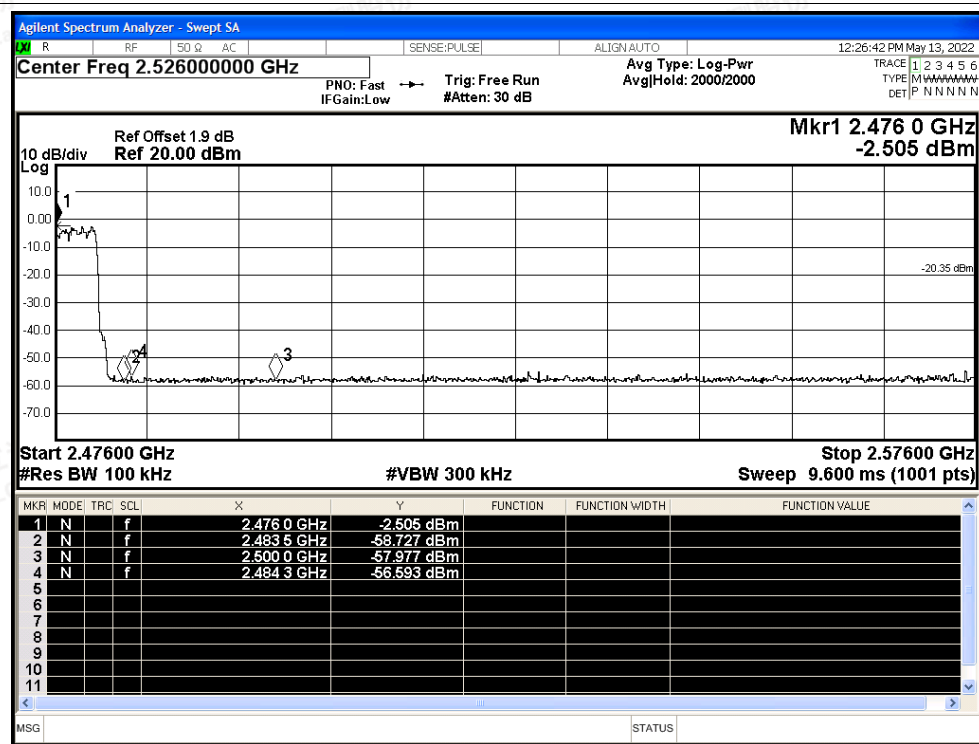




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant Hopping Emission





A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant	-55.69	-20	Pass
NVNT	1-DH5	2441	Ant	-57.12	-20	Pass
NVNT	1-DH5	2480	Ant	-56.62	-20	Pass
NVNT	2-DH5	2402	Ant	-55.1	-20	Pass
NVNT	2-DH5	2441	Ant	-54.92	-20	Pass
NVNT	2-DH5	2480	Ant	-55.19	-20	Pass
NVNT	3-DH5	2402	Ant	-55.09	-20	Pass
NVNT	3-DH5	2441	Ant	-55.87	-20	Pass
NVNT	3-DH5	2480	Ant	-56.19	-20	Pass

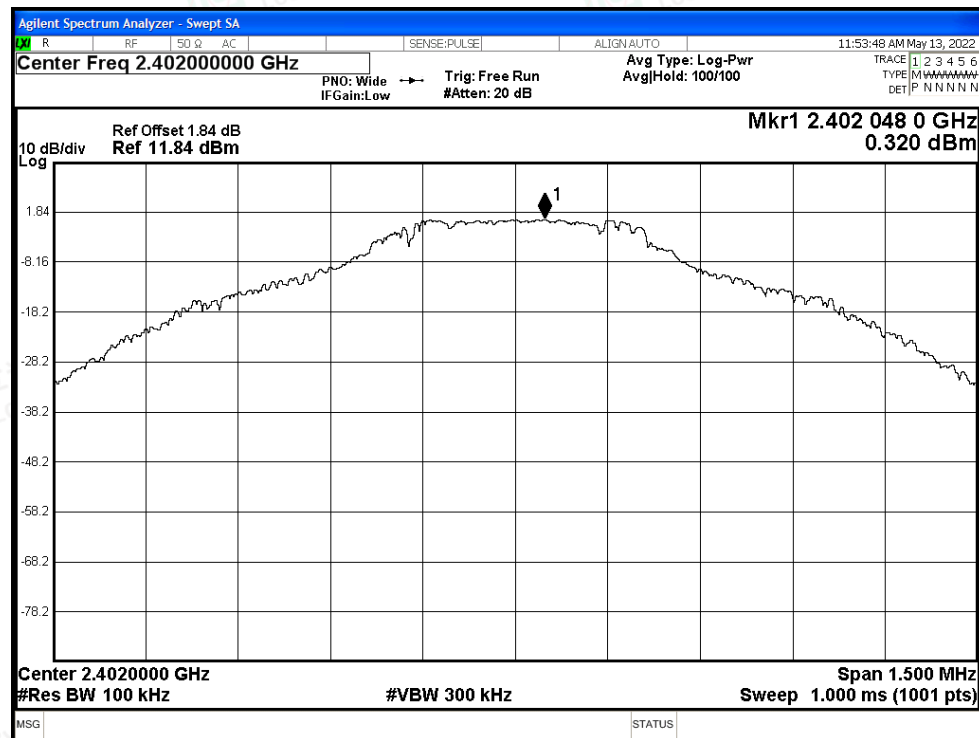


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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

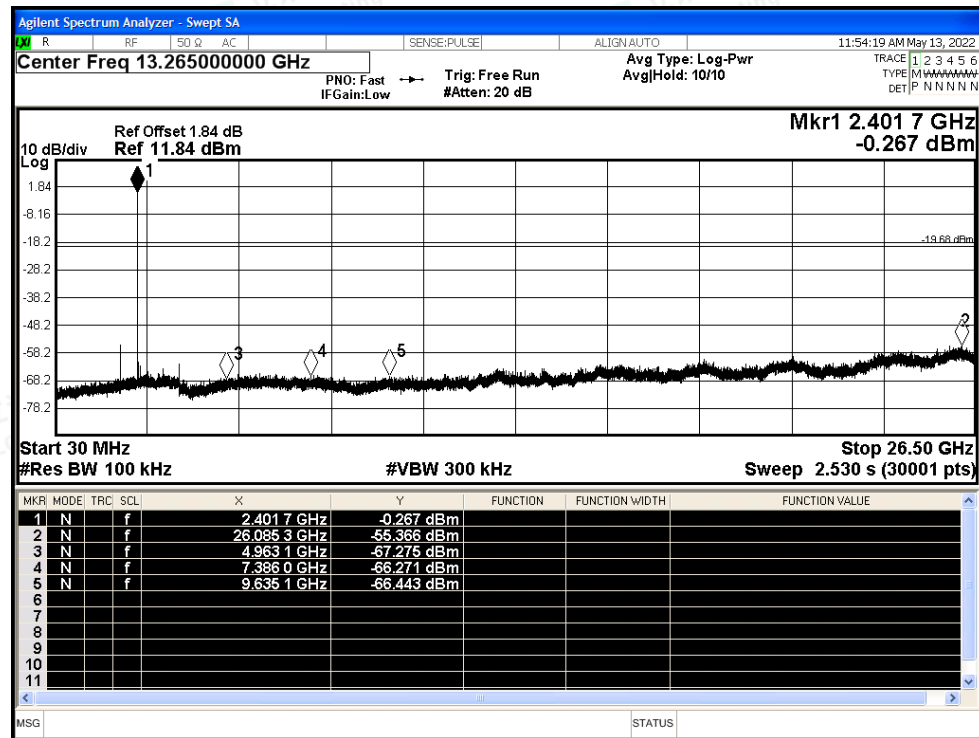


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant Ref

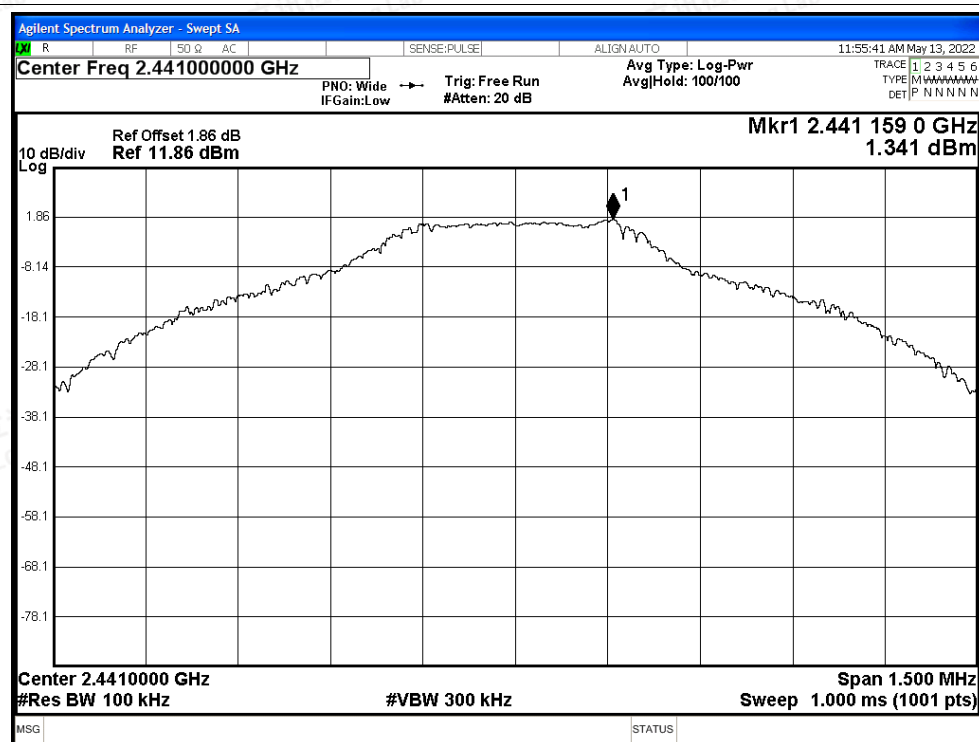


Tx. Spurious NVNT 1-DH5 2402MHz Ant Emission

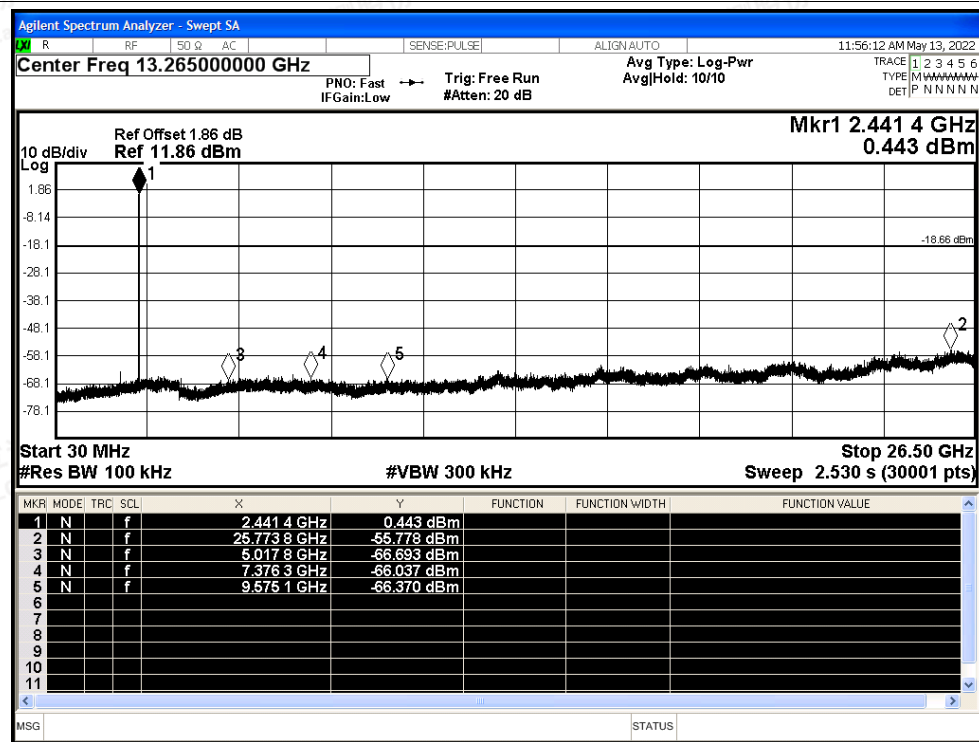




Tx. Spurious NVNT 1-DH5 2441MHz Ant Ref

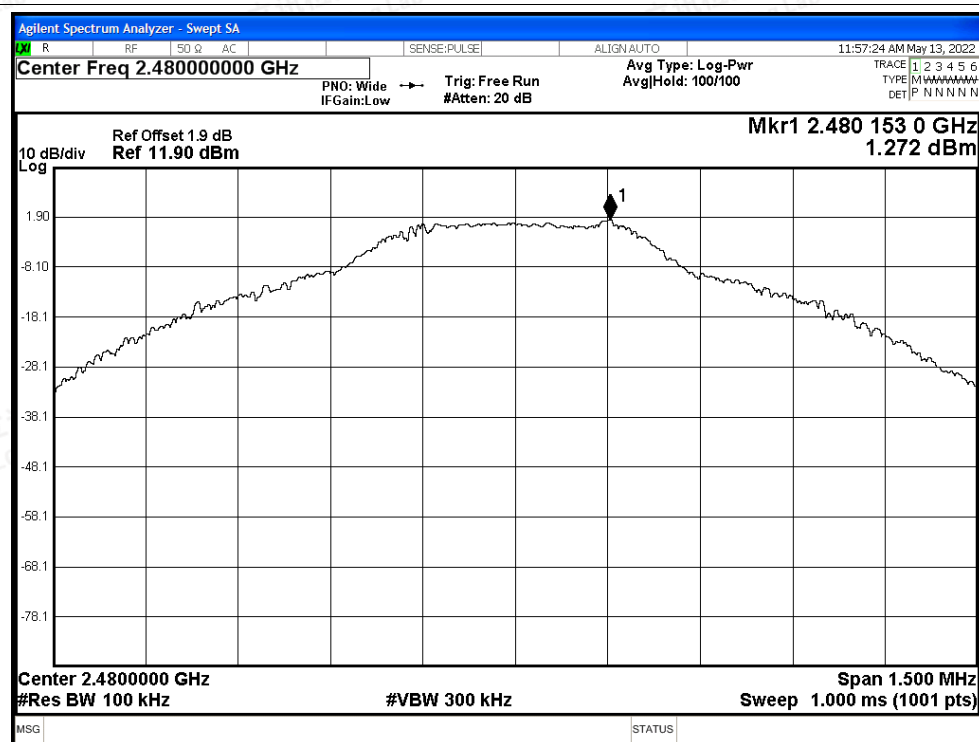


Tx. Spurious NVNT 1-DH5 2441MHz Ant Emission

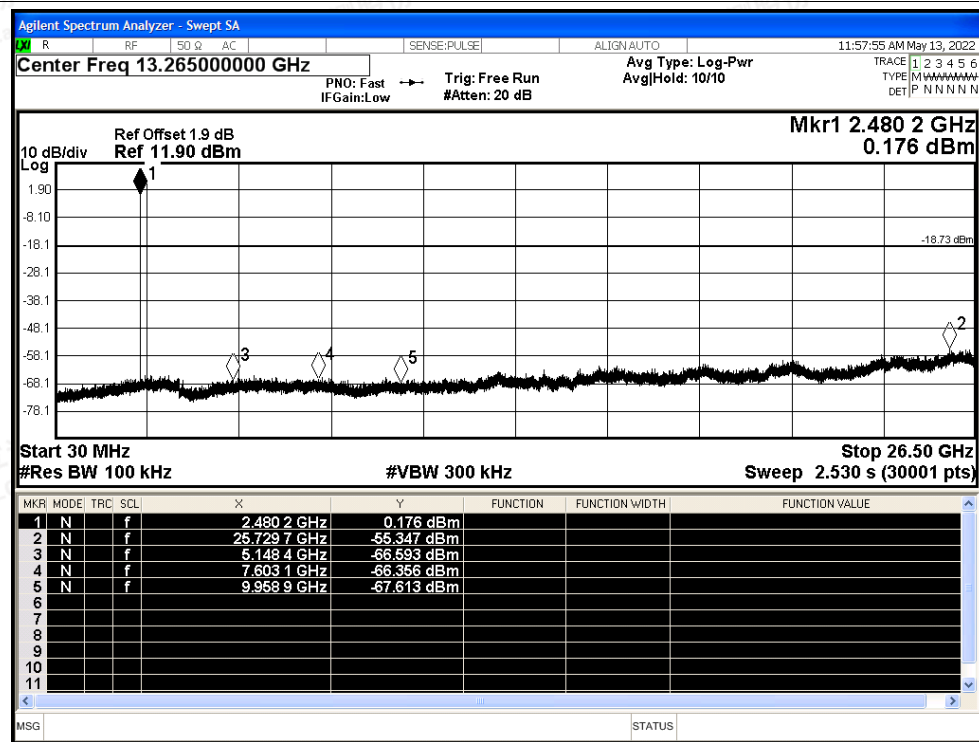




Tx. Spurious NVNT 1-DH5 2480MHz Ant Ref

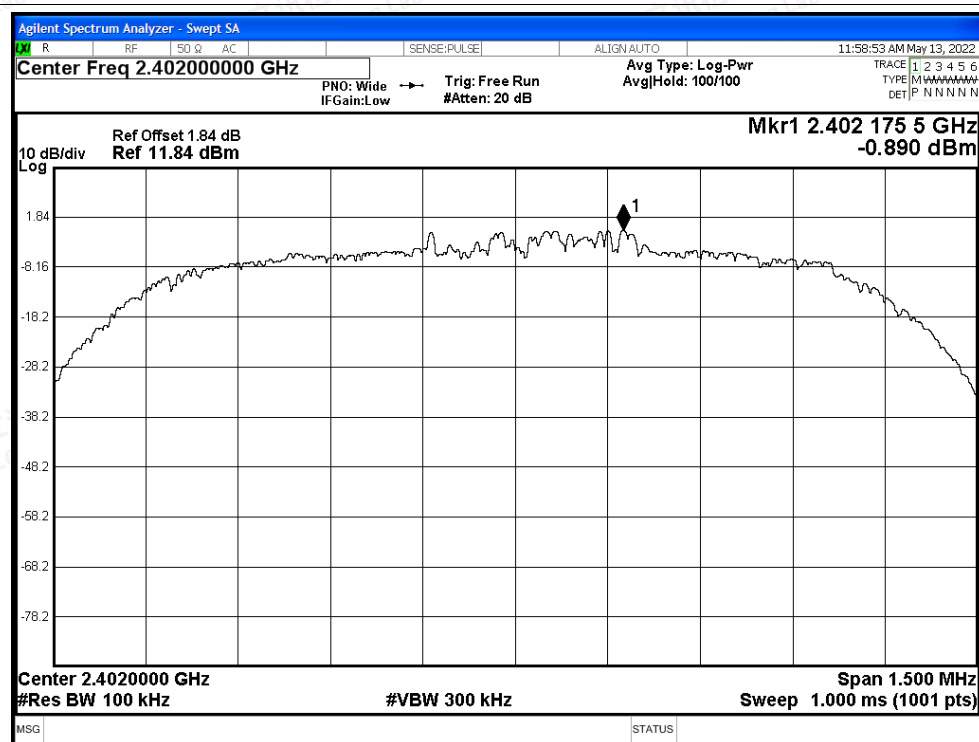


Tx. Spurious NVNT 1-DH5 2480MHz Ant Emission

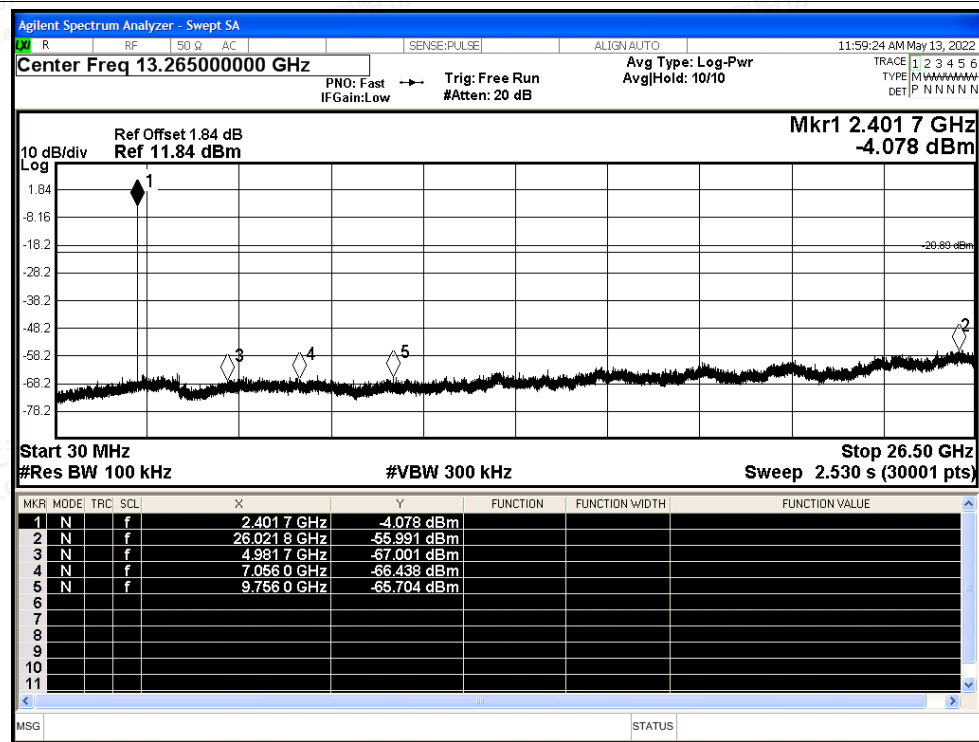




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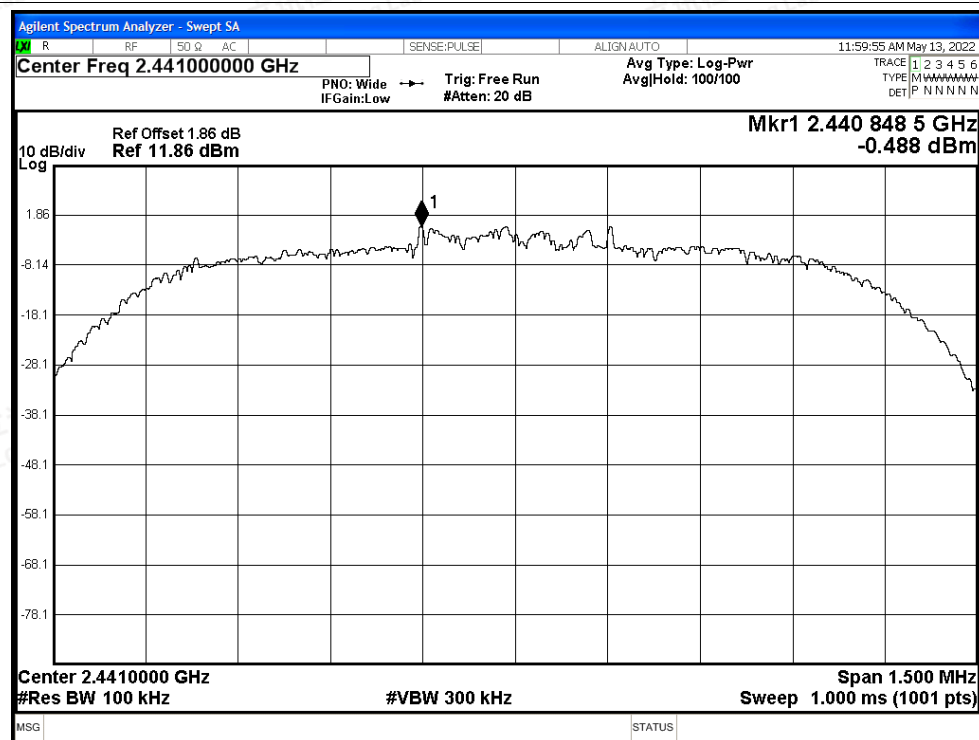


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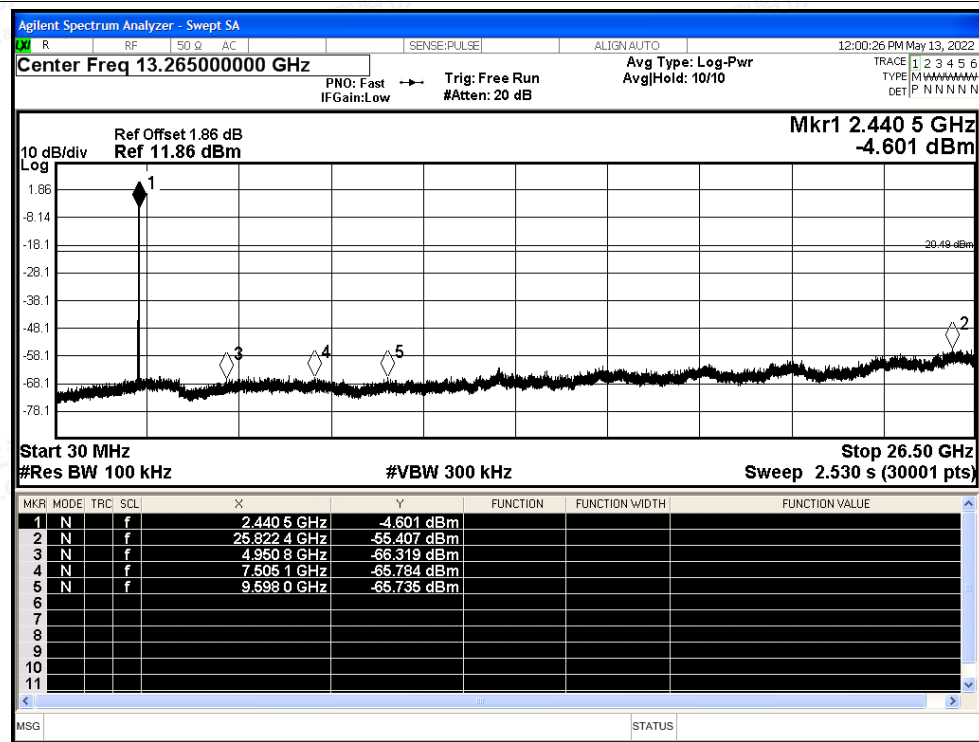




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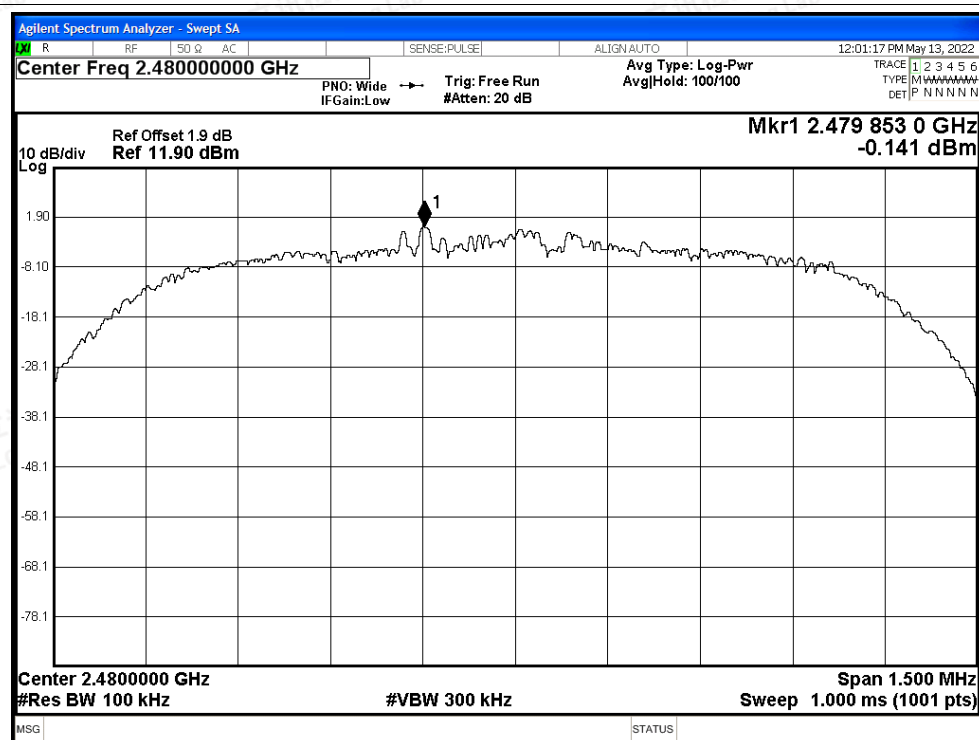


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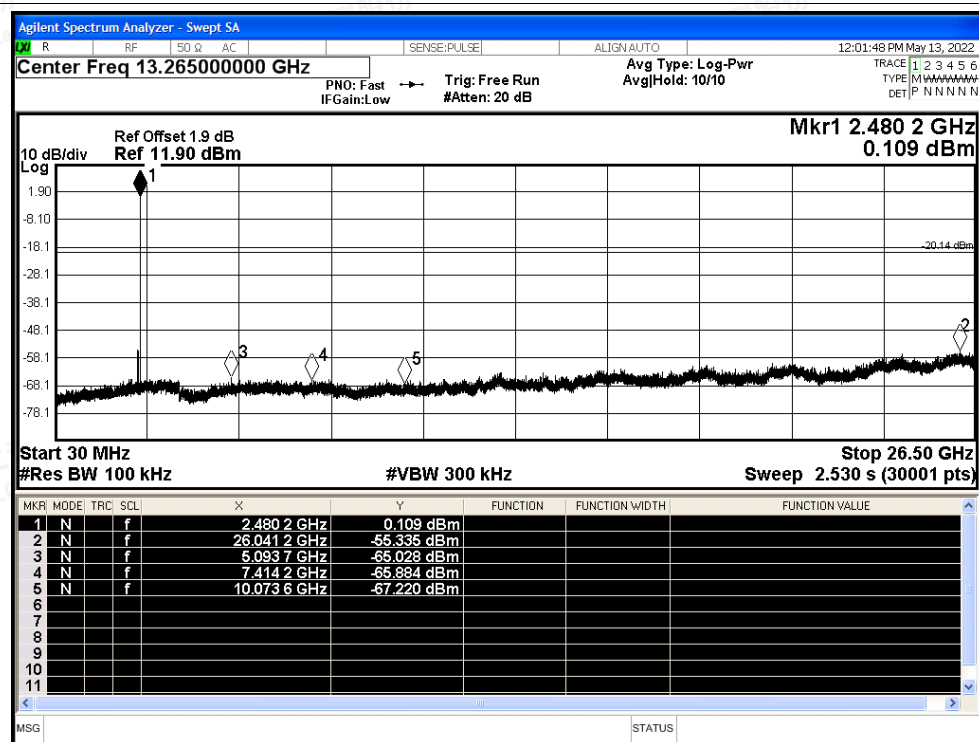




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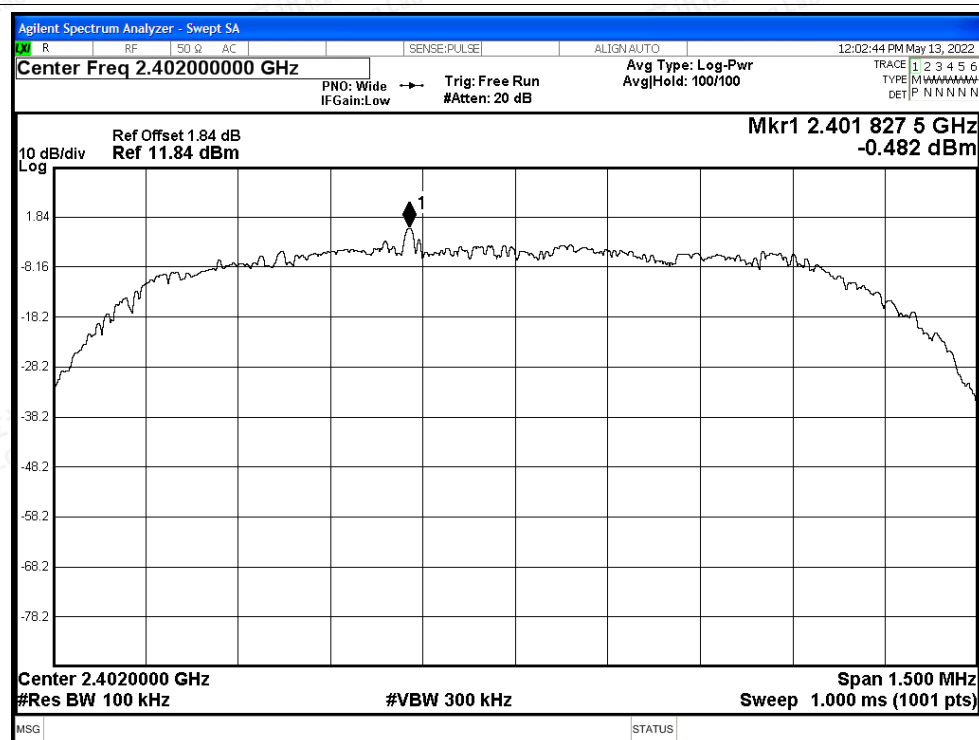


Tx. Spurious NVNT 2-DH5 2480MHz Ant Emission

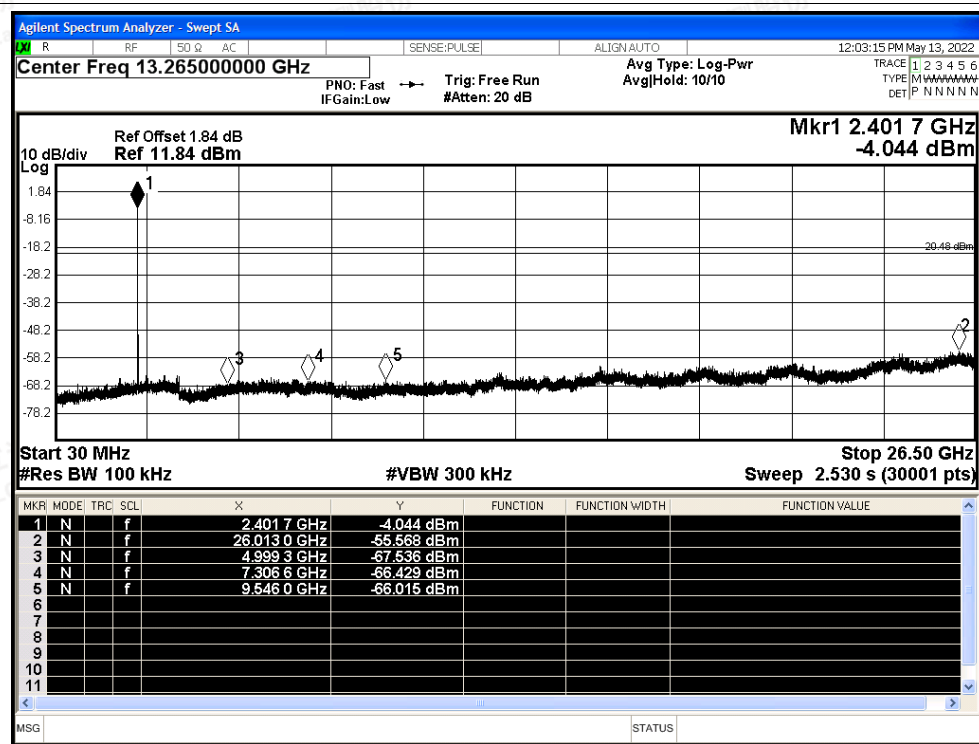




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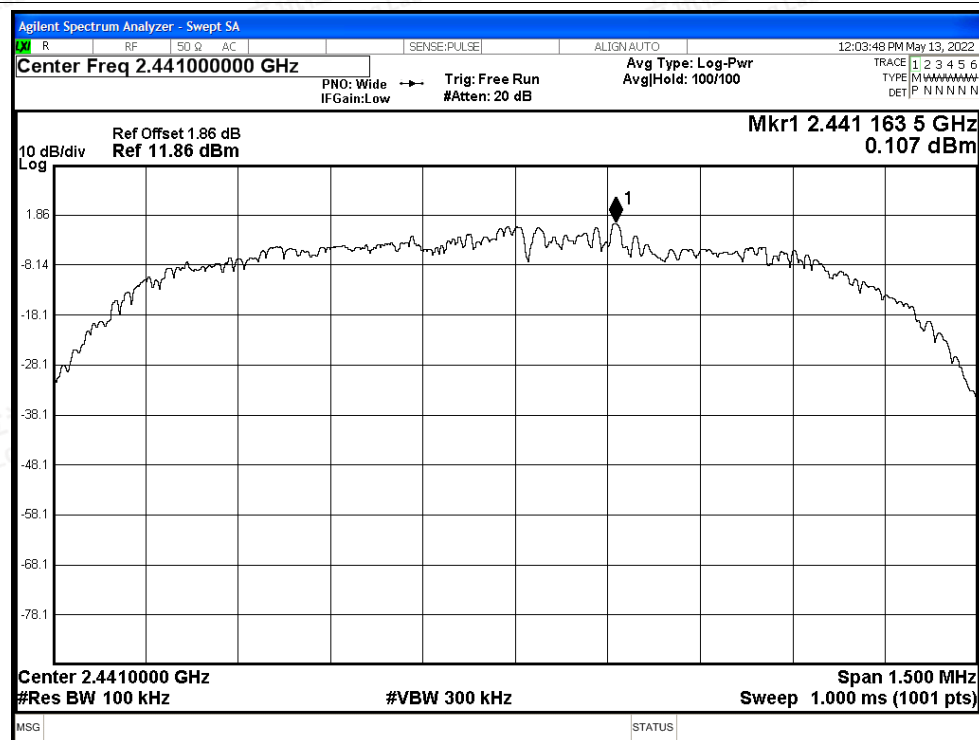


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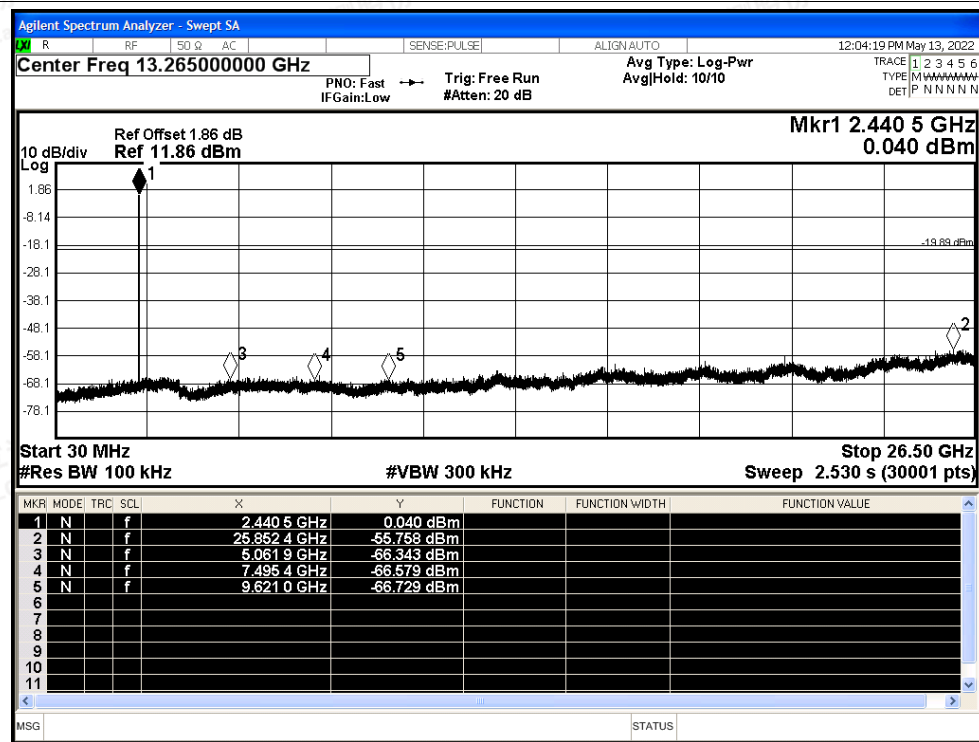




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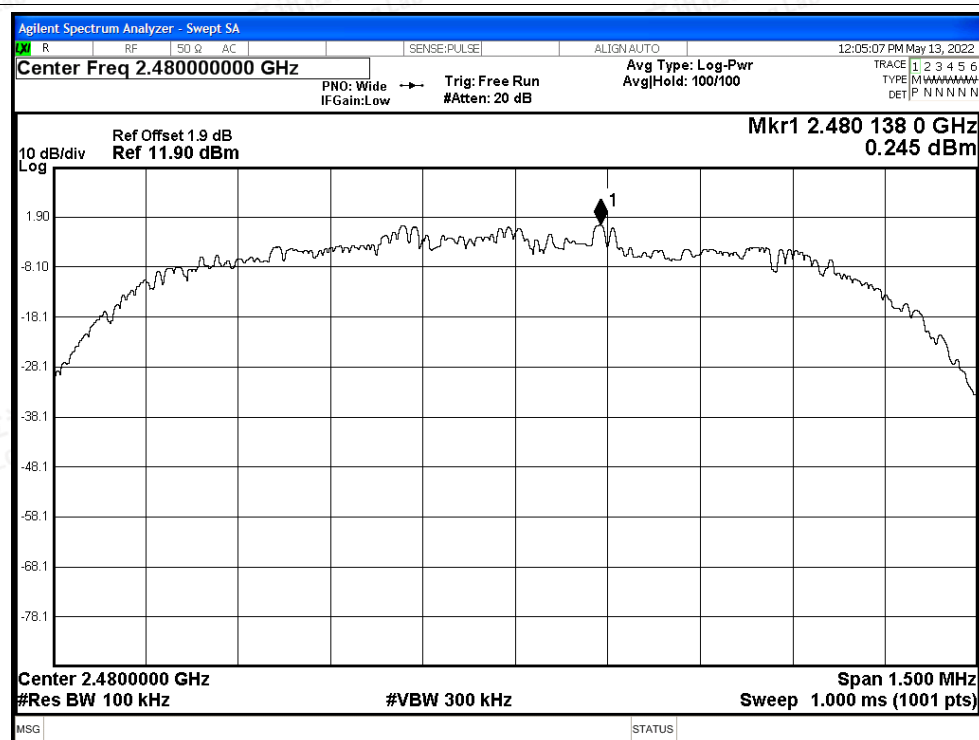


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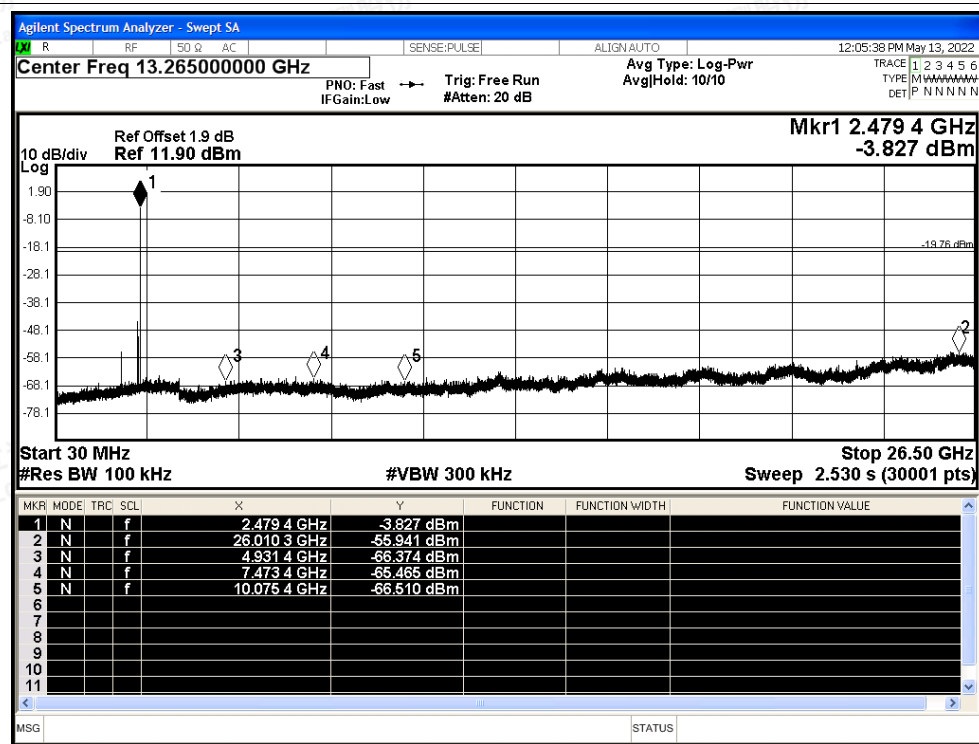




Tx. Spurious NVNT 3-DH5 2480MHz Ant Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant 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	Ant	No-Hopping	2310	-51.34	2	45.92	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2310	-60.78	2	36.48	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2342.064	-48.09	2	49.17	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2380.464	-60.12	2	37.14	Average	54	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-51.44	2	45.82	Peak	74	Pass
NVNT	1-DH5	2402	Ant	No-Hopping	2390	-60.31	2	36.95	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-49.01	2	48.25	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2483.5	-59.75	2	37.51	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2495.752	-47.26	2	50	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2485.696	-59.69	2	37.57	Average	54	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-50.57	2	46.69	Peak	74	Pass
NVNT	1-DH5	2480	Ant	No-Hopping	2500	-59.96	2	37.3	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-52.12	2	45.14	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2310	-60.65	2	36.61	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2321.904	-47.32	2	49.94	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2388.528	-60.12	2	37.14	Average	54	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-51.29	2	45.97	Peak	74	Pass
NVNT	2-DH5	2402	Ant	No-Hopping	2390	-60.32	2	36.94	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-50.88	2	46.38	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.5	-59.75	2	37.51	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2489.056	-47.12	2	50.14	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2483.608	-59.69	2	37.57	Average	54	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-50.5	2	46.76	Peak	74	Pass
NVNT	2-DH5	2480	Ant	No-Hopping	2500	-59.91	2	37.35	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-50.1	2	47.16	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2310	-60.7	2	36.56	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2362.896	-47.24	2	50.02	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2387.184	-60.18	2	37.08	Average	54	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-49.25	2	48.01	Peak	74	Pass
NVNT	3-DH5	2402	Ant	No-Hopping	2390	-60.26	2	37	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-49.02	2	48.24	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2483.5	-59.74	2	37.52	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2486.896	-46.91	2	50.35	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2484.256	-59.62	2	37.64	Average	54	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-50.46	2	46.8	Peak	74	Pass
NVNT	3-DH5	2480	Ant	No-Hopping	2500	-60.02	2	37.24	Average	54	Pass

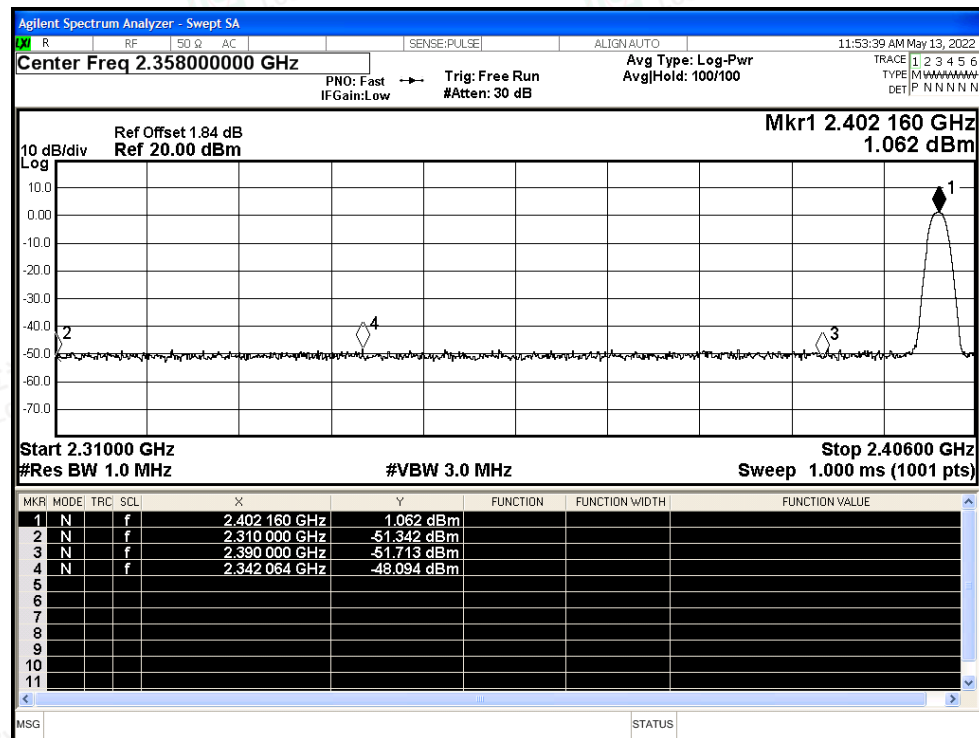


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Scan code to check authenticity

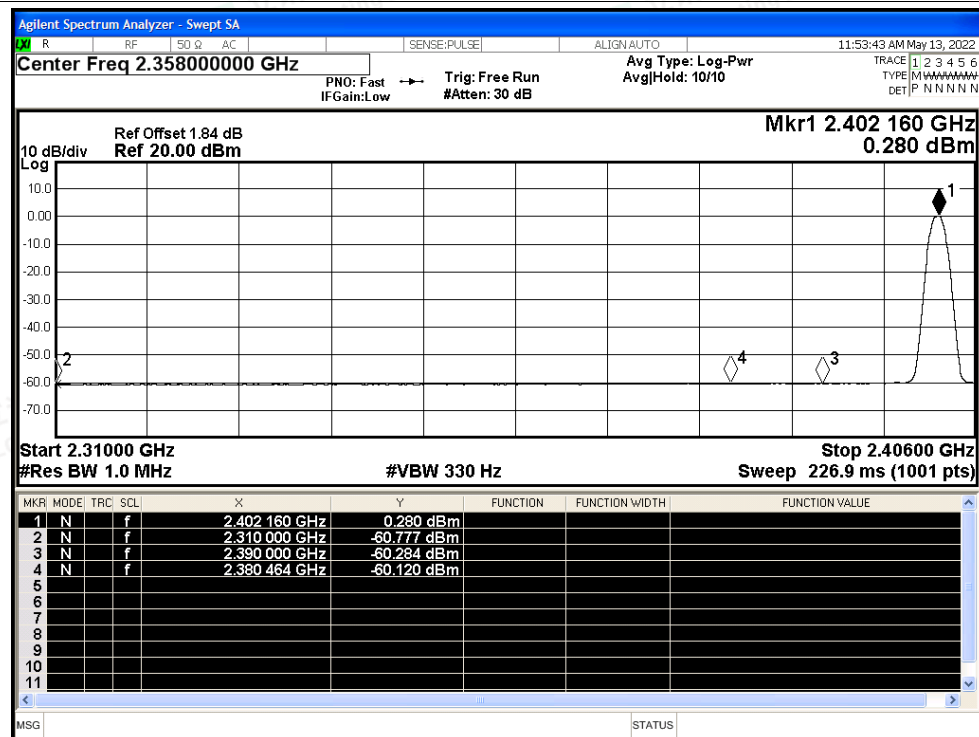


Test Graphs

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

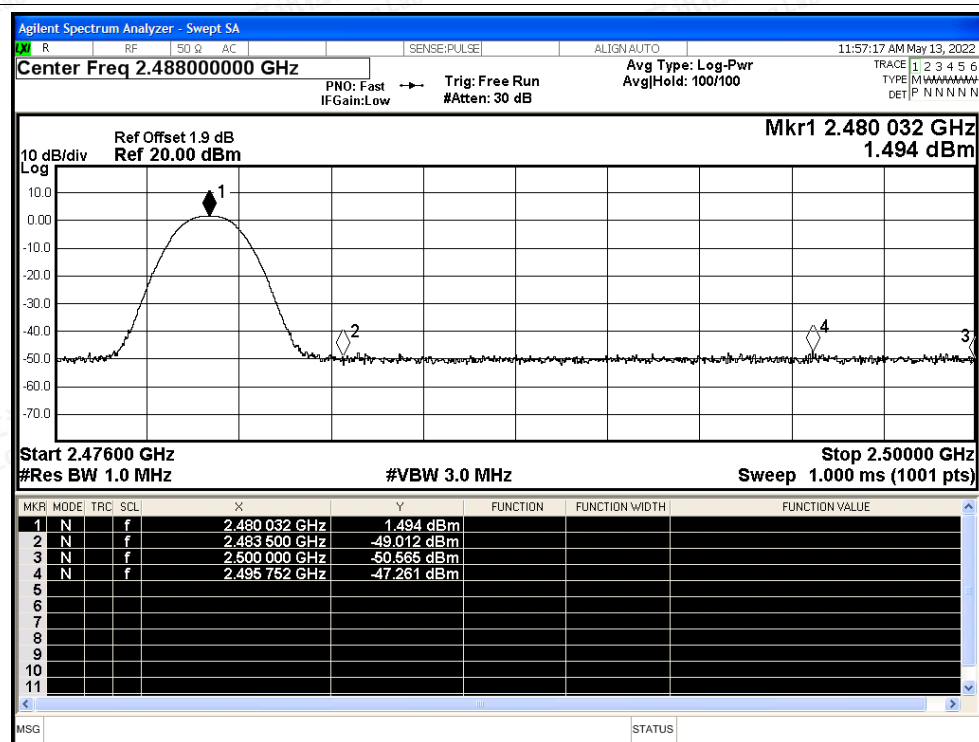


Restrict Band NVNT 1-DH5 2402MHz Ant No-Hopping Average

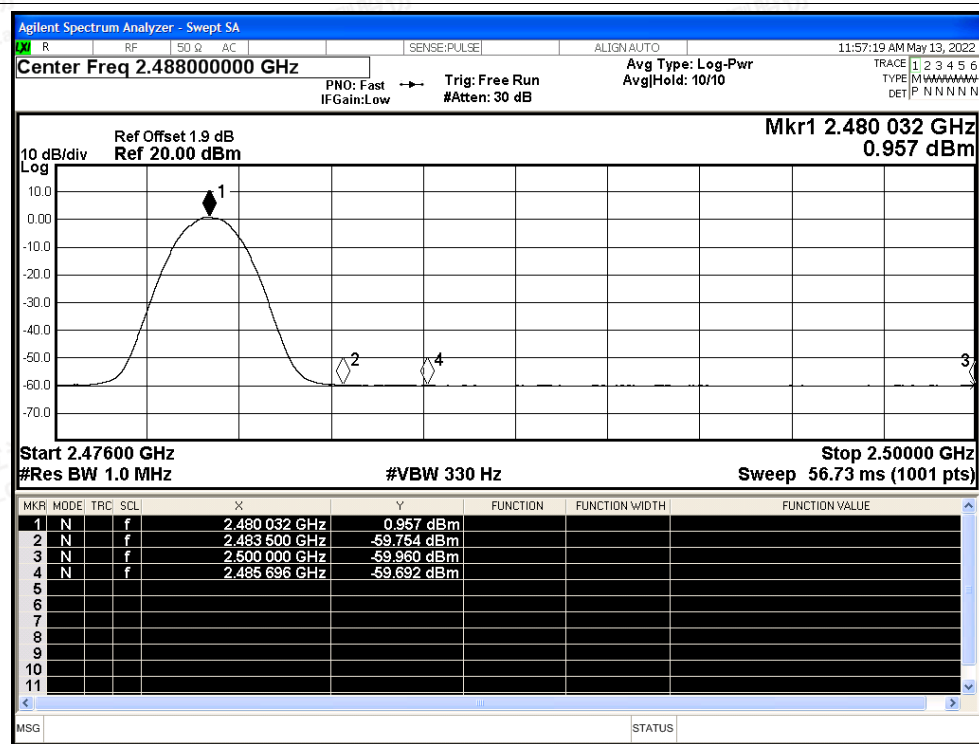




Restrict Band NVNT 1-DH5 2480MHz Ant No-Hopping Peak

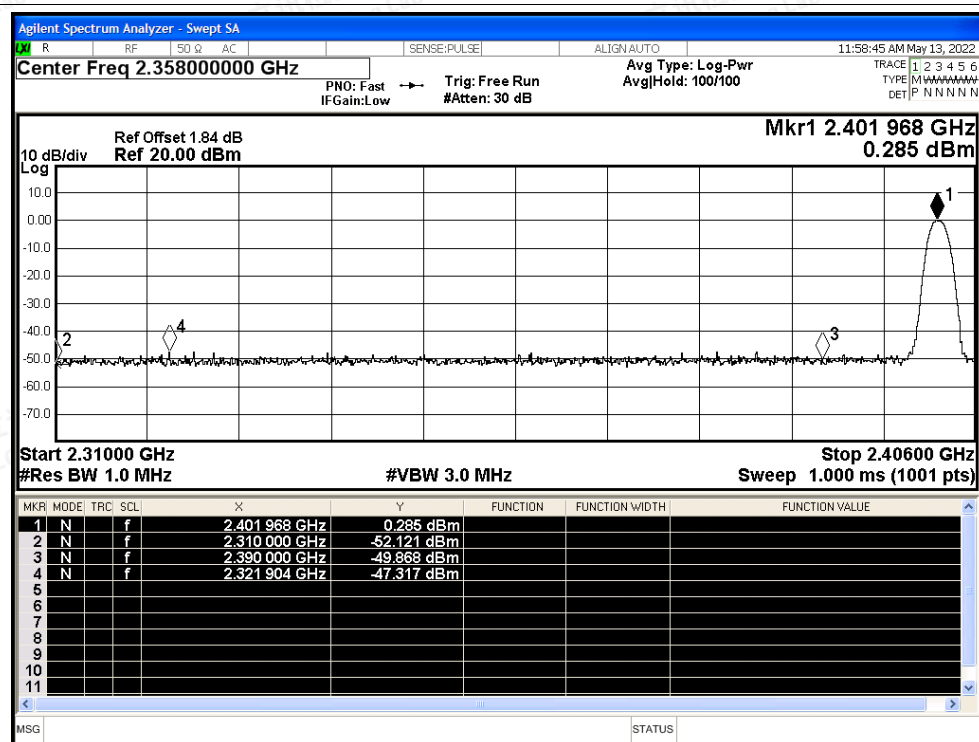


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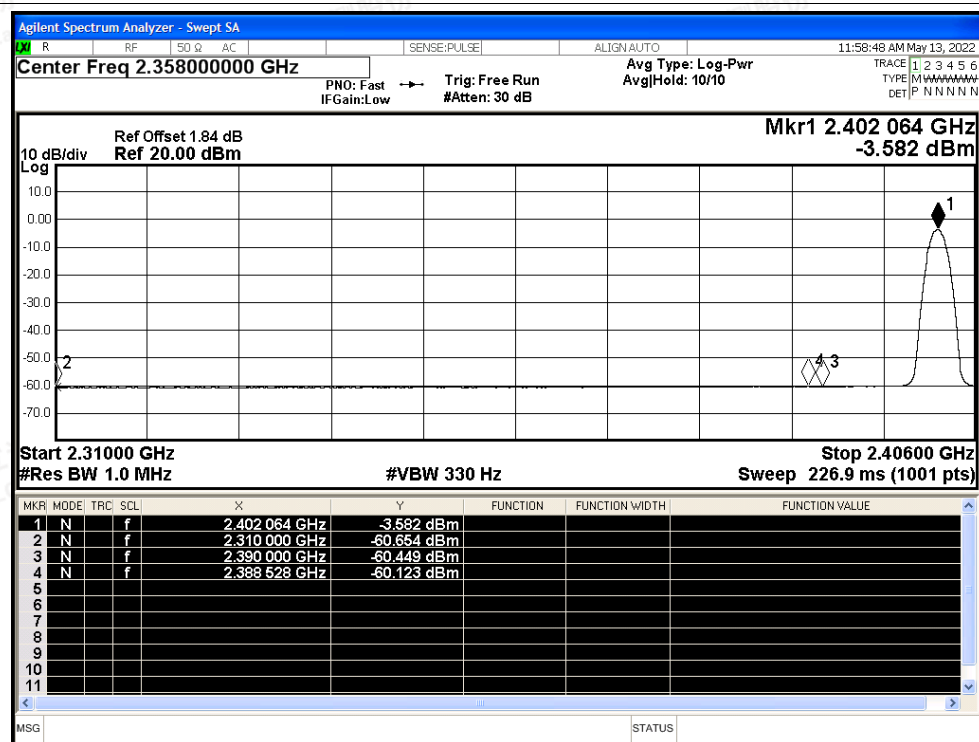




Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Peak

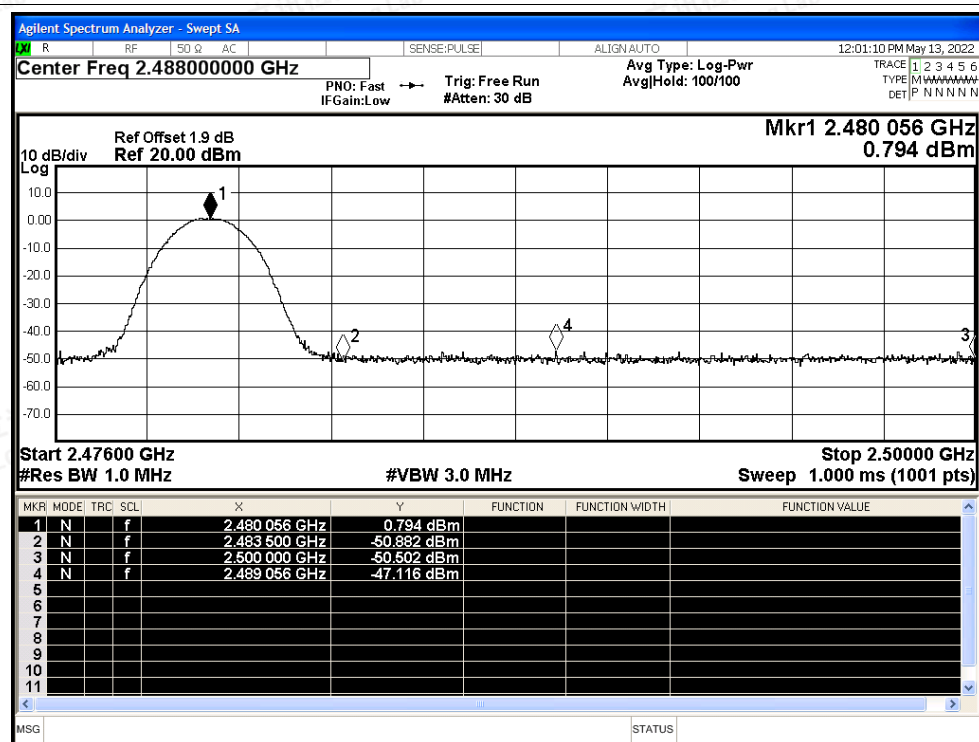


Restrict Band NVNT 2-DH5 2402MHz Ant No-Hopping Average

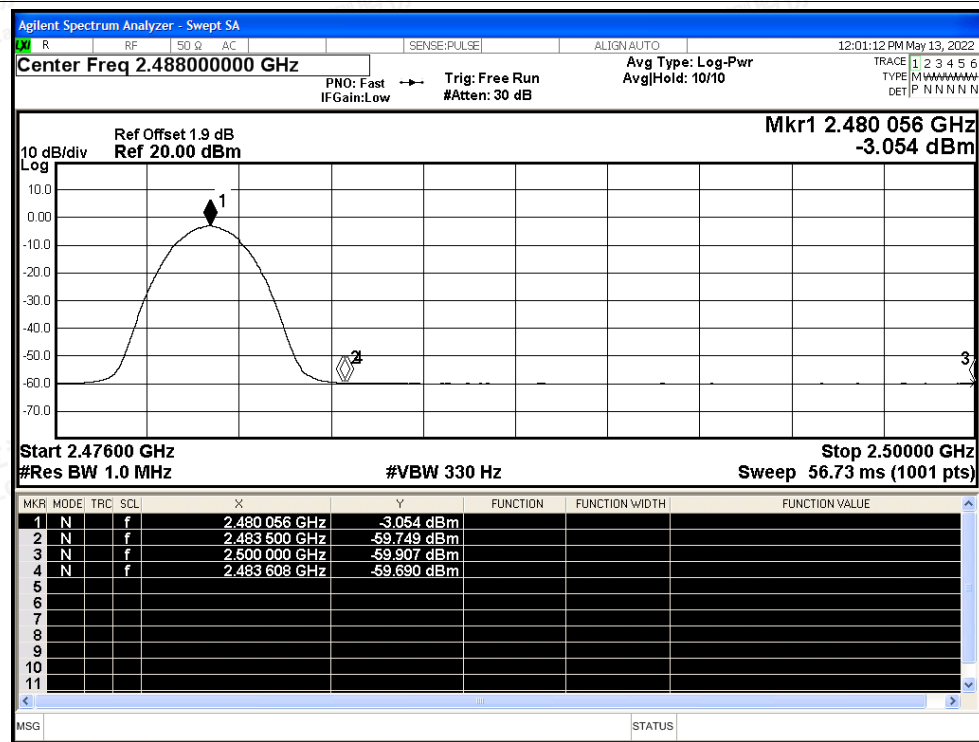




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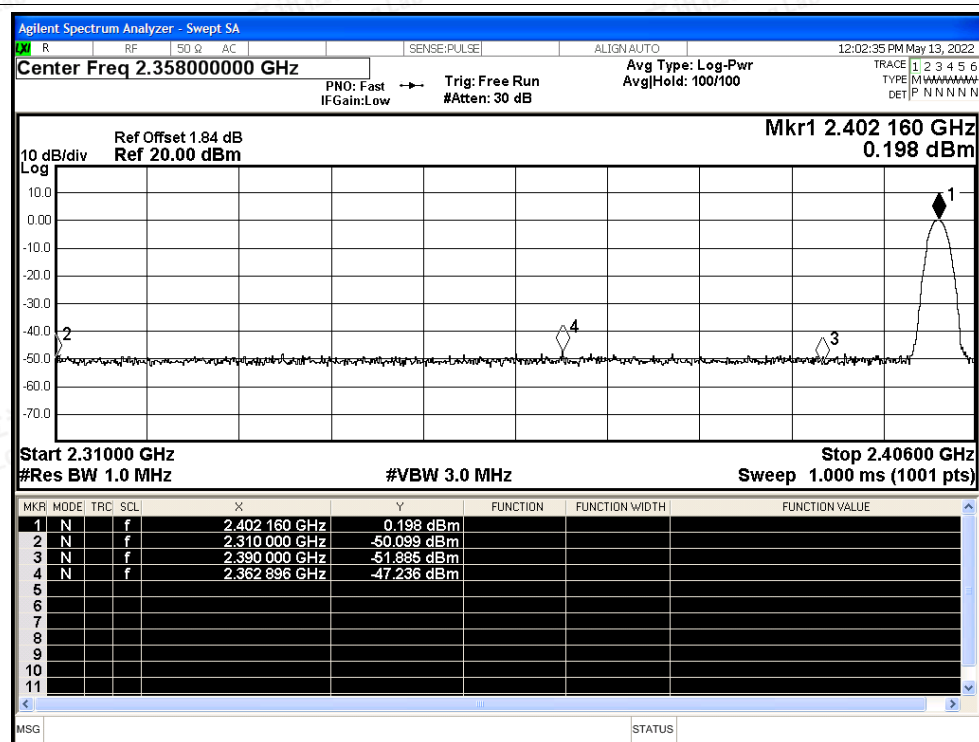


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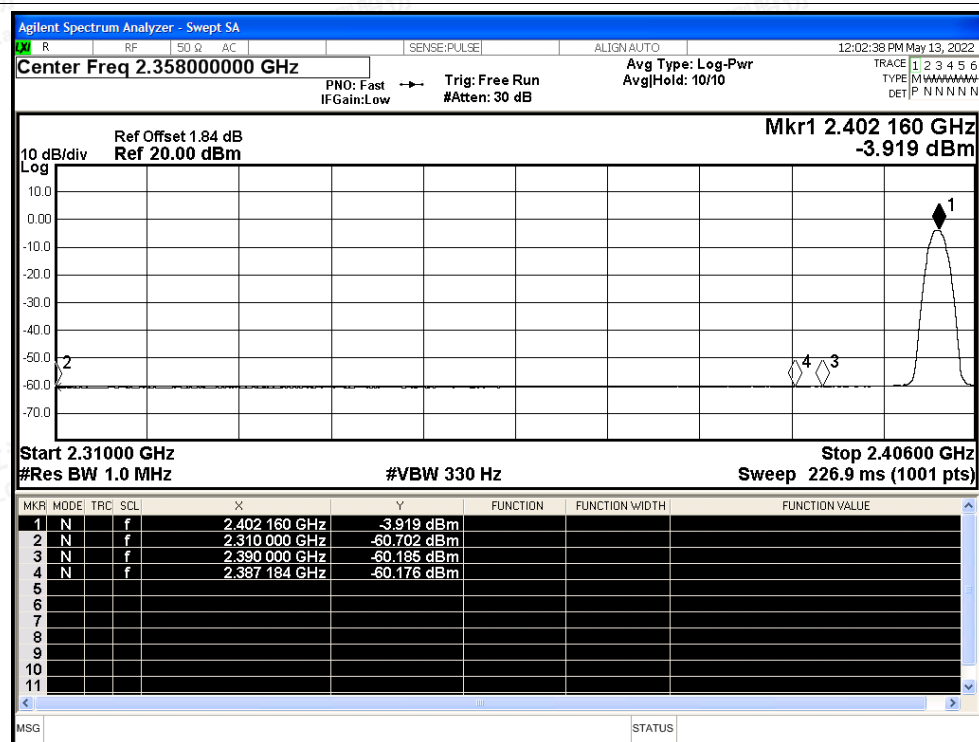




Restrict Band NVNT 3-DH5 2402MHz Ant No-Hopping Peak

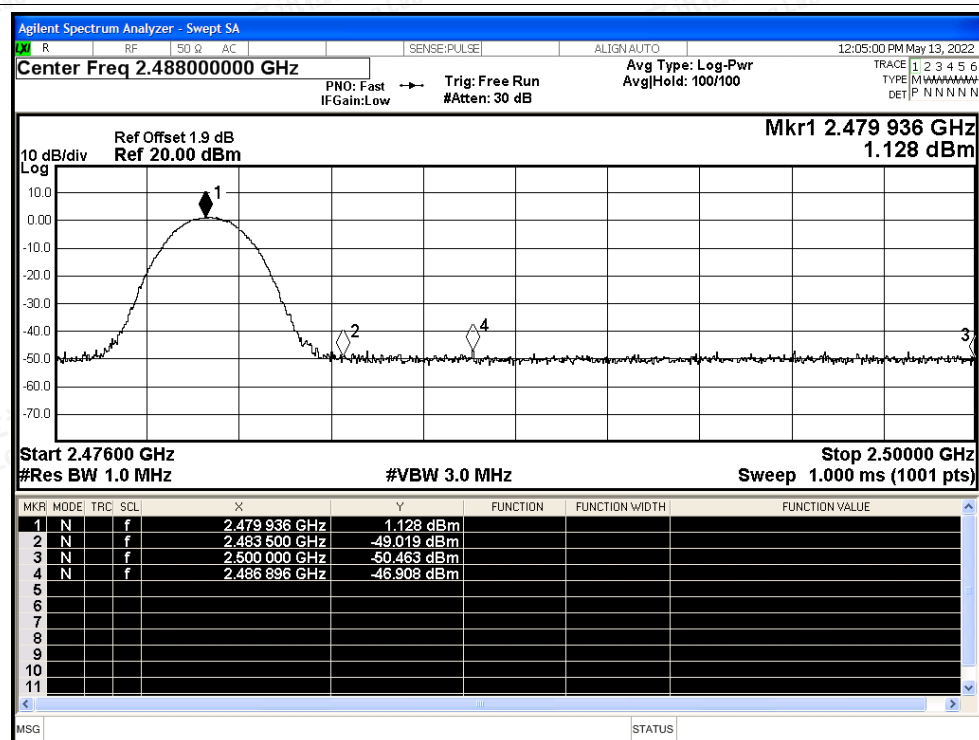


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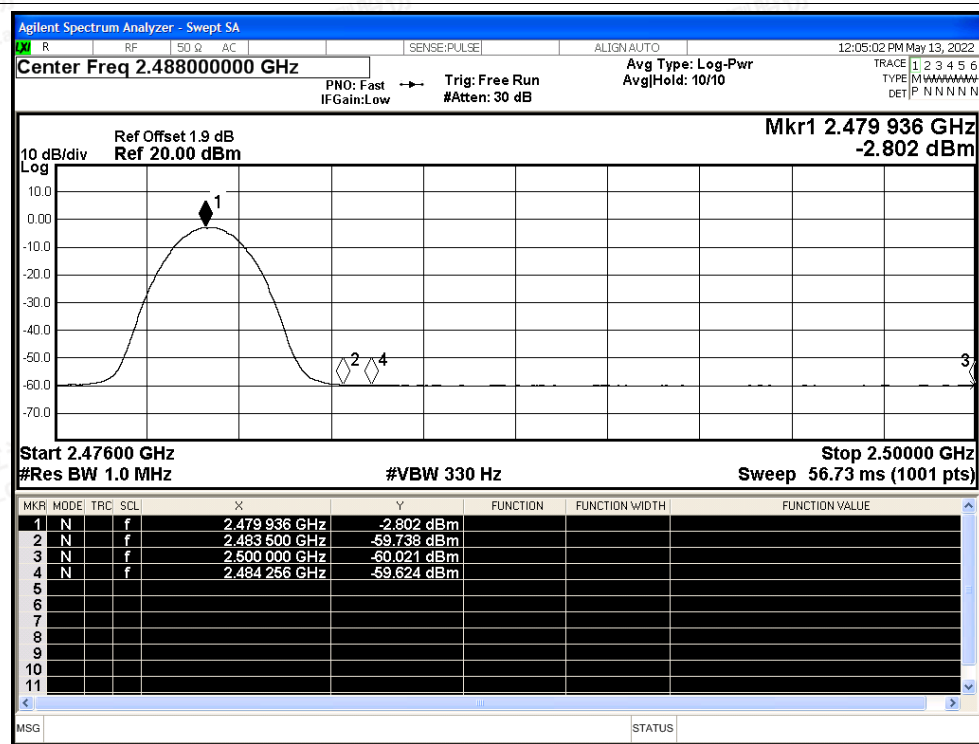




Restrict Band NVNT 3-DH5 2480MHz Ant No-Hopping Peak



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



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