



## Appendix A

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

Product Name: DT20

Test Model: HPPAP21

#### Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
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	0.96	0	Pass
NVNT	1-DH5	2441	Ant1	1.021	0	Pass
NVNT	1-DH5	2480	Ant1	0.959	0	Pass
NVNT	2-DH5	2402	Ant1	1.316	0	Pass
NVNT	2-DH5	2441	Ant1	1.317	0	Pass
NVNT	2-DH5	2480	Ant1	1.309	0	Pass
NVNT	3-DH5	2402	Ant1	1.3	0	Pass
NVNT	3-DH5	2441	Ant1	1.289	0	Pass
NVNT	3-DH5	2480	Ant1	1.303	0	Pass

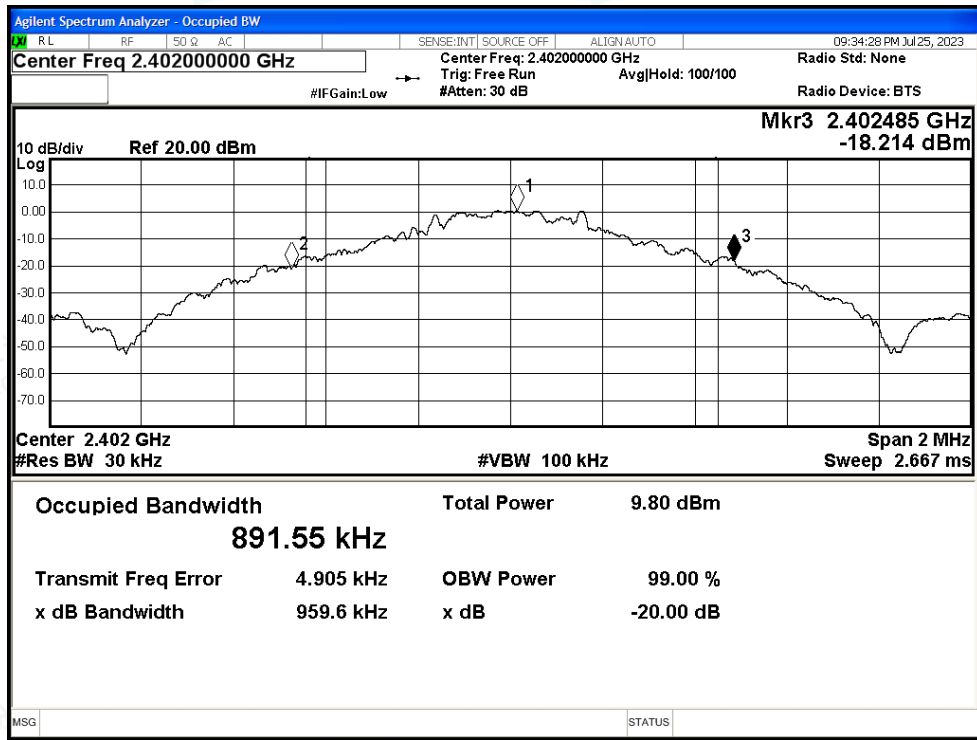


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Scan code to check authenticity

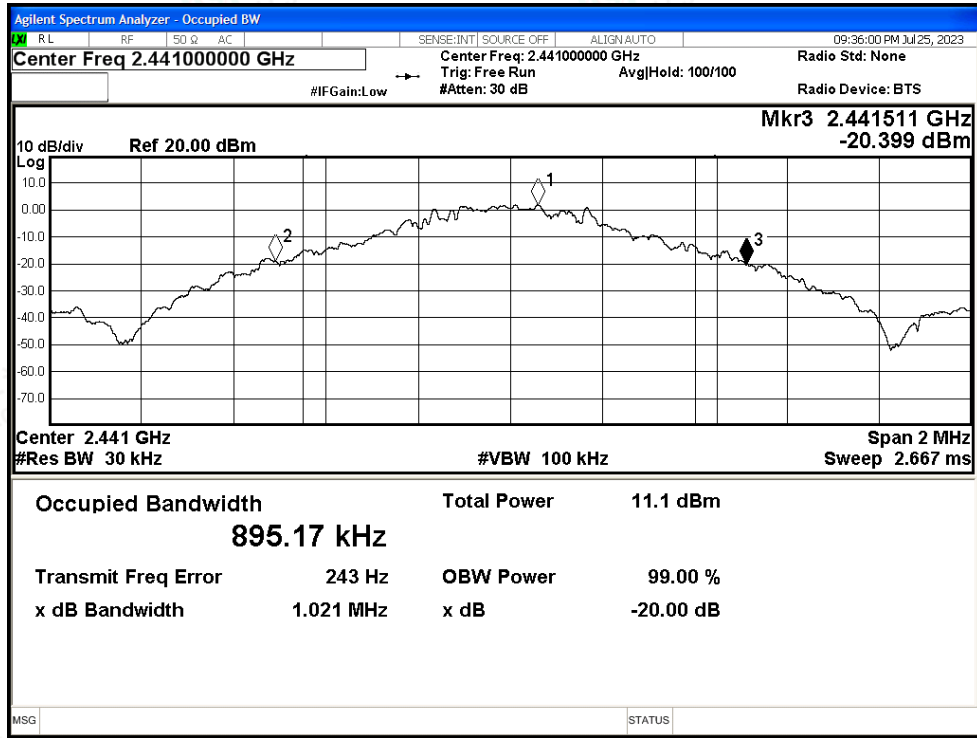


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

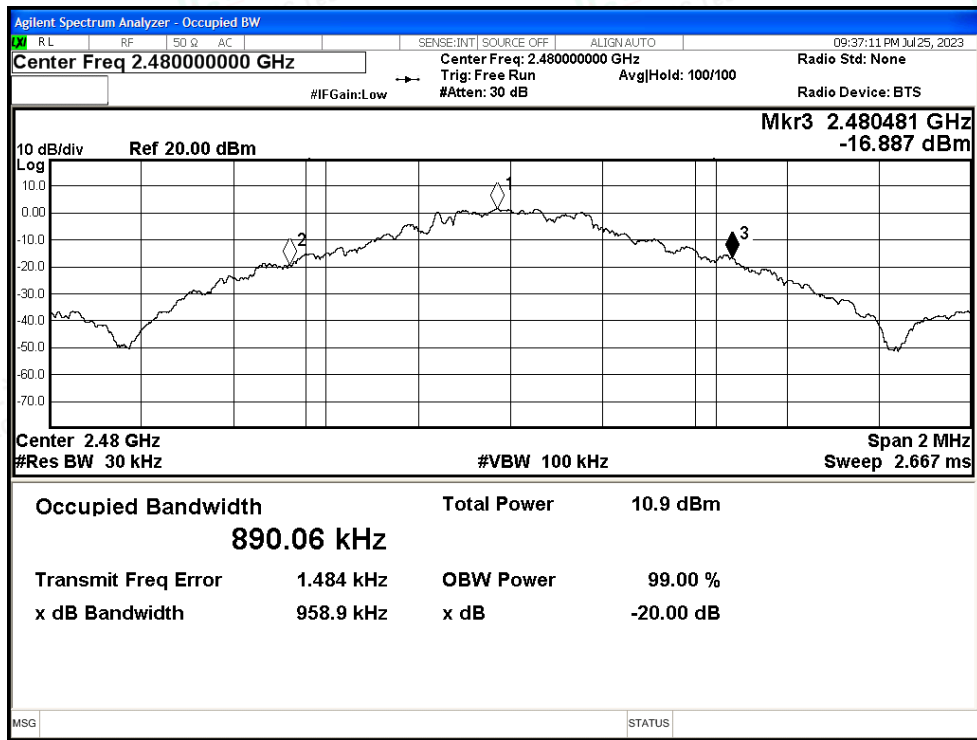


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

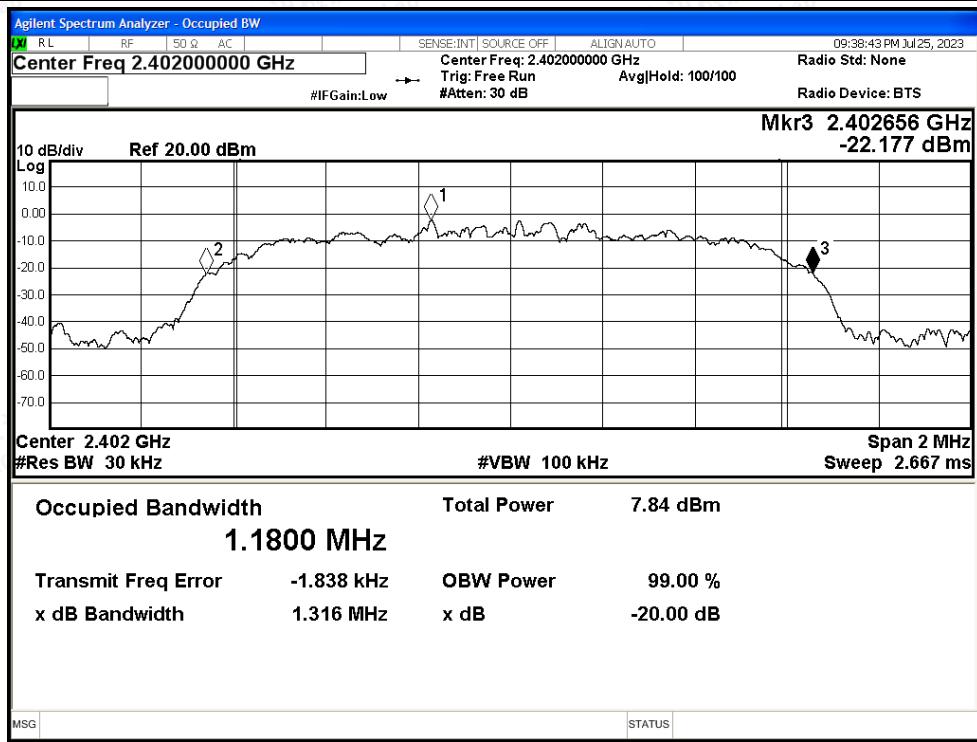




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

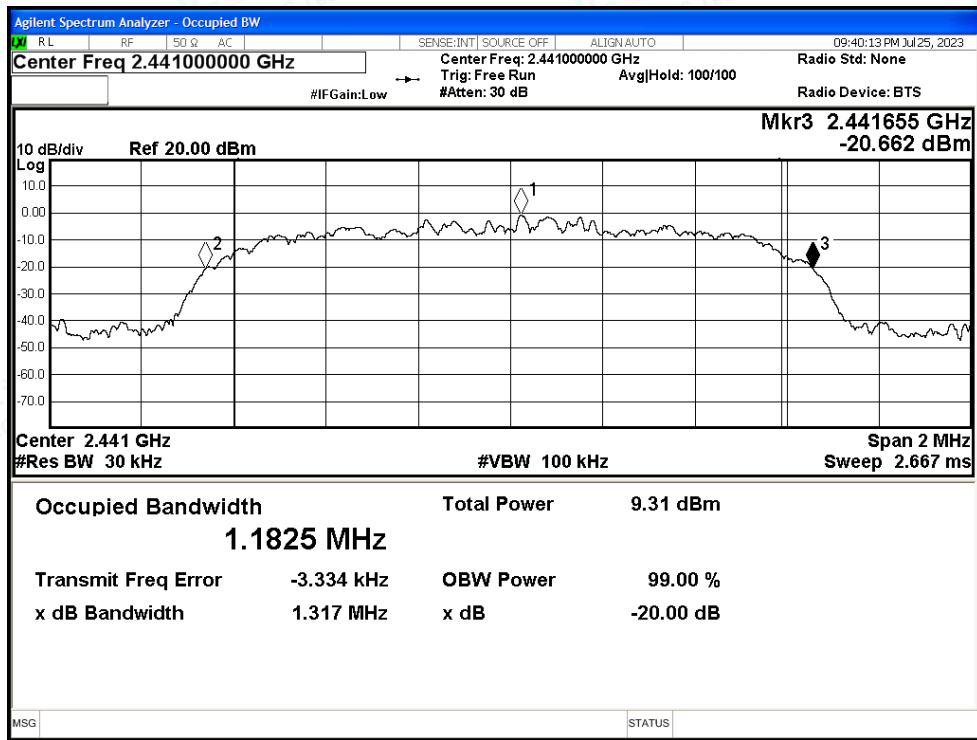


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

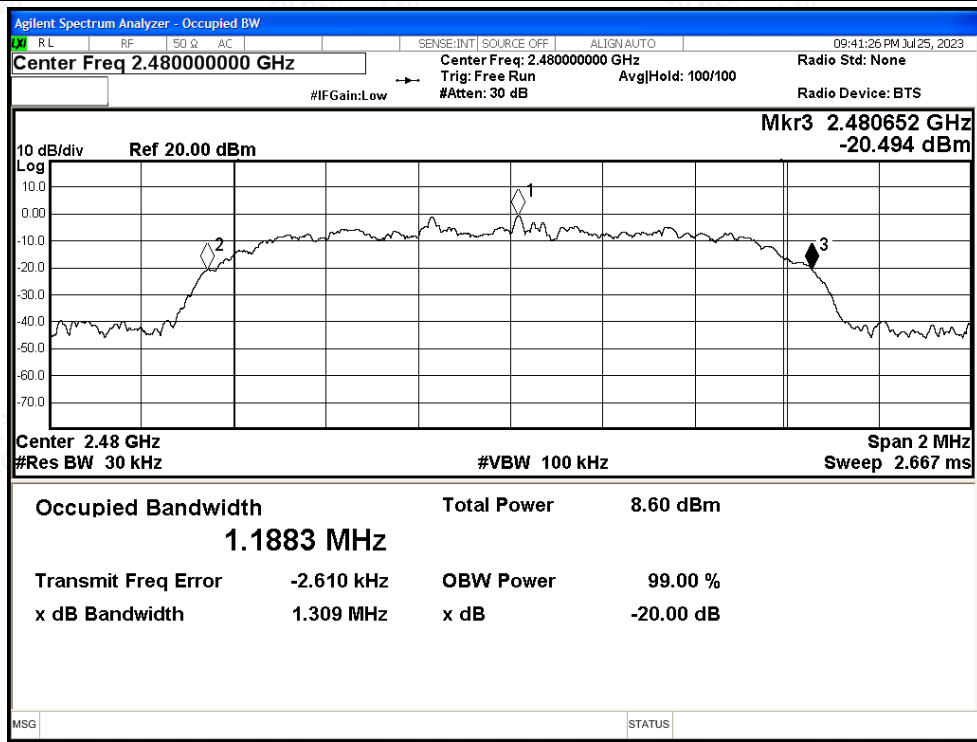




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

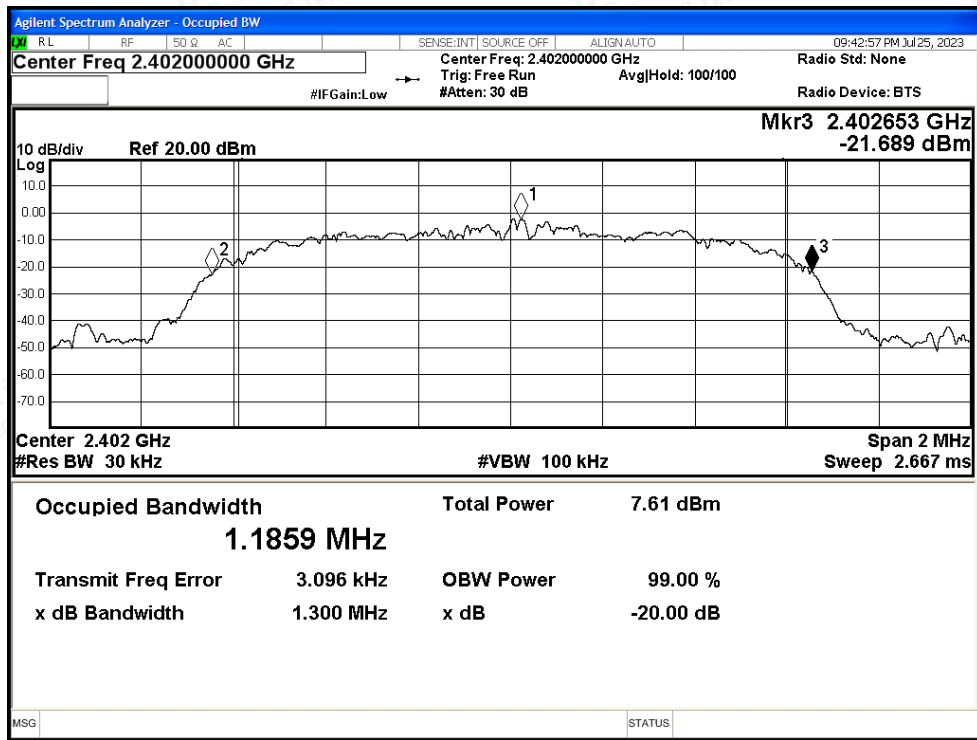


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

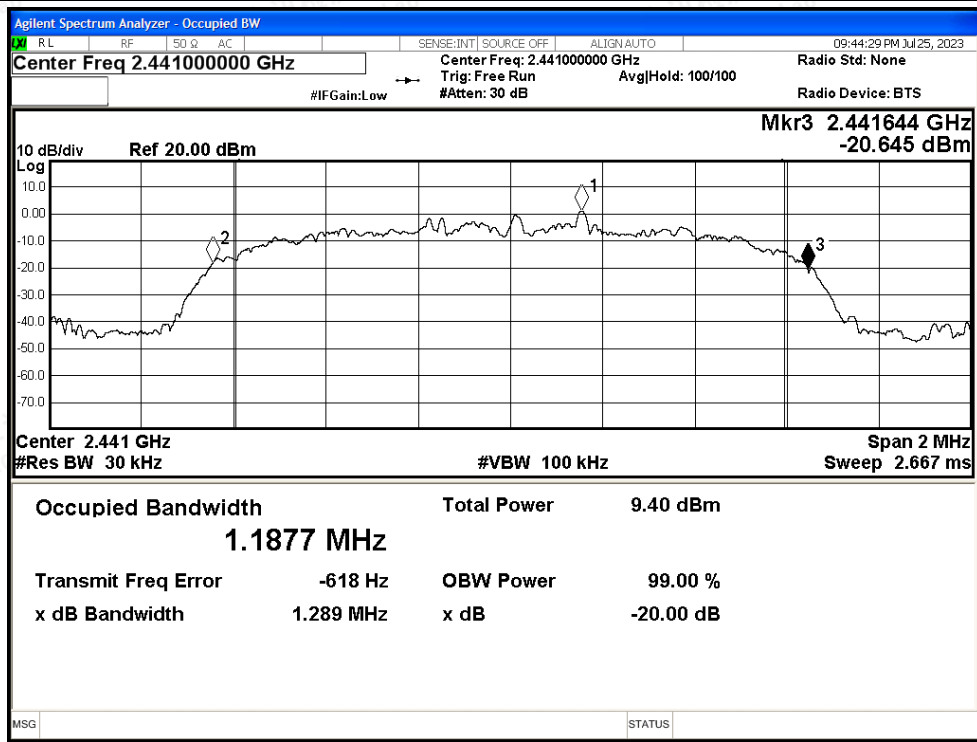


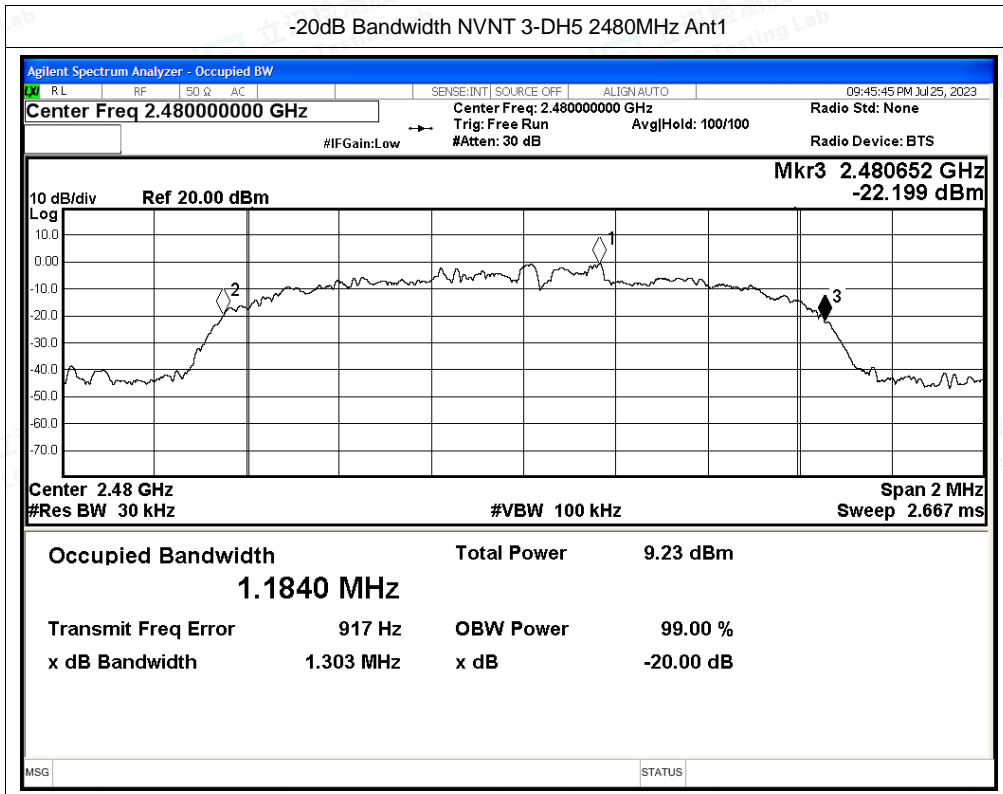


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1







## A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	3.36	21	Pass
NVNT	1-DH5	2441	Ant1	4.86	21	Pass
NVNT	1-DH5	2480	Ant1	4.41	21	Pass
NVNT	2-DH5	2402	Ant1	3.16	21	Pass
NVNT	2-DH5	2441	Ant1	4.59	21	Pass
NVNT	2-DH5	2480	Ant1	4.18	21	Pass
NVNT	3-DH5	2402	Ant1	3.31	21	Pass
NVNT	3-DH5	2441	Ant1	4.84	21	Pass
NVNT	3-DH5	2480	Ant1	4.35	21	Pass



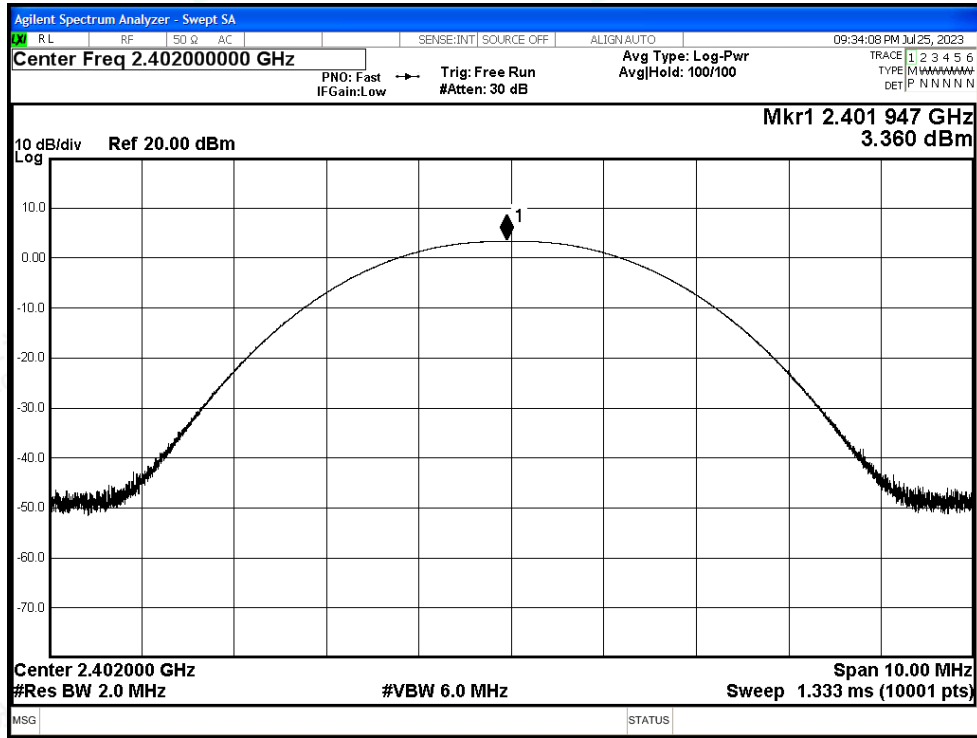
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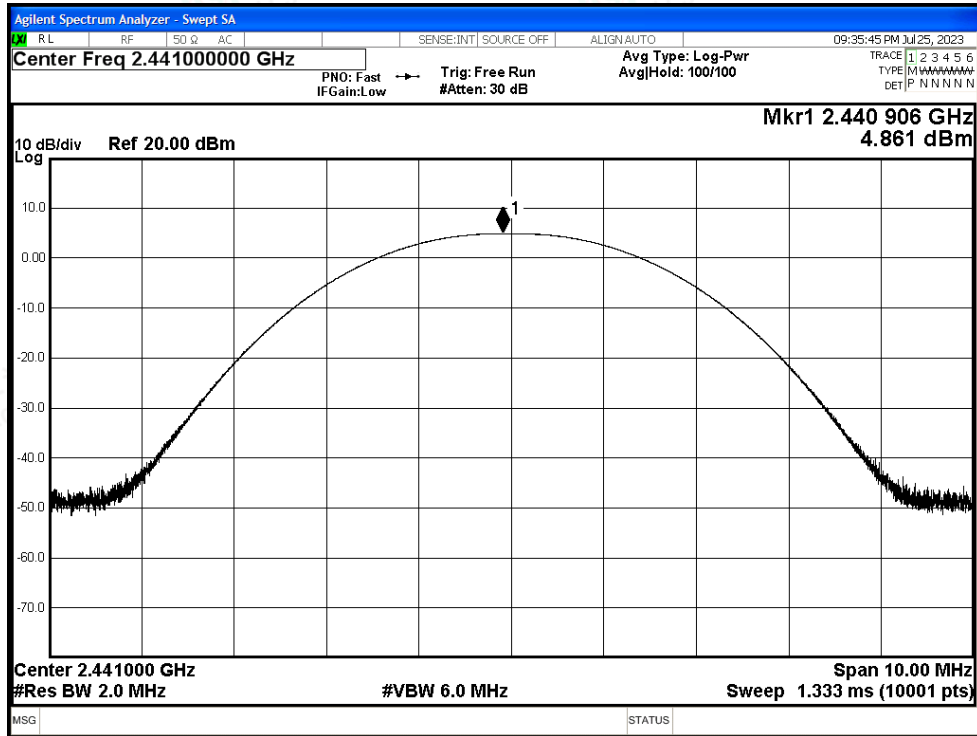


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

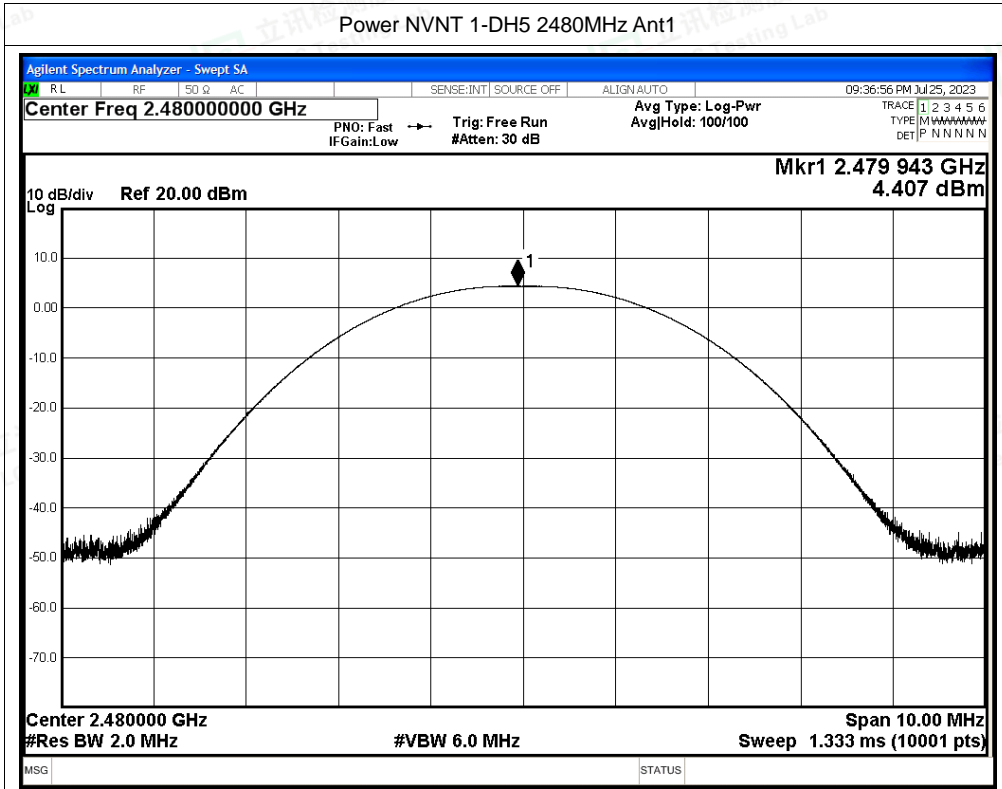


Power NVNT 1-DH5 2441MHz Ant1

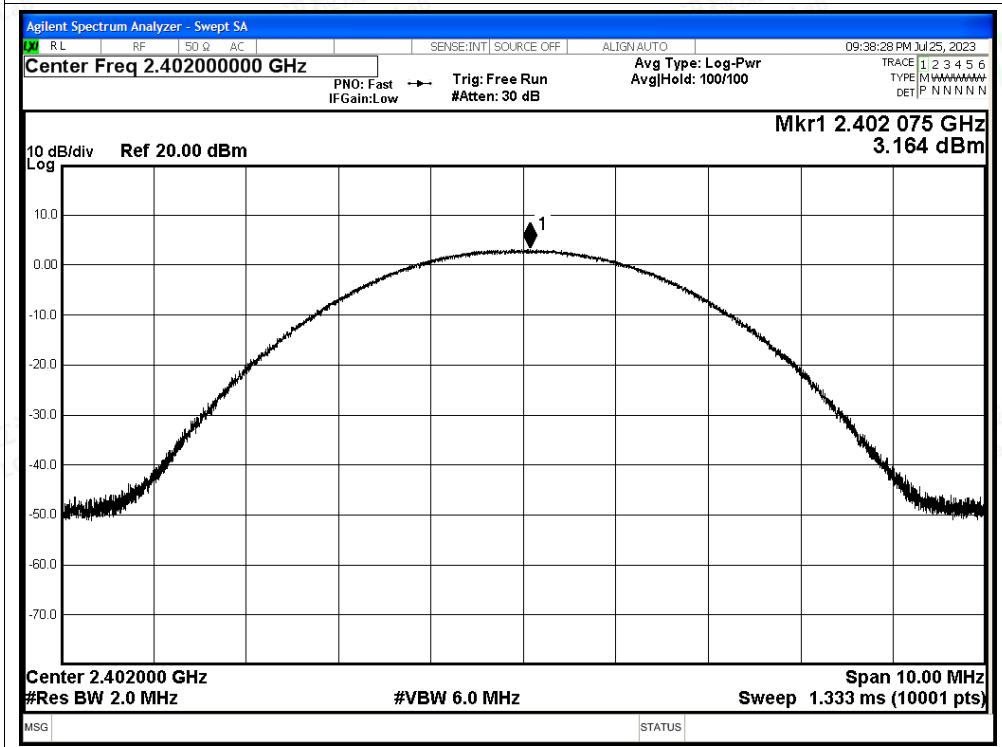




Power NVNT 1-DH5 2480MHz Ant1

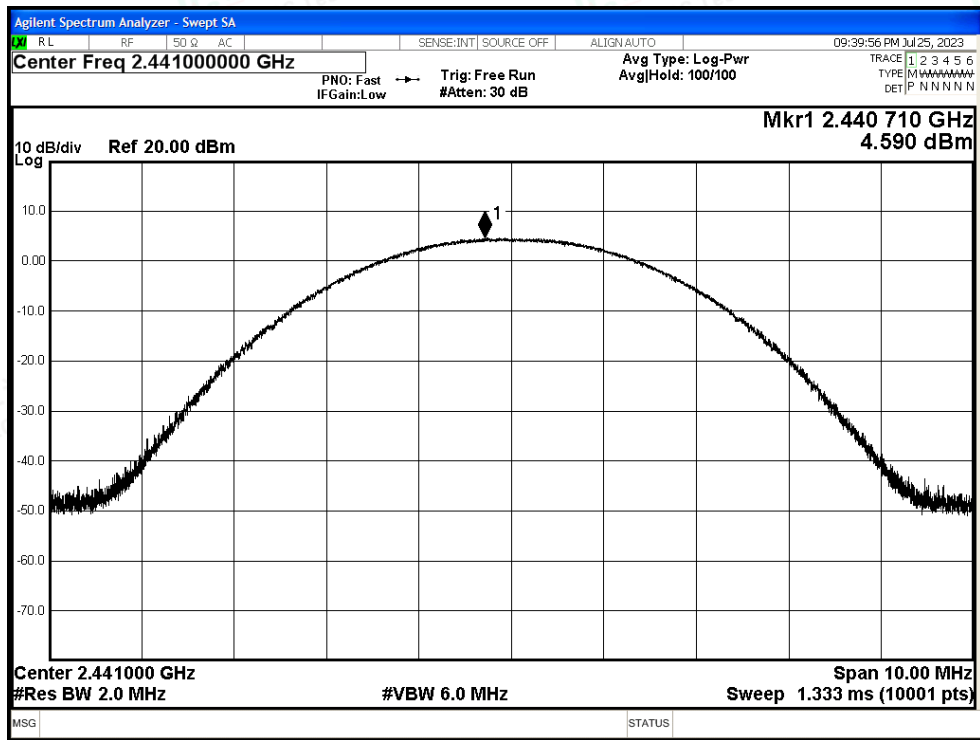


Power NVNT 2-DH5 2402MHz Ant1

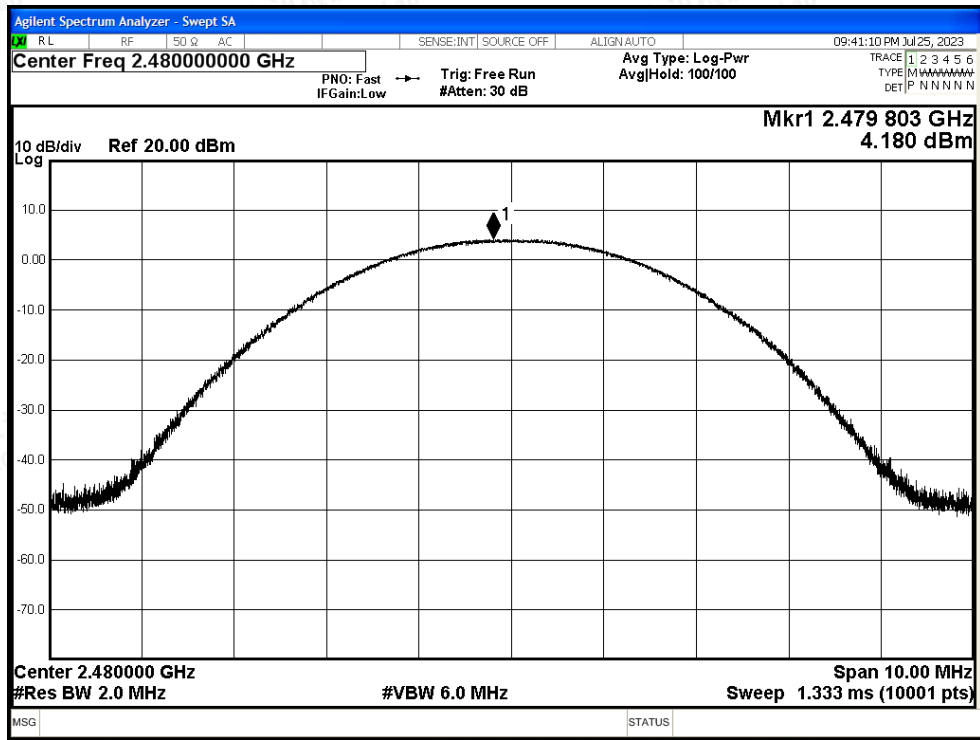




Power NVNT 2-DH5 2441MHz Ant1

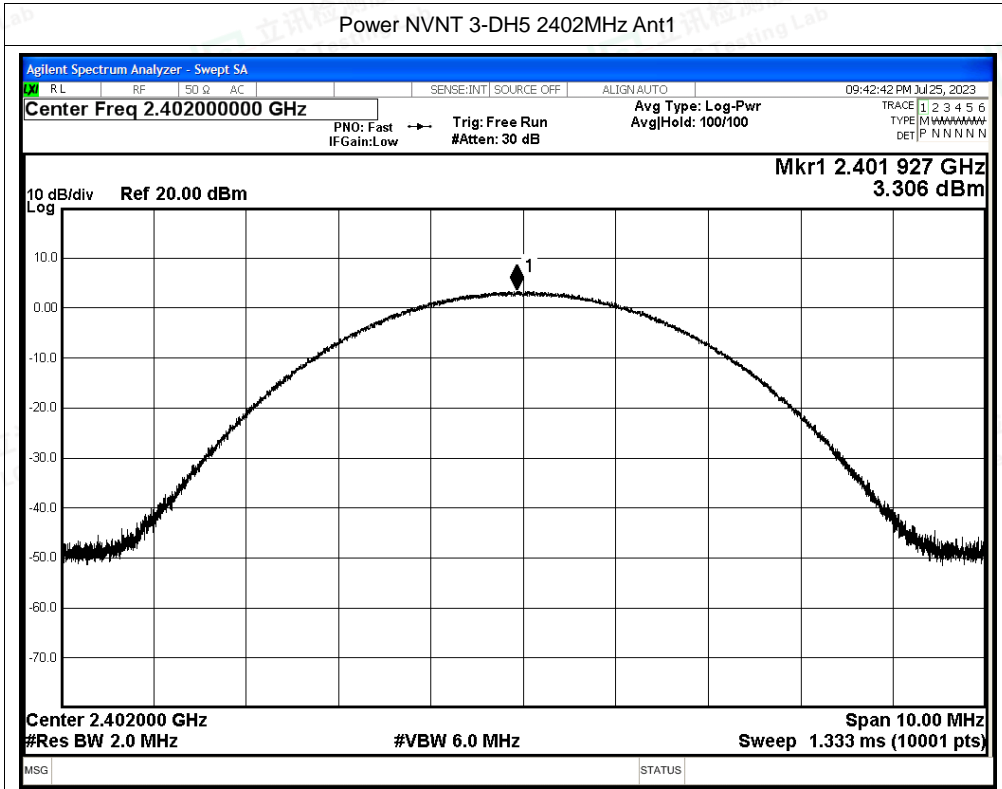


Power NVNT 2-DH5 2480MHz Ant1

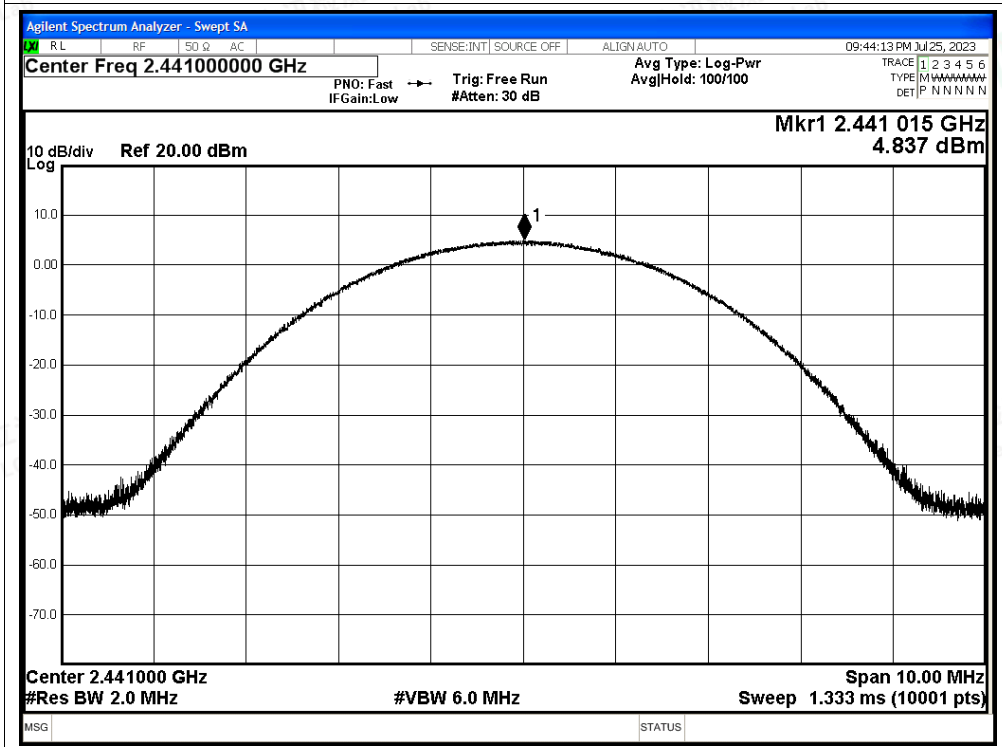


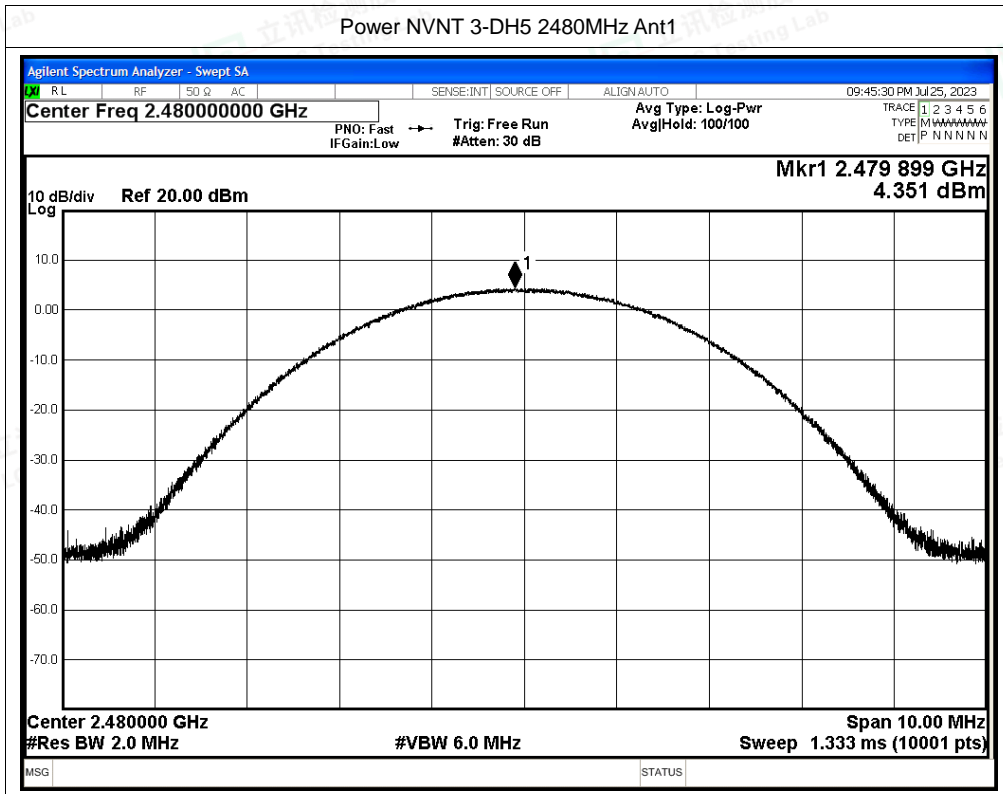


Power NVNT 3-DH5 2402MHz Ant1



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	2402.012	2403.012	1	0.681	Pass
NVNT	2-DH5	Ant1	2402.012	2403.006	0.994	0.878	Pass
NVNT	3-DH5	Ant1	2402.004	2403.022	1.018	0.869	Pass

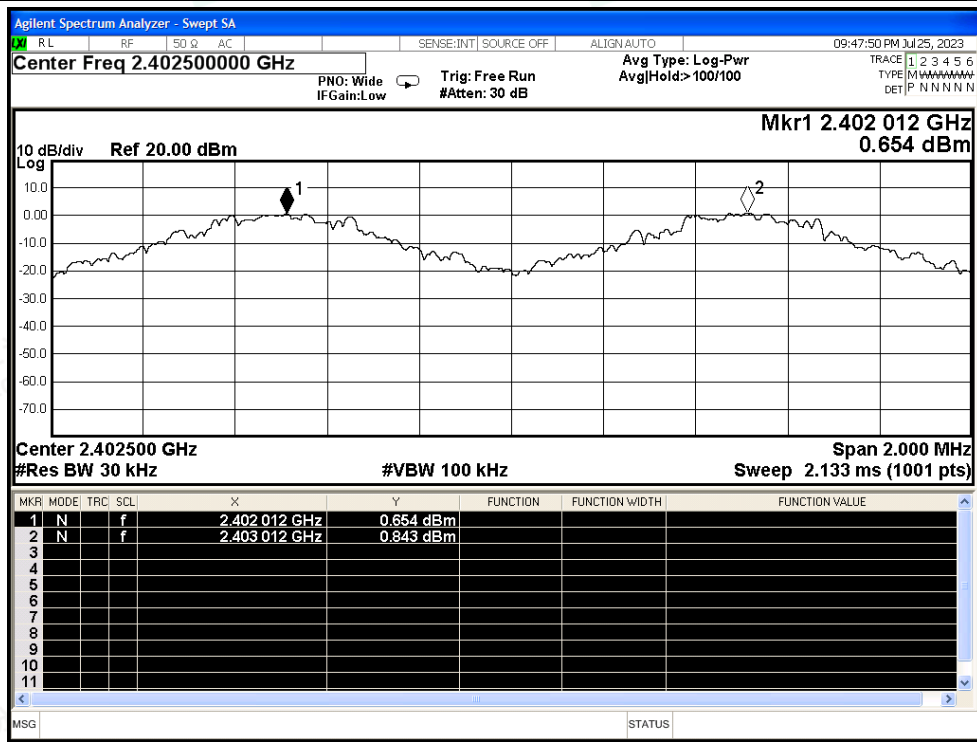


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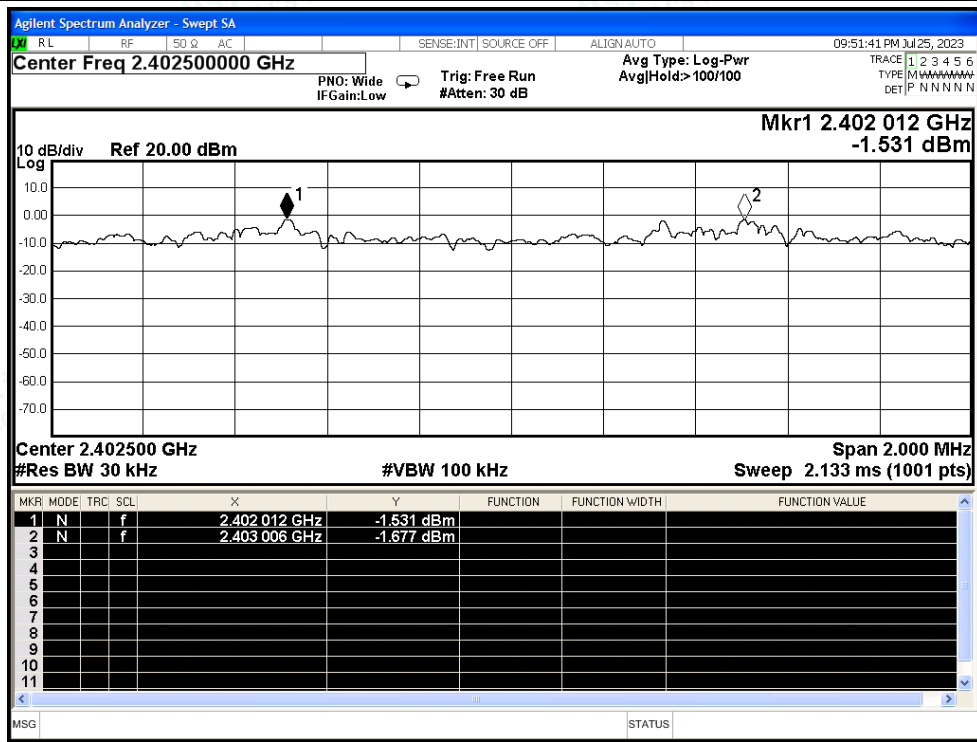


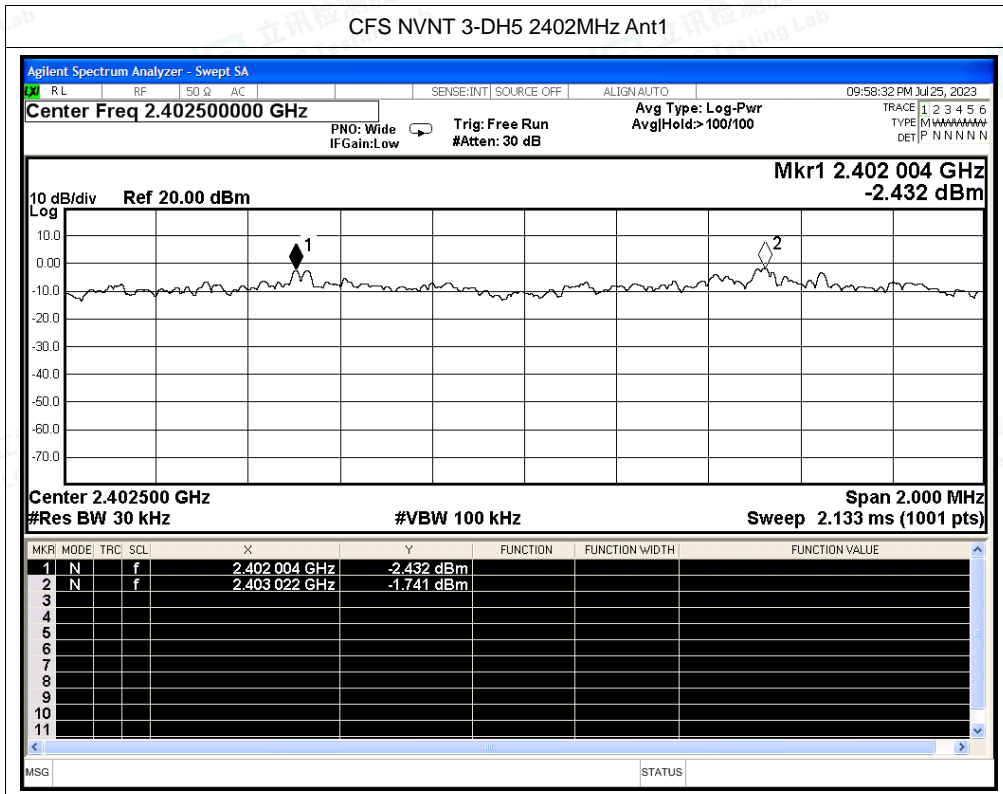
Test Graphs

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	302.61	105	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.885	331.775	115	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.887	306.022	106	31600	400	Pass

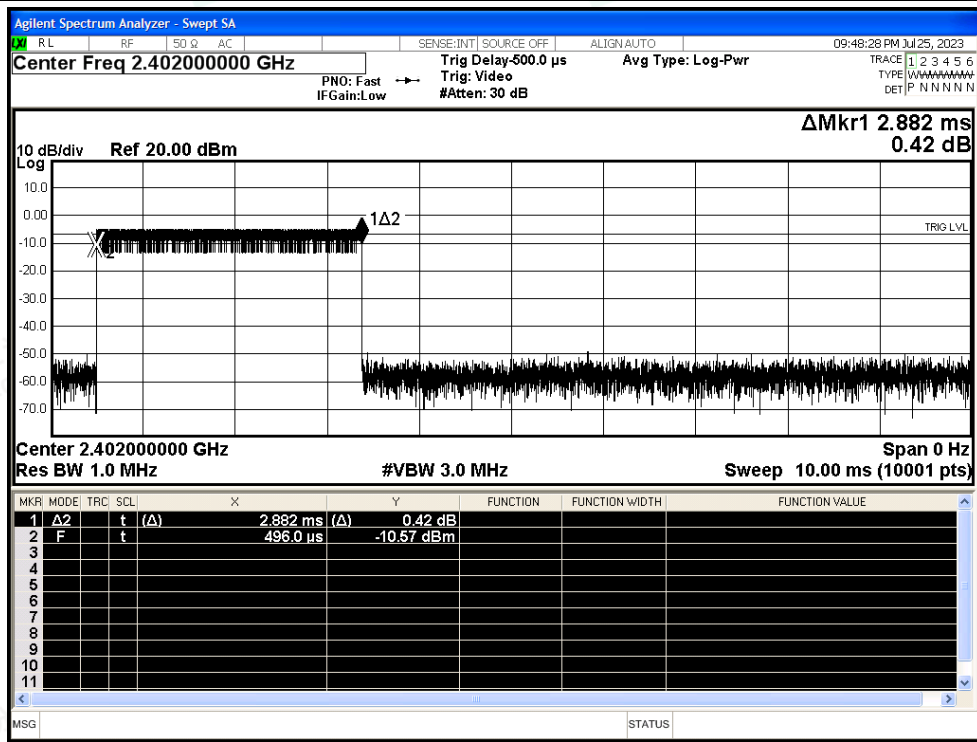


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Scan code to check authenticity

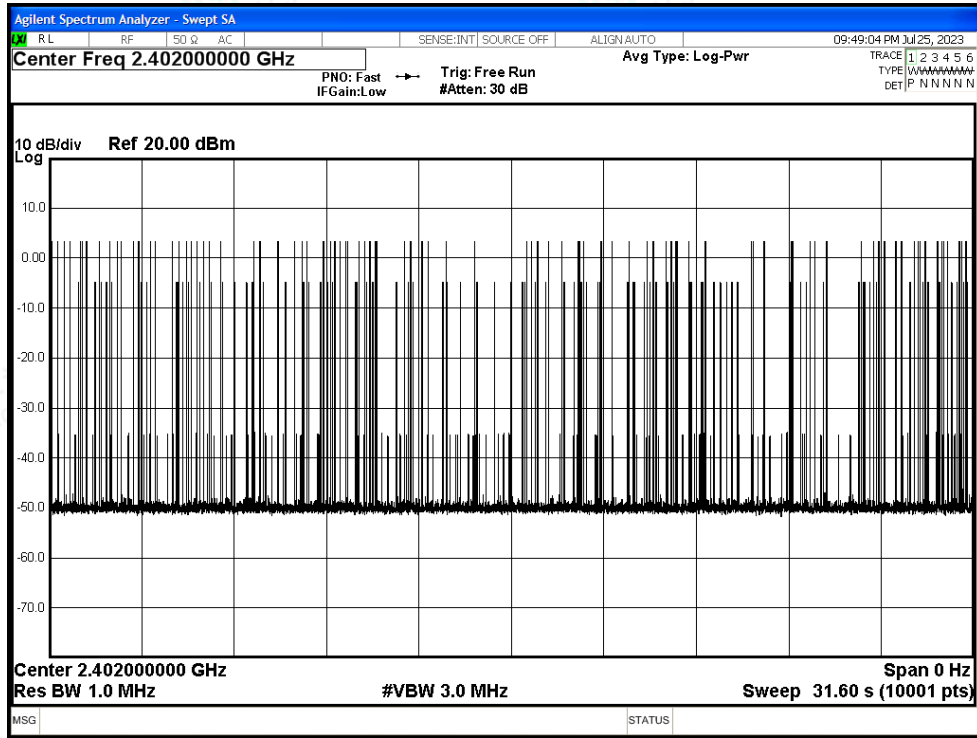


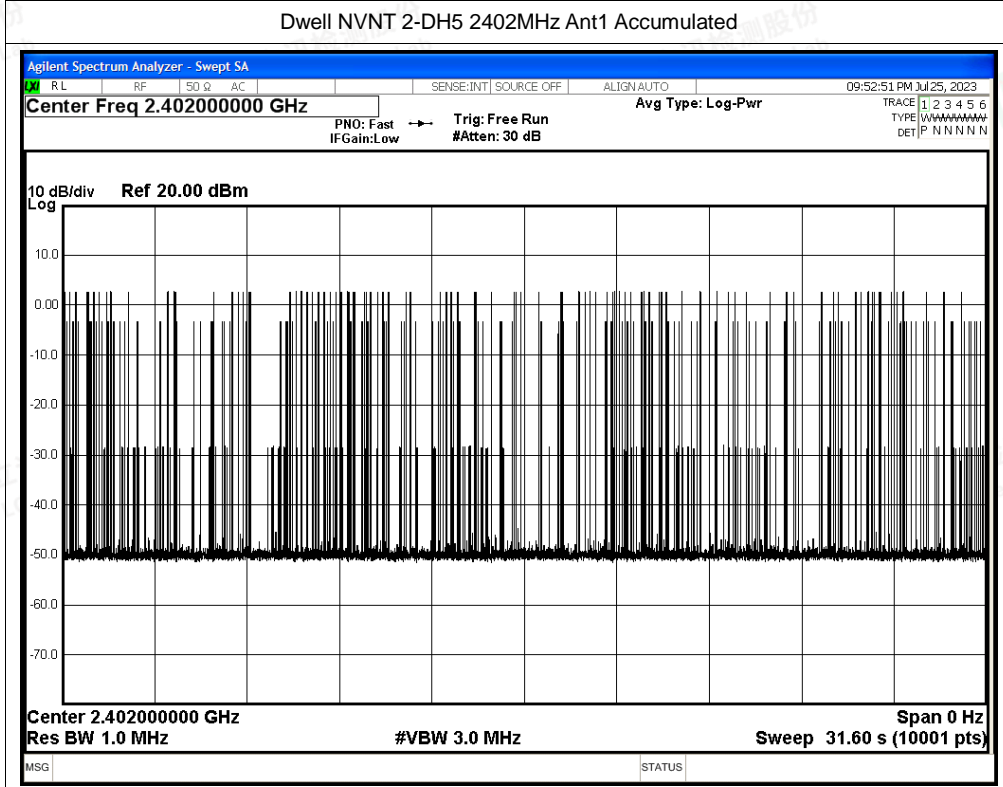
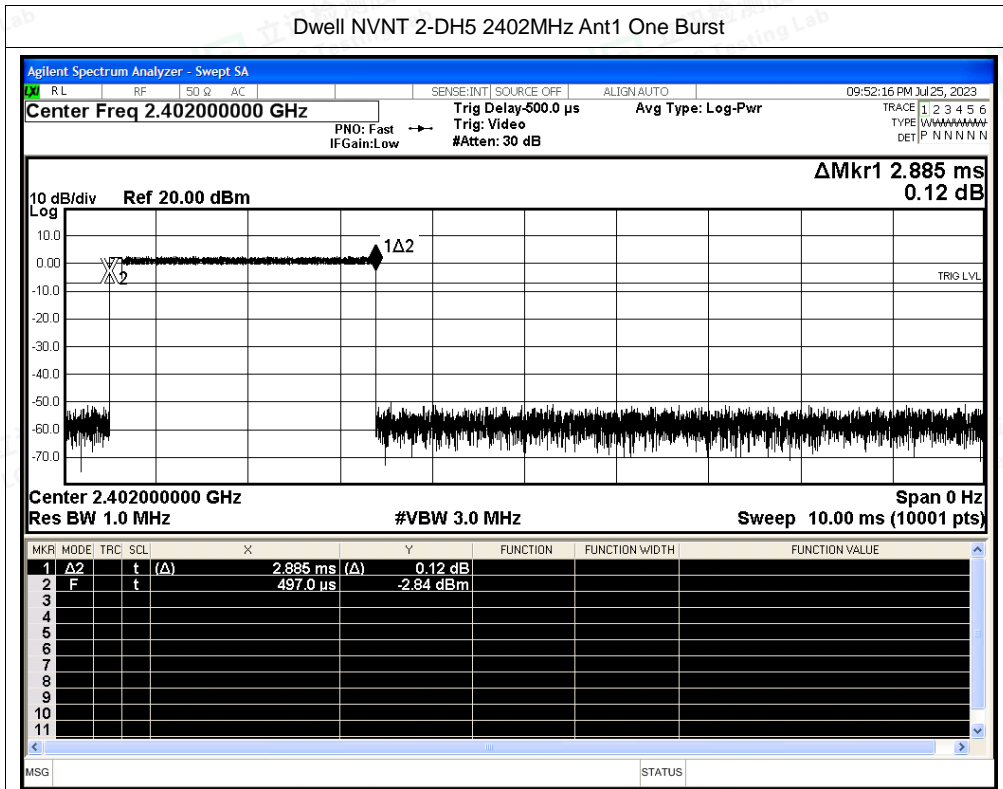
Test Graphs

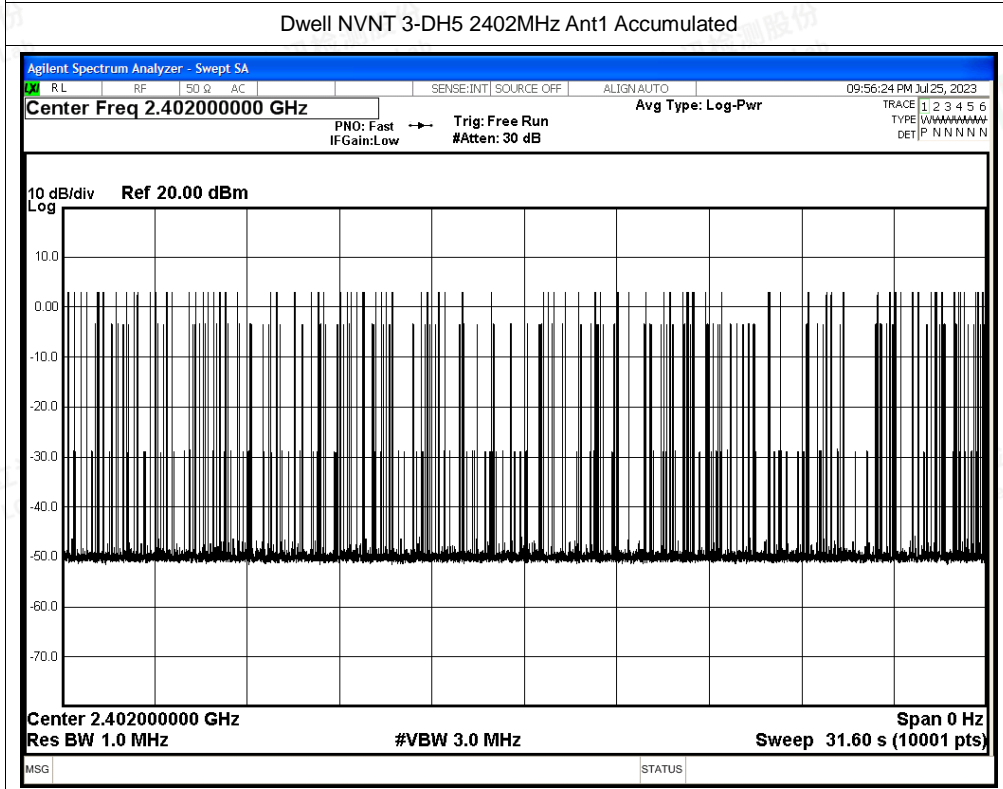
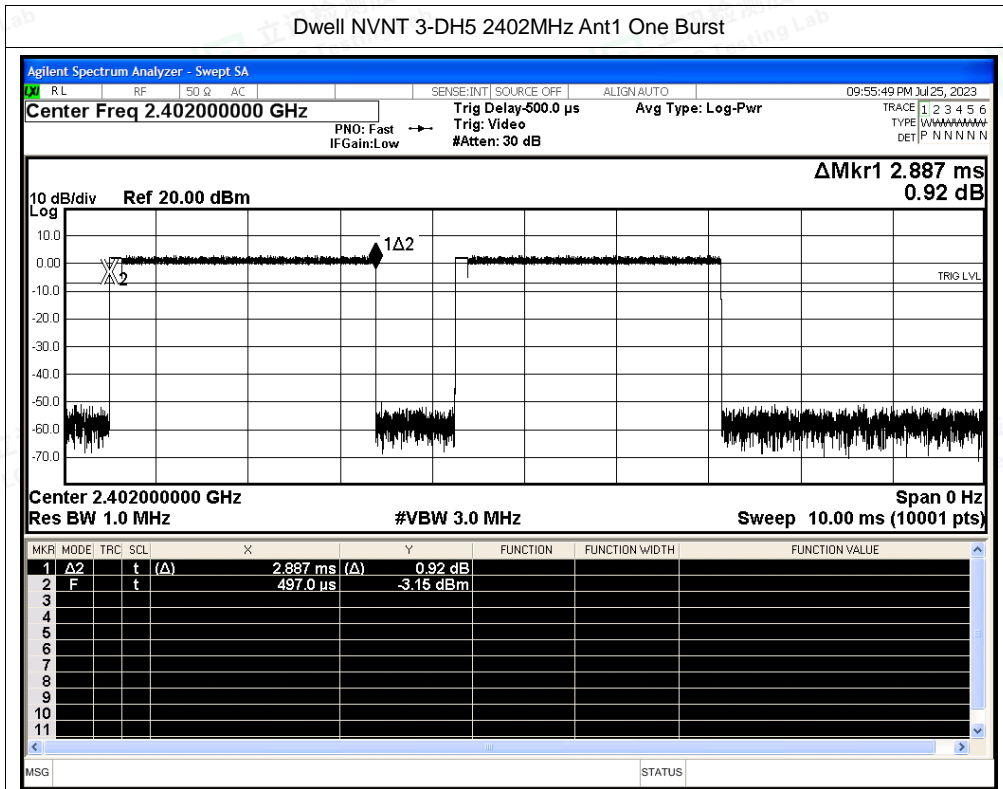
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated









## A.5 Number of Hopping Channel

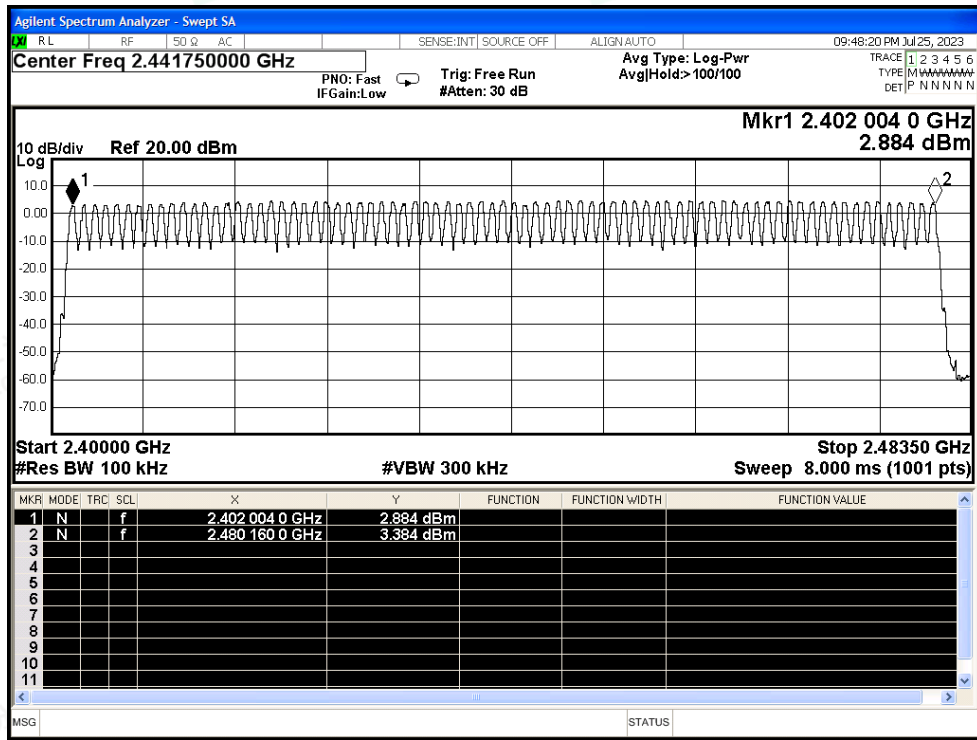
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass



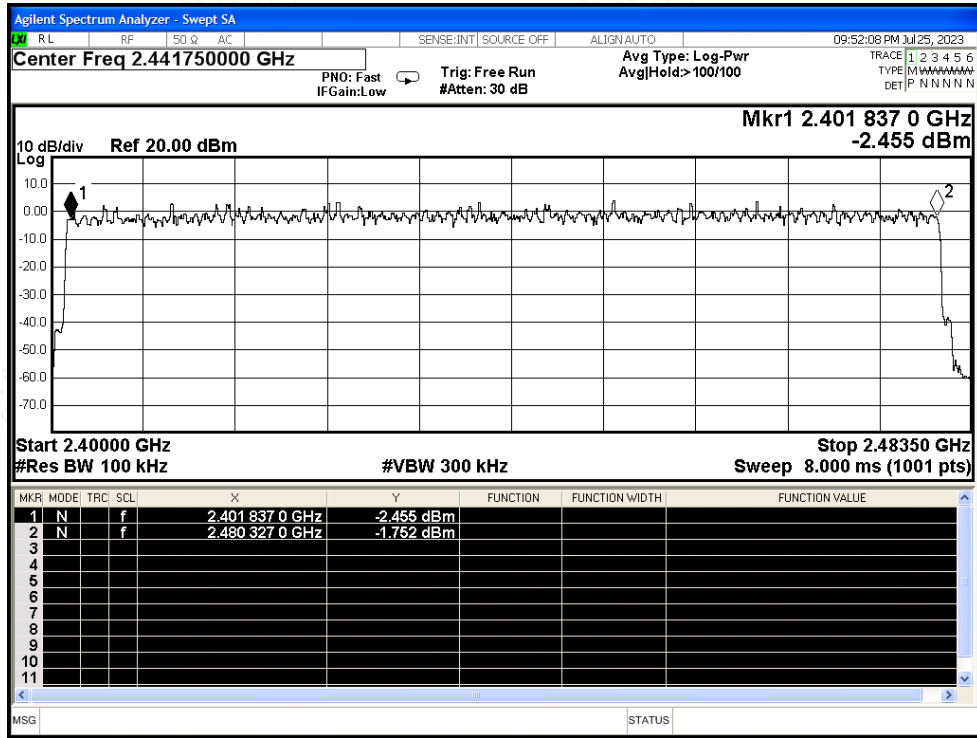


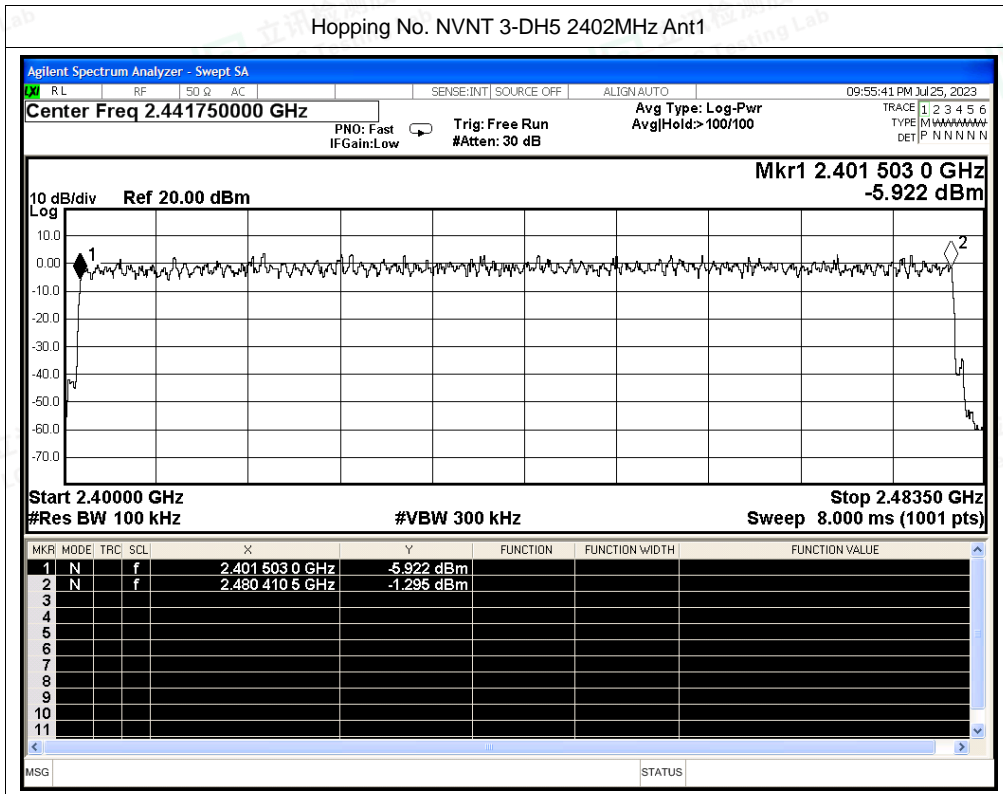
Test Graphs

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	-59.2	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-62.38	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-56.33	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-59.99	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-55.54	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-61.94	-20	Pass



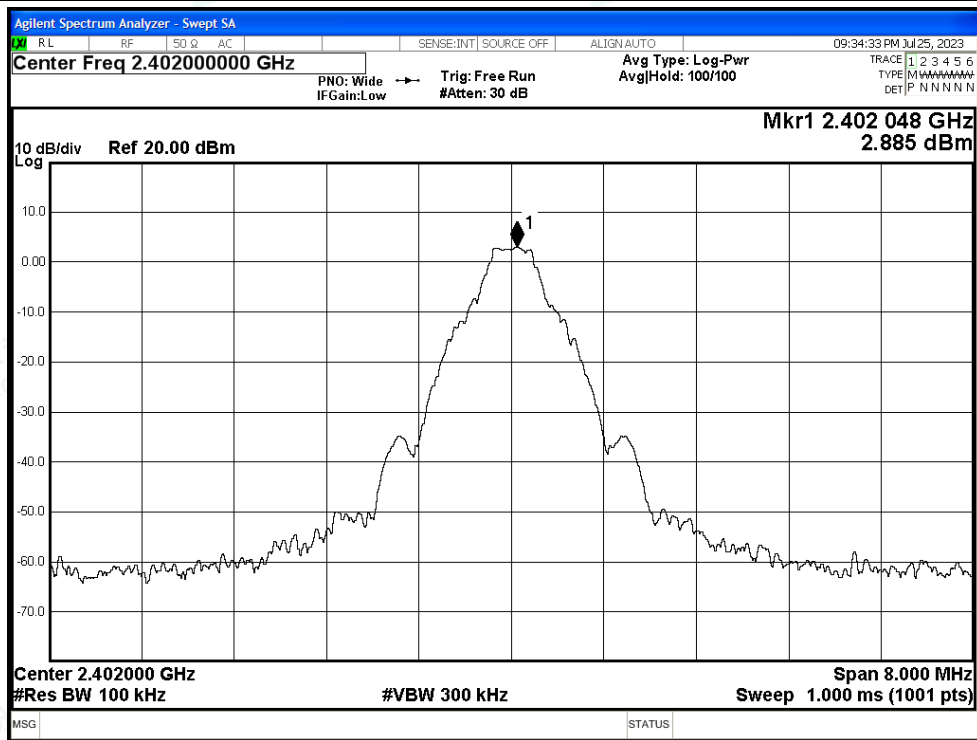
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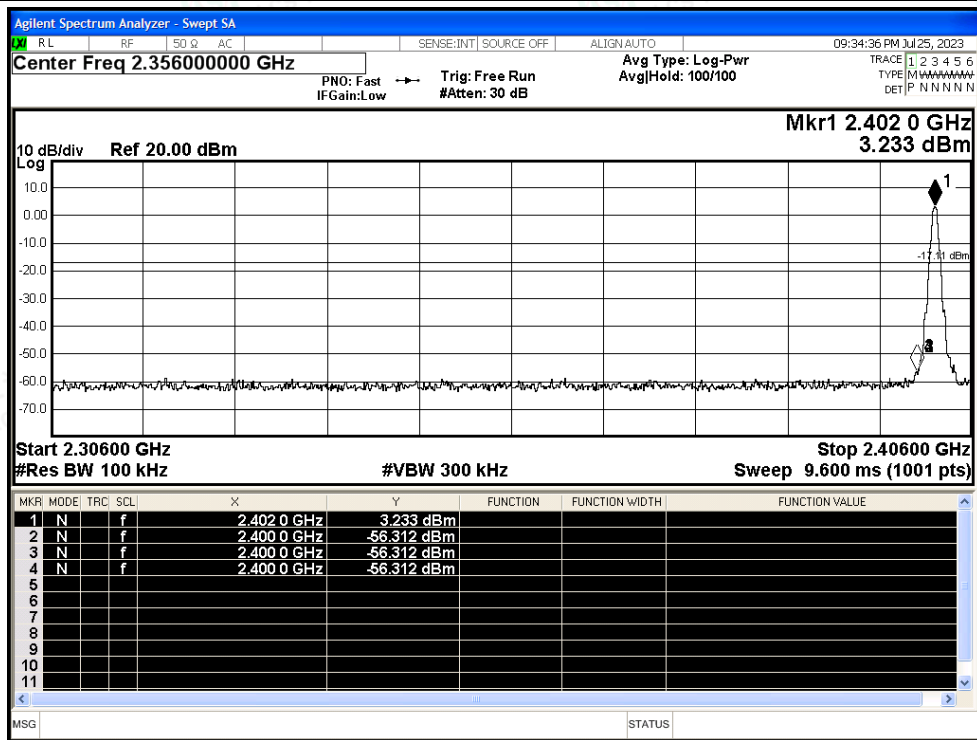


Test Graphs

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

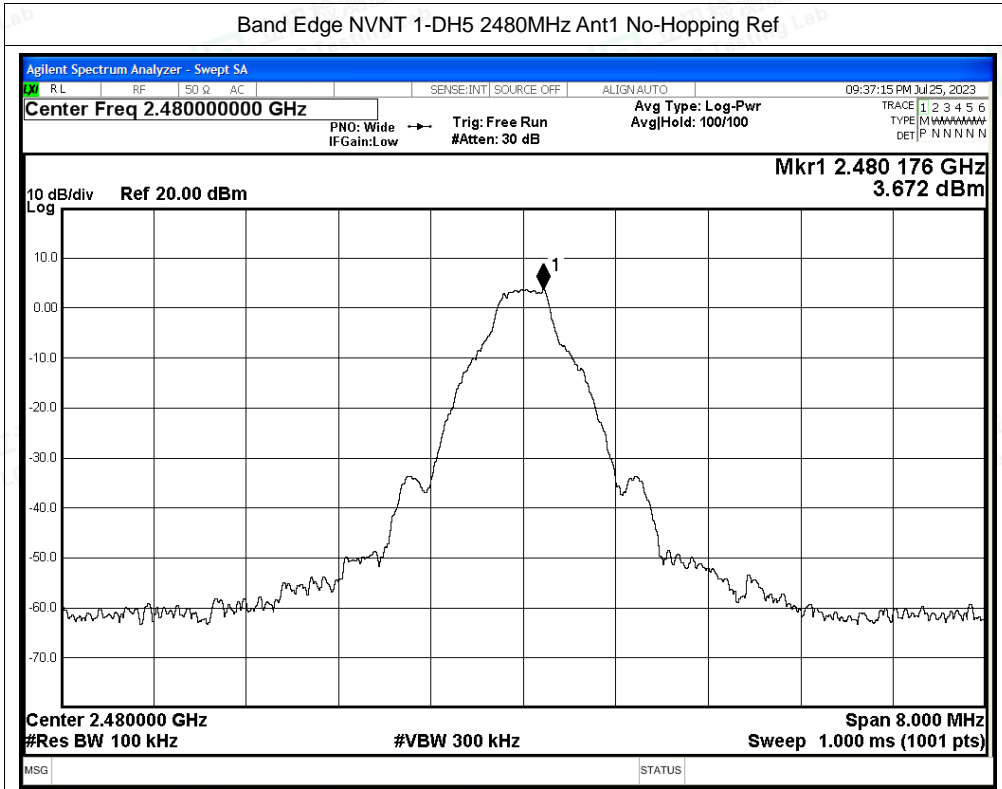


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

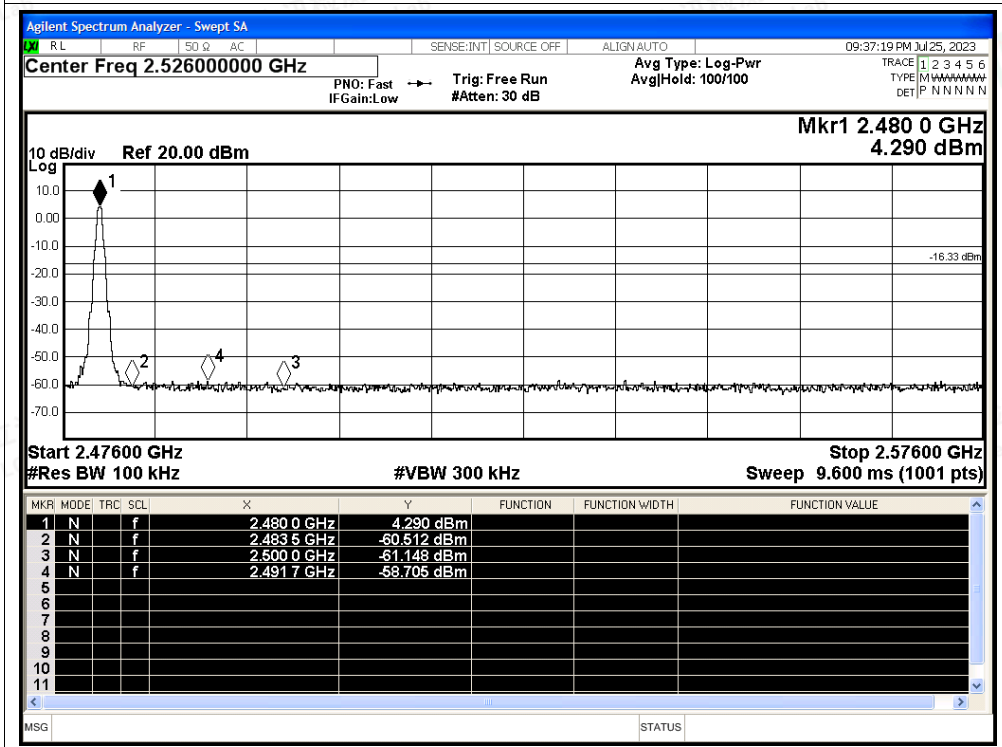




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

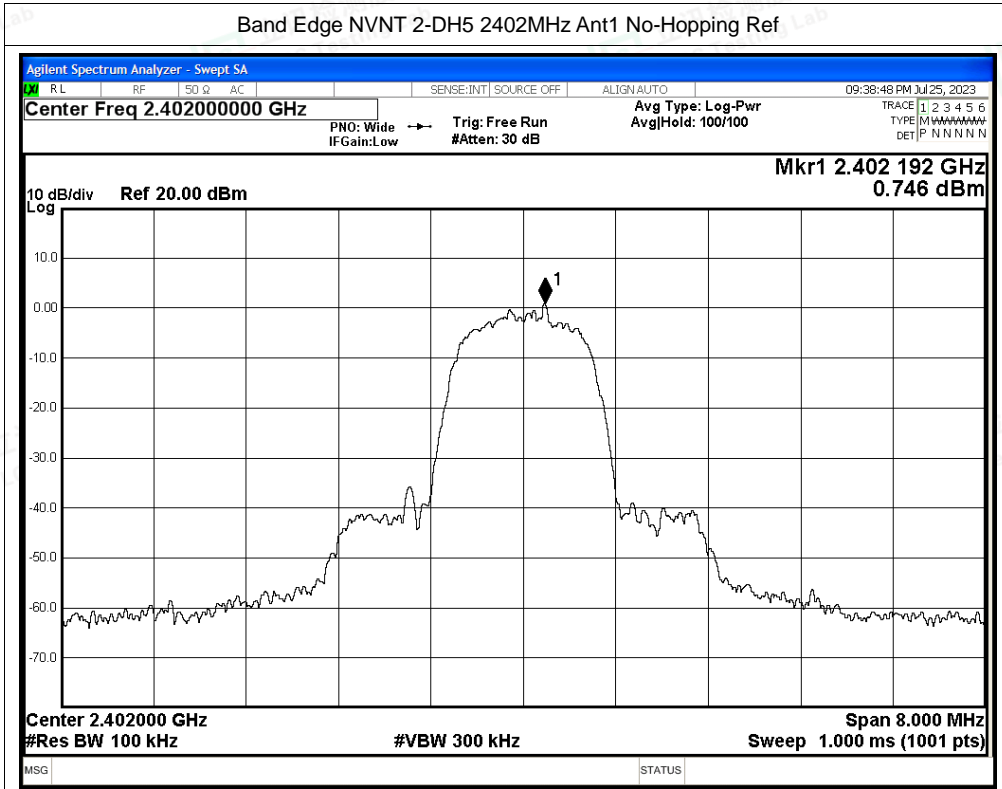


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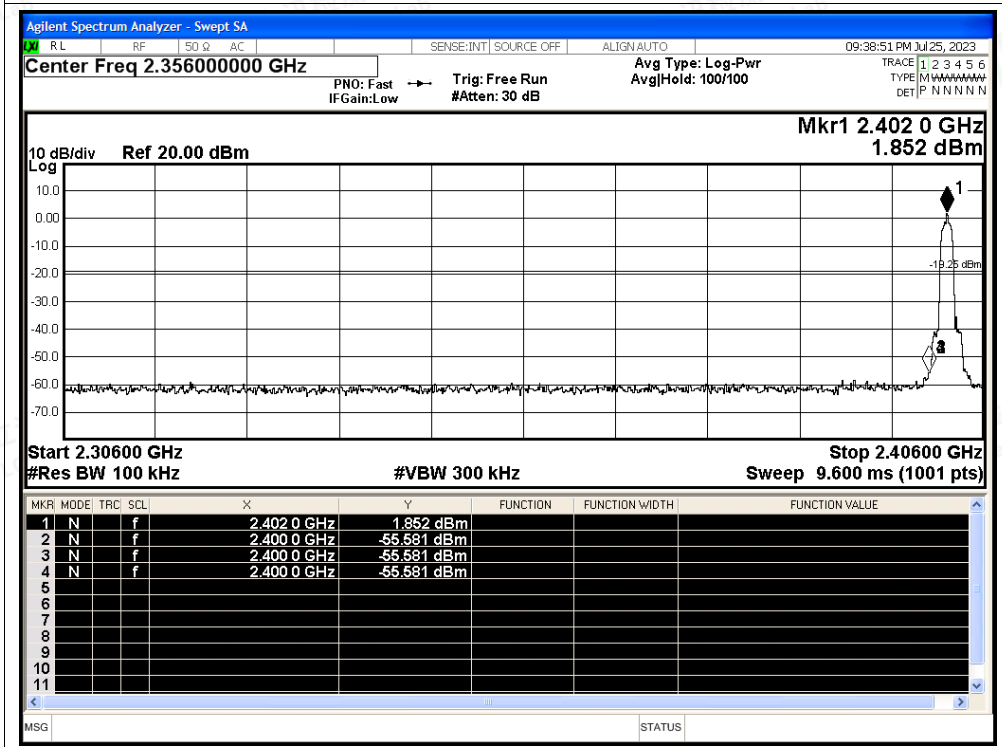




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

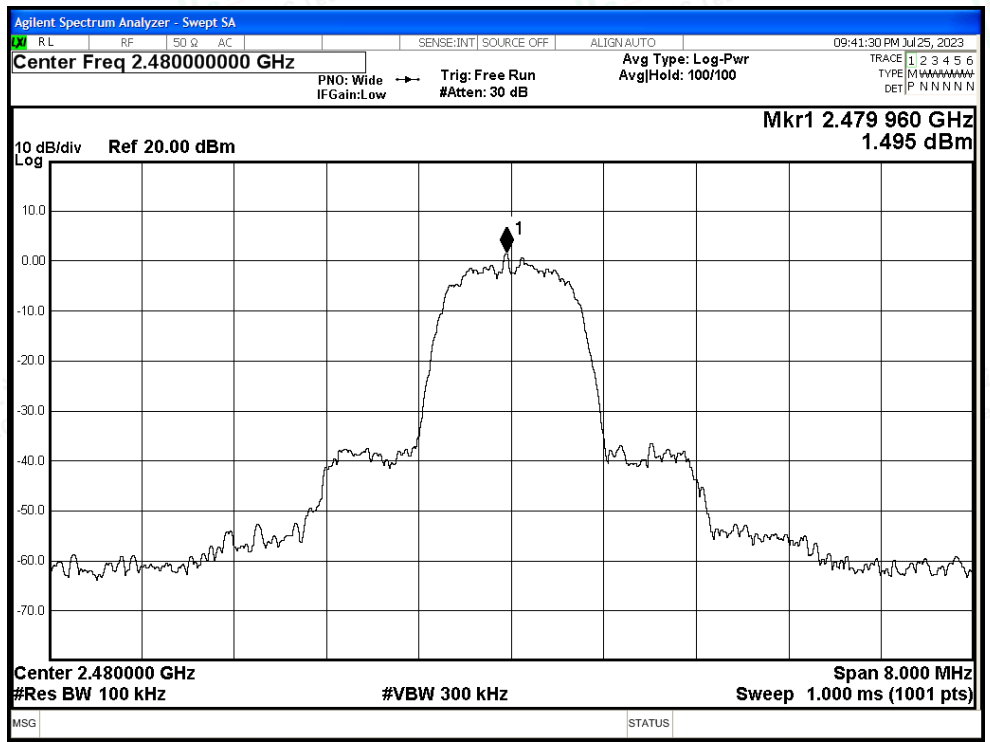


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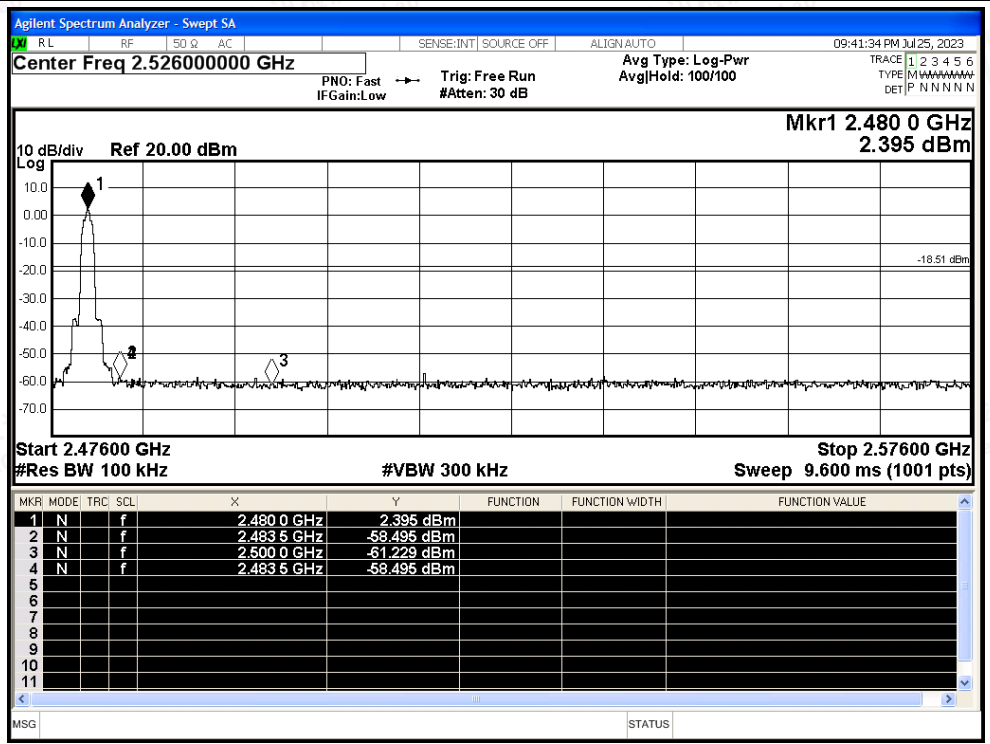




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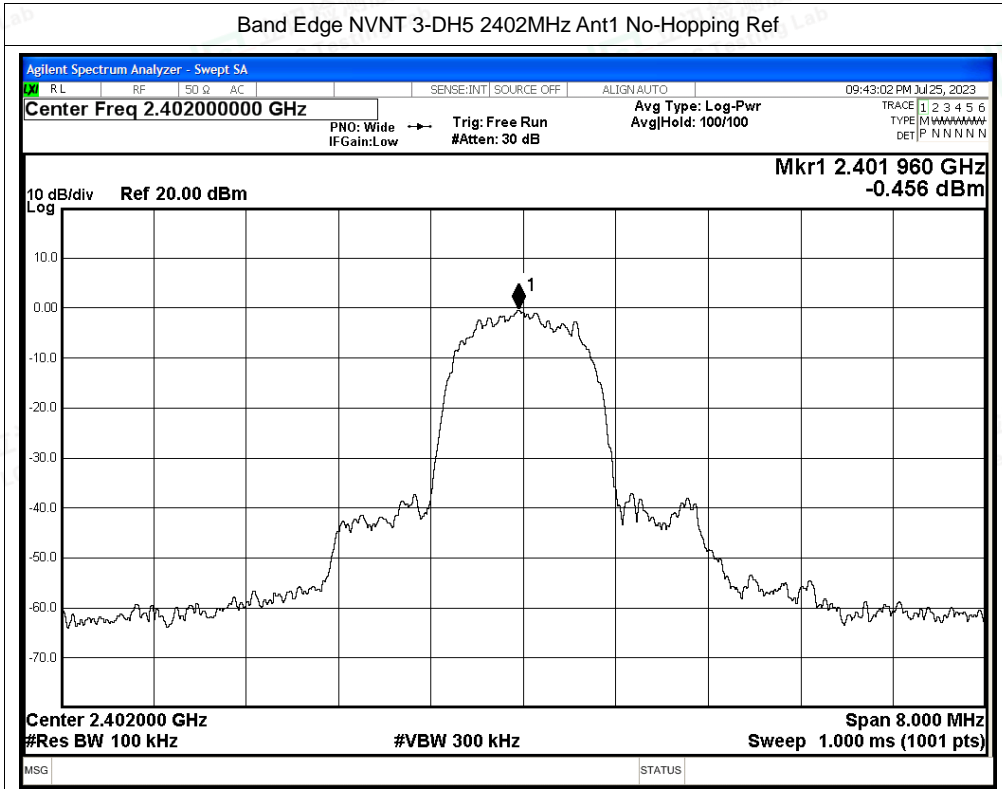


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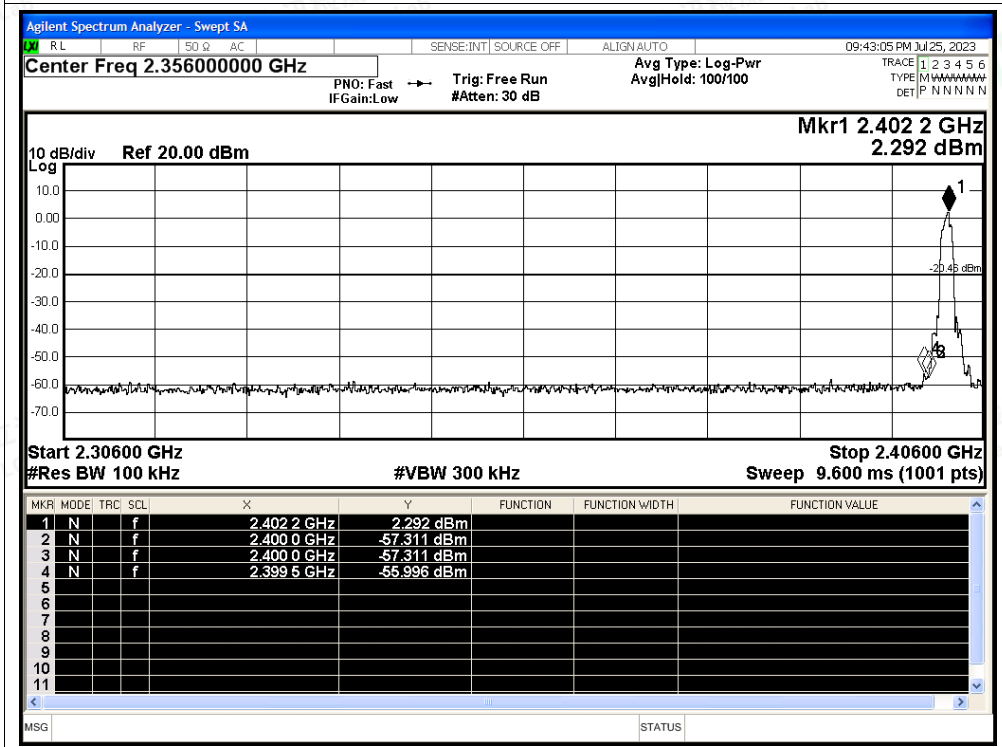




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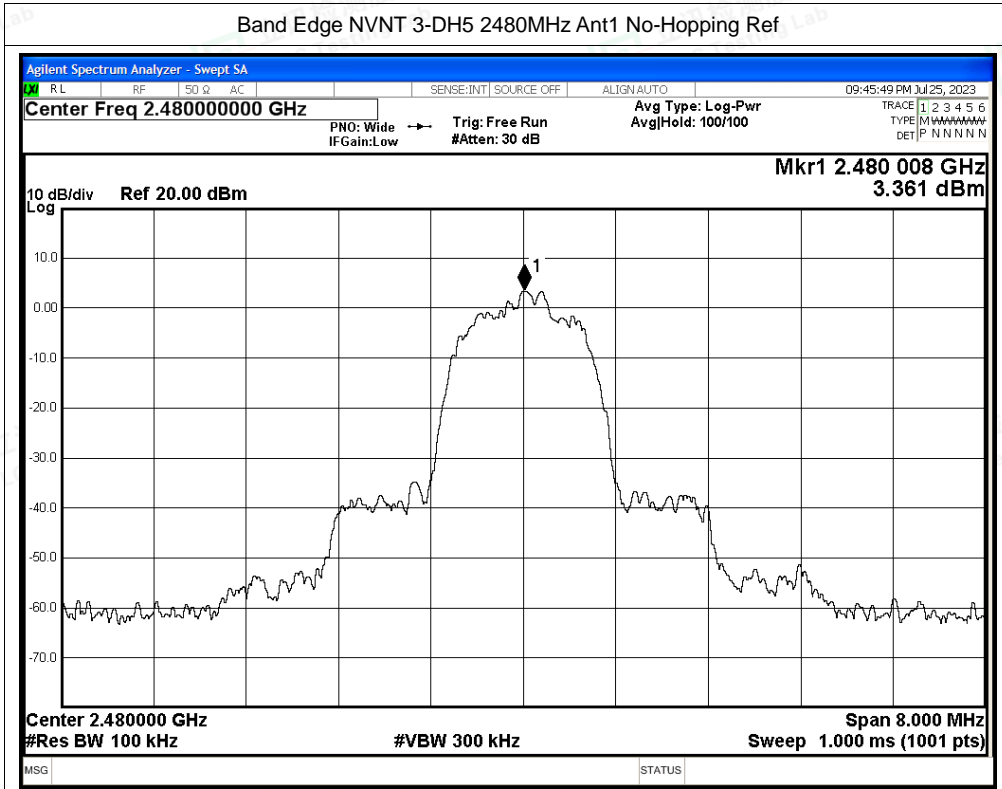


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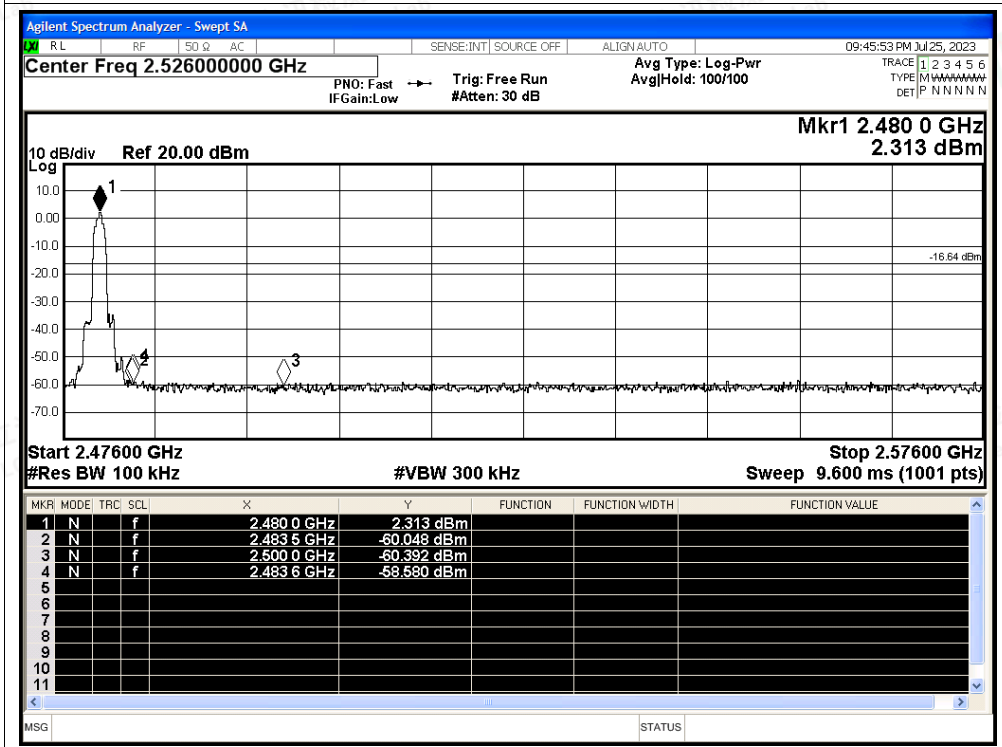




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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	-60.38	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-61.49	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-57.68	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-60.72	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-59.88	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-61.31	-20	Pass

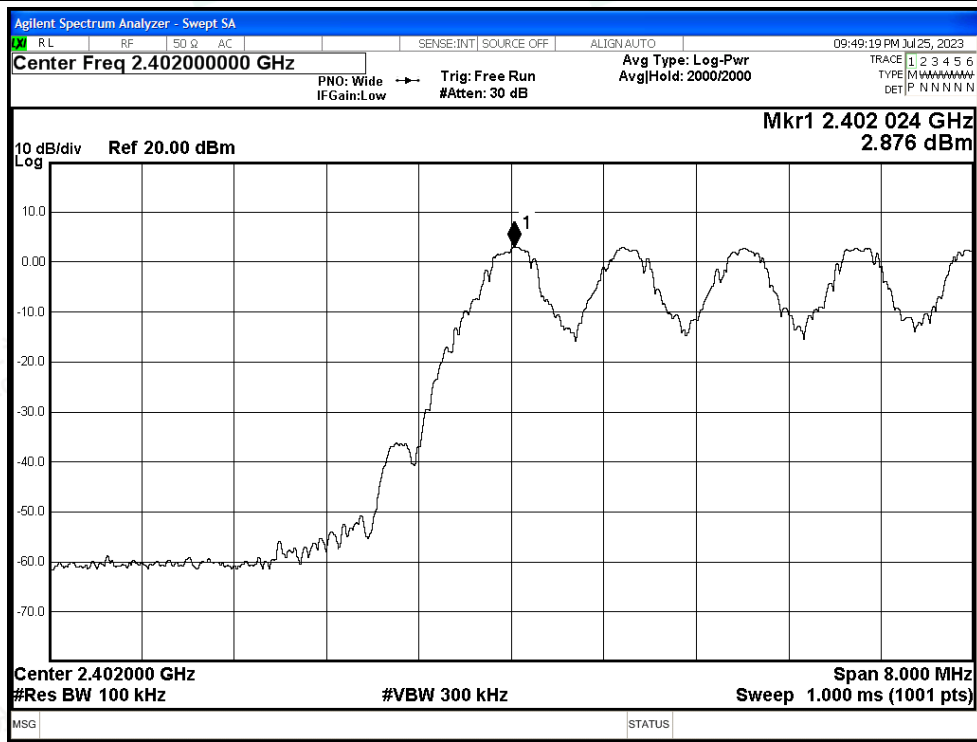


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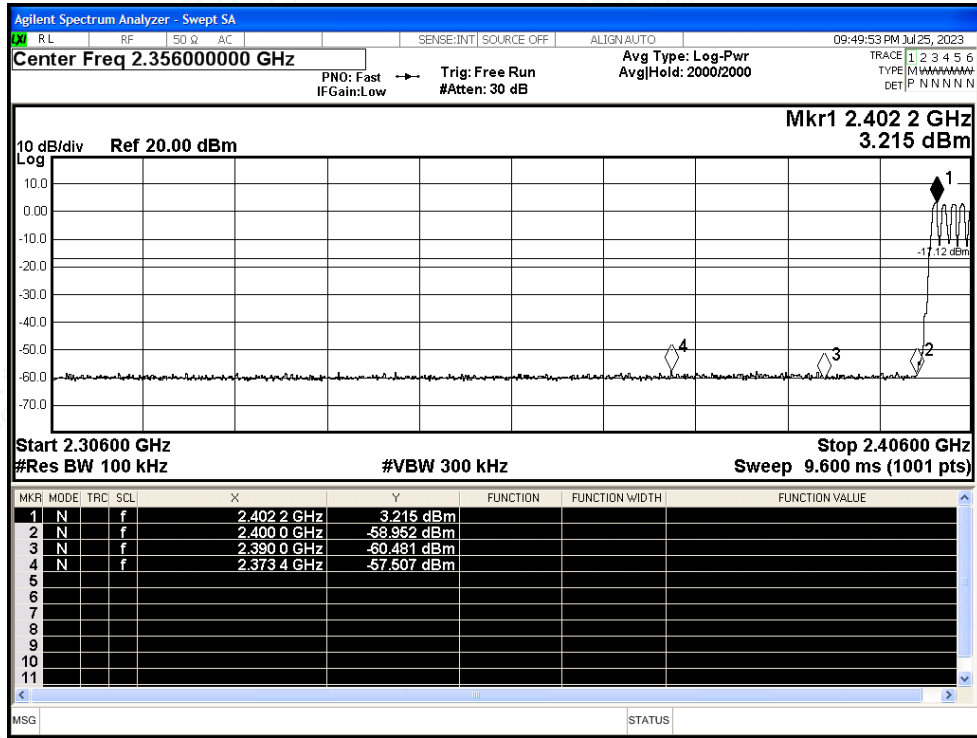


Test Graphs

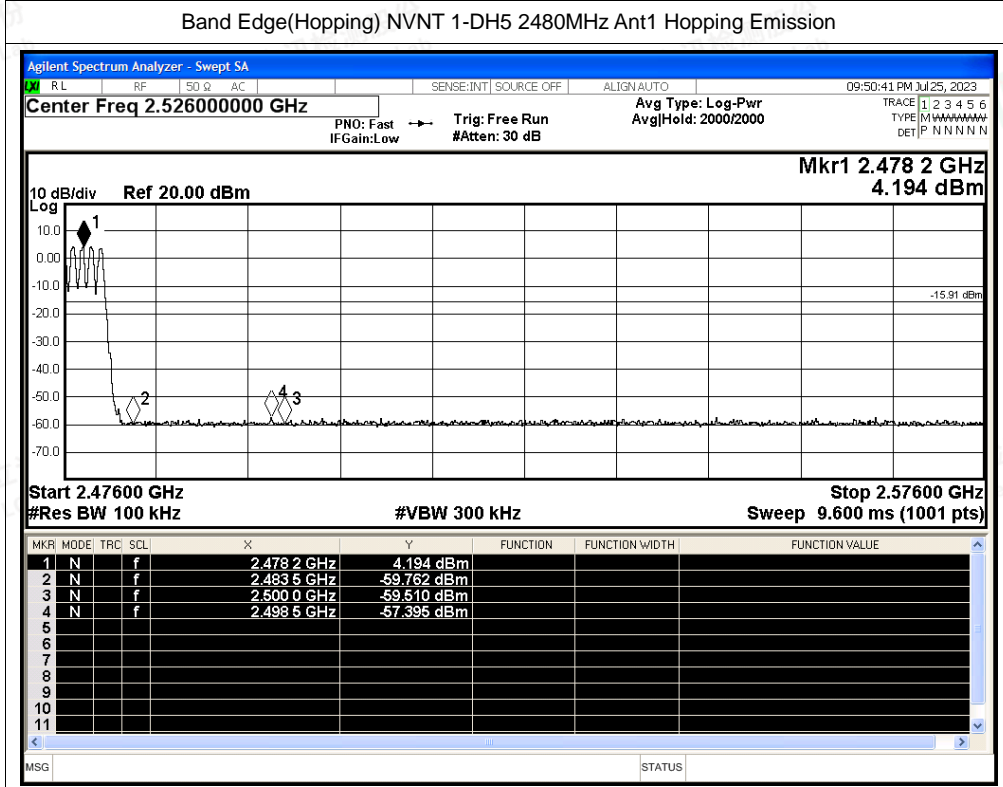
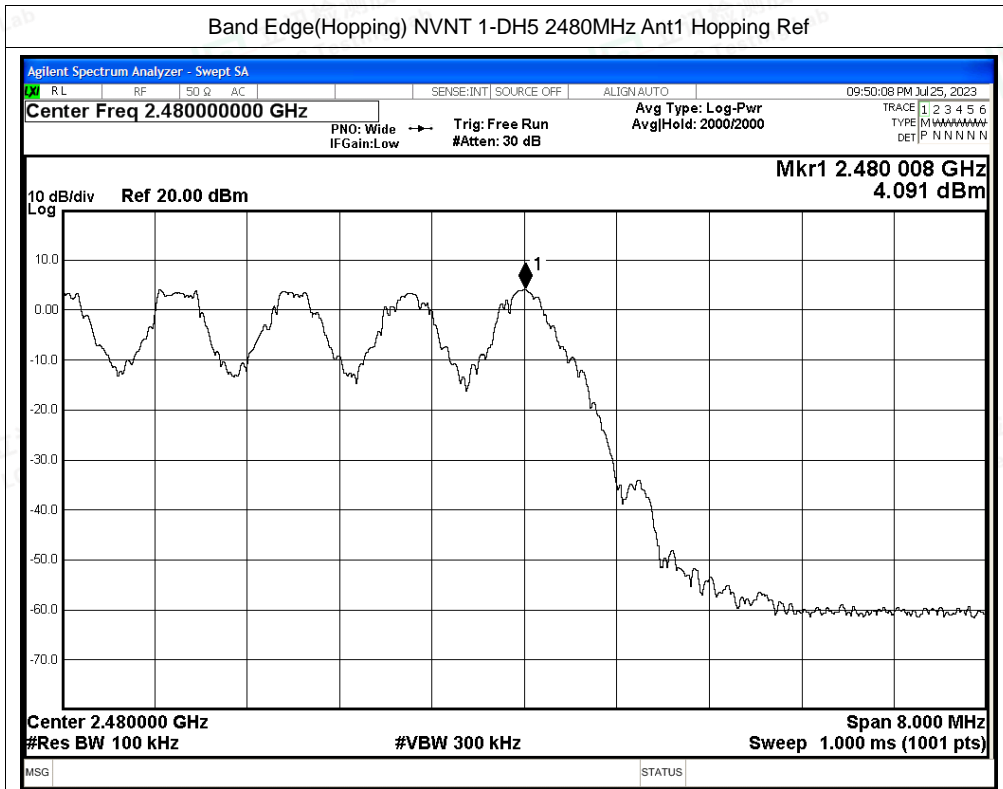
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



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

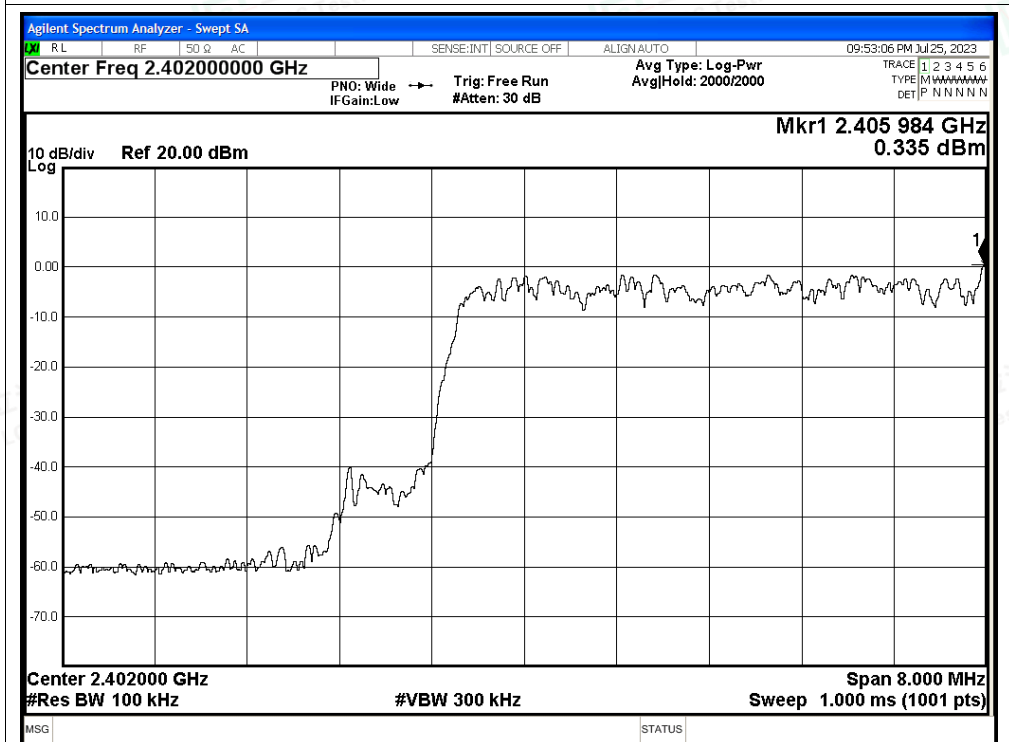




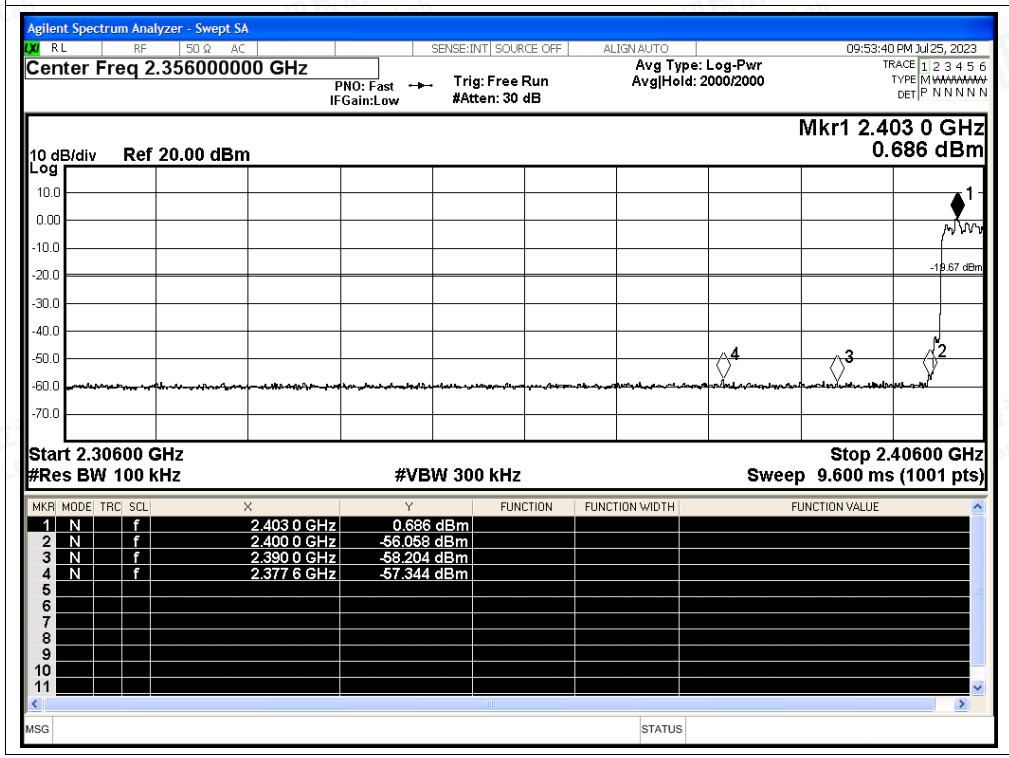




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

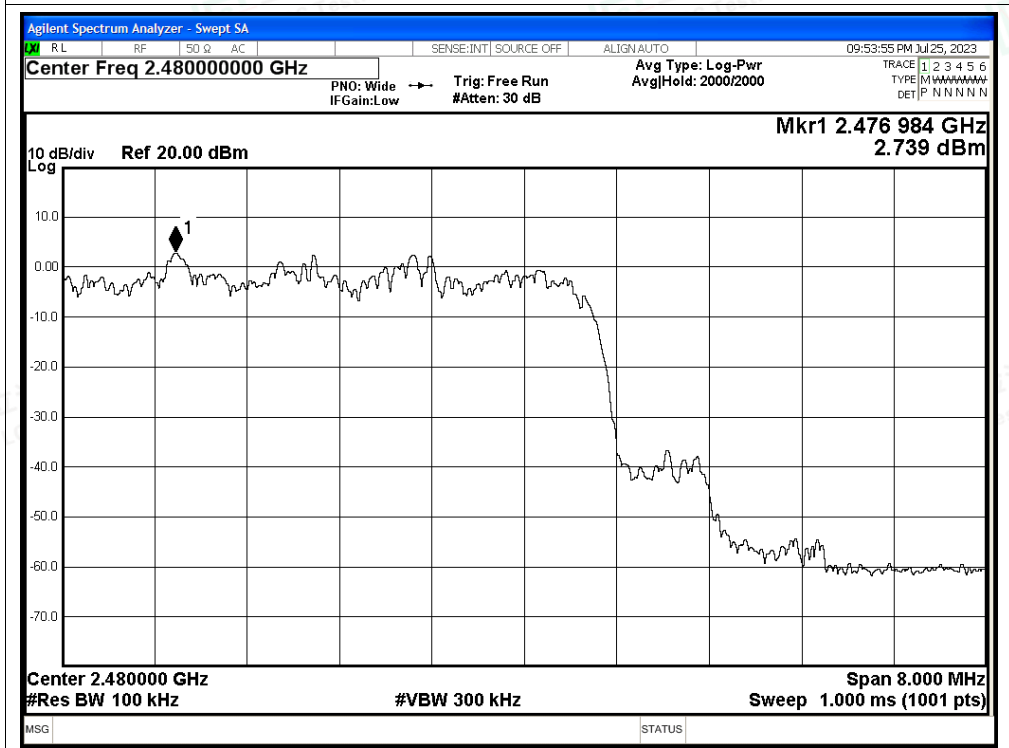


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

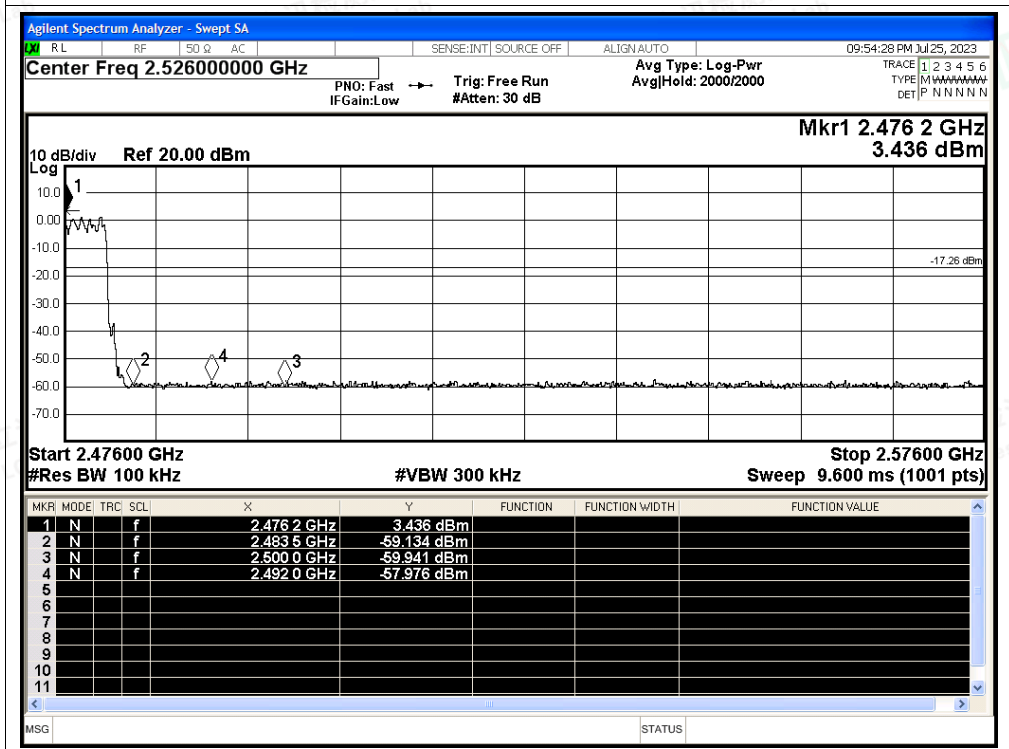




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref

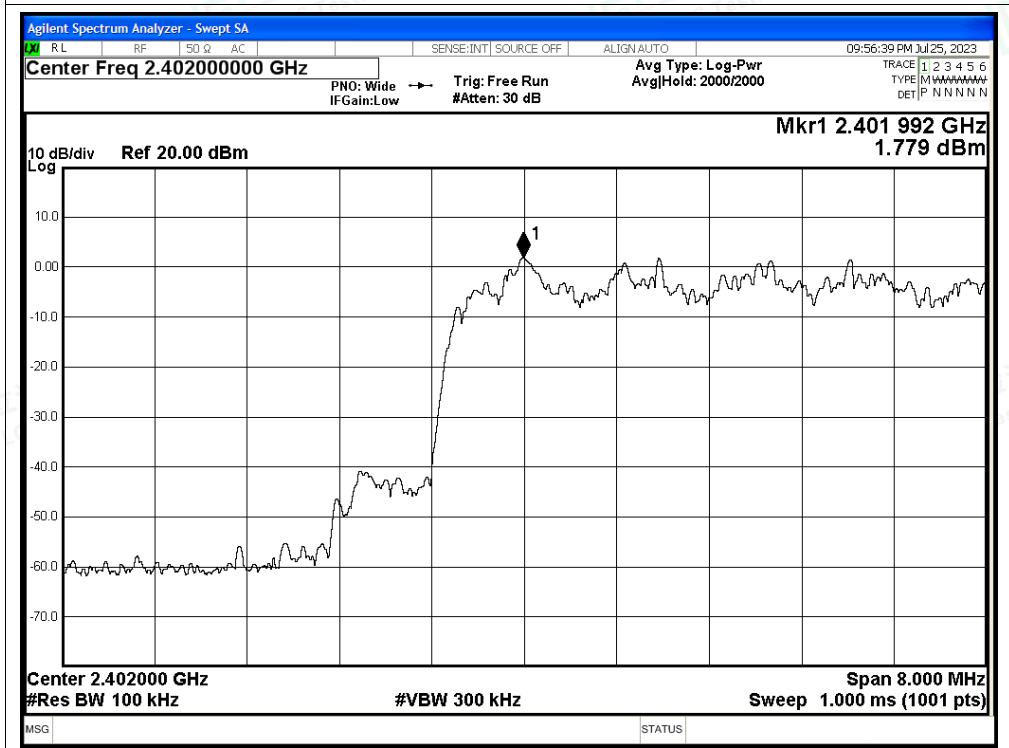


Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission

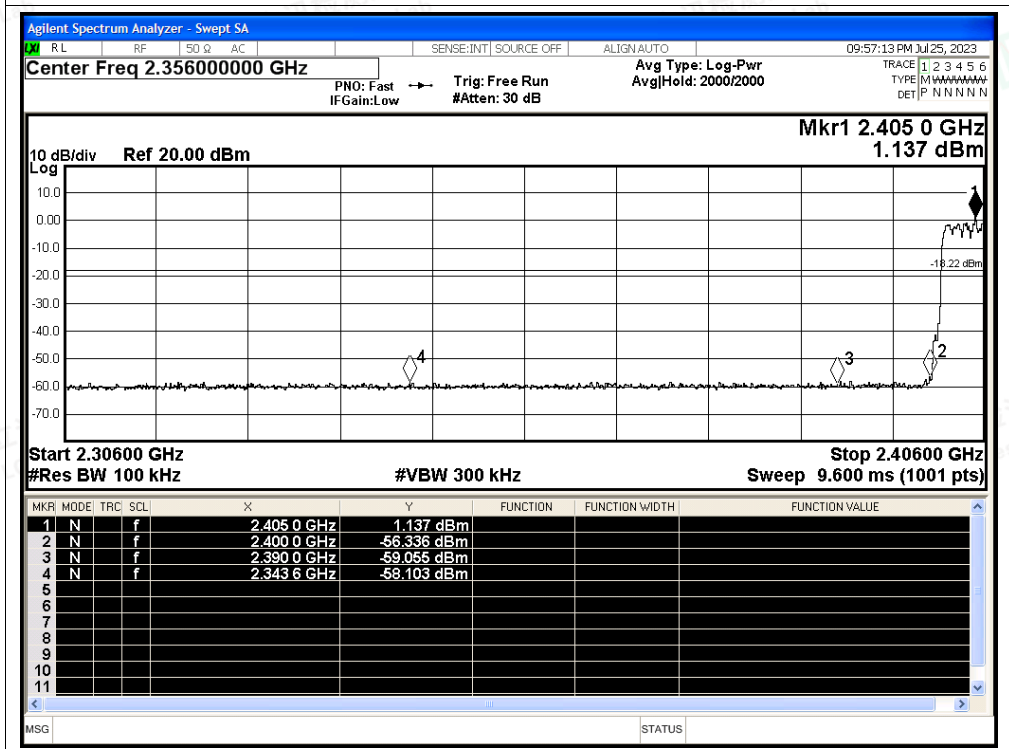




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref

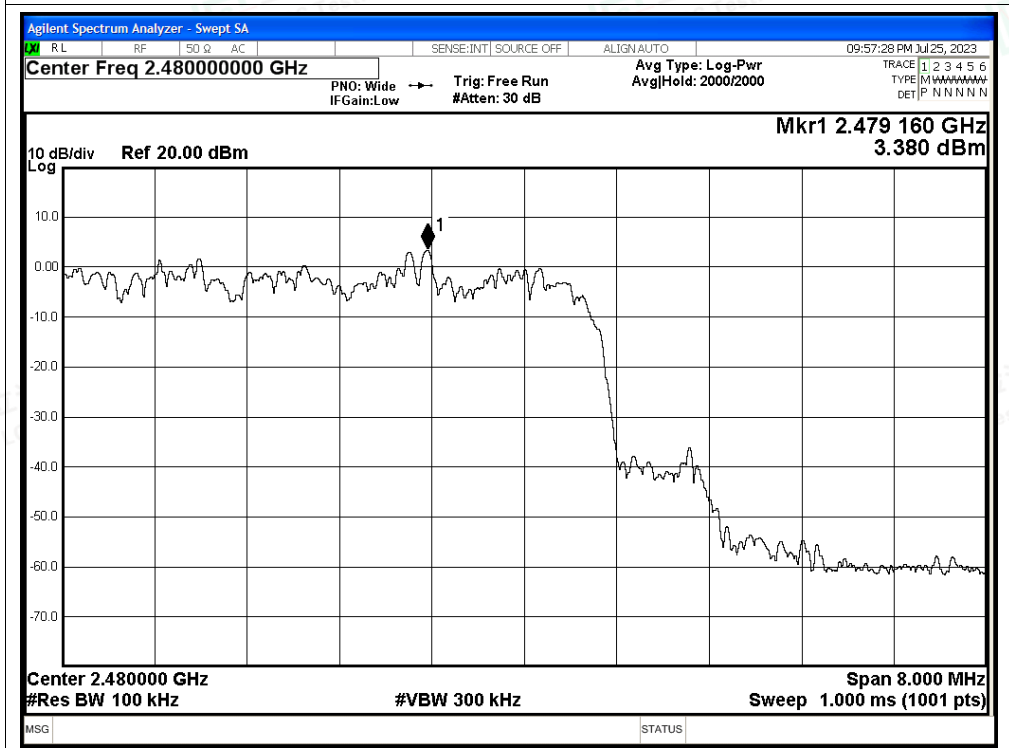


Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission

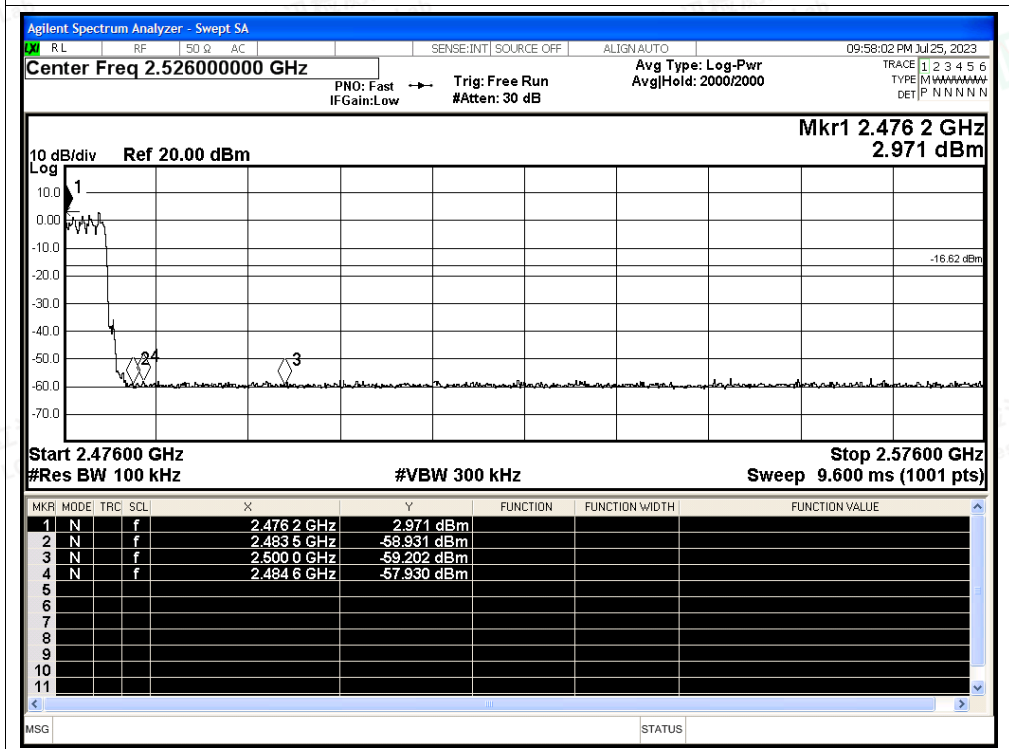




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



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	-60.49	-20	Pass
NVNT	1-DH5	2441	Ant1	-62.21	-20	Pass
NVNT	1-DH5	2480	Ant1	-61.19	-20	Pass
NVNT	2-DH5	2402	Ant1	-59.27	-20	Pass
NVNT	2-DH5	2441	Ant1	-61.1	-20	Pass
NVNT	2-DH5	2480	Ant1	-60.97	-20	Pass
NVNT	3-DH5	2402	Ant1	-59.33	-20	Pass
NVNT	3-DH5	2441	Ant1	-61.19	-20	Pass
NVNT	3-DH5	2480	Ant1	-61.07	-20	Pass

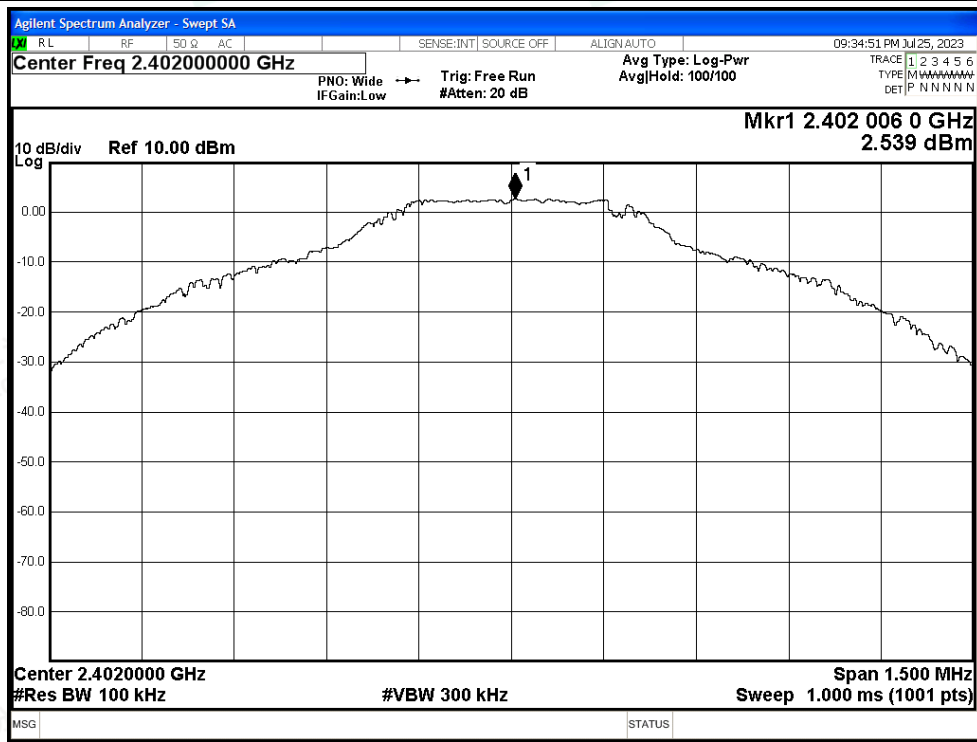


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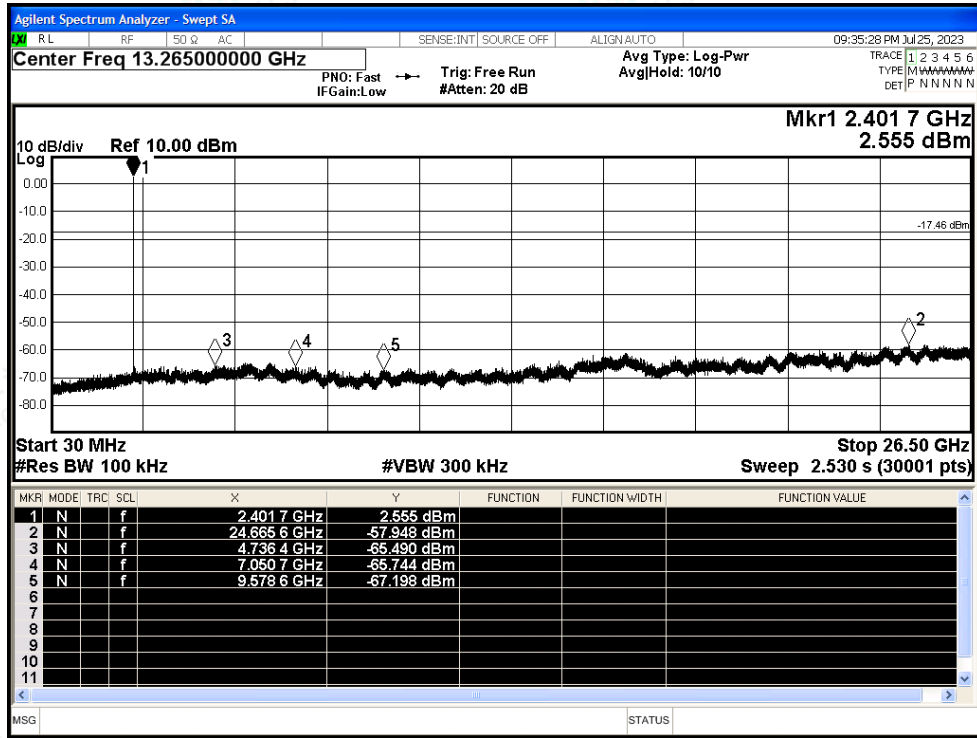


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

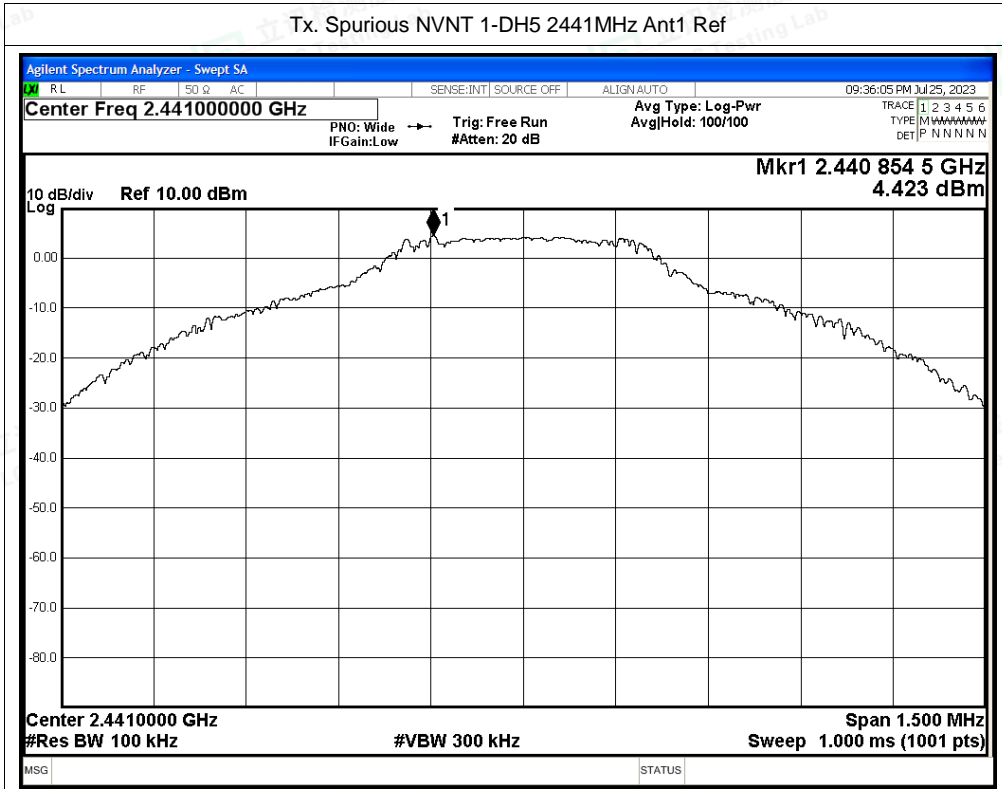


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

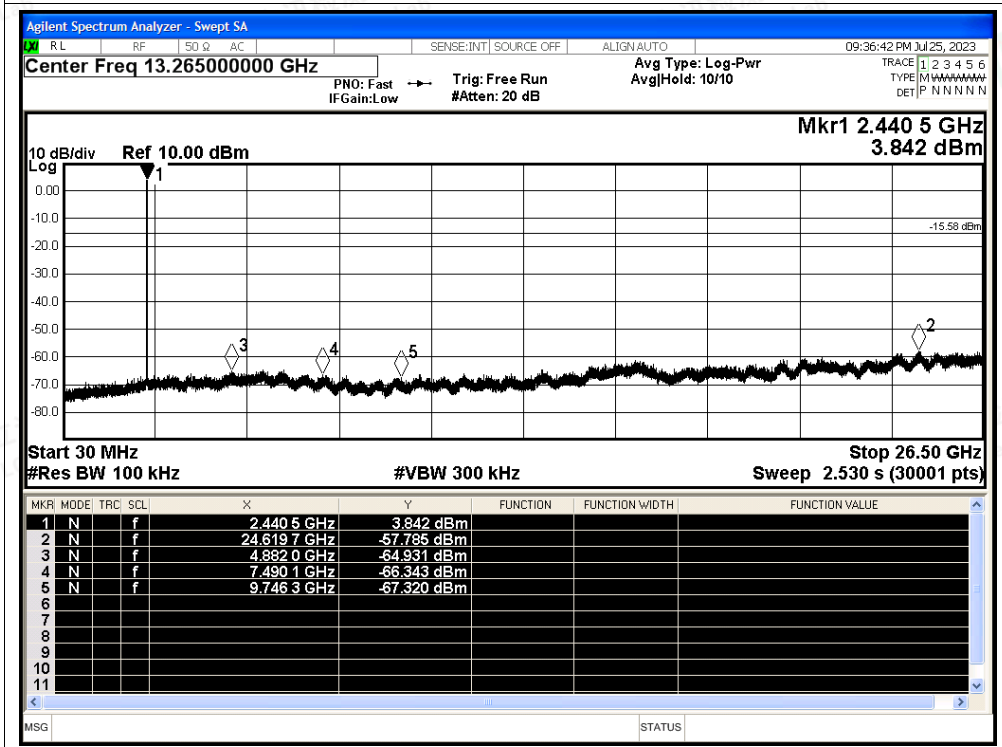




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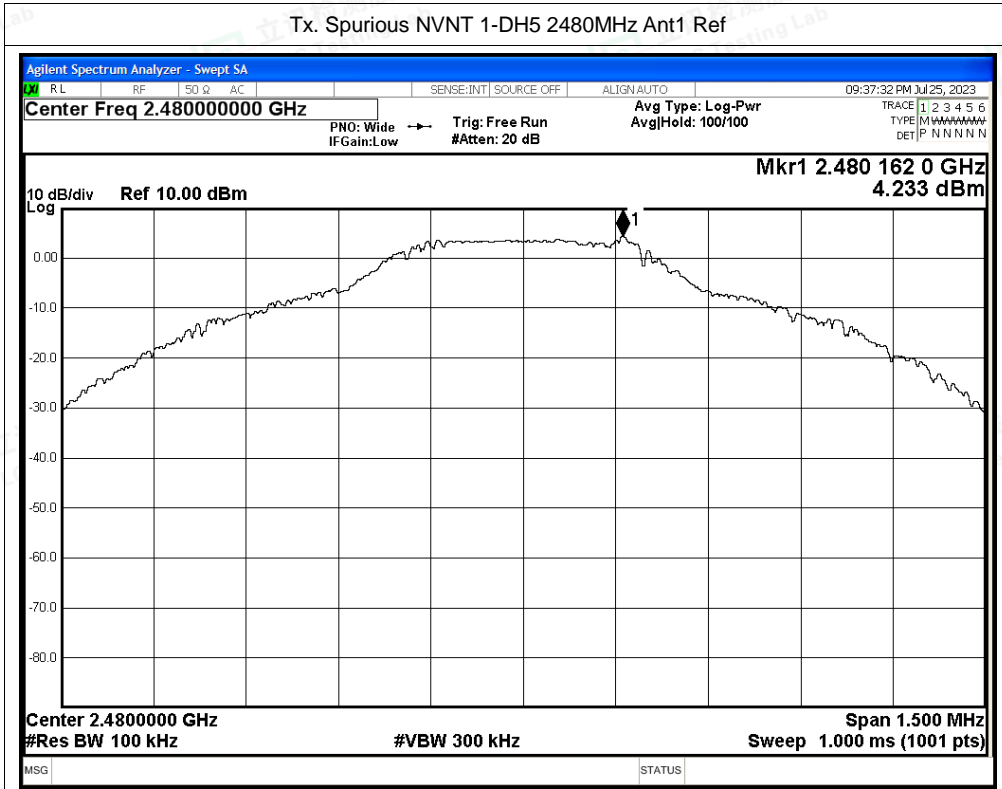
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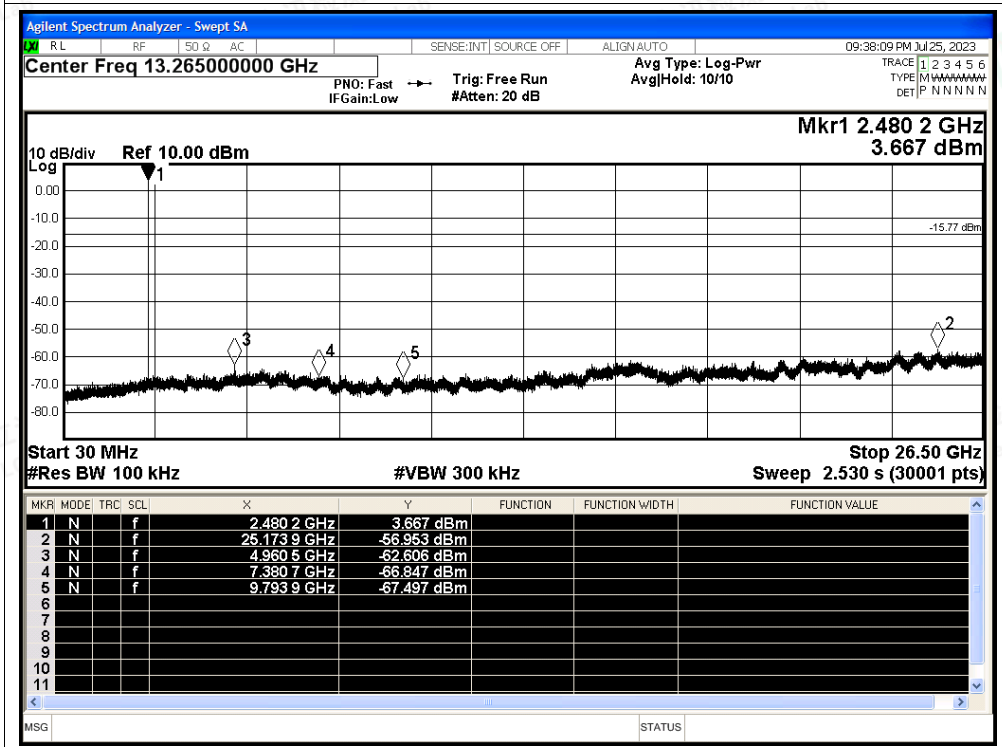




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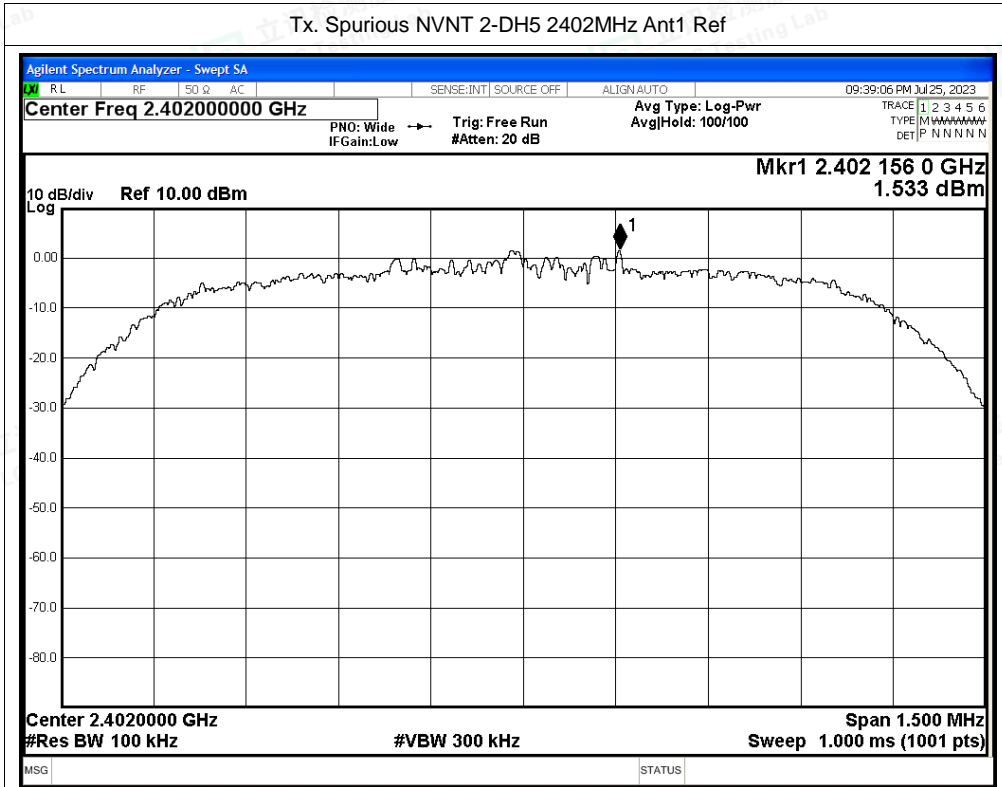


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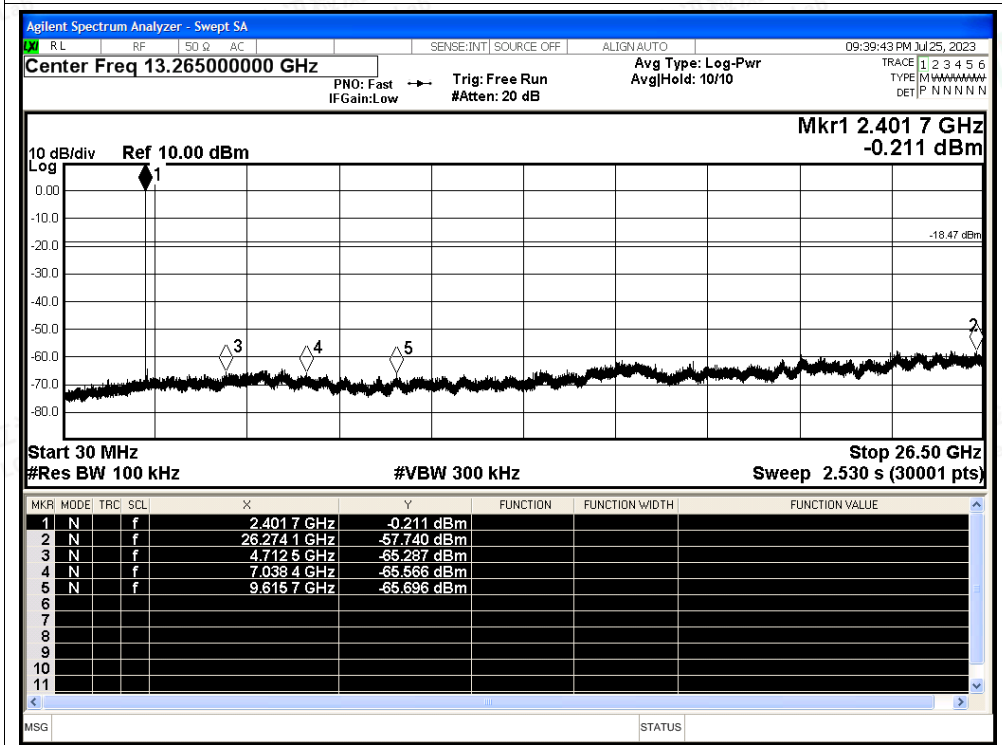




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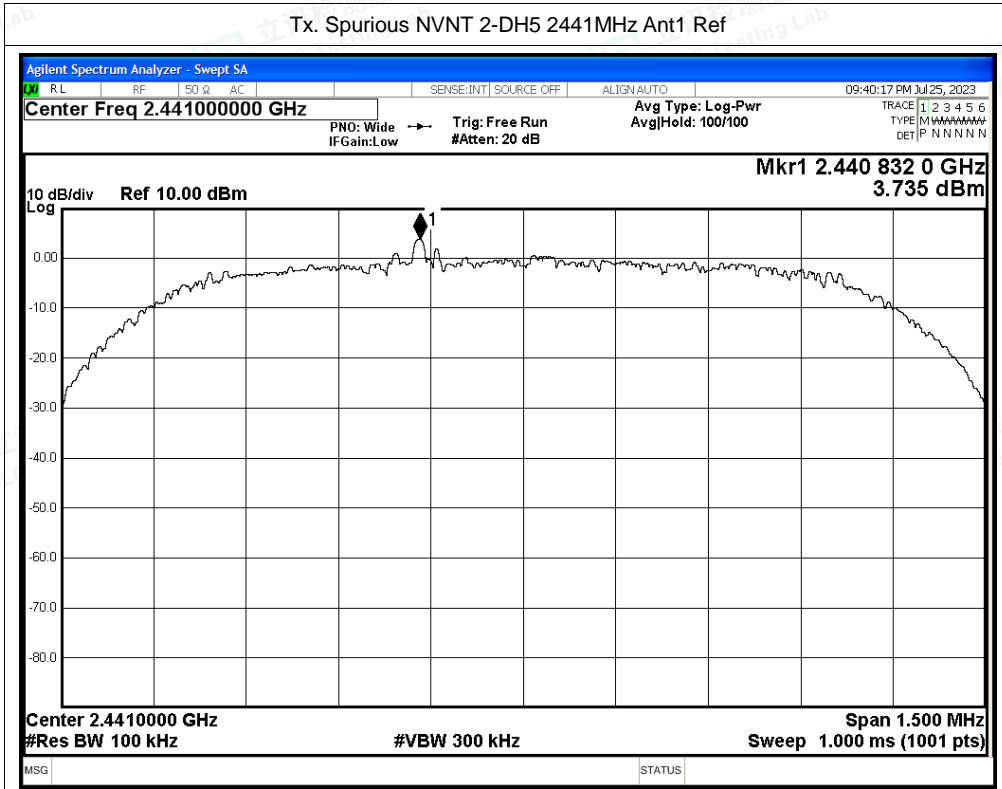


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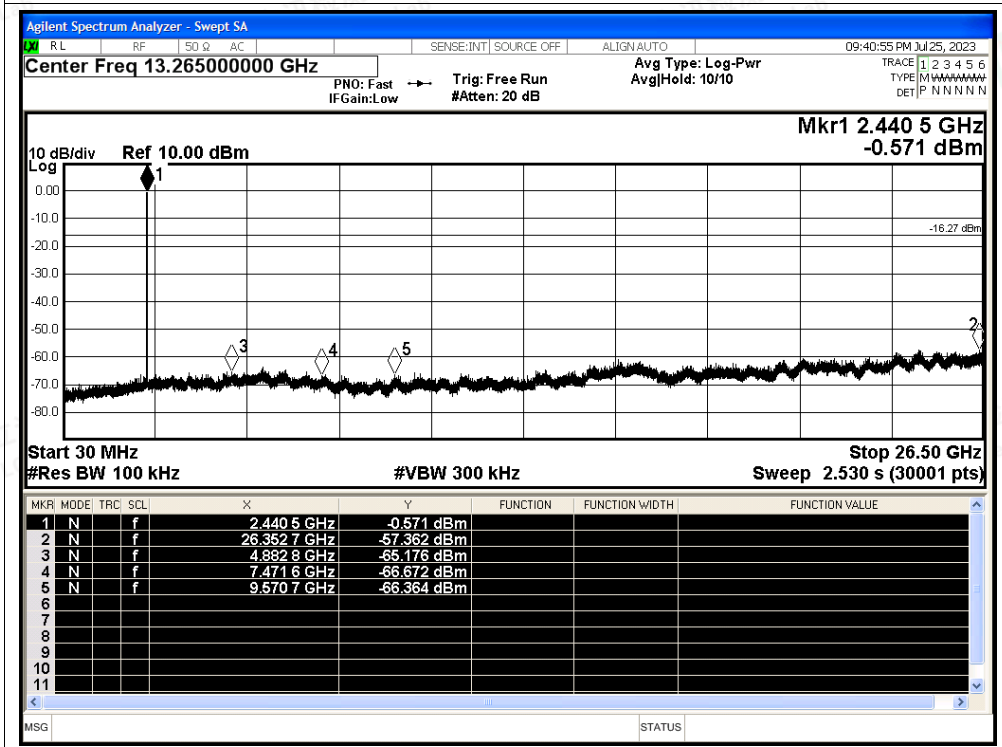




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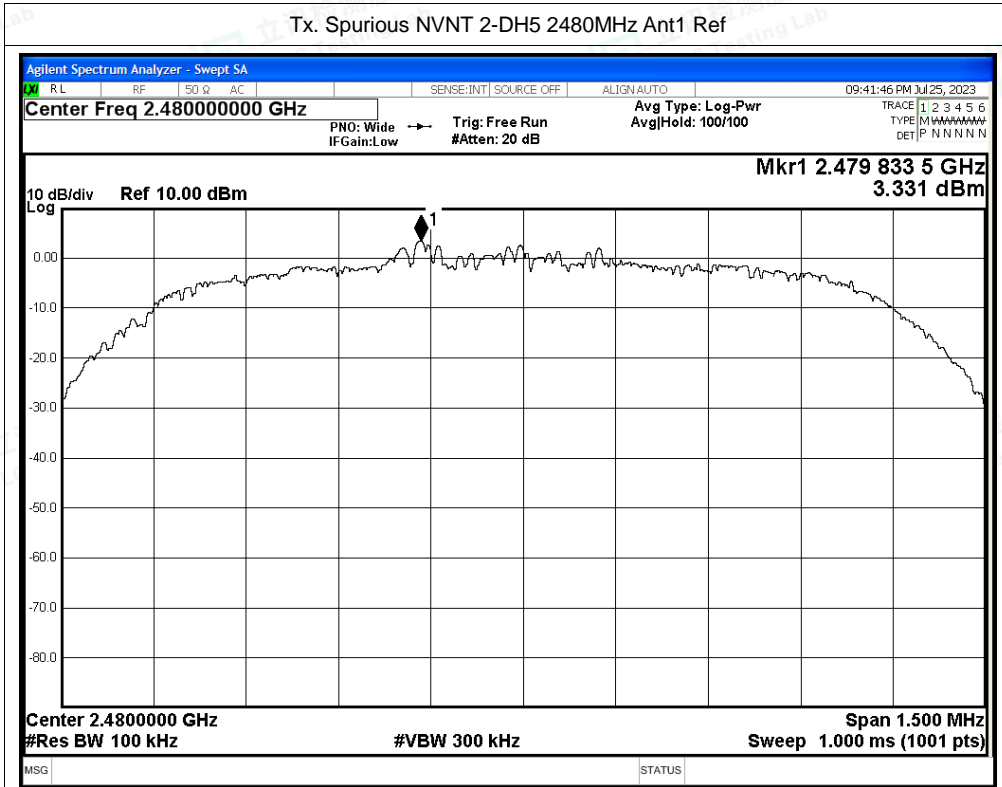


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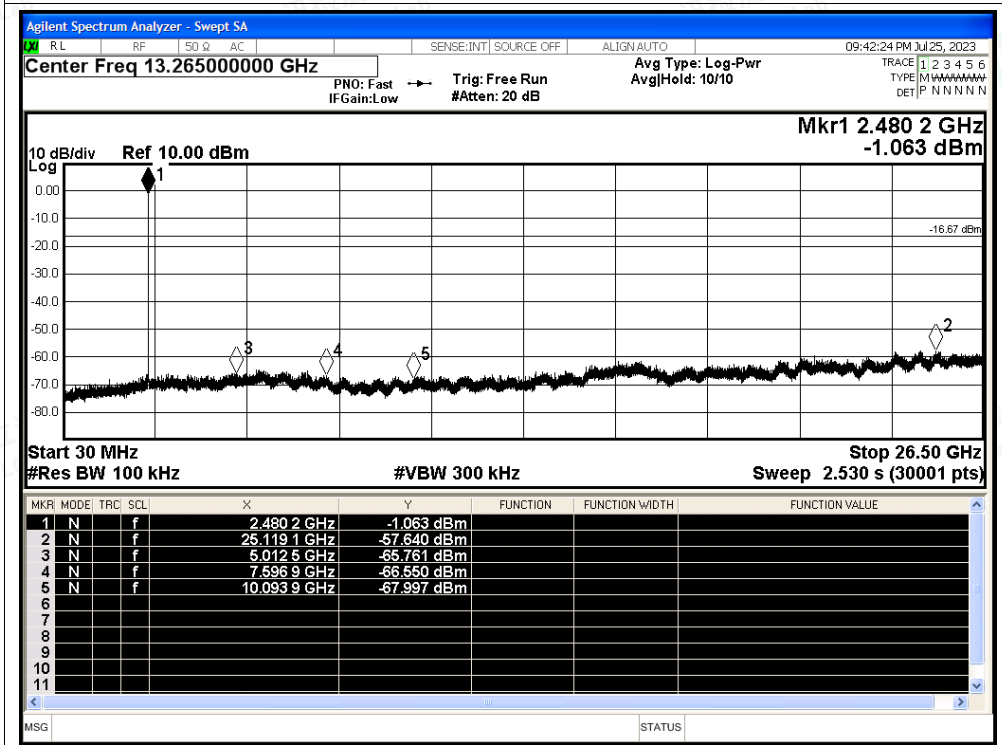




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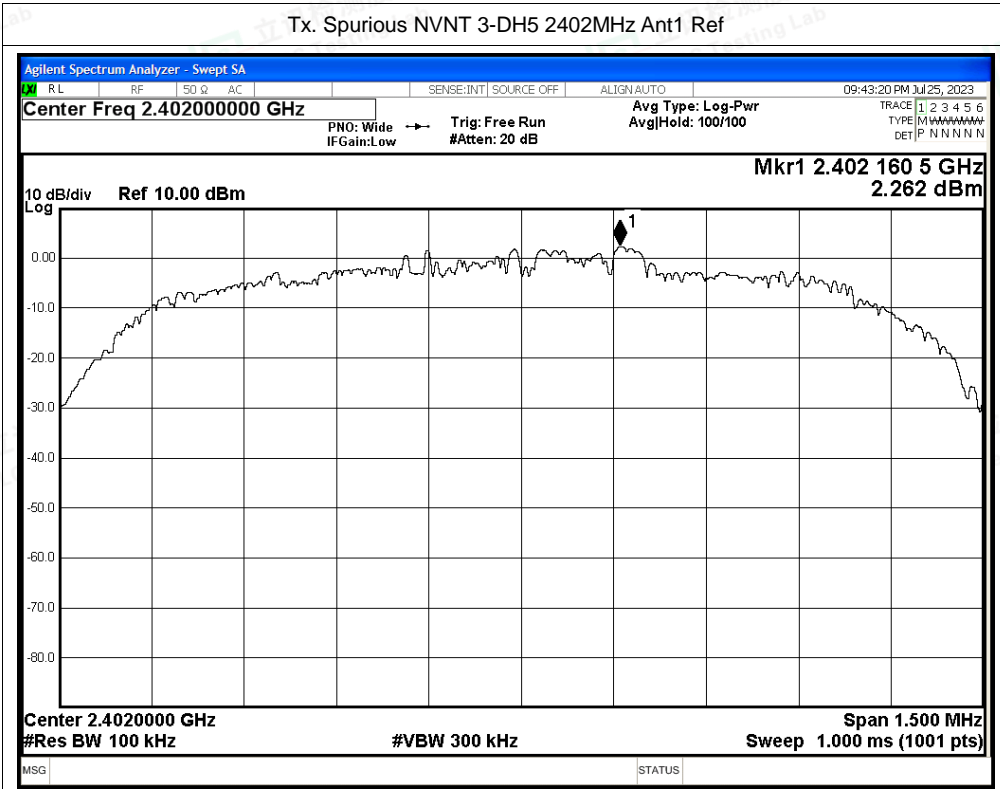


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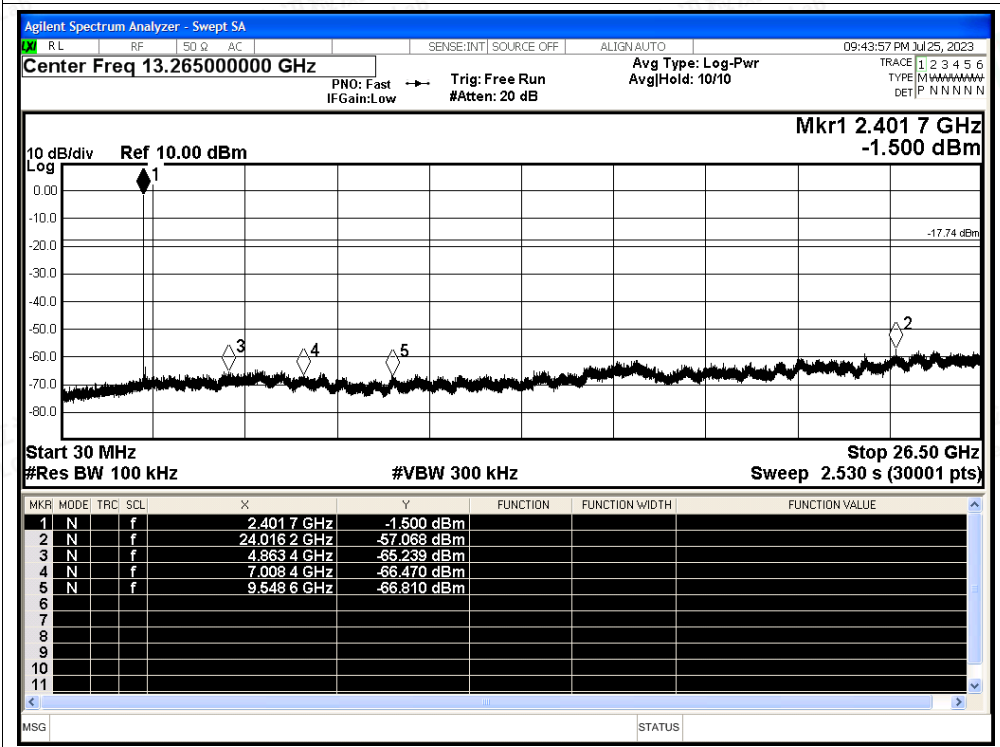




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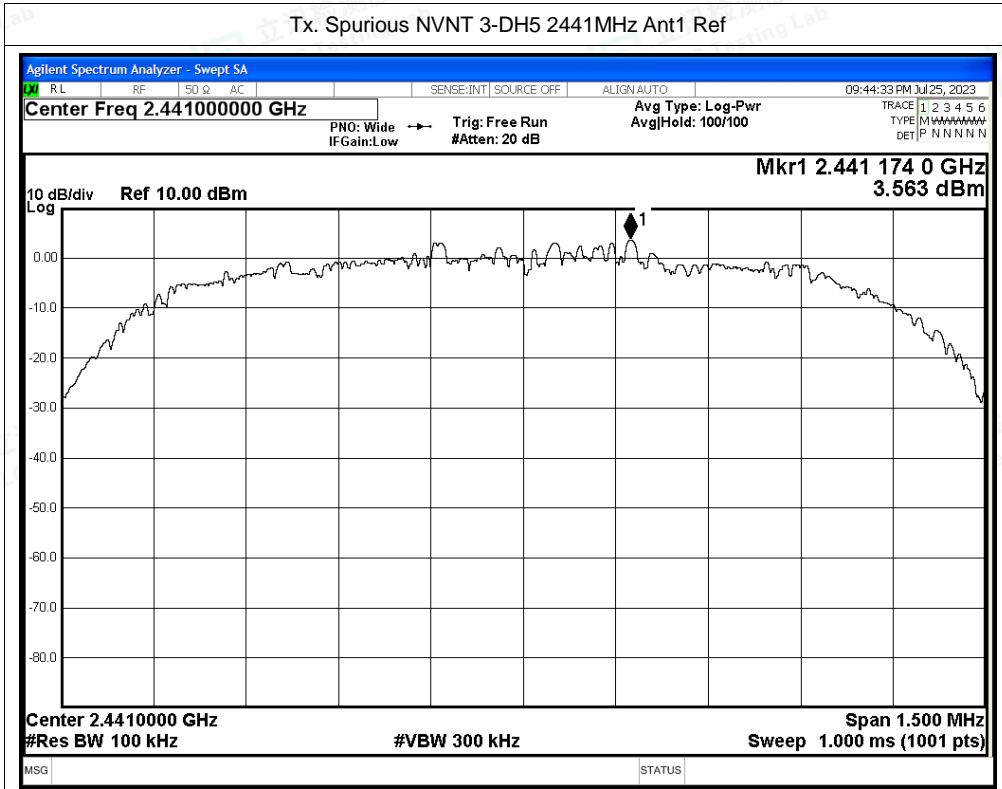


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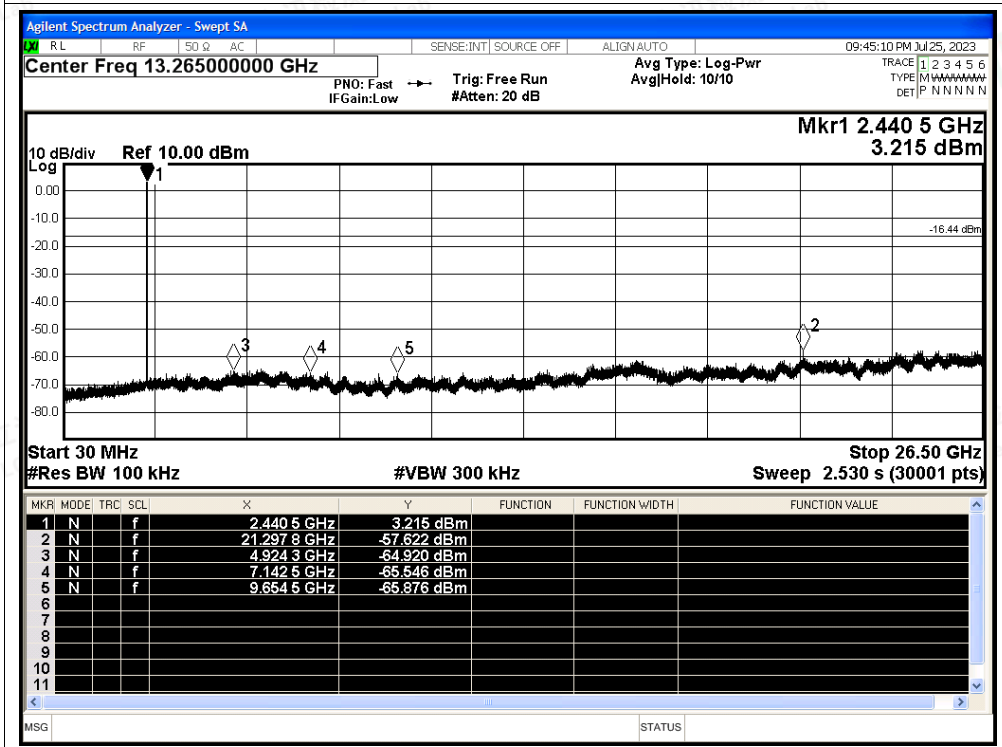




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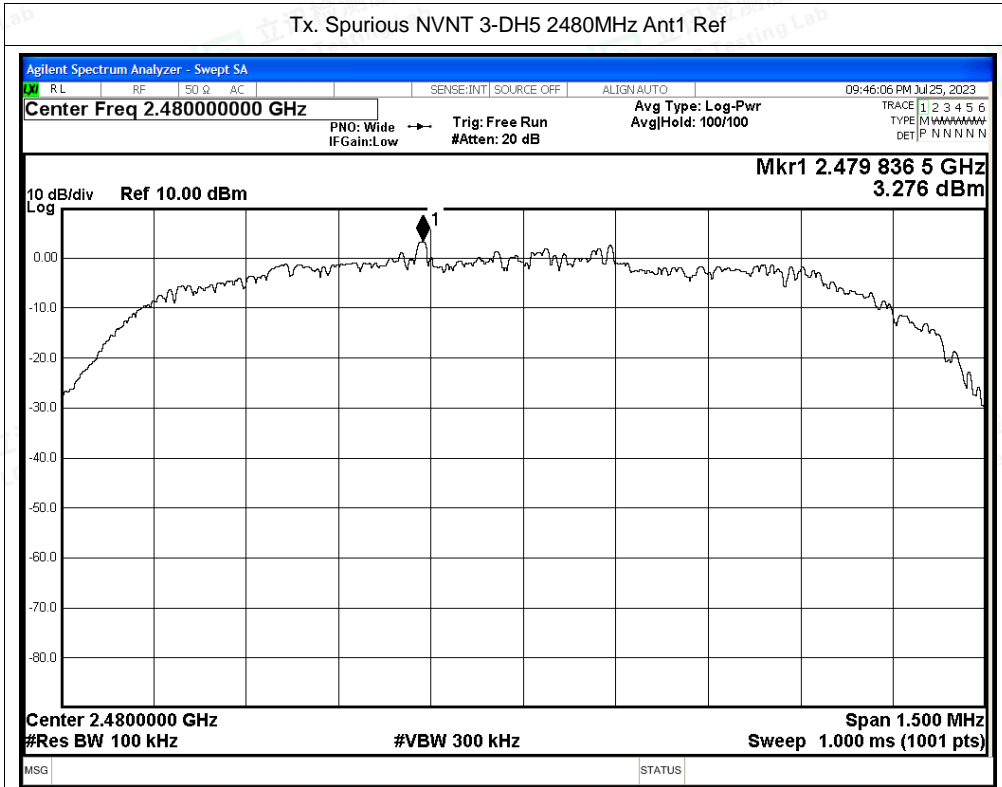


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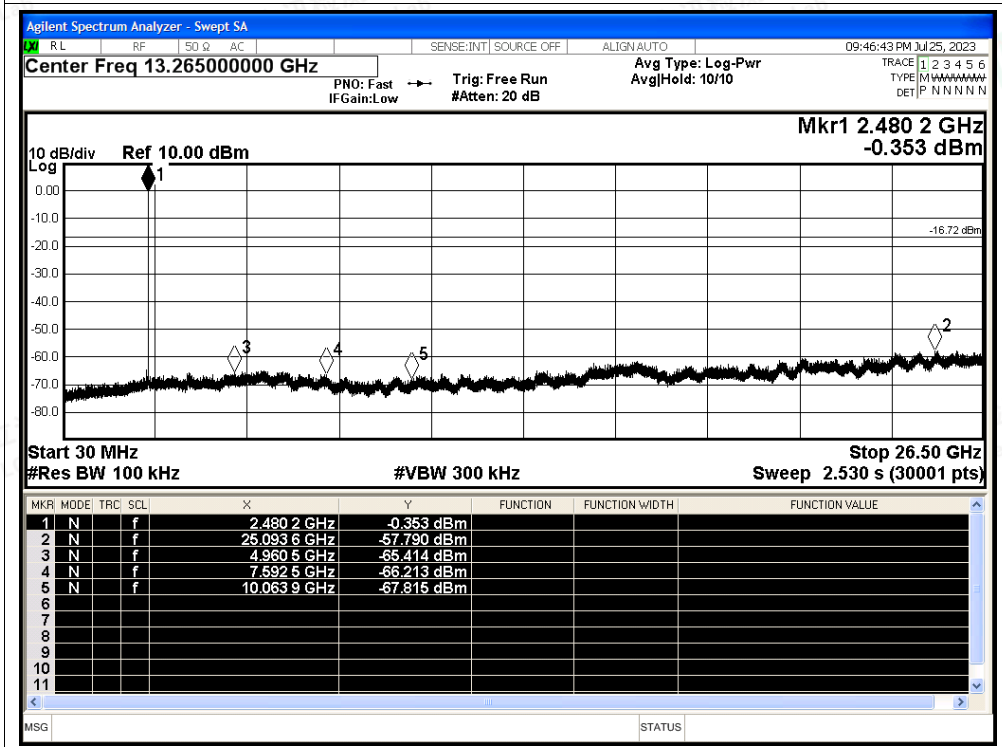




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



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	-52.17	2	45.09	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-62.07	2	35.19	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2376.336	-48.44	2	48.82	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2389.68	-61.52	2	35.74	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-52.43	2	44.83	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-61.7	2	35.56	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-51.3	2	45.96	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-60.57	2	36.69	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.56	-48.07	2	49.19	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.68	-60.53	2	36.73	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-51.98	2	45.28	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-61.77	2	35.49	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-52.54	2	44.72	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-62.16	2	35.1	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2370.096	-49.15	2	48.11	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2382.96	-61.51	2	35.75	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-52.9	2	44.36	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-61.58	2	35.68	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-48.31	2	48.95	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-60.1	2	37.16	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-48.31	2	48.95	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-60.1	2	37.16	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-51.59	2	45.67	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-61.64	2	35.62	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-52.95	2	44.31	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-62.04	2	35.22	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2385.36	-49.62	2	47.64	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2382.672	-61.57	2	35.69	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.81	2	45.45	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-61.65	2	35.61	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.13	2	48.13	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-60.19	2	37.07	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.608	-48.56	2	48.7	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.56	-60.18	2	37.08	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-51.27	2	45.99	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-61.72	2	35.54	Average	54	Pass



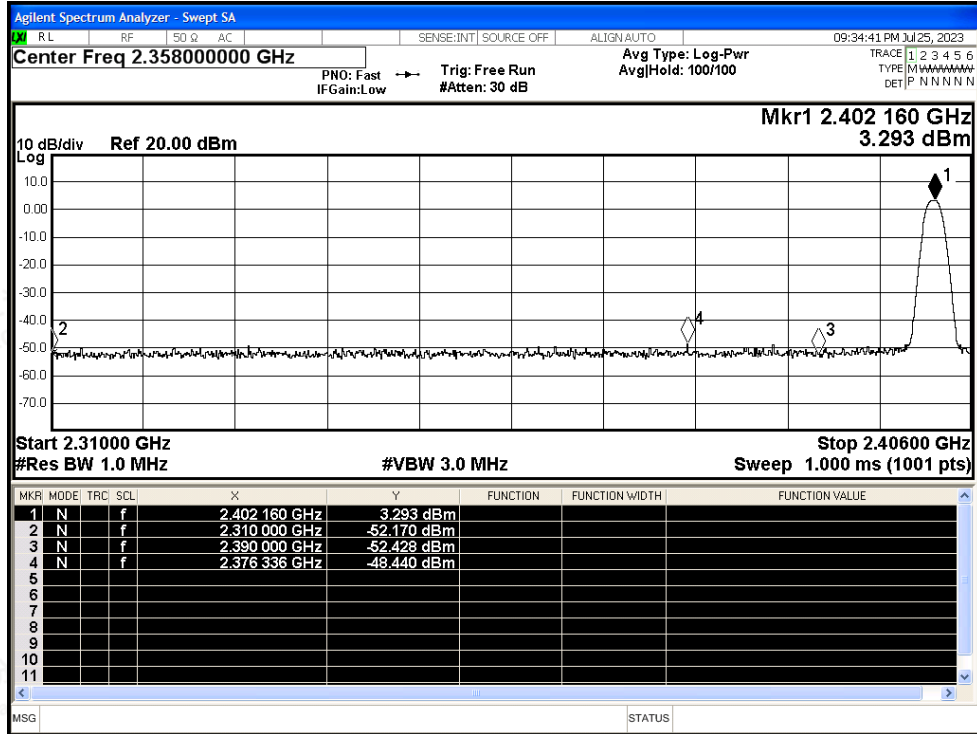
Shenzhen LCS Compliance Testing Laboratory Ltd.  
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
 Scan code to check authenticity



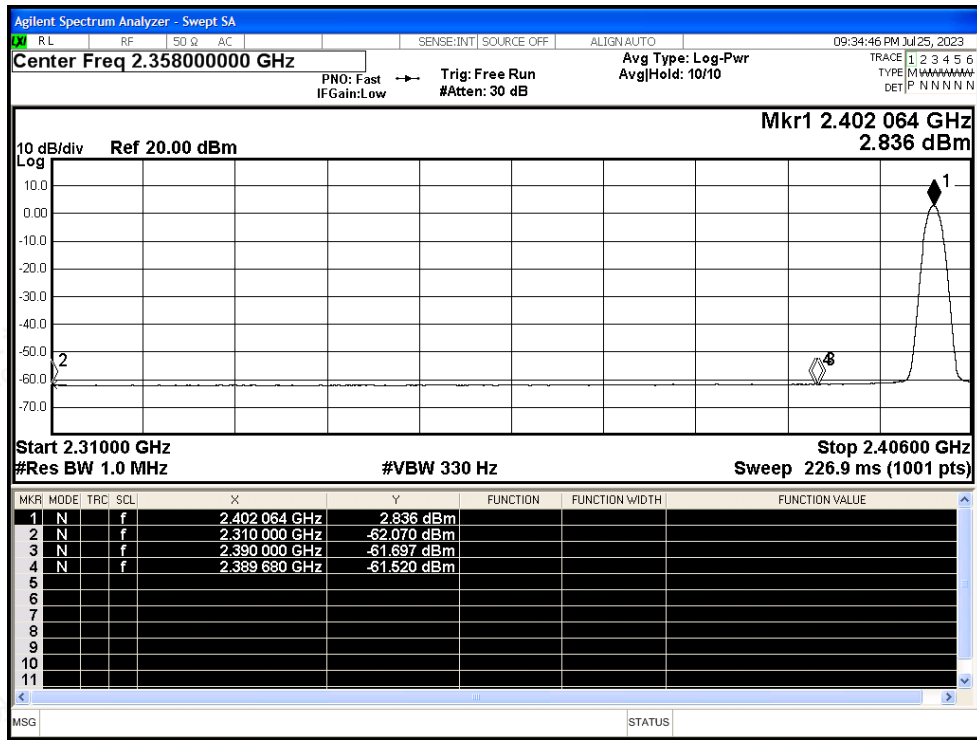


Test Graphs

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

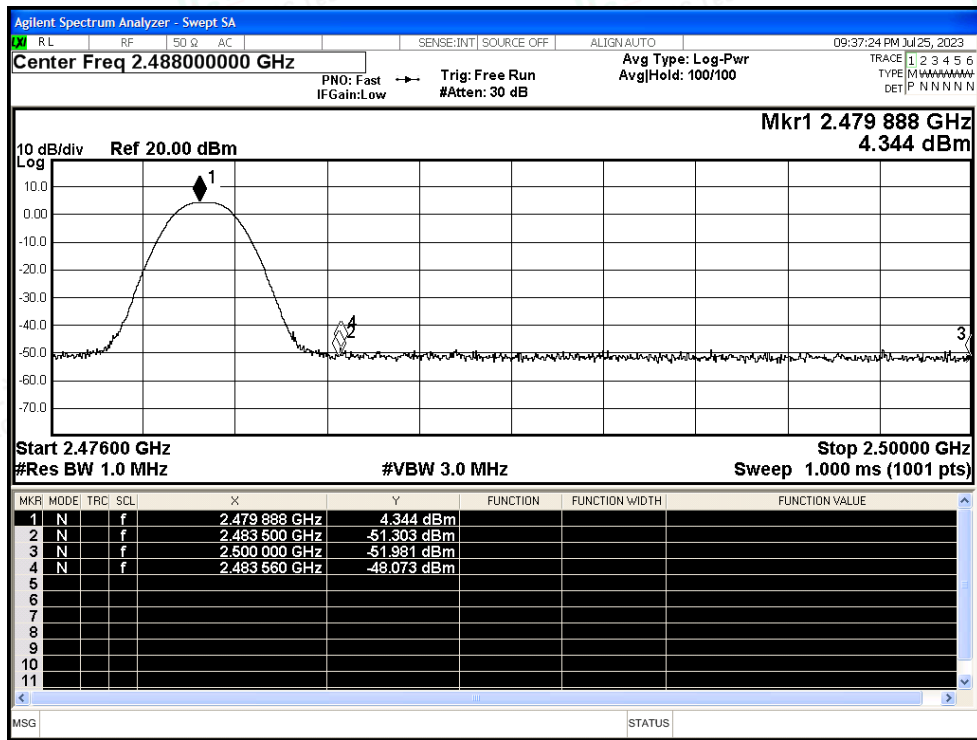


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average





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



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

