



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: BLUETOOTH HEADPHONES

Test Model: ttec AirBeat Plus Gerçek Kablosuz TWS Bluetooth Kulaklık

Environmental Conditions

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





A.1 -20dB Bandwidth

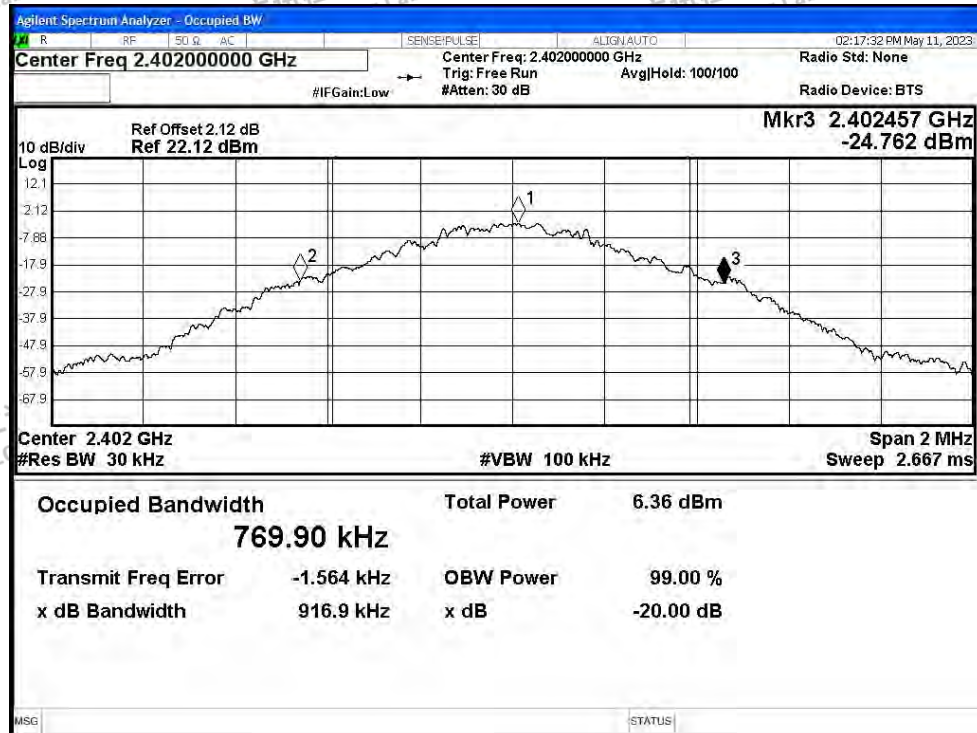
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.917	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.849	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.811	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.282	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.266	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.266	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.277	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.282	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.302	N/A	Pass





Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

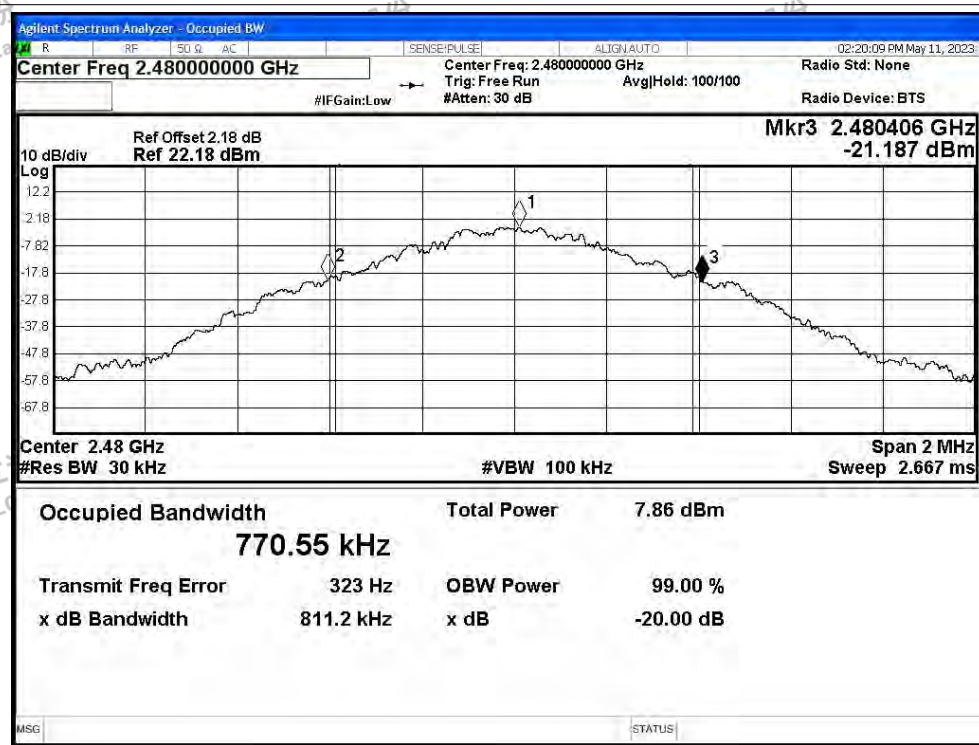


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

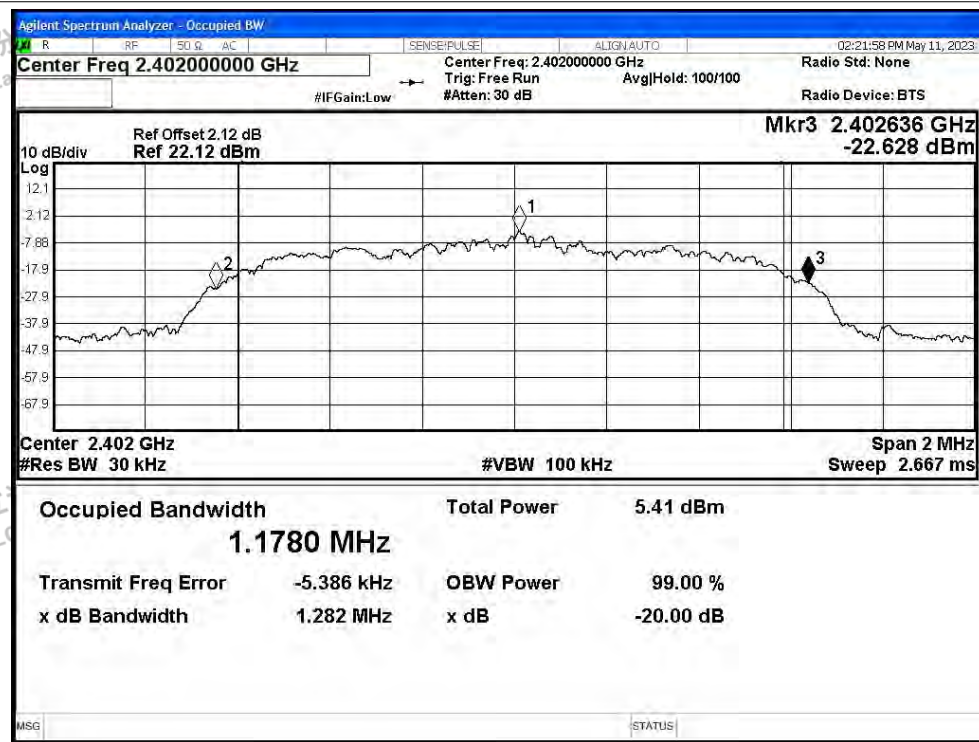




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1





-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

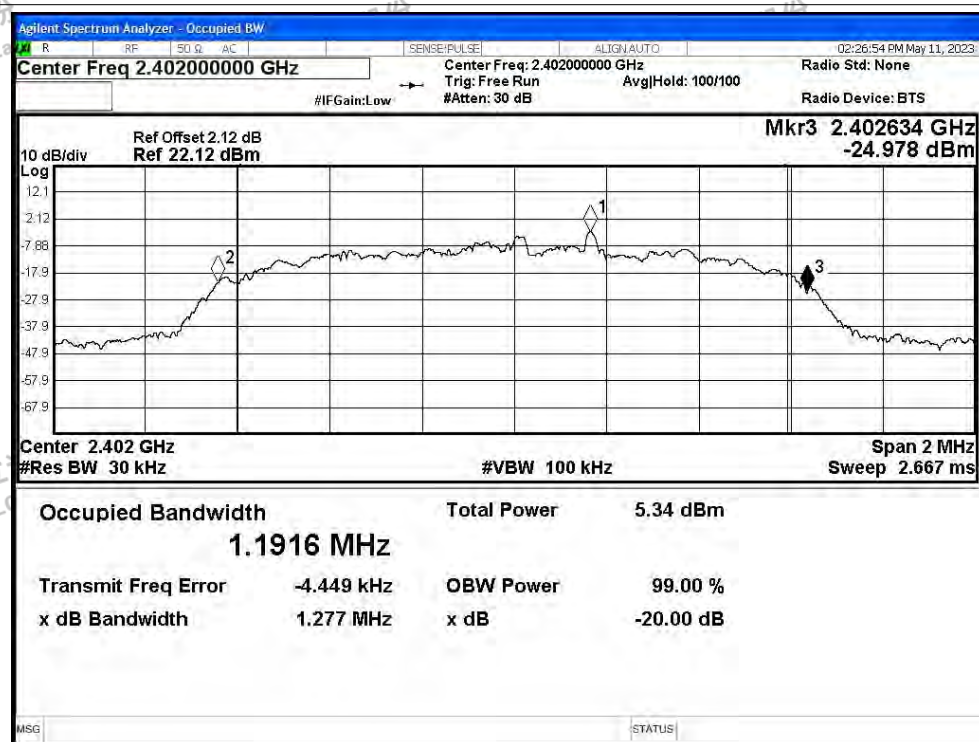


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

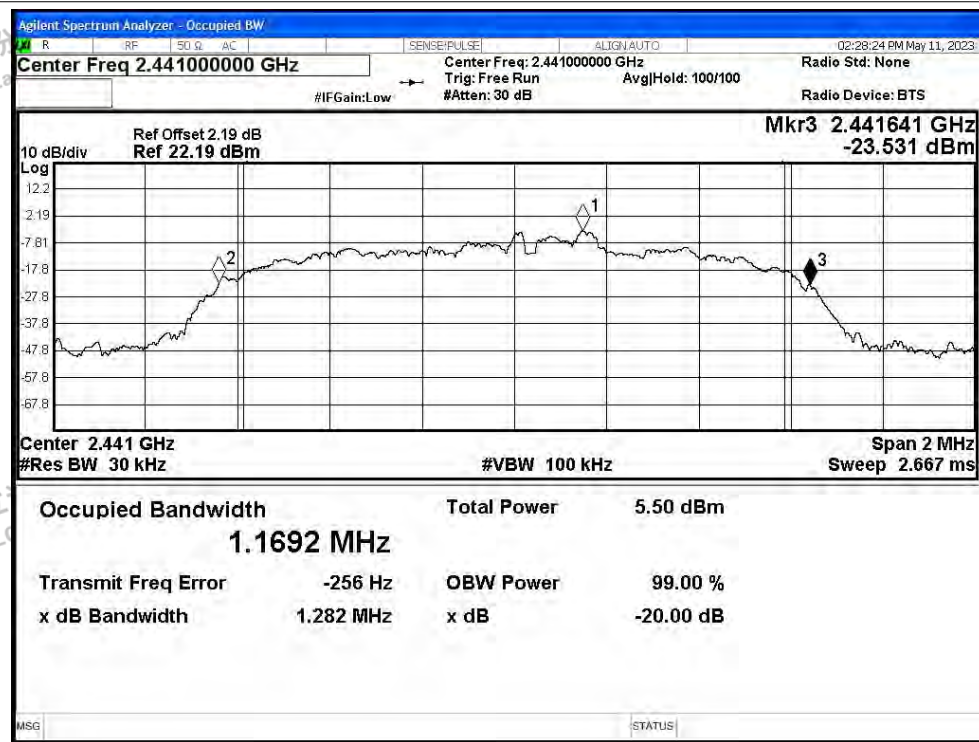


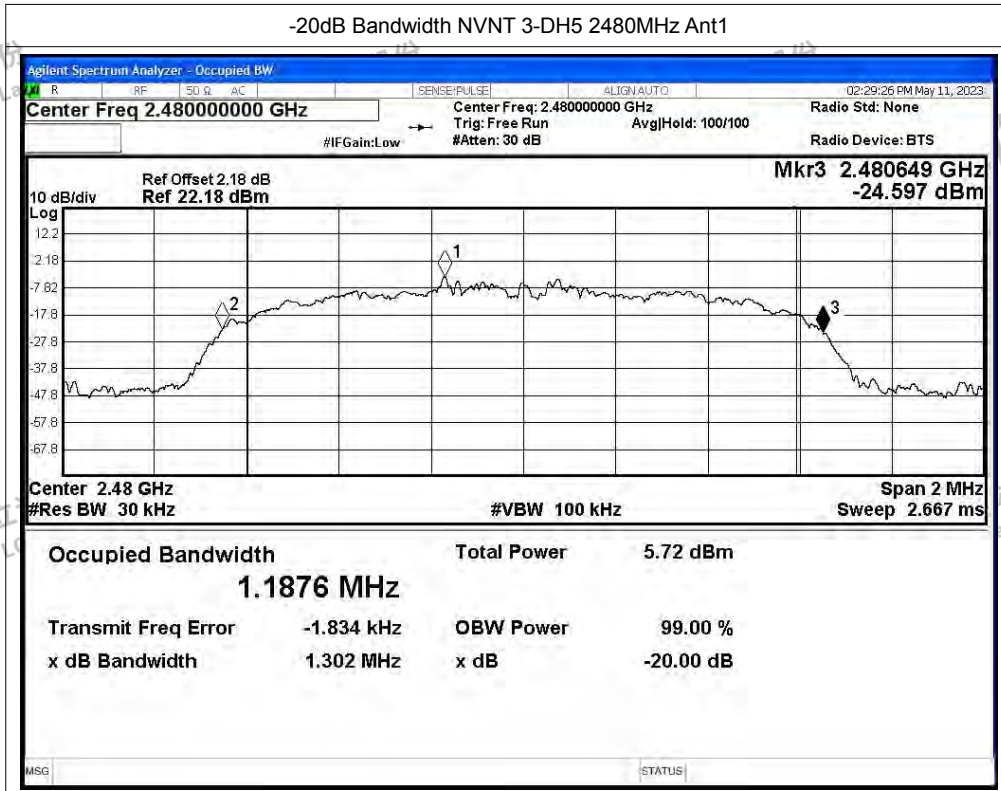


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1







A.2 Maximum Conducted Output Power

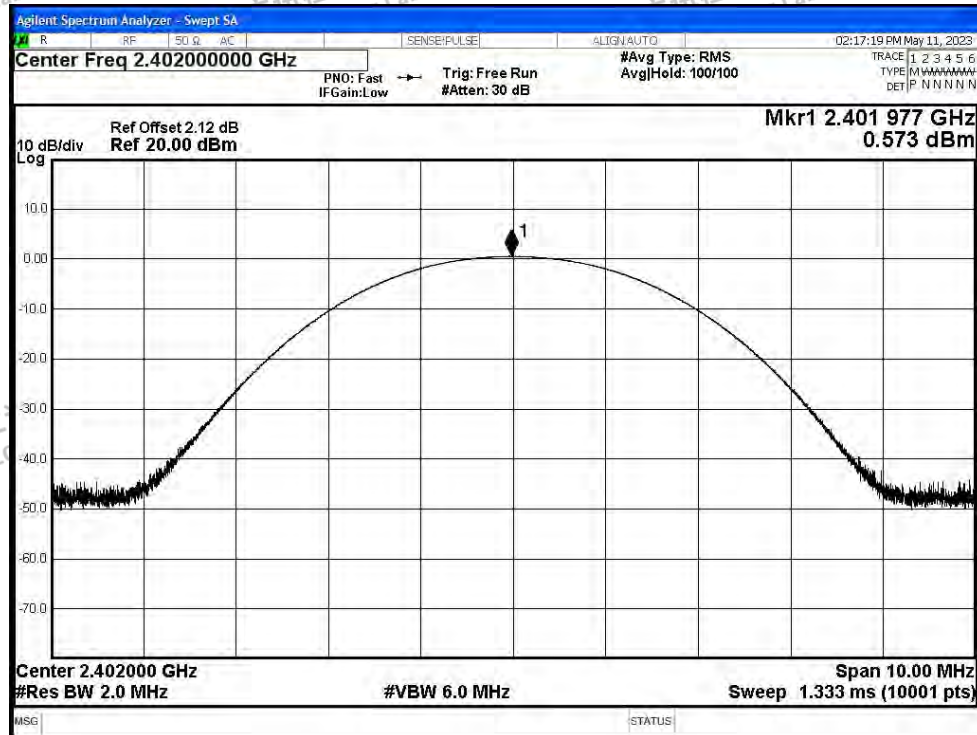
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.57	21	Pass
NVNT	1-DH5	2441	Ant1	1.12	21	Pass
NVNT	1-DH5	2480	Ant1	2.04	21	Pass
NVNT	2-DH5	2402	Ant1	0.63	21	Pass
NVNT	2-DH5	2441	Ant1	0.52	21	Pass
NVNT	2-DH5	2480	Ant1	1.48	21	Pass
NVNT	3-DH5	2402	Ant1	0.56	21	Pass
NVNT	3-DH5	2441	Ant1	0.48	21	Pass
NVNT	3-DH5	2480	Ant1	1.45	21	Pass



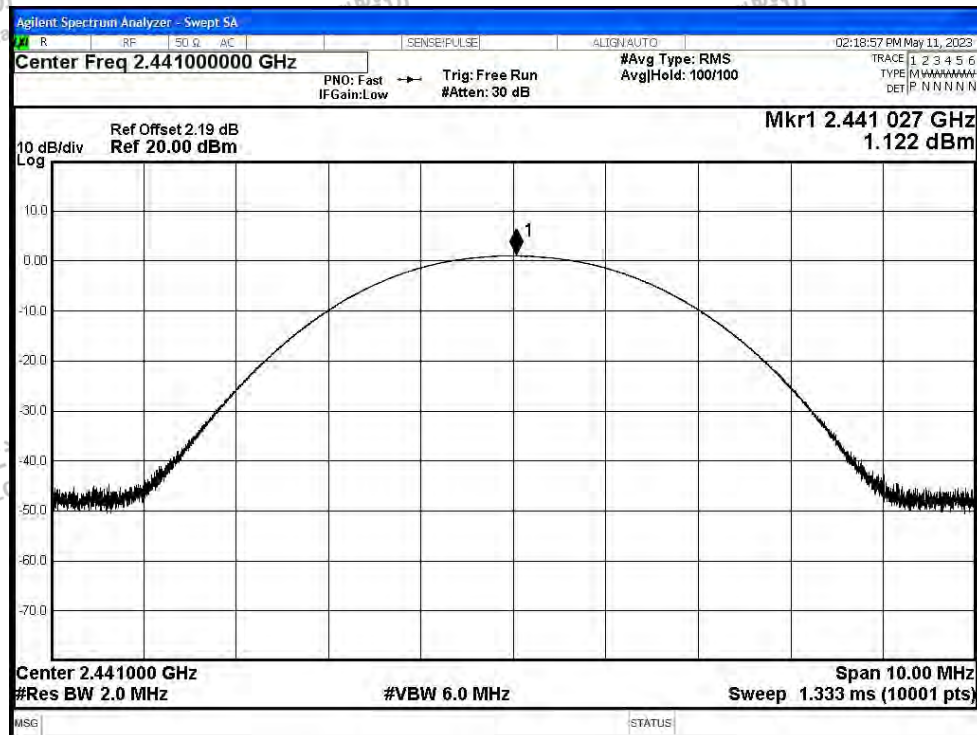


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

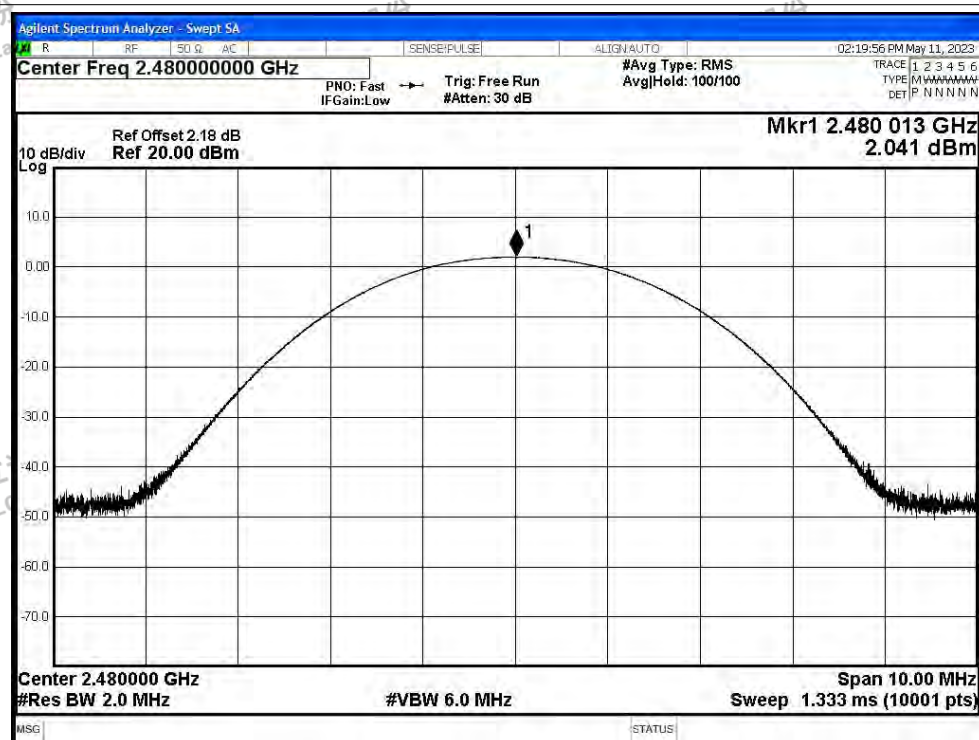


Power NVNT 1-DH5 2441MHz Ant1

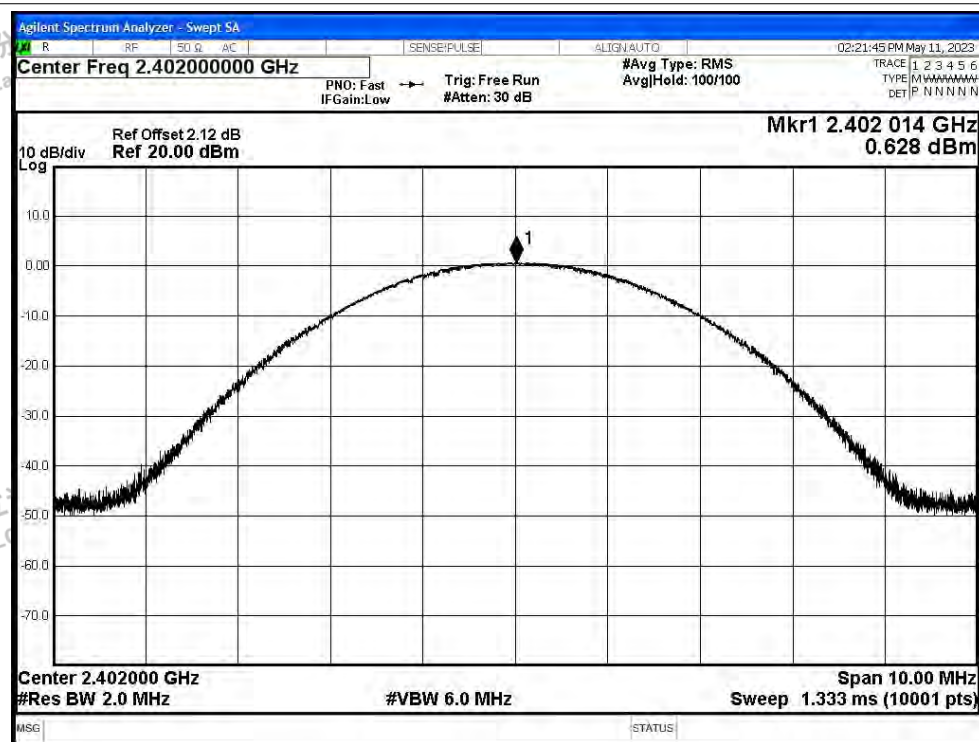




Power NVNT 1-DH5 2480MHz Ant1

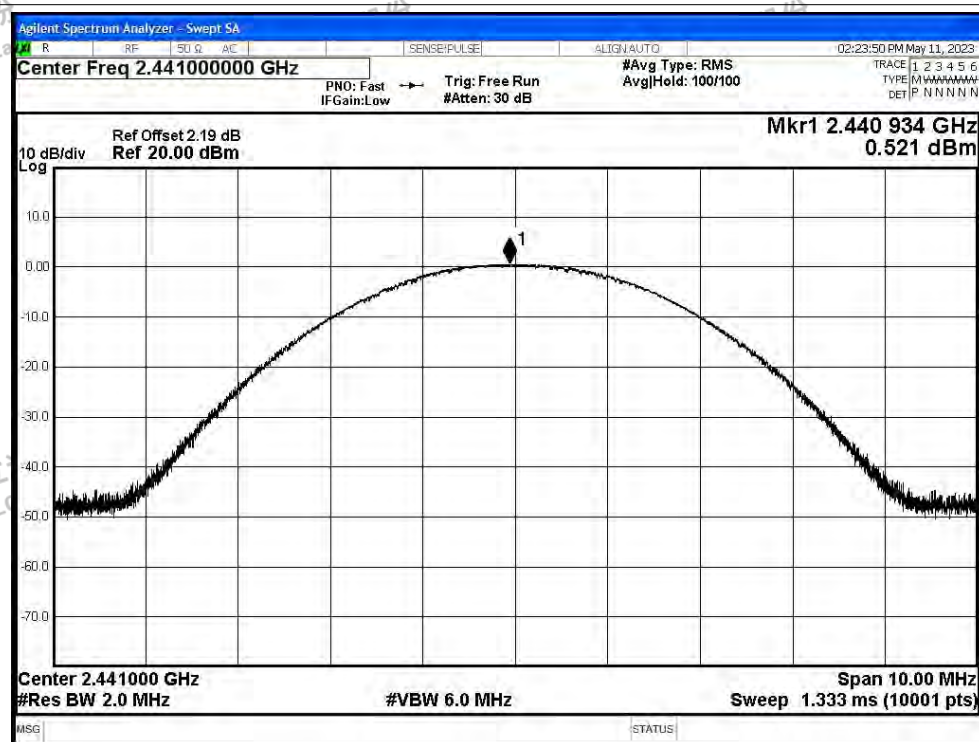


Power NVNT 2-DH5 2402MHz Ant1

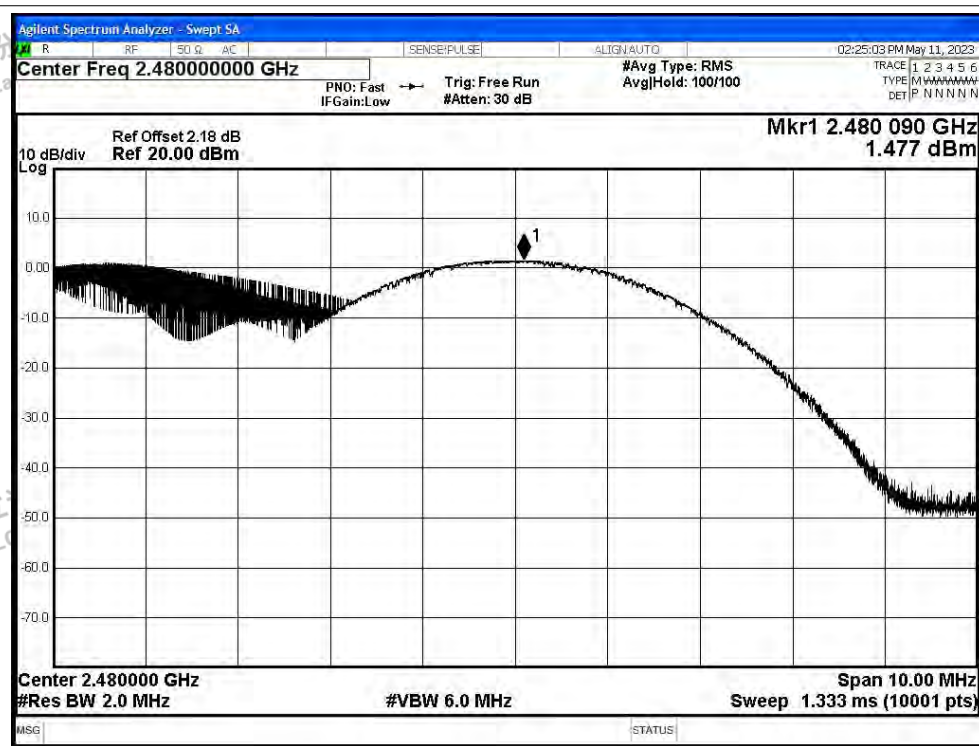




Power NVNT 2-DH5 2441MHz Ant1

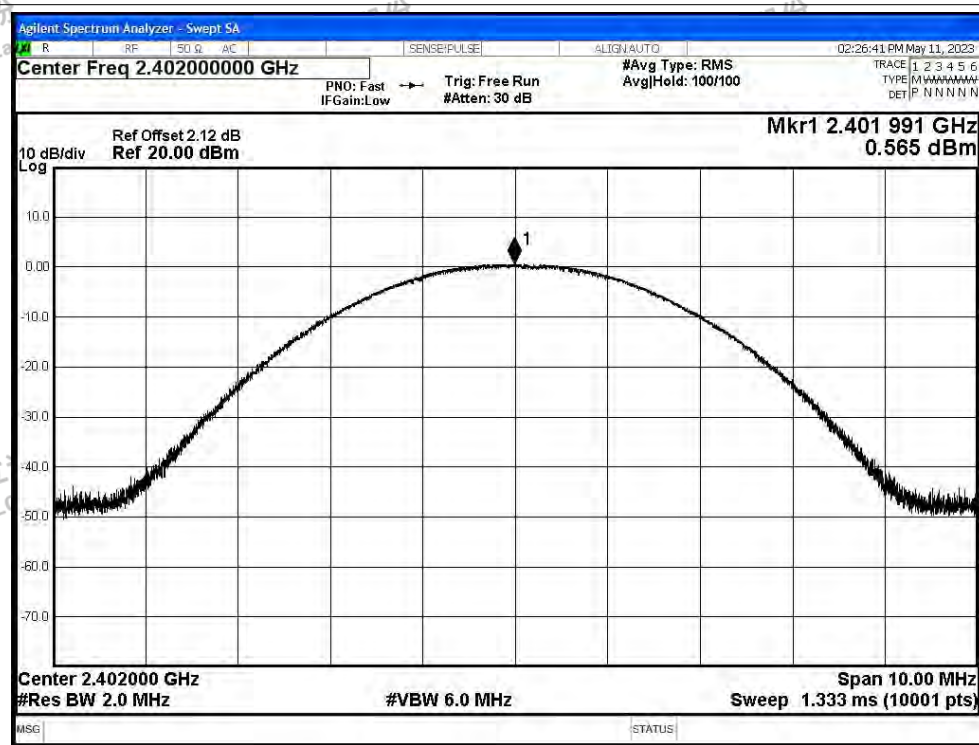


Power NVNT 2-DH5 2480MHz Ant1

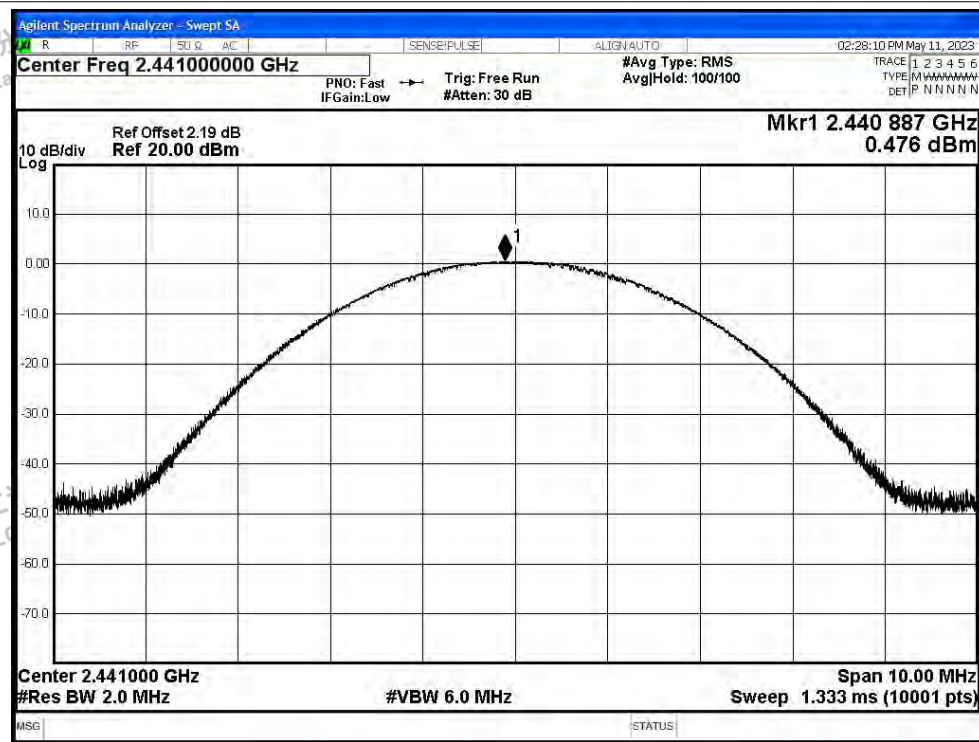


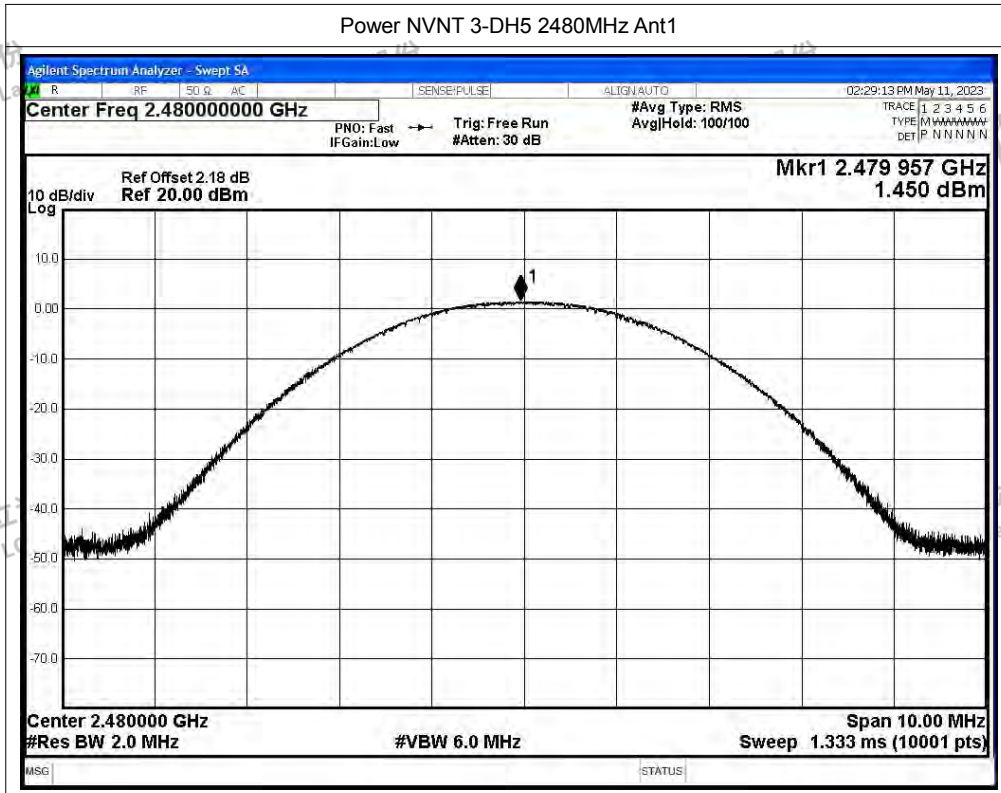


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1







A.3 Carrier Frequencies Separation

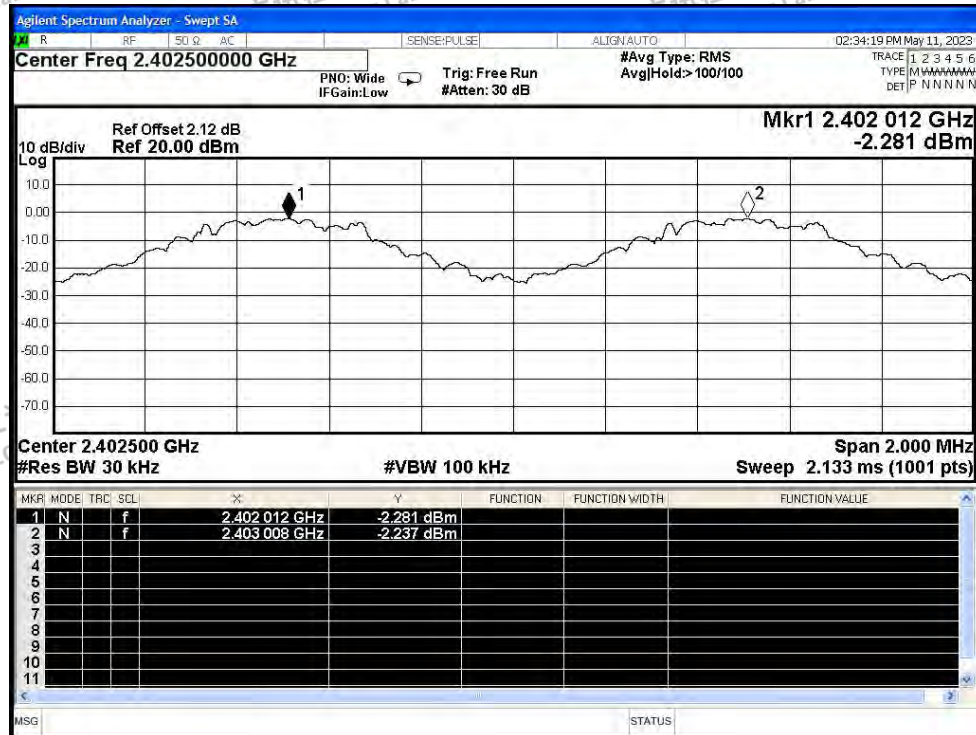
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.012	2403.008	0.996	0.611	Pass
NVNT	2-DH5	Ant1	2402.158	2403.018	0.86	0.855	Pass
NVNT	3-DH5	Ant1	2402.016	2403.164	1.148	0.868	Pass



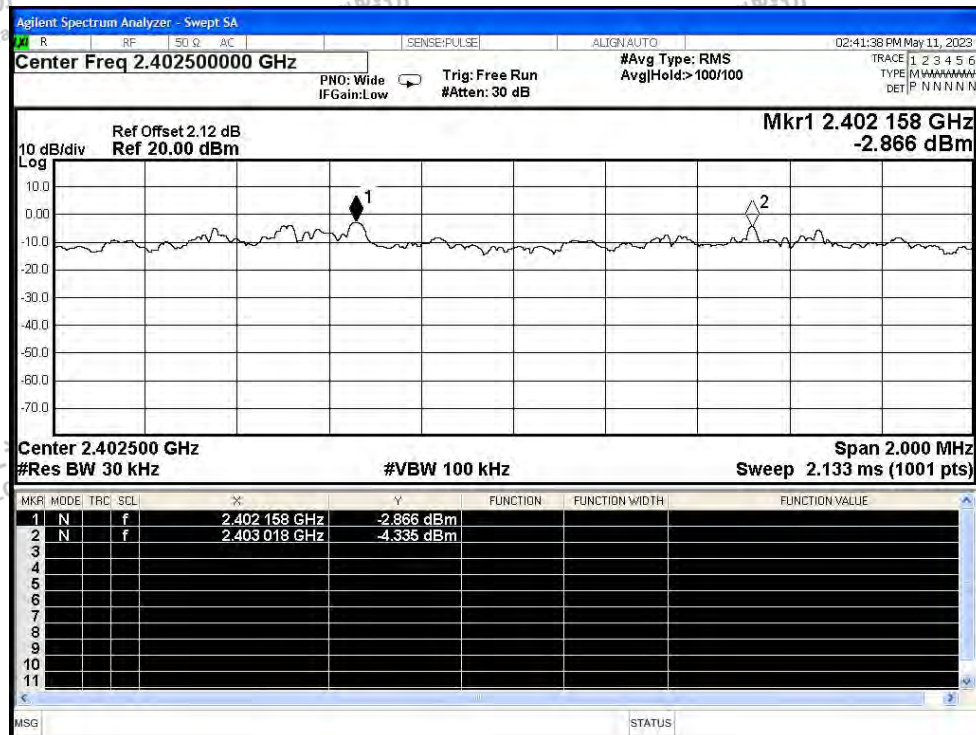


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1

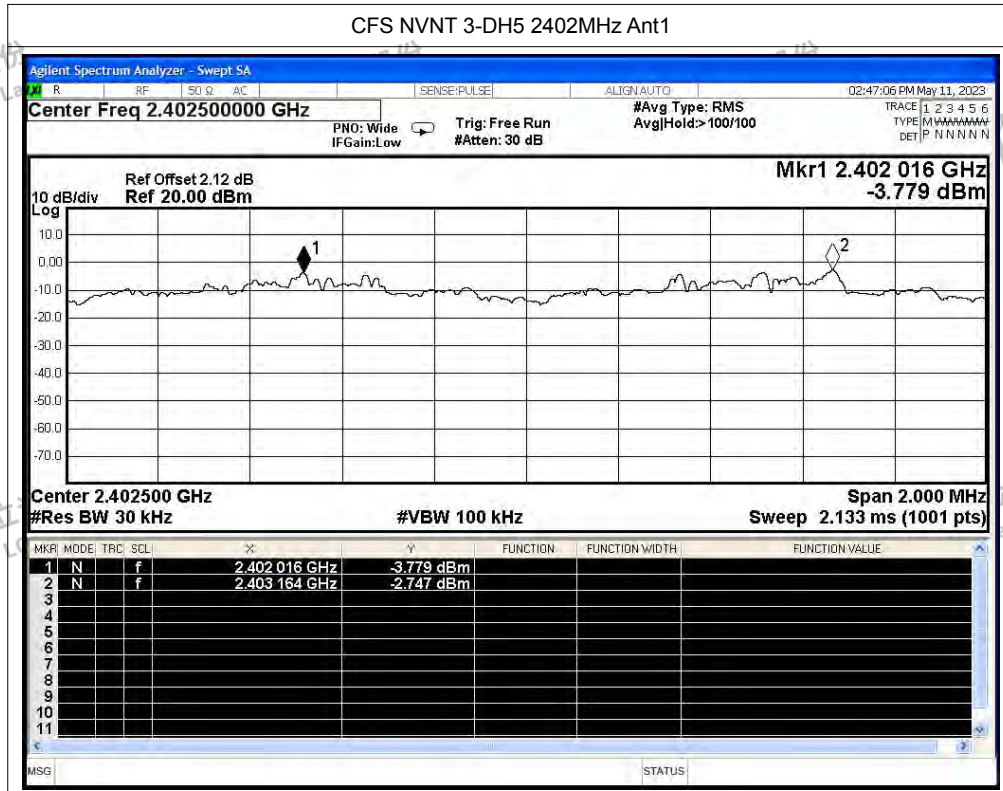


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A.4 Dwell Time

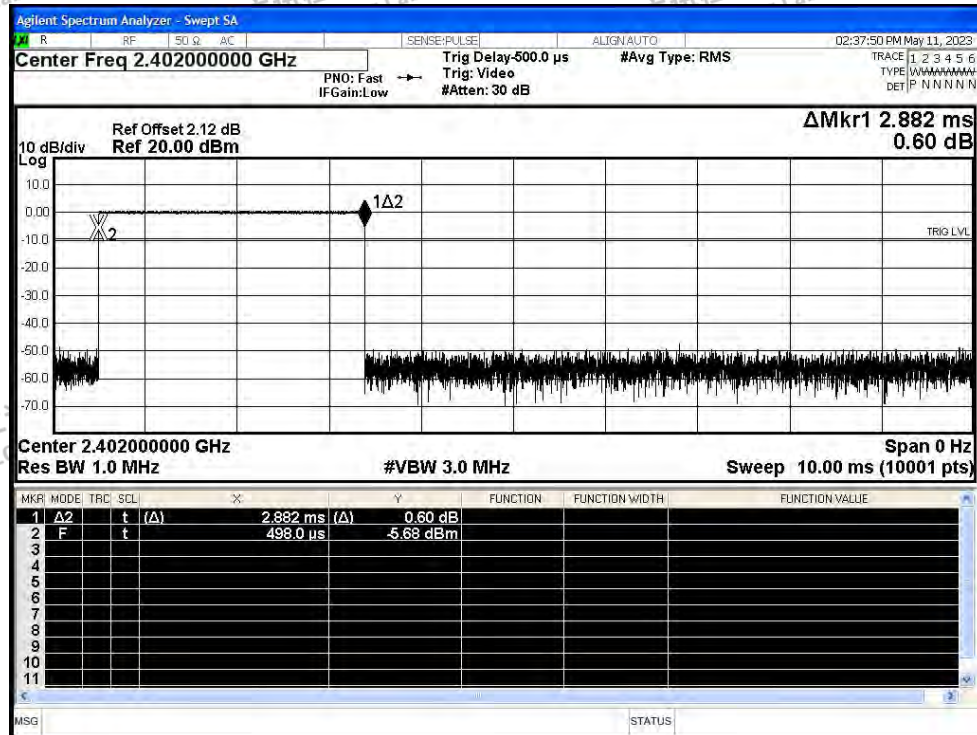
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.882	331.43	115	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.882	279.554	97	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.887	311.796	108	31600	400	Pass



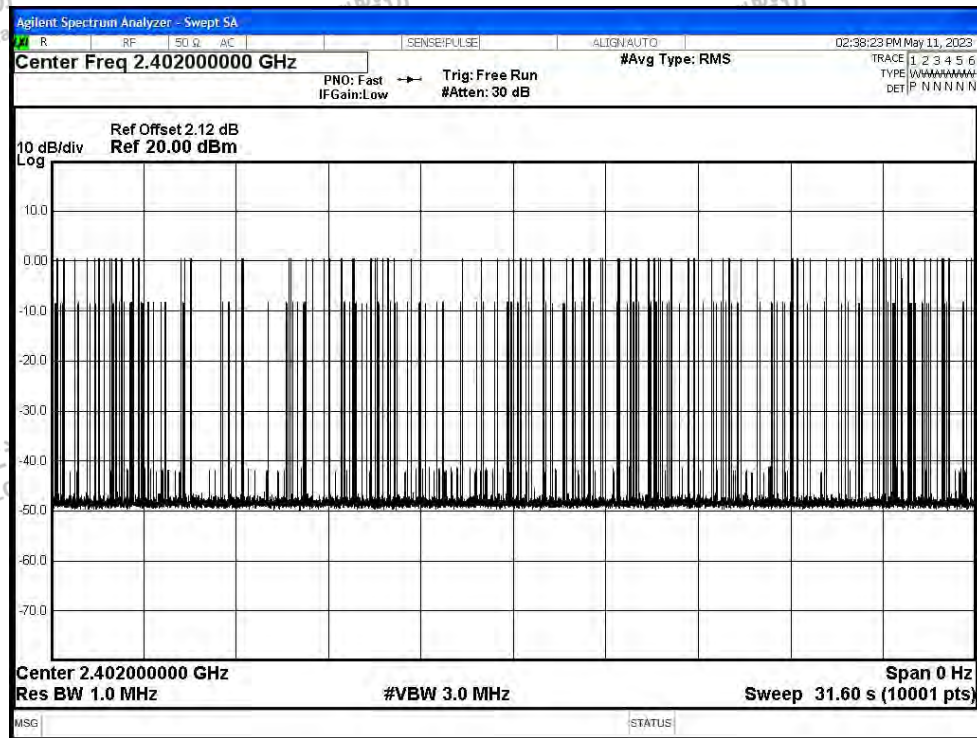


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

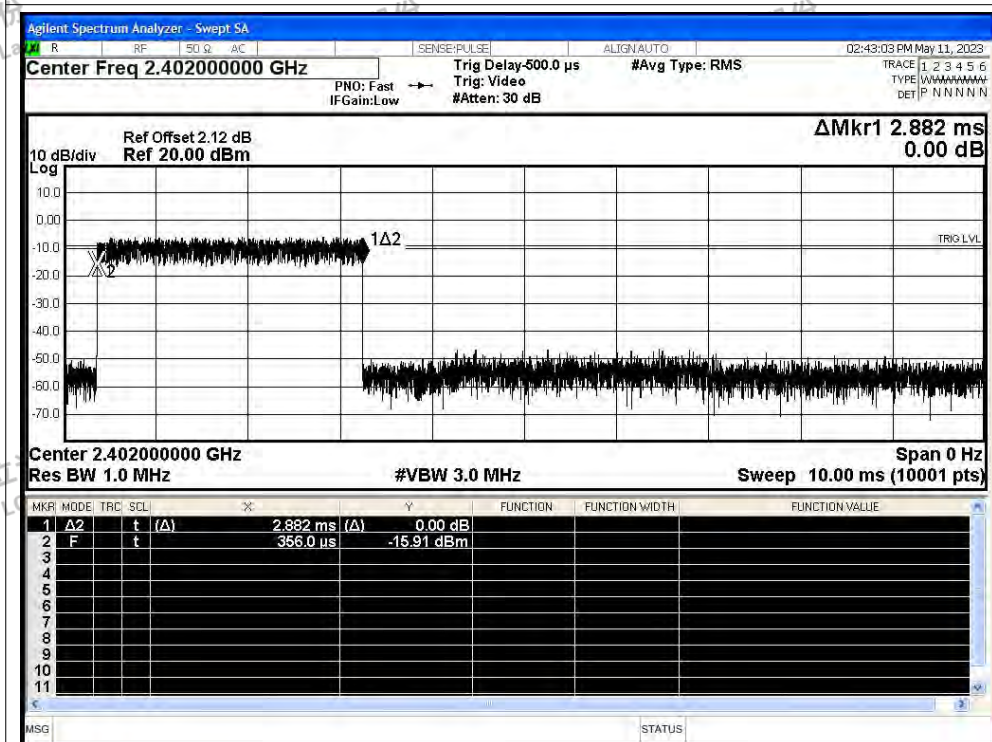


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

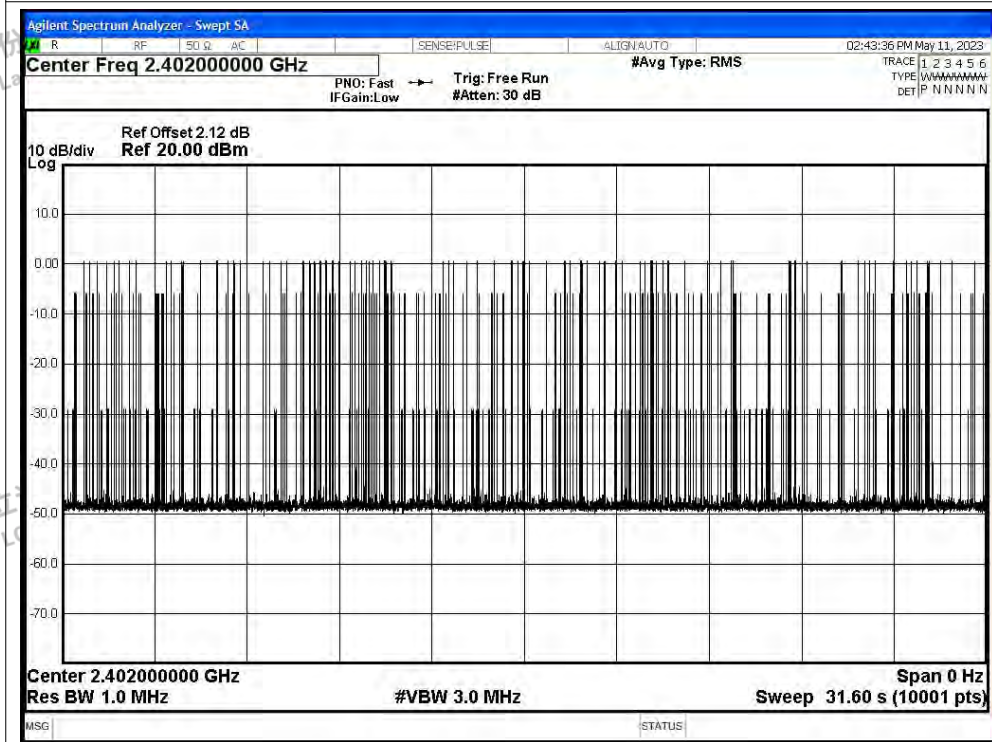




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

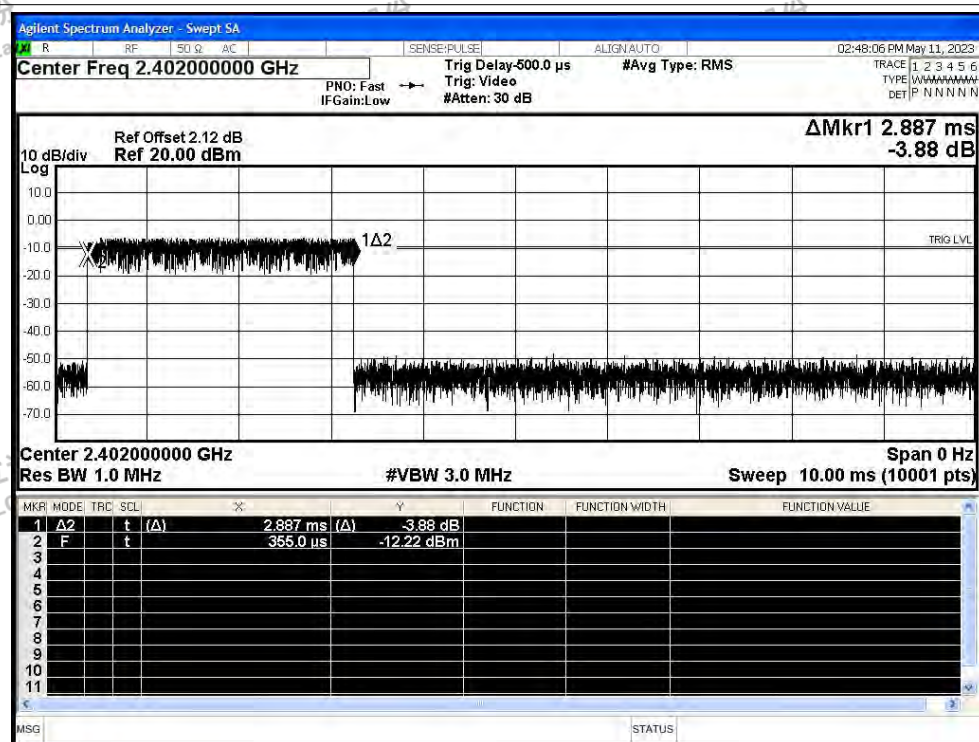


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

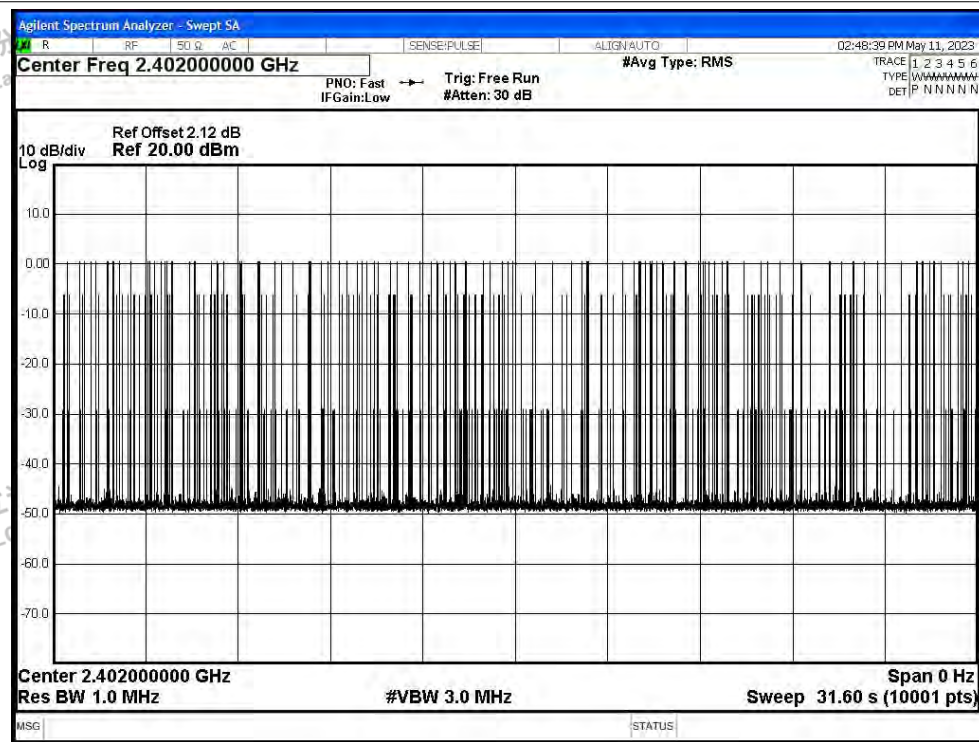




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated





A.5 Number of Hopping Channel

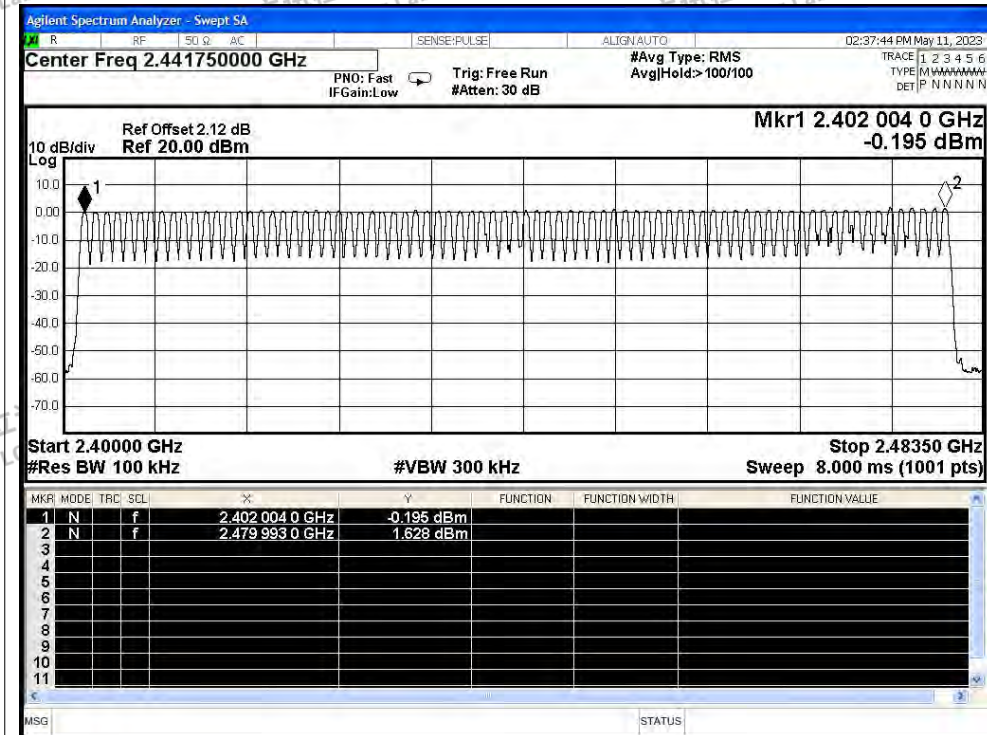
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass



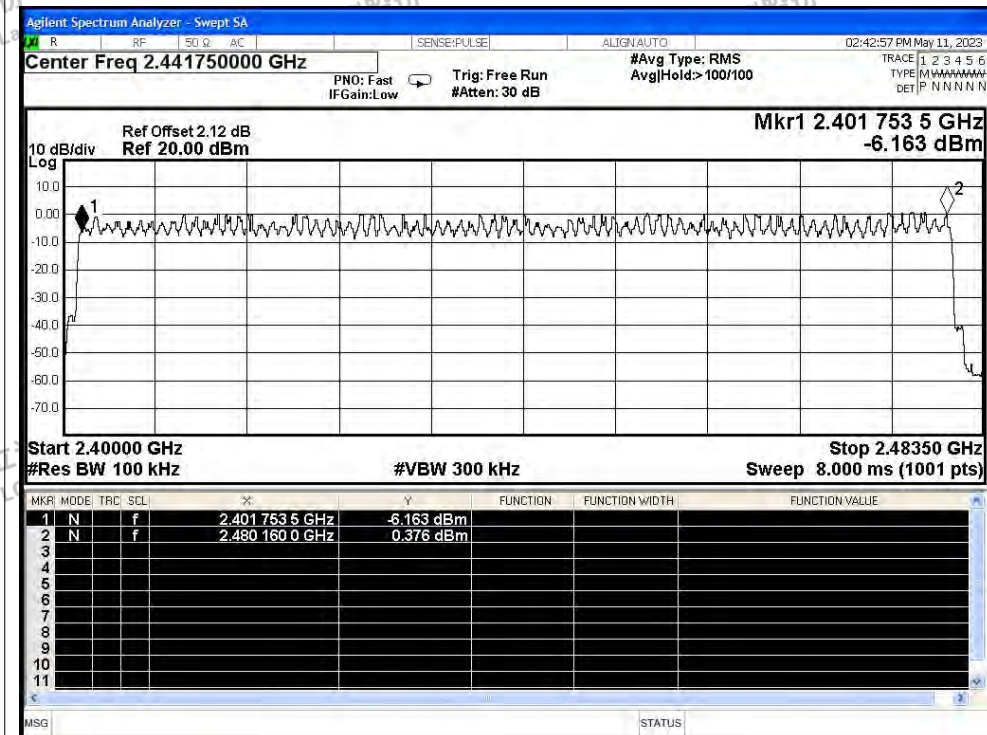


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

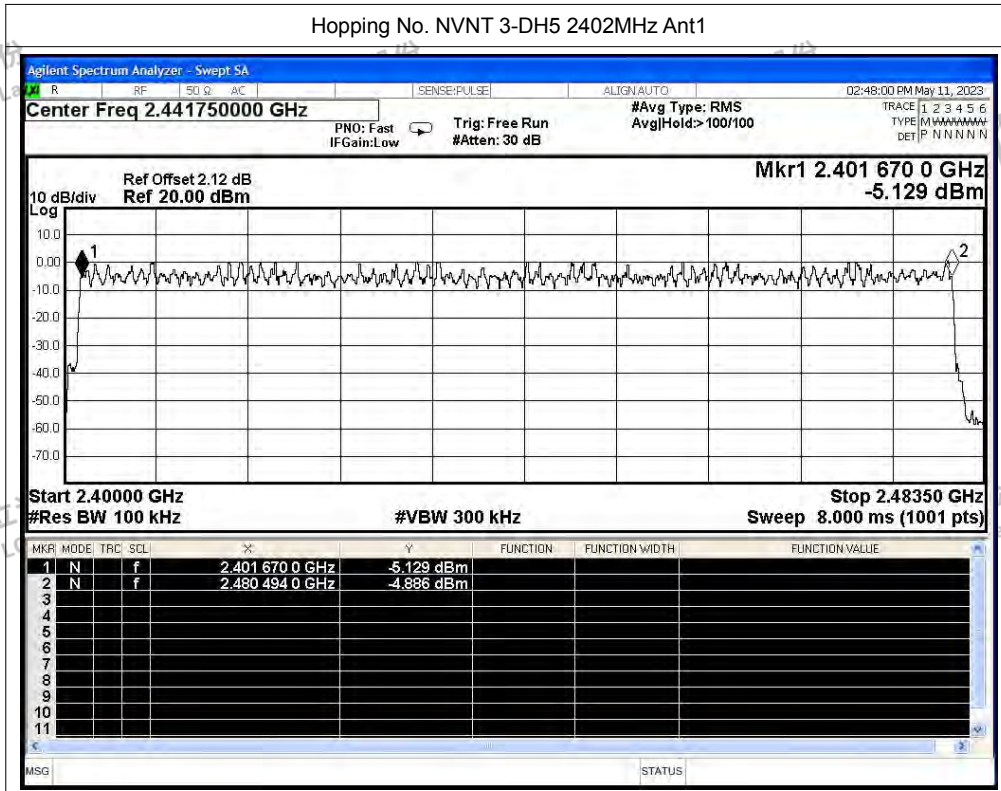


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A.6 Band Edge

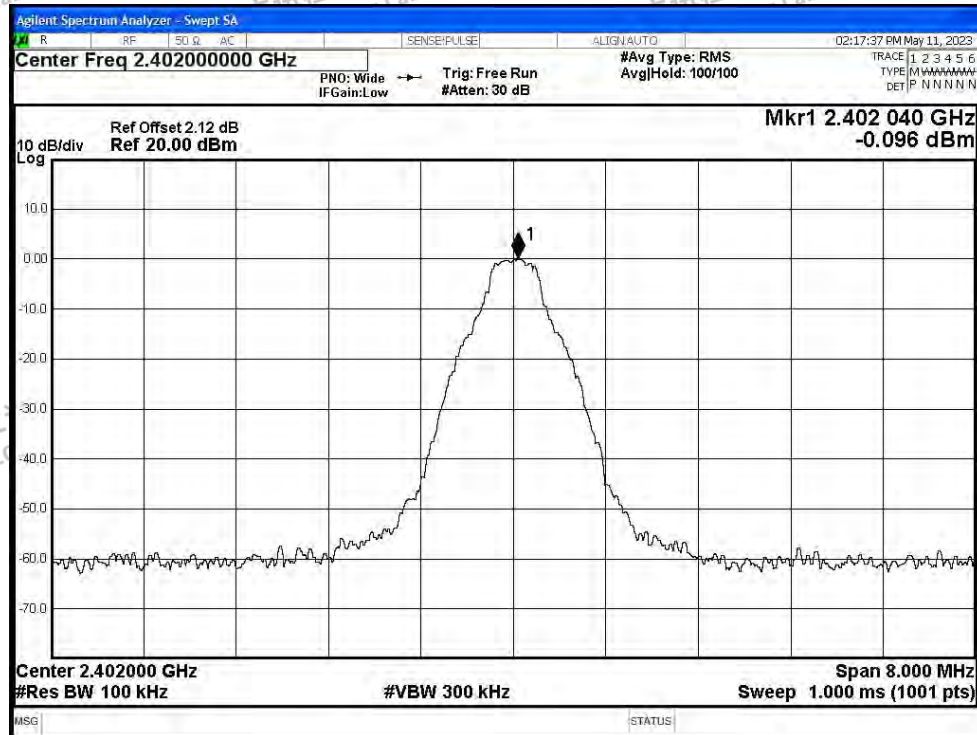
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.78	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-57.99	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.1	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.88	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-48.24	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-56.61	-20	Pass



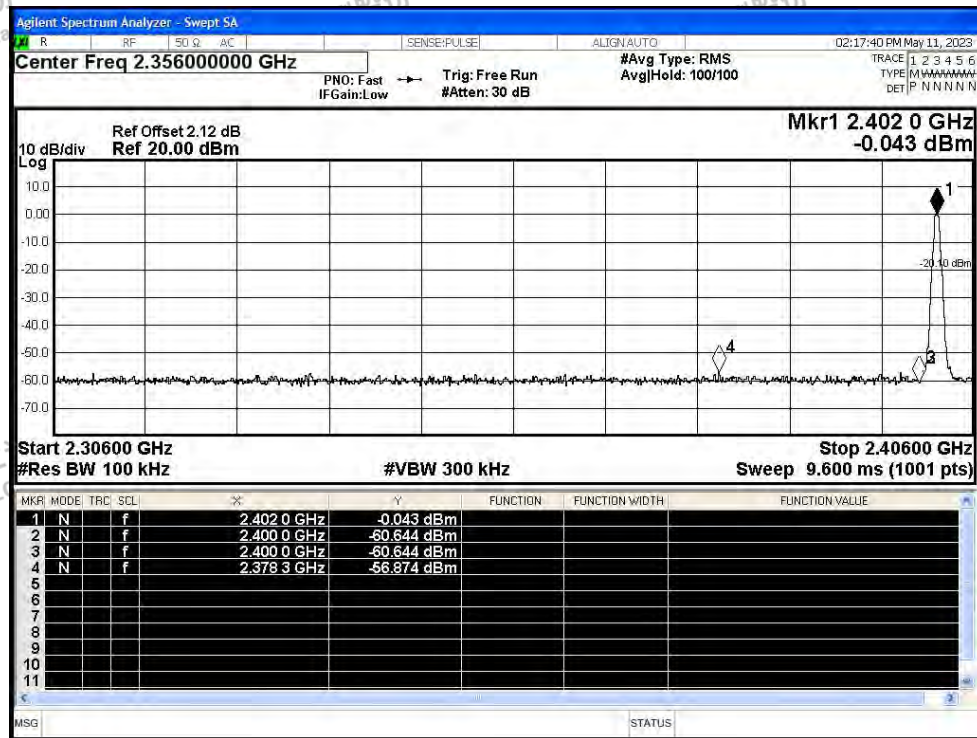


Test Graphs

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

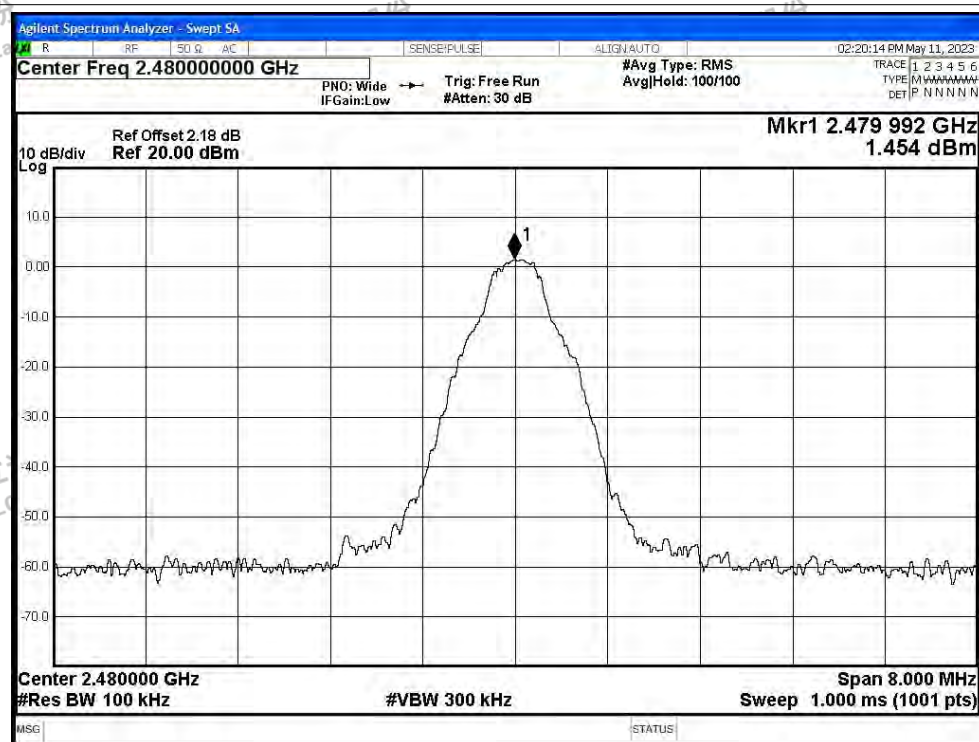


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

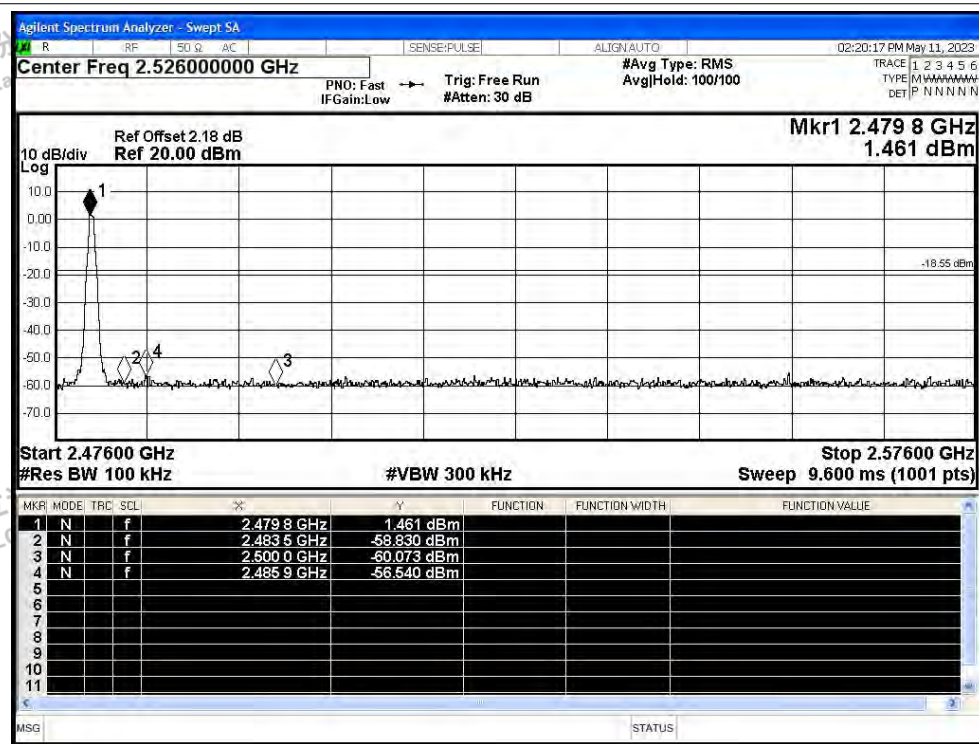


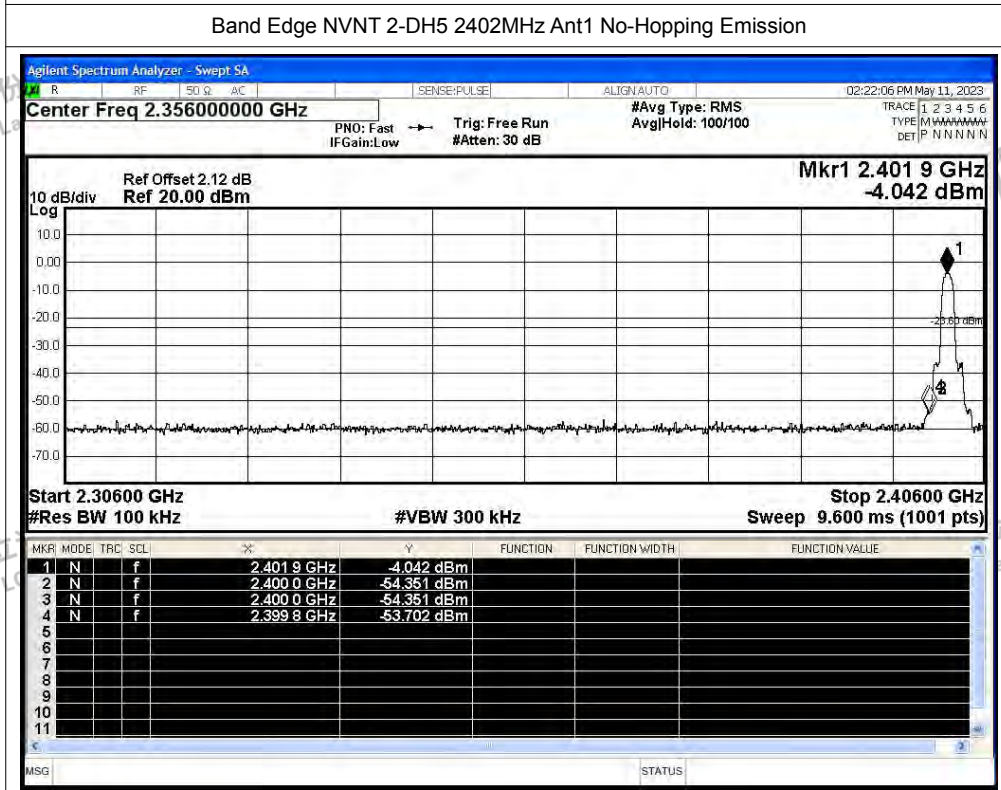
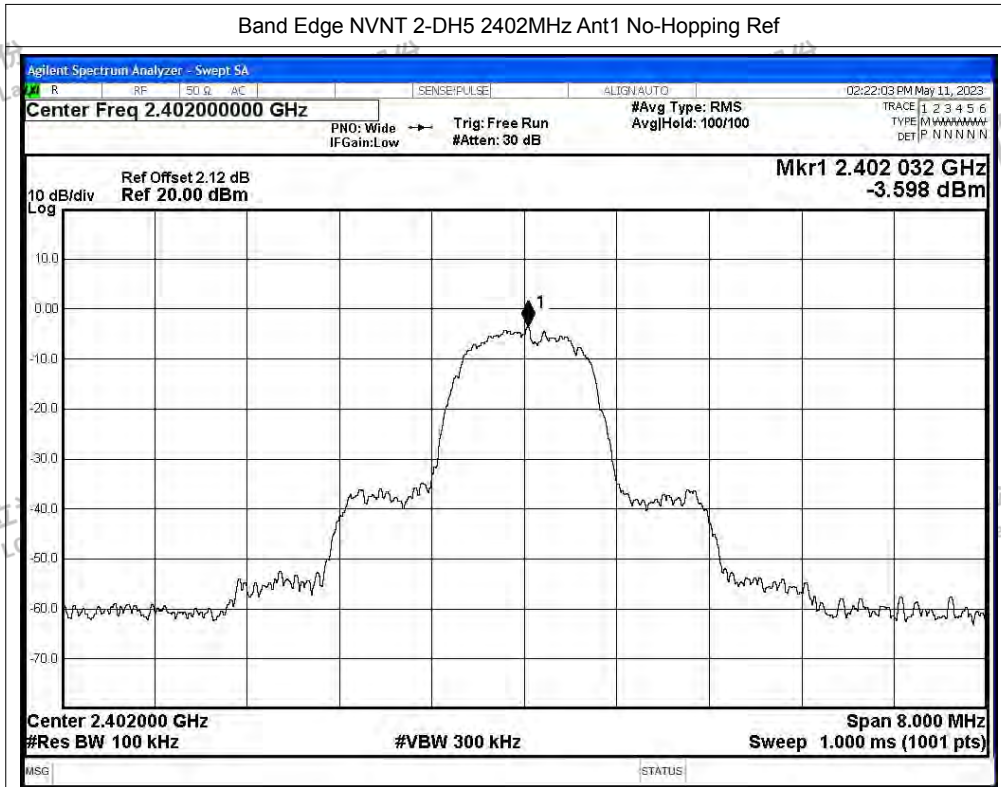


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



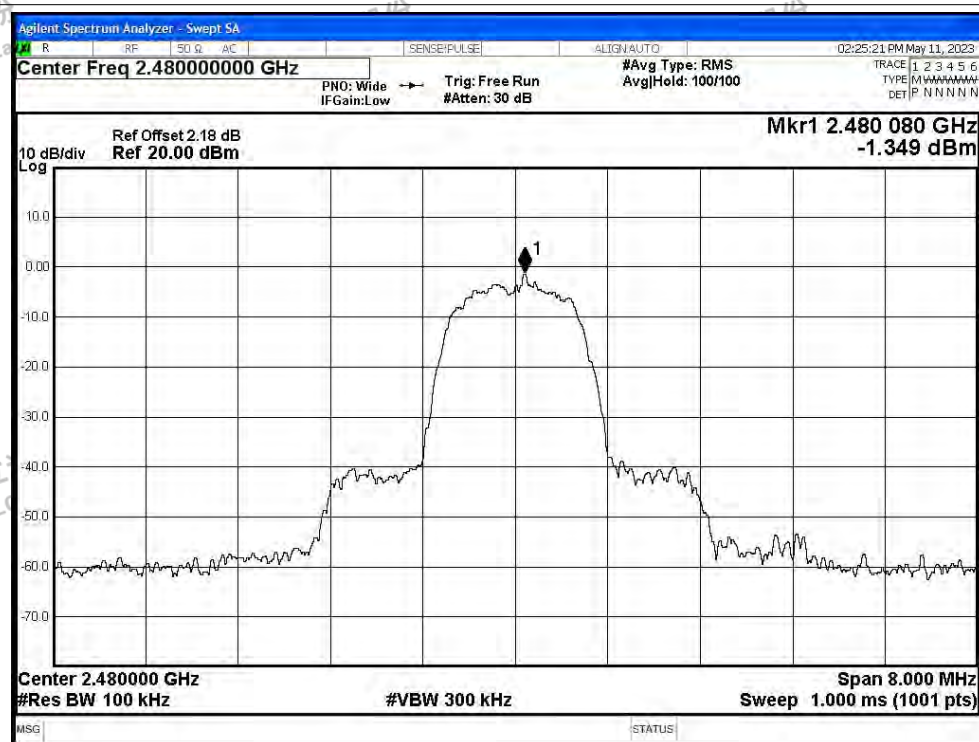
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



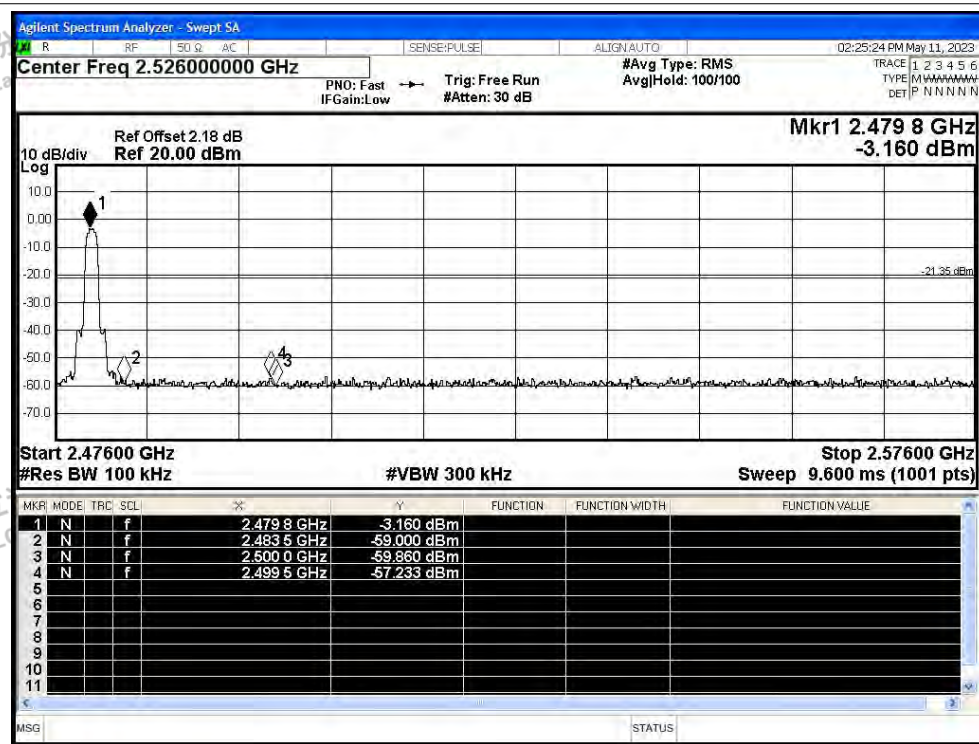




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

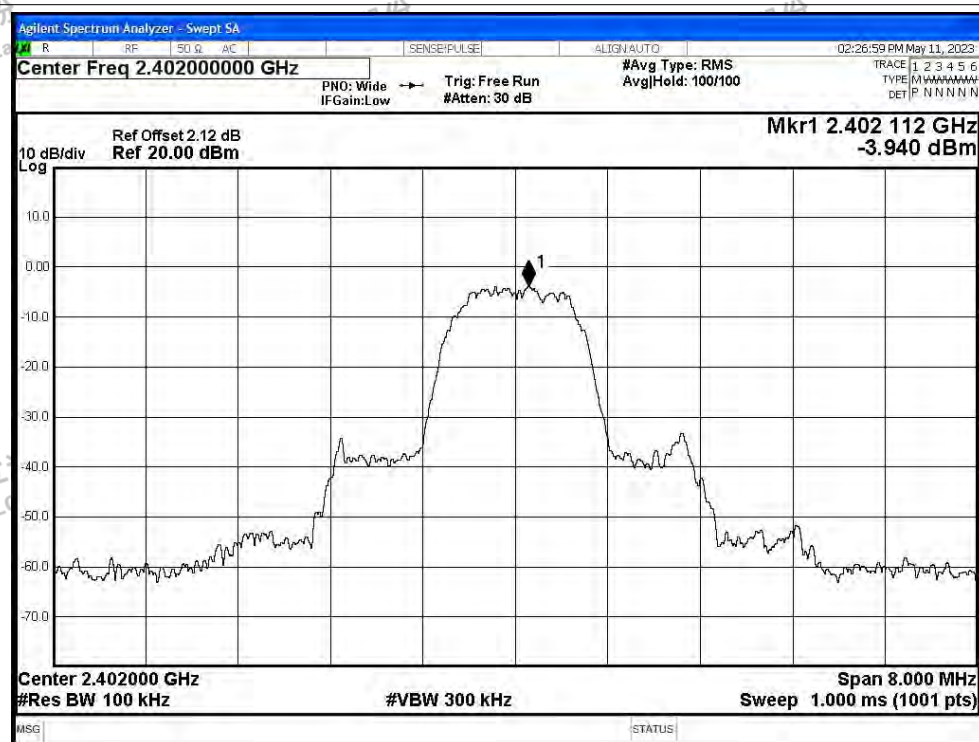


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

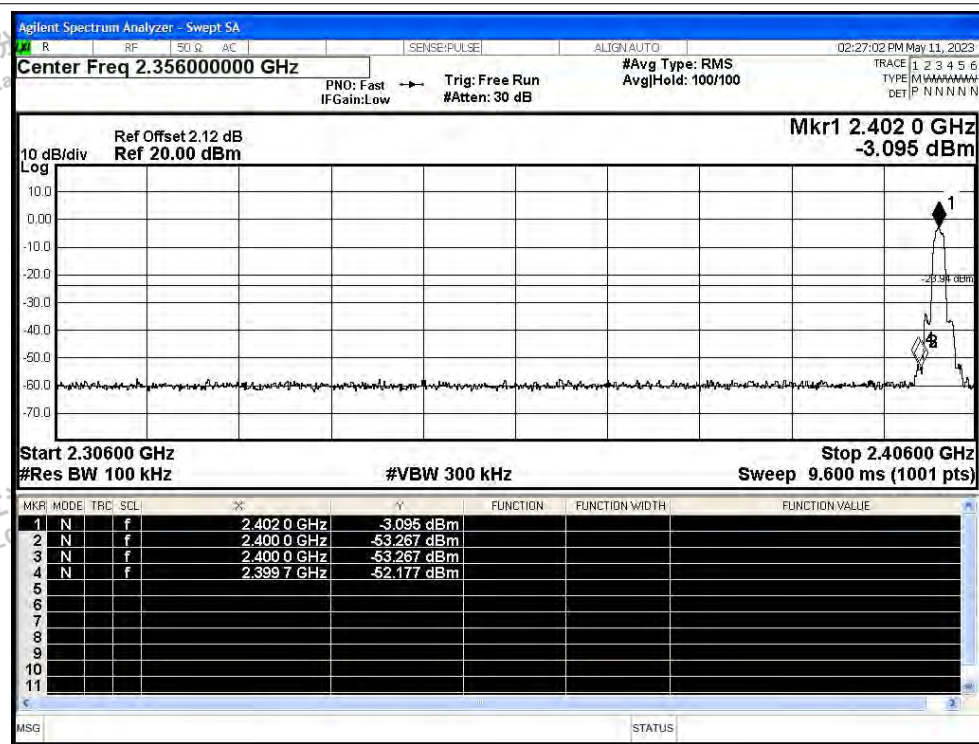




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

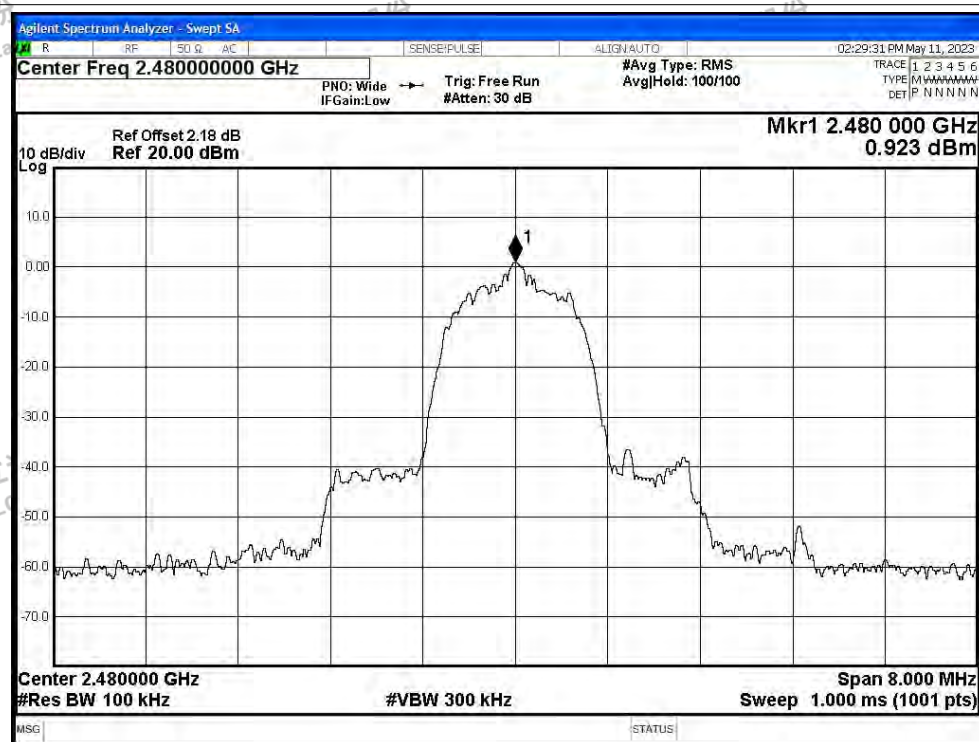


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

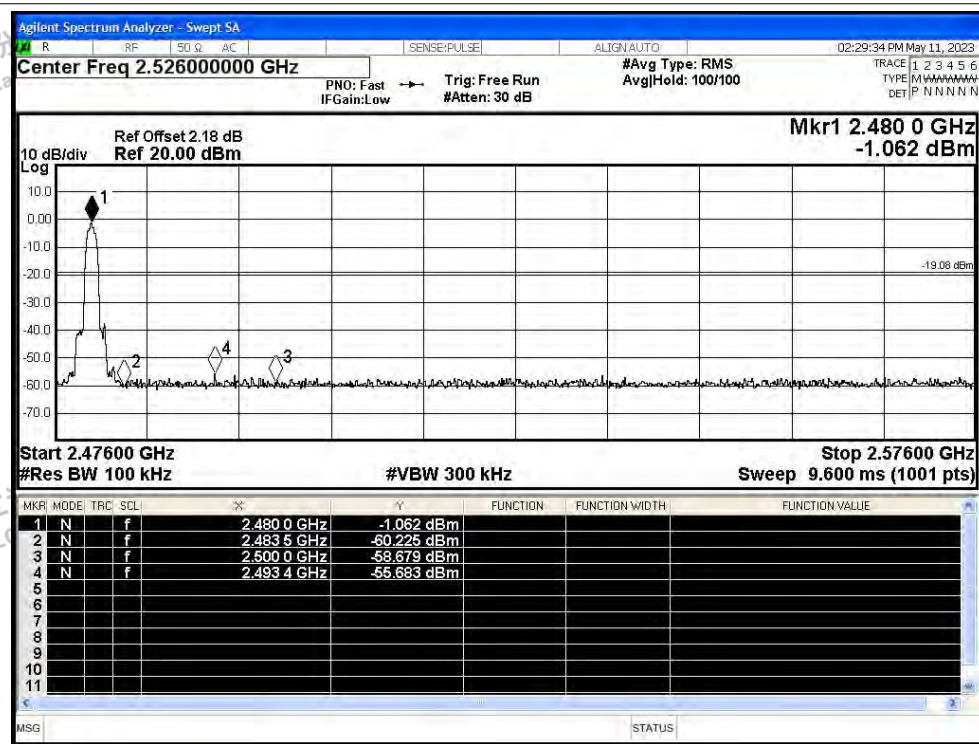




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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





(Hopping)

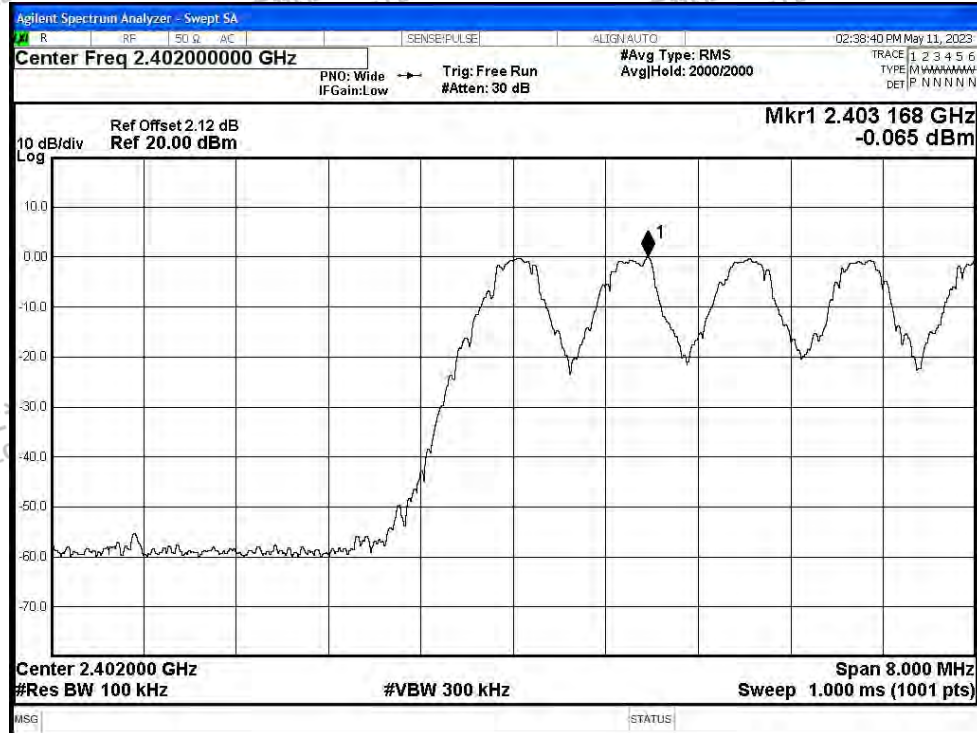
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-55.83	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-57.13	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-54.69	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-55.99	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-53.05	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-56.22	-20	Pass



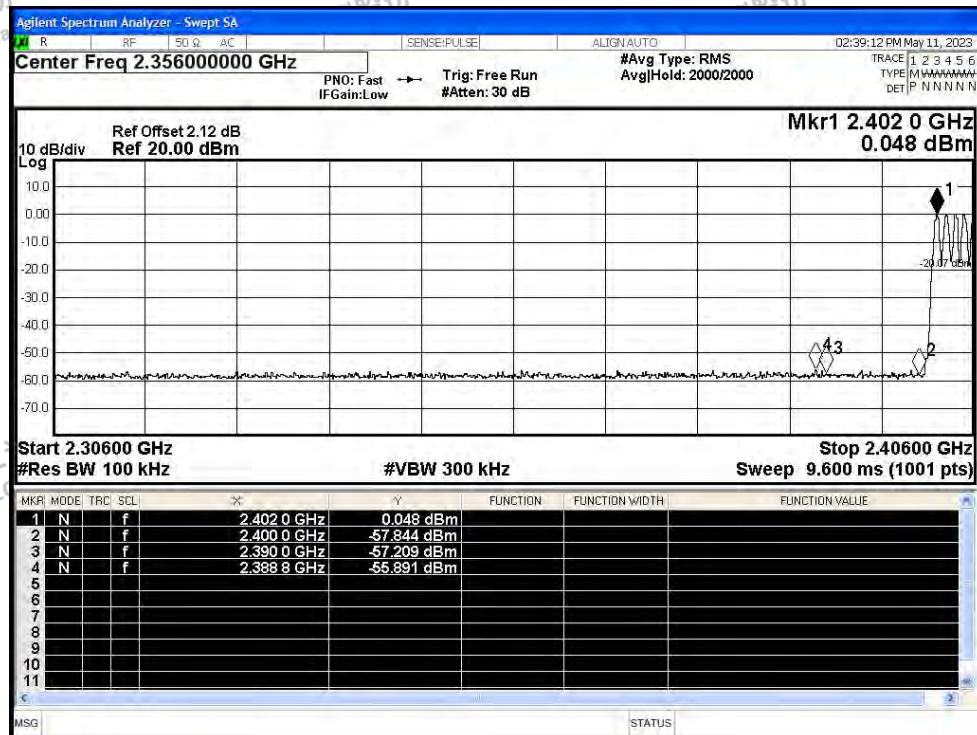


Test Graphs

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



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

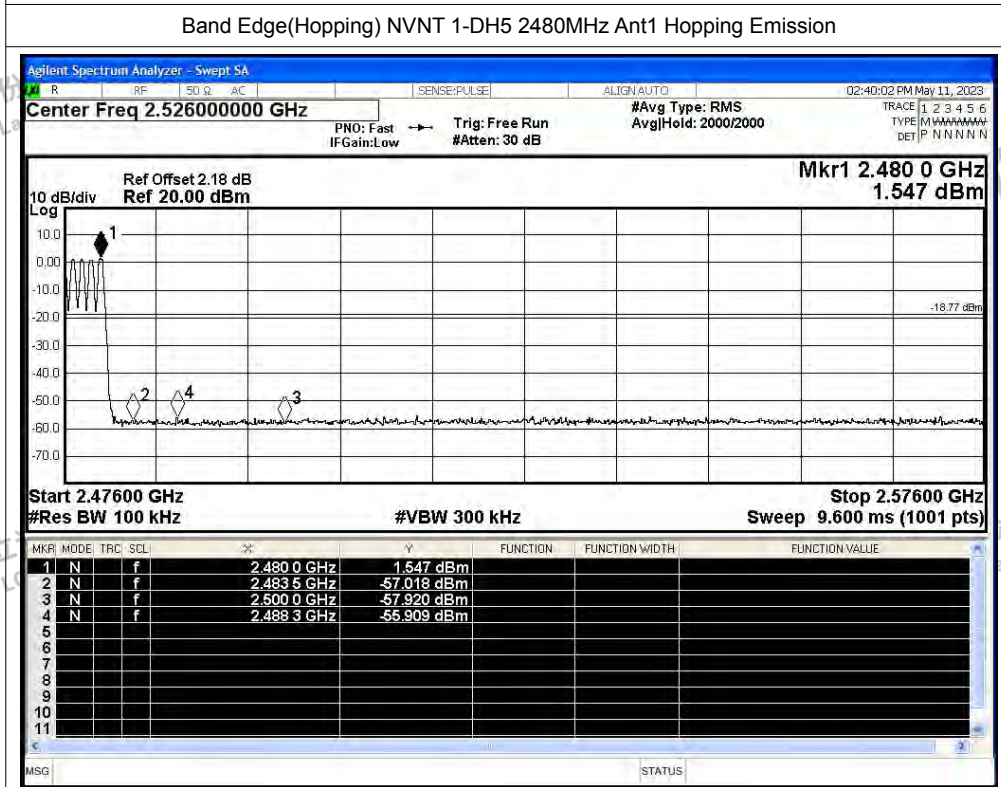
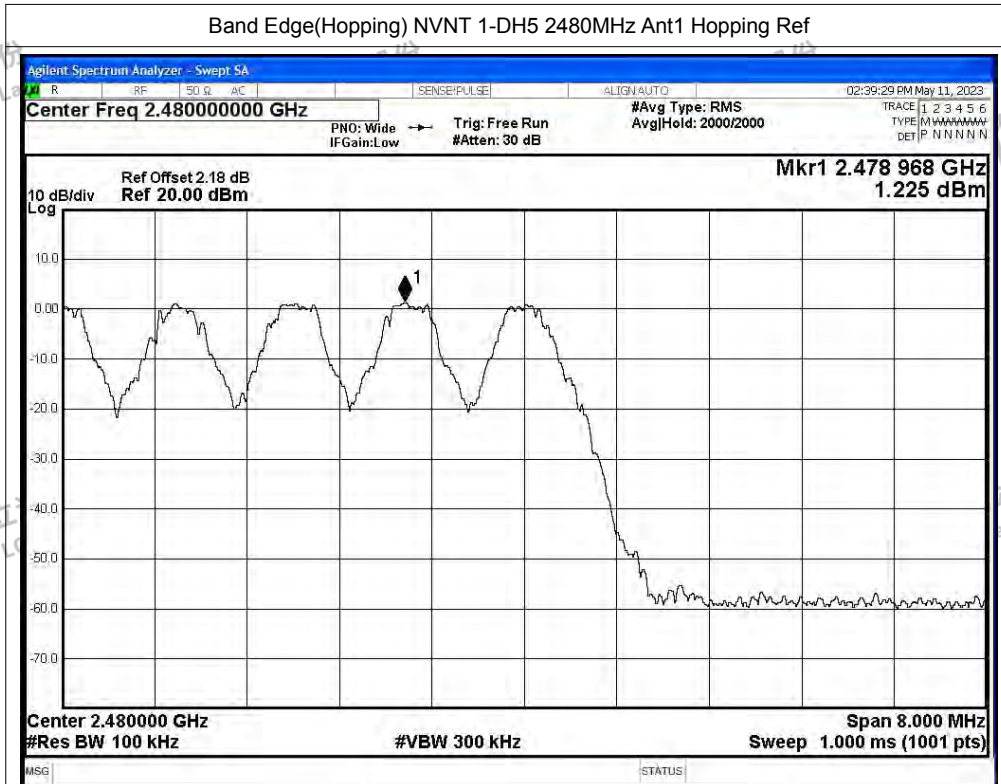


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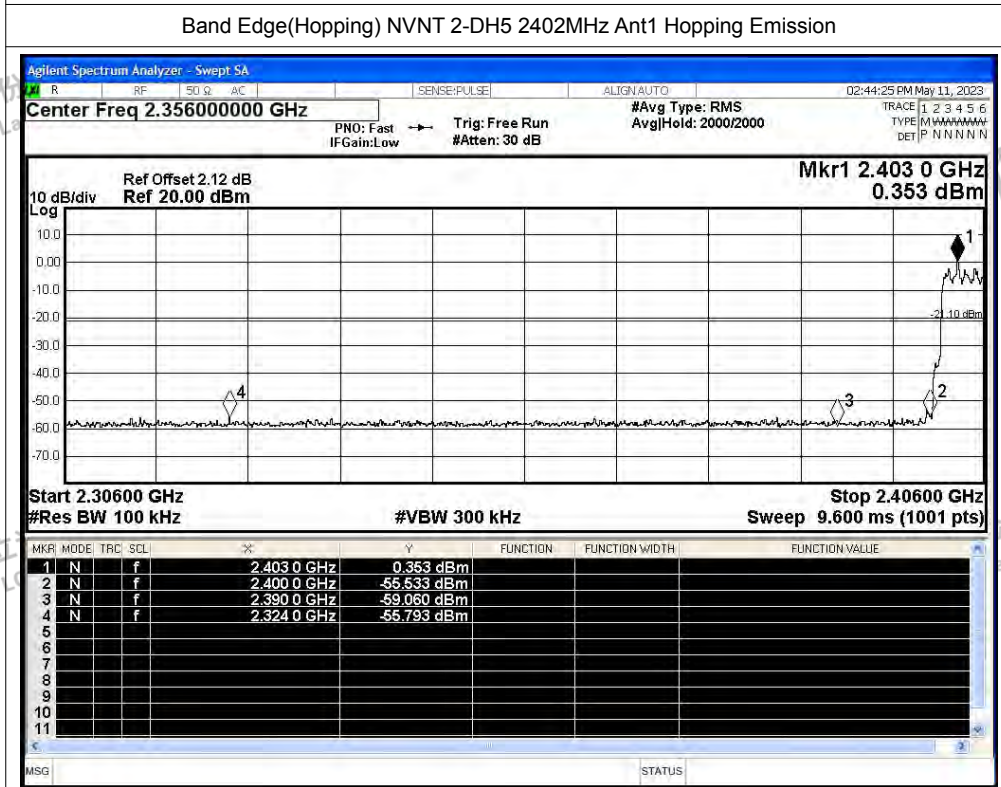
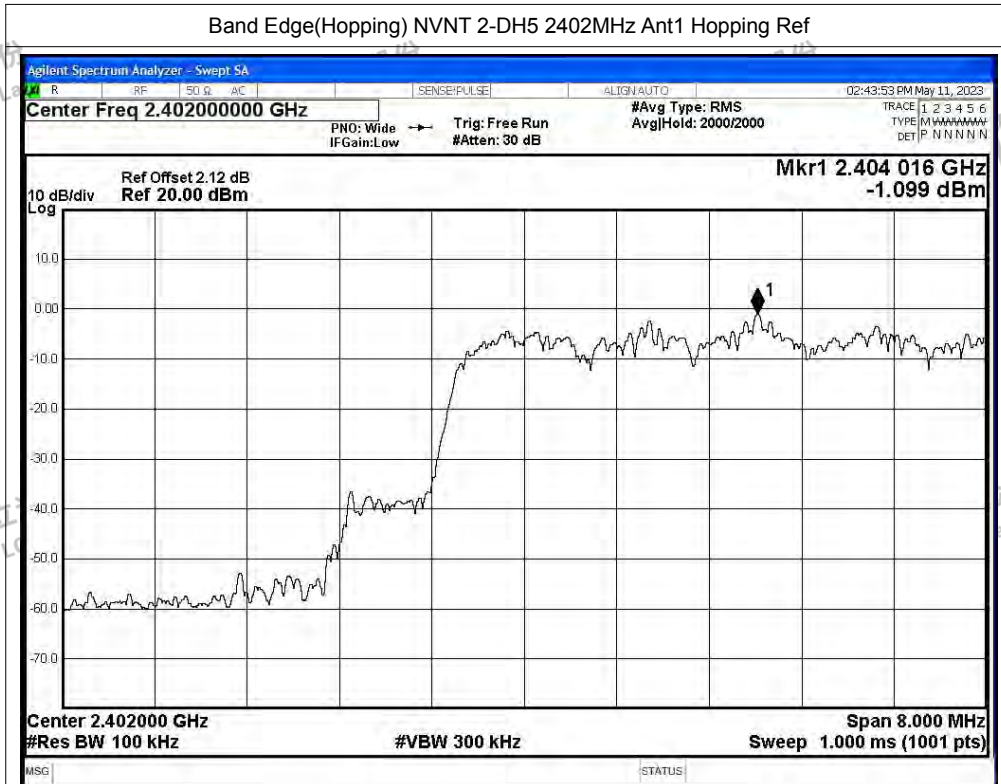


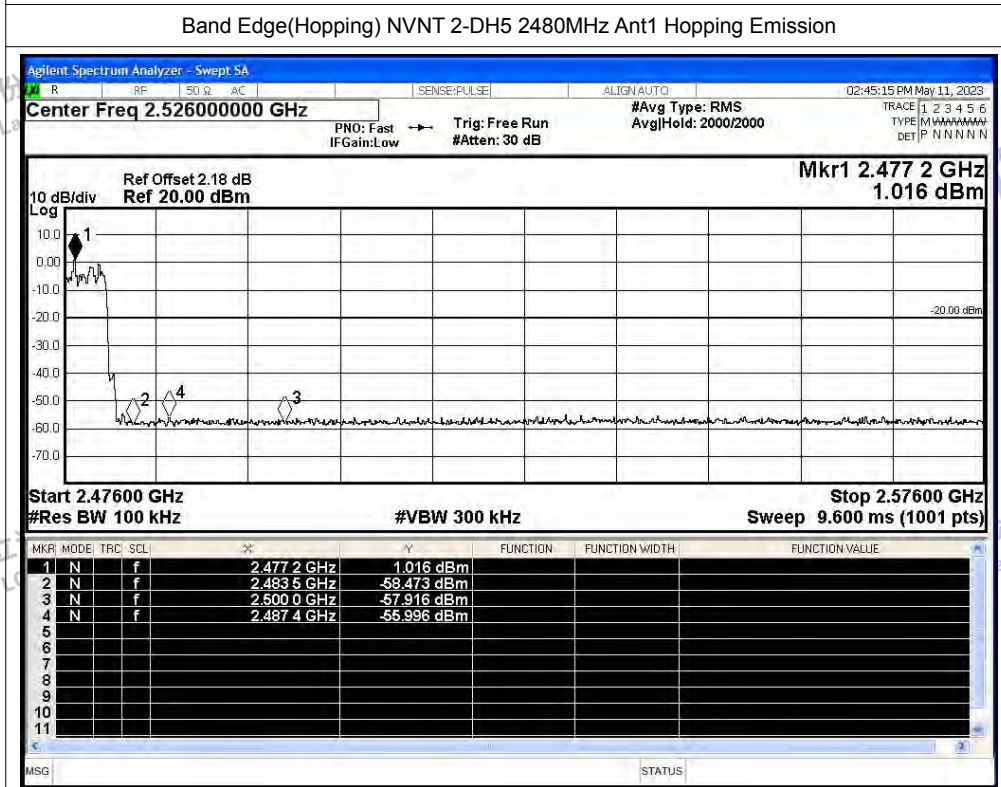
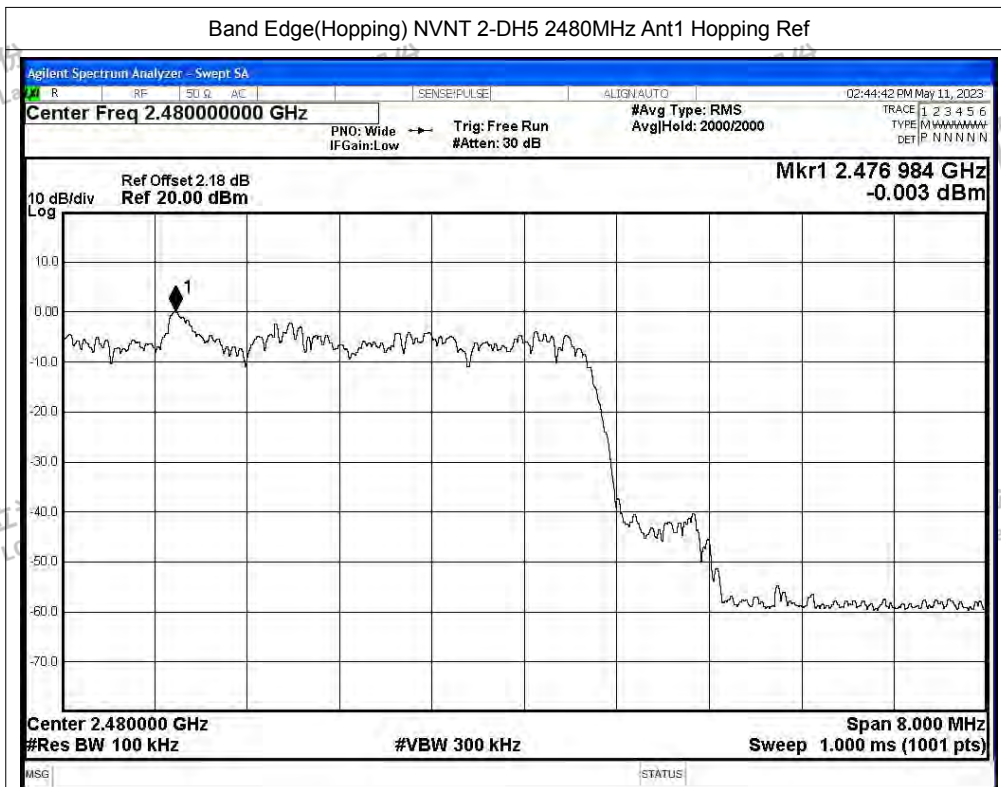
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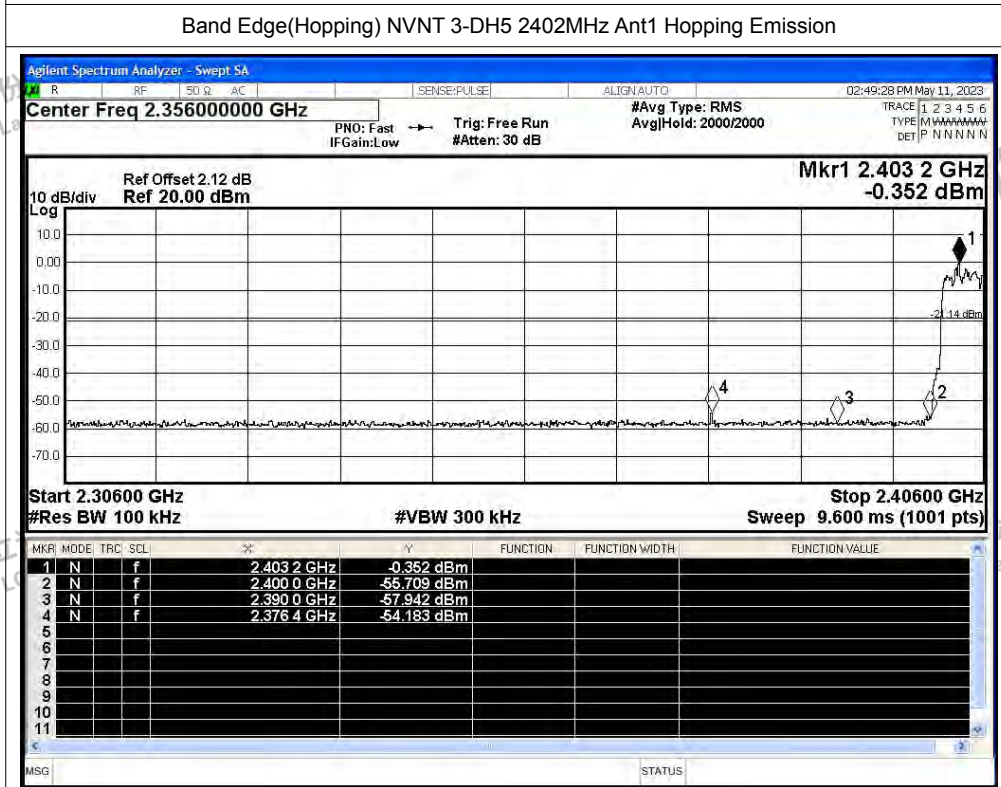
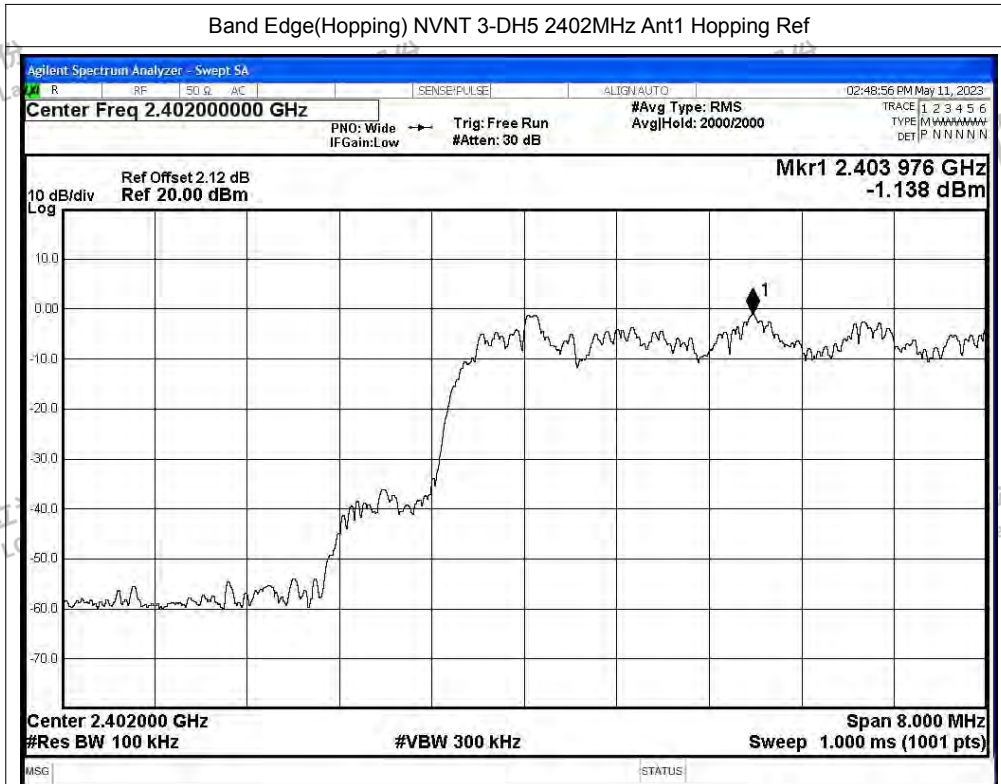
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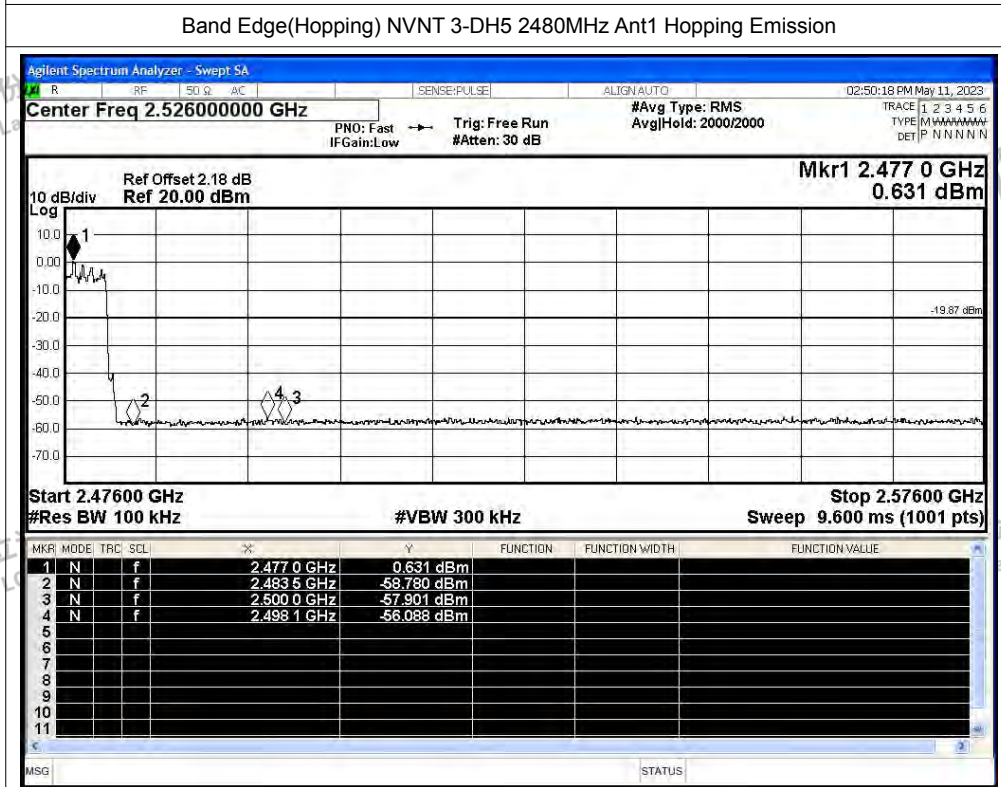
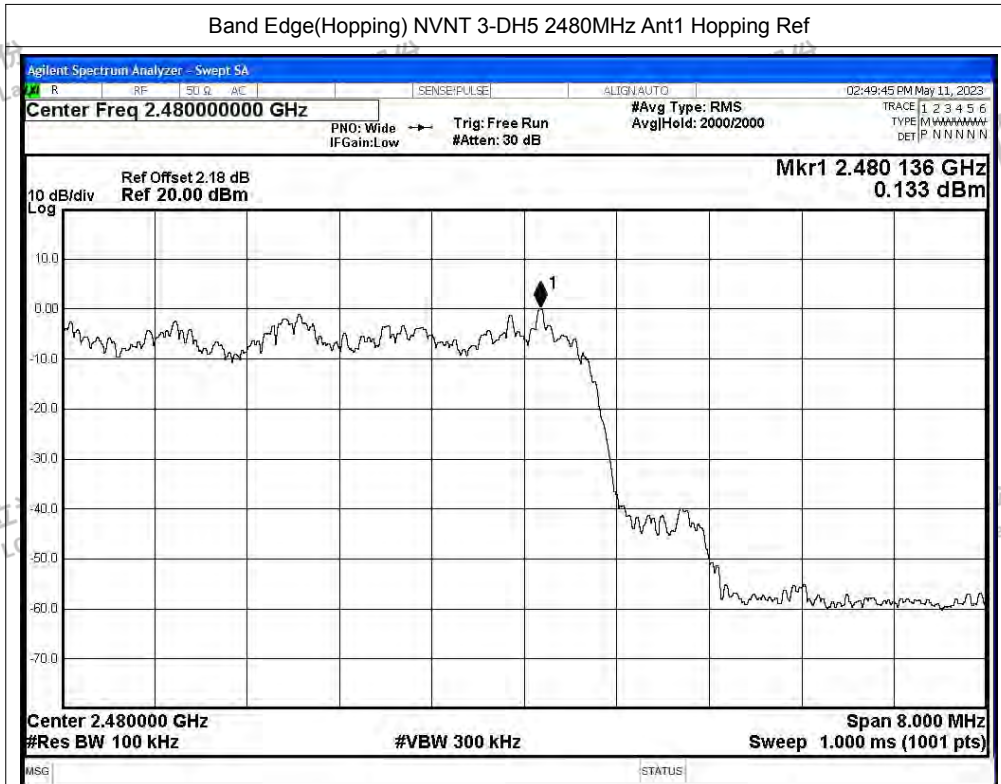
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A.7 Conducted RF Spurious Emission

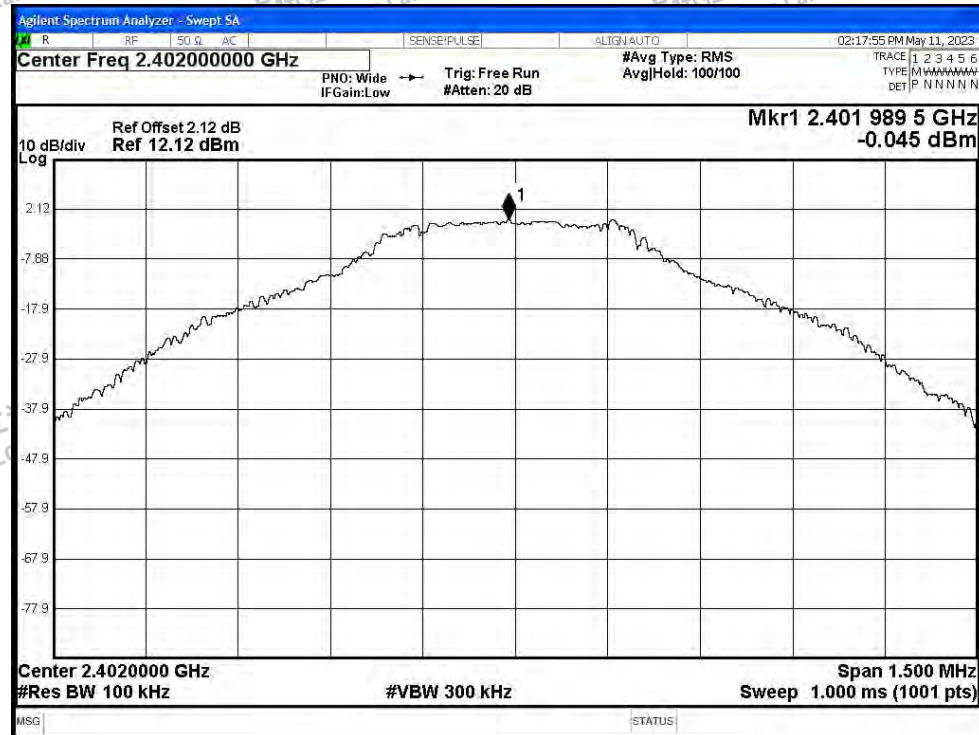
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-55.63	-20	Pass
NVNT	1-DH5	2441	Ant1	-56.51	-20	Pass
NVNT	1-DH5	2480	Ant1	-57	-20	Pass
NVNT	2-DH5	2402	Ant1	-55.24	-20	Pass
NVNT	2-DH5	2441	Ant1	-55.3	-20	Pass
NVNT	2-DH5	2480	Ant1	-55.67	-20	Pass
NVNT	3-DH5	2402	Ant1	-55.31	-20	Pass
NVNT	3-DH5	2441	Ant1	-55.59	-20	Pass
NVNT	3-DH5	2480	Ant1	-56.13	-20	Pass



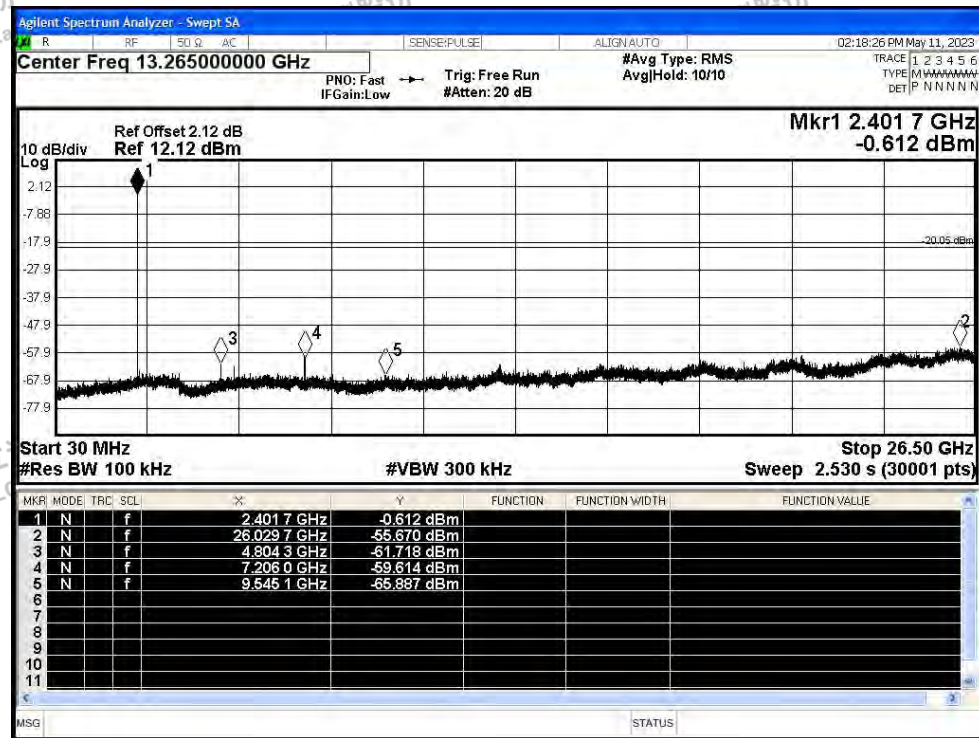


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

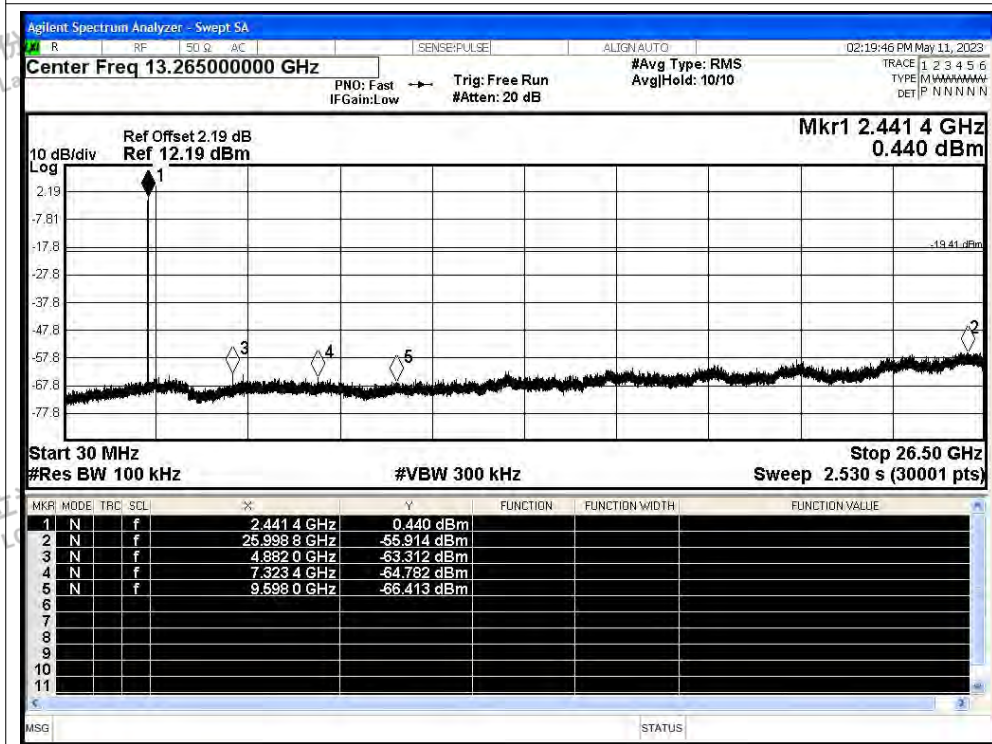




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

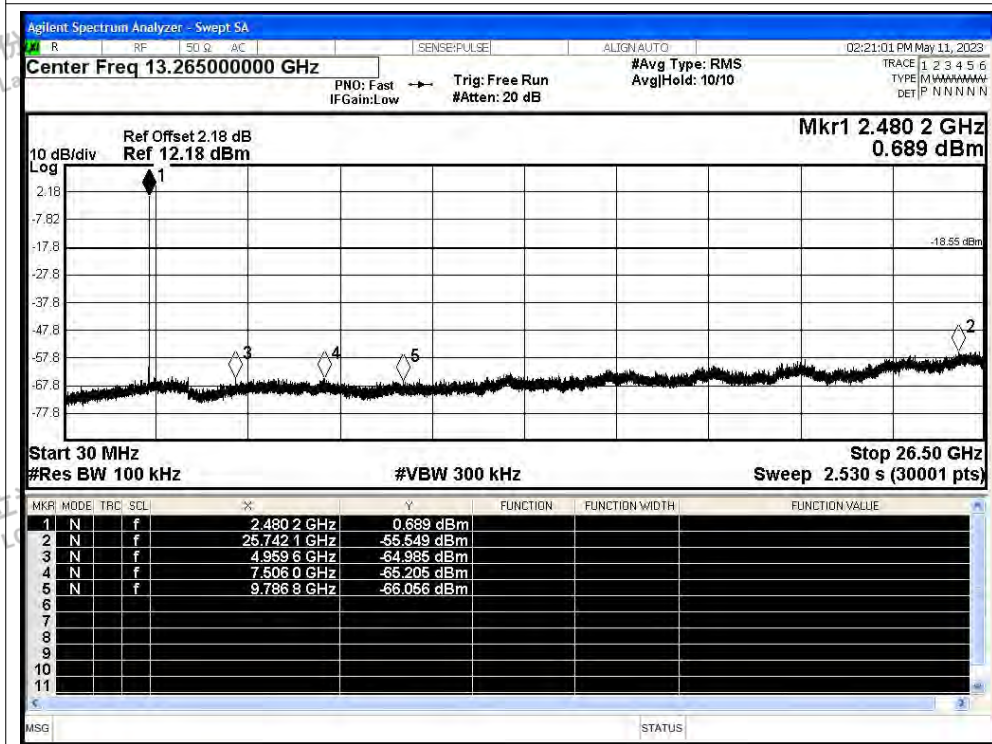




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

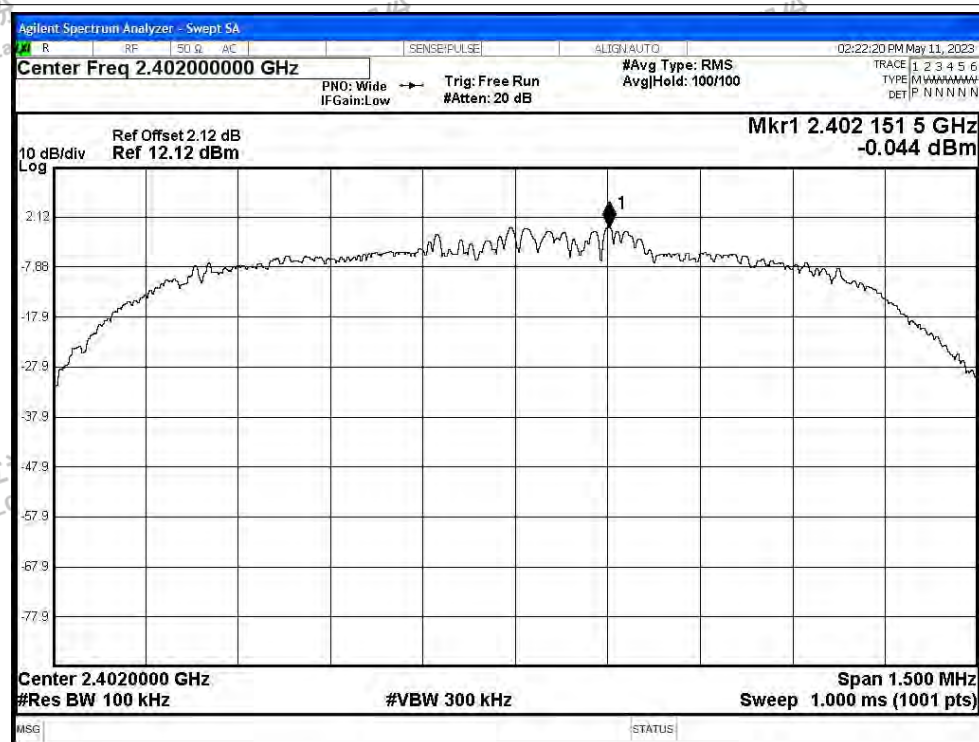


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

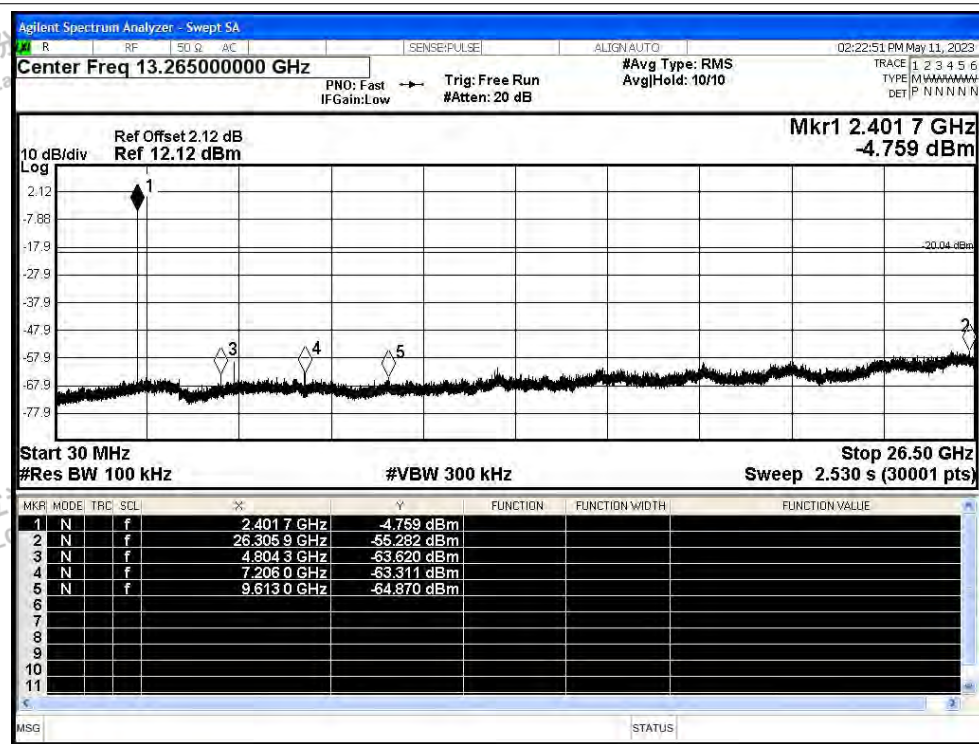




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



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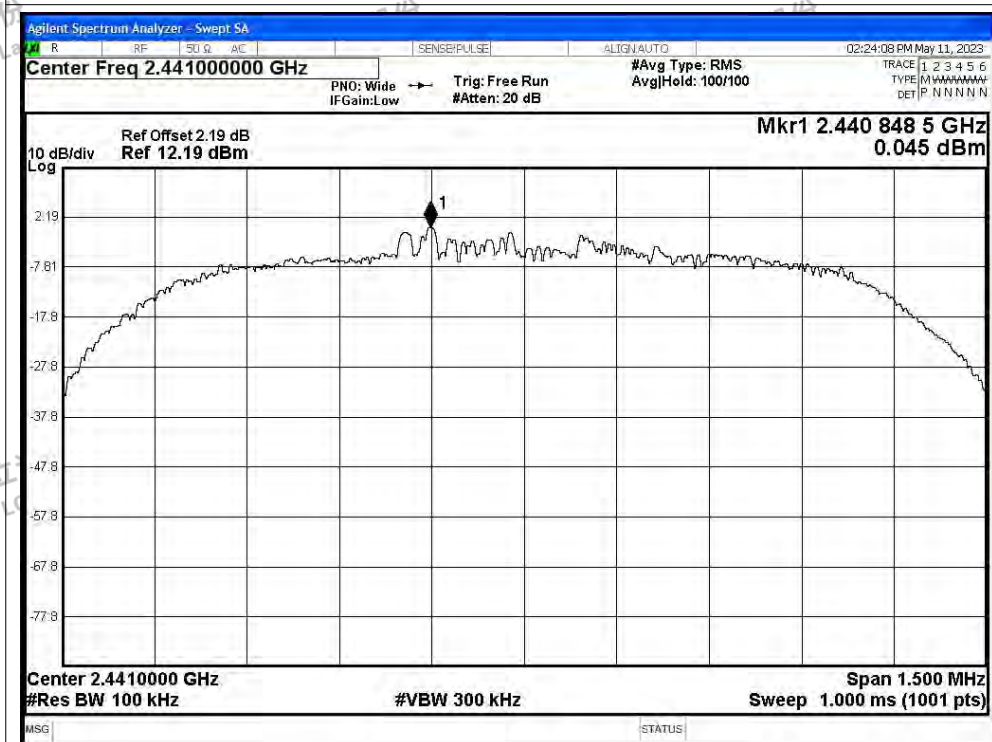
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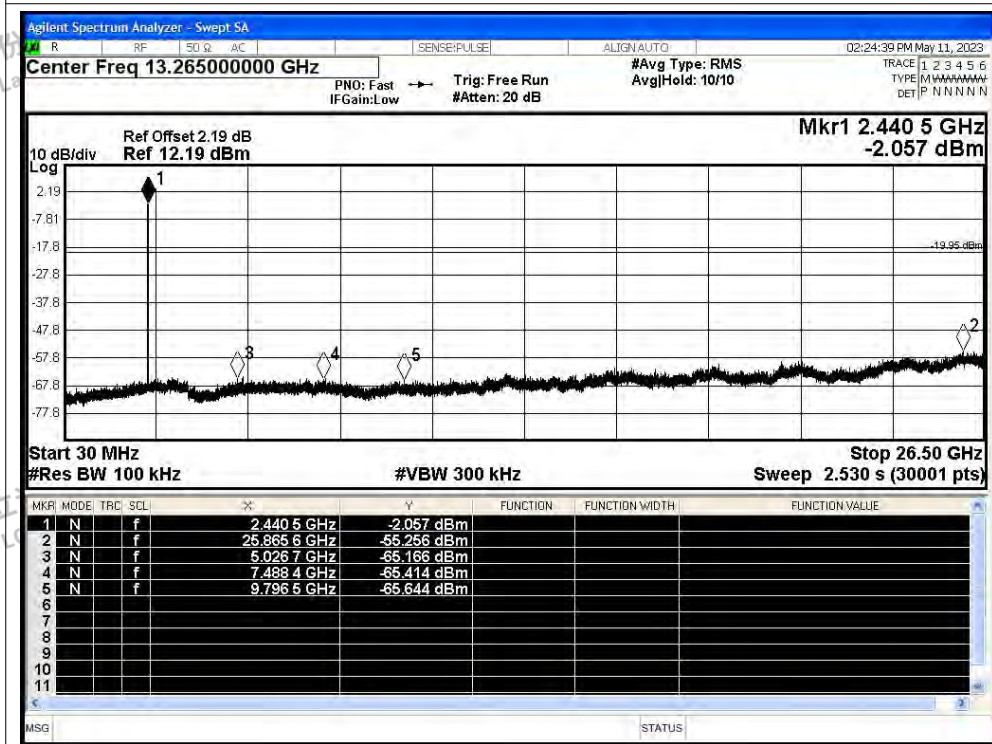
Scan code to check authenticity



Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

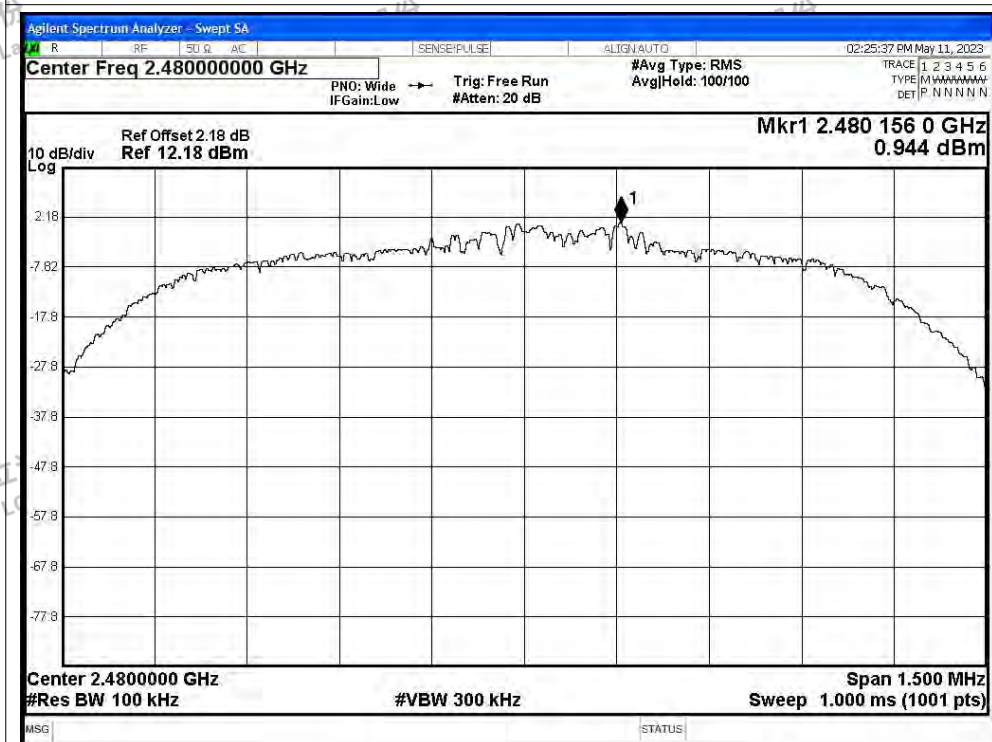


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

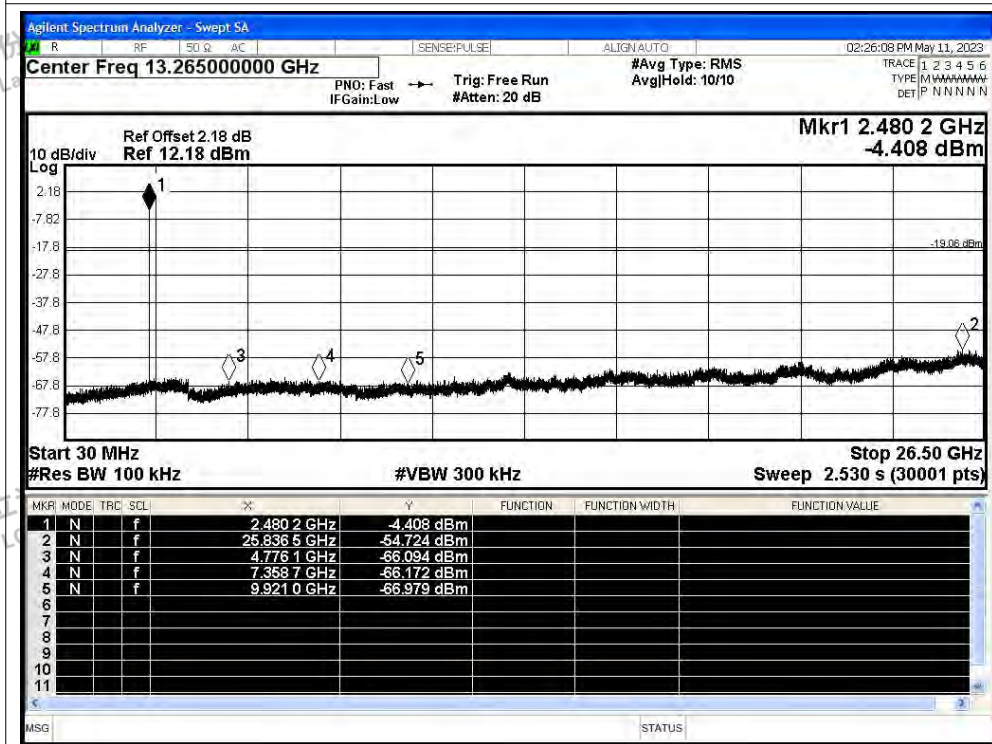




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

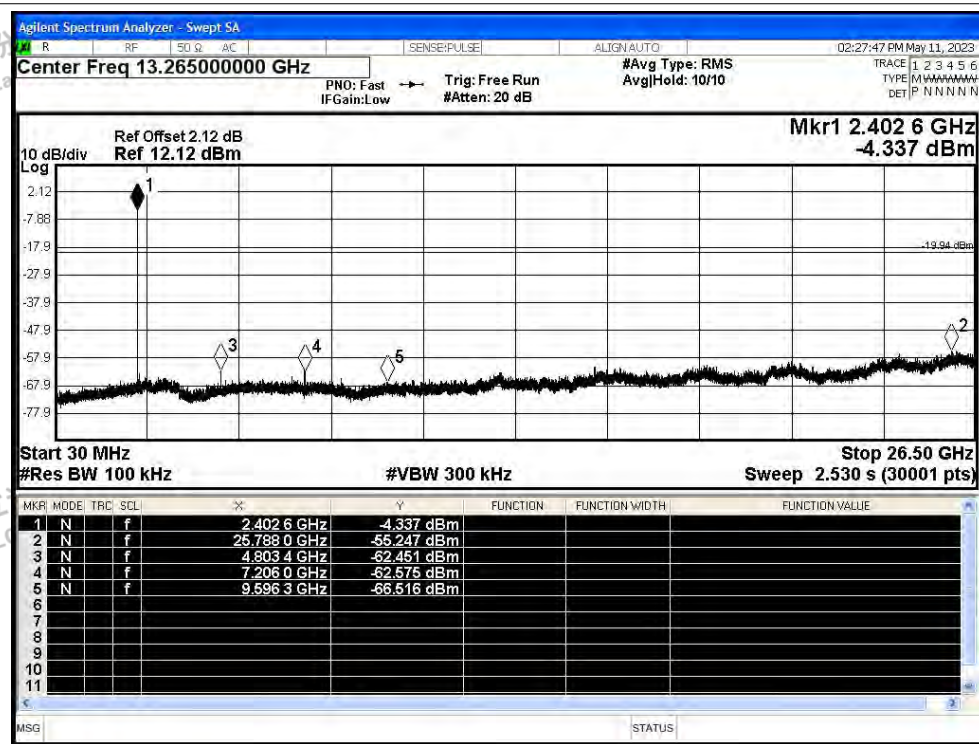




Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref

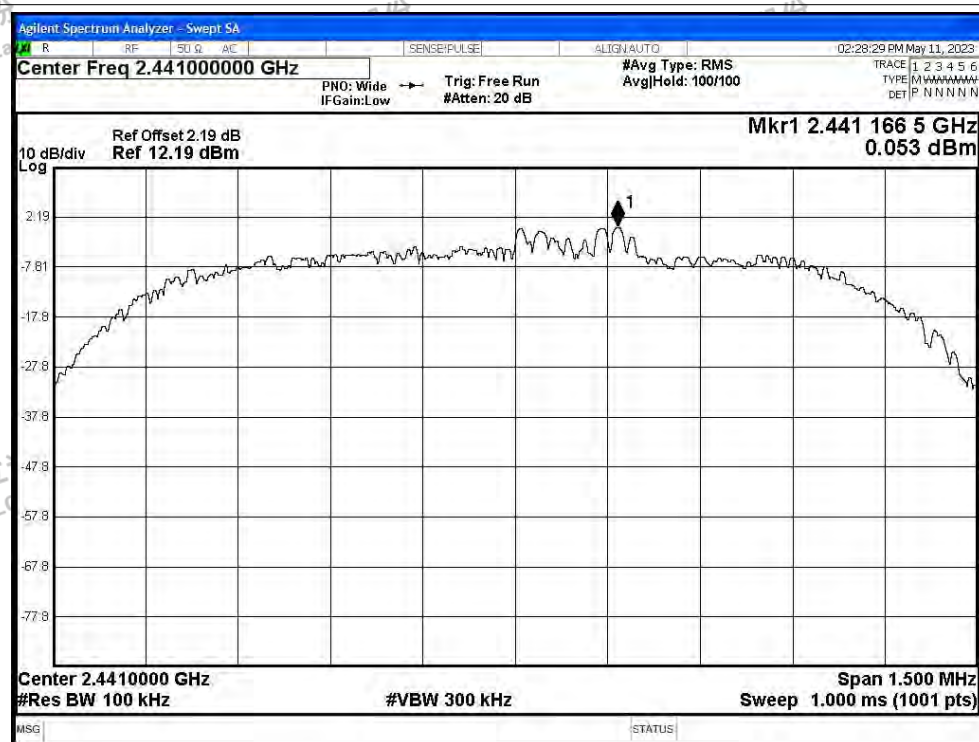


Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

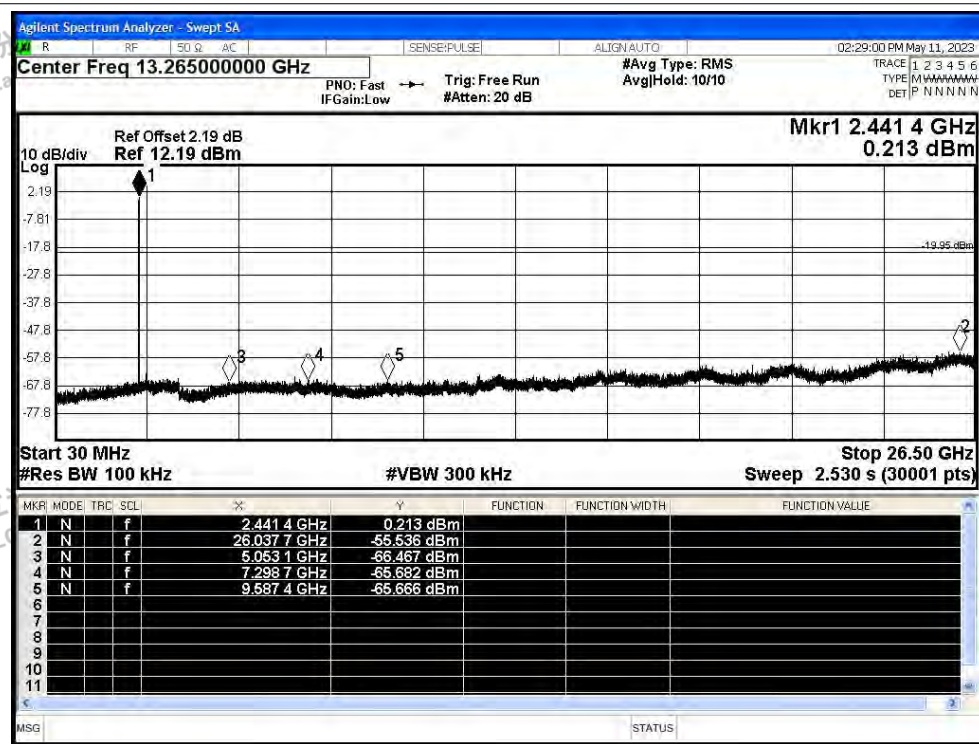




Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



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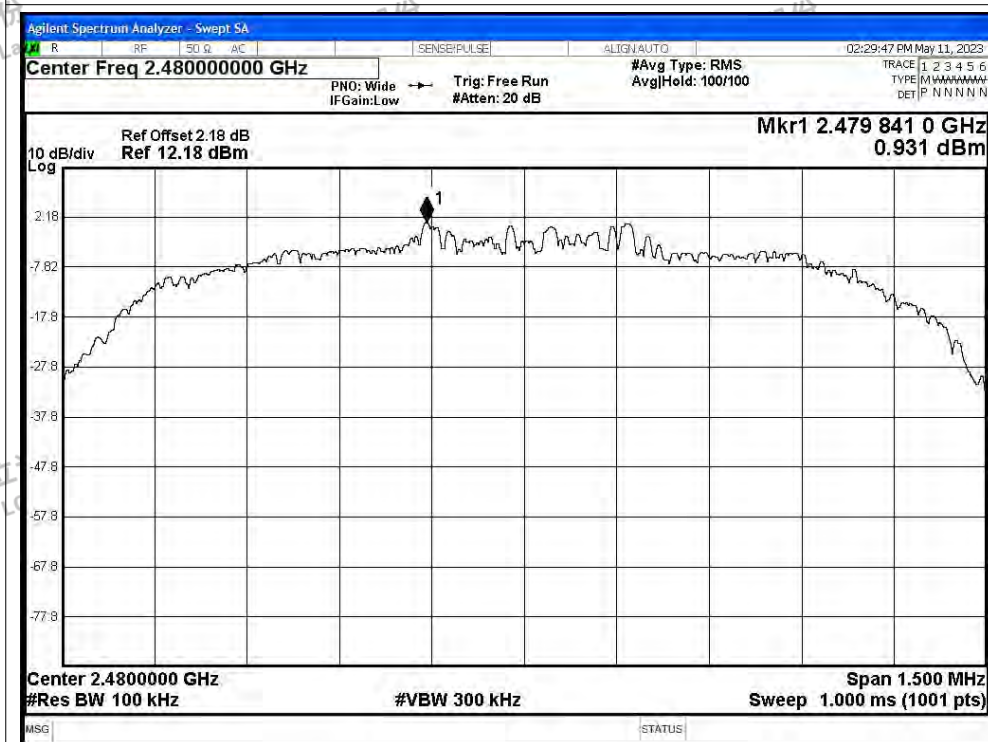
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

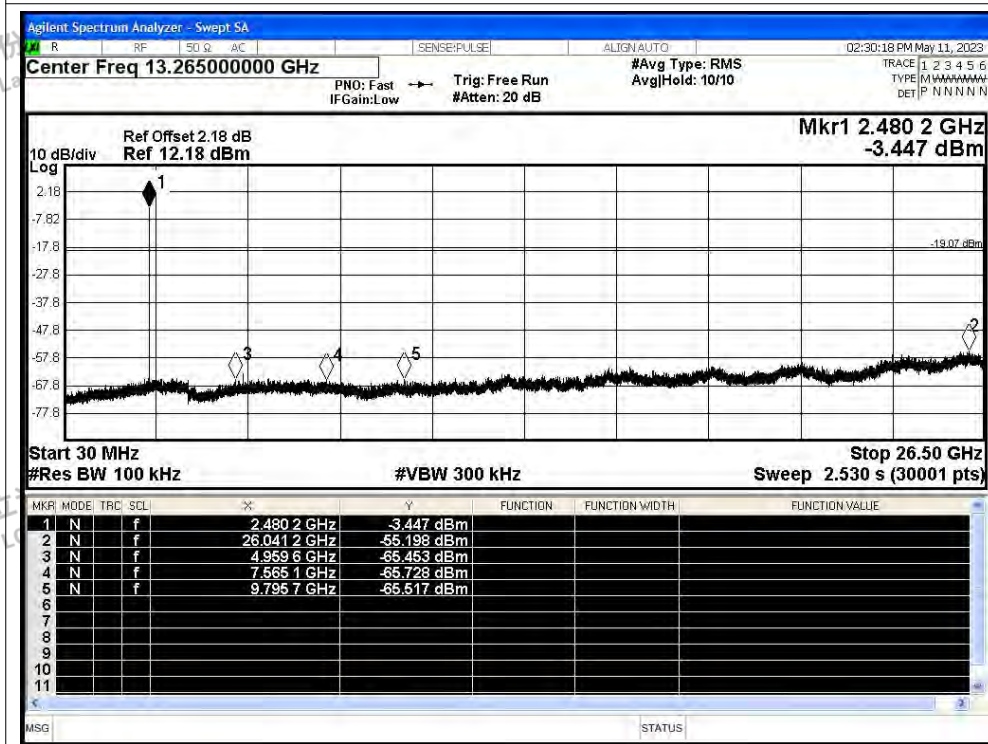
Scan code to check authenticity



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission





A.8 Restrict Band

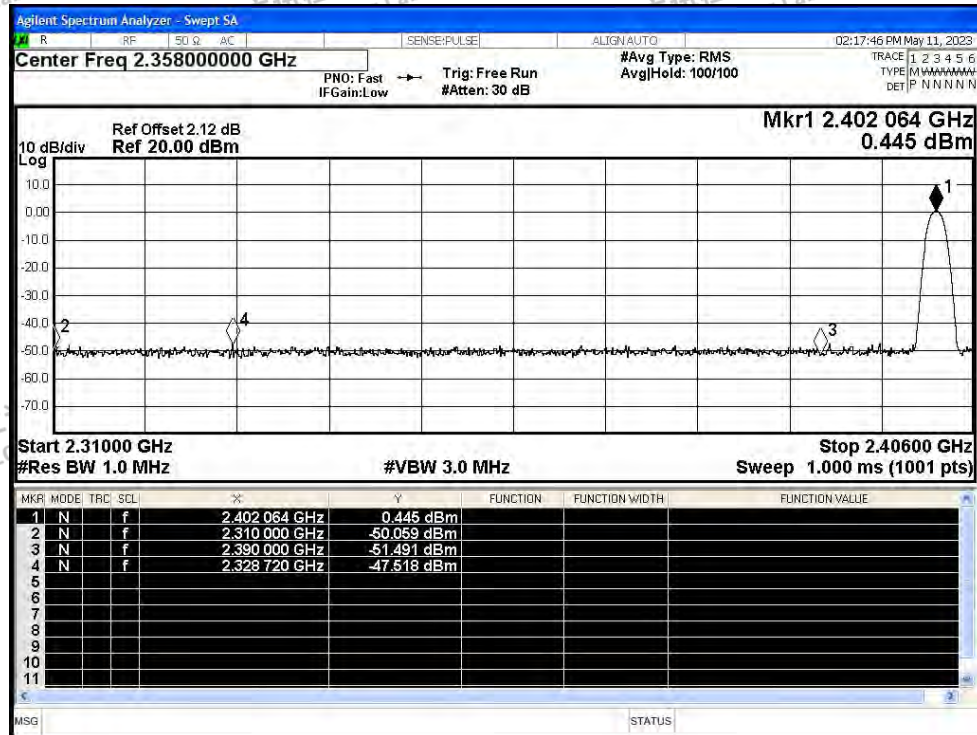
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50.06	2	47.2	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57.79	2	39.47	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2328.72	-47.52	2	49.74	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2386.704	-57.42	2	39.84	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-51.49	2	45.77	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-57.52	2	39.74	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.65	2	47.61	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-55.2	2	42.06	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2498.464	-47.34	2	49.92	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.512	-55.2	2	42.06	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.03	2	47.23	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.22	2	40.04	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.51	2	45.75	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.04	2	39.22	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2383.632	-47.32	2	49.94	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2388.528	-57.4	2	39.86	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.39	2	46.87	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-57.7	2	39.56	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-51.49	2	45.77	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-55.1	2	42.16	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2497.216	-46.61	2	50.65	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-55.1	2	42.16	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.6	2	47.66	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.25	2	40.01	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.66	2	46.6	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.02	2	39.24	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2367.12	-47.8	2	49.46	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2384.688	-57.5	2	39.76	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.46	2	45.8	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-57.58	2	39.68	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-48.85	2	48.41	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-55.09	2	42.17	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2495.056	-46.71	2	50.55	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.512	-55.09	2	42.17	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-49.3	2	47.96	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.26	2	40	Average	54	Pass



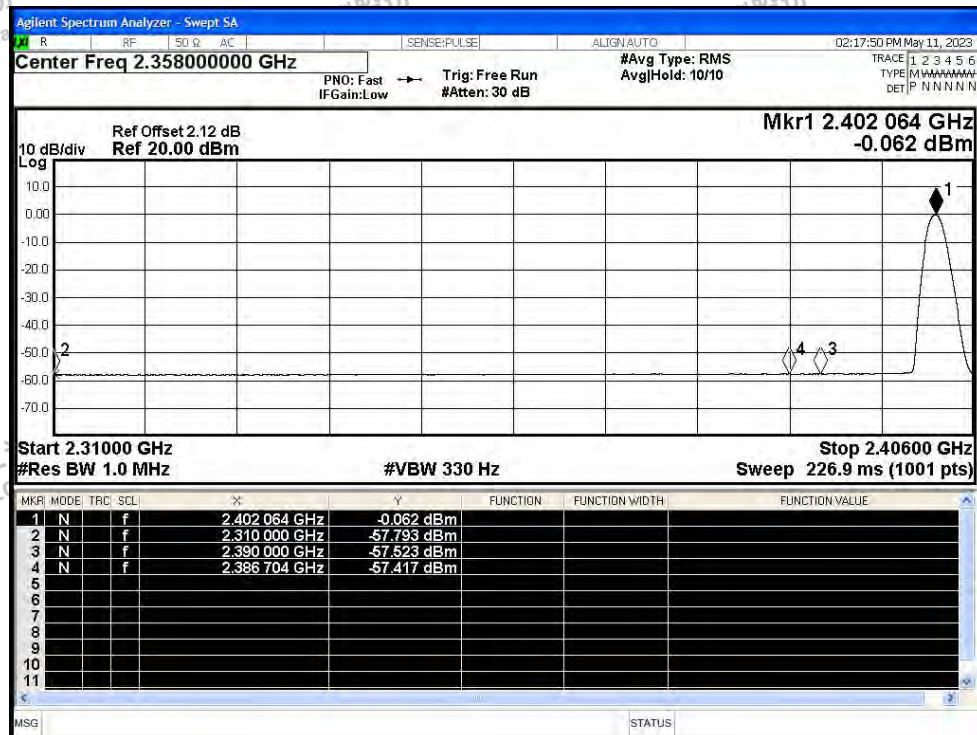


Test Graphs

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

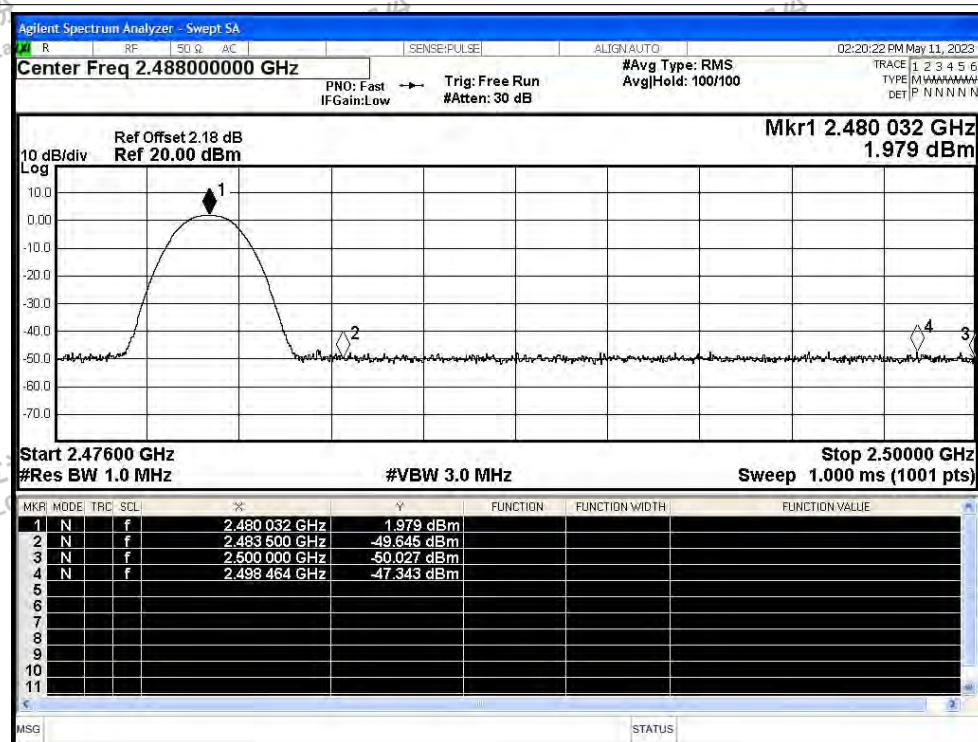


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

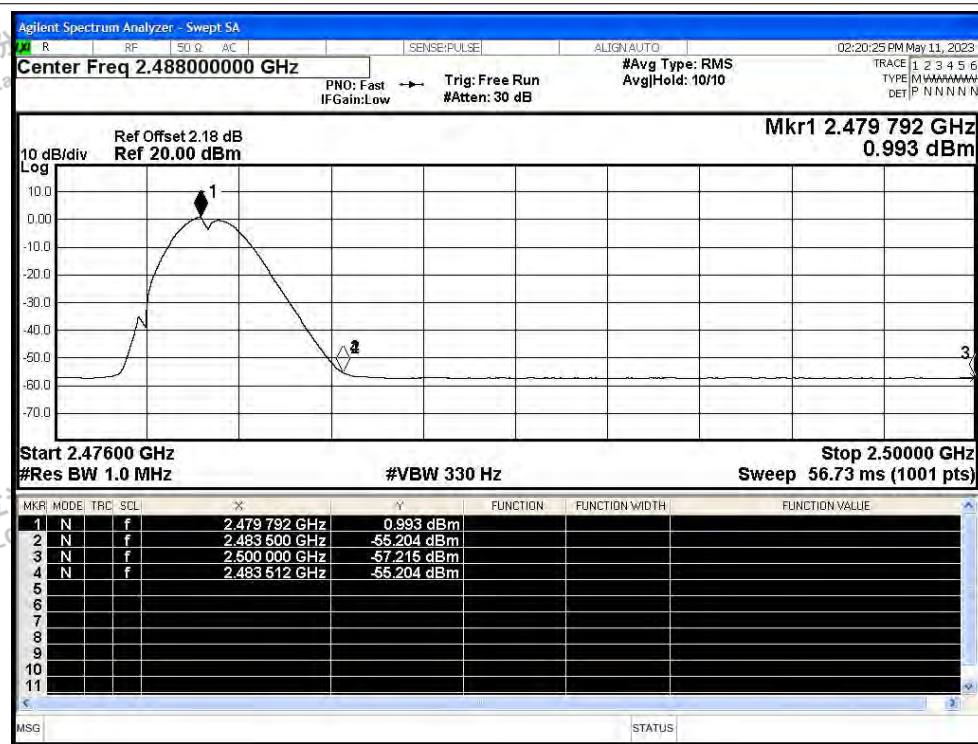


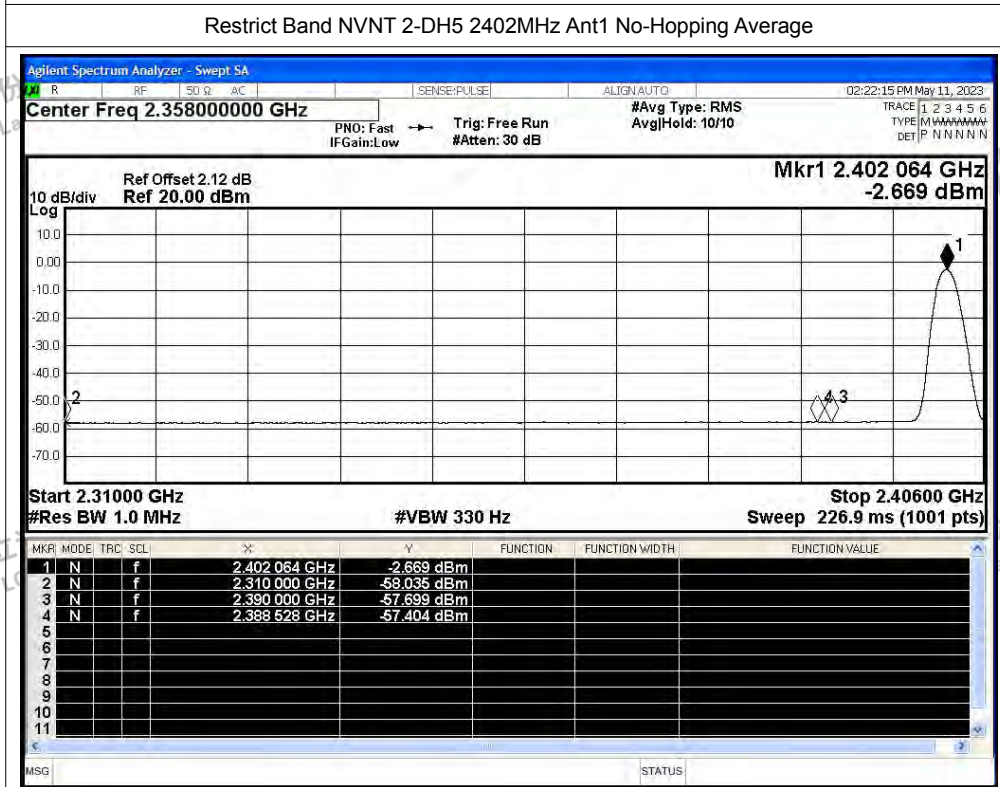
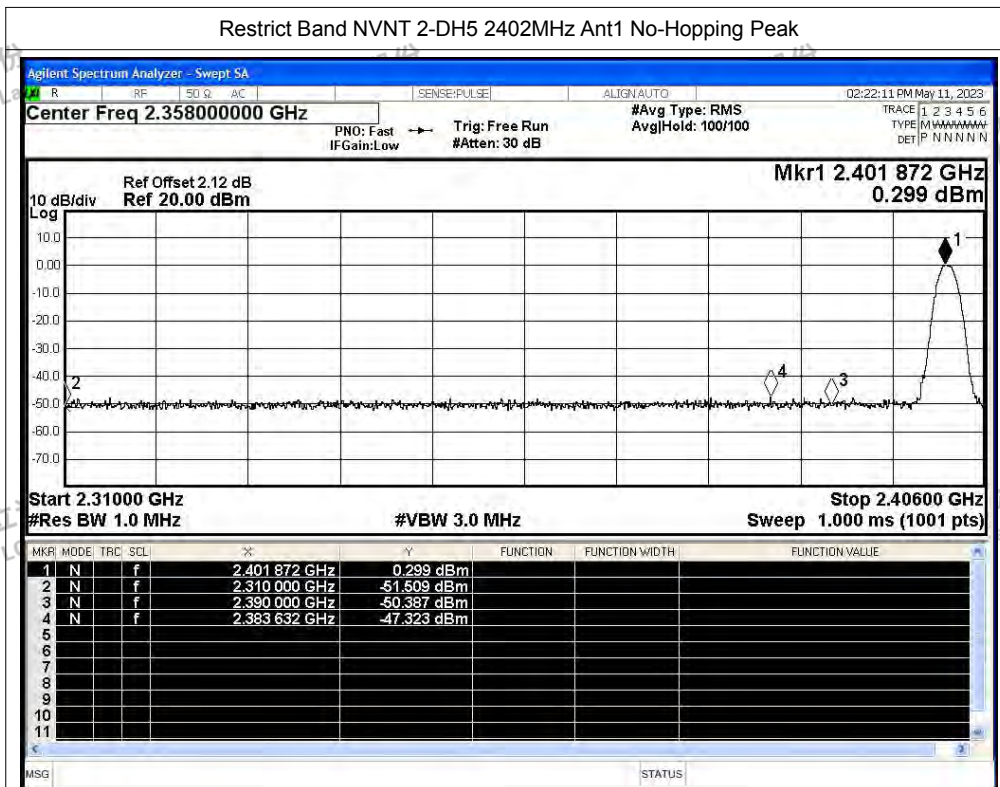


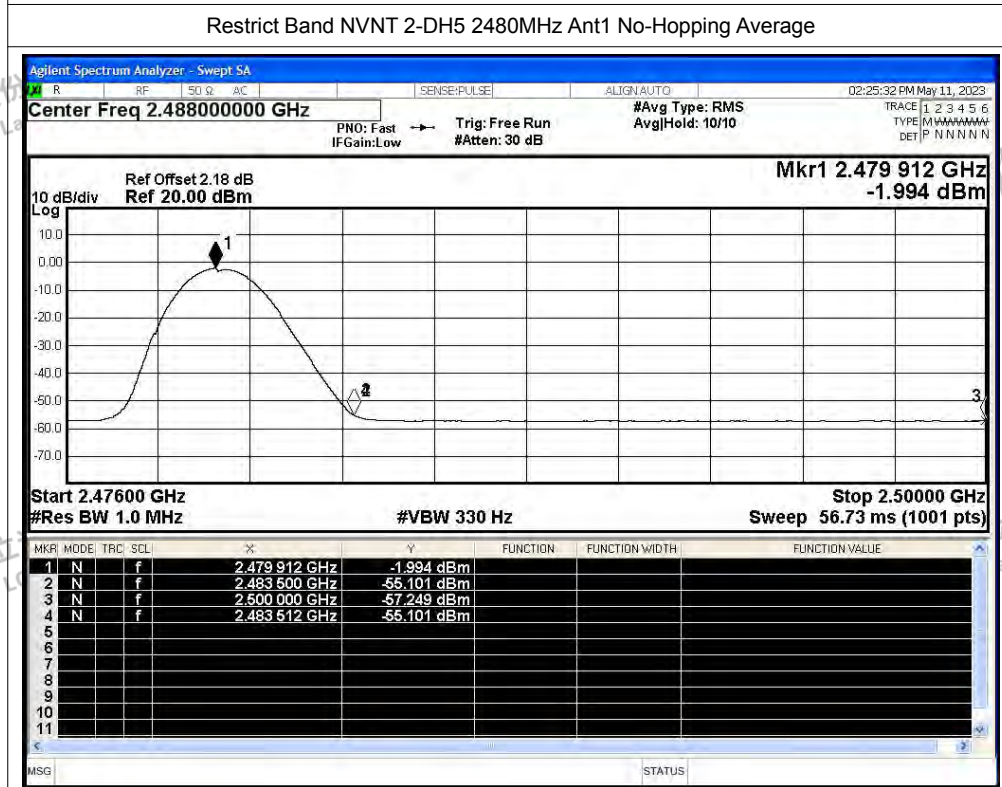
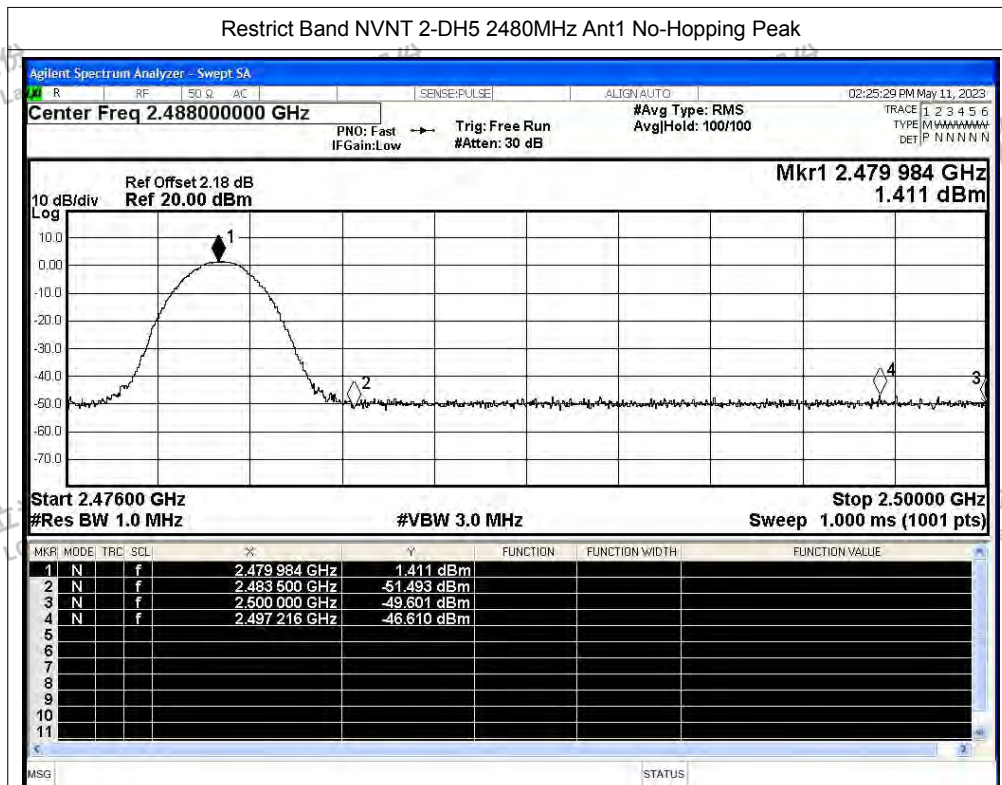
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

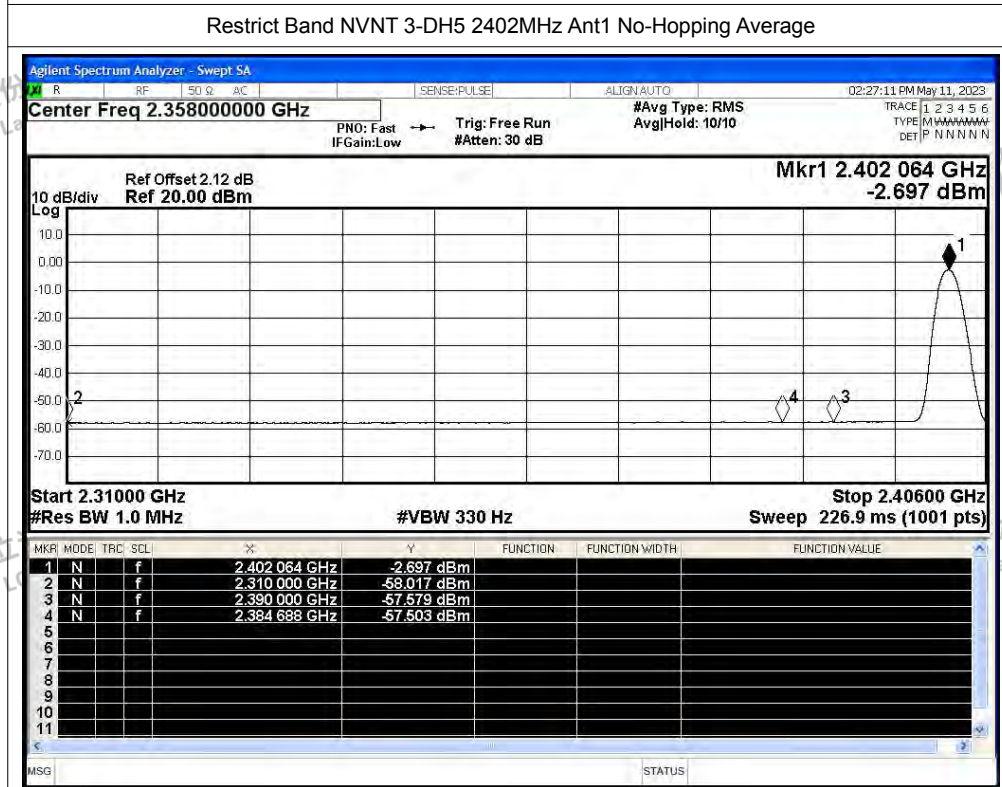
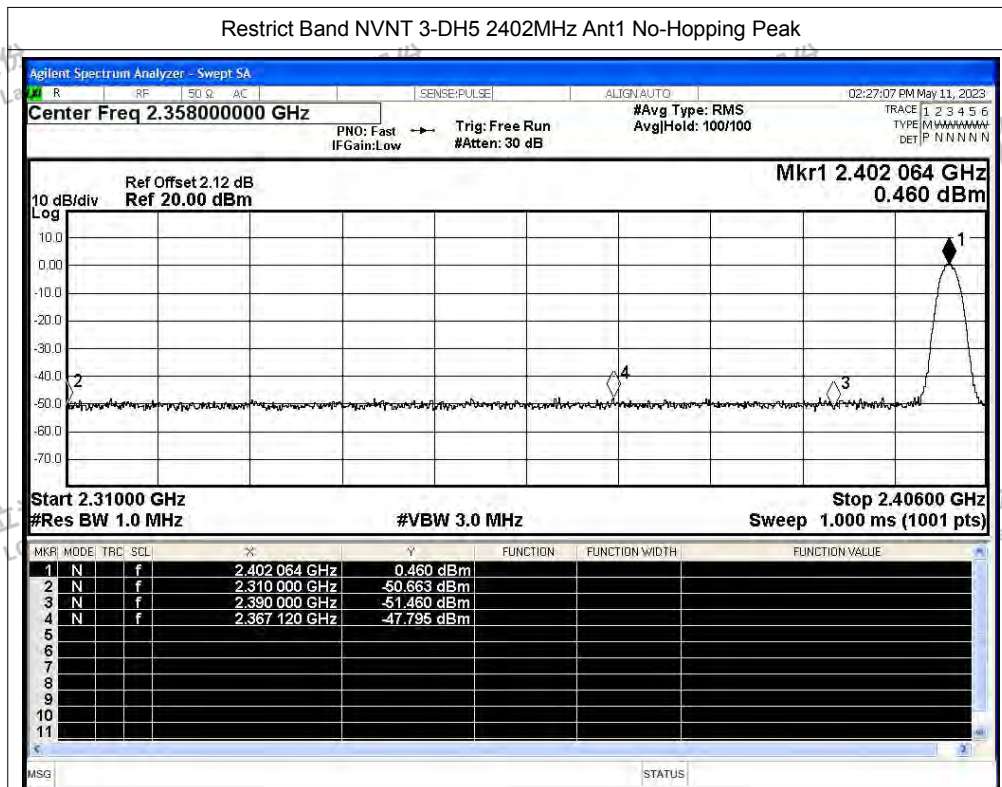


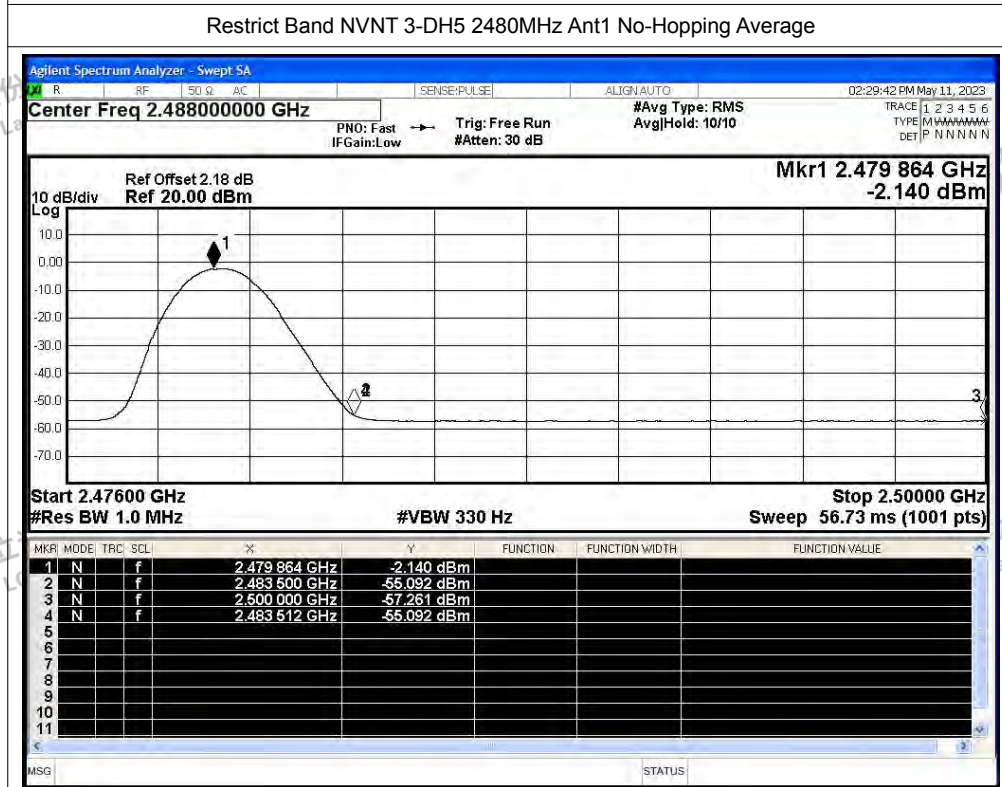
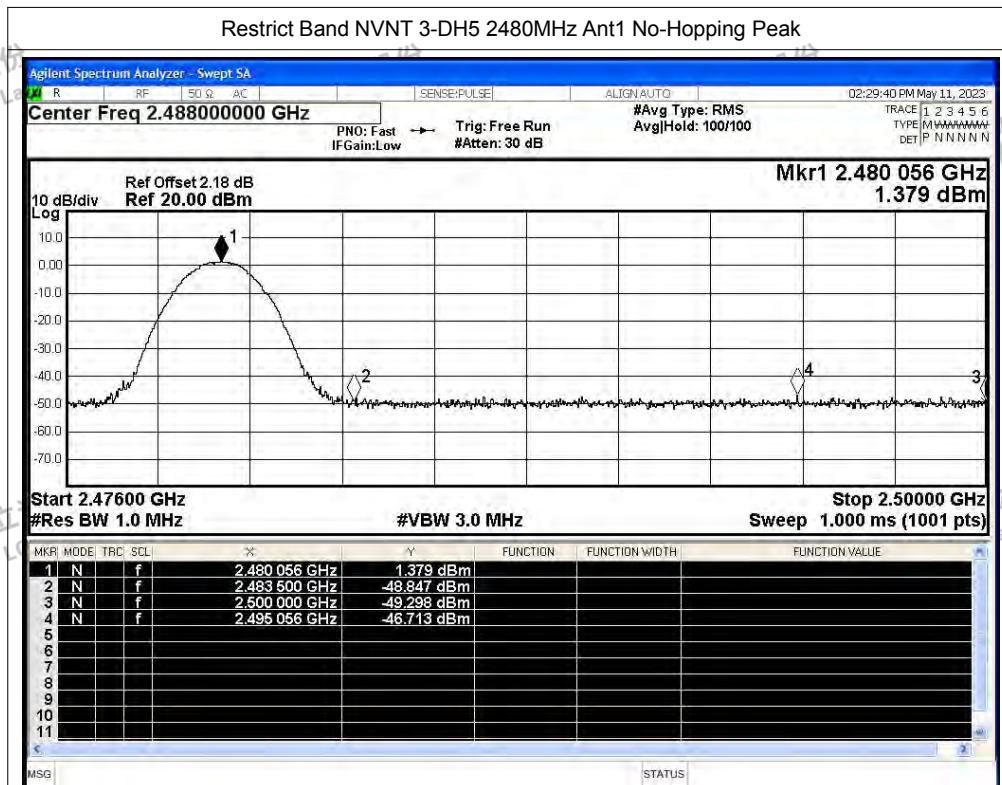
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average











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