



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Wireless 3D wheel Aligner

Test Model: WA613 V2.0

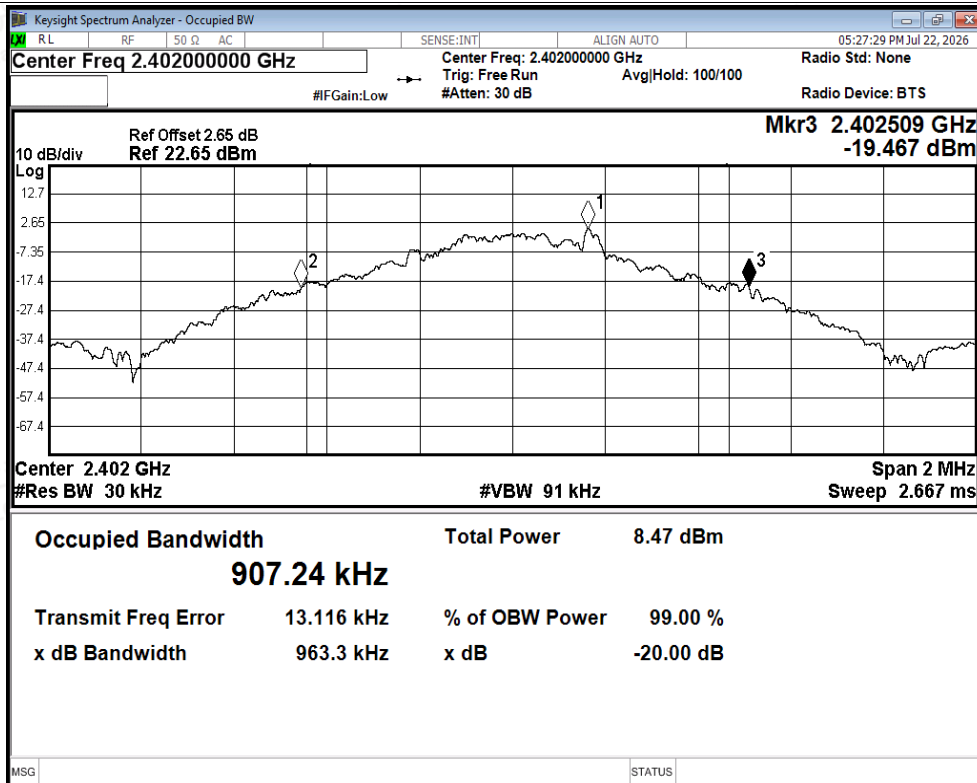
Environmental Conditions

Temperature:	24.2° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Faith Li
Supervised by:	Can Kun

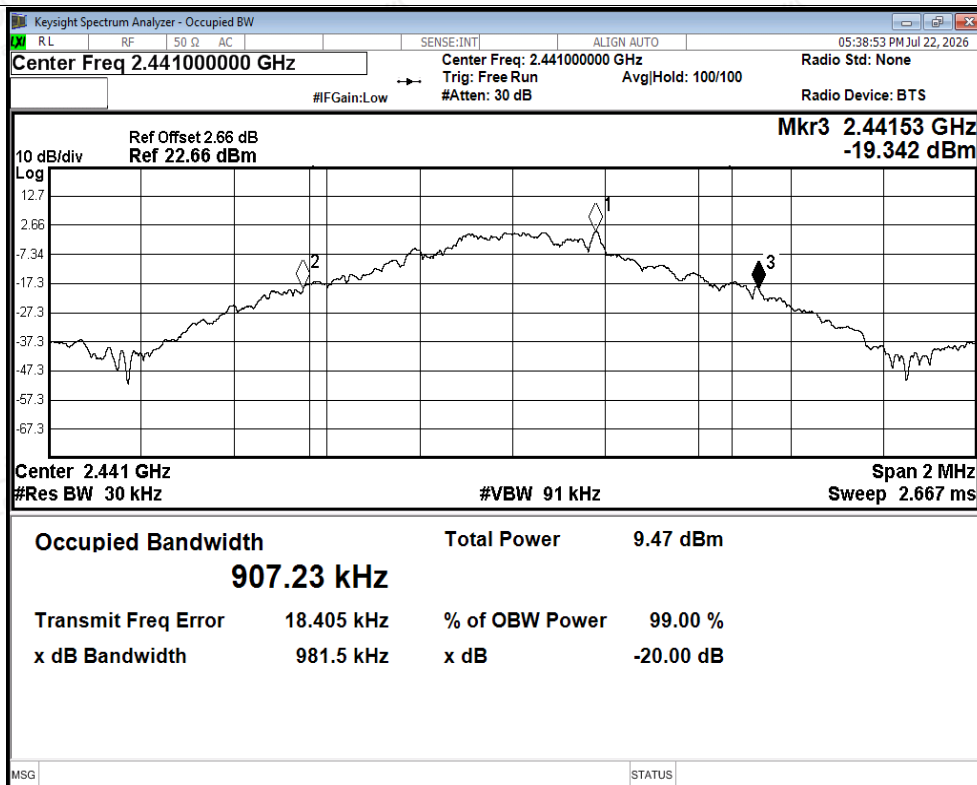


A.1 -20dB Bandwidth

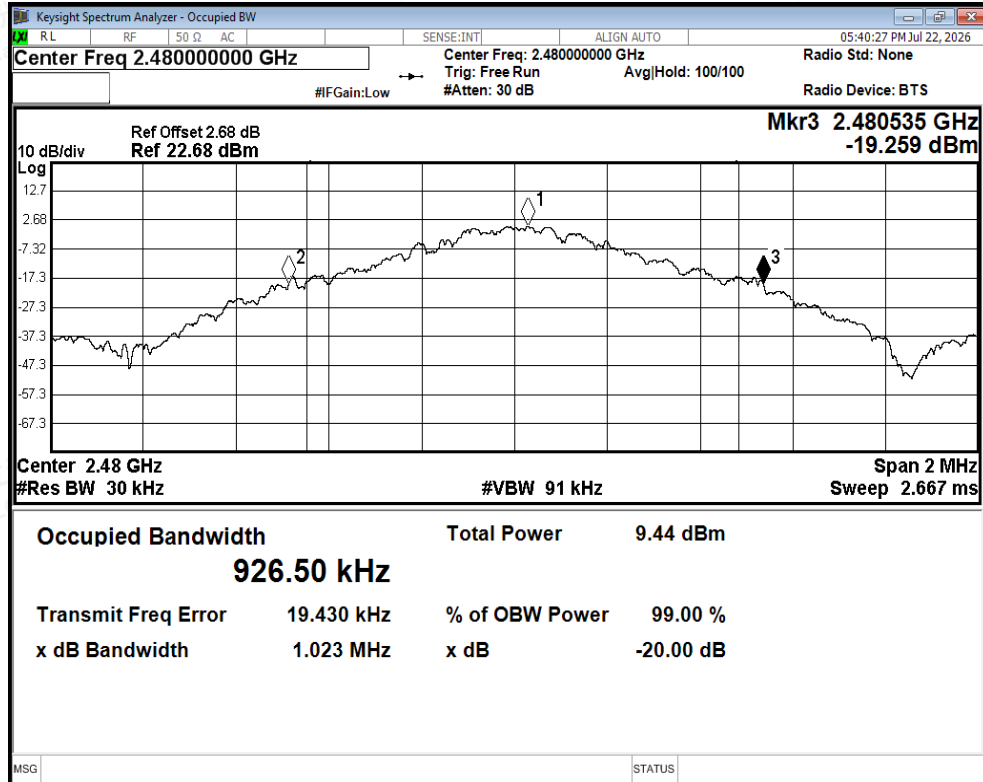
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.9633	---	Pass
NVNT	1-DH5	2441	Ant1	0.9815	---	Pass
NVNT	1-DH5	2480	Ant1	1.023	---	Pass
NVNT	2-DH5	2402	Ant1	1.356	---	Pass
NVNT	2-DH5	2441	Ant1	1.357	---	Pass
NVNT	2-DH5	2480	Ant1	1.359	---	Pass
NVNT	3-DH5	2402	Ant1	1.565	---	Pass
NVNT	3-DH5	2441	Ant1	1.355	---	Pass
NVNT	3-DH5	2480	Ant1	1.311	---	Pass



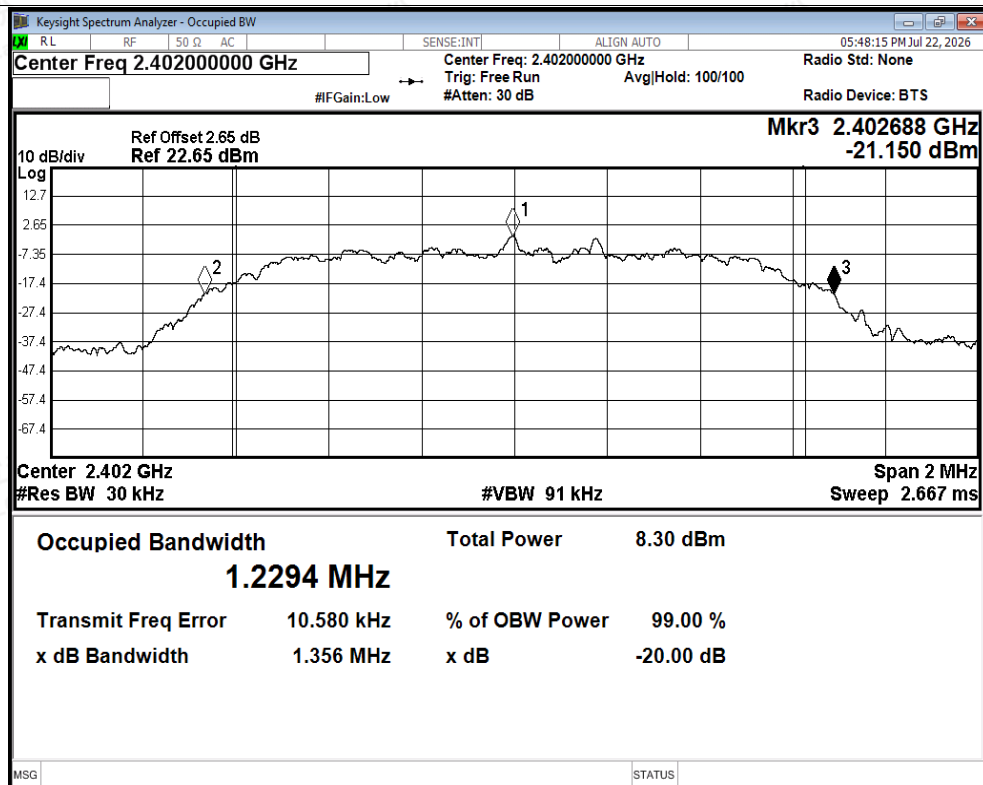
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



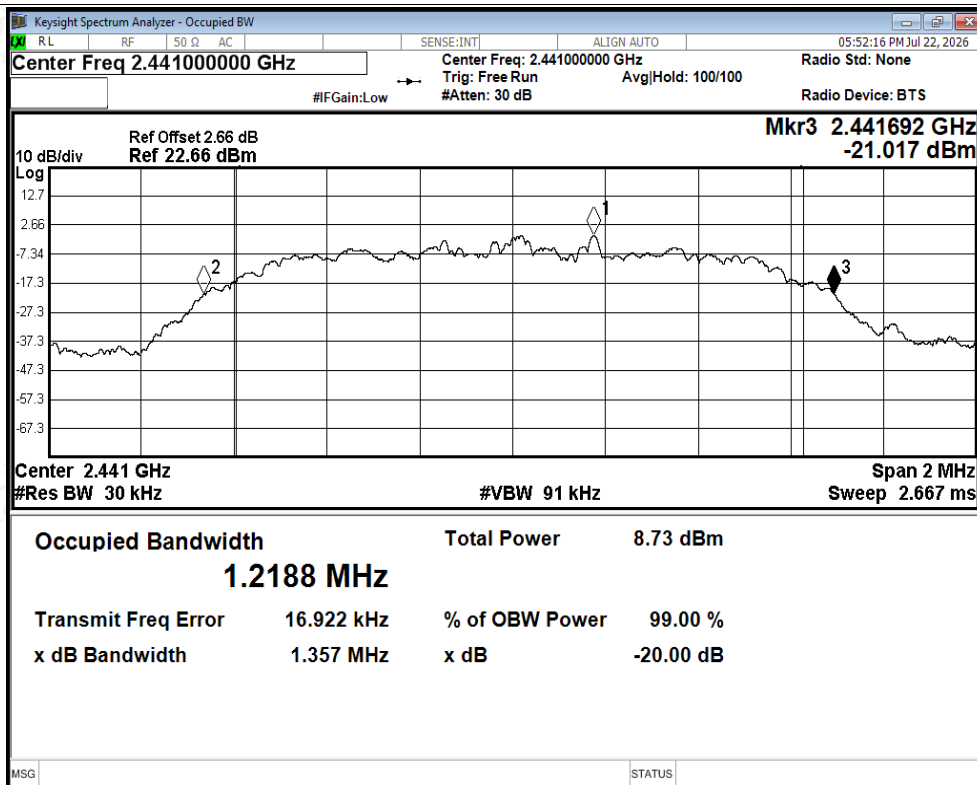
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



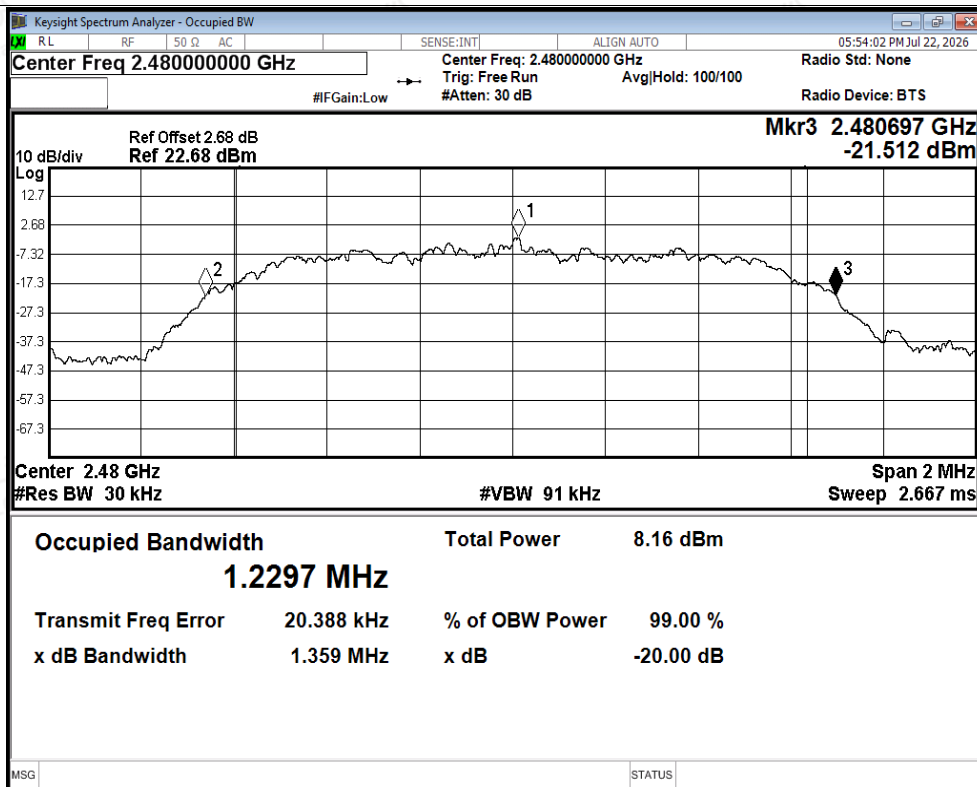
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



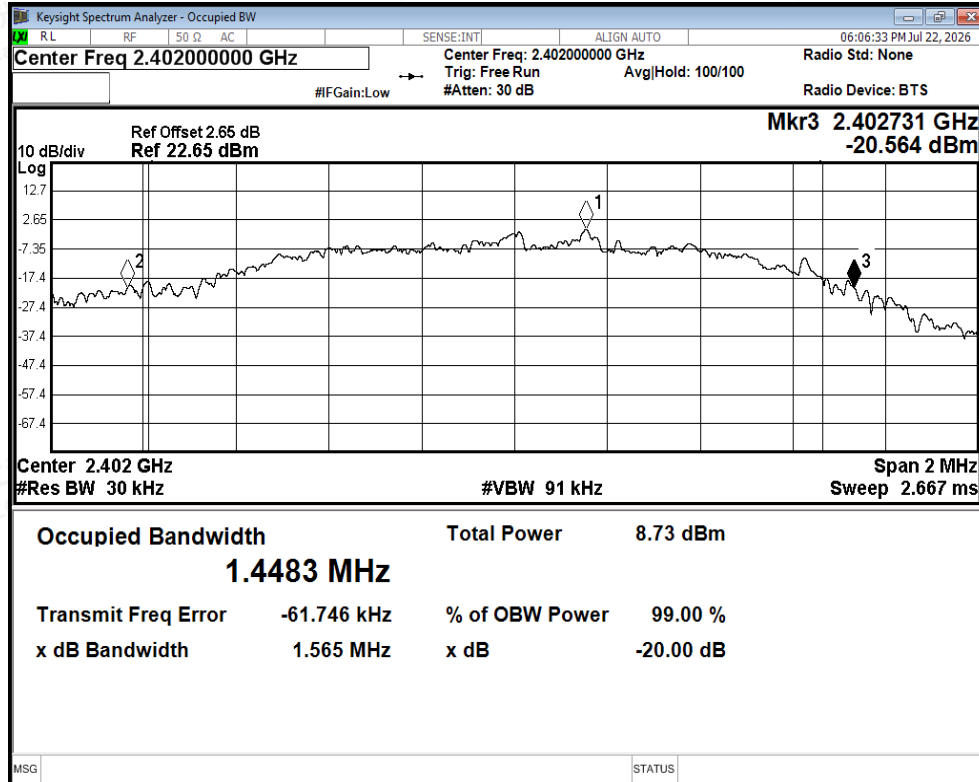
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



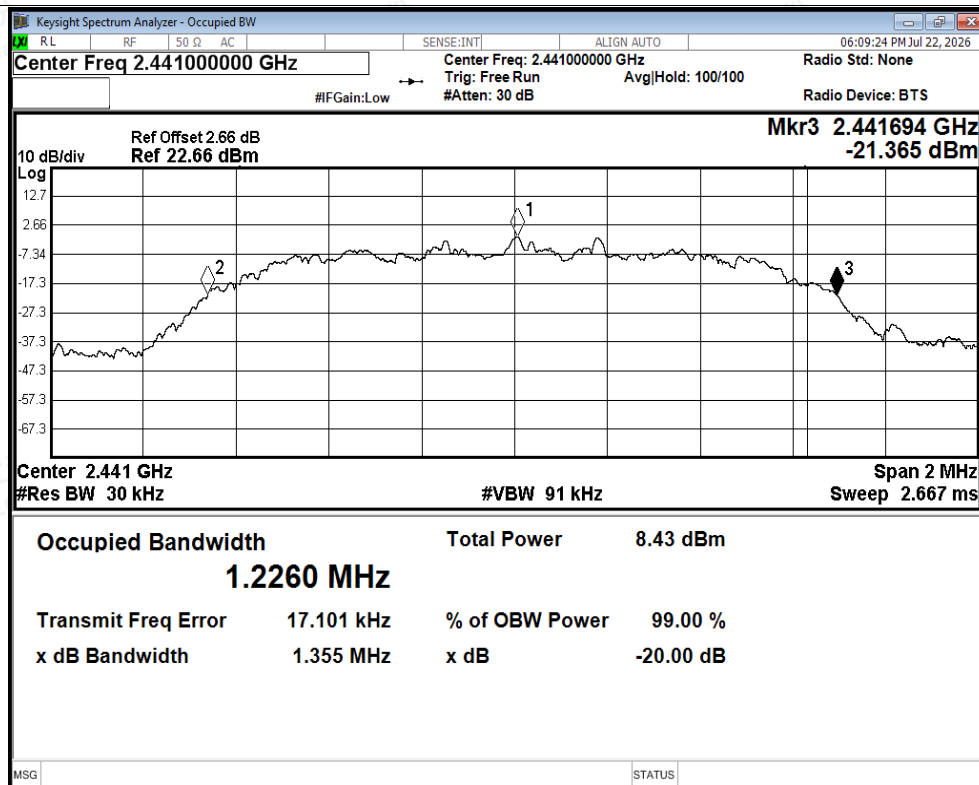
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



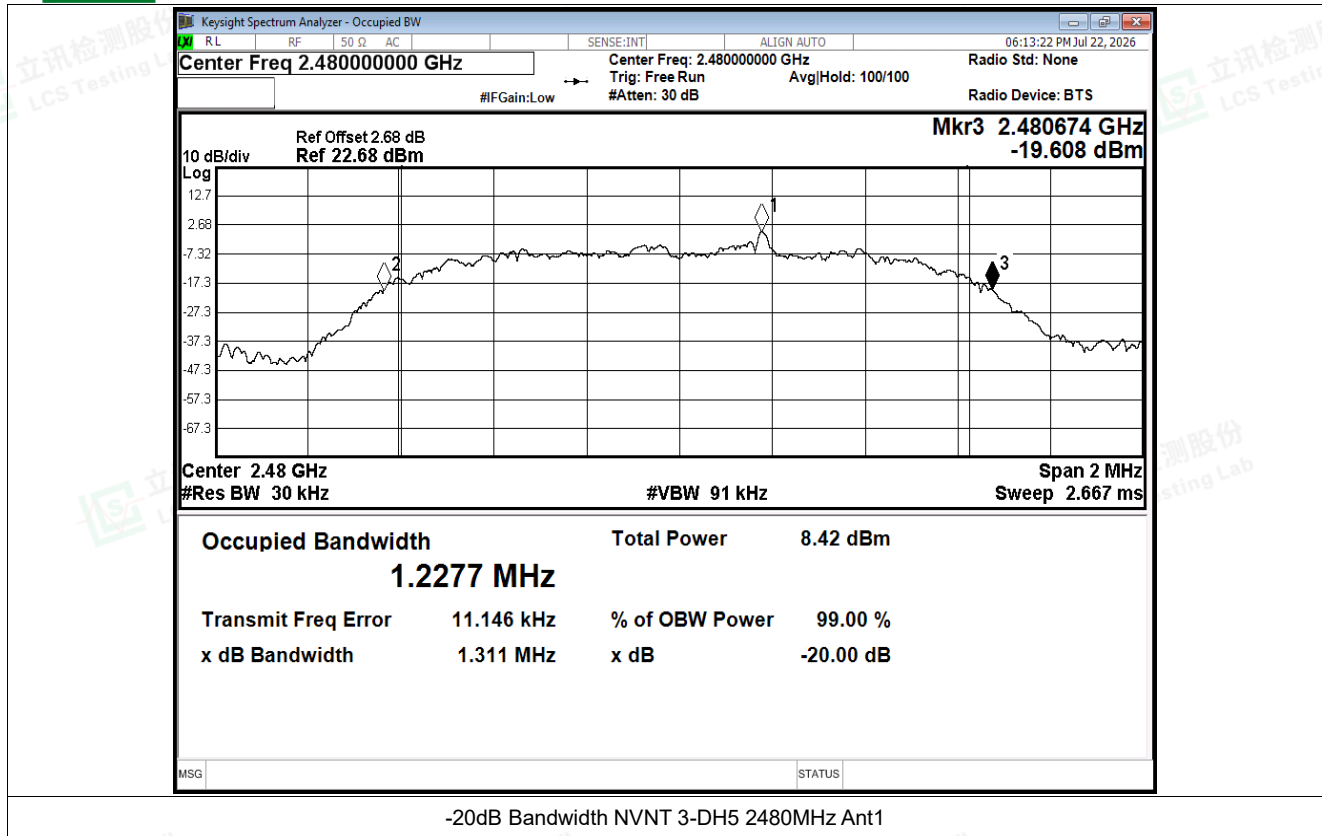
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



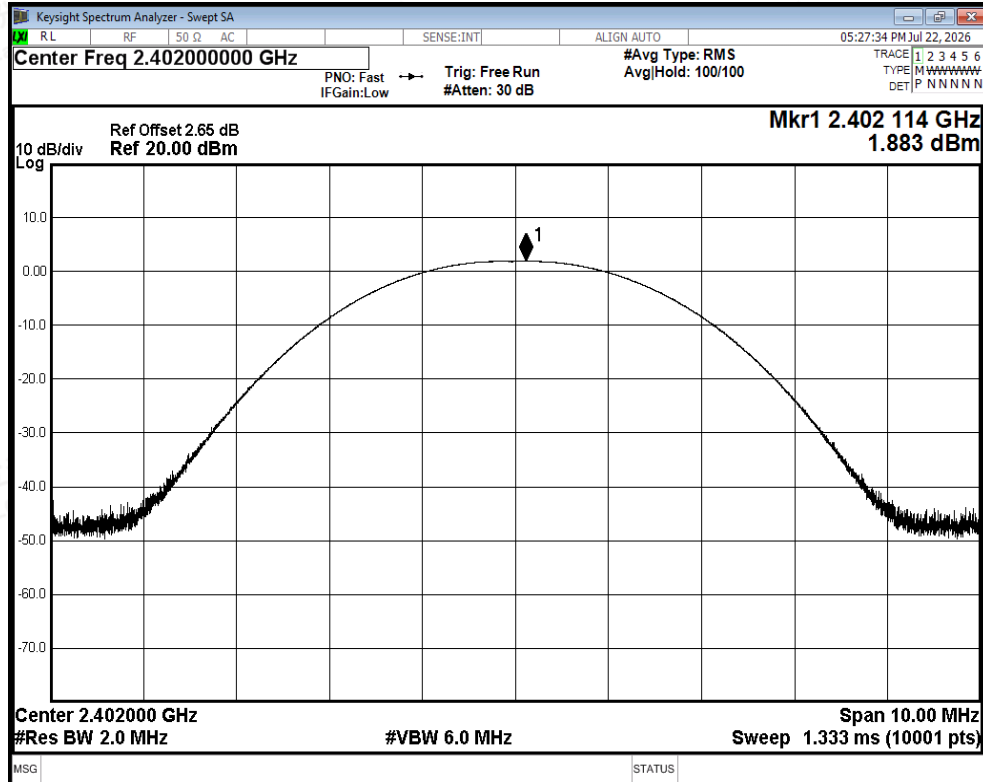
-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



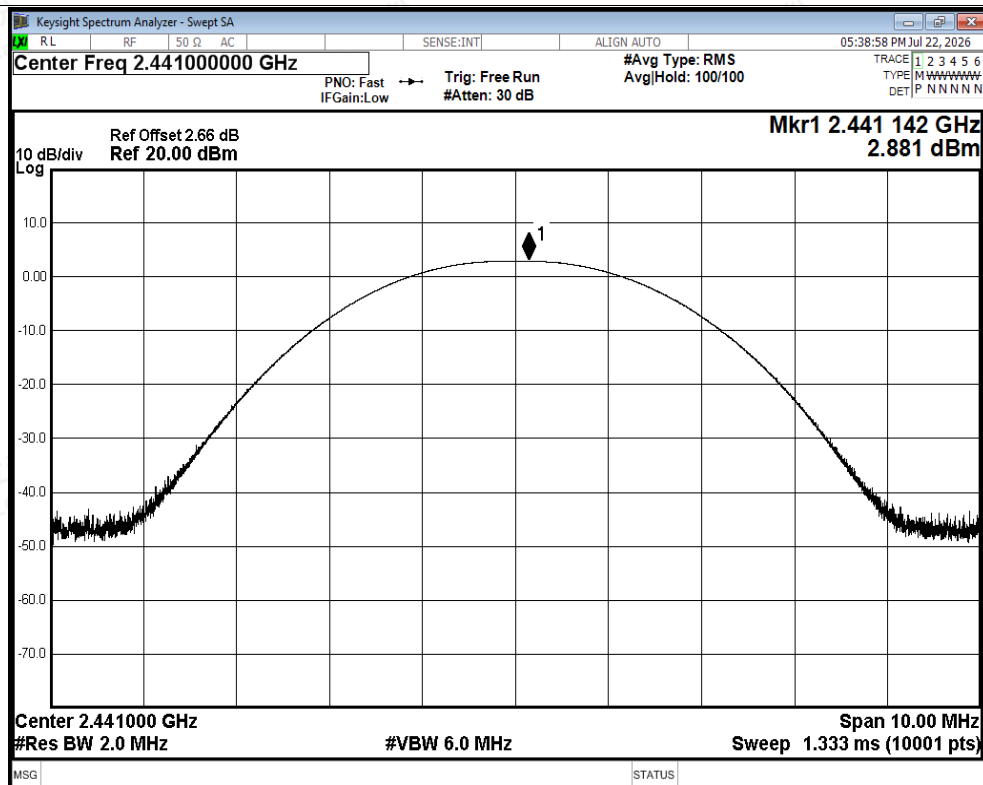


A.2 Maximum Peak Conducted Output Power

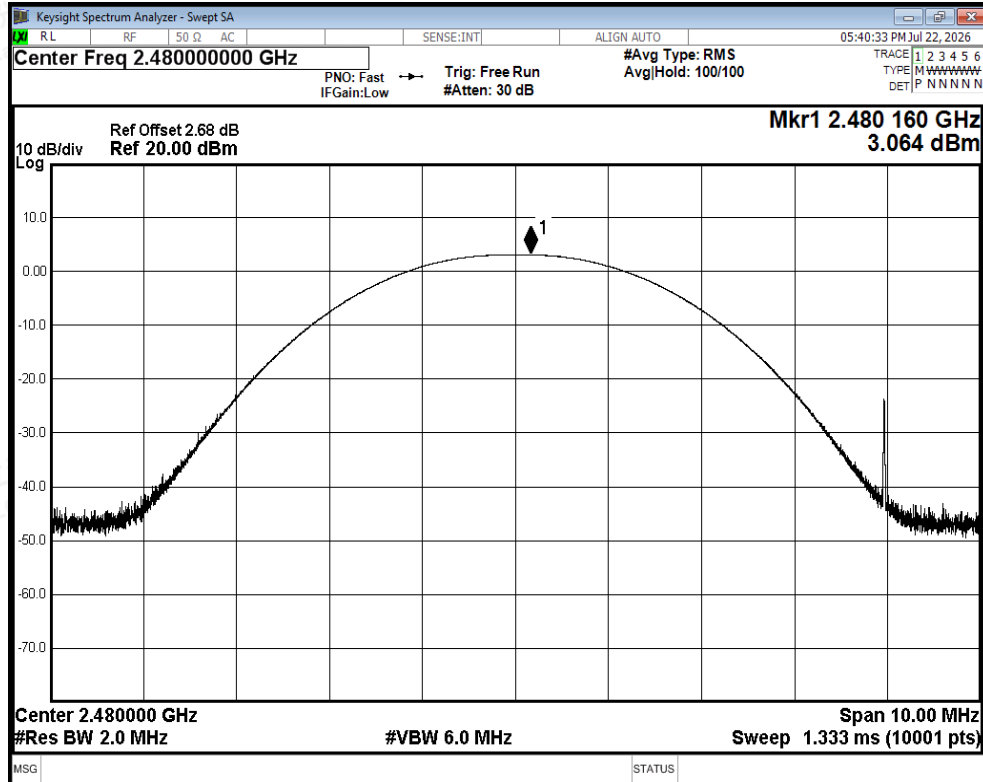
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit Conducted(dBm)	Verdict
NVNT	1-DH5	2402	Ant1	1.88	30	Pass
NVNT	1-DH5	2441	Ant1	2.88	30	Pass
NVNT	1-DH5	2480	Ant1	3.06	30	Pass
NVNT	2-DH5	2402	Ant1	3.35	30	Pass
NVNT	2-DH5	2441	Ant1	3.46	30	Pass
NVNT	2-DH5	2480	Ant1	3.51	30	Pass
NVNT	3-DH5	2402	Ant1	3.59	30	Pass
NVNT	3-DH5	2441	Ant1	3.32	30	Pass
NVNT	3-DH5	2480	Ant1	3.94	30	Pass



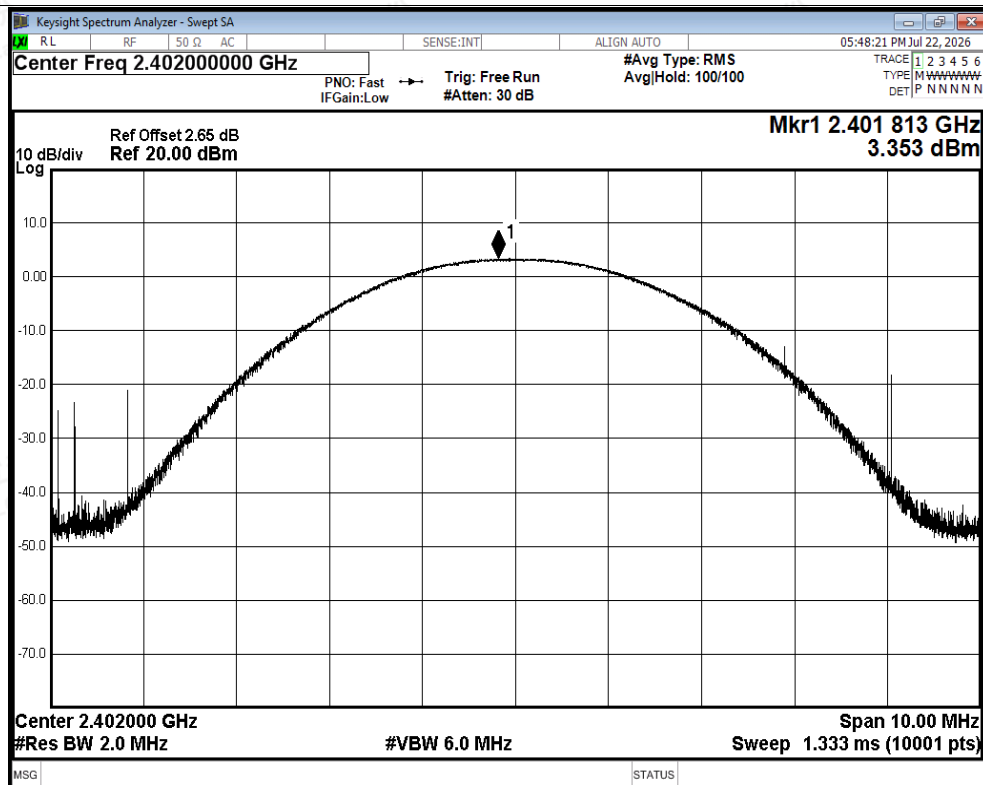
Peak Power NVNT 1-DH5 2402MHz Ant1



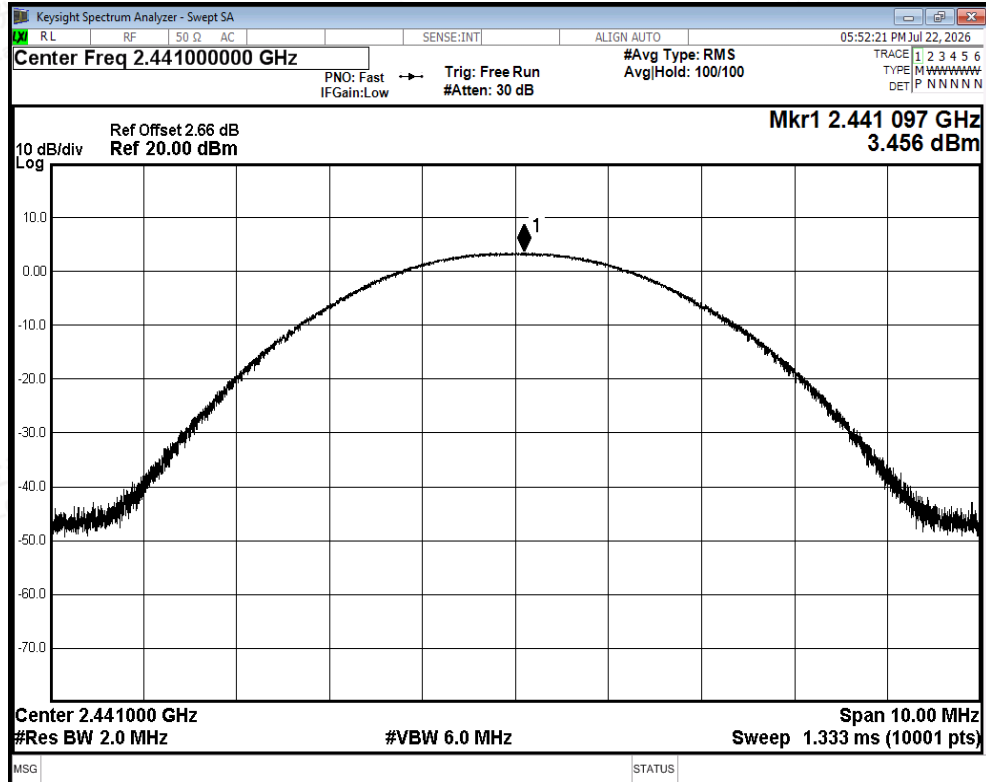
Peak Power NVNT 1-DH5 2441MHz Ant1



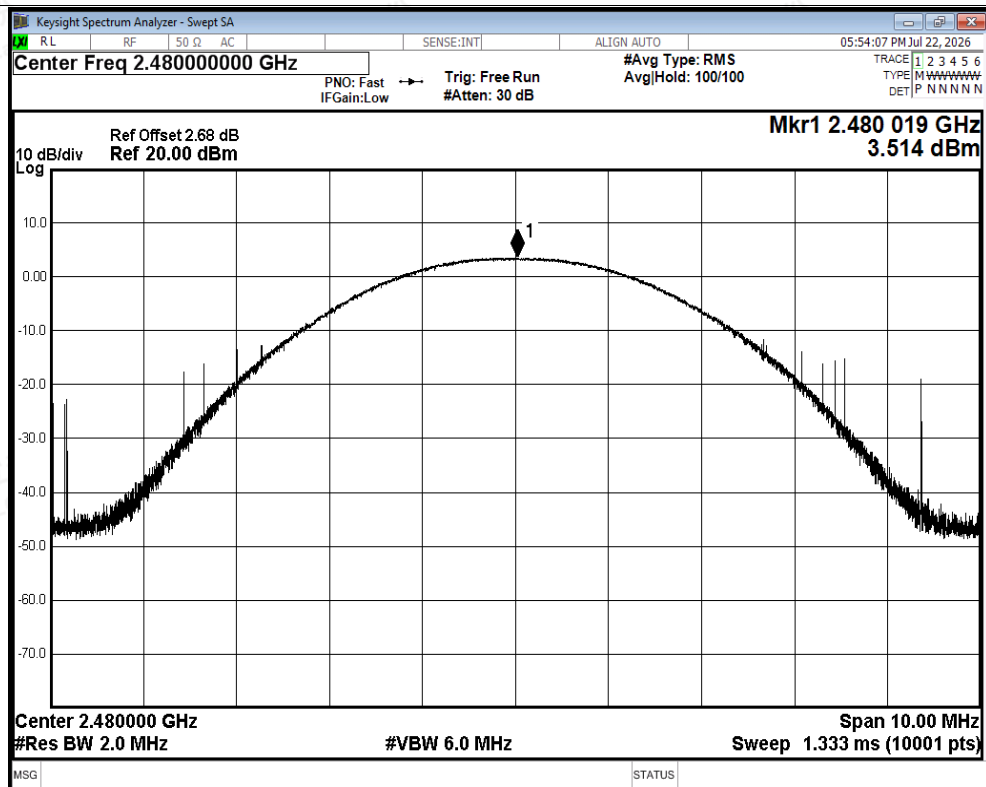
Peak Power NVNT 1-DH5 2480MHz Ant1



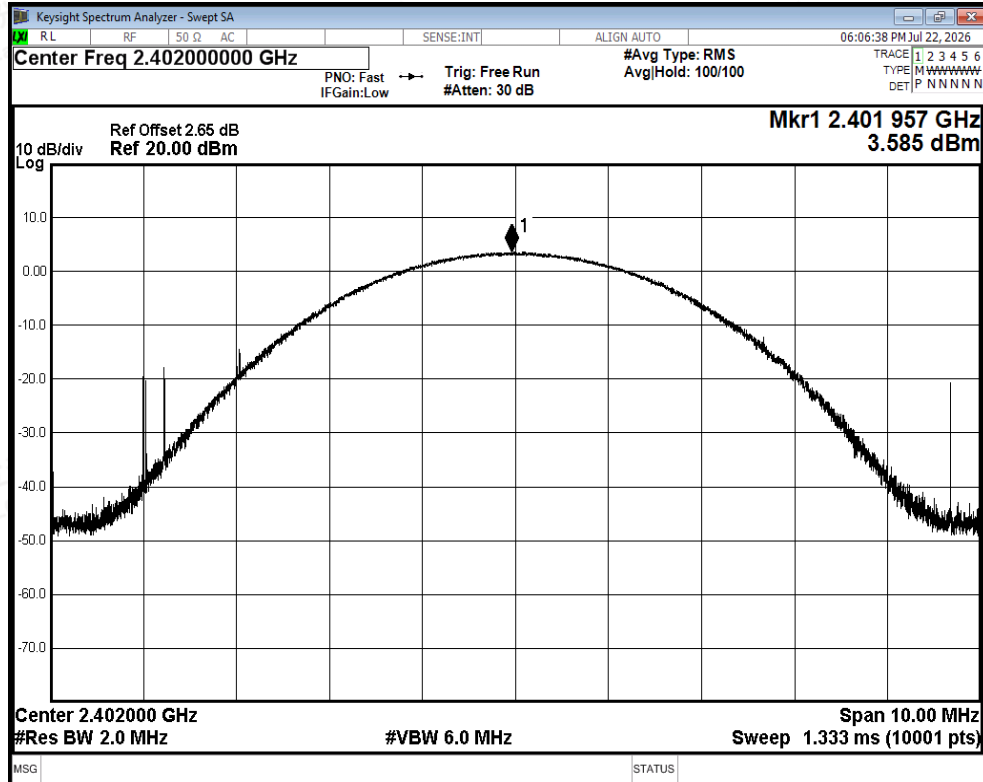
Peak Power NVNT 2-DH5 2402MHz Ant1



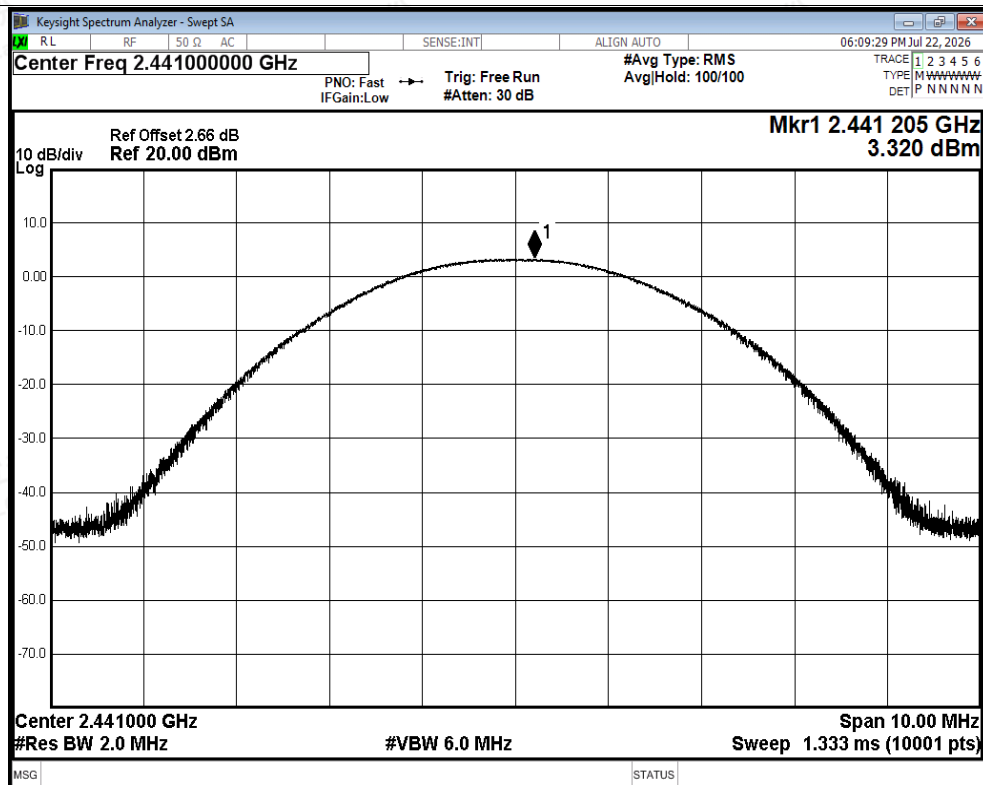
Peak Power NVNT 2-DH5 2441MHz Ant1



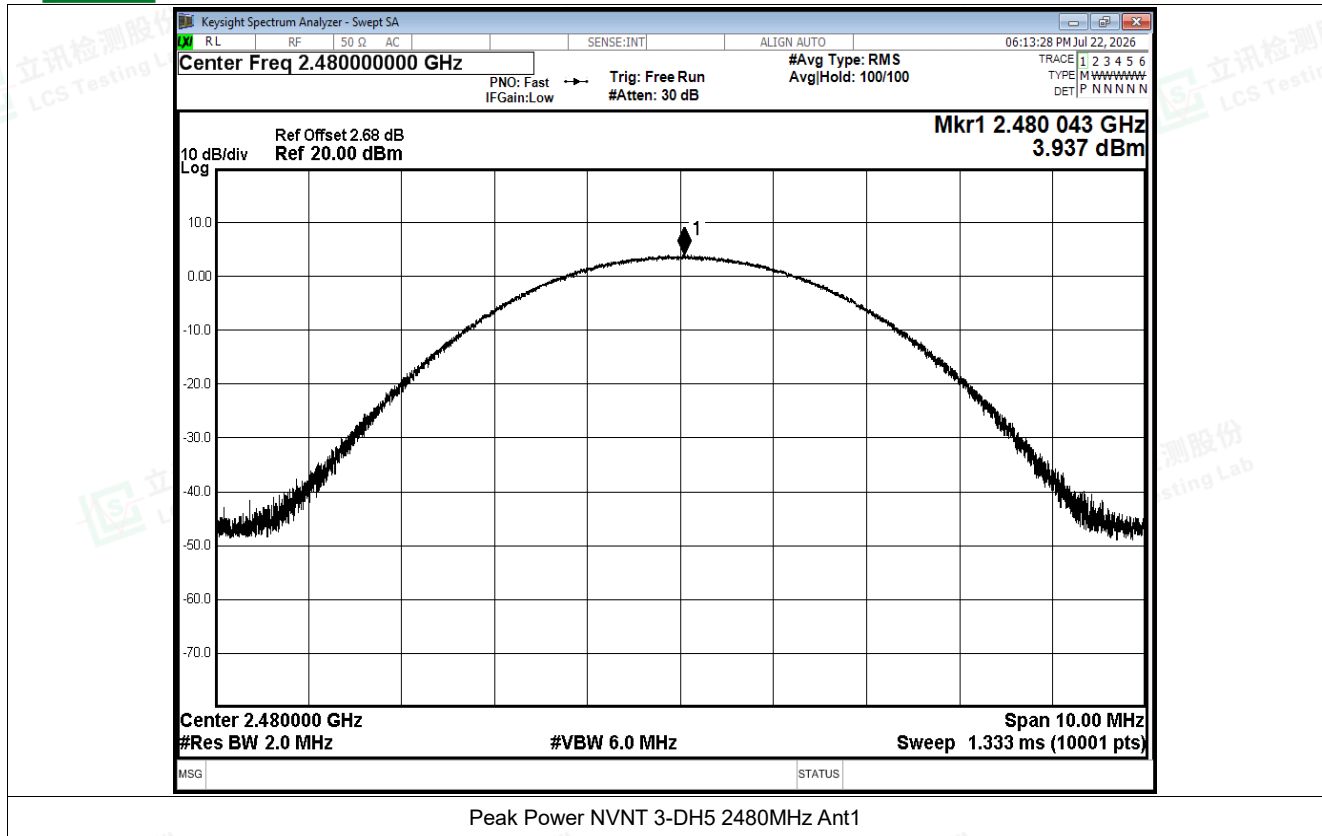
Peak Power NVNT 2-DH5 2480MHz Ant1



Peak Power NVNT 3-DH5 2402MHz Ant1



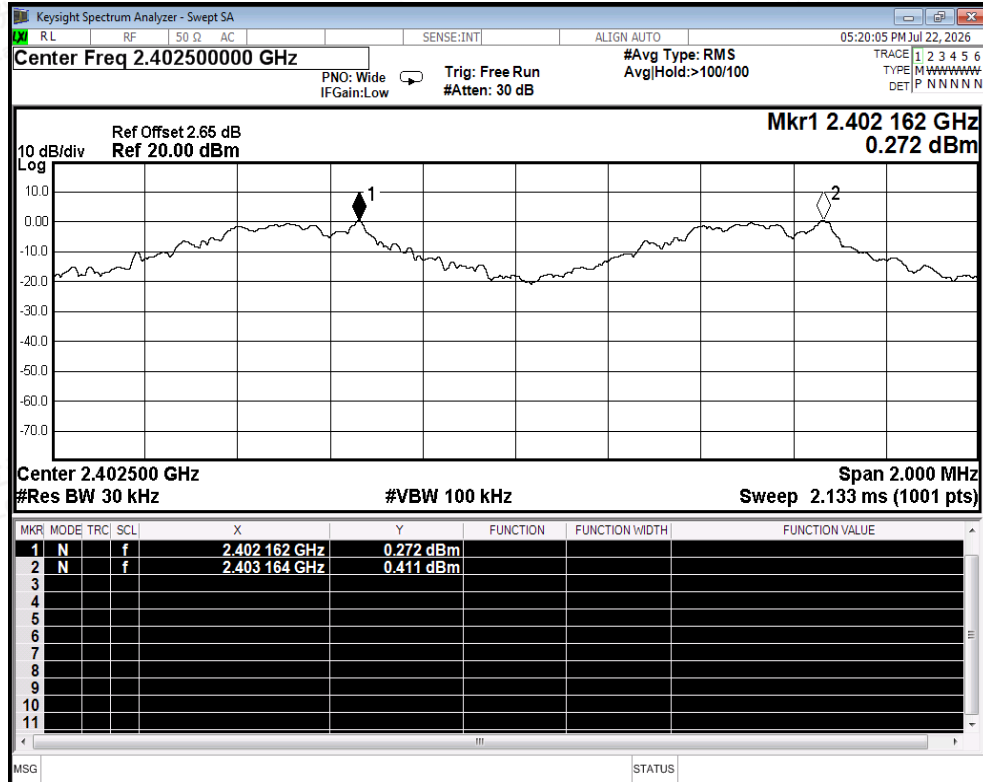
Peak Power NVNT 3-DH5 2441MHz Ant1



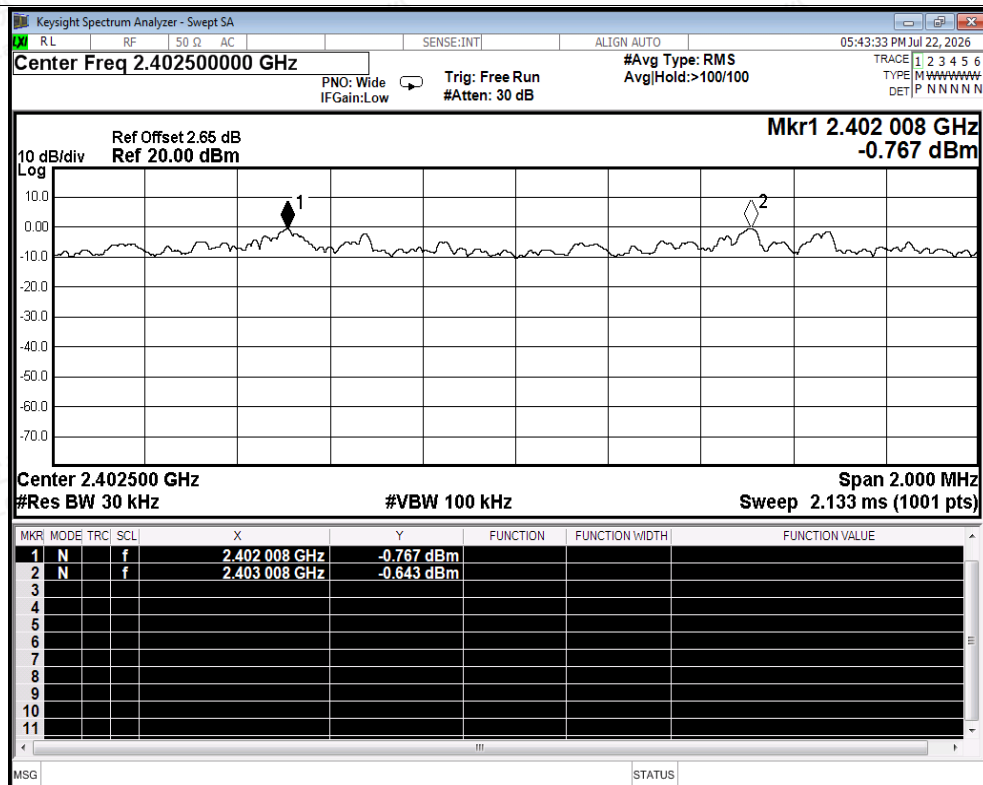


A.3 Carrier Frequencies Separation

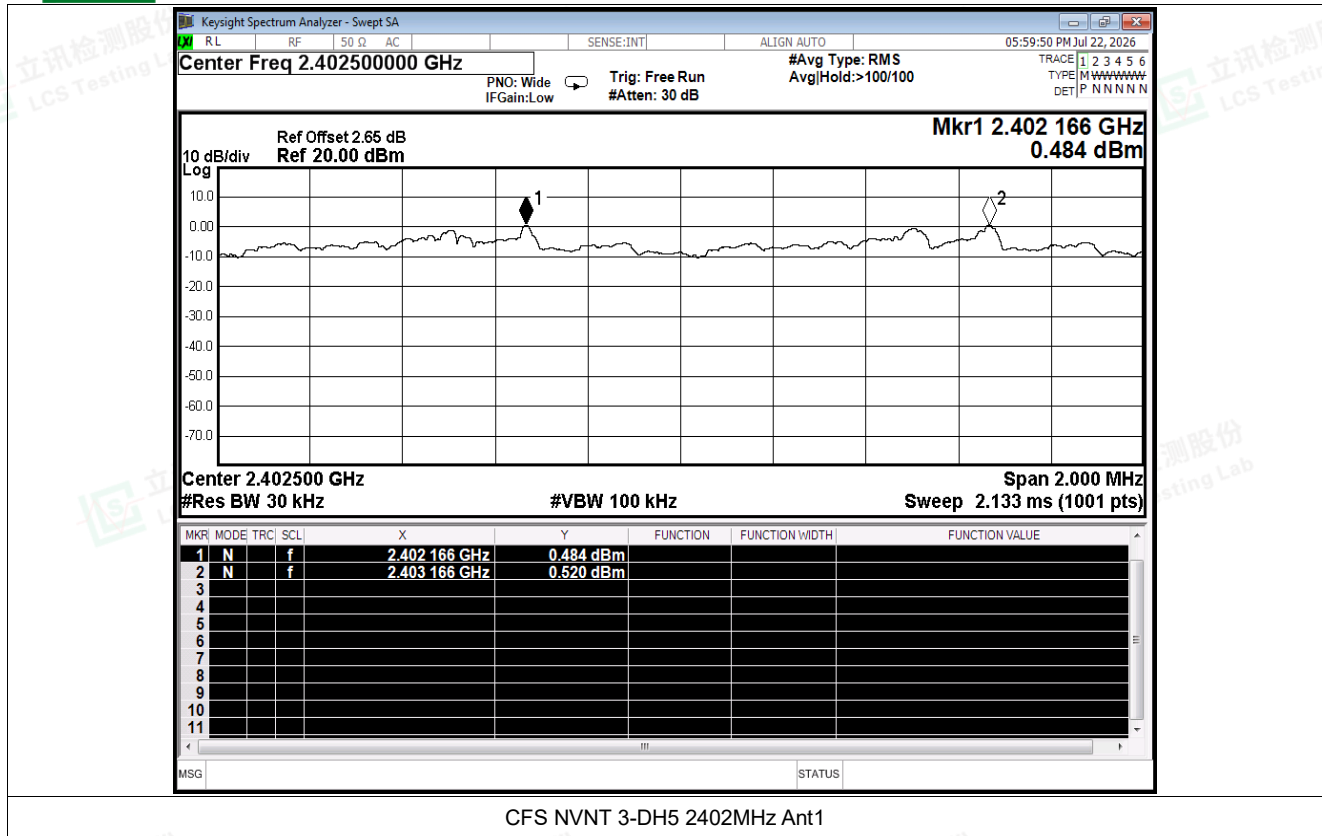
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.162	2403.164	1.002	0.634	Pass
NVNT	2-DH5	Ant1	2402.008	2403.008	1	0.858	Pass
NVNT	3-DH5	Ant1	2402.166	2403.166	1	0.859	Pass



CFS NVNT 1-DH5 2402MHz Ant1



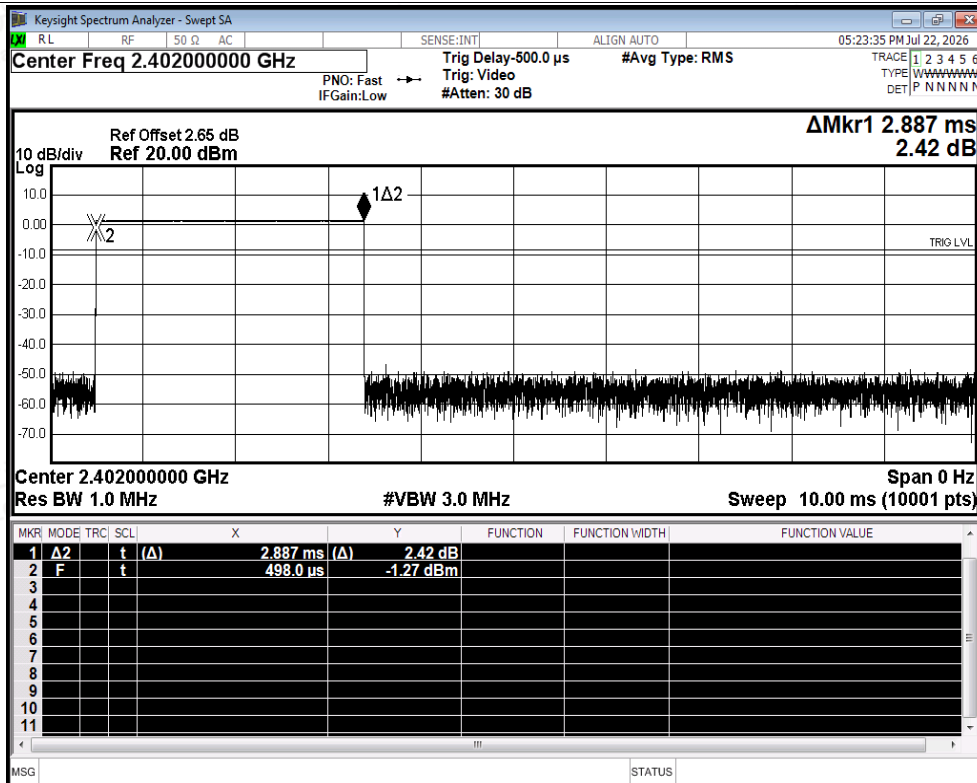
CFS NVNT 2-DH5 2402MHz Ant1



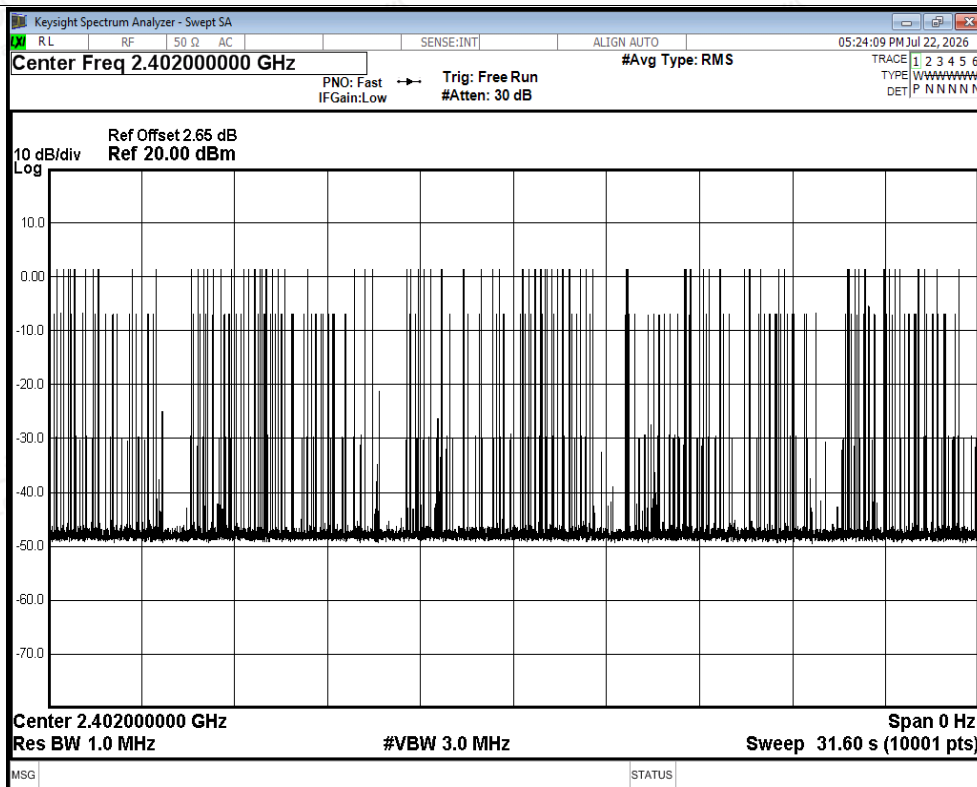


A.4 Dwell Time

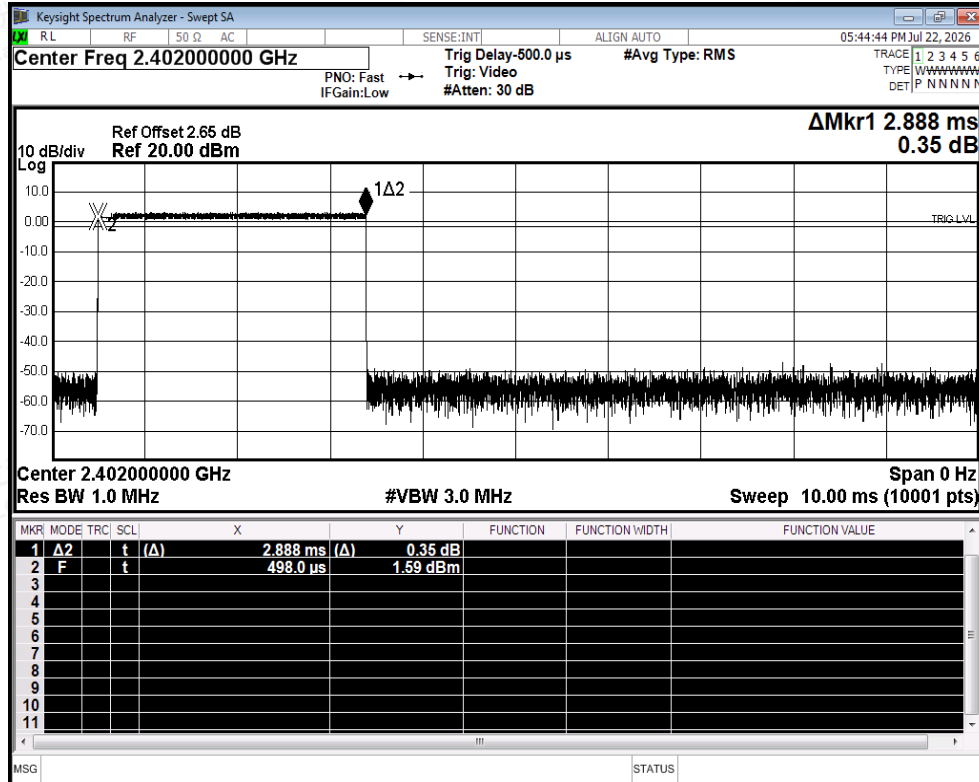
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.887	254.056	88	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.888	297.464	103	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.891	320.901	111	31600	400	Pass



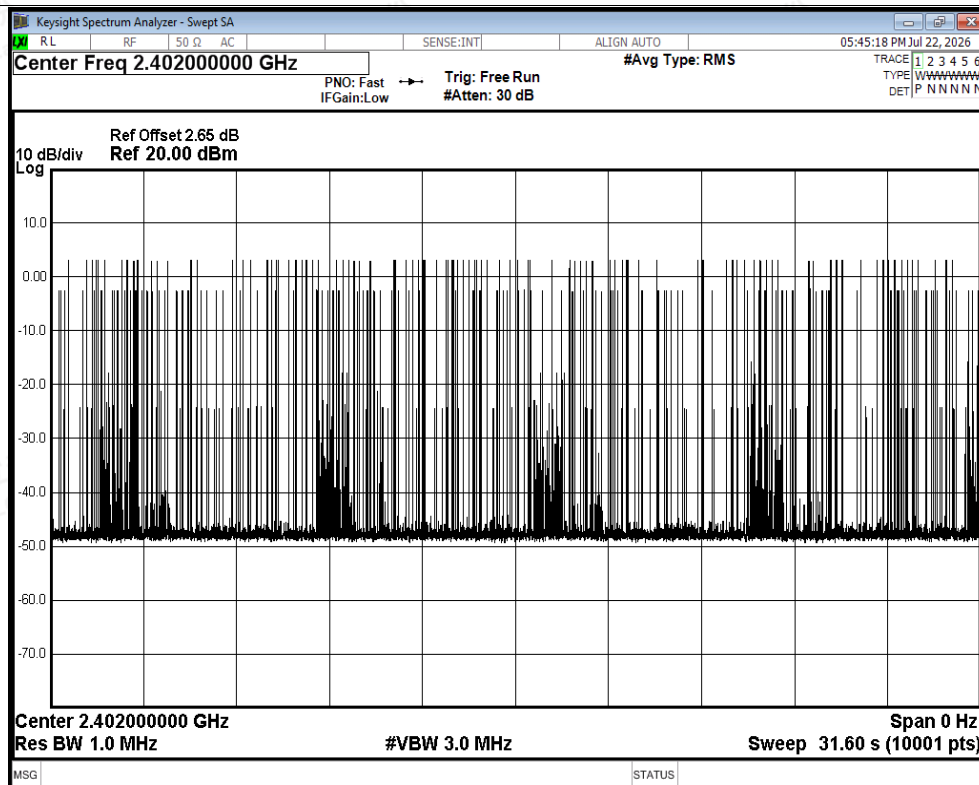
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



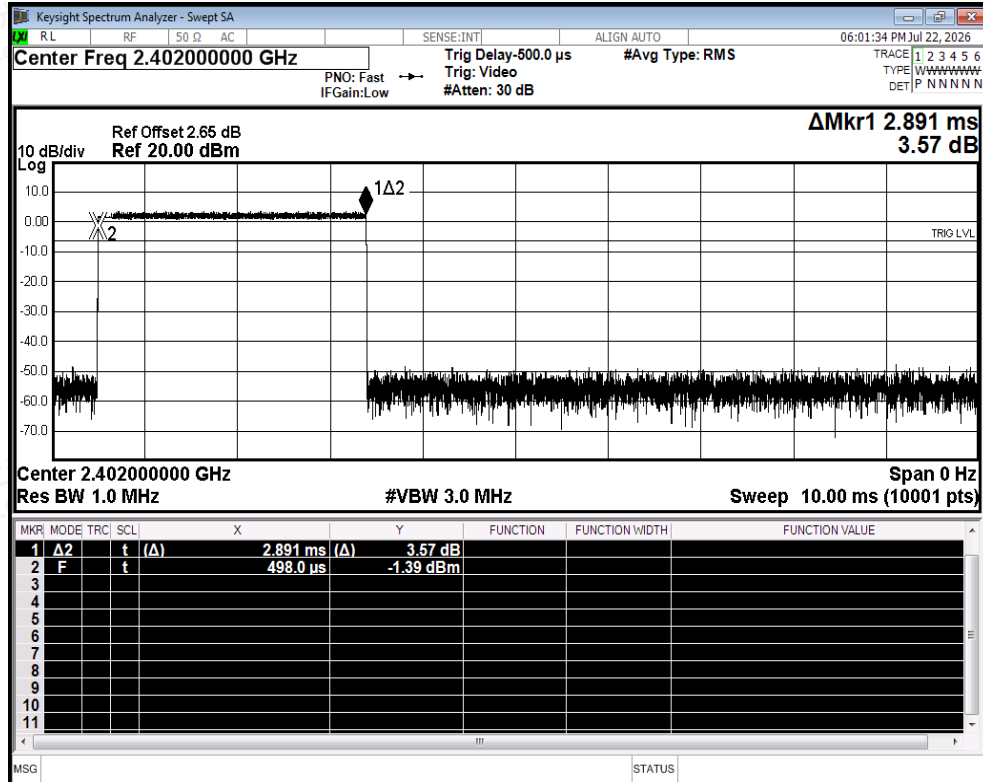
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



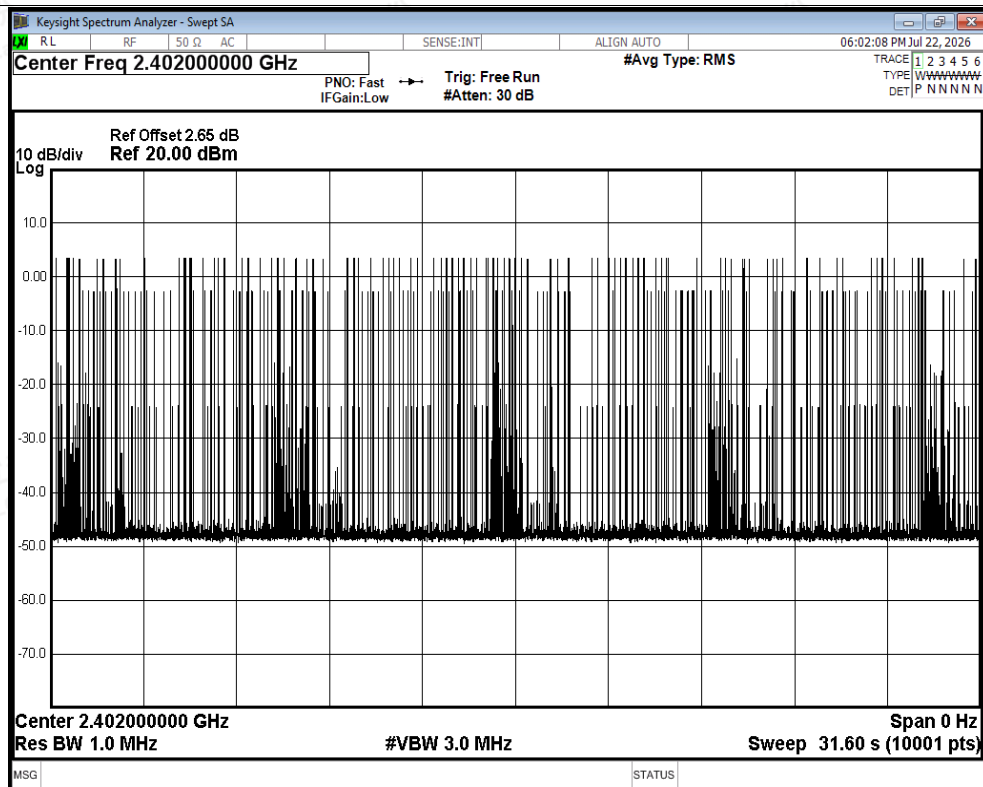
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst

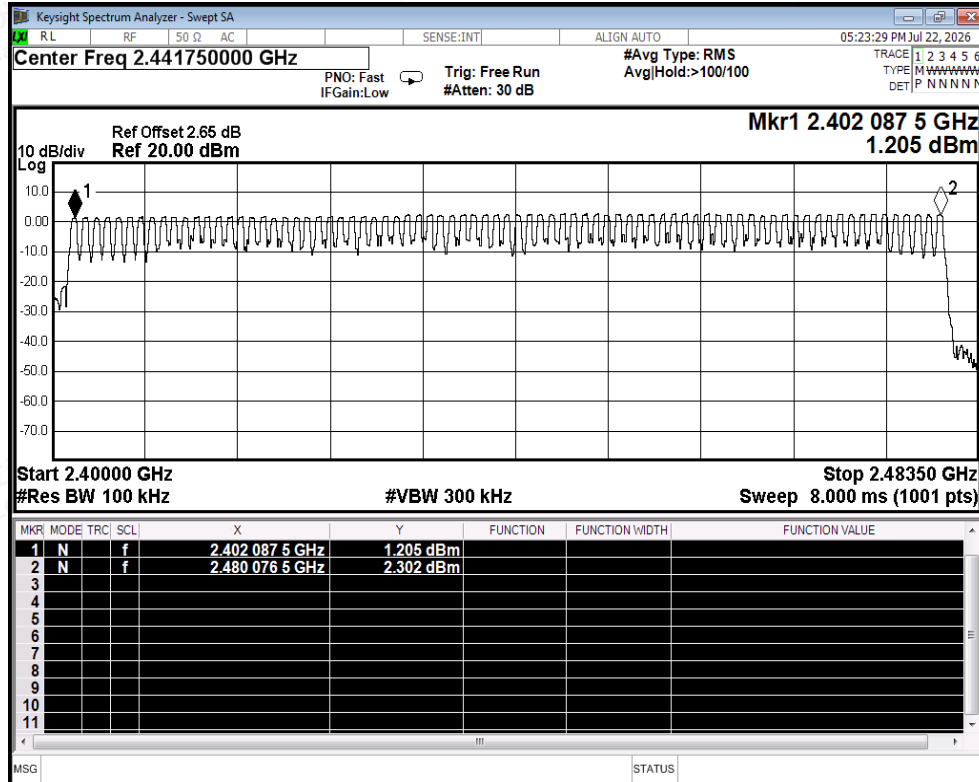


Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

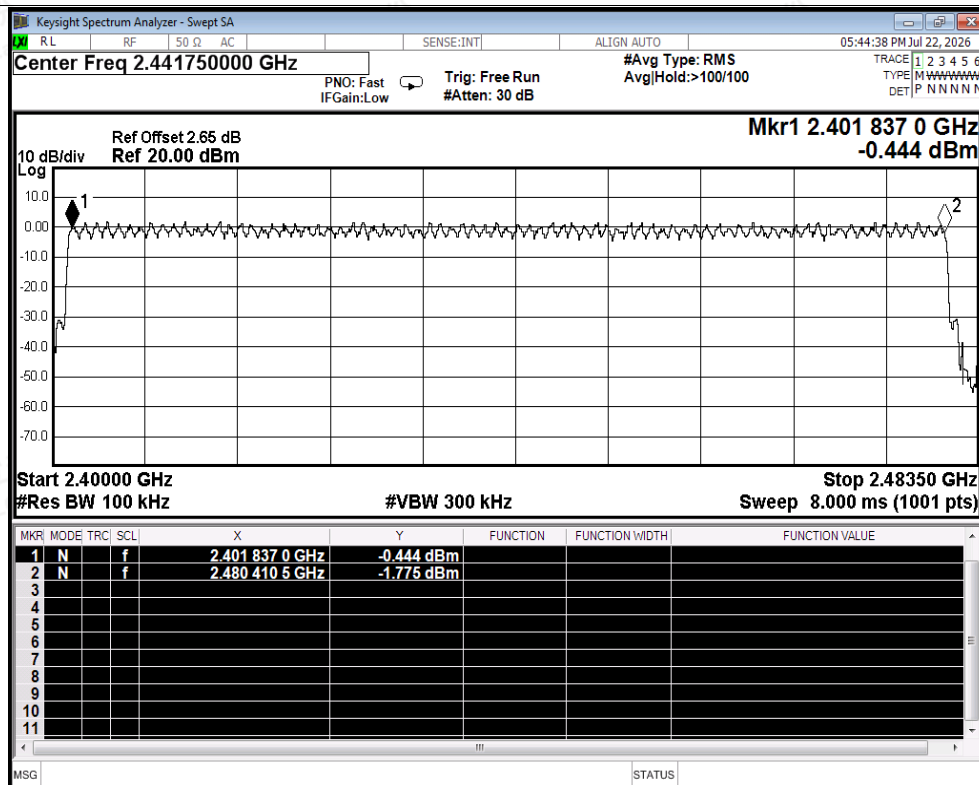


A.5 Number of Hopping Channel

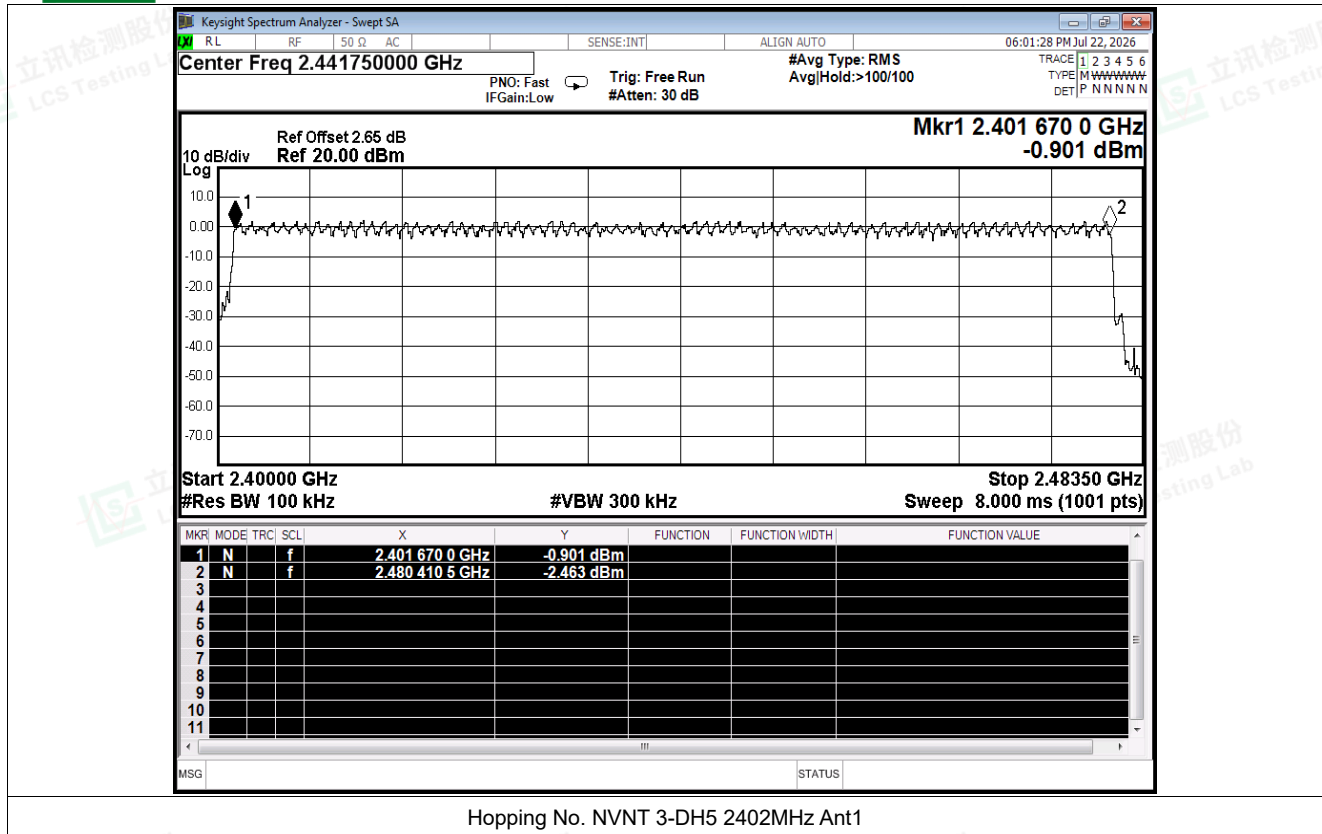
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass



Hopping No. NVNT 1-DH5 2402MHz Ant1



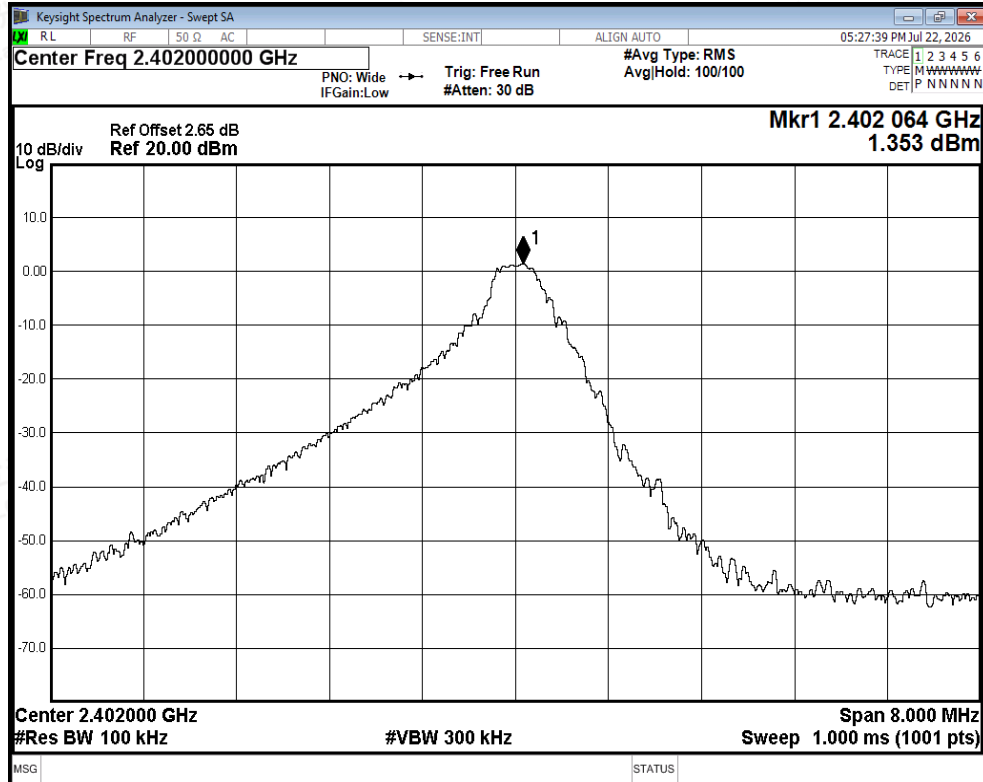
Hopping No. NVNT 2-DH5 2402MHz Ant1



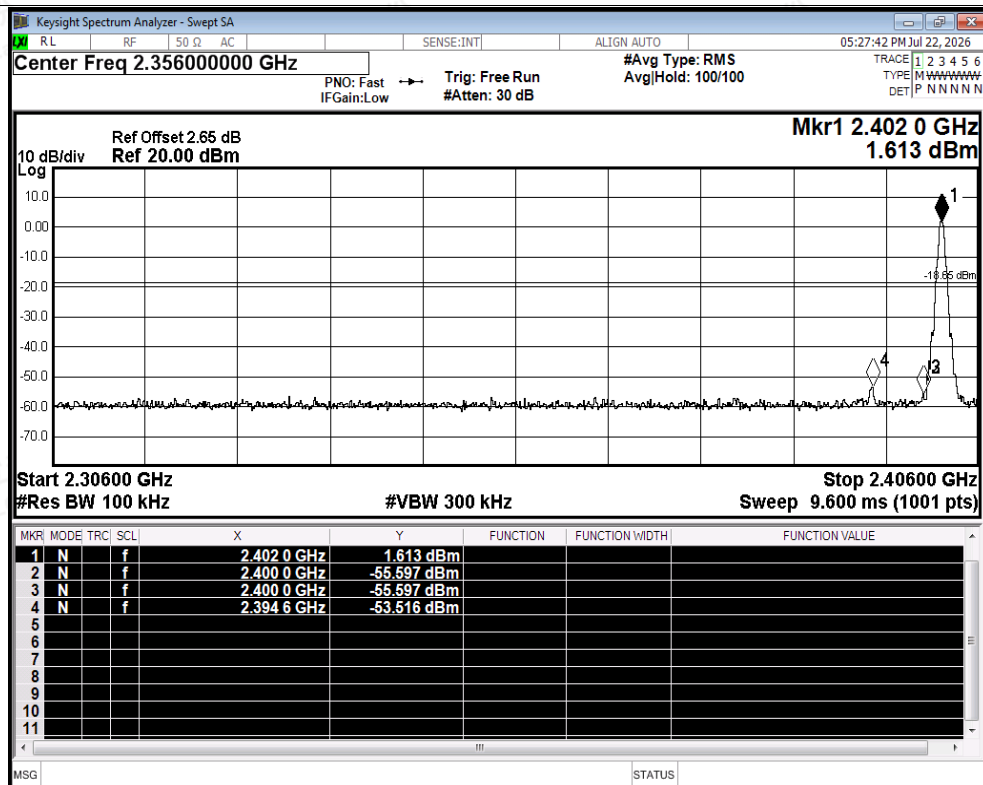


A.6 Band Edge

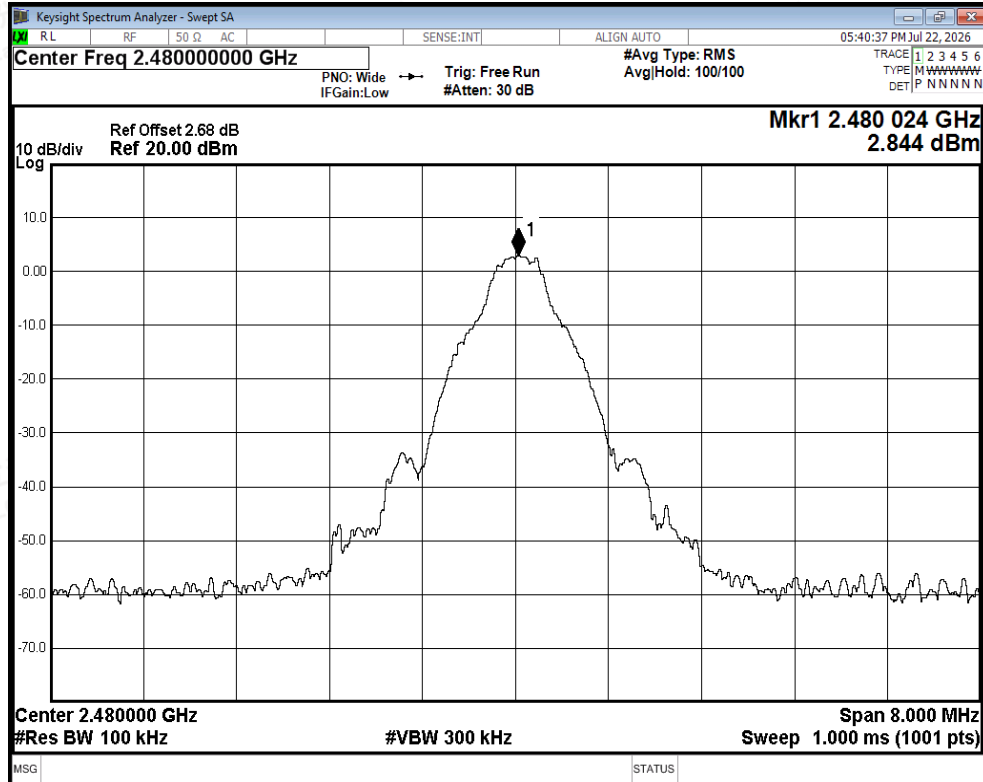
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-54.86	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-49.17	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-49.32	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-43.51	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-41.83	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-57.2	-20	Pass



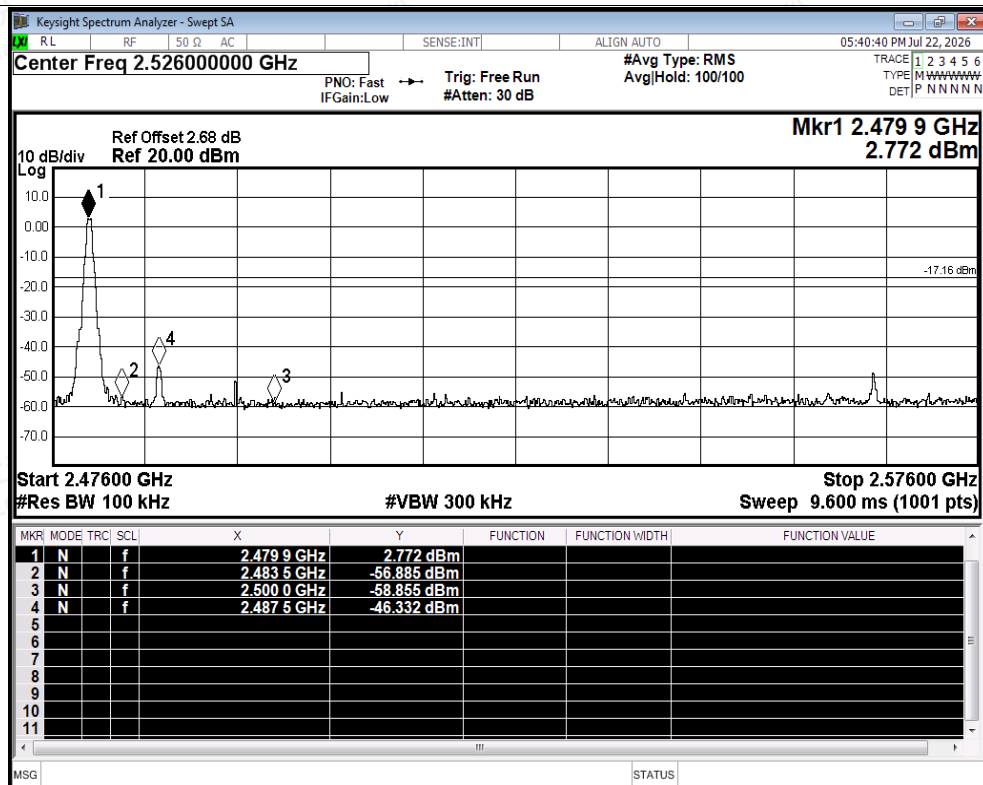
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



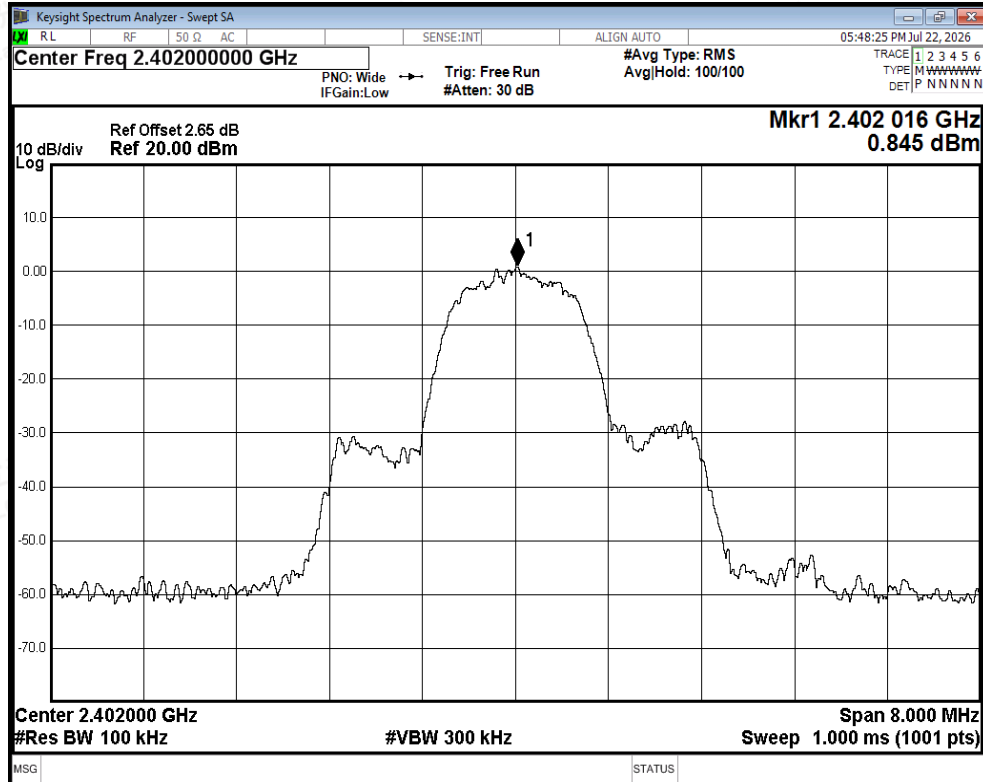
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



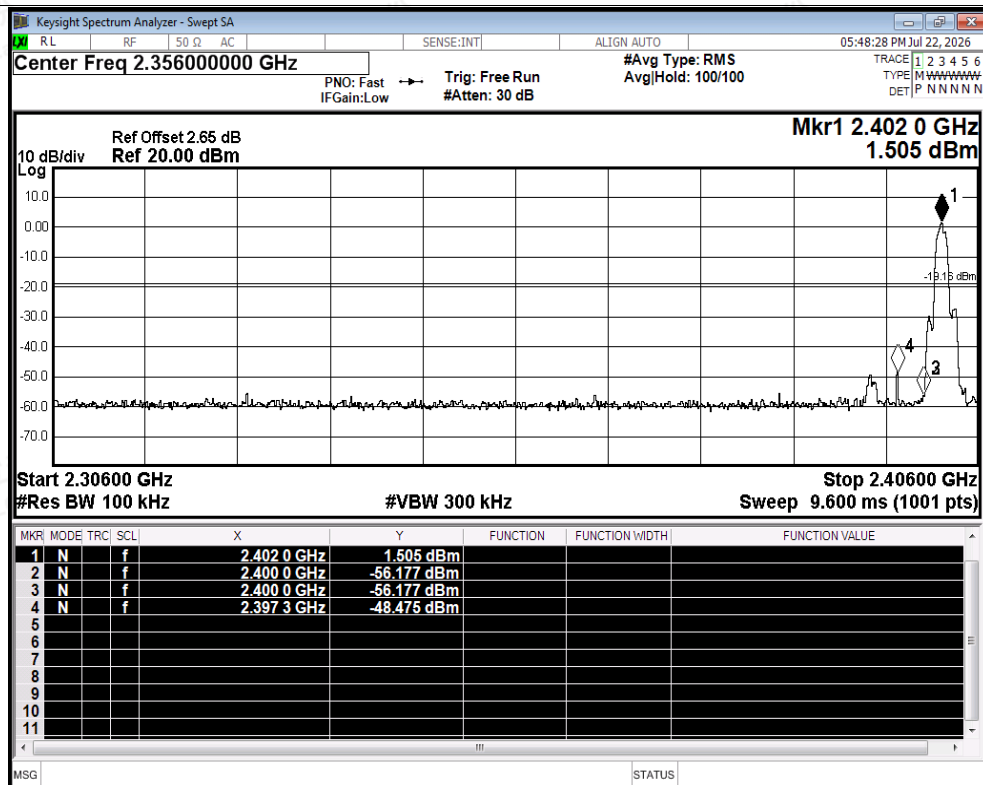
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



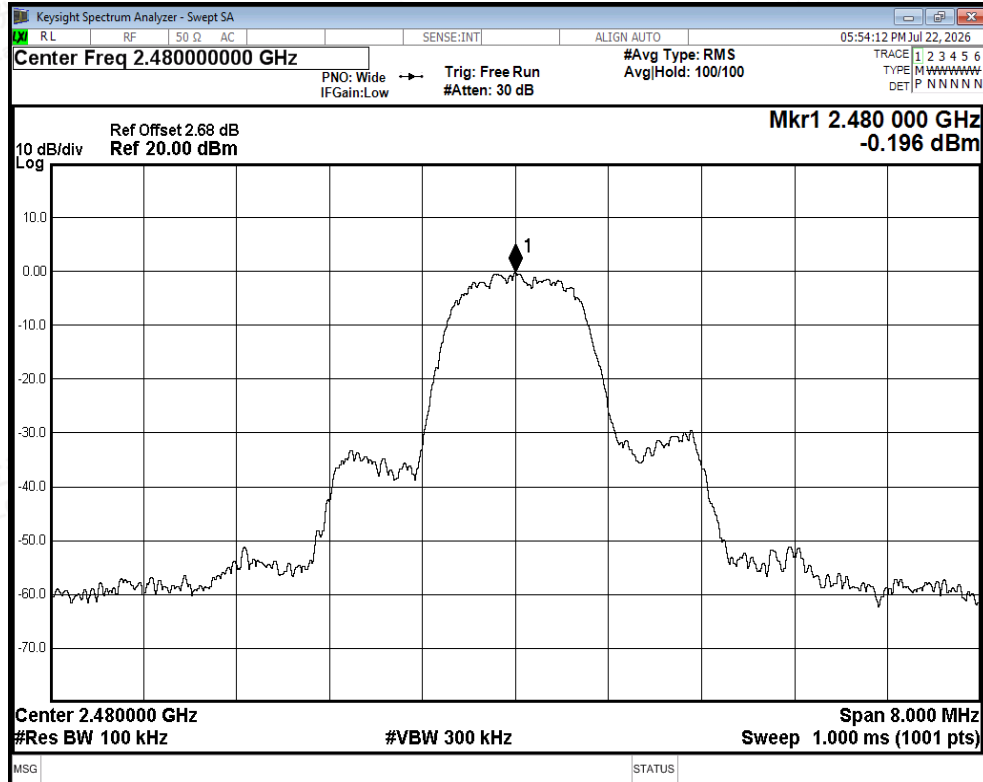
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



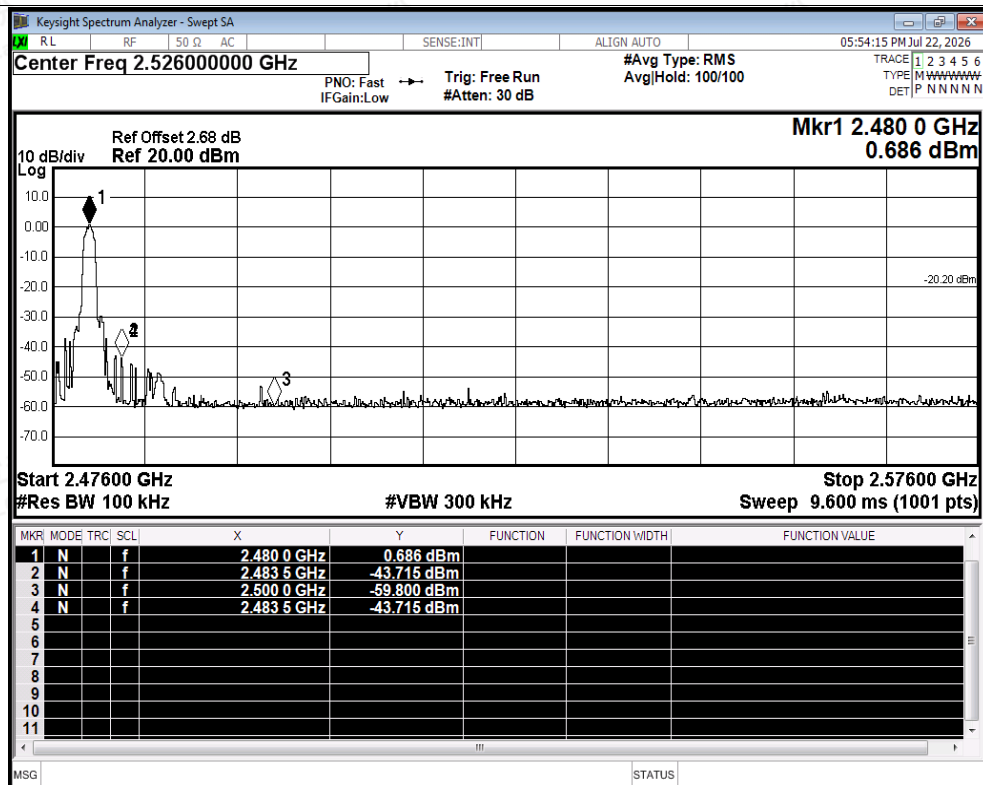
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



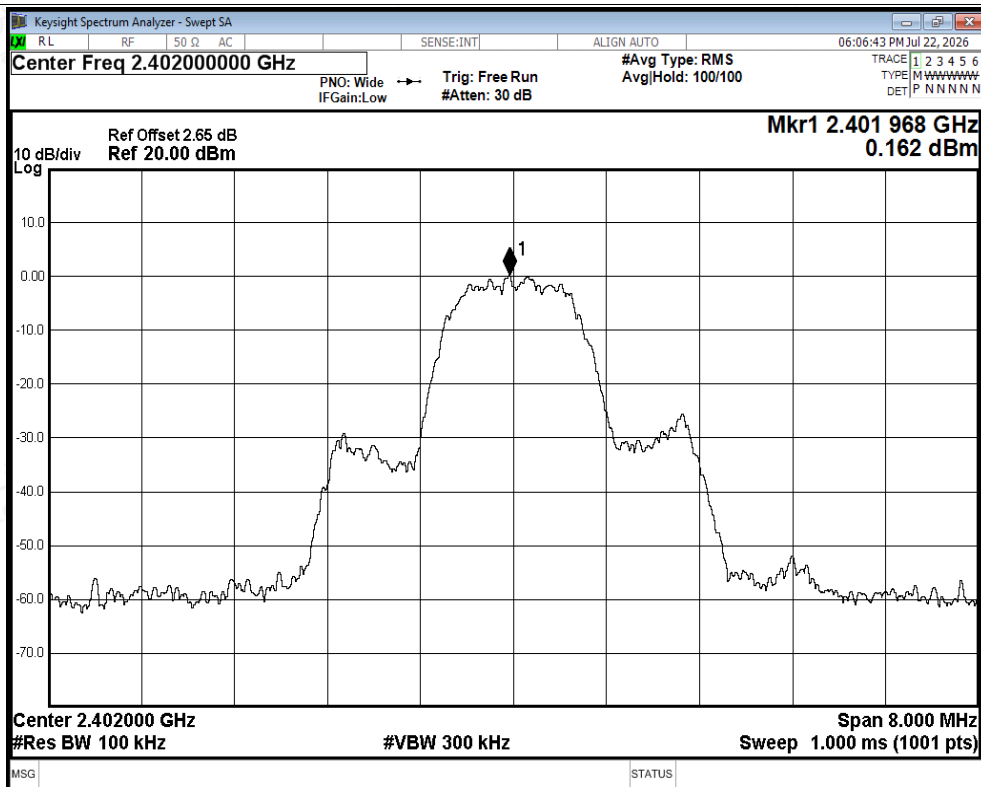
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



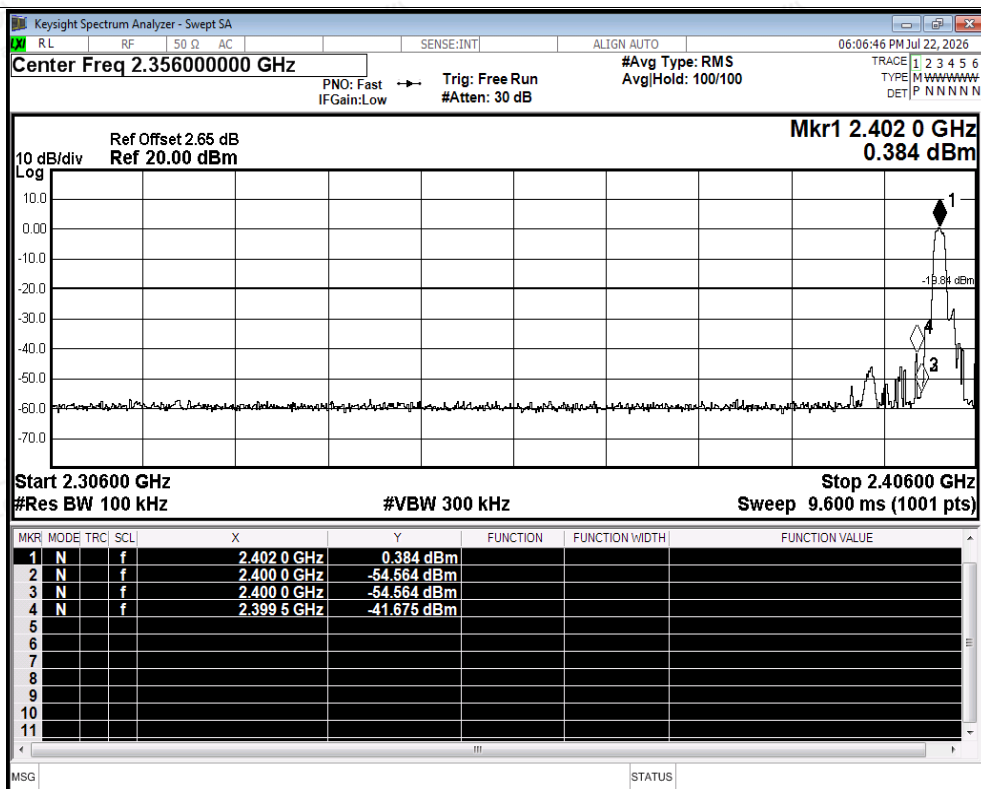
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



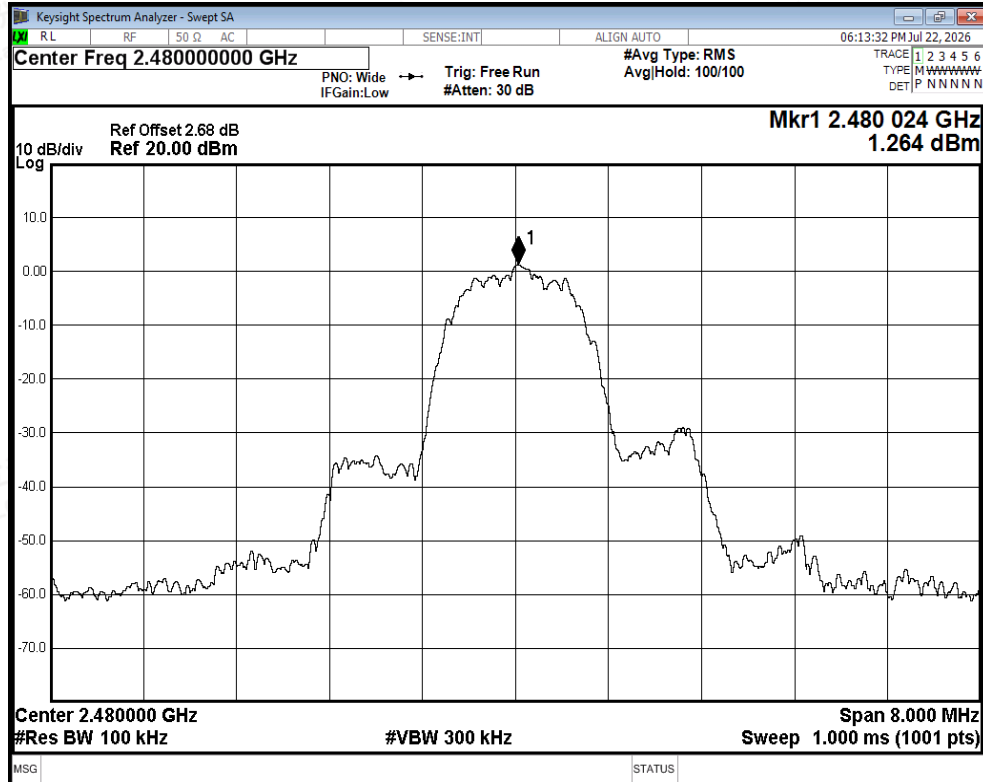
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



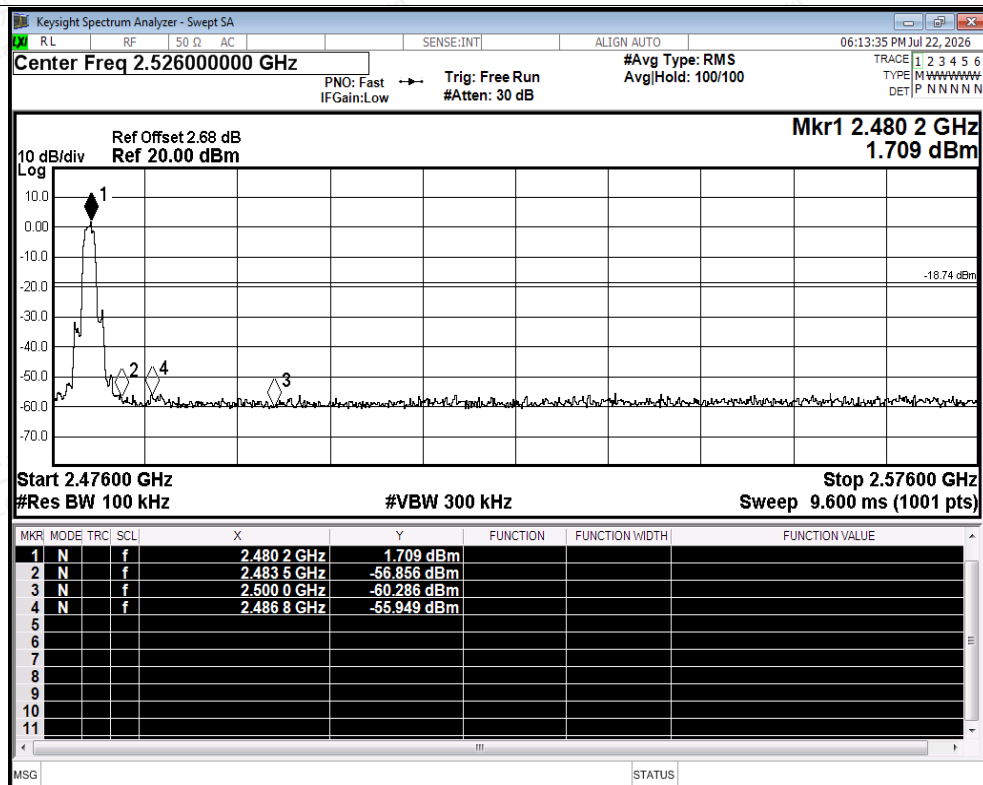
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



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



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

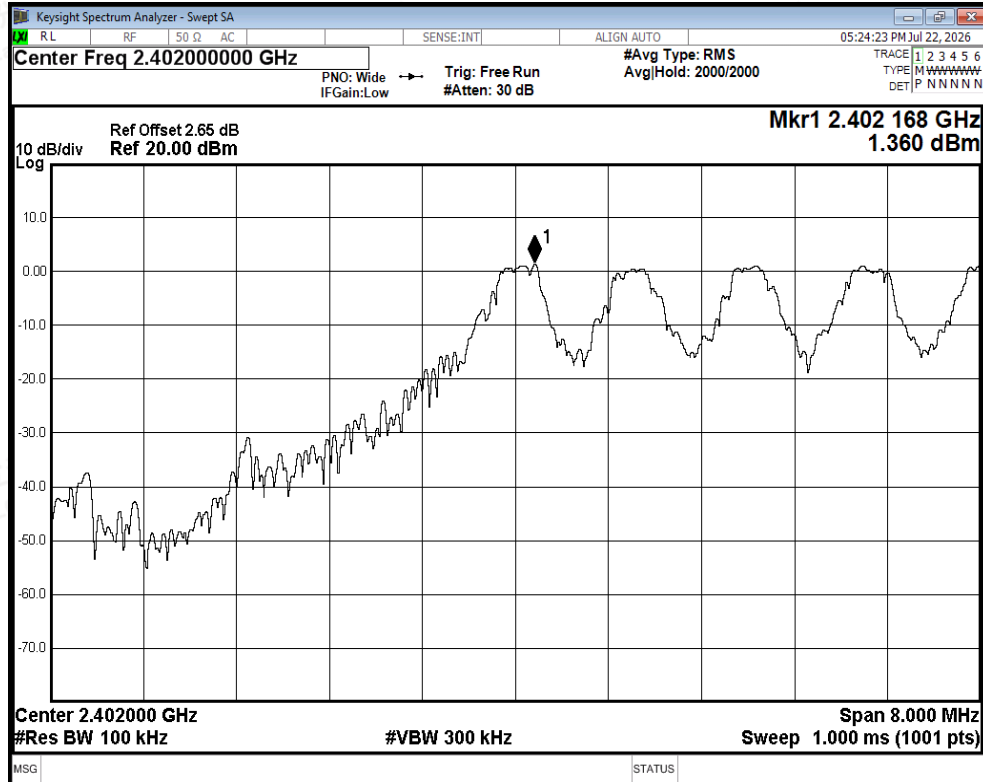


Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission

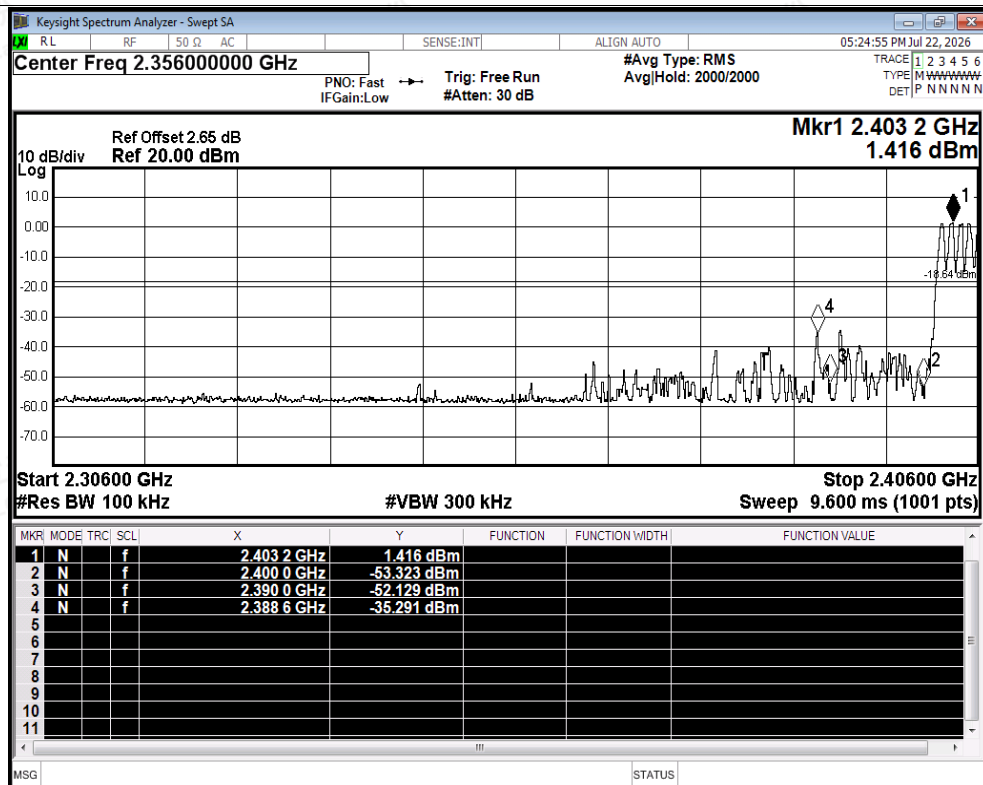


(Hopping)

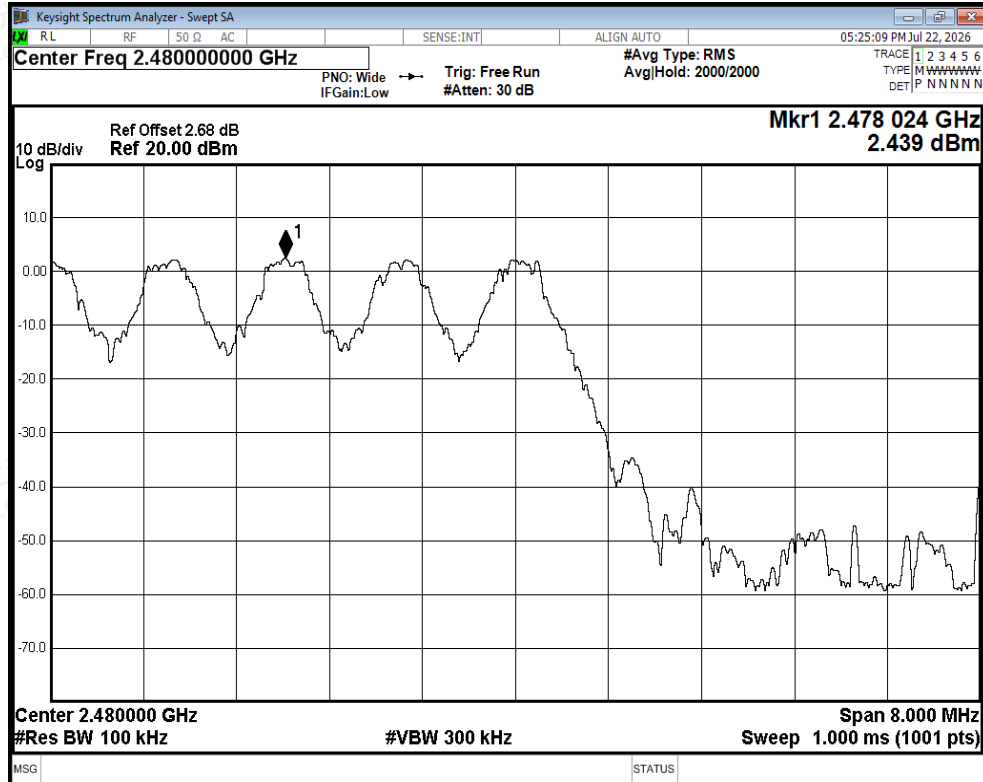
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-36.65	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-47.54	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-39.63	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-47.38	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-41.61	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-44.86	-20	Pass



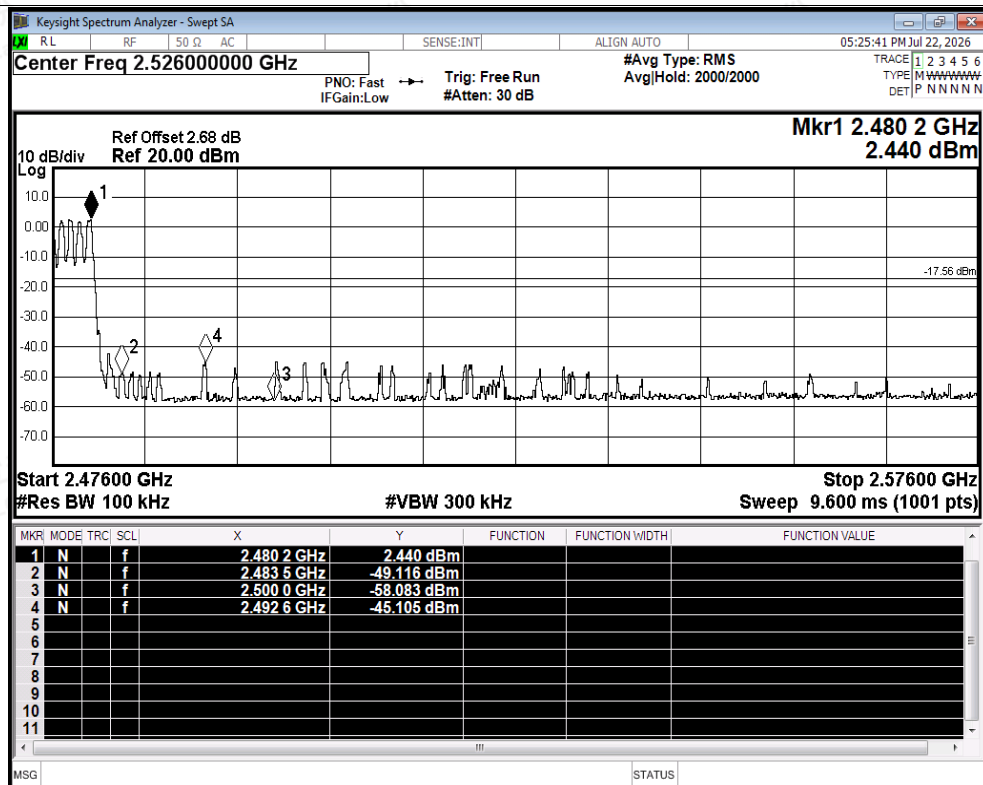
Band Edge (Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



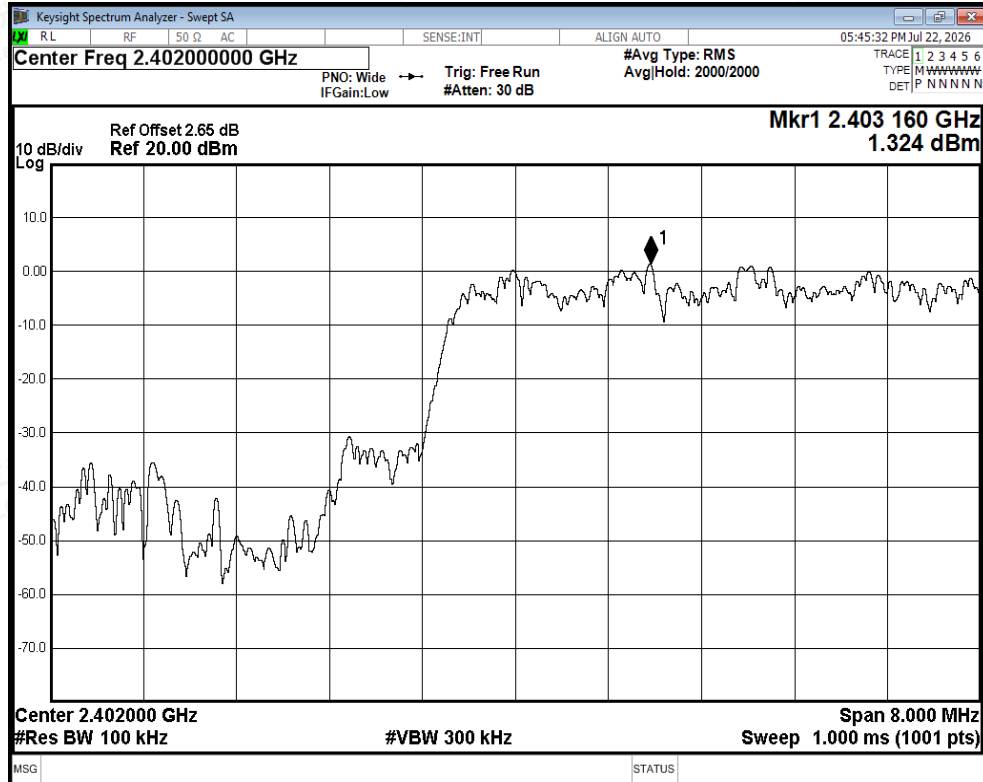
Band Edge (Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



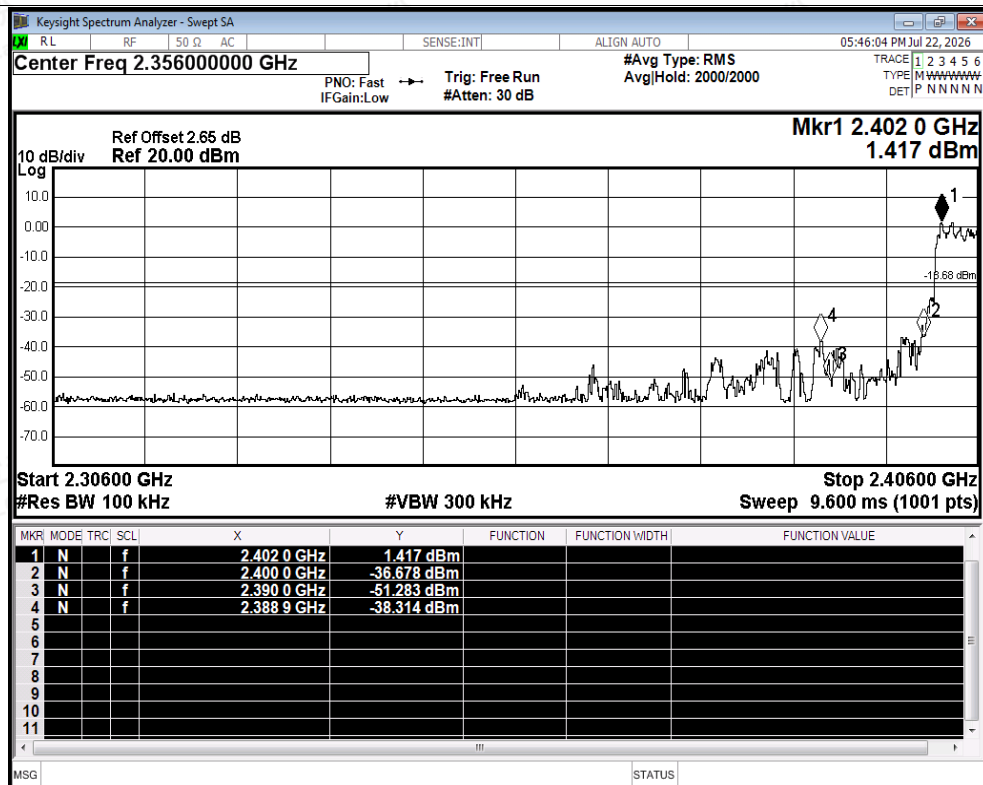
Band Edge (Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



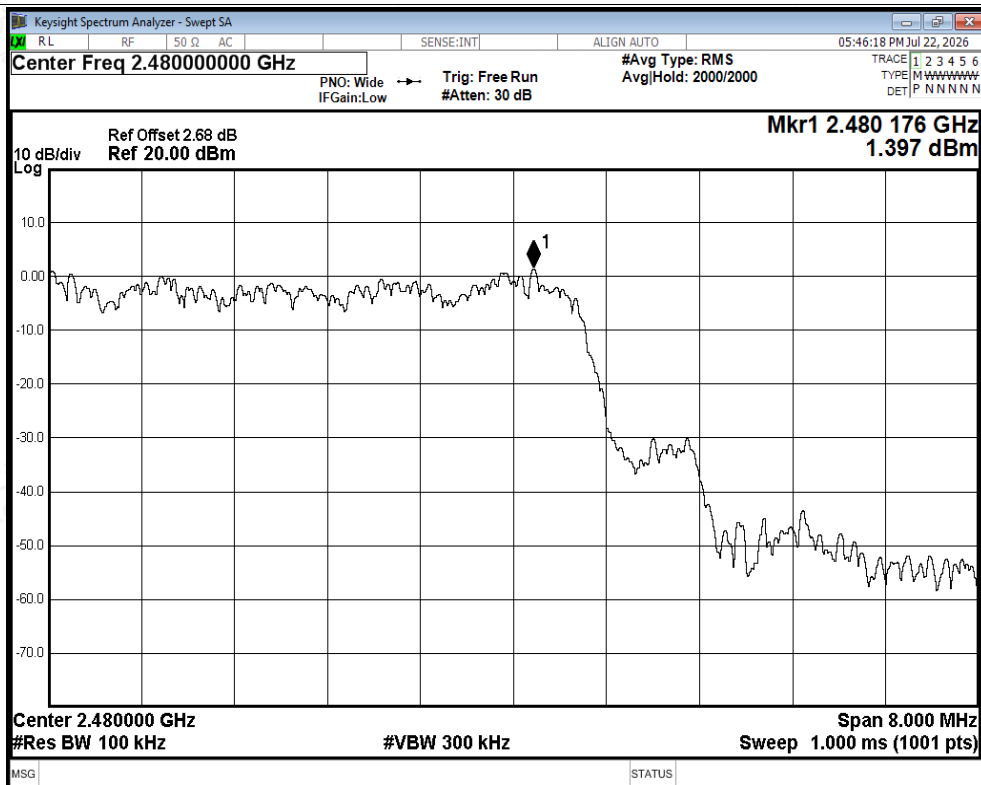
Band Edge (Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



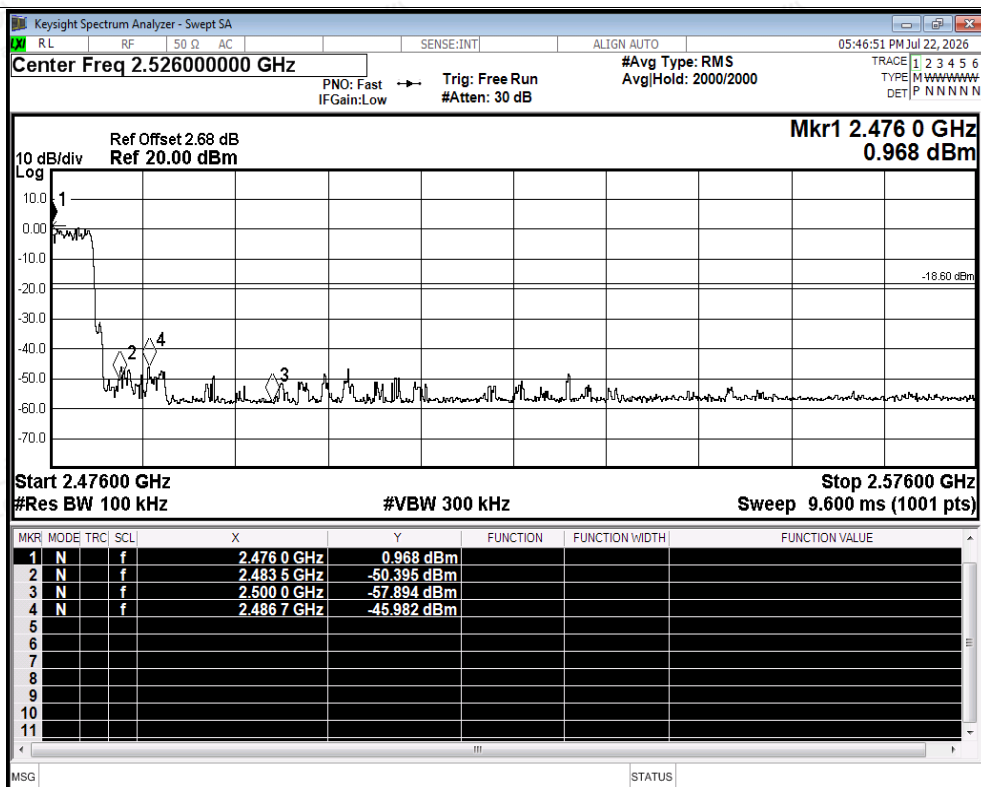
Band Edge (Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



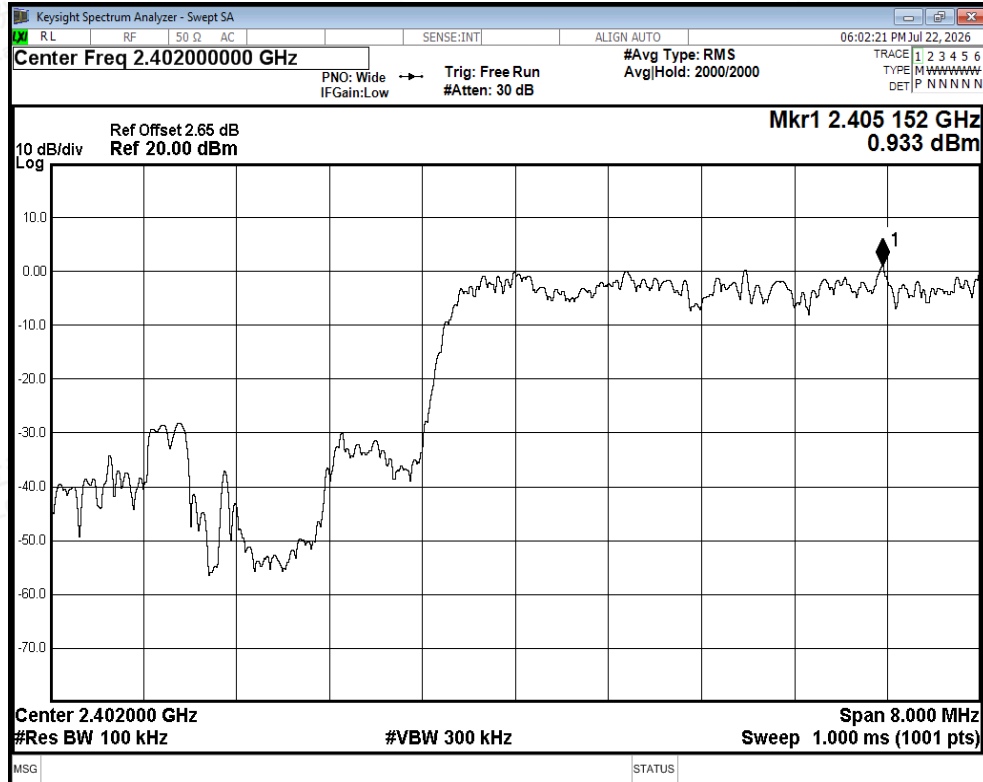
Band Edge (Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



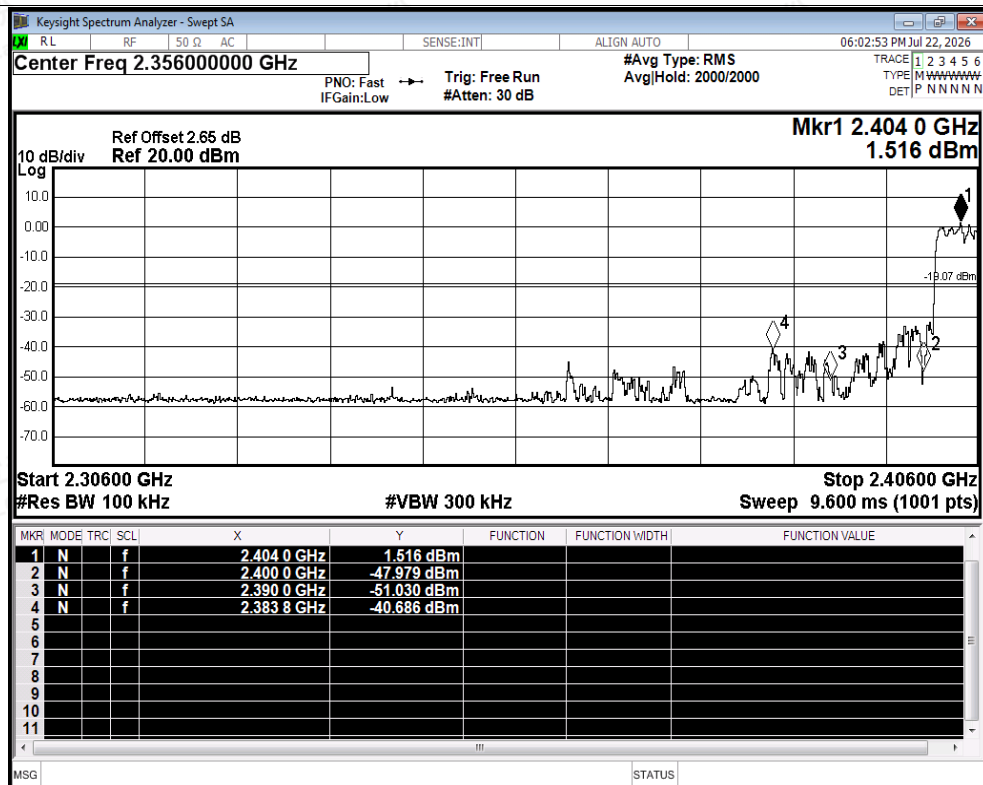
Band Edge (Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



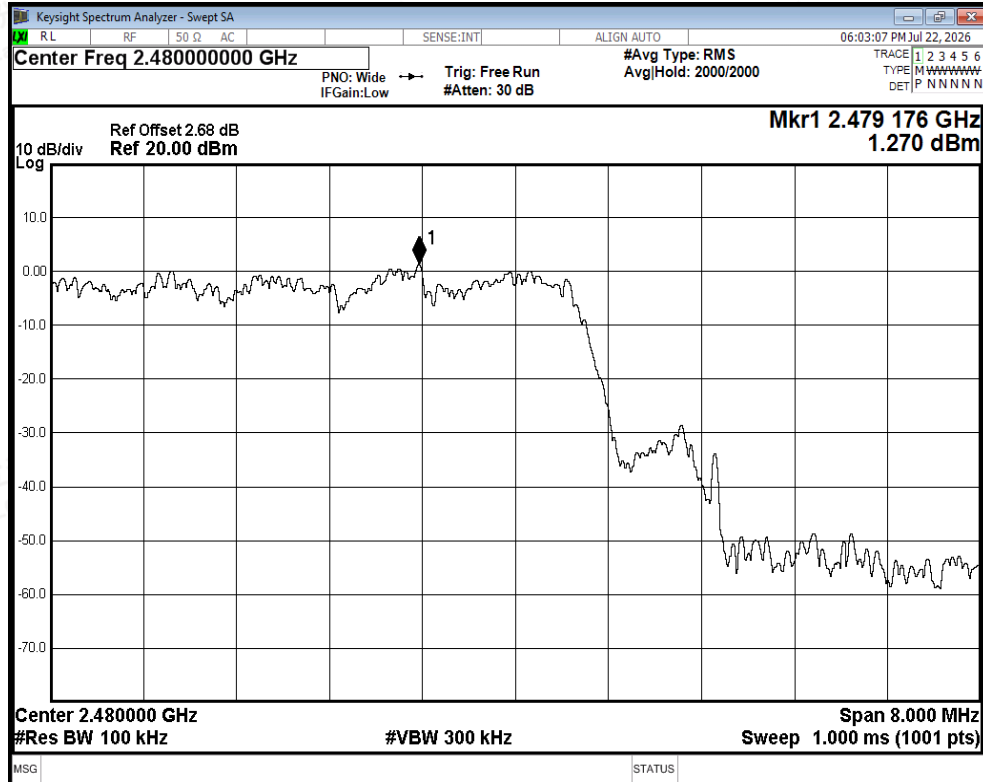
Band Edge (Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



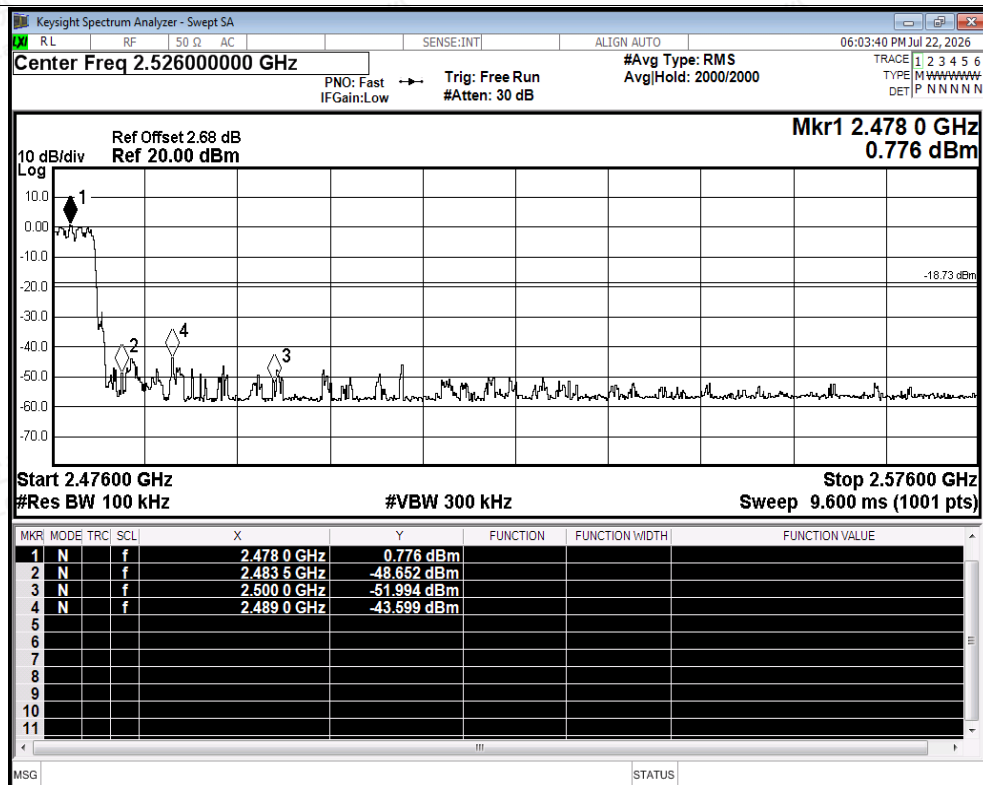
Band Edge (Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



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



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

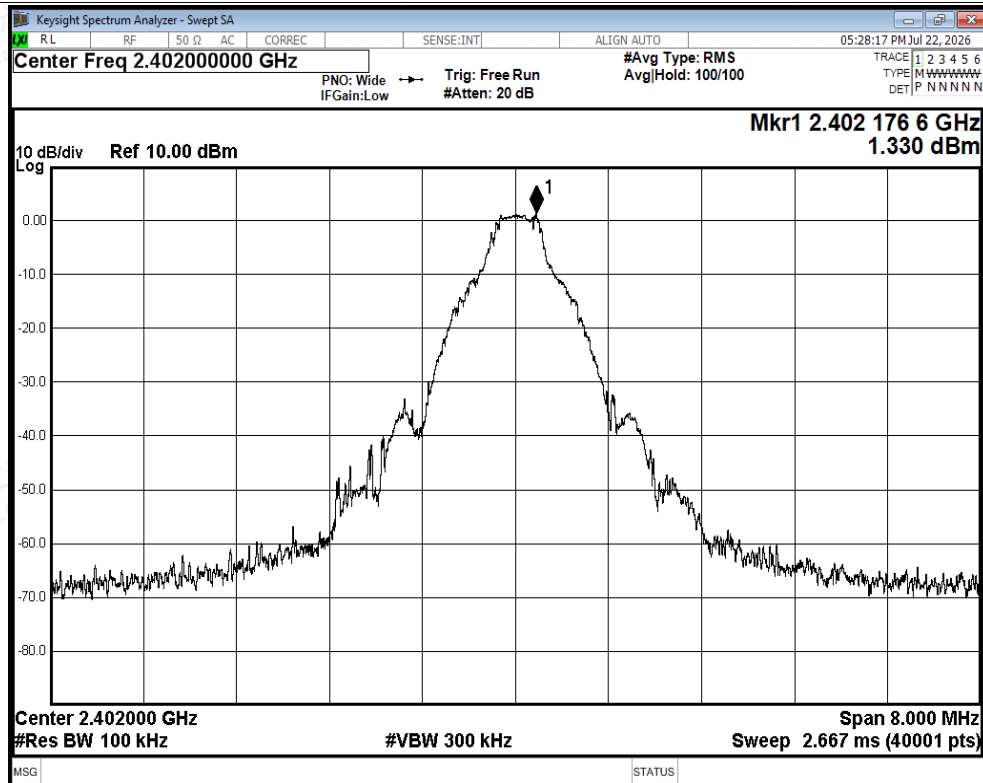


Band Edge (Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

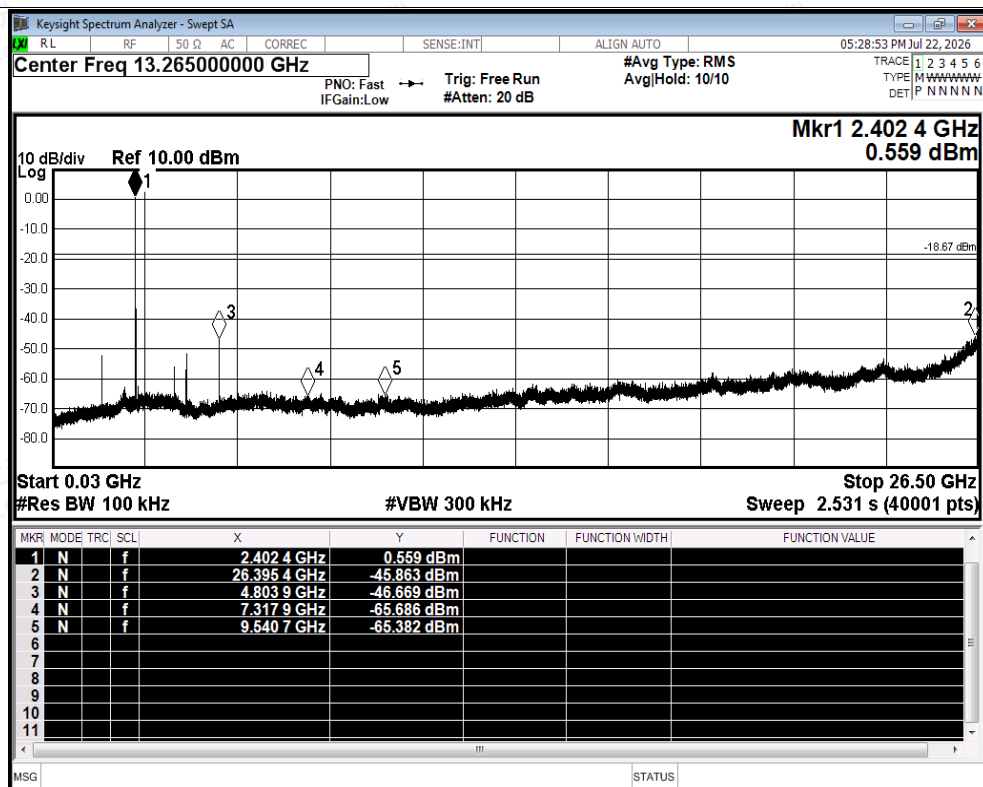


A.7 Conducted RF Spurious Emission

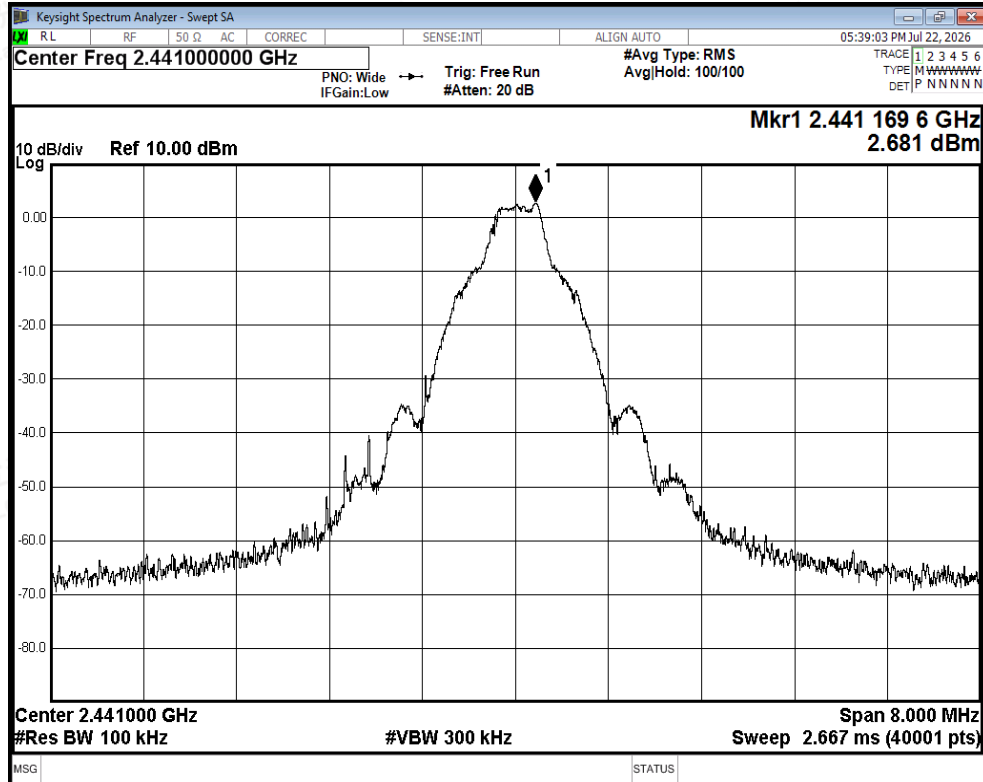
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-47.19	-20	Pass
NVNT	1-DH5	2441	Ant1	-49.27	-20	Pass
NVNT	1-DH5	2480	Ant1	-49.1	-20	Pass
NVNT	2-DH5	2402	Ant1	-46.51	-20	Pass
NVNT	2-DH5	2441	Ant1	-47.01	-20	Pass
NVNT	2-DH5	2480	Ant1	-25.91	-20	Pass
NVNT	3-DH5	2402	Ant1	-47.4	-20	Pass
NVNT	3-DH5	2441	Ant1	-46.98	-20	Pass
NVNT	3-DH5	2480	Ant1	-47.36	-20	Pass



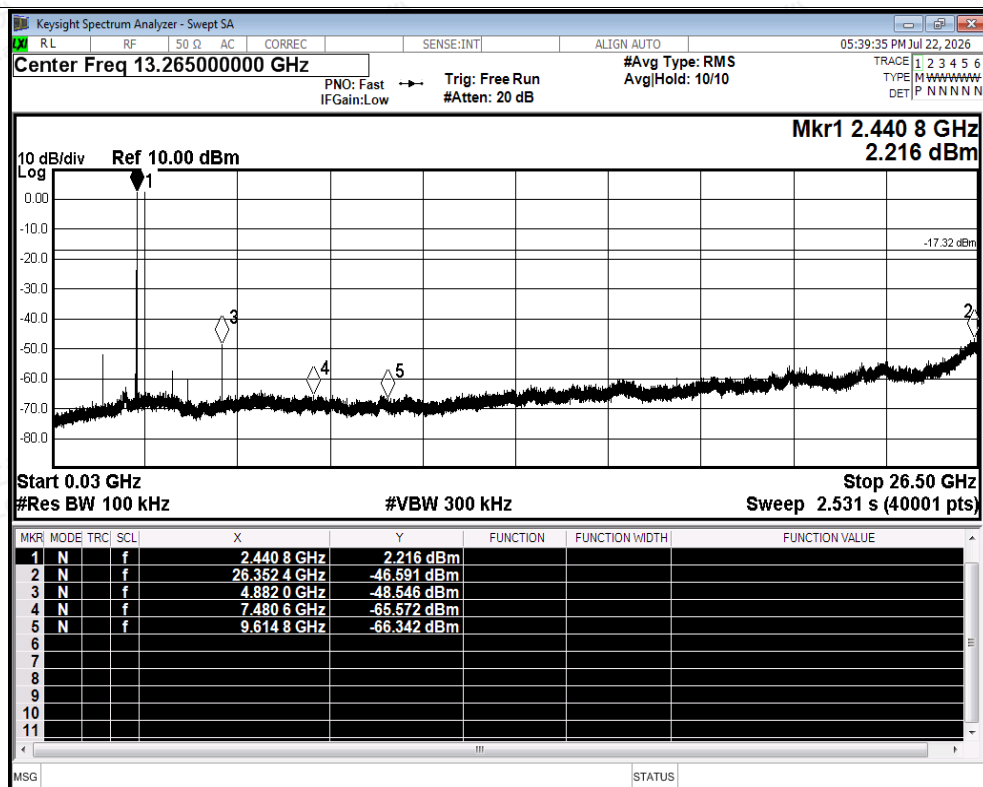
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



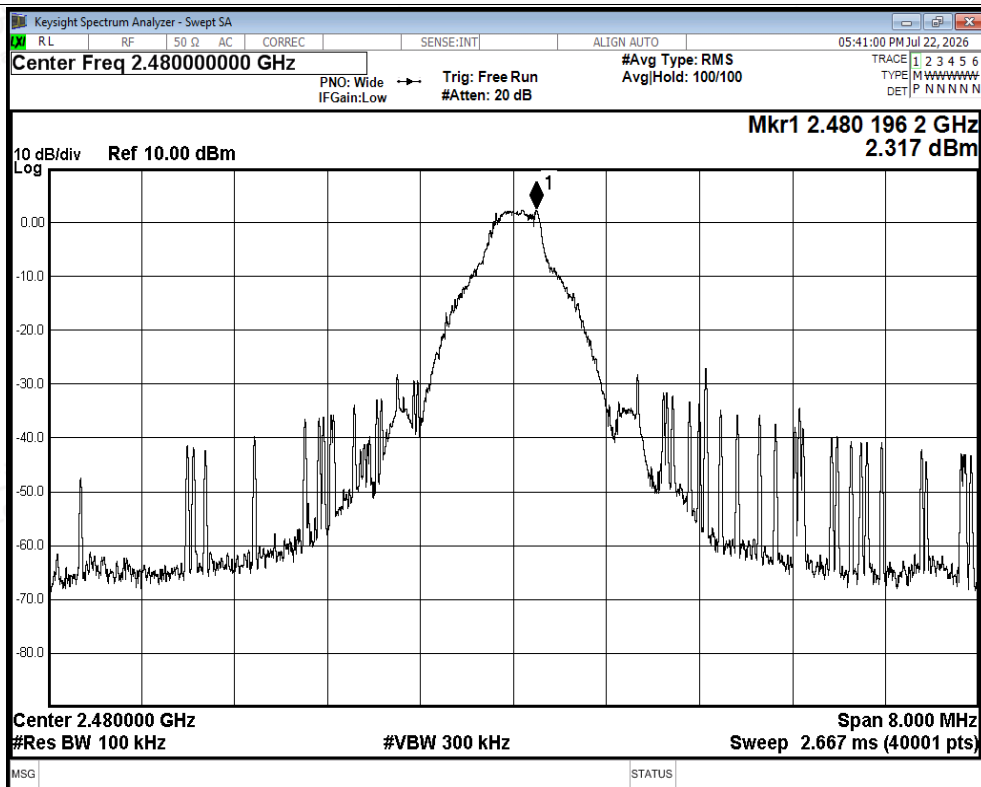
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



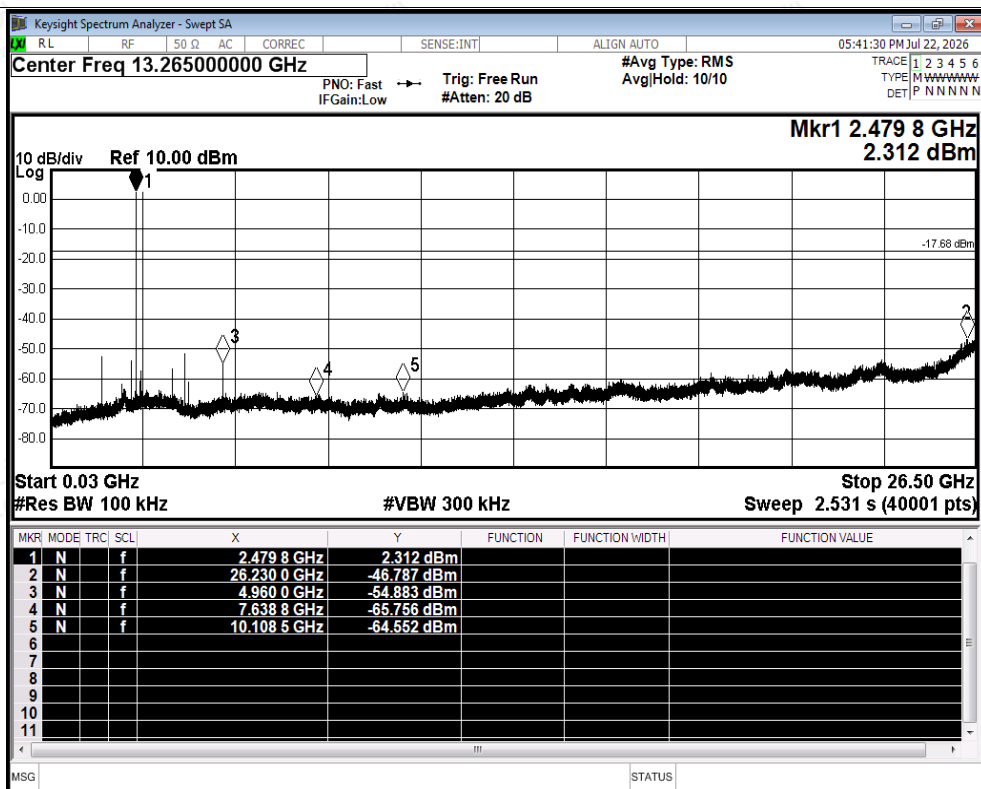
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



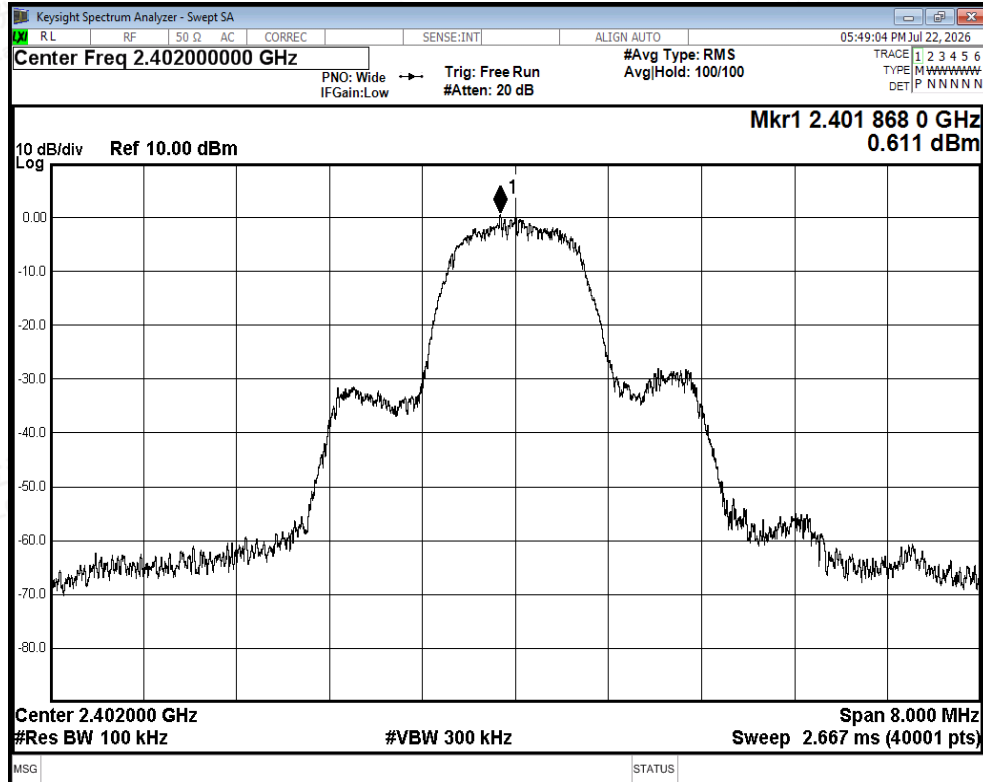
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



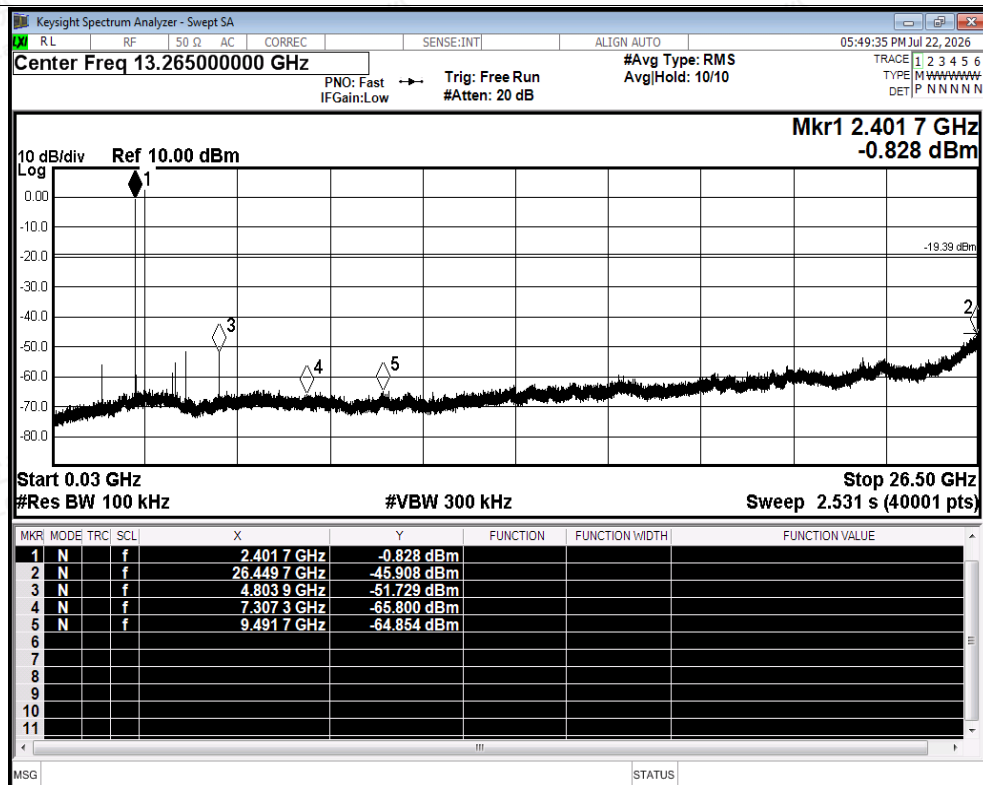
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



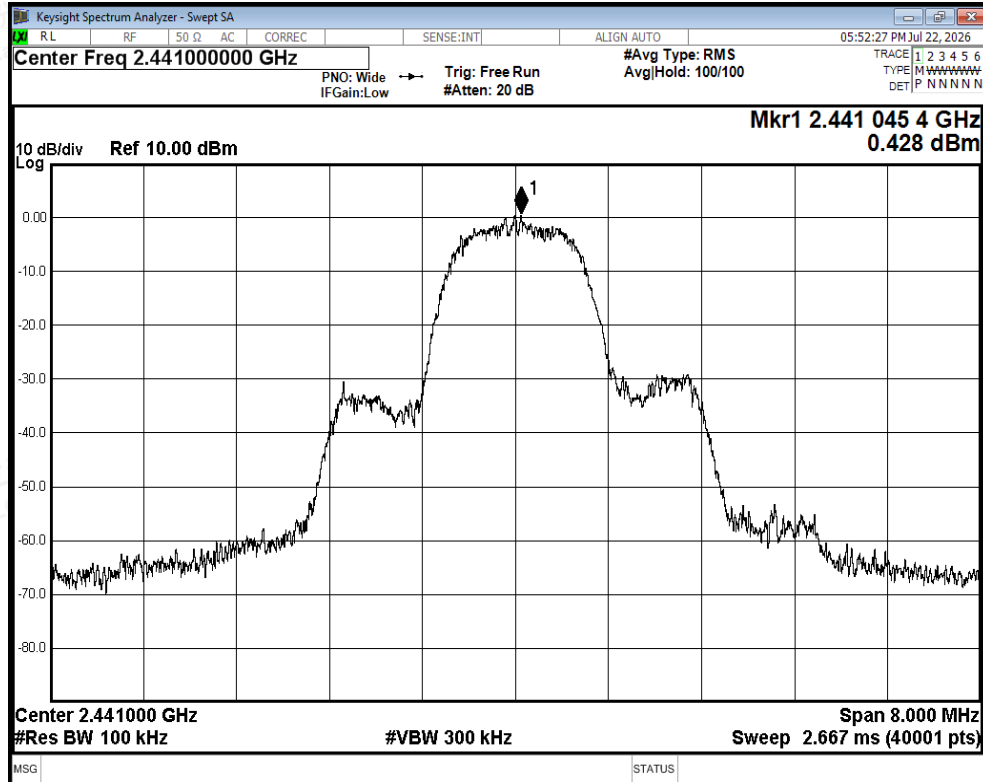
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



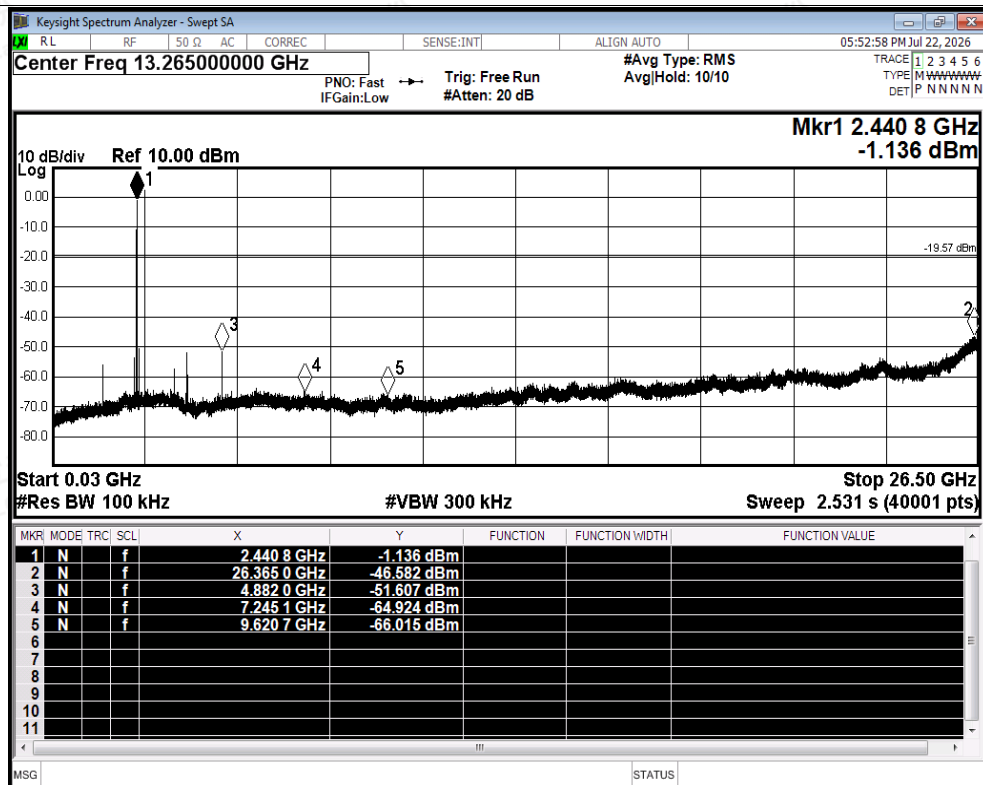
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



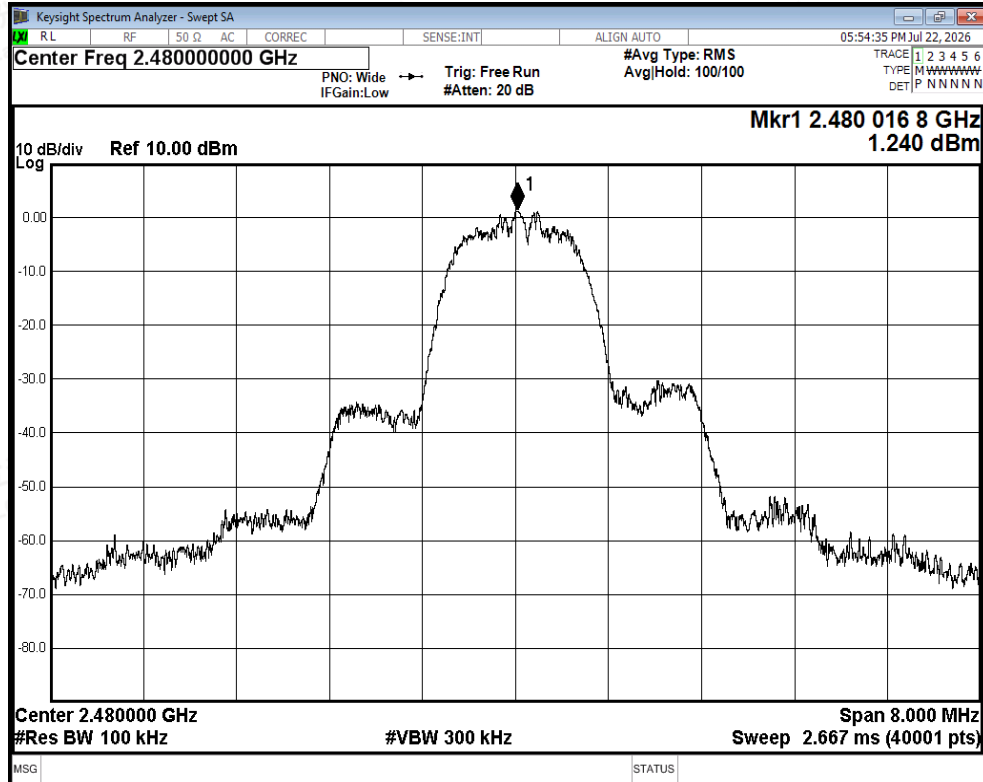
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



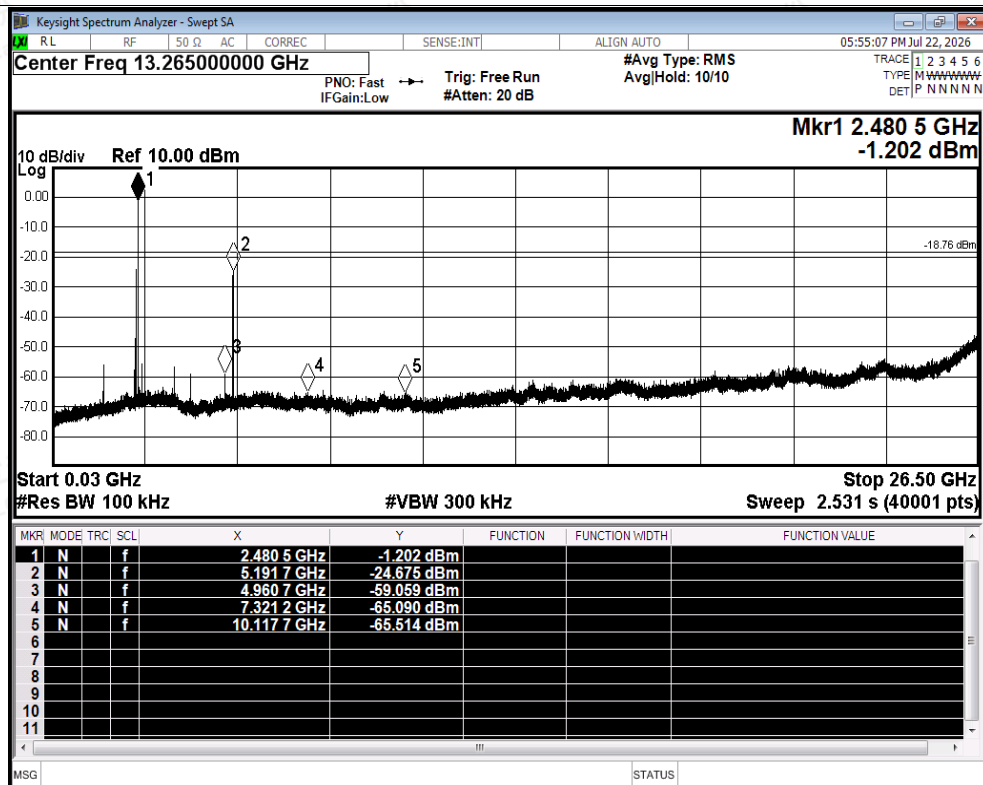
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



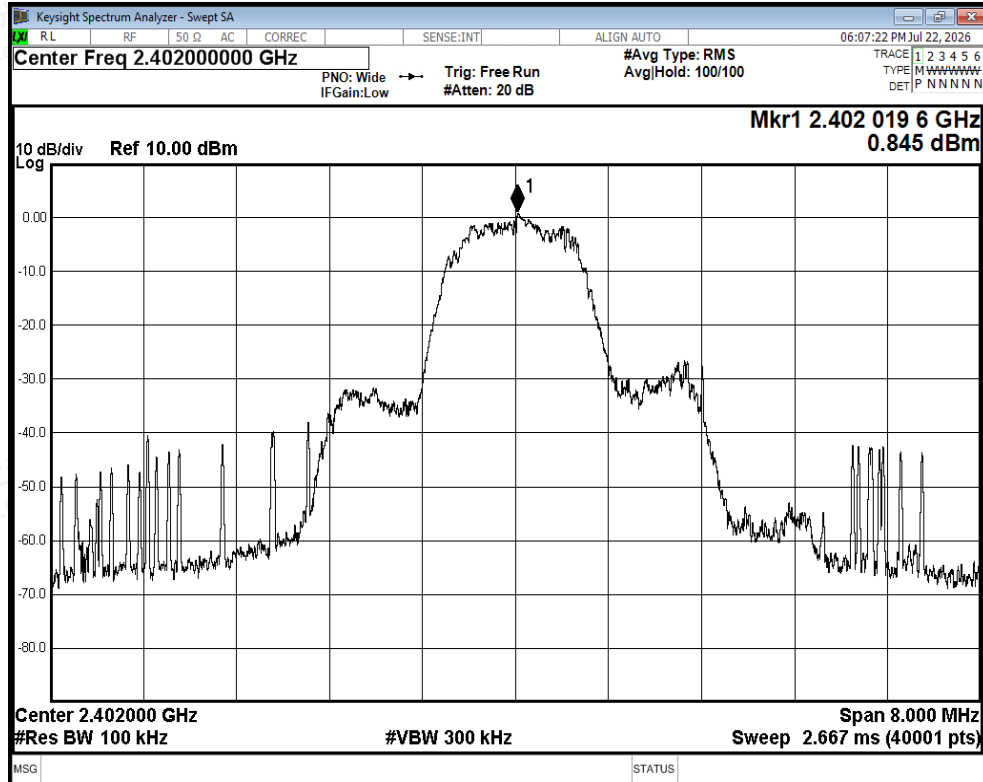
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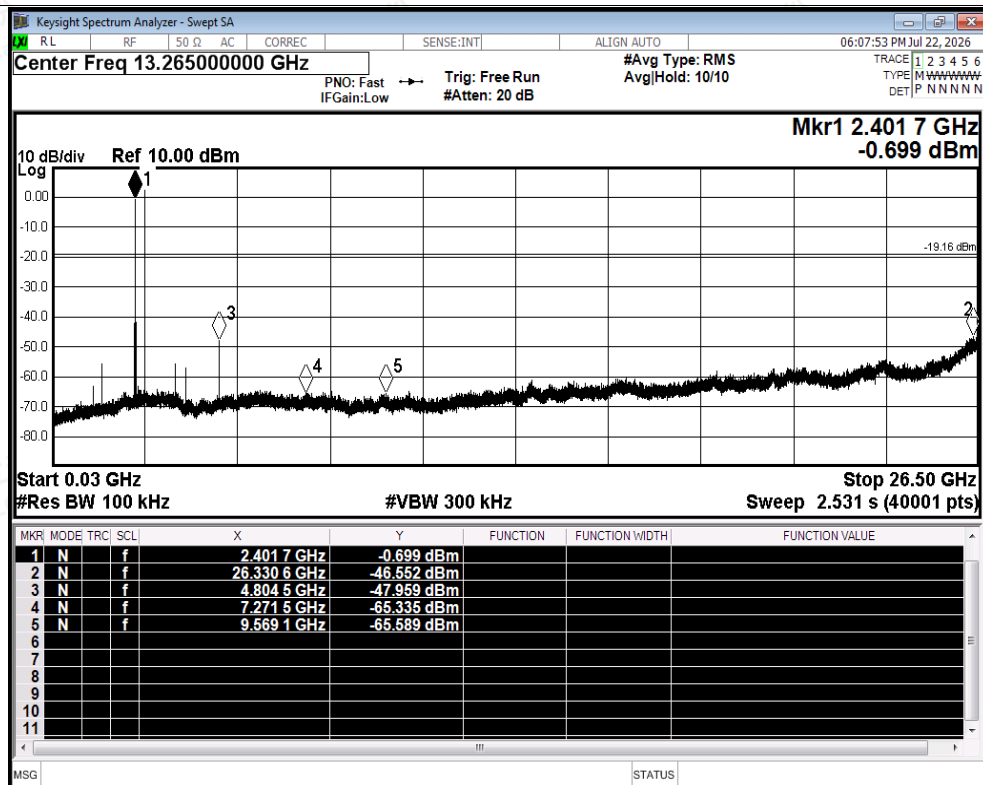
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



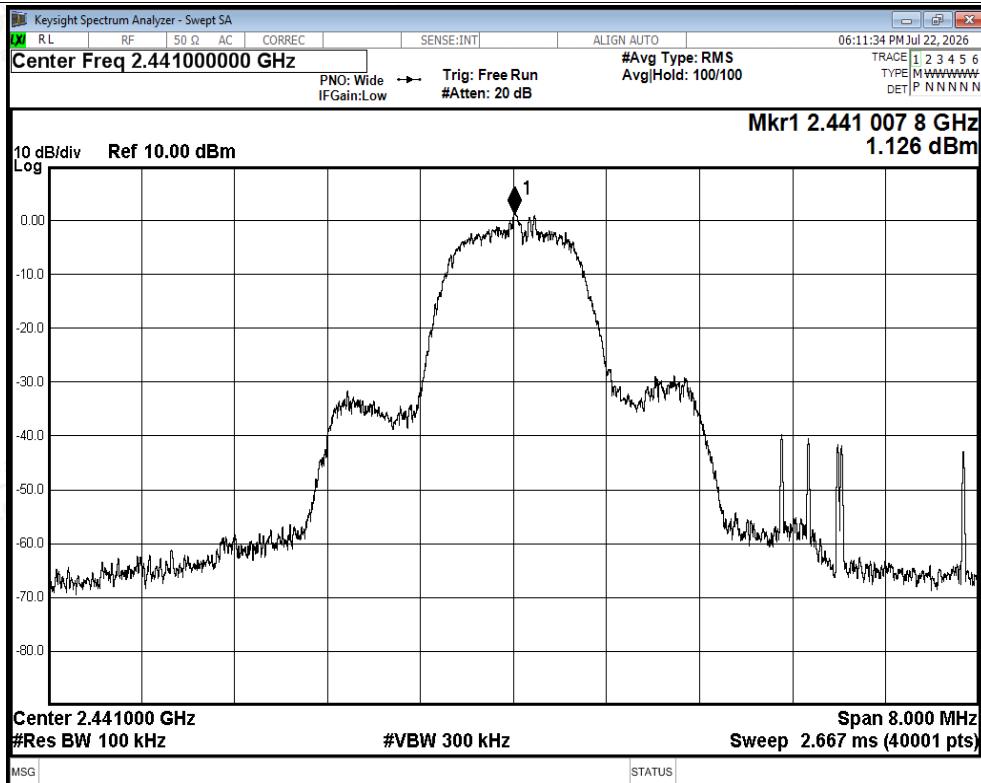
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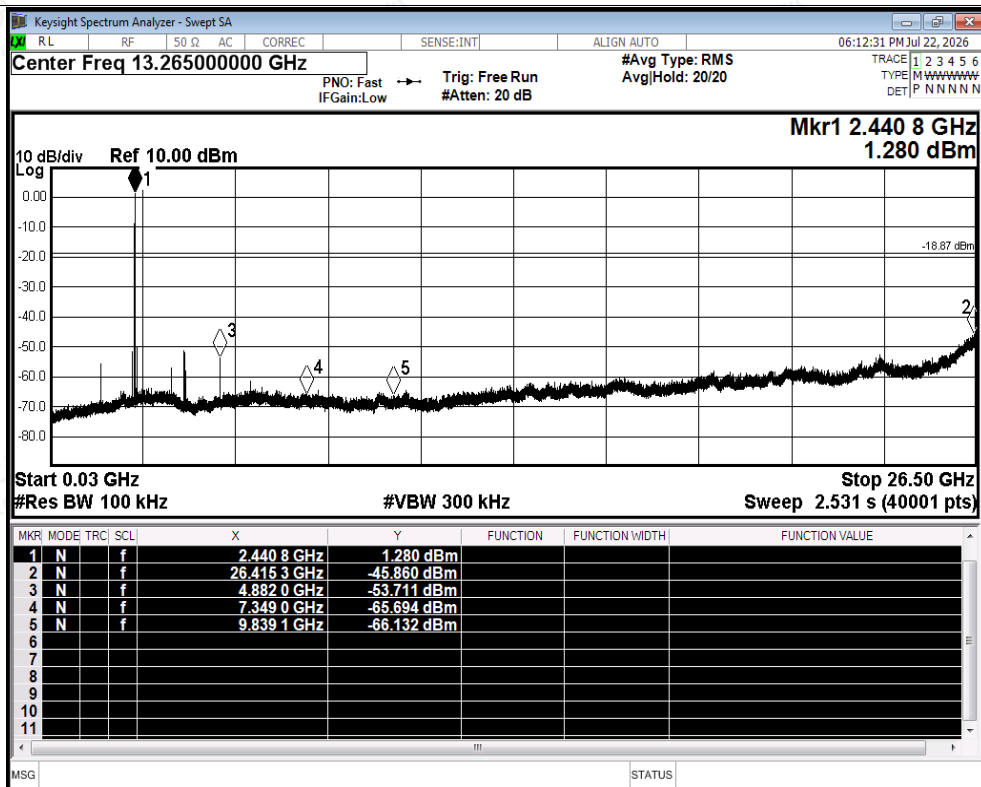
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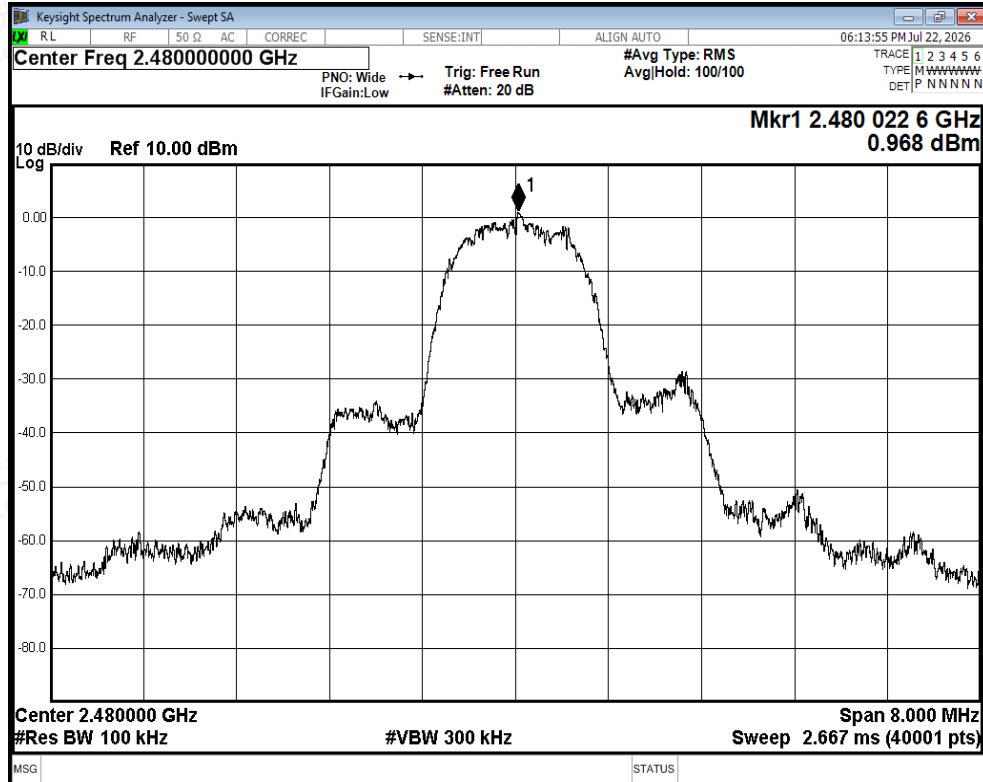
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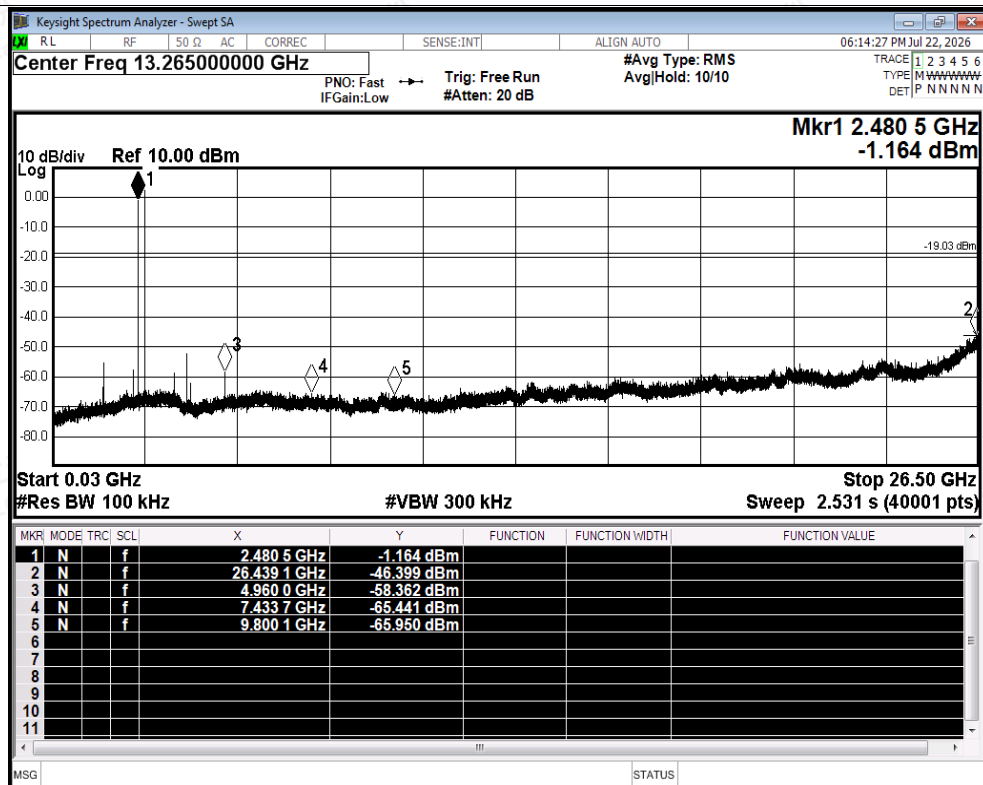
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref

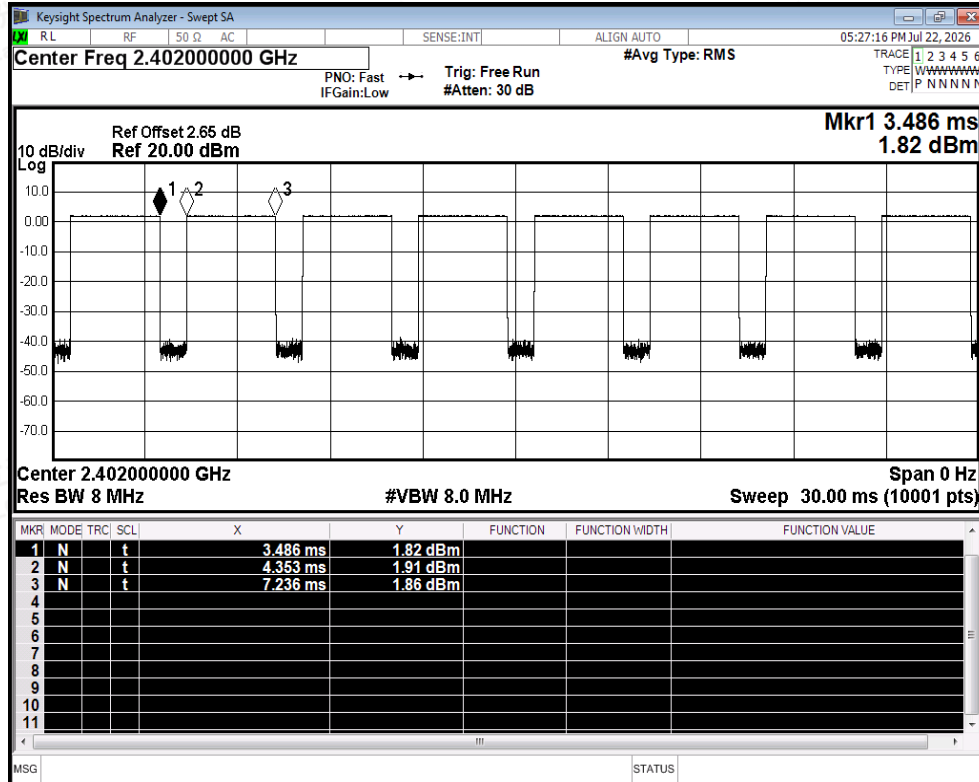


Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

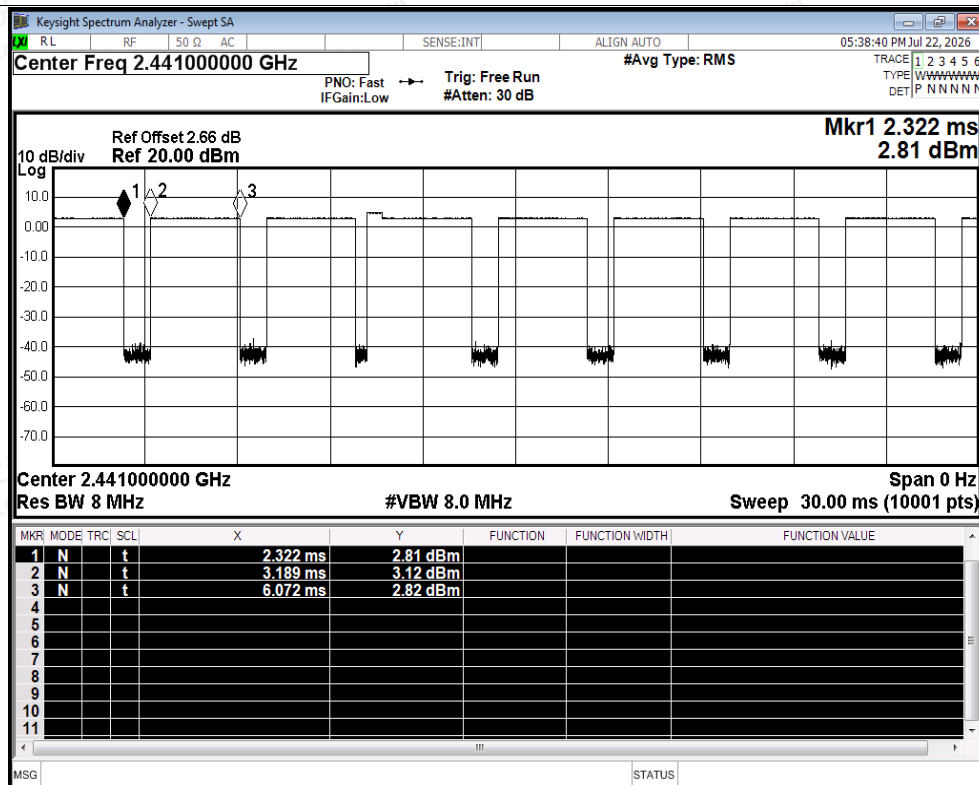


A.8 Duty Cycle

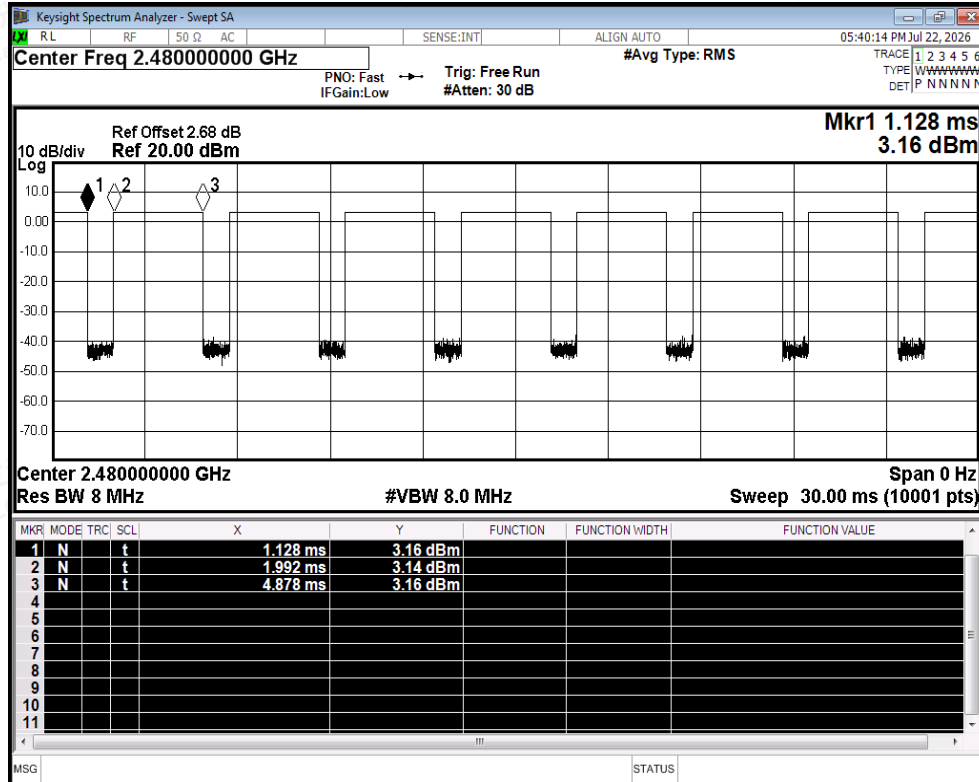
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2402	Ant1	77.04	1.13	0.35
NVNT	2-DH5	2441	Ant1	77.04	1.13	0.35
NVNT	2-DH5	2480	Ant1	77.12	1.13	0.35
NVNT	3-DH5	2402	Ant1	77.12	1.13	0.35
NVNT	3-DH5	2441	Ant1	77.04	1.13	0.35
NVNT	3-DH5	2480	Ant1	77.12	1.13	0.35



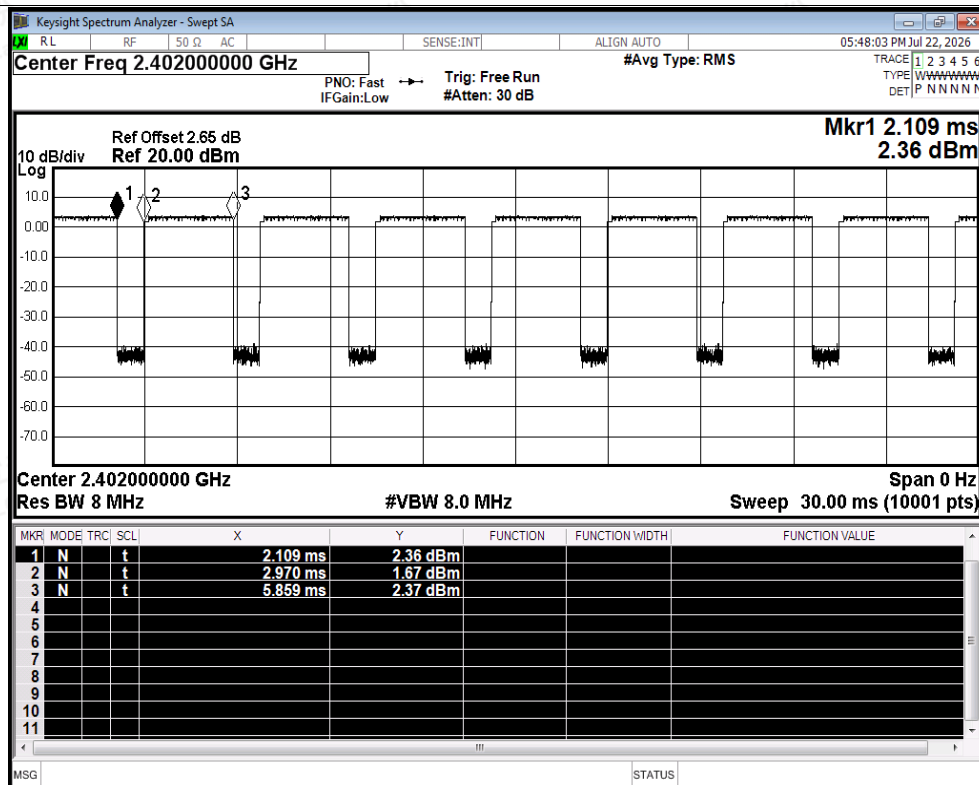
Duty Cycle NVNT 1-DH5 2402MHz Ant1



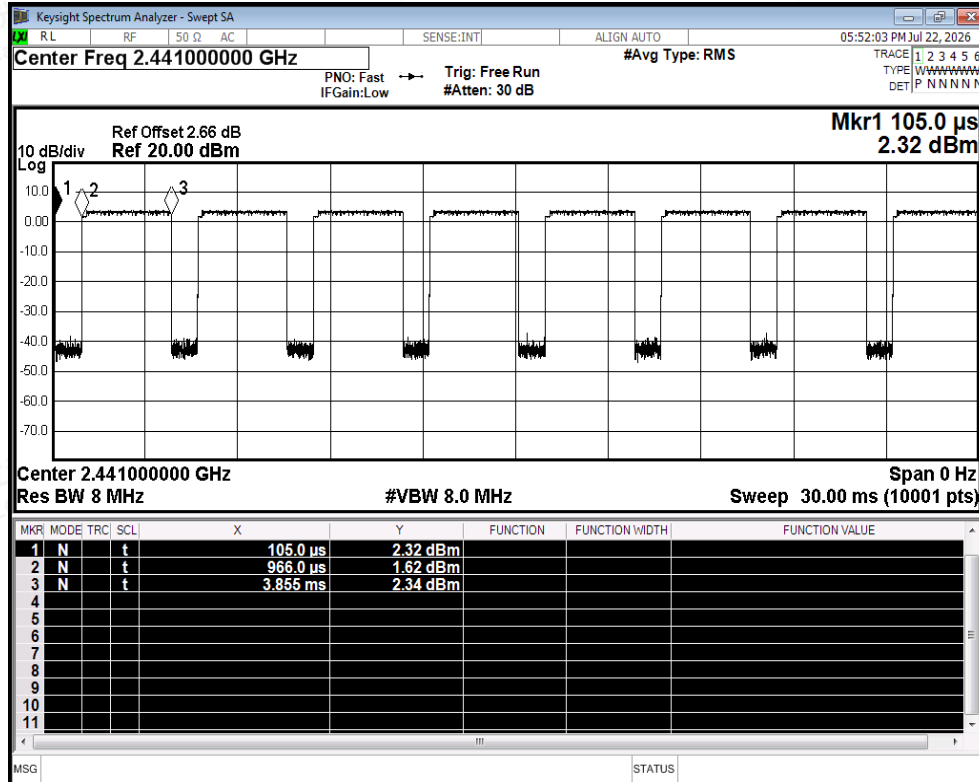
Duty Cycle NVNT 1-DH5 2441MHz Ant1



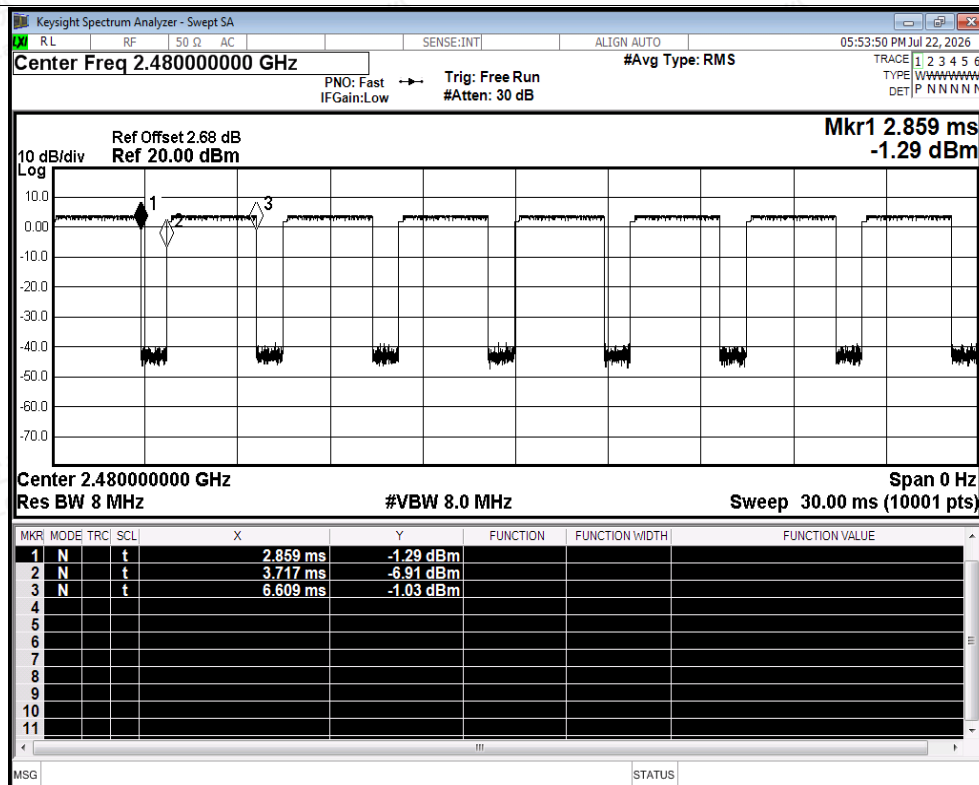
Duty Cycle NVNT 1-DH5 2480MHz Ant1



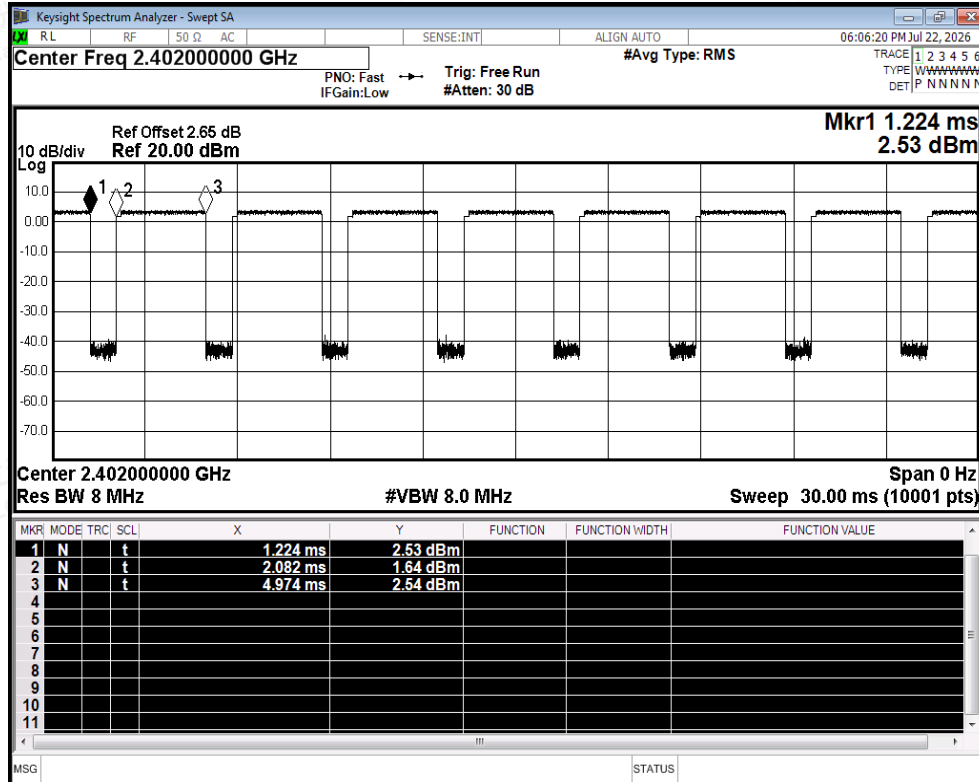
Duty Cycle NVNT 2-DH5 2402MHz Ant1



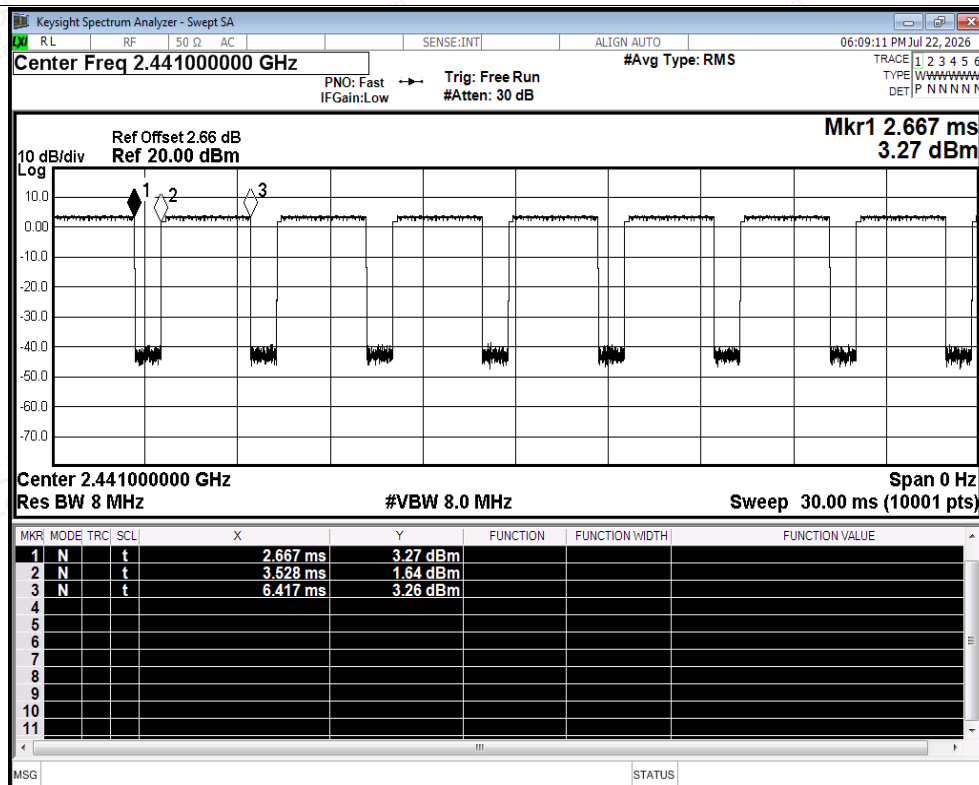
Duty Cycle NVNT 2-DH5 2441MHz Ant1



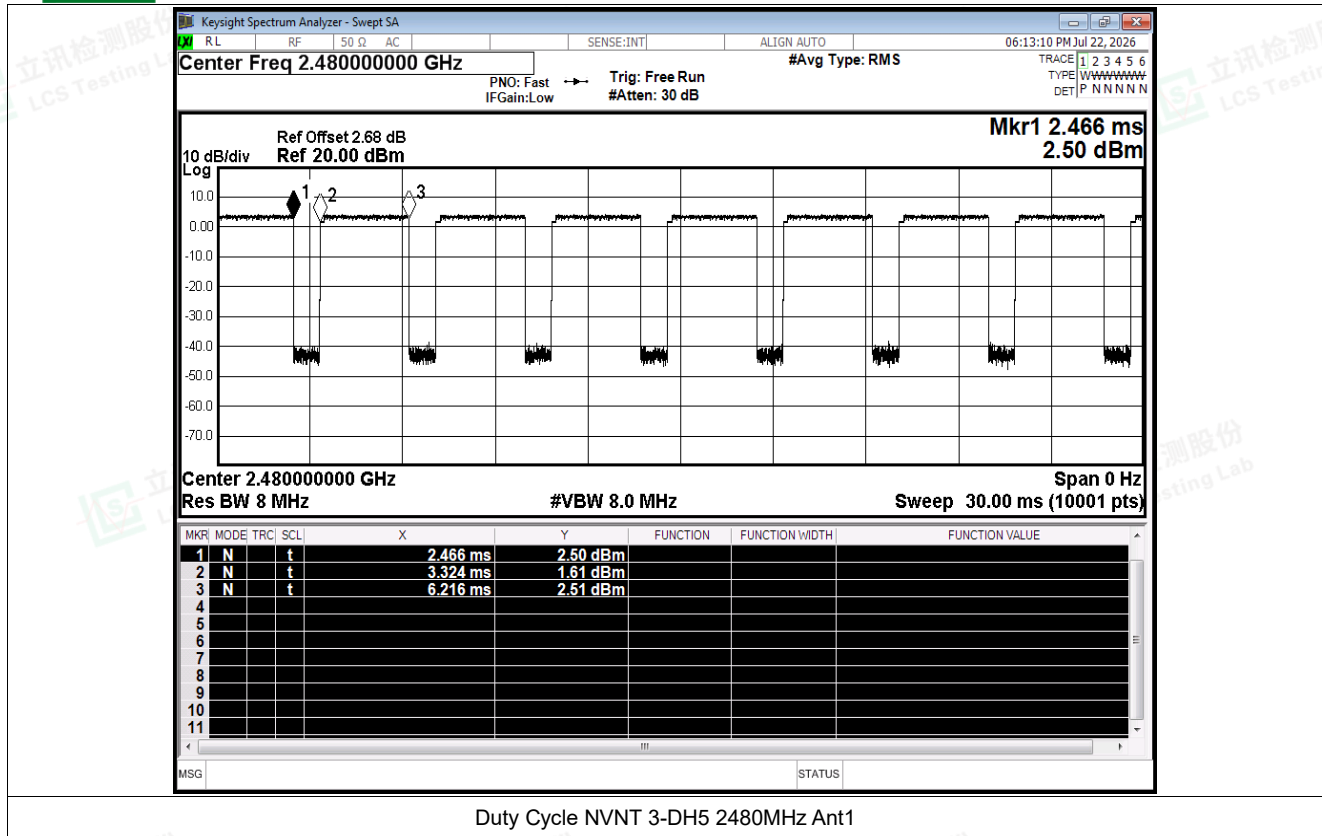
Duty Cycle NVNT 2-DH5 2480MHz Ant1



Duty Cycle NVNT 3-DH5 2402MHz Ant1



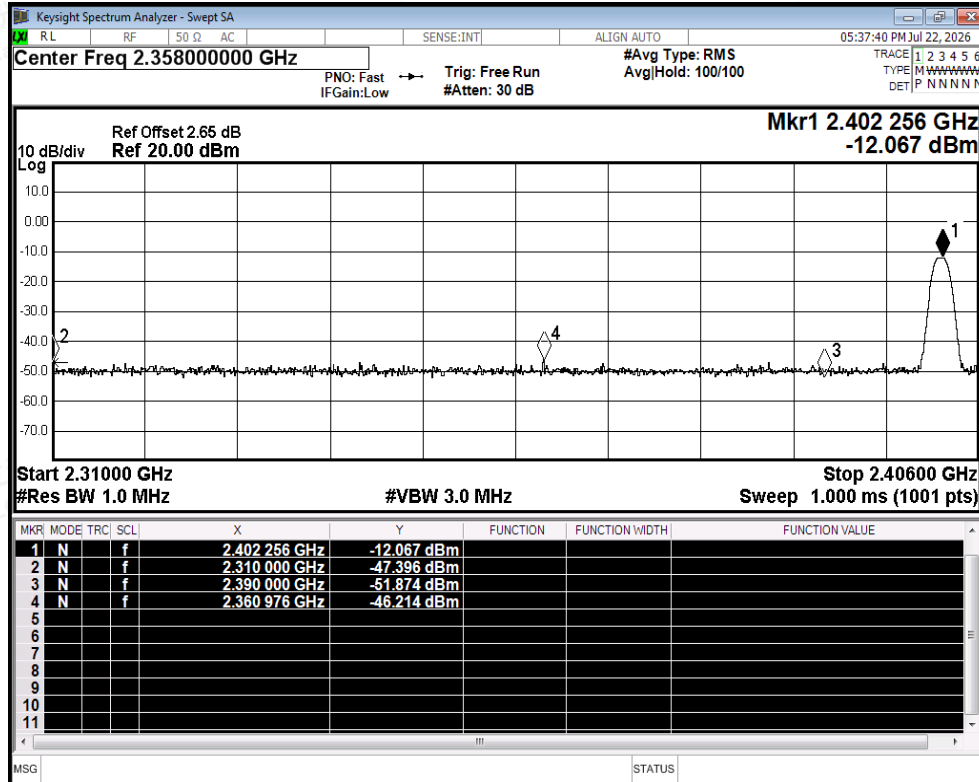
Duty Cycle NVNT 3-DH5 2441MHz Ant1



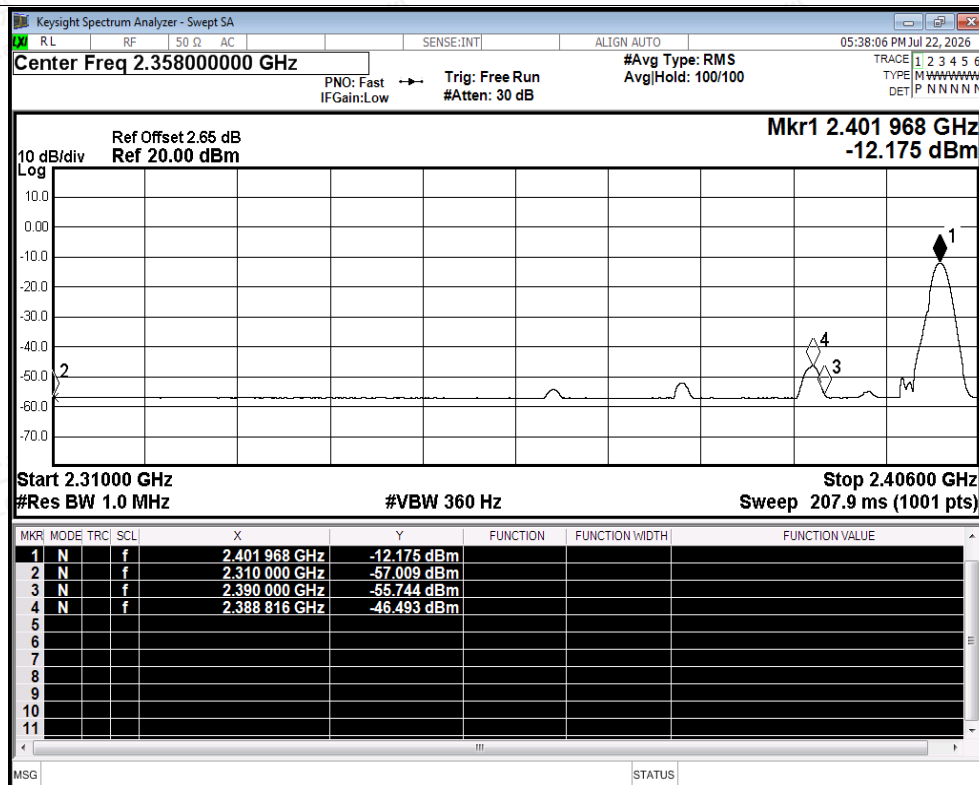


A.9 Restrict Band

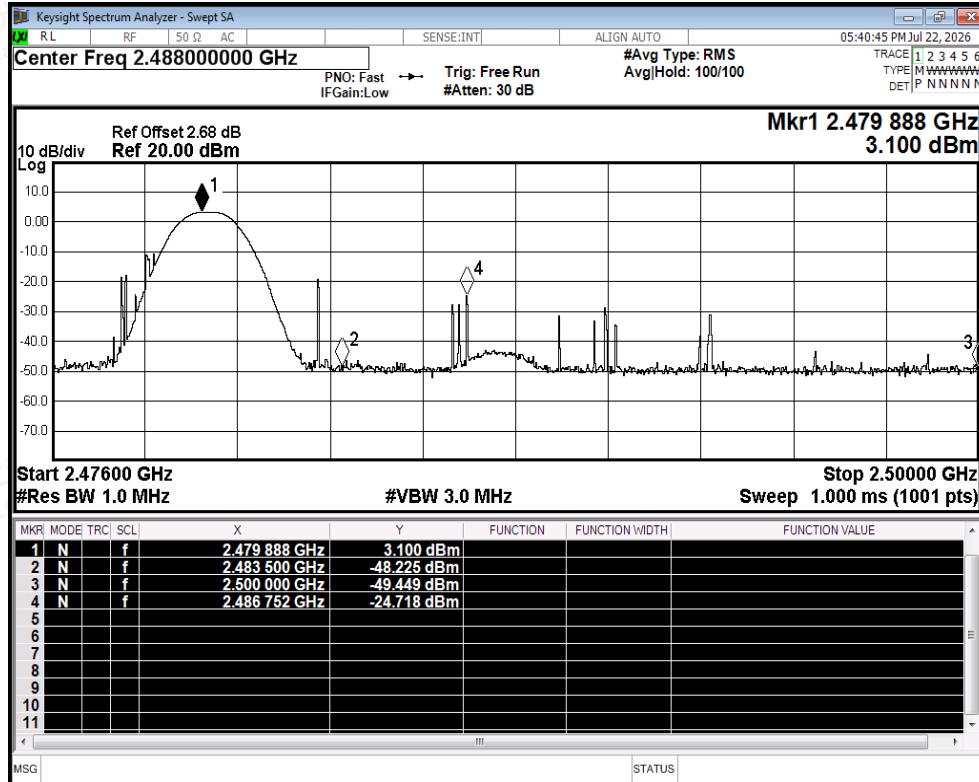
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-47.39	2	49.87	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57	2	40.26	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2360.976	-46.21	2	51.05	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2388.816	-46.49	2	50.77	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-51.66	2	45.6	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-56.19	2	41.07	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.22	2	49.04	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-51.55	2	45.71	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2486.752	-24.71	2	72.55	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2484.16	-43.59	2	53.67	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.44	2	47.82	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-56.84	2	40.42	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.64	2	46.62	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-56.97	2	40.29	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2325.552	-46.57	2	50.69	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2388.816	-44.96	2	52.3	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.91	2	47.35	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-53.39	2	43.87	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-50.88	2	46.38	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-56.33	2	40.93	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.632	-38.05	2	59.21	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2496.352	-55.6	2	41.66	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-50.17	2	47.09	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-56.85	2	40.41	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.21	2	47.05	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-57.05	2	40.21	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2388.816	-41.21	2	56.05	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2388.528	-45.4	2	51.86	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-46.91	2	50.35	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-53.04	2	44.22	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-47.09	2	50.17	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-51.12	2	46.14	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.704	-44.91	2	52.35	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.68	-44.04	2	53.22	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.17	2	47.09	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-56.87	2	40.39	Average	54	Pass



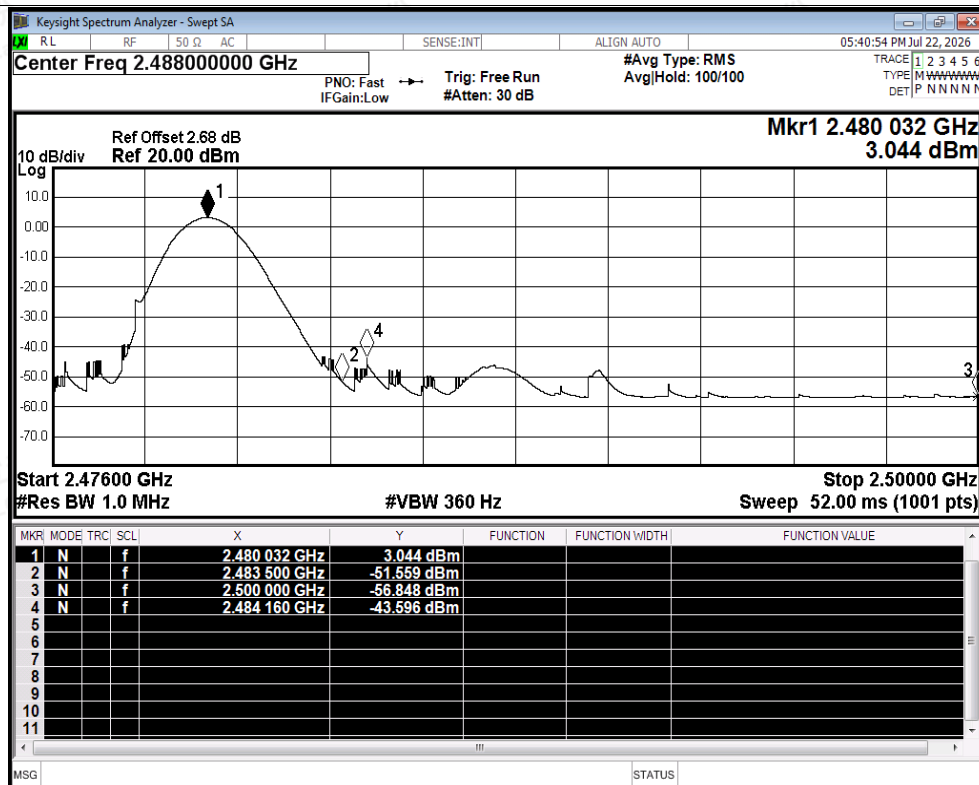
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



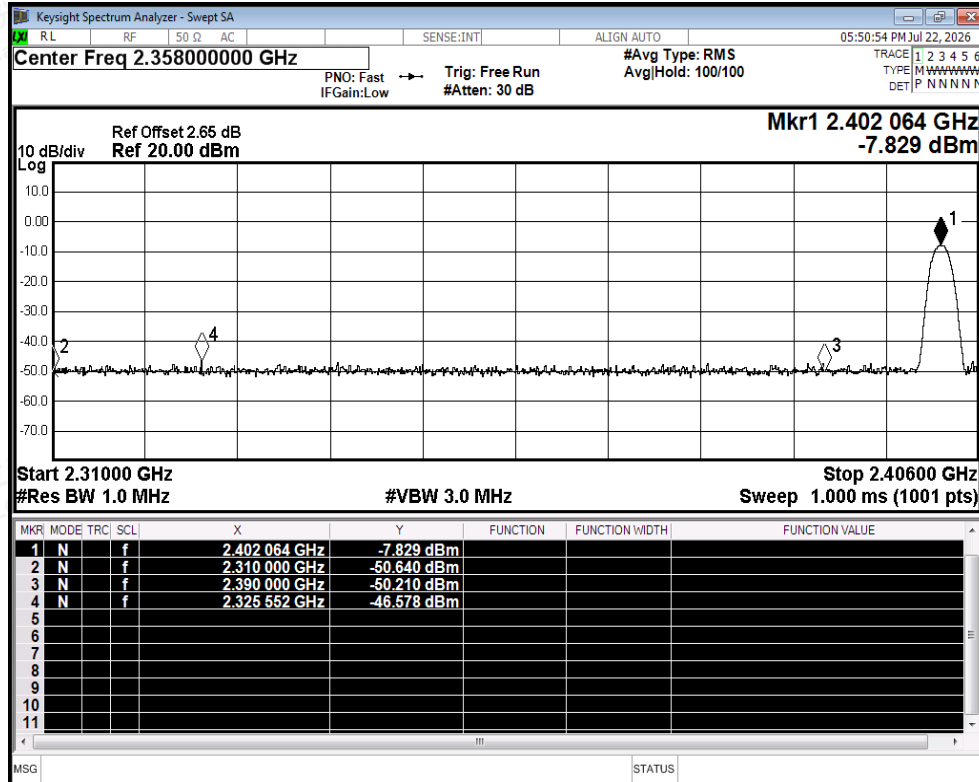
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



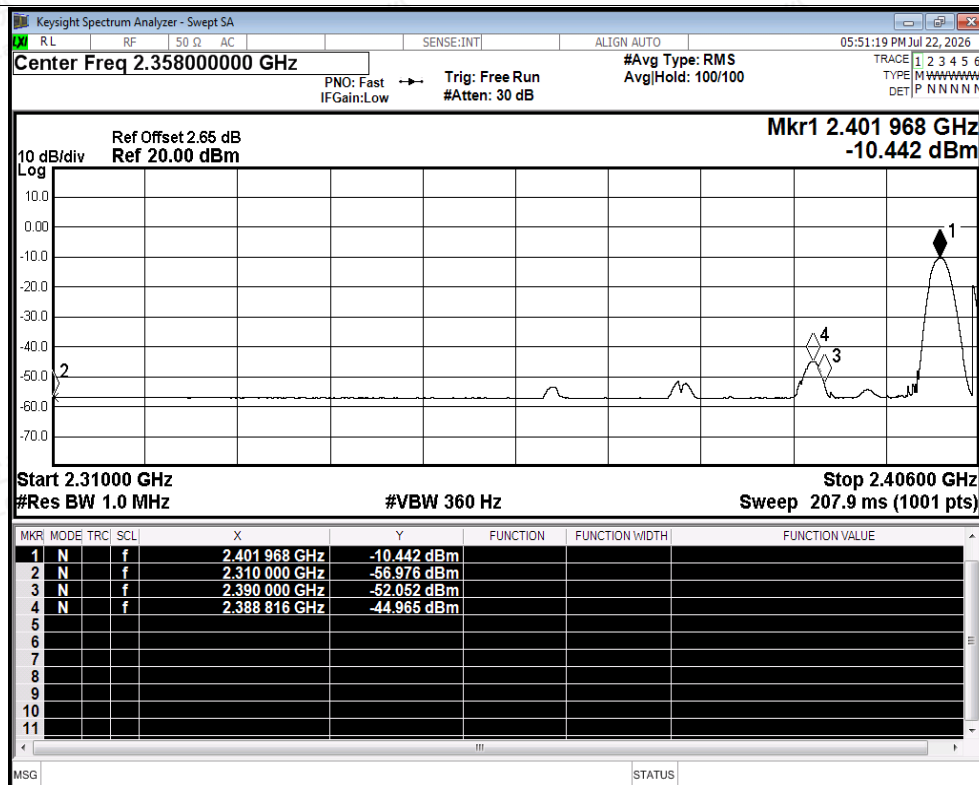
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



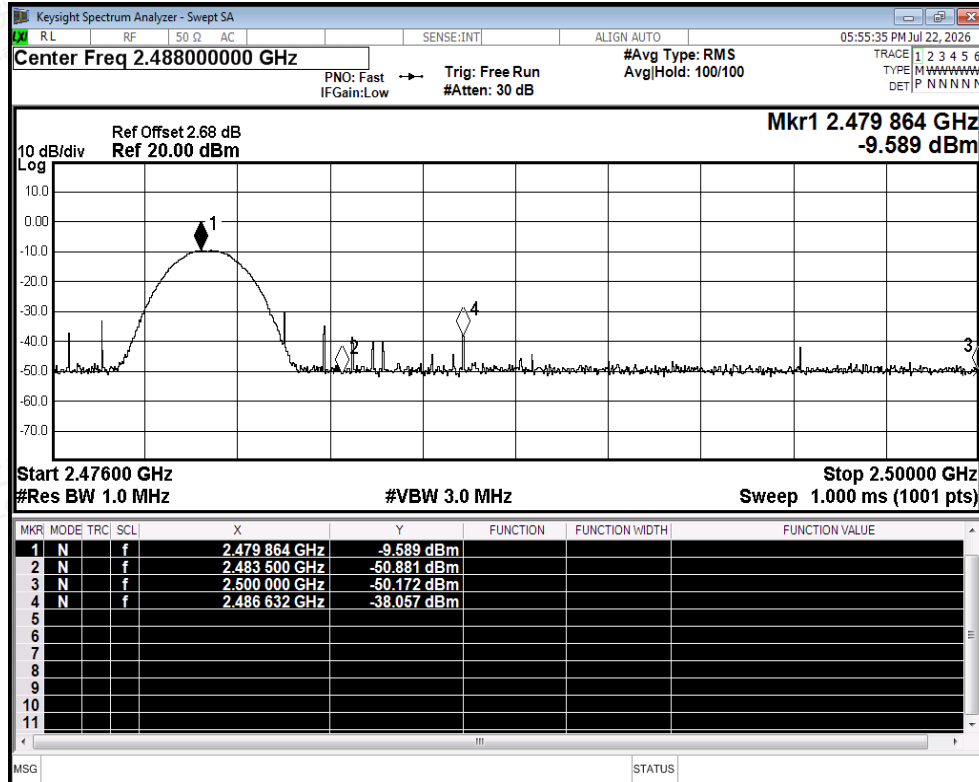
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



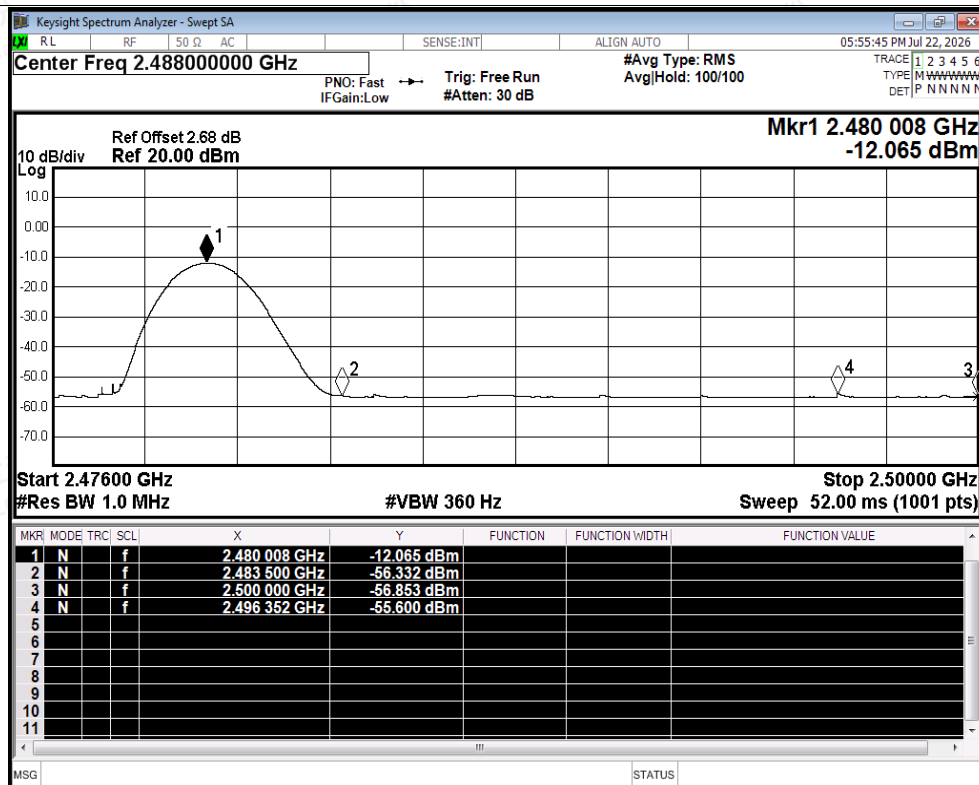
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



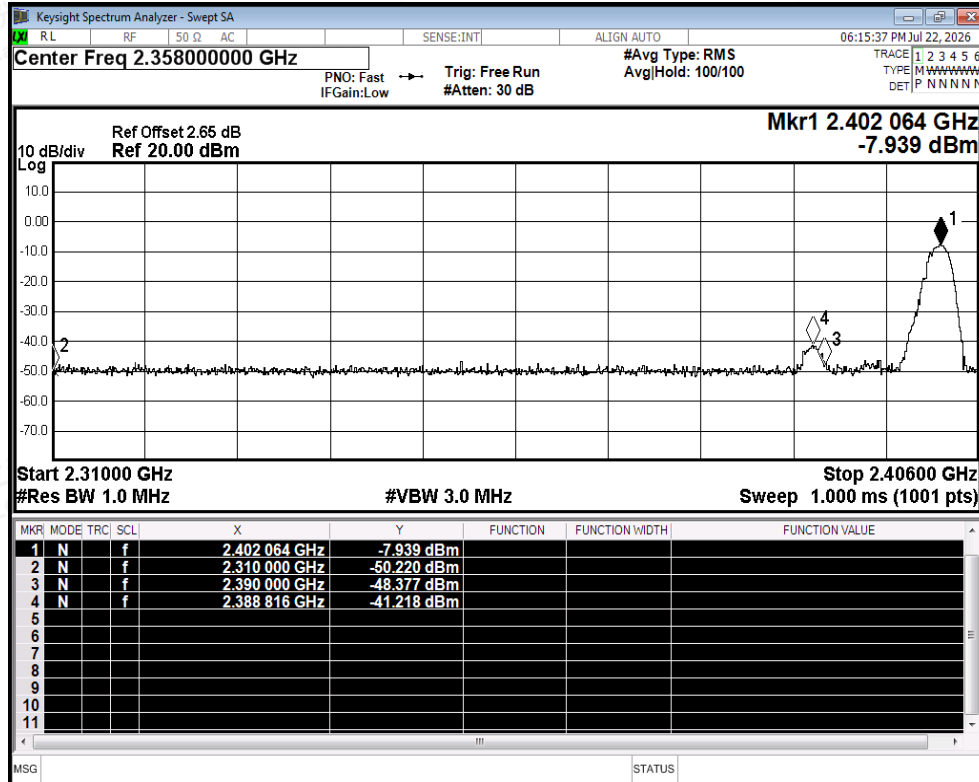
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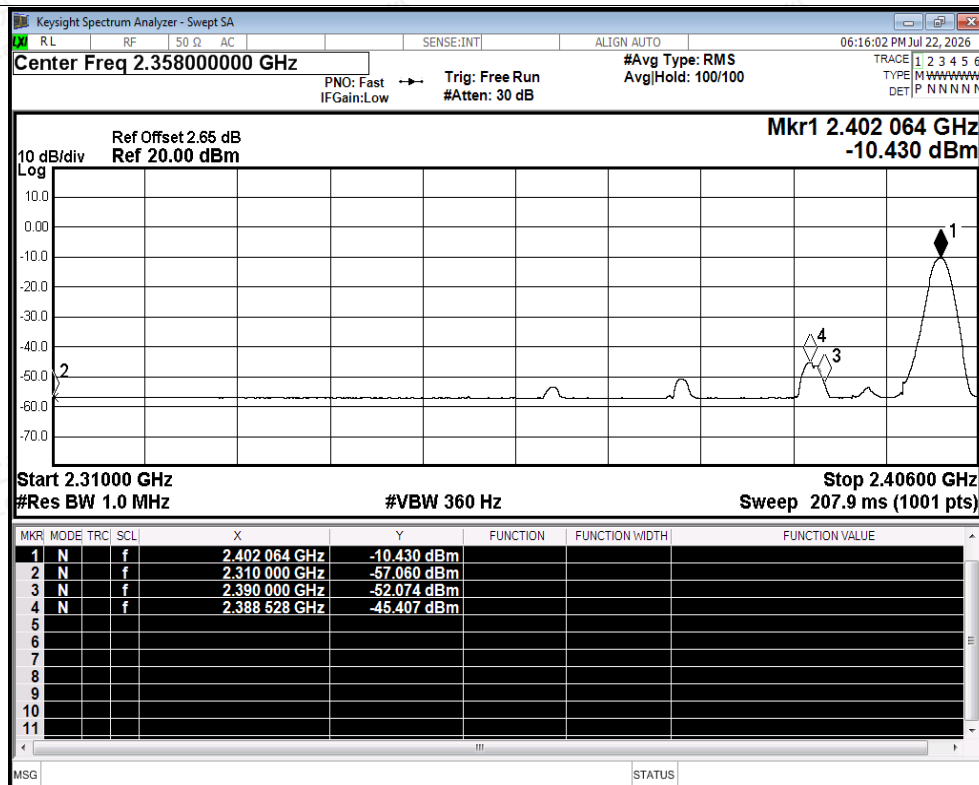
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



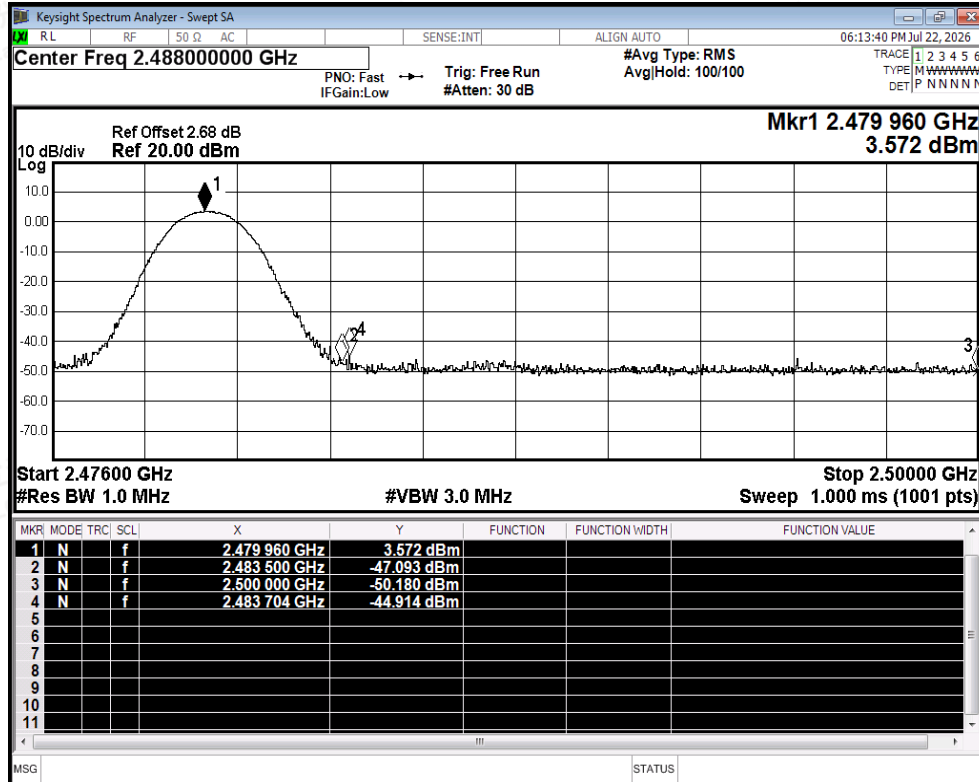
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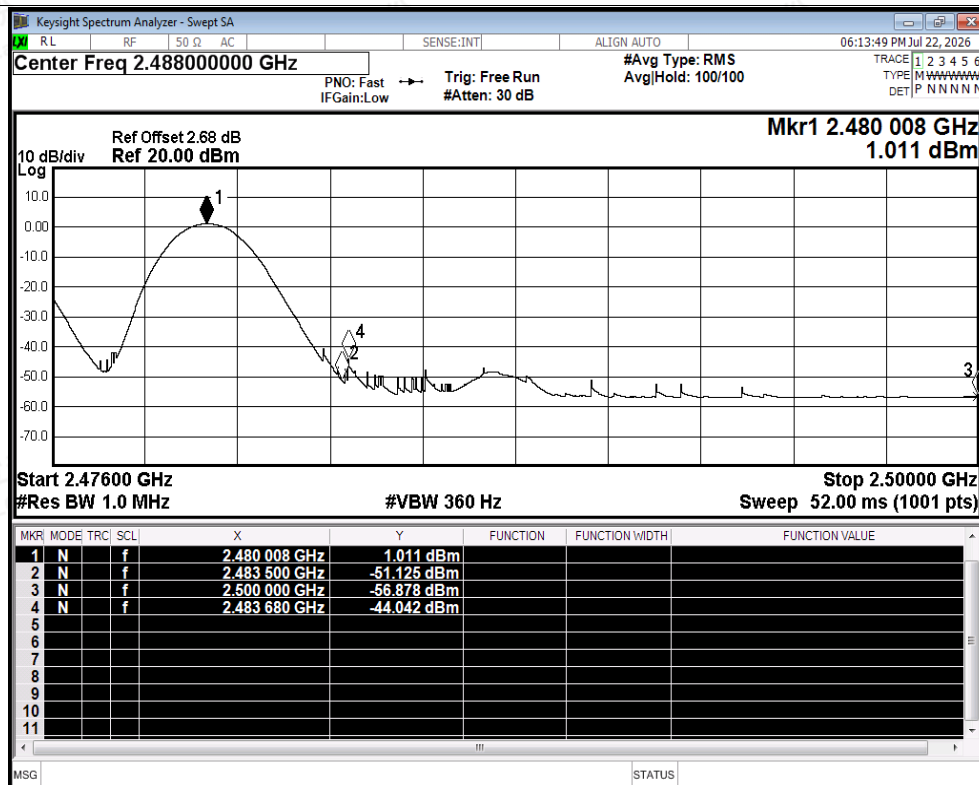
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average



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



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