Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Yamaha JetBlaster Speaker

Test Model: GDI-YMHF5P01

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Can Kun
Supervised by:	Nick Peng

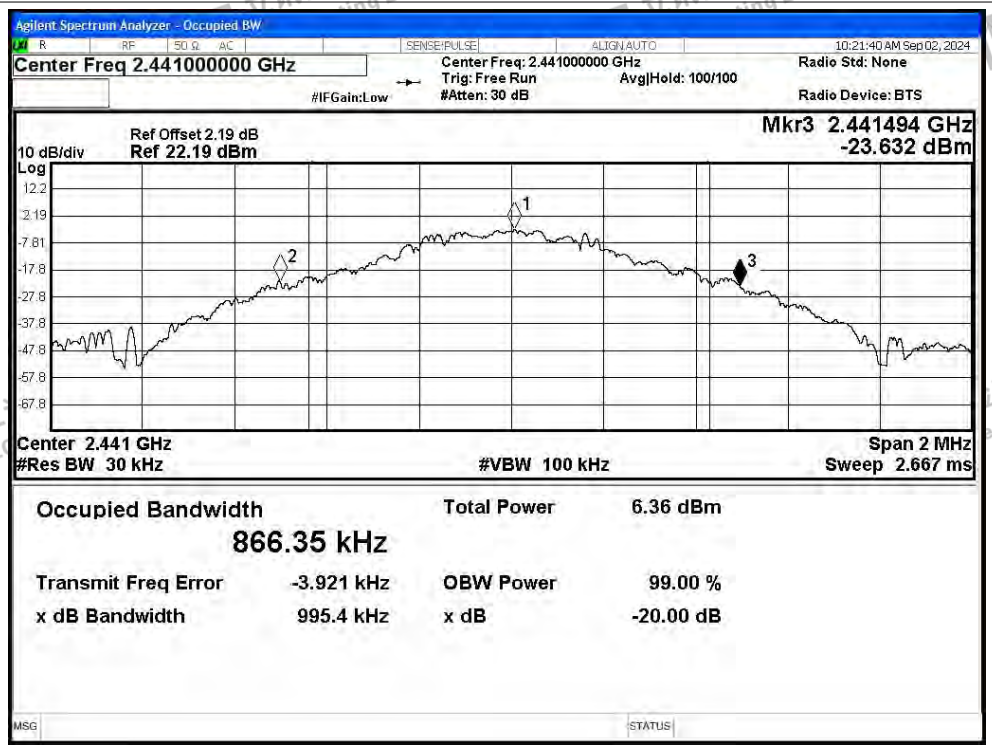
A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.975	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.995	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.945	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.286	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.288	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.312	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.298	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.289	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.294	N/A	Pass

Test Graphs

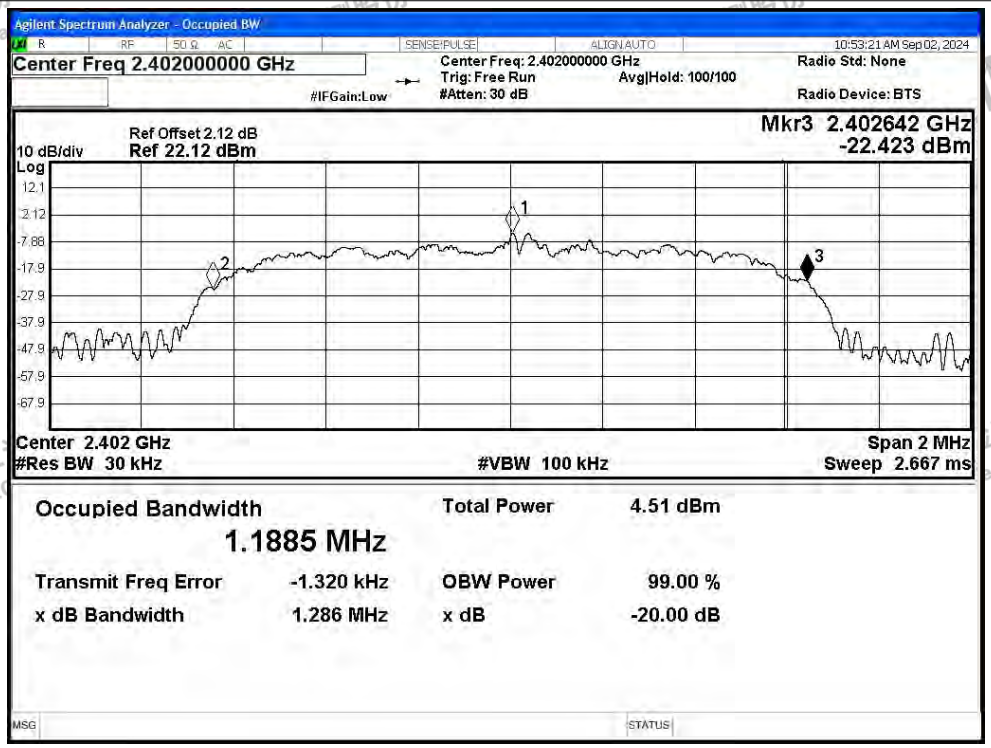
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

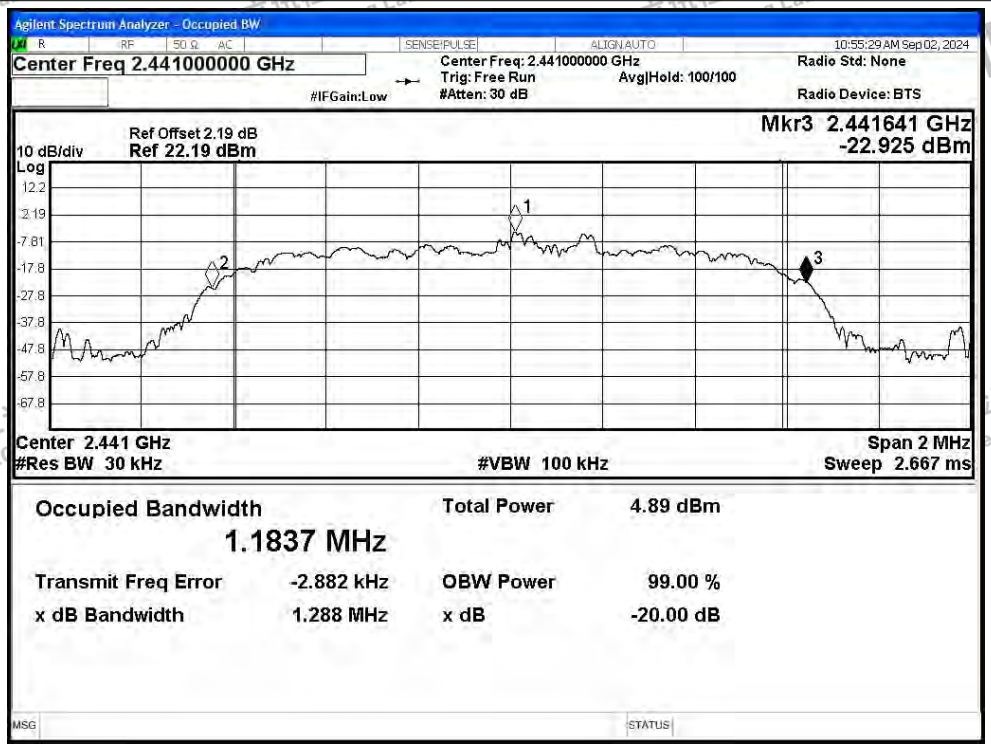


-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

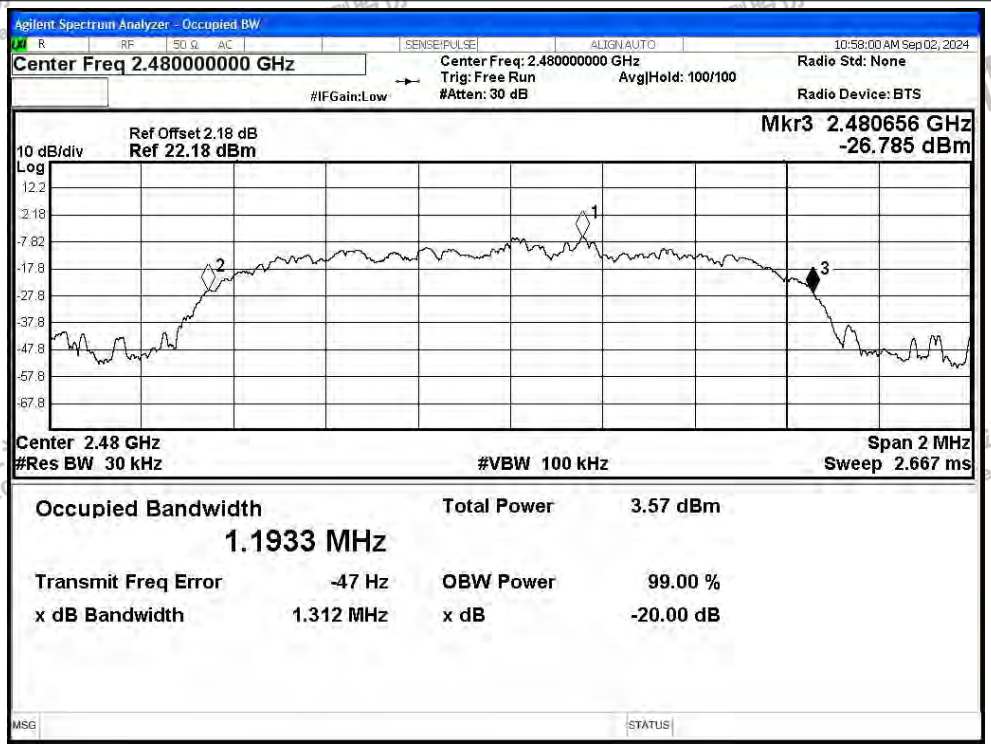
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



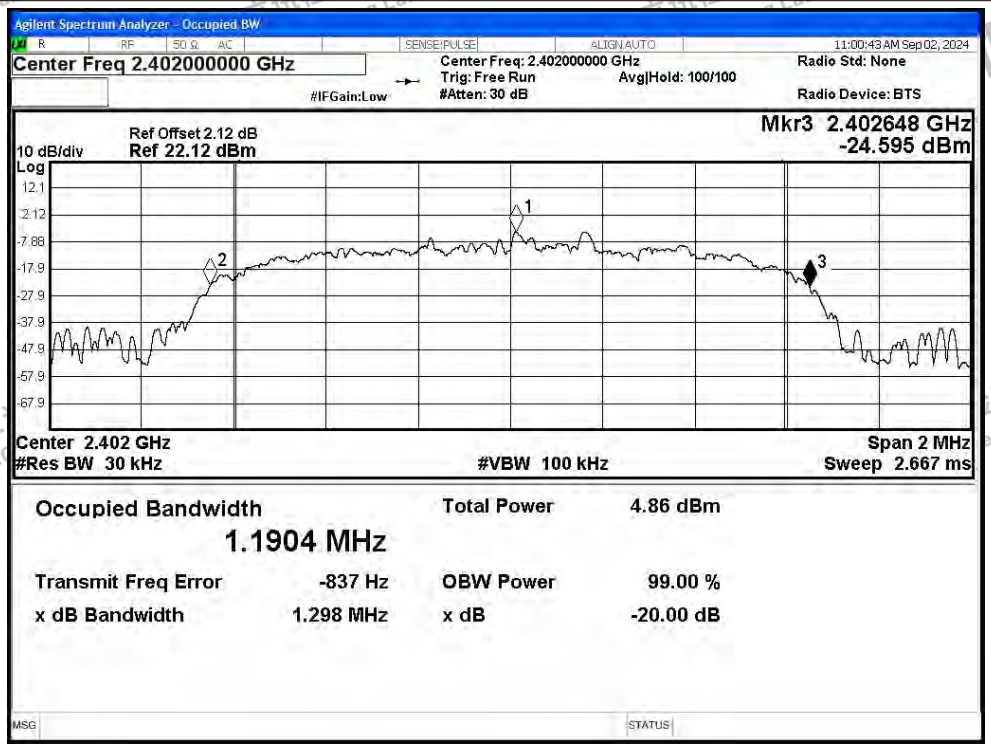
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



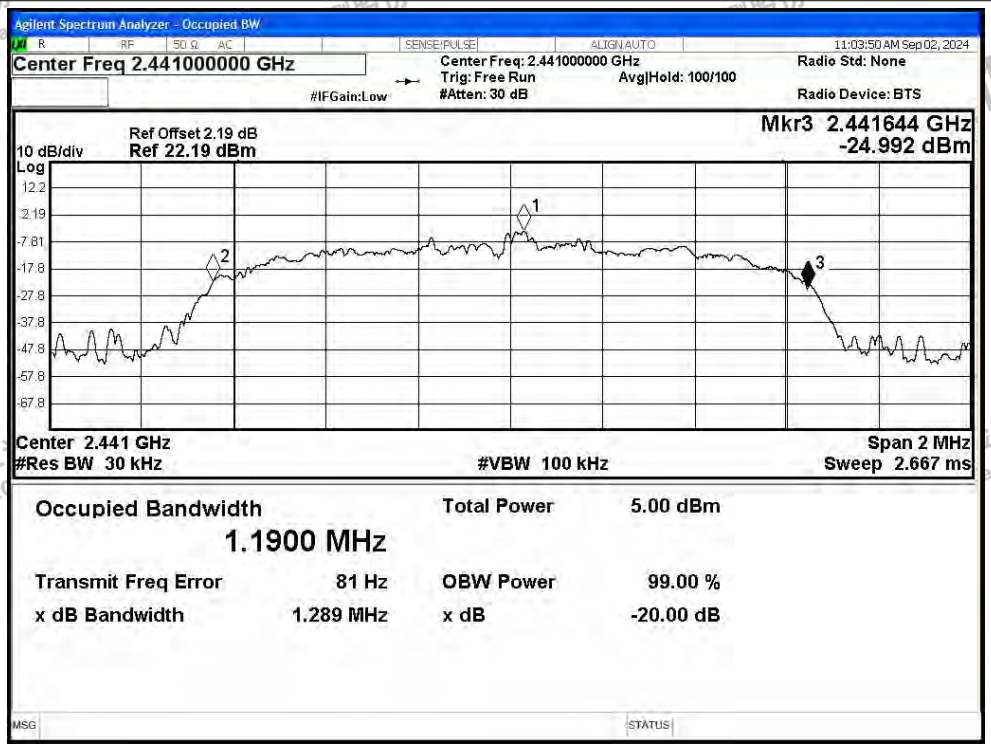
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



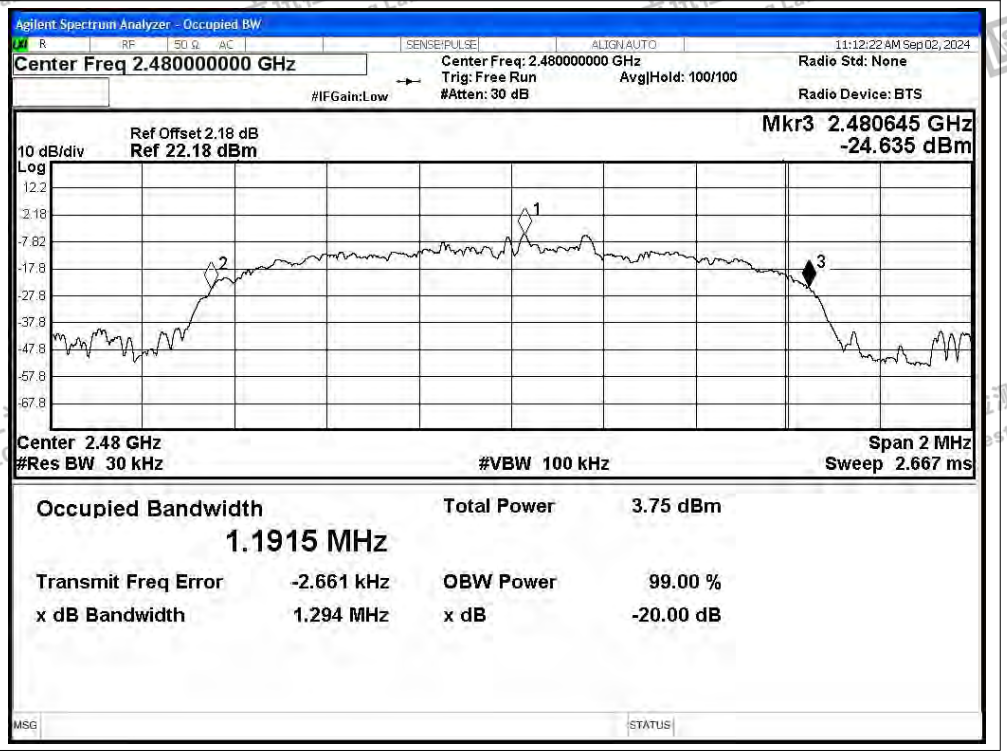
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

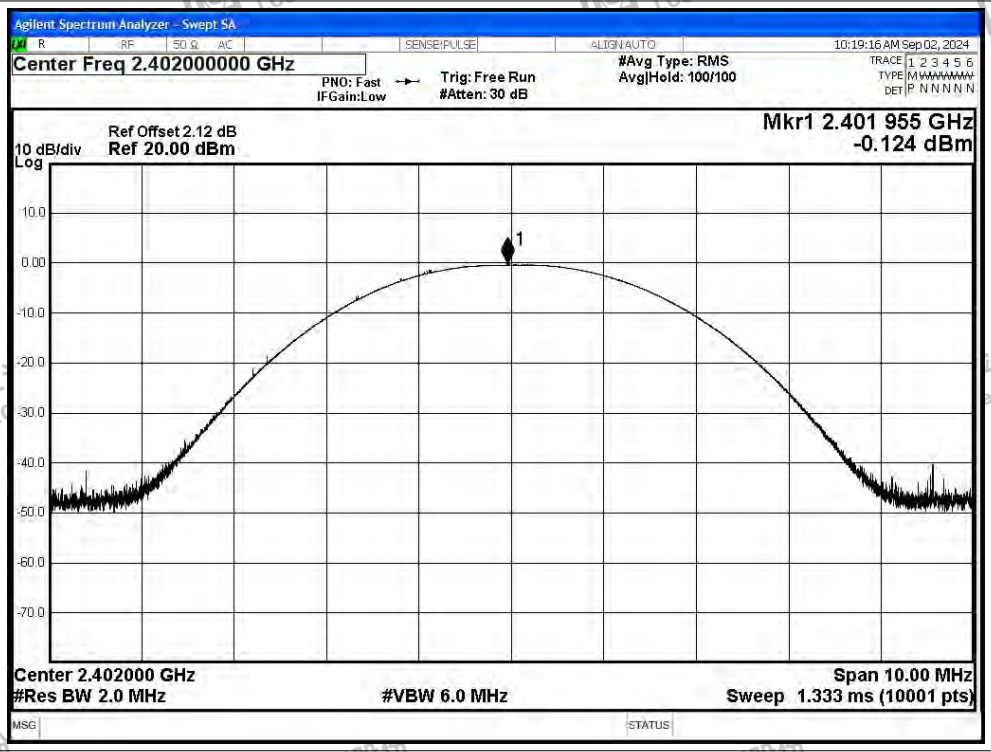


A.2 Maximum Peak Conducted Output Power

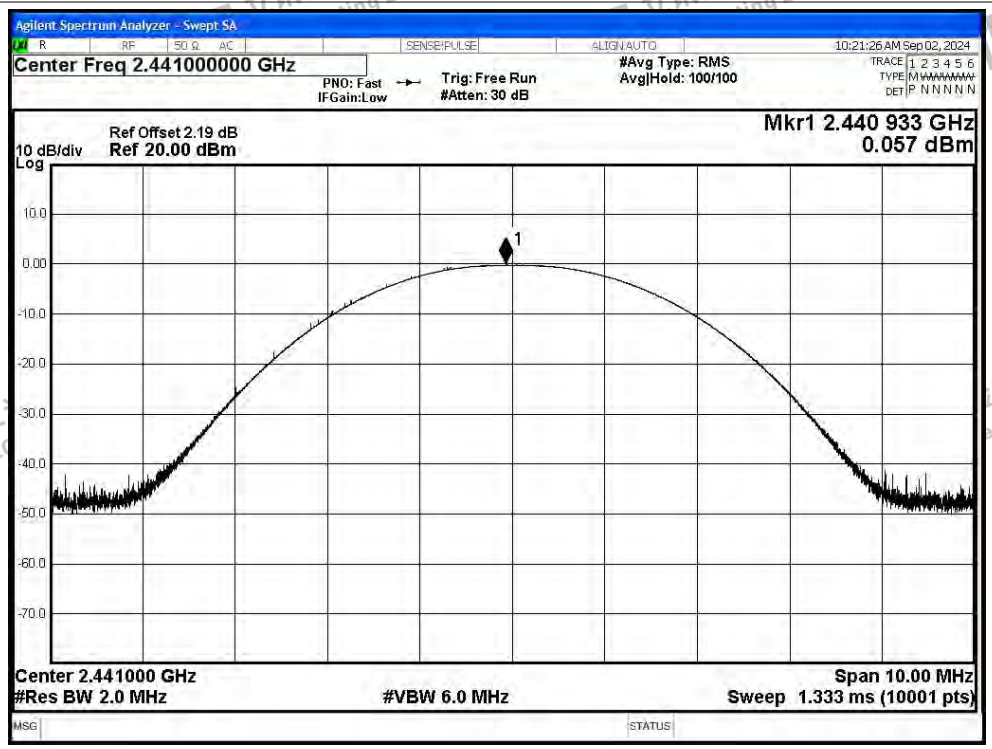
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.12	21	Pass
NVNT	1-DH5	2441	Ant1	0.06	21	Pass
NVNT	1-DH5	2480	Ant1	-0.79	21	Pass
NVNT	2-DH5	2402	Ant1	0.38	21	Pass
NVNT	2-DH5	2441	Ant1	0.36	21	Pass
NVNT	2-DH5	2480	Ant1	-0.83	21	Pass
NVNT	3-DH5	2402	Ant1	0.73	21	Pass
NVNT	3-DH5	2441	Ant1	0.72	21	Pass
NVNT	3-DH5	2480	Ant1	-0.51	21	Pass

Test Graphs

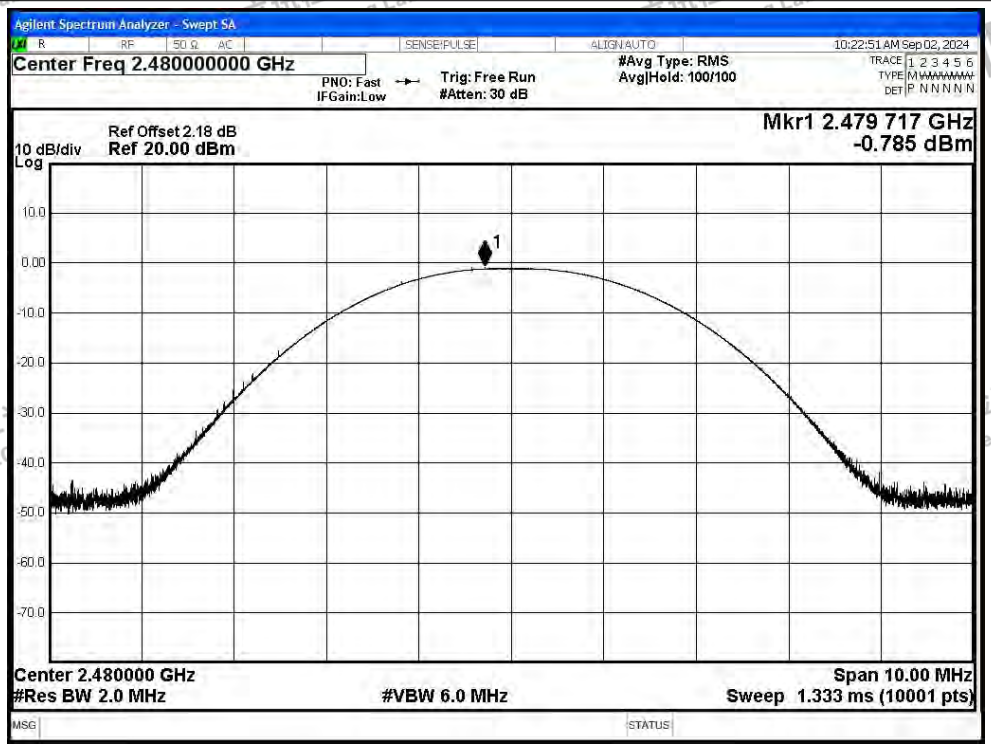
Power NVNT 1-DH5 2402MHz Ant1



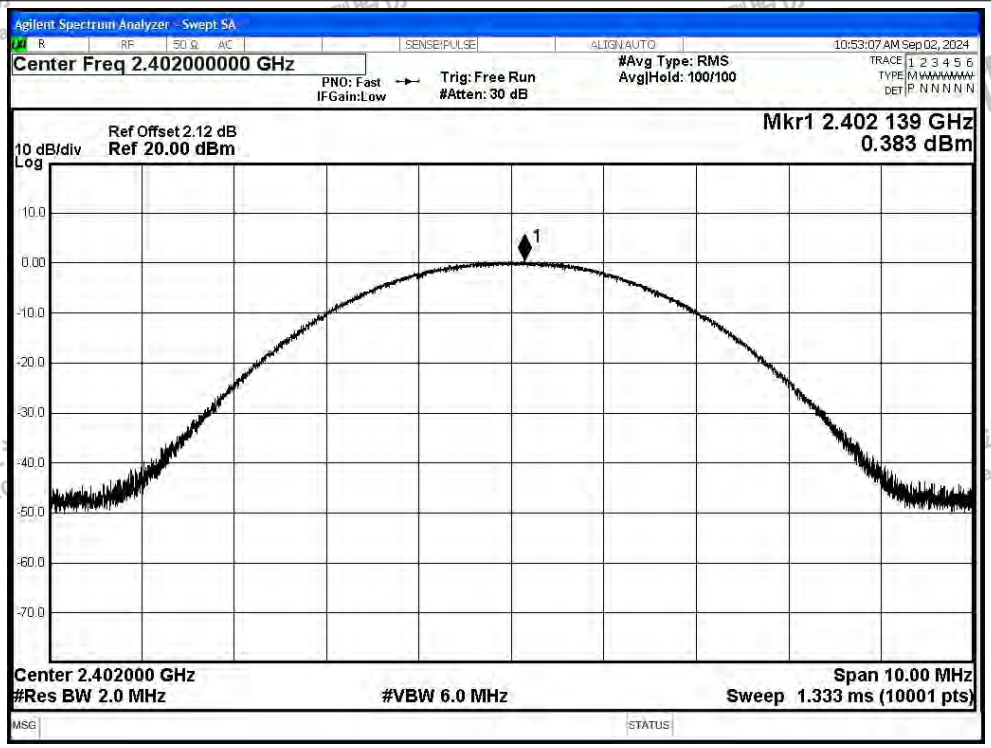
Power NVNT 1-DH5 2441MHz Ant1



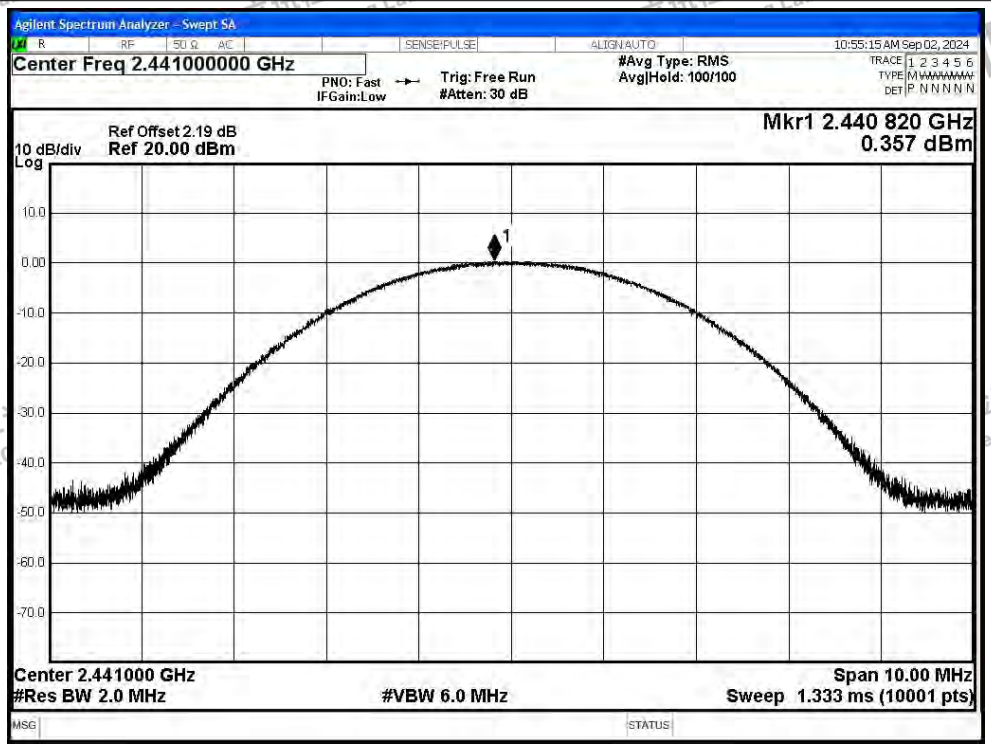
Power NVNT 1-DH5 2480MHz Ant1



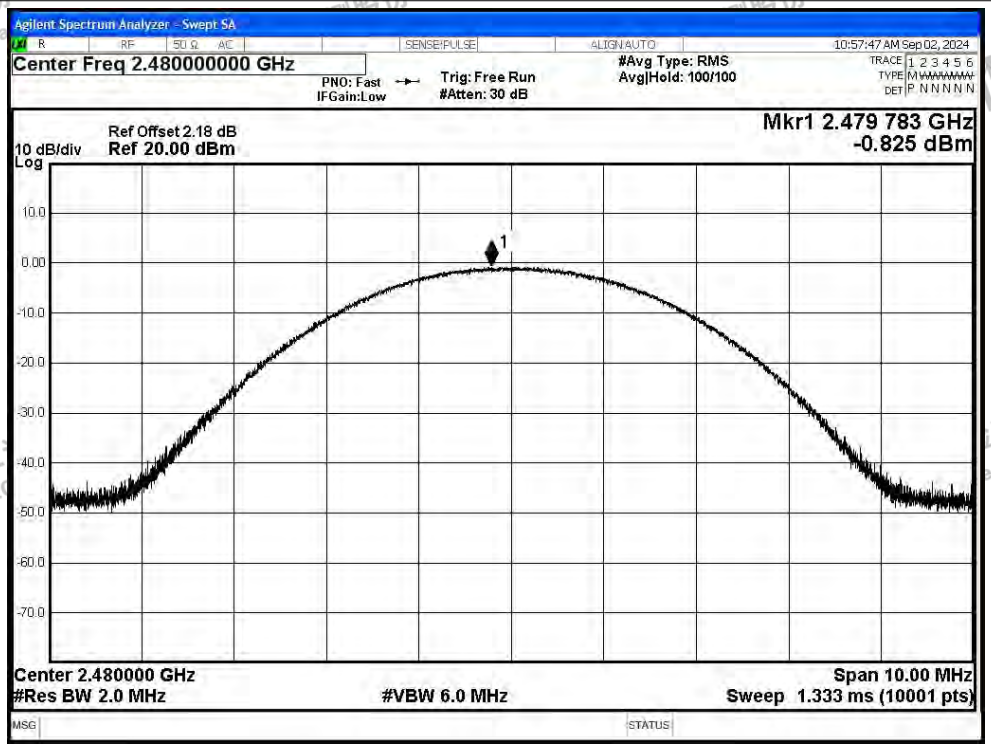
Power NVNT 2-DH5 2402MHz Ant1



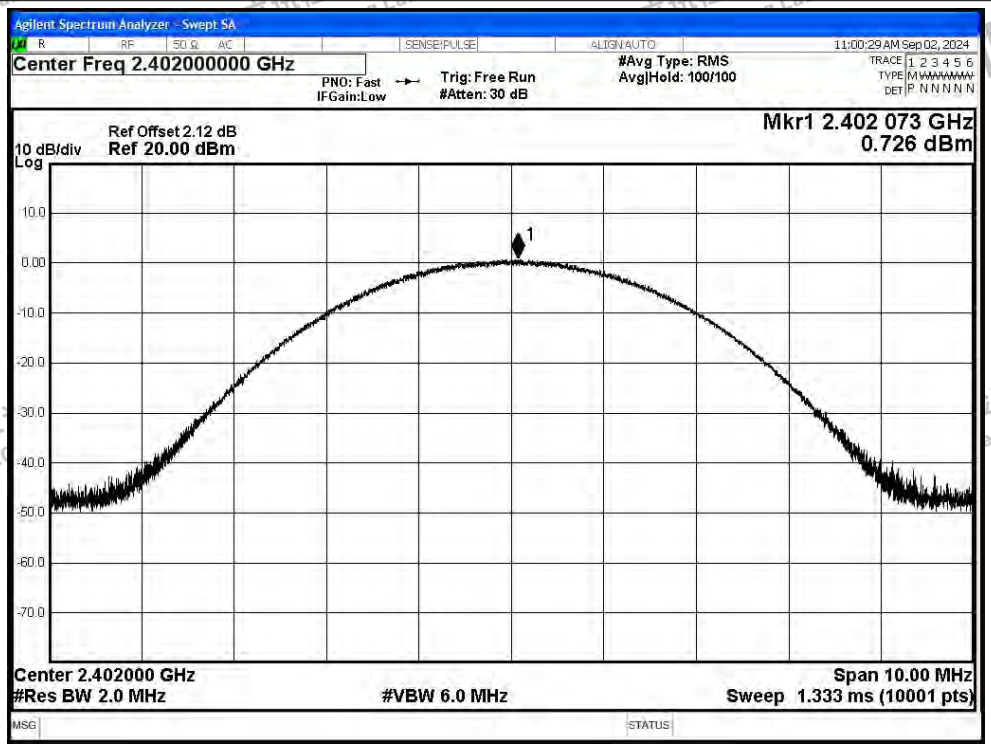
Power NVNT 2-DH5 2441MHz Ant1



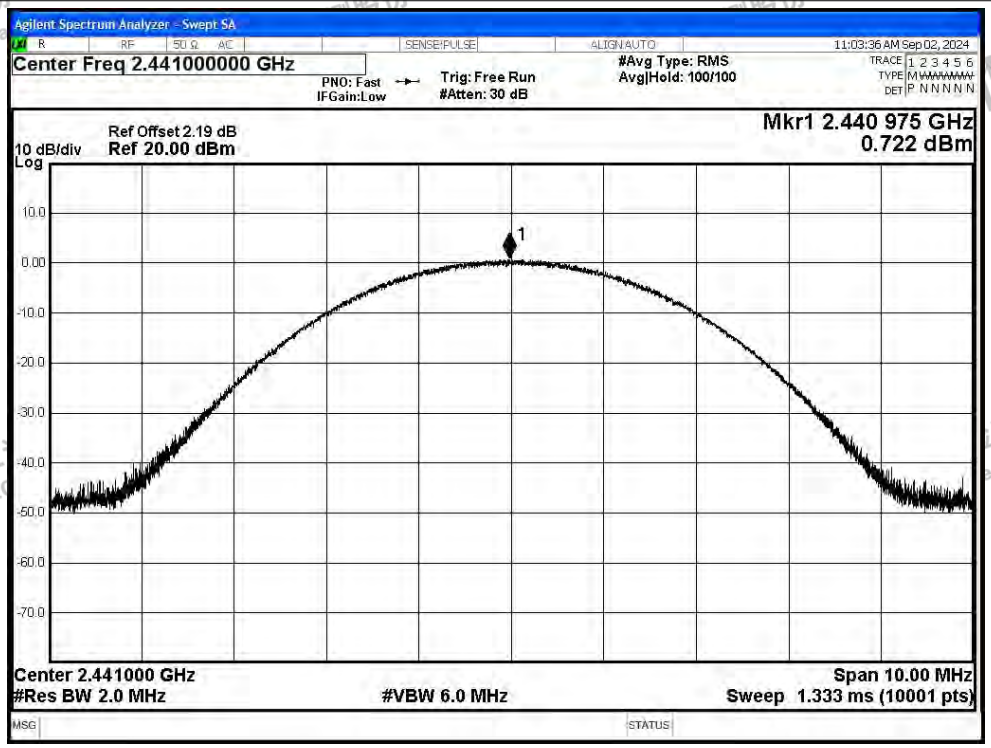
Power NVNT 2-DH5 2480MHz Ant1



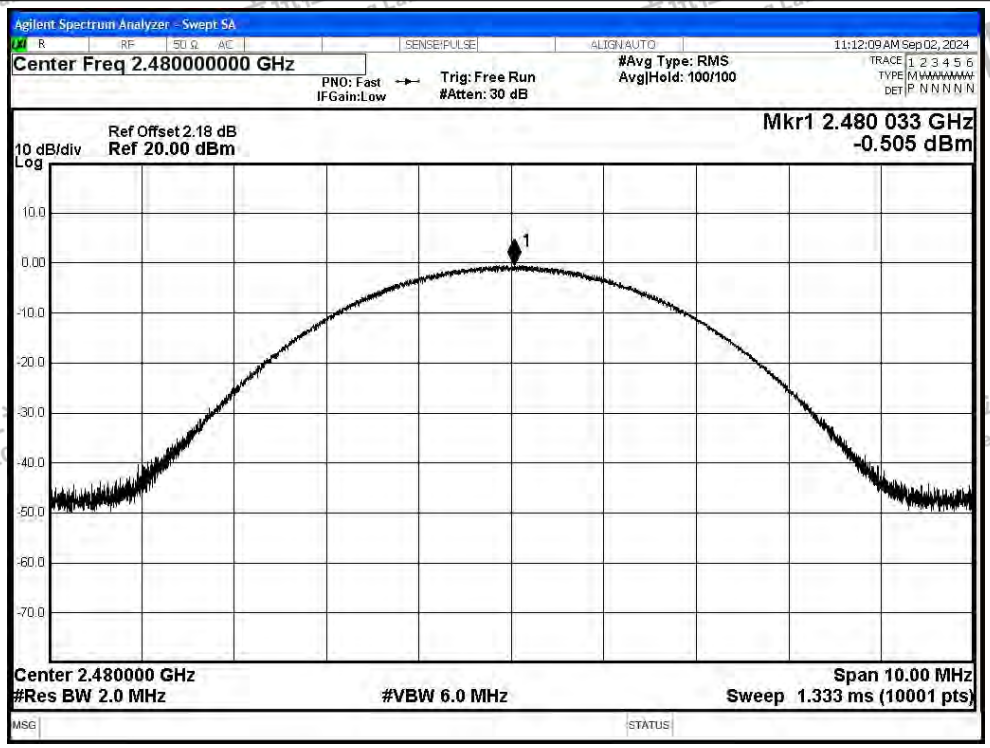
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1

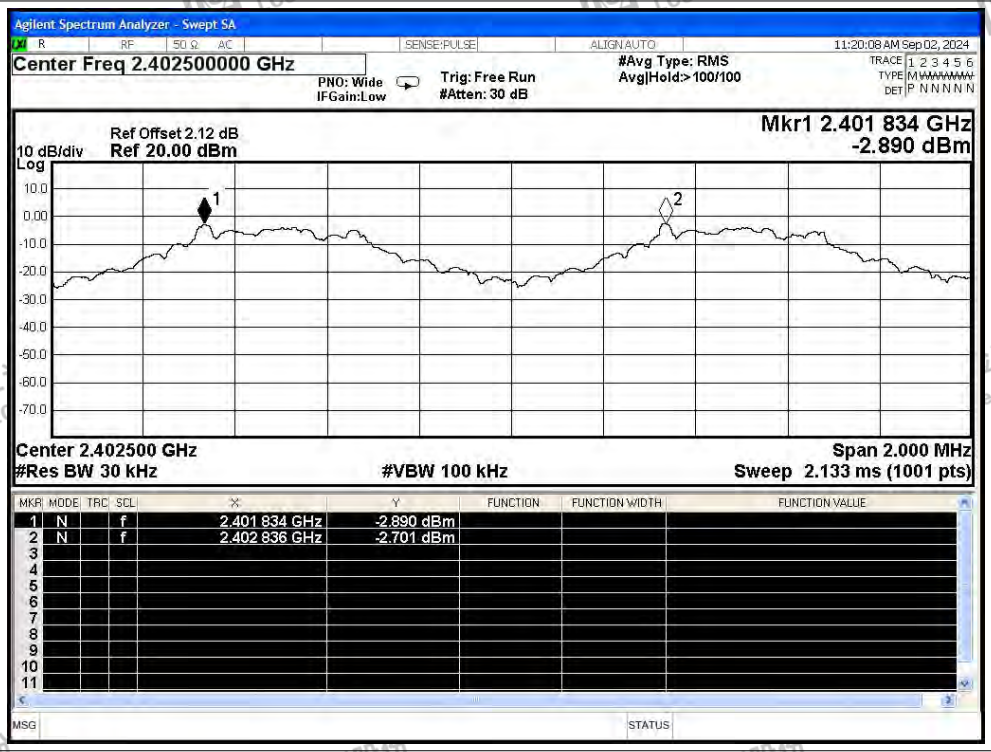


A.3 Carrier Frequencies Separation

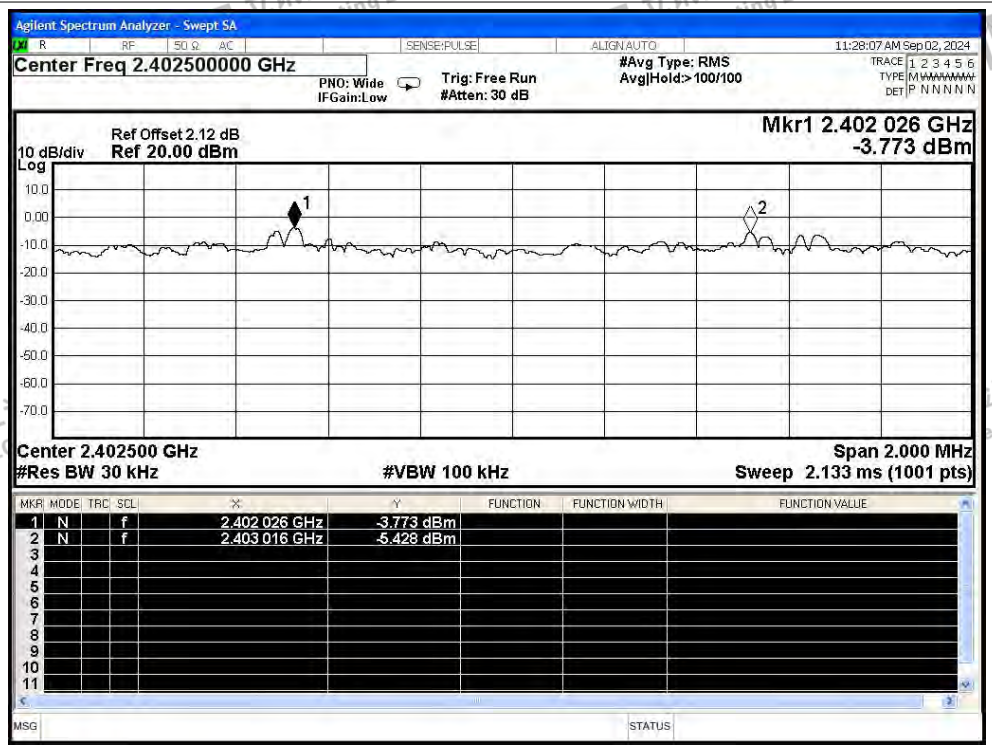
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.834	2402.836	1.002	0.663	Pass
NVNT	2-DH5	Ant1	2402.026	2403.016	0.99	0.875	Pass
NVNT	3-DH5	Ant1	2402.01	2403.162	1.152	0.865	Pass

Test Graphs

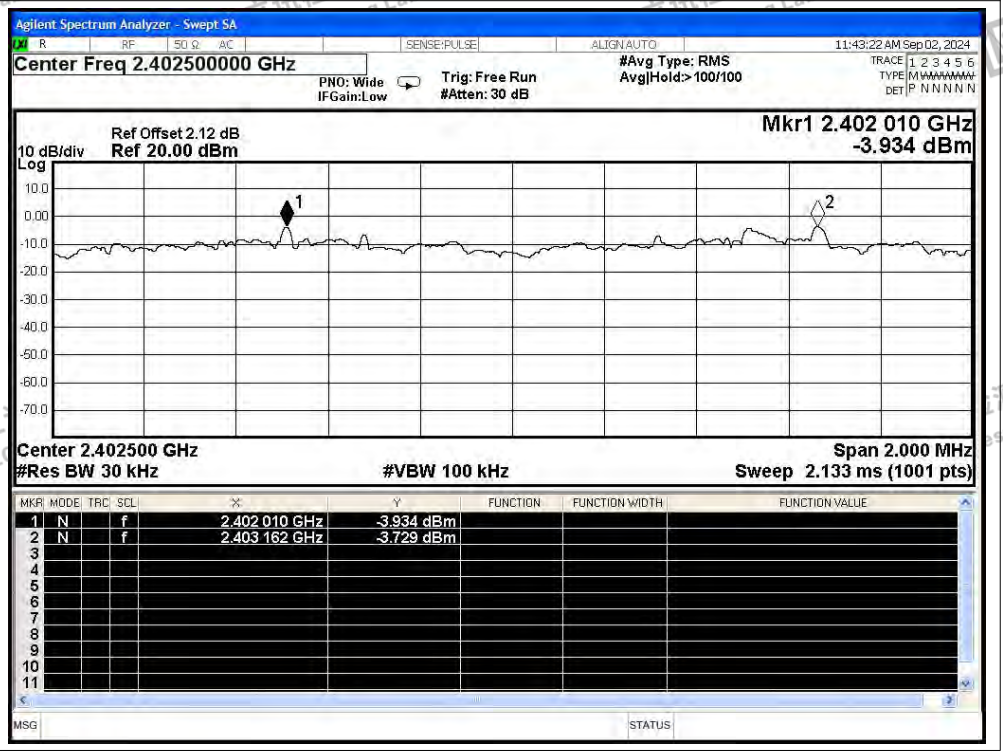
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

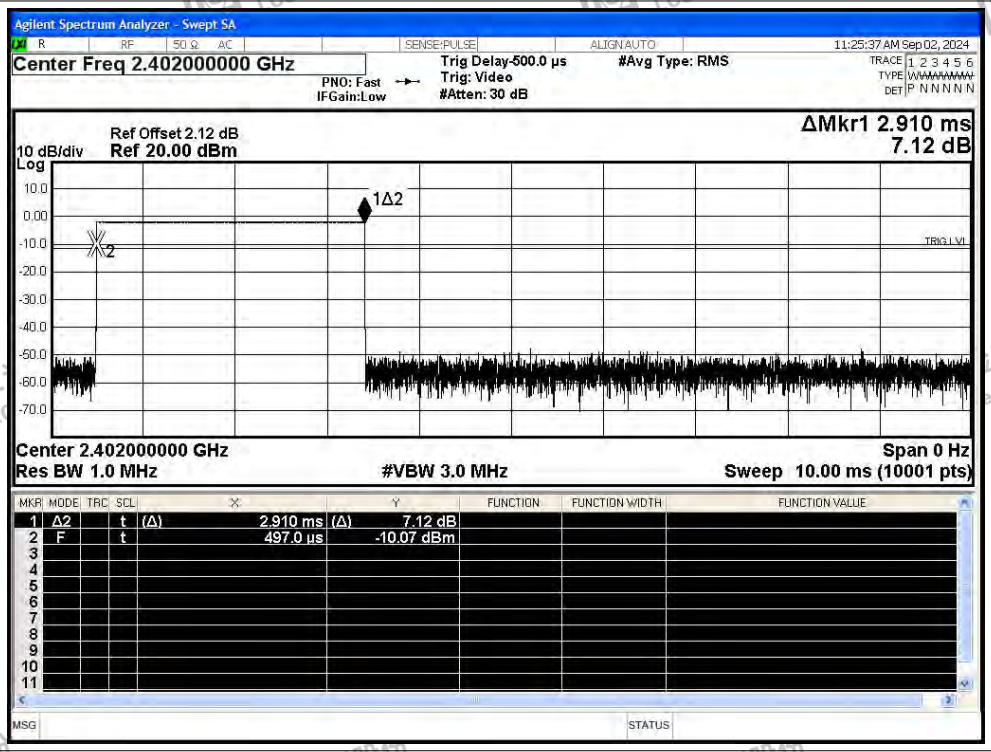


A.4 Dwell Time

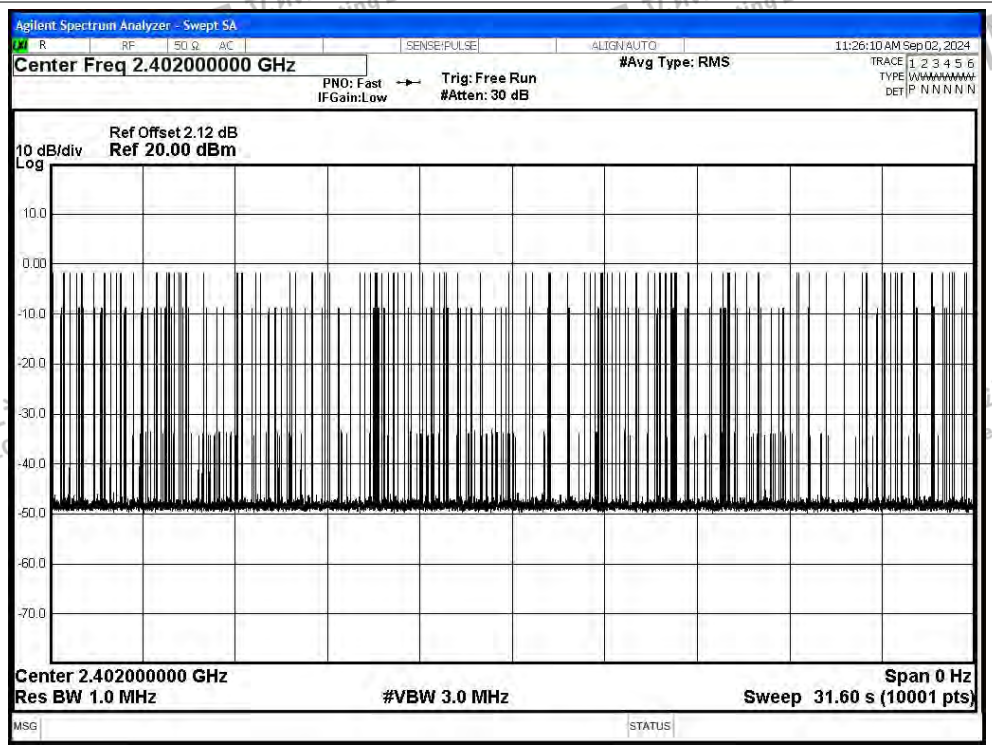
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.91	323.01	111	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	304.29	105	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	315.773	109	31600	400	Pass

Test Graphs

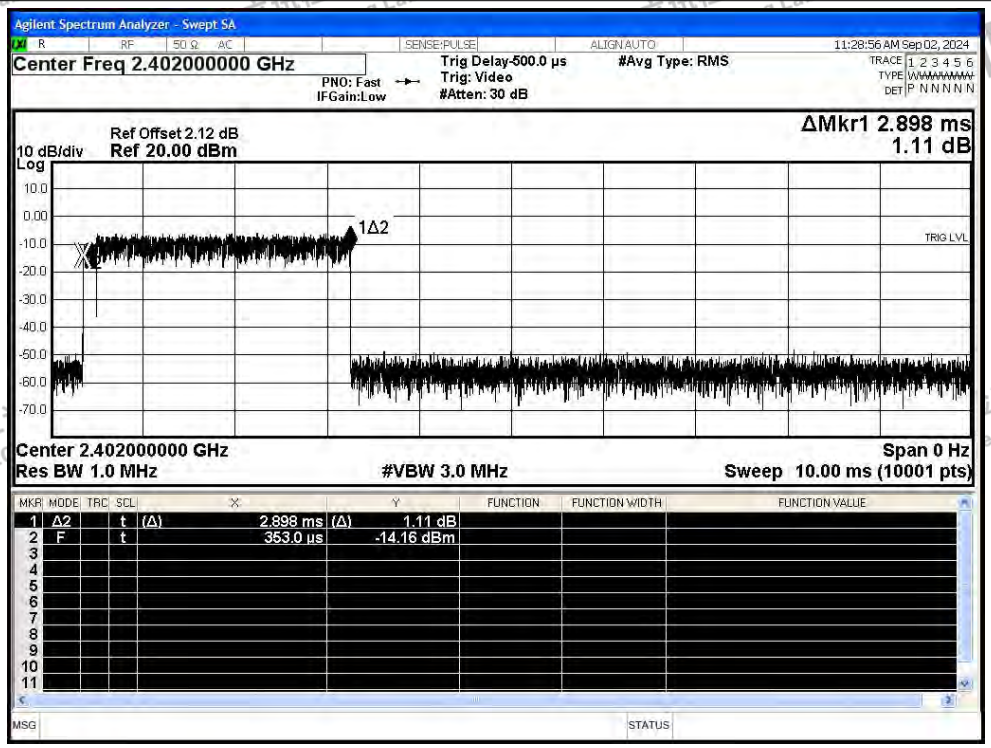
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



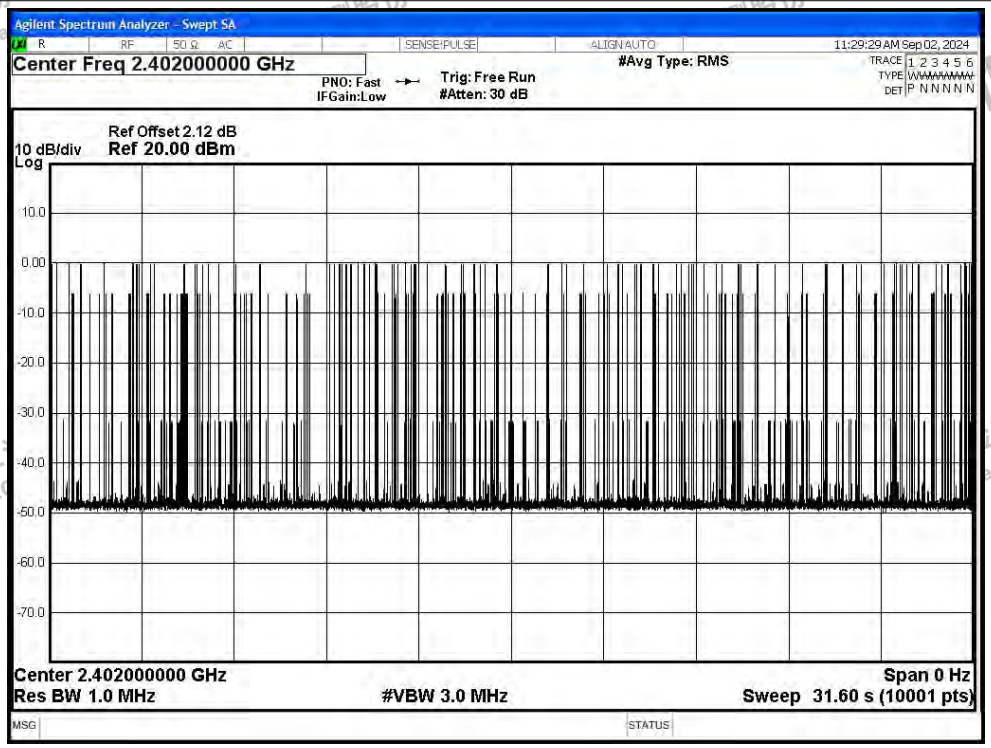
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



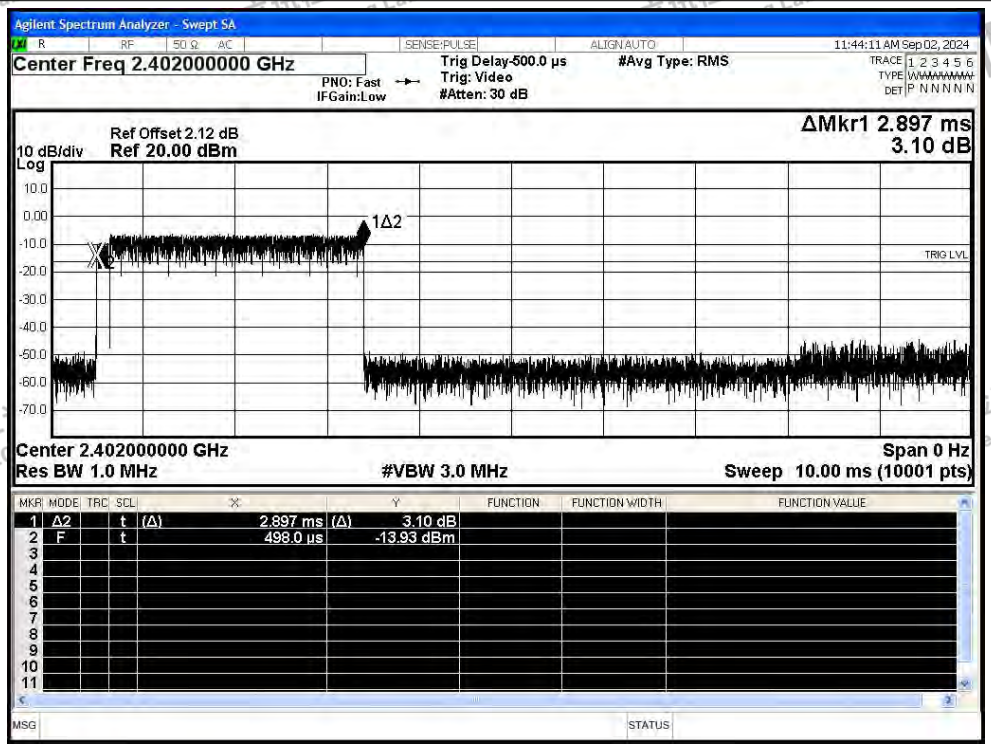
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



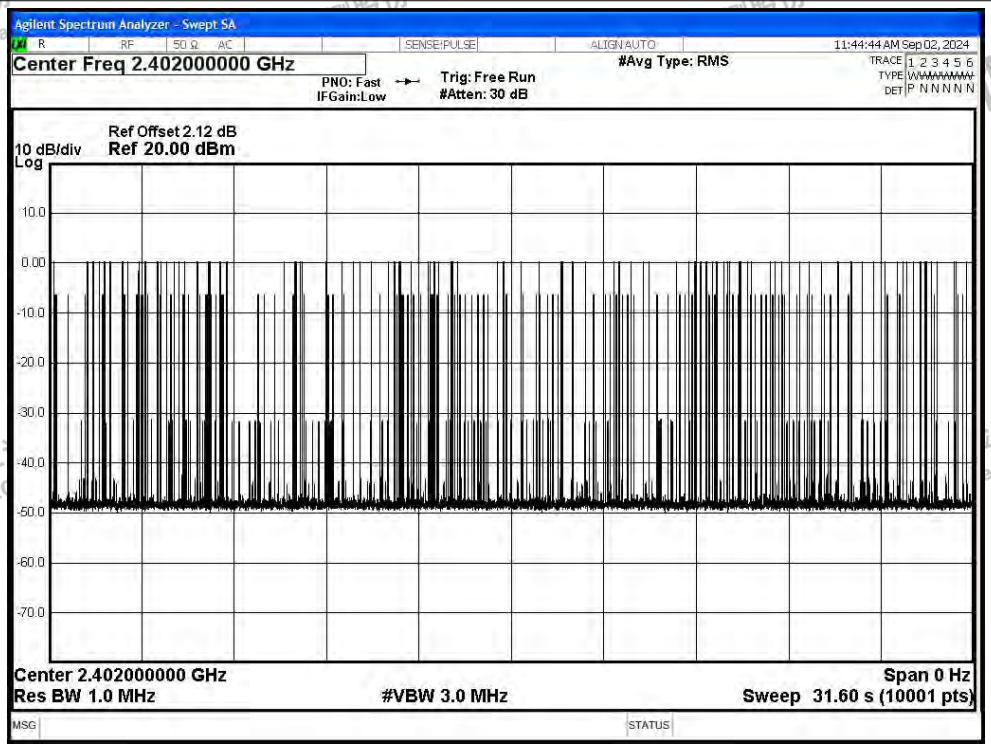
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

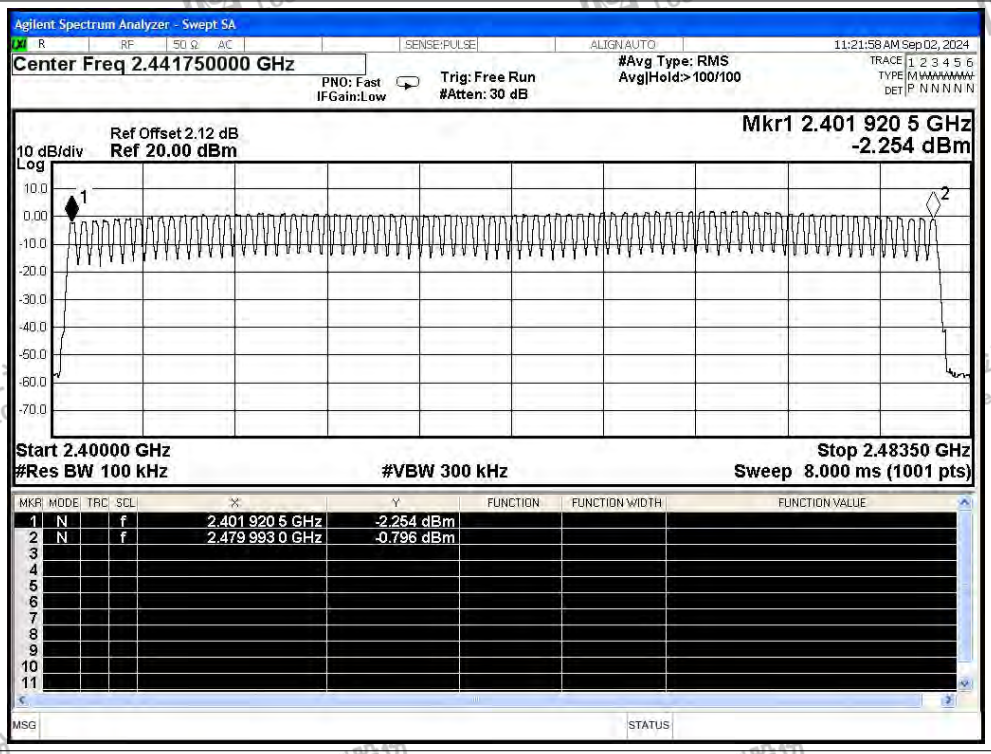


A.5 Number of Hopping Channel

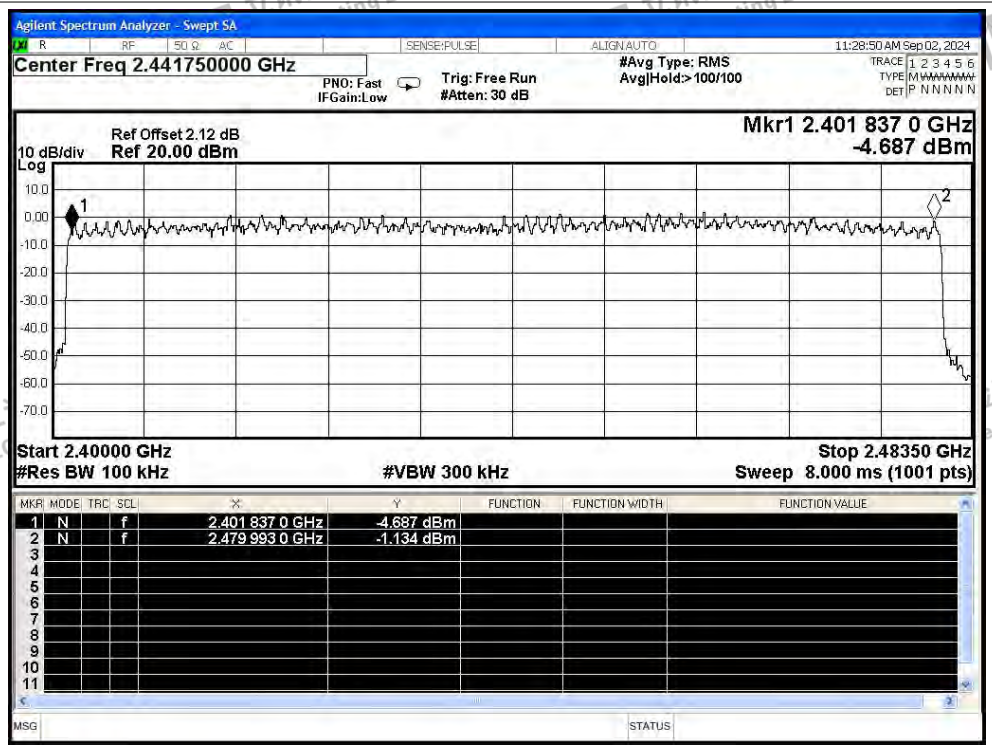
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

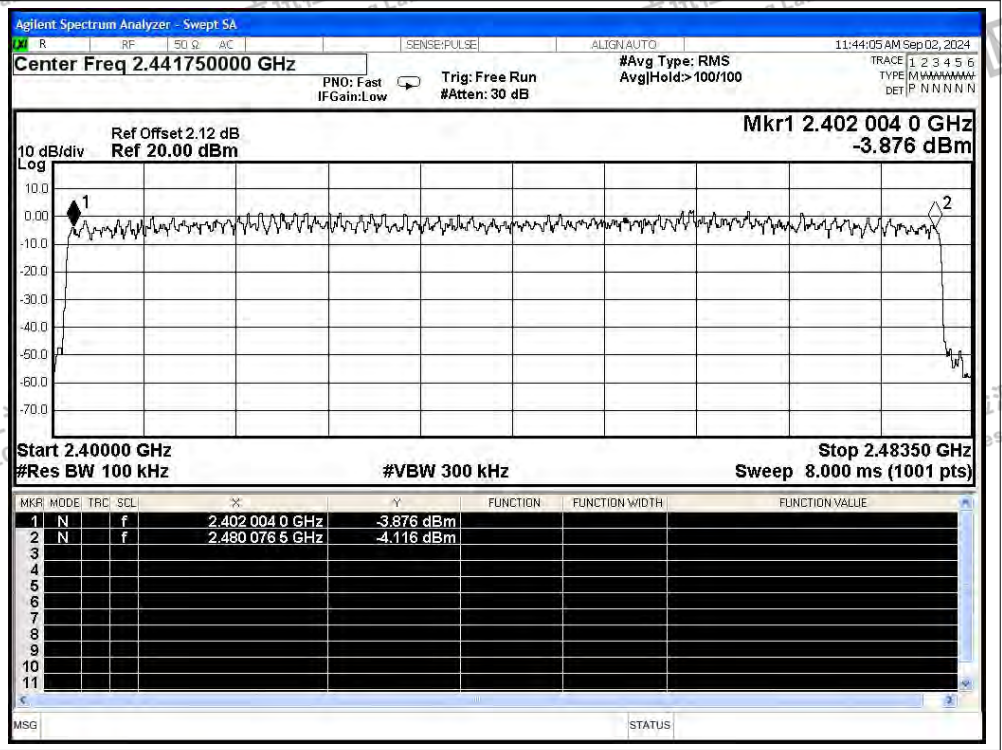
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

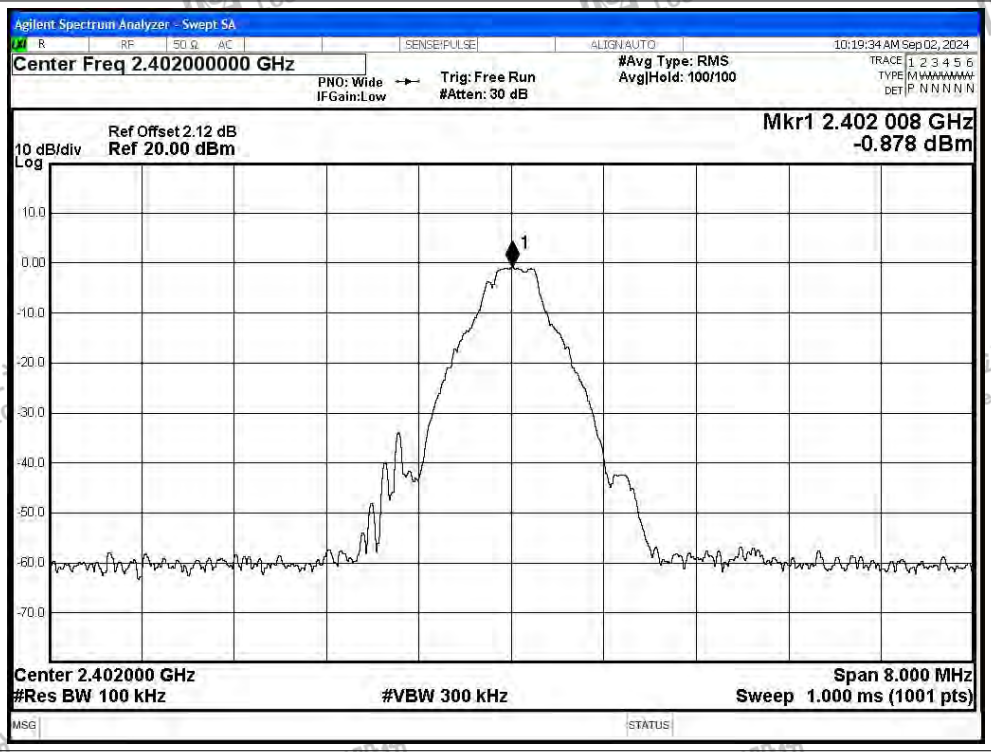


A.6 Band Edge

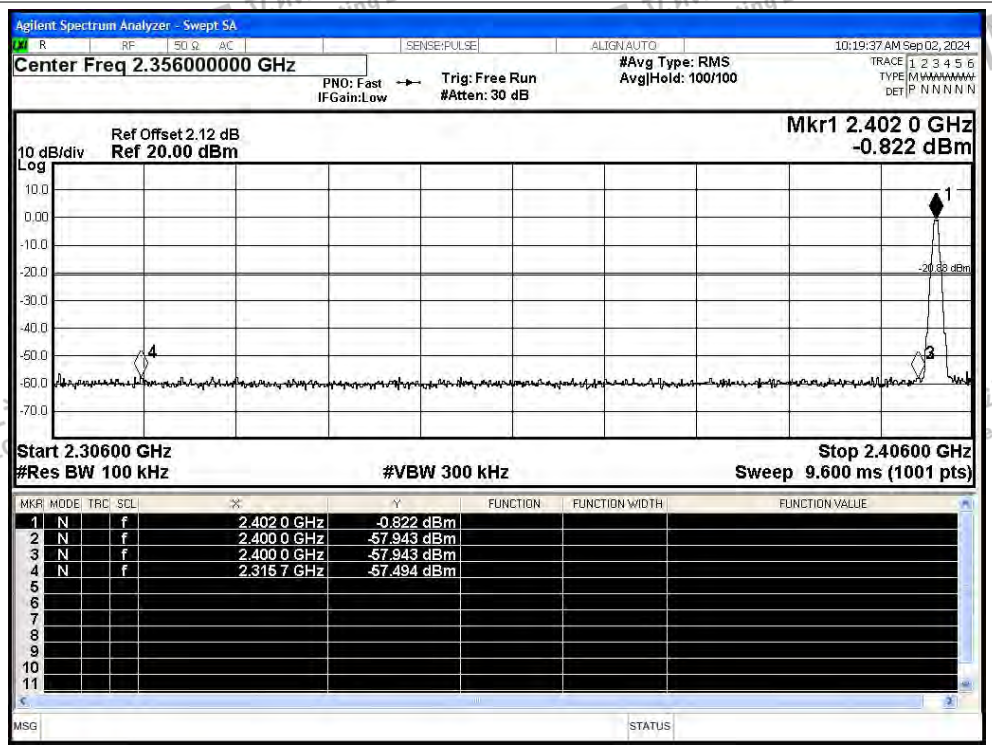
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.62	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-55.31	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.08	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-52.44	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-48.76	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-53.87	-20	Pass

Test Graphs

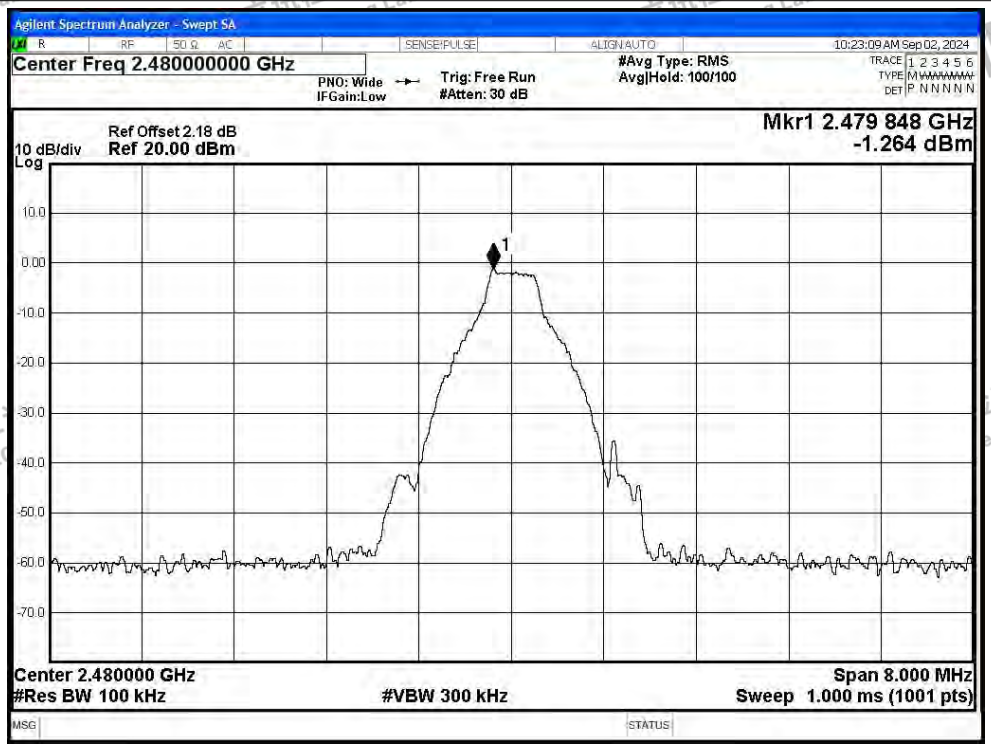
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



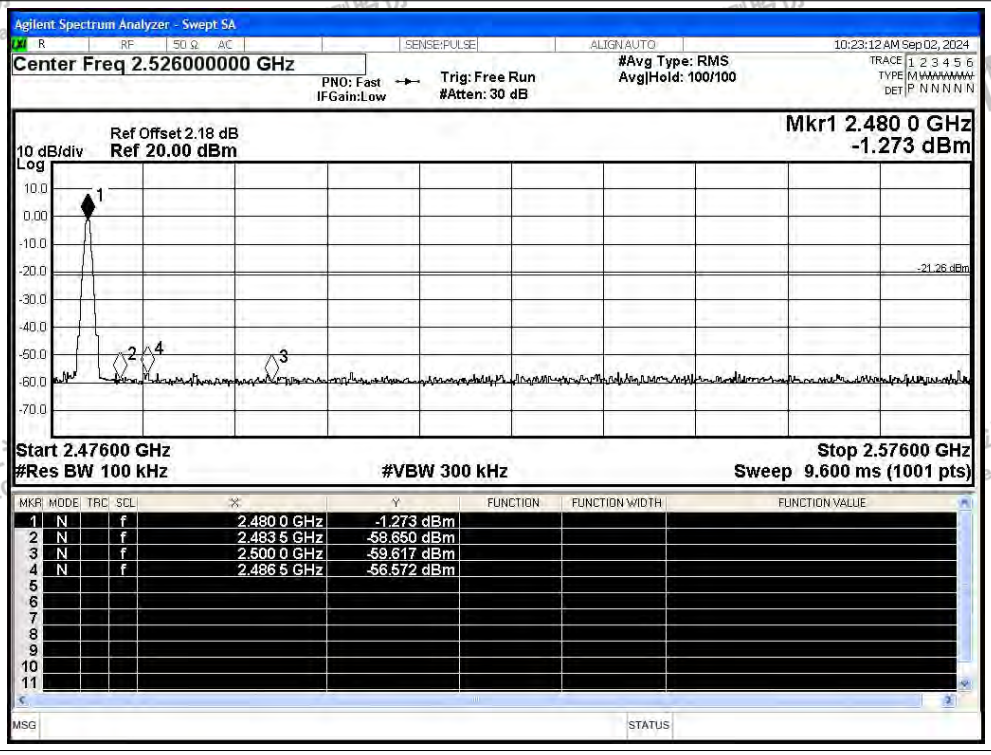
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



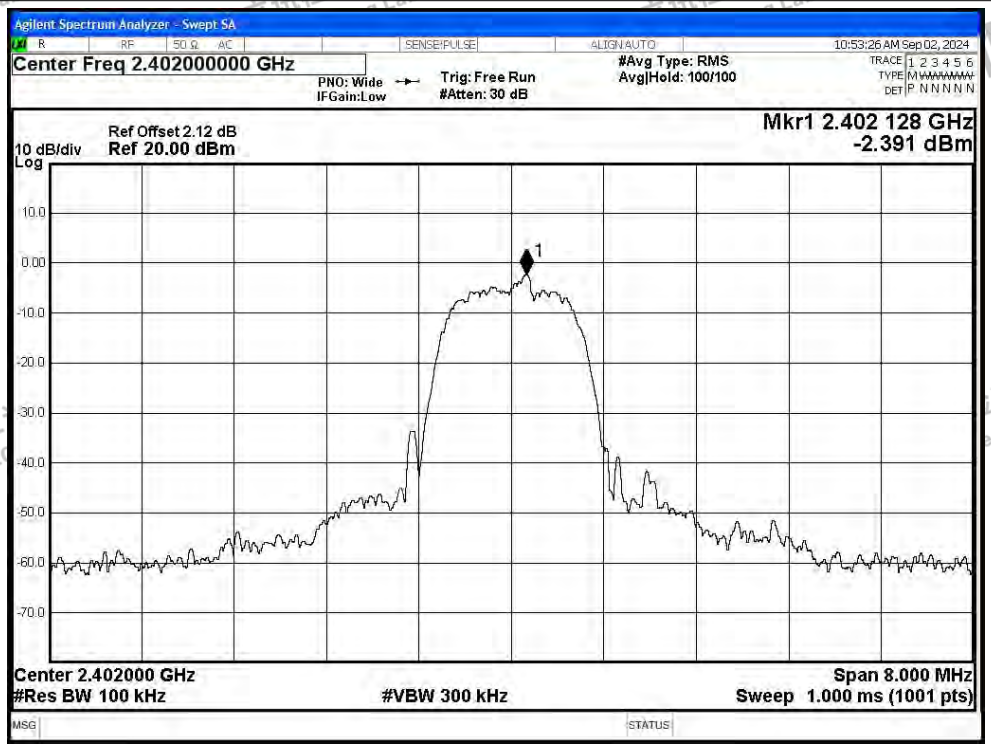
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



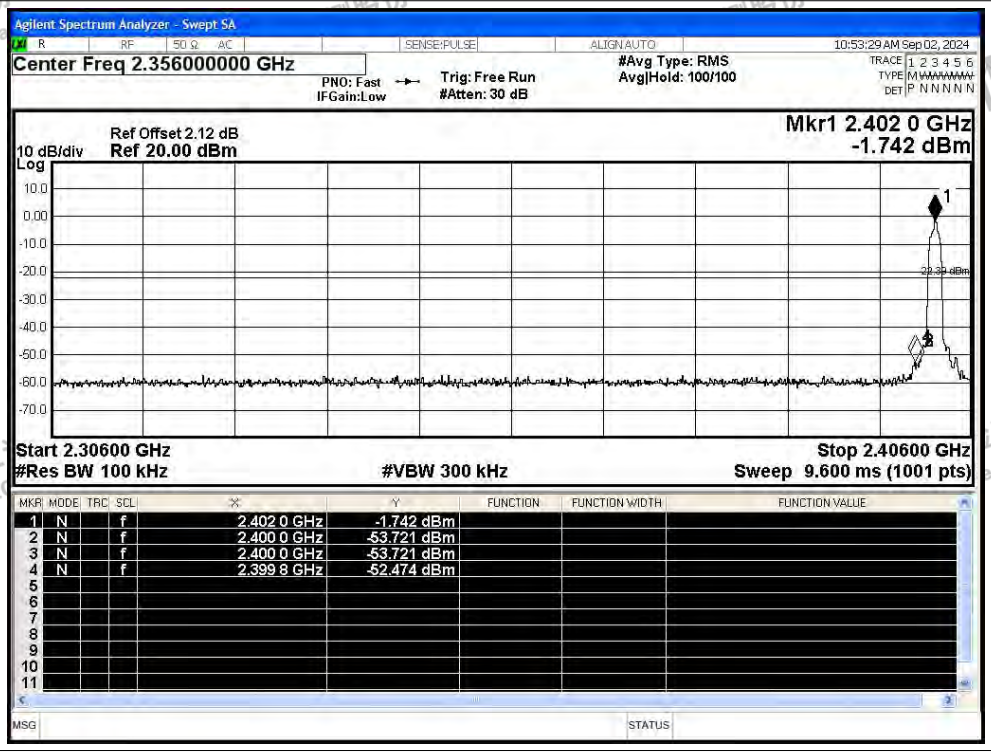
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



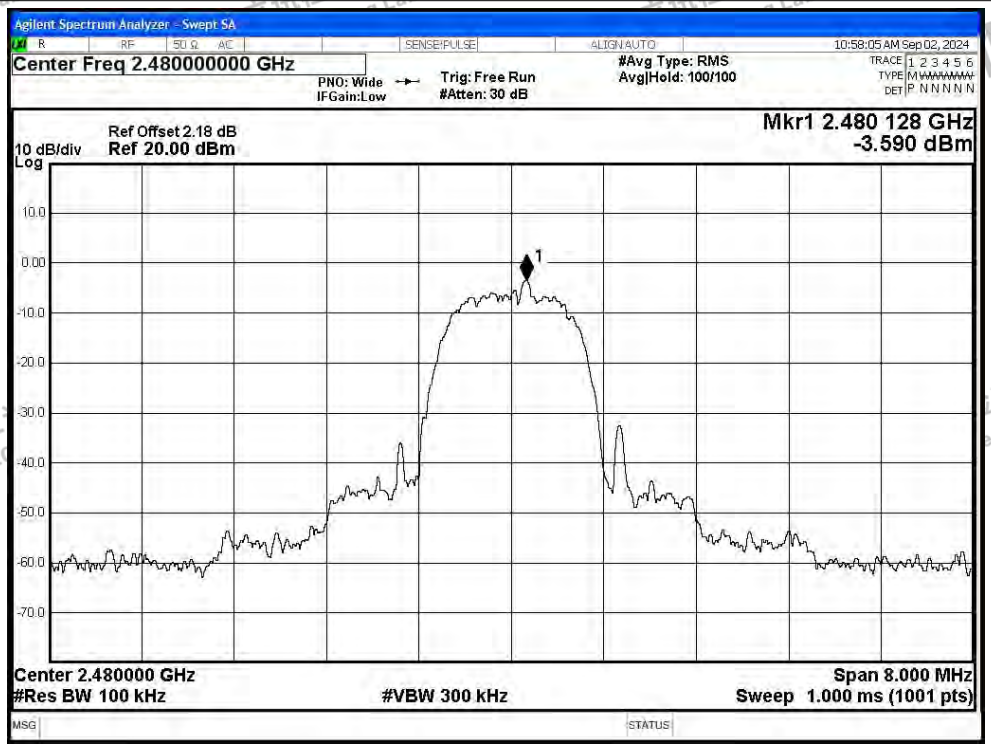
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



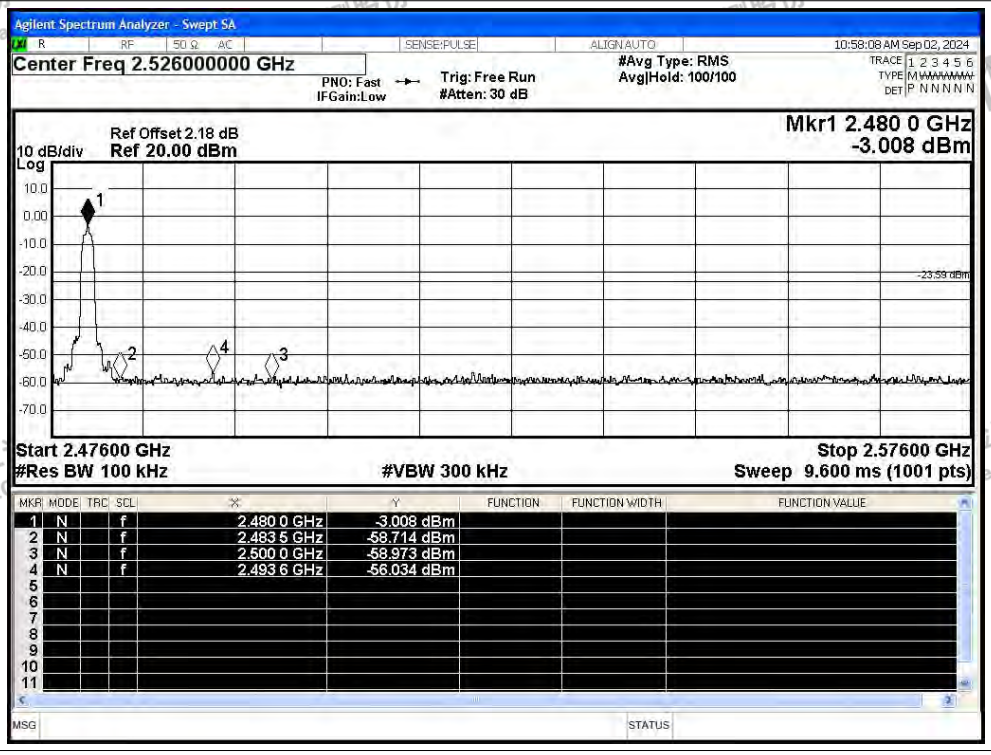
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



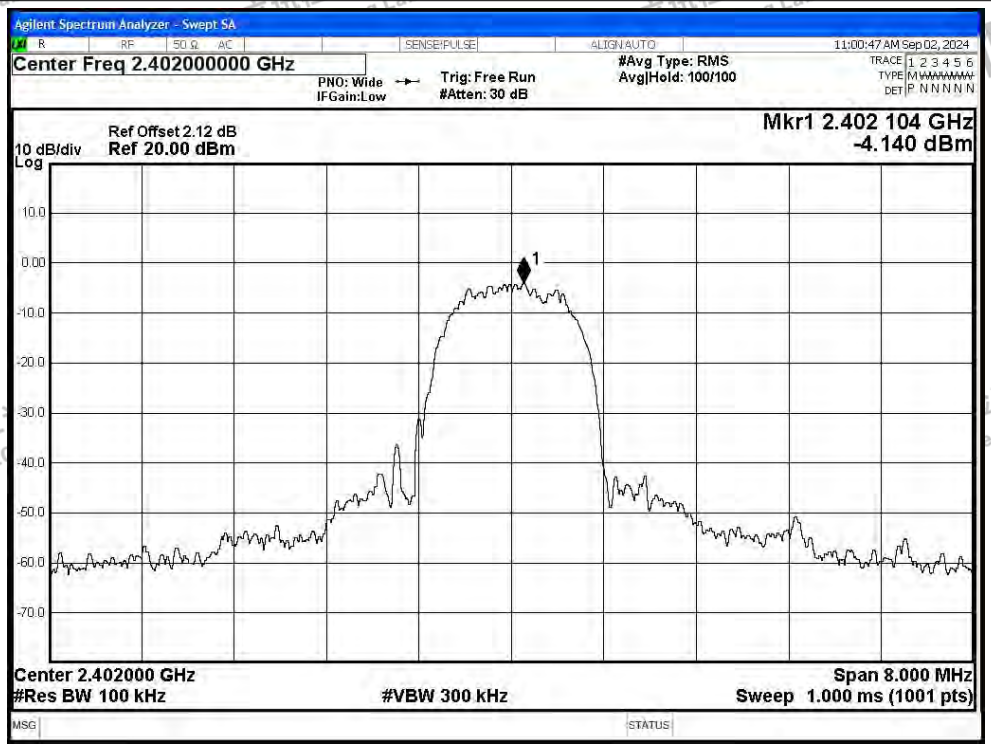
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



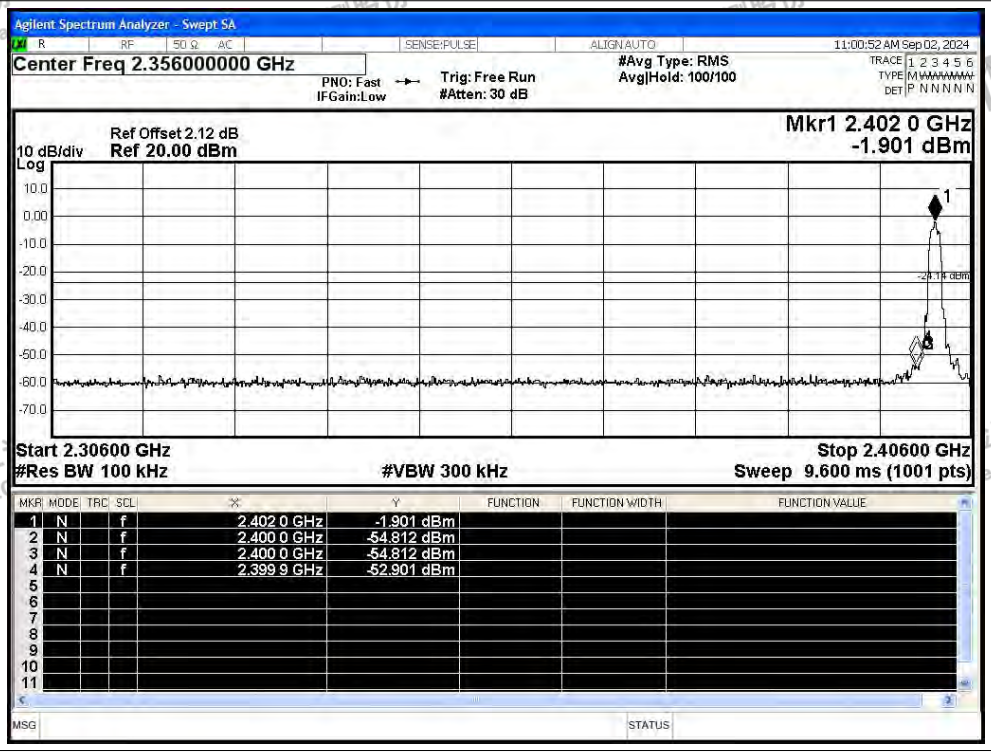
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



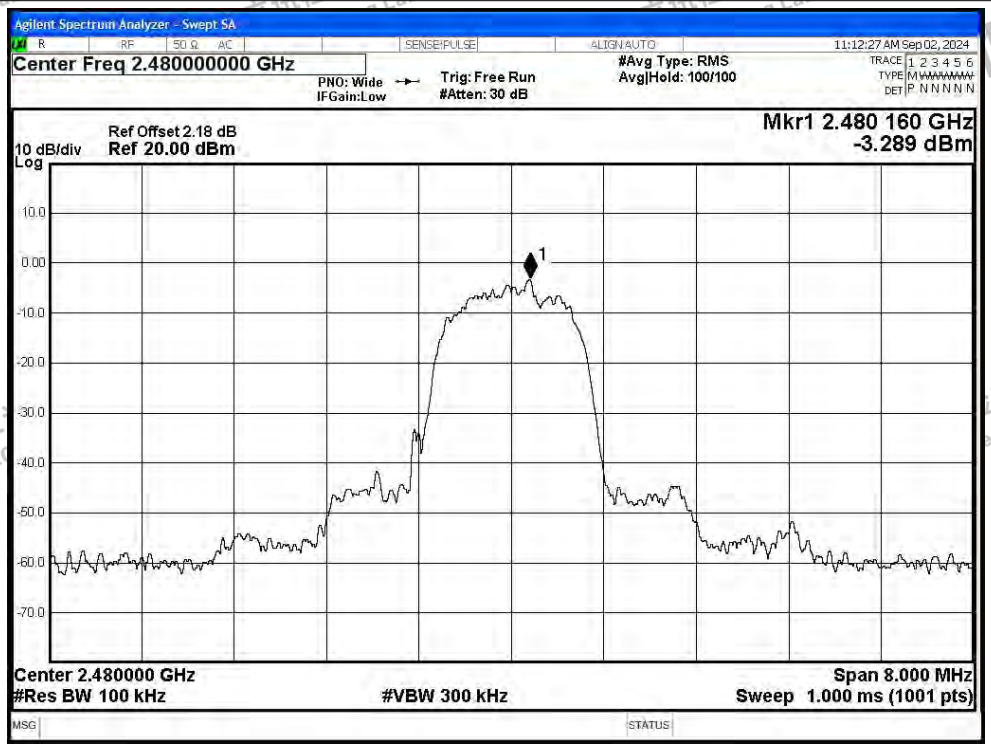
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



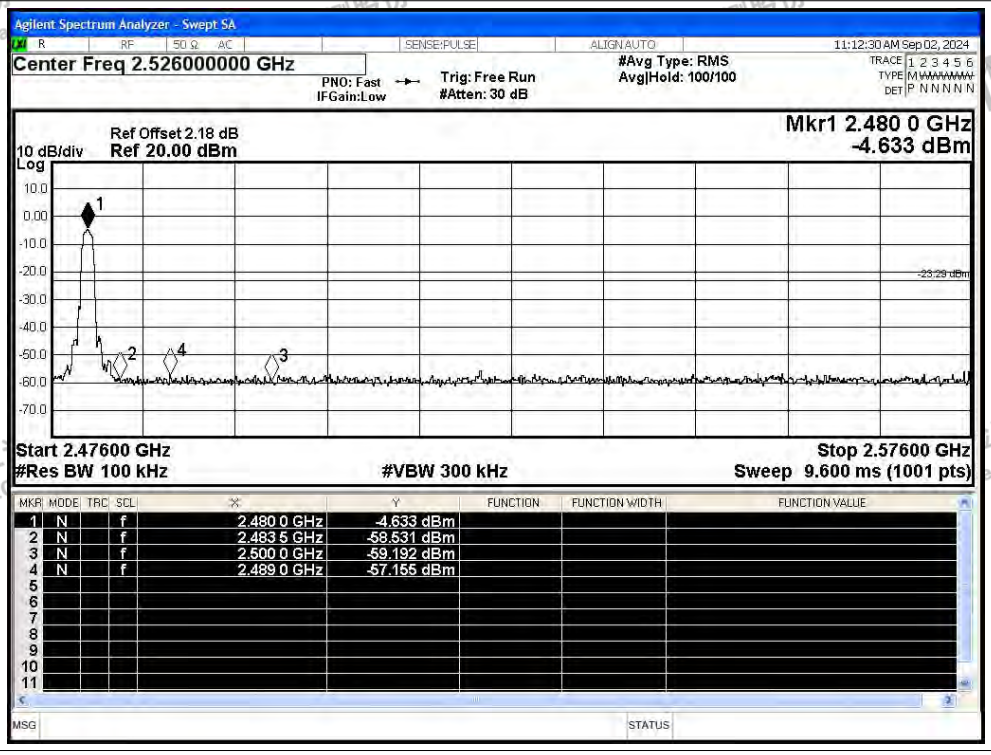
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

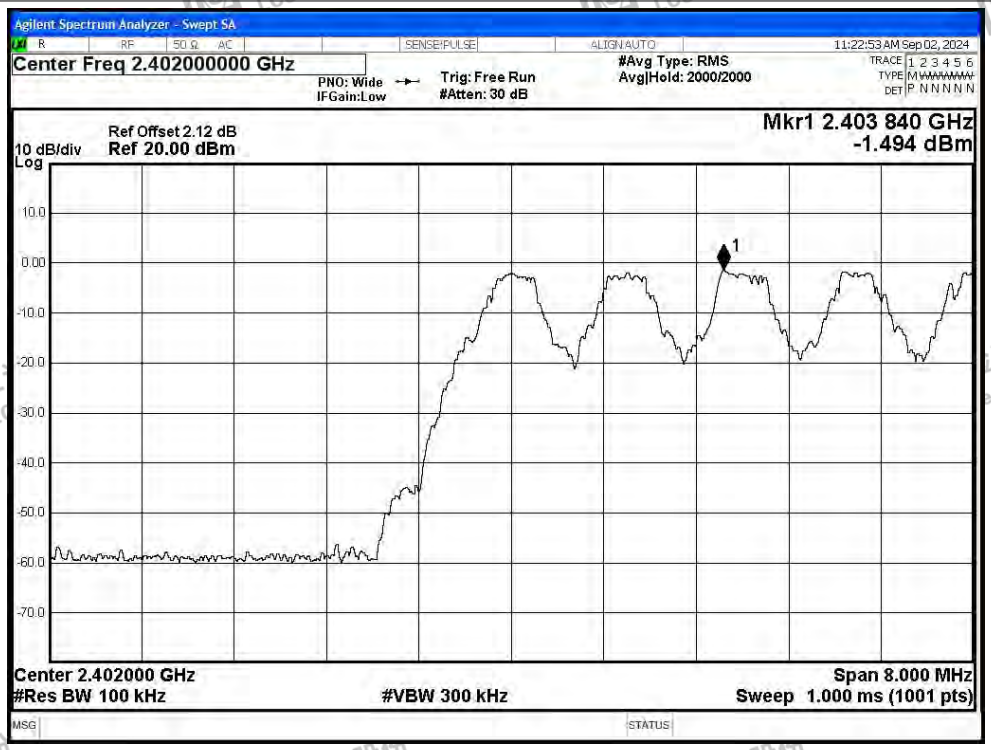


(Hopping)

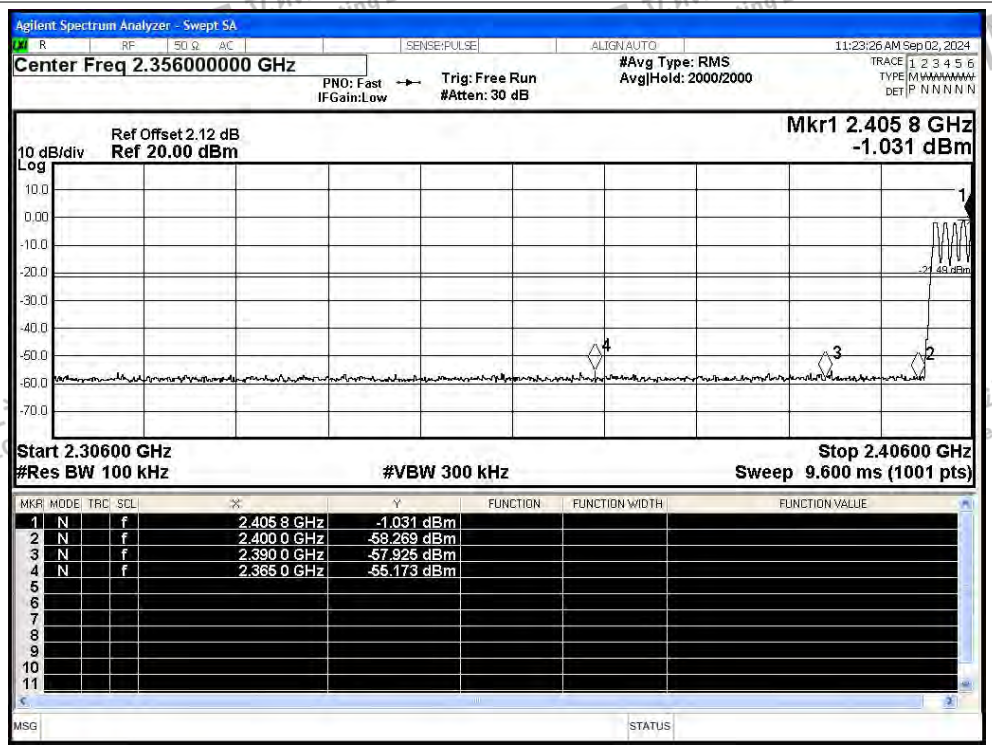
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-53.68	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-55.91	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-53.67	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-55.31	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-54.84	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.91	-20	Pass

Test Graphs

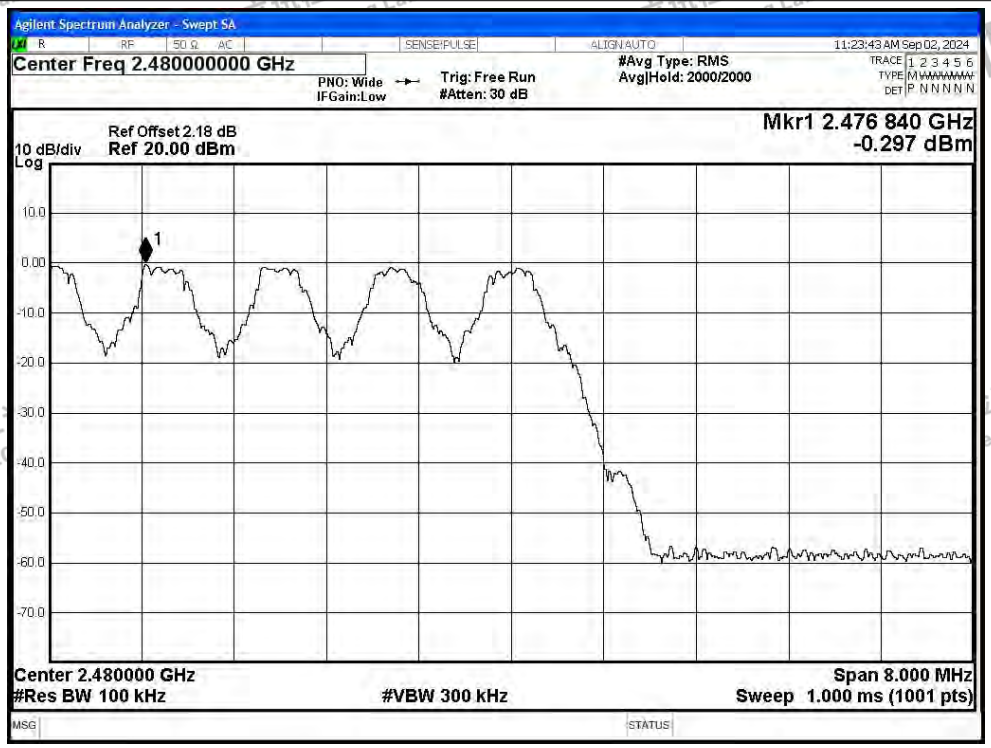
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



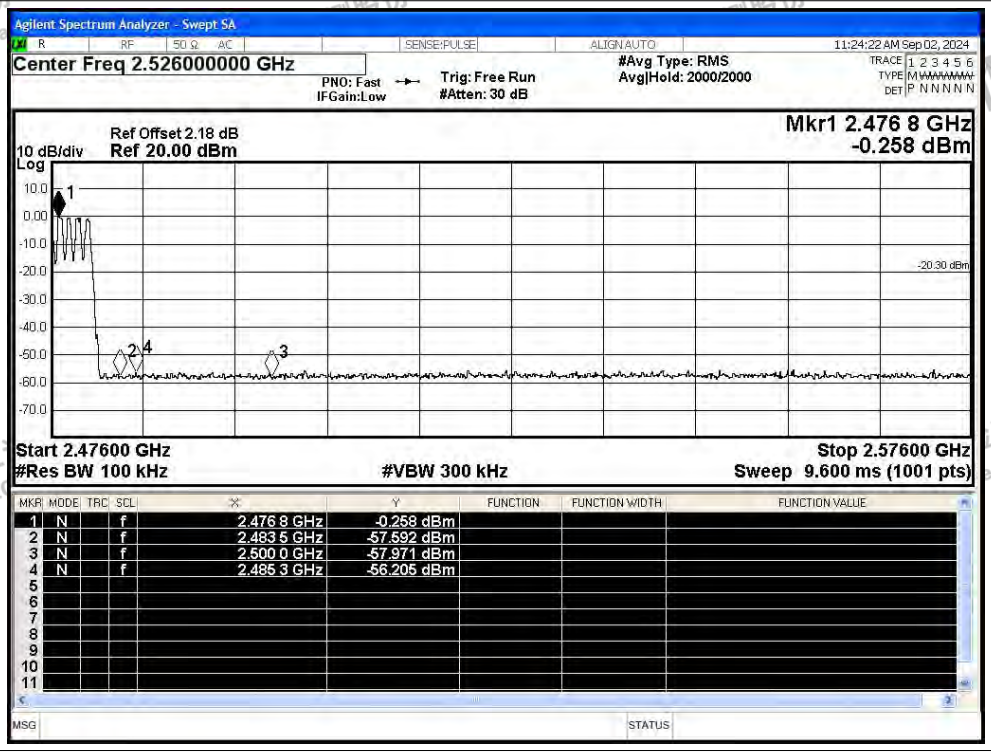
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



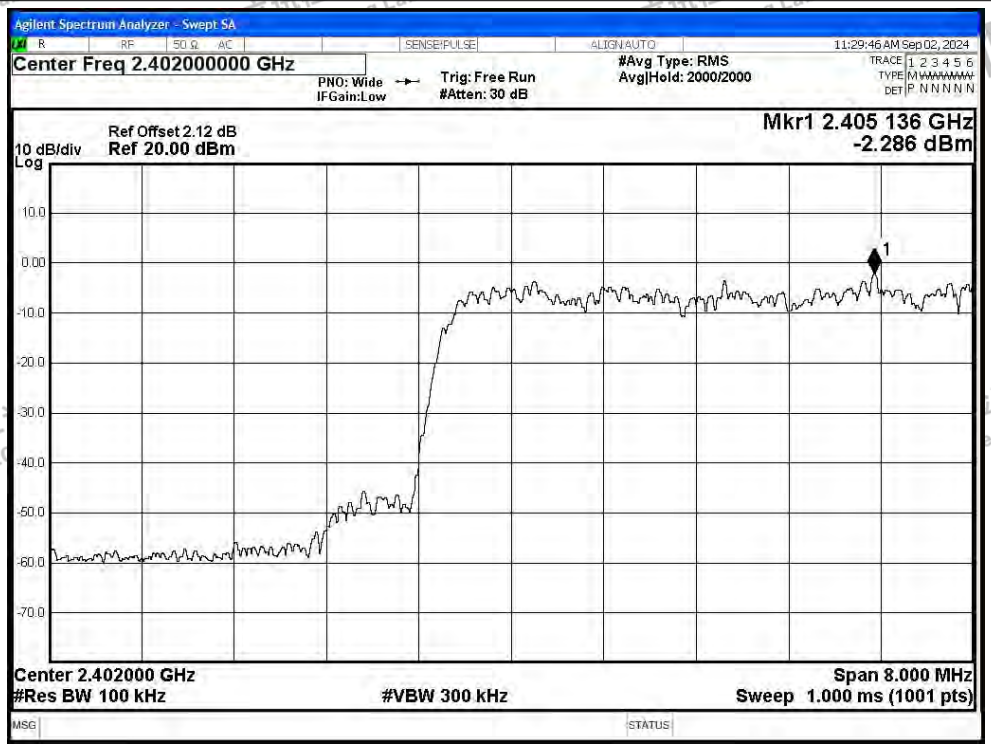
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



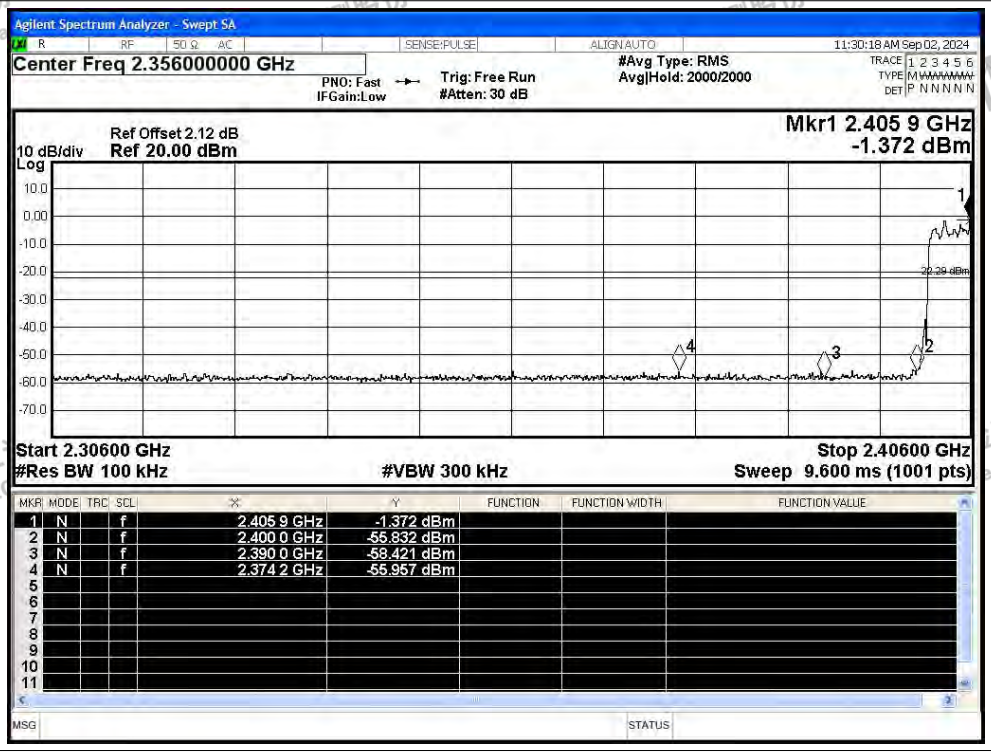
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



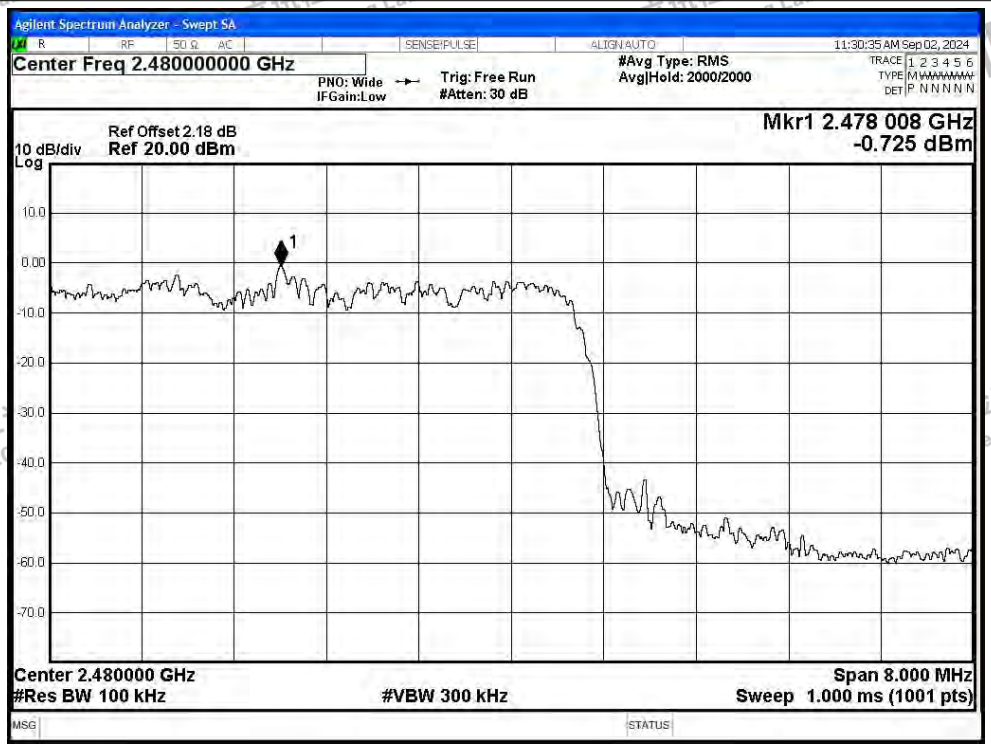
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



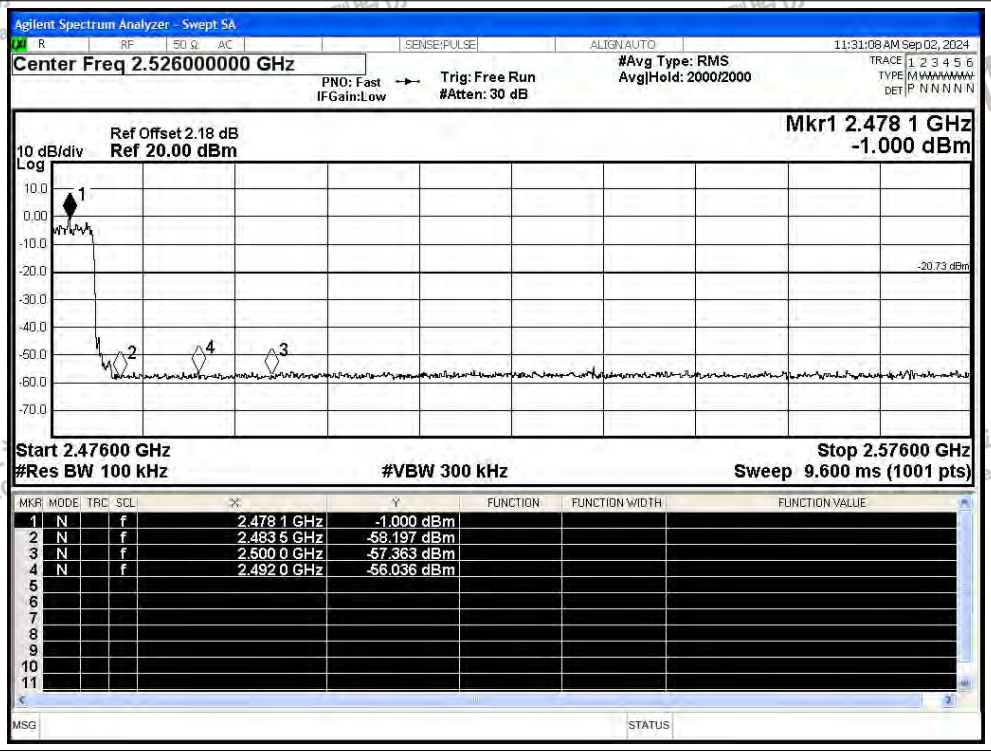
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



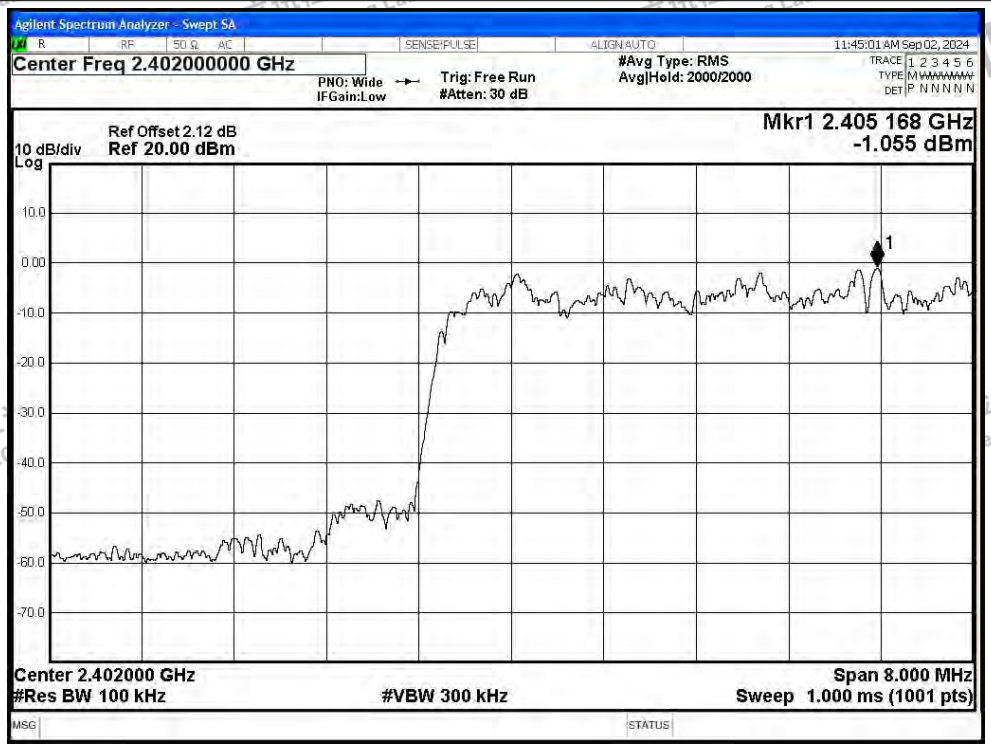
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



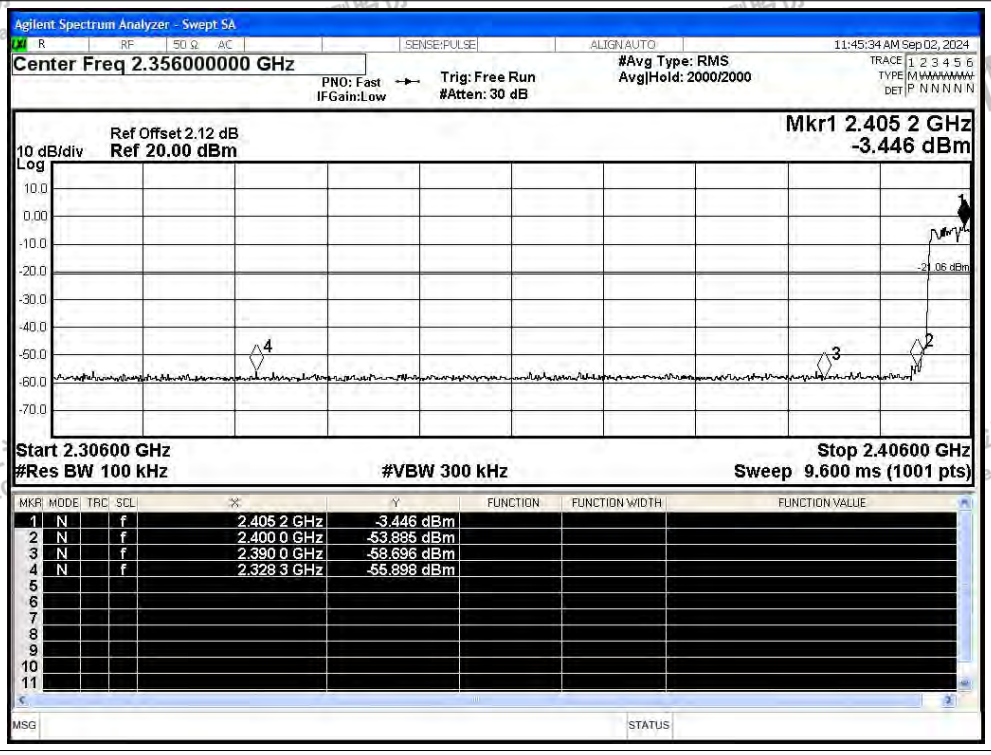
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



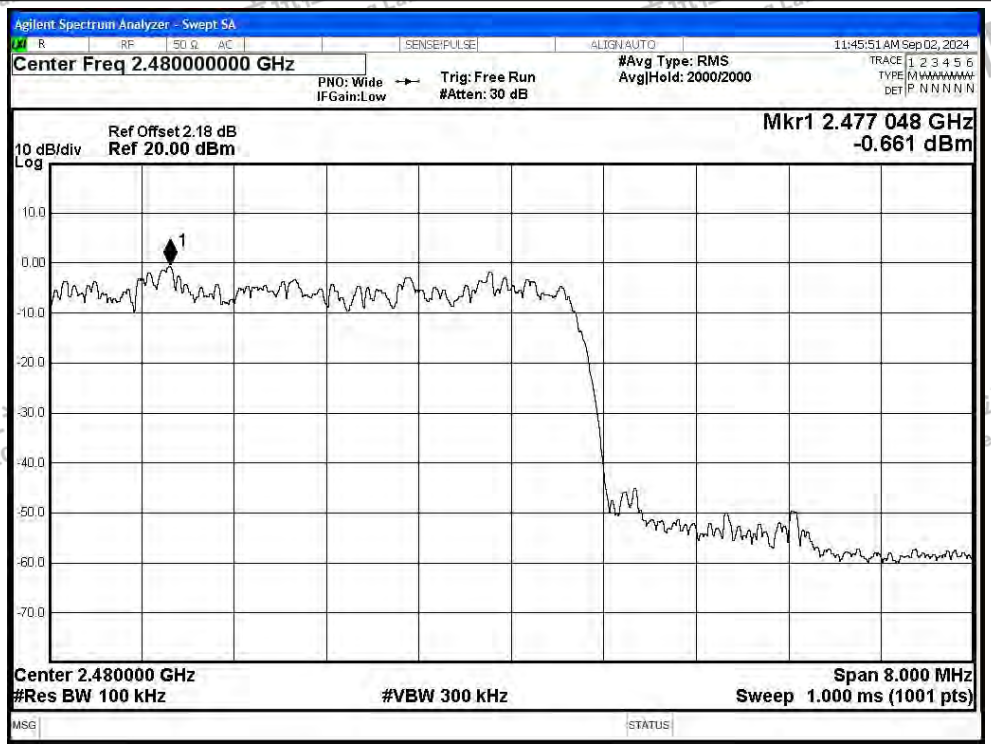
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



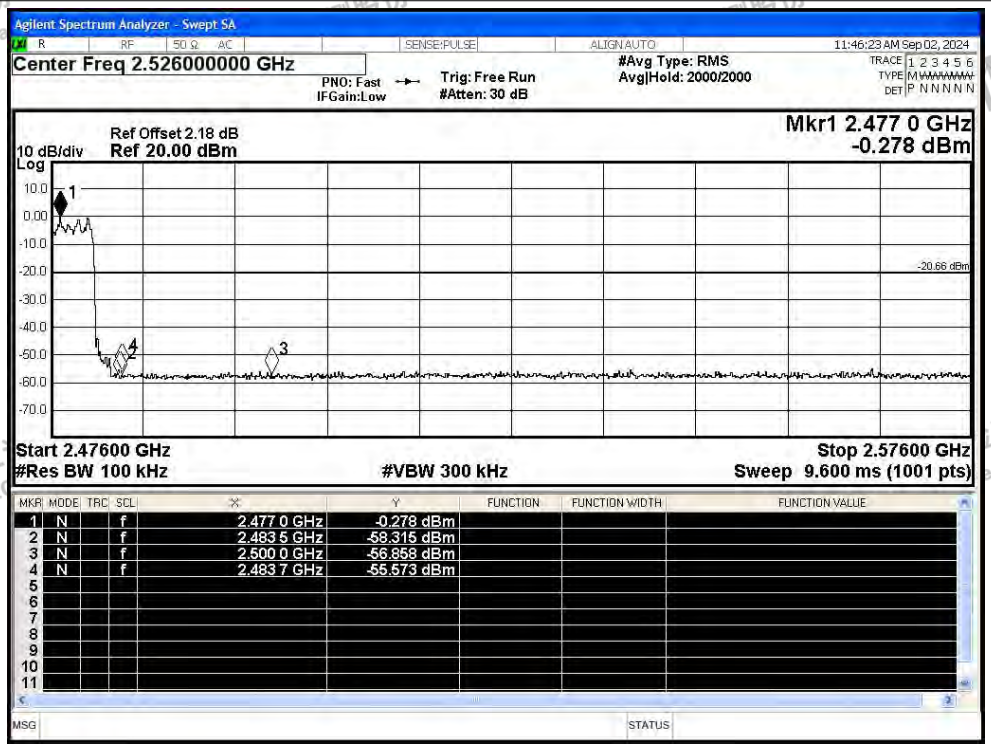
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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



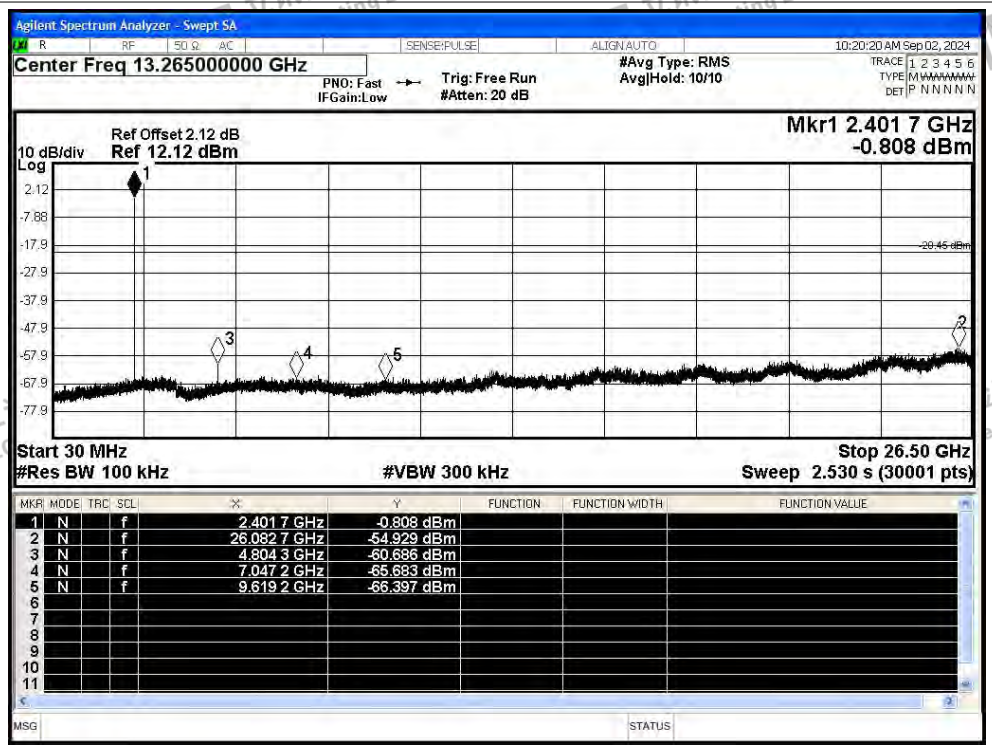
A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-54.48	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.8	-20	Pass
NVNT	1-DH5	2480	Ant1	-53.74	-20	Pass
NVNT	2-DH5	2402	Ant1	-53.82	-20	Pass
NVNT	2-DH5	2441	Ant1	-53.1	-20	Pass
NVNT	2-DH5	2480	Ant1	-52.79	-20	Pass
NVNT	3-DH5	2402	Ant1	-53.7	-20	Pass
NVNT	3-DH5	2441	Ant1	-53.9	-20	Pass
NVNT	3-DH5	2480	Ant1	-51.23	-20	Pass

Test Graphs

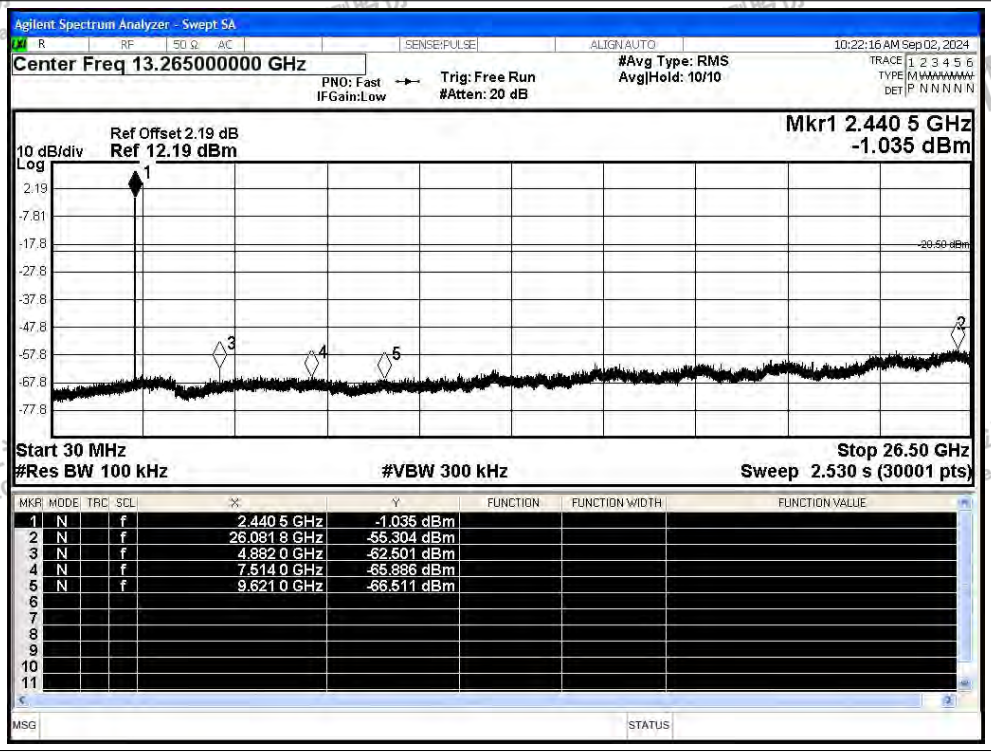
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



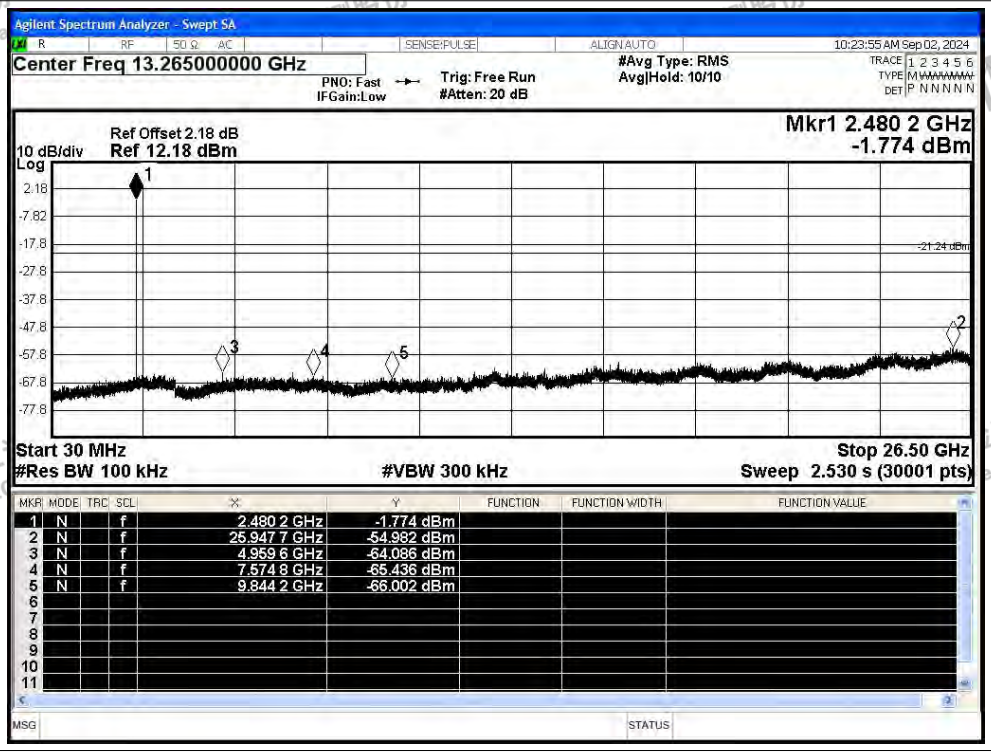
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

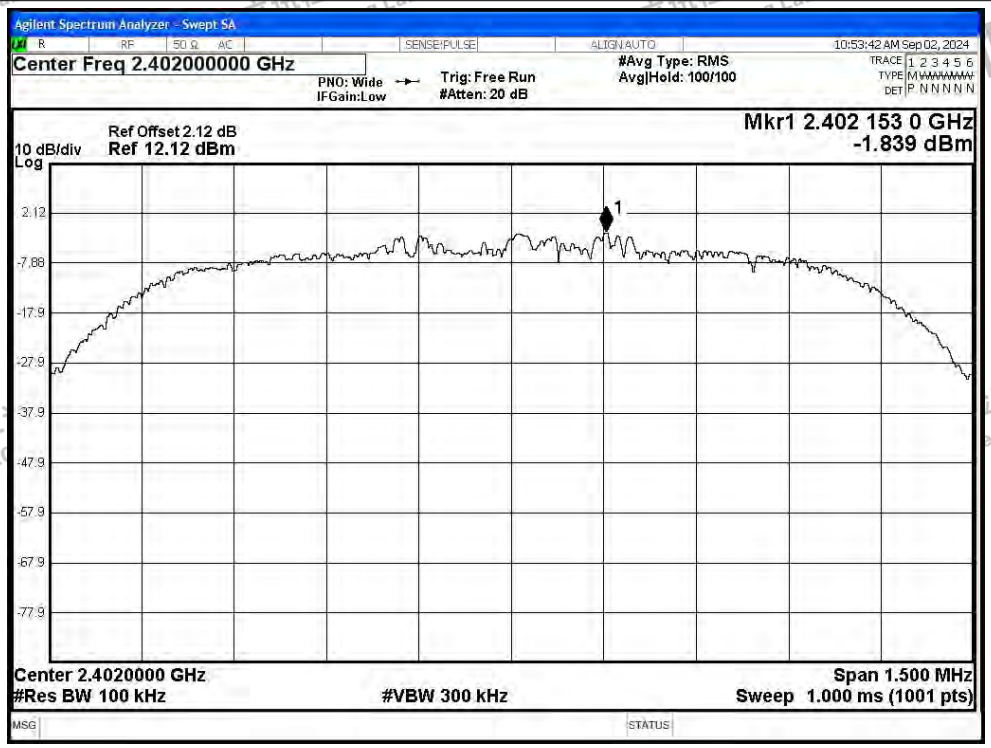


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

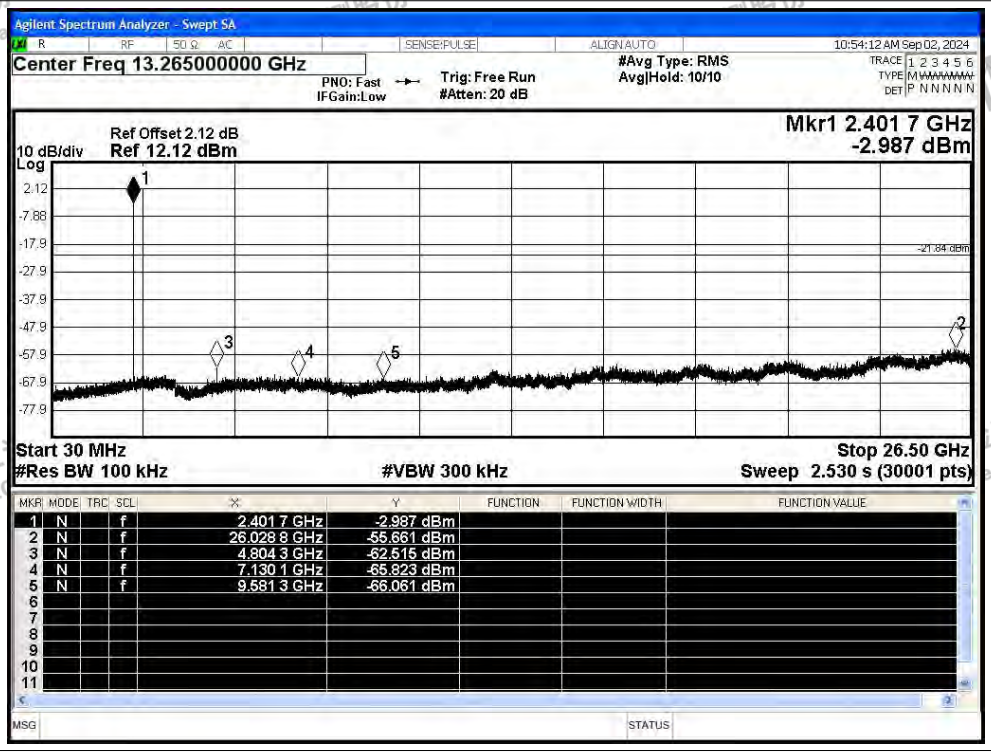
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



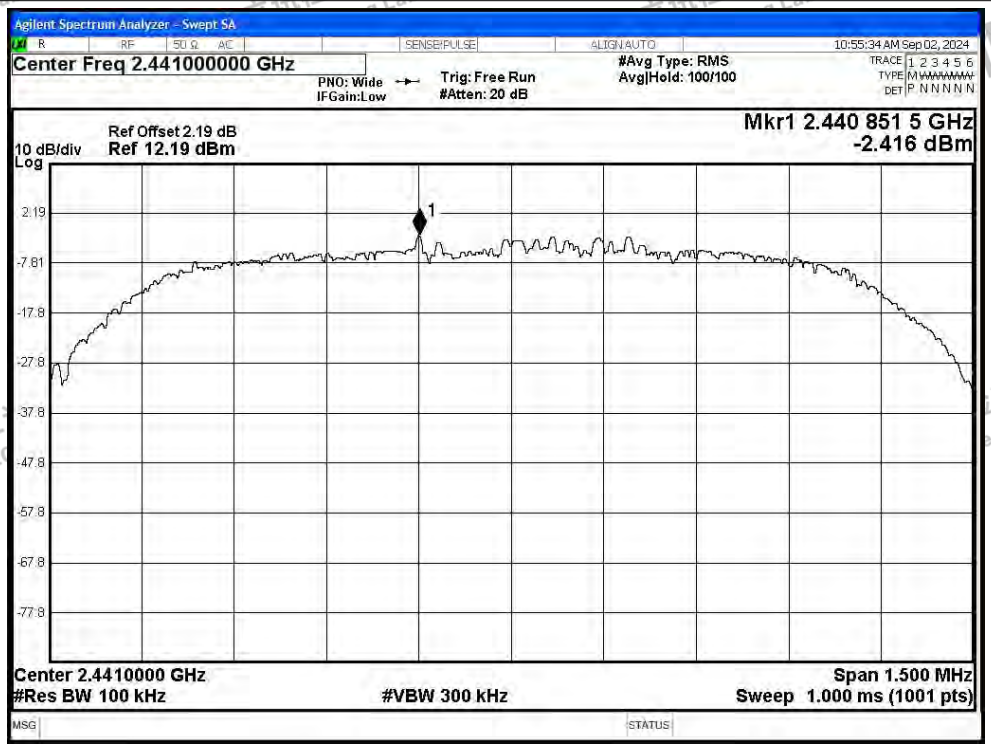
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



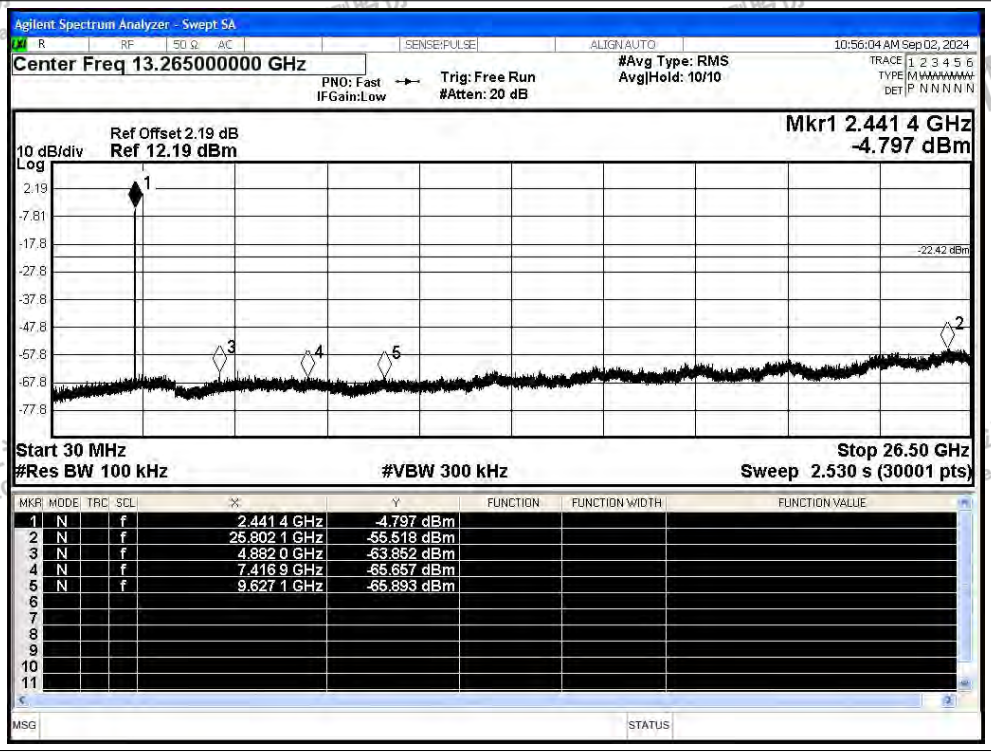
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



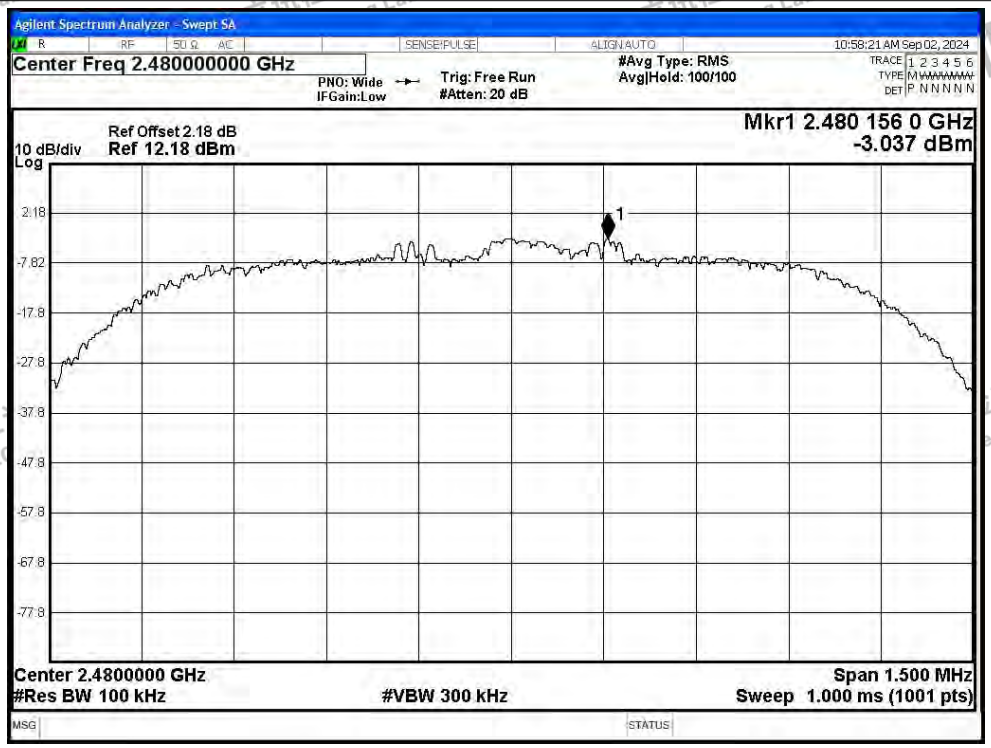
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



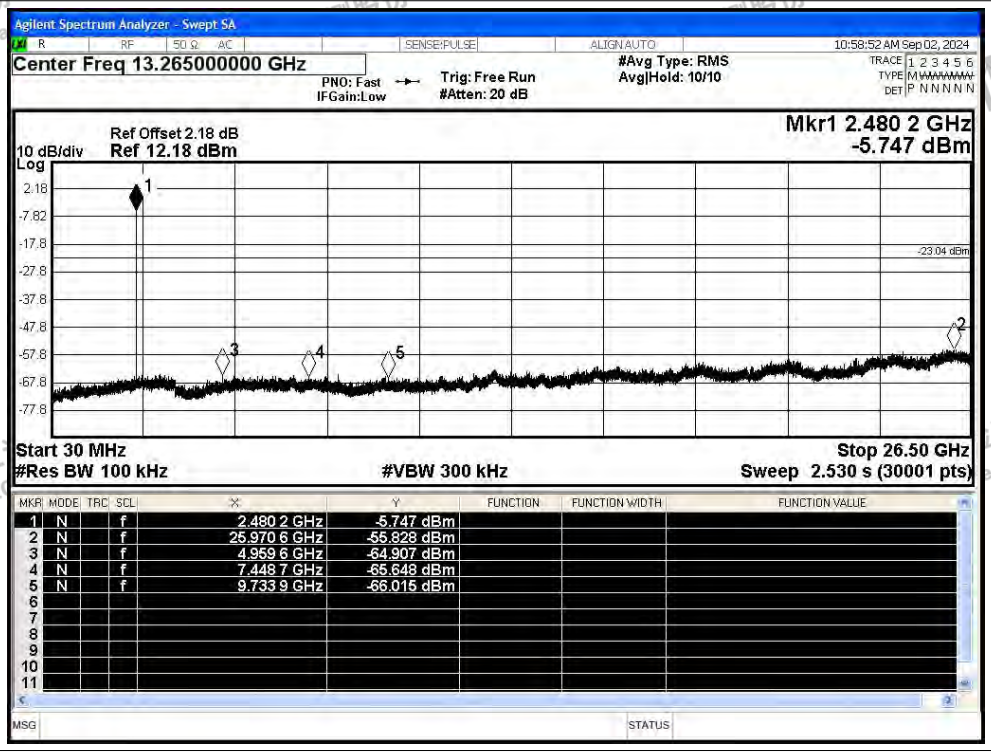
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref

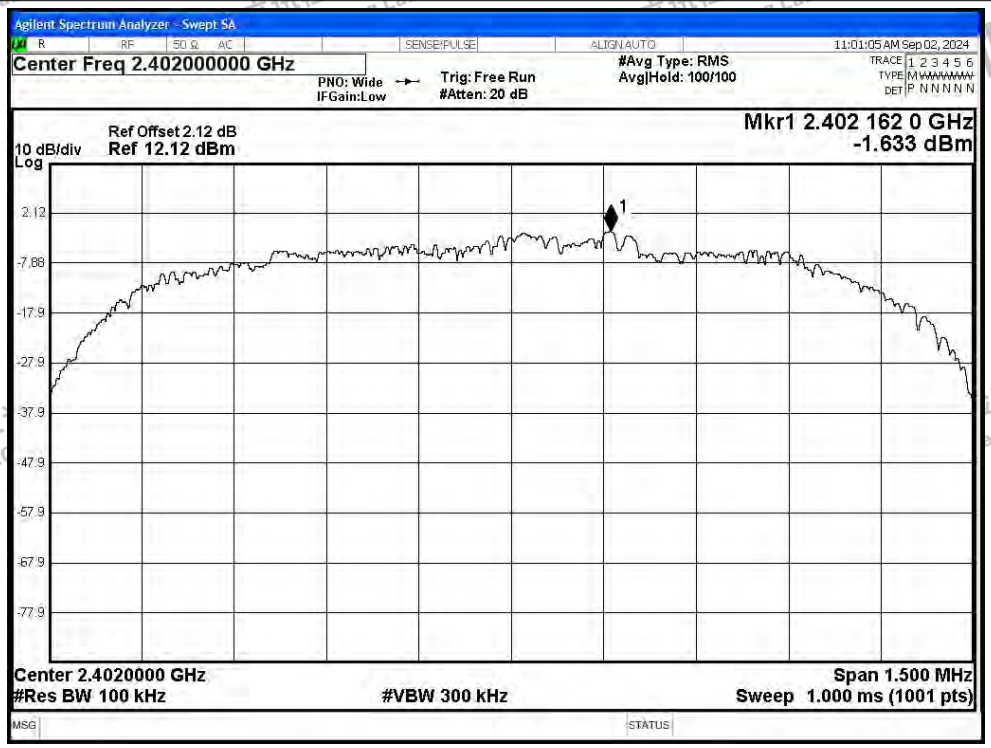


Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

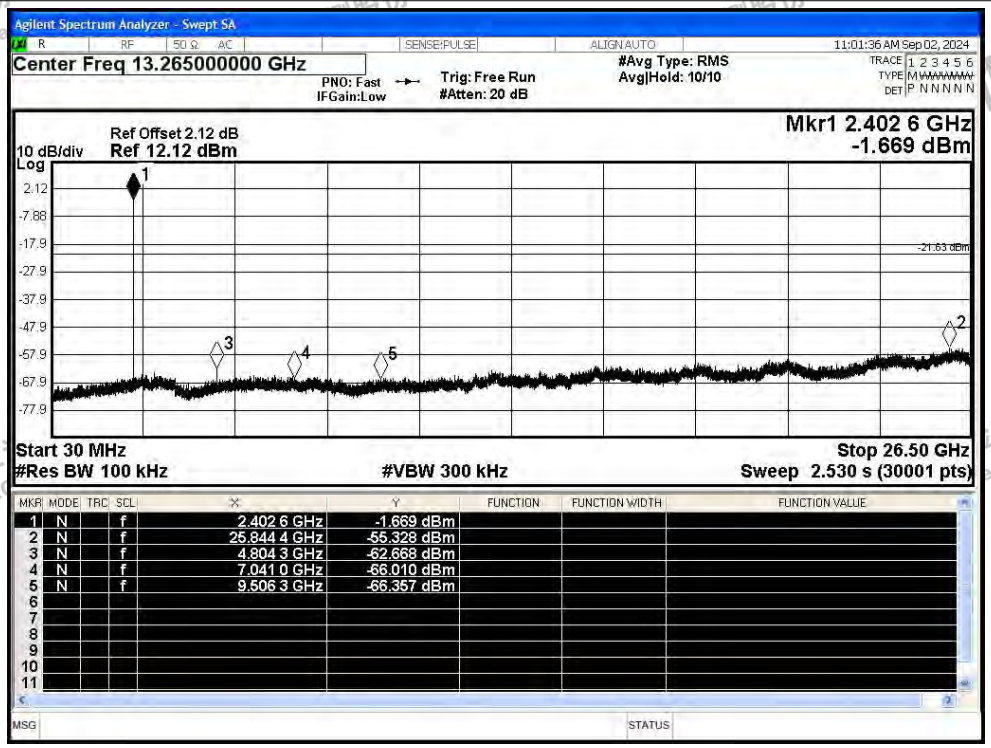


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.480 2 GHz	-5.747 dBm			
2	N		f	25.970 6 GHz	-55.828 dBm			
3	N		f	4.959 6 GHz	-64.907 dBm			
4	N		f	7.448 7 GHz	-65.648 dBm			
5	N		f	9.733 9 GHz	-66.015 dBm			
6								
7								
8								
9								
10								
11								

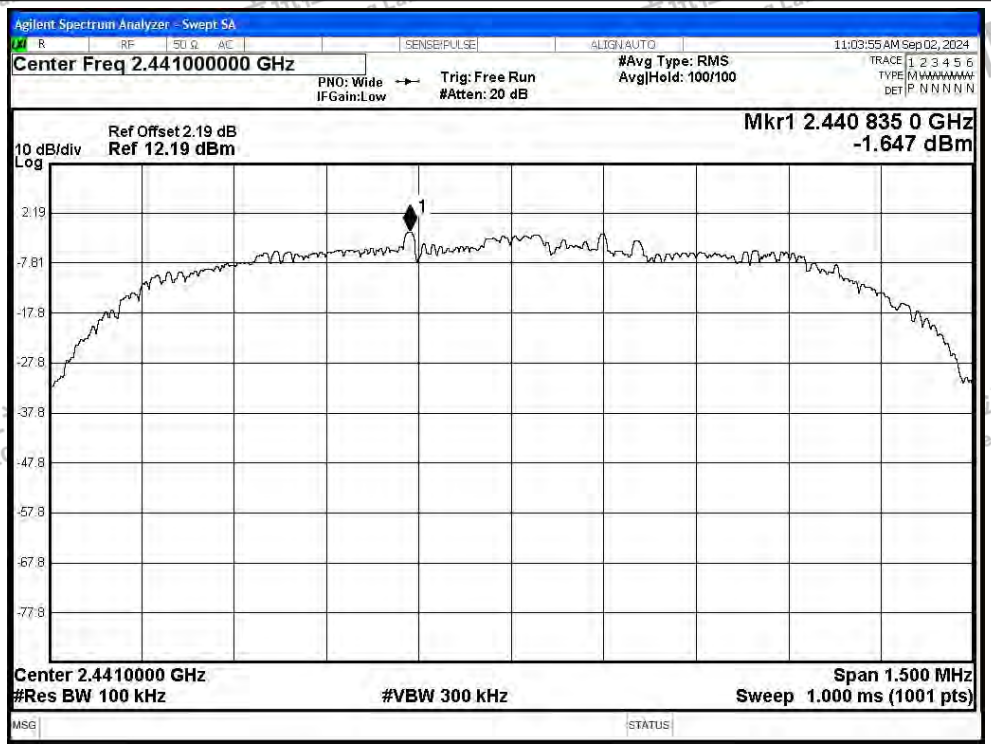
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



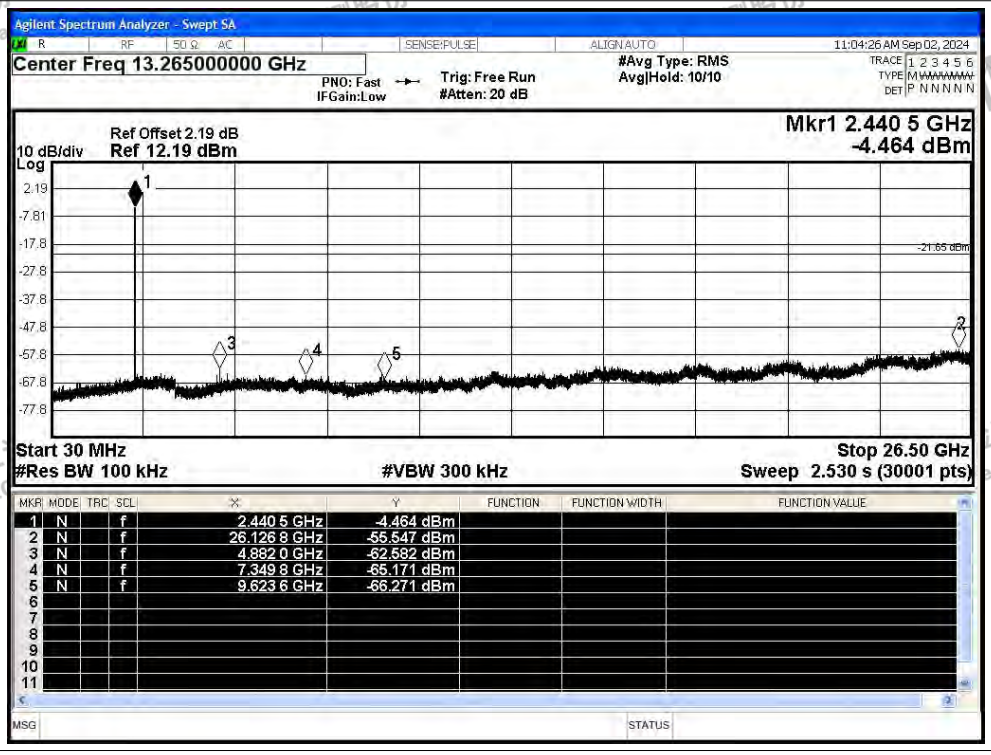
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



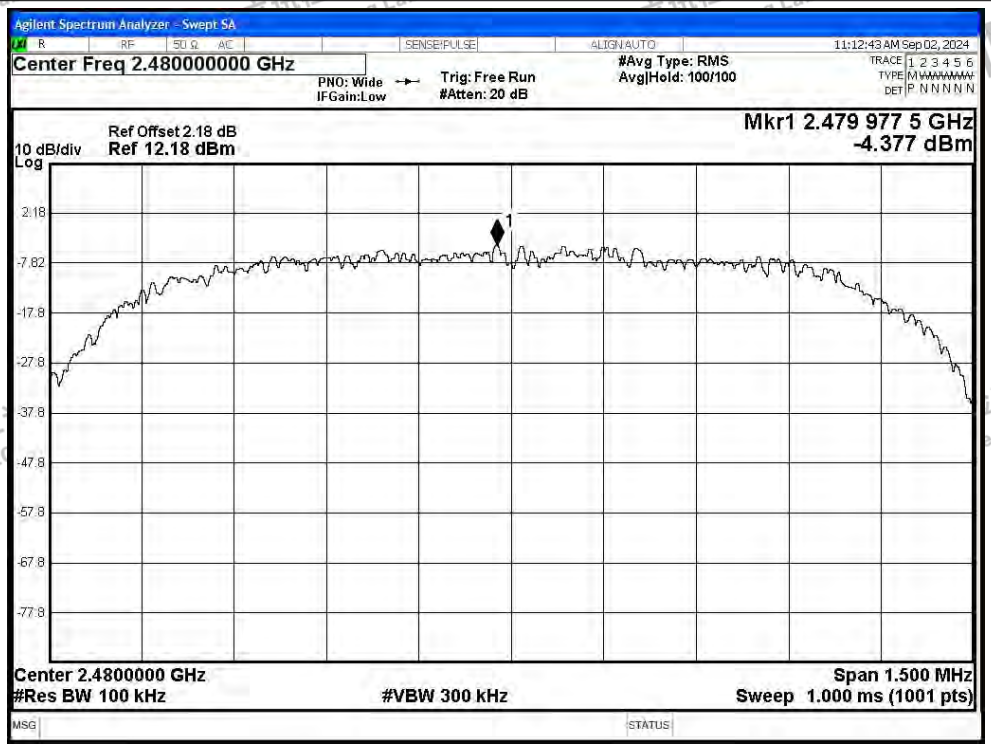
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



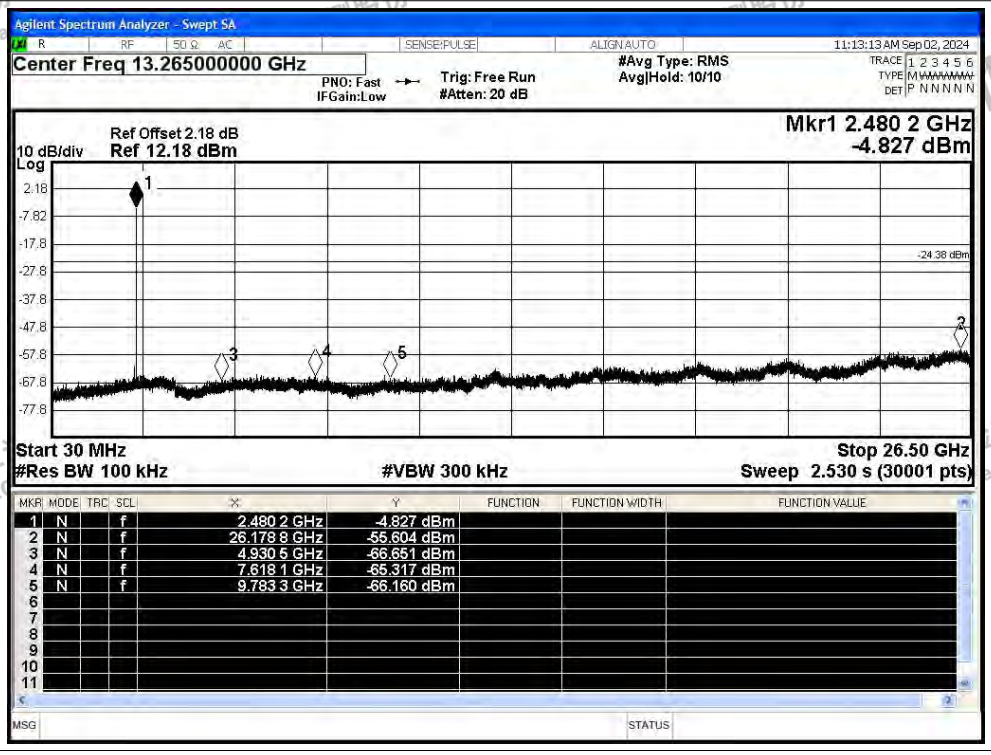
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

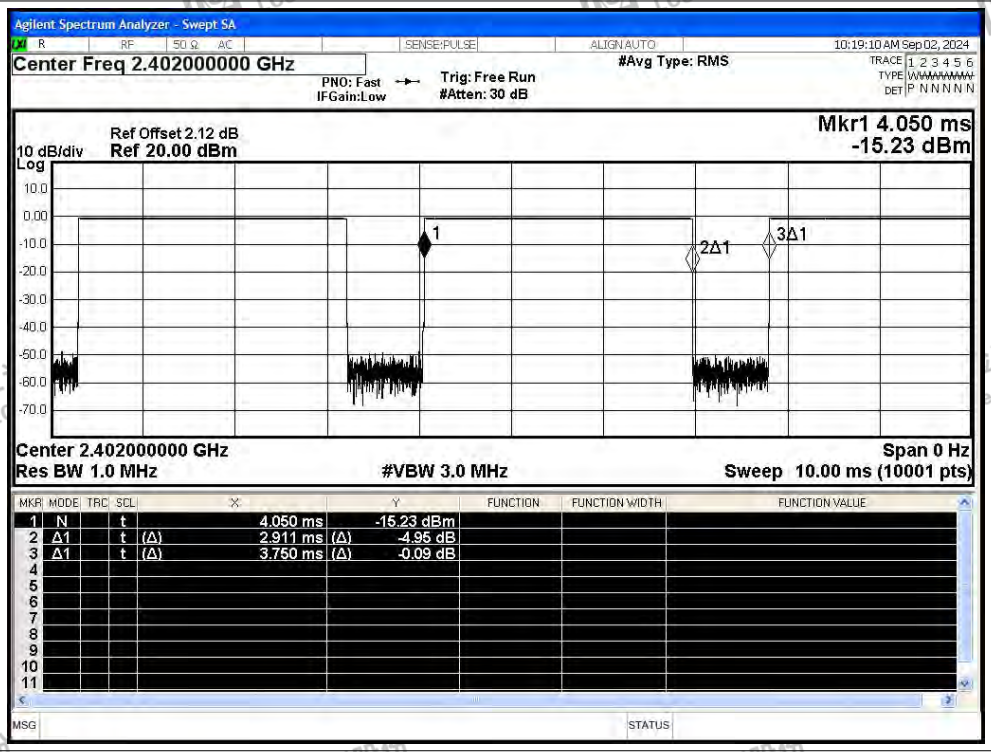


A.8 Duty Cycle

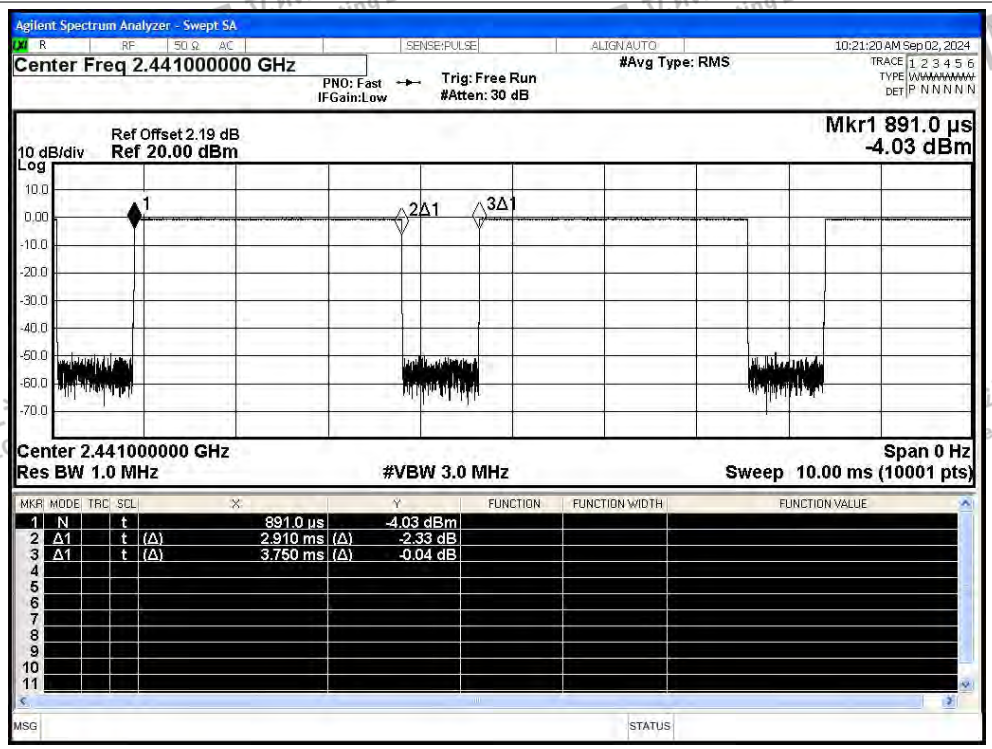
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2480	Ant1	77.28	1.12	0.35

Test Graphs

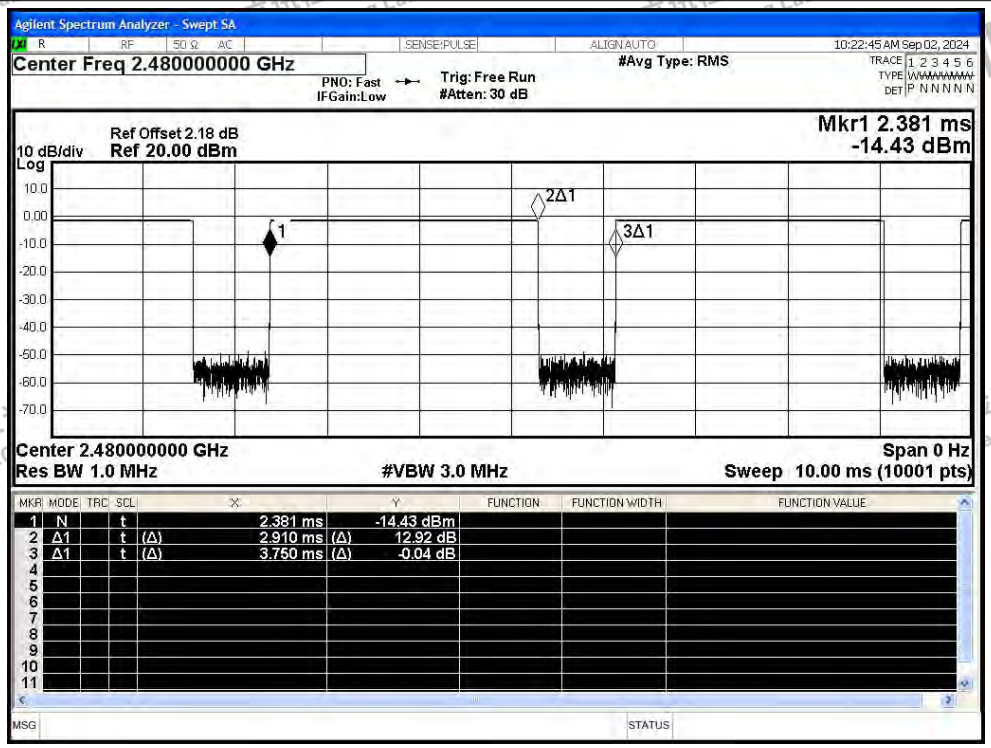
Duty Cycle NVNT 1-DH5 2402MHz Ant1



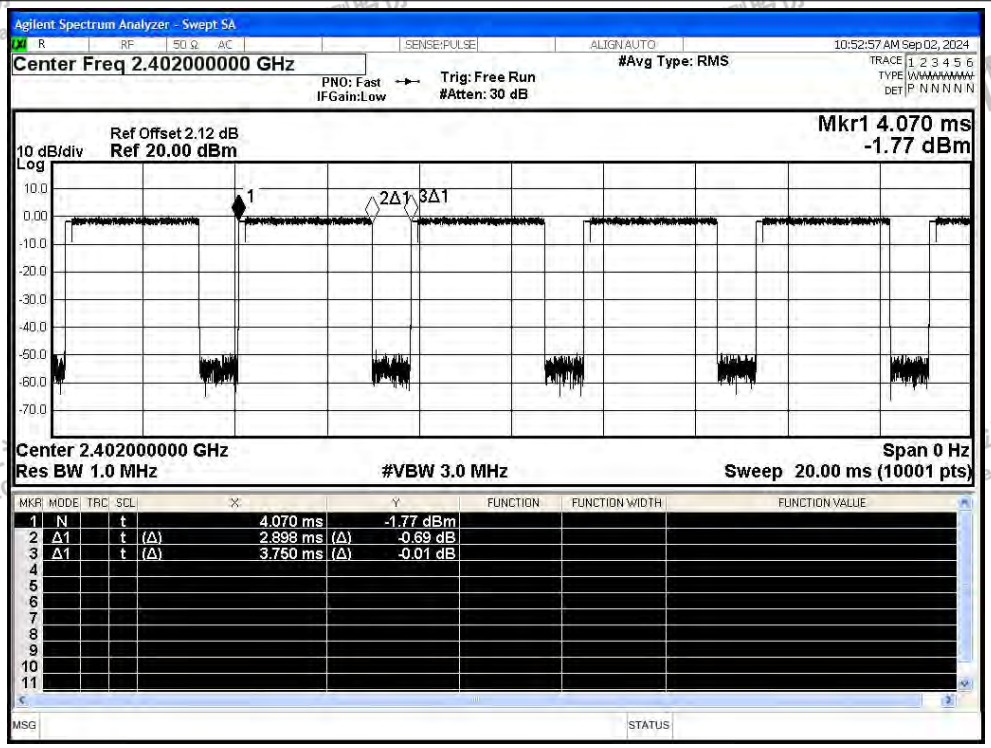
Duty Cycle NVNT 1-DH5 2441MHz Ant1



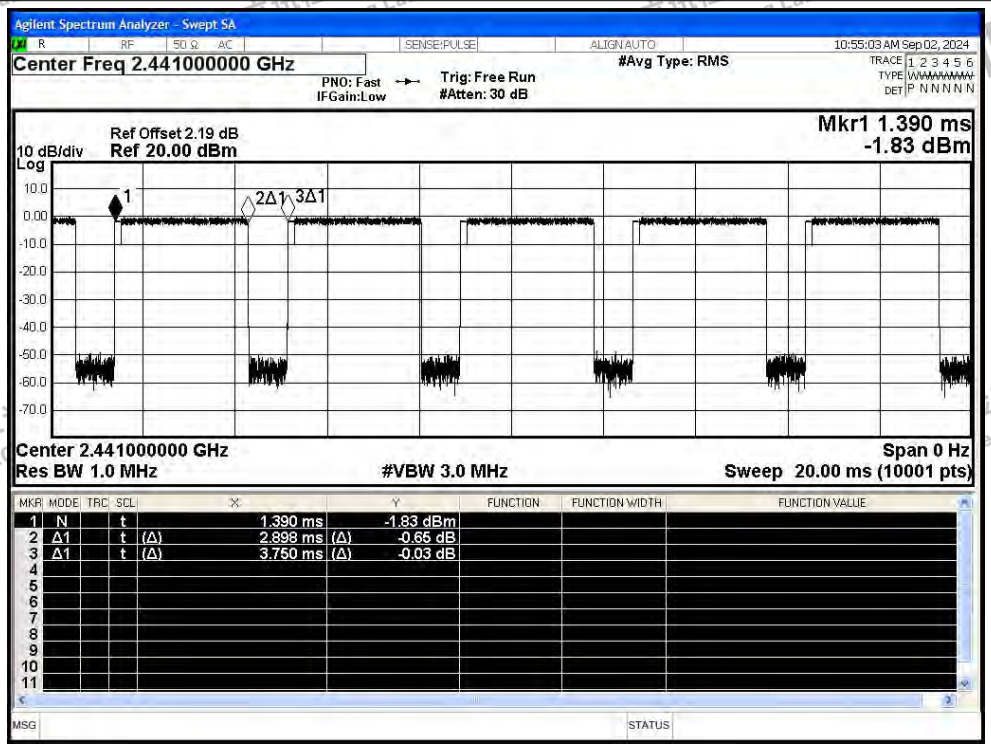
Duty Cycle NVNT 1-DH5 2480MHz Ant1



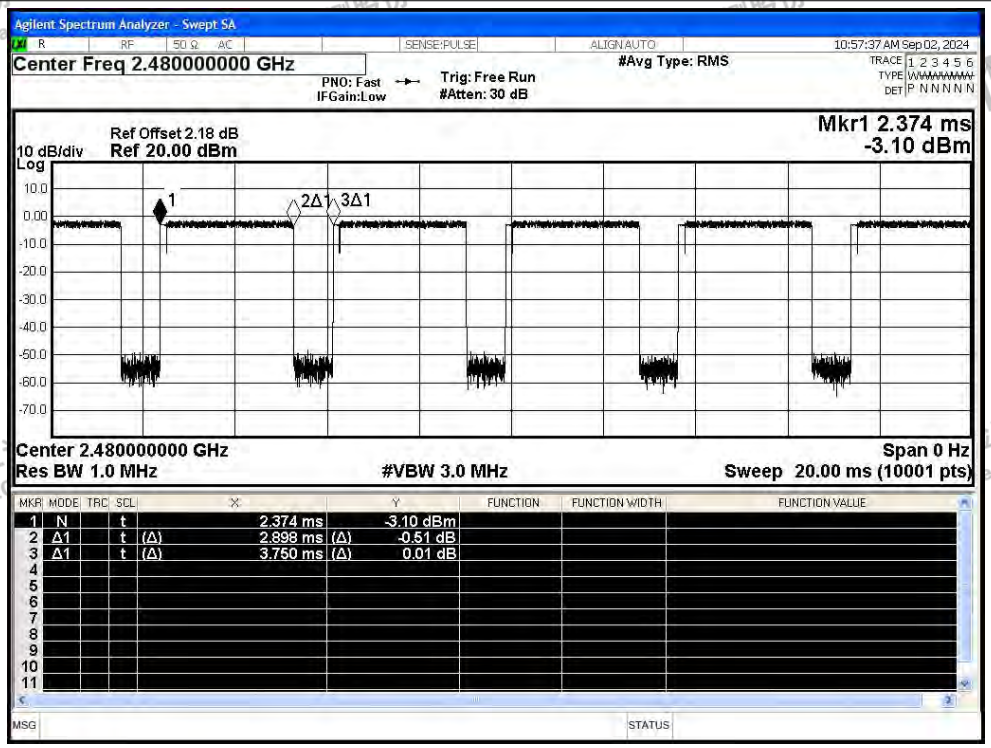
Duty Cycle NVNT 2-DH5 2402MHz Ant1



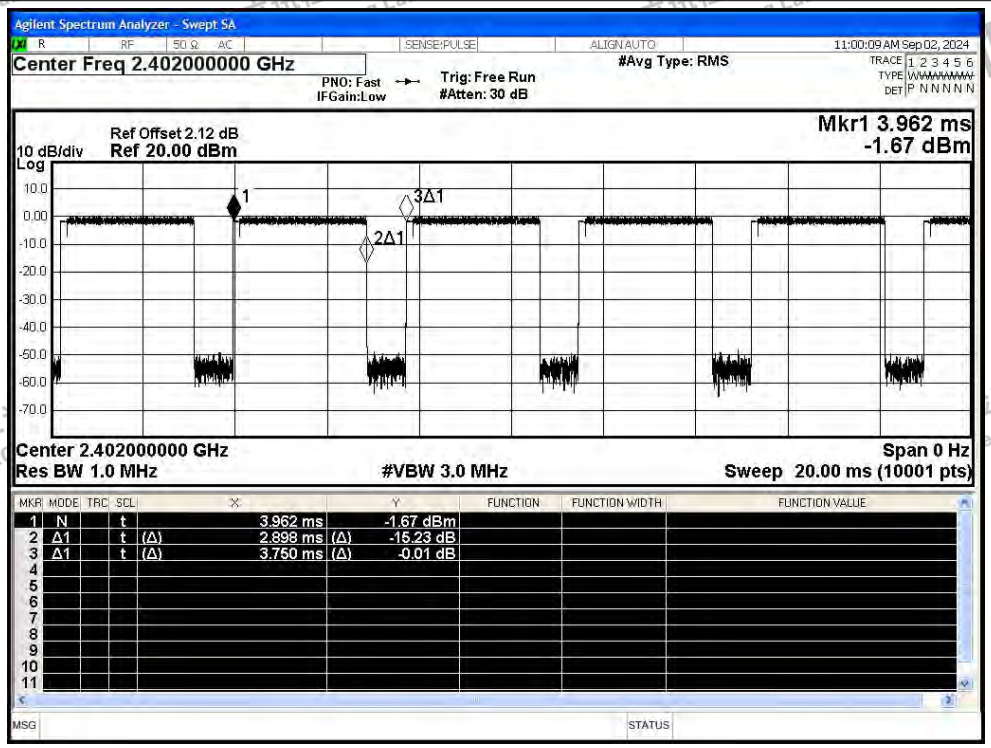
Duty Cycle NVNT 2-DH5 2441MHz Ant1



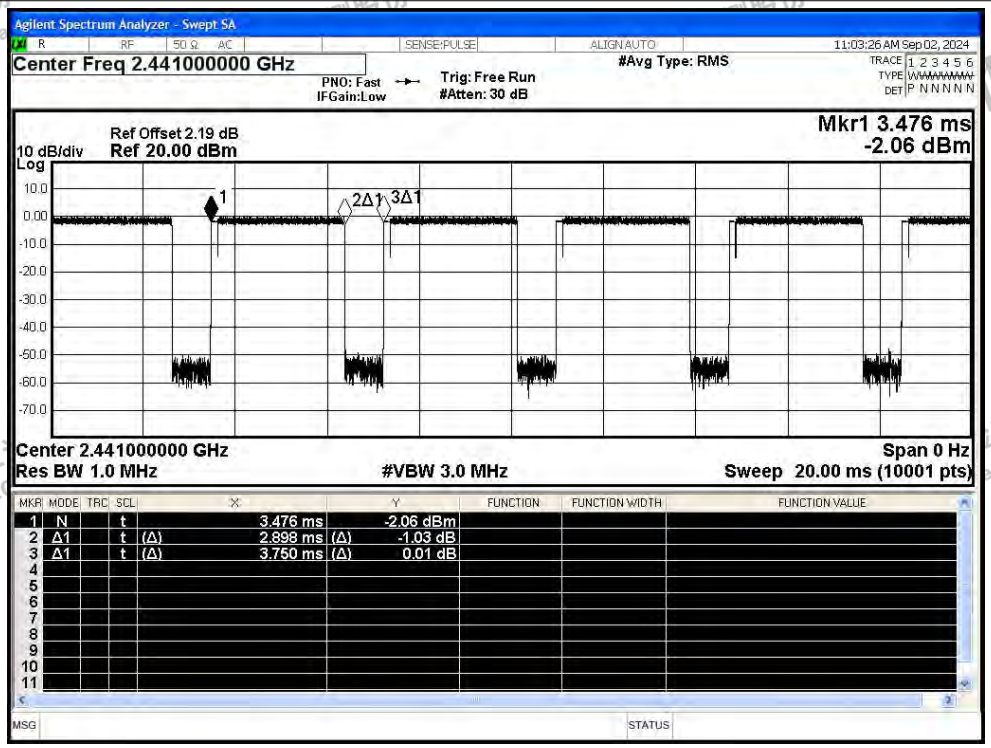
Duty Cycle NVNT 2-DH5 2480MHz Ant1



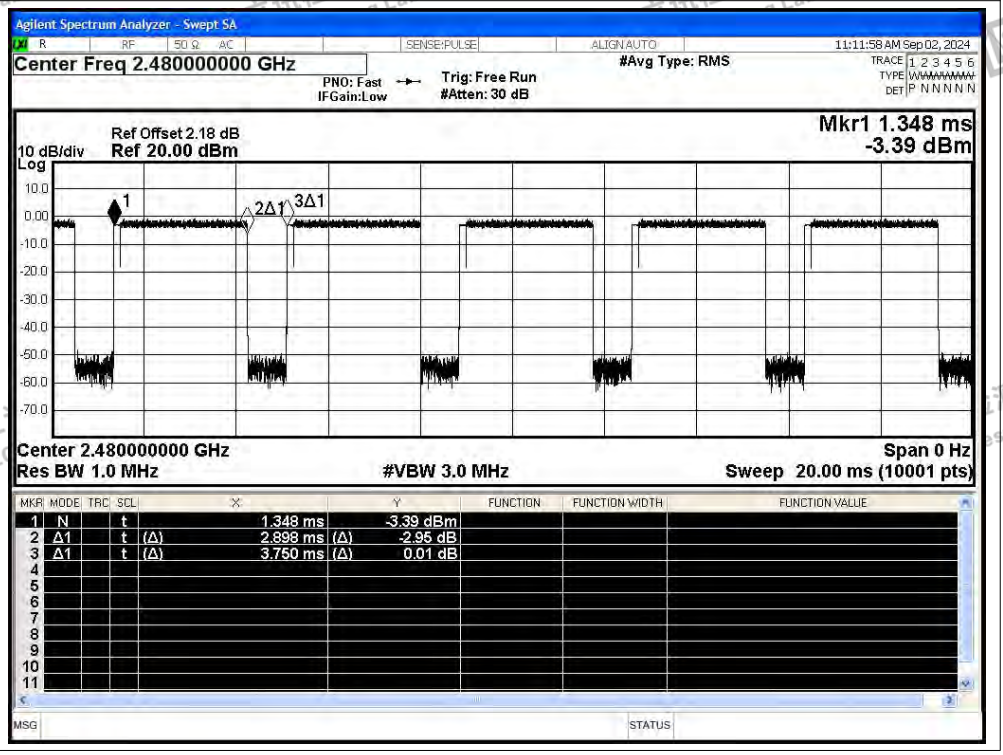
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

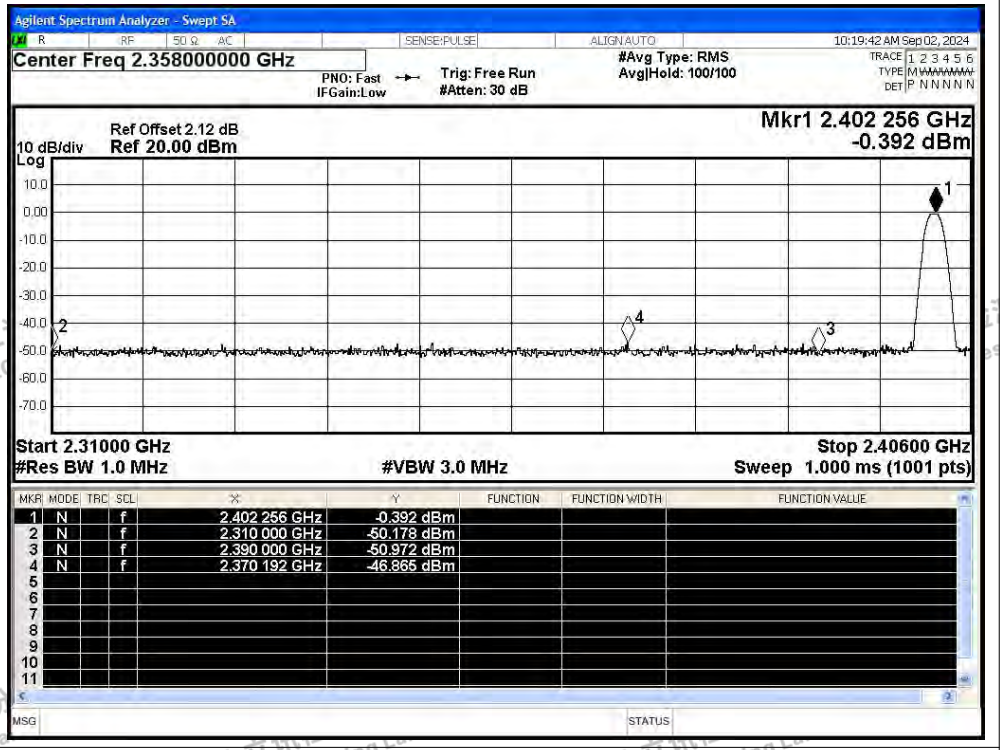


A.9 Restrict Band

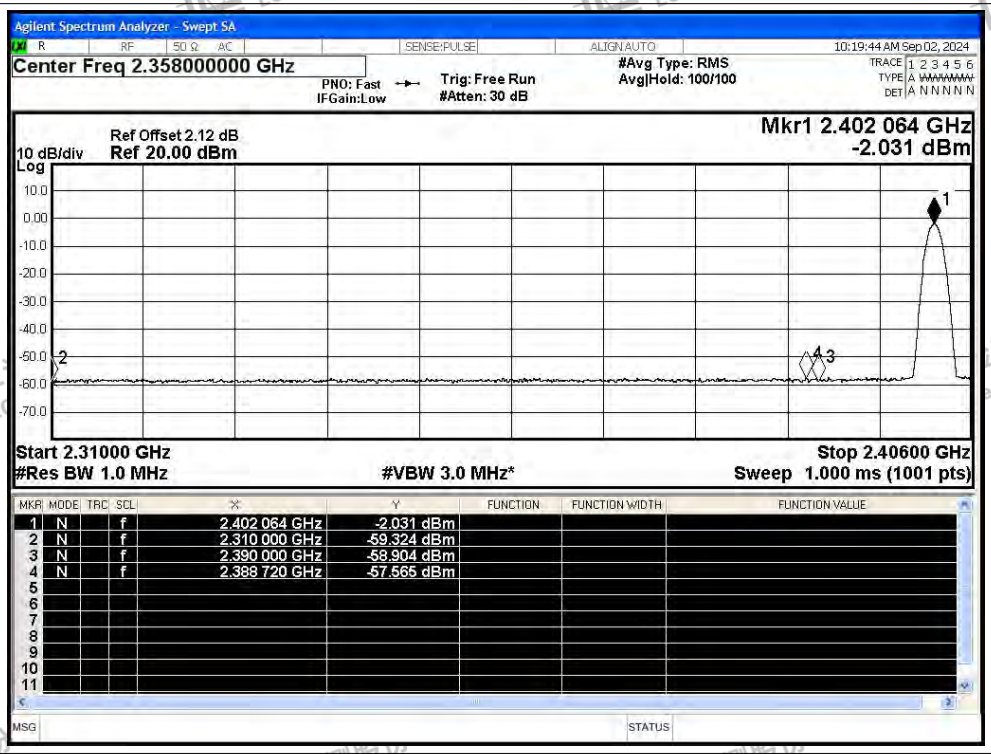
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50.18	3.53	-	48.61	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.32	3.53	1.1	40.57	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2370.192	-46.87	3.53	-	51.92	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2388.72	-57.57	3.53	1.1	42.32	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.97	3.53	-	47.82	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.9	3.53	1.1	40.99	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.23	3.53	-	50.56	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.59	3.53	1.1	42.30	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2490.664	-46.73	3.53	-	52.06	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2495.464	-57.13	3.53	1.1	42.76	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.54	3.53	-	49.25	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.01	3.53	1.1	41.88	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.14	3.53	-	47.65	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.7	3.53	1.12	41.21	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2358	-46.78	3.53	-	52.01	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2338.32	-57.57	3.53	1.12	42.34	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.36	3.53	-	49.43	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-57.98	3.53	1.12	41.93	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-50.88	3.53	-	47.91	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.99	3.53	1.12	41.92	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2485.408	-46.84	3.53	-	51.95	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2497.312	-57.23	3.53	1.12	42.68	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.32	3.53	-	49.47	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.17	3.53	1.12	41.74	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.15	3.53	-	47.64	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.93	3.53	1.12	40.98	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2371.344	-47.44	3.53	-	51.35	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2380.08	-57.6	3.53	1.12	42.31	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.63	3.53	-	48.16	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.59	3.53	1.12	41.32	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-46.6	3.53	-	52.19	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.36	3.53	1.12	42.55	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2495.608	-46.38	3.53	-	52.41	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2496.496	-57.13	3.53	1.12	42.78	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.28	3.53	-	48.51	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.33	3.53	1.12	41.58	Average	54	Pass

Test Graphs

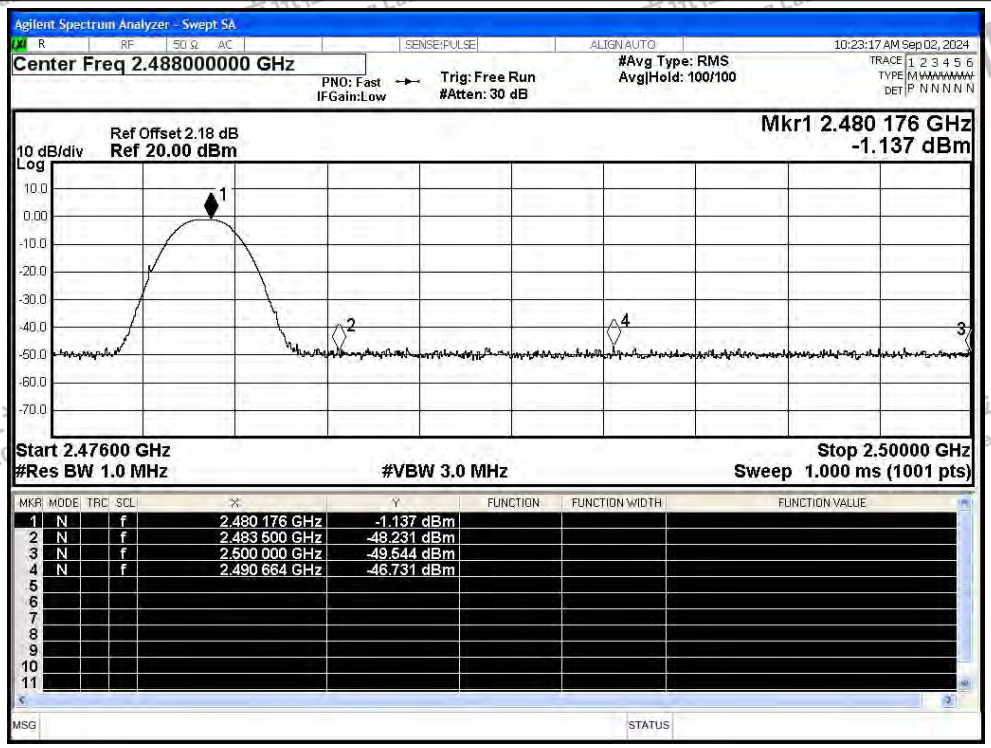
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



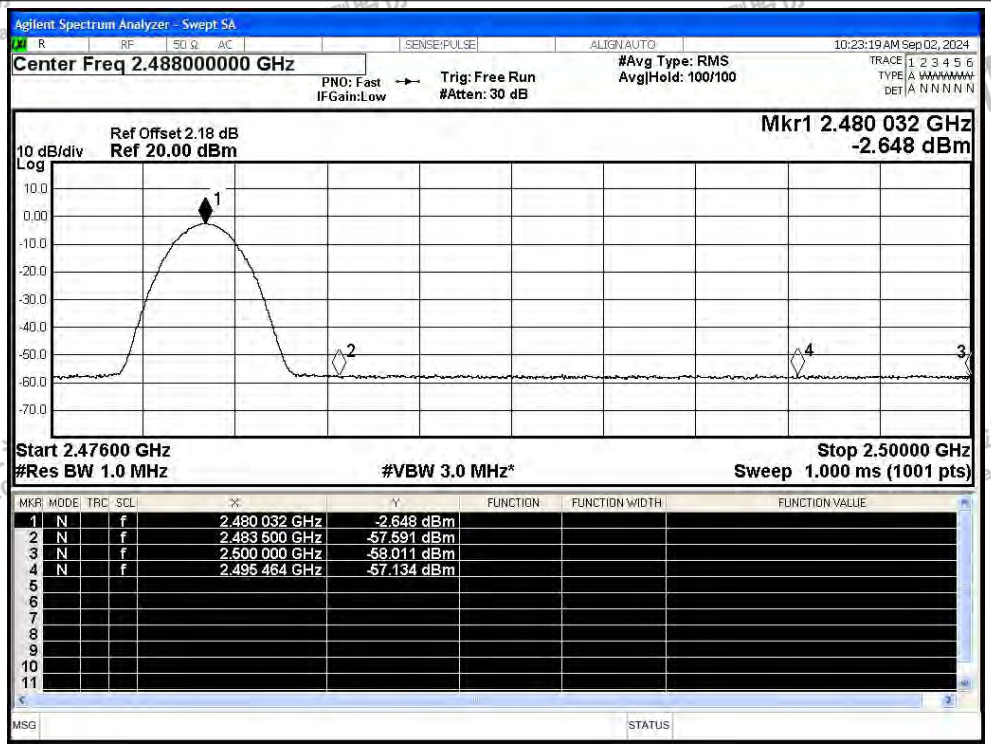
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



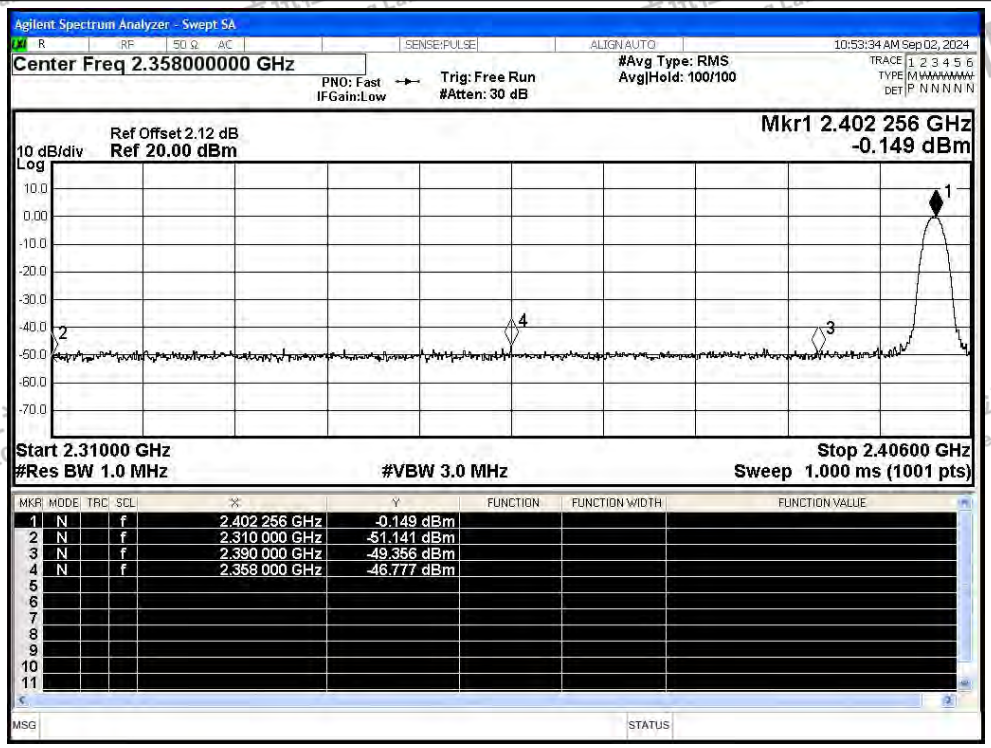
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



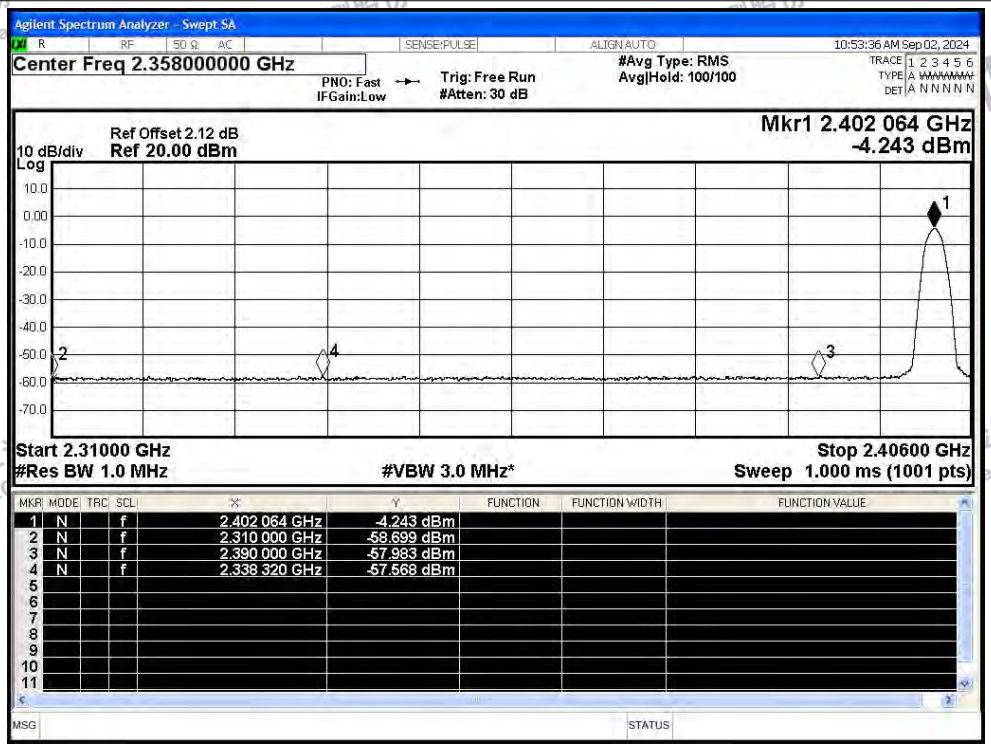
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



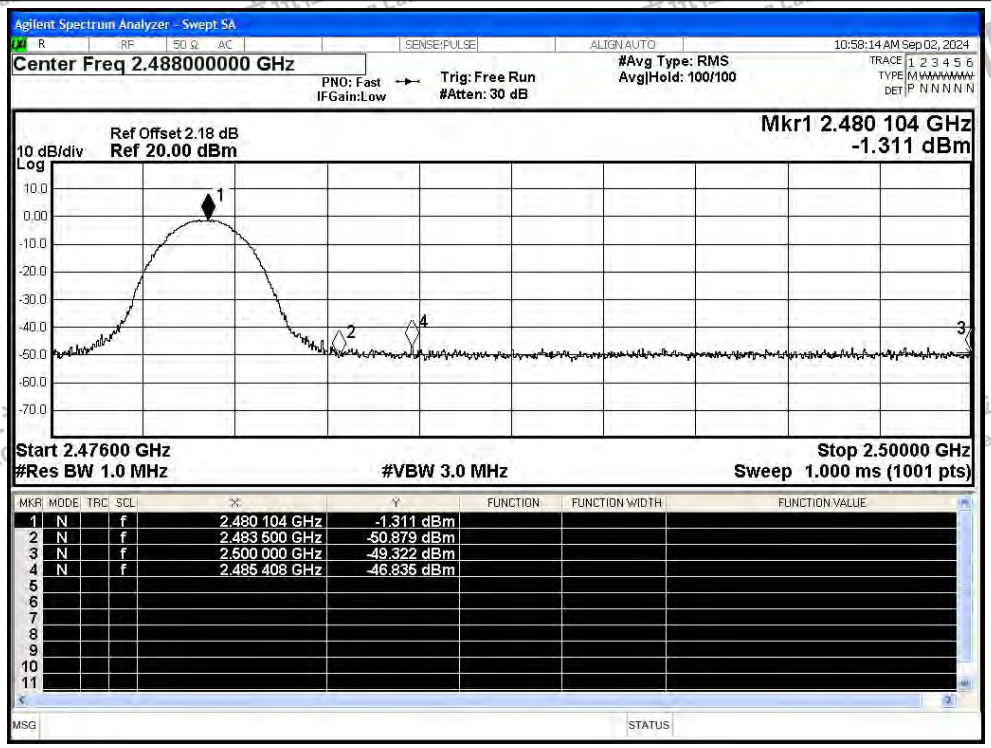
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



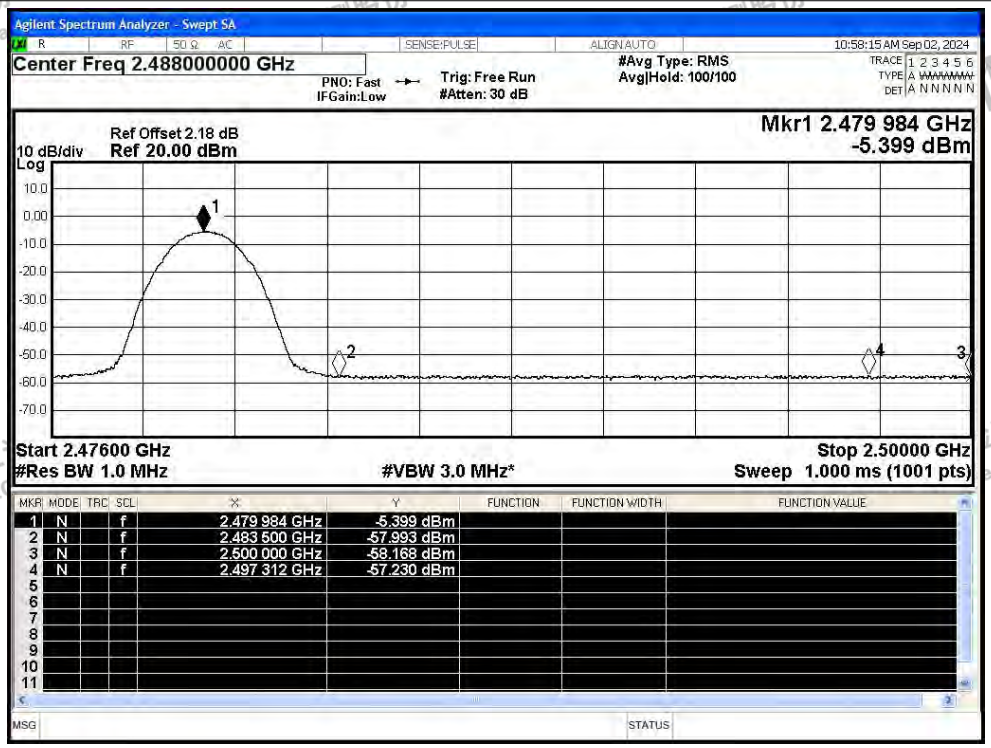
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



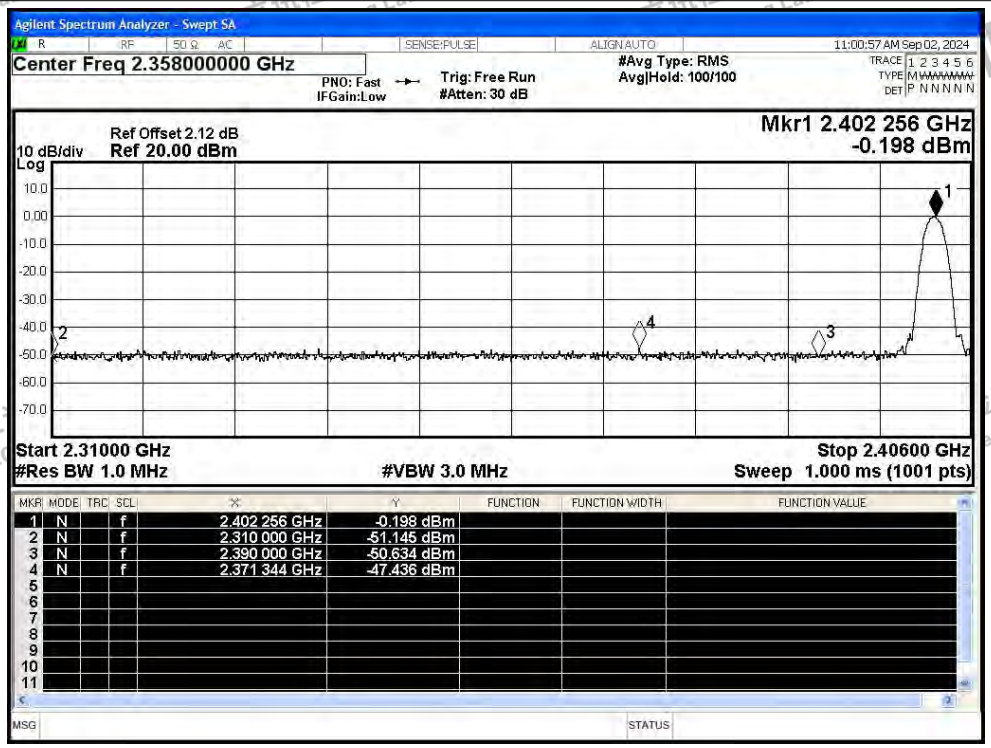
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



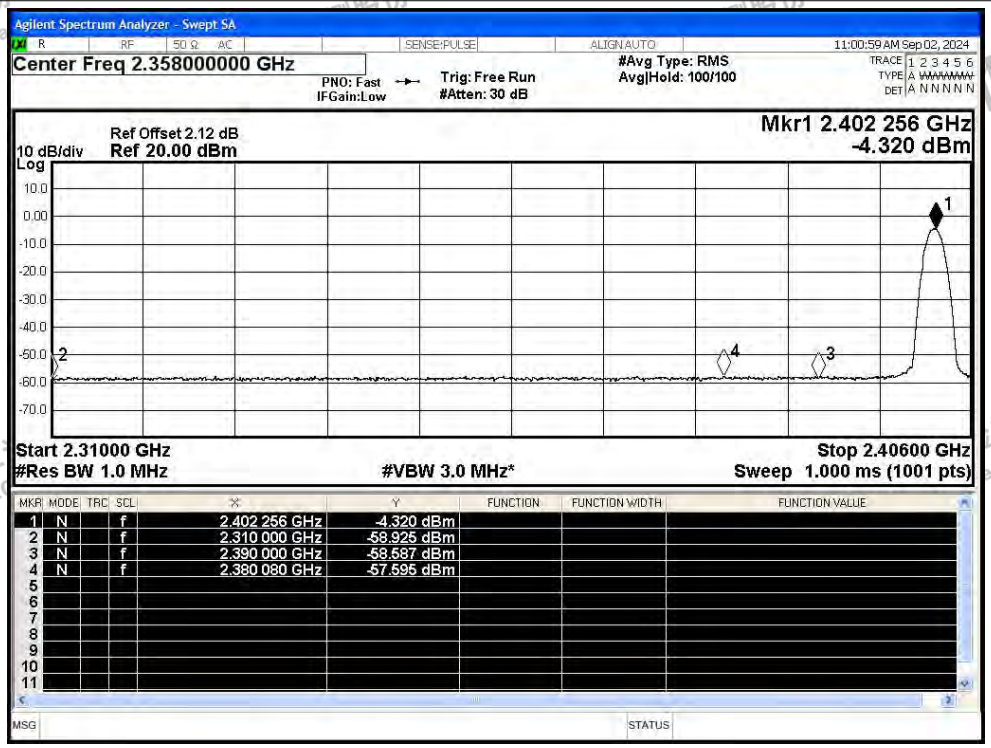
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



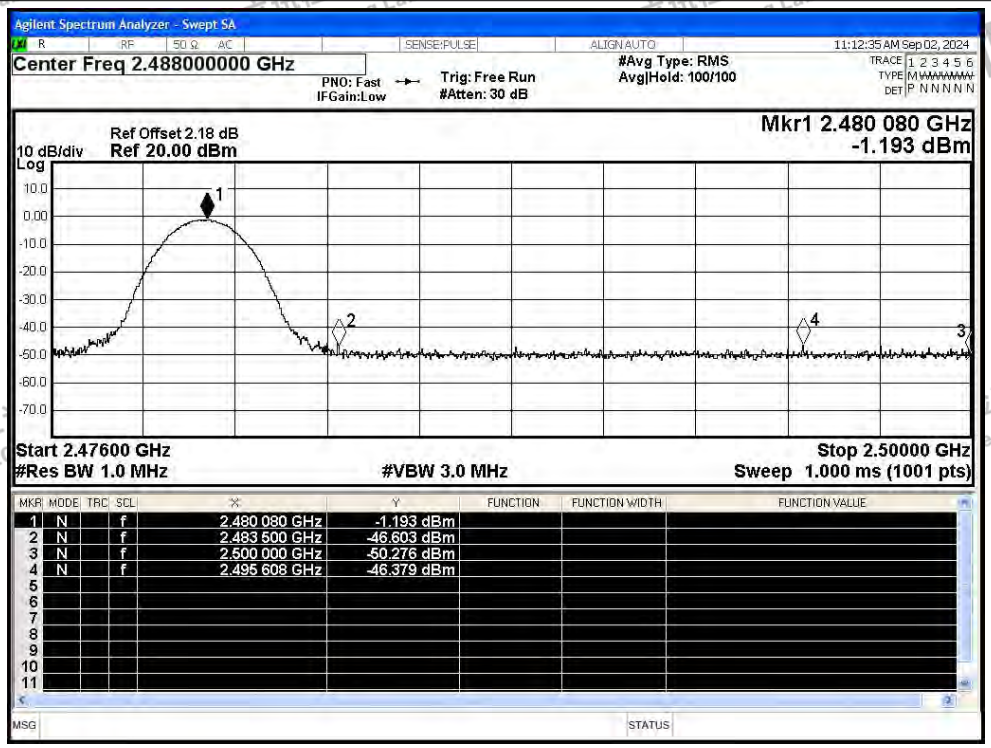
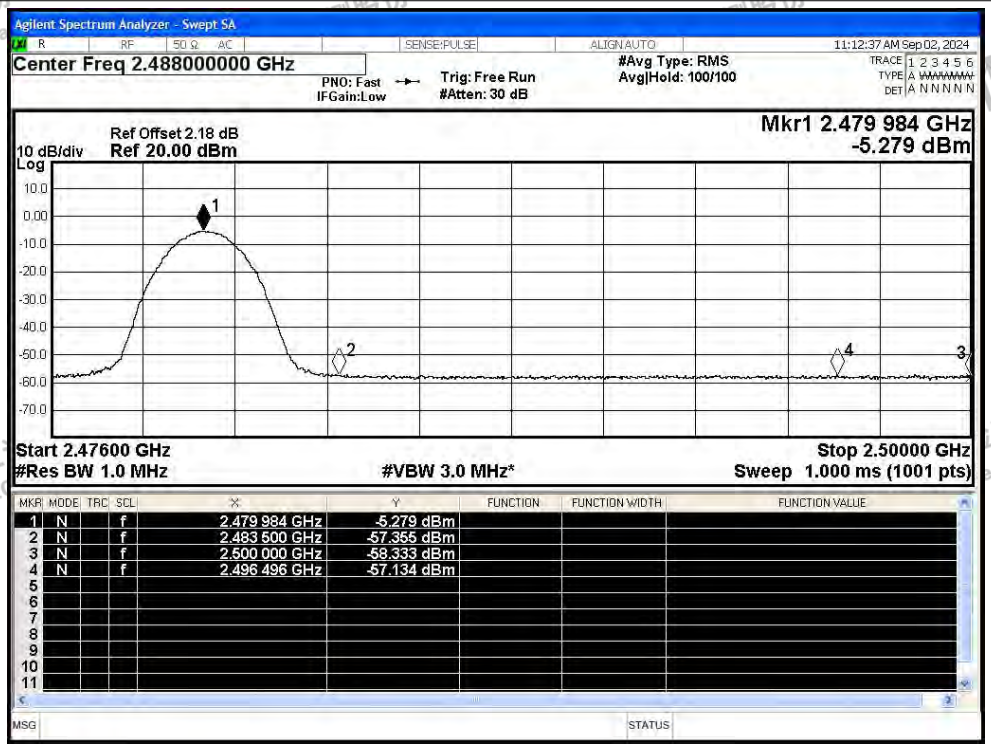
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



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