

FCC Appendix RF Test Data for BT

Product Name: Automotive Diagnostic Tool

Test Model: VD700

Environmental Conditions

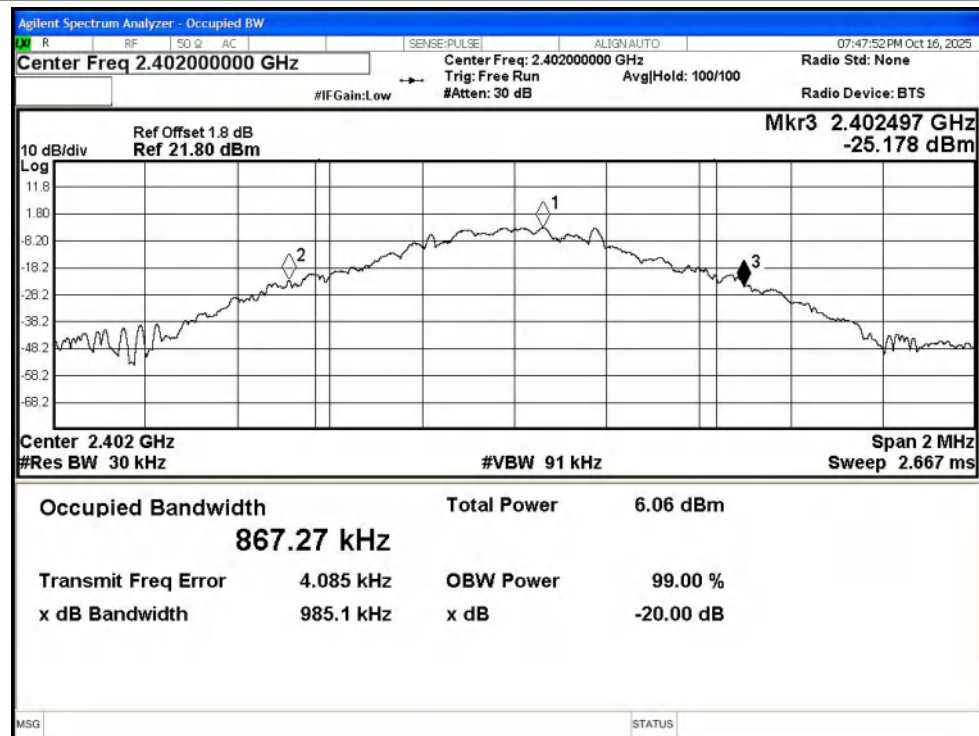
Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Zoey Cao
Supervised by:	Eric Wang

1. -20dB Bandwidth

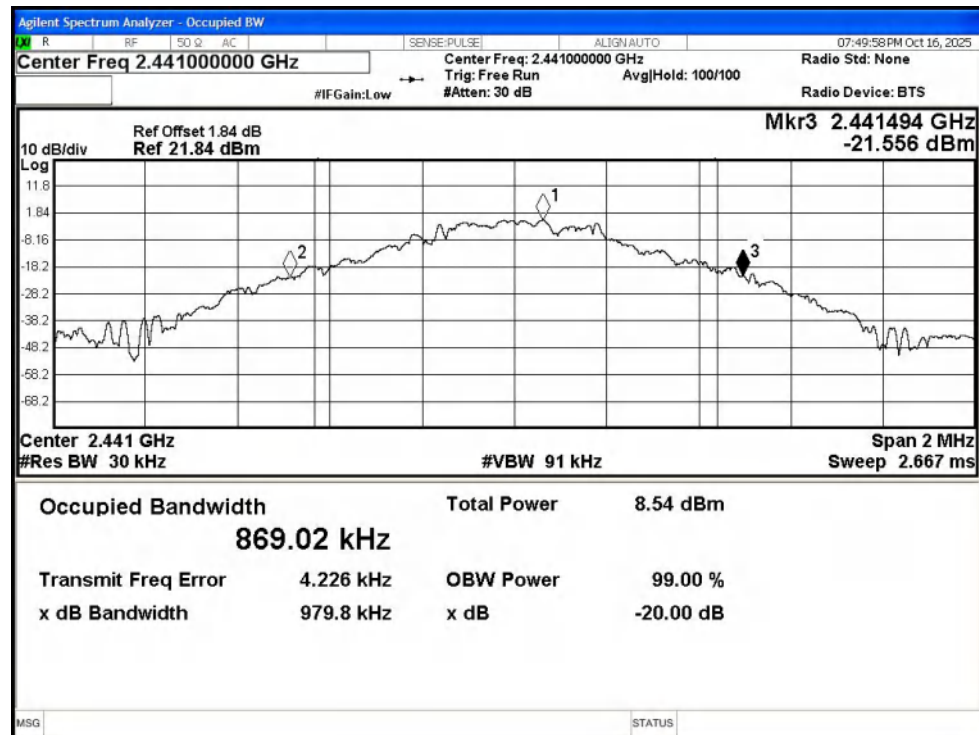
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.985	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.98	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.979	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.282	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.282	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.285	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.284	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.296	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.314	N/A	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



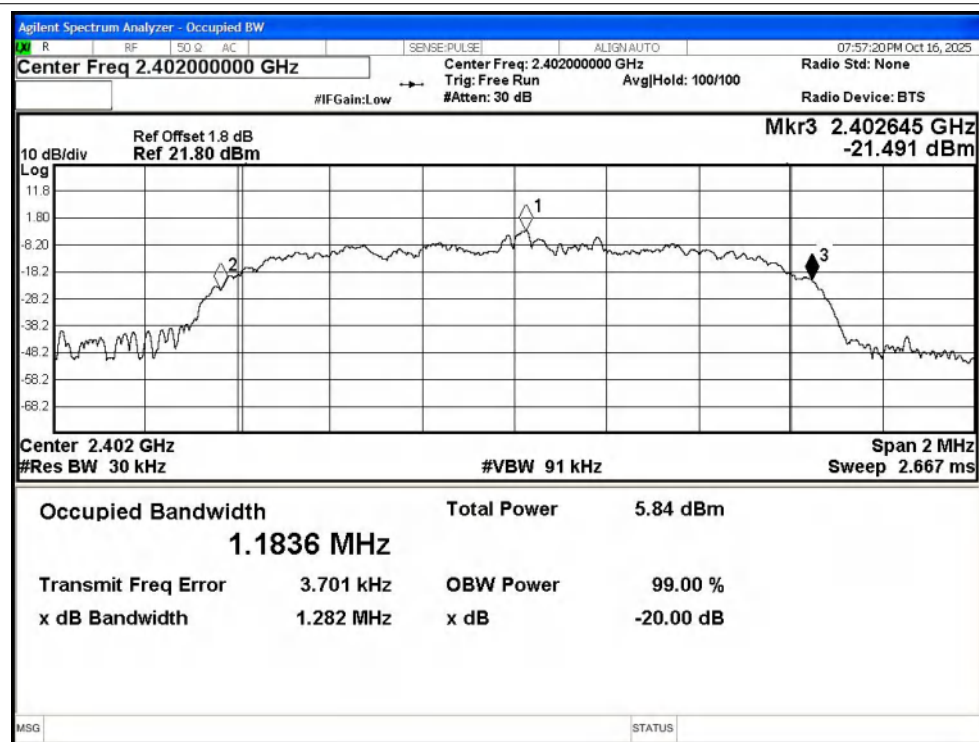
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



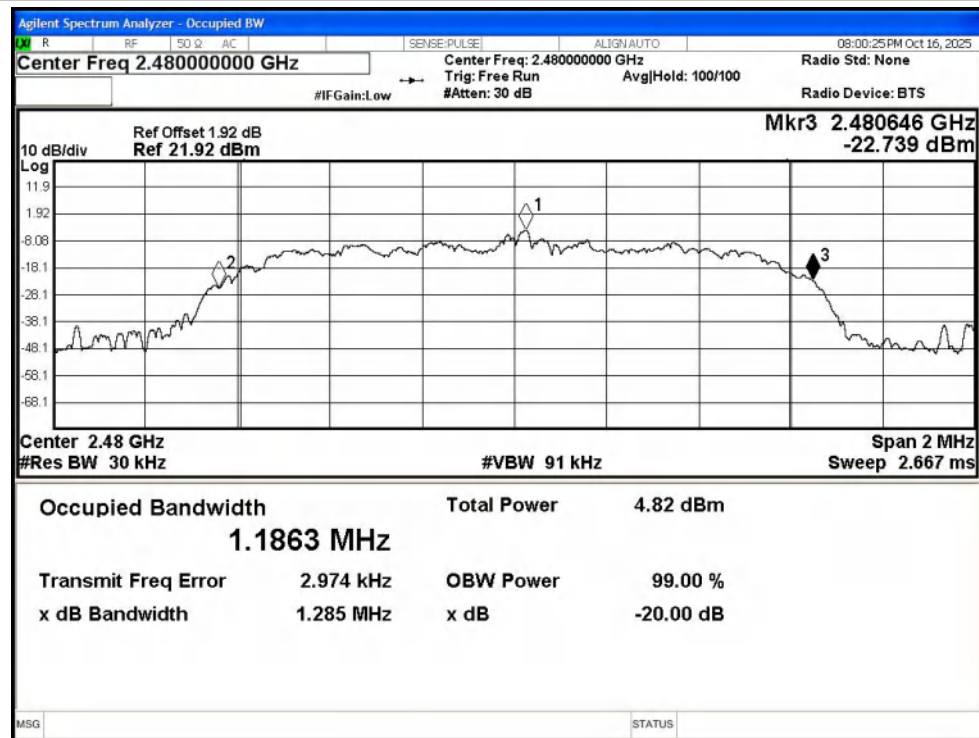
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



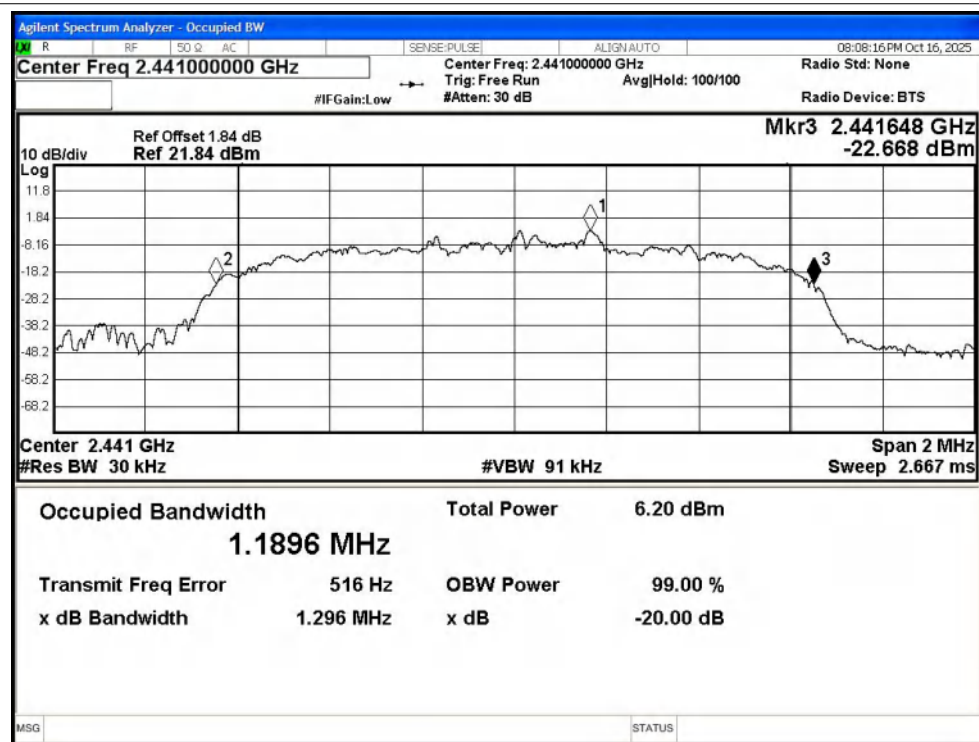
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



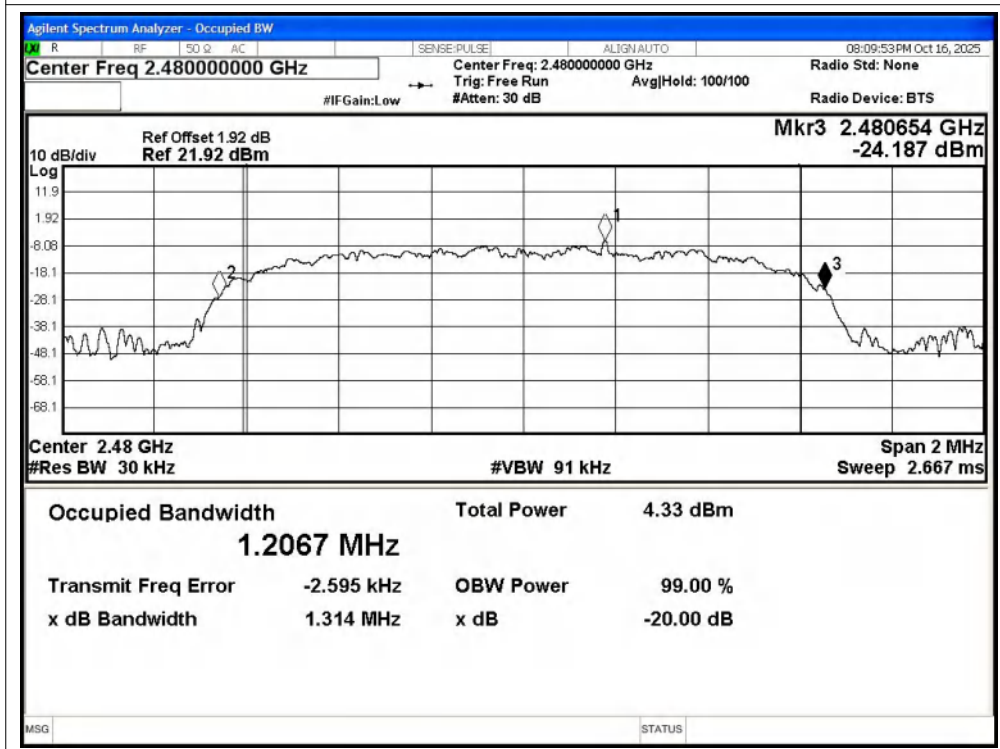
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1



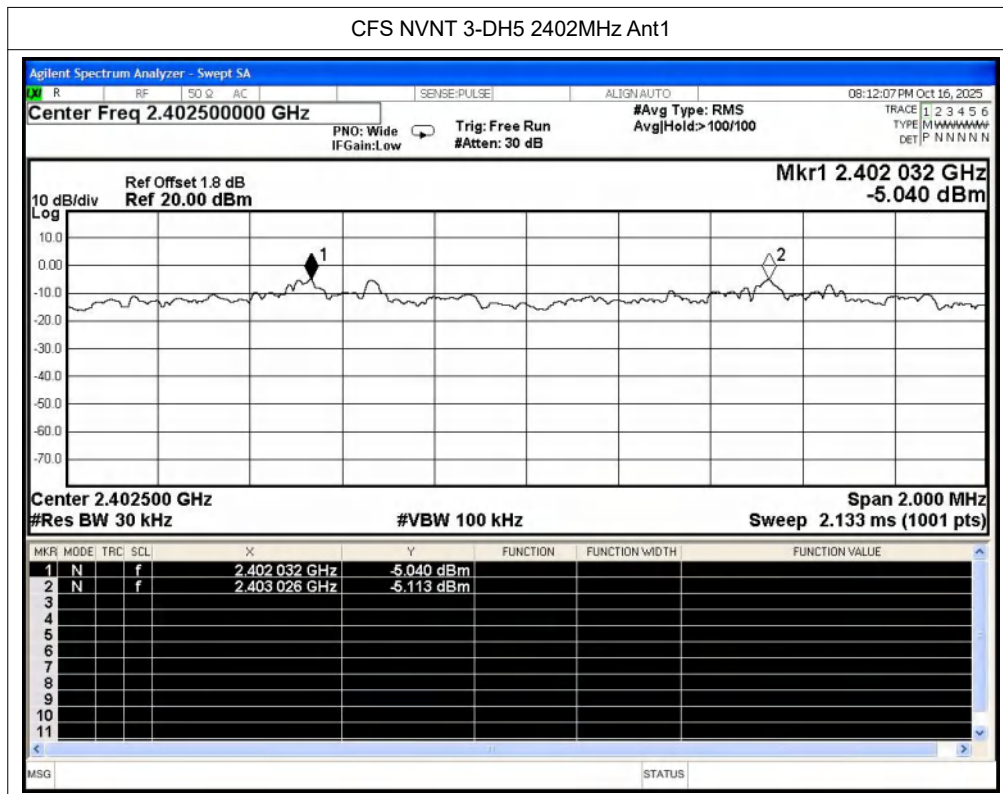
2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.35	21	Pass
NVNT	1-DH5	2441	Ant1	2.3	21	Pass
NVNT	1-DH5	2480	Ant1	1.33	21	Pass
NVNT	2-DH5	2402	Ant1	1.58	21	Pass
NVNT	2-DH5	2441	Ant1	1.58	21	Pass
NVNT	2-DH5	2480	Ant1	0.67	21	Pass
NVNT	3-DH5	2402	Ant1	2	21	Pass
NVNT	3-DH5	2441	Ant1	2.1	21	Pass
NVNT	3-DH5	2480	Ant1	1.07	21	Pass

3. Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.838	2402.83	0.992	0.657	Pass
NVNT	2-DH5	Ant1	2402.01	2403.014	1.004	0.857	Pass
NVNT	3-DH5	Ant1	2402.032	2403.026	0.994	0.876	Pass

[illegible]

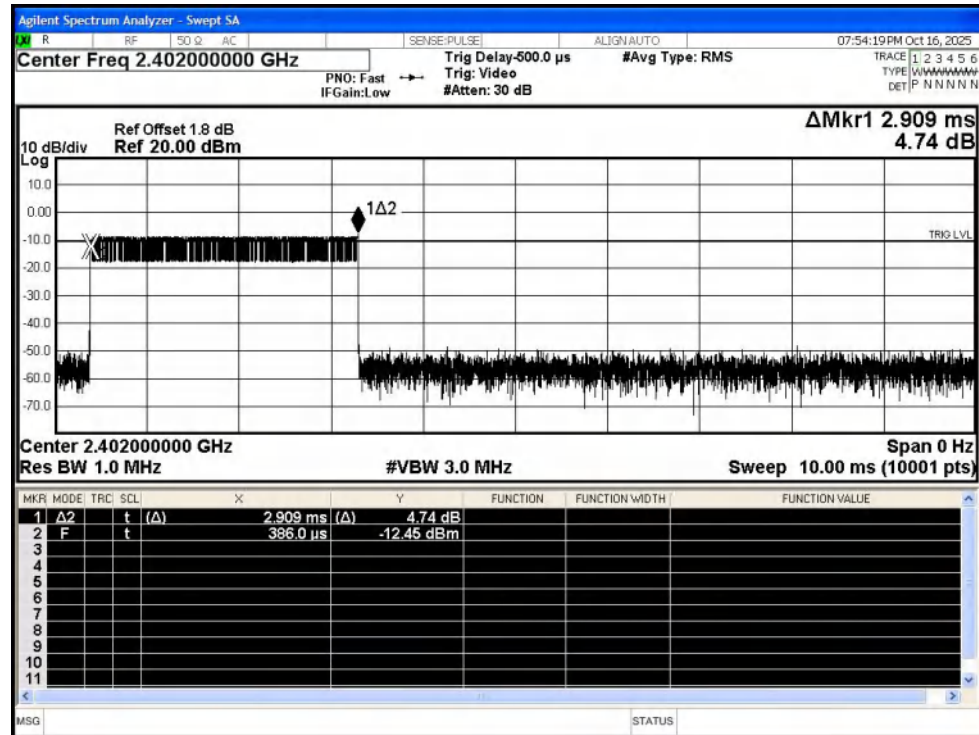


4. Dwell Time

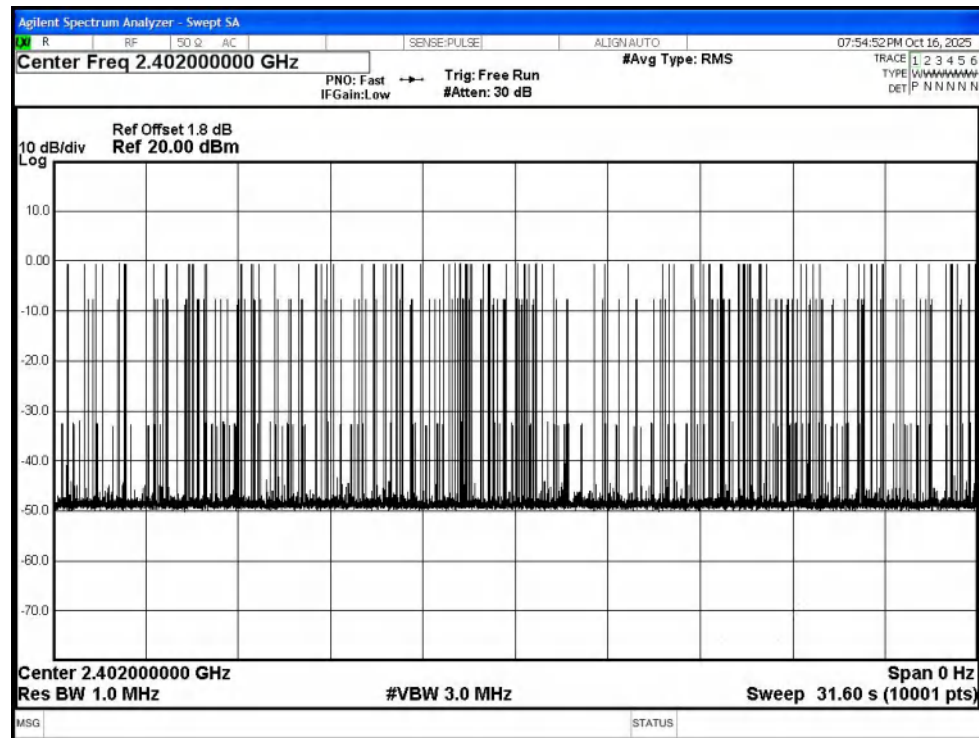
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.909	287.991	99	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	321.678	111	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.898	304.29	105	31600	400	Pass

Test Graphs

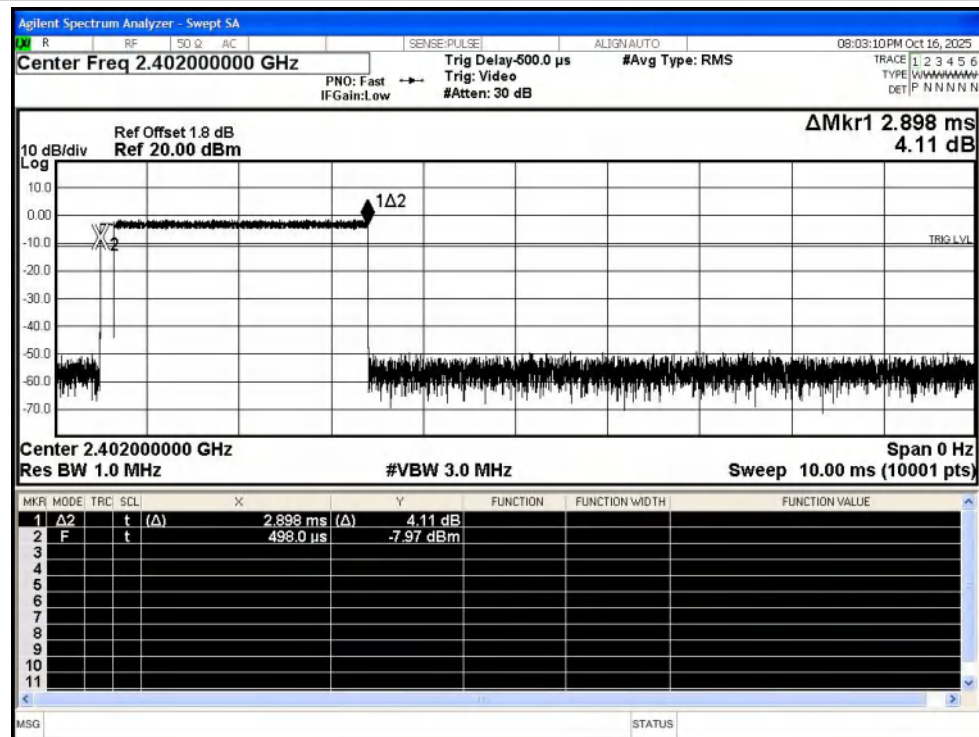
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



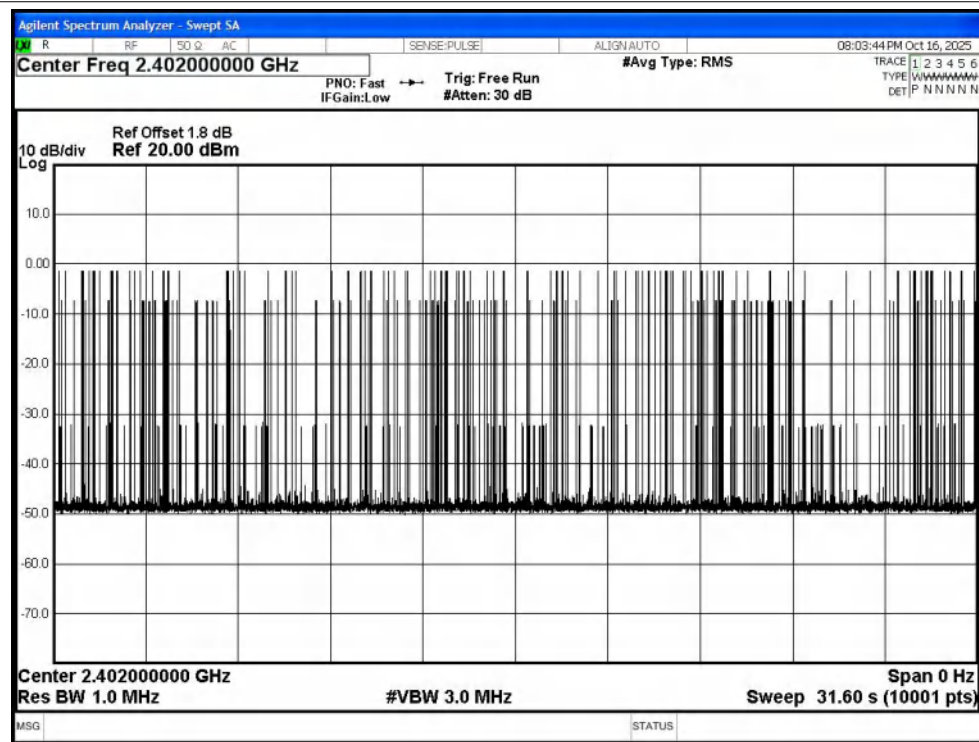
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



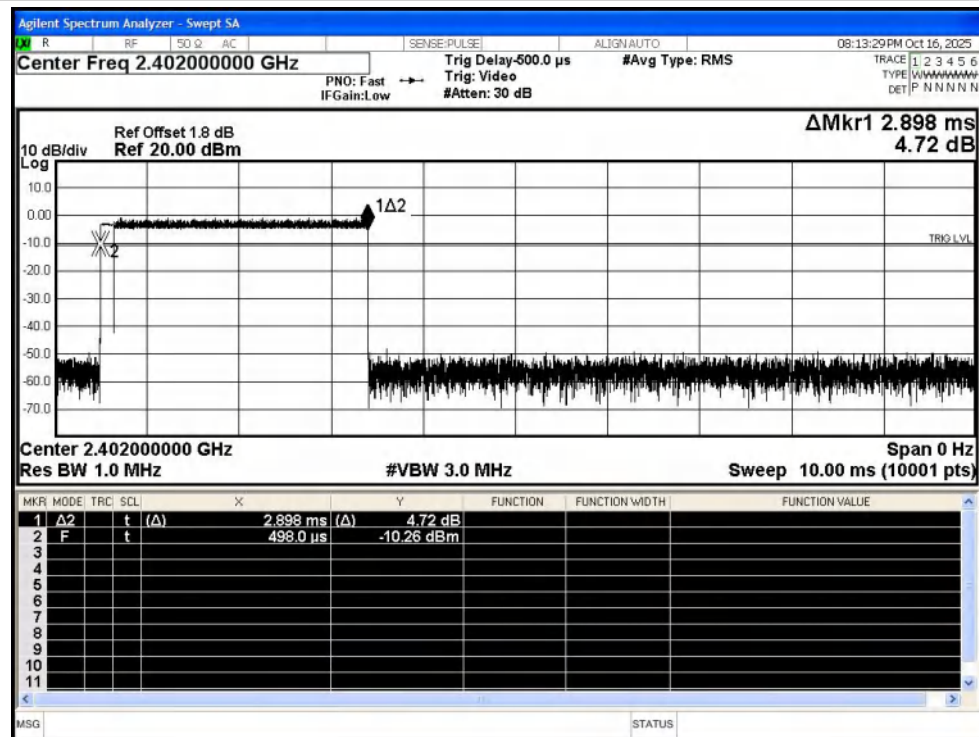
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



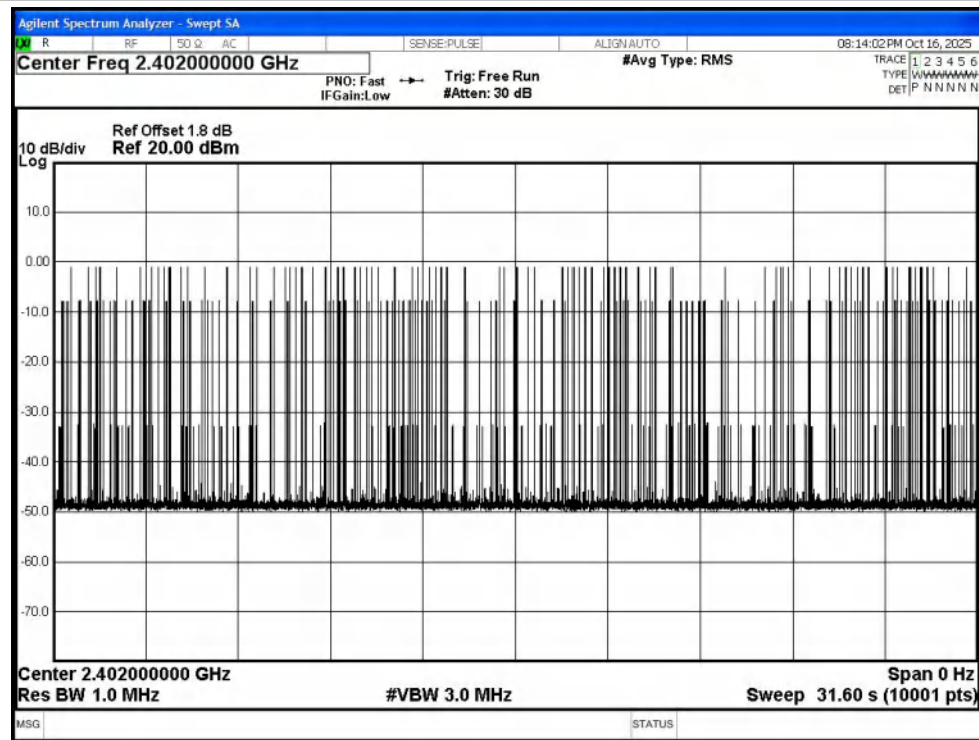
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated



5. Number of Hopping Channel

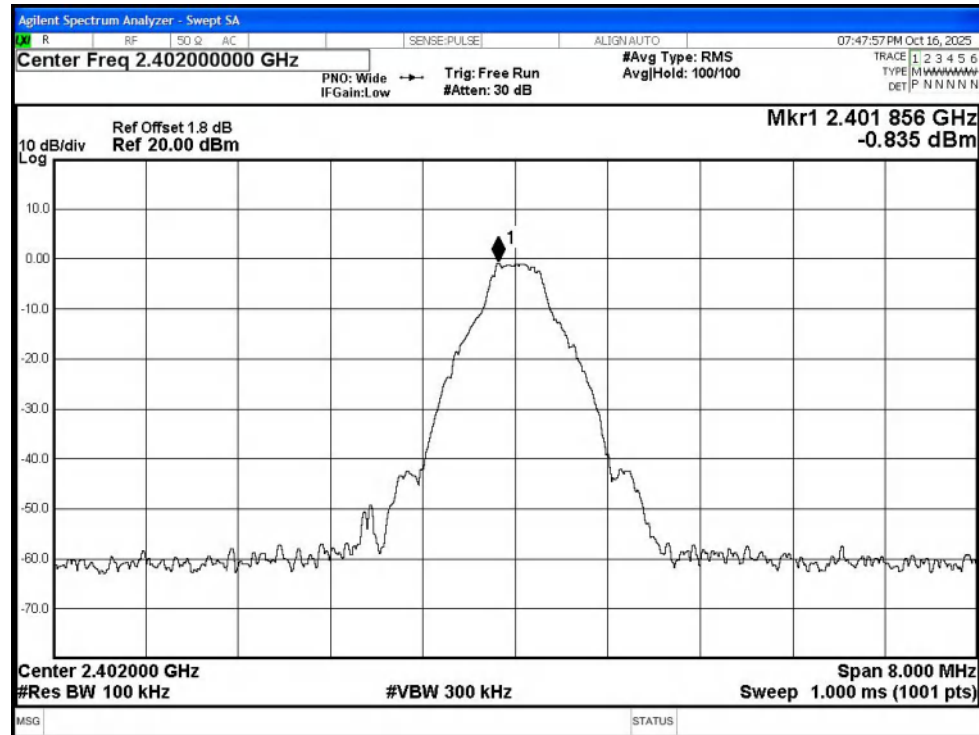
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

6. Band Edge

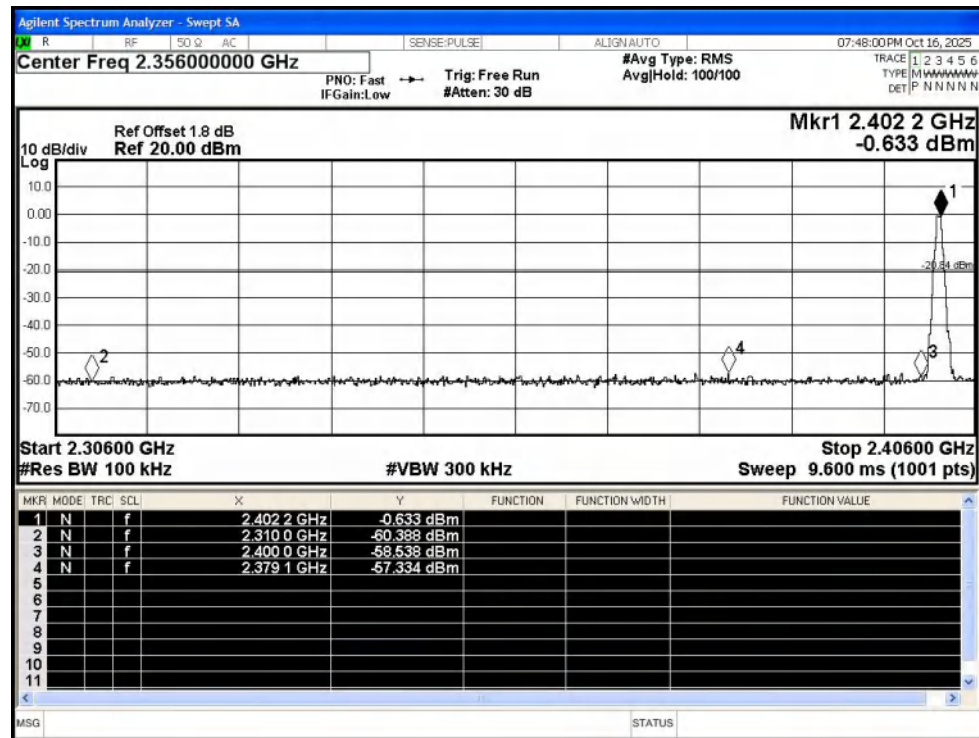
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.5	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.82	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-51.43	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.58	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-51.44	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-55.57	-20	Pass

Test Graphs

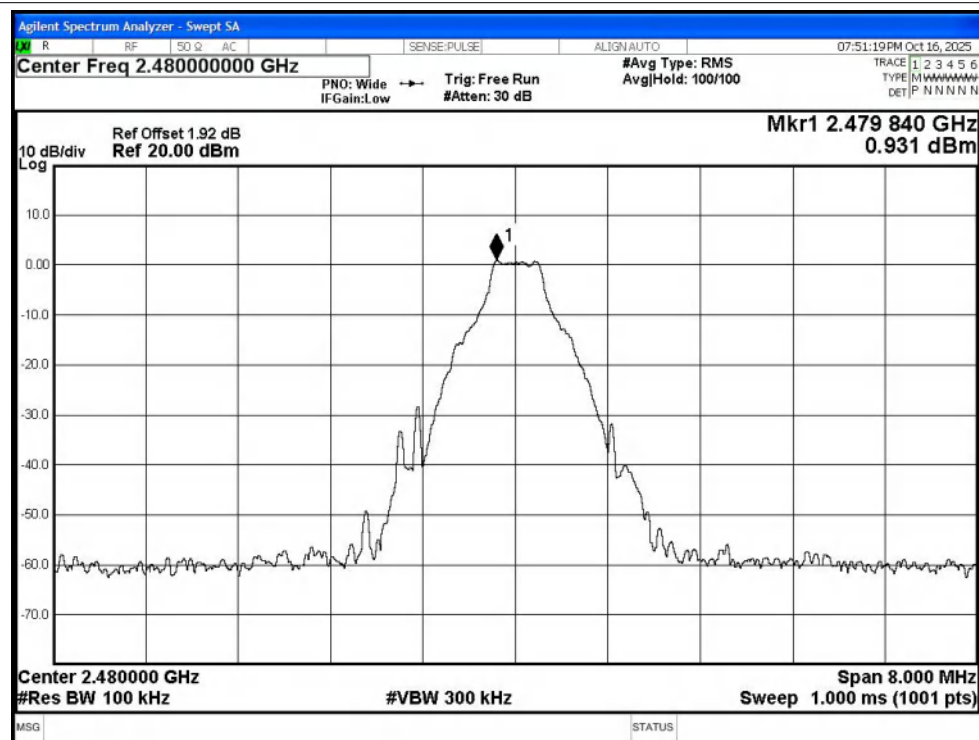
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



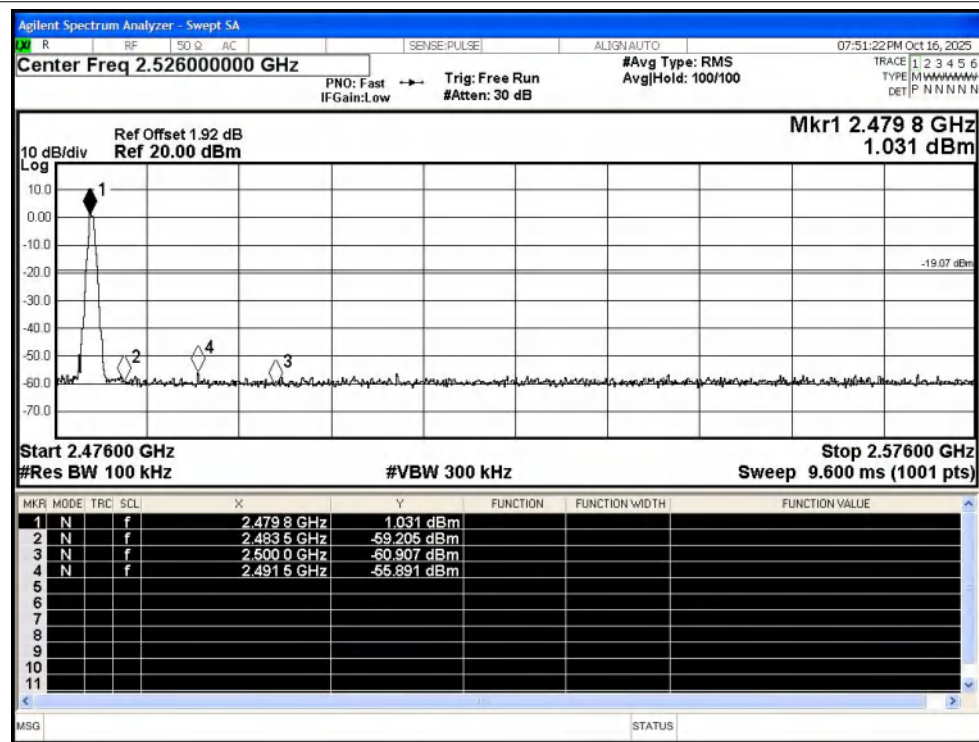
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



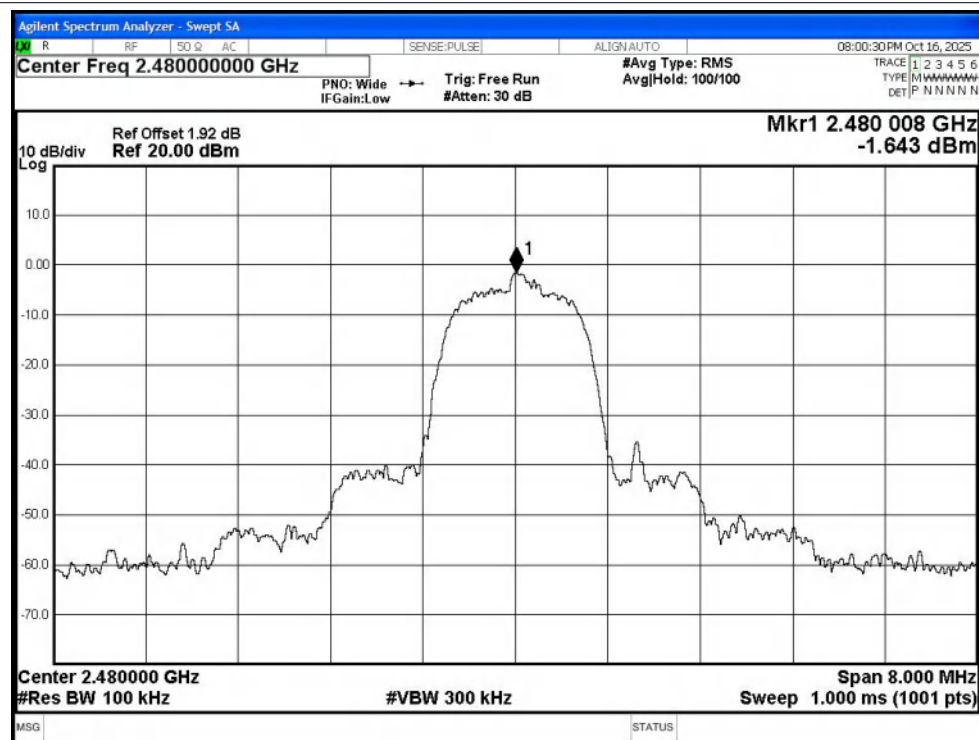
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



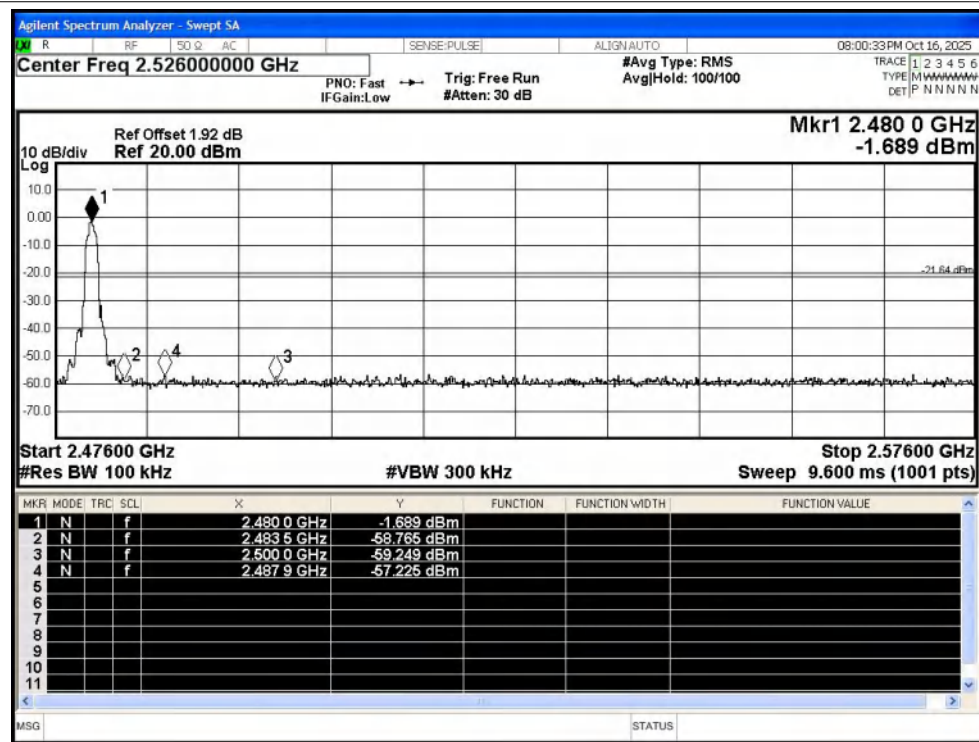
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



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



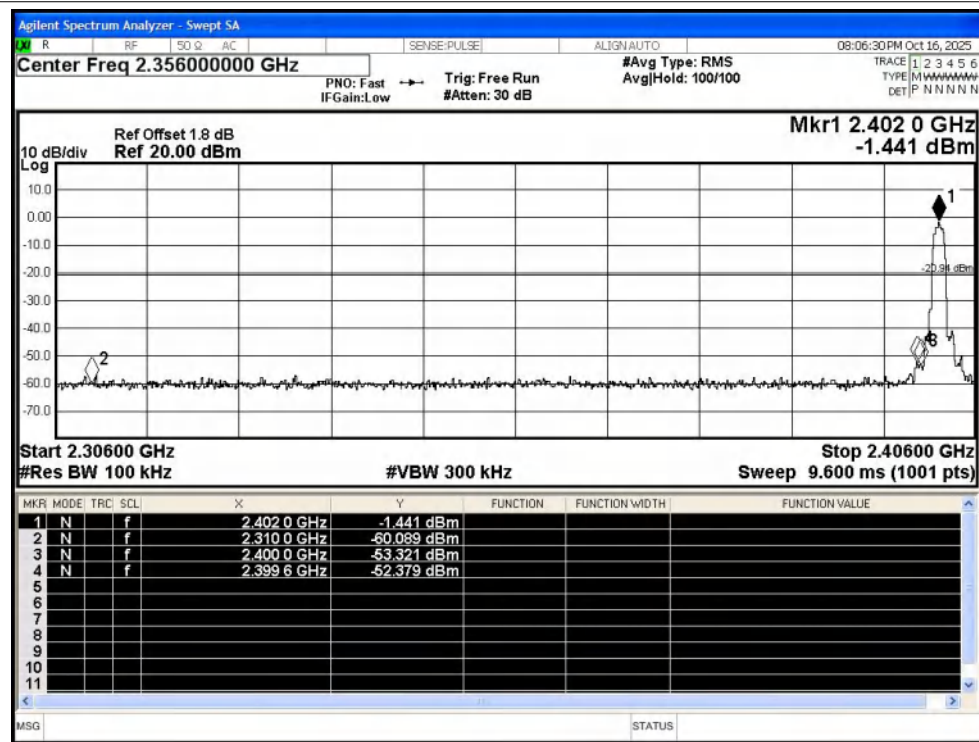
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



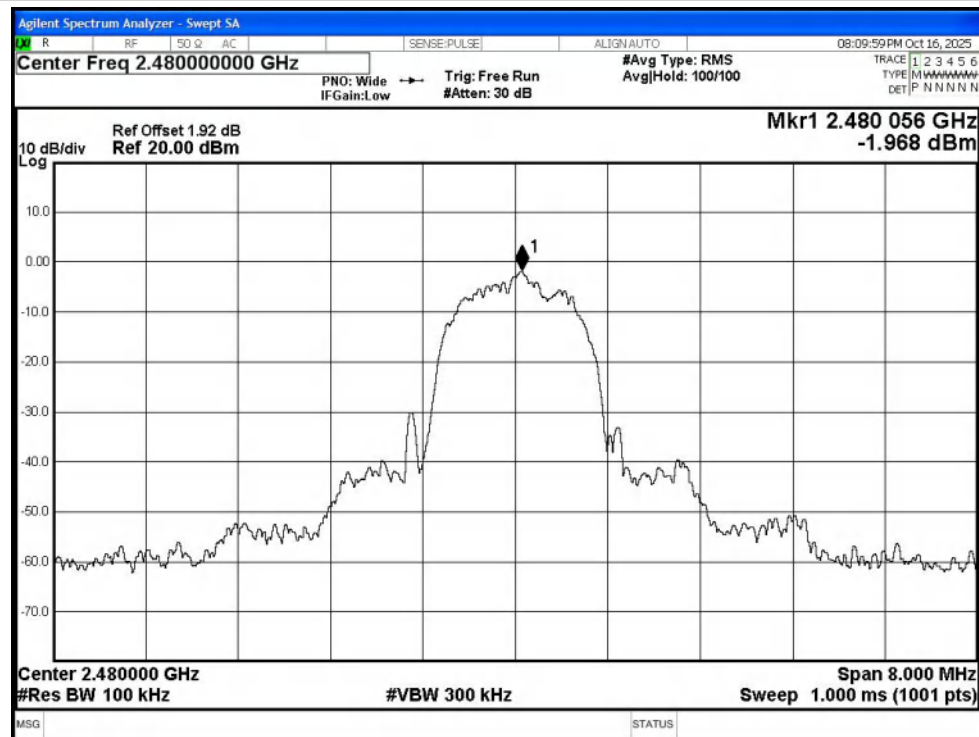
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



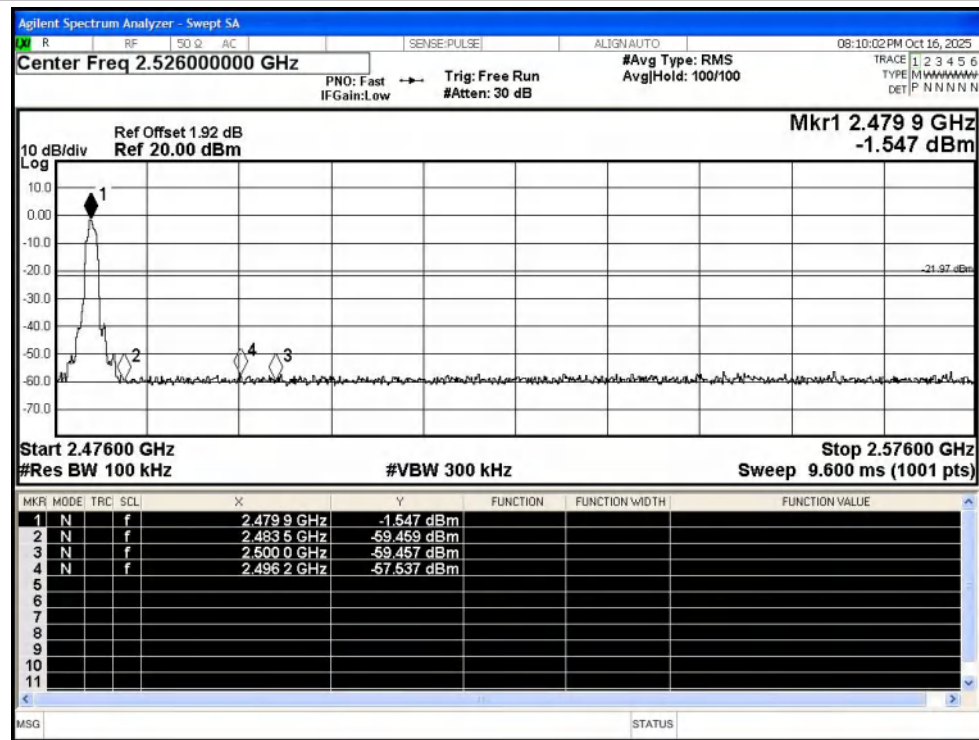
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

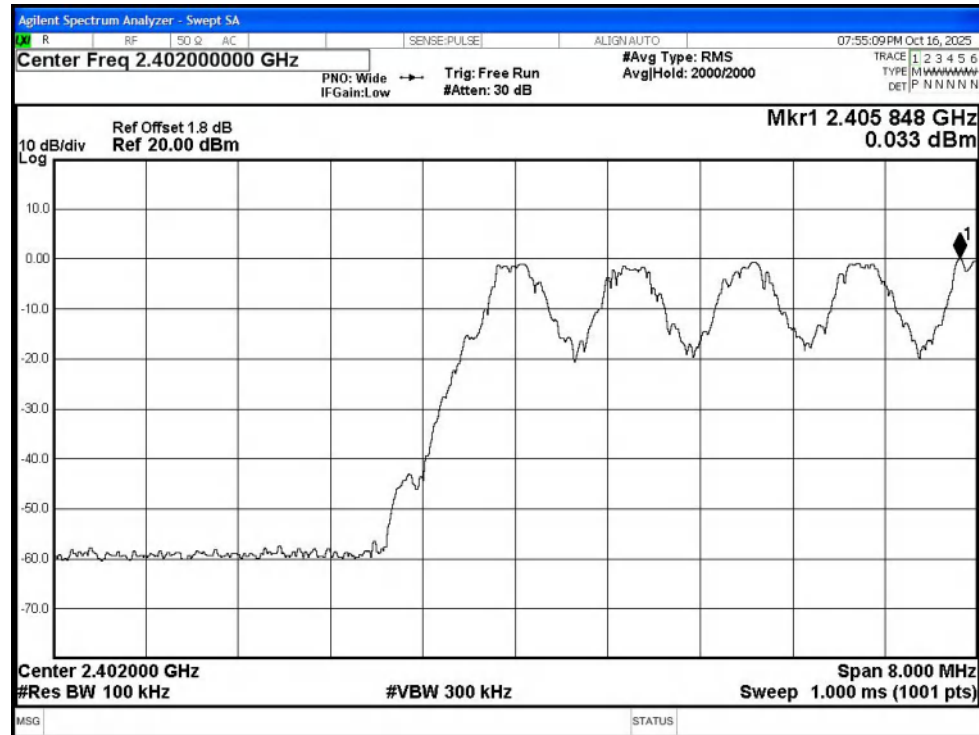


(Hopping)

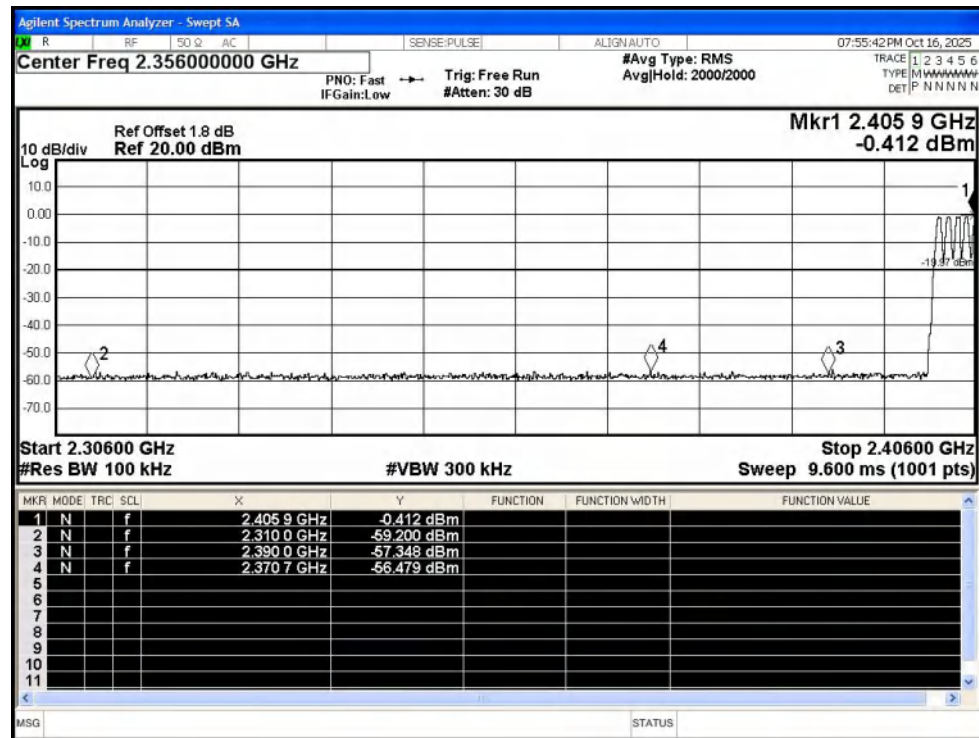
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-56.51	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-57.35	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.75	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.31	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-53.55	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.1	-20	Pass

Test Graphs

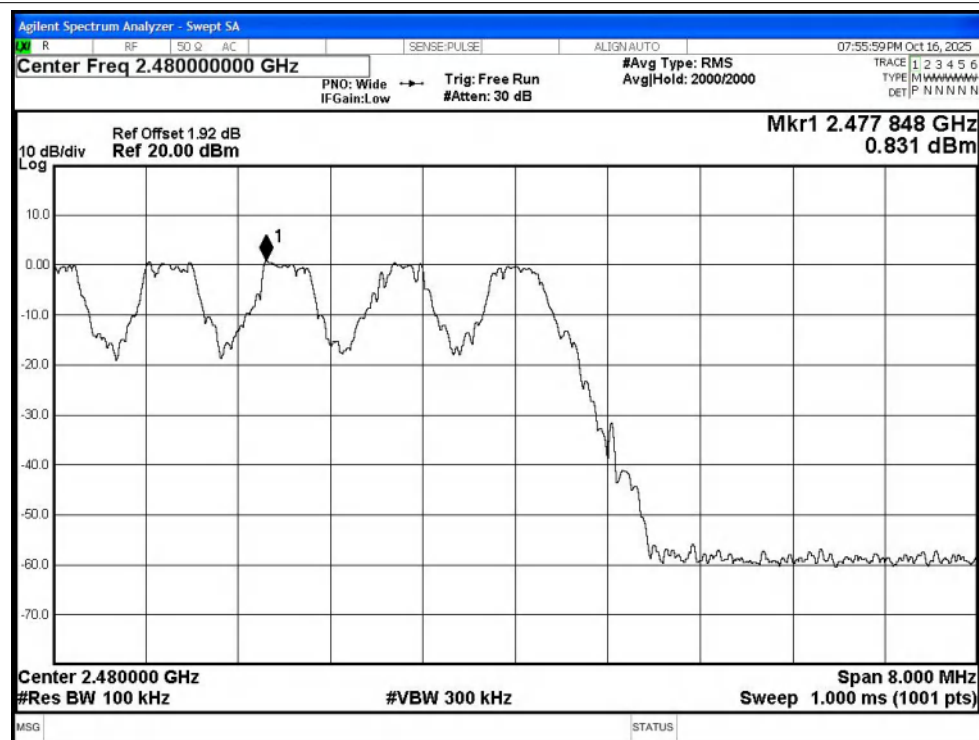
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



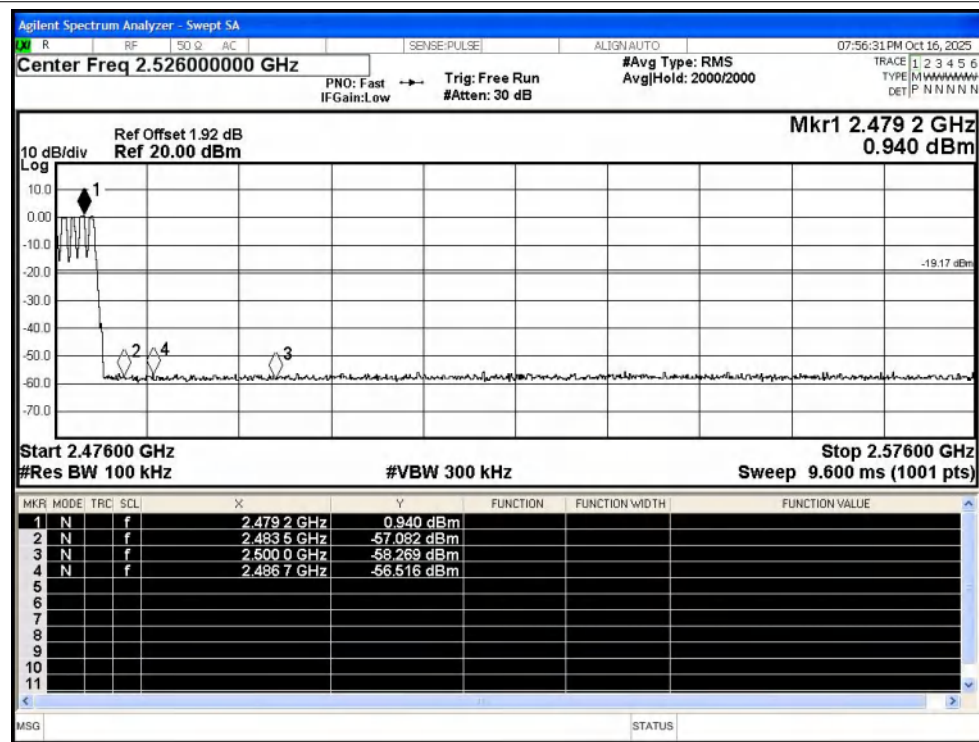
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



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



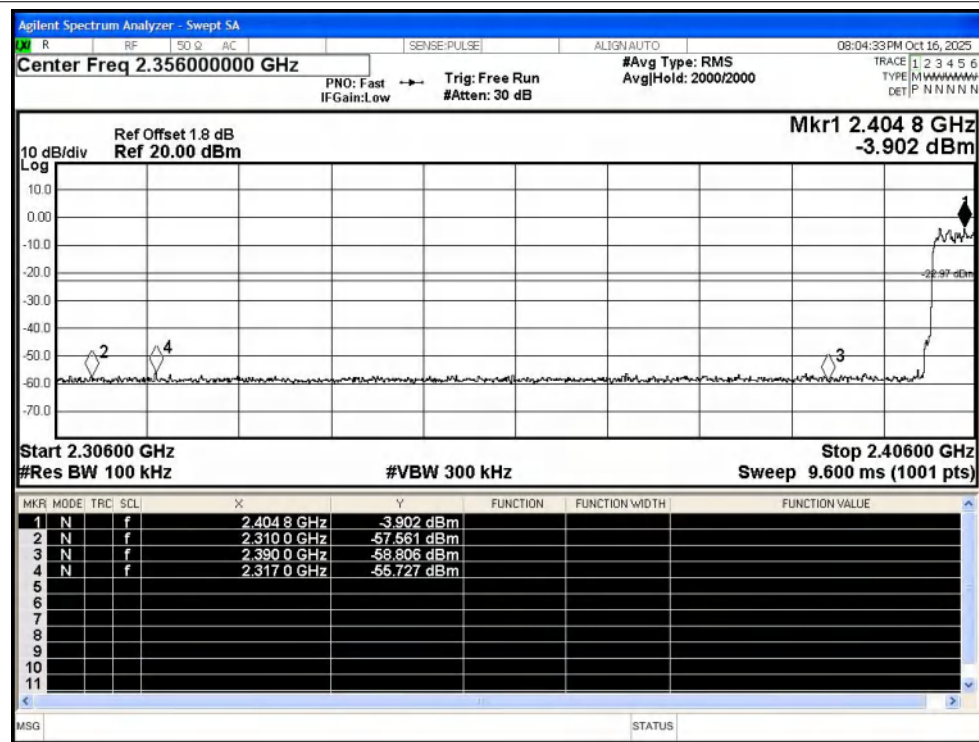
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



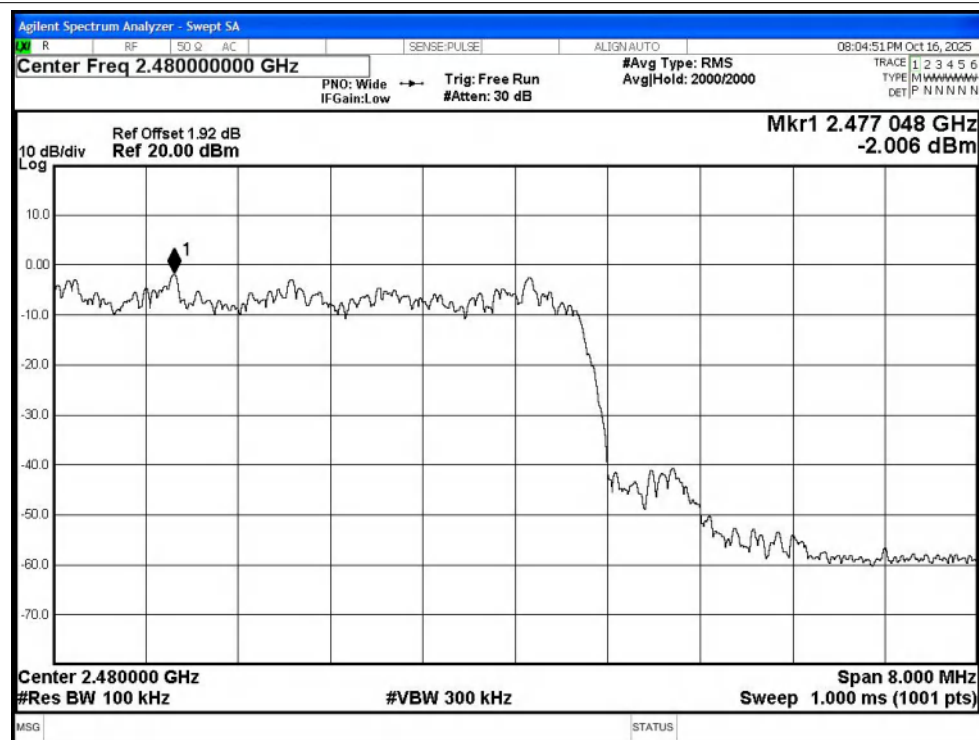
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



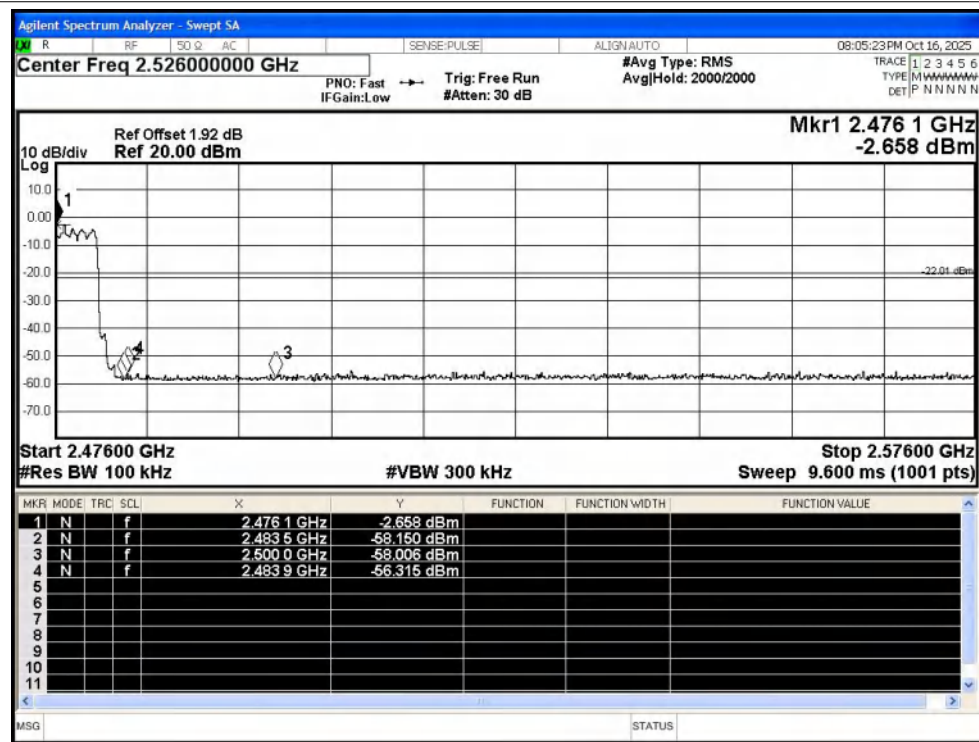
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



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



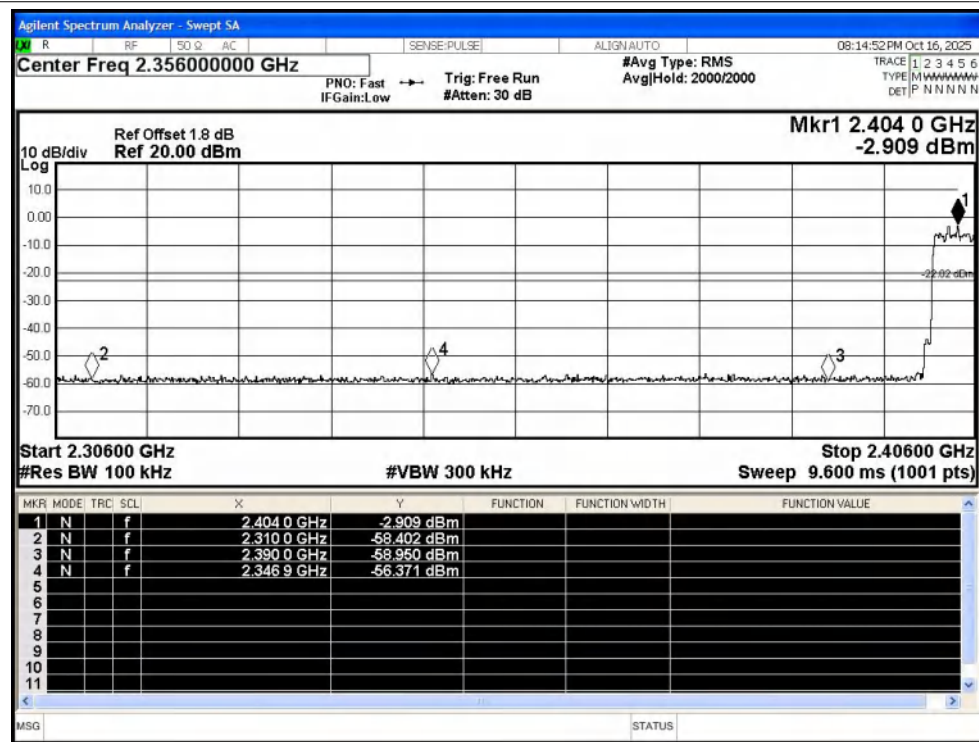
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



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



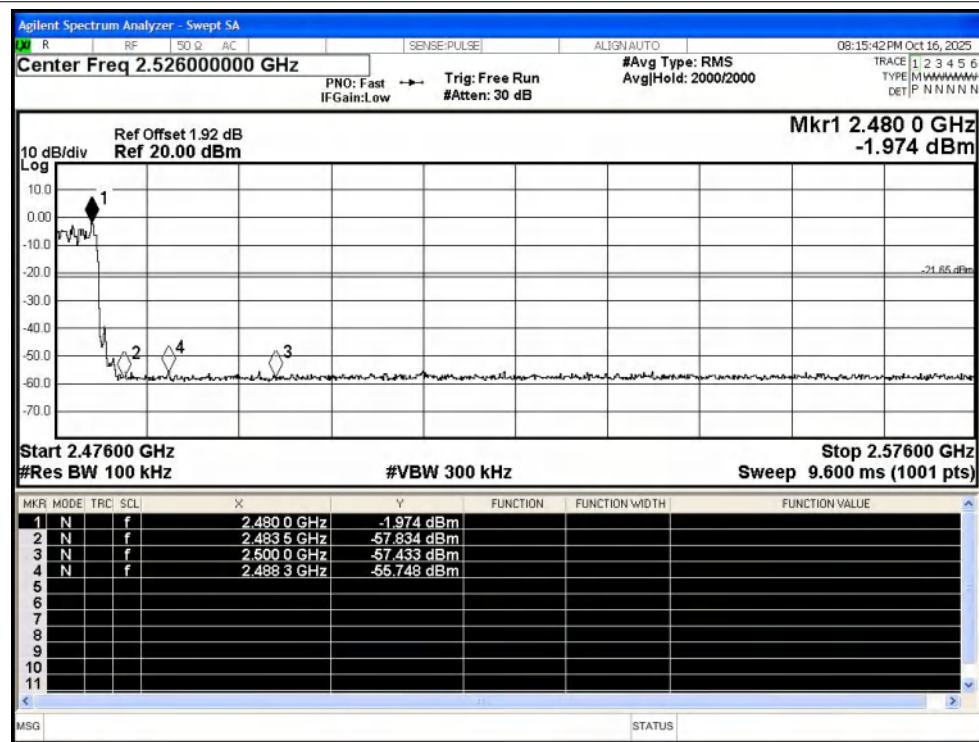
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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



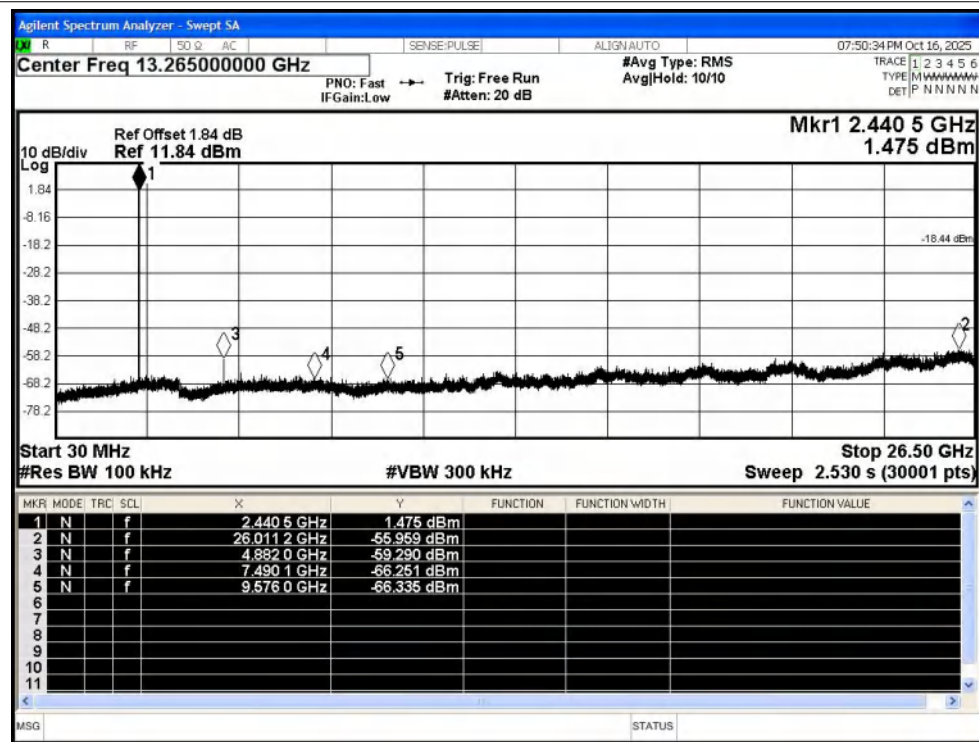
7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-54.67	-20	Pass
NVNT	1-DH5	2441	Ant1	-57.52	-20	Pass
NVNT	1-DH5	2480	Ant1	-56.16	-20	Pass
NVNT	2-DH5	2402	Ant1	-54.37	-20	Pass
NVNT	2-DH5	2441	Ant1	-54.83	-20	Pass
NVNT	2-DH5	2480	Ant1	-53.5	-20	Pass
NVNT	3-DH5	2402	Ant1	-55.1	-20	Pass
NVNT	3-DH5	2441	Ant1	-54.81	-20	Pass
NVNT	3-DH5	2480	Ant1	-54.02	-20	Pass

Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



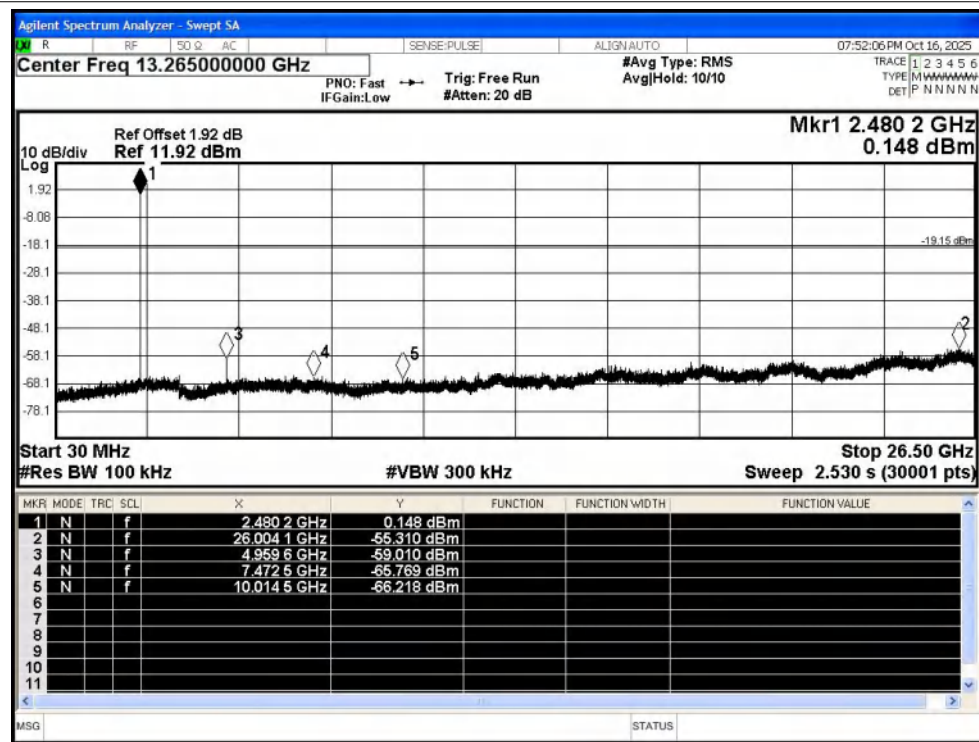
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



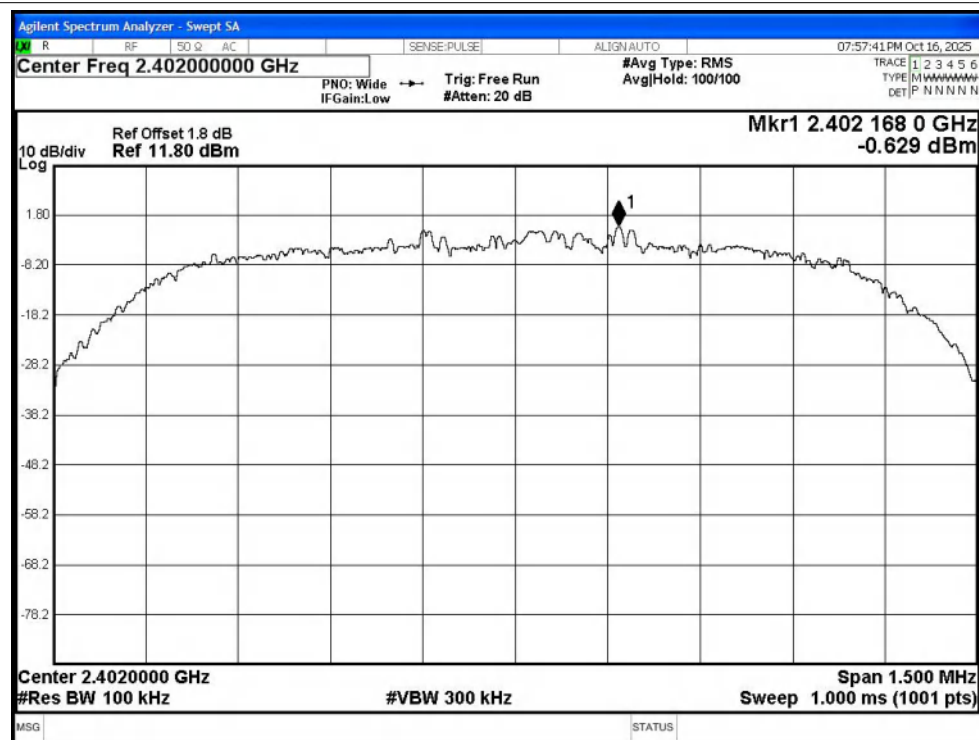
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



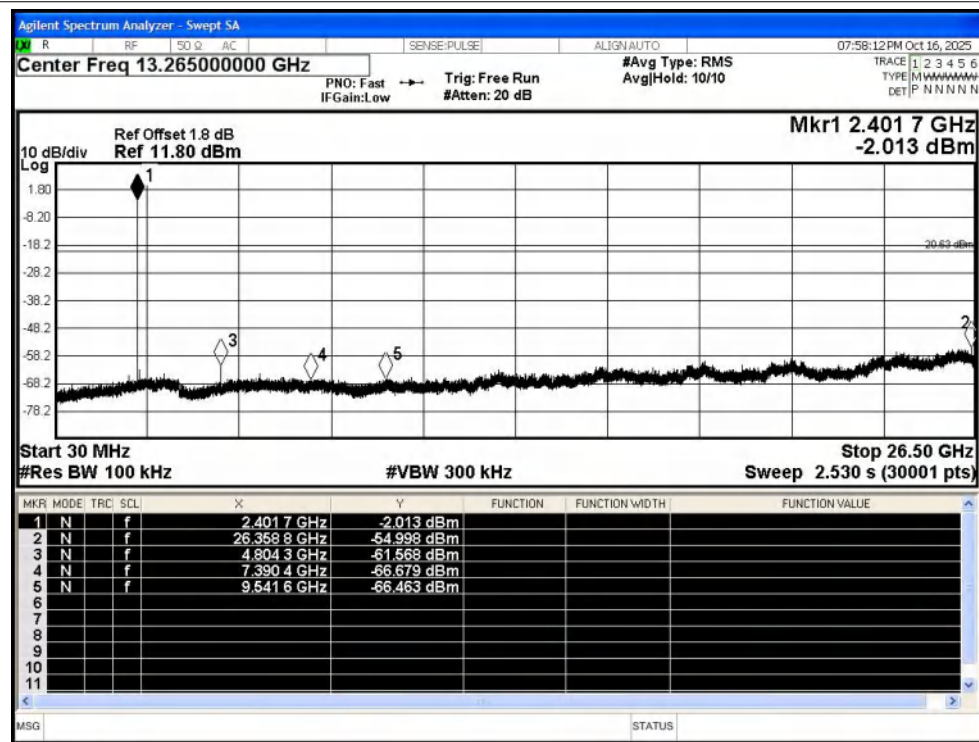
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



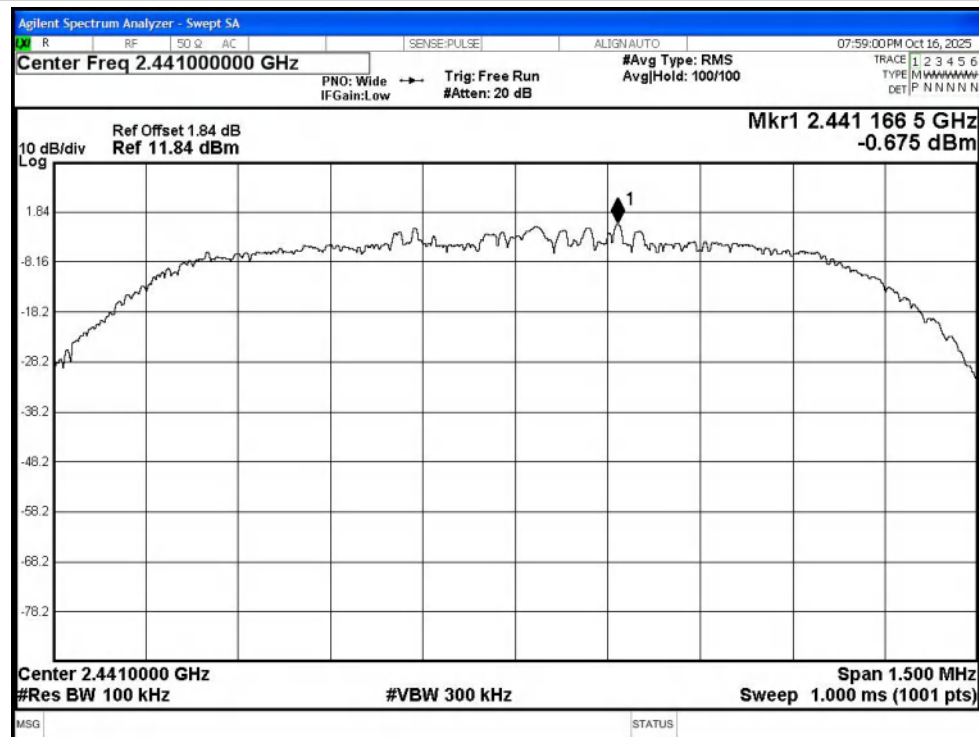
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



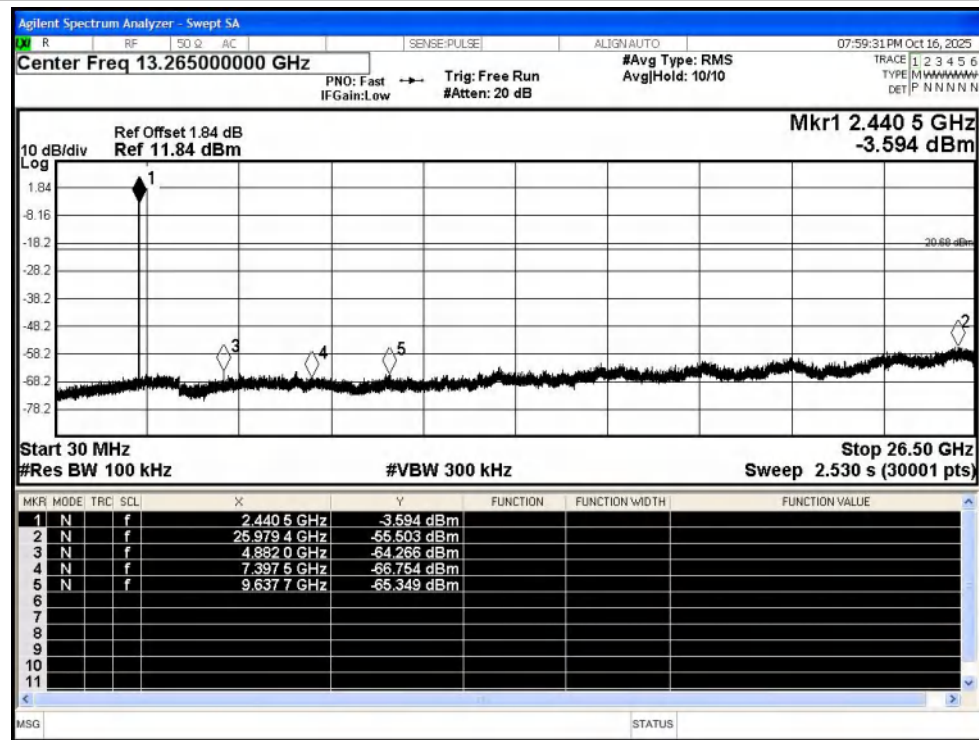
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



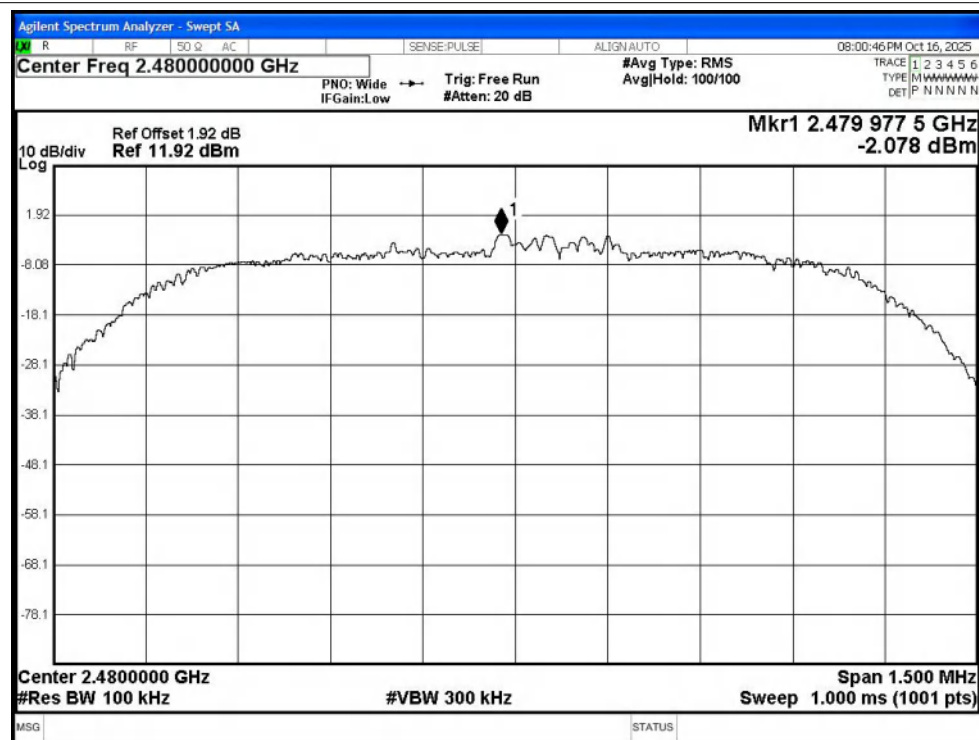
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



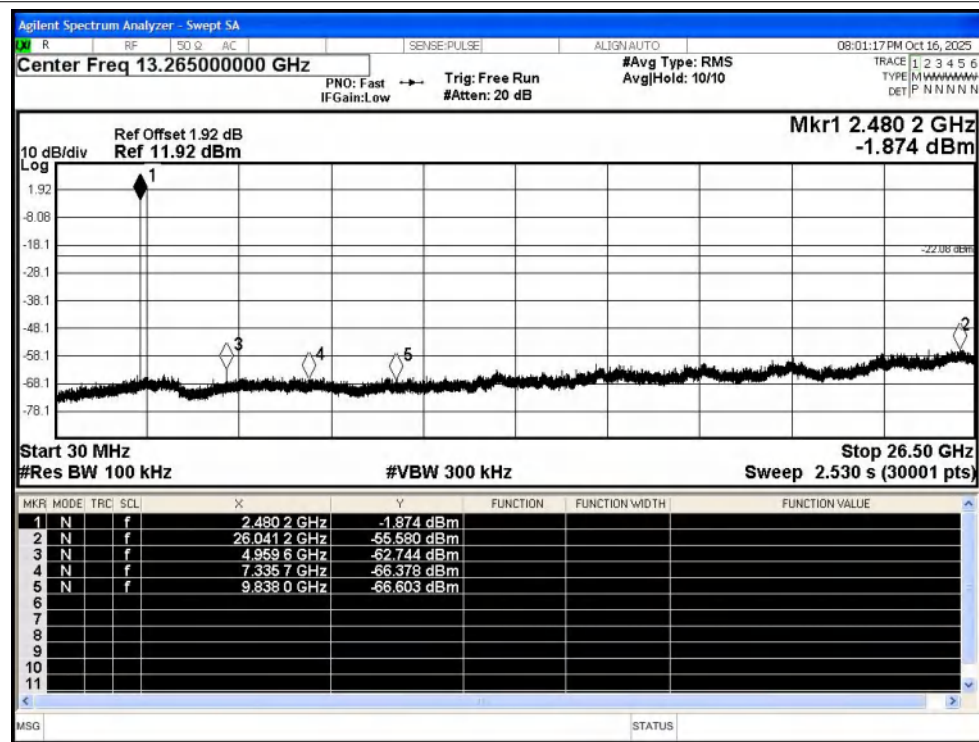
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



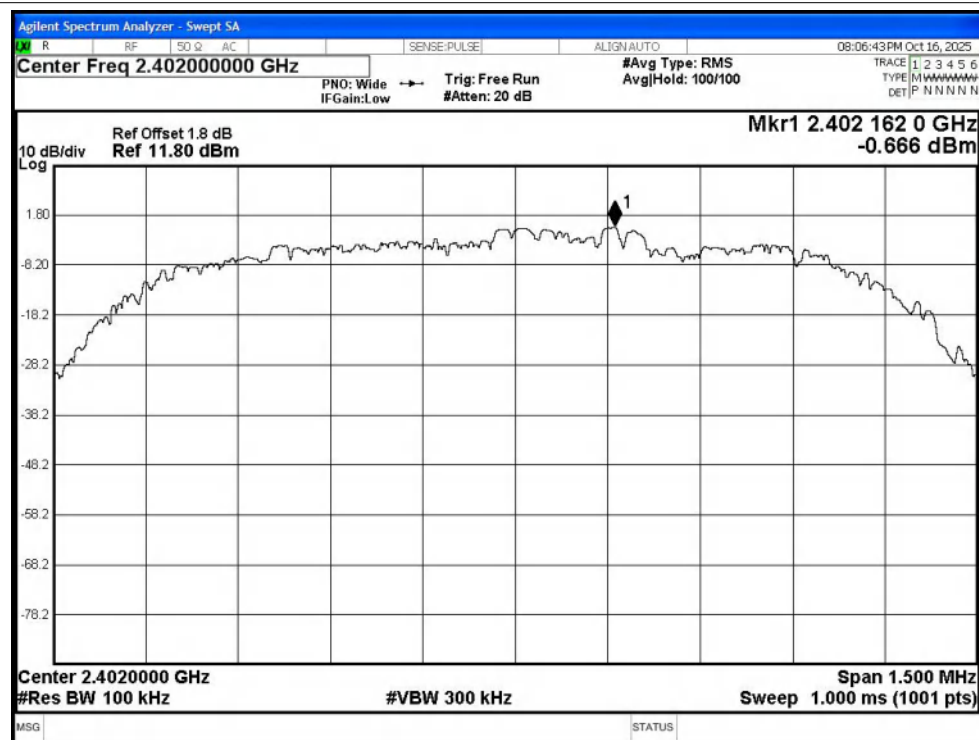
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



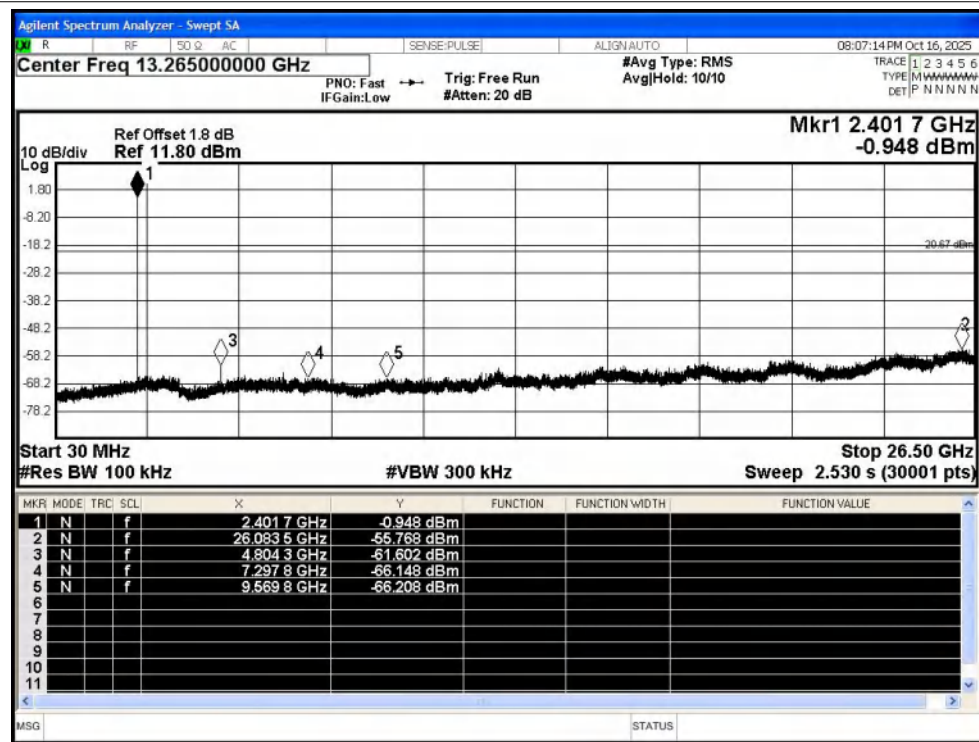
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



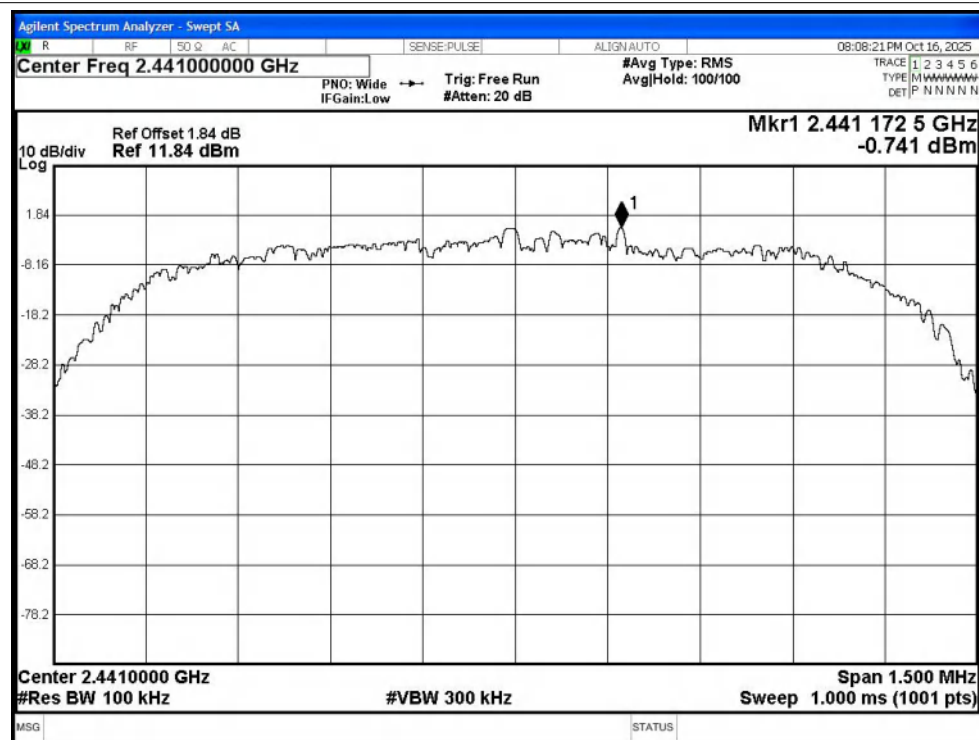
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



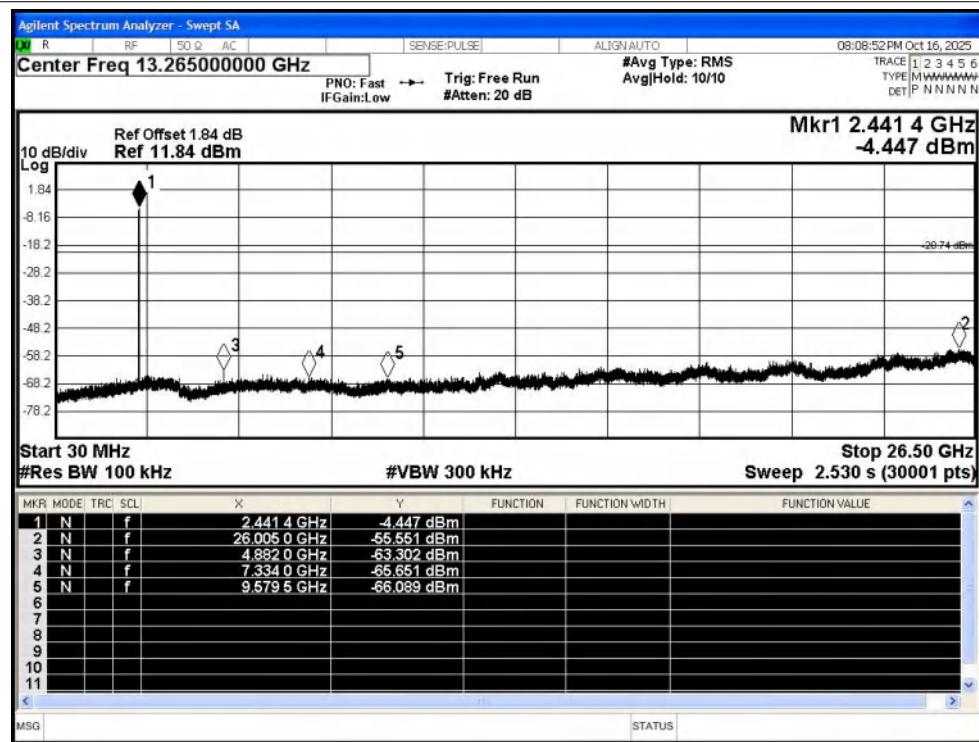
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



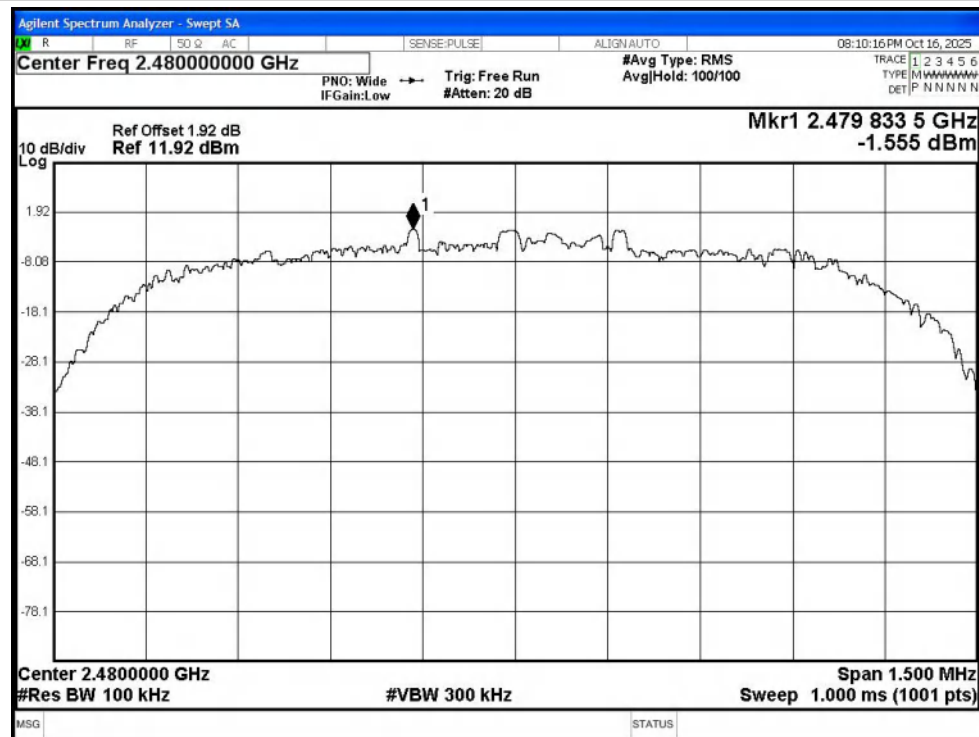
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



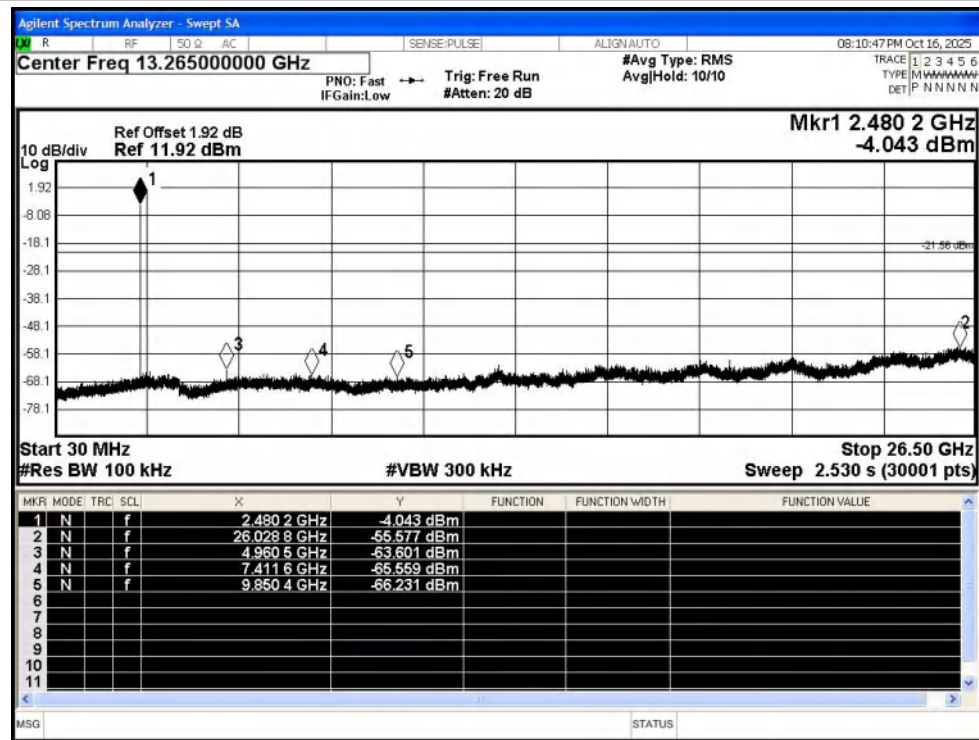
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref

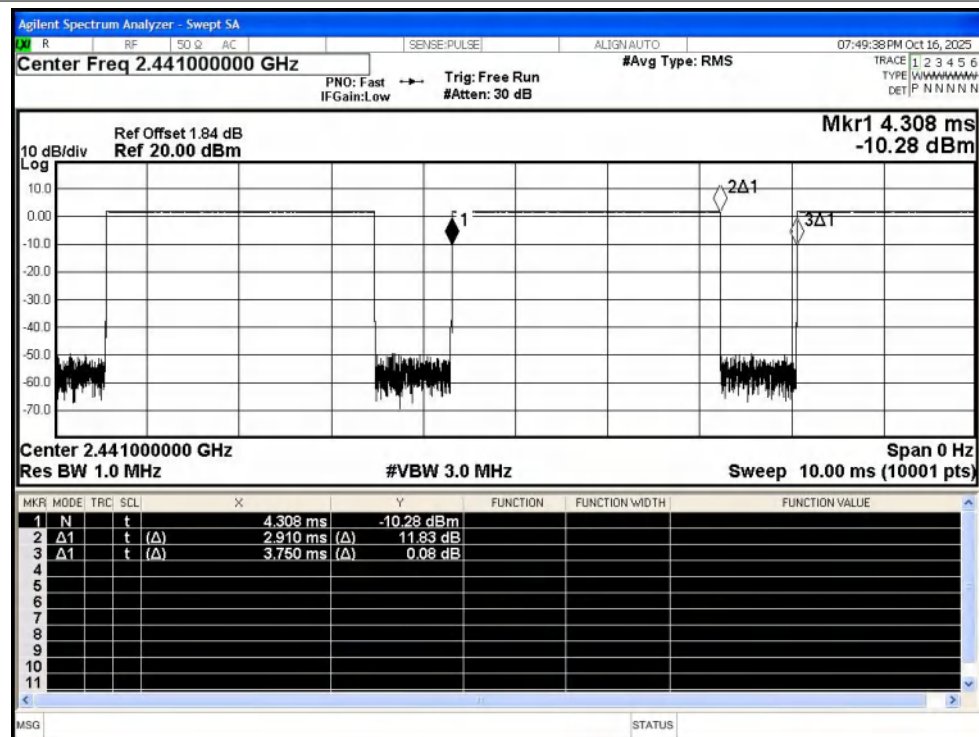


Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

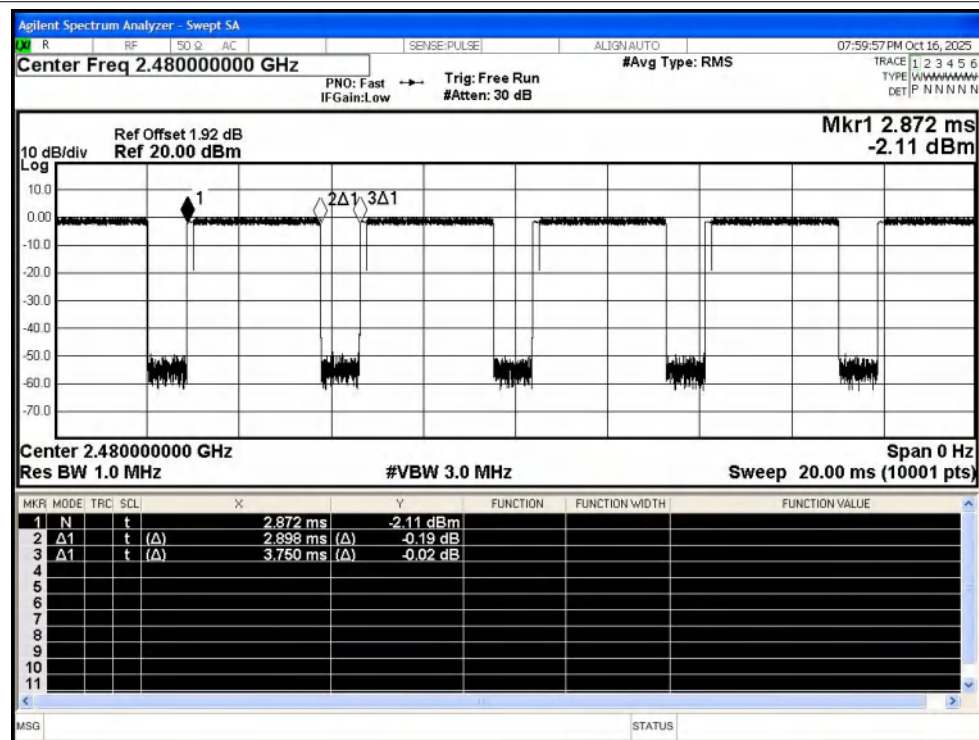


8. Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.6	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	77.33	1.12	0.34
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



[illegible][illegible]



Duty Cycle NVNT 3-DH5 2402MHz Ant1

The screenshot shows an Agilent Spectrum Analyzer interface. The top bar indicates 'Agilent Spectrum Analyzer - Swept SA'. The main display shows a signal at 'Center Freq 2.402000000 GHz'. The signal is a periodic pulse train. A marker '1' is placed on the signal, showing a value of 'Mkr1 3.320 ms' and '-0.81 dBm'. The y-axis is labeled '10 dB/div' and 'Log'. The x-axis is labeled 'Sweep 20.00 ms (10001 pts)'. The bottom status bar shows 'MSG' and 'STATUS'.

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		t	3.320 ms	-0.81 dBm			
2	Δ1		t (Δ)	2.898 ms (Δ)	-1.66 dB			
3	Δ1		t (Δ)	3.750 ms (Δ)	0.00 dB			

[illegible]

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	-49.69	3.27	-	48.84	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.82	3.27	1.1	40.81	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2346.384	-47.21	3.27	-	51.32	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2377.584	-58.06	3.27	1.1	41.57	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.31	3.27	-	48.22	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-59.15	3.27	1.1	40.48	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.25	3.27	-	49.28	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.58	3.27	1.1	42.05	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.536	-45.14	3.27	-	53.39	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2484.904	-57.32	3.27	1.1	42.31	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-51.1	3.27	-	47.43	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.9	3.27	1.1	41.73	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.7	3.27	-	46.83	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.95	3.27	1.12	40.70	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2348.016	-46.78	3.27	-	51.75	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2386.896	-57.76	3.27	1.12	41.89	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.15	3.27	-	49.38	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.76	3.27	1.12	40.89	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-48.31	3.27	-	50.22	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.76	3.27	1.12	41.89	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.944	-44.96	3.27	-	53.57	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.752	-57.12	3.27	1.12	42.53	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.6	3.27	-	48.93	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.55	3.27	1.12	41.10	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.13	3.27	-	47.40	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.85	3.27	1.12	40.80	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2335.728	-47.64	3.27	-	50.89	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2388.624	-58.01	3.27	1.12	41.64	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.63	3.27	-	47.90	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.42	3.27	1.12	41.23	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.16	3.27	-	49.37	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.76	3.27	1.12	41.89	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2489.176	-46.64	3.27	-	51.89	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.824	-57.1	3.27	1.12	42.55	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.35	3.27	-	48.18	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.97	3.27	1.12	41.68	Average	54	Pass

MR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.402 256 GHz	1.032 dBm			
2	N		f	2.310 000 GHz	-51.695 dBm			
3	N		f	2.390 000 GHz	-49.151 dBm			
4	N		f	2.348 016 GHz	-46.783 dBm			
5								
6								
7								
8								
9								
10								
11								

[illegible]

MR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.480 080 GHz	0.498 dBm			
2	N		f	2.483 500 GHz	-49.161 dBm			
3	N		f	2.500 000 GHz	-50.354 dBm			
4	N		f	2.489 176 GHz	-46.642 dBm			
5								
6								
7								
8								
9								
10								
11								

[illegible]