

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	smart watch
Test Model:	K70A
Sample ID:	HC-C-202504-0026-01-02#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.8V
Test Engineer:	Lily Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202504-0026-91 The report only show the worst case data.	

Contents

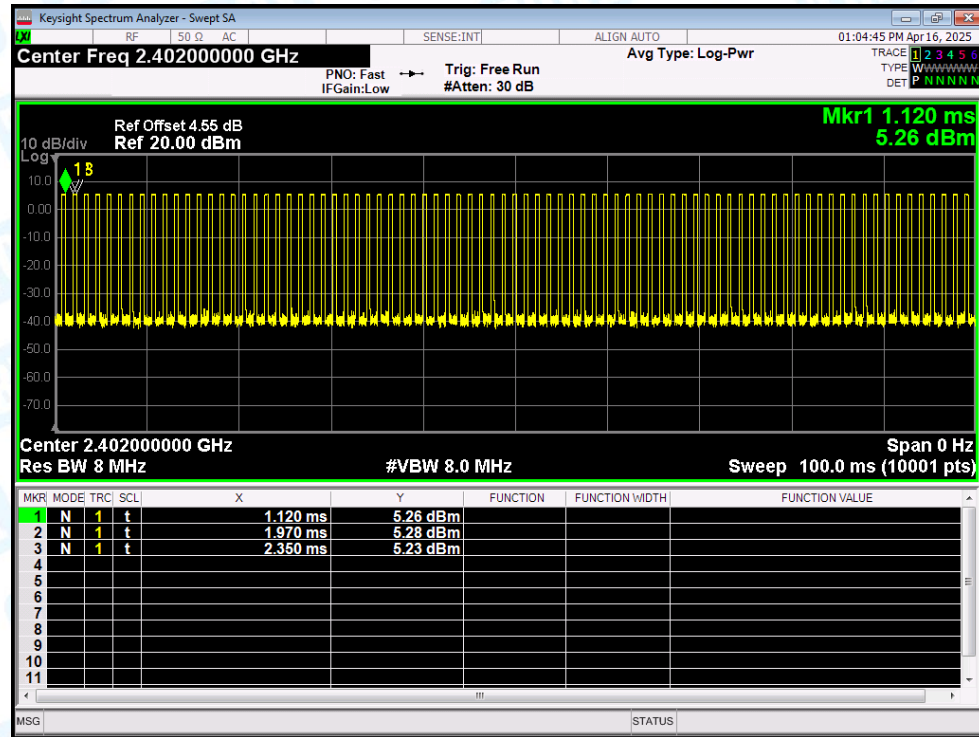
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1.Duty Cycle

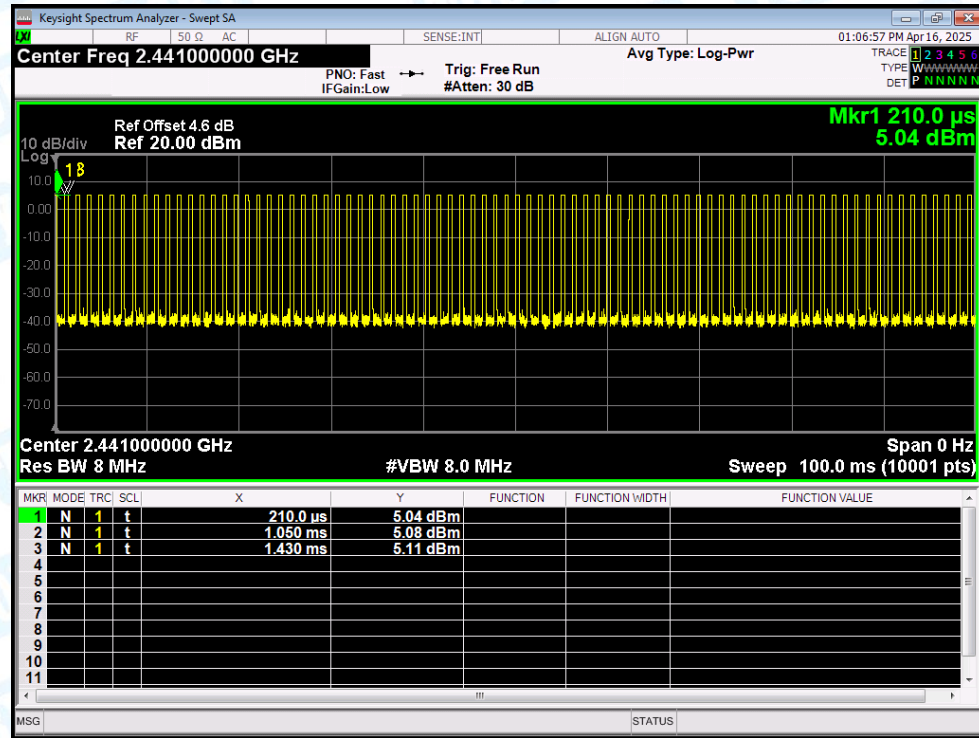
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.89	5.1	2.63
NVNT	1-DH1	2441	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2480	Ant1	30.89	5.1	2.63
NVNT	2-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2480	Ant1	31.45	5.02	2.56
NVNT	3-DH1	2402	Ant1	32.26	4.91	2.5
NVNT	3-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	3-DH1	2480	Ant1	32.26	4.91	2.5

Test Graphs

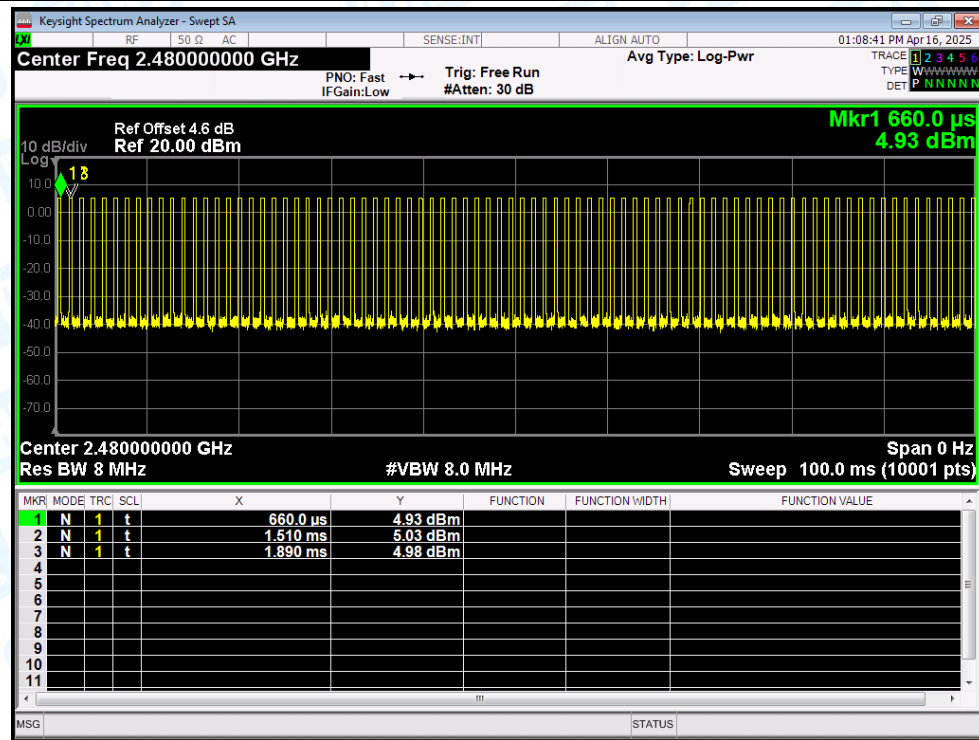
Duty Cycle NVNT 1-DH1 2402MHz Ant1



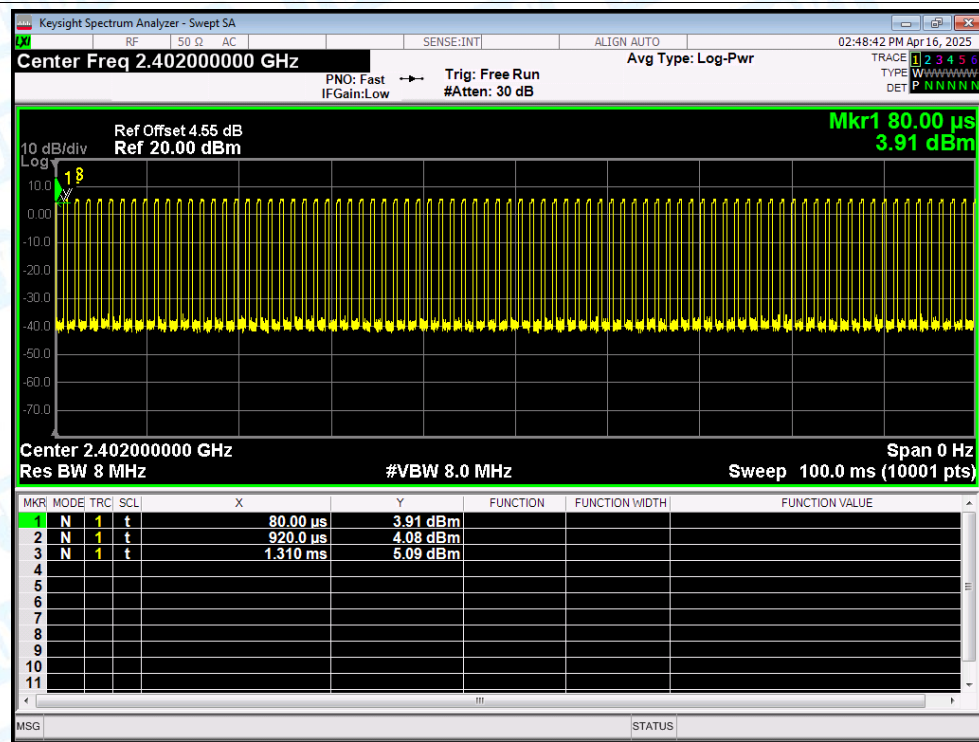
Duty Cycle NVNT 1-DH1 2441MHz Ant1



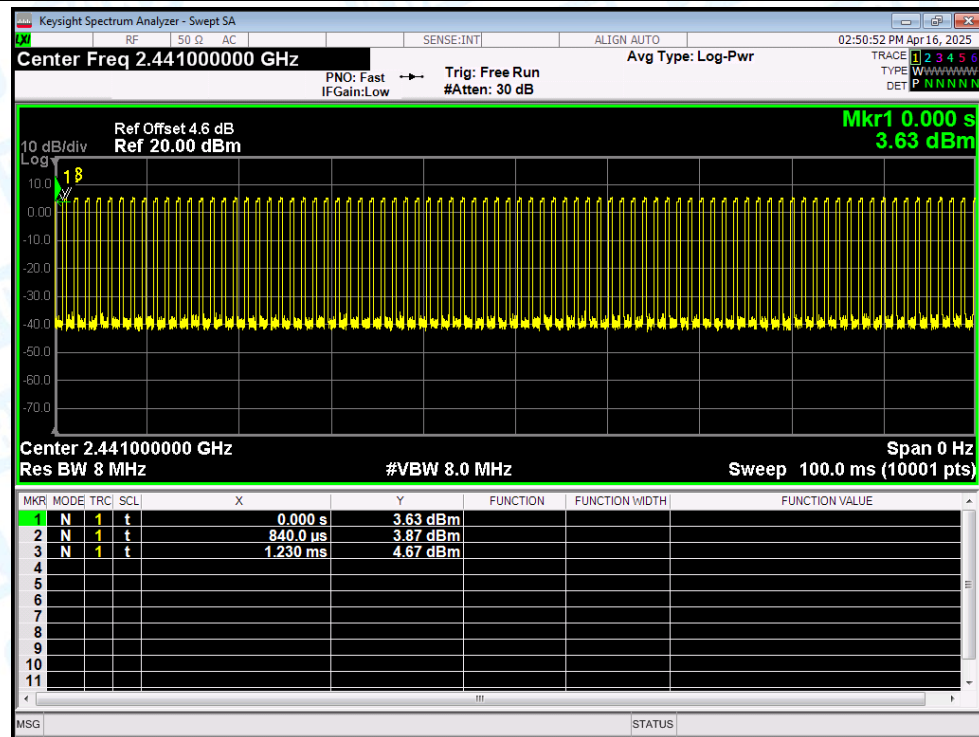
Duty Cycle NVNT 1-DH1 2480MHz Ant1



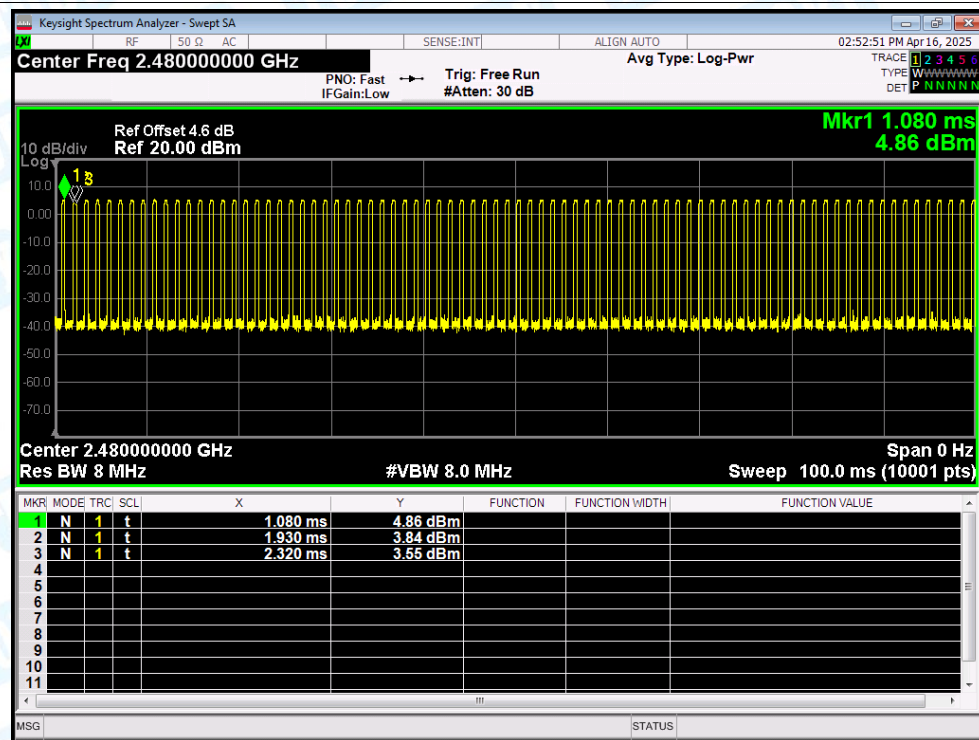
Duty Cycle NVNT 2-DH1 2402MHz Ant1



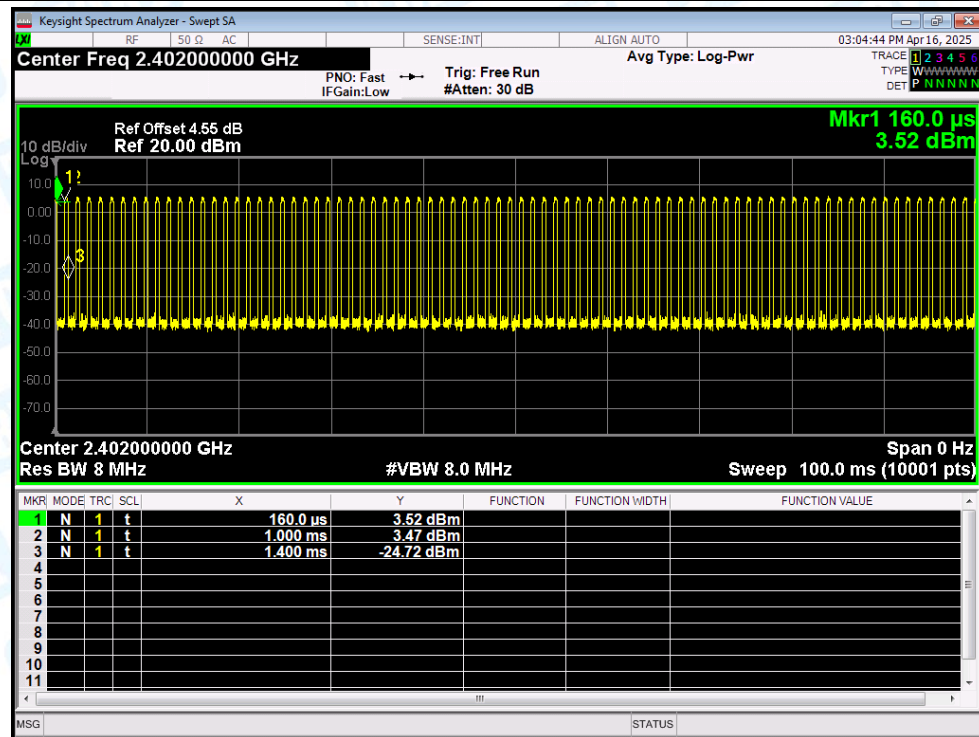
Duty Cycle NVNT 2-DH1 2441MHz Ant1



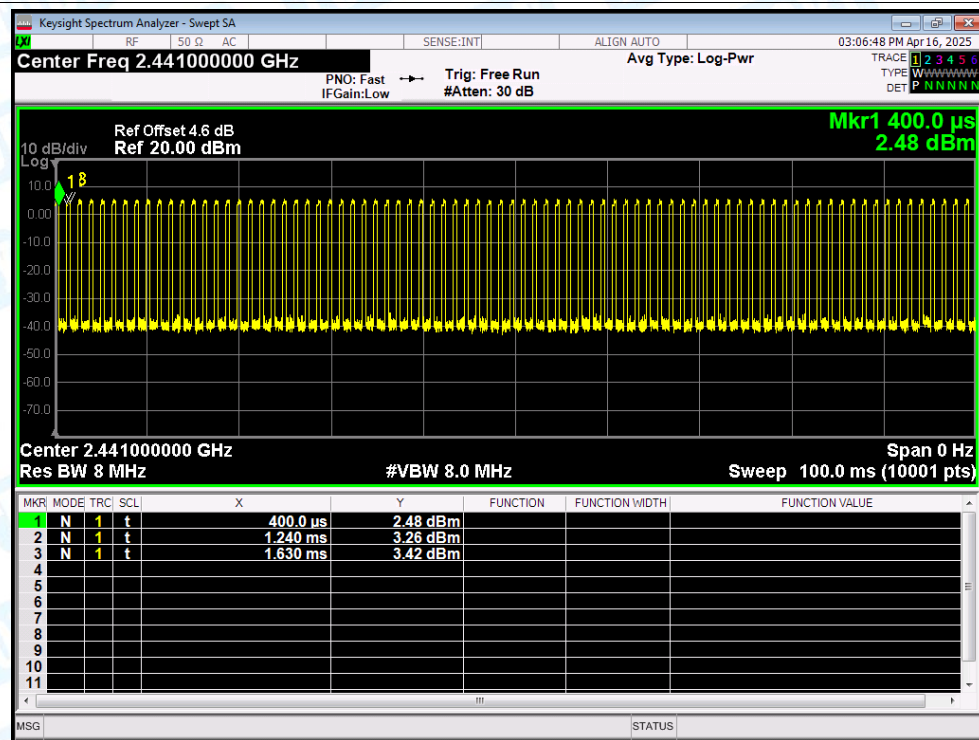
Duty Cycle NVNT 2-DH1 2480MHz Ant1

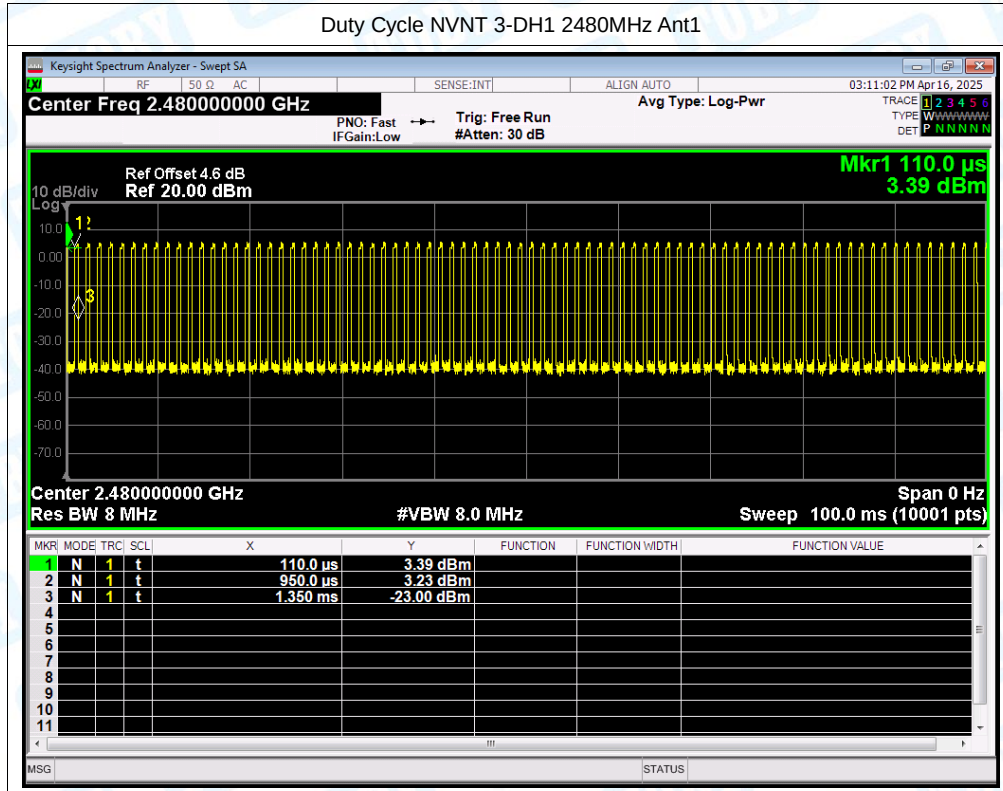


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



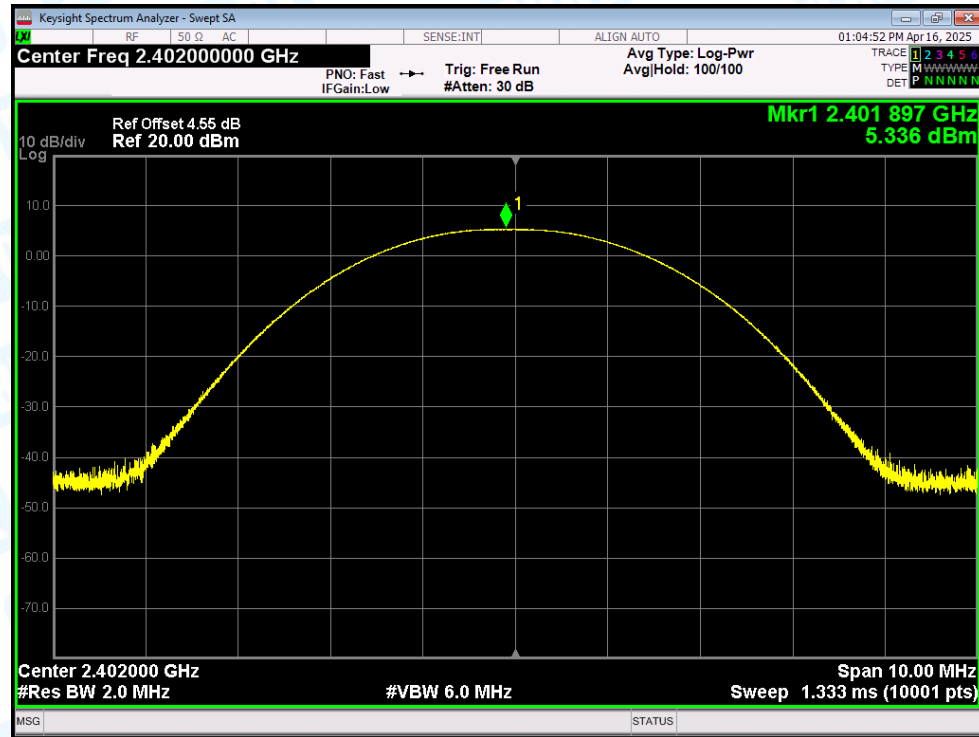


2.Maximum Conducted Output Power

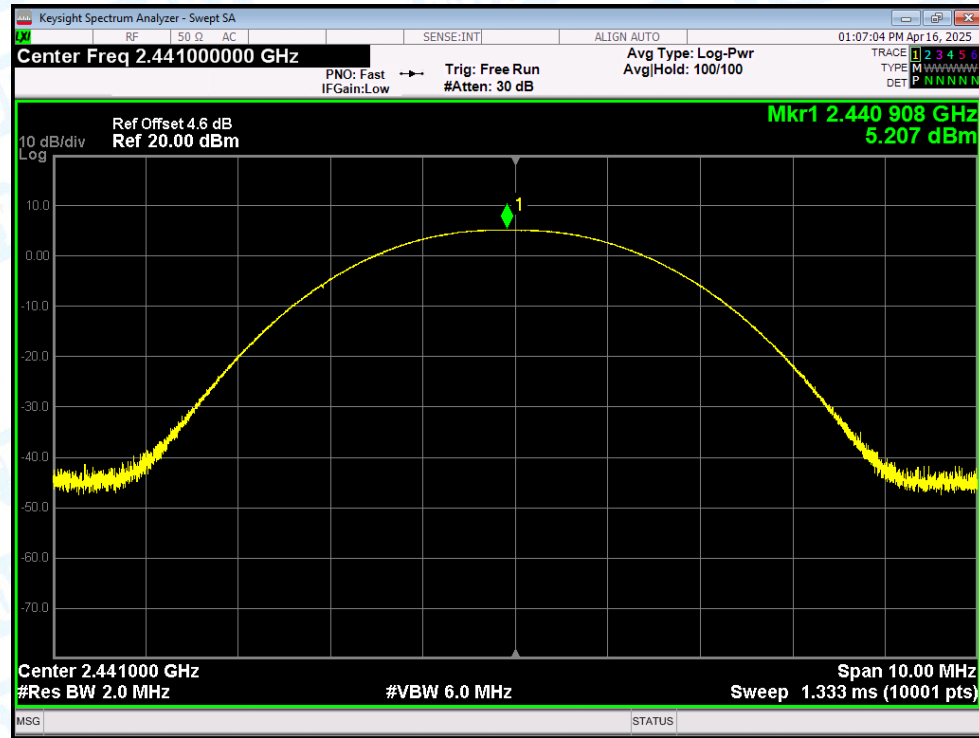
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.336	21	Pass
NVNT	1-DH1	2441	Ant1	5.207	21	Pass
NVNT	1-DH1	2480	Ant1	5.109	21	Pass
NVNT	2-DH1	2402	Ant1	5.367	21	Pass
NVNT	2-DH1	2441	Ant1	5.177	21	Pass
NVNT	2-DH1	2480	Ant1	5.122	21	Pass
NVNT	3-DH1	2402	Ant1	5.457	21	Pass
NVNT	3-DH1	2441	Ant1	5.273	21	Pass
NVNT	3-DH1	2480	Ant1	5.222	21	Pass

Test Graphs

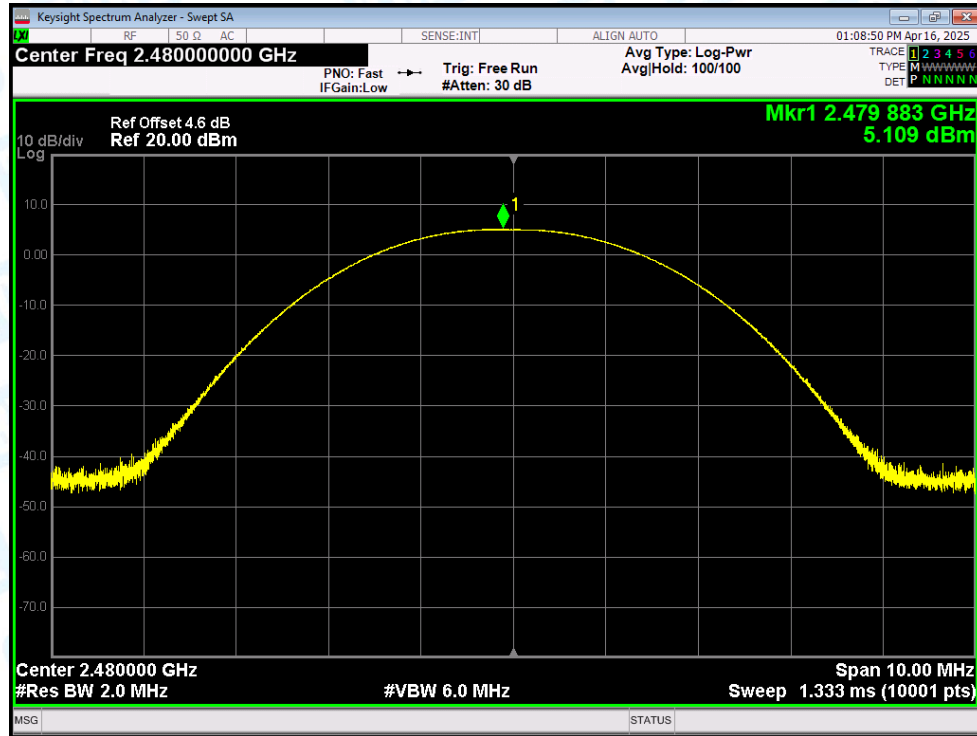
Power NVNT 1-DH1 2402MHz Ant1



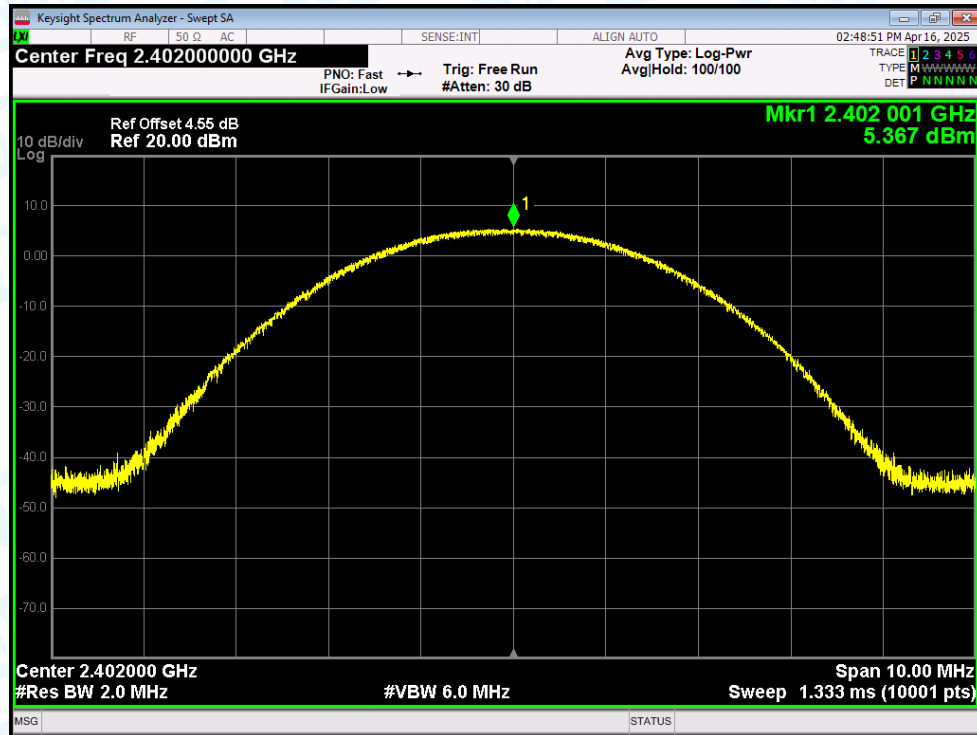
Power NVNT 1-DH1 2441MHz Ant1



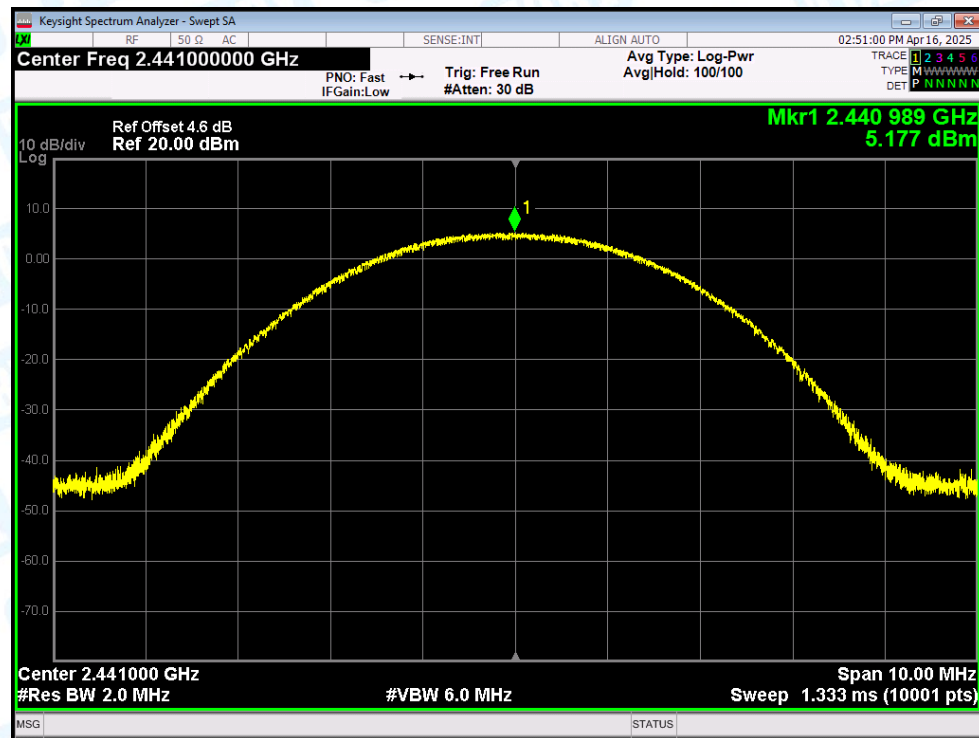
Power NVNT 1-DH1 2480MHz Ant1



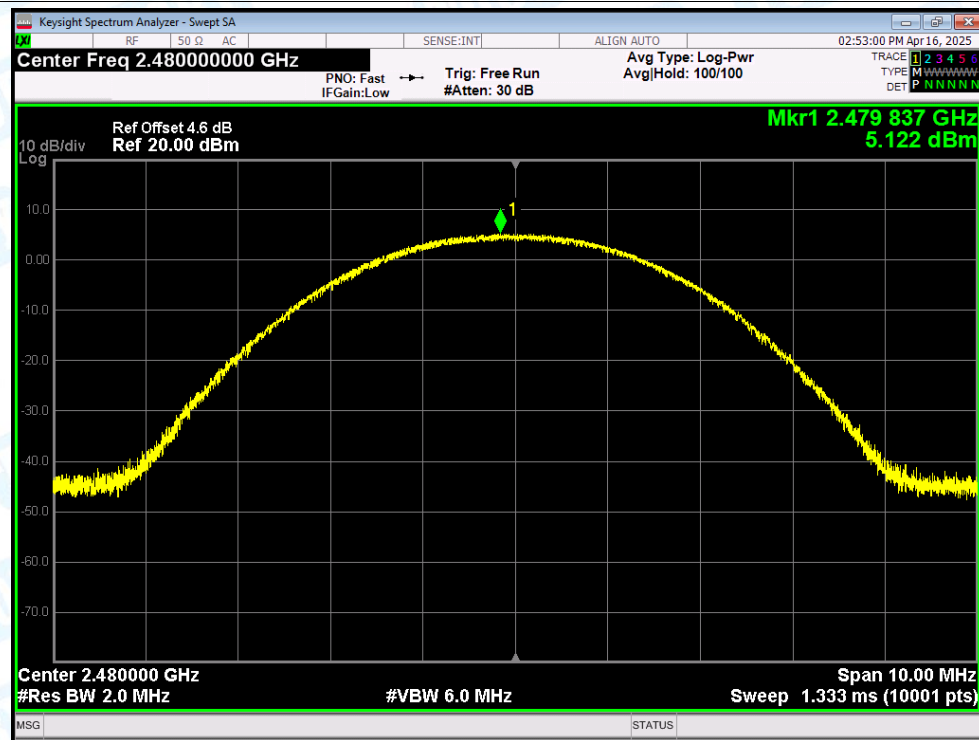
Power NVNT 2-DH1 2402MHz Ant1



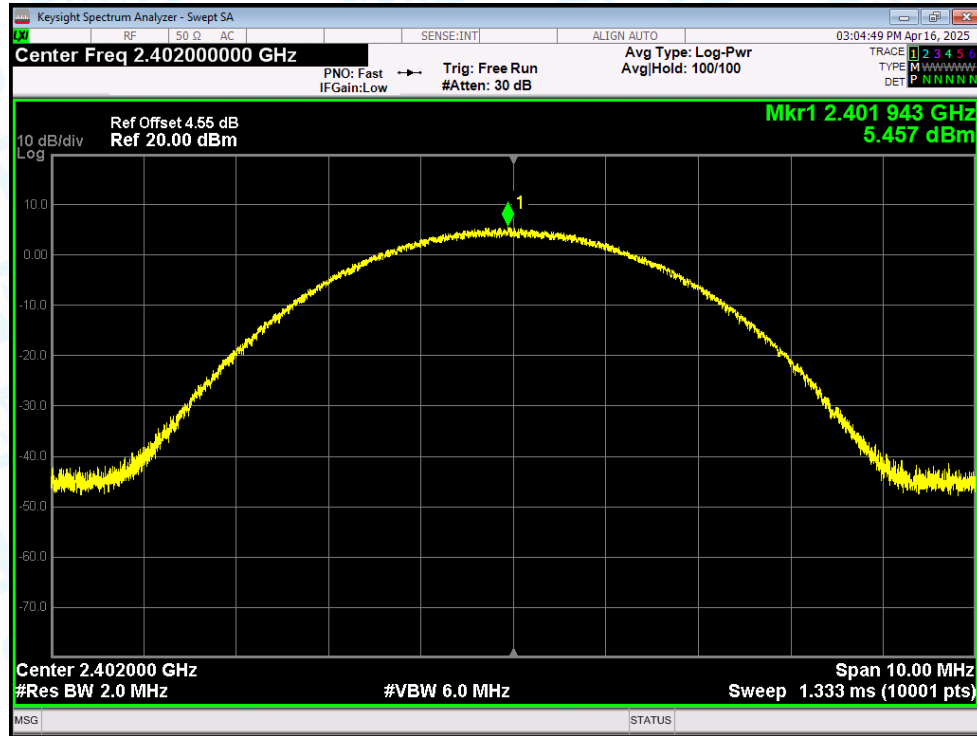
Power NVNT 2-DH1 2441MHz Ant1



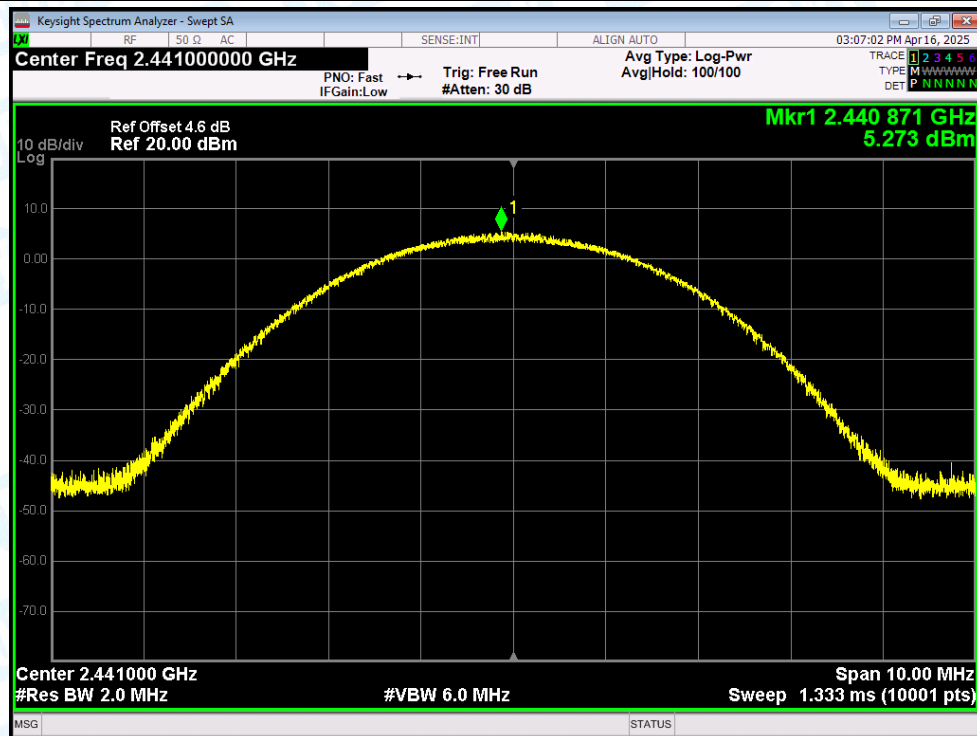
Power NVNT 2-DH1 2480MHz Ant1

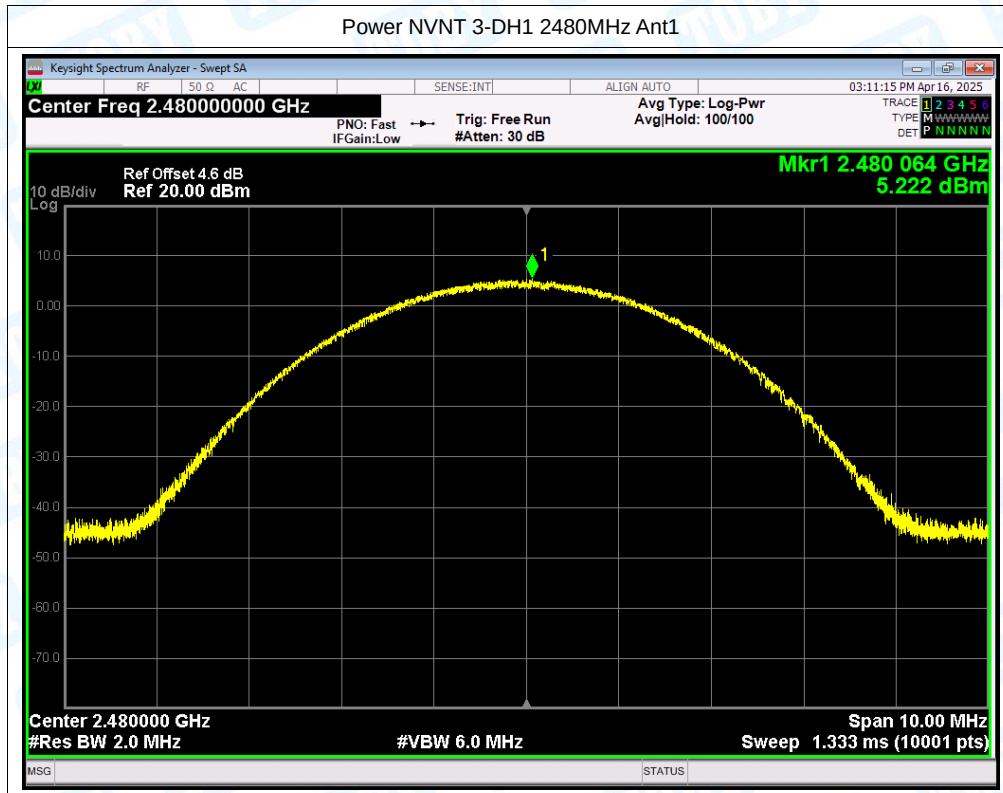


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



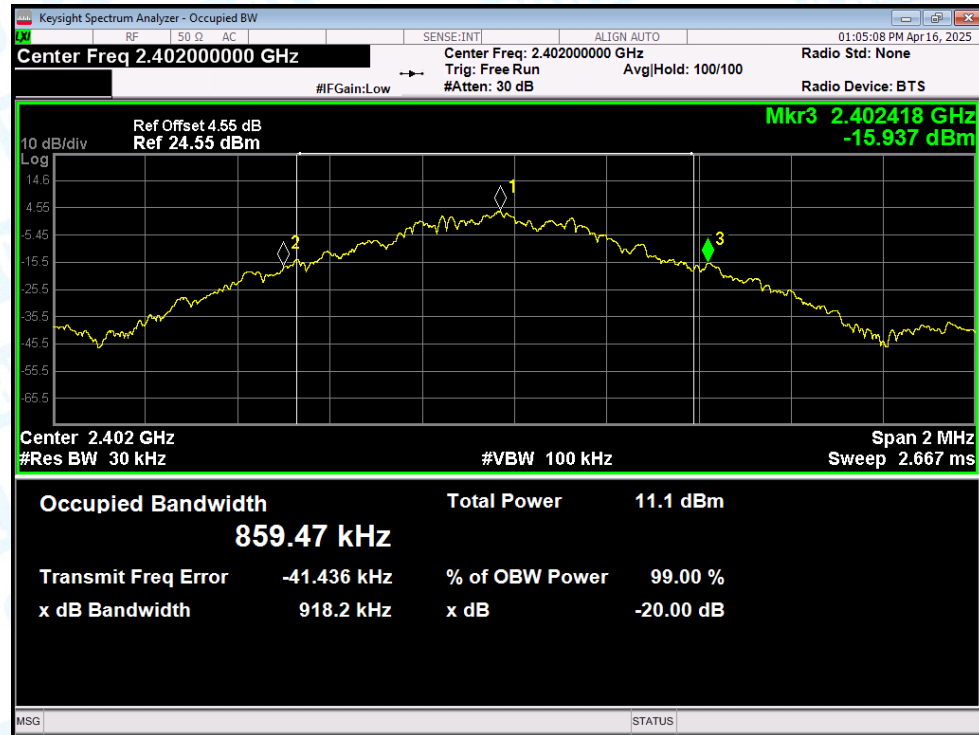


3.-20dB Bandwidth

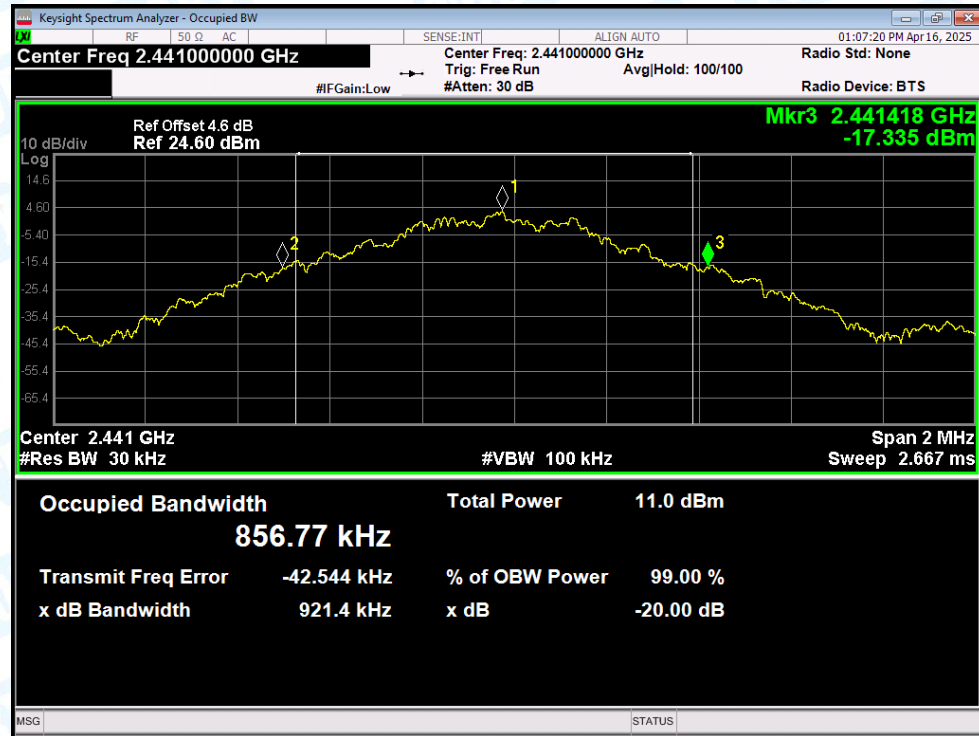
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.92	0	Pass
NVNT	1-DH1	2441	Ant1	0.92	0	Pass
NVNT	1-DH1	2480	Ant1	0.92	0	Pass
NVNT	2-DH1	2402	Ant1	1.23	0	Pass
NVNT	2-DH1	2441	Ant1	1.24	0	Pass
NVNT	2-DH1	2480	Ant1	1.22	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.21	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass

Test Graphs

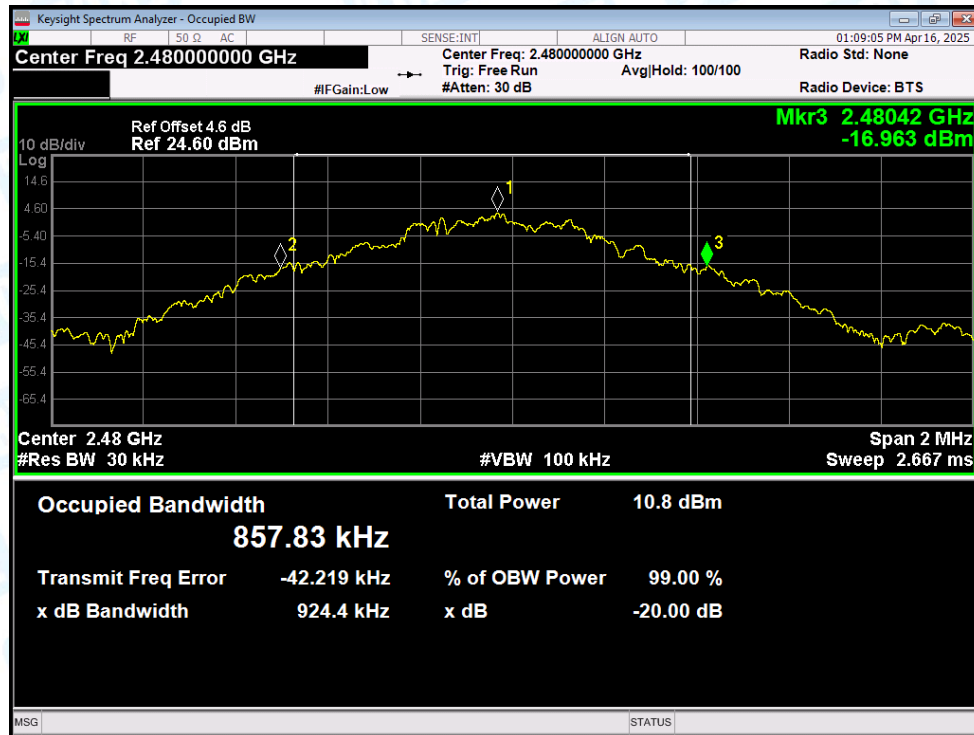
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



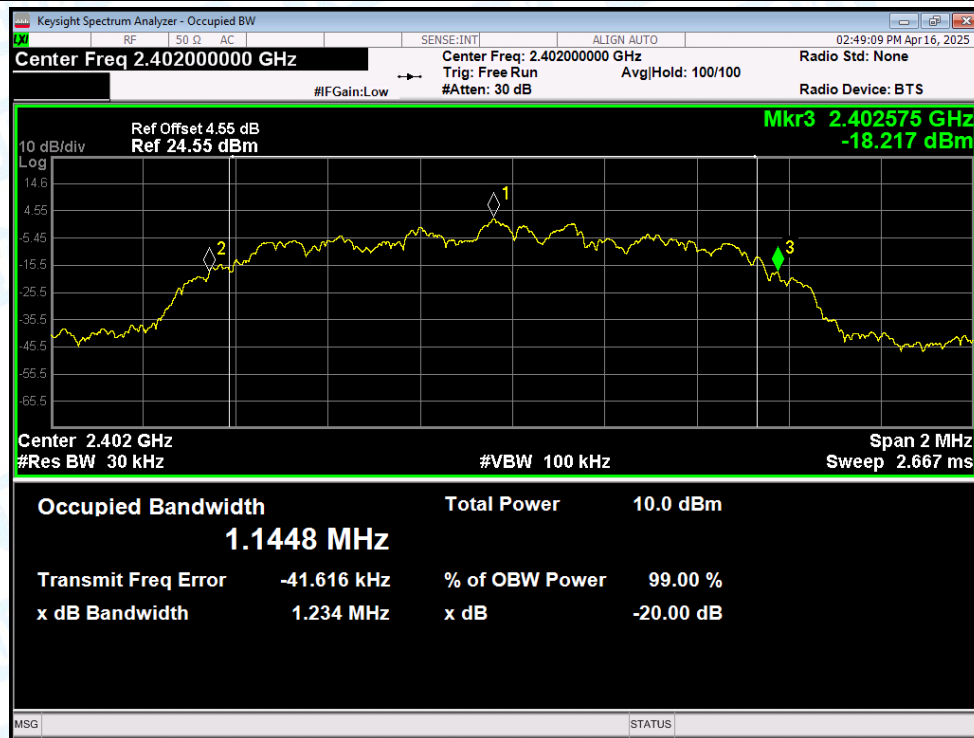
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



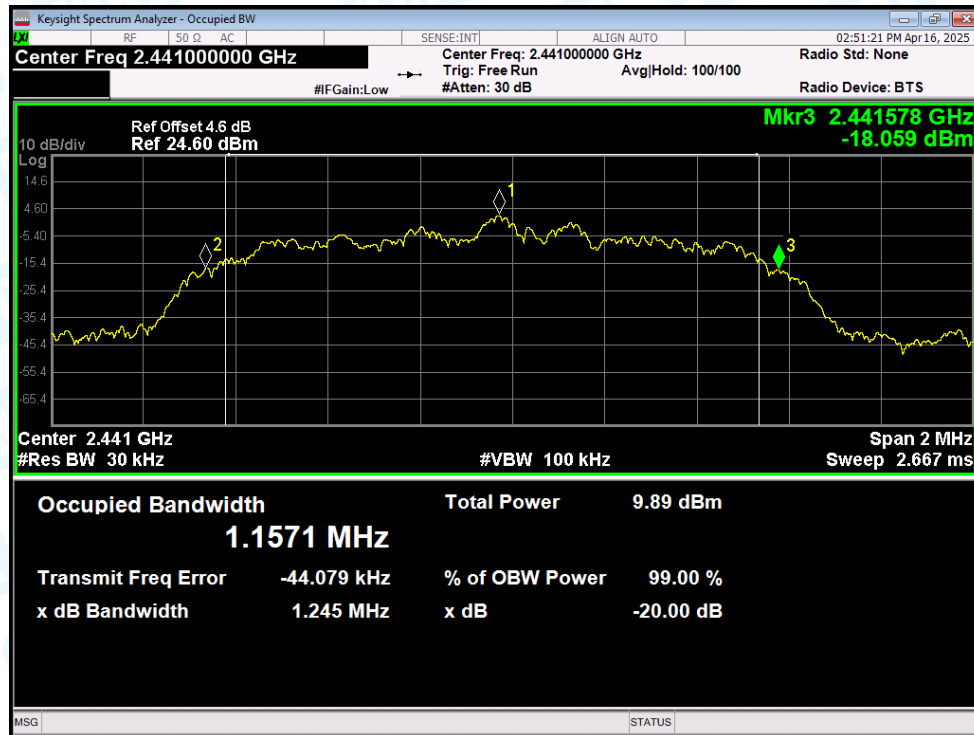
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



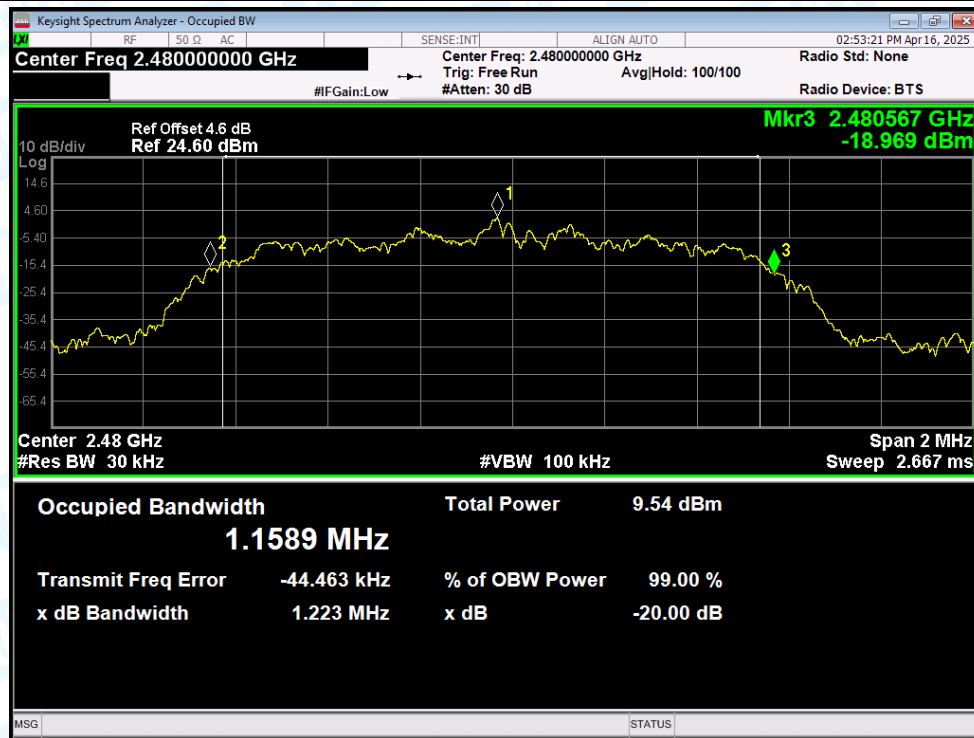
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



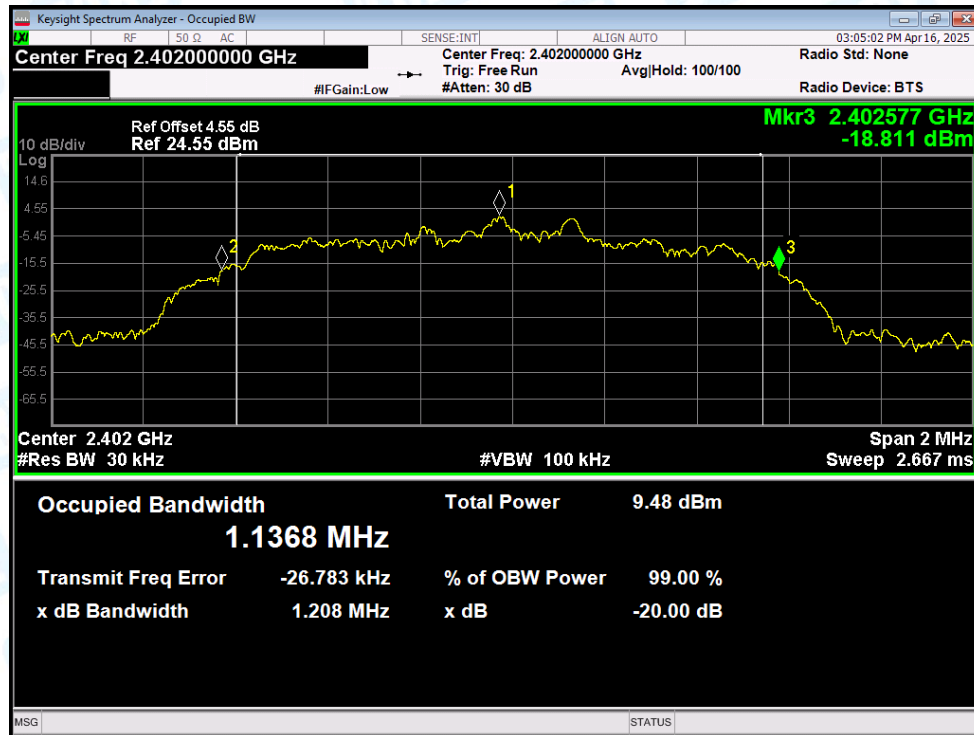
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



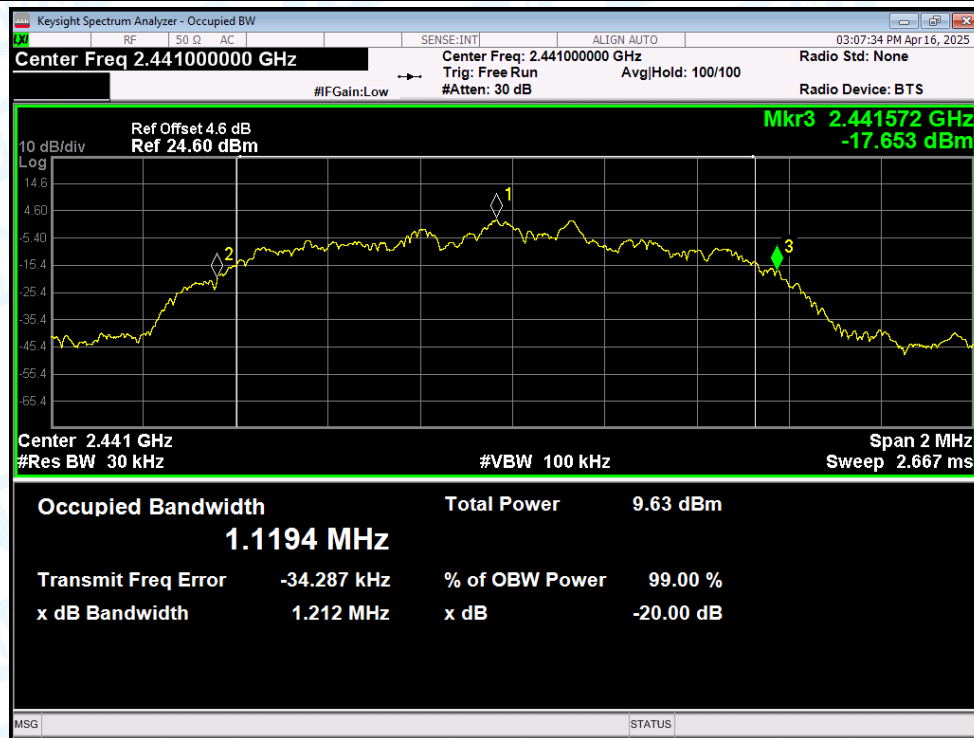
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

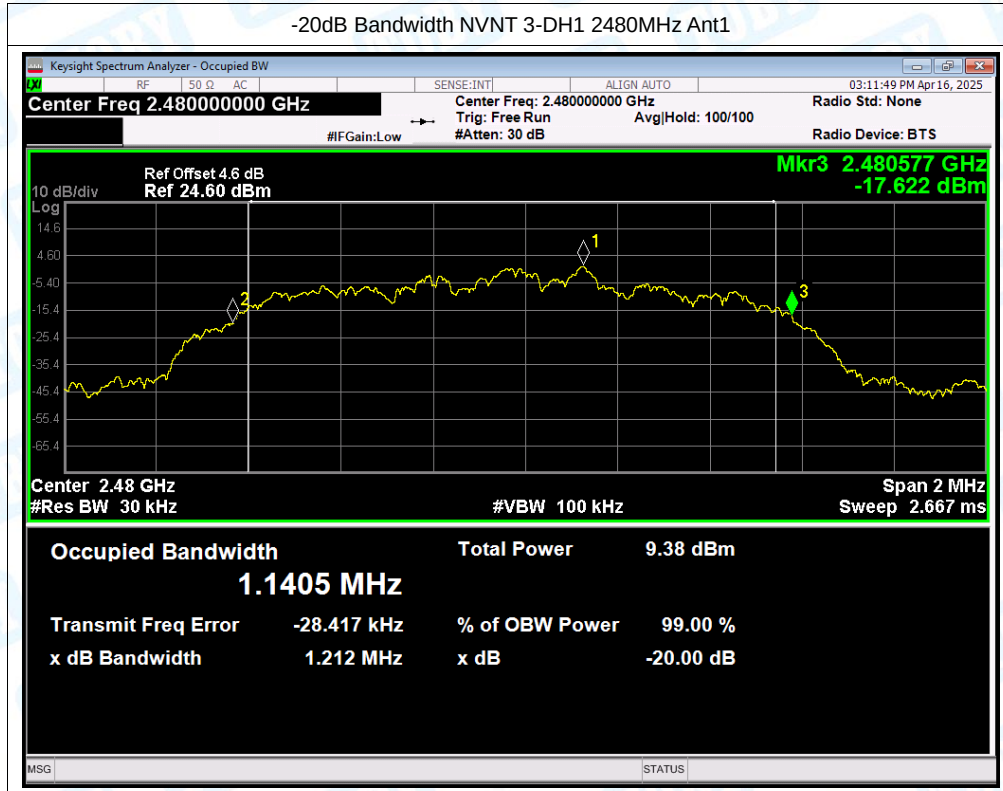


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



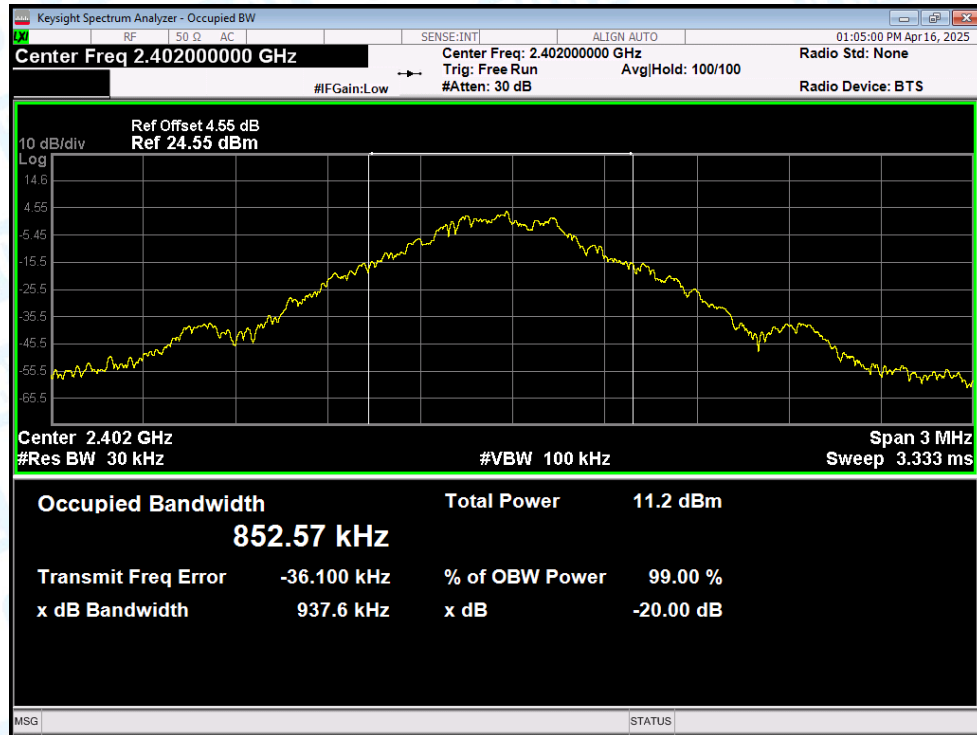


4.Occupied Channel Bandwidth

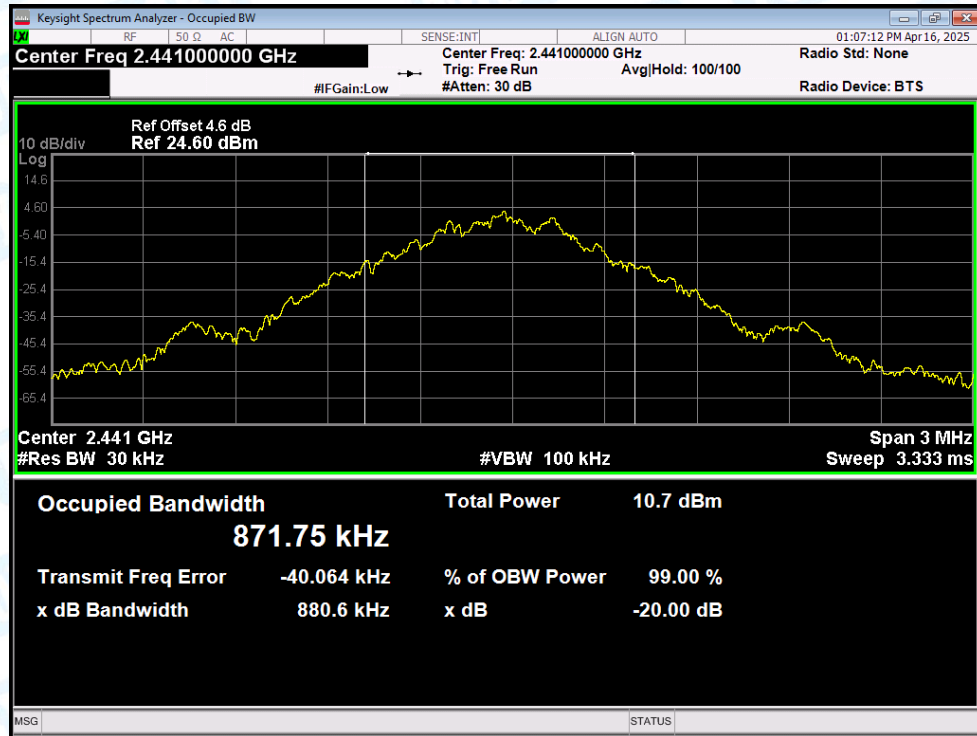
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.853
NVNT	1-DH1	2441	Ant1	0.872
NVNT	1-DH1	2480	Ant1	0.851
NVNT	2-DH1	2402	Ant1	1.158
NVNT	2-DH1	2441	Ant1	1.159
NVNT	2-DH1	2480	Ant1	1.161
NVNT	3-DH1	2402	Ant1	1.145
NVNT	3-DH1	2441	Ant1	1.139
NVNT	3-DH1	2480	Ant1	1.136

Test Graphs

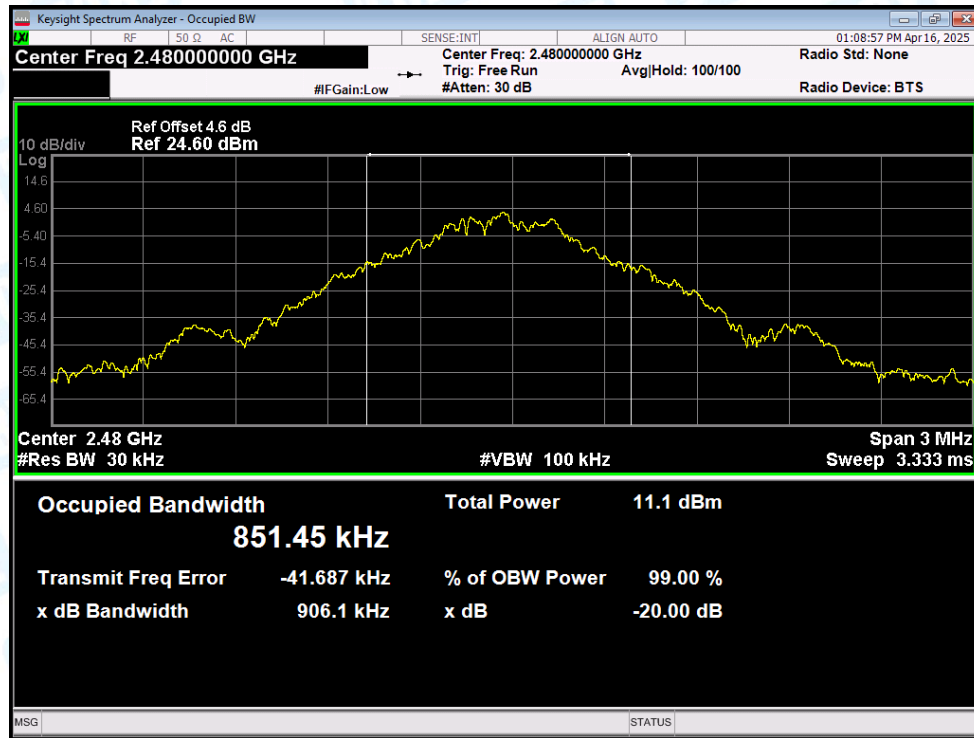
OBW NVNT 1-DH1 2402MHz Ant1



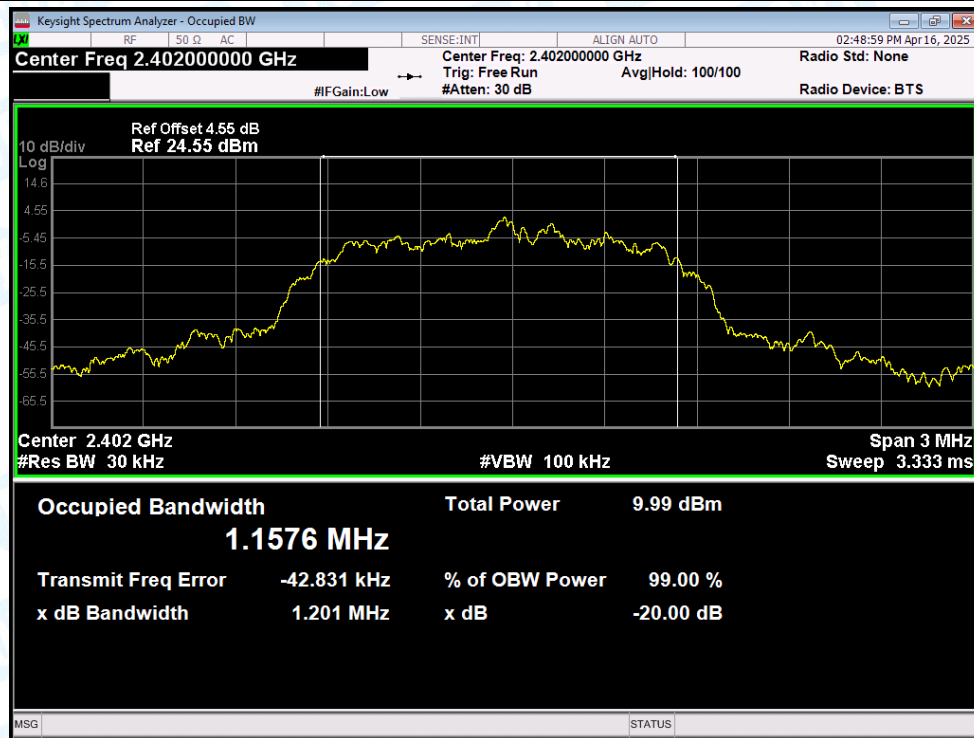
OBW NVNT 1-DH1 2441MHz Ant1



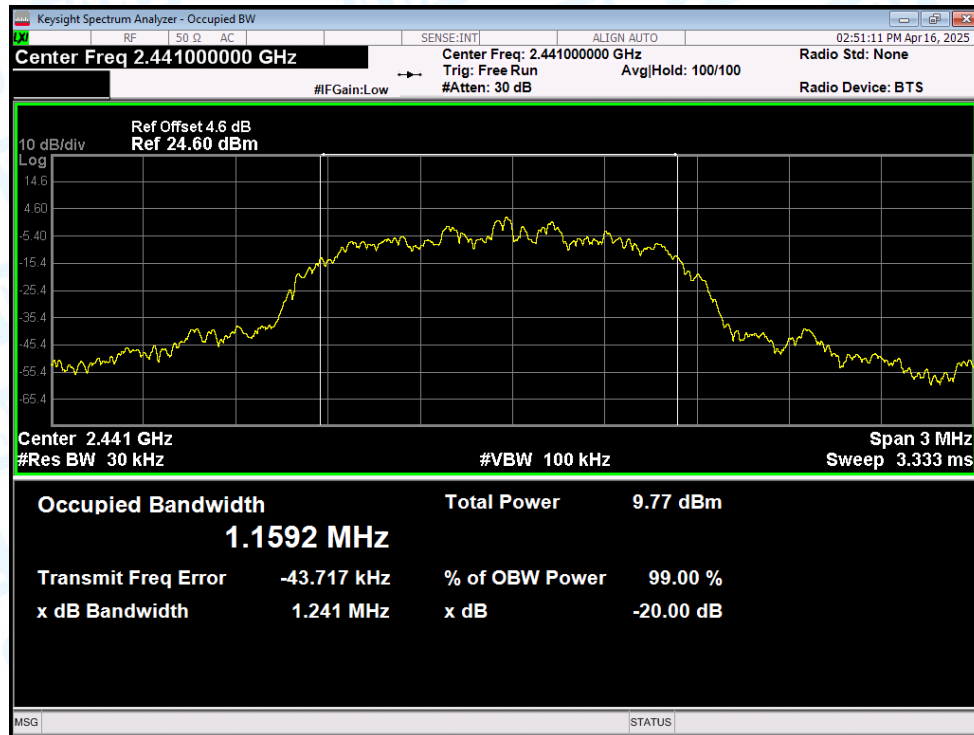
OBW NVNT 1-DH1 2480MHz Ant1



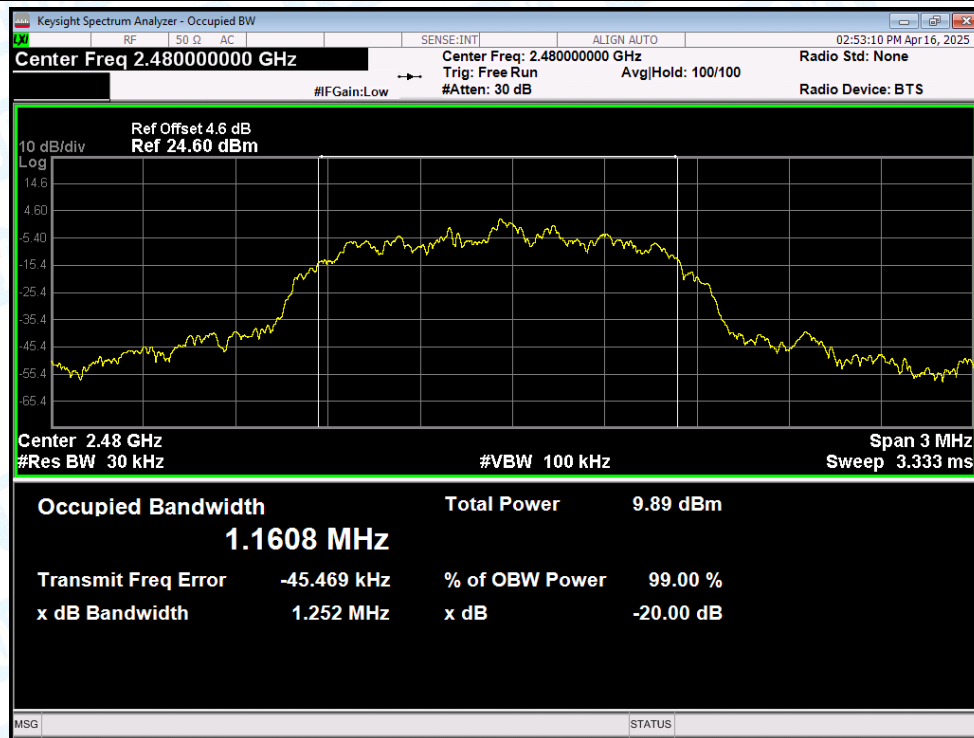
OBW NVNT 2-DH1 2402MHz Ant1



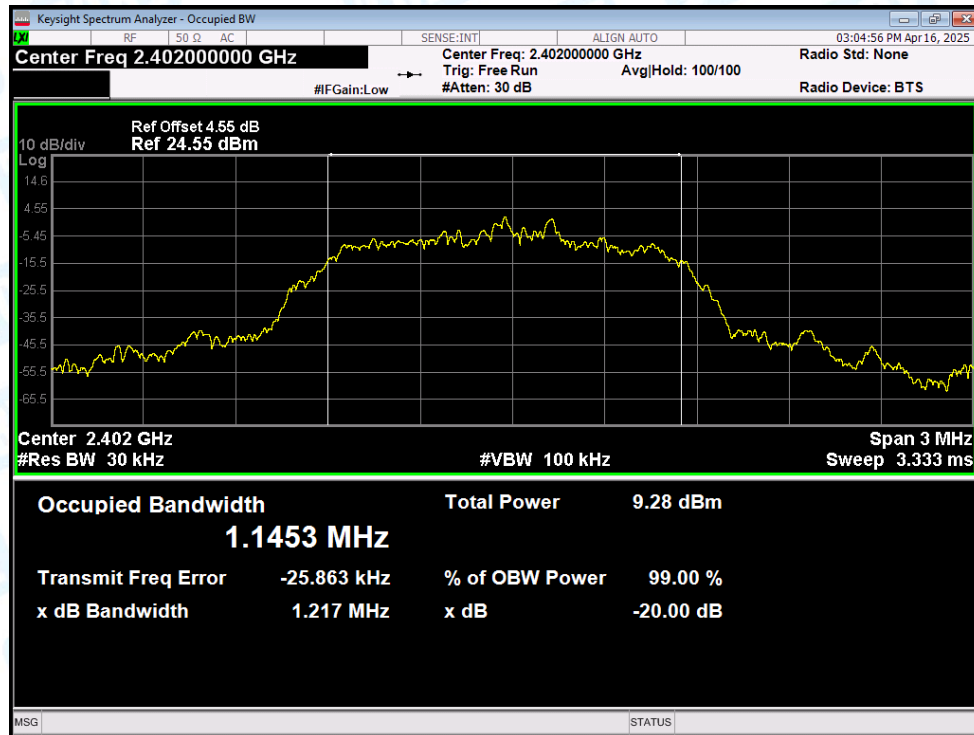
OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1

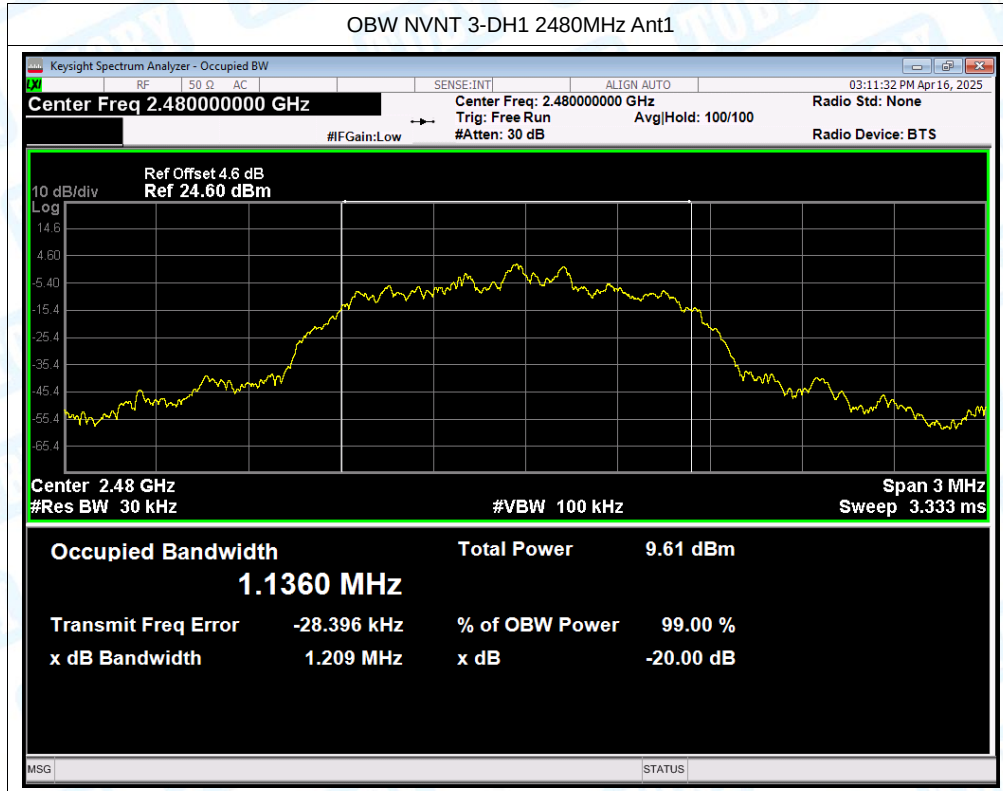


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



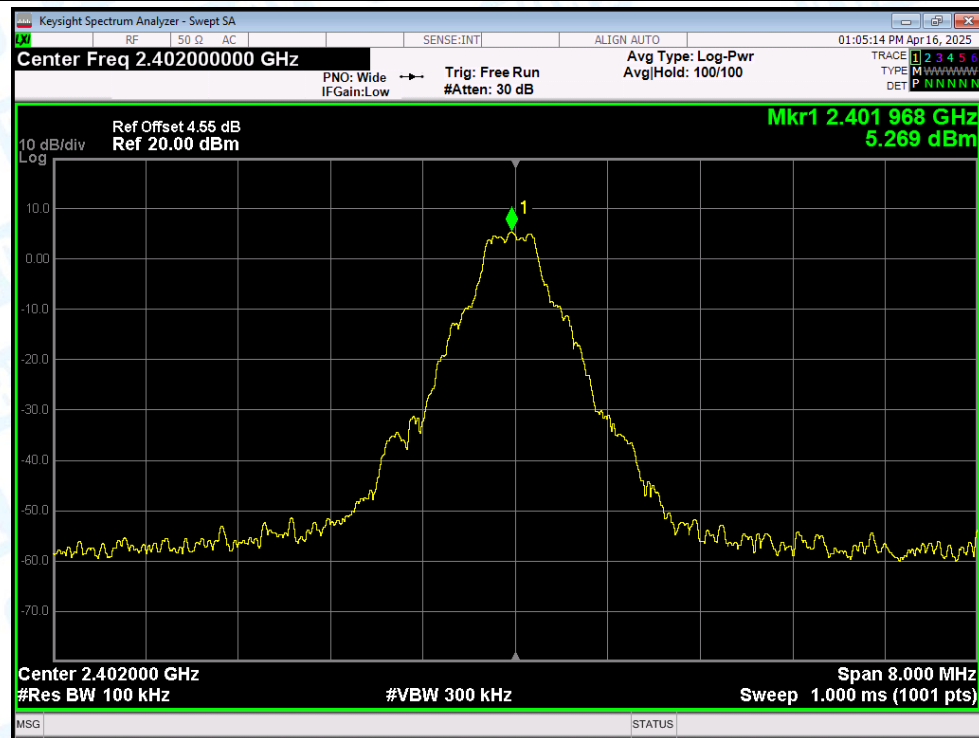


5.Band Edge

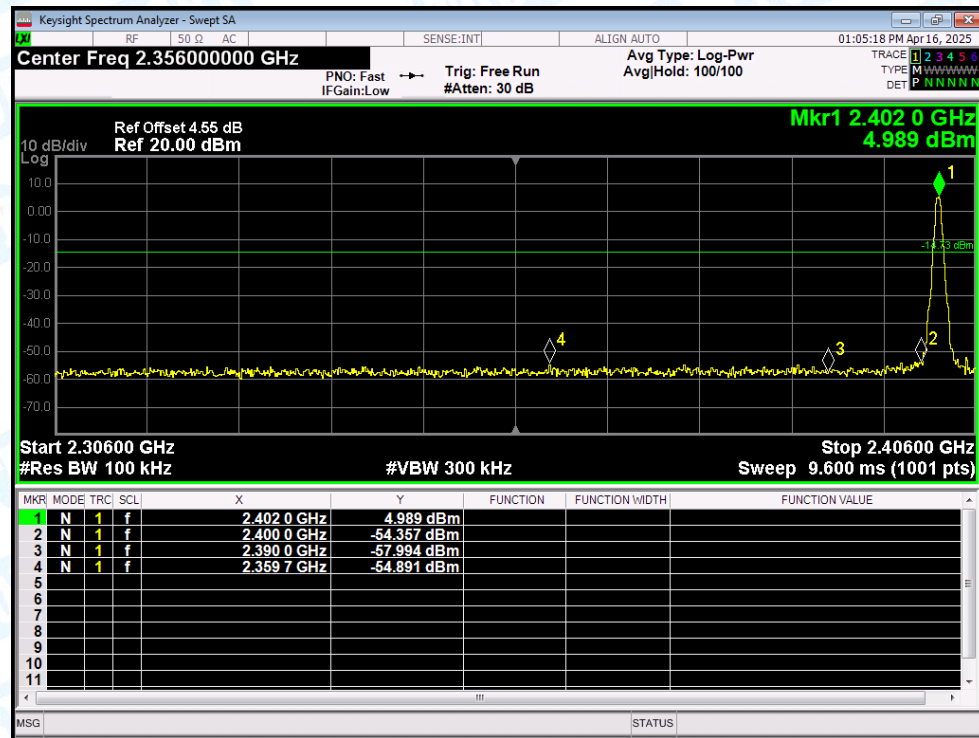
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-60.16	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-60.04	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.8	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-58.82	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.35	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-57.7	-20	Pass

Test Graphs

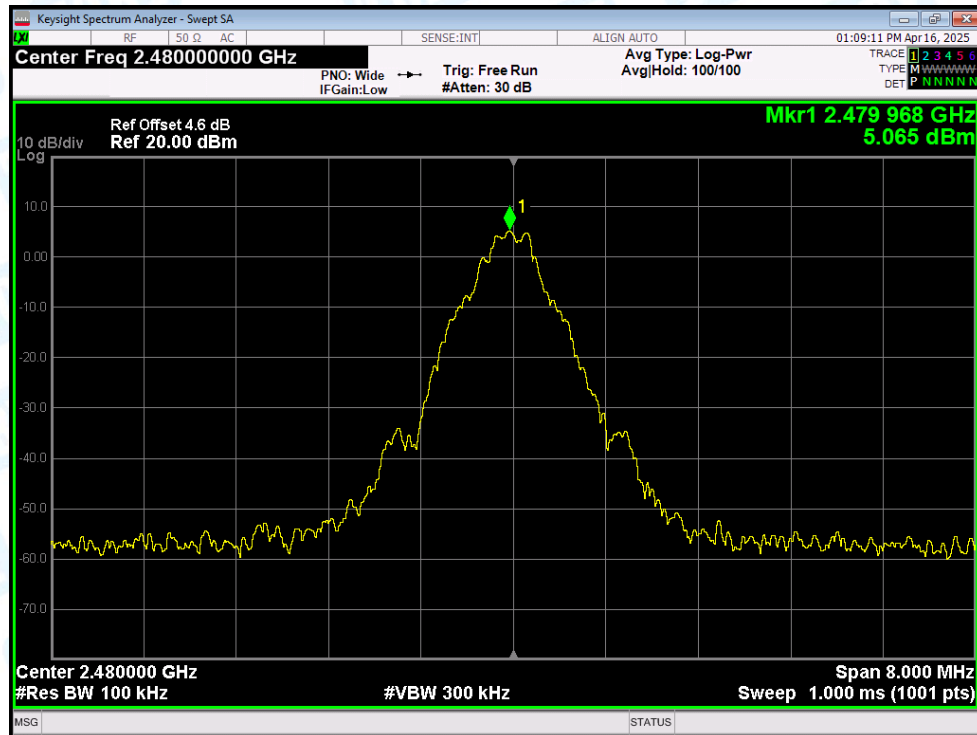
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



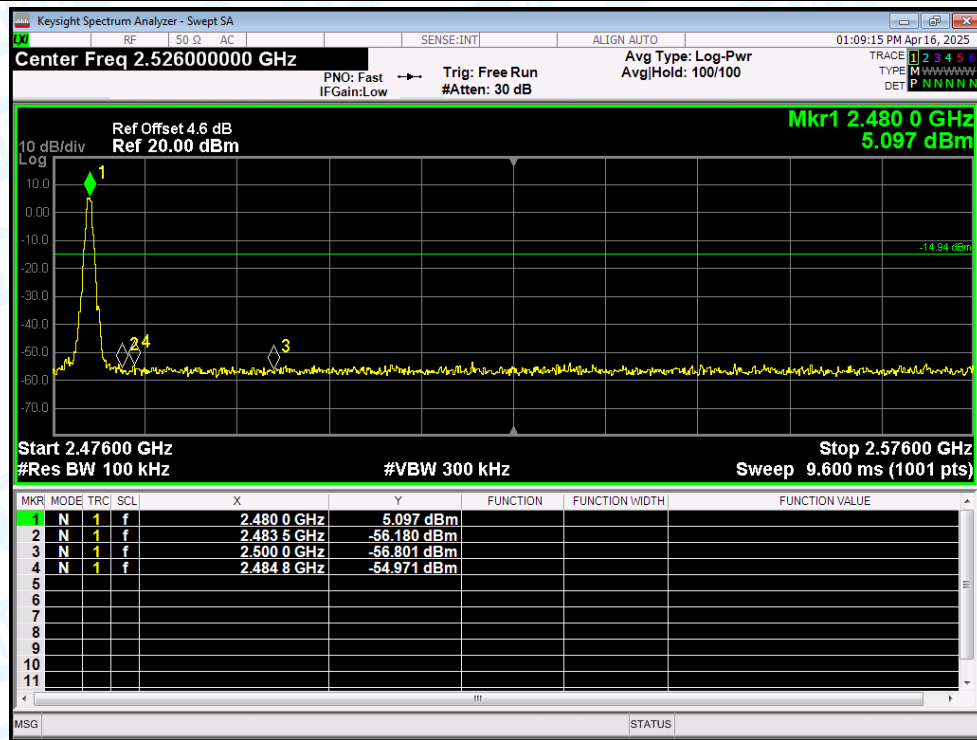
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



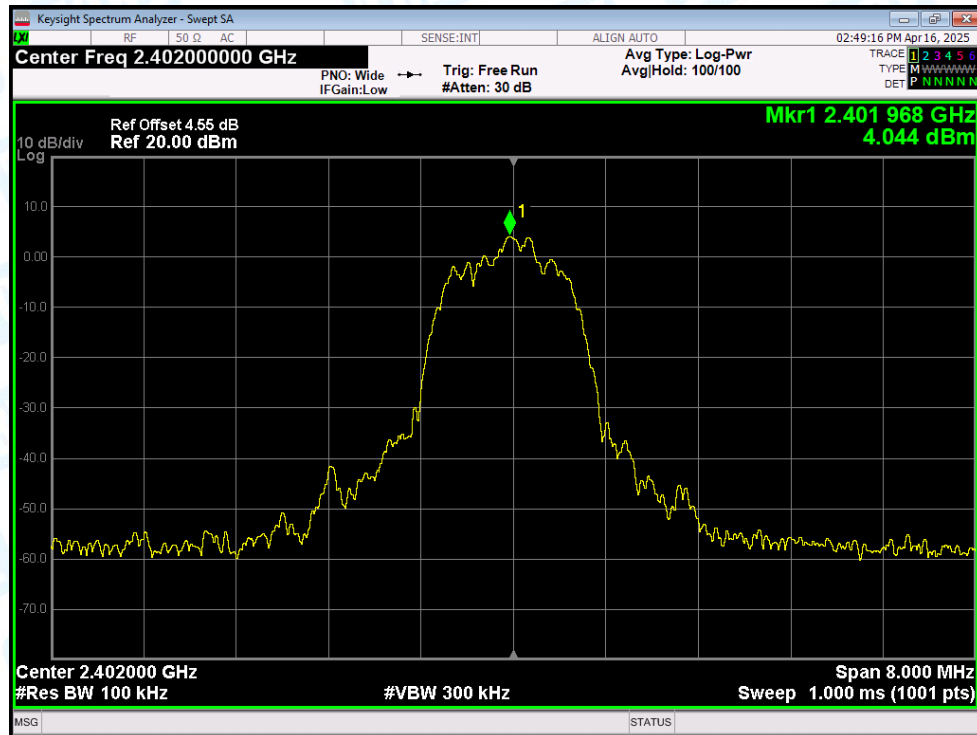
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



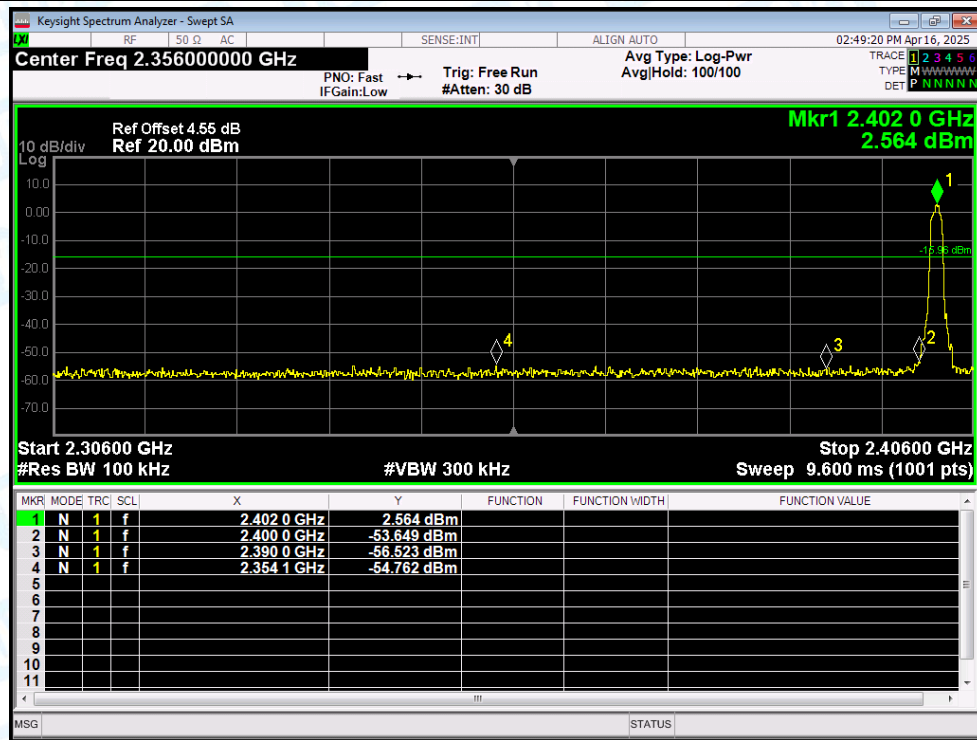
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



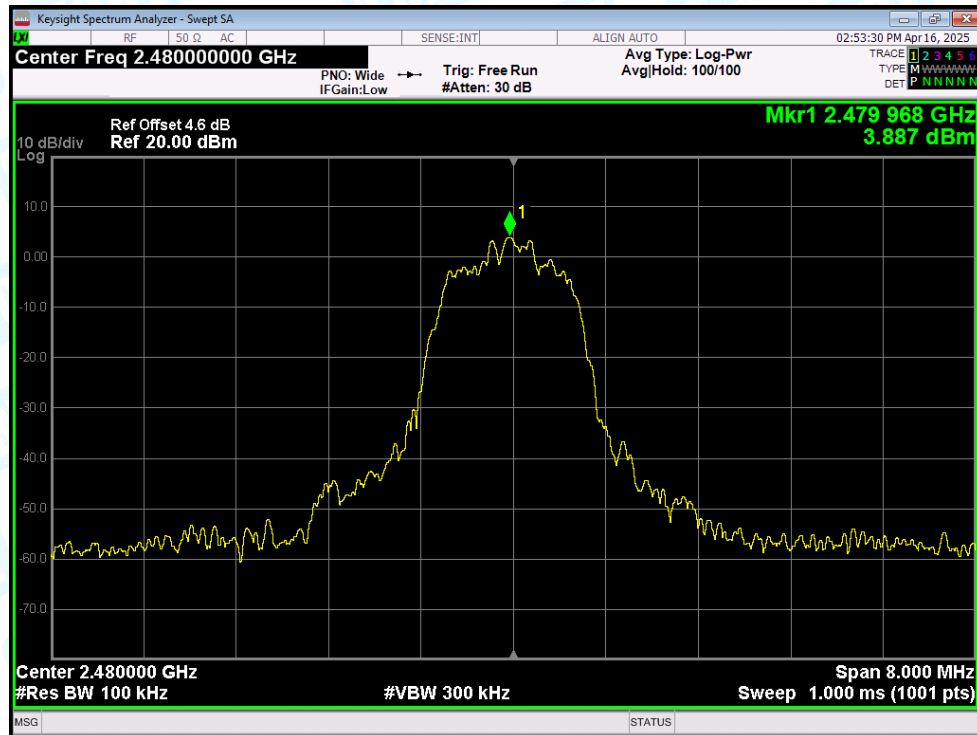
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



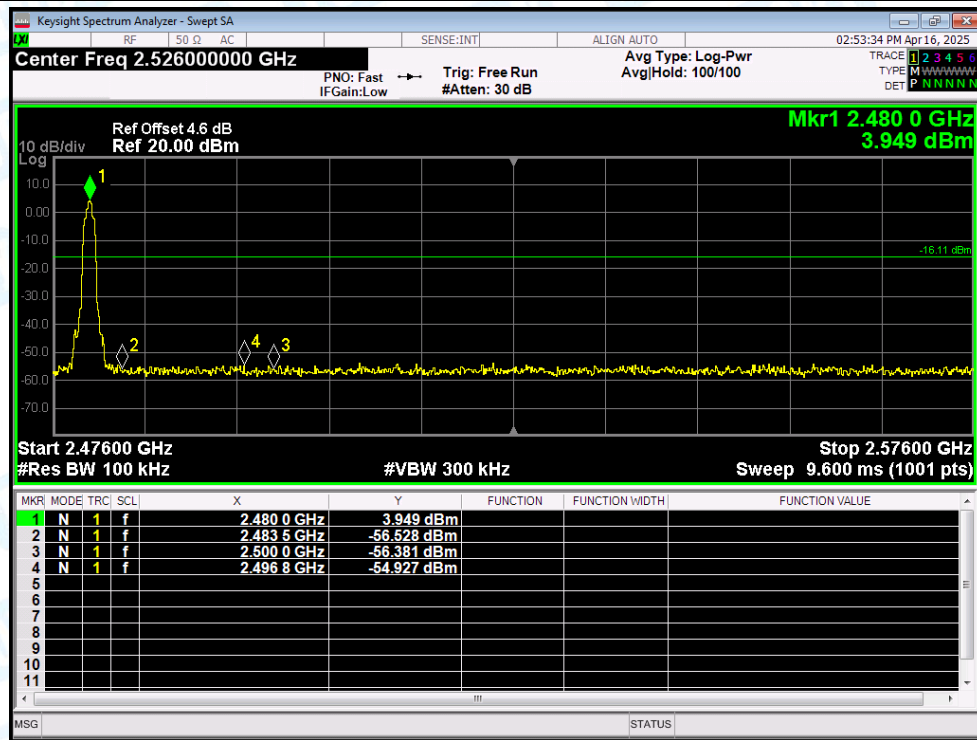
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



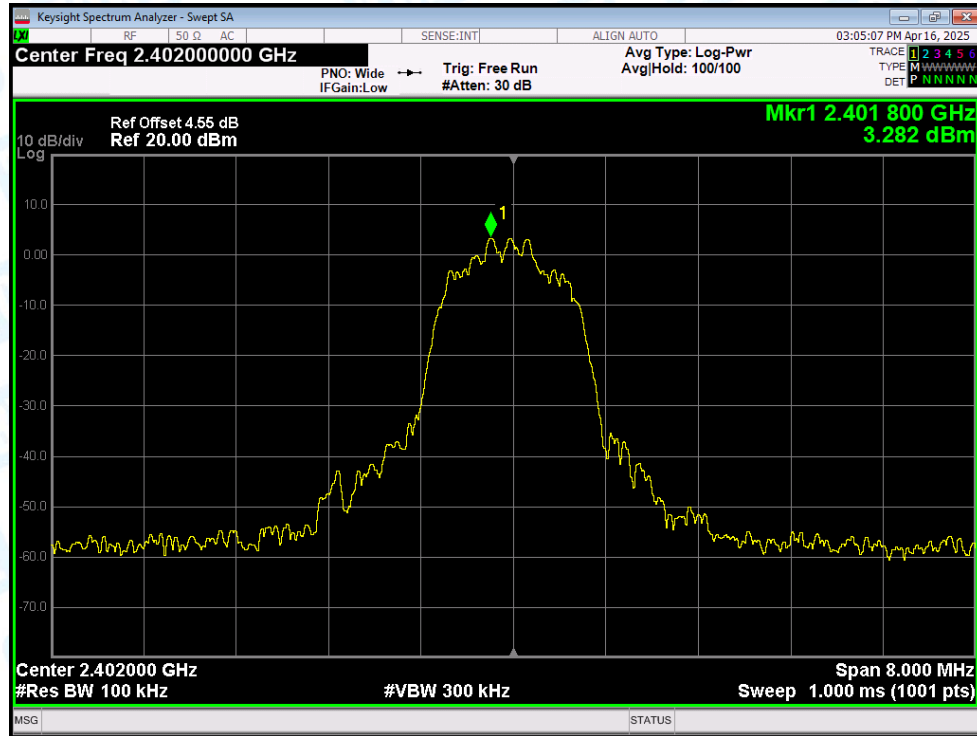
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



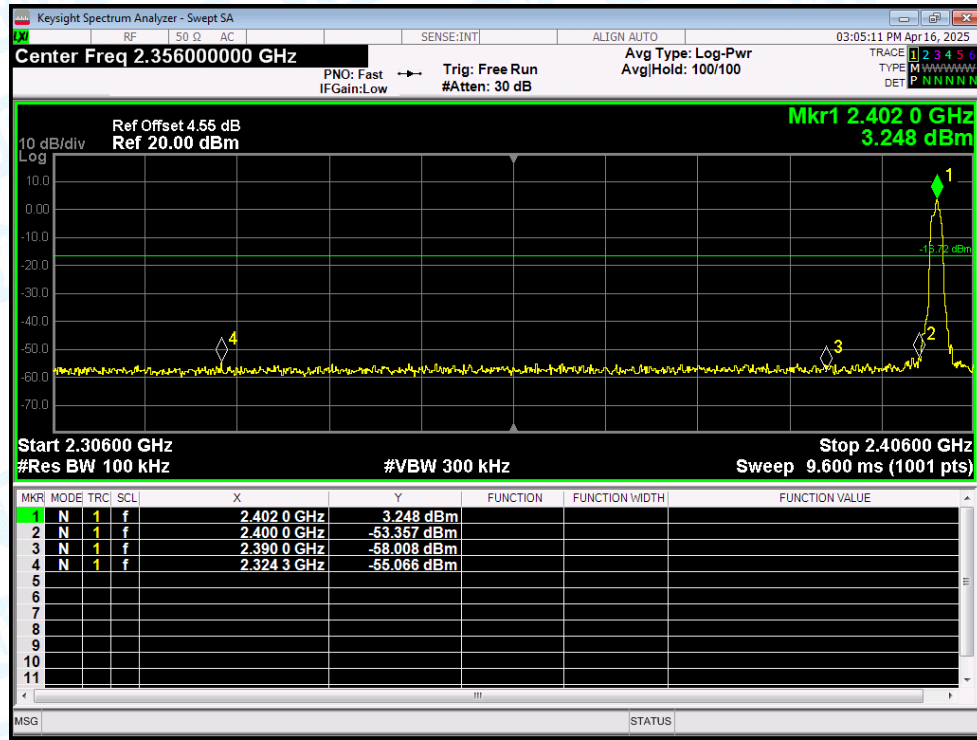
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



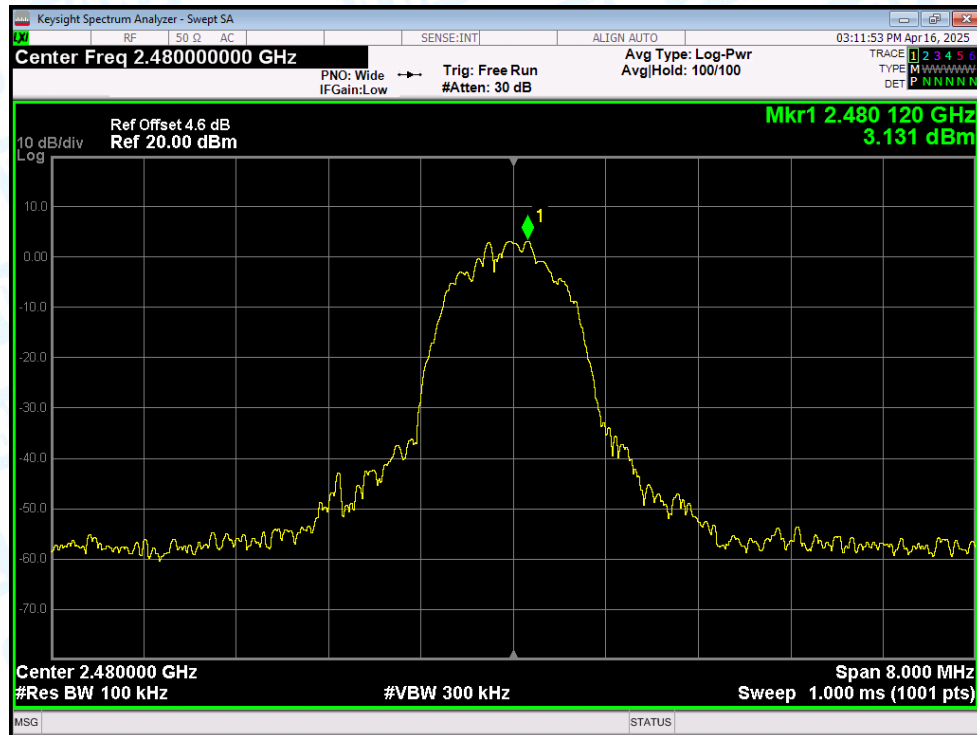
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



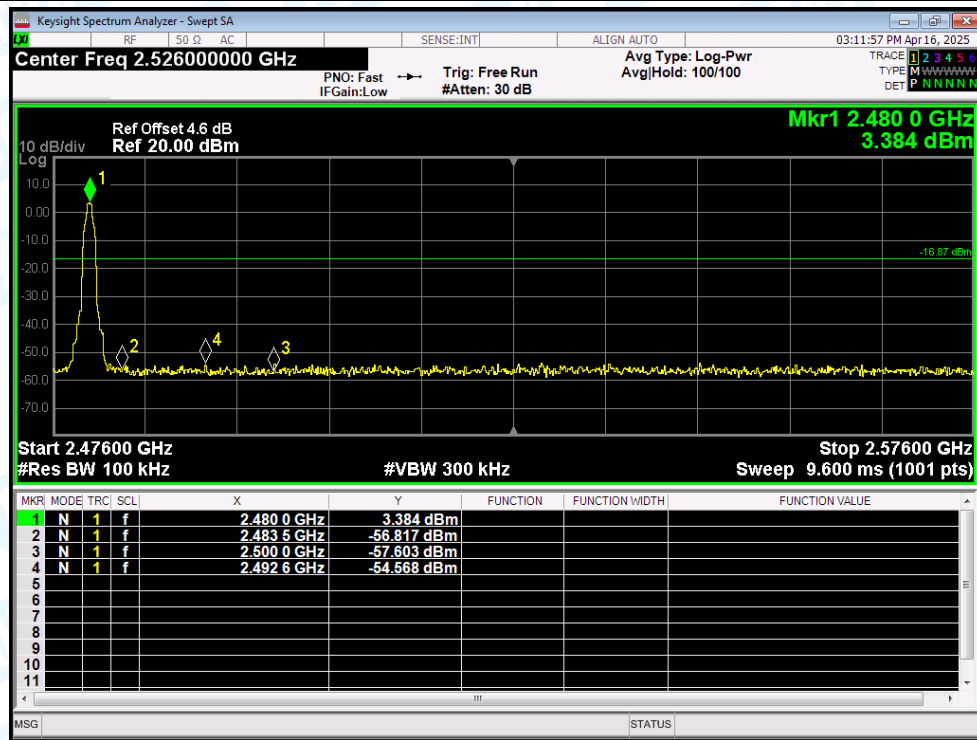
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission



6.Band Edge(Hopping)

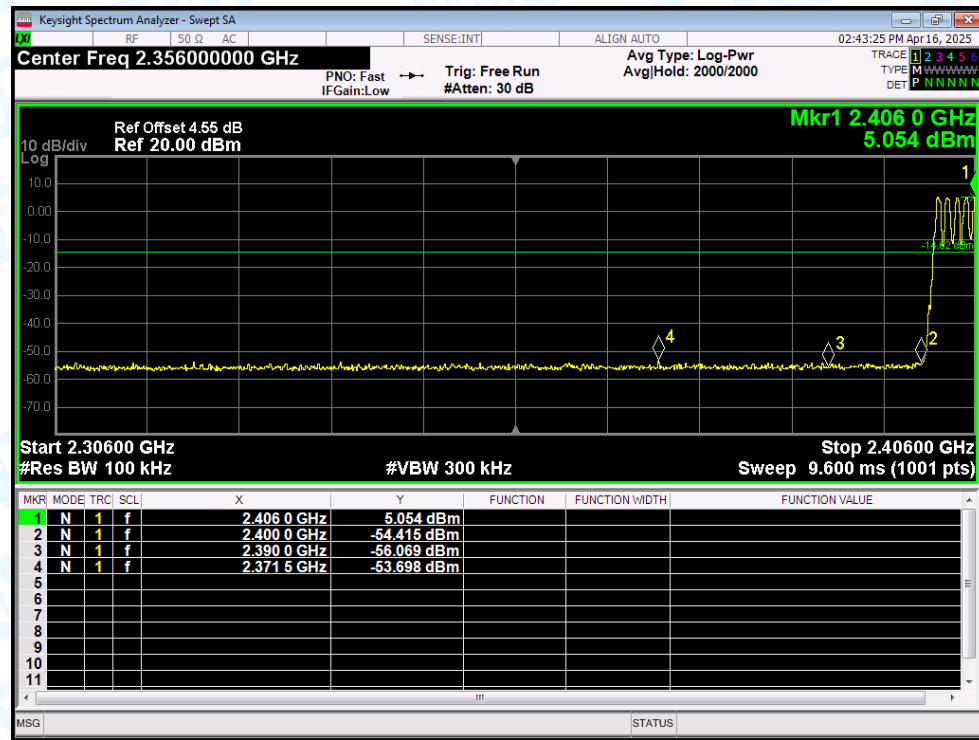
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-59.09	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-57.33	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-56.7	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-57.29	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-56.84	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-56.12	-20	Pass

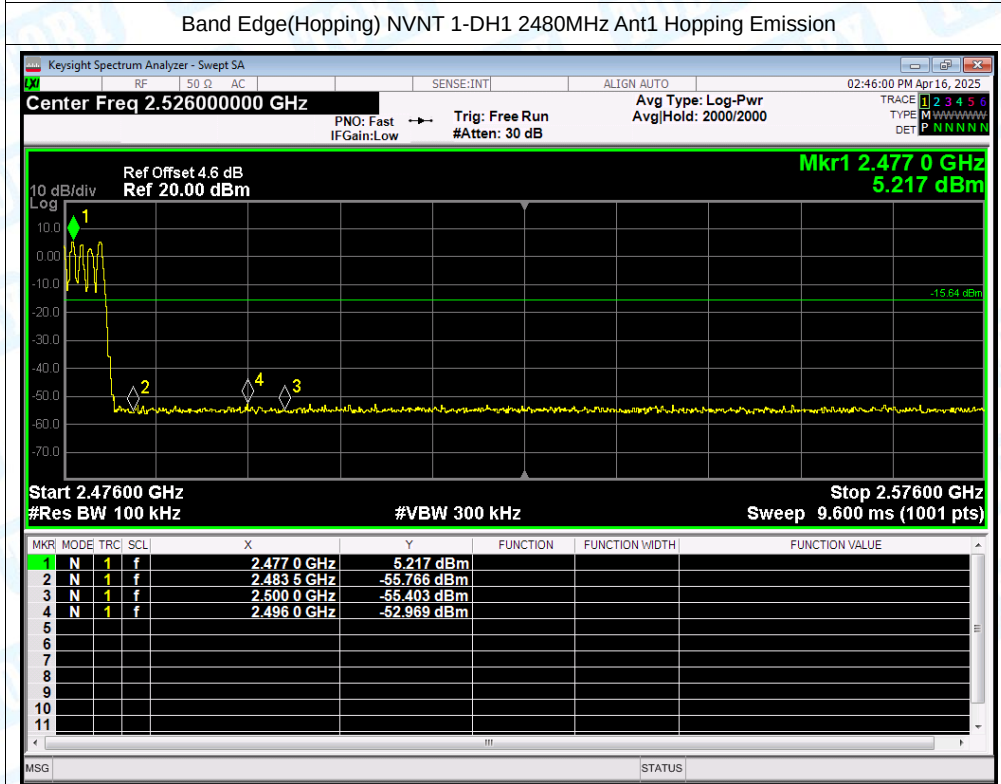
Test Graphs

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

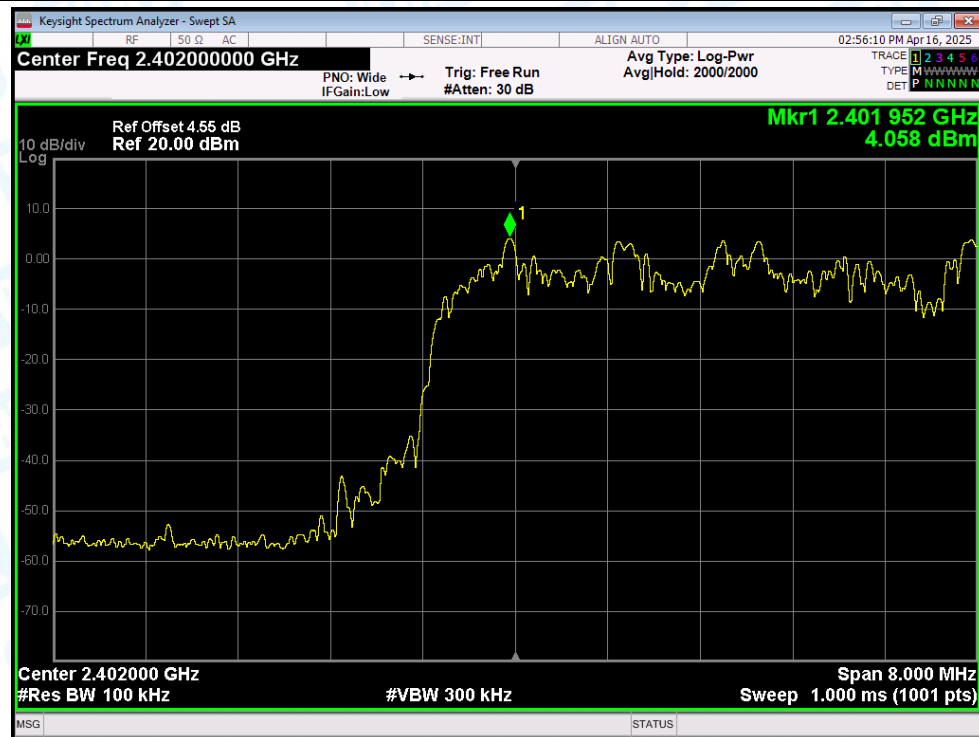


Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

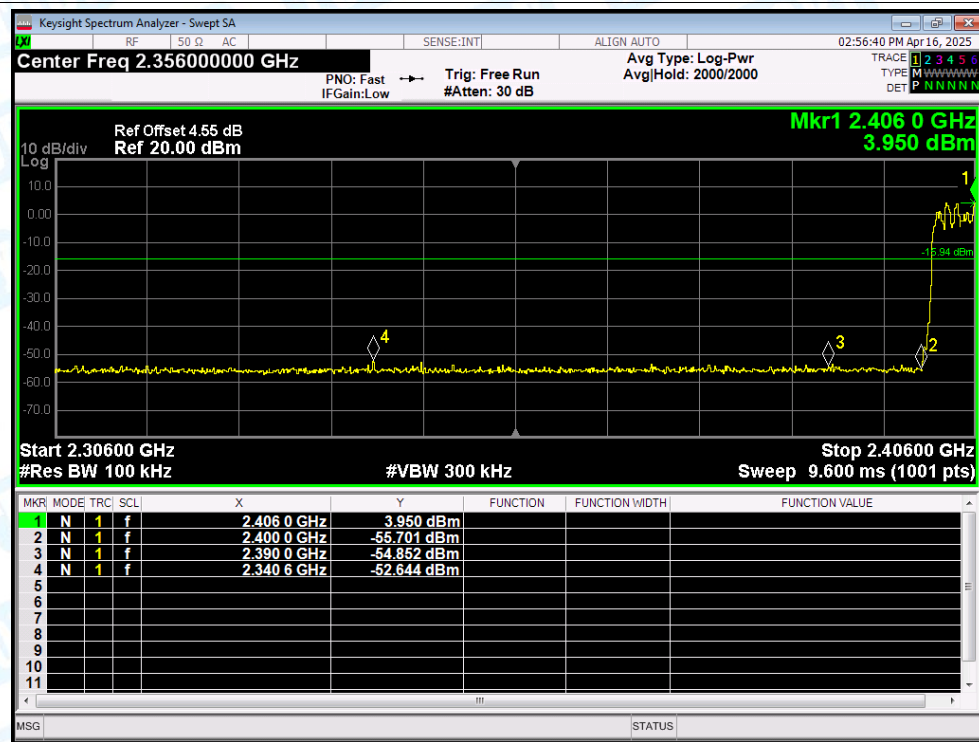


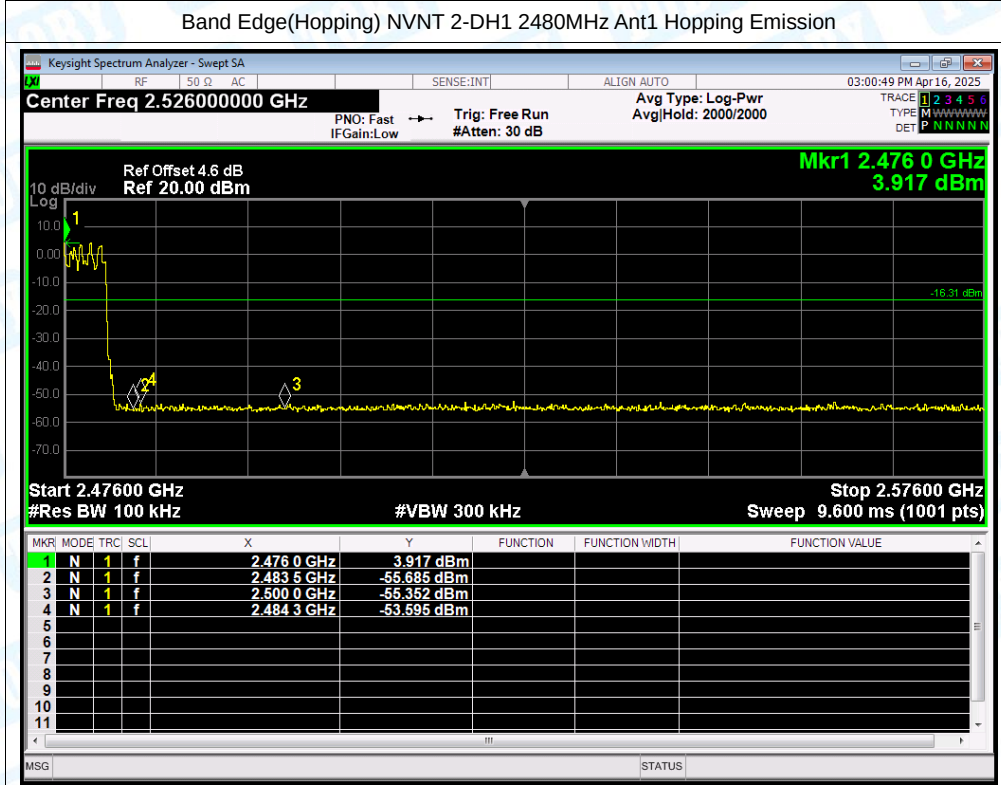


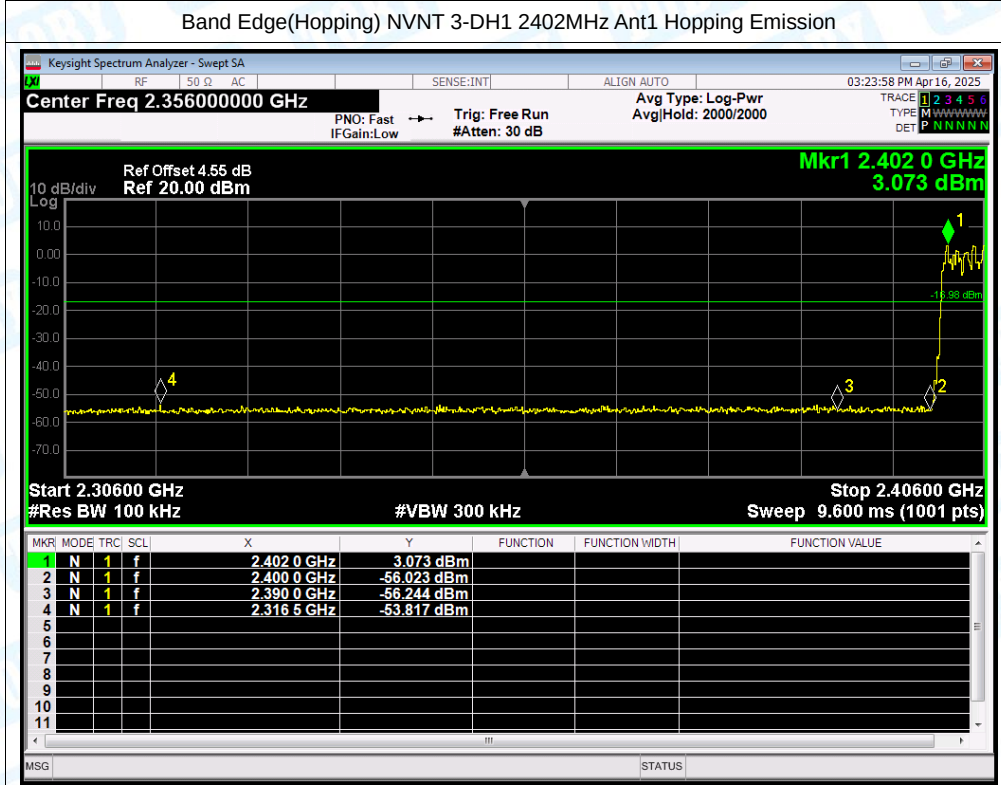
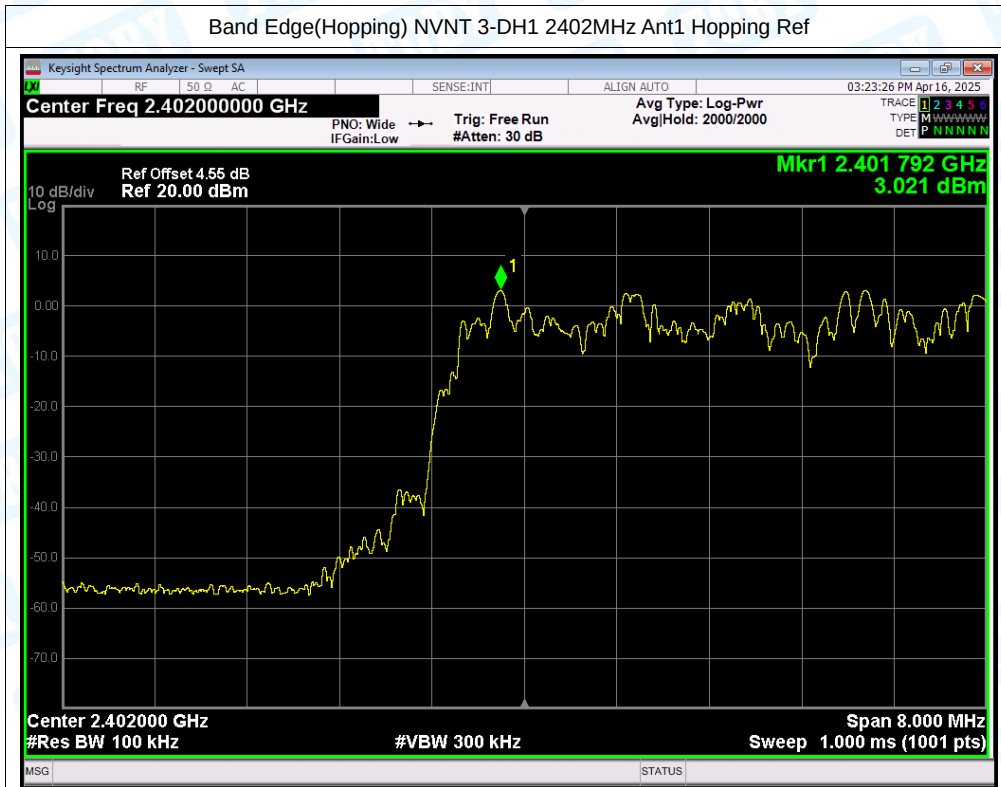
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

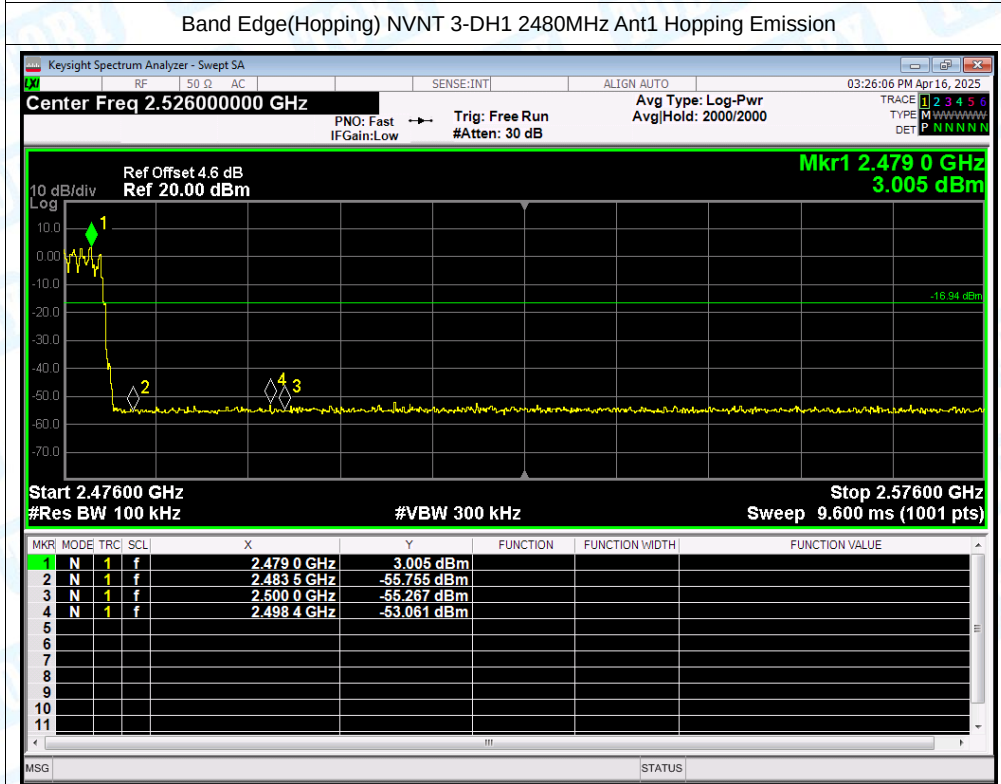
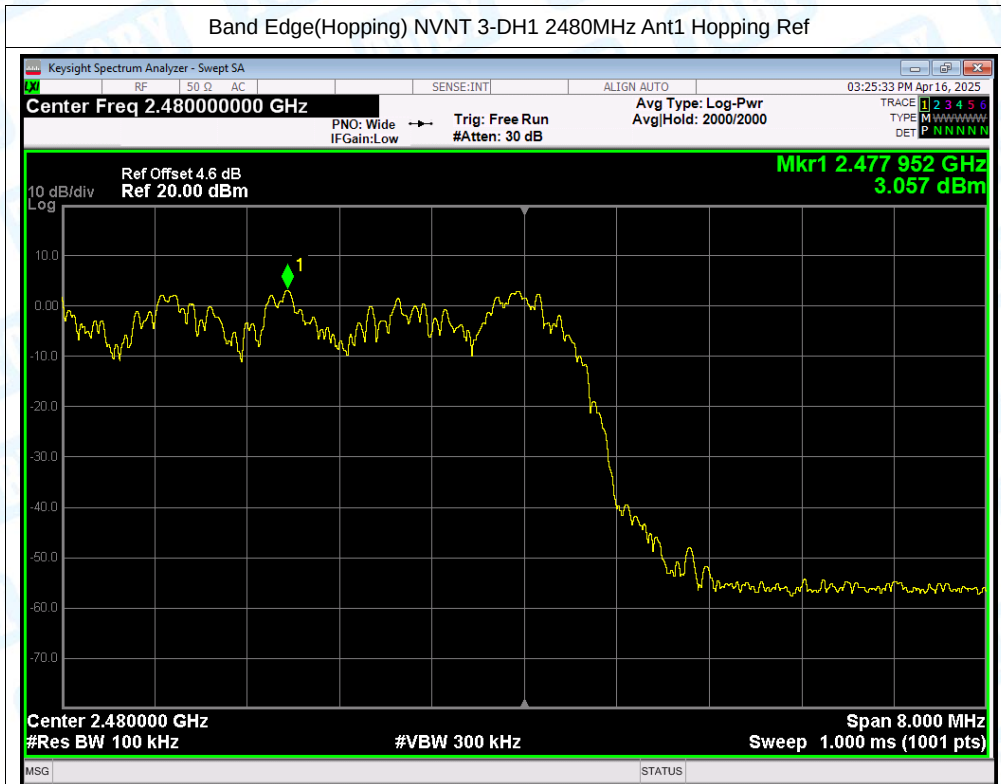


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission







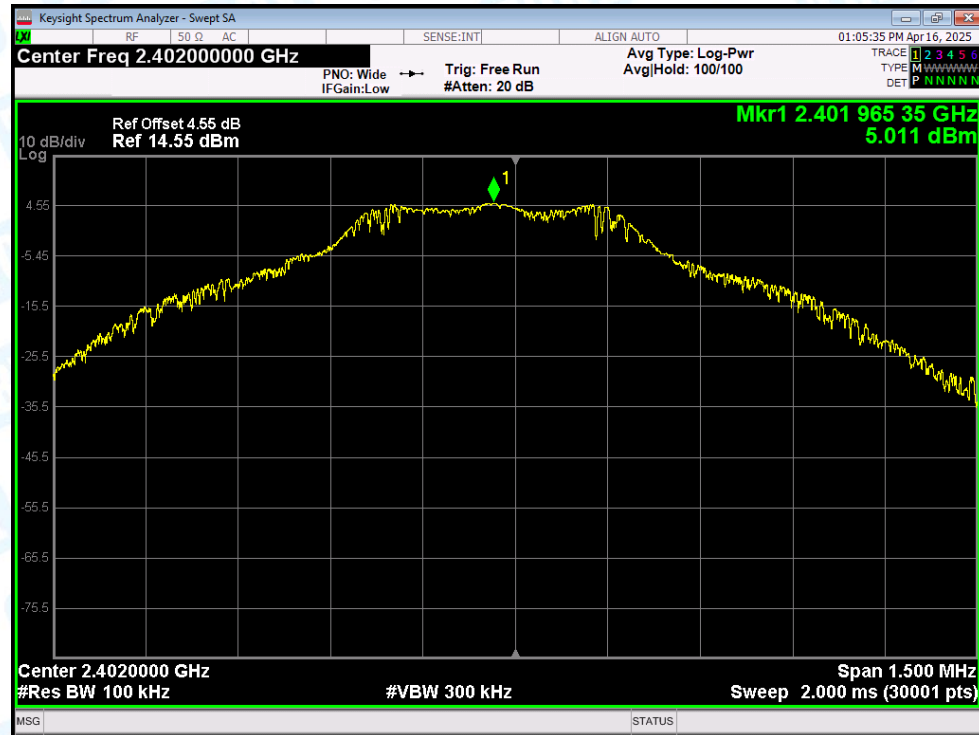


7. Conducted RF Spurious Emission

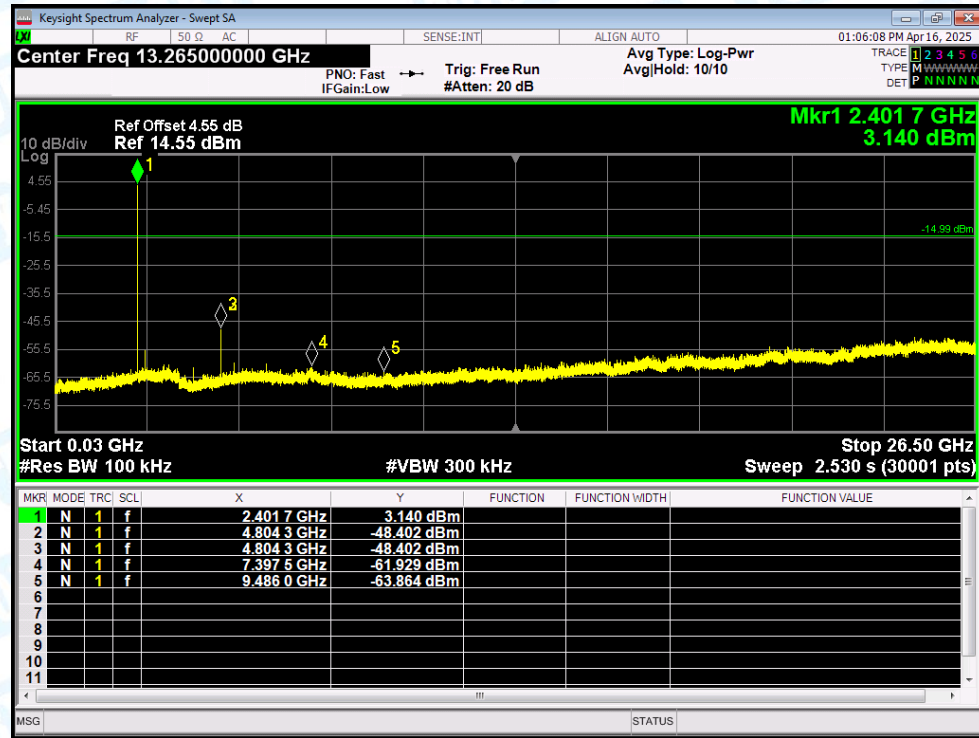
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-53.41	-20	Pass
NVNT	1-DH1	2441	Ant1	-56.02	-20	Pass
NVNT	1-DH1	2480	Ant1	-56.61	-20	Pass
NVNT	2-DH1	2402	Ant1	-55.11	-20	Pass
NVNT	2-DH1	2441	Ant1	-53.73	-20	Pass
NVNT	2-DH1	2480	Ant1	-55.01	-20	Pass
NVNT	3-DH1	2402	Ant1	-48.25	-20	Pass
NVNT	3-DH1	2441	Ant1	-53.98	-20	Pass
NVNT	3-DH1	2480	Ant1	-53.57	-20	Pass

Test Graphs

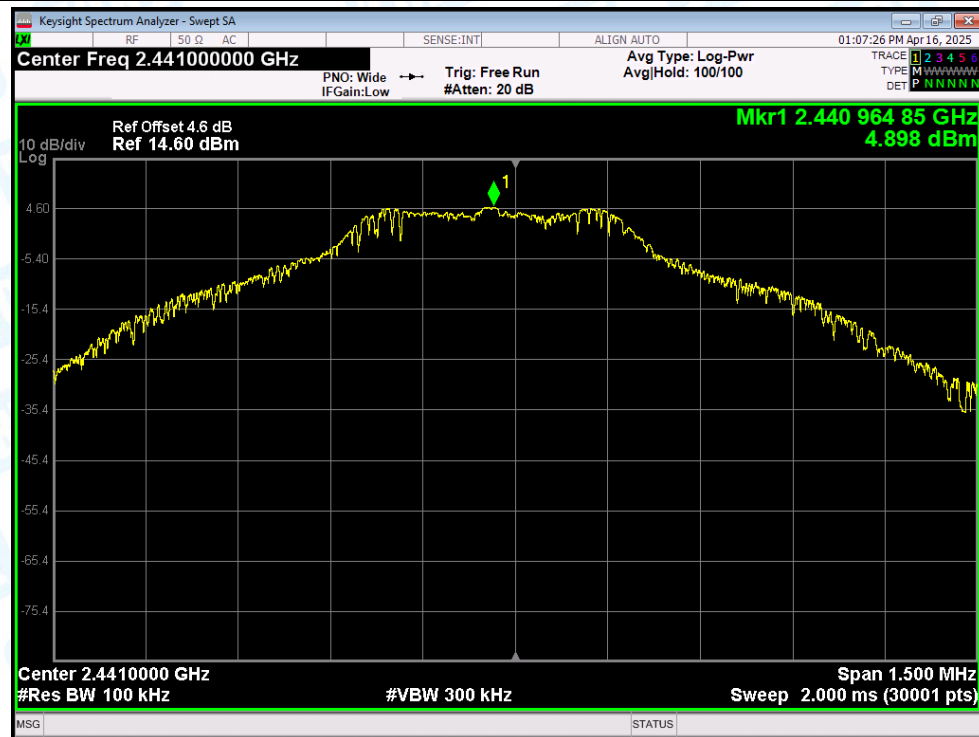
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



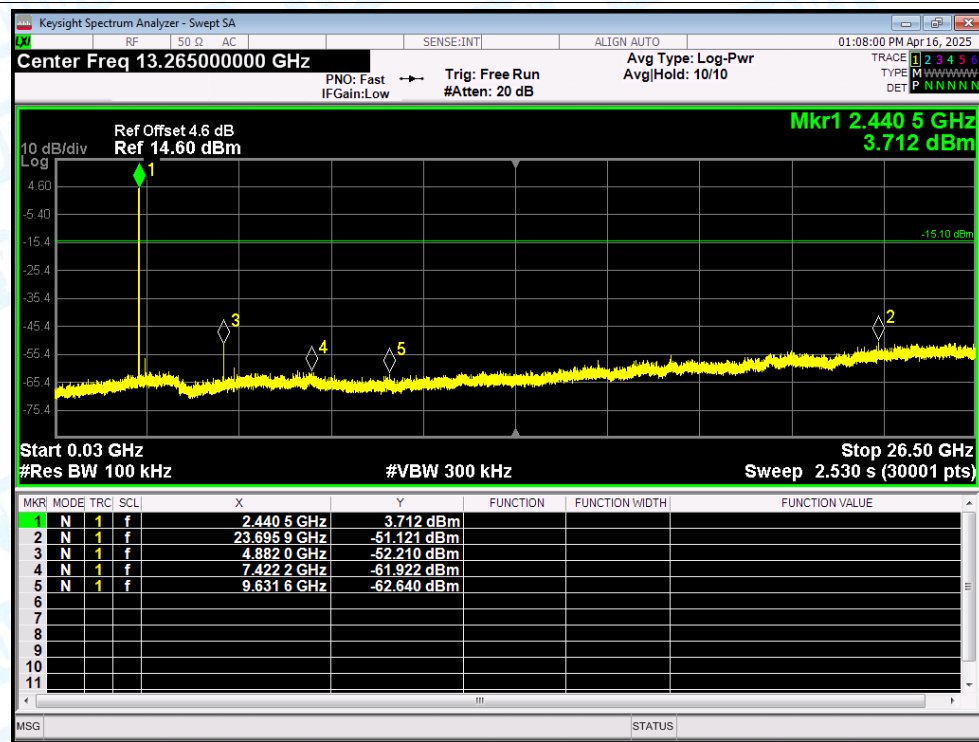
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



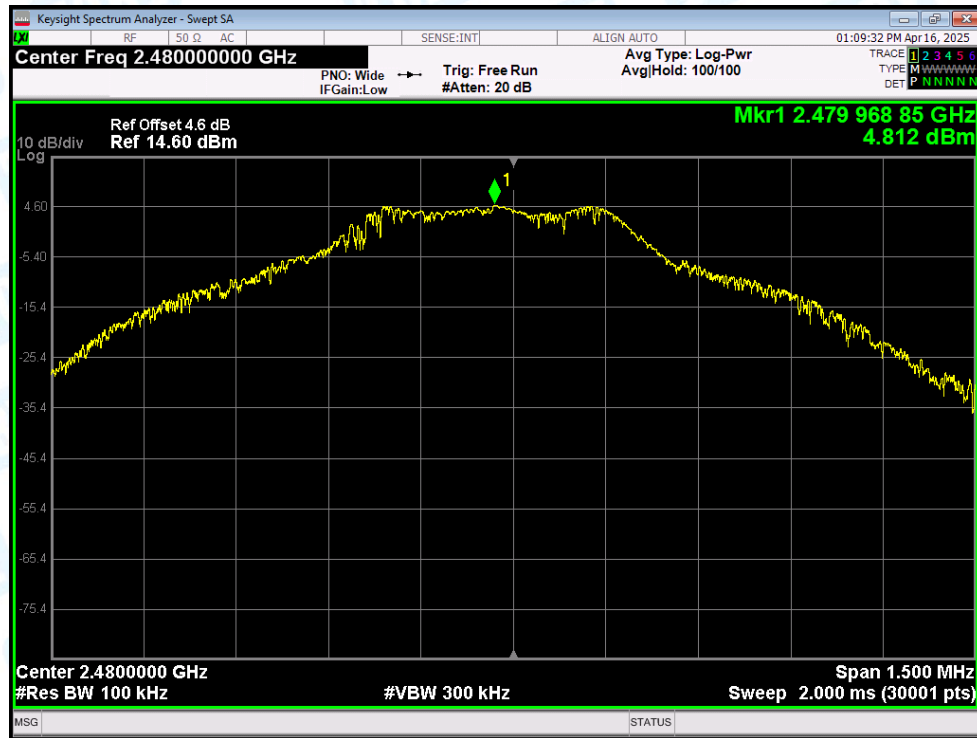
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



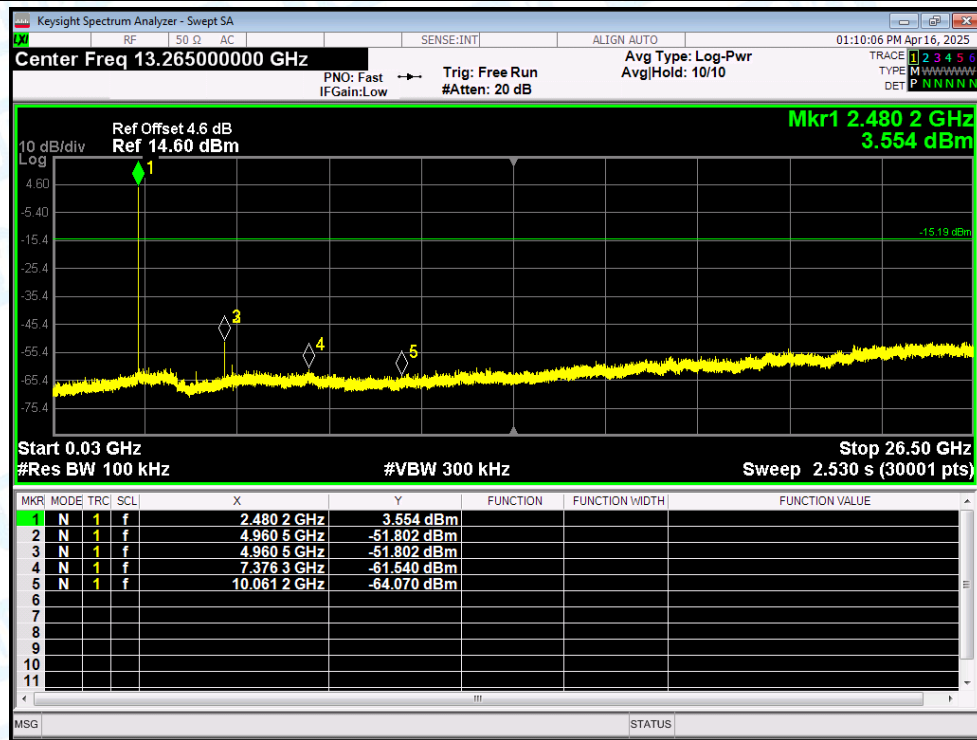
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



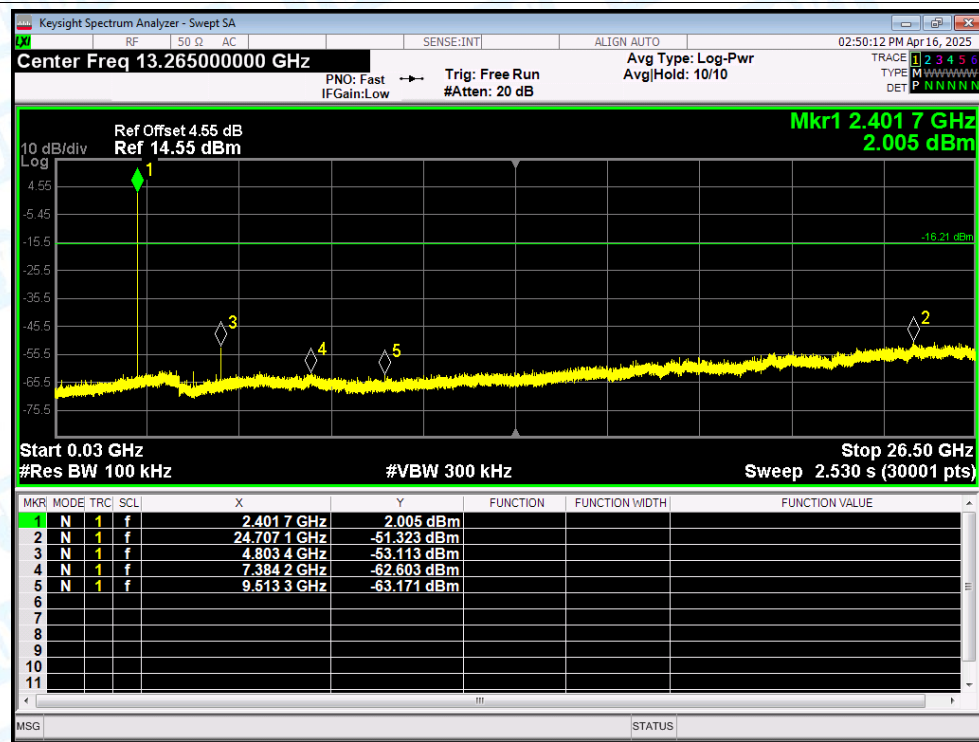
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



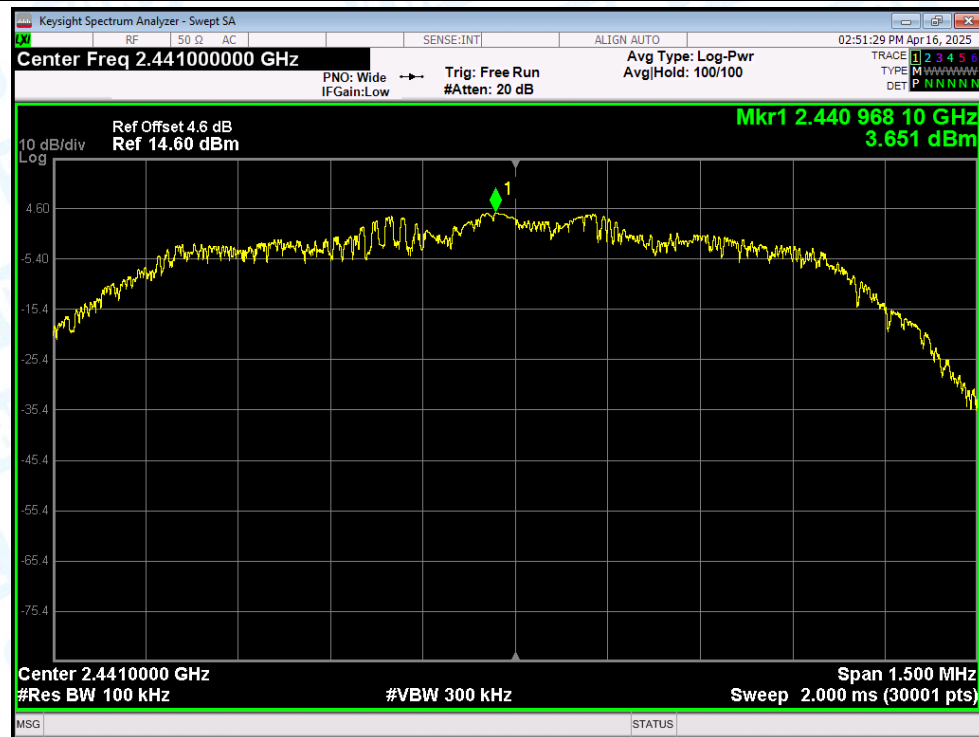
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



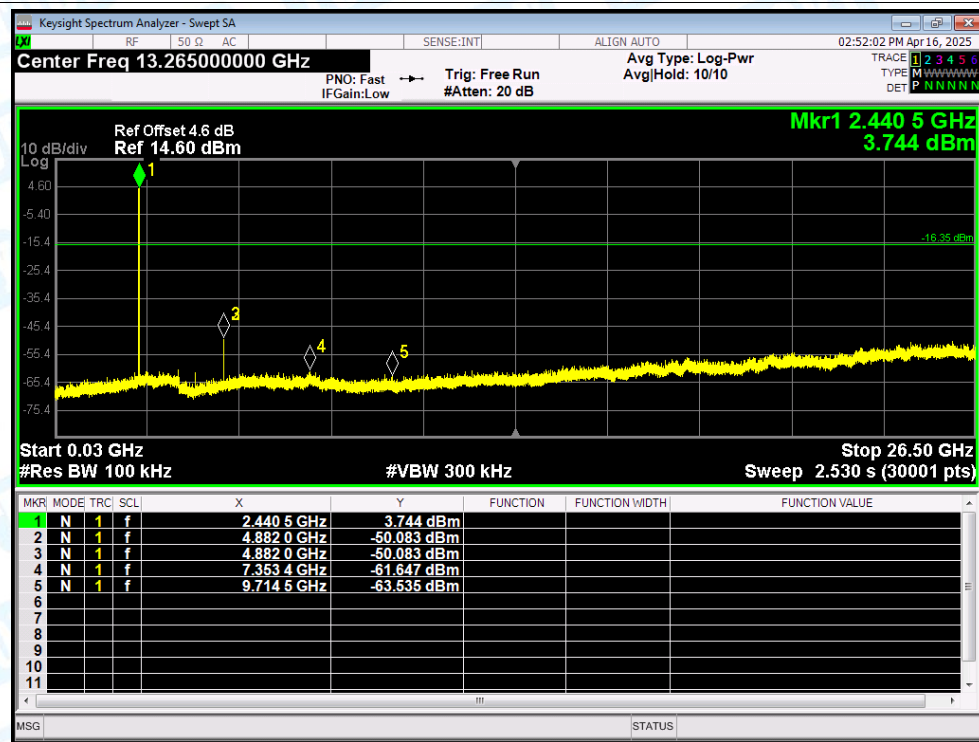
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



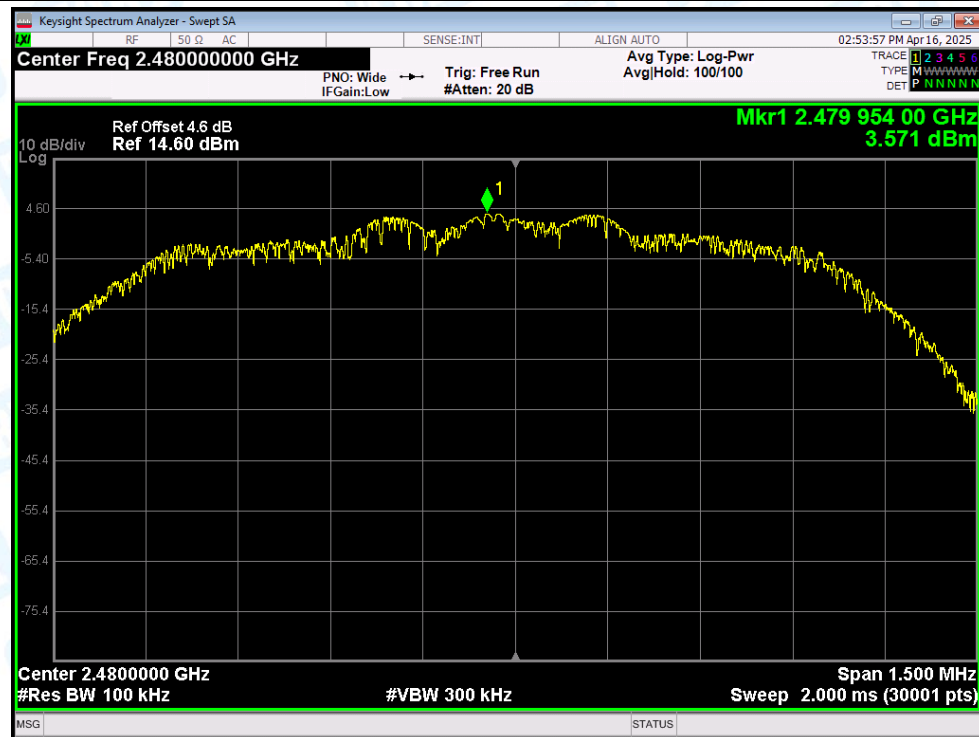
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



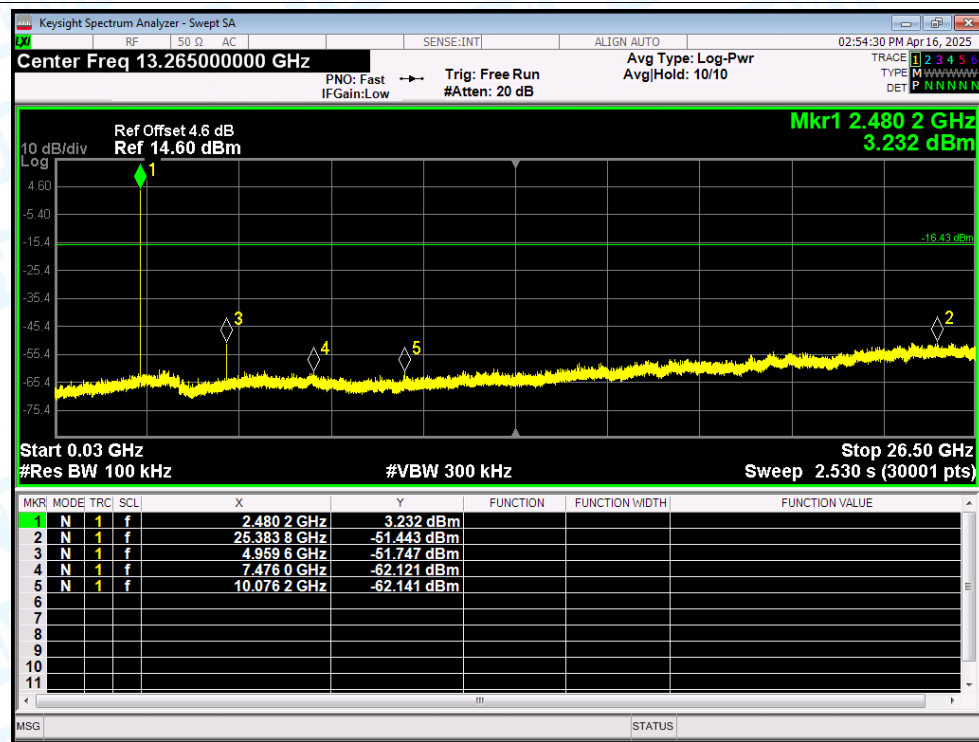
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



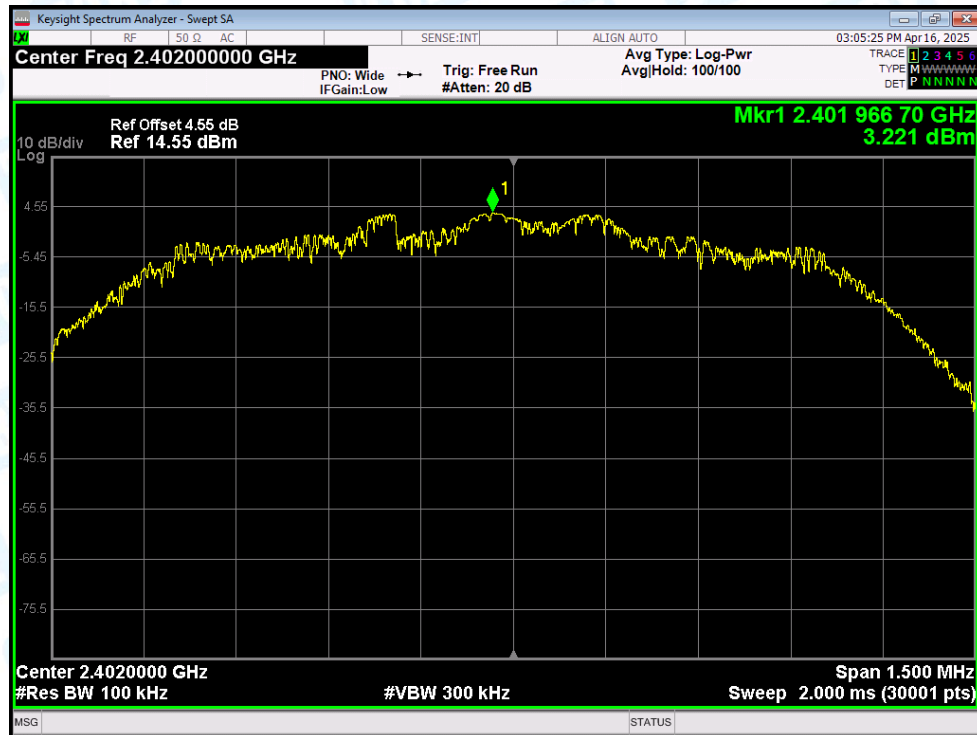
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



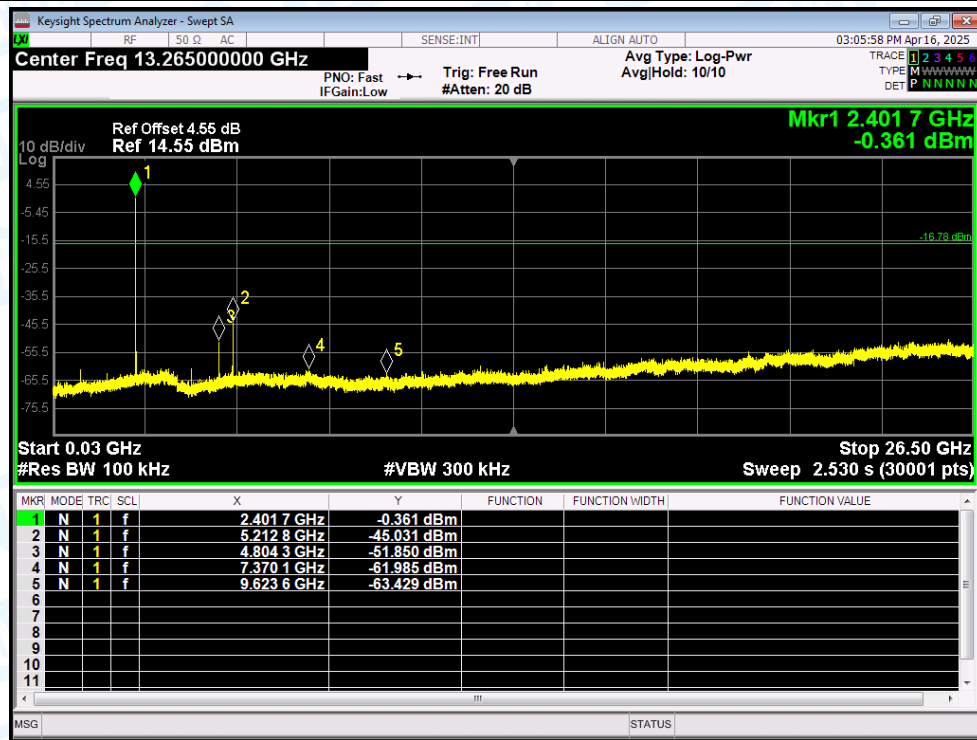
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



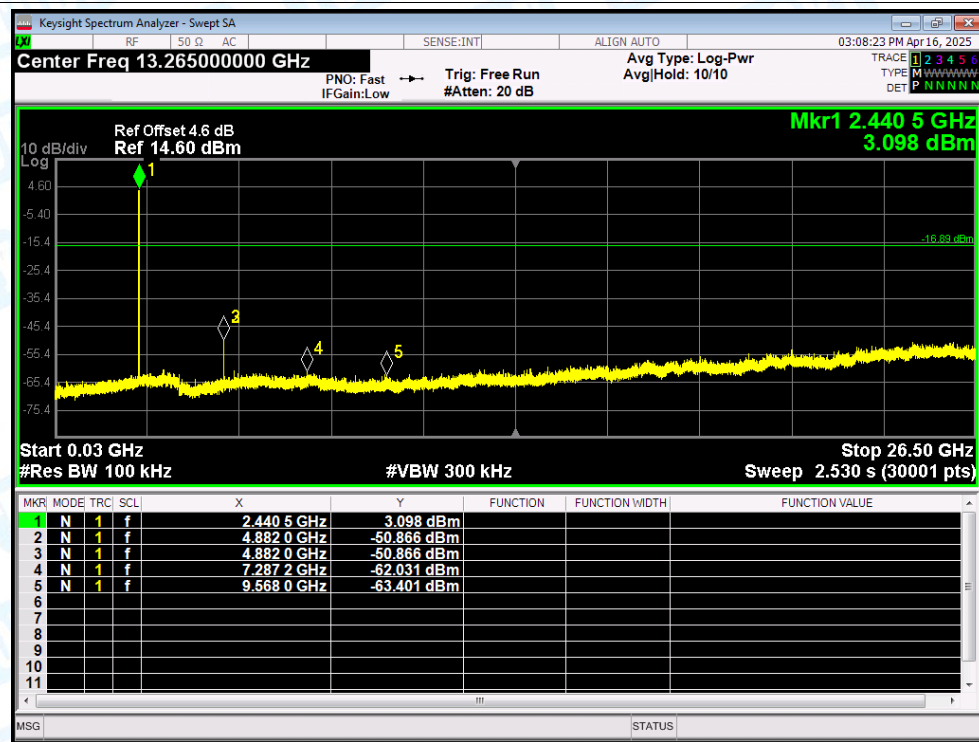
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



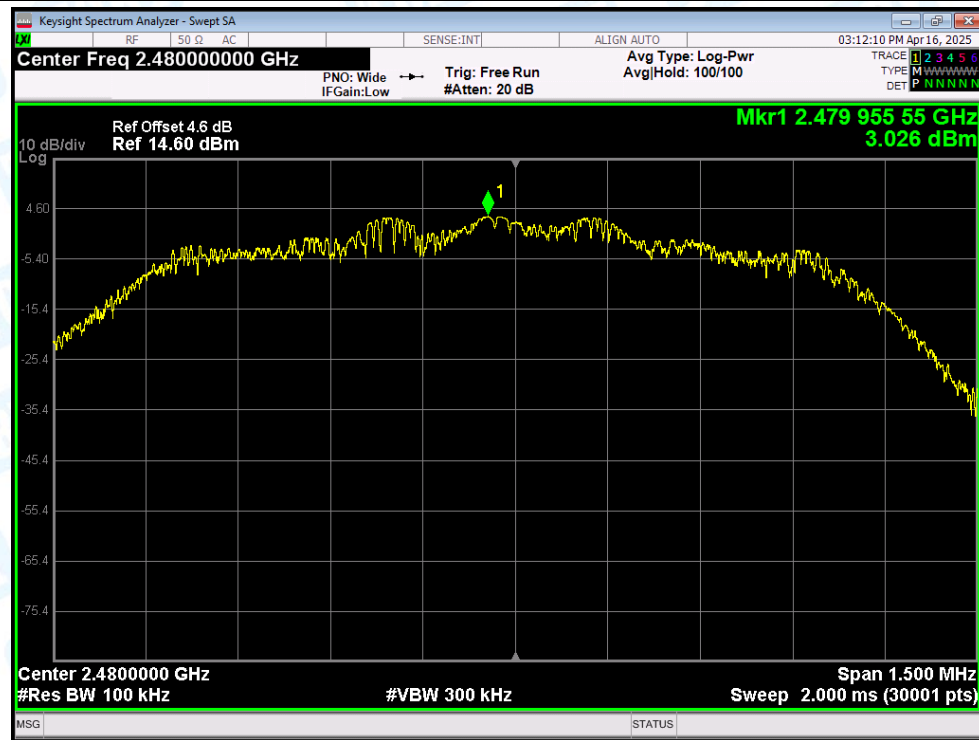
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



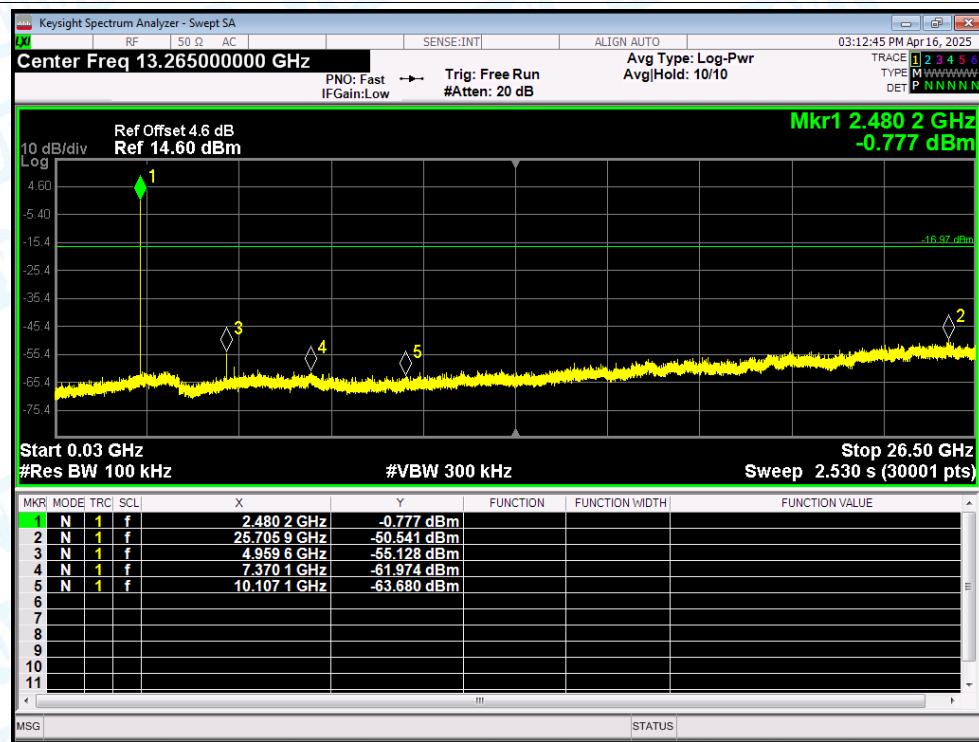
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

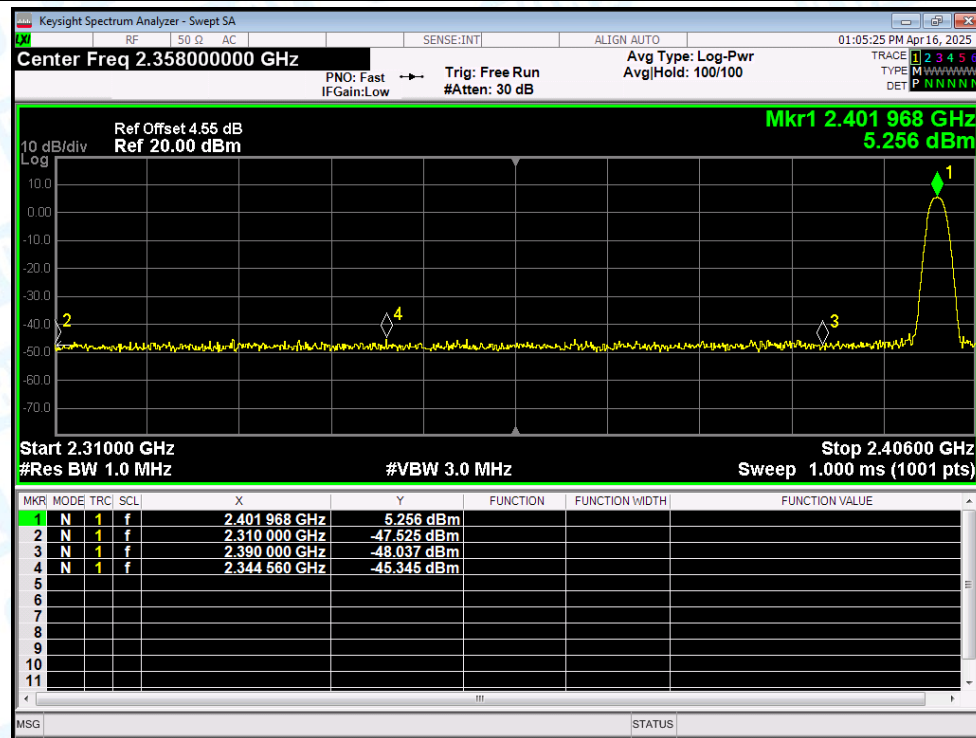


8.Restrict Band

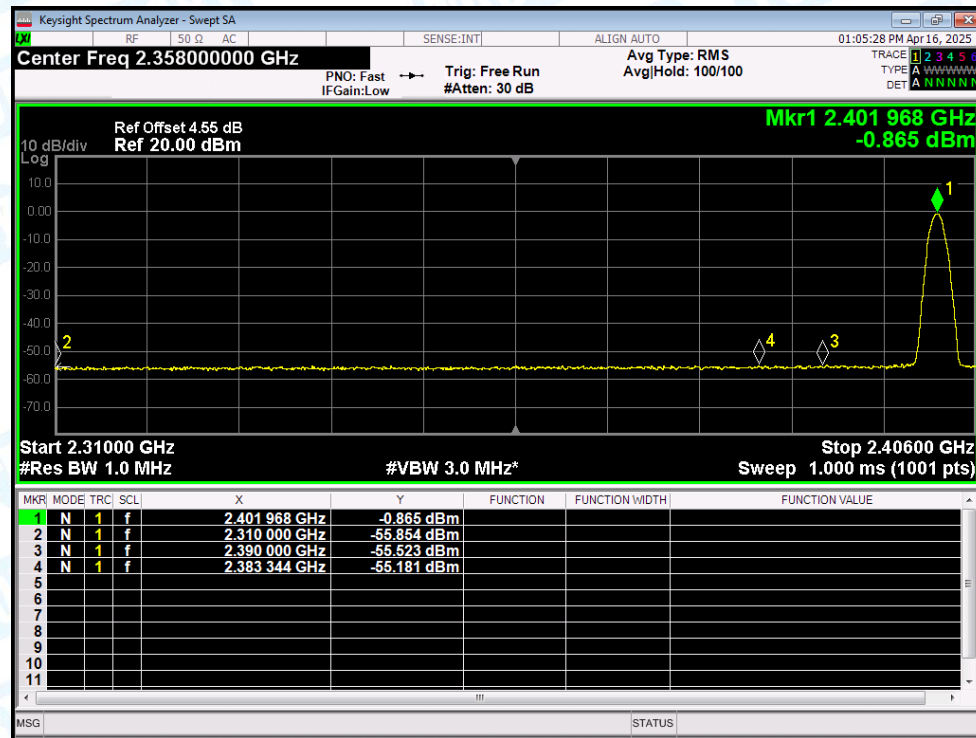
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.53	2	-	49.73	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-55.85	2	5.1	46.51	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2344.56	-45.34	2	-	51.92	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2383.344	-55.18	2	5.1	47.18	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.04	2	-	49.22	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.52	2	5.1	46.84	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.66	2	-	49.6	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.84	2	5.1	47.52	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.544	-43.76	2	-	53.5	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.608	-54.38	2	5.1	47.98	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.7	2	-	50.56	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.19	2	5.1	47.17	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.41	2	-	48.85	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.27	2	4.99	45.98	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2352.816	-44.86	2	-	52.4	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2376.144	-54.99	2	4.99	47.26	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.39	2	-	49.87	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.26	2	4.99	45.99	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.5	2	-	50.76	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.11	2	5.02	47.17	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2486.344	-43.88	2	-	53.38	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2486.752	-54.46	2	5.02	47.82	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.92	2	-	49.34	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.63	2	5.02	47.65	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.5	2	-	48.76	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.1	2	4.91	46.07	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2379.696	-44.59	2	-	52.67	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2377.2	-54.88	2	4.91	47.29	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.94	2	-	48.32	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.96	2	4.91	46.21	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.8	2	-	50.46	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-54.64	2	4.91	47.53	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2491.456	-43.97	2	-	53.29	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2495.152	-54.34	2	4.91	47.83	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-45.99	2	-	51.27	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.27	2	4.91	46.9	Average	54	Pass

Test Graphs

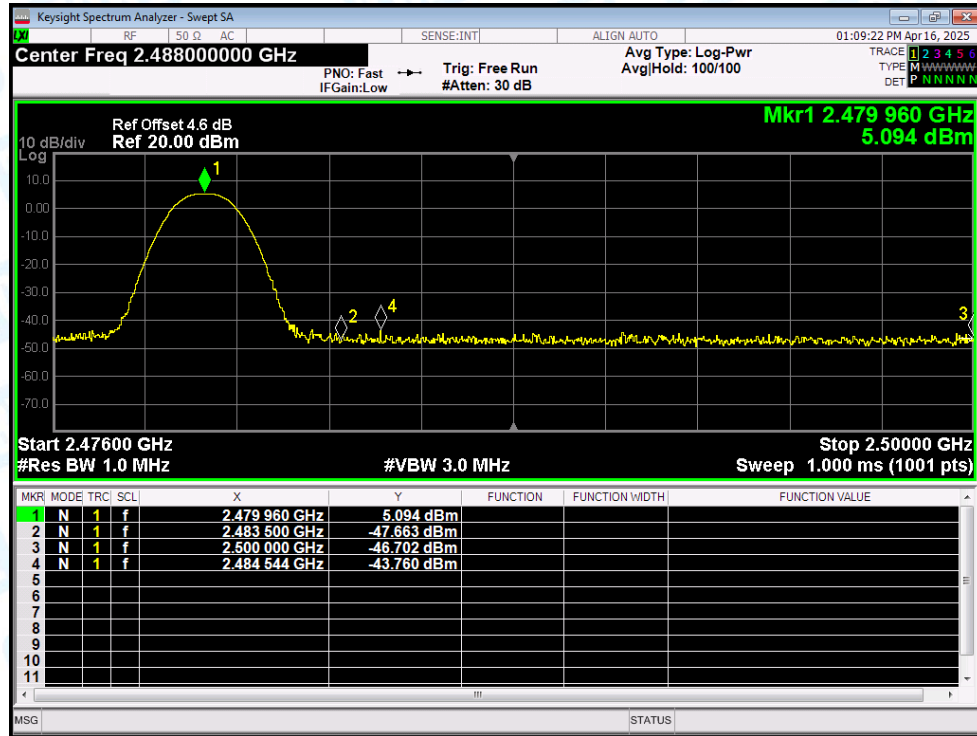
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



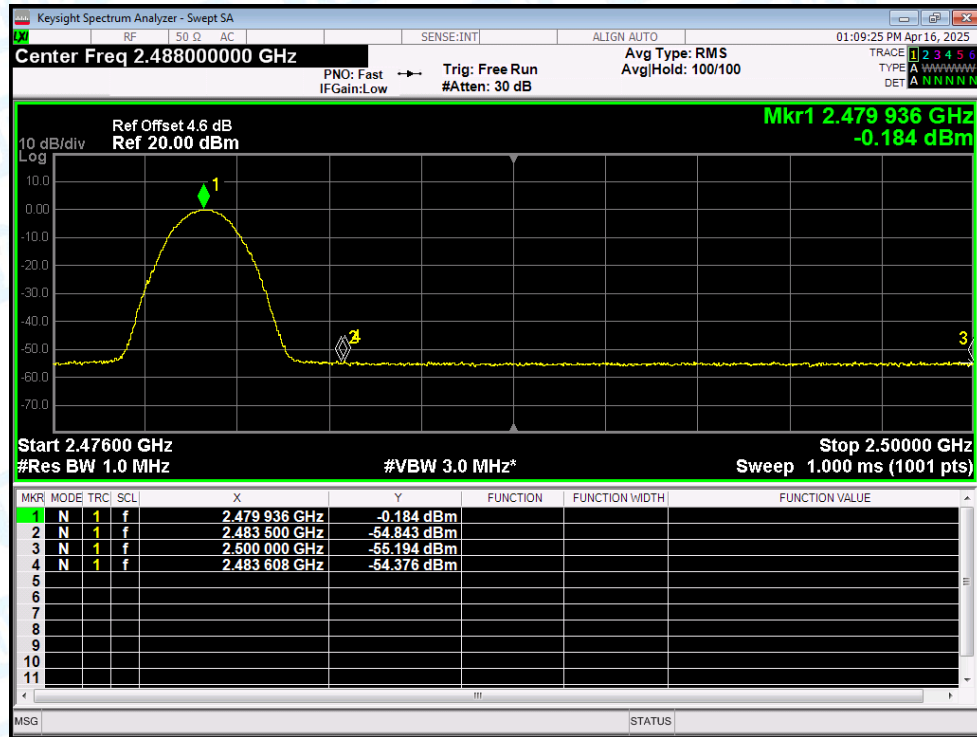
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



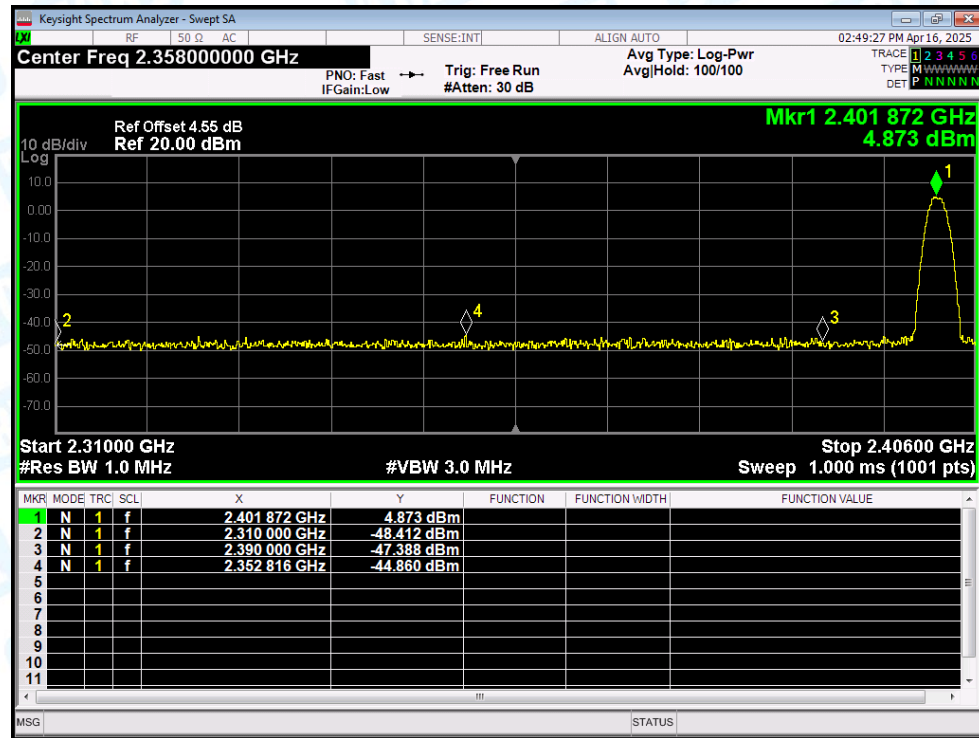
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



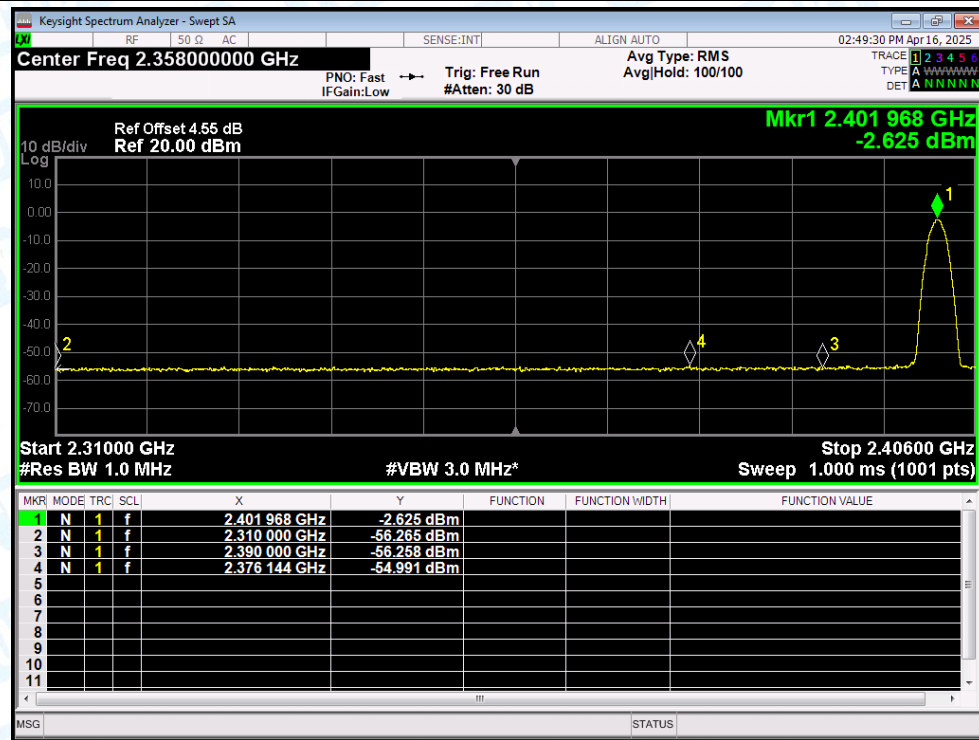
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



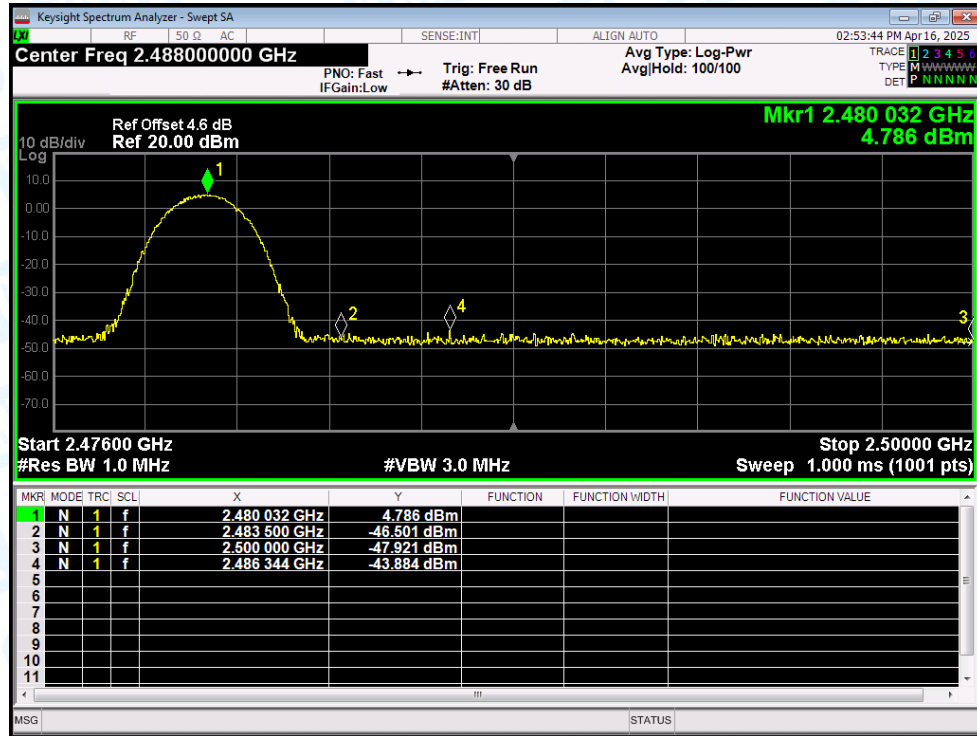
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



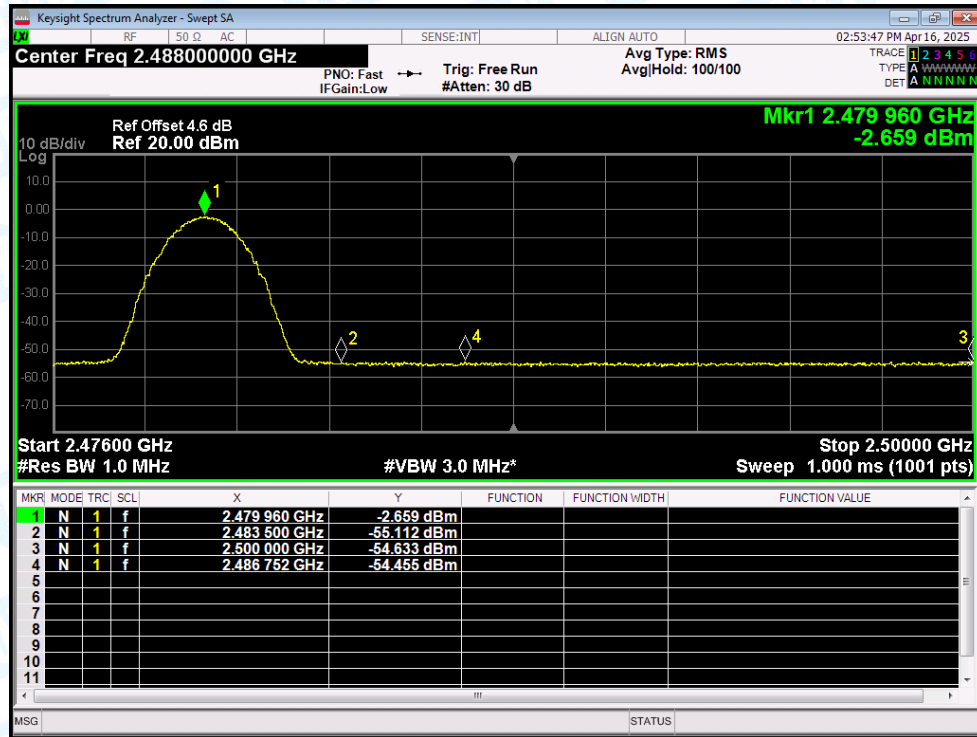
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



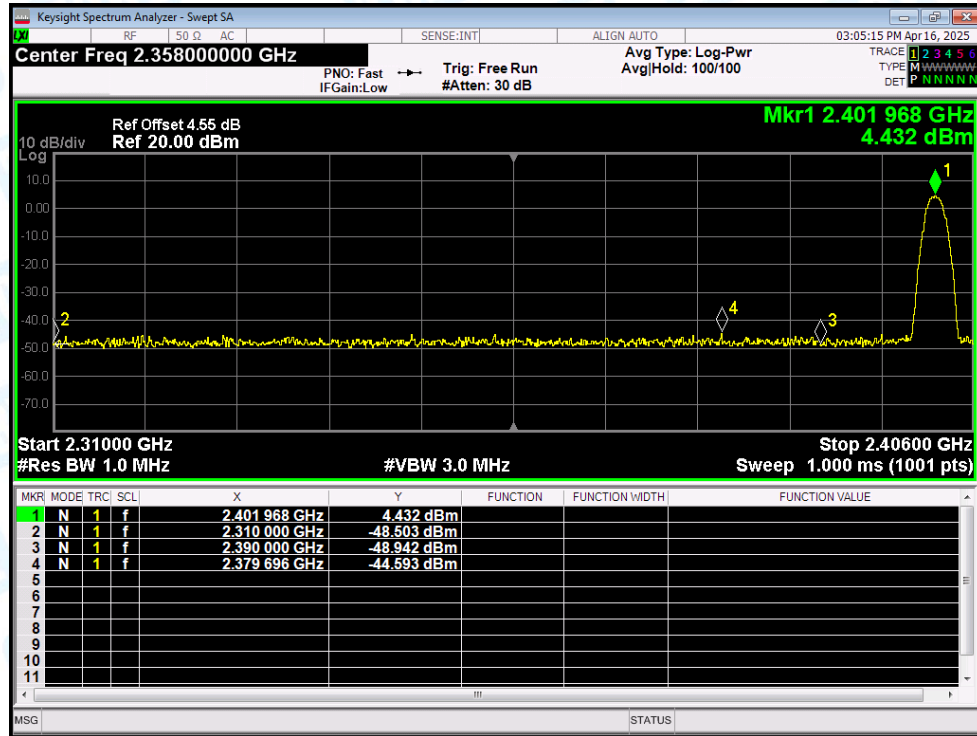
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



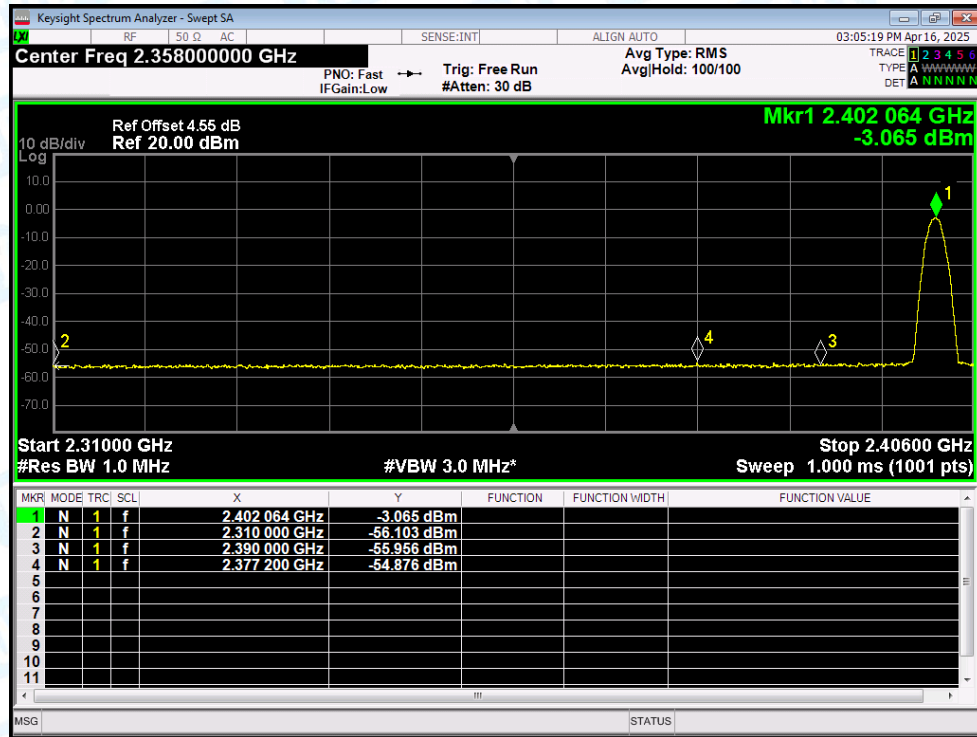
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



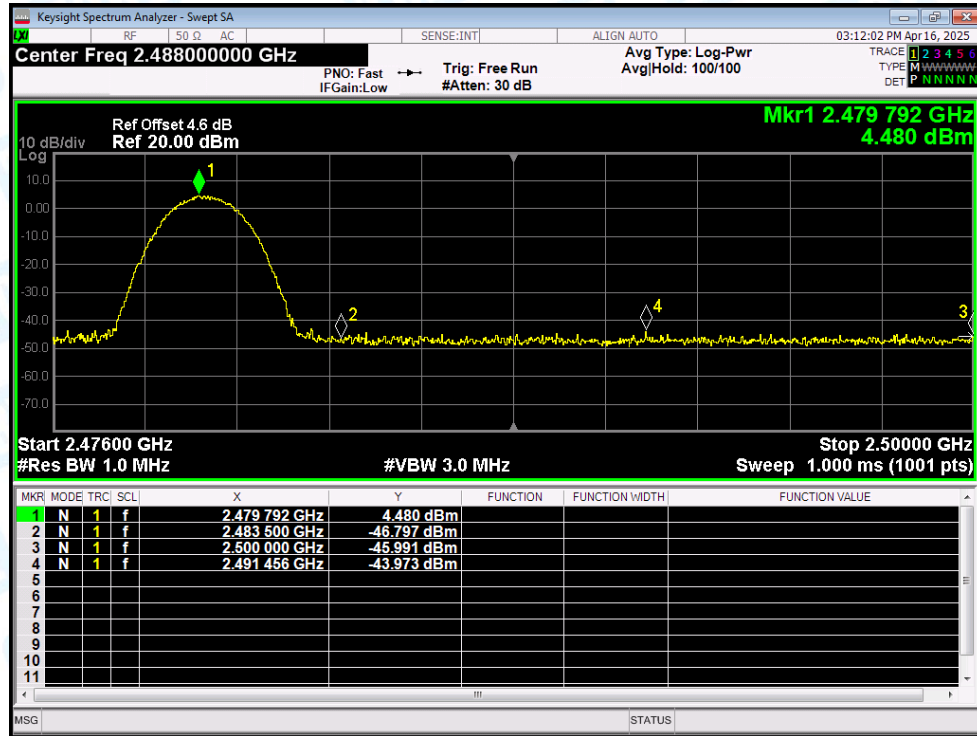
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



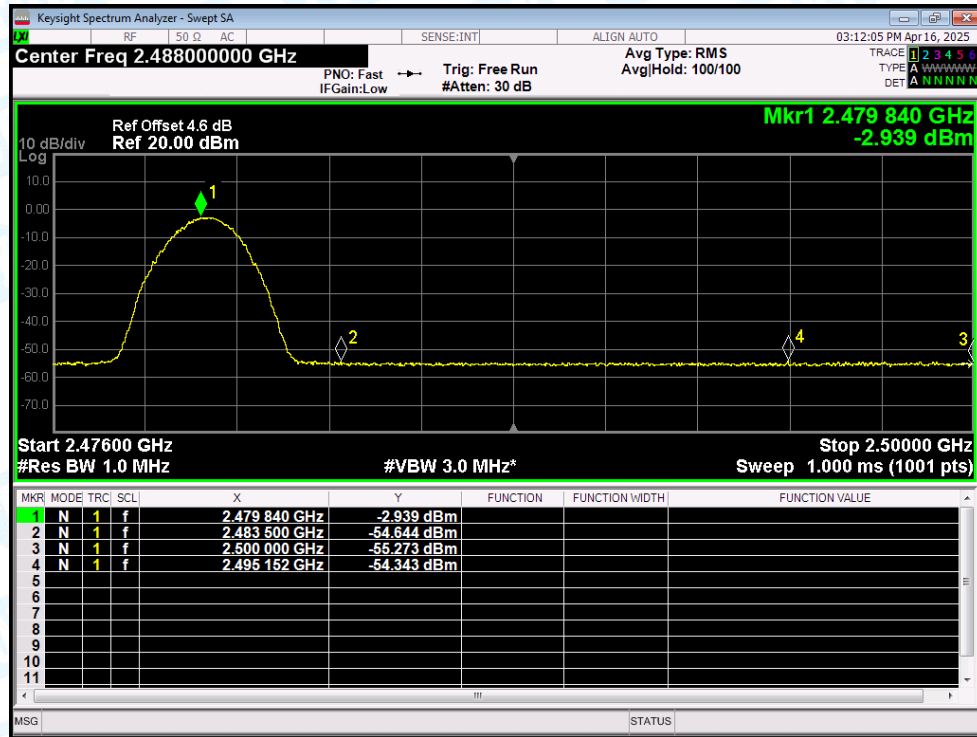
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Average

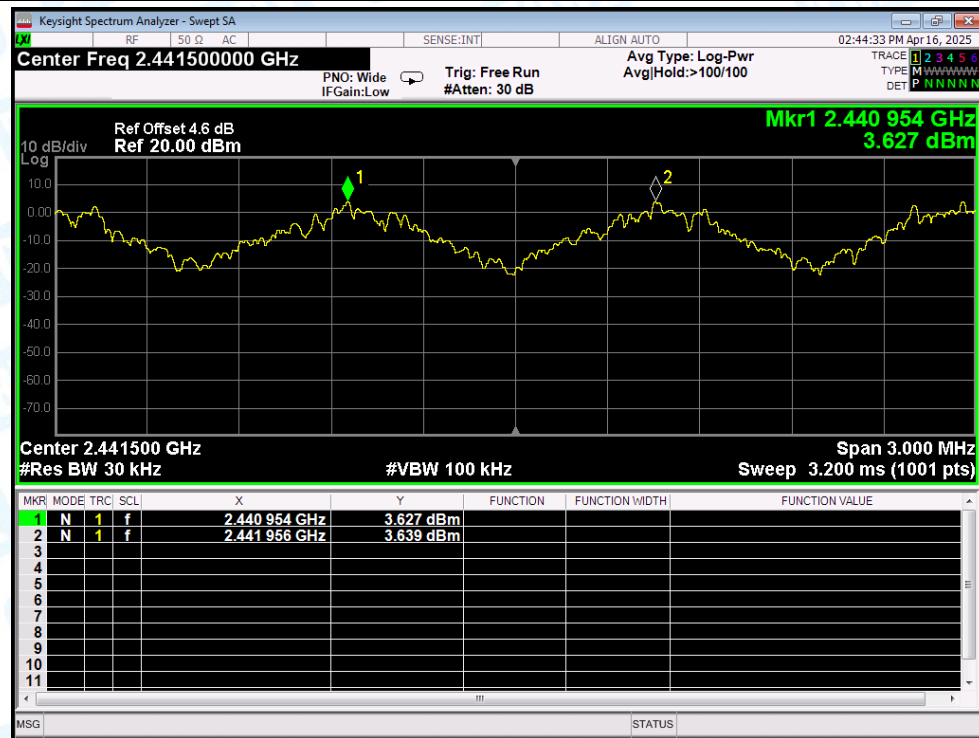


9.Carrier Frequencies Separation

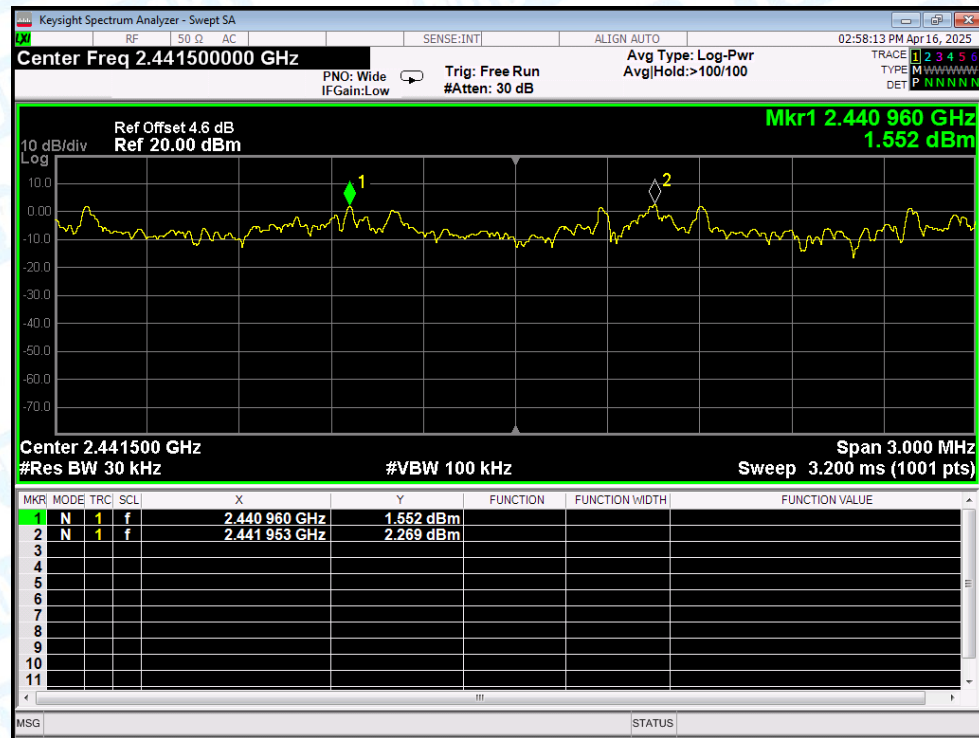
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.954	2441.956	1.002	0.613	Pass
NVNT	2-DH1	Ant1	2440.96	2441.953	0.993	0.827	Pass
NVNT	3-DH1	Ant1	2441.116	2441.941	0.825	0.025	Pass

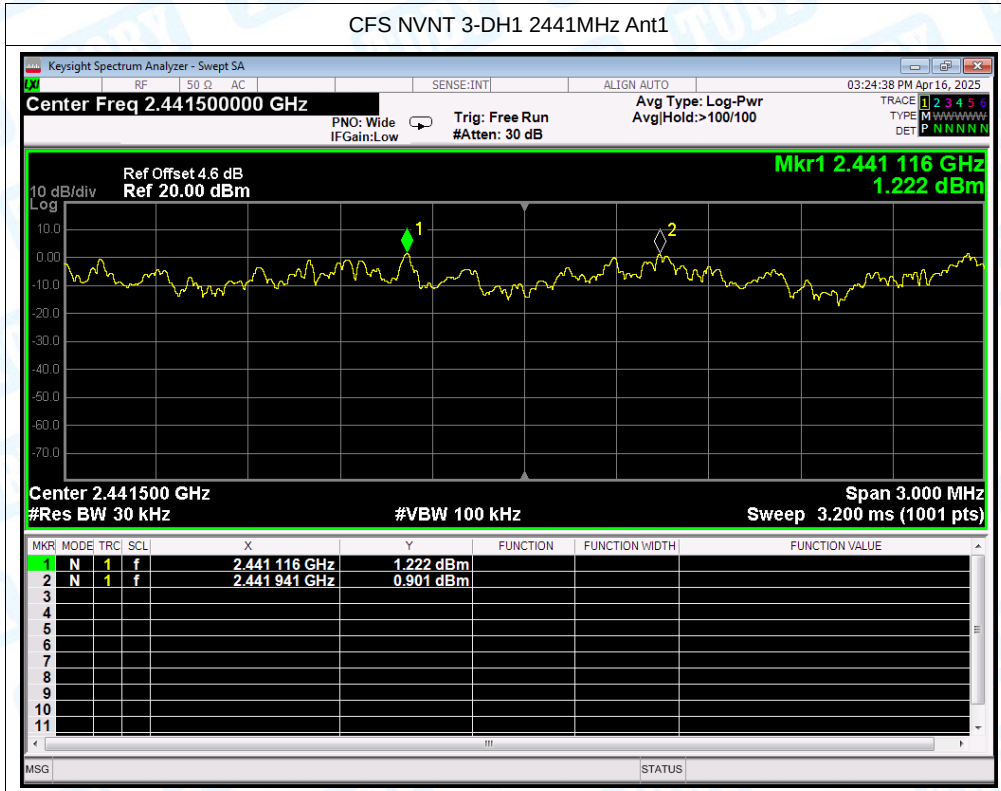
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



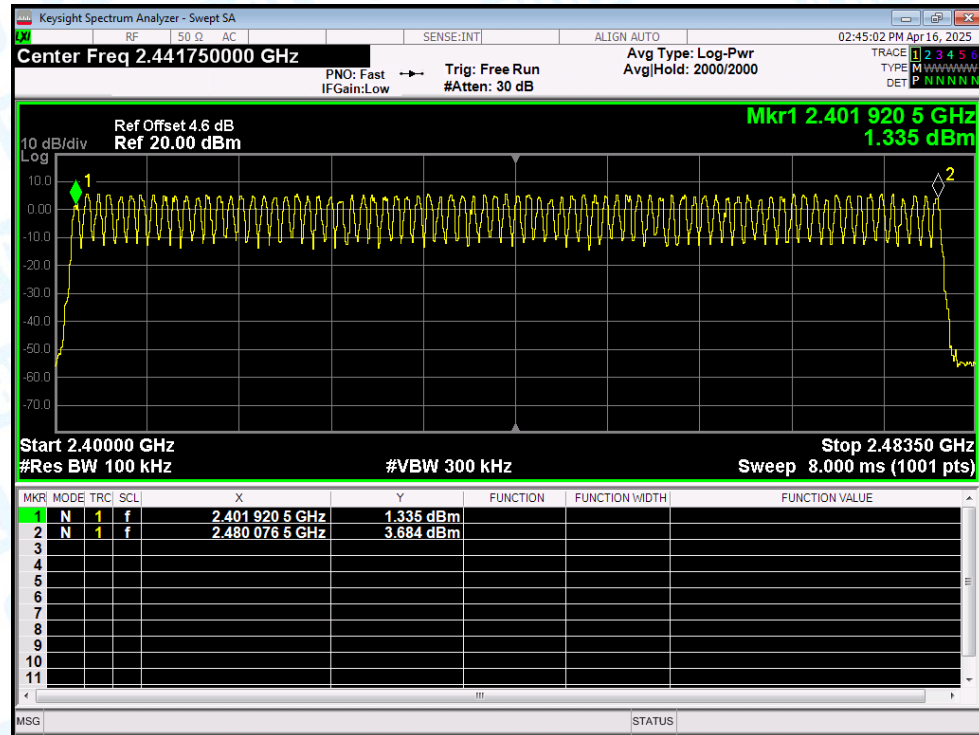


10.Number of Hopping Channel

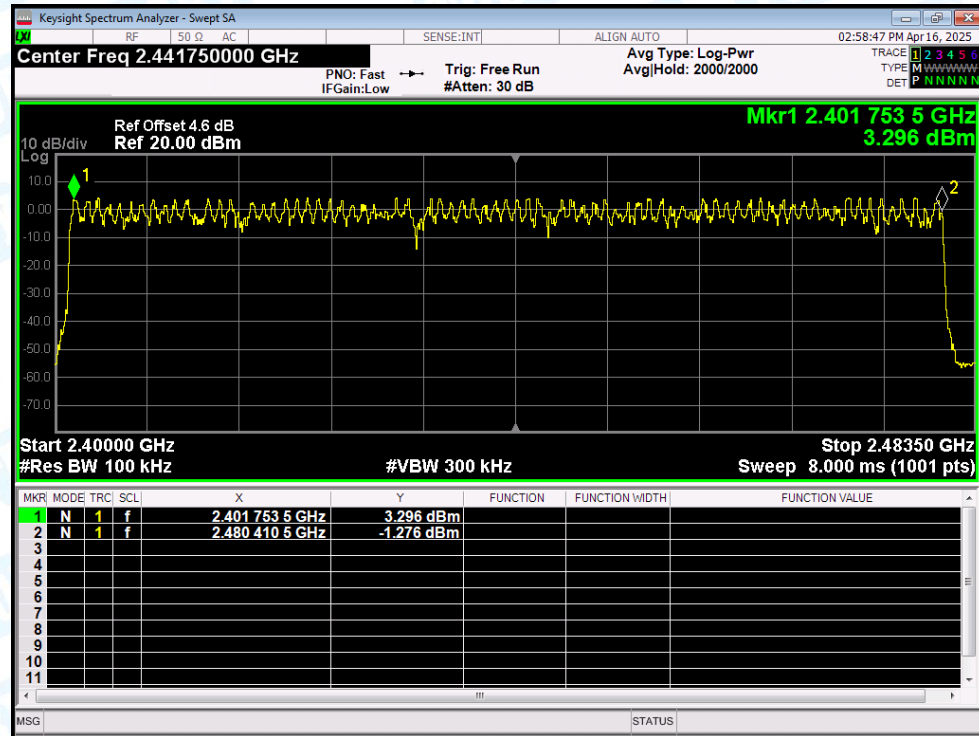
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

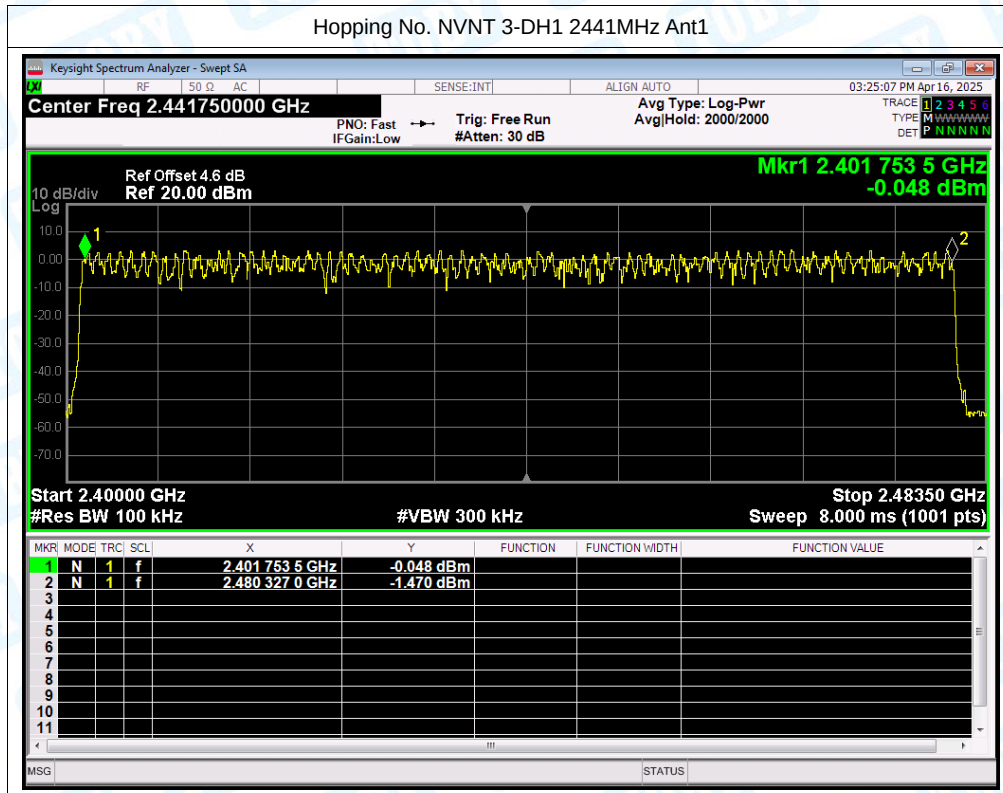
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



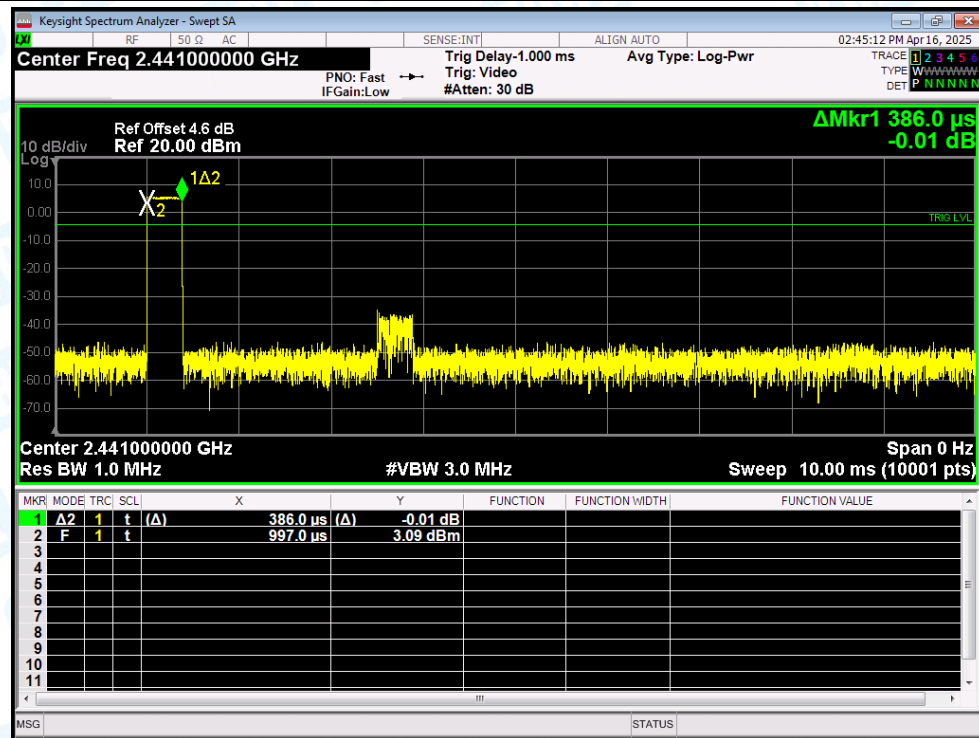


11.Dwell Time

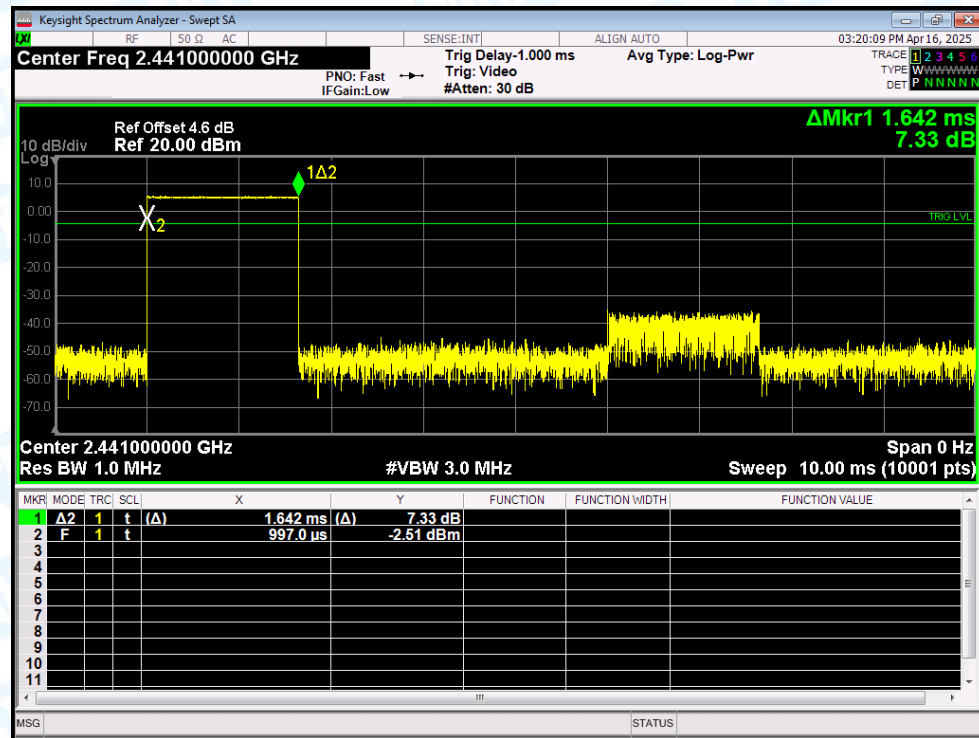
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.642	262.72	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.889	308.16	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.395	126.4	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.647	263.52	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.894	308.693	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.394	126.08	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.897	309.013	31600	400	Pass

Test Graphs

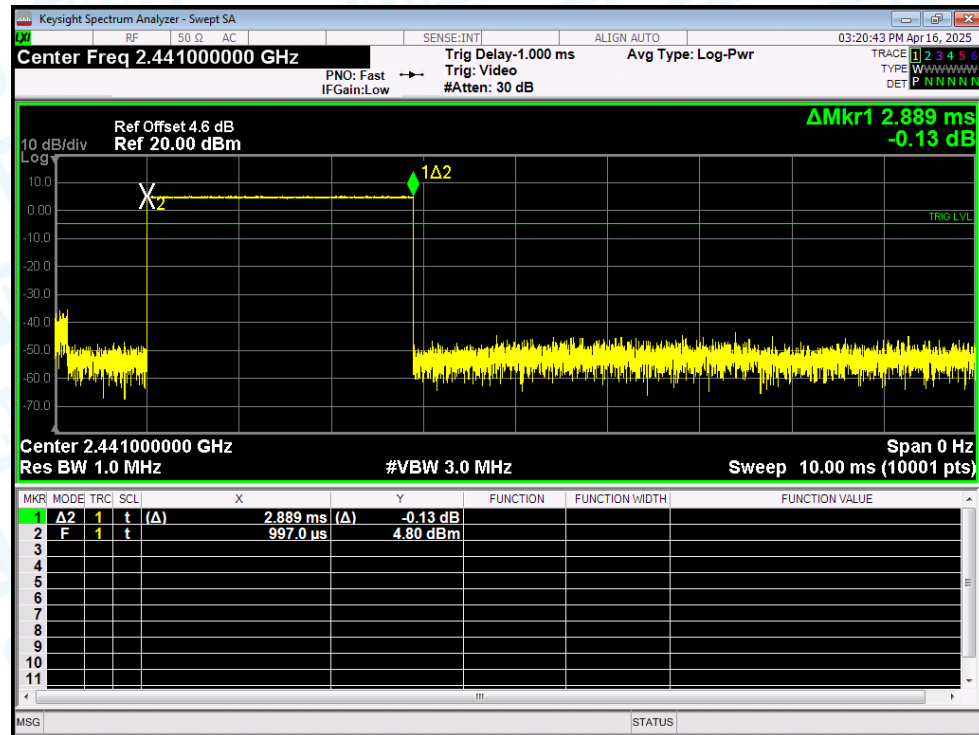
Dwell NVNT 1-DH1 2441MHz Ant1



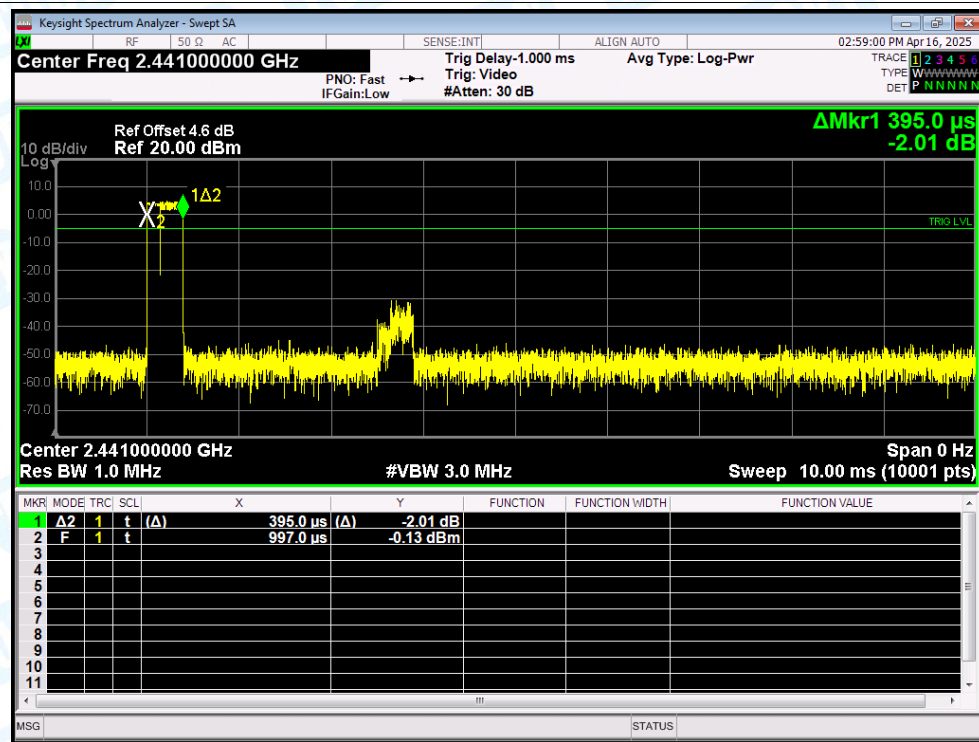
Dwell NVNT 1-DH3 2441MHz Ant1



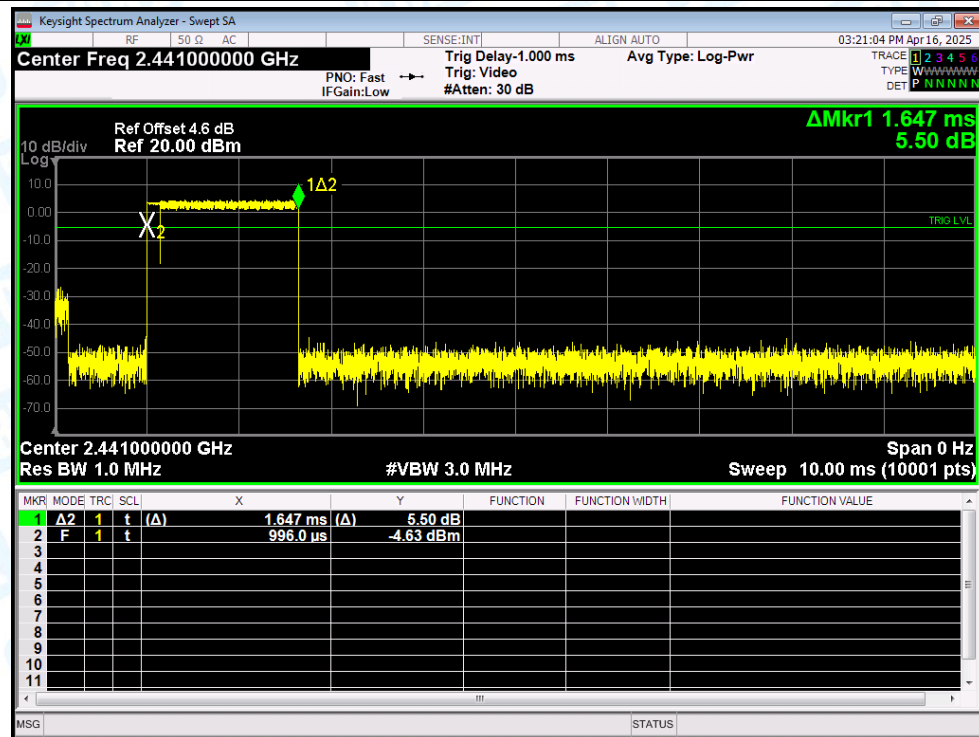
Dwell NVNT 1-DH5 2441MHz Ant1



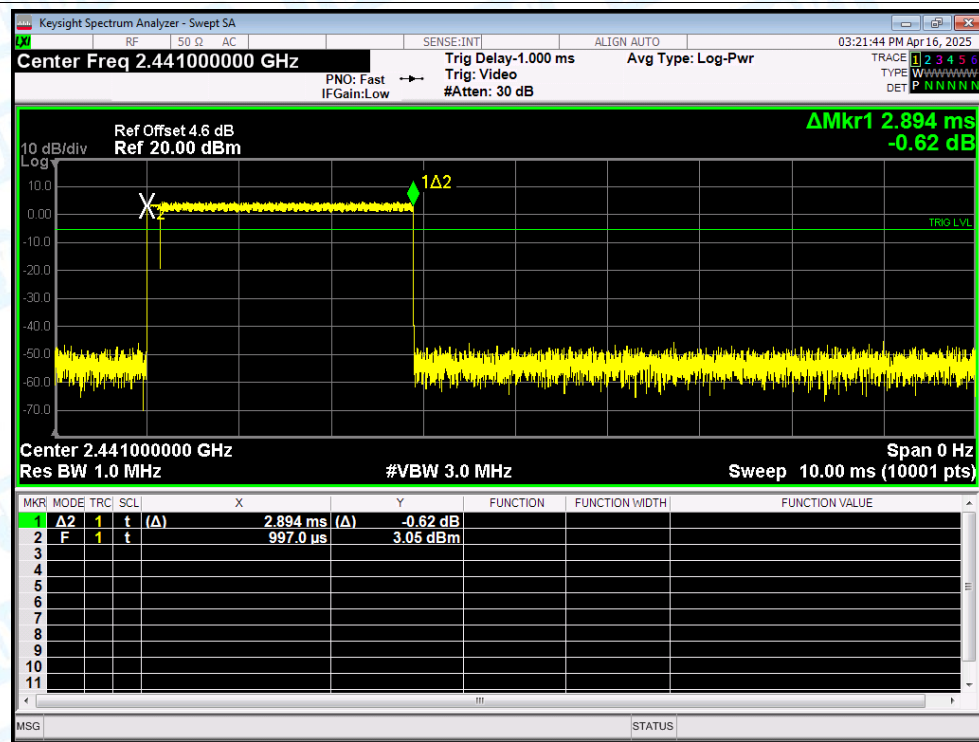
Dwell NVNT 2-DH1 2441MHz Ant1



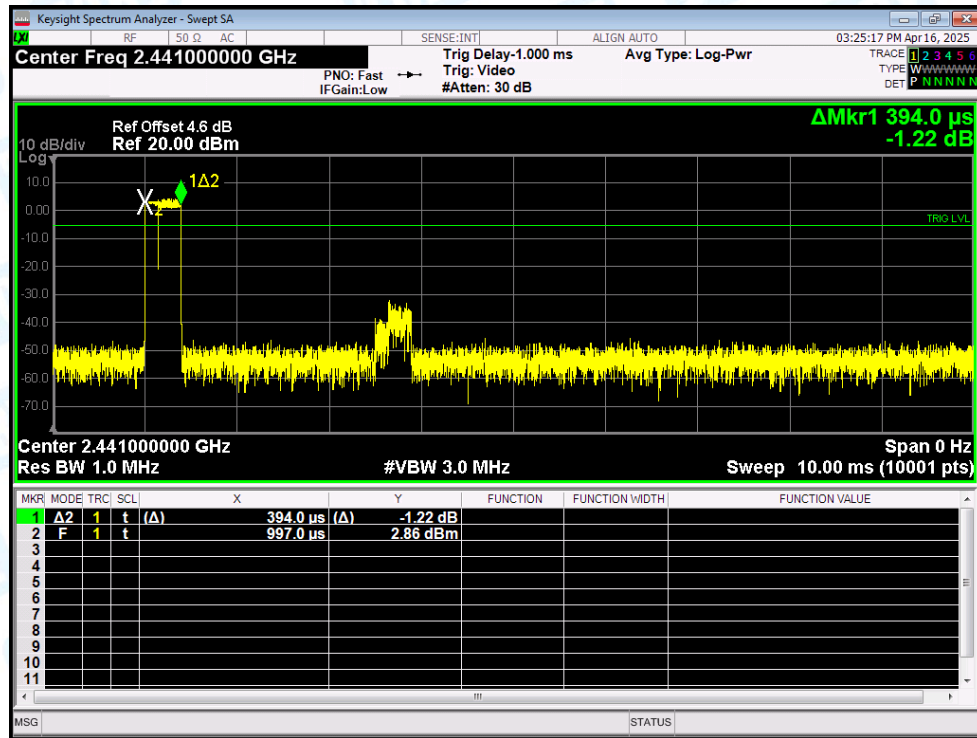
Dwell NVNT 2-DH3 2441MHz Ant1



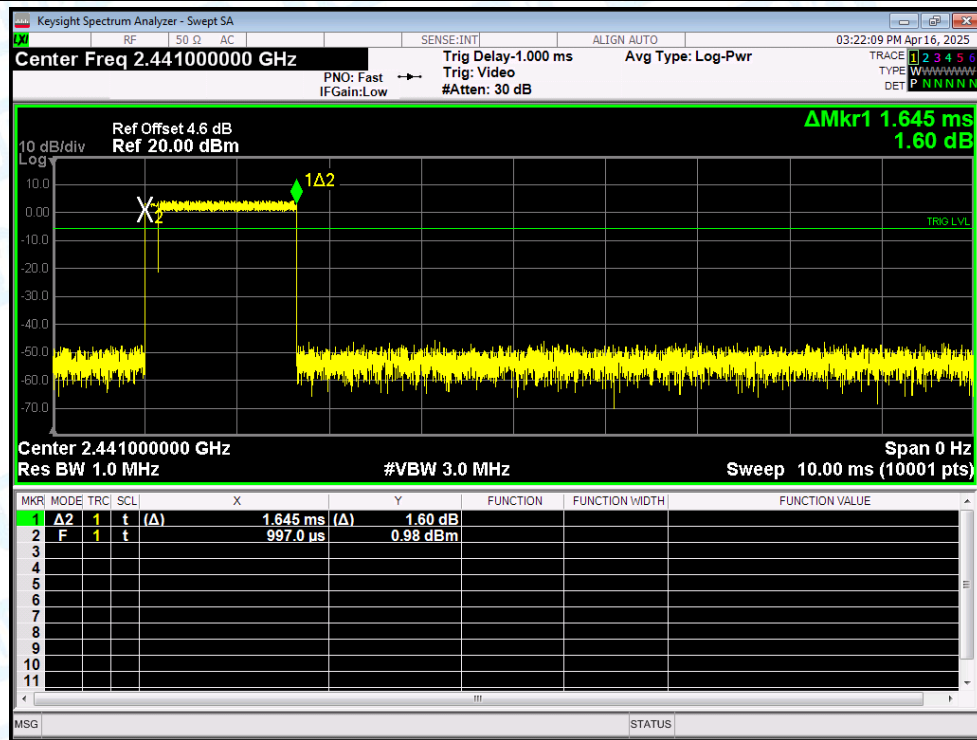
Dwell NVNT 2-DH5 2441MHz Ant1

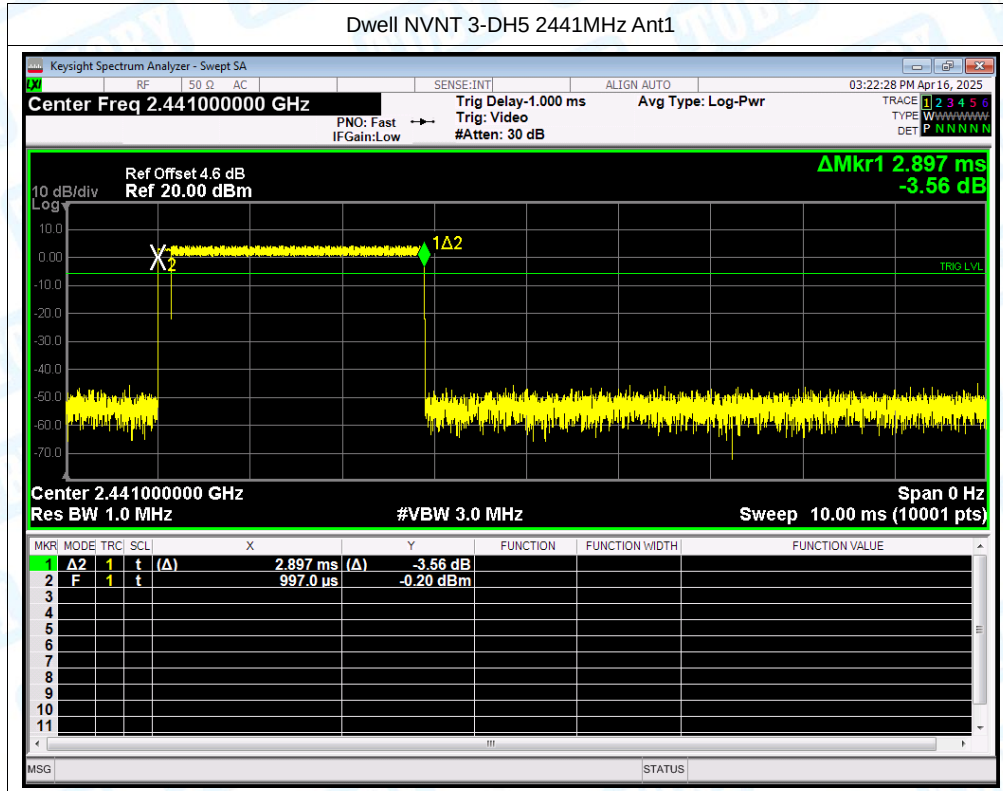


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





-----END OF REPORT-----