

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	SMART WATCH
Test Model:	B7
Sample ID:	HC-C-202405-0278-01-02
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	52%
Test Voltage:	DC 3.8V
Test Engineer:	Mike YAN
Note: For a more detailed features description, please refer to the report TBR-C-202405-0278-91 The report only show the worst case data.	

Contents

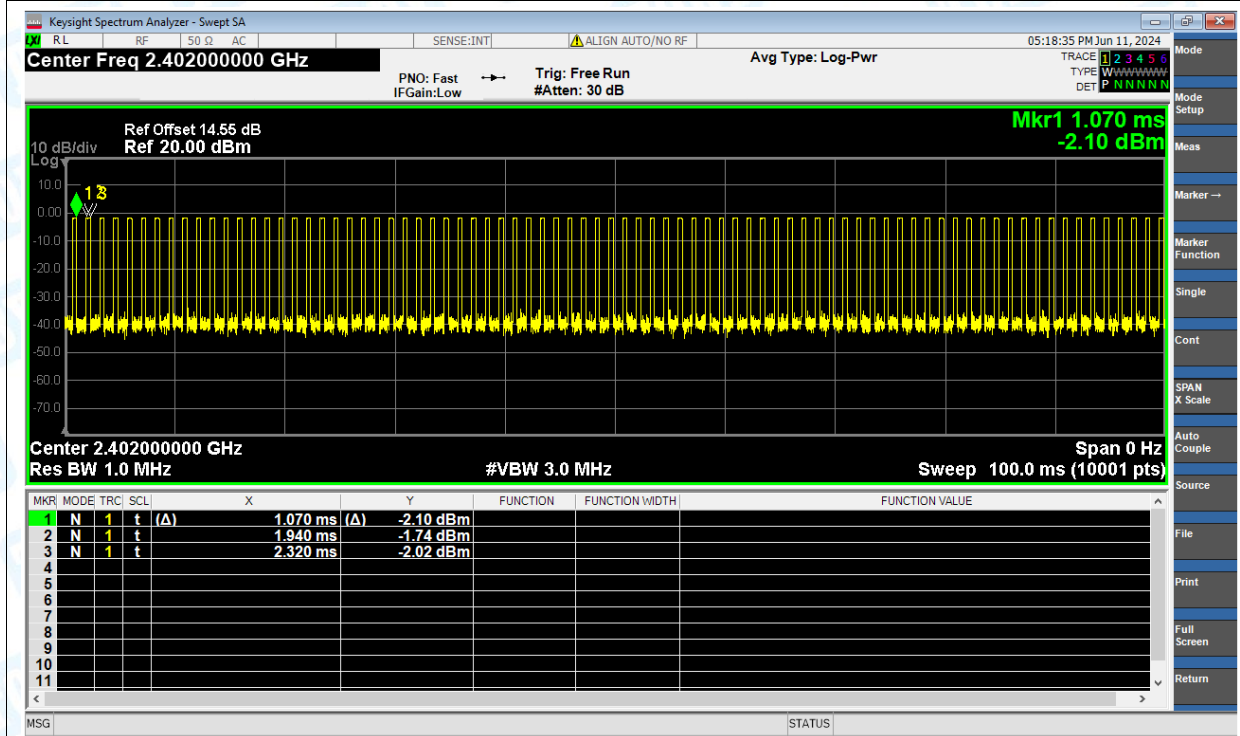
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1. Duty Cycle

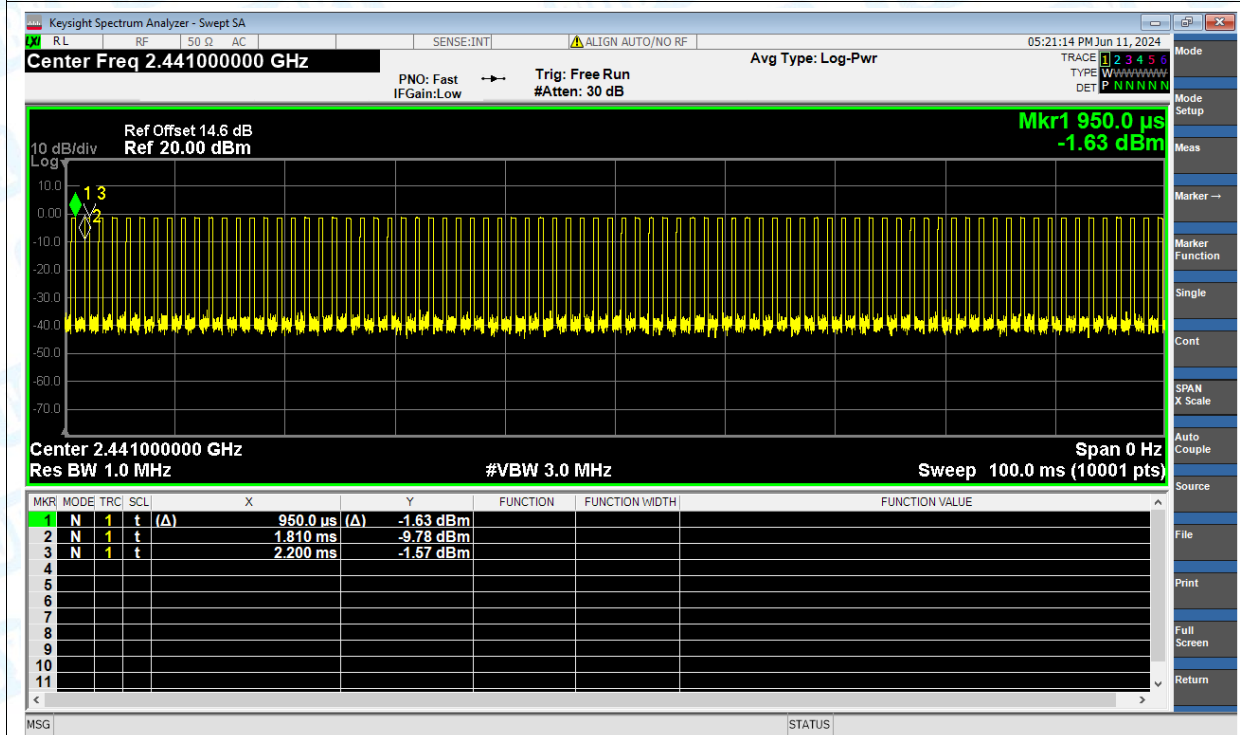
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

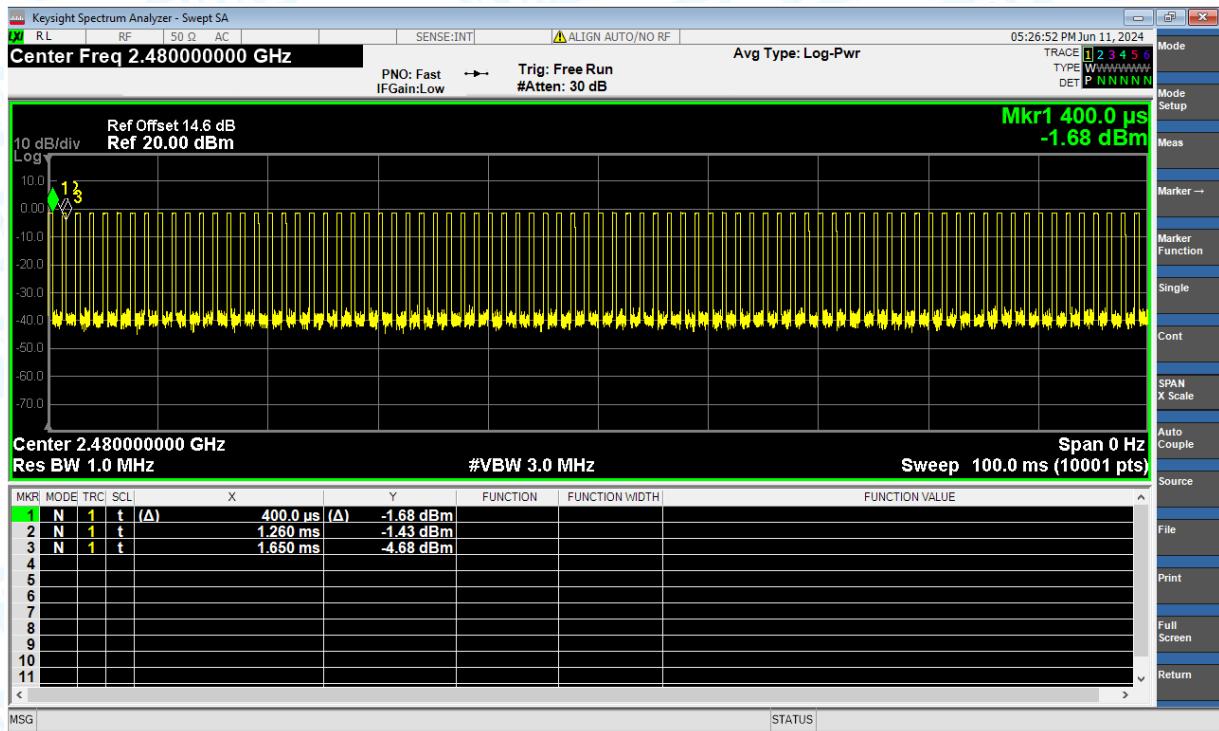
Duty Cycle NVNT 1-DH1 2402MHz Ant1



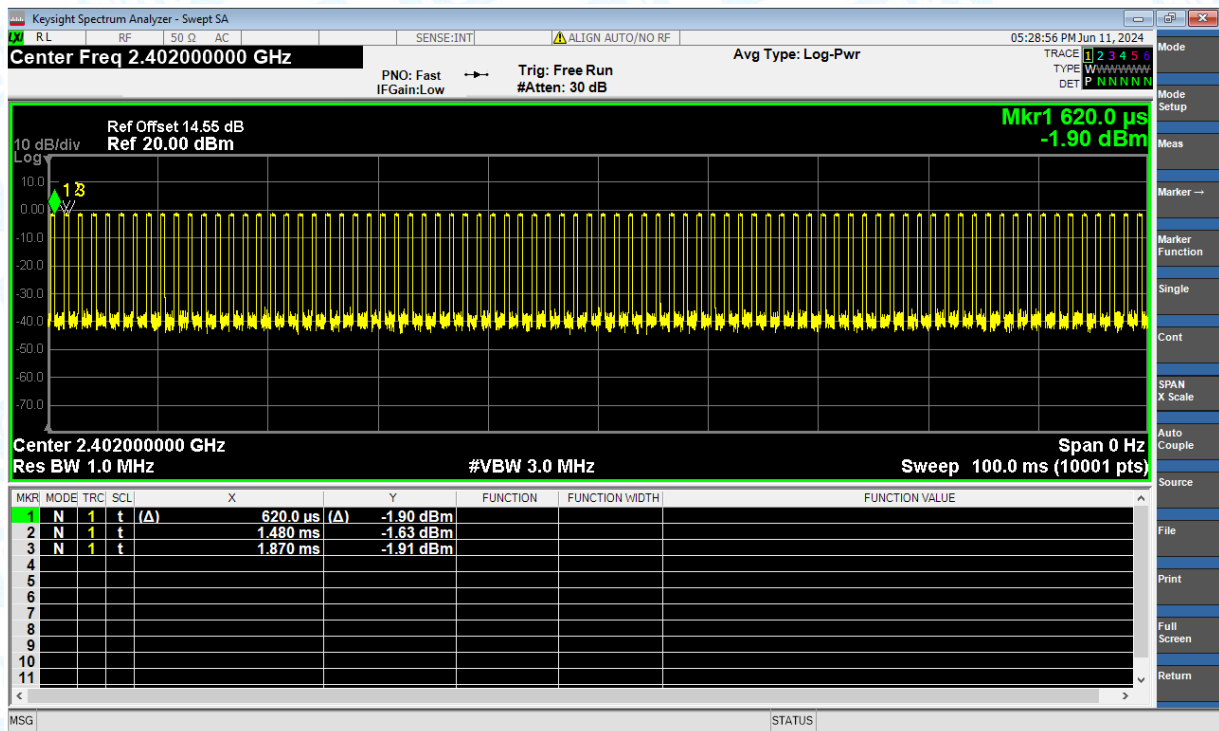
Duty Cycle NVNT 1-DH1 2441MHz Ant1



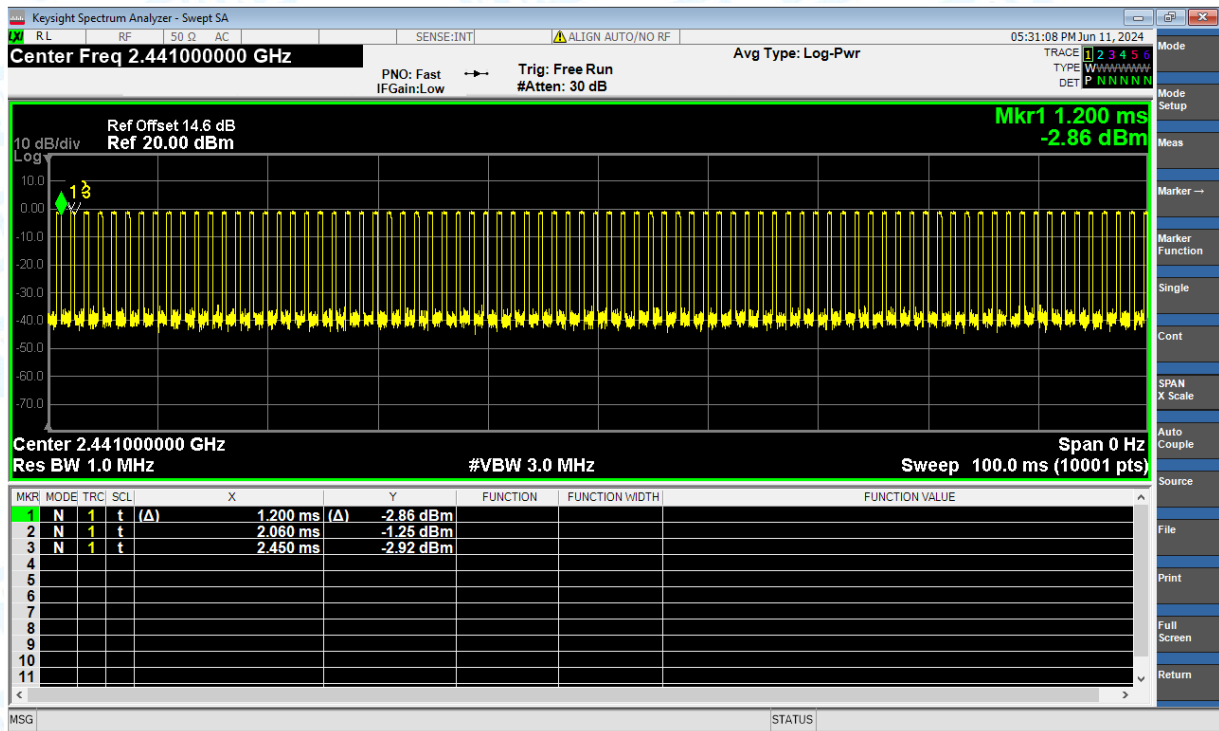
Duty Cycle NVNT 1-DH1 2480MHz Ant1



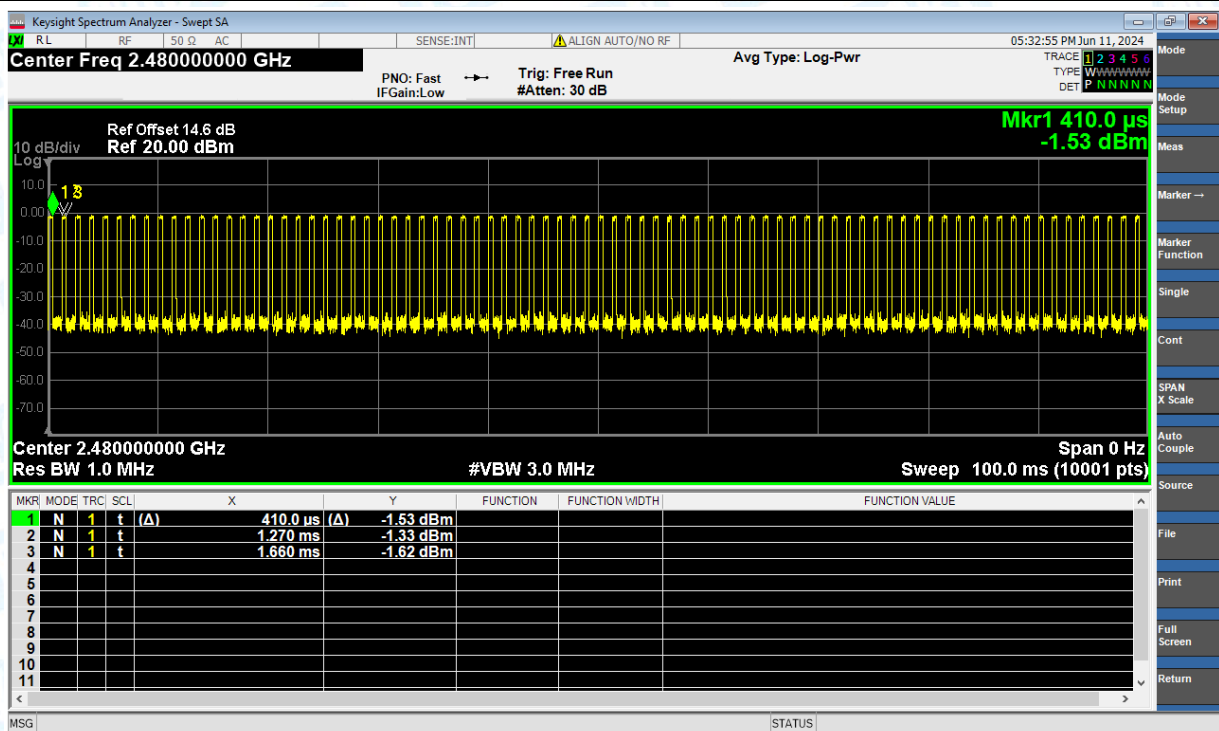
Duty Cycle NVNT 2-DH1 2402MHz Ant1



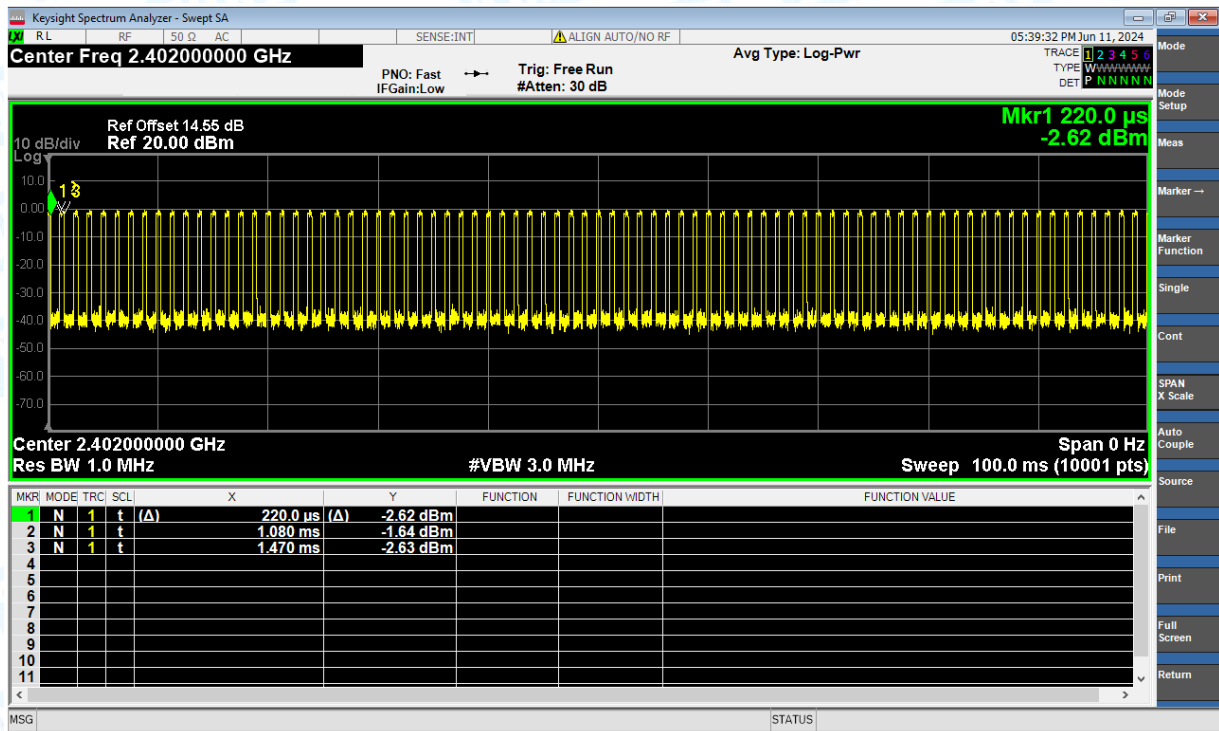
Duty Cycle NVNT 2-DH1 2441MHz Ant1



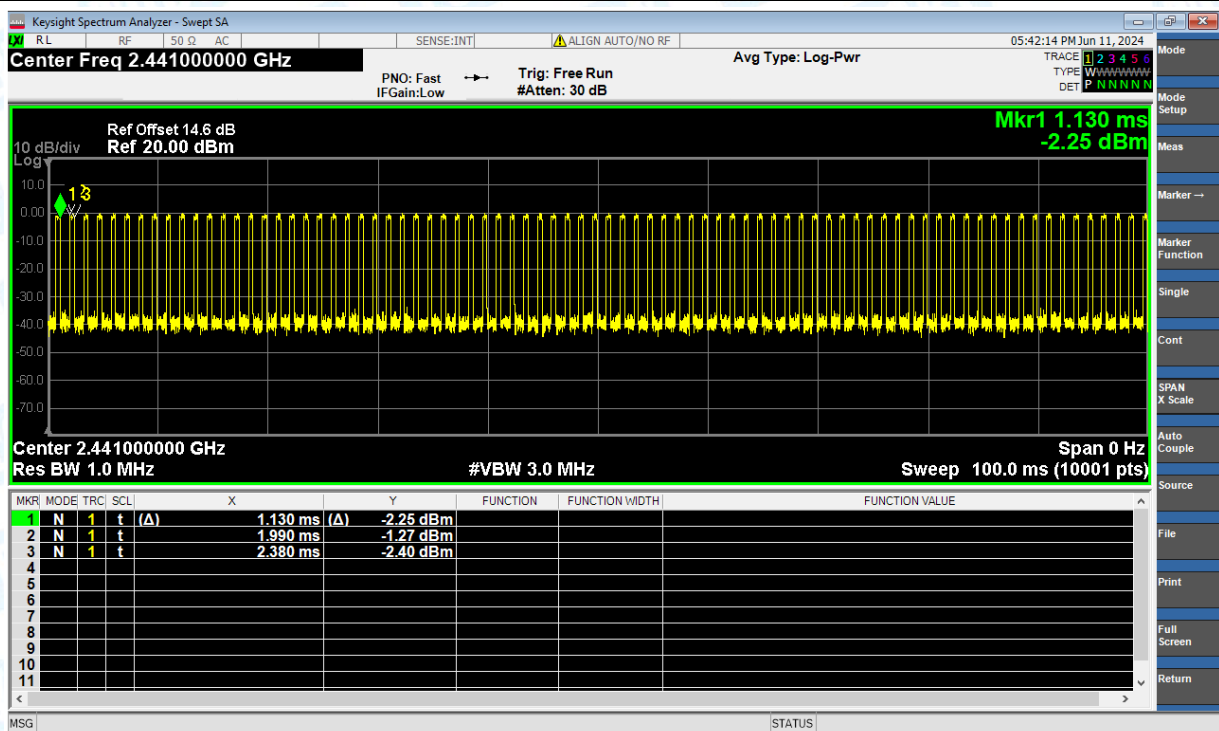
Duty Cycle NVNT 2-DH1 2480MHz Ant1

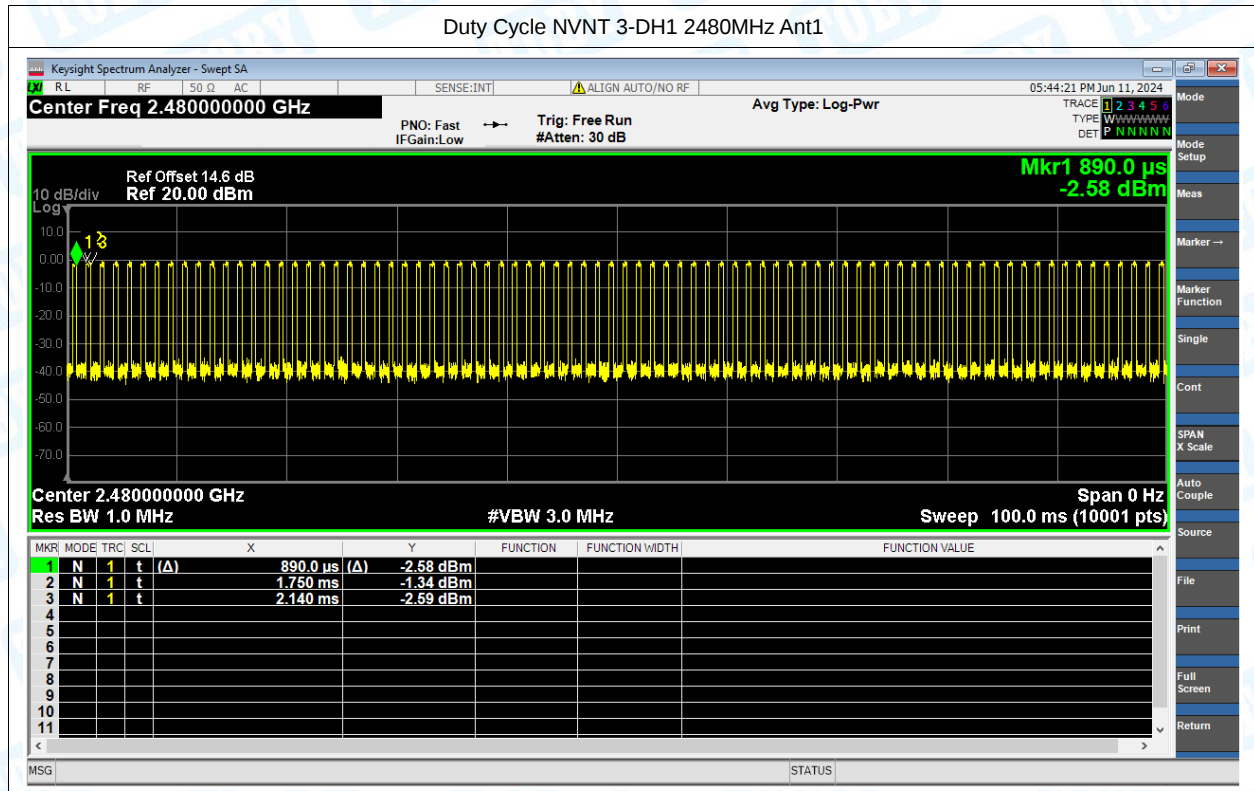


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



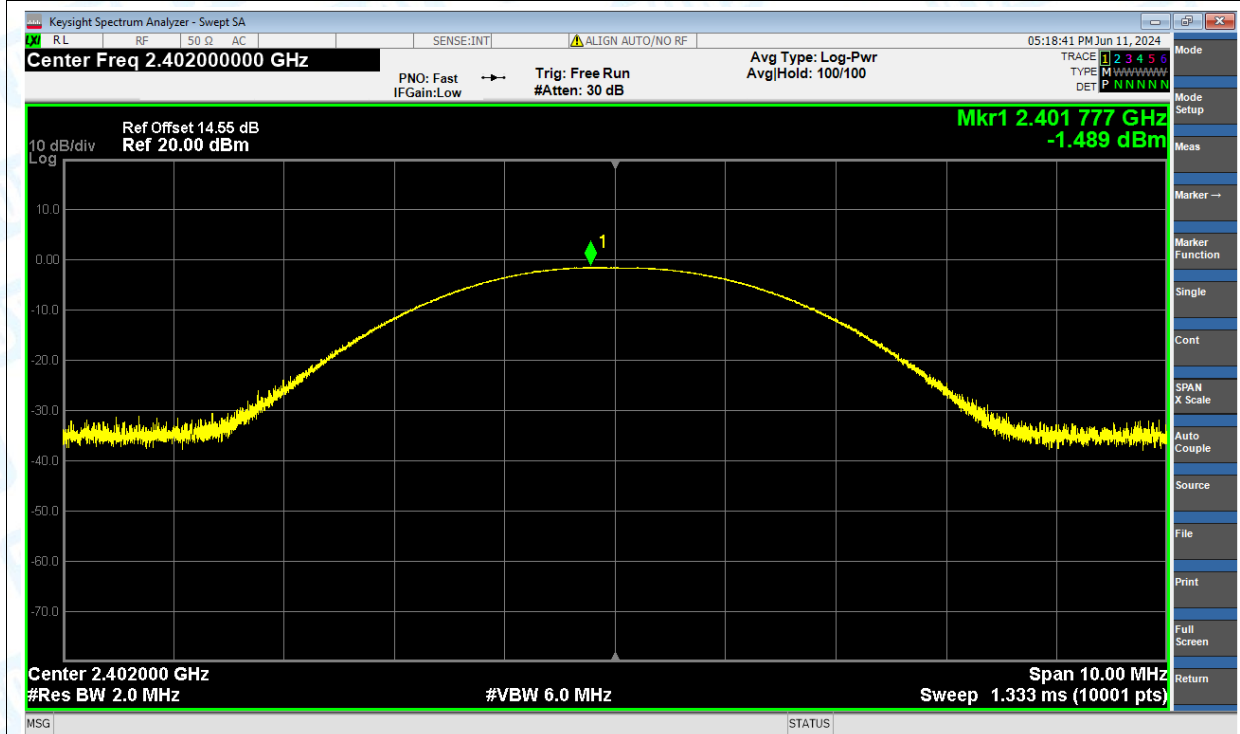


2. Maximum Conducted Output Power

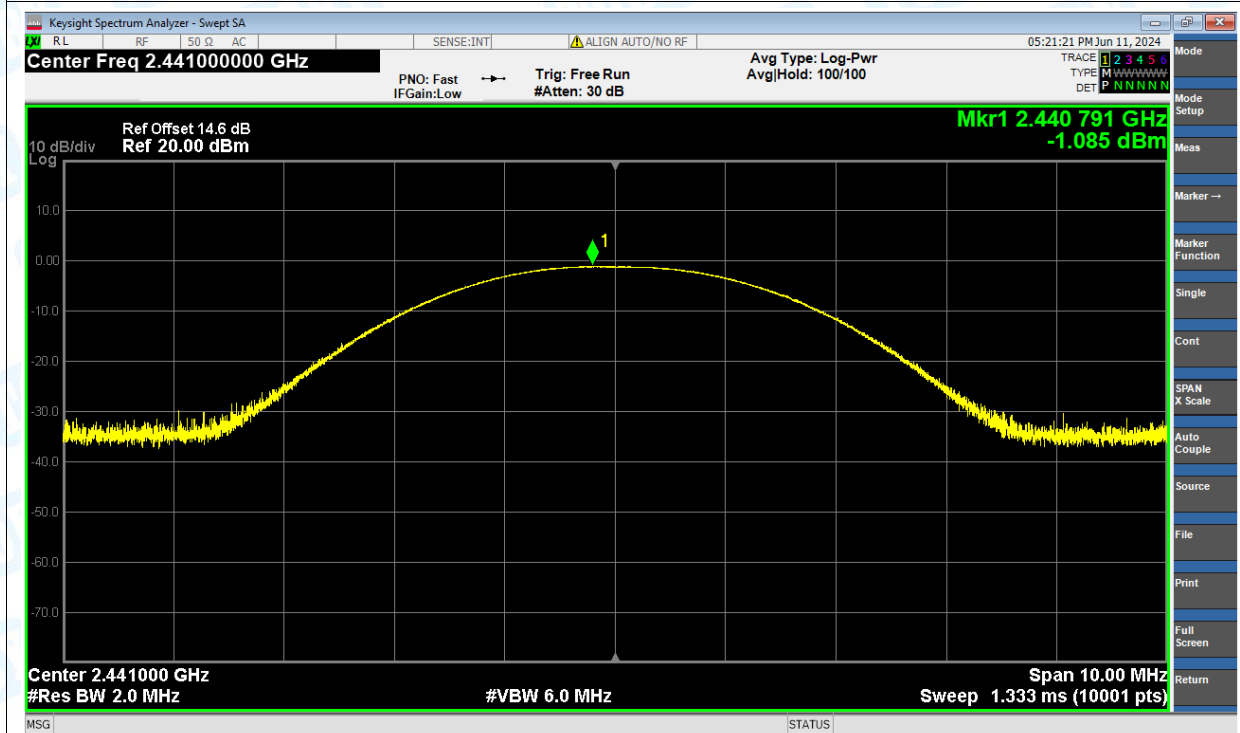
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-1.489	21	Pass
NVNT	1-DH1	2441	Ant1	-1.085	21	Pass
NVNT	1-DH1	2480	Ant1	-1.14	21	Pass
NVNT	1-DH3	2441	Ant1	-1.183	21	Pass
NVNT	1-DH5	2441	Ant1	-0.351	21	Pass
NVNT	2-DH1	2402	Ant1	-0.653	21	Pass
NVNT	2-DH1	2441	Ant1	-0.286	21	Pass
NVNT	2-DH1	2480	Ant1	-0.399	21	Pass
NVNT	2-DH3	2441	Ant1	-0.369	21	Pass
NVNT	2-DH5	2441	Ant1	-0.342	21	Pass
NVNT	3-DH1	2402	Ant1	-0.021	21	Pass
NVNT	3-DH1	2441	Ant1	0.325	21	Pass
NVNT	3-DH1	2480	Ant1	0.247	21	Pass
NVNT	3-DH3	2441	Ant1	0.087	21	Pass
NVNT	3-DH5	2441	Ant1	0.081	21	Pass

Test Graphs

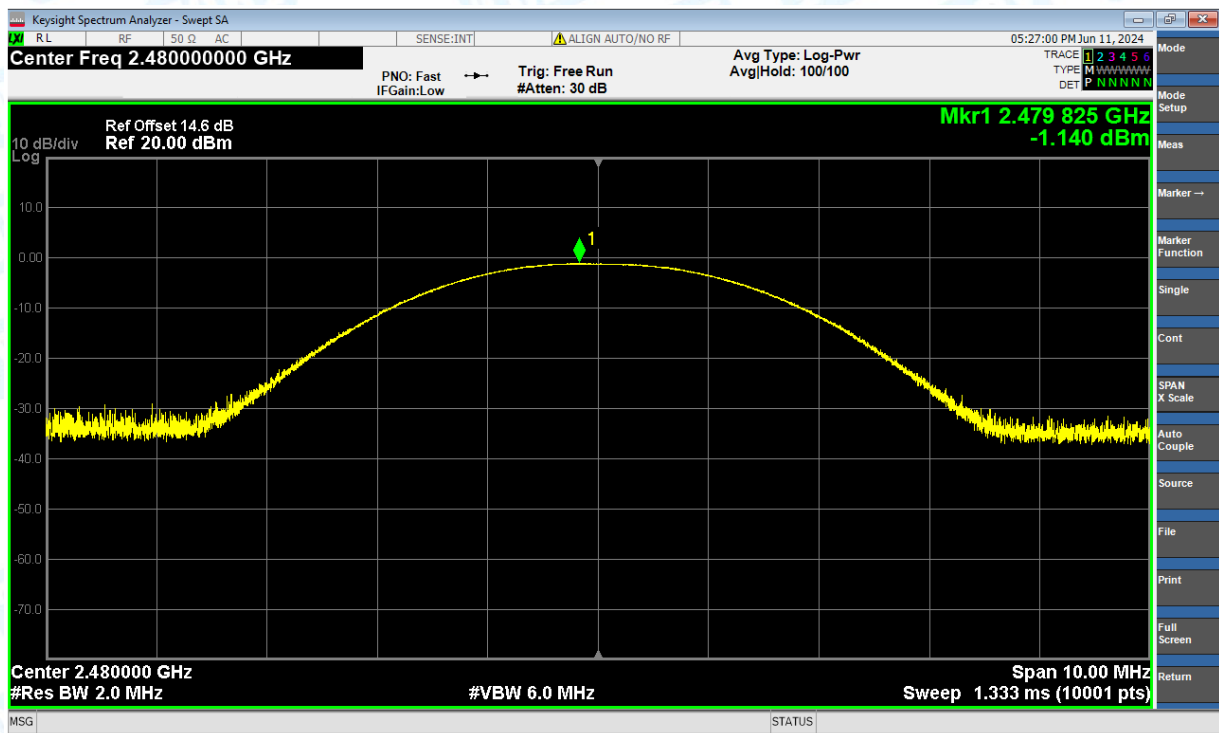
Power NVNT 1-DH1 2402MHz Ant1



Power NVNT 1-DH1 2441MHz Ant1



Power NVNT 1-DH1 2480MHz Ant1



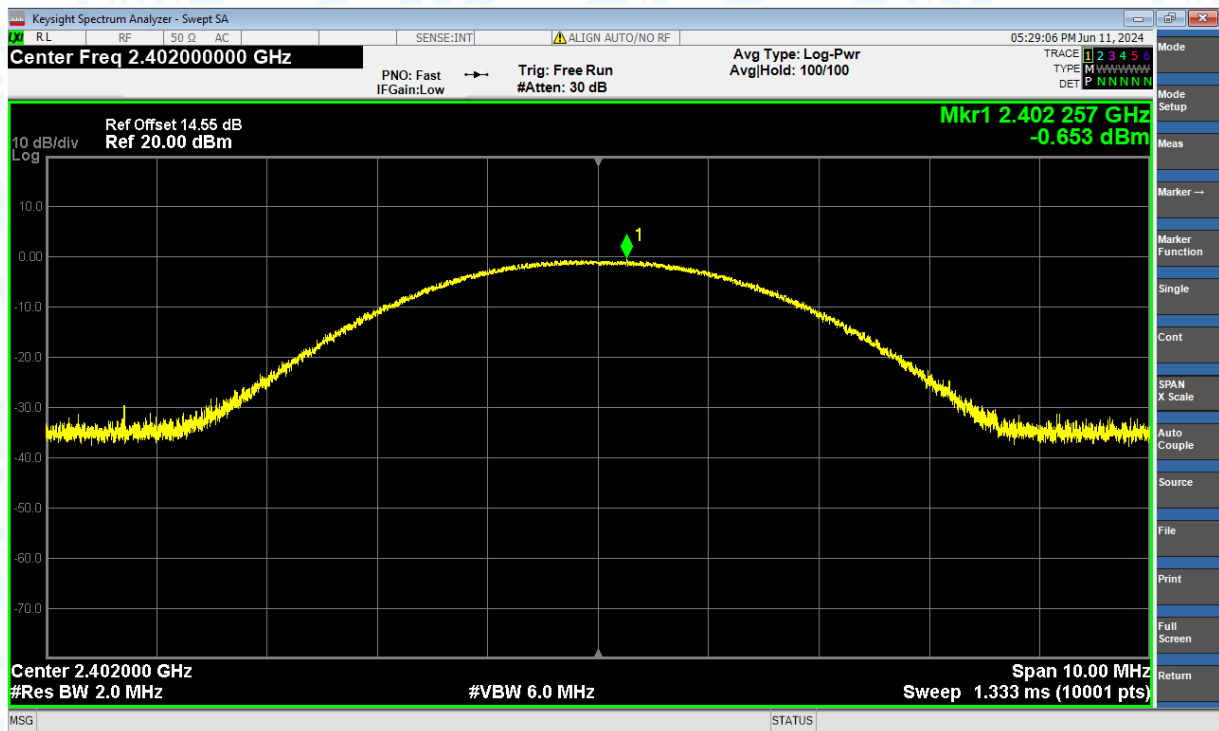
Power NVNT 1-DH3 2441MHz Ant1



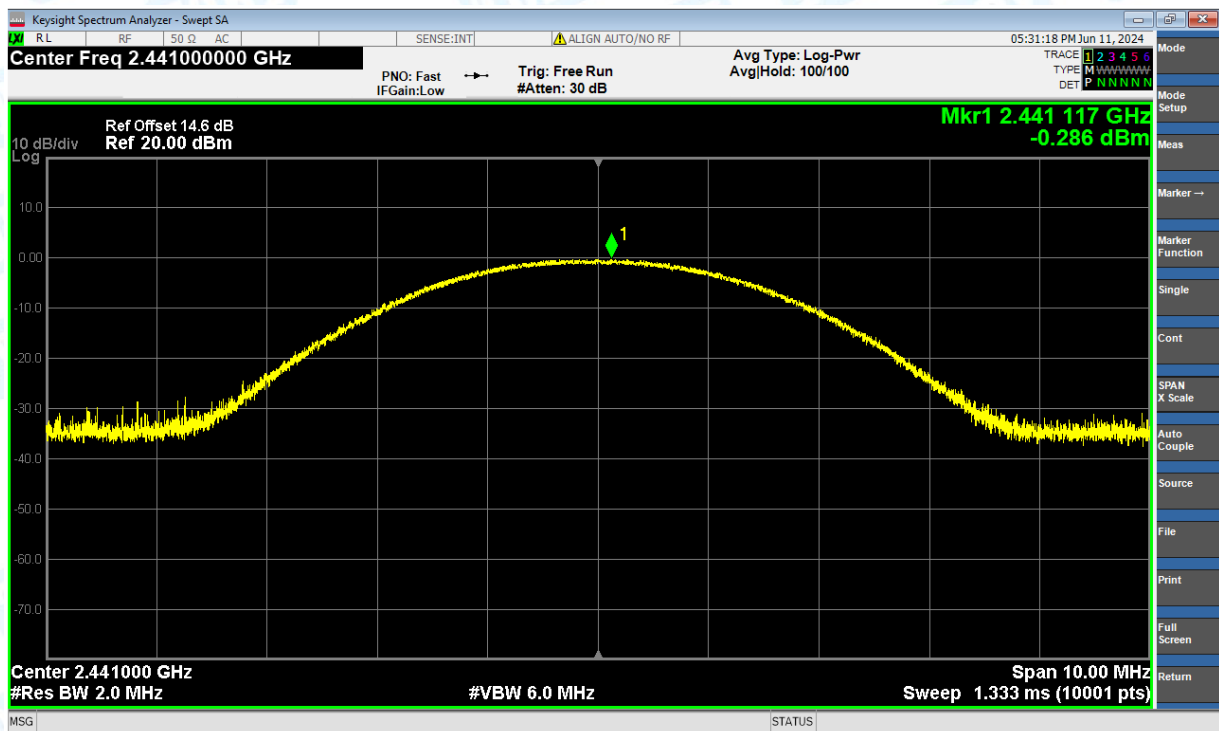
Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



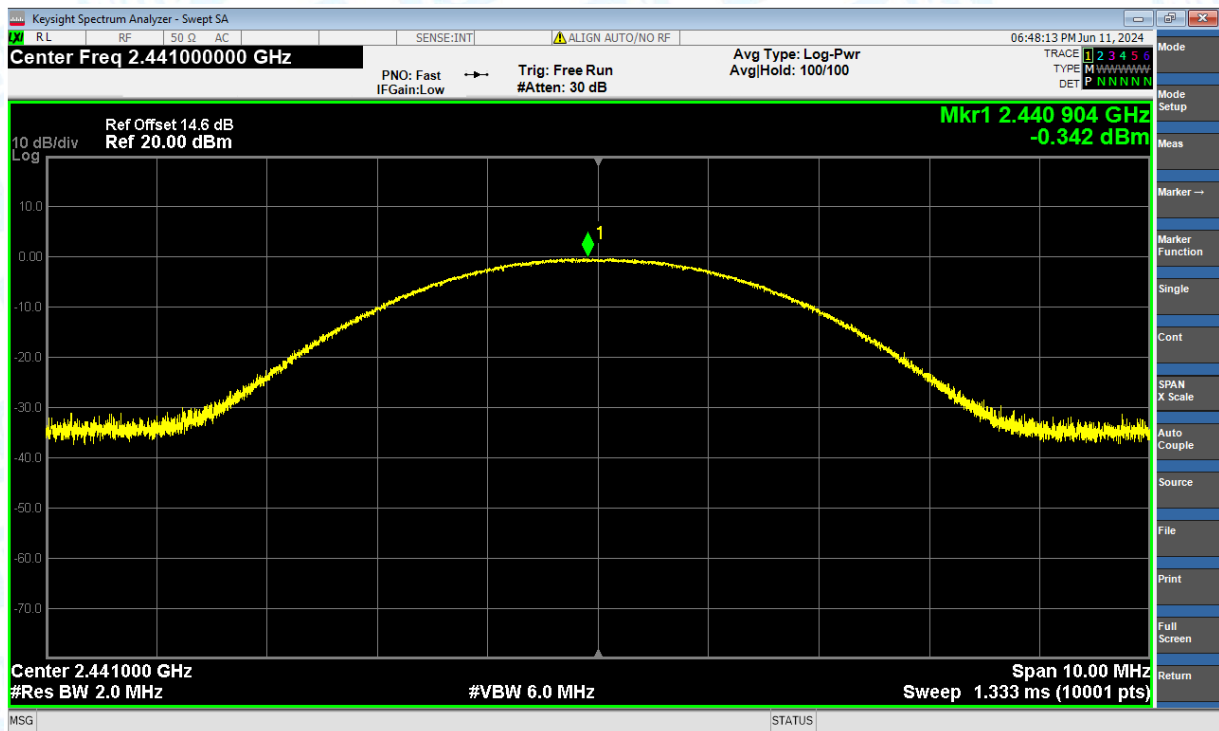
Power NVNT 2-DH1 2480MHz Ant1



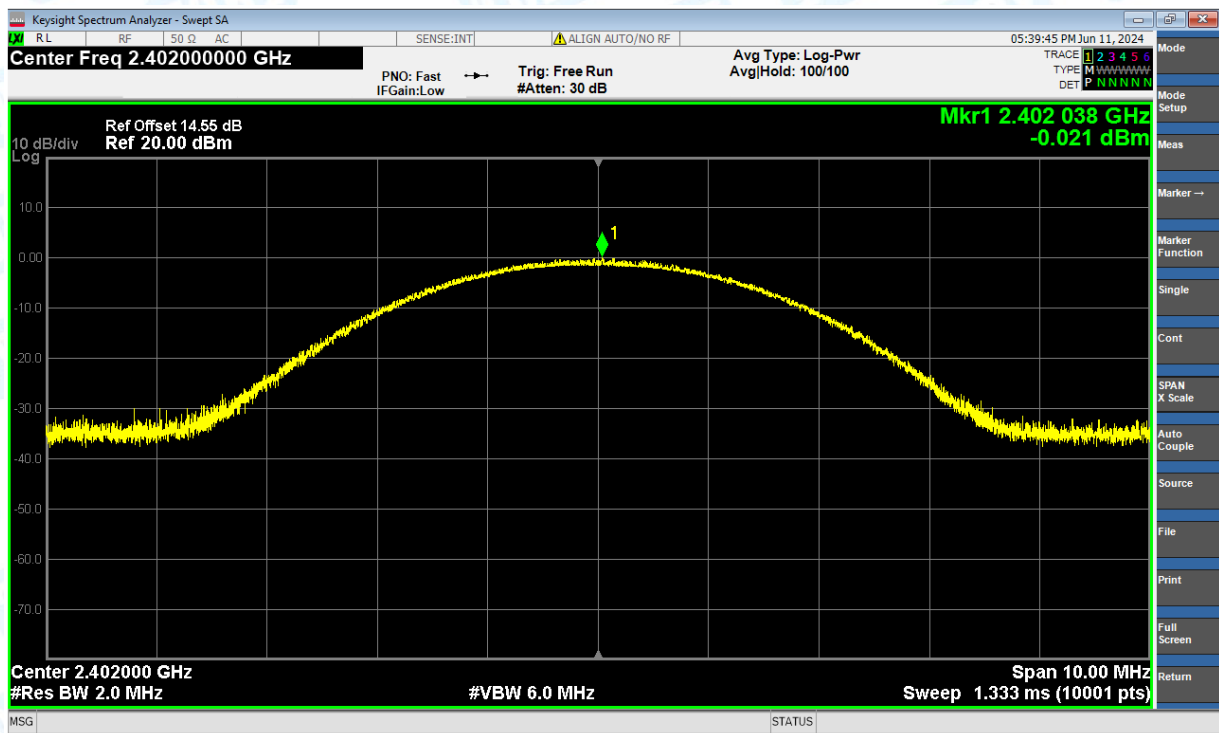
Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



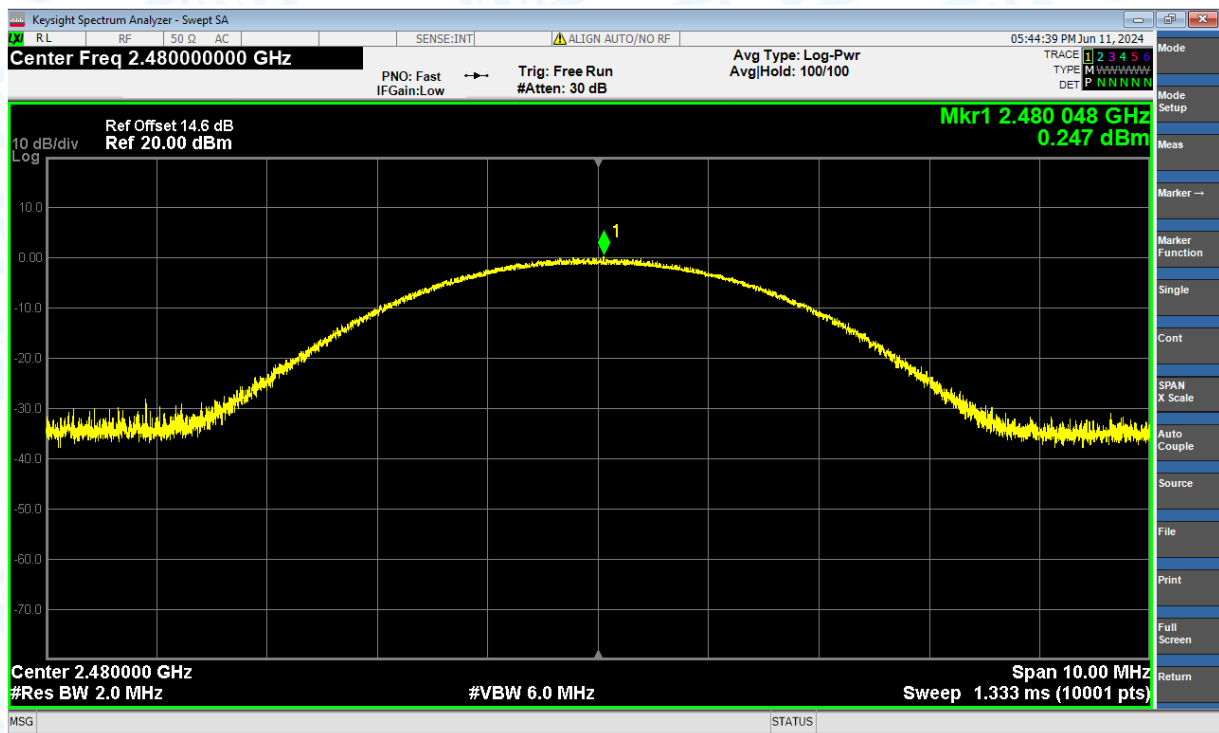
Power NVNT 3-DH1 2402MHz Ant1



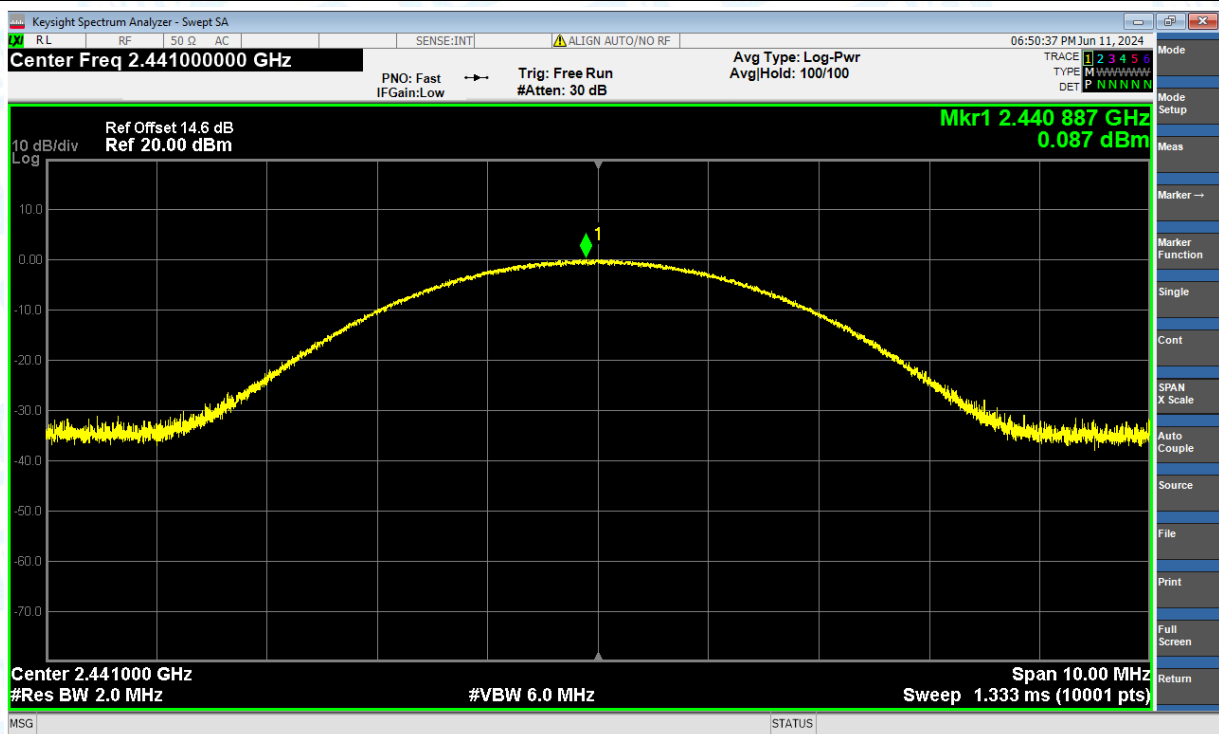
Power NVNT 3-DH1 2441MHz Ant1



Power NVNT 3-DH1 2480MHz Ant1



Power NVNT 3-DH3 2441MHz Ant1



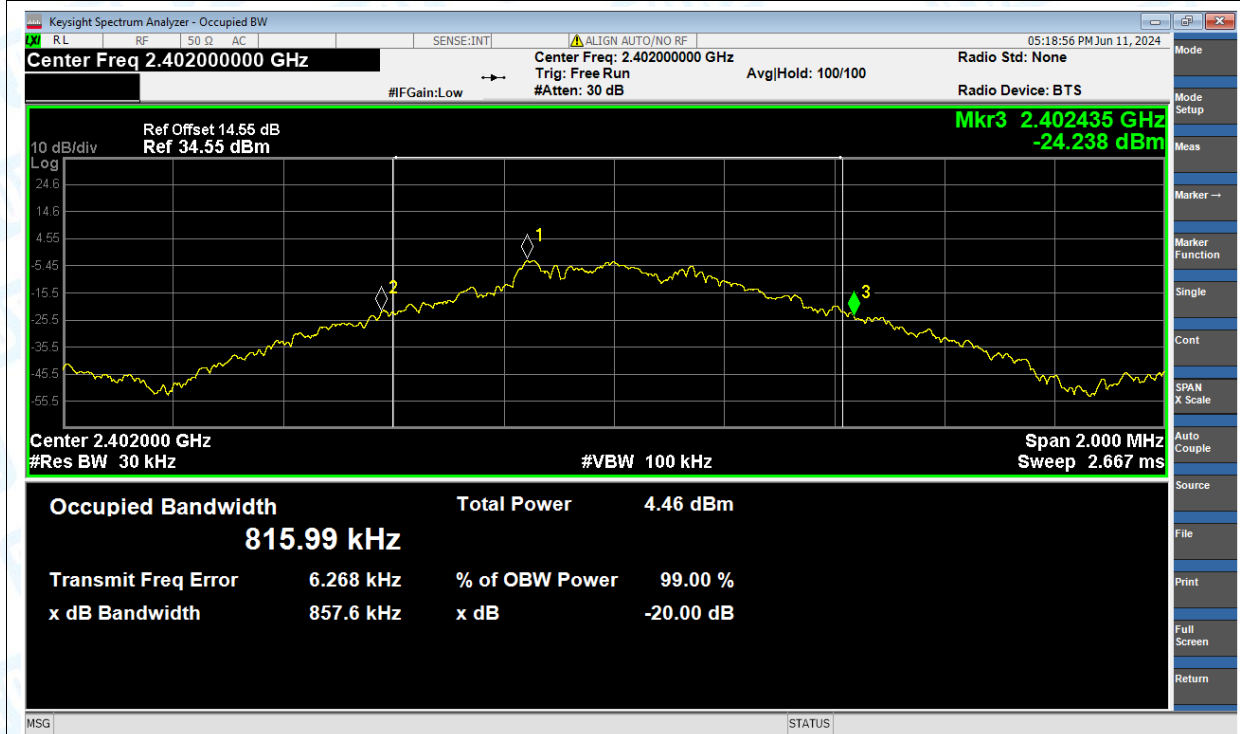


3. -20dB Bandwidth

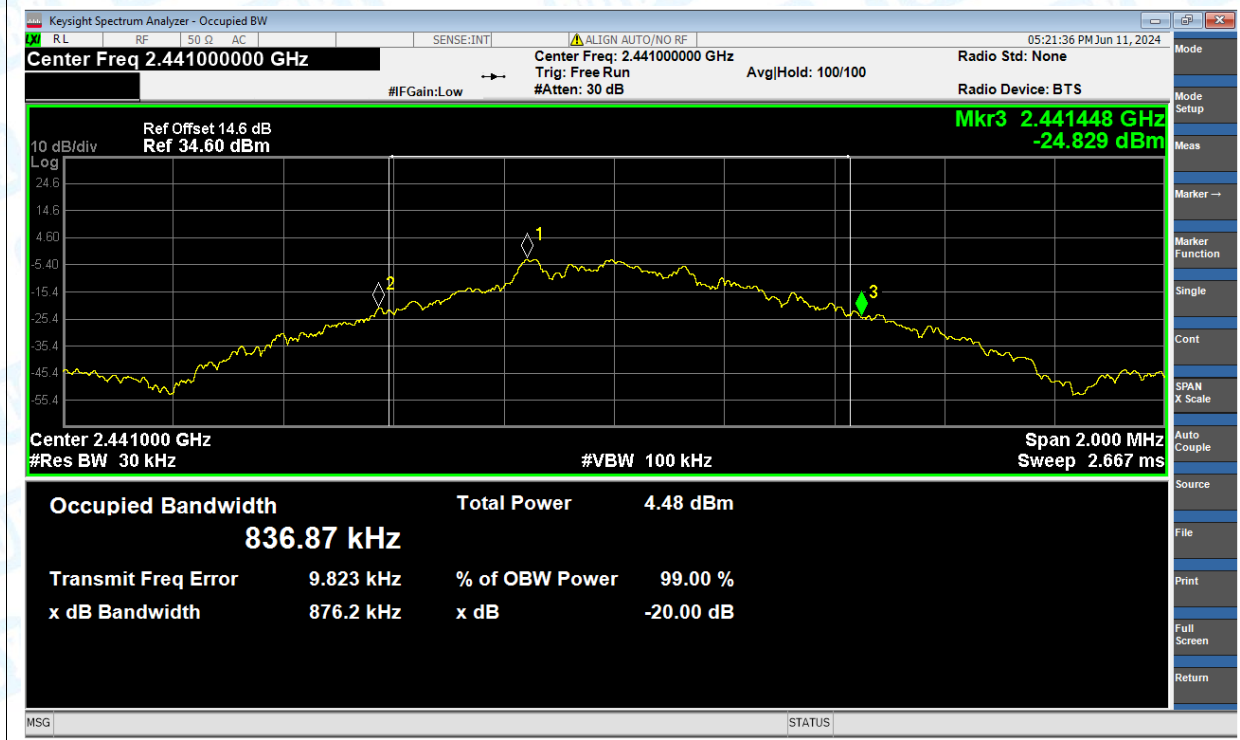
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.86	0	Pass
NVNT	1-DH1	2441	Ant1	0.88	0	Pass
NVNT	1-DH1	2480	Ant1	0.87	0	Pass
NVNT	2-DH1	2402	Ant1	1.23	0	Pass
NVNT	2-DH1	2441	Ant1	1.24	0	Pass
NVNT	2-DH1	2480	Ant1	1.24	0	Pass
NVNT	3-DH1	2402	Ant1	1.24	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.22	0	Pass

Test Graphs

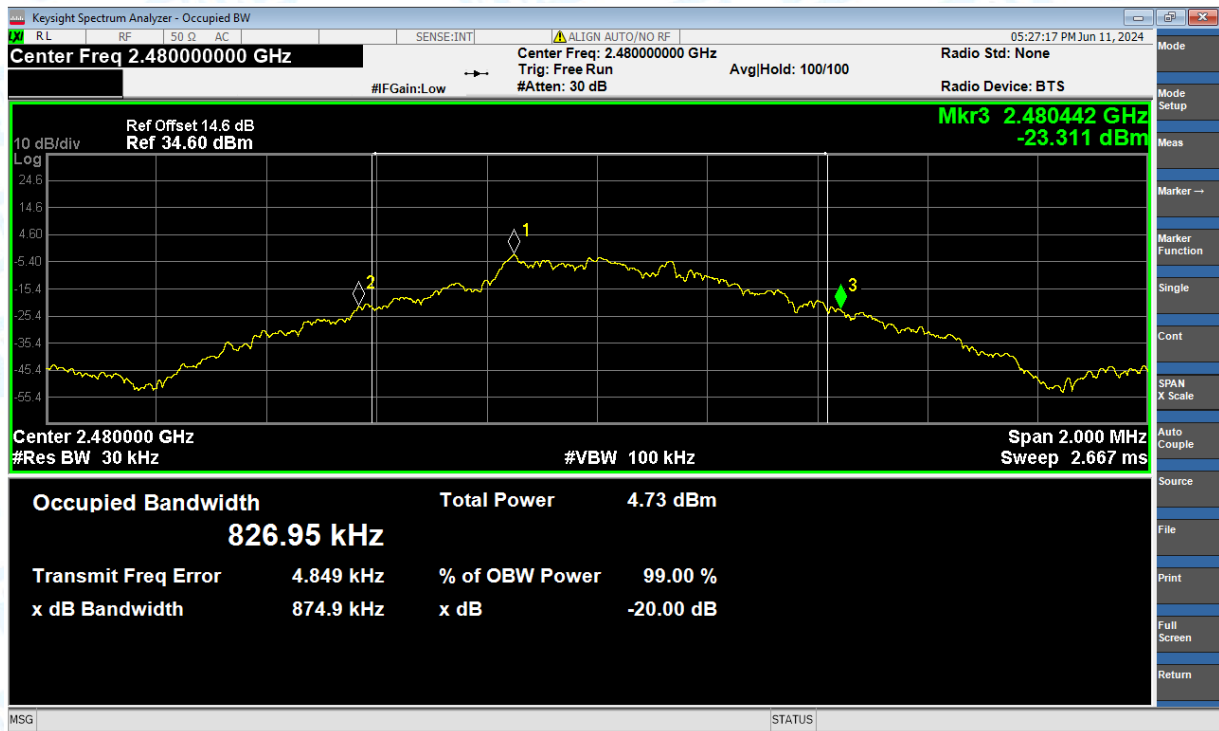
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



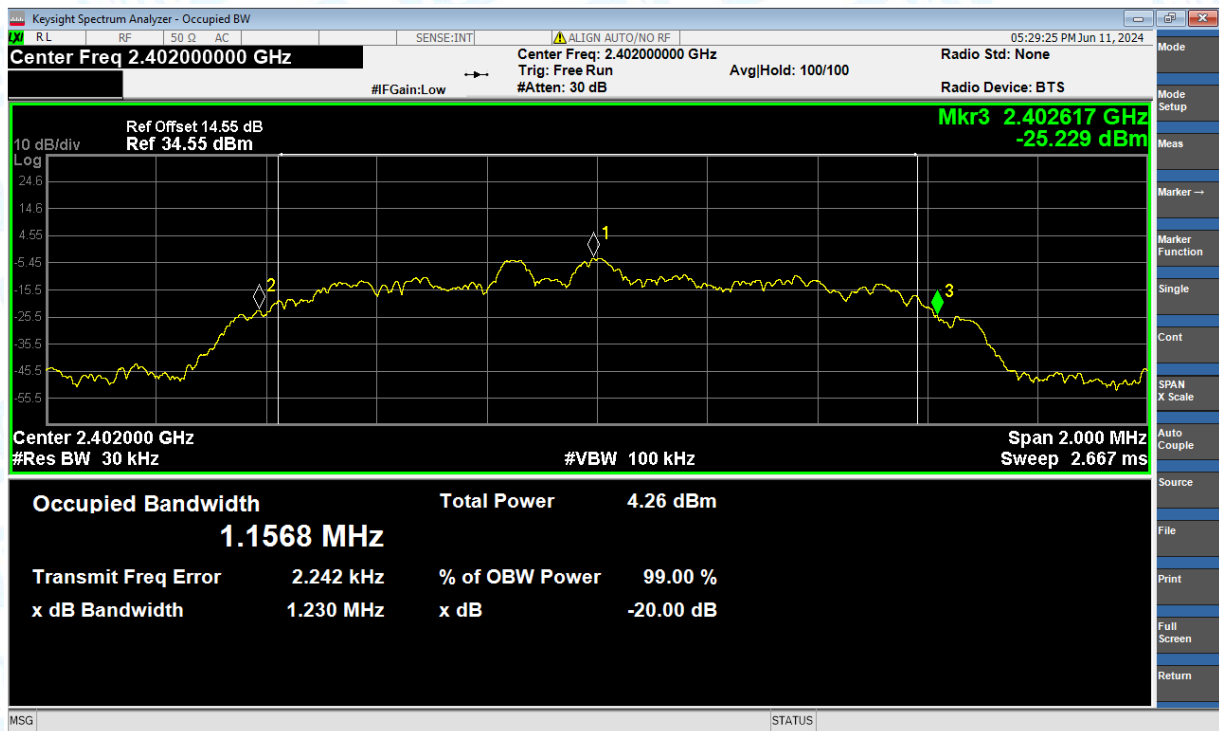
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



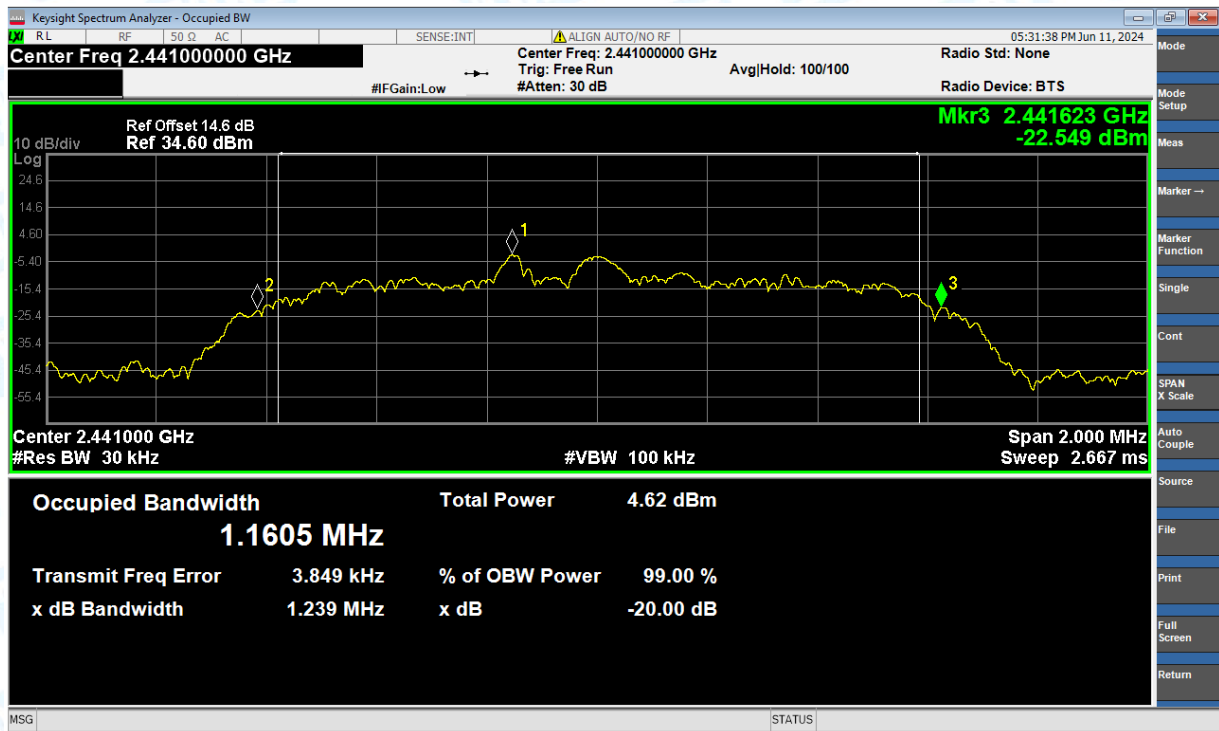
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



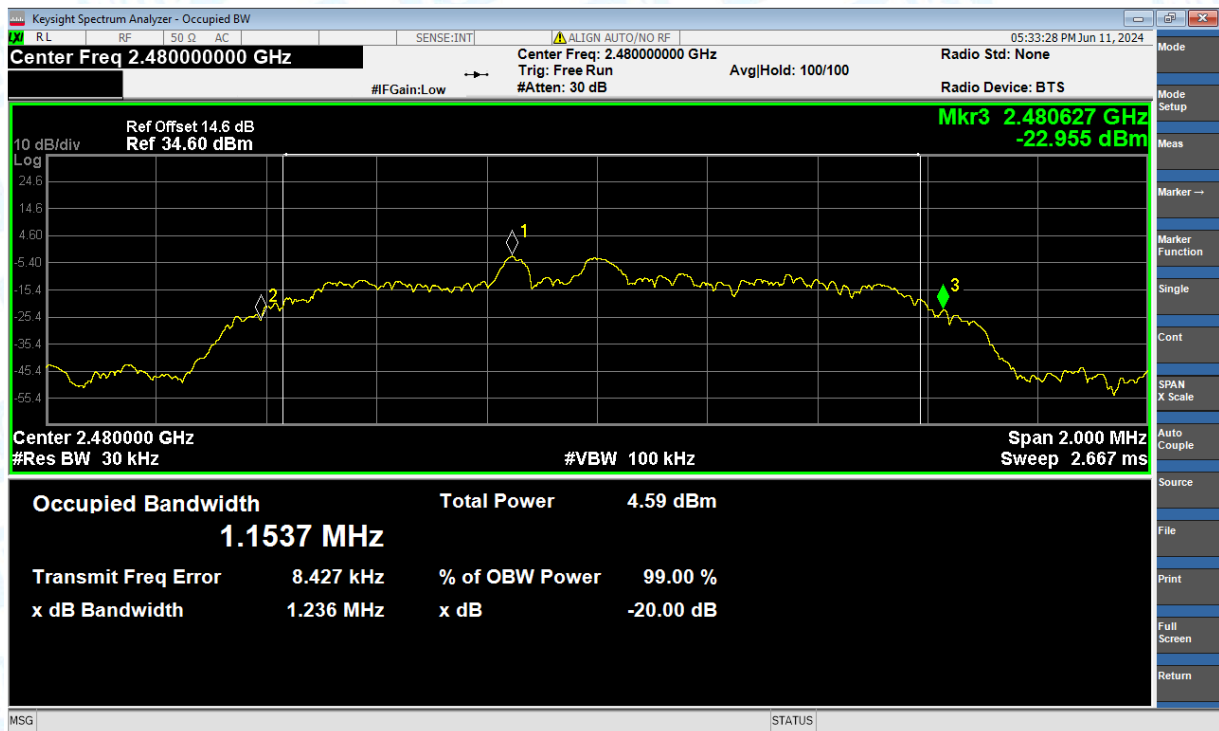
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



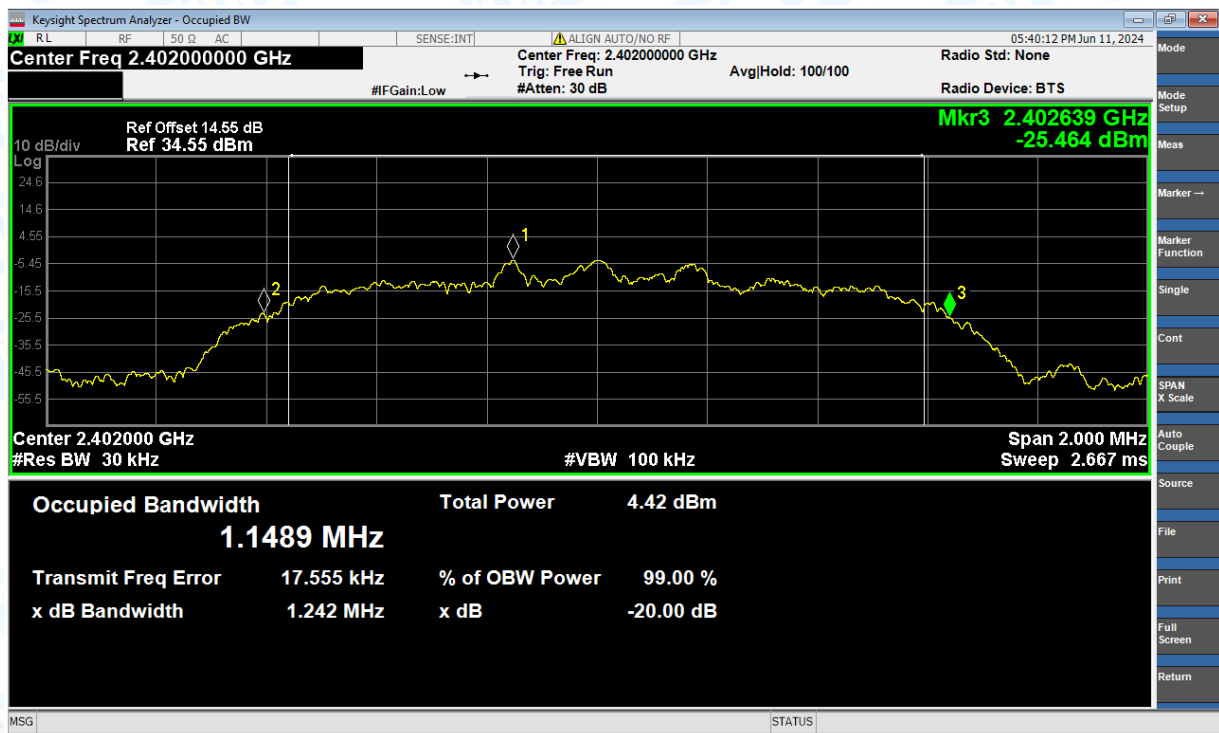
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



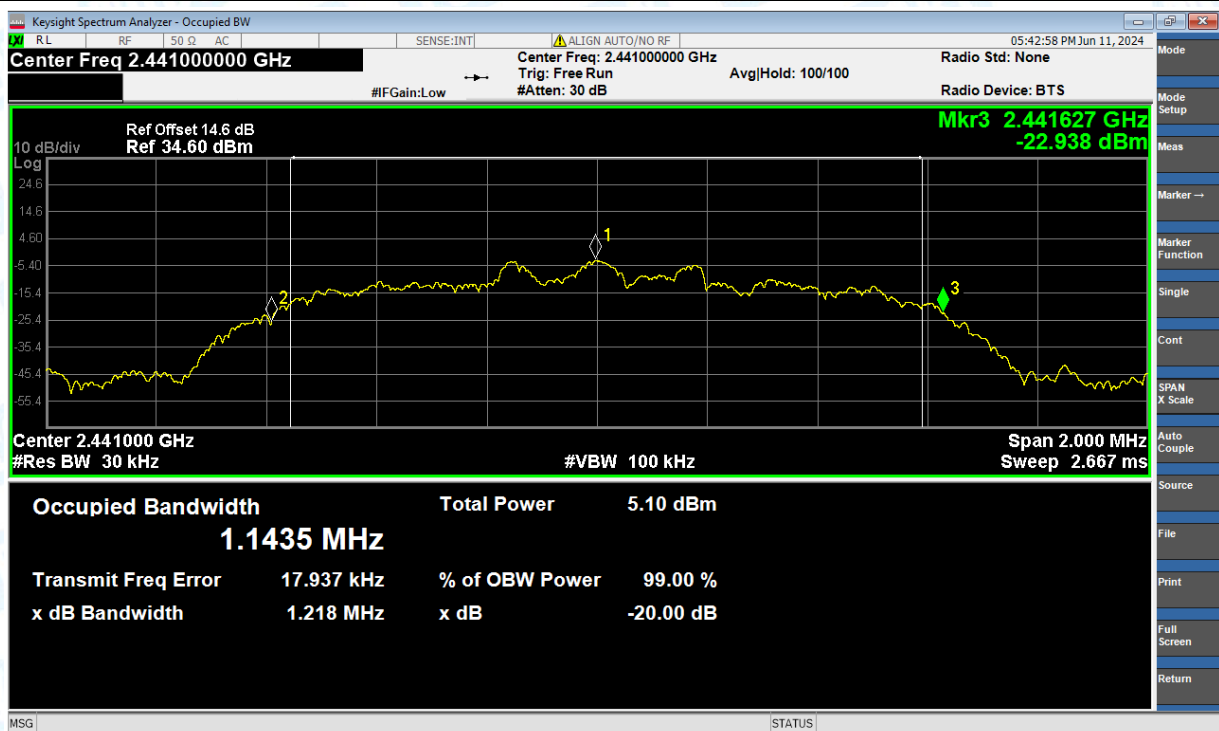
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

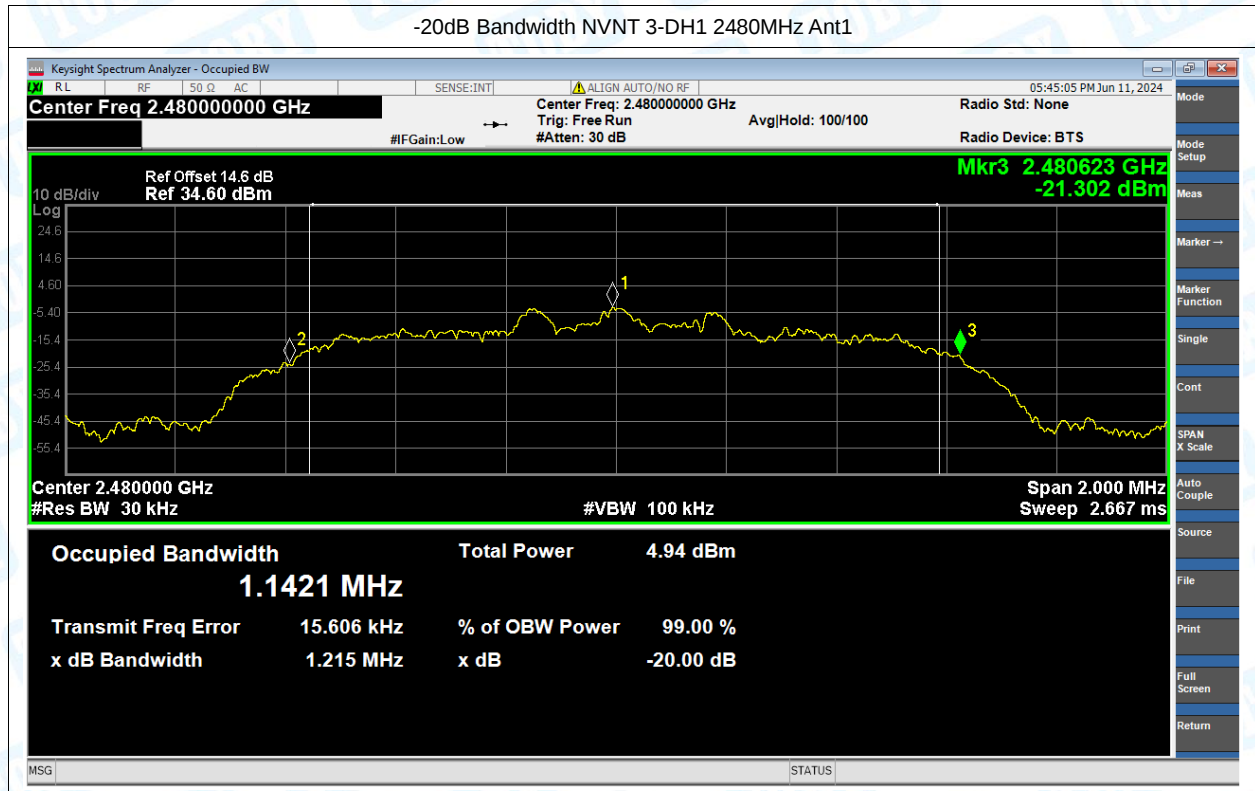


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



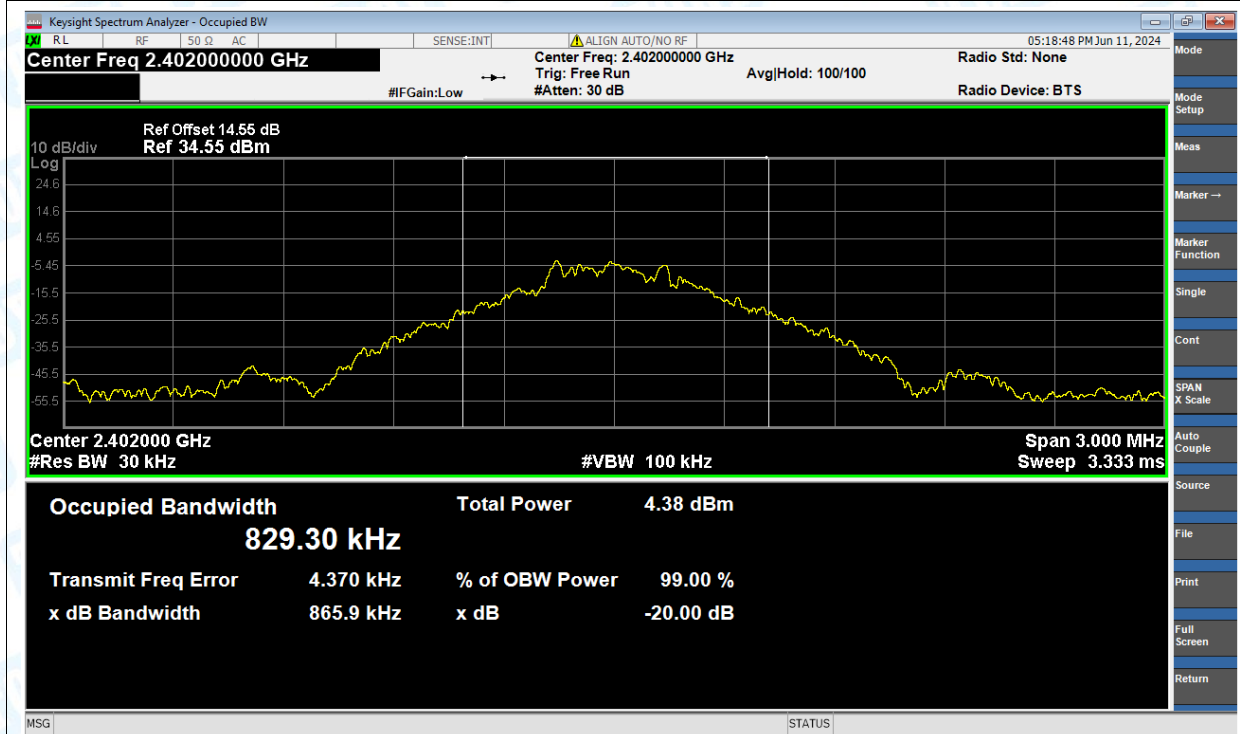


3. Occupied Channel Bandwidth

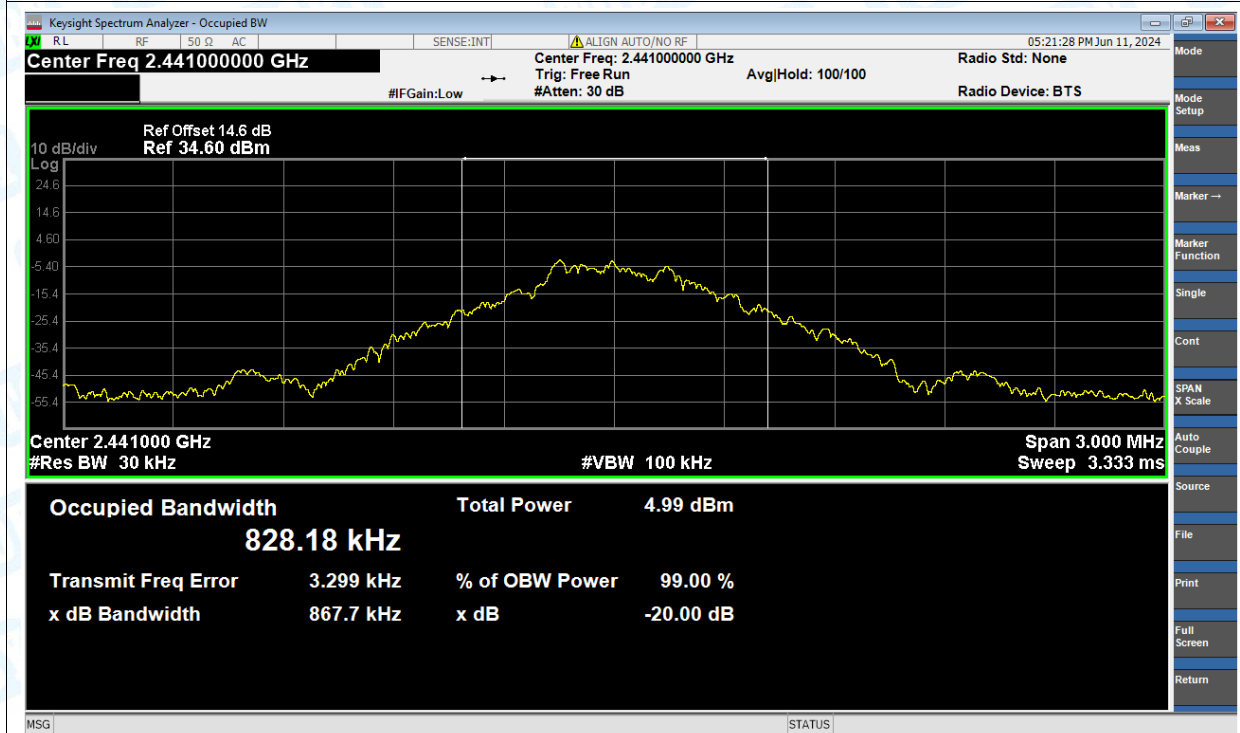
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.829
NVNT	1-DH1	2441	Ant1	0.828
NVNT	1-DH1	2480	Ant1	0.813
NVNT	2-DH1	2402	Ant1	1.159
NVNT	2-DH1	2441	Ant1	1.141
NVNT	2-DH1	2480	Ant1	1.173
NVNT	3-DH1	2402	Ant1	1.139
NVNT	3-DH1	2441	Ant1	1.139
NVNT	3-DH1	2480	Ant1	1.152

Test Graphs

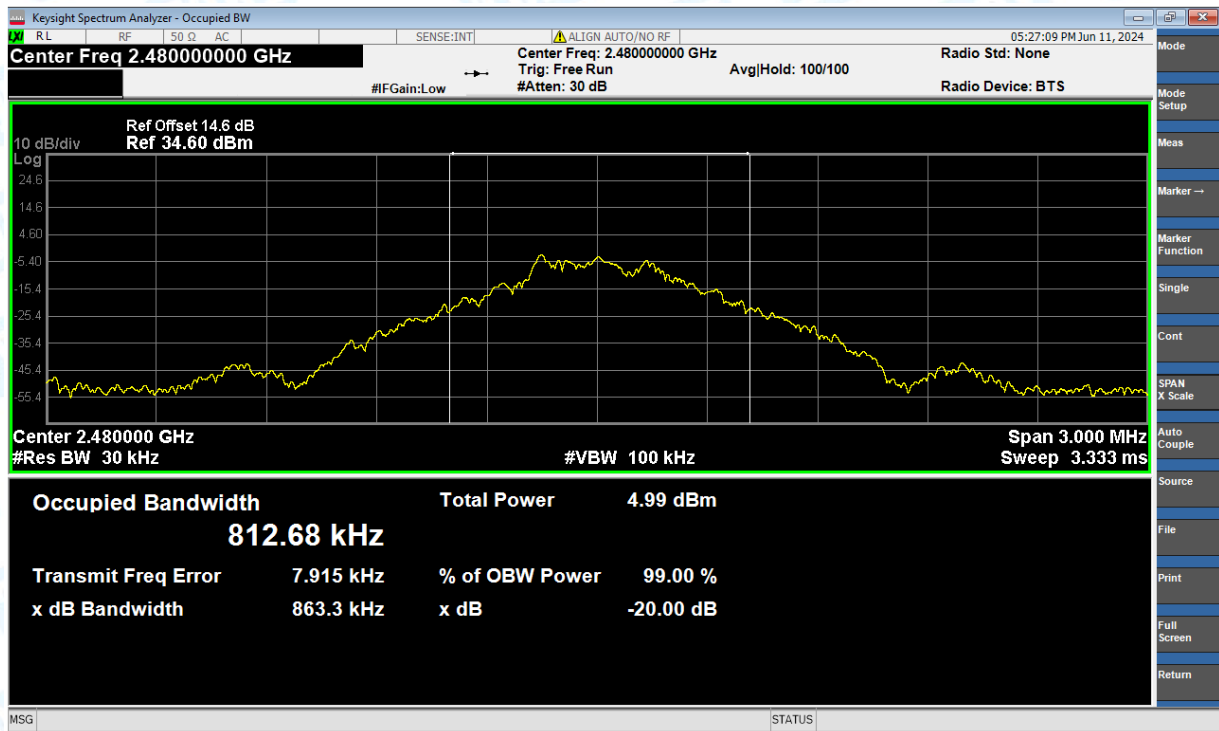
OBW NVNT 1-DH1 2402MHz Ant1



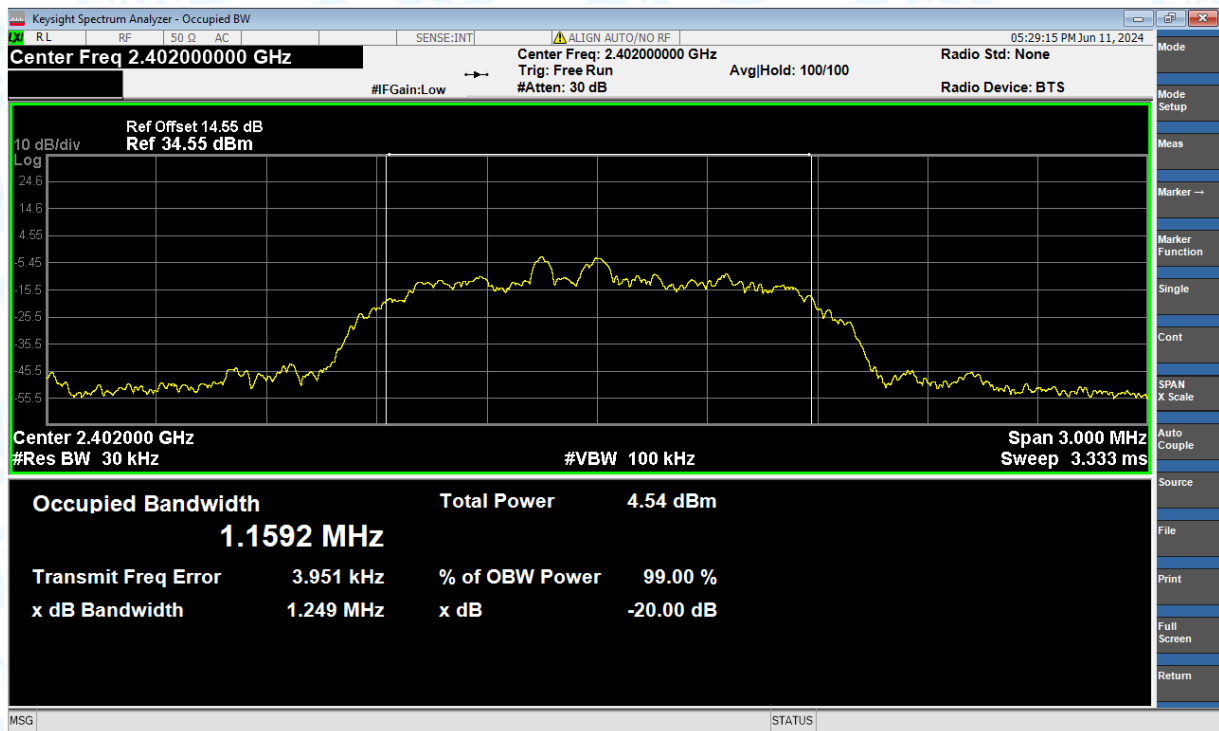
OBW NVNT 1-DH1 2441MHz Ant1



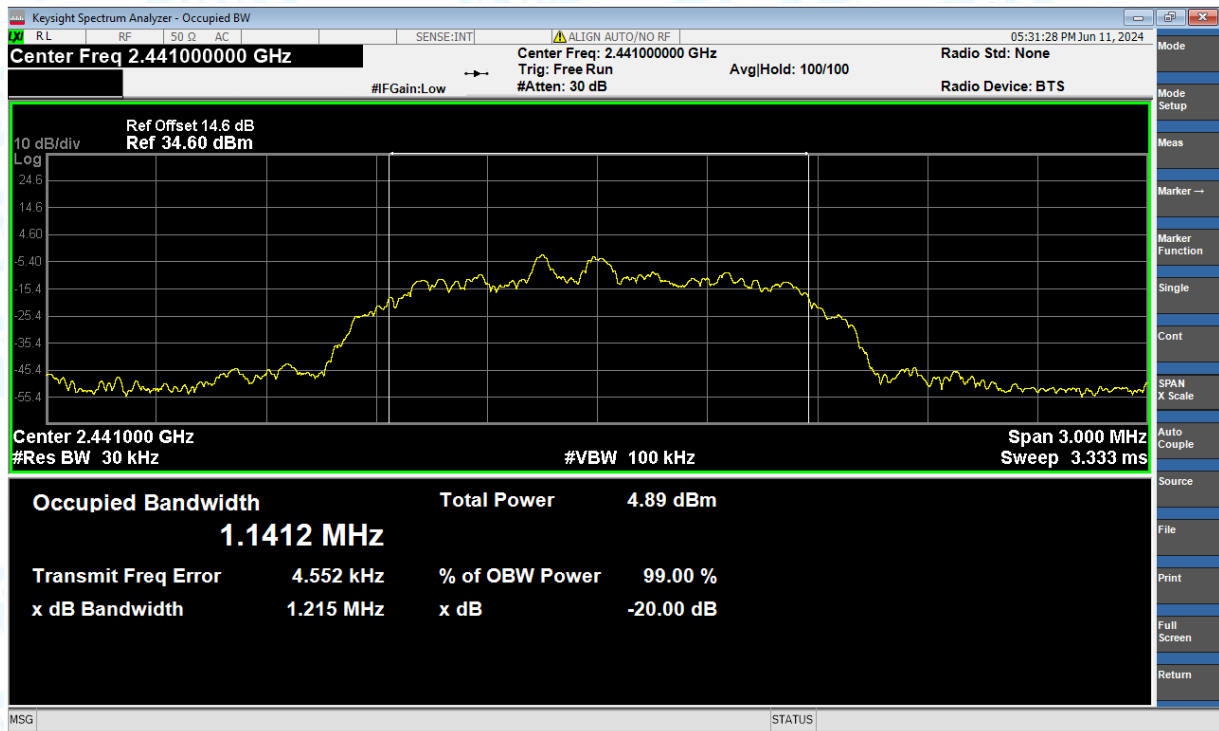
OBW NVNT 1-DH1 2480MHz Ant1



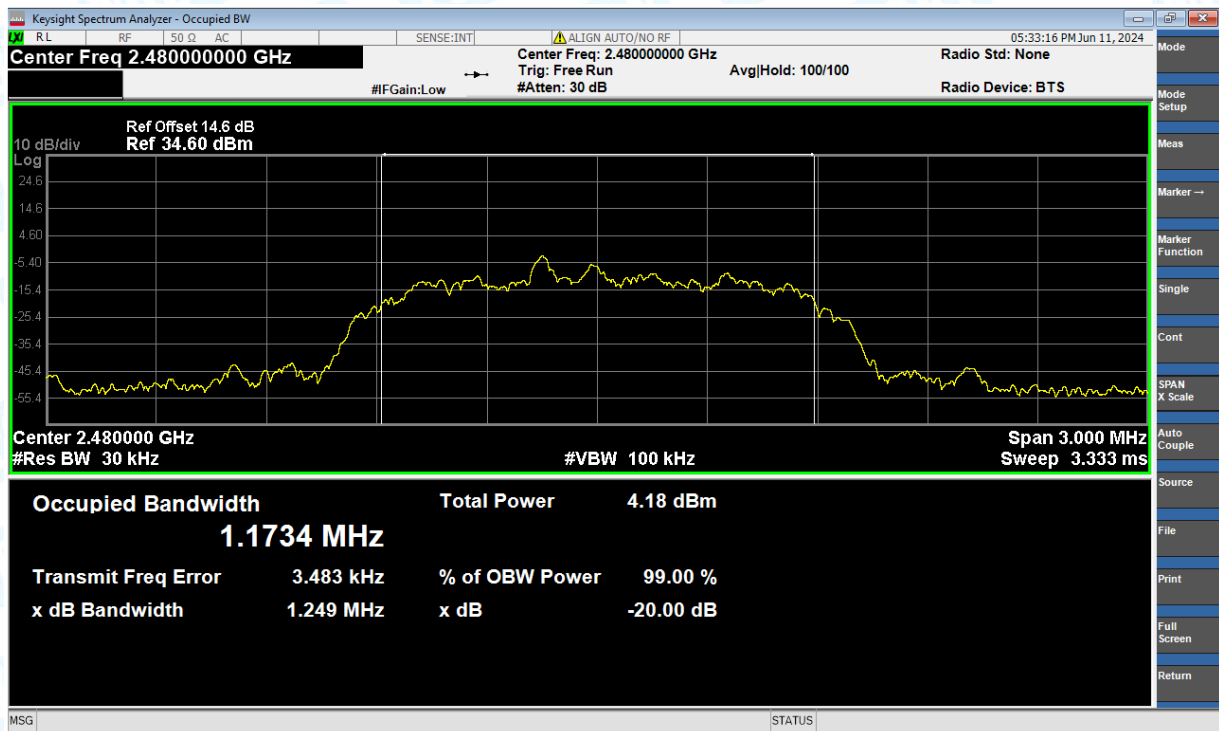
OBW NVNT 2-DH1 2402MHz Ant1



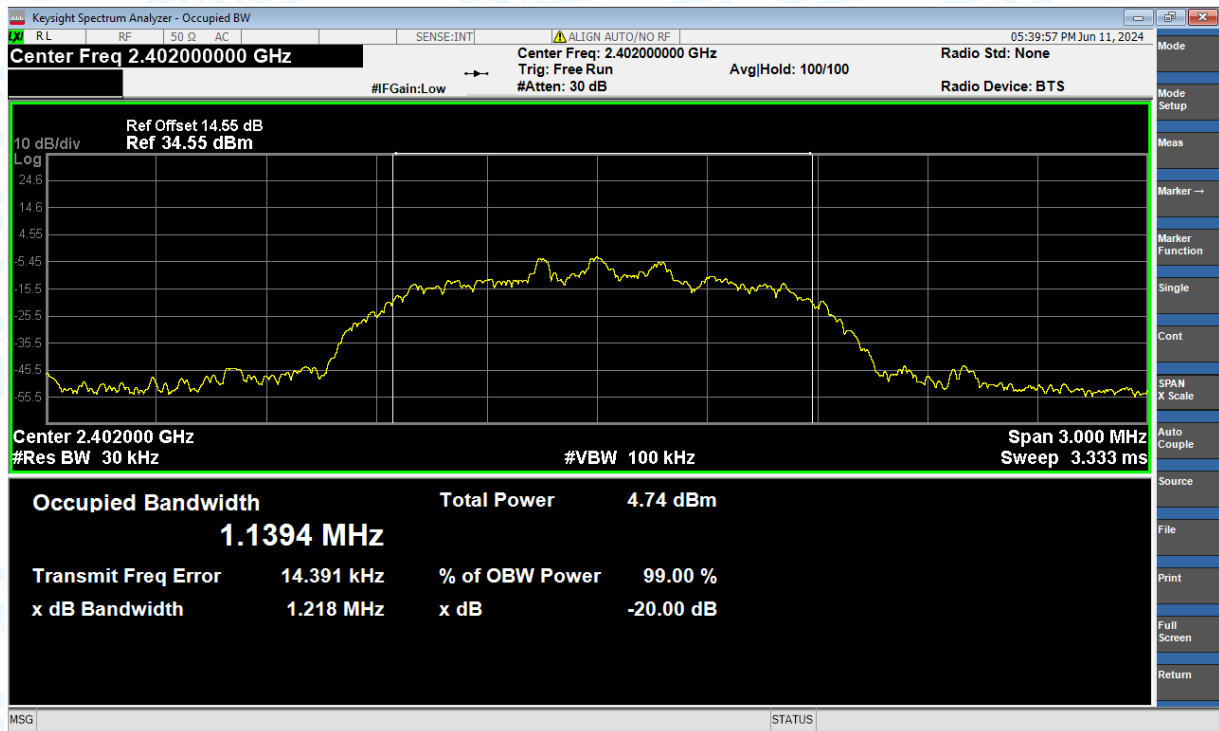
OBW NVNT 2-DH1 2441MHz Ant1



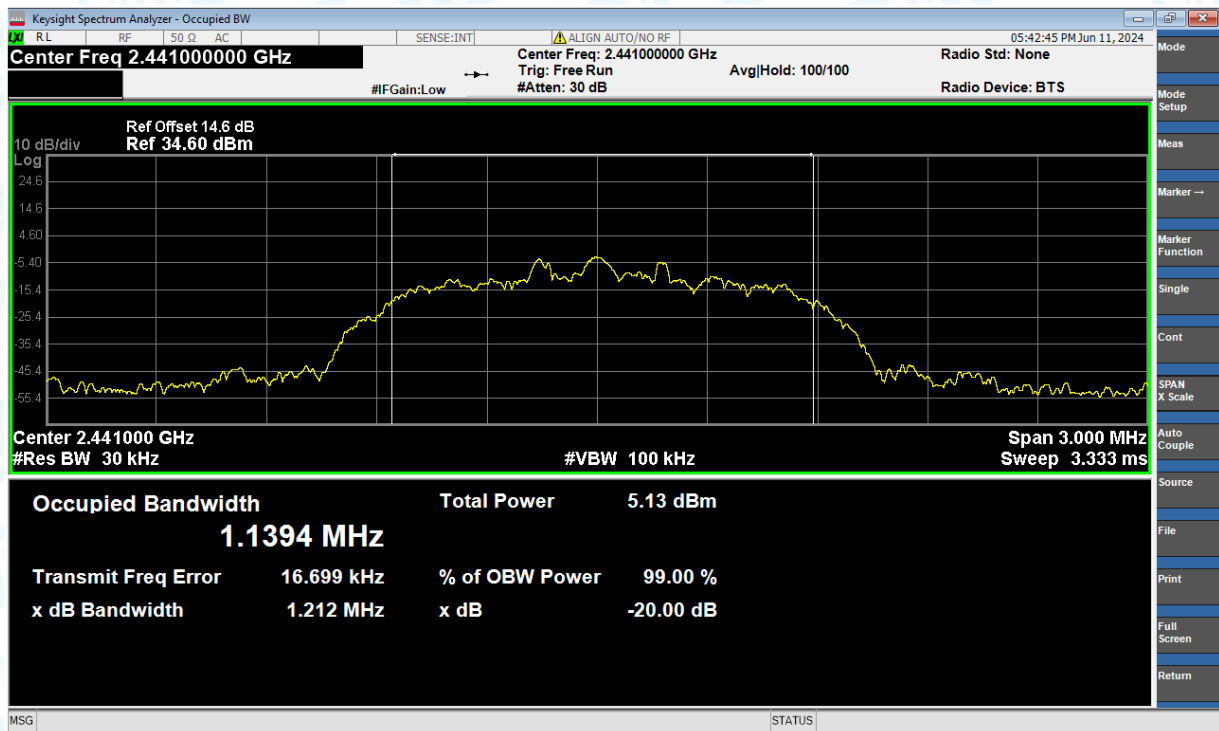
OBW NVNT 2-DH1 2480MHz Ant1

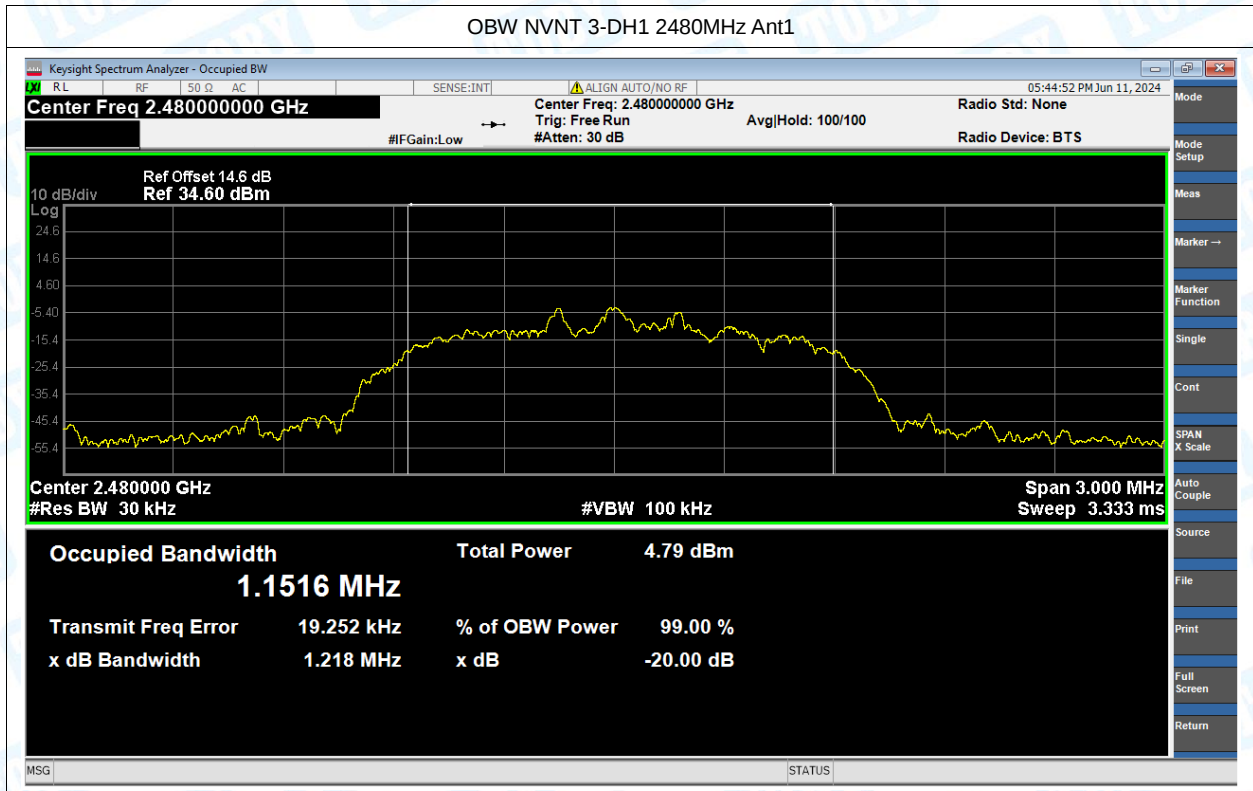


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



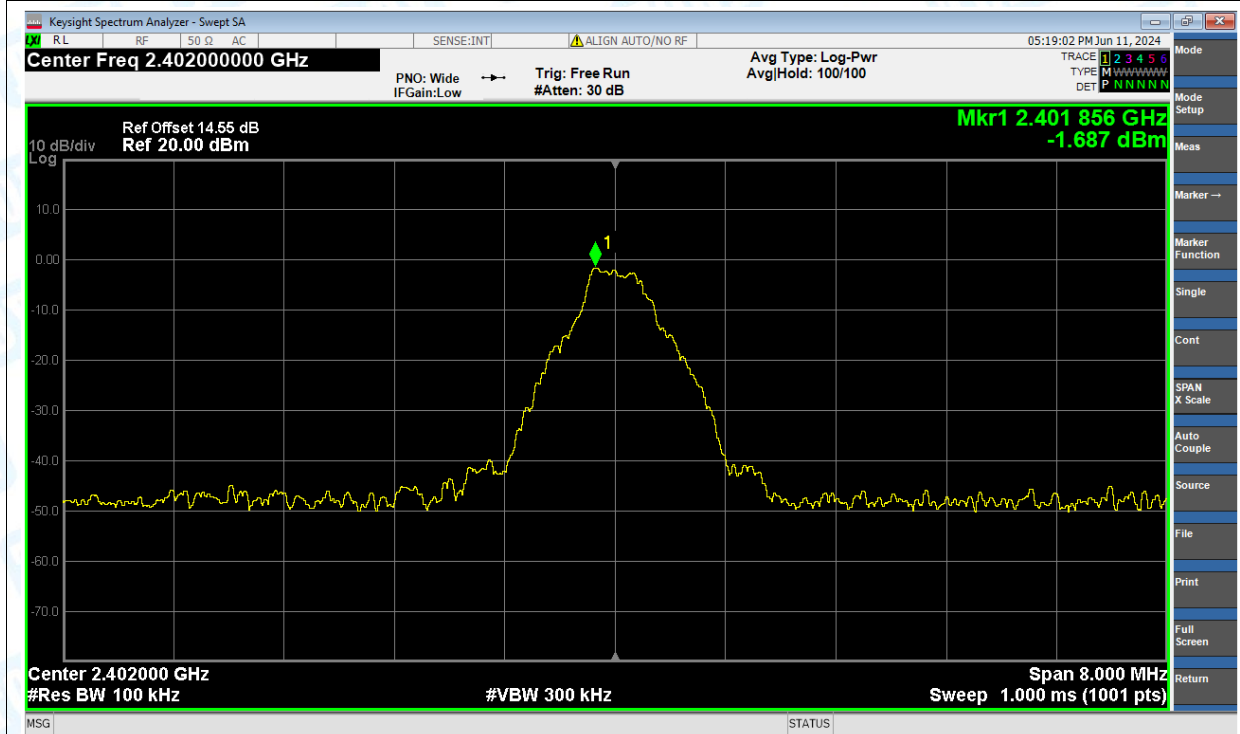


4. Band Edge

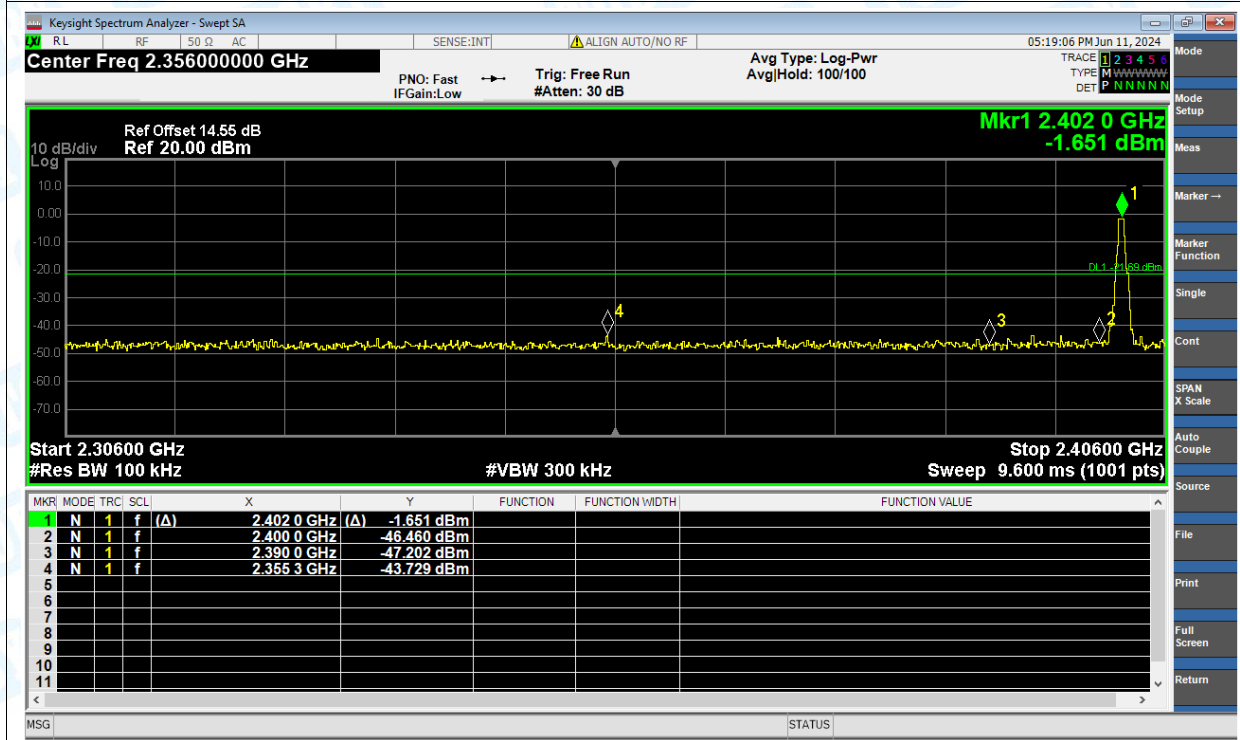
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-42.04	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-42.87	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-42.7	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-42.86	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-41.77	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-42.07	-20	Pass

Test Graphs

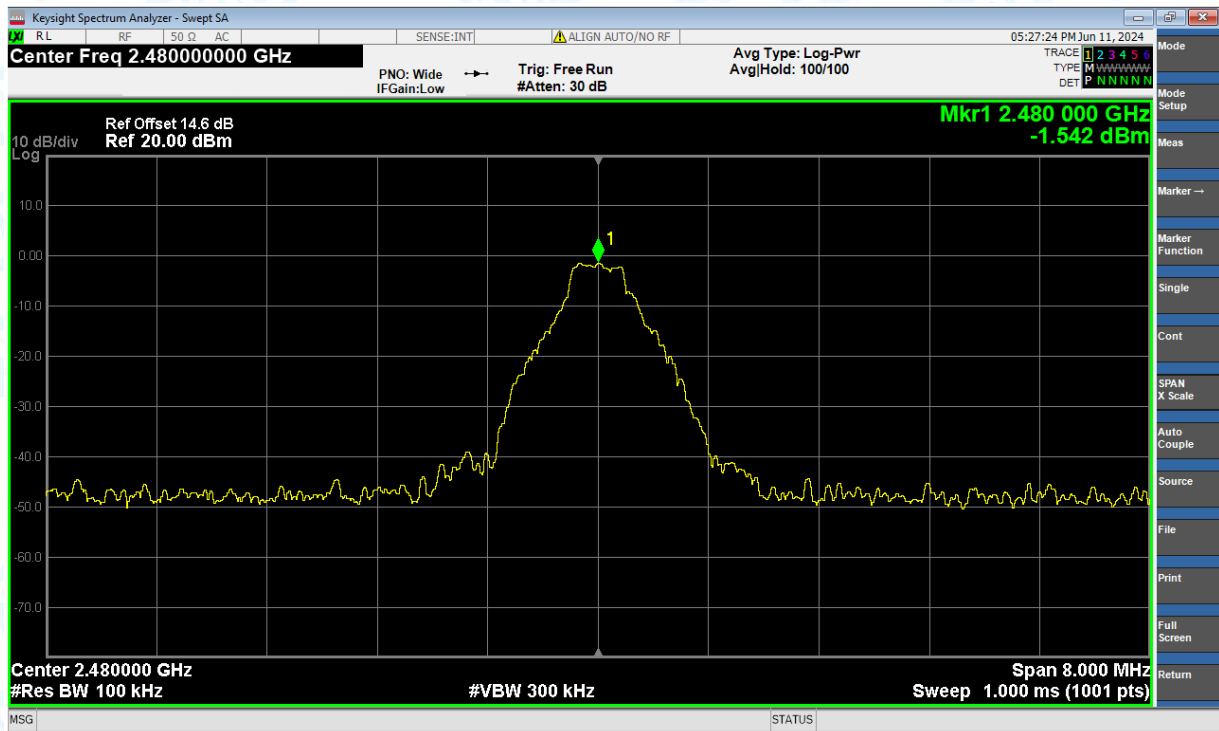
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



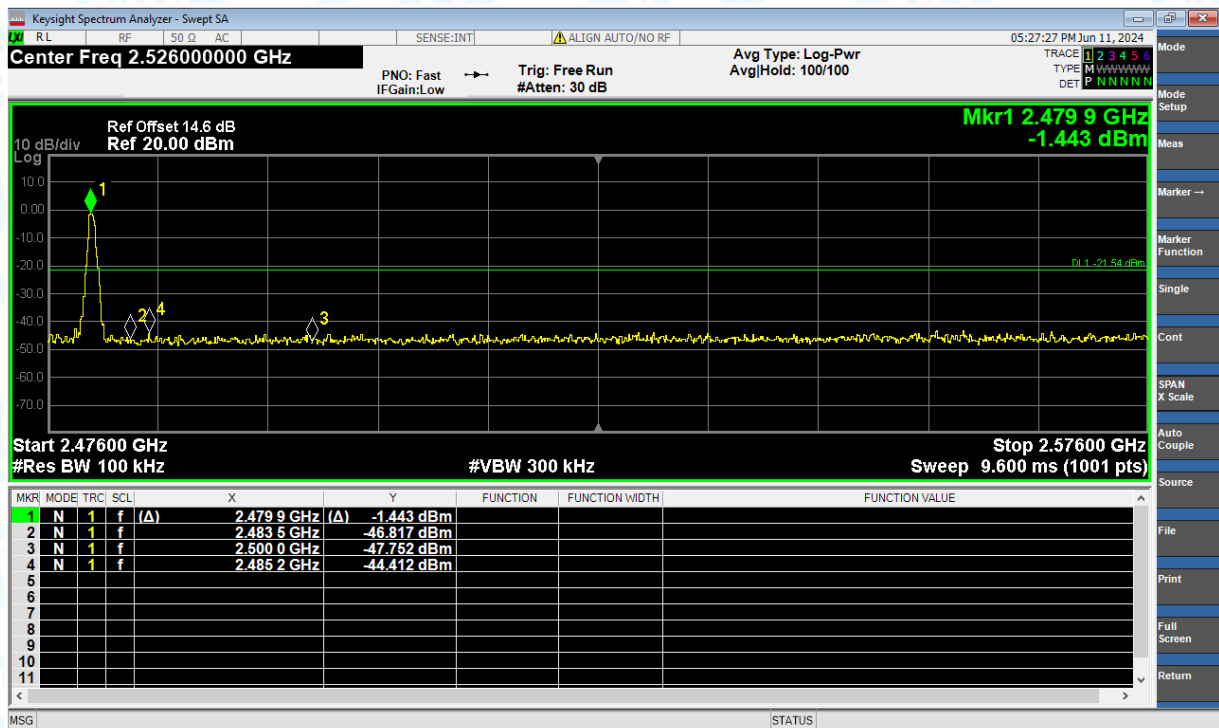
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



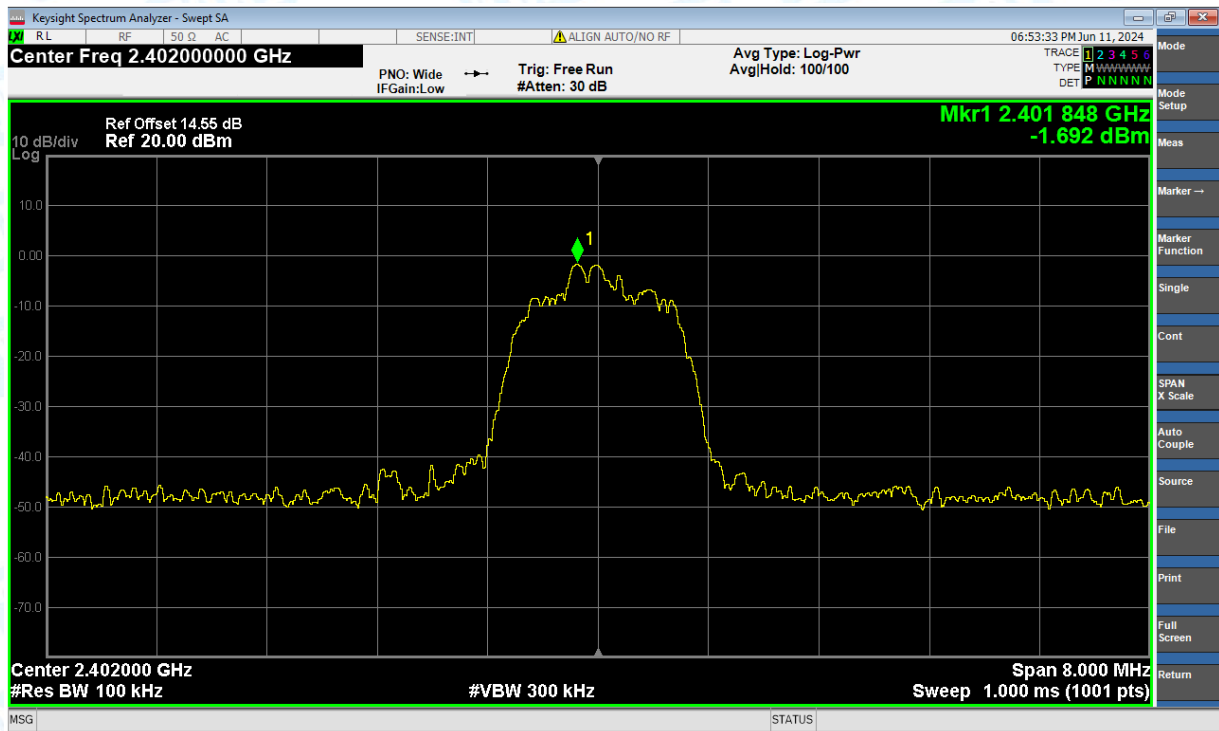
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



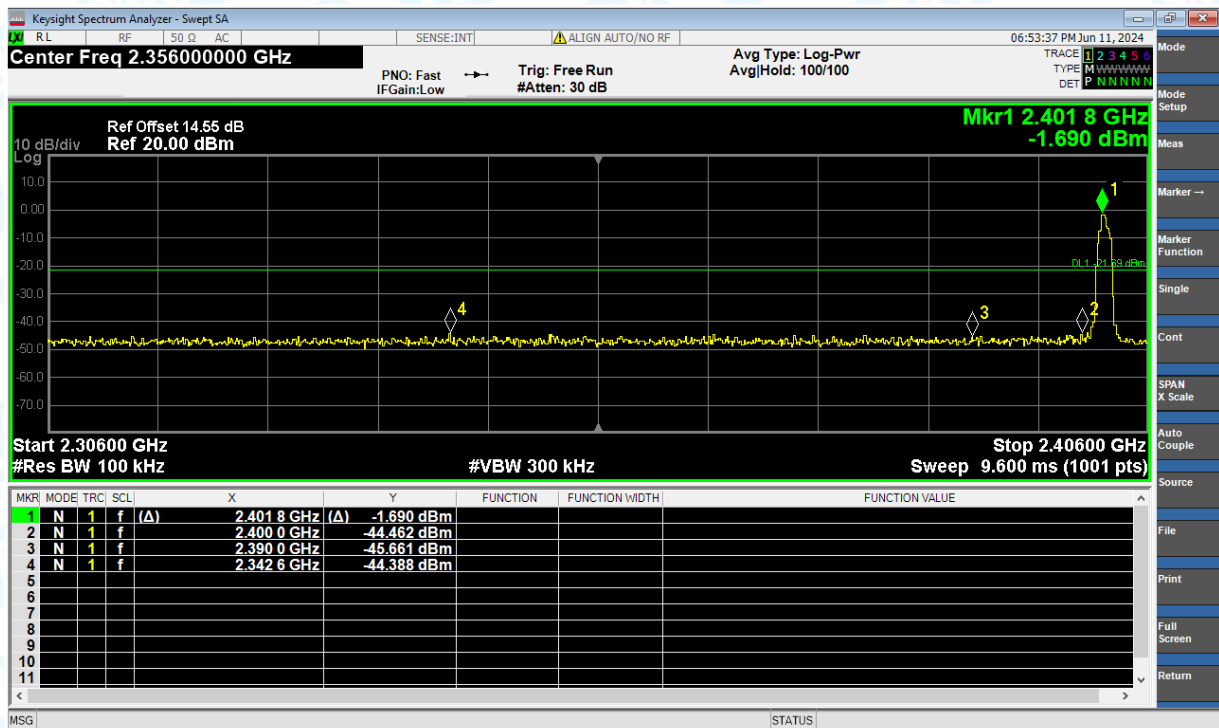
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



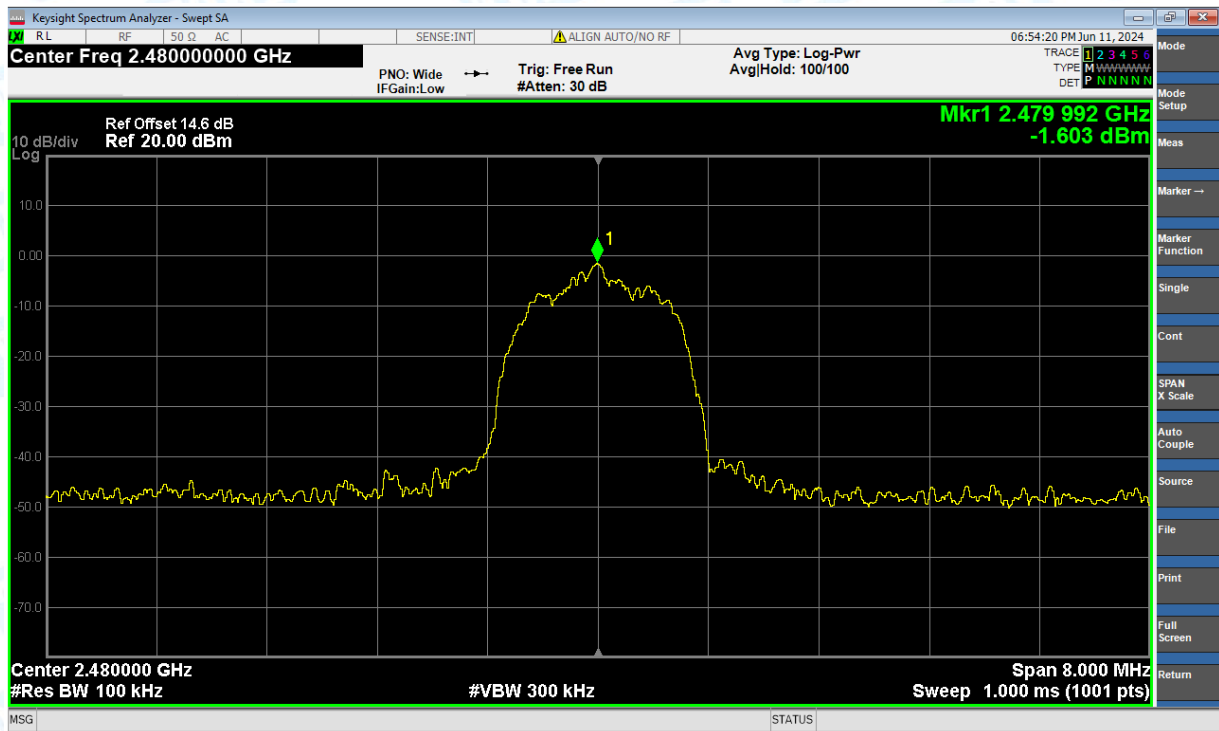
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



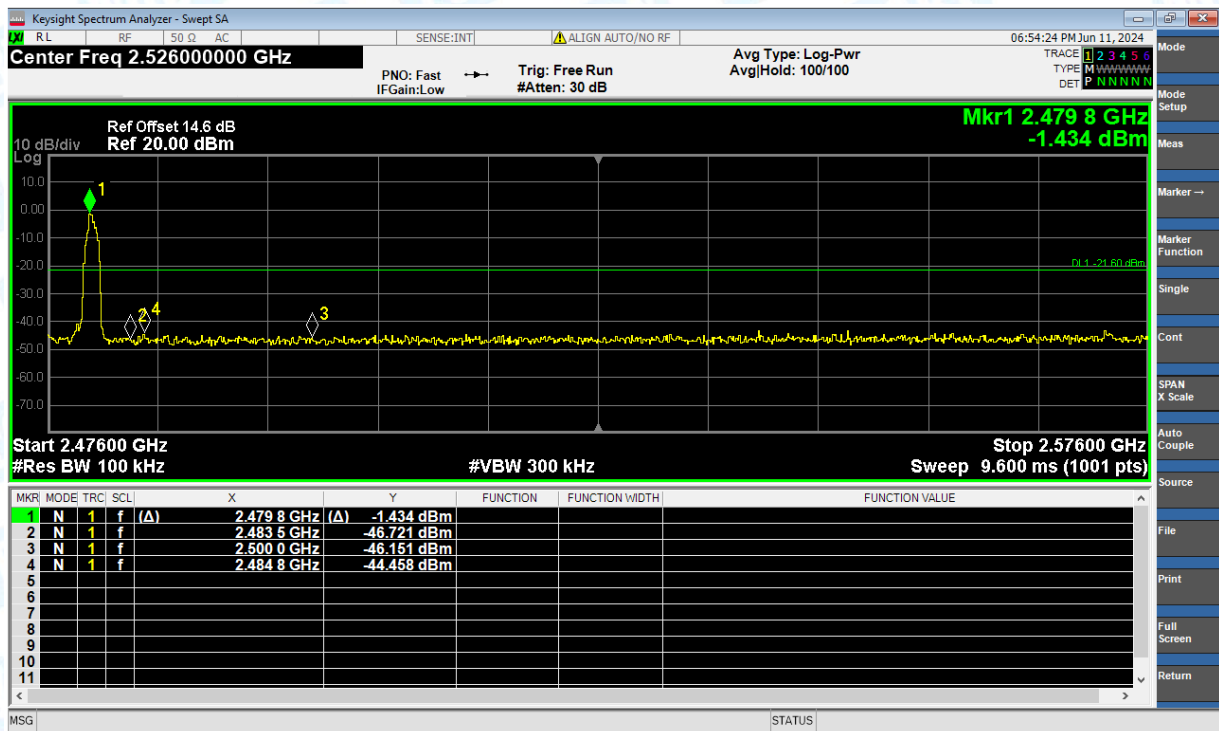
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



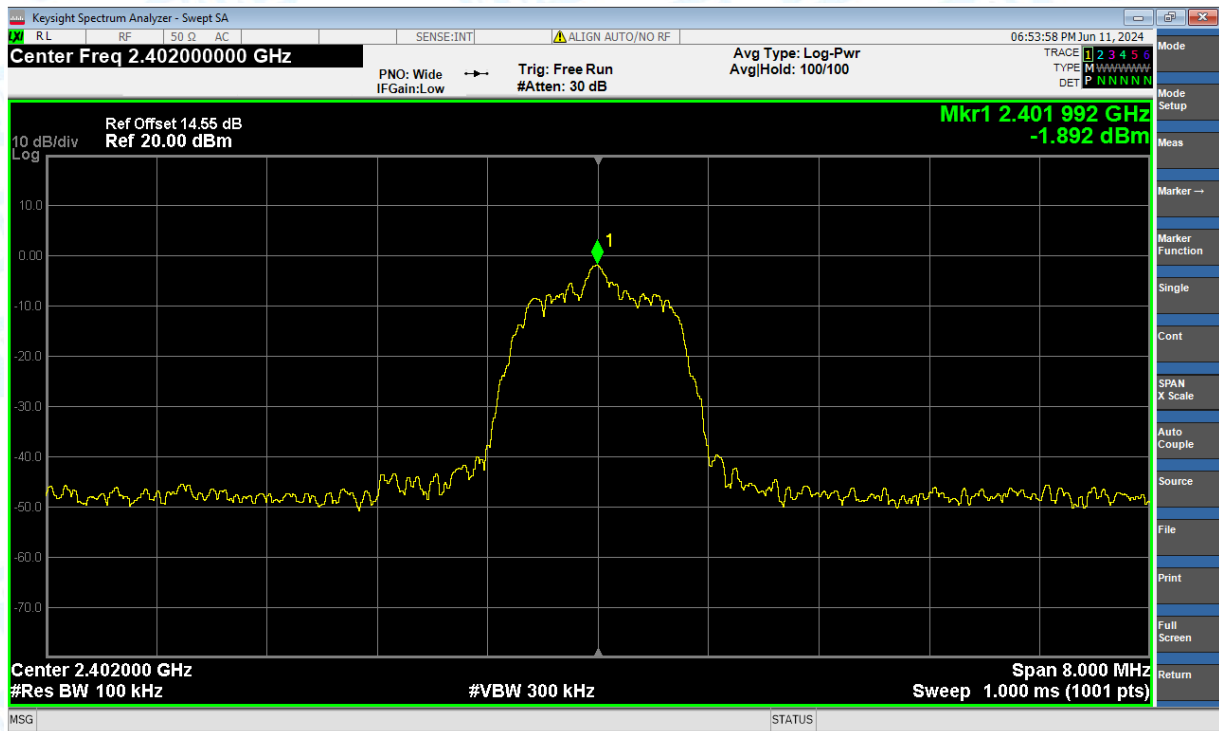
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



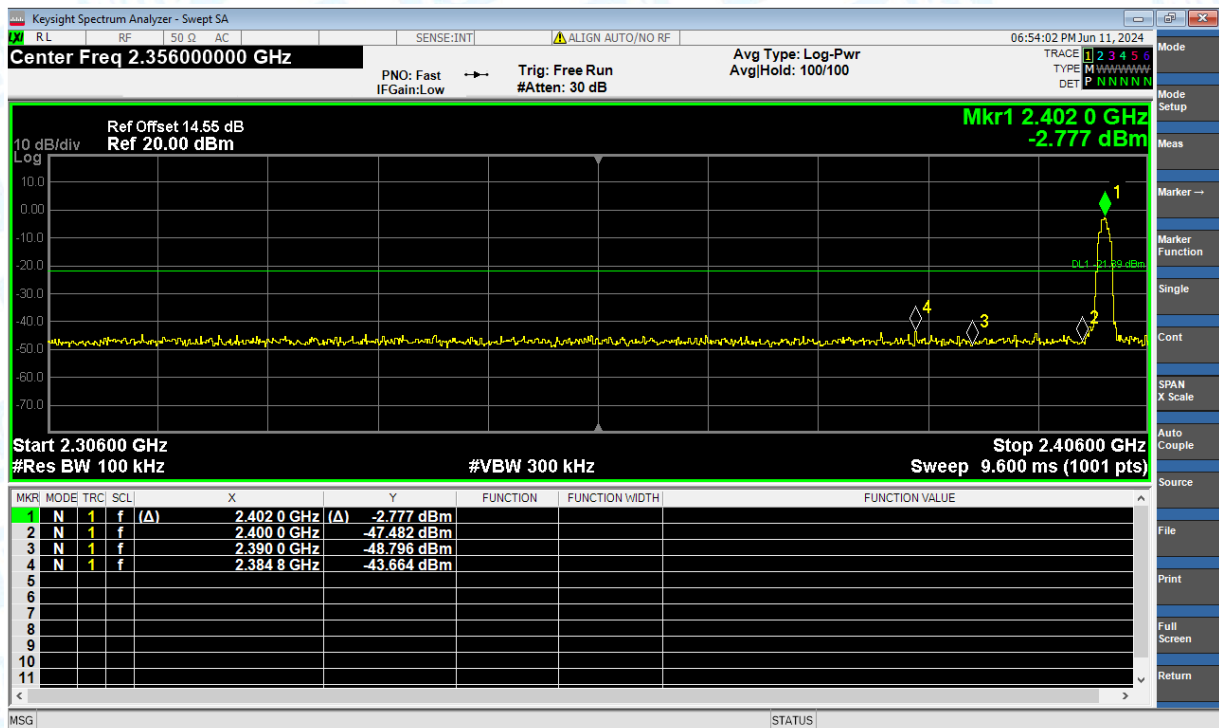
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



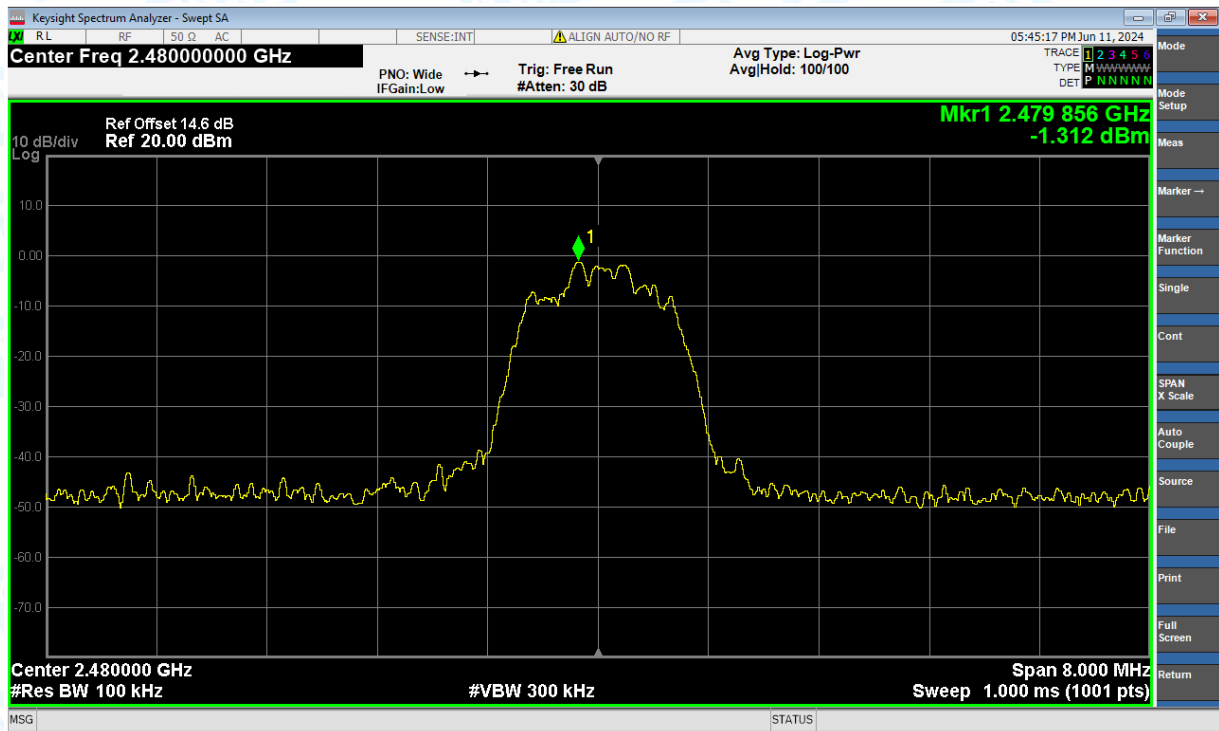
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



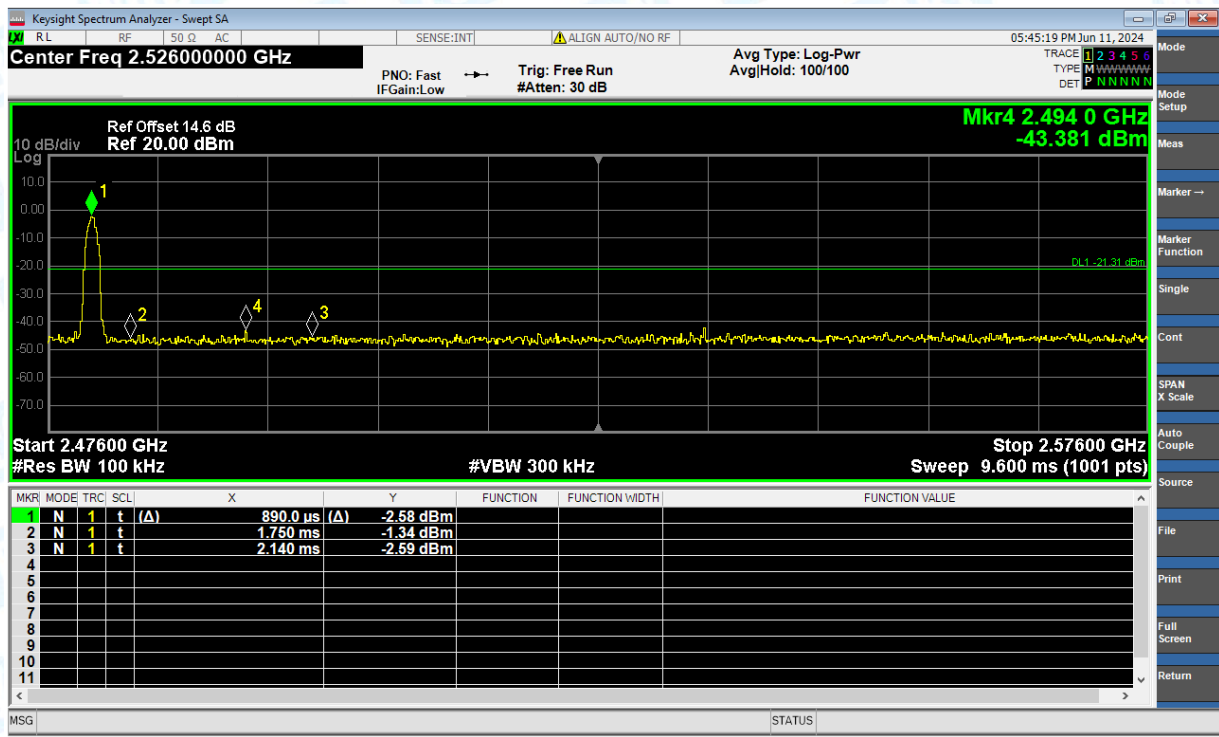
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

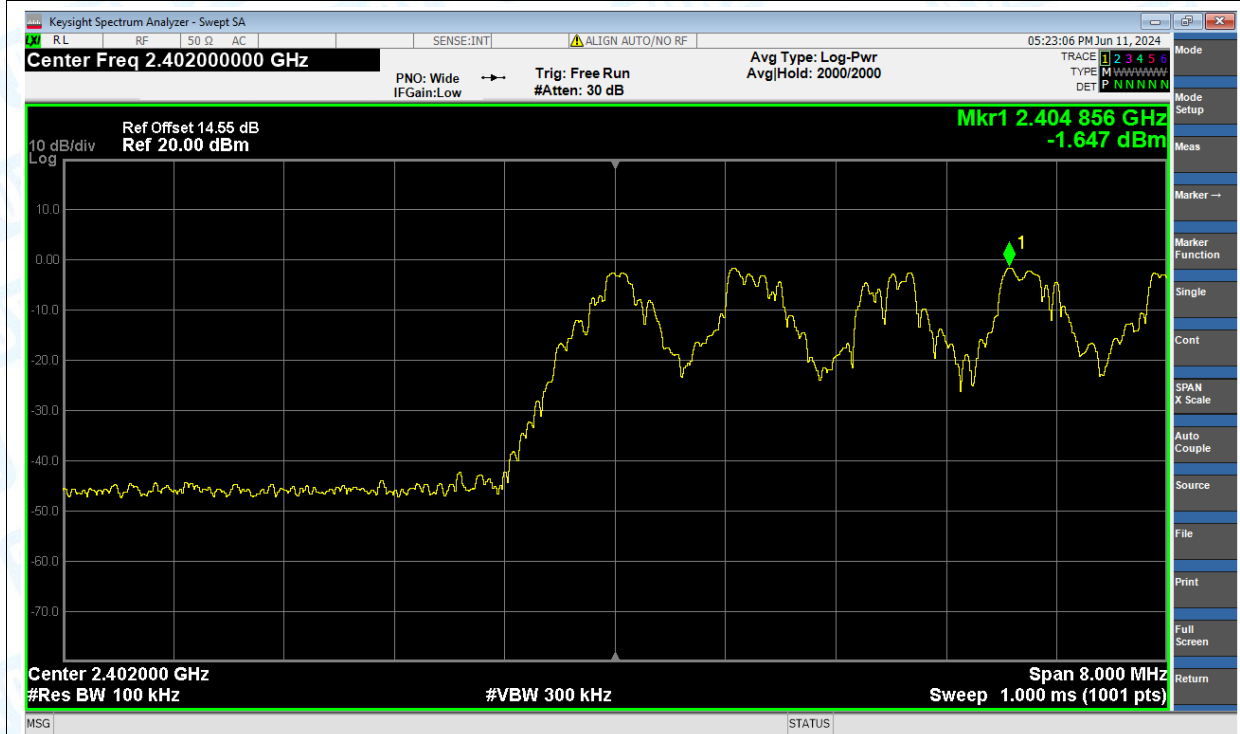


5. Band Edge(Hopping)

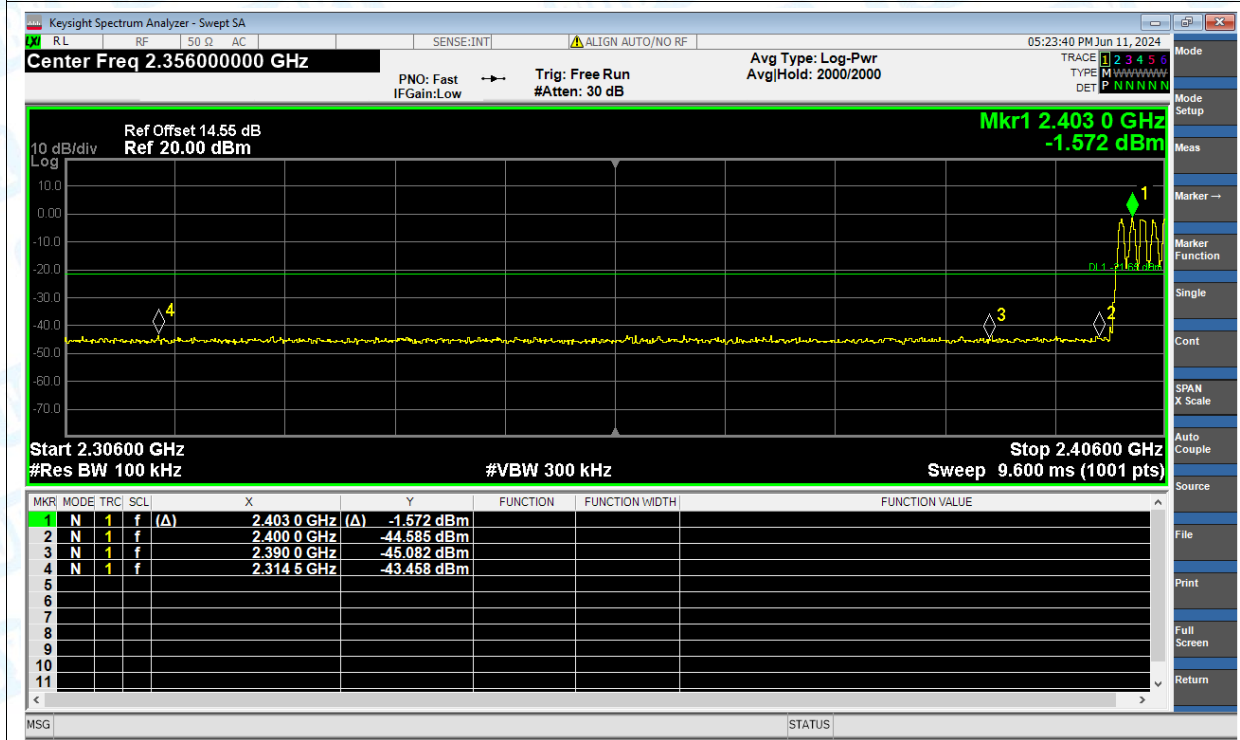
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-41.81	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-41.68	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-41.78	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-41.78	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-41.47	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-40.49	-20	Pass

Test Graphs

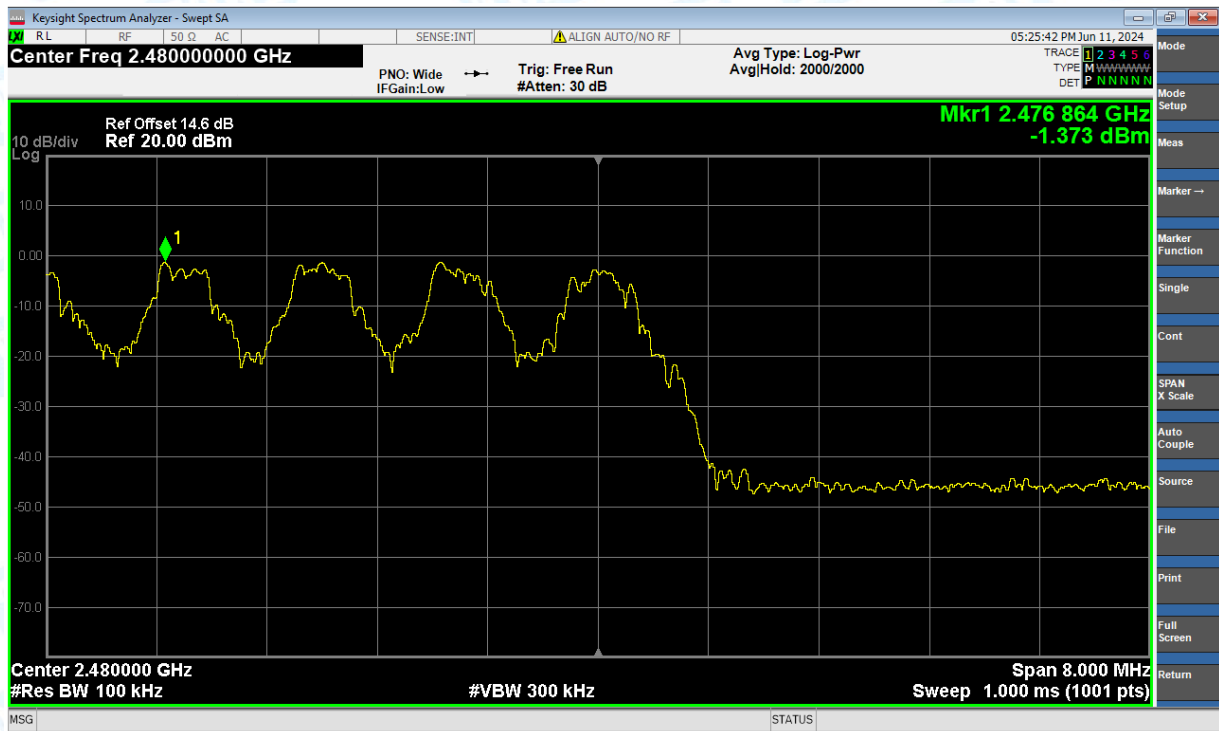
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



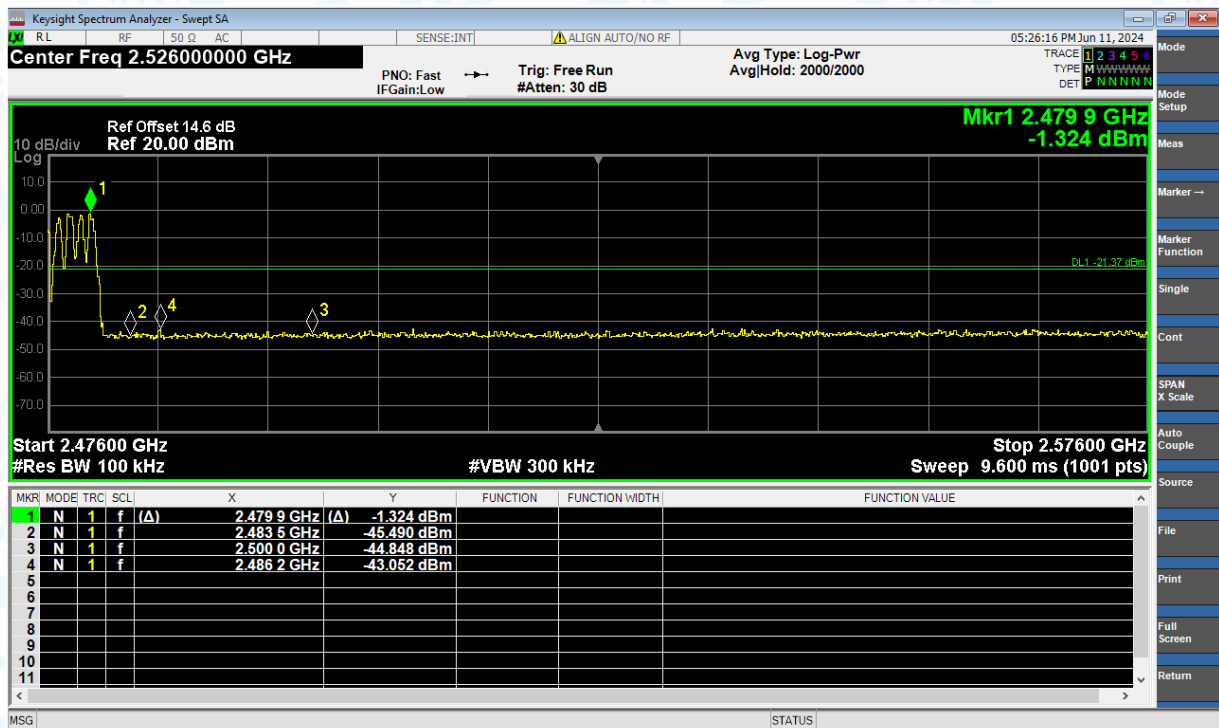
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



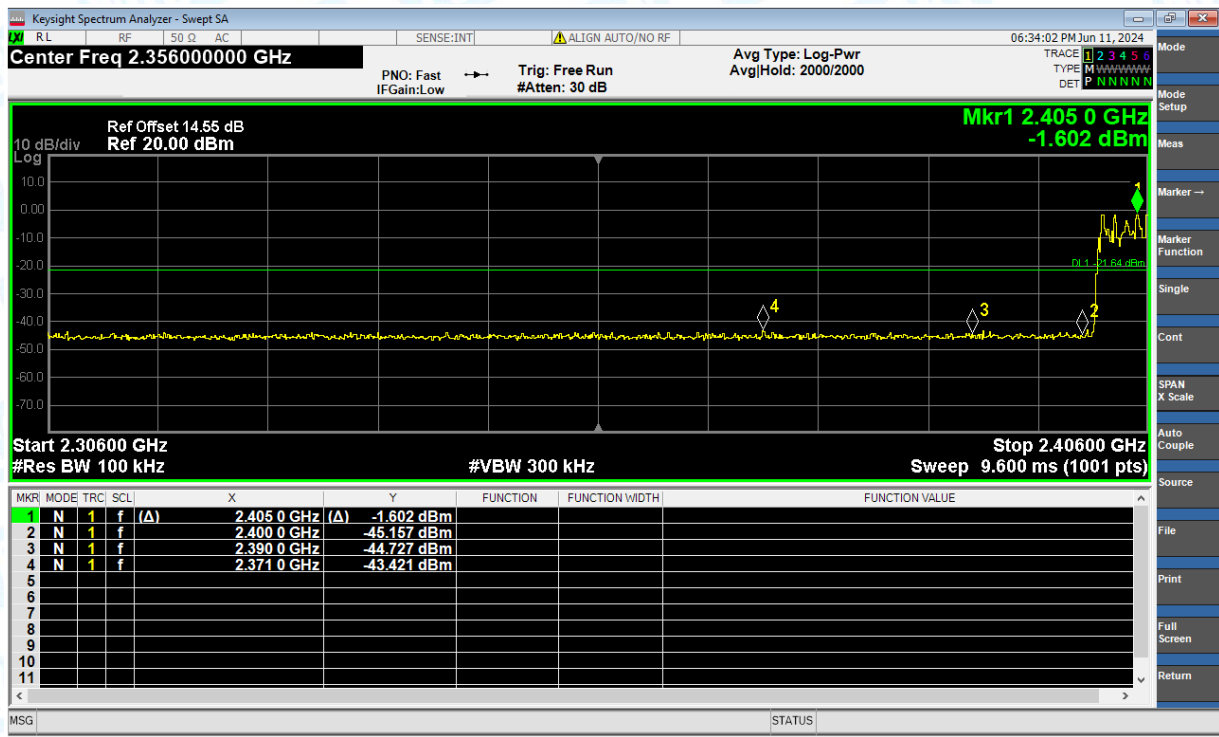
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



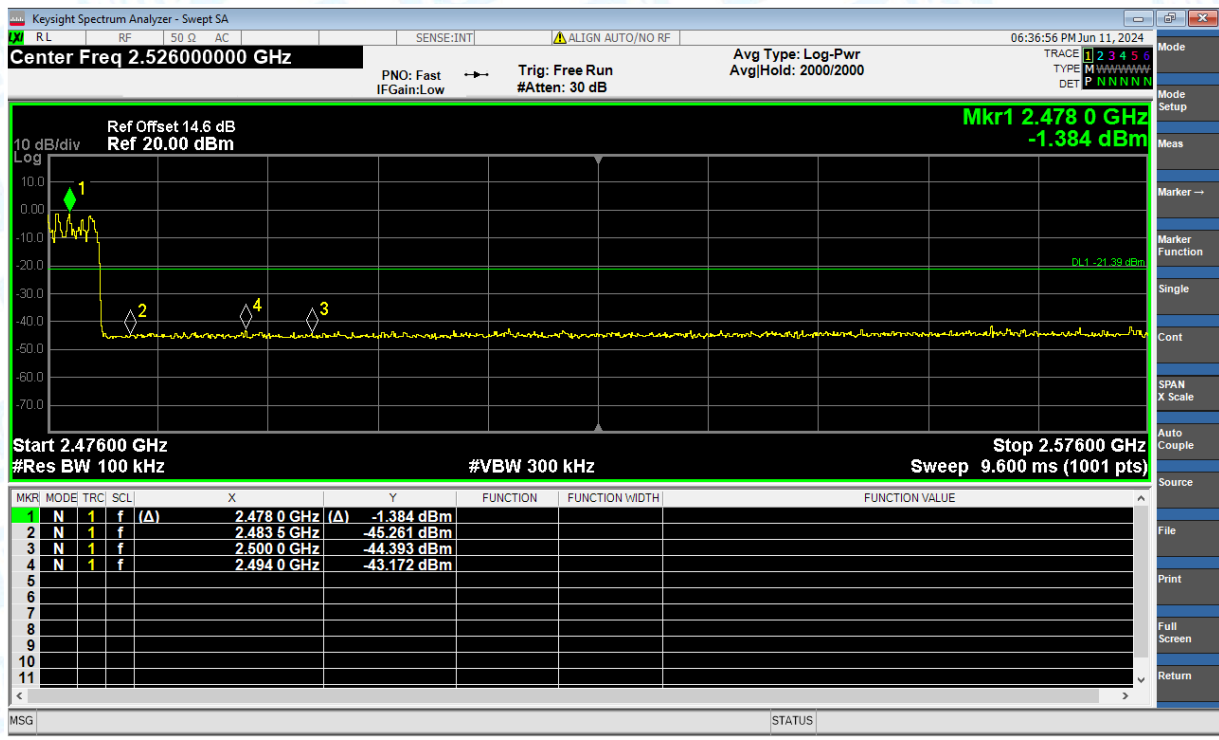
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



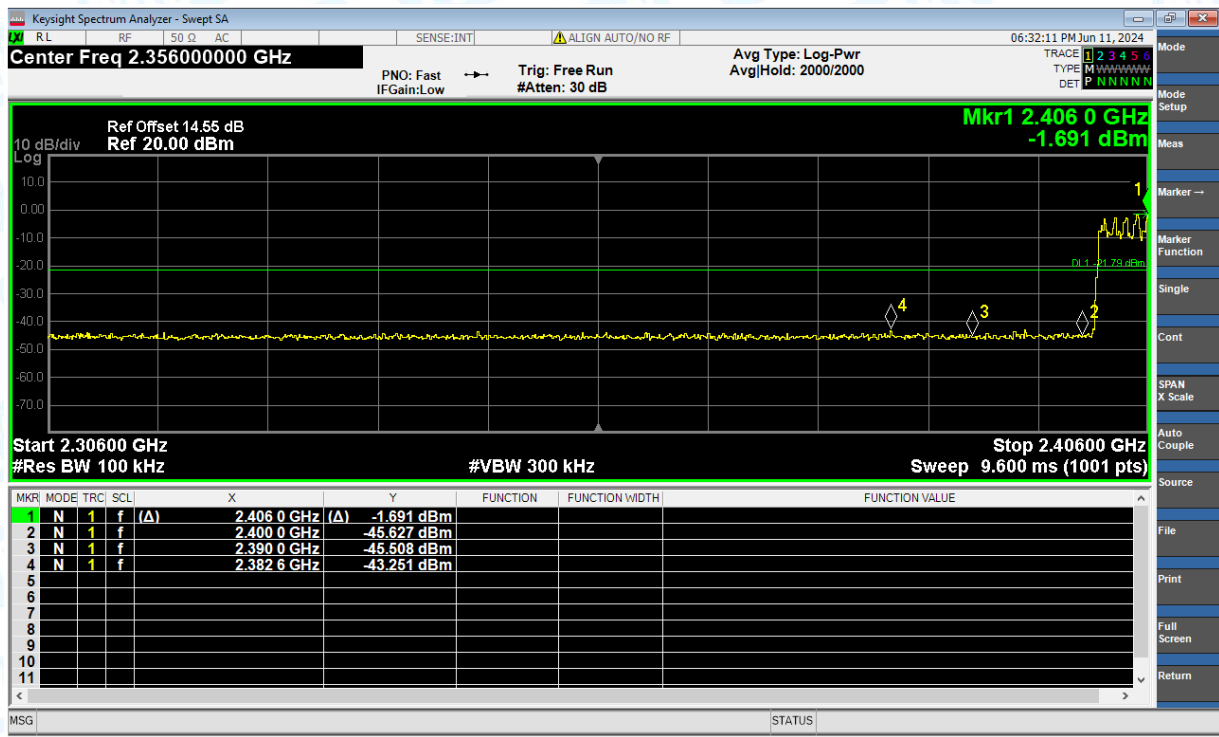
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



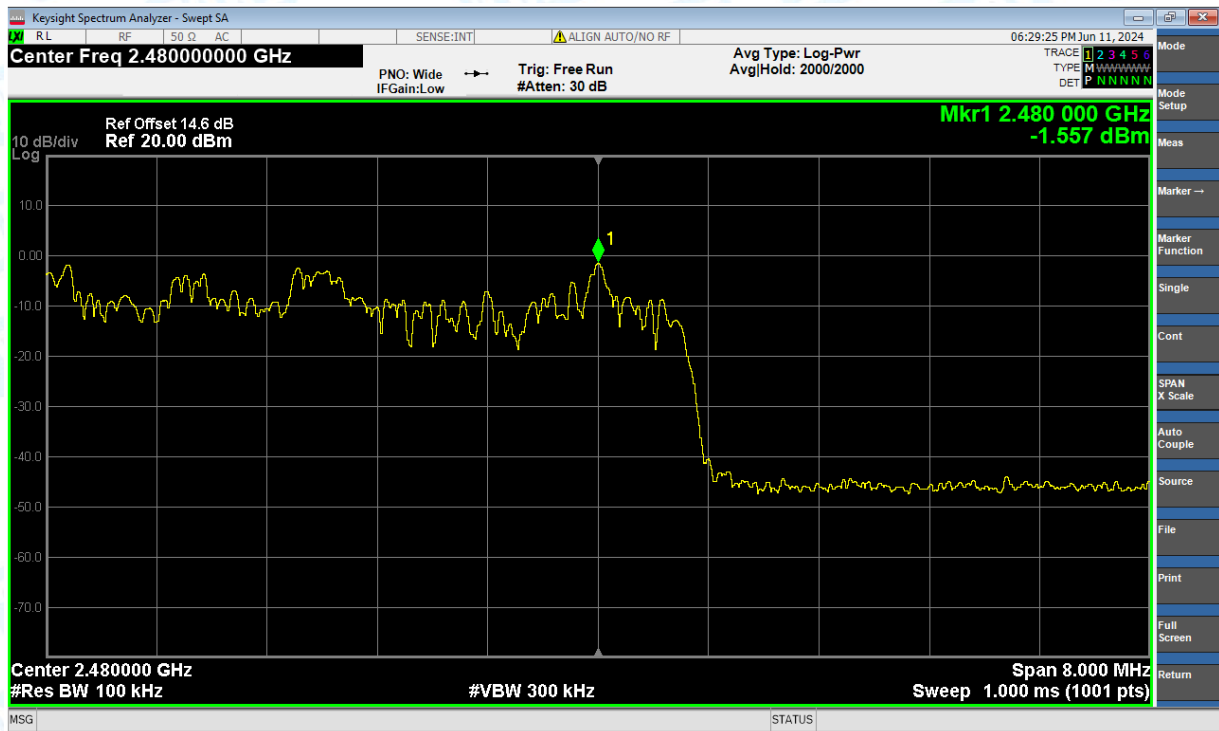
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



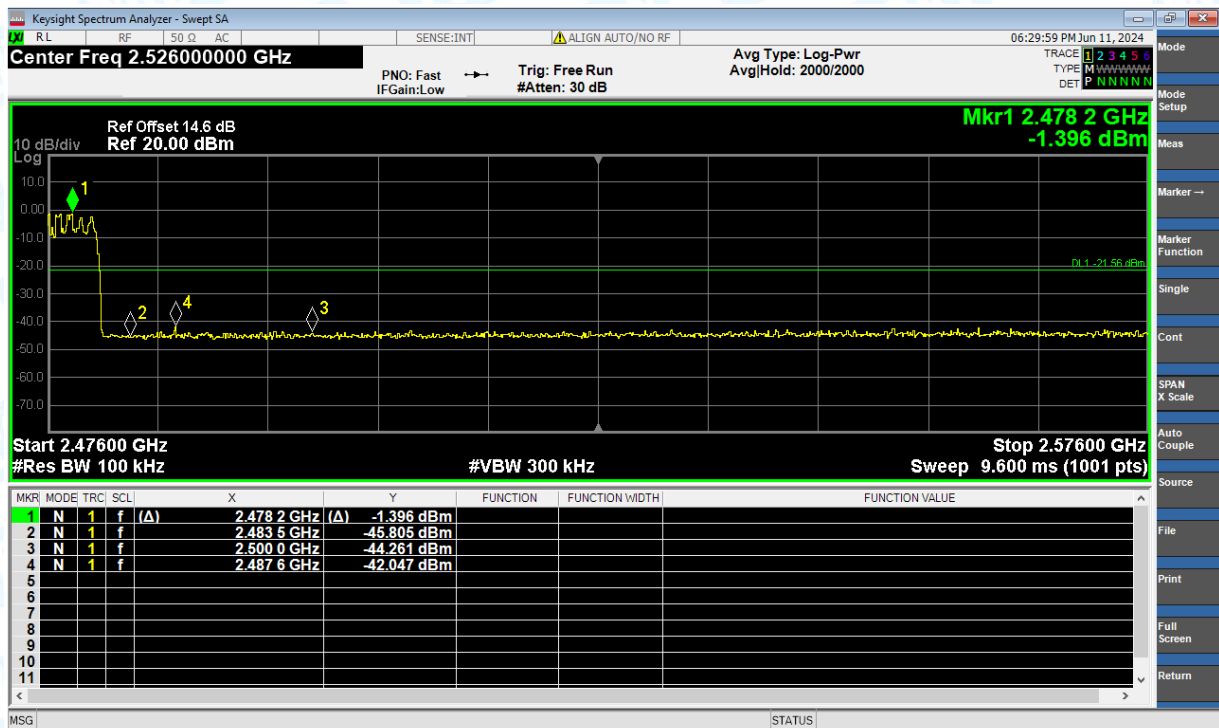
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission

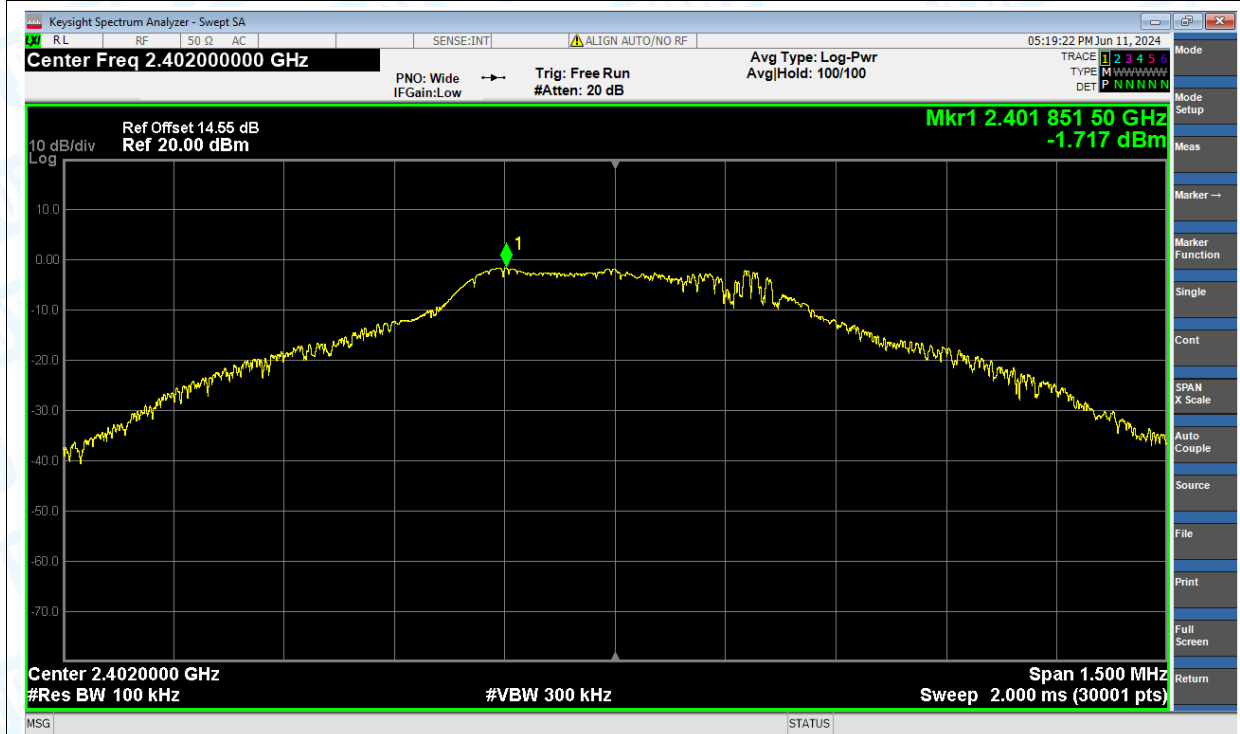


6. Conducted RF Spurious Emission

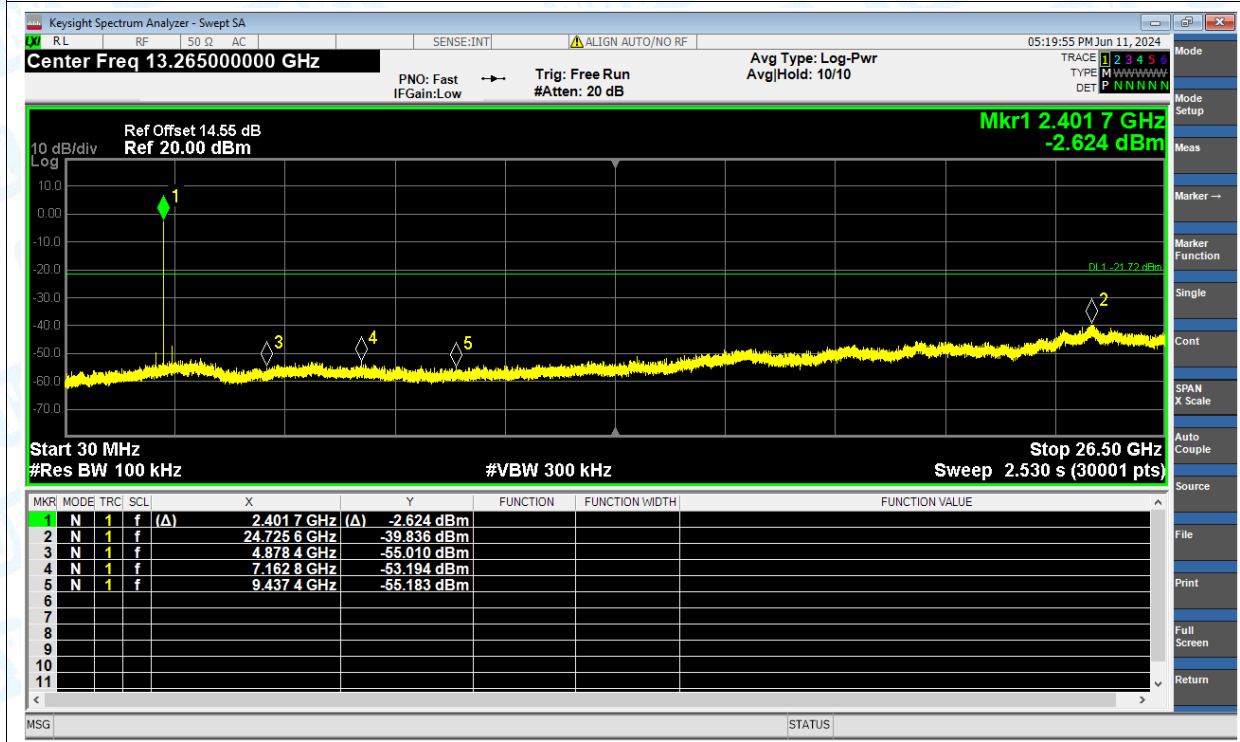
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-38.12	-20	Pass
NVNT	1-DH1	2441	Ant1	-38.41	-20	Pass
NVNT	1-DH1	2480	Ant1	-37.12	-20	Pass
NVNT	2-DH1	2402	Ant1	-38.66	-20	Pass
NVNT	2-DH1	2441	Ant1	-37.86	-20	Pass
NVNT	2-DH1	2480	Ant1	-37.92	-20	Pass
NVNT	3-DH1	2402	Ant1	-38.22	-20	Pass
NVNT	3-DH1	2441	Ant1	-38.46	-20	Pass
NVNT	3-DH1	2480	Ant1	-38.14	-20	Pass

Test Graphs

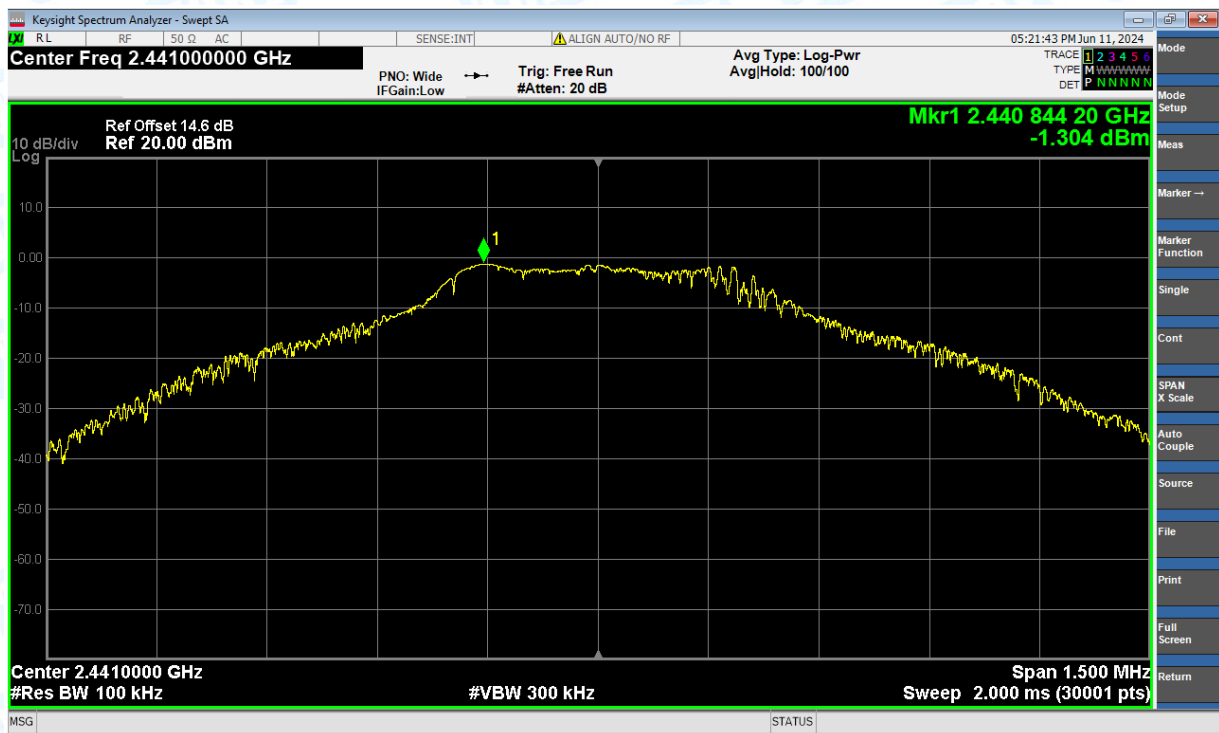
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



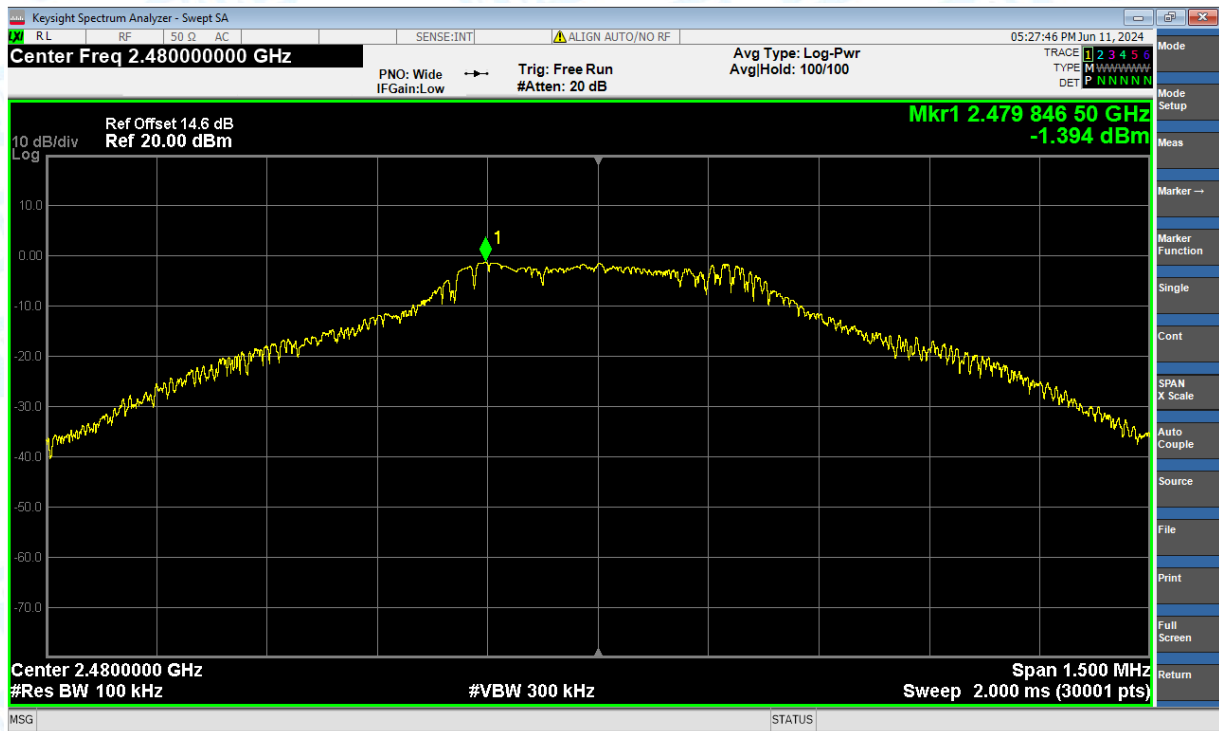
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



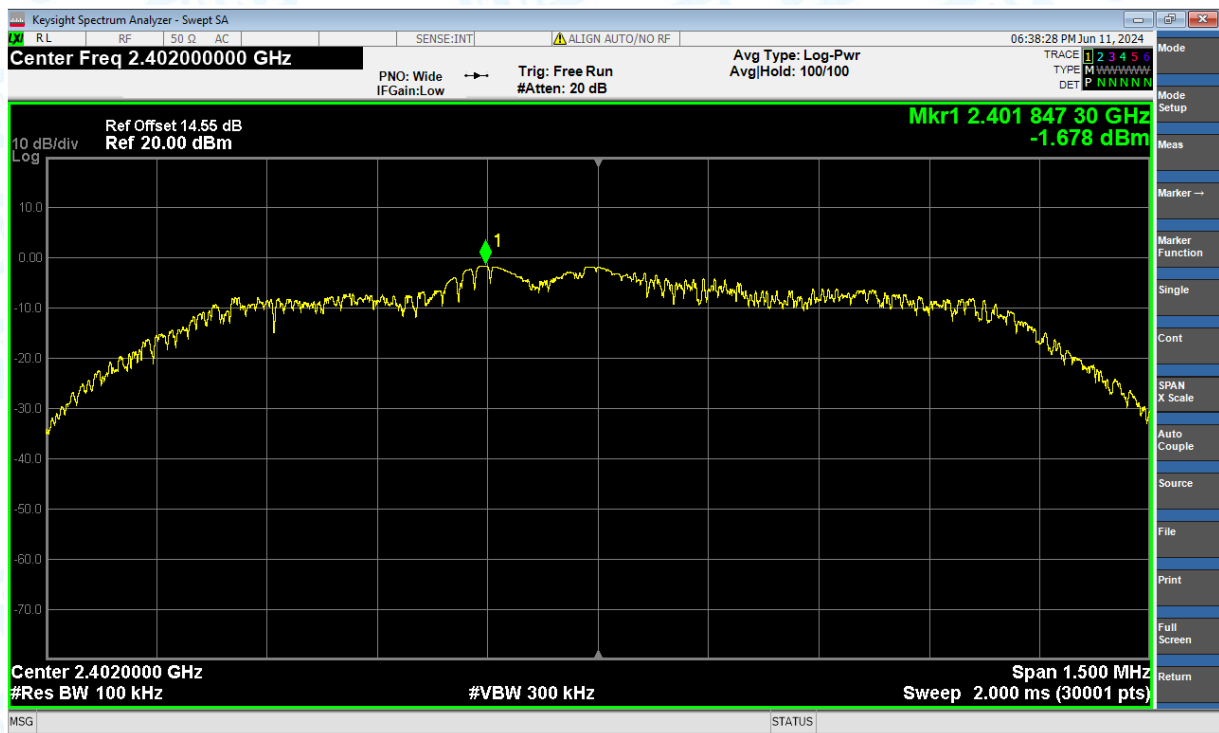
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



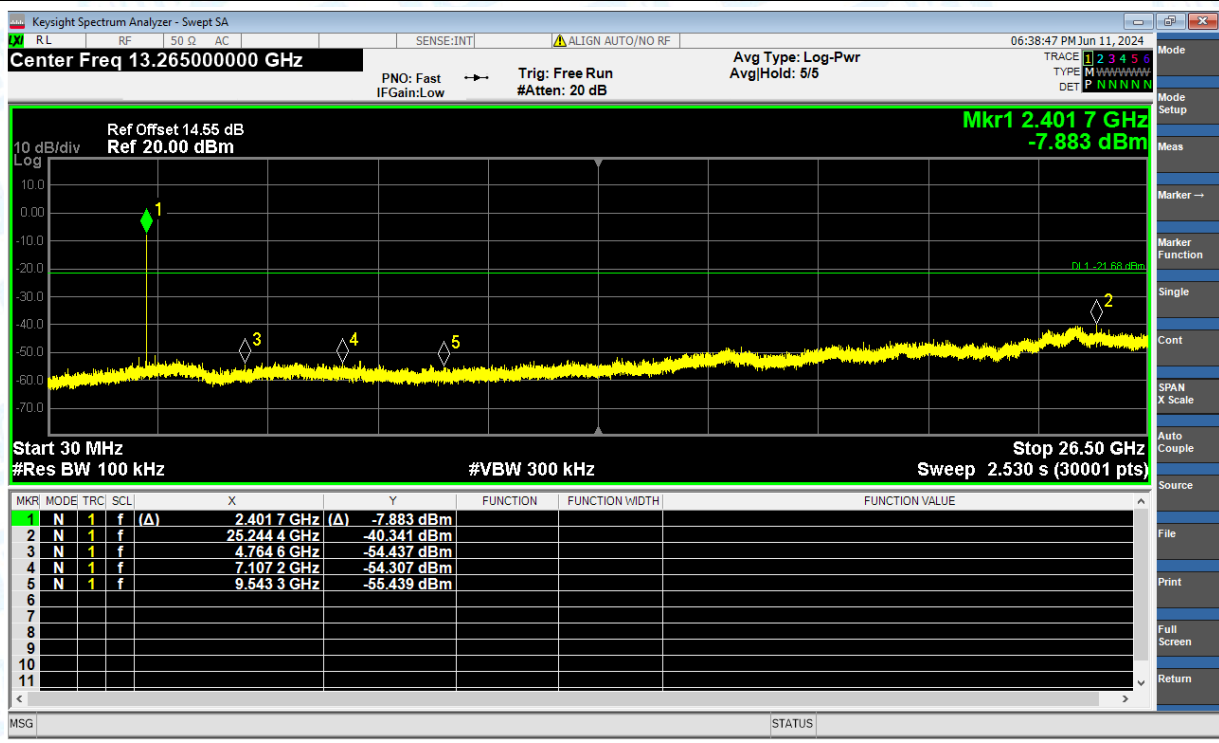
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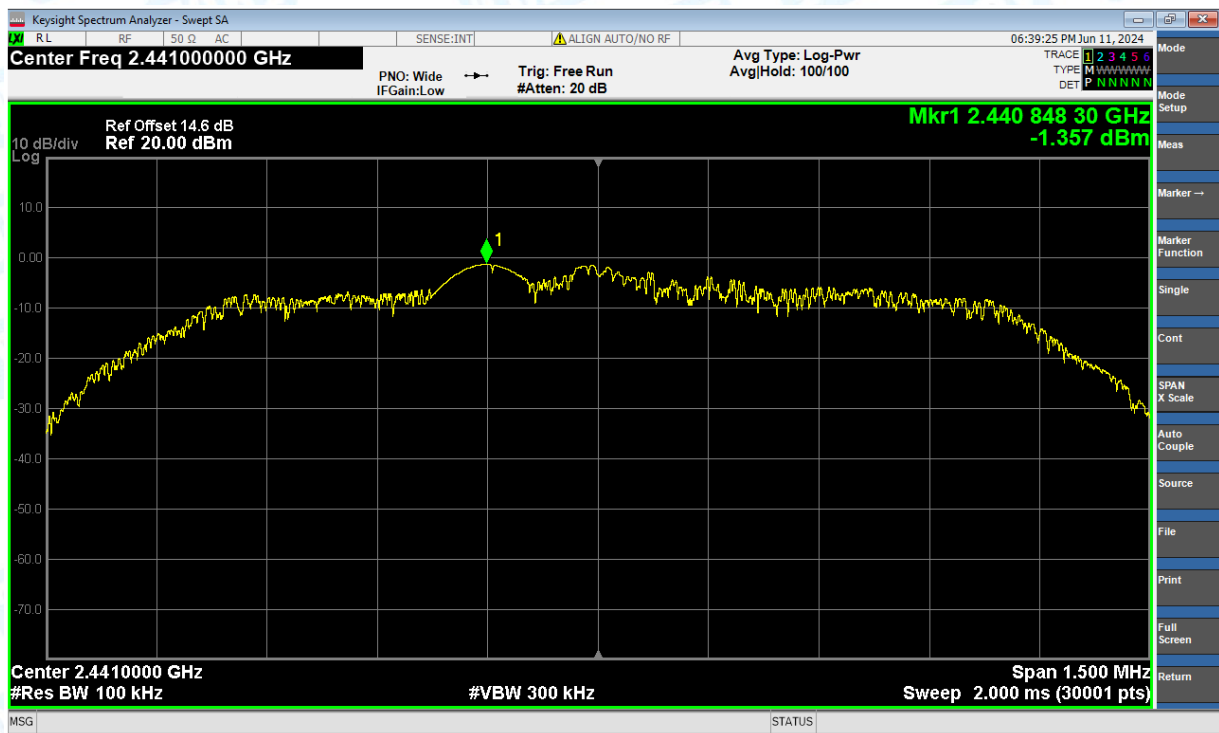
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



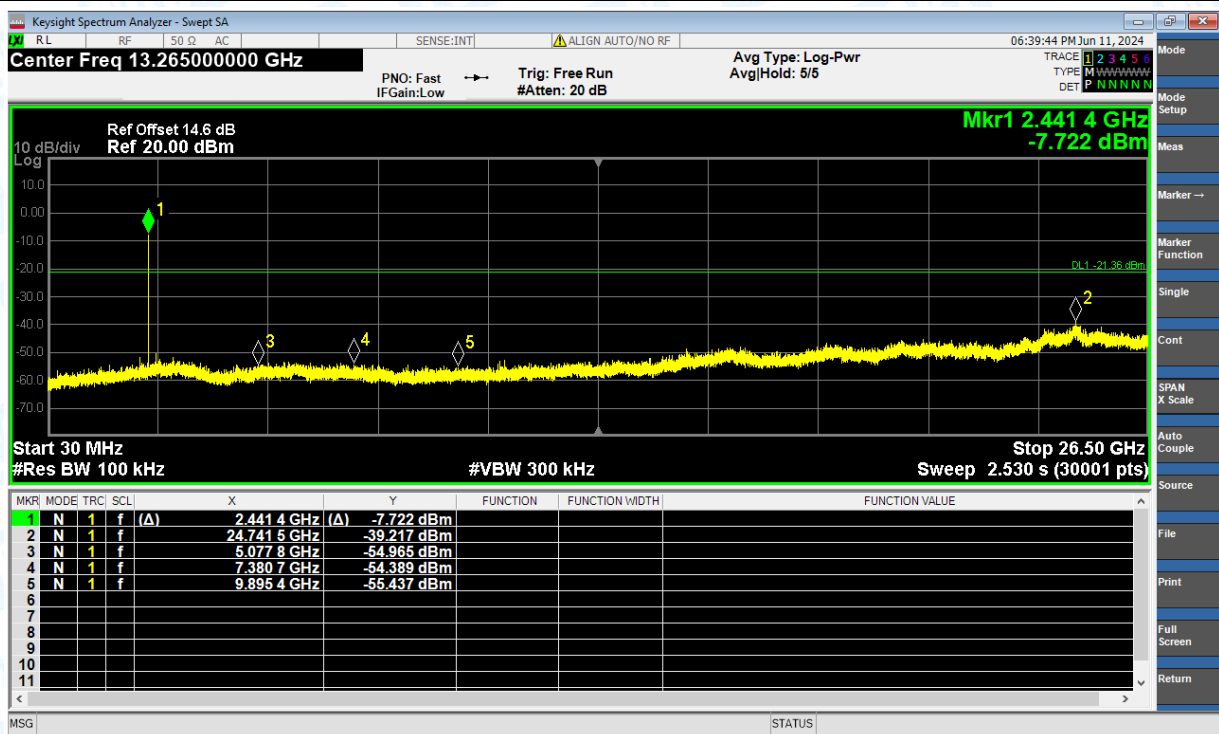
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



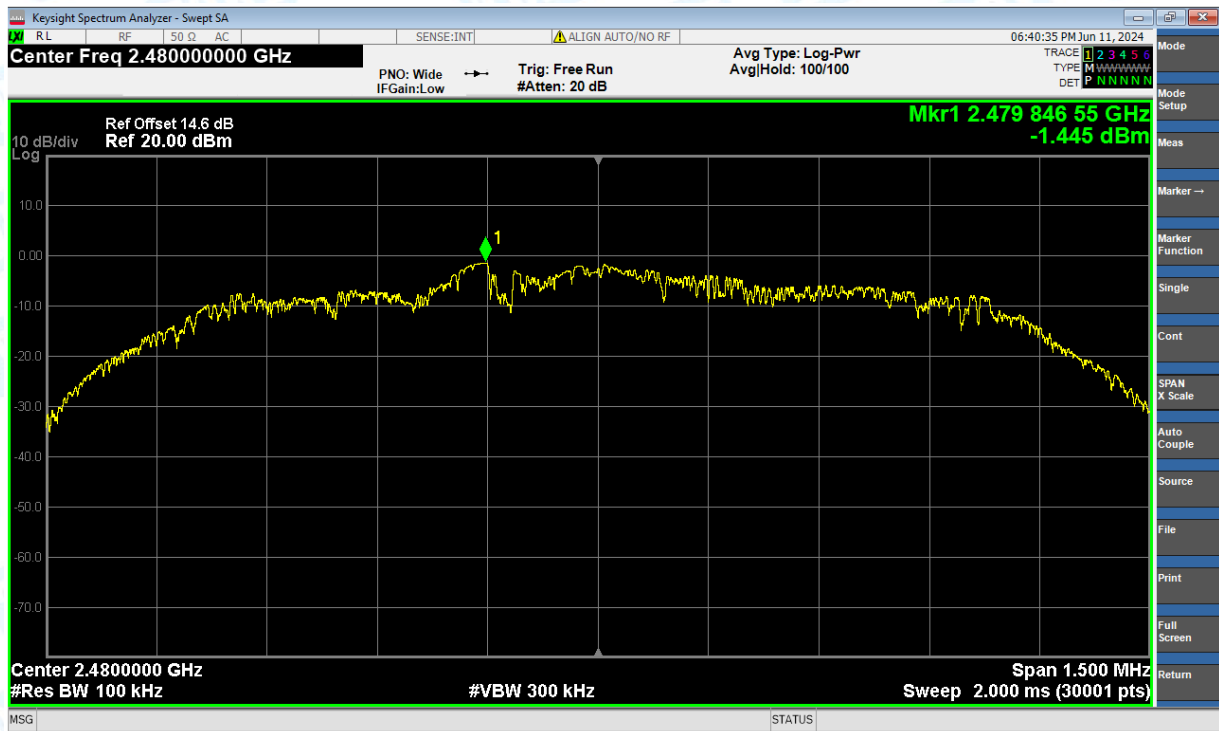
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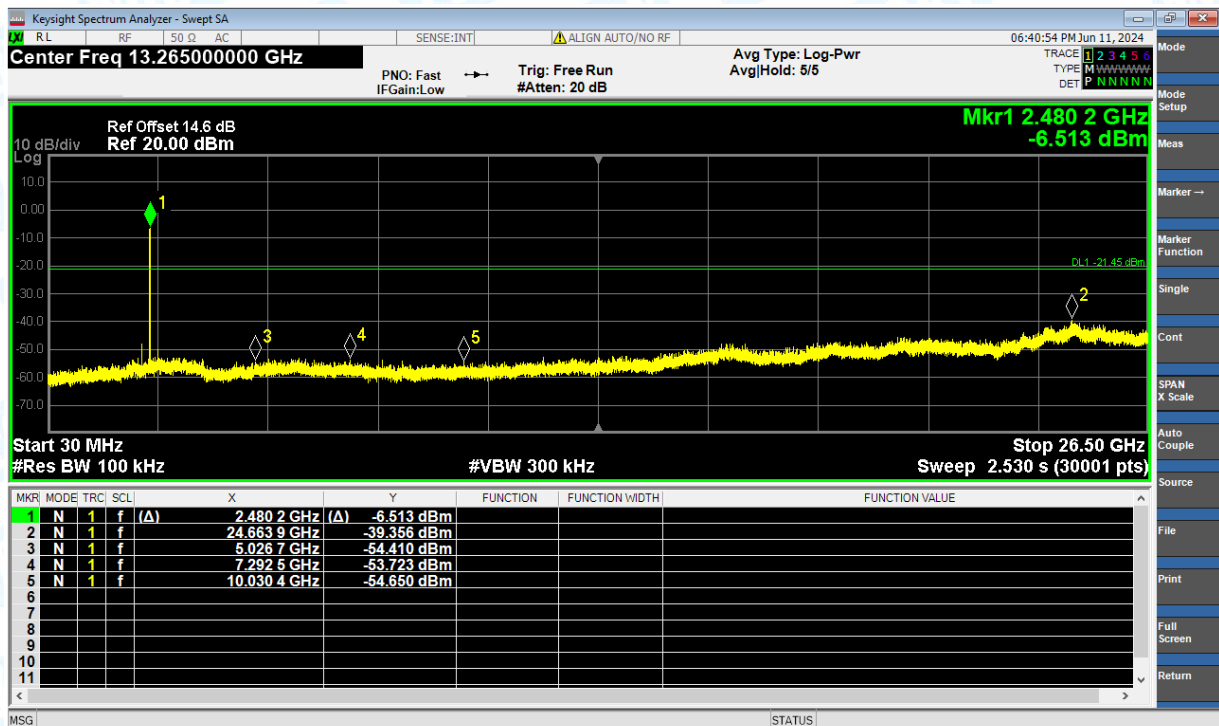
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



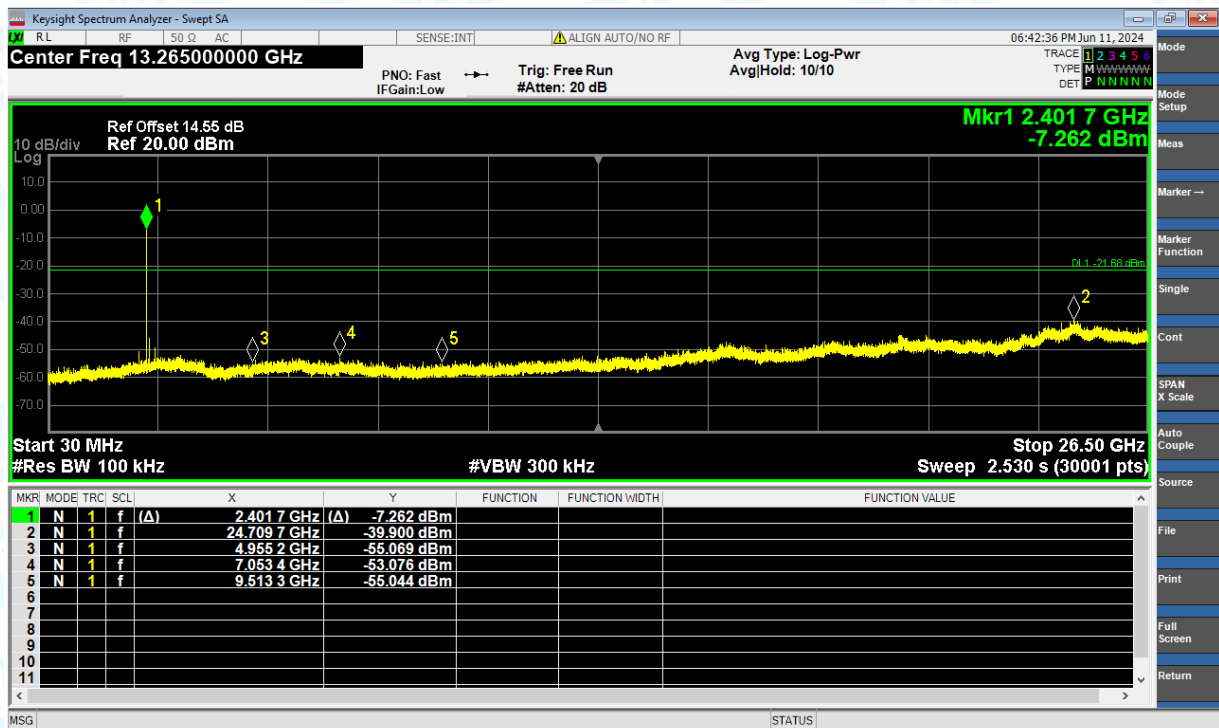
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



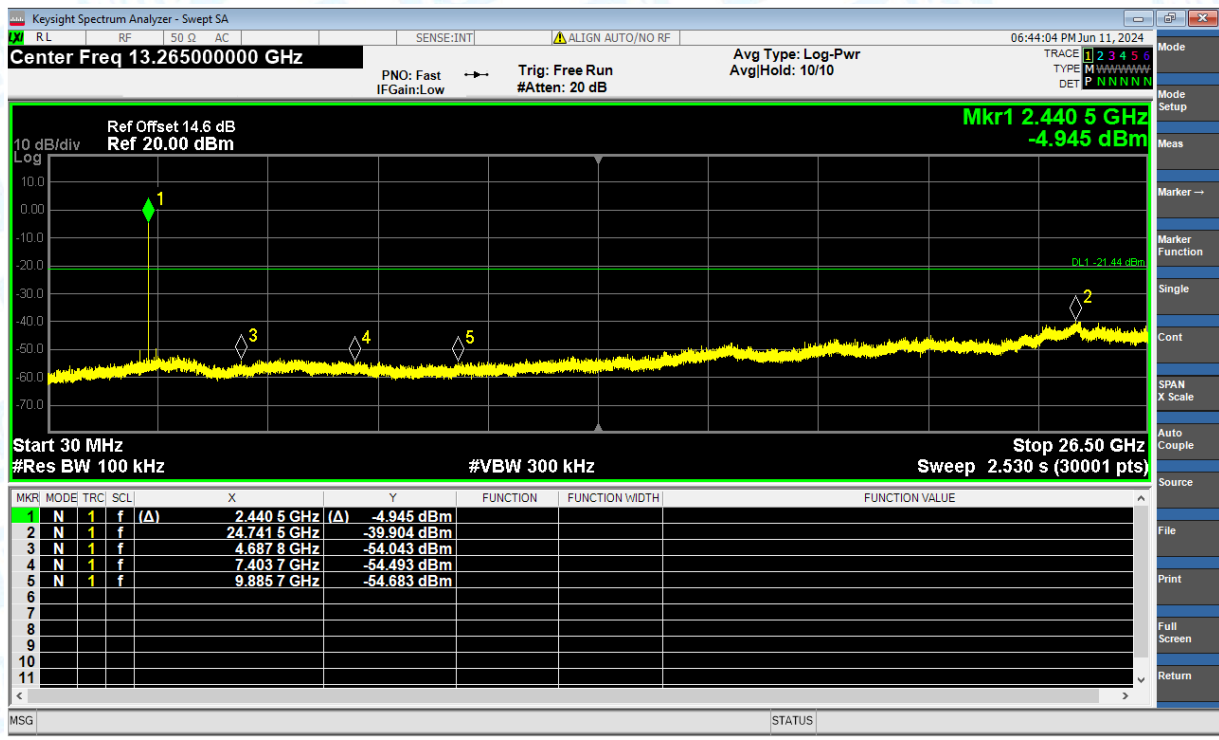
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



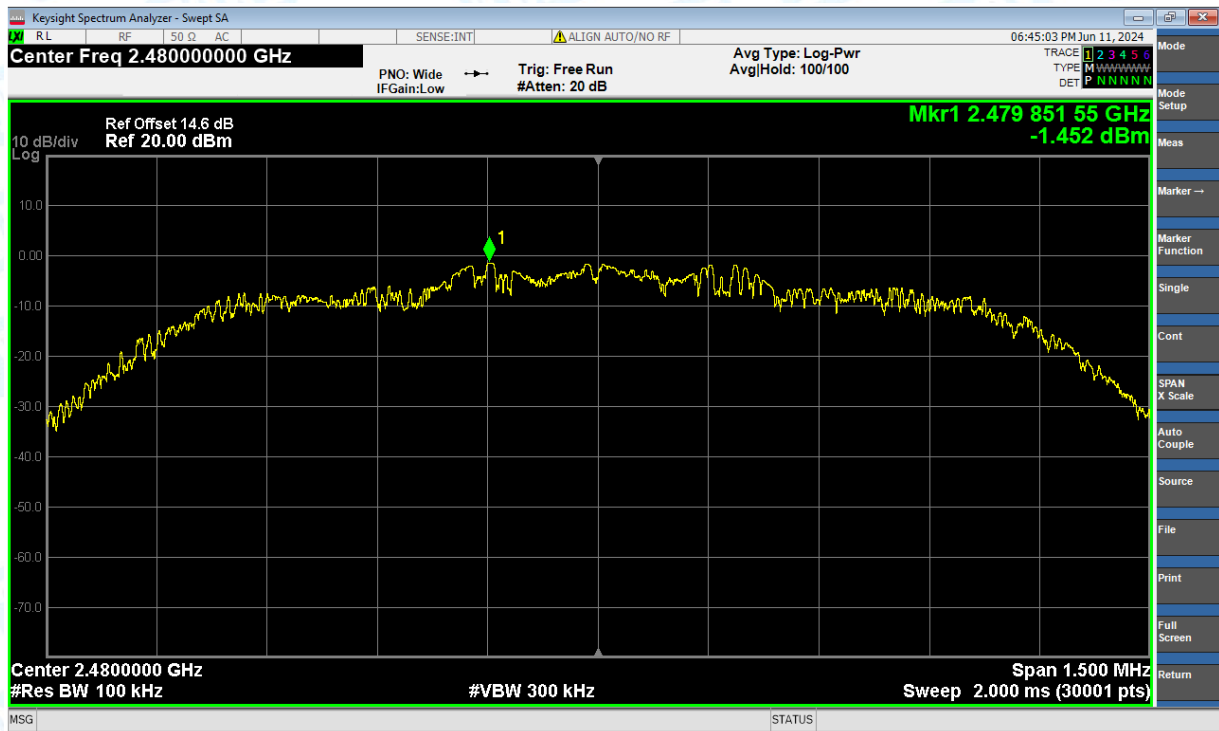
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



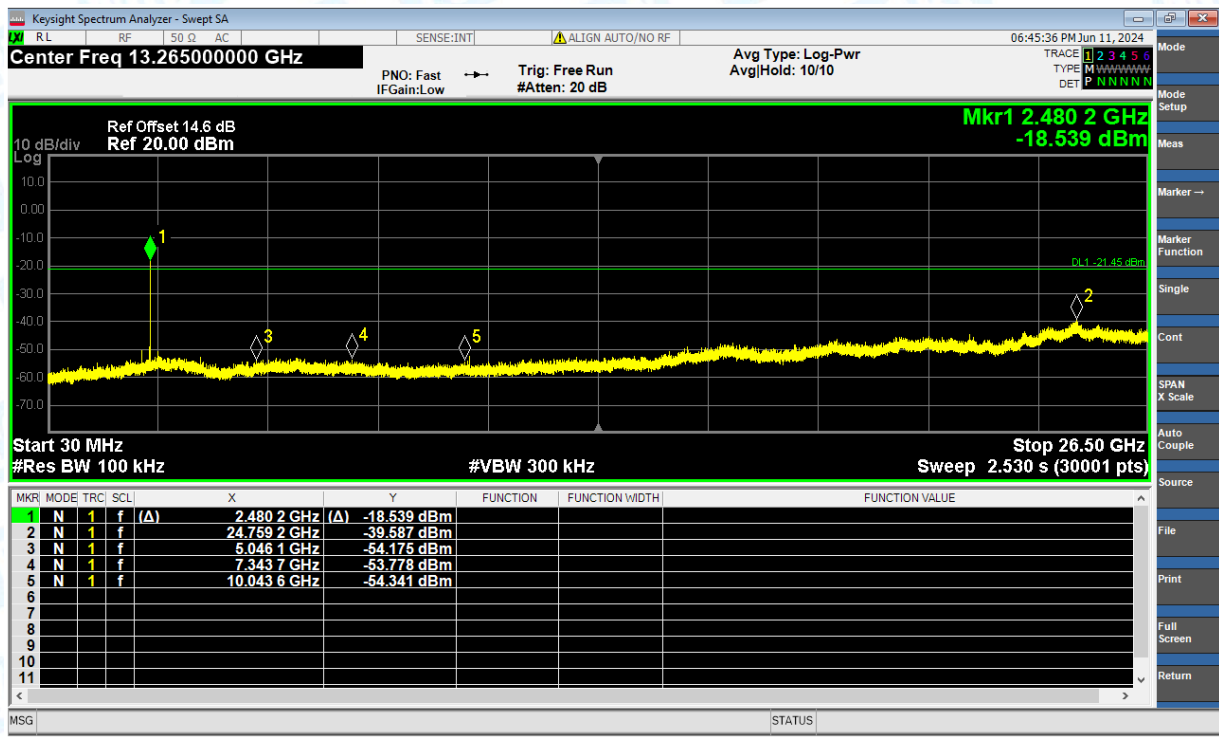
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

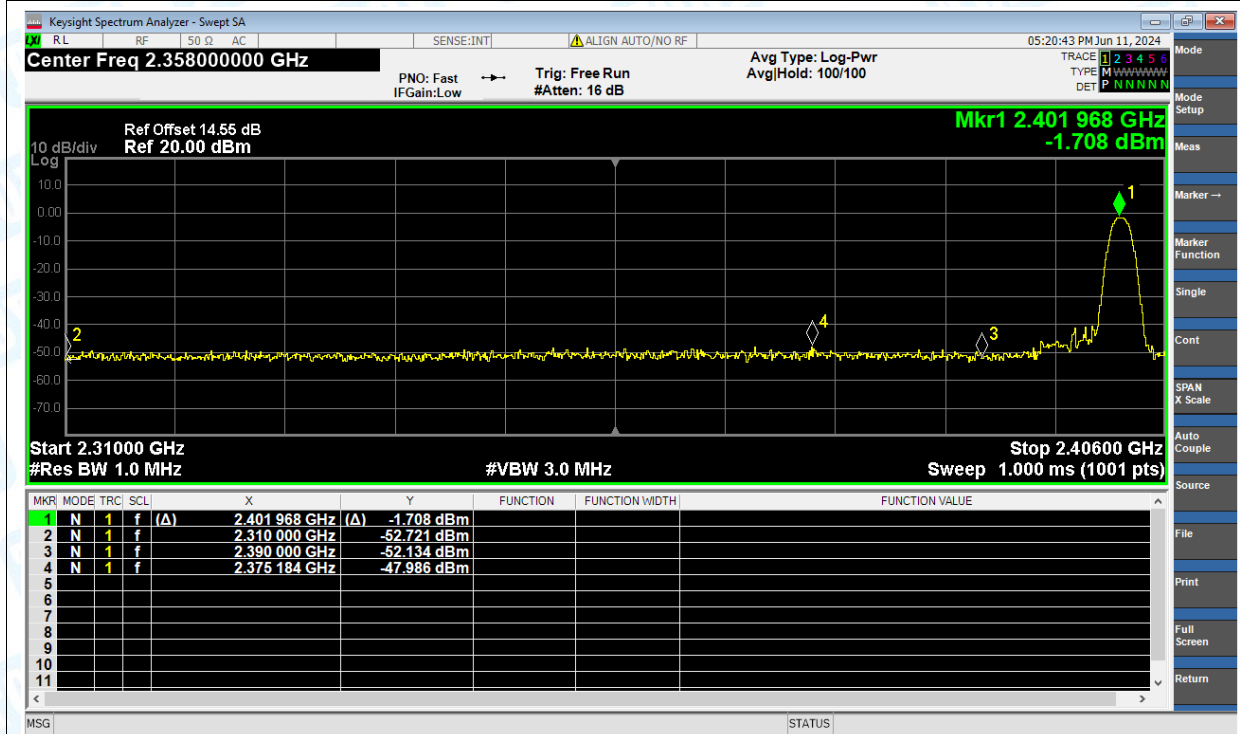


7. Restrict Band

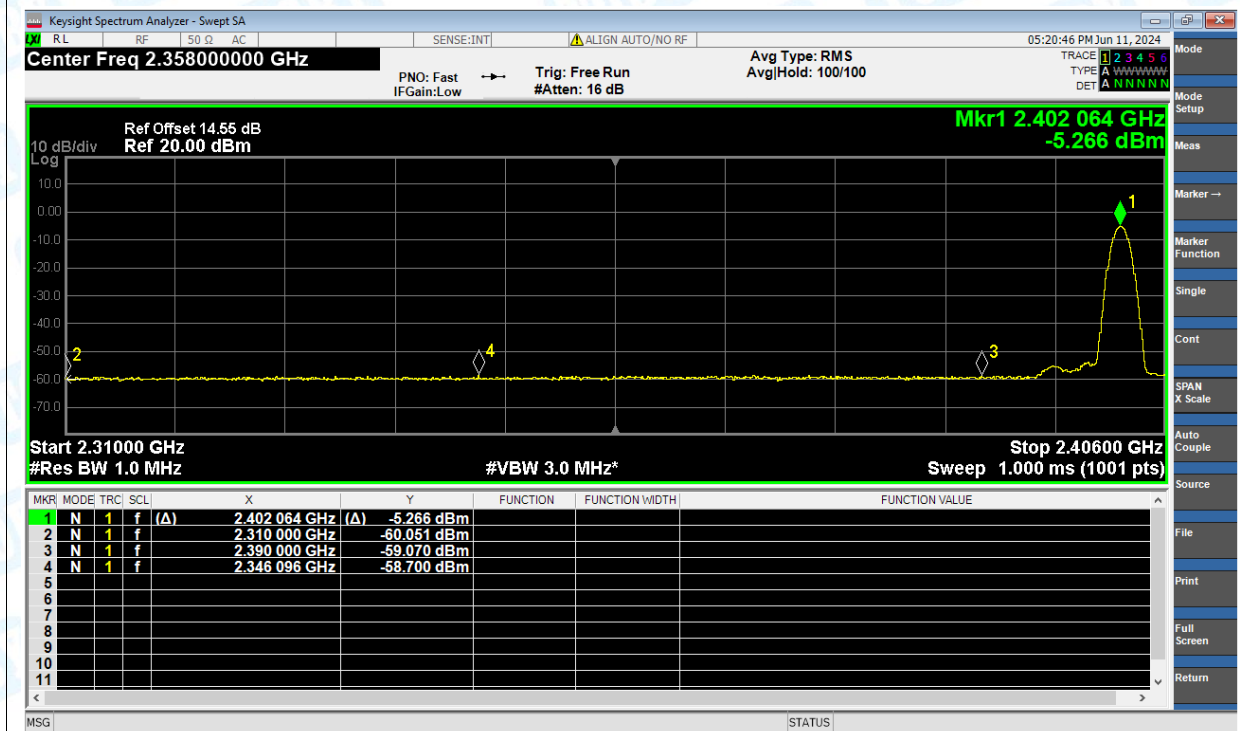
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-52.72	2	-	44.54	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-60.05	2	5.17	42.38	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2375.184	-47.99	2	-	49.27	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2346.096	-58.7	2	5.17	43.73	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-52.13	2	-	45.13	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-59.07	2	5.17	43.36	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-49.9	2	-	47.36	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-58.2	2	5.06	44.12	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.704	-48.03	2	-	49.23	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.56	-57.93	2	5.06	44.39	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-51.52	2	-	45.74	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-58.74	2	5.06	43.58	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.92	2	-	49.34	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.57	2	5.06	46.75	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2376.432	-44.4	2	-	52.86	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2360.208	-54.7	2	5.06	47.62	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.09	2	-	49.17	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-54.82	2	5.06	47.5	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-47.44	2	-	49.82	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.05	2	5.06	47.27	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2497.48	-44.14	2	-	53.12	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.616	-54.39	2	5.06	47.93	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.88	2	-	50.38	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.22	2	5.06	47.1	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-46.76	2	-	50.5	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-55.77	2	5.06	46.55	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2359.728	-43.48	2	-	53.78	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2367.024	-54.85	2	5.06	47.47	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.87	2	-	49.39	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.45	2	5.06	46.87	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-49.12	2	-	48.14	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-58.6	2	5.06	43.72	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.632	-46.59	2	-	50.67	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2499.16	-58.18	2	5.06	44.14	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-50.75	2	-	46.51	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-59.06	2	5.06	43.26	Average	54	Pass

Test Graphs

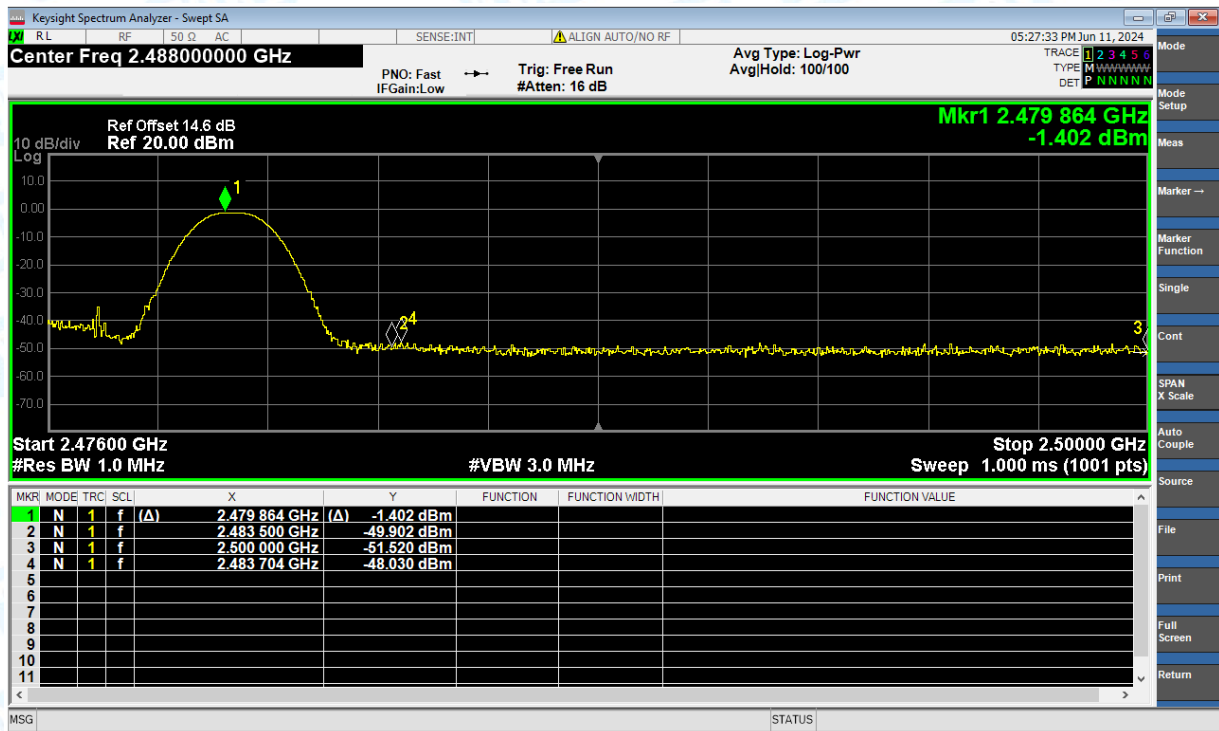
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



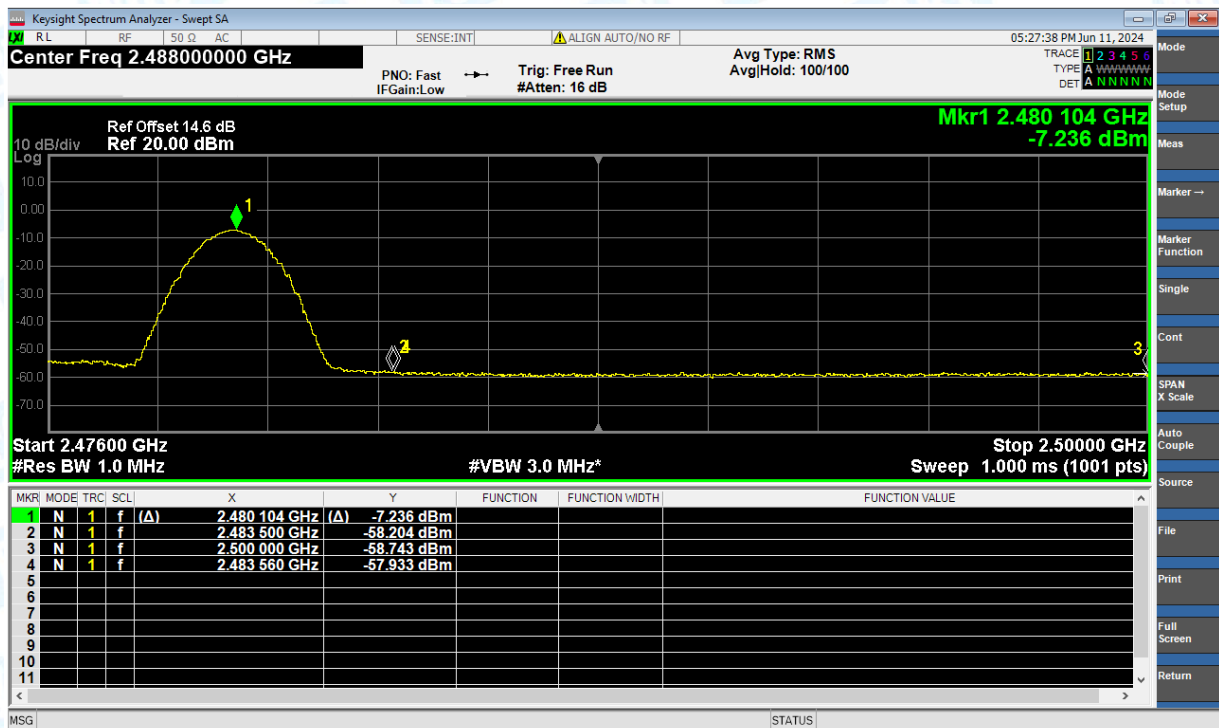
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



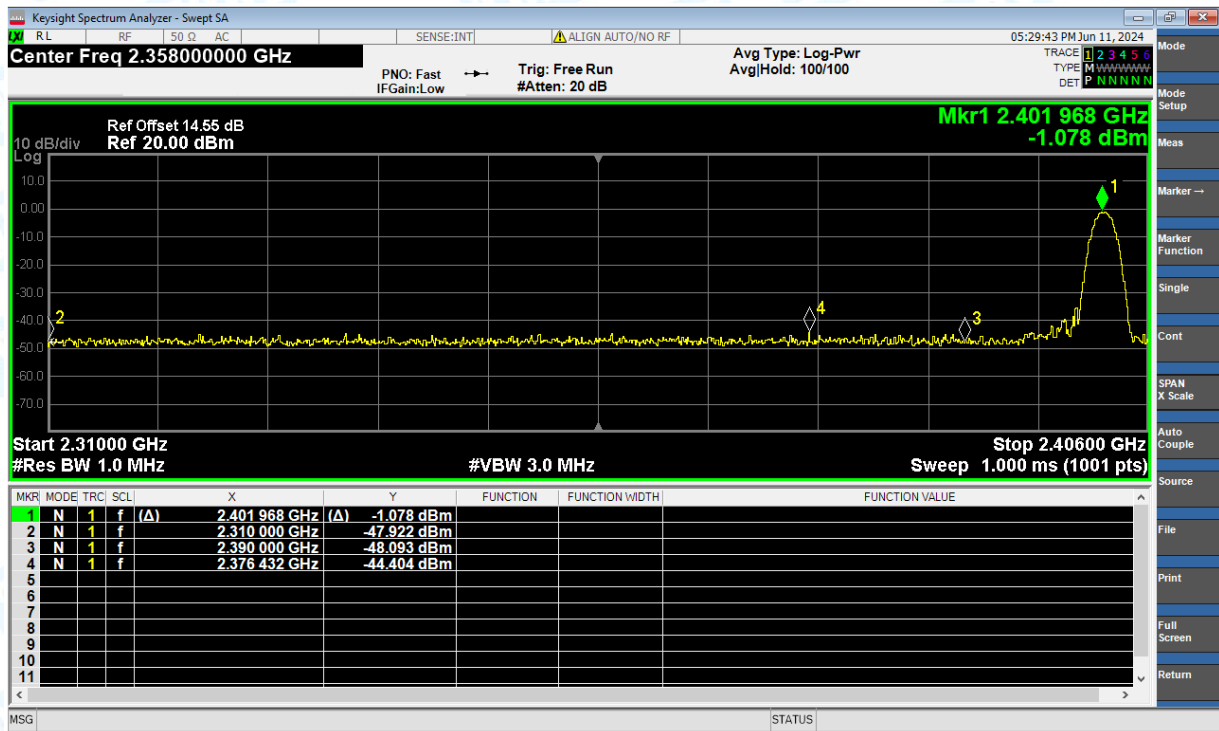
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



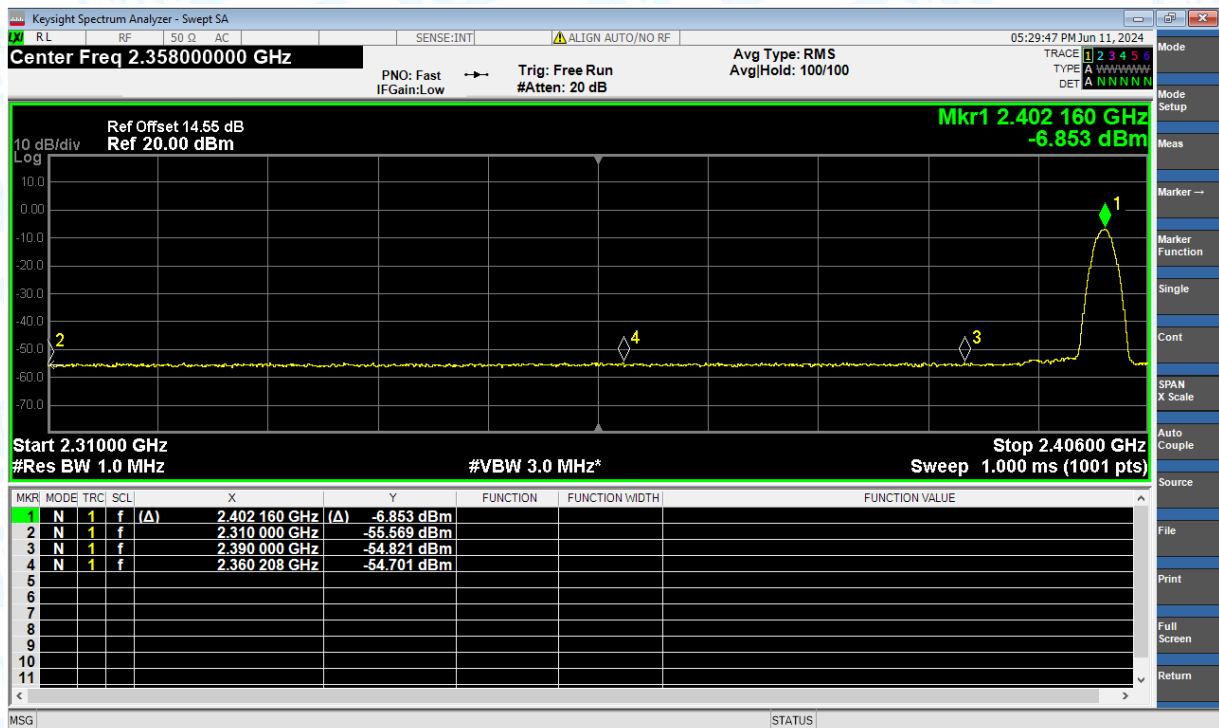
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



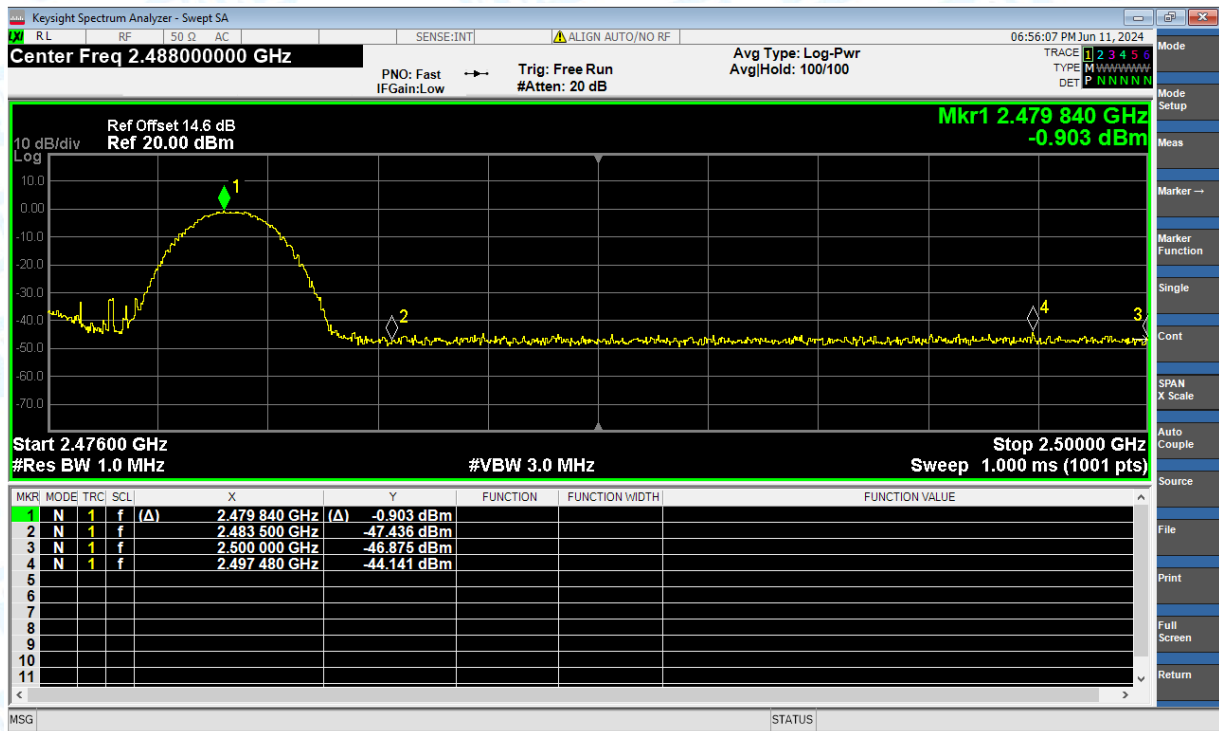
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



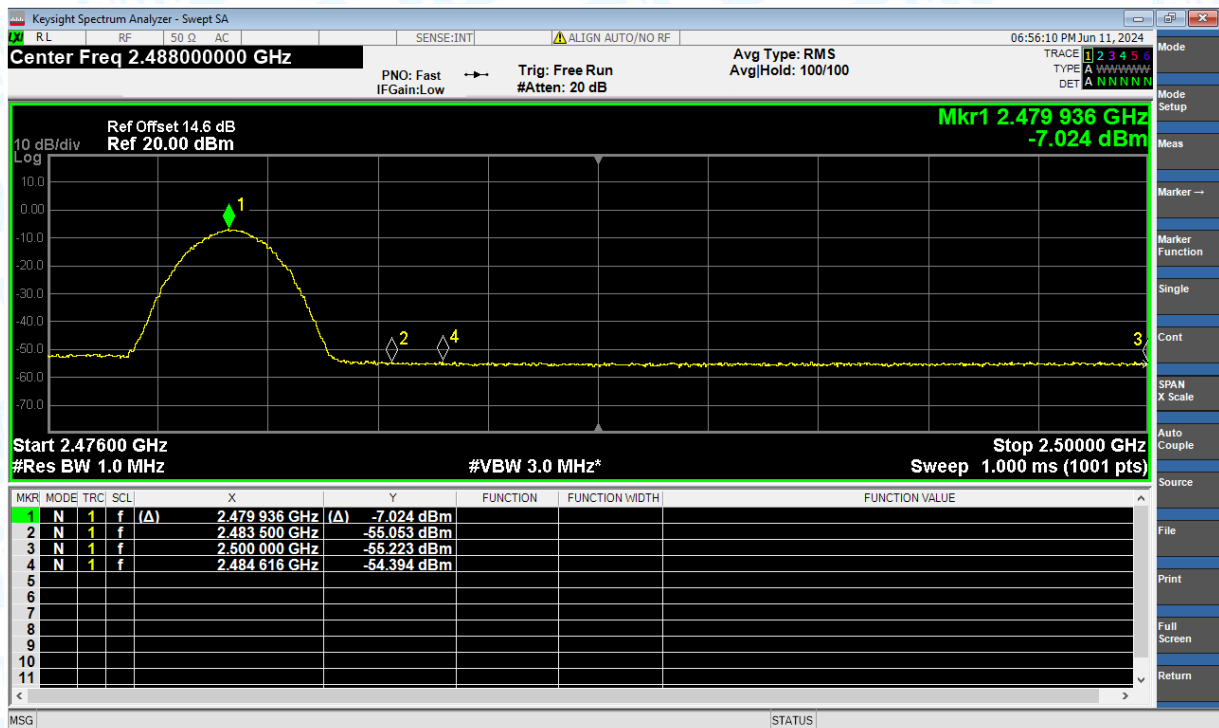
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



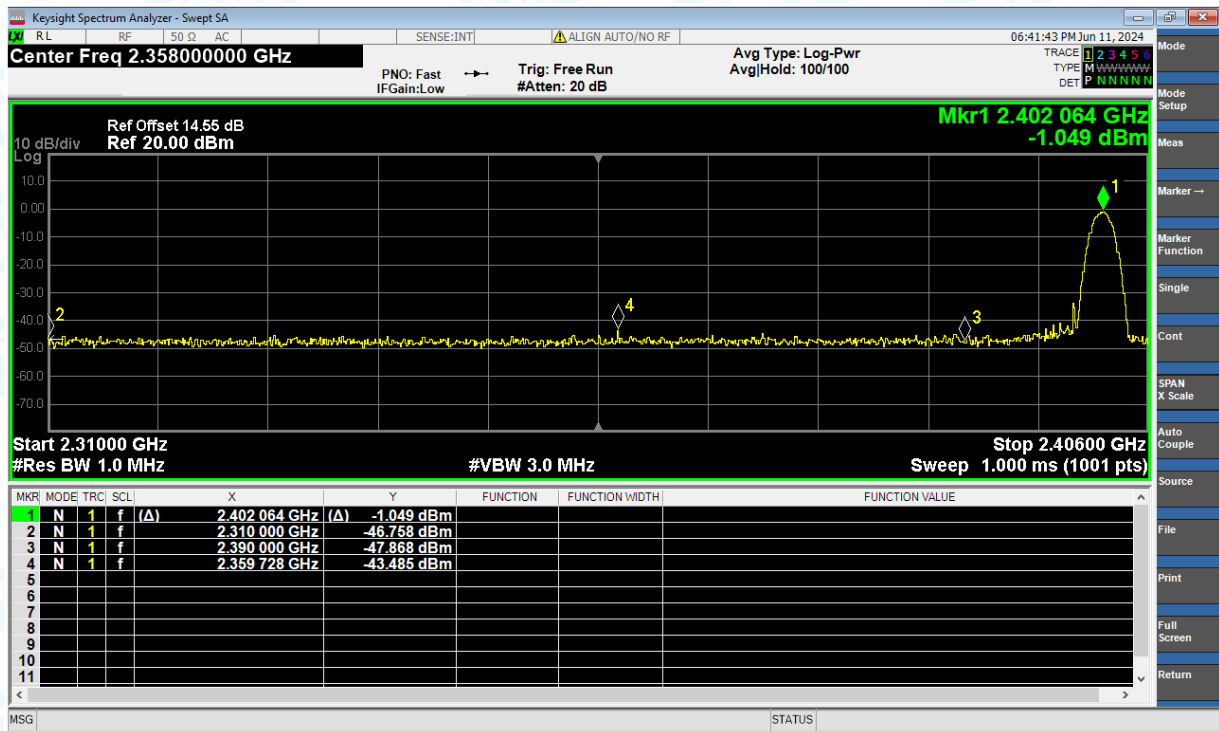
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



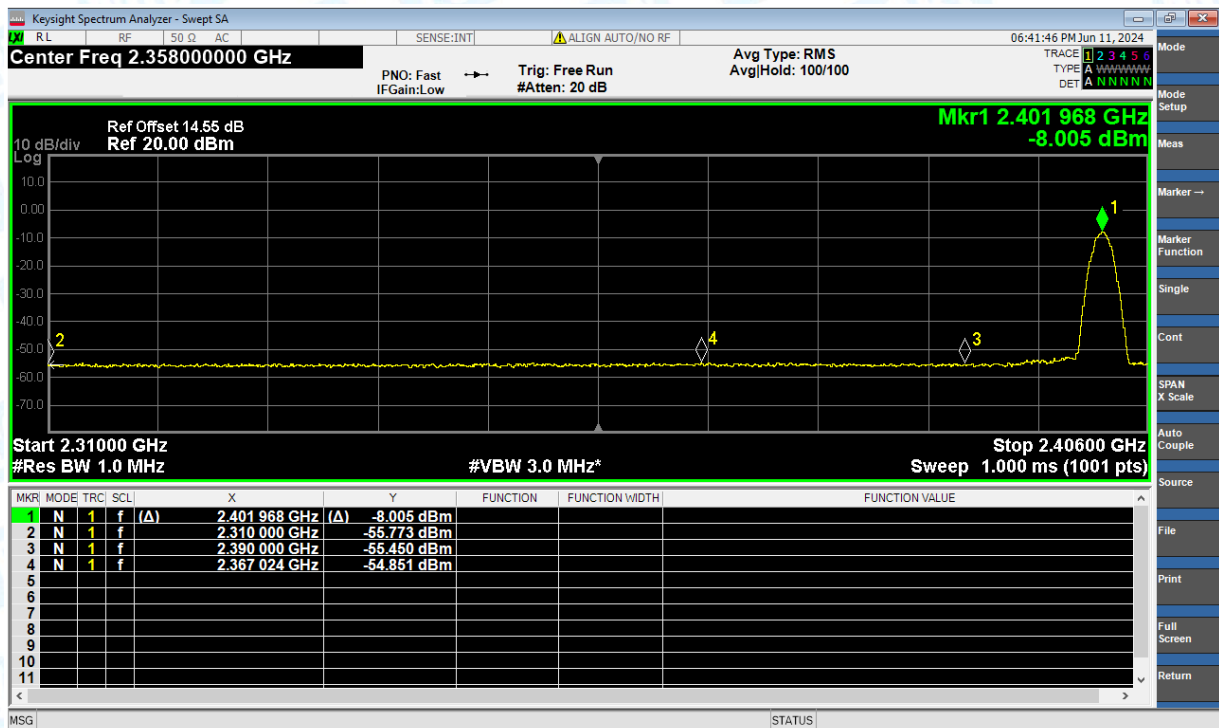
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



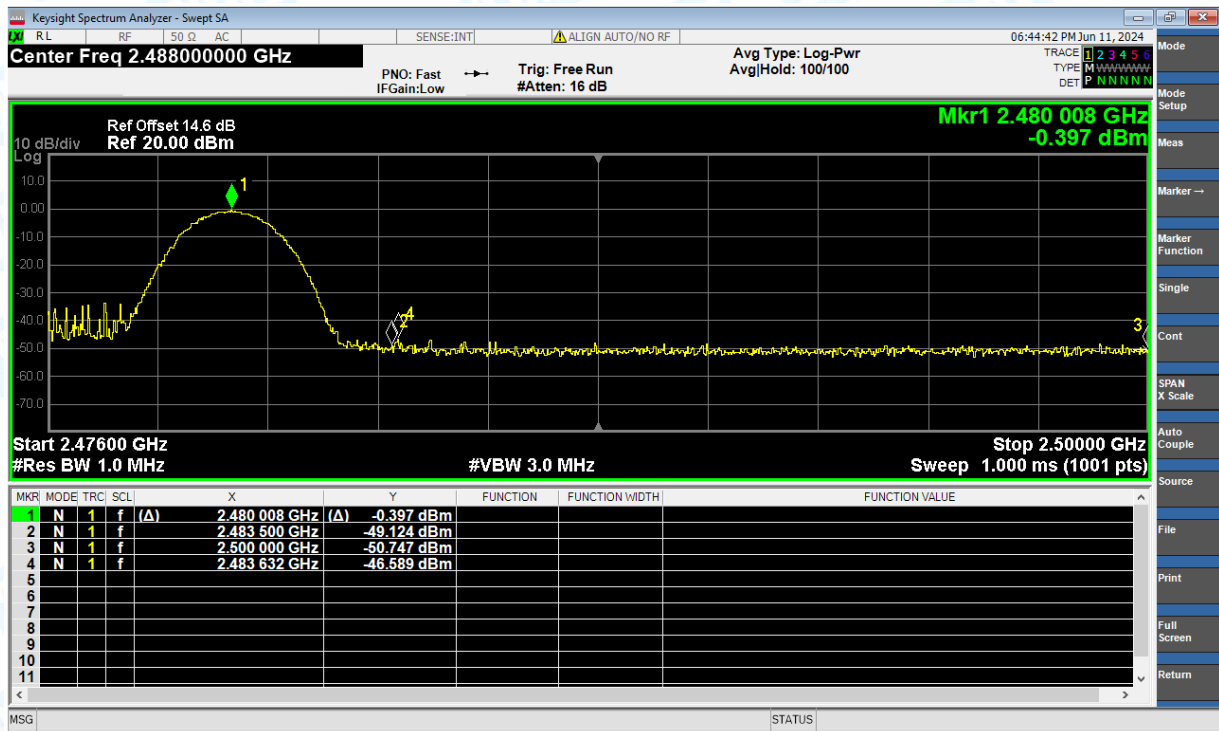
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



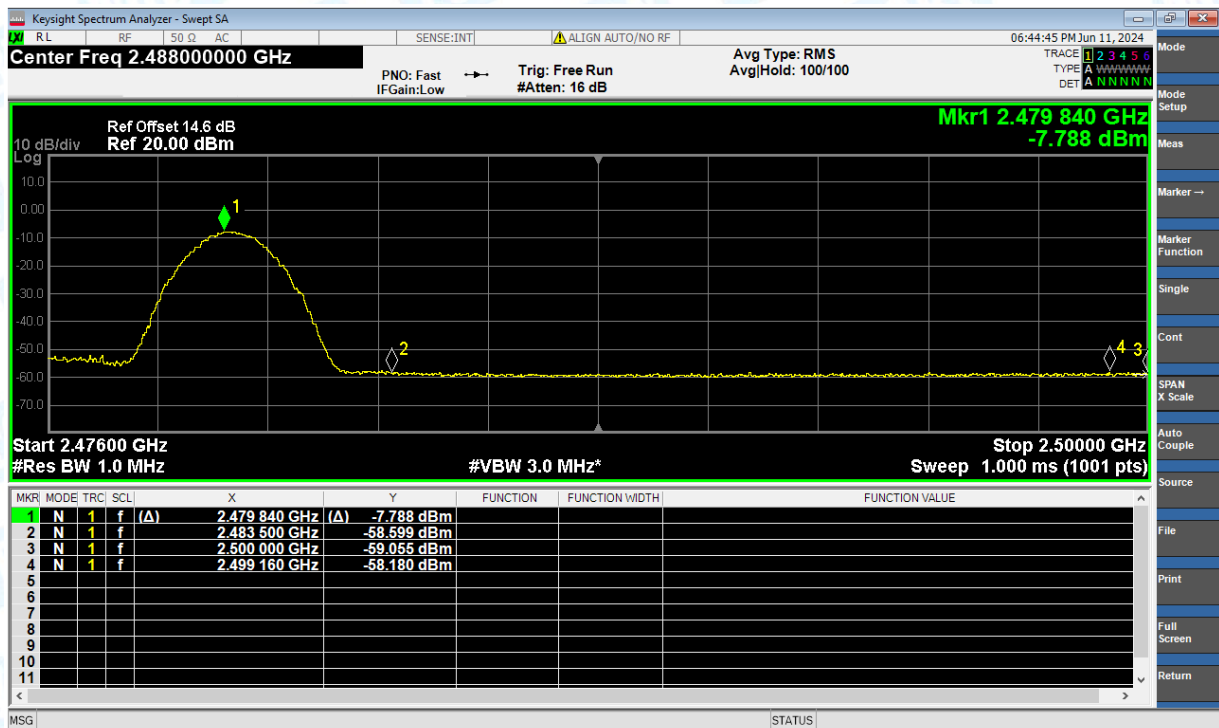
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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



8. Carrier Frequencies Separation

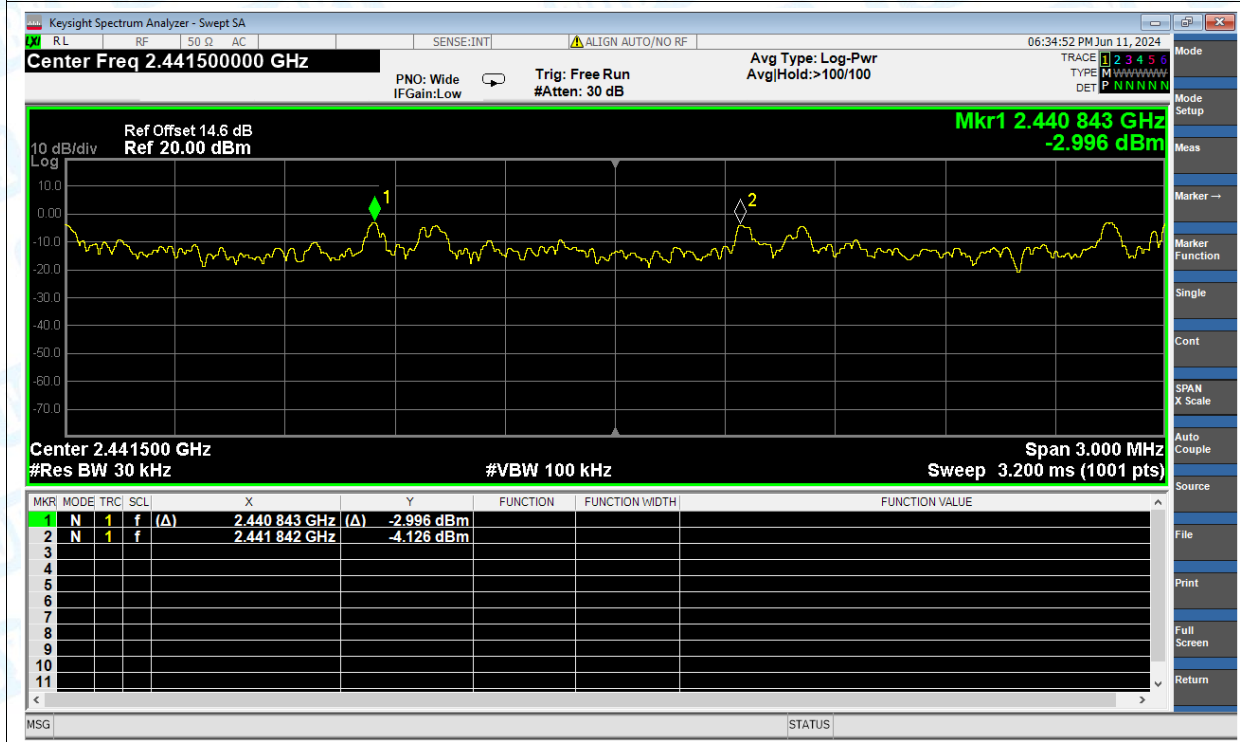
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.858	2441.848	0.99	0.587	Pass
NVNT	2-DH1	Ant1	2440.843	2441.842	0.999	0.827	Pass
NVNT	3-DH1	Ant1	2440.993	2441.986	0.993	0.813	Pass

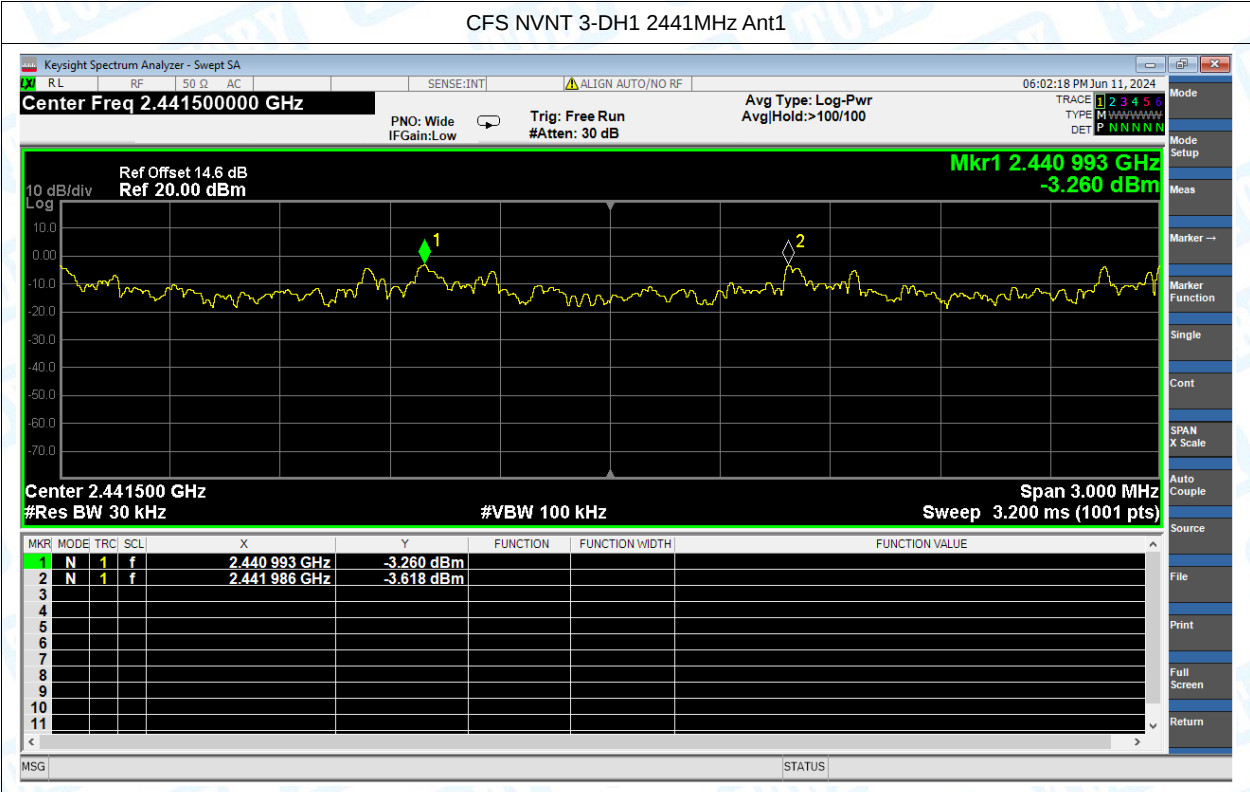
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



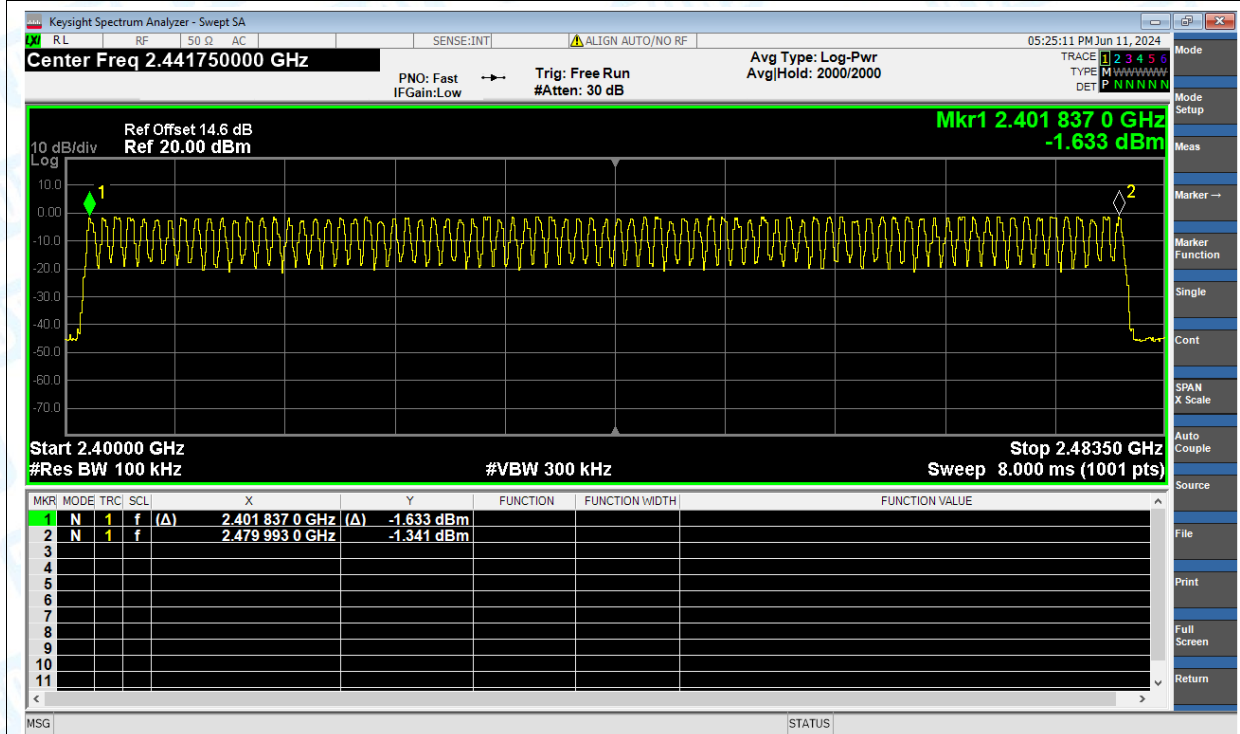


9. Number of Hopping Channel

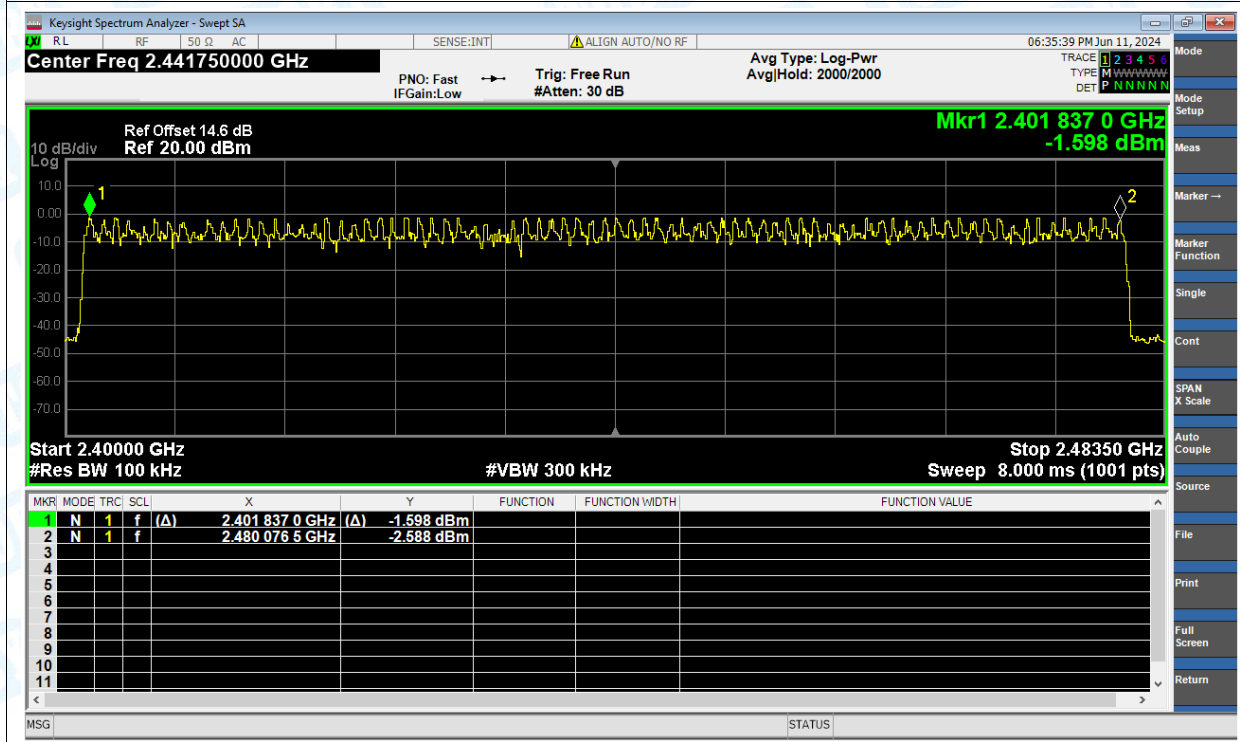
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

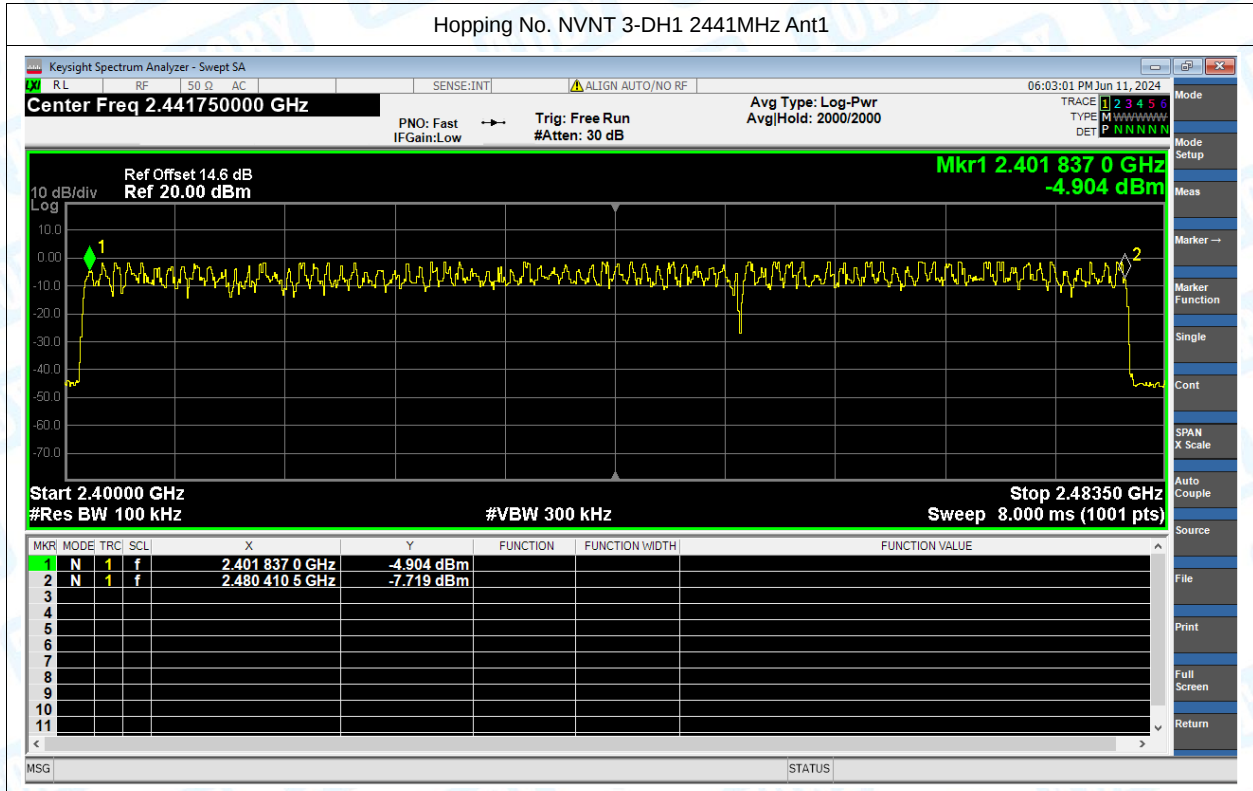
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



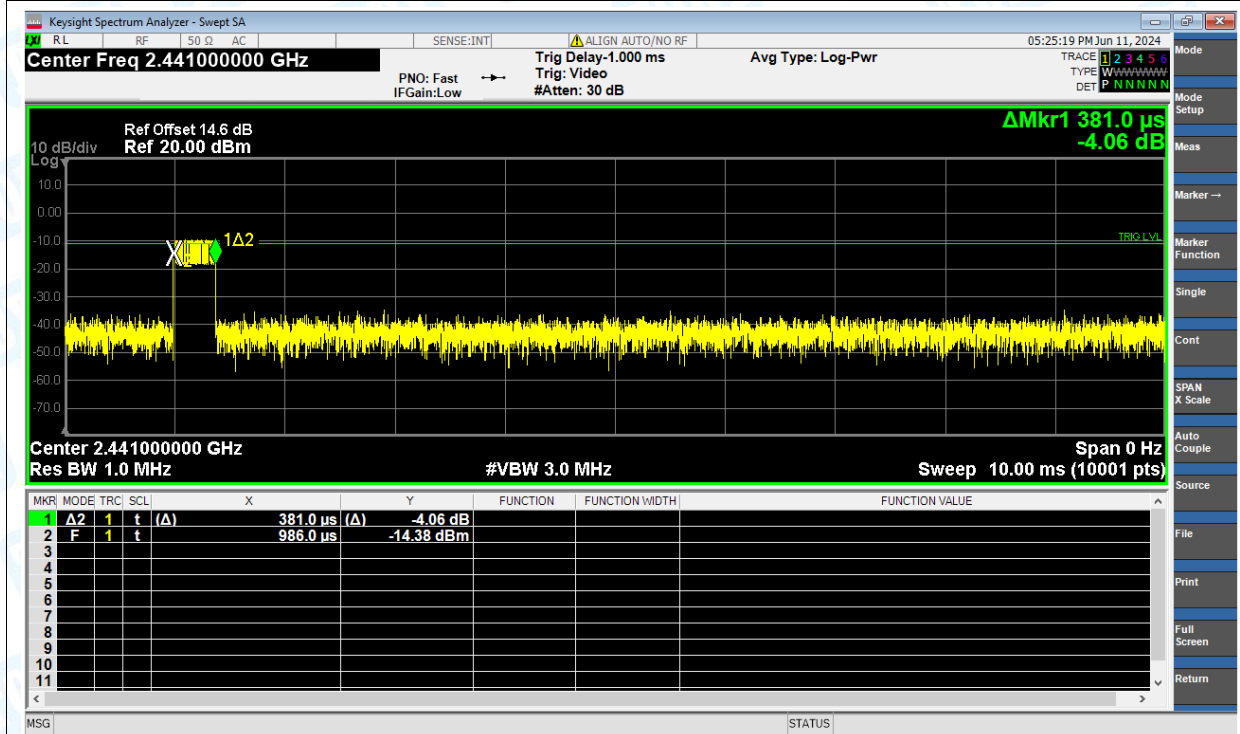


10. Dwell Time

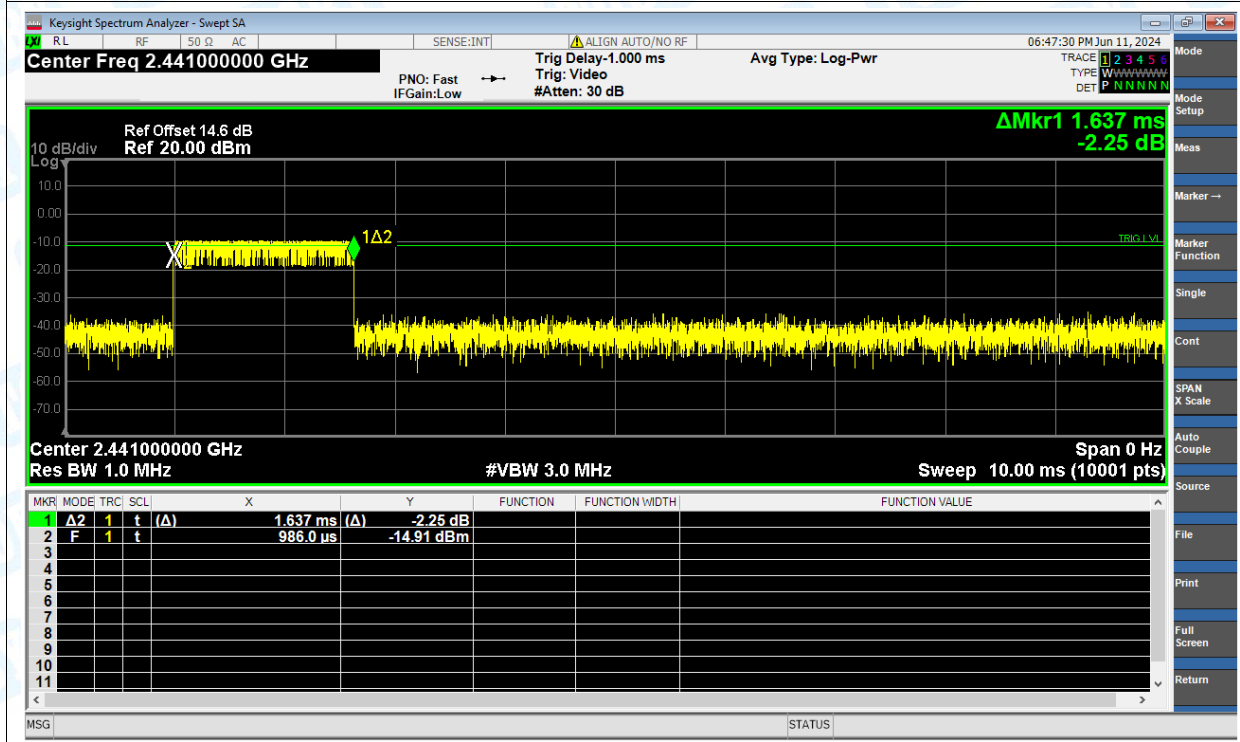
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.381	121.92	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.637	261.92	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.392	125.44	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.637	261.92	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.89	308.267	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.392	125.44	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.642	262.72	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

Test Graphs

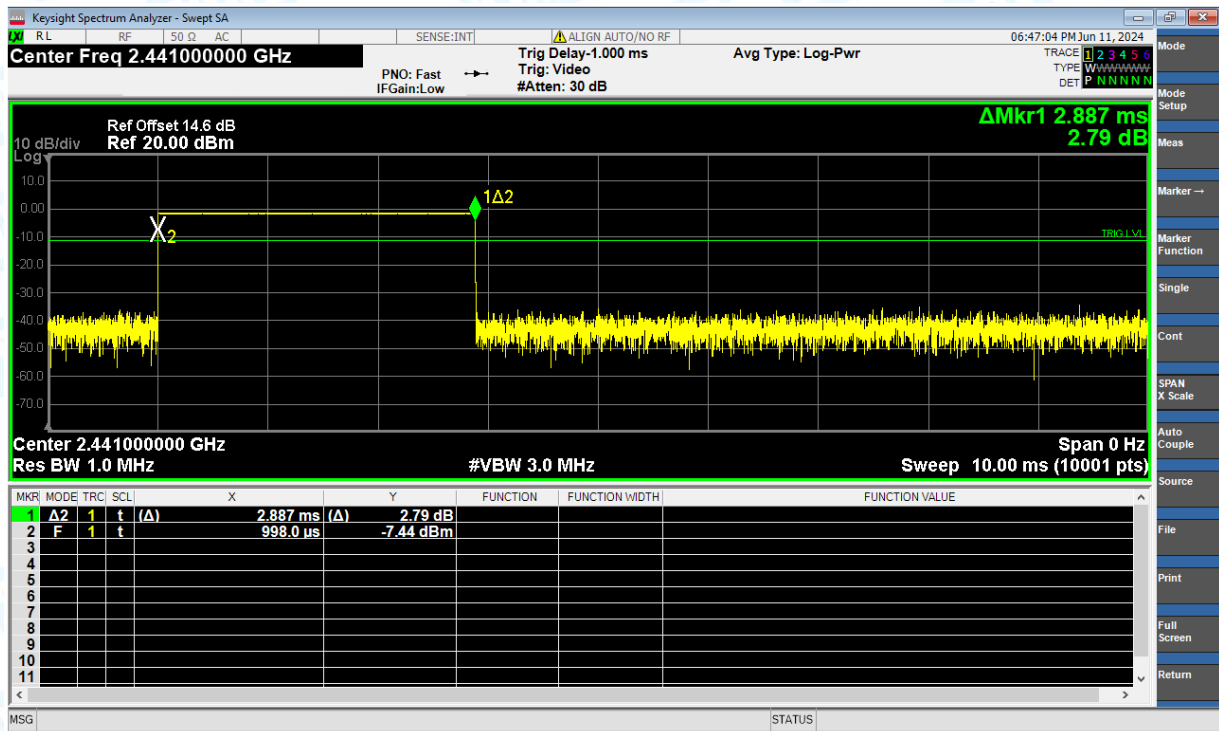
Dwell NVNT 1-DH1 2441MHz Ant1



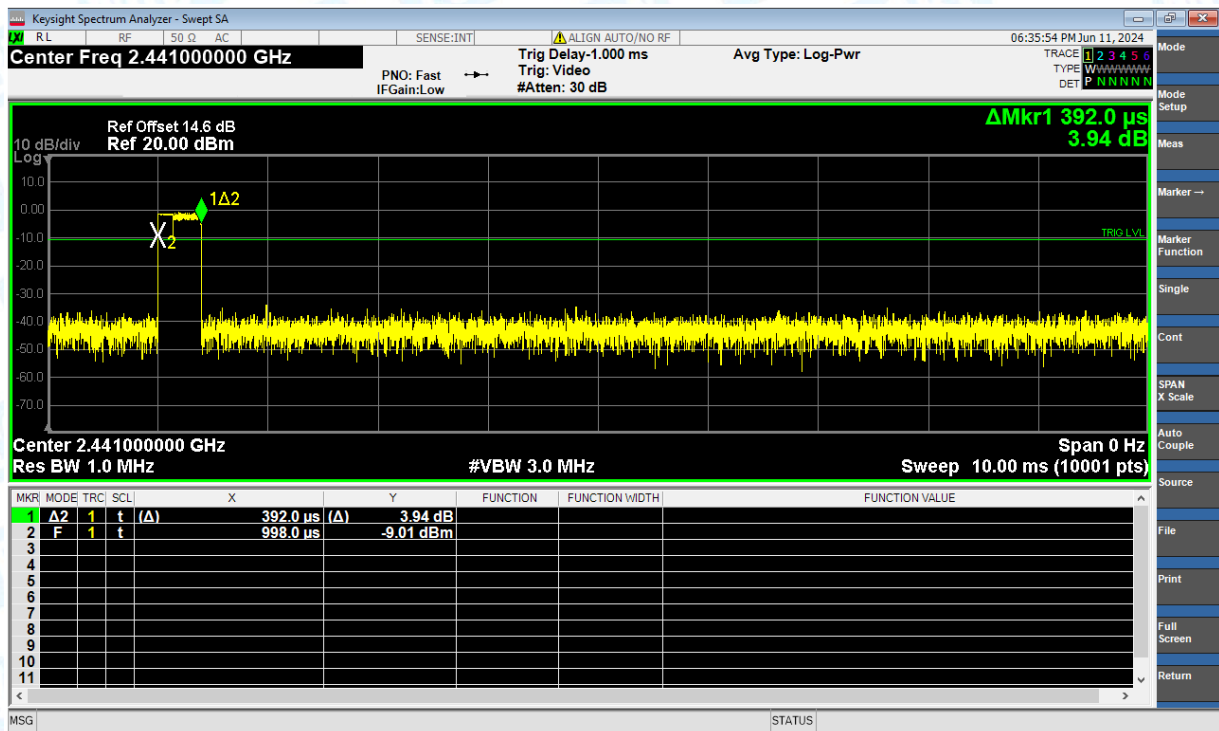
Dwell NVNT 1-DH3 2441MHz Ant1



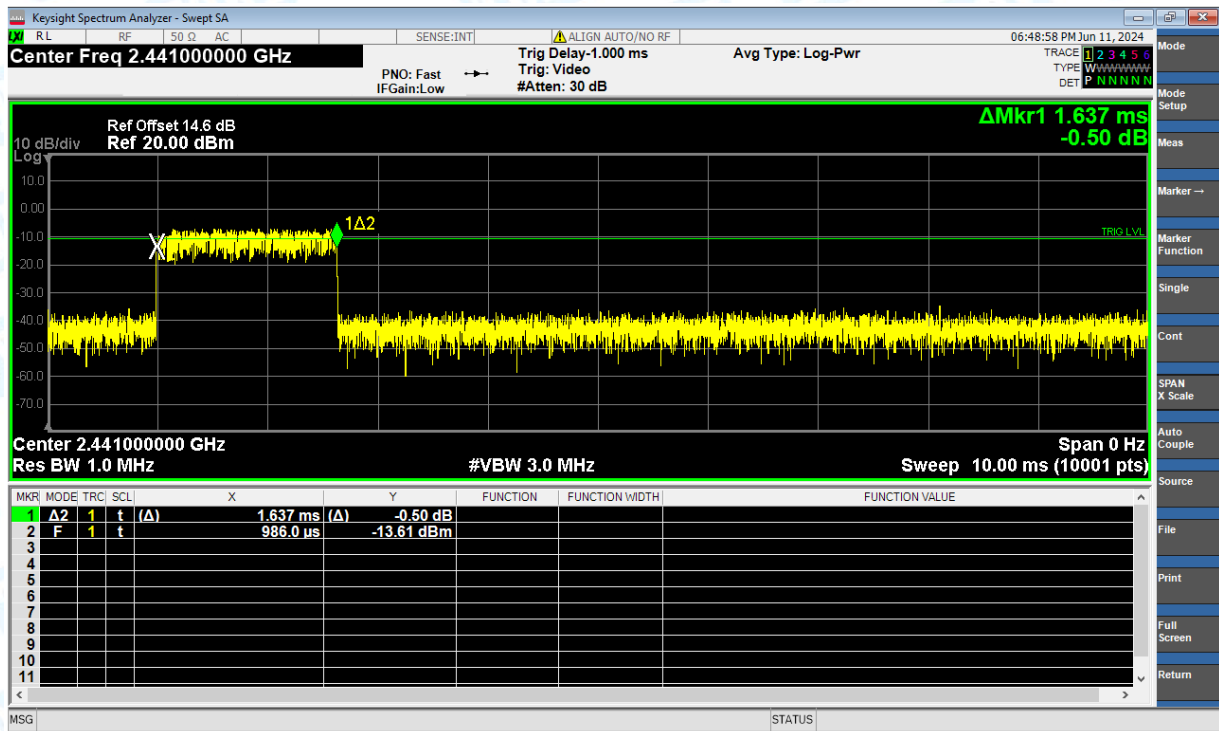
Dwell NVNT 1-DH5 2441MHz Ant1



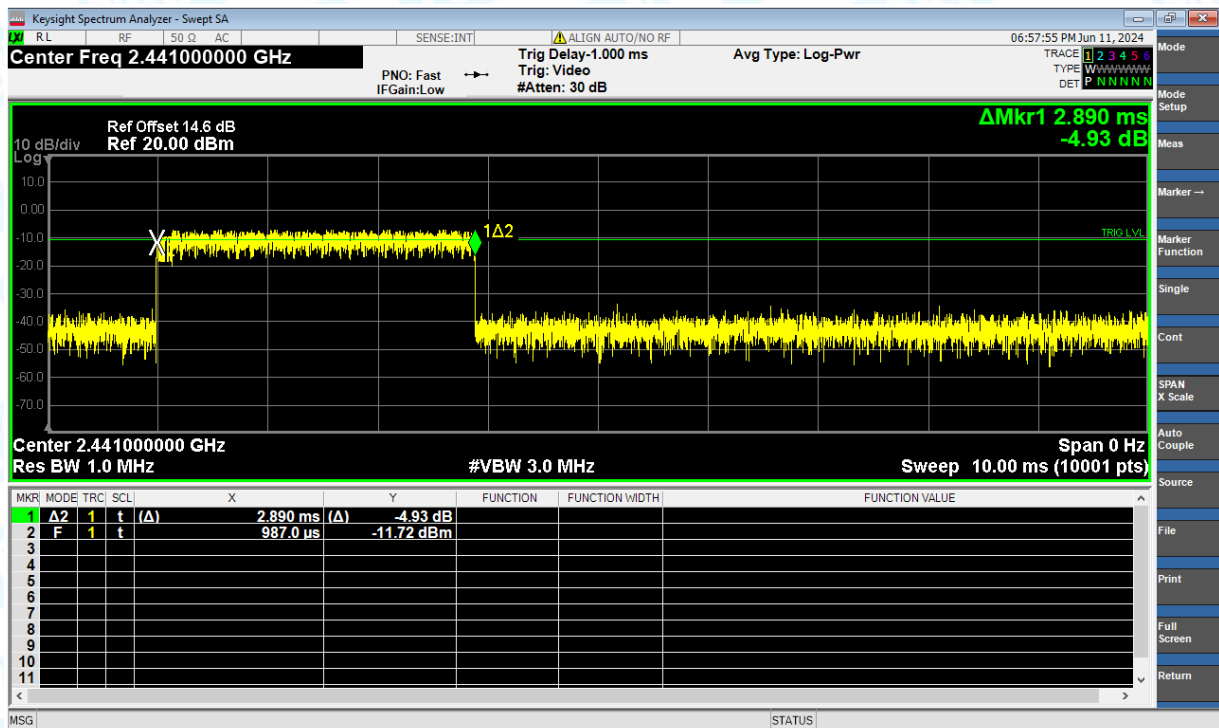
Dwell NVNT 2-DH1 2441MHz Ant1



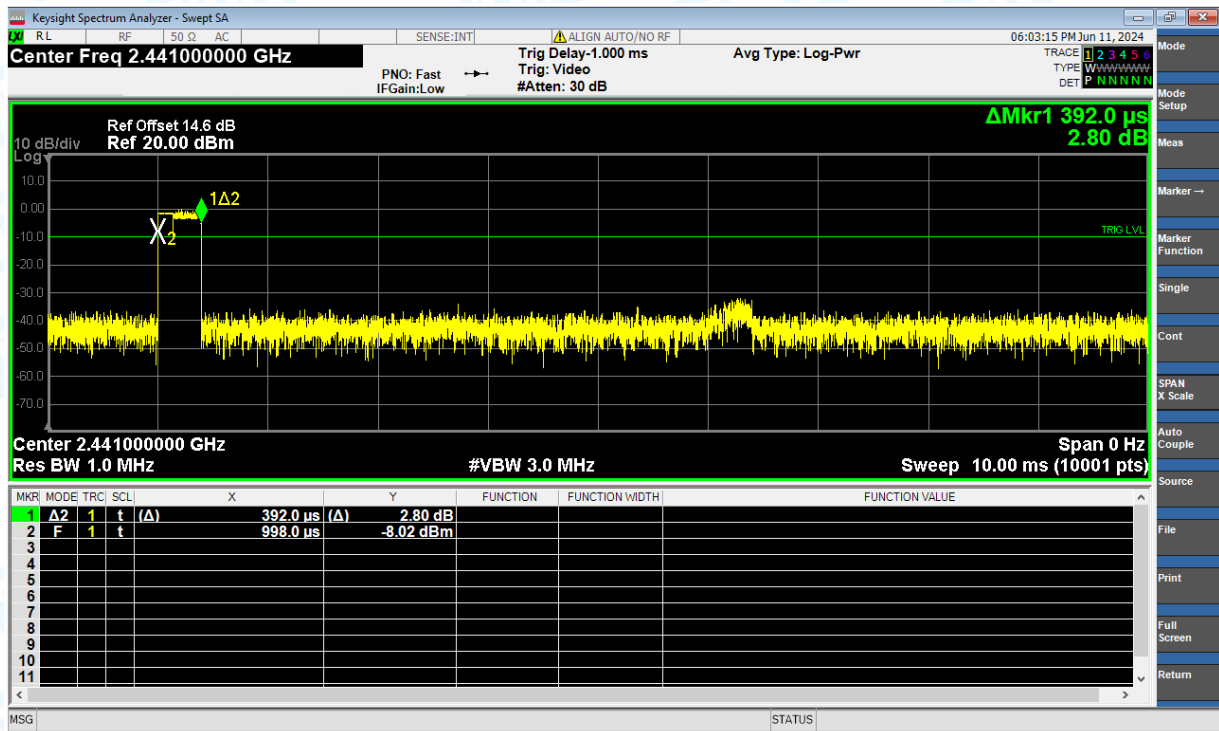
Dwell NVNT 2-DH3 2441MHz Ant1



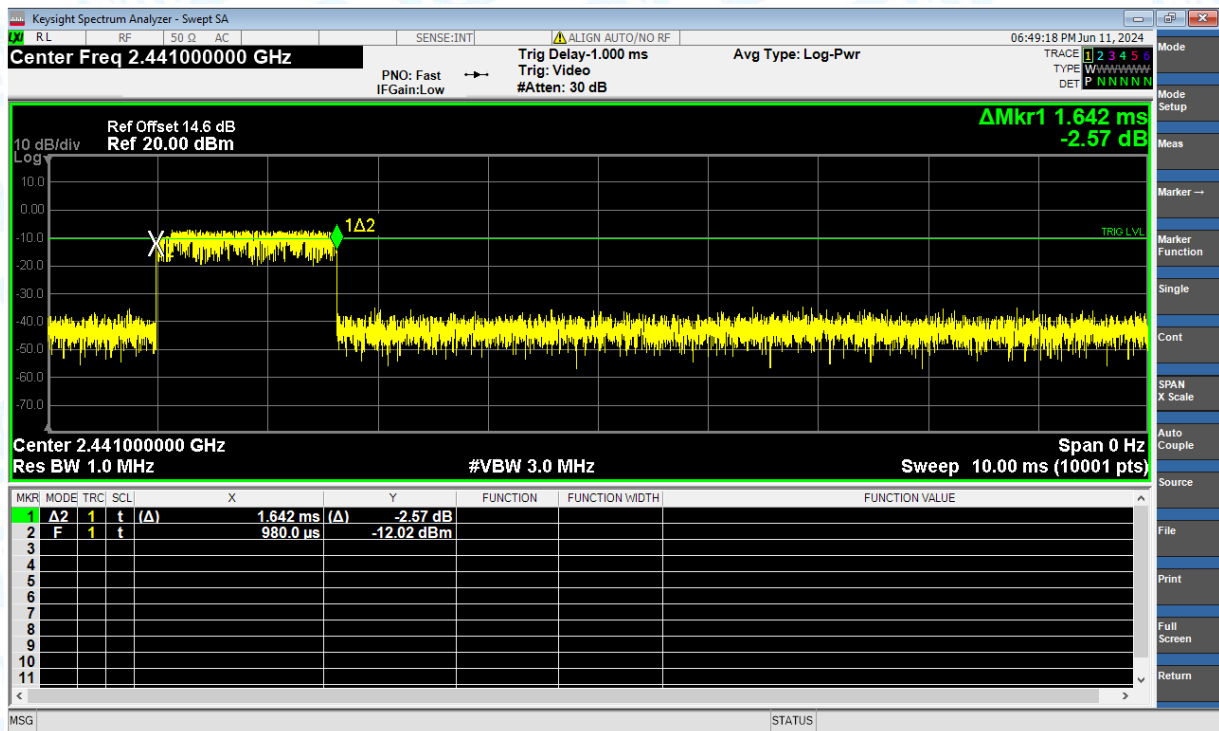
Dwell NVNT 2-DH5 2441MHz Ant1

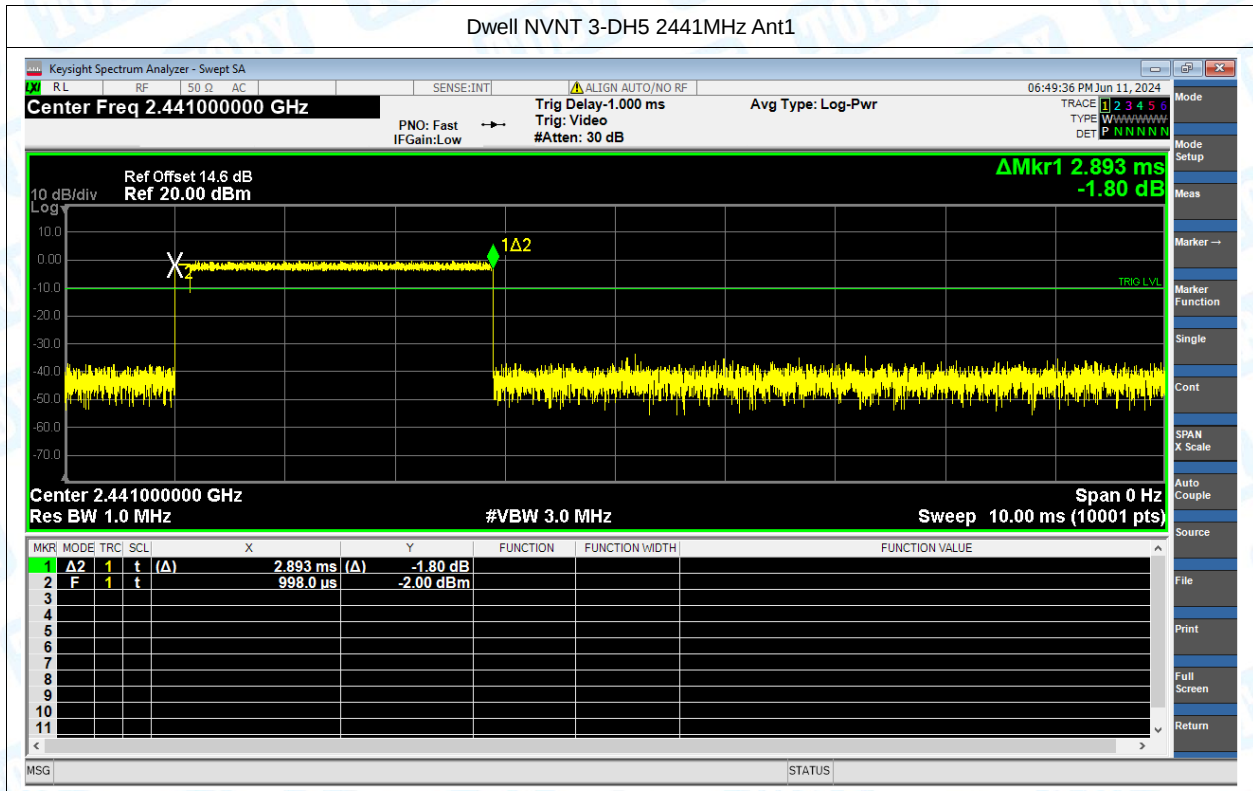


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





-----End of report-----