

RF Test Data for Bluetooth(BDR+EDR) (Conducted Measurements)

General Description of EUT	
Product Name:	Duet+
Test Model:	4001231
Sample ID:	202302-0278-1-2#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202302-0278-2 The report only show the worst case data.	

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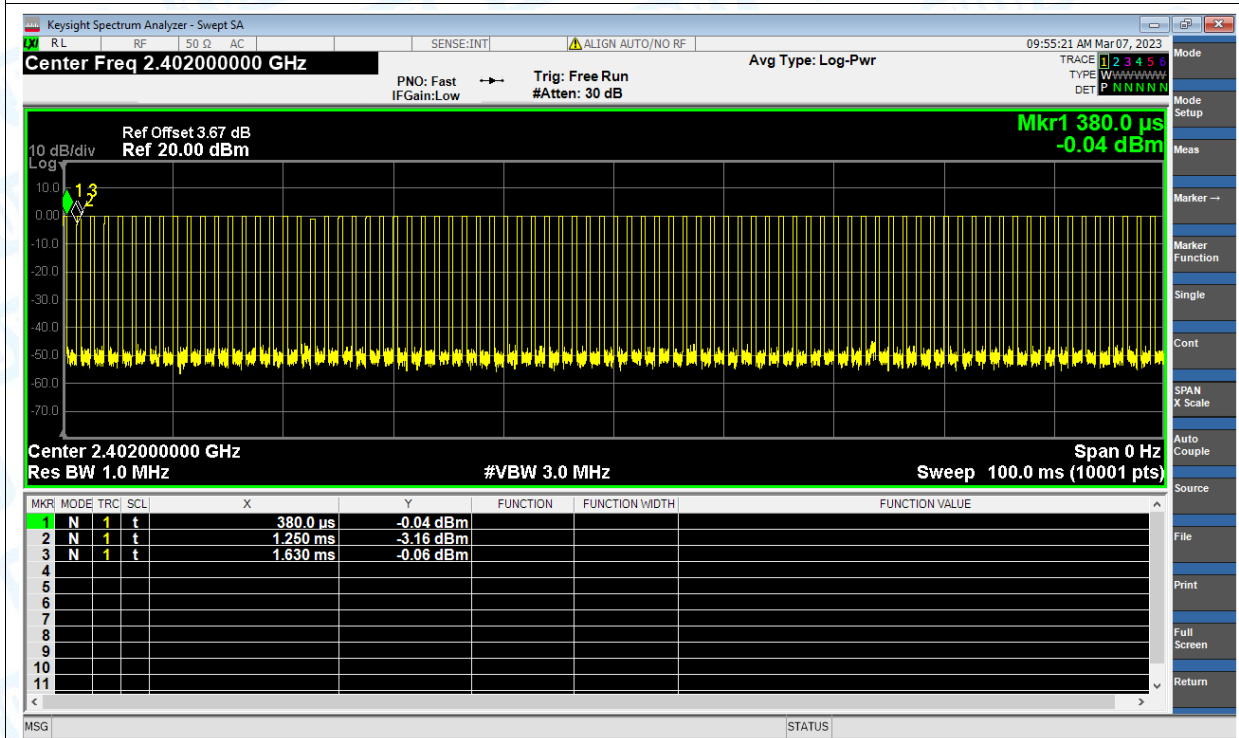
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1. Duty Cycle

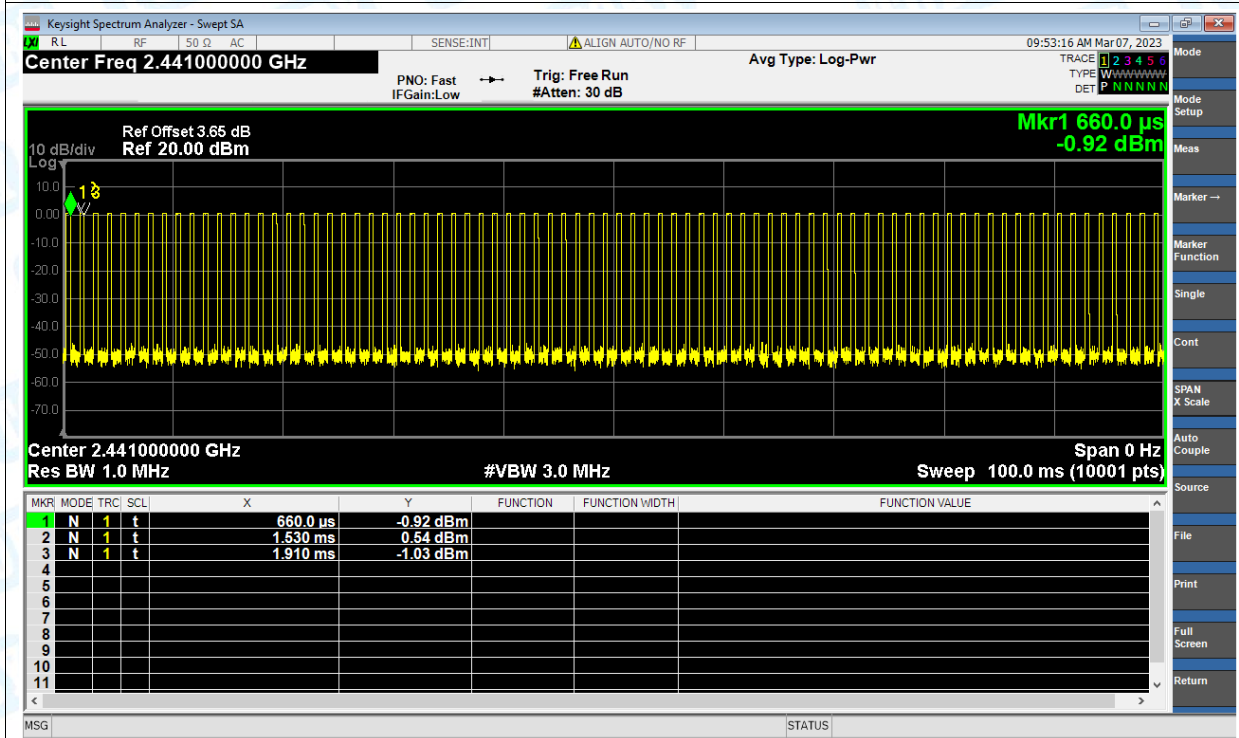
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56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

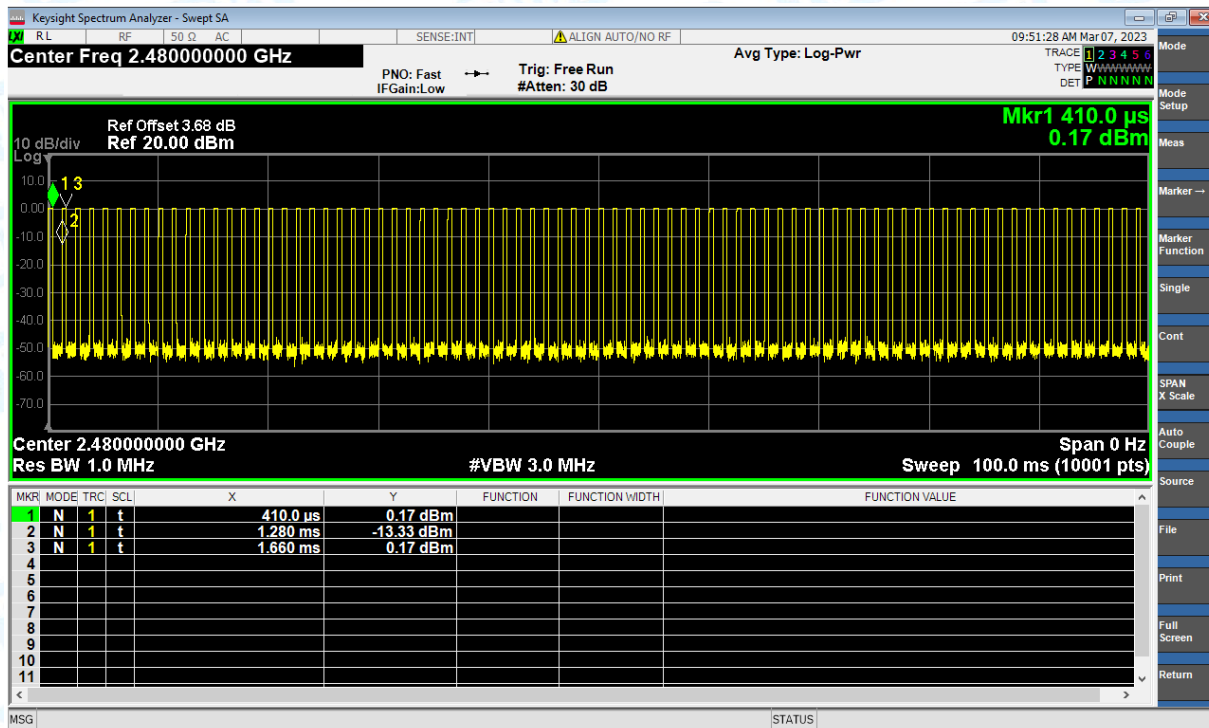
Duty Cycle NVNT 1-DH1 2402MHz Ant1



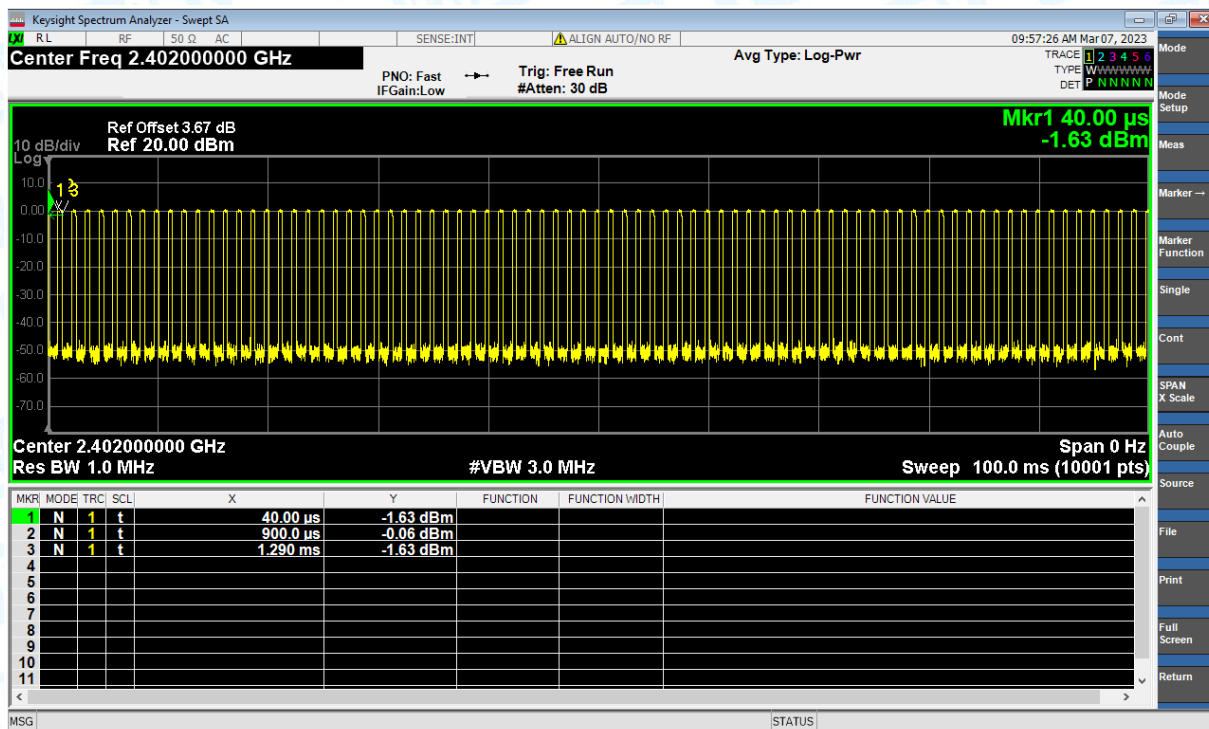
Duty Cycle NVNT 1-DH1 2441MHz Ant1



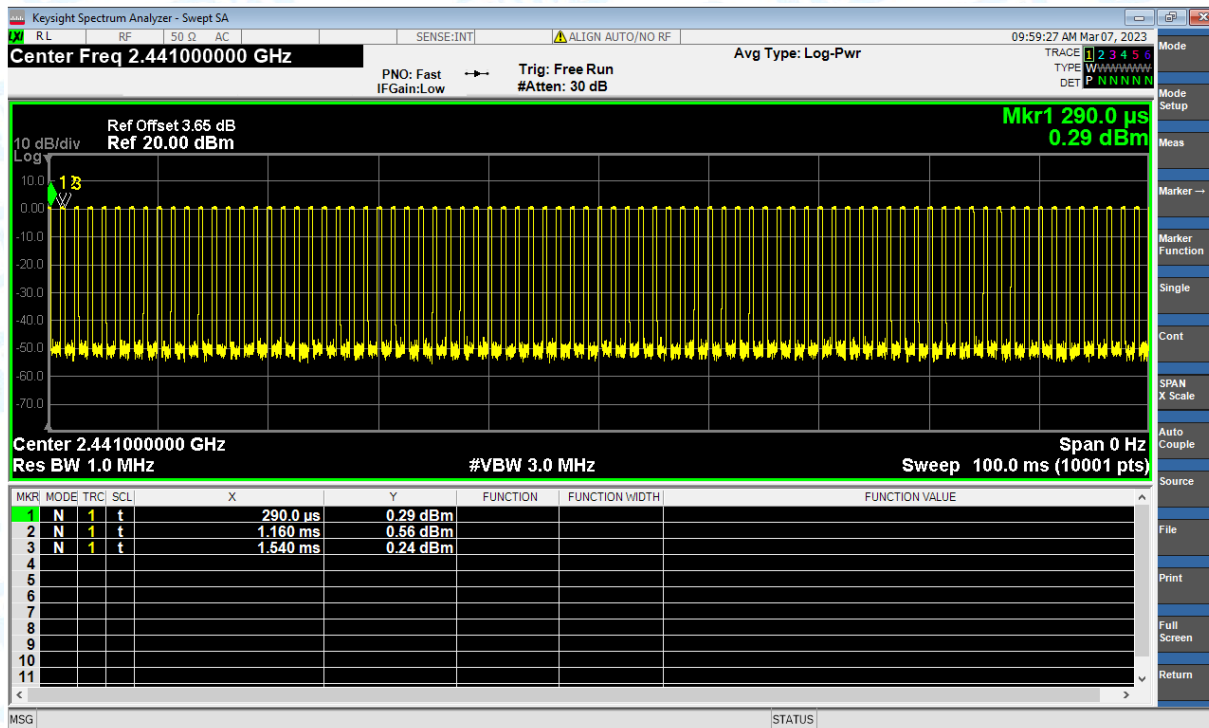
Duty Cycle NVNT 1-DH1 2480MHz Ant1



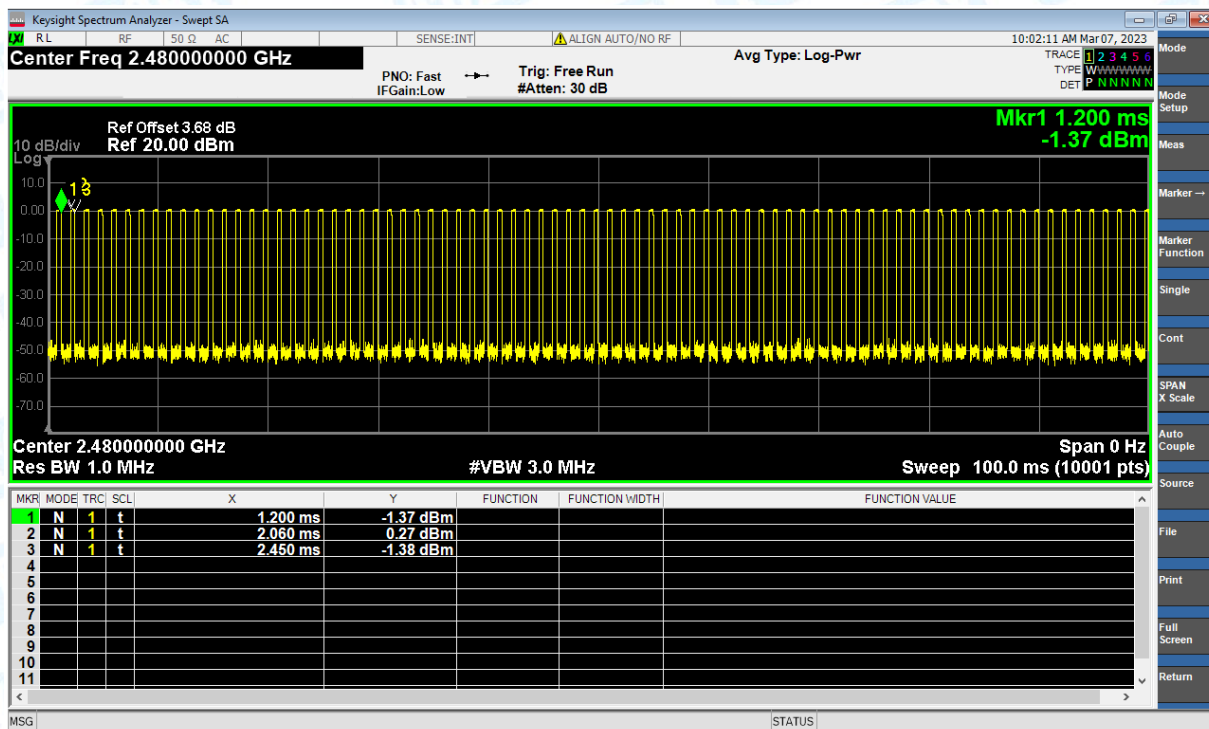
Duty Cycle NVNT 2-DH1 2402MHz Ant1



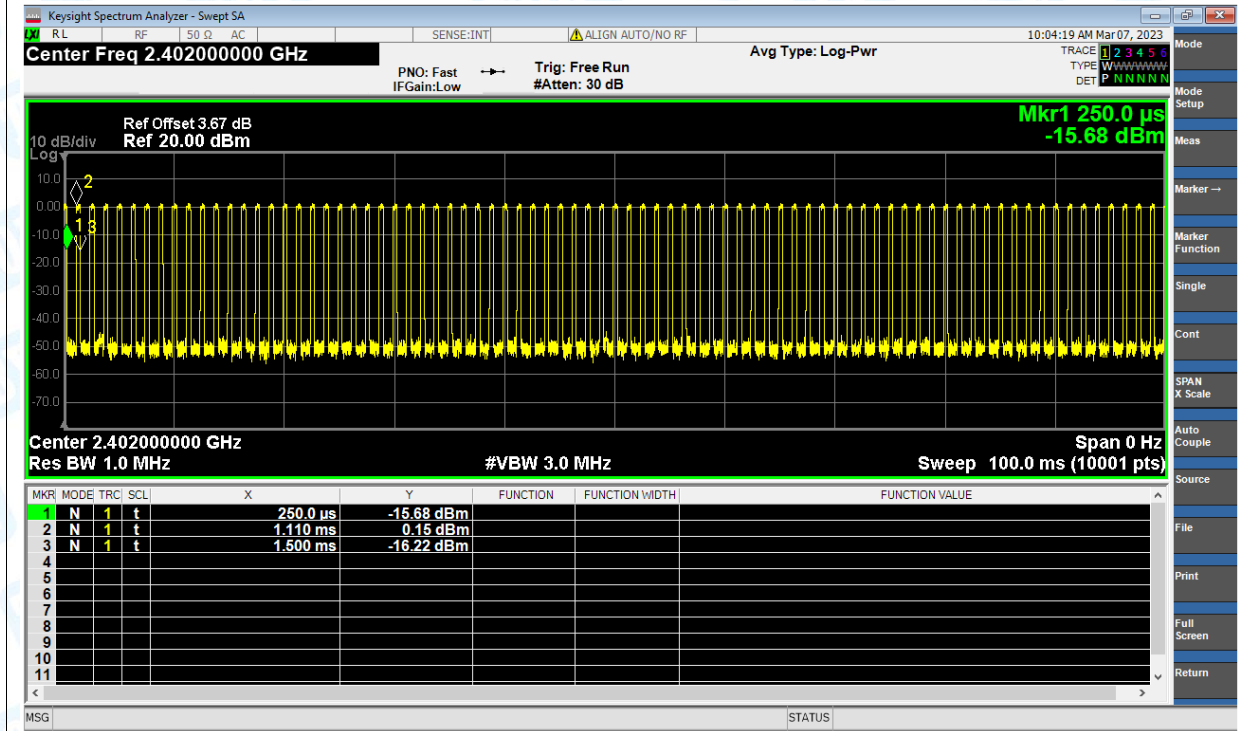
Duty Cycle NVNT 2-DH1 2441MHz Ant1



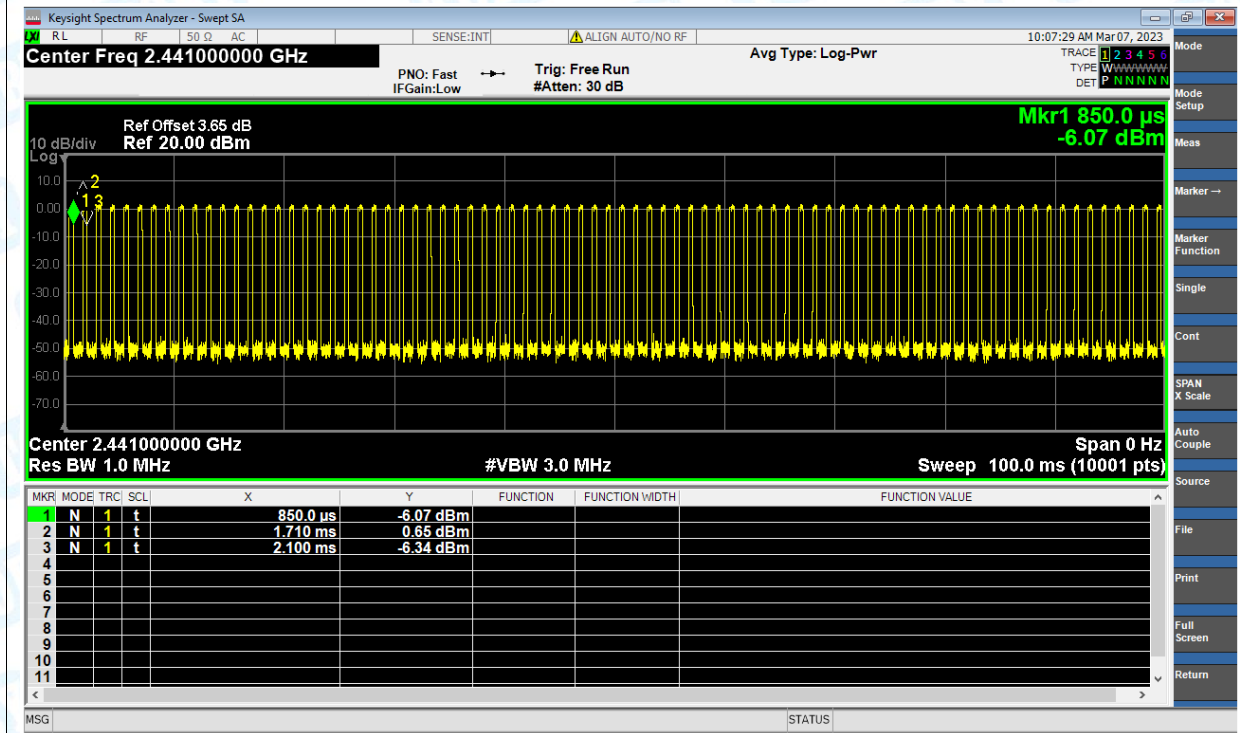
Duty Cycle NVNT 2-DH1 2480MHz Ant1

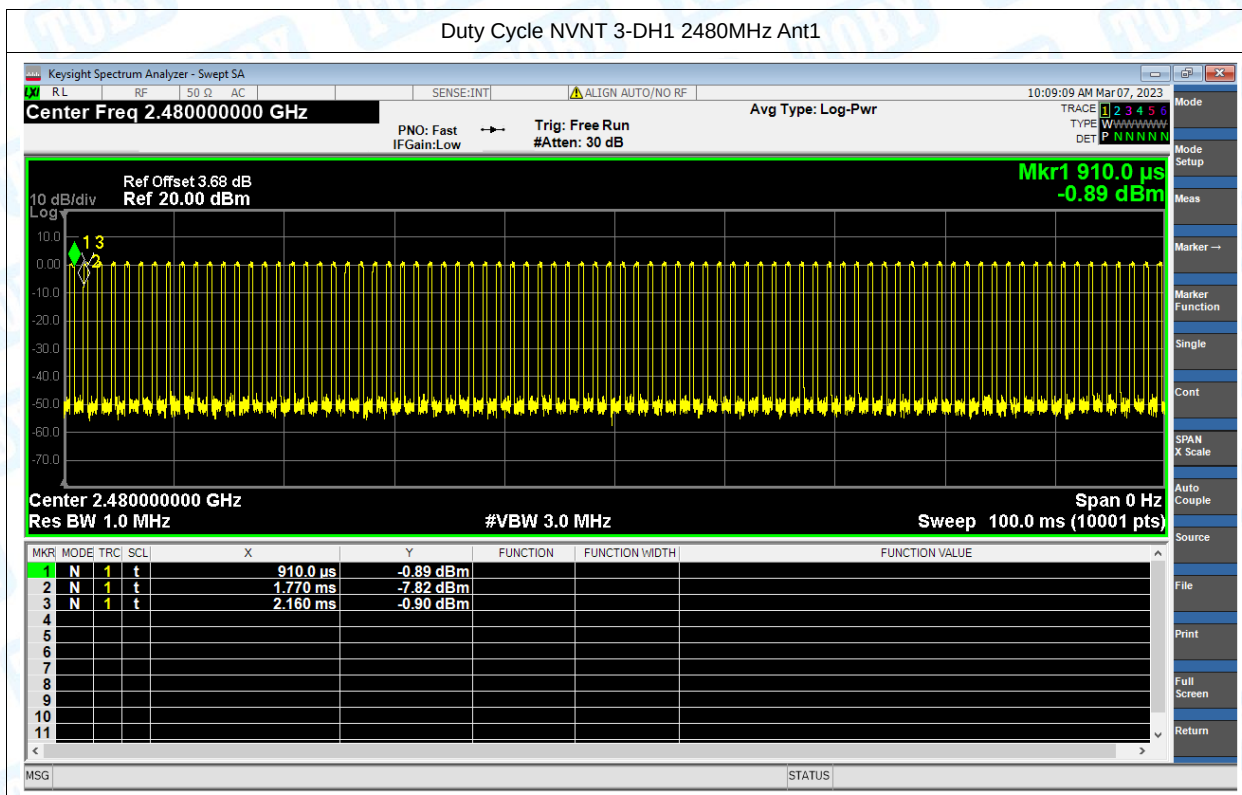


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



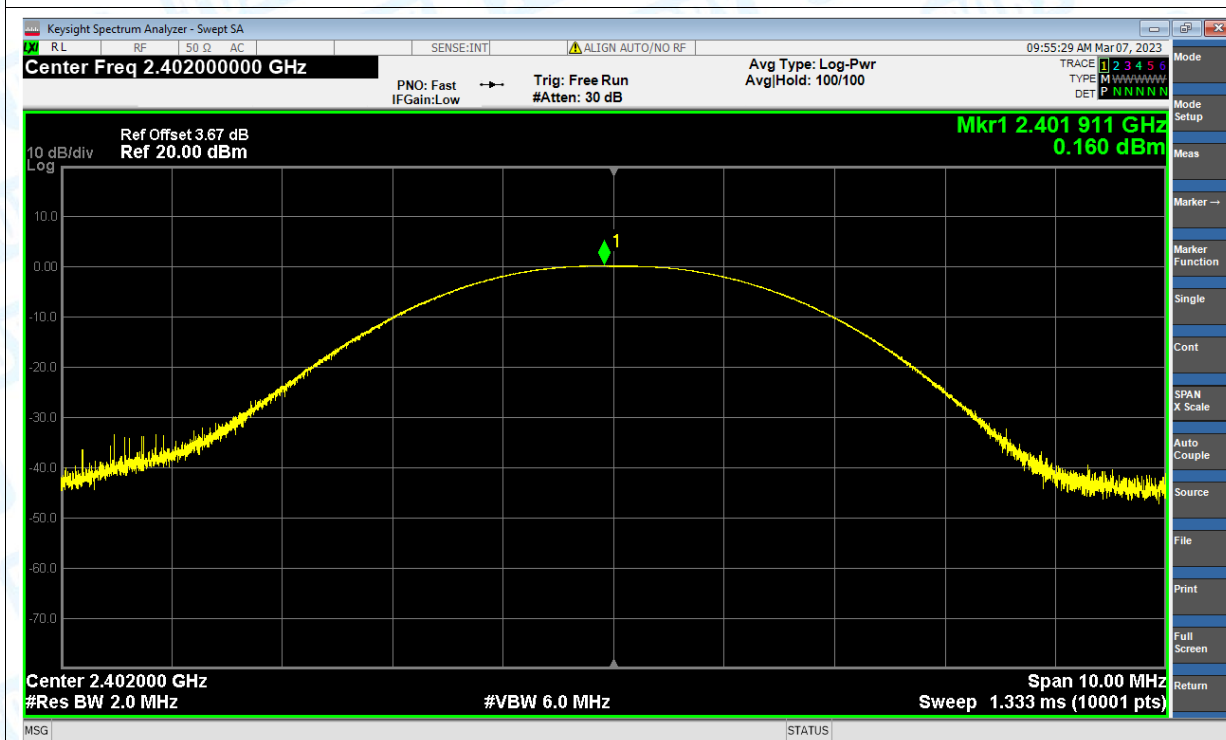


2. Maximum Conducted Output Power

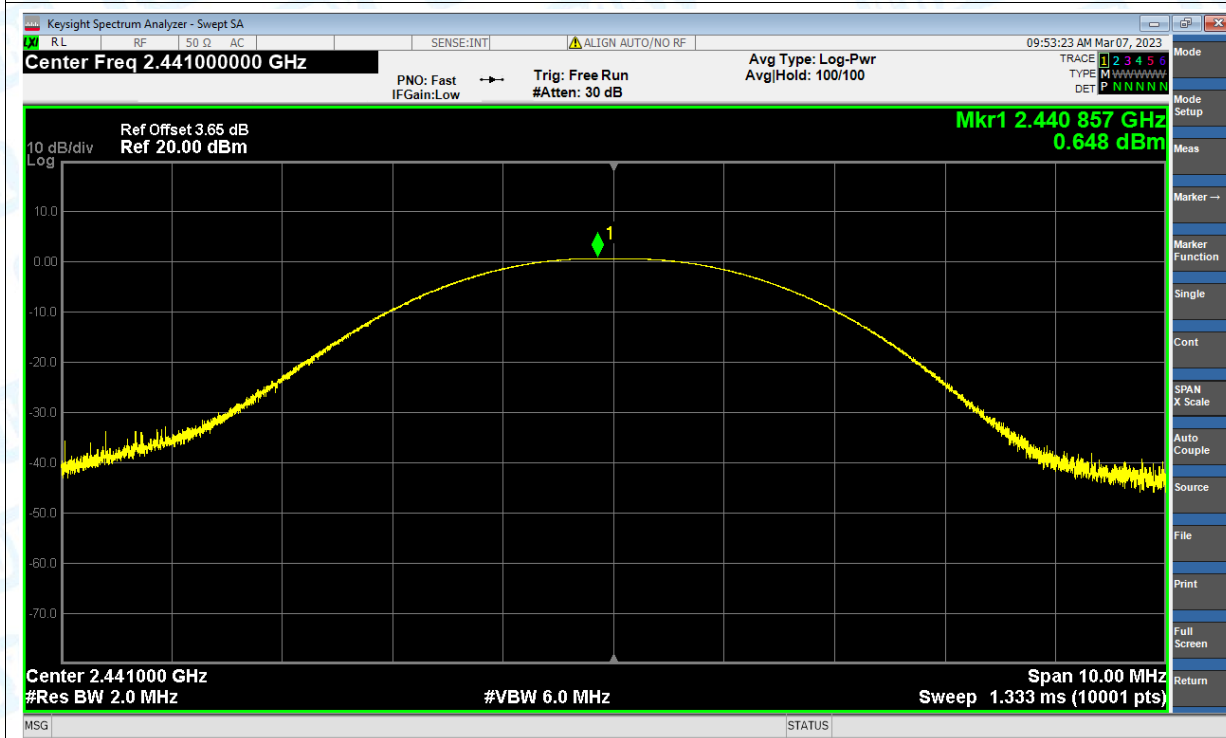
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	0.16	21	Pass
NVNT	1-DH1	2441	Ant1	0.648	21	Pass
NVNT	1-DH1	2480	Ant1	0.342	21	Pass
NVNT	2-DH1	2402	Ant1	1.011	21	Pass
NVNT	2-DH1	2441	Ant1	1.486	21	Pass
NVNT	2-DH1	2480	Ant1	1.227	21	Pass
NVNT	3-DH1	2402	Ant1	1.675	21	Pass
NVNT	3-DH1	2441	Ant1	2.102	21	Pass
NVNT	3-DH1	2480	Ant1	1.822	21	Pass

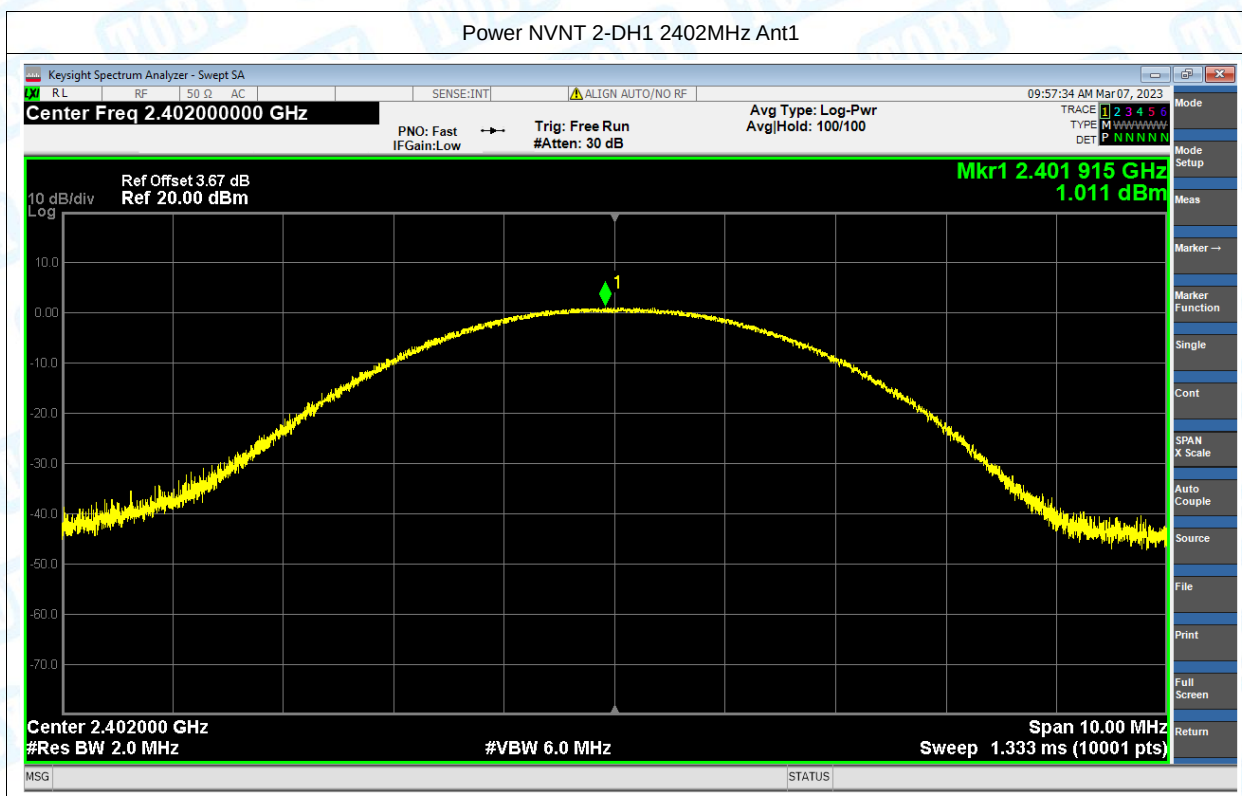
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1



Power NVNT 1-DH1 2441MHz Ant1

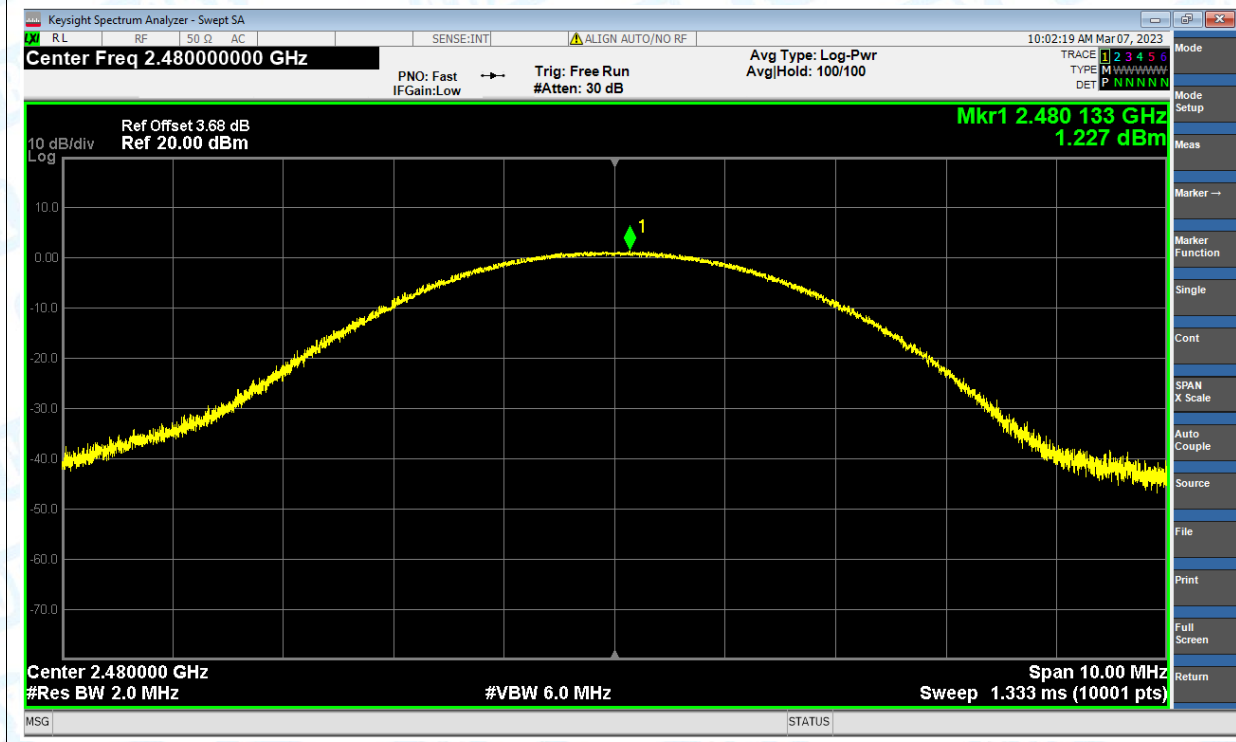




Power NVNT 2-DH1 2441MHz Ant1



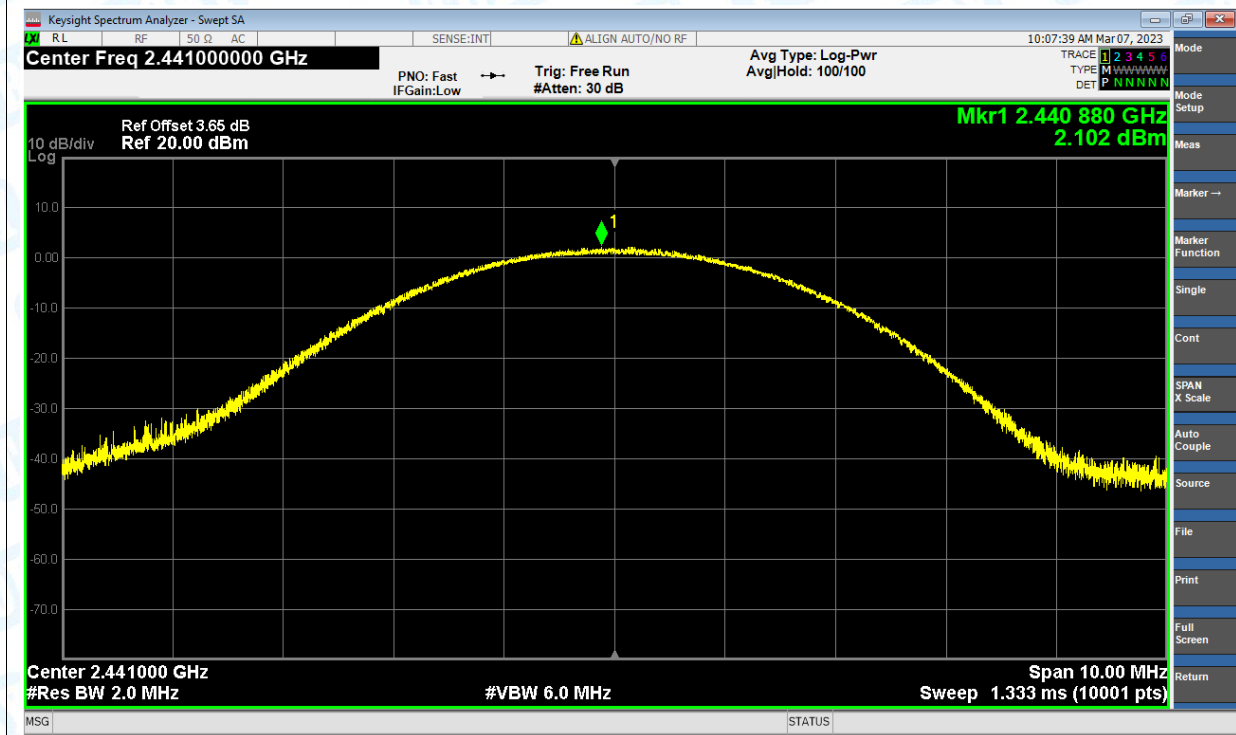
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



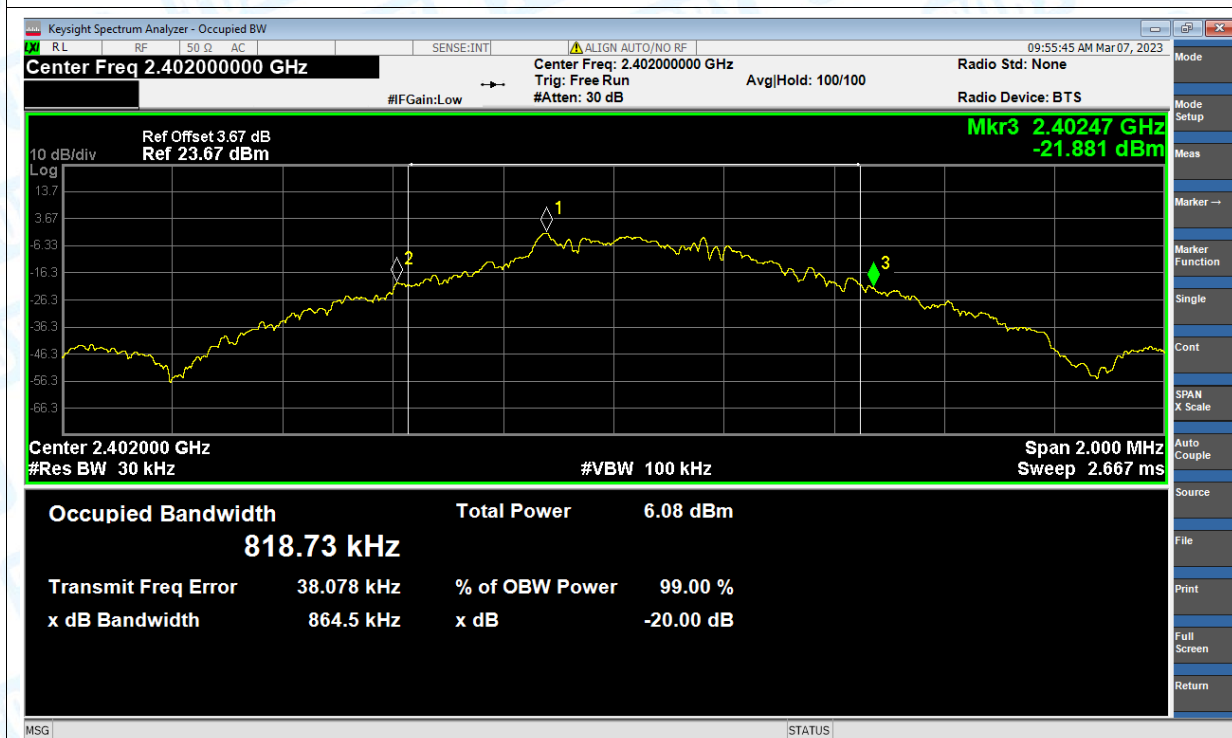


3. -20dB Bandwidth

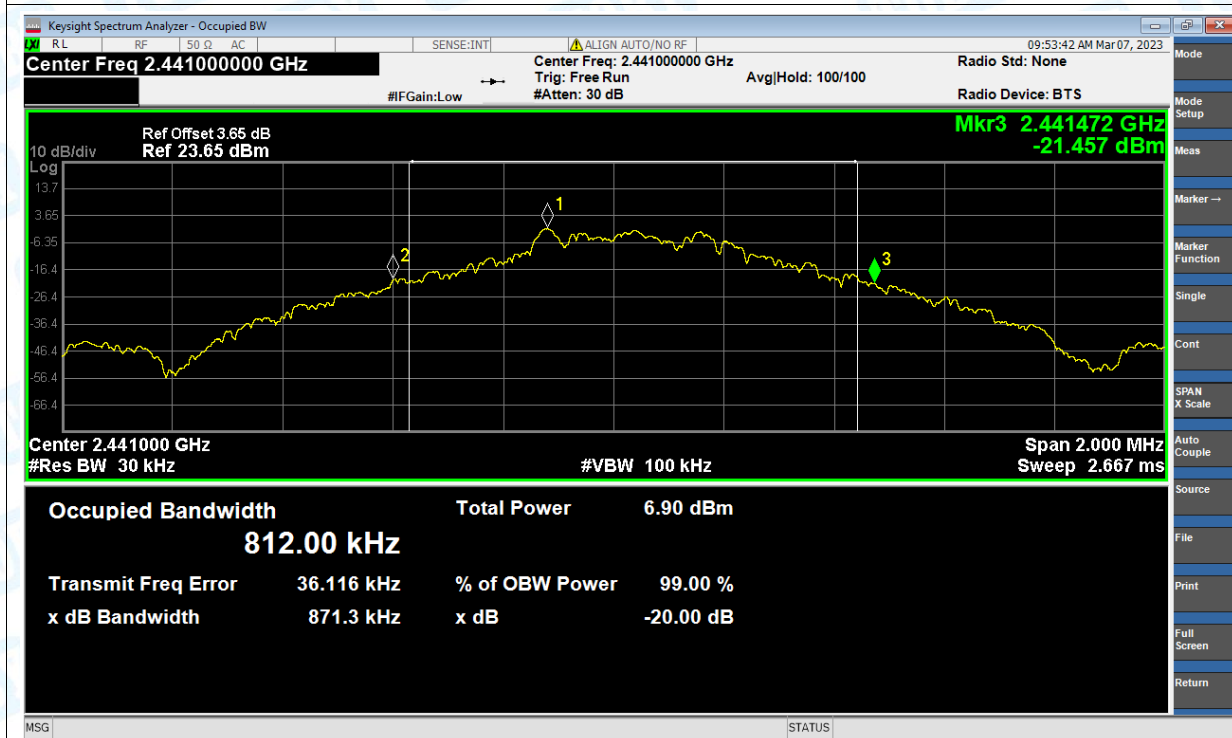
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.86	0	Pass
NVNT	1-DH1	2441	Ant1	0.87	0	Pass
NVNT	1-DH1	2480	Ant1	0.85	0	Pass
NVNT	2-DH1	2402	Ant1	1.24	0	Pass
NVNT	2-DH1	2441	Ant1	1.25	0	Pass
NVNT	2-DH1	2480	Ant1	1.22	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass

Test Graphs

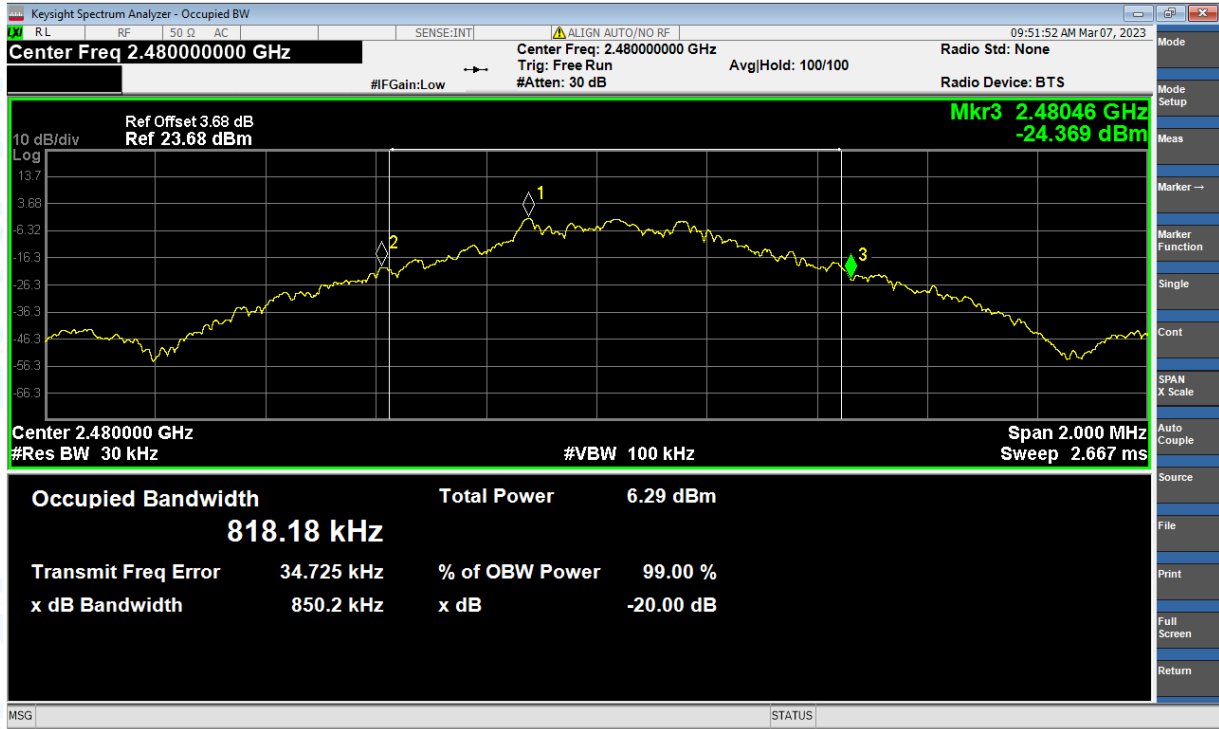
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



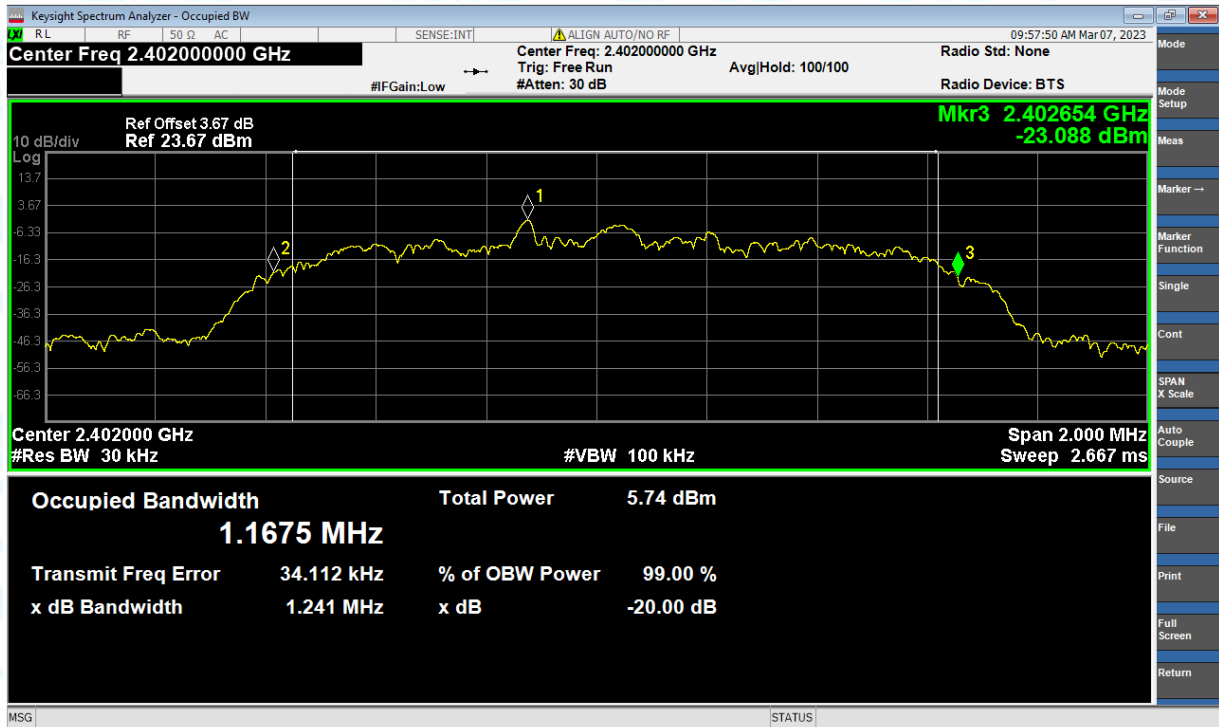
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



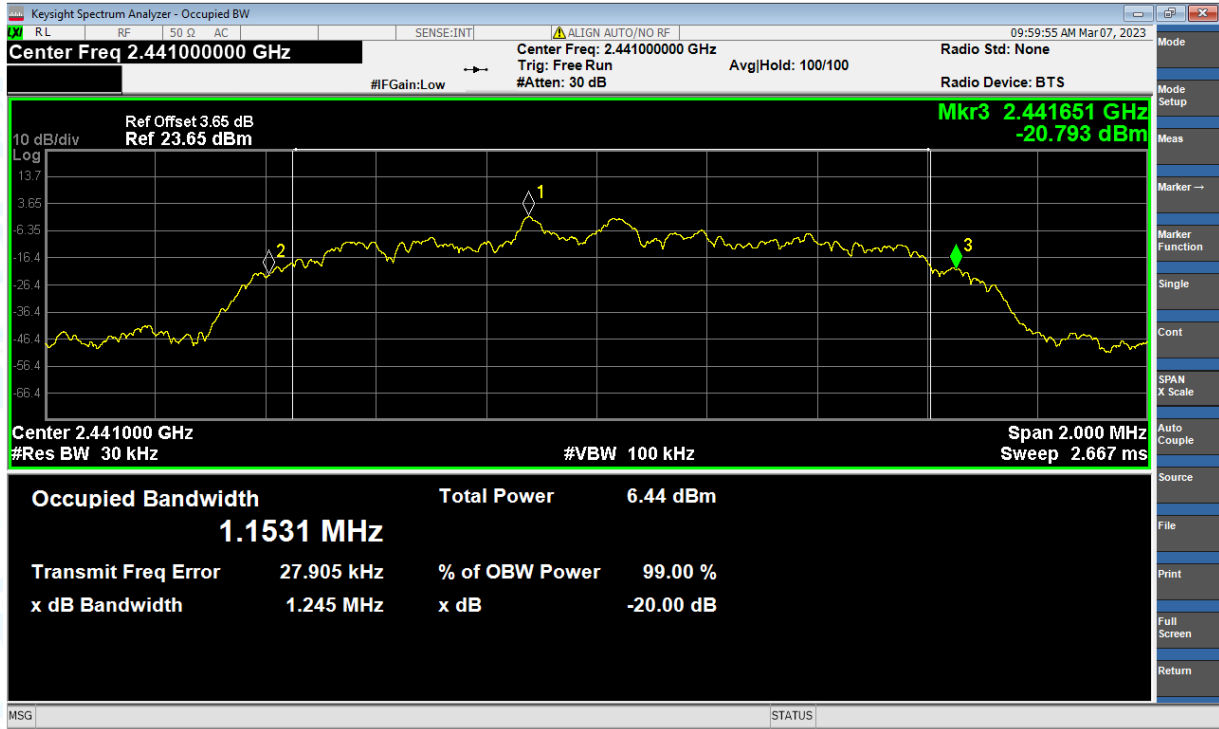
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



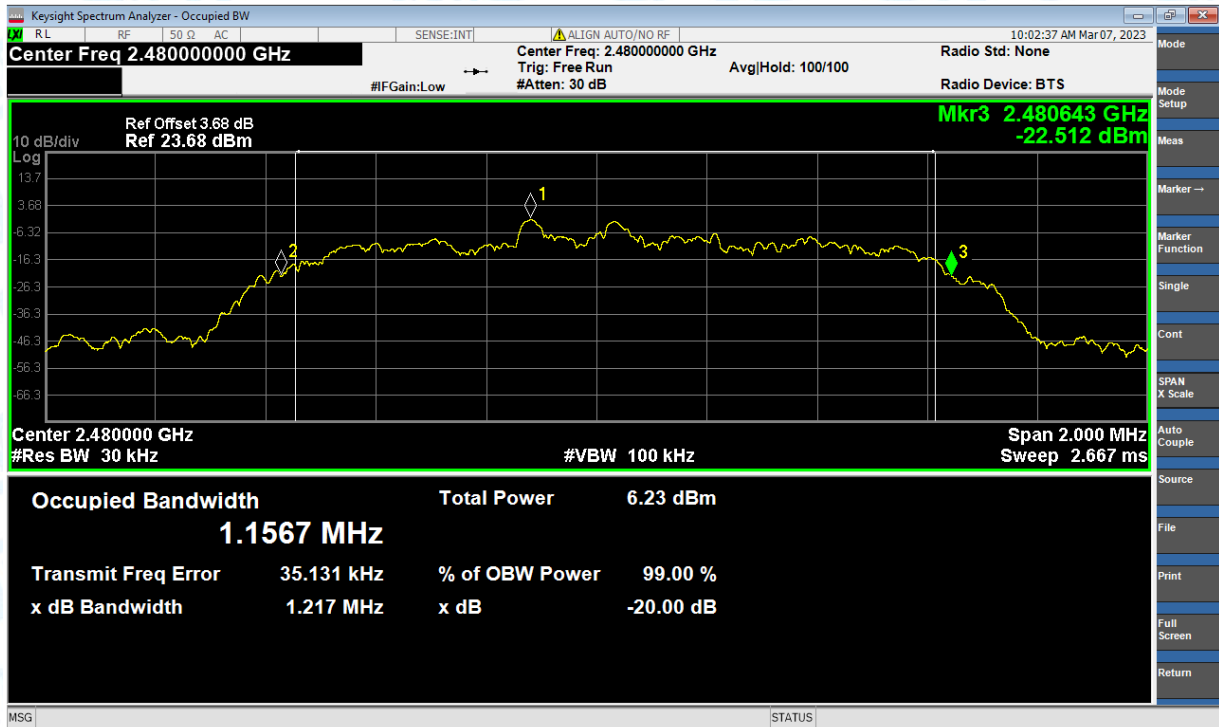
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



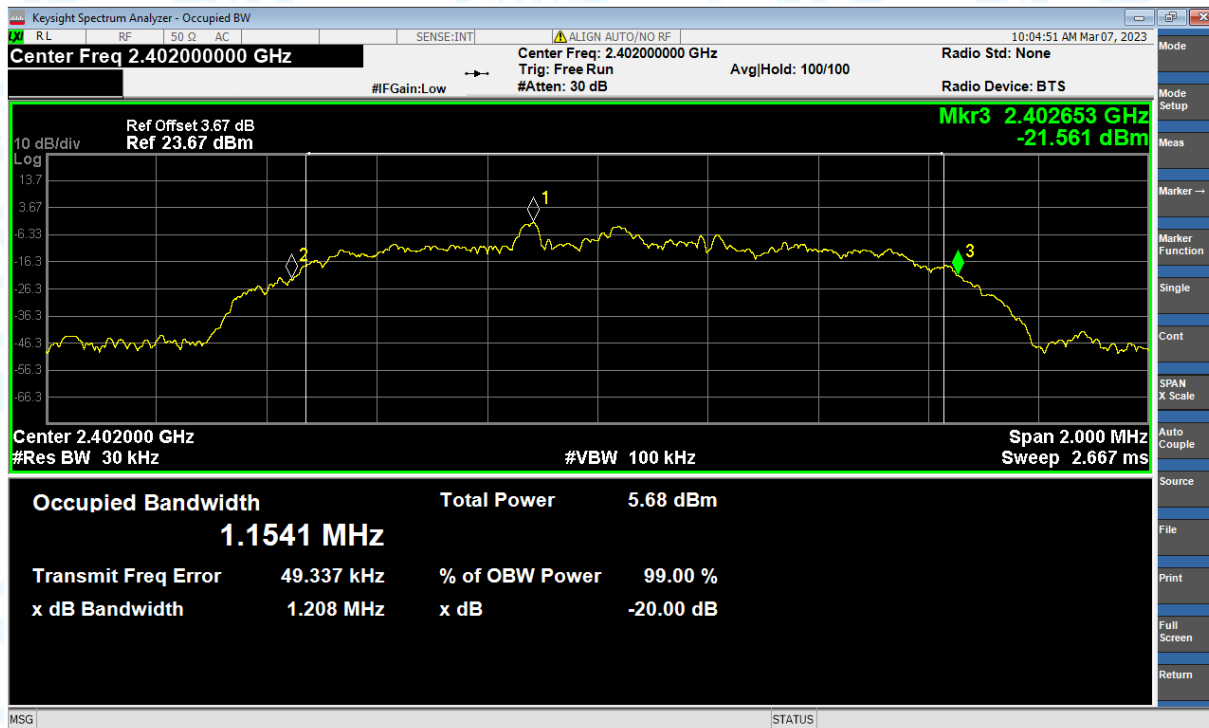
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



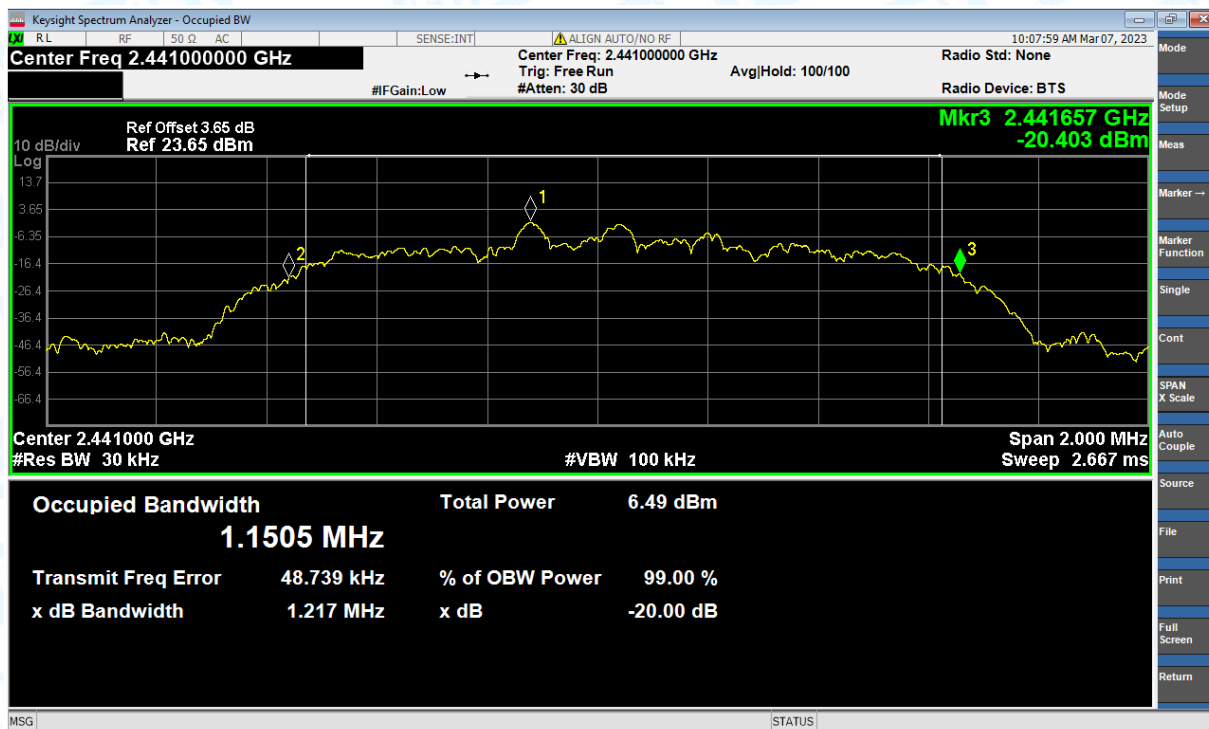
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

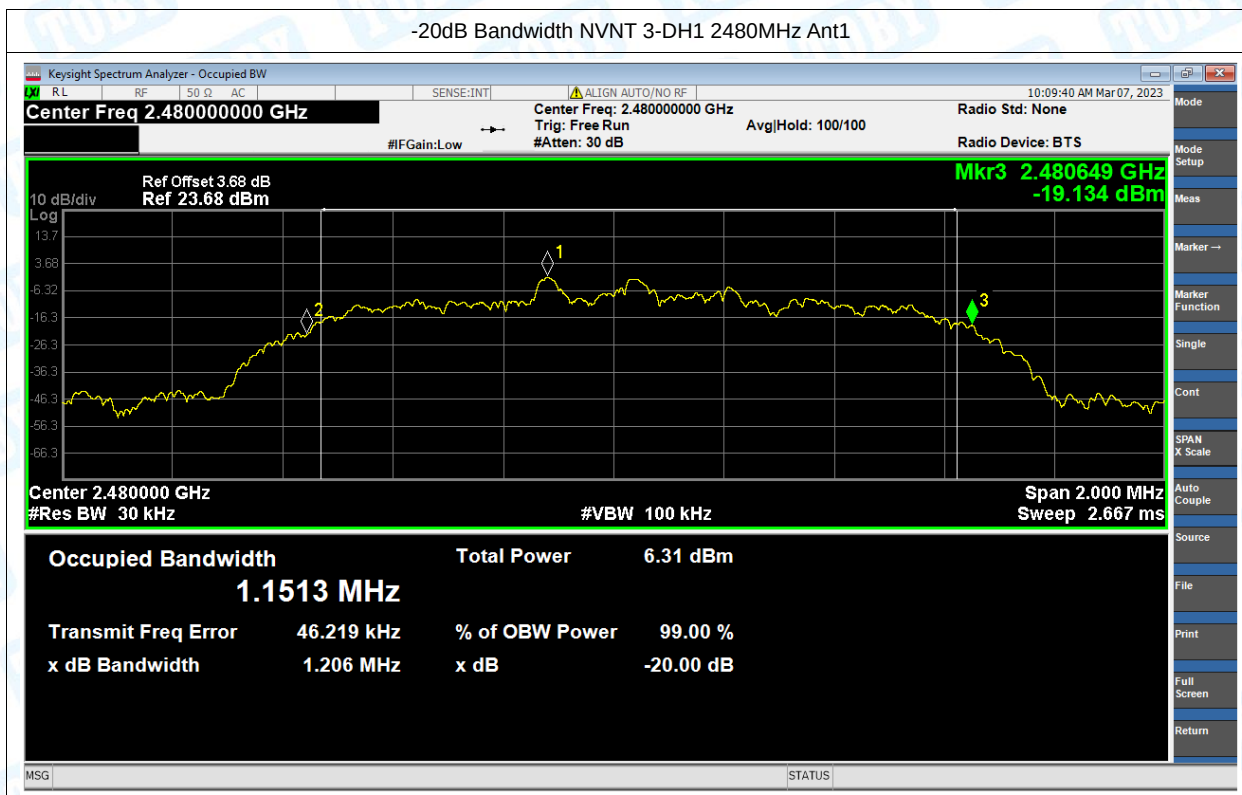


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



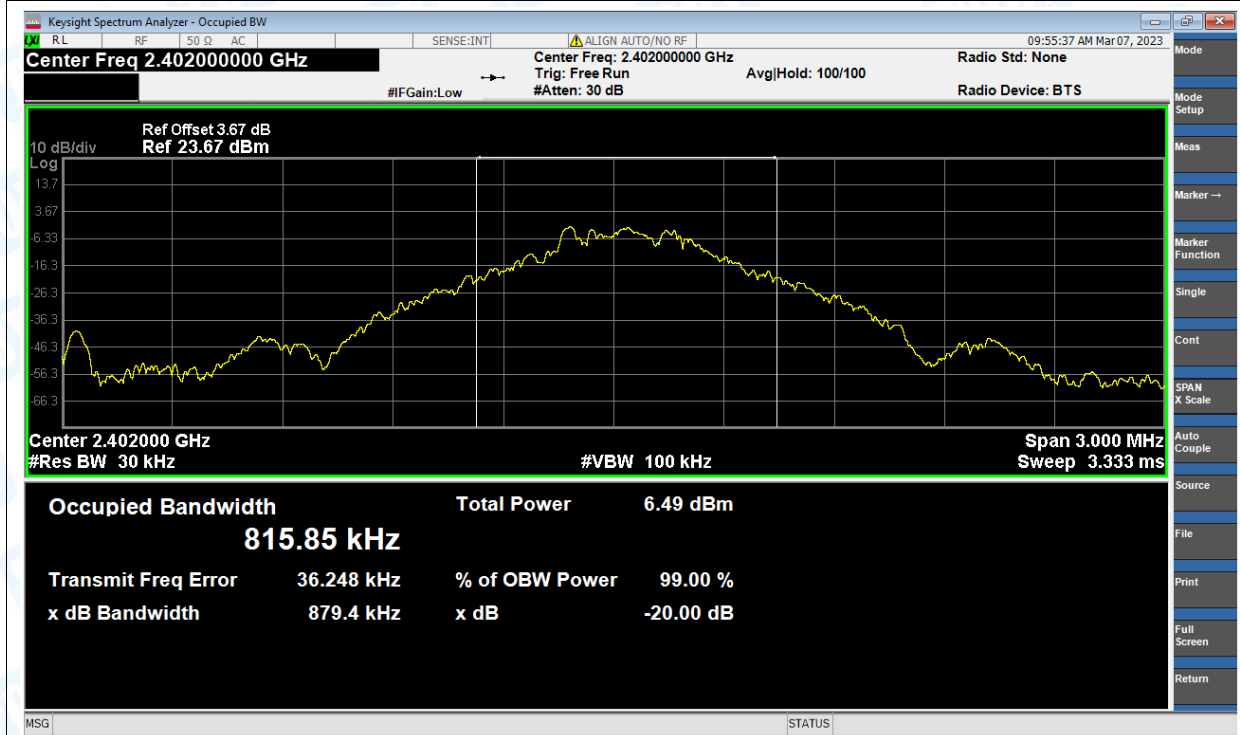


4. Occupied Channel Bandwidth

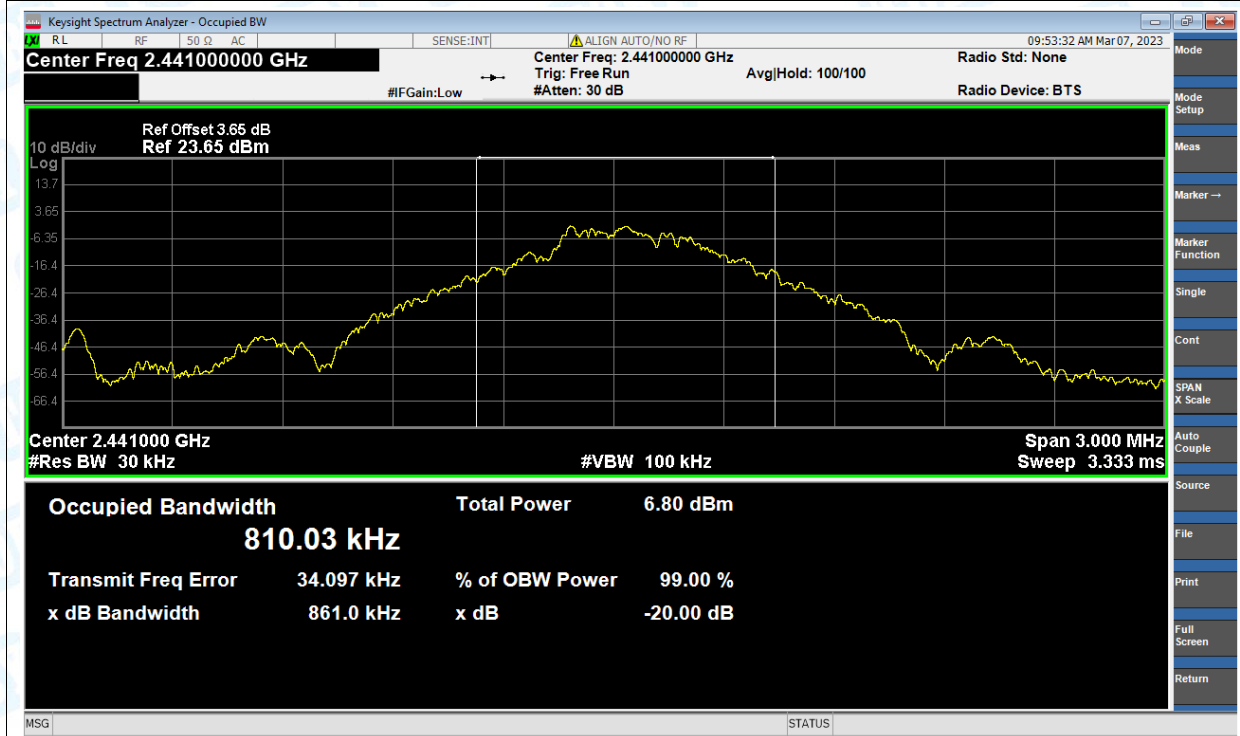
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.816
NVNT	1-DH1	2441	Ant1	0.81
NVNT	1-DH1	2480	Ant1	0.82
NVNT	2-DH1	2402	Ant1	1.155
NVNT	2-DH1	2441	Ant1	1.163
NVNT	2-DH1	2480	Ant1	1.168
NVNT	3-DH1	2402	Ant1	1.149
NVNT	3-DH1	2441	Ant1	1.15
NVNT	3-DH1	2480	Ant1	1.148

Test Graphs

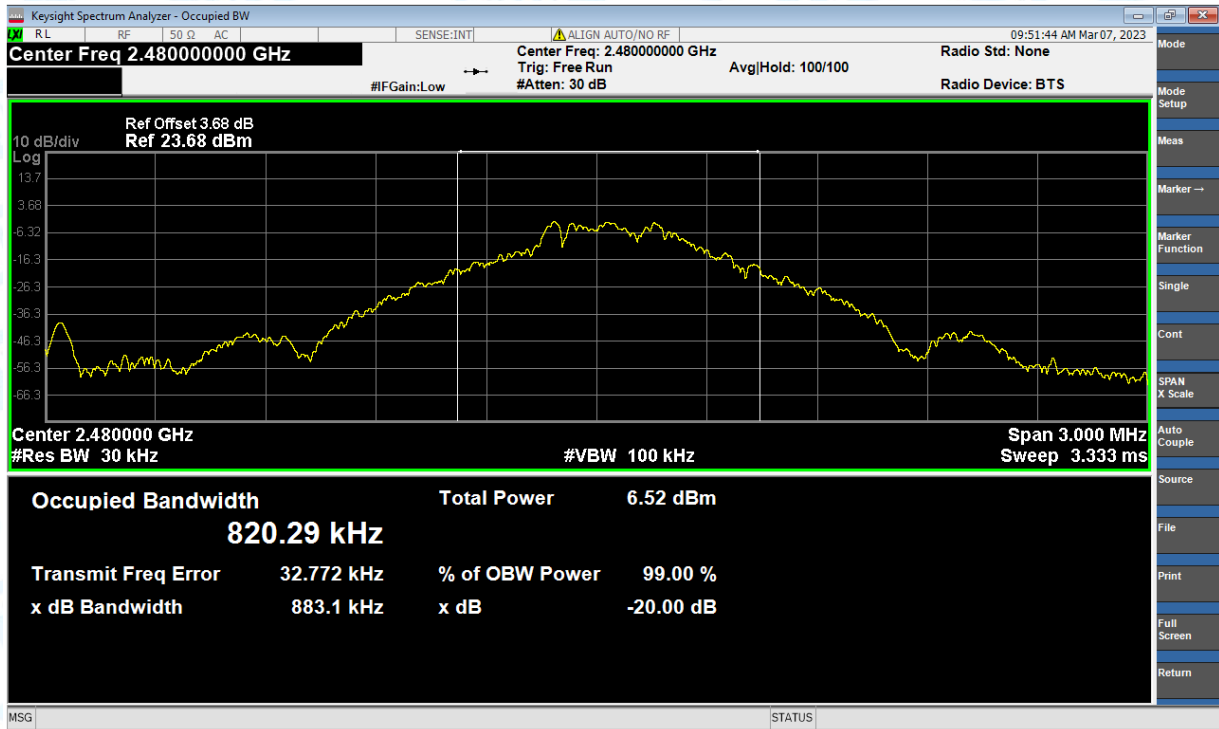
OBW NVNT 1-DH1 2402MHz Ant1



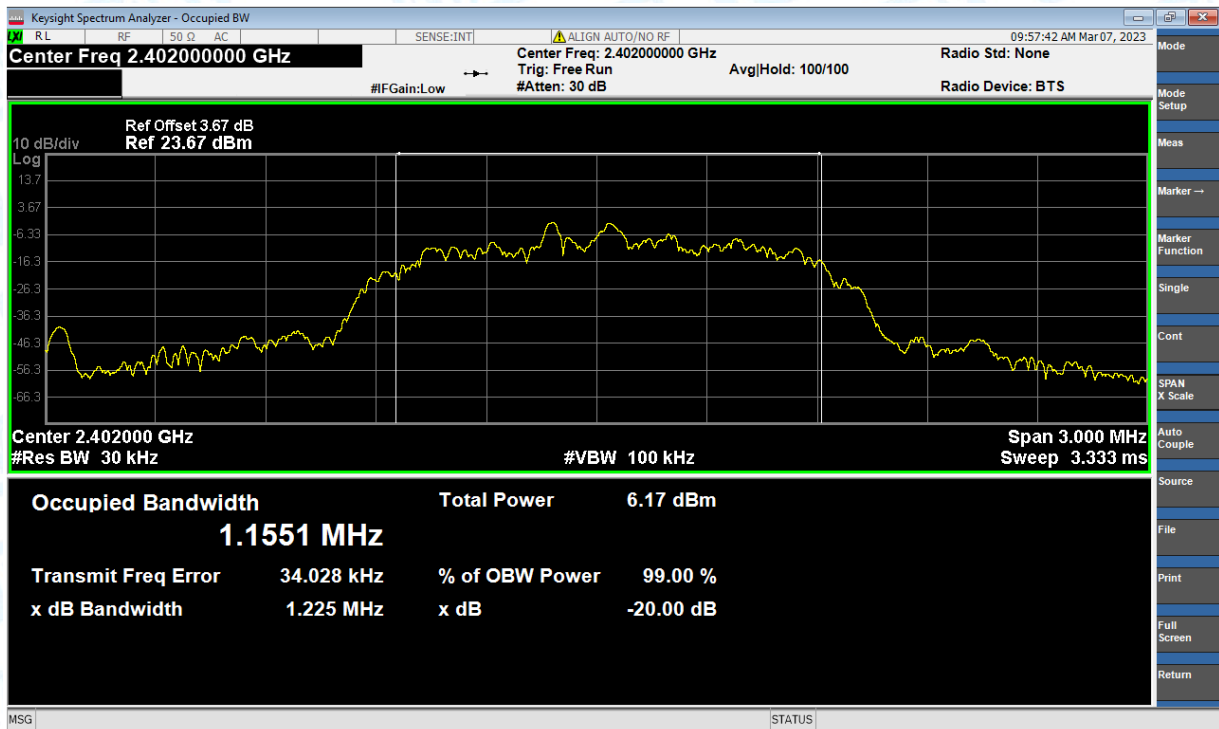
OBW NVNT 1-DH1 2441MHz Ant1



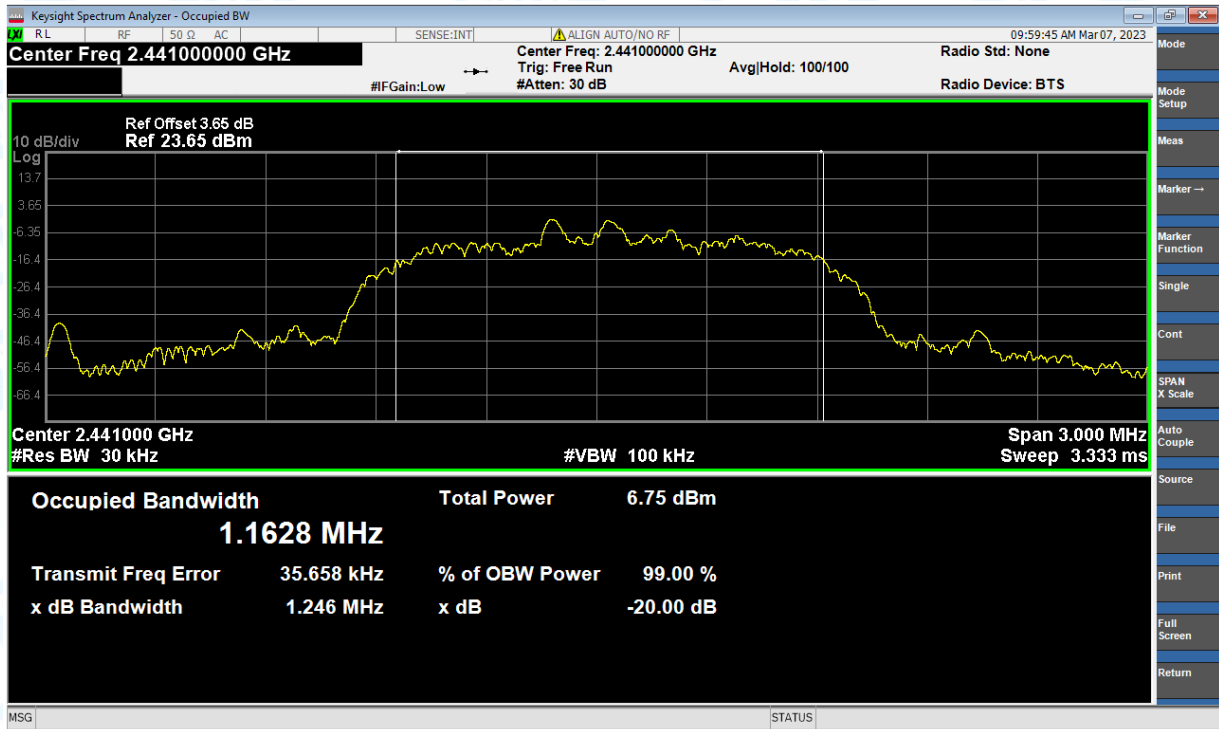
OBW NVNT 1-DH1 2480MHz Ant1



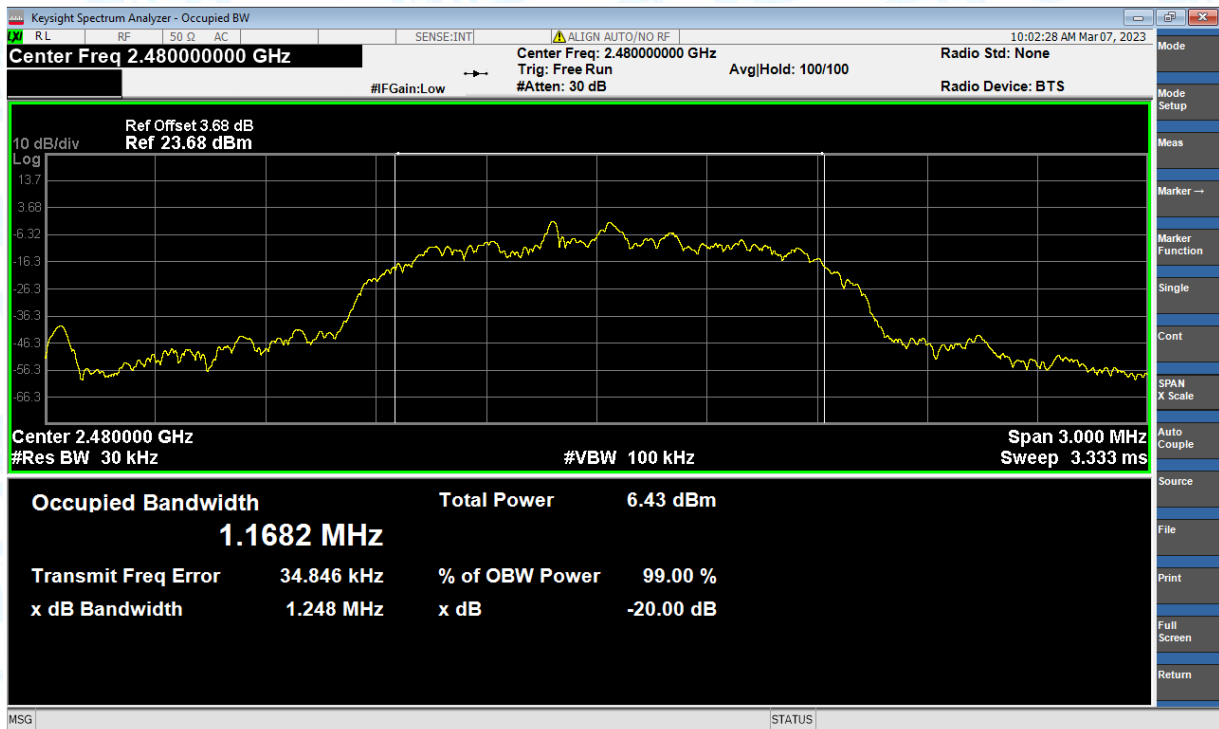
OBW NVNT 2-DH1 2402MHz Ant1



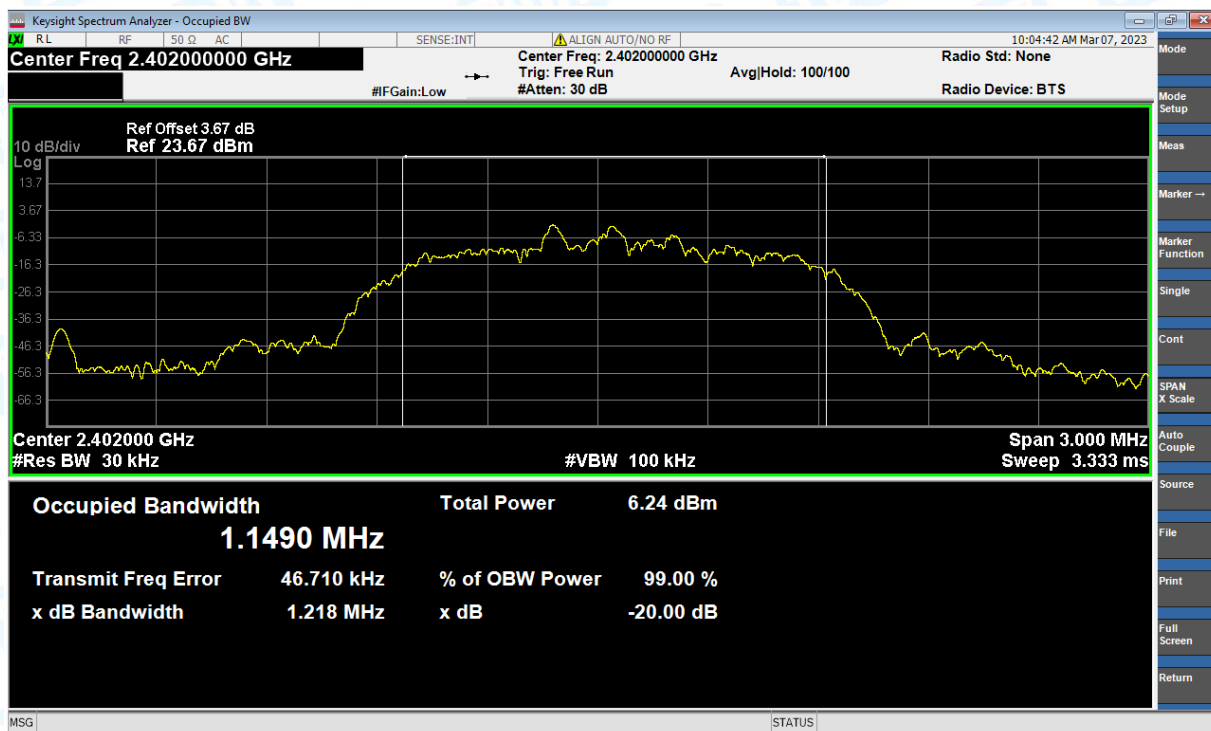
OBW NVNT 2-DH1 2441MHz Ant1



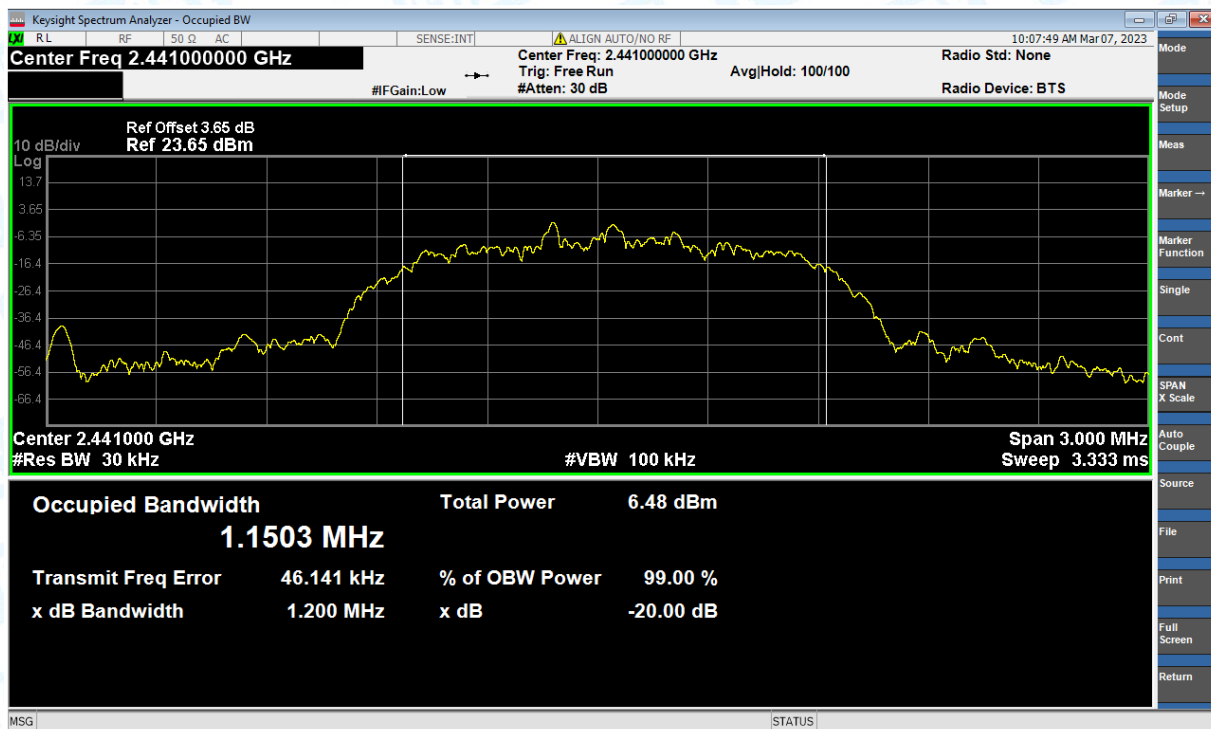
OBW NVNT 2-DH1 2480MHz Ant1

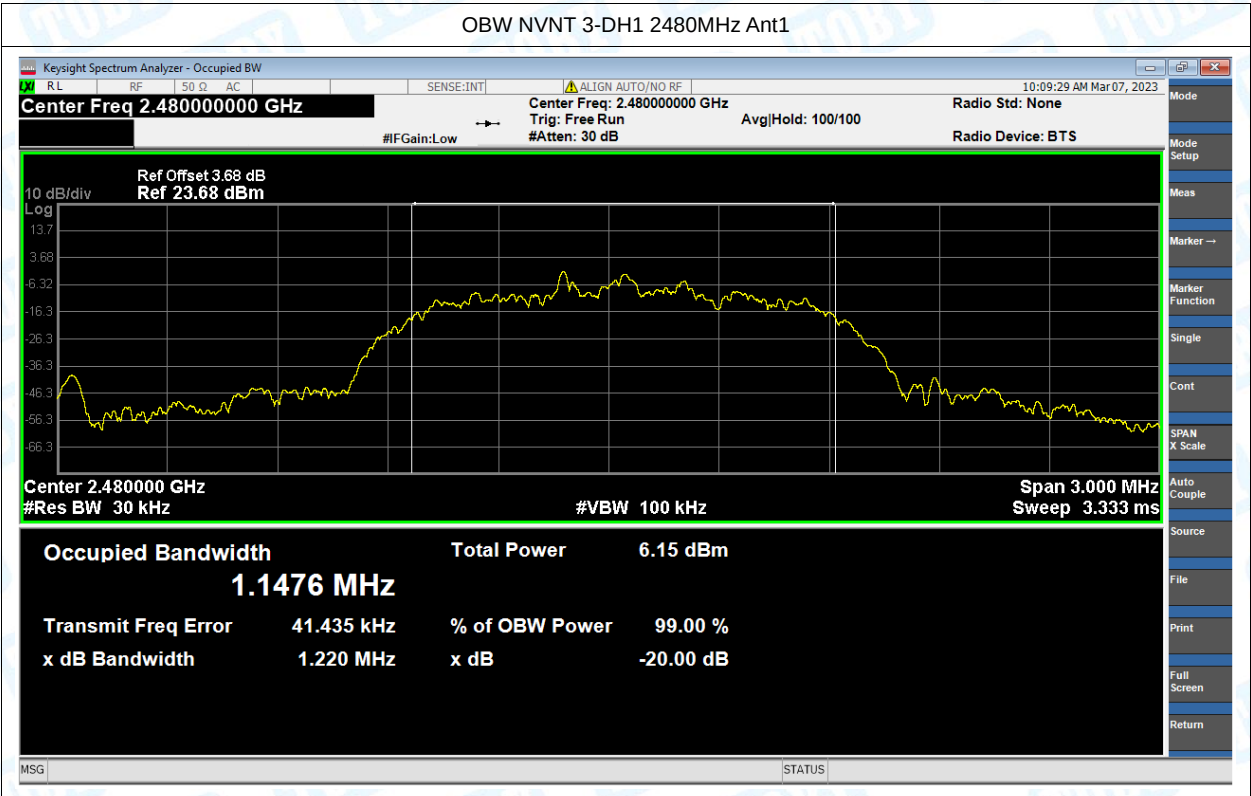


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





5. Band Edge

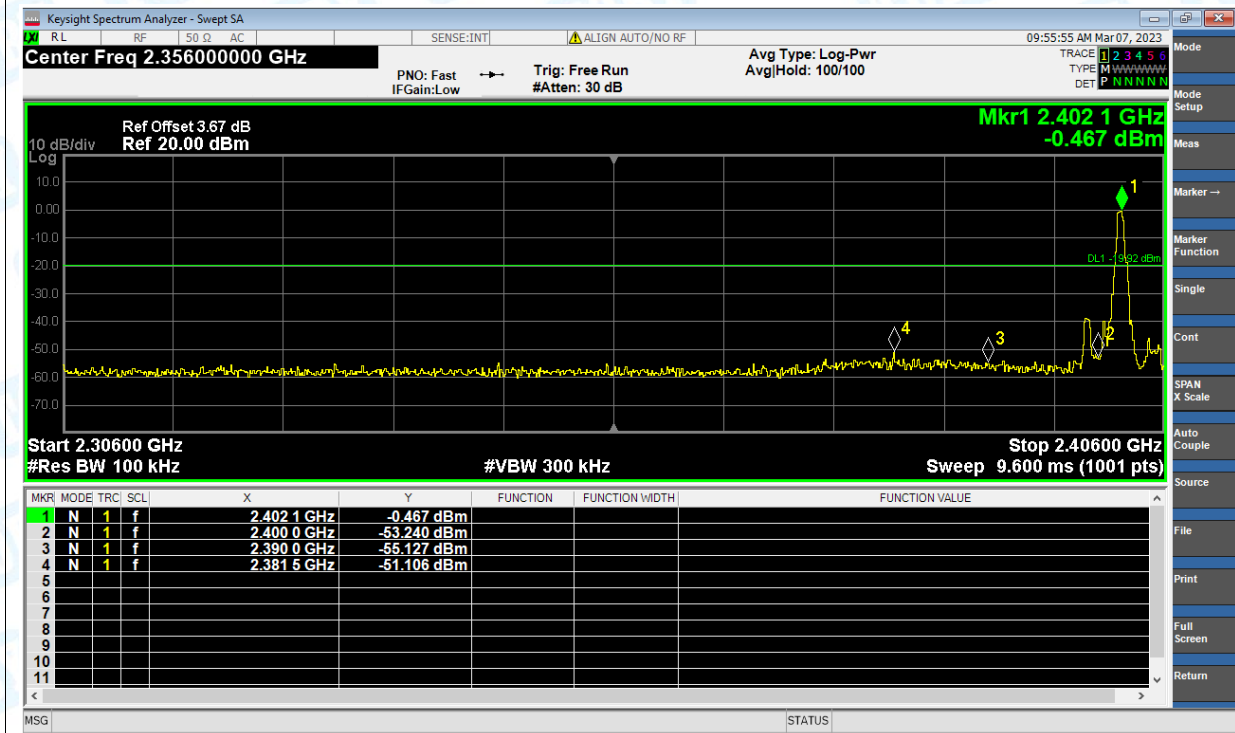
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-51.19	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-44.13	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-51.04	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-47.3	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-52.76	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-47.6	-20	Pass

Test Graphs

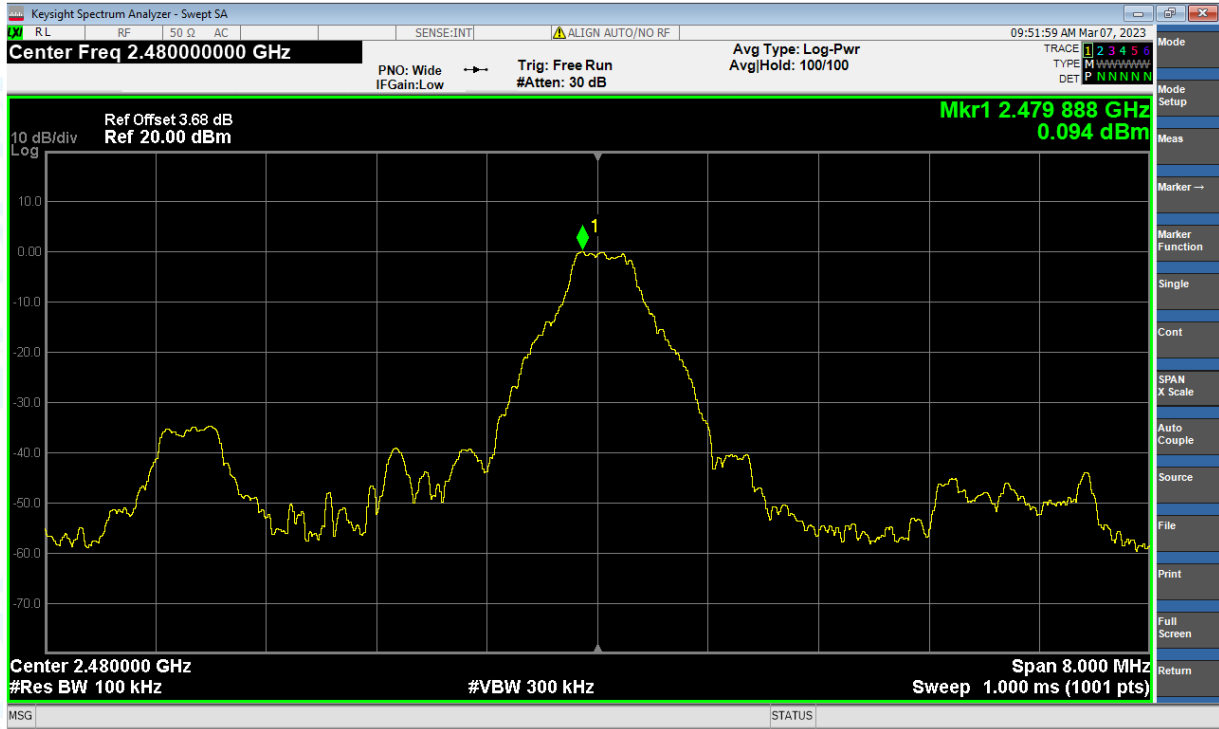
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



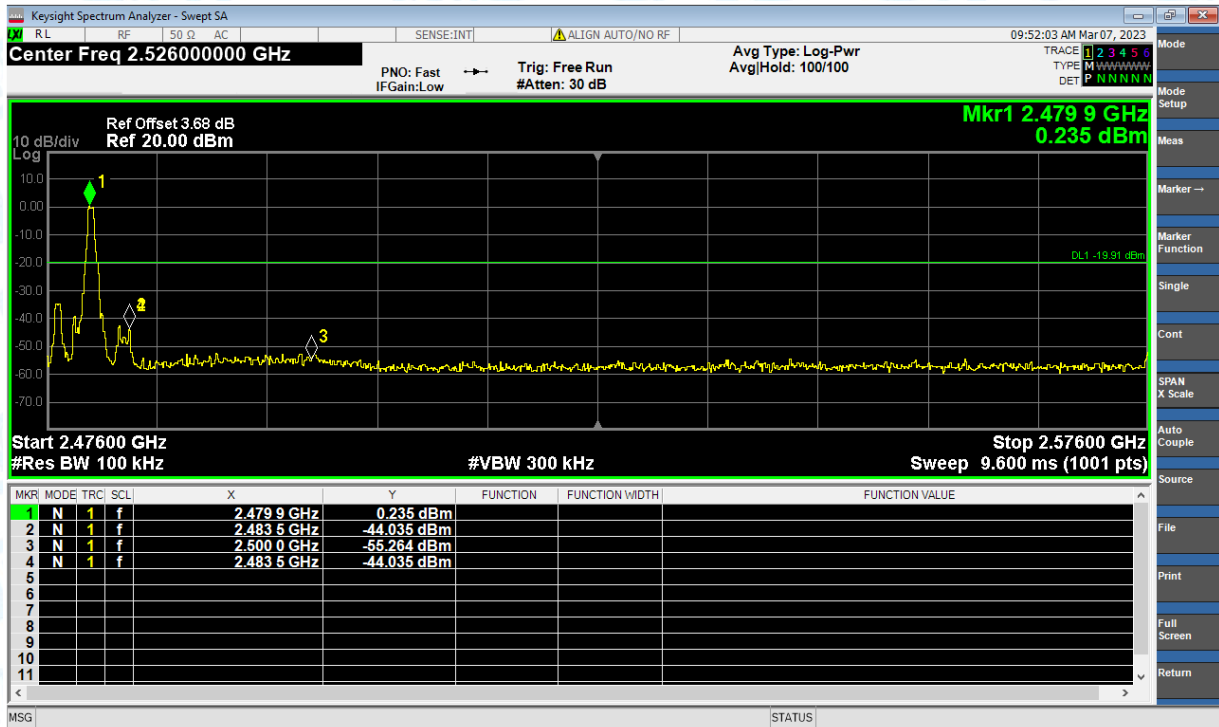
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



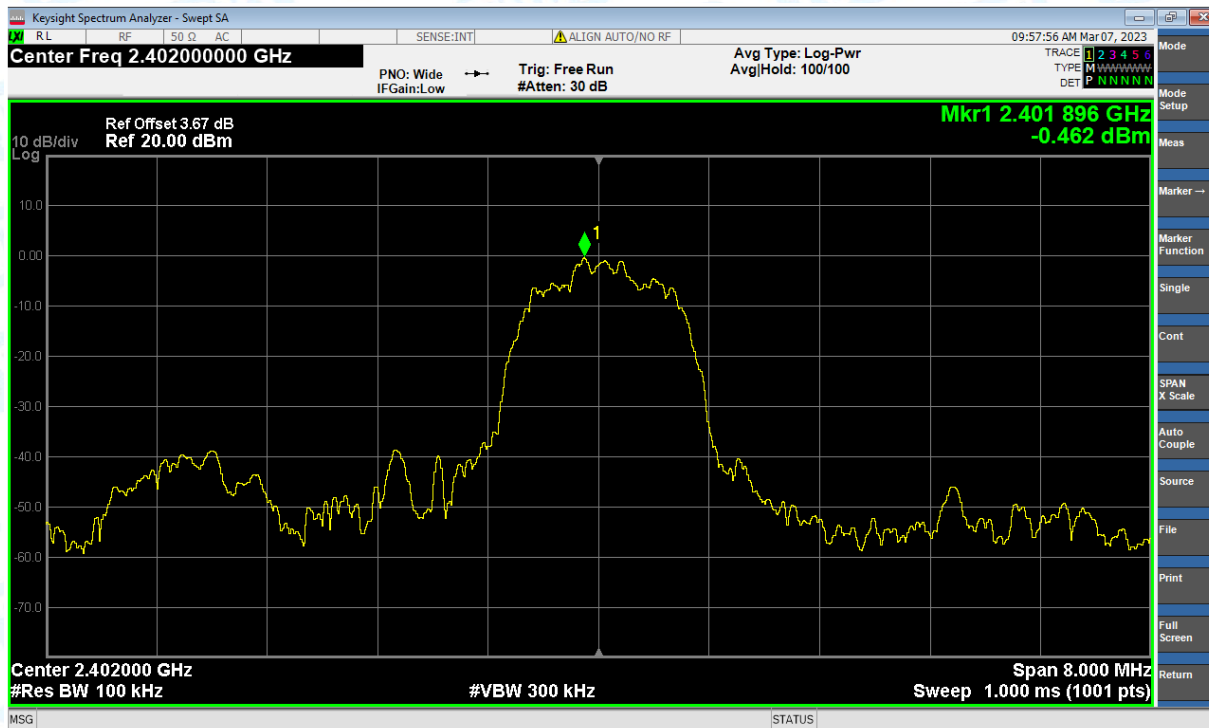
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



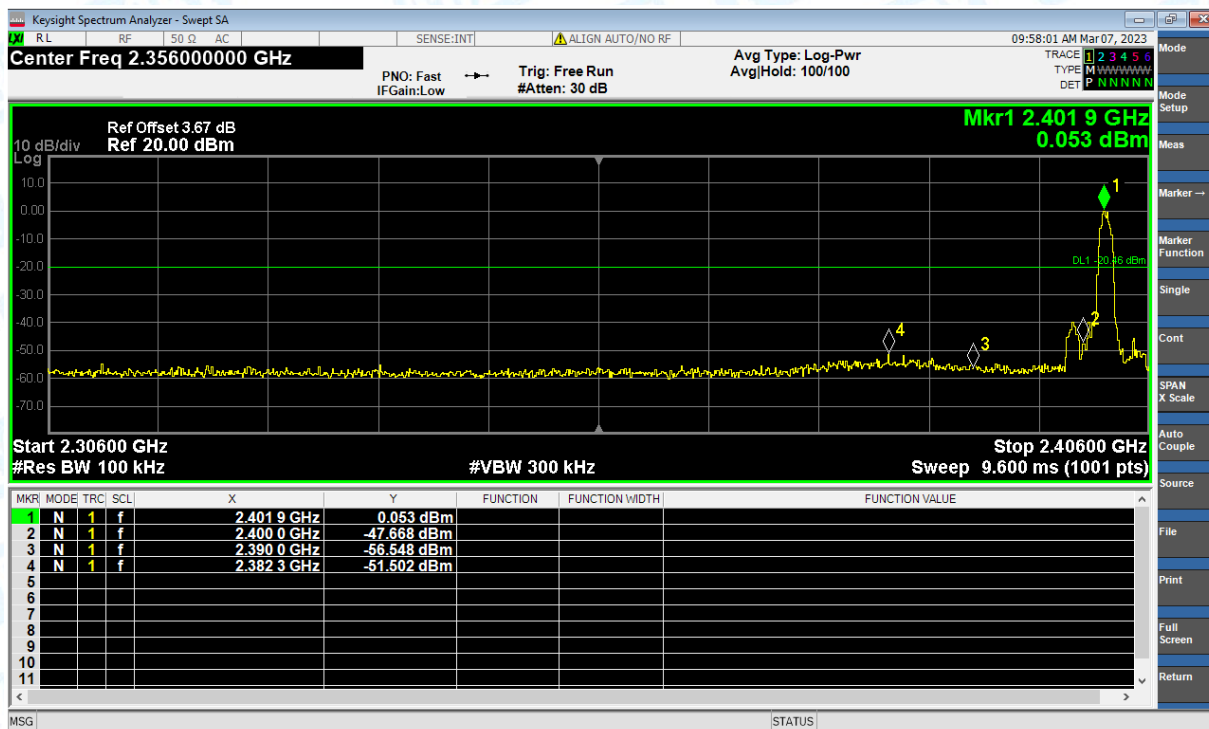
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



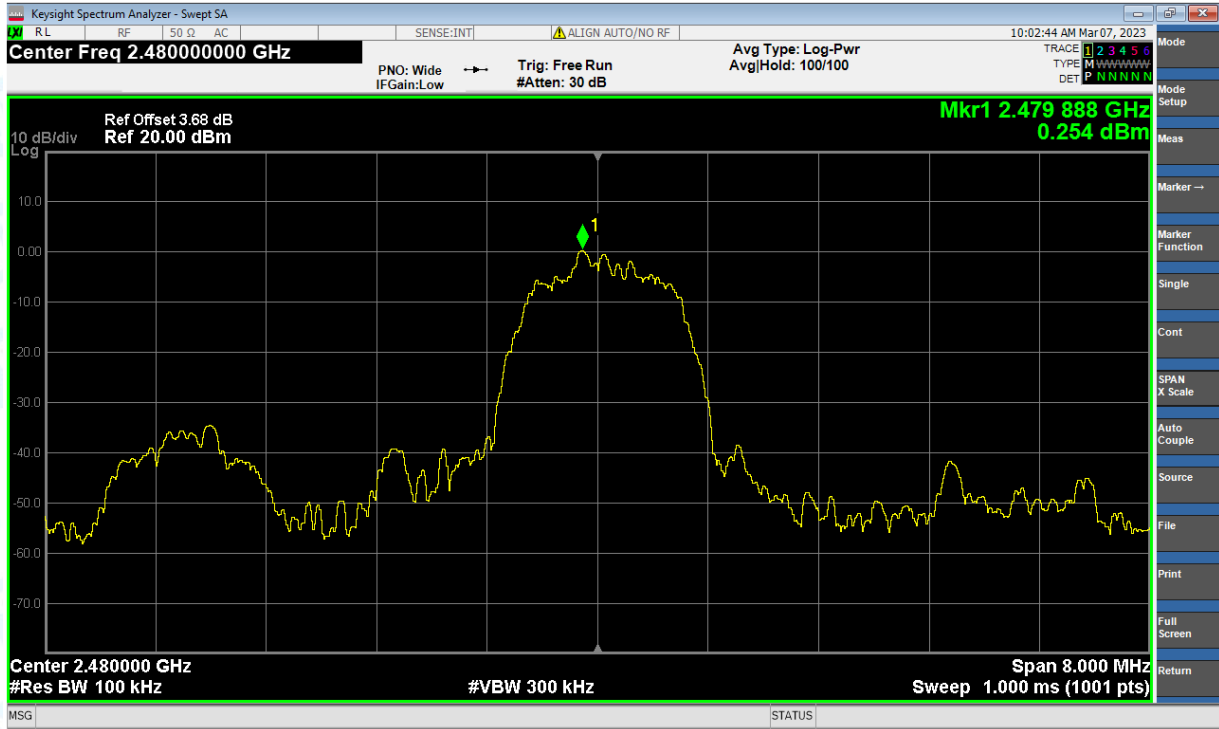
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



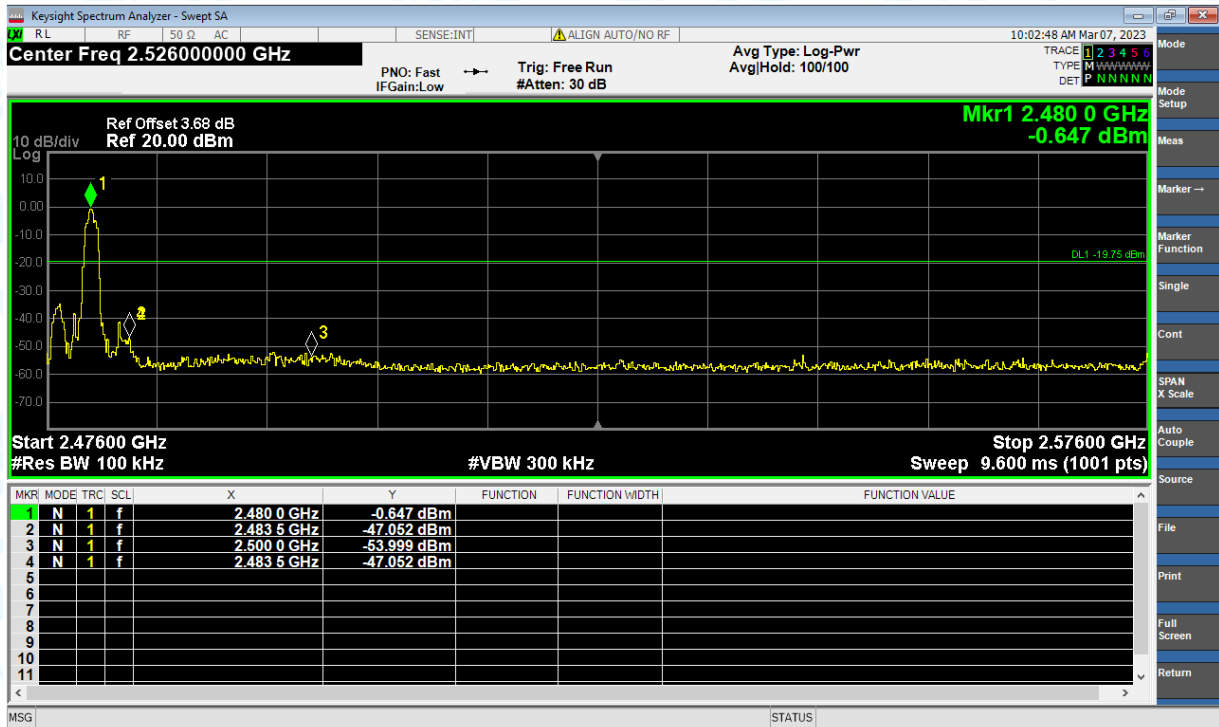
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



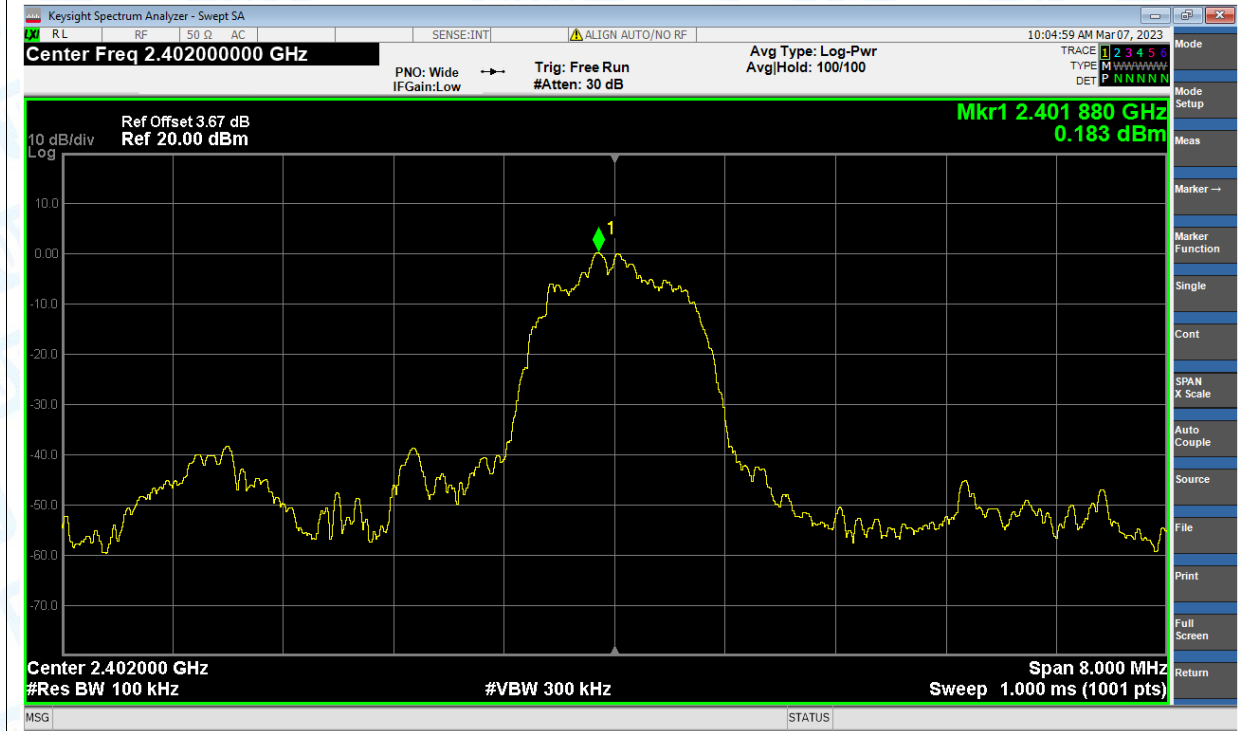
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



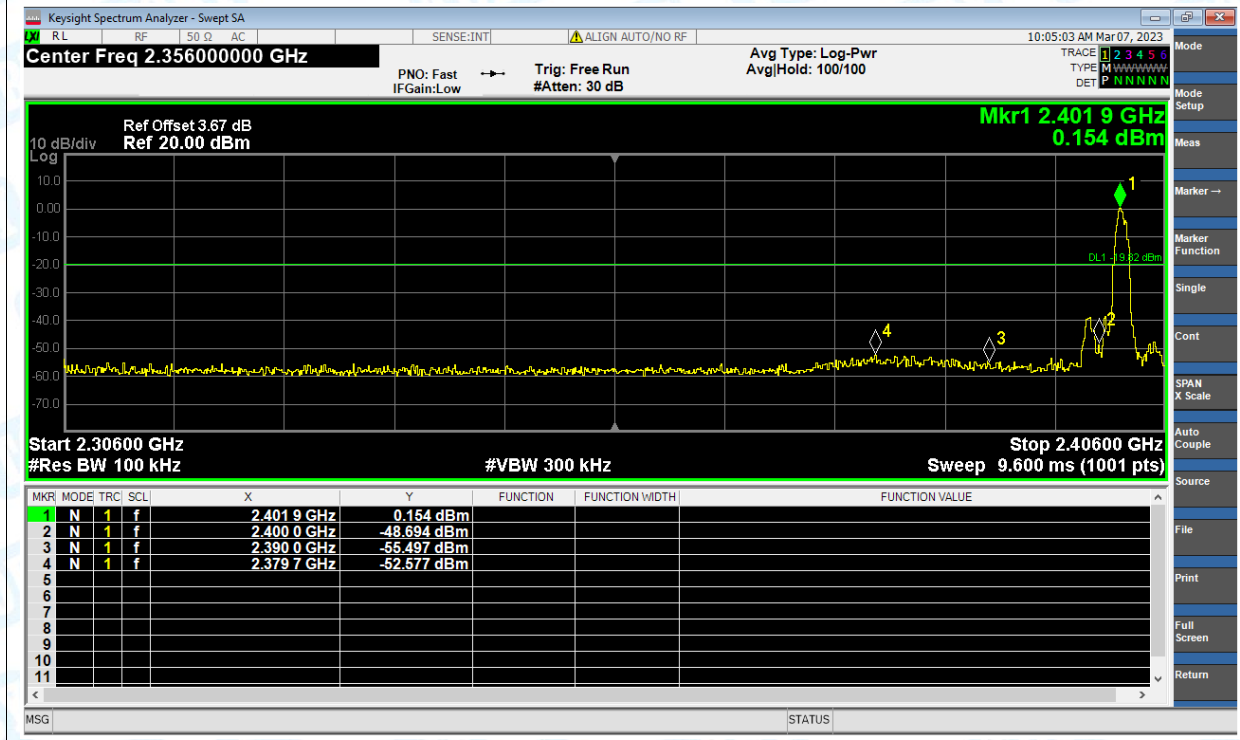
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



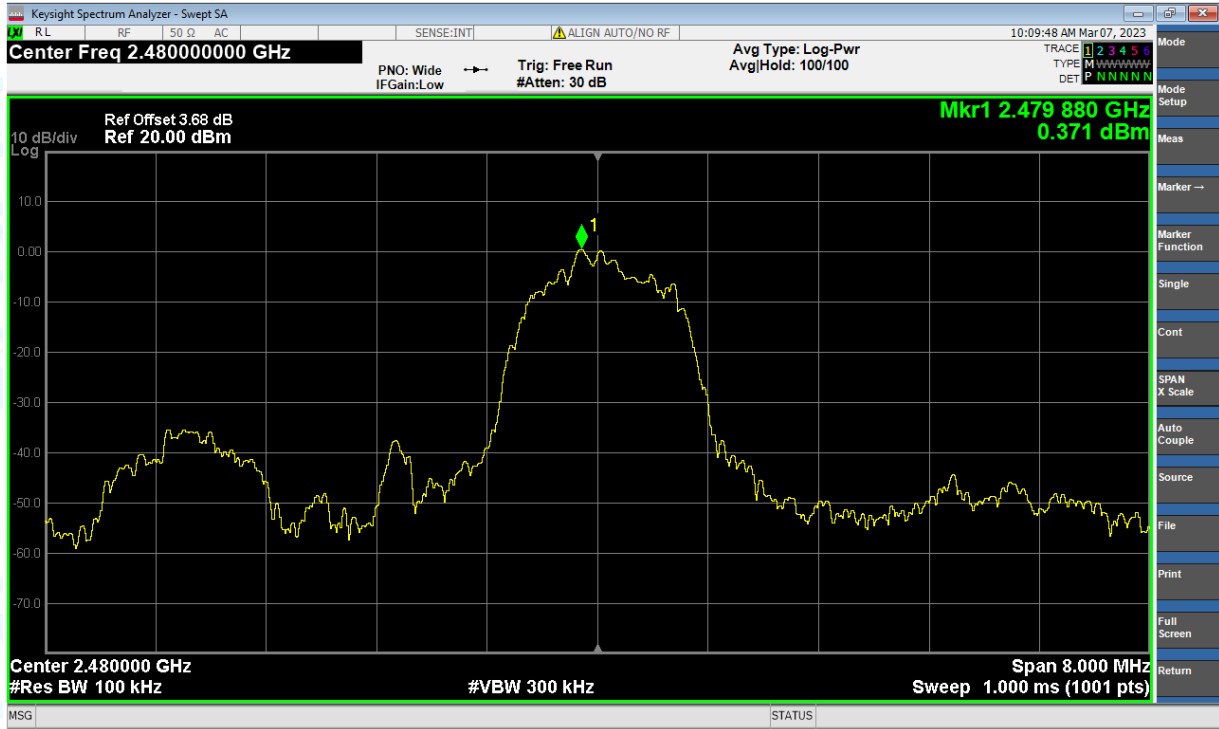
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



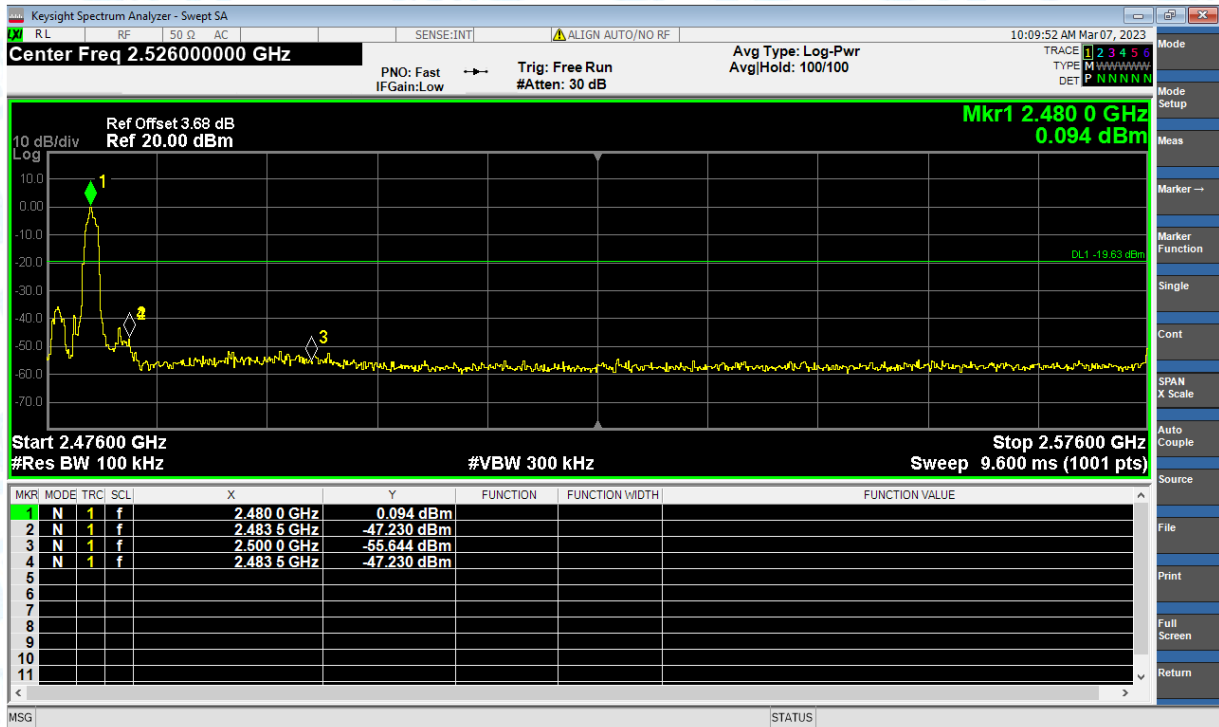
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

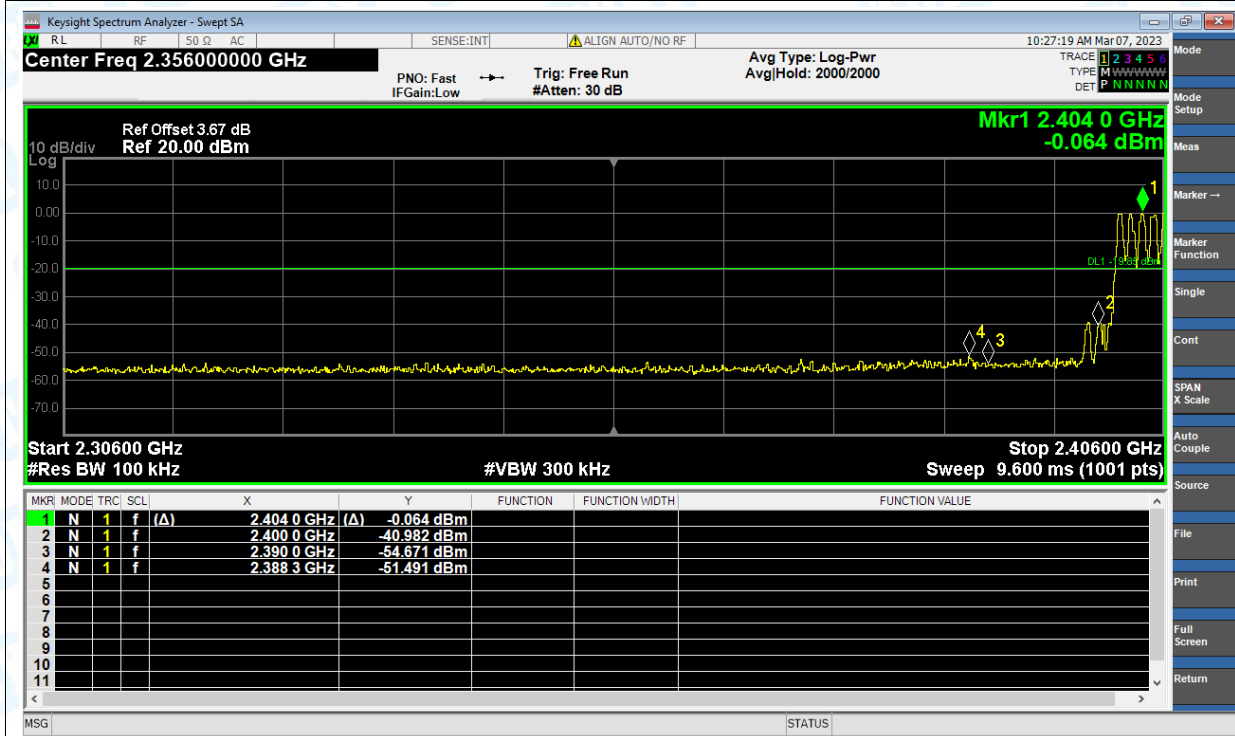
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-51.64	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-45.06	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-51.52	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-49.53	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-50.19	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-50.43	-20	Pass

Test Graphs

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



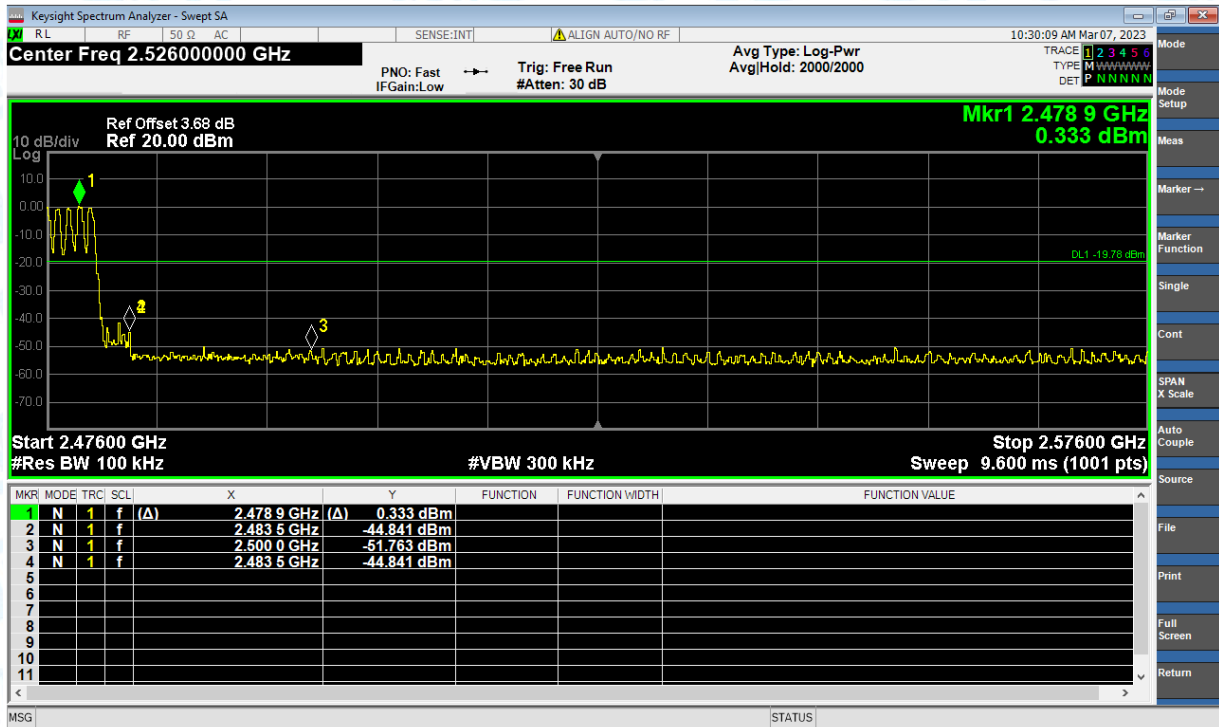
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



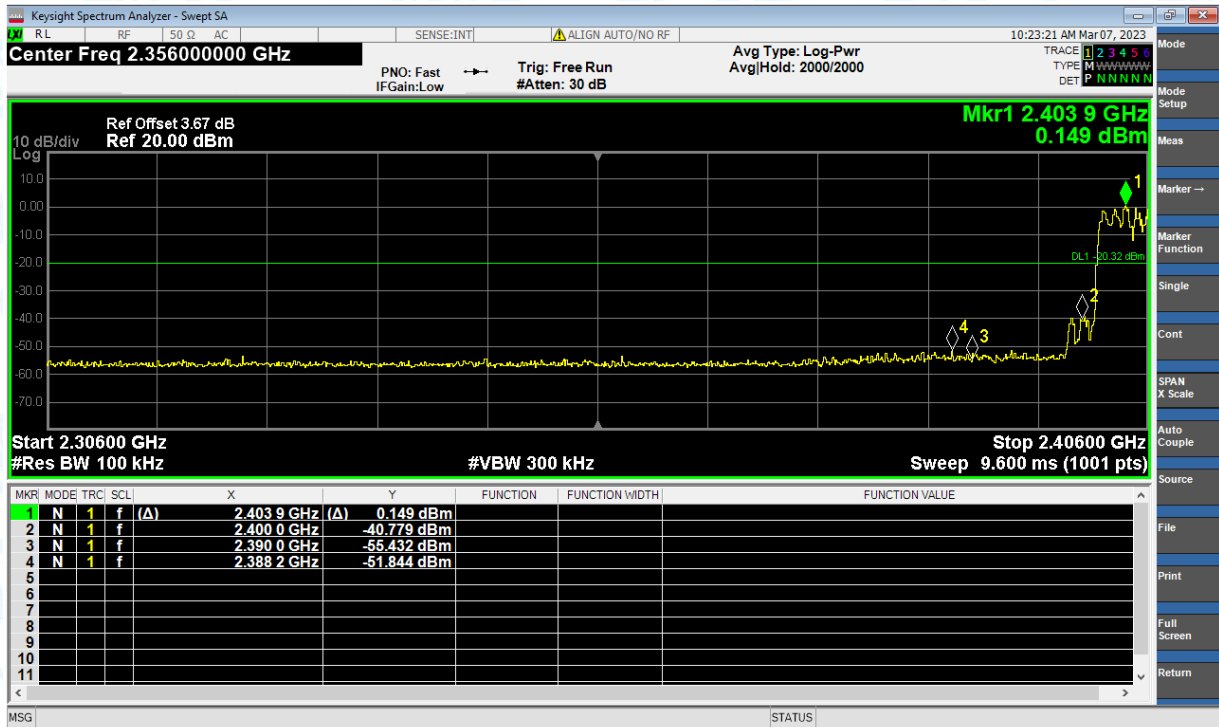
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



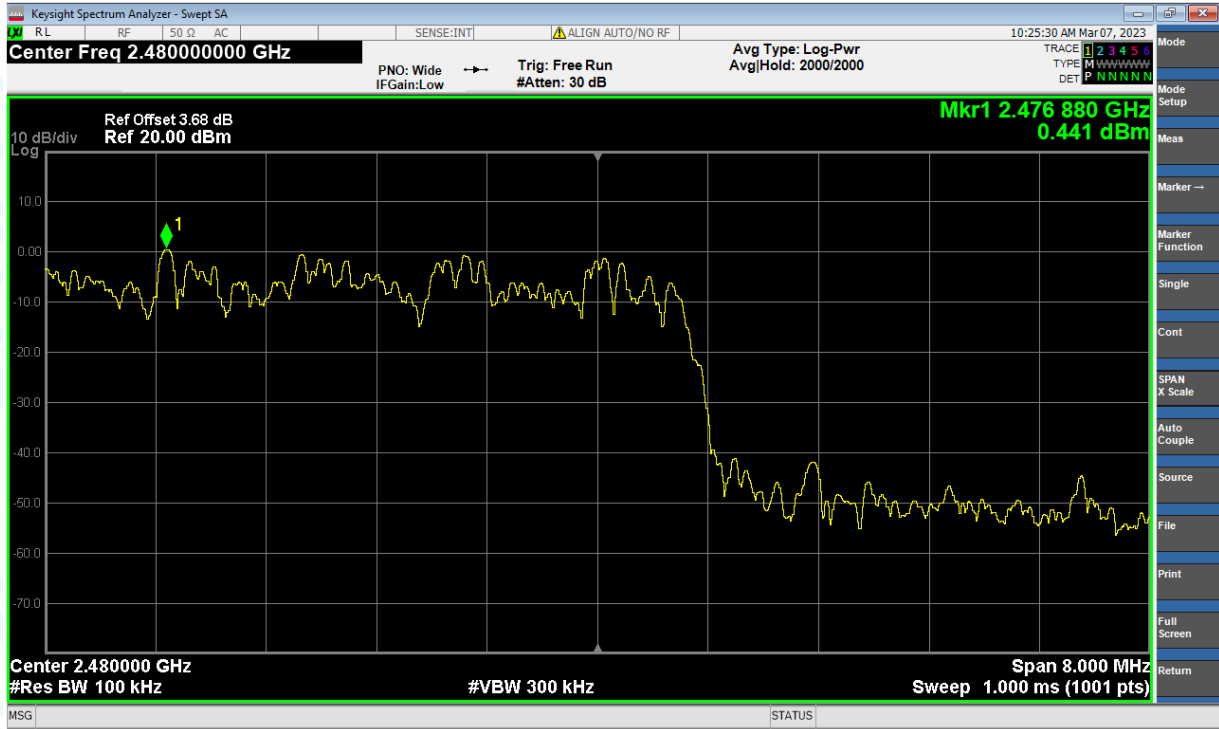
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



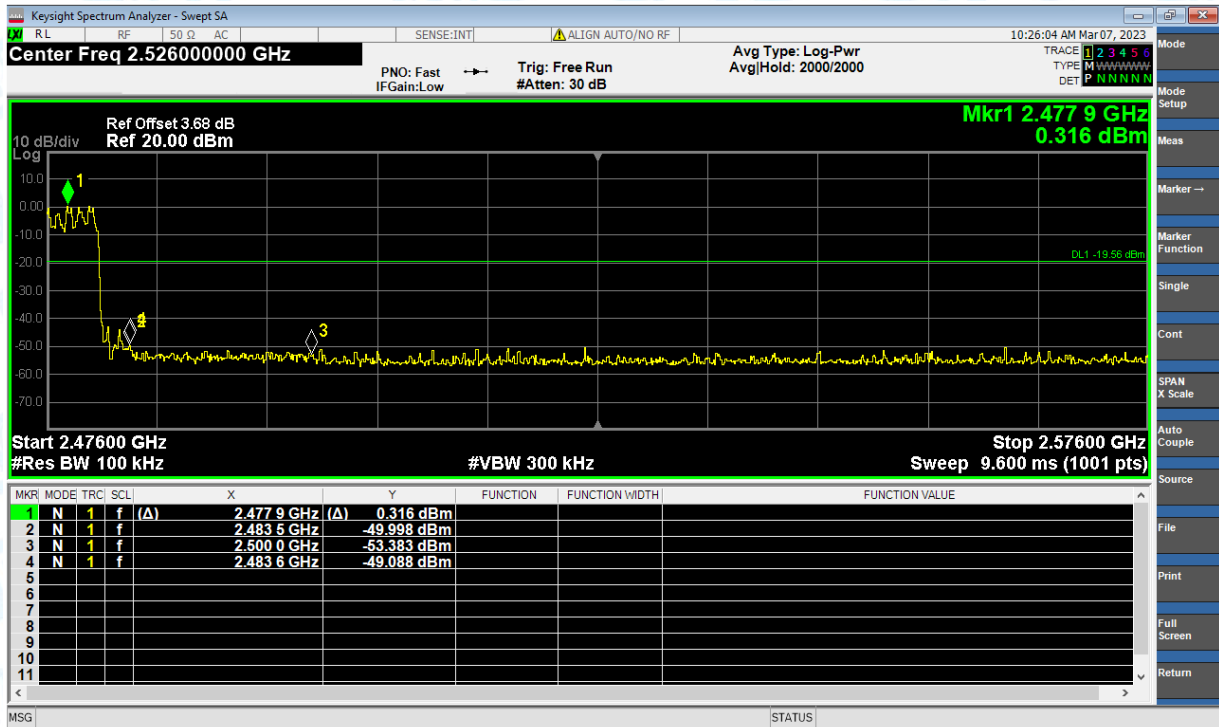
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



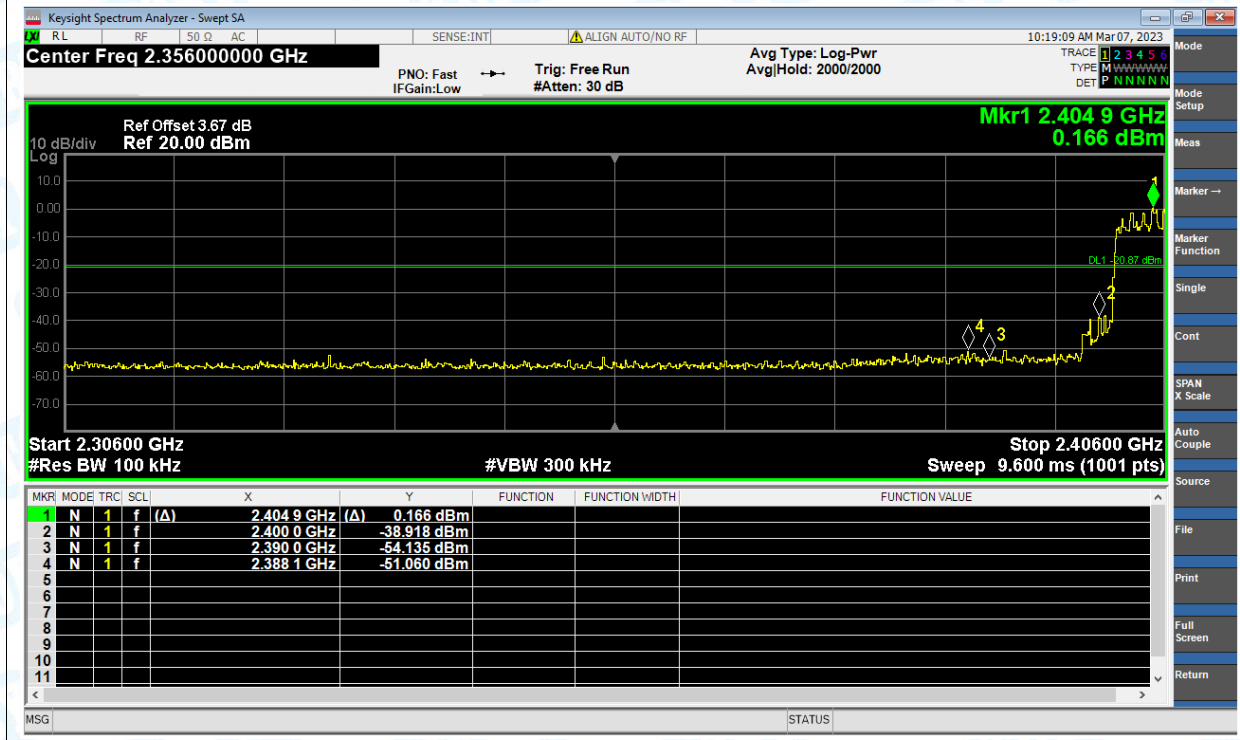
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



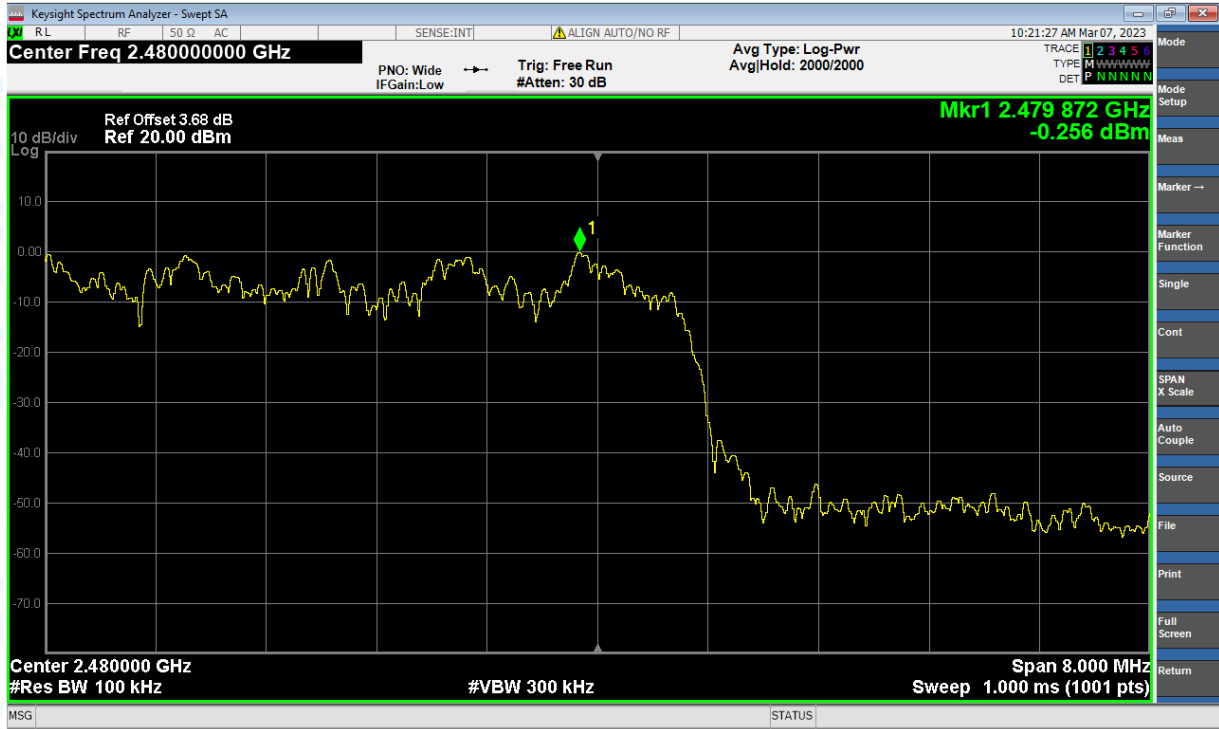
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



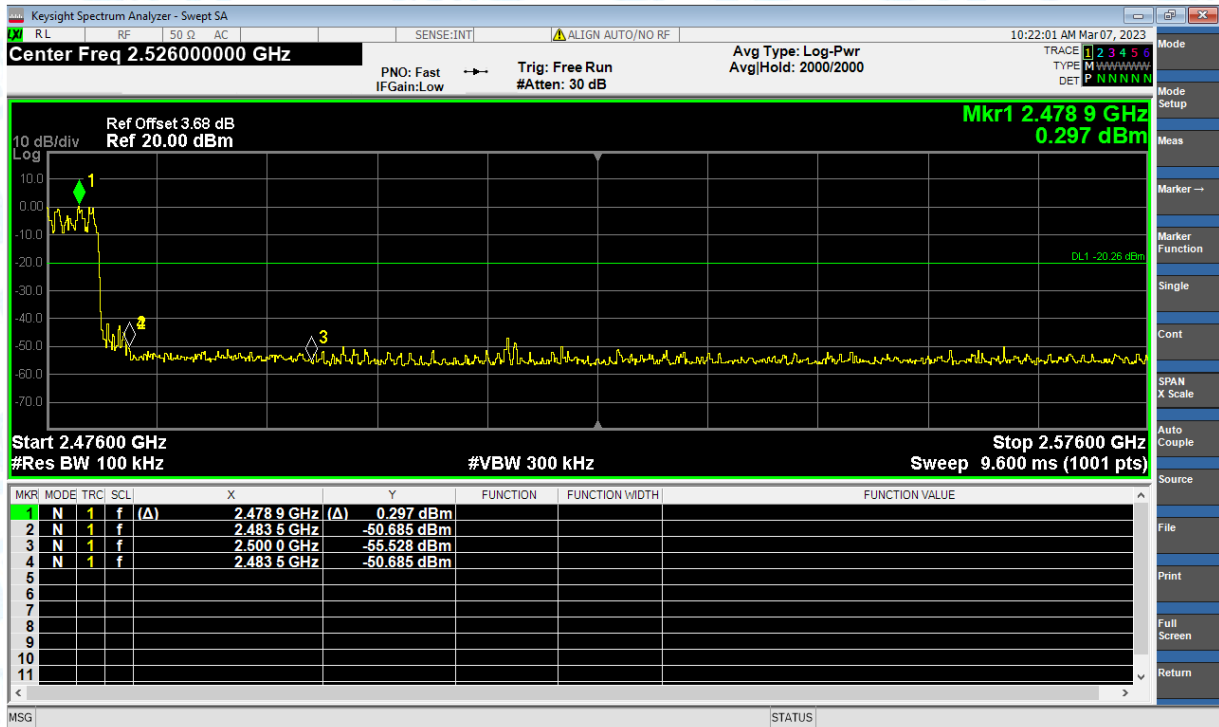
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

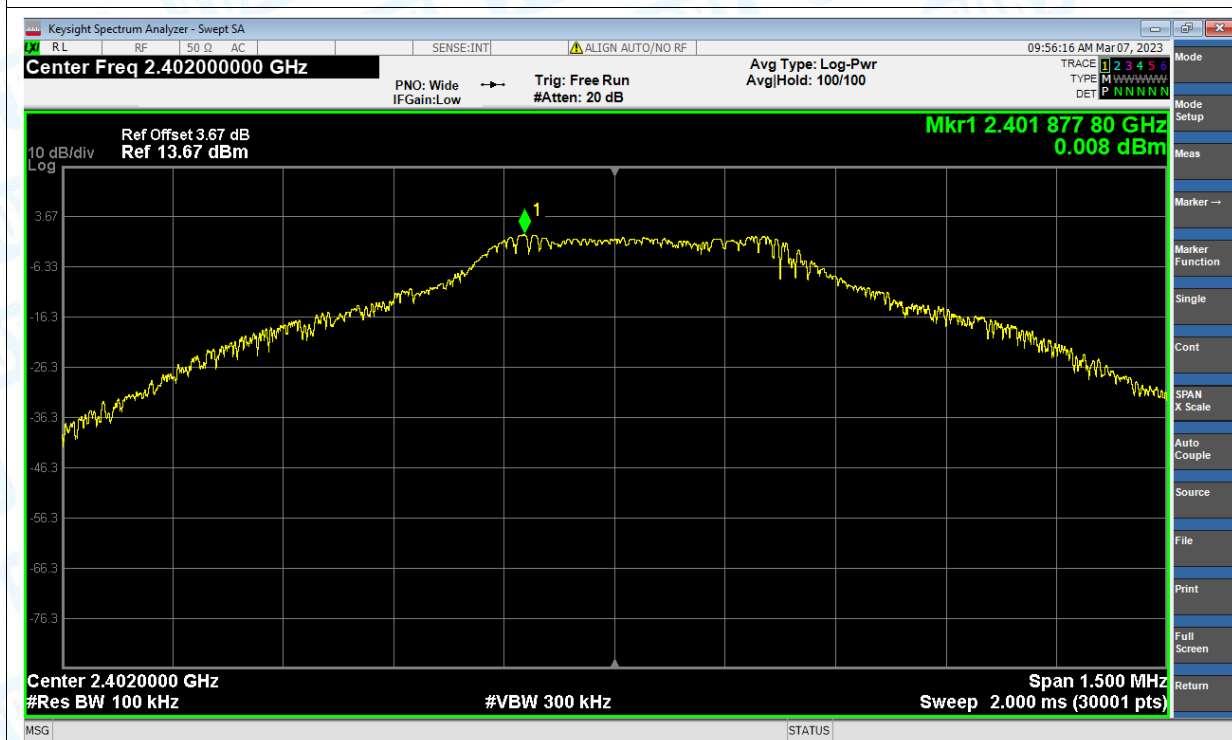


7. Conducted RF Spurious Emission

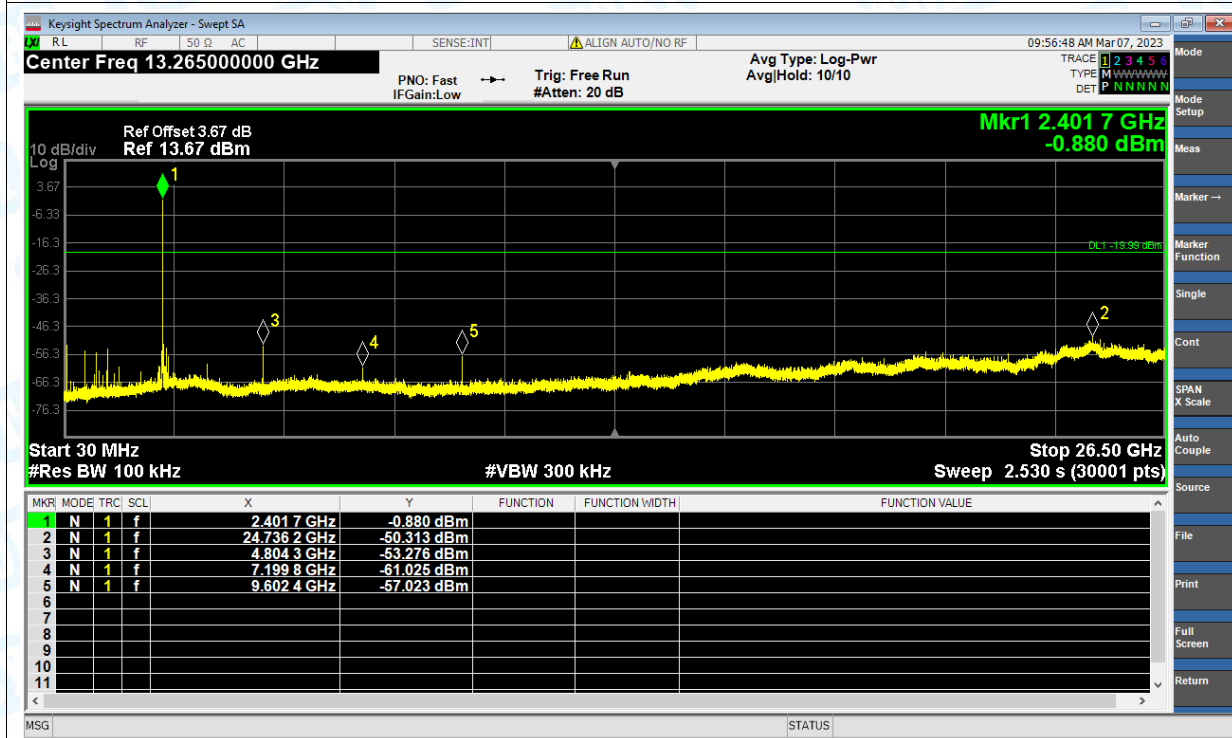
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-50.32	-20	Pass
NVNT	1-DH1	2441	Ant1	-46.01	-20	Pass
NVNT	1-DH1	2480	Ant1	-47.45	-20	Pass
NVNT	2-DH1	2402	Ant1	-50.66	-20	Pass
NVNT	2-DH1	2441	Ant1	-50.81	-20	Pass
NVNT	2-DH1	2480	Ant1	-49.15	-20	Pass
NVNT	3-DH1	2402	Ant1	-50.28	-20	Pass
NVNT	3-DH1	2441	Ant1	-50.35	-20	Pass
NVNT	3-DH1	2480	Ant1	-47.88	-20	Pass

Test Graphs

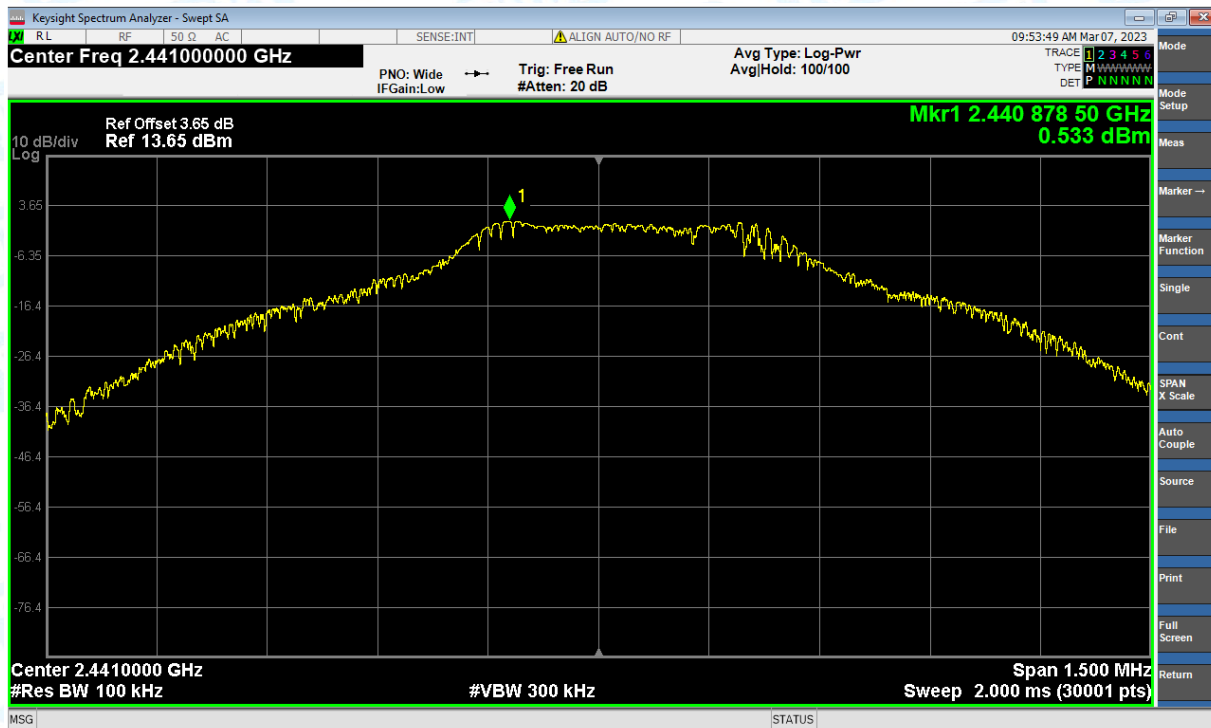
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



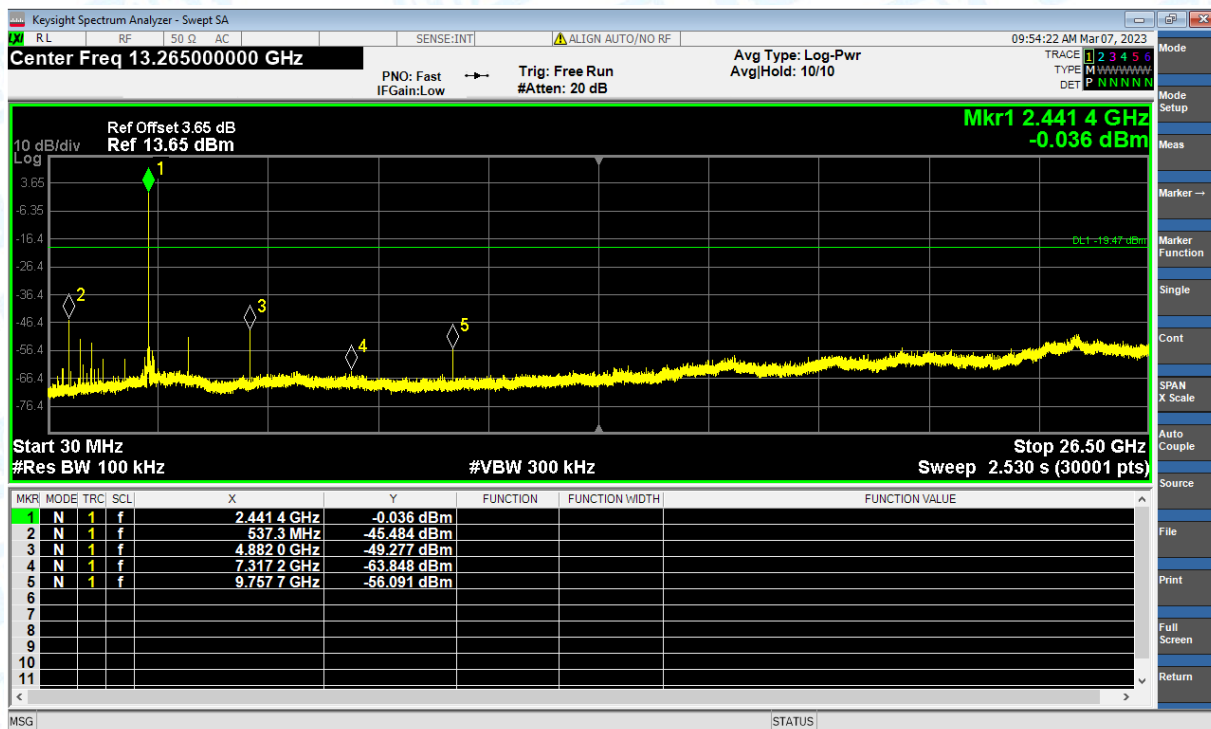
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



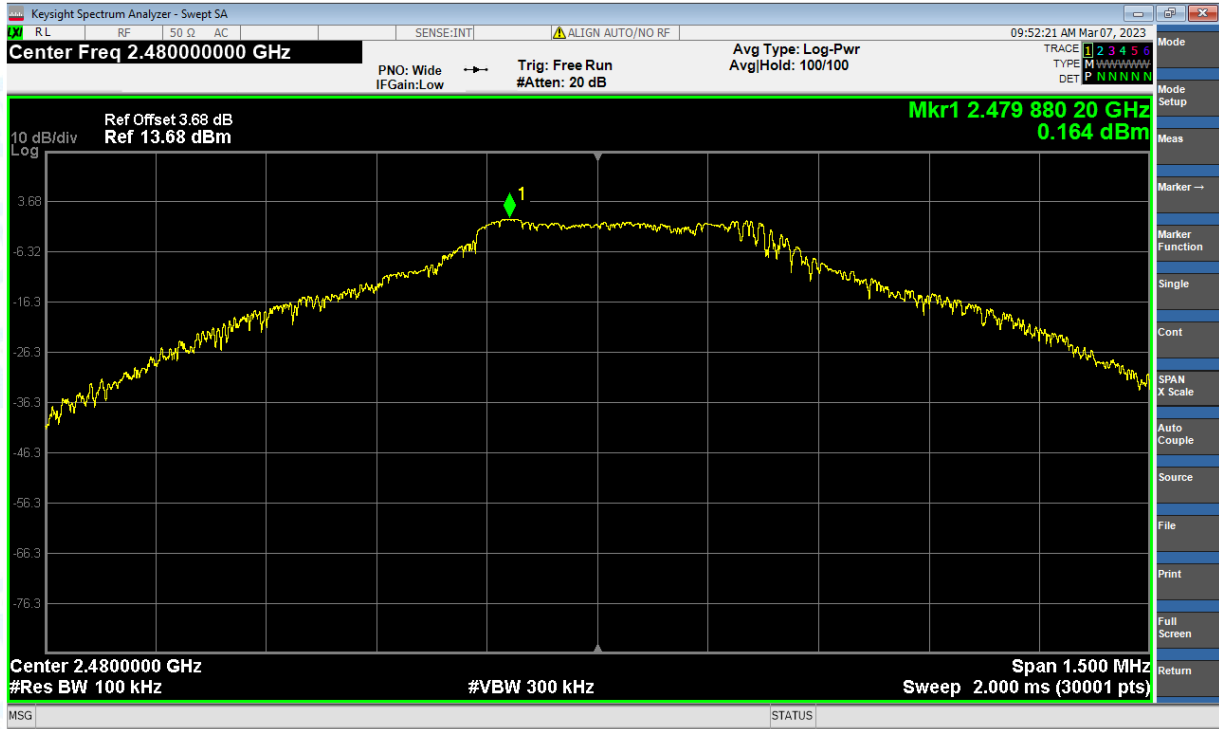
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



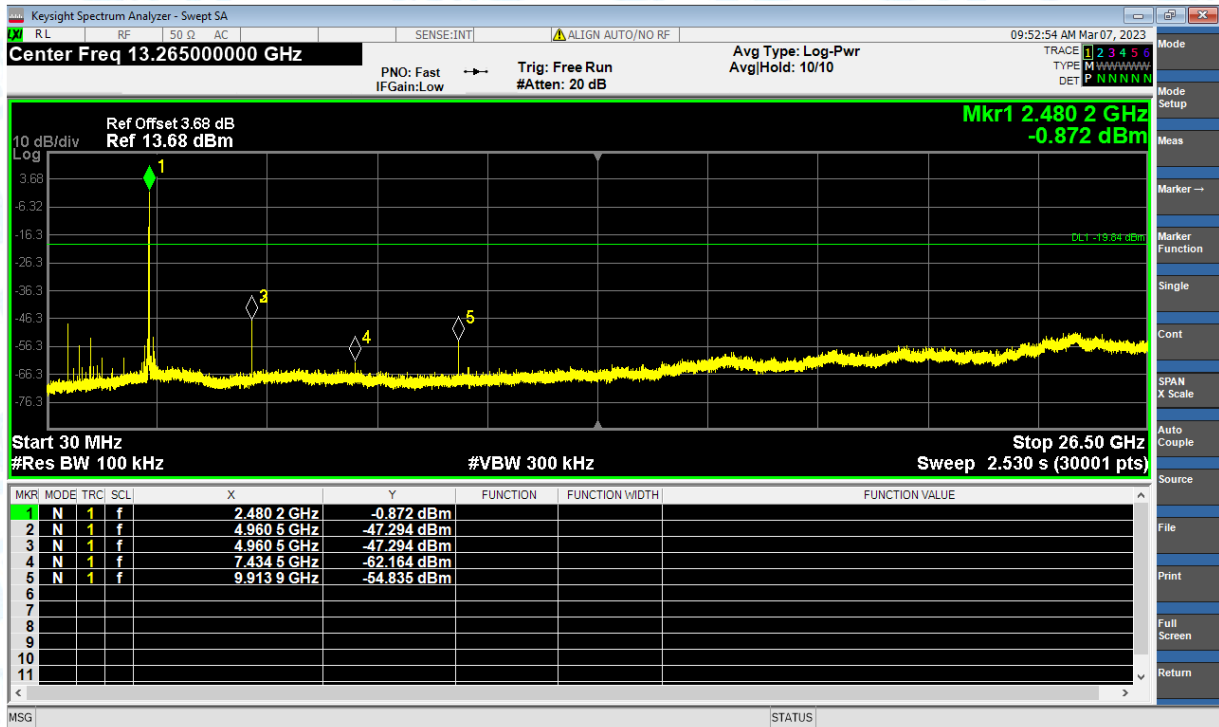
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



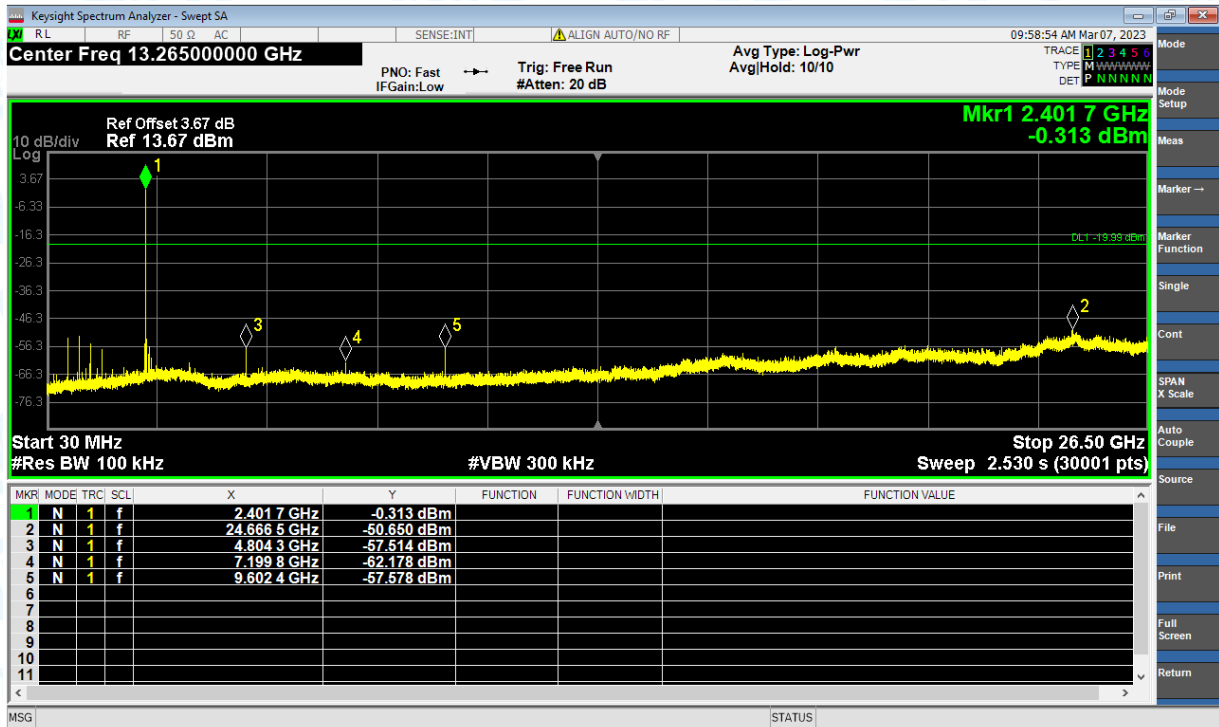
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



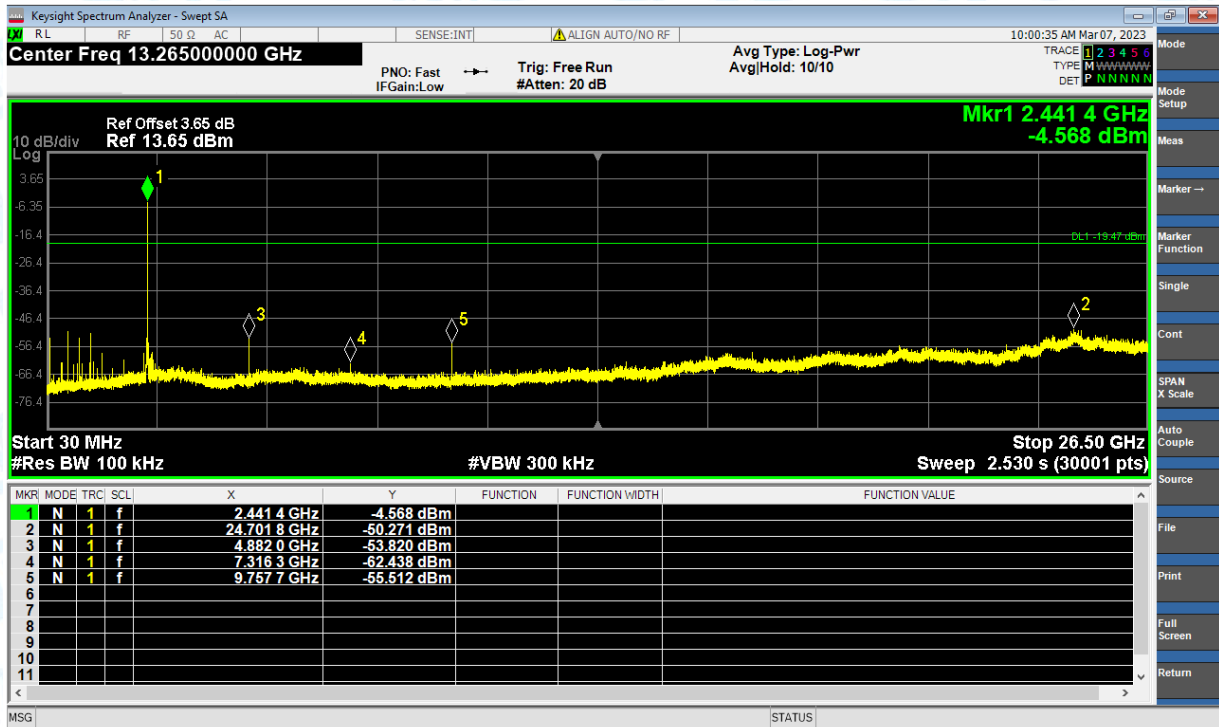
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



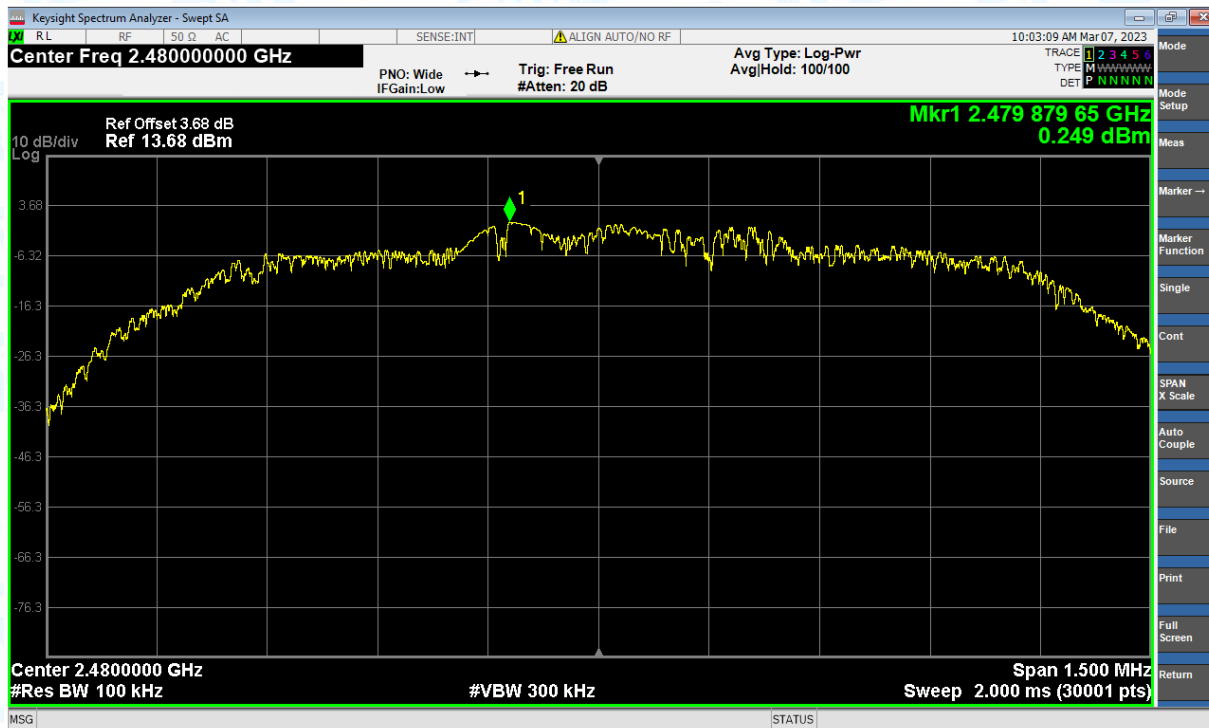
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



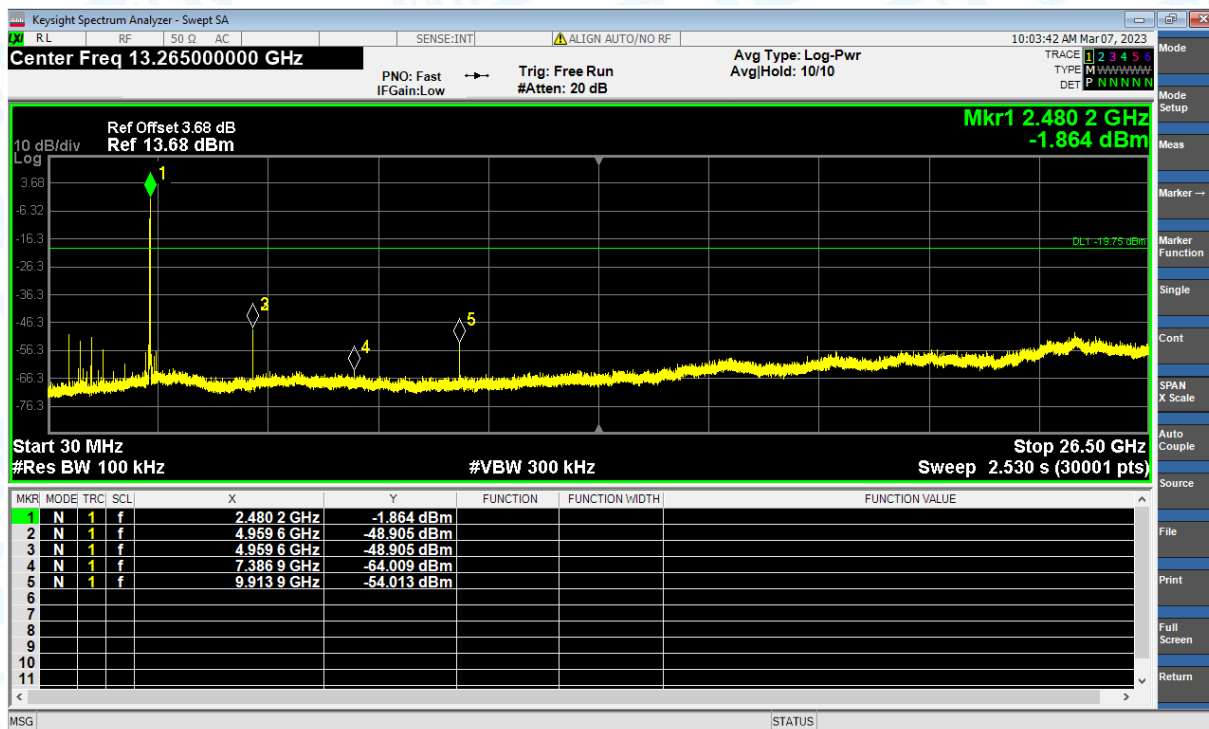
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



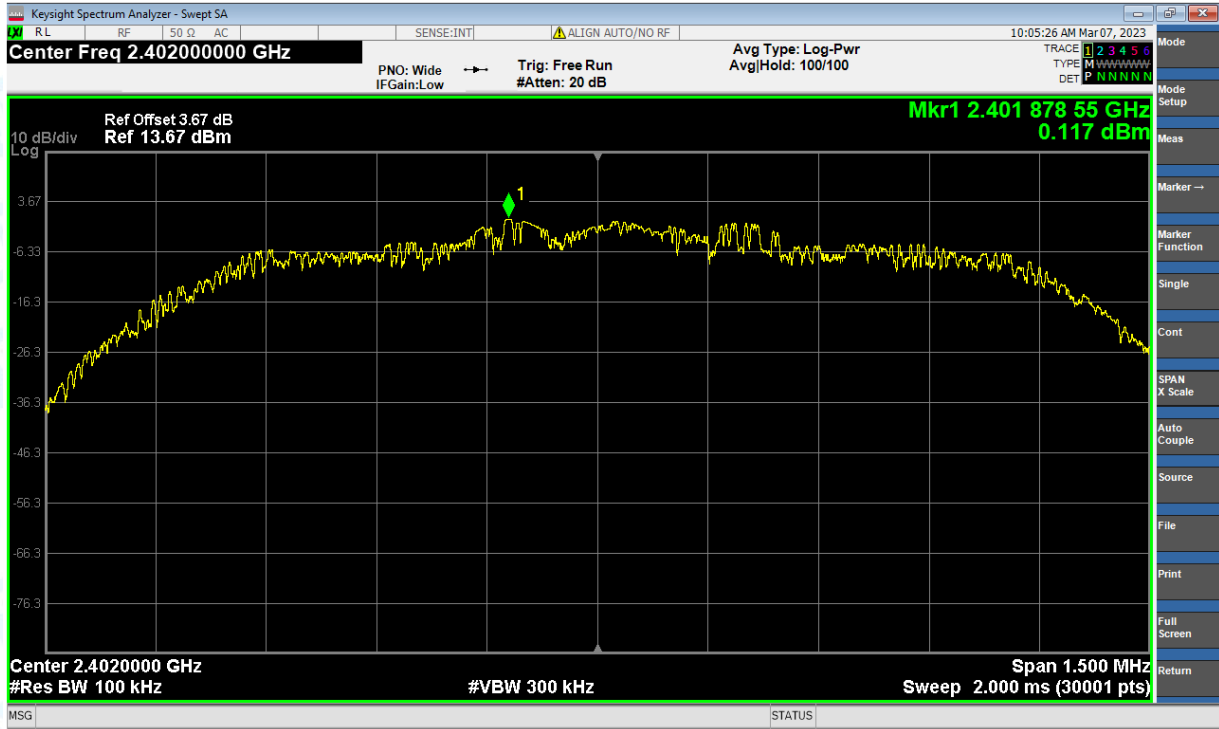
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



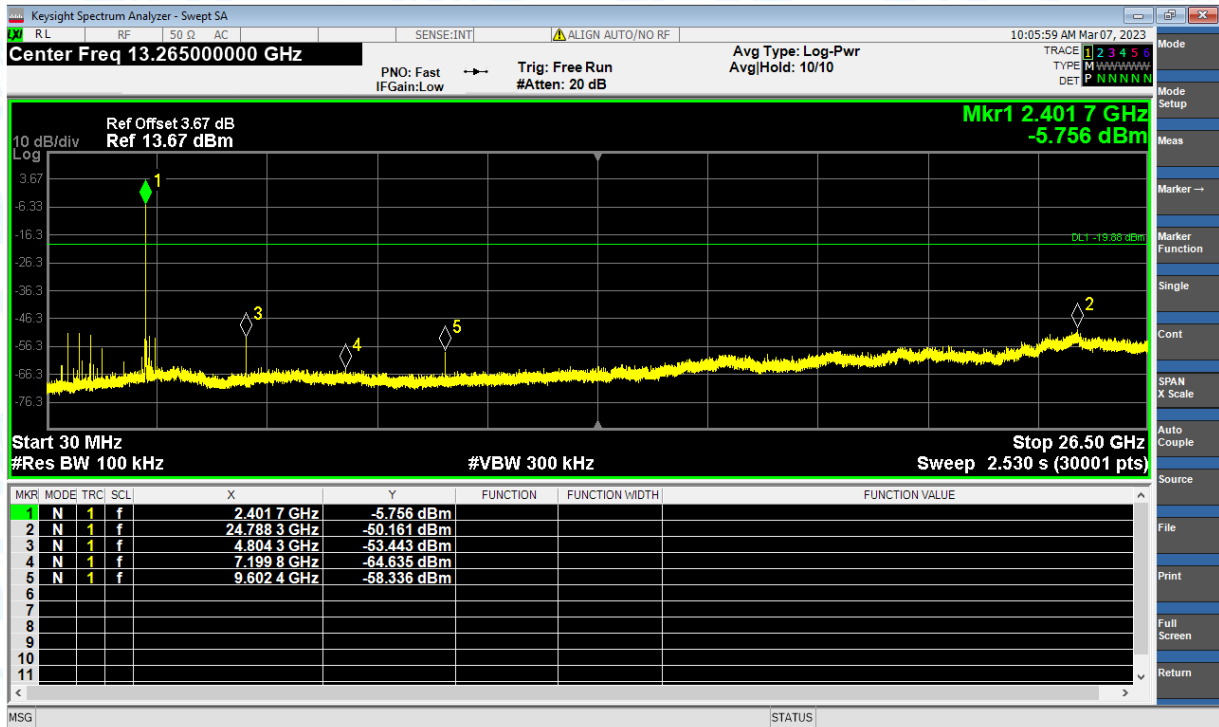
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



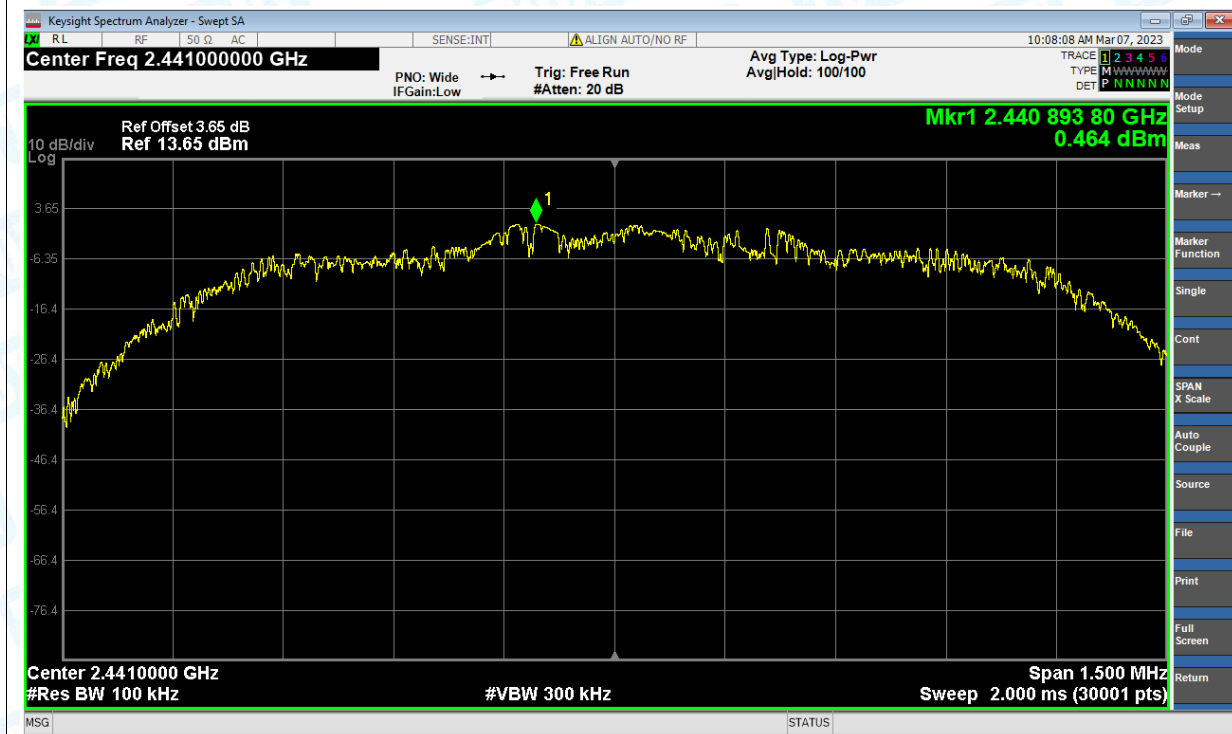
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



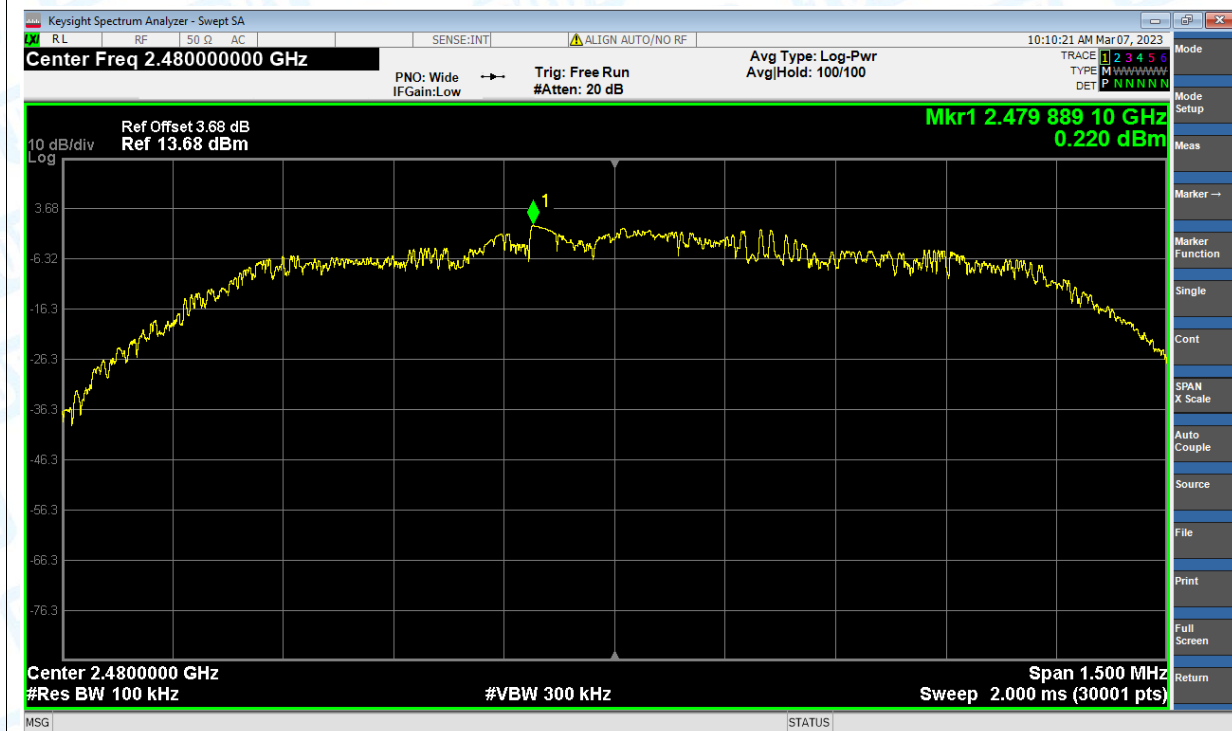
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



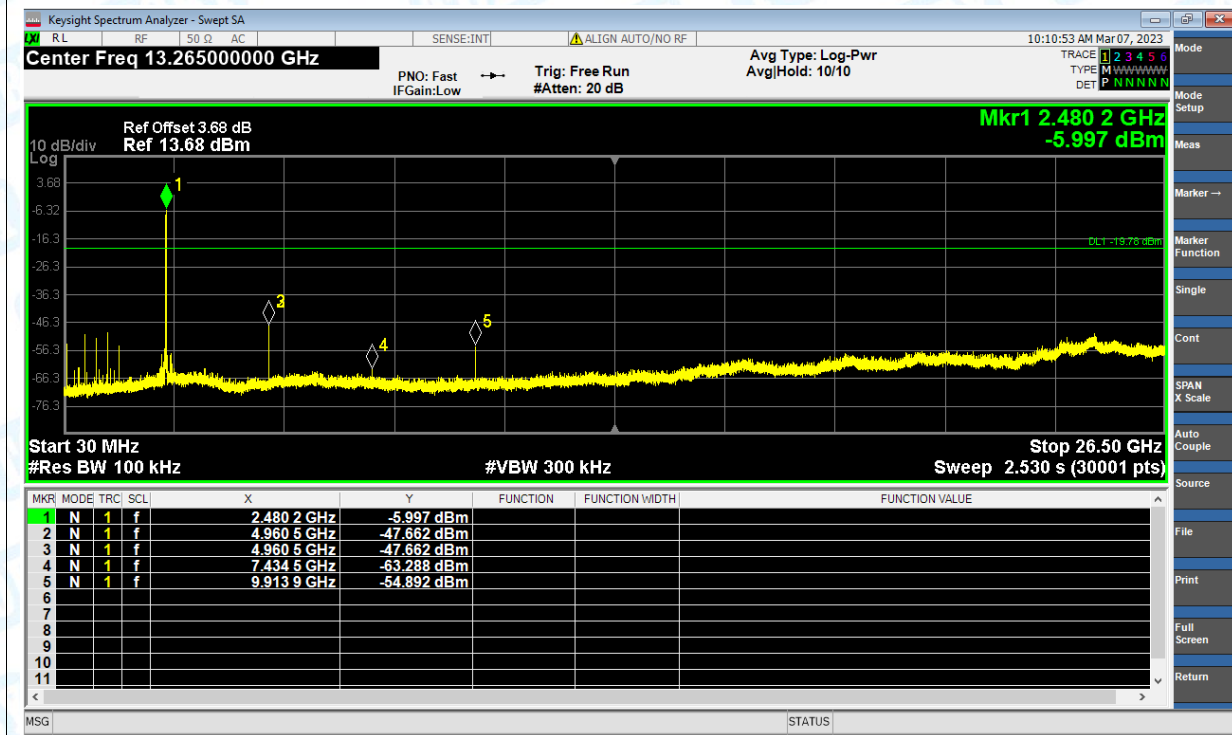
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

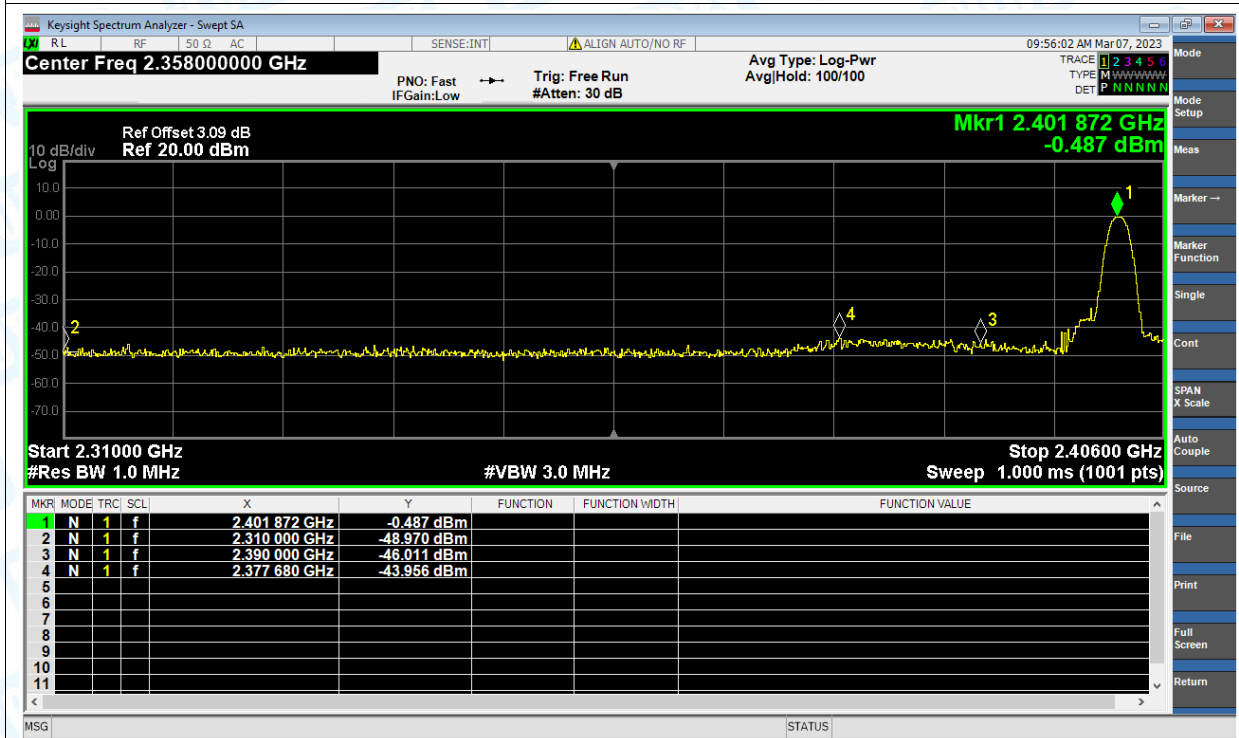


8. Restrict Band

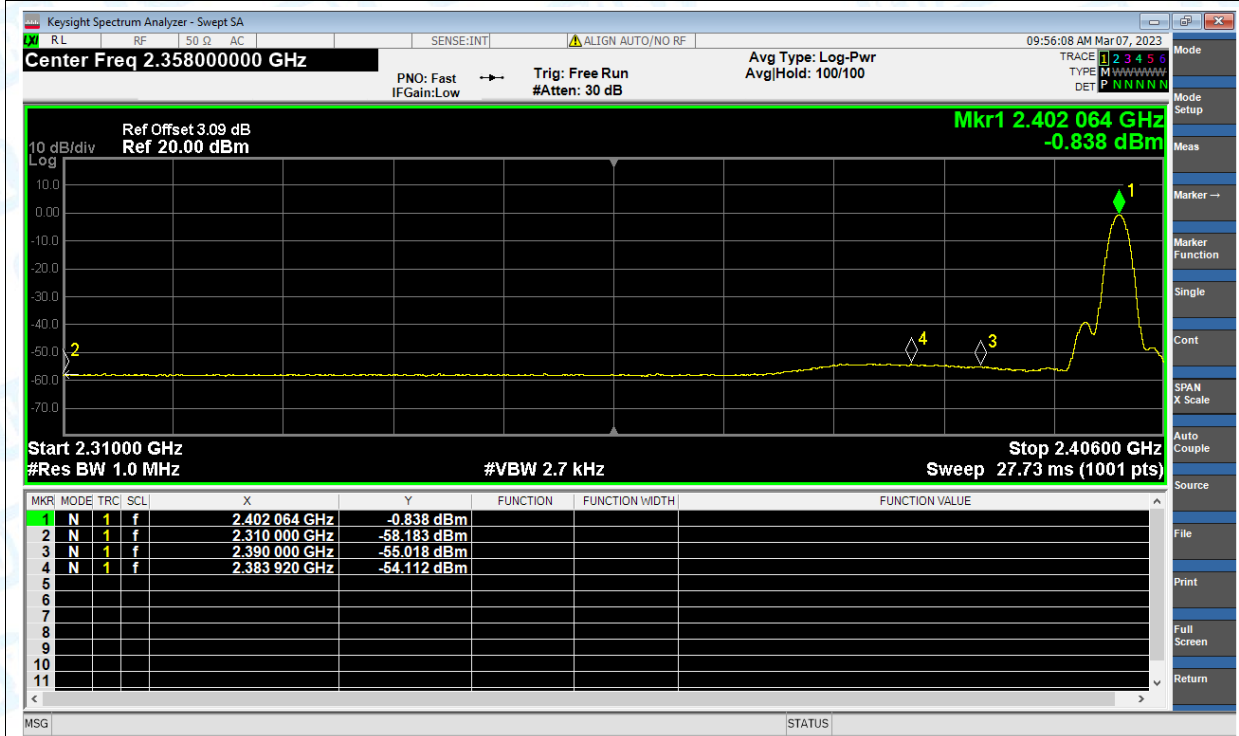
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.97	2	48.29	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-58.18	2	39.08	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2377.68	-43.96	2	53.3	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2383.92	-54.11	2	43.15	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.65	2	50.61	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.09	2	42.17	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-41.44	2	55.82	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.47	2	49.79	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.752	-41.05	2	56.21	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-47.47	2	49.79	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-44.44	2	52.82	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.15	2	43.11	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.2	2	50.06	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-58.28	2	38.98	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2380.176	-43.91	2	53.35	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2384.304	-53.82	2	43.44	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-45.64	2	51.62	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.32	2	41.94	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-41.52	2	55.74	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-49.55	2	47.71	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.56	-40.62	2	56.64	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.512	-49.55	2	47.71	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-44.99	2	52.27	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.06	2	43.2	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.76	2	48.5	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-58.18	2	39.08	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2378.16	-43.72	2	53.54	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2384.4	-53.74	2	43.52	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.48	2	48.78	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.33	2	41.93	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-41.72	2	55.54	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-49.63	2	47.63	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.536	-40.43	2	56.83	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.512	-49.63	2	47.63	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.07	2	51.19	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-54.19	2	43.07	Average	54	Pass

Test Graphs

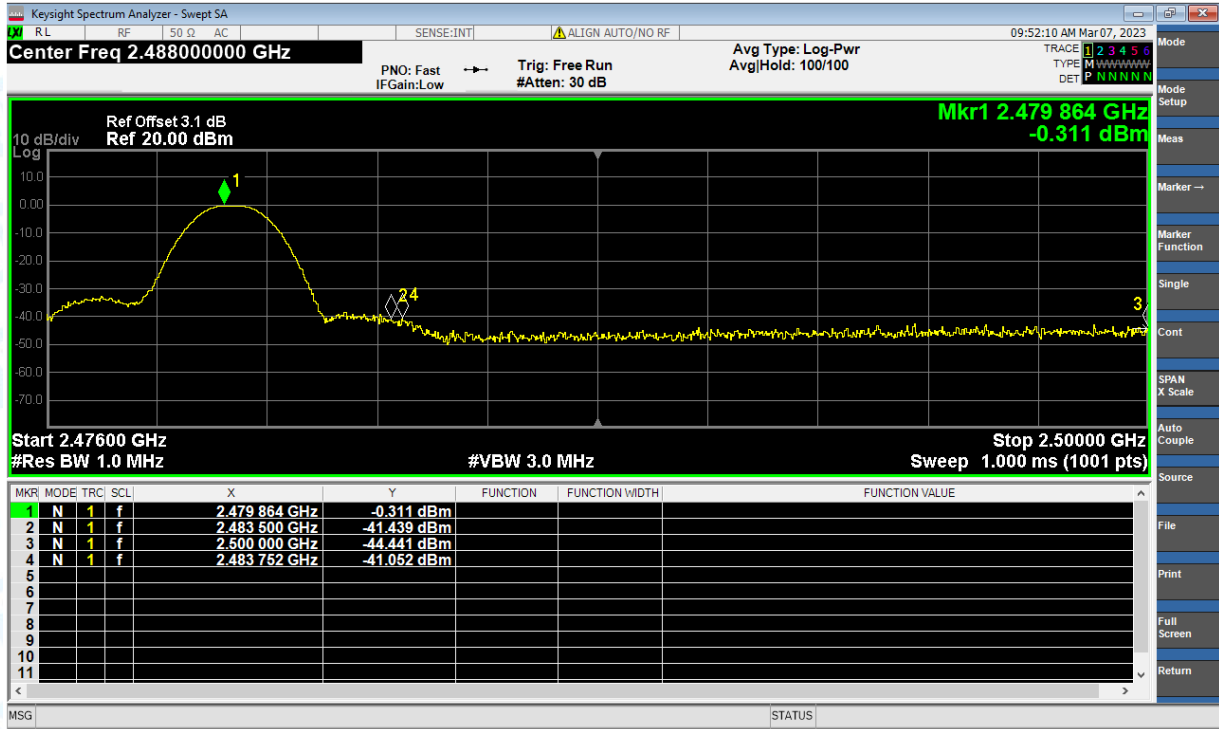
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



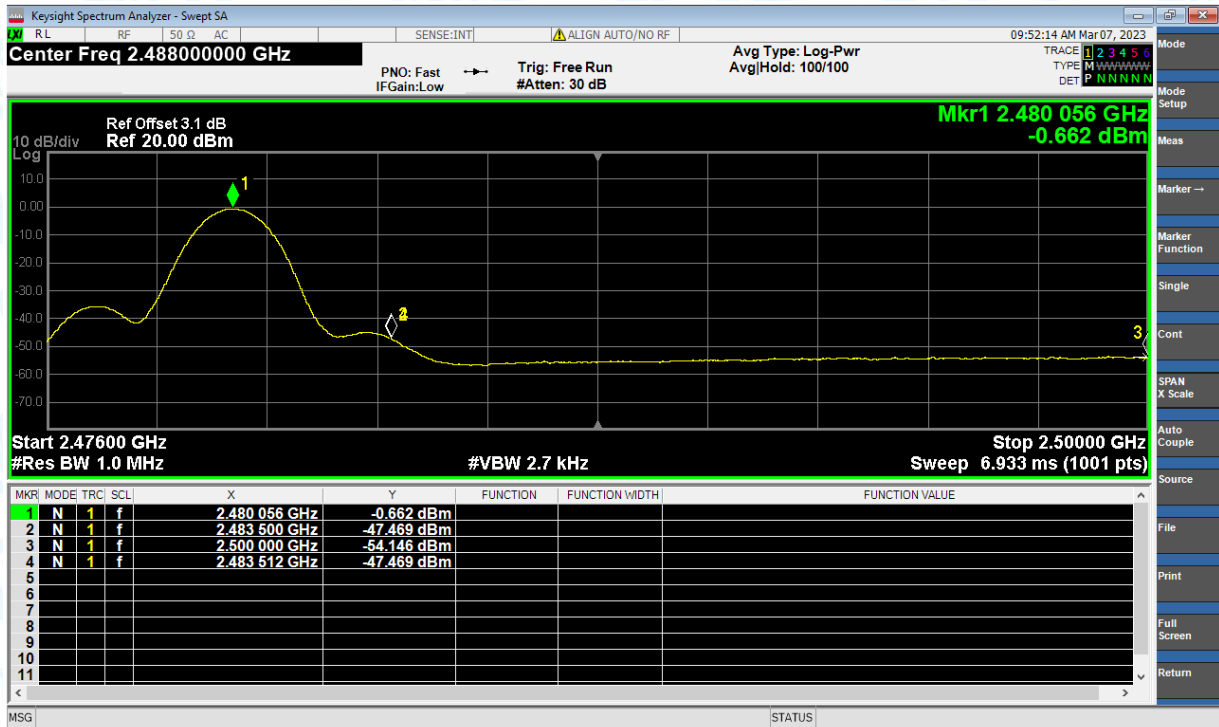
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



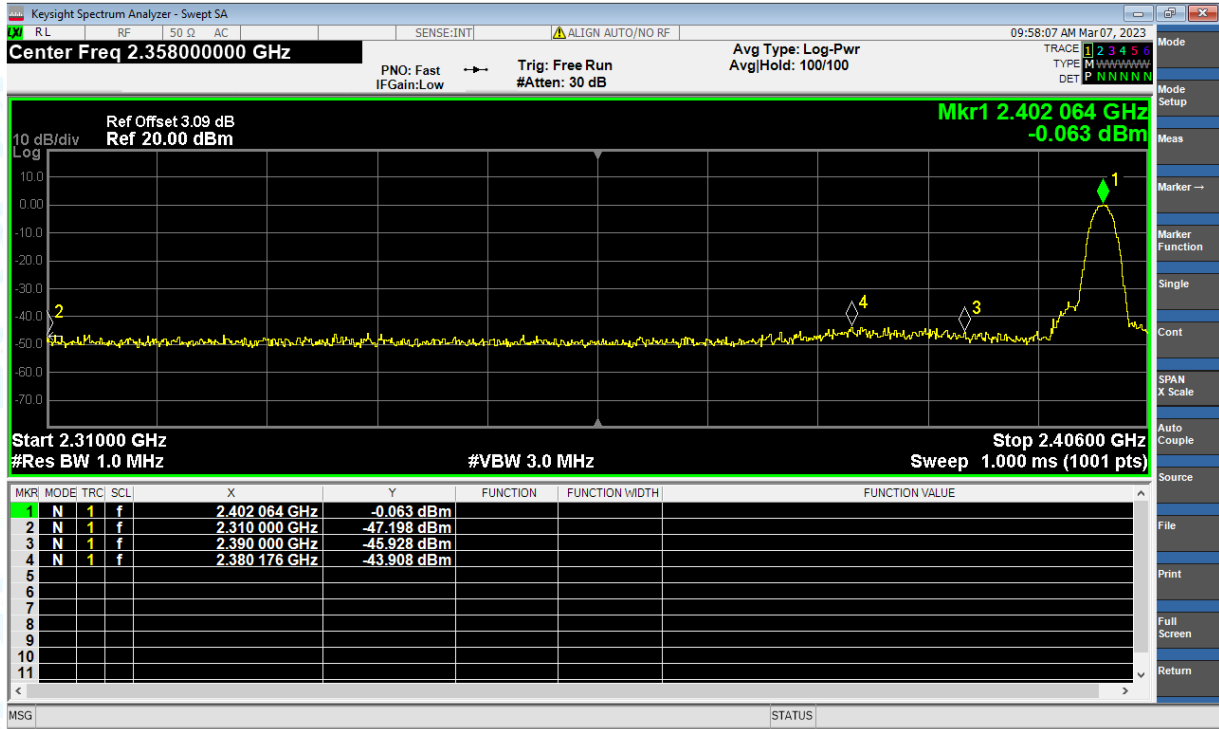
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



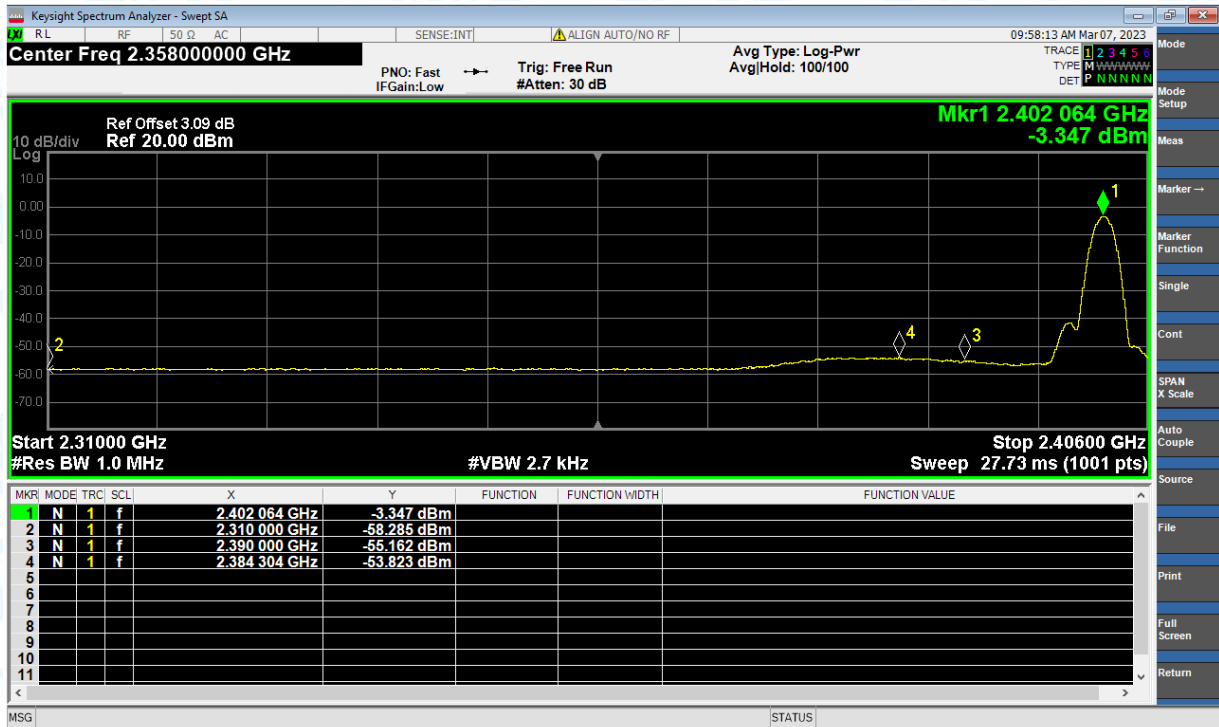
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



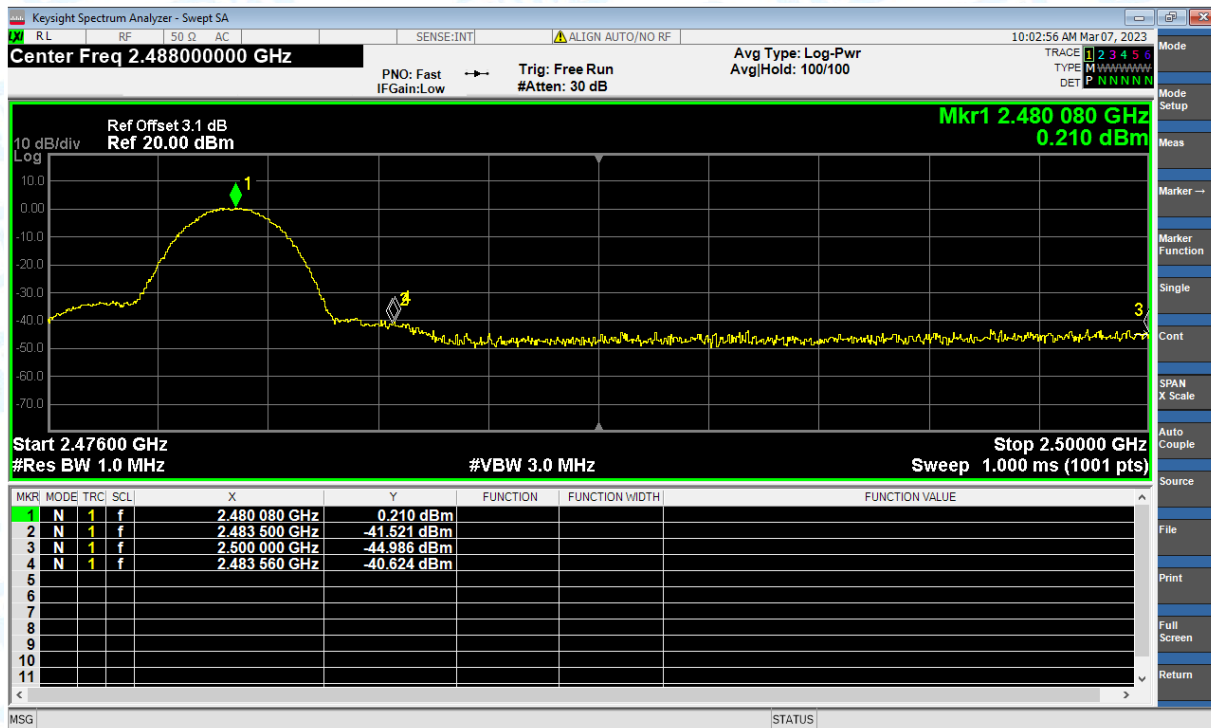
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



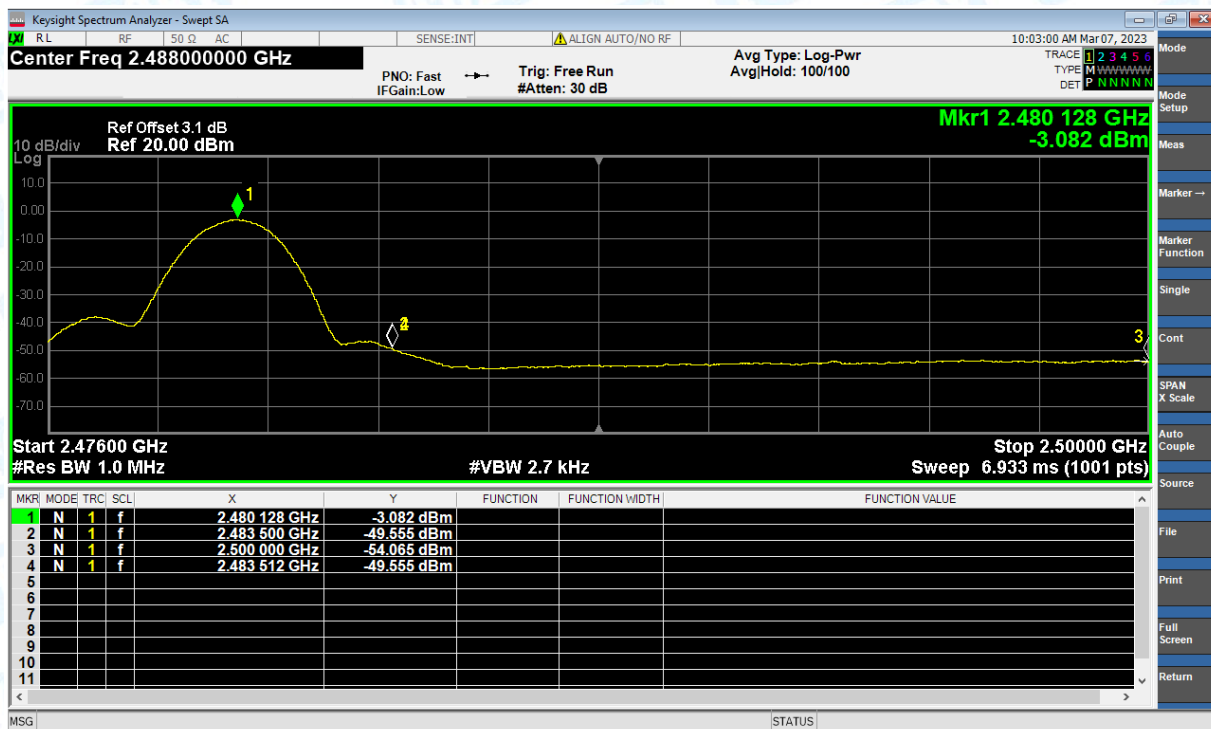
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



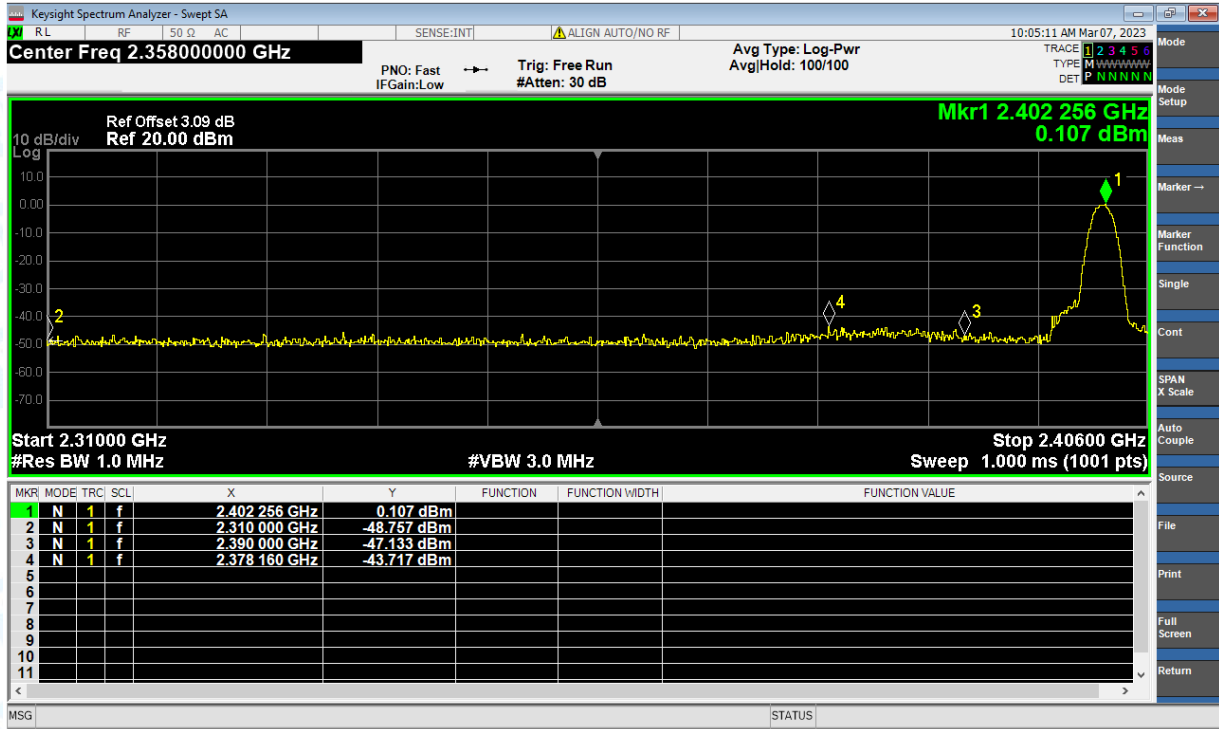
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



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



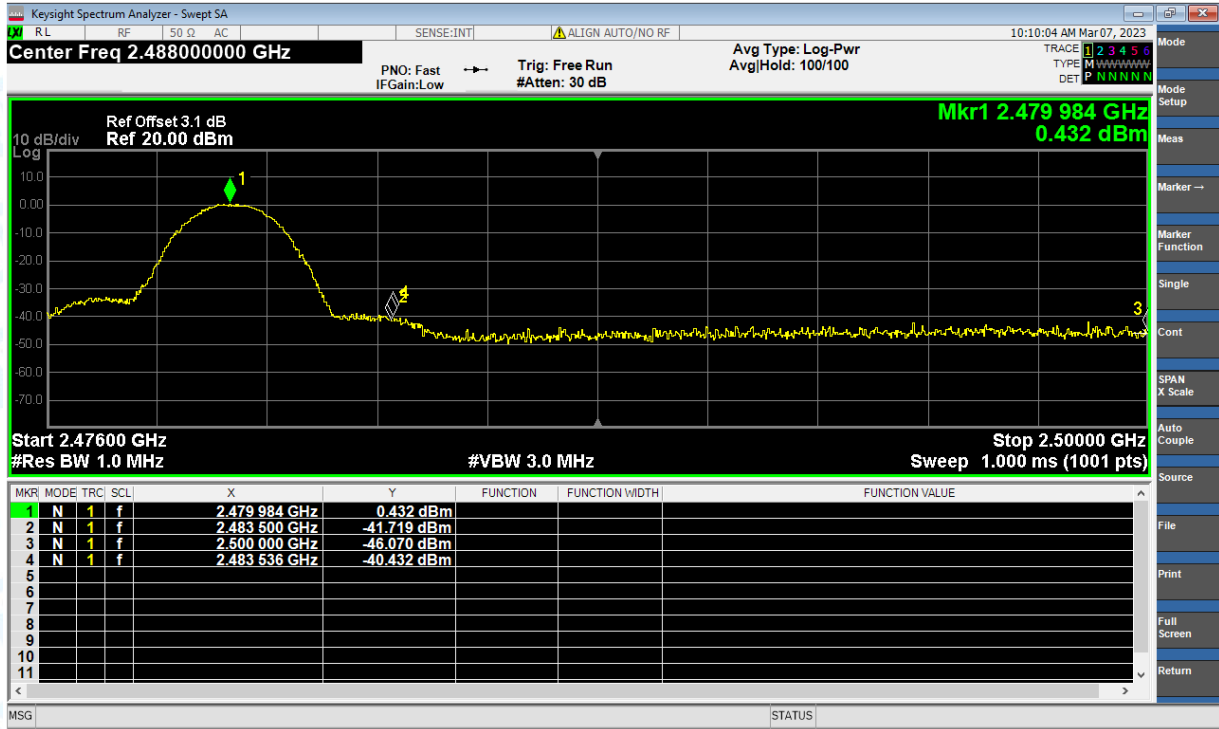
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



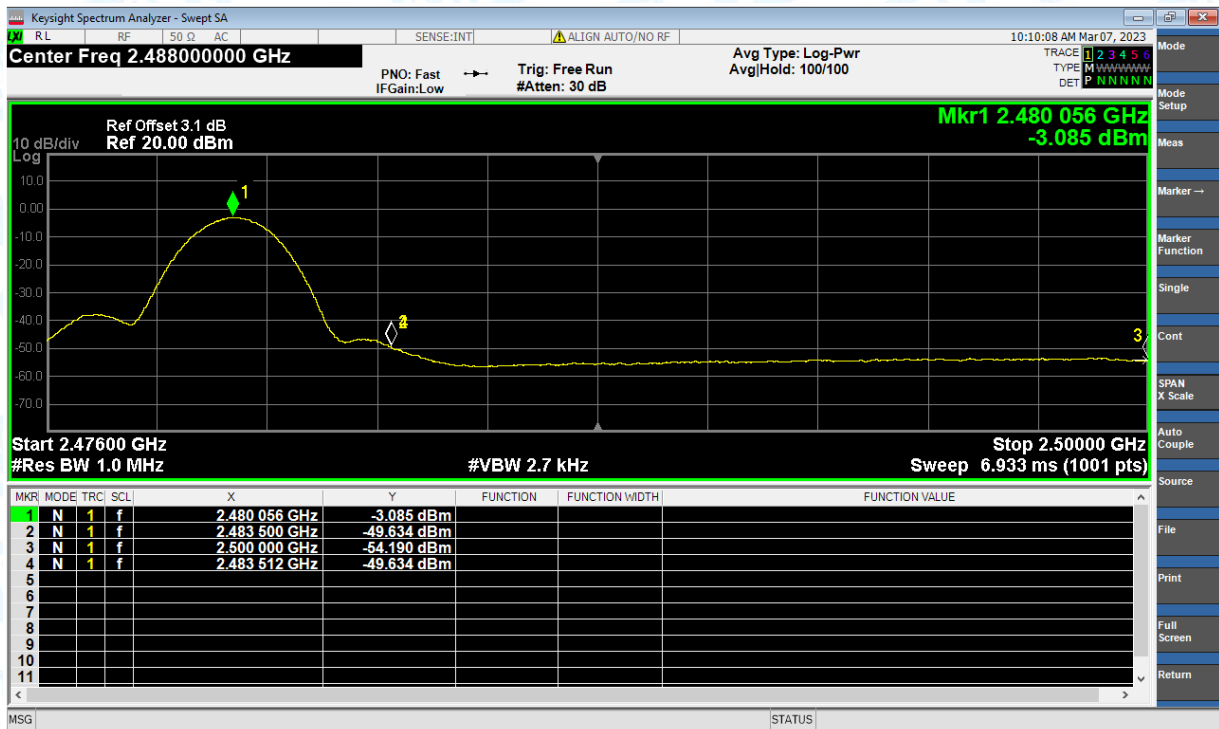
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

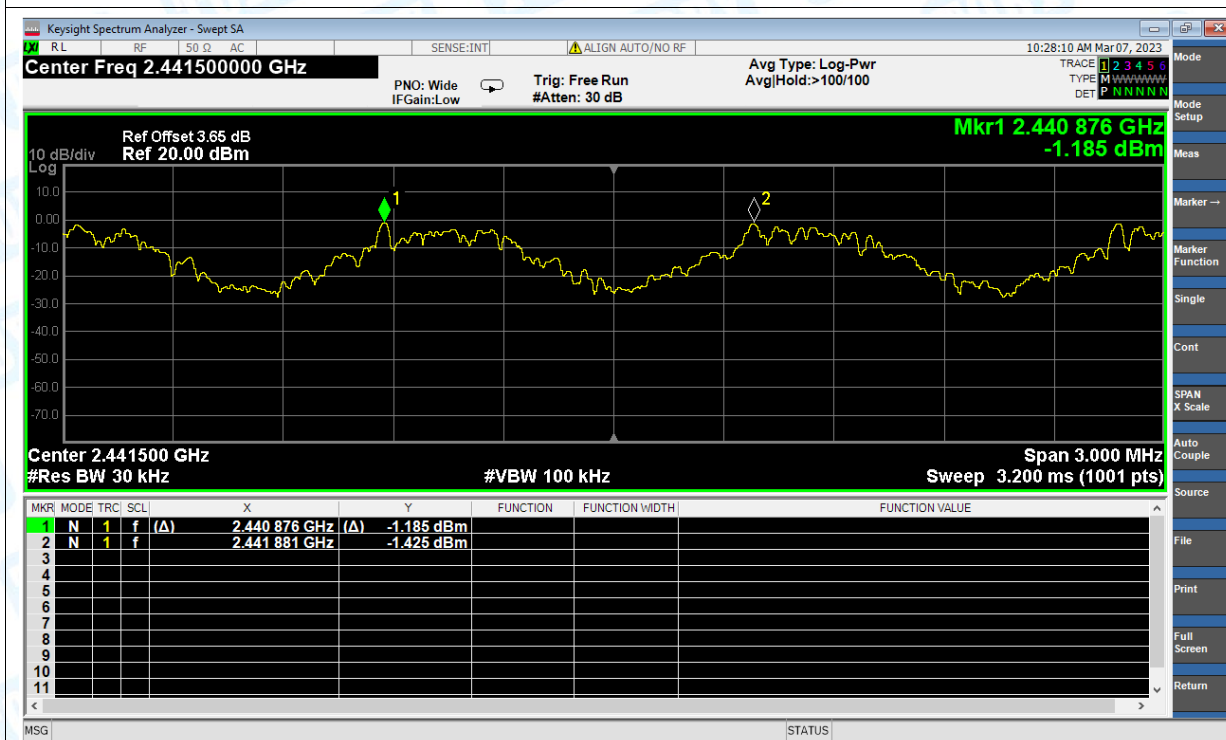


9. Carrier Frequencies Separation

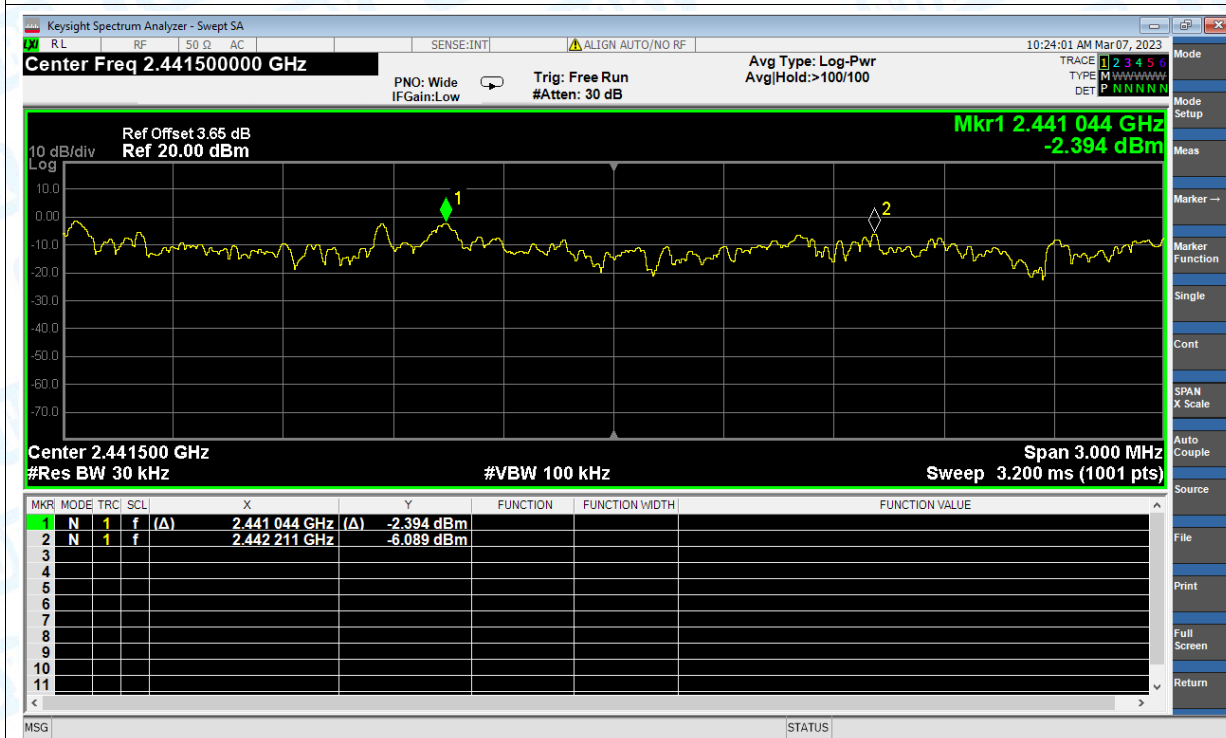
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.876	2441.881	1.005	0.58	Pass
NVNT	2-DH1	Ant1	2441.044	2442.211	1.167	0.833	Pass
NVNT	3-DH1	Ant1	2440.87	2441.881	1.011	0.813	Pass

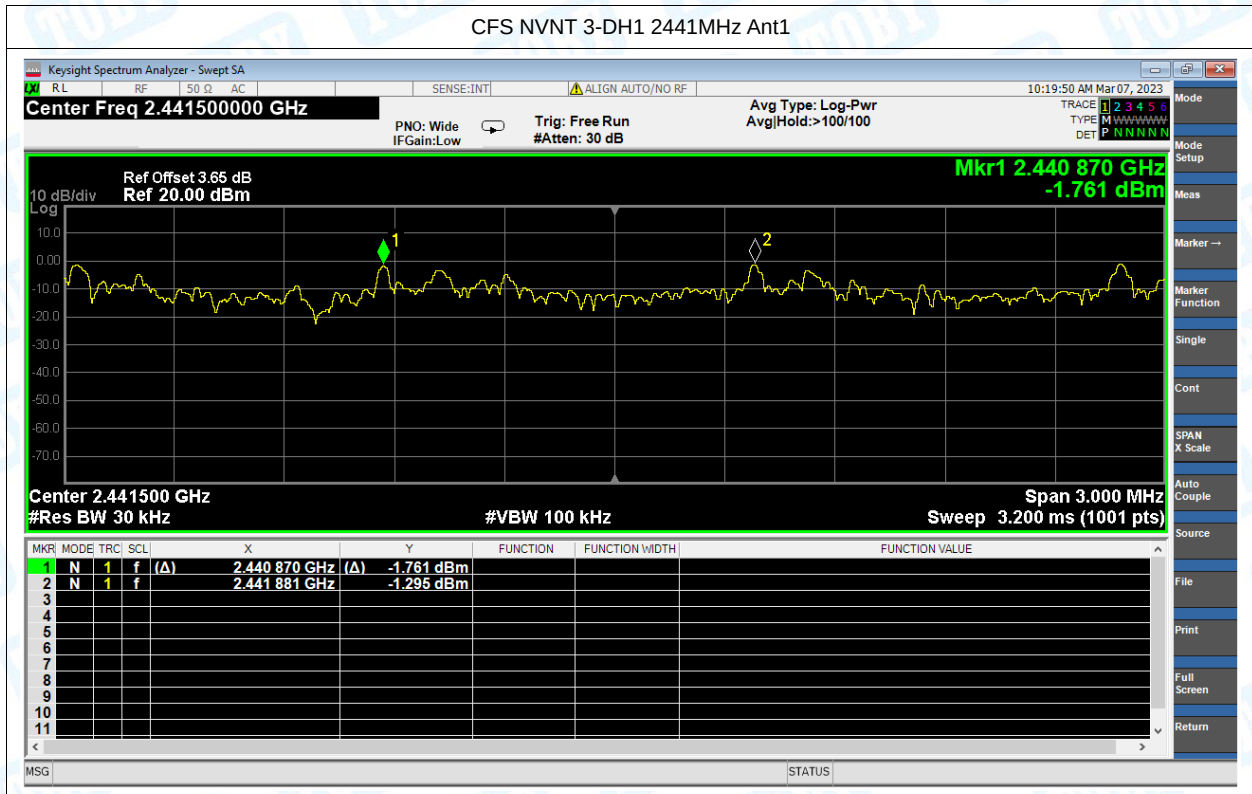
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



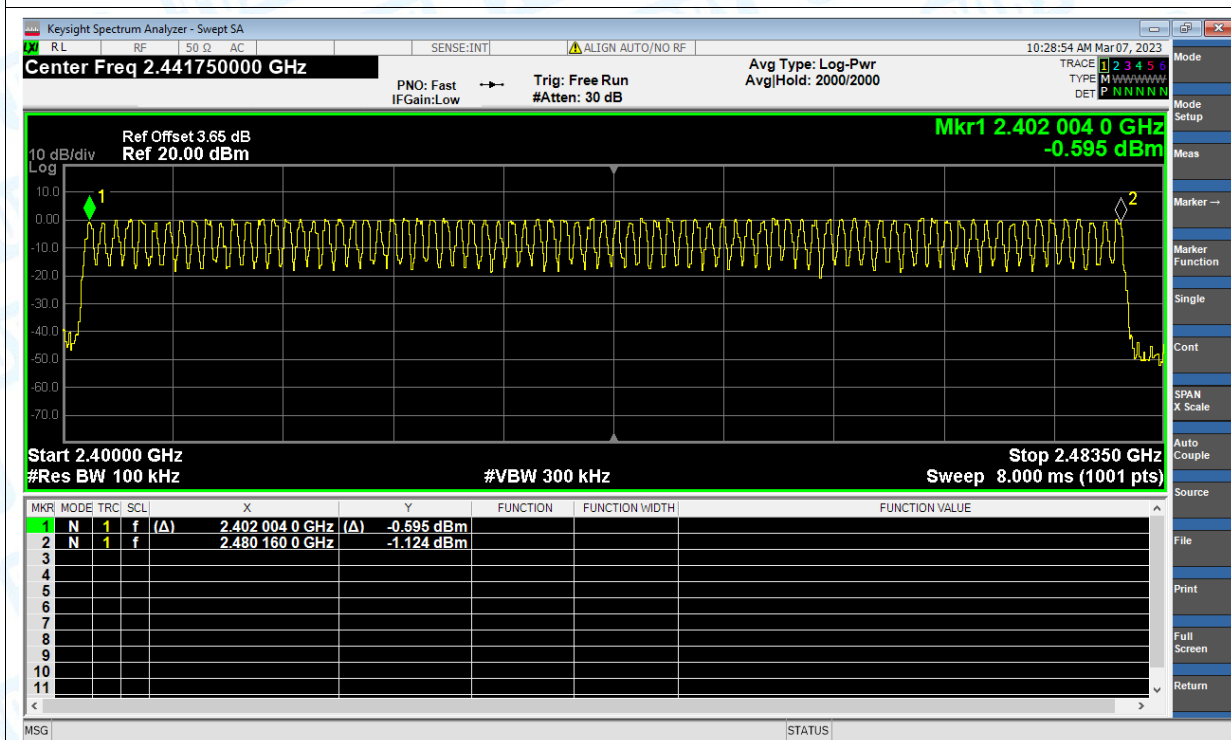


10. Number of Hopping Channel

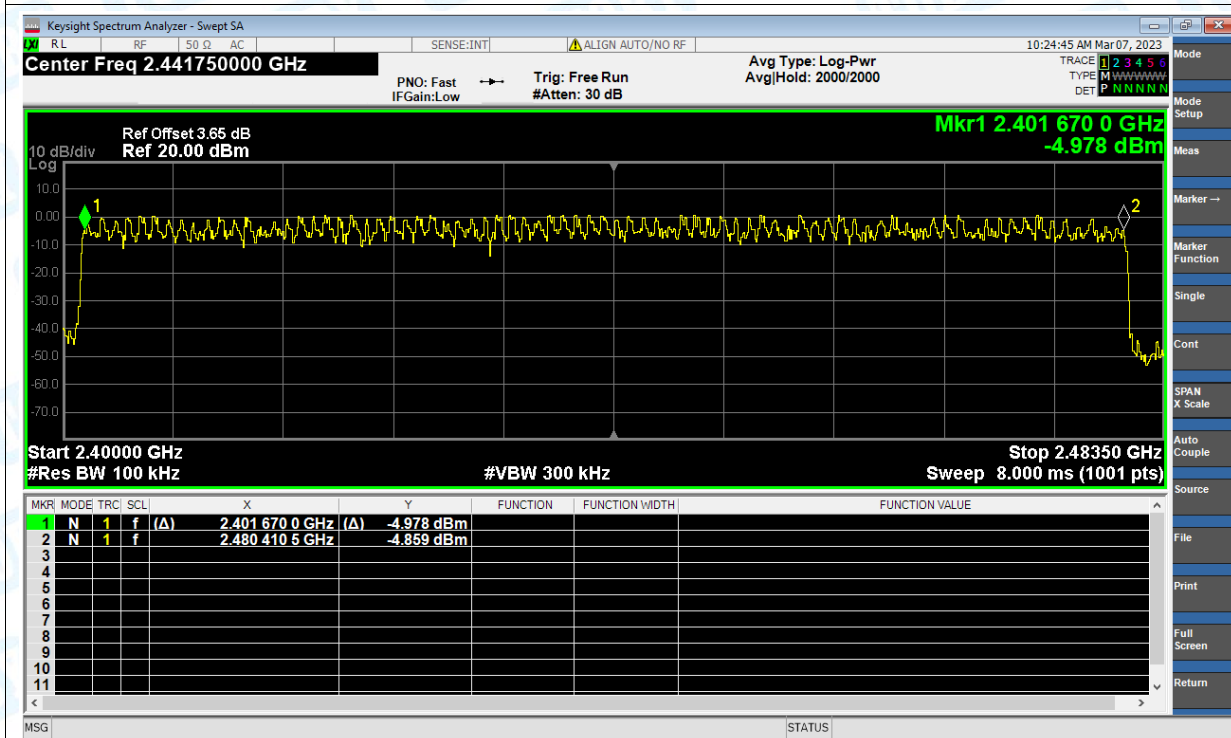
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

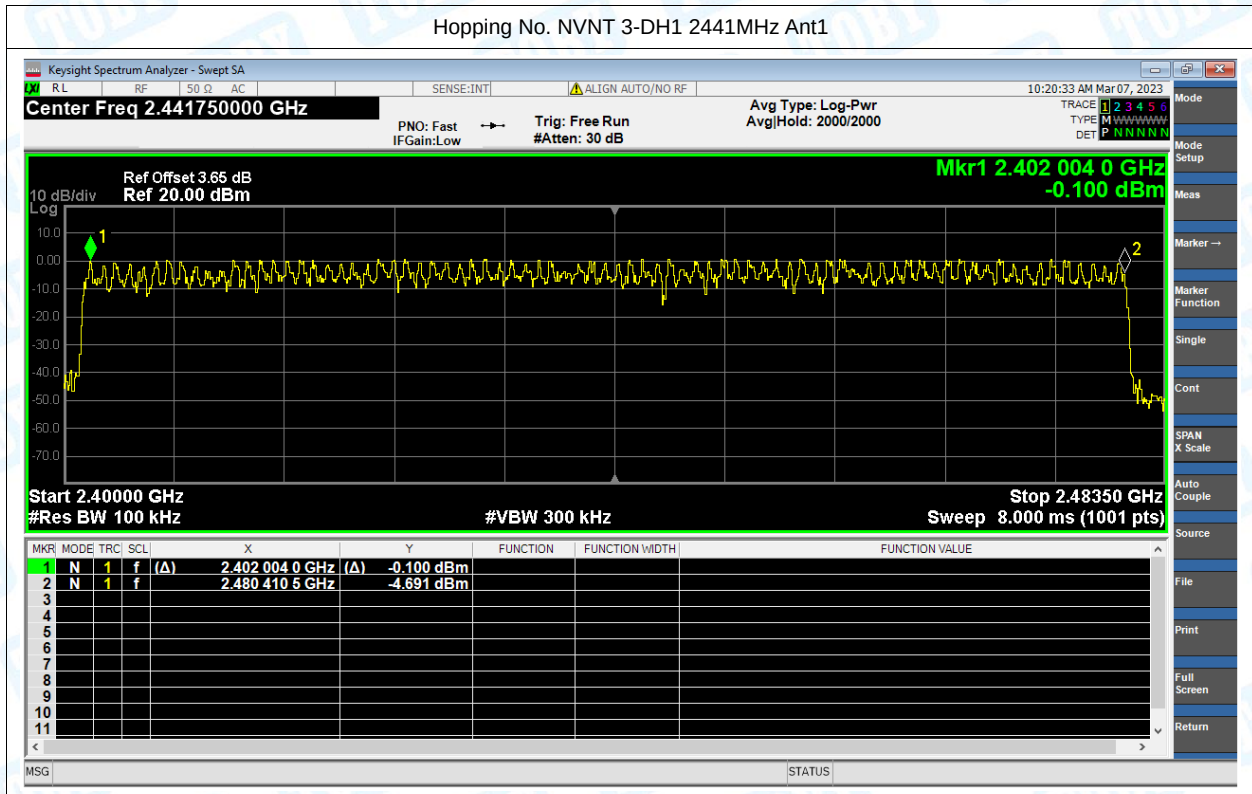
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



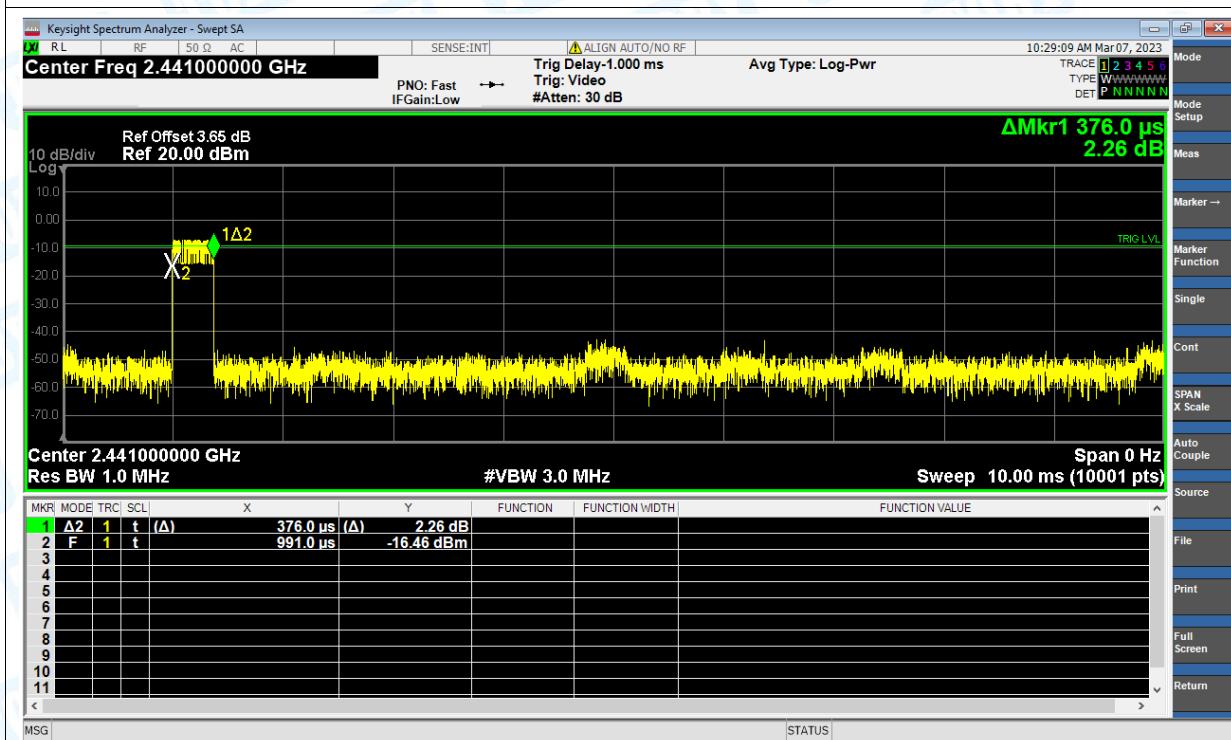


11. Dwell Time

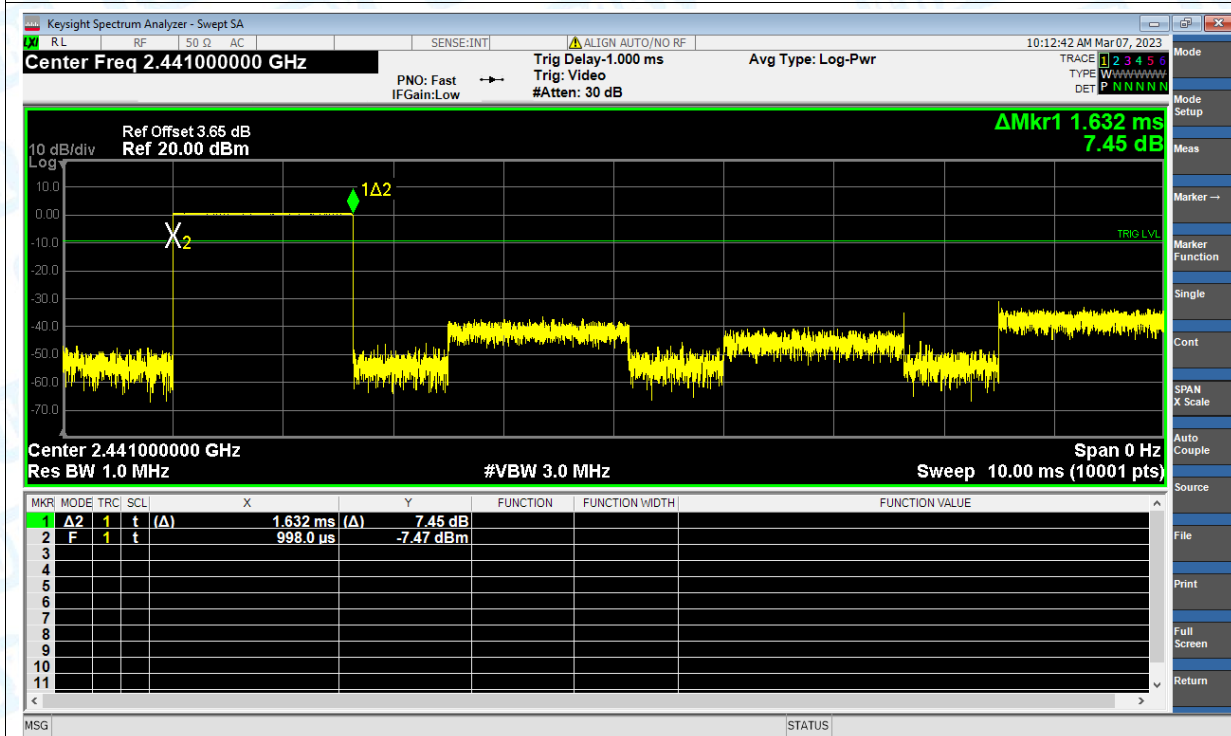
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.376	120.32	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.632	261.12	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.88	307.2	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.637	261.92	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.885	307.733	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.387	123.84	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.637	261.92	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.888	308.053	31600	400	Pass

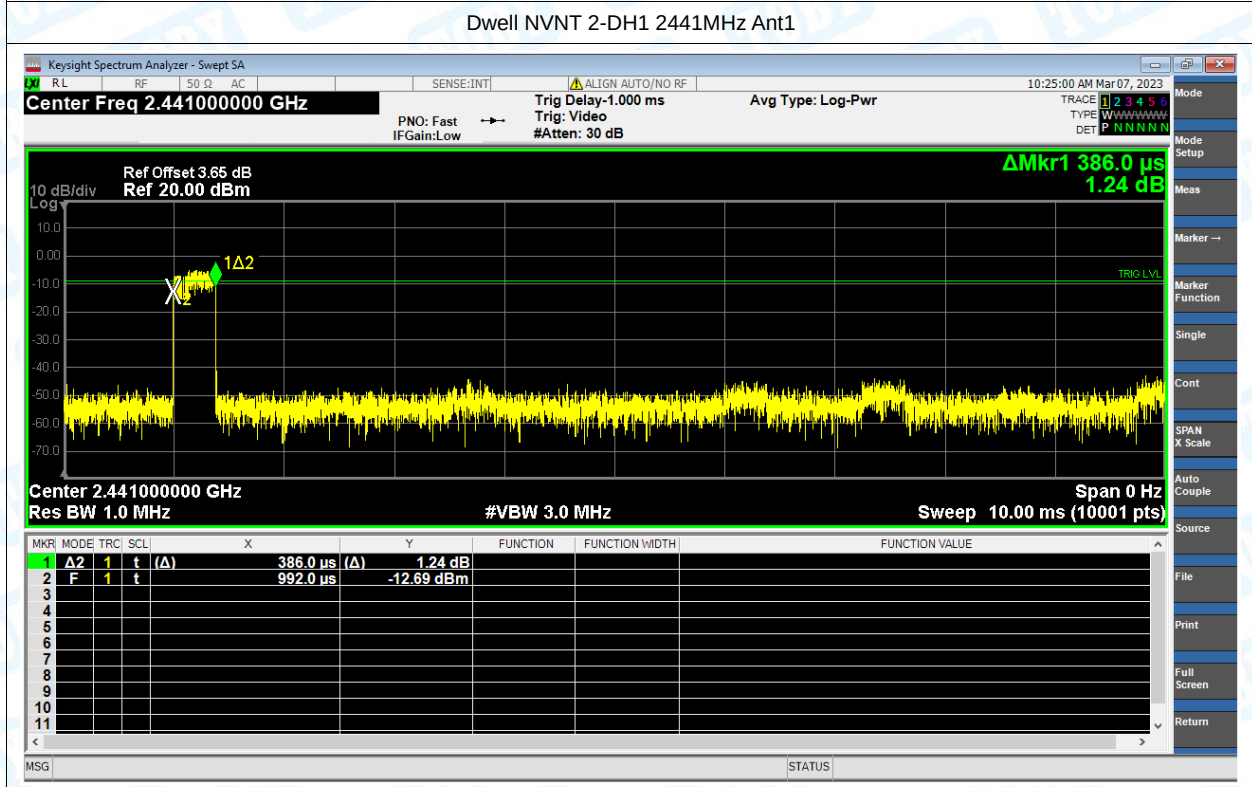
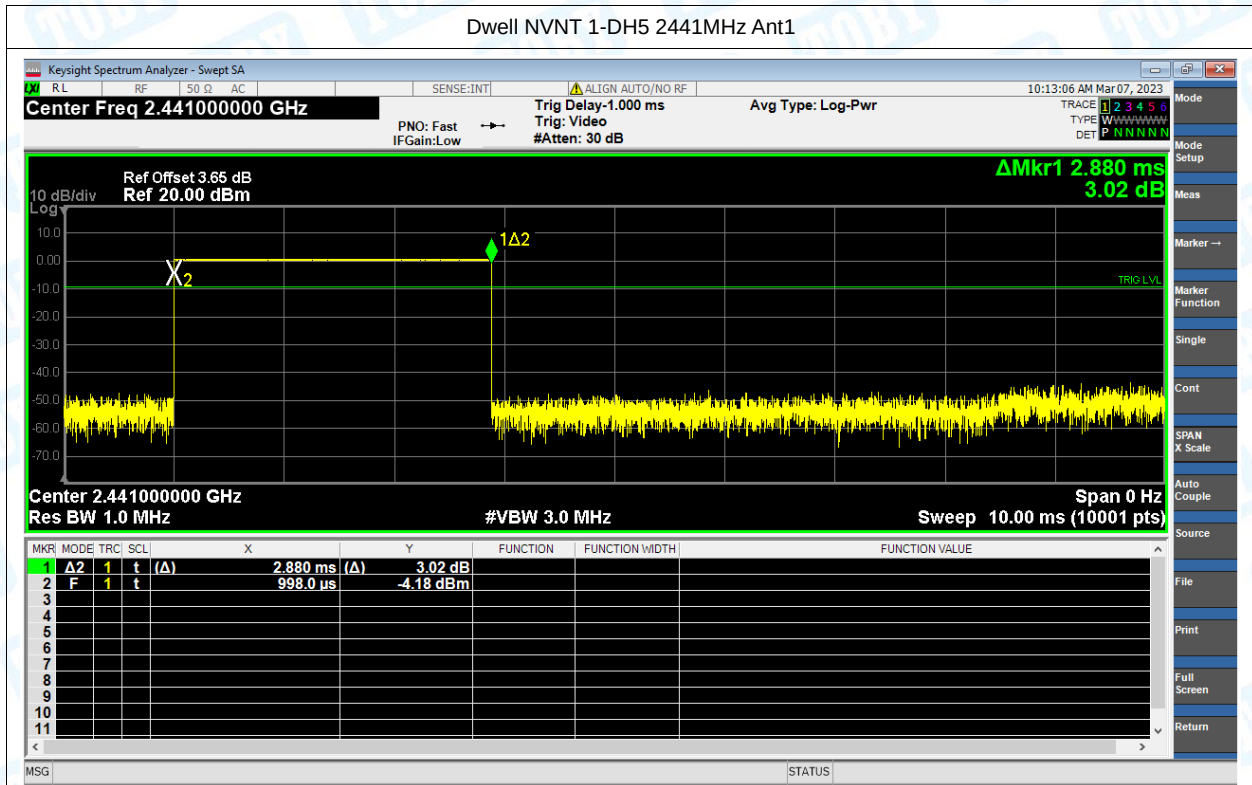
Test Graphs

Dwell NVNT 1-DH1 2441MHz Ant1

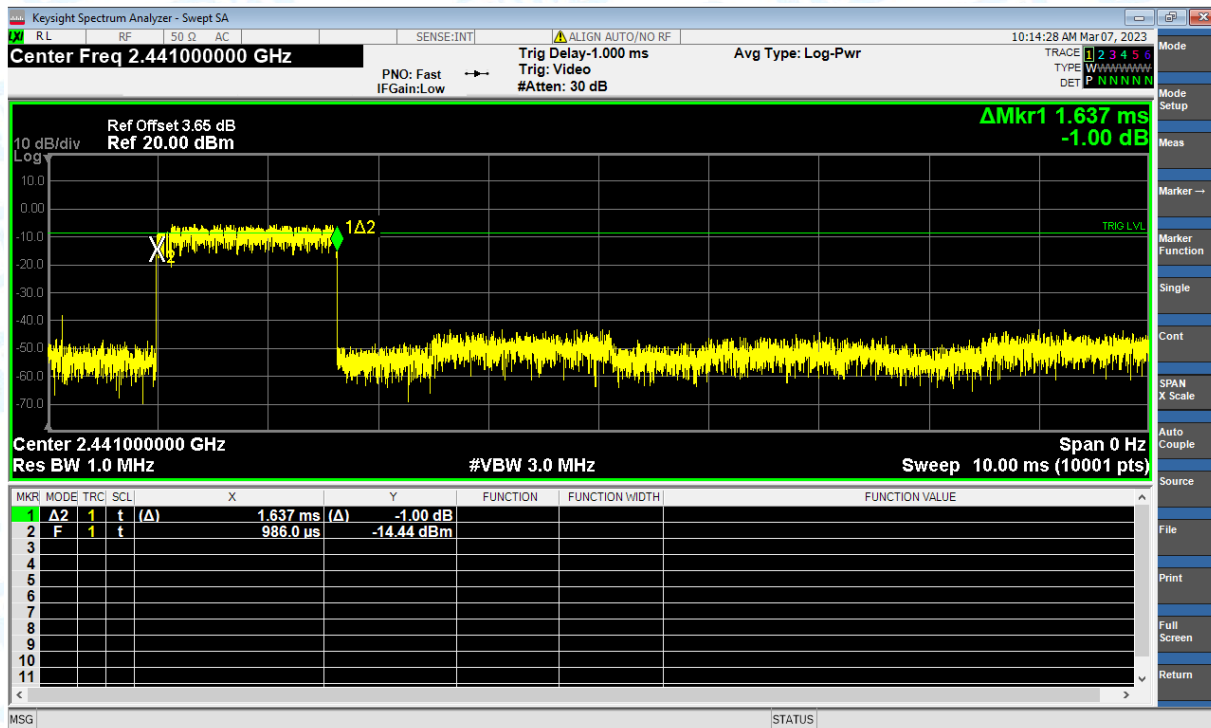


Dwell NVNT 1-DH3 2441MHz Ant1

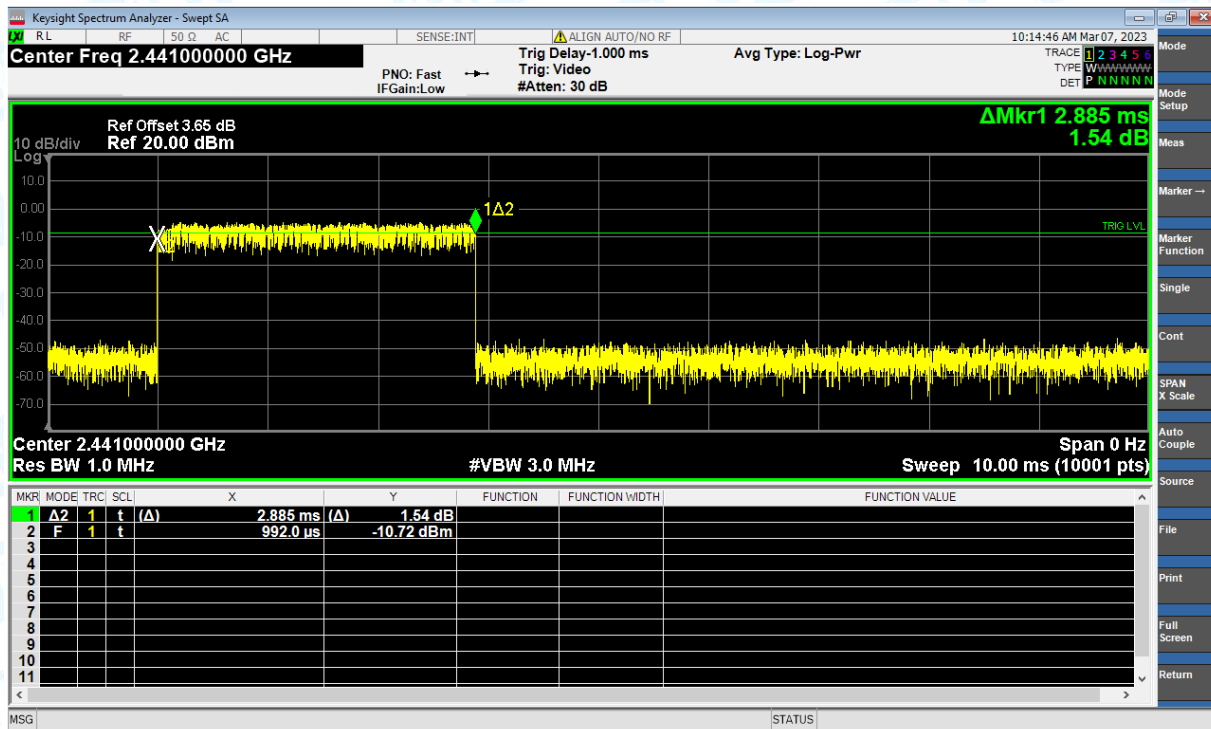


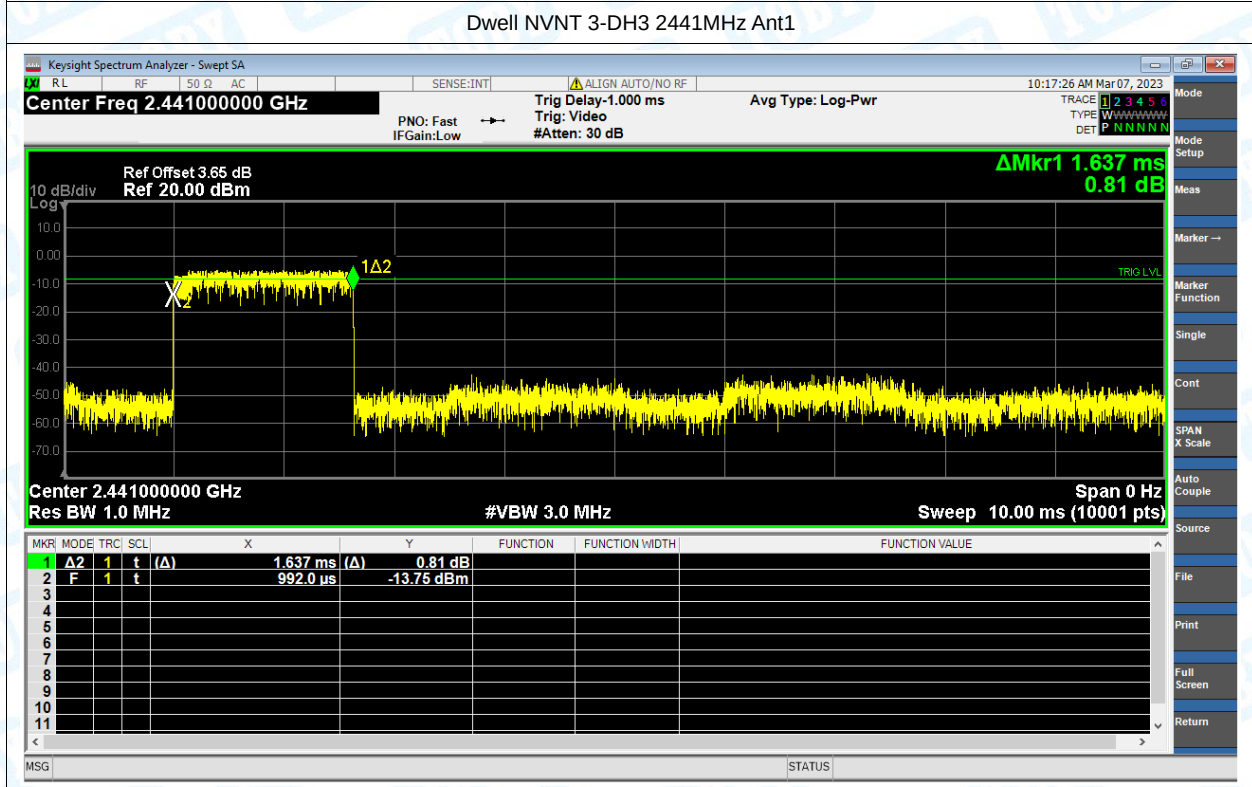
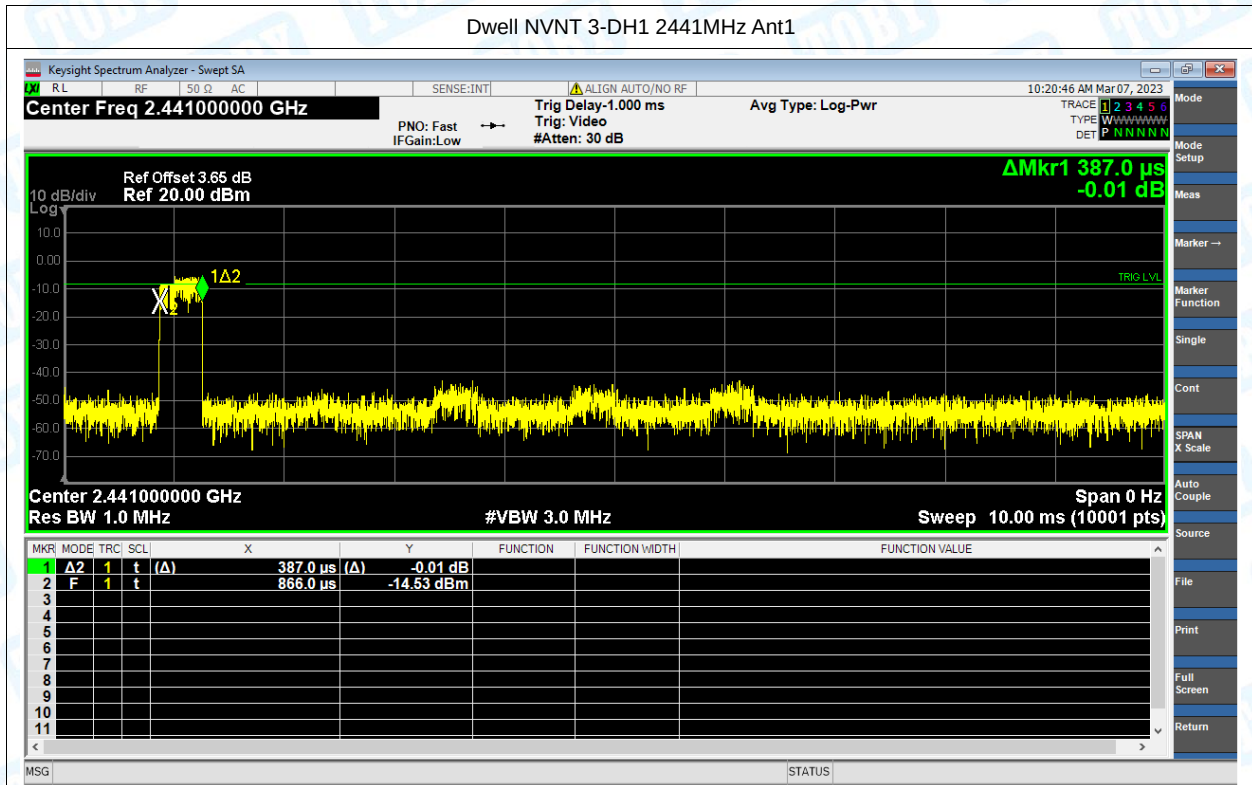


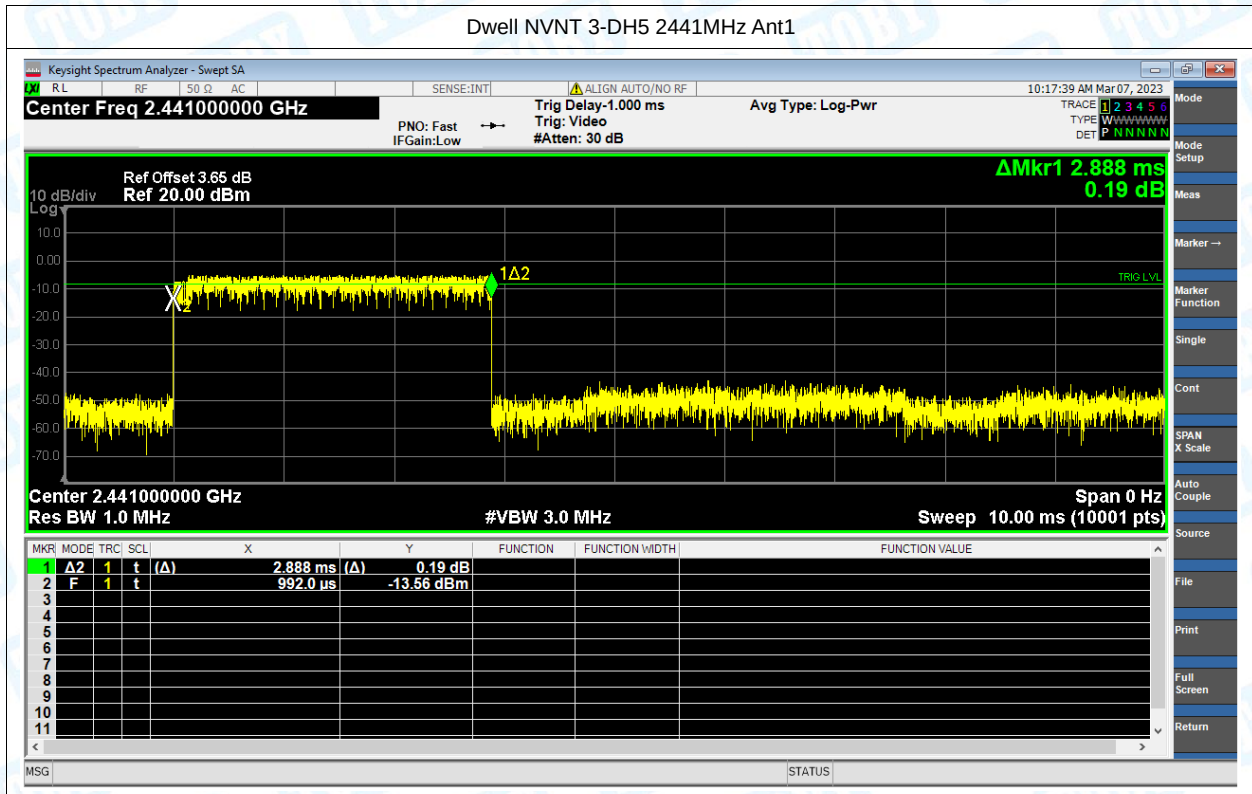
Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1







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