

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

General Description of EUT	
Product Name:	Watch Square
Test Model:	Watch Square
Sample ID:	RW-C-202305-0267-1-2#
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-202305-0267-12 The report only show the worst case data.	

Contents

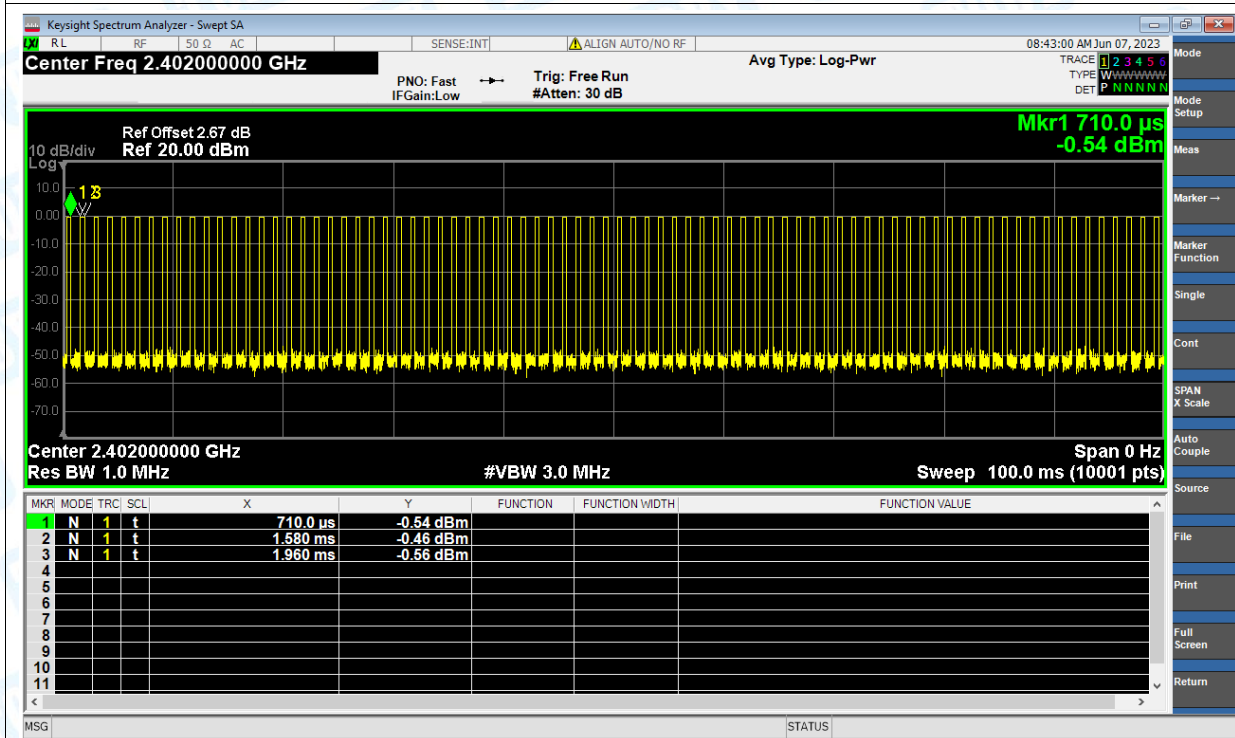
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1. Duty Cycle

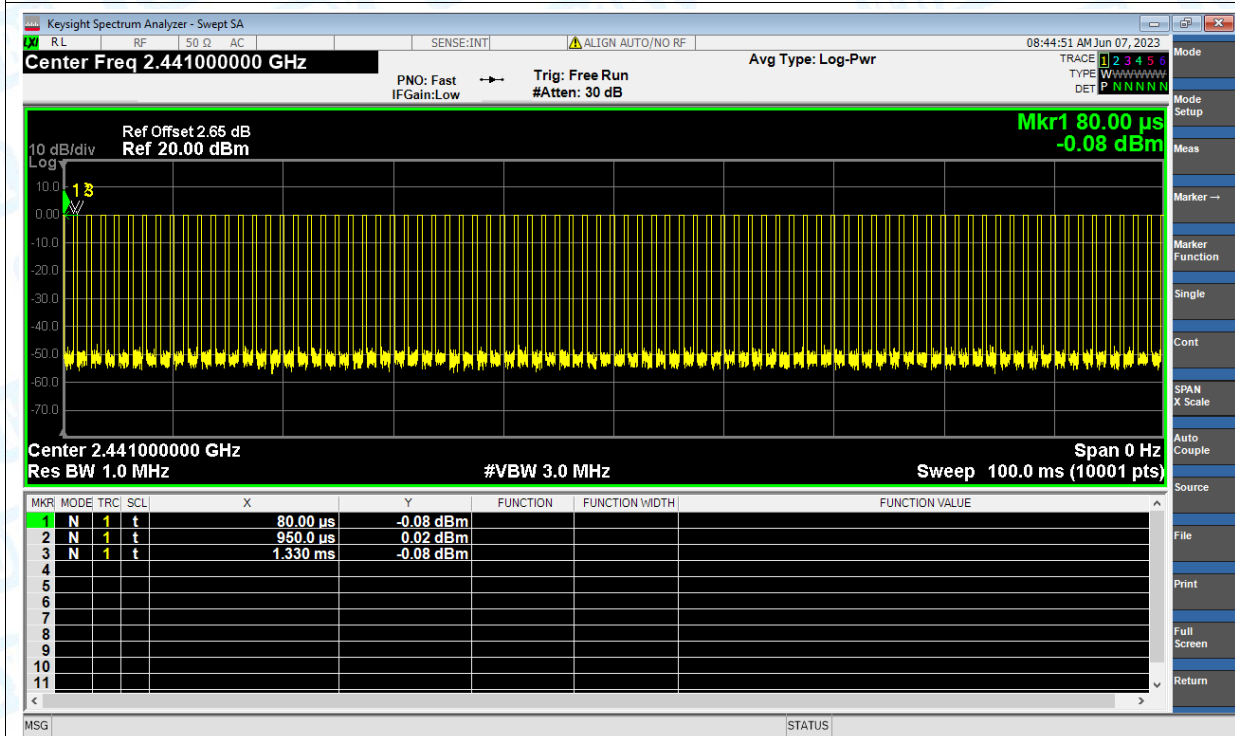
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63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

Test Graphs

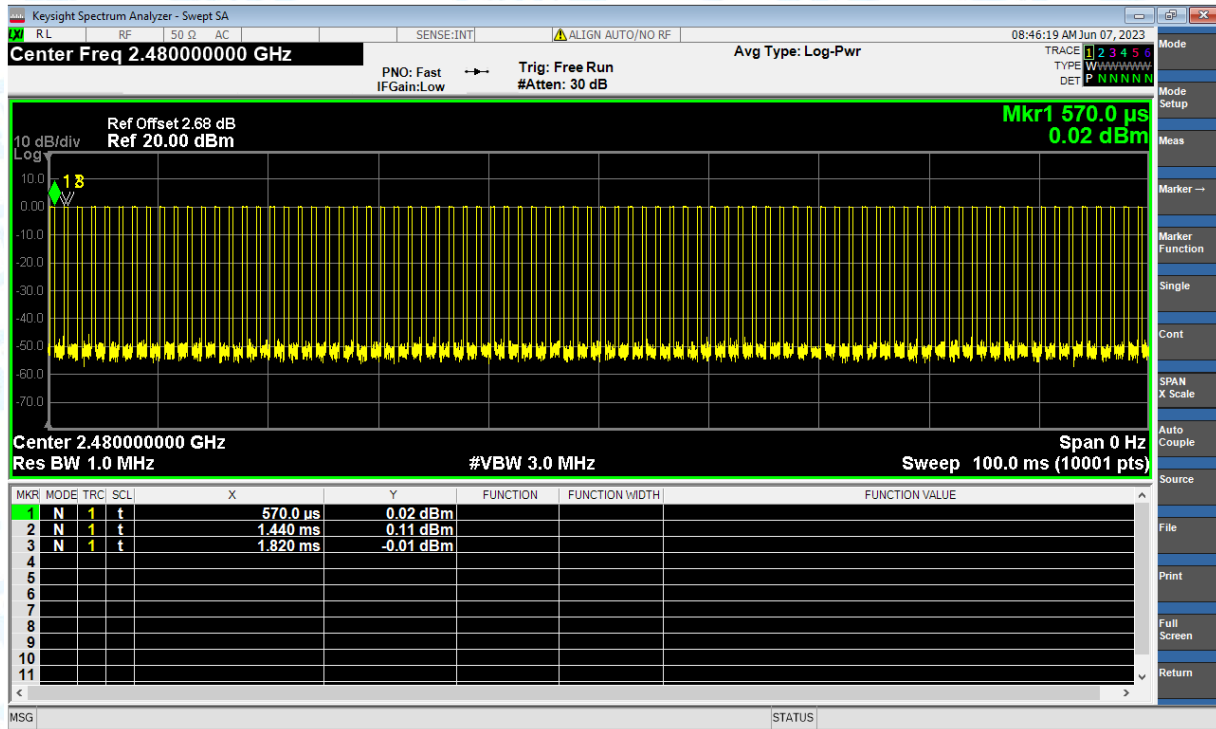
Duty Cycle NVNT 1-DH1 2402MHz Ant1



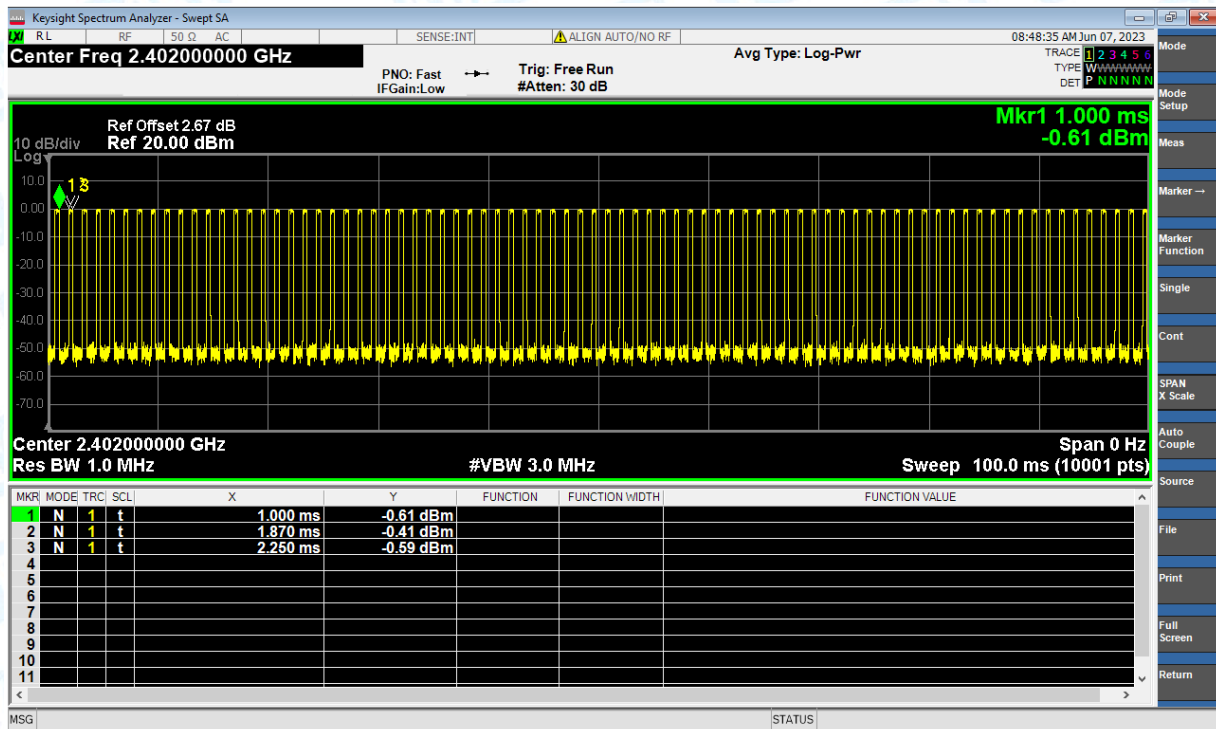
Duty Cycle NVNT 1-DH1 2441MHz Ant1



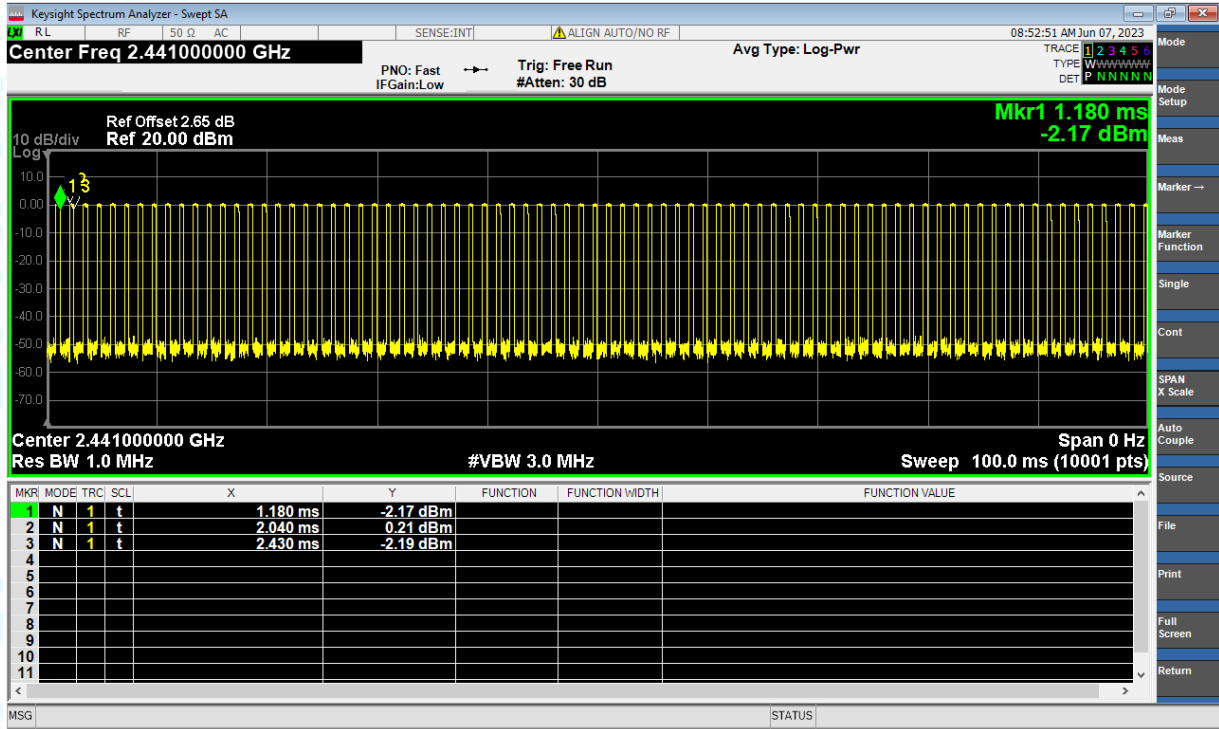
Duty Cycle NVNT 1-DH1 2480MHz Ant1



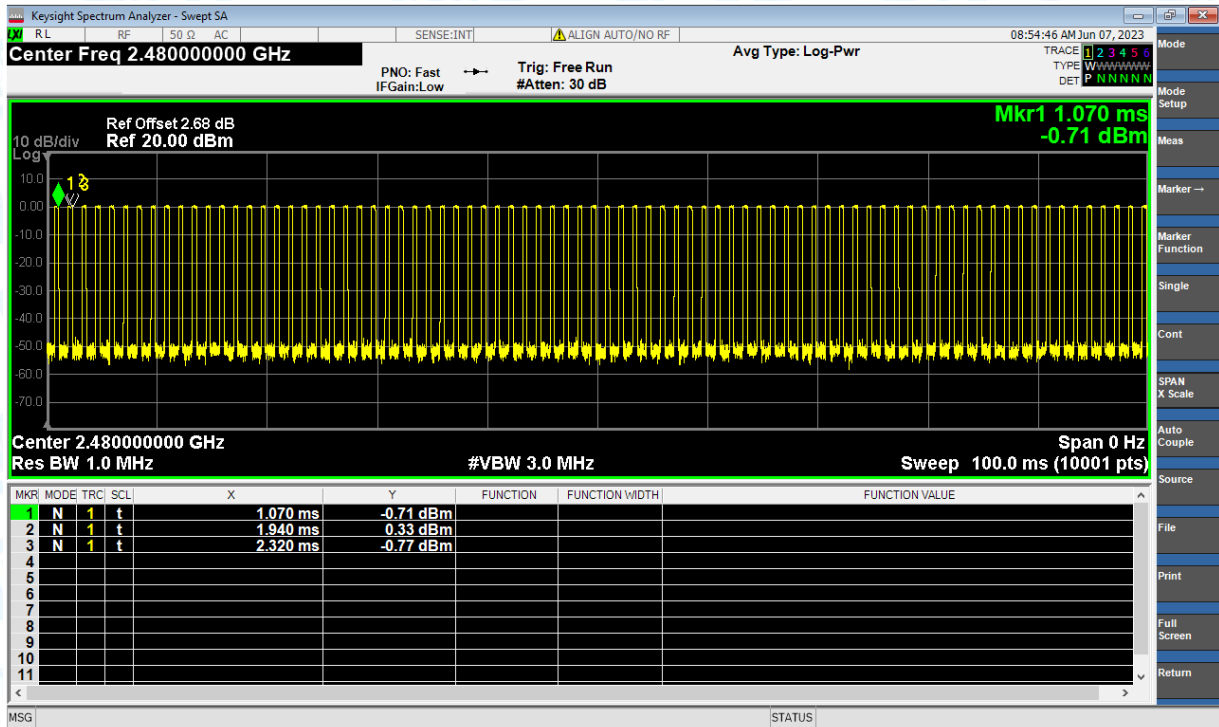
Duty Cycle NVNT 2-DH1 2402MHz Ant1



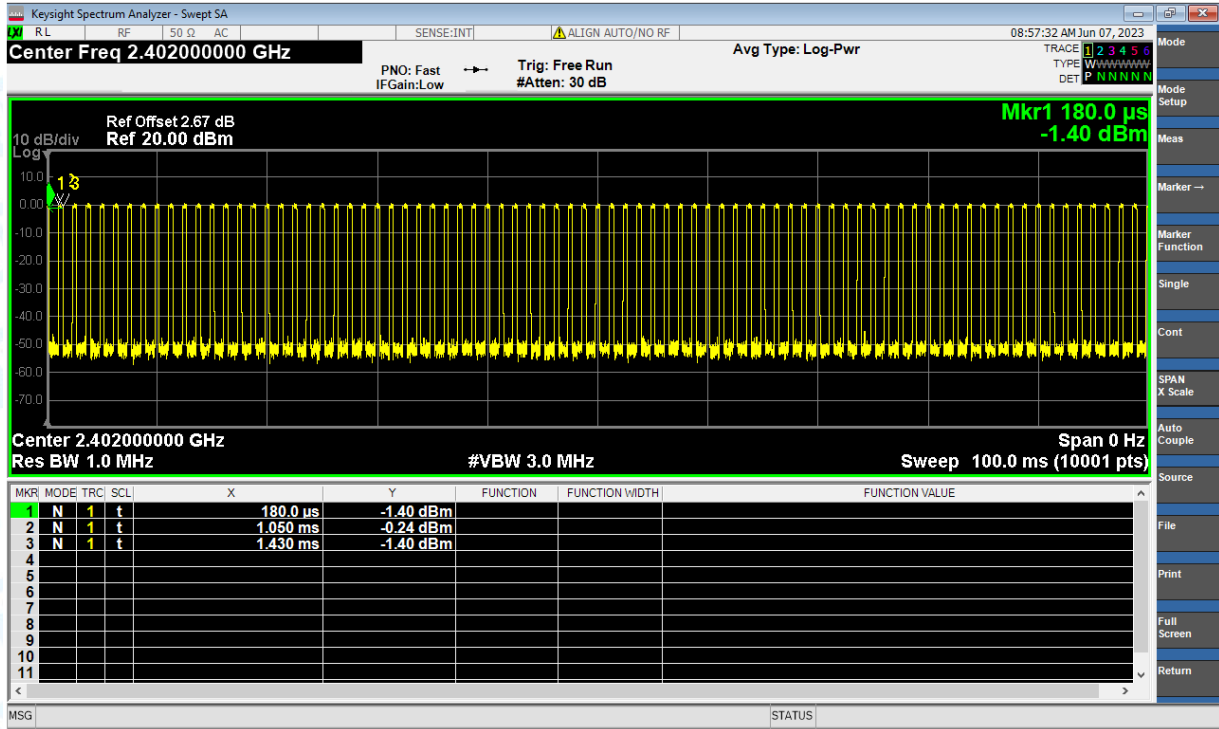
Duty Cycle NVNT 2-DH1 2441MHz Ant1



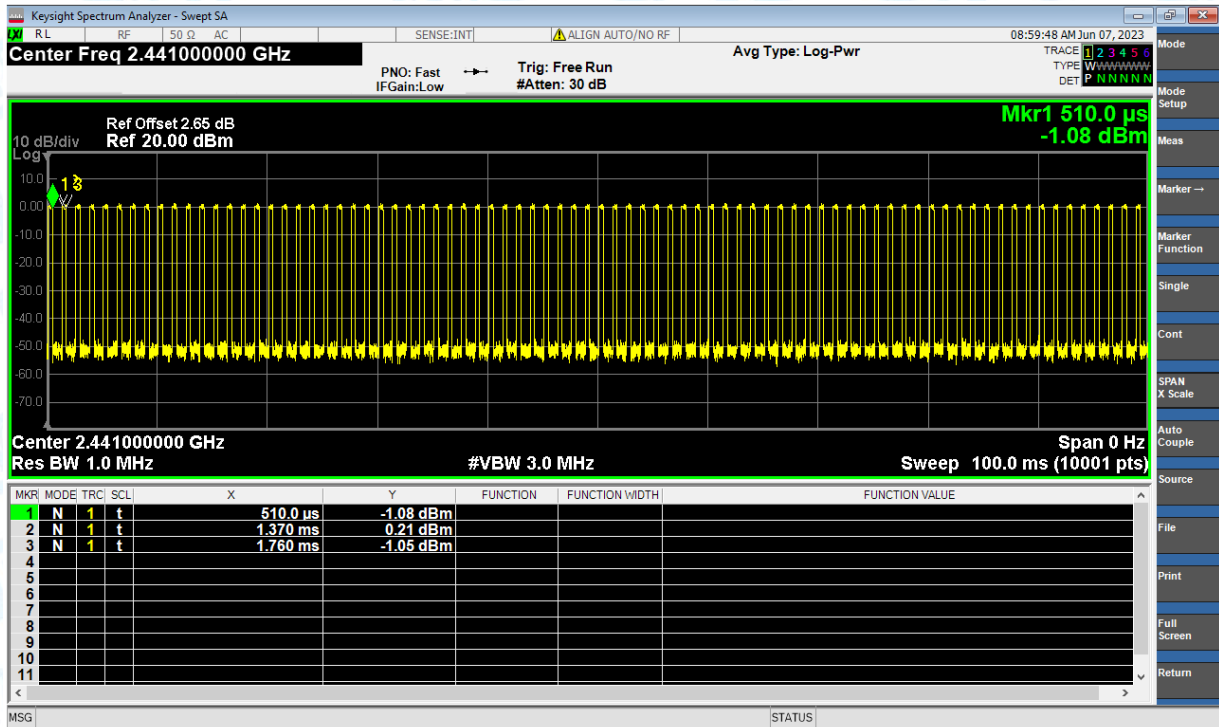
Duty Cycle NVNT 2-DH1 2480MHz Ant1

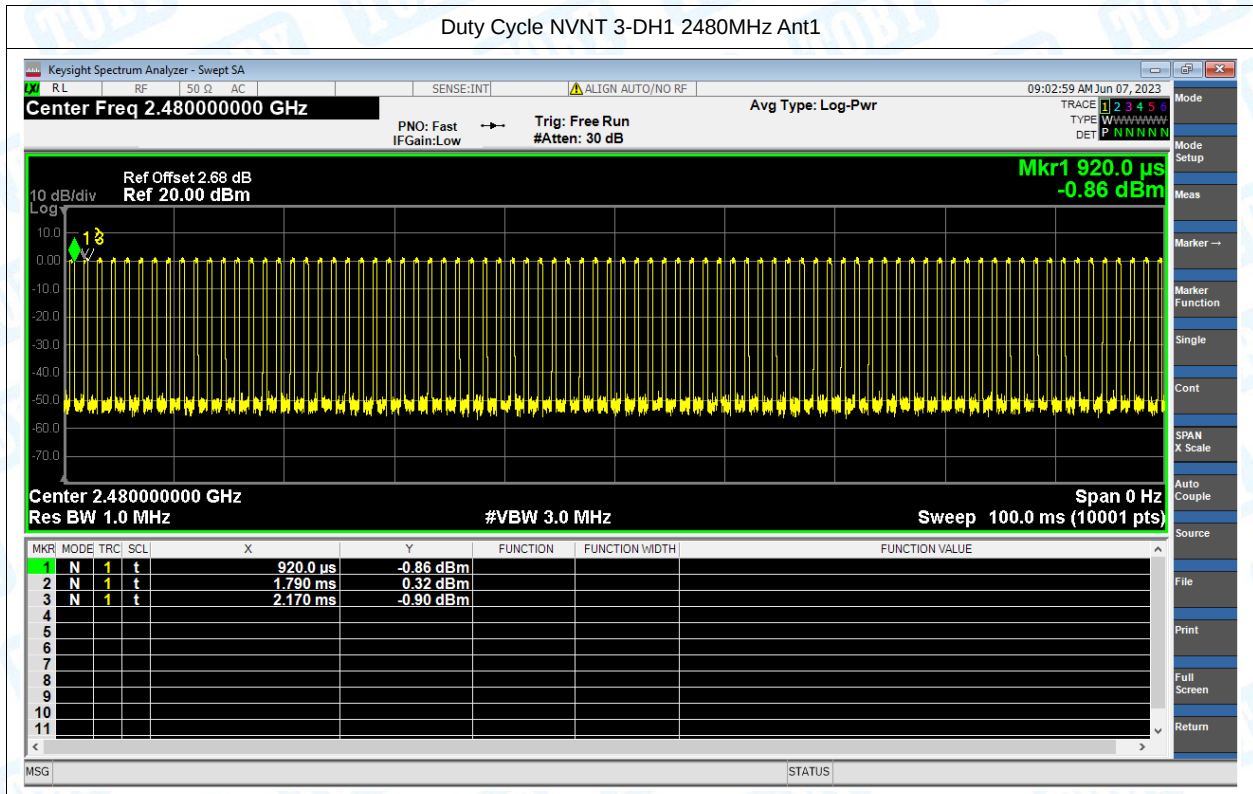


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



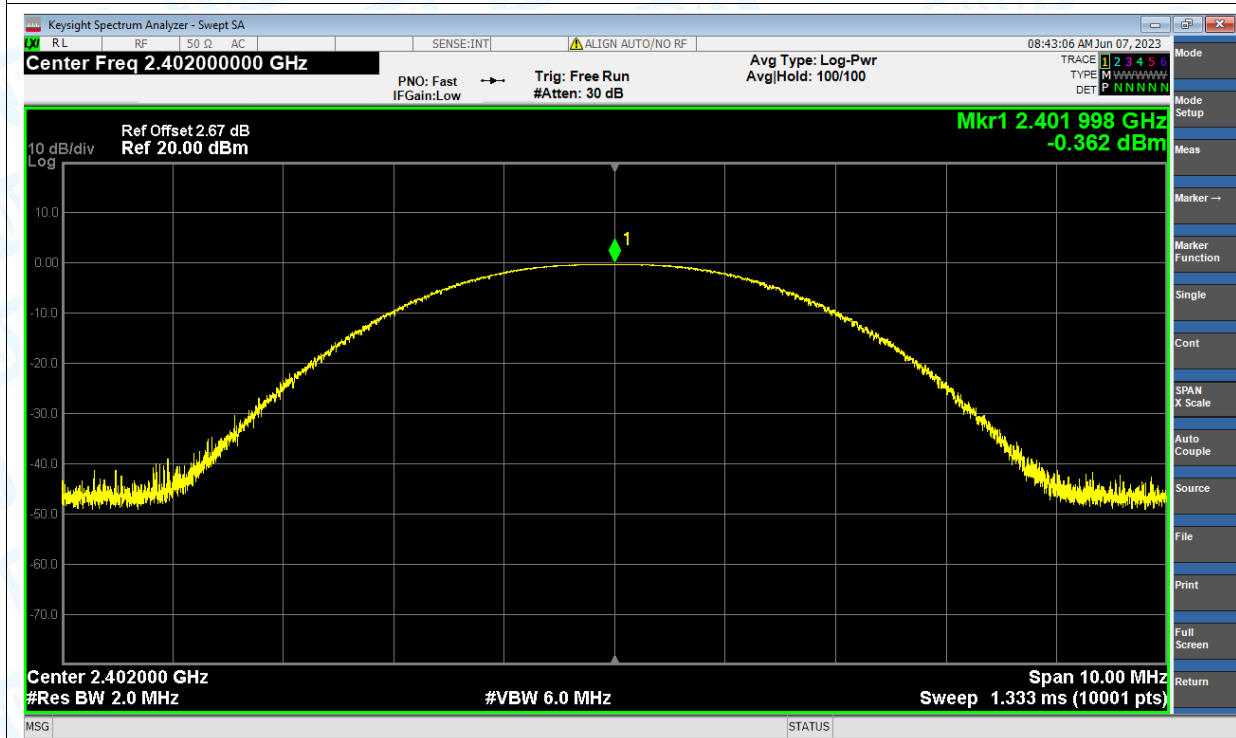


2. Maximum Conducted Output Power

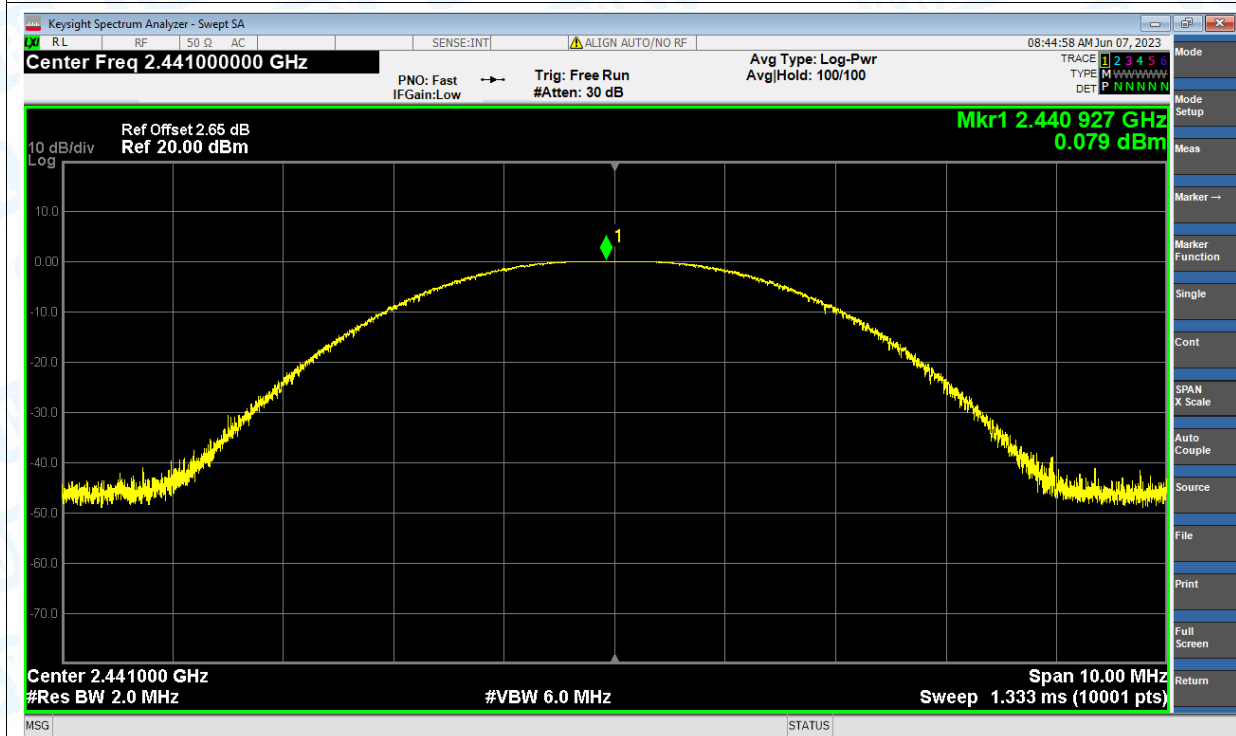
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-0.362	21	Pass
NVNT	1-DH1	2441	Ant1	0.079	21	Pass
NVNT	1-DH1	2480	Ant1	0.181	21	Pass
NVNT	2-DH1	2402	Ant1	0.519	21	Pass
NVNT	2-DH1	2441	Ant1	1.013	21	Pass
NVNT	2-DH1	2480	Ant1	1.129	21	Pass
NVNT	3-DH1	2402	Ant1	1.178	21	Pass
NVNT	3-DH1	2441	Ant1	1.573	21	Pass
NVNT	3-DH1	2480	Ant1	1.695	21	Pass

Test Graphs

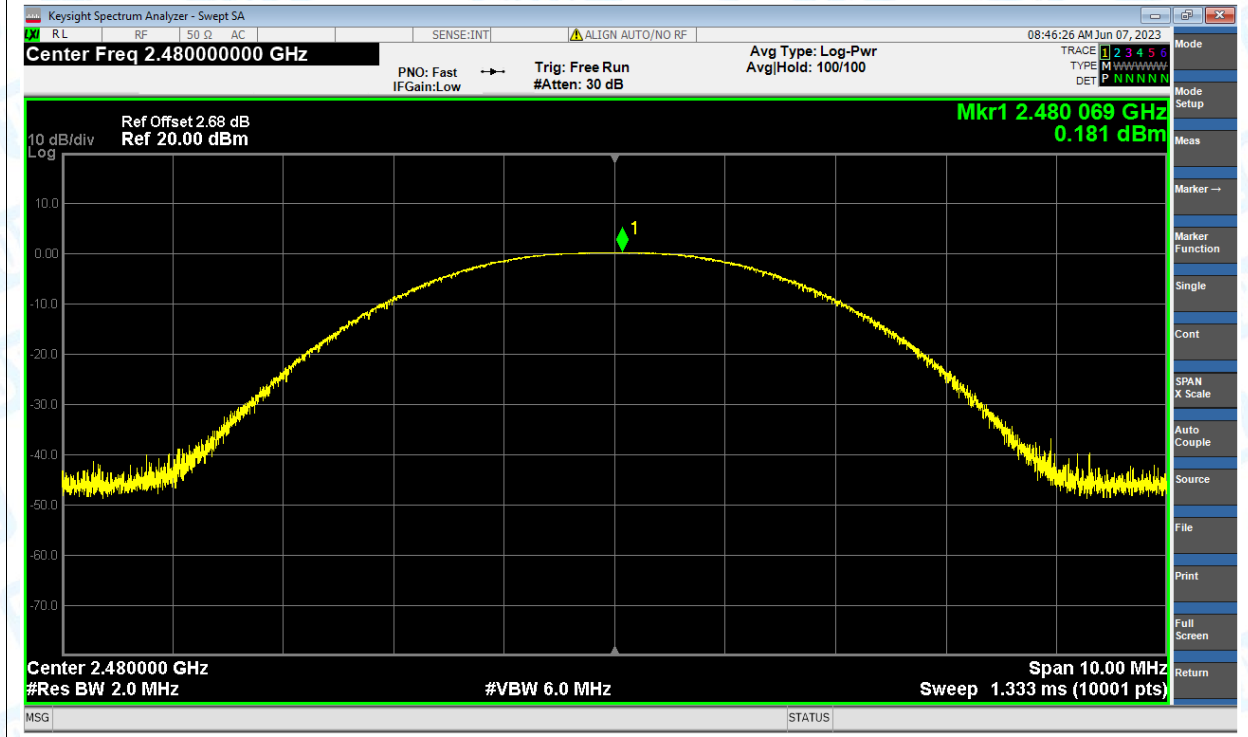
Power NVNT 1-DH1 2402MHz Ant1



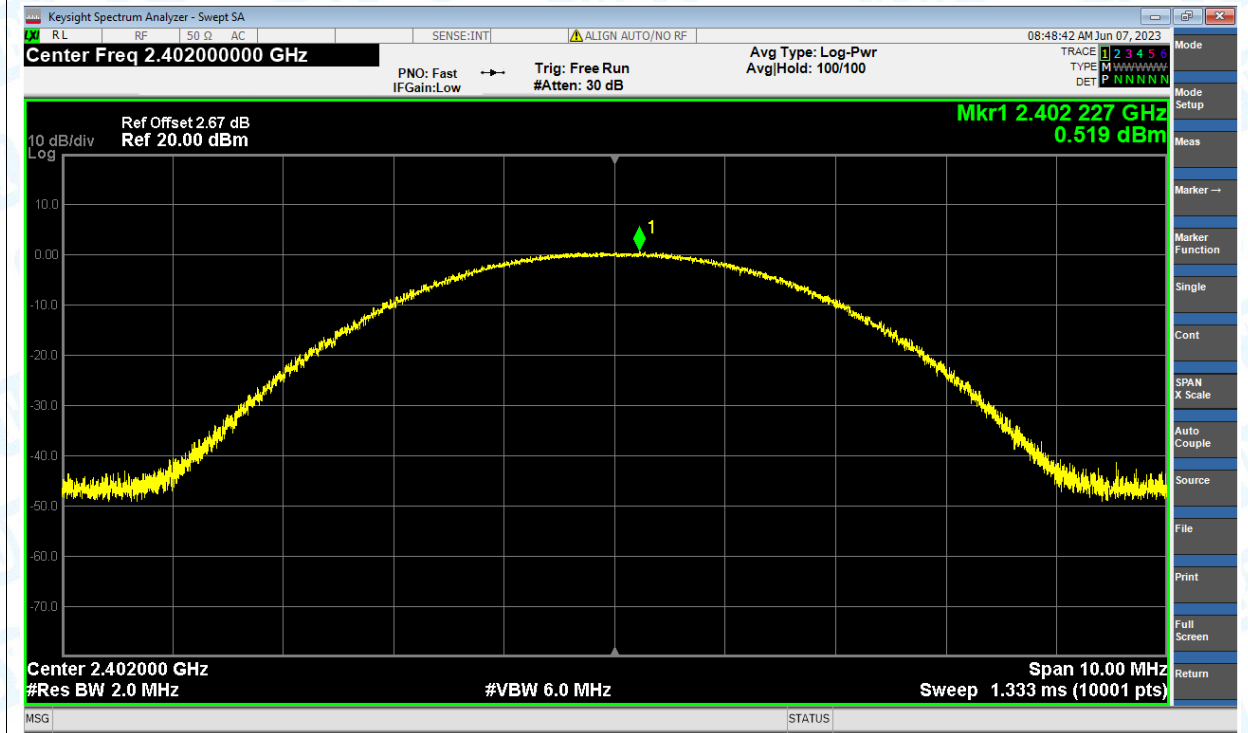
Power NVNT 1-DH1 2441MHz Ant1



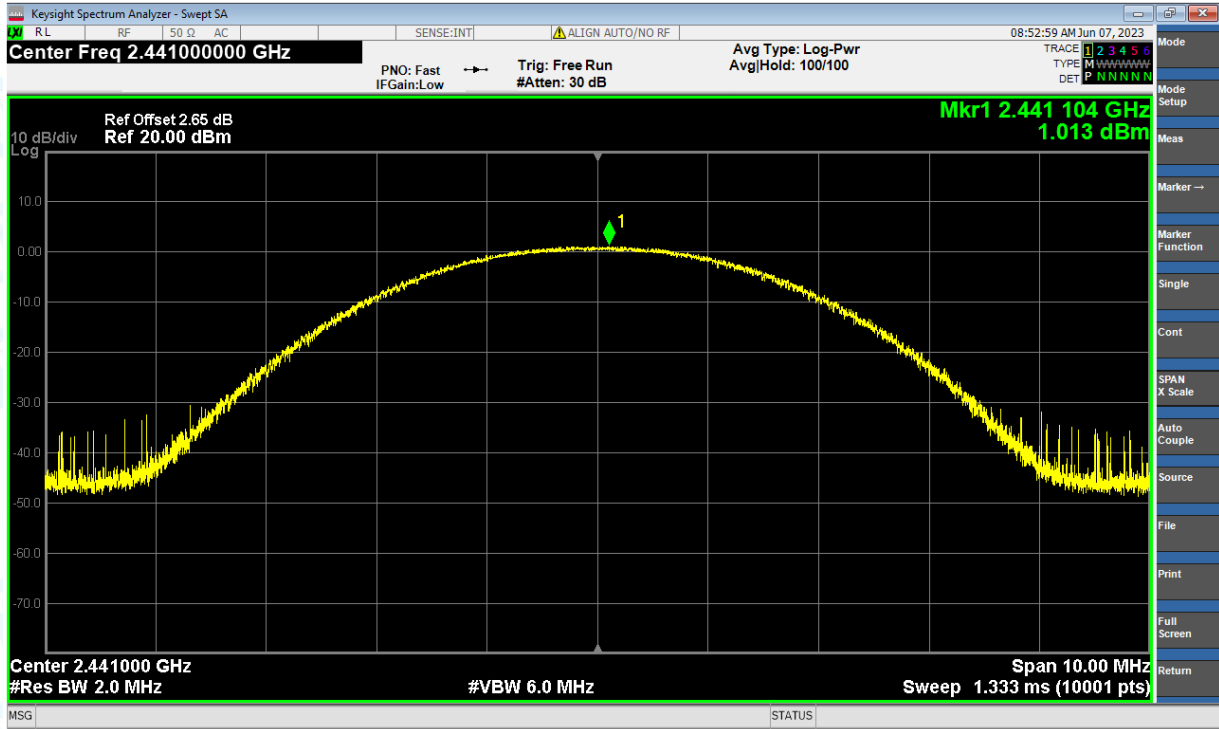
Power NVNT 1-DH1 2480MHz Ant1



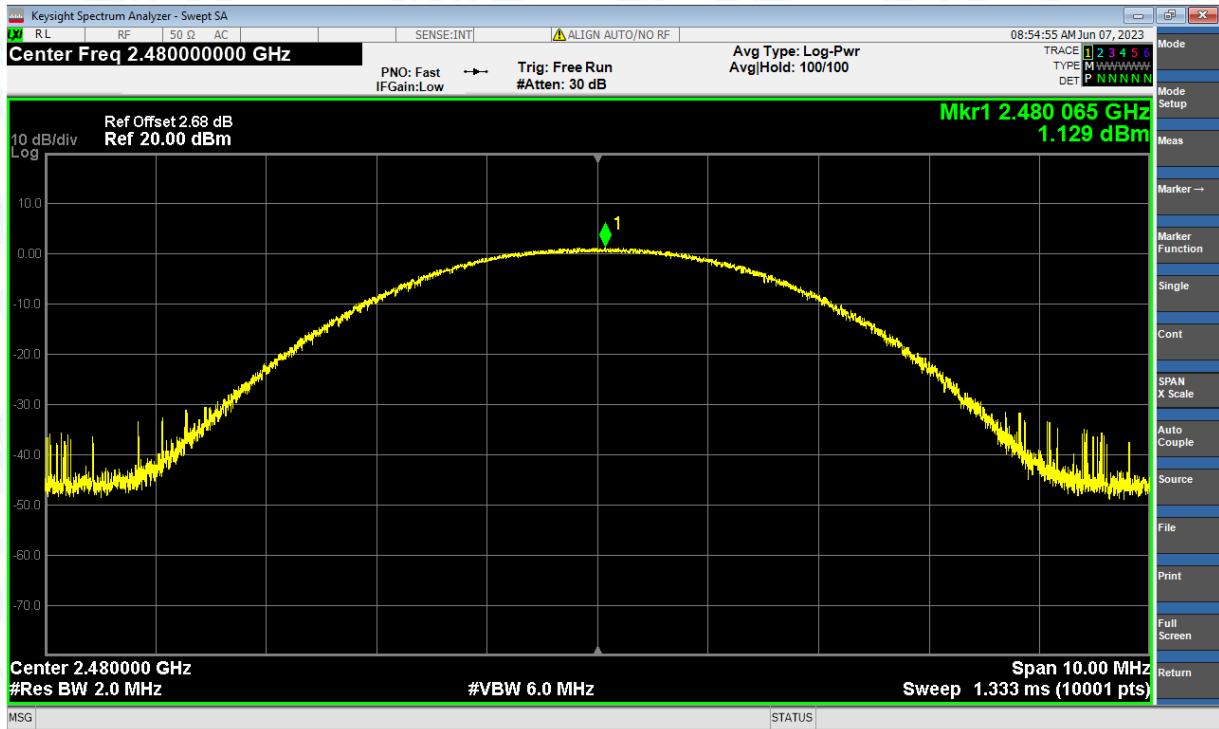
Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



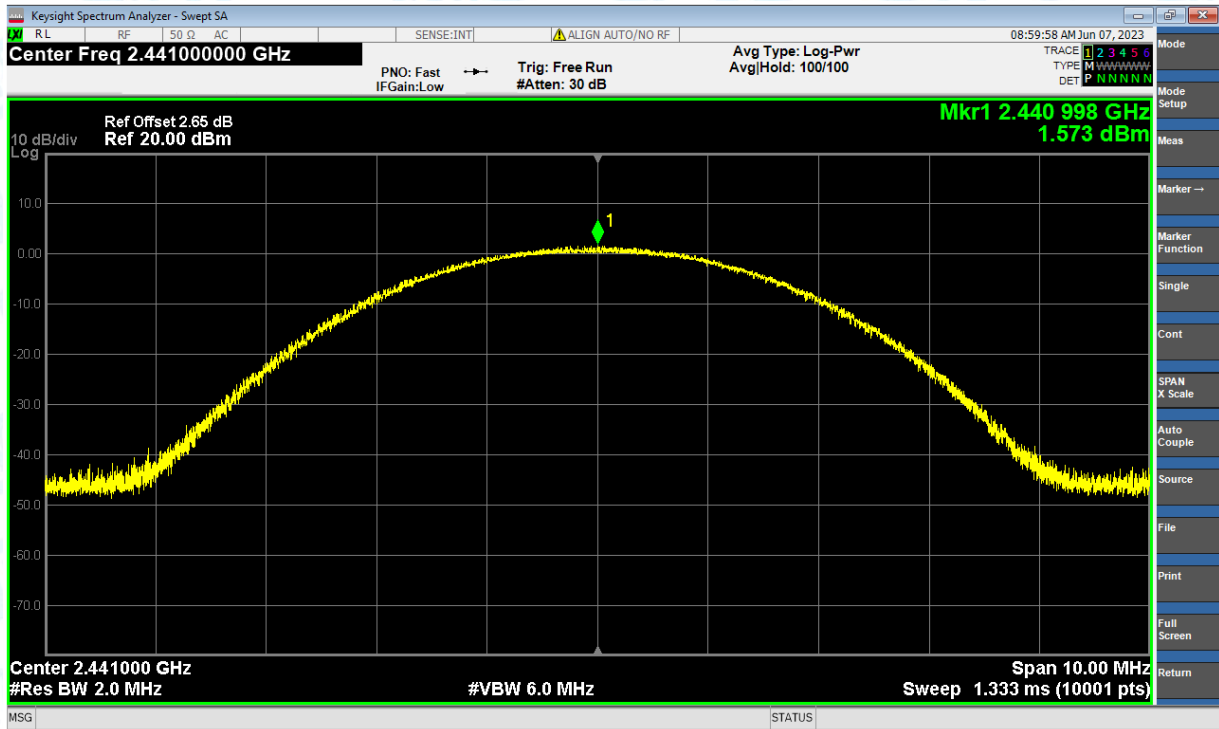
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



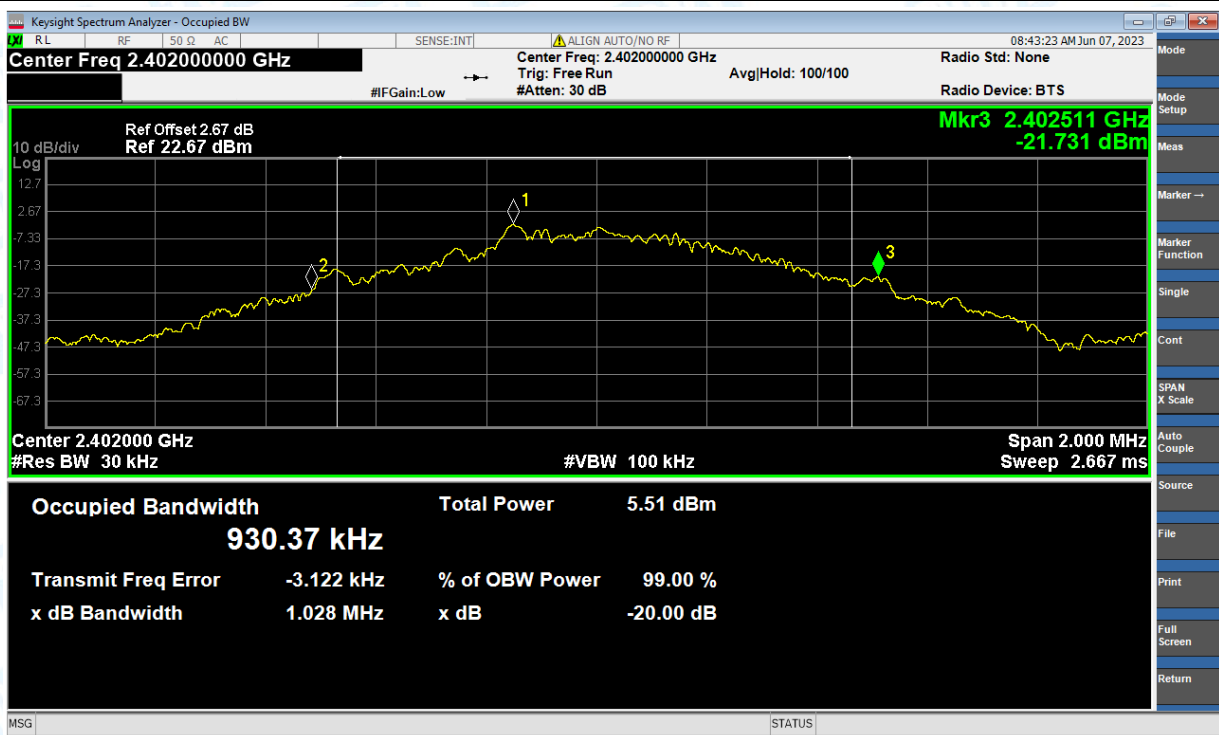


3. -20dB Bandwidth

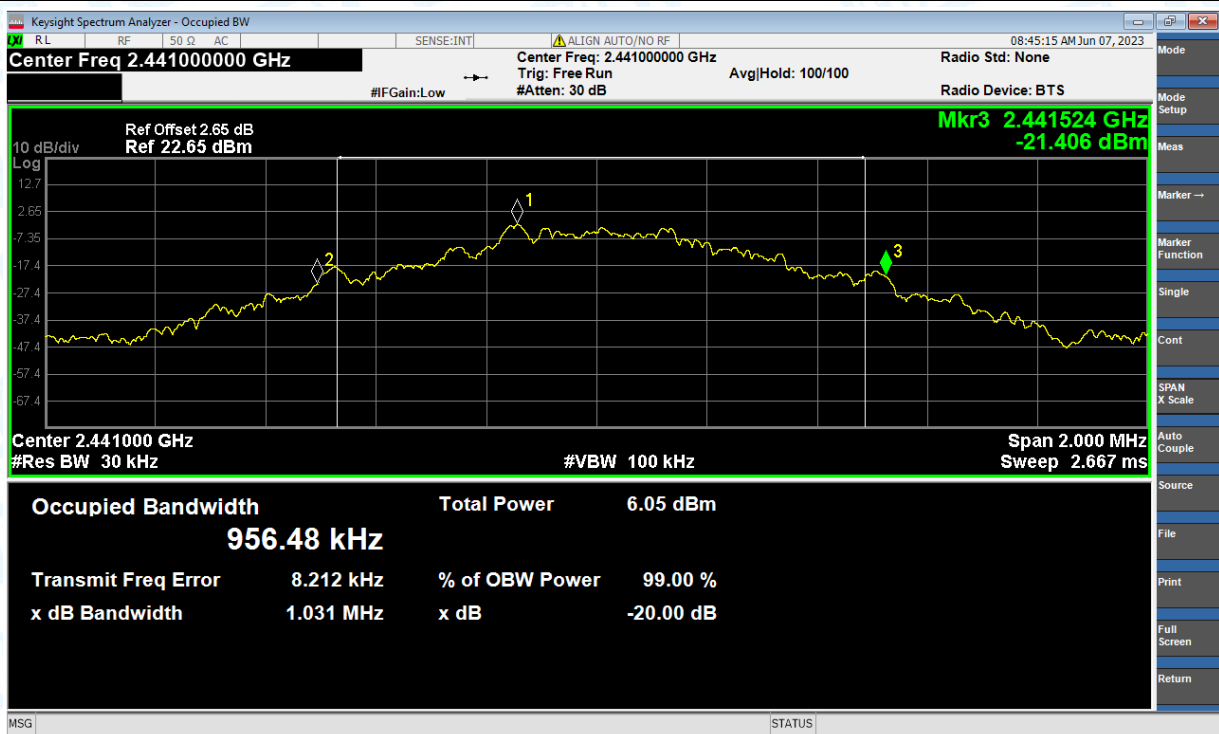
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	1.03	0	Pass
NVNT	1-DH1	2441	Ant1	1.03	0	Pass
NVNT	1-DH1	2480	Ant1	1.04	0	Pass
NVNT	2-DH1	2402	Ant1	1.29	0	Pass
NVNT	2-DH1	2441	Ant1	1.28	0	Pass
NVNT	2-DH1	2480	Ant1	1.27	0	Pass
NVNT	3-DH1	2402	Ant1	1.25	0	Pass
NVNT	3-DH1	2441	Ant1	1.24	0	Pass
NVNT	3-DH1	2480	Ant1	1.25	0	Pass

Test Graphs

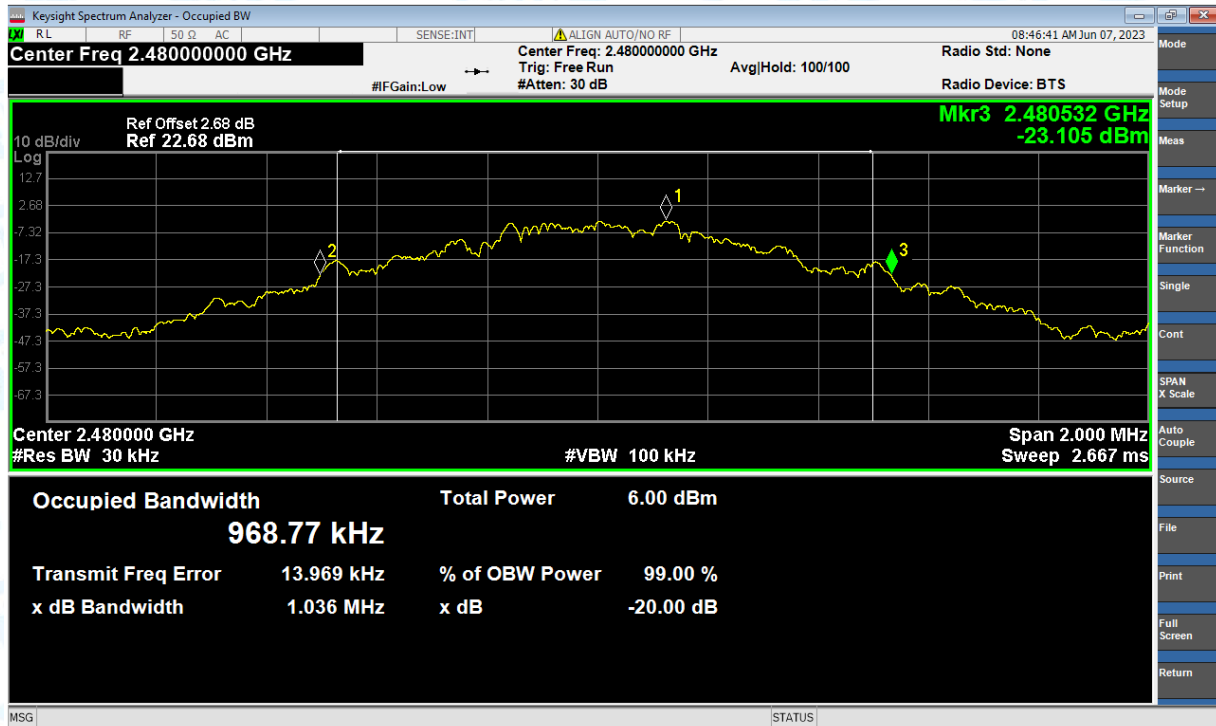
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



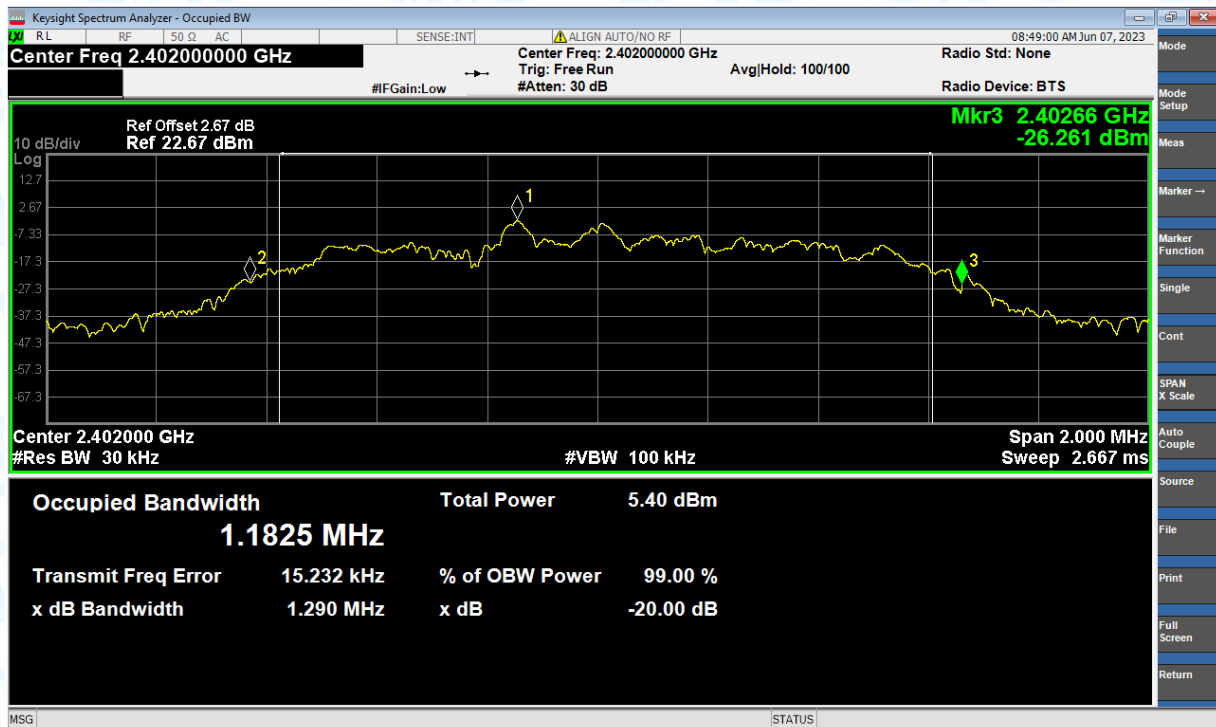
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



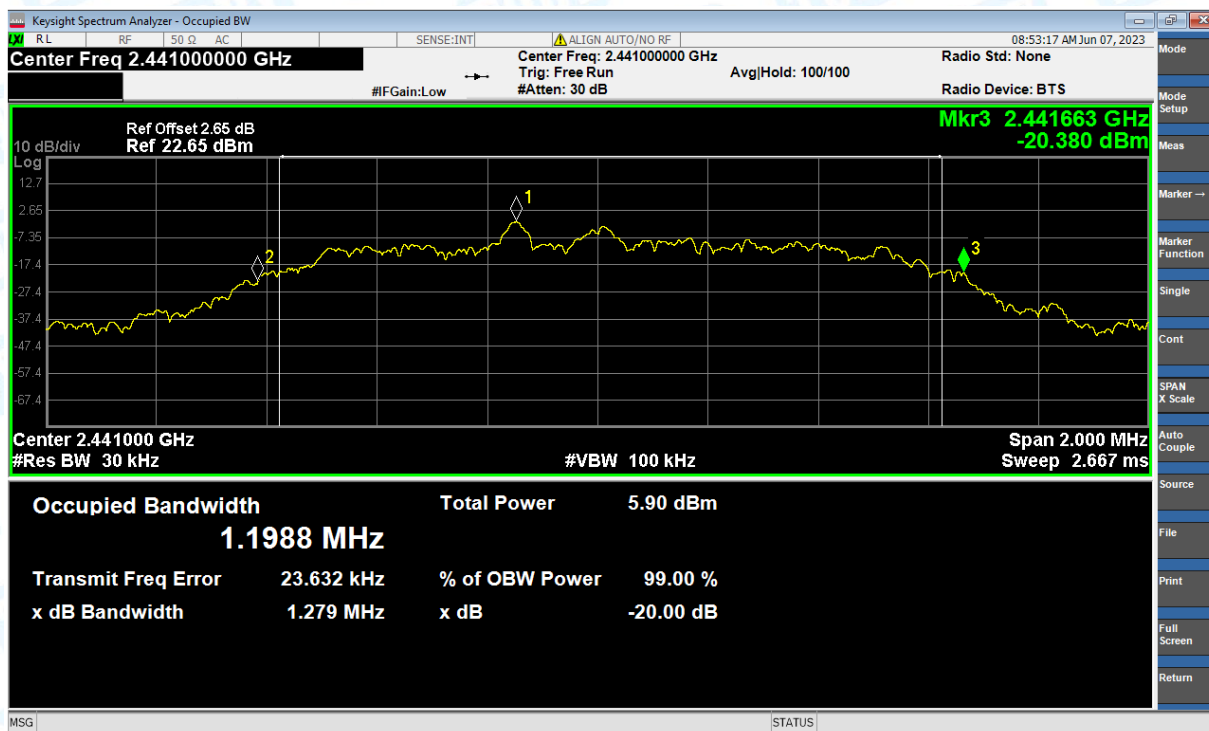
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



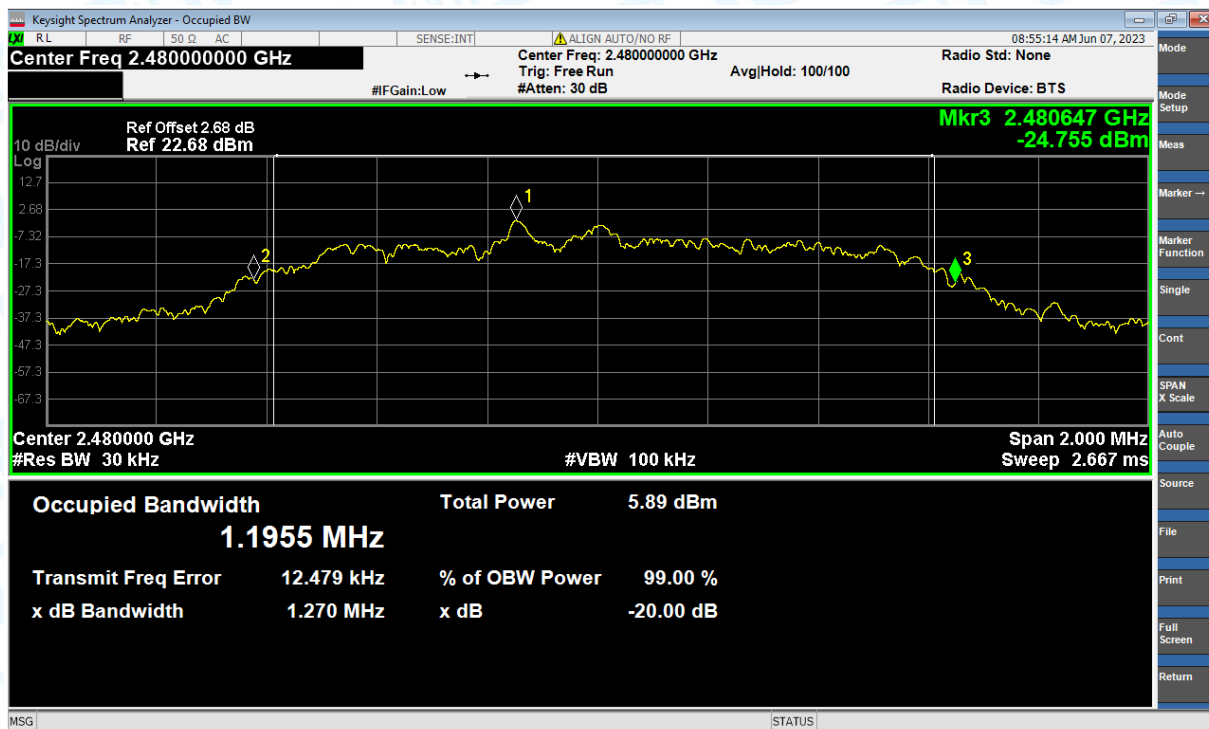
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



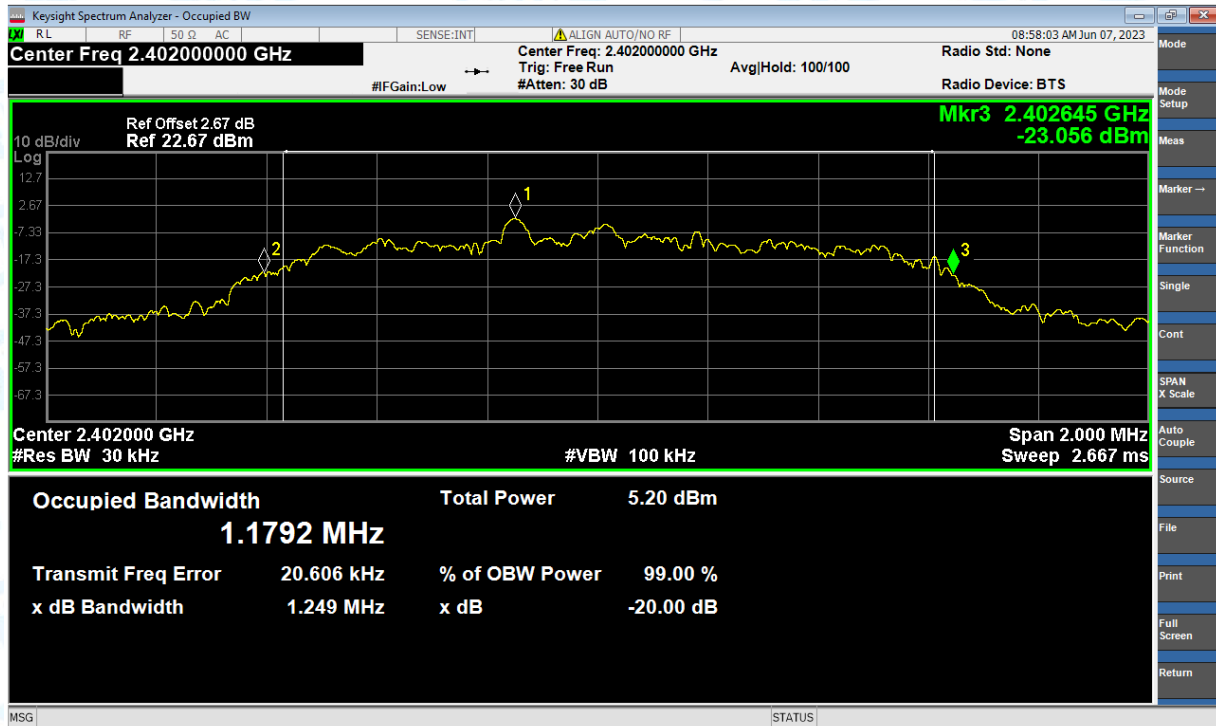
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



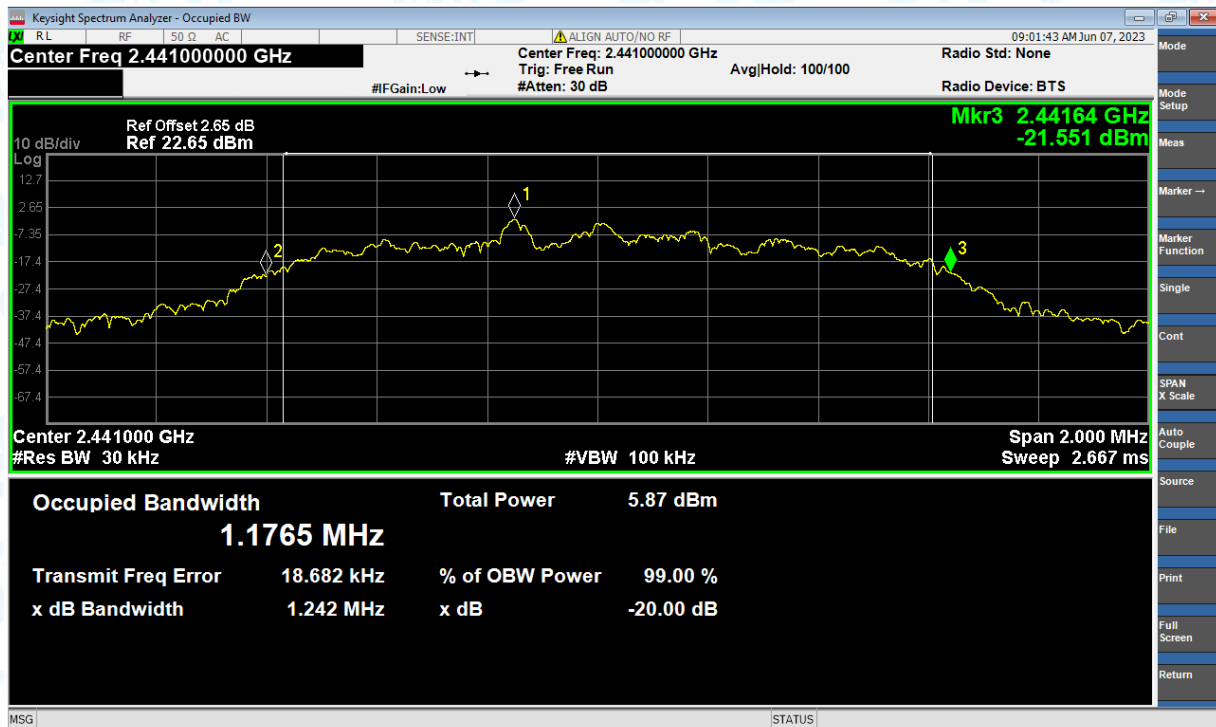
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

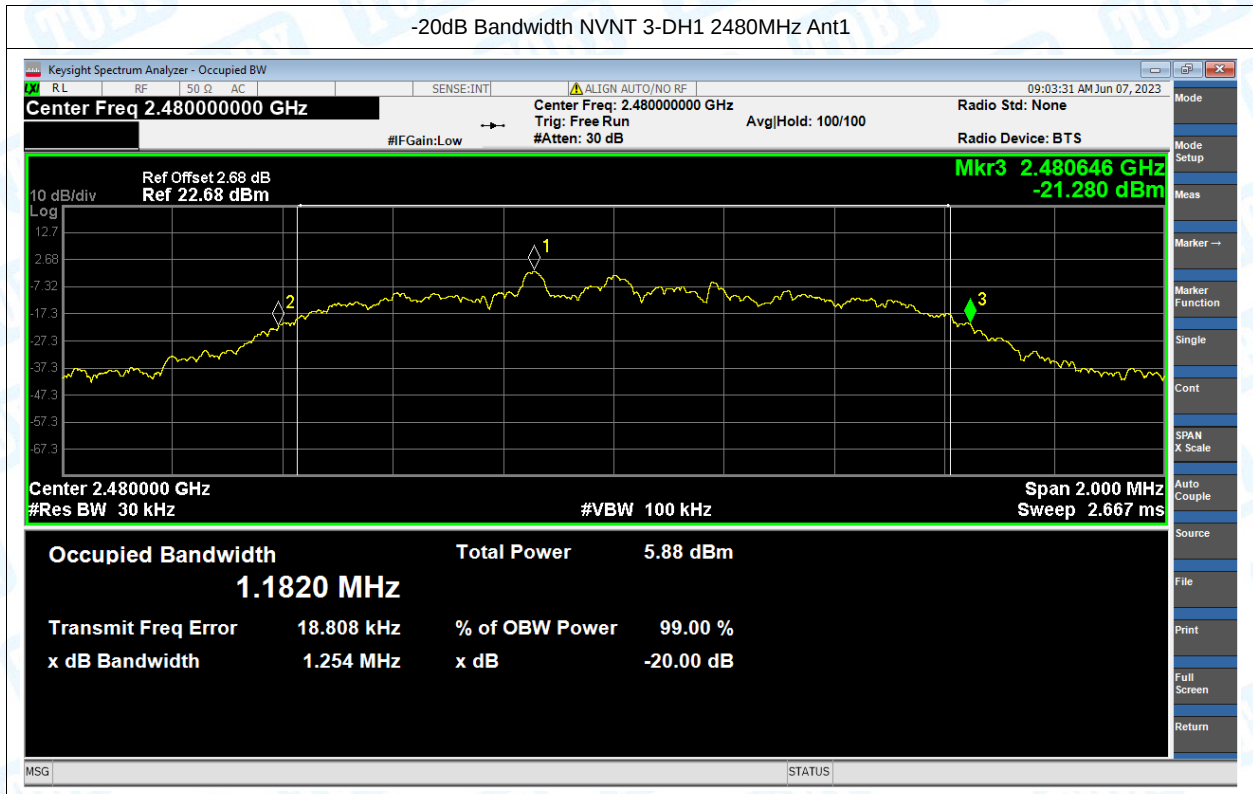


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



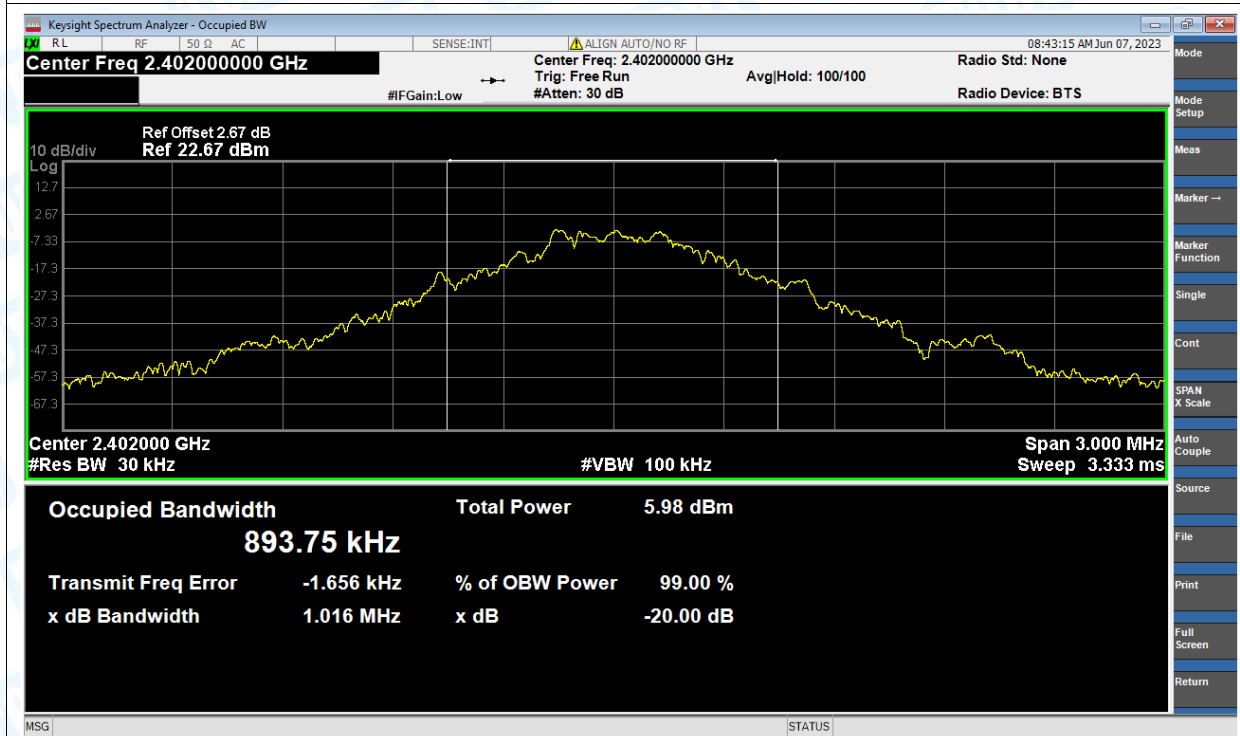


4. Occupied Channel Bandwidth

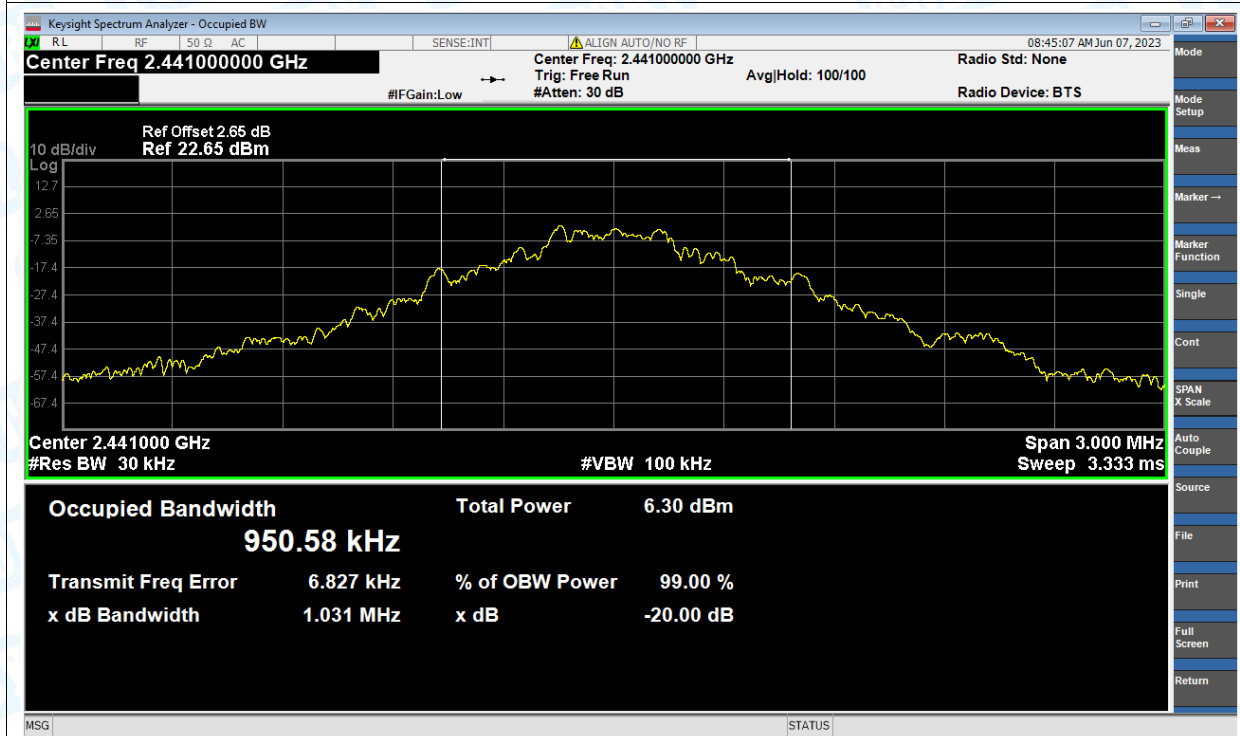
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.894
NVNT	1-DH1	2441	Ant1	0.951
NVNT	1-DH1	2480	Ant1	0.951
NVNT	2-DH1	2402	Ant1	1.205
NVNT	2-DH1	2441	Ant1	1.196
NVNT	2-DH1	2480	Ant1	1.178
NVNT	3-DH1	2402	Ant1	1.183
NVNT	3-DH1	2441	Ant1	1.188
NVNT	3-DH1	2480	Ant1	1.183

Test Graphs

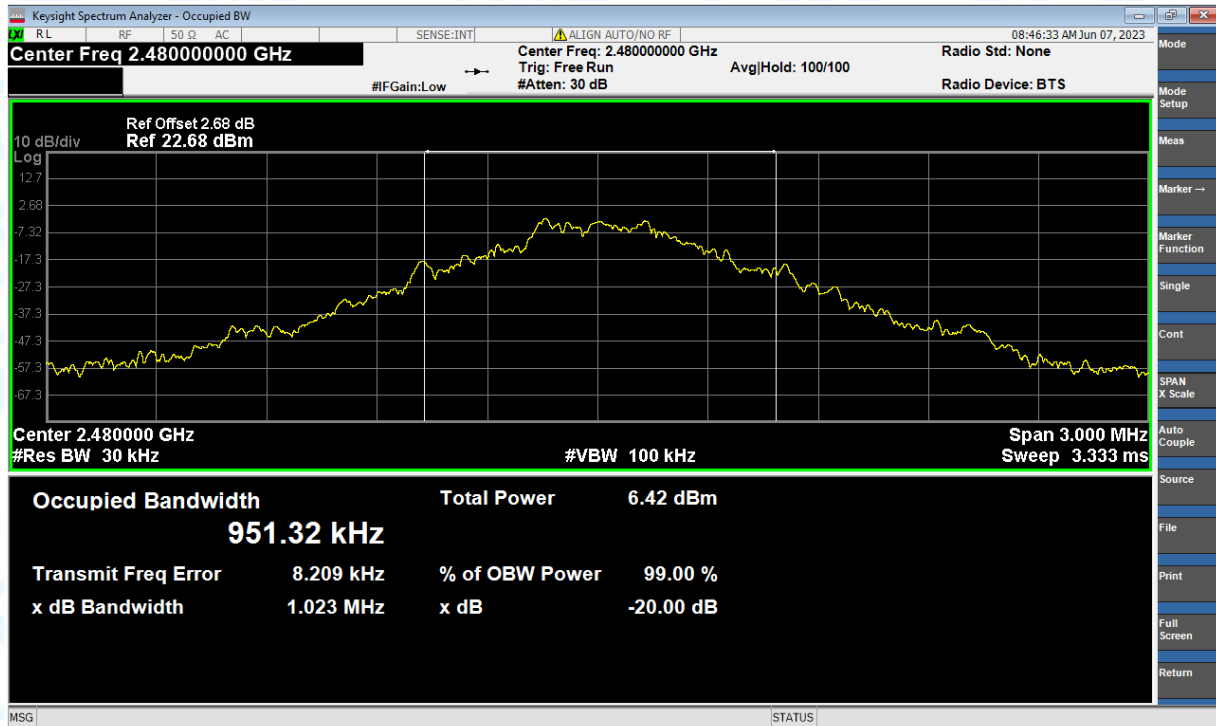
OBW NVNT 1-DH1 2402MHz Ant1



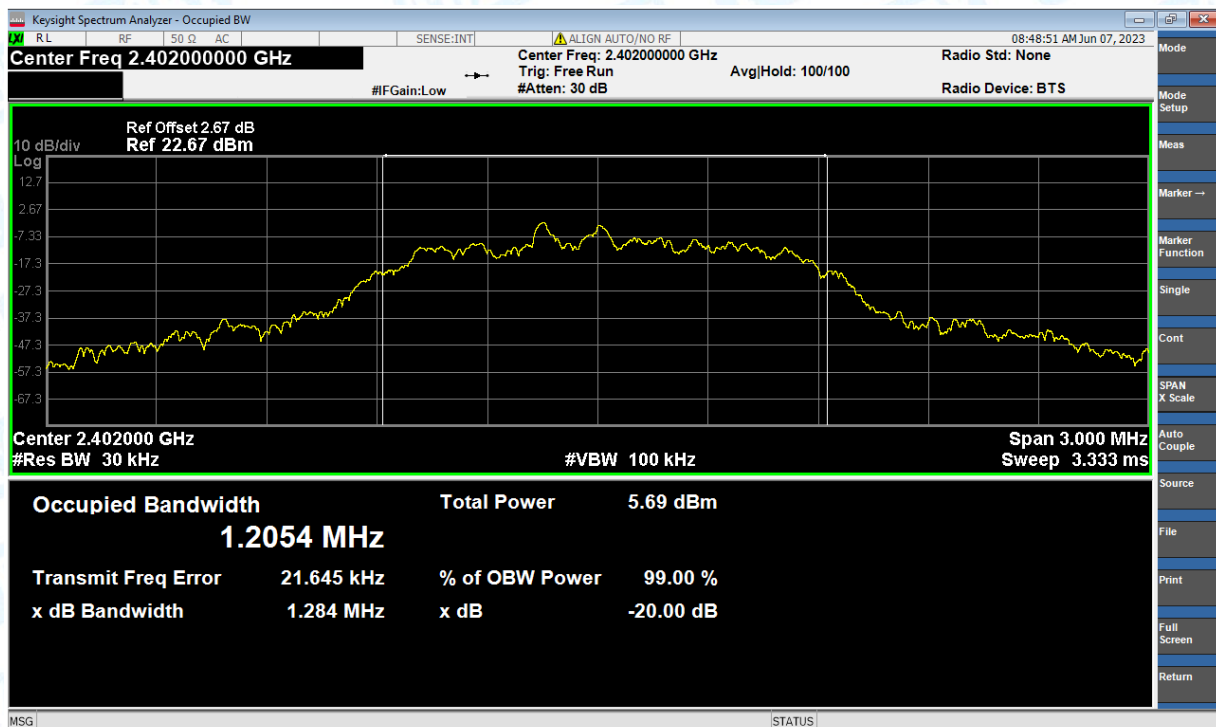
OBW NVNT 1-DH1 2441MHz Ant1



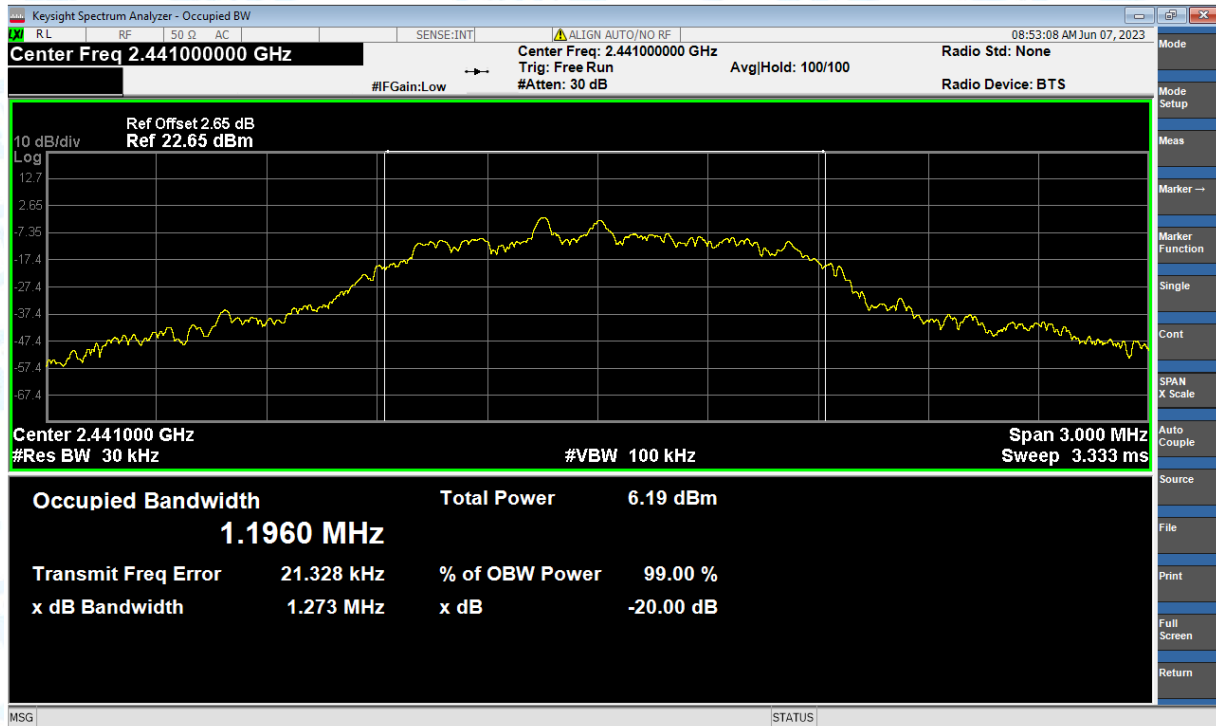
OBW NVNT 1-DH1 2480MHz Ant1



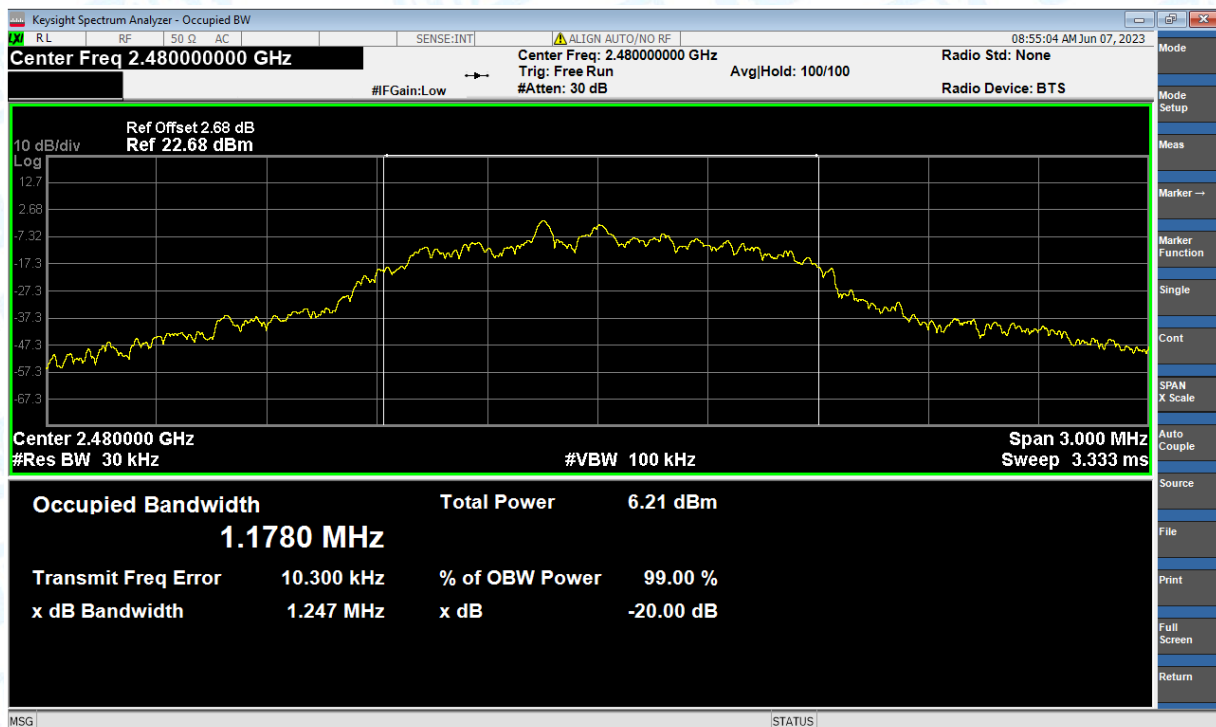
OBW NVNT 2-DH1 2402MHz Ant1



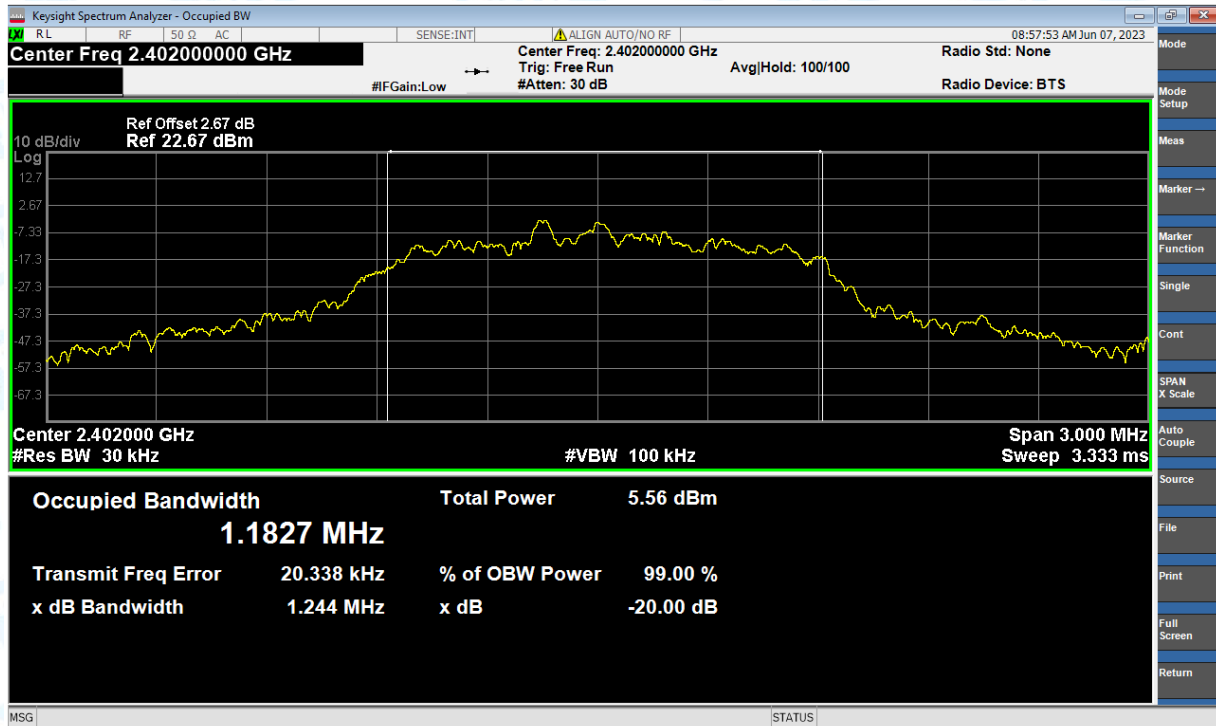
OBW NVNT 2-DH1 2441MHz Ant1



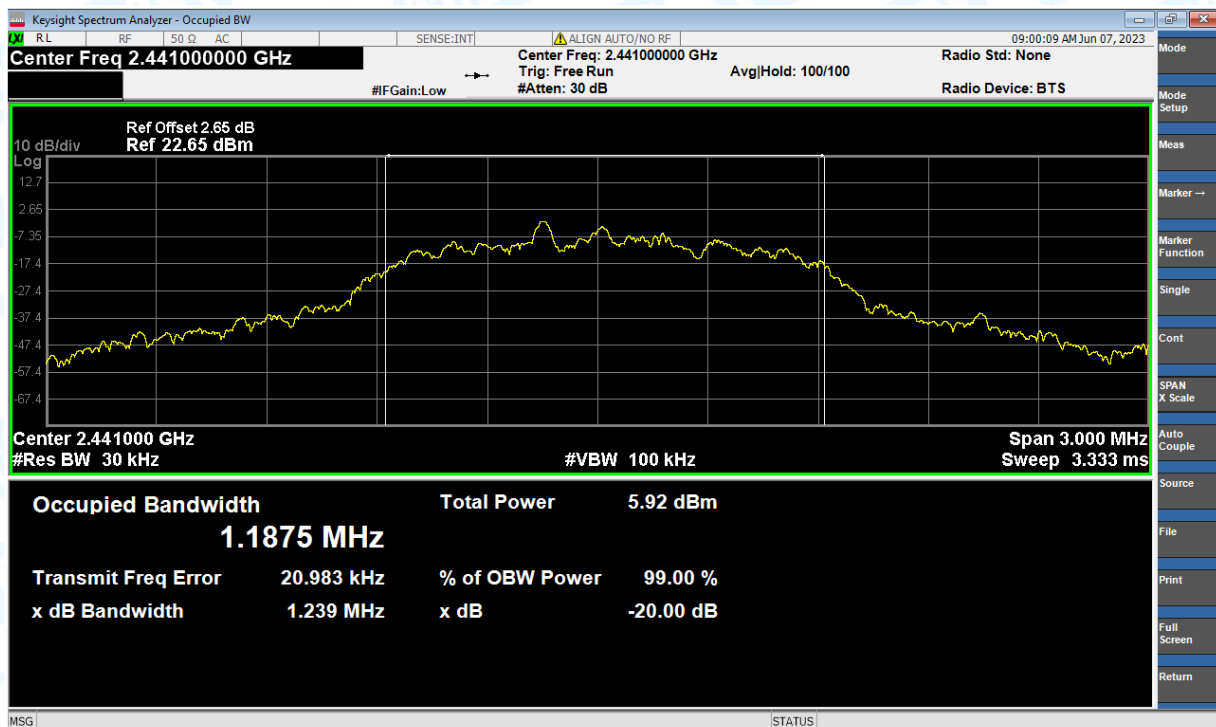
OBW NVNT 2-DH1 2480MHz Ant1

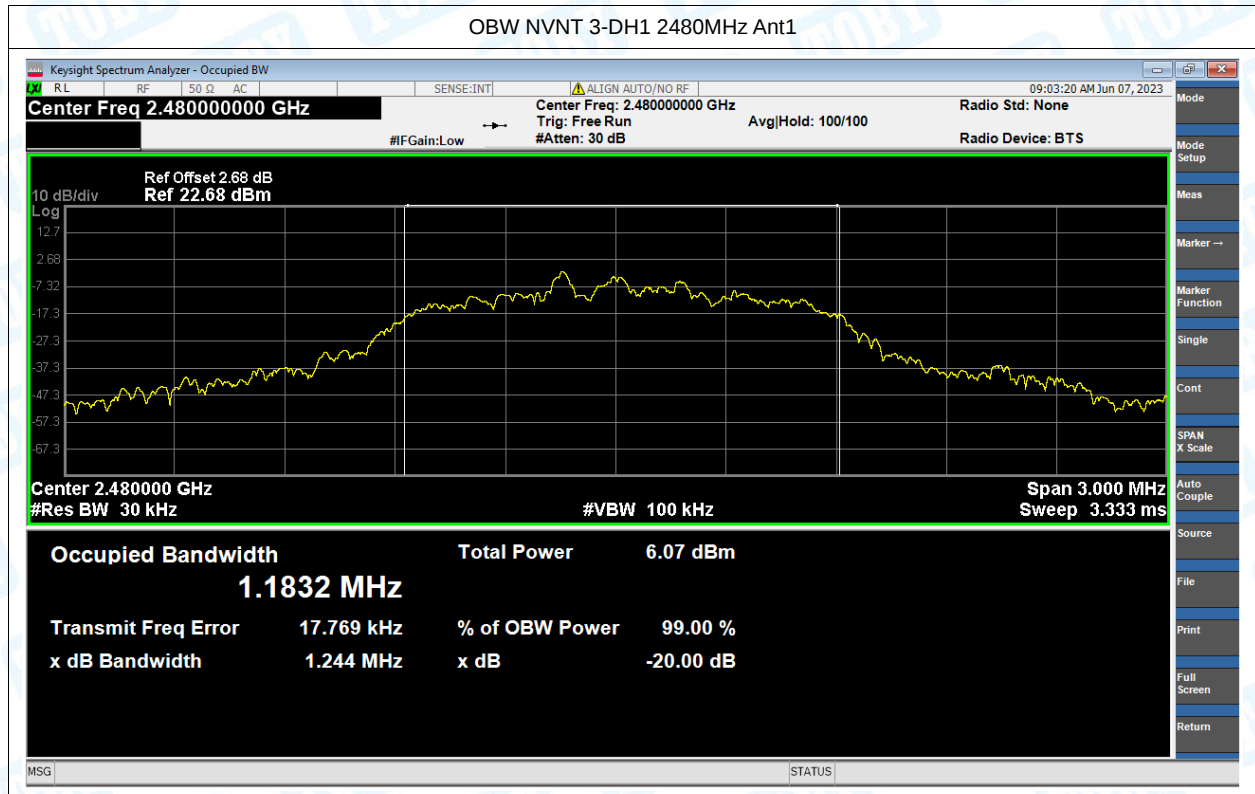


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



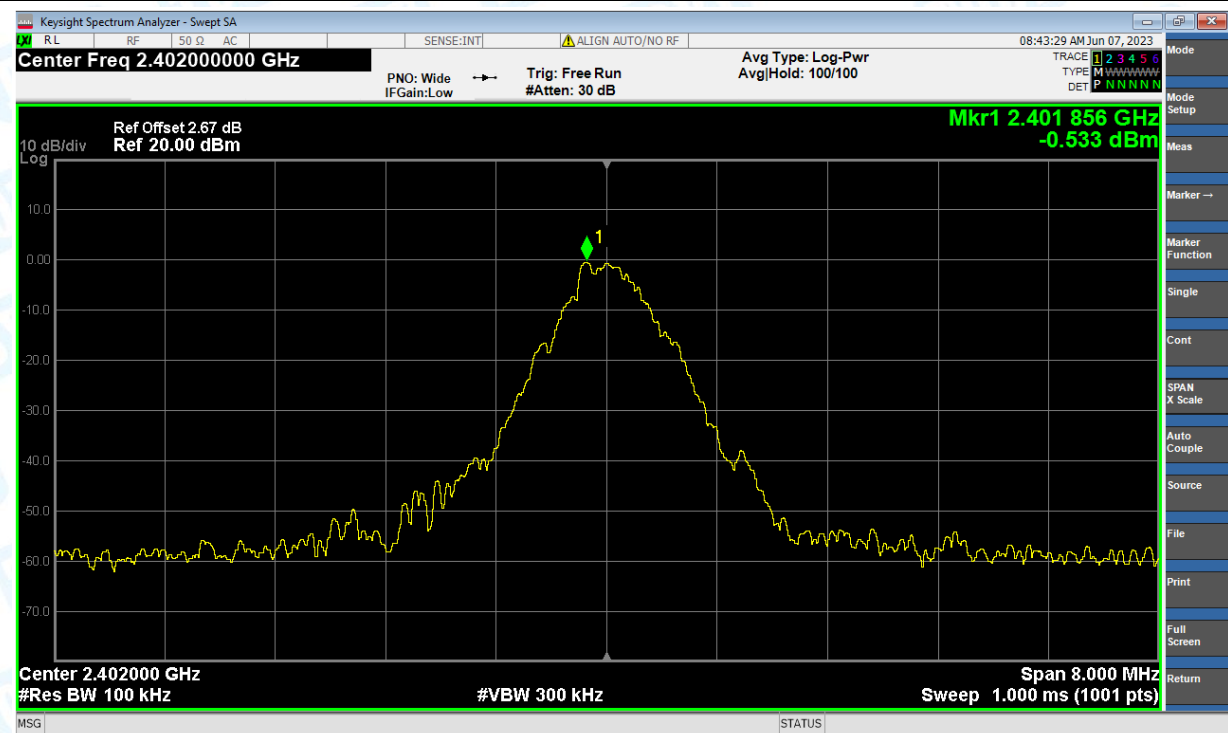


5. Band Edge

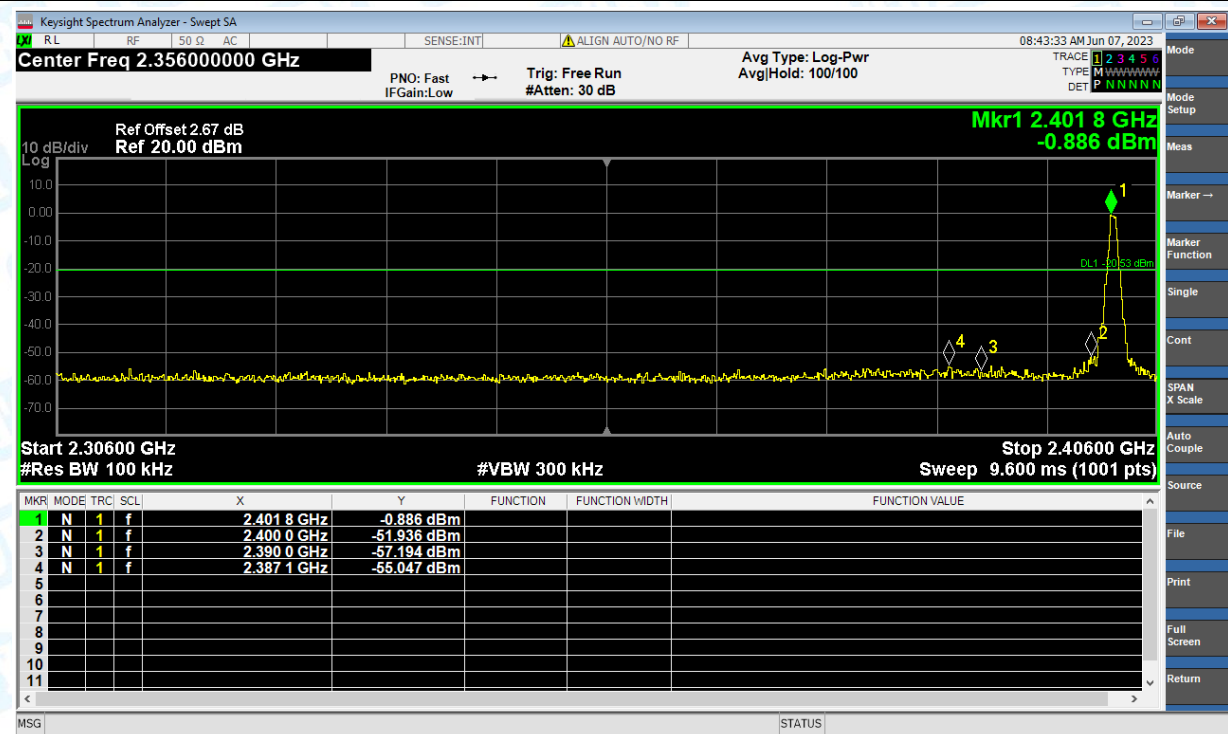
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-54.52	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-53.7	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-55.02	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-54.11	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-52.77	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-52.8	-20	Pass

Test Graphs

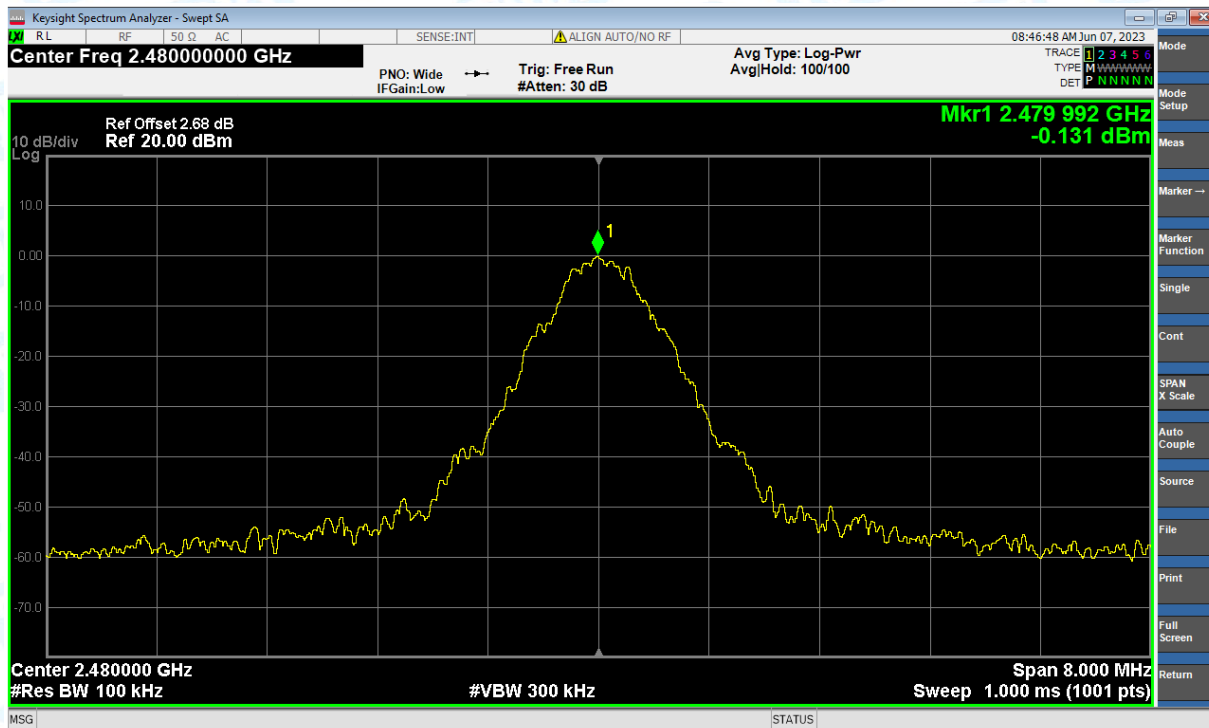
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



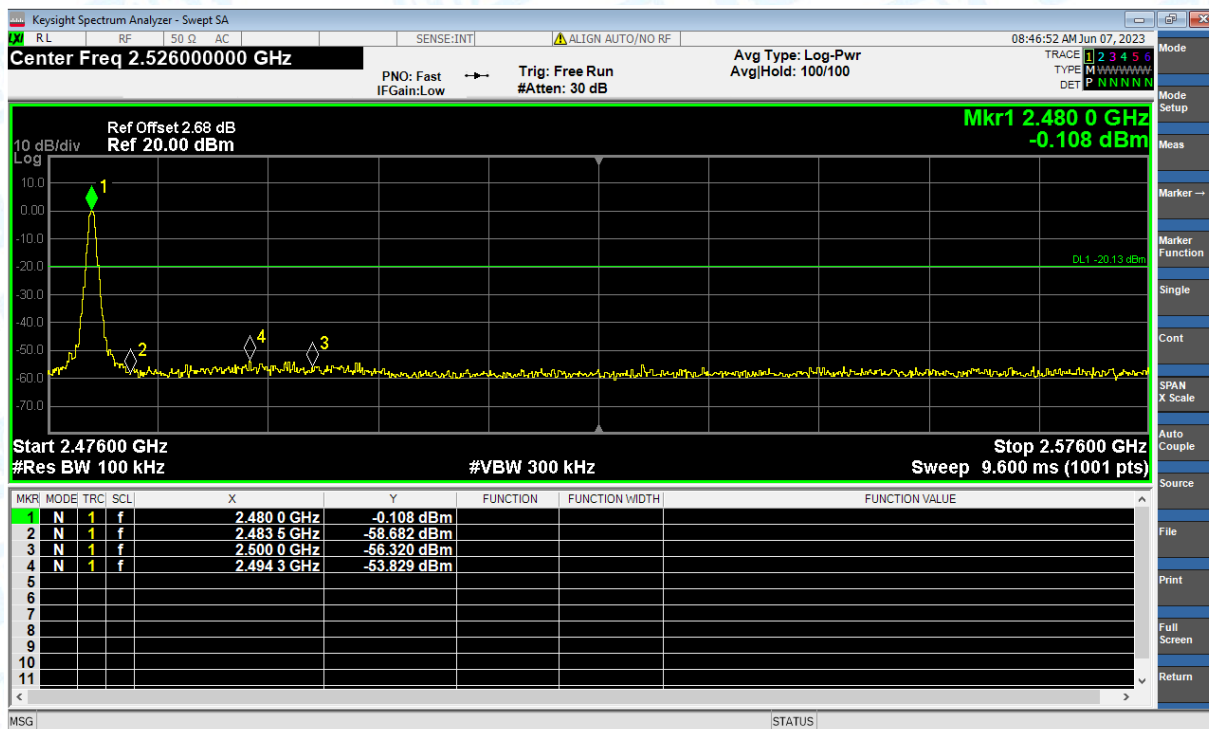
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



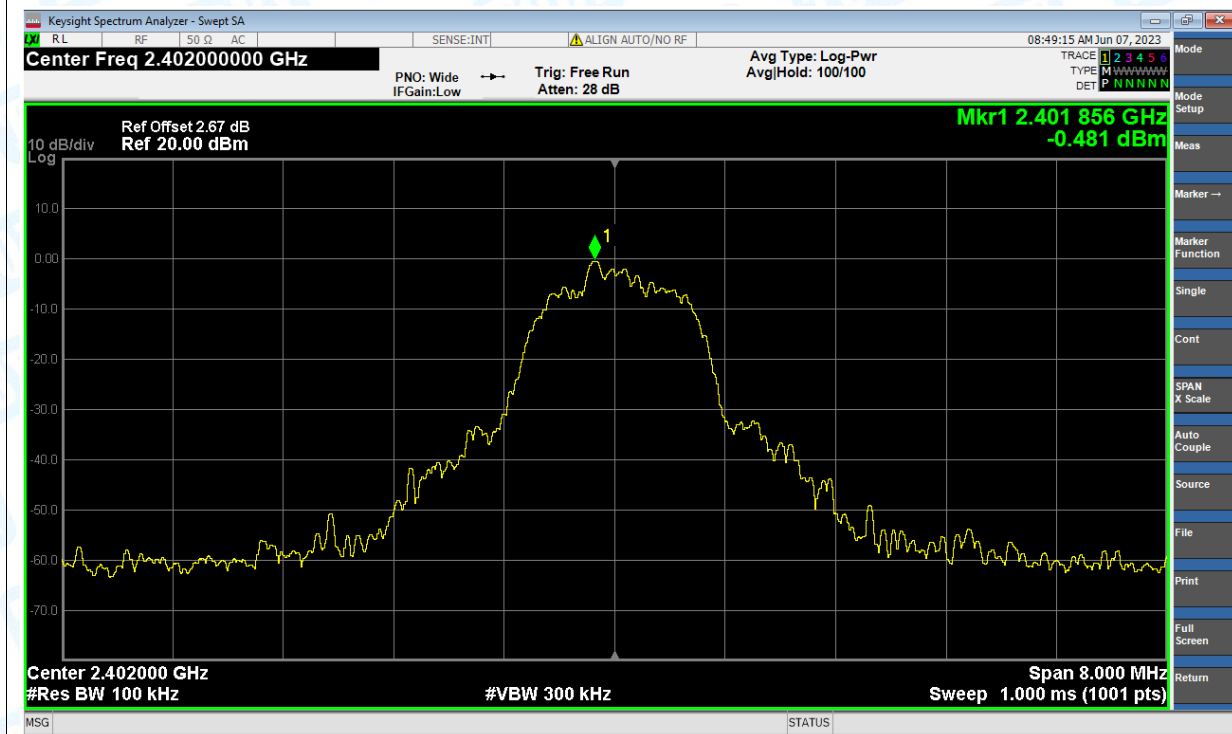
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



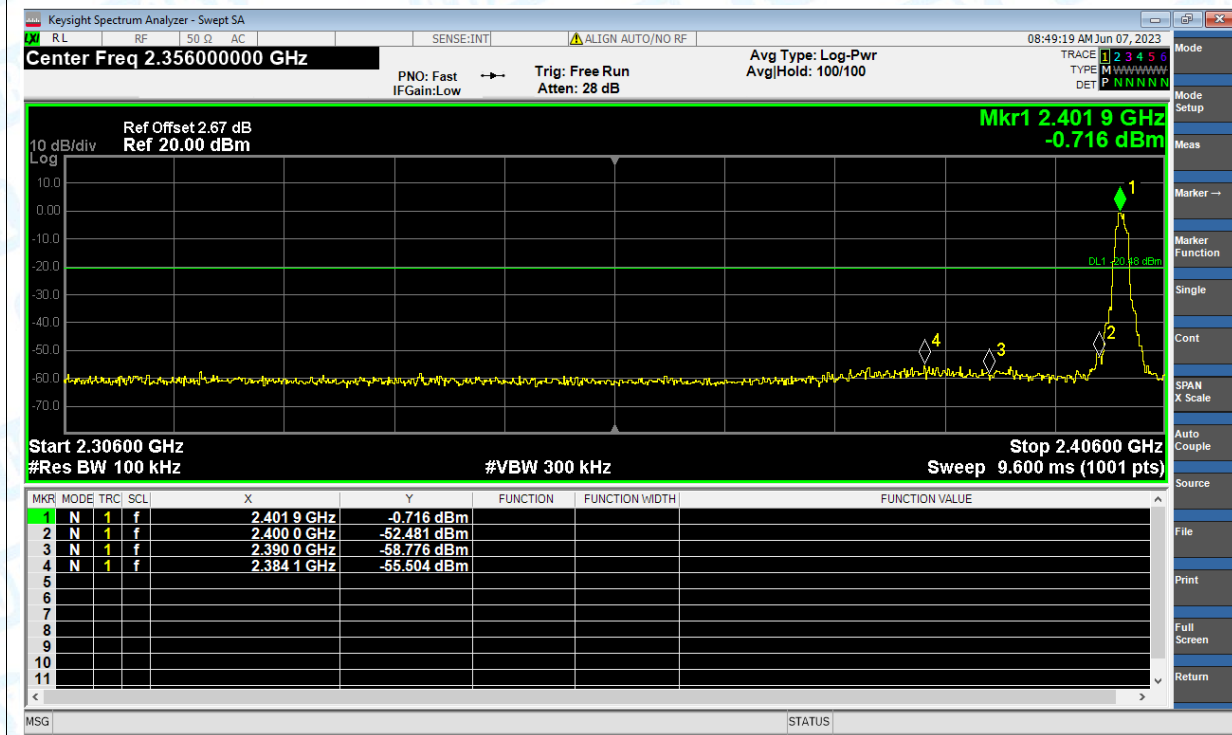
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



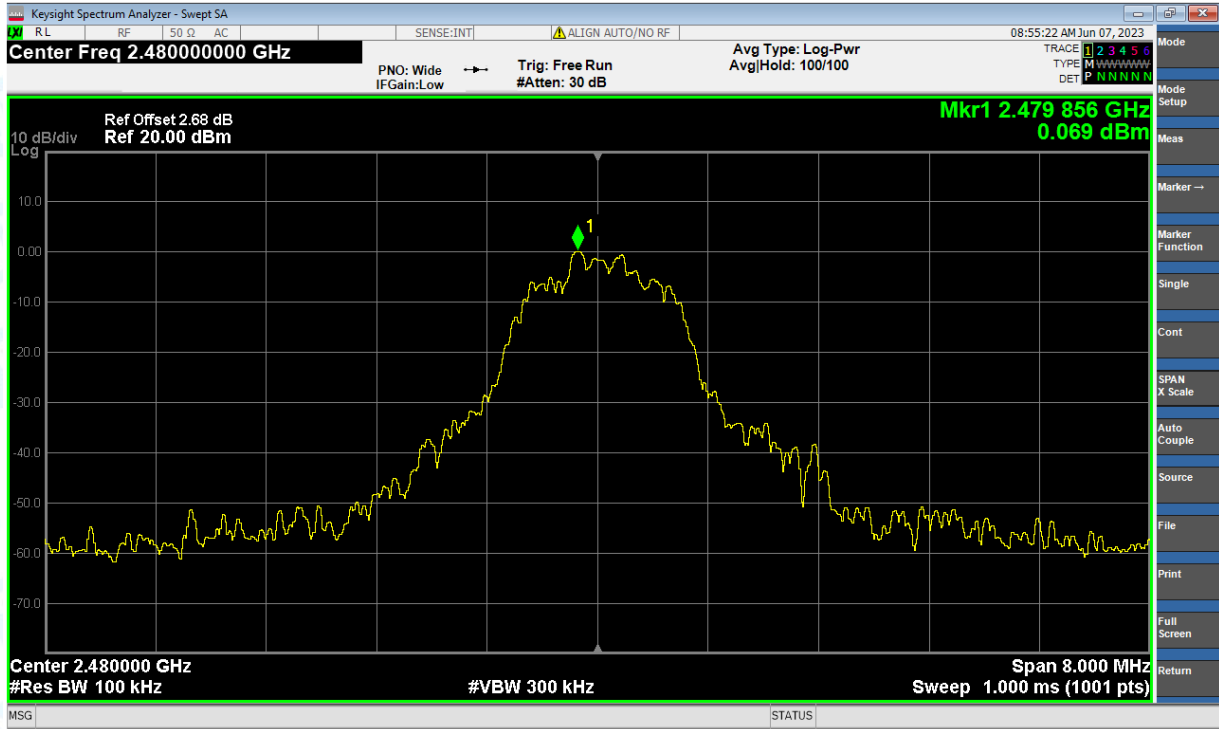
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



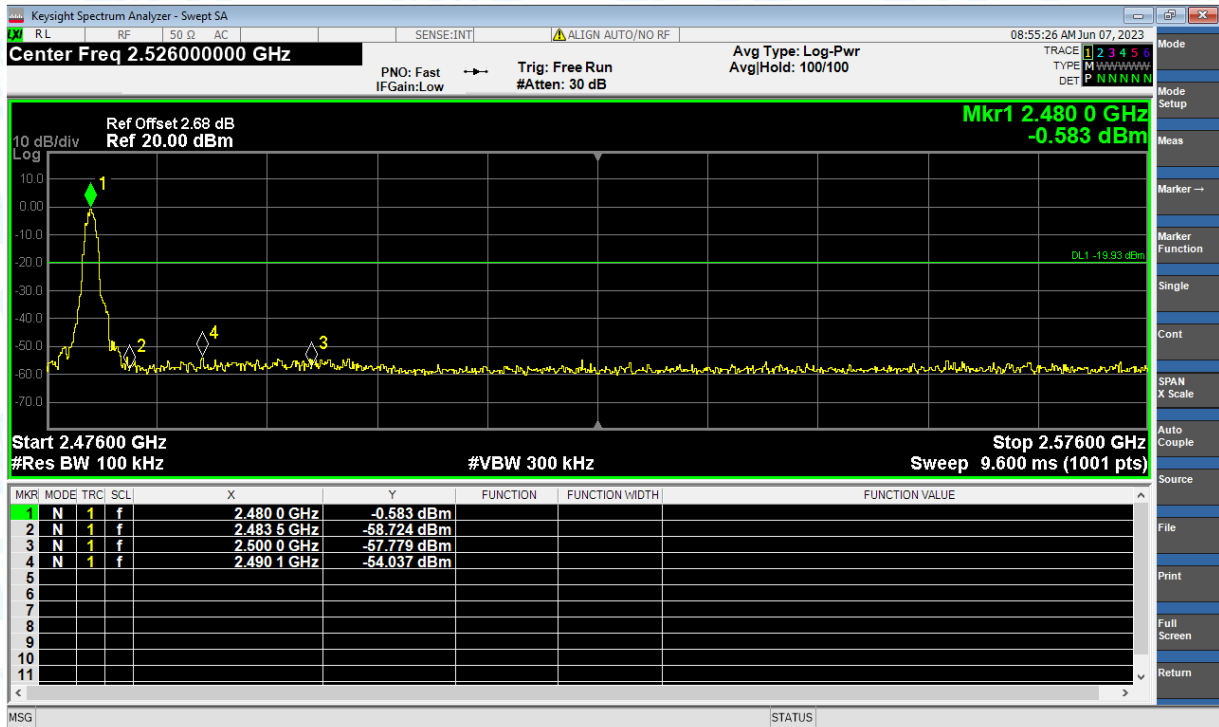
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



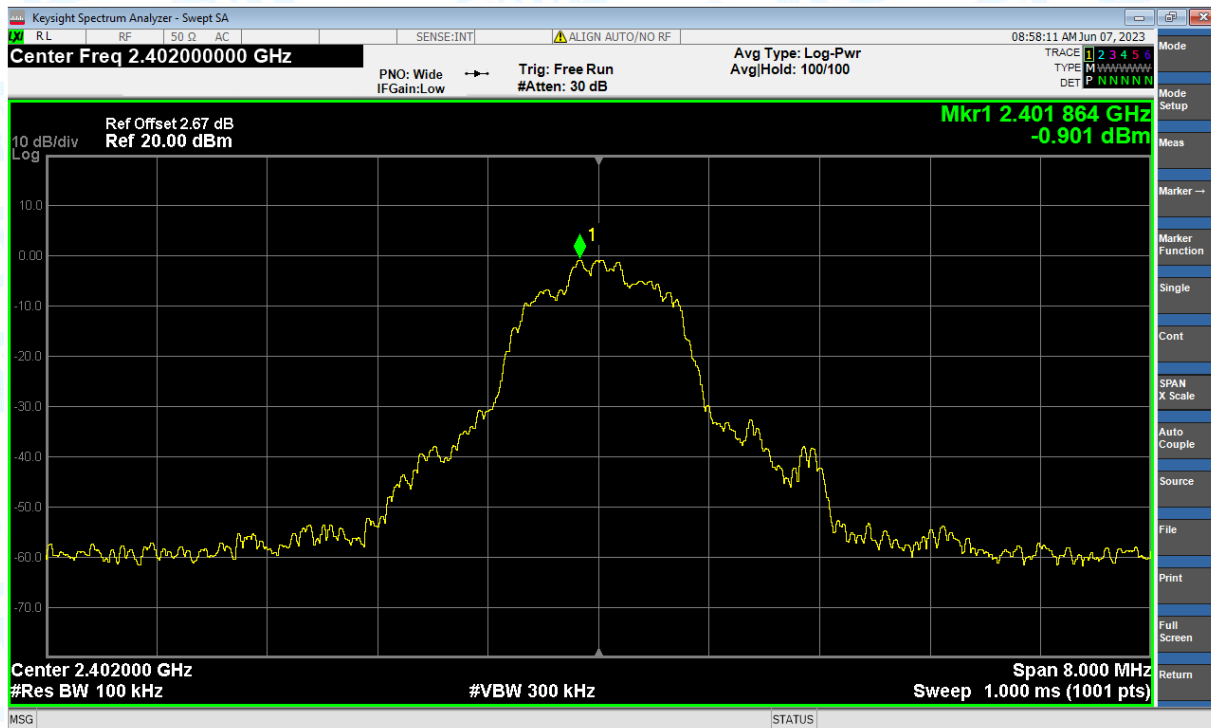
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



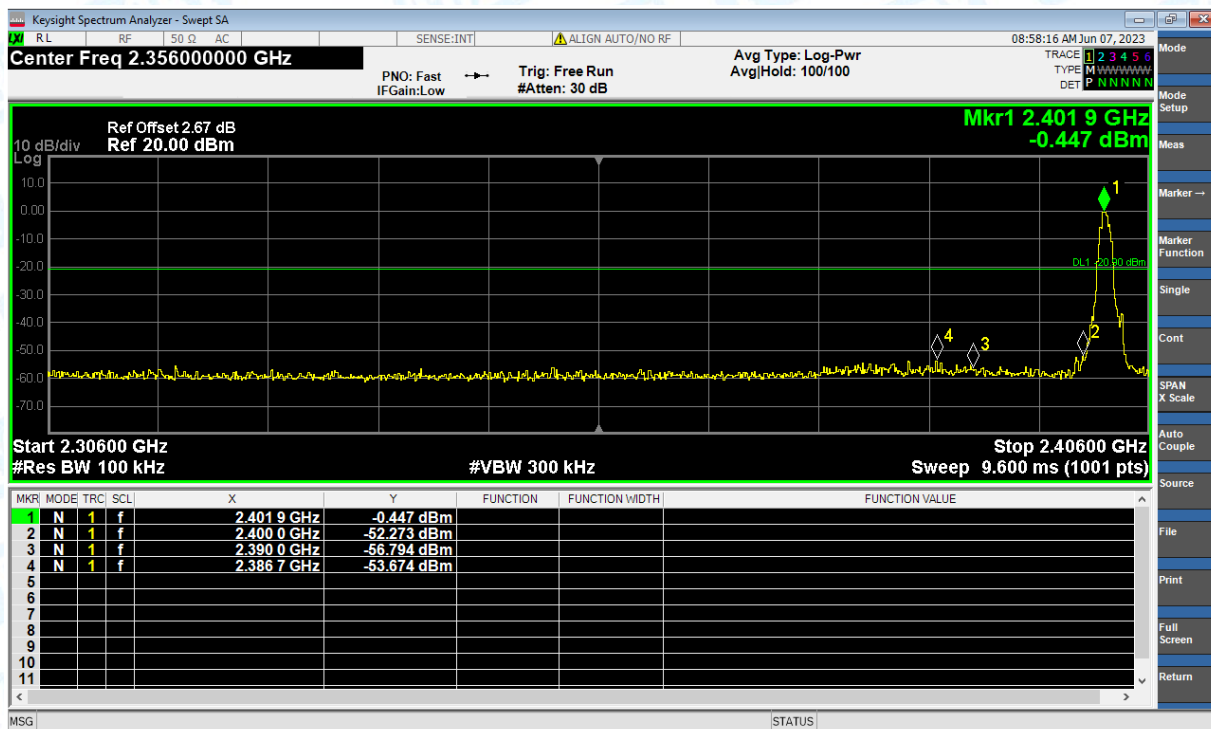
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



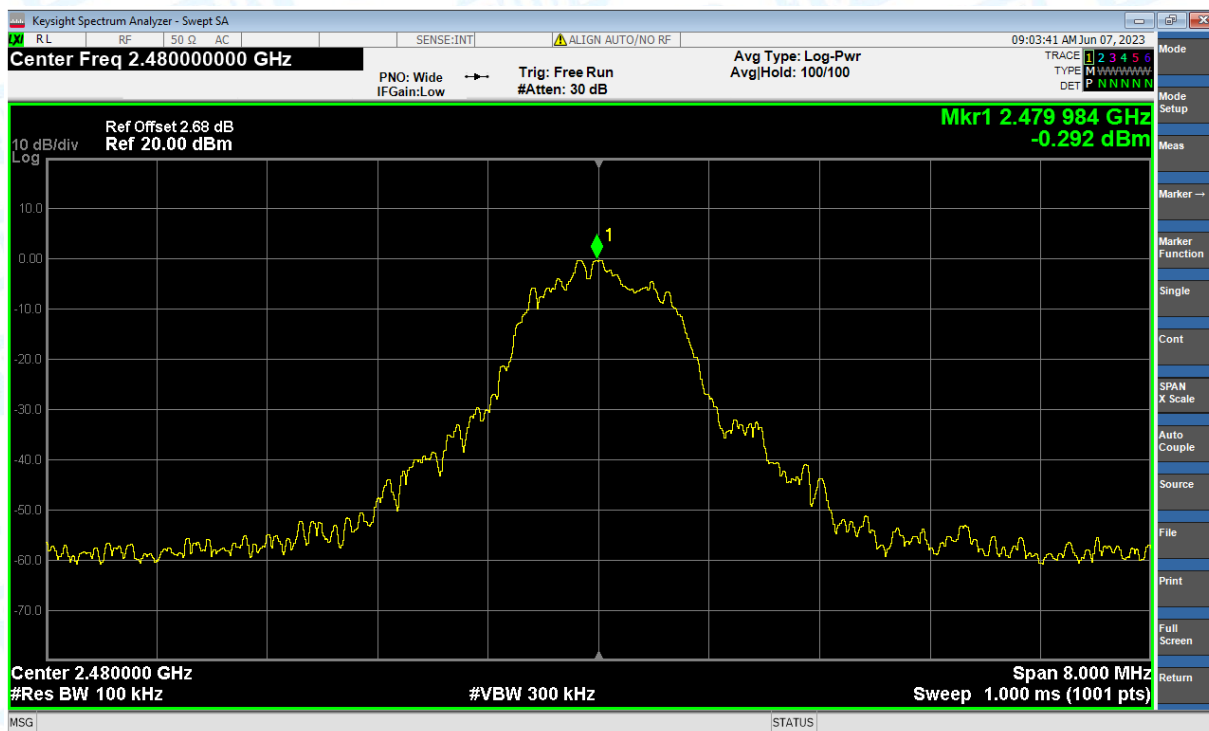
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



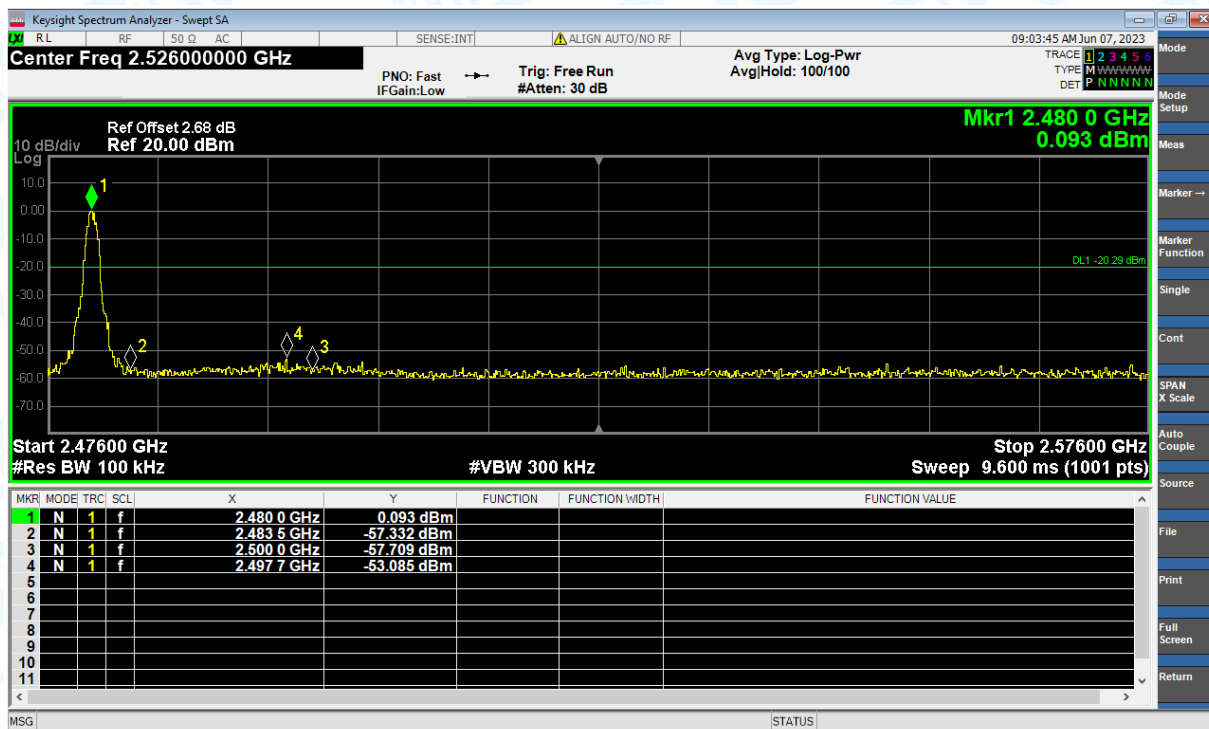
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

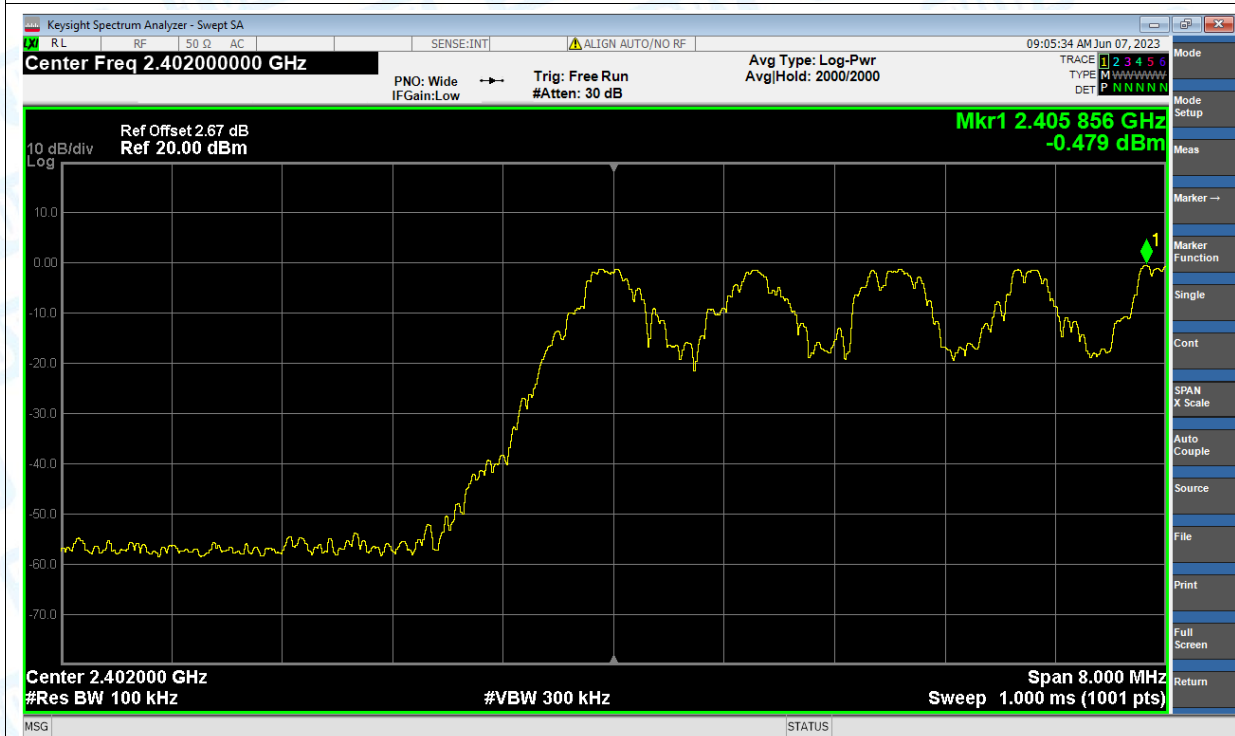


6. Band Edge(Hopping)

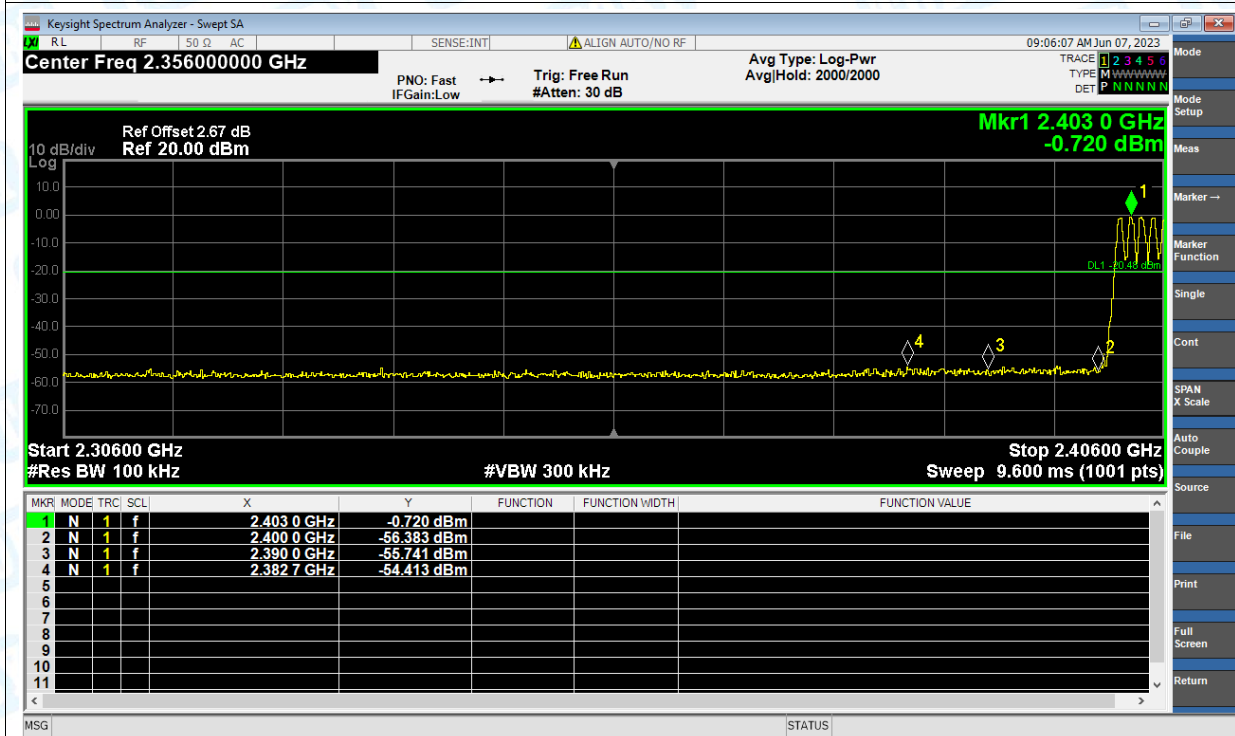
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-53.93	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-53.64	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-53.46	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-53.3	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-53.44	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-53.41	-20	Pass

Test Graphs

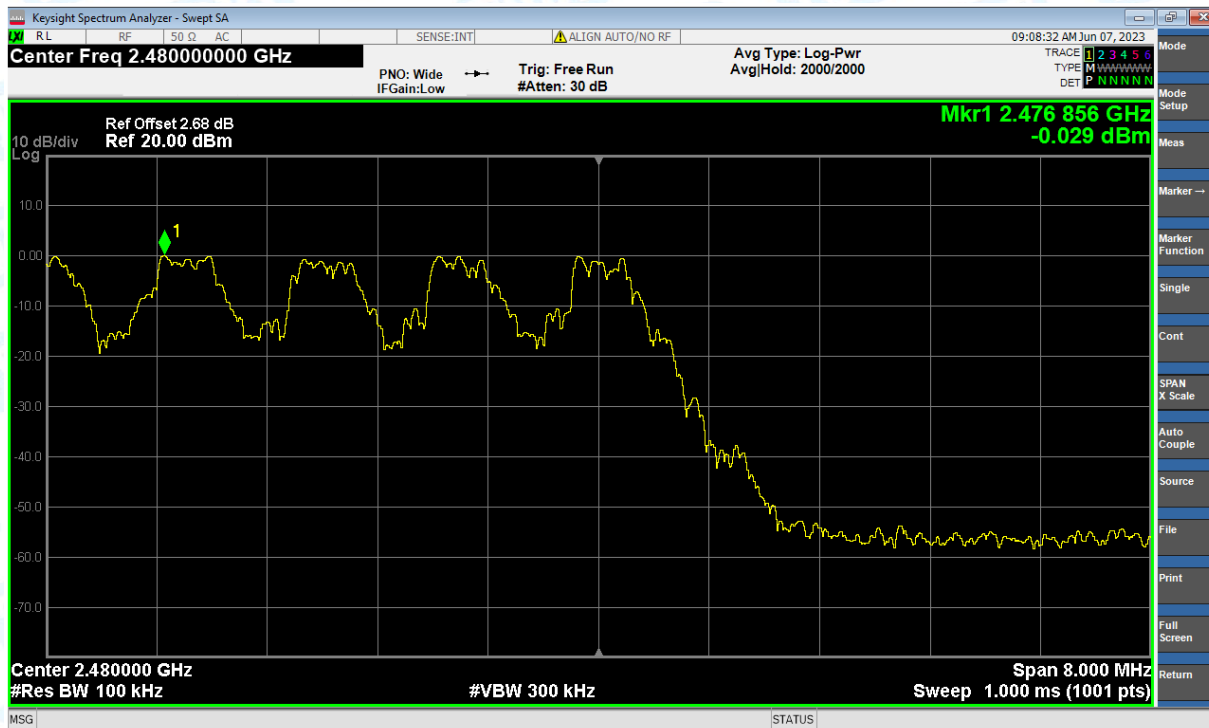
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



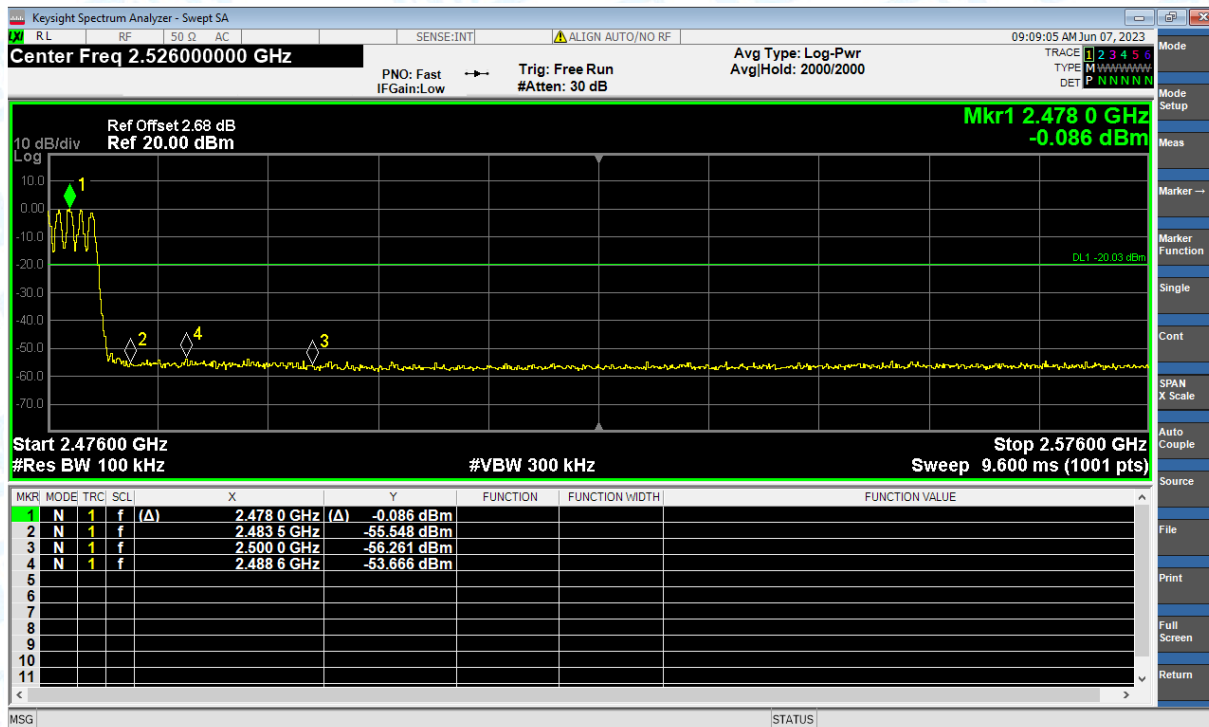
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



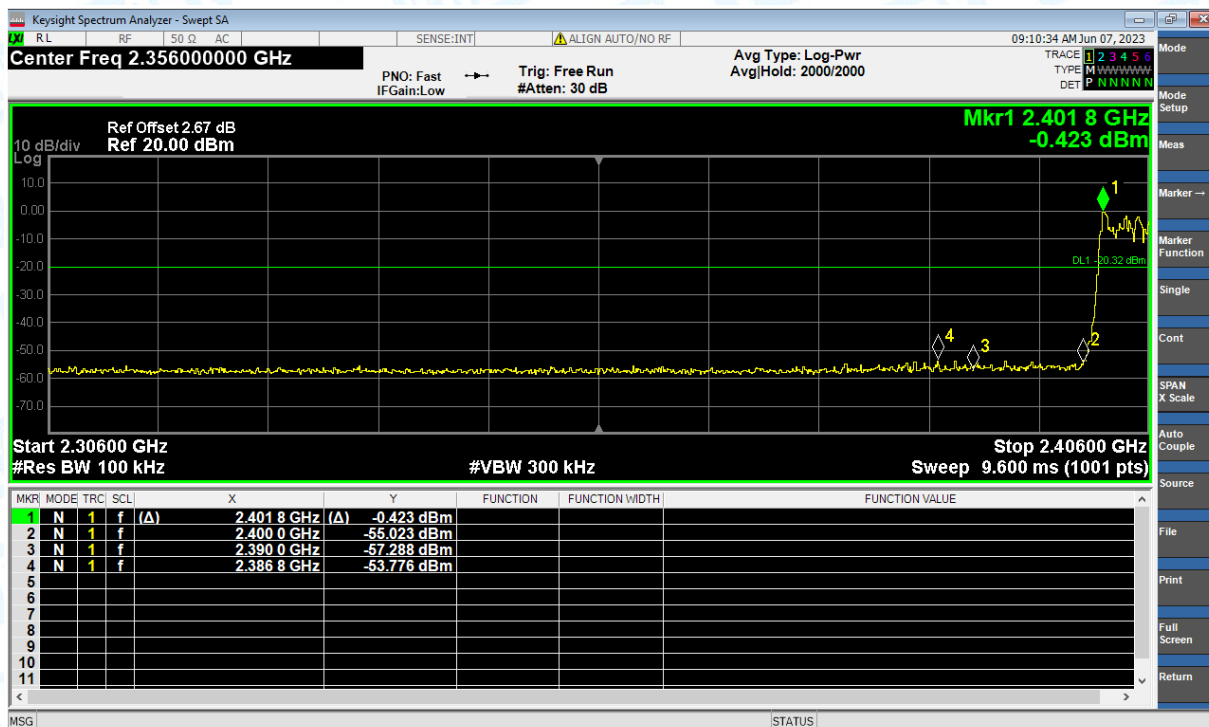
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



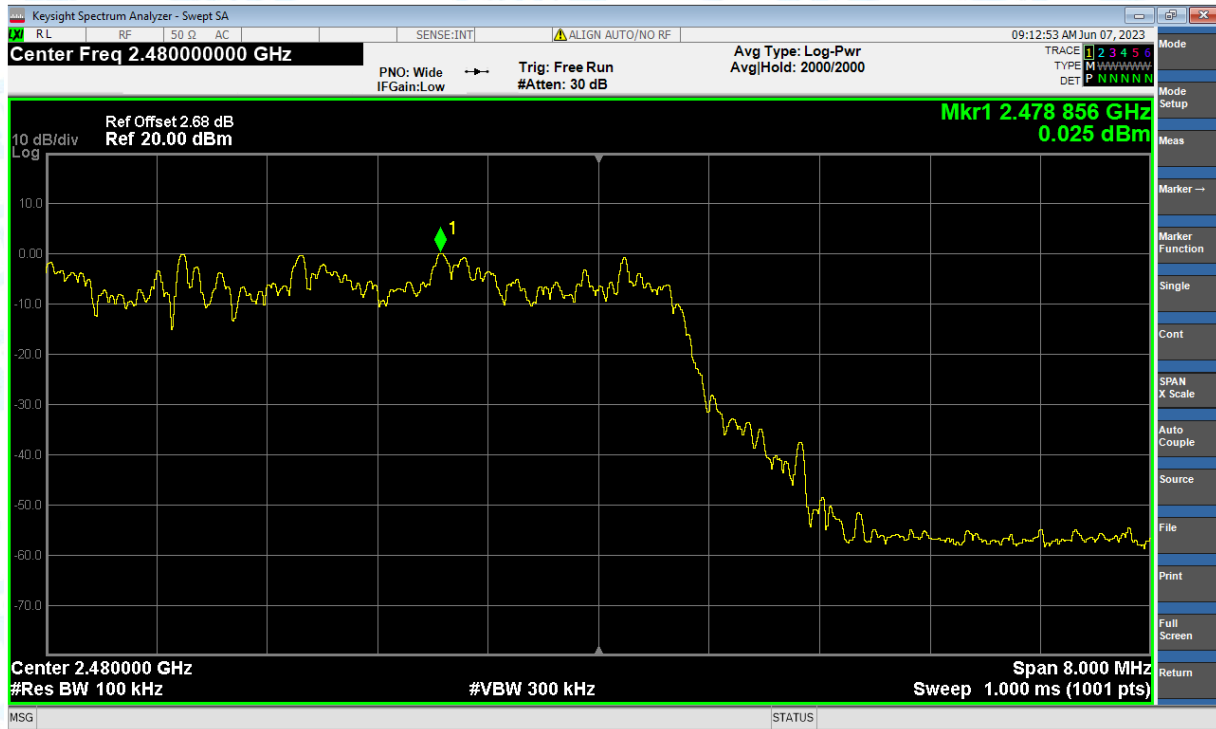
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



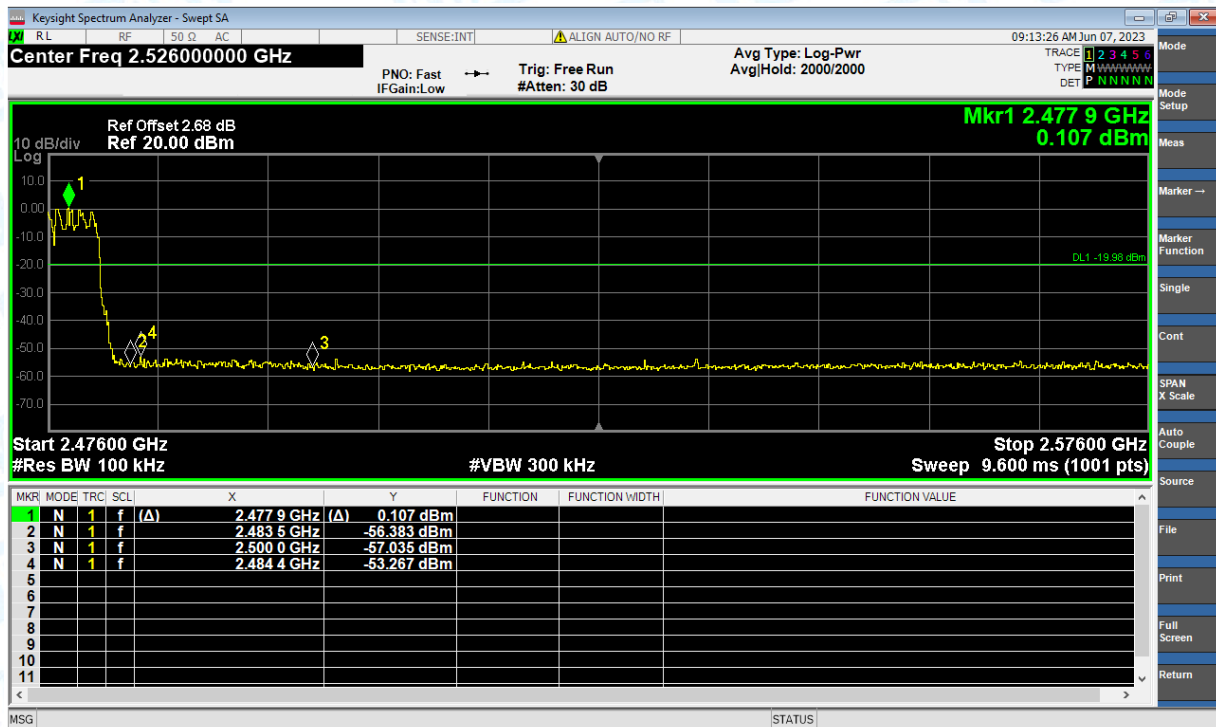
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



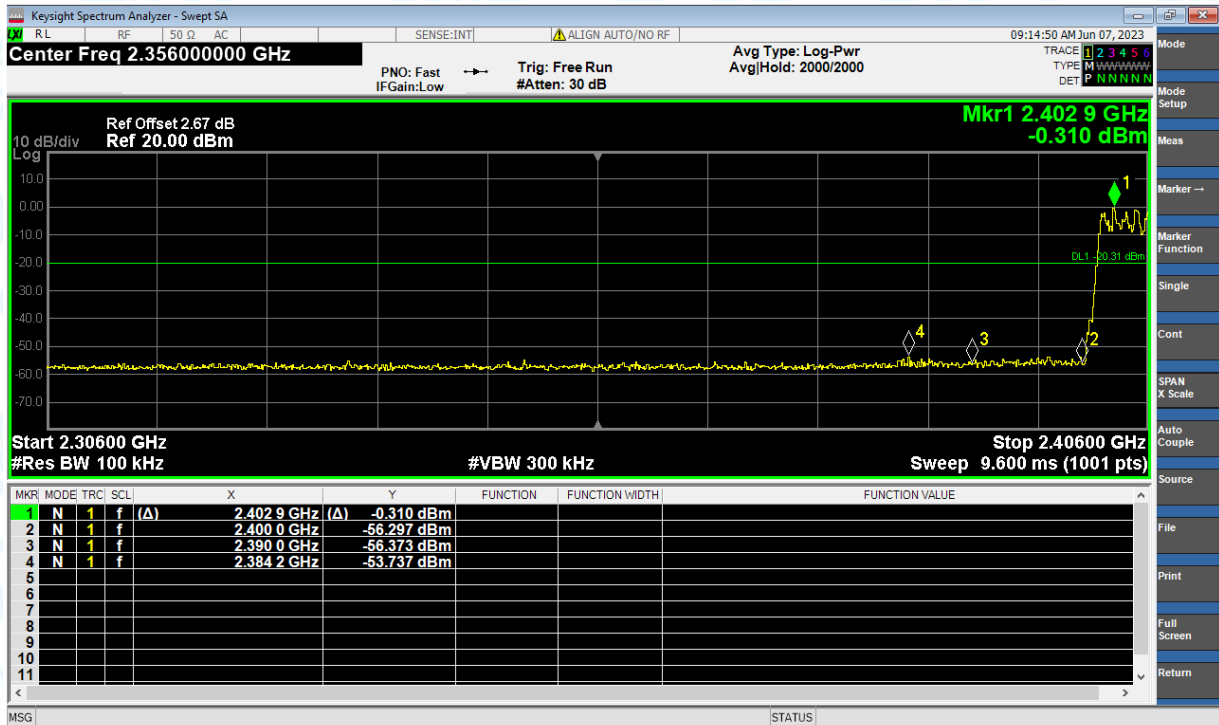
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



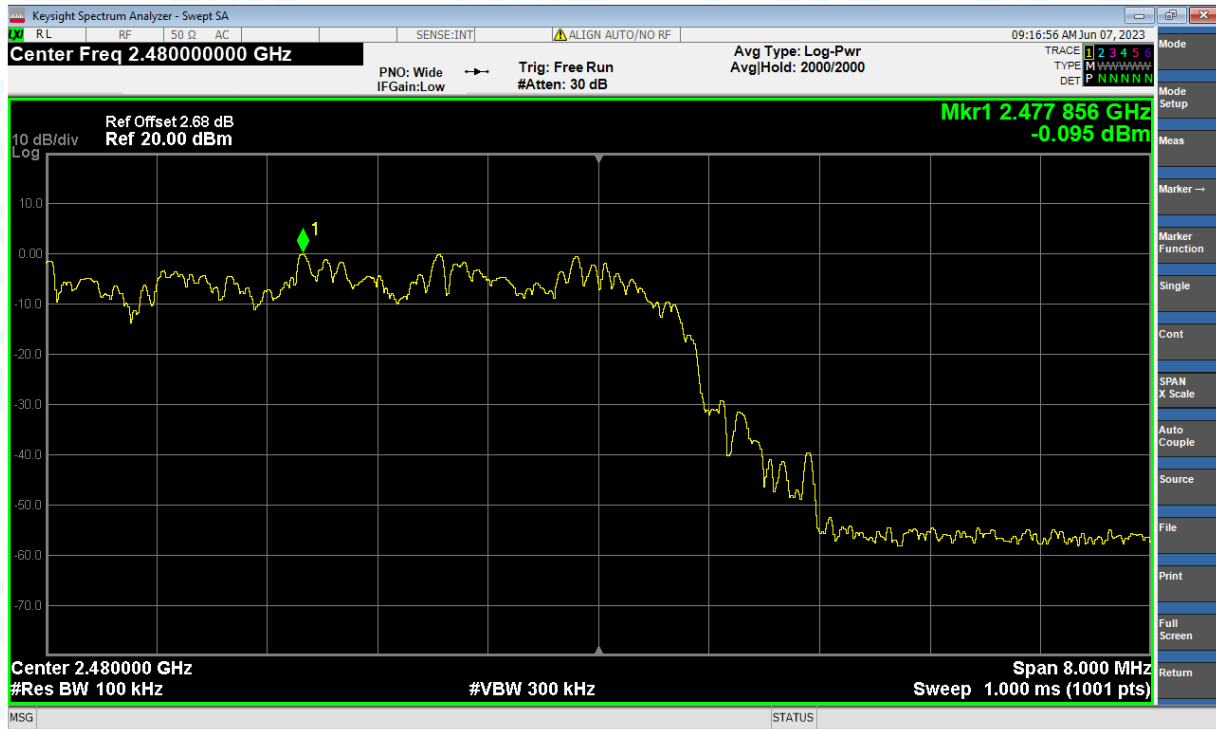
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



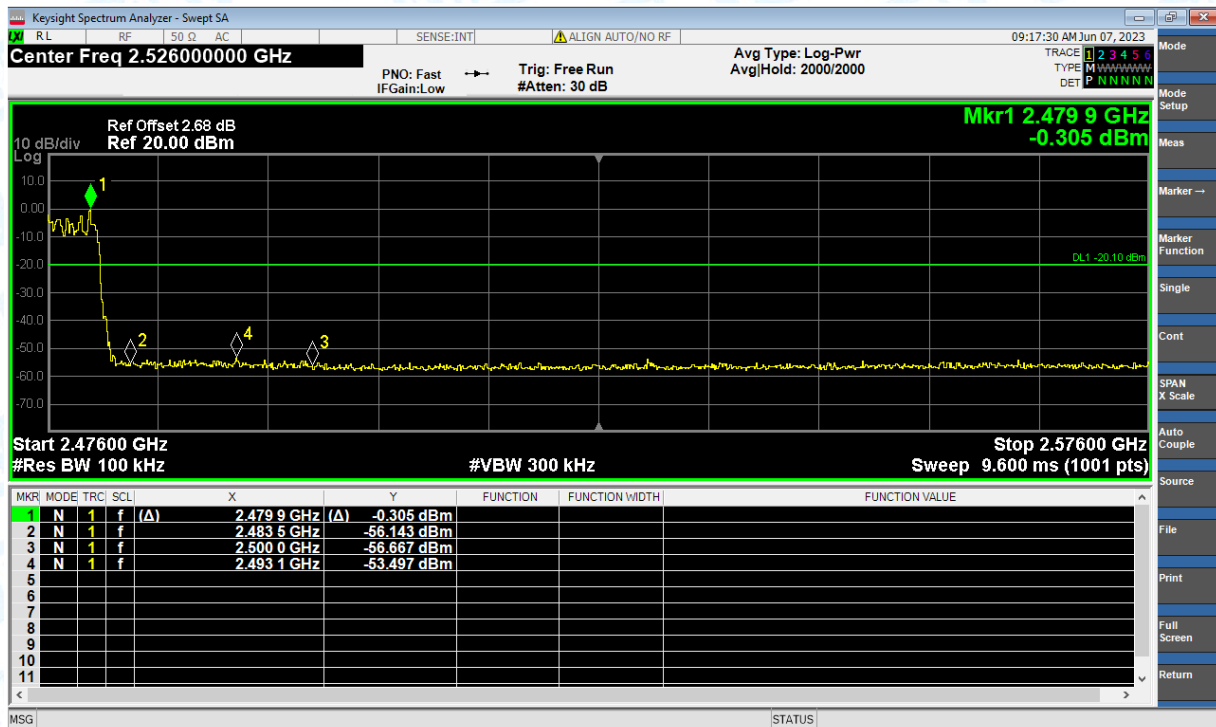
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

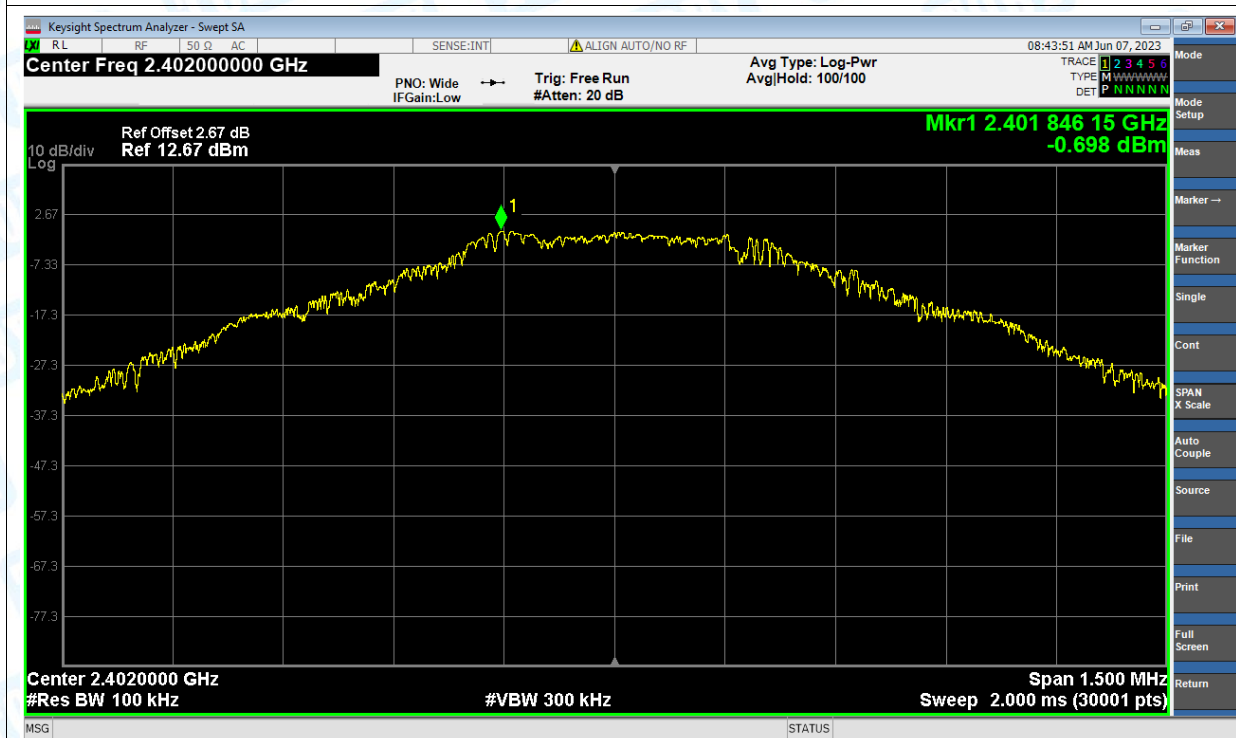


7. Conducted RF Spurious Emission

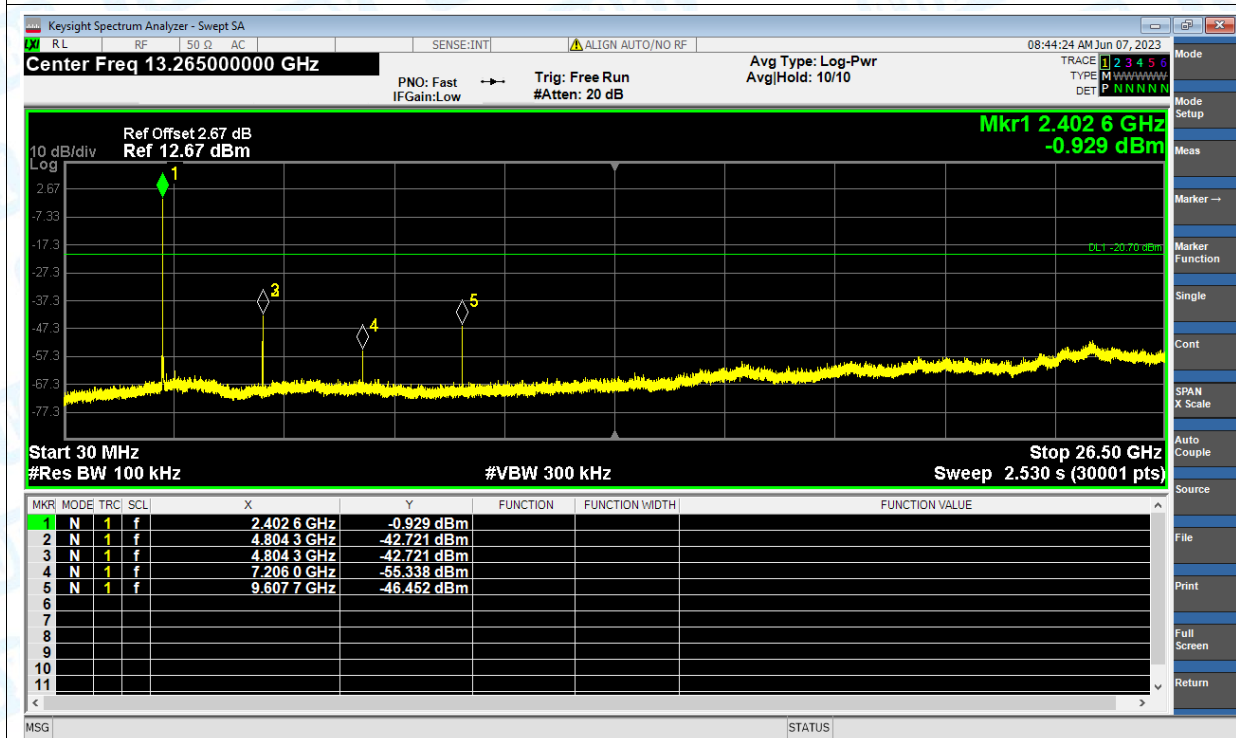
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-42.02	-20	Pass
NVNT	1-DH1	2441	Ant1	-46.33	-20	Pass
NVNT	1-DH1	2480	Ant1	-43.04	-20	Pass
NVNT	2-DH1	2402	Ant1	-45.88	-20	Pass
NVNT	2-DH1	2441	Ant1	-46.22	-20	Pass
NVNT	2-DH1	2480	Ant1	-44.17	-20	Pass
NVNT	3-DH1	2402	Ant1	-45.56	-20	Pass
NVNT	3-DH1	2441	Ant1	-44.68	-20	Pass
NVNT	3-DH1	2480	Ant1	-43.25	-20	Pass

Test Graphs

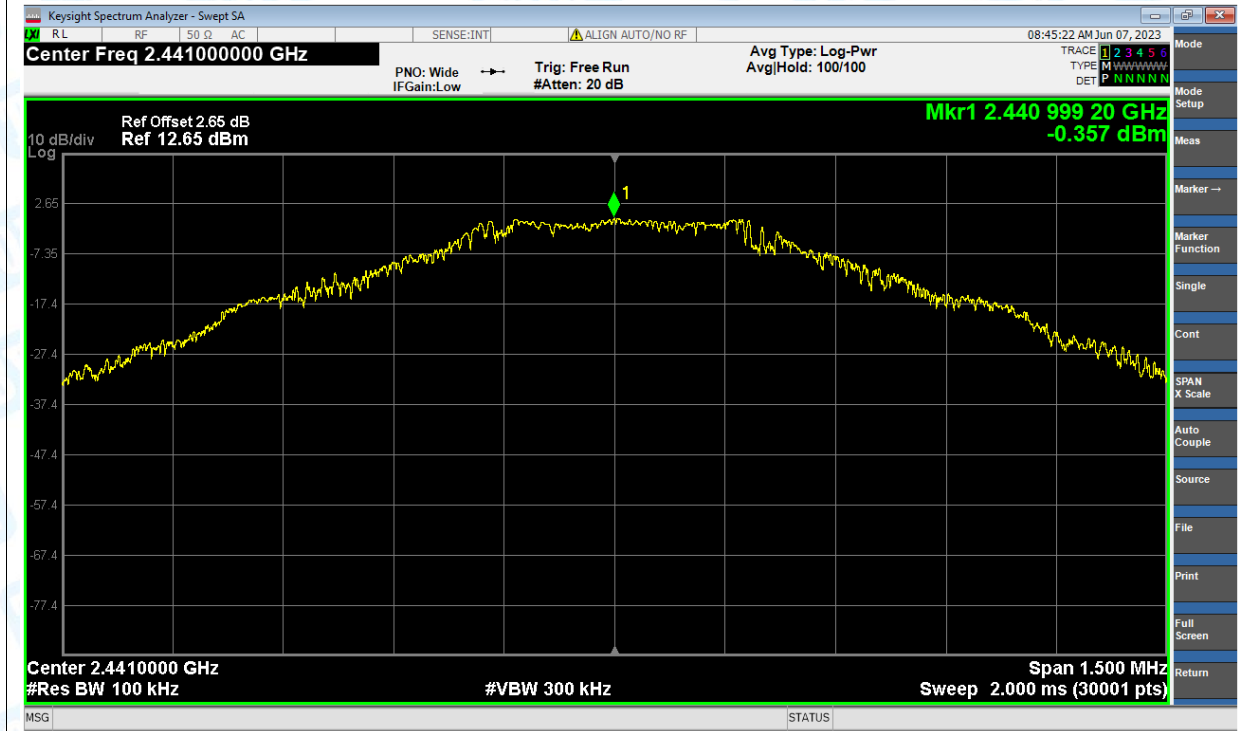
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



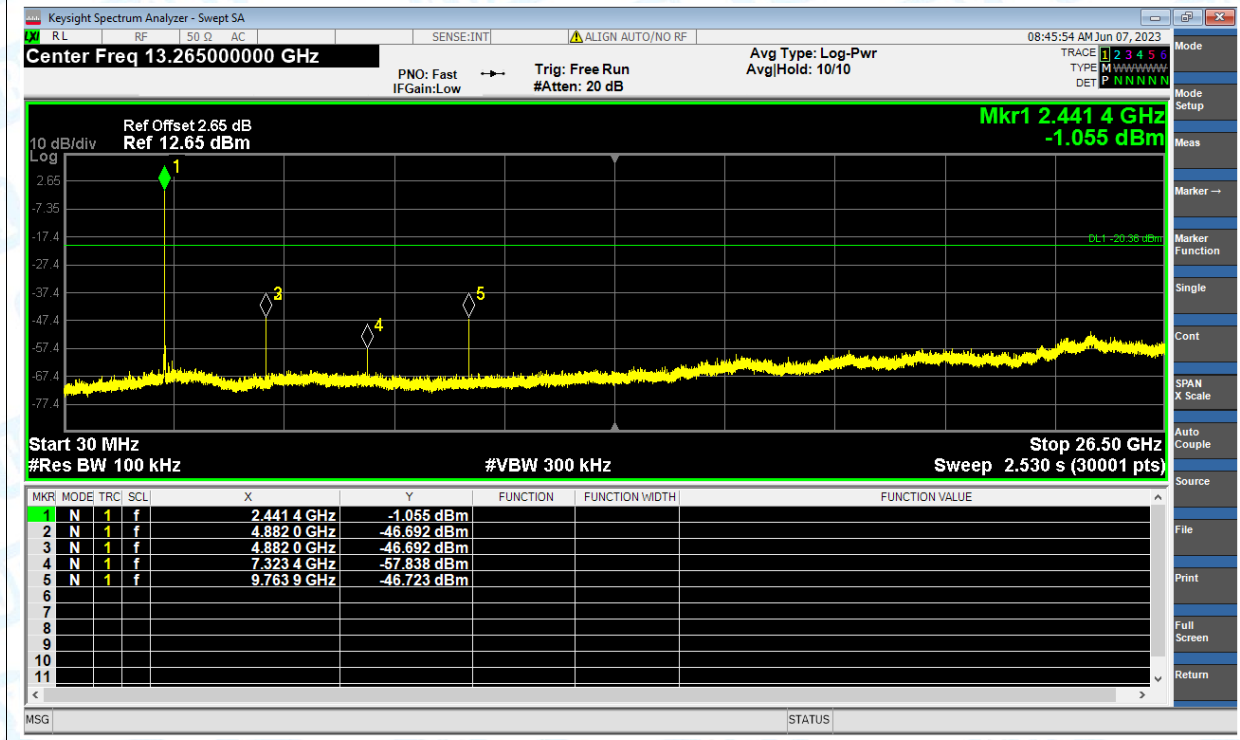
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



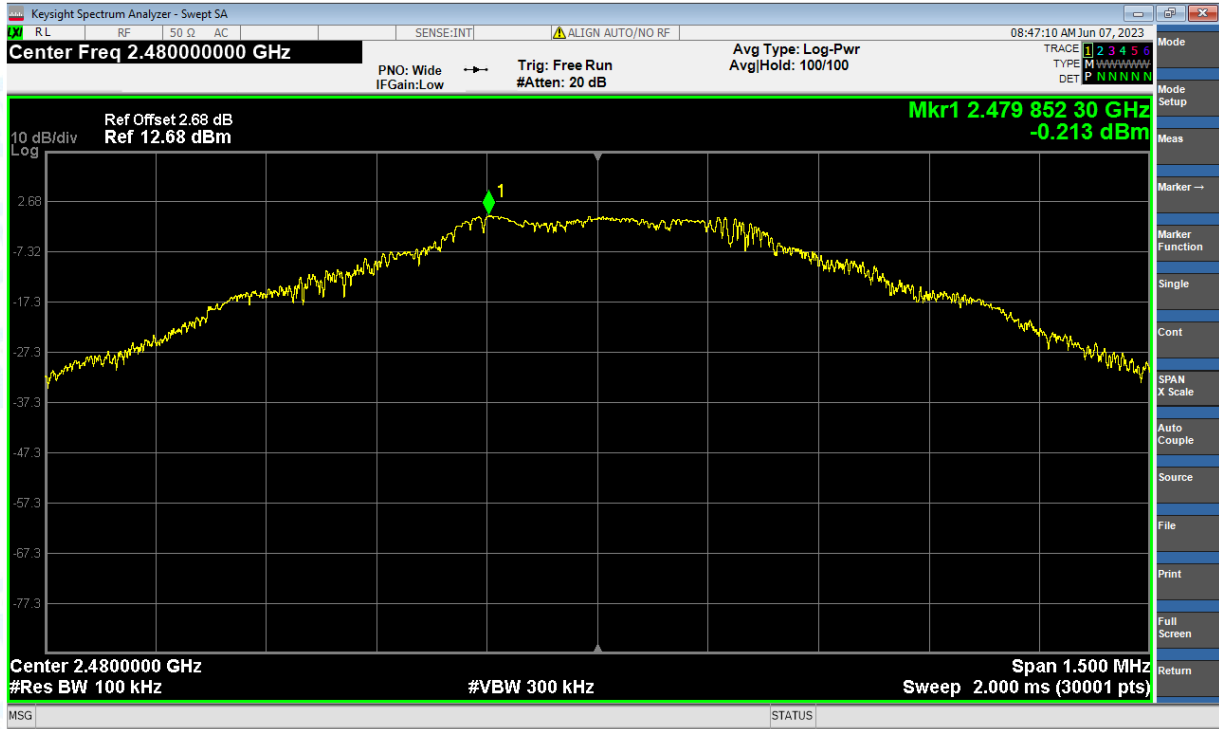
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



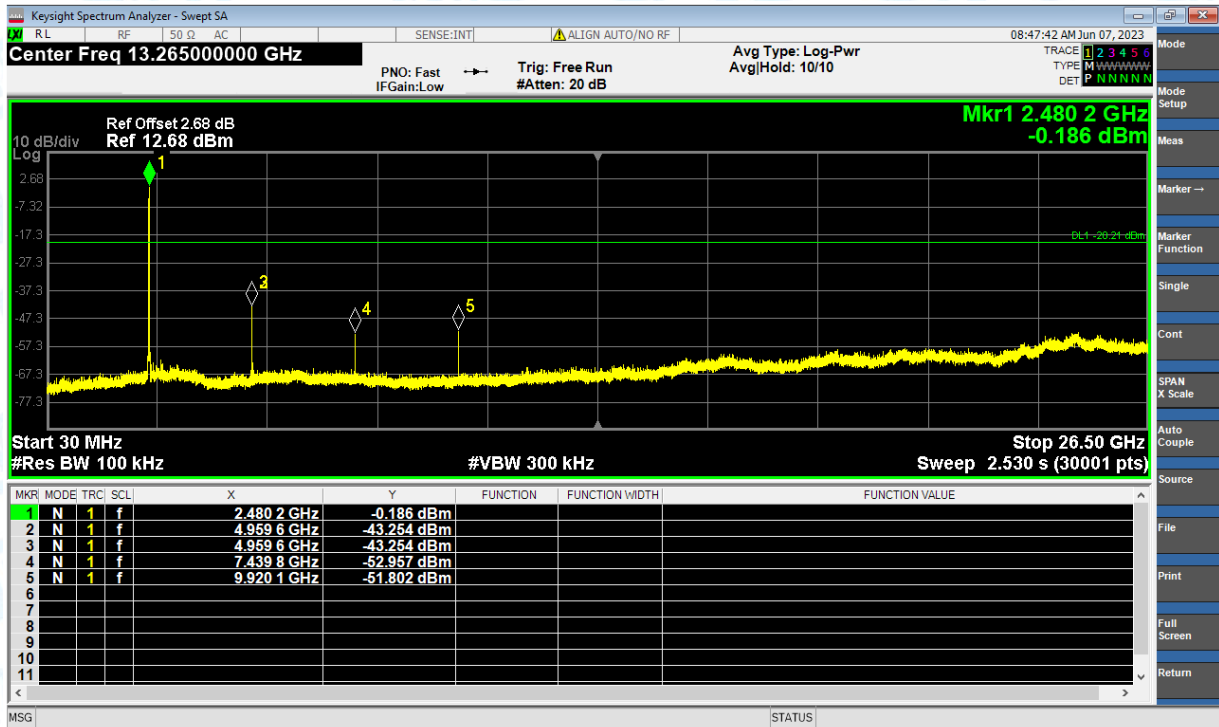
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



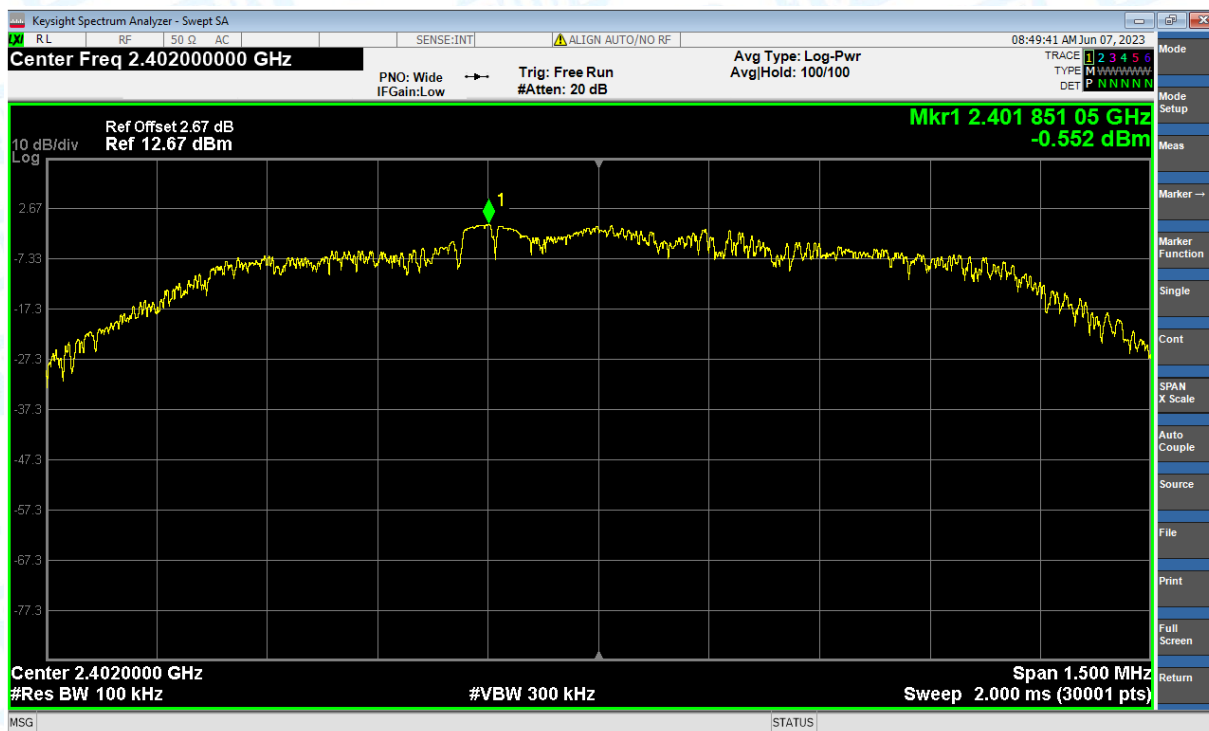
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



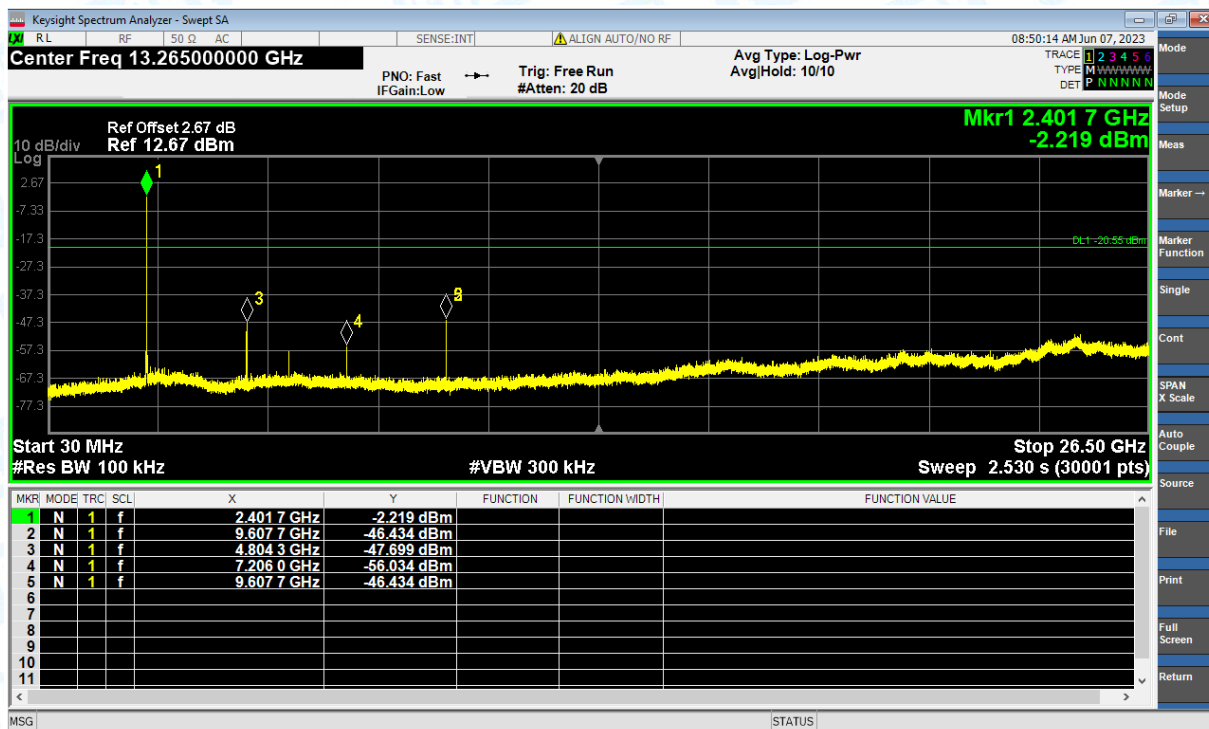
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



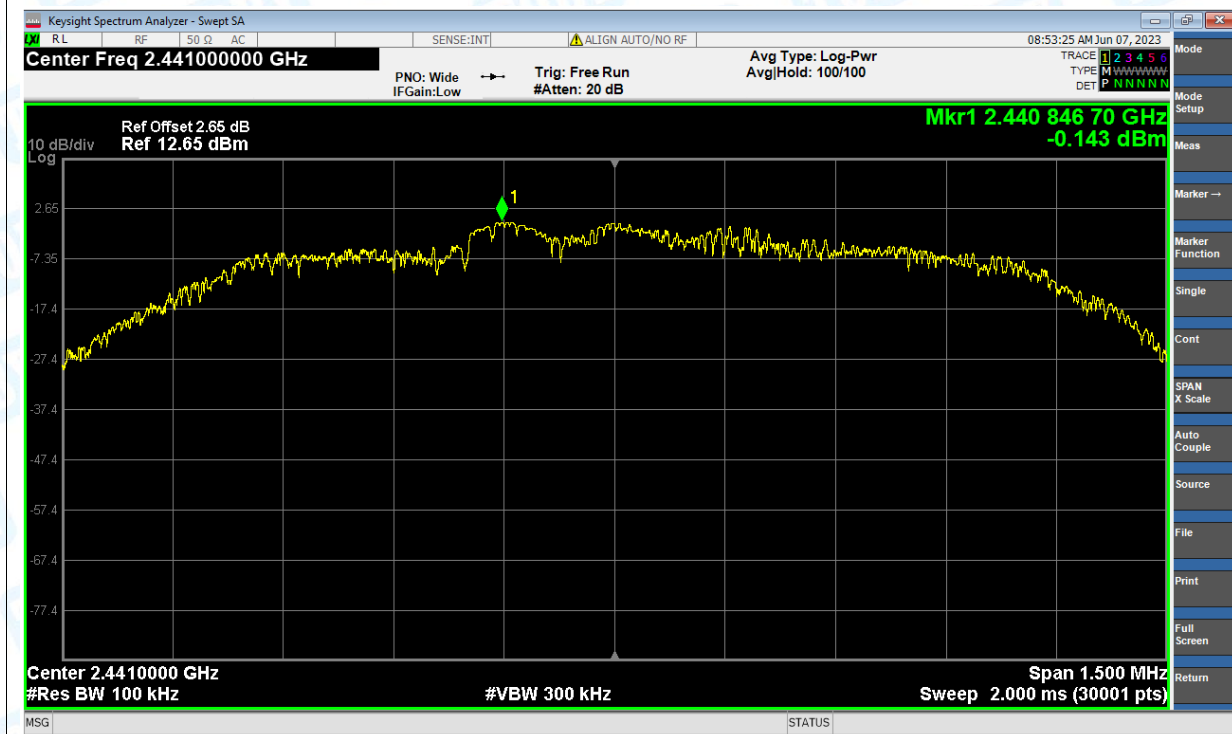
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



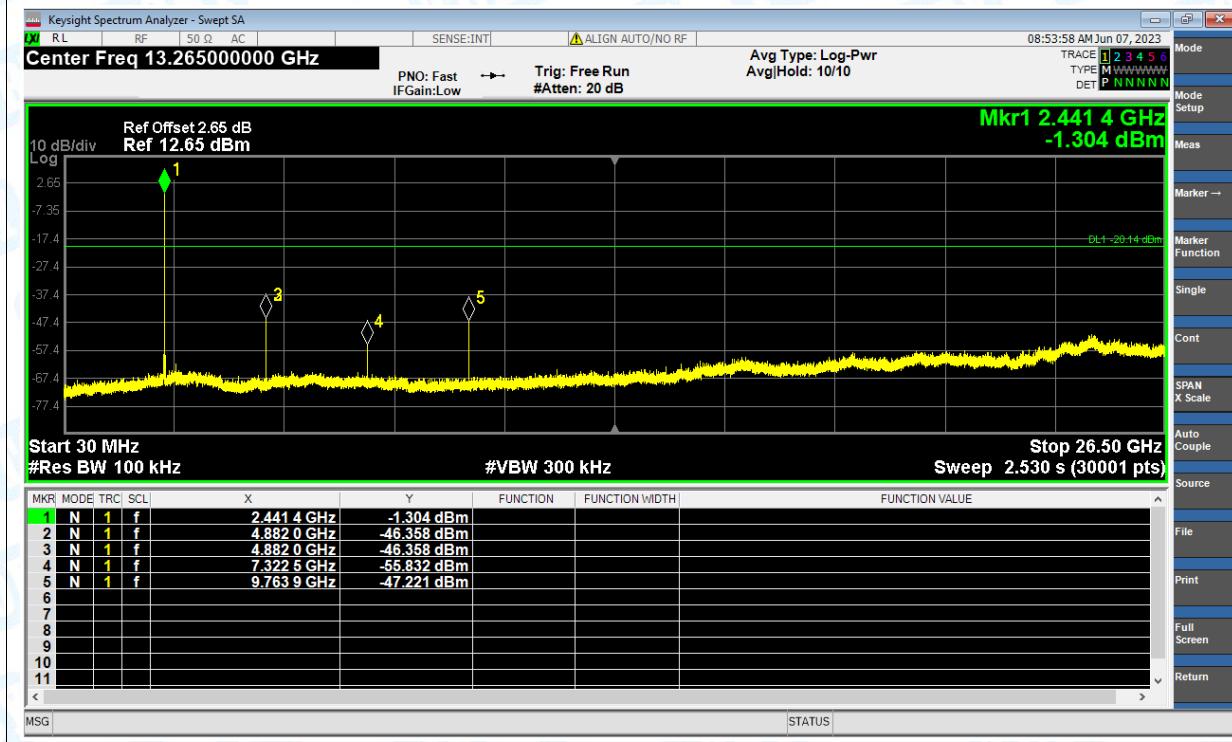
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



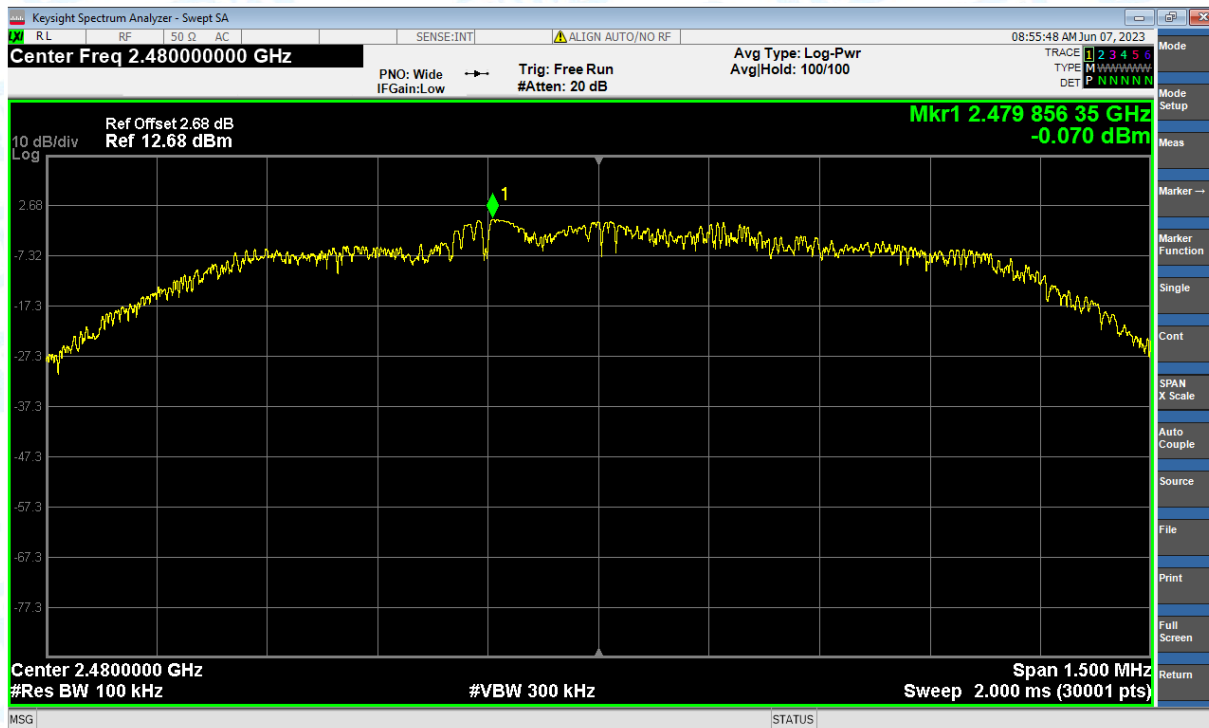
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



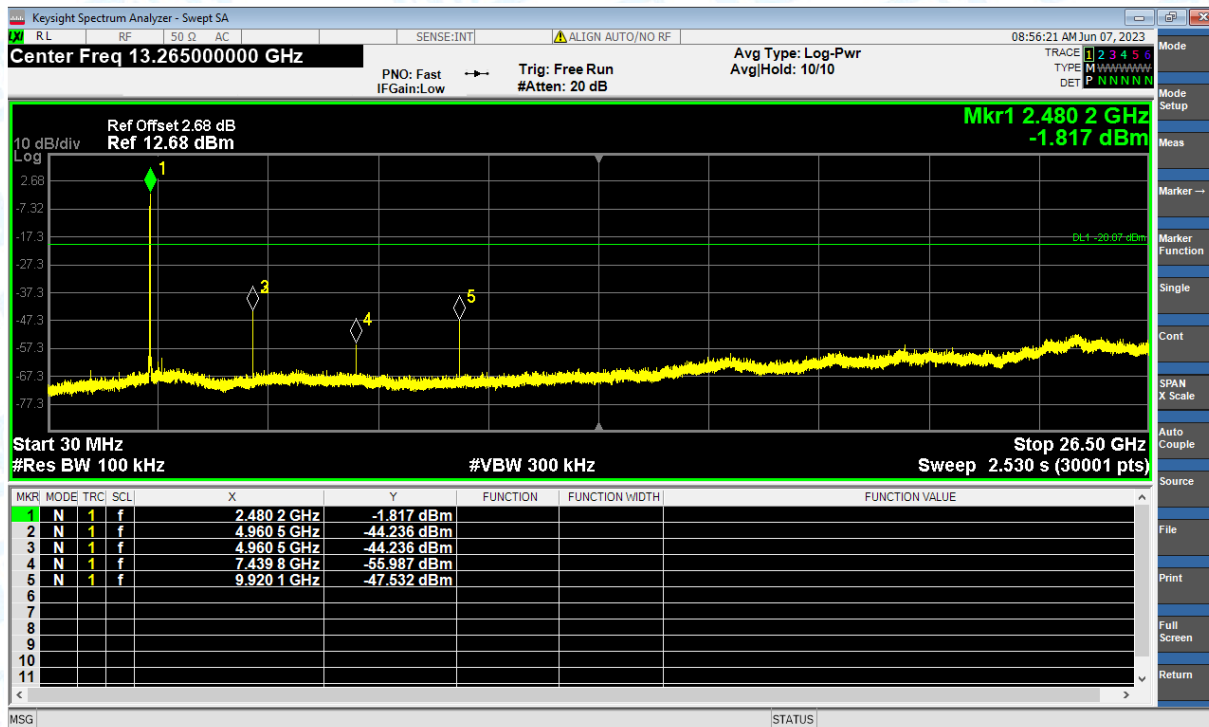
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



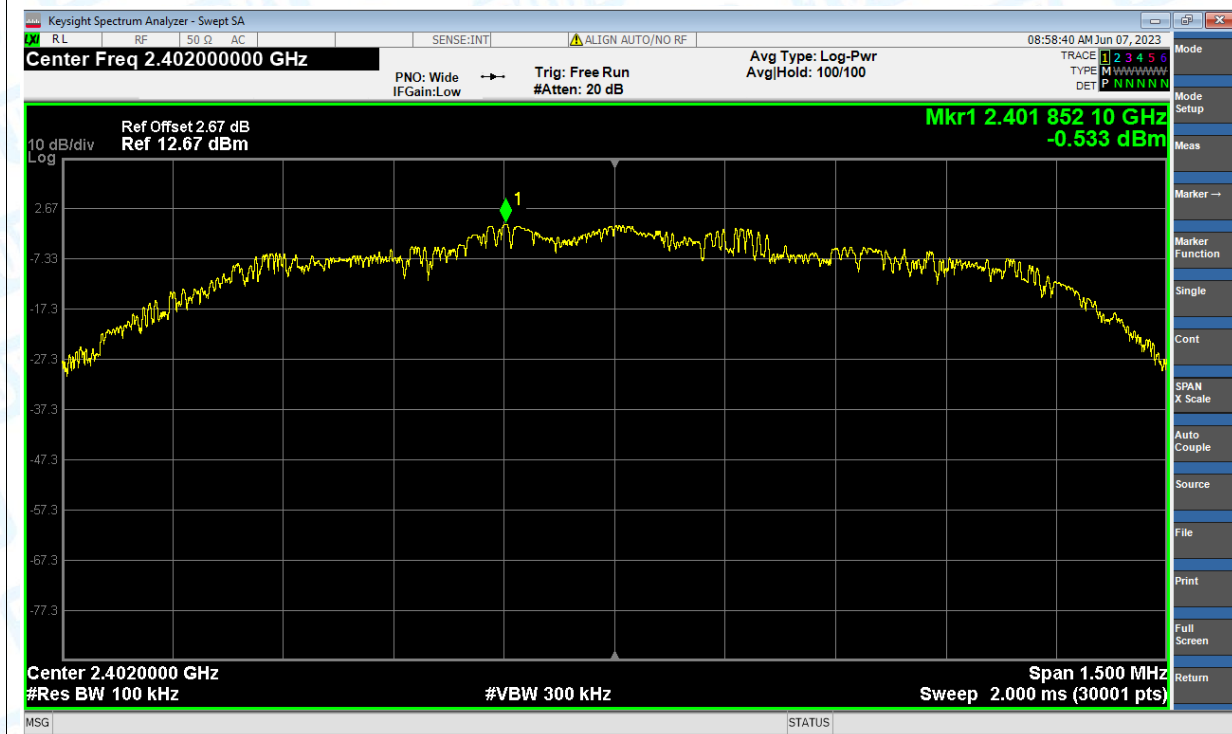
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



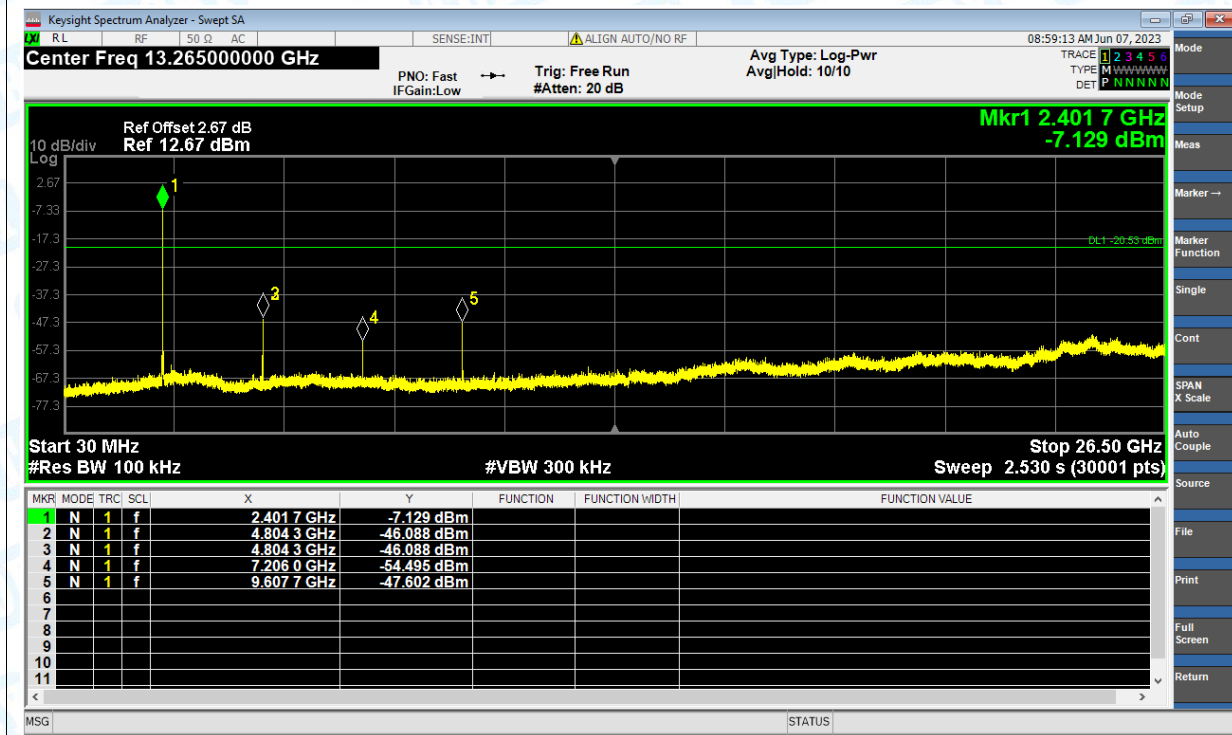
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



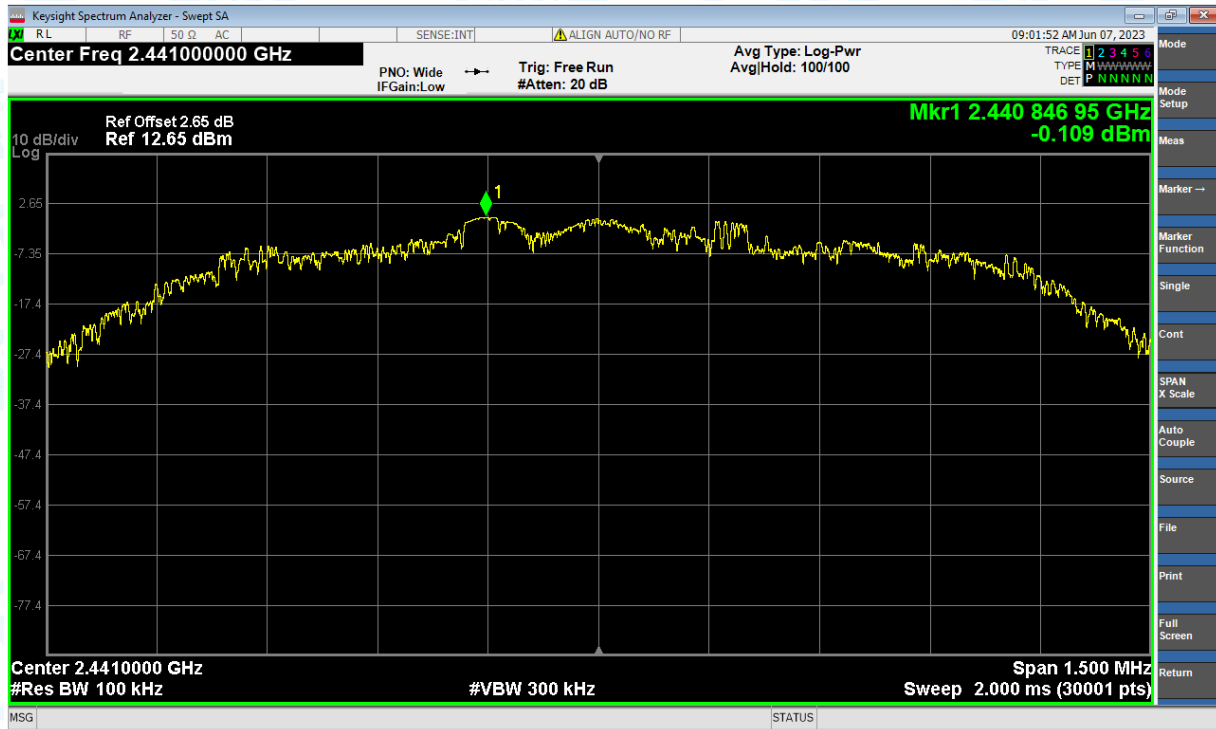
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



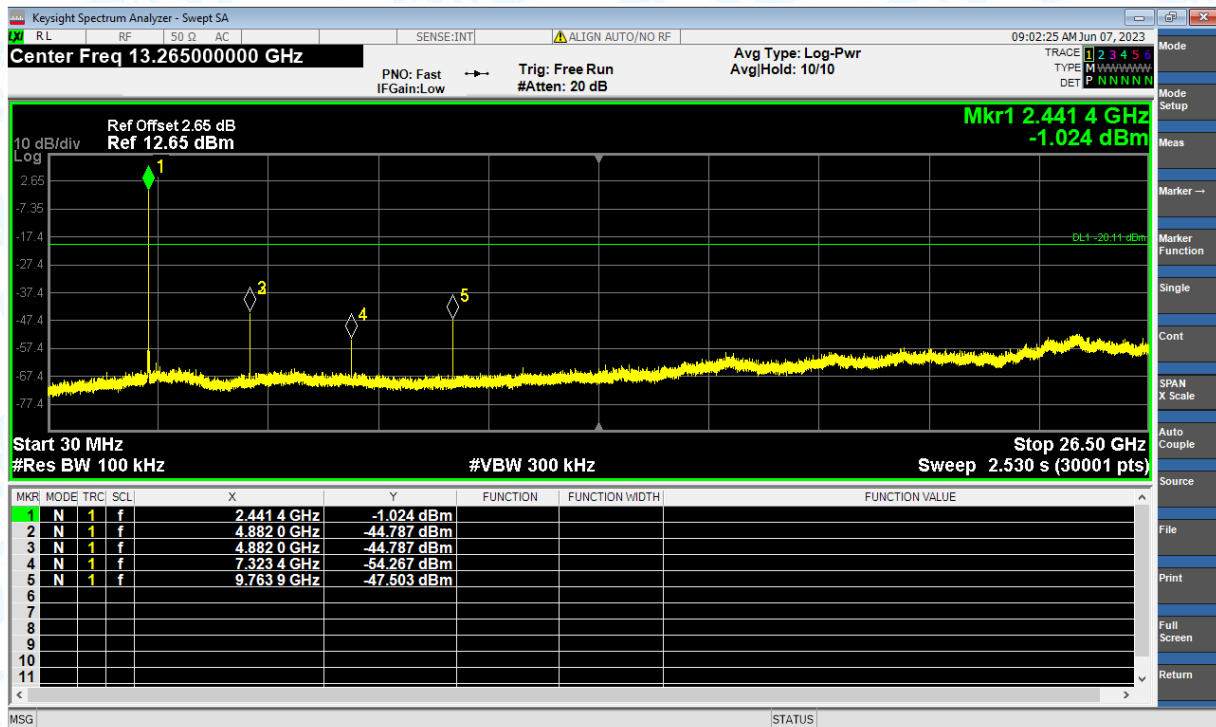
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



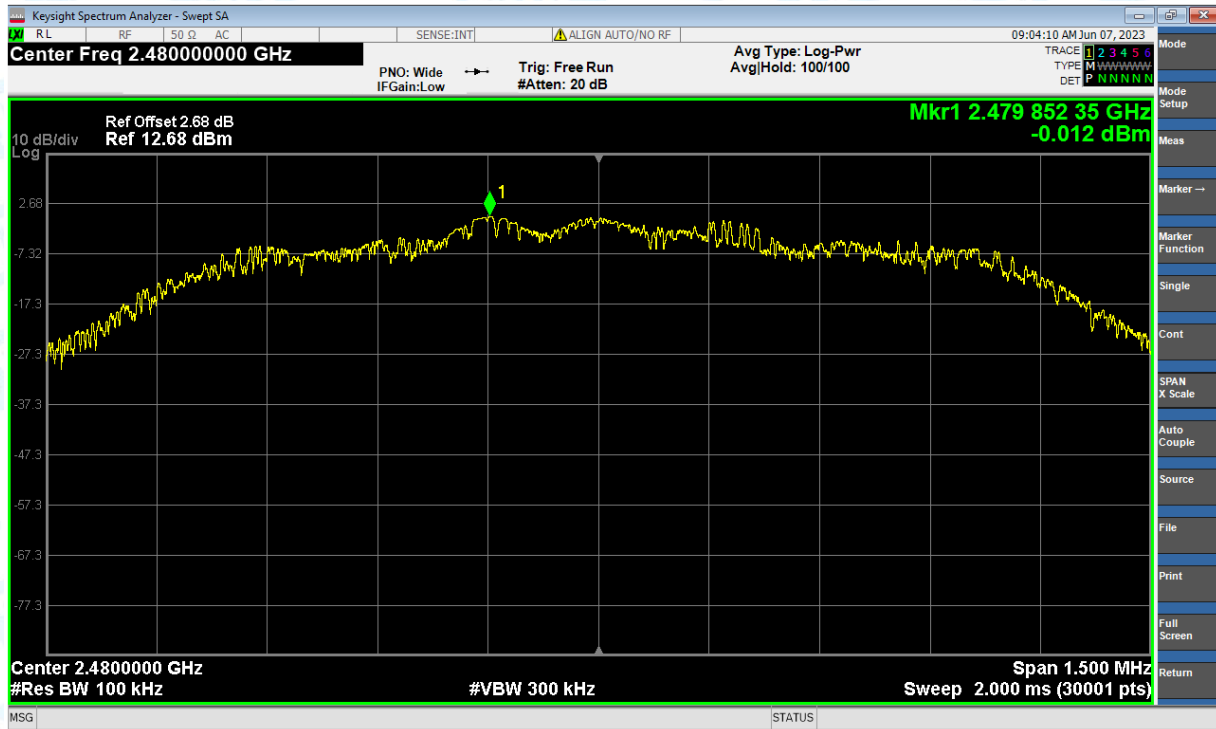
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



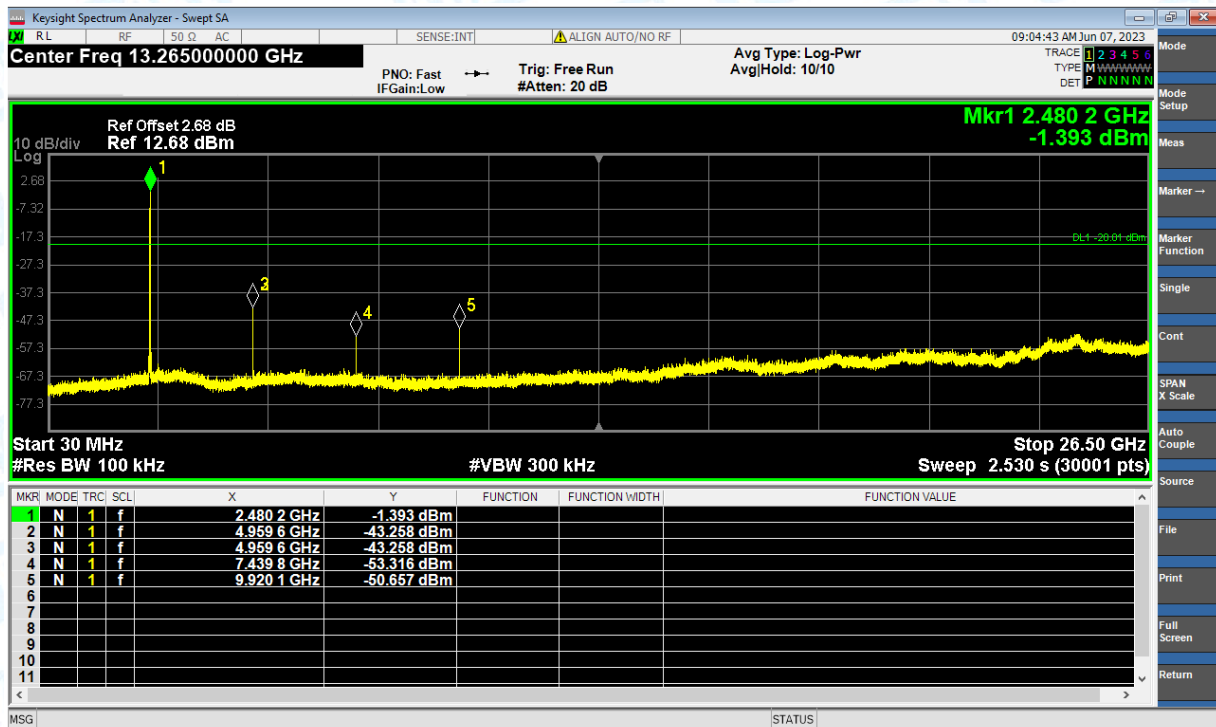
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

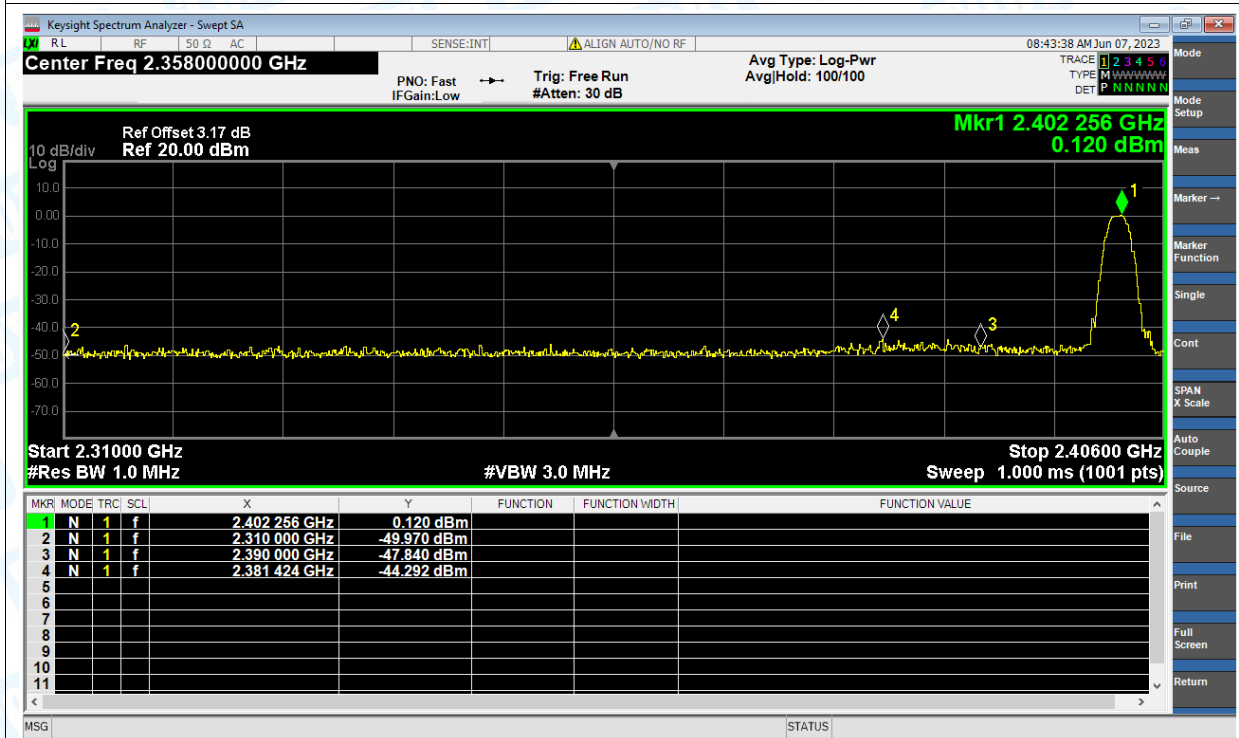


8. Restrict Band

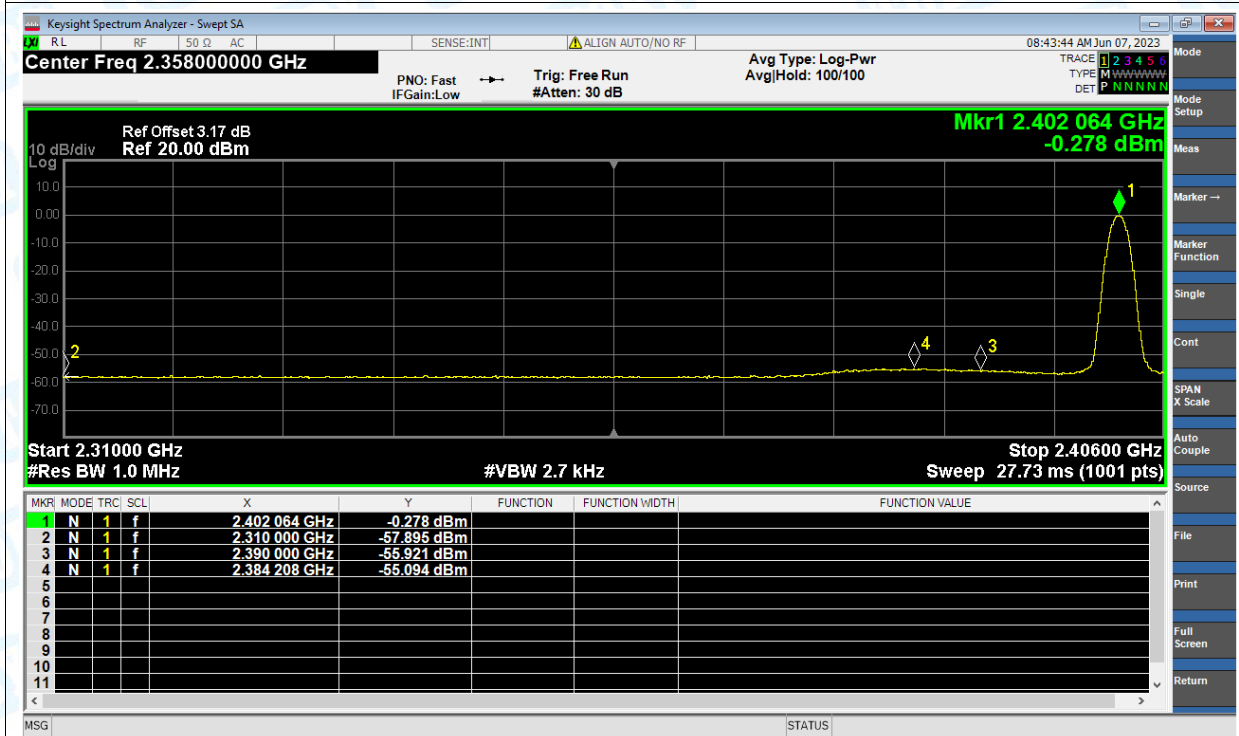
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.97	2	47.29	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-57.9	2	39.36	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2381.424	-44.29	2	52.97	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2384.208	-55.09	2	42.17	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.44	2	50.82	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.02	2	41.24	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.08	2	50.18	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.35	2	41.91	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2497.816	-43.26	2	54	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2496.568	-54.7	2	42.56	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.77	2	50.49	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.74	2	42.52	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.14	2	49.12	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-58.01	2	39.25	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2381.424	-44.19	2	53.07	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2384.112	-54.86	2	42.4	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.37	2	49.89	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.61	2	41.65	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.86	2	50.4	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.56	2	41.7	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.584	-35.36	2	61.9	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2498.848	-54.33	2	42.93	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-45.26	2	52	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.75	2	42.51	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.76	2	49.5	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-57.94	2	39.32	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2384.112	-44.41	2	52.85	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2381.808	-54.74	2	42.52	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.21	2	50.05	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.85	2	41.41	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-48.62	2	48.64	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.78	2	41.48	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.896	-41.85	2	55.41	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2498.704	-54.23	2	43.03	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-49.08	2	48.18	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-54.99	2	42.27	Average	54	Pass

Test Graphs

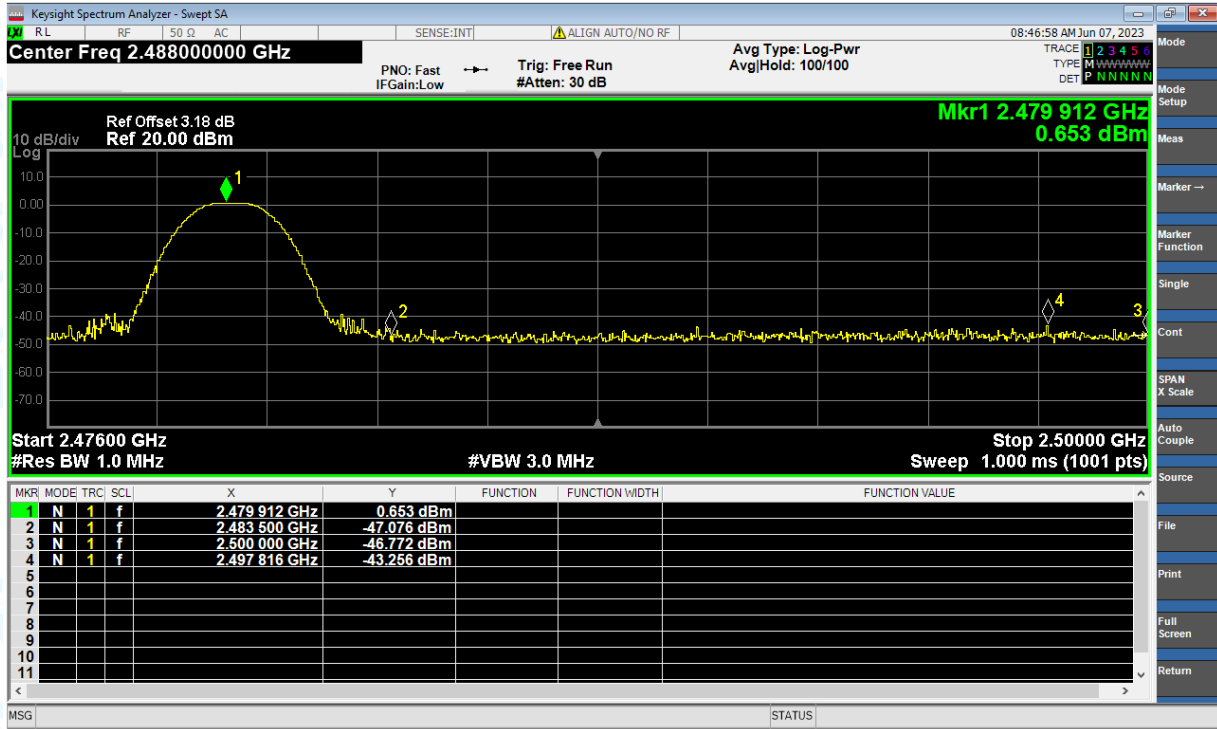
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



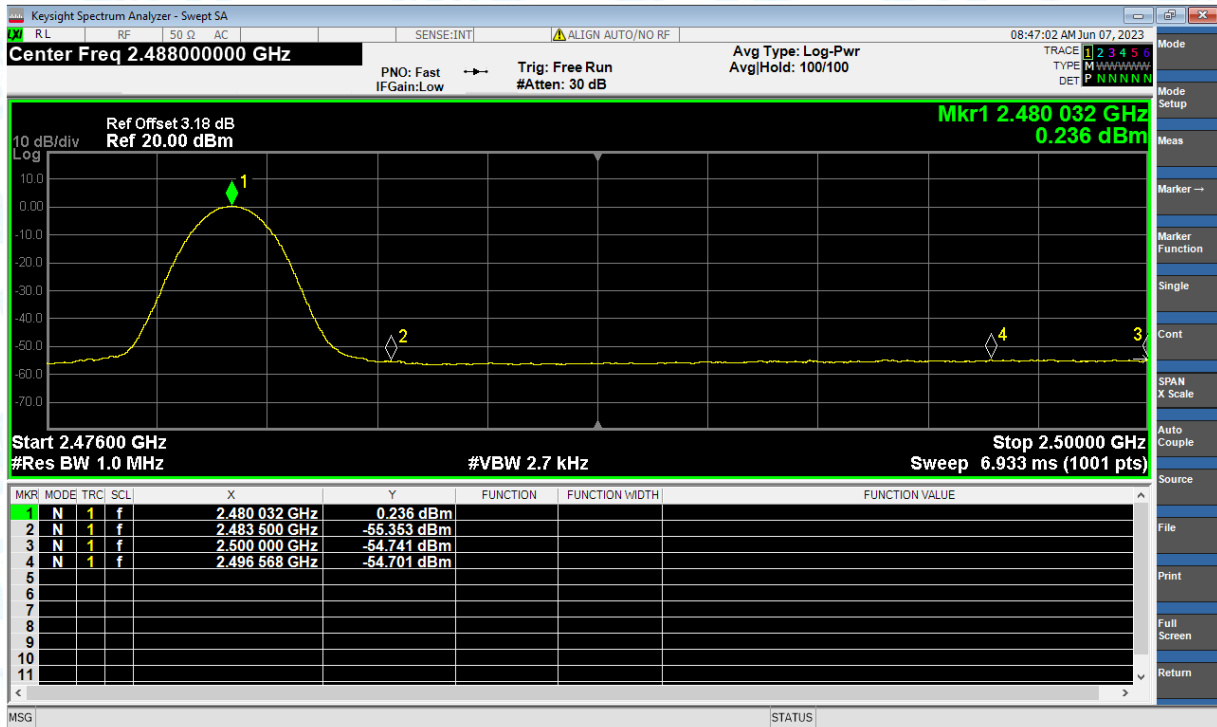
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



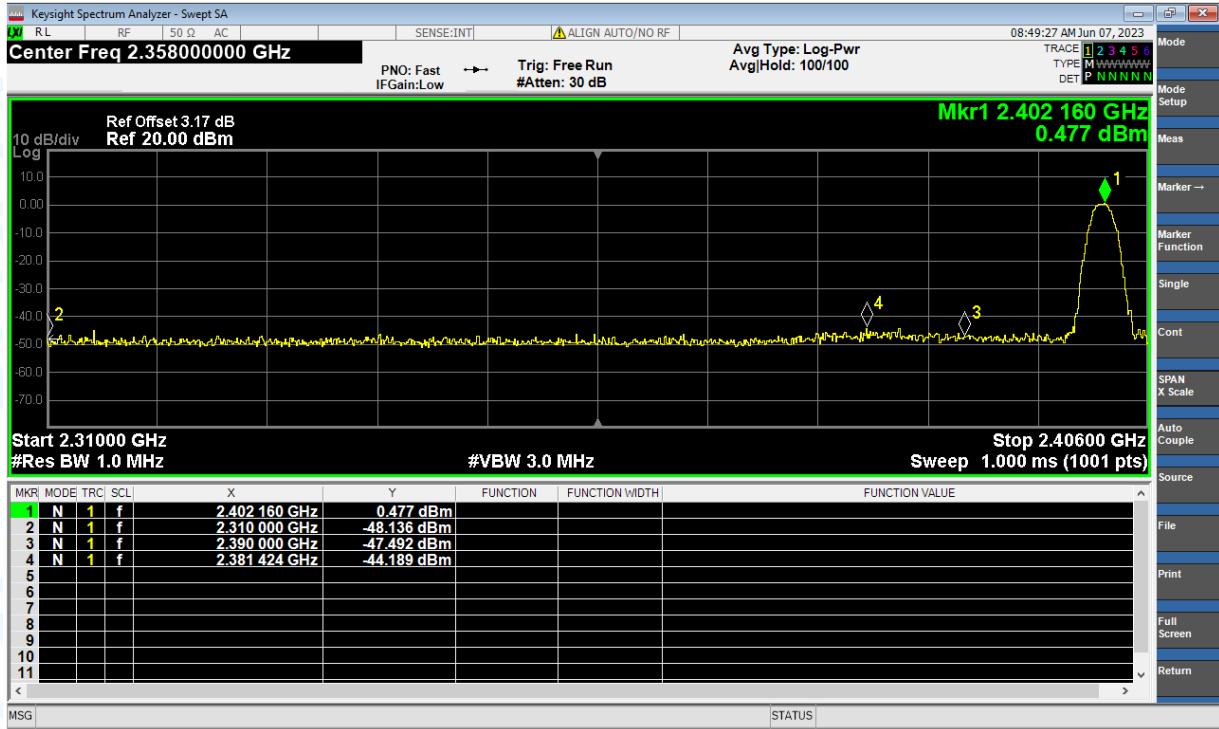
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



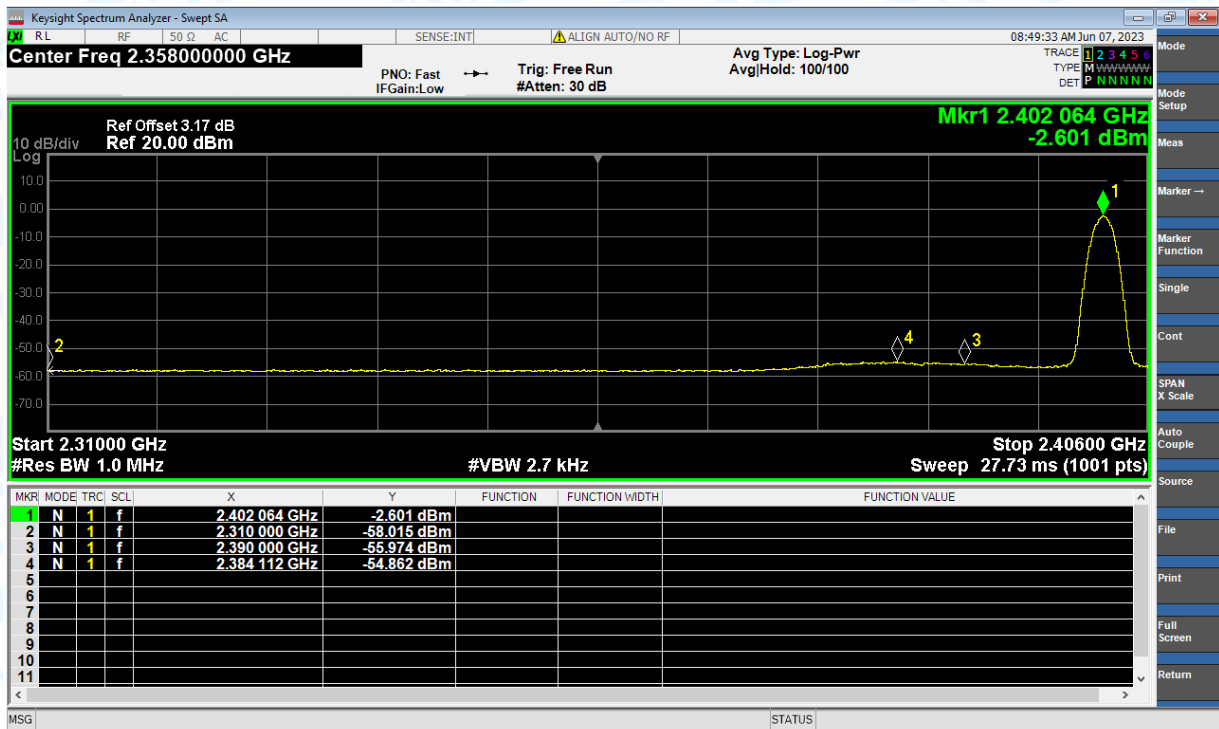
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



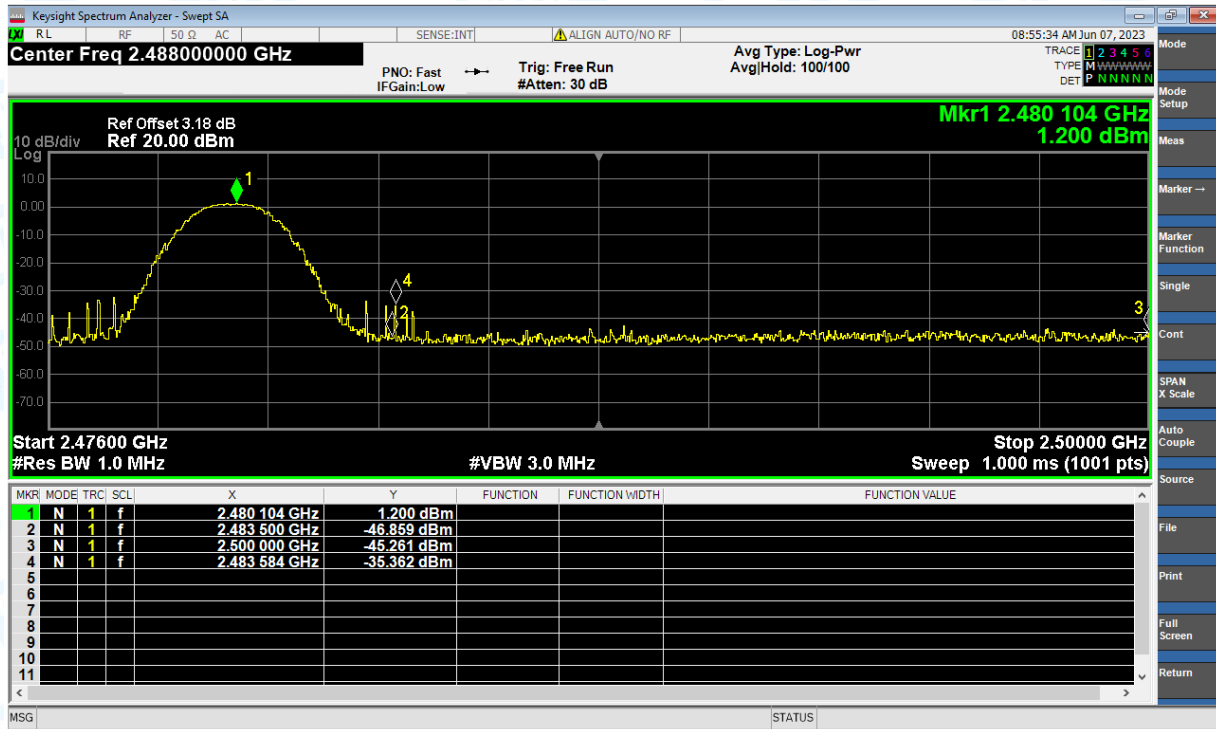
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



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



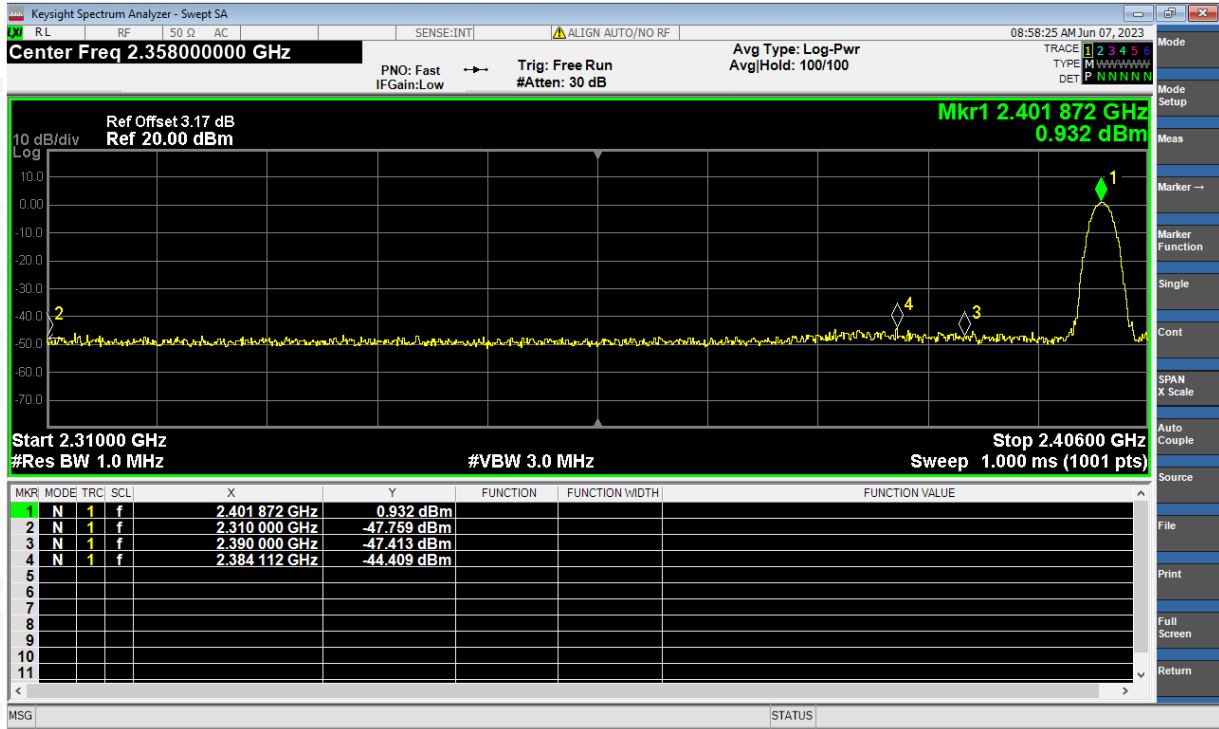
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



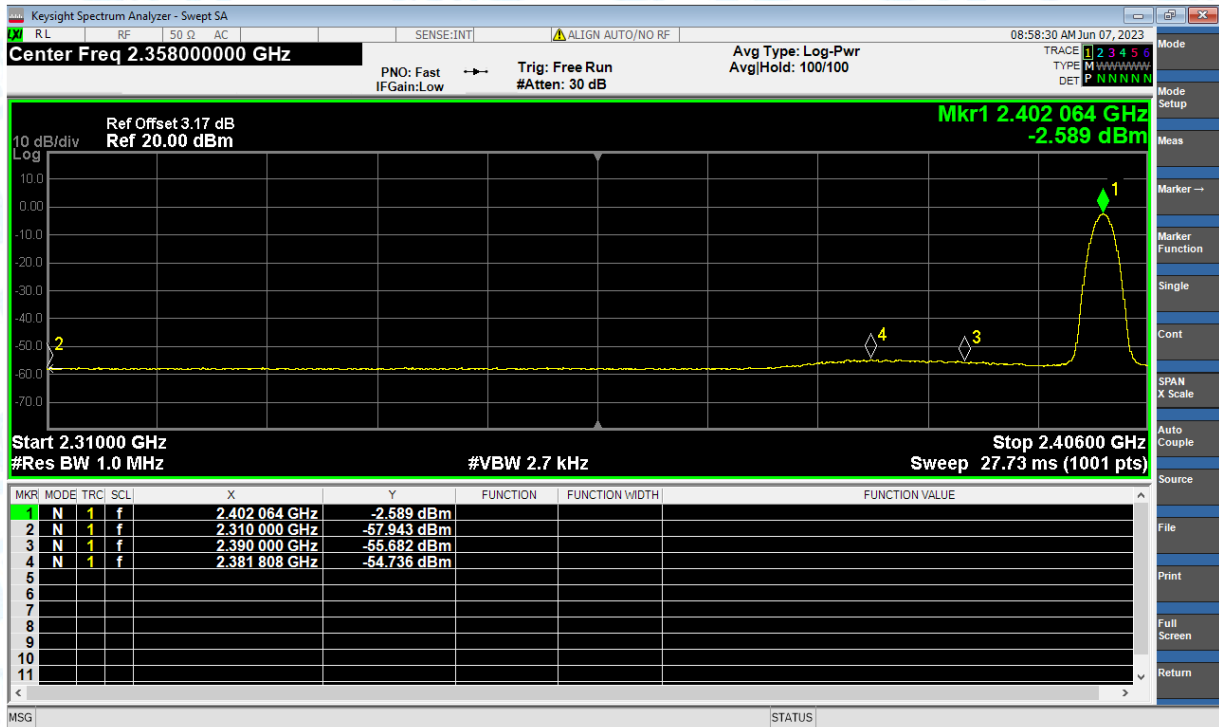
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



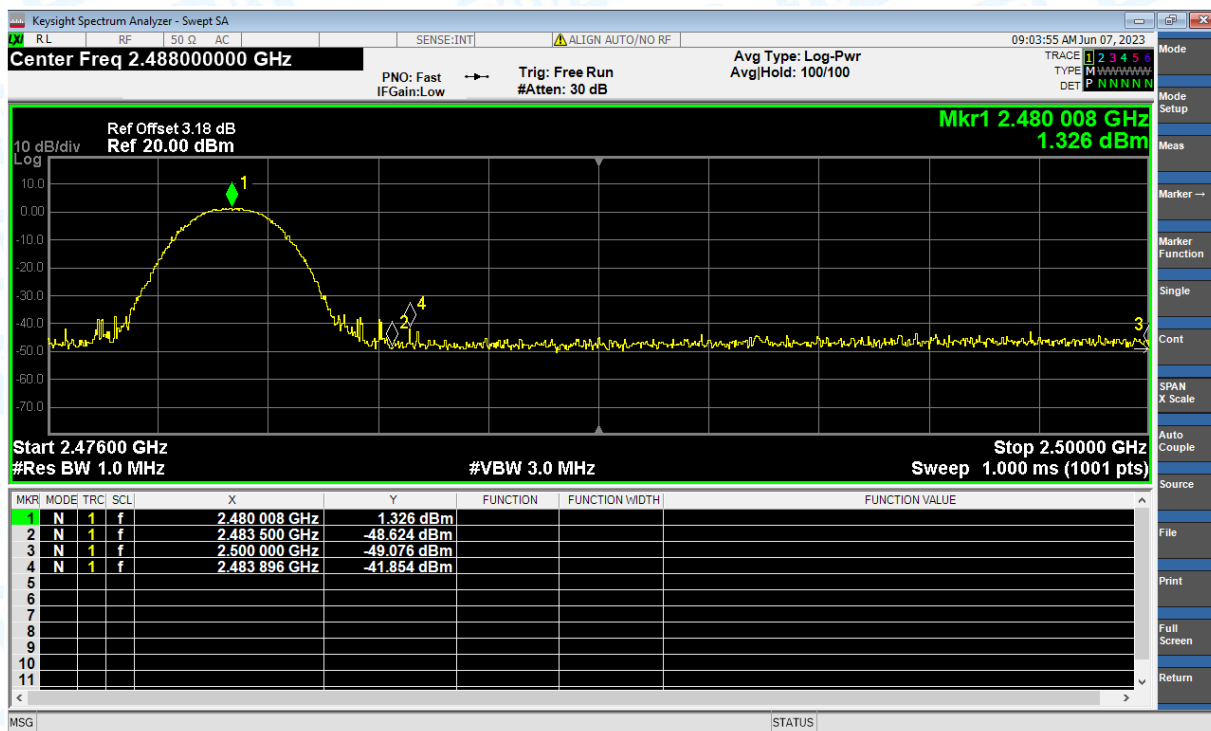
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



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

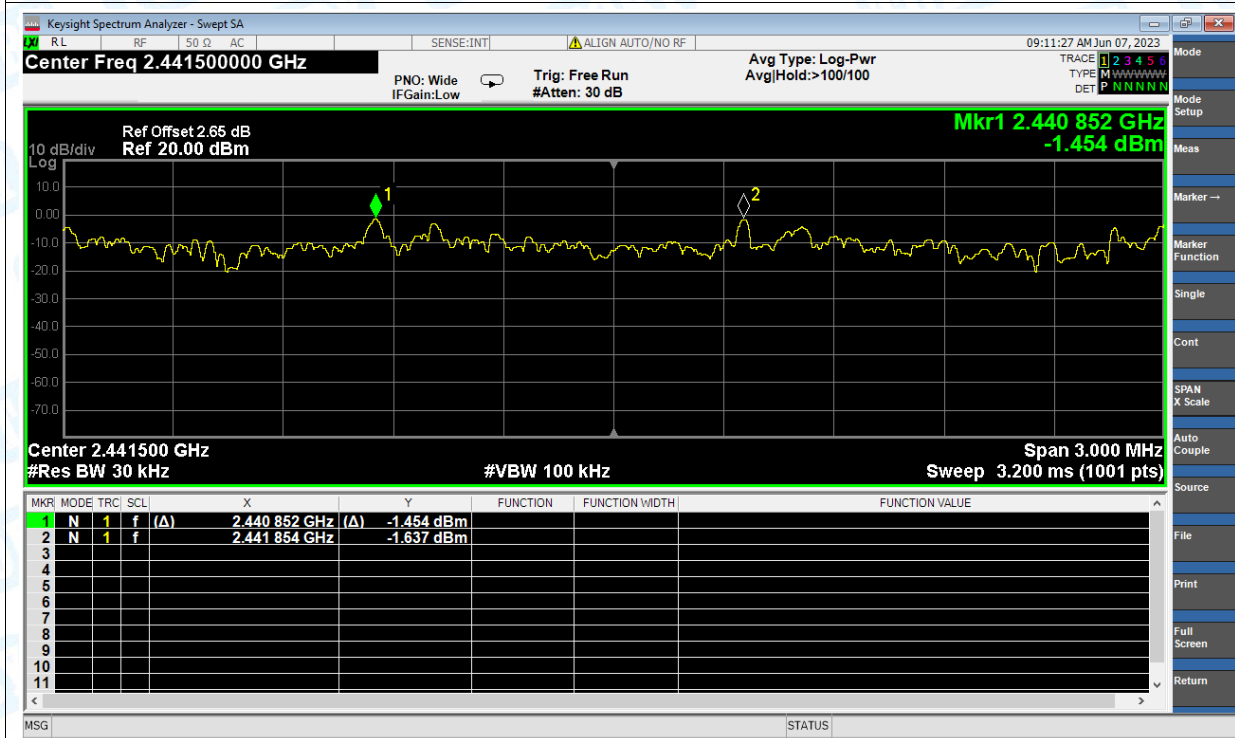
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.131	2442.004	0.873	0.687	Pass
NVNT	2-DH1	Ant1	2440.852	2441.854	1.002	0.853	Pass
NVNT	3-DH1	Ant1	2440.846	2441.845	0.999	0.827	Pass

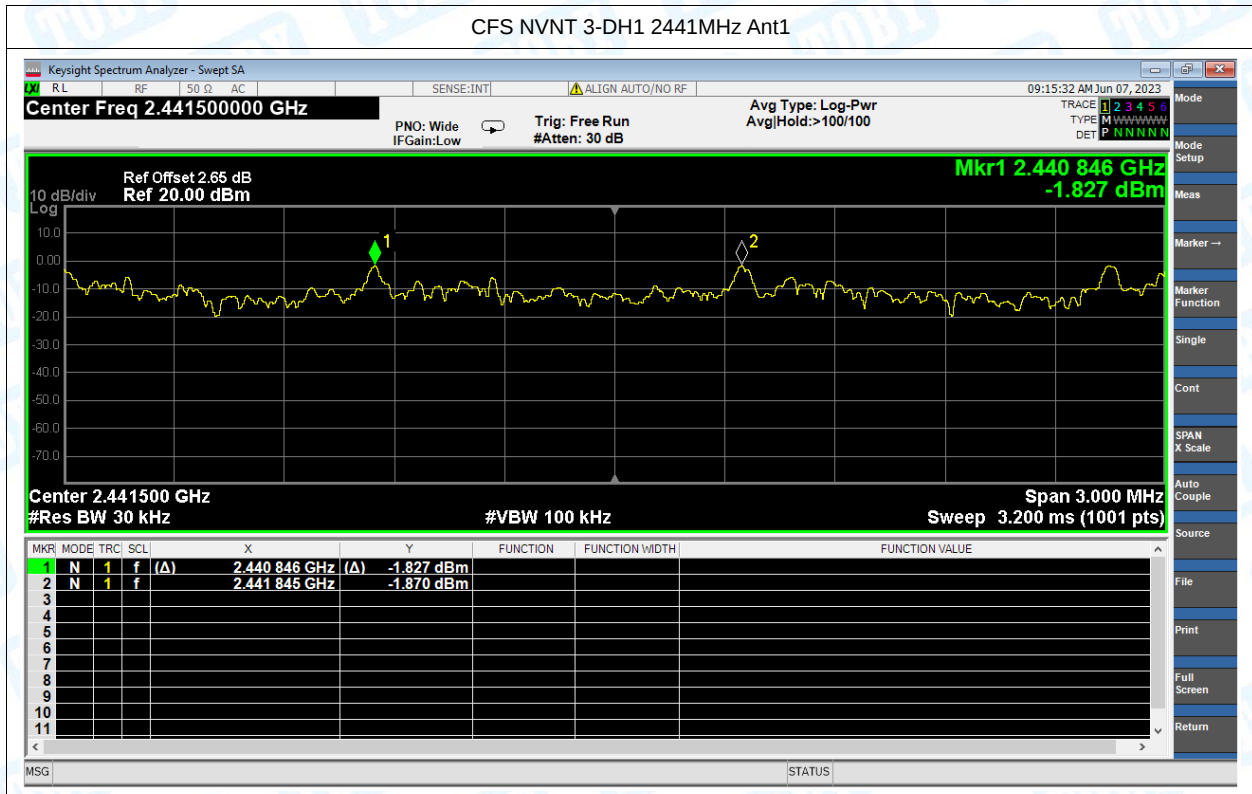
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



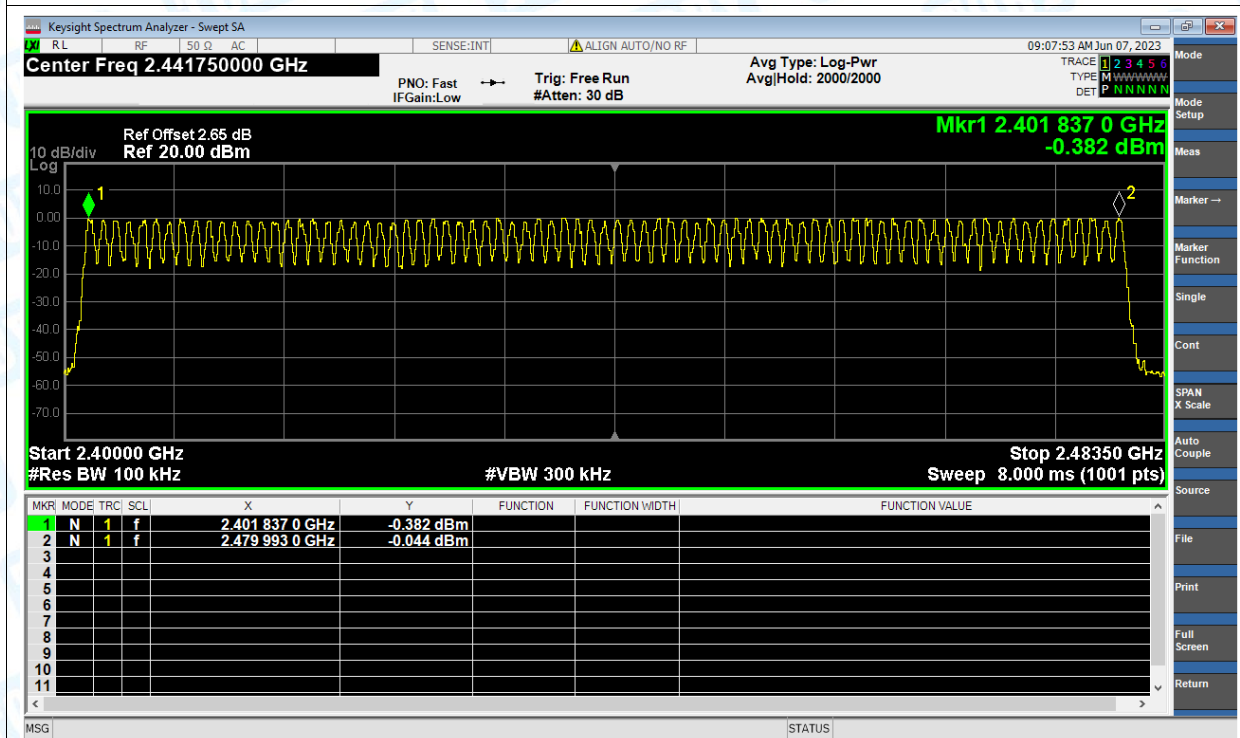


10. Number of Hopping Channel

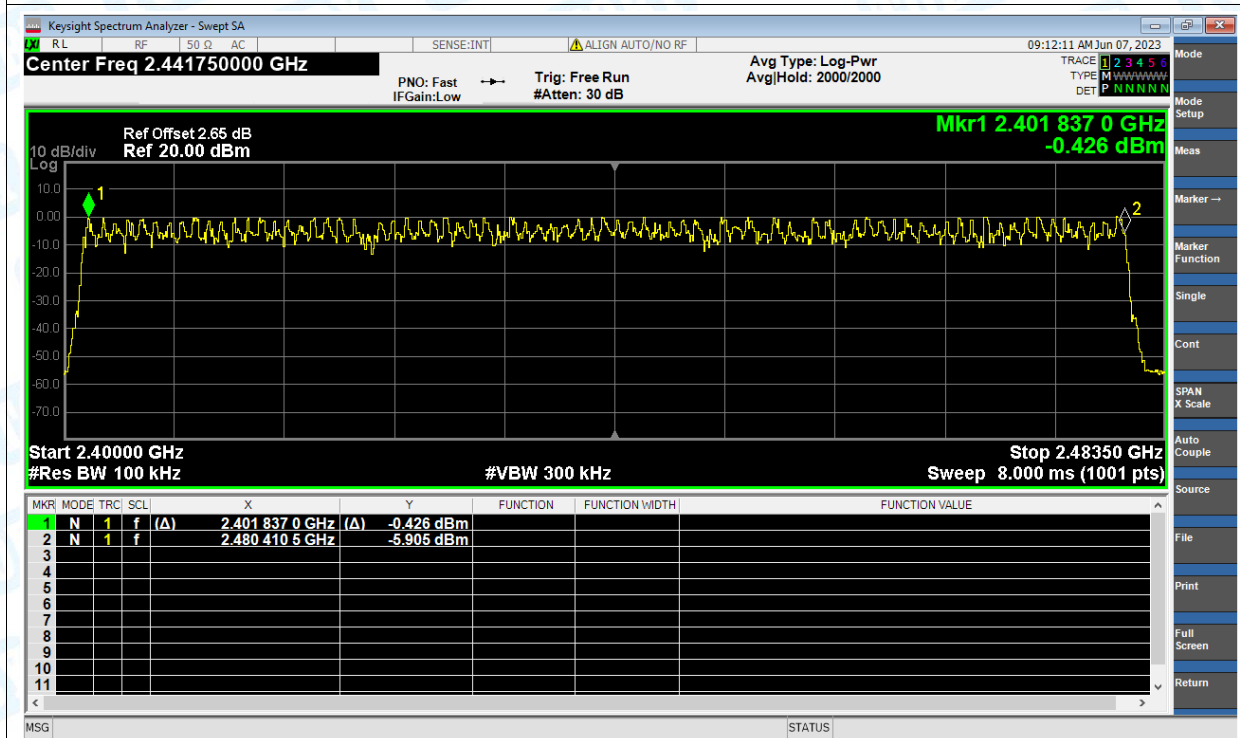
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

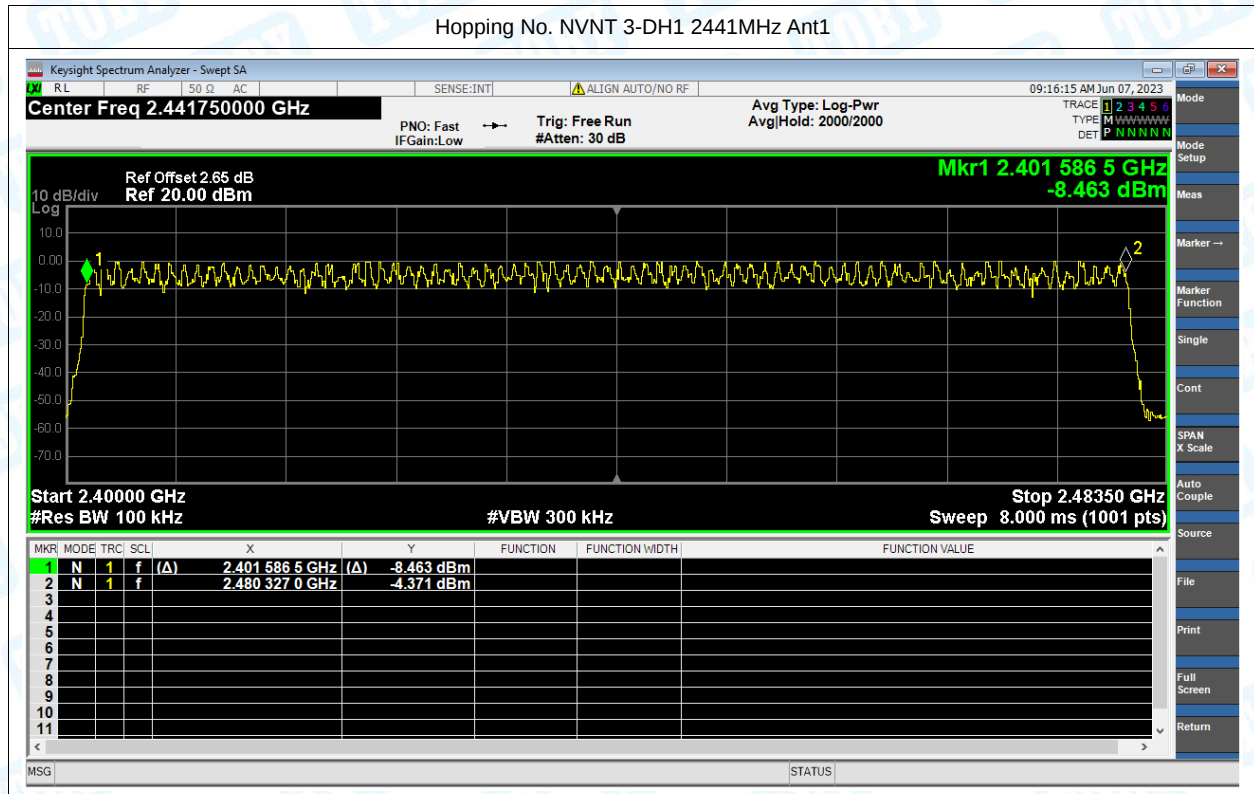
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



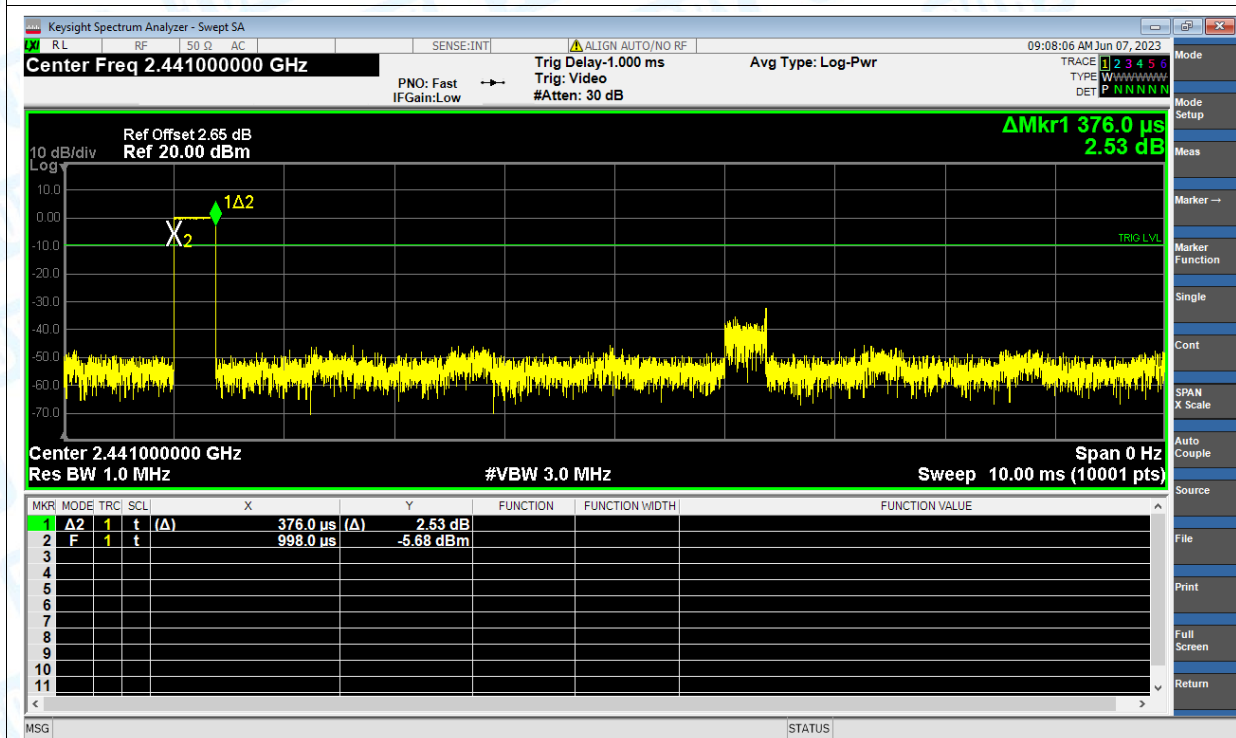


11. Dwell Time

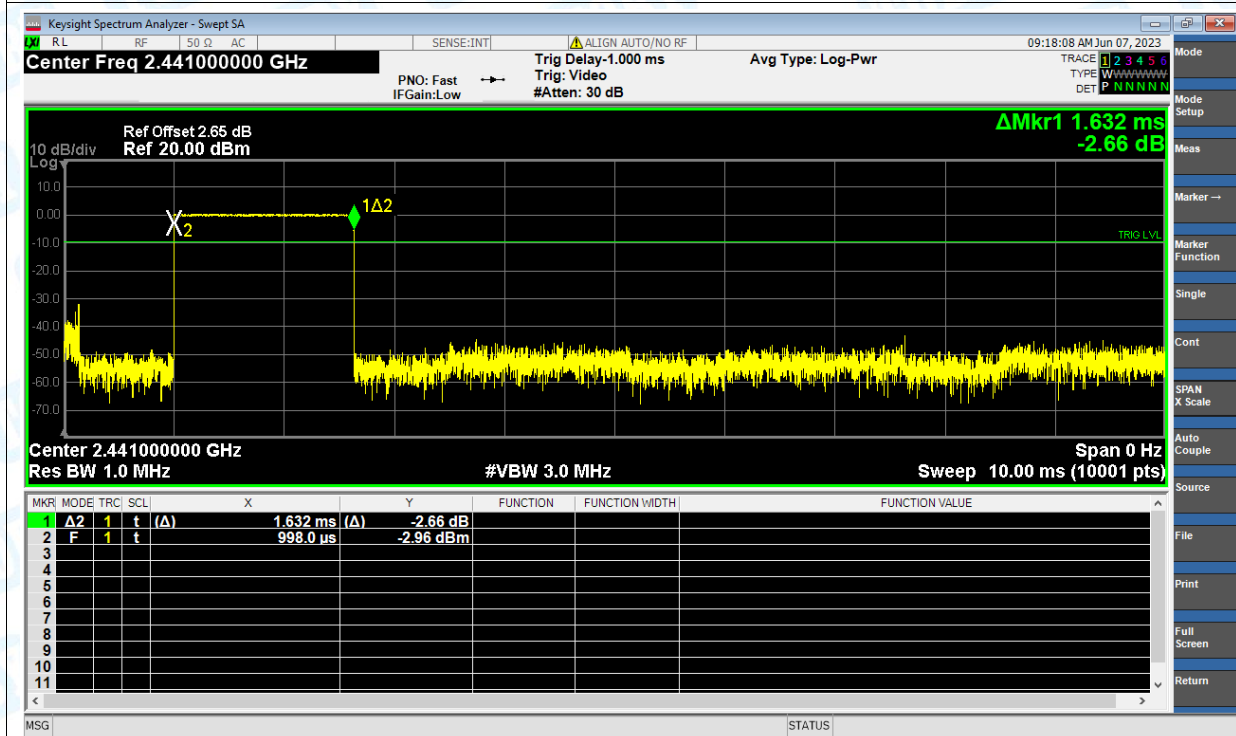
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.376	120.32	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.632	261.12	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.878	306.987	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.385	123.2	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.886	307.84	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.636	261.76	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.888	308.053	31600	400	Pass

Test Graphs

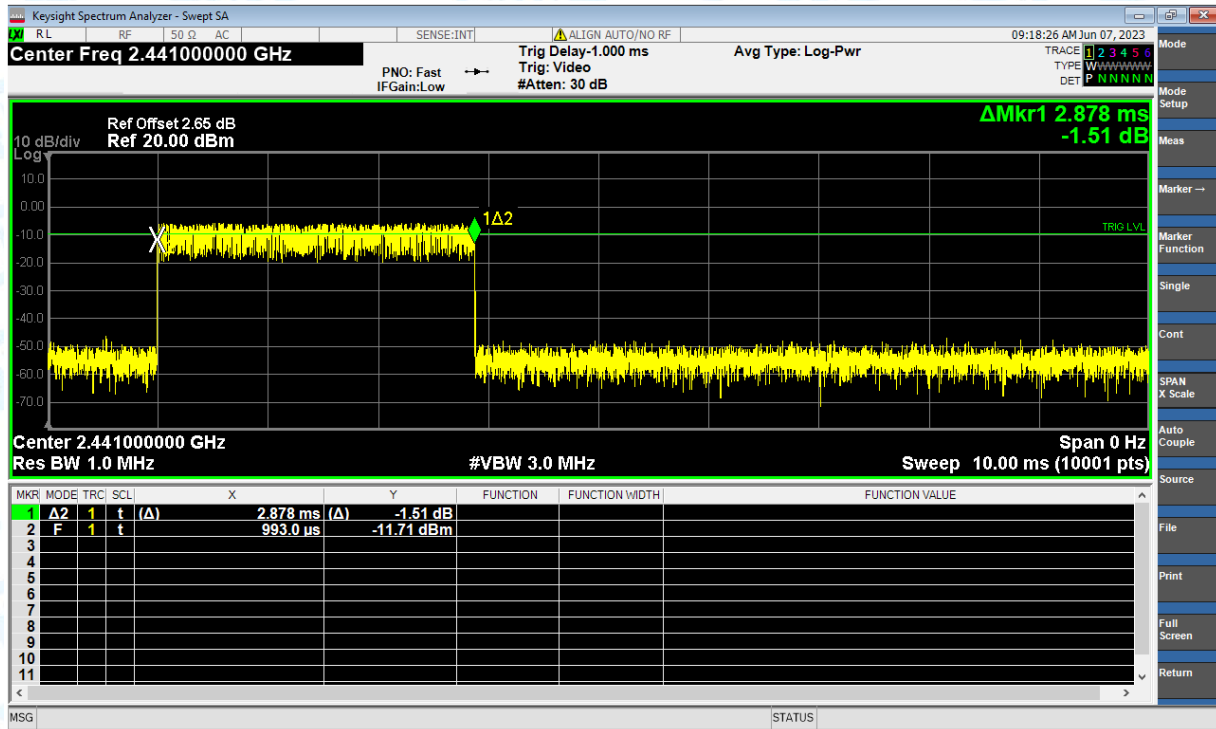
Dwell NVNT 1-DH1 2441MHz Ant1



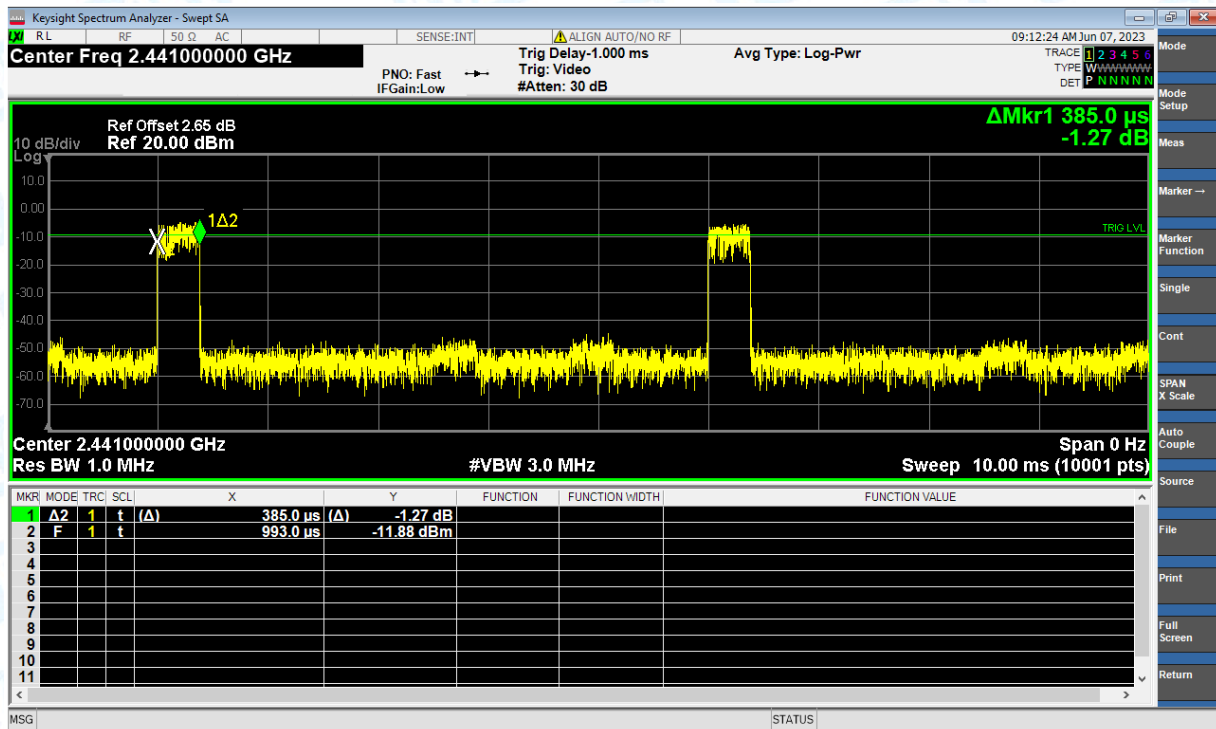
Dwell NVNT 1-DH3 2441MHz Ant1



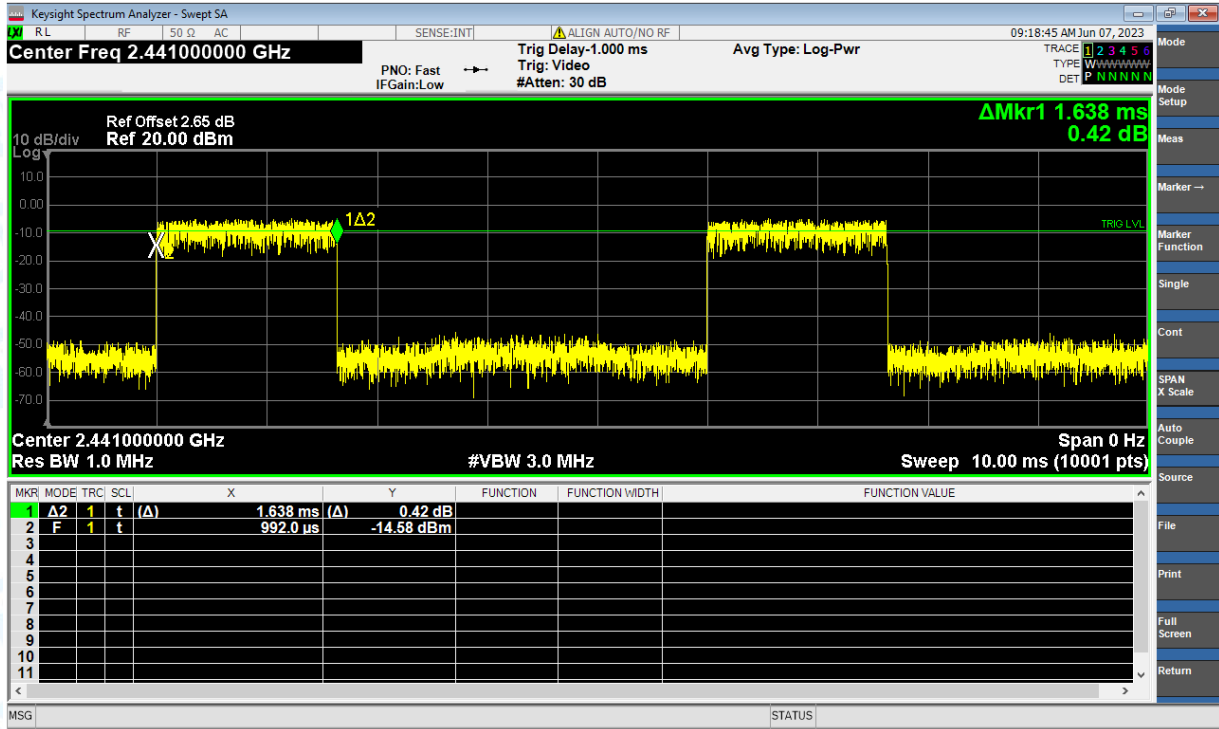
Dwell NVNT 1-DH5 2441MHz Ant1



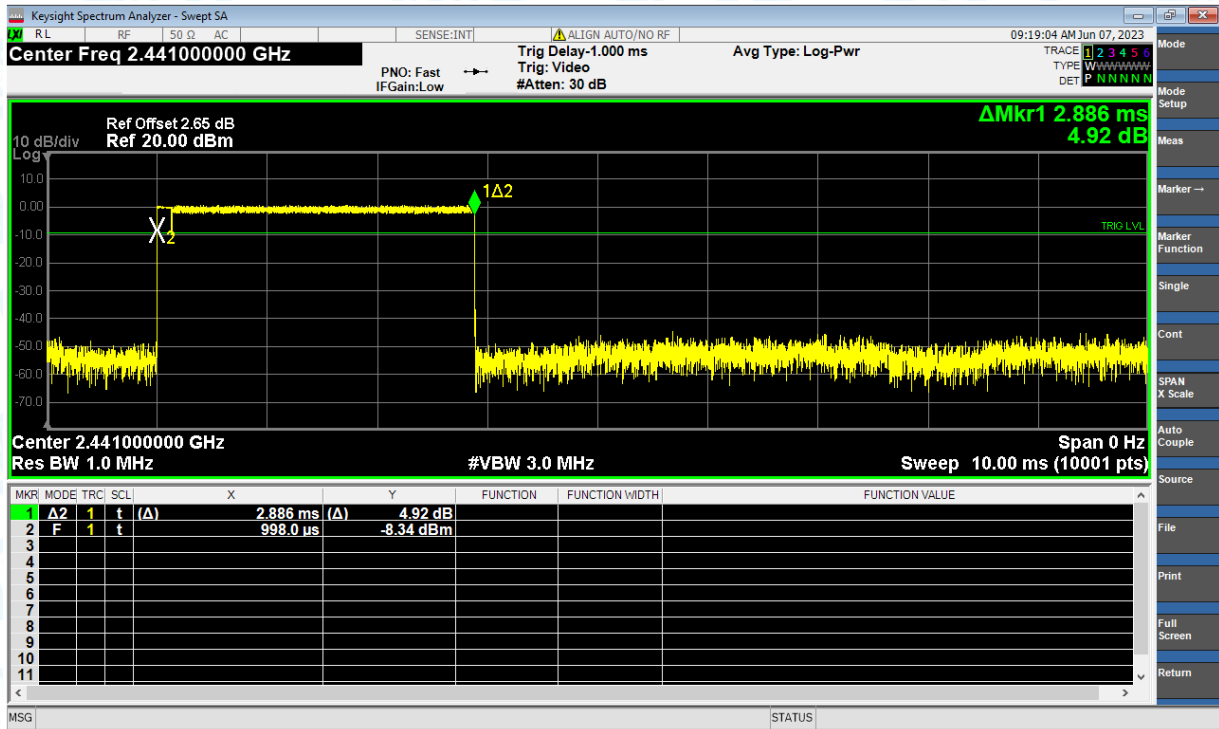
Dwell NVNT 2-DH1 2441MHz Ant1



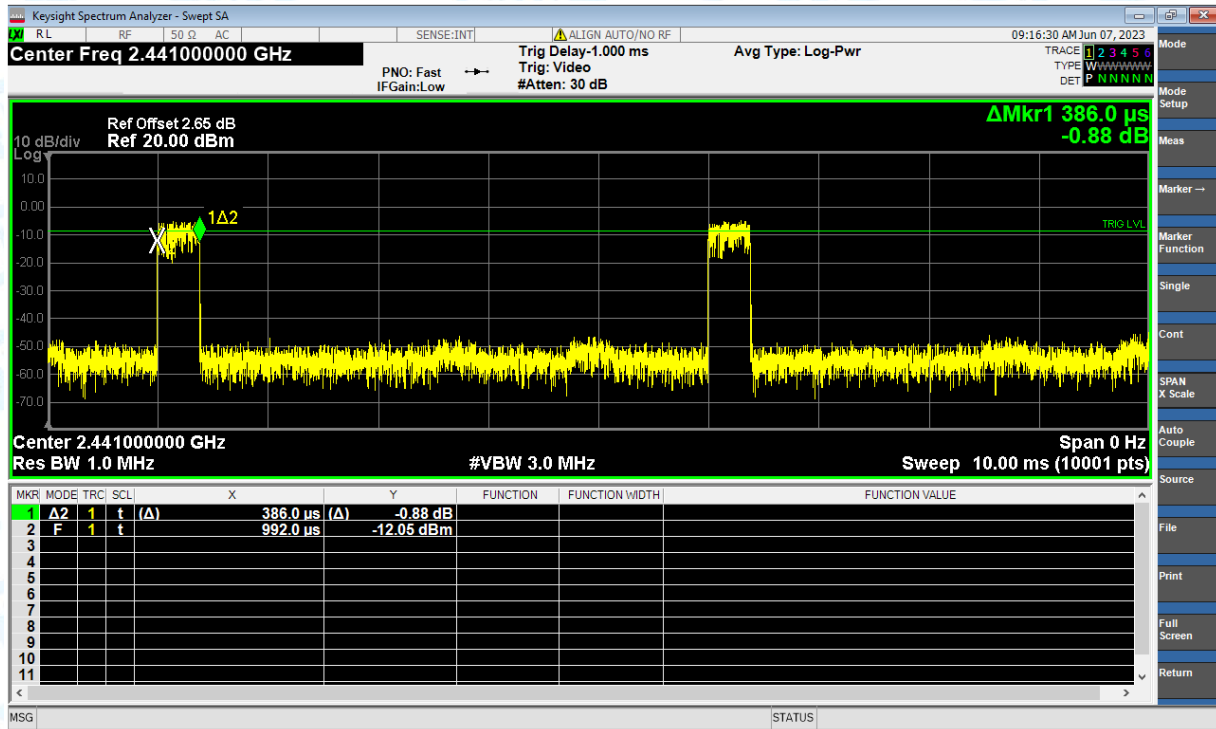
Dwell NVNT 2-DH3 2441MHz Ant1



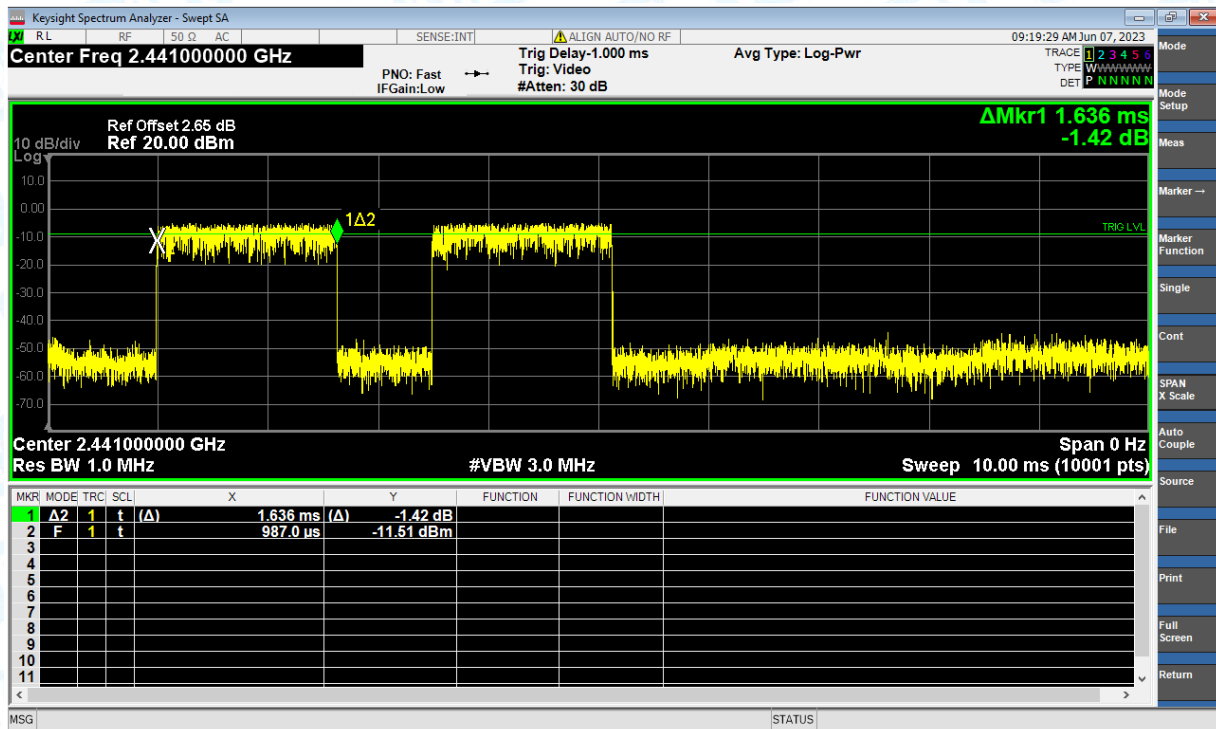
Dwell NVNT 2-DH5 2441MHz Ant1

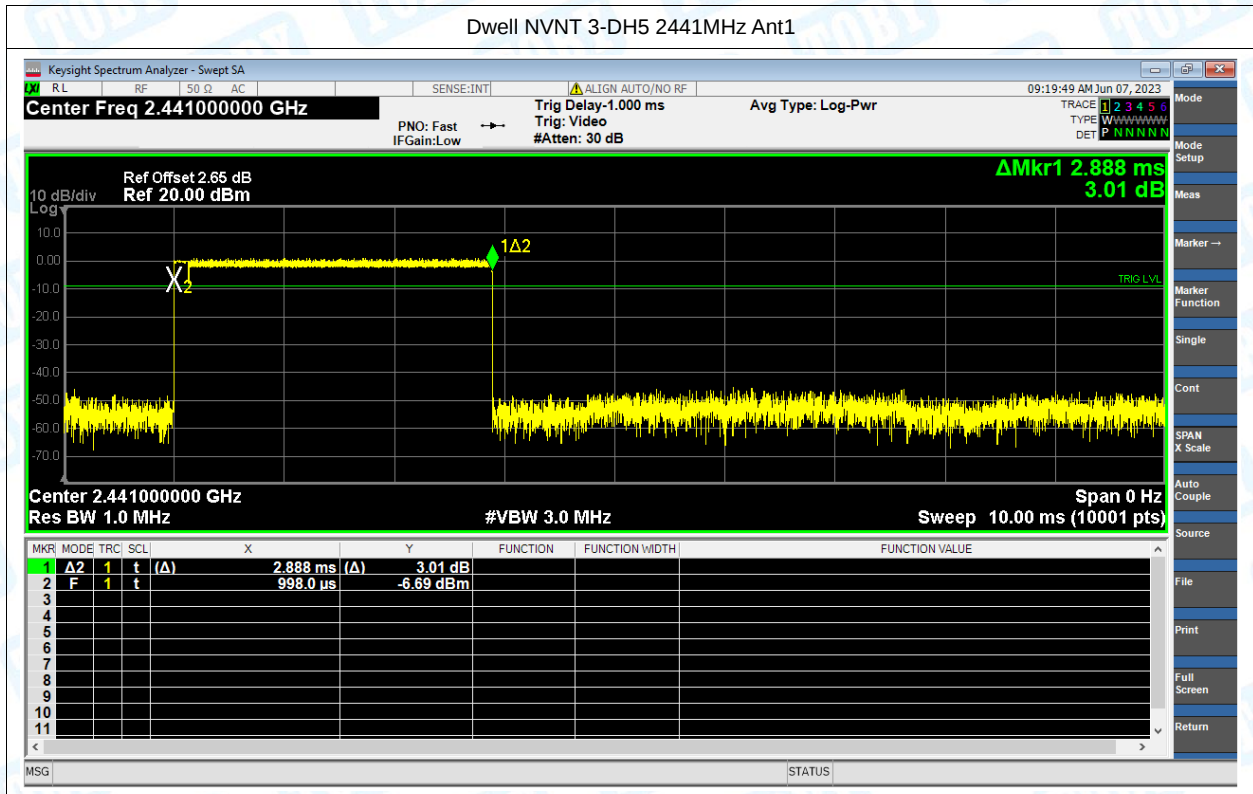


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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