

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

General Description of EUT	
Product Name:	Pico Projector
Test Model:	P07S
Sample ID:	202307-0061-4-2#
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Li Ying Jing
Note: For a more detailed features description, please refer to the report TBR-C-202307-0061-5 The report only show the worst case data.	

Contents

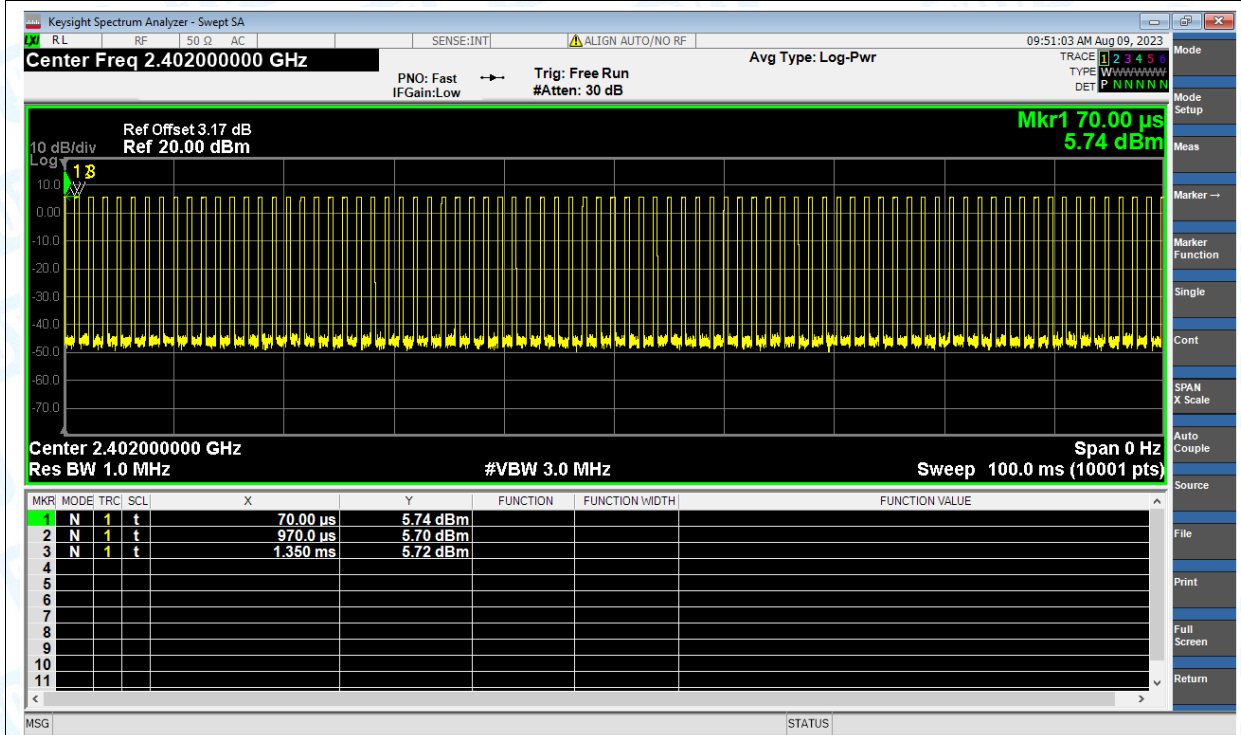
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1. Duty Cycle

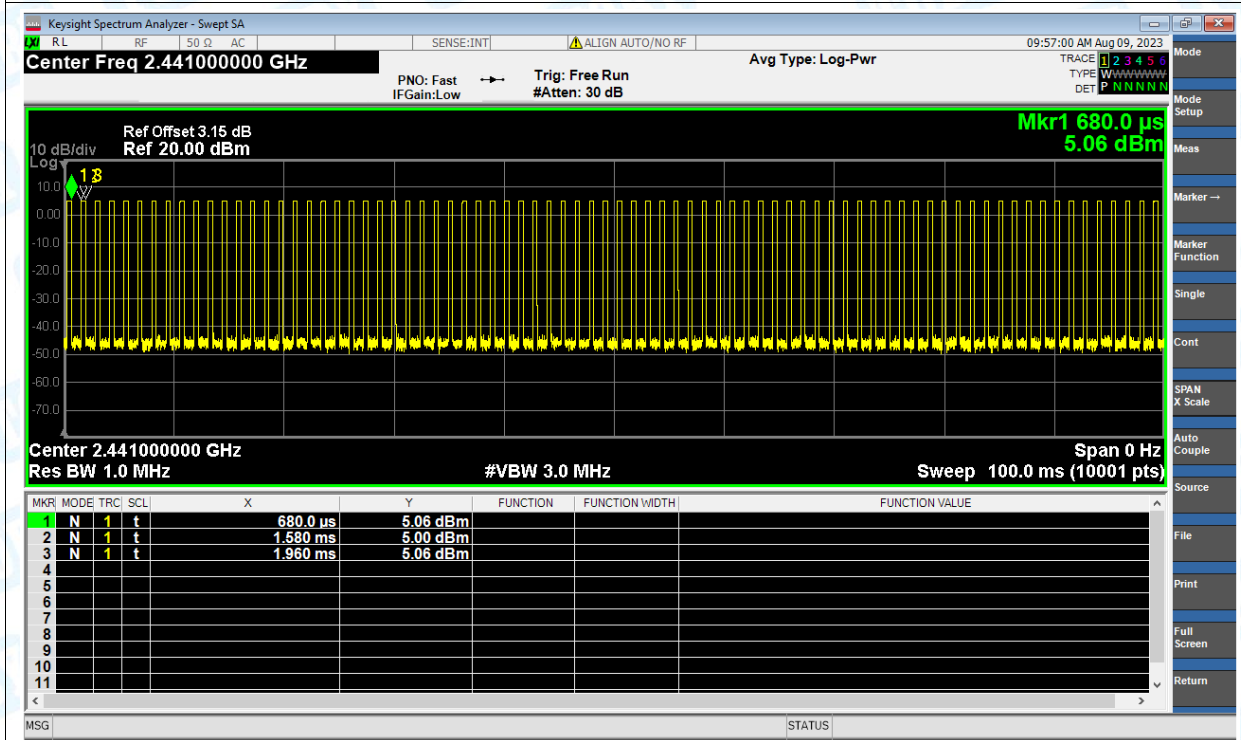
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.69	5.27	2.63
NVNT	1-DH1	2441	Ant1	29.69	5.27	2.63
NVNT	1-DH1	2480	Ant1	29.69	5.27	2.63
NVNT	2-DH1	2402	Ant1	30.23	5.2	2.56
NVNT	2-DH1	2441	Ant1	30.23	5.2	2.56
NVNT	2-DH1	2480	Ant1	30.23	5.2	2.56
NVNT	3-DH1	2402	Ant1	30.23	5.2	2.56
NVNT	3-DH1	2441	Ant1	30.23	5.2	2.56
NVNT	3-DH1	2480	Ant1	30.23	5.2	2.56

Test Graphs

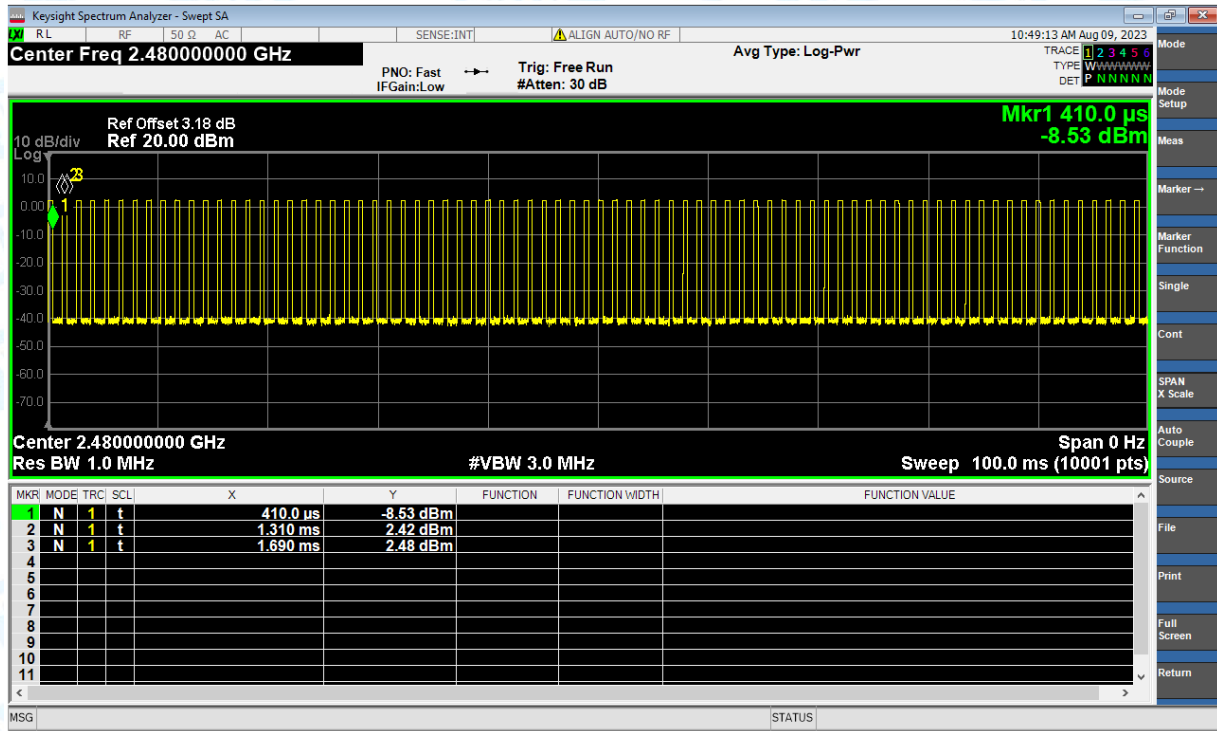
Duty Cycle NVNT 1-DH1 2402MHz Ant1



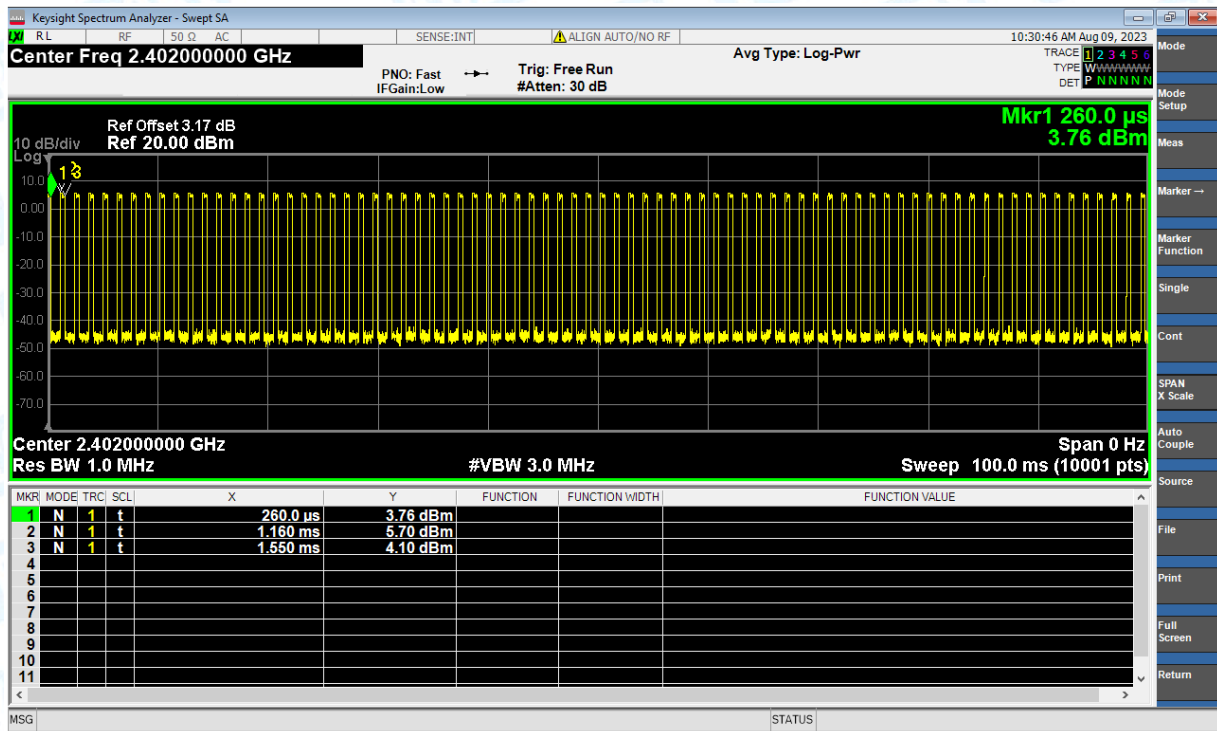
Duty Cycle NVNT 1-DH1 2441MHz Ant1



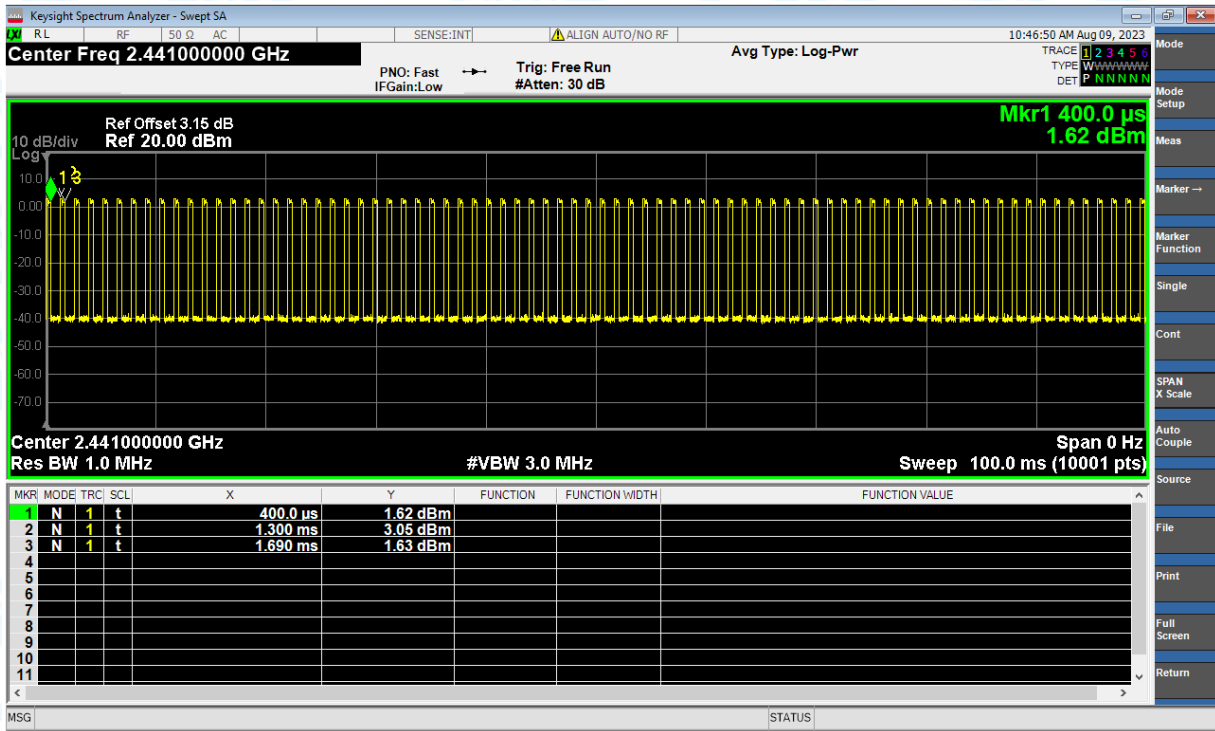
Duty Cycle NVNT 1-DH1 2480MHz Ant1



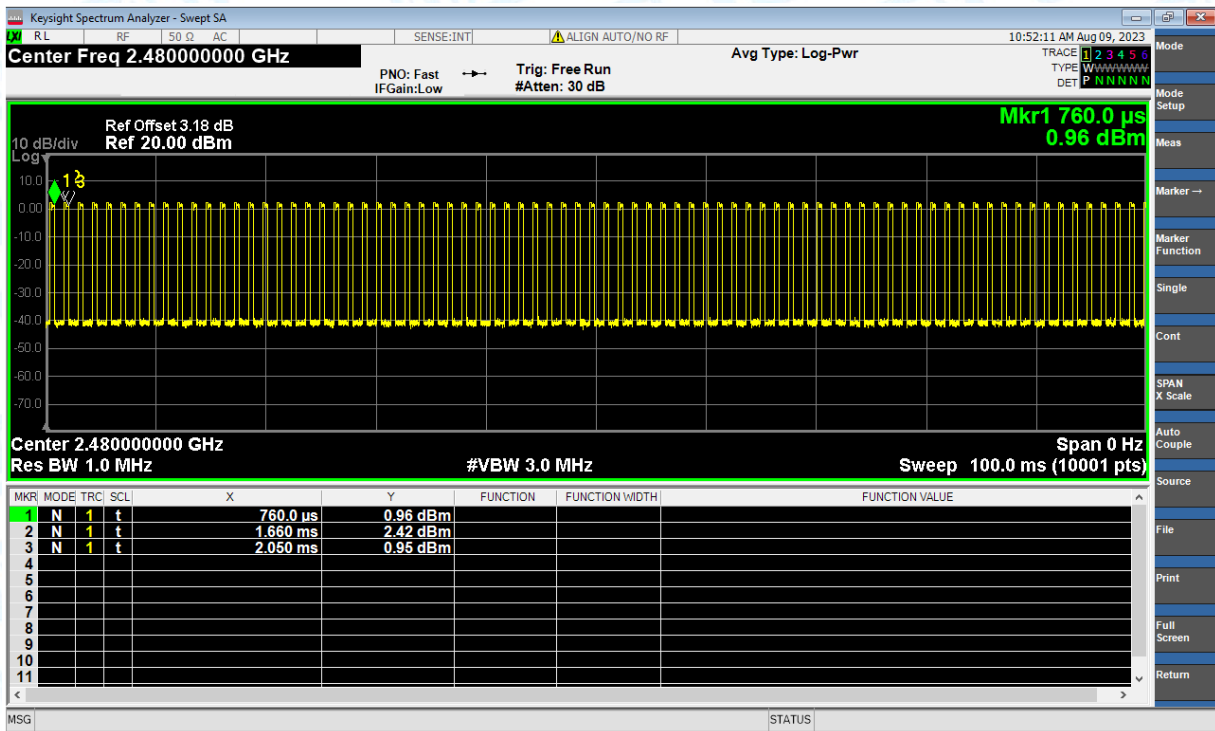
Duty Cycle NVNT 2-DH1 2402MHz Ant1



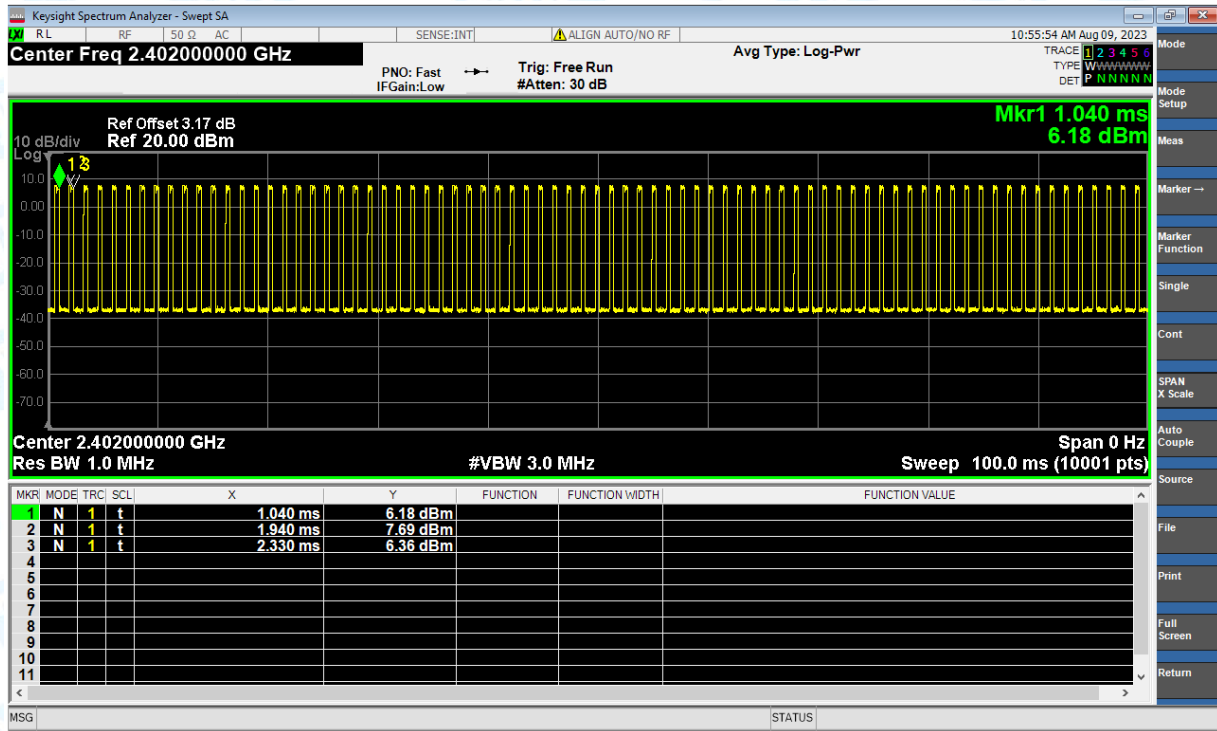
Duty Cycle NVNT 2-DH1 2441MHz Ant1



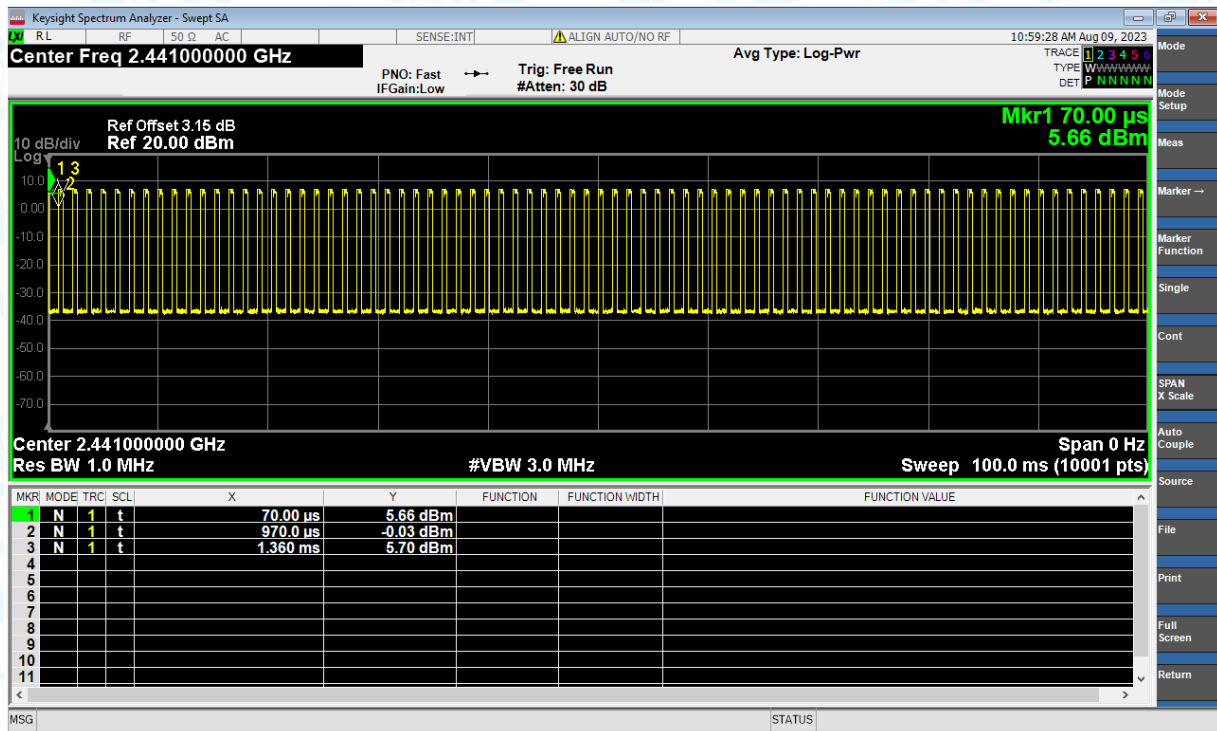
Duty Cycle NVNT 2-DH1 2480MHz Ant1

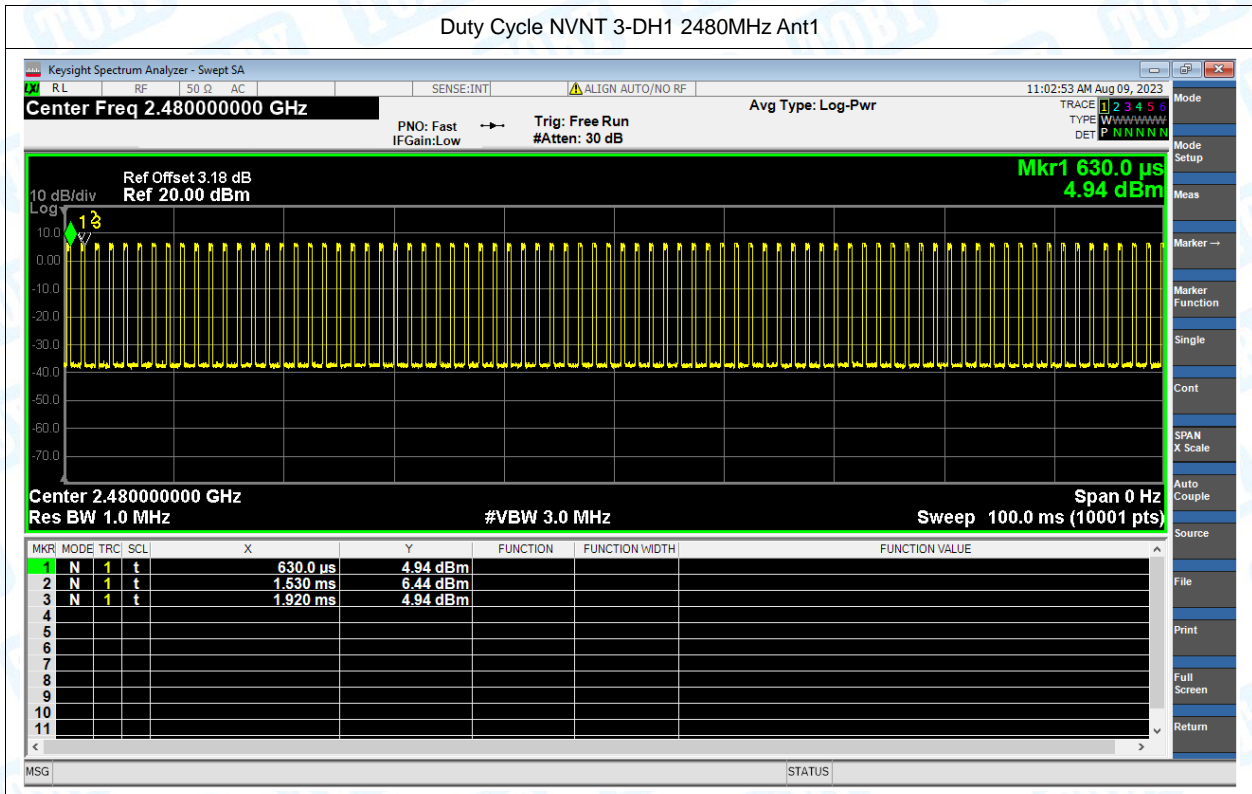


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



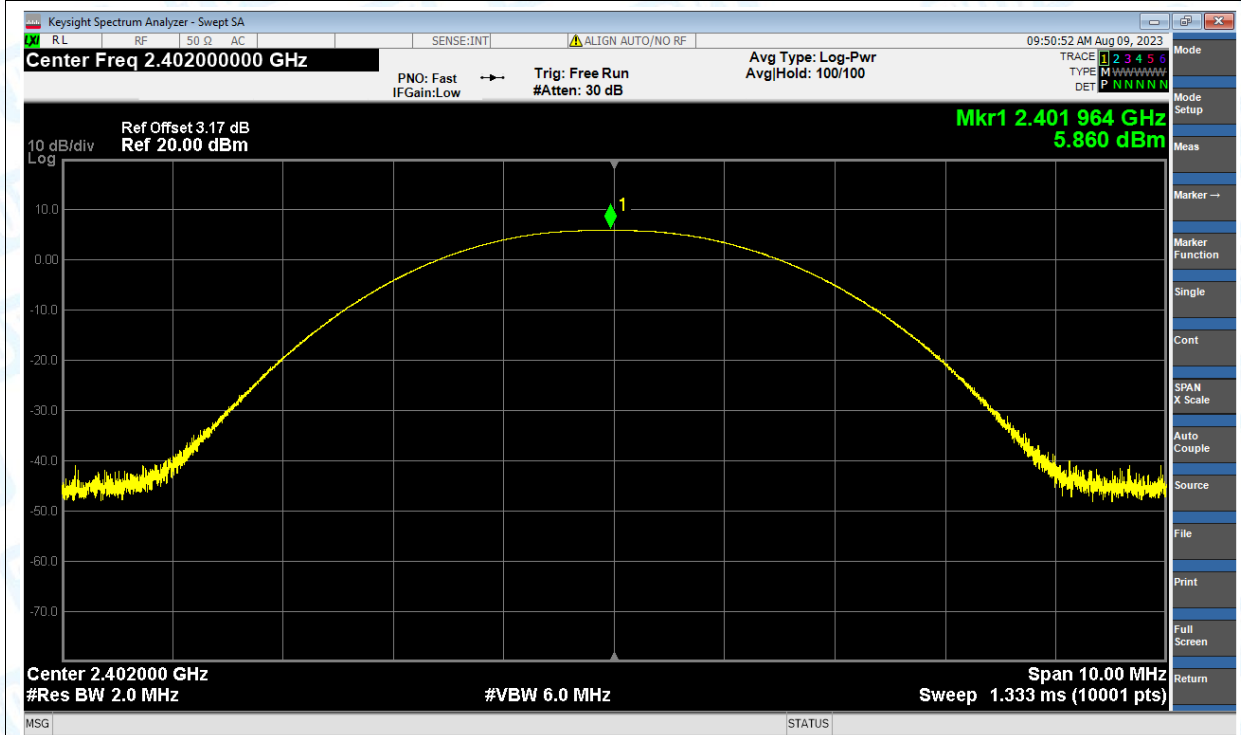


2. Maximum Conducted Output Power

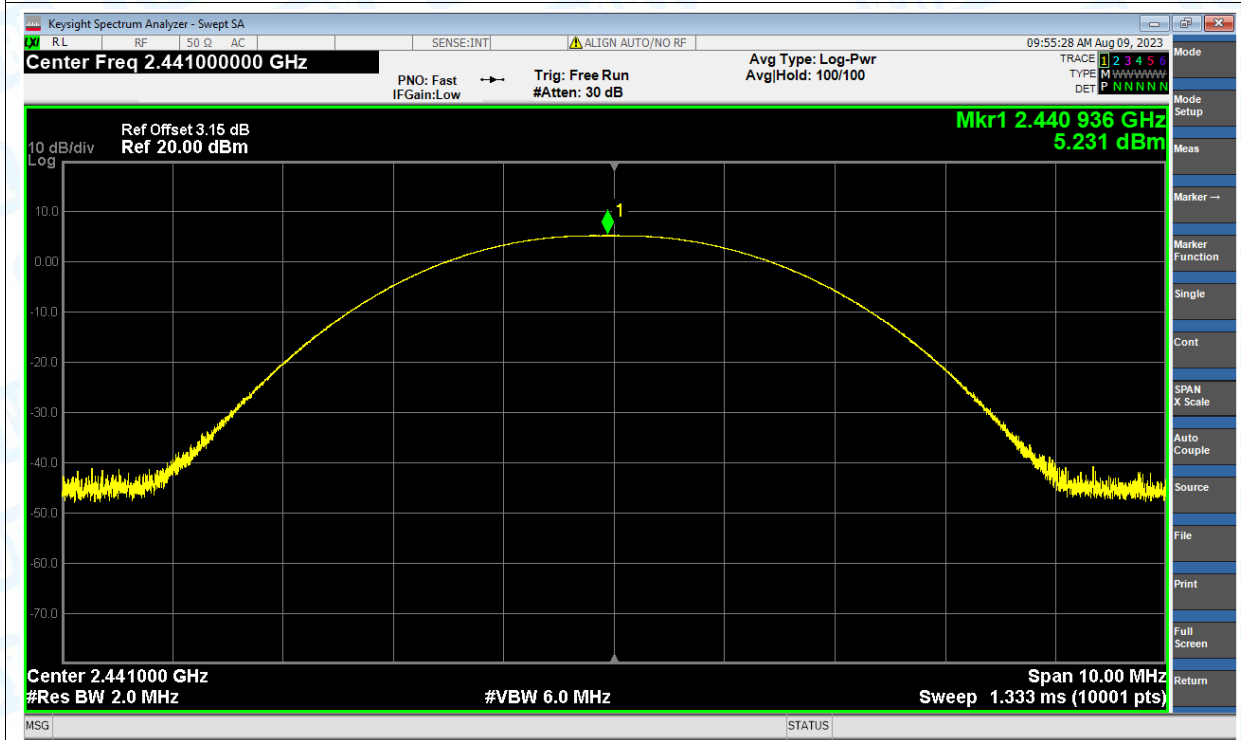
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.860	21	Pass
NVNT	1-DH1	2441	Ant1	5.231	21	Pass
NVNT	1-DH1	2480	Ant1	2.573	21	Pass
NVNT	2-DH1	2402	Ant1	5.814	21	Pass
NVNT	2-DH1	2441	Ant1	3.182	21	Pass
NVNT	2-DH1	2480	Ant1	2.553	21	Pass
NVNT	3-DH1	2402	Ant1	8.080	21	Pass
NVNT	3-DH1	2441	Ant1	7.454	21	Pass
NVNT	3-DH1	2480	Ant1	6.812	21	Pass

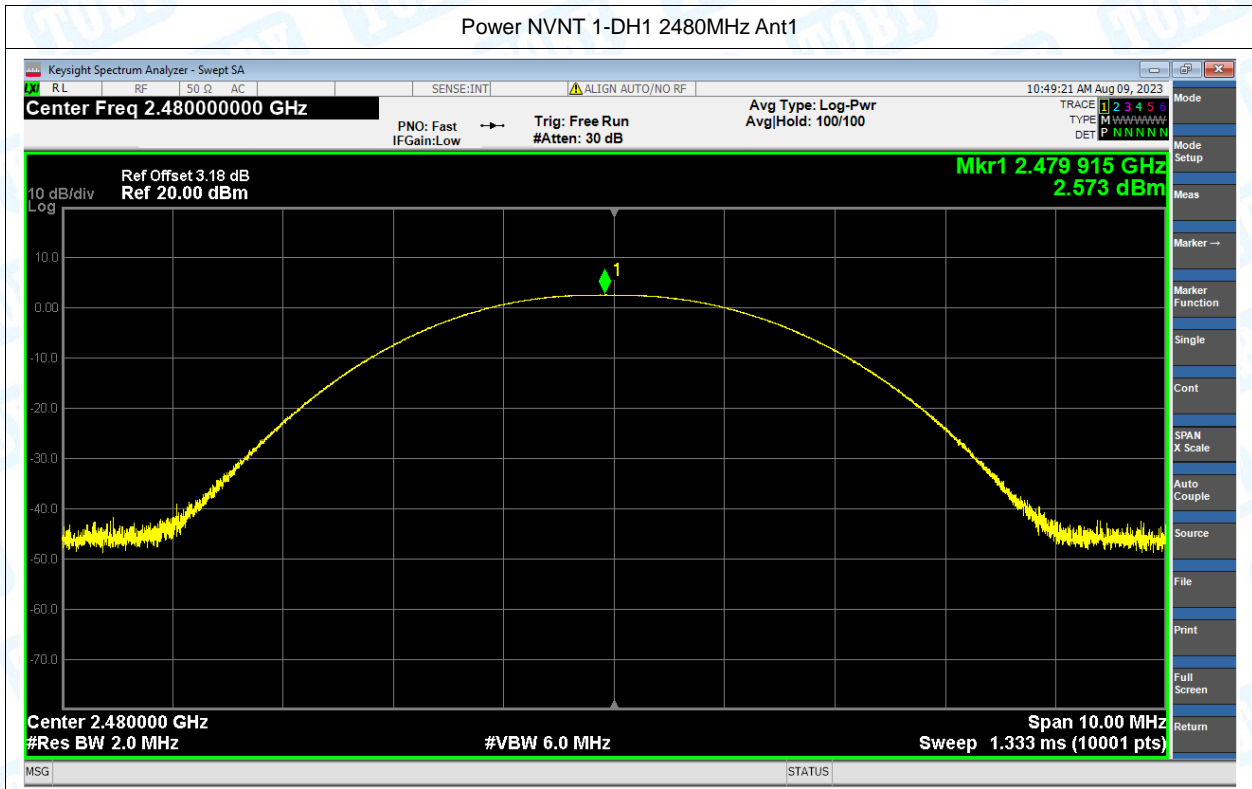
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1



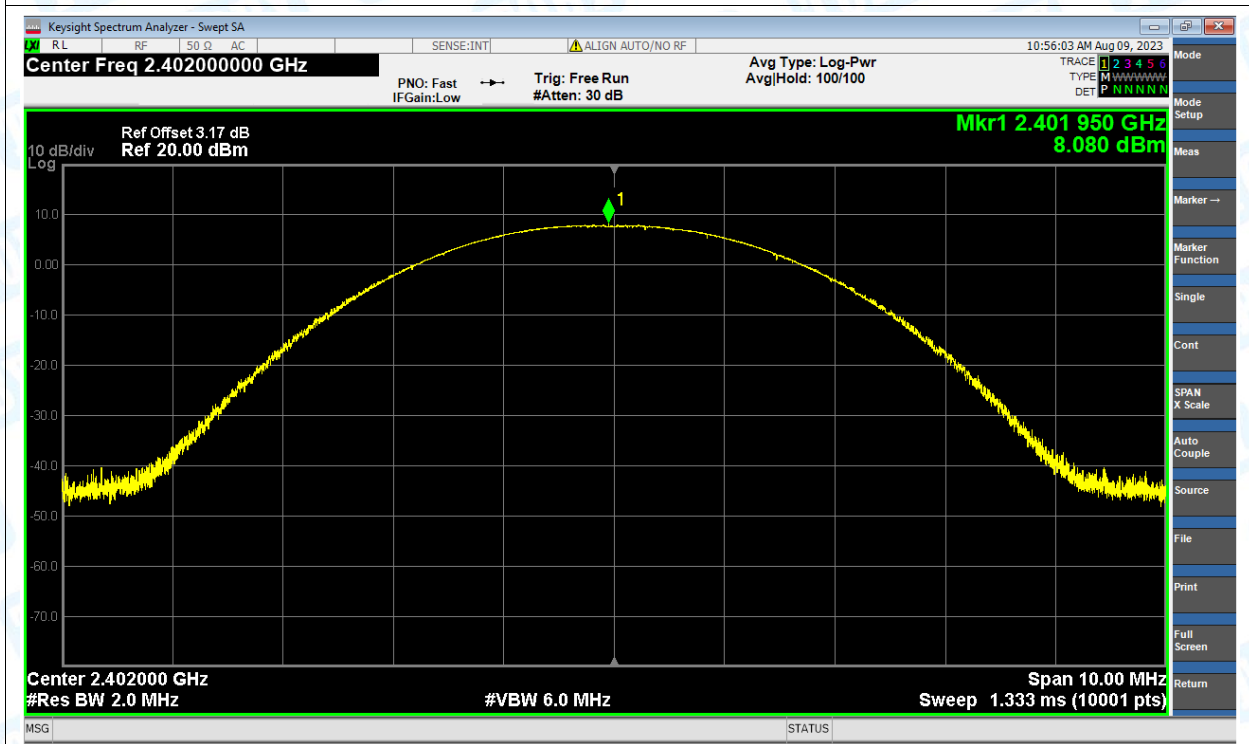
Power NVNT 1-DH1 2441MHz Ant1



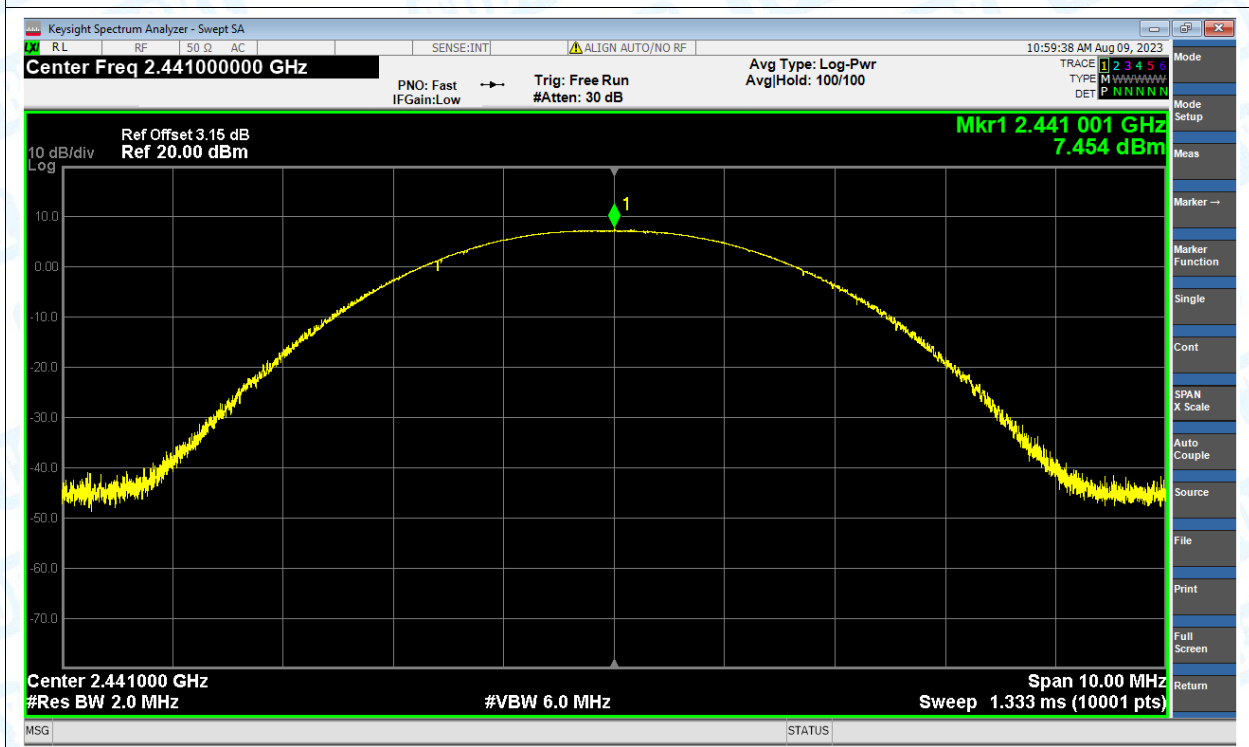




Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1





3. -20dB Bandwidth

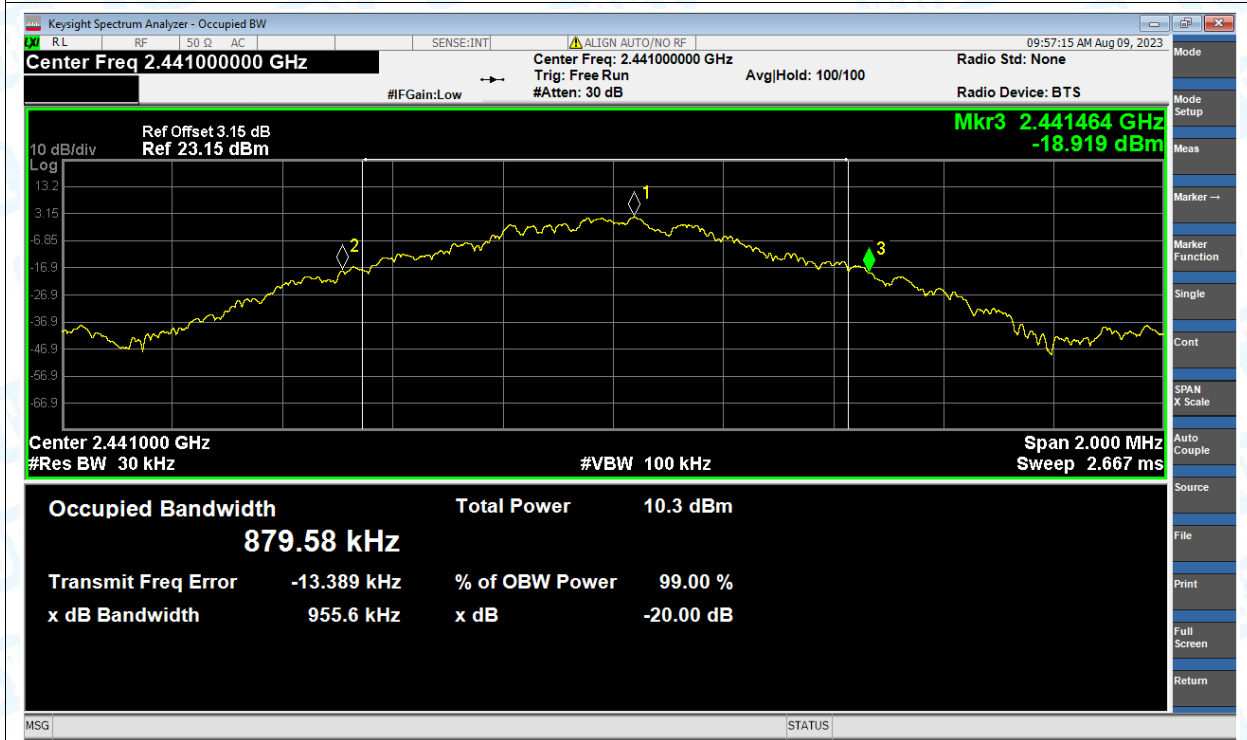
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.85	----	Pass
NVNT	1-DH1	2441	Ant1	0.96	----	Pass
NVNT	1-DH1	2480	Ant1	0.95	----	Pass
NVNT	2-DH1	2402	Ant1	1.24	----	Pass
NVNT	2-DH1	2441	Ant1	1.24	----	Pass
NVNT	2-DH1	2480	Ant1	1.23	----	Pass
NVNT	3-DH1	2402	Ant1	1.21	----	Pass
NVNT	3-DH1	2441	Ant1	1.19	----	Pass
NVNT	3-DH1	2480	Ant1	1.20	----	Pass

Test Graphs

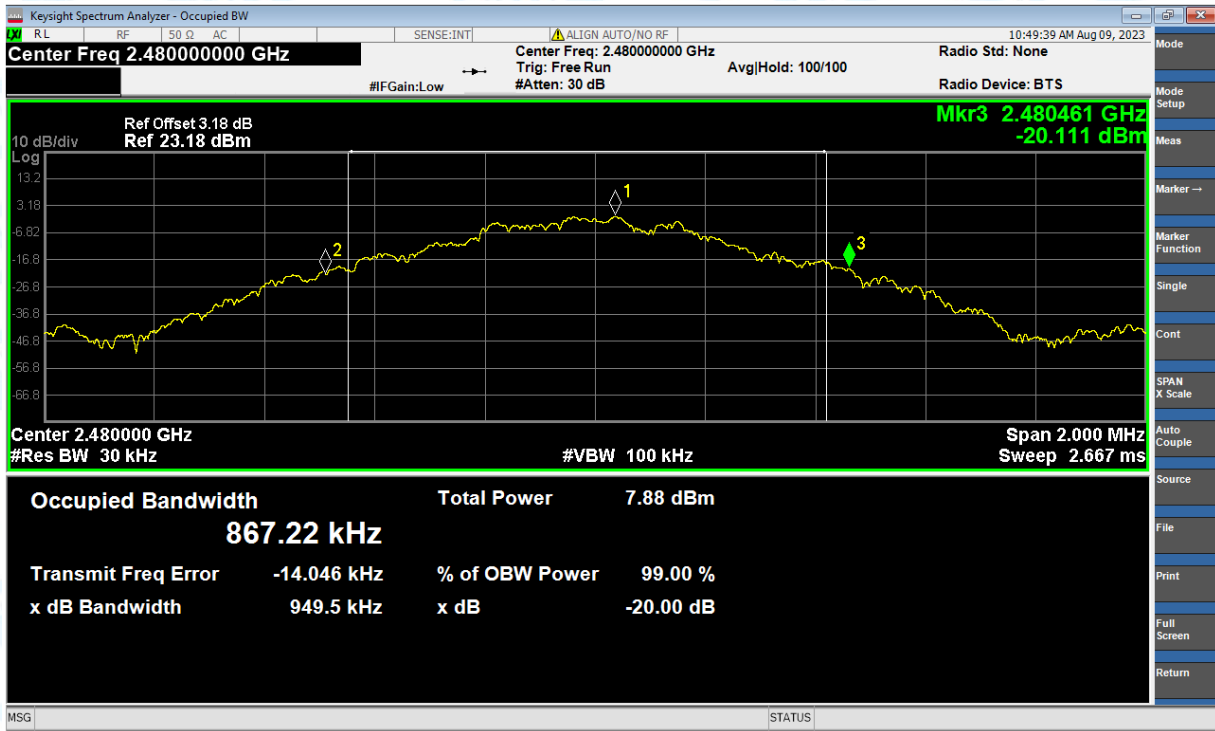
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



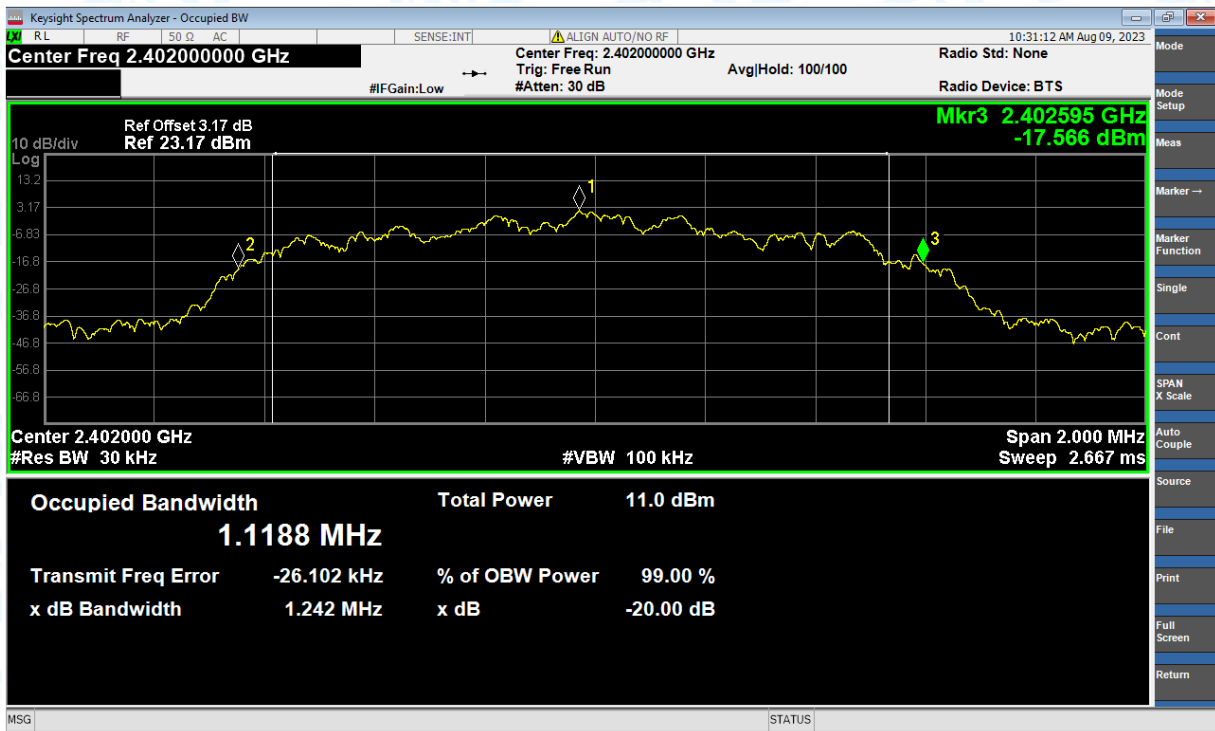
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



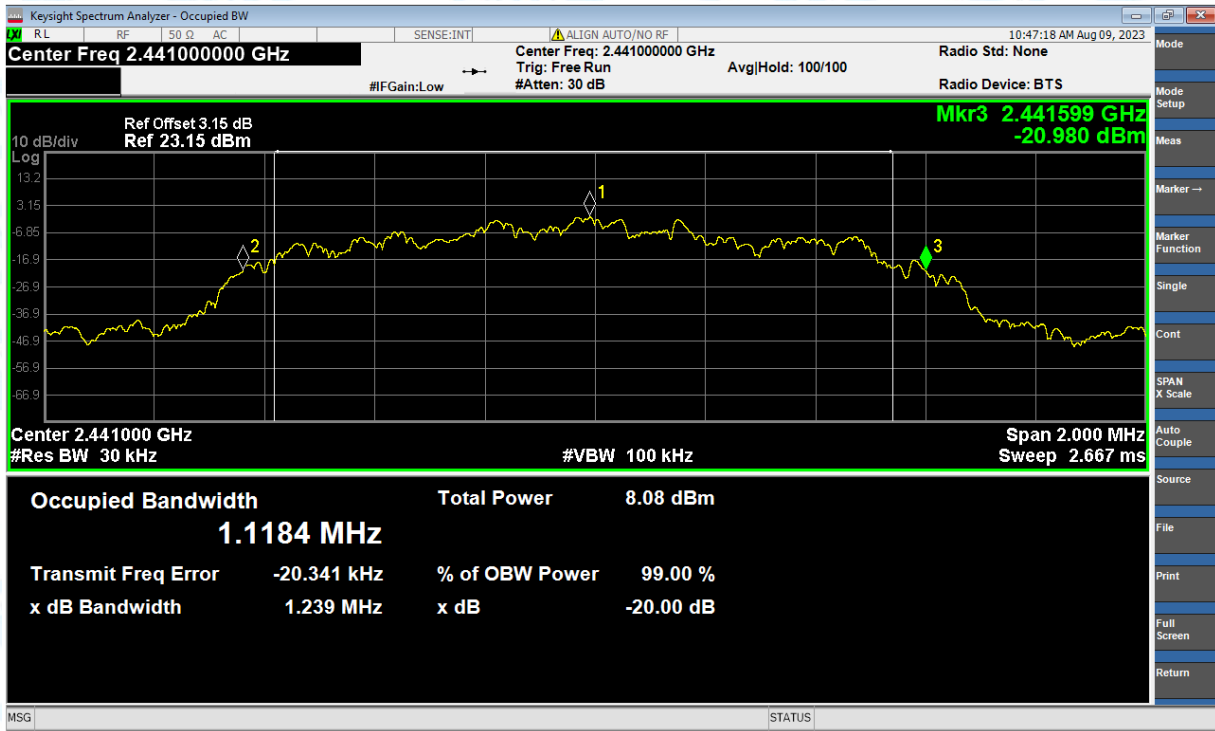
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



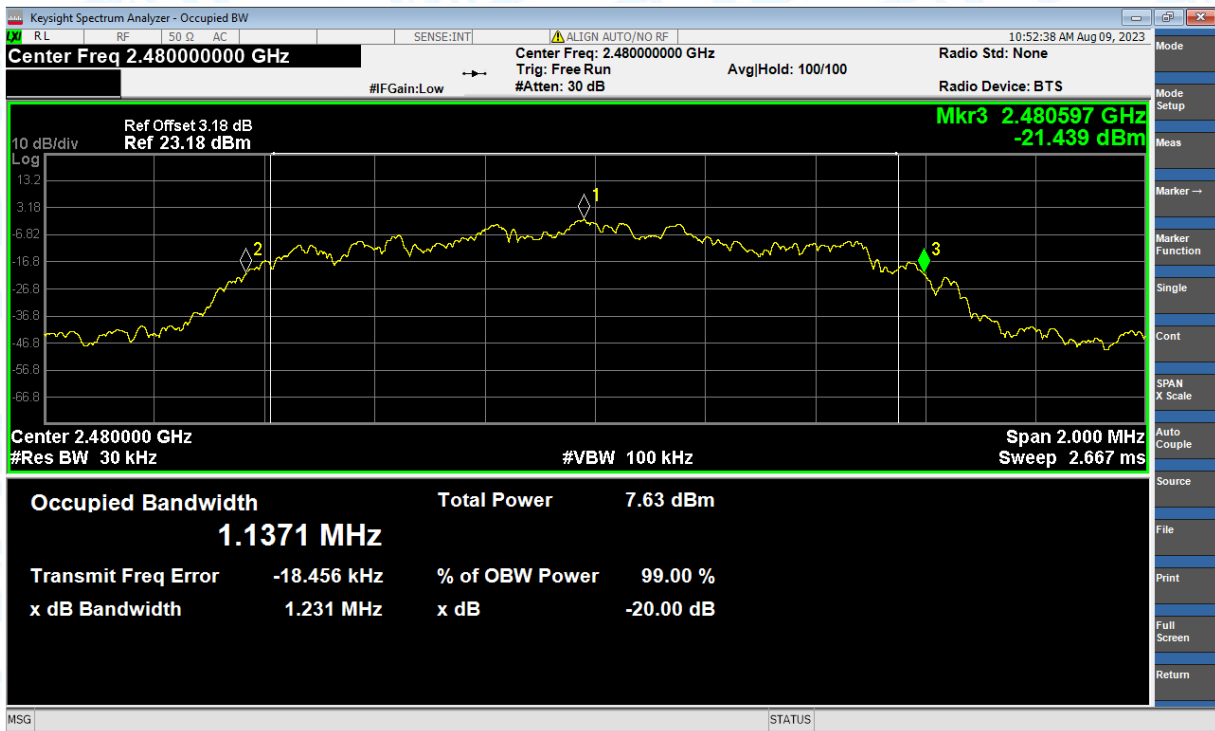
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



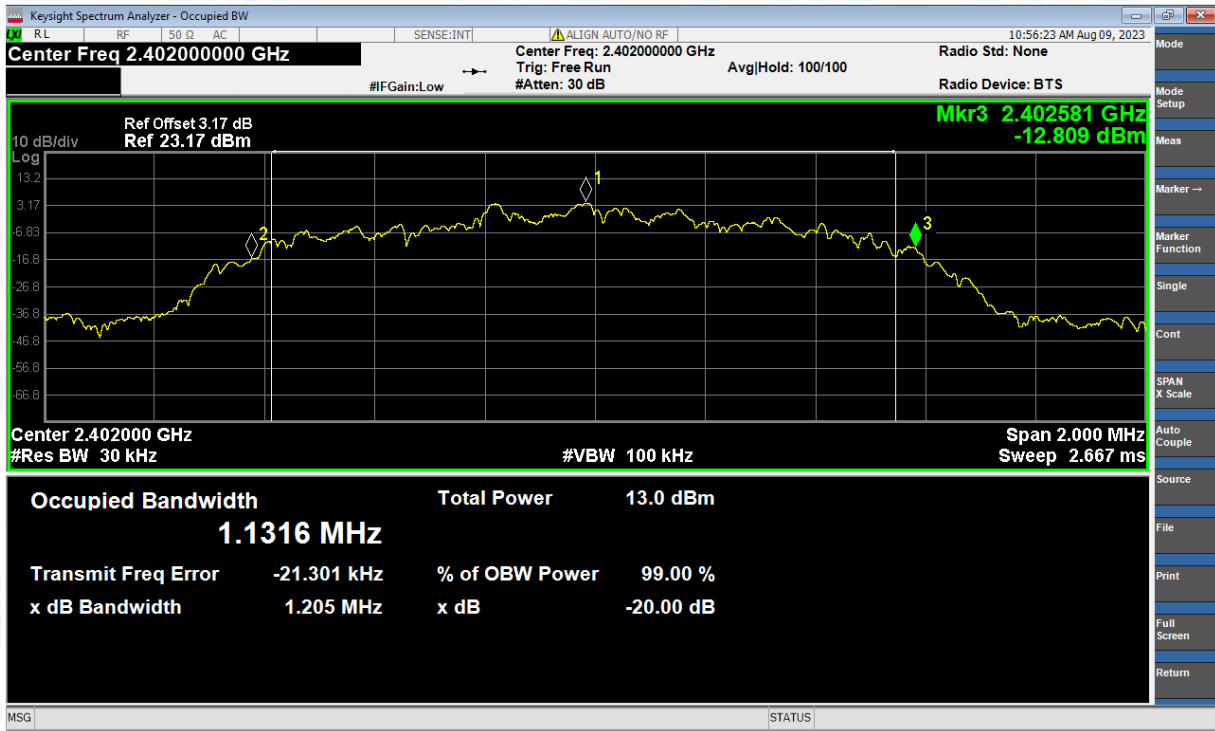
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



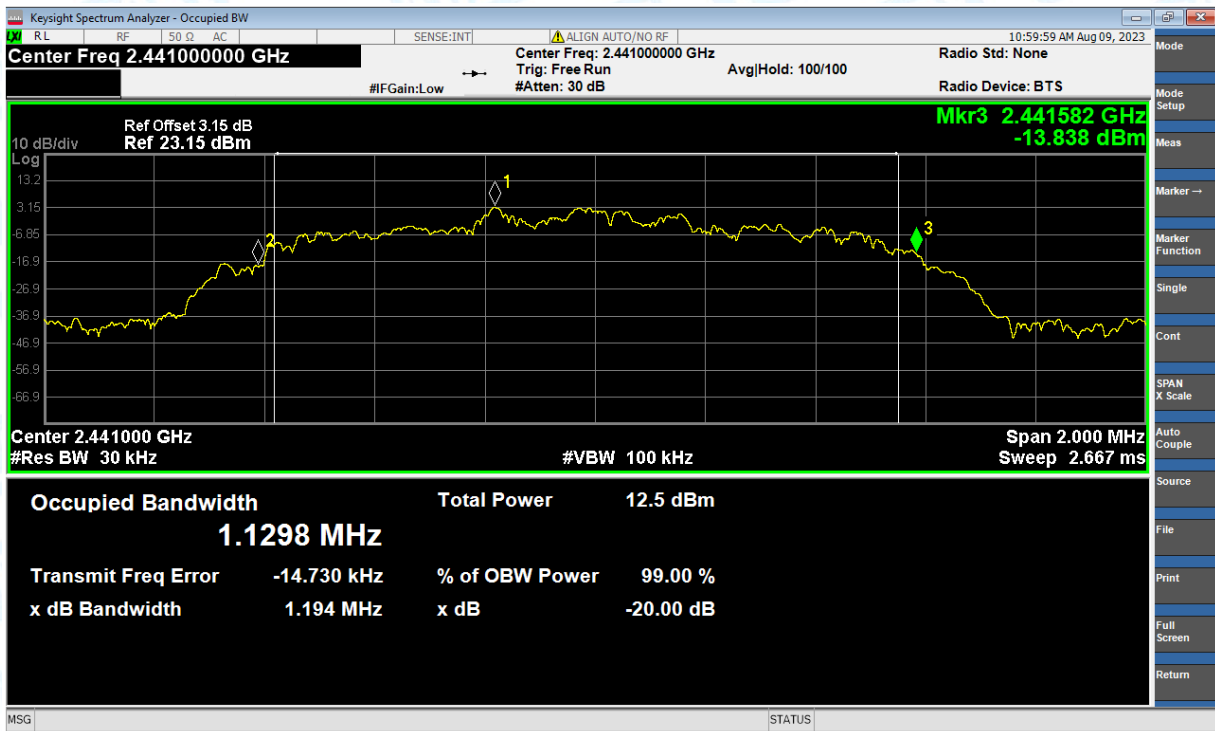
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

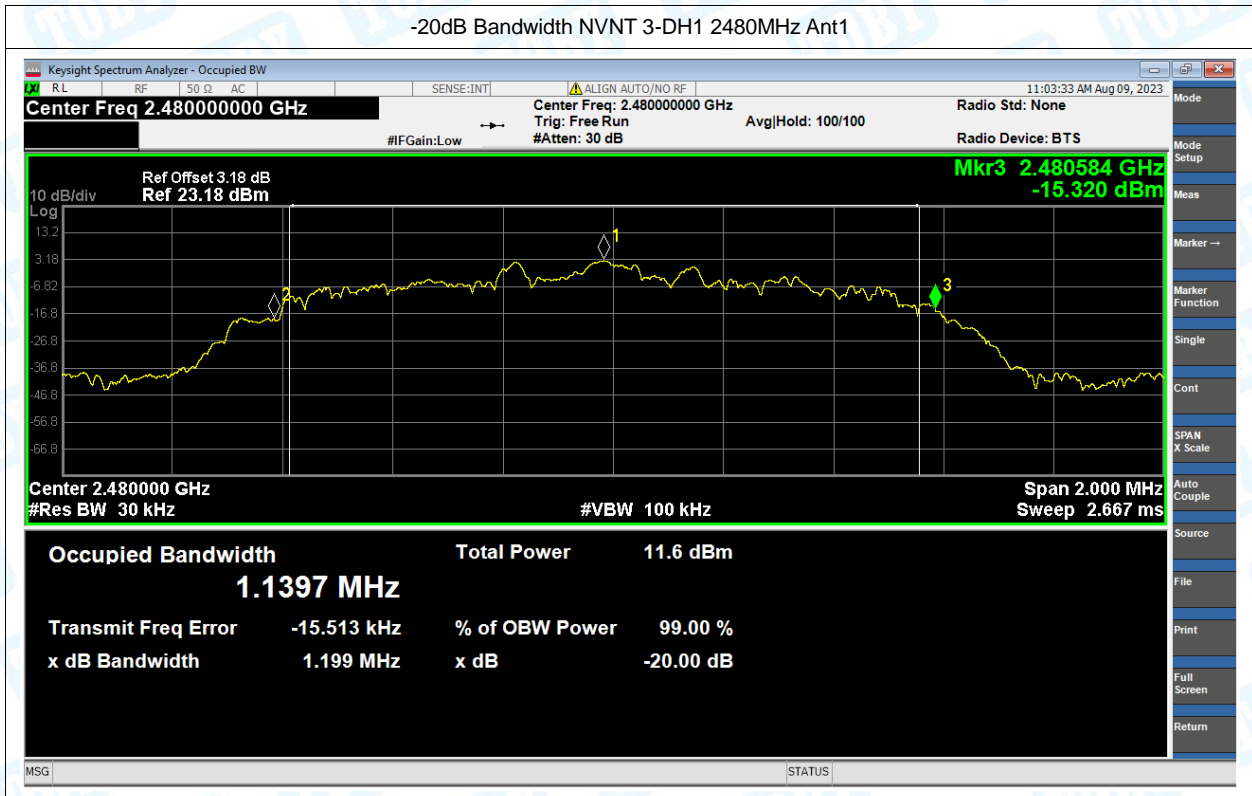


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



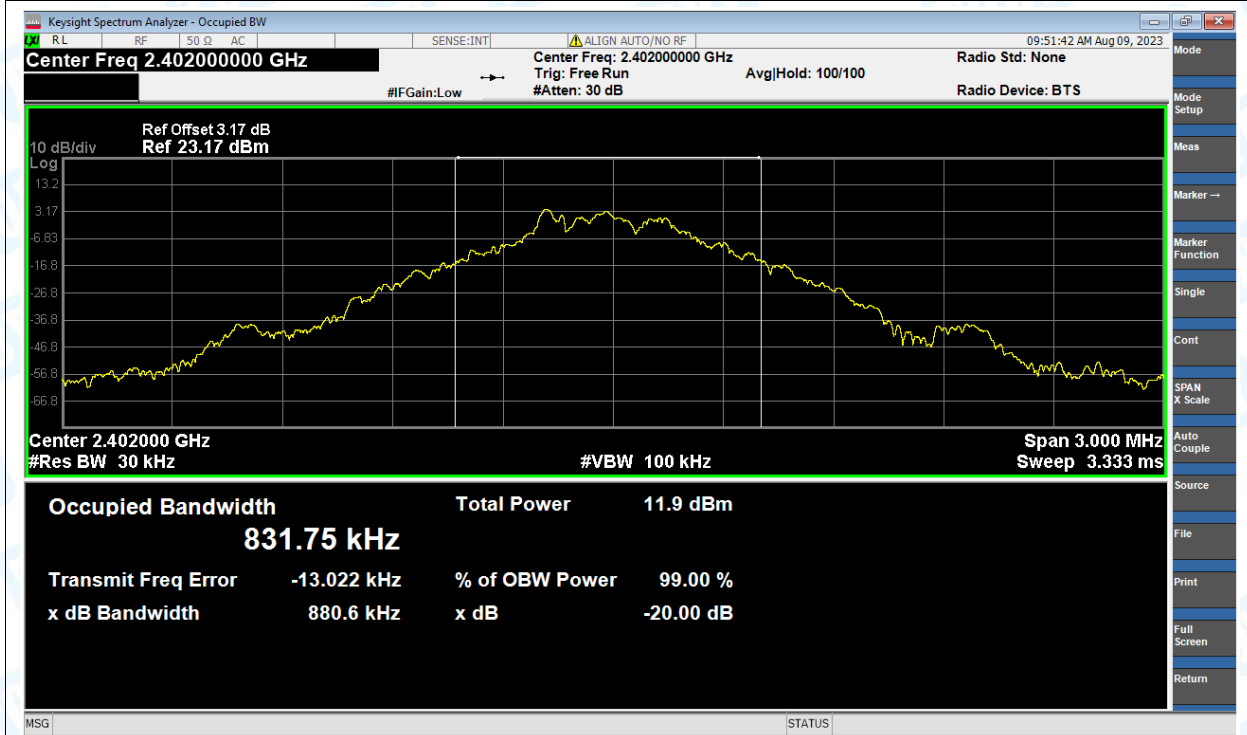


4. Occupied Channel Bandwidth

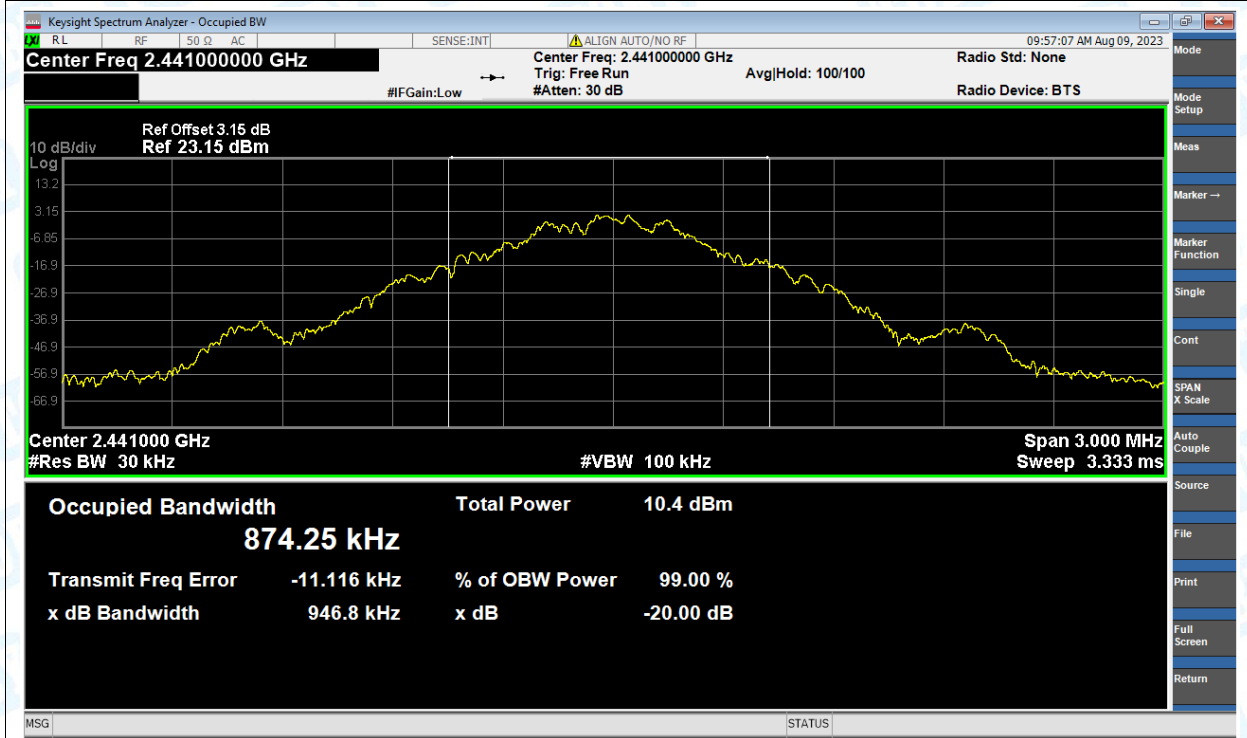
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.832
NVNT	1-DH1	2441	Ant1	0.874
NVNT	1-DH1	2480	Ant1	0.891
NVNT	2-DH1	2402	Ant1	1.130
NVNT	2-DH1	2441	Ant1	1.143
NVNT	2-DH1	2480	Ant1	1.139
NVNT	3-DH1	2402	Ant1	1.141
NVNT	3-DH1	2441	Ant1	1.141
NVNT	3-DH1	2480	Ant1	1.132

Test Graphs

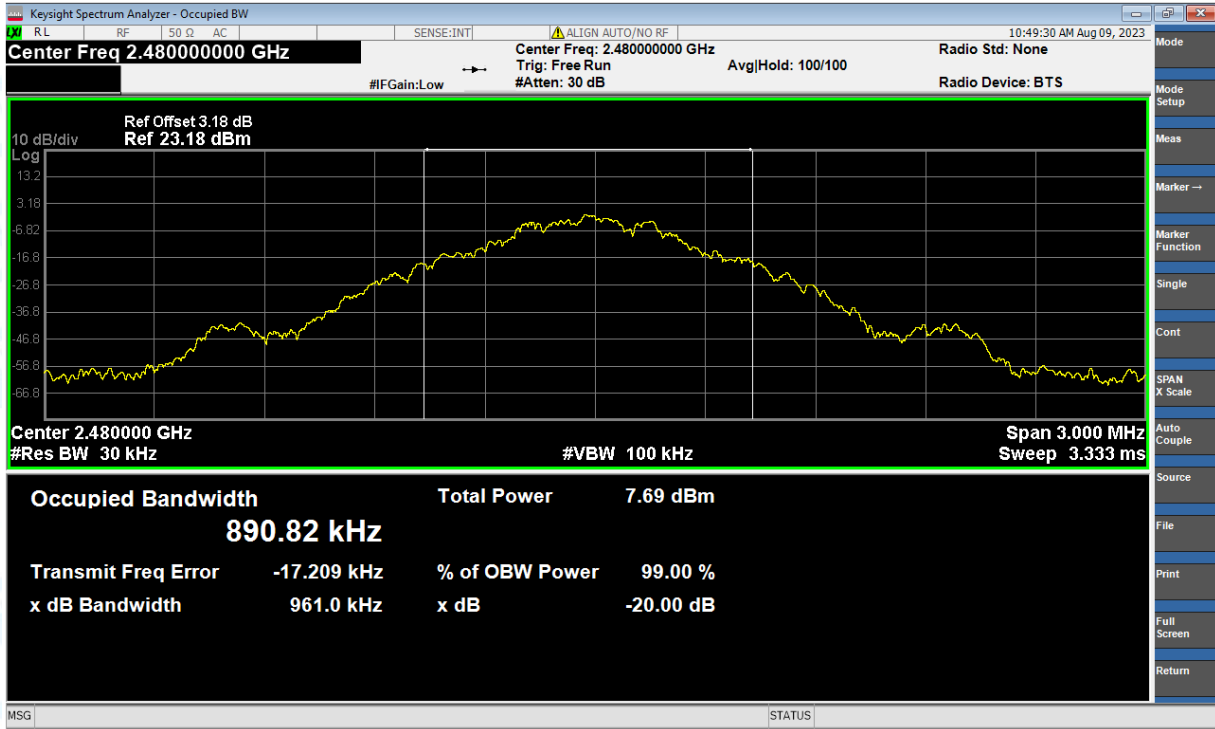
OBW NVNT 1-DH1 2402MHz Ant1



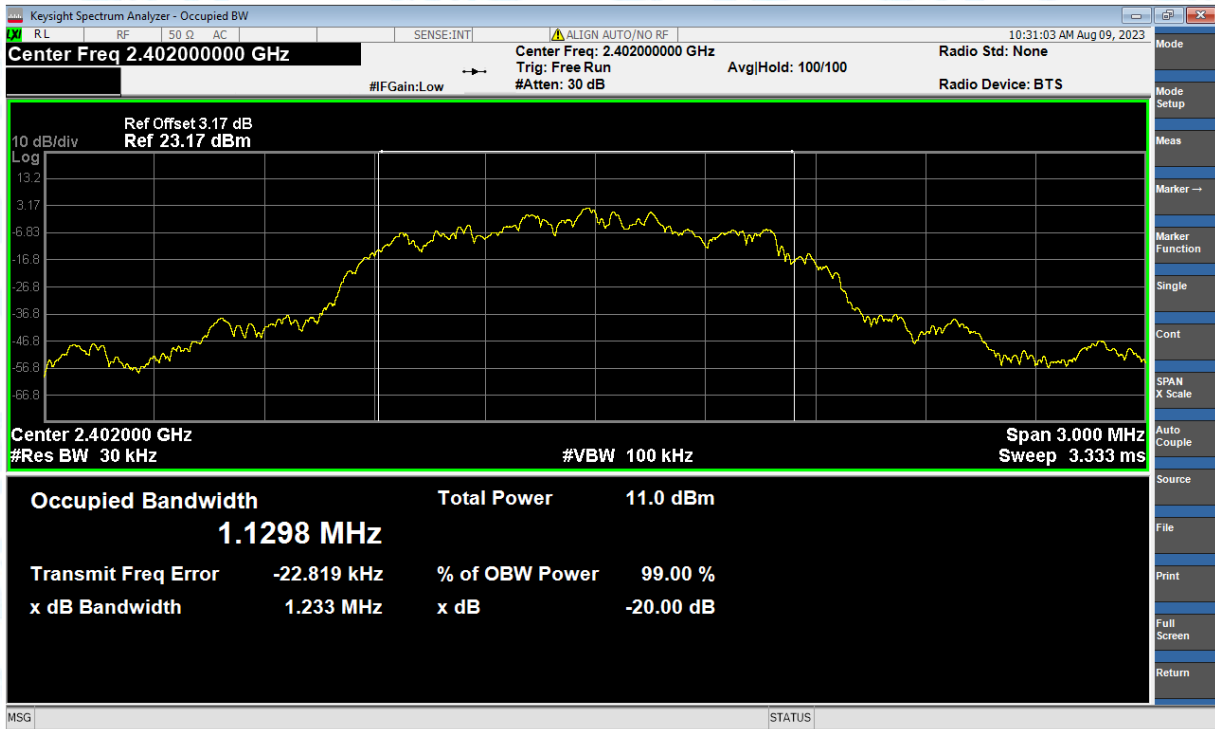
OBW NVNT 1-DH1 2441MHz Ant1



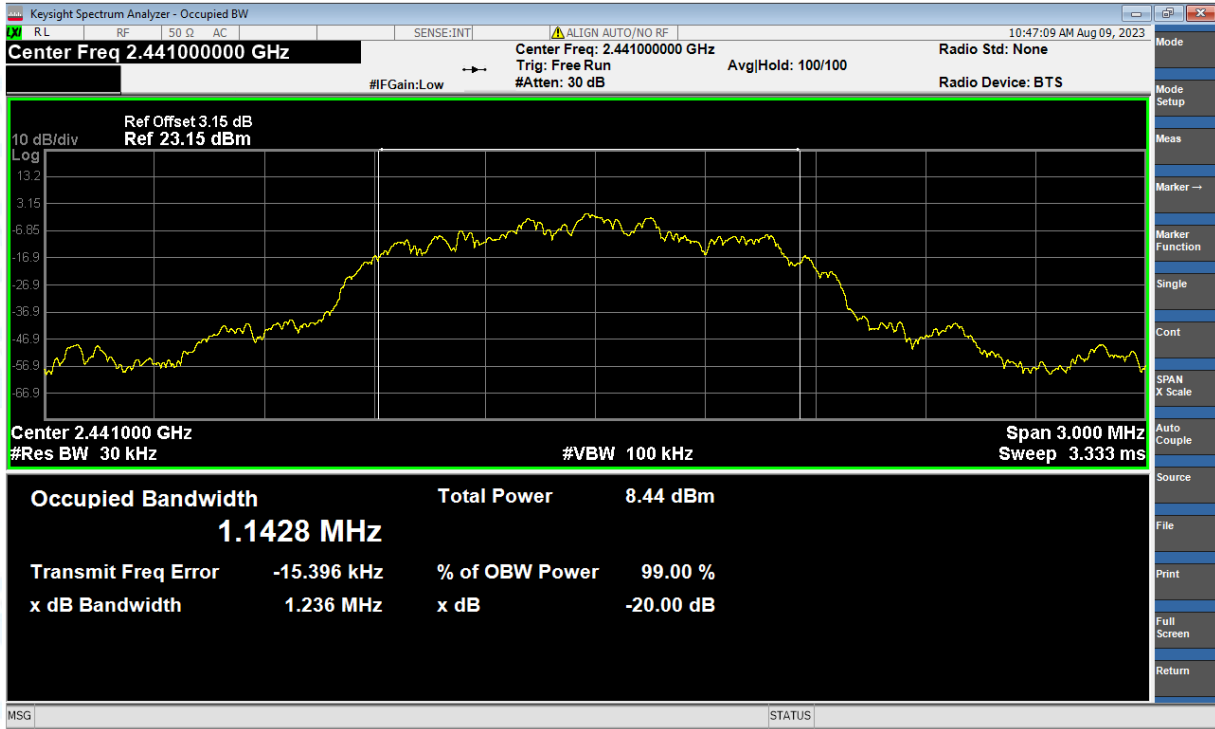
OBW NVNT 1-DH1 2480MHz Ant1



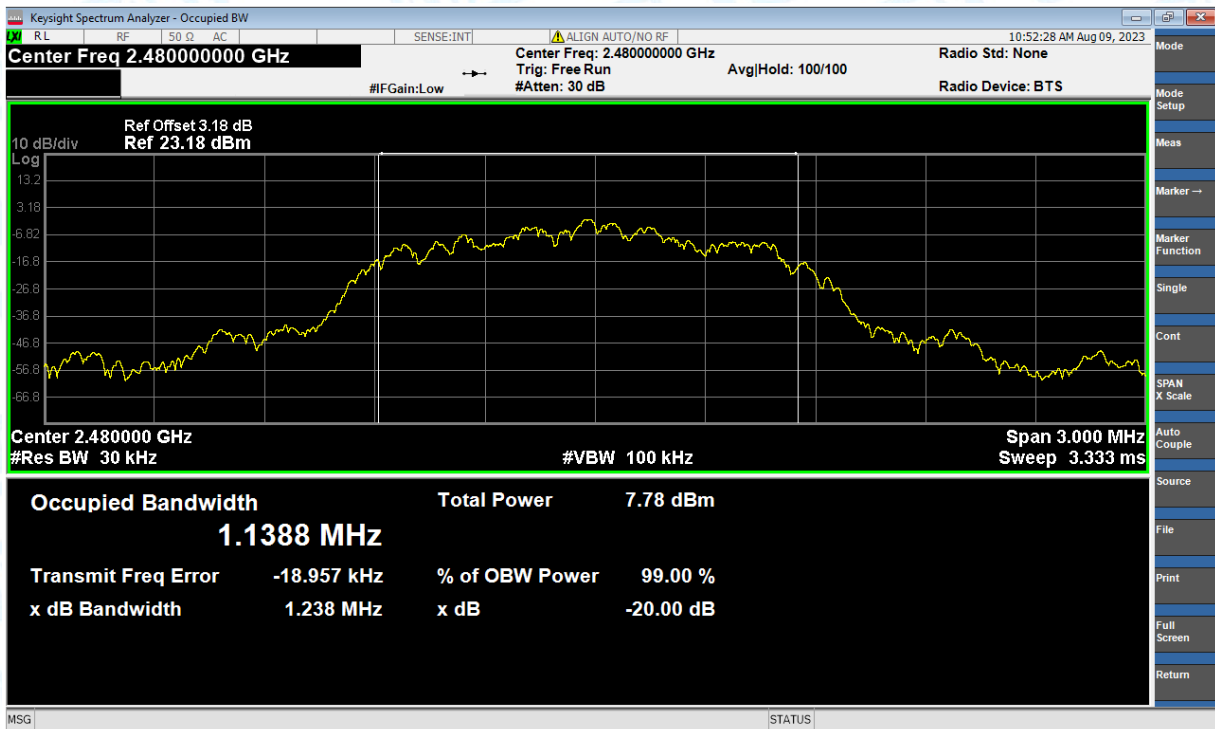
OBW NVNT 2-DH1 2402MHz Ant1



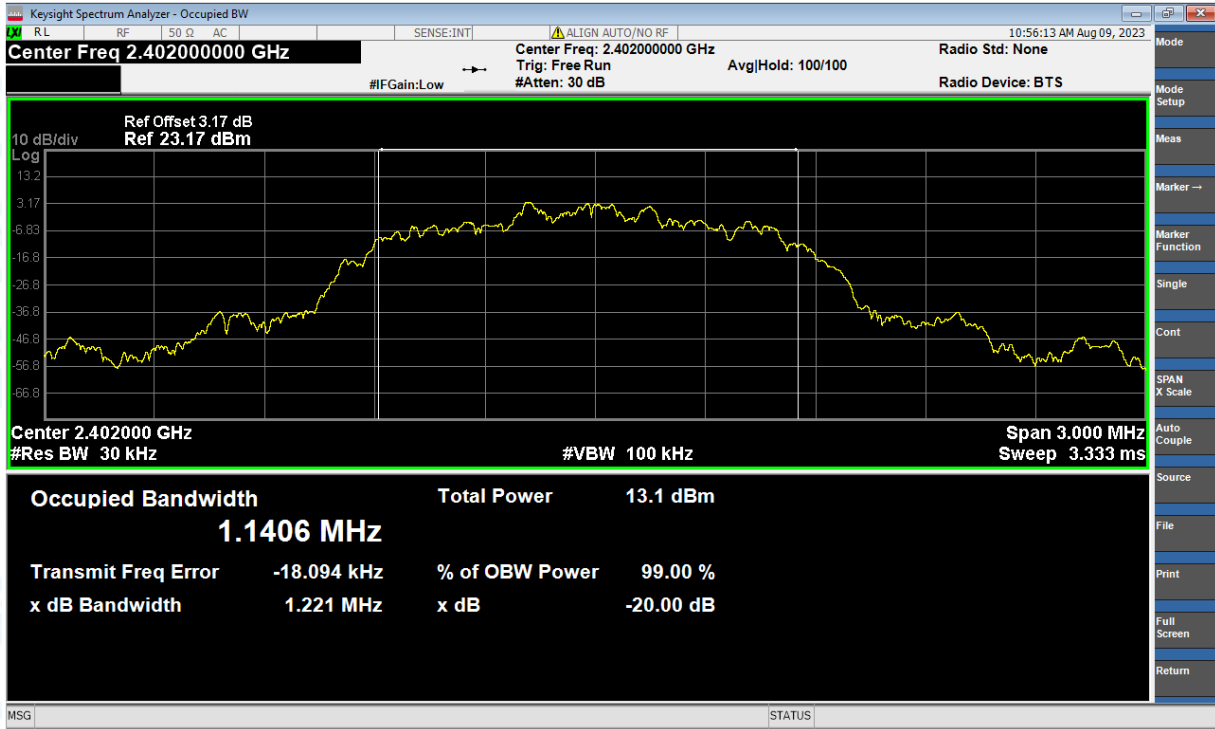
OBW NVNT 2-DH1 2441MHz Ant1



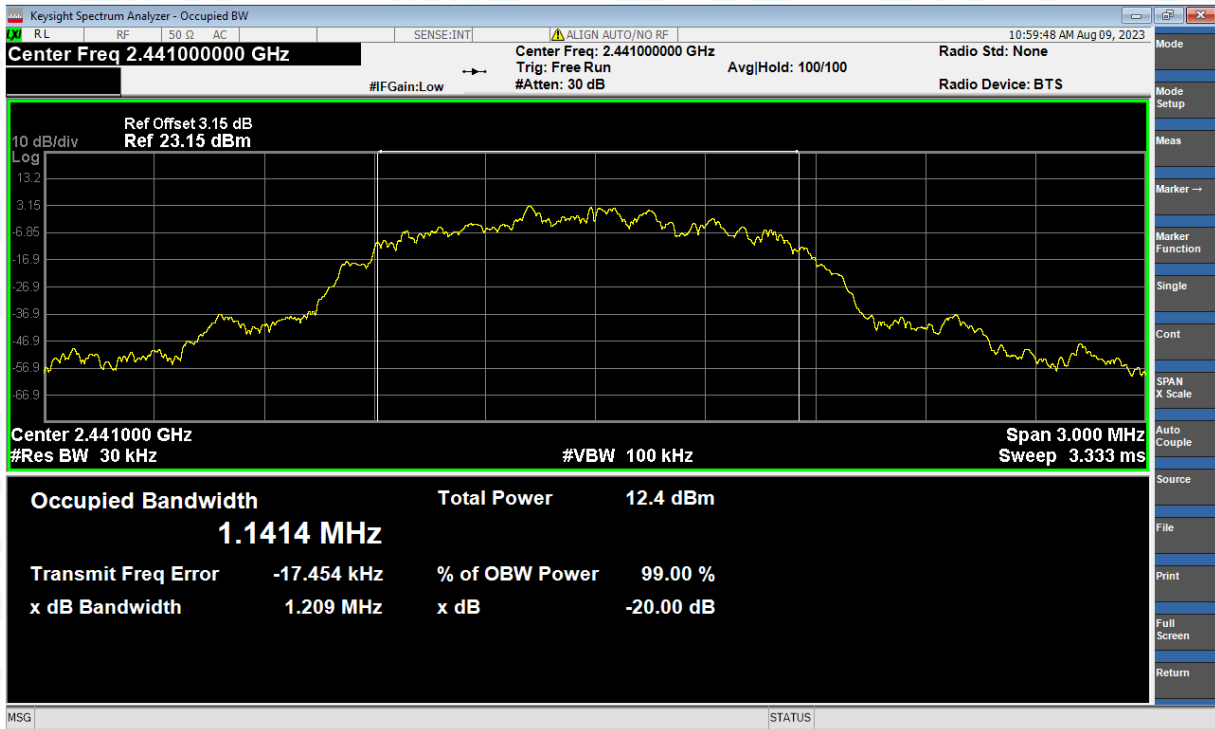
OBW NVNT 2-DH1 2480MHz Ant1

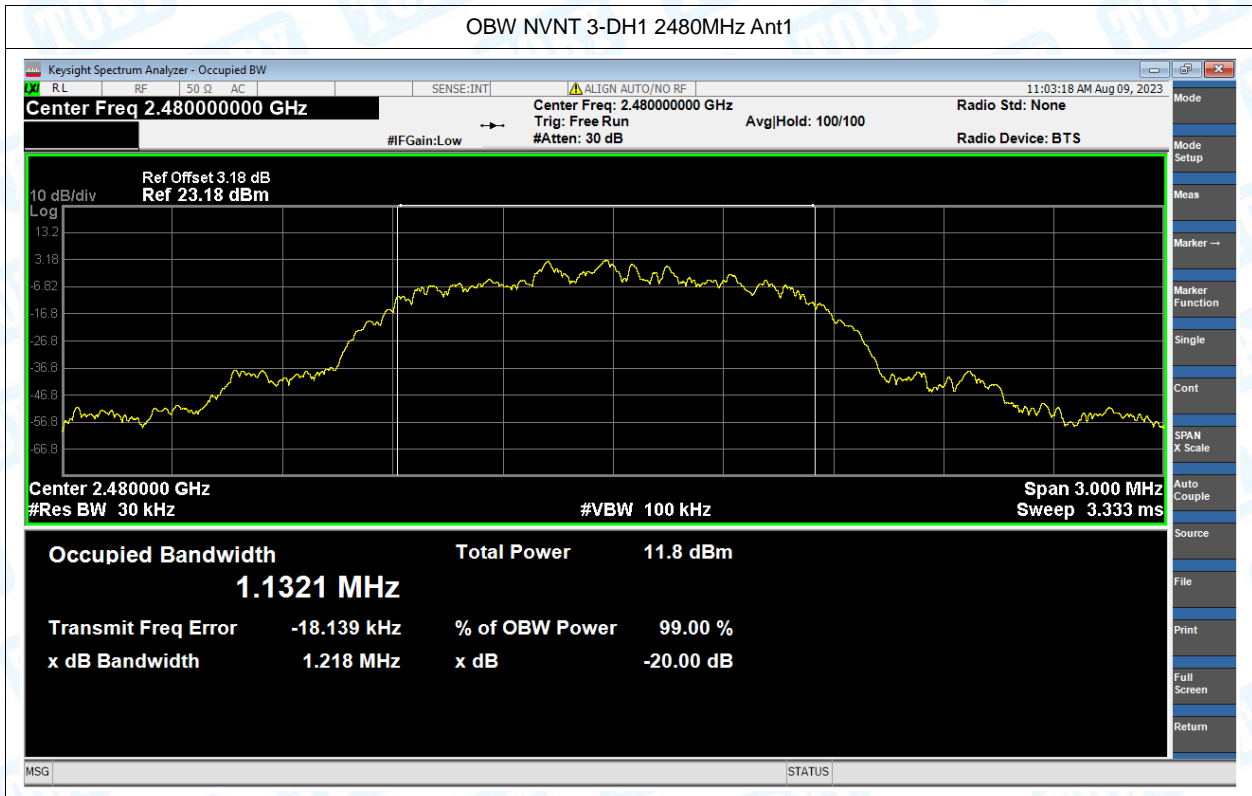


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





5. Band Edge

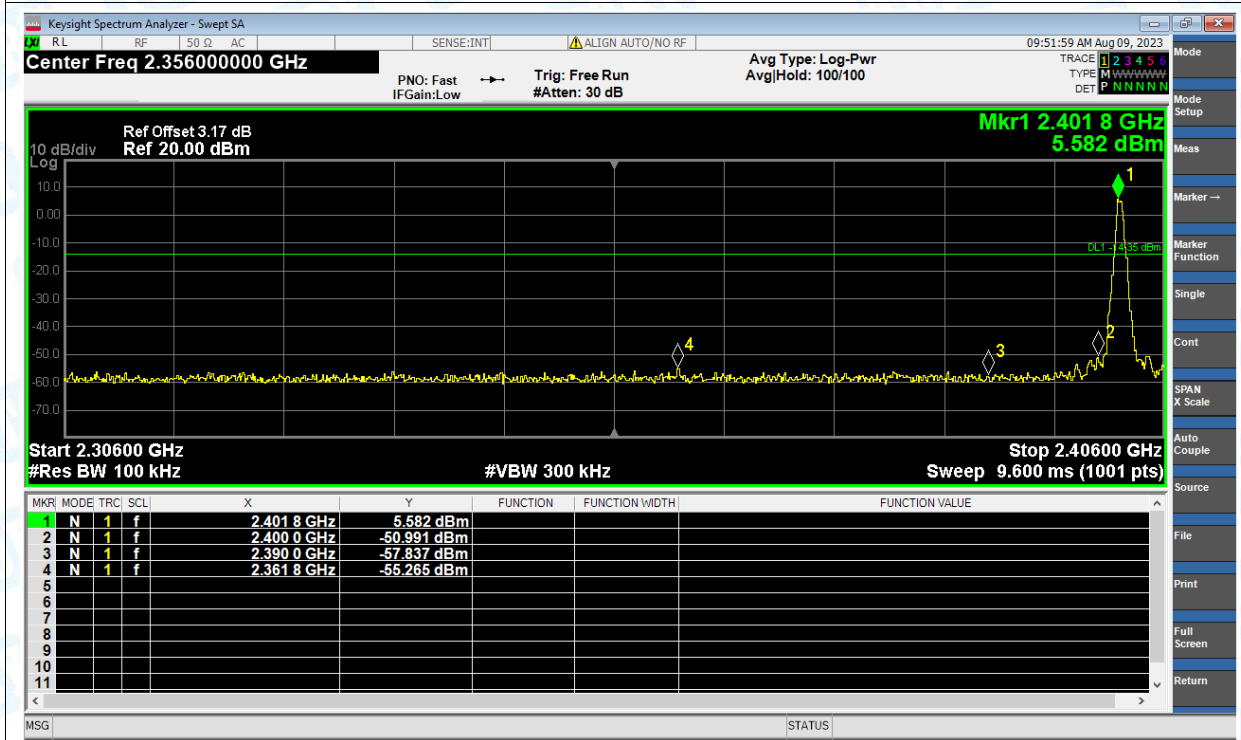
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-60.92	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-57.31	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-59.76	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-56.97	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-61.67	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-59.42	-20	Pass

Test Graphs

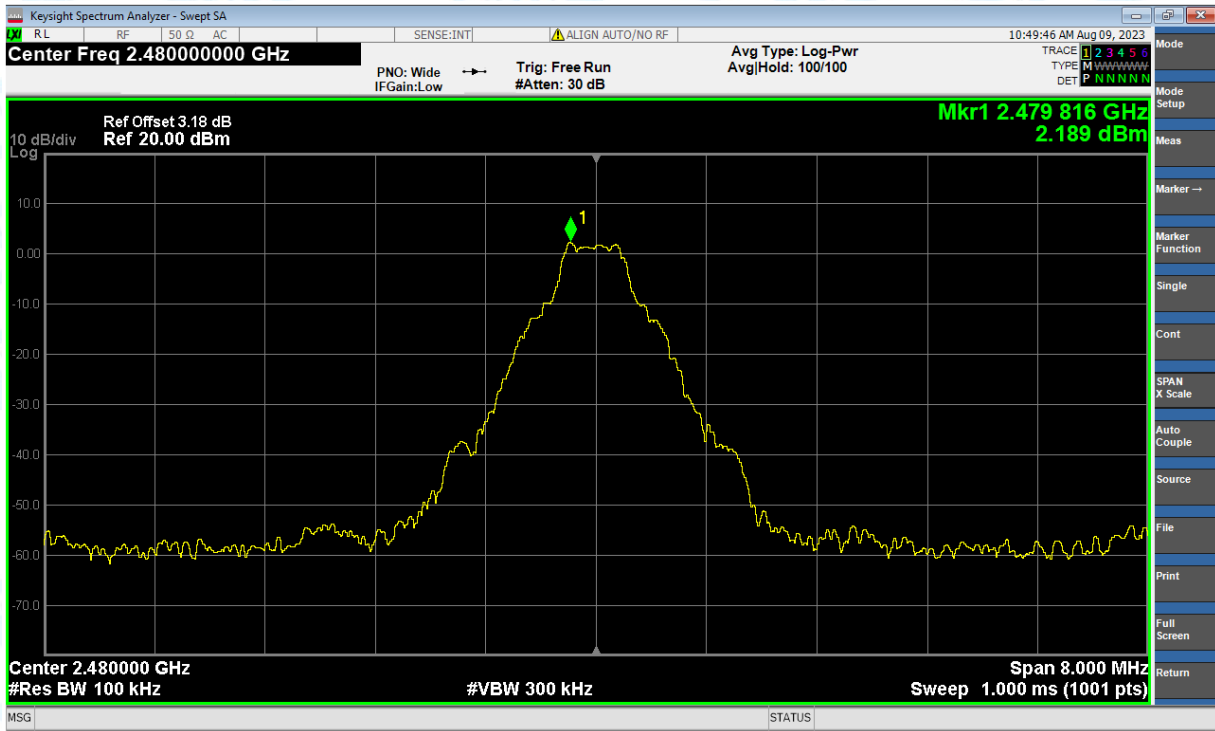
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



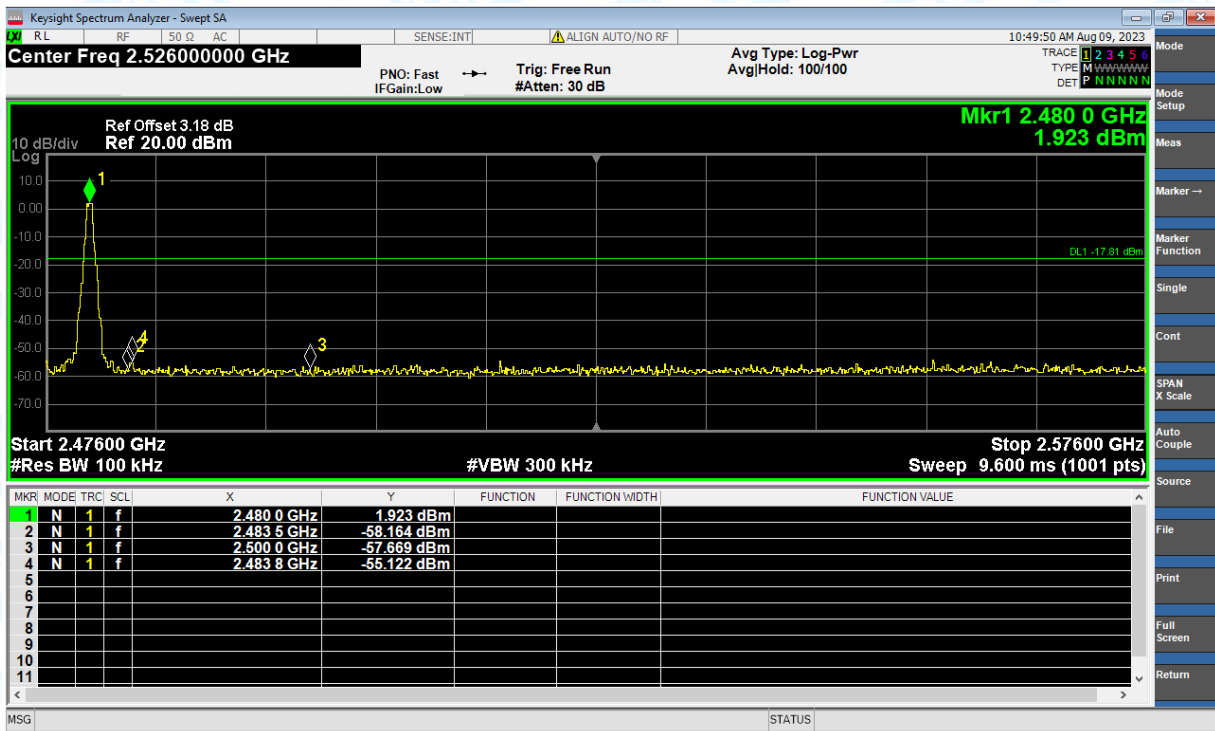
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



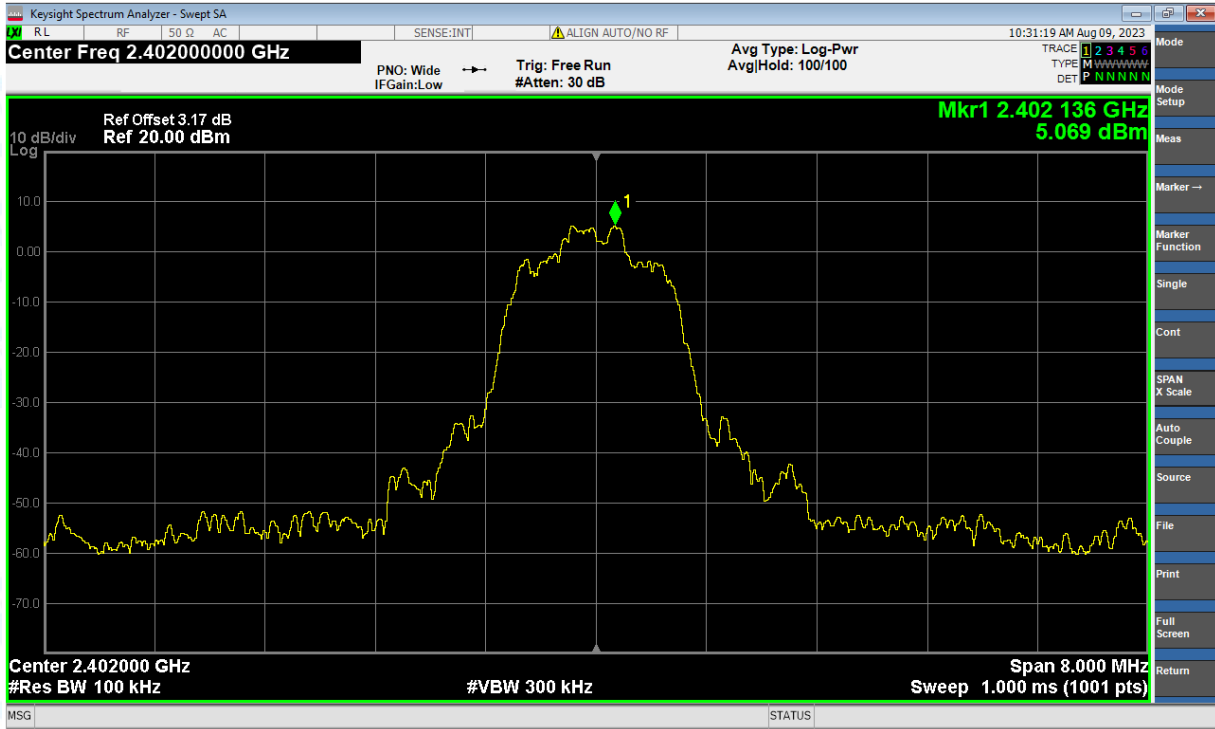
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



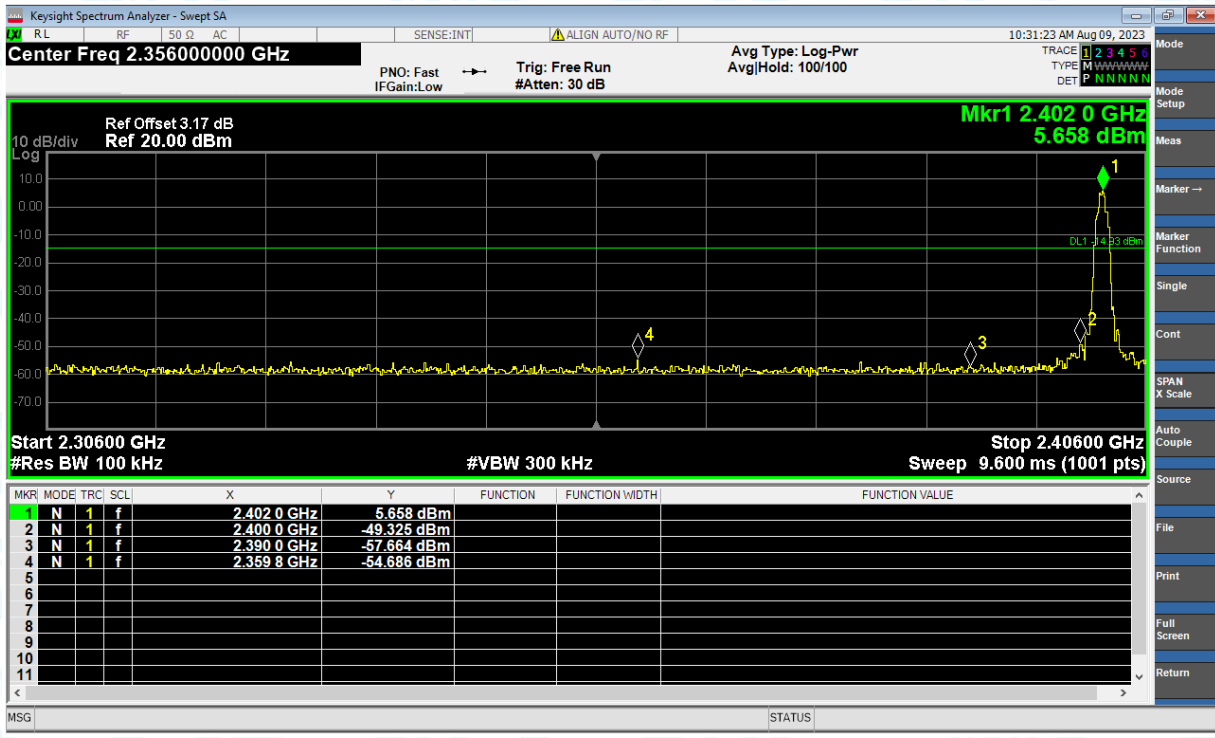
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



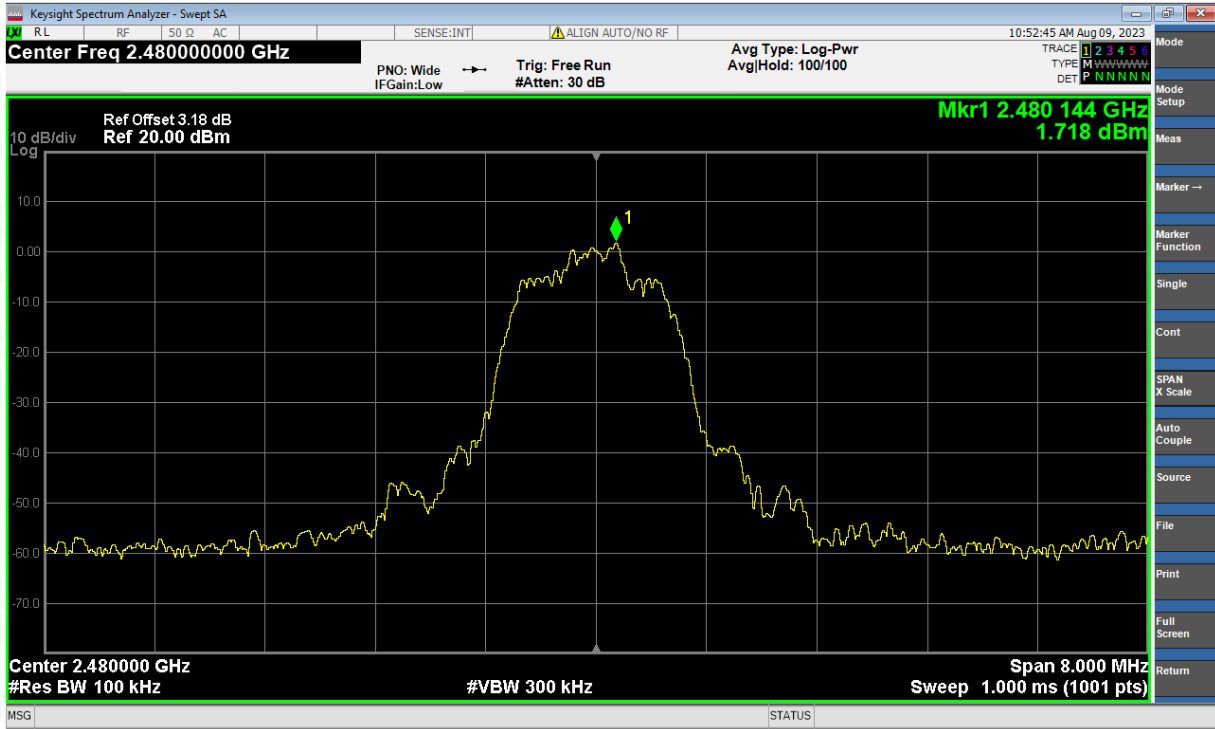
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



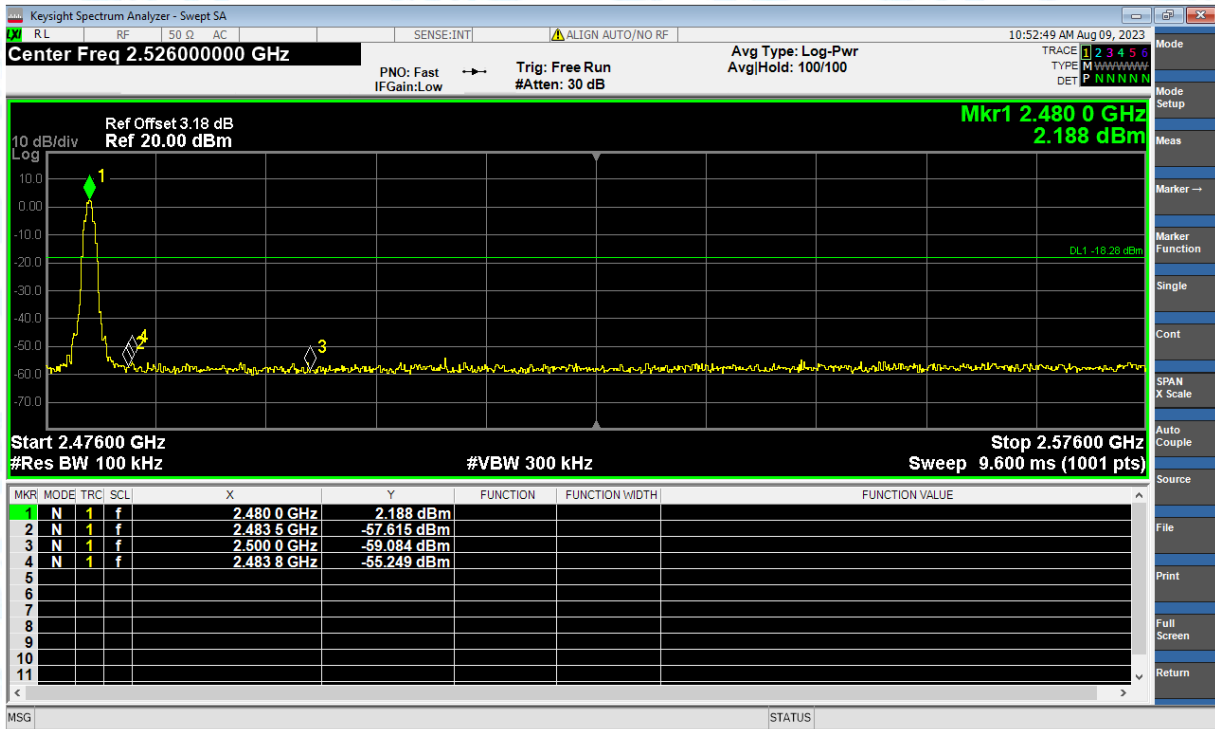
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



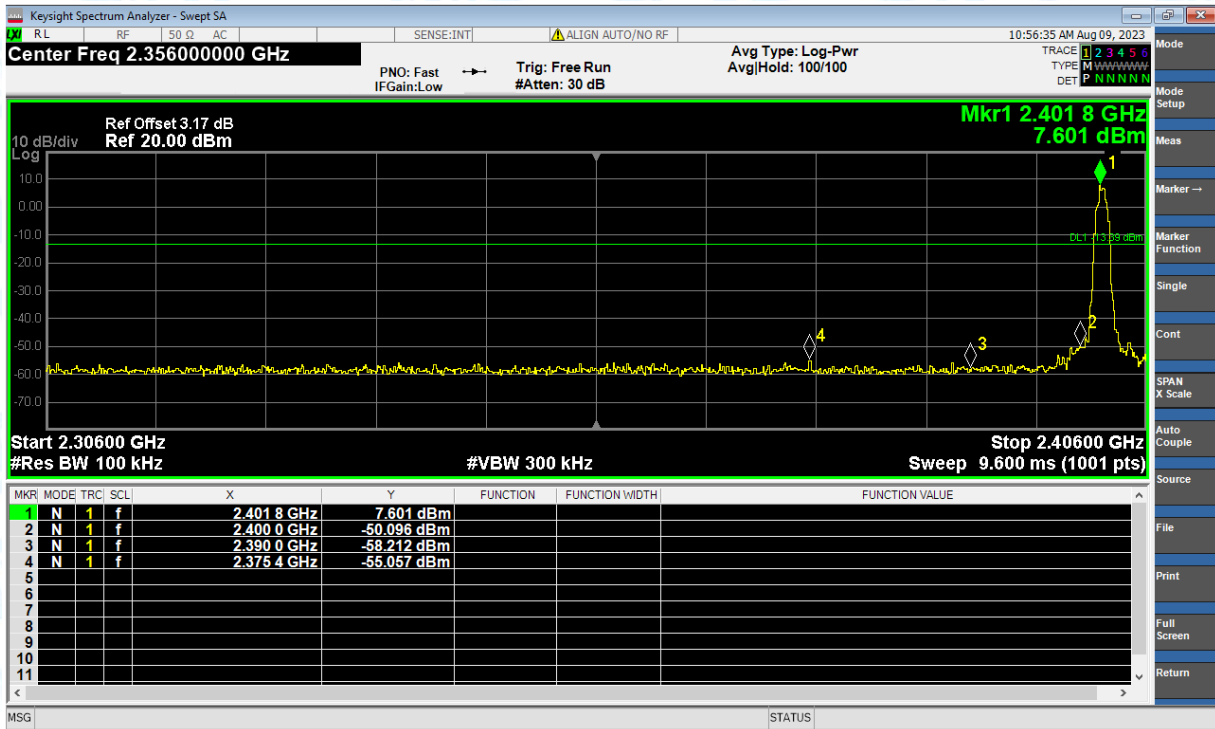
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



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



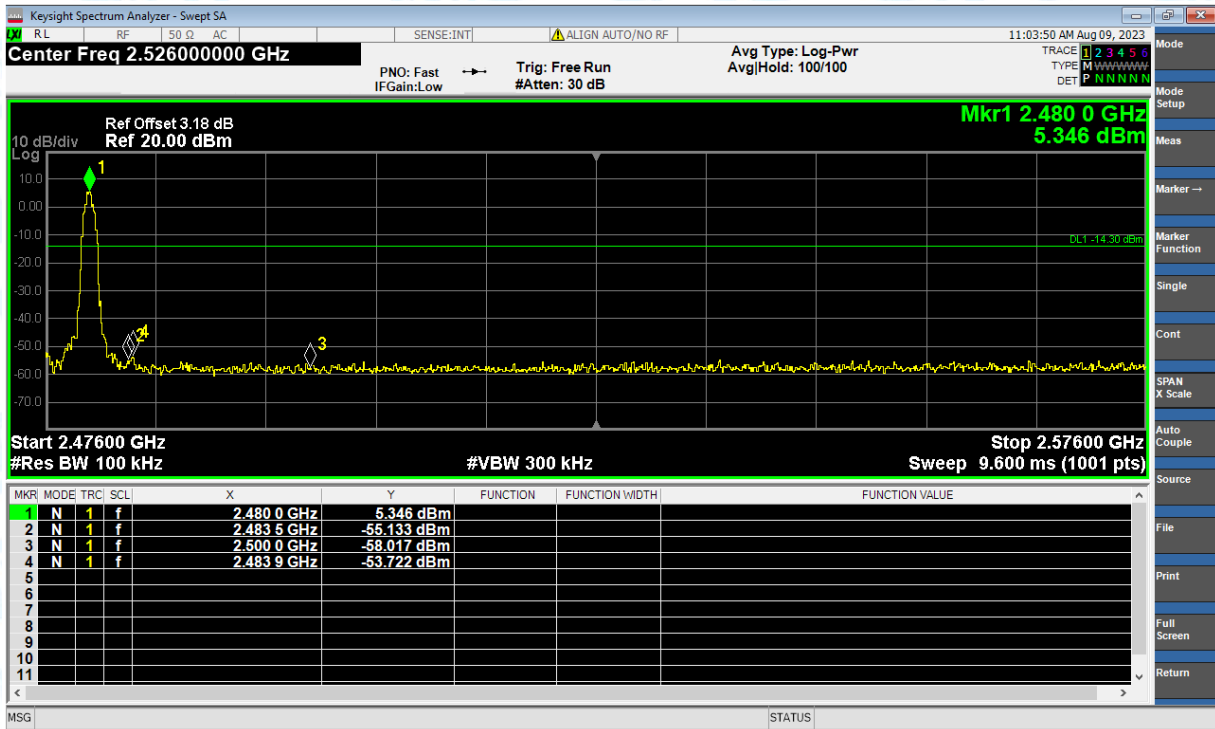
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

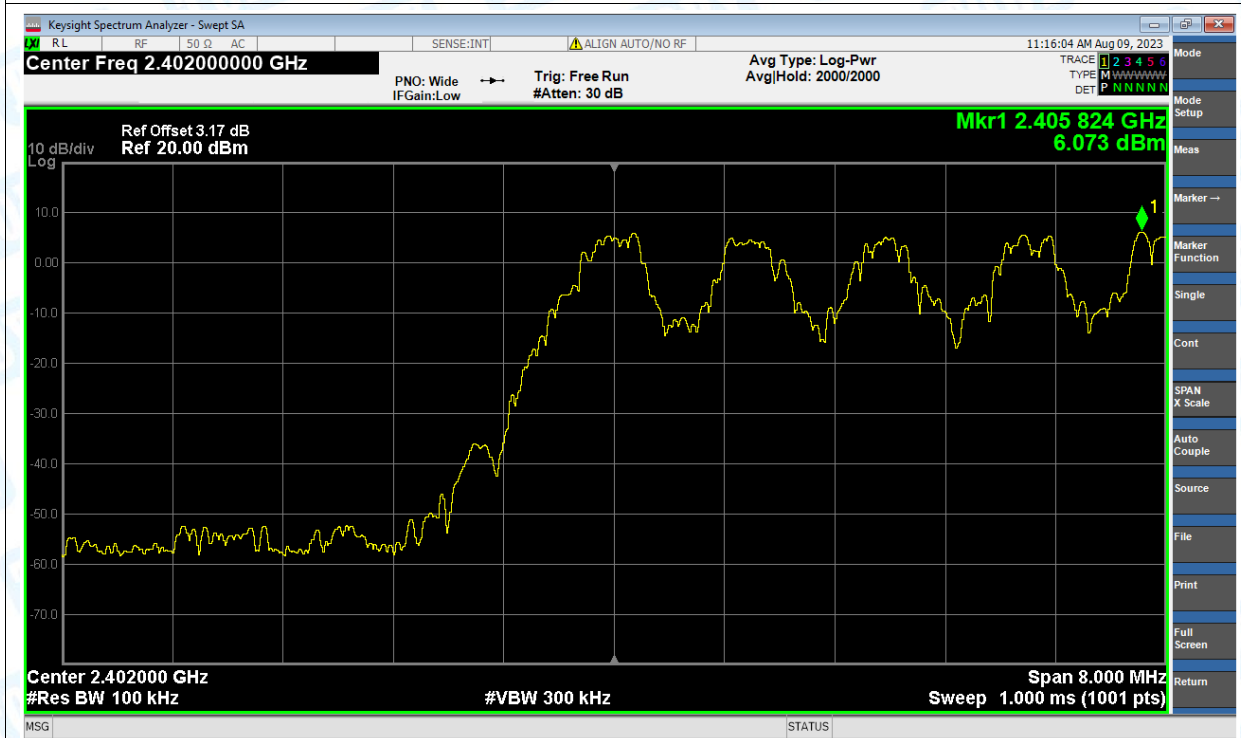


6. Band Edge(Hopping)

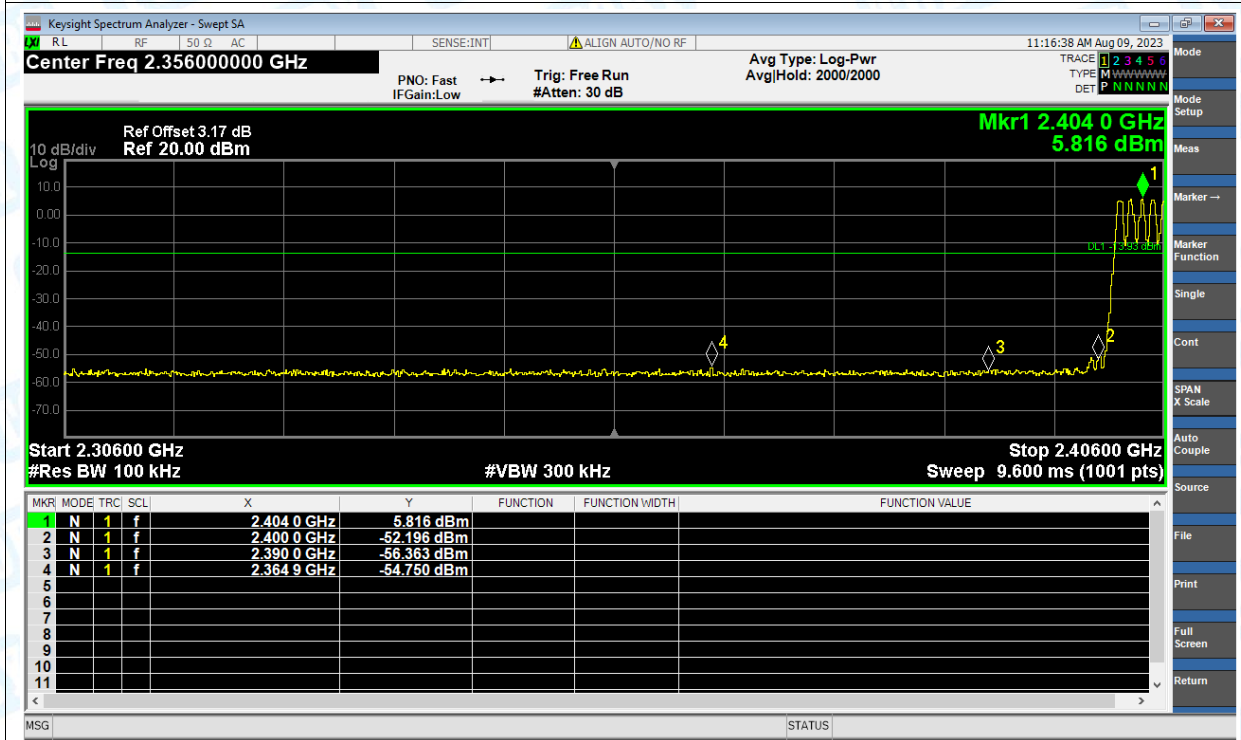
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-60.82	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-59.63	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-62.64	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-59.14	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-62.5	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-60.33	-20	Pass

Test Graphs

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



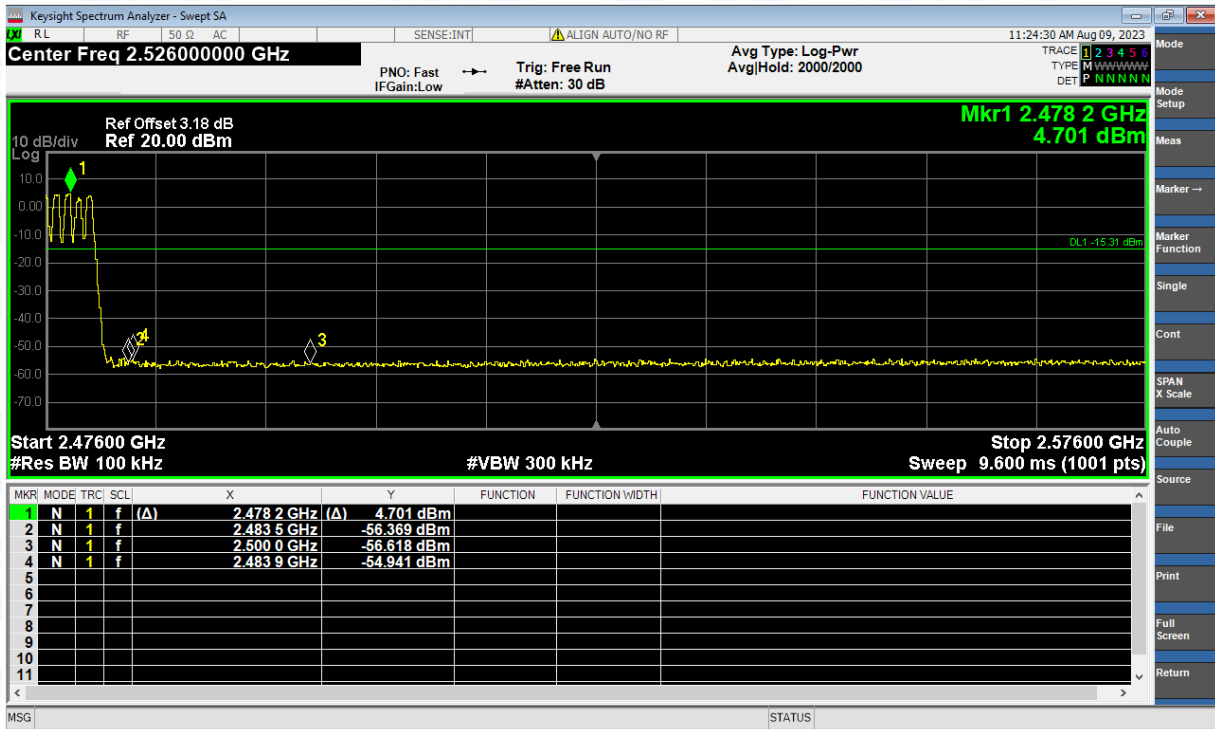
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



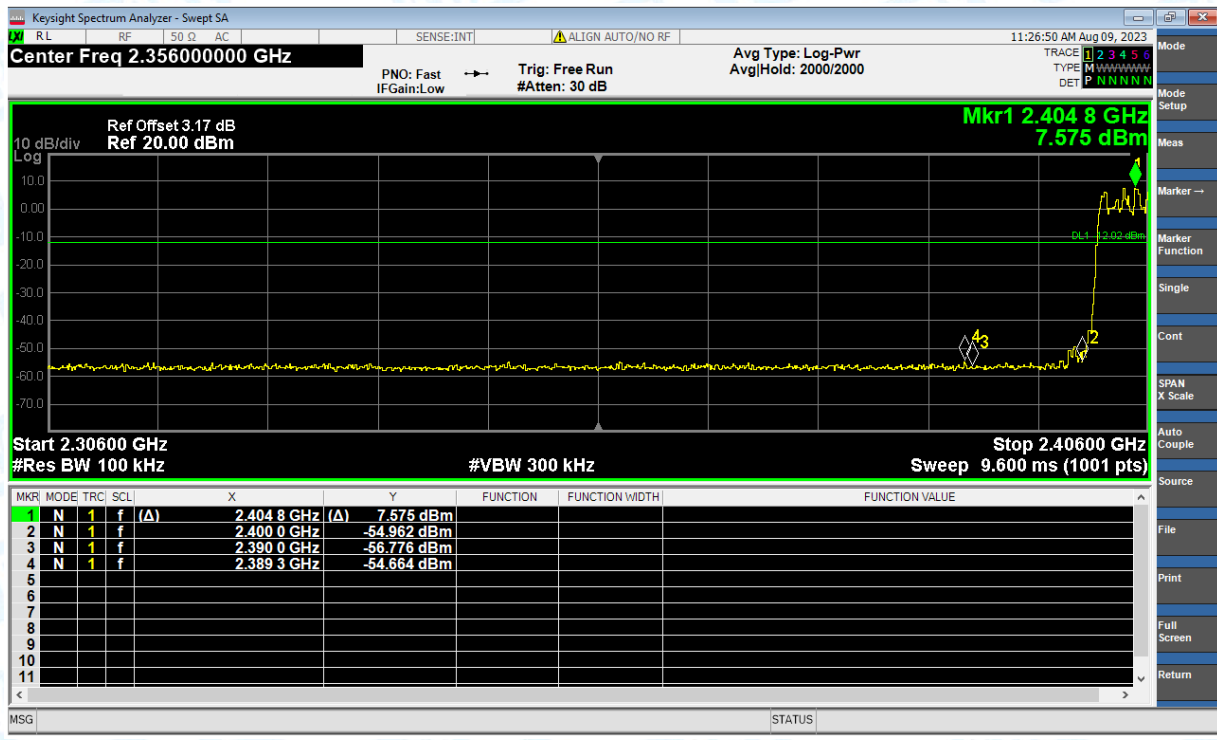
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



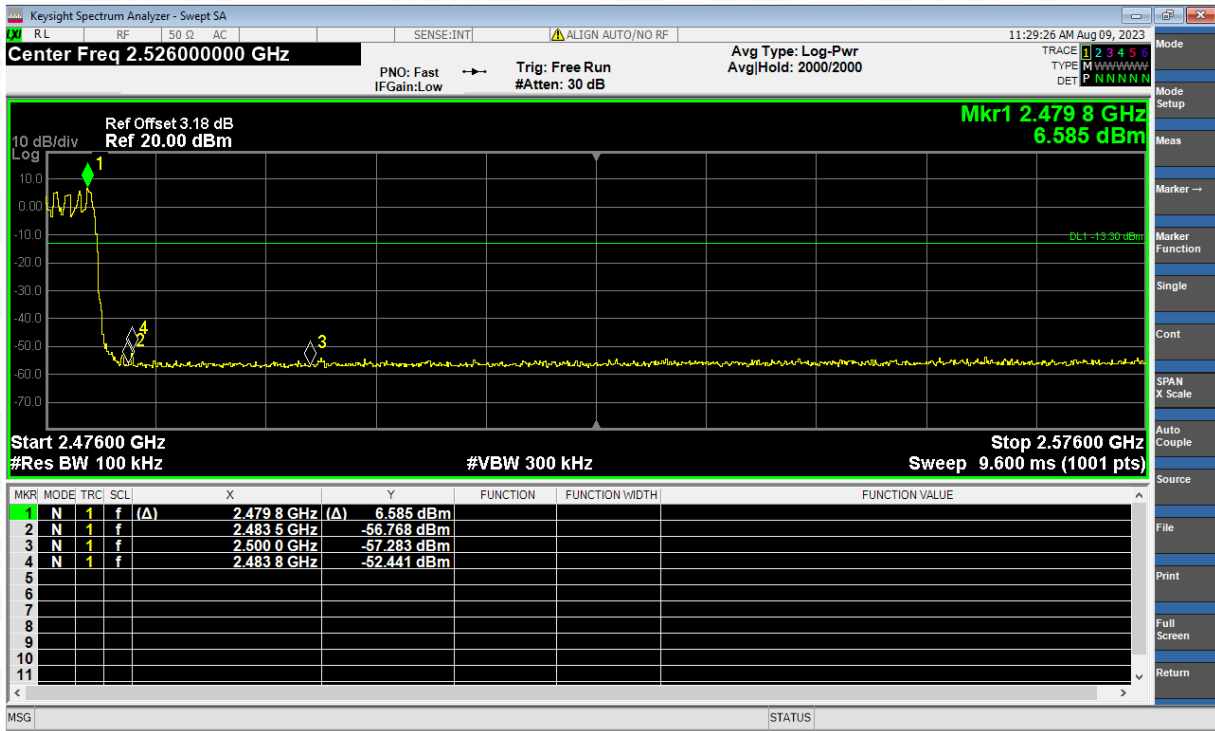
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



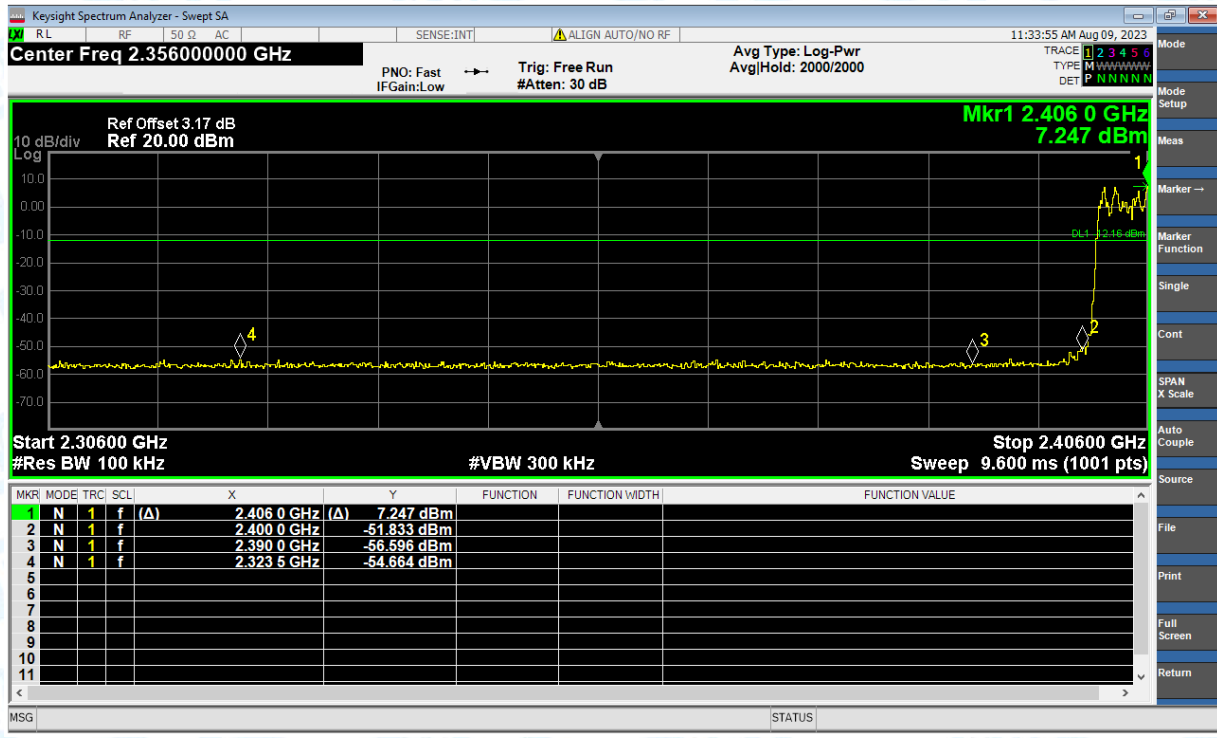
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



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



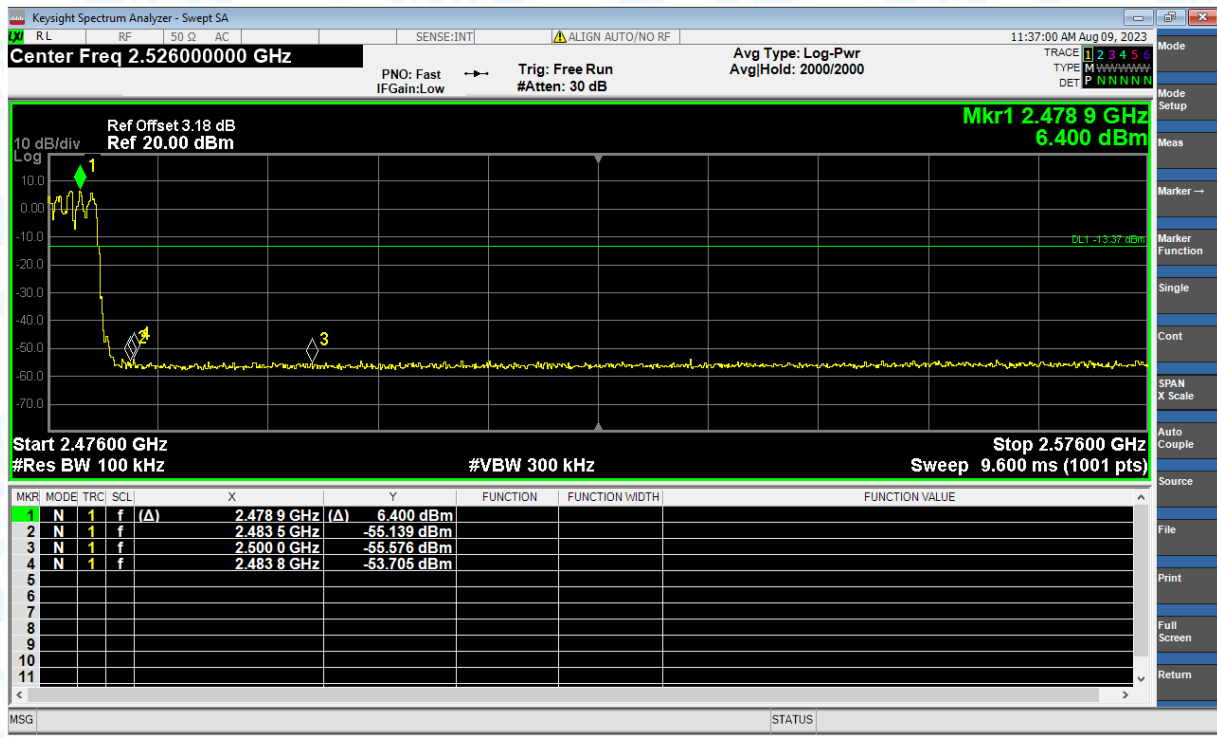
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

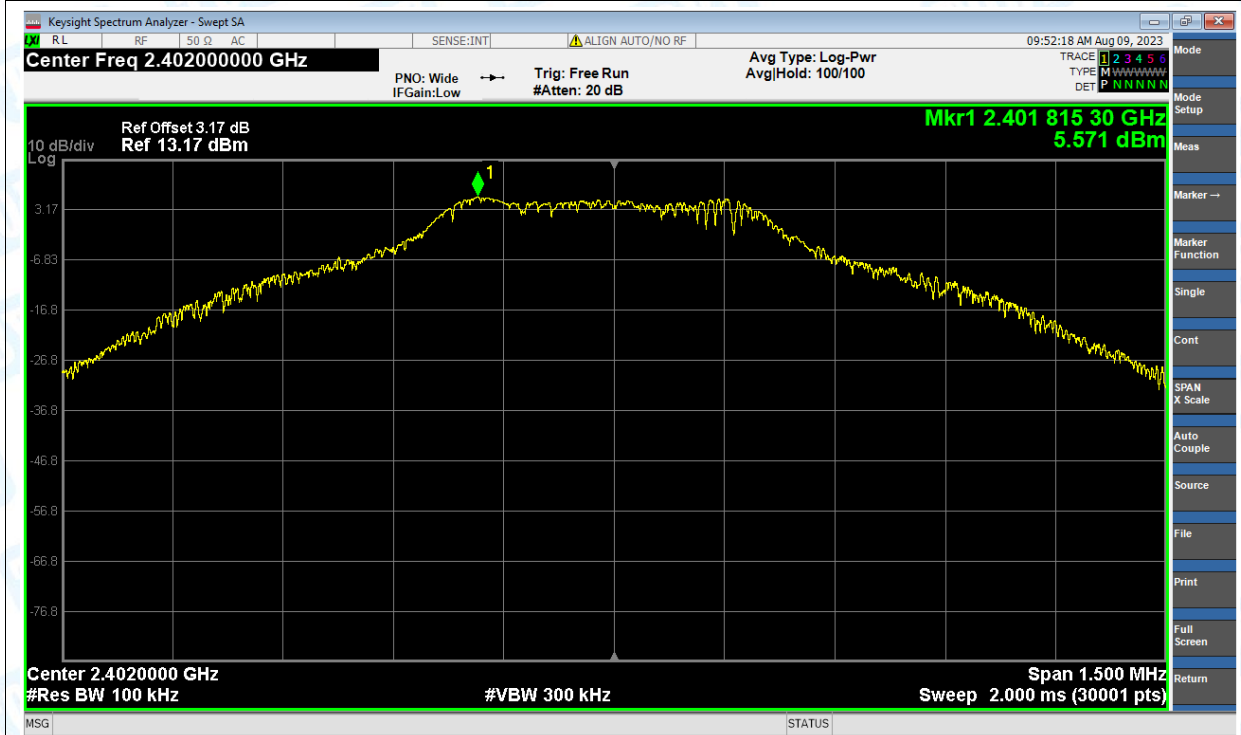


7. Conducted RF Spurious Emission

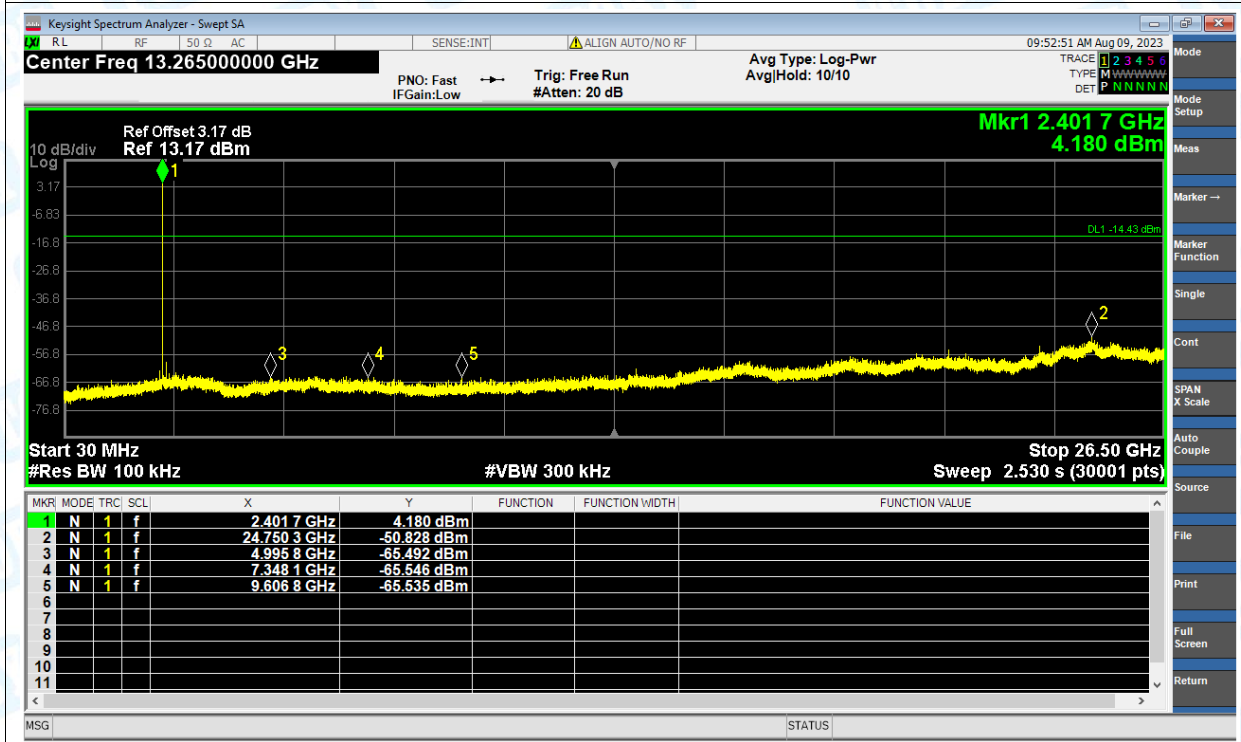
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-56.4	-20	Pass
NVNT	1-DH1	2441	Ant1	-55.65	-20	Pass
NVNT	1-DH1	2480	Ant1	-53.37	-20	Pass
NVNT	2-DH1	2402	Ant1	-56.76	-20	Pass
NVNT	2-DH1	2441	Ant1	-54.43	-20	Pass
NVNT	2-DH1	2480	Ant1	-53.14	-20	Pass
NVNT	3-DH1	2402	Ant1	-59.16	-20	Pass
NVNT	3-DH1	2441	Ant1	-58.73	-20	Pass
NVNT	3-DH1	2480	Ant1	-57.4	-20	Pass

Test Graphs

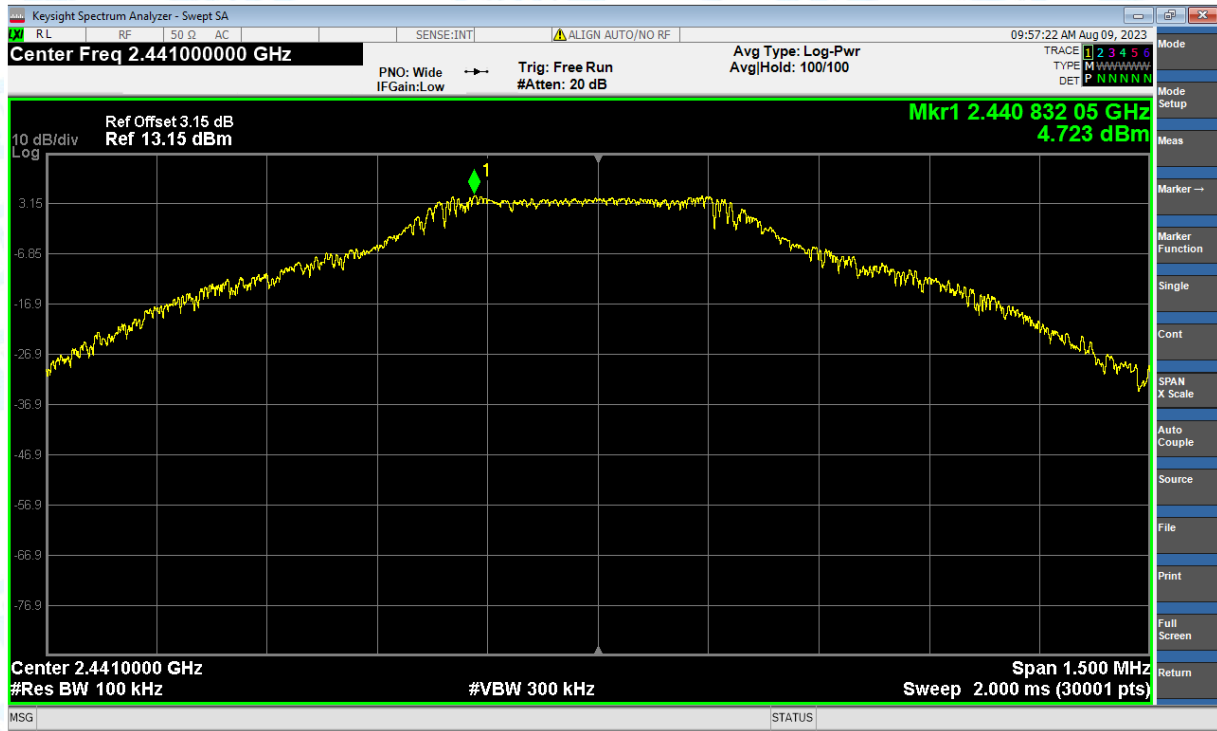
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



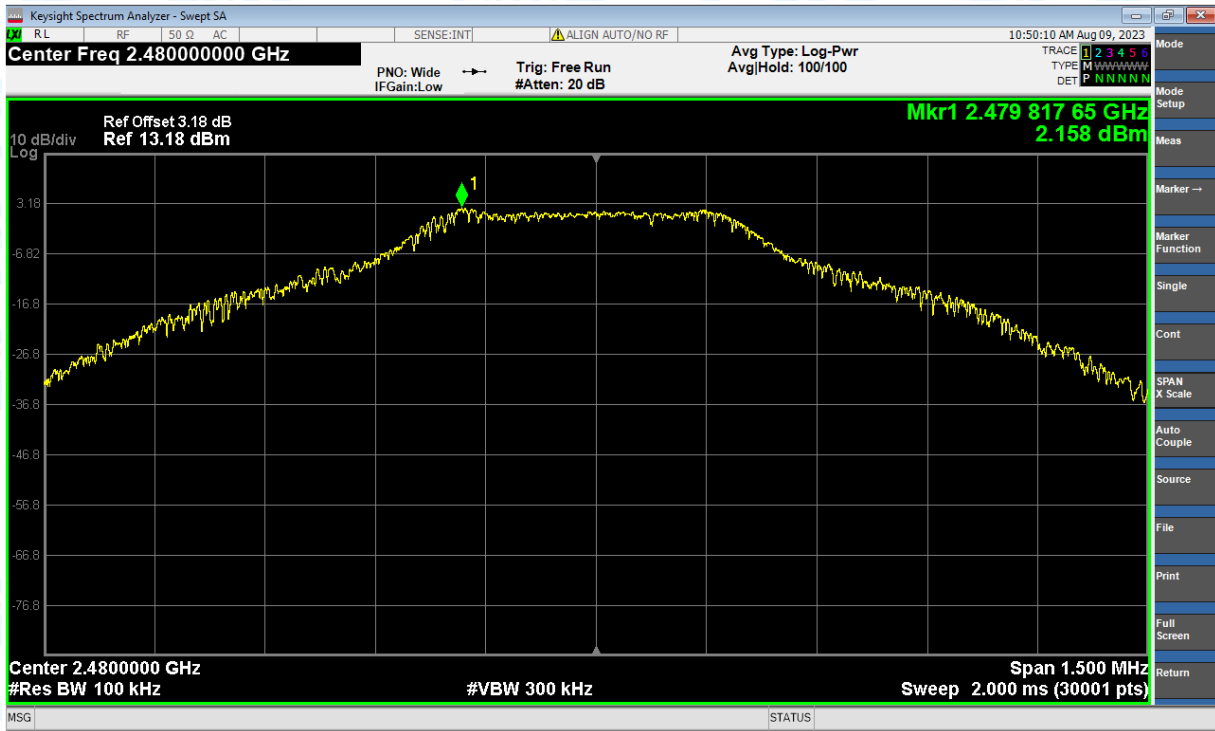
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



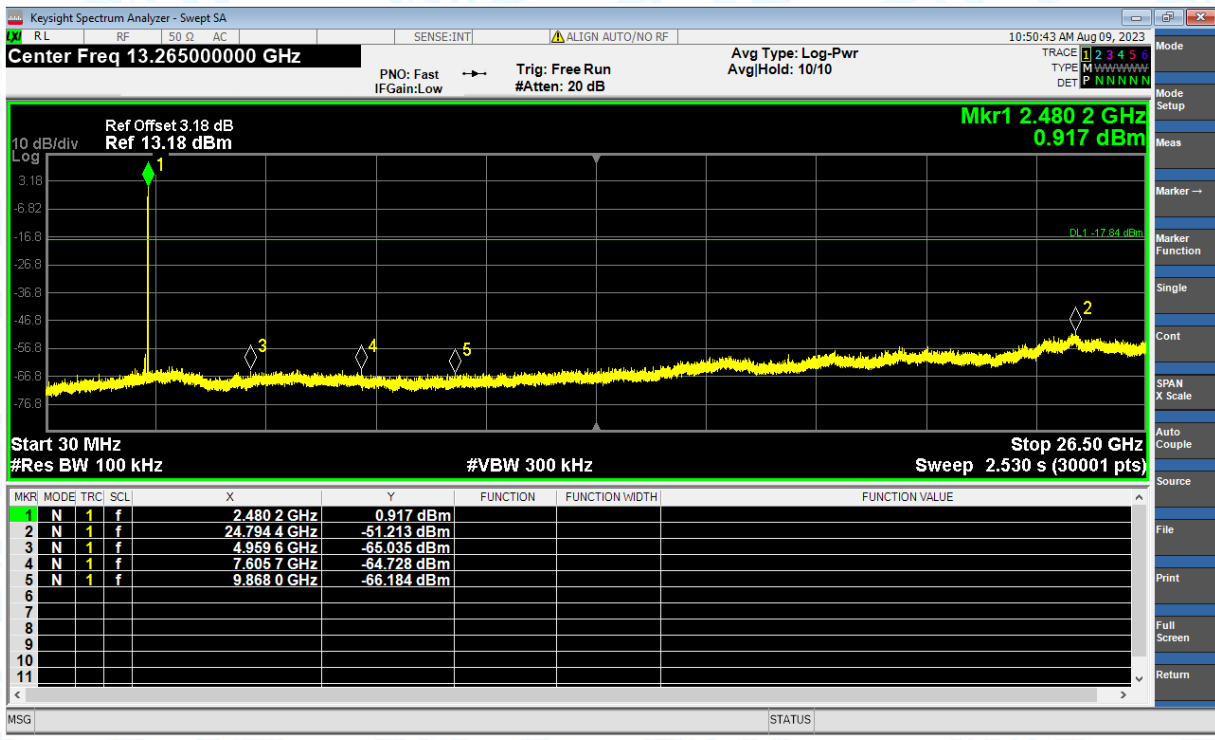
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



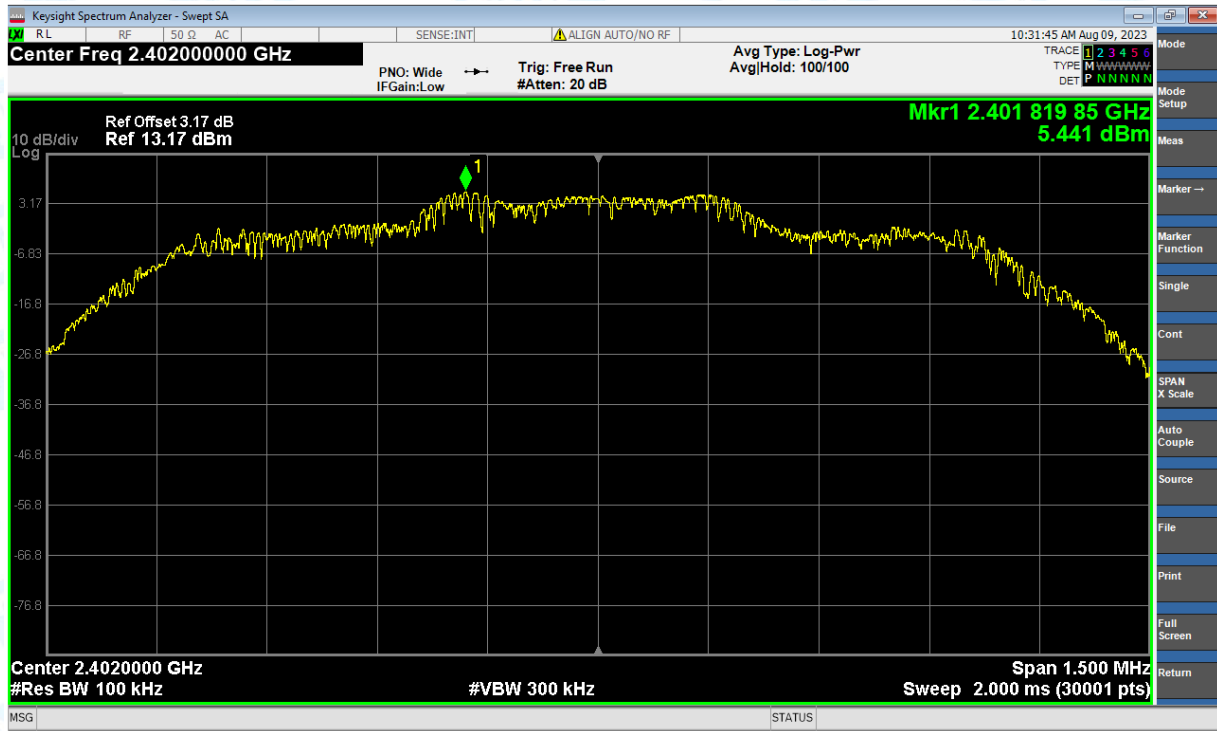
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



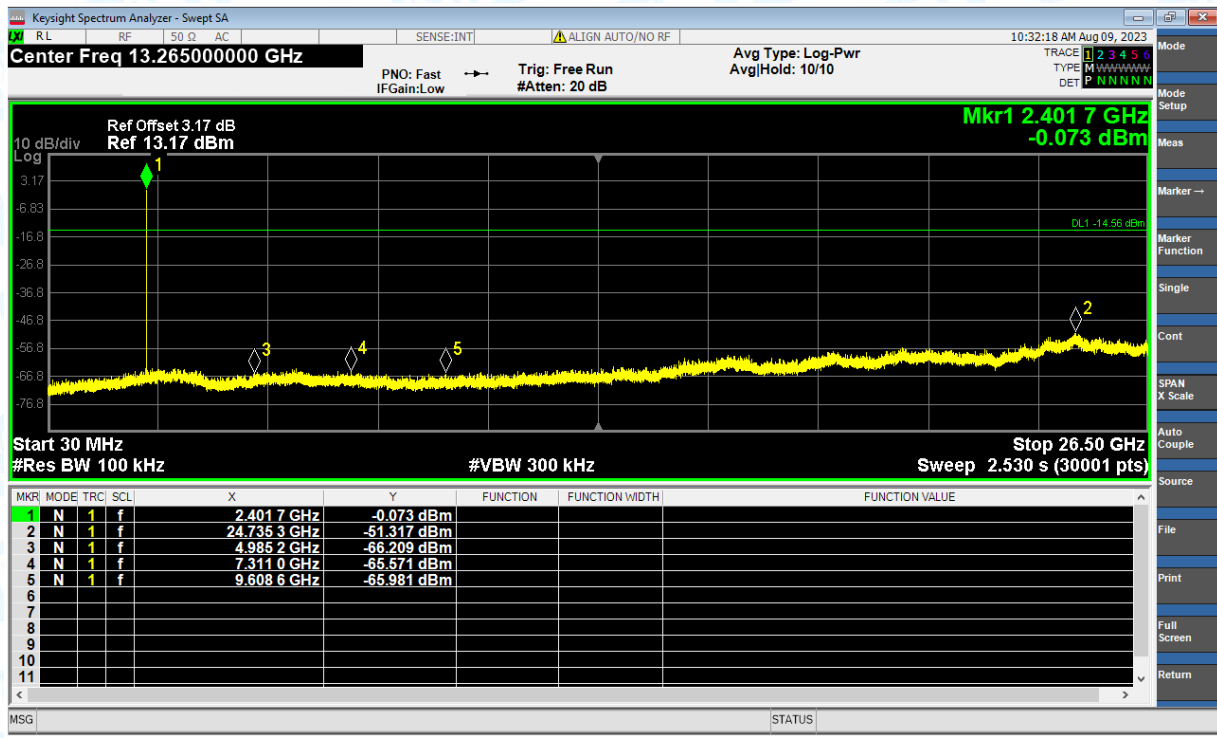
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



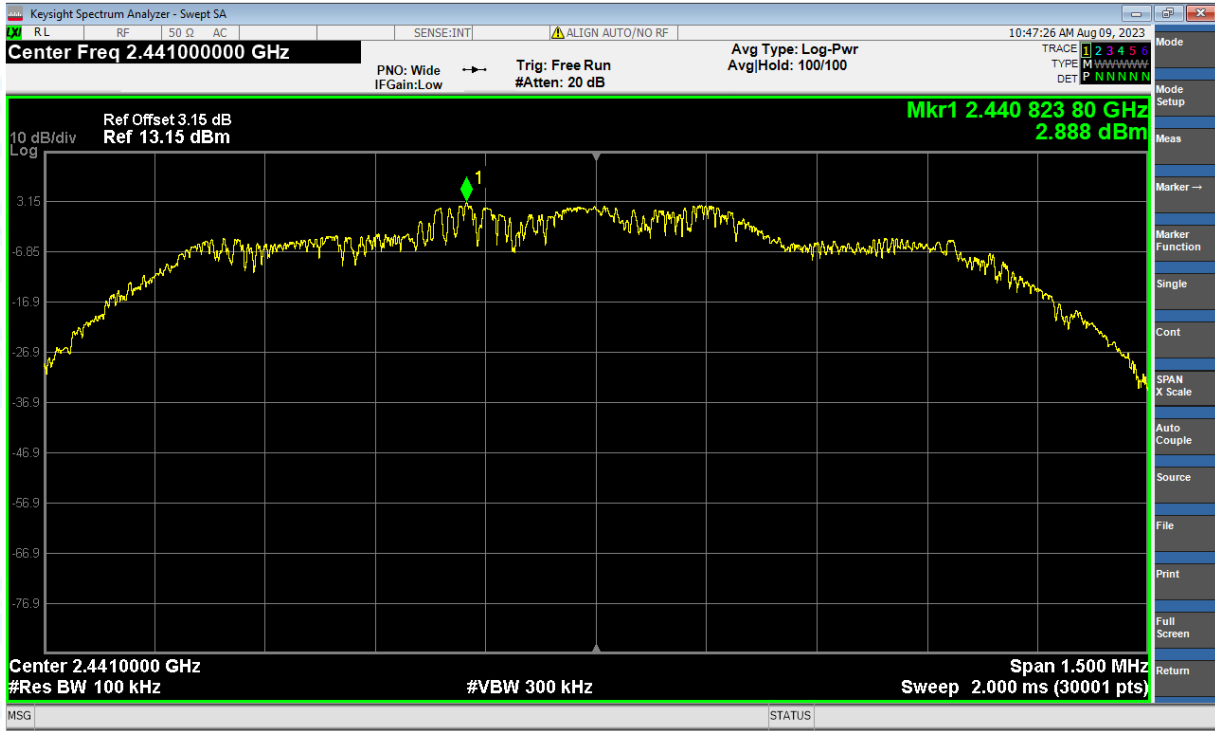
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



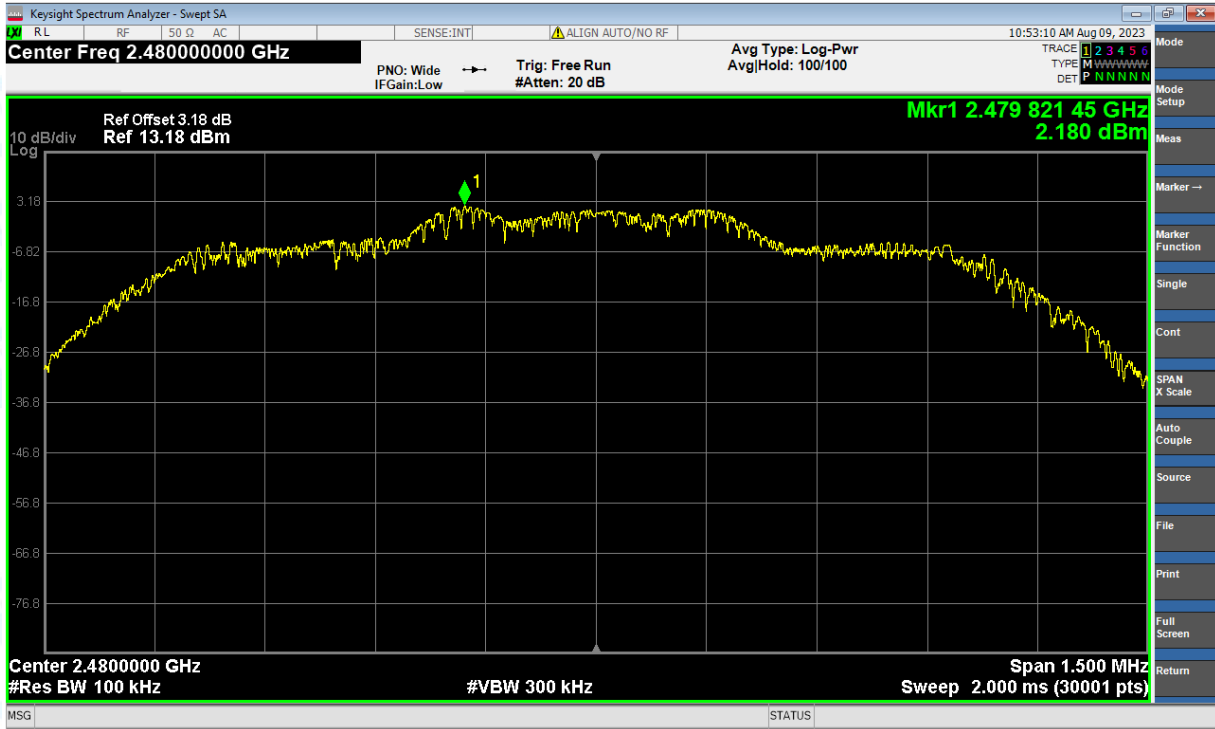
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



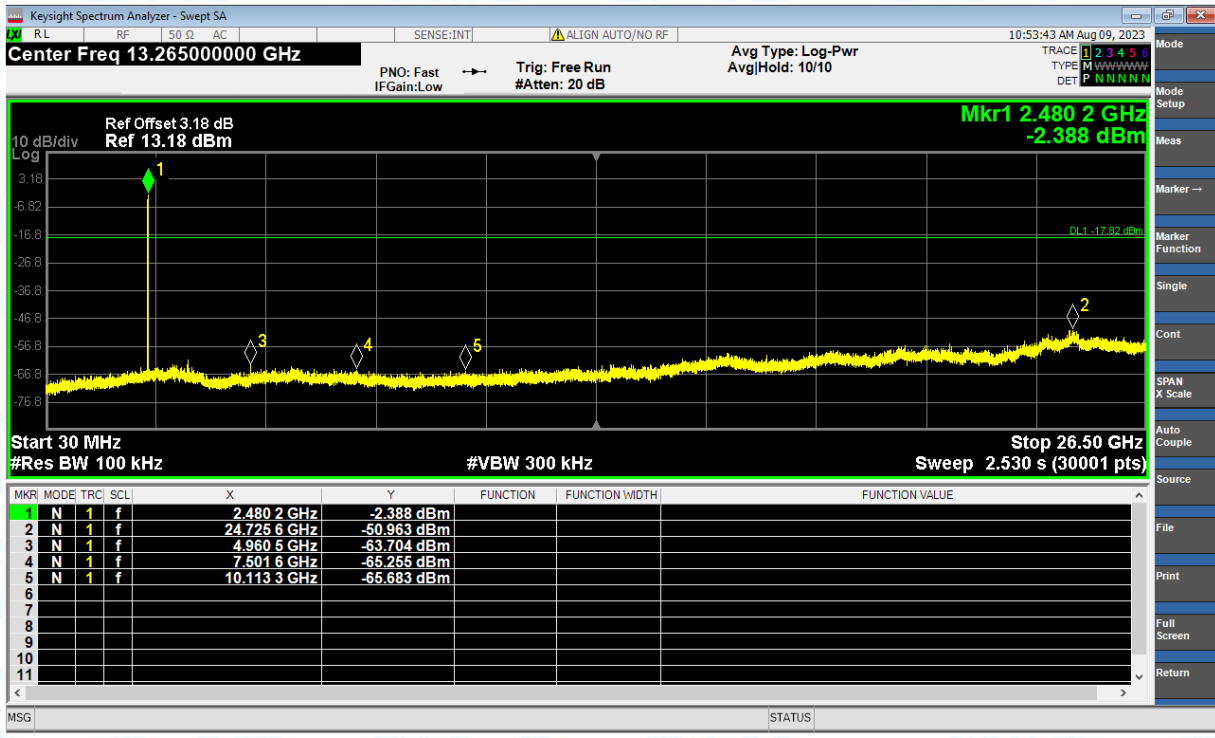
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



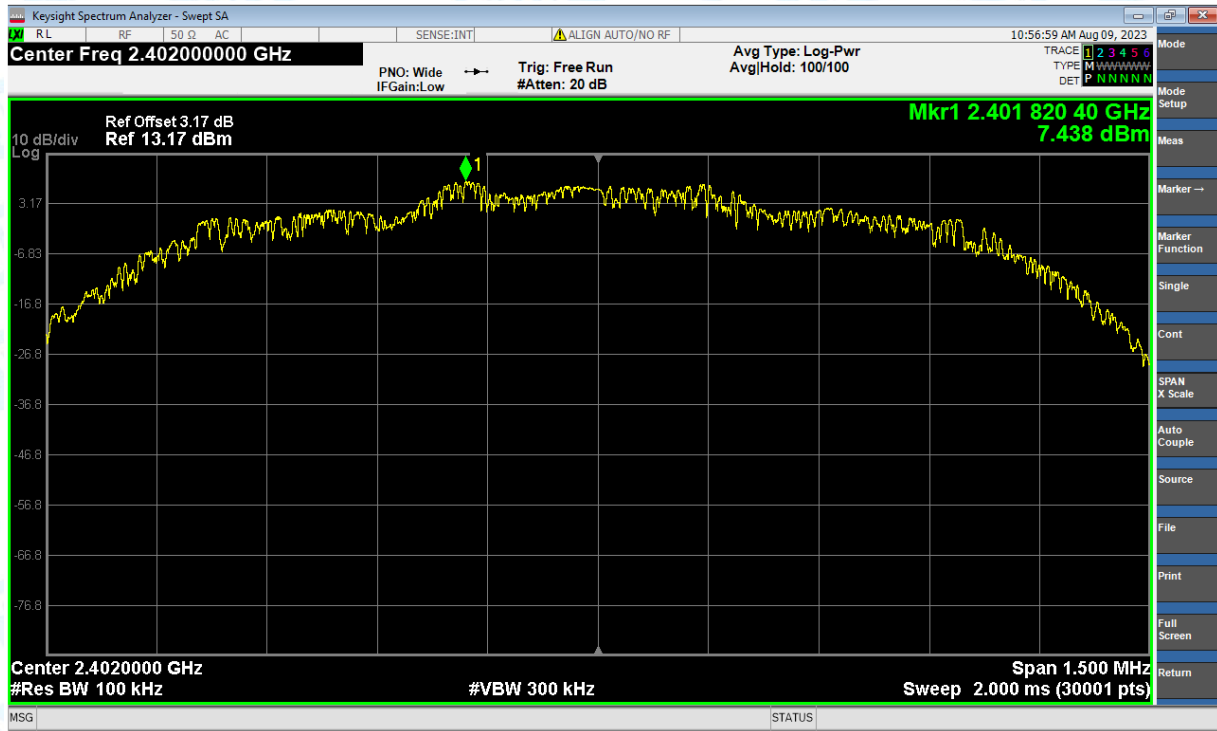
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



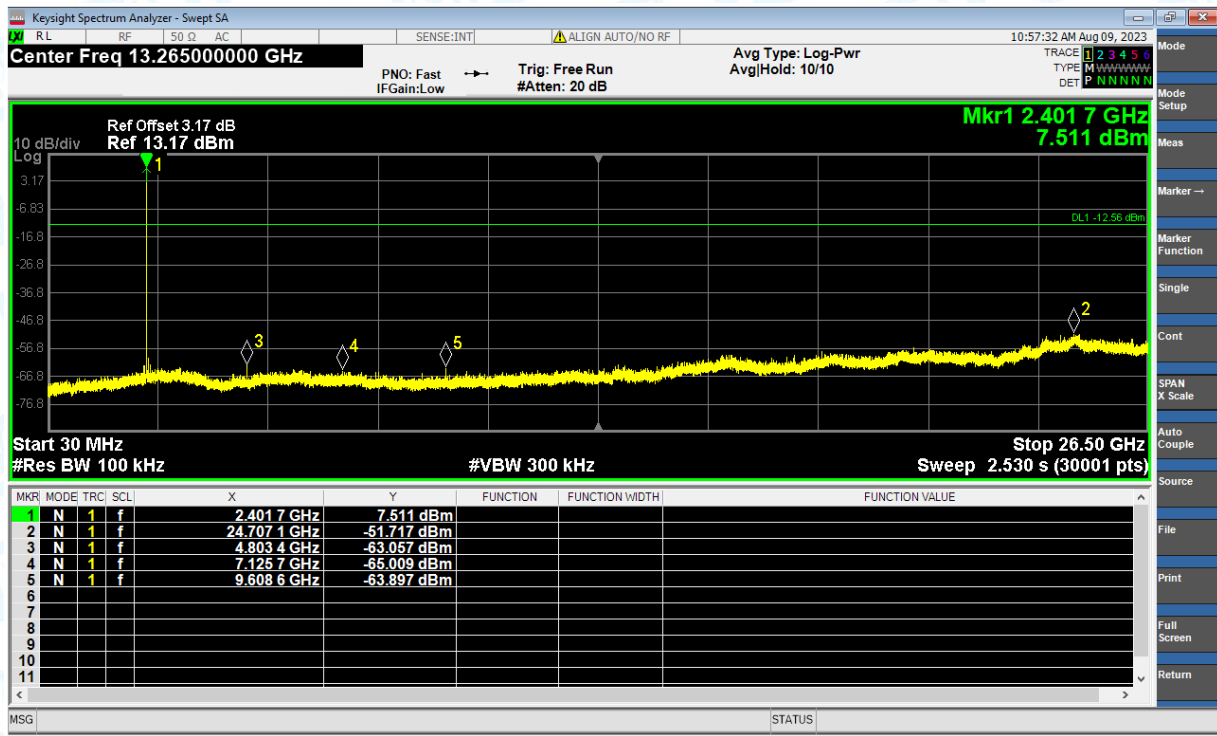
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



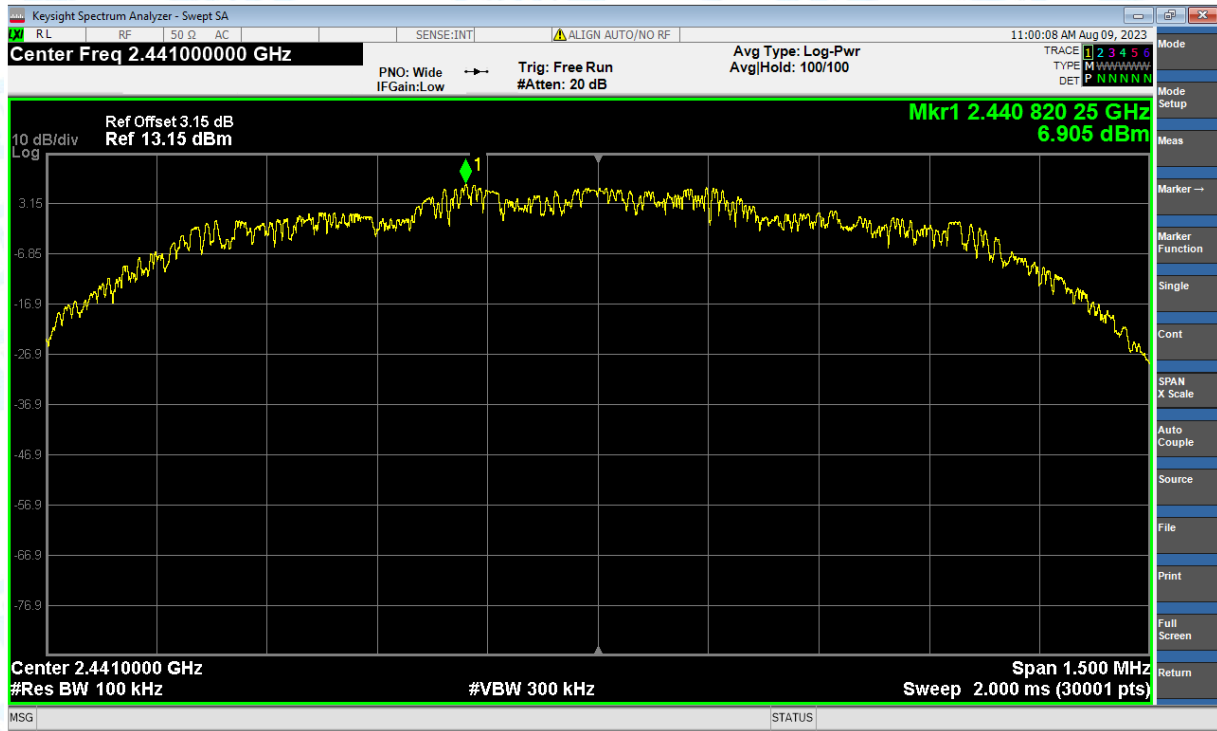
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



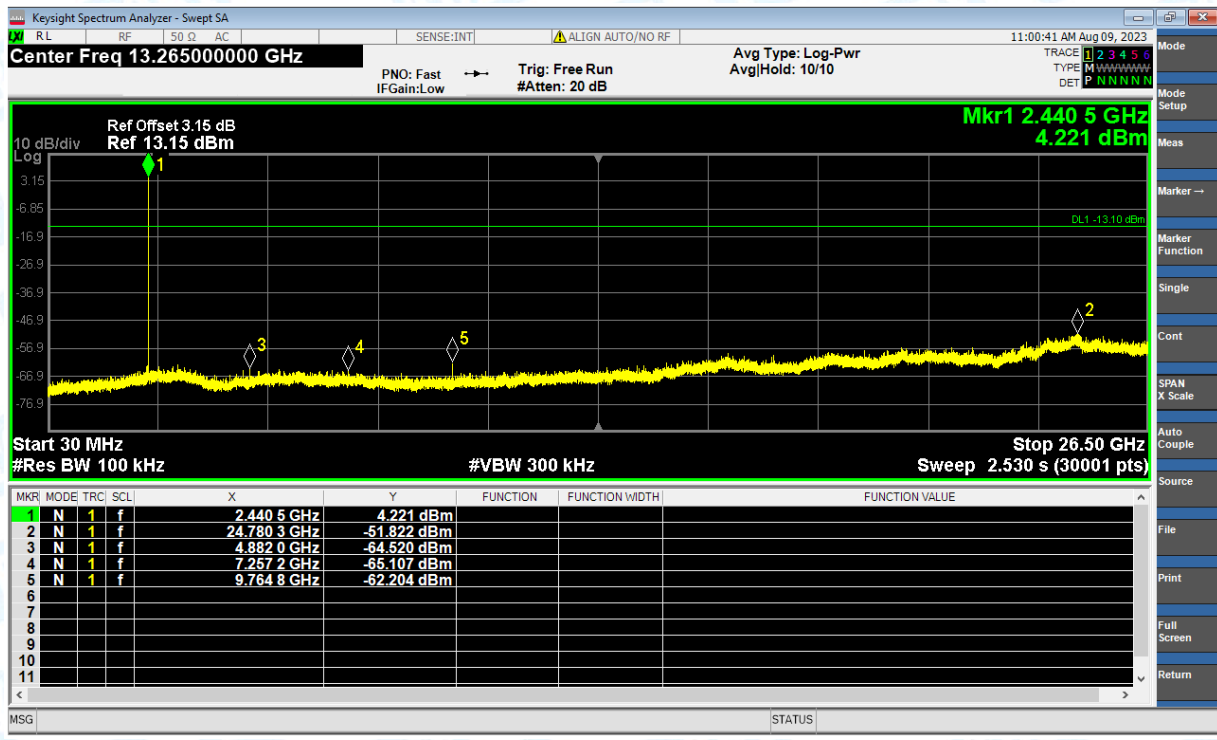
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



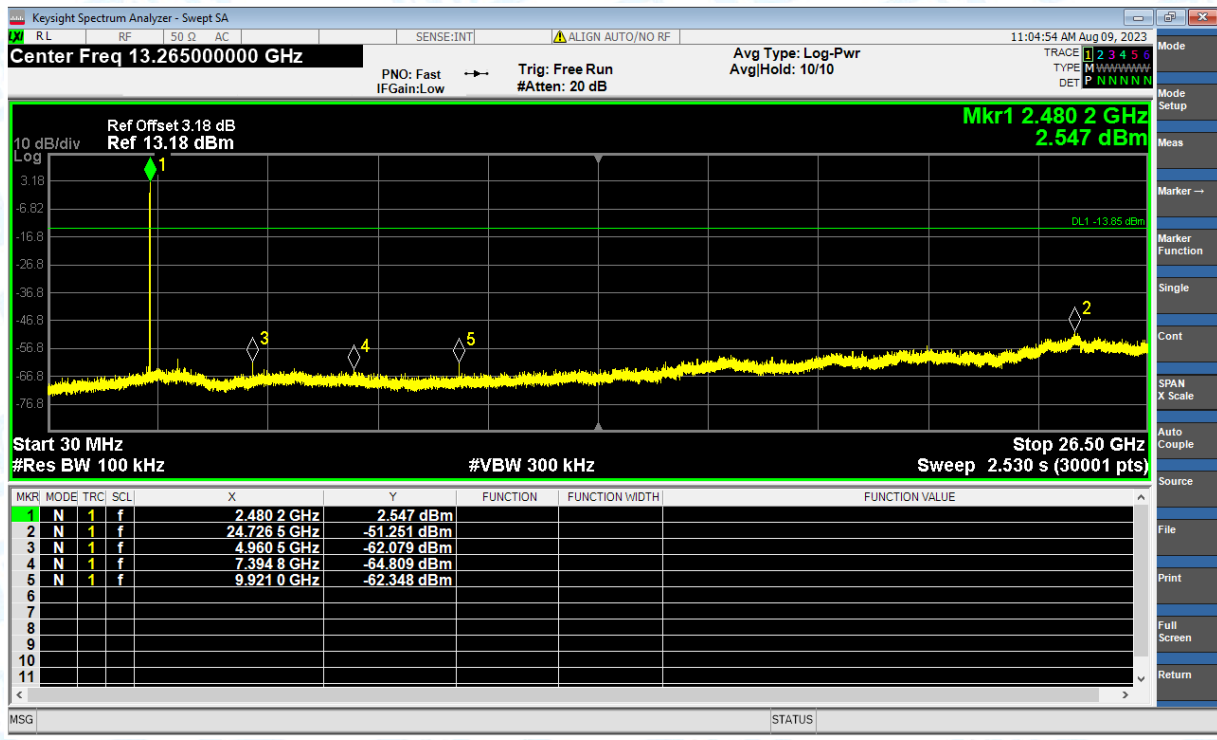
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

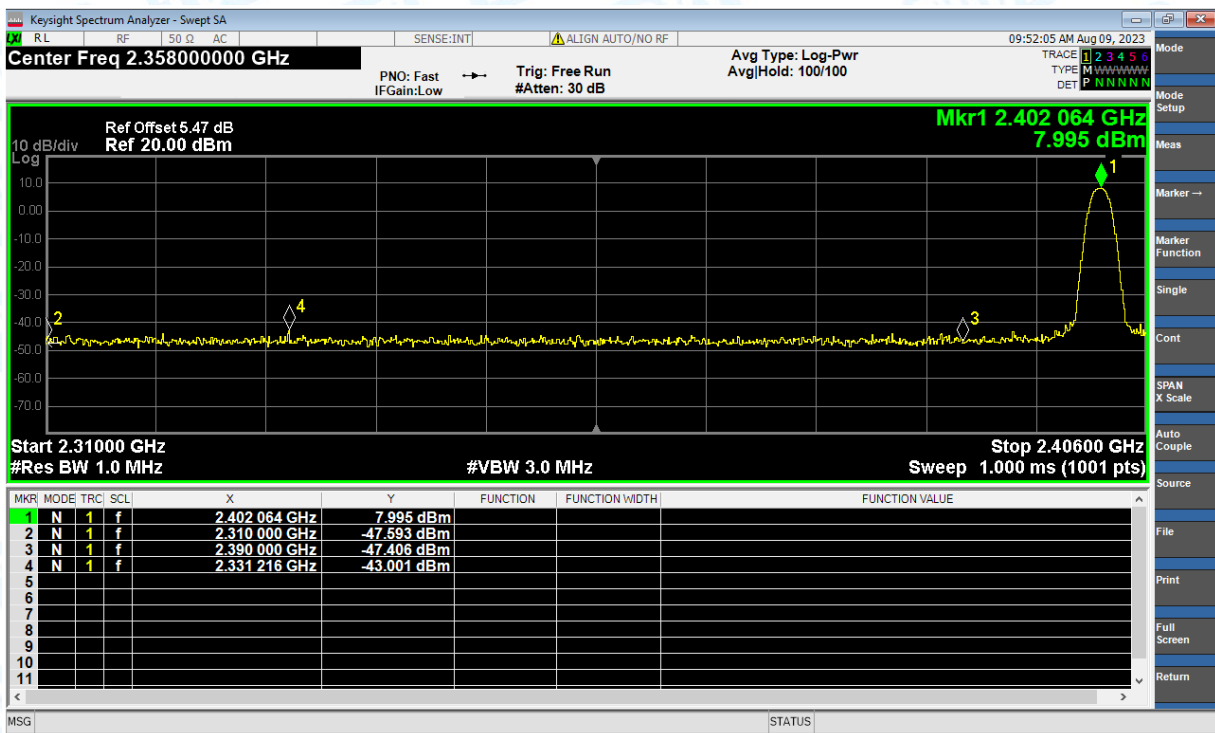


8. Restrict Band

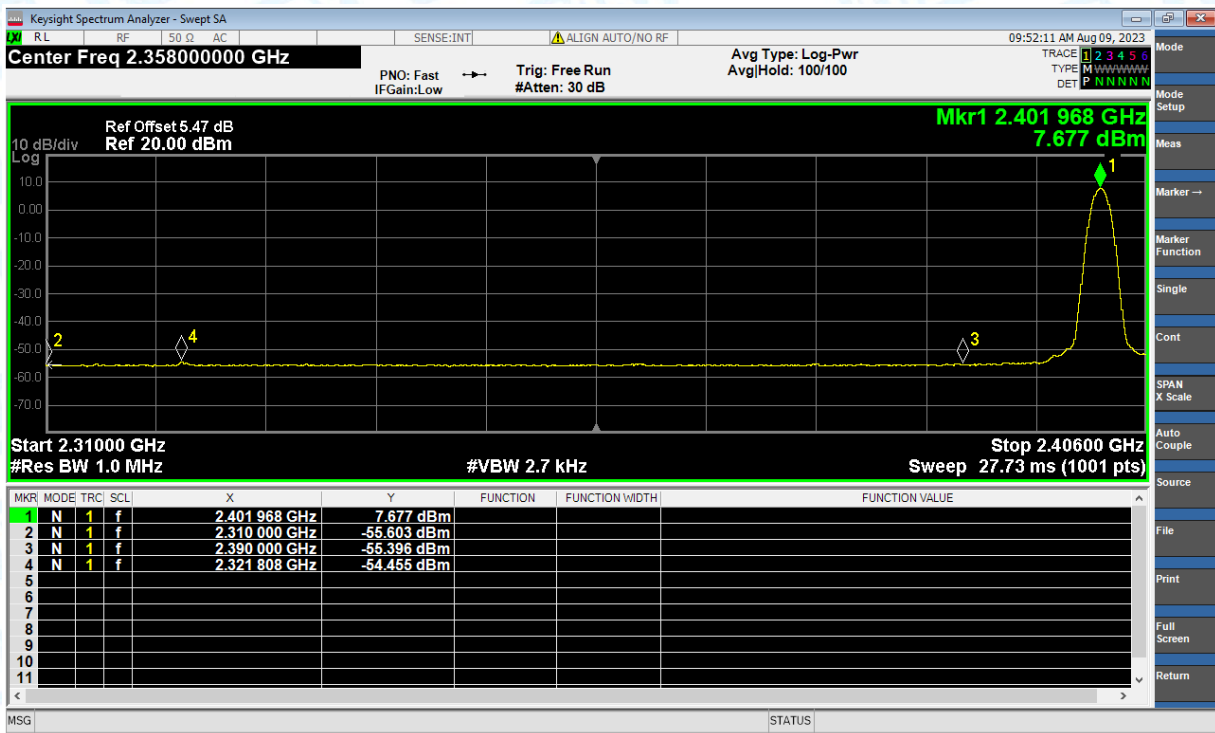
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.59	2.43	50.1	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-55.6	2.43	42.09	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2331.216	-43	2.43	54.69	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2321.808	-54.45	2.43	43.24	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.05	2.43	51.64	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.68	2.43	42.01	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-45.74	2.43	51.95	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.21	2.43	43.48	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2486.152	-42.87	2.43	54.82	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.584	-53.59	2.43	44.1	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-45.91	2.43	51.78	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.37	2.43	42.32	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.53	2.43	50.16	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.51	2.43	42.18	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2363.568	-43.83	2.43	53.86	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2322	-54.91	2.43	42.78	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.66	2.43	51.03	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.45	2.43	42.24	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-45.46	2.43	52.23	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.15	2.43	43.54	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2498.752	-43.25	2.43	54.44	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.136	-53.66	2.43	44.03	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.27	2.43	51.42	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.99	2.43	42.7	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-46.39	2.43	51.3	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-55.83	2.43	41.86	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2354.448	-43.46	2.43	54.23	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2321.808	-54.81	2.43	42.88	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-46.56	2.43	51.13	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.51	2.43	42.18	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-43.05	2.43	54.64	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-52.53	2.43	45.16	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.992	-42.39	2.43	55.3	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.656	-51.78	2.43	45.91	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.2	2.43	51.49	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.55	2.43	42.14	Average	54	Pass

Test Graphs

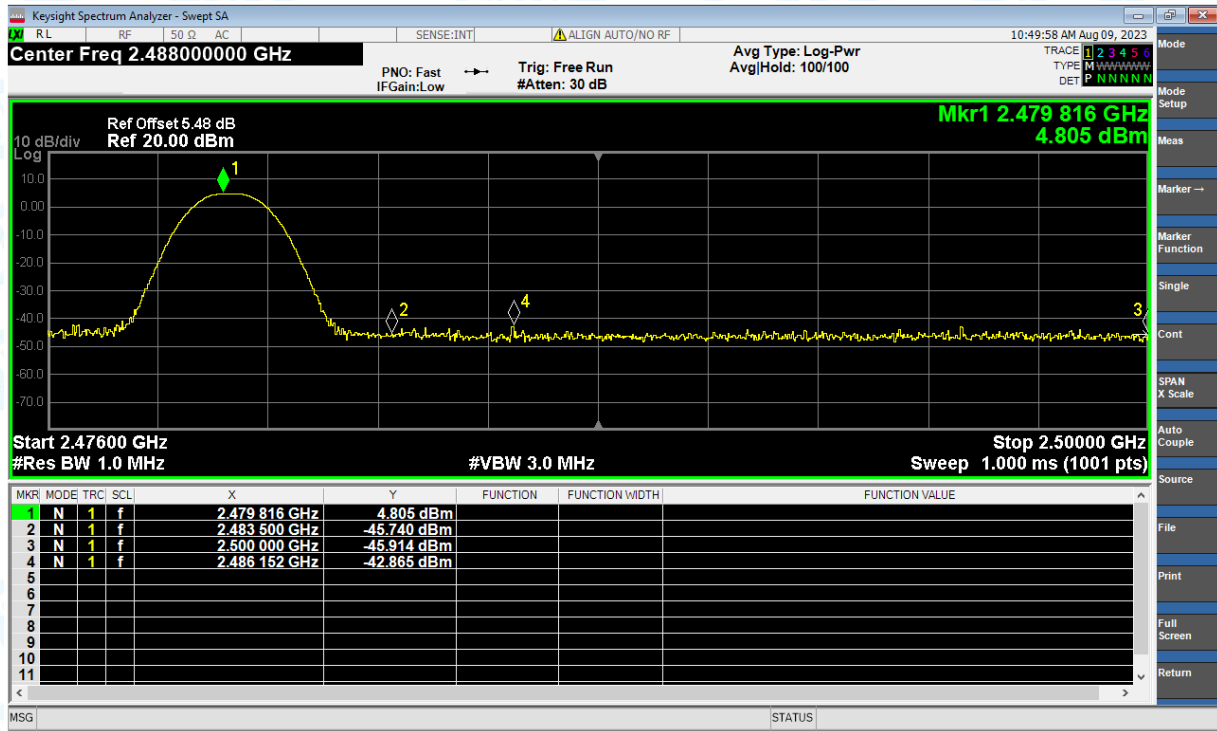
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



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



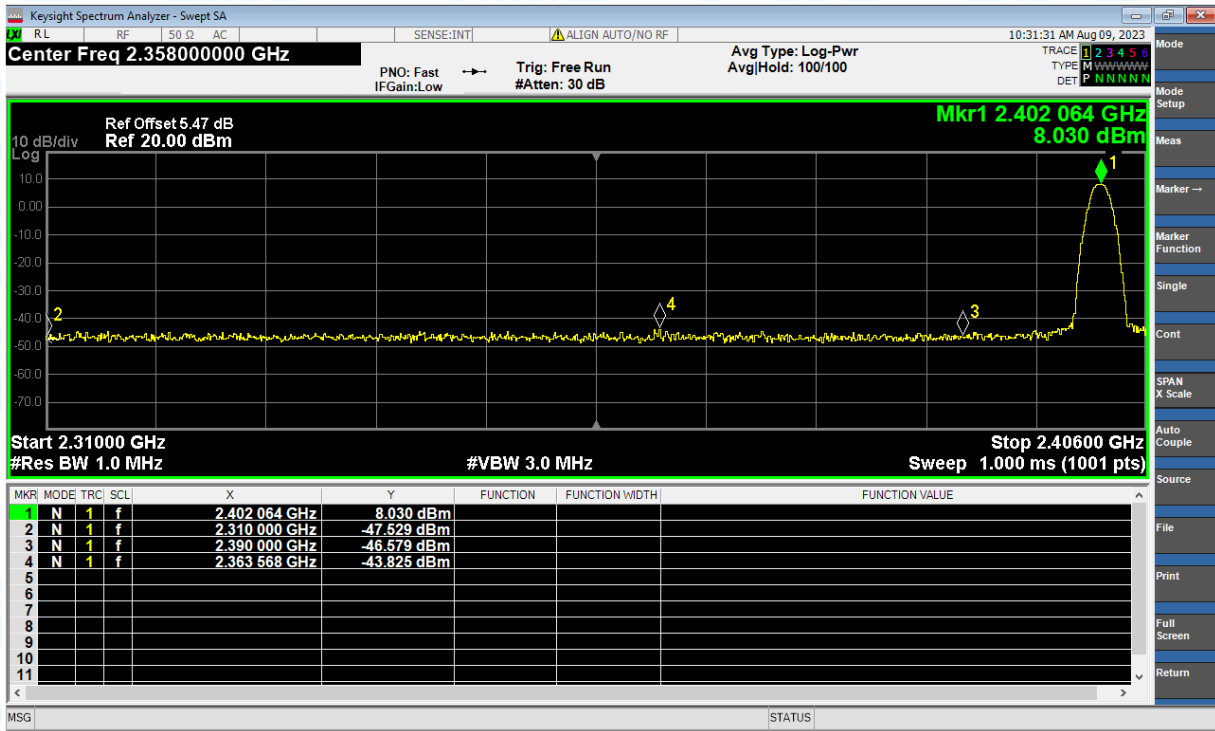
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



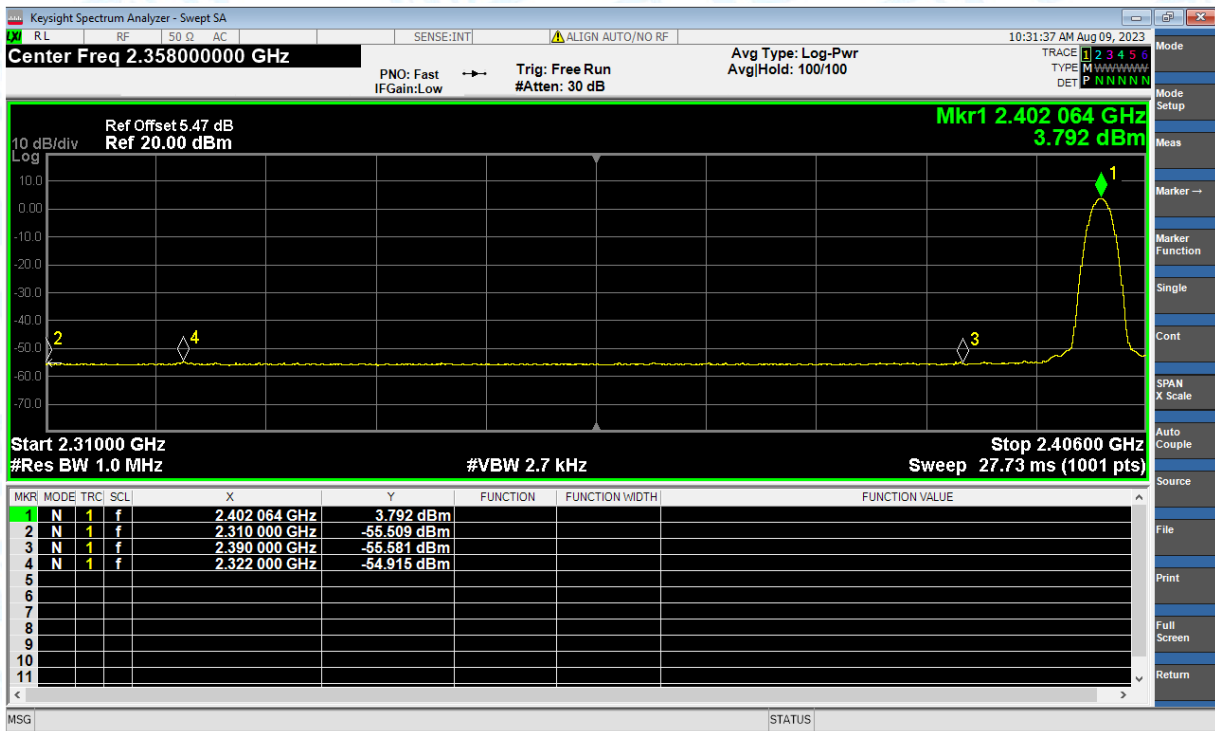
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



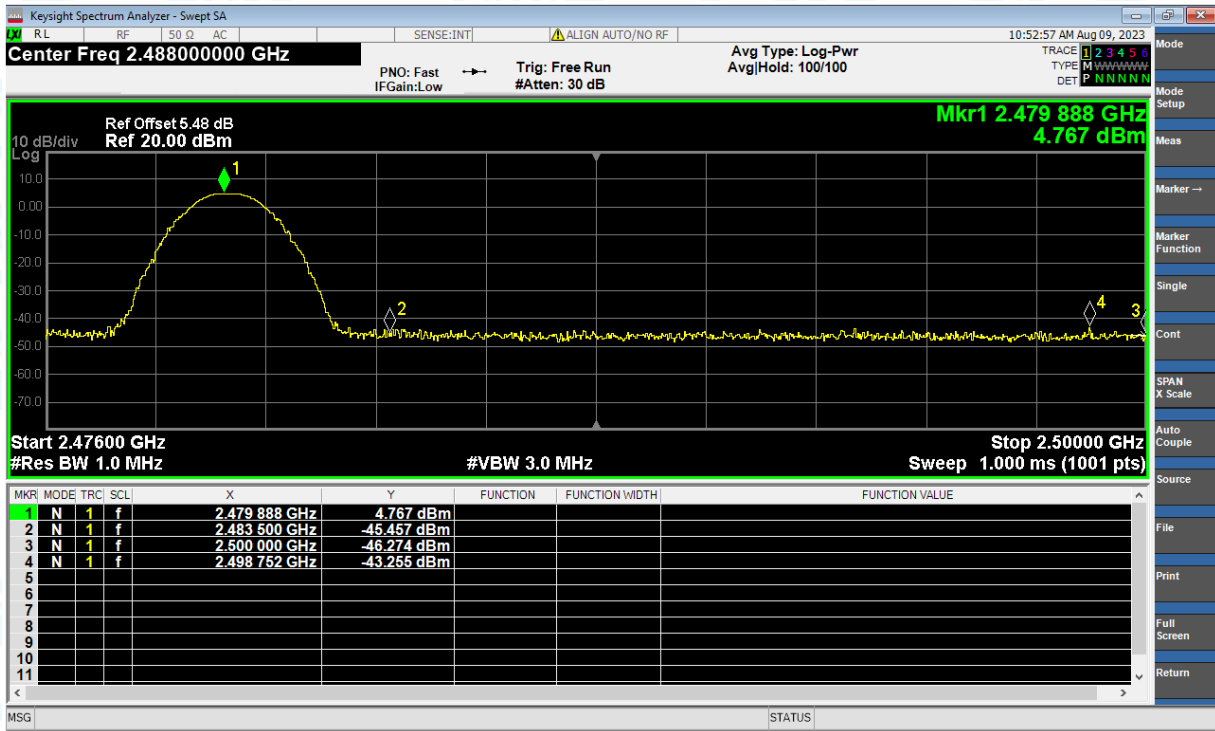
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



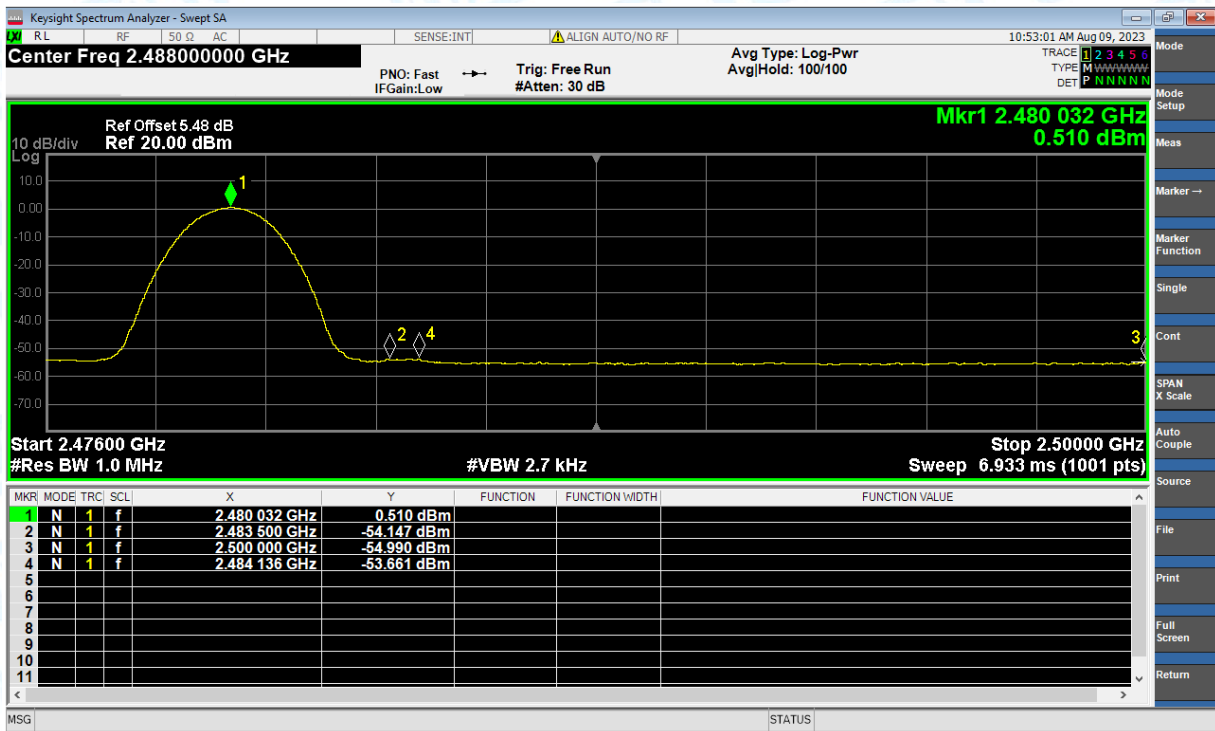
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



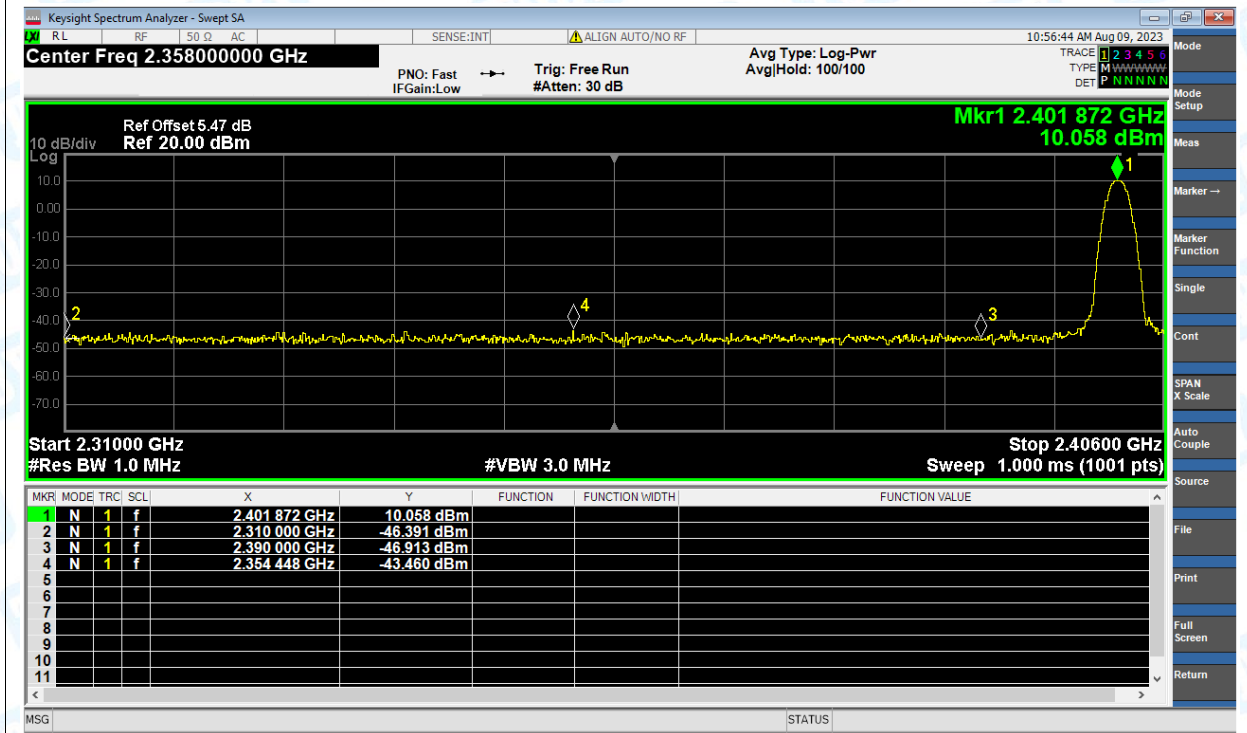
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



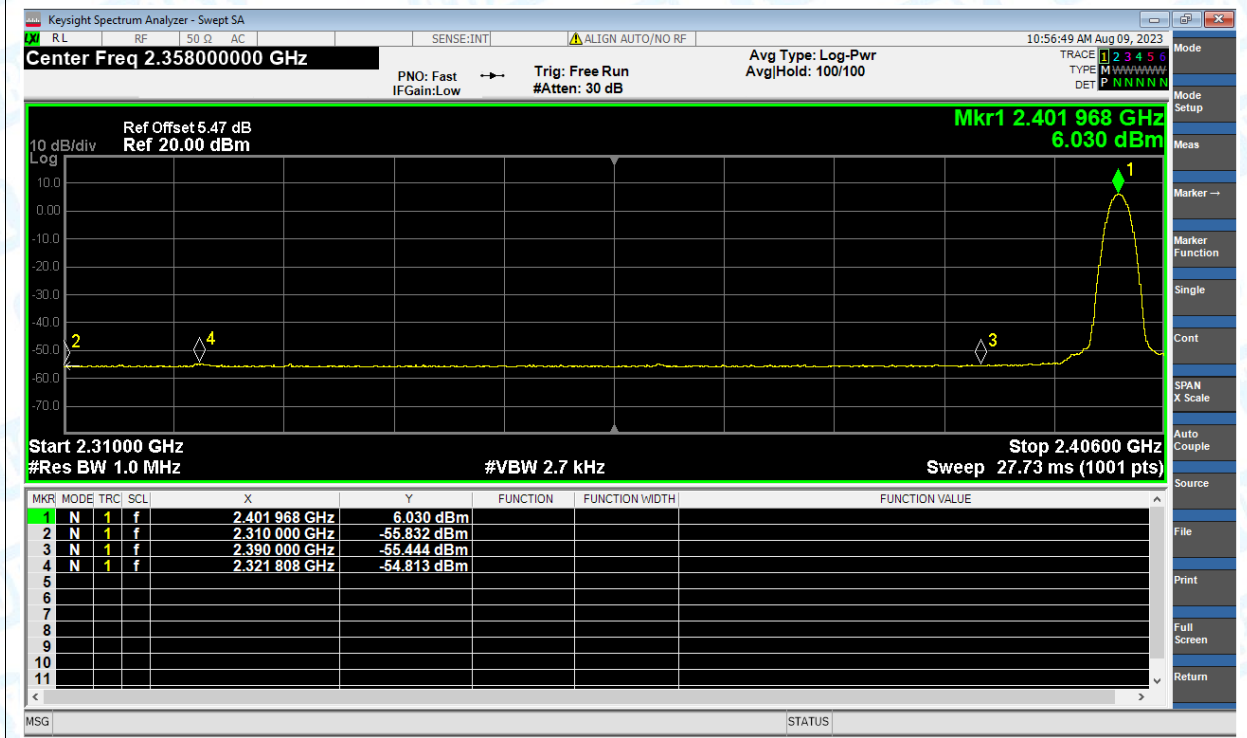
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



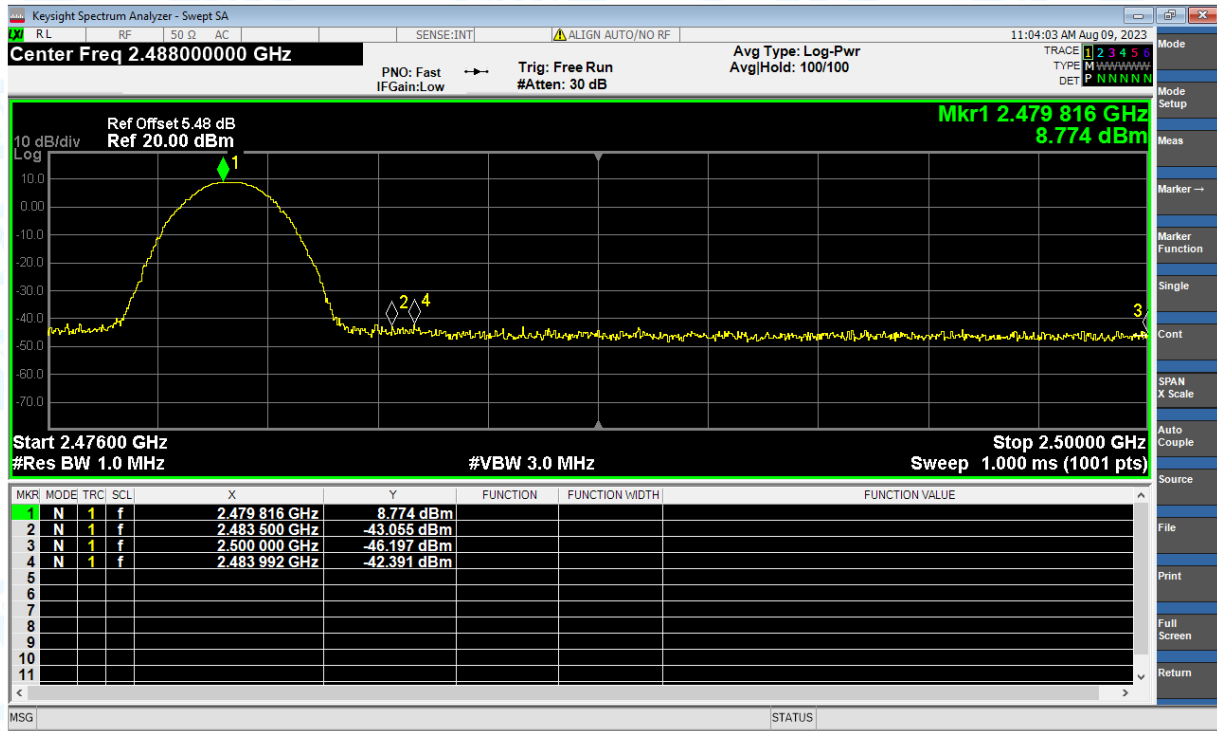
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



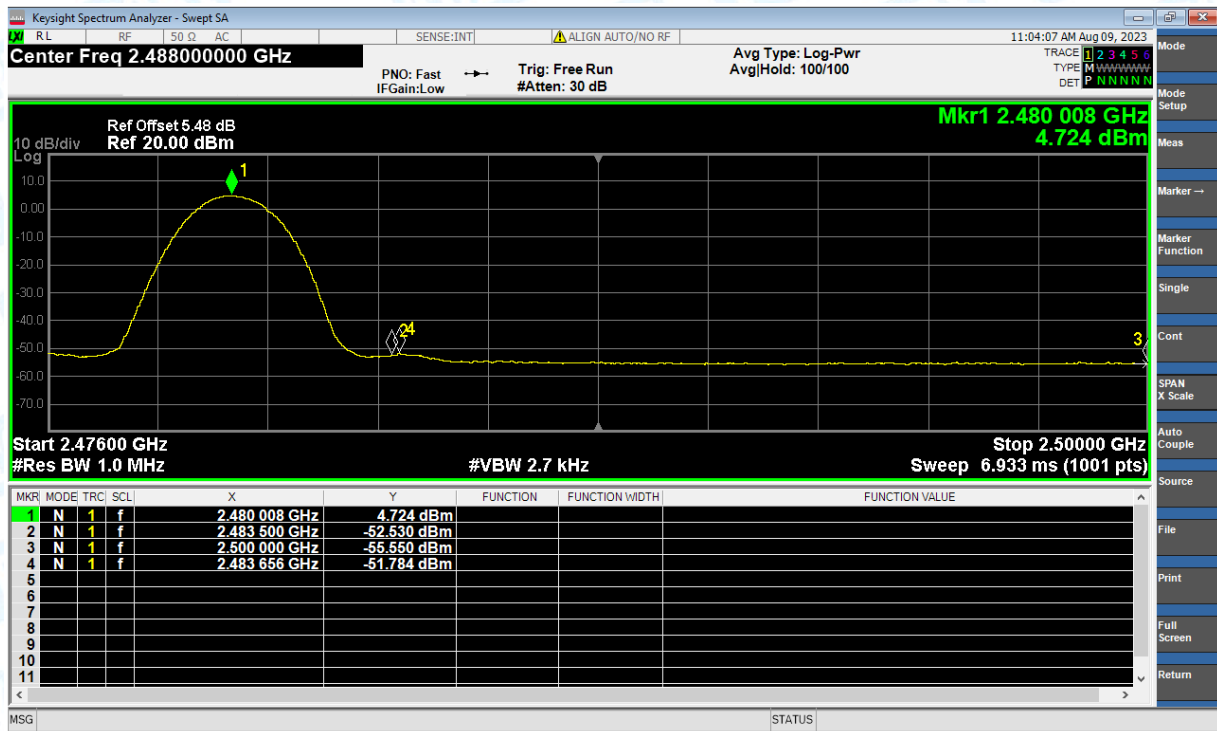
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

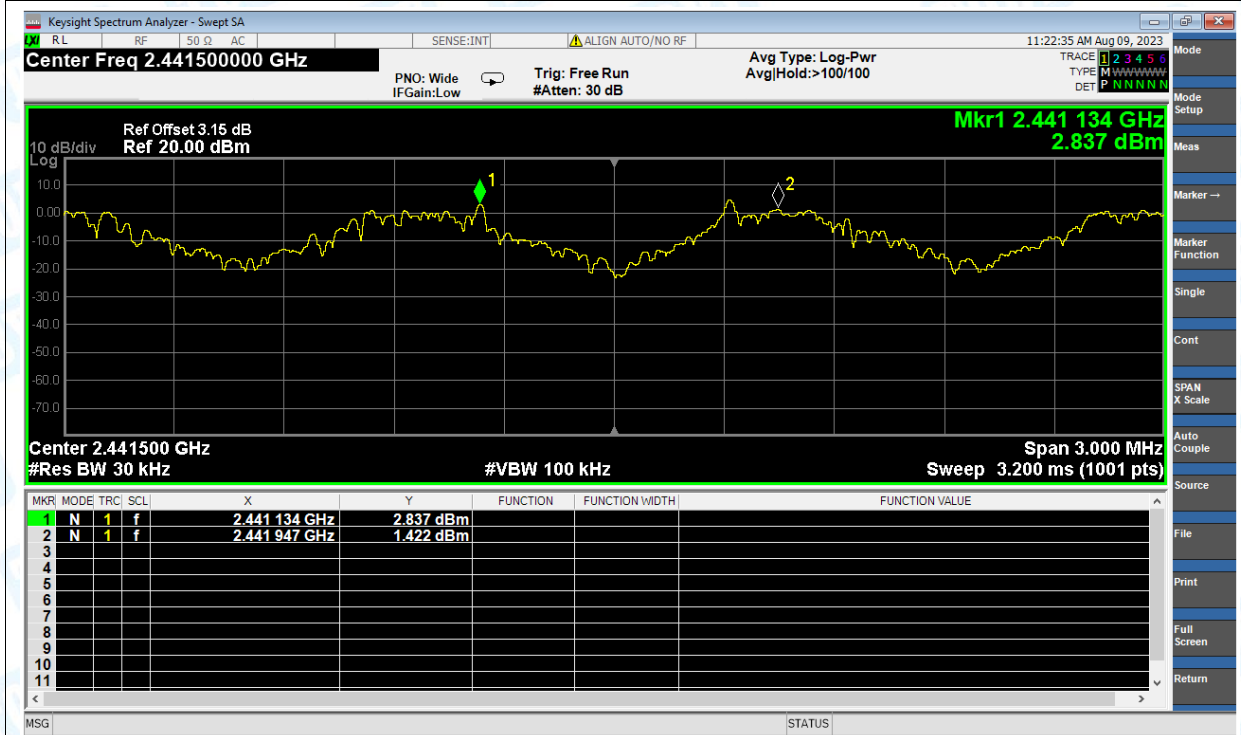


9. Carrier Frequencies Separation

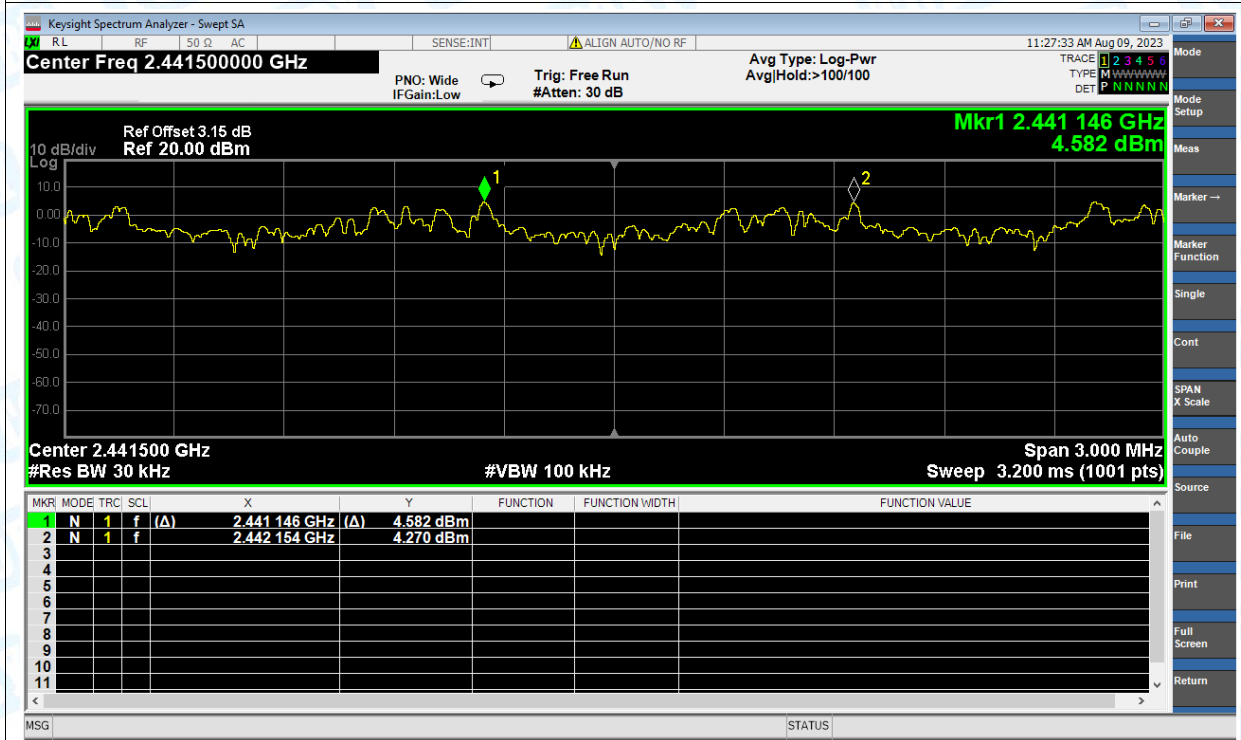
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.134	2441.947	0.813	0.640	Pass
NVNT	2-DH1	Ant1	2441.146	2442.154	1.008	0.827	Pass
NVNT	3-DH1	Ant1	2440.813	2442.142	1.329	0.807	Pass

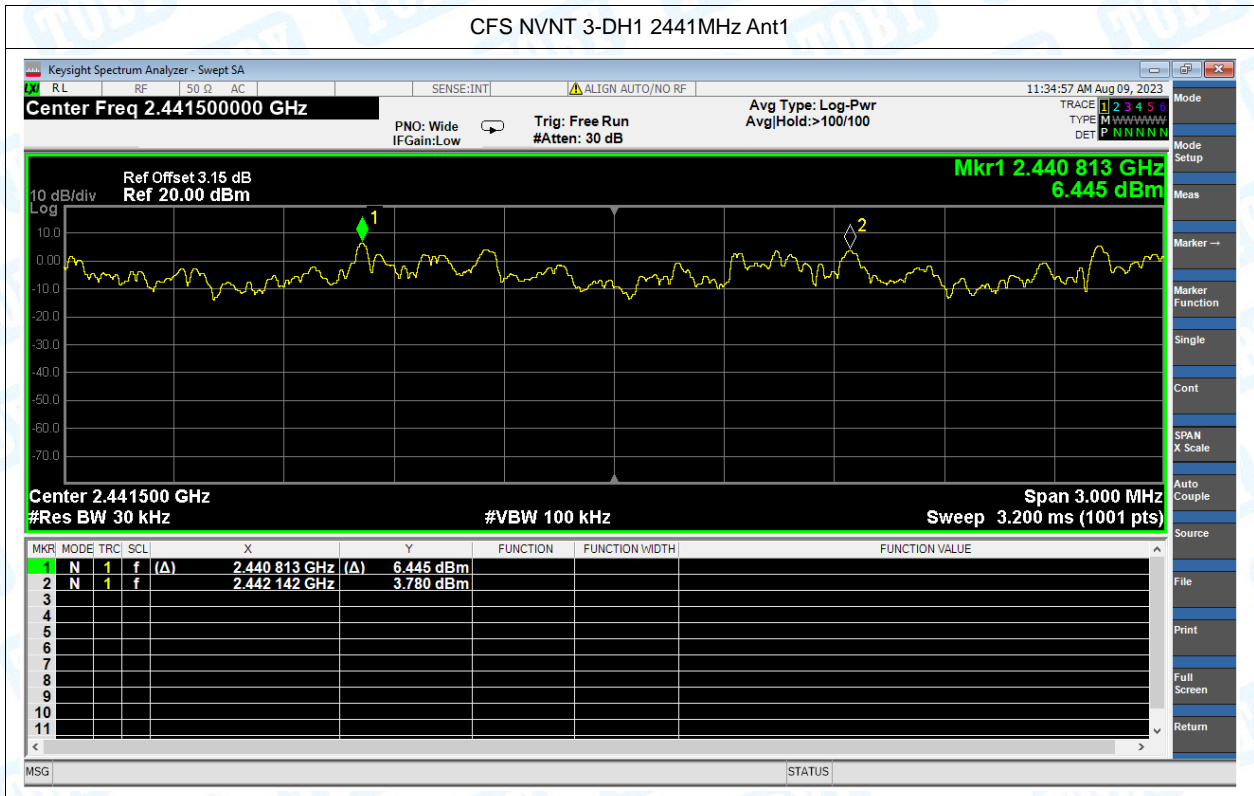
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



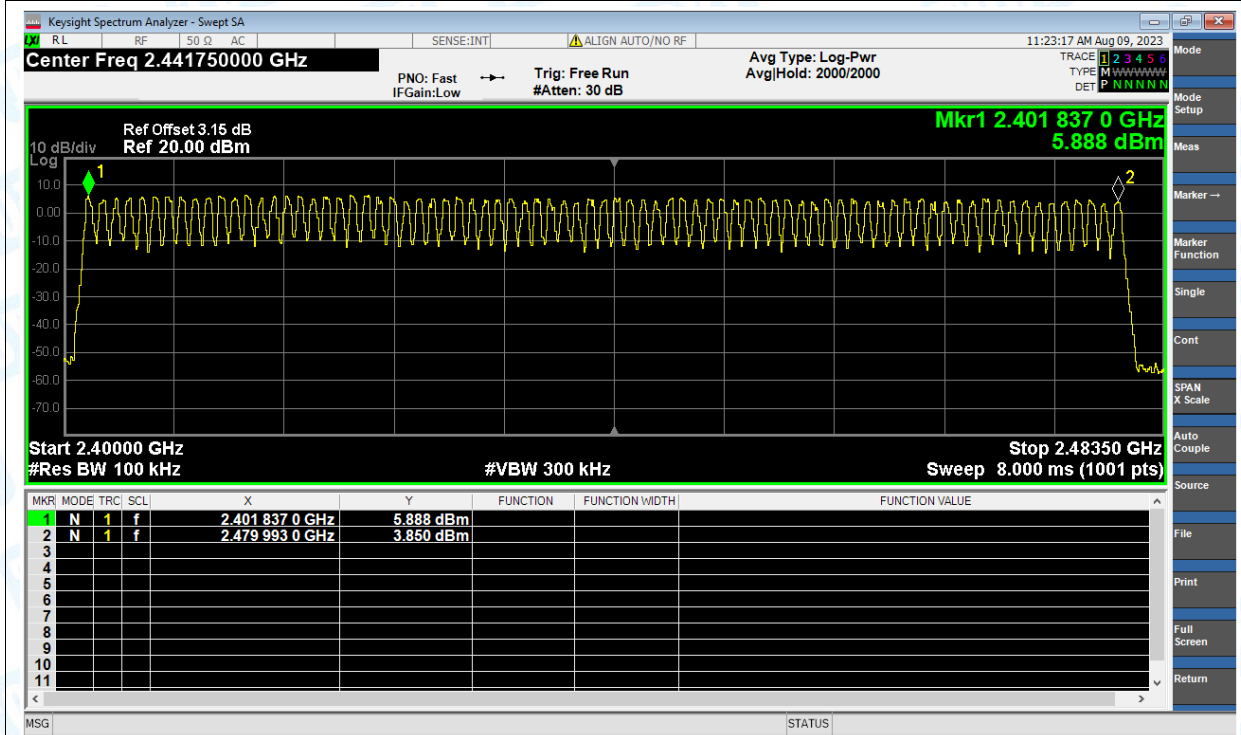


10. Number of Hopping Channel

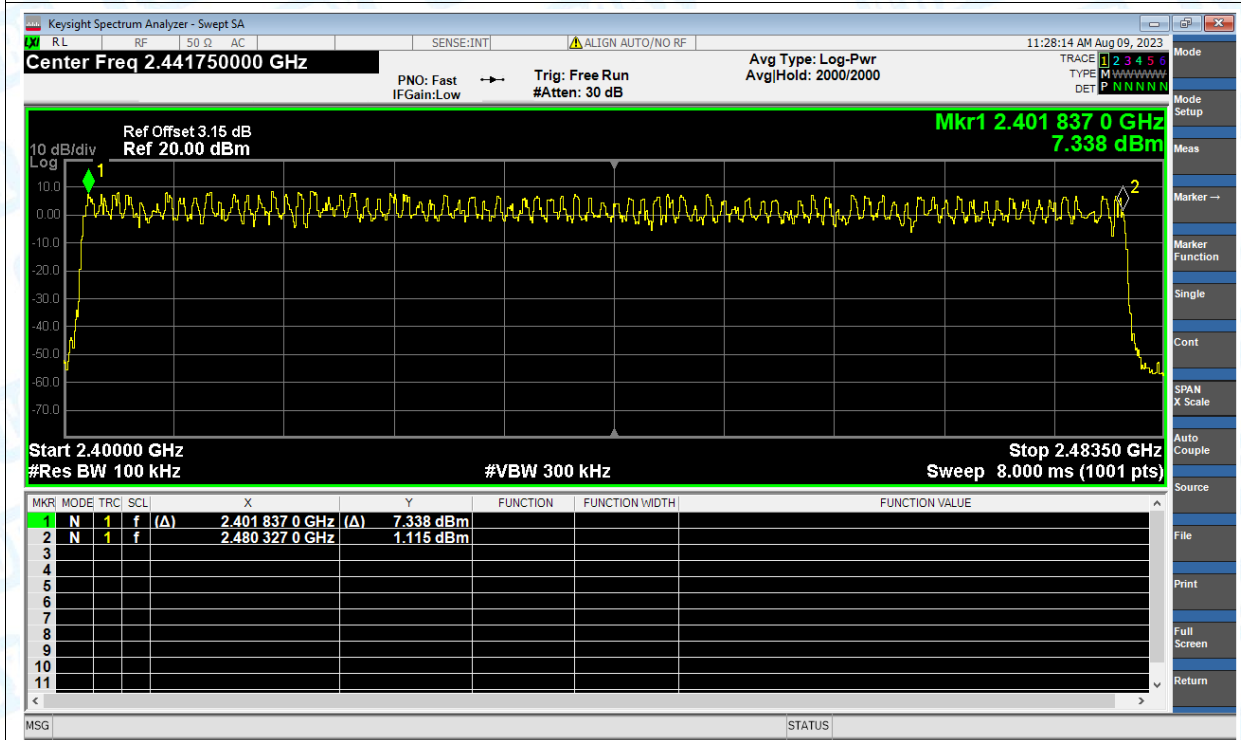
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

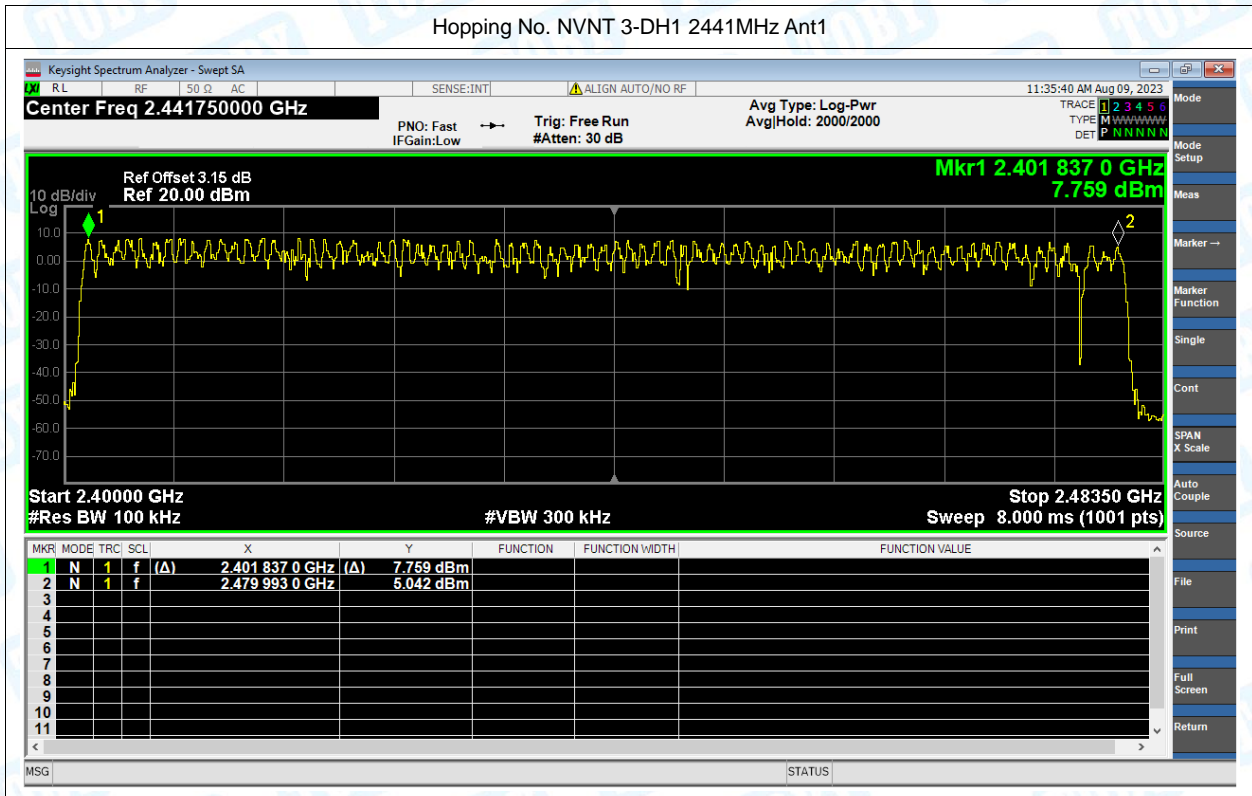
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



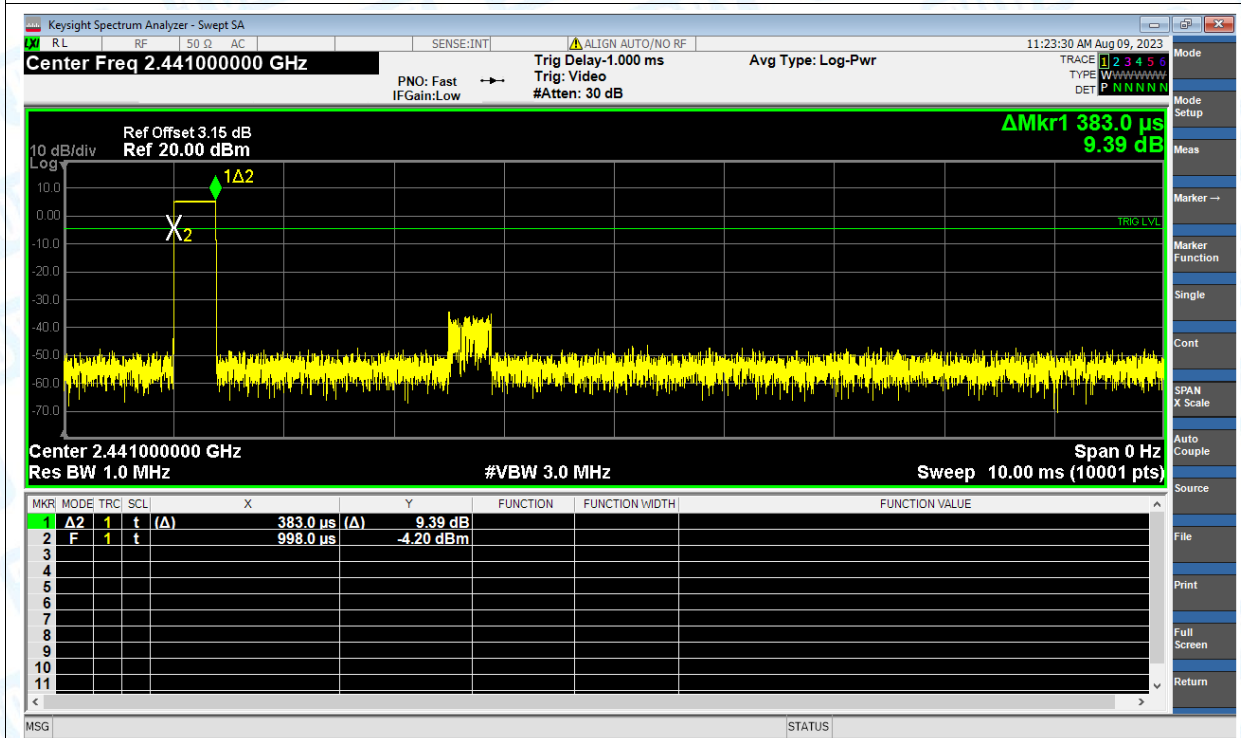


11. Dwell Time

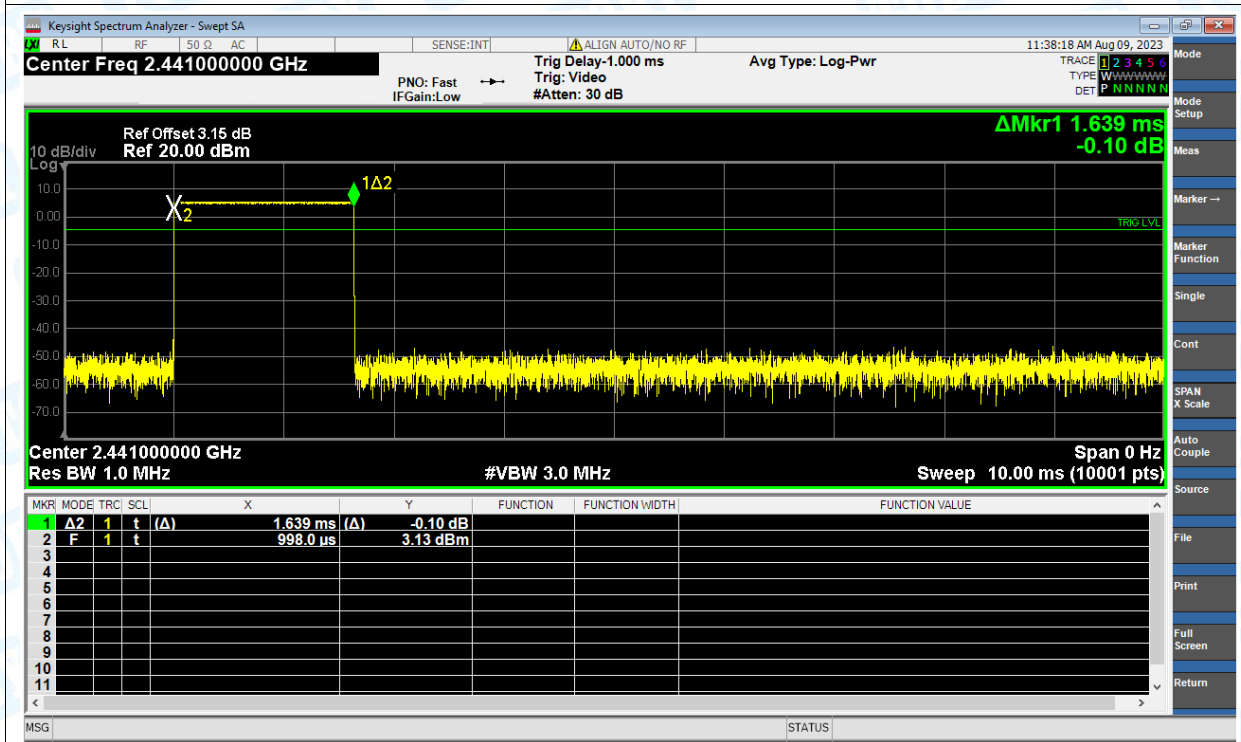
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.643	262.88	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

Test Graphs

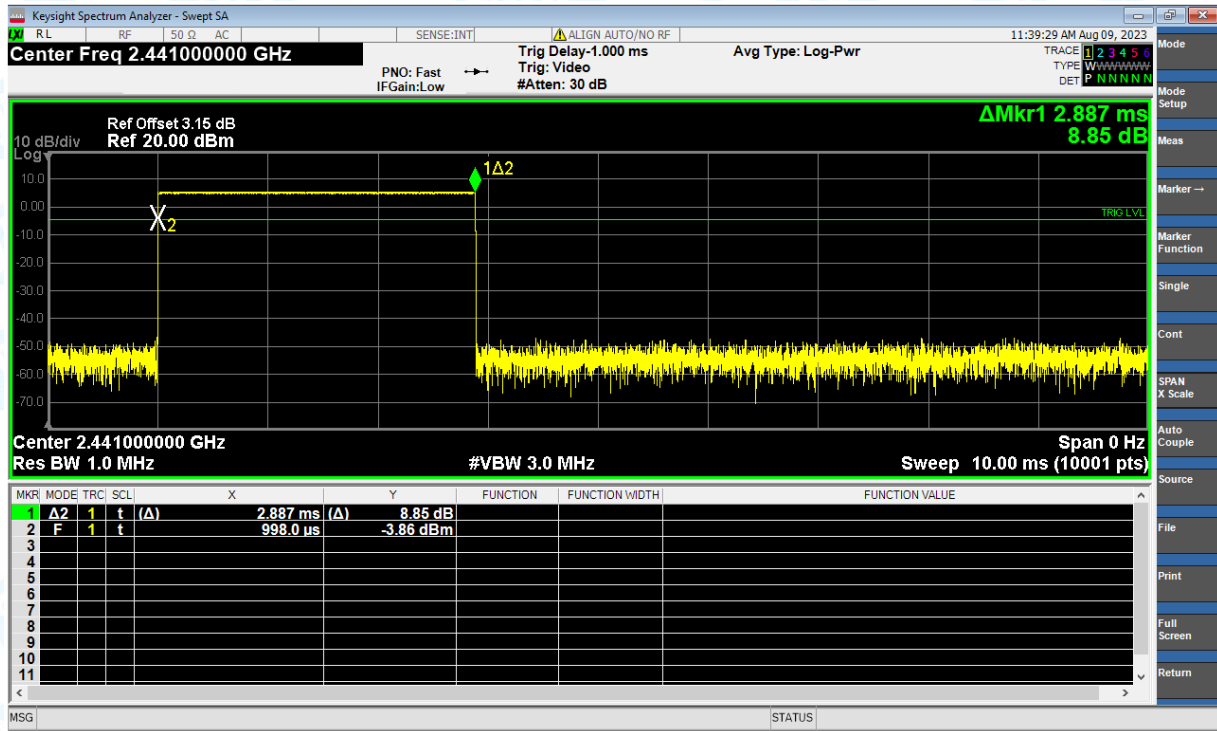
Dwell NVNT 1-DH1 2441MHz Ant1



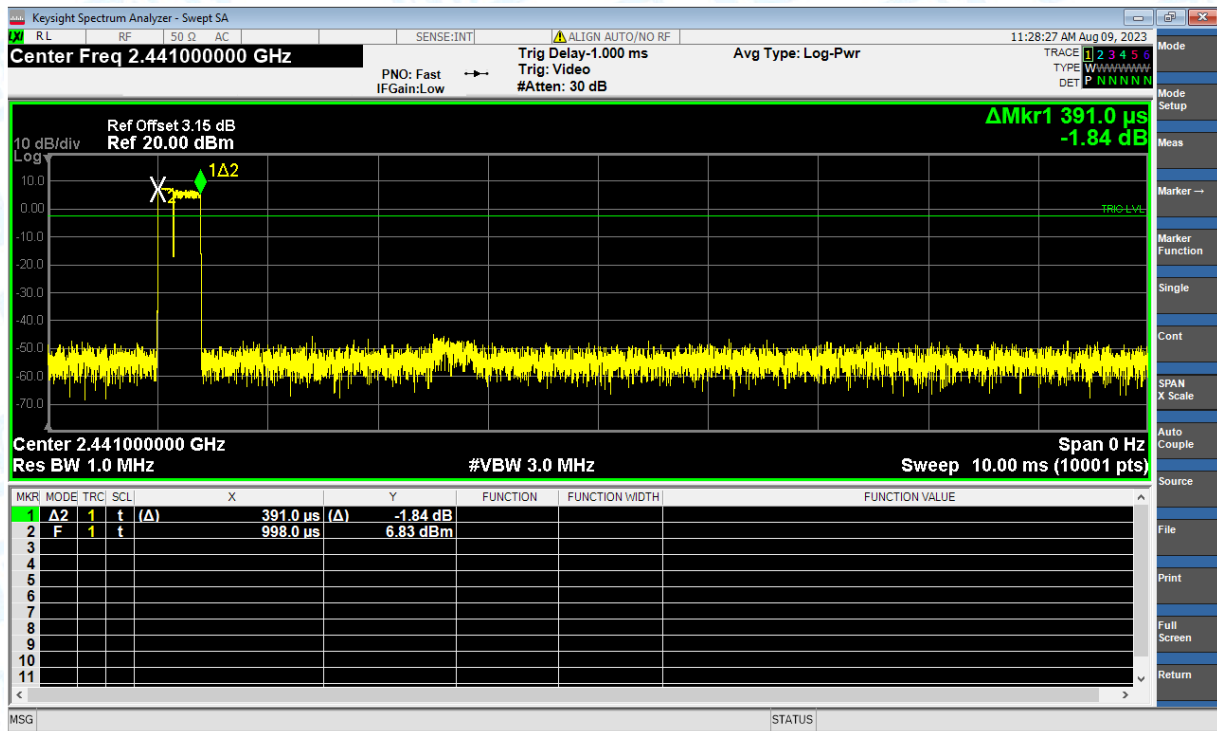
Dwell NVNT 1-DH3 2441MHz Ant1



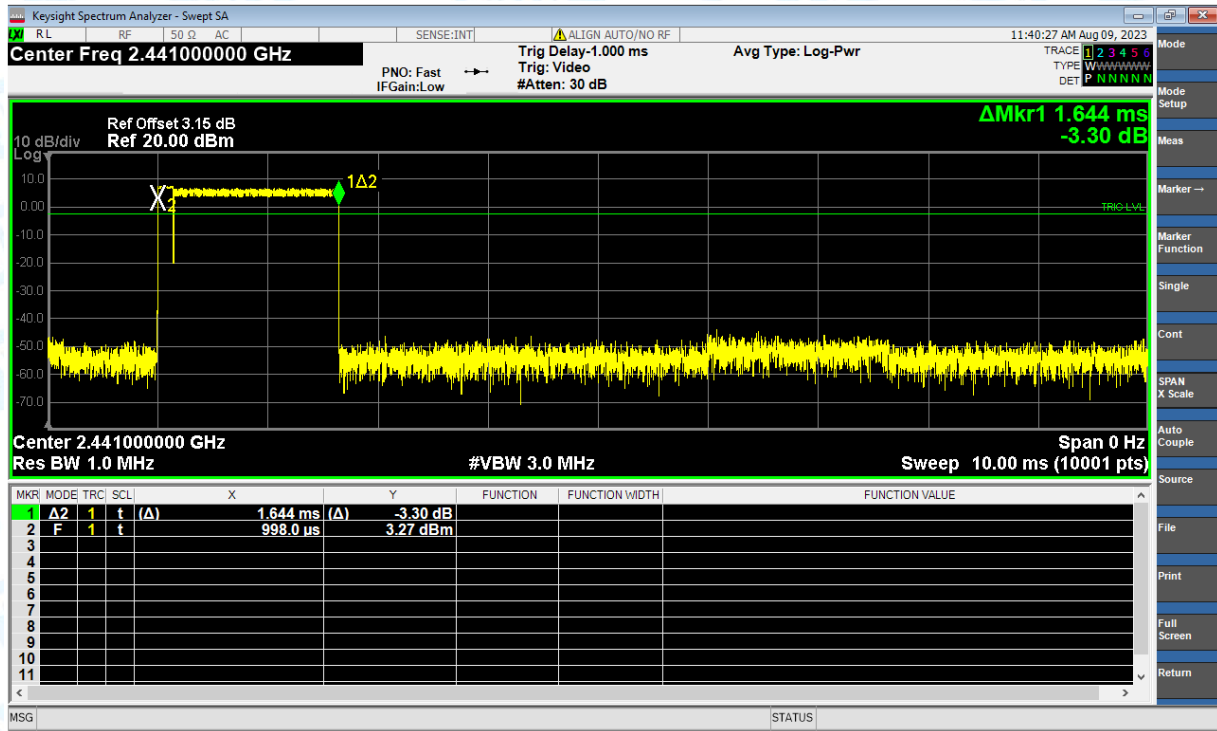
Dwell NVNT 1-DH5 2441MHz Ant1



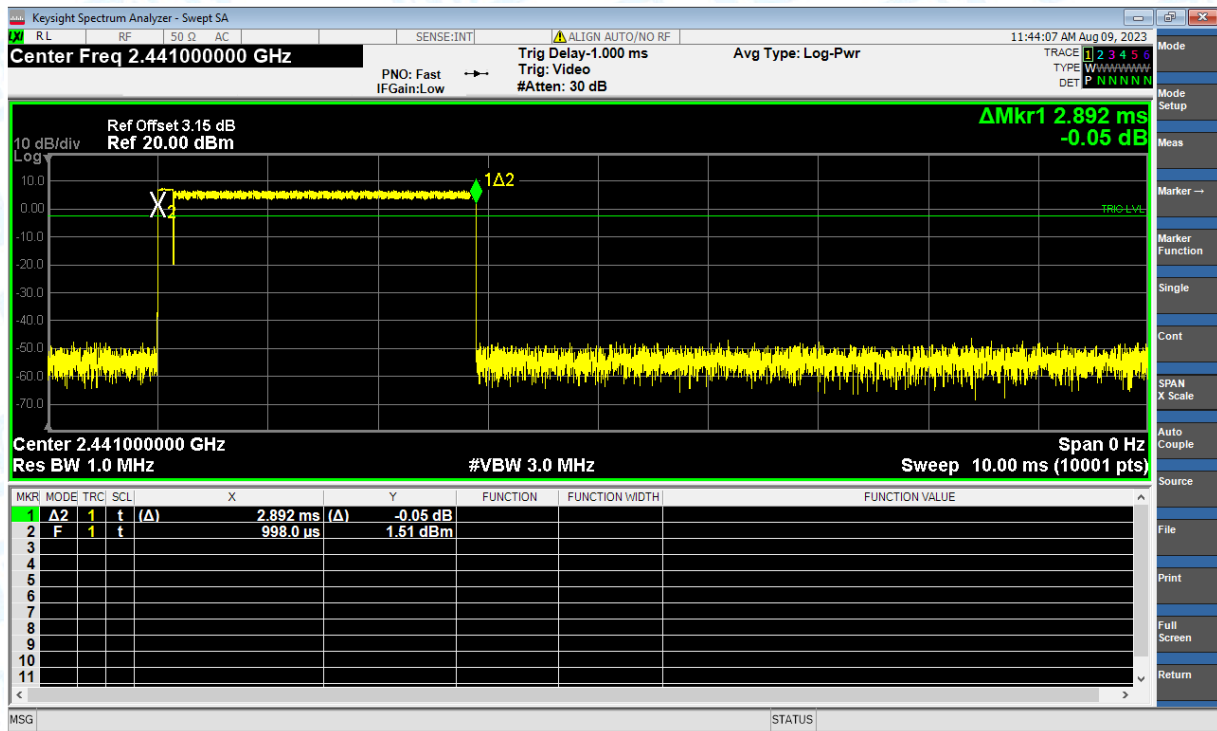
Dwell NVNT 2-DH1 2441MHz Ant1



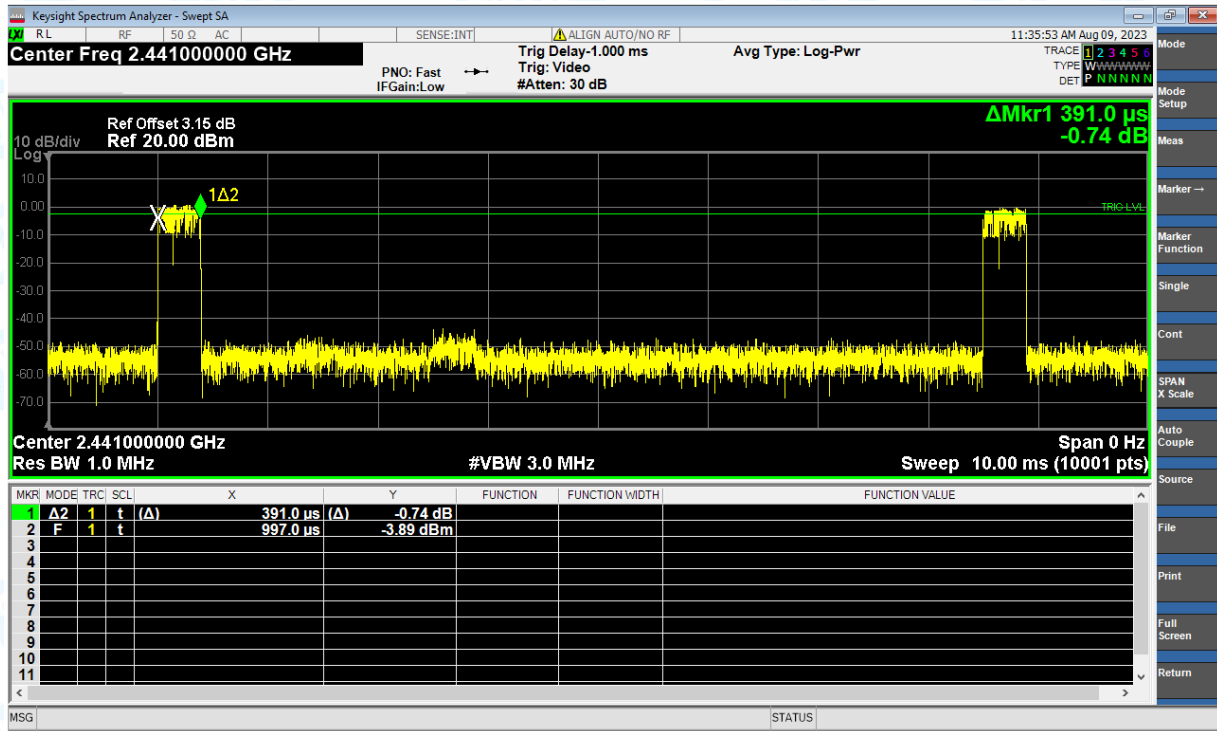
Dwell NVNT 2-DH3 2441MHz Ant1



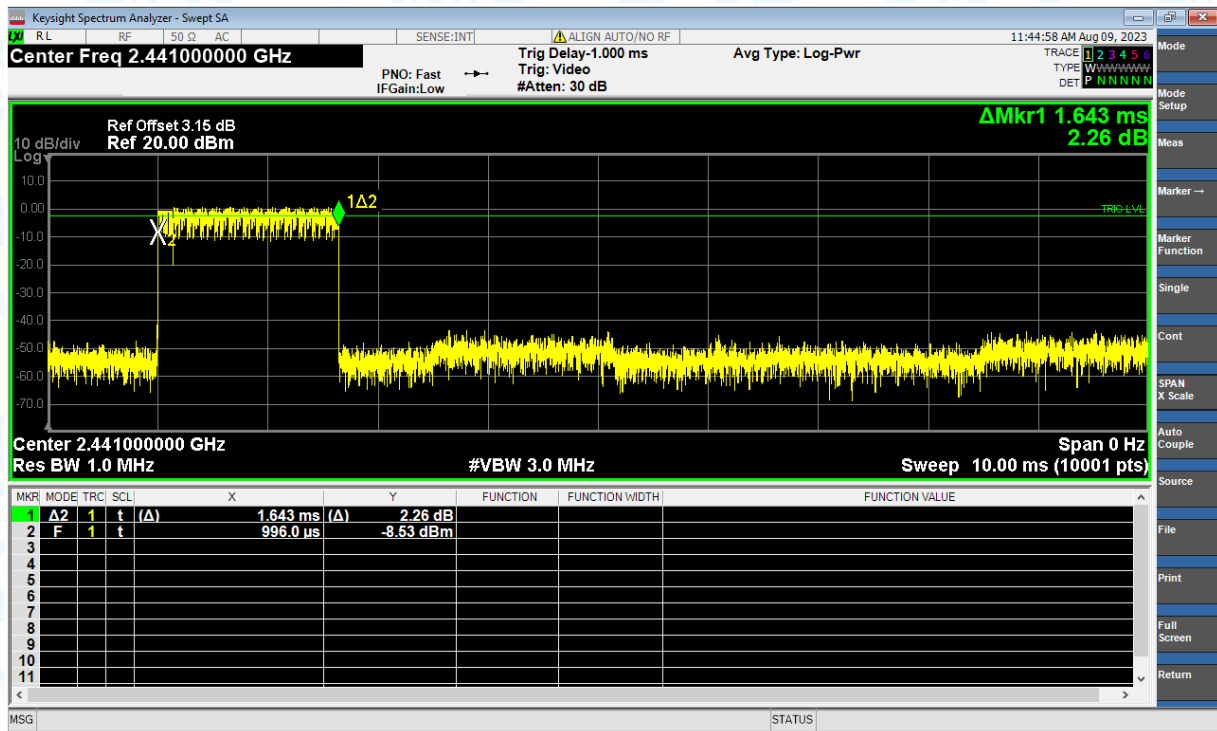
Dwell NVNT 2-DH5 2441MHz Ant1

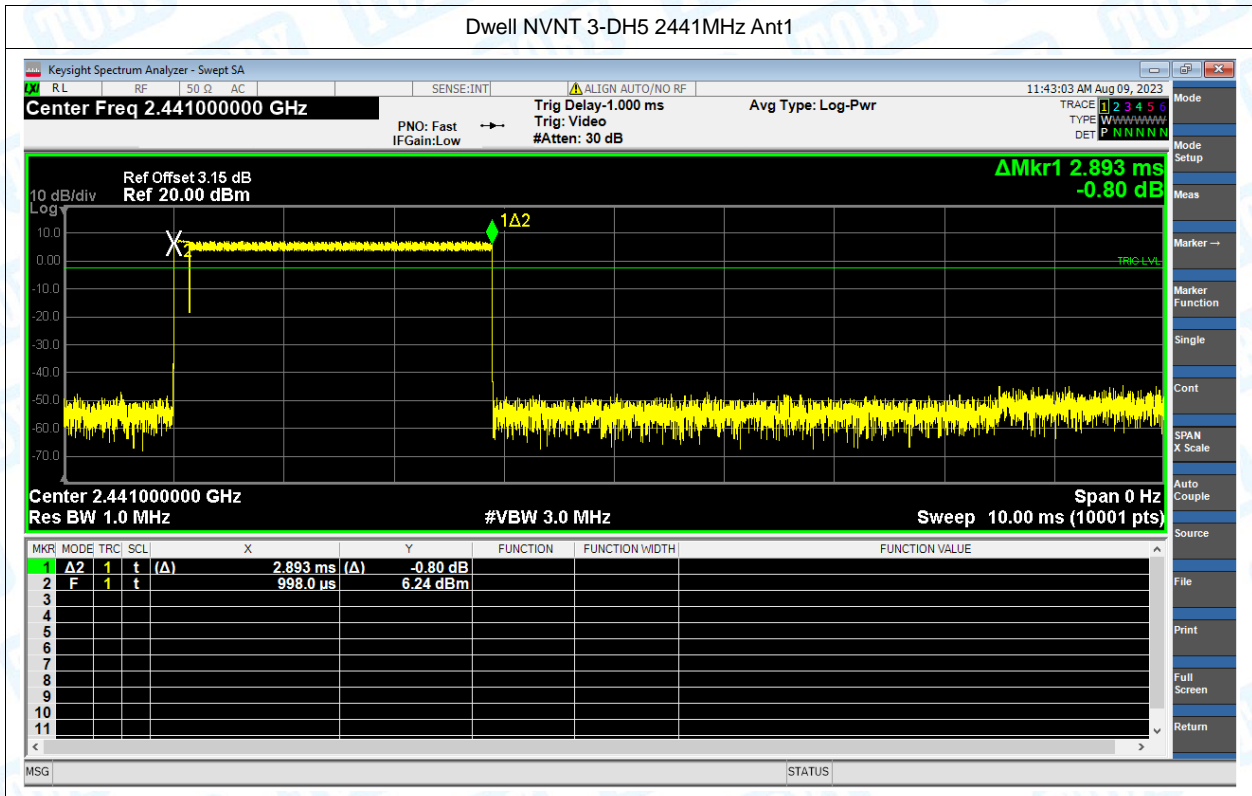


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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