

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

General Description of EUT	
Product Name:	Bluetooth Speaker
Test Model:	D68F
Sample ID:	202311-0216-1-2#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Zhou zhen
Note: For a more detailed features description, please refer to the report TBR-C-202311-0216-2 The report only show the worst case data.	

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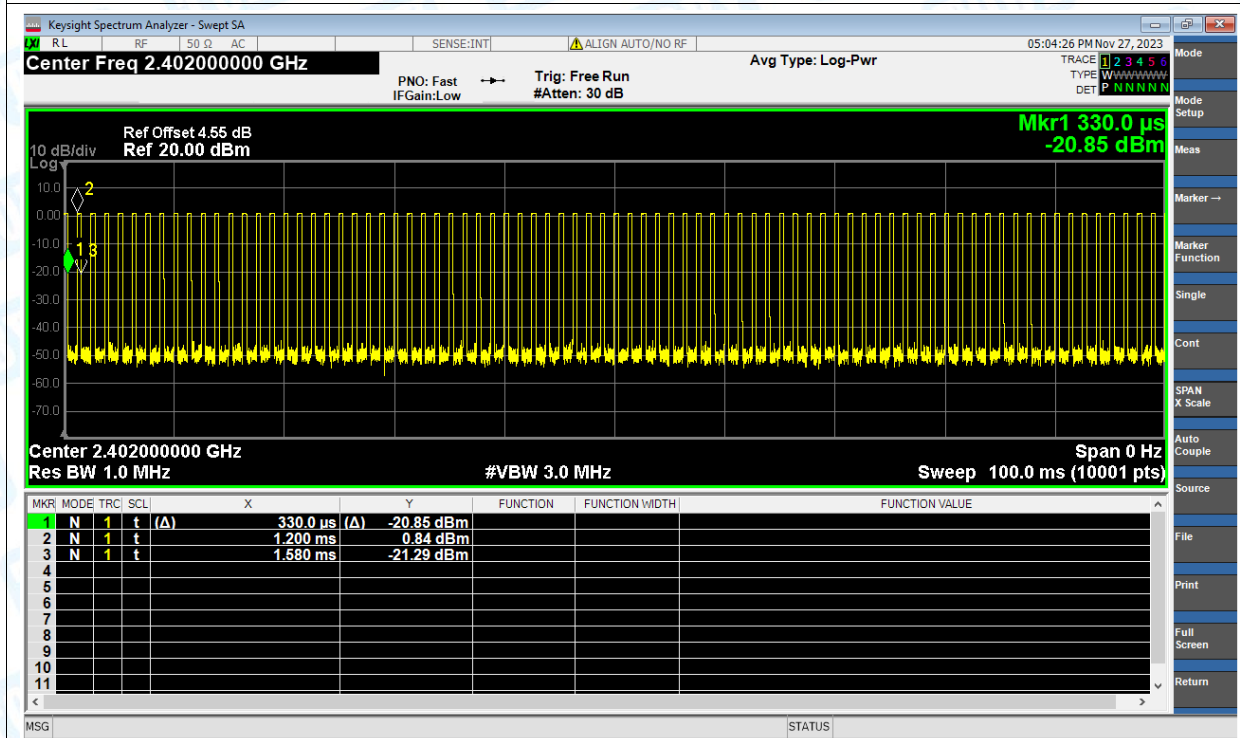
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1. Duty Cycle

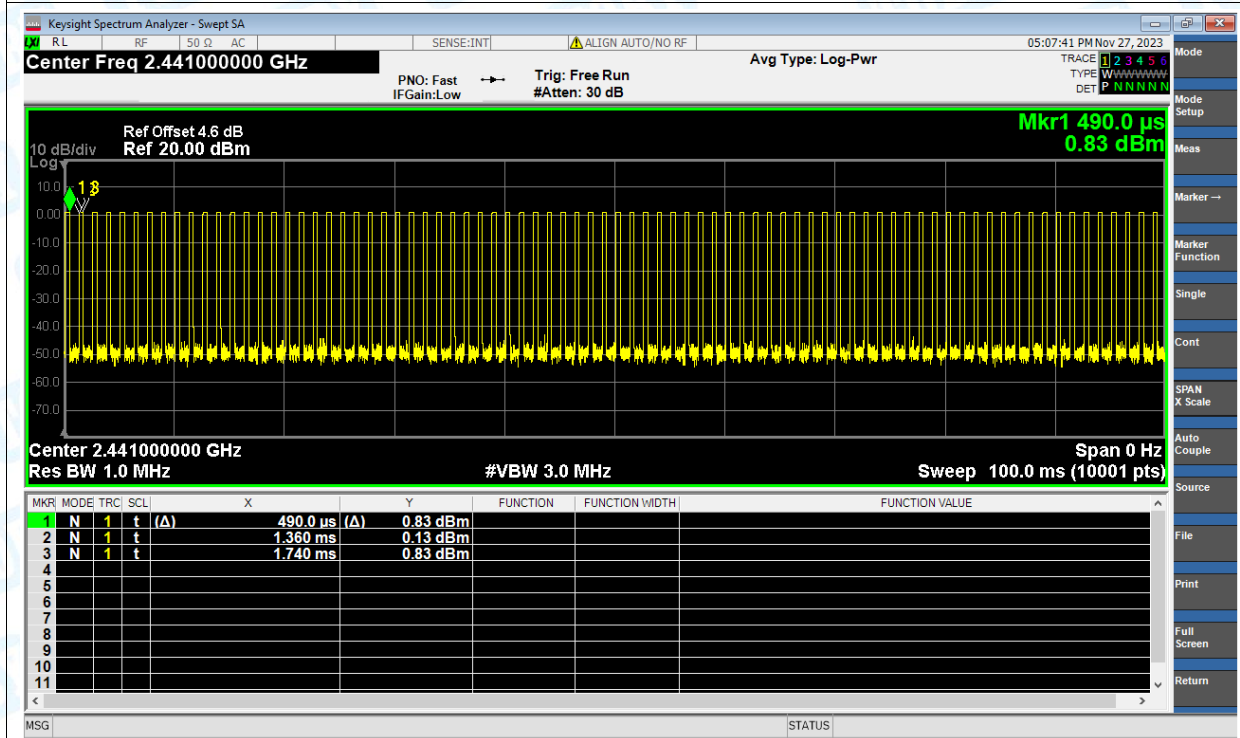
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	29.6	5.29	2.7
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56
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	30.4	5.17	2.63

Test Graphs

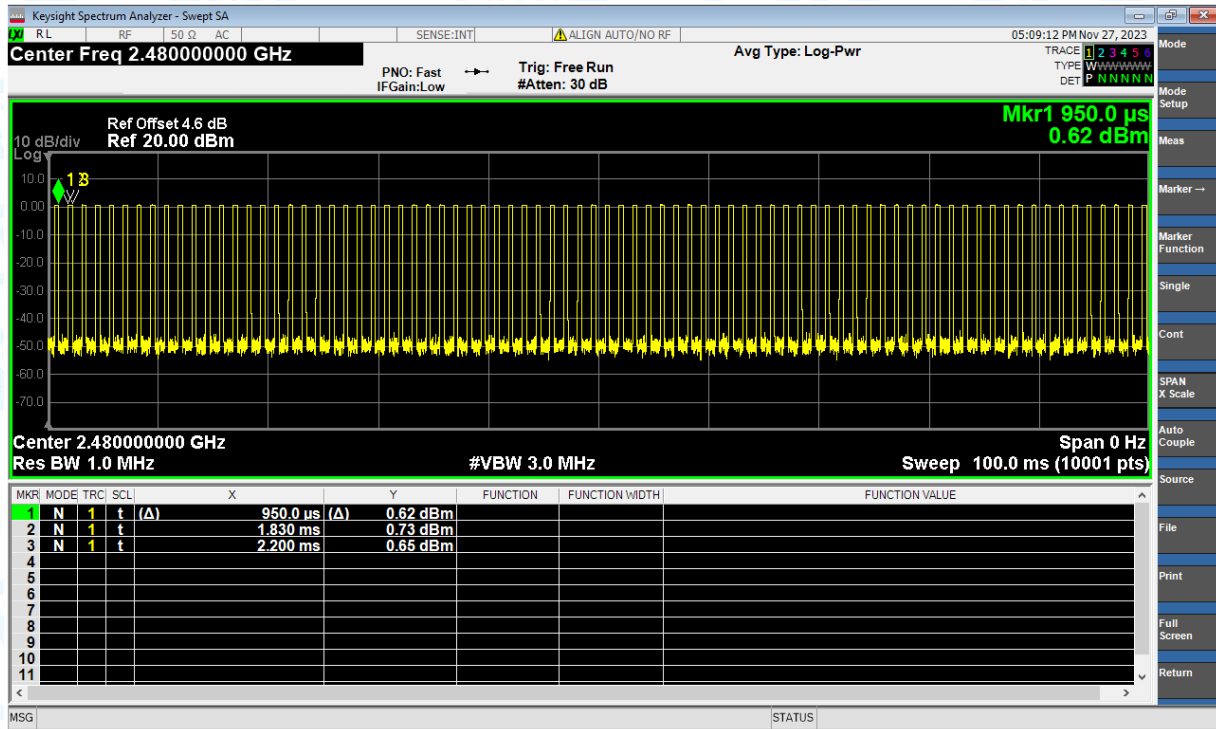
Duty Cycle NVNT 1-DH1 2402MHz Ant1



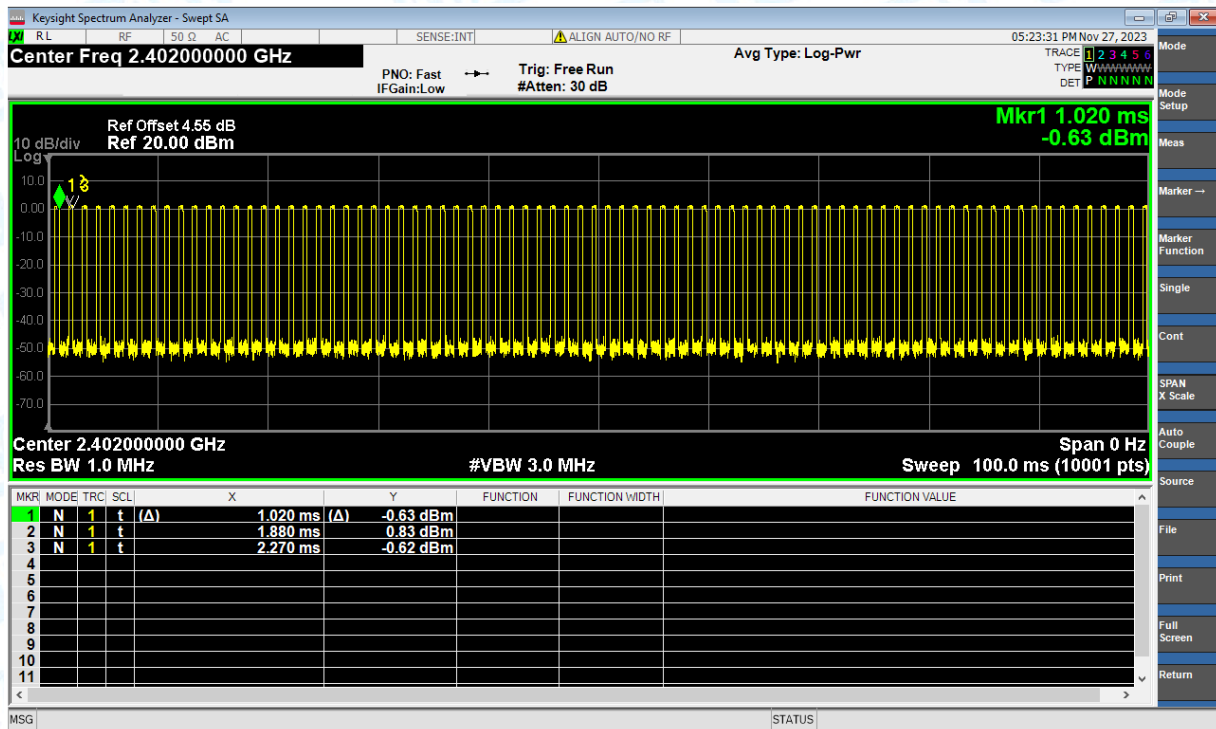
Duty Cycle NVNT 1-DH1 2441MHz Ant1



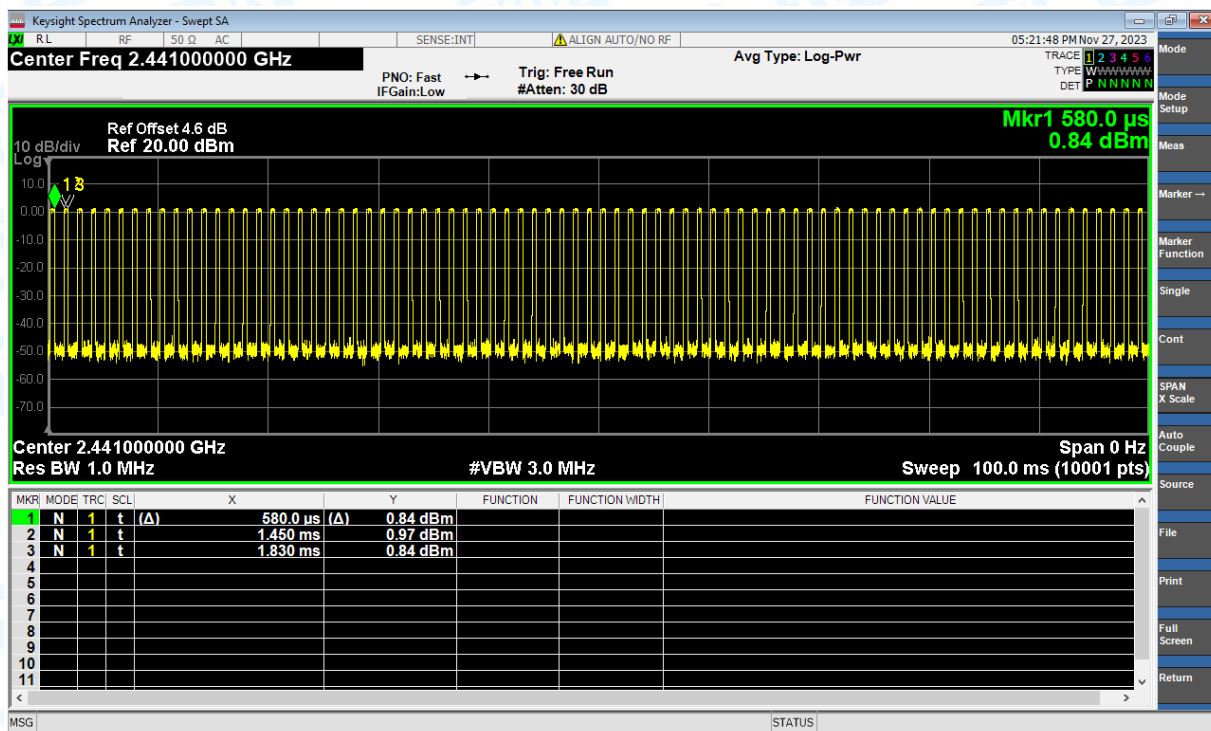
Duty Cycle NVNT 1-DH1 2480MHz Ant1



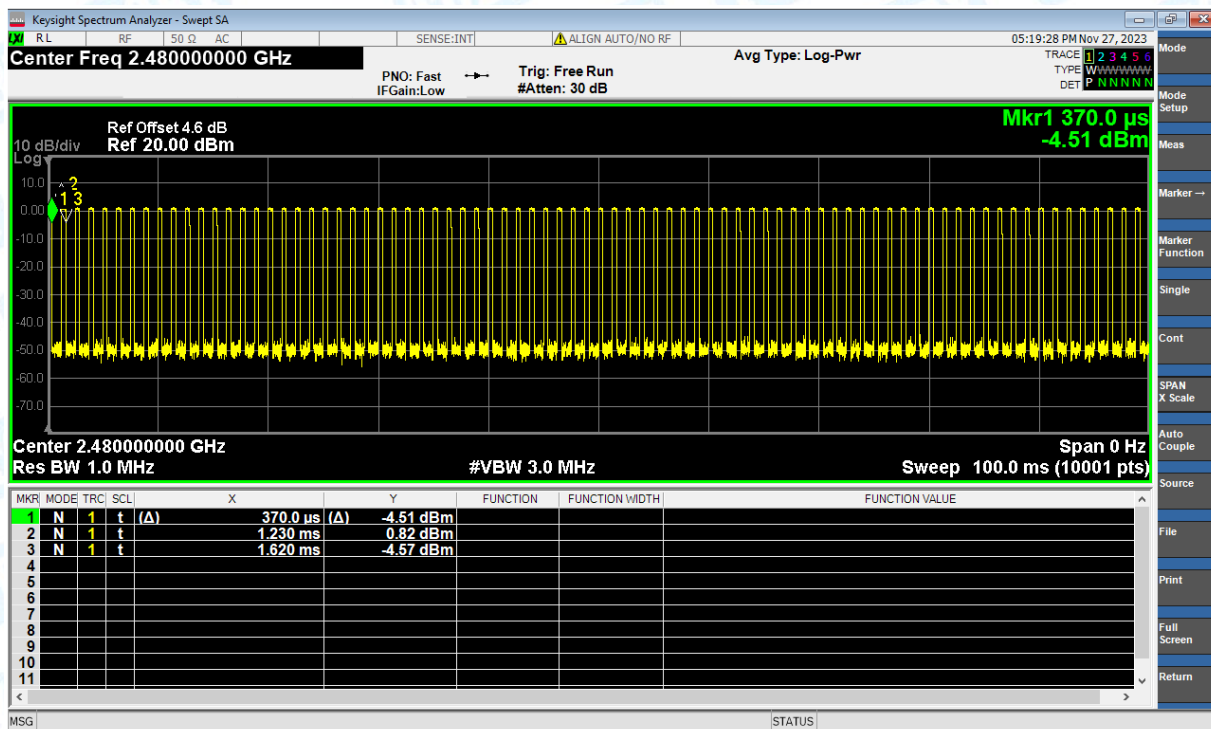
Duty Cycle NVNT 2-DH1 2402MHz Ant1



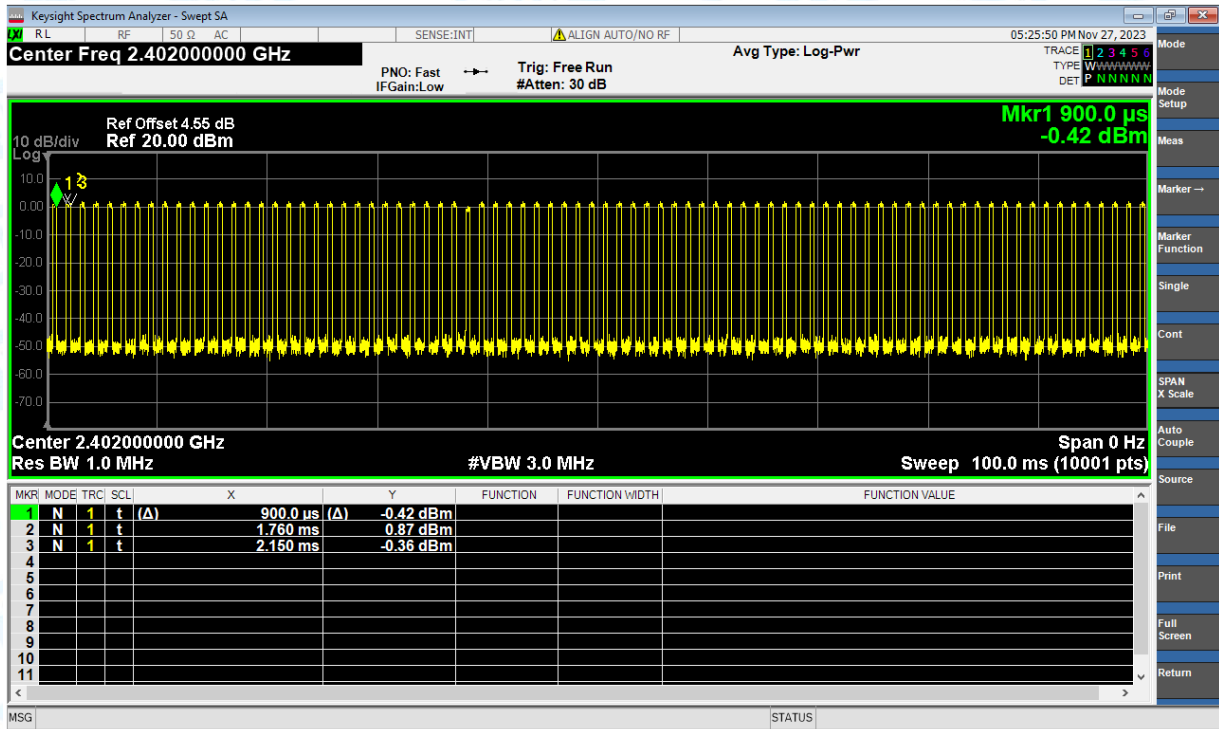
Duty Cycle NVNT 2-DH1 2441MHz Ant1



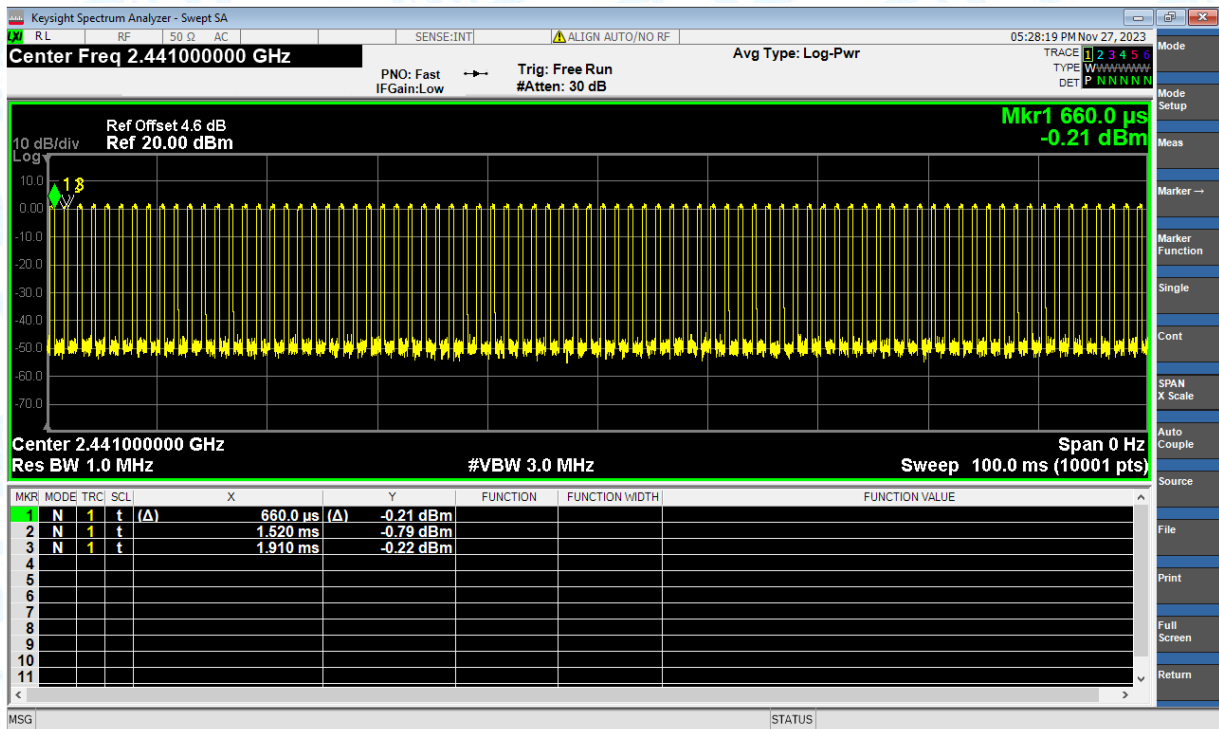
Duty Cycle NVNT 2-DH1 2480MHz Ant1

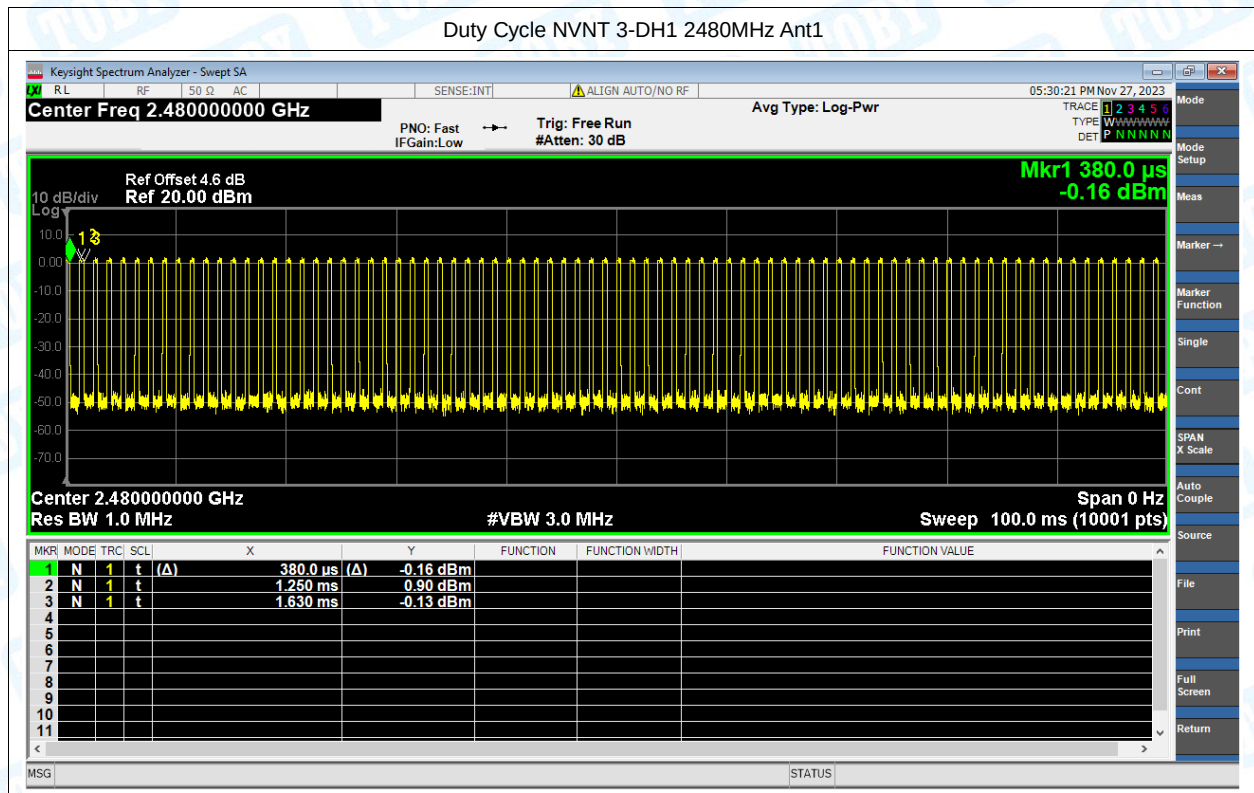


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



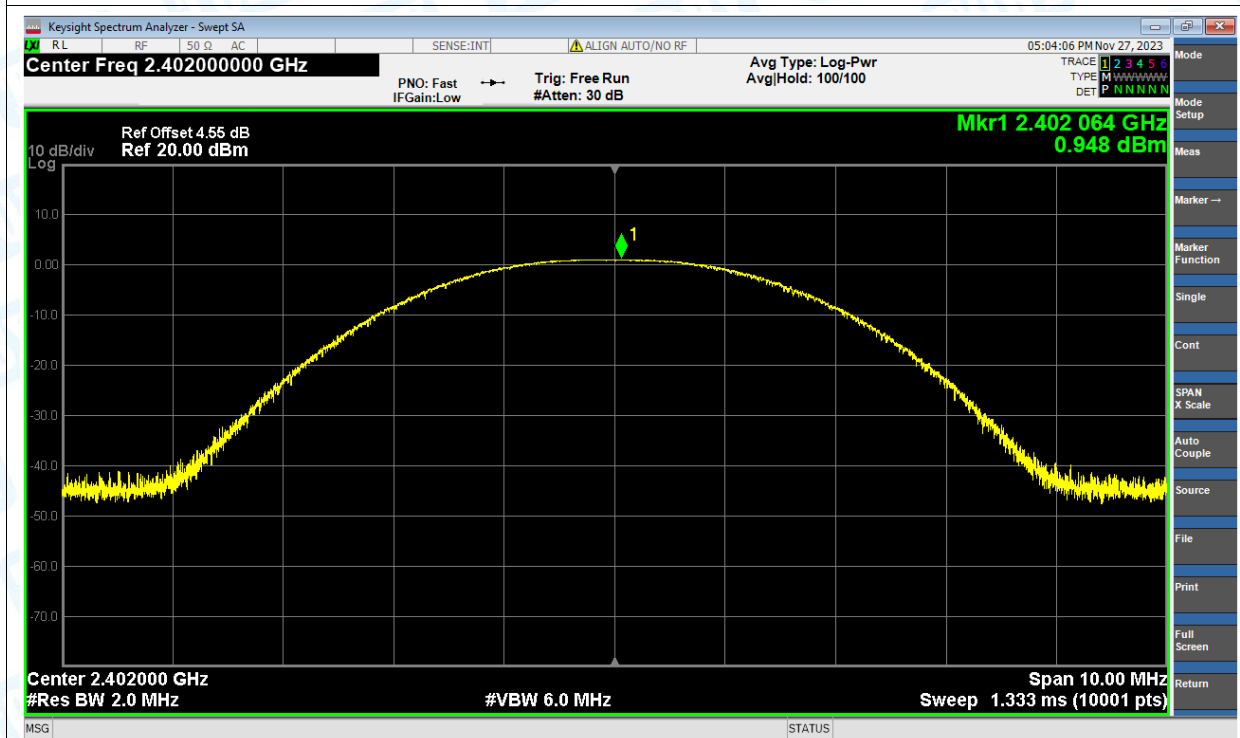


2. Maximum Conducted Output Power

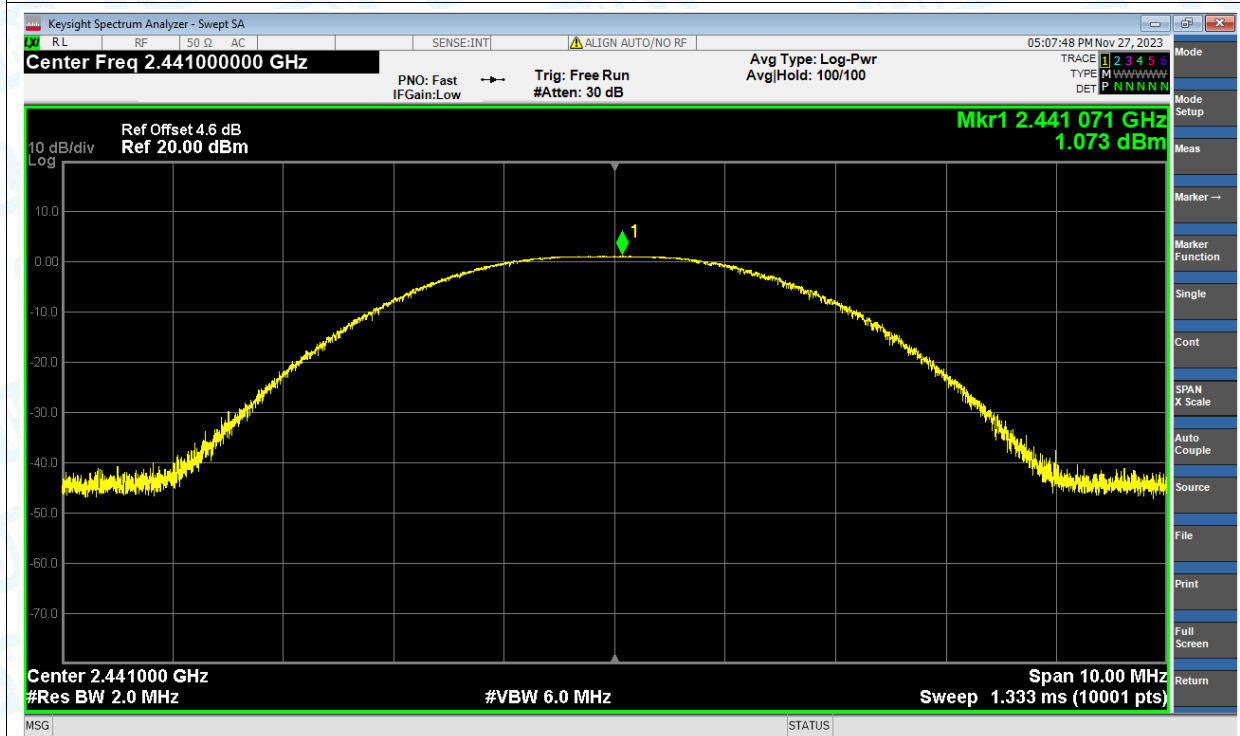
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	0.948	21	Pass
NVNT	1-DH1	2441	Ant1	1.073	21	Pass
NVNT	1-DH1	2480	Ant1	0.877	21	Pass
NVNT	2-DH1	2402	Ant1	1.747	21	Pass
NVNT	2-DH1	2441	Ant1	1.848	21	Pass
NVNT	2-DH1	2480	Ant1	1.658	21	Pass
NVNT	3-DH1	2402	Ant1	2.356	21	Pass
NVNT	3-DH1	2441	Ant1	2.464	21	Pass
NVNT	3-DH1	2480	Ant1	2.334	21	Pass

Test Graphs

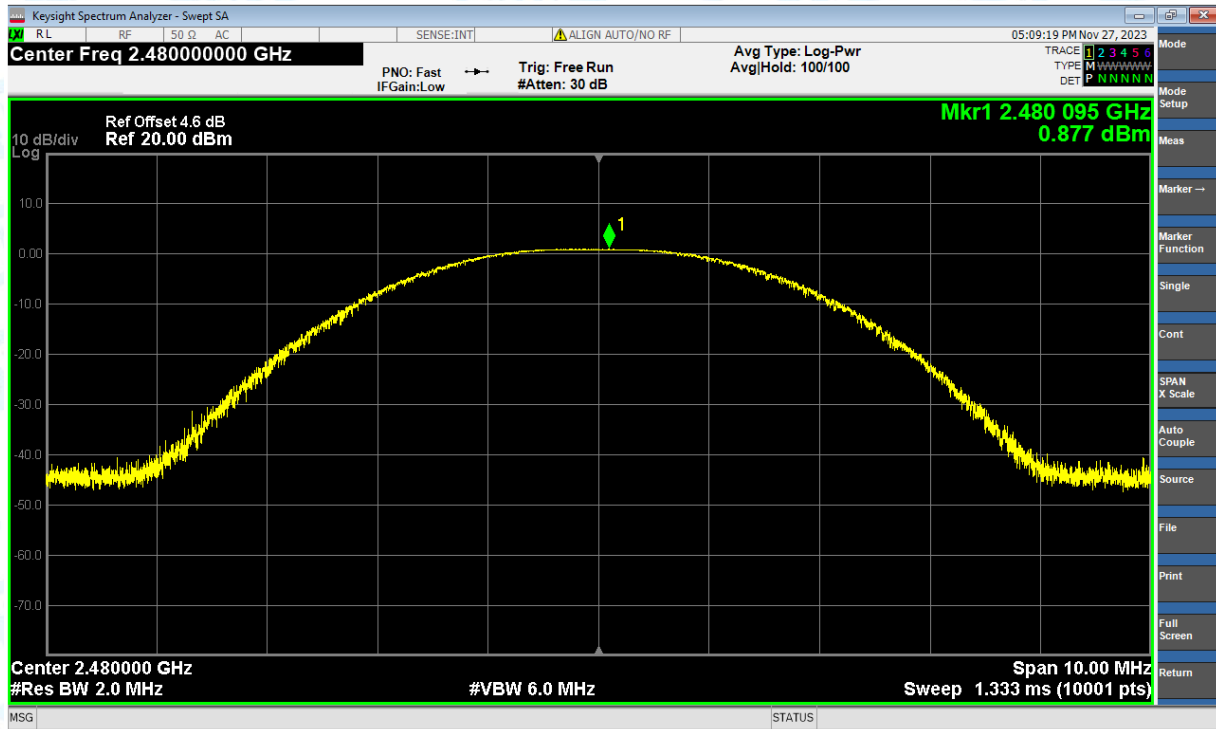
Power NVNT 1-DH1 2402MHz Ant1



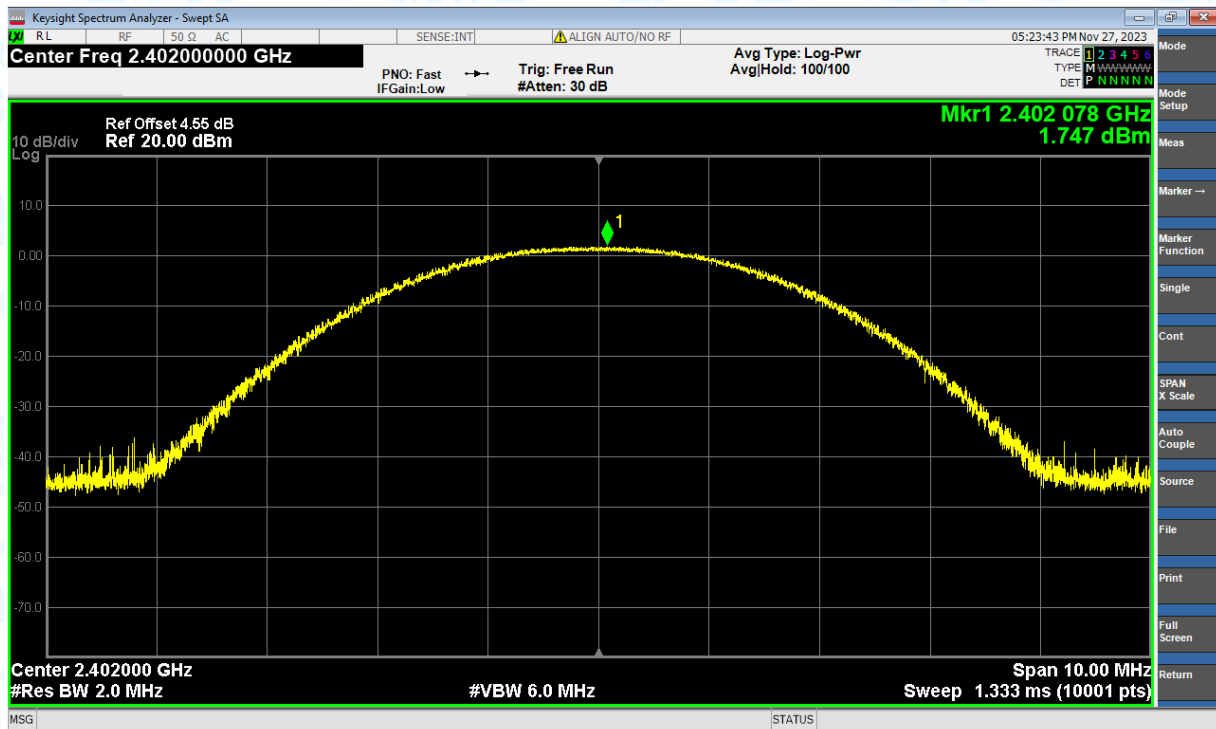
Power NVNT 1-DH1 2441MHz Ant1



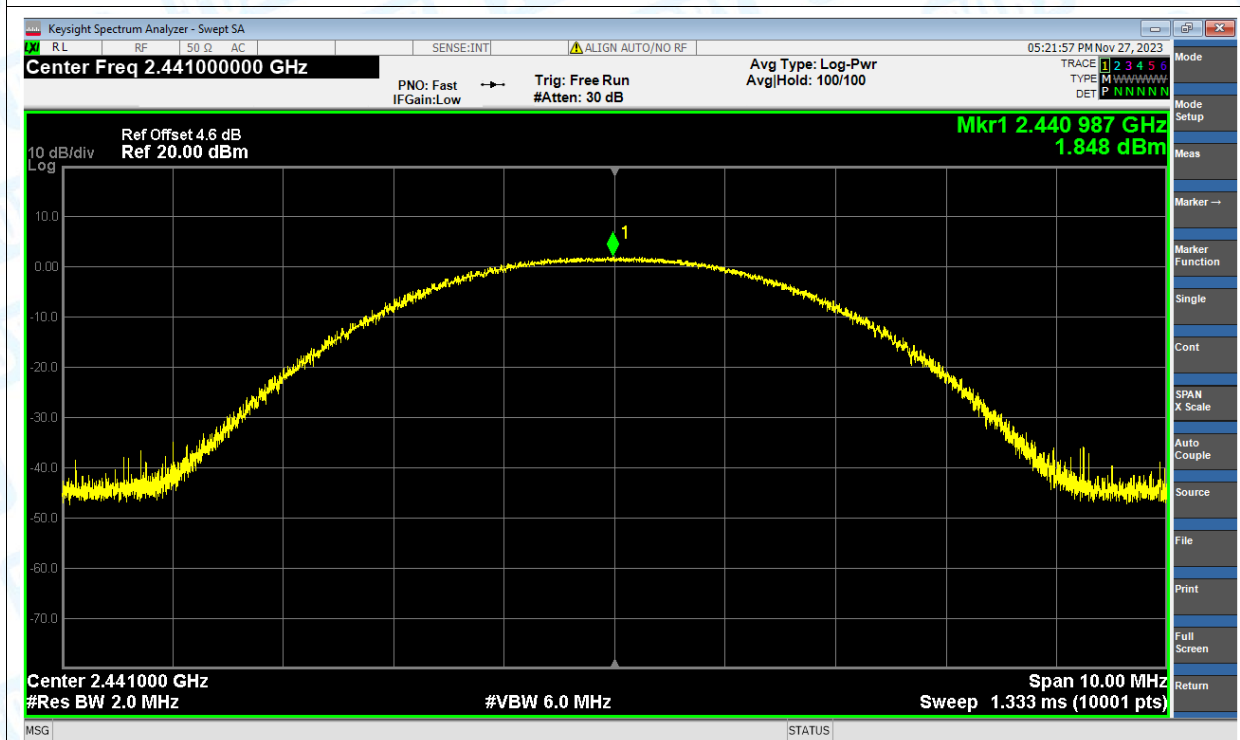
Power NVNT 1-DH1 2480MHz Ant1



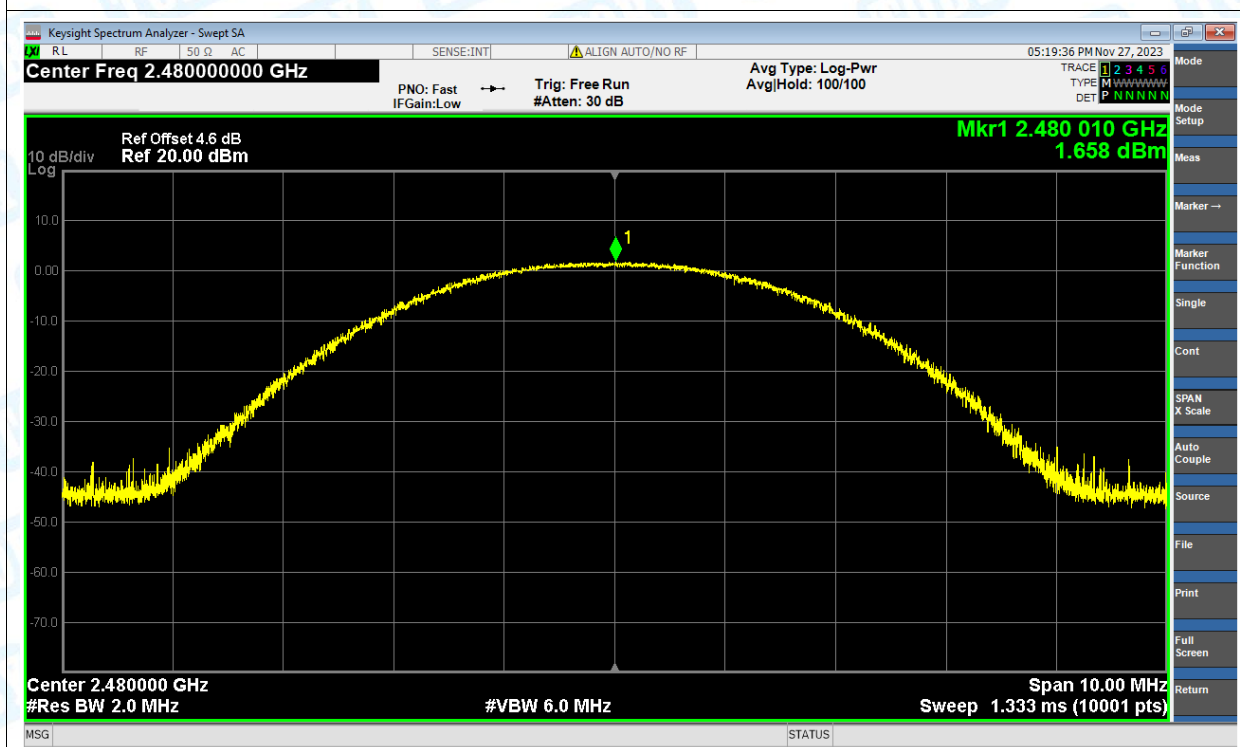
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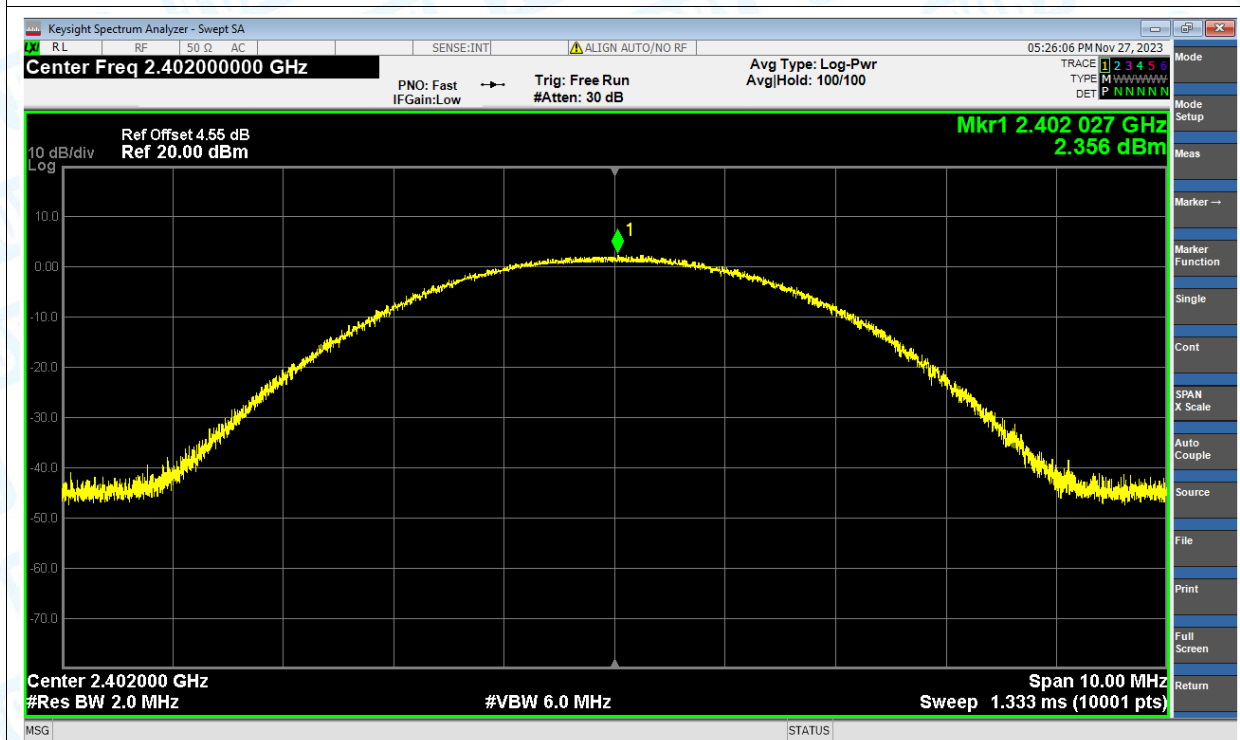
Power NVNT 2-DH1 2441MHz Ant1



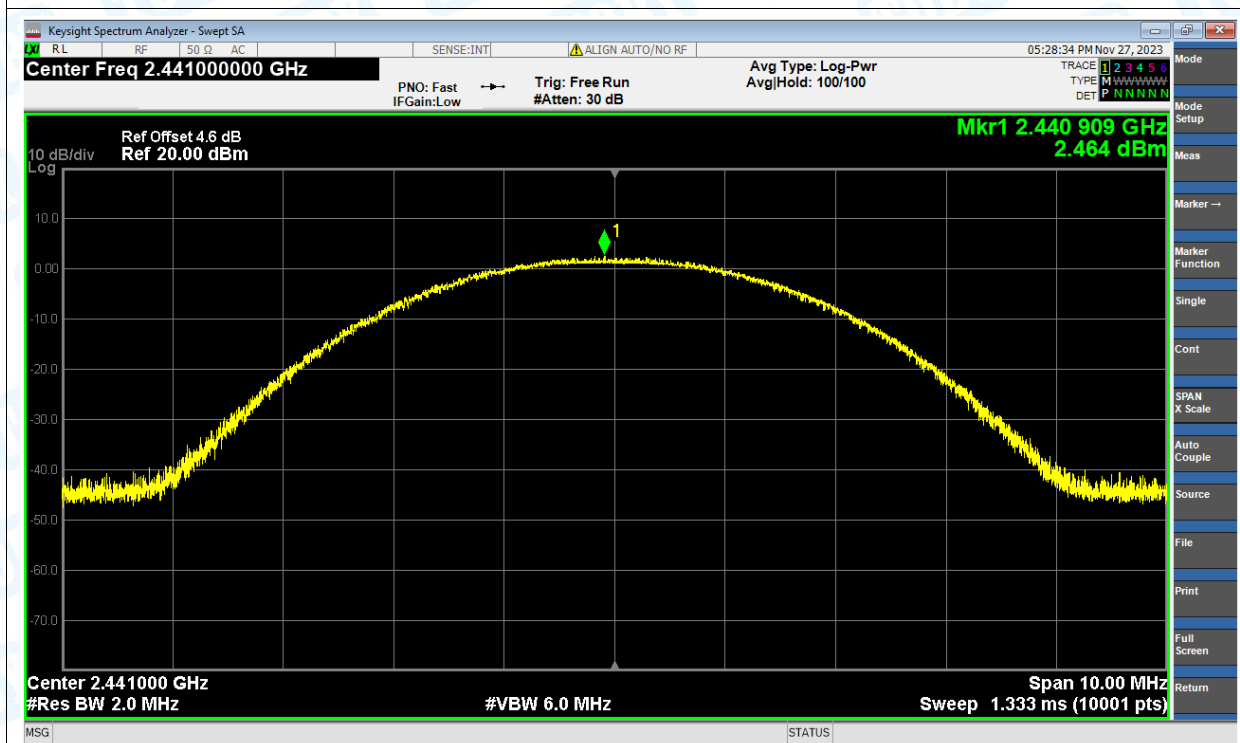
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



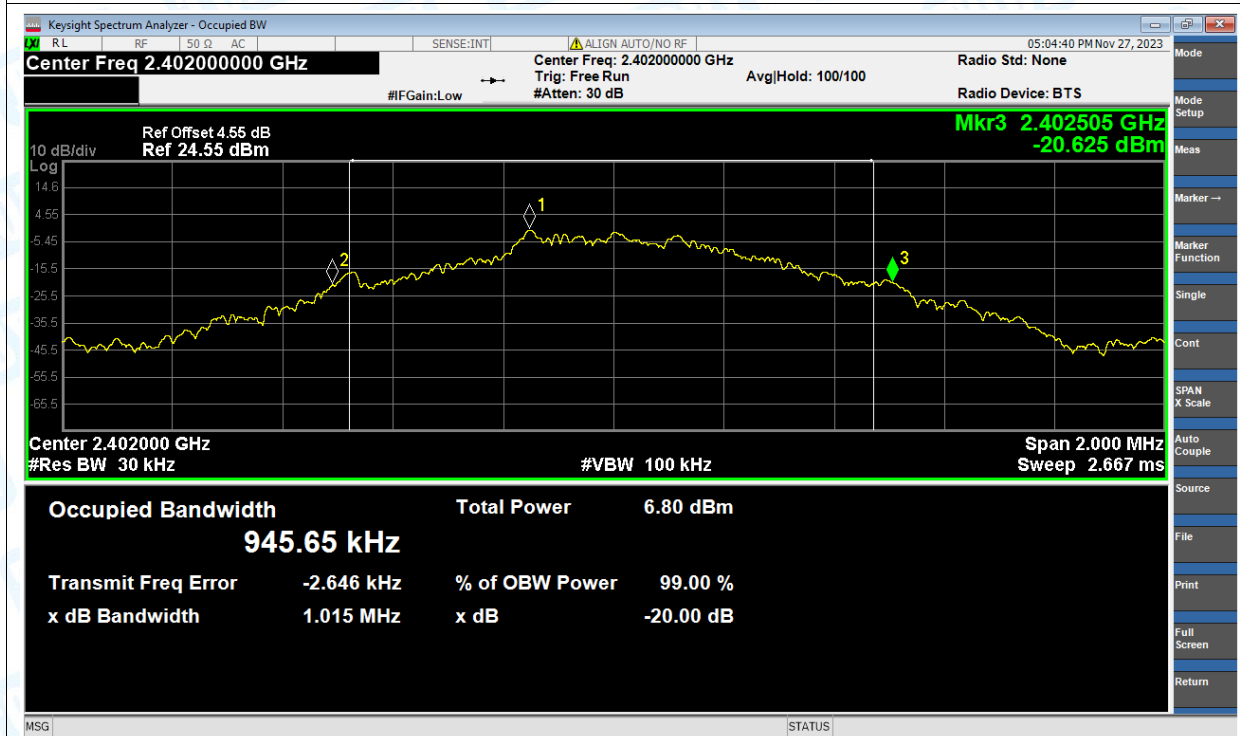


3. -20dB Bandwidth

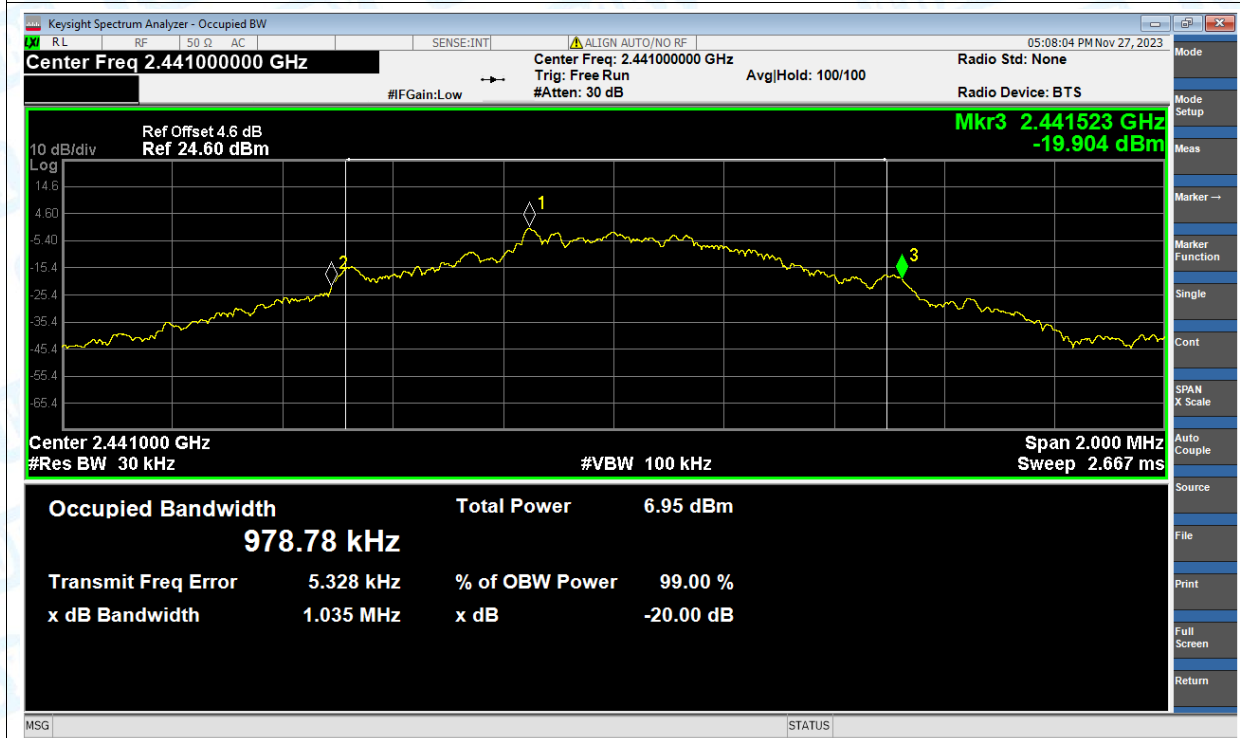
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	1.02	0	Pass
NVNT	1-DH1	2441	Ant1	1.04	0	Pass
NVNT	1-DH1	2480	Ant1	1.04	0	Pass
NVNT	2-DH1	2402	Ant1	1.3	0	Pass
NVNT	2-DH1	2441	Ant1	1.3	0	Pass
NVNT	2-DH1	2480	Ant1	1.31	0	Pass
NVNT	3-DH1	2402	Ant1	1.27	0	Pass
NVNT	3-DH1	2441	Ant1	1.28	0	Pass
NVNT	3-DH1	2480	Ant1	1.25	0	Pass

Test Graphs

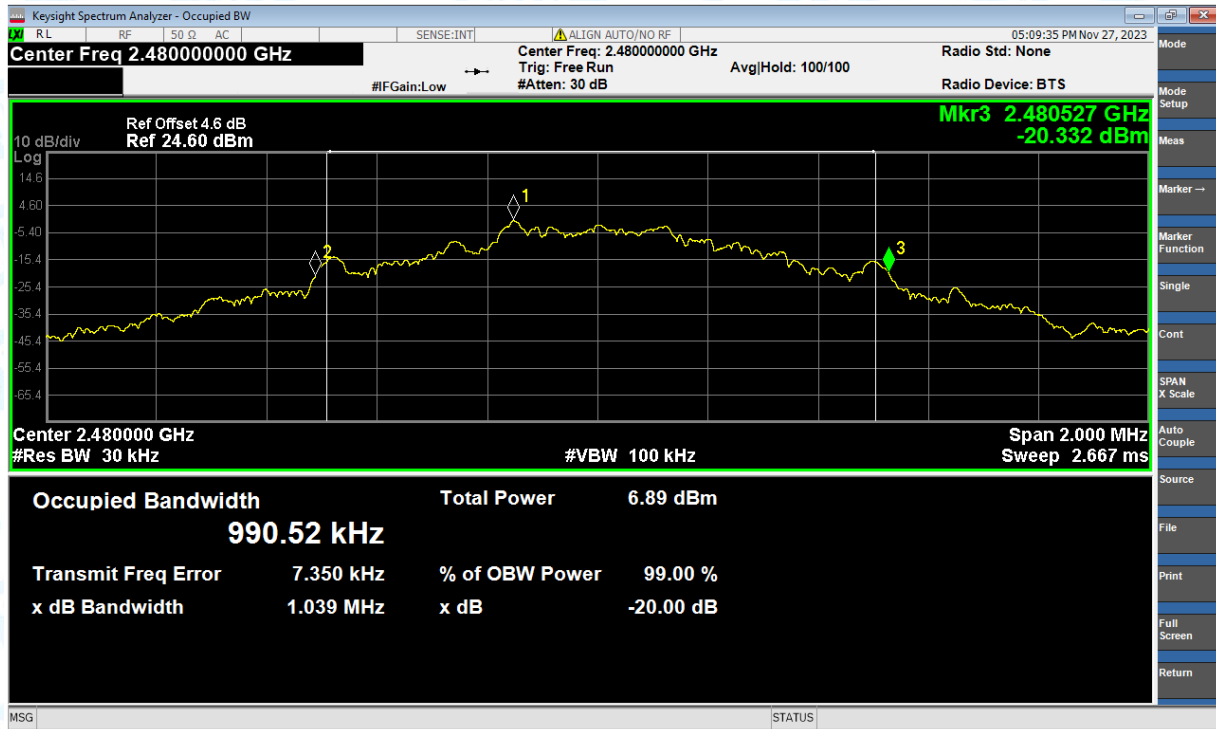
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



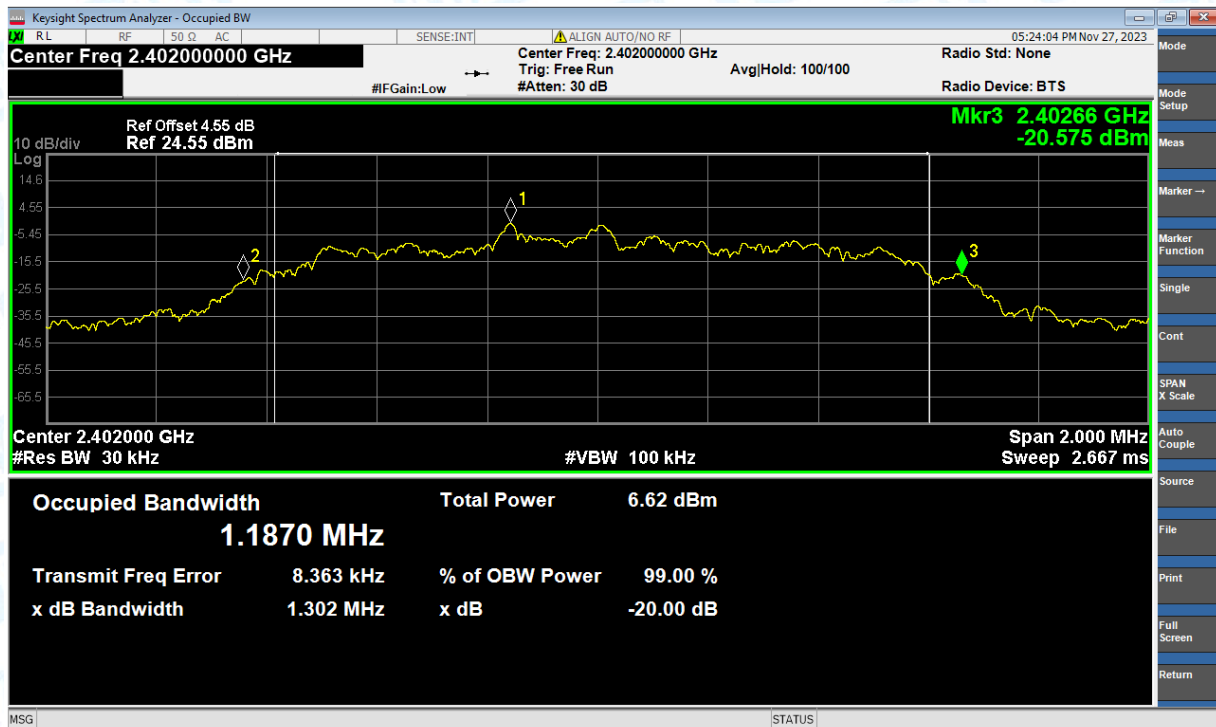
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



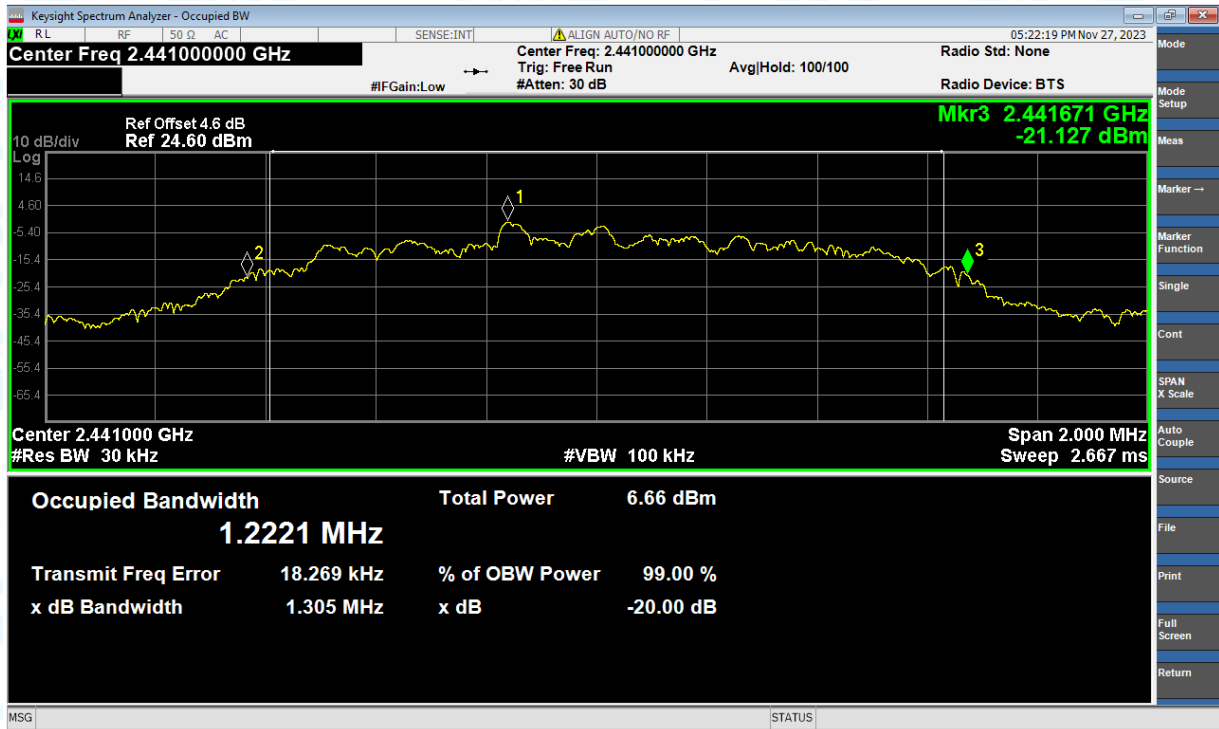
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



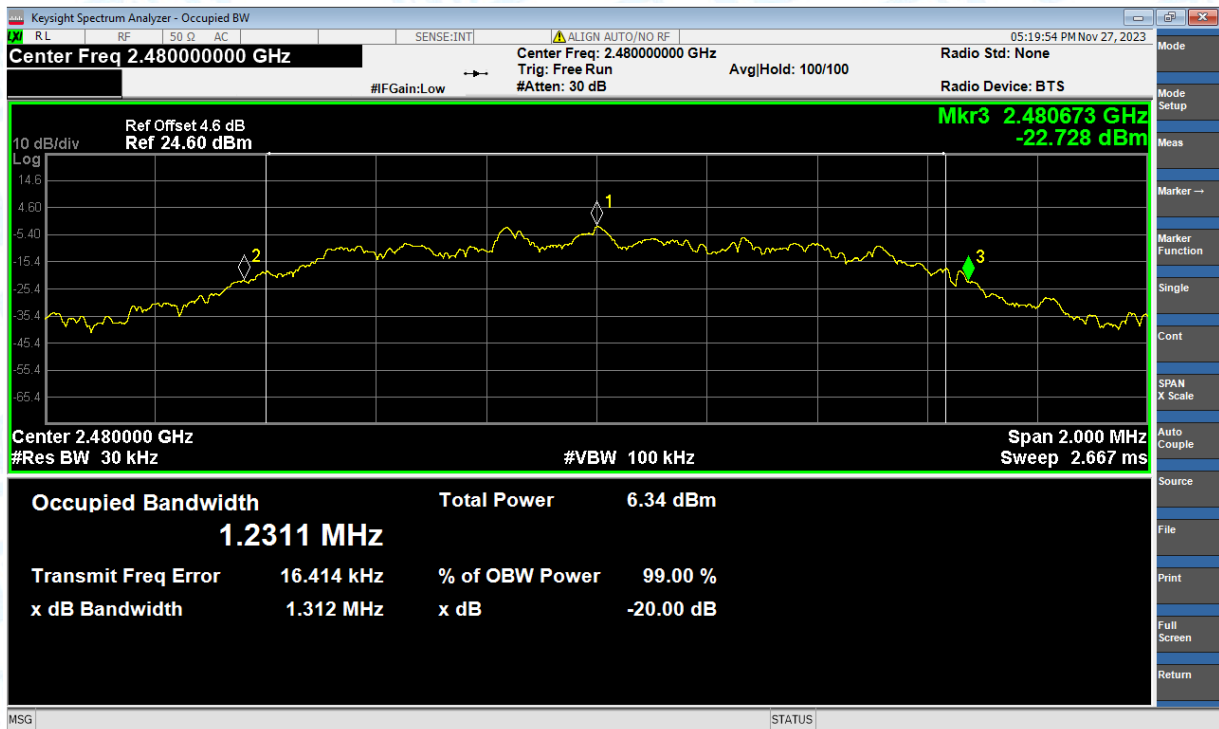
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



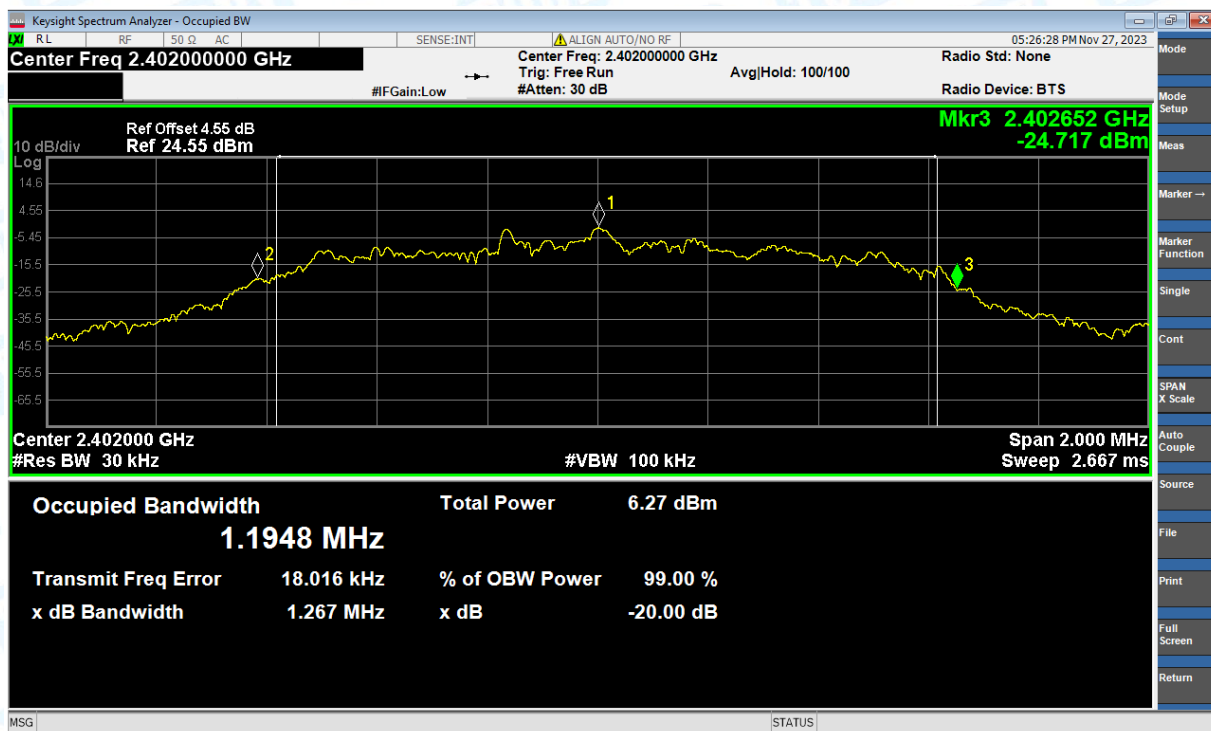
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



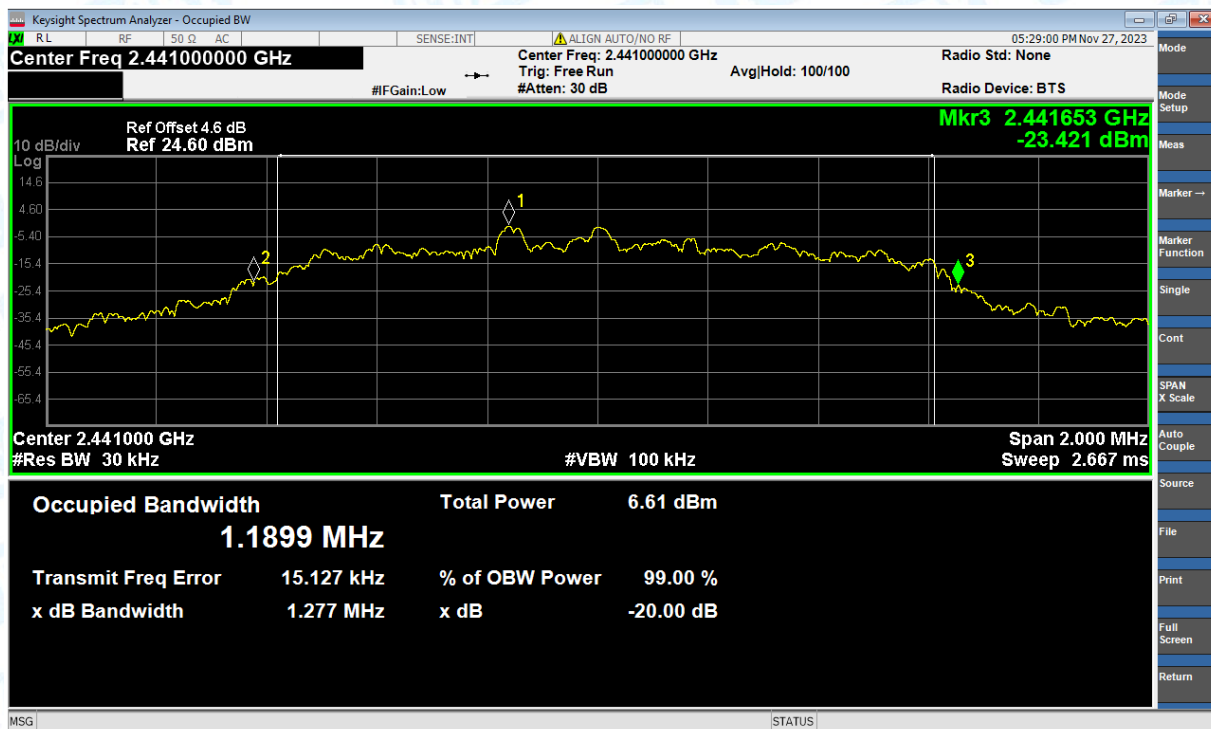
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

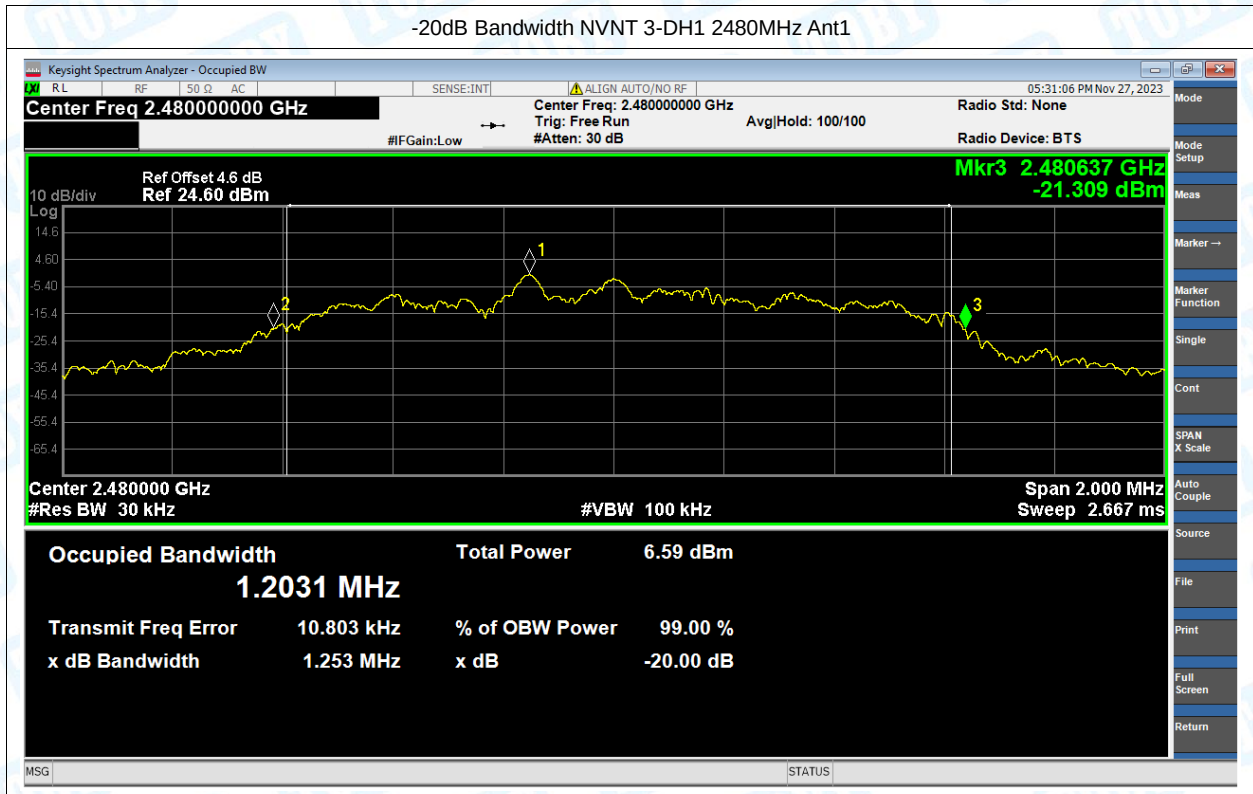


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



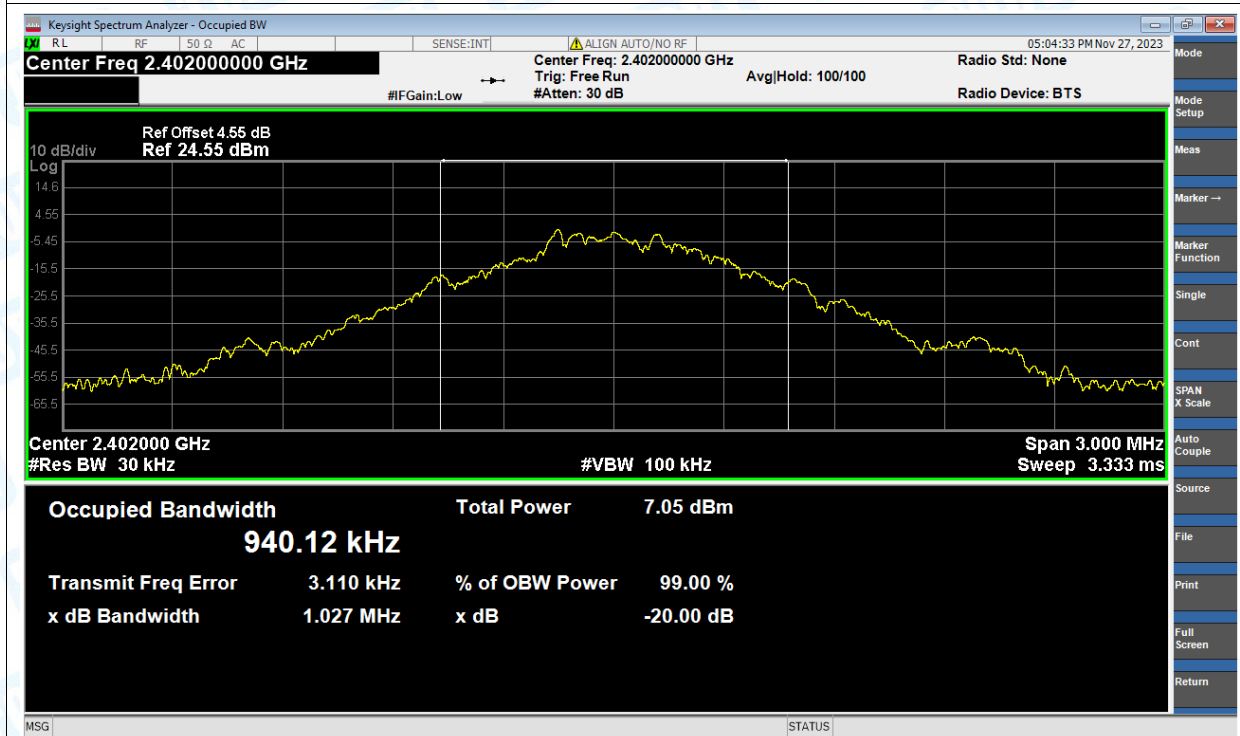


4. Occupied Channel Bandwidth

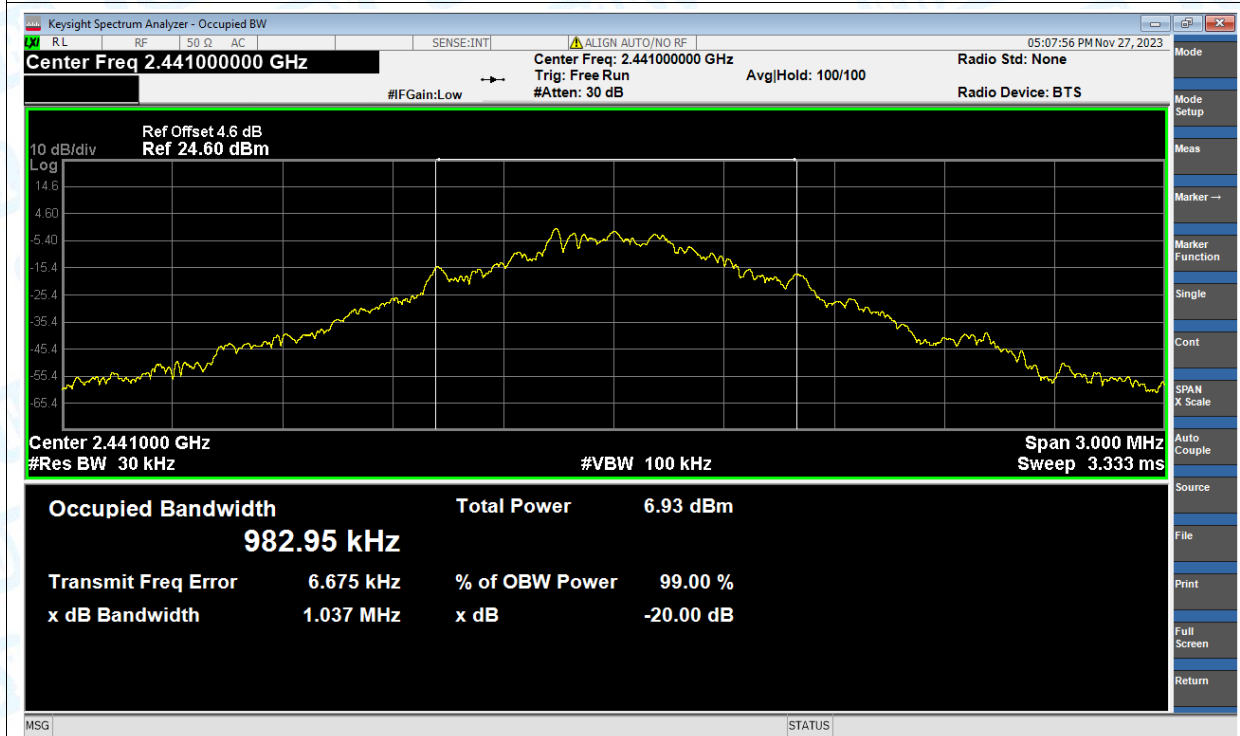
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.94
NVNT	1-DH1	2441	Ant1	0.983
NVNT	1-DH1	2480	Ant1	0.992
NVNT	2-DH1	2402	Ant1	1.206
NVNT	2-DH1	2441	Ant1	1.224
NVNT	2-DH1	2480	Ant1	1.215
NVNT	3-DH1	2402	Ant1	1.188
NVNT	3-DH1	2441	Ant1	1.191
NVNT	3-DH1	2480	Ant1	1.205

Test Graphs

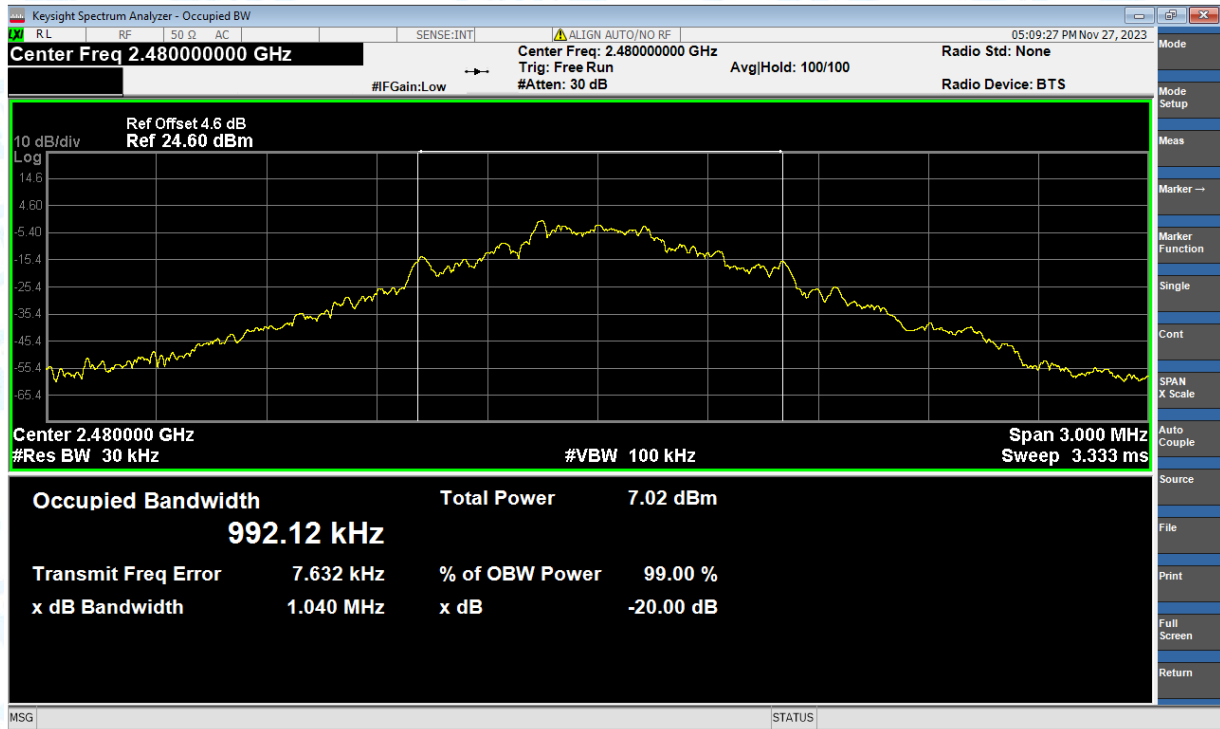
OBW NVNT 1-DH1 2402MHz Ant1



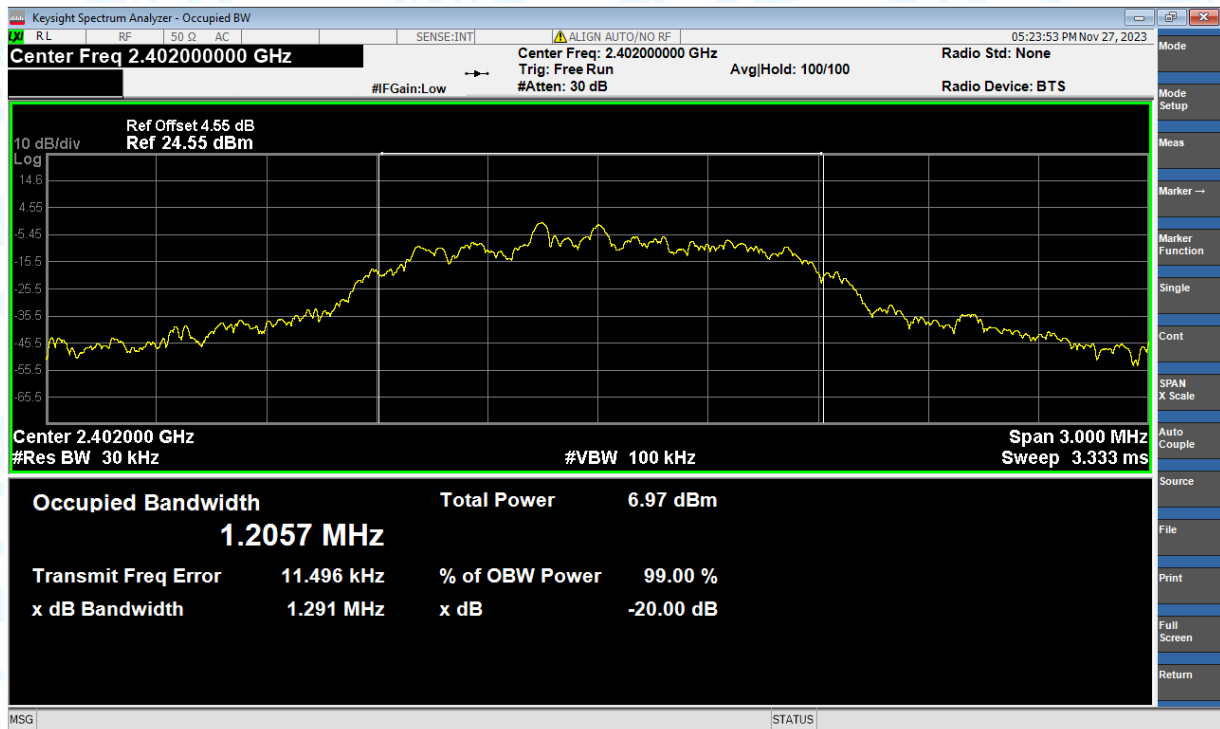
OBW NVNT 1-DH1 2441MHz Ant1



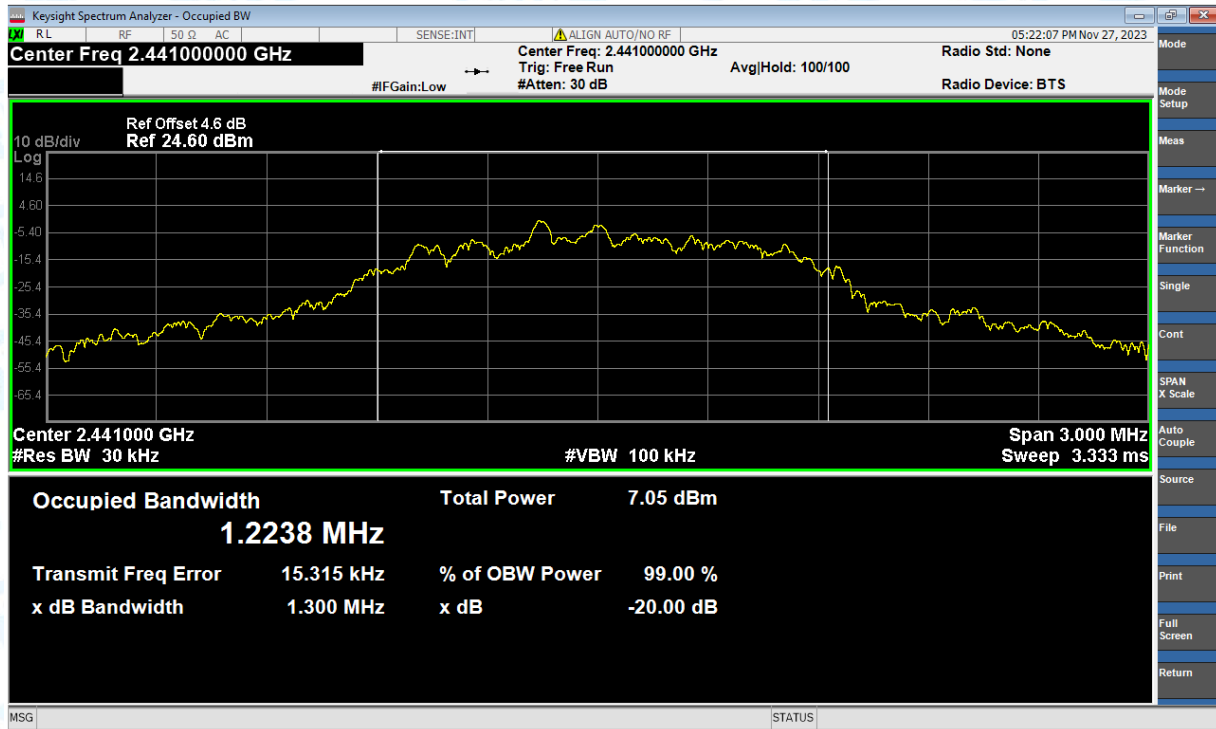
OBW NVNT 1-DH1 2480MHz Ant1



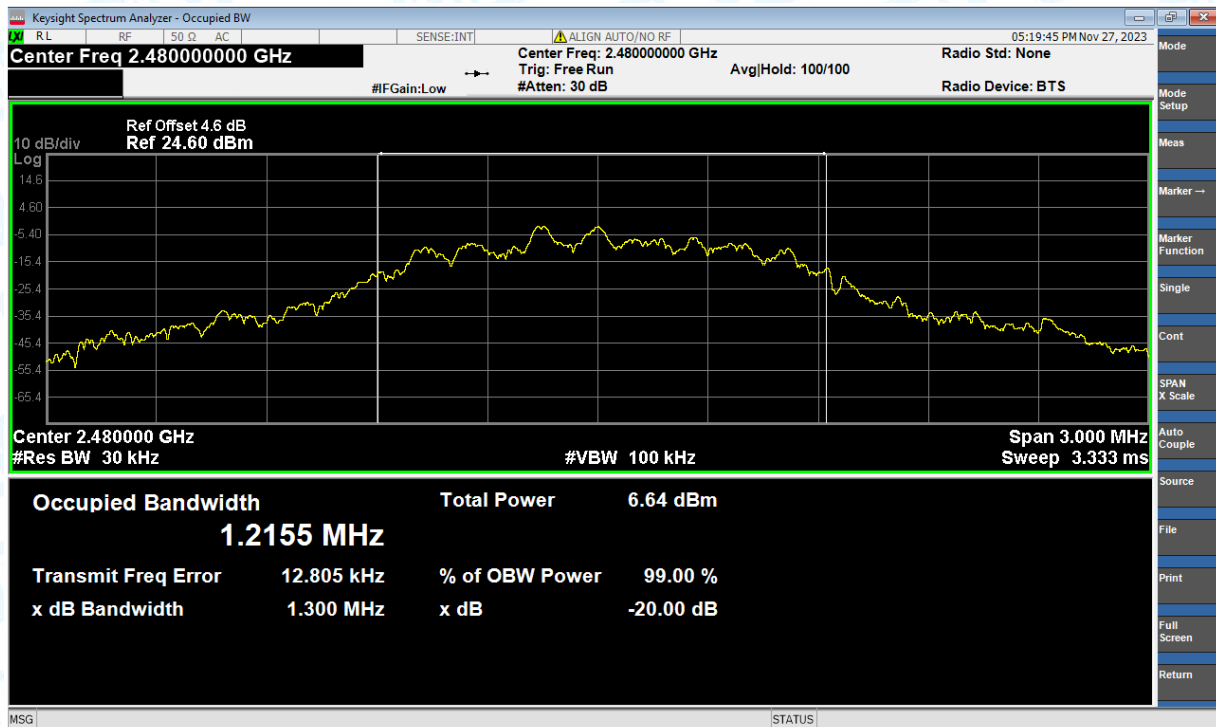
OBW NVNT 2-DH1 2402MHz Ant1



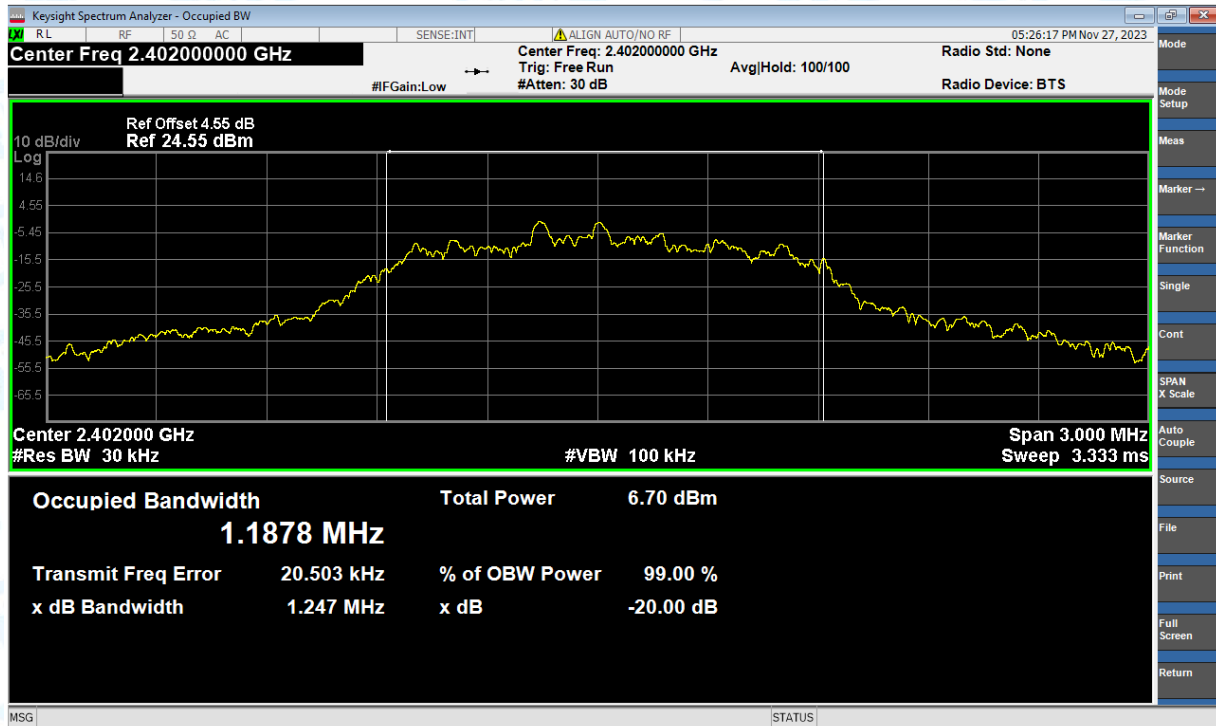
OBW NVNT 2-DH1 2441MHz Ant1



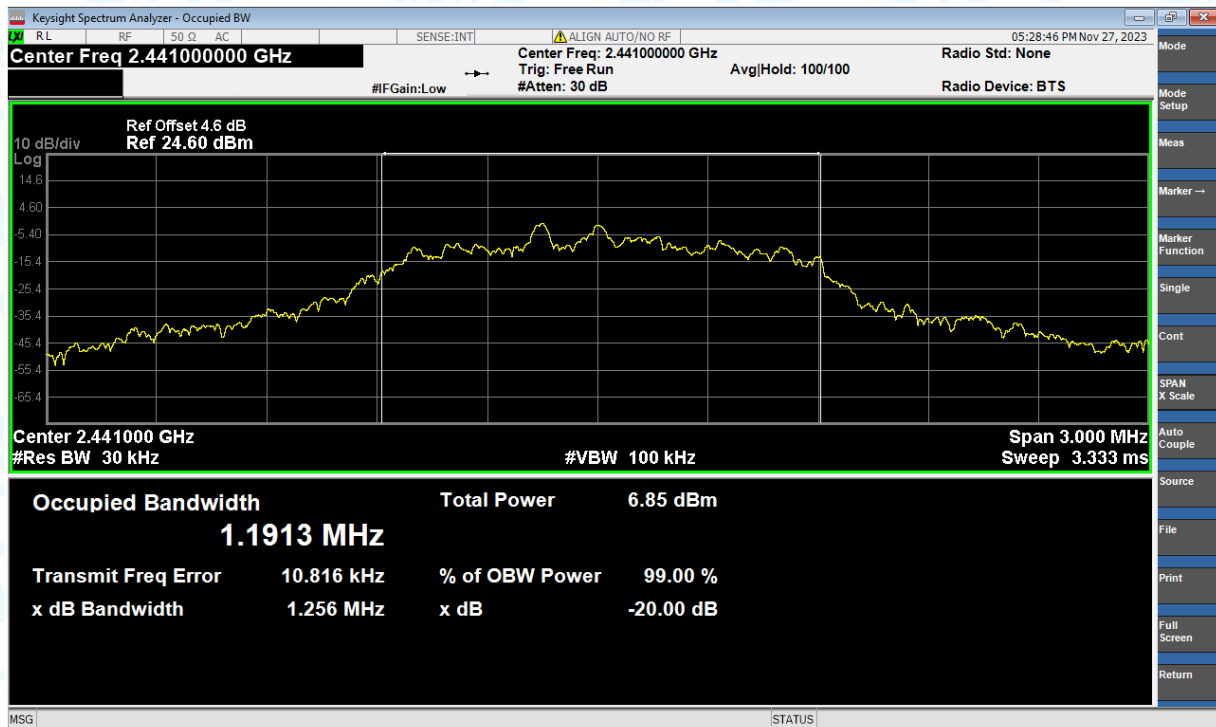
OBW NVNT 2-DH1 2480MHz Ant1

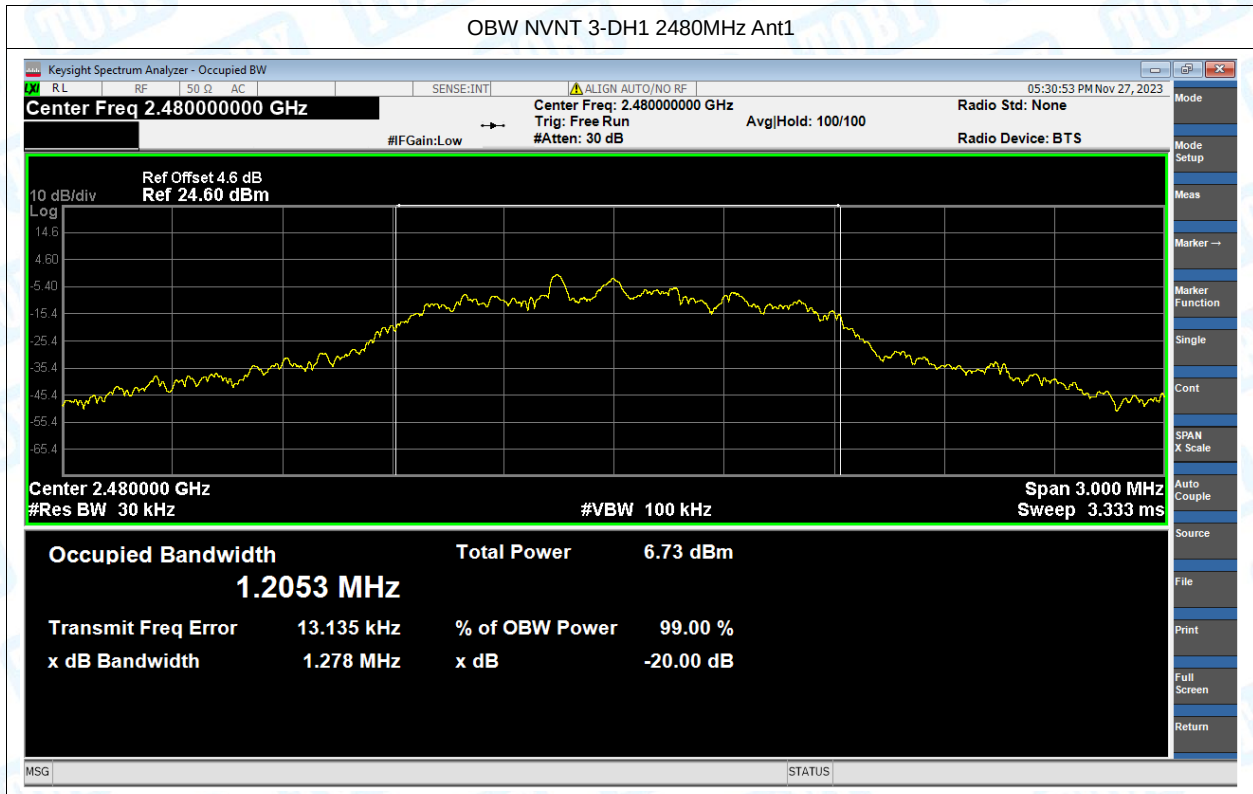


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



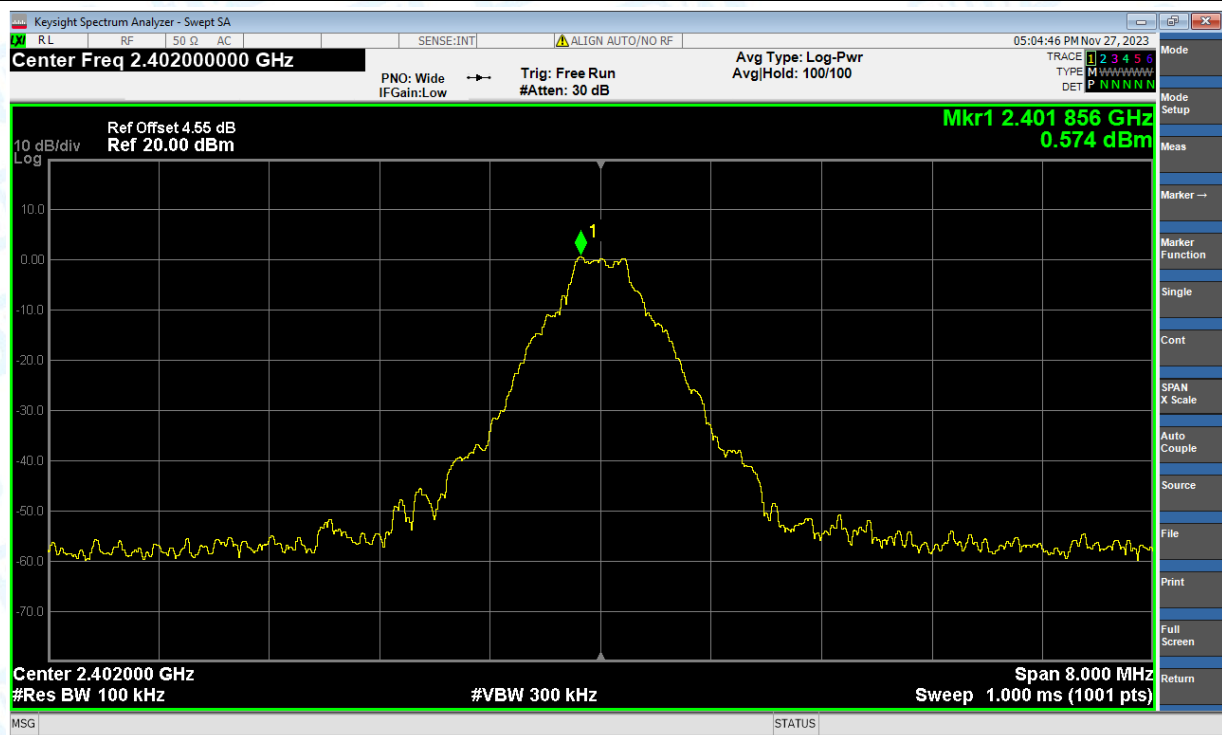


5. Band Edge

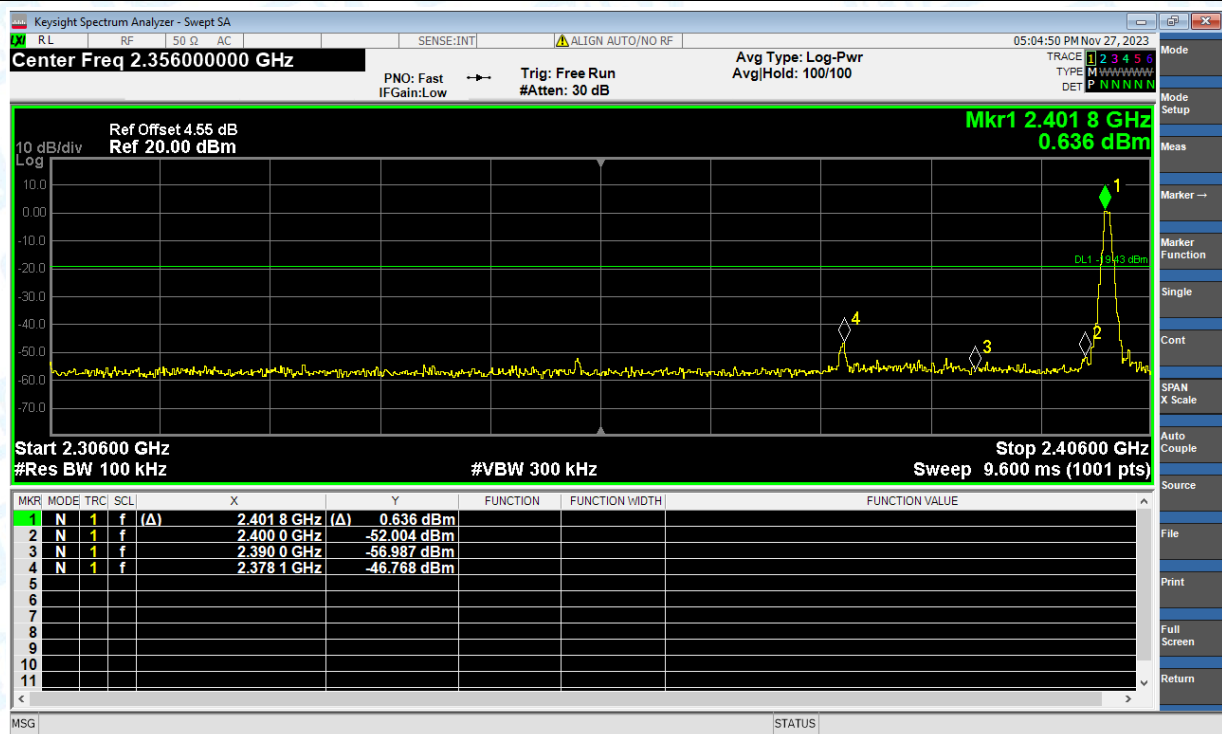
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-47.34	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-52.95	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-47.47	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-53.09	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-49.36	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-53.78	-20	Pass

Test Graphs

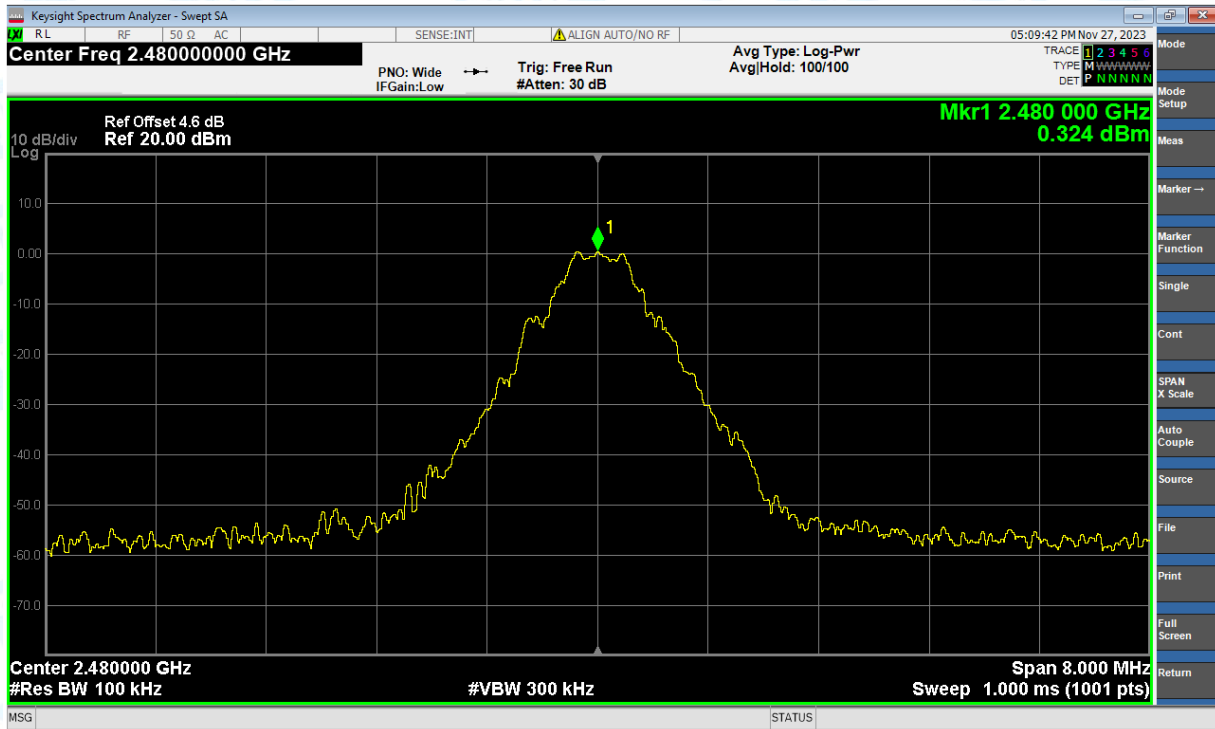
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



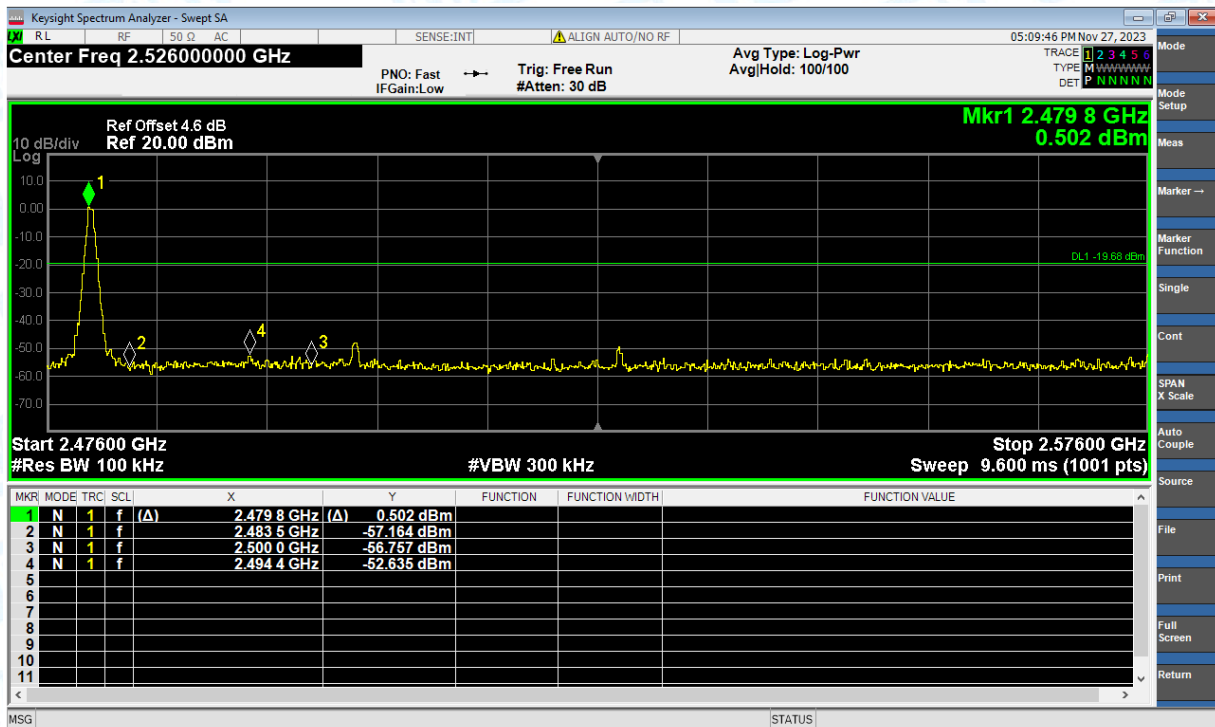
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



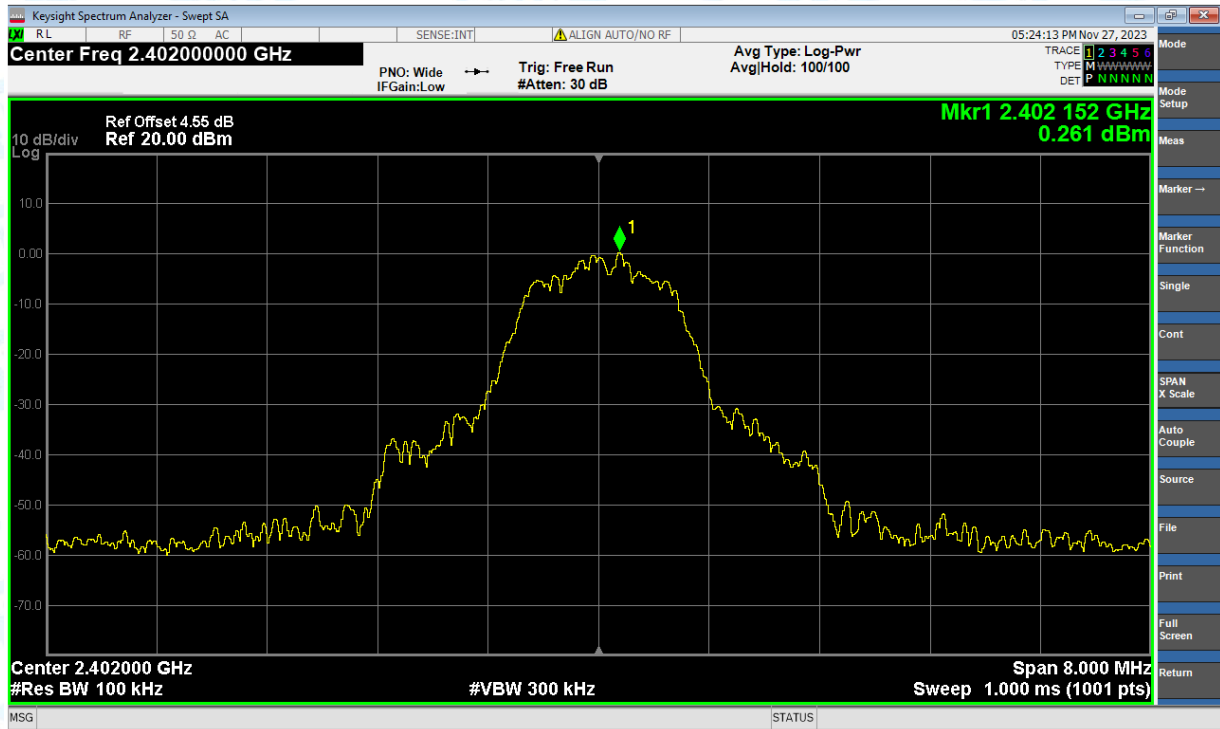
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



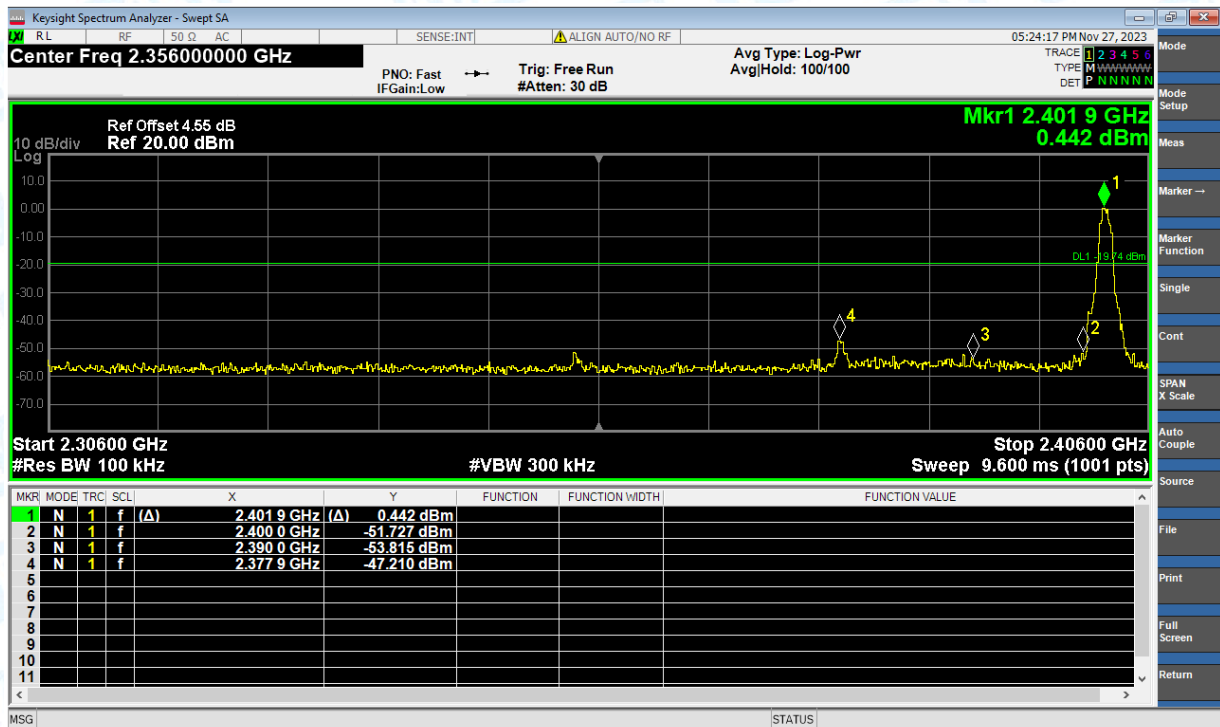
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



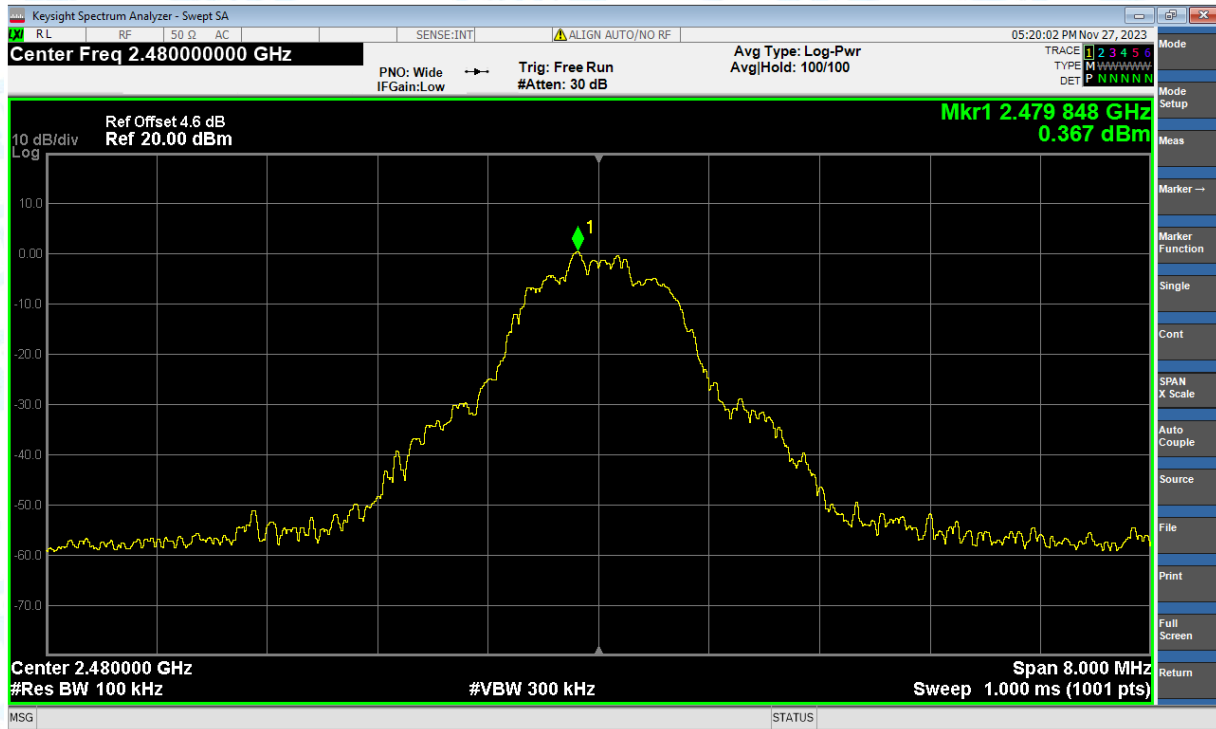
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



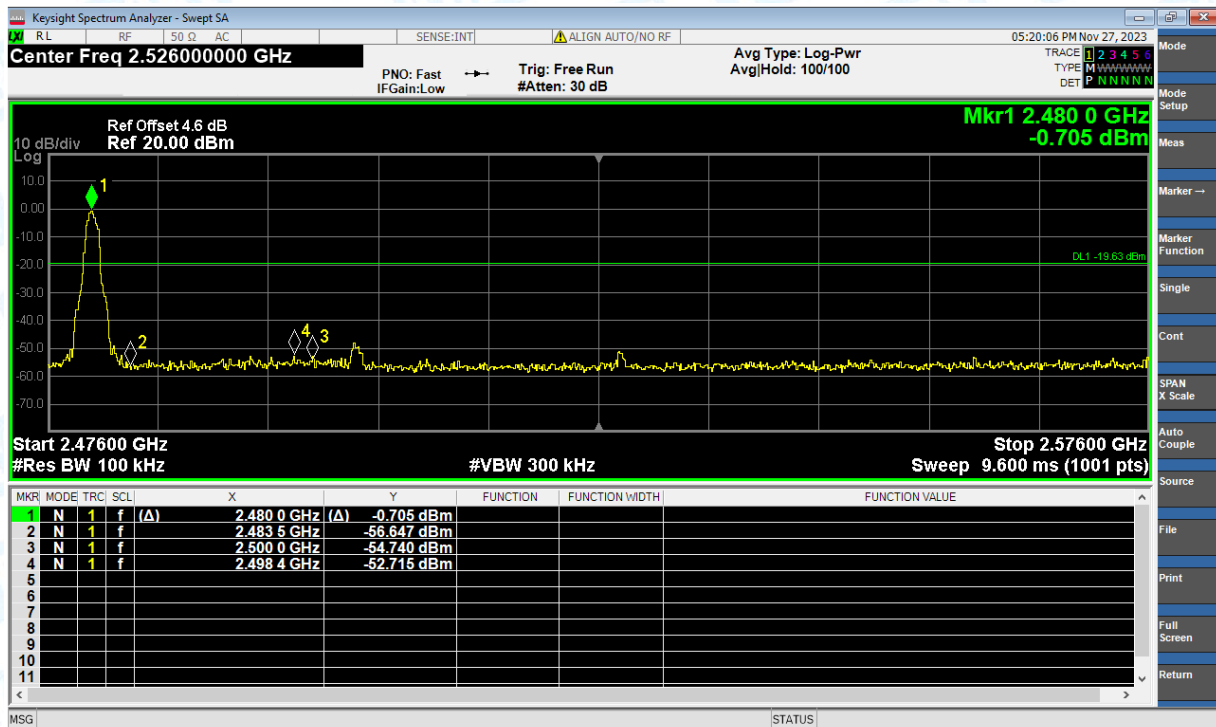
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



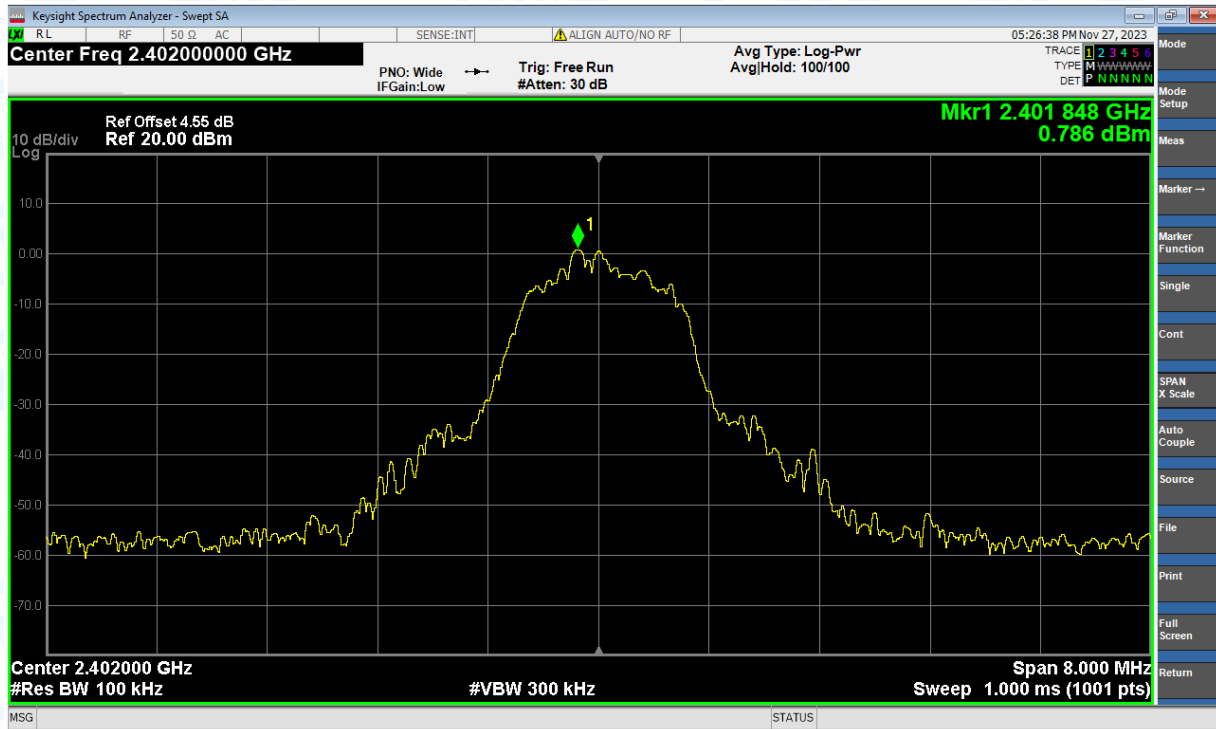
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



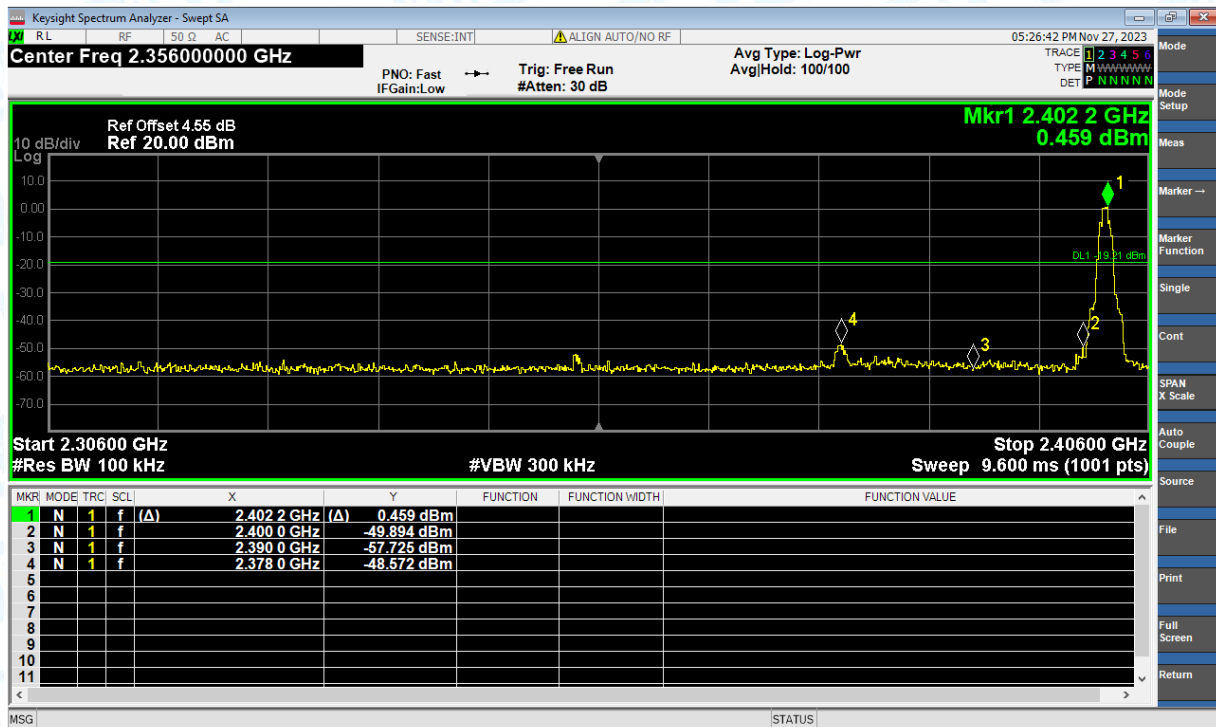
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



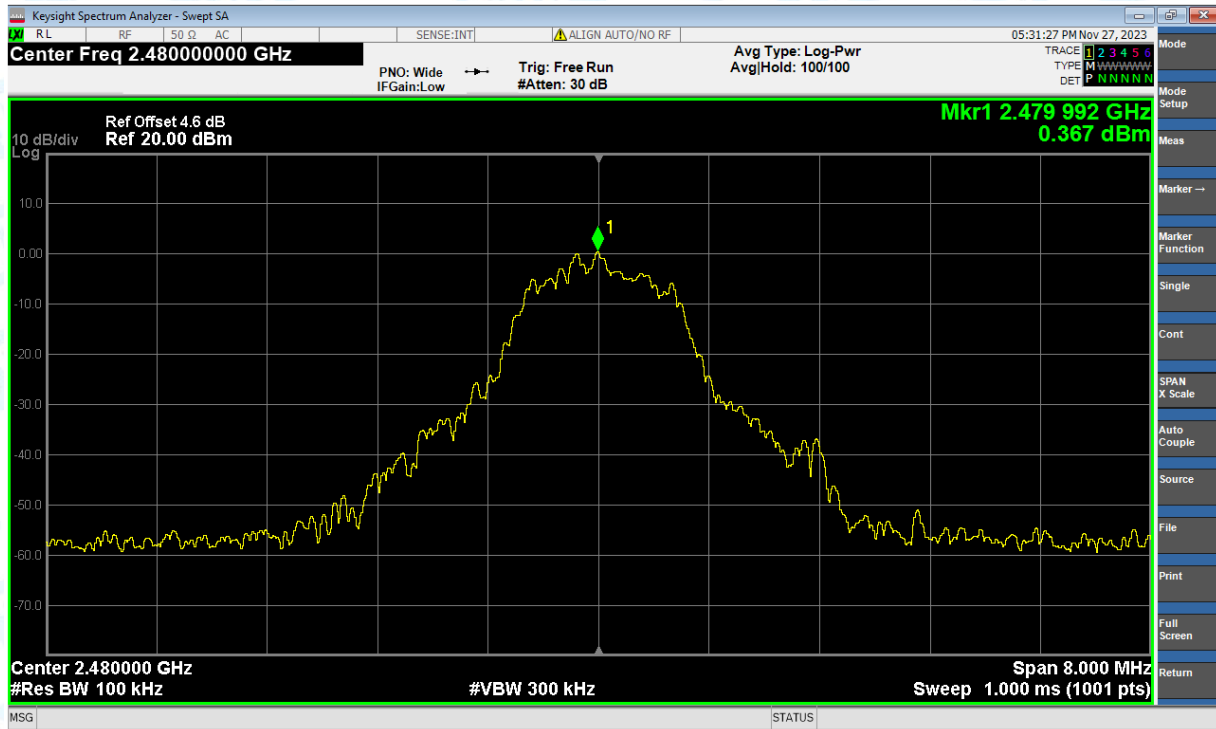
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



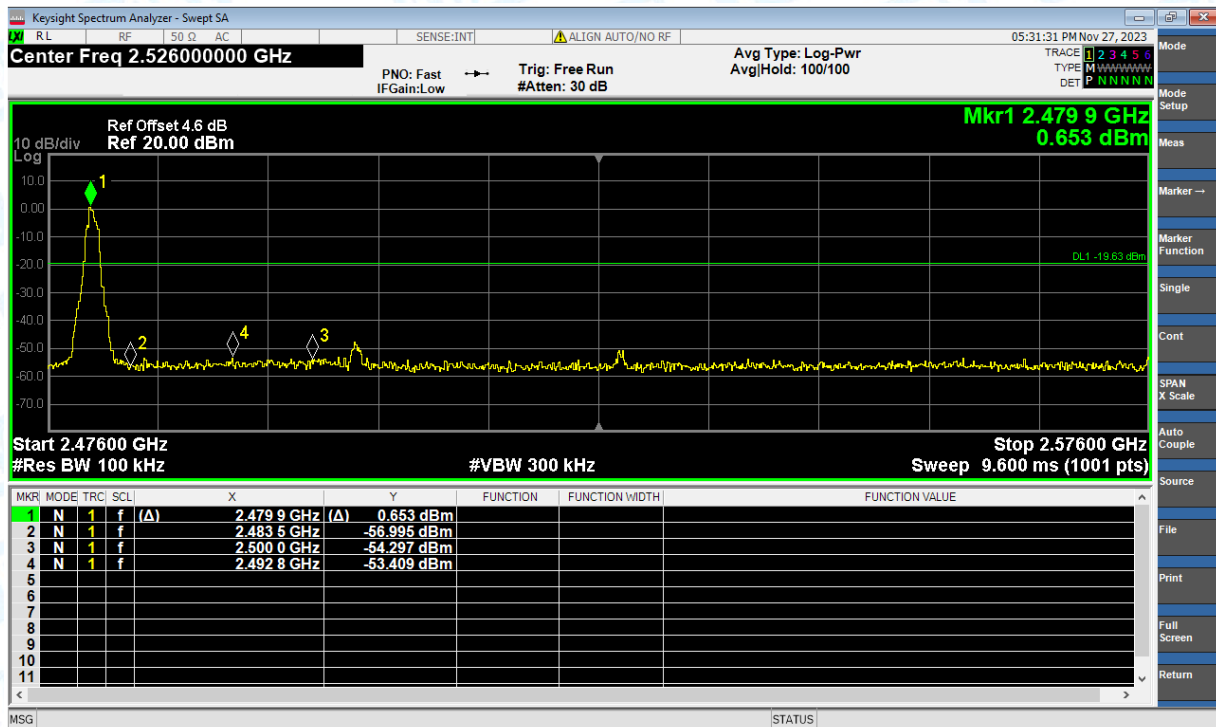
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

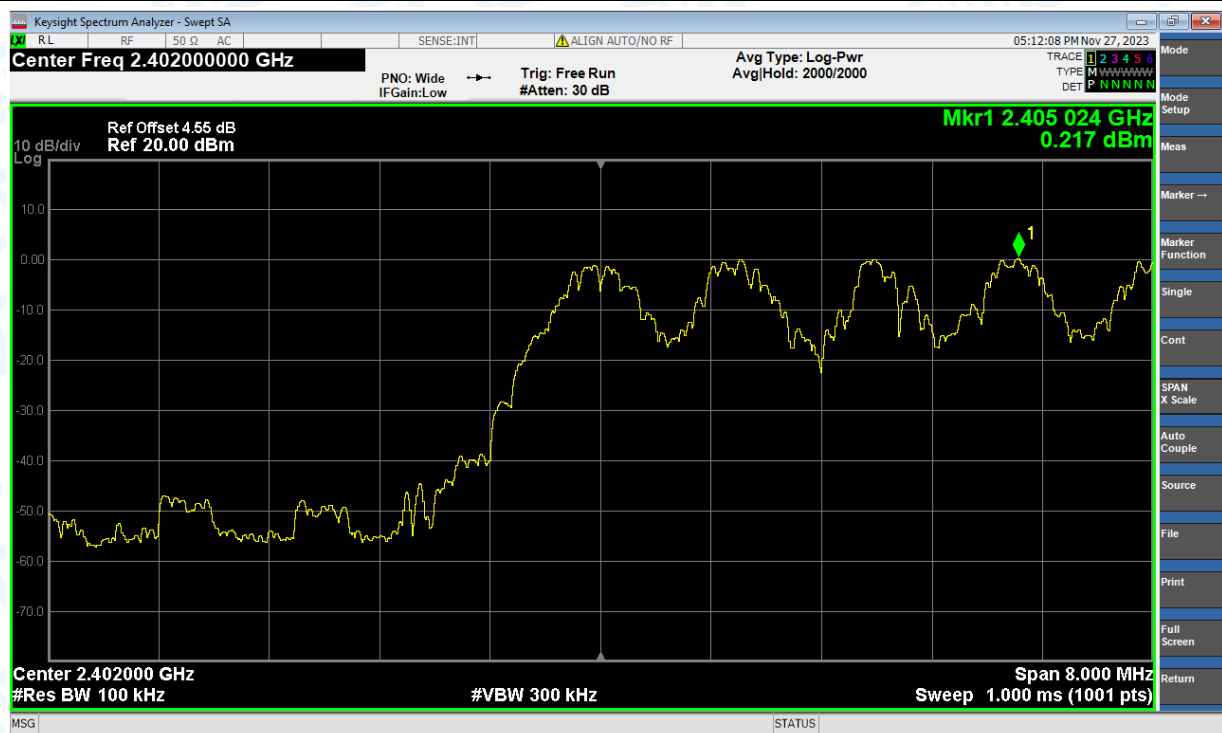


6. Band Edge(Hopping)

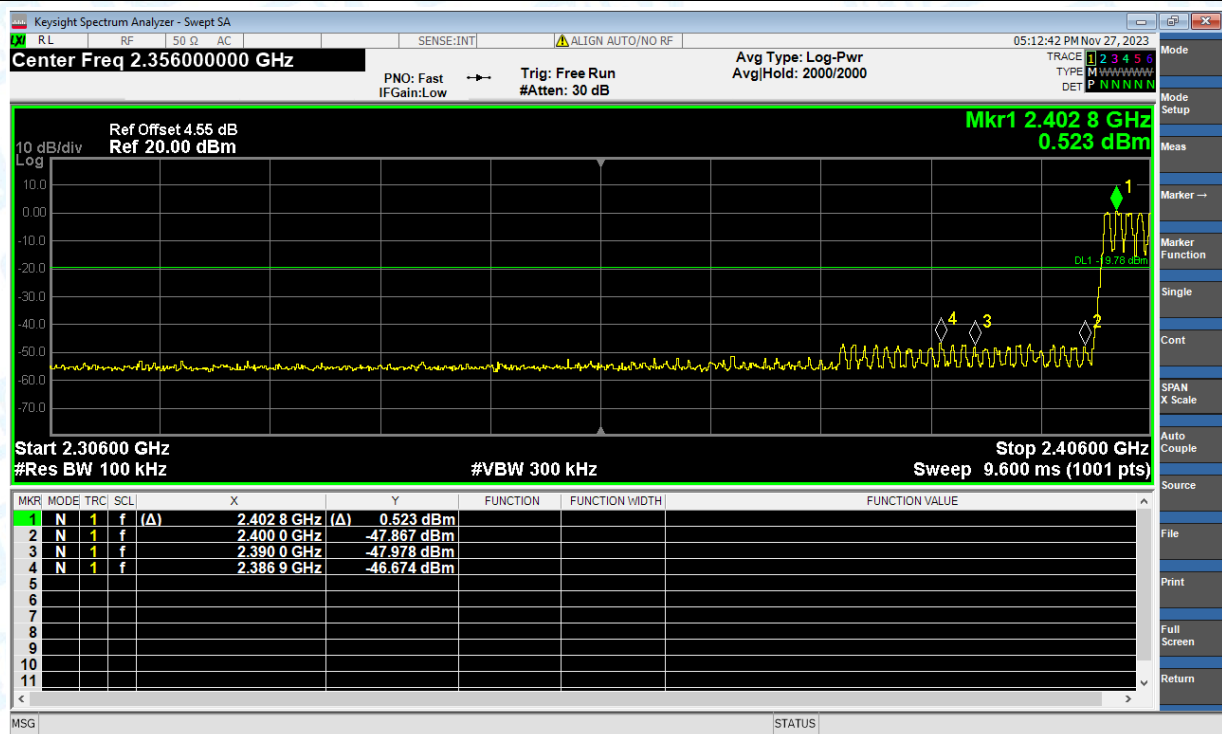
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-46.89	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-47.46	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-47.59	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-47.91	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-47.13	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-47.78	-20	Pass

Test Graphs

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



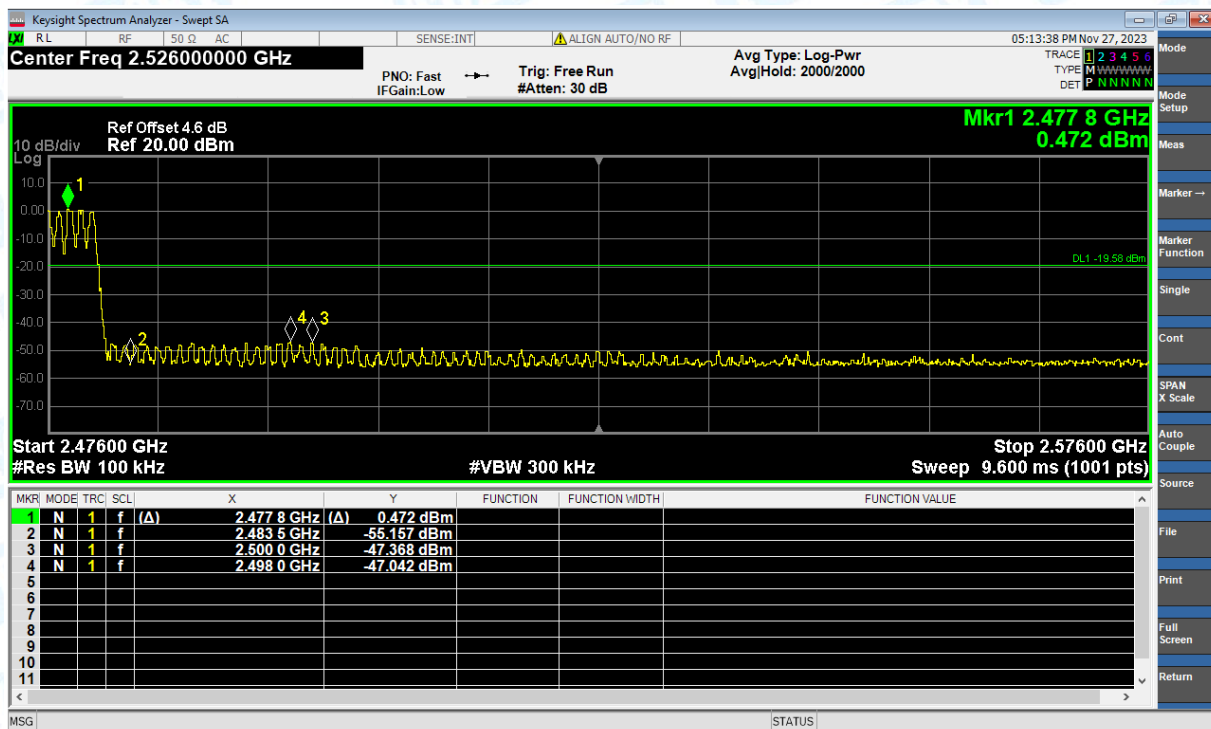
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



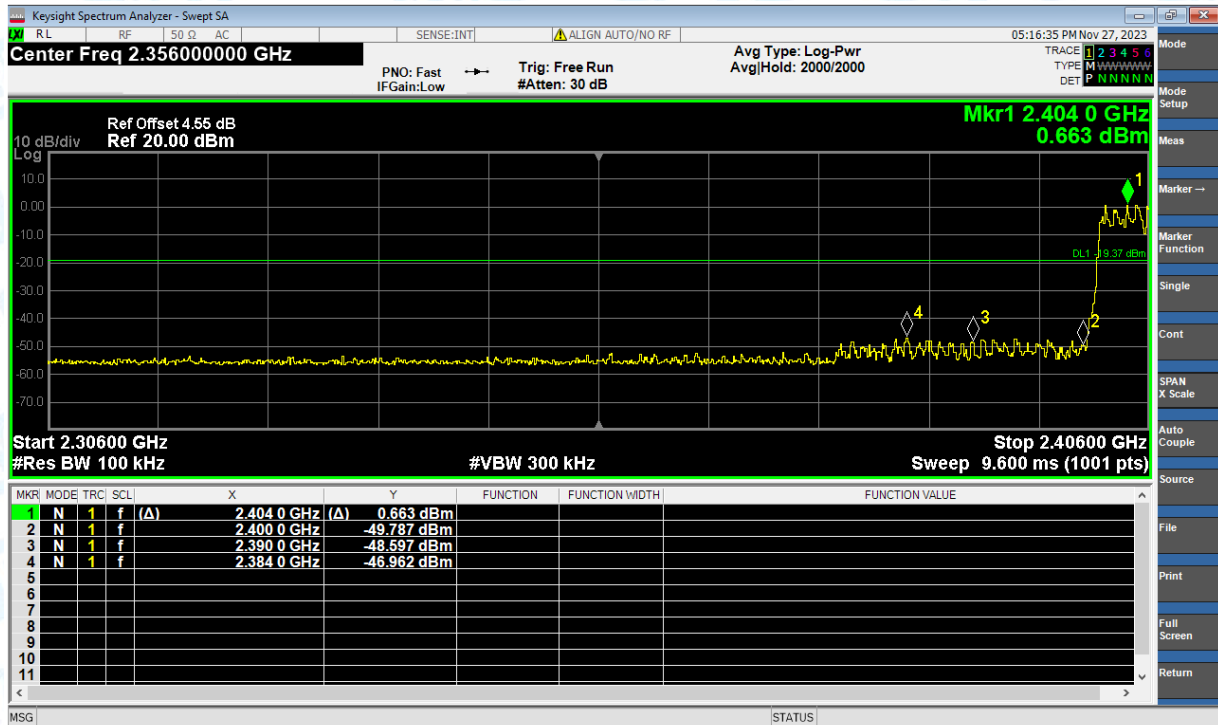
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



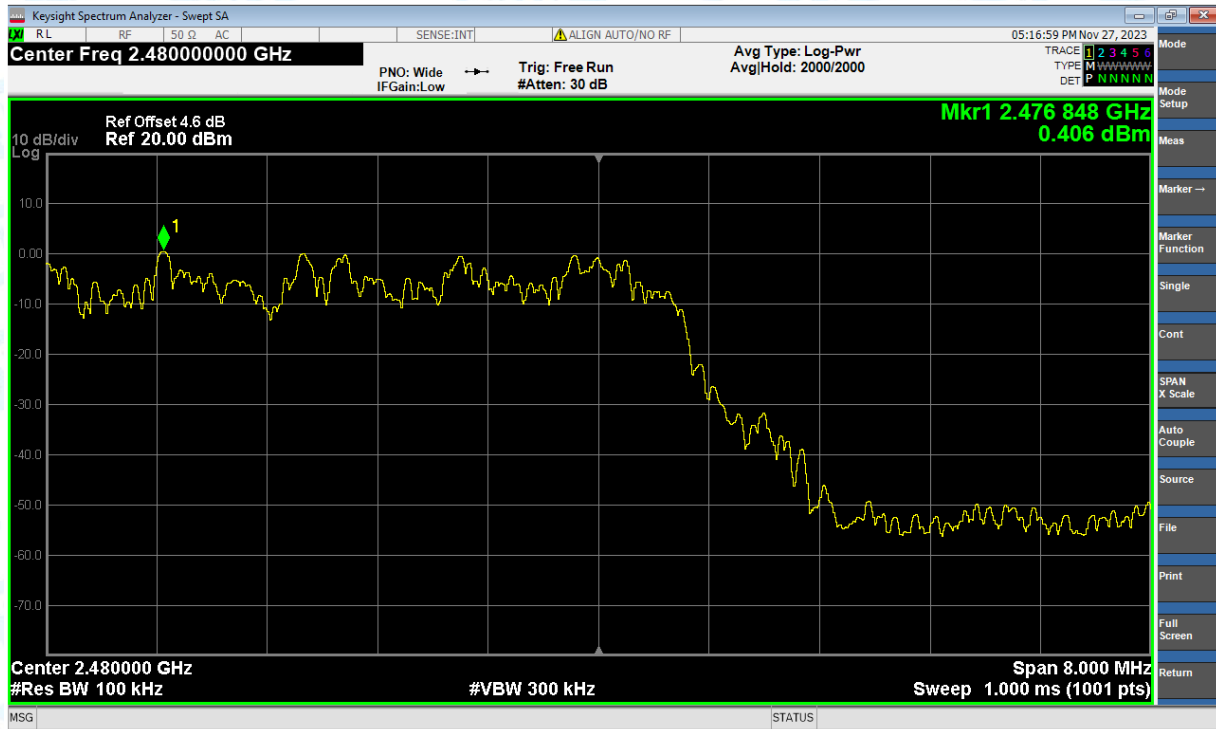
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



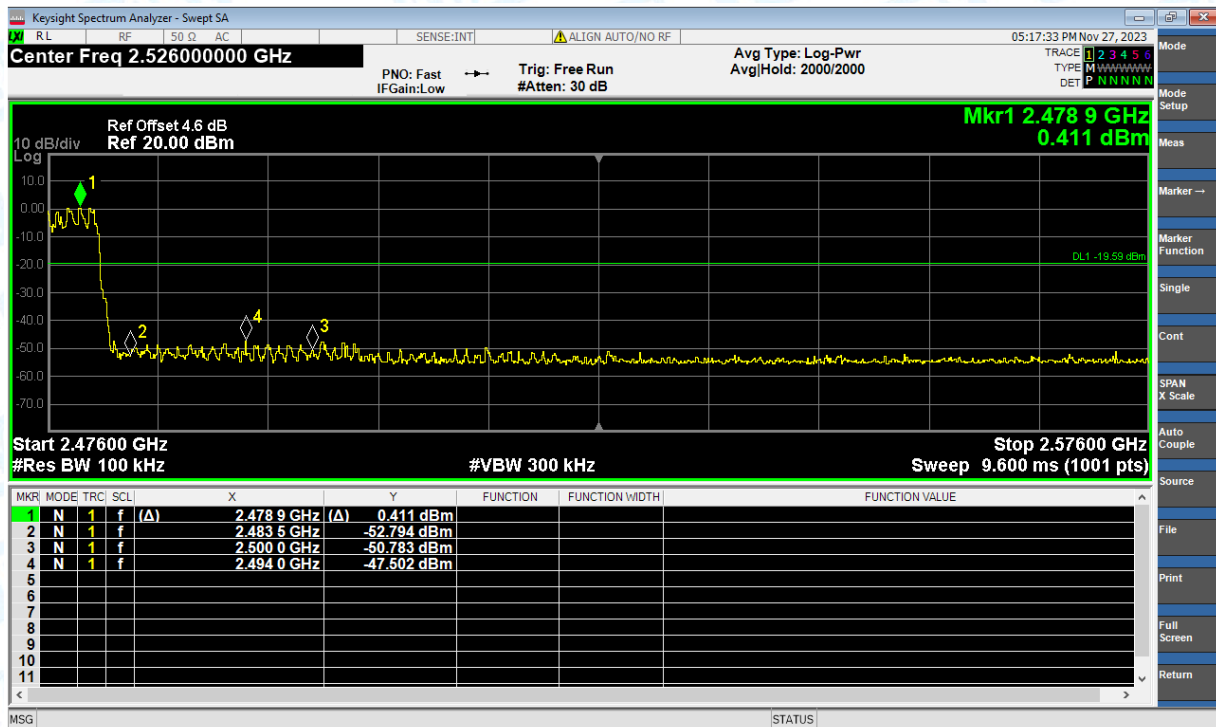
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



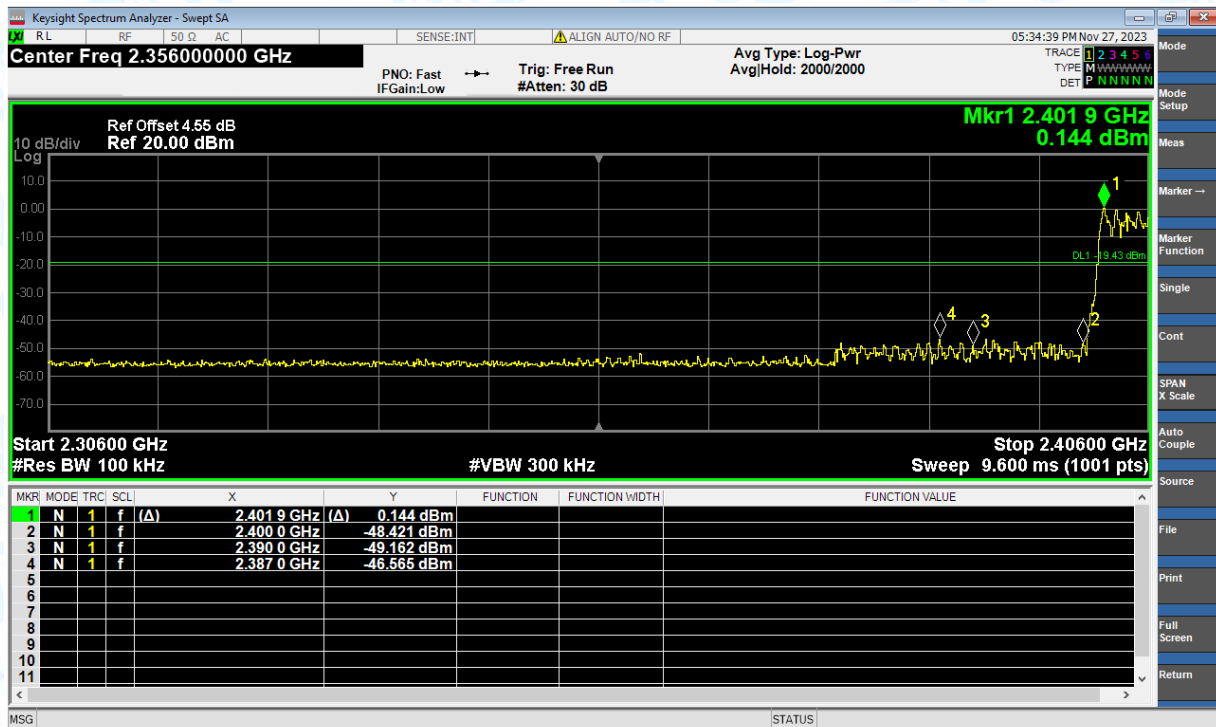
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



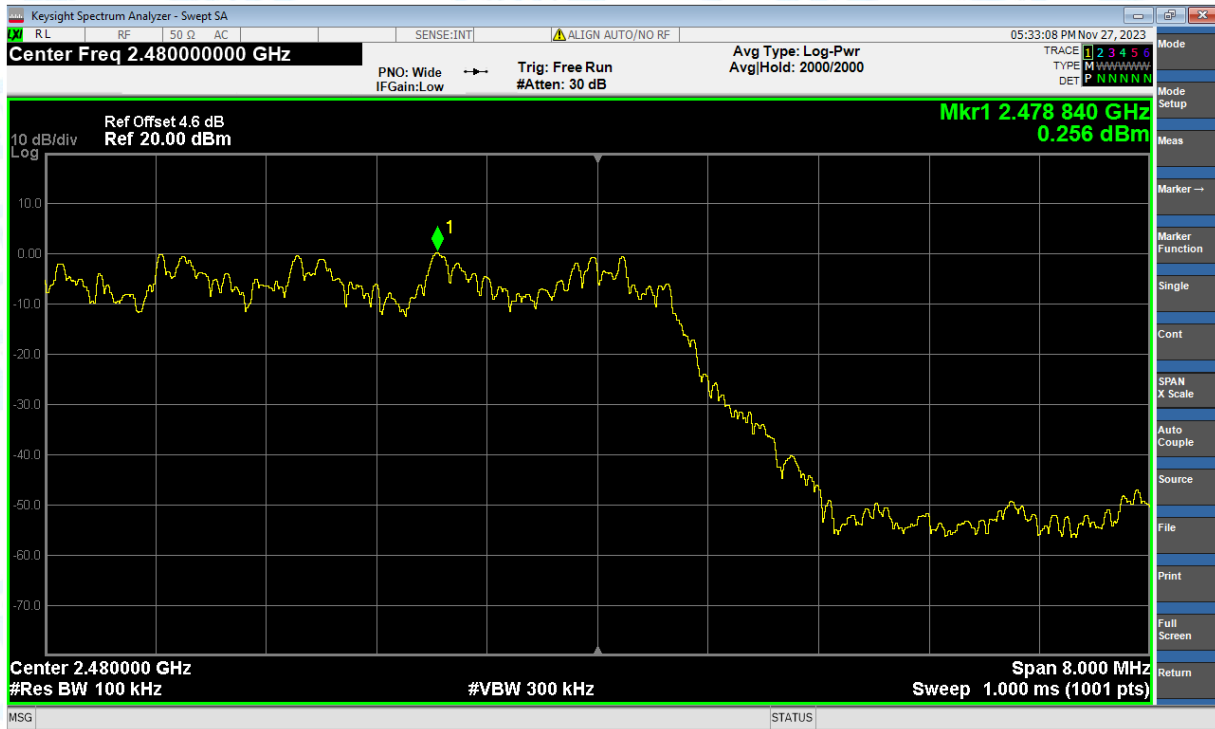
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



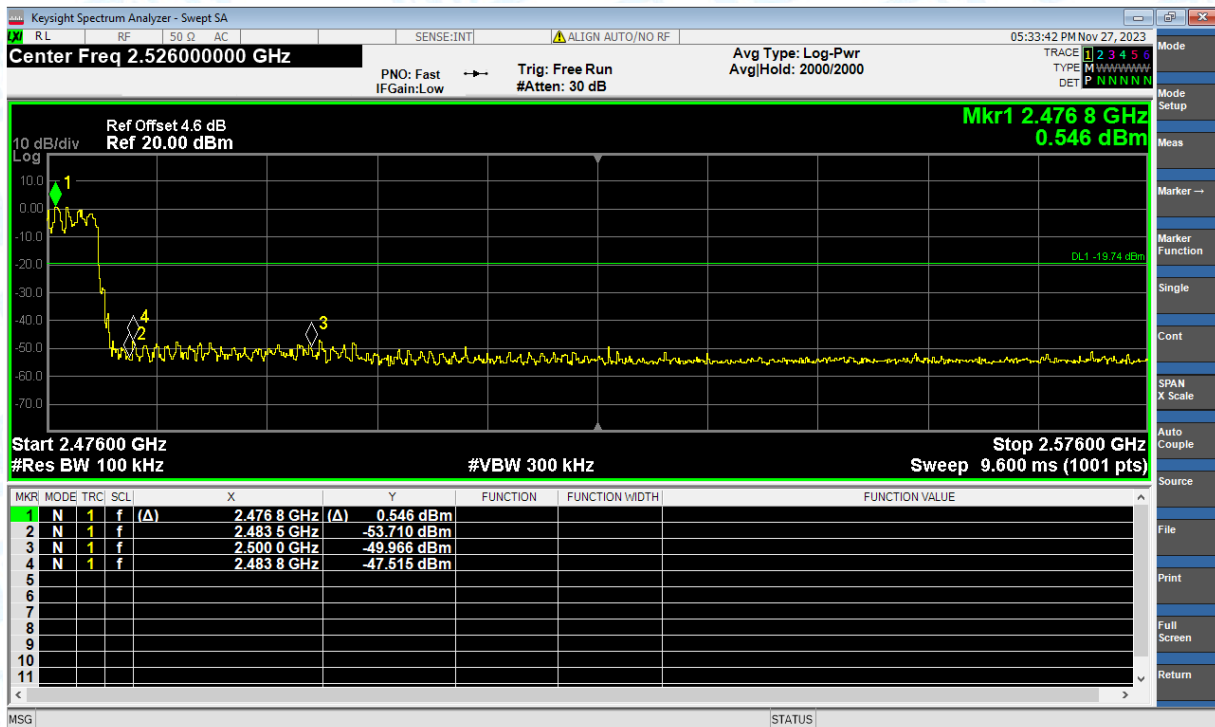
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

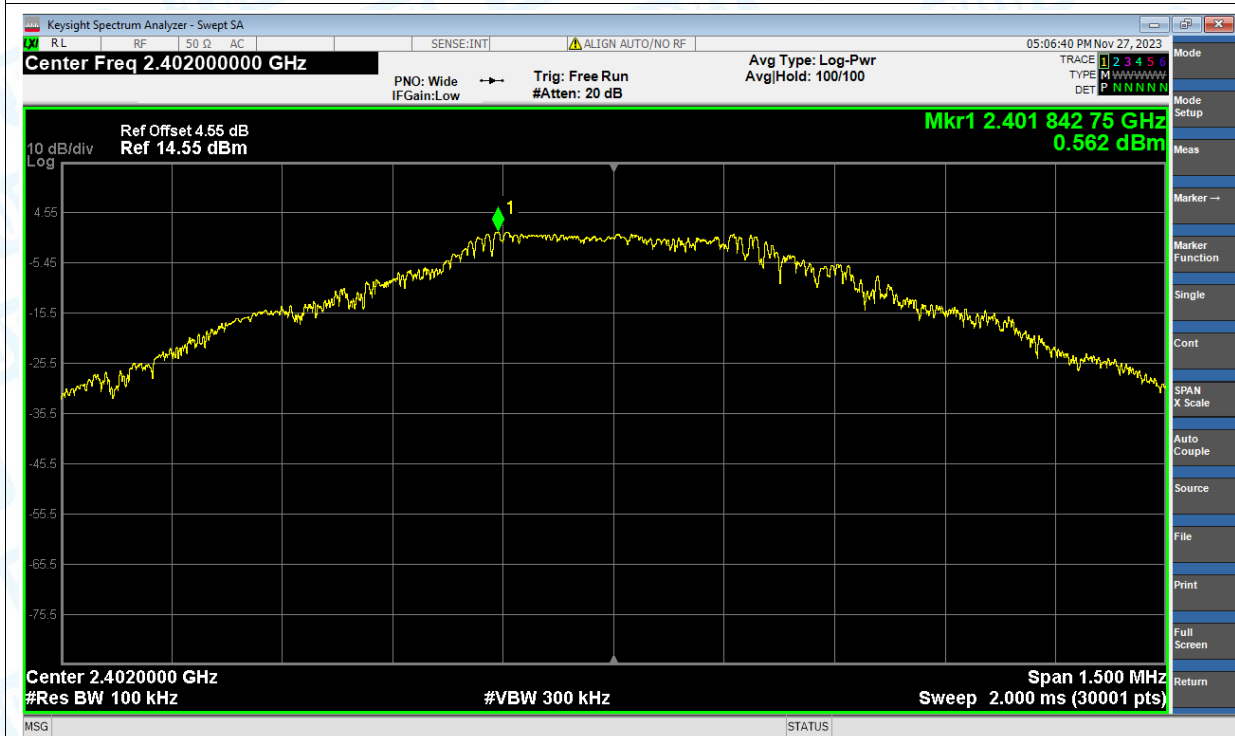


7. Conducted RF Spurious Emission

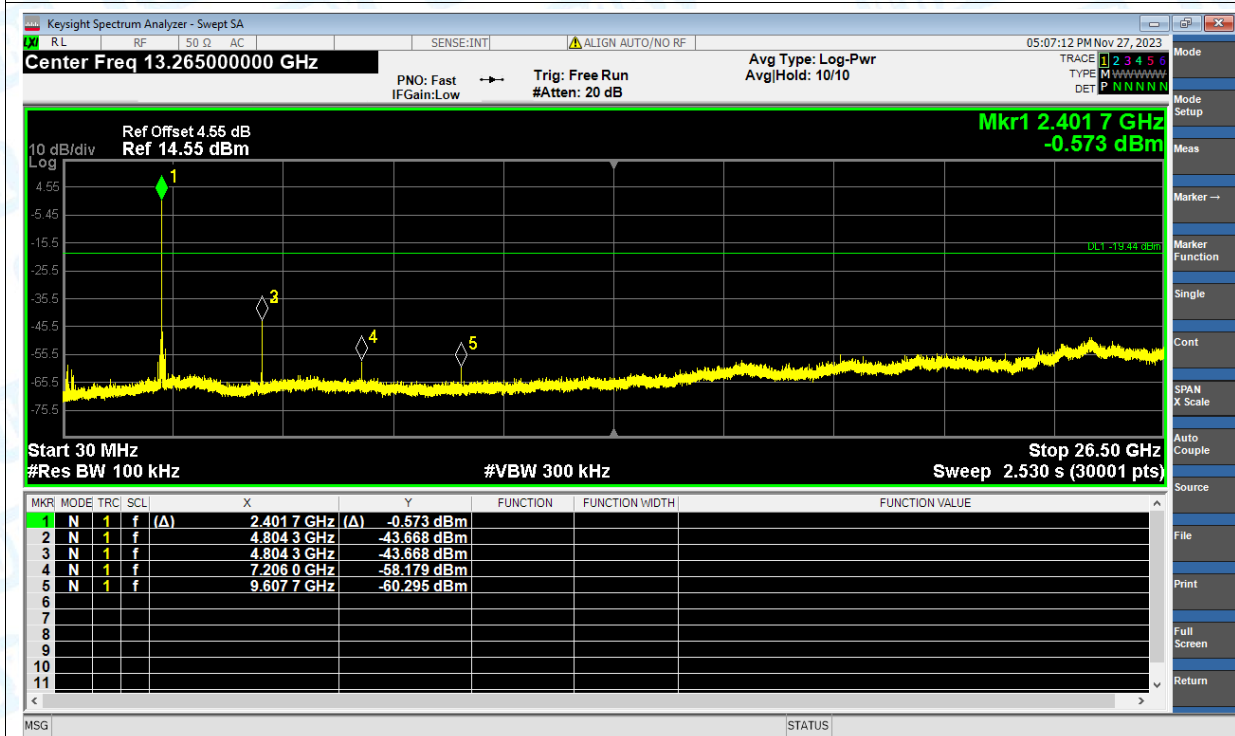
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-44.23	-20	Pass
NVNT	1-DH1	2441	Ant1	-45.23	-20	Pass
NVNT	1-DH1	2480	Ant1	-46.31	-20	Pass
NVNT	2-DH1	2402	Ant1	-42.97	-20	Pass
NVNT	2-DH1	2441	Ant1	-47.31	-20	Pass
NVNT	2-DH1	2480	Ant1	-41.49	-20	Pass
NVNT	3-DH1	2402	Ant1	-48.35	-20	Pass
NVNT	3-DH1	2441	Ant1	-47.34	-20	Pass
NVNT	3-DH1	2480	Ant1	-40.75	-20	Pass

Test Graphs

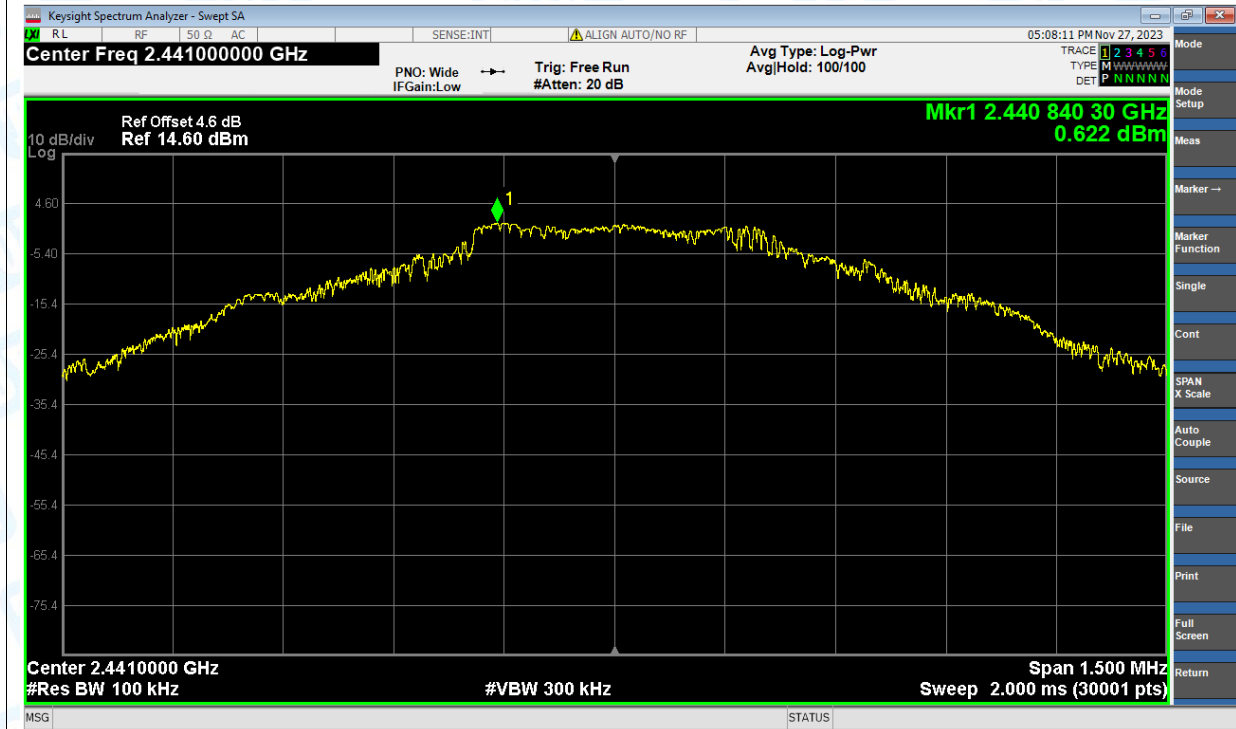
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



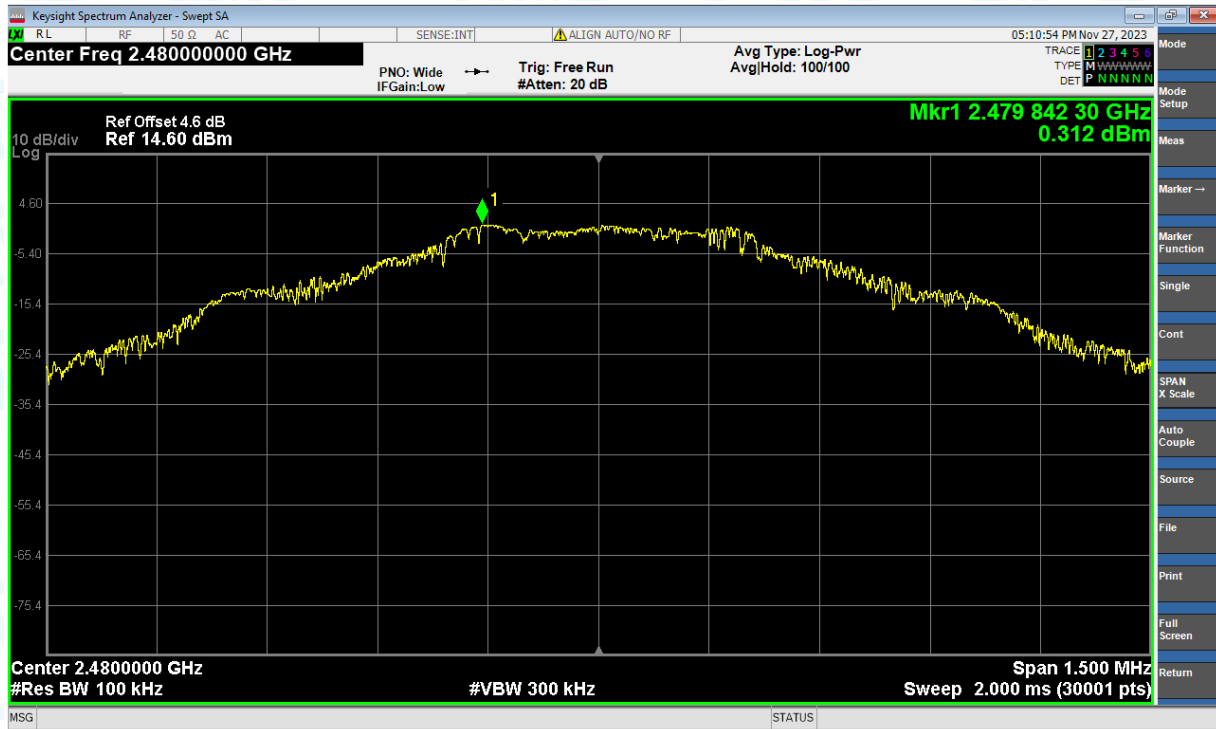
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



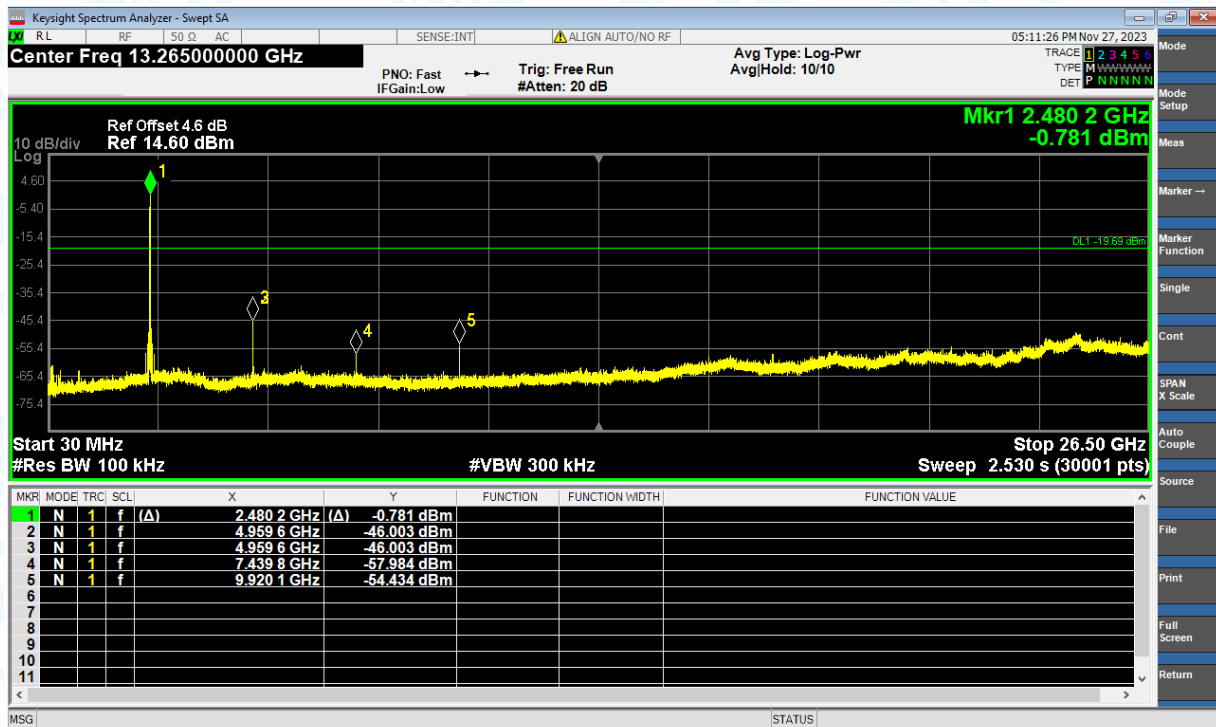
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



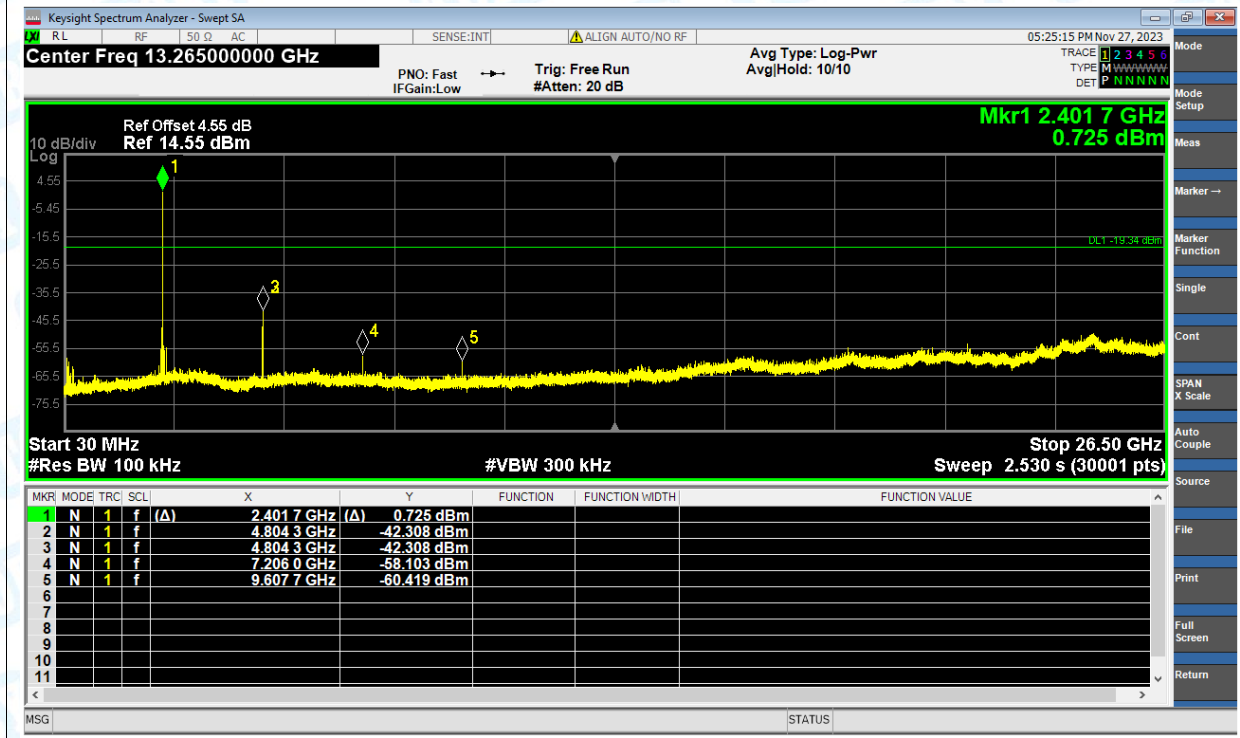
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



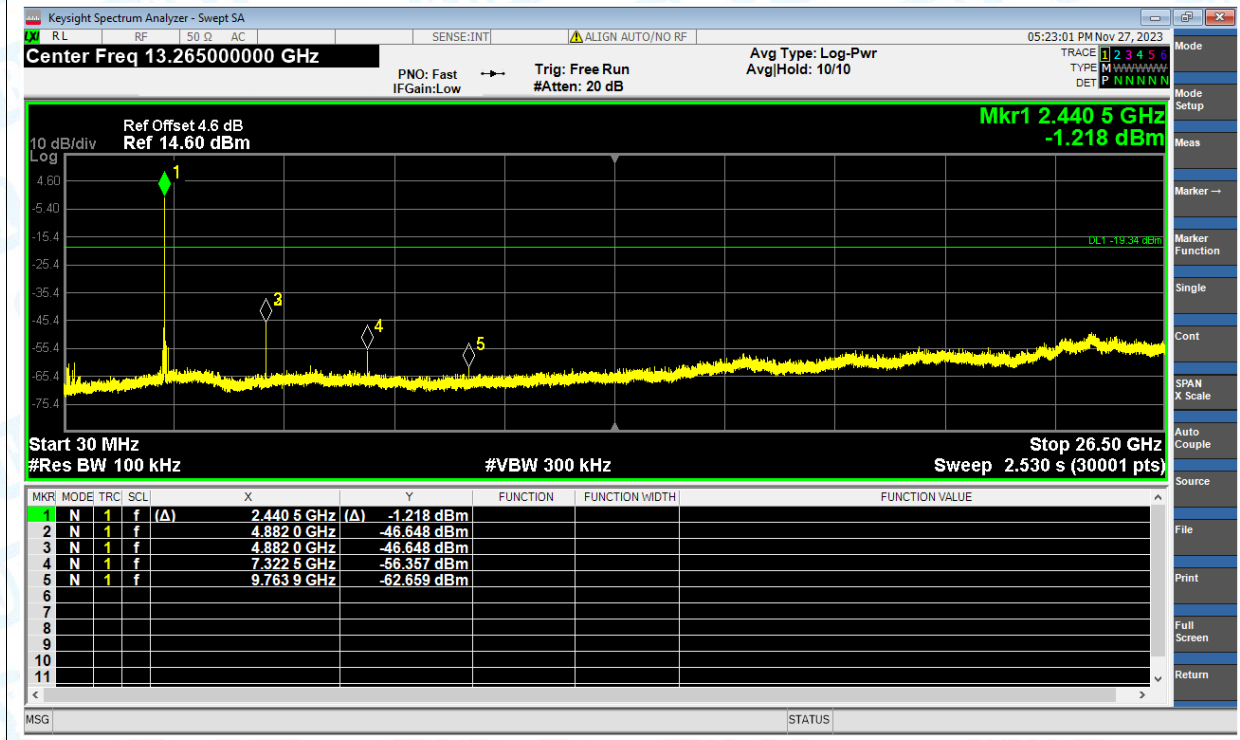
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



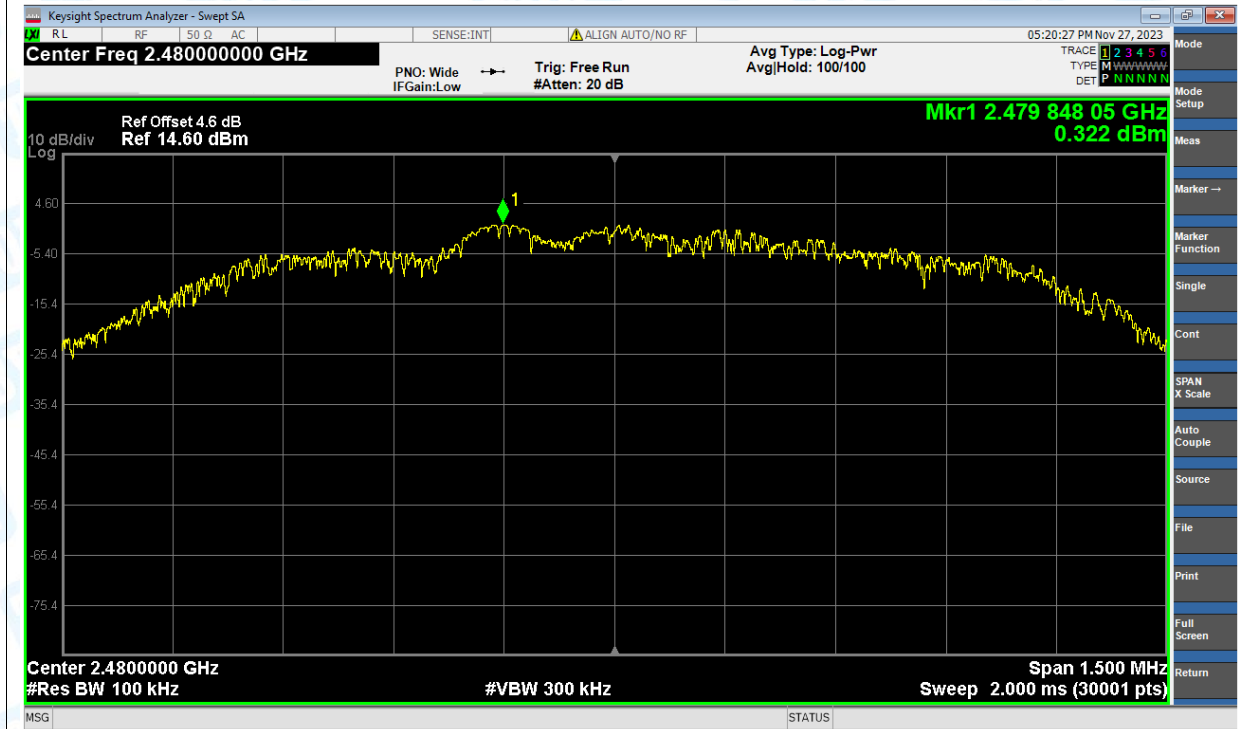
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



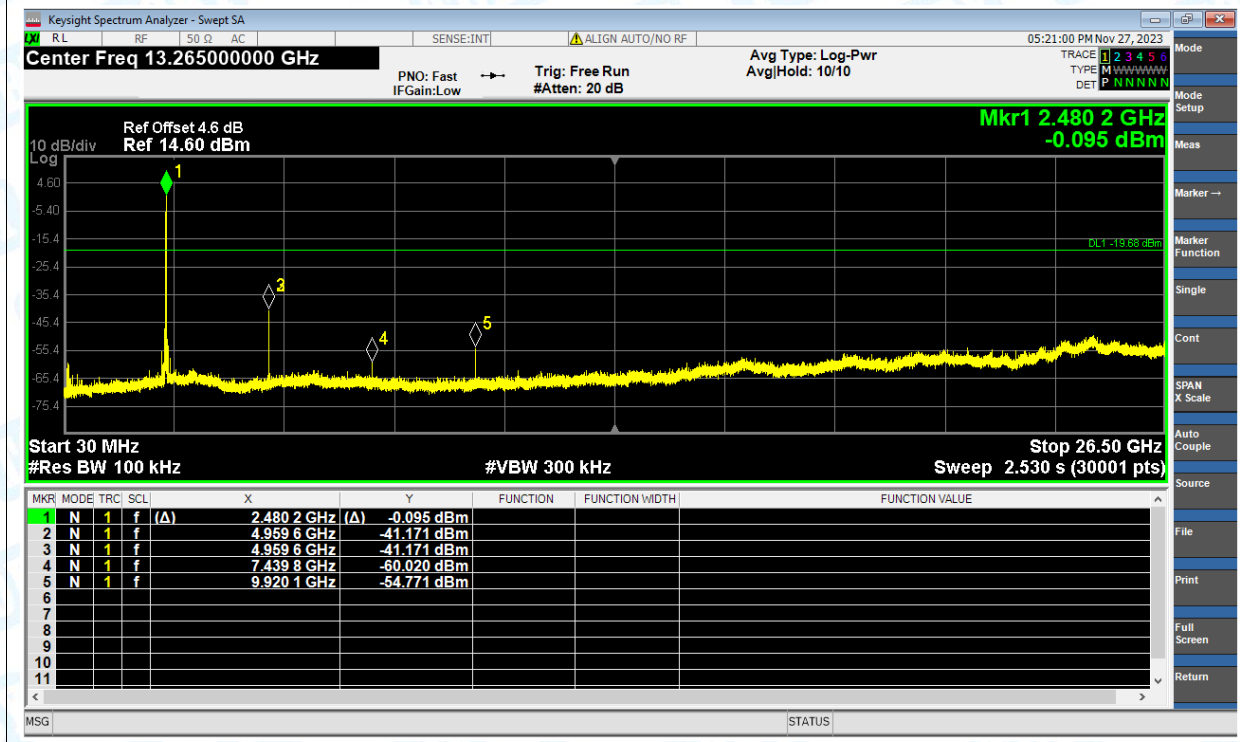
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



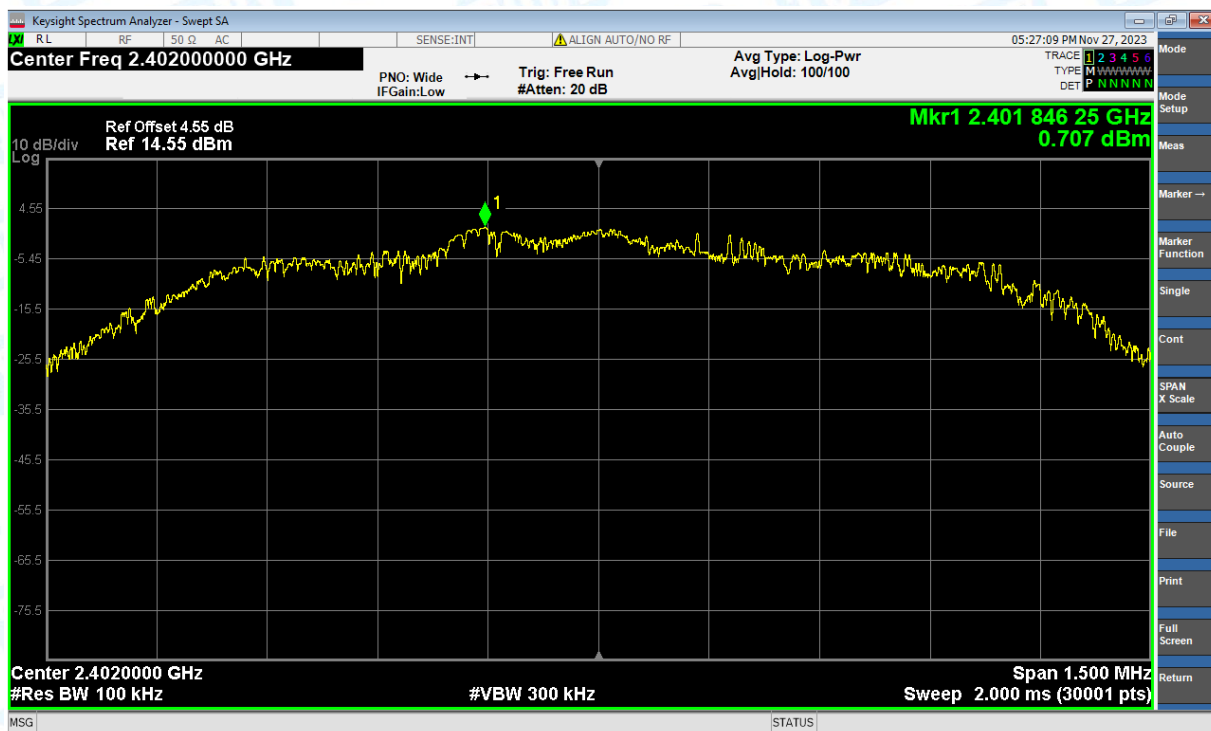
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



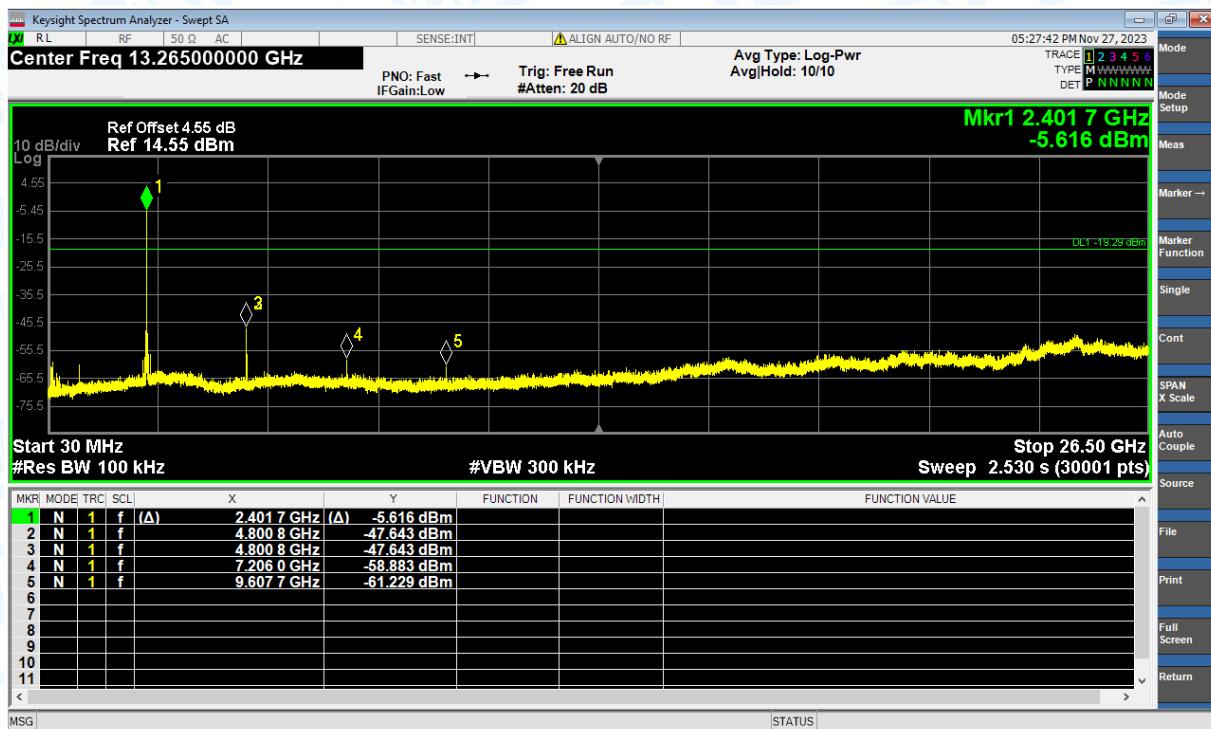
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



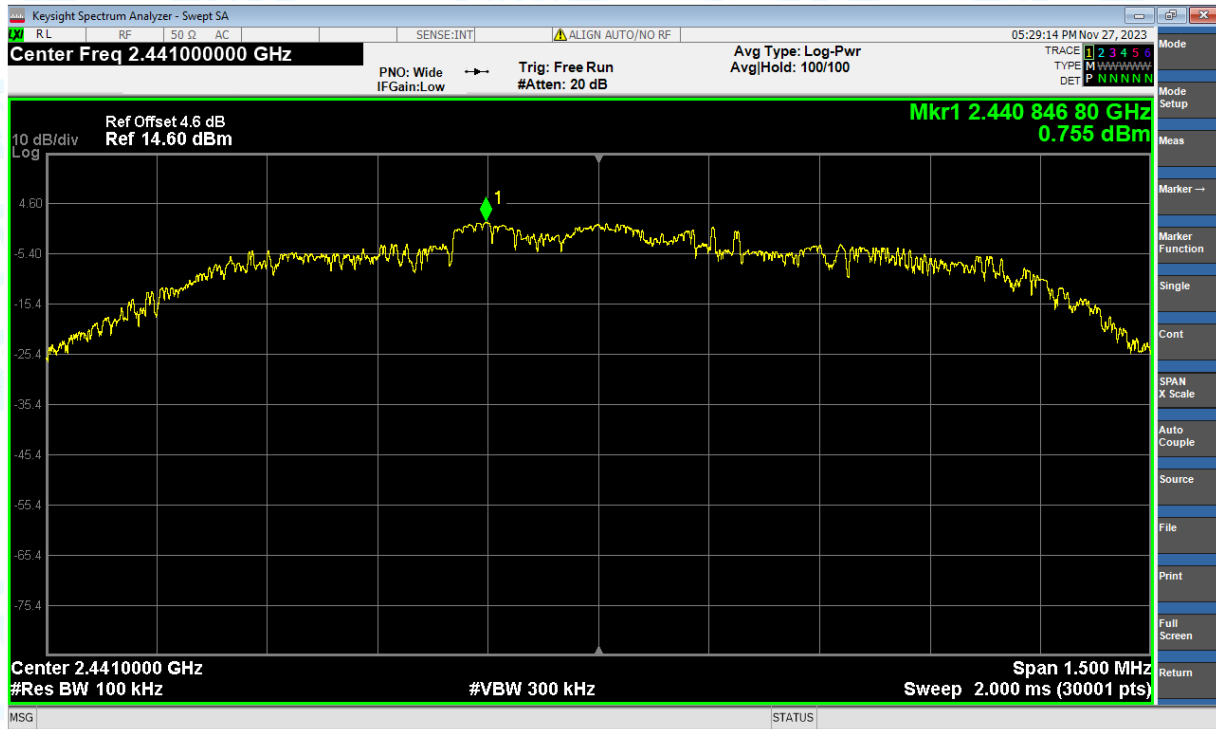
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



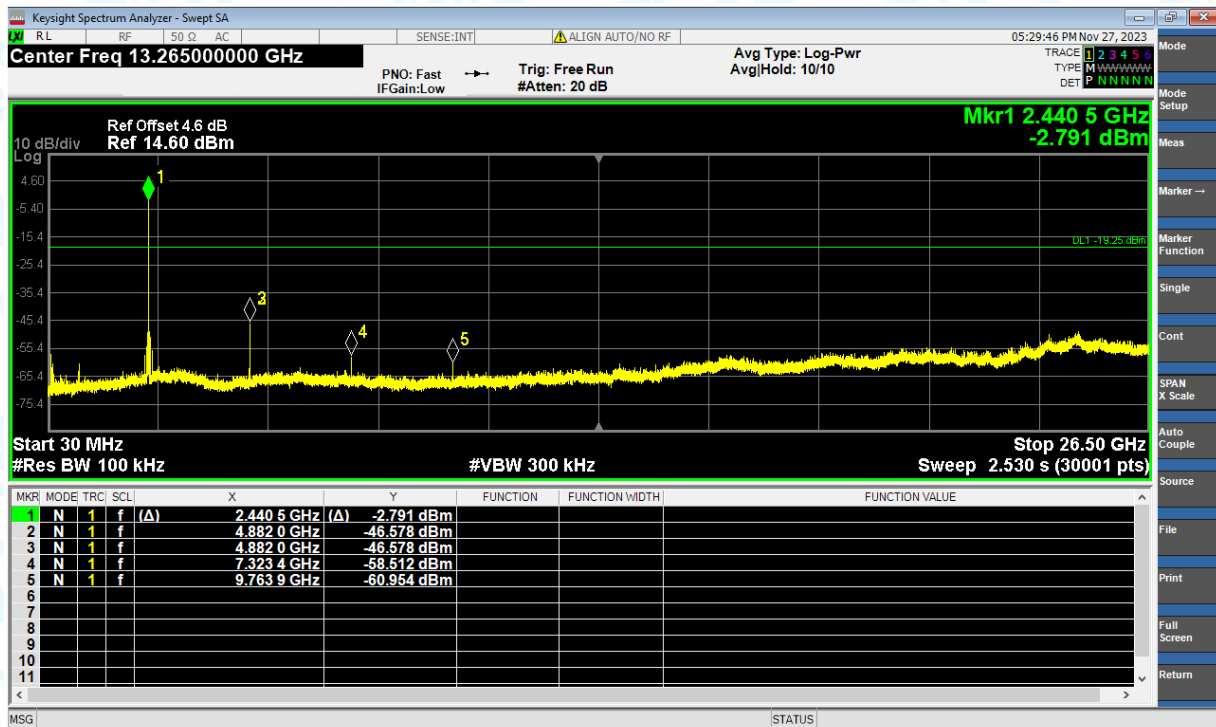
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



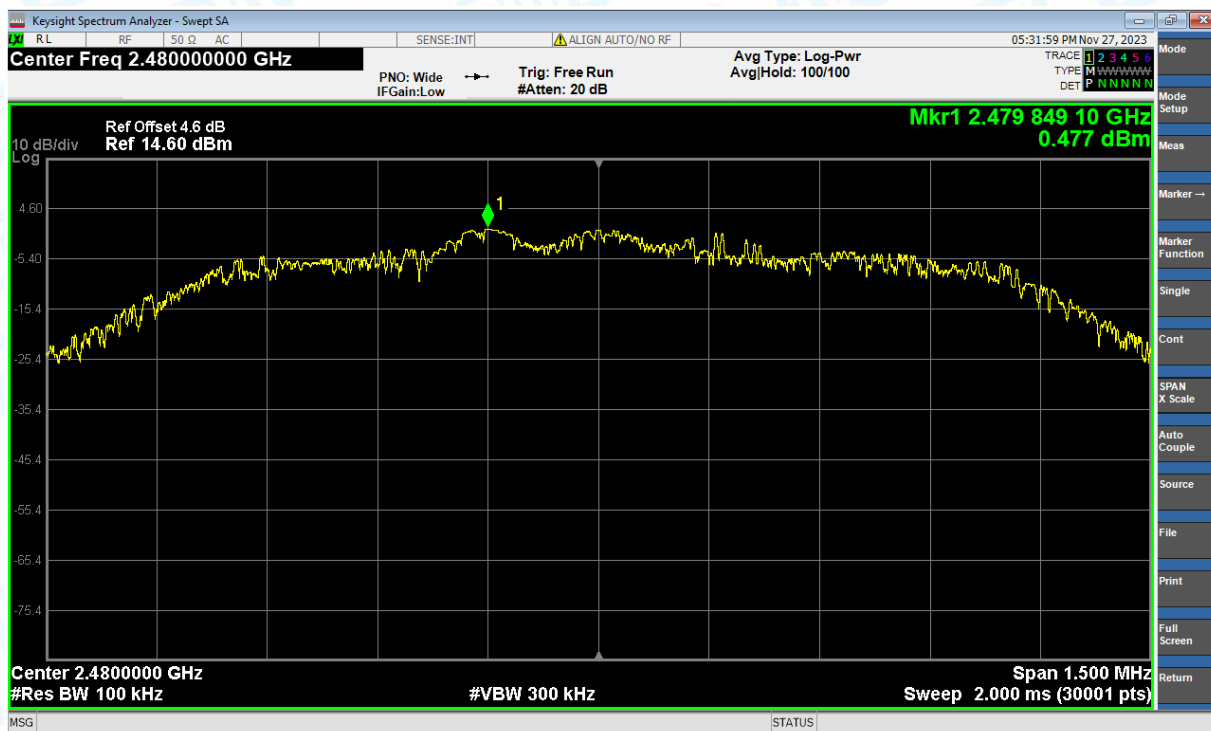
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



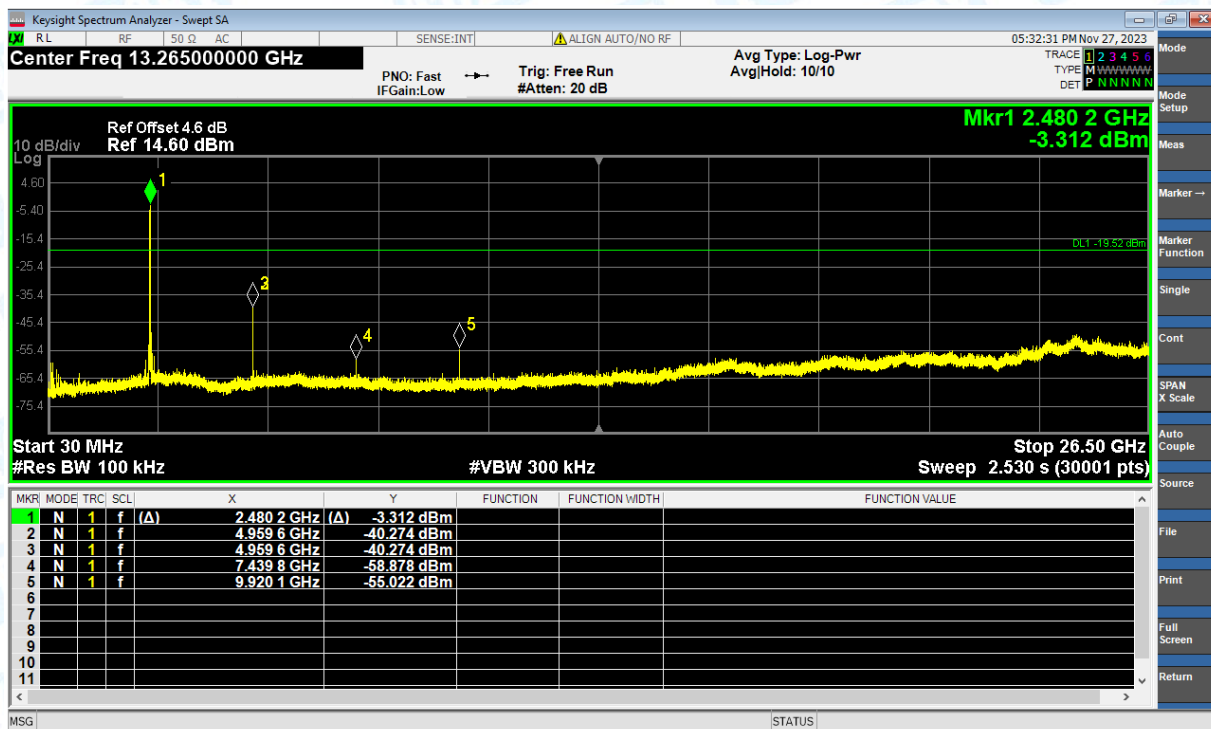
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

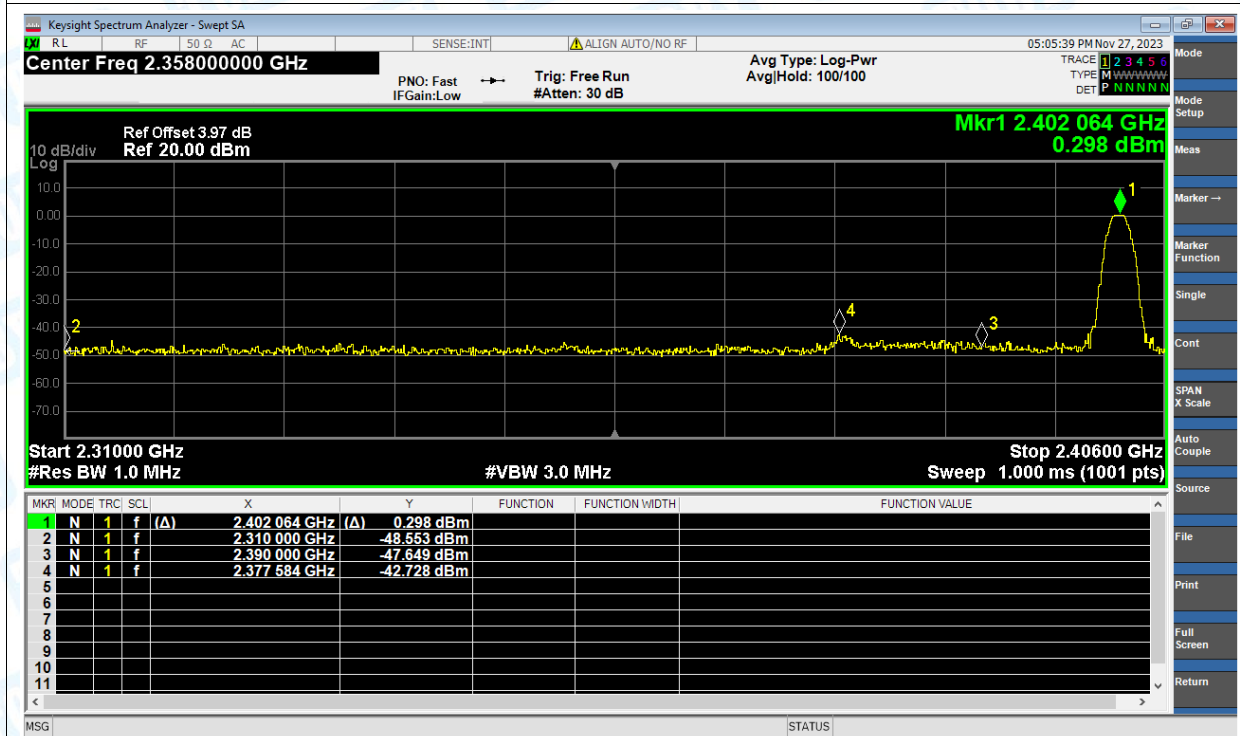


8. Restrict Band

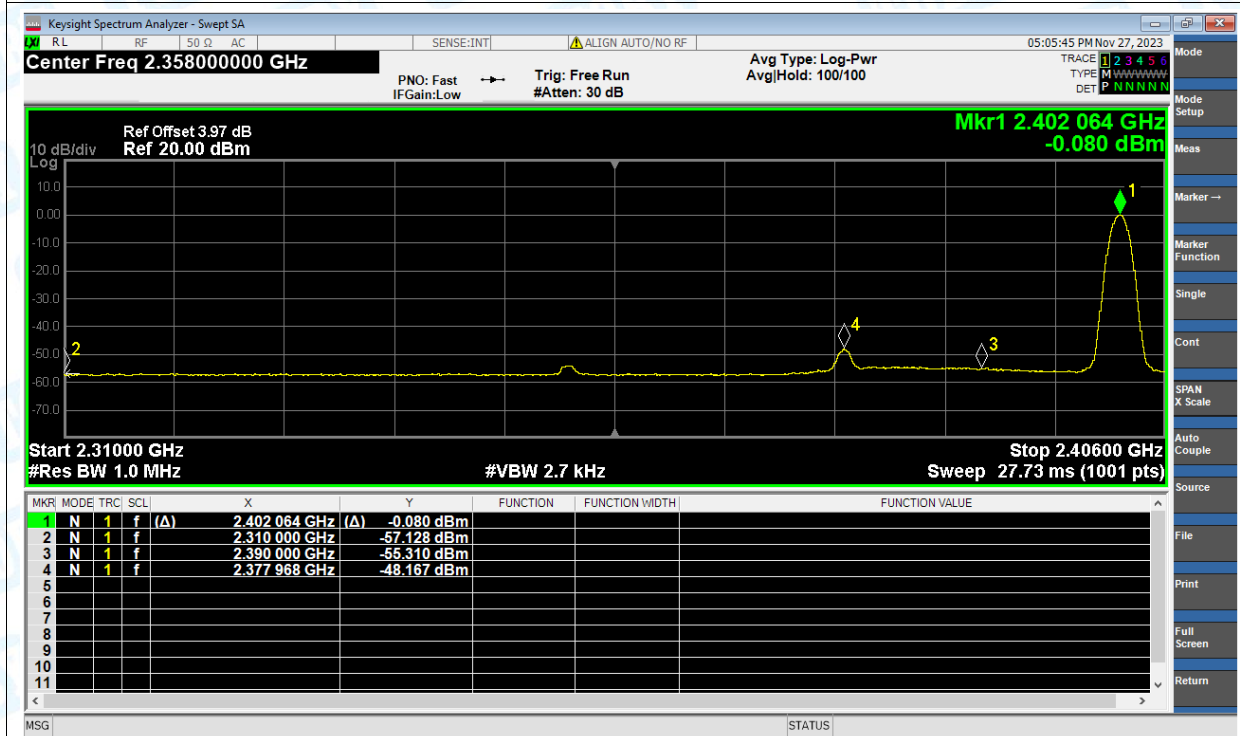
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.55	2	48.71	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-57.13	2	40.13	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2377.584	-42.73	2	54.53	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2377.968	-48.17	2	49.09	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.81	2	50.45	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.25	2	42.01	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-44.98	2	52.28	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.58	2	41.68	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2490.448	-43.35	2	53.91	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2498.248	-54.45	2	42.81	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-47.5	2	49.76	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.65	2	42.61	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.02	2	50.24	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-57.45	2	39.81	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.256	-43.12	2	54.14	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2377.872	-49.38	2	47.88	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.38	2	49.88	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.06	2	42.2	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-41.71	2	55.55	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.84	2	41.42	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.512	-41.71	2	55.55	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2496.784	-54.3	2	42.96	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-44.94	2	52.32	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.67	2	42.59	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.72	2	48.54	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-57.23	2	40.03	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2378.352	-42.55	2	54.71	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2378.064	-49.7	2	47.56	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-46.44	2	50.82	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-54.83	2	42.43	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-47.6	2	49.66	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	2495.632	-43.29	2	53.97	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2498.392	-54.16	2	43.1	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.92	2	49.34	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-54.84	2	42.42	Average	54	Pass

Test Graphs

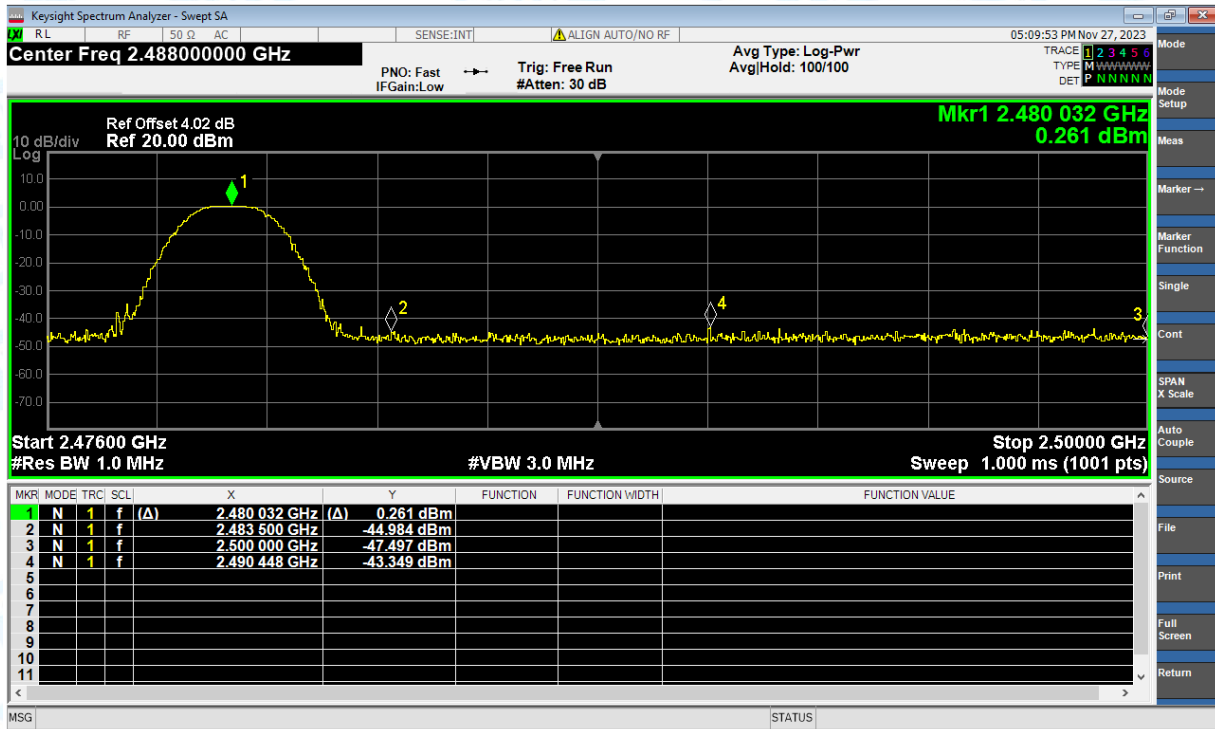
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



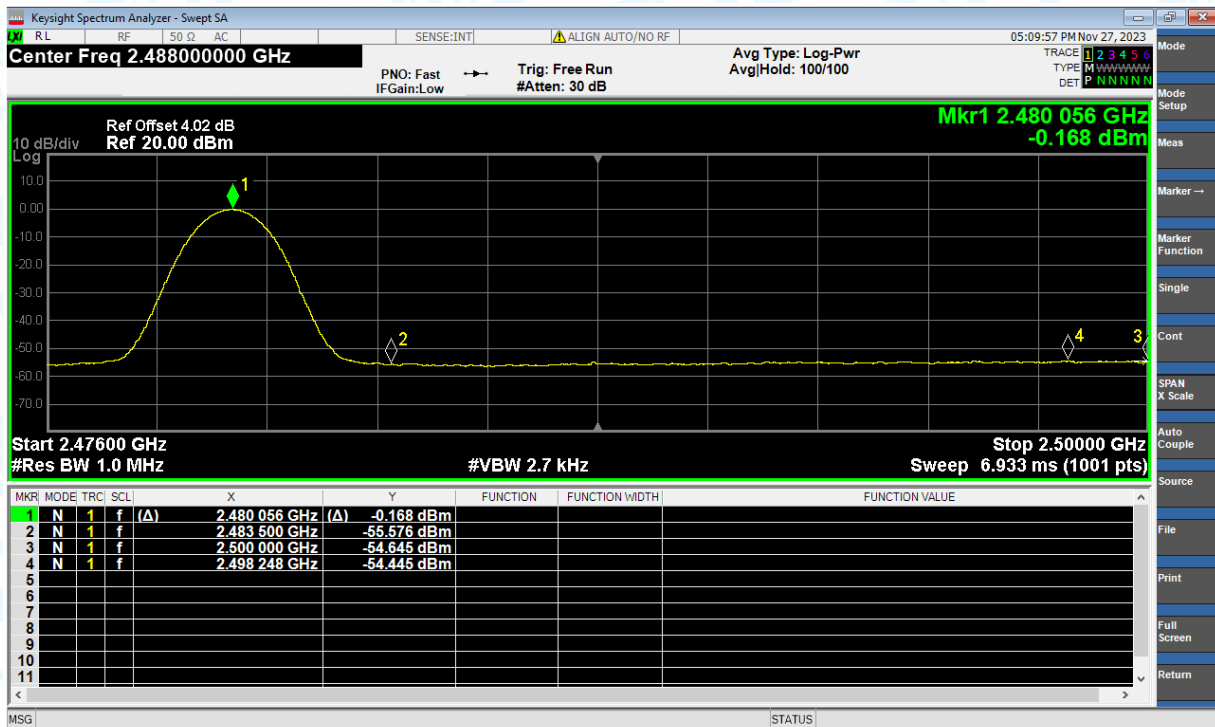
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



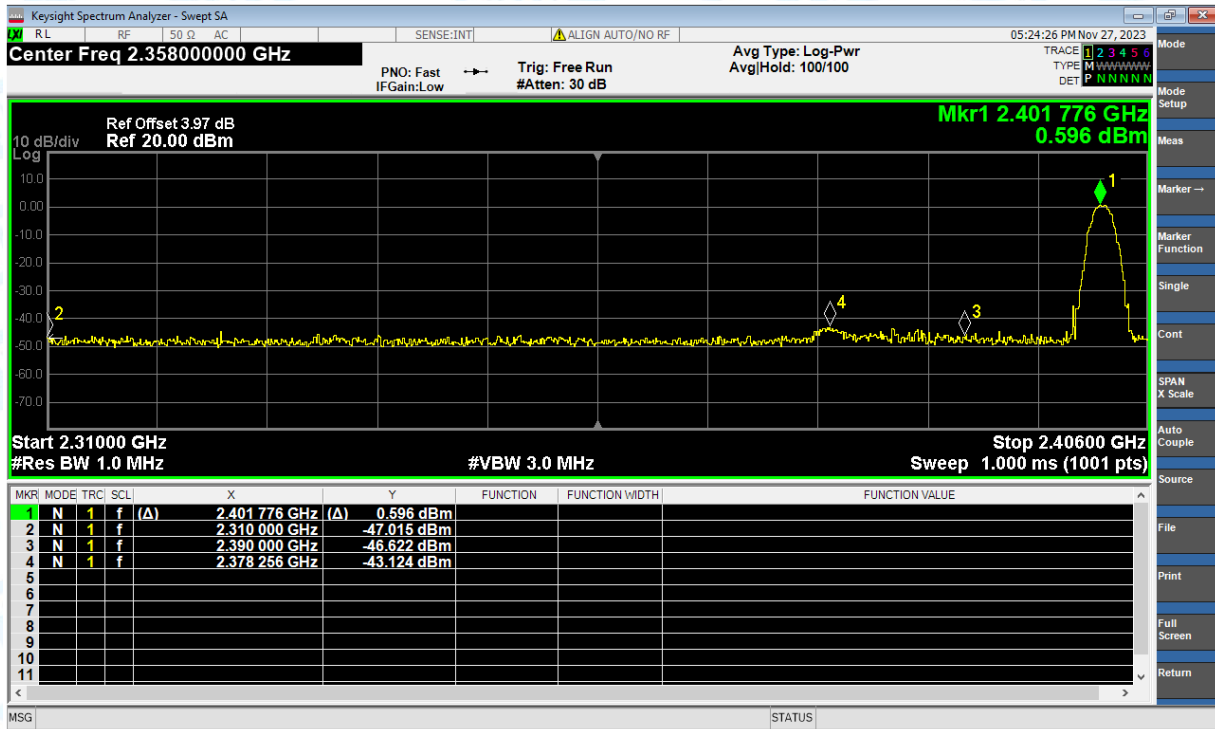
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



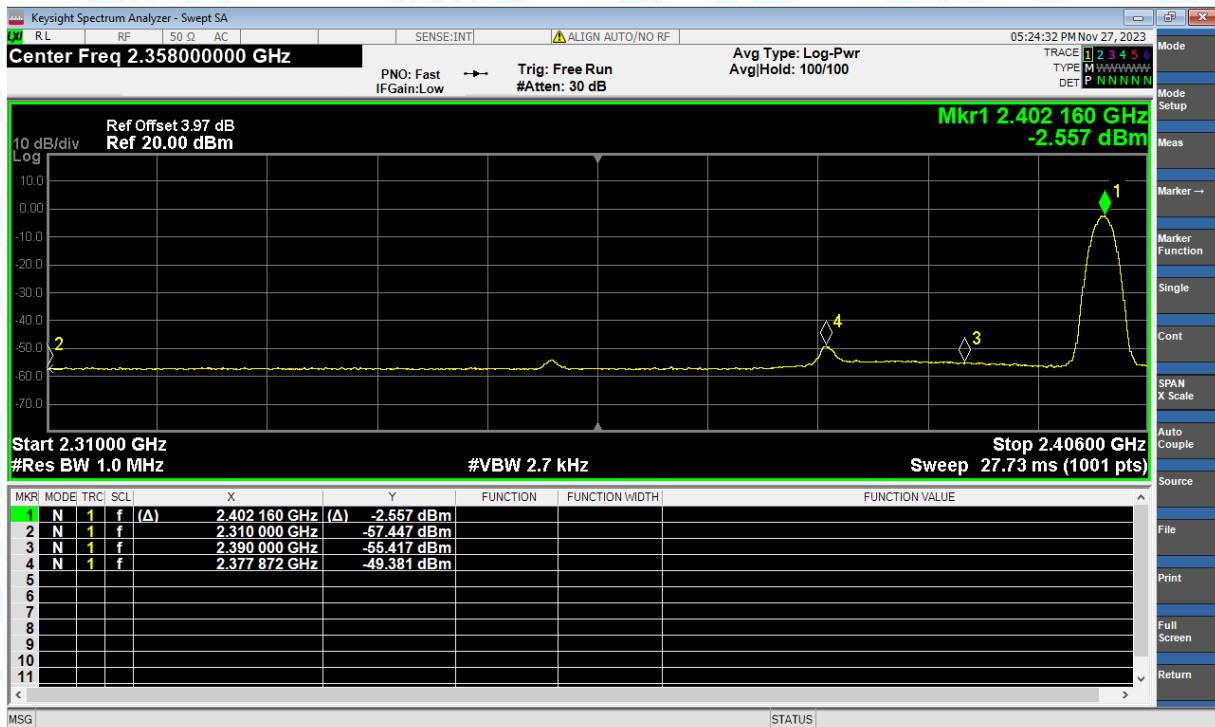
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



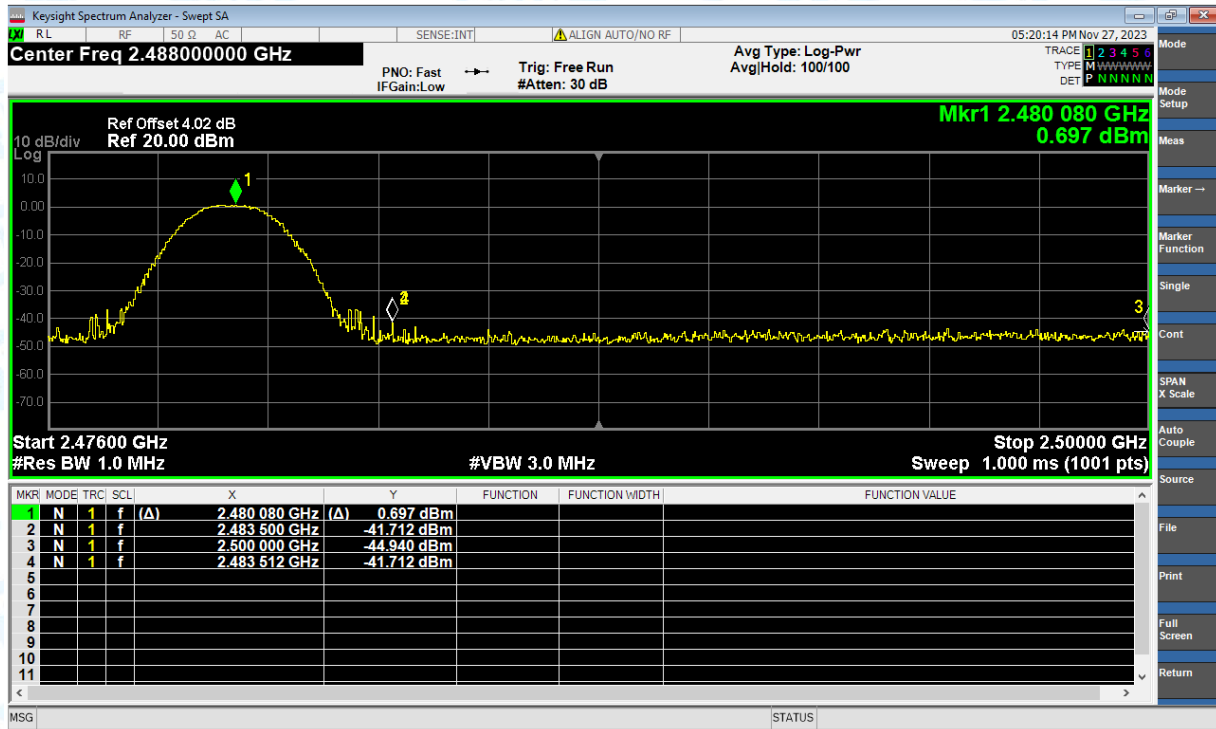
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



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



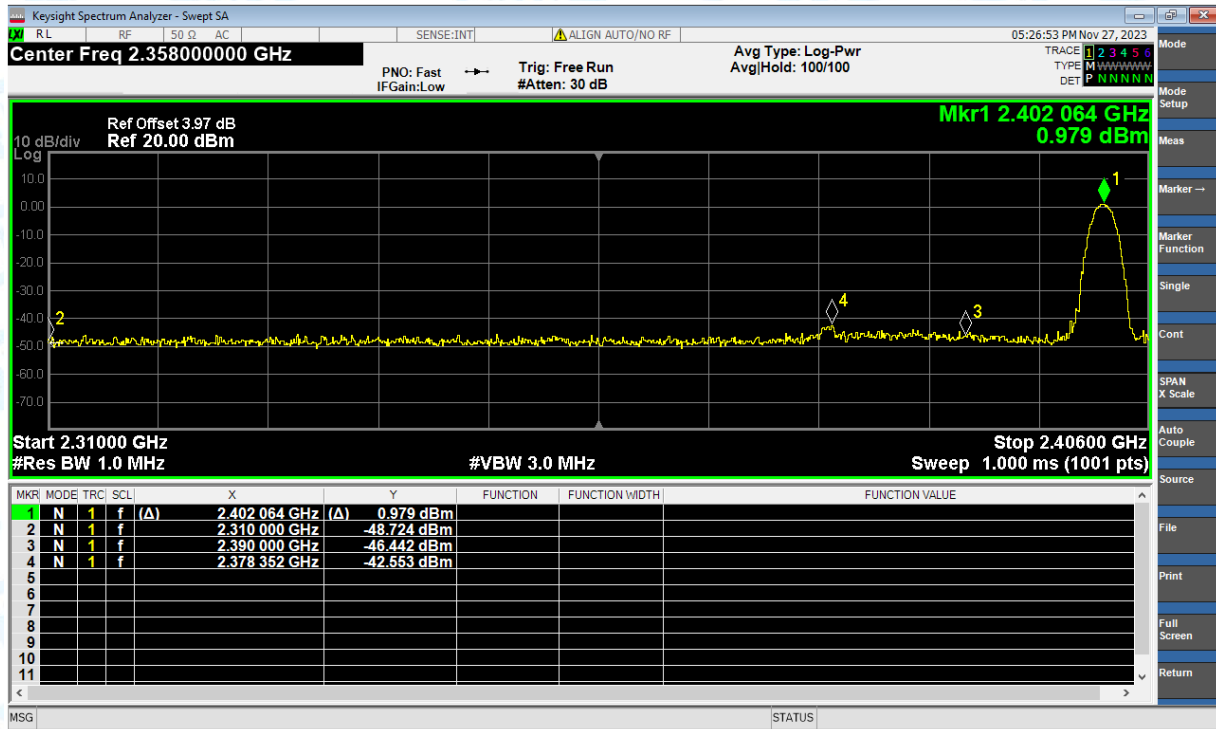
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



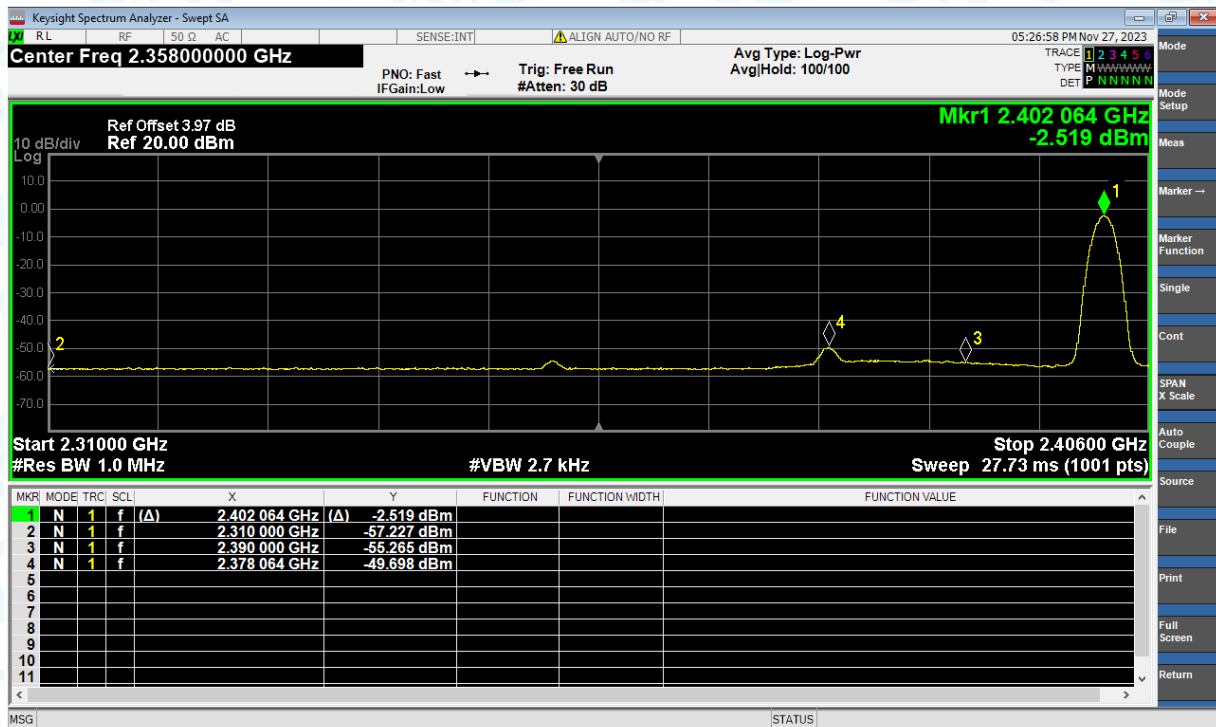
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



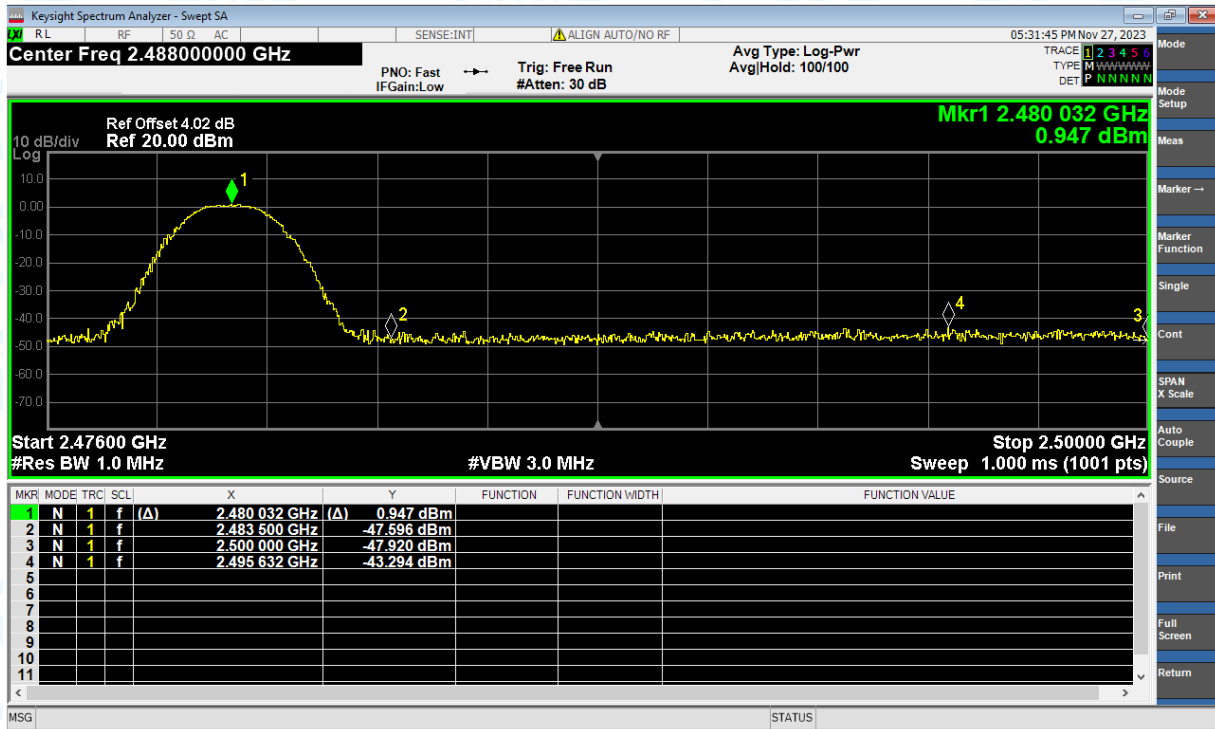
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



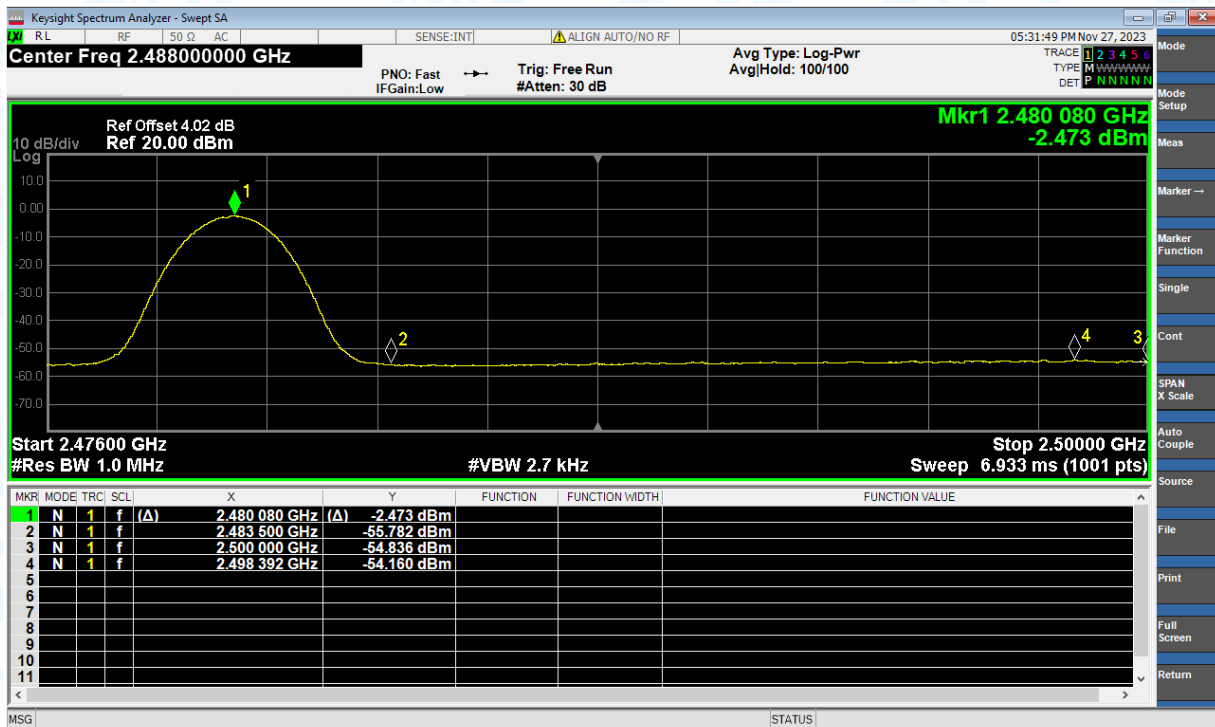
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

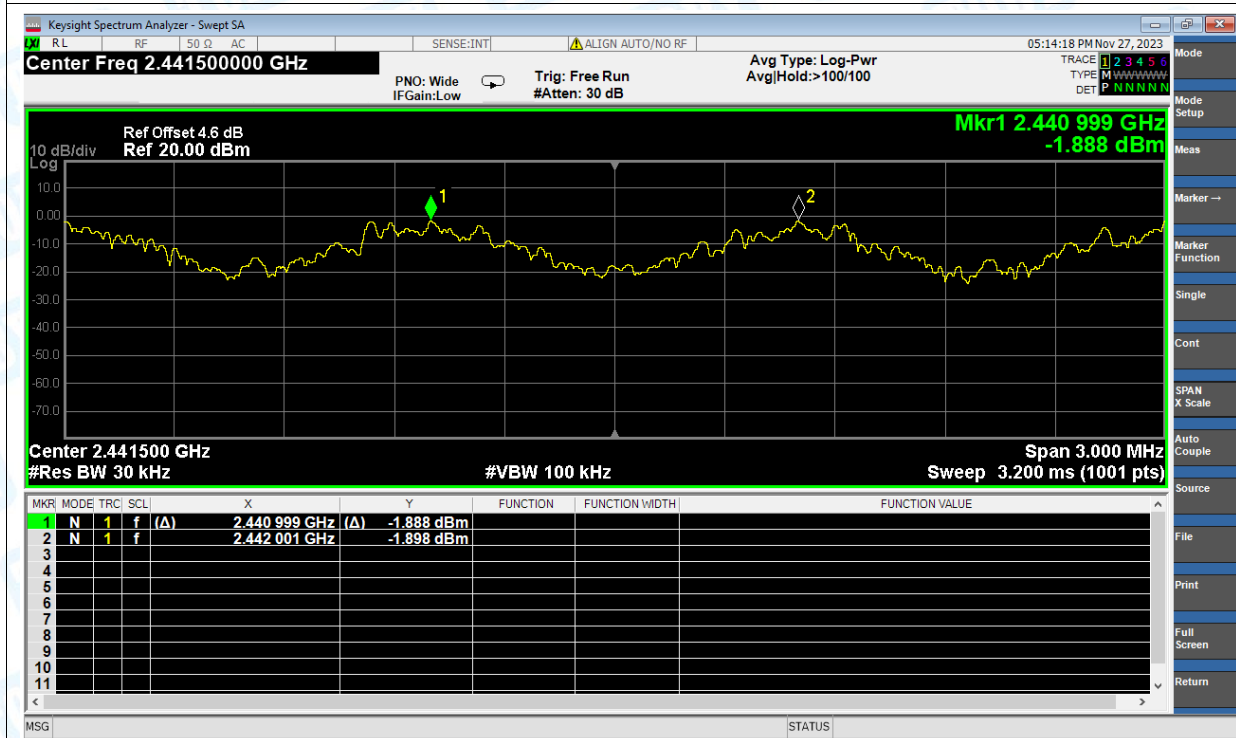


9. Carrier Frequencies Separation

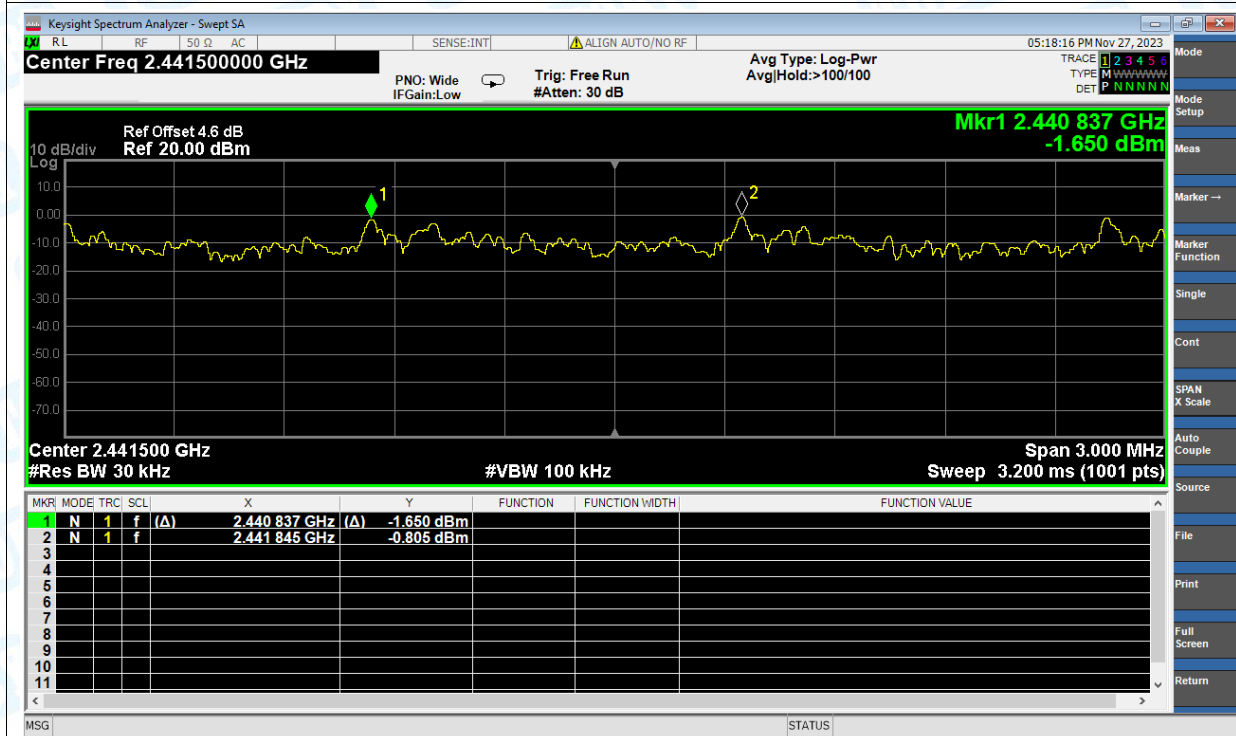
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.999	2442.001	1.002	0.693	Pass
NVNT	2-DH1	Ant1	2440.837	2441.845	1.008	0.025	Pass
NVNT	3-DH1	Ant1	2441.002	2442.004	1.002	0.853	Pass

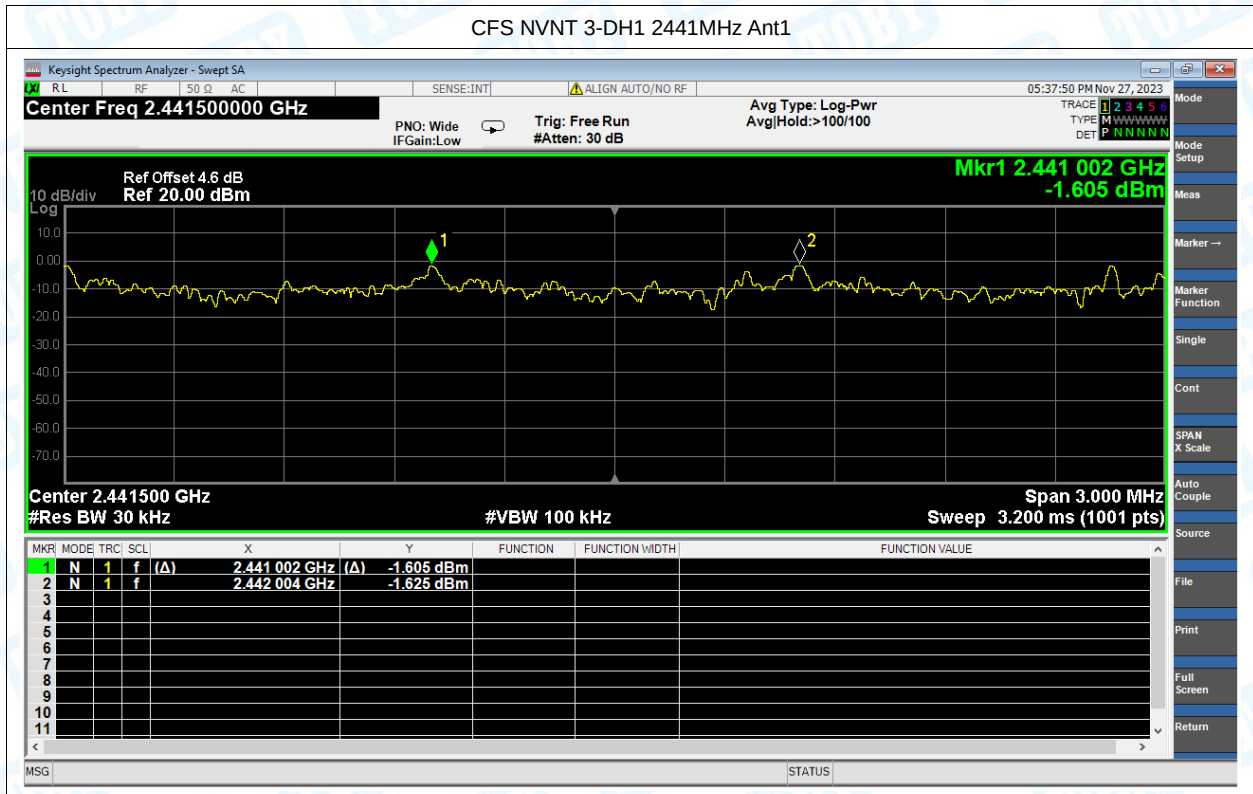
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



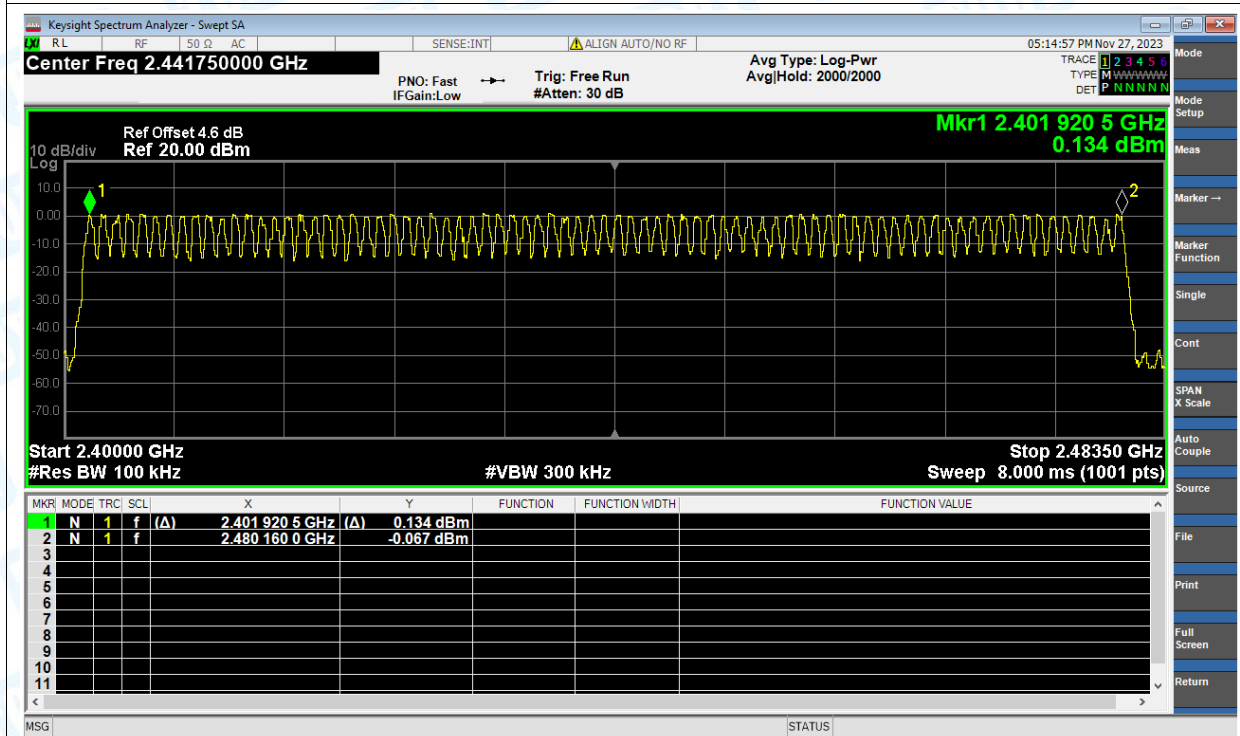


10. Number of Hopping Channel

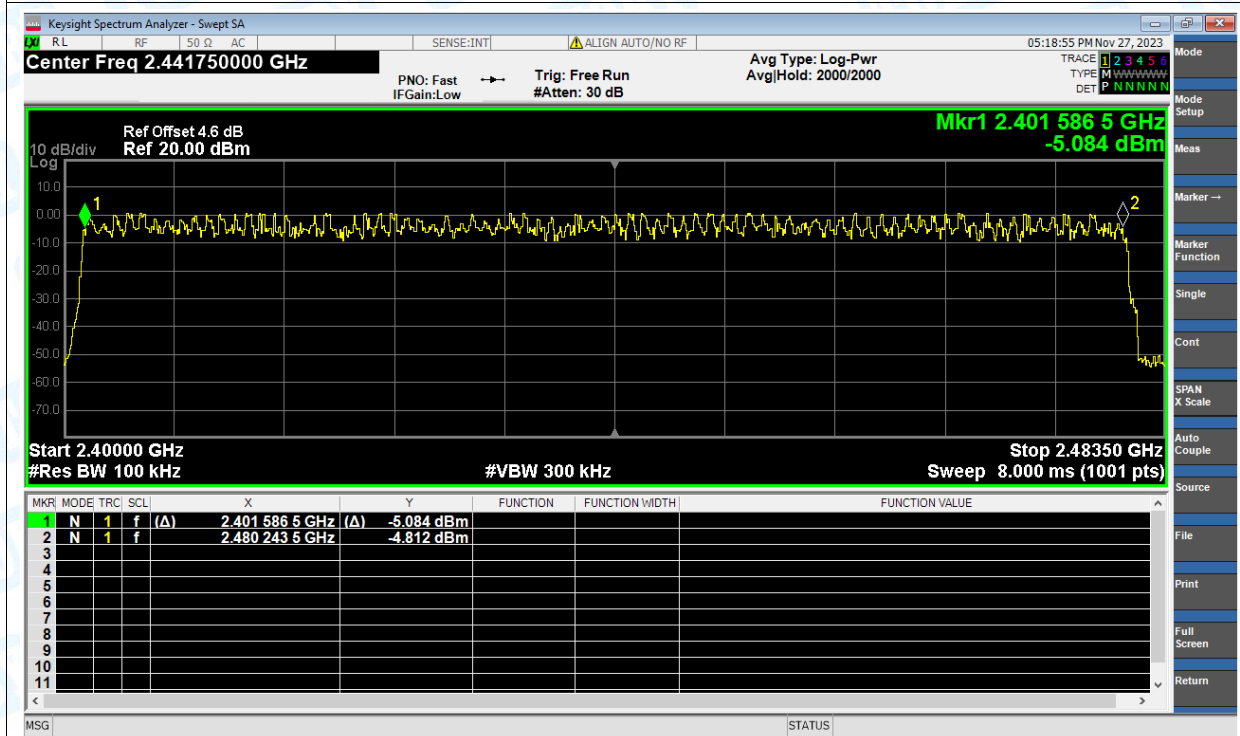
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

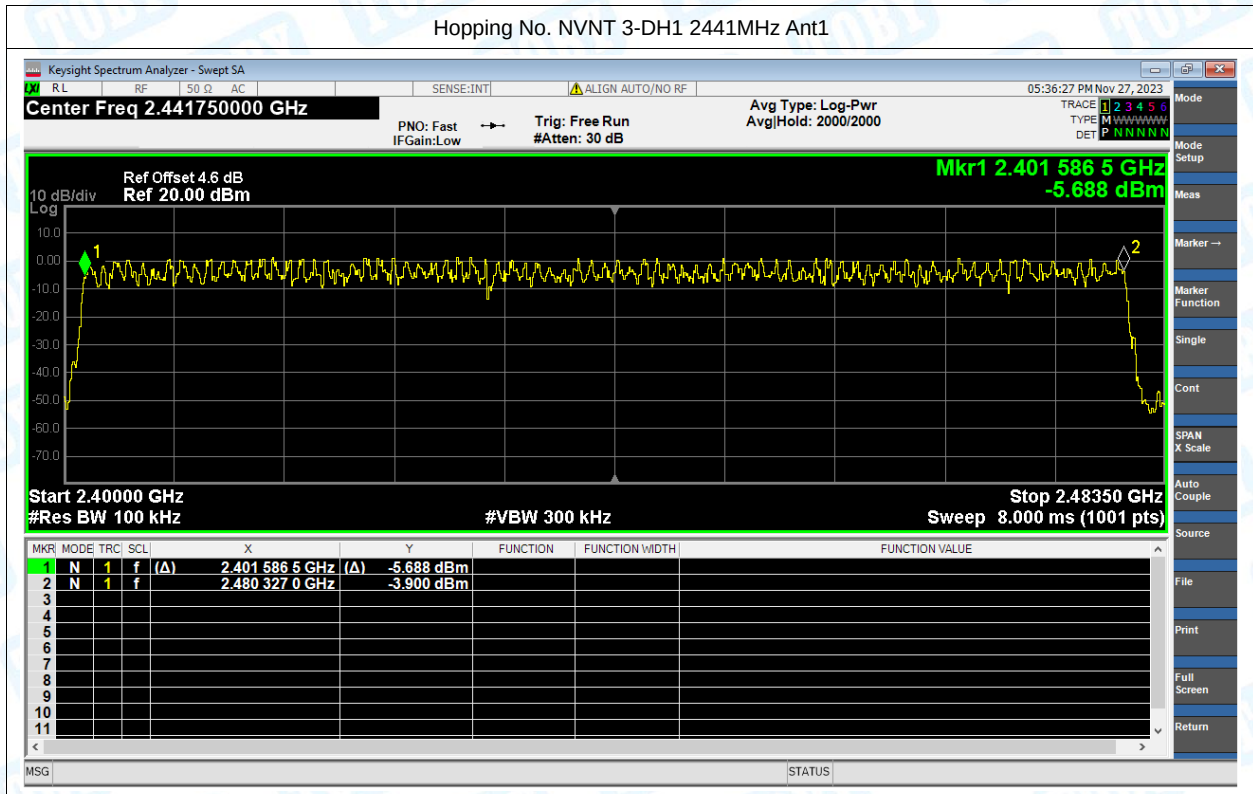
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



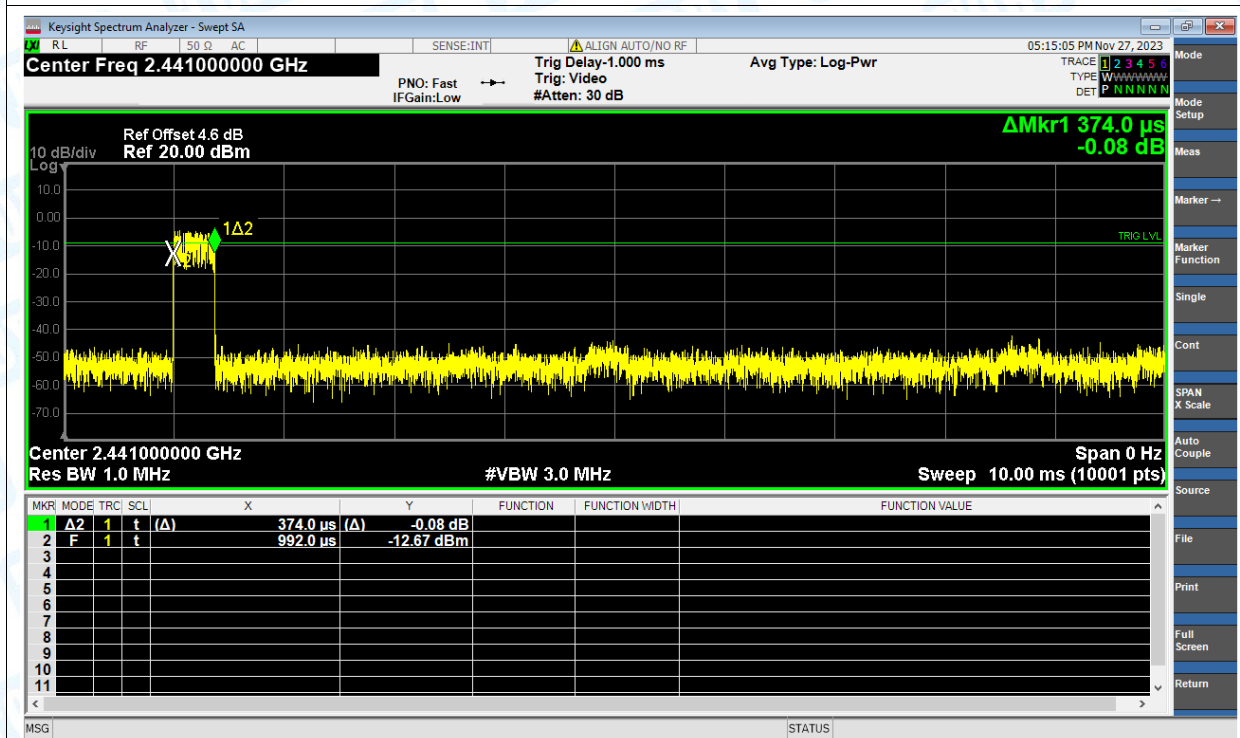


11. Dwell Time

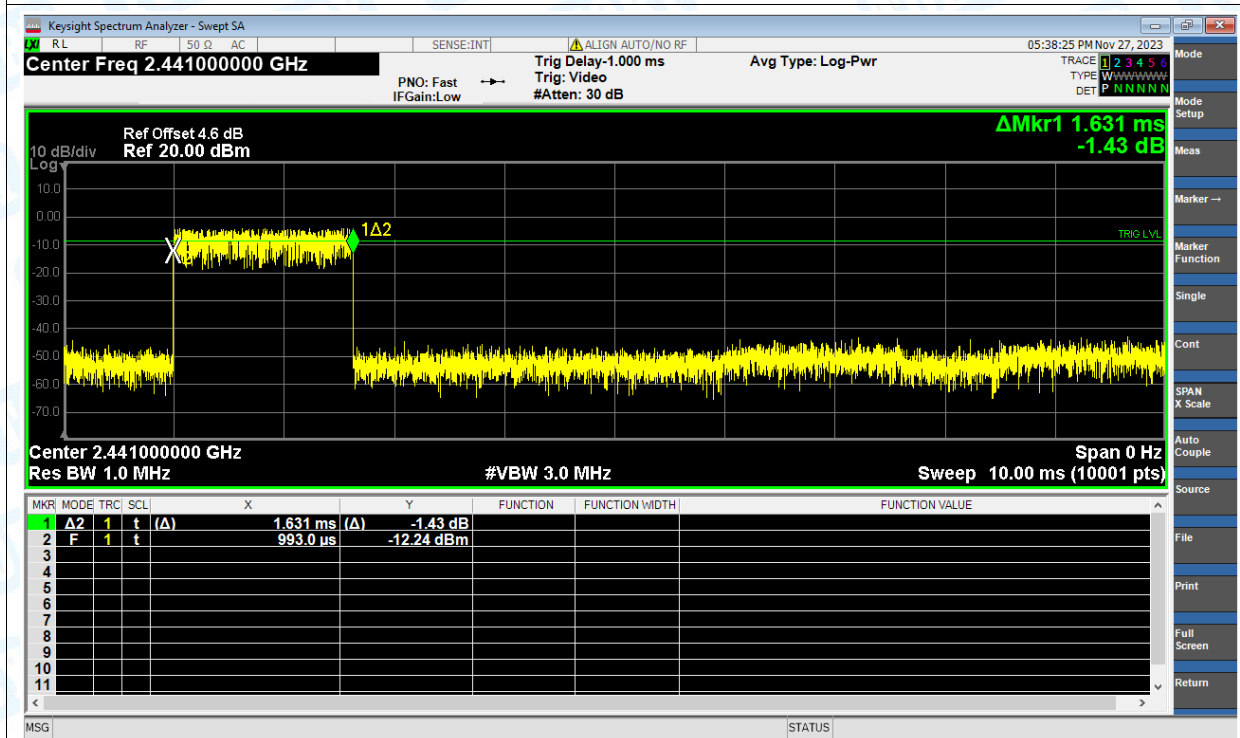
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.374	119.68	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.631	260.96	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.879	307.093	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.385	123.2	31600	400	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	1.636	261.76	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.887	307.947	31600	400	Pass

Test Graphs

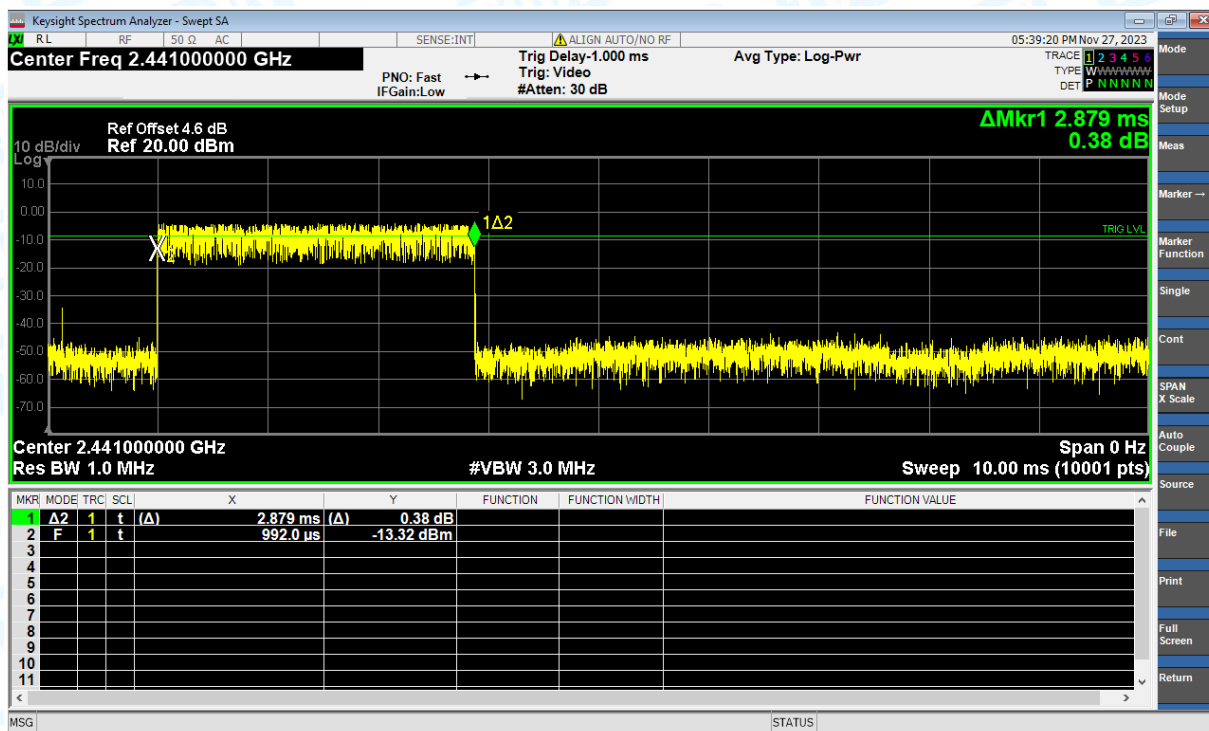
Dwell NVNT 1-DH1 2441MHz Ant1



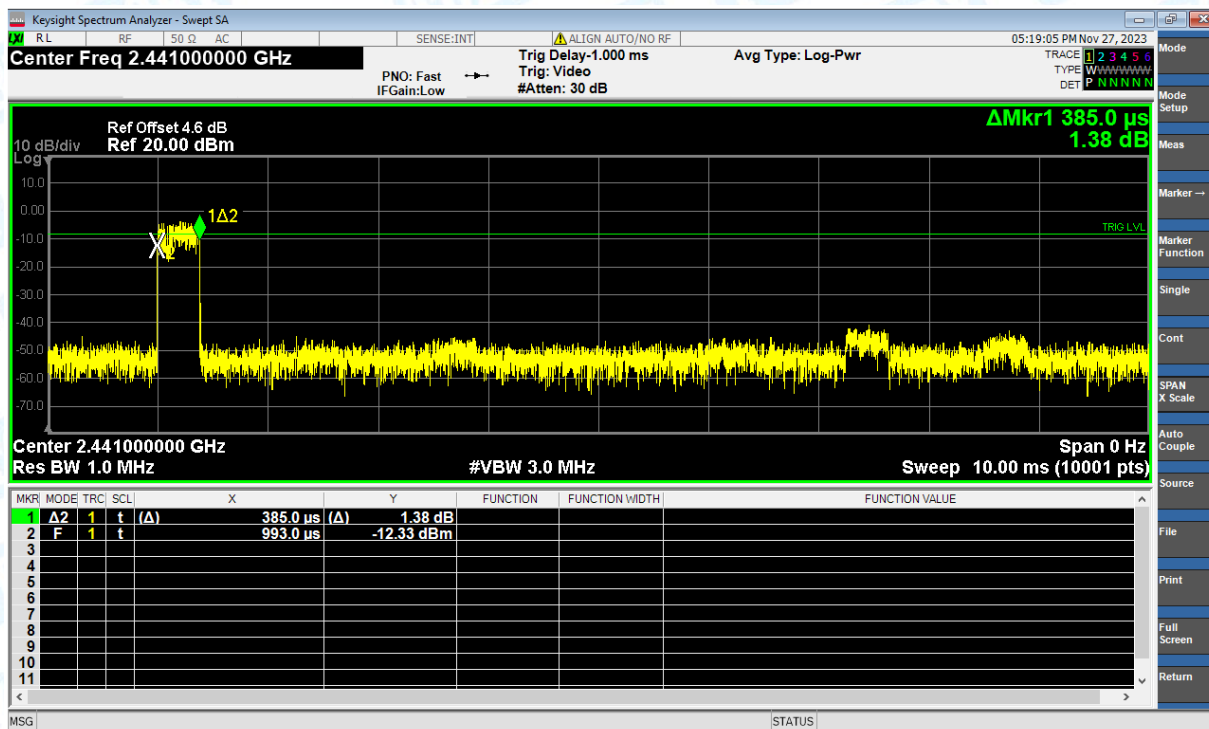
Dwell NVNT 1-DH3 2441MHz Ant1



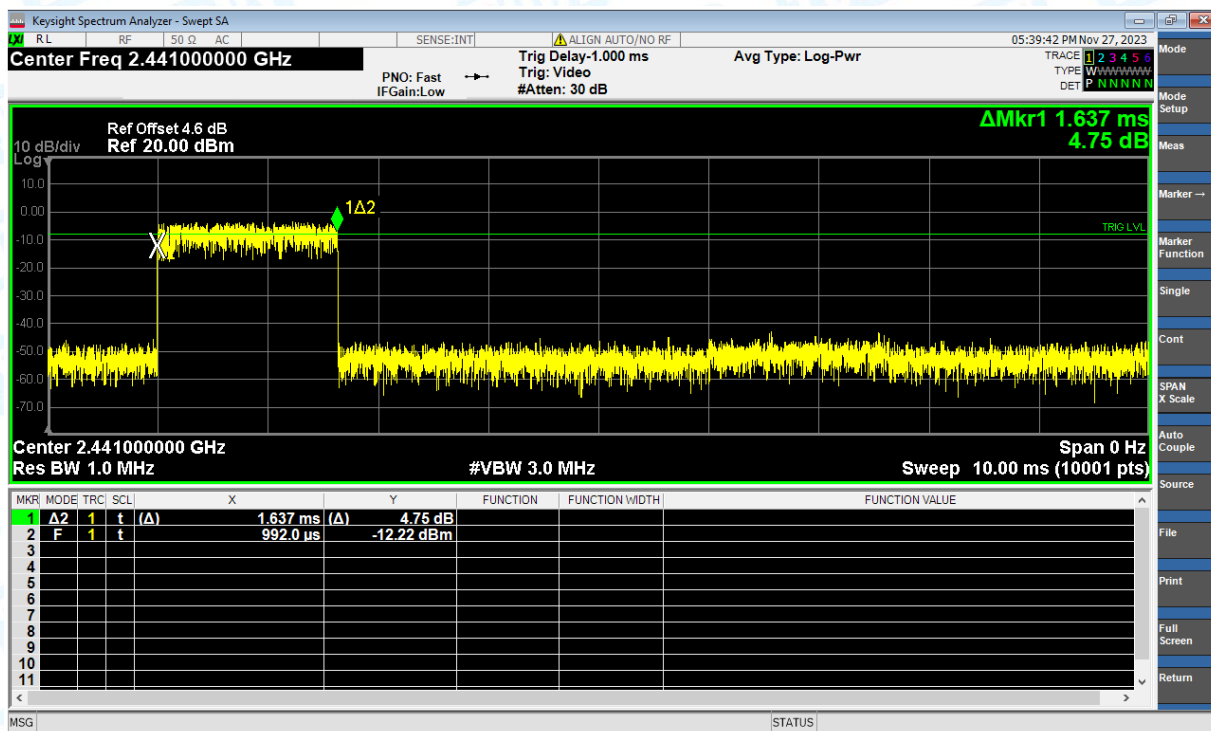
Dwell NVNT 1-DH5 2441MHz Ant1



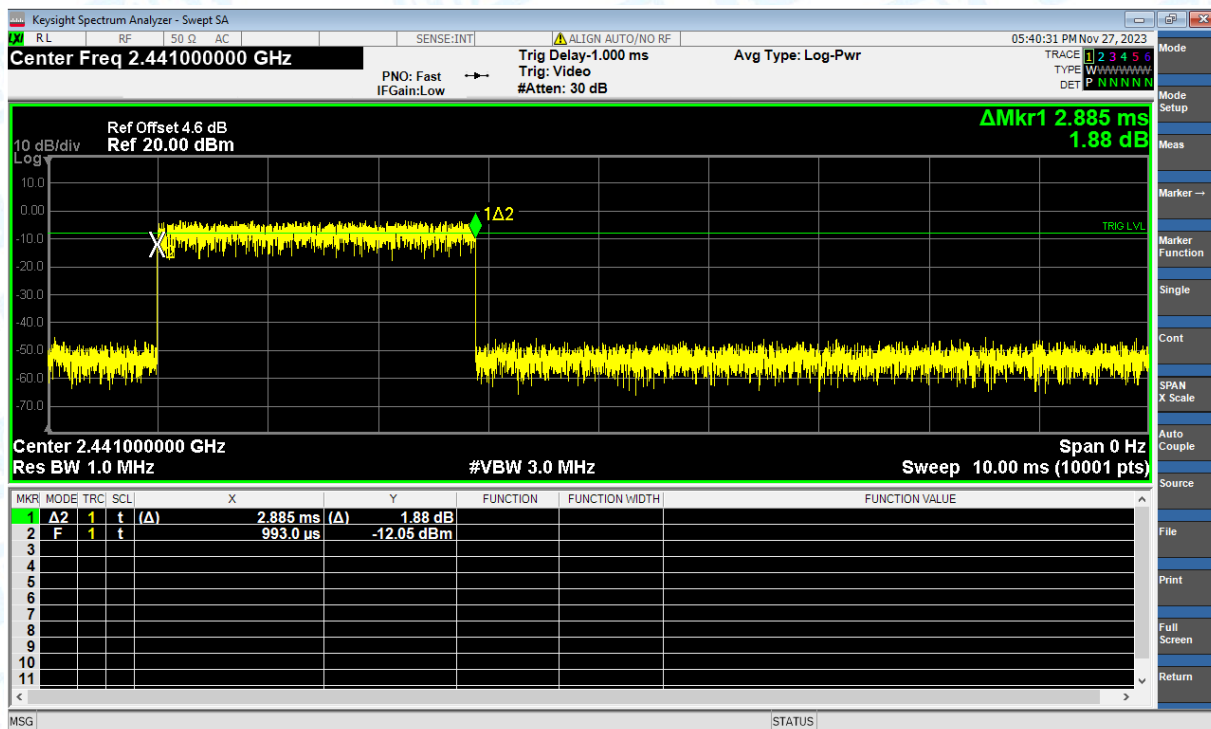
Dwell NVNT 2-DH1 2441MHz Ant1



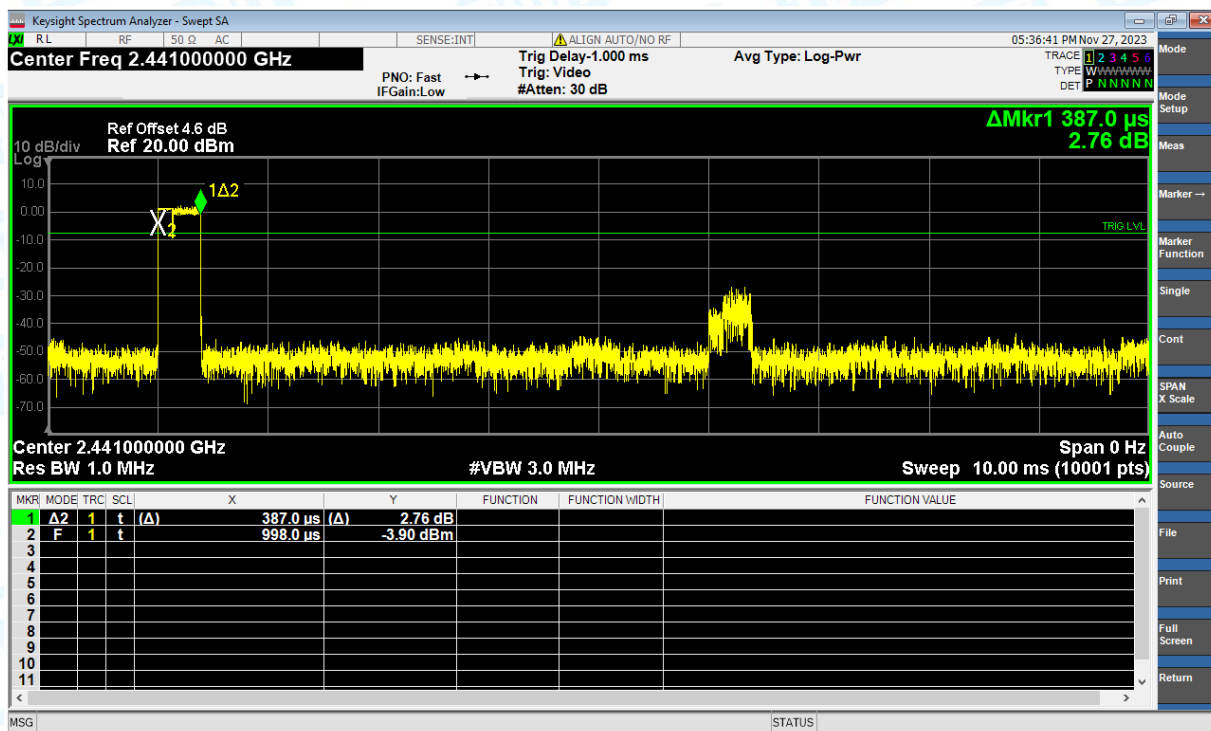
Dwell NVNT 2-DH3 2441MHz Ant1



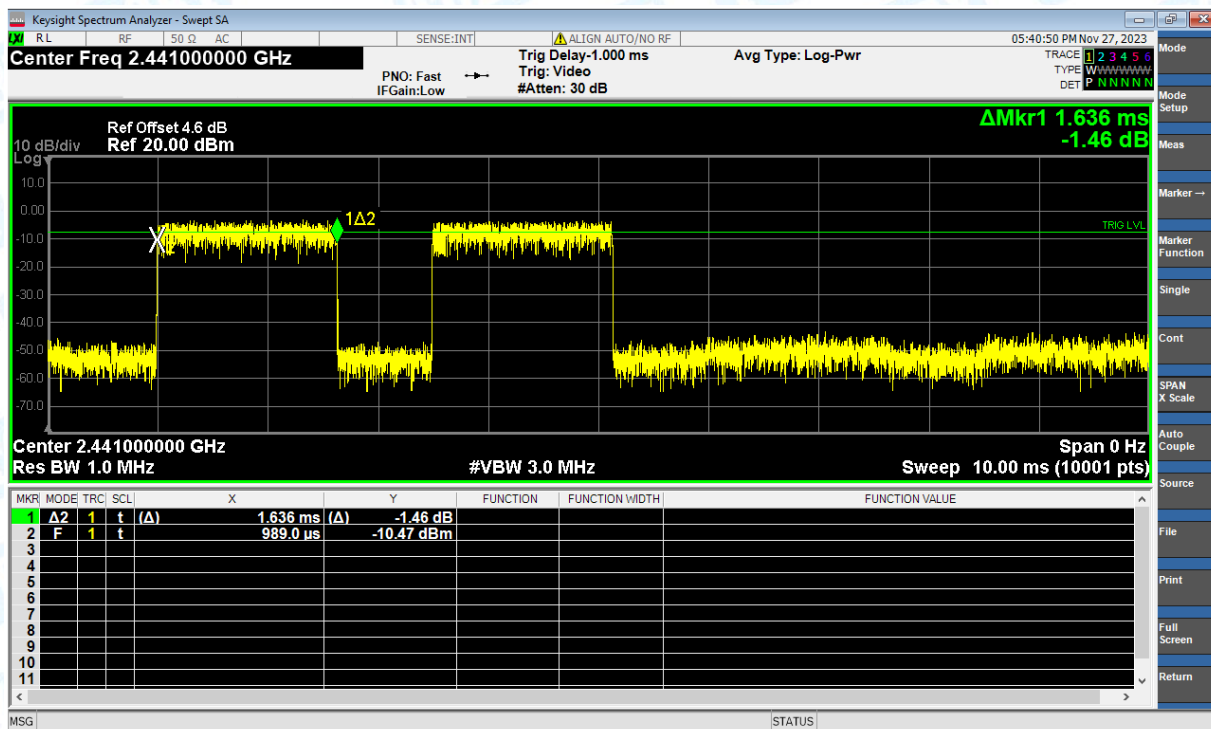
Dwell NVNT 2-DH5 2441MHz Ant1

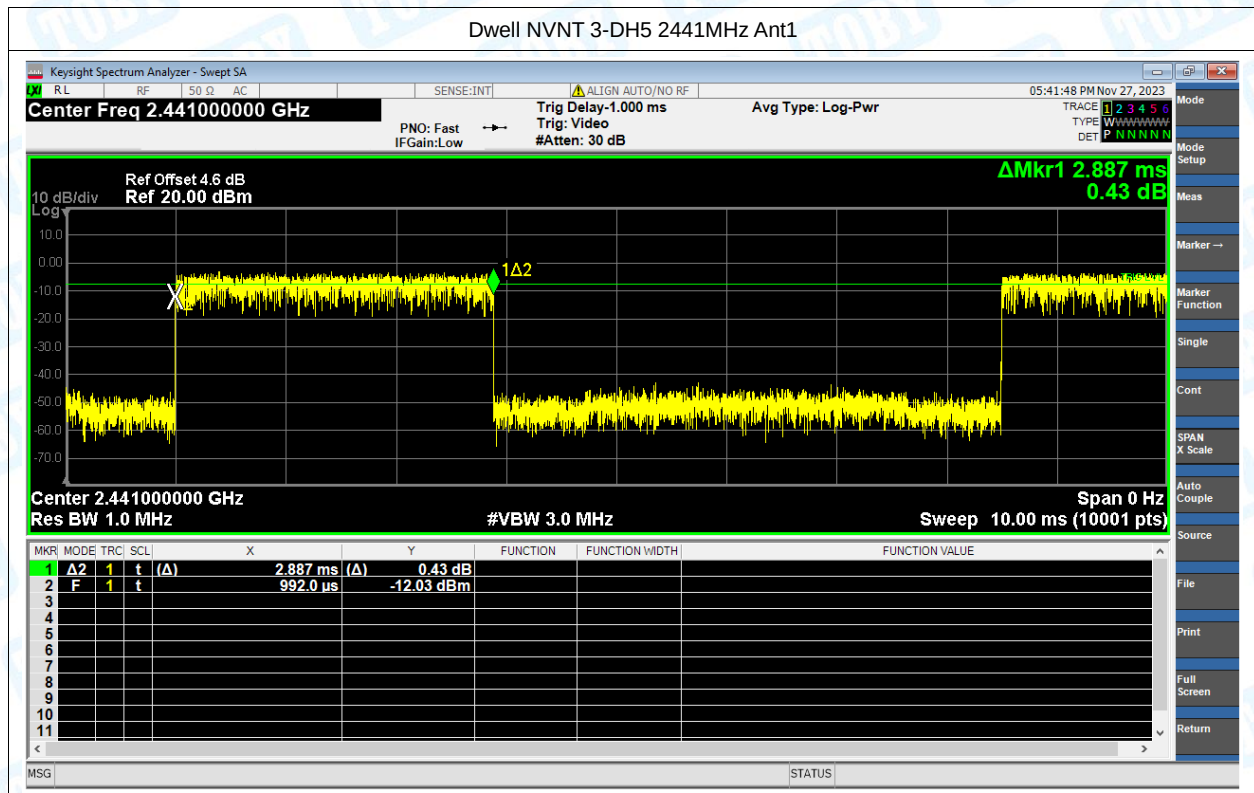


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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