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

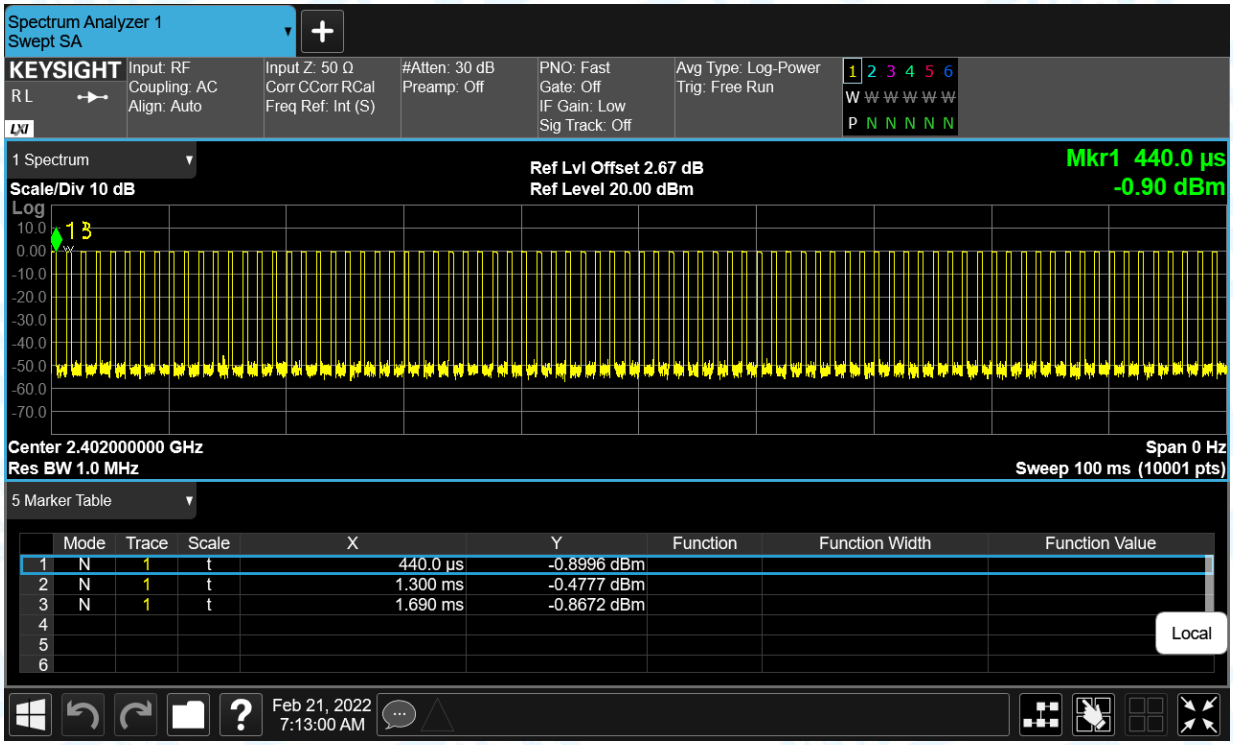
General Description of EUT	
Product Name:	Bluetooth headphones
Test Model:	MS-T20
Sample ID:	C-202202-0123-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	Input: DC 5V DC 3.7V by 60mAh Li-ion battery
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202202-0123-1	

1. Duty Cycle

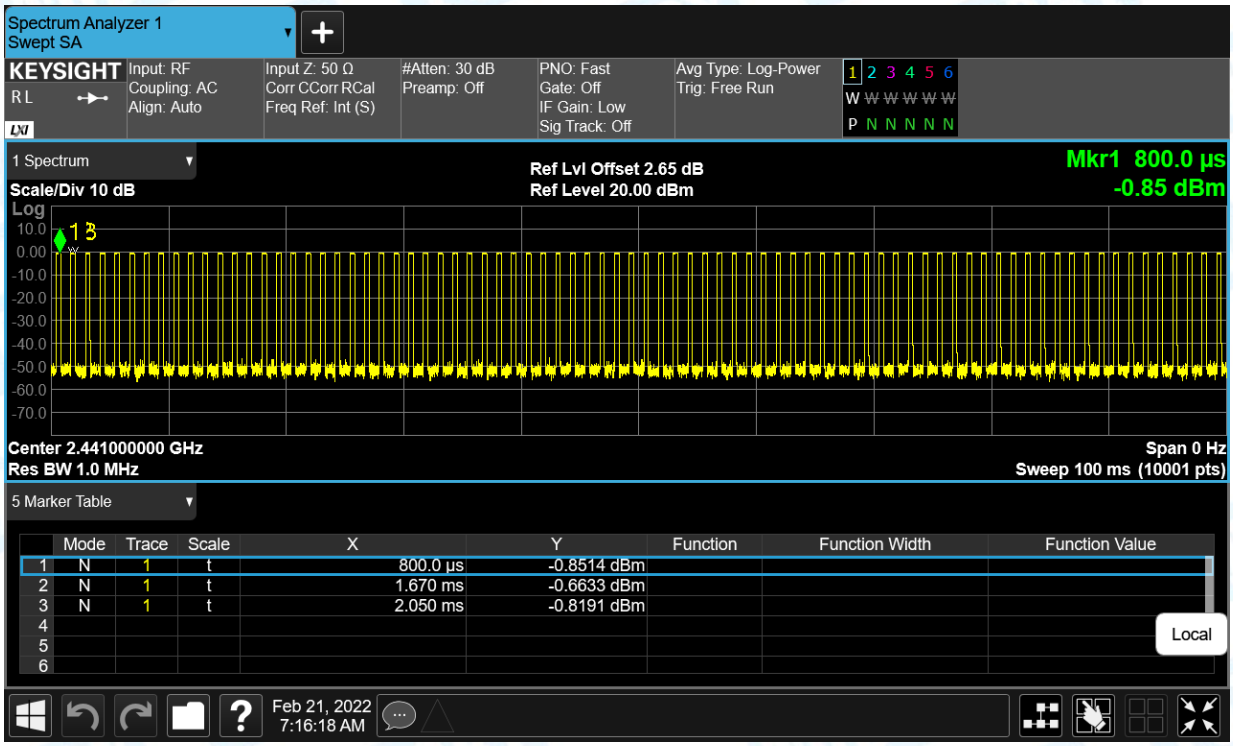
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	32	4.95	2.56
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.63
NVNT	1-DH1	2480	Ant1	31.21	5.06	2.63
NVNT	2-DH1	2402	Ant1	32	4.95	2.56
NVNT	2-DH1	2441	Ant1	32	4.95	2.56
NVNT	2-DH1	2480	Ant1	32	4.95	2.56

Test Graphs

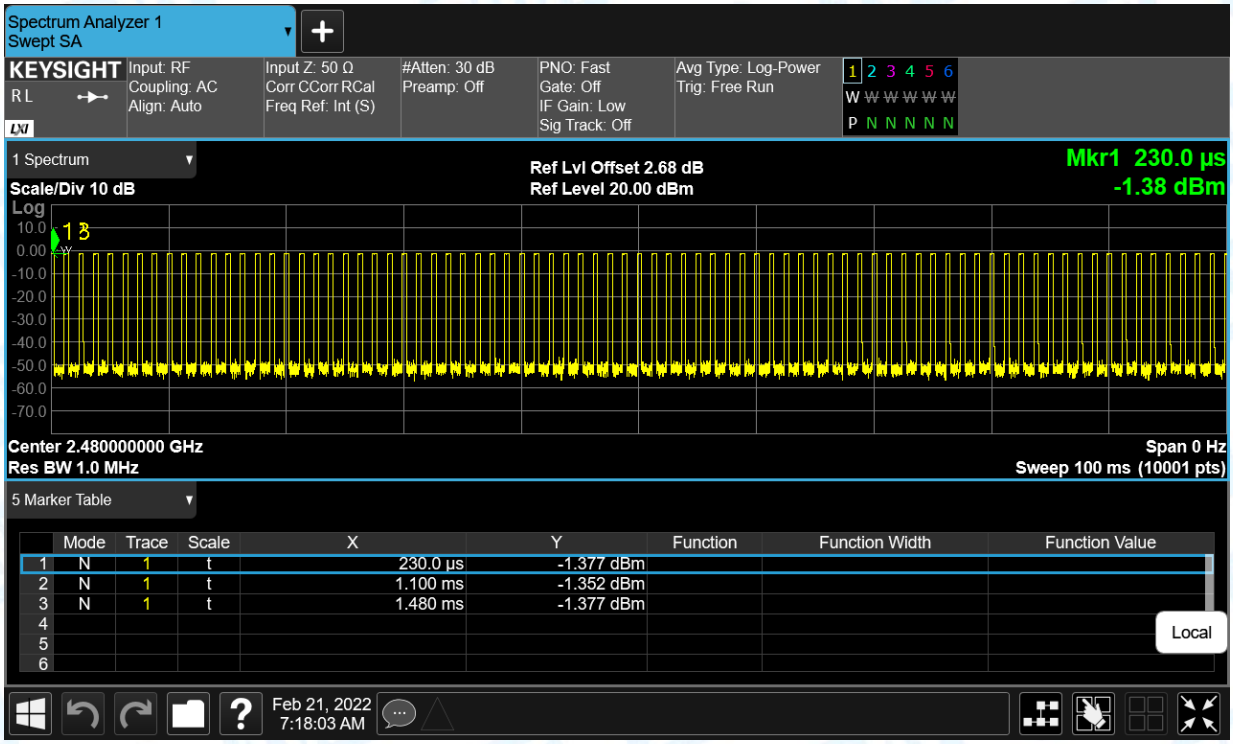
Duty Cycle NVNT 1-DH1 2402MHz Ant1



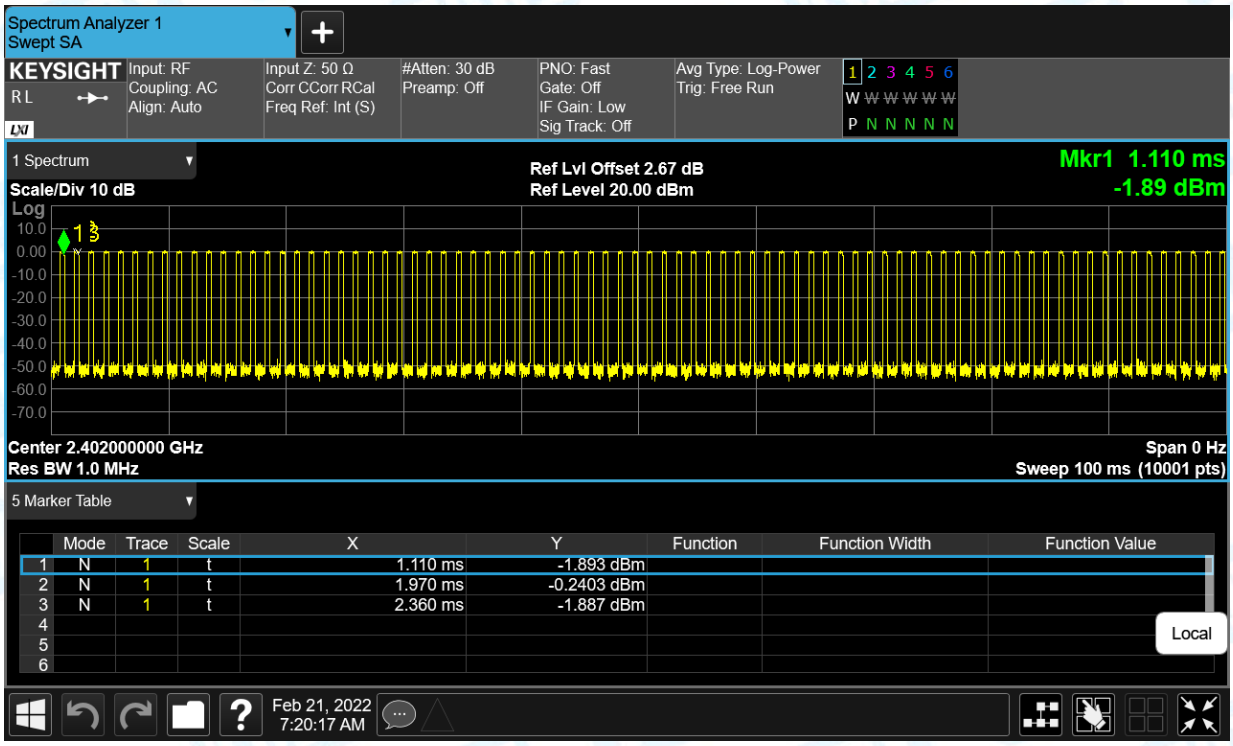
Duty Cycle NVNT 1-DH1 2441MHz Ant1



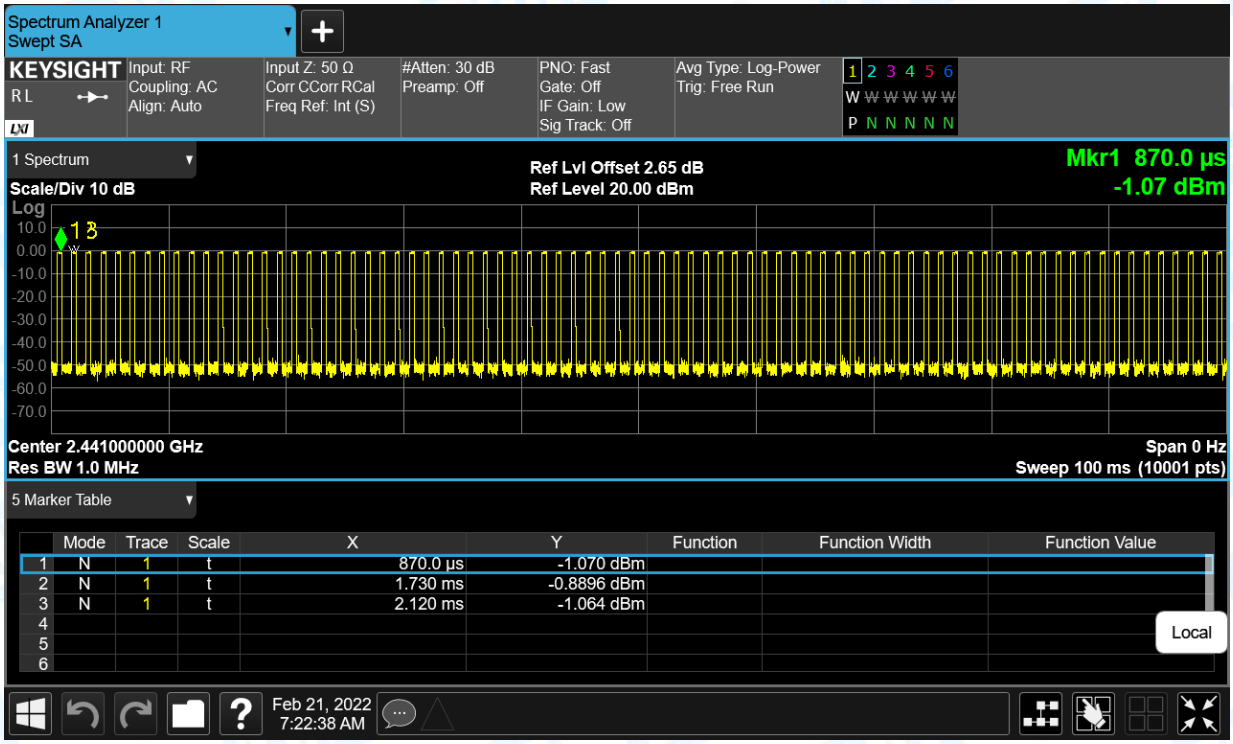
Duty Cycle NVNT 1-DH1 2480MHz Ant1



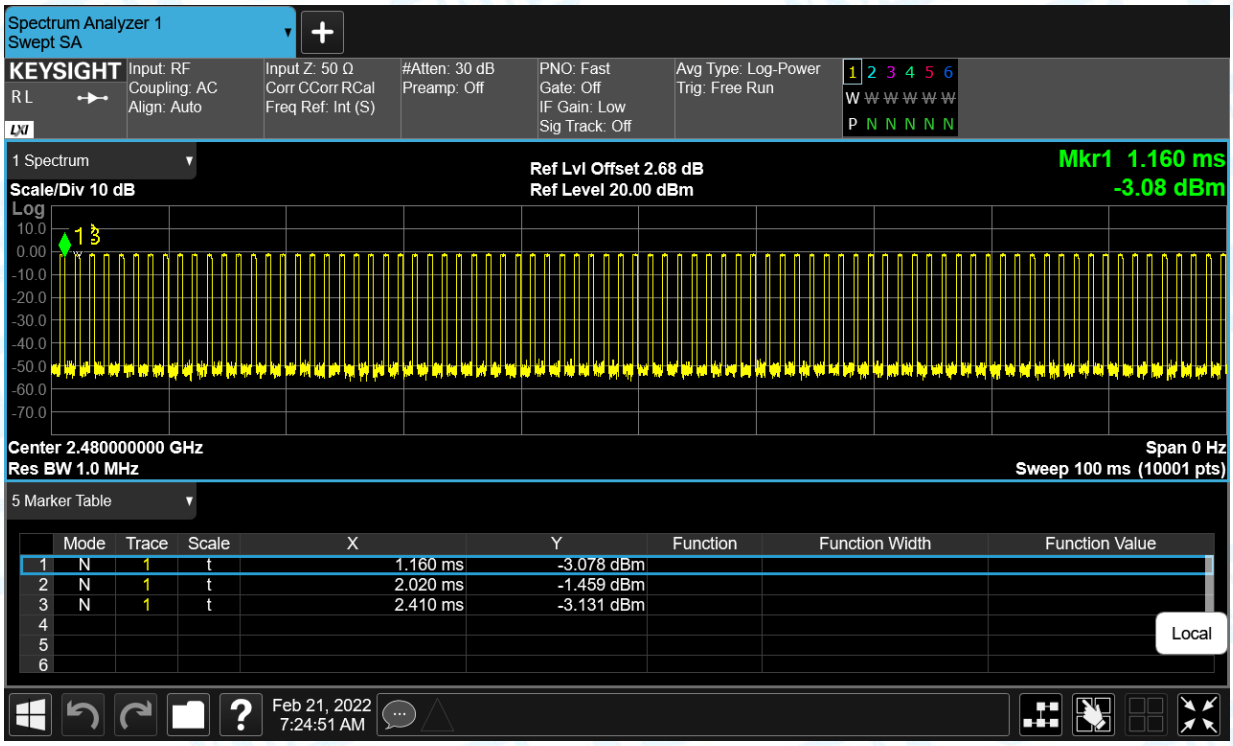
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1



Duty Cycle NVNT 2-DH1 2480MHz Ant1

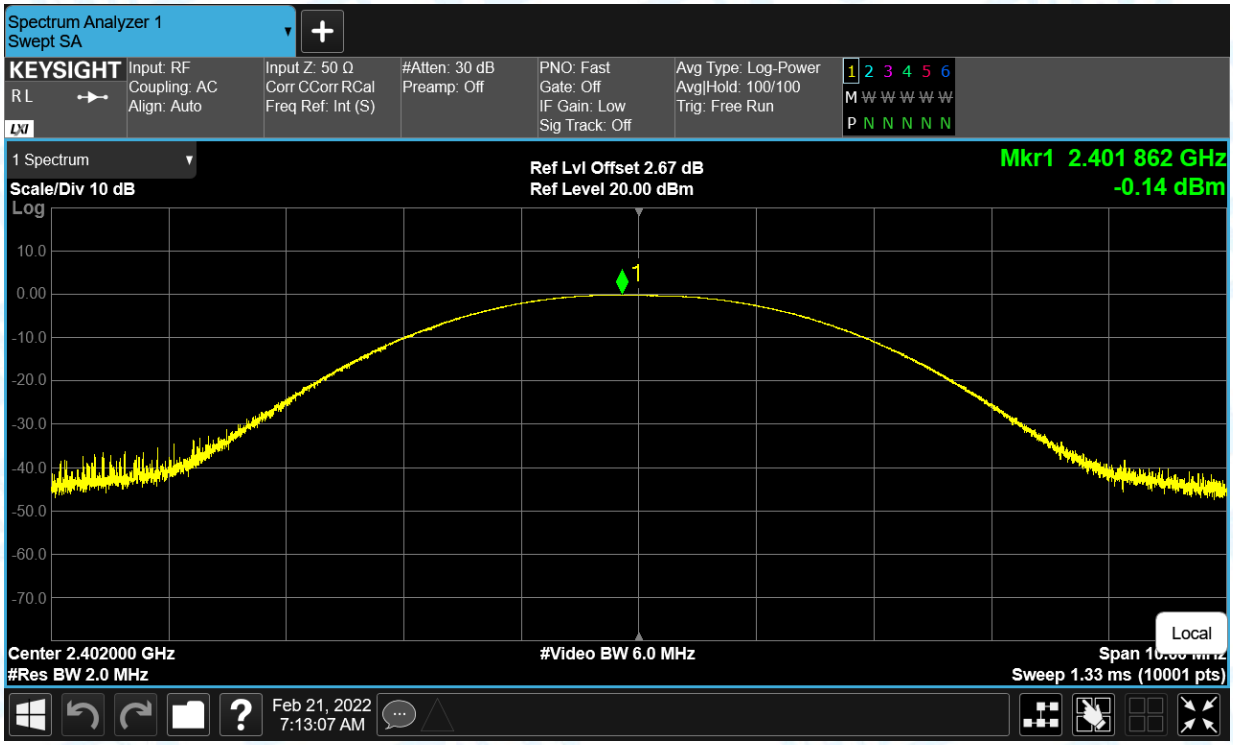


2. Maximum Conducted Output Power

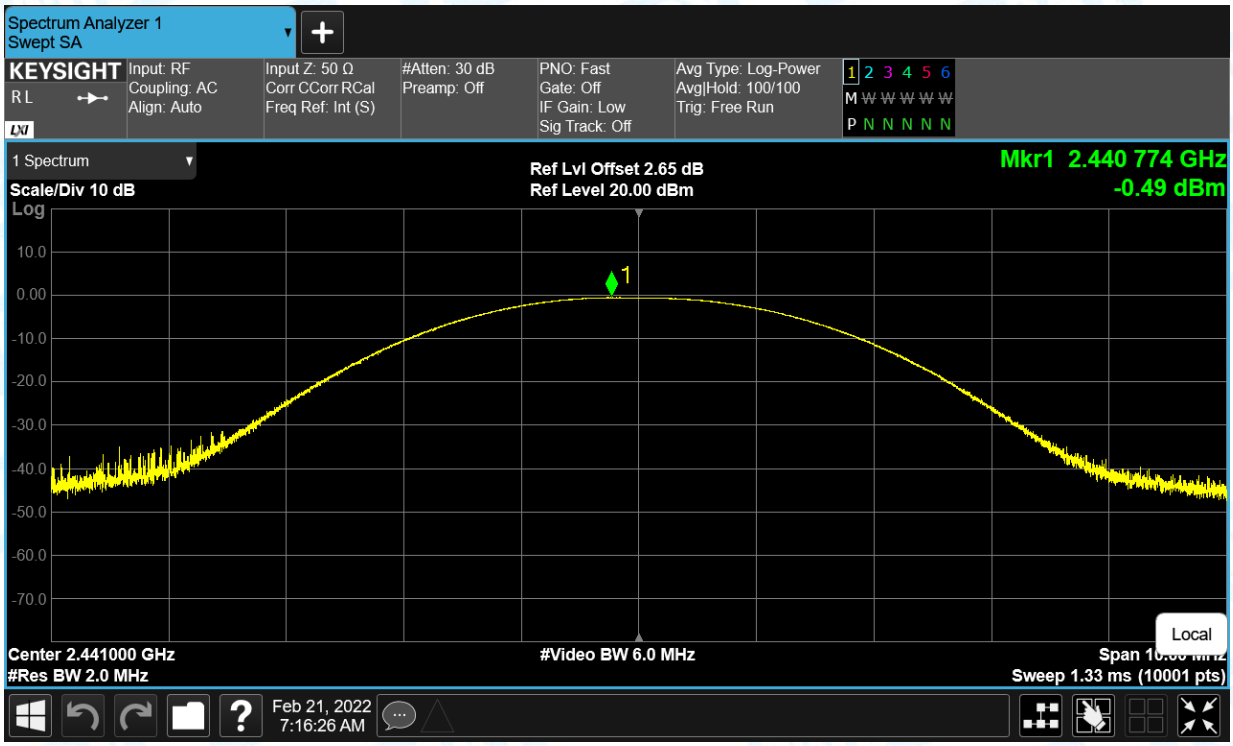
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-0.14	21	Pass
NVNT	1-DH1	2441	Ant1	-0.49	21	Pass
NVNT	1-DH1	2480	Ant1	-1.17	21	Pass
NVNT	1-DH3	2441	Ant1	-0.78	21	Pass
NVNT	1-DH5	2441	Ant1	-0.76	21	Pass
NVNT	2-DH1	2402	Ant1	0.82	21	Pass
NVNT	2-DH1	2441	Ant1	0.21	21	Pass
NVNT	2-DH1	2480	Ant1	-0.39	21	Pass
NVNT	2-DH3	2441	Ant1	0.18	21	Pass
NVNT	2-DH5	2441	Ant1	0.18	21	Pass

Test Graphs

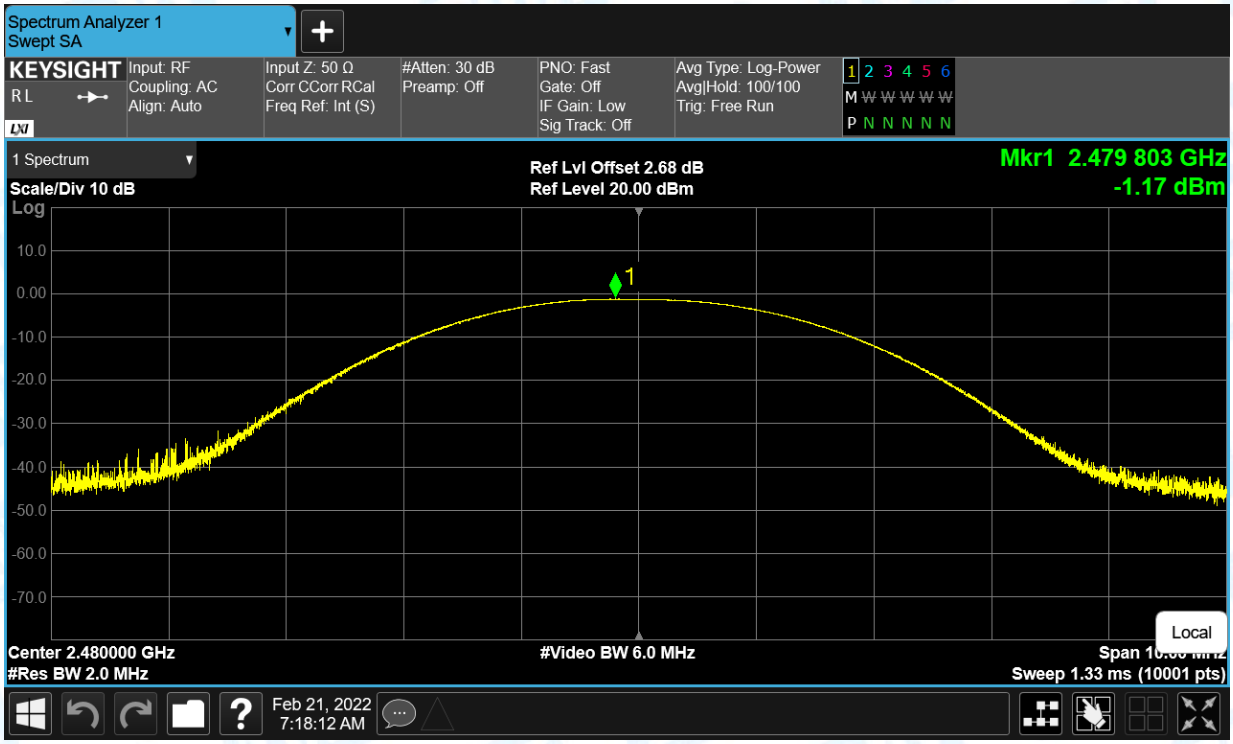
Power NVNT 1-DH1 2402MHz Ant1



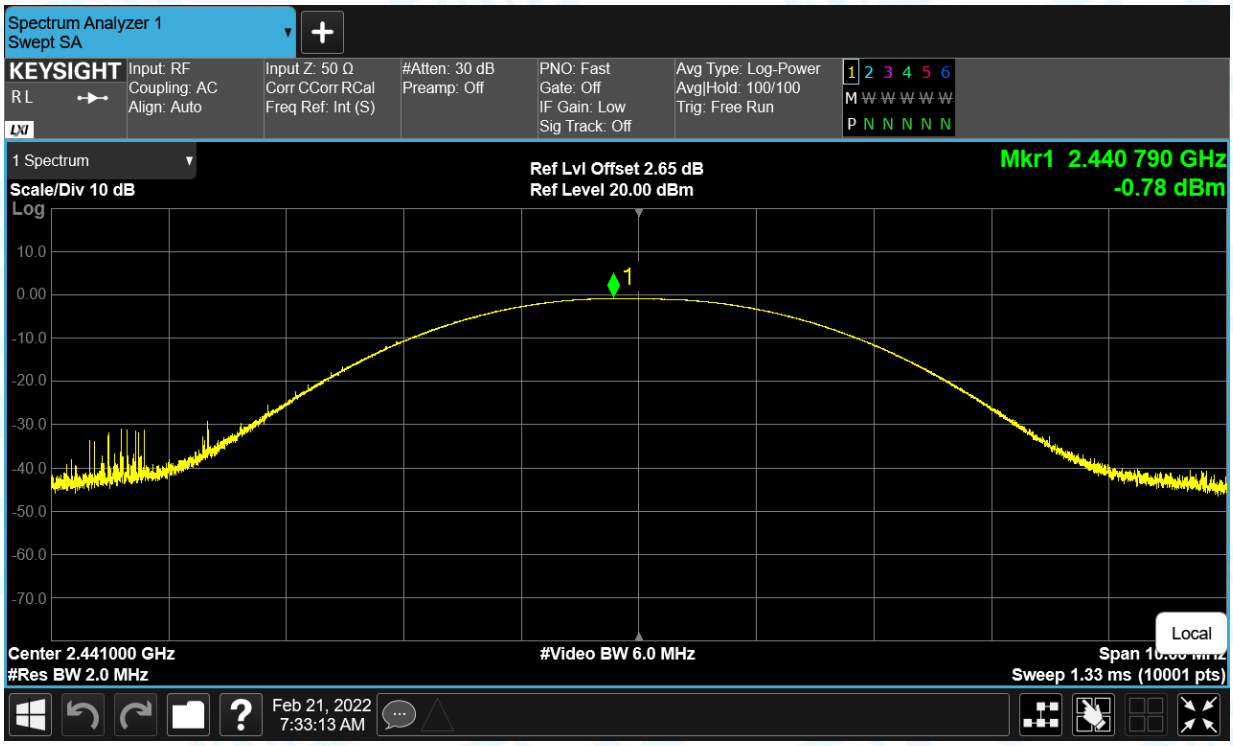
Power NVNT 1-DH1 2441MHz Ant1



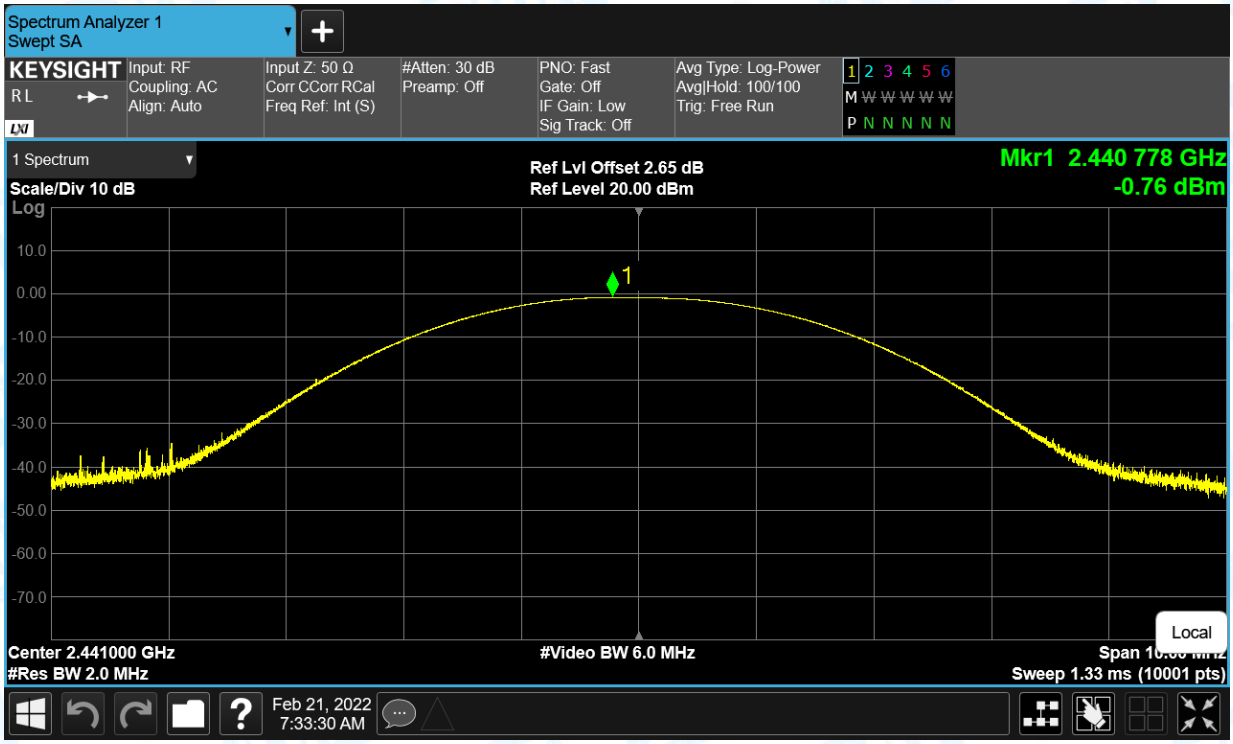
Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 1-DH3 2441MHz Ant1

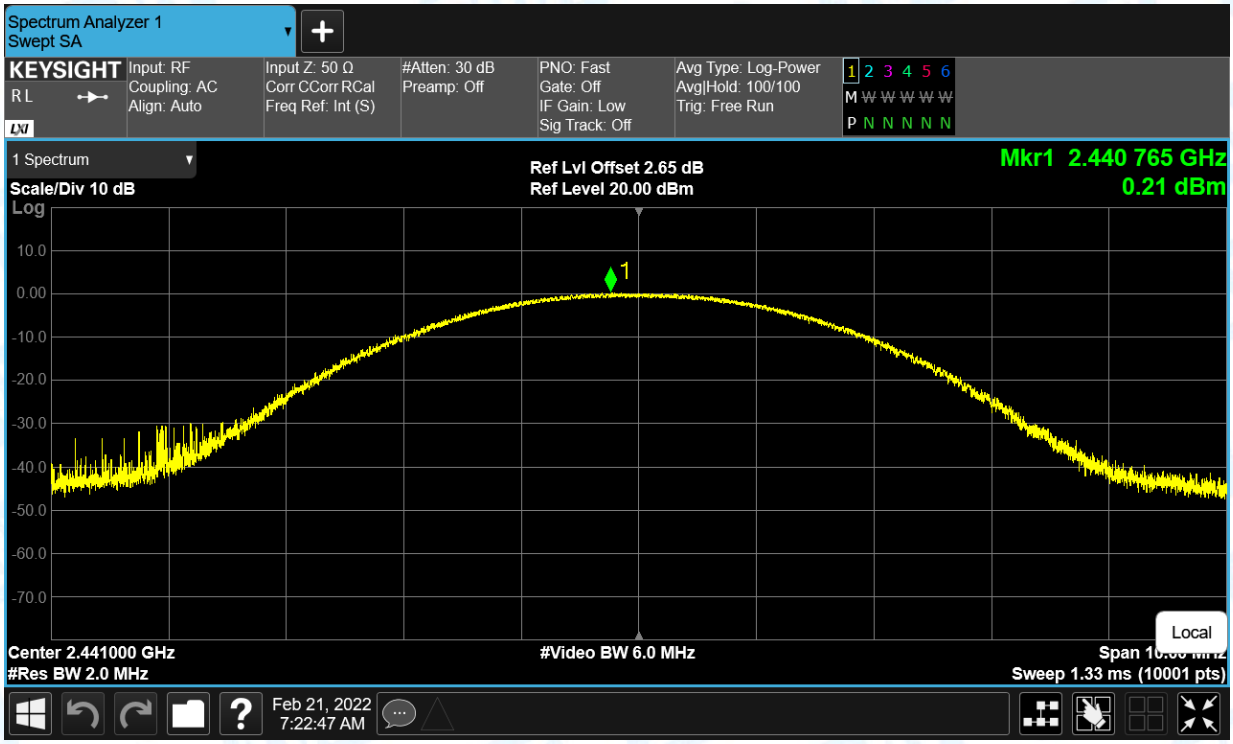


Power NVNT 1-DH5 2441MHz Ant1

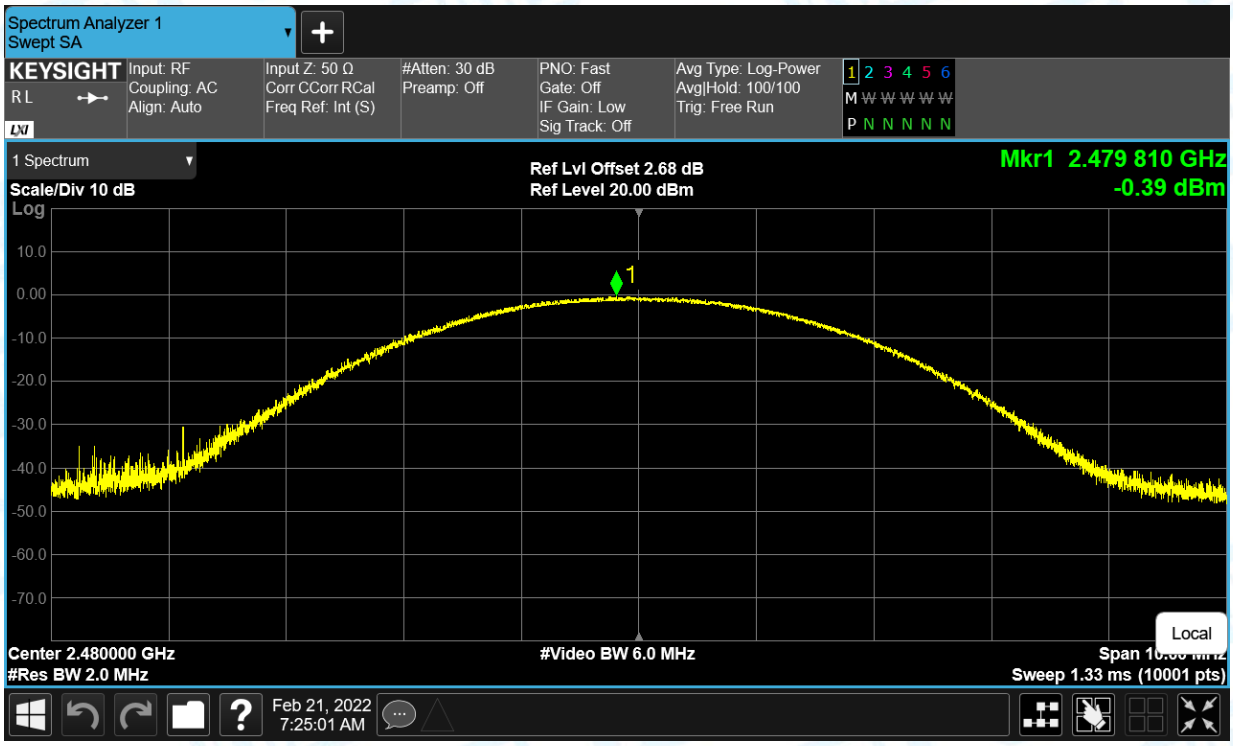


Power NVNT 2-DH1 2402MHz Ant1

Power NVNT 2-DH1 2441MHz Ant1

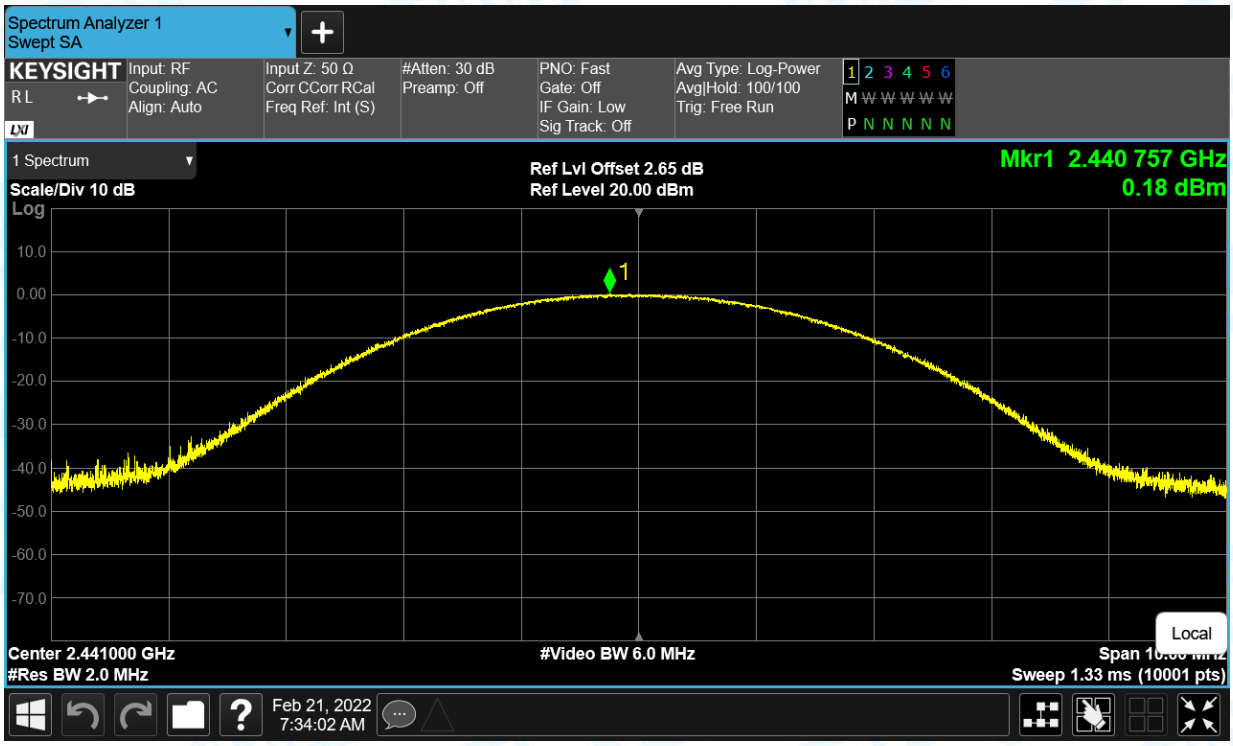


Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1

Power NVNT 2-DH5 2441MHz Ant1



3. -20dB Bandwidth

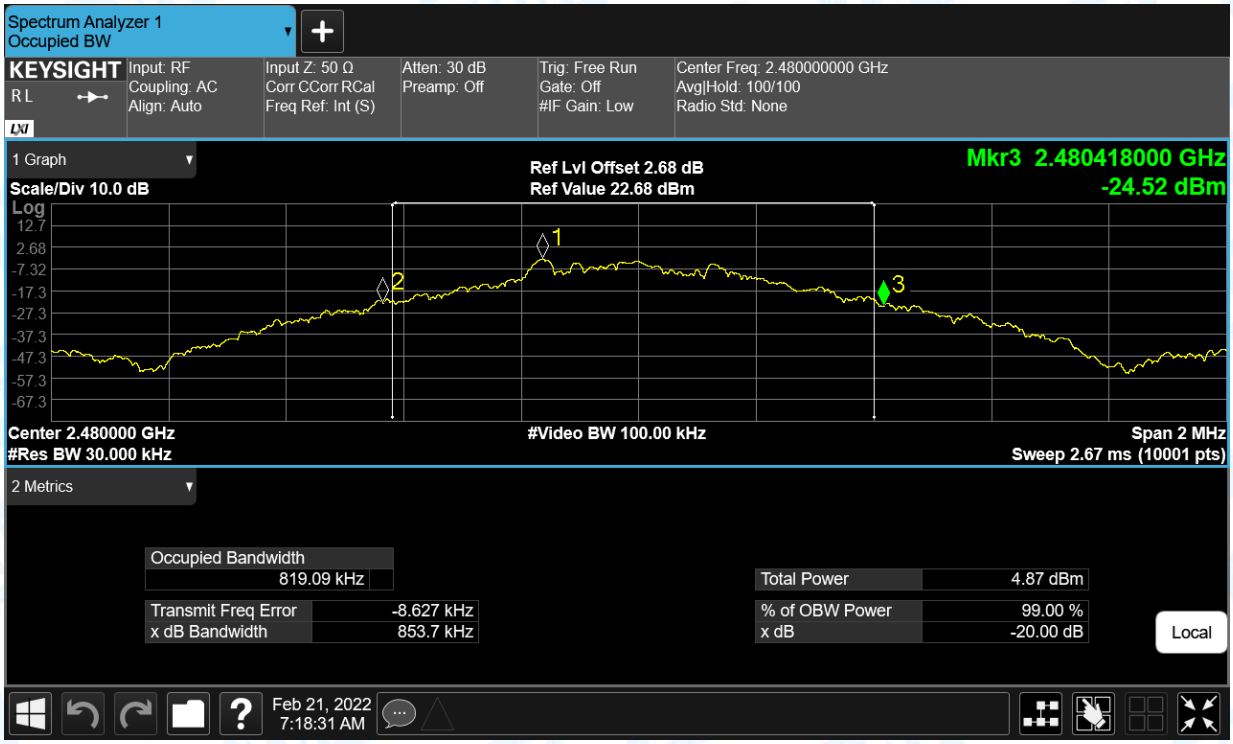
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.87	0	Pass
NVNT	1-DH1	2441	Ant1	0.86	0	Pass
NVNT	1-DH1	2480	Ant1	0.85	0	Pass
NVNT	2-DH1	2402	Ant1	1.22	0	Pass
NVNT	2-DH1	2441	Ant1	1.24	0	Pass
NVNT	2-DH1	2480	Ant1	1.24	0	Pass

Test Graphs

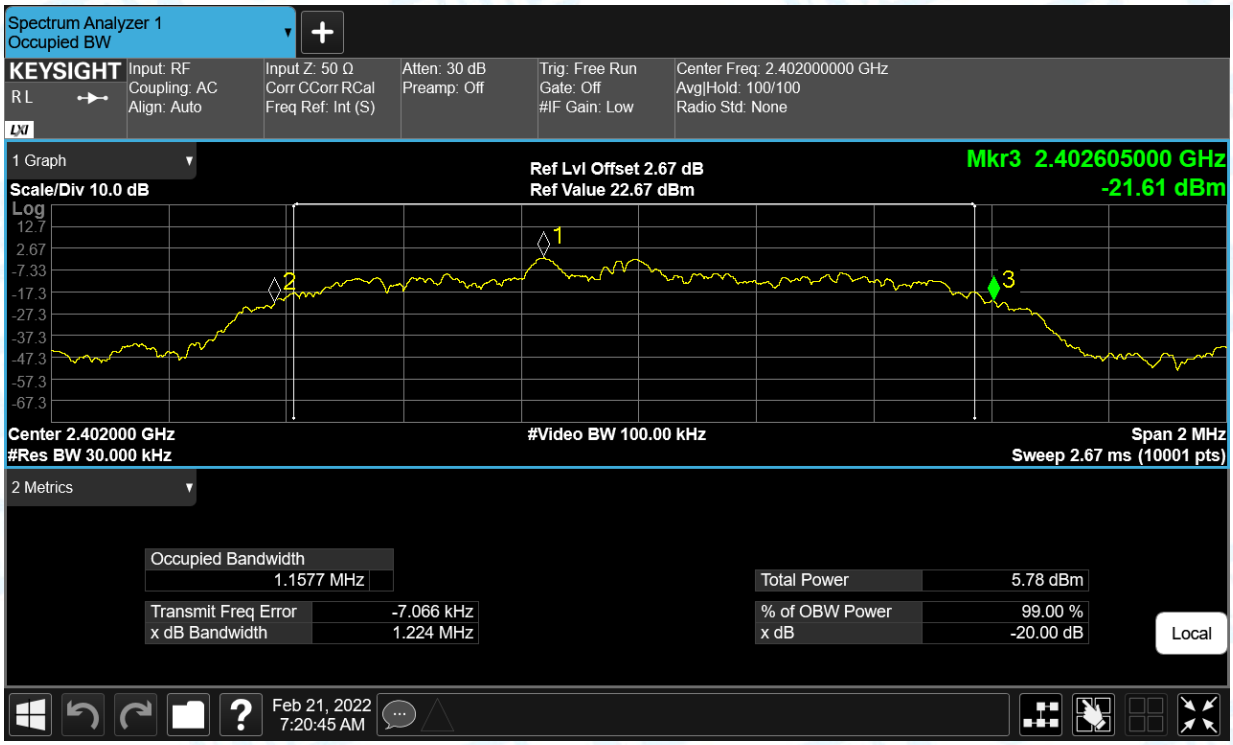
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

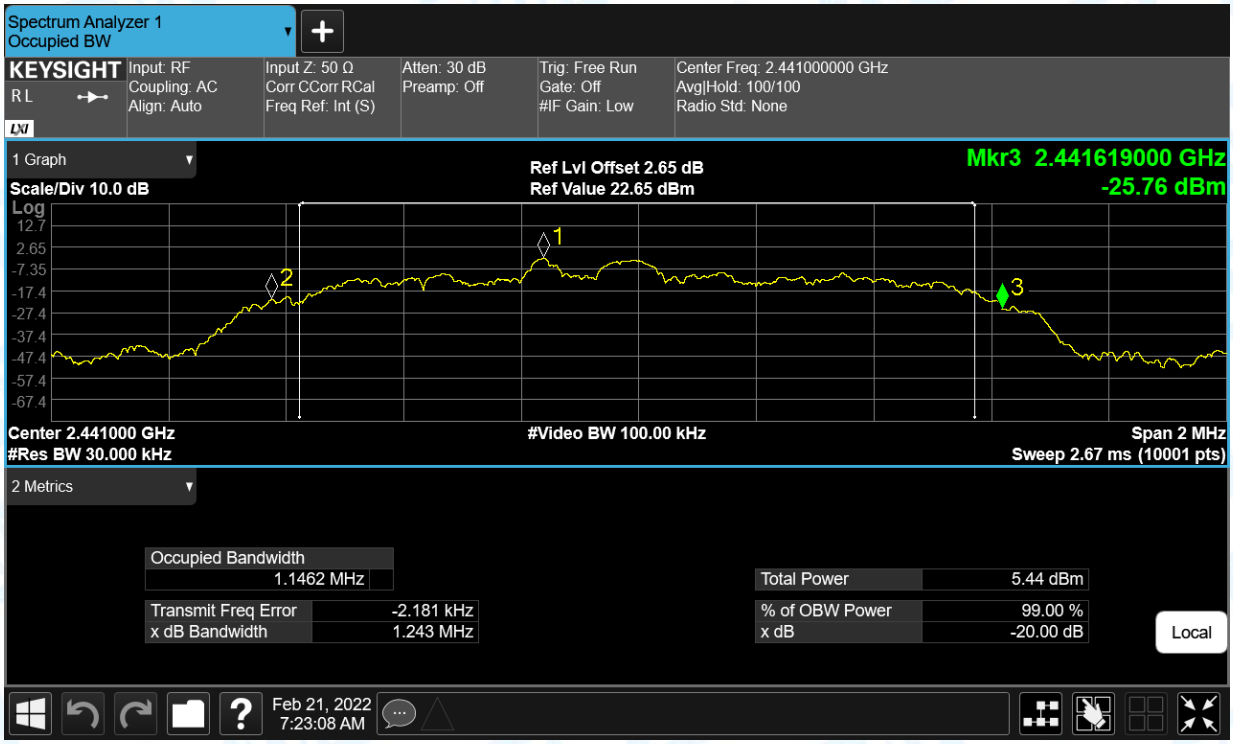
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



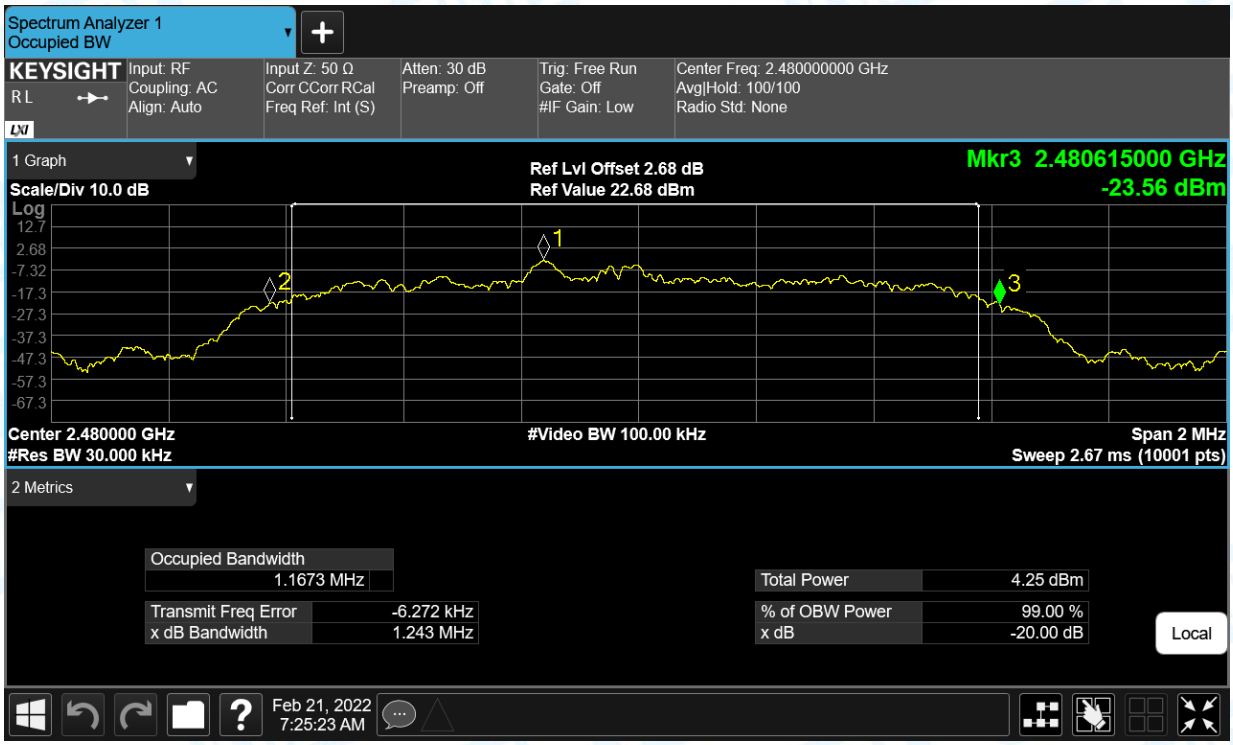
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



4. Occupied Channel Bandwidth

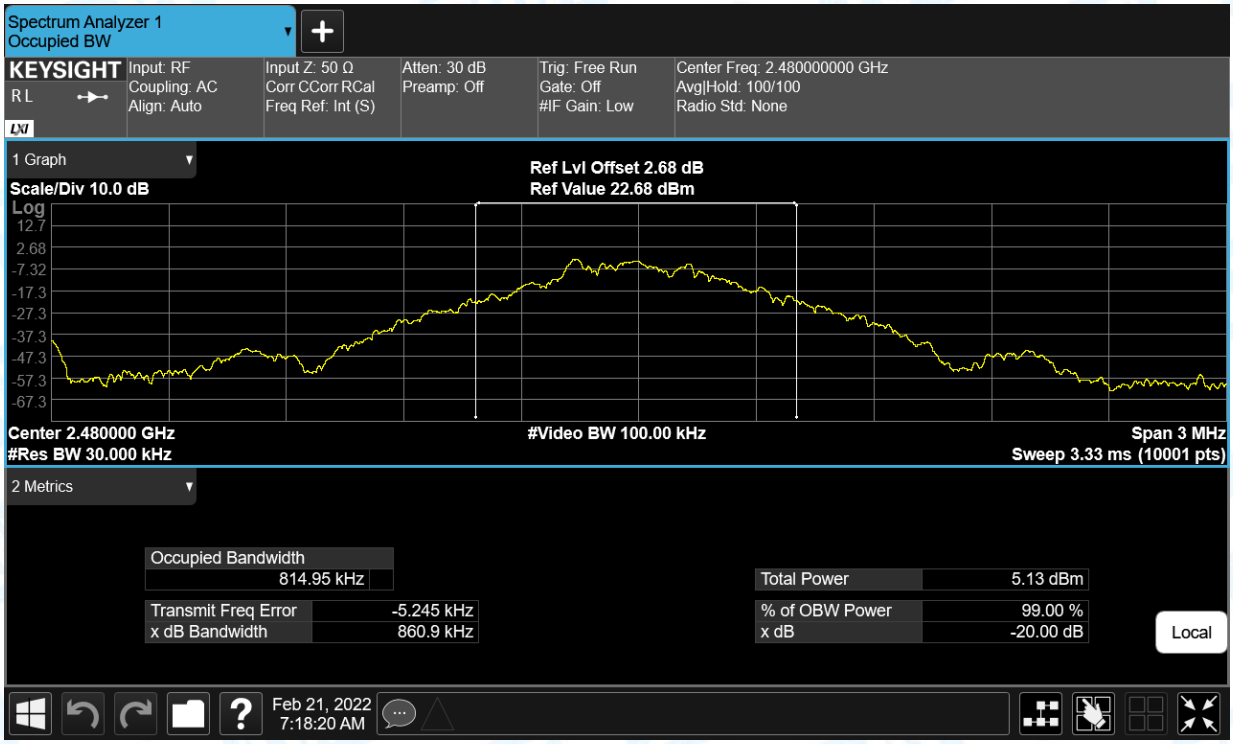
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.819
NVNT	1-DH1	2441	Ant1	0.806
NVNT	1-DH1	2480	Ant1	0.815
NVNT	2-DH1	2402	Ant1	1.159
NVNT	2-DH1	2441	Ant1	1.173
NVNT	2-DH1	2480	Ant1	1.168

Test Graphs

OBW NVNT 1-DH1 2402MHz Ant1

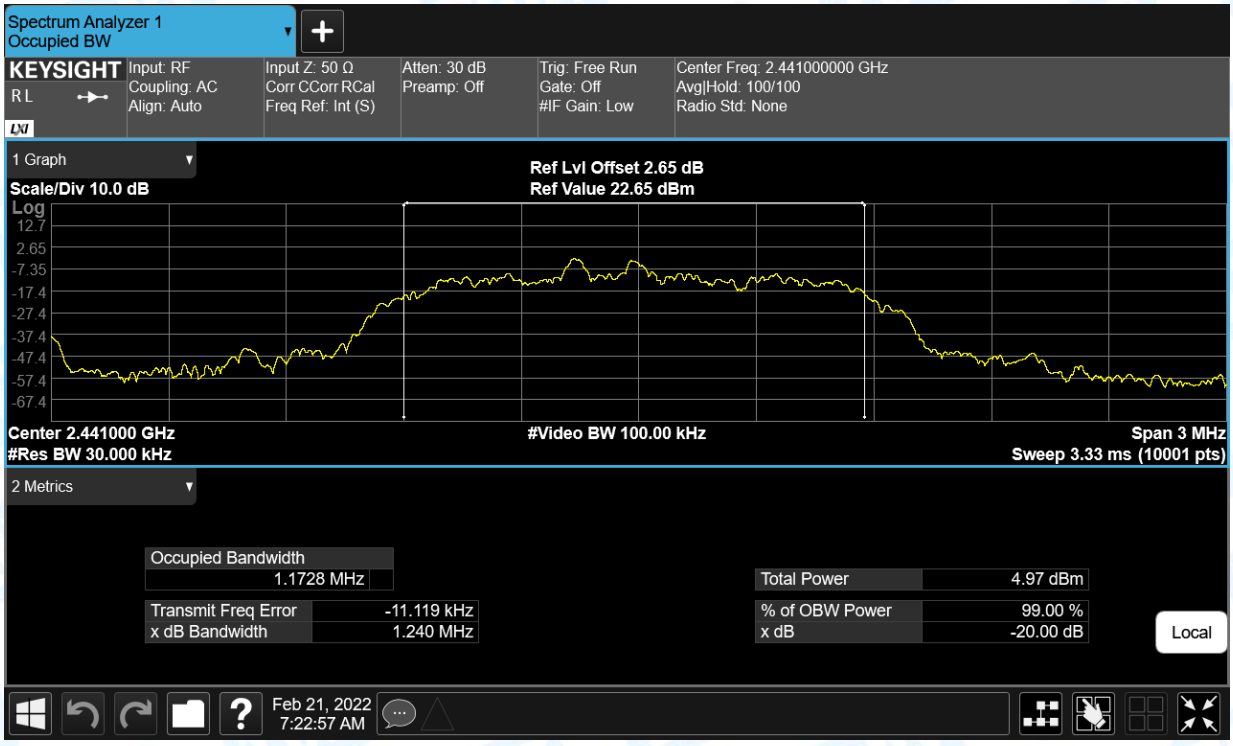
OBW NVNT 1-DH1 2441MHz Ant1

OBW NVNT 1-DH1 2480MHz Ant1



OBW NVNT 2-DH1 2402MHz Ant1

OBW NVNT 2-DH1 2441MHz Ant1



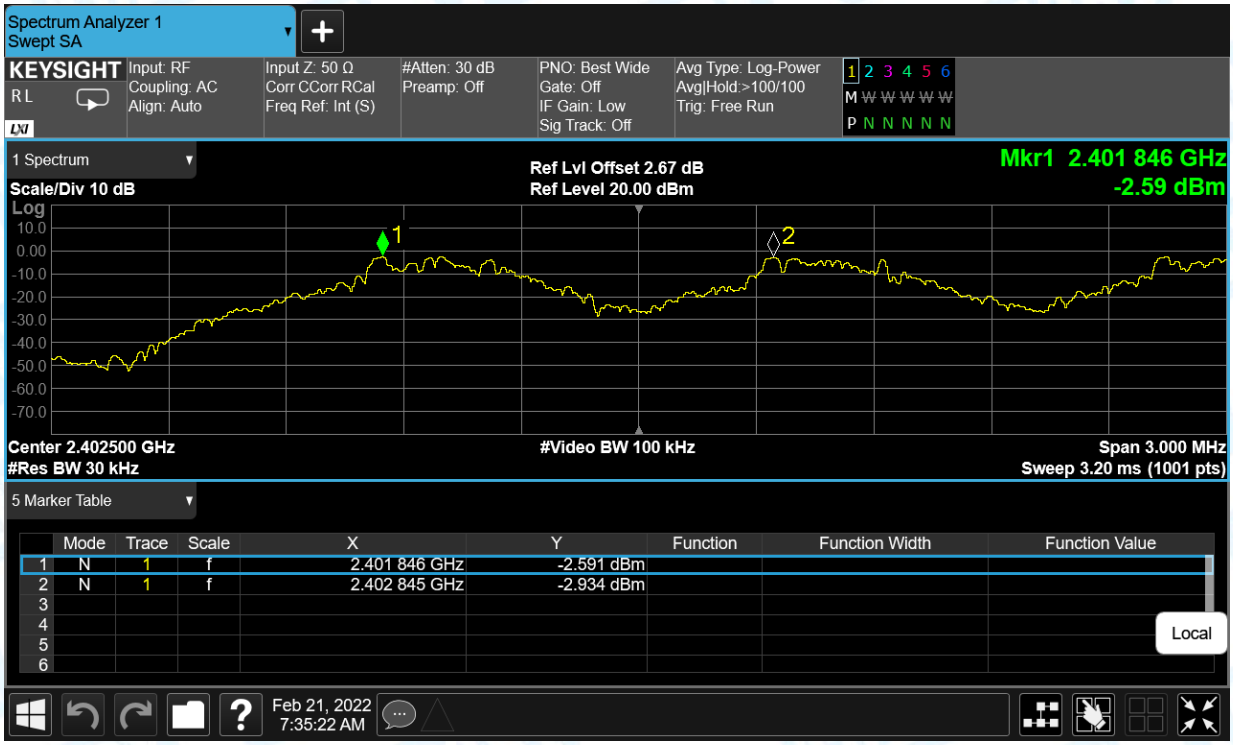
OBW NVNT 2-DH1 2480MHz Ant1

5. Carrier Frequencies Separation

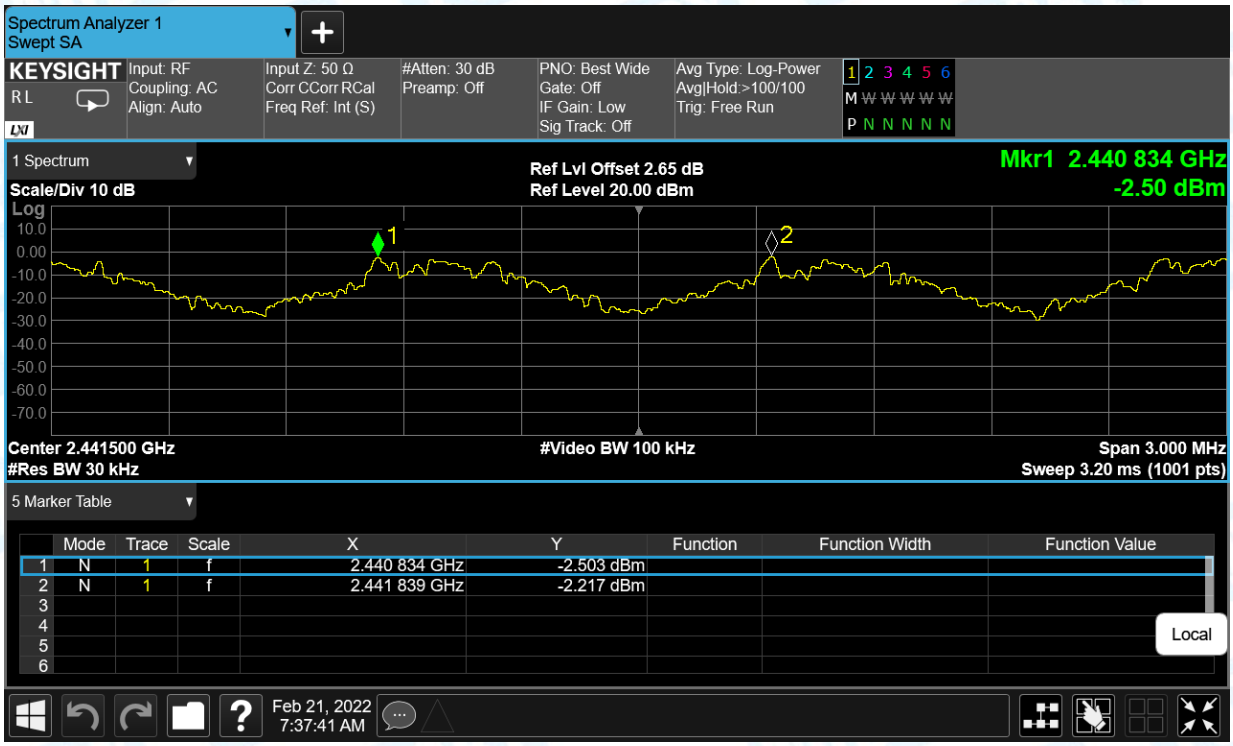
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2401.846	2402.845	0.999	0.58	Pass
NVNT	1-DH1	Ant1	2440.834	2441.839	1.005	0.573	Pass
NVNT	1-DH1	Ant1	2478.843	2479.836	0.993	0.567	Pass
NVNT	2-DH1	Ant1	2401.828	2402.992	1.164	0.813	Pass
NVNT	2-DH1	Ant1	2440.99	2441.833	0.843	0.827	Pass
NVNT	2-DH1	Ant1	2478.993	2479.842	0.849	0.827	Pass

Test Graphs

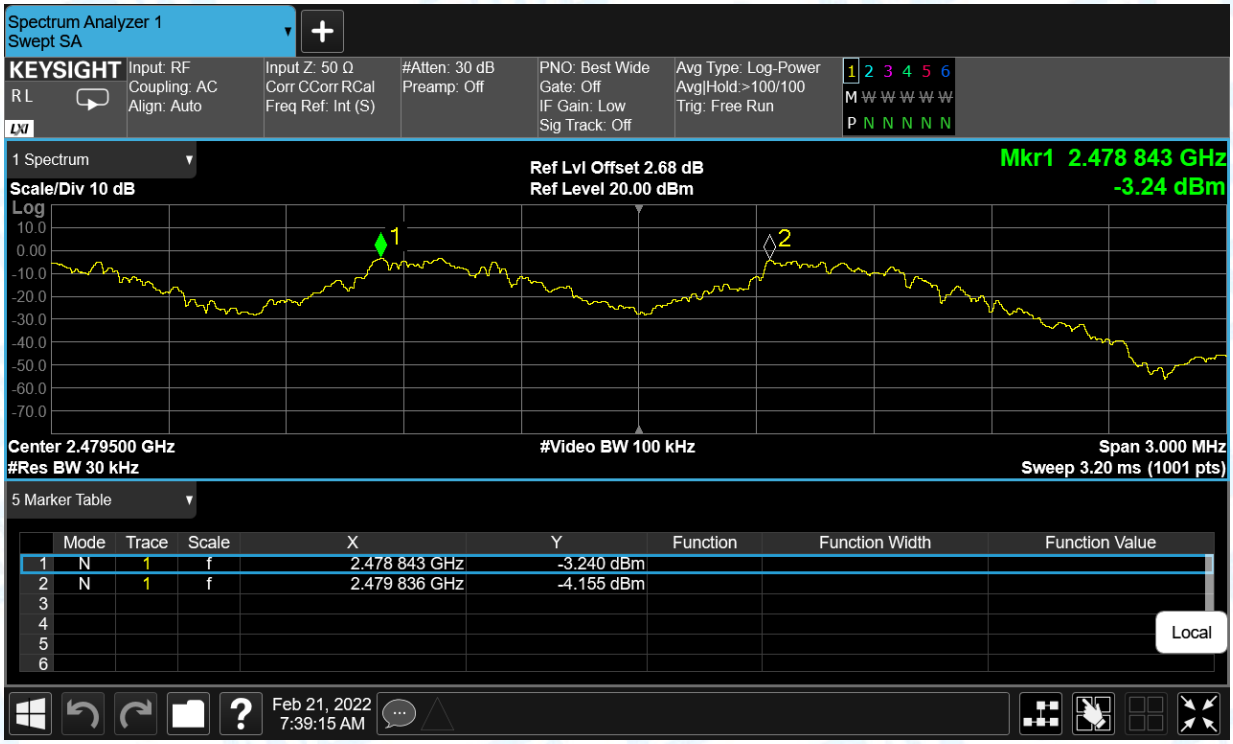
CFS NVNT 1-DH1 2402MHz Ant1



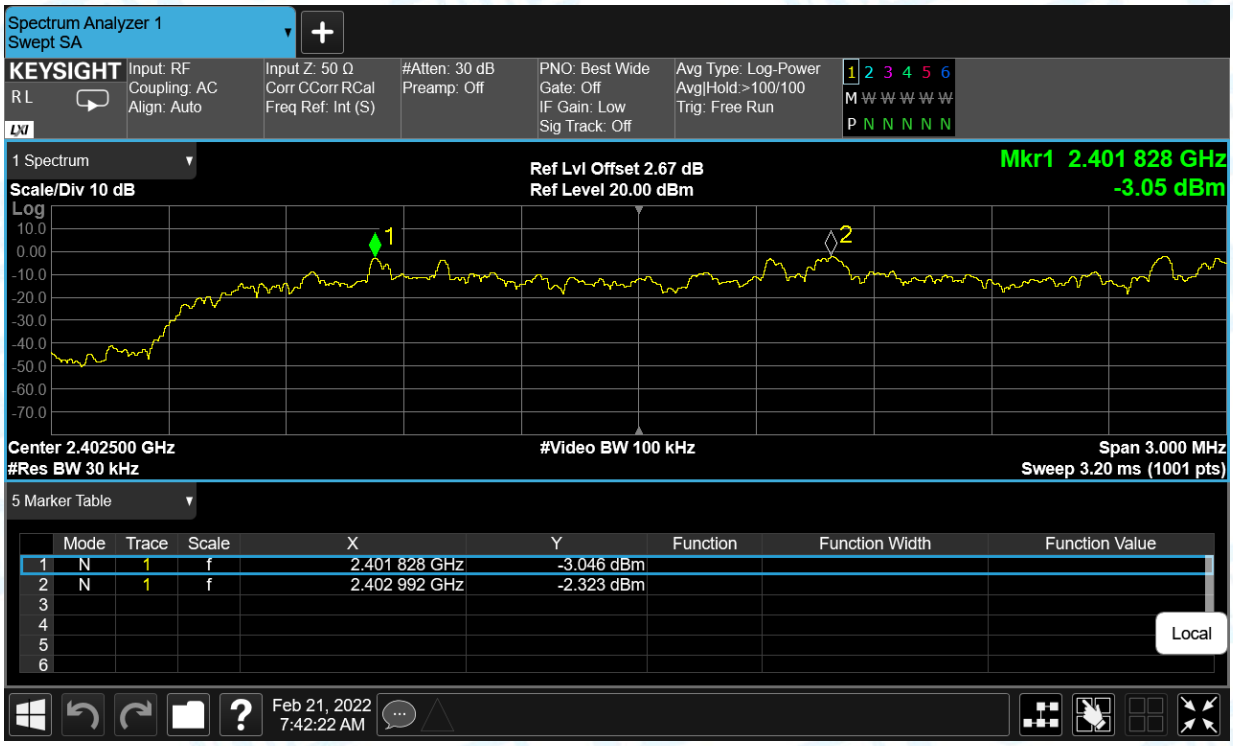
CFS NVNT 1-DH1 2441MHz Ant1



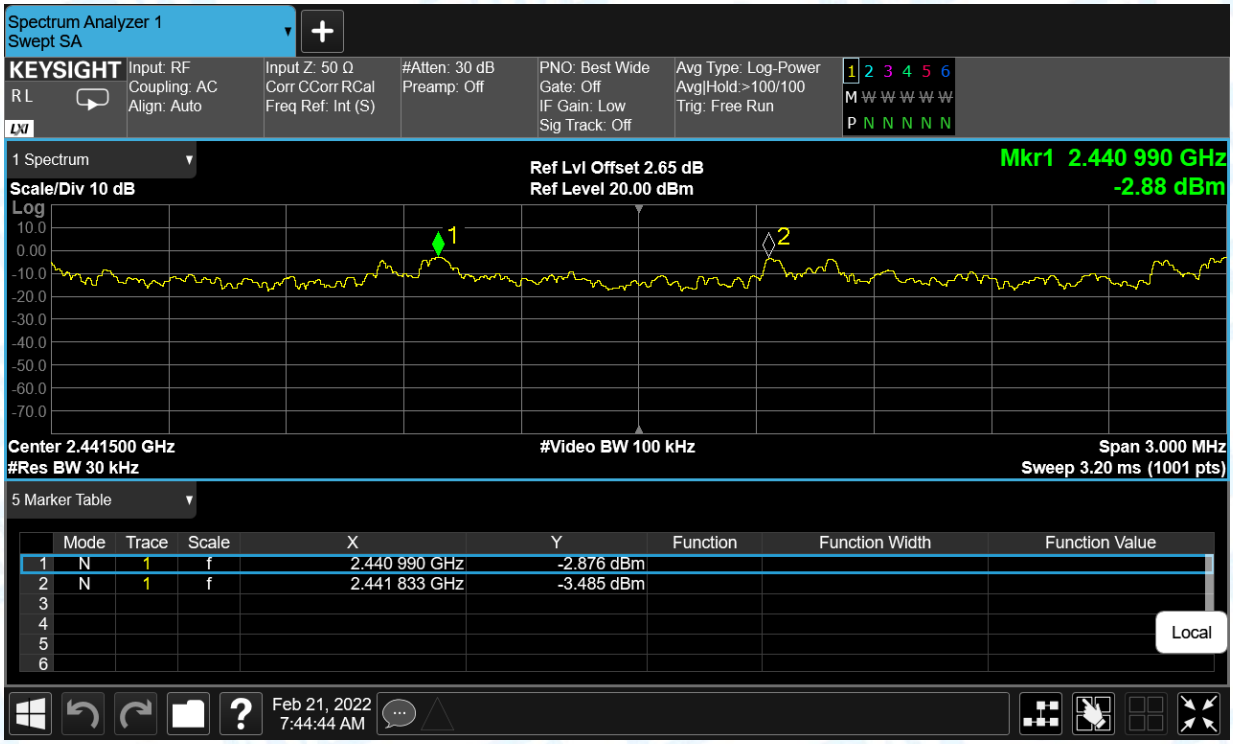
CFS NVNT 1-DH1 2480MHz Ant1



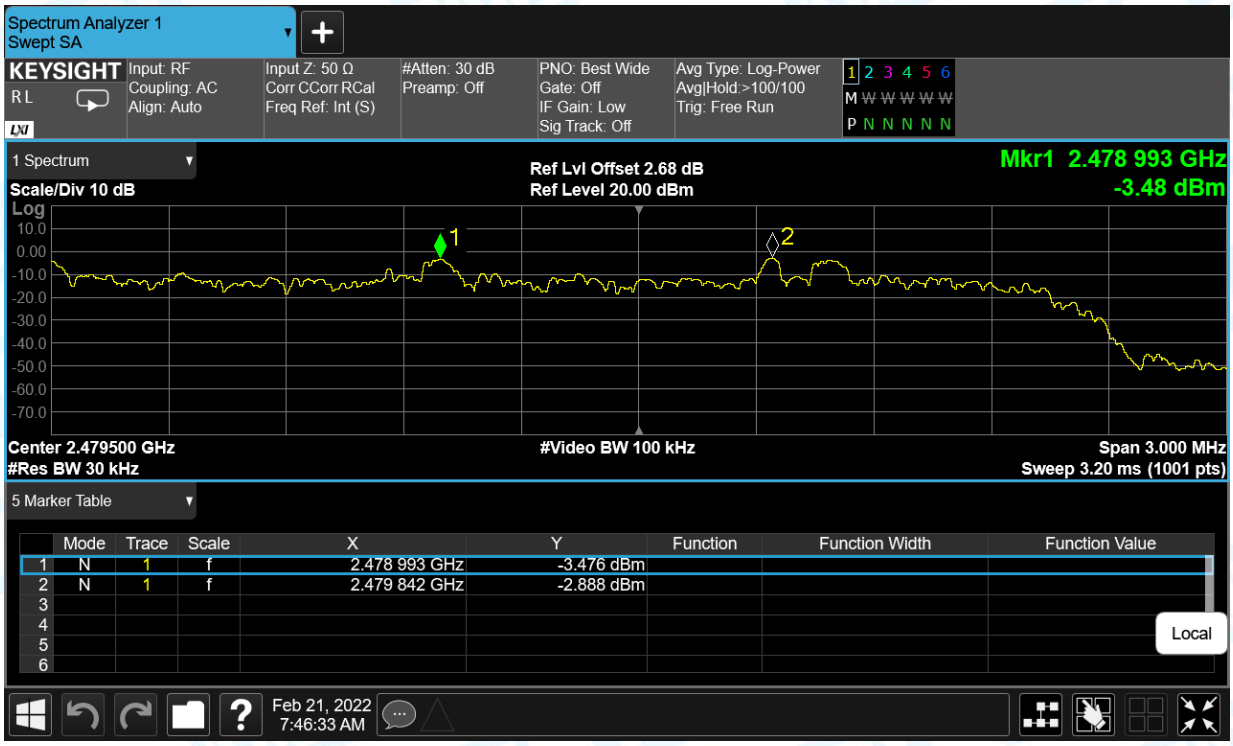
CFS NVNT 2-DH1 2402MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2480MHz Ant1

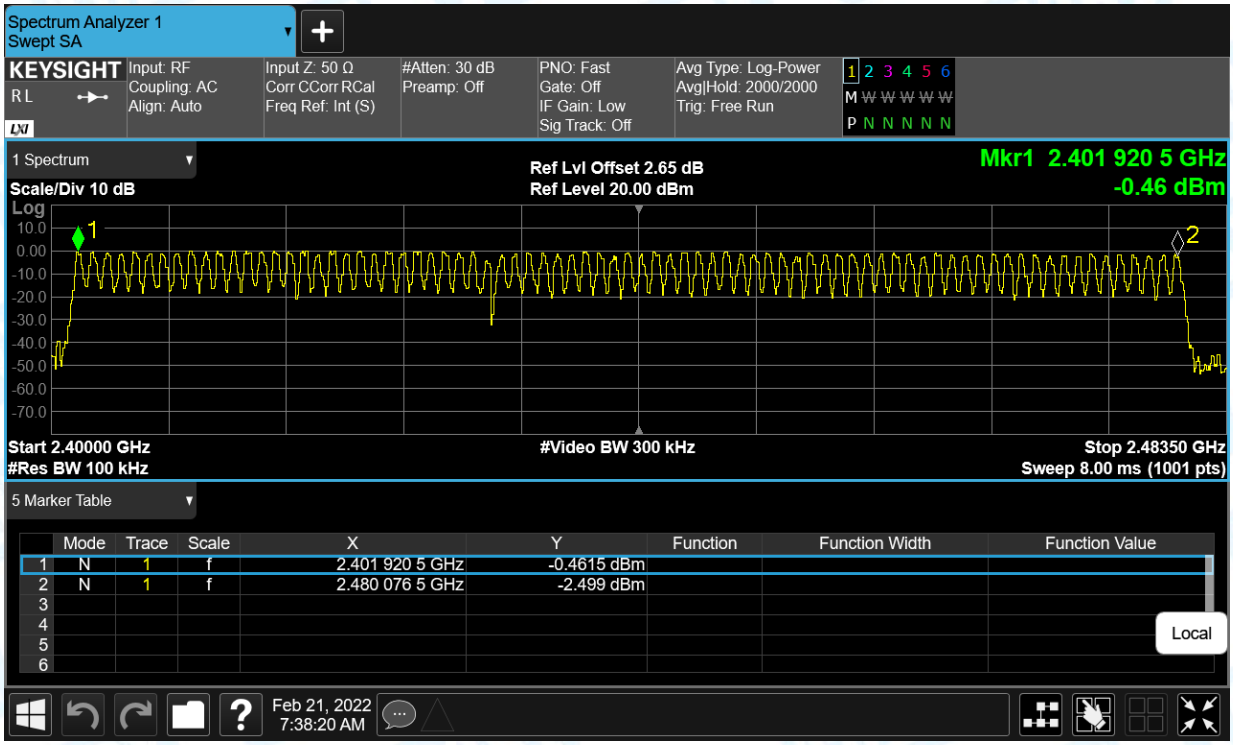


6. Number of Hopping Channel

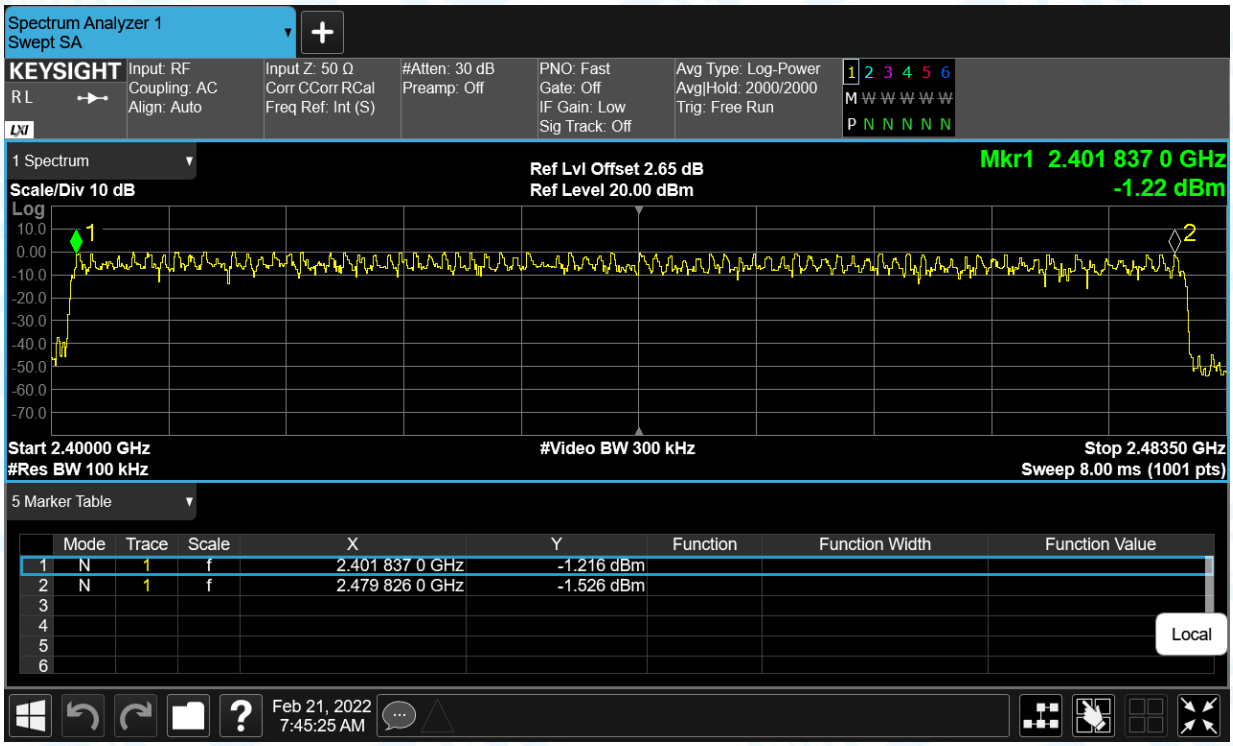
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1

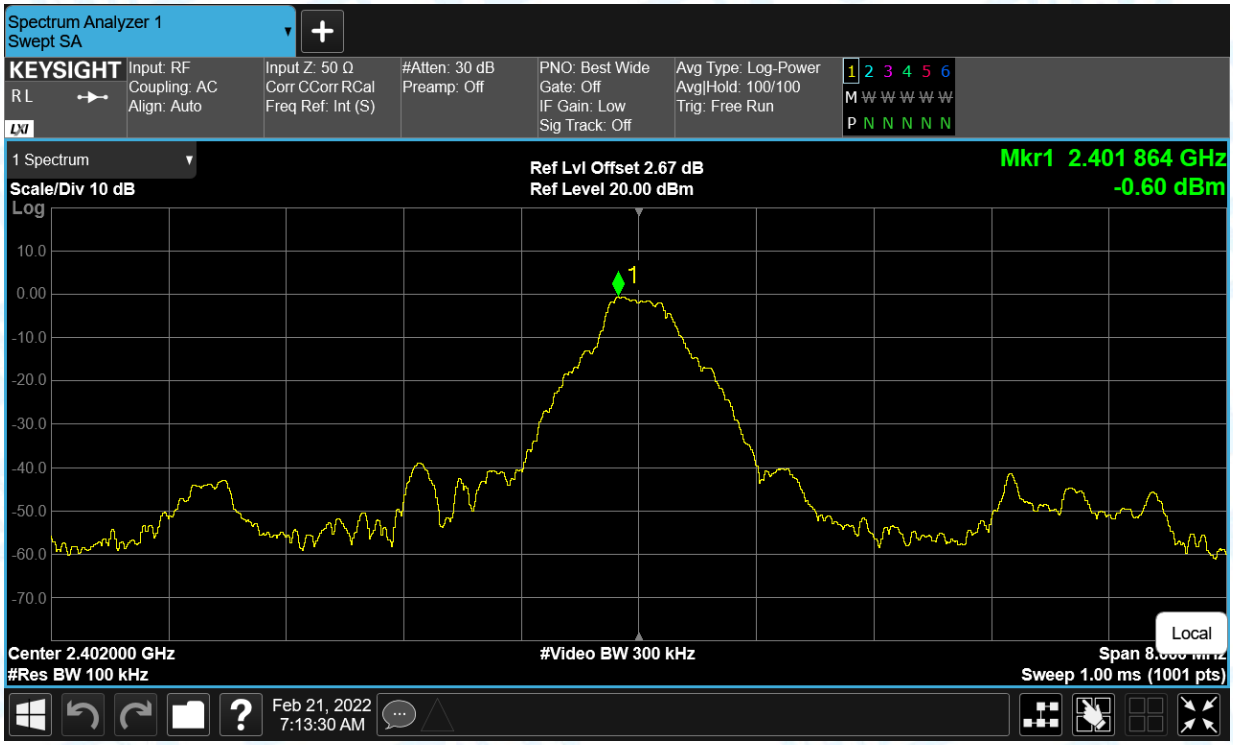


7. Band Edge

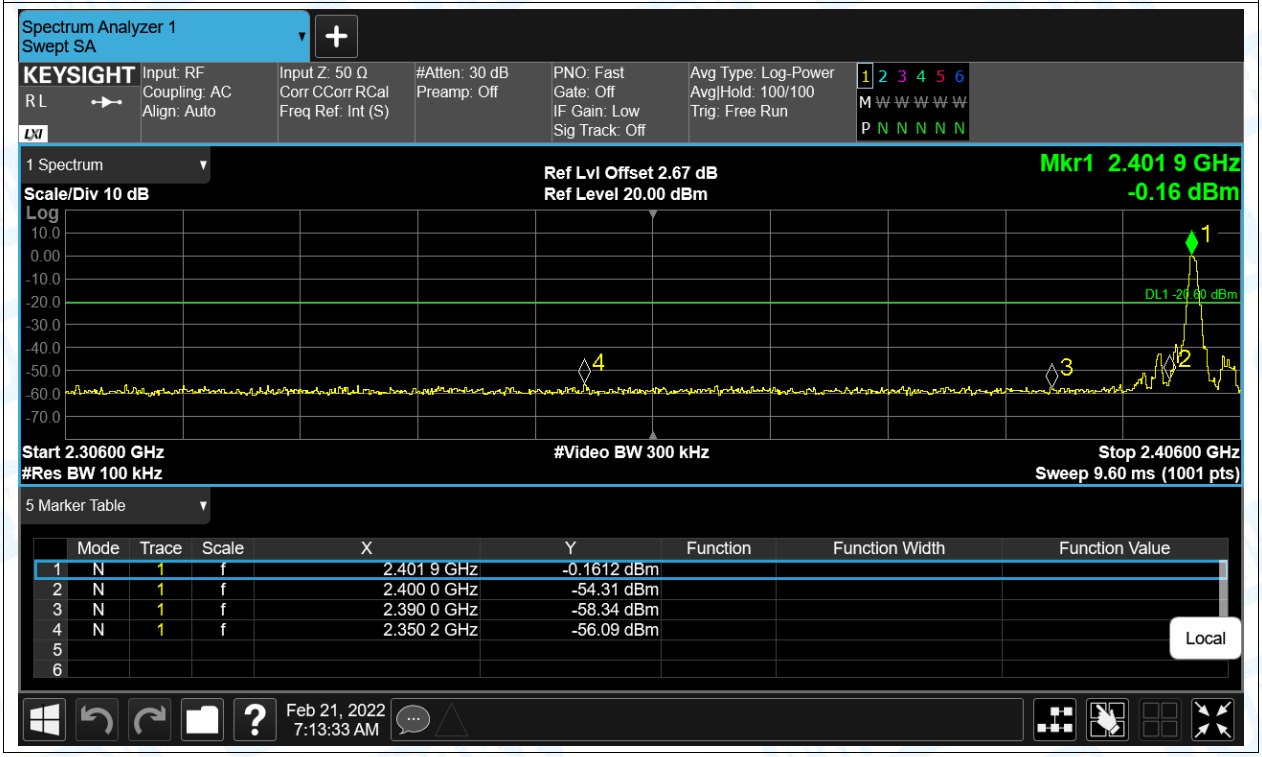
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-55.49	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-47.82	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-55.87	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-50.32	-20	Pass

Test Graphs

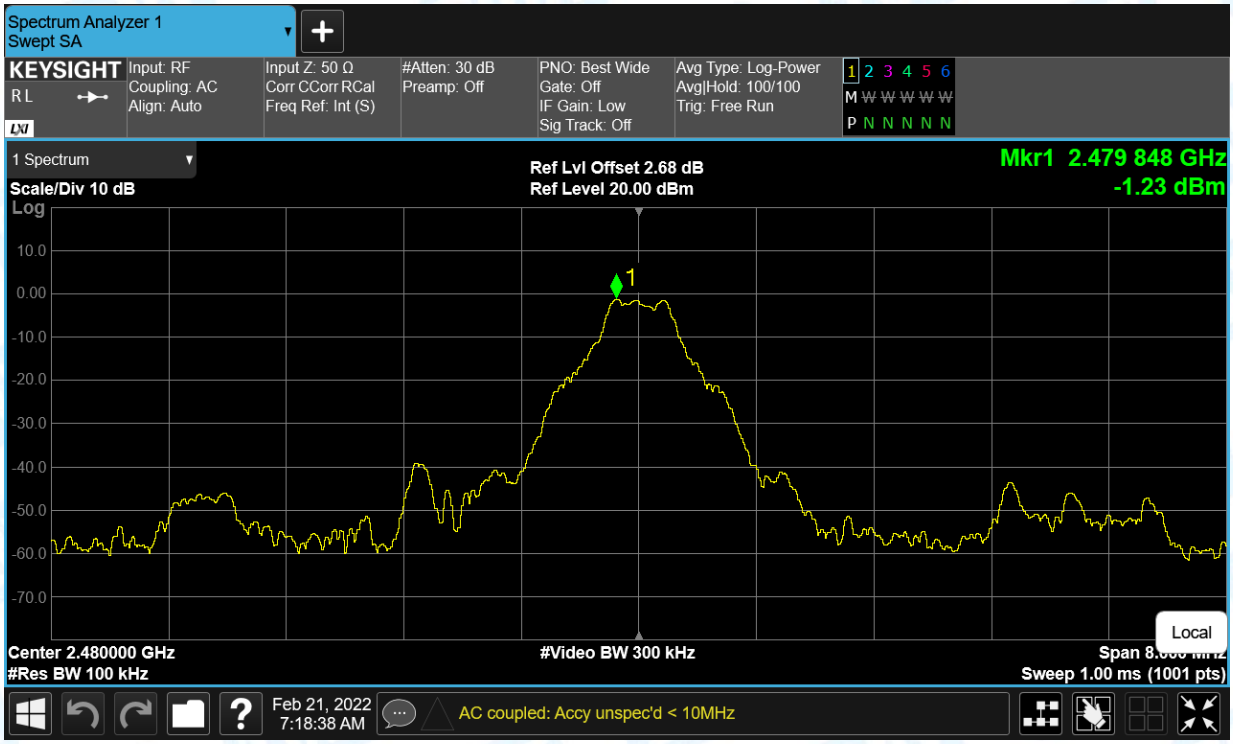
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



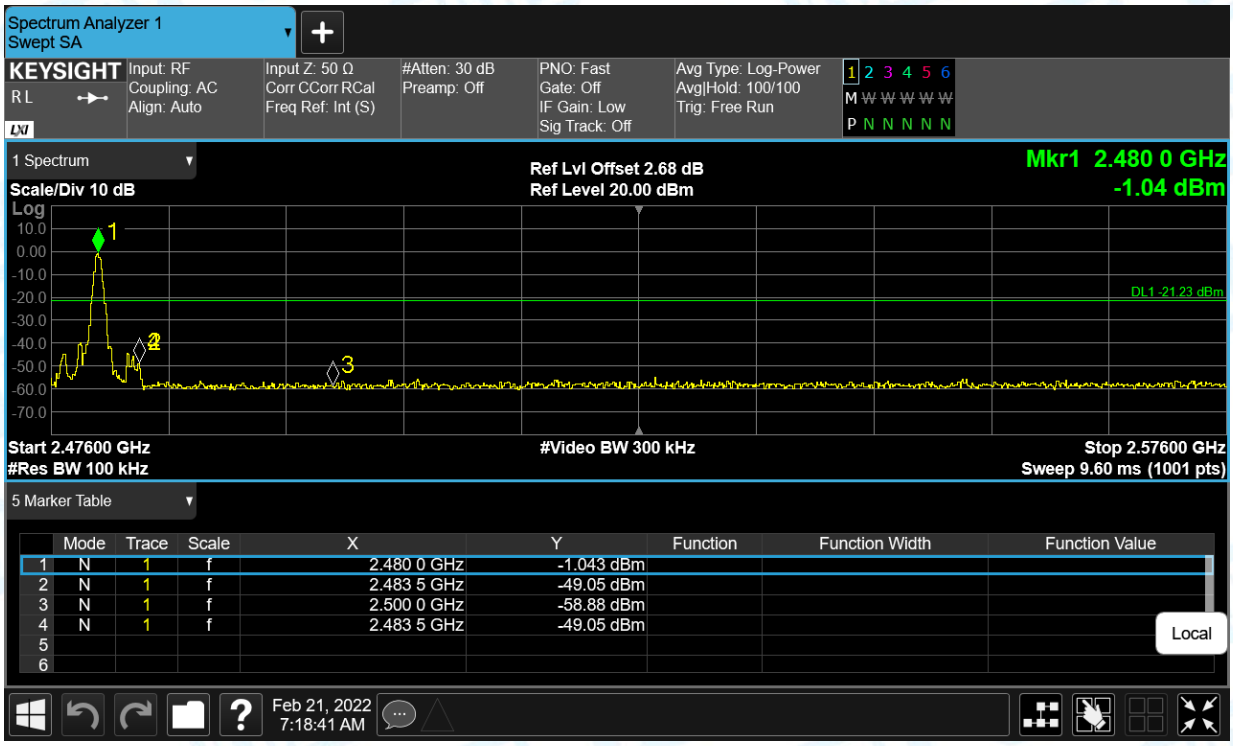
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



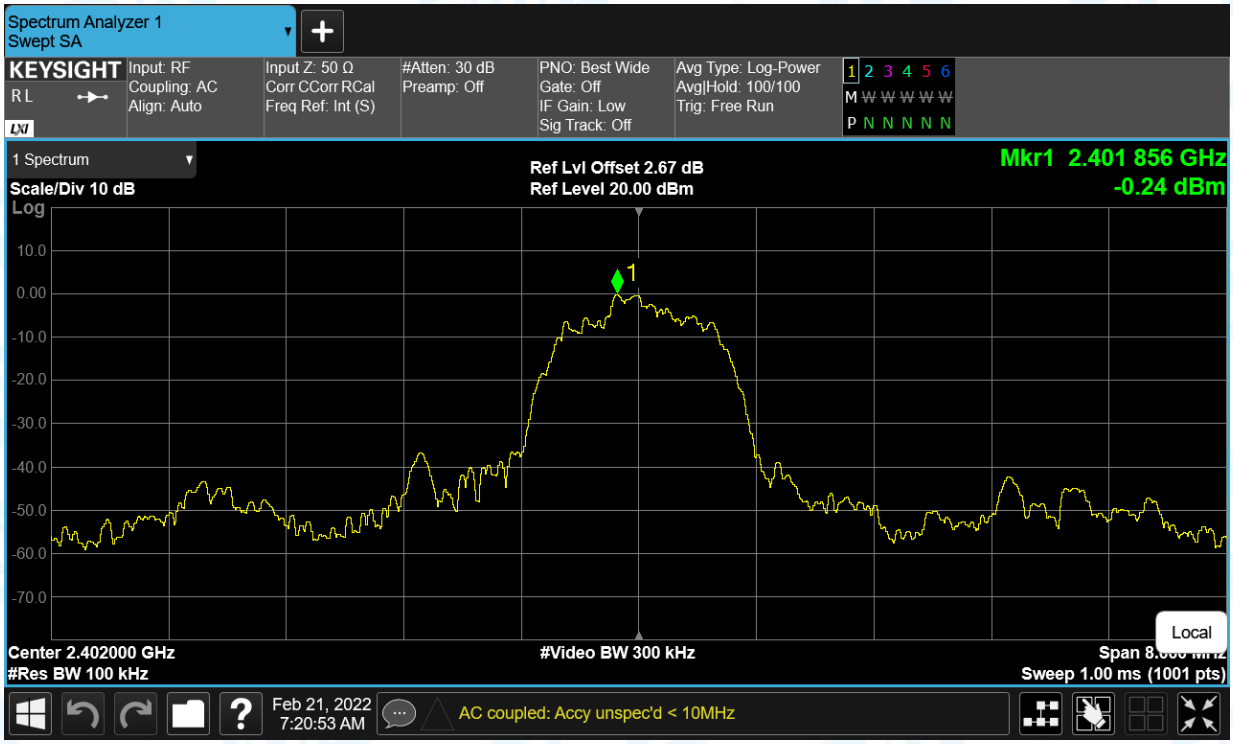
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



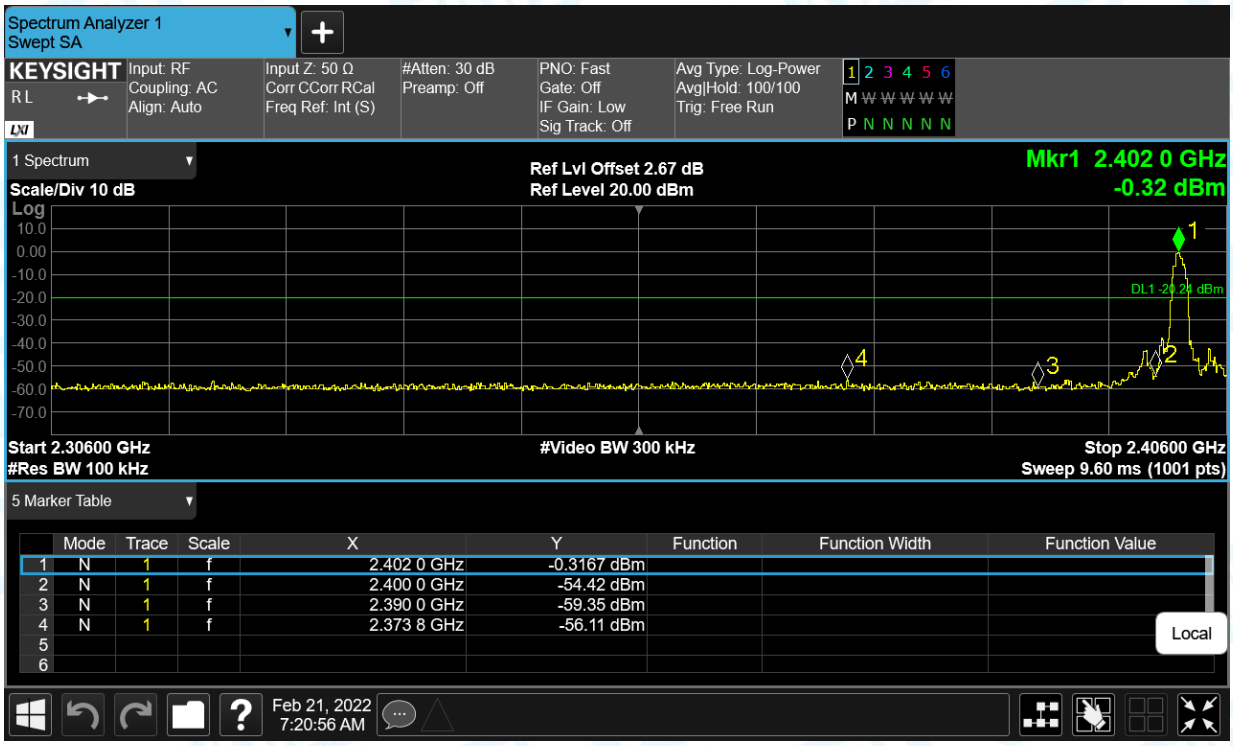
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



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

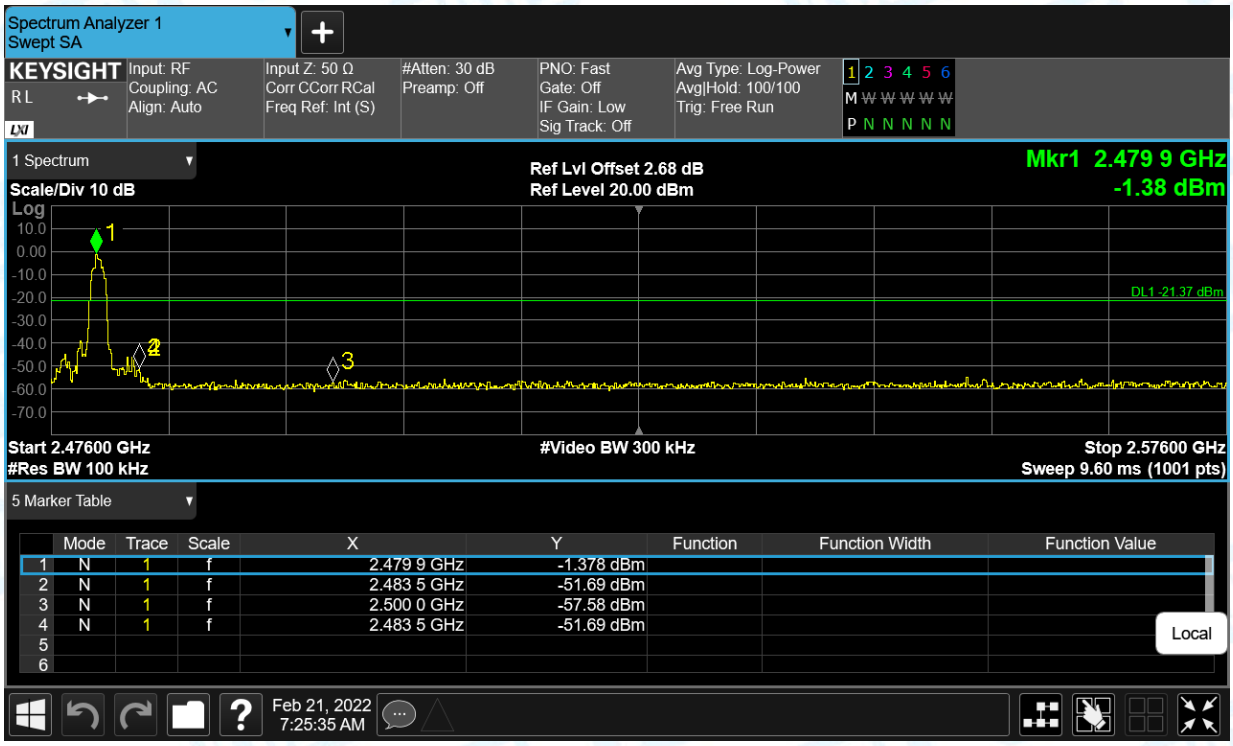


Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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

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

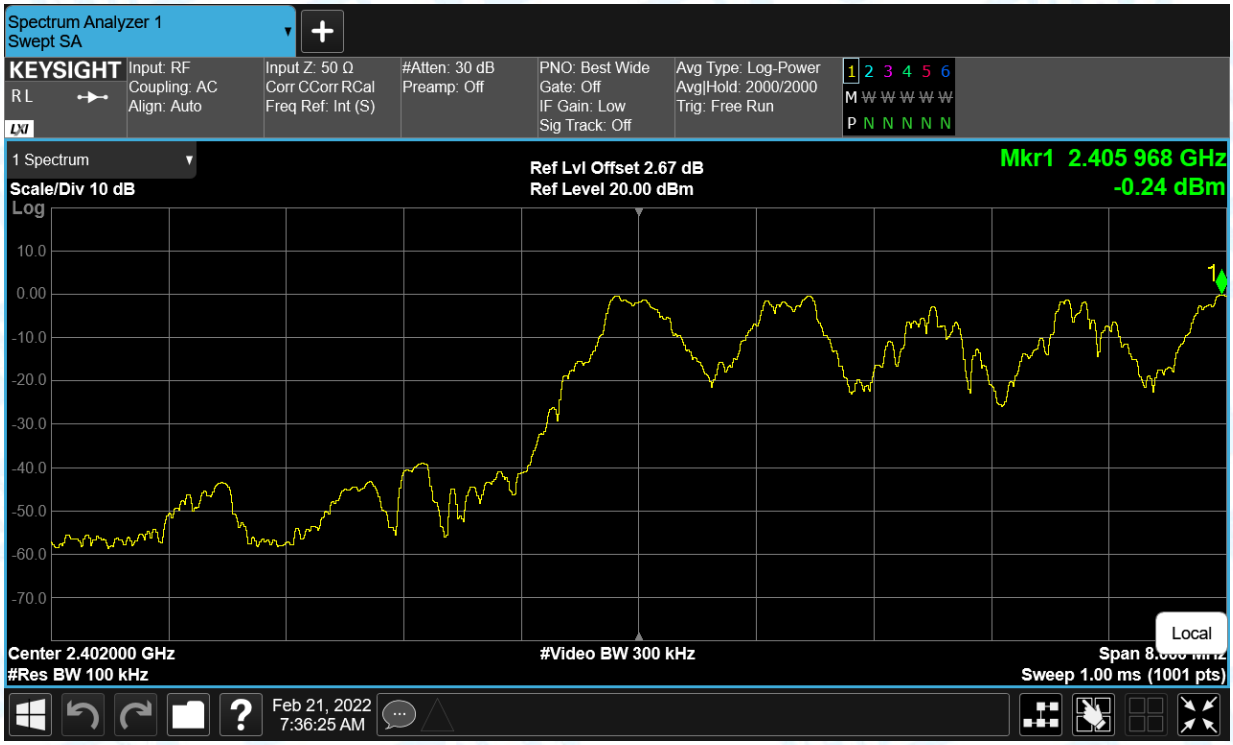


8. Band Edge(Hopping)

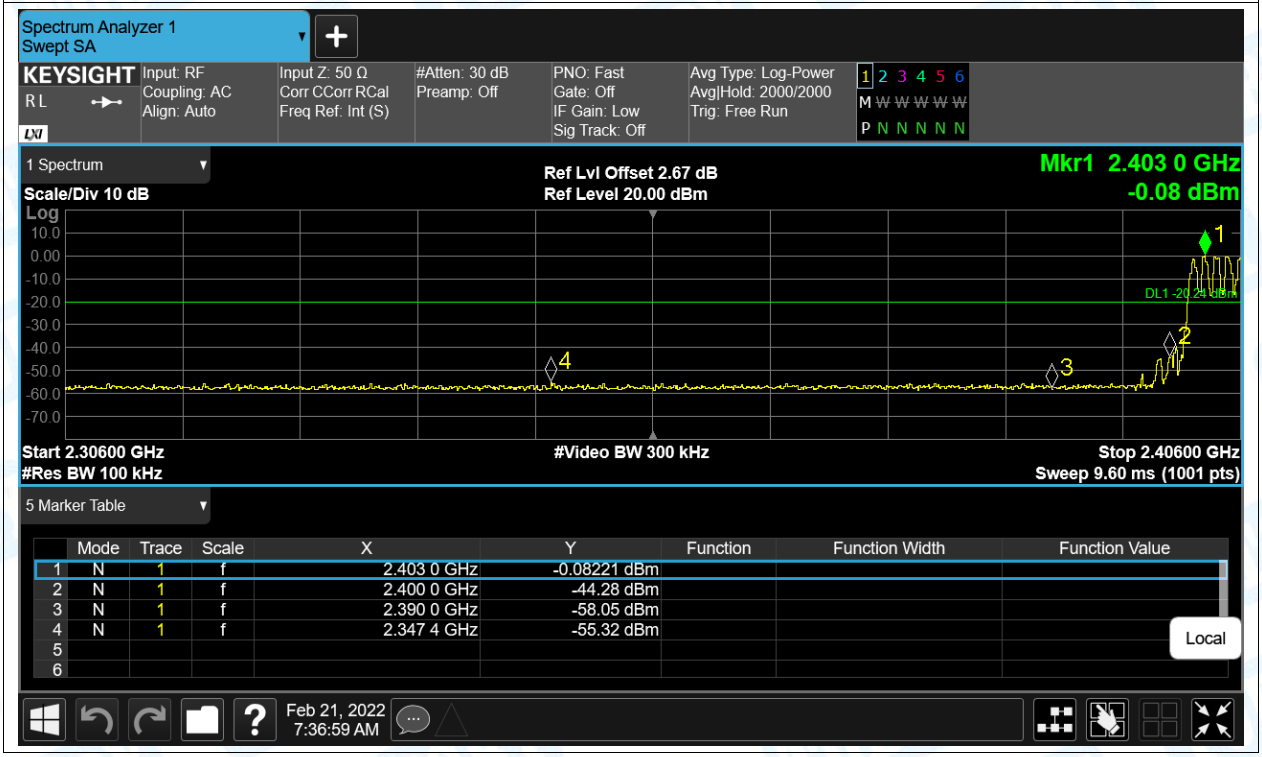
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.08	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-50.51	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-54.84	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-50.27	-20	Pass

Test Graphs

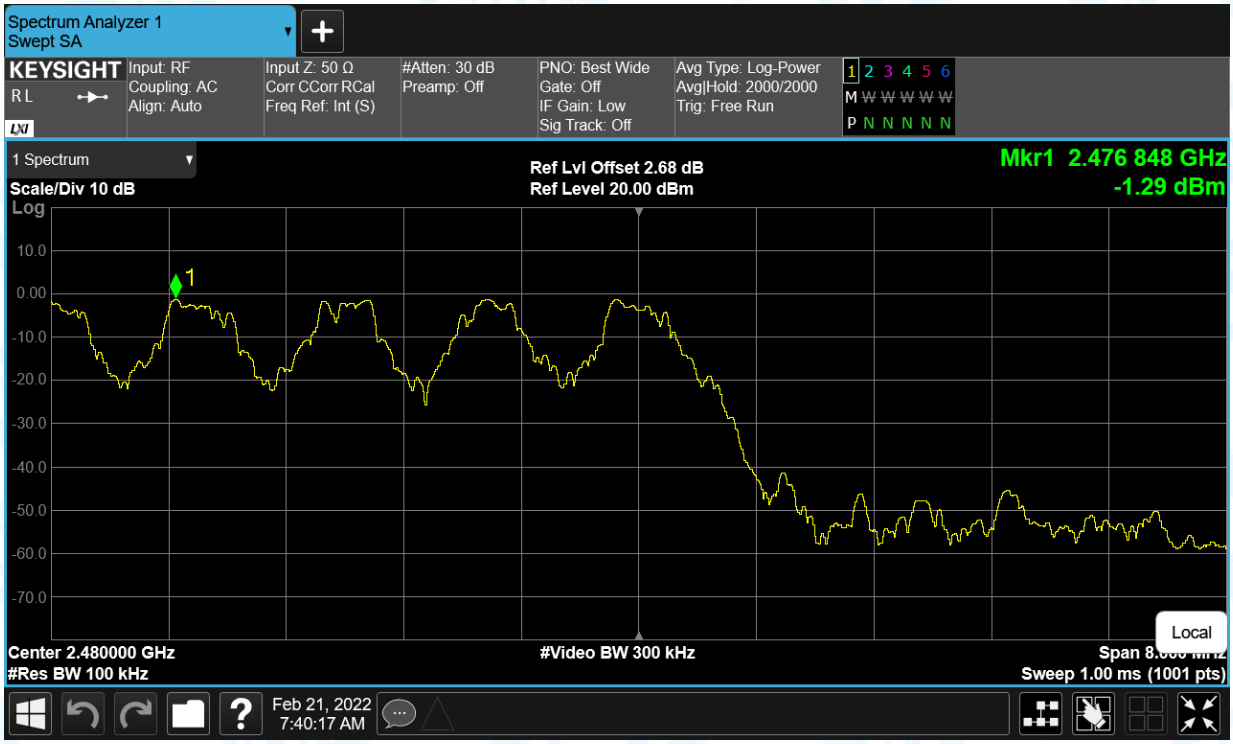
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



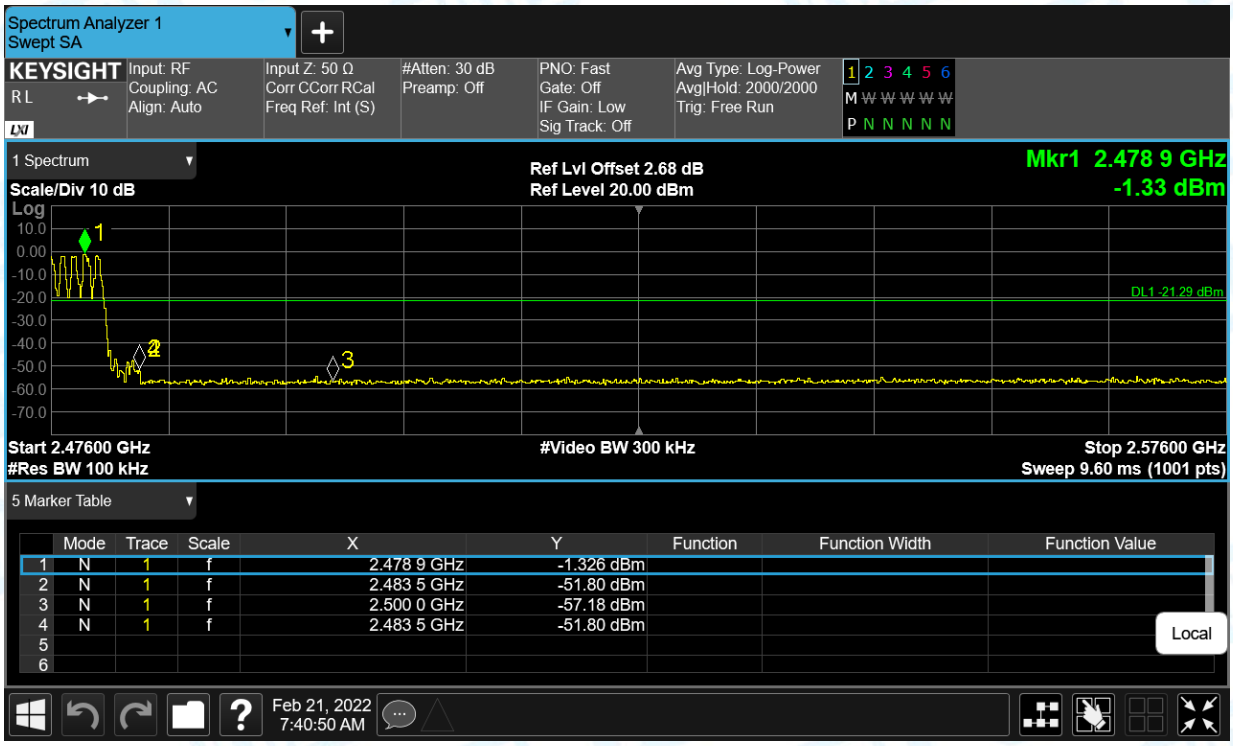
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



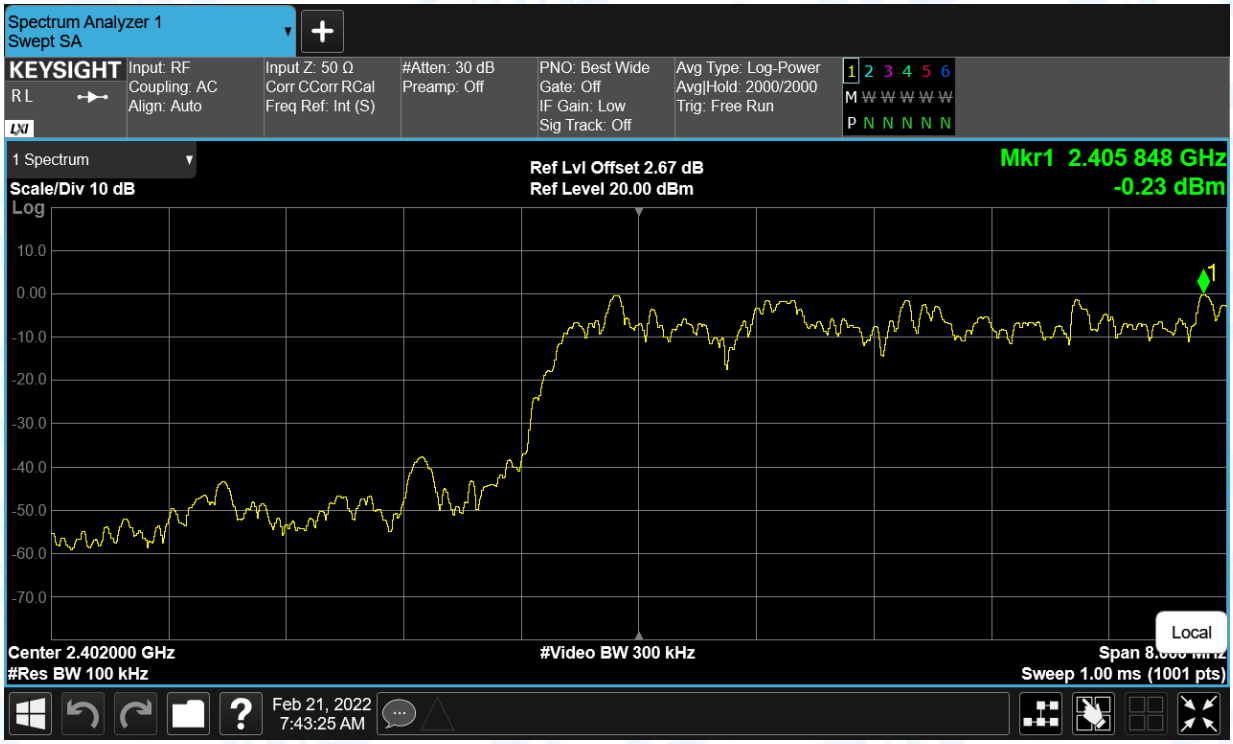
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



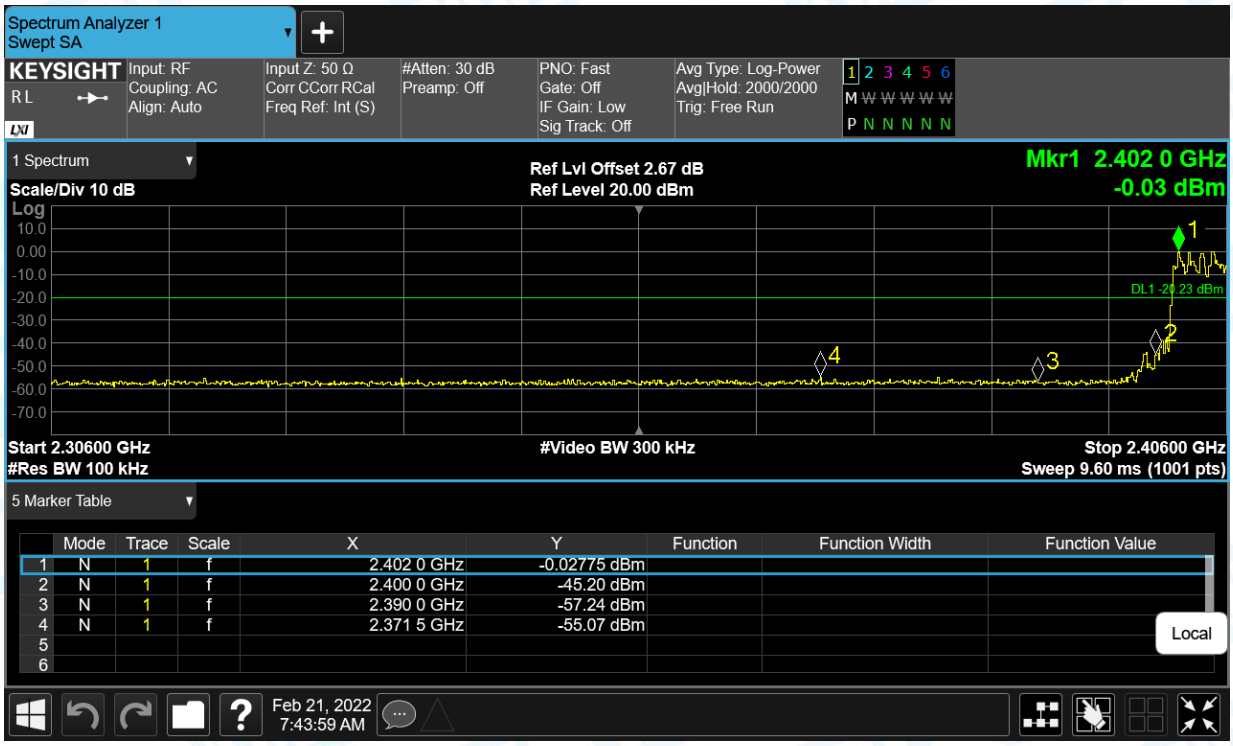
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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

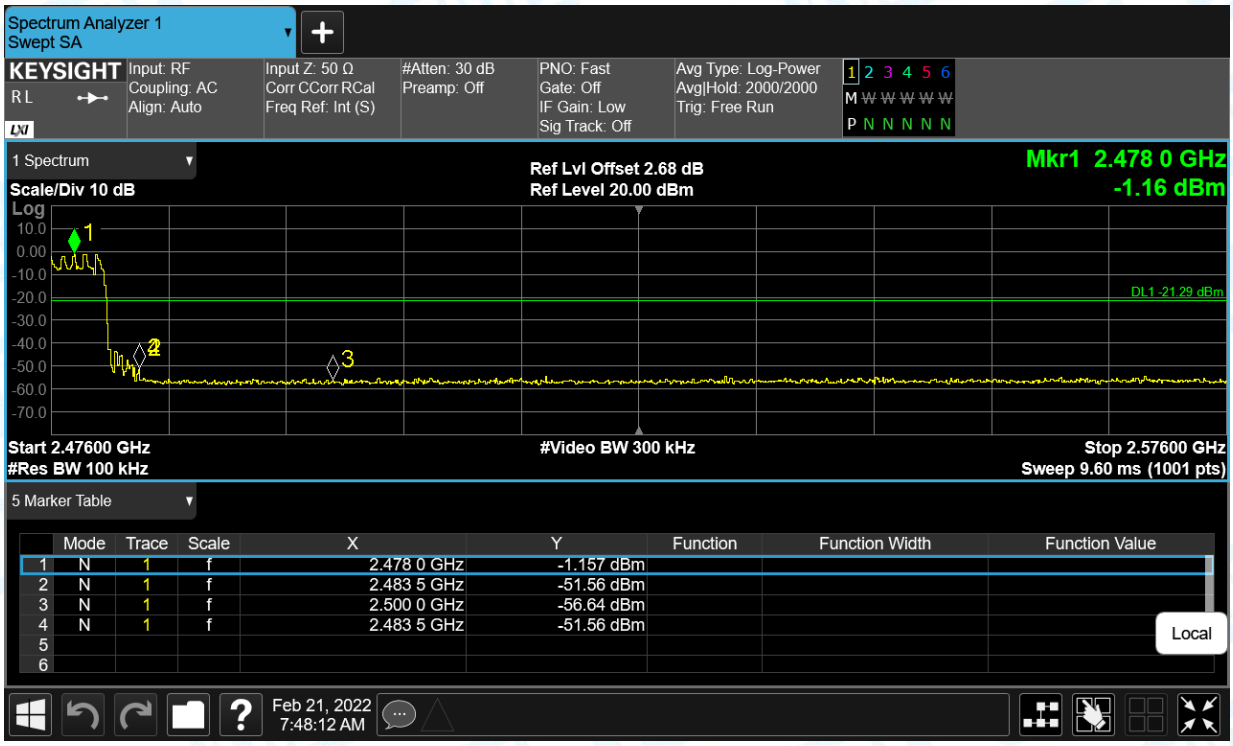


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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

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

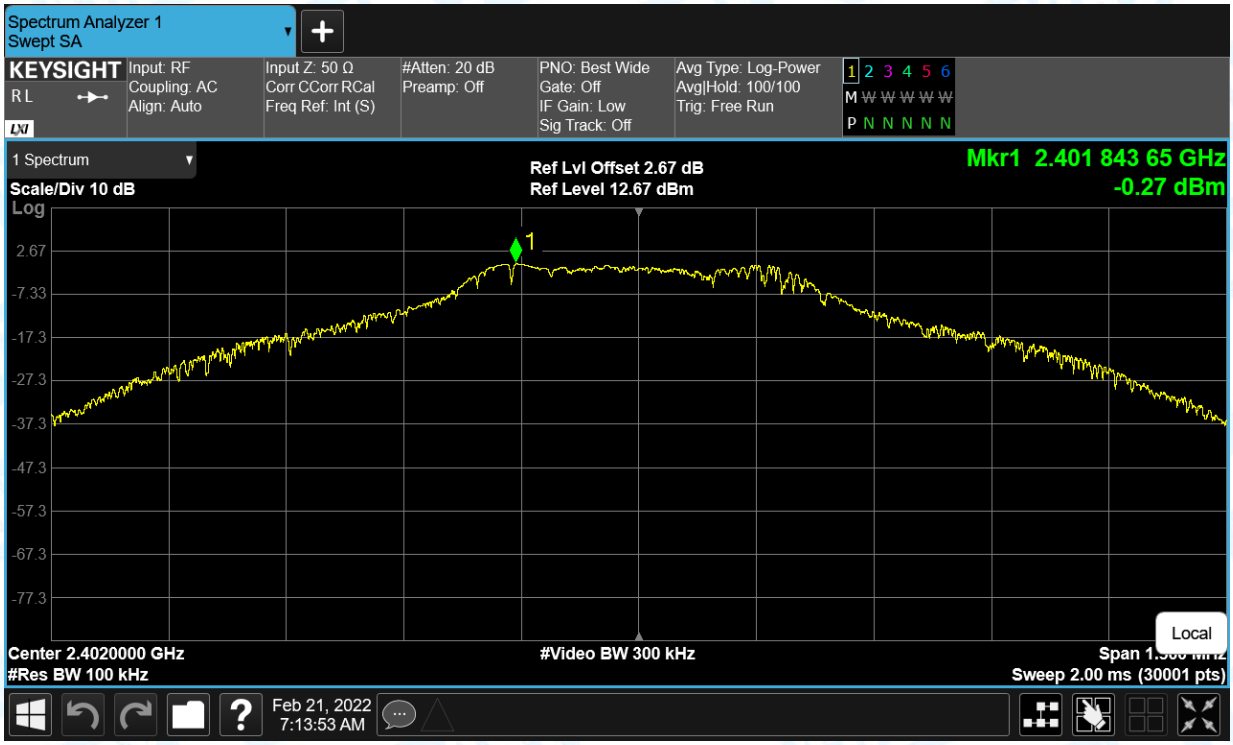


9. Conducted RF Spurious Emission

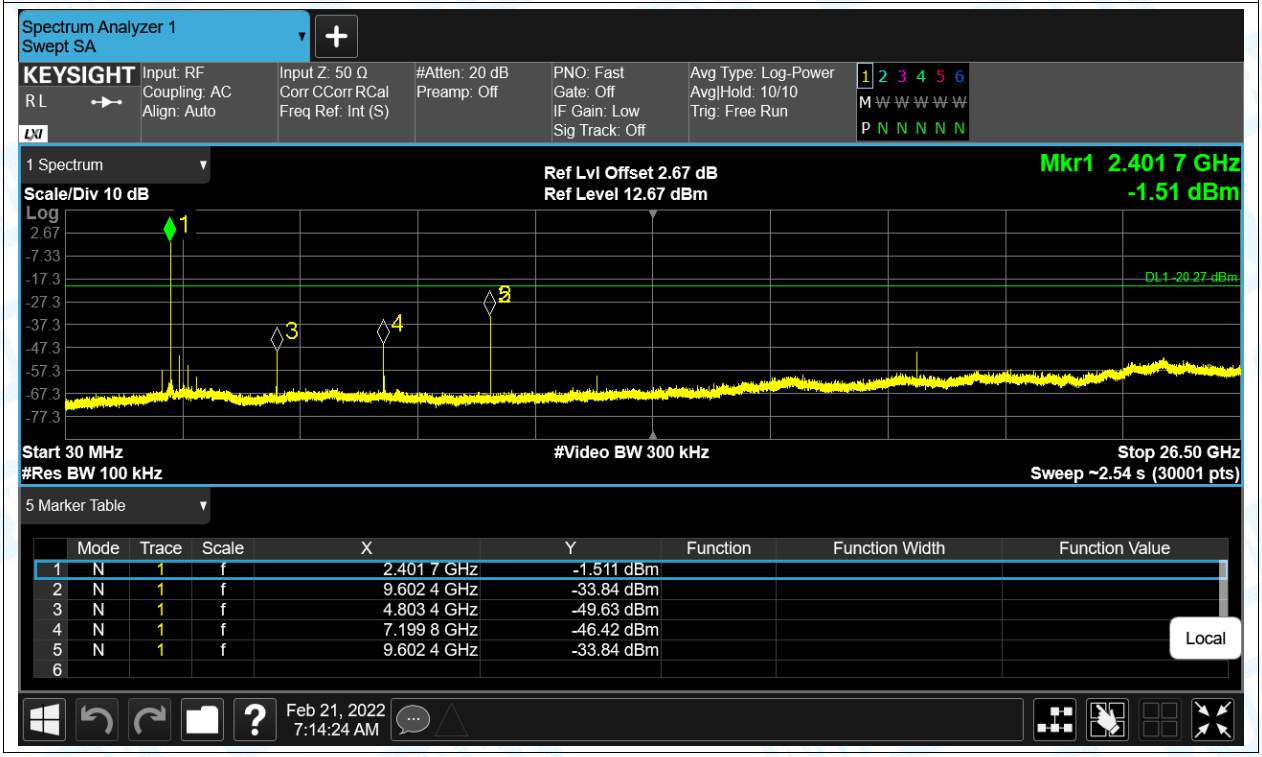
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-33.57	-20	Pass
NVNT	1-DH1	2441	Ant1	-32.91	-20	Pass
NVNT	1-DH1	2480	Ant1	-30.64	-20	Pass
NVNT	2-DH1	2402	Ant1	-33.82	-20	Pass
NVNT	2-DH1	2441	Ant1	-33.2	-20	Pass
NVNT	2-DH1	2480	Ant1	-30.95	-20	Pass

Test Graphs

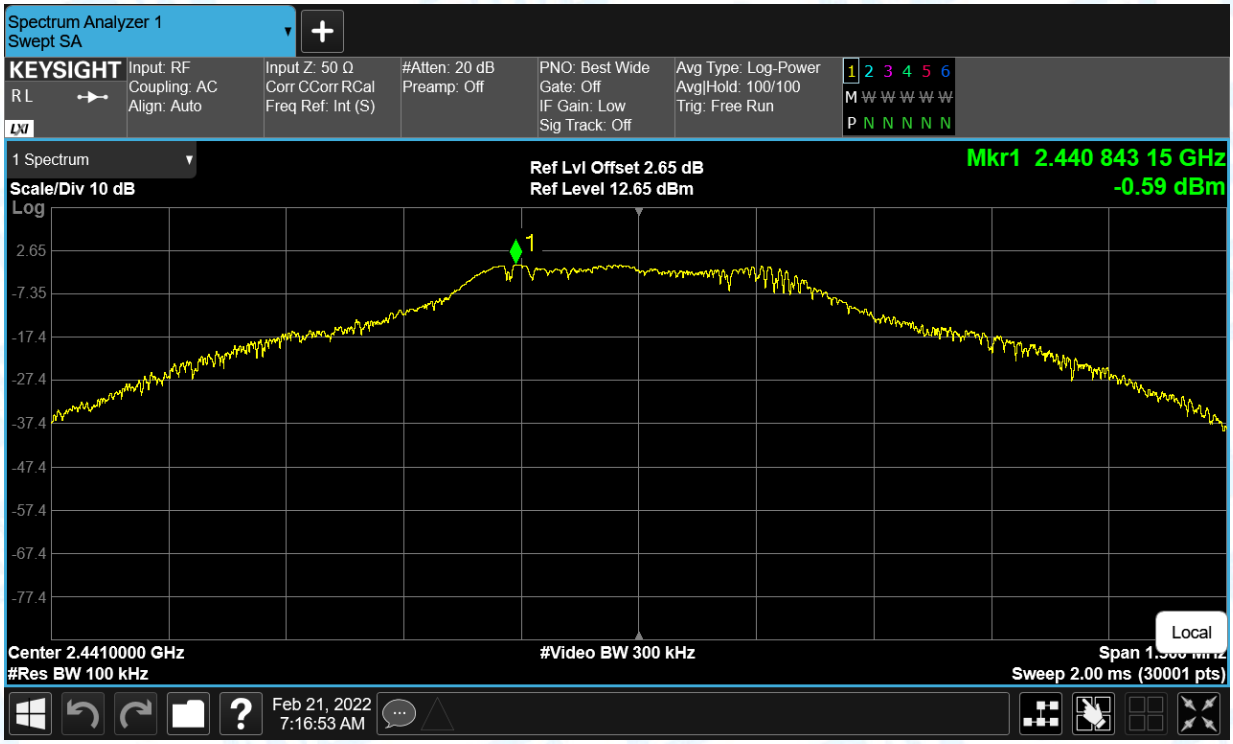
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



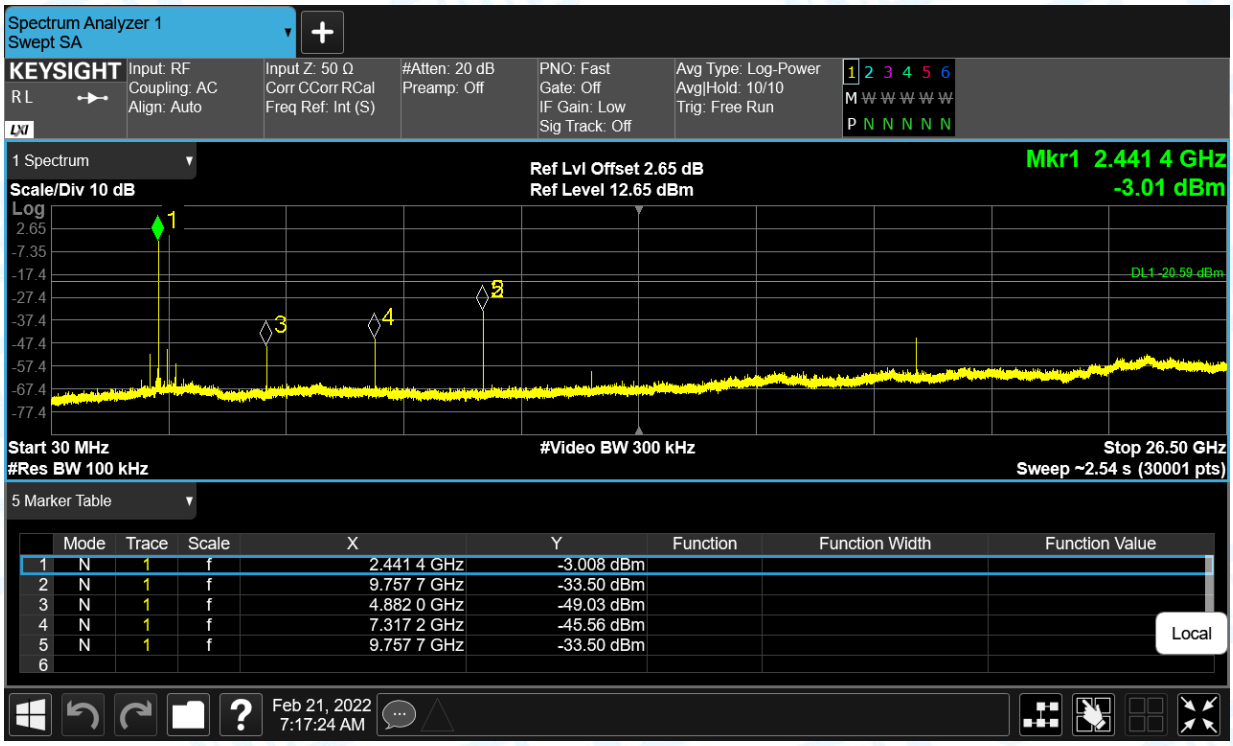
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



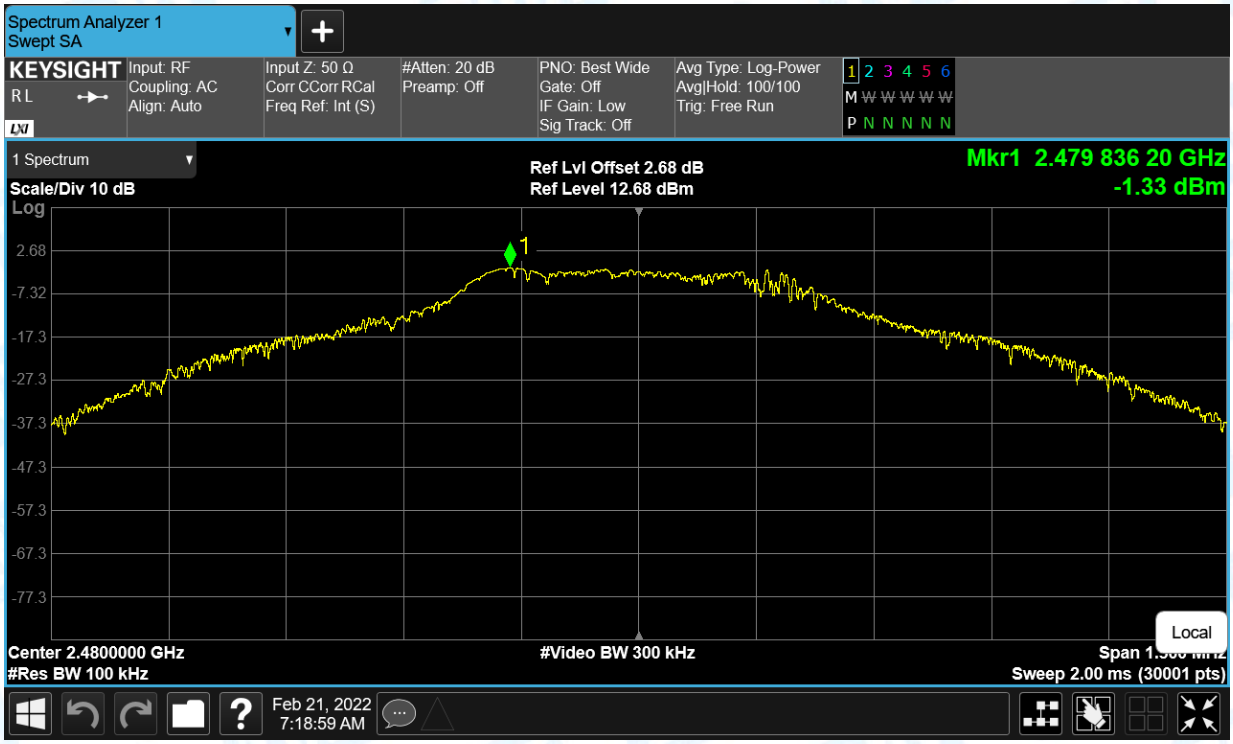
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



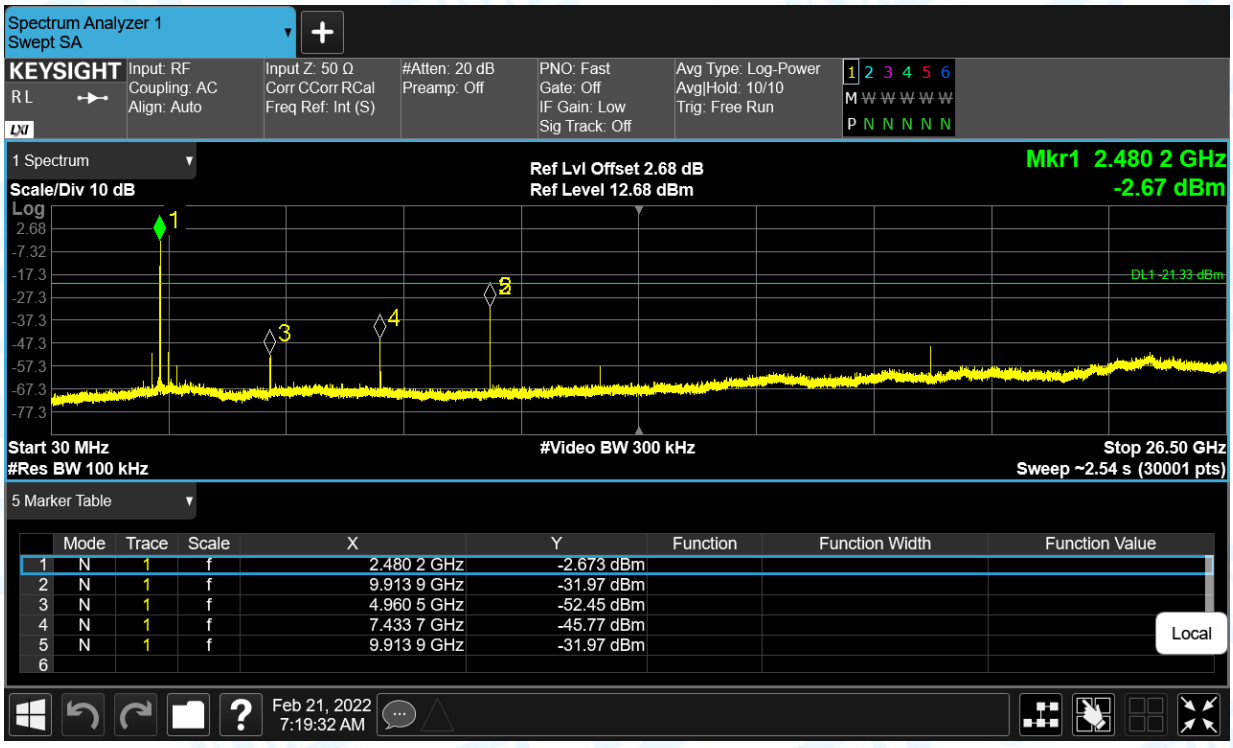
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



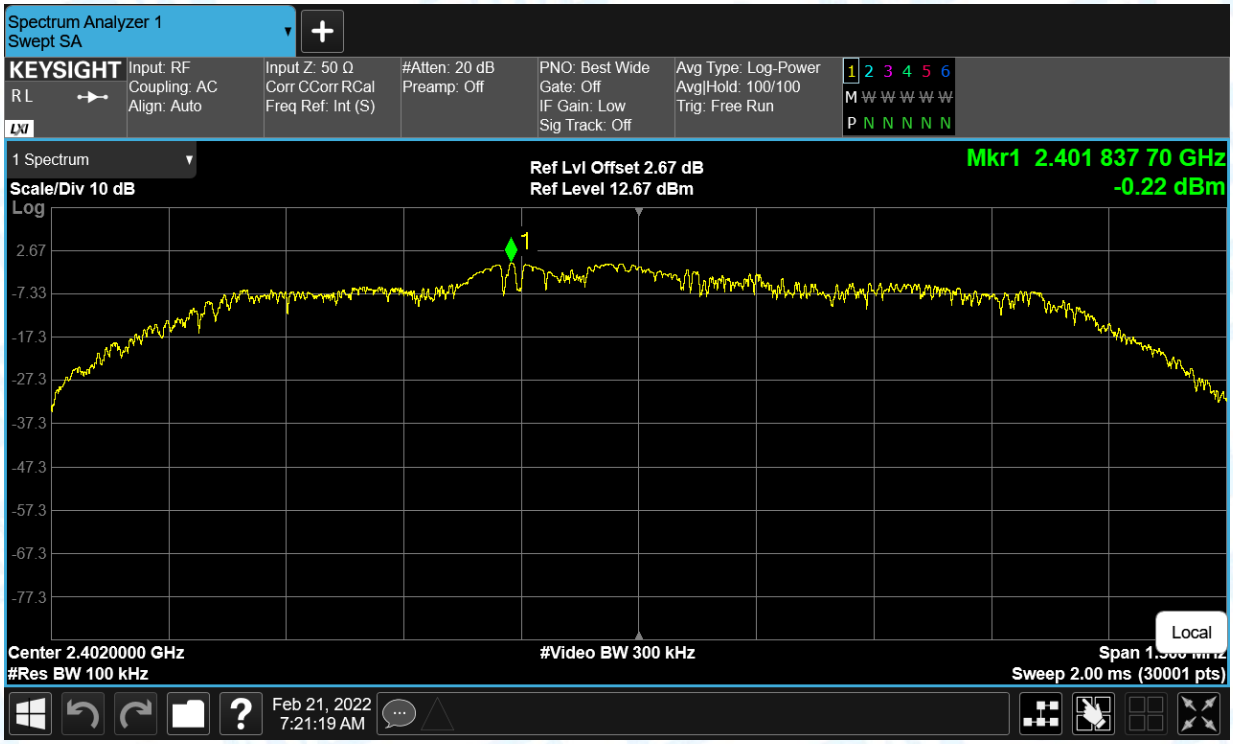
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

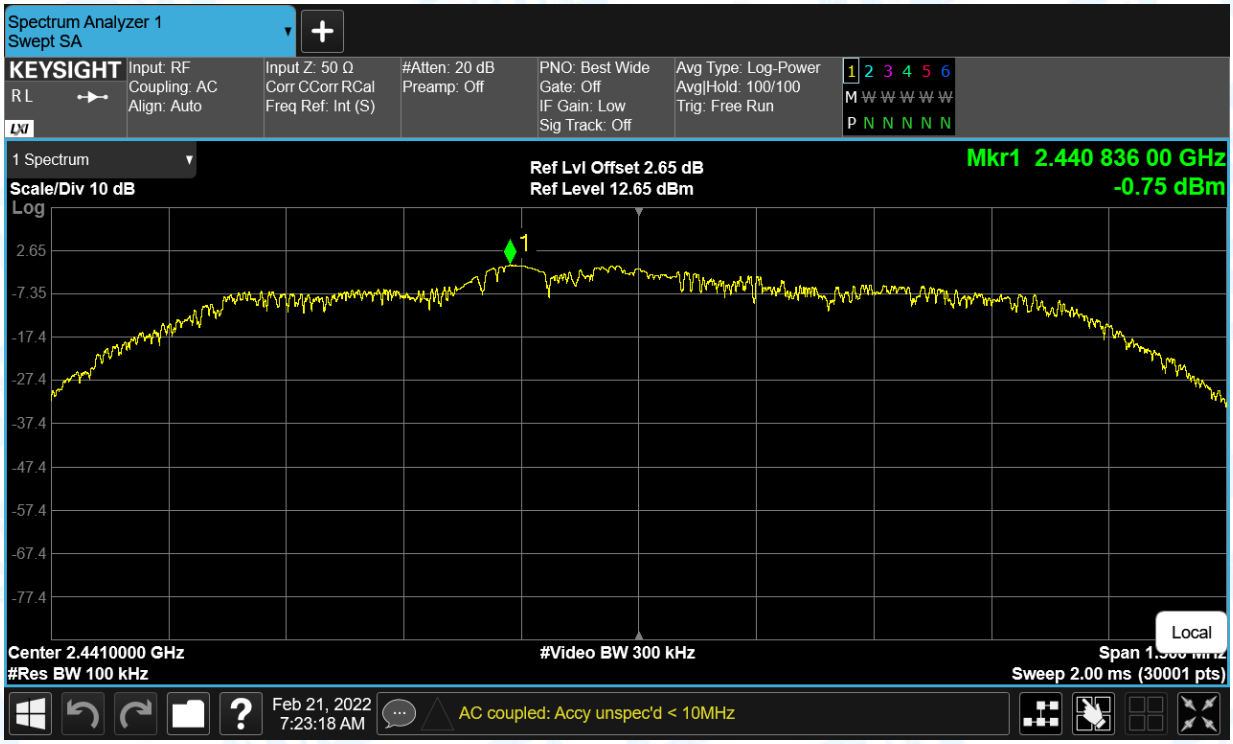


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref

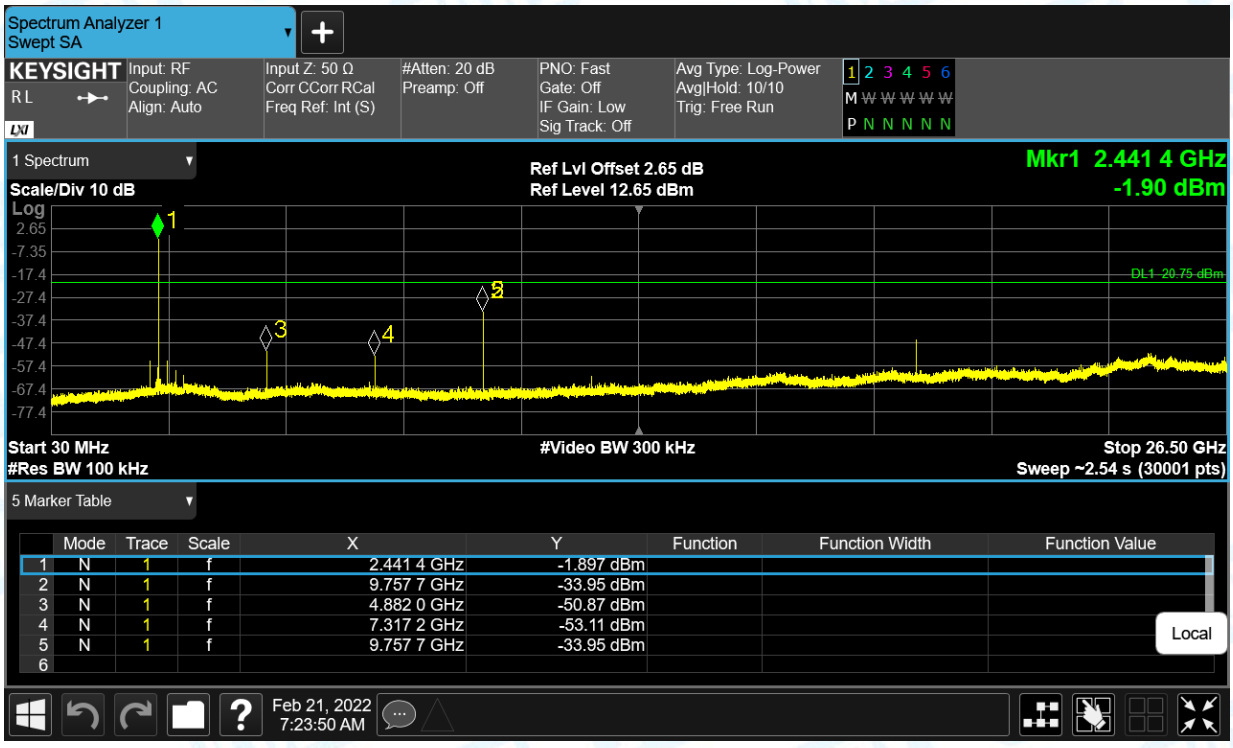


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

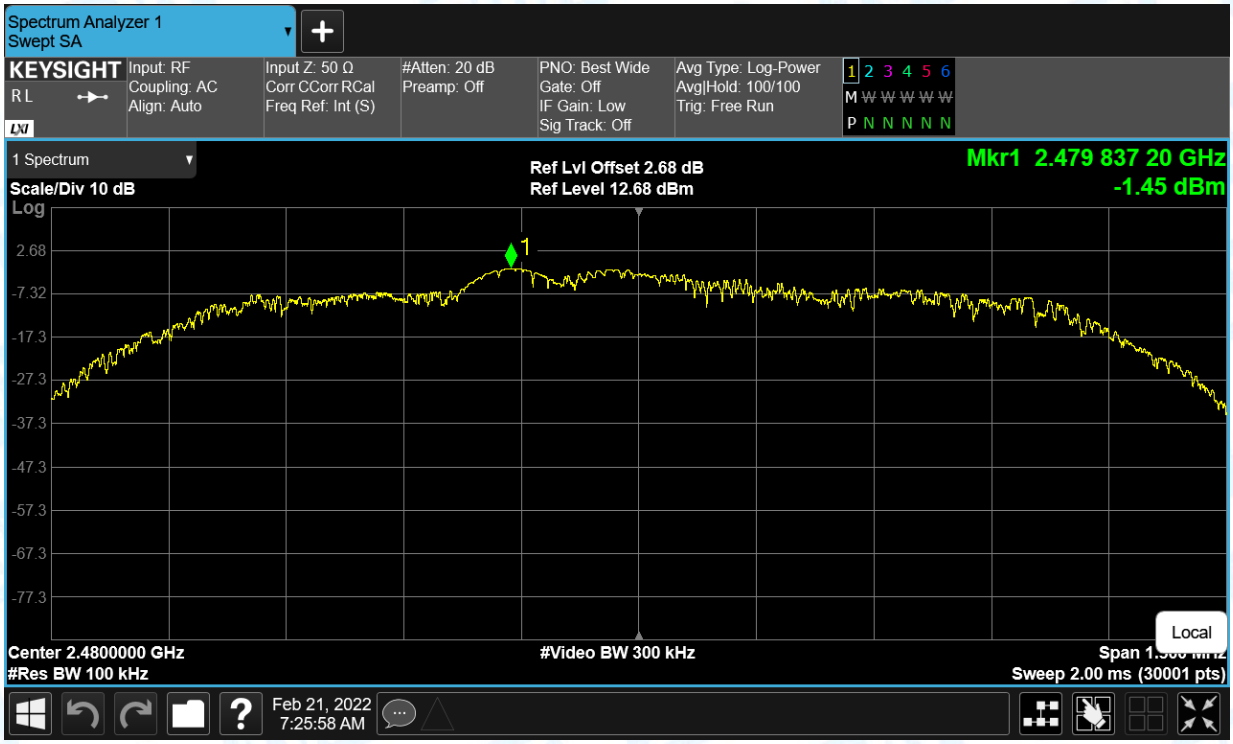
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



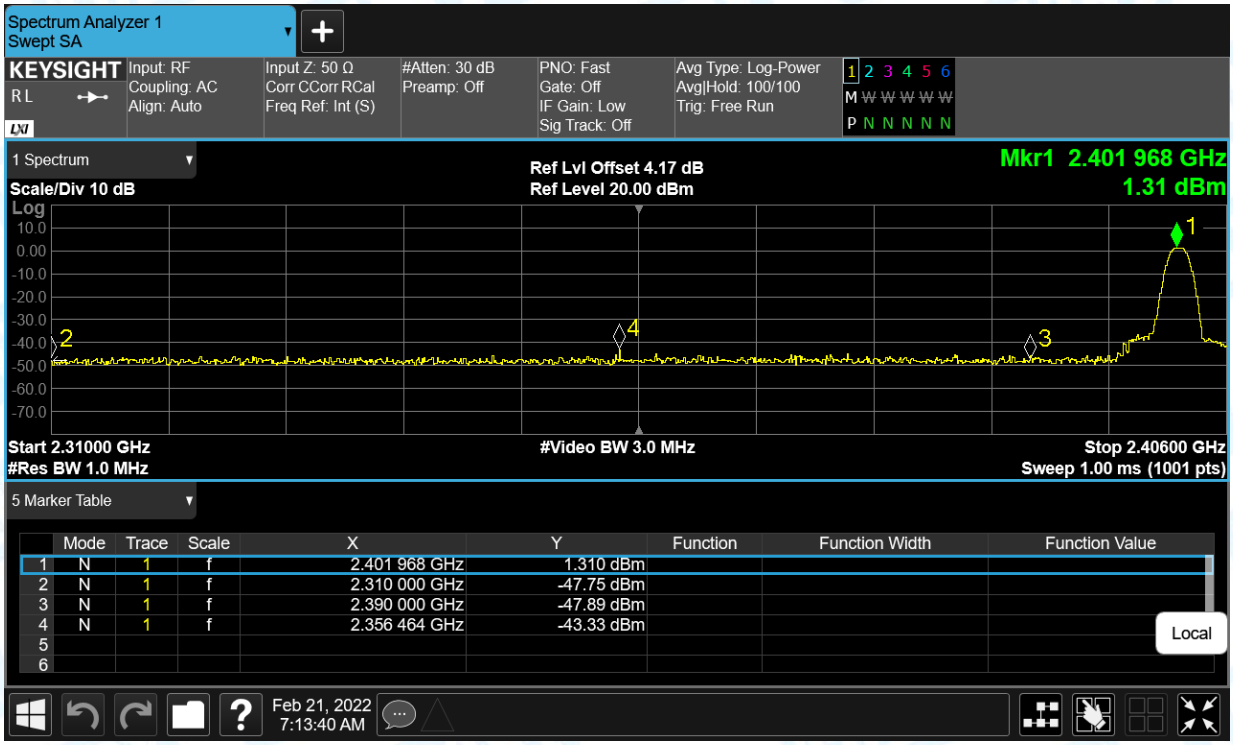
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

10. Restrict Band

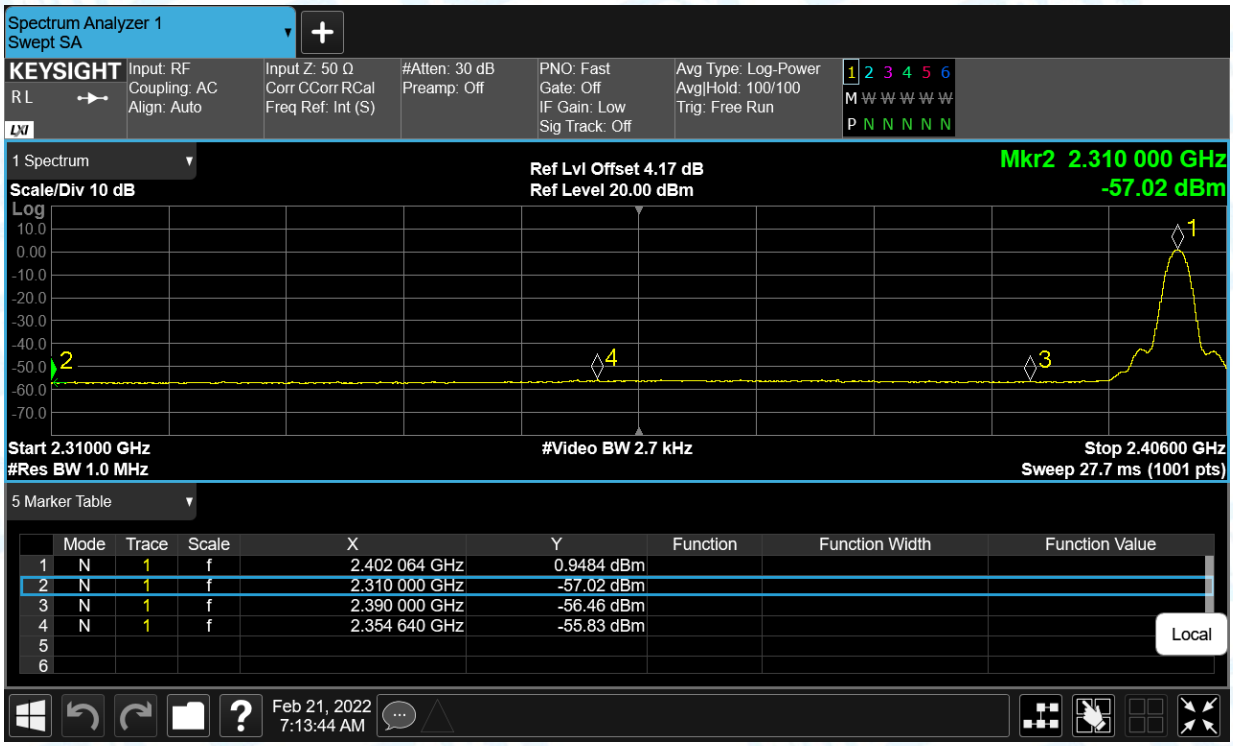
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.75	2	49.51	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-57.02	2	40.24	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2356.464	-43.33	2	53.93	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2354.64	-55.83	2	41.43	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-45.87	2	51.39	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.67	2	40.59	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-41.81	2	55.45	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-48.43	2	48.83	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.752	-41.2	2	56.06	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-48.43	2	48.83	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-47.22	2	50.04	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-56.66	2	40.6	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-46.54	2	50.72	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-57.17	2	40.09	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2327.28	-44.14	2	53.12	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2365.776	-55.7	2	41.56	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.09	2	49.17	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.44	2	40.82	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-41.91	2	55.35	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-50.34	2	46.92	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.656	-41.24	2	56.02	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.512	-50.34	2	46.92	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.91	2	50.35	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-56.36	2	40.9	Average	54	Pass

Test Graphs

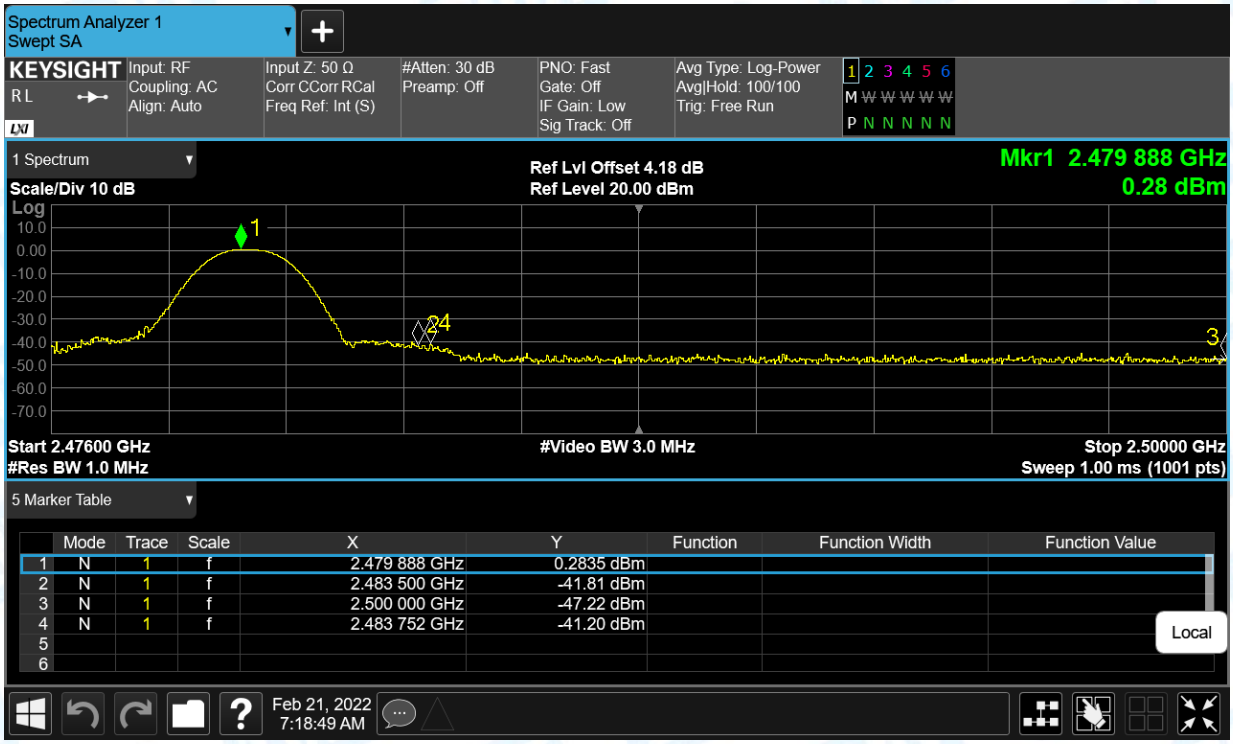
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



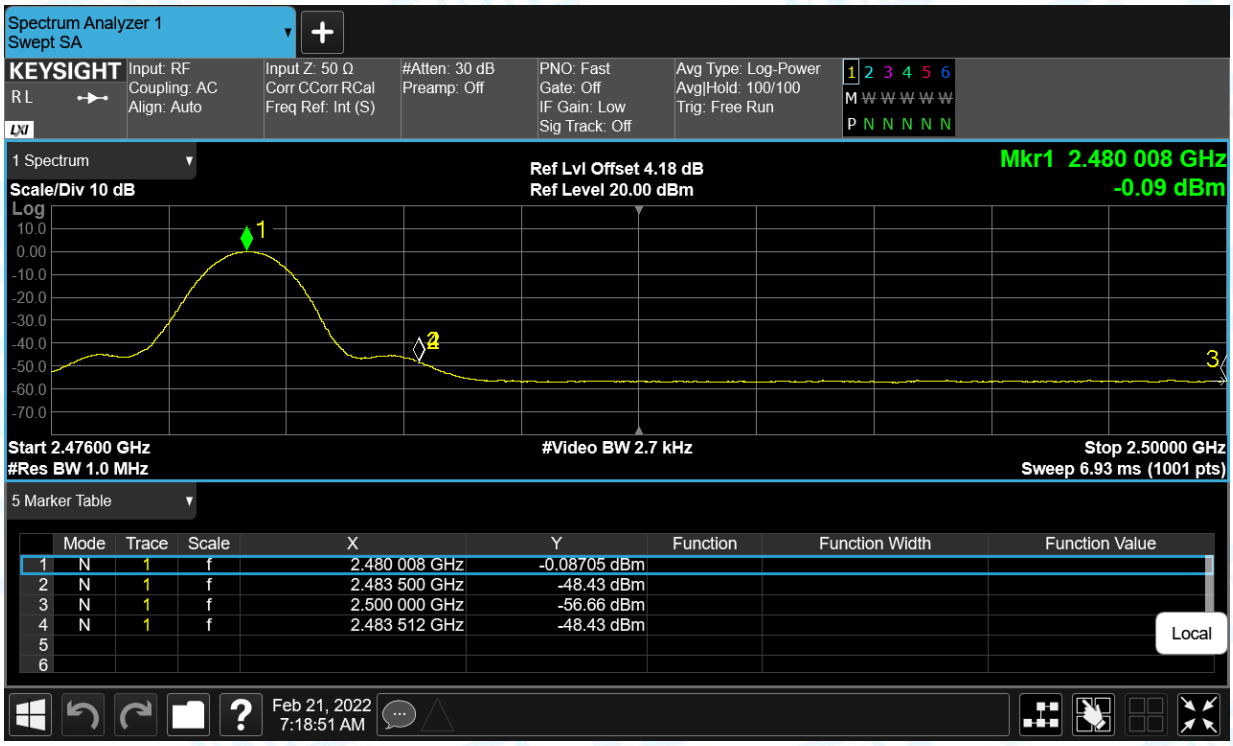
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



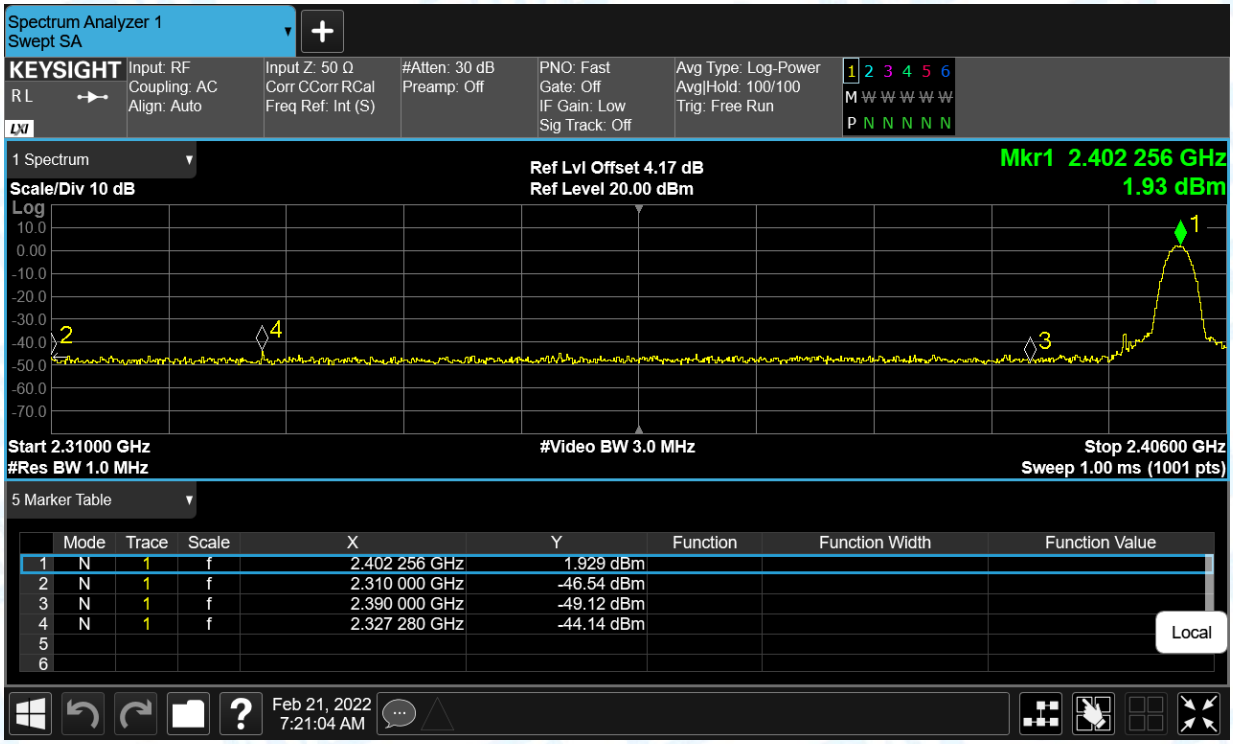
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



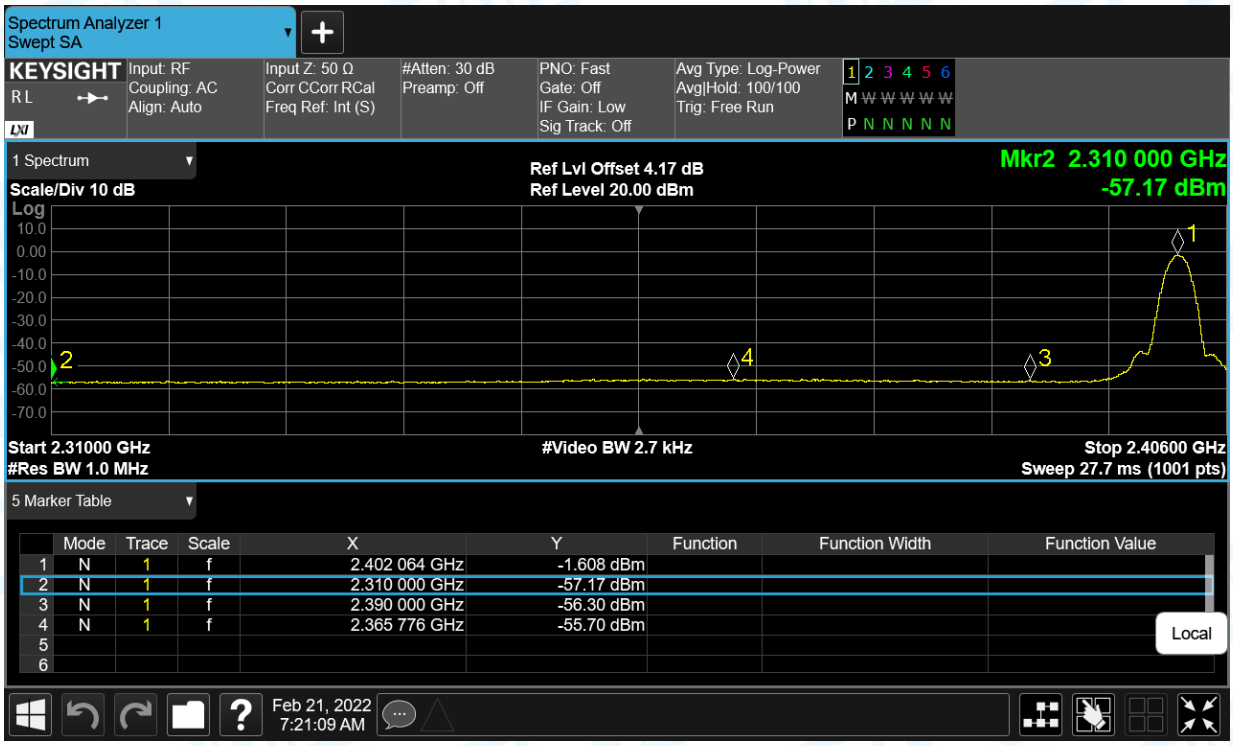
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



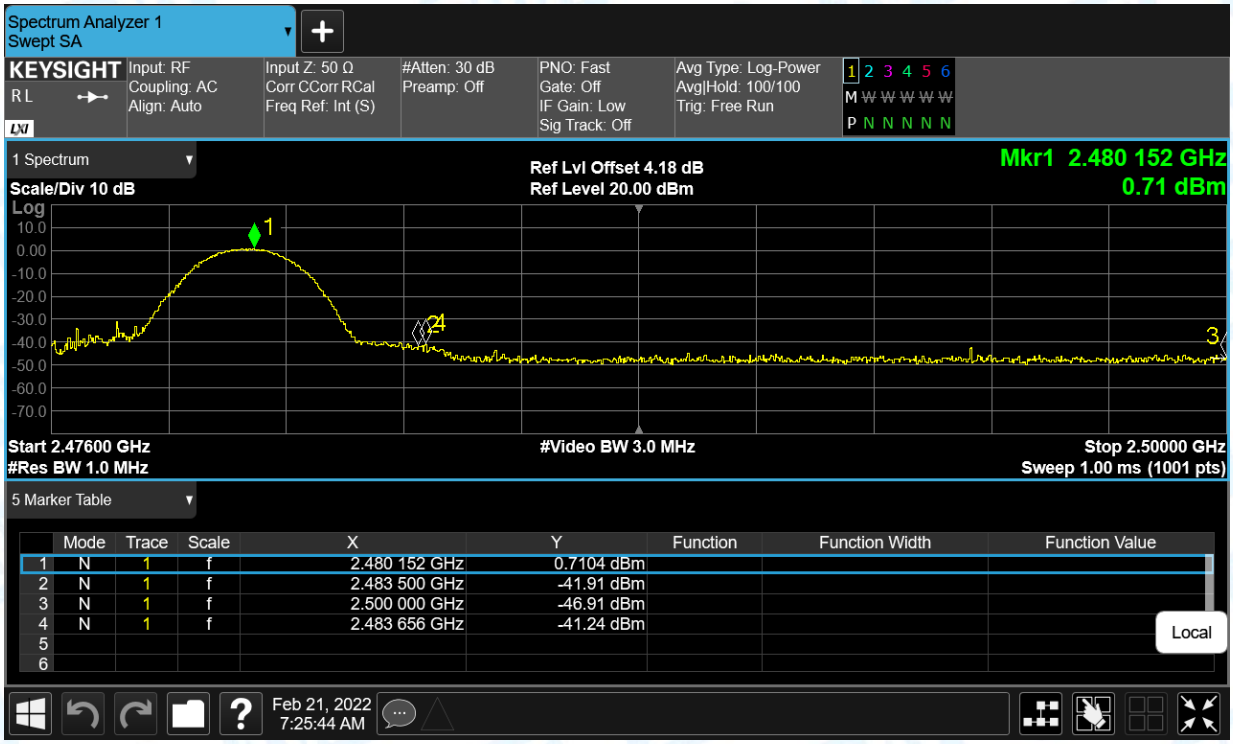
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



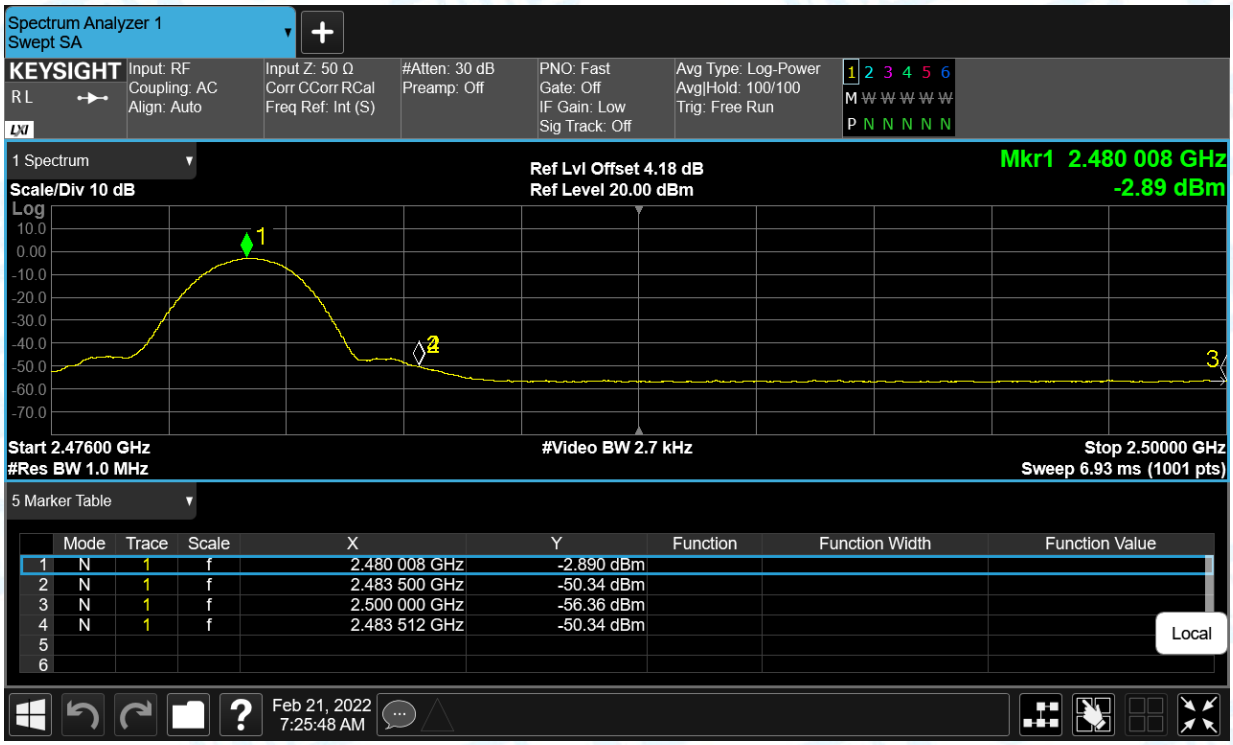
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



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



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

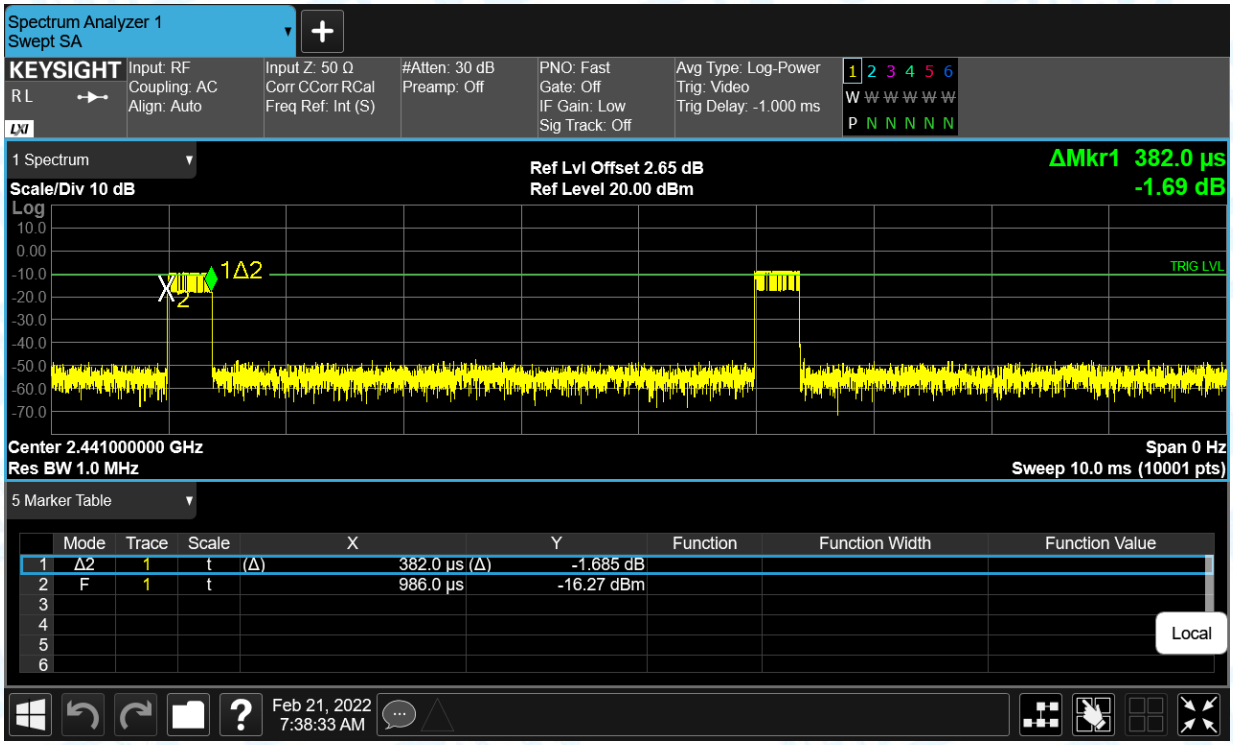


11. Dwell Time

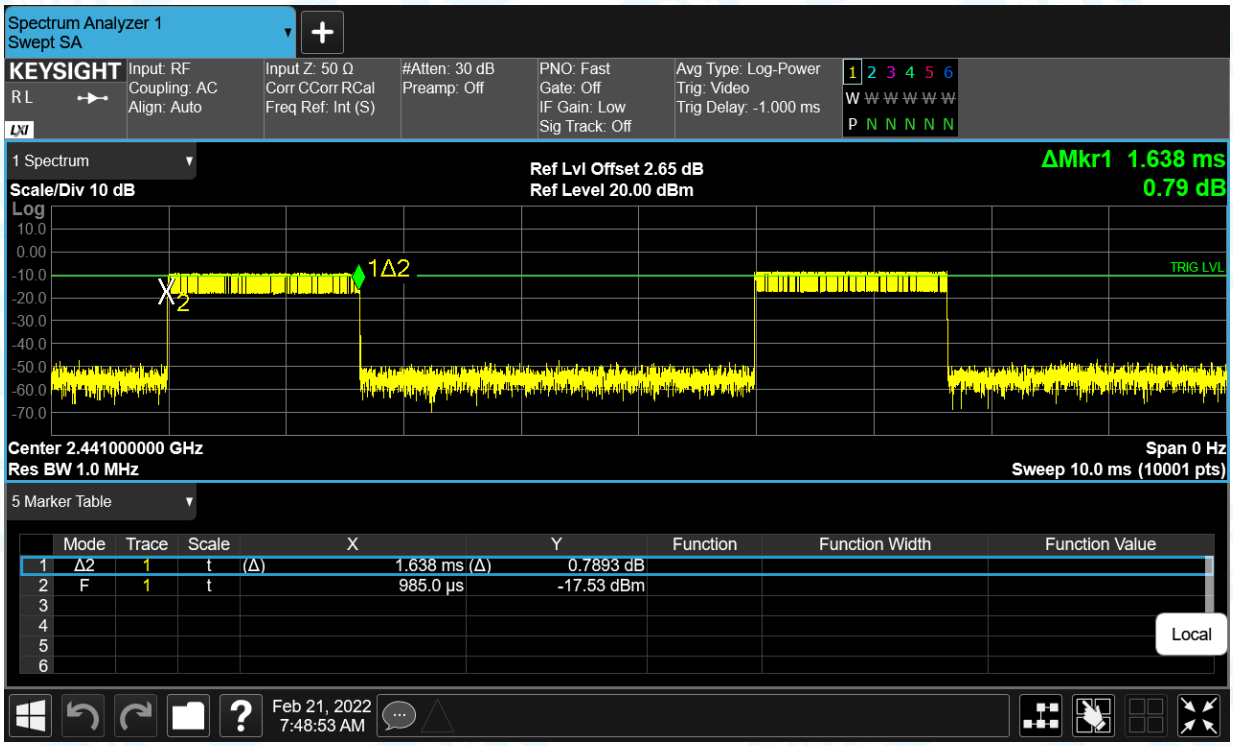
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.382	122.24	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.886	307.84	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.64	262.4	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass

Test Graphs

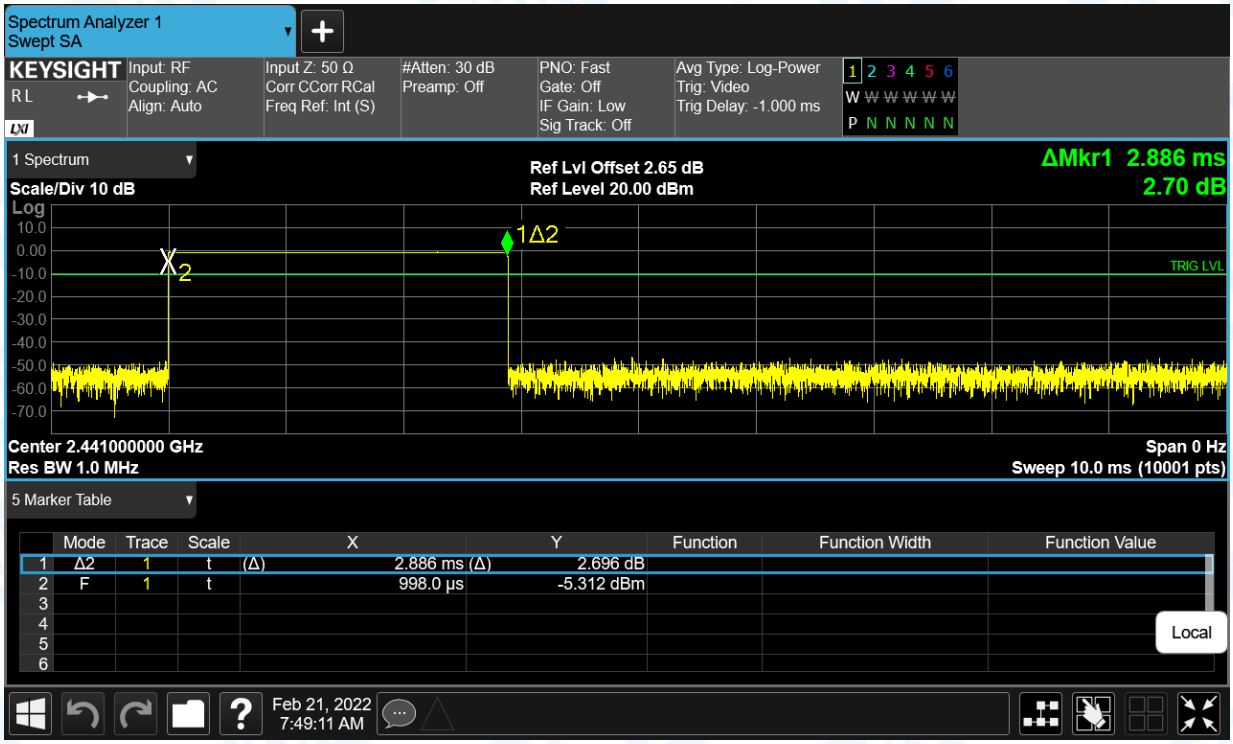
Dwell NVNT 1-DH1 2441MHz Ant1



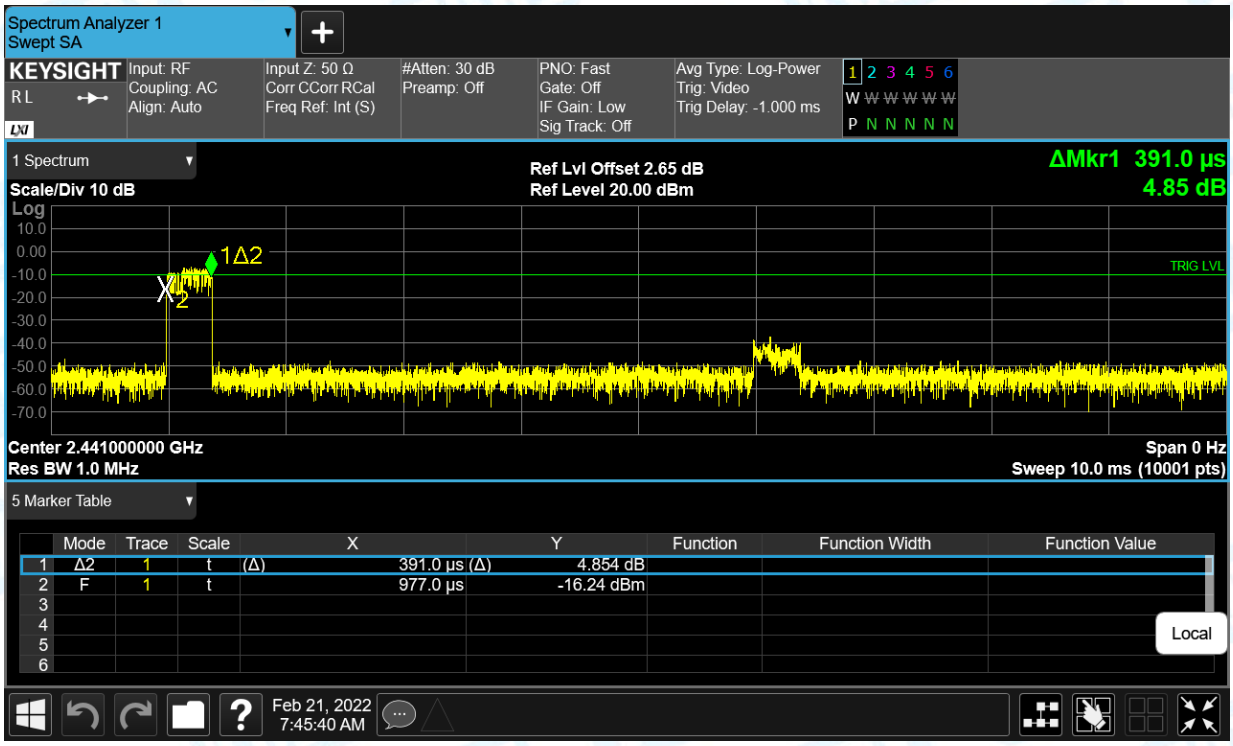
Dwell NVNT 1-DH3 2441MHz Ant1



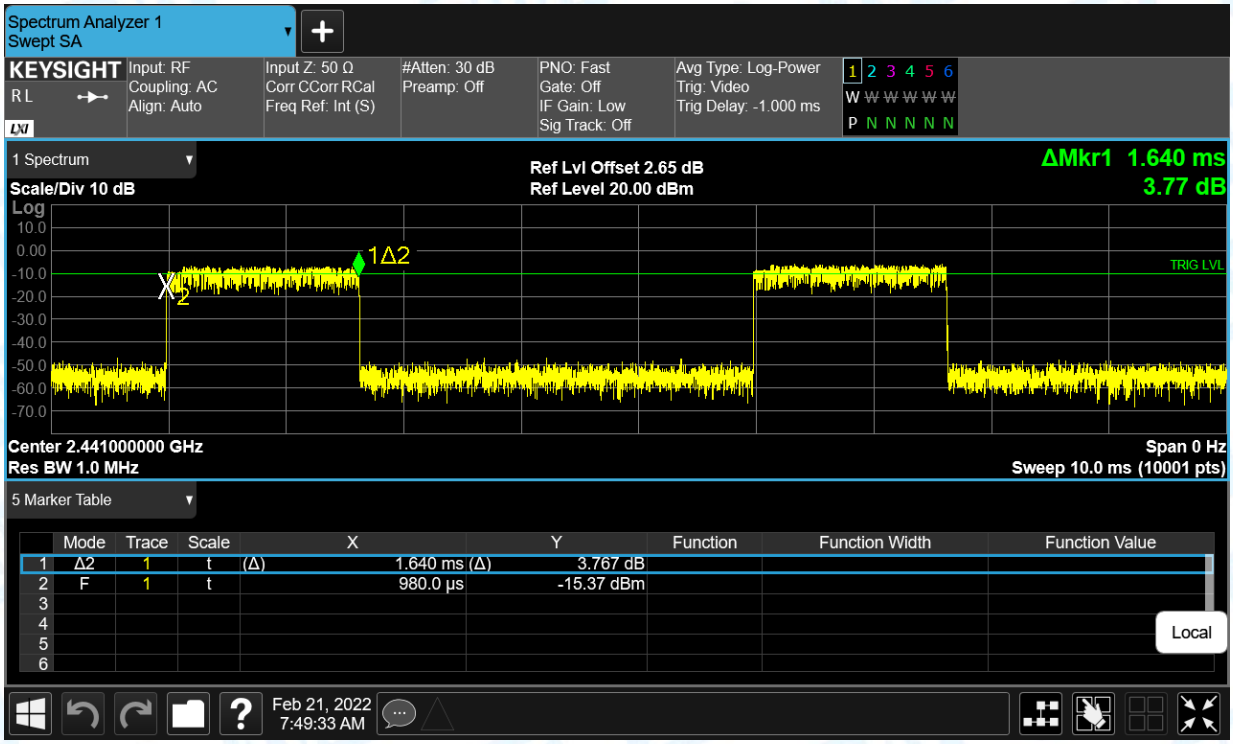
Dwell NVNT 1-DH5 2441MHz Ant1



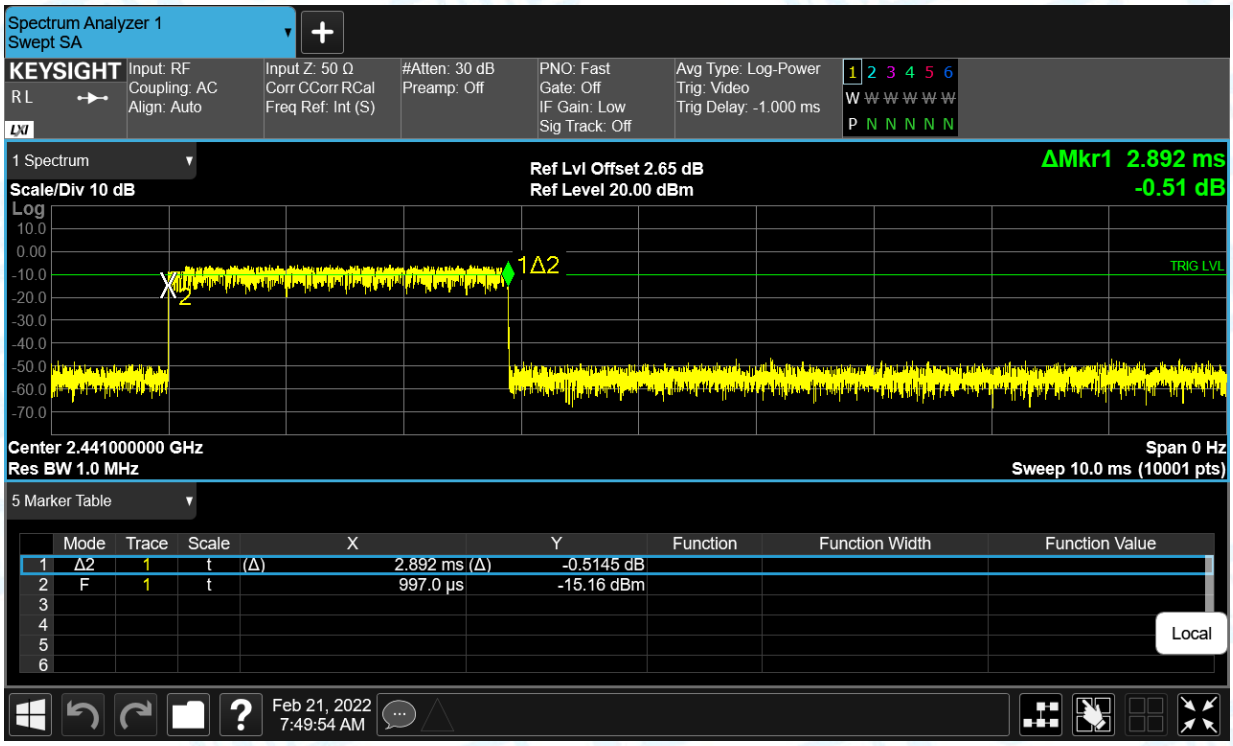
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



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