

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	RUGGEDIZED HAND-HELD DEVICE
Test Model:	CHAMELEON 7
Sample ID:	202202_0108-01-2
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 3.85V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202202-0108-310.	

Contents

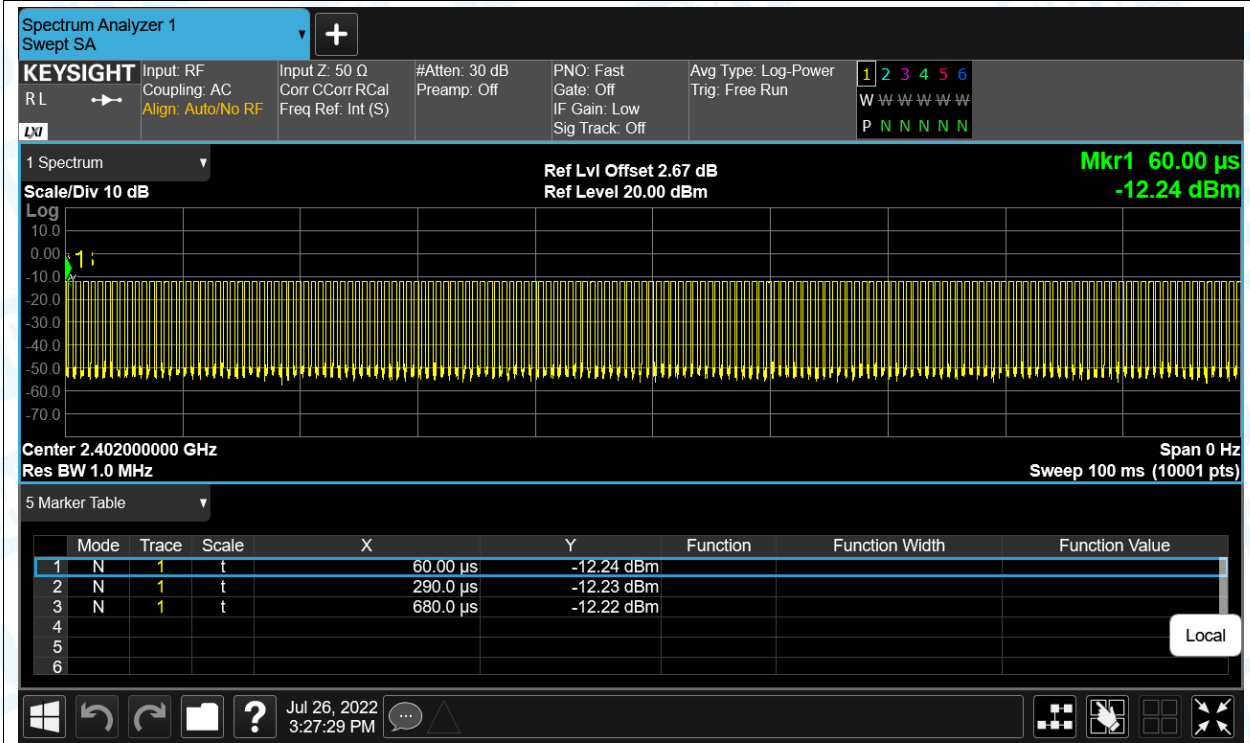
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1. Duty Cycle

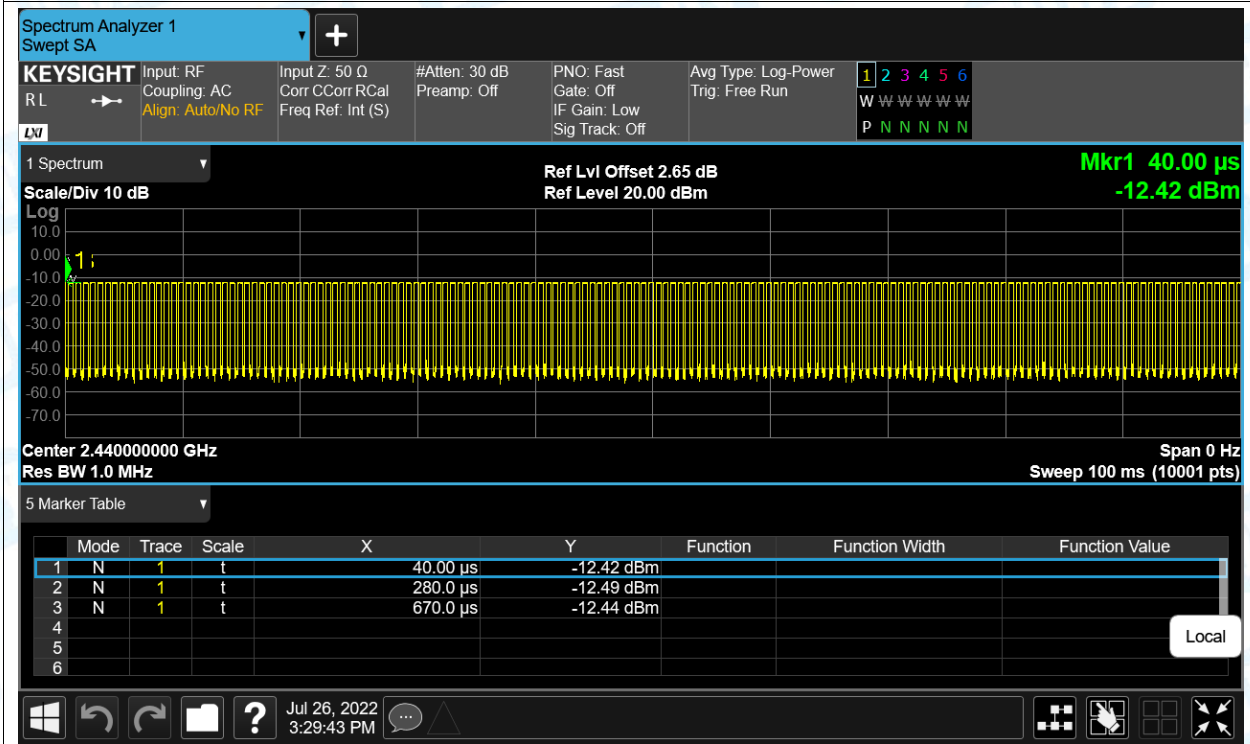
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	64	1.94	2.56
NVNT	BLE 1Mbps	2440	Ant1	64	1.94	2.56
NVNT	BLE 1Mbps	2480	Ant1	64.43	1.91	2.56
NVNT	BLE 2Mbps	2402	Ant1	35.2	4.54	4.76
NVNT	BLE 2Mbps	2440	Ant1	34.41	4.63	4.76
NVNT	BLE 2Mbps	2480	Ant1	34.4	4.63	5

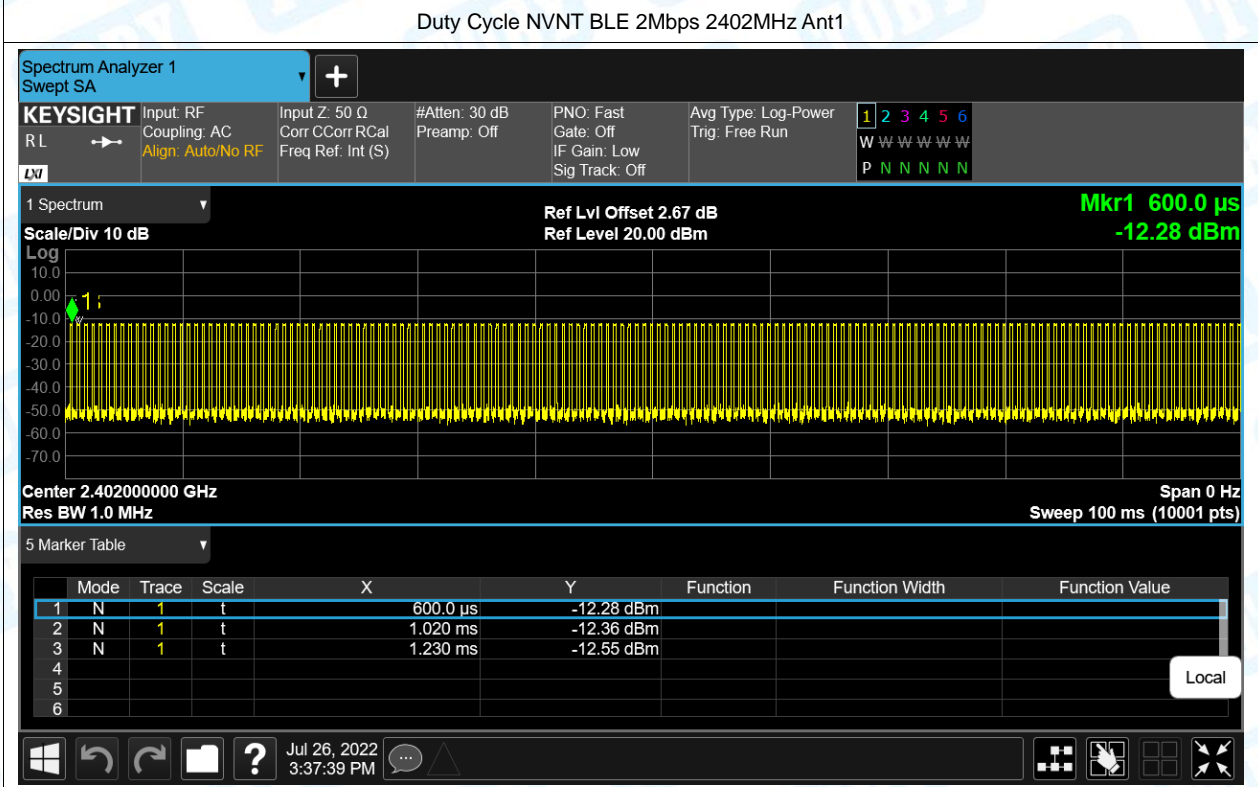
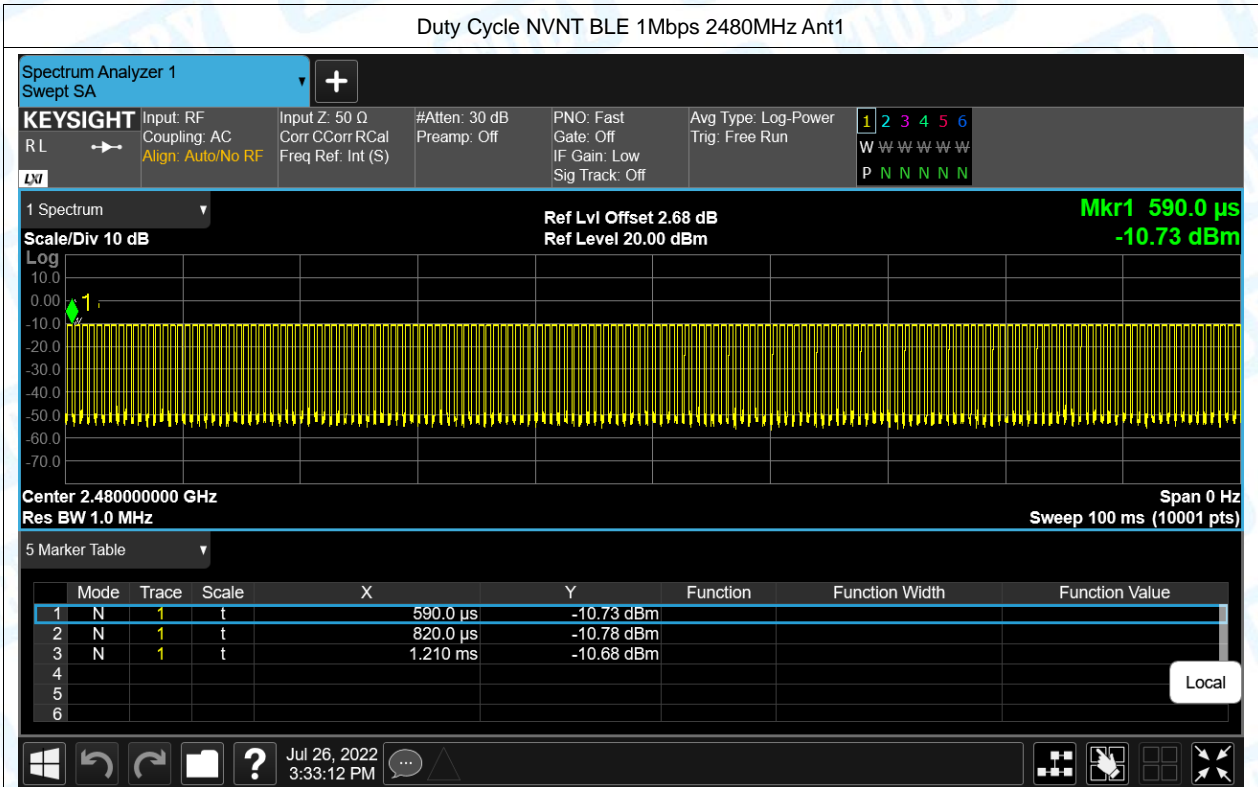
Test Graphs

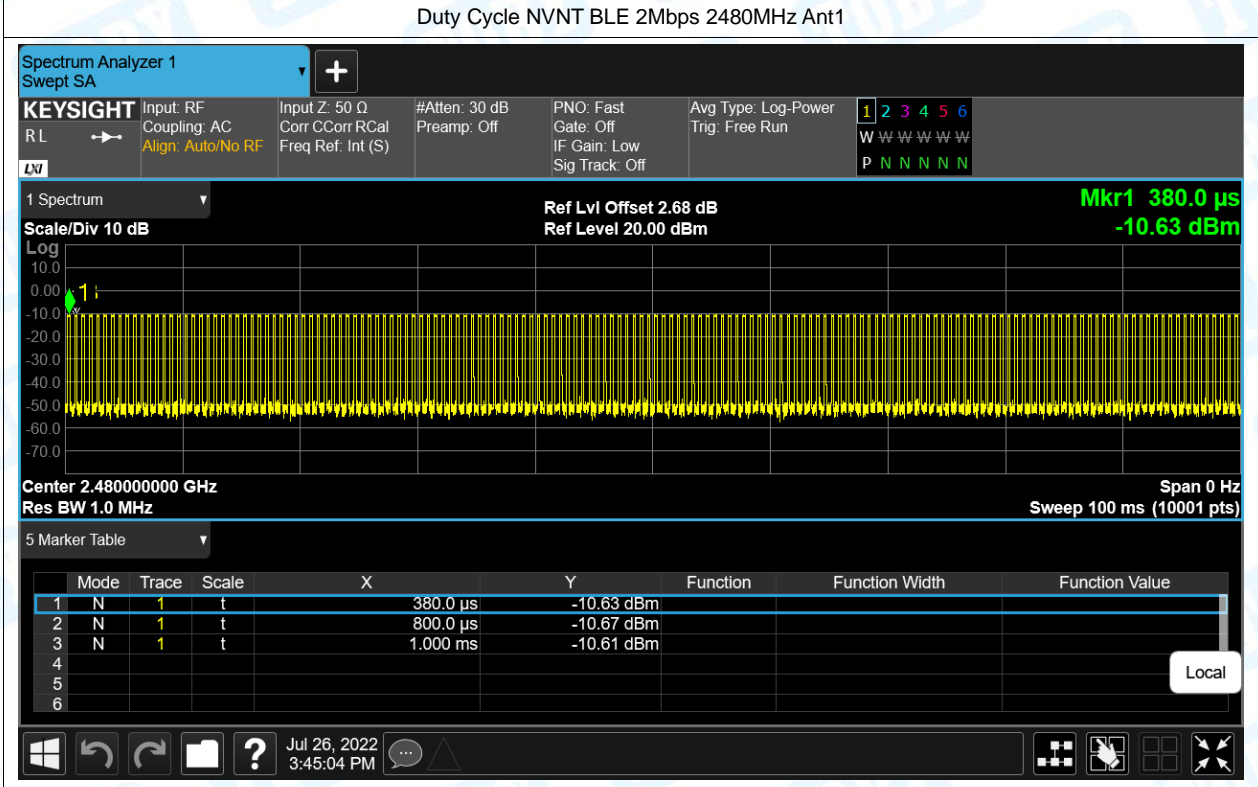
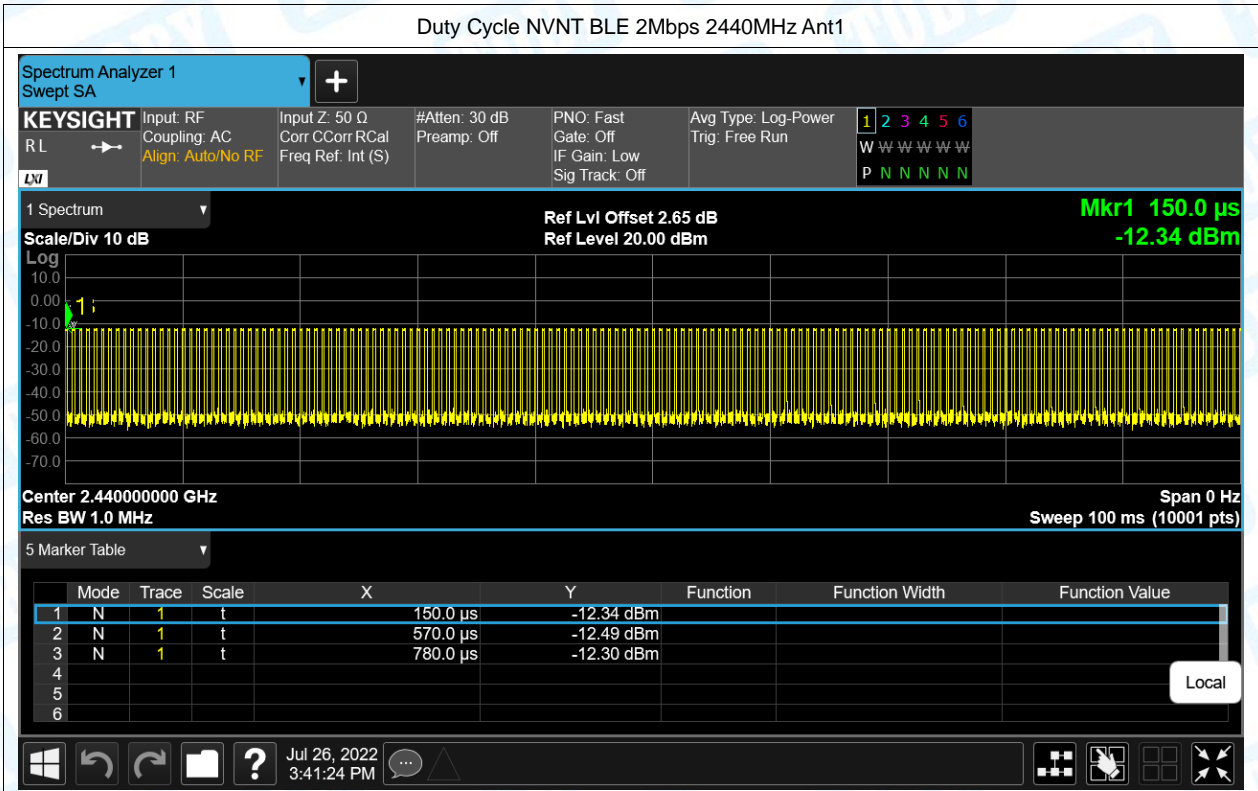
Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1



Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1

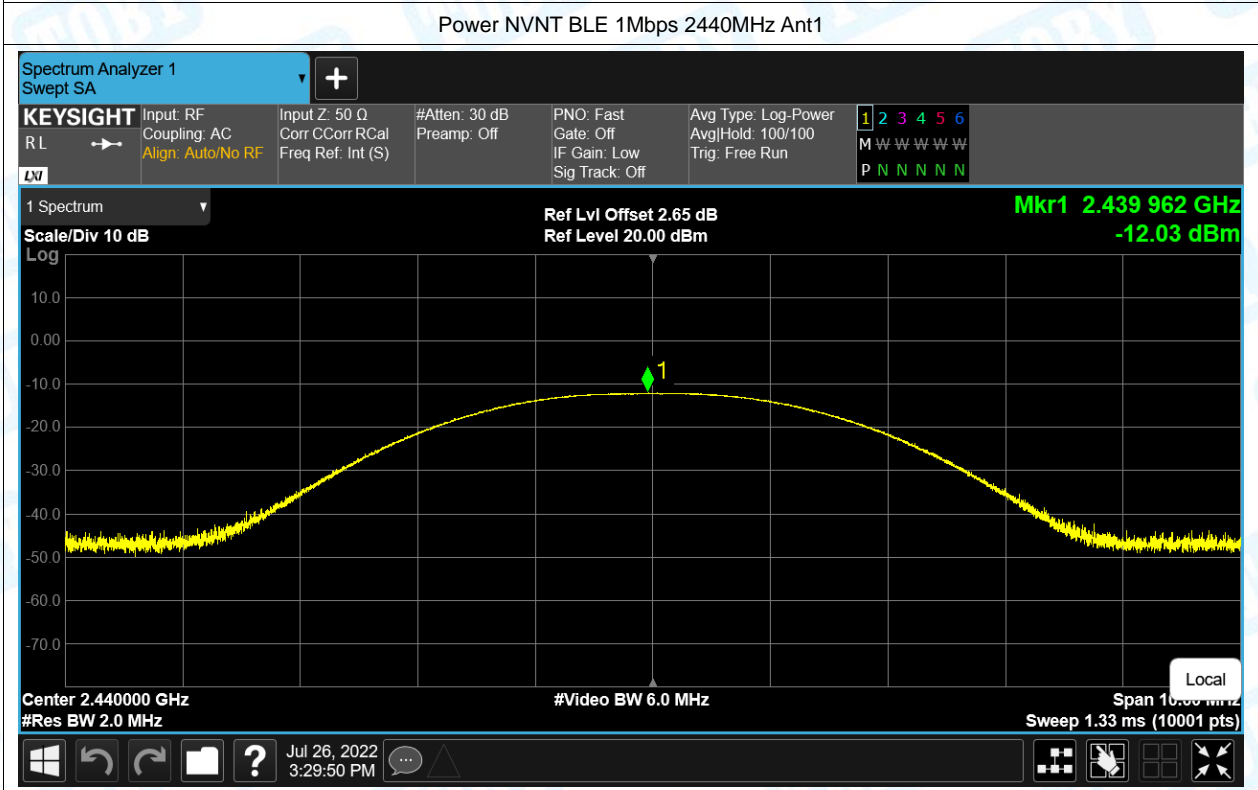
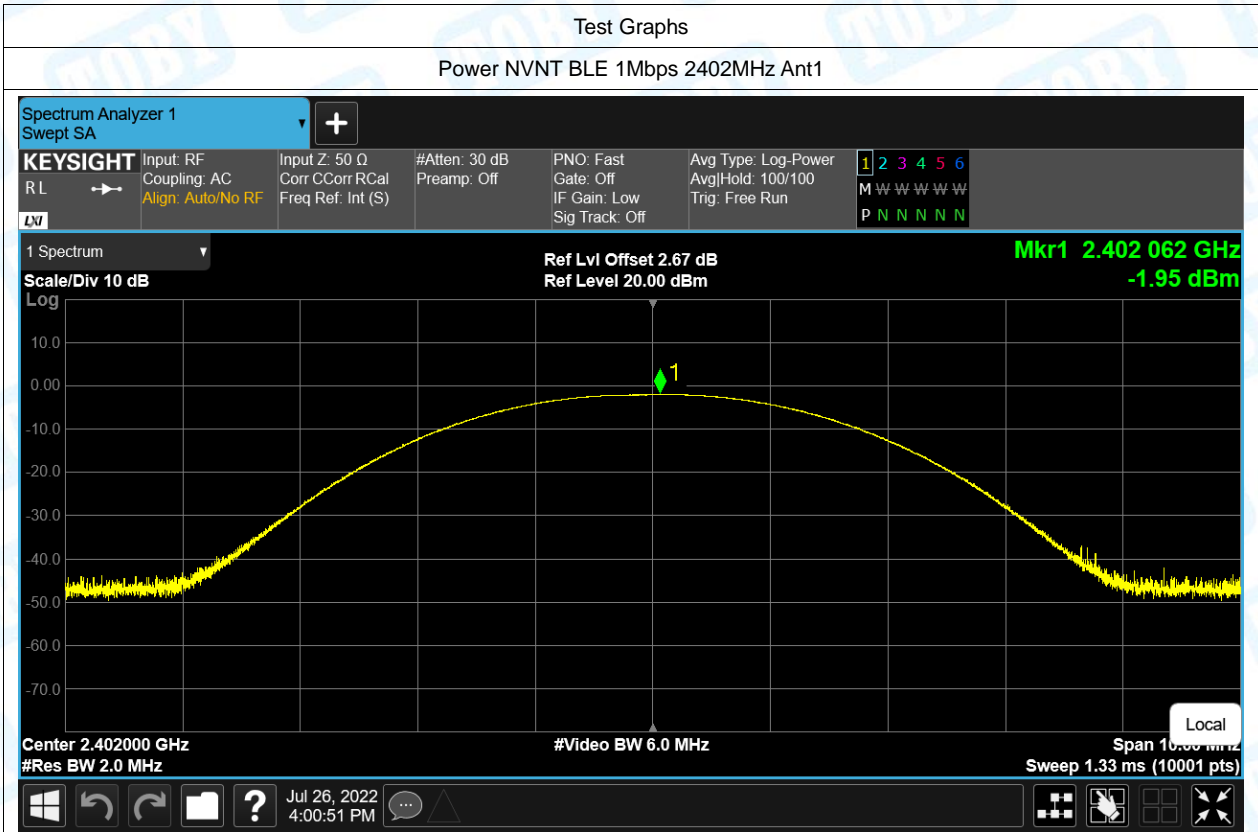




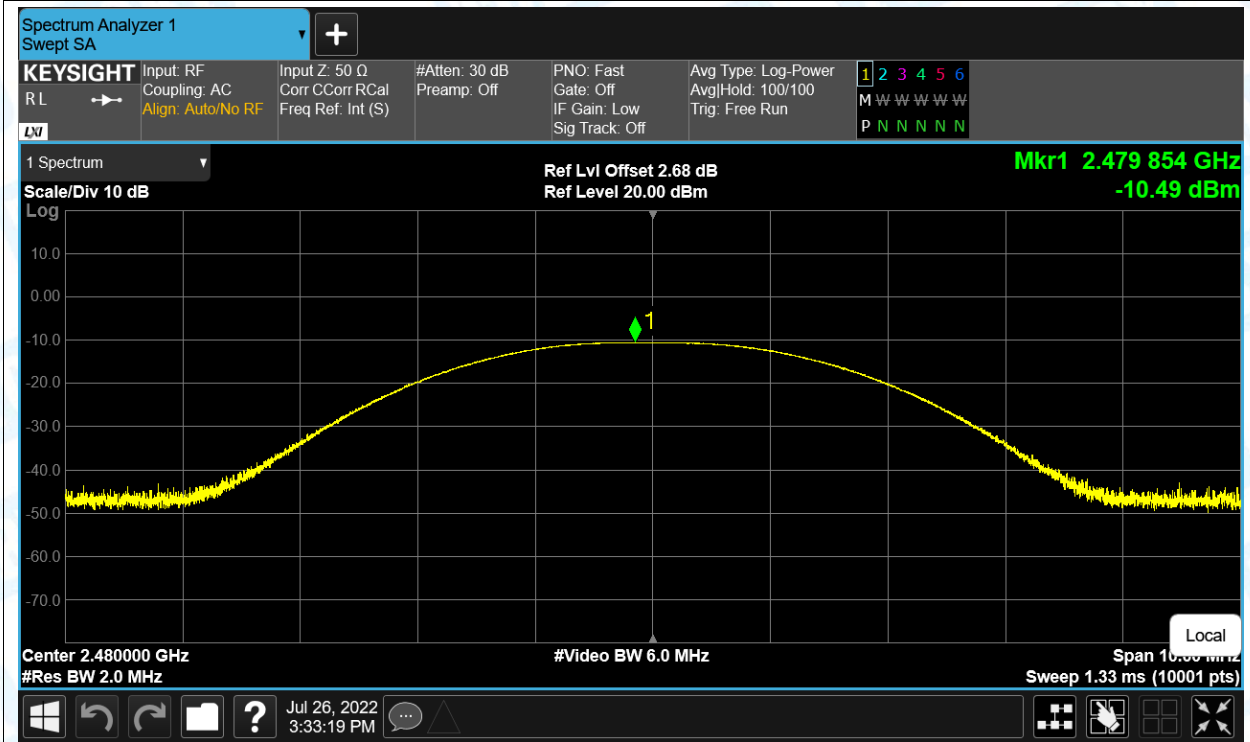


2. Maximum Conducted Output Power

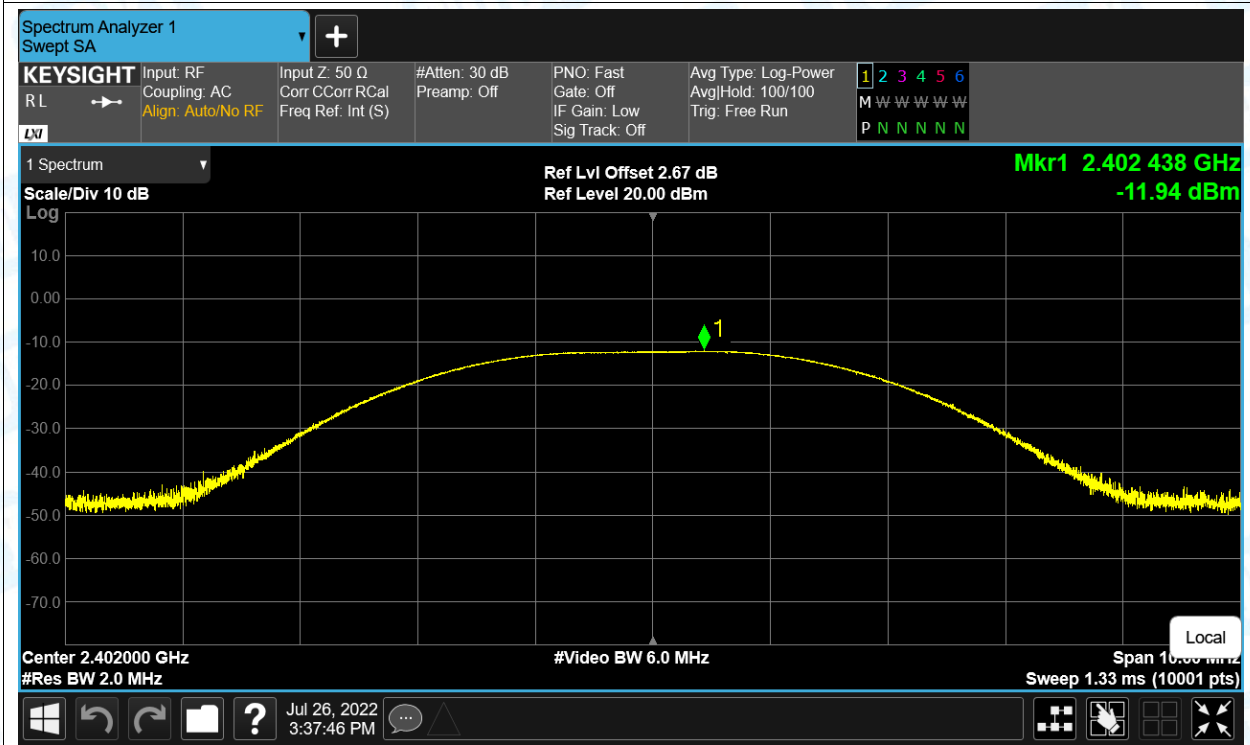
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-1.951	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	-12.031	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	-10.495	30	Pass
NVNT	BLE 2Mbps	2402	Ant1	-11.945	30	Pass
NVNT	BLE 2Mbps	2440	Ant1	-11.981	30	Pass
NVNT	BLE 2Mbps	2480	Ant1	-10.424	30	Pass

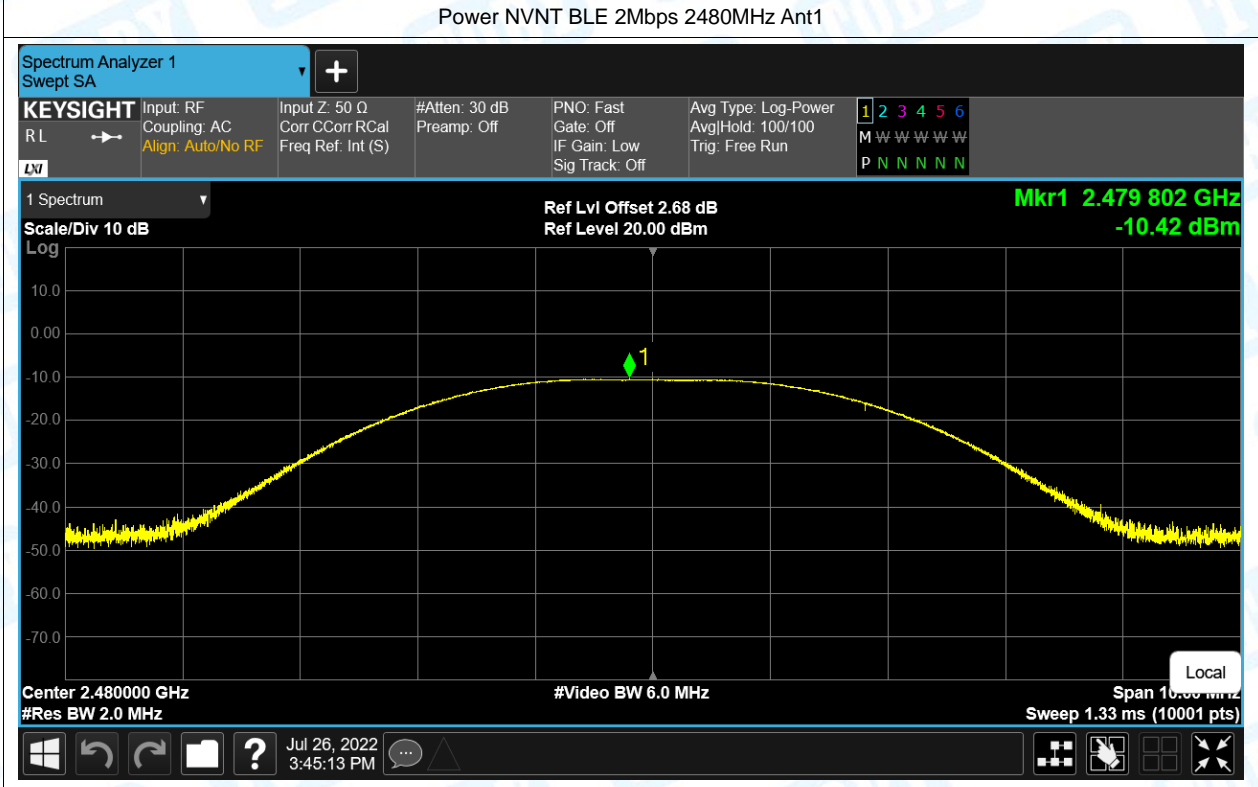
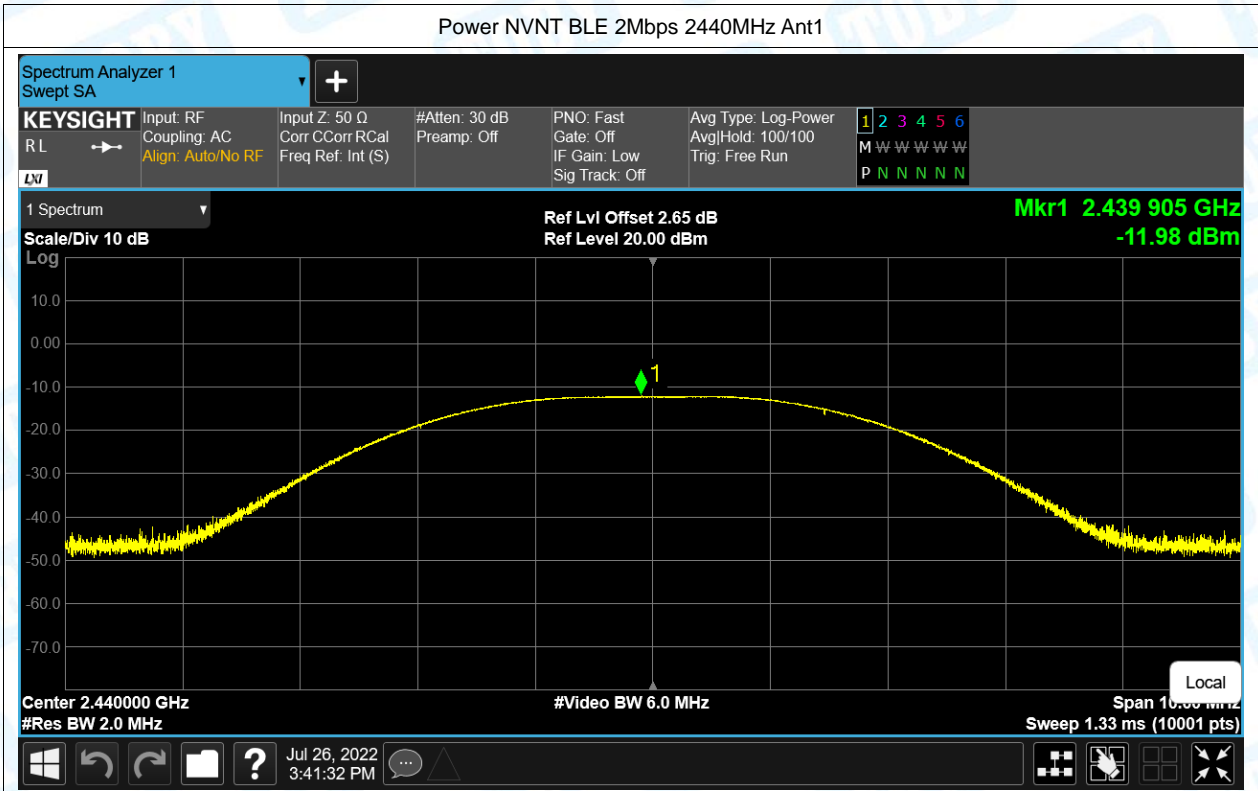


Power NVNT BLE 1Mbps 2480MHz Ant1



Power NVNT BLE 2Mbps 2402MHz Ant1



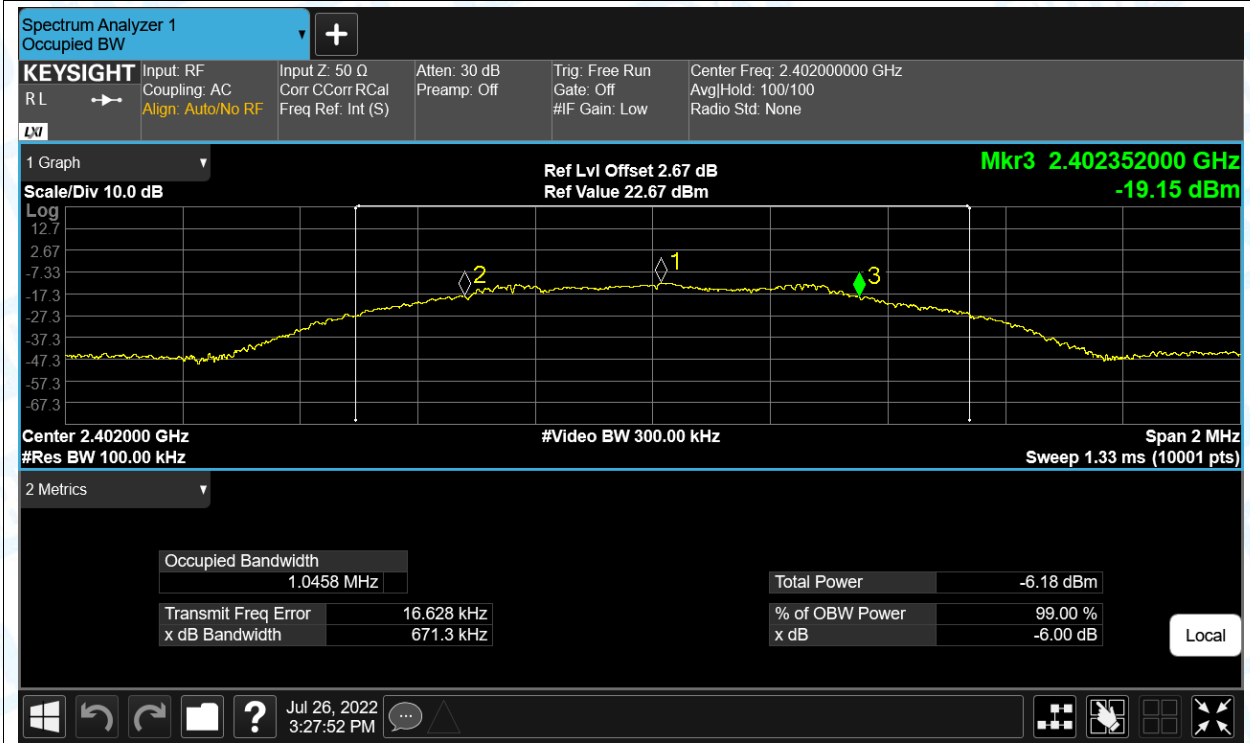


3. -6dB Bandwidth

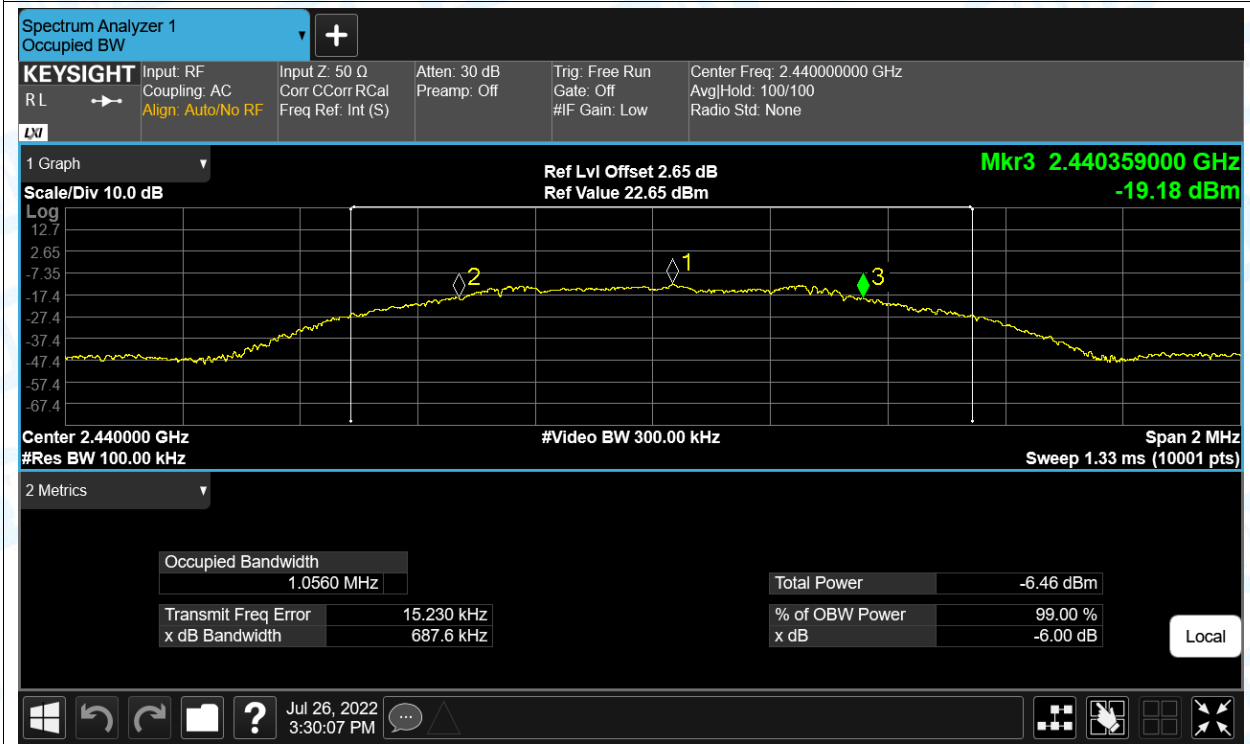
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.67	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.69	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.68	0.5	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.12	0.5	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.16	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.13	0.5	Pass

Test Graphs

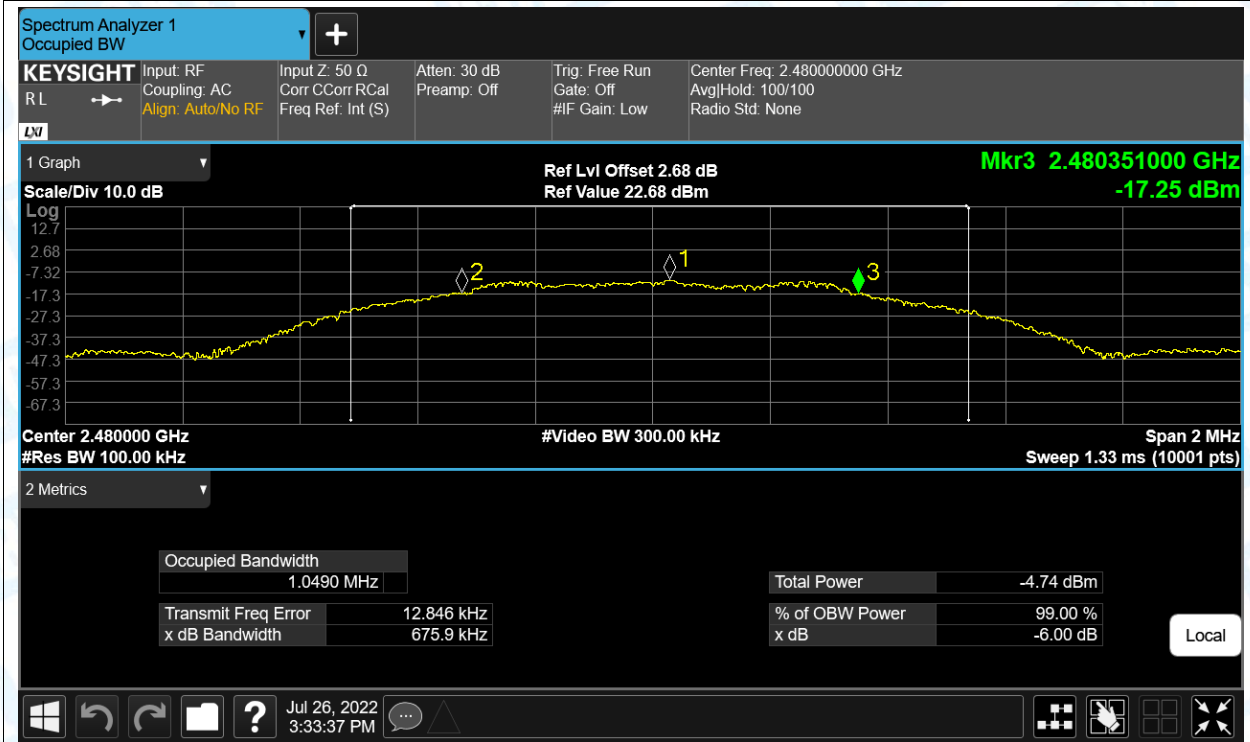
-6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1



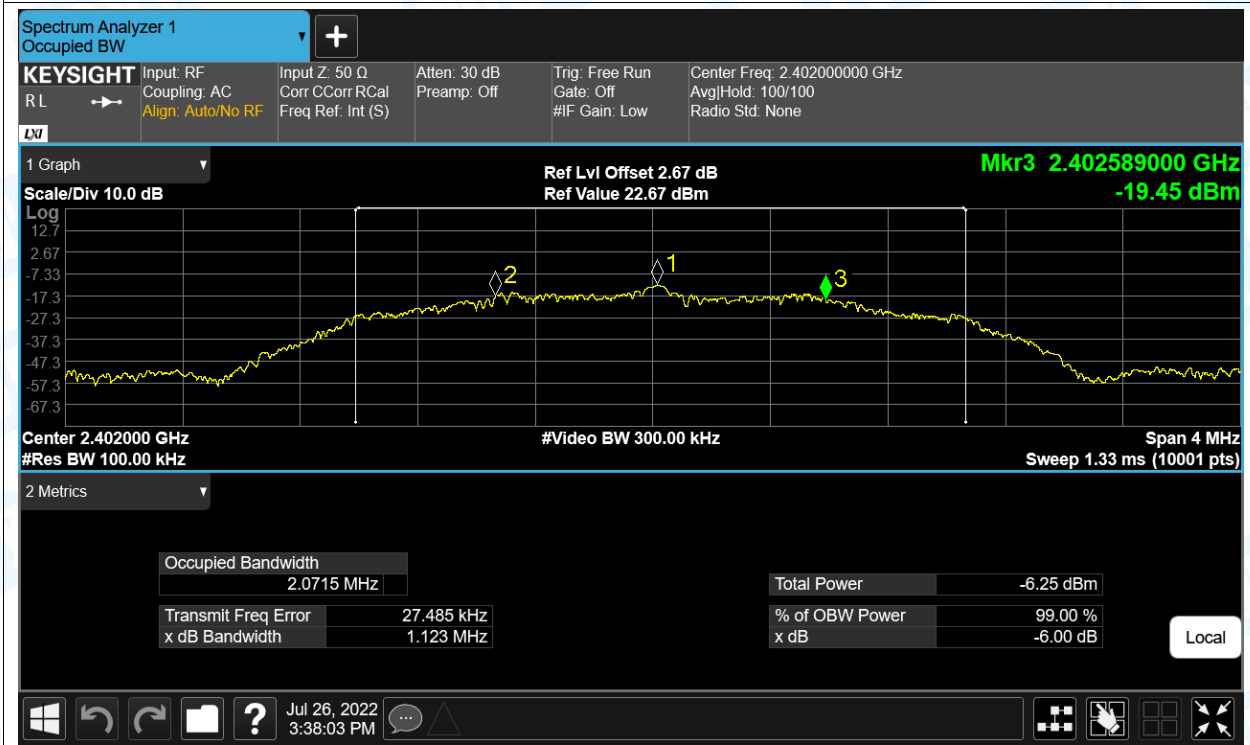
-6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1



-6dB Bandwidth NVNT BLE 1Mbps 2480MHz Ant1



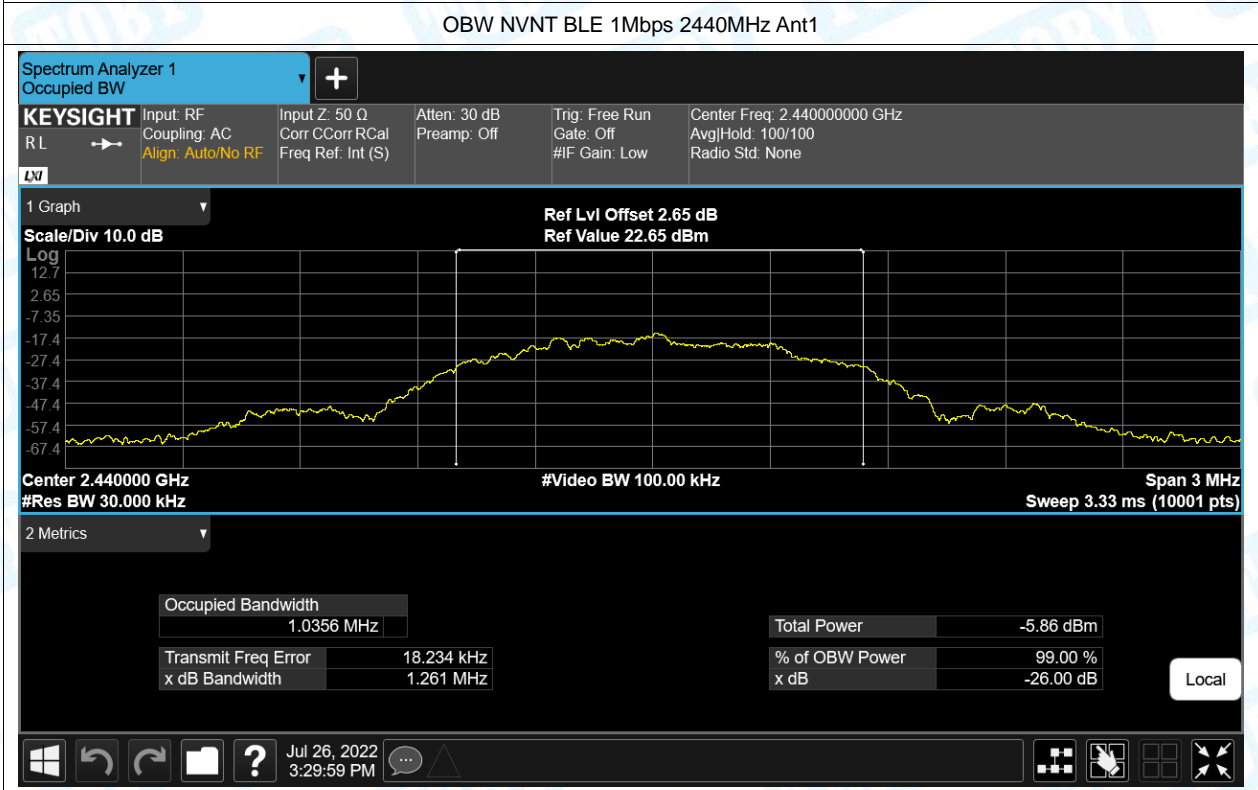
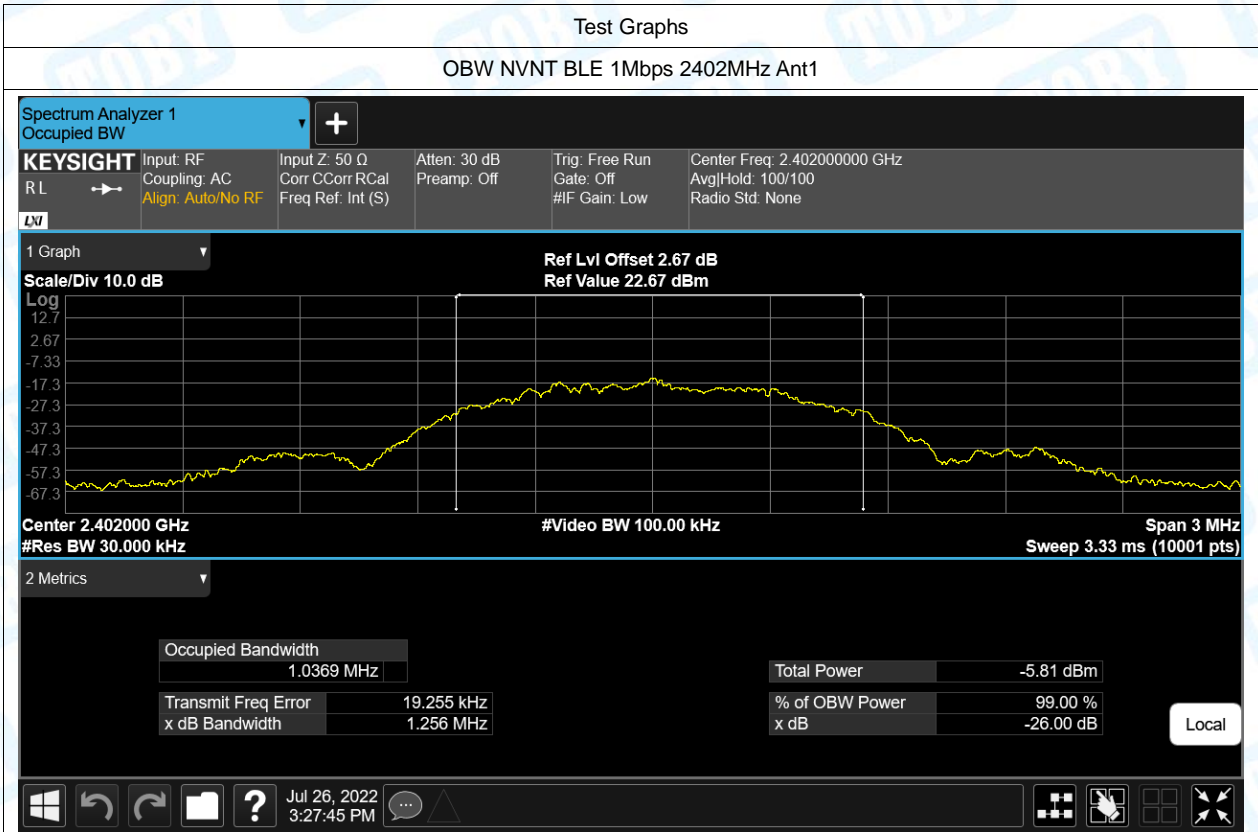
-6dB Bandwidth NVNT BLE 2Mbps 2402MHz Ant1





4. Occupied Channel Bandwidth

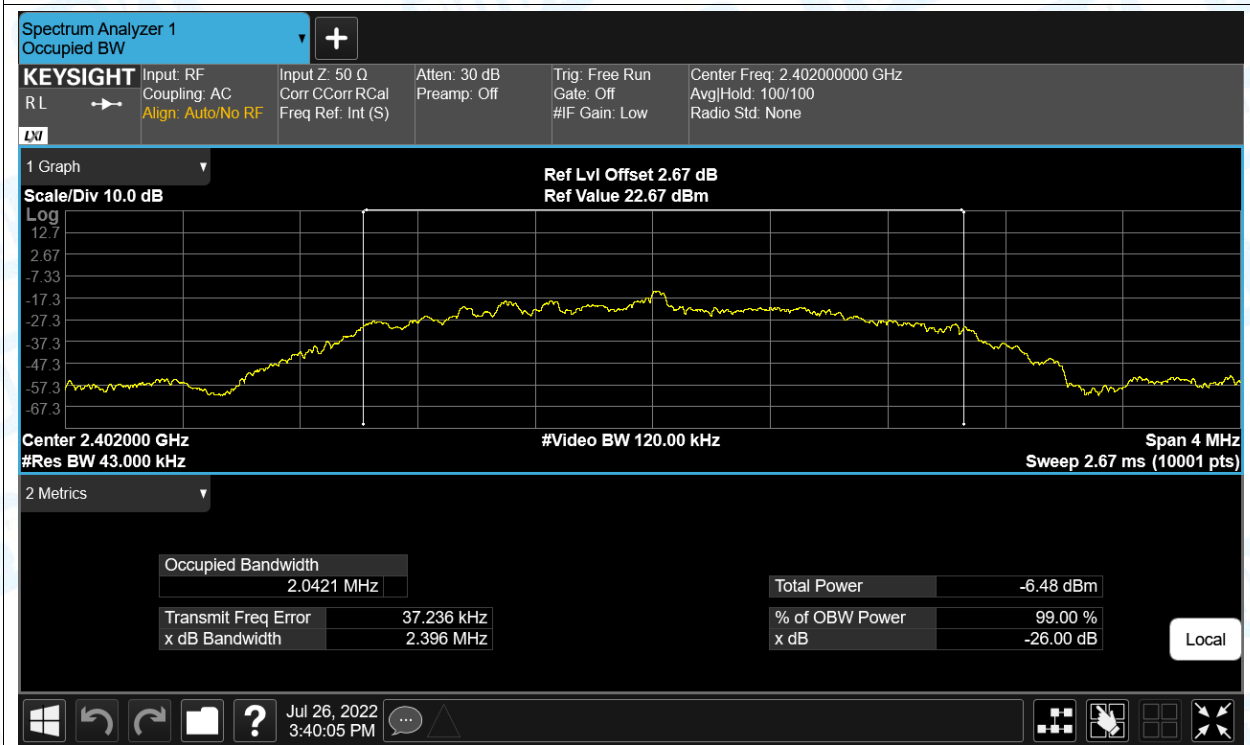
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.037
NVNT	BLE 1Mbps	2440	Ant1	1.036
NVNT	BLE 1Mbps	2480	Ant1	1.037
NVNT	BLE 2Mbps	2402	Ant1	2.042
NVNT	BLE 2Mbps	2440	Ant1	2.049
NVNT	BLE 2Mbps	2480	Ant1	2.05



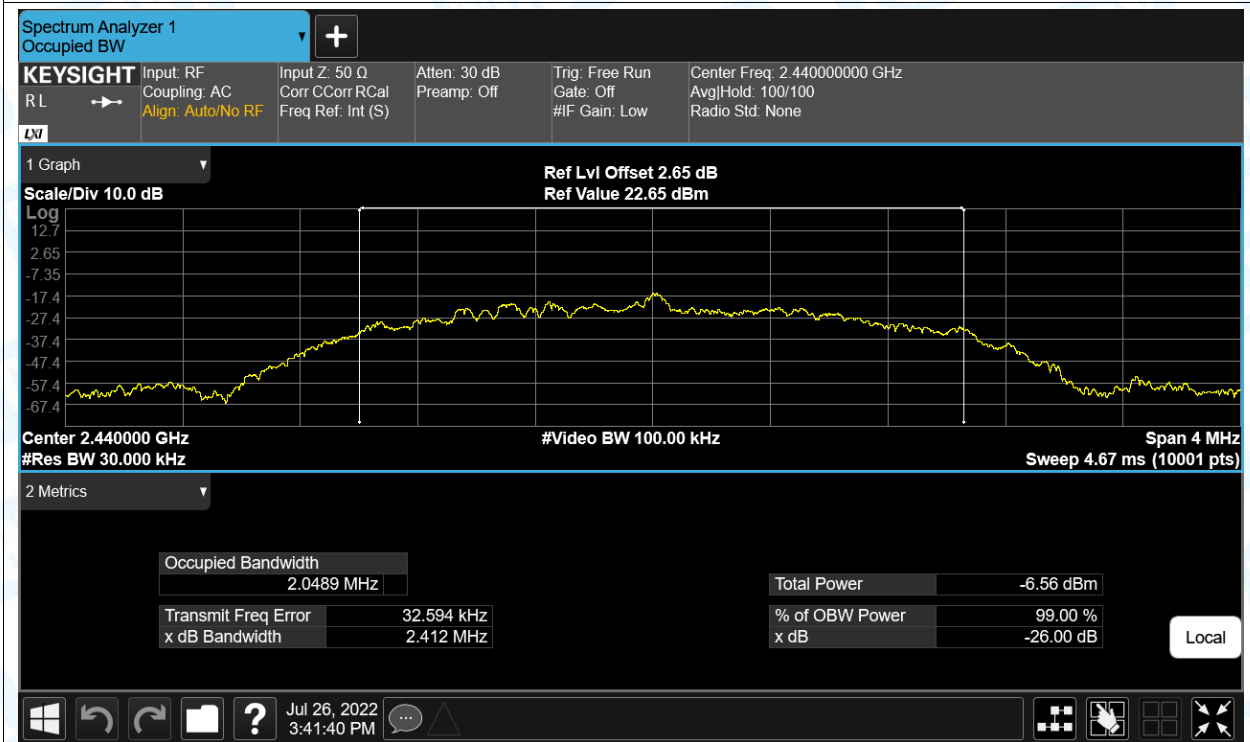
OBW NVNT BLE 1Mbps 2480MHz Ant1



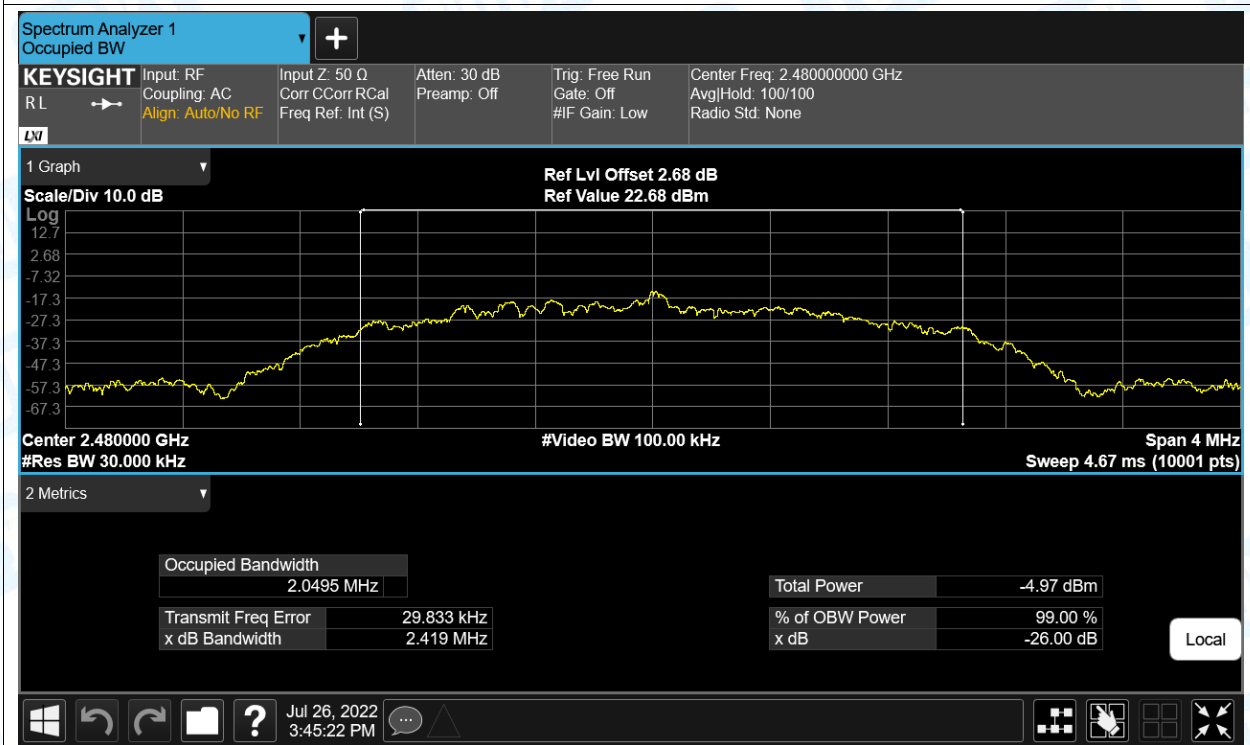
OBW NVNT BLE 2Mbps 2402MHz Ant1



OBW NVNT BLE 2Mbps 2440MHz Ant1

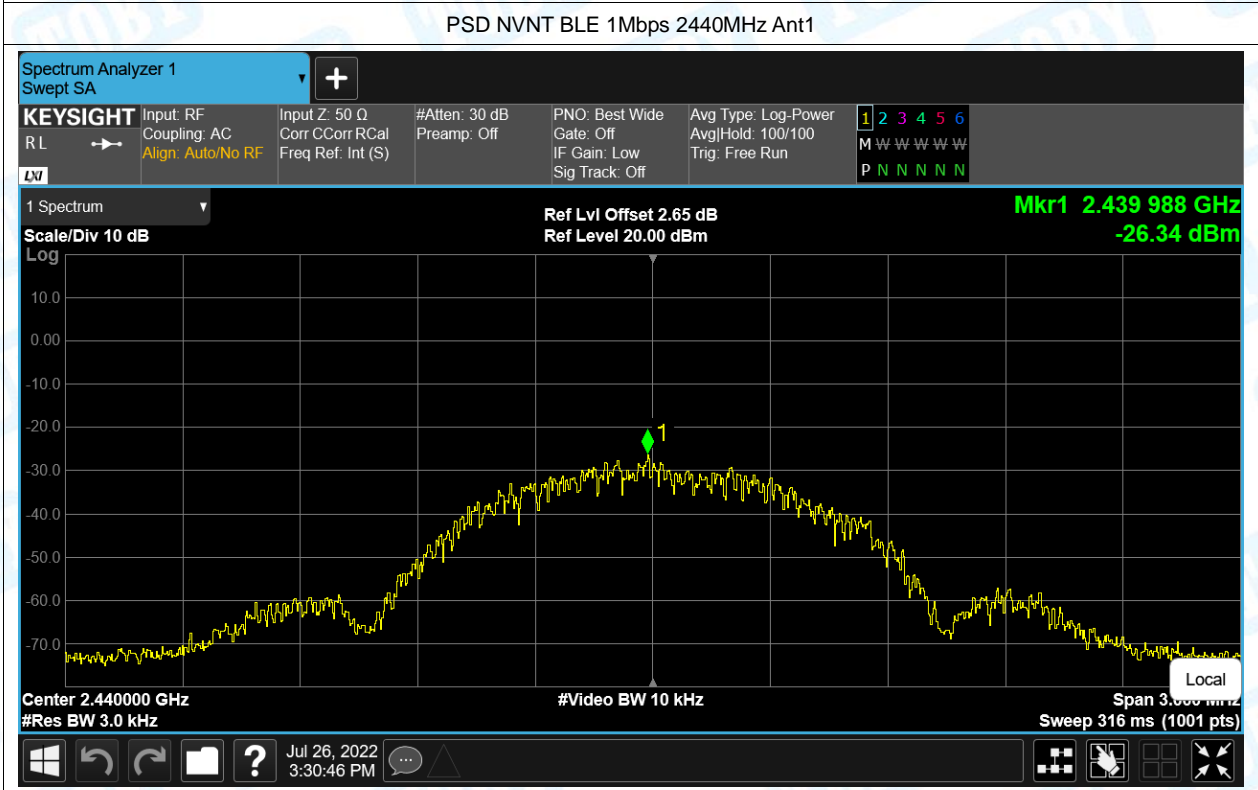
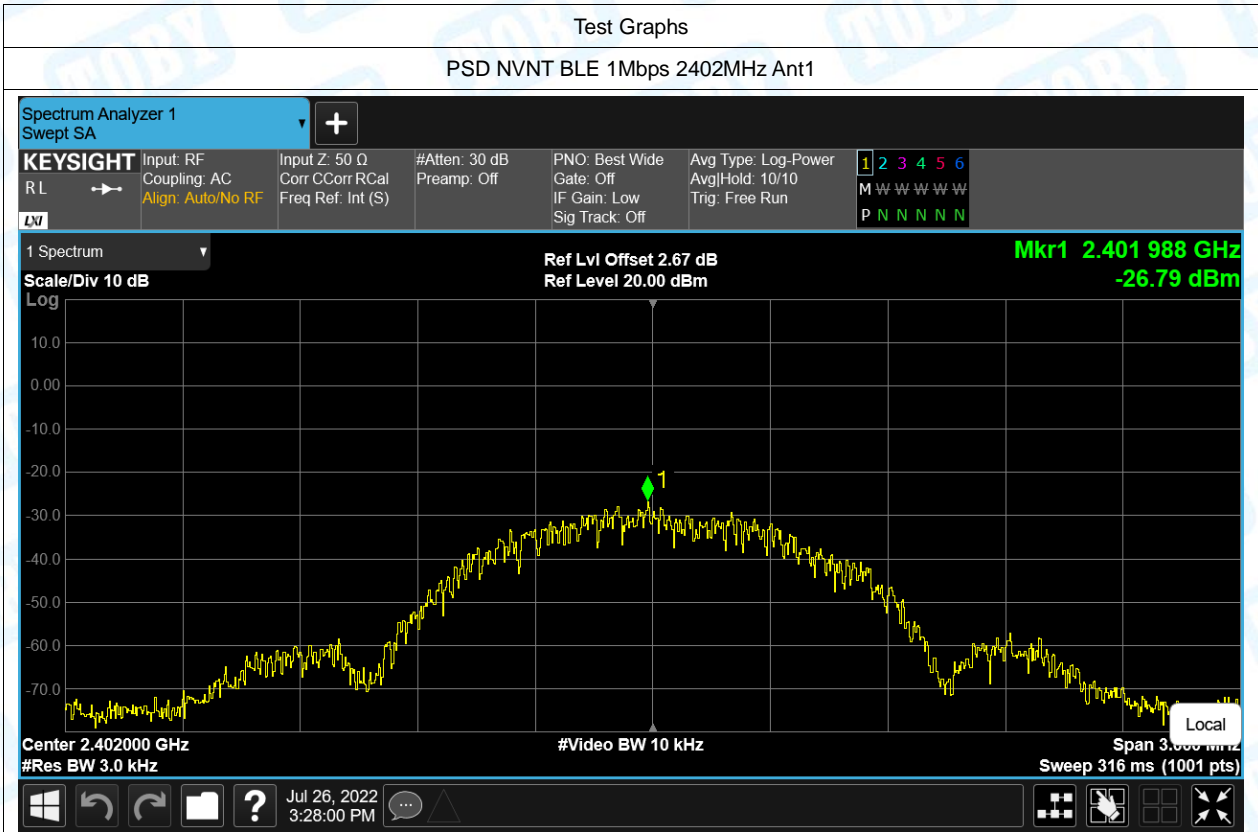


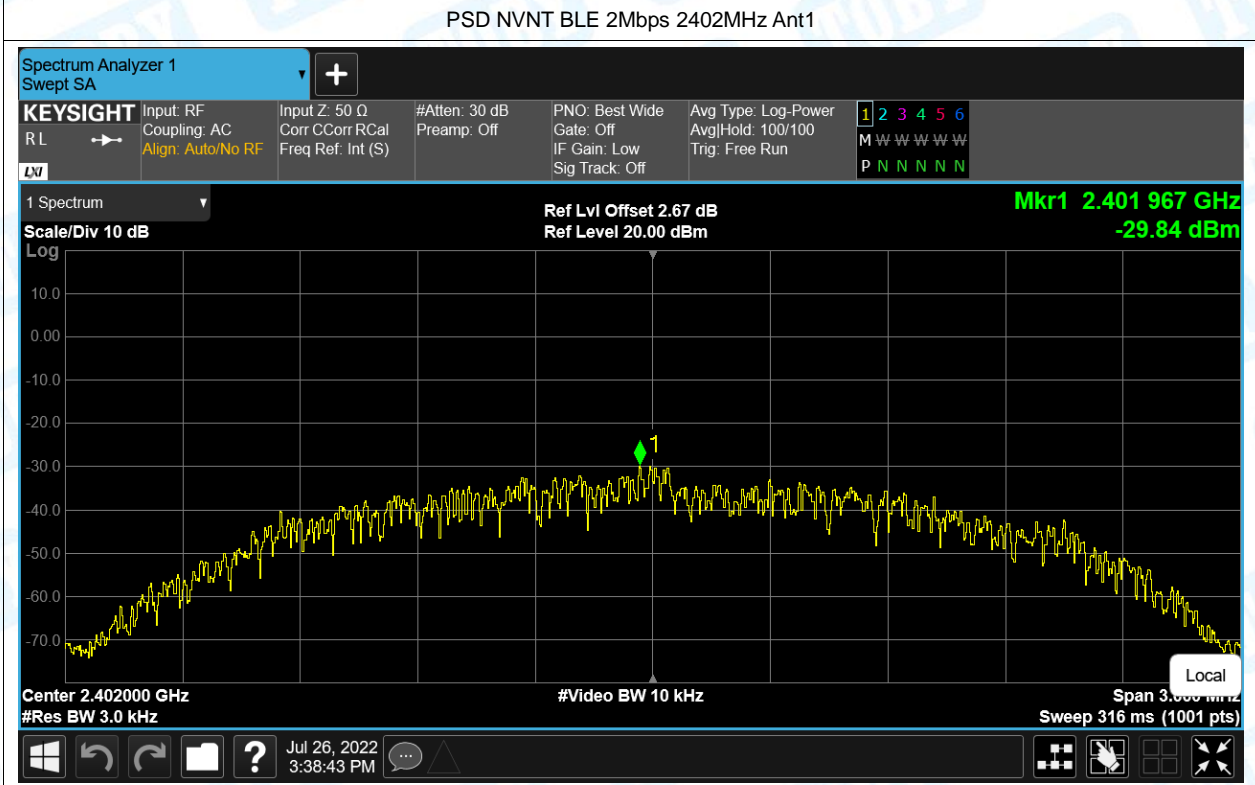
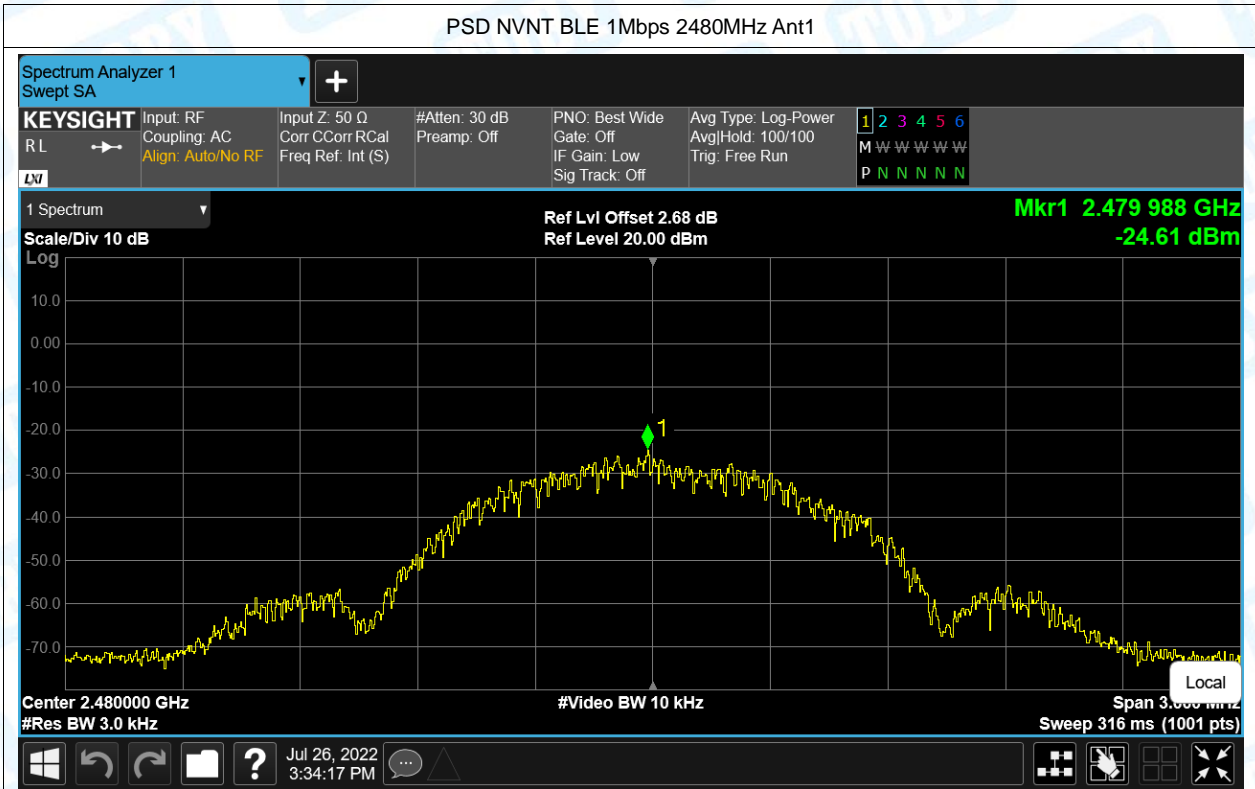
OBW NVNT BLE 2Mbps 2480MHz Ant1

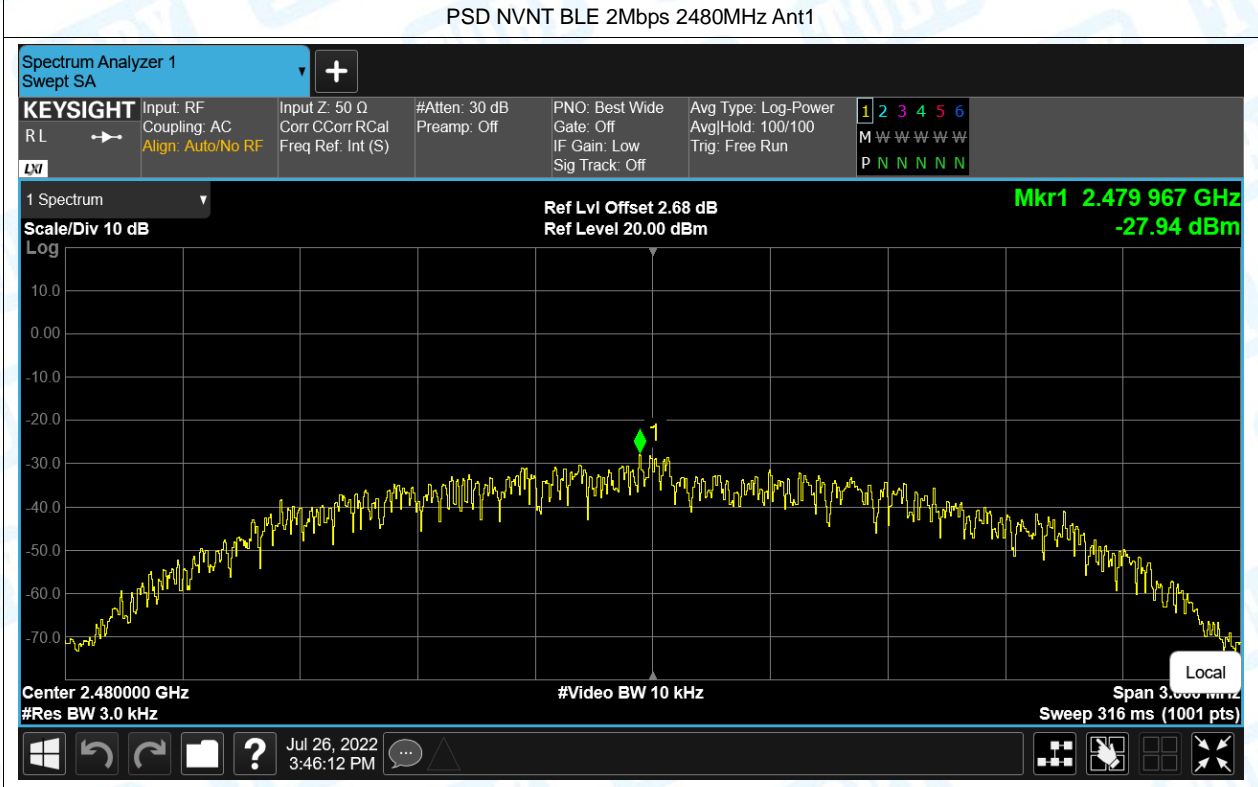
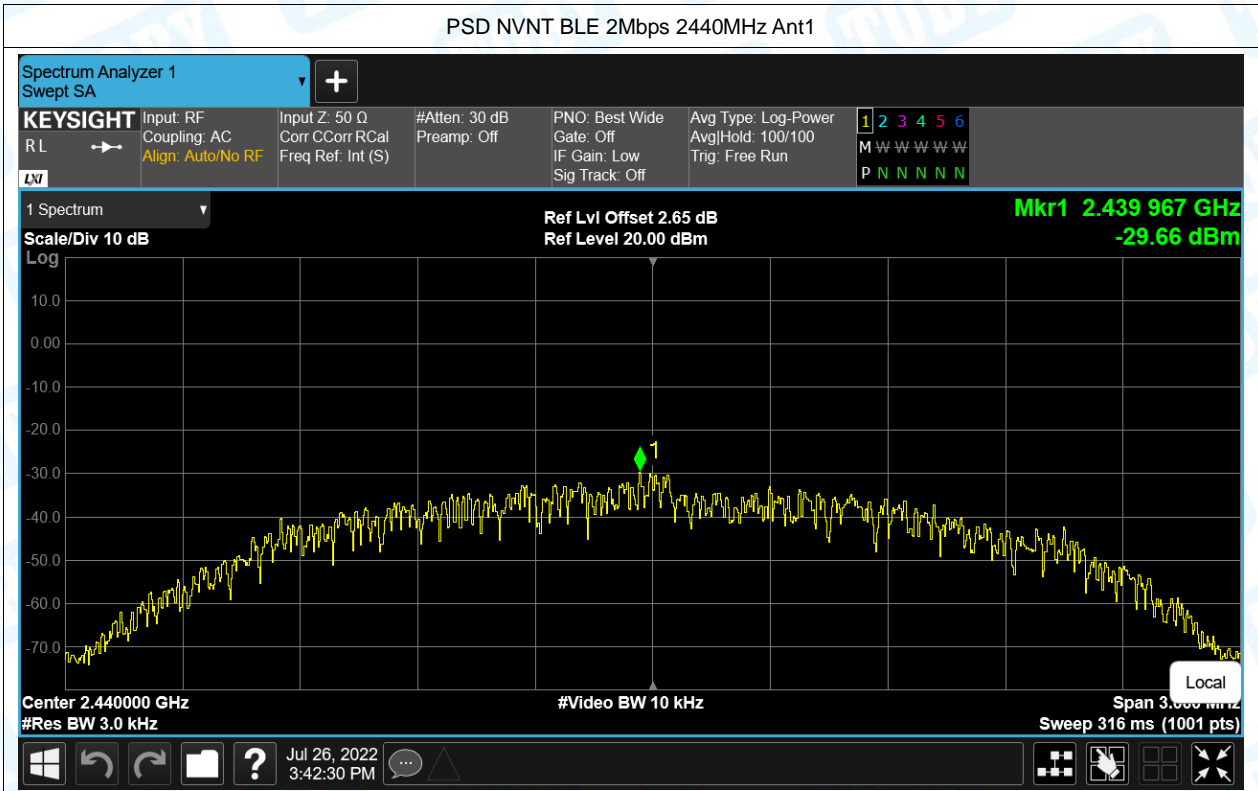


5. Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-26.79	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-26.342	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-24.612	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-29.844	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-29.66	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-27.938	8	Pass





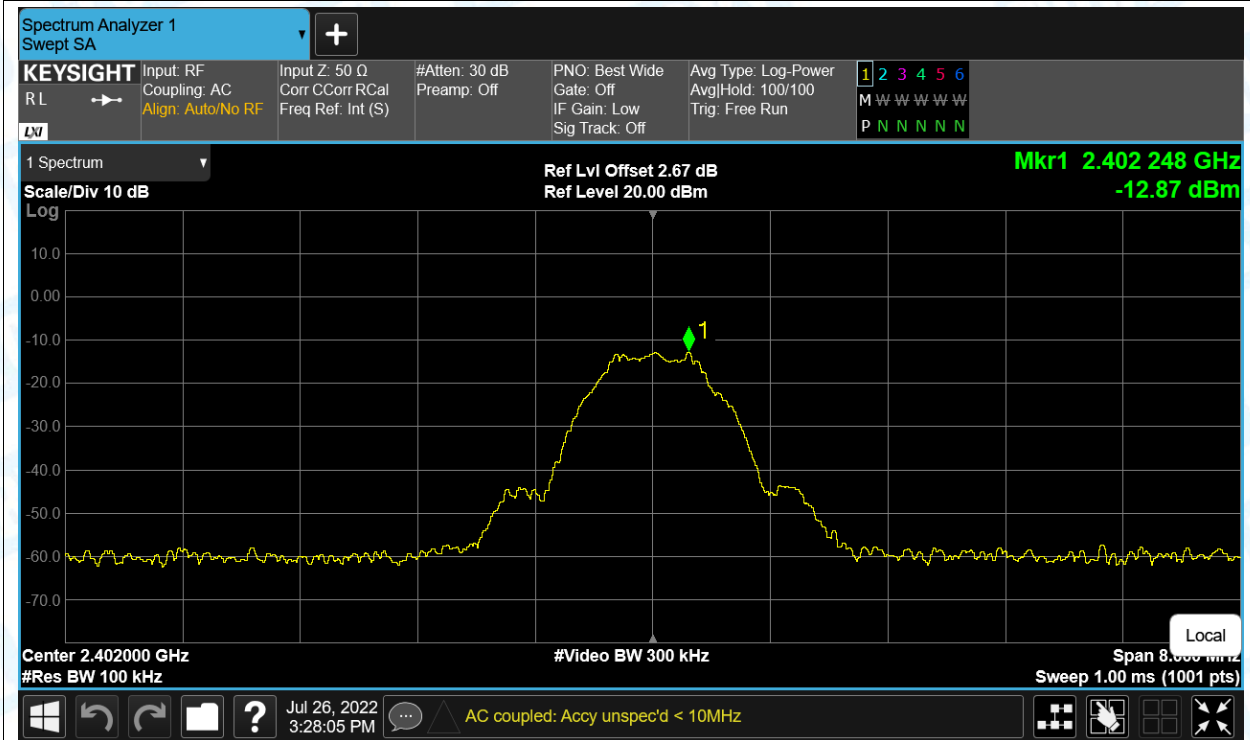


6. Band Edge

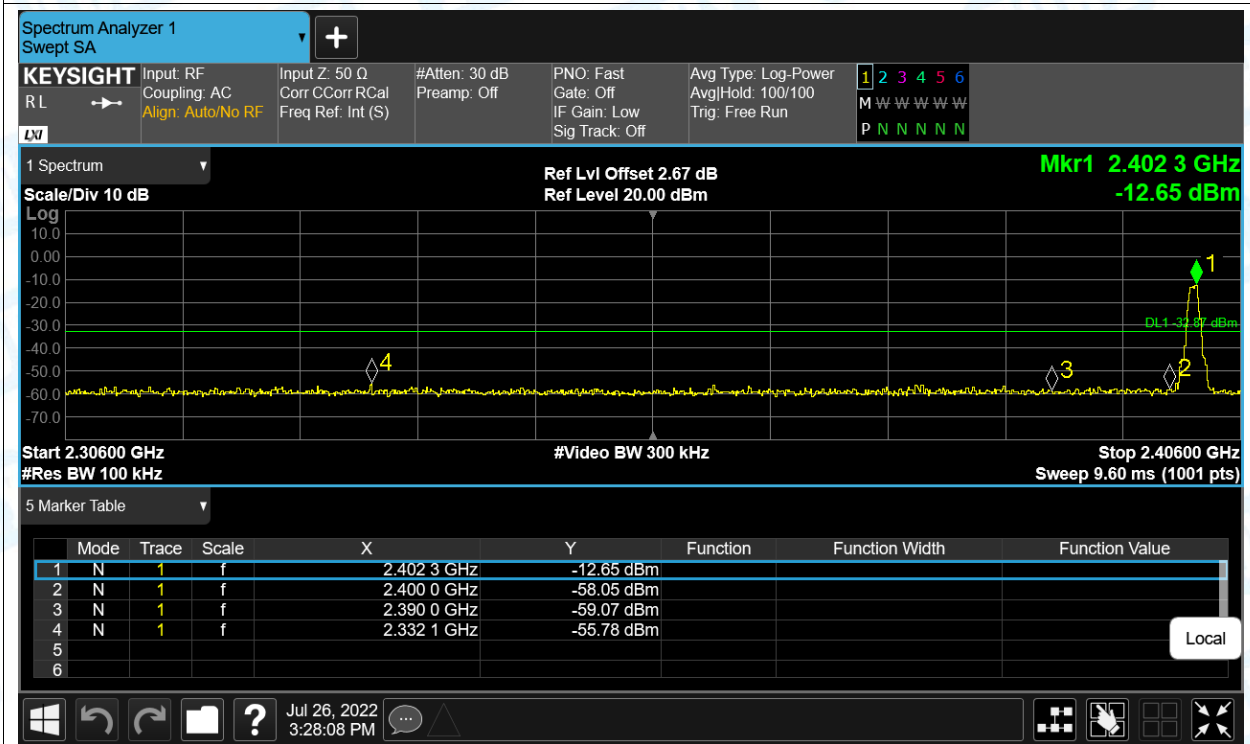
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-42.91	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-45.27	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-43.54	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-45.63	-20	Pass

Test Graphs

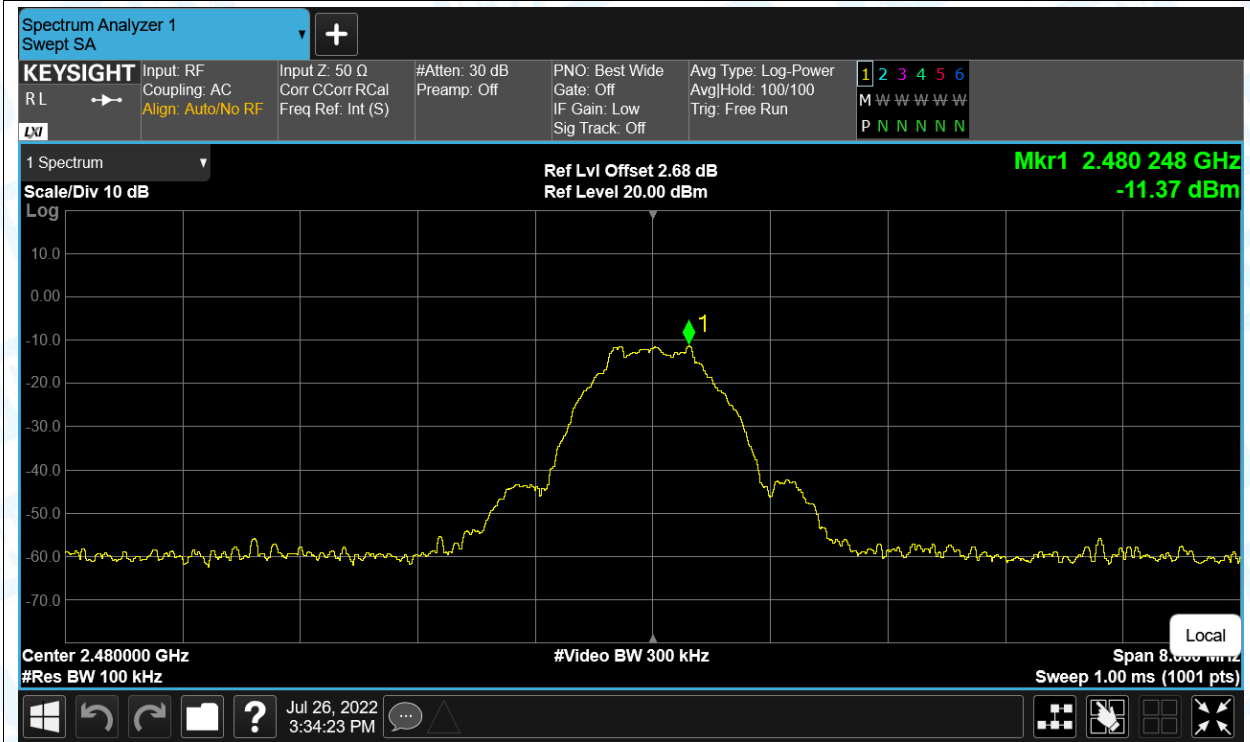
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref



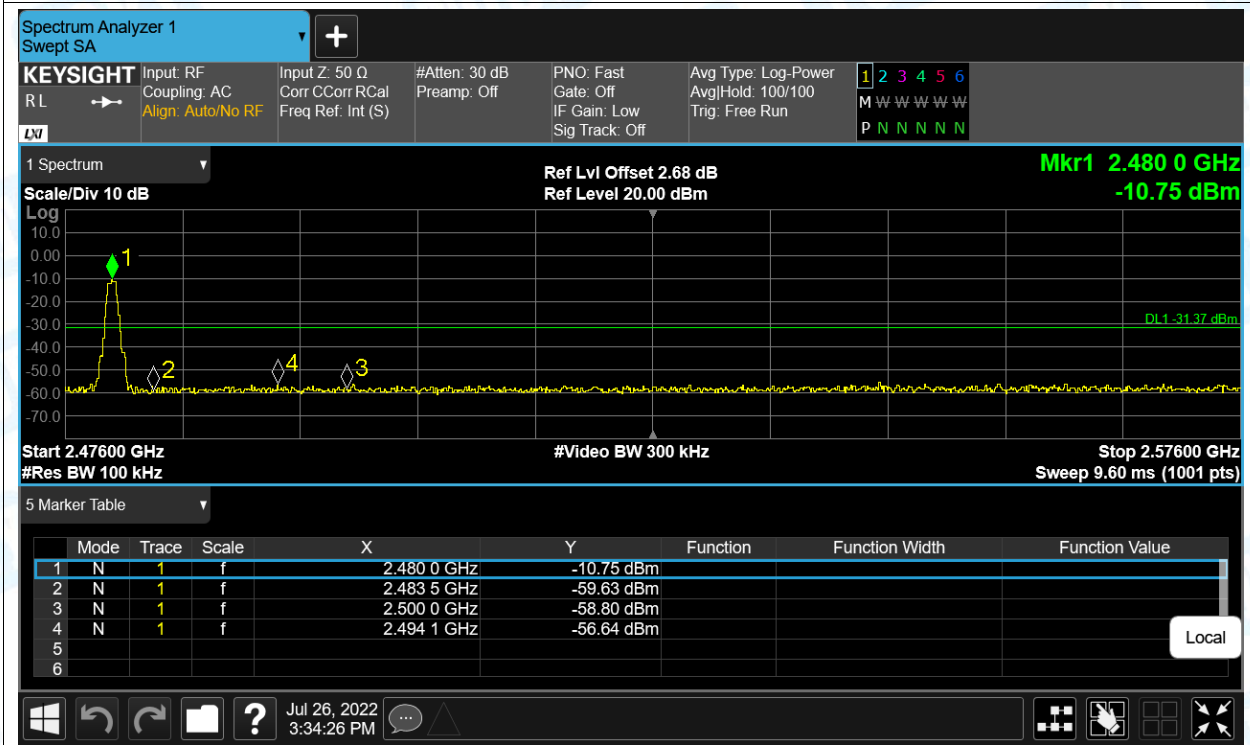
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission

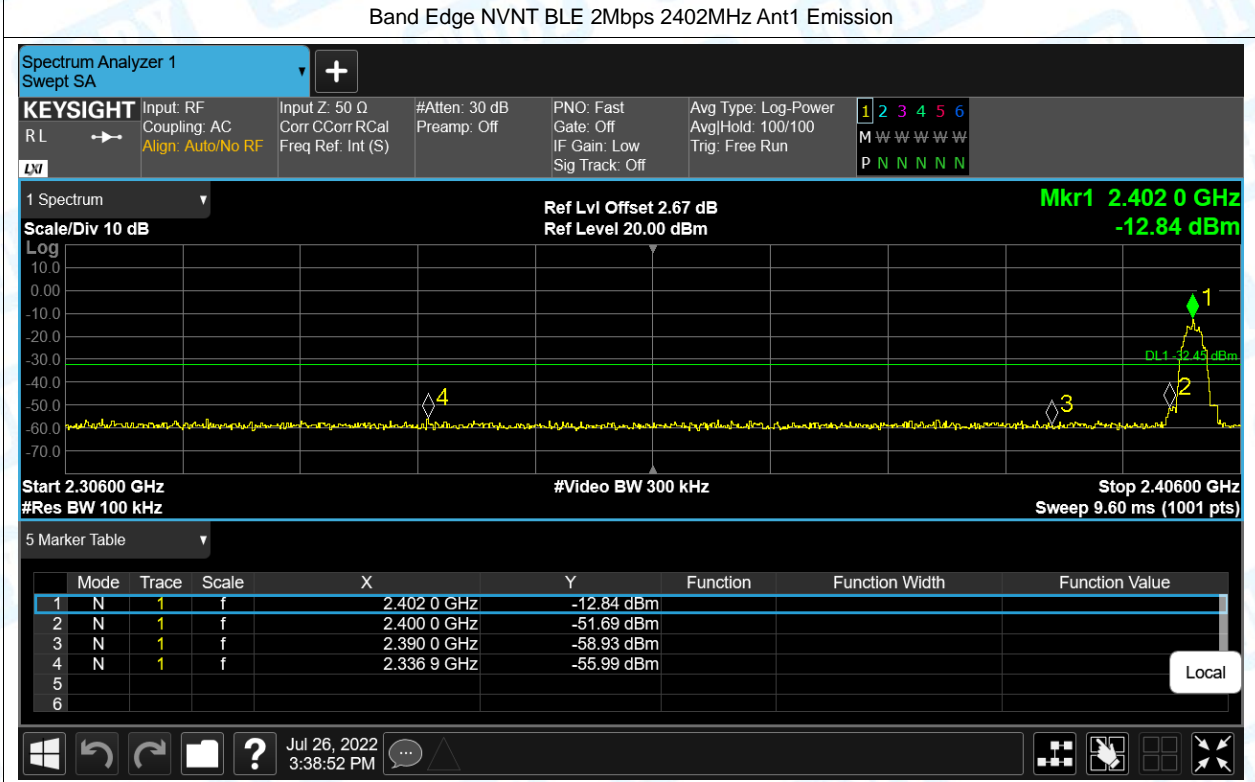
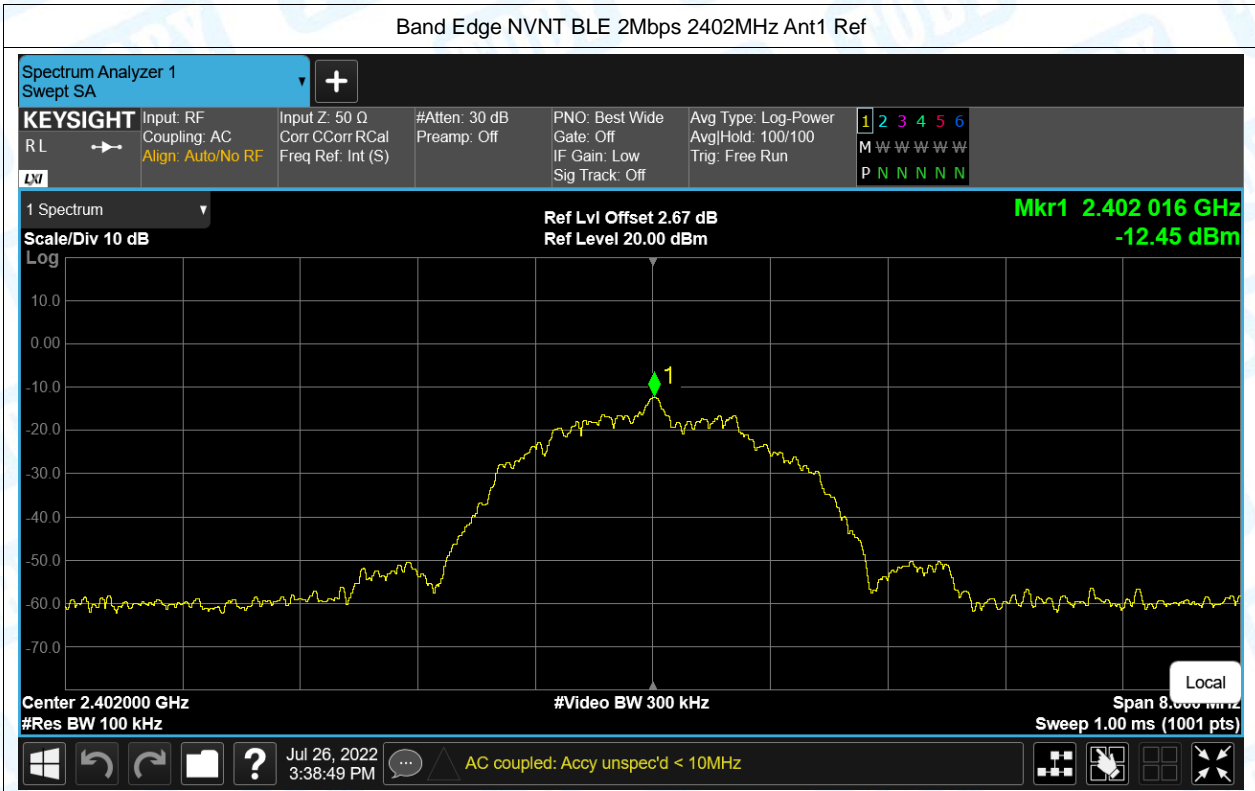


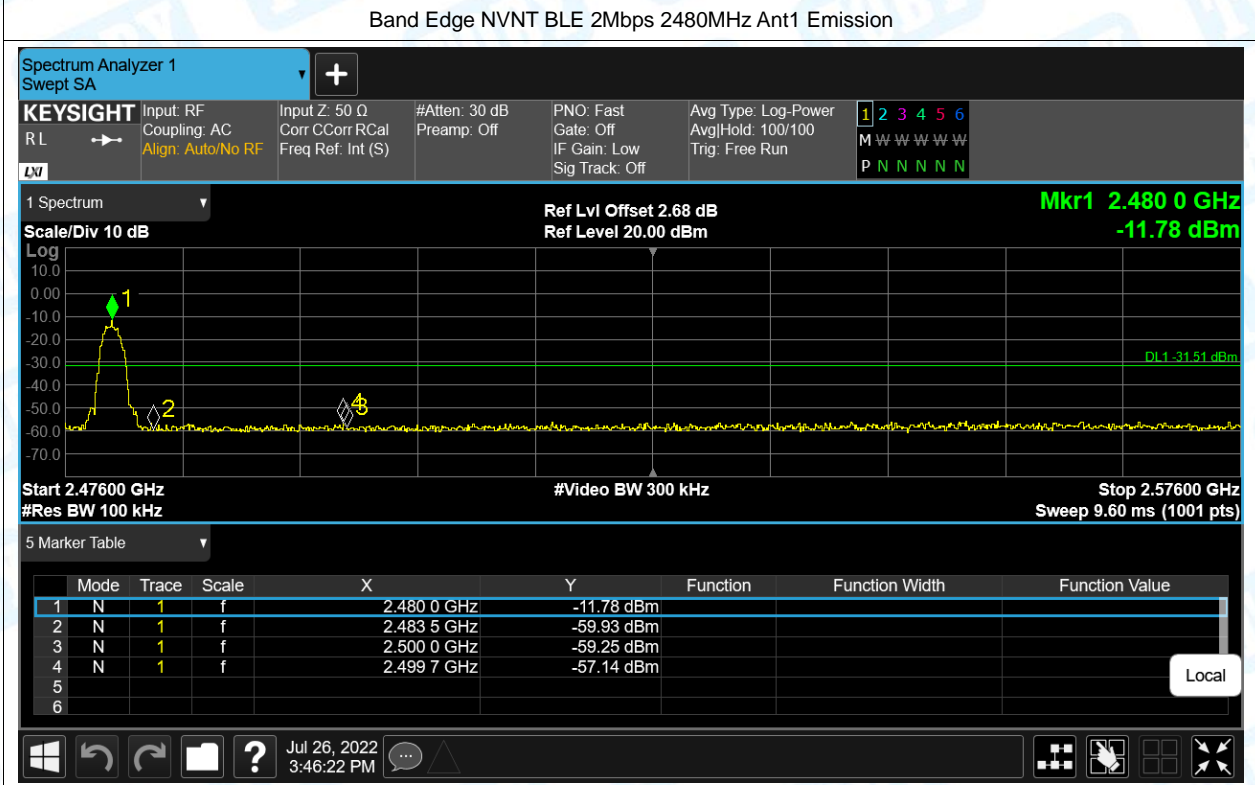
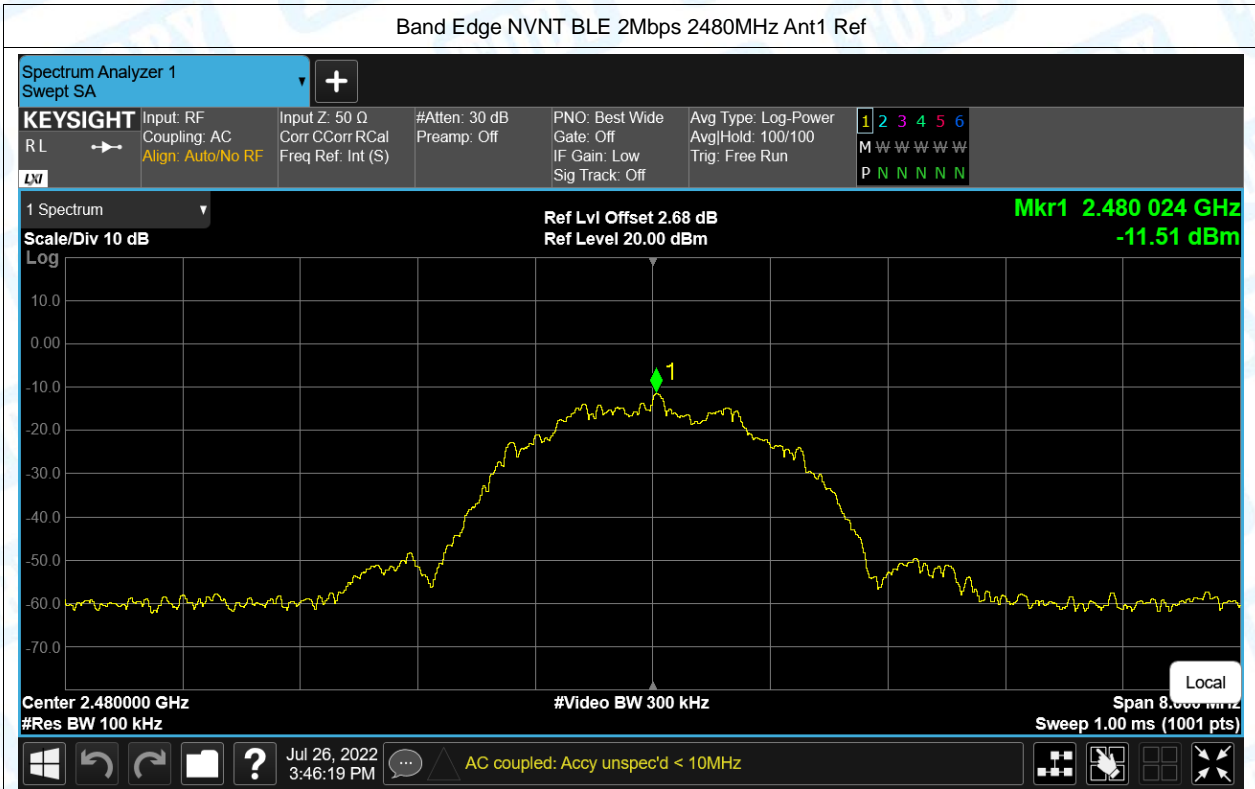
Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Ref



Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Emission





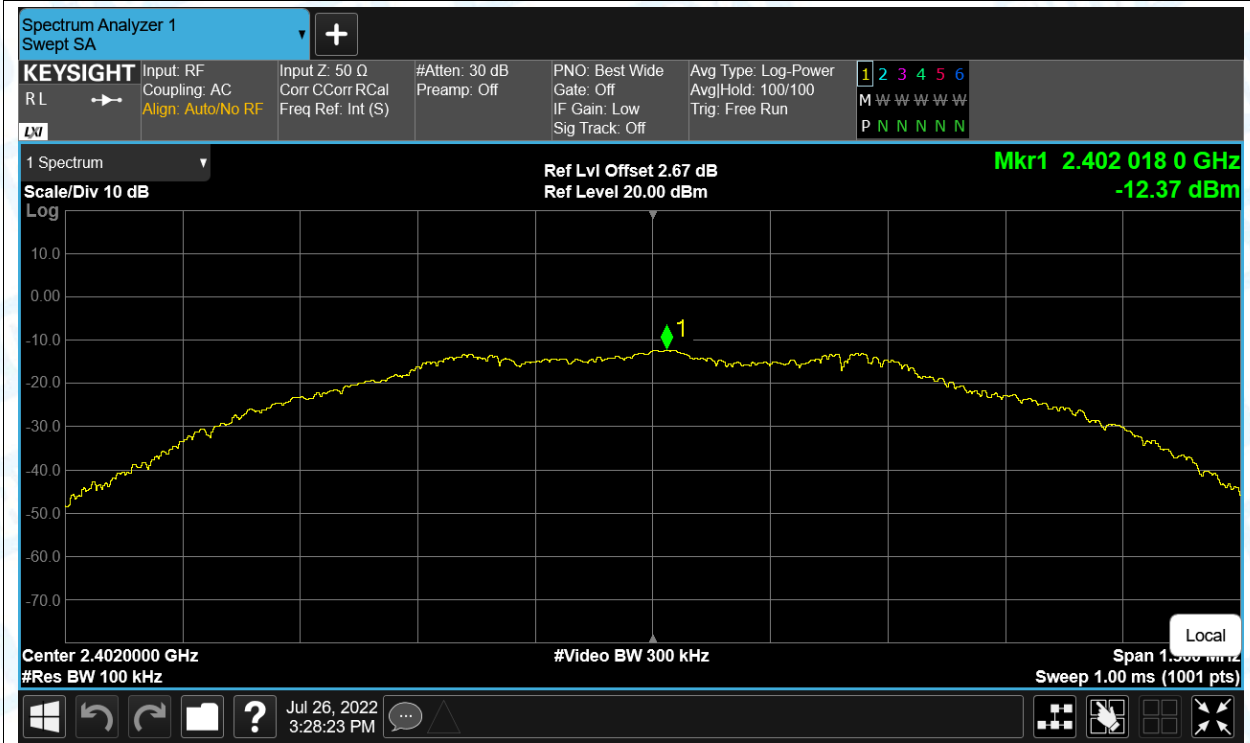


7. Conducted RF Spurious Emission

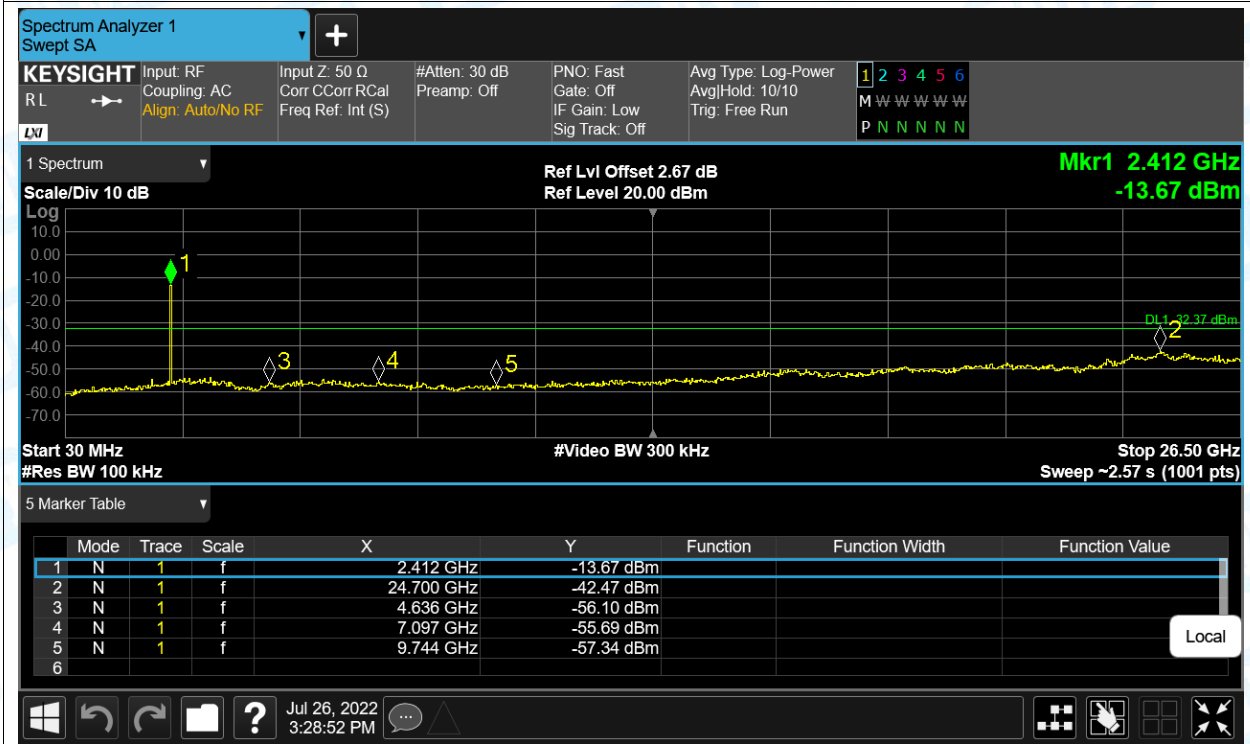
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-30.1	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-29.43	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-30.69	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-29.56	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-29.38	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-31.48	-20	Pass

Test Graphs

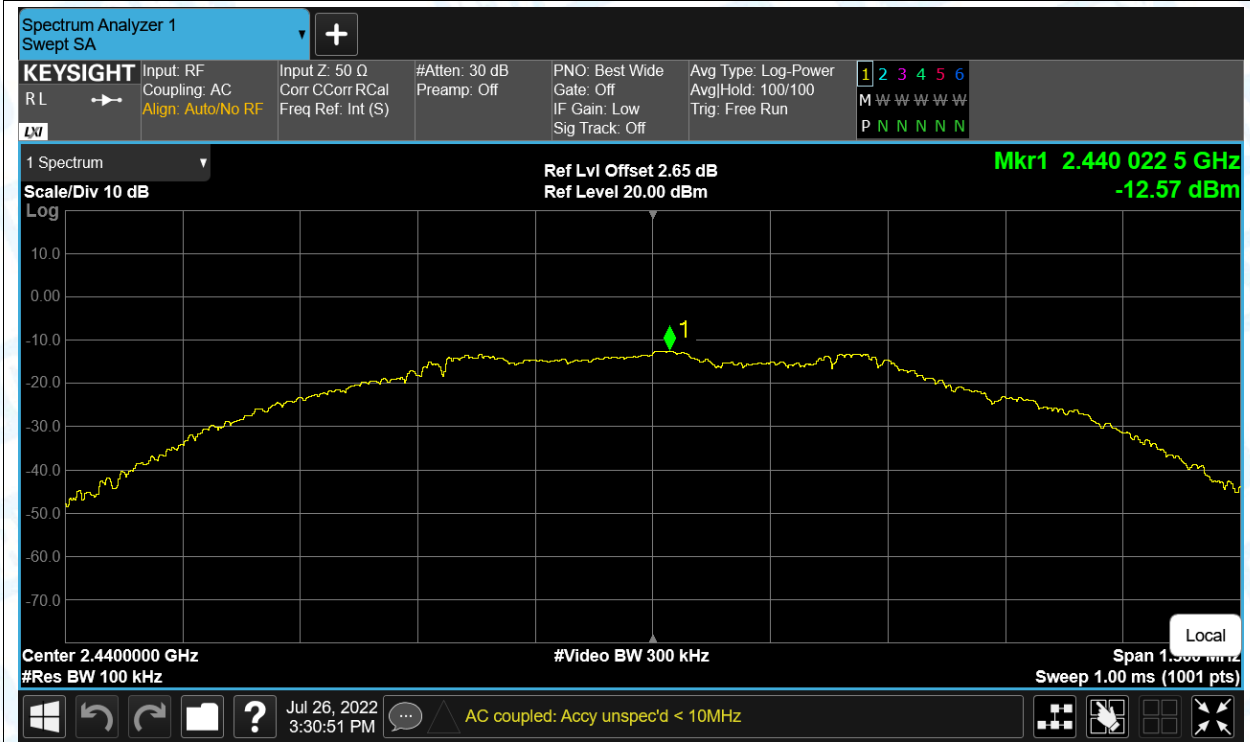
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref



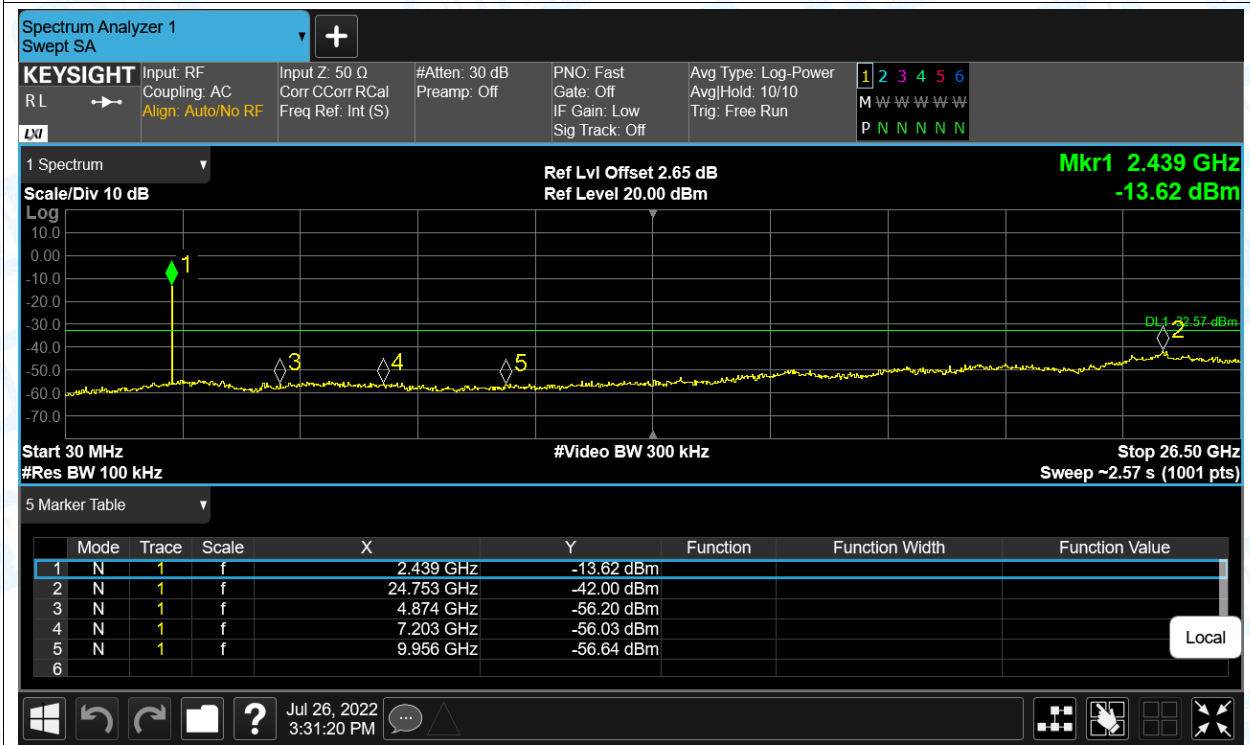
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission



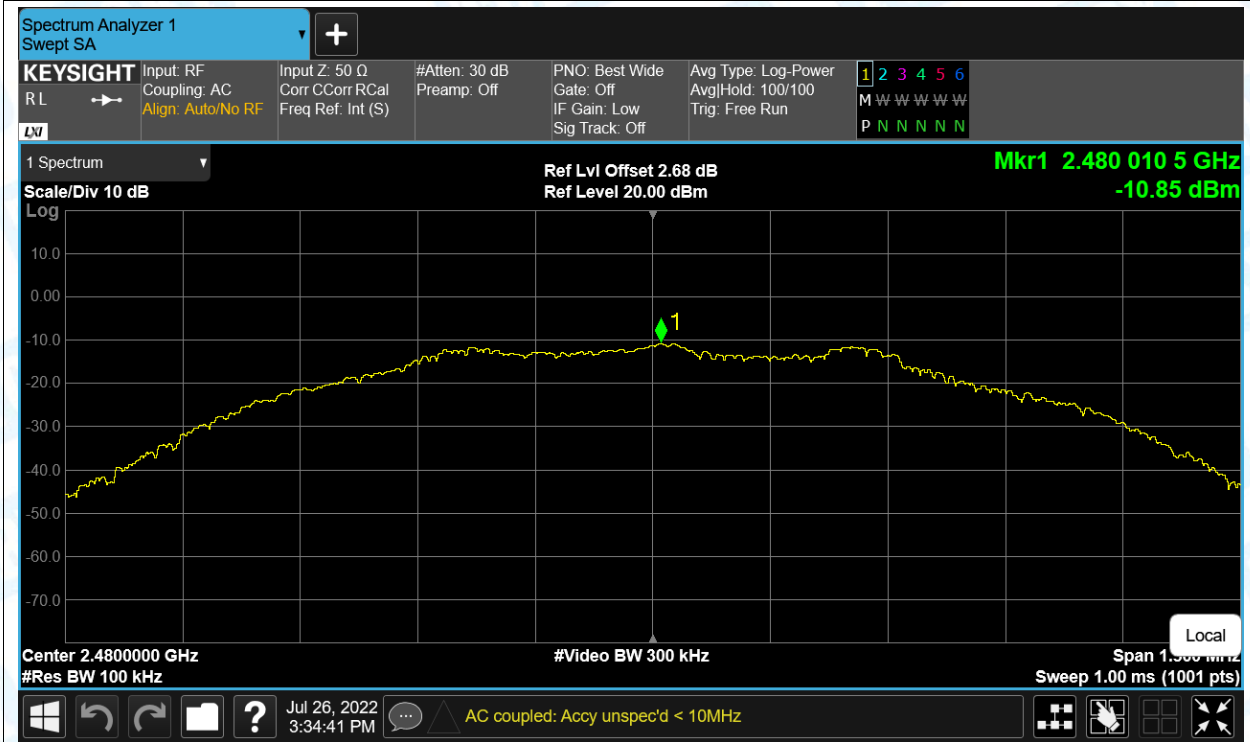
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Ref



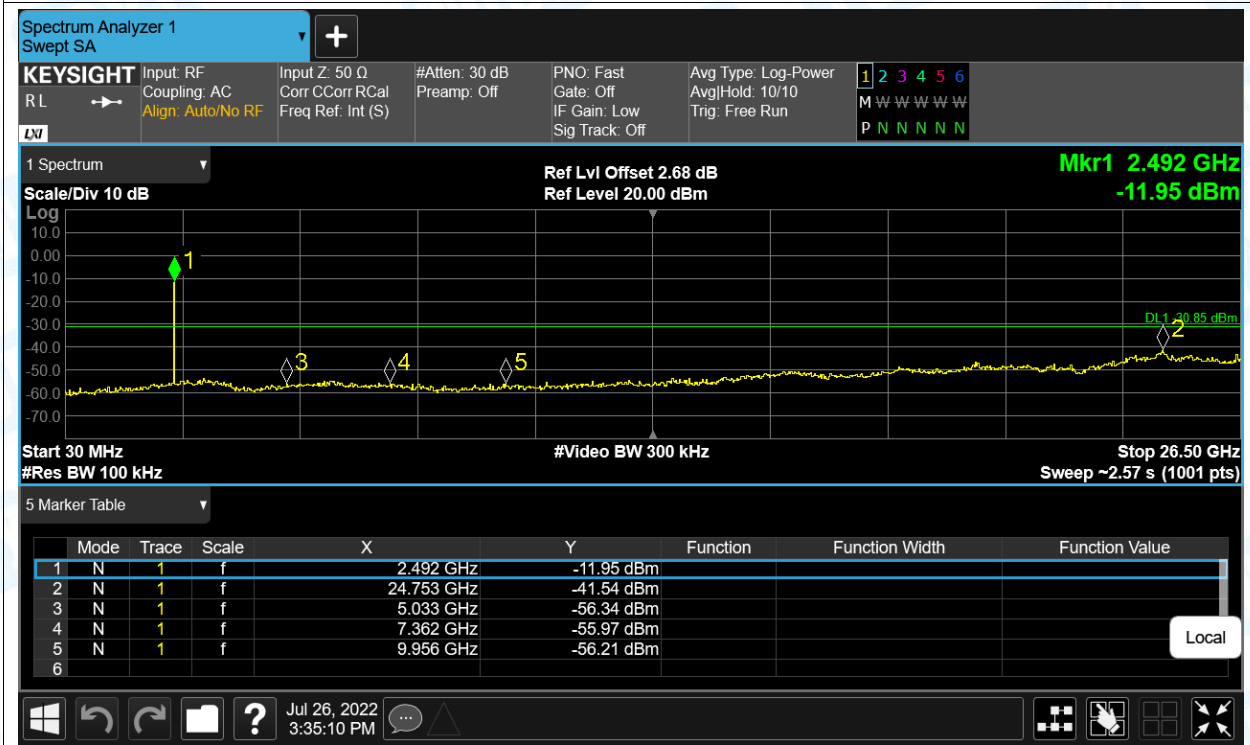
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Emission



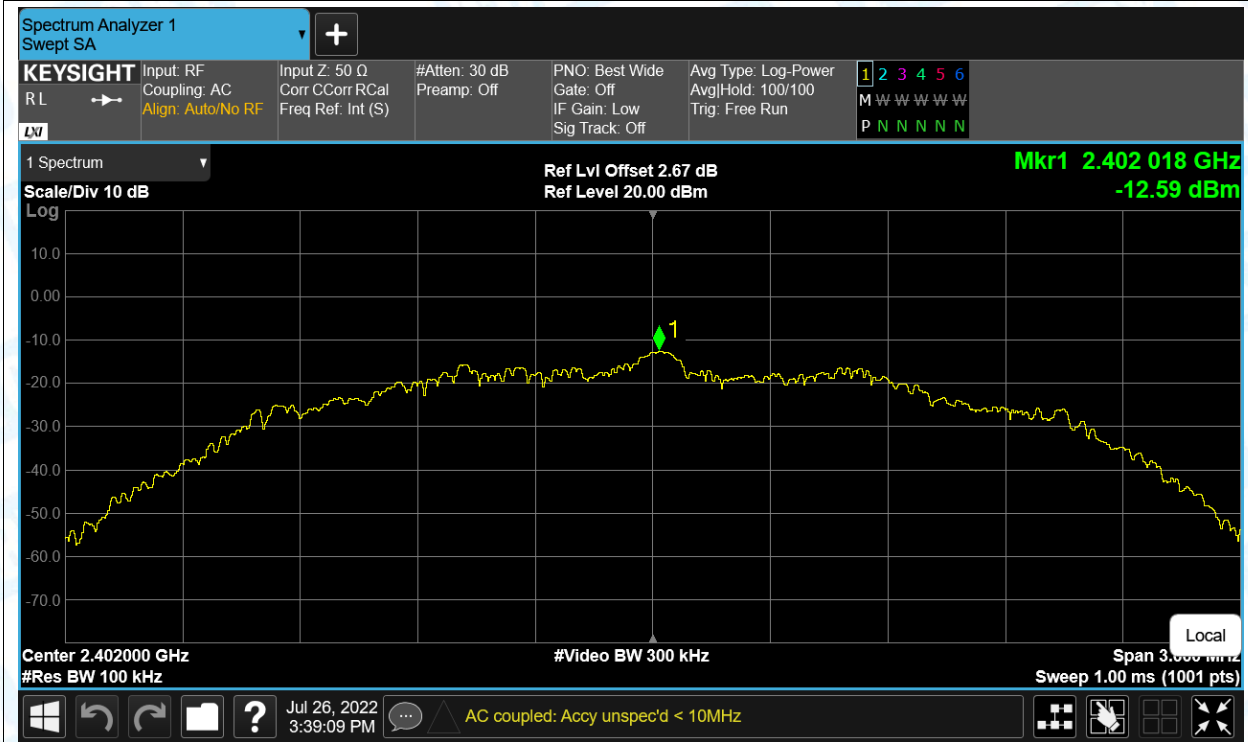
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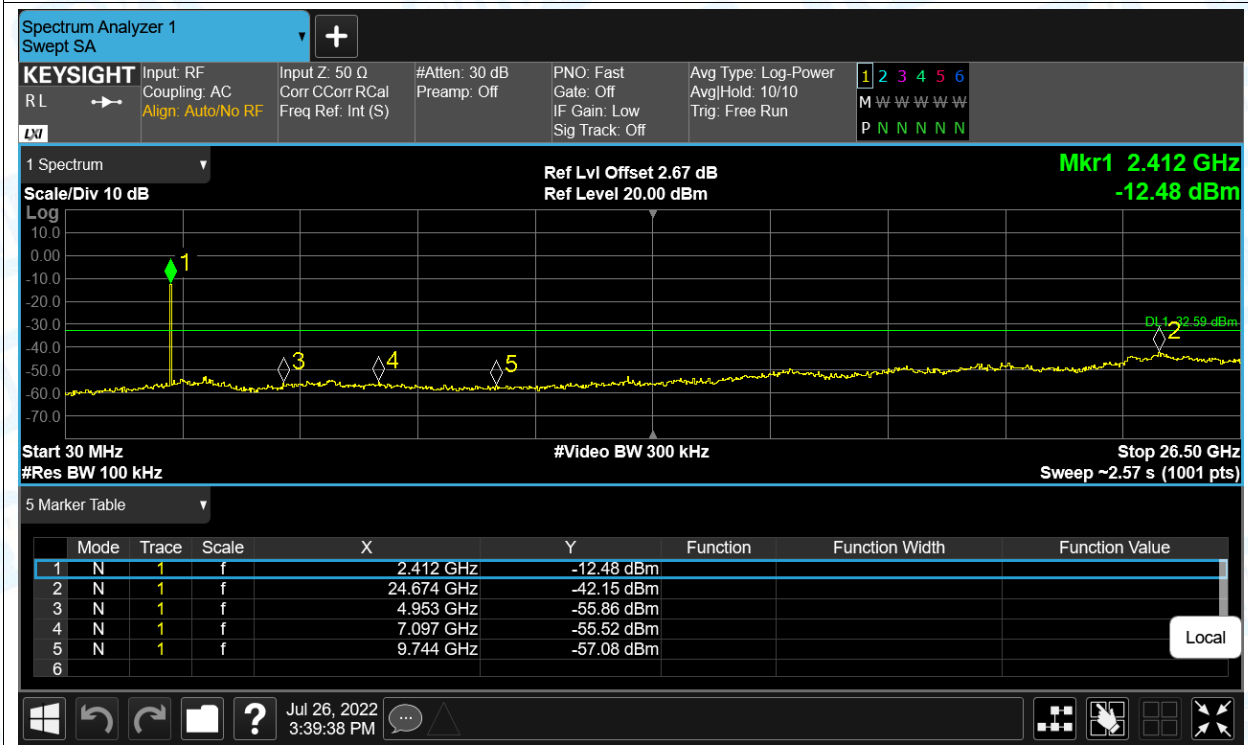
Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Emission



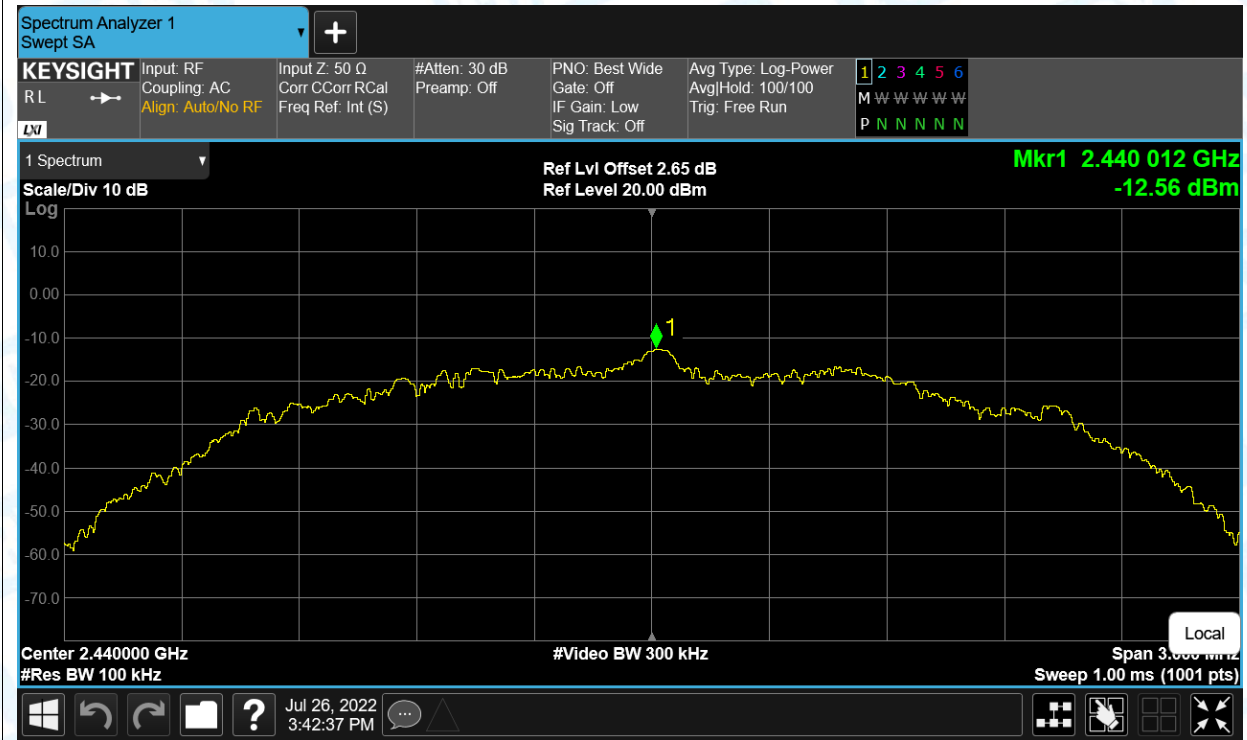
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Ref



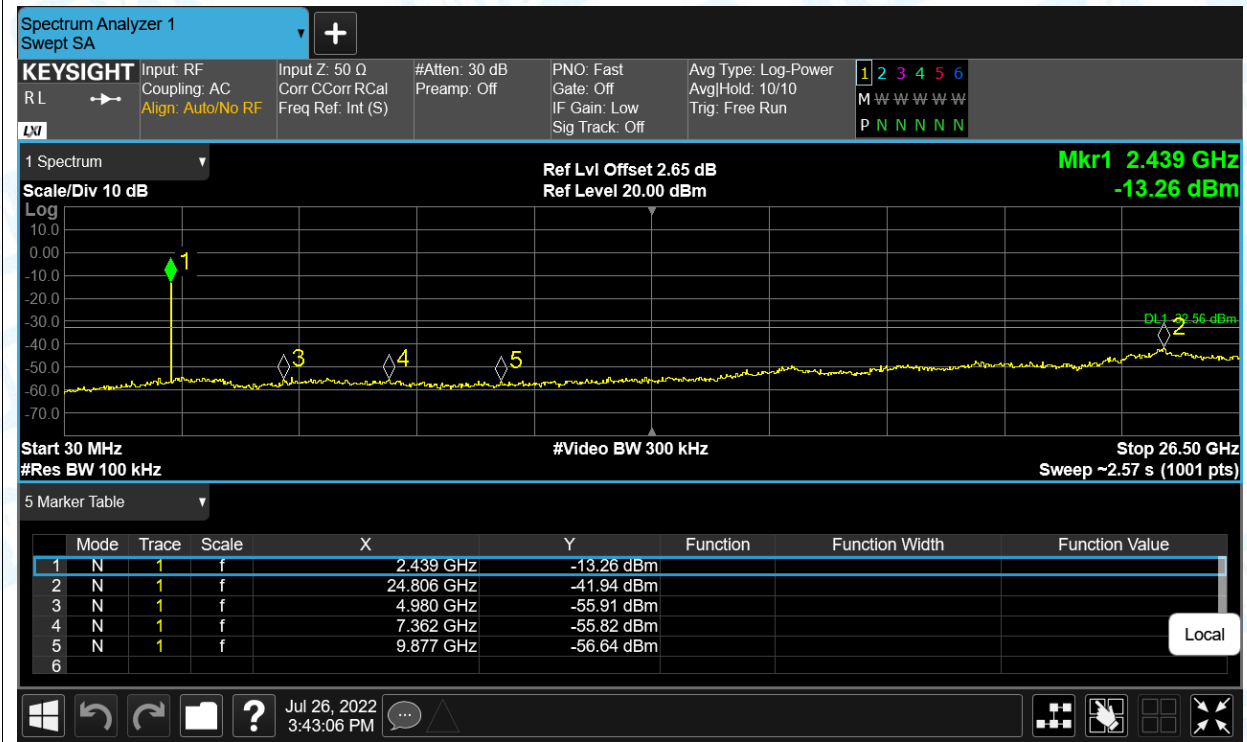
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Emission



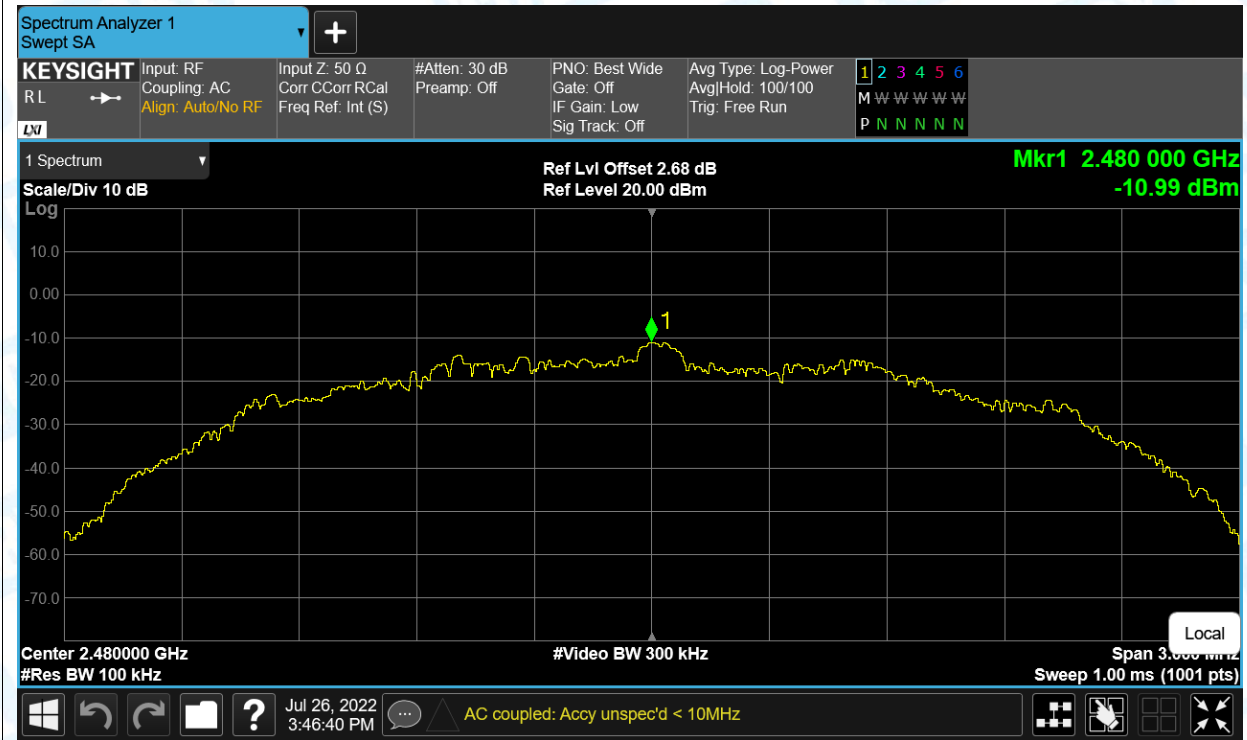
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Ref



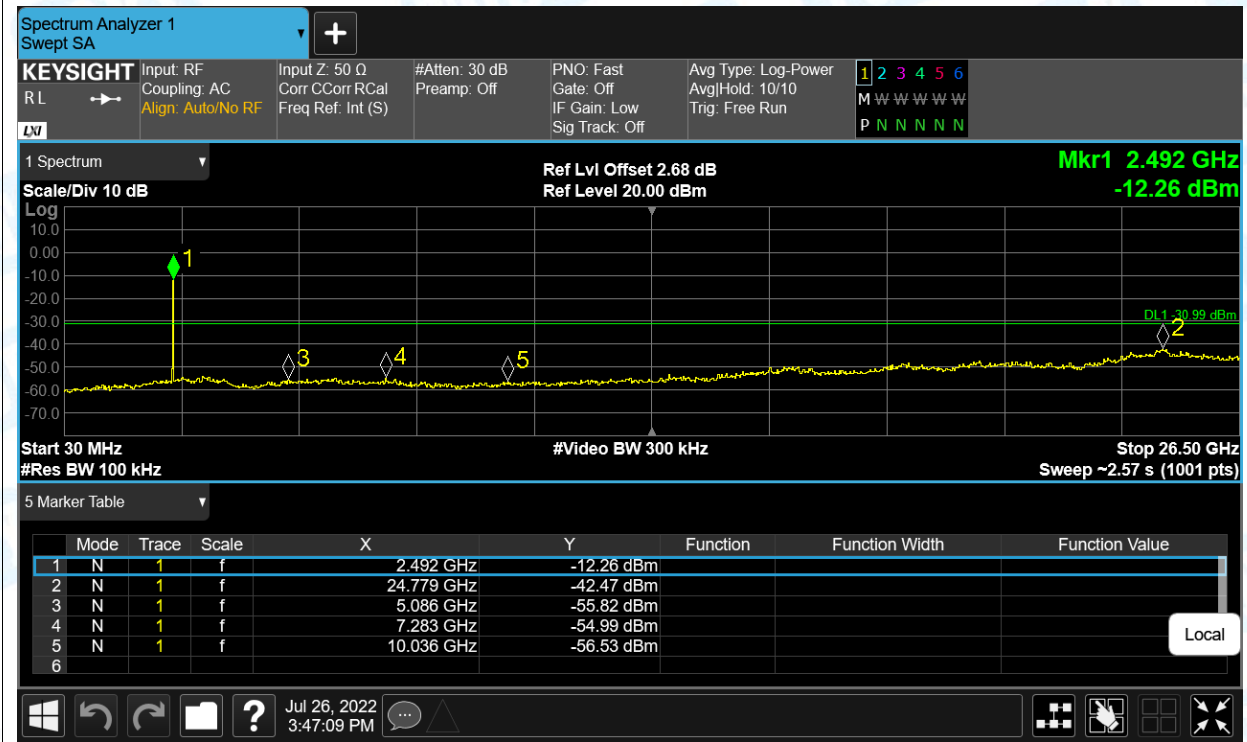
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Emission



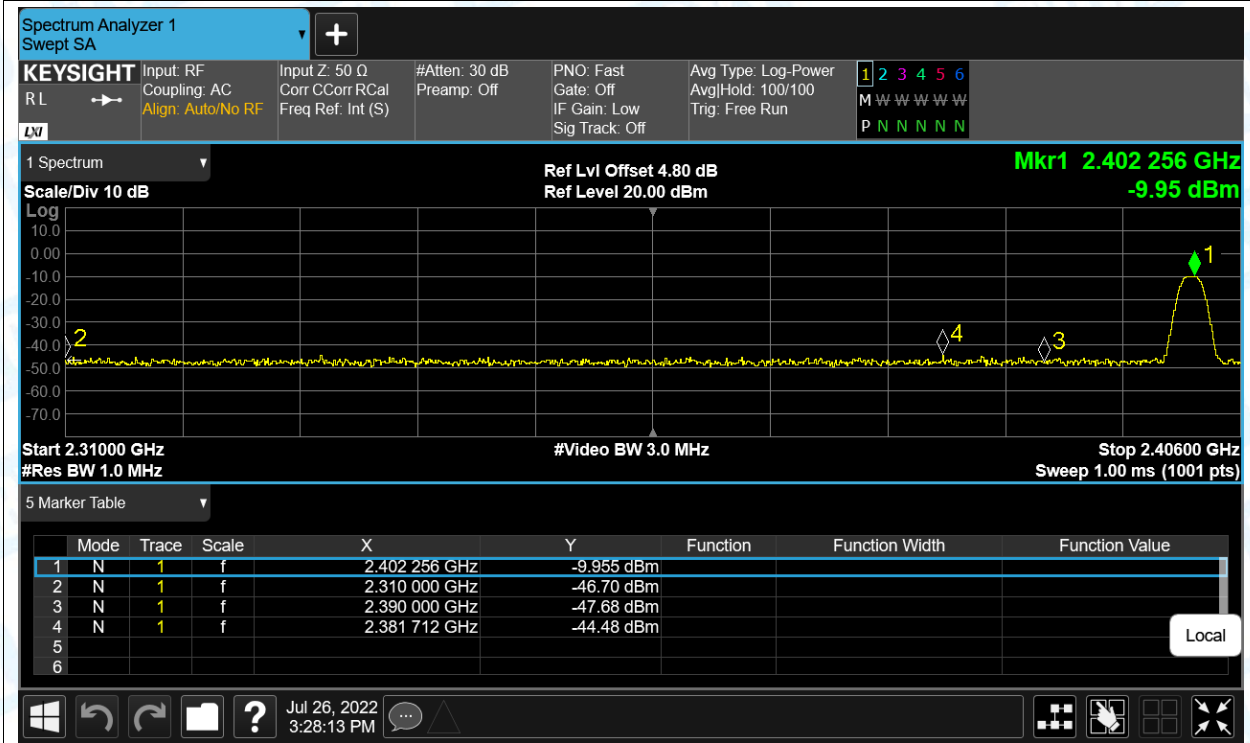
8. Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	2310	-46.7	2.13	50.69	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2310	-56.44	2.13	40.95	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2381.712	-44.48	2.13	52.91	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2323.248	-55.82	2.13	41.57	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-47.93	2.13	49.46	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-56.03	2.13	41.36	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-47.59	2.13	49.8	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-56.37	2.13	41.02	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2487.232	-44.15	2.13	53.24	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2484.472	-55.61	2.13	41.78	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-47.43	2.13	49.96	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-56.34	2.13	41.05	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-48.56	2.13	48.83	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-56.17	2.13	41.22	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2318.448	-44.16	2.13	53.23	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2335.728	-55.12	2.13	42.27	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-47.3	2.13	50.09	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-55.75	2.13	41.64	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-47.77	2.13	49.62	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-56.04	2.13	41.35	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2485.6	-44.28	2.13	53.11	Peak	74	Pass
NVNT	BLE	2480	Ant1	2491.096	-55	2.13	42.39	Average	54	Pass

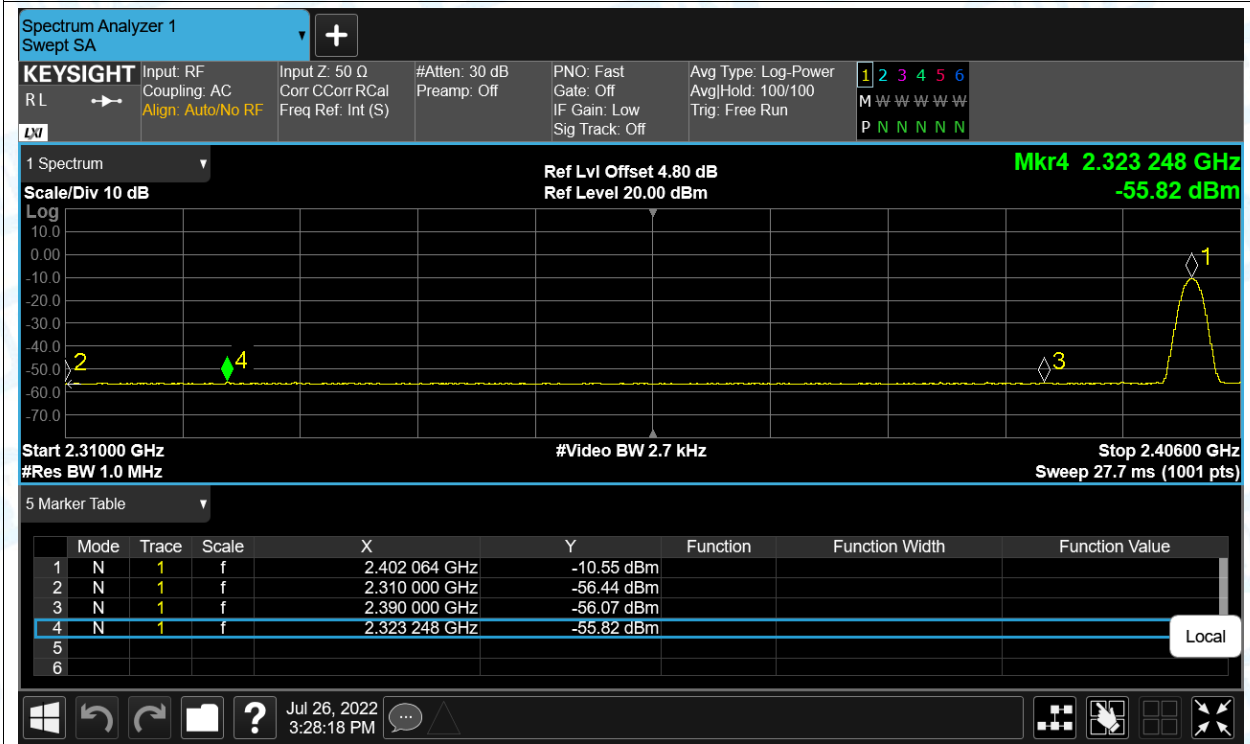
	2Mbps									
NVNT	BLE 2Mbps	2480	Ant1	2500	-45.88	2.13	51.51	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-55.61	2.13	41.78	Average	54	Pass

Test Graphs

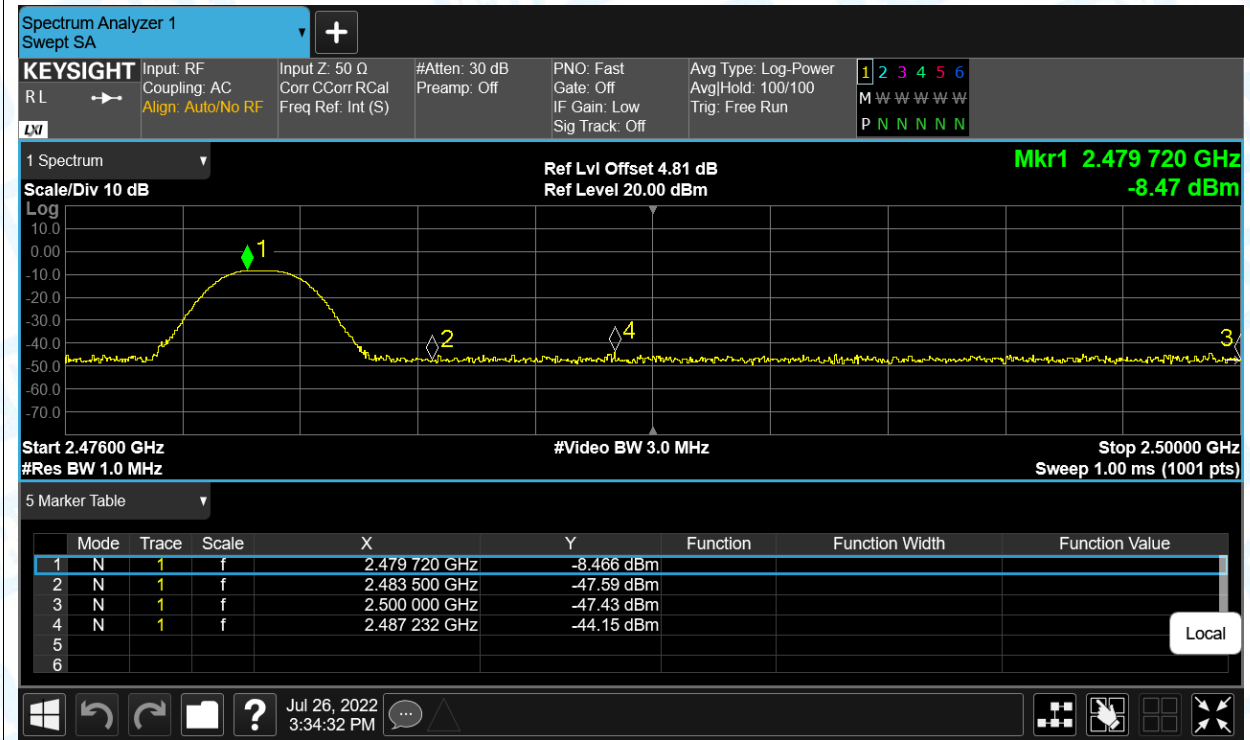
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



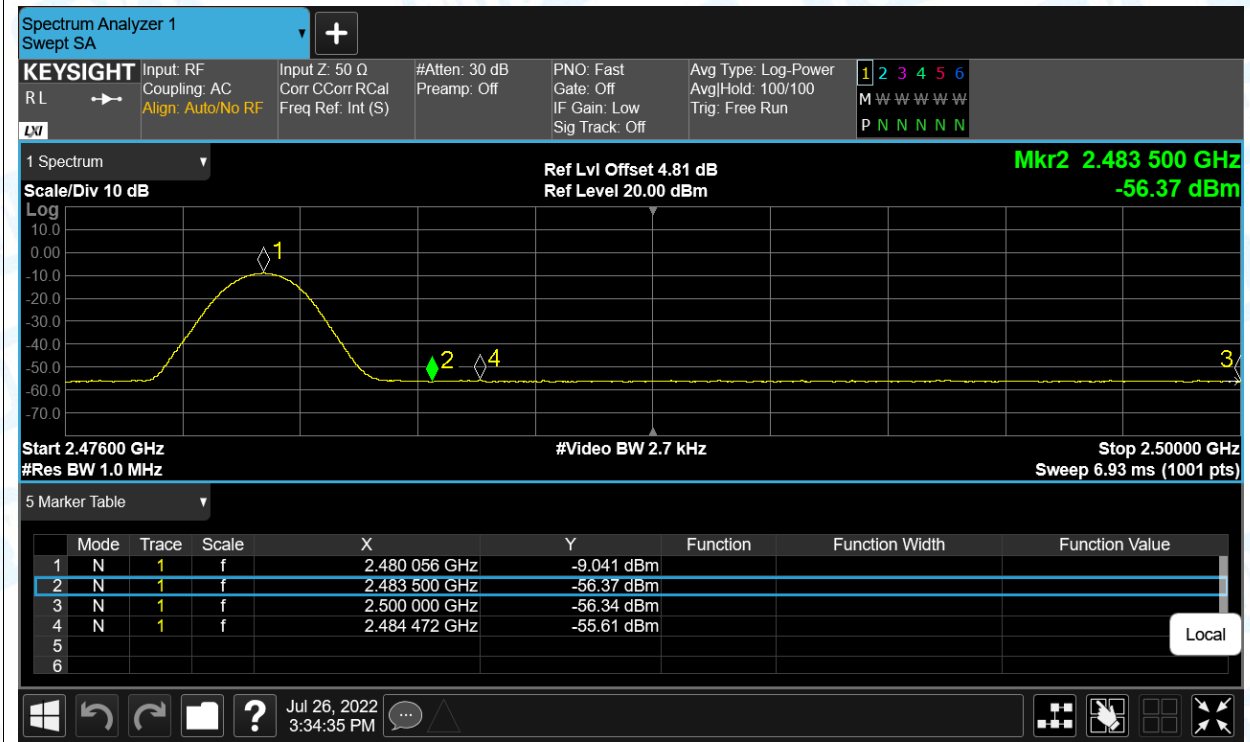
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average



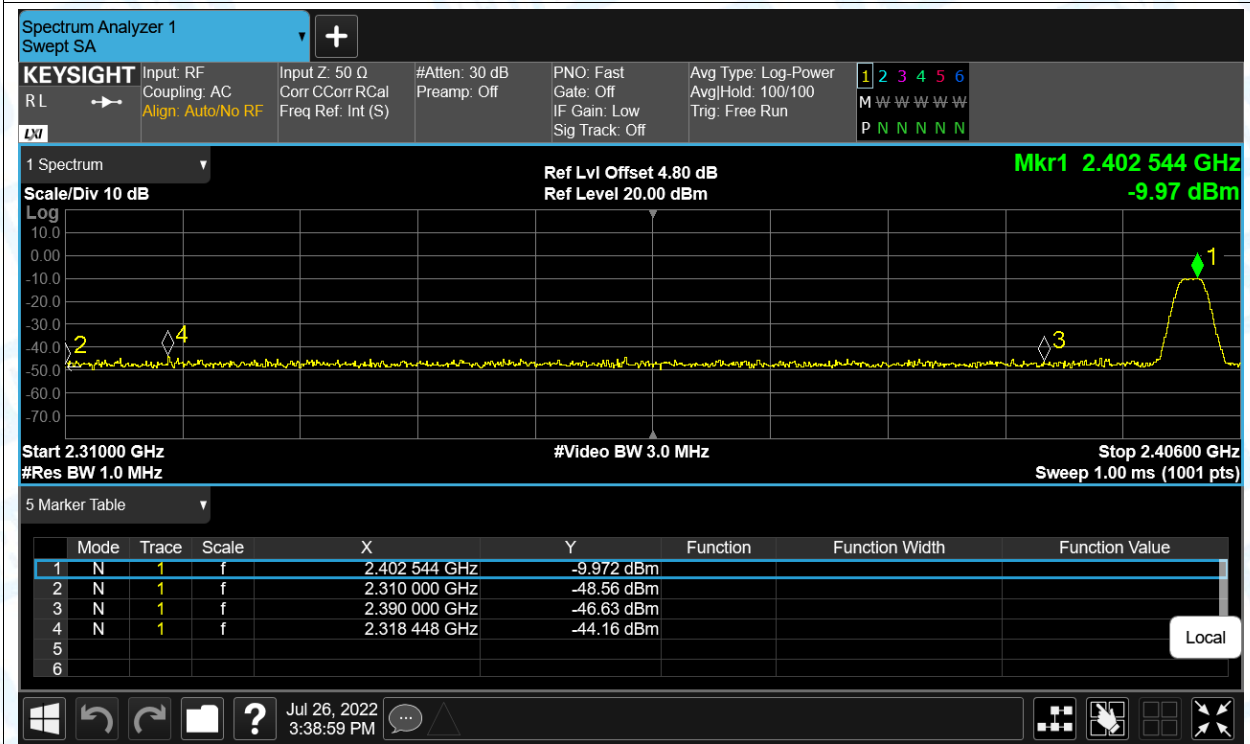
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Peak



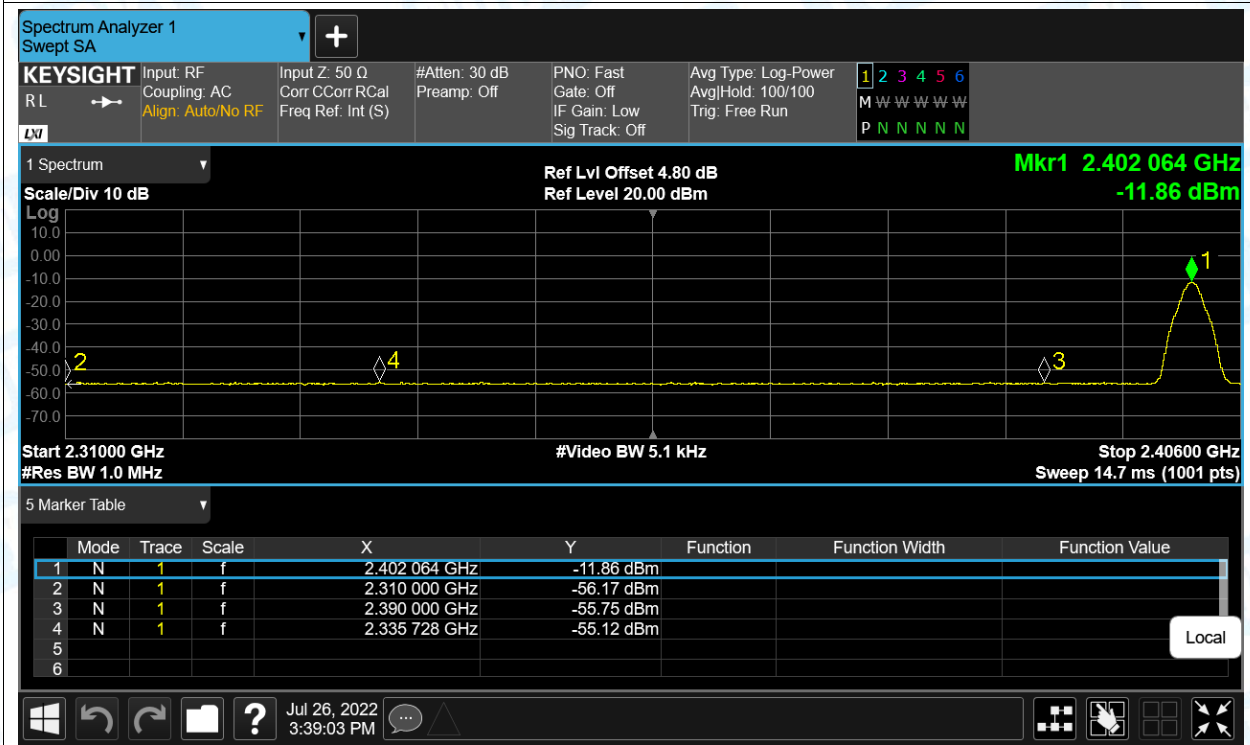
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Average

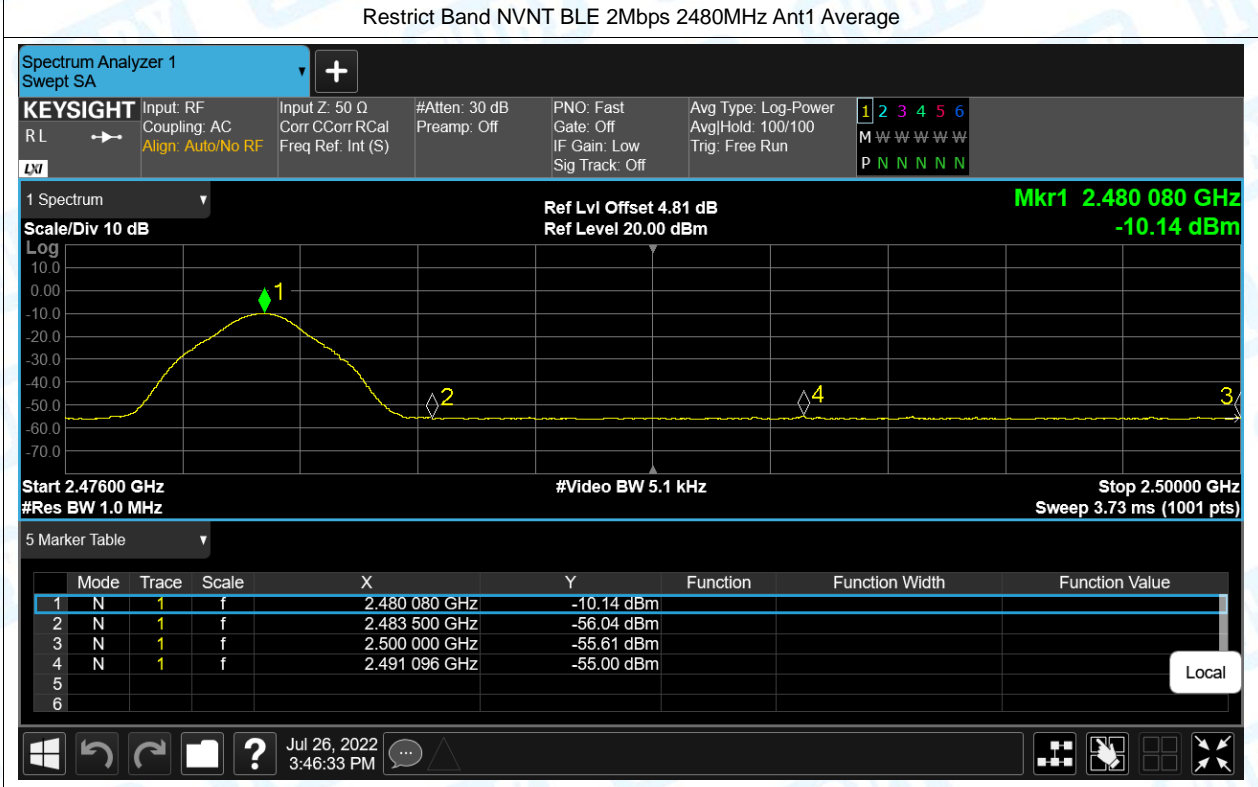
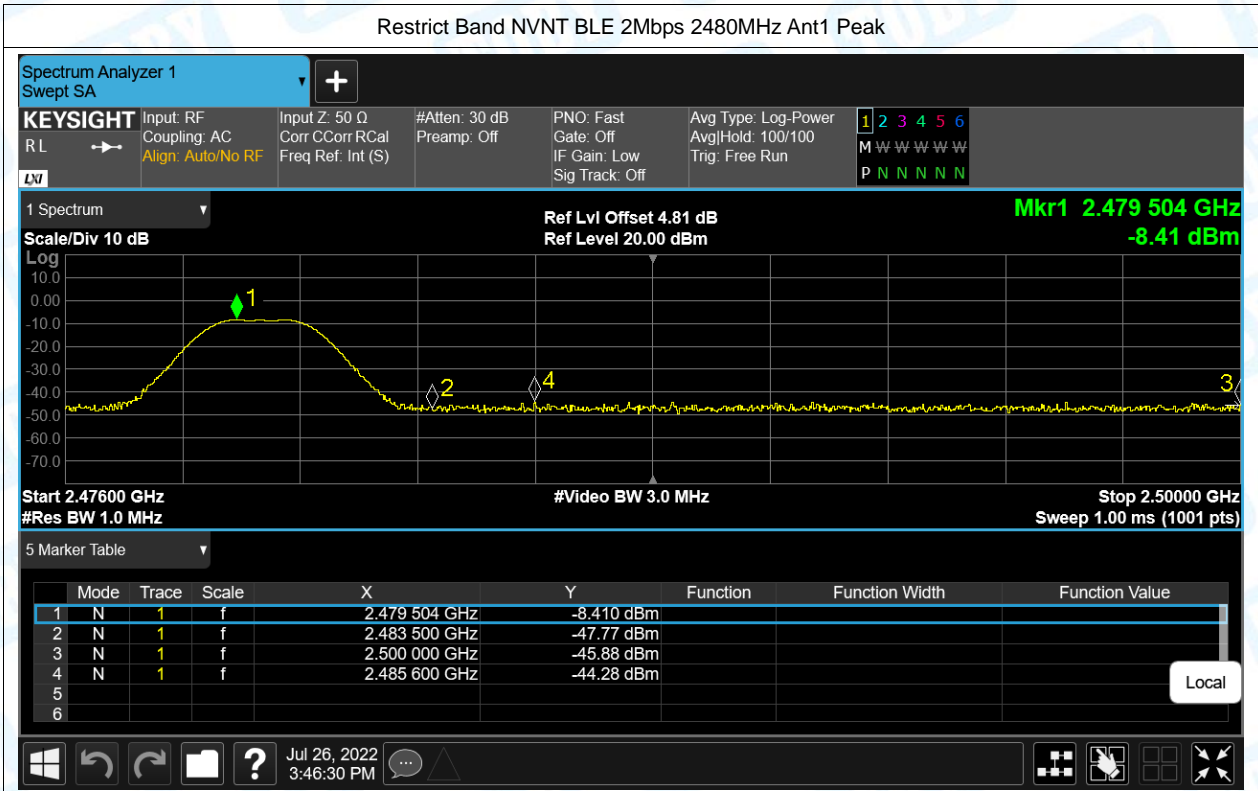


Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Average





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