

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	RUGGEDIZED HAND-HELD DEVICE
Test Model:	CHAMELEON 5R V2 DUAL
Sample ID:	202202_0108-01-4
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-202202-0108-141	

Contents

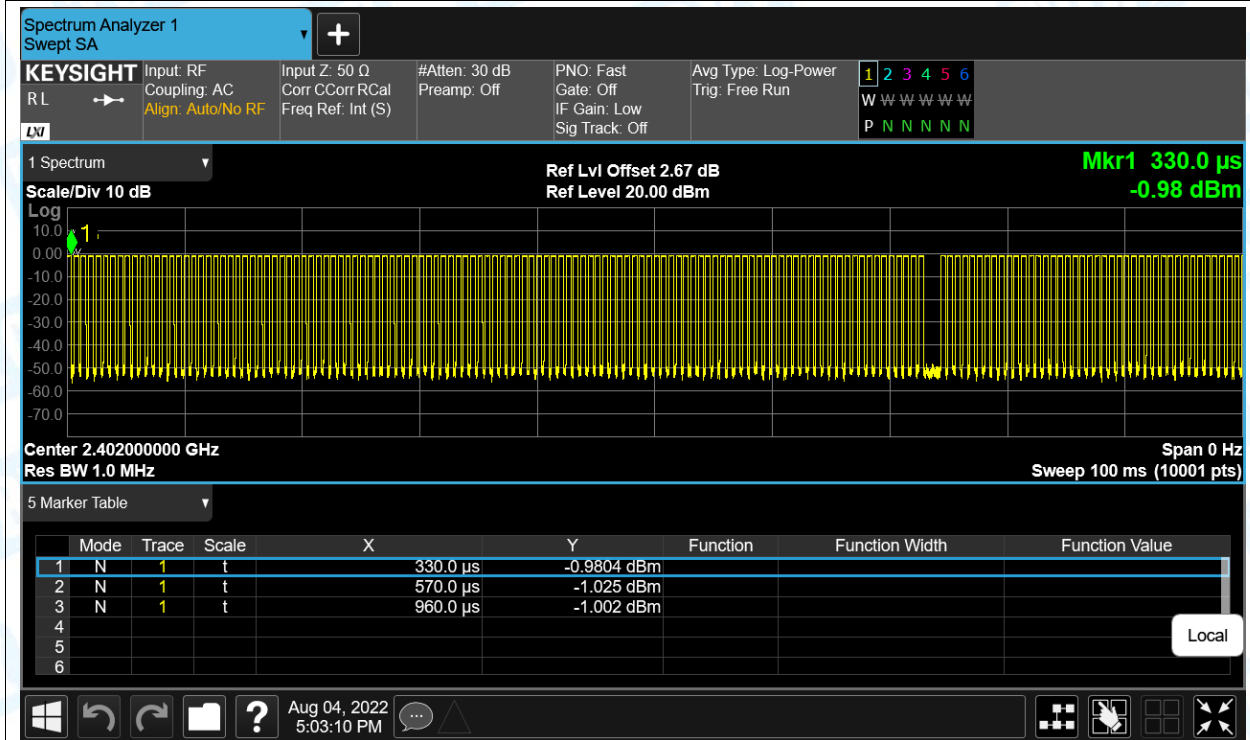
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1. Duty Cycle

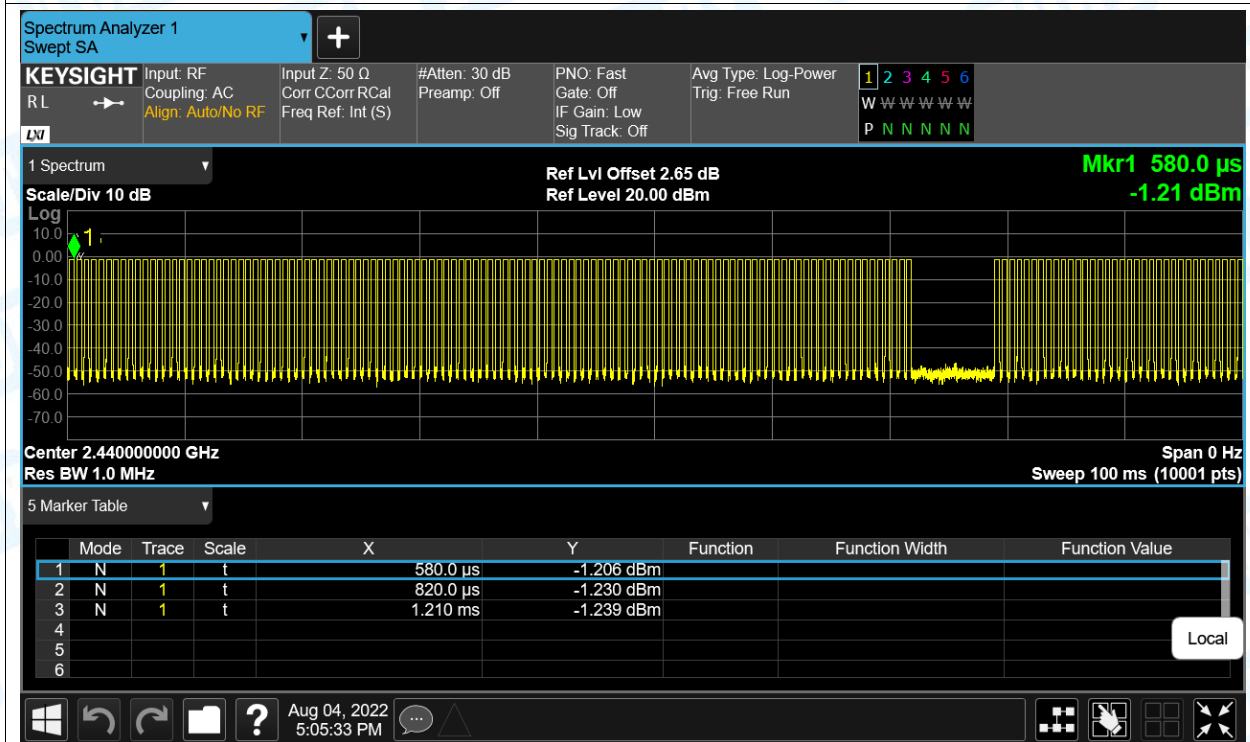
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	63.2	1.99	2.56
NVNT	BLE 1Mbps	2440	Ant1	59.59	2.25	2.56
NVNT	BLE 1Mbps	2480	Ant1	56.33	2.49	2.56
NVNT	BLE 2Mbps	2402	Ant1	34.76	4.59	4.76
NVNT	BLE 2Mbps	2440	Ant1	30.96	5.09	4.76
NVNT	BLE 2Mbps	2480	Ant1	34.76	4.59	4.76

Test Graphs

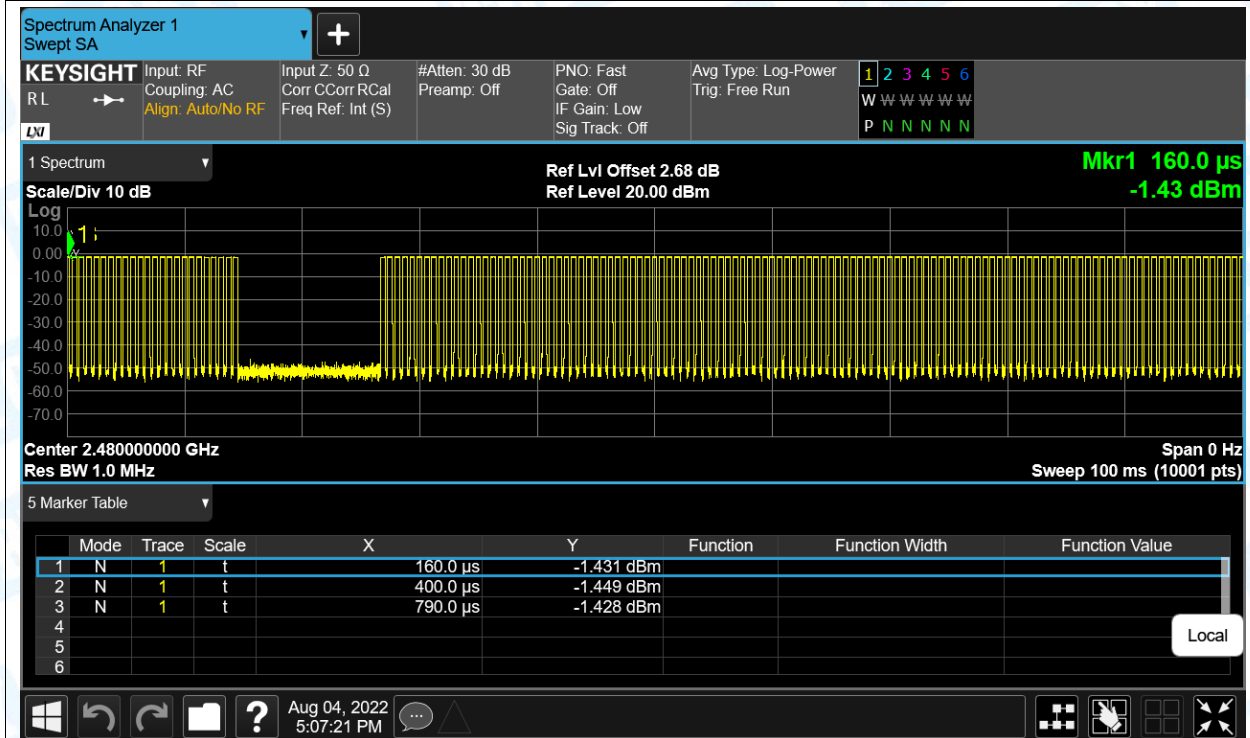
Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1



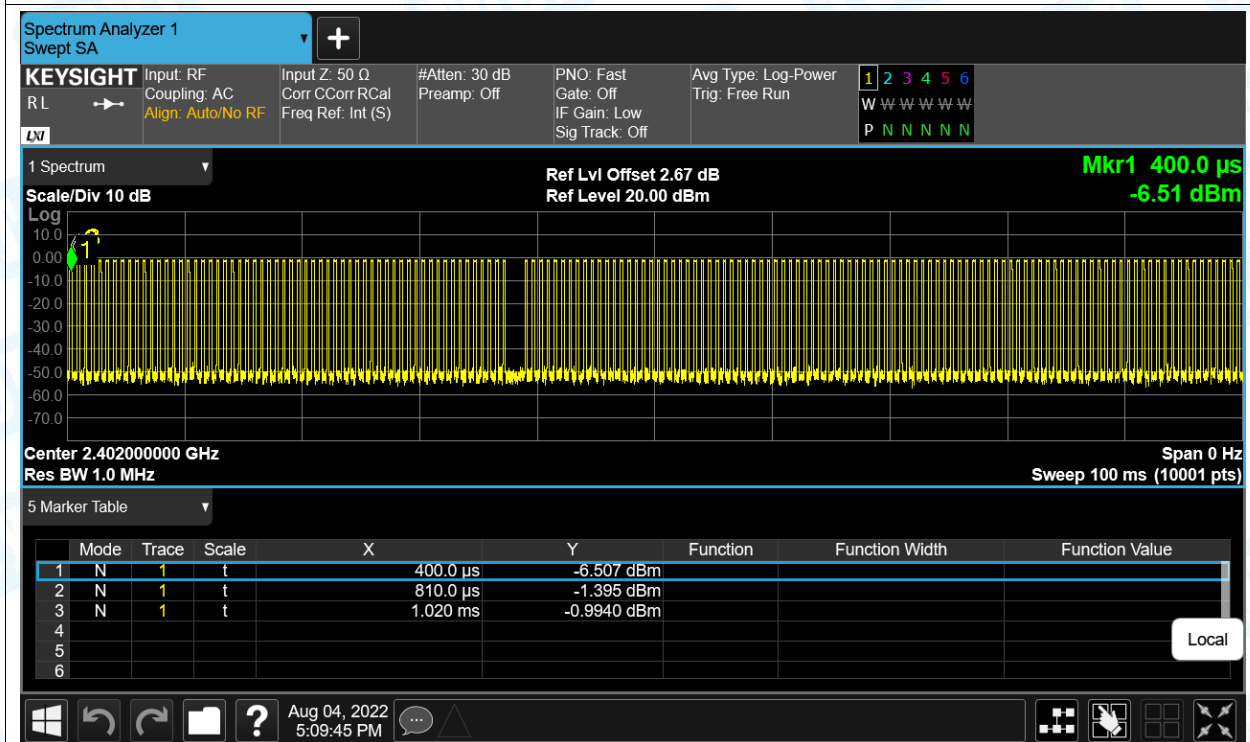
Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1

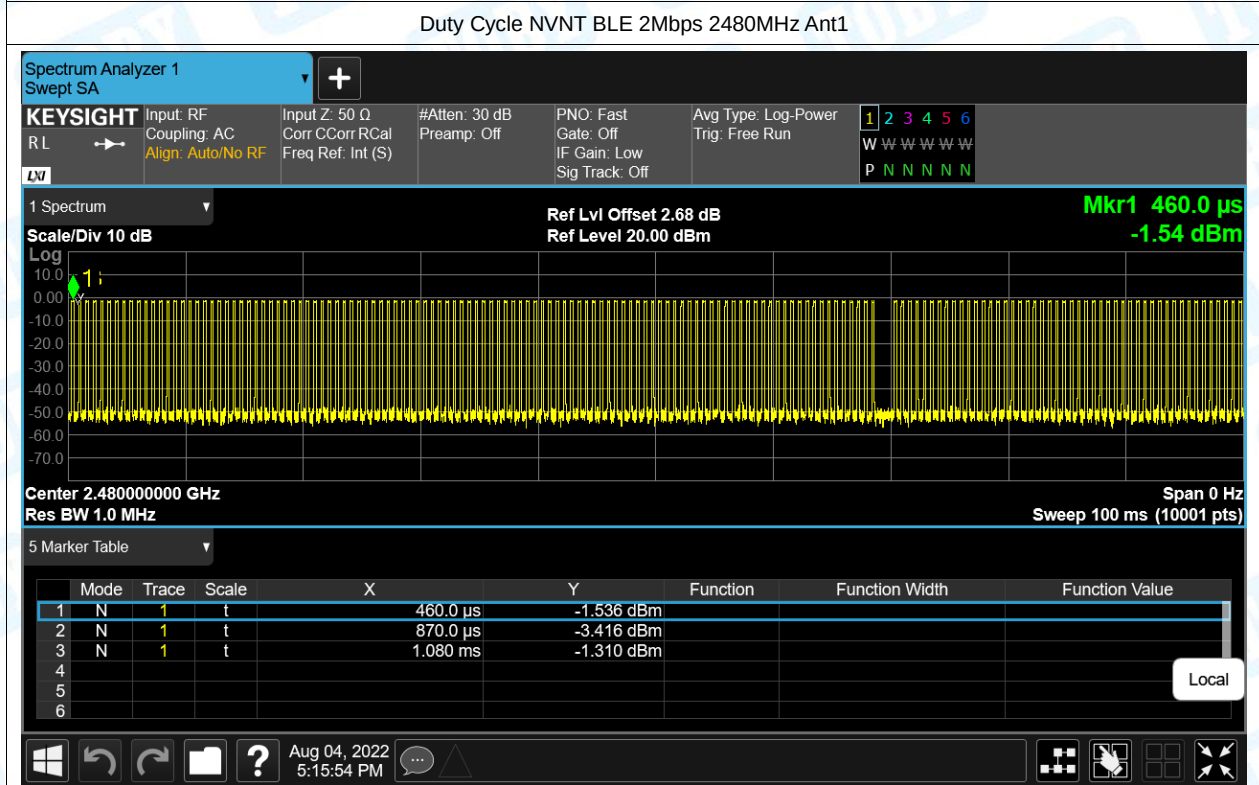
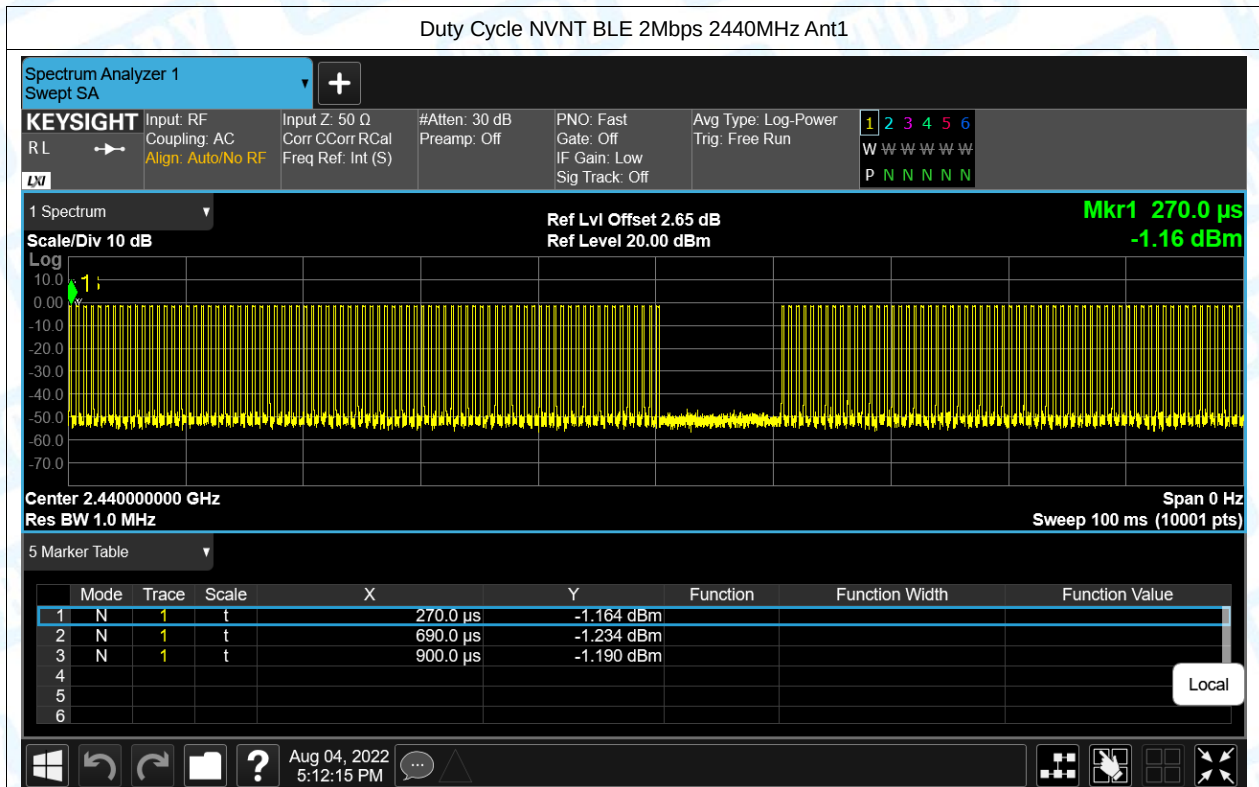


Duty Cycle NVNT BLE 1Mbps 2480MHz Ant1



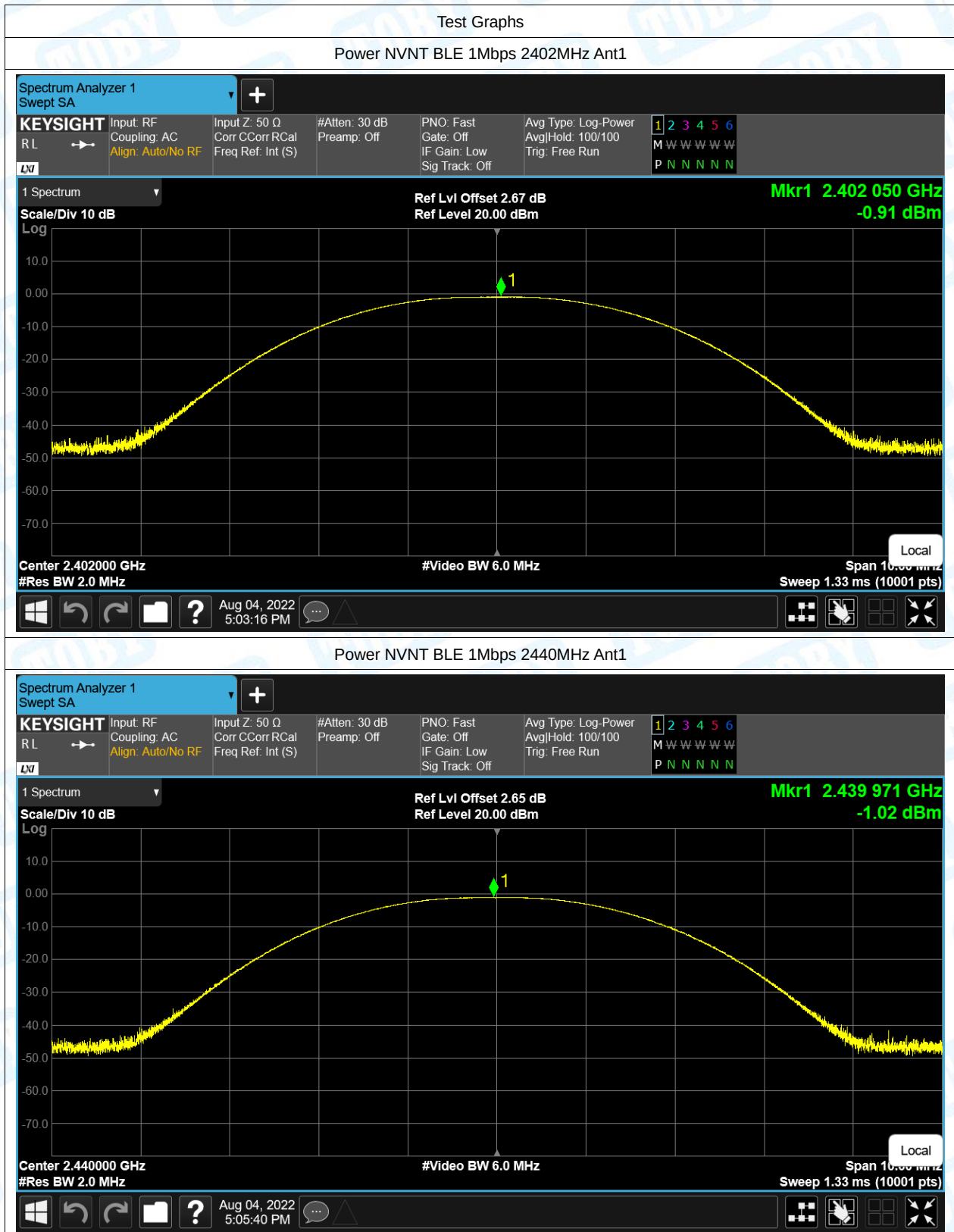
Duty Cycle NVNT BLE 2Mbps 2402MHz Ant1

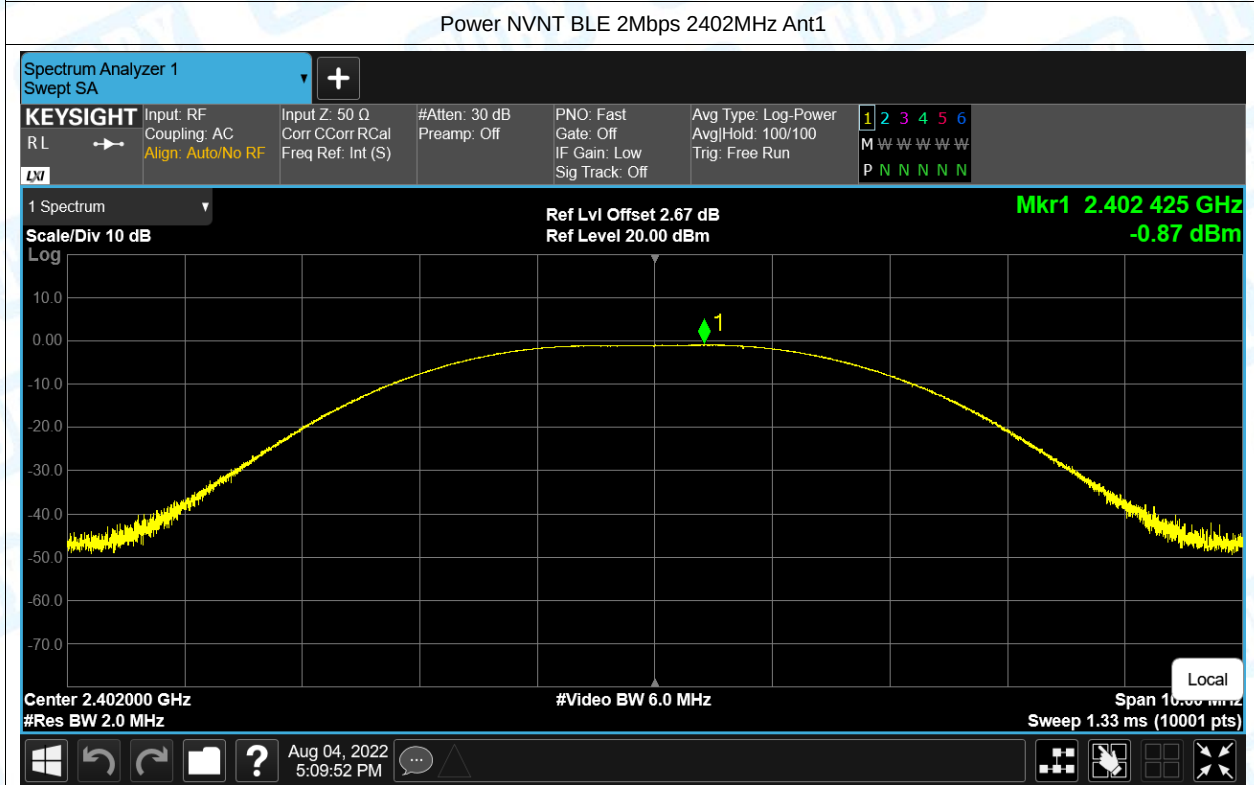
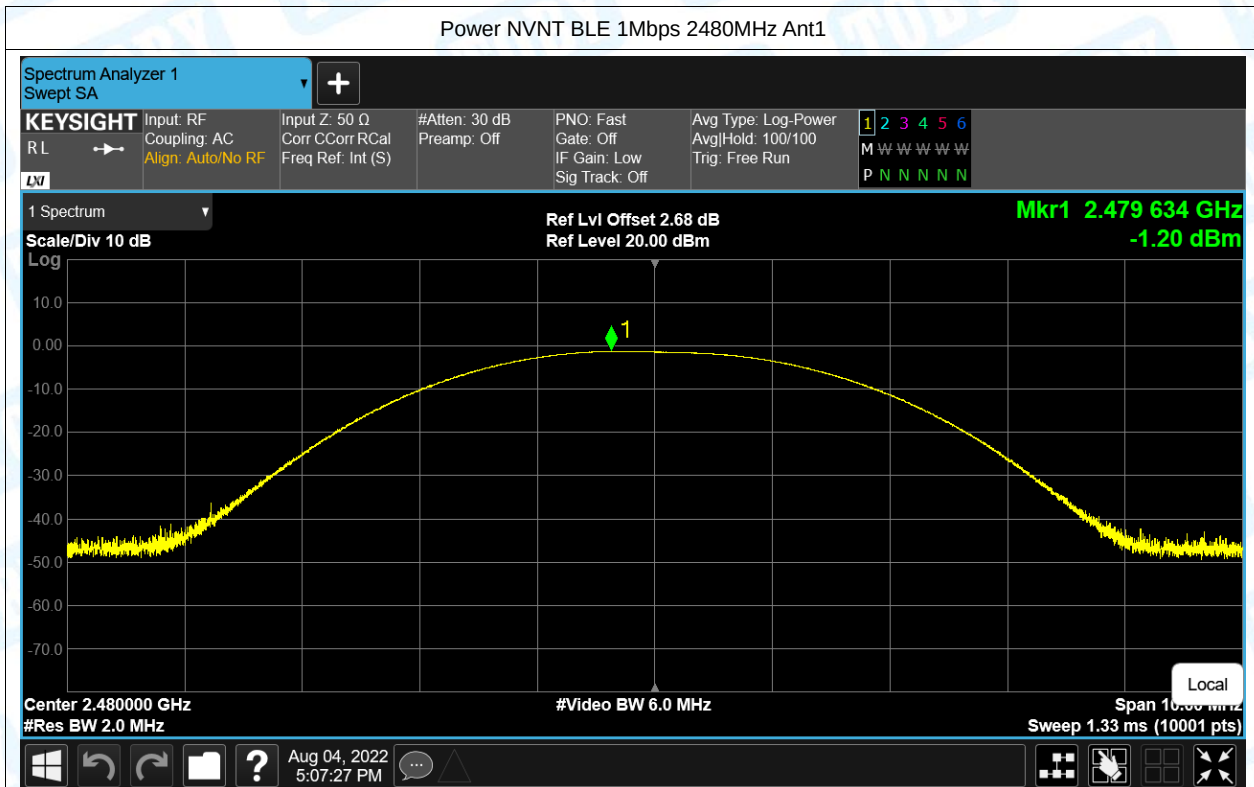


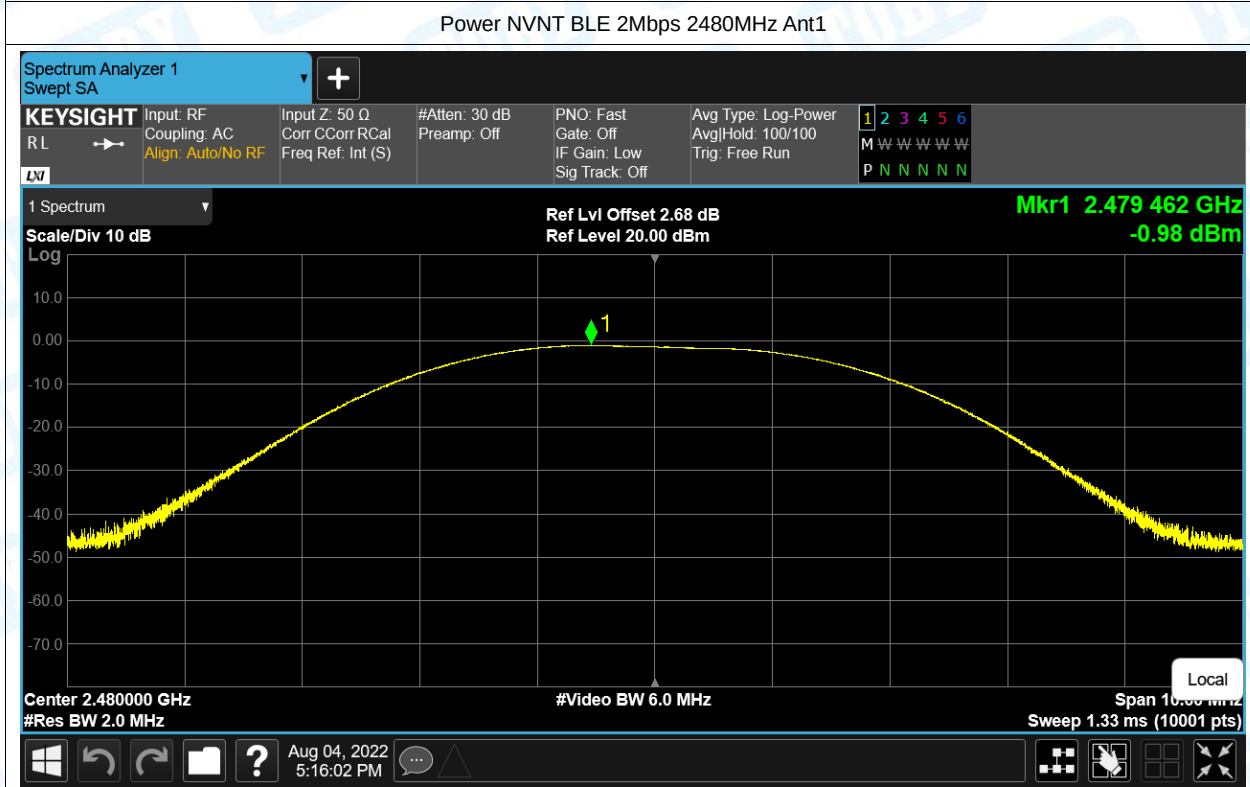
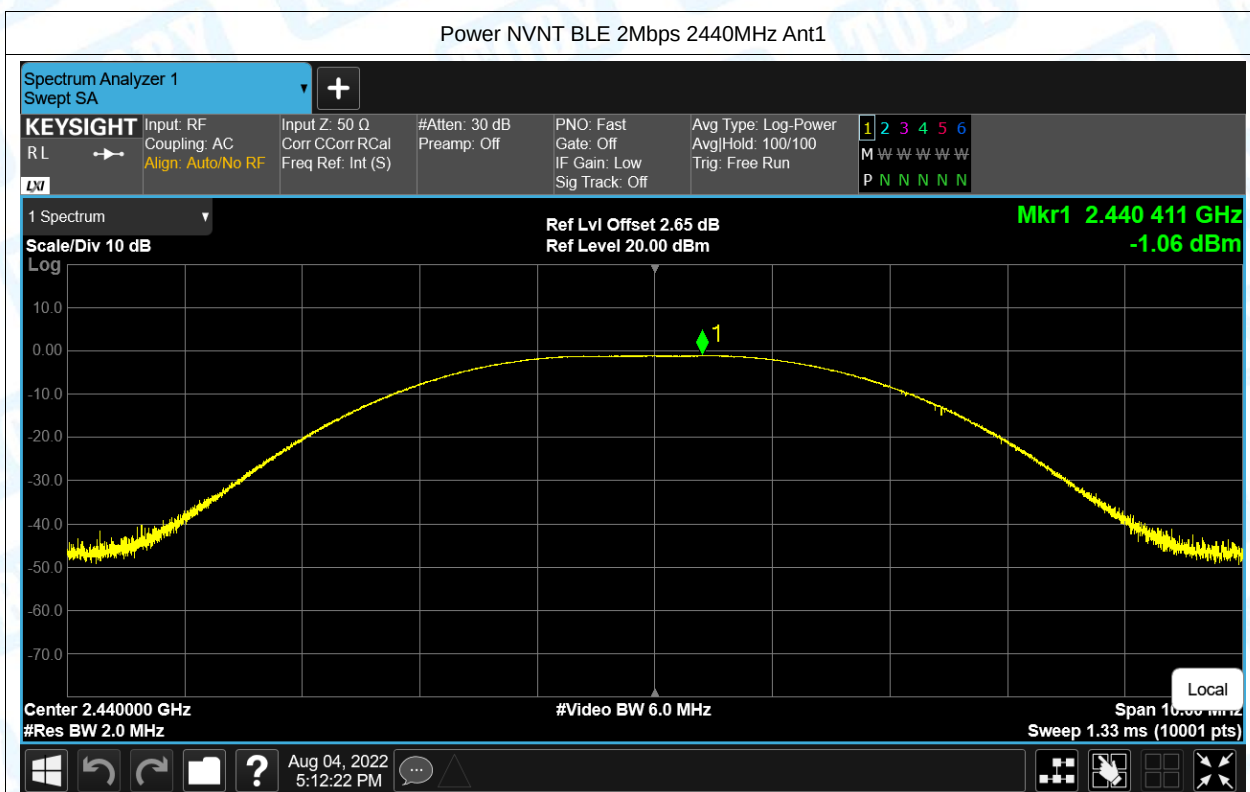


2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-0.909	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	-1.018	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	-1.2	30	Pass
NVNT	BLE 2Mbps	2402	Ant1	-0.868	30	Pass
NVNT	BLE 2Mbps	2440	Ant1	-1.056	30	Pass
NVNT	BLE 2Mbps	2480	Ant1	-0.98	30	Pass

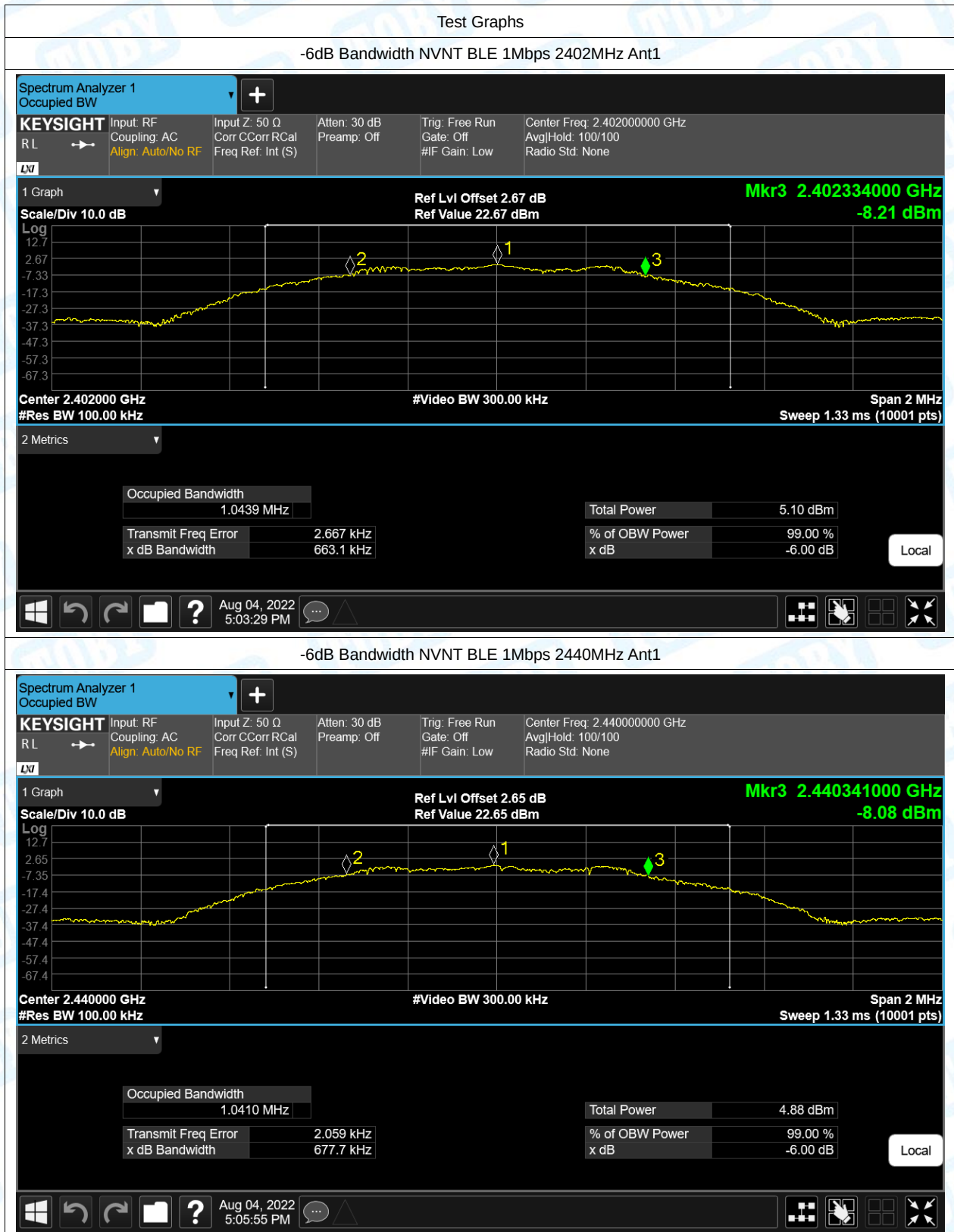


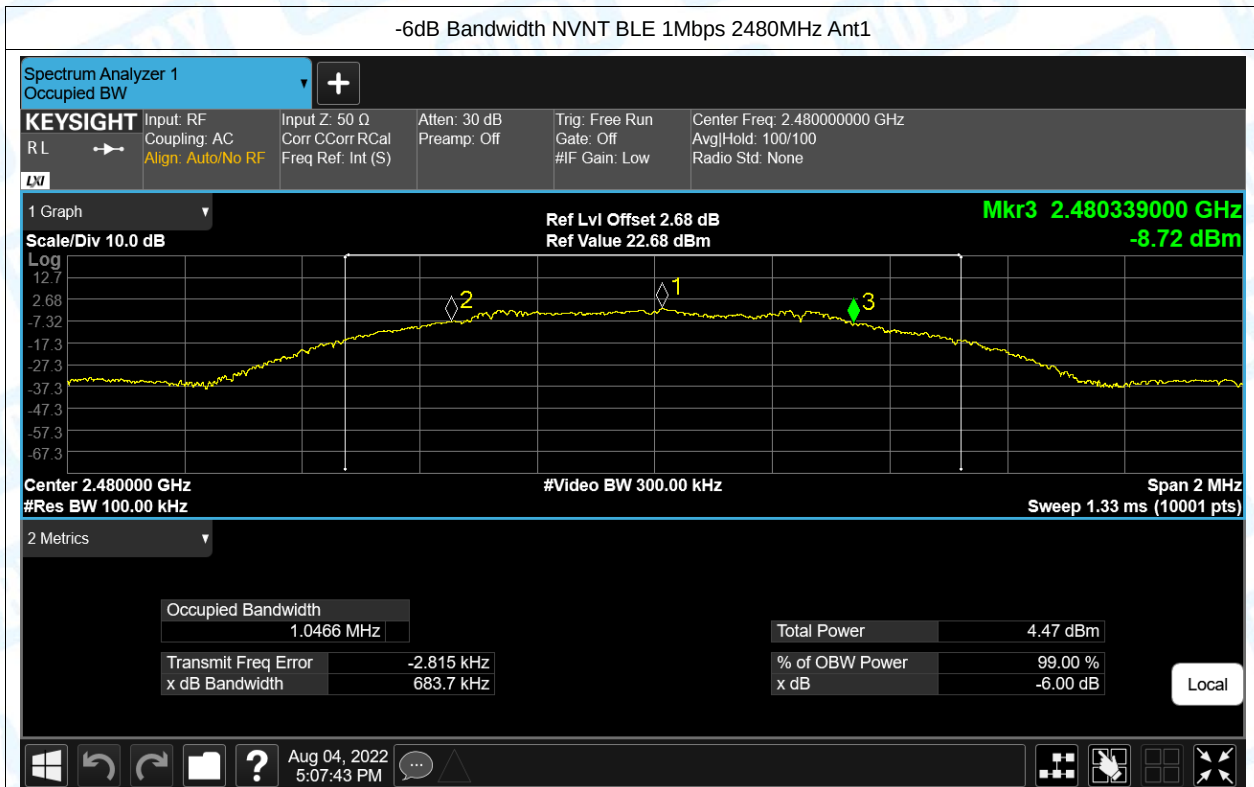




3. -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.66	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.68	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	1.23	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.24	0.5	Pass



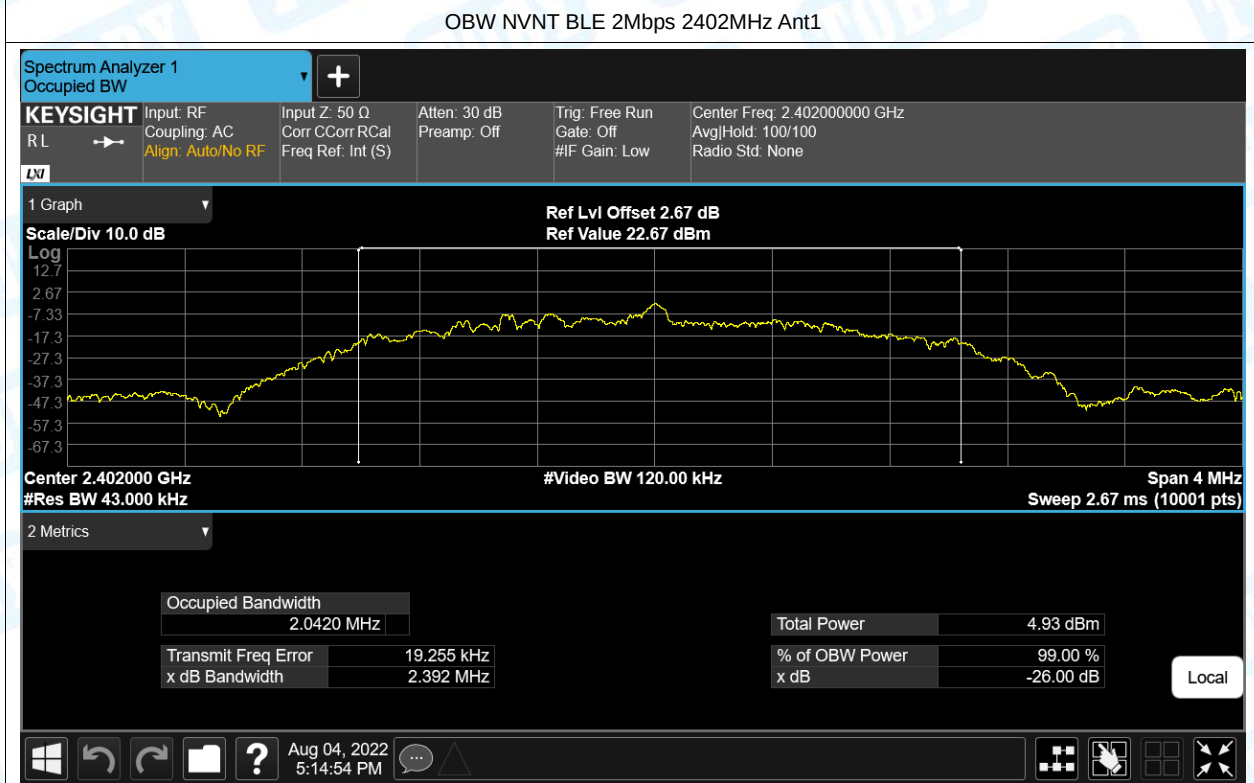
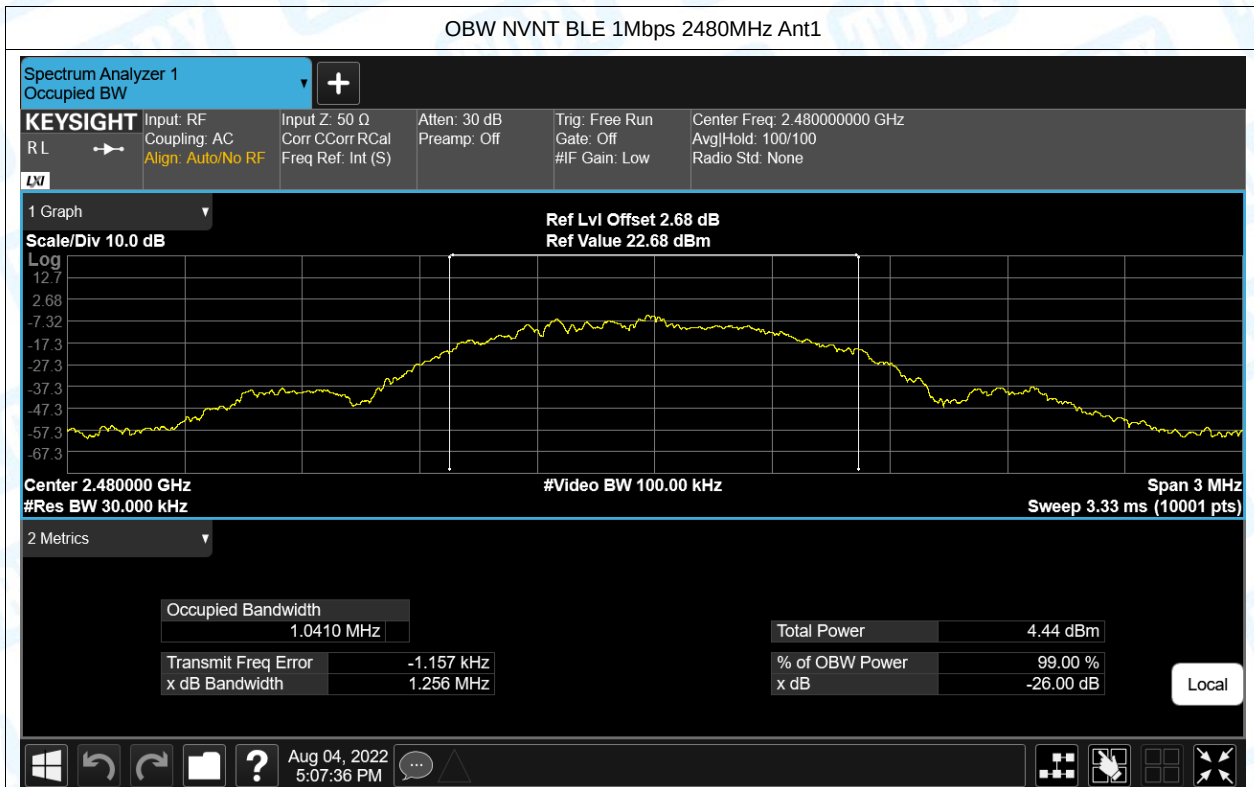


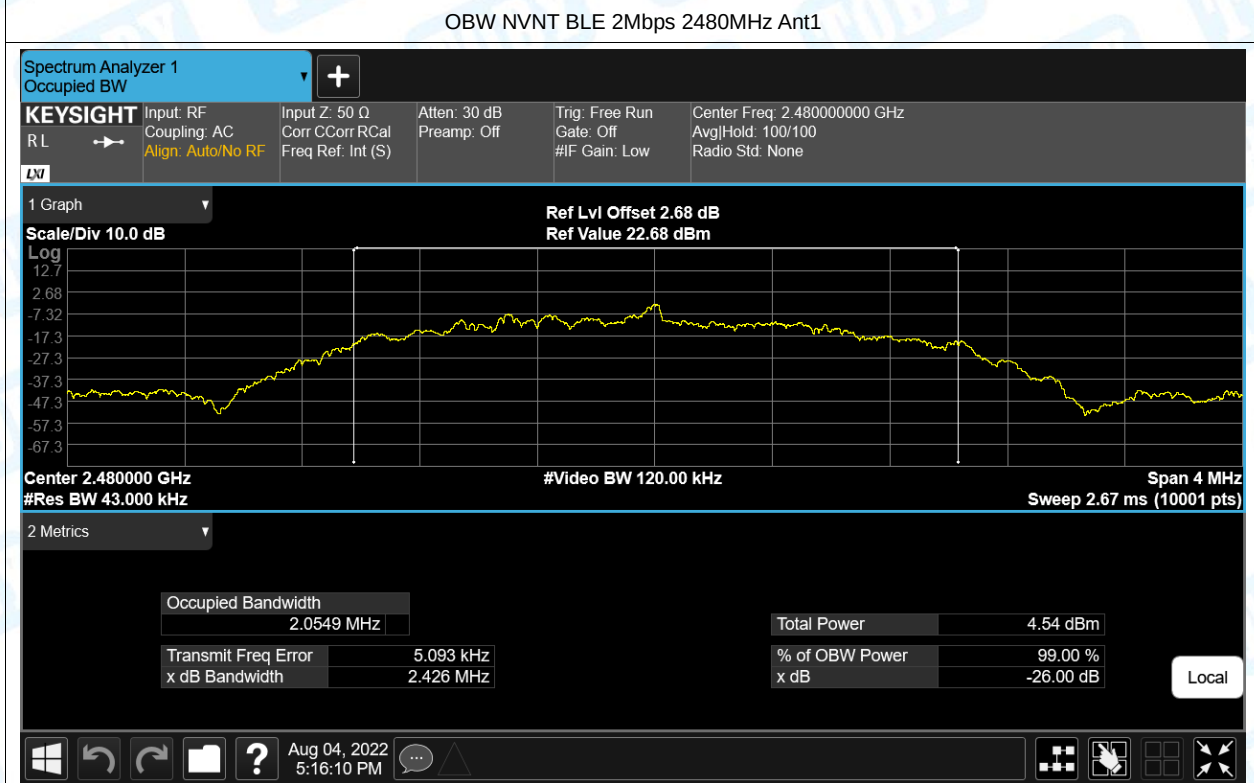
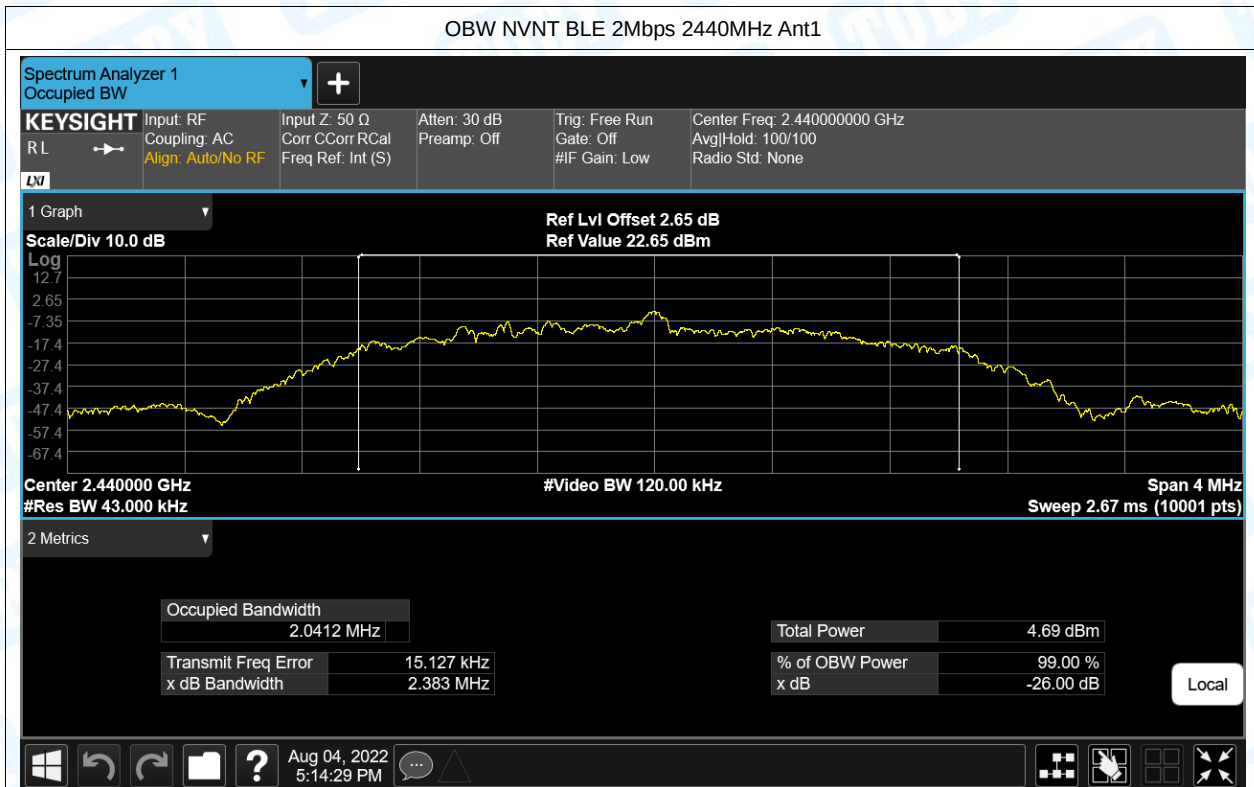


4. Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.035
NVNT	BLE 1Mbps	2440	Ant1	1.025
NVNT	BLE 1Mbps	2480	Ant1	1.041
NVNT	BLE 2Mbps	2402	Ant1	2.042
NVNT	BLE 2Mbps	2440	Ant1	2.041
NVNT	BLE 2Mbps	2480	Ant1	2.055

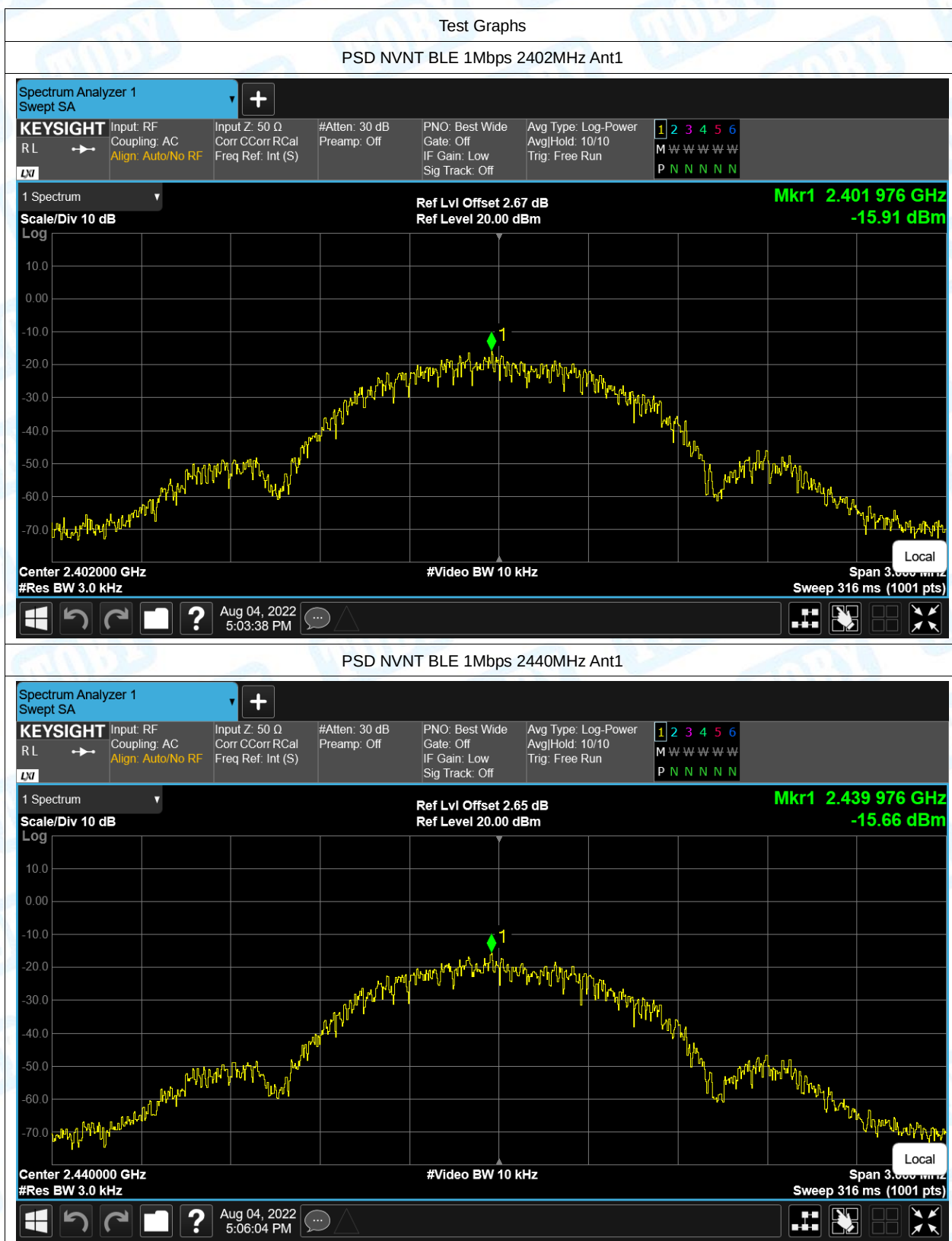


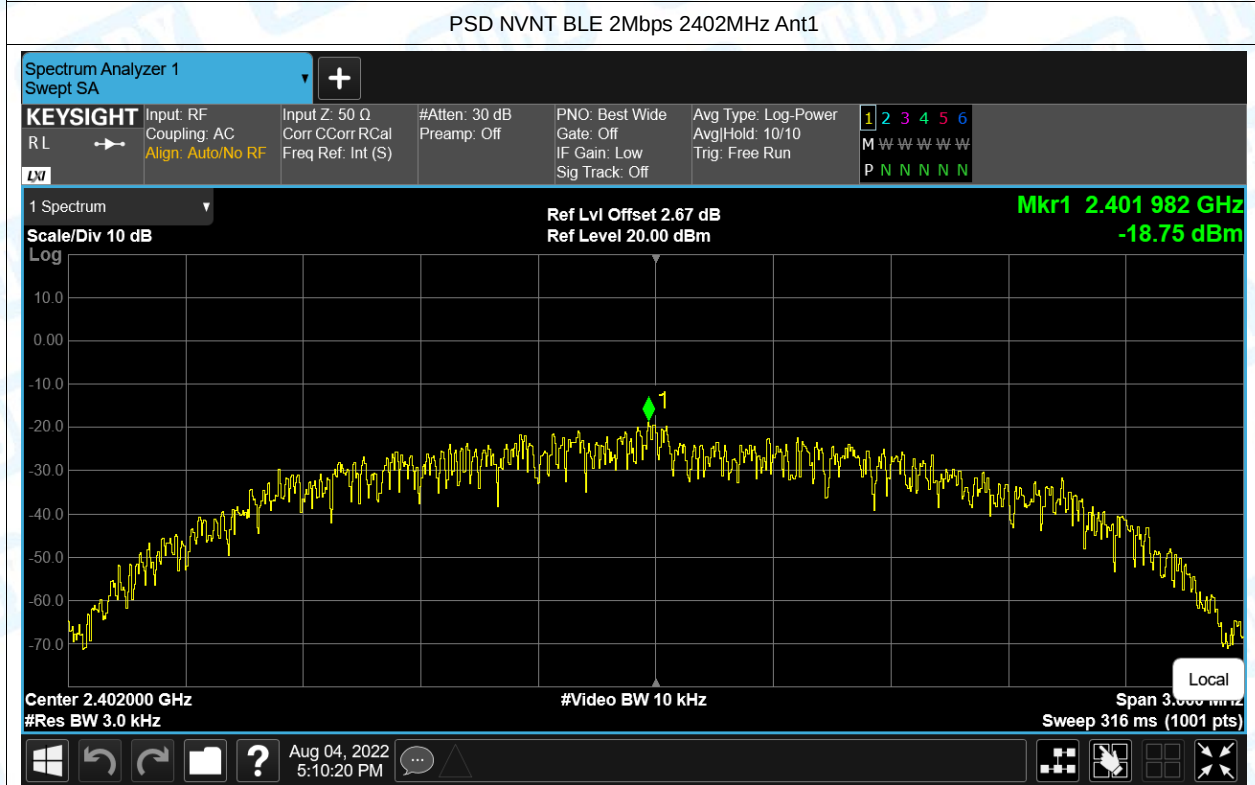
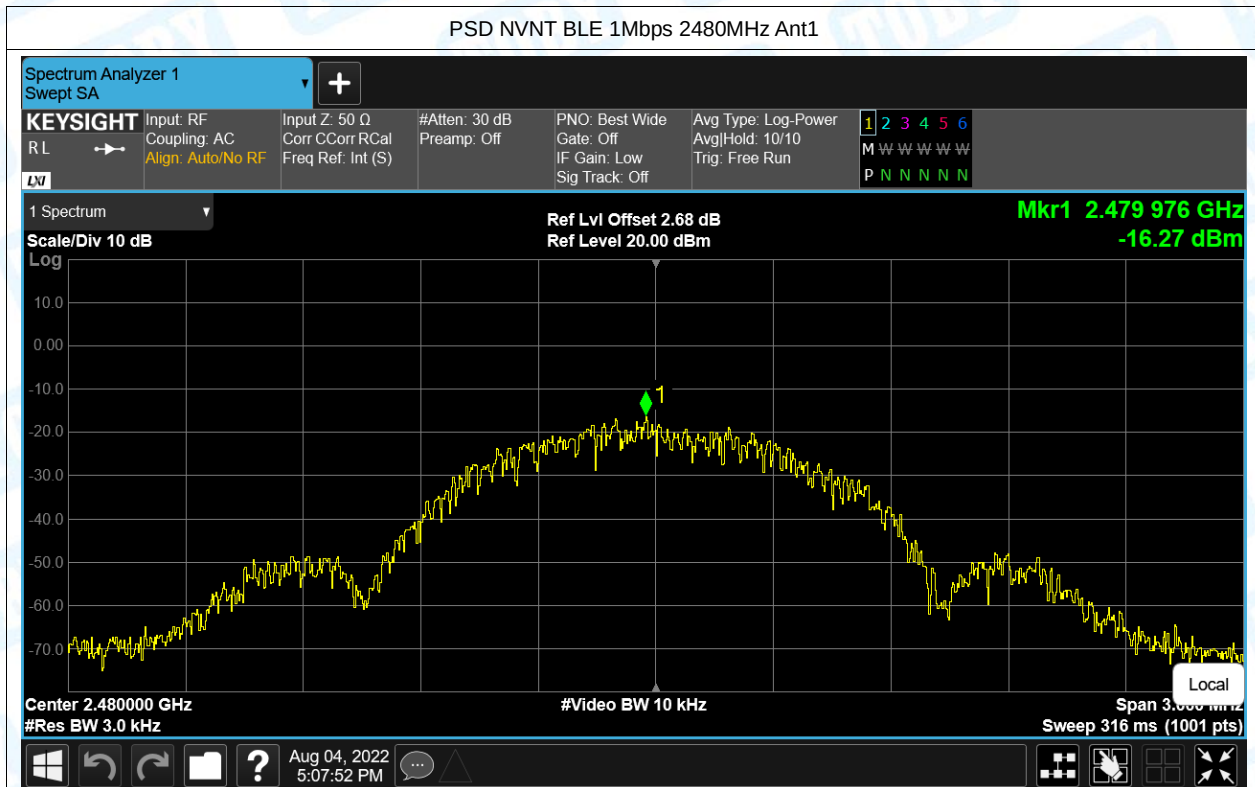


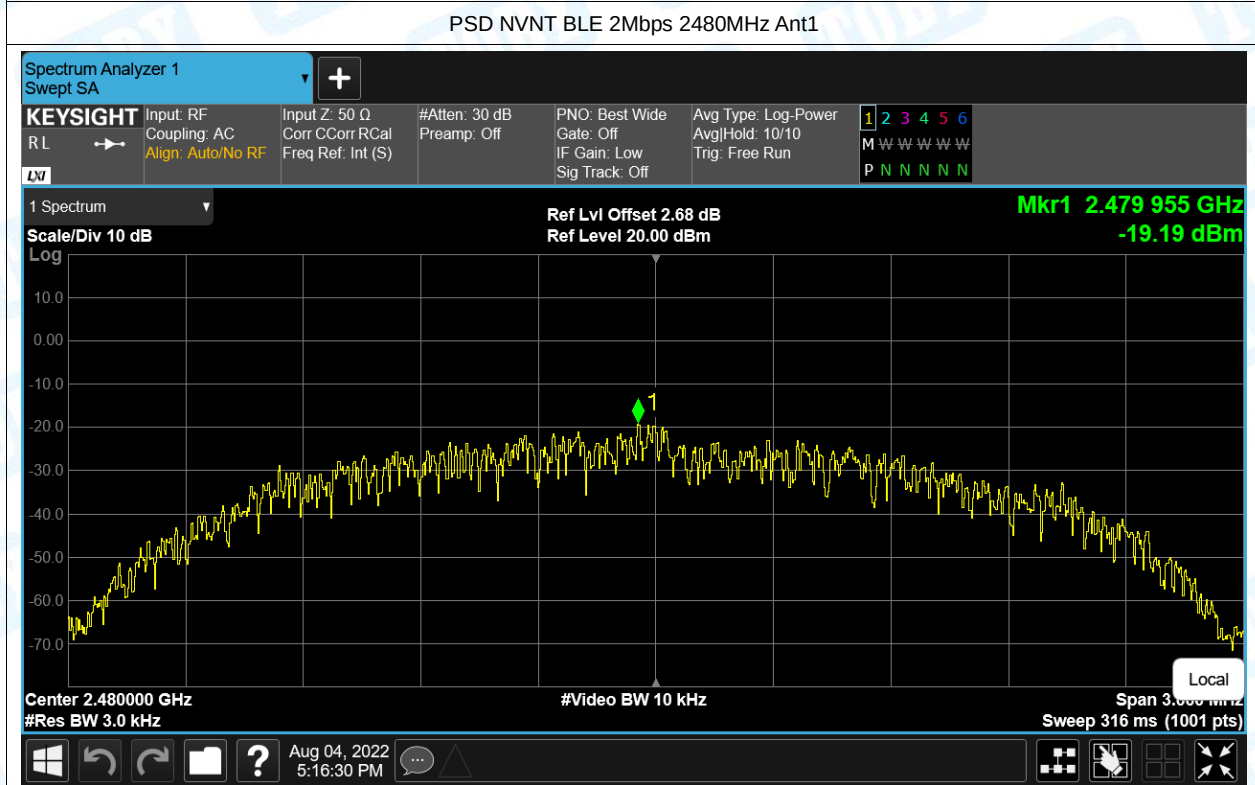
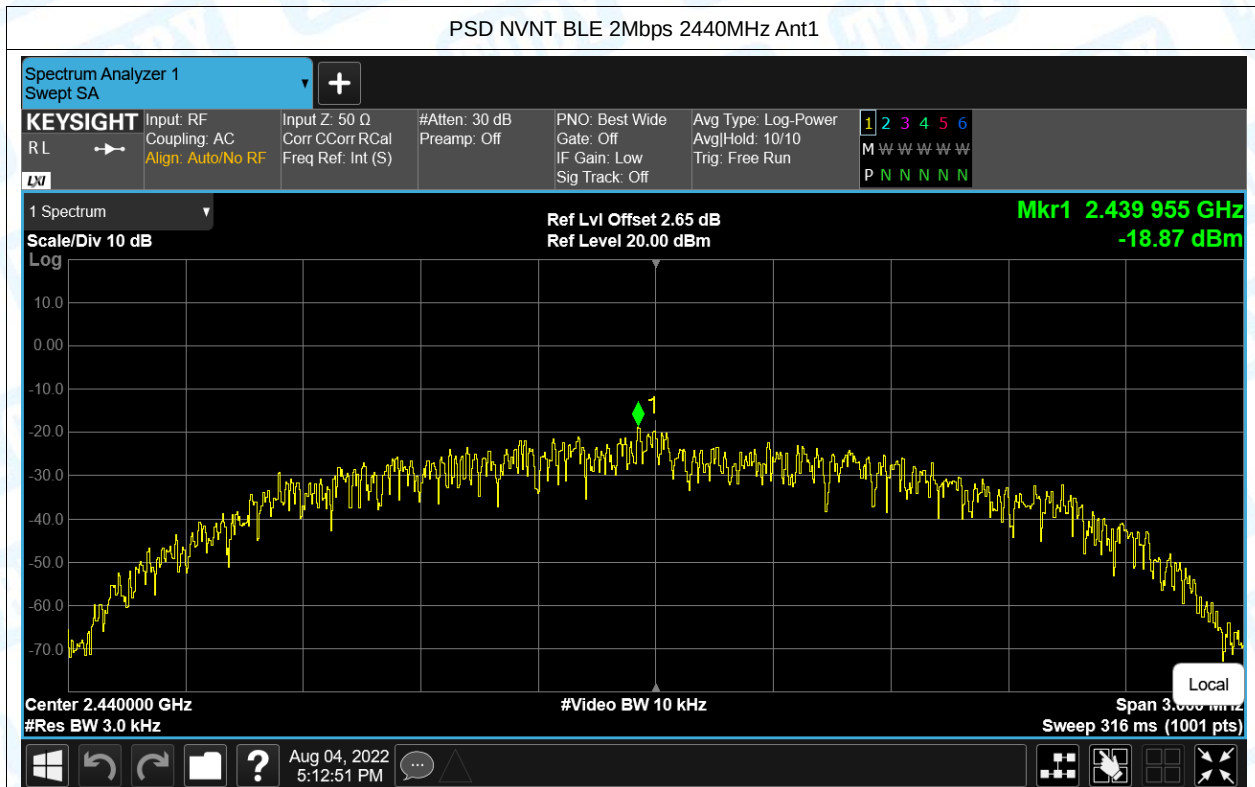


5. Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-15.91	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-15.661	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-16.269	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-18.754	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-18.868	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-19.186	8	Pass





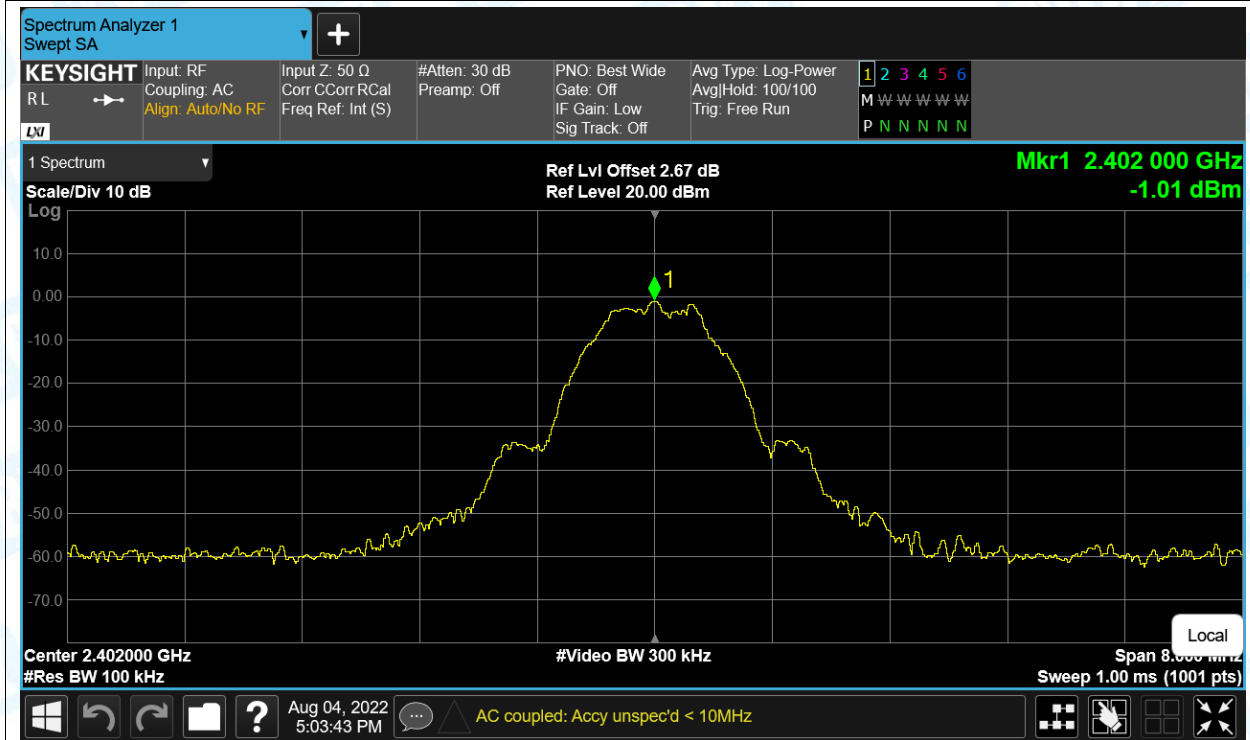


6. Band Edge

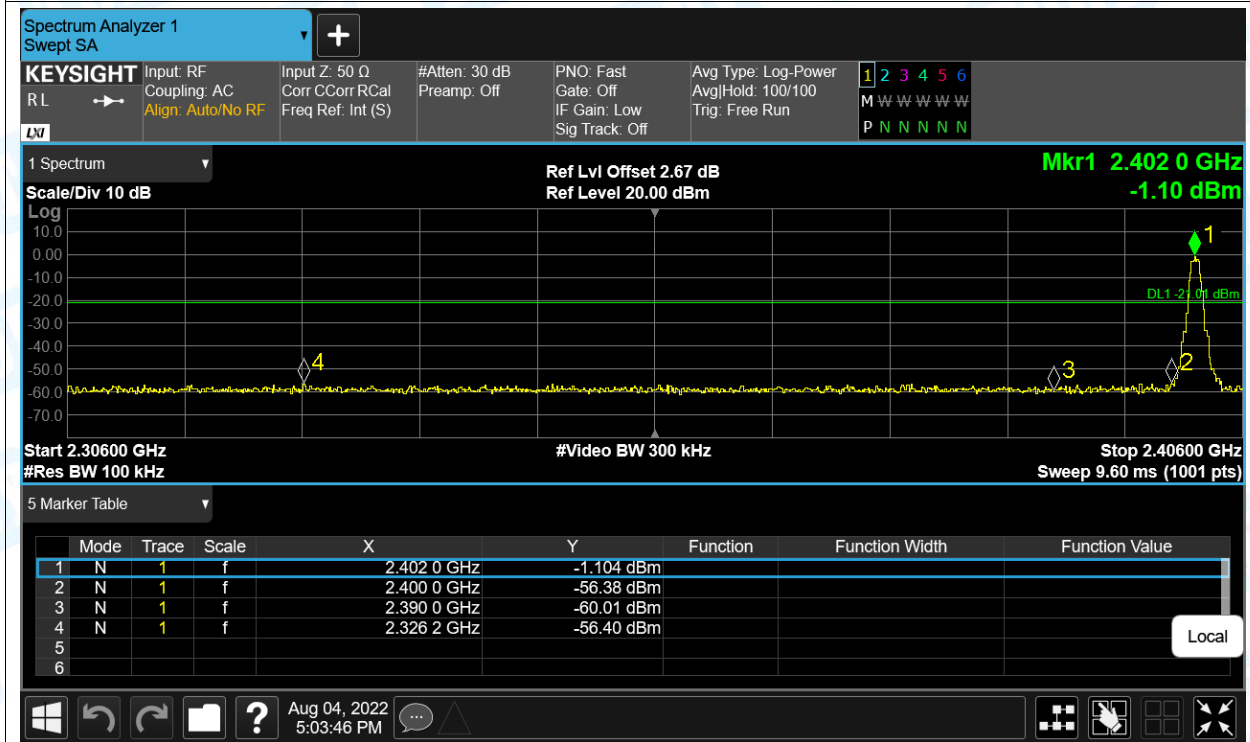
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-55.4	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-55.24	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-54.79	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-55.35	-20	Pass

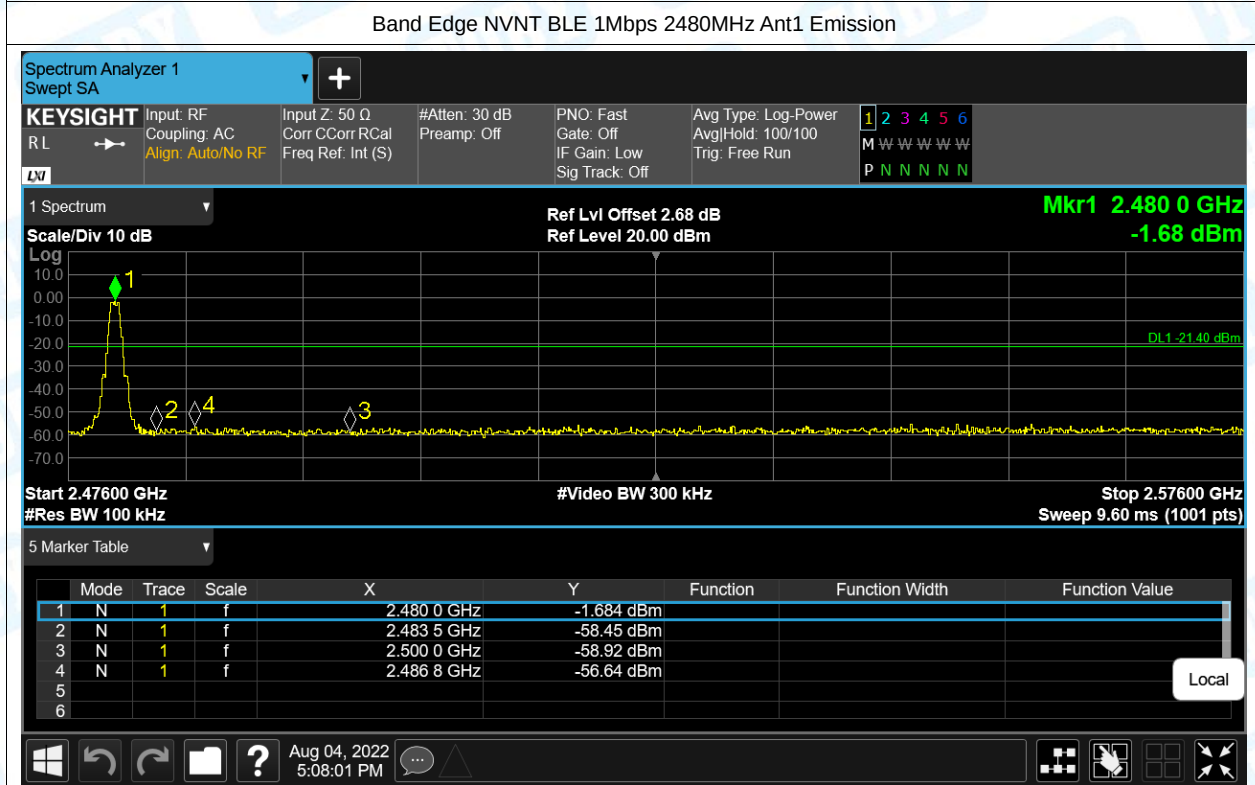
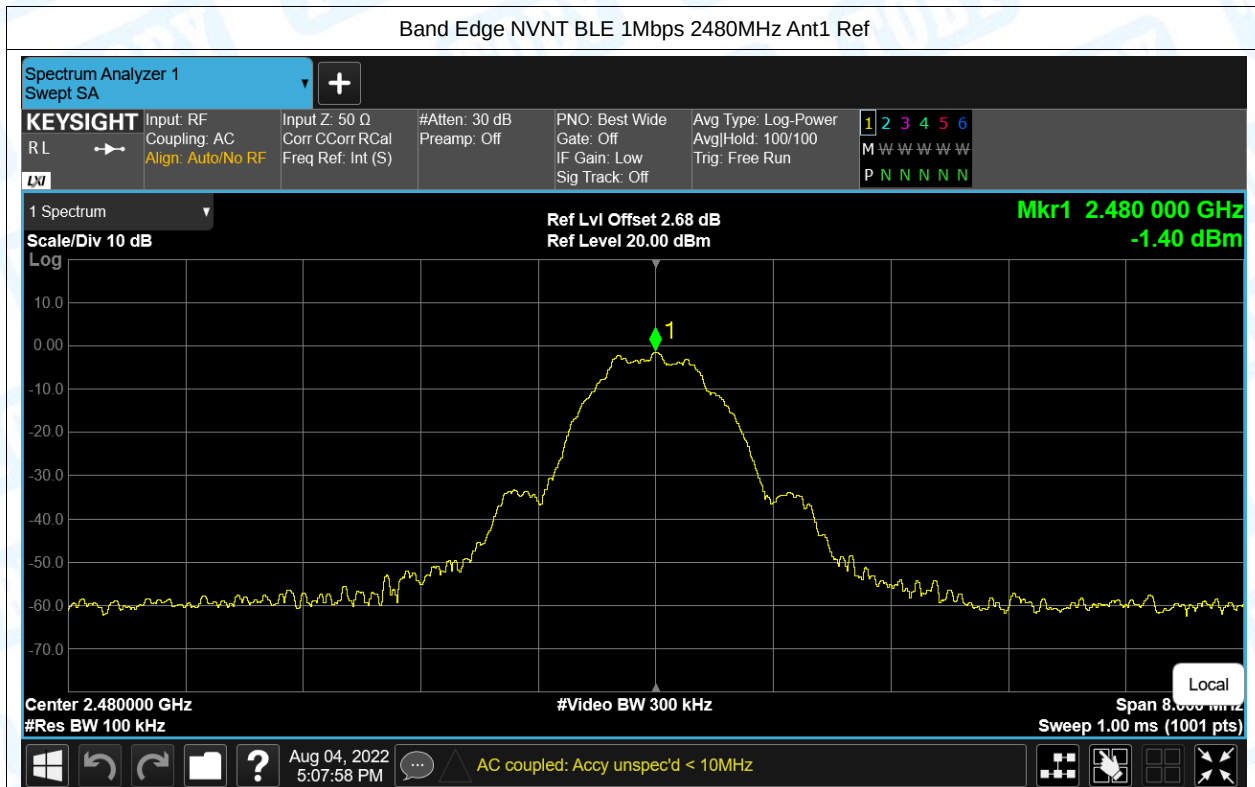
Test Graphs

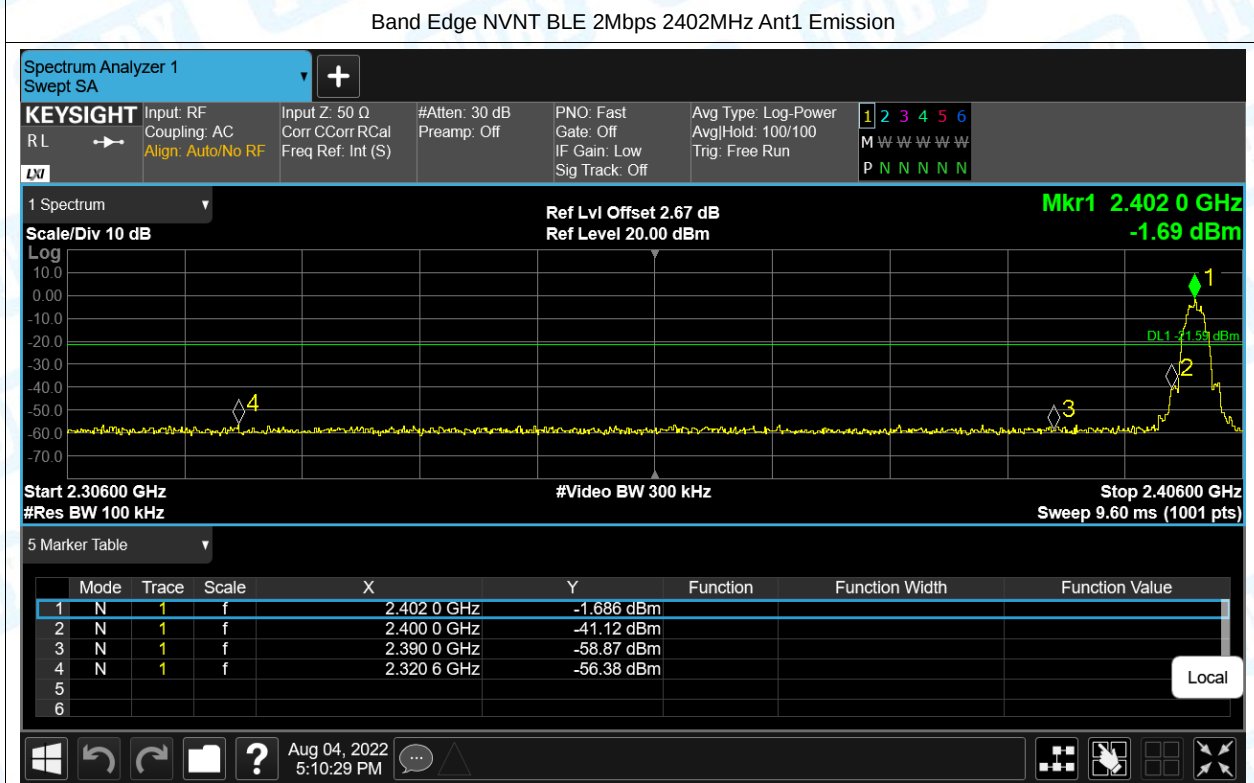
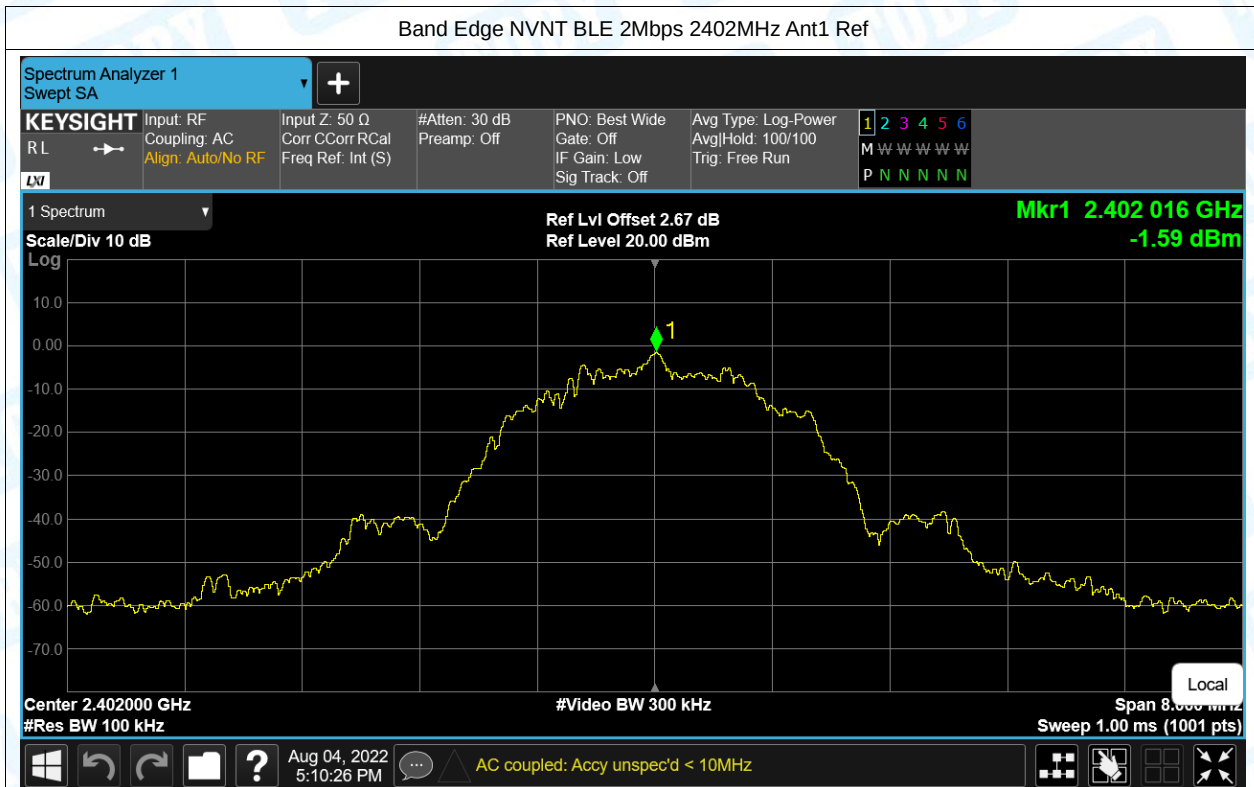
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref

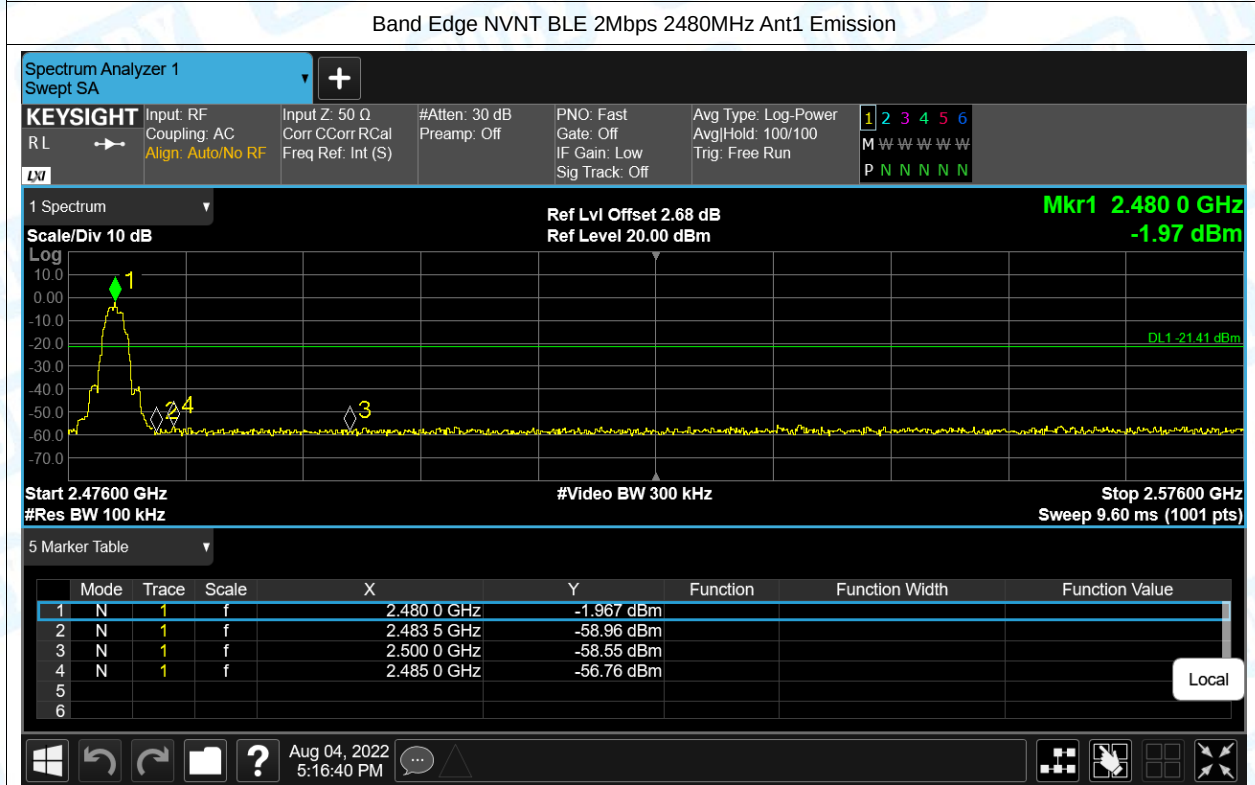
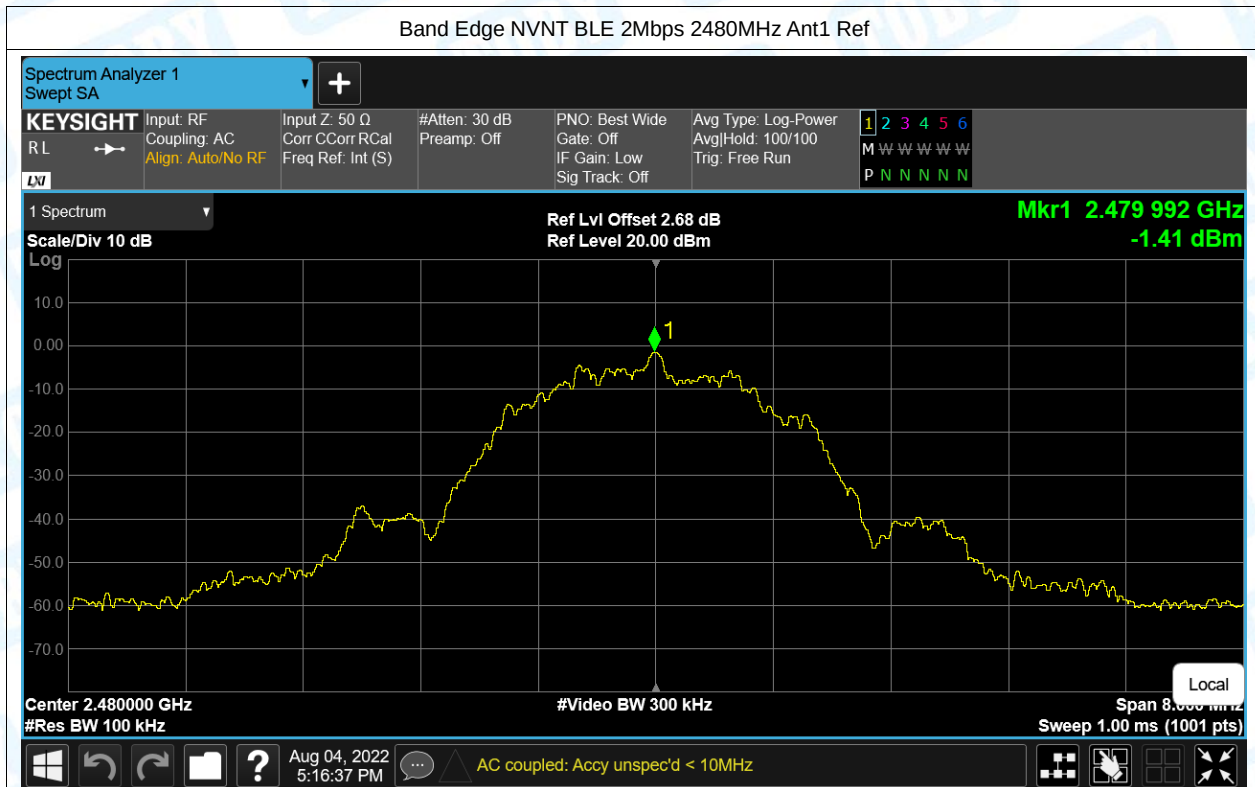


Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission







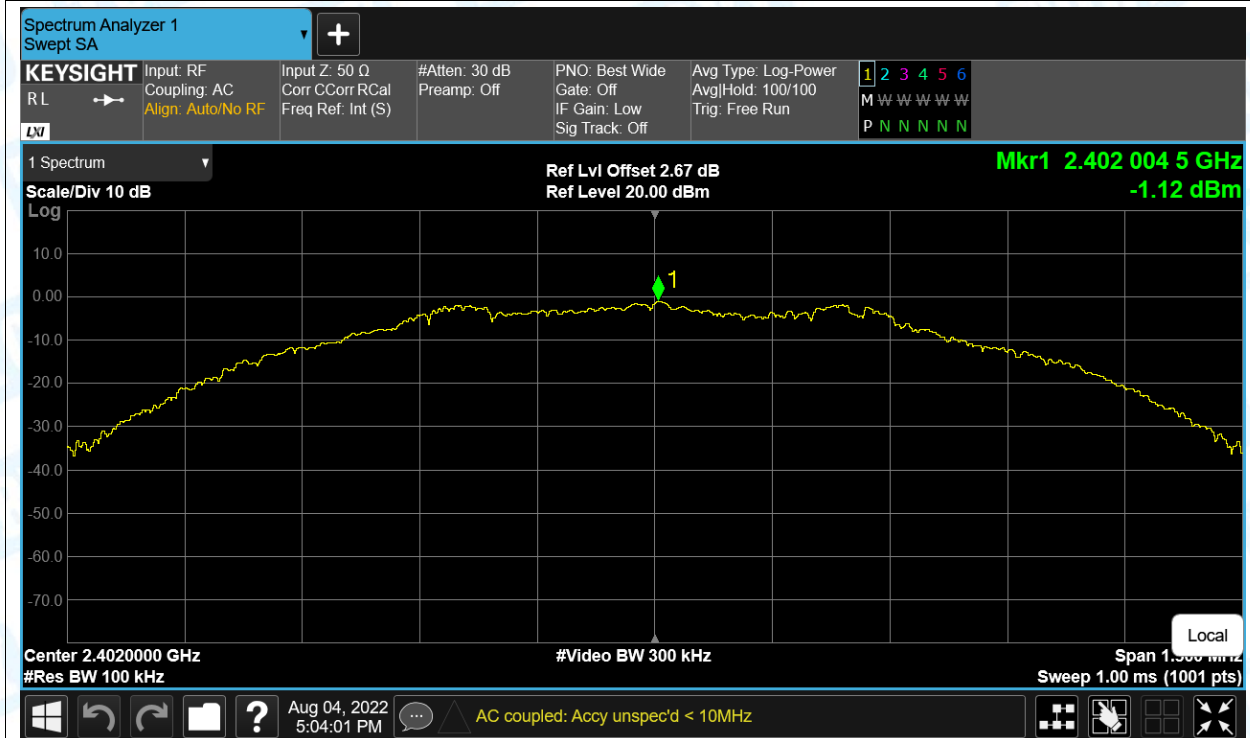


7. Conducted RF Spurious Emission

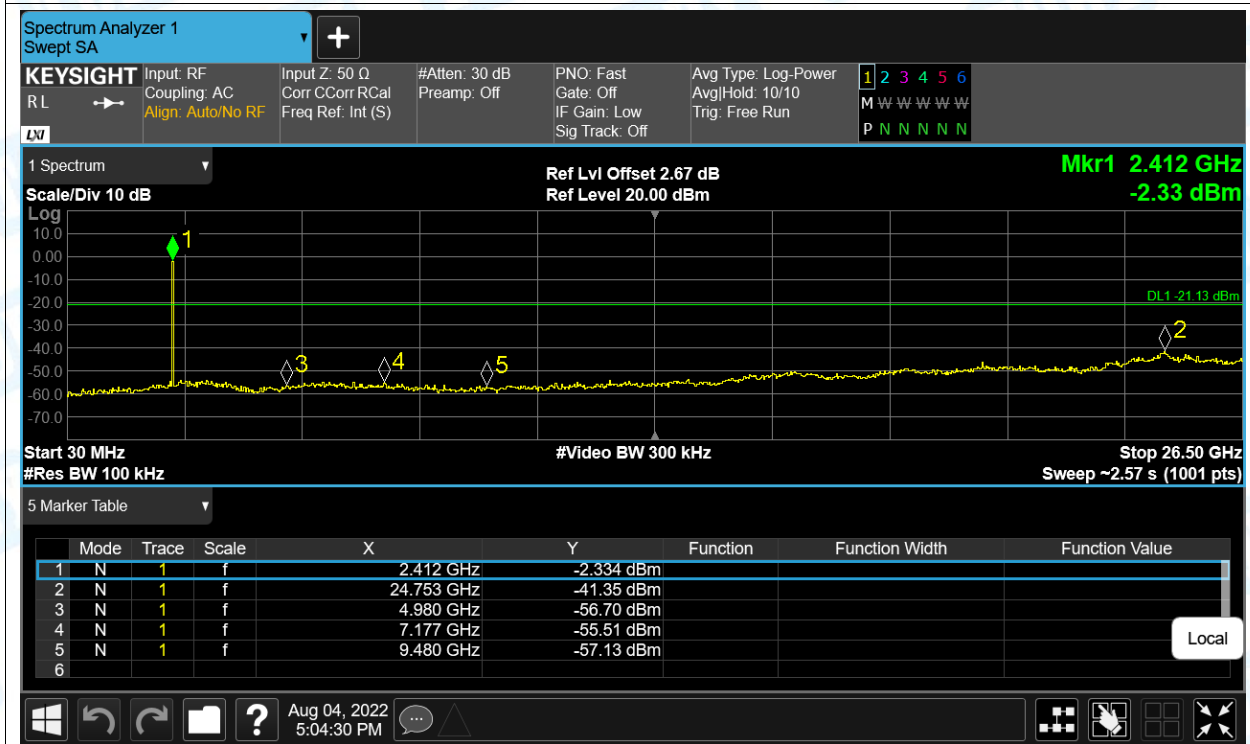
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-40.23	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-40.5	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-40.28	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-40.35	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-40.41	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-40.71	-20	Pass

Test Graphs

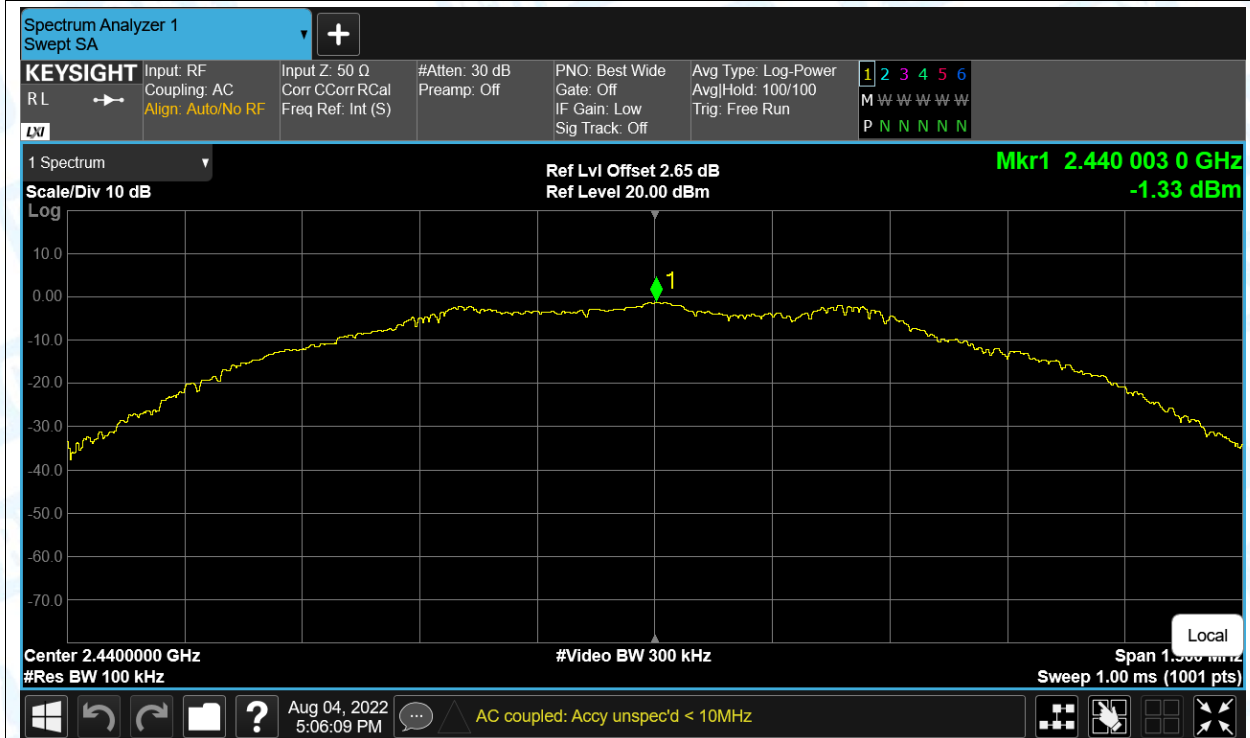
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref



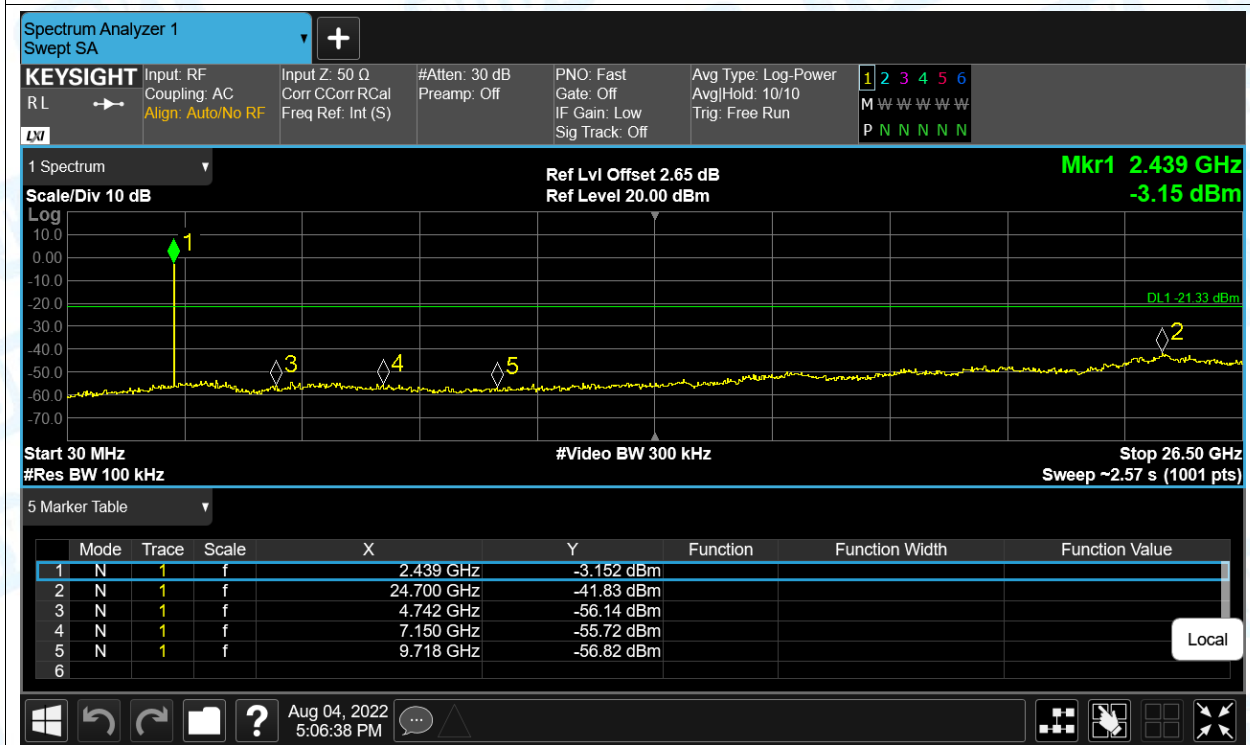
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission



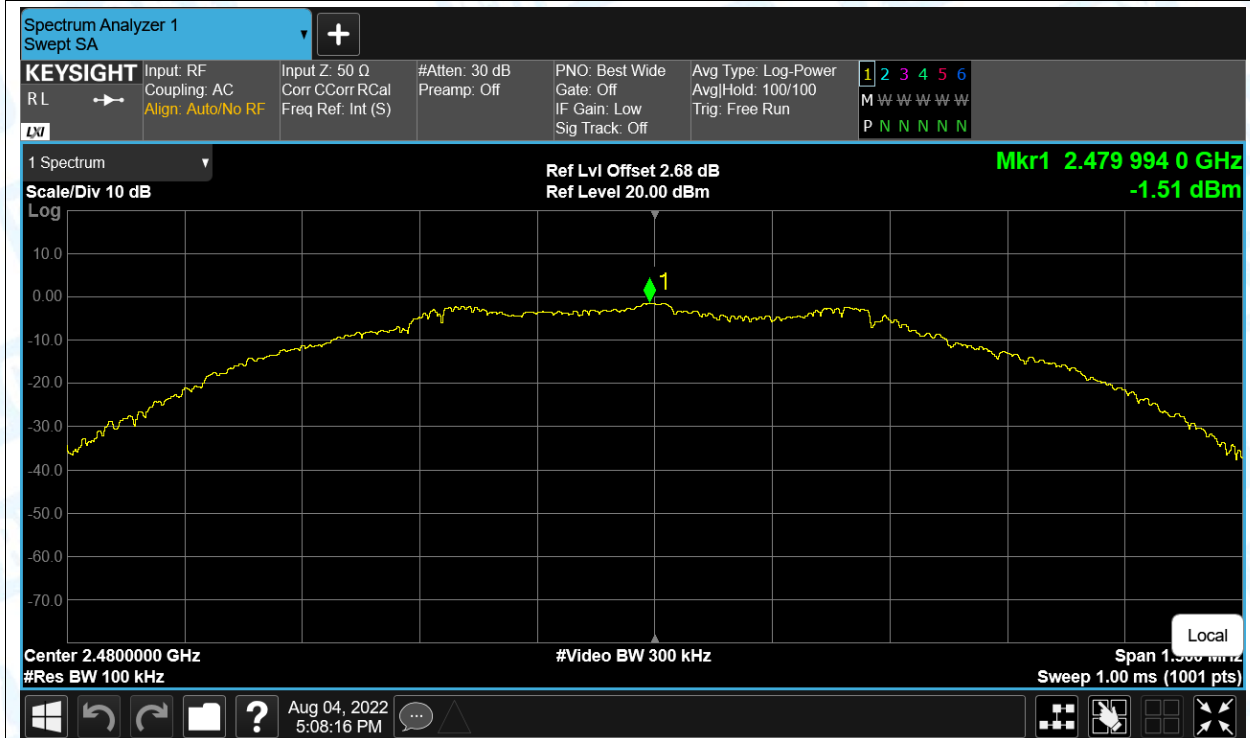
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Ref



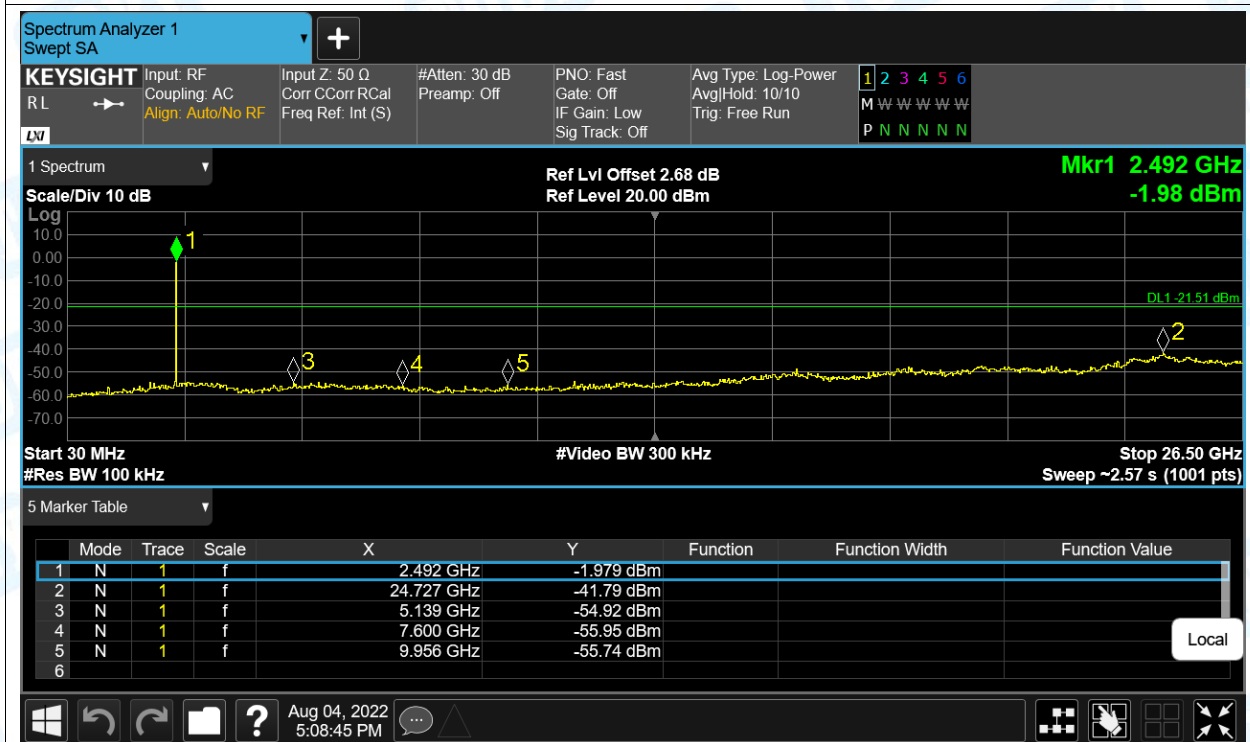
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Ref



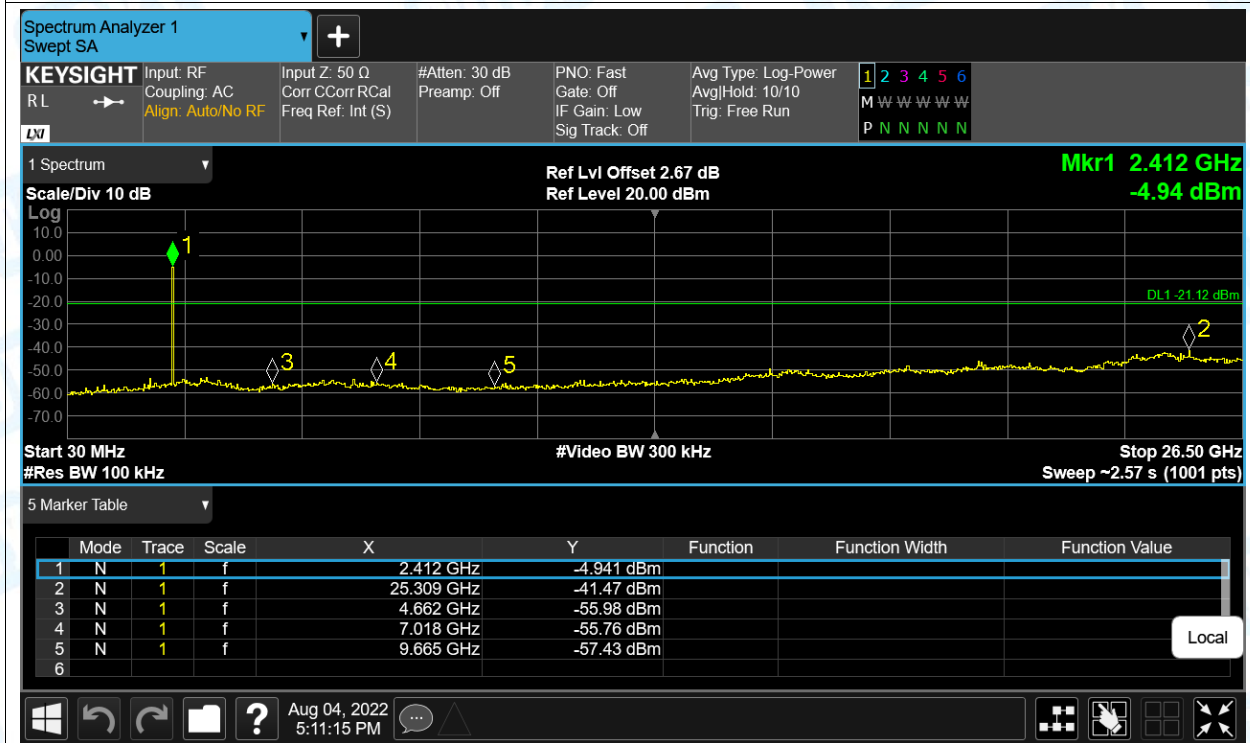
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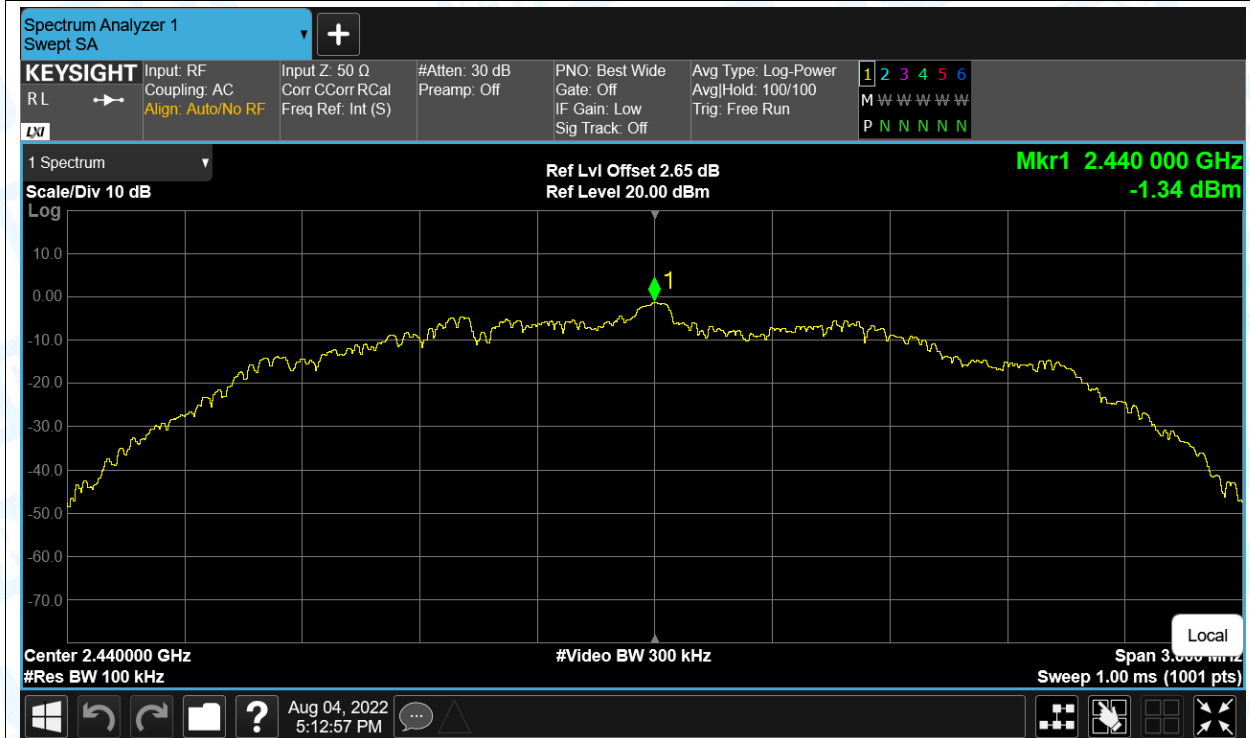
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Ref



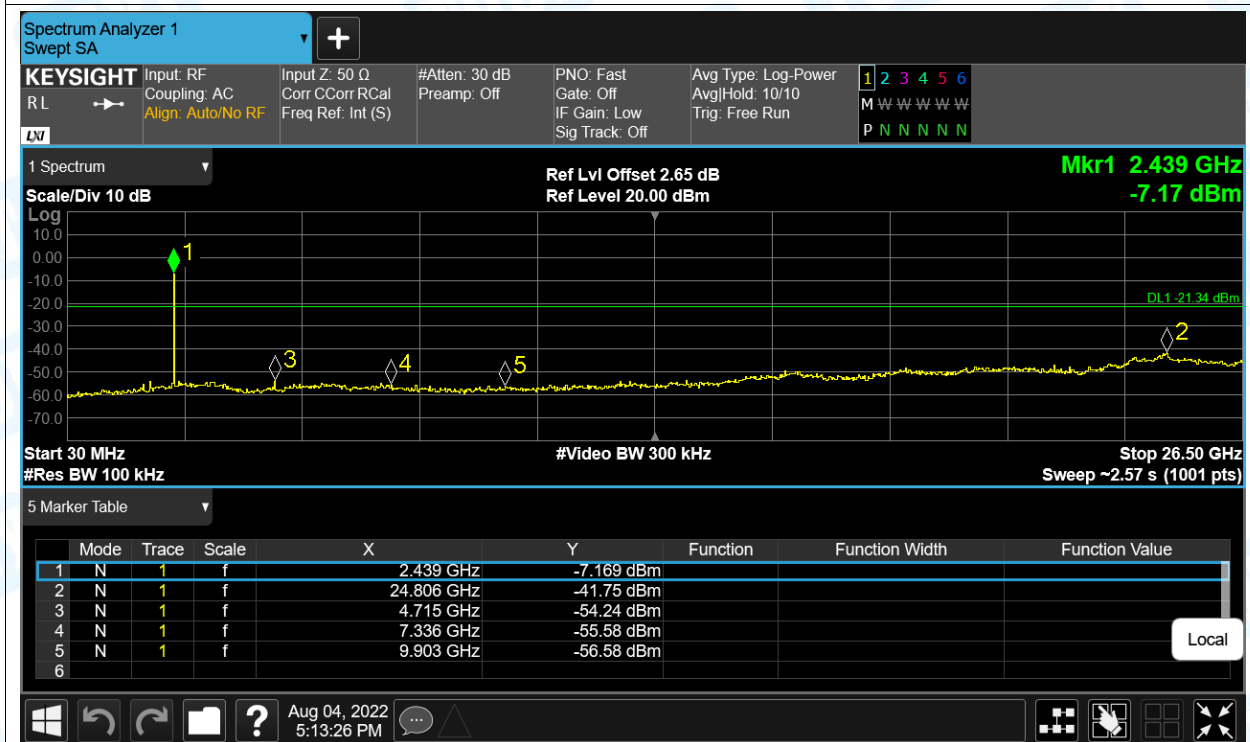
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Emission



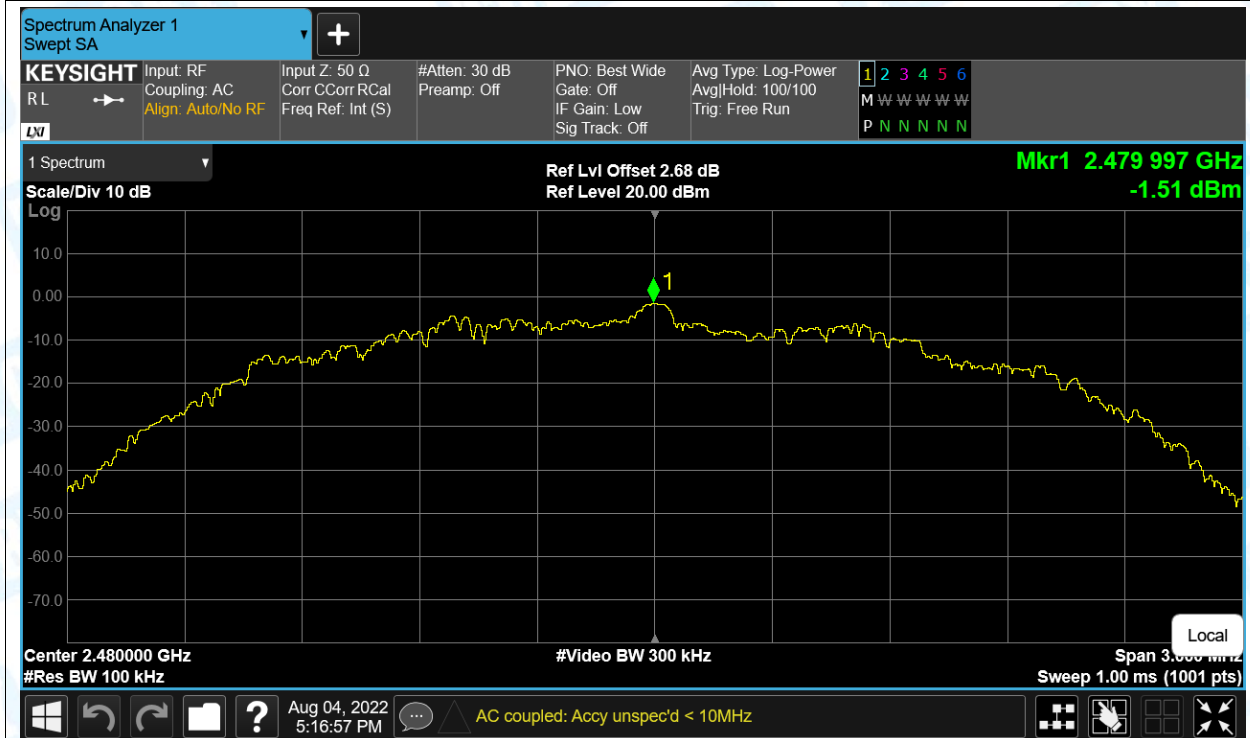
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Ref



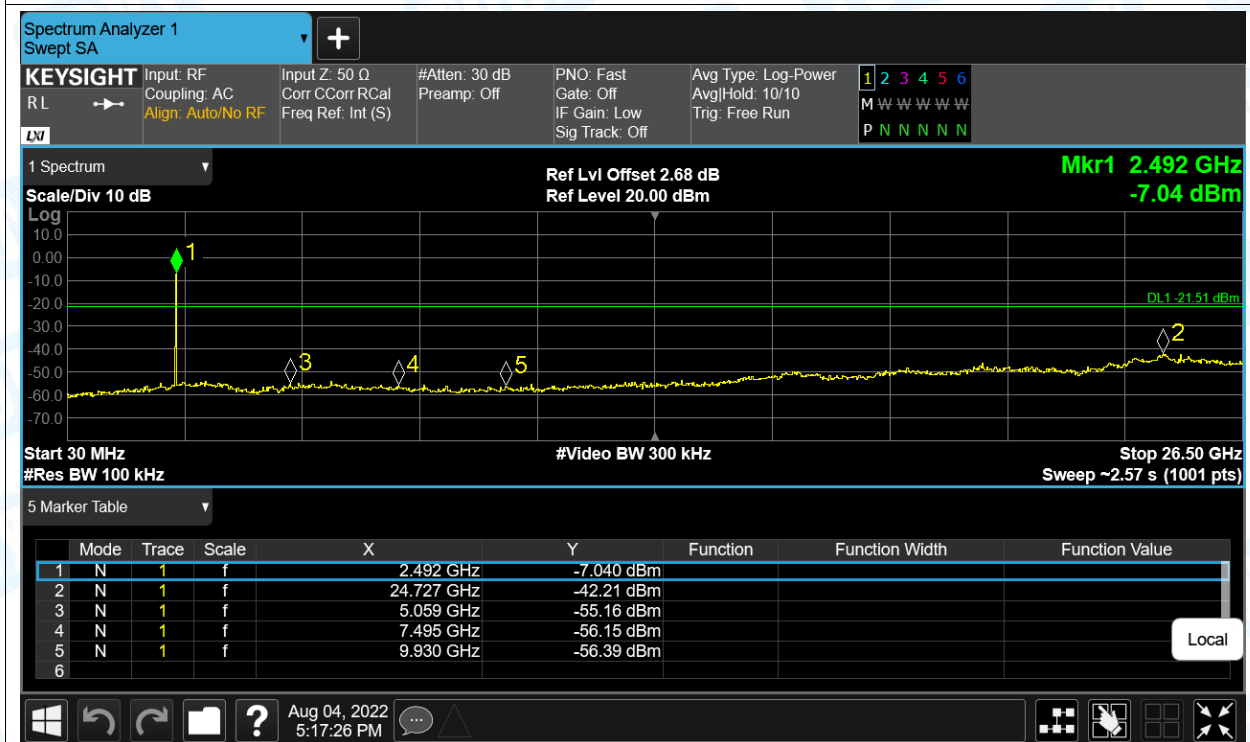
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Emission

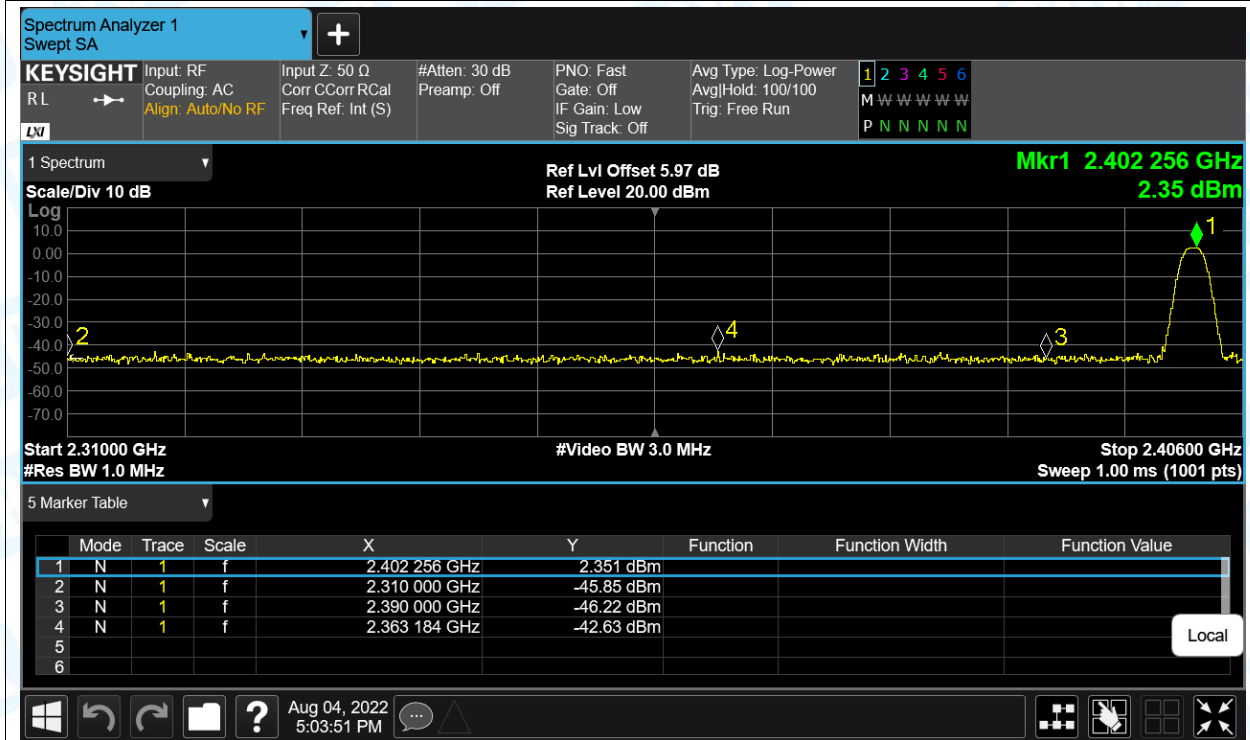


8. Restrict Band

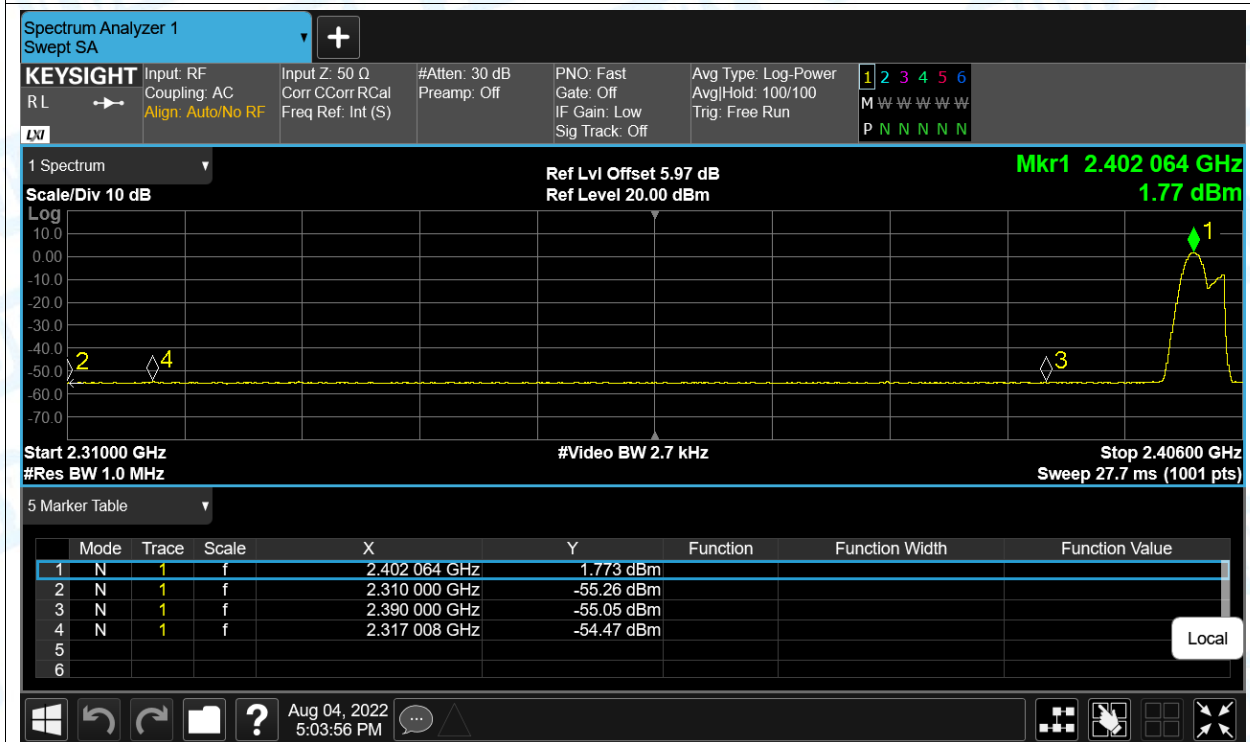
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	2310	-45.85	3.3	52.71	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2310	-55.26	3.3	43.3	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2363.184	-42.63	3.3	55.93	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2317.008	-54.47	3.3	44.09	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-45.59	3.3	52.97	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-55.14	3.3	43.42	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-45.32	3.3	53.24	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-54.88	3.3	43.68	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2489.008	-42.8	3.3	55.76	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2491.696	-54.41	3.3	44.15	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-46.01	3.3	52.55	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-55.16	3.3	43.4	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-45.54	3.3	53.02	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-54.87	3.3	43.69	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2384.016	-43.81	3.3	54.75	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2356.848	-53.71	3.3	44.85	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-45.68	3.3	52.88	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-54.44	3.3	44.12	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-44.61	3.3	53.95	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-53.58	3.3	44.98	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2485.672	-43.28	3.3	55.28	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.536	-53.55	3.3	45.01	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-45.75	3.3	52.81	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-54.55	3.3	44.01	Average	54	Pass

Test Graphs

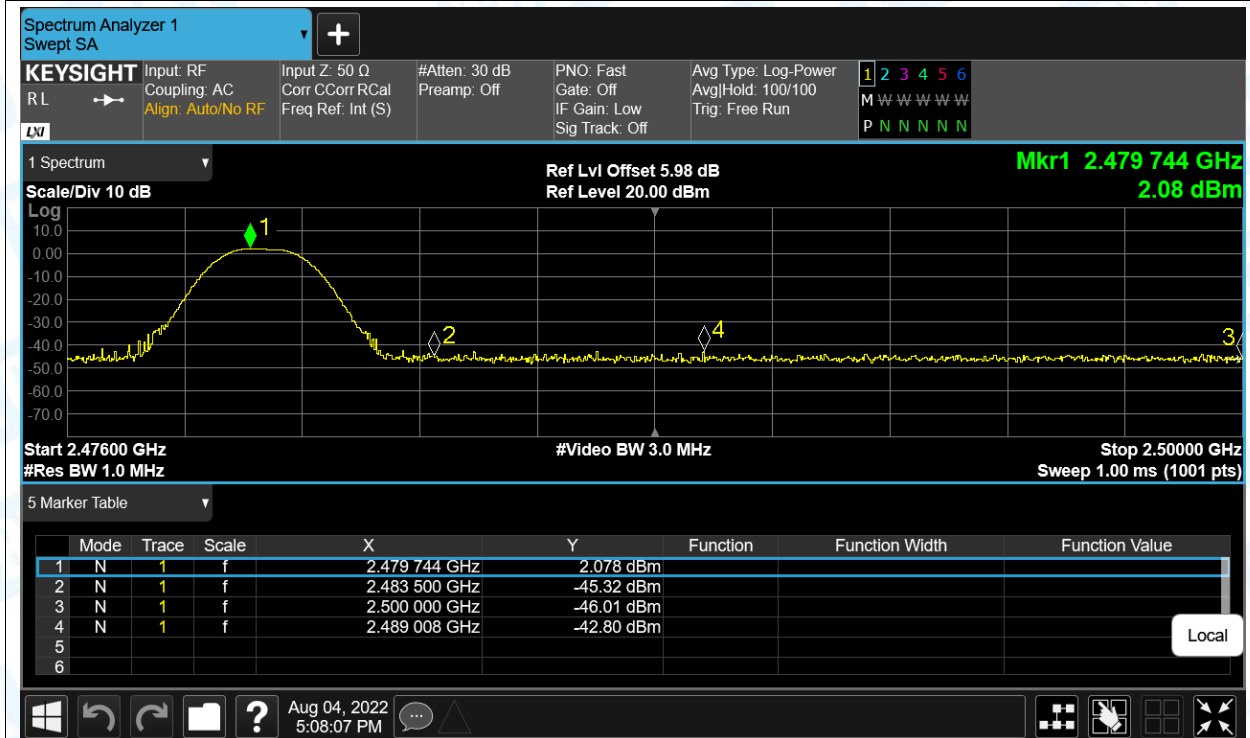
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



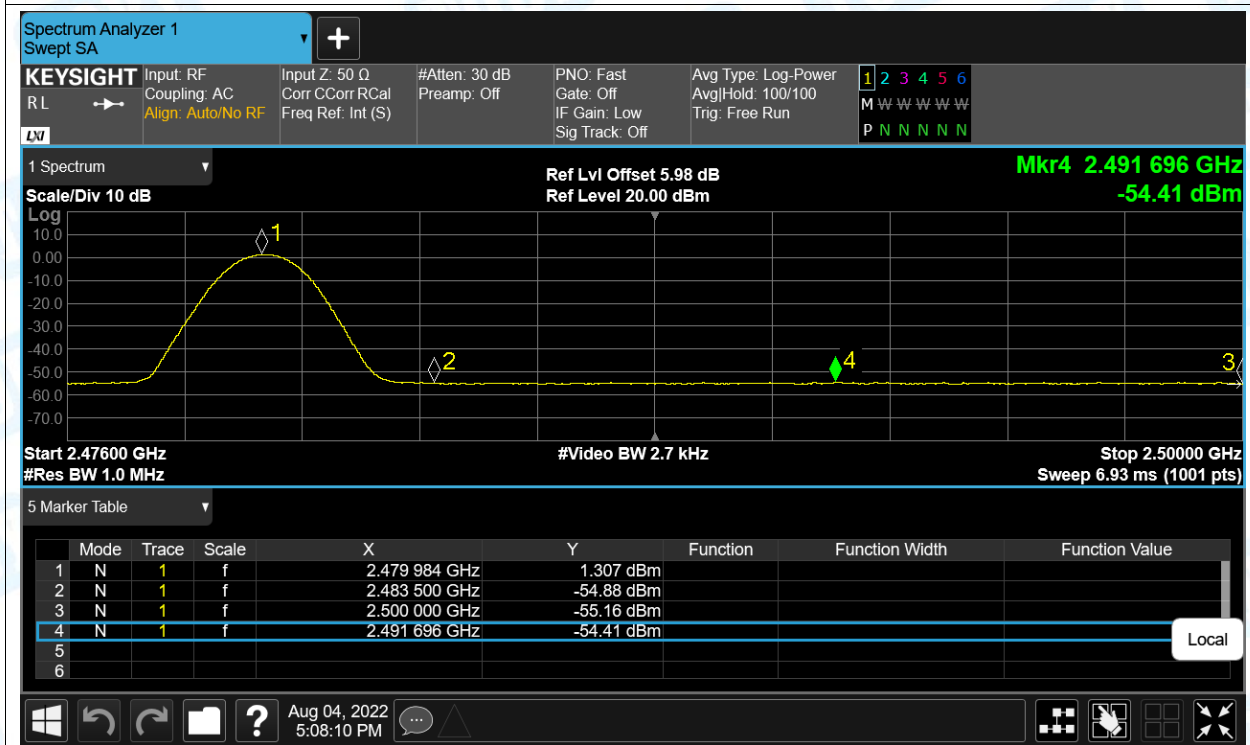
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average



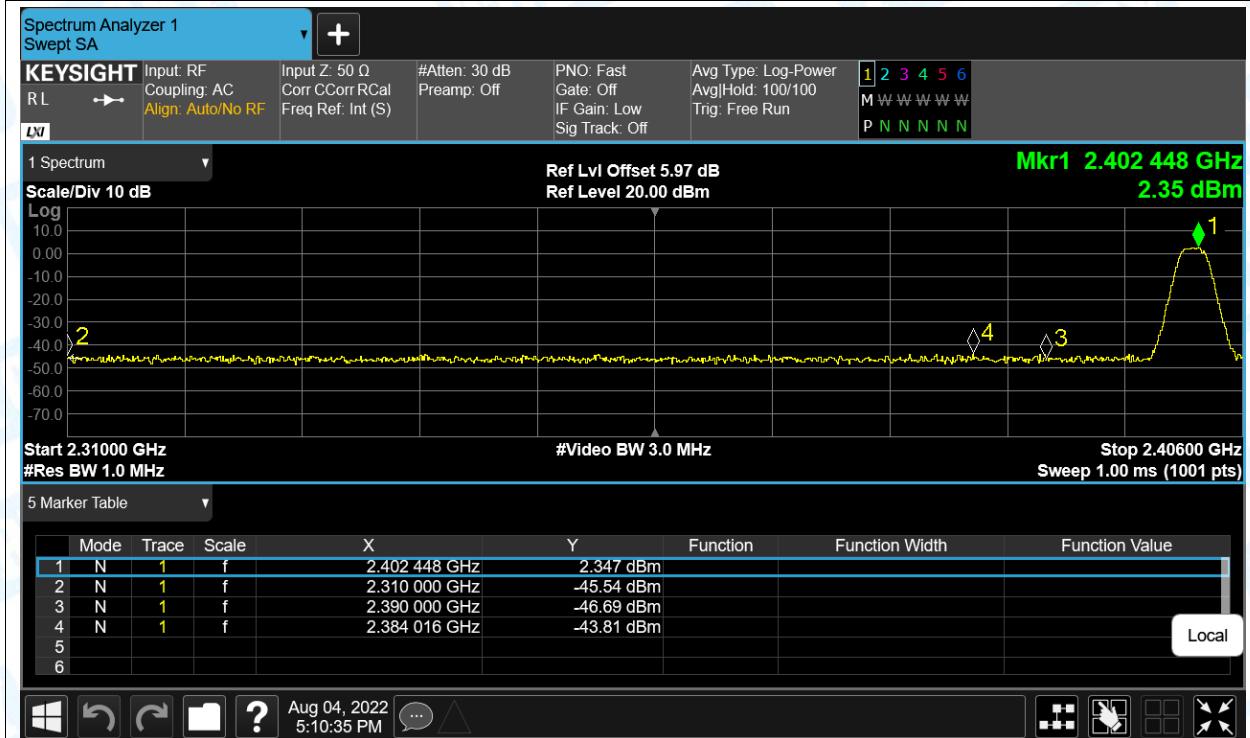
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Peak



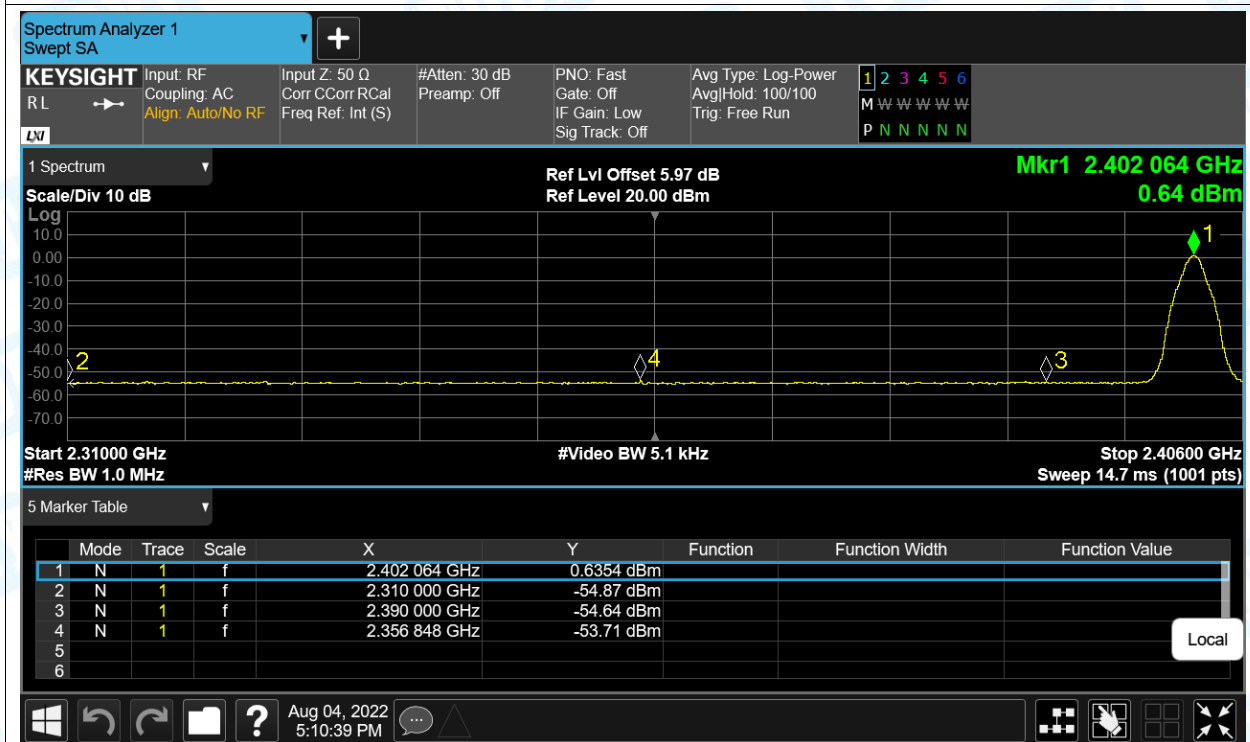
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Average

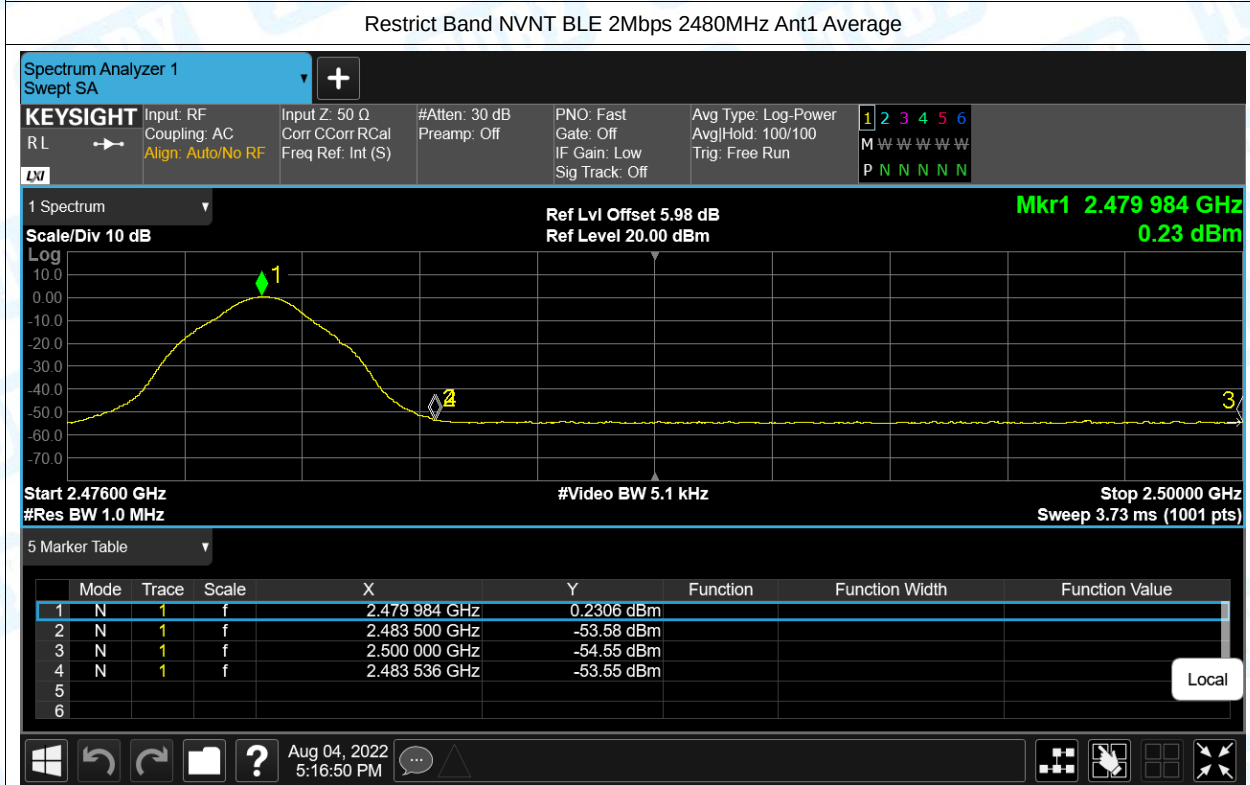
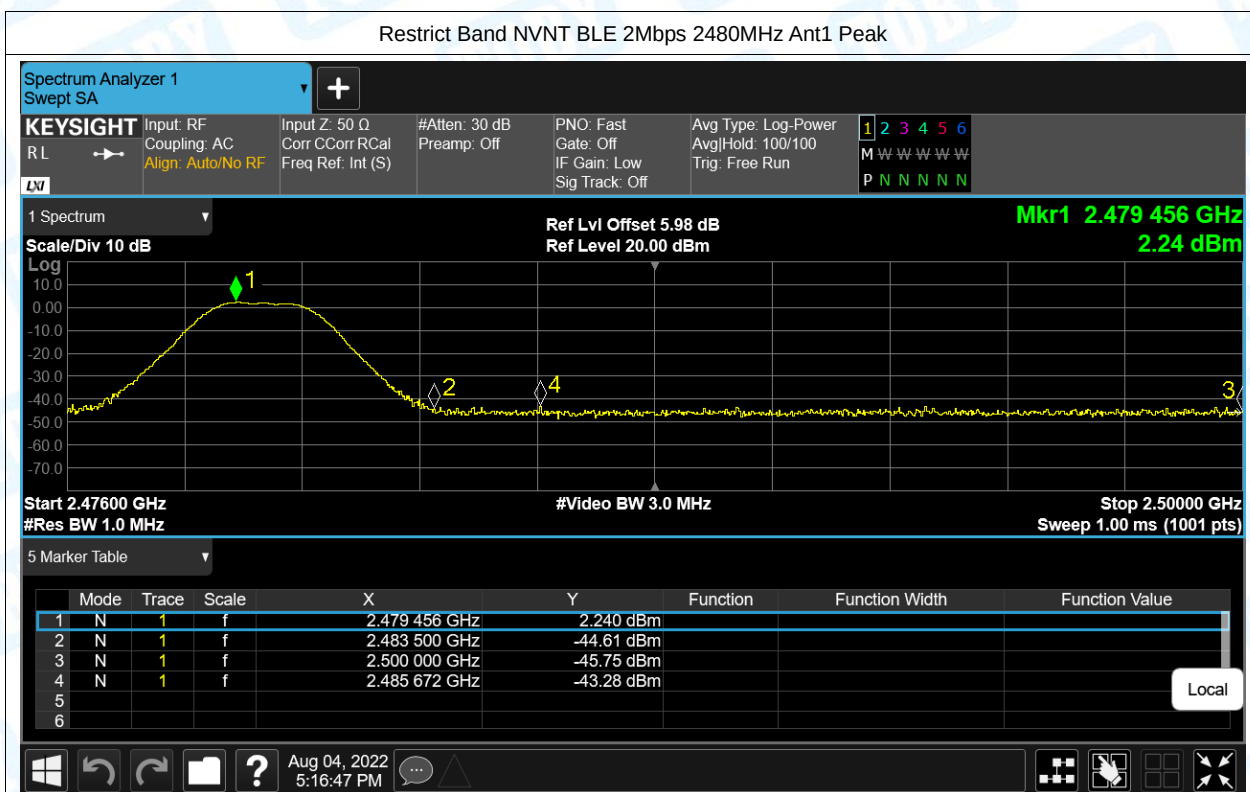


Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Average





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