

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	IOT
Test Model:	IOT-WB2S-LC3
Sample ID:	202209-0223-01_2
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 3.3V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202209-0223-3	

Contents

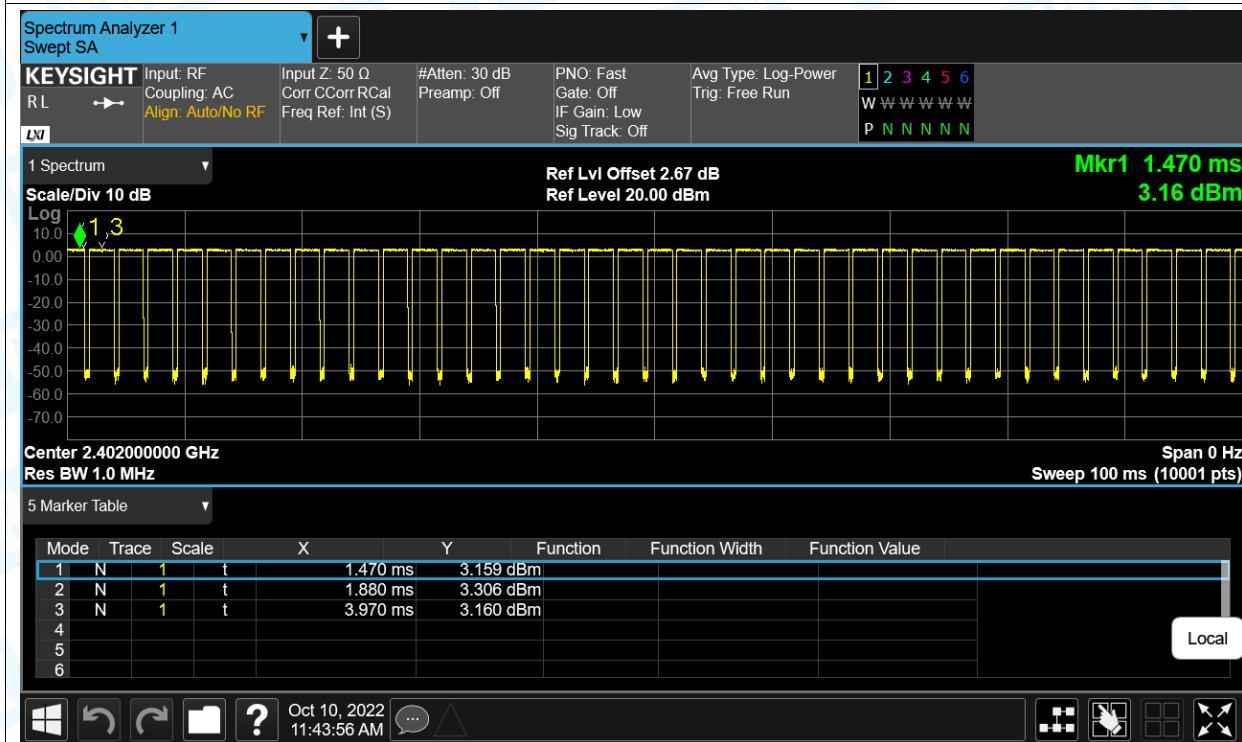
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1. Duty Cycle

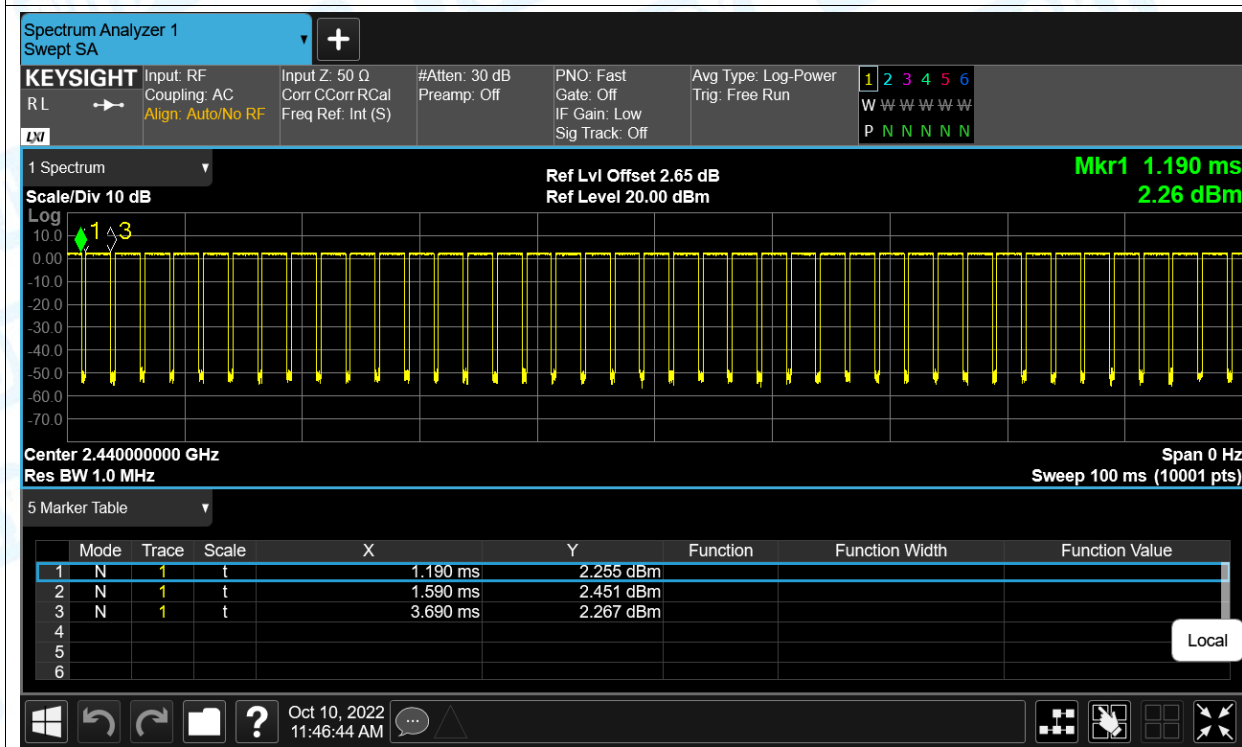
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	83.6	0.78	0.48
NVNT	BLE 1Mbps	2440	Ant1	84	0.76	0.48
NVNT	BLE 1Mbps	2480	Ant1	84	0.76	0.48
NVNT	BLE 2Mbps	2402	Ant1	56.68	2.47	0.94
NVNT	BLE 2Mbps	2440	Ant1	56.68	2.47	0.94
NVNT	BLE 2Mbps	2480	Ant1	56.68	2.47	0.94

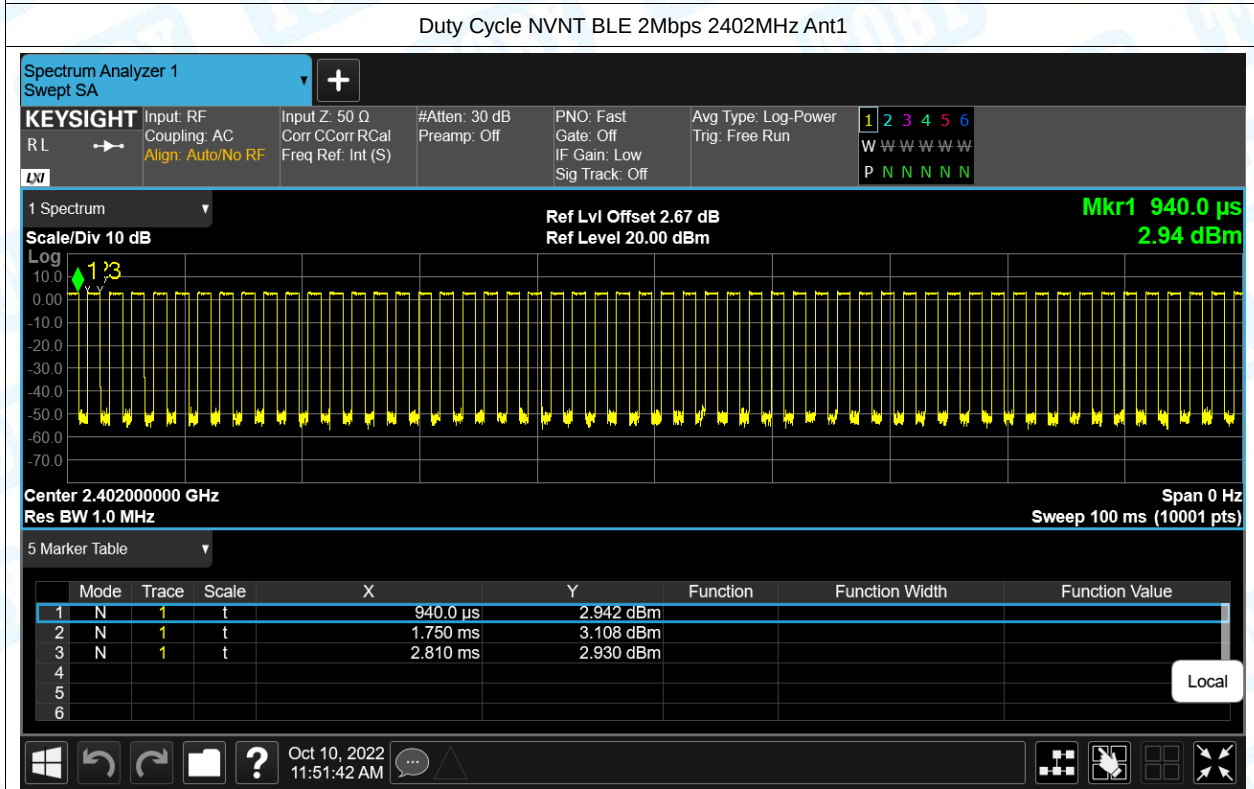
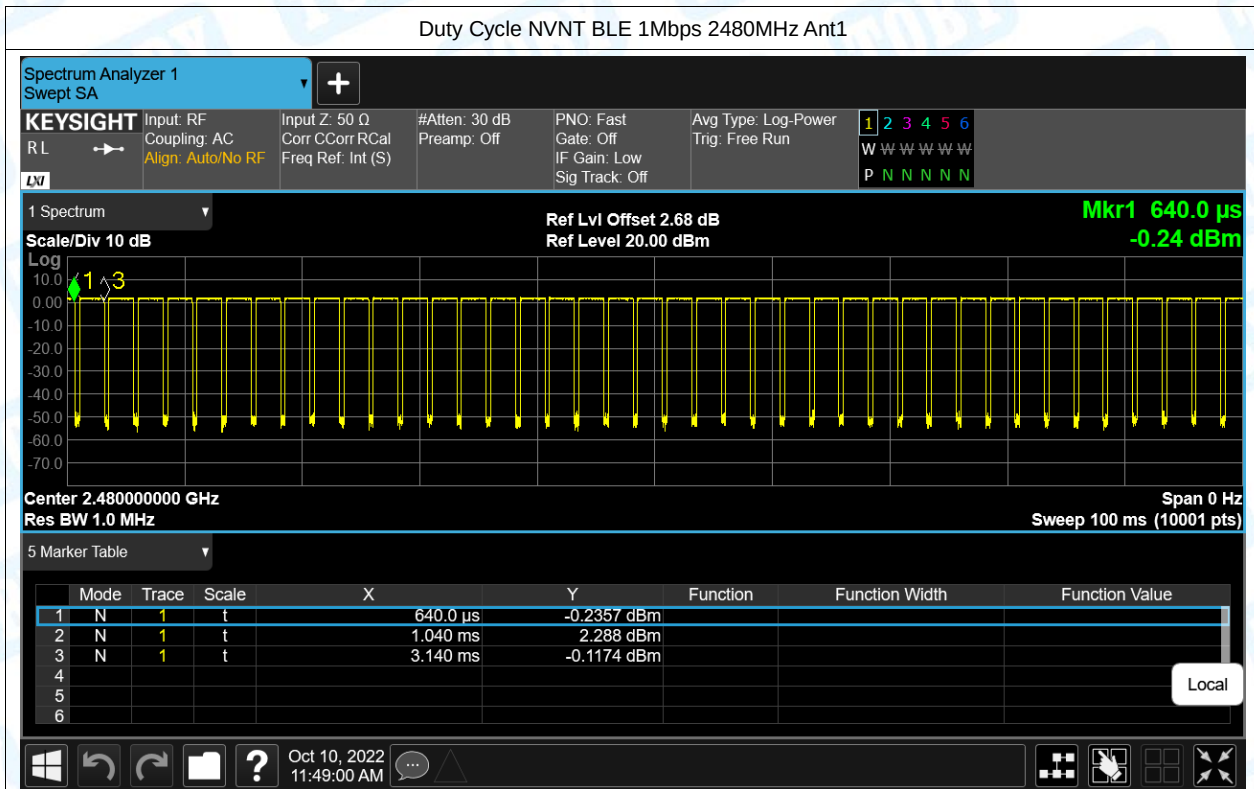
Test Graphs

Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1

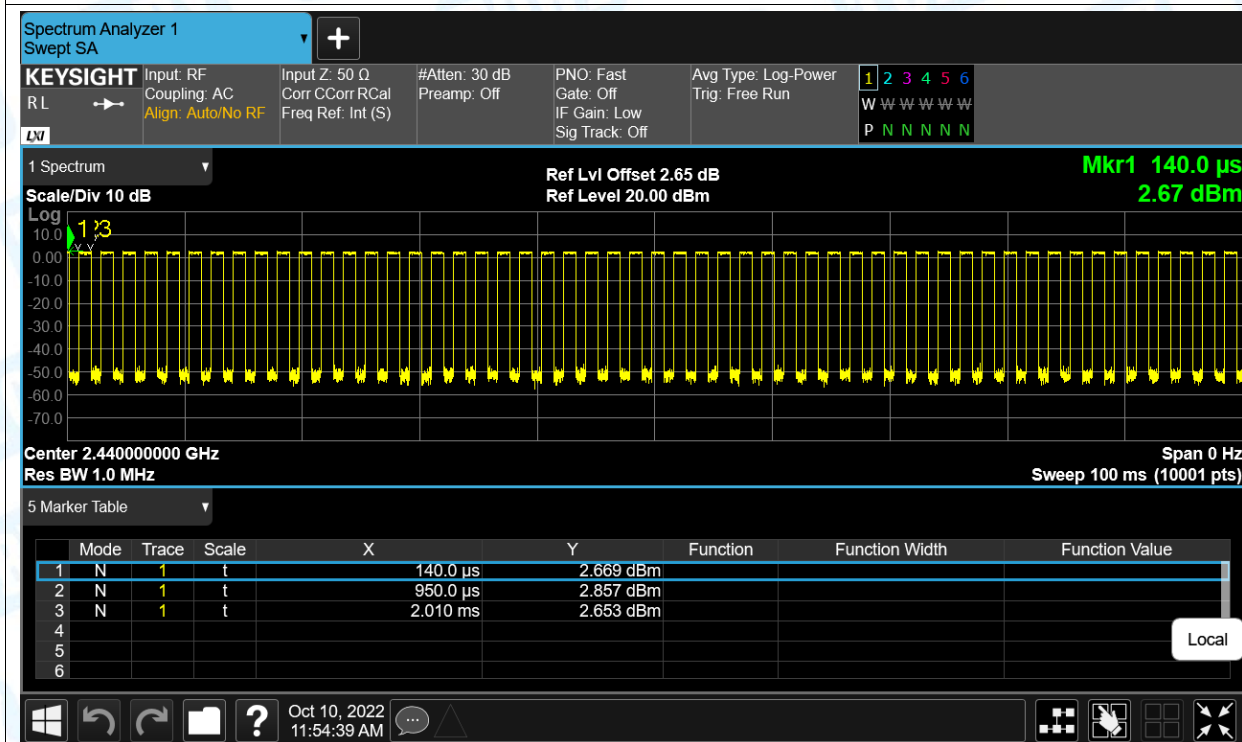


Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1

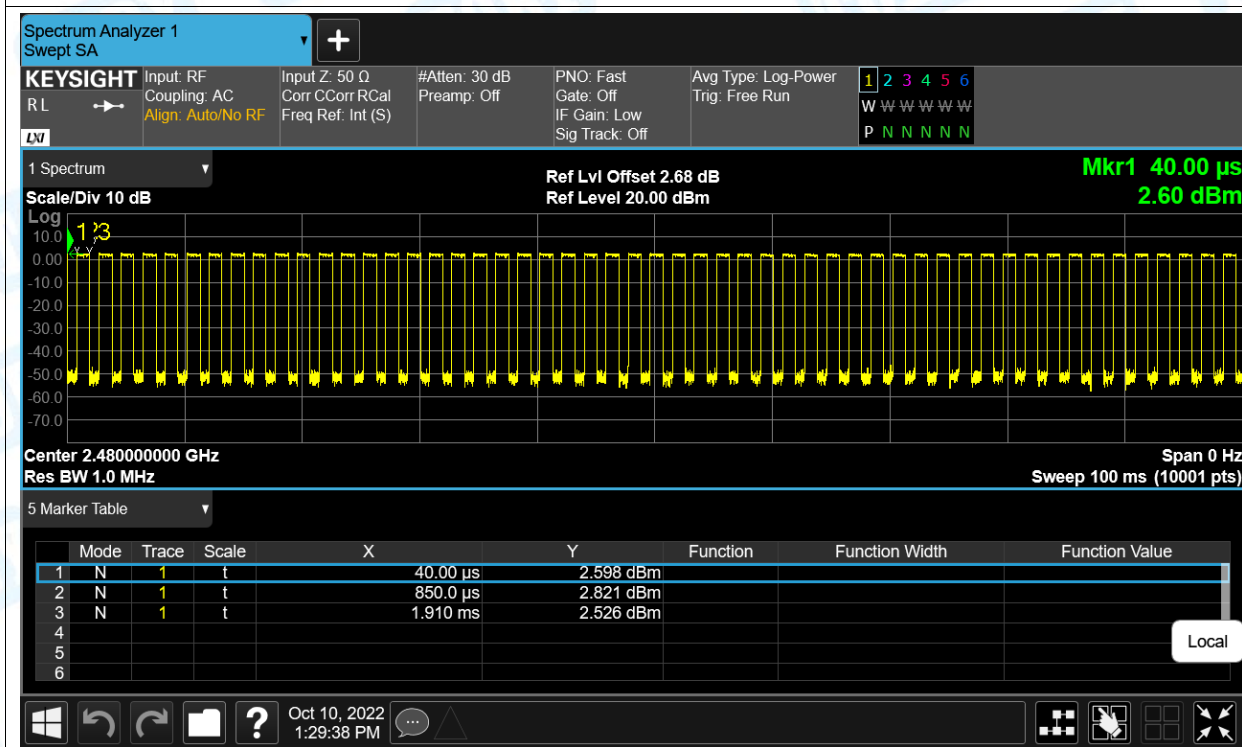




Duty Cycle NVNT BLE 2Mbps 2440MHz Ant1

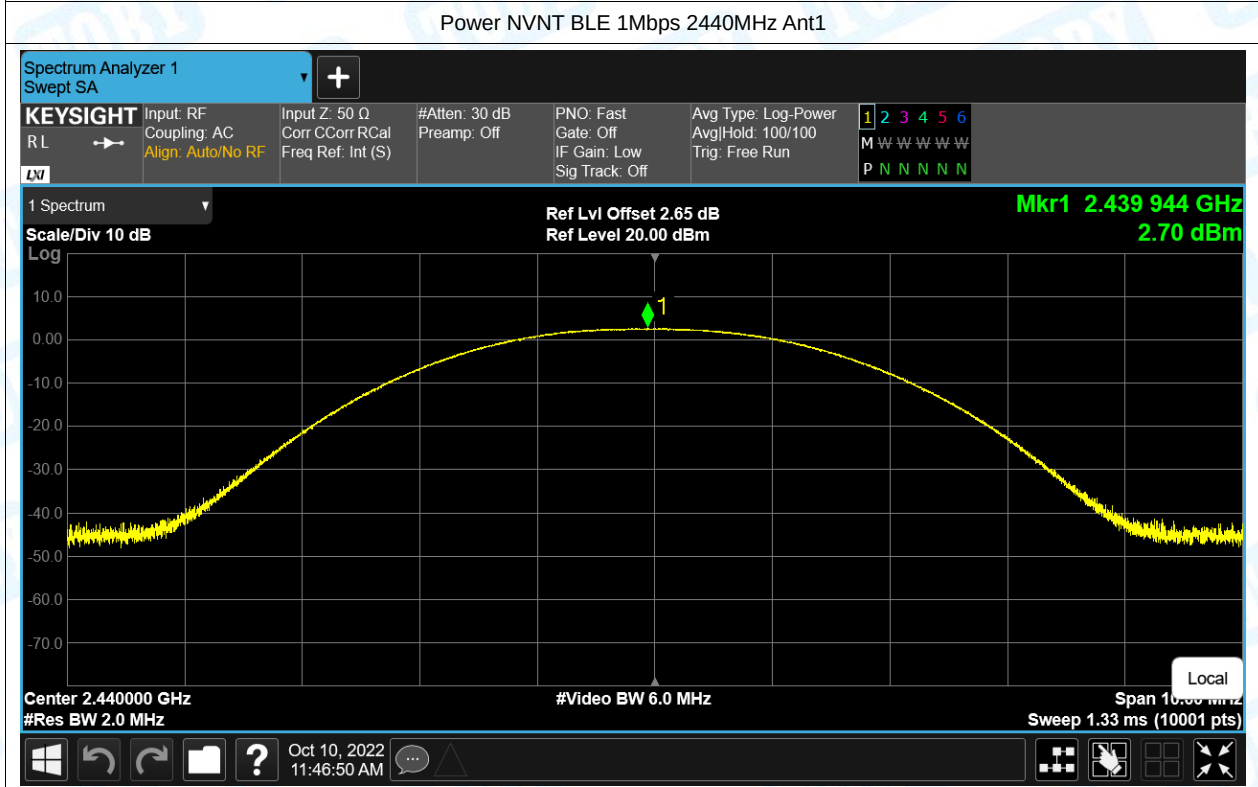
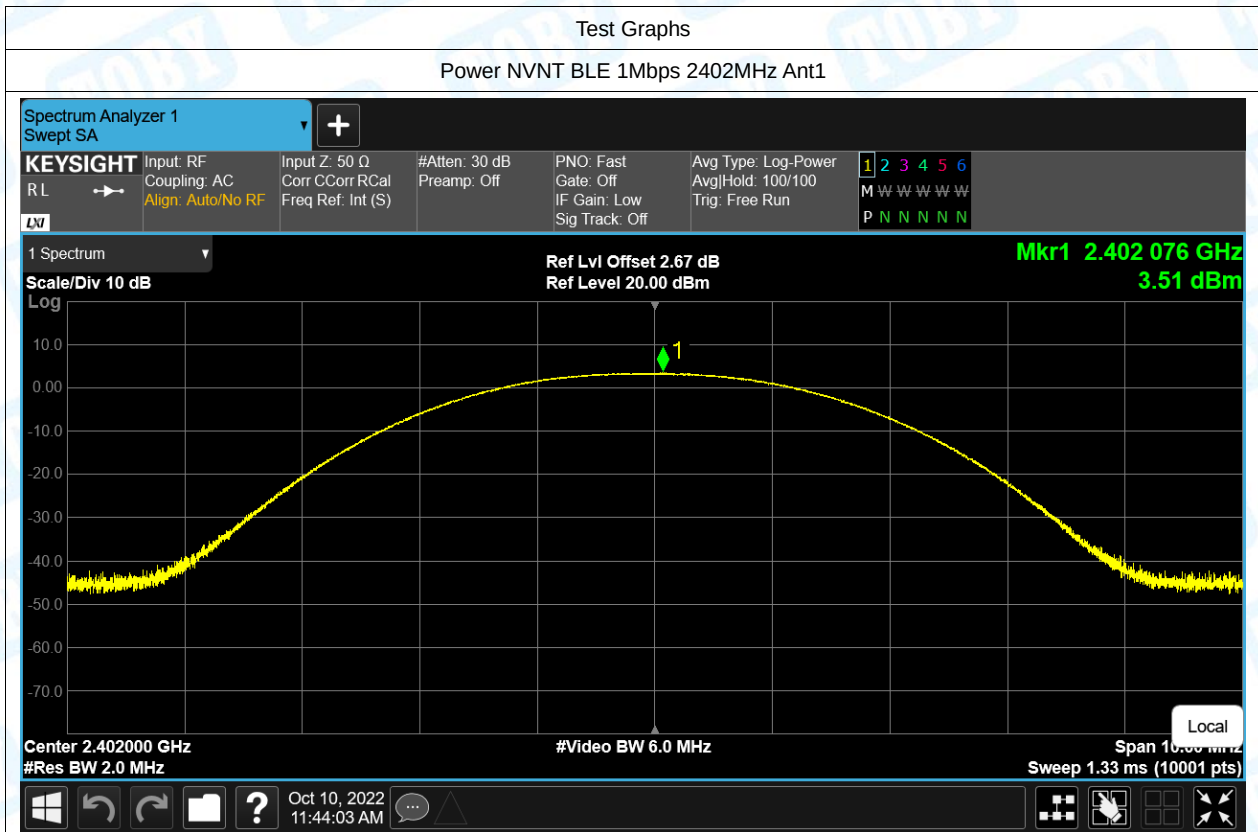


Duty Cycle NVNT BLE 2Mbps 2480MHz Ant1

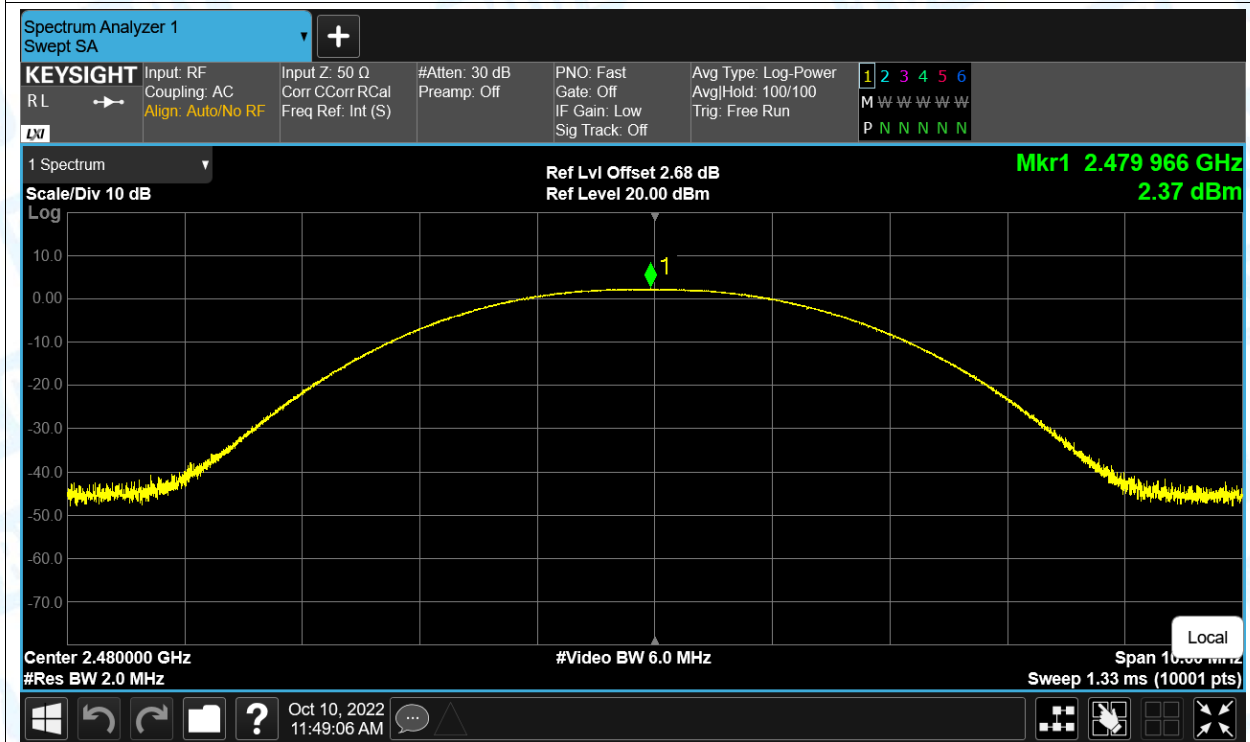


2. Maximum Conducted Output Power

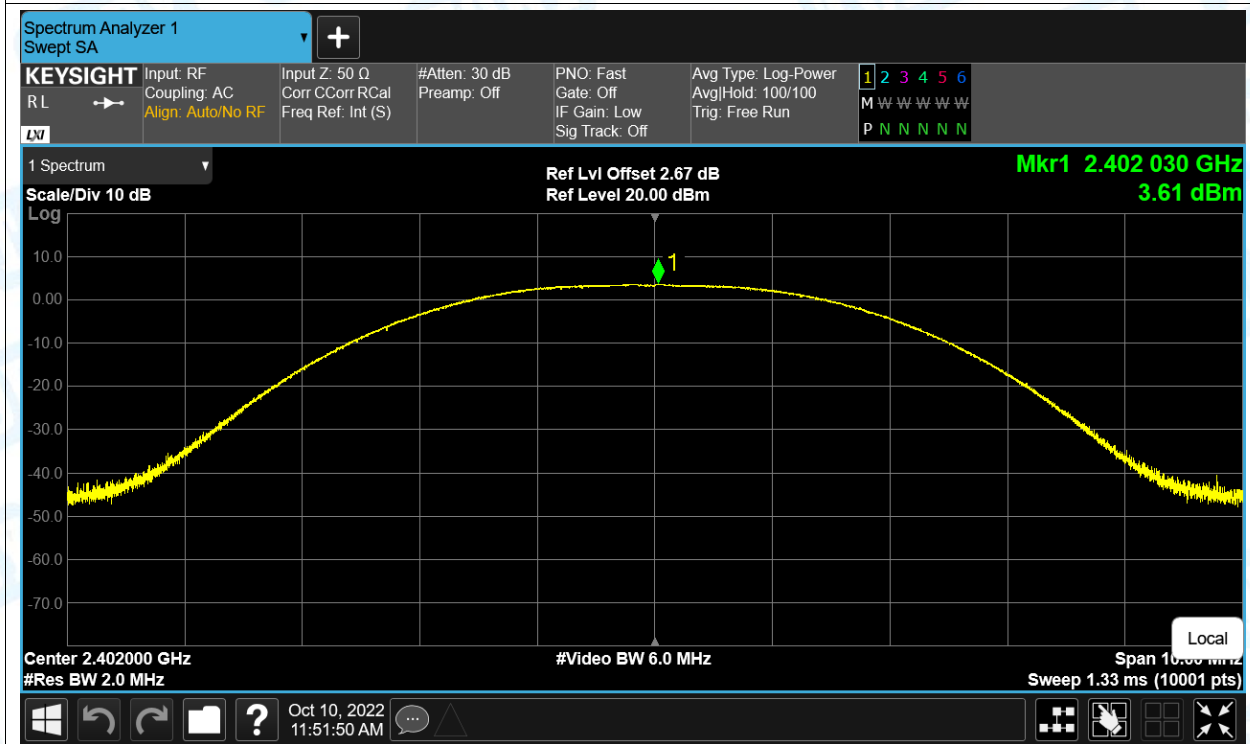
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	3.51	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	2.696	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	2.374	30	Pass
NVNT	BLE 2Mbps	2402	Ant1	3.614	30	Pass
NVNT	BLE 2Mbps	2440	Ant1	2.85	30	Pass
NVNT	BLE 2Mbps	2480	Ant1	2.898	30	Pass



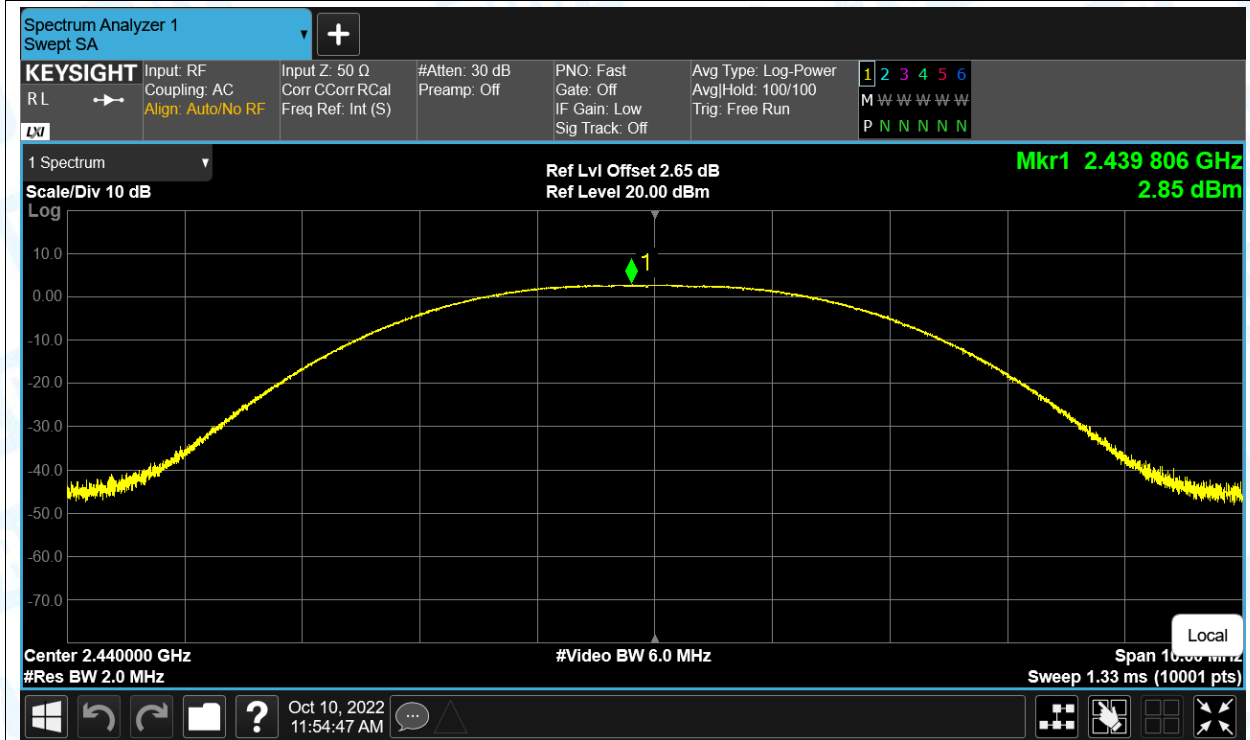
Power NVNT BLE 1Mbps 2480MHz Ant1



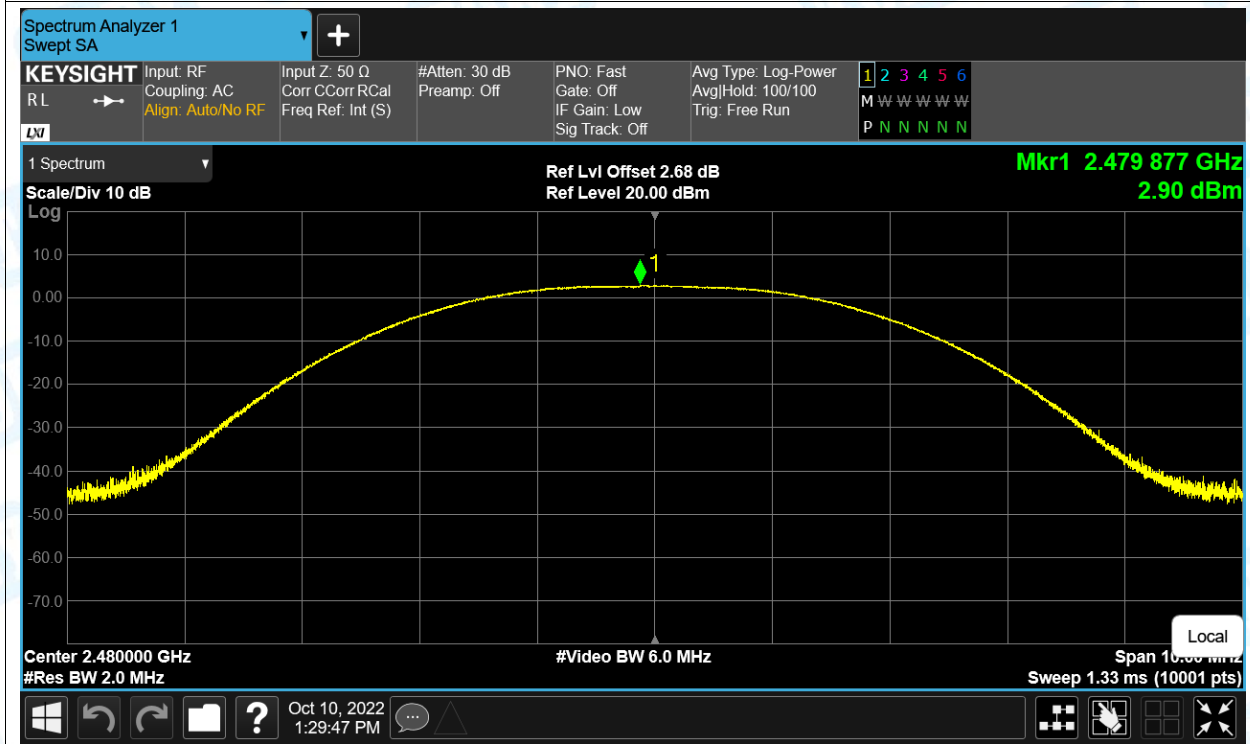
Power NVNT BLE 2Mbps 2402MHz Ant1



Power NVNT BLE 2Mbps 2440MHz Ant1



Power NVNT BLE 2Mbps 2480MHz Ant1

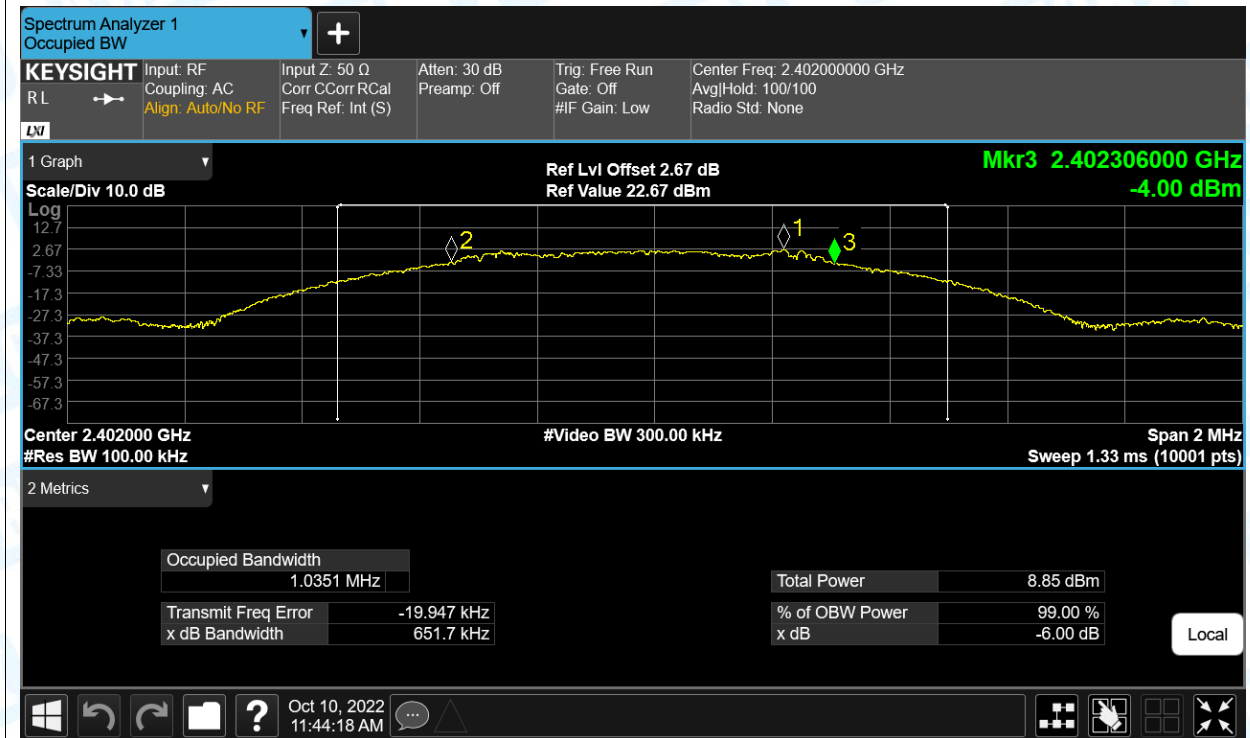


3. -6dB Bandwidth

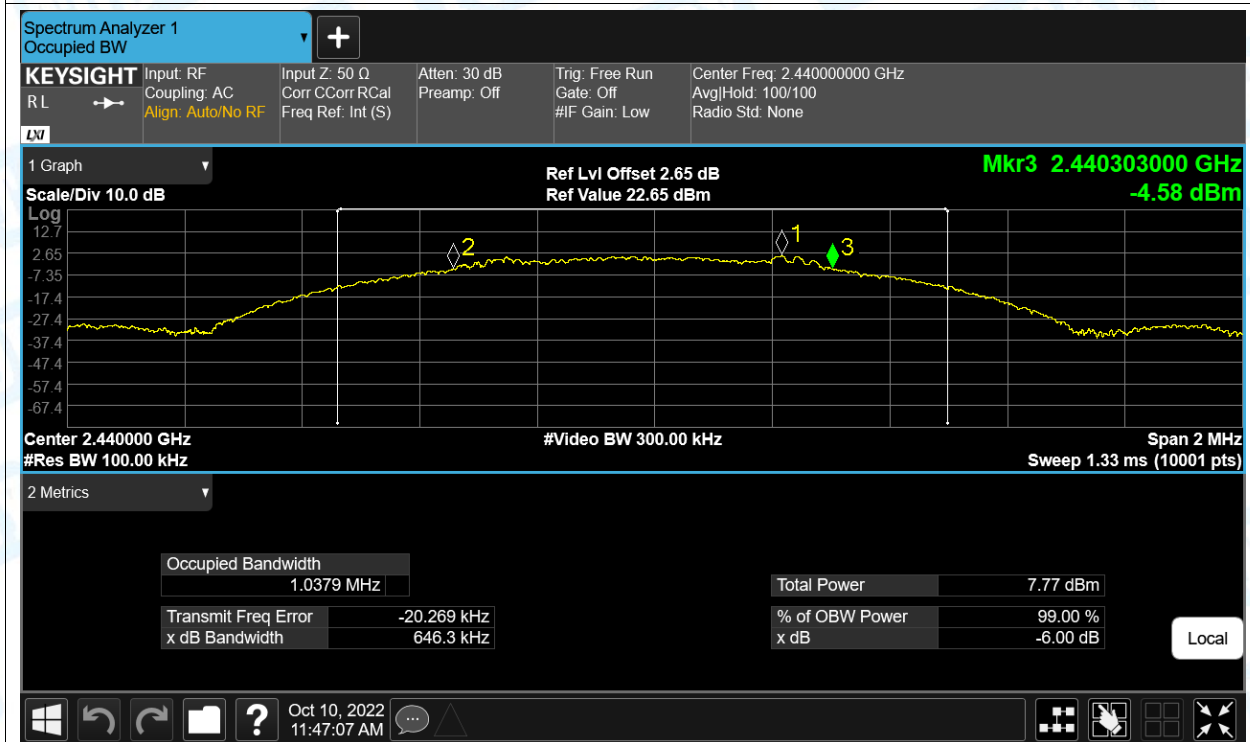
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.65	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.65	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.63	0.5	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.12	0.5	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.08	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.11	0.5	Pass

Test Graphs

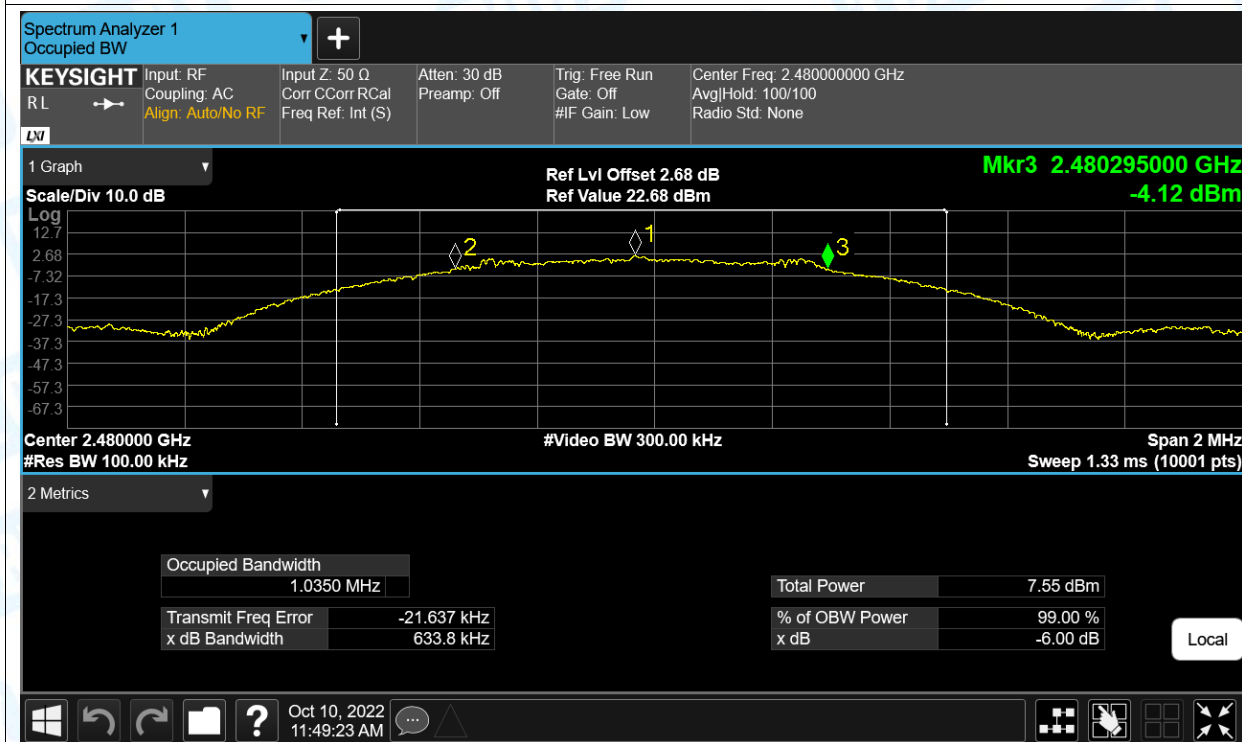
-6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1



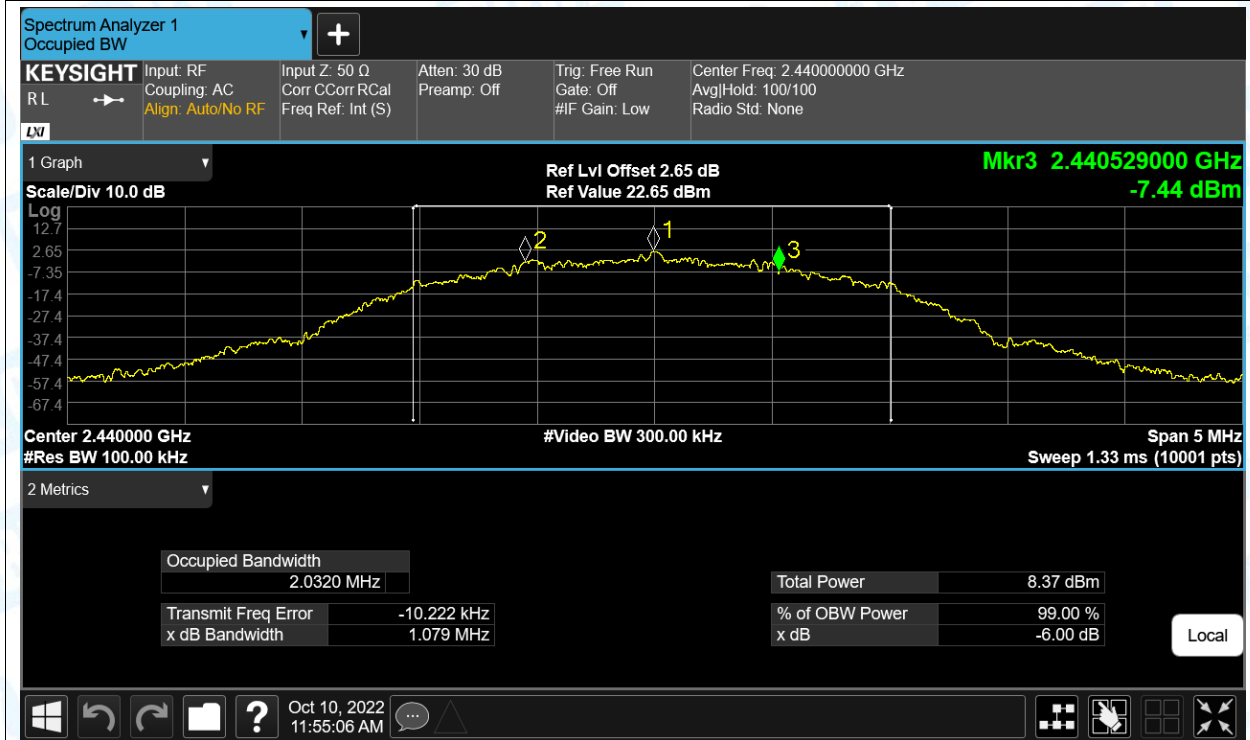
-6dB Bandwidth NVNT BLE 1Mbps 2480MHz Ant1



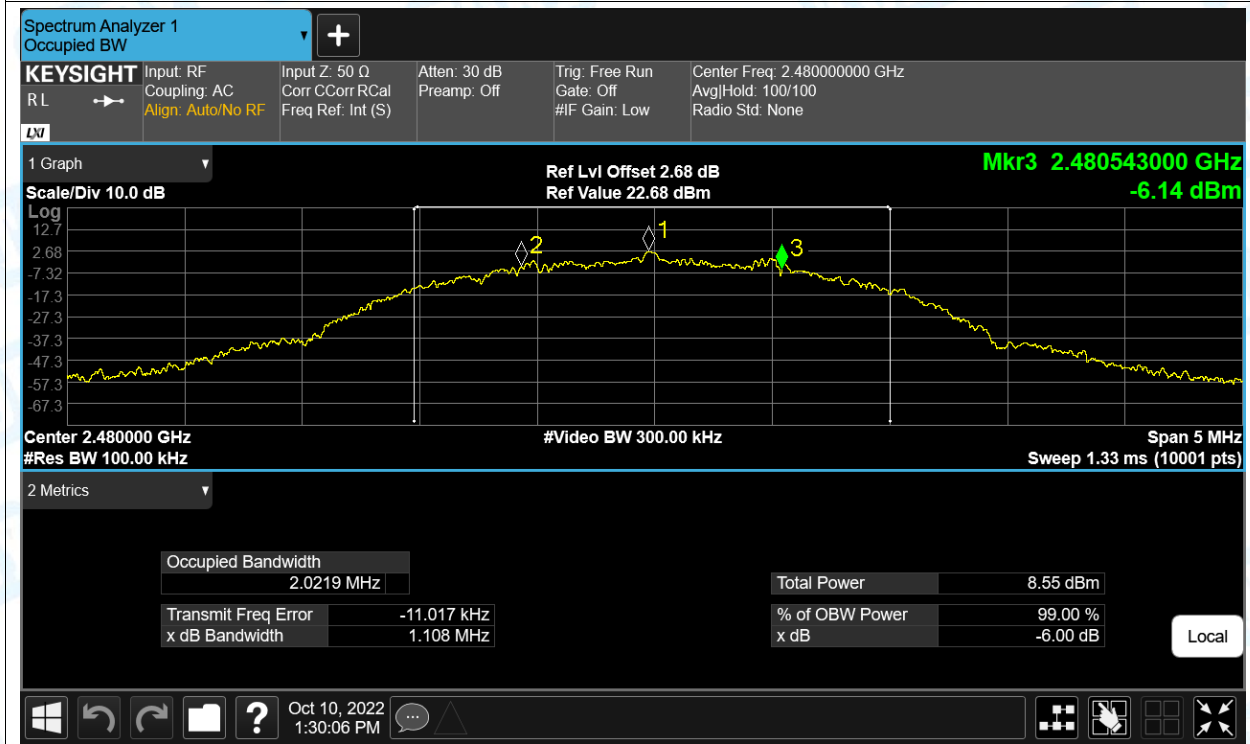
-6dB Bandwidth NVNT BLE 2Mbps 2402MHz Ant1



-6dB Bandwidth NVNT BLE 2Mbps 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2Mbps 2480MHz Ant1

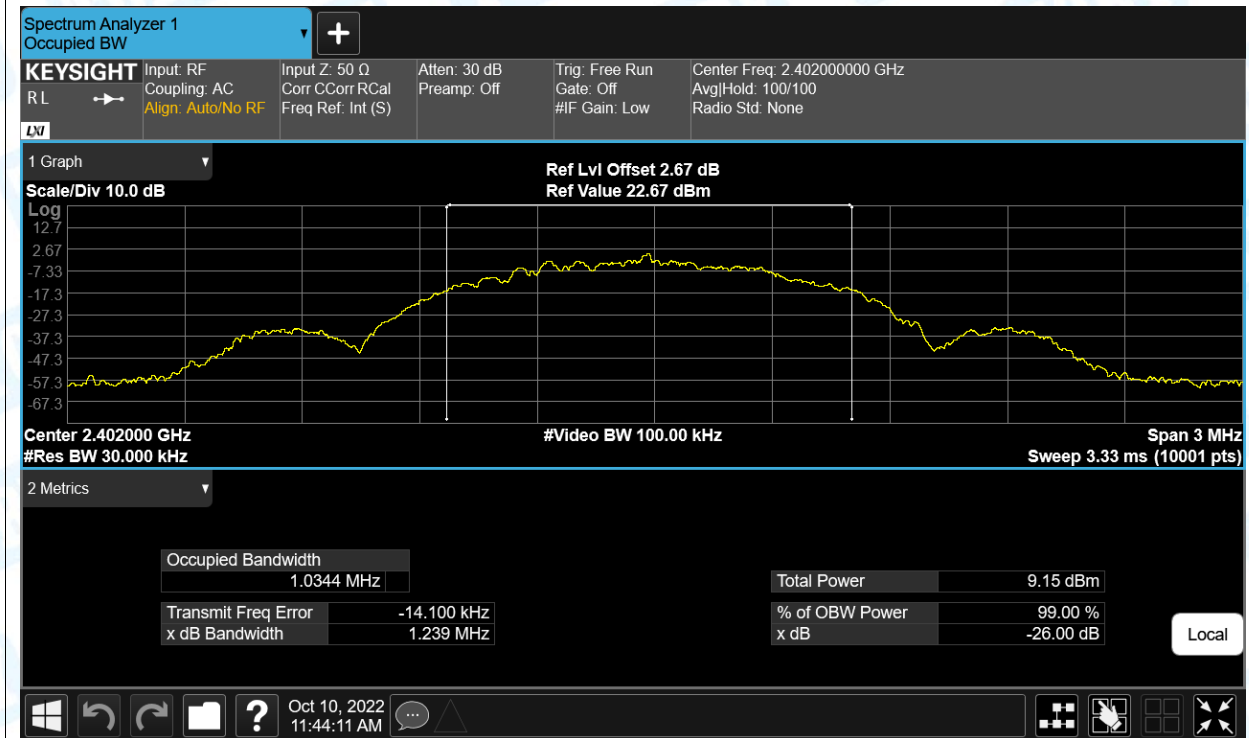


4. Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.034
NVNT	BLE 1Mbps	2440	Ant1	1.031
NVNT	BLE 1Mbps	2480	Ant1	1.034
NVNT	BLE 2Mbps	2402	Ant1	2.03
NVNT	BLE 2Mbps	2440	Ant1	2.025
NVNT	BLE 2Mbps	2480	Ant1	2.043

Test Graphs

OBW NVNT BLE 1Mbps 2402MHz Ant1



OBW NVNT BLE 1Mbps 2440MHz Ant1

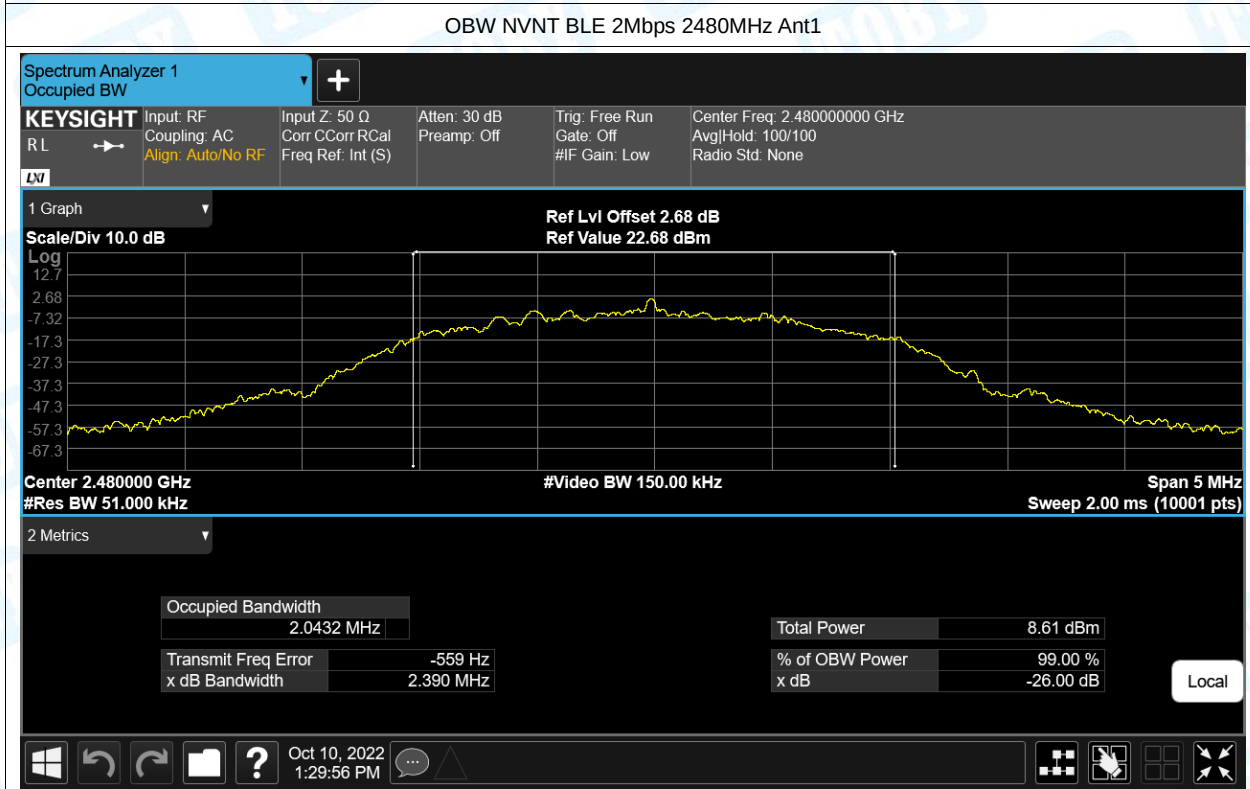
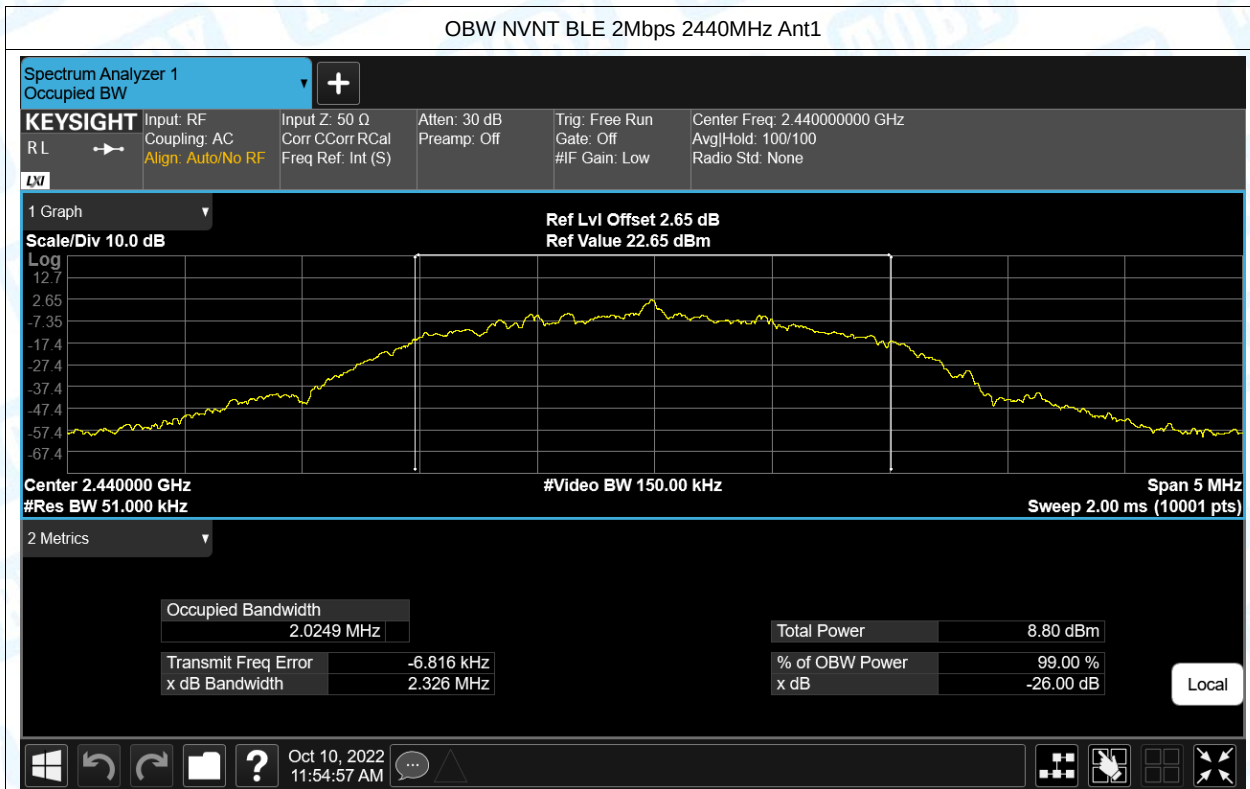


OBW NVNT BLE 1Mbps 2480MHz Ant1



OBW NVNT BLE 2Mbps 2402MHz Ant1



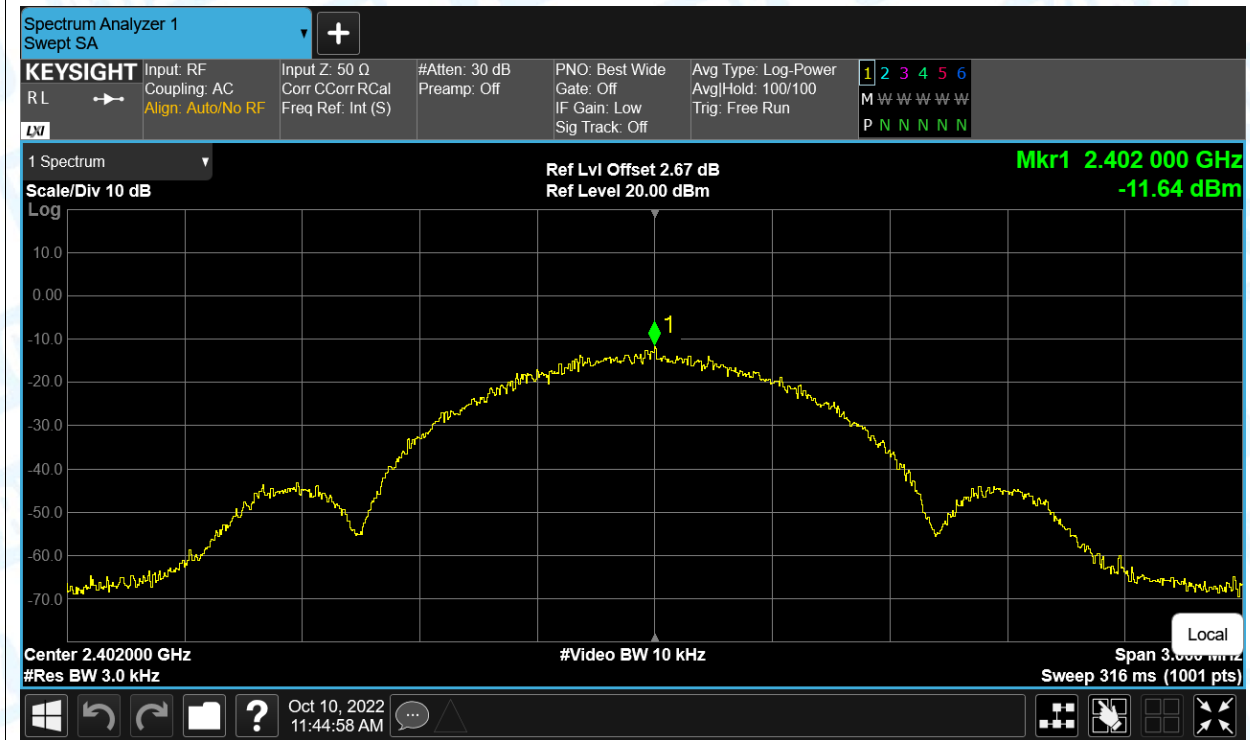


5. Maximum Power Spectral Density Level

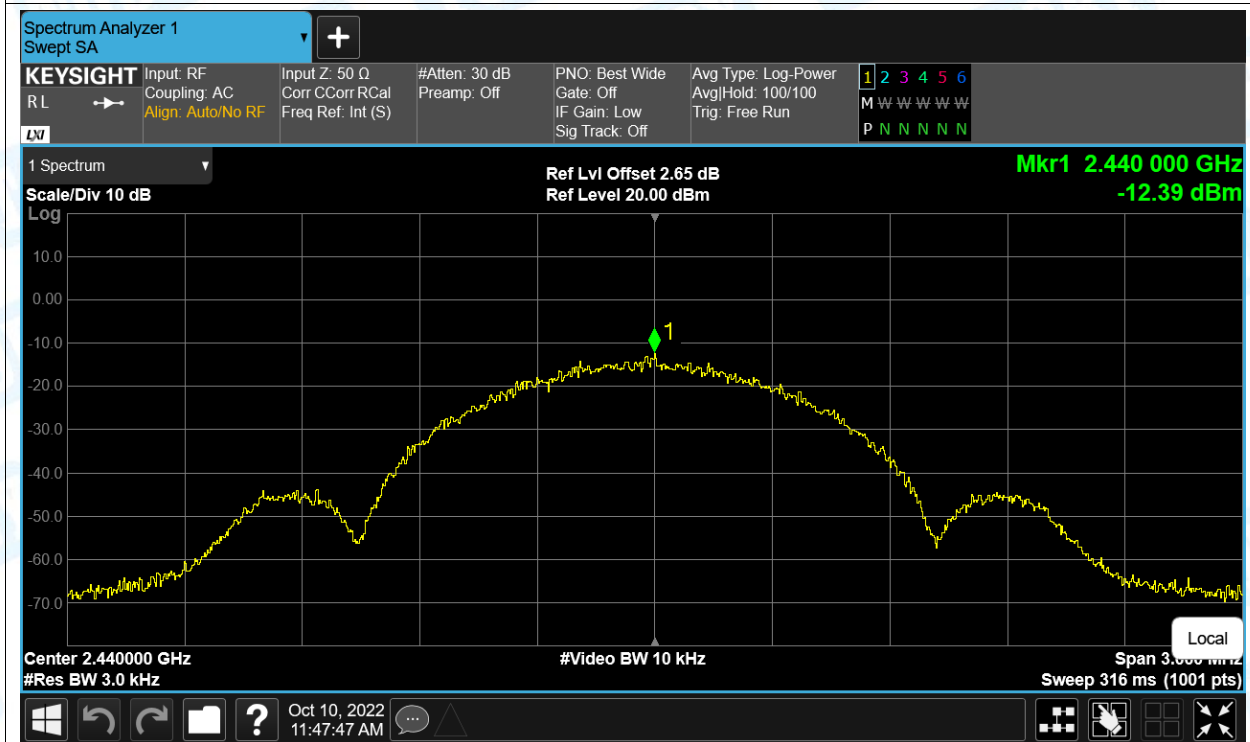
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-11.638	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-12.395	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-13.119	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-13.783	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-14.417	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-14.367	8	Pass

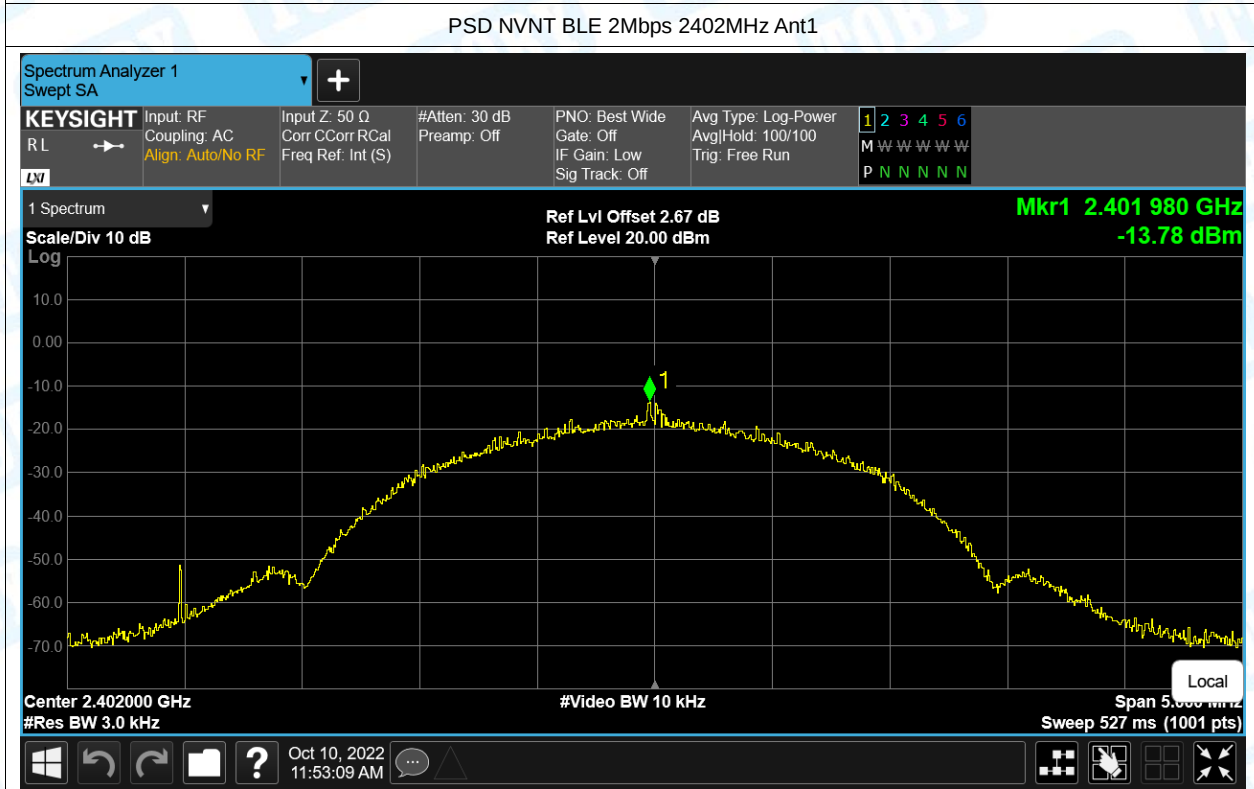
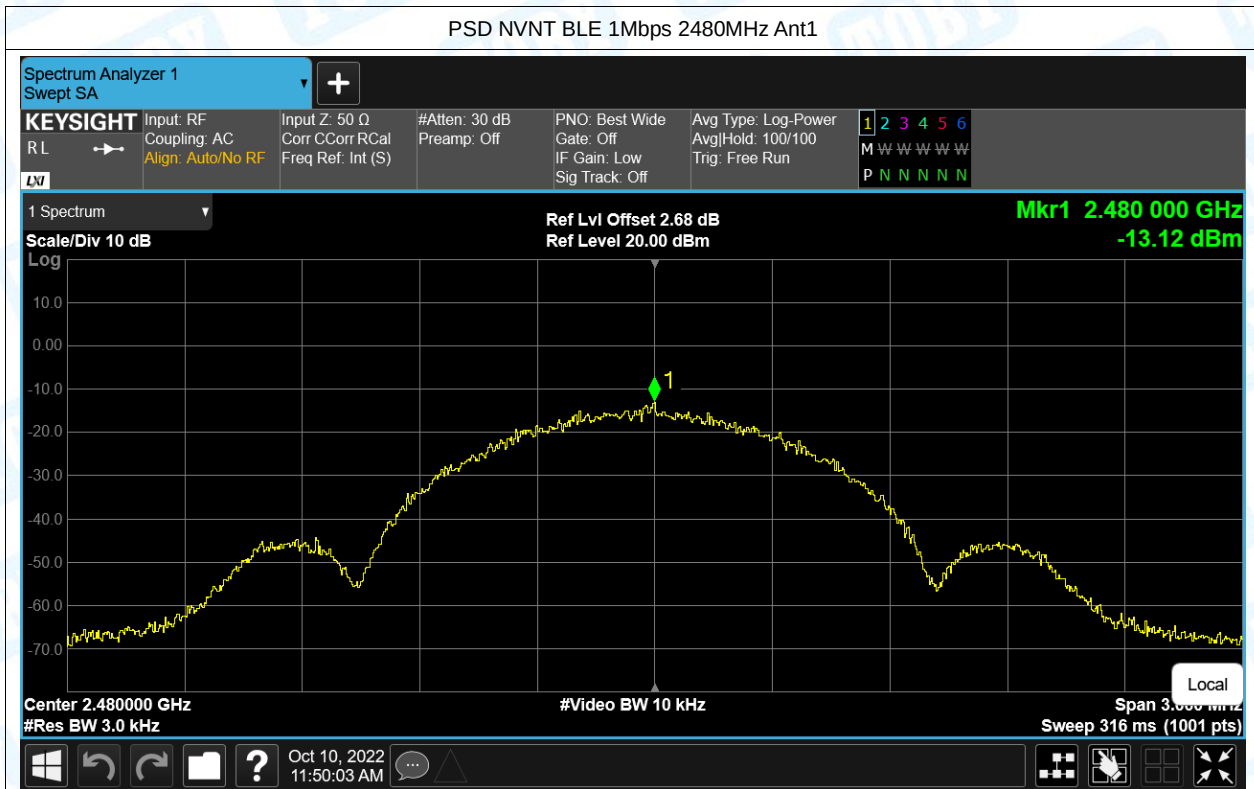
Test Graphs

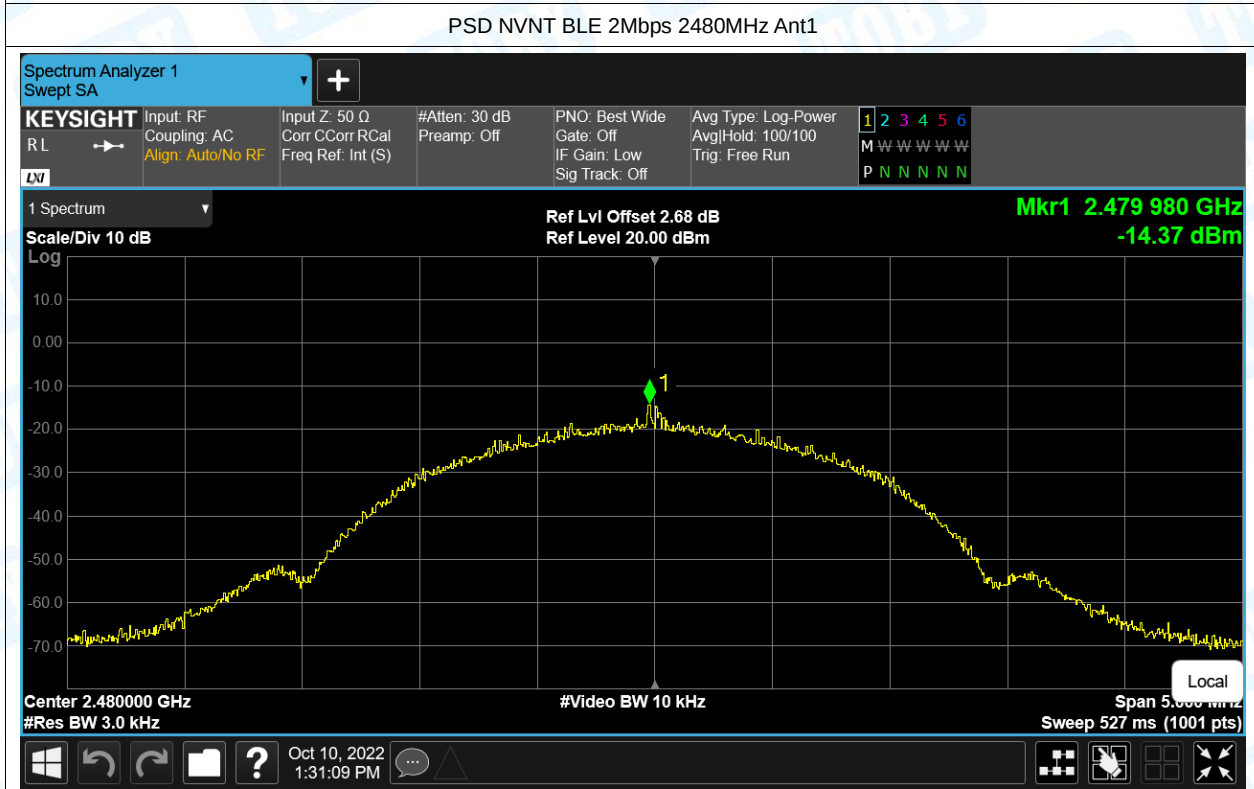
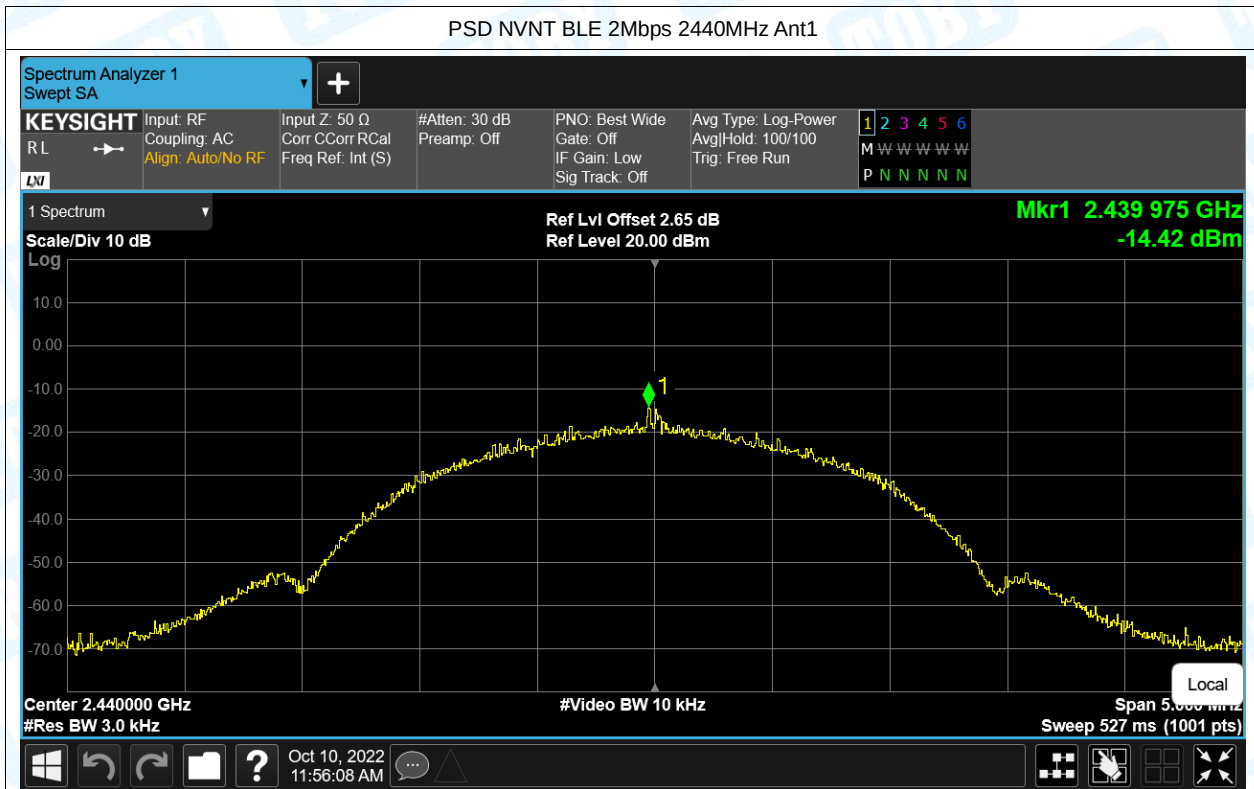
PSD NVNT BLE 1Mbps 2402MHz Ant1



PSD NVNT BLE 1Mbps 2440MHz Ant1

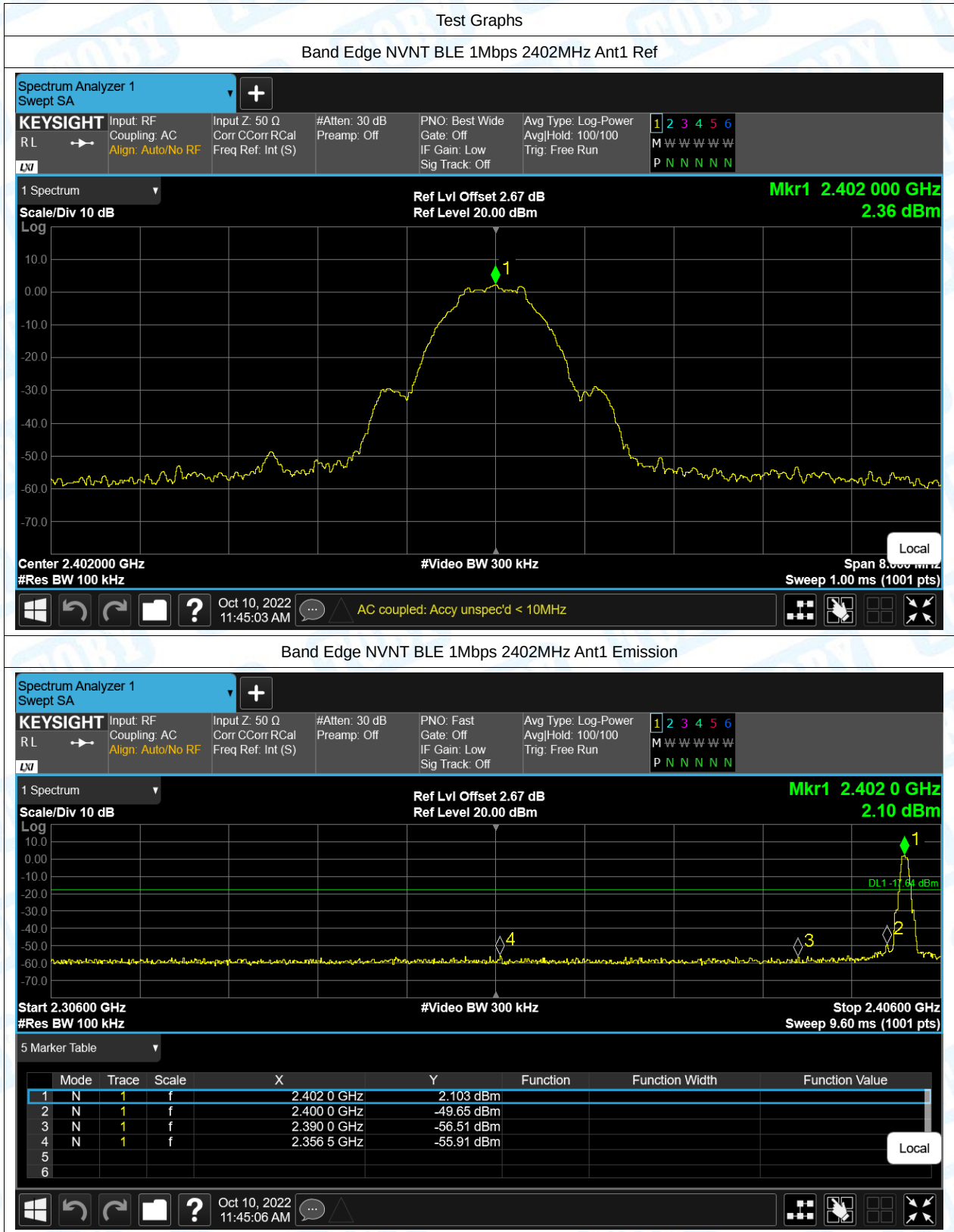


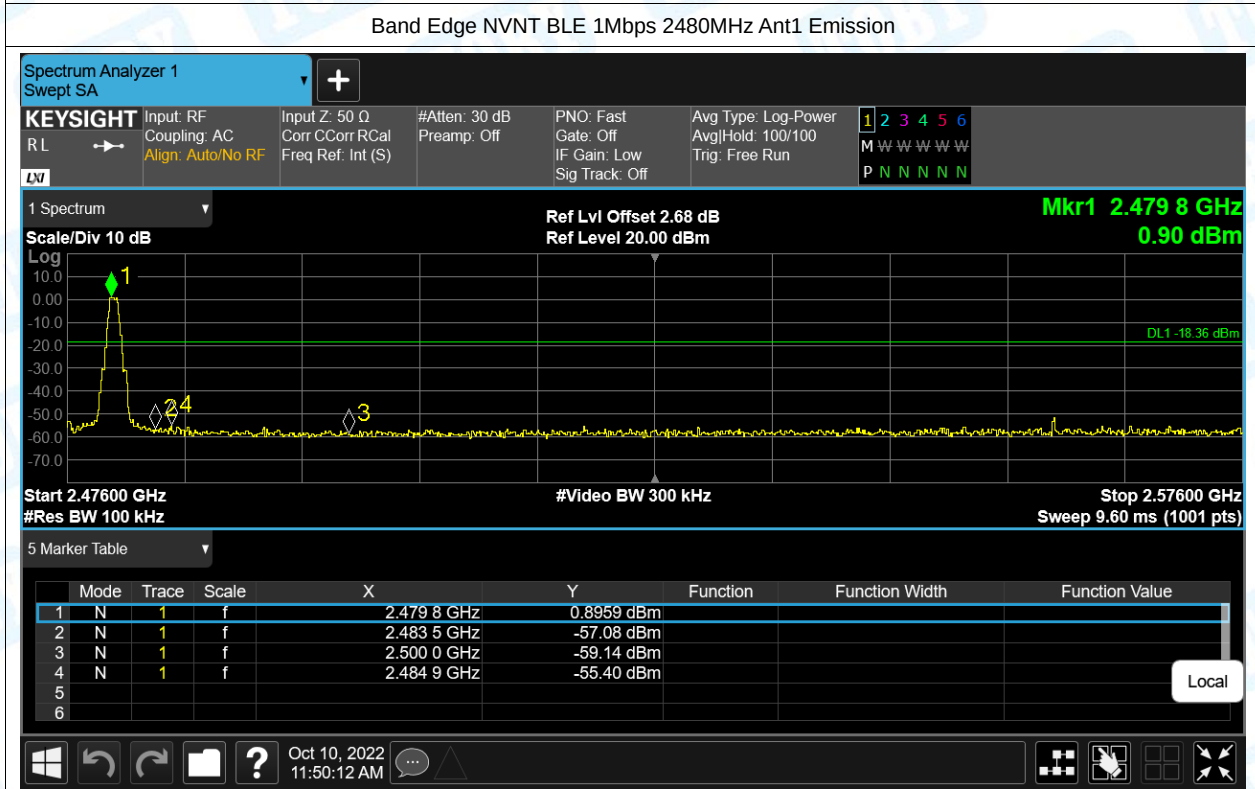
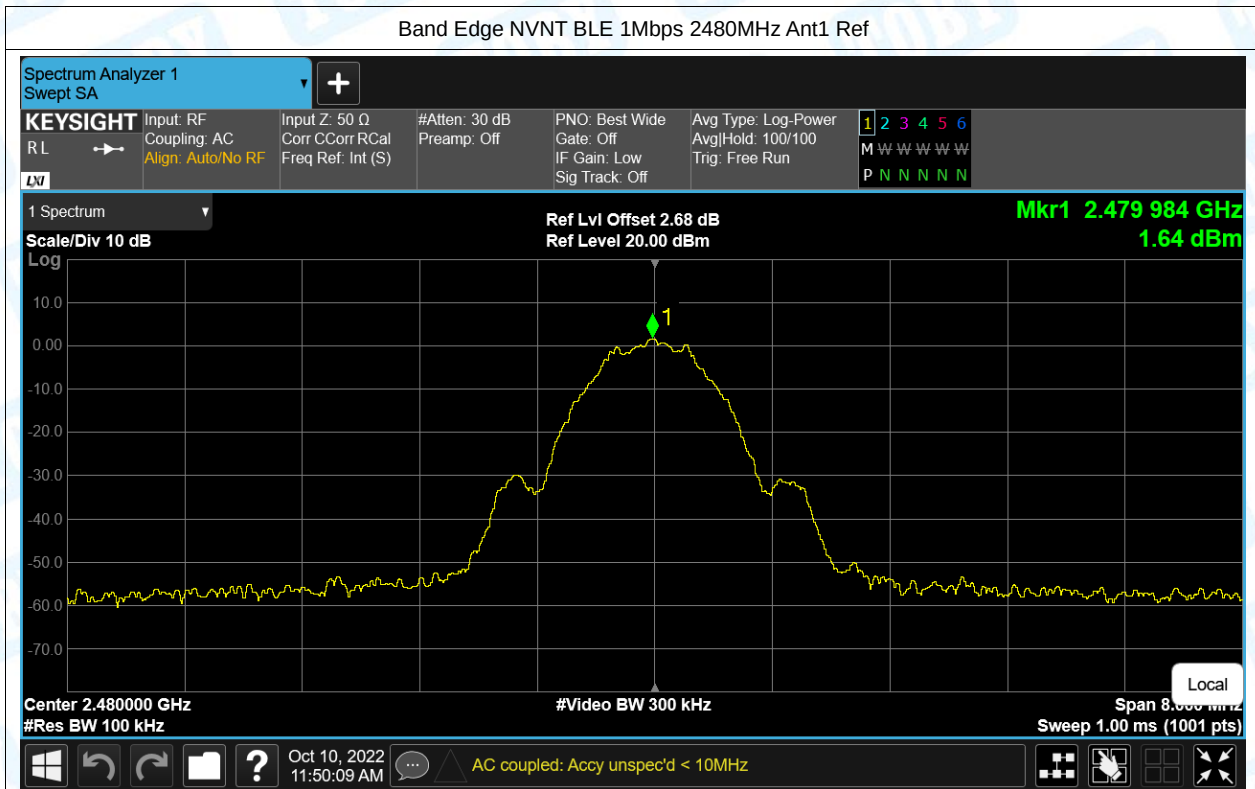


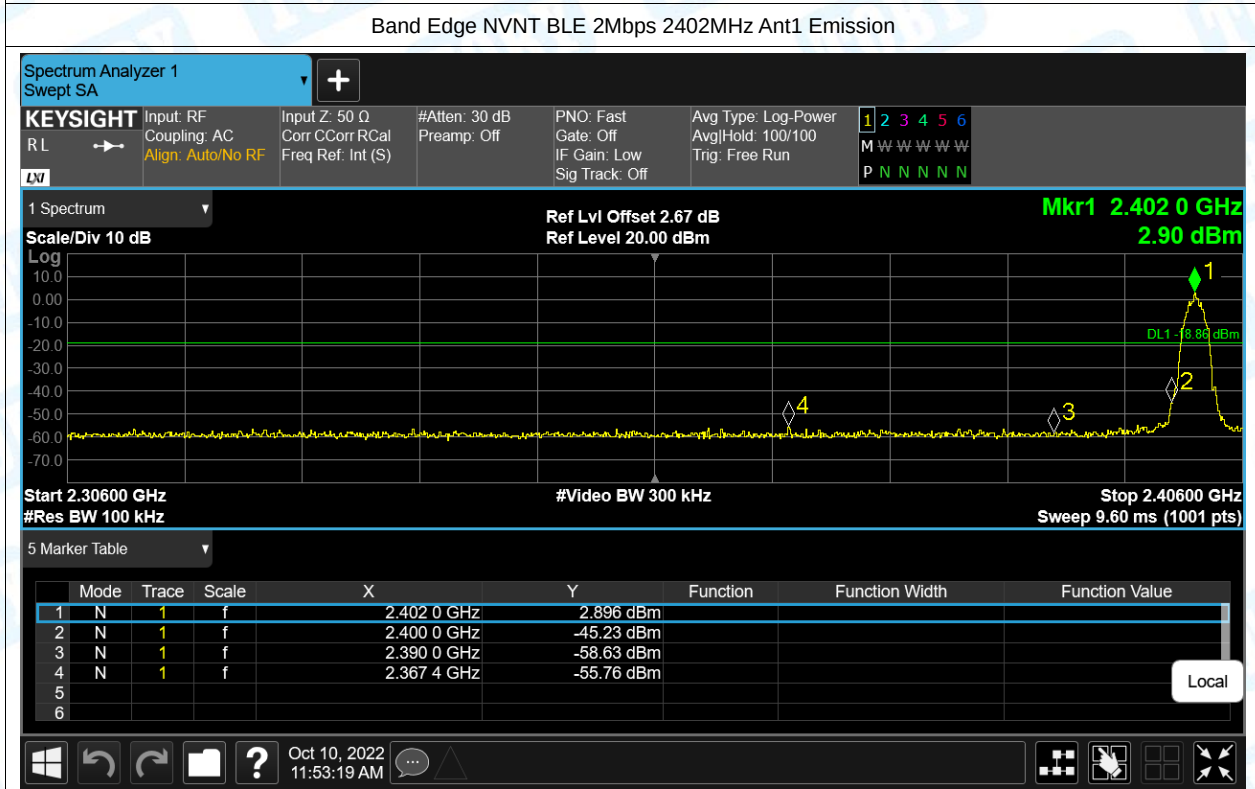
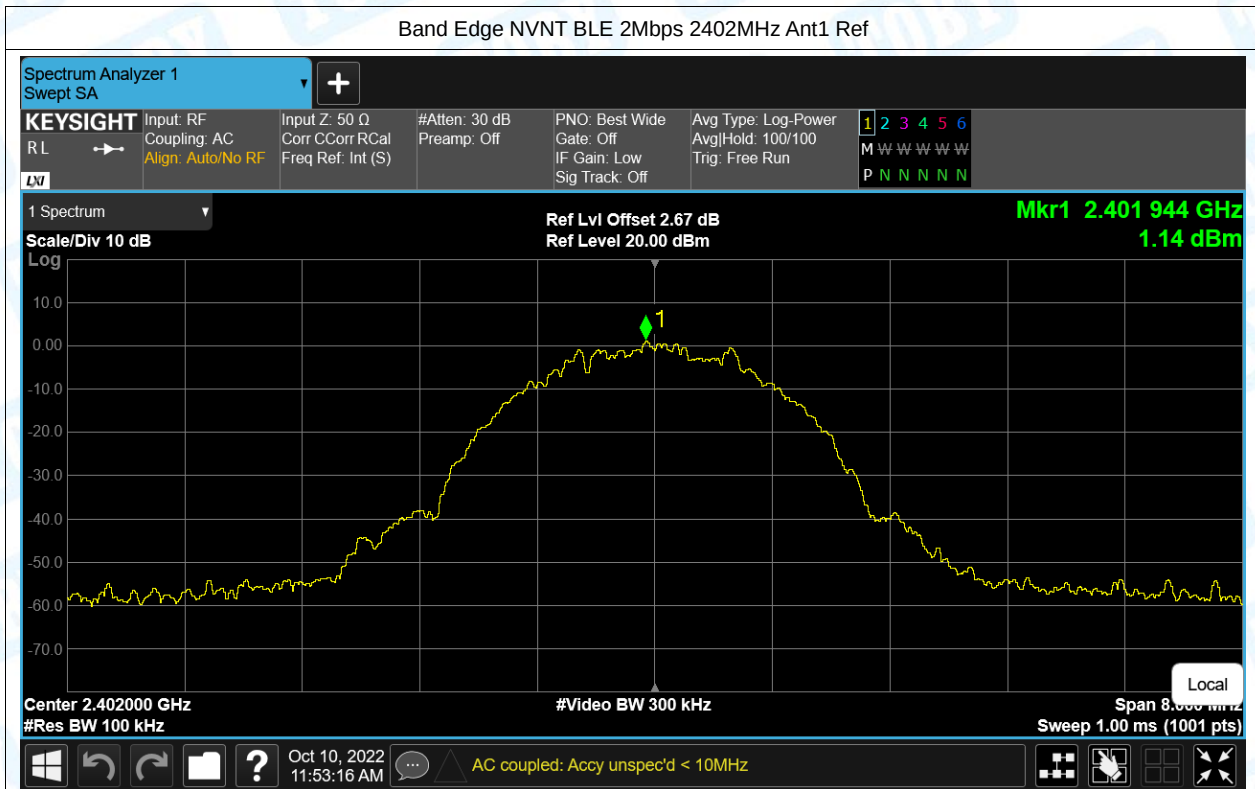


6. Band Edge

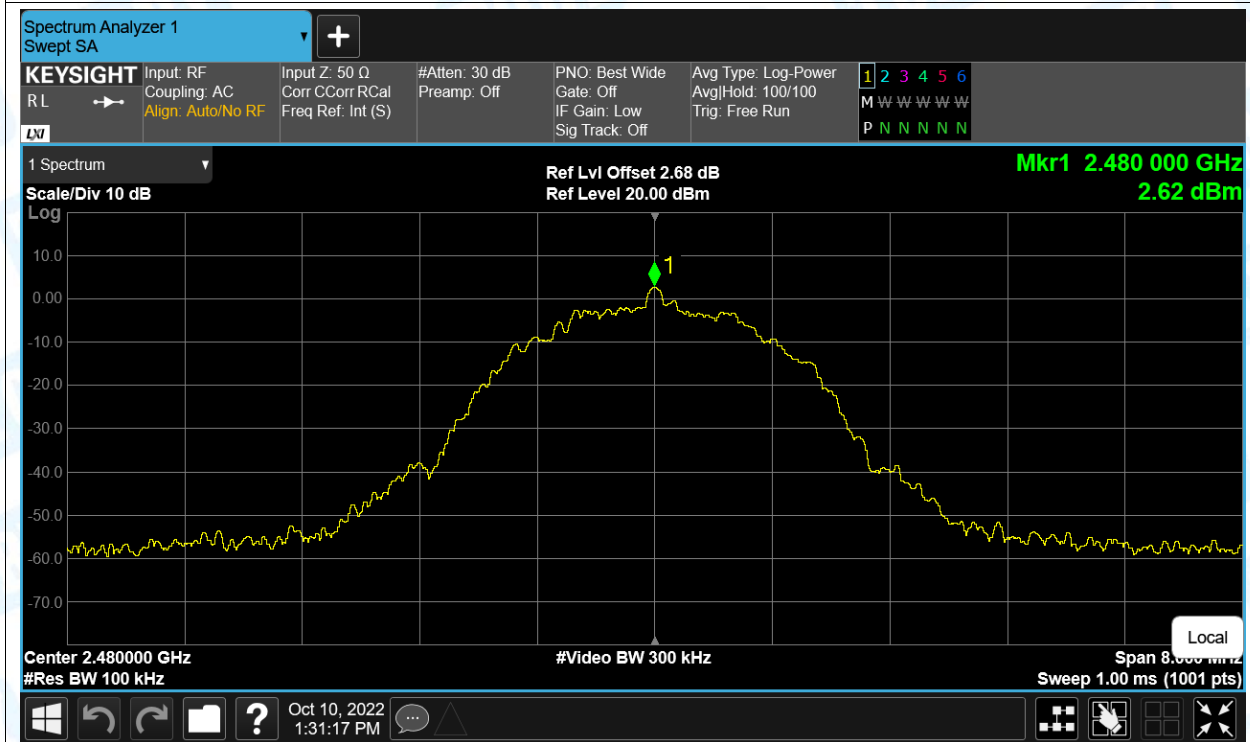
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-58.27	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-57.04	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-56.9	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-58.45	-20	Pass



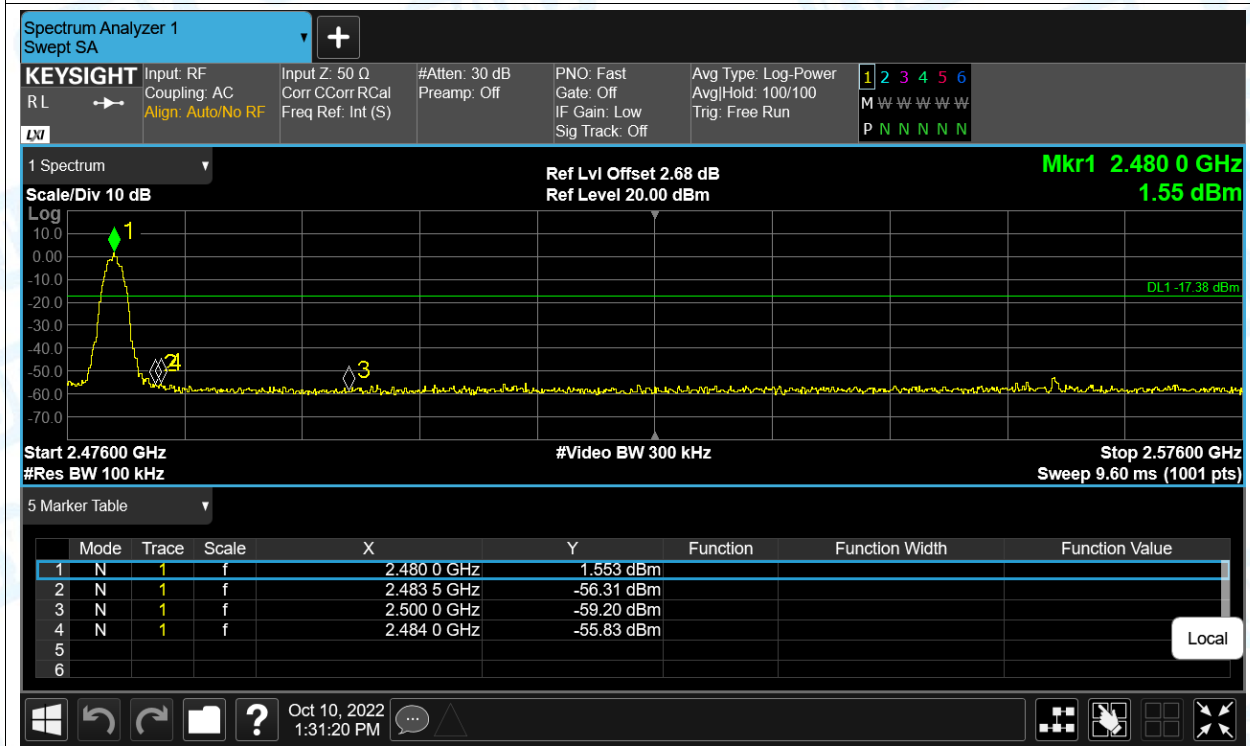




Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Ref



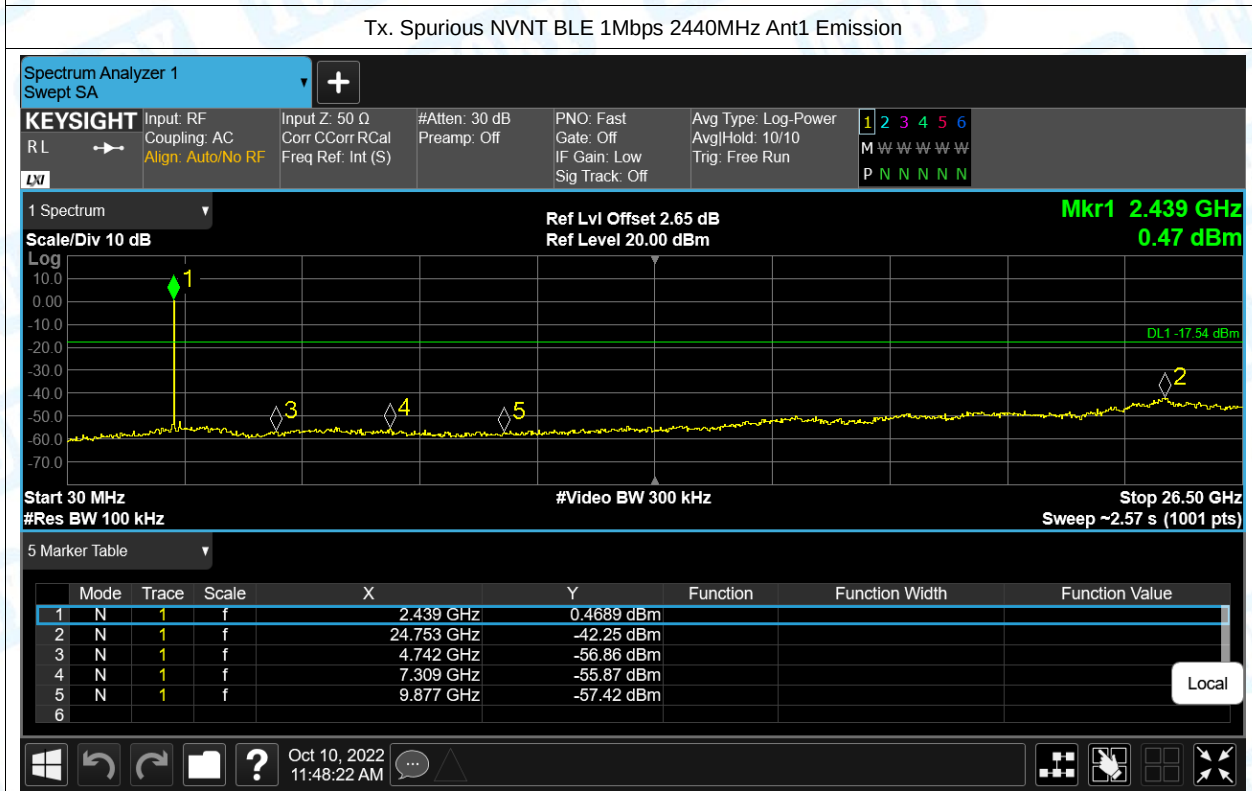
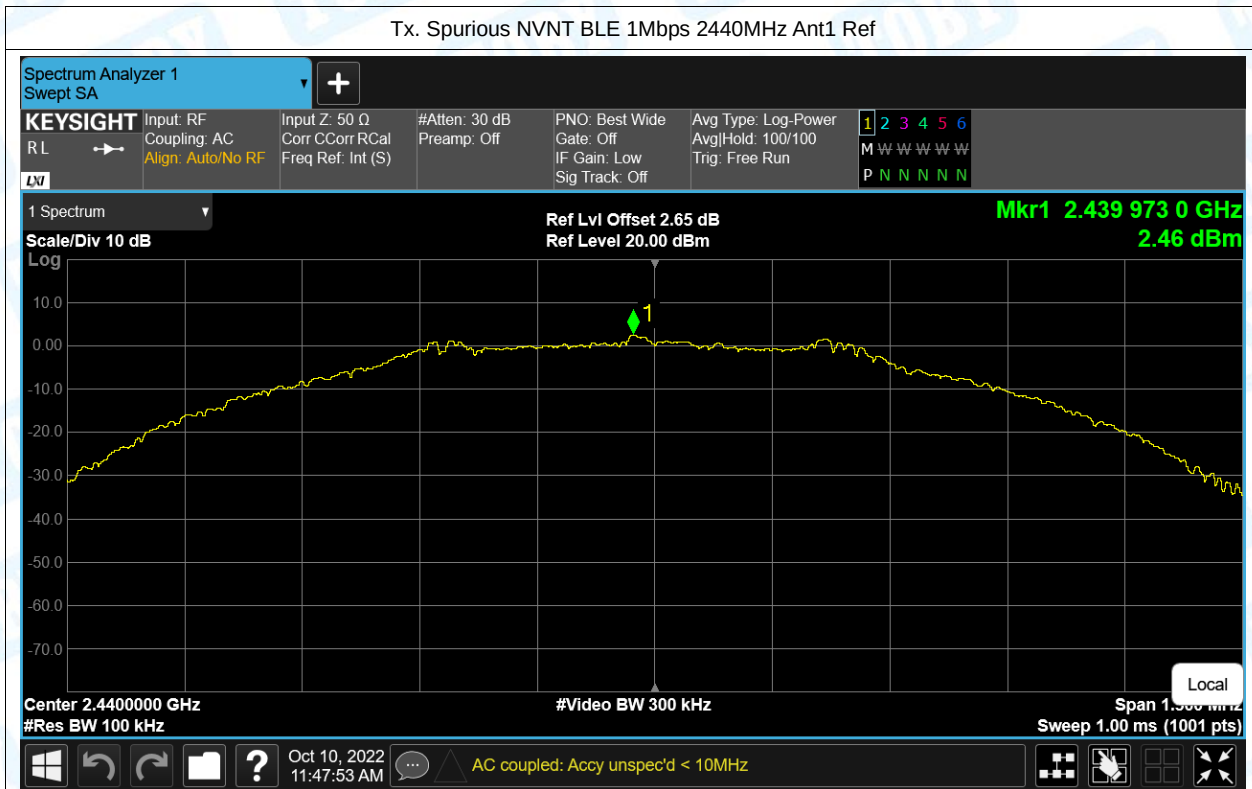
Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Emission

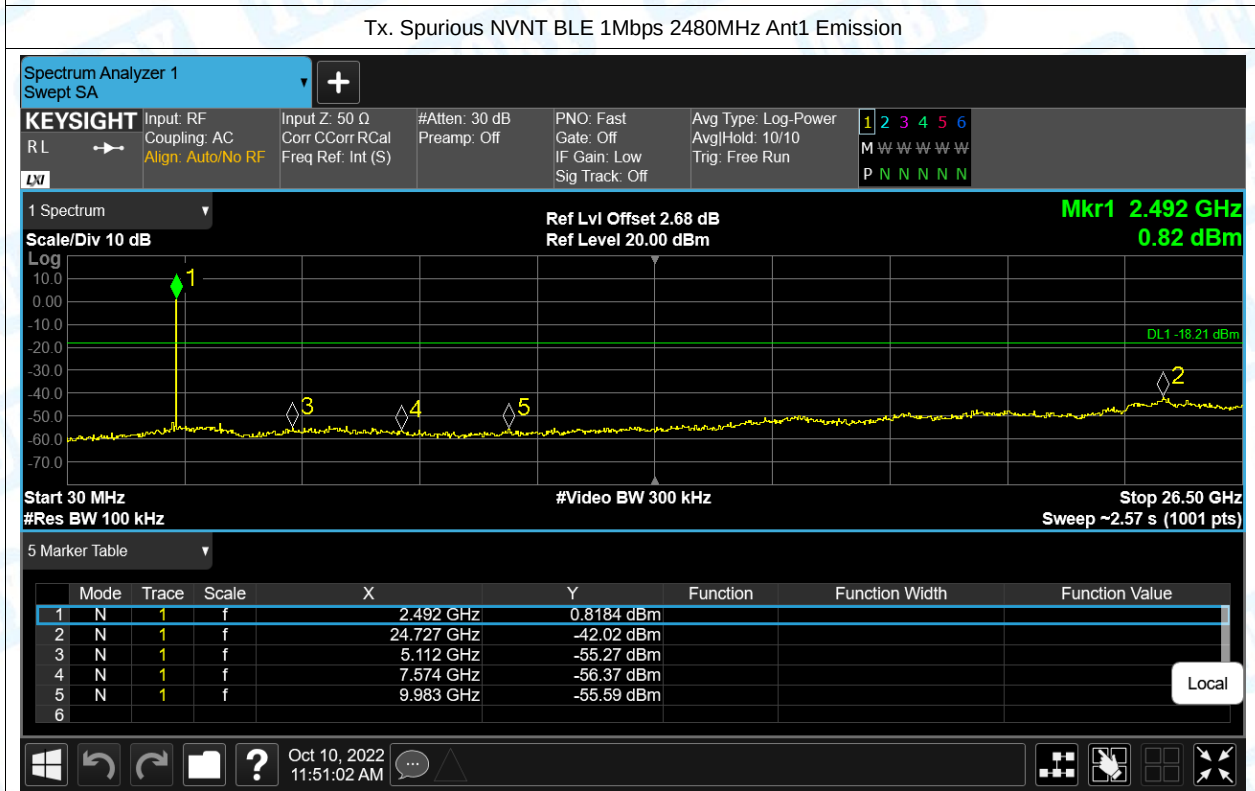
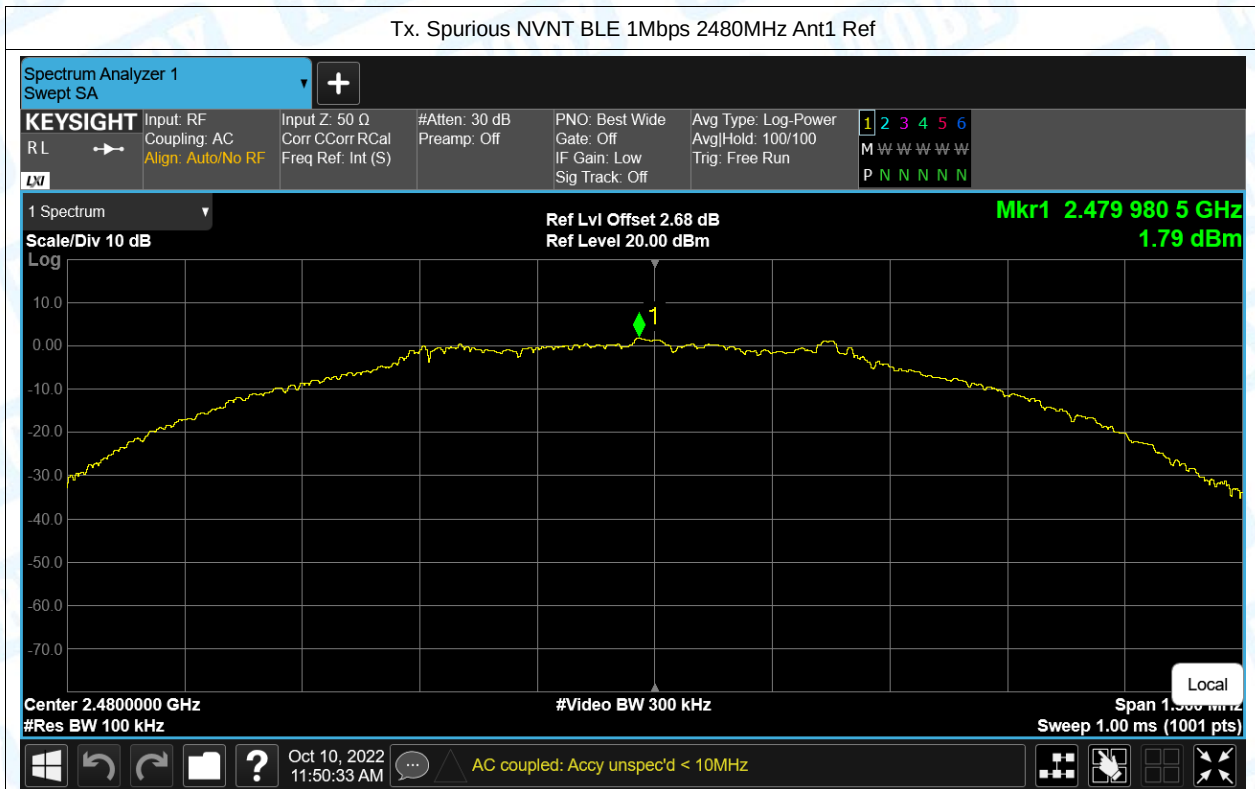


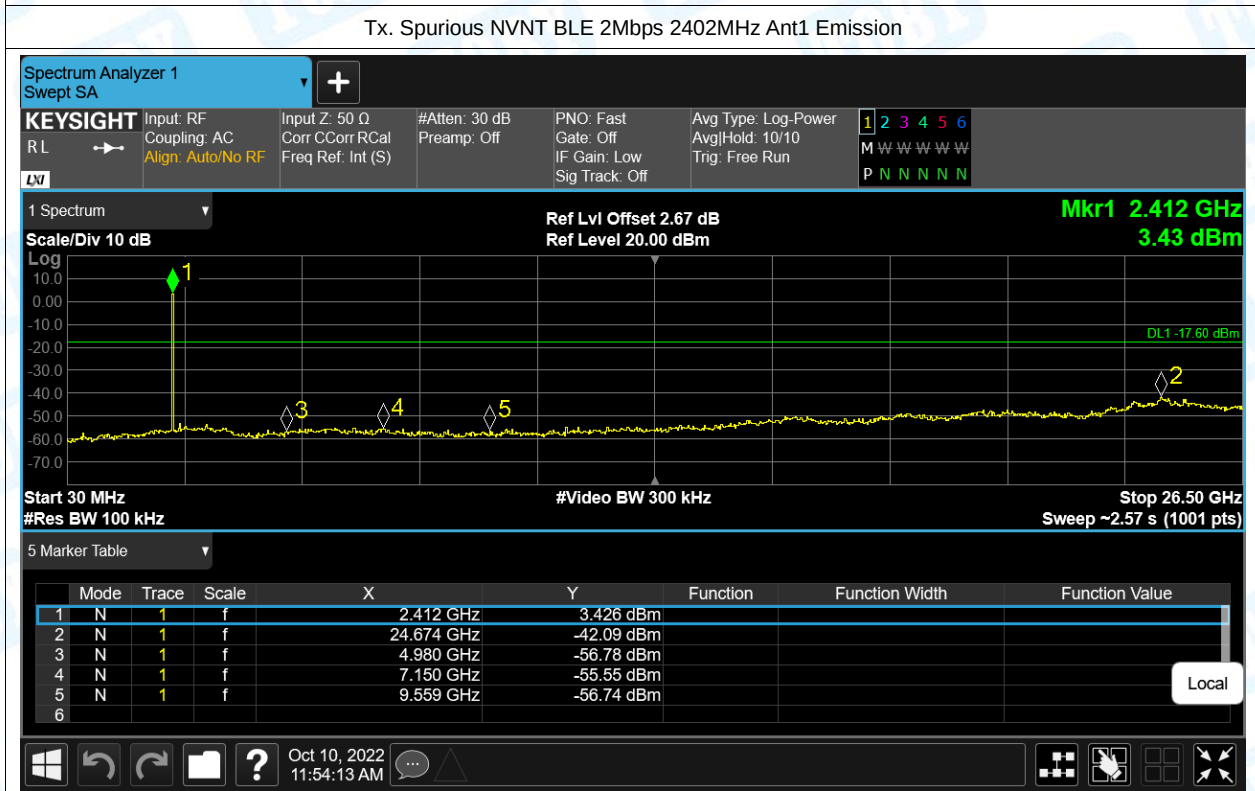
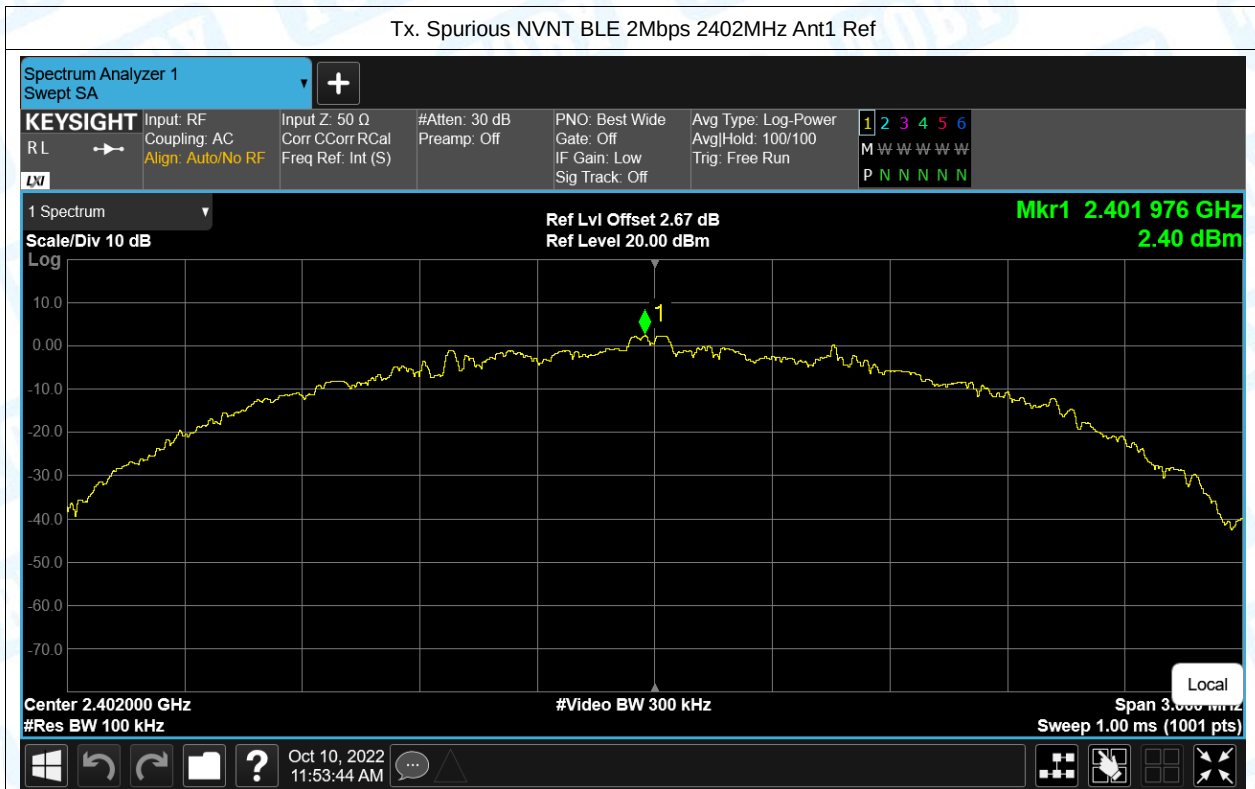
7. Conducted RF Spurious Emission

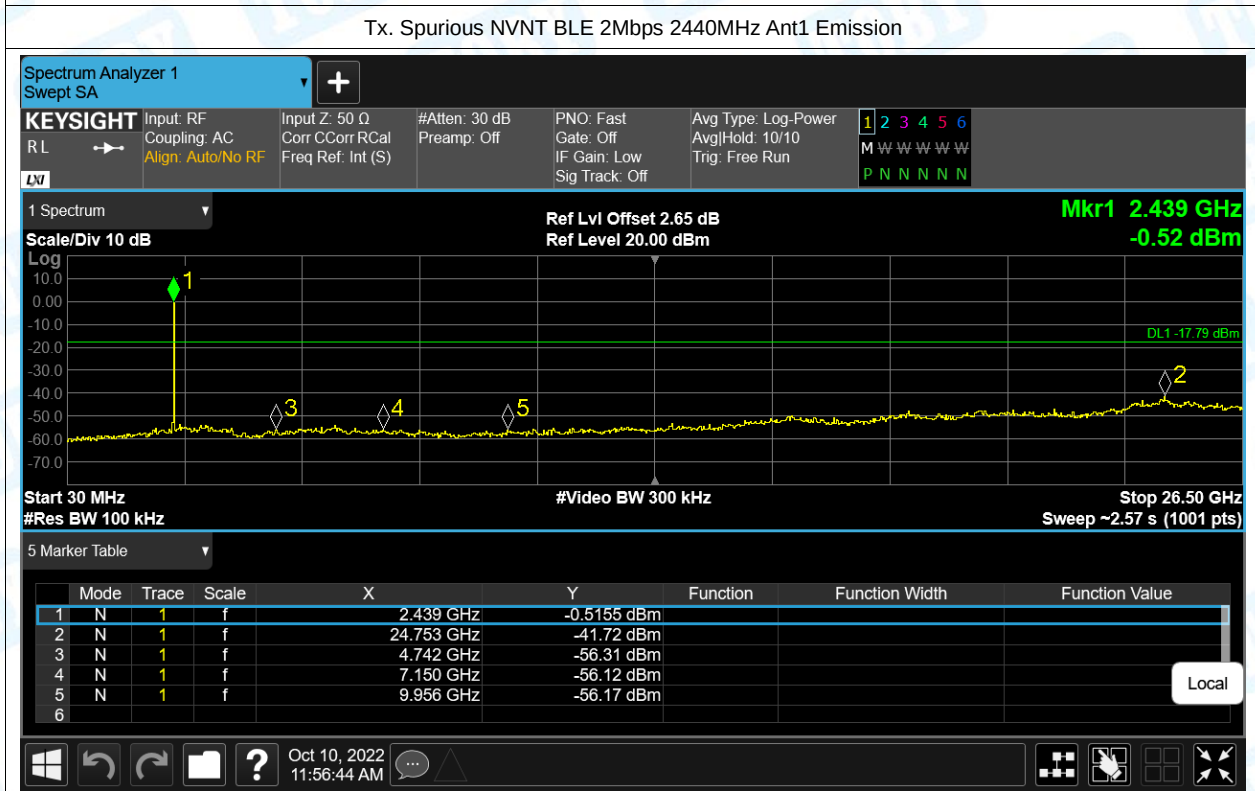
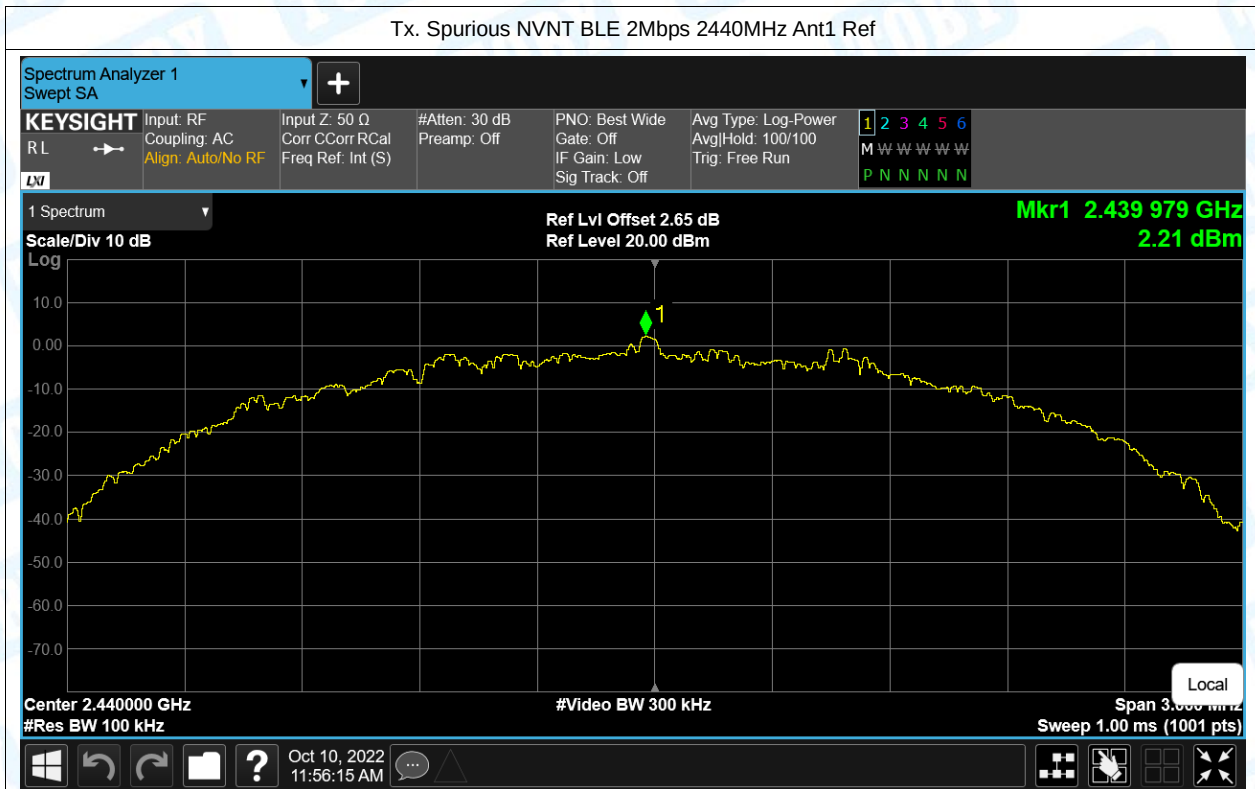
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-44.98	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-44.71	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-43.81	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-44.49	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-43.93	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-43.42	-20	Pass

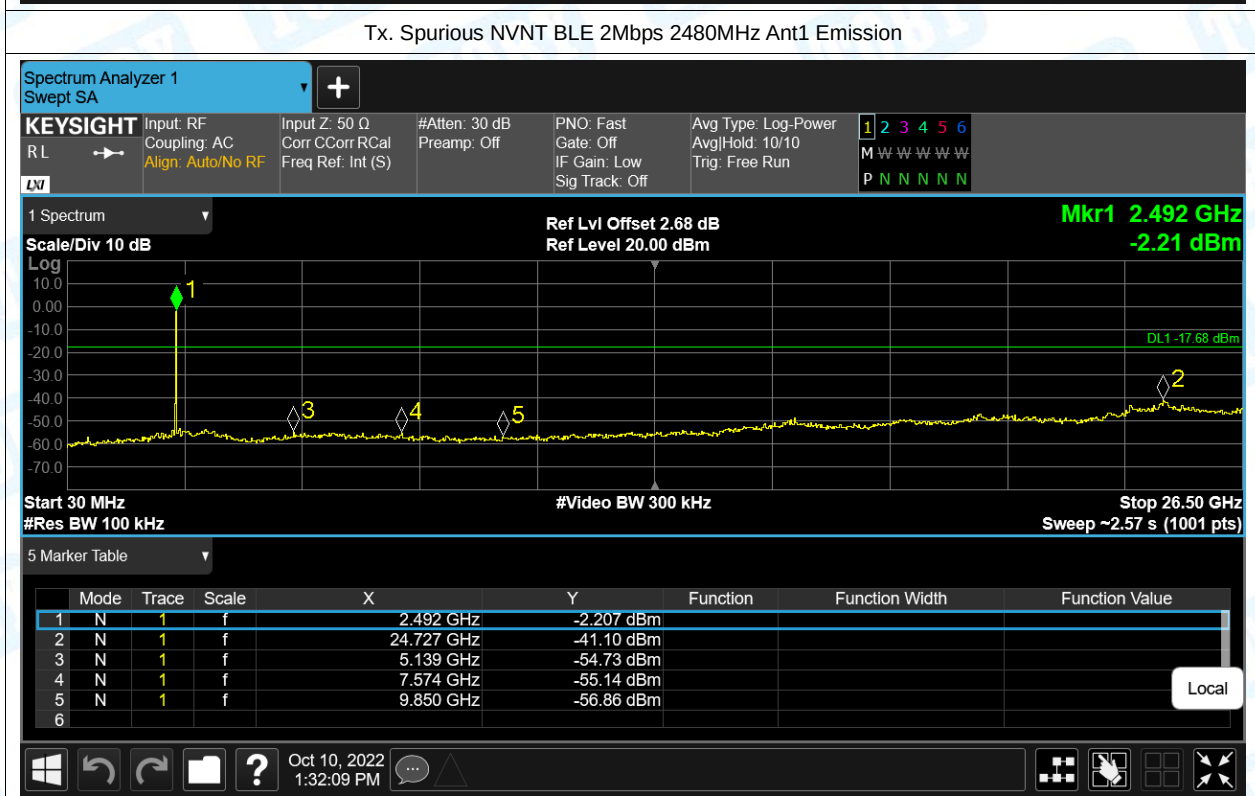
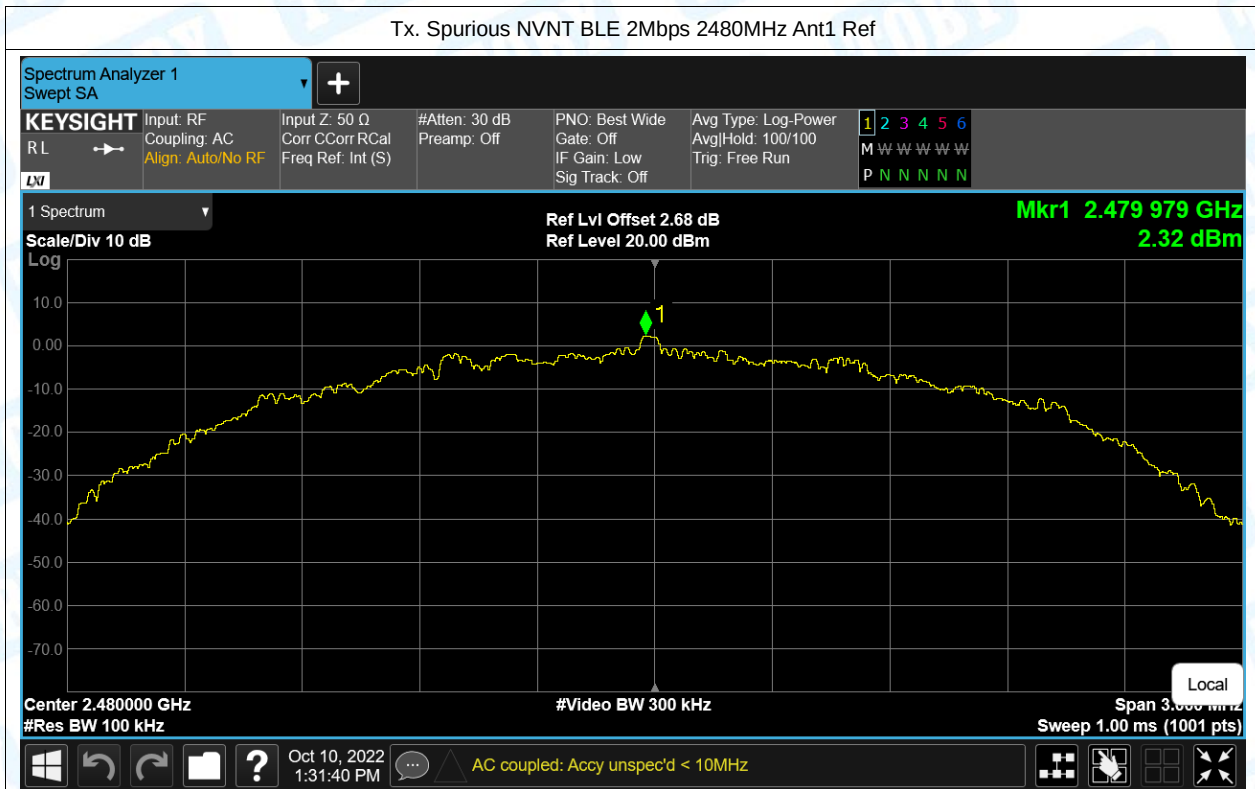










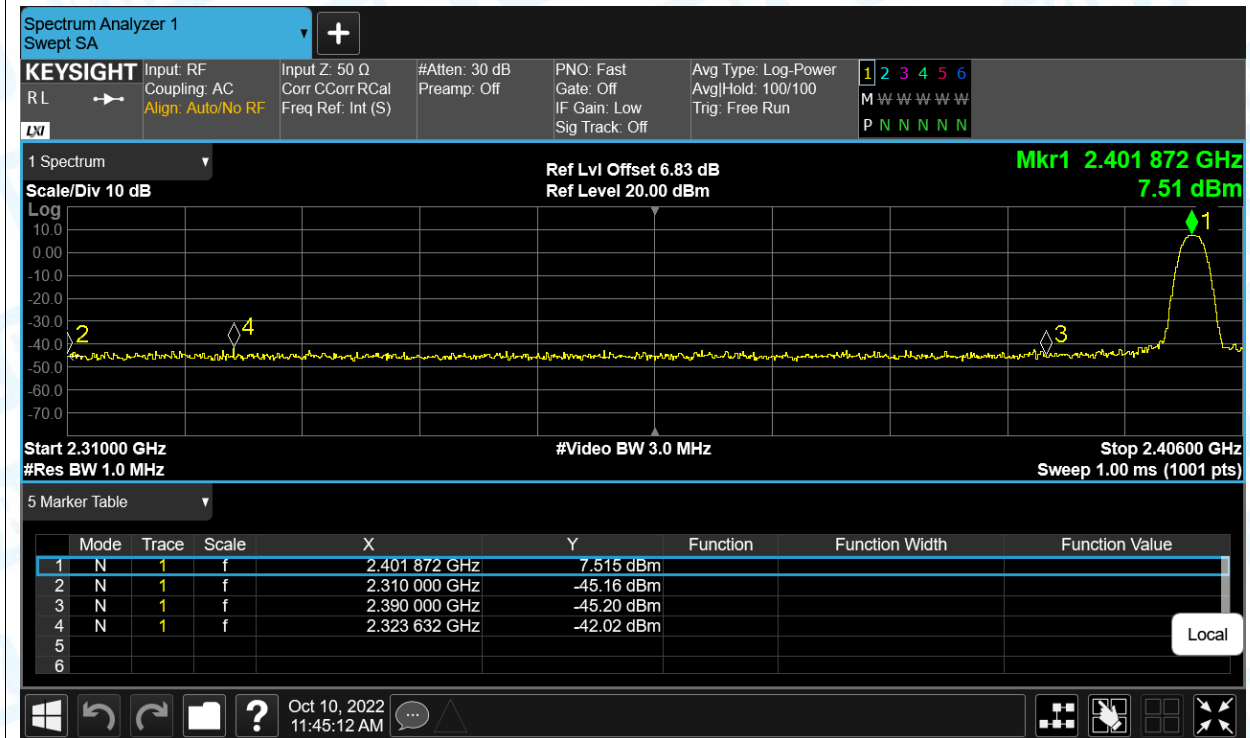


8. Restrict Band

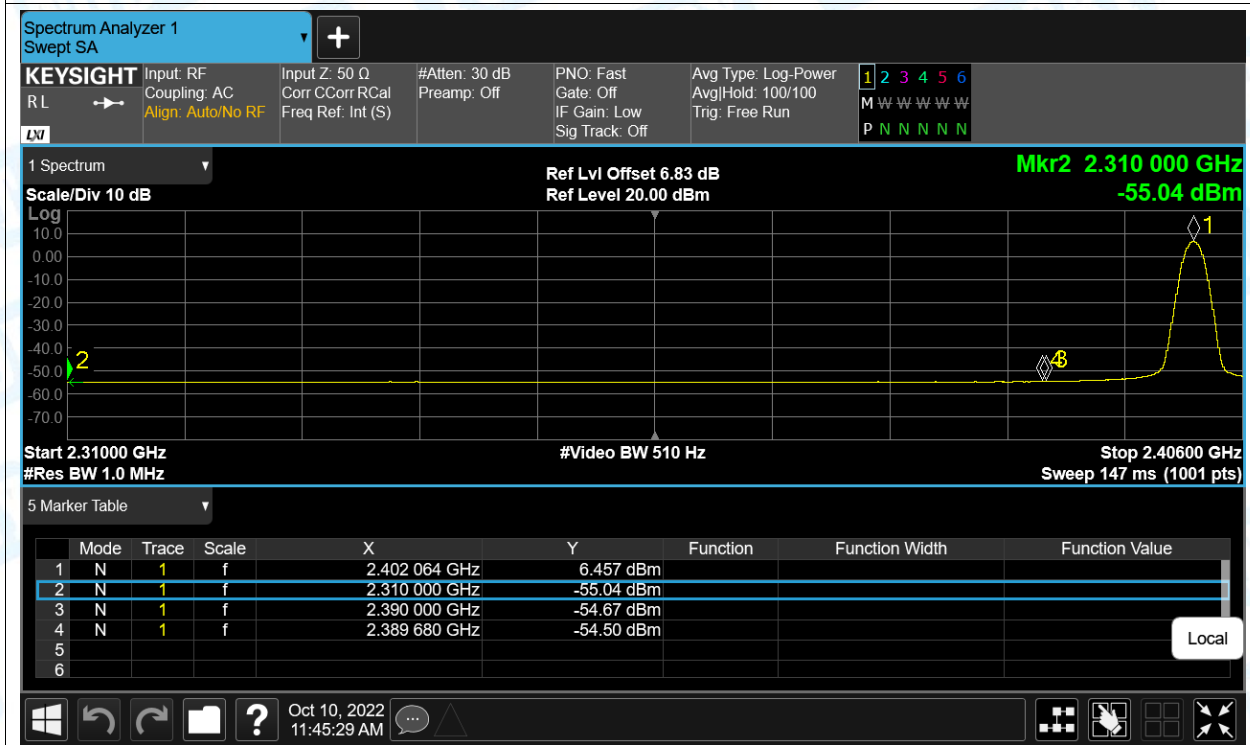
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	2310	-45.16	4.16	54.26	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2310	-55.04	4.16	44.38	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2323.632	-42.02	4.16	57.4	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2389.68	-54.5	4.16	44.92	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-45.79	4.16	53.63	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-54.59	4.16	44.83	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-43.28	4.16	56.14	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-52.33	4.16	47.09	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2485.96	-41.07	4.16	58.35	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2484.088	-51.05	4.16	48.37	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-44.8	4.16	54.62	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-54.45	4.16	44.97	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-45.61	4.16	53.81	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-54.84	4.16	44.58	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2340.72	-42.44	4.16	56.98	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2389.968	-54.29	4.16	45.13	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-44.2	4.16	55.22	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-54.25	4.16	45.17	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-42.87	4.16	56.55	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-51.45	4.16	47.97	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.776	-40.39	4.16	59.03	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.512	-51.45	4.16	47.97	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-44.06	4.16	55.36	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-54.15	4.16	45.27	Average	54	Pass

Test Graphs

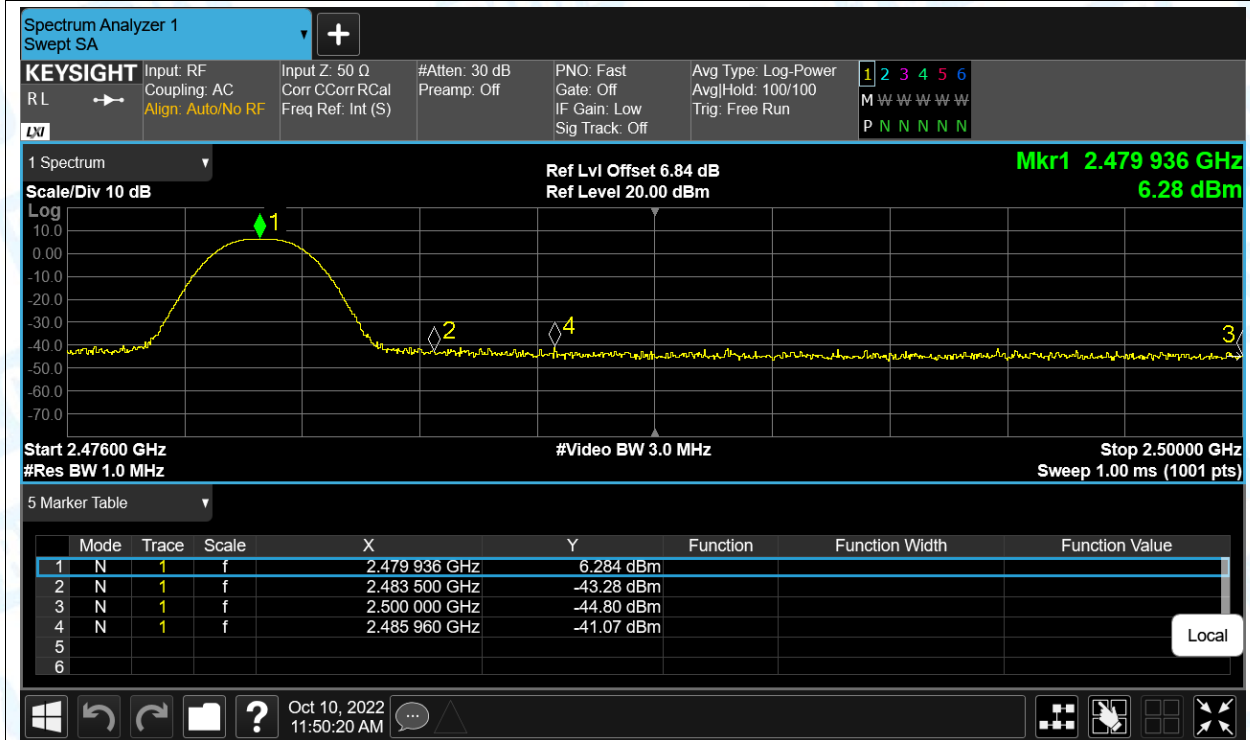
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



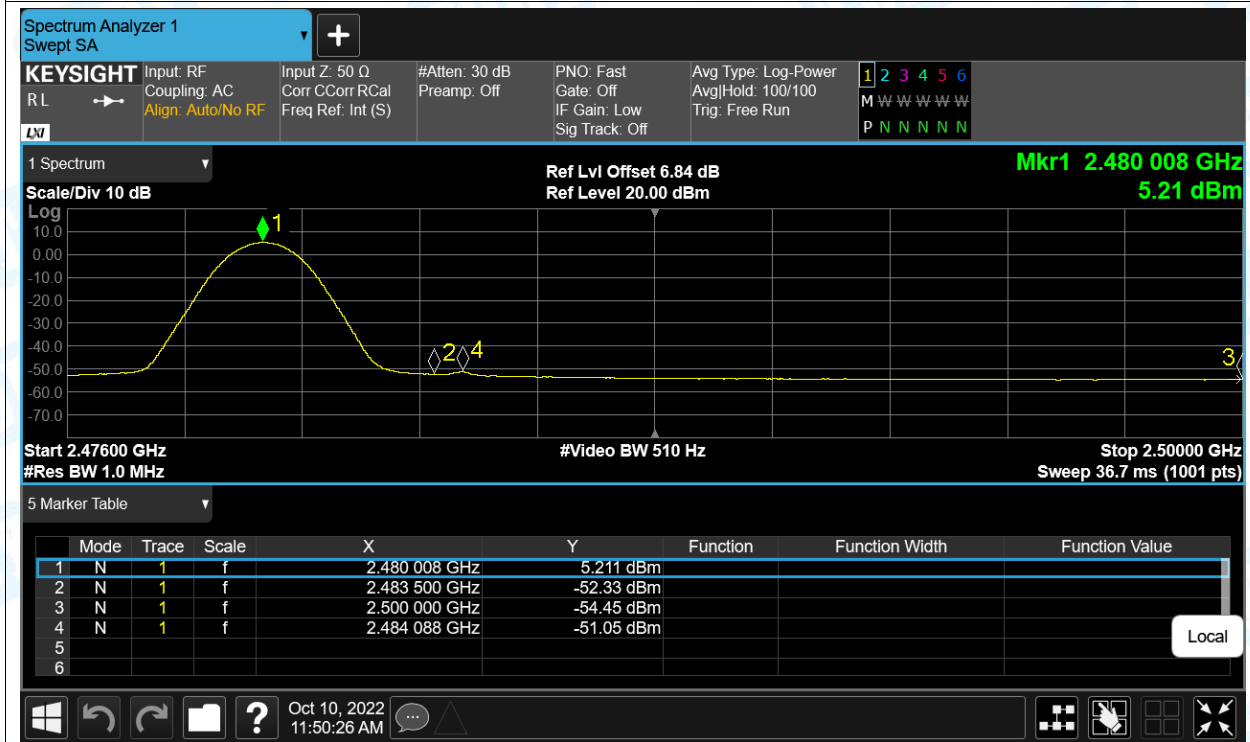
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average



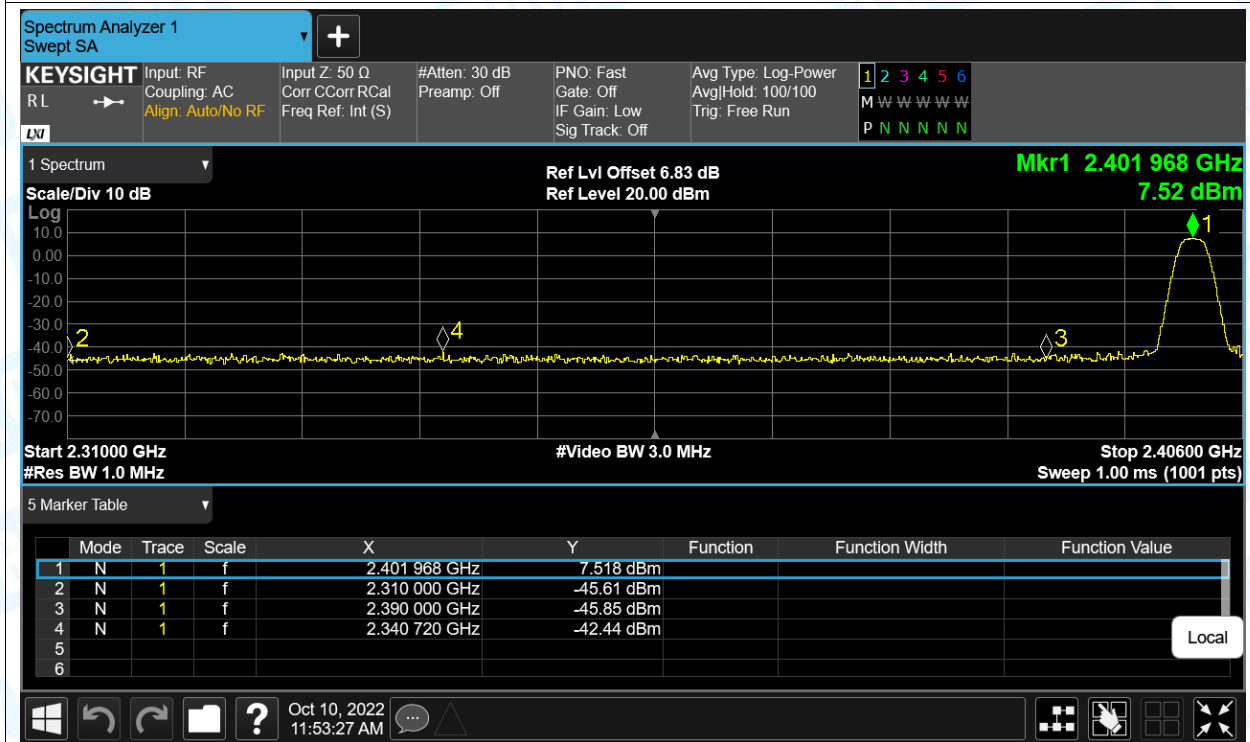
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Peak



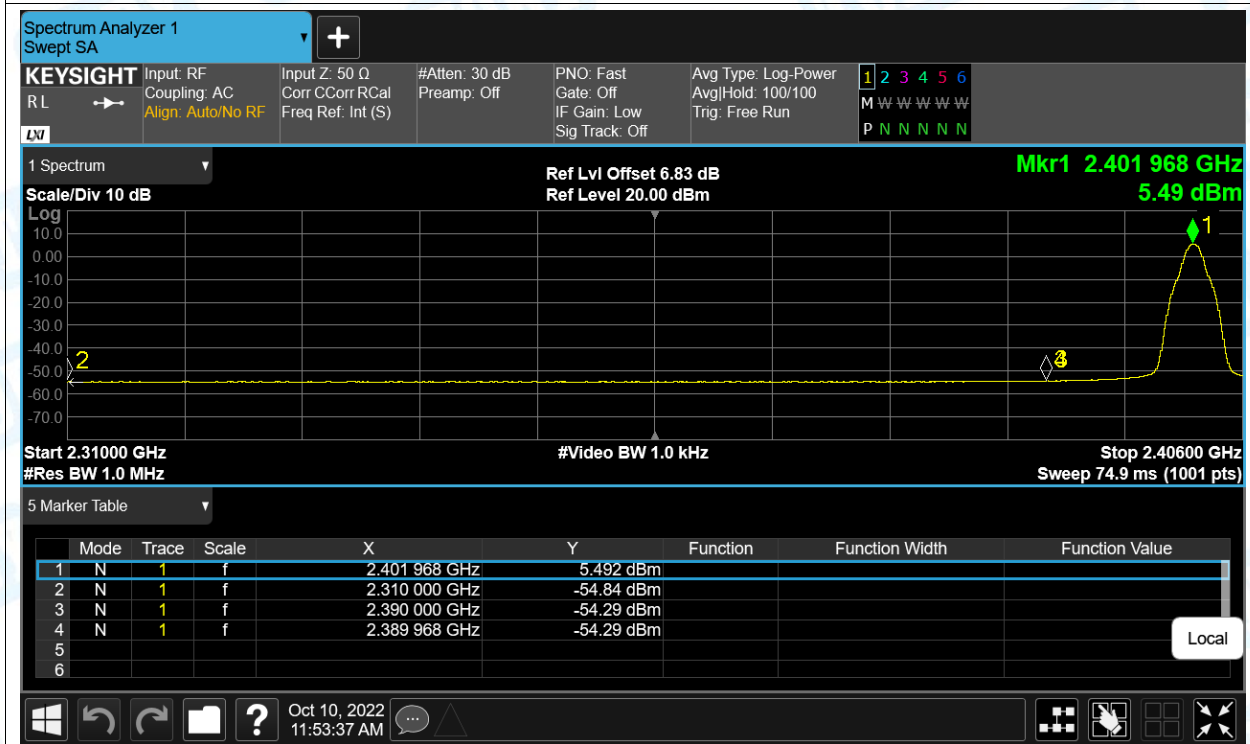
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Average



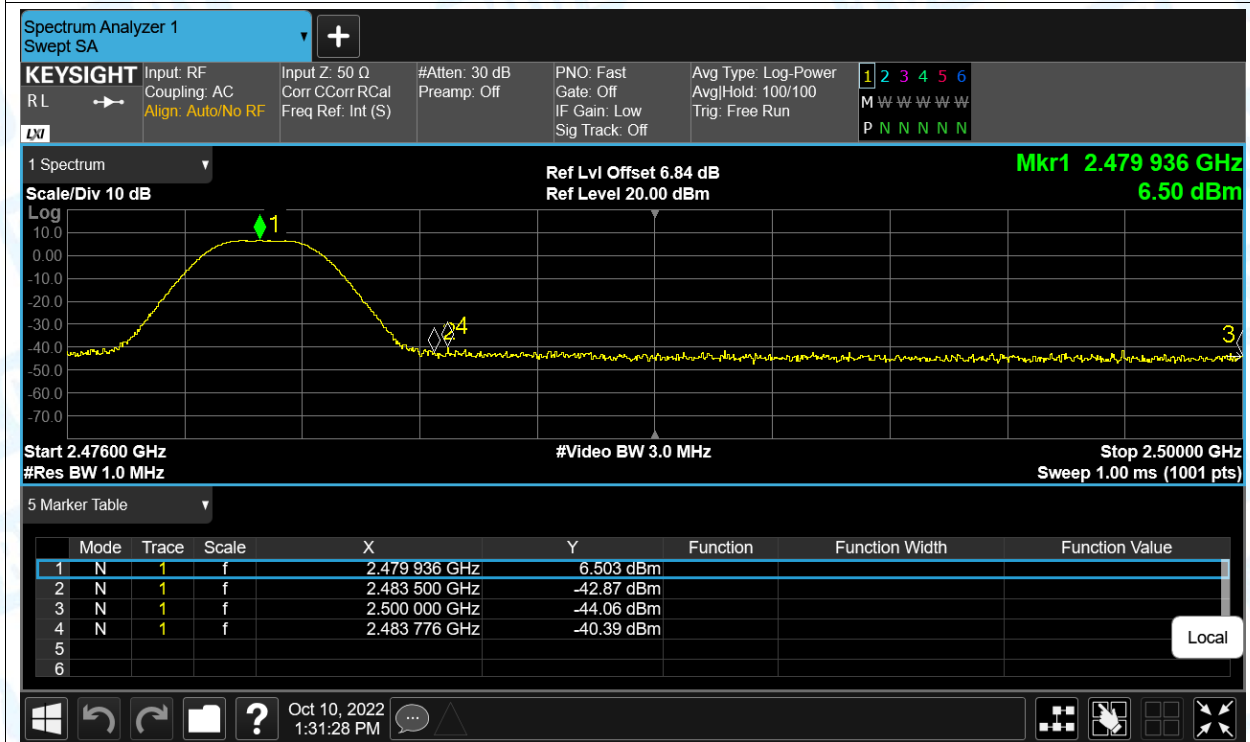
Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Peak



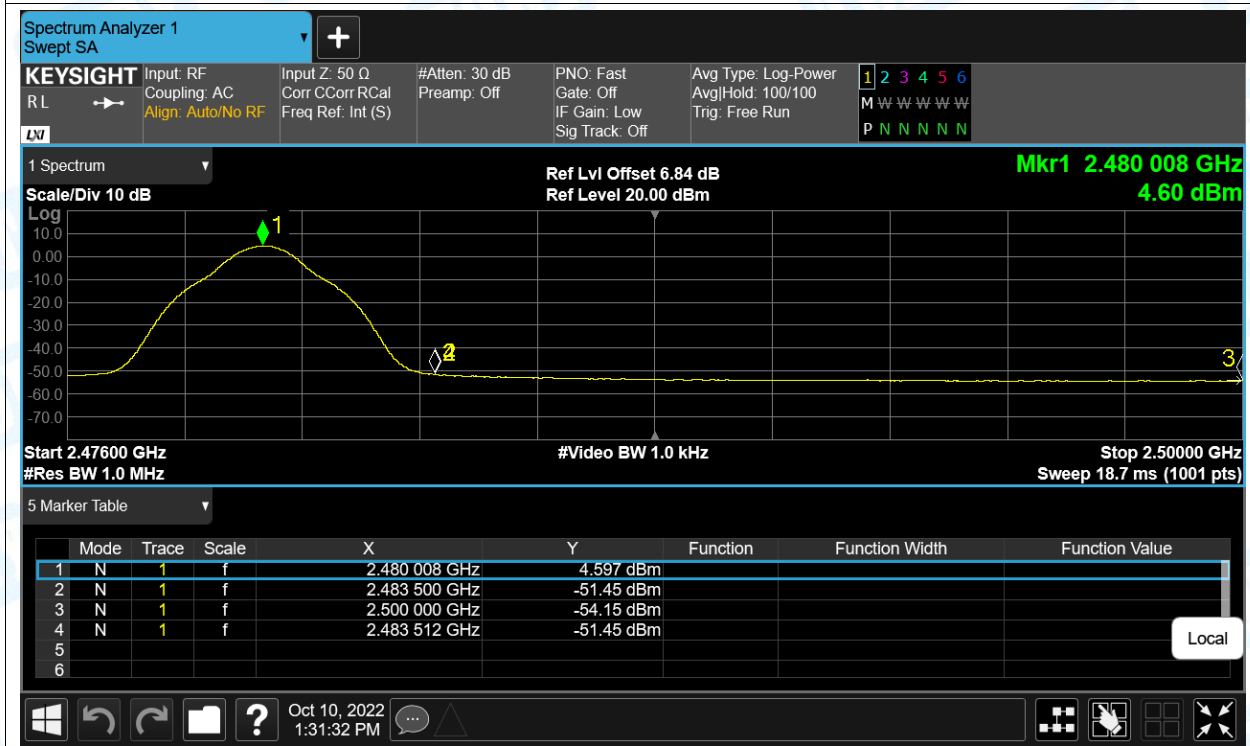
Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Average



Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Average



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