

RF Test Data for Bluetooth LE (Conducted Measurements)

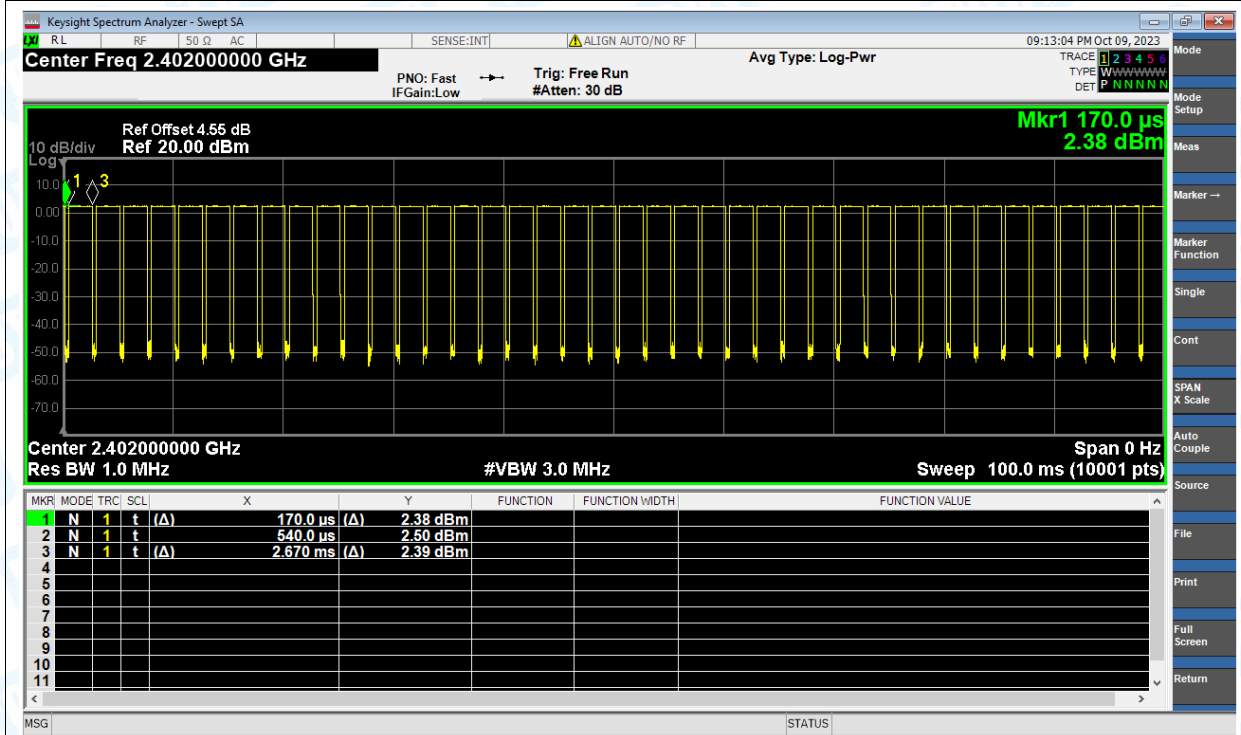
General Description of EUT	
Product Name:	Solar Bluetooth Speaker
Test Model:	EL209/ES-T69 PRO MAX
Sample ID:	HC-C-202309-0047-01-01-2#
Environmental Conditions	
Temperature:	24°C
Relative Humidity:	50%
Test Voltage:	DC 7.4V
Test Engineer:	Zhangchenxi
Note: For a more detailed features description, please refer to the report TBR-C-202309-0047-3 The report only show the worst case data.	

Duty Cycle

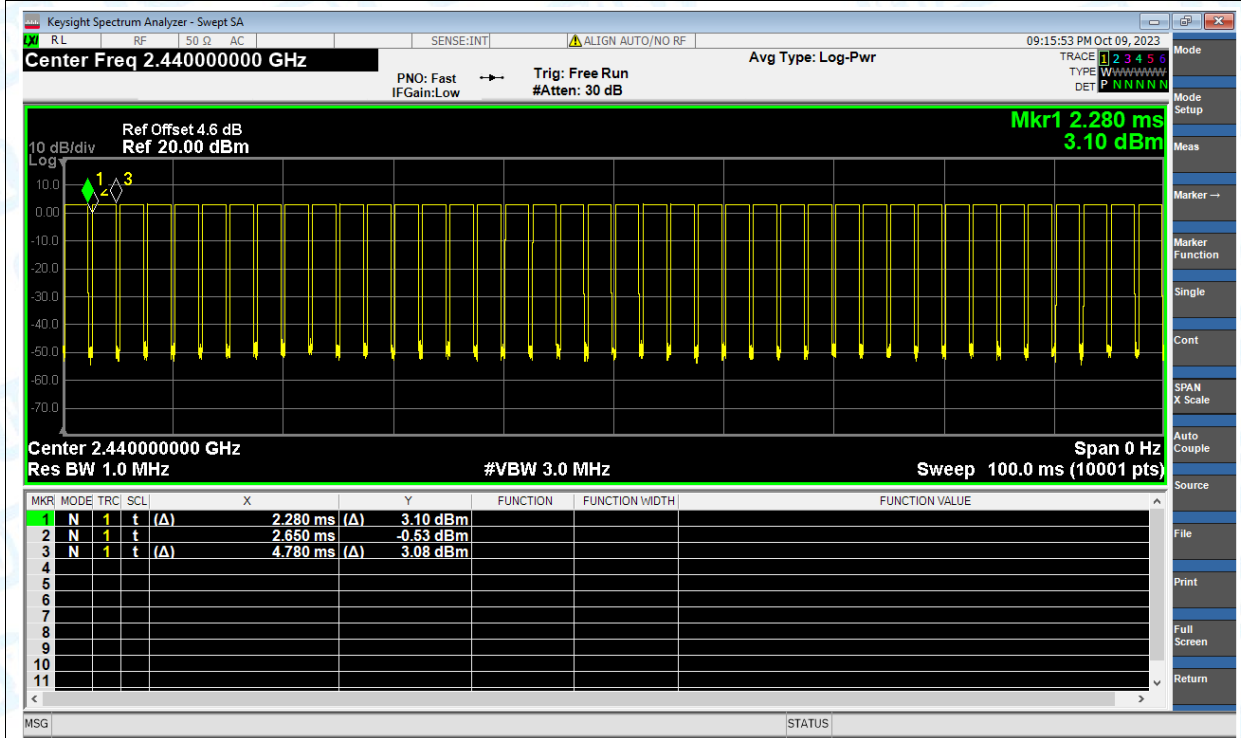
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	85.2	0.7	0.47
NVNT	BLE 1Mbps	2440	Ant1	85.2	0.7	0.47
NVNT	BLE 1Mbps	2480	Ant1	85.2	0.7	0.47
NVNT	BLE 2Mbps	2402	Ant1	43.2	3.65	0.93
NVNT	BLE 2Mbps	2440	Ant1	43.2	3.65	0.93
NVNT	BLE 2Mbps	2480	Ant1	42.8	3.69	0.93

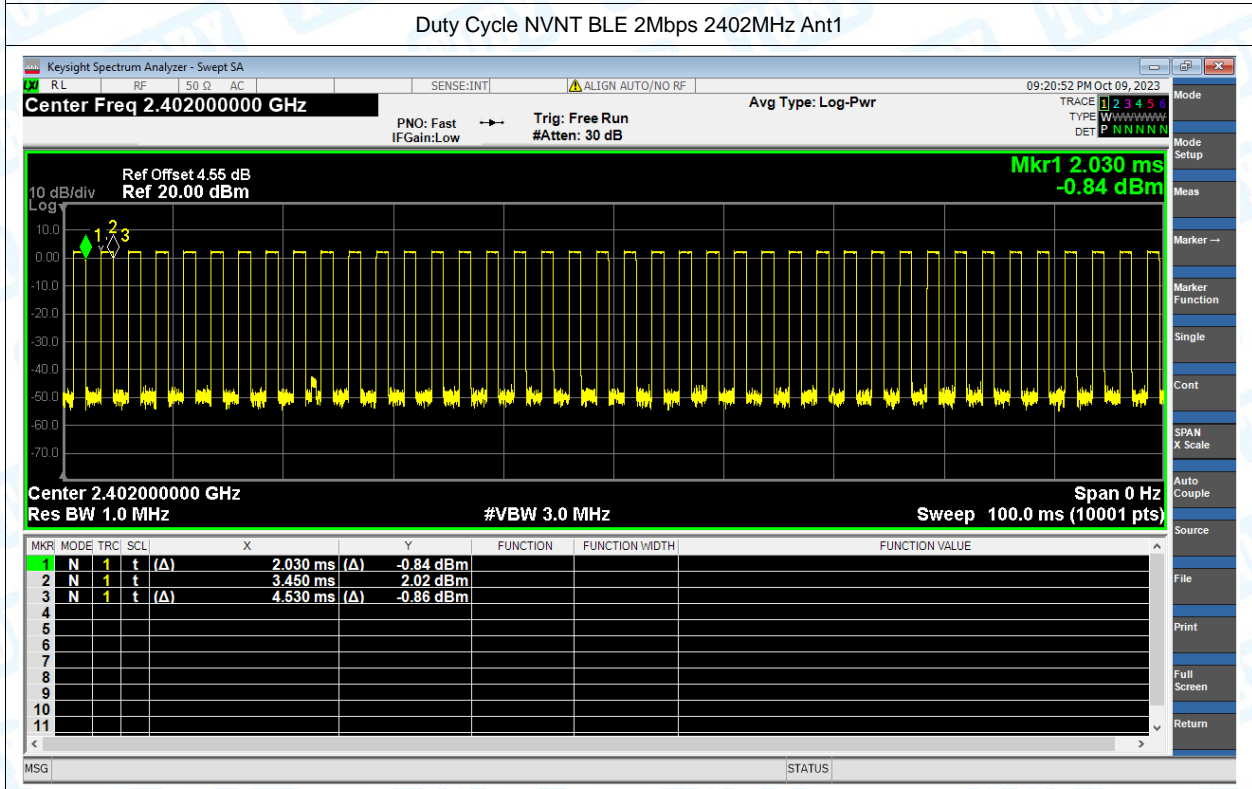
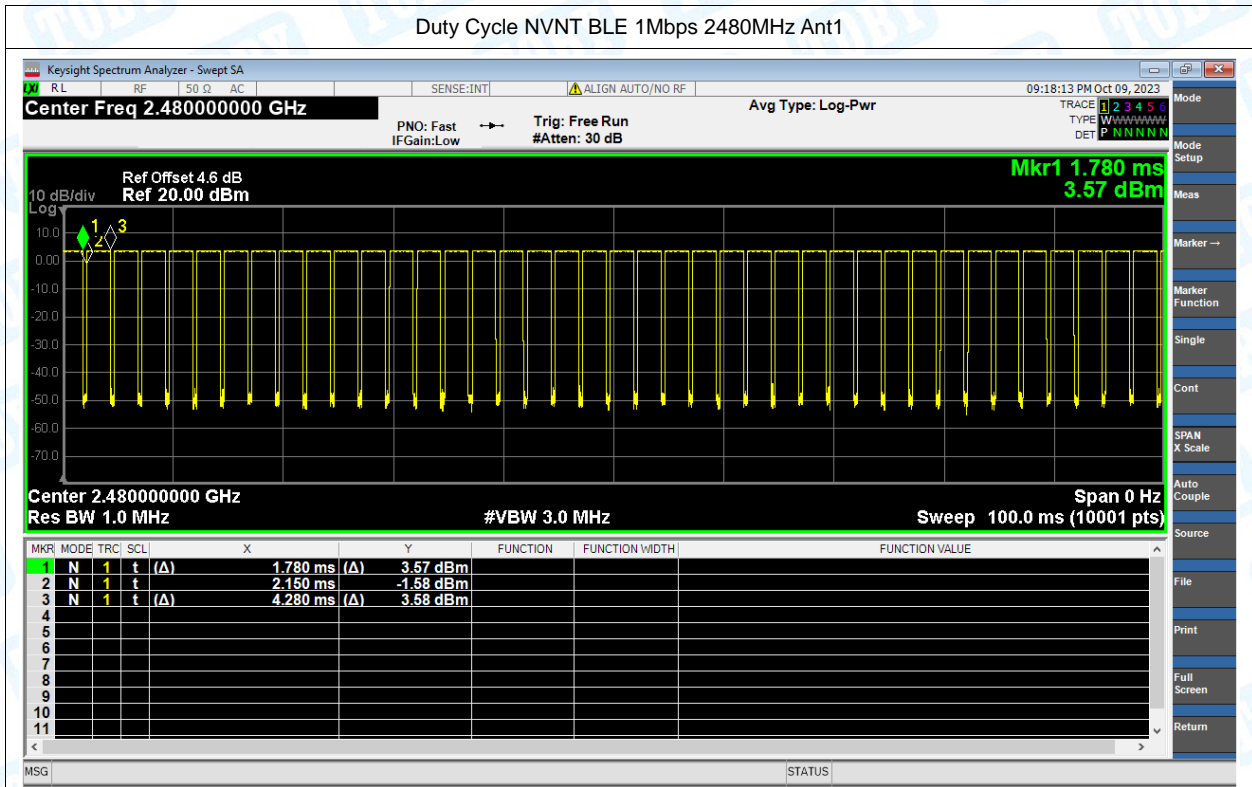
Test Graphs

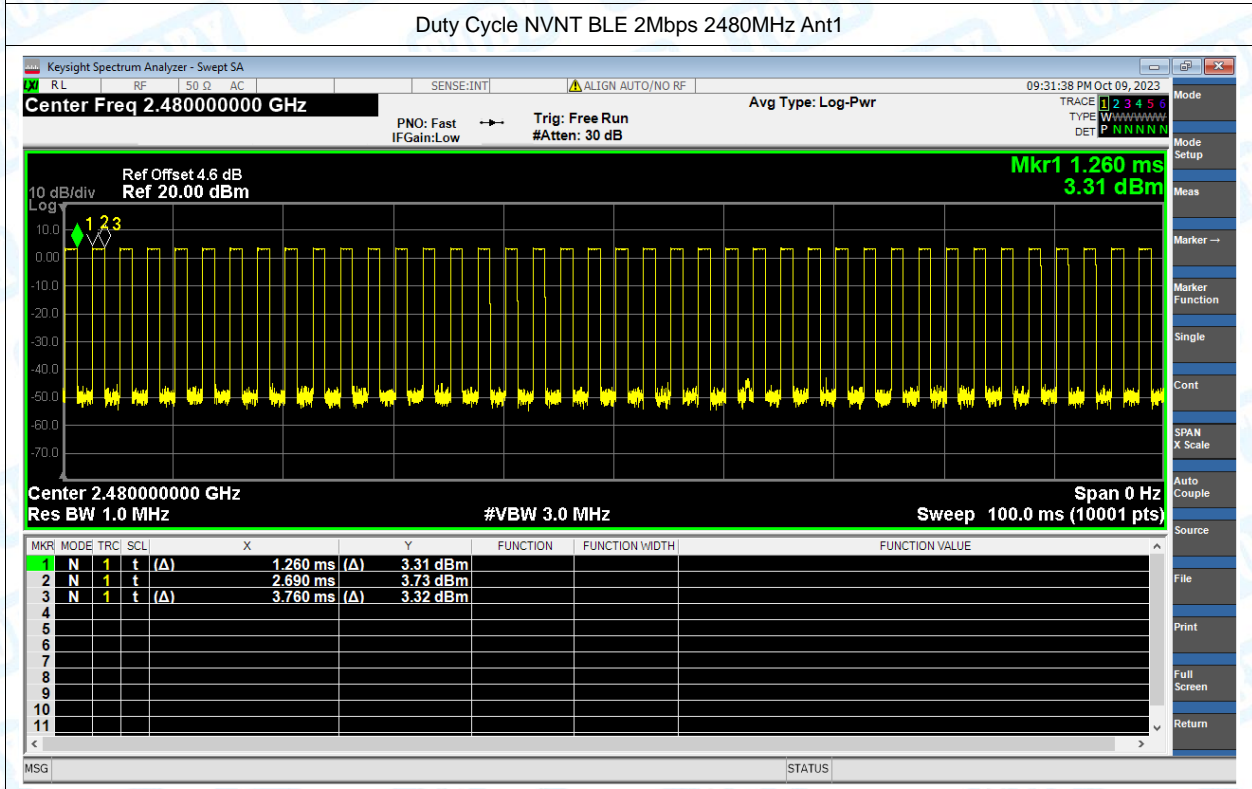
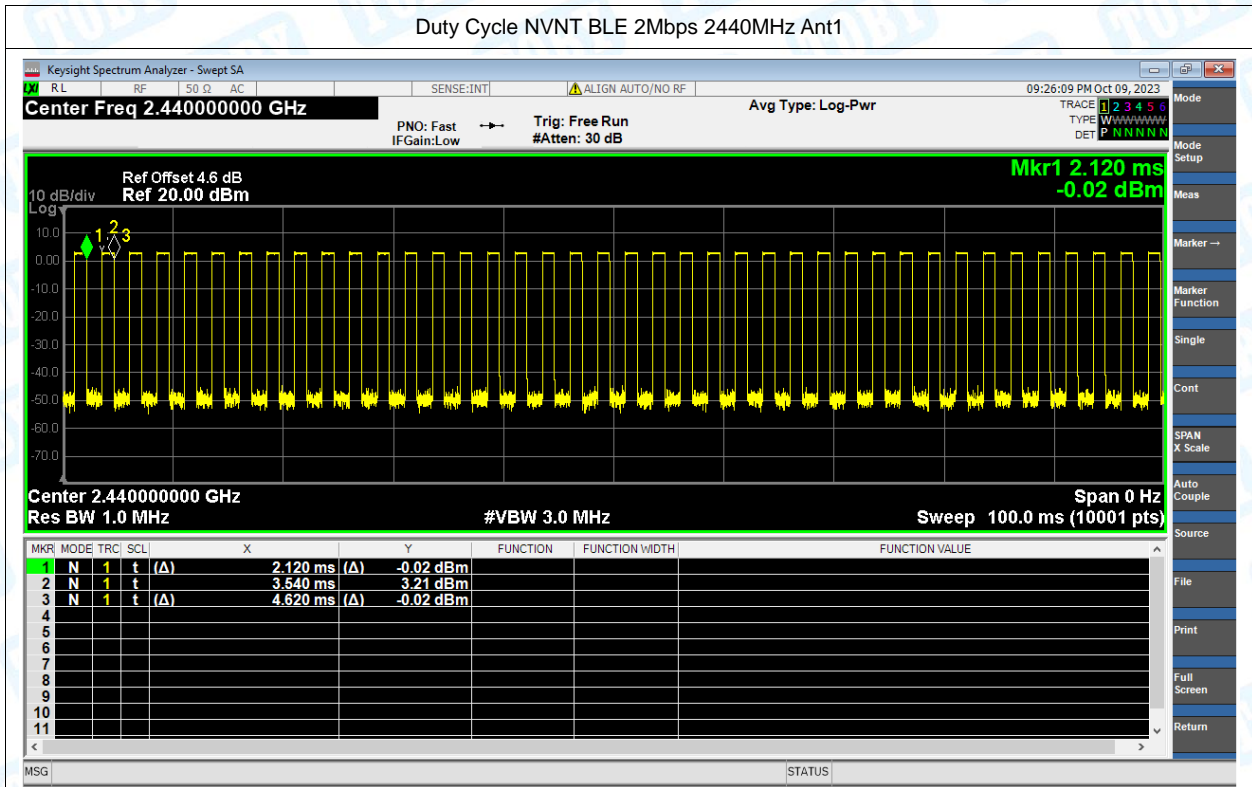
Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1



Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1





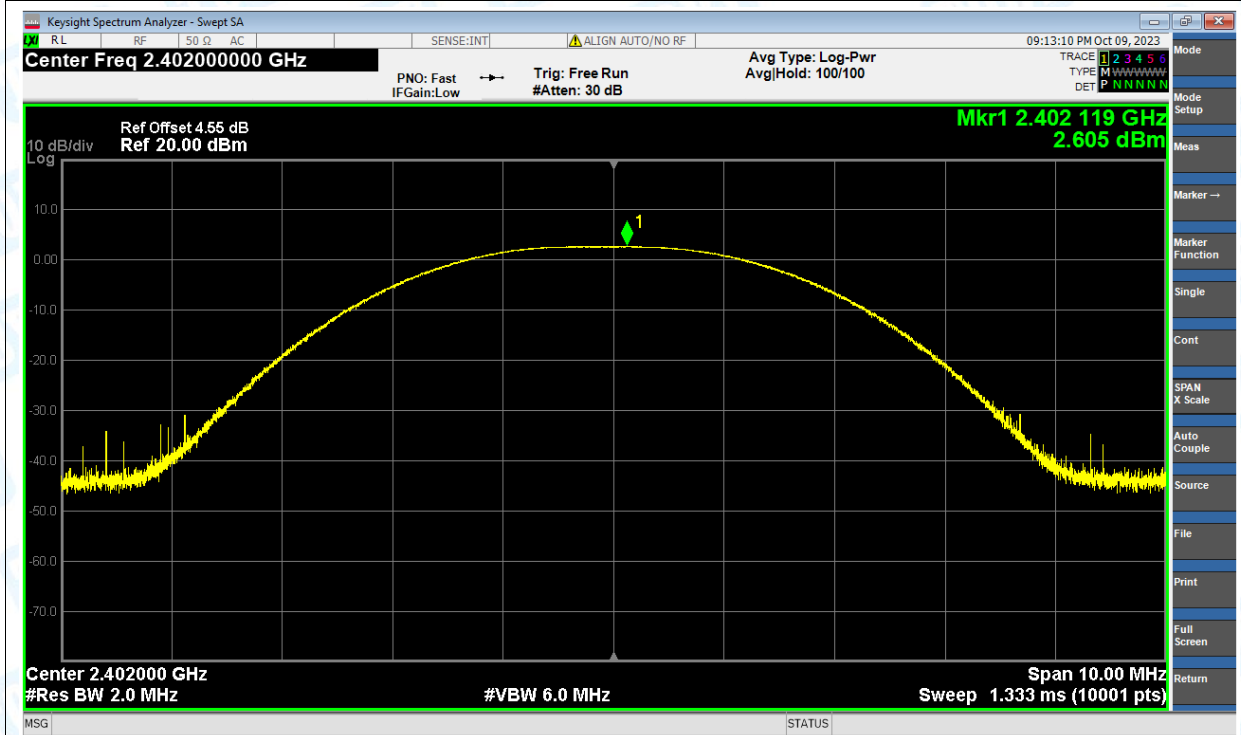


Maximum Conducted Output Power

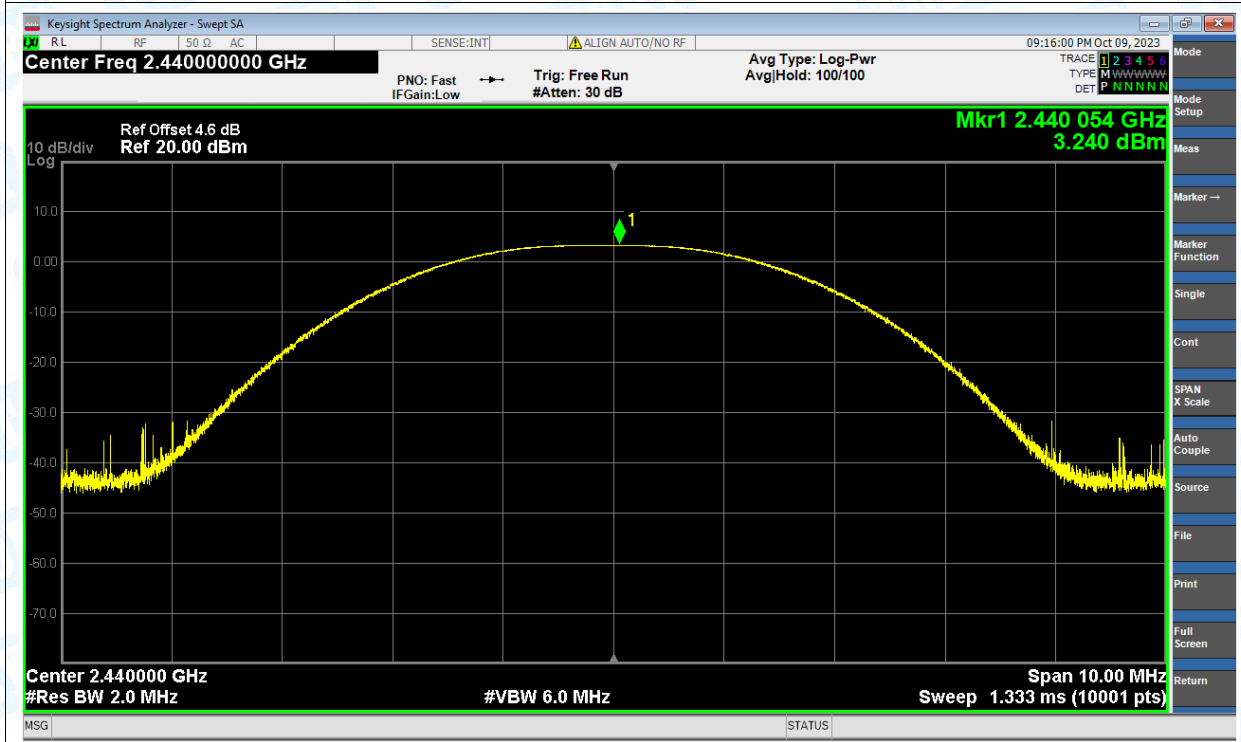
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	2.605	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	3.240	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	3.746	30	Pass
NVNT	BLE 2Mbps	2402	Ant1	2.587	30	Pass
NVNT	BLE 2Mbps	2440	Ant1	3.271	30	Pass
NVNT	BLE 2Mbps	2480	Ant1	3.752	30	Pass

Test Graphs

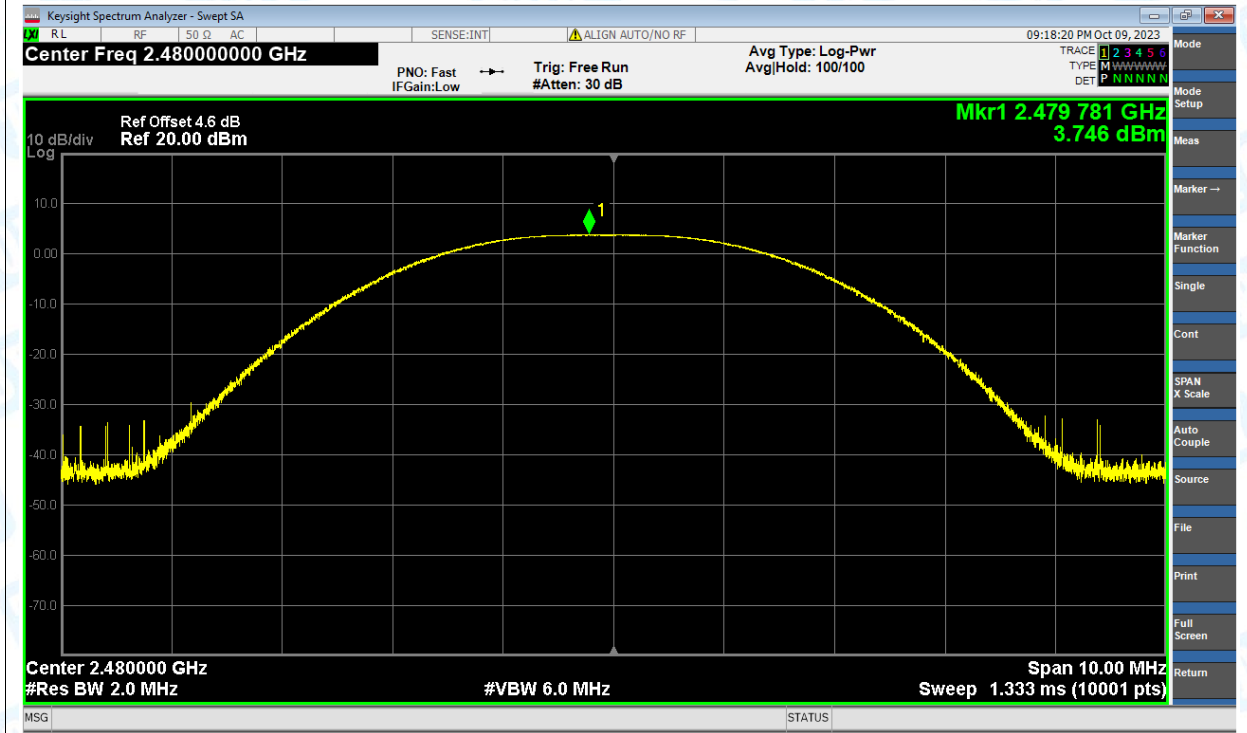
Power NVNT BLE 1Mbps 2402MHz Ant1



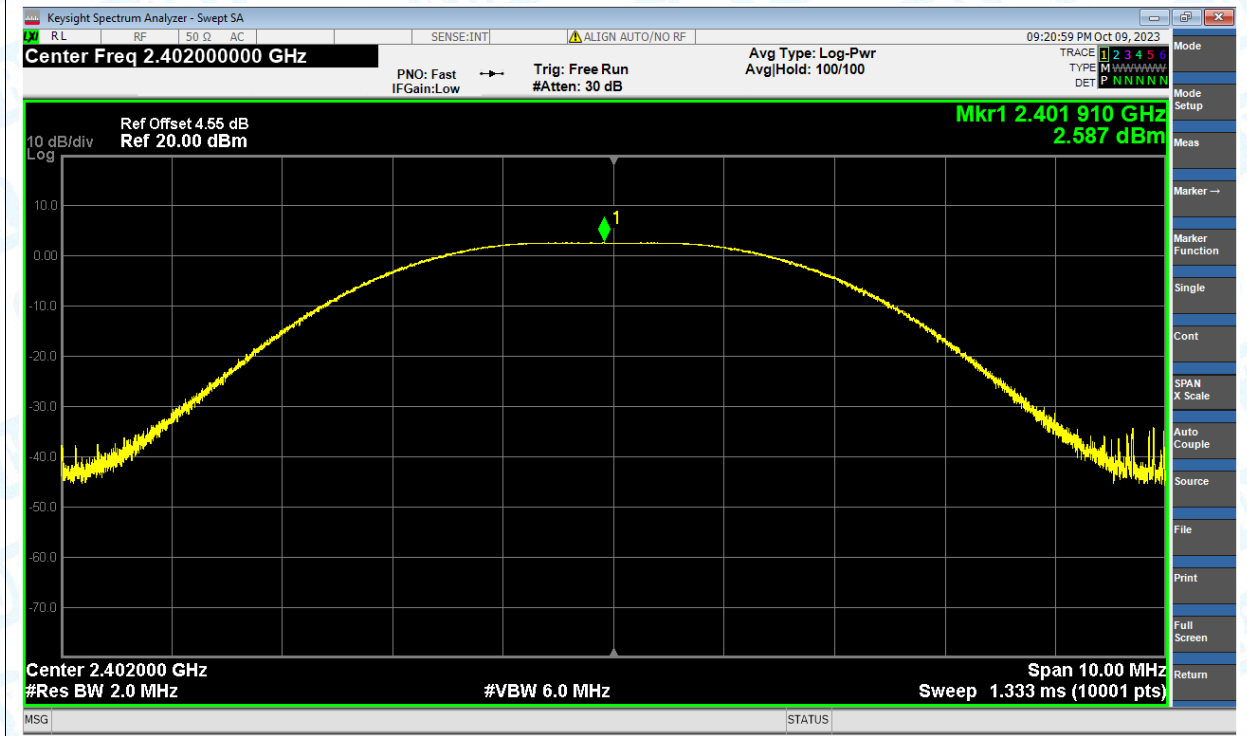
Power NVNT BLE 1Mbps 2440MHz Ant1

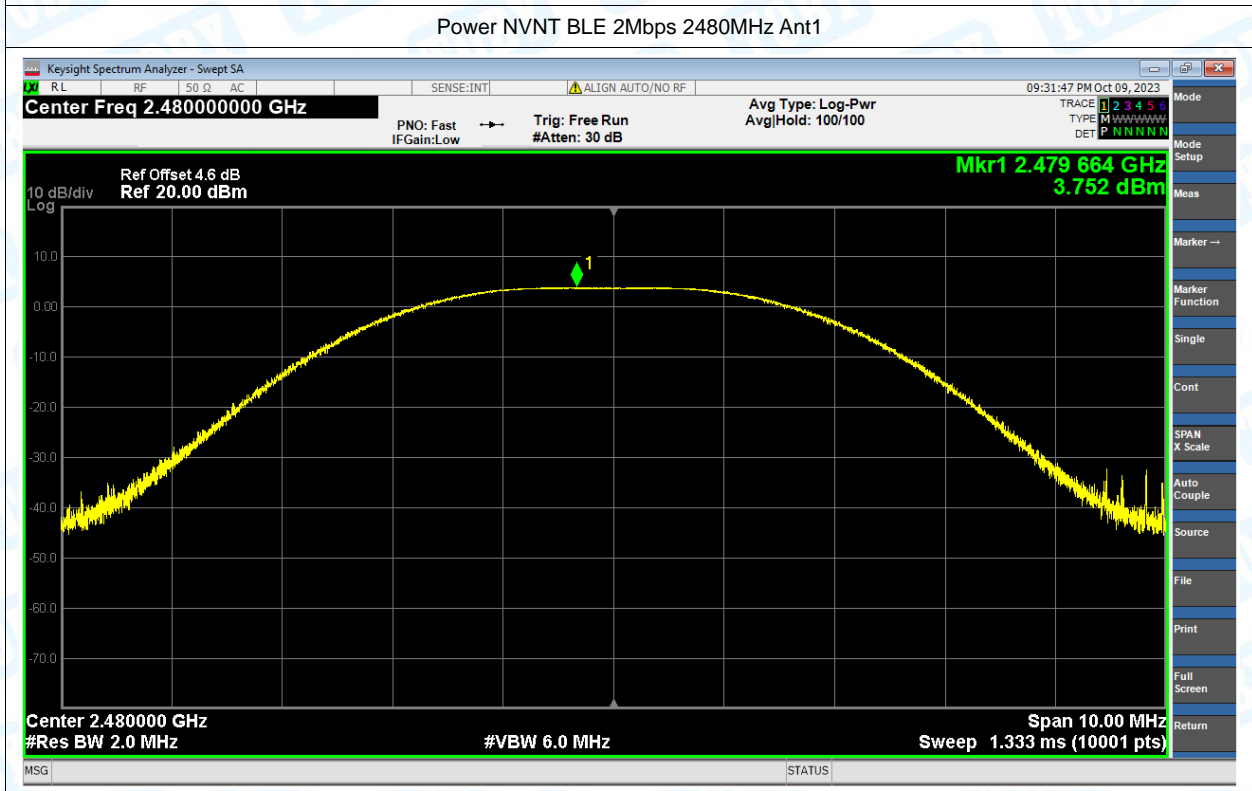
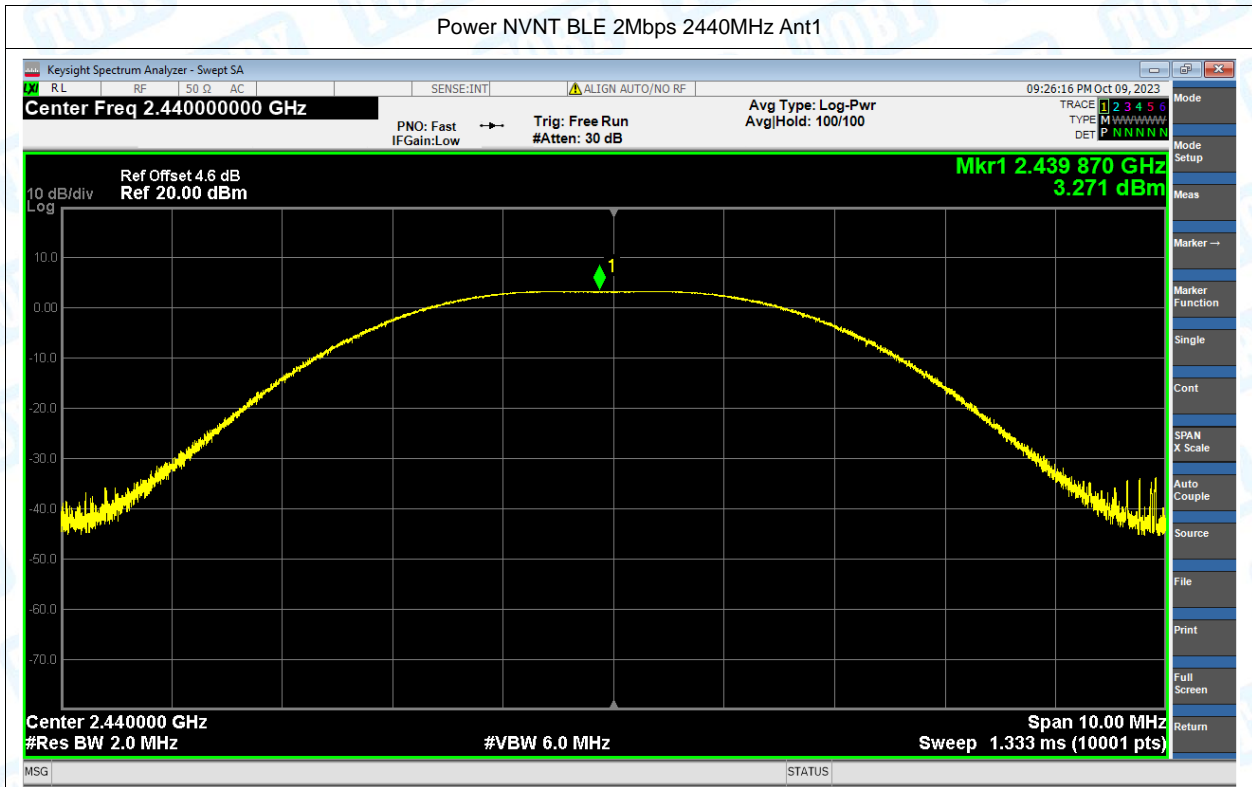


Power NVNT BLE 1Mbps 2480MHz Ant1



Power NVNT BLE 2Mbps 2402MHz Ant1



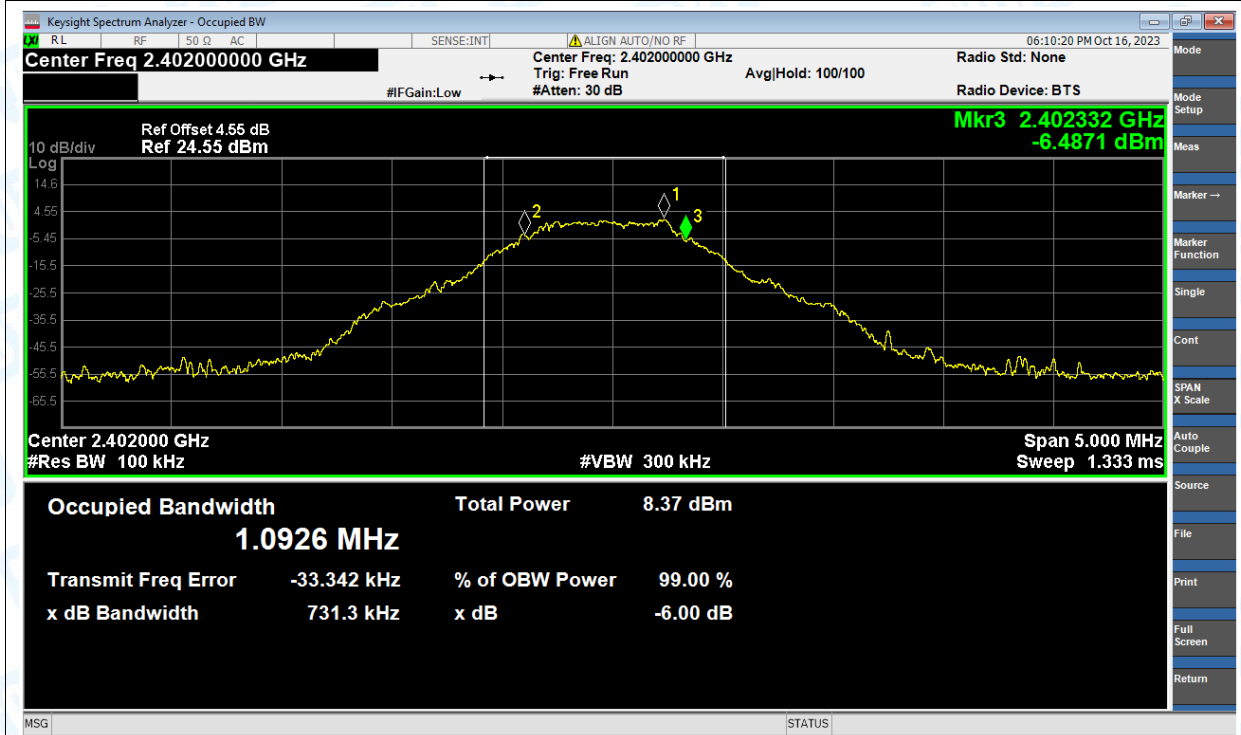


-6dB Bandwidth

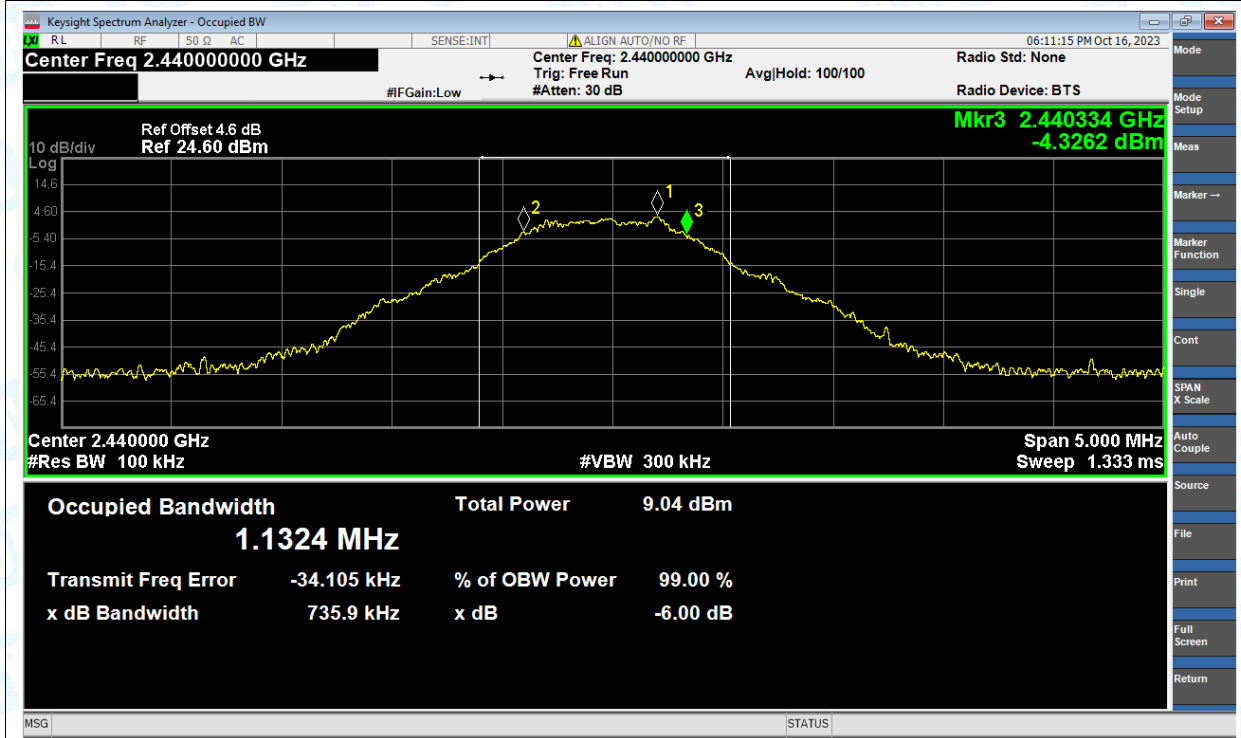
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.73	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.74	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.71	0.5	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.12	0.5	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.11	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.25	0.5	Pass

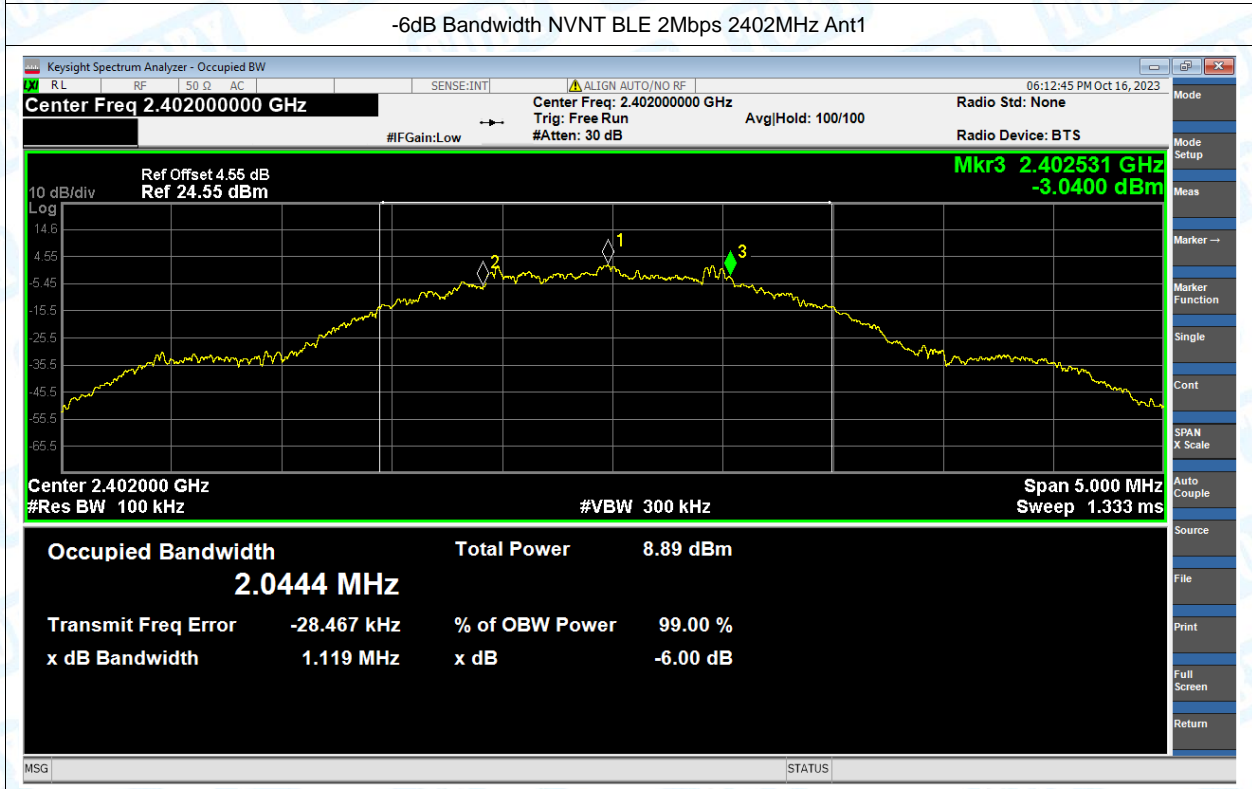
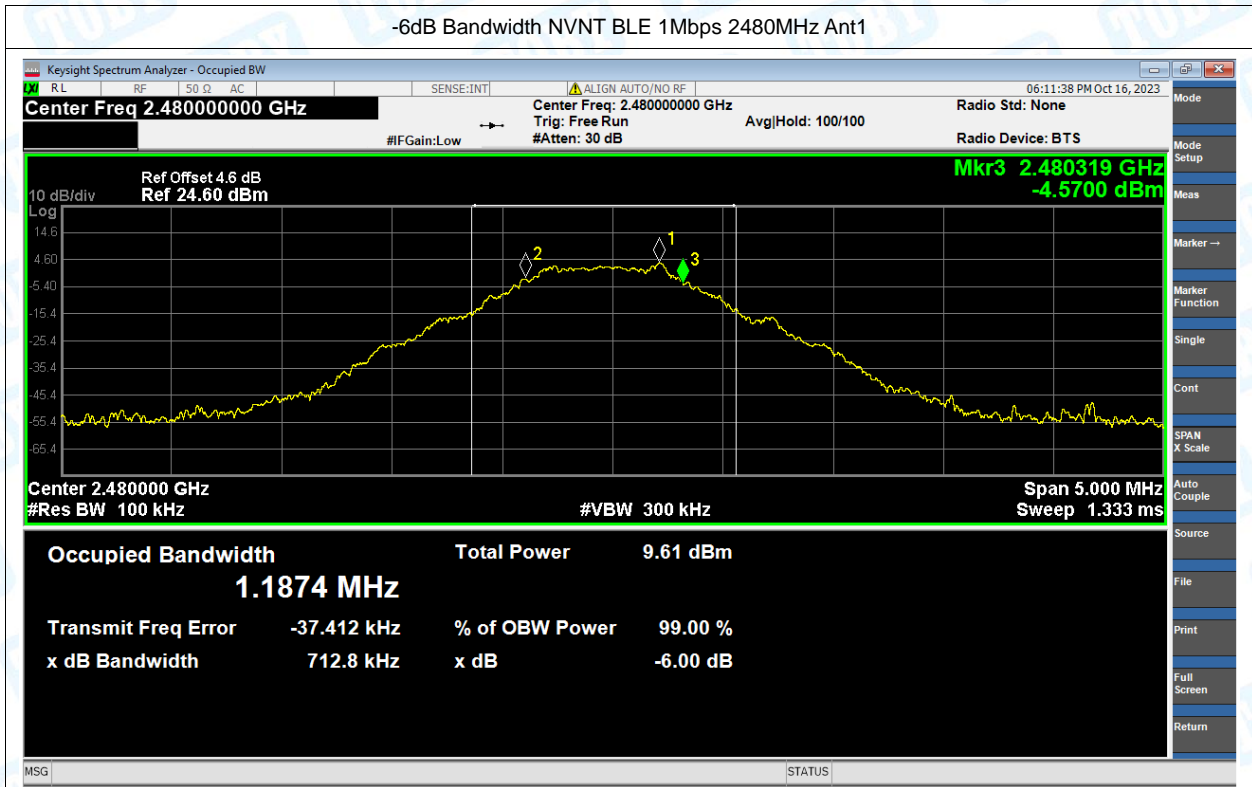
Test Graphs

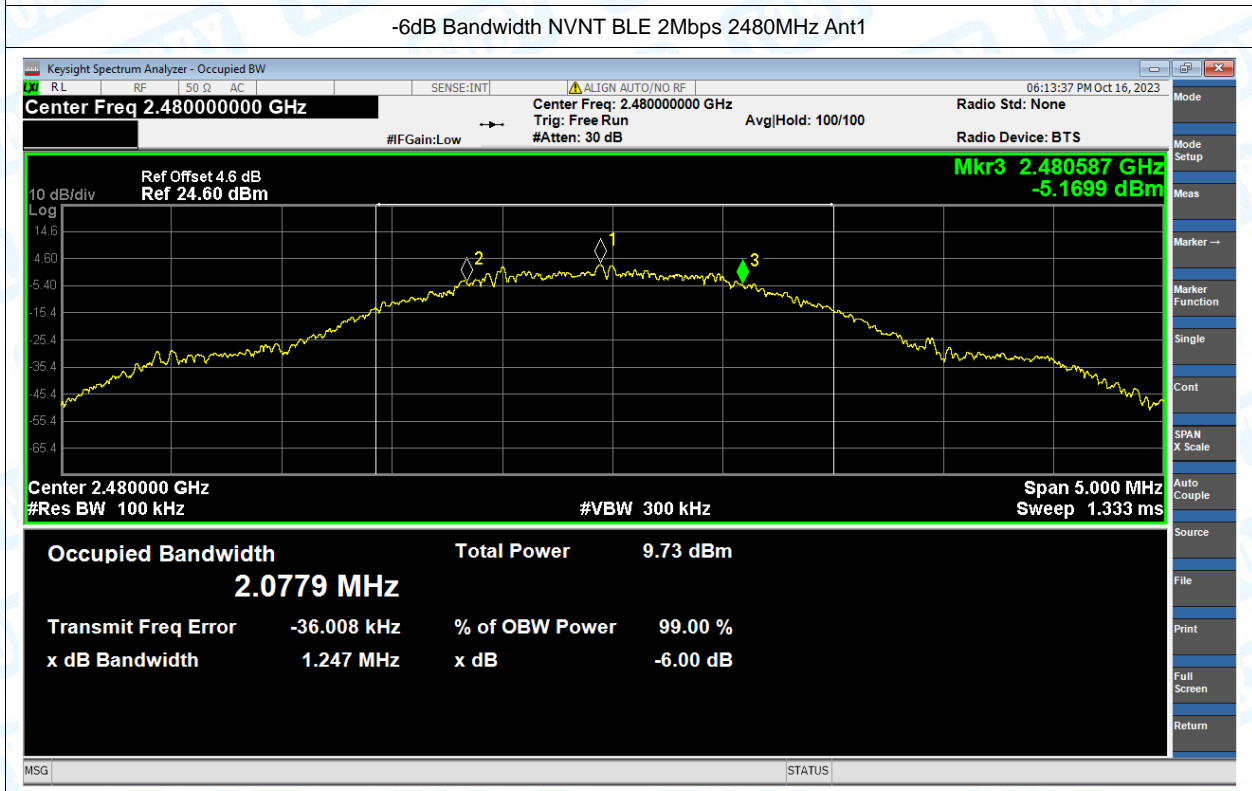
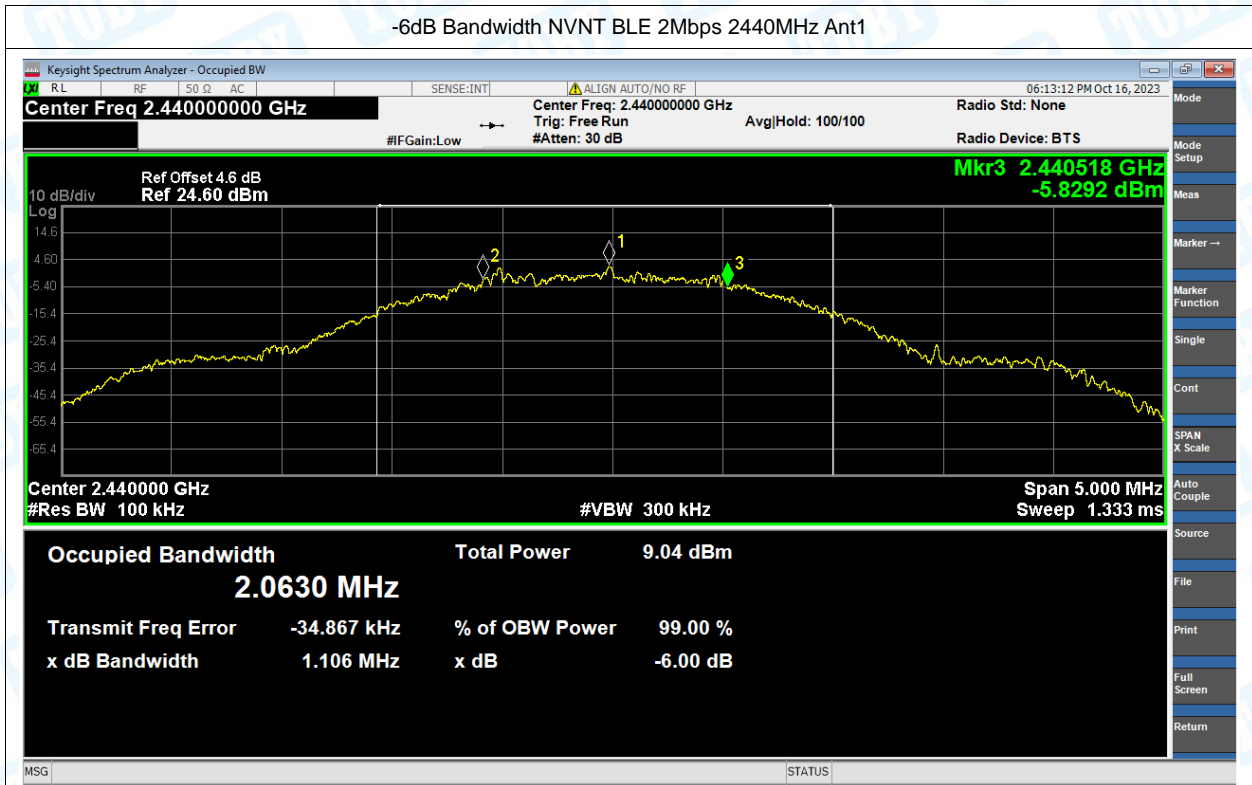
-6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1





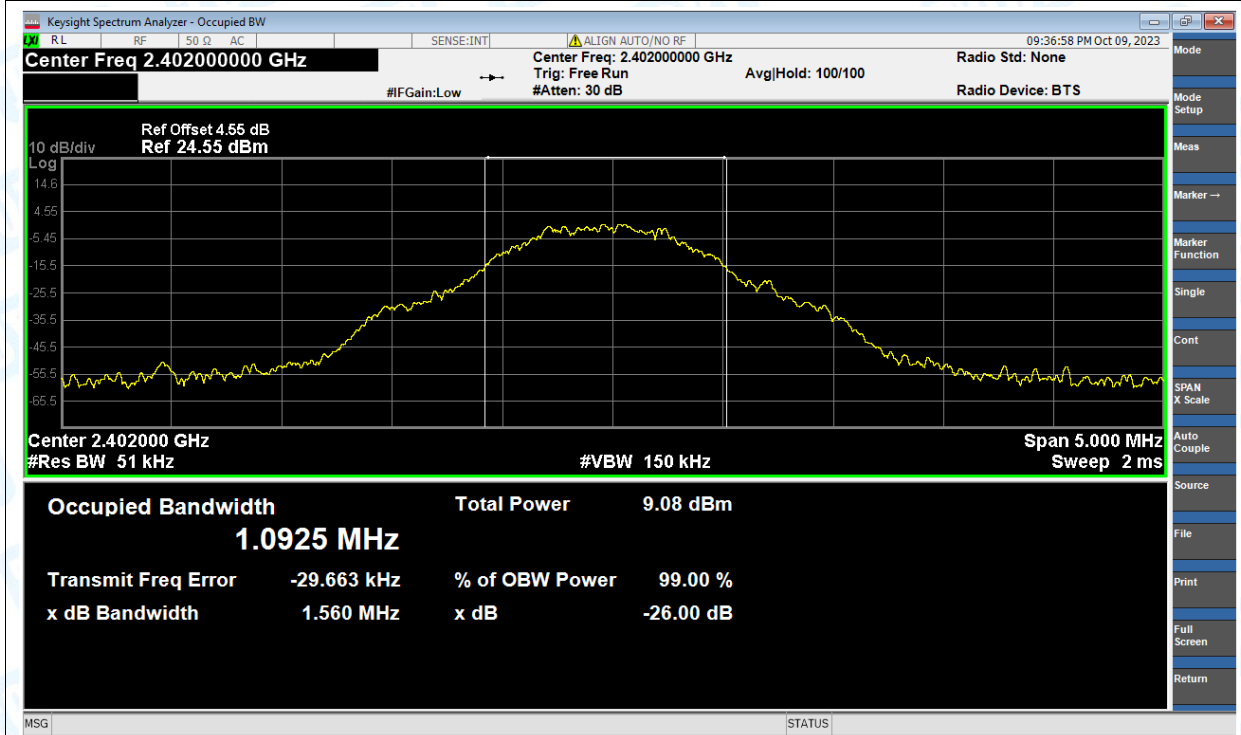


Occupied Channel Bandwidth

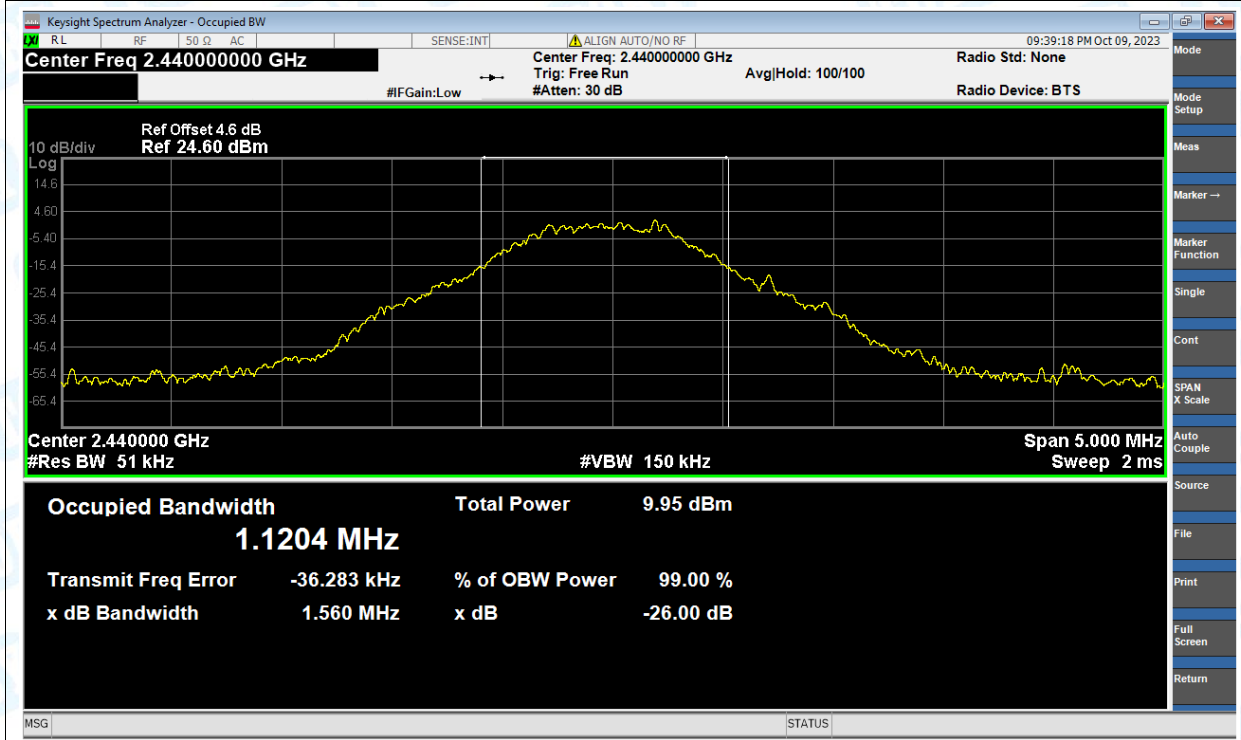
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.092
NVNT	BLE 1Mbps	2440	Ant1	1.12
NVNT	BLE 1Mbps	2480	Ant1	1.178
NVNT	BLE 2Mbps	2402	Ant1	2.074
NVNT	BLE 2Mbps	2440	Ant1	2.089
NVNT	BLE 2Mbps	2480	Ant1	2.079

Test Graphs

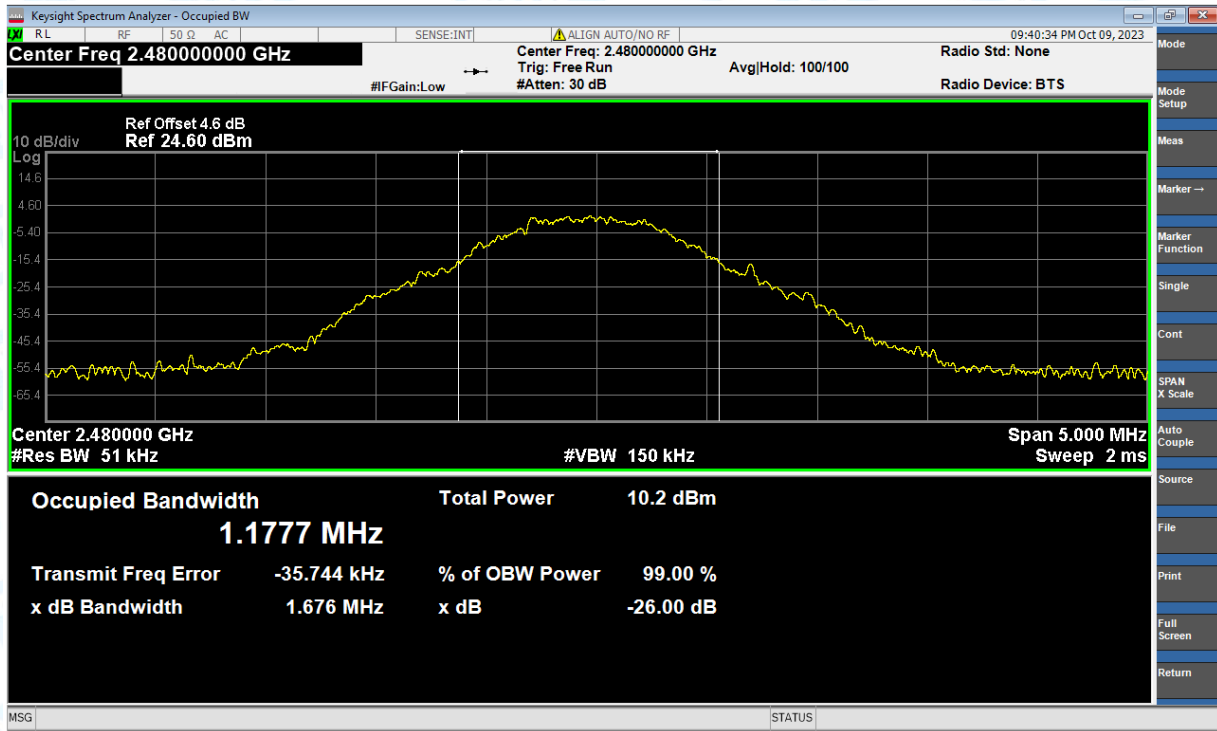
OBW NVNT BLE 1Mbps 2402MHz Ant1



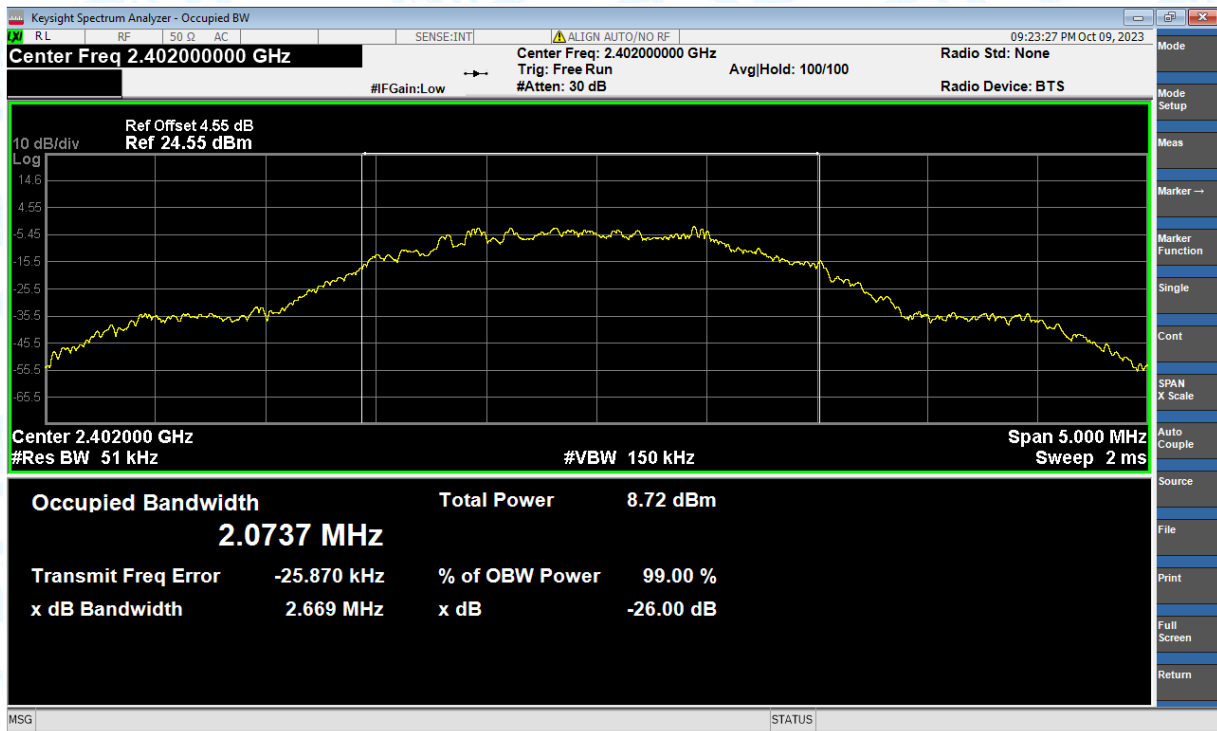
OBW NVNT BLE 1Mbps 2440MHz Ant1



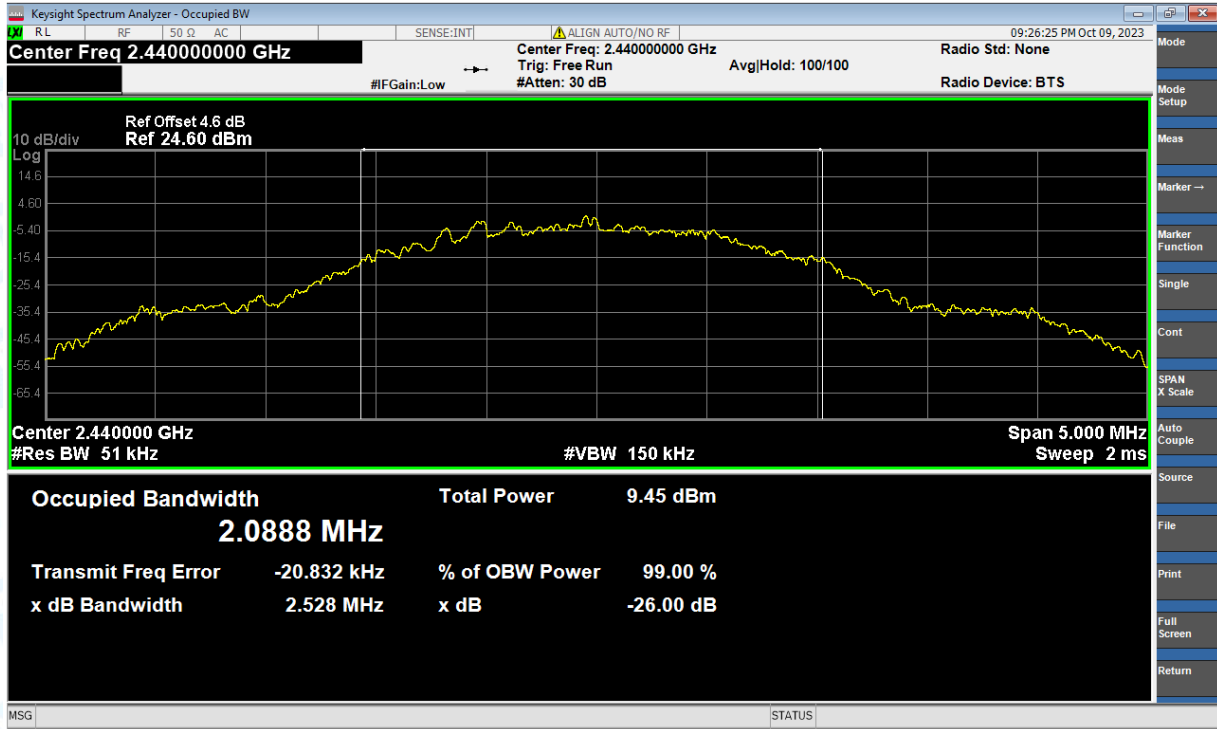
OBW NVNT BLE 1Mbps 2480MHz Ant1



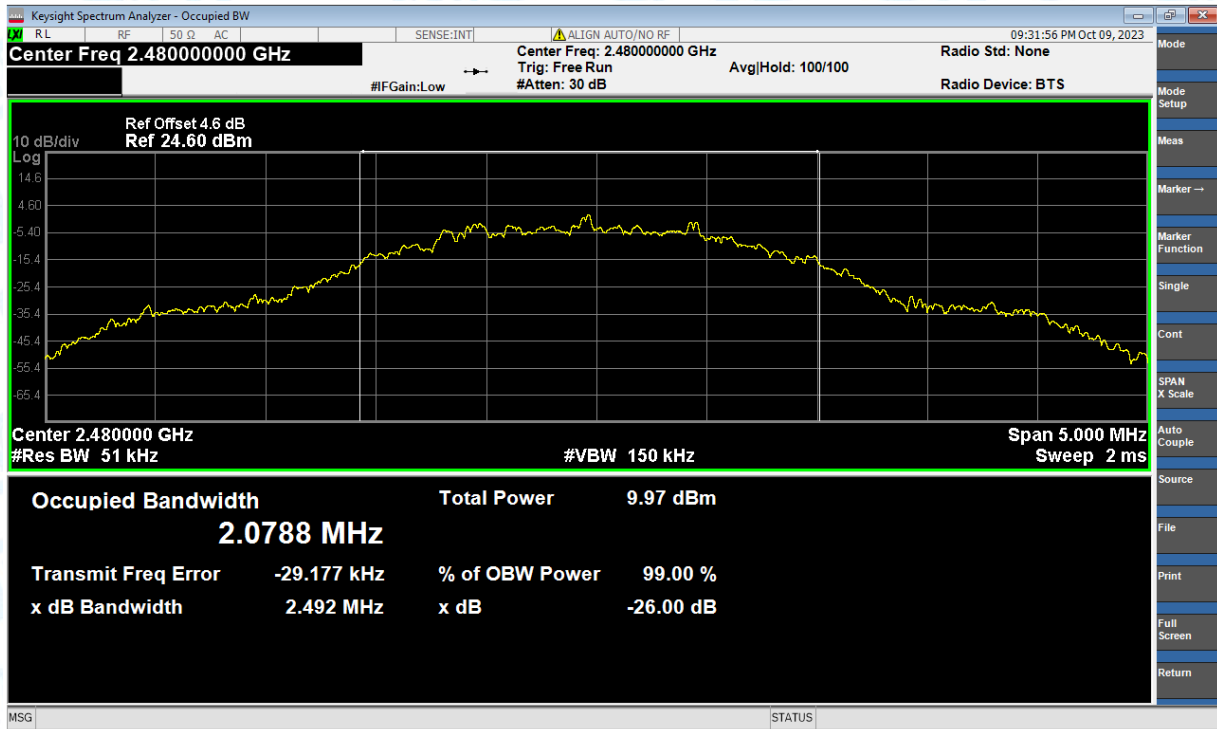
OBW NVNT BLE 2Mbps 2402MHz Ant1



OBW NVNT BLE 2Mbps 2440MHz Ant1



OBW NVNT BLE 2Mbps 2480MHz Ant1



Maximum Power Spectral Density Level

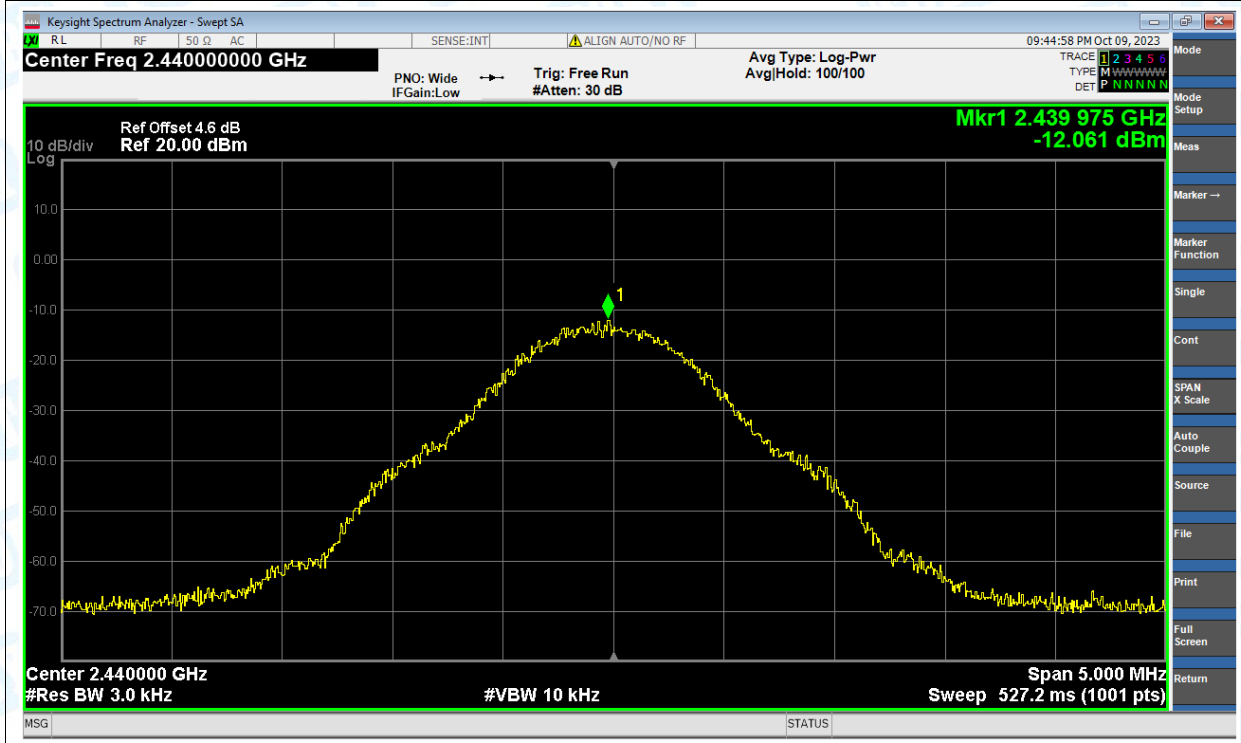
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-12.838	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-12.061	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-11.629	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-16.954	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-15.759	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-15.022	8	Pass

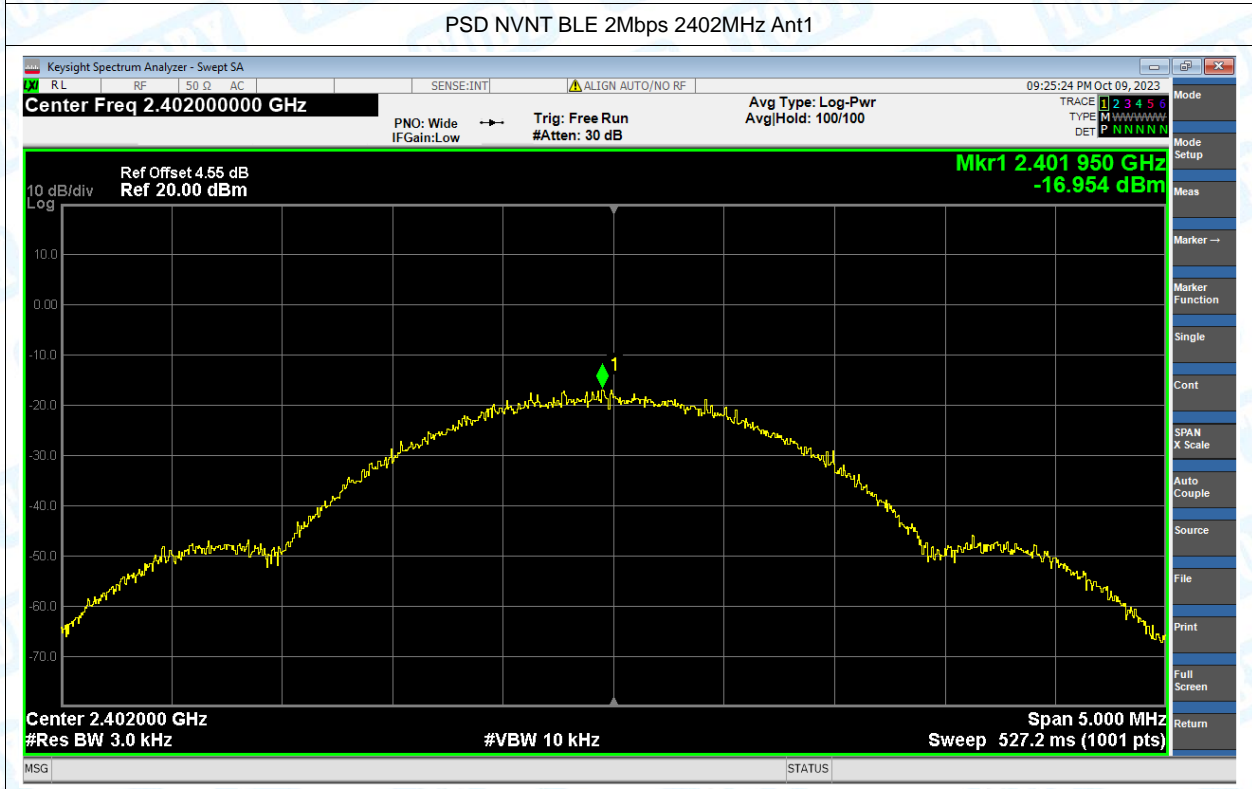
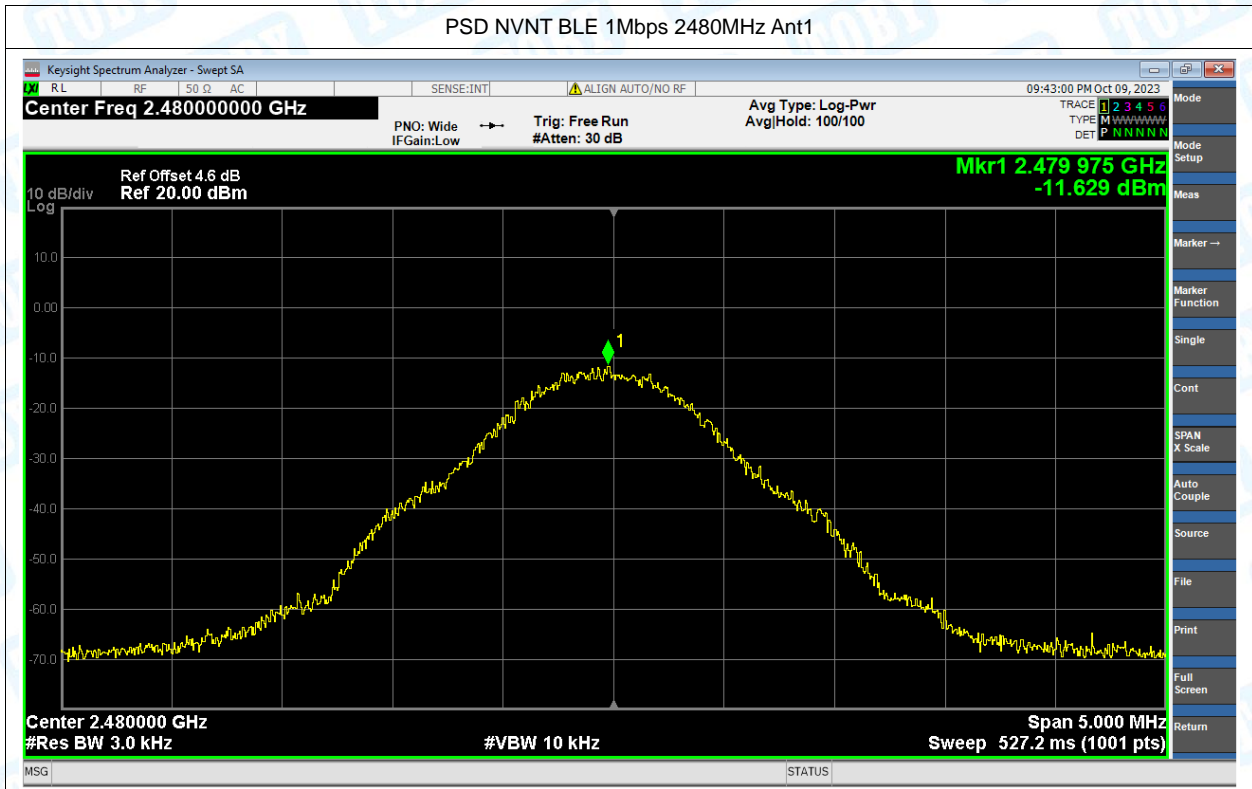
Test Graphs

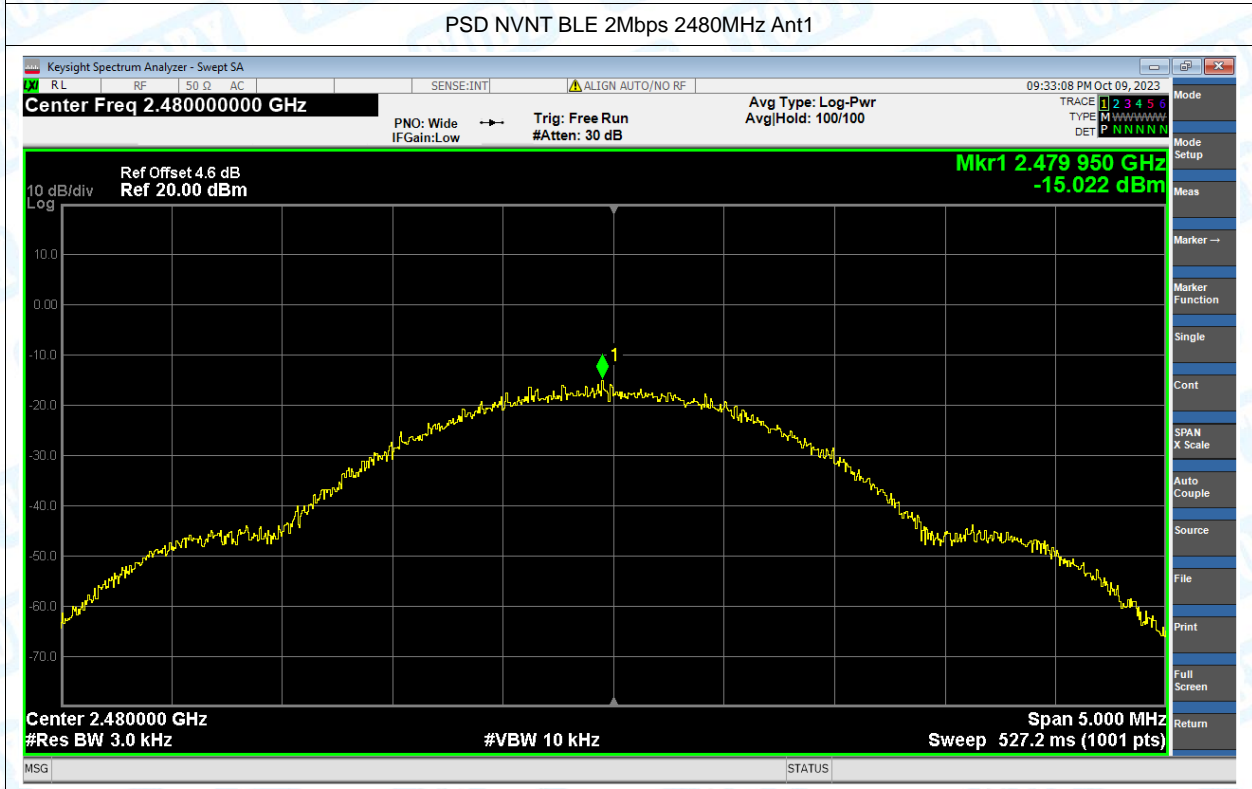
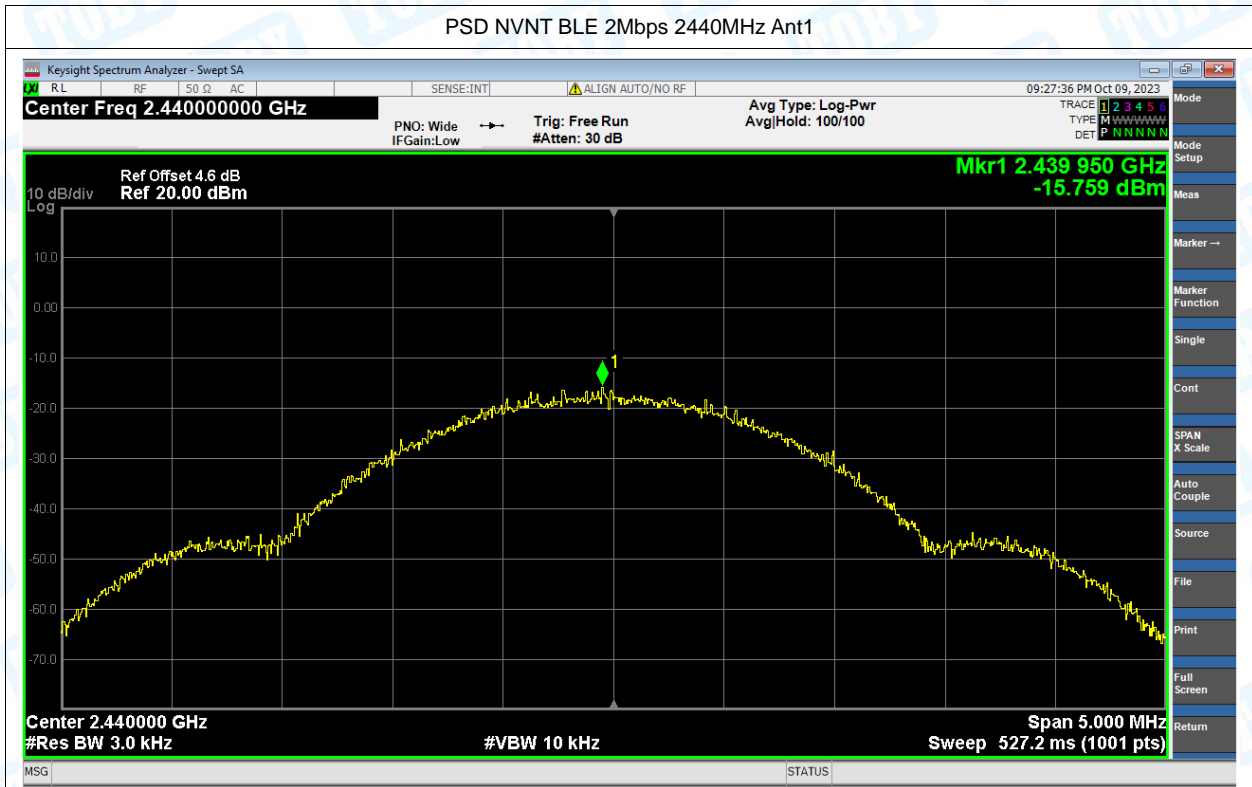
PSD NVNT BLE 1Mbps 2402MHz Ant1



PSD NVNT BLE 1Mbps 2440MHz Ant1





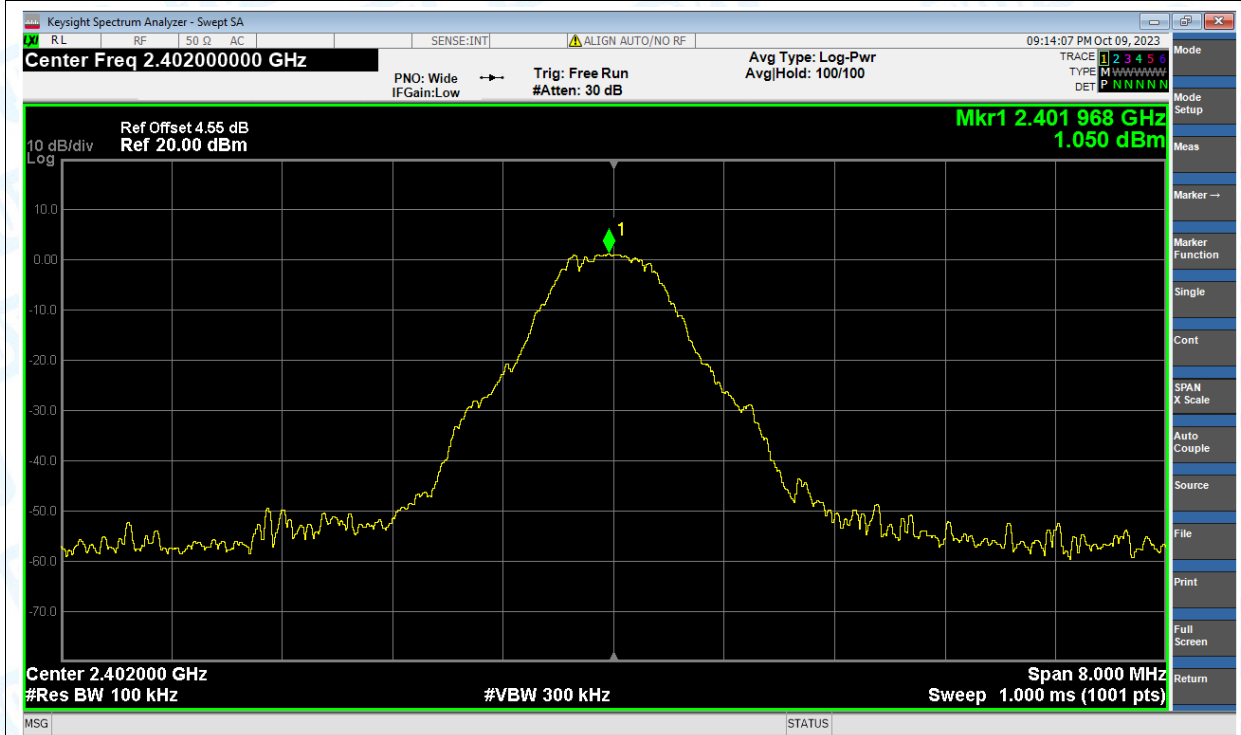


Band Edge

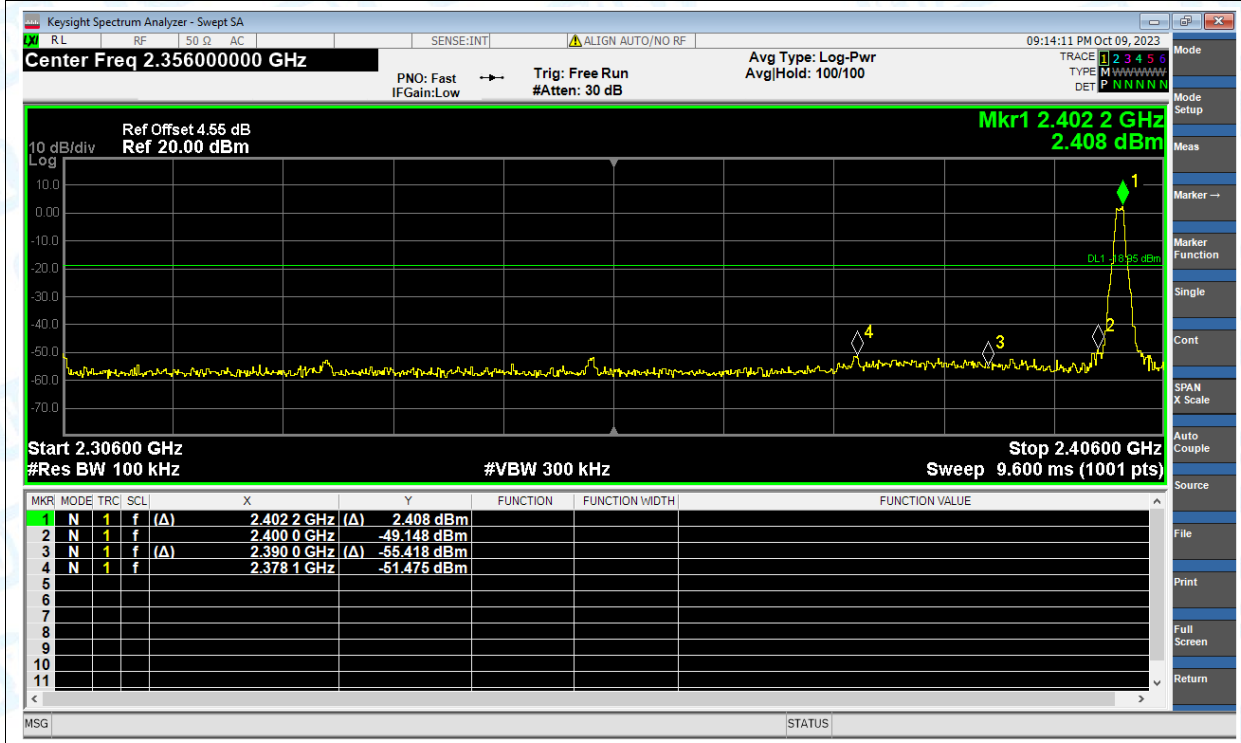
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-52.52	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-53.91	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-53.75	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-48.29	-20	Pass

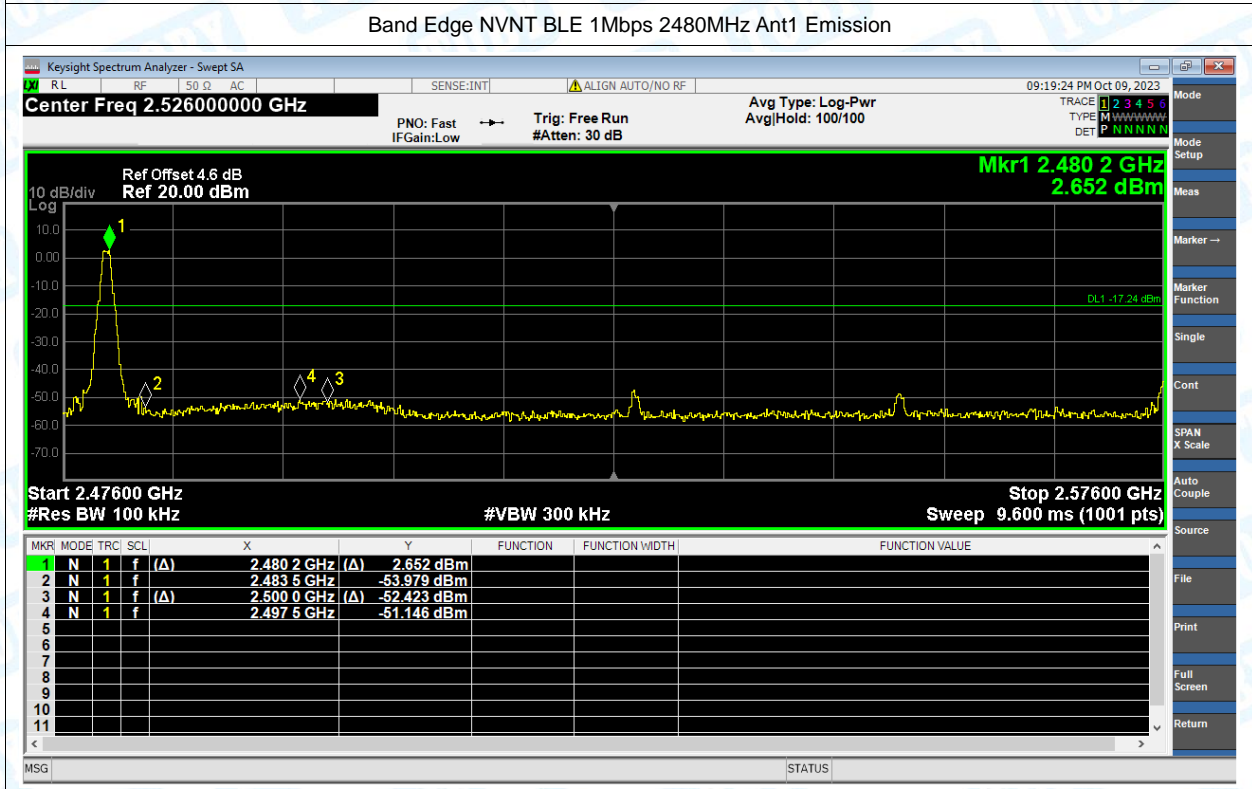
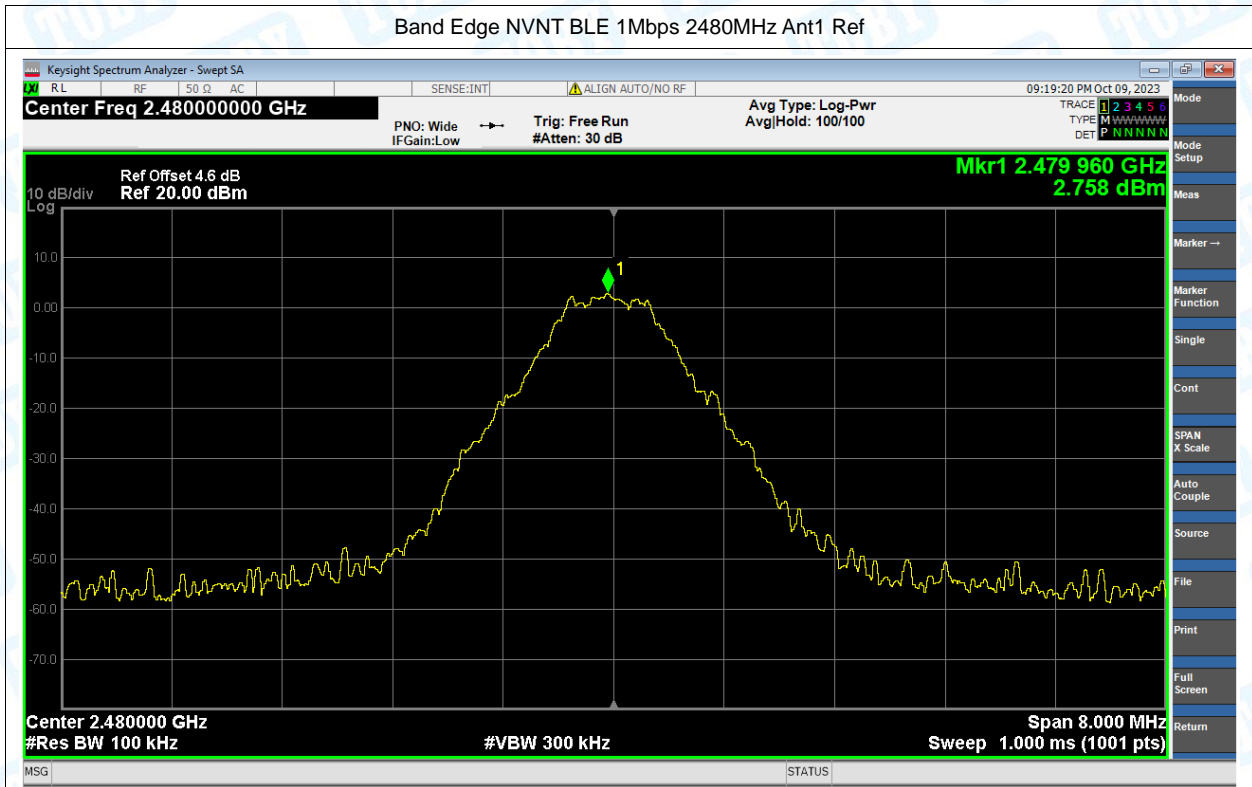
Test Graphs

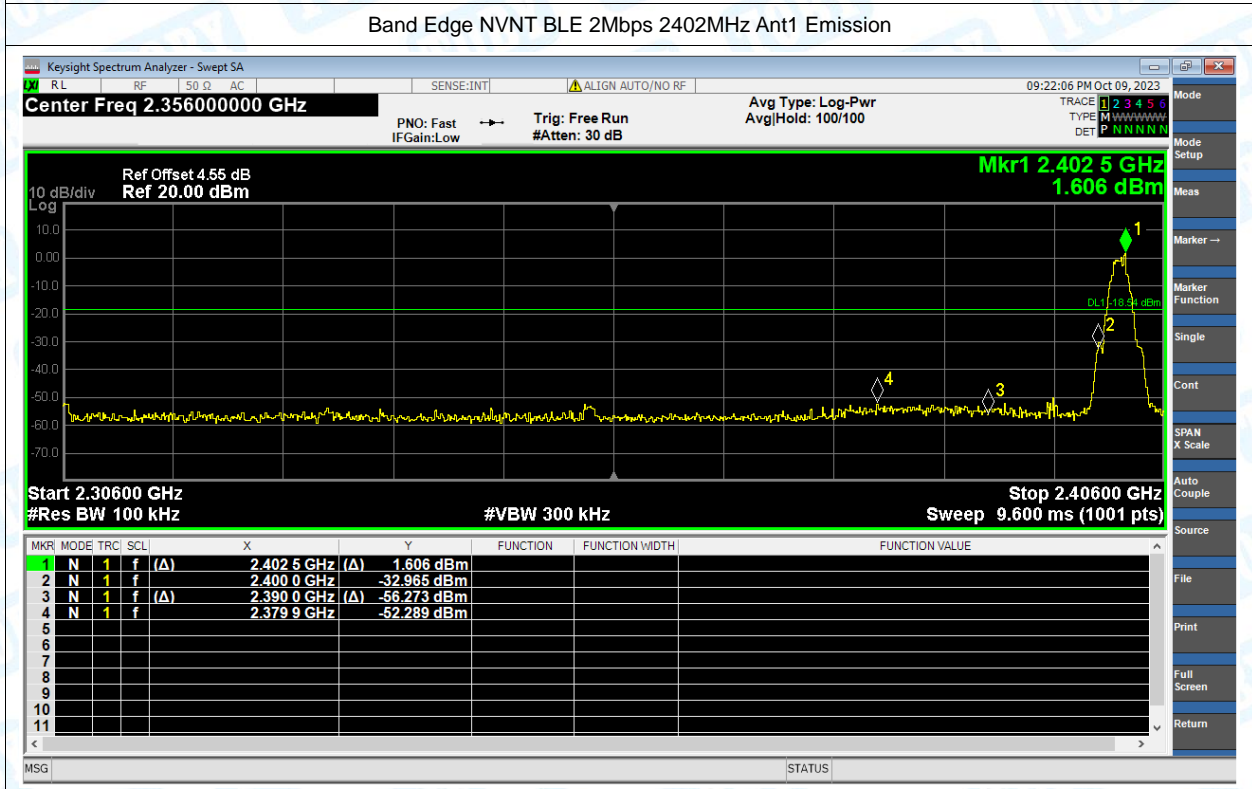
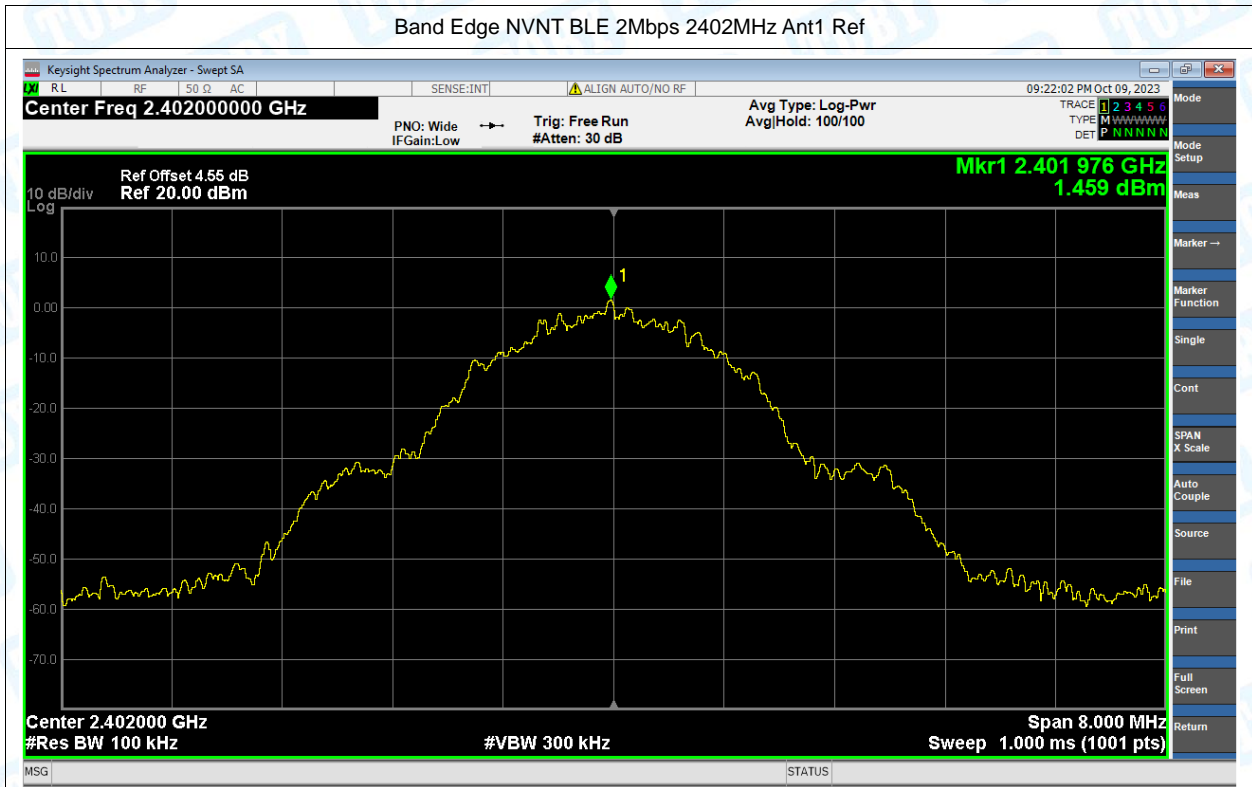
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref

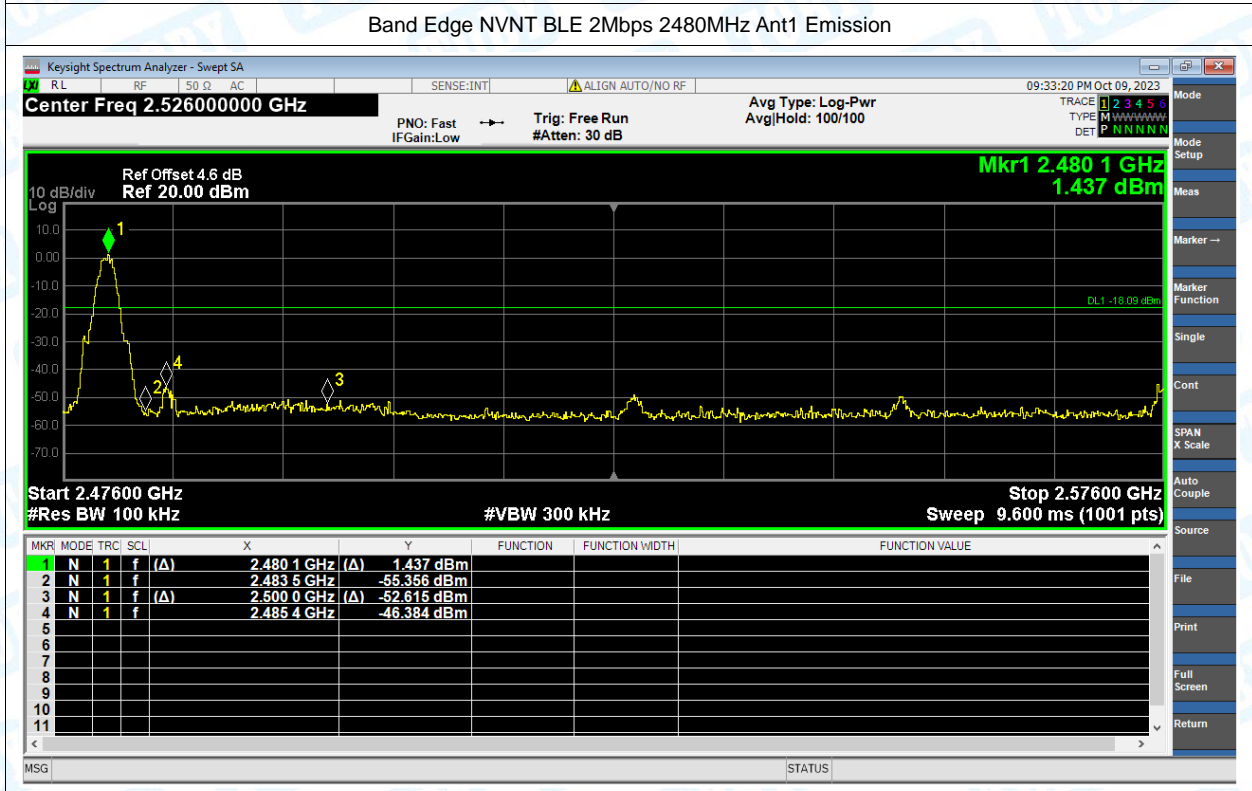
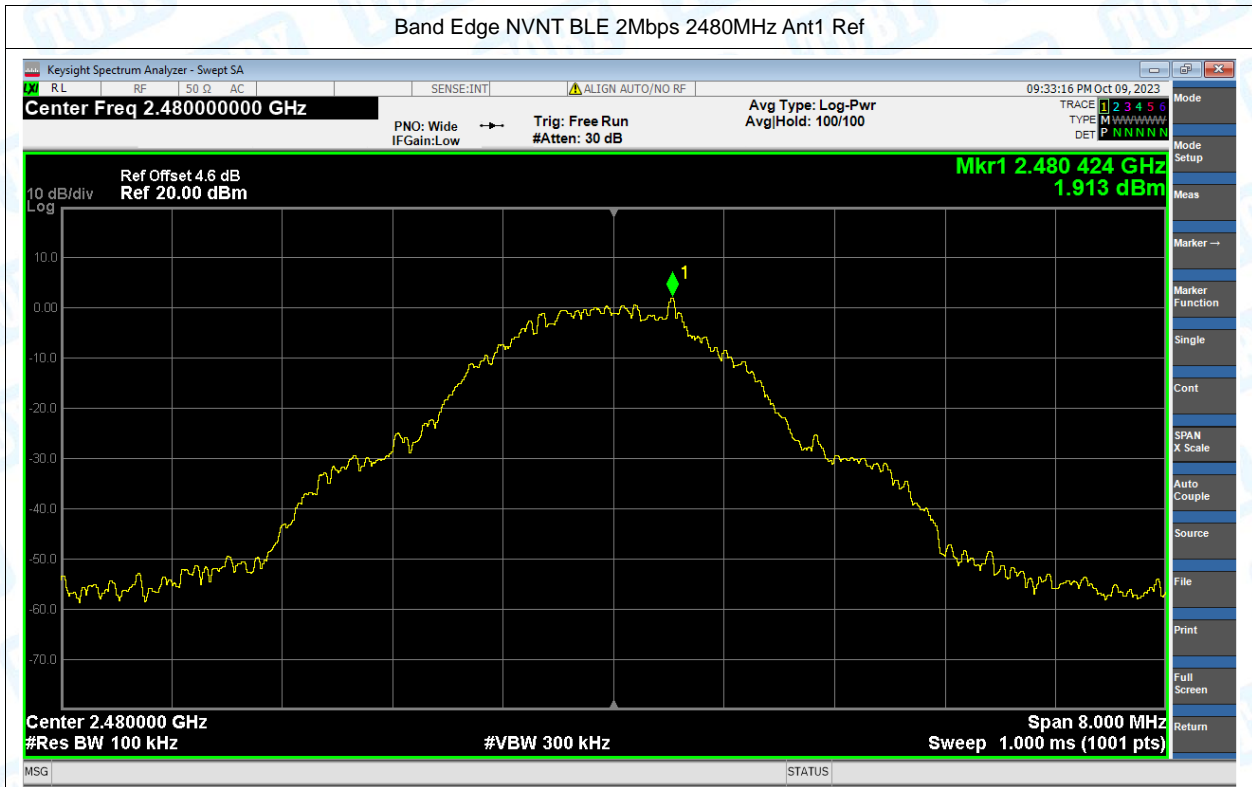


Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission









Conducted RF Spurious Emission

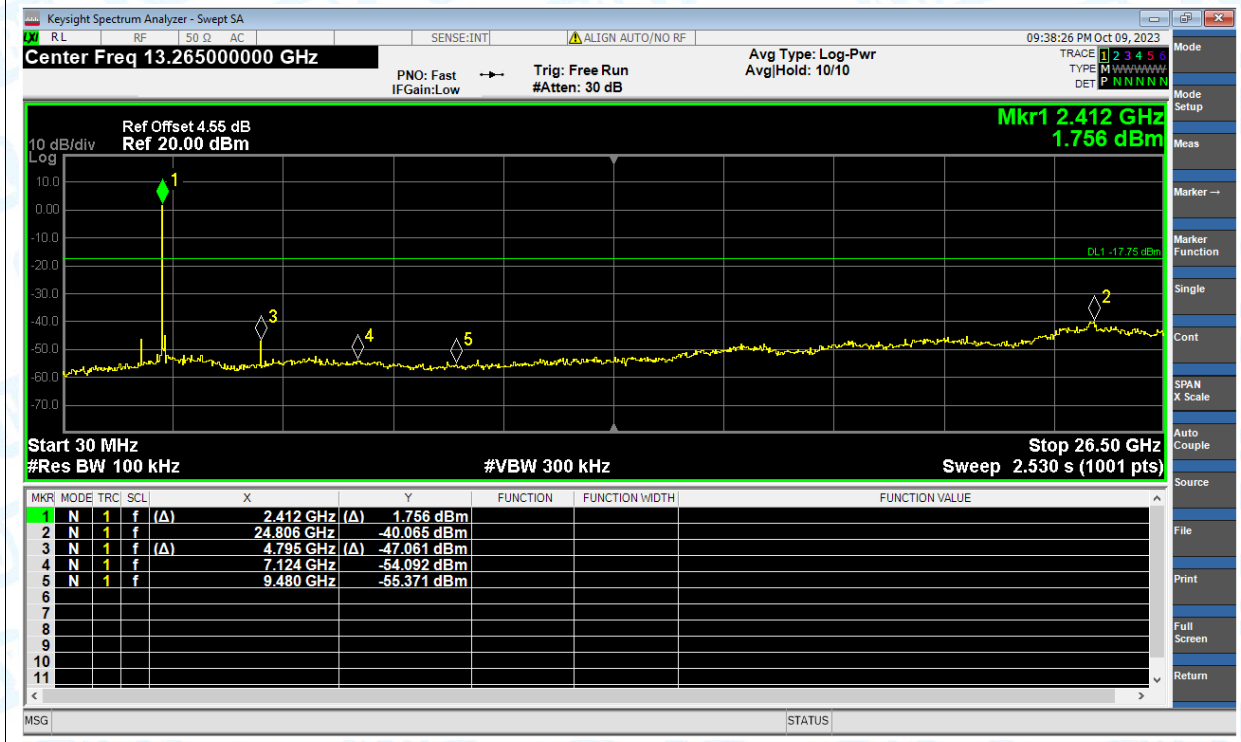
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-42.32	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-42.96	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-42.36	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-41.72	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-41.83	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-42.9	-20	Pass

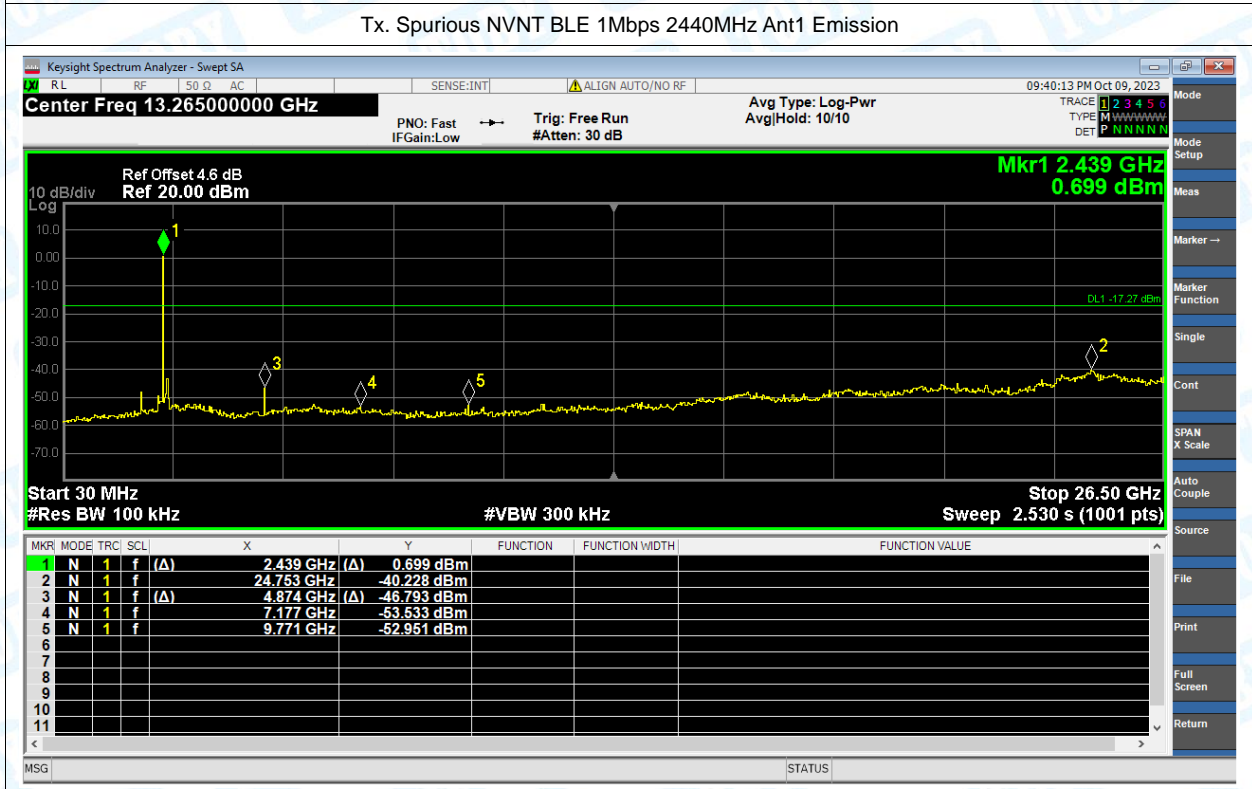
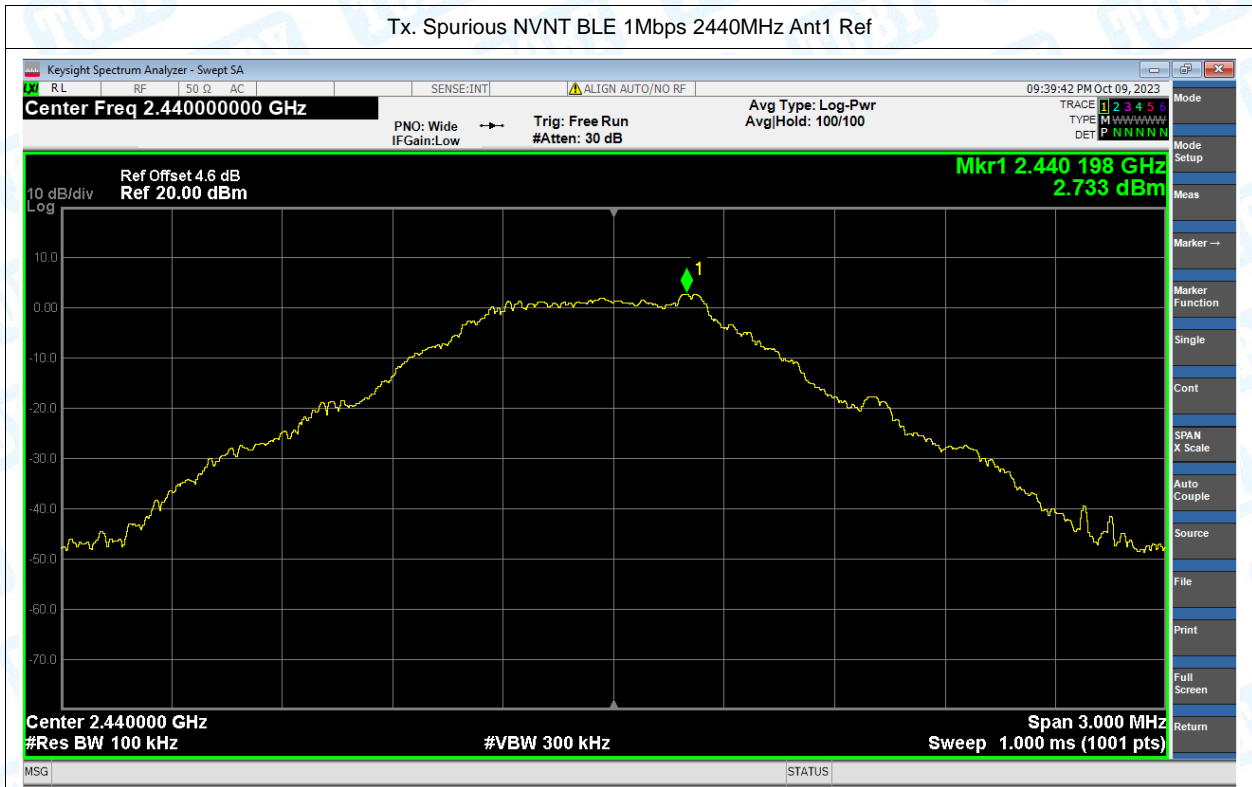
Test Graphs

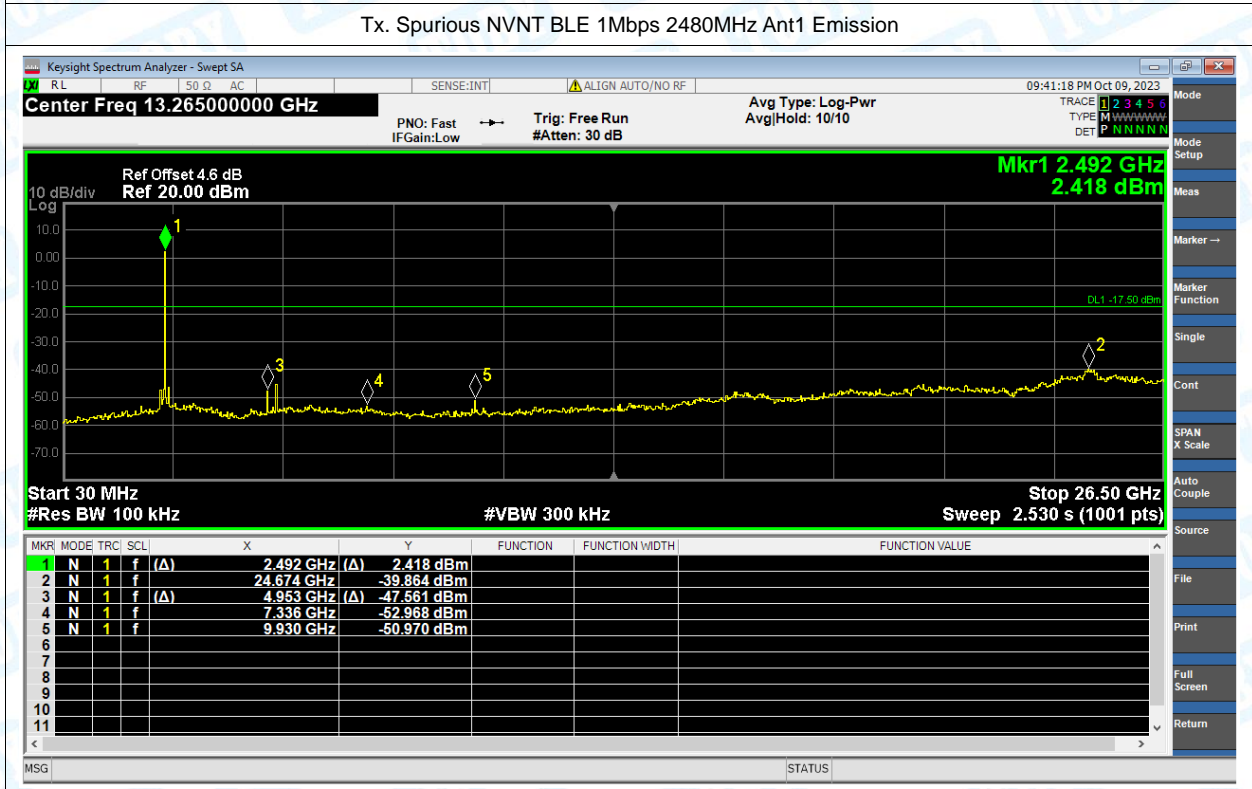
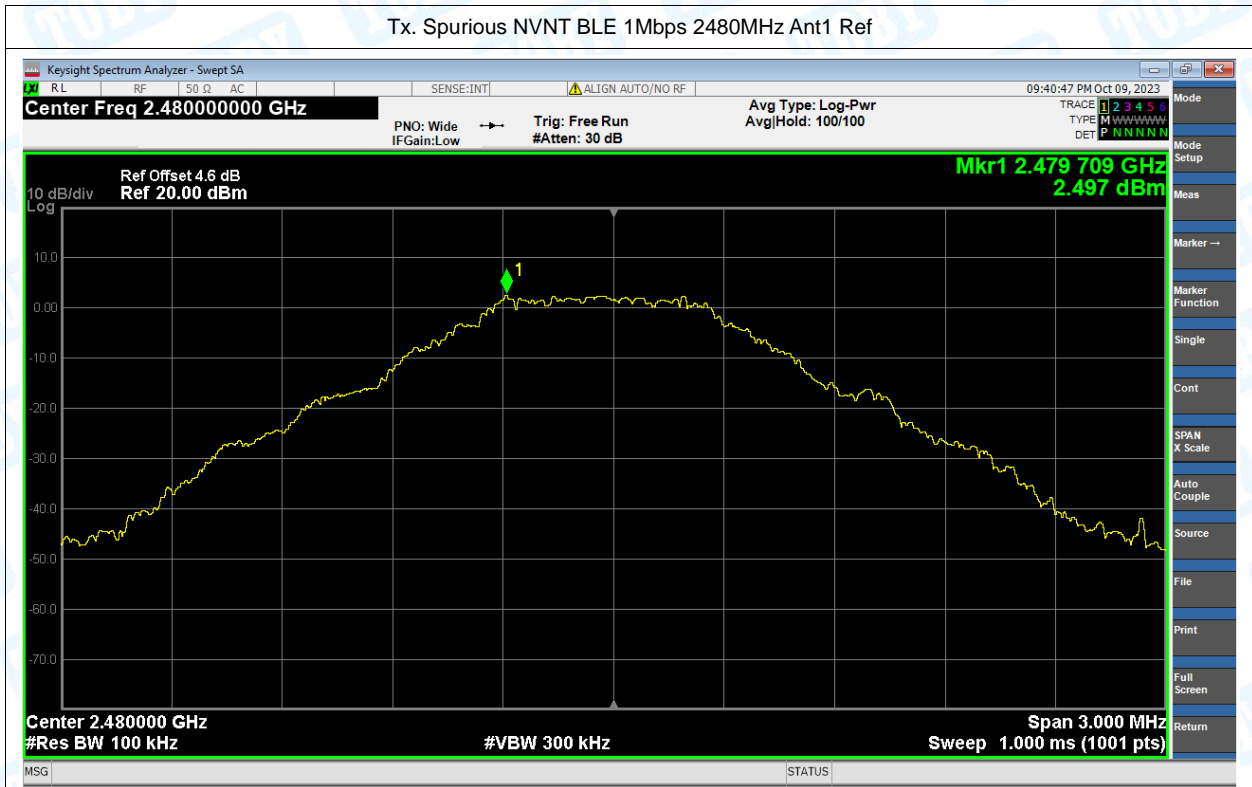
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref



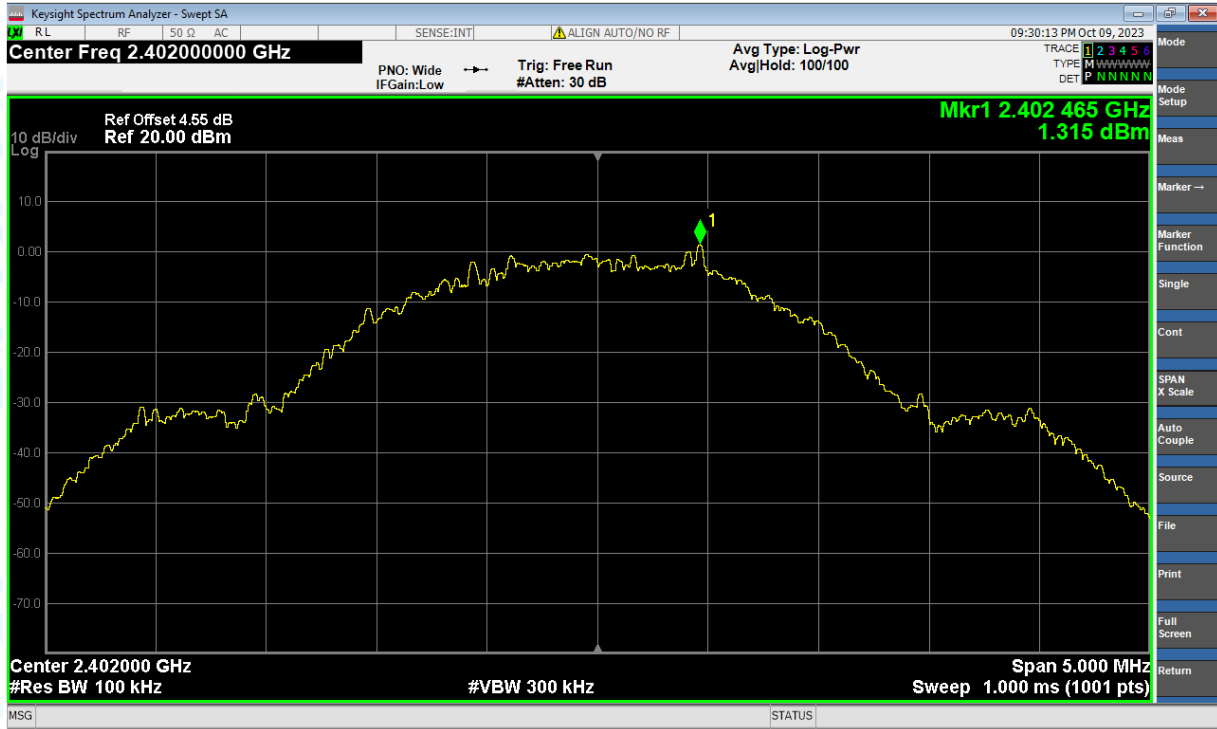
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission



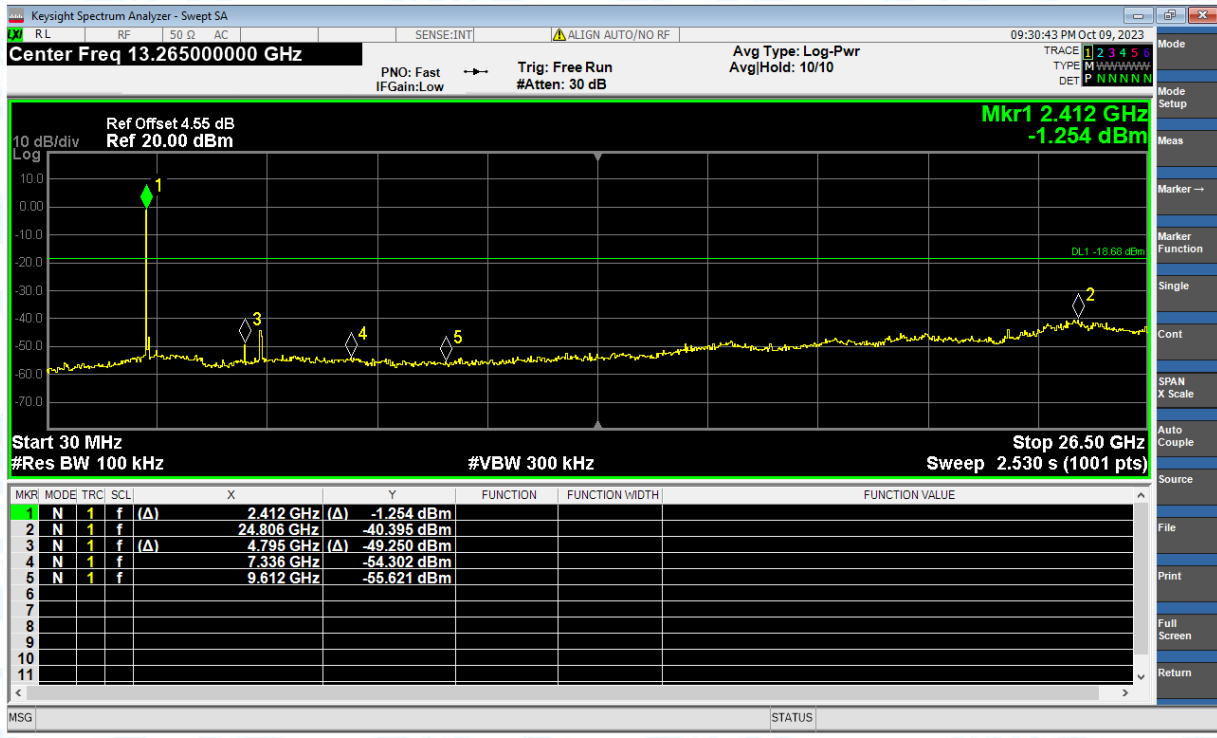


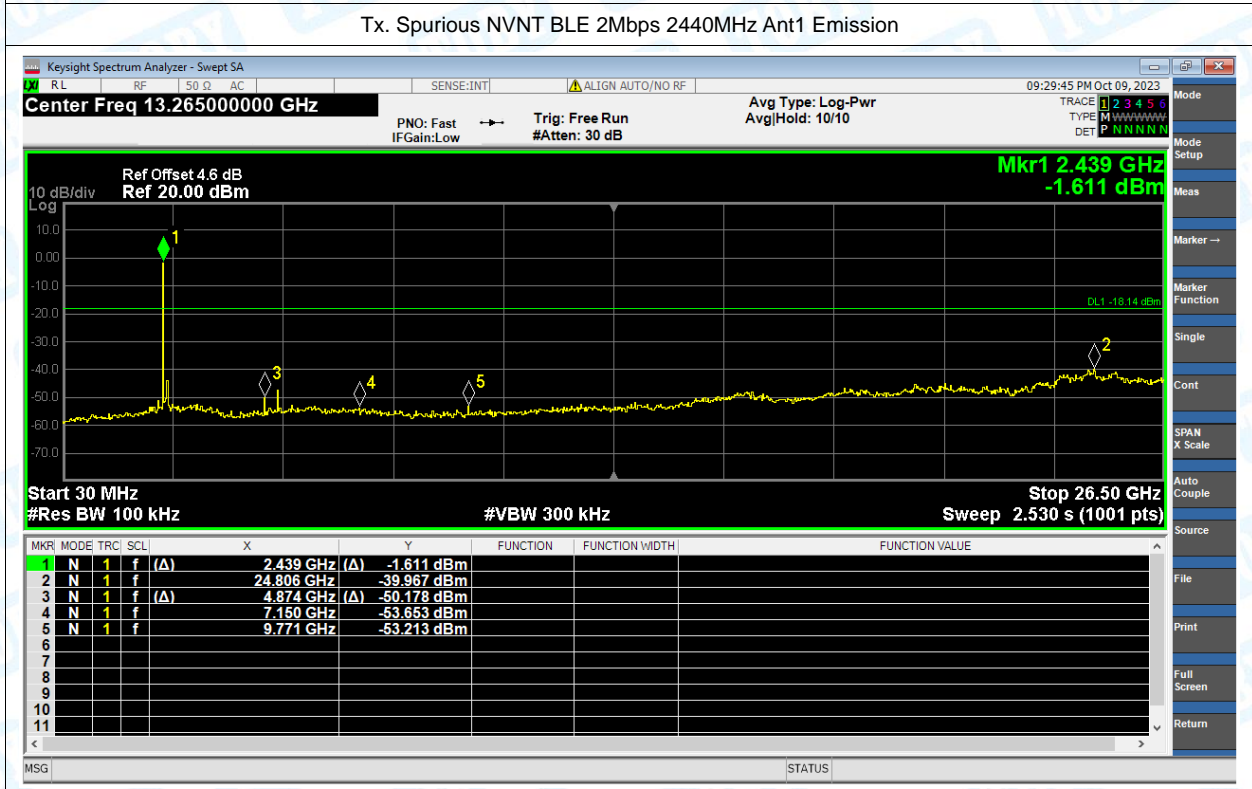
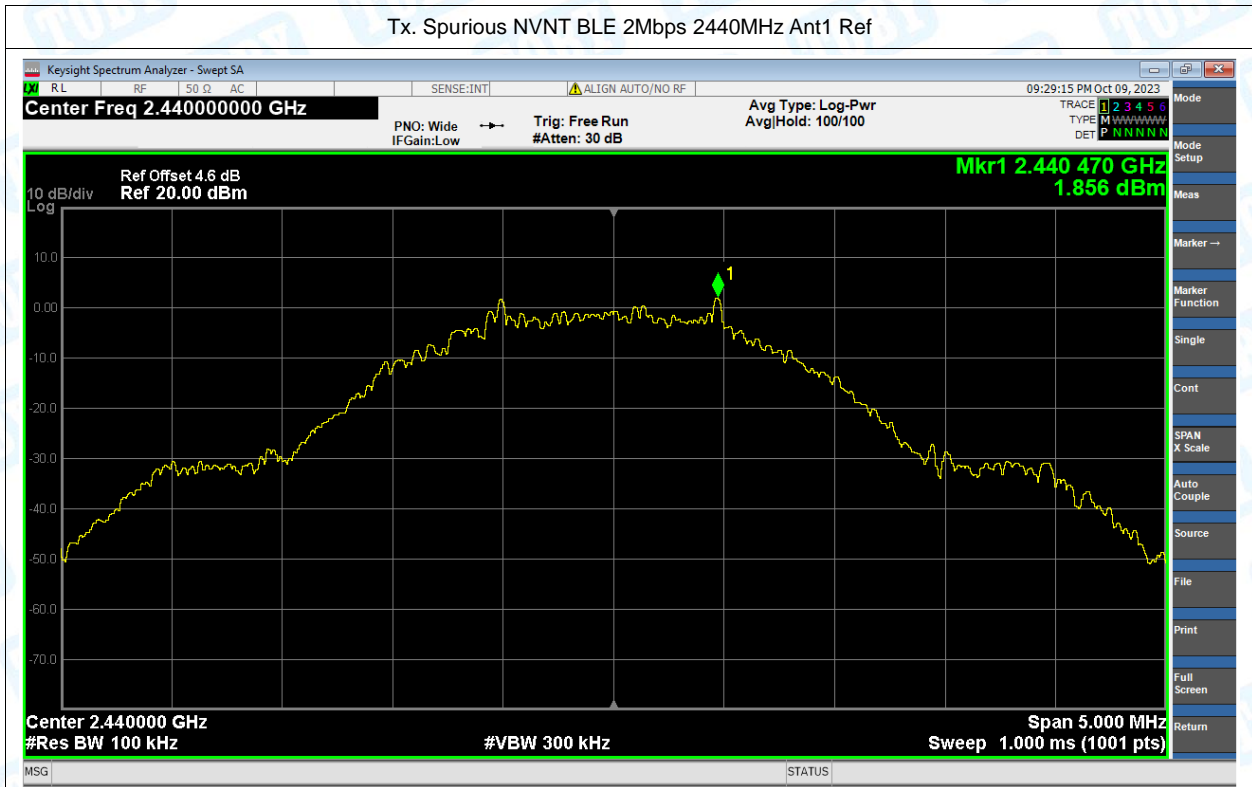


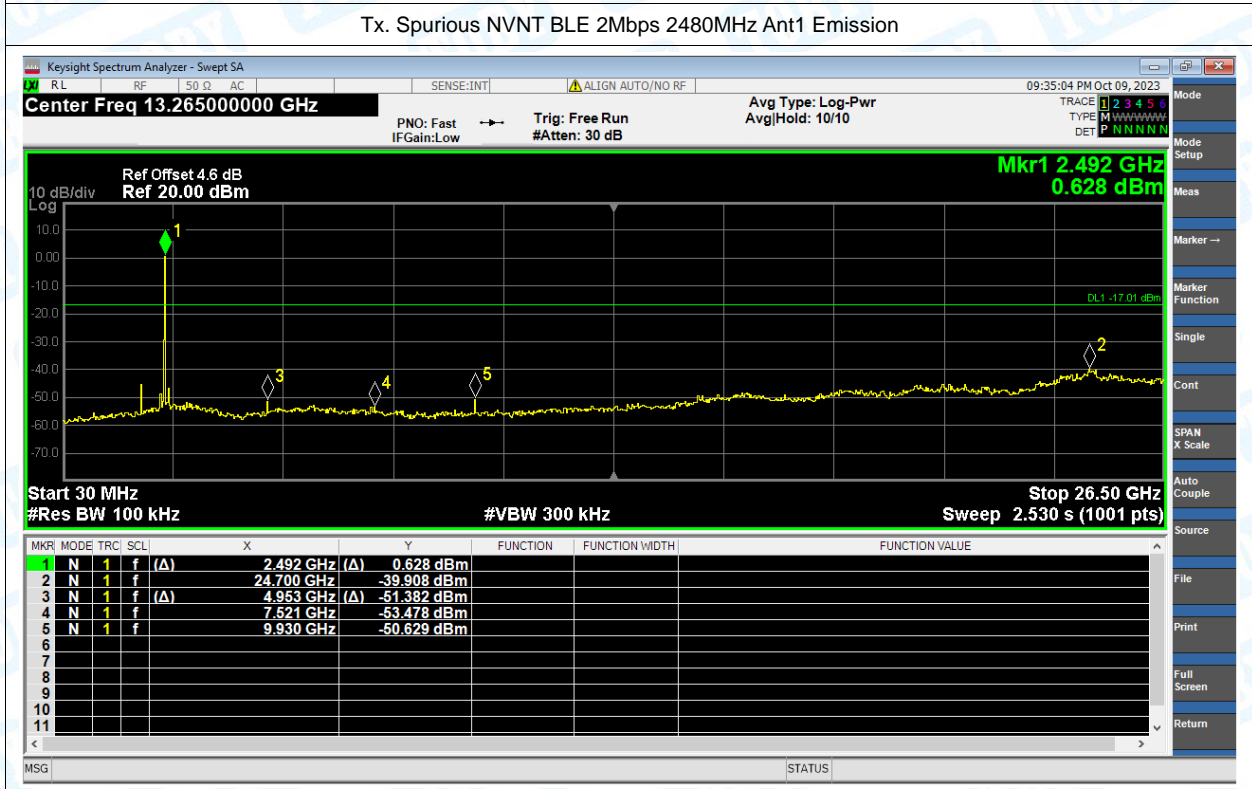
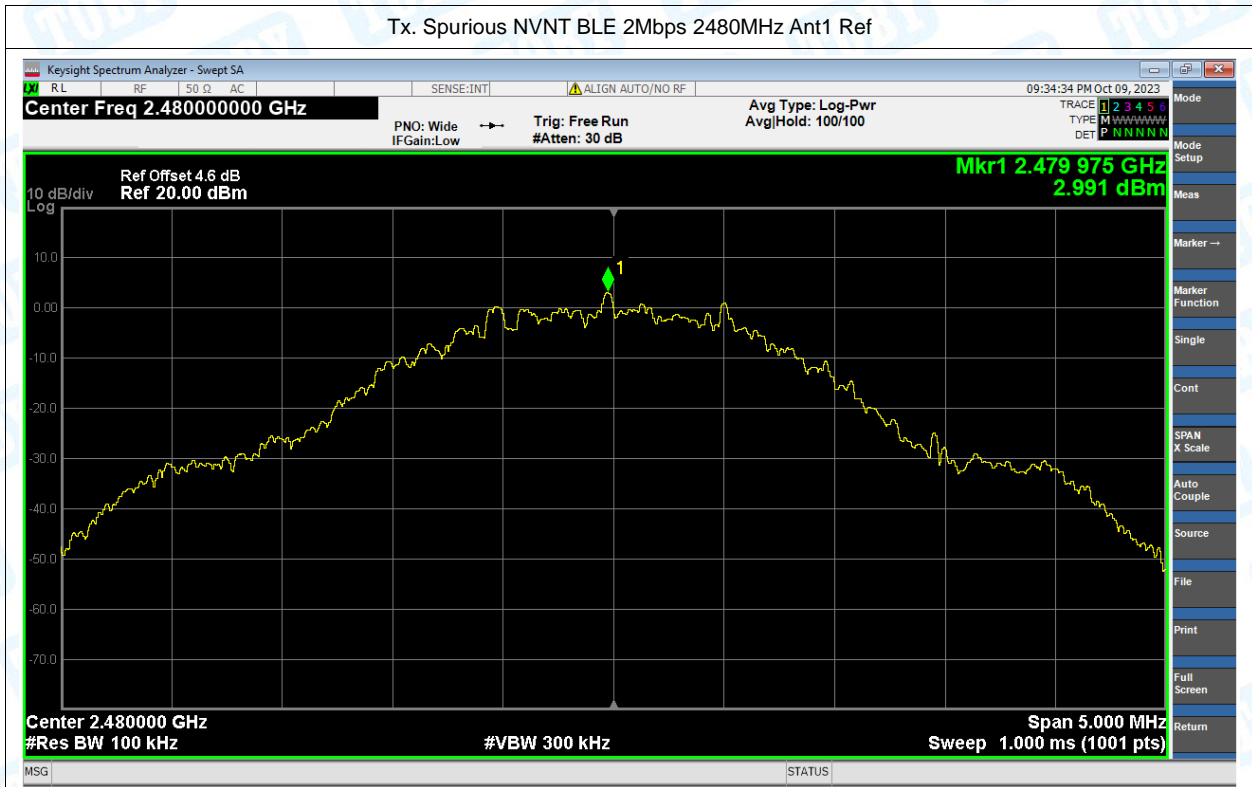
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Emission







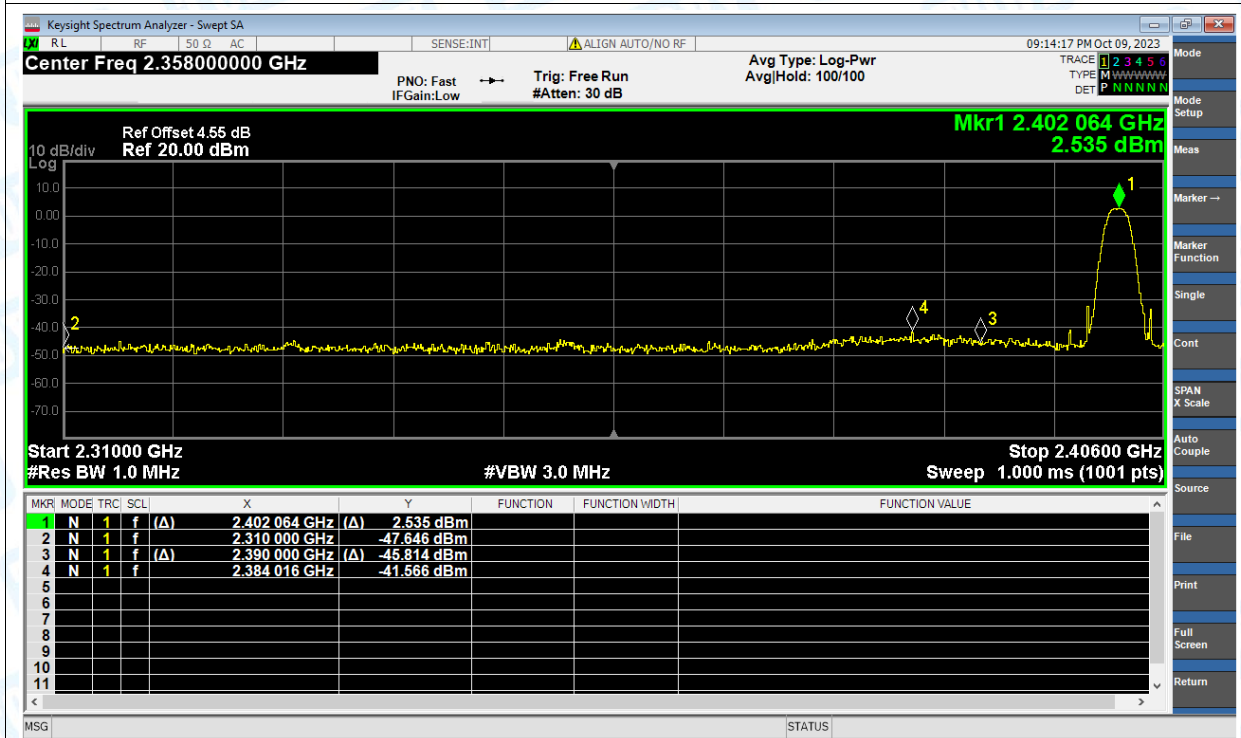
Restrict Band

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	-47.65	2	49.61	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2310	-57.32	2	39.94	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2384.016	-41.57	2	55.69	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2353.872	-53.35	2	43.91	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-46.41	2	50.85	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-54.42	2	42.84	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-44.6	2	52.66	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-55.44	2	41.82	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.8	-37.27	2	59.99	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2499.76	-52.63	2	44.63	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-43.23	2	54.03	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-52.74	2	44.52	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-47.48	2	49.78	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-56.98	2	40.28	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2387.568	-42.93	2	54.33	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2381.52	-53.49	2	43.77	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-45.58	2	51.68	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-54.18	2	43.08	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-44.24	2	53.02	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-52.83	2	44.43	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2485	-35	2	62.26	Peak	74	Pass
NVNT	BLE	2480	Ant1	2499.88	-52.4	2	44.86	Average	54	Pass

	2Mbps									
NVNT	BLE 2Mbps	2480	Ant1	2500	-44.11	2	53.15	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-52.62	2	44.64	Average	54	Pass

Test Graphs

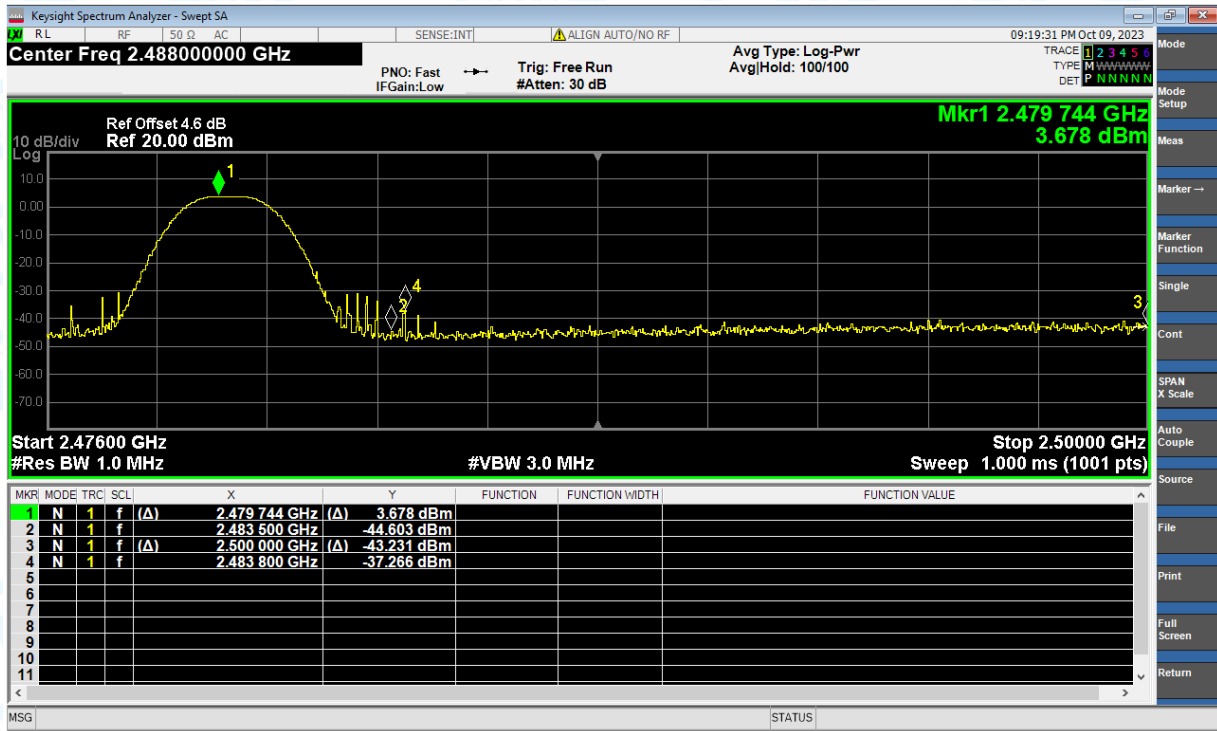
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



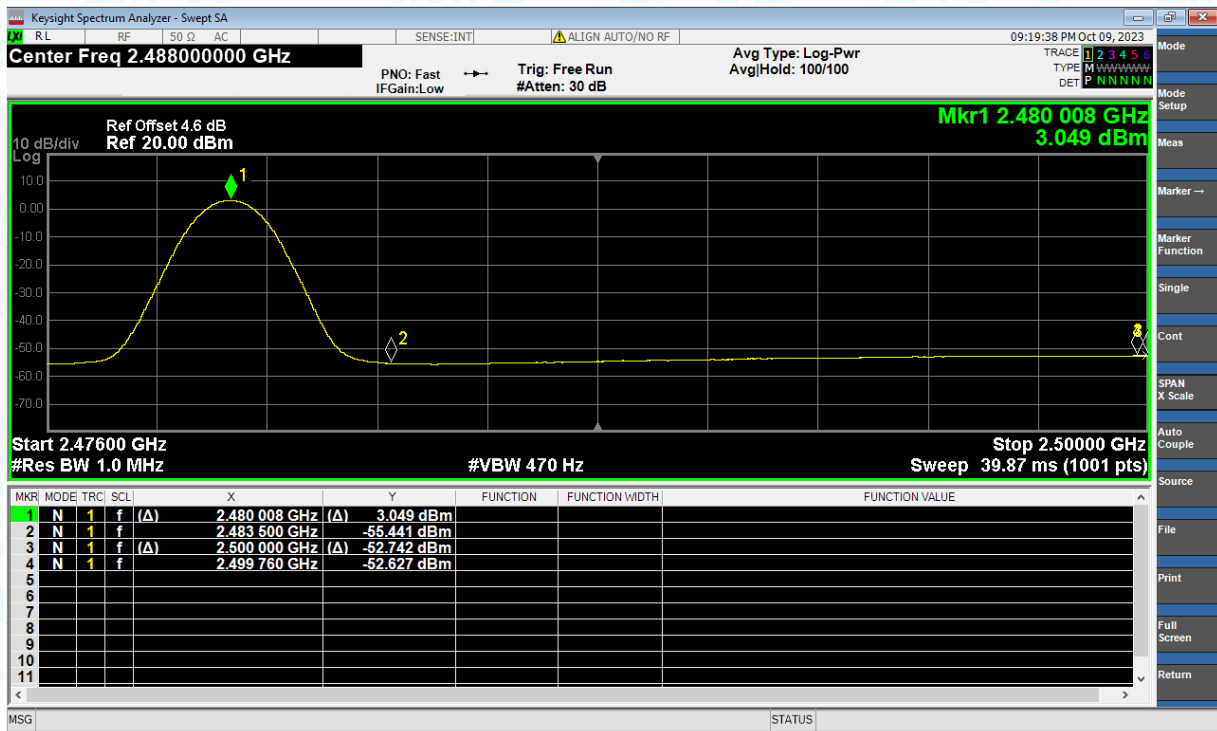
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average



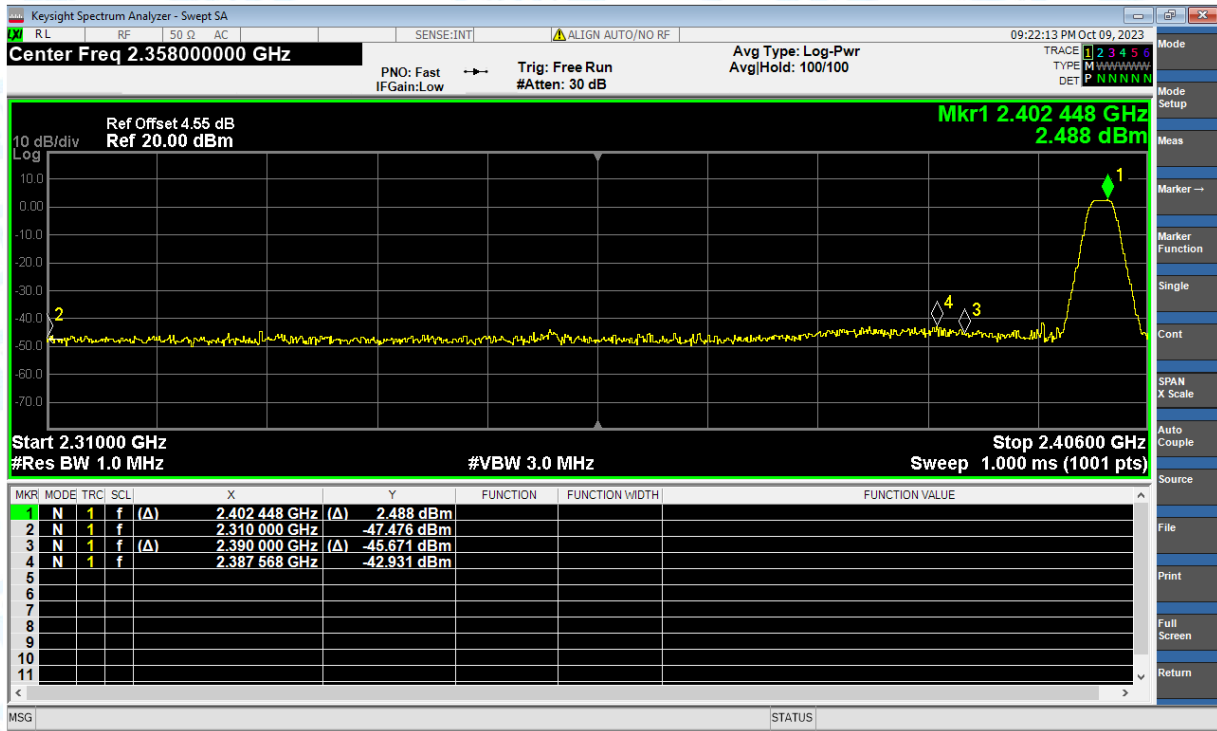
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Peak



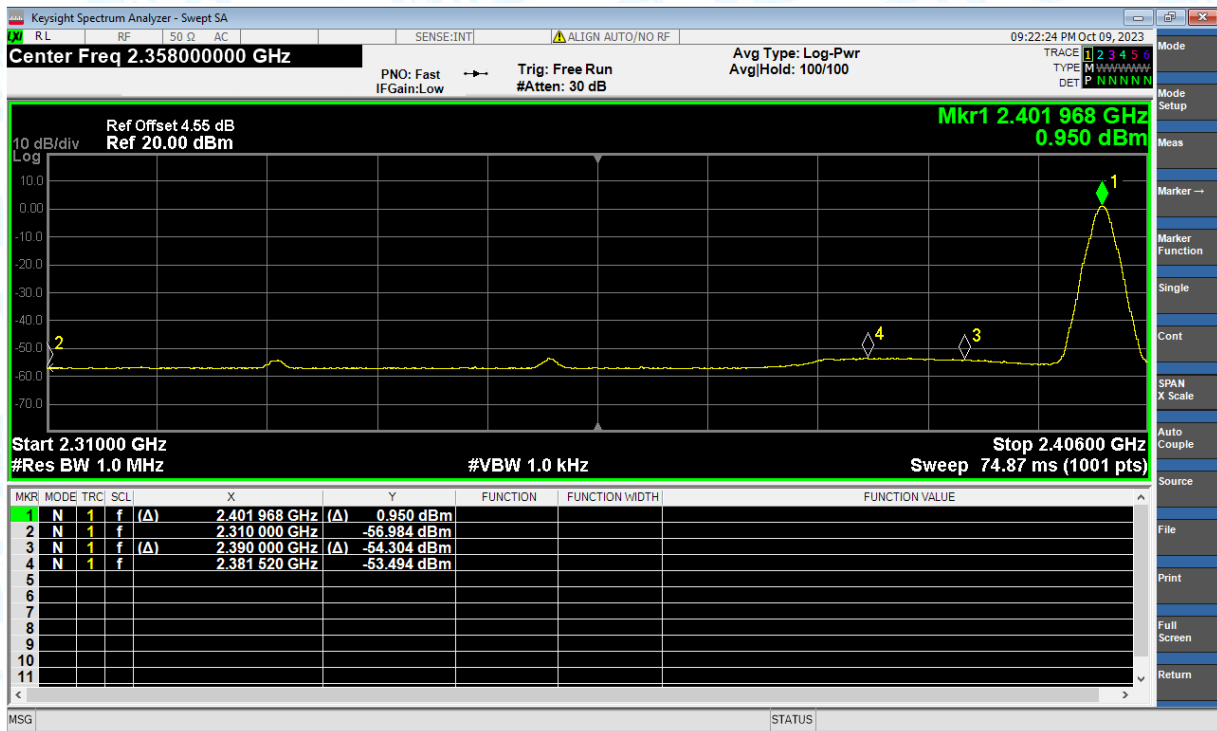
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Average



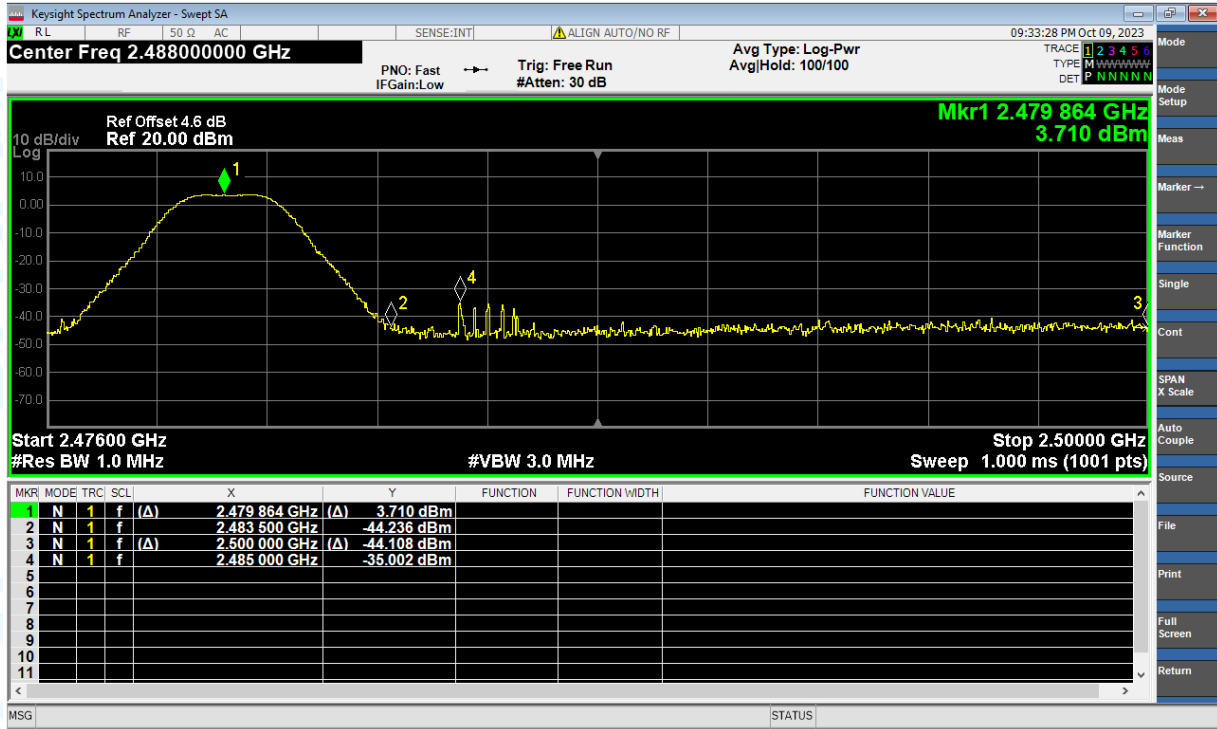
Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Average



Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Average

