

# RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
<b>Product Name:</b>	Smart Watch
<b>Test Model:</b>	KC88
<b>Sample ID:</b>	HC-C-202403-0385-06-2
Environmental Conditions	
<b>Temperature:</b>	24.6°C
<b>Relative Humidity:</b>	46%
<b>Test Voltage:</b>	DC 3.7V
<b>Test Engineer:</b>	ZKN Zhou
Note: For a more detailed features description, please refer to the report TBR-C-202403-0385-8 The report only show the worst case data.	

## Contents

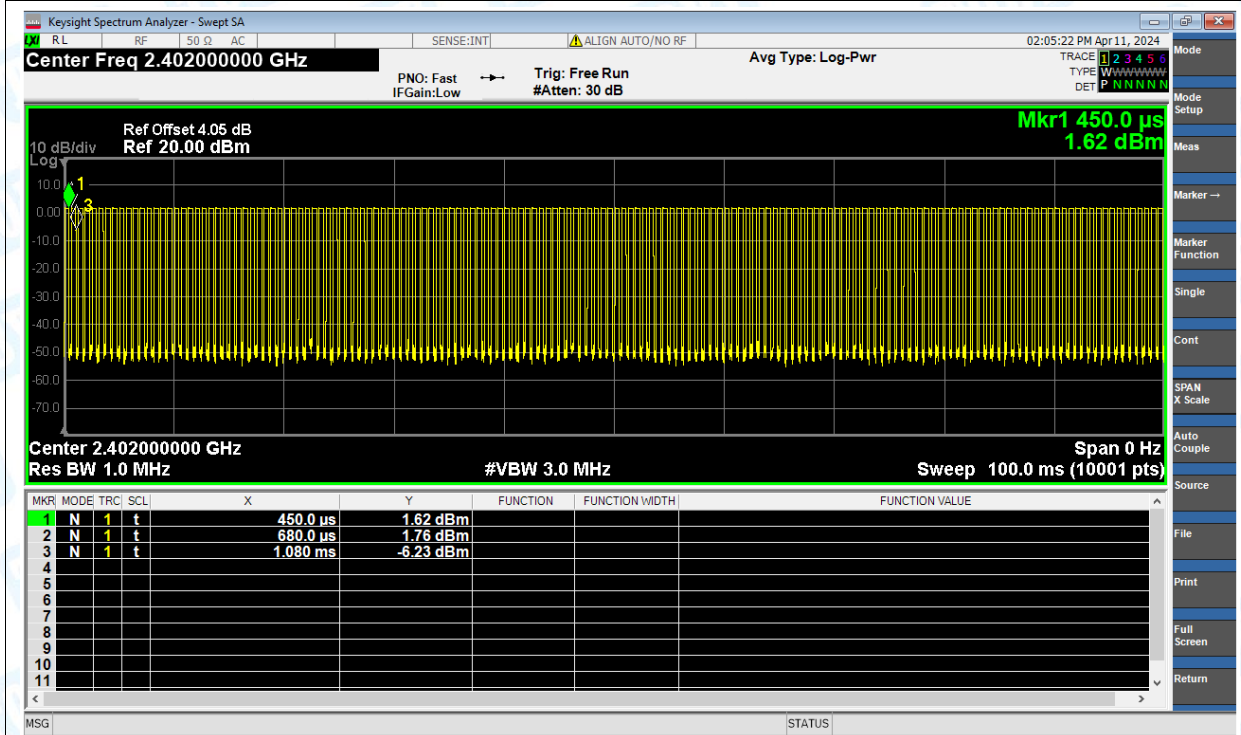
1. Duty Cycle .....	3
2. Maximum Conducted Output Power .....	7
3. -6dB Bandwidth .....	11
4. Occupied Channel Bandwidth .....	15
5. Maximum Power Spectral Density Level .....	19
6. Band Edge .....	23
7. Conducted RF Spurious Emission .....	28
8. Restrict Band .....	35

## 1. Duty Cycle

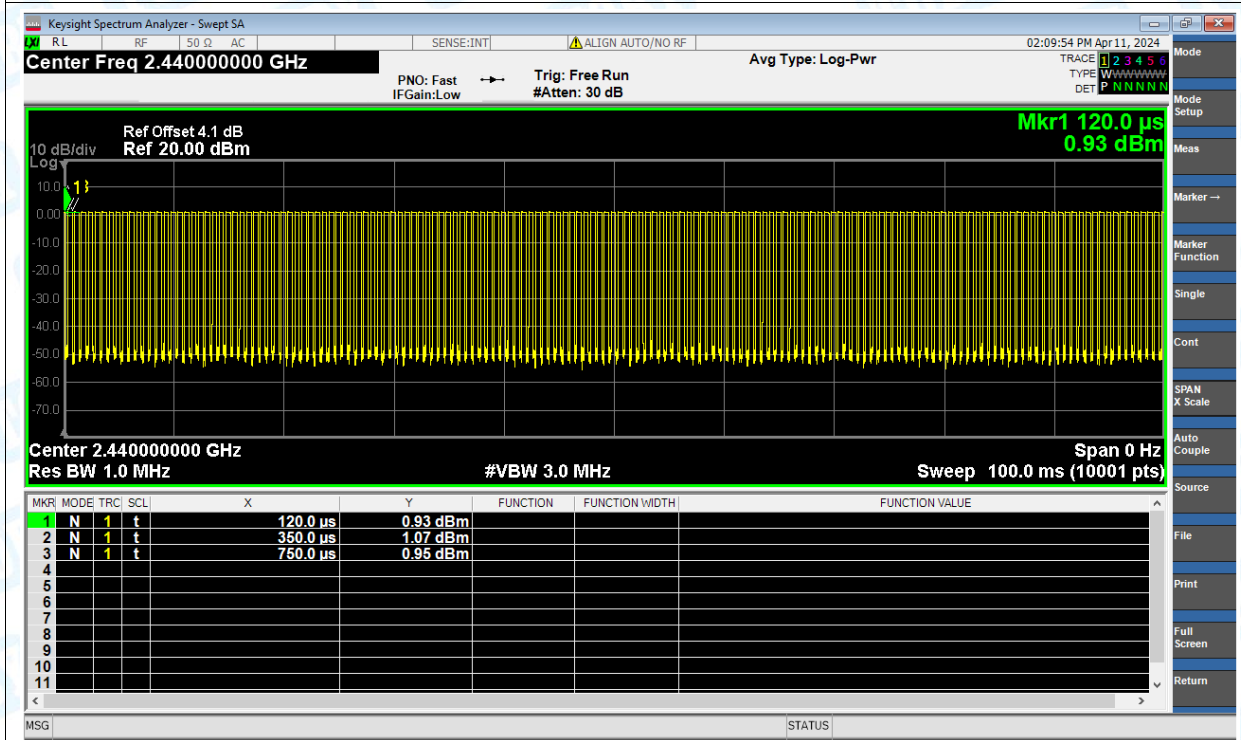
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	63.49	1.97	2.5
NVNT	BLE 1Mbps	2440	Ant1	63.49	1.97	2.5
NVNT	BLE 1Mbps	2480	Ant1	63.49	1.97	2.5
NVNT	BLE 2Mbps	2402	Ant1	33.33	4.77	4.76
NVNT	BLE 2Mbps	2440	Ant1	33.33	4.77	4.76
NVNT	BLE 2Mbps	2480	Ant1	32.26	4.91	5

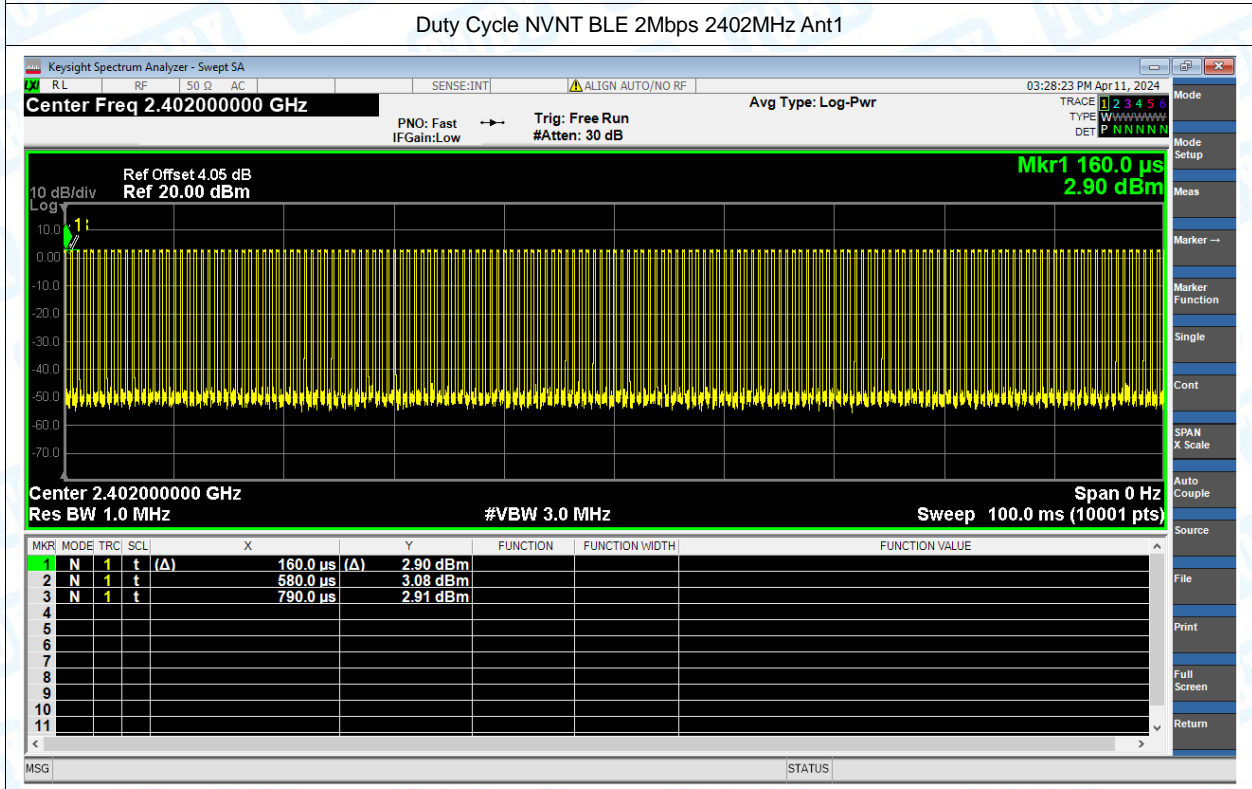
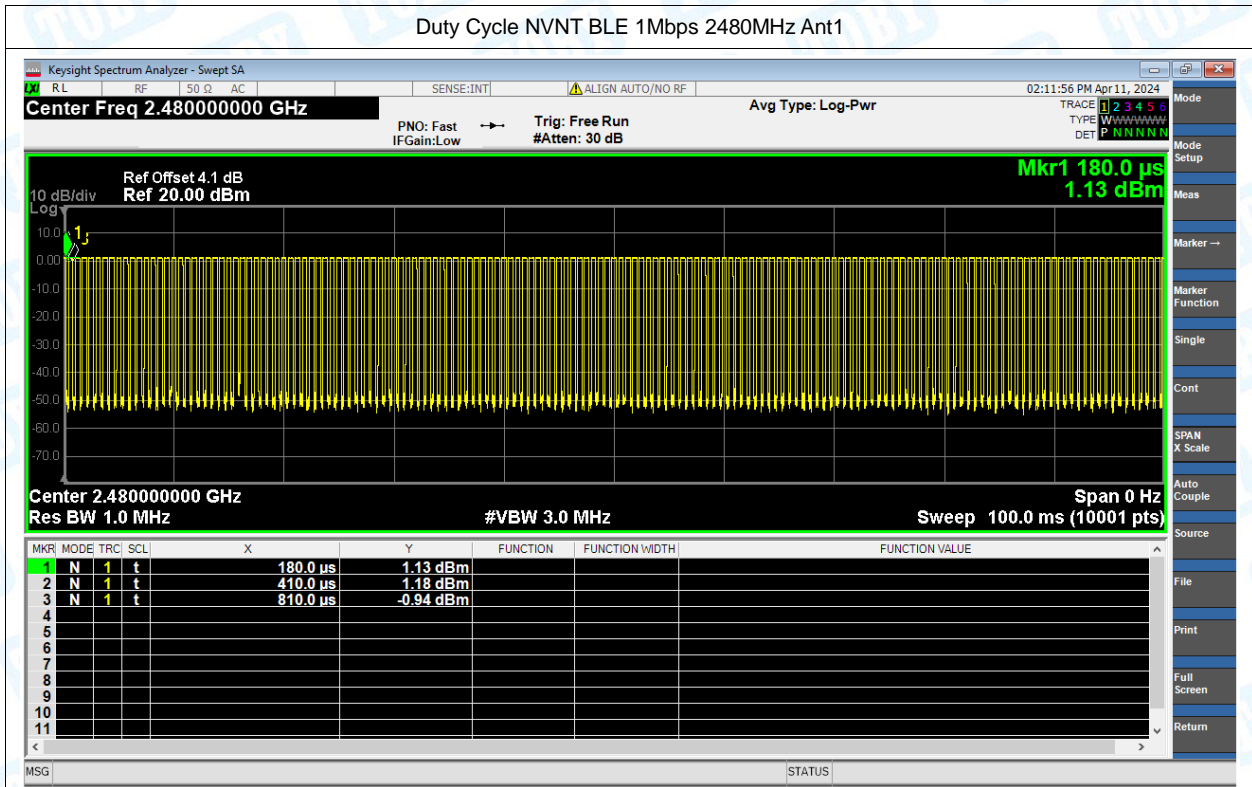
Test Graphs

Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1

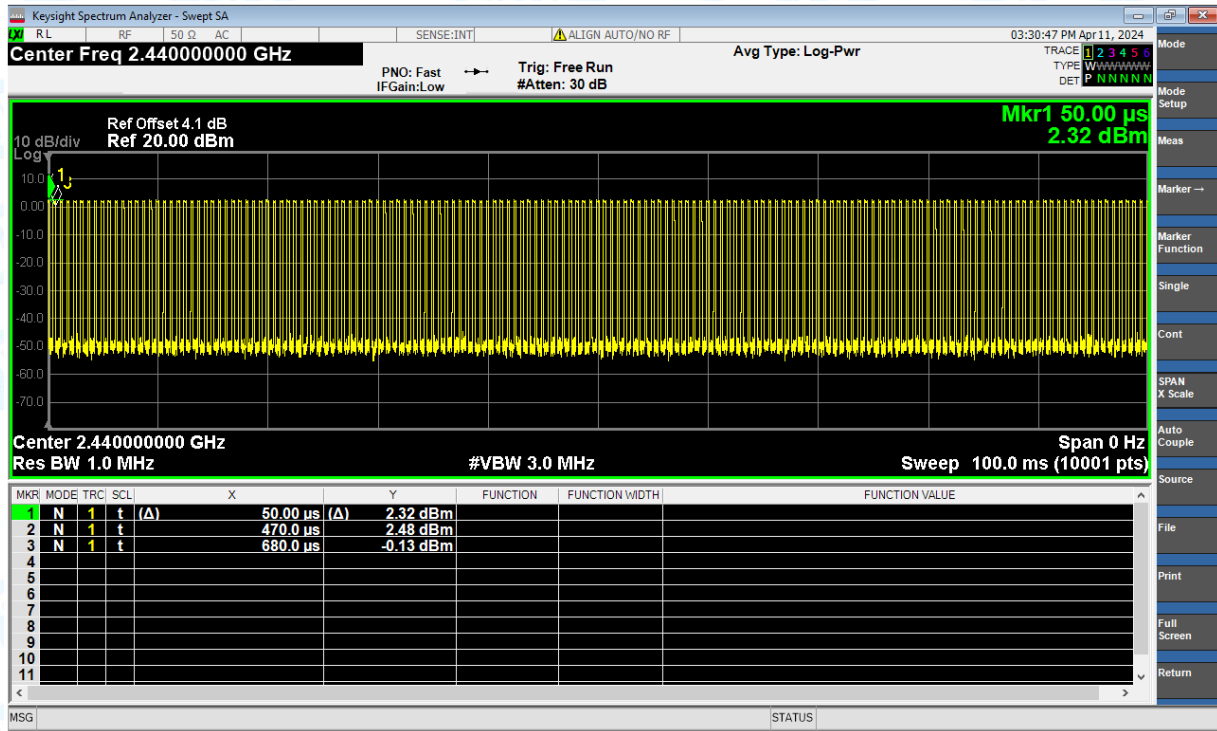


Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1

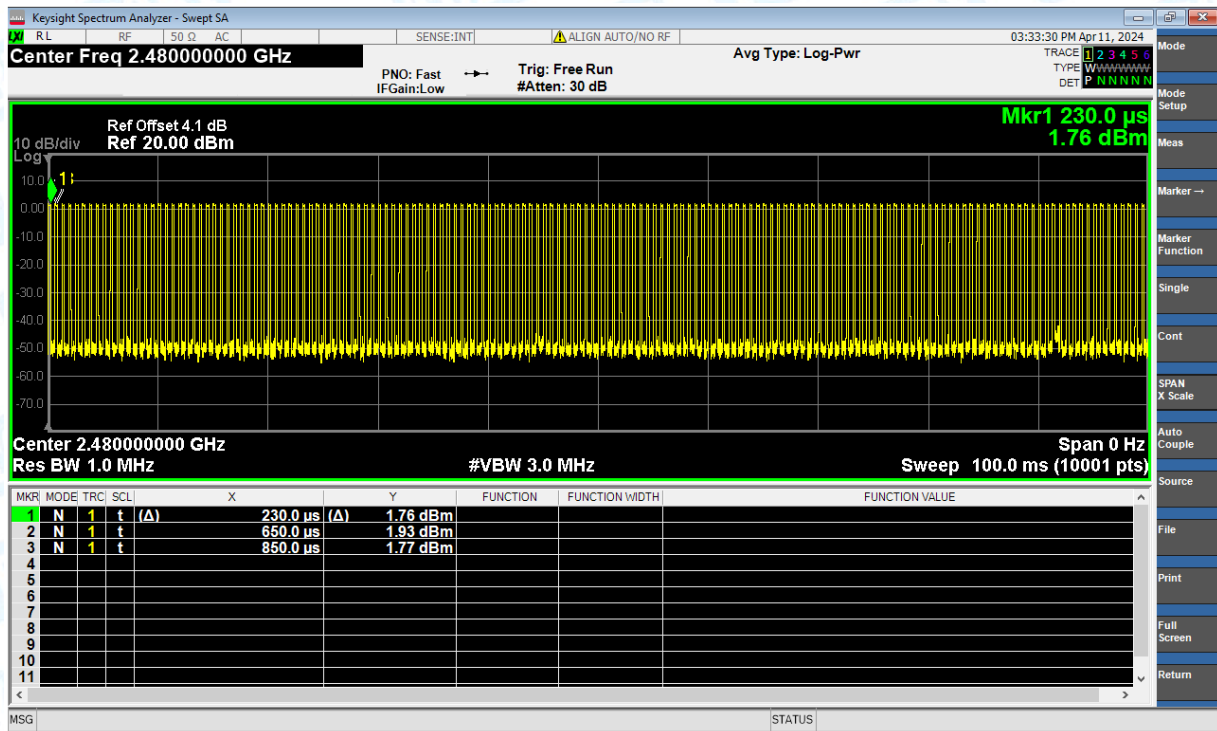




Duty Cycle NVNT BLE 2Mbps 2440MHz Ant1



Duty Cycle NVNT BLE 2Mbps 2480MHz Ant1

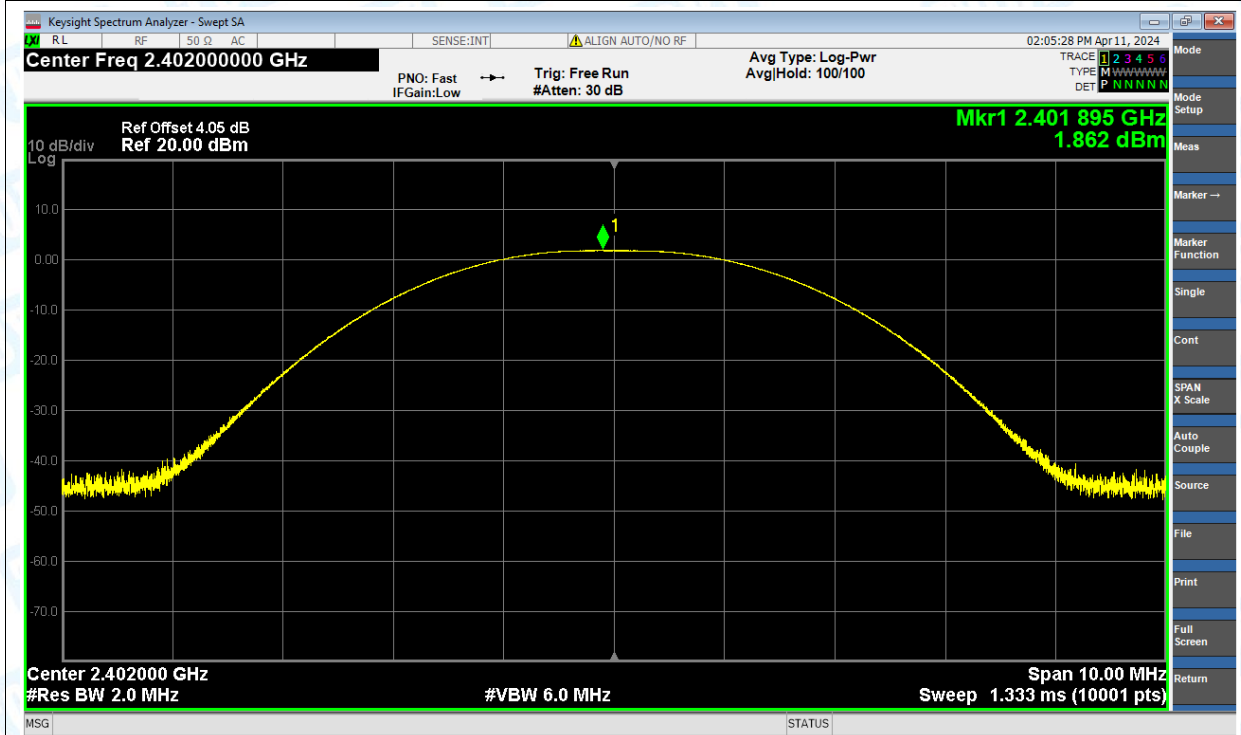


## 2. Maximum Conducted Output Power

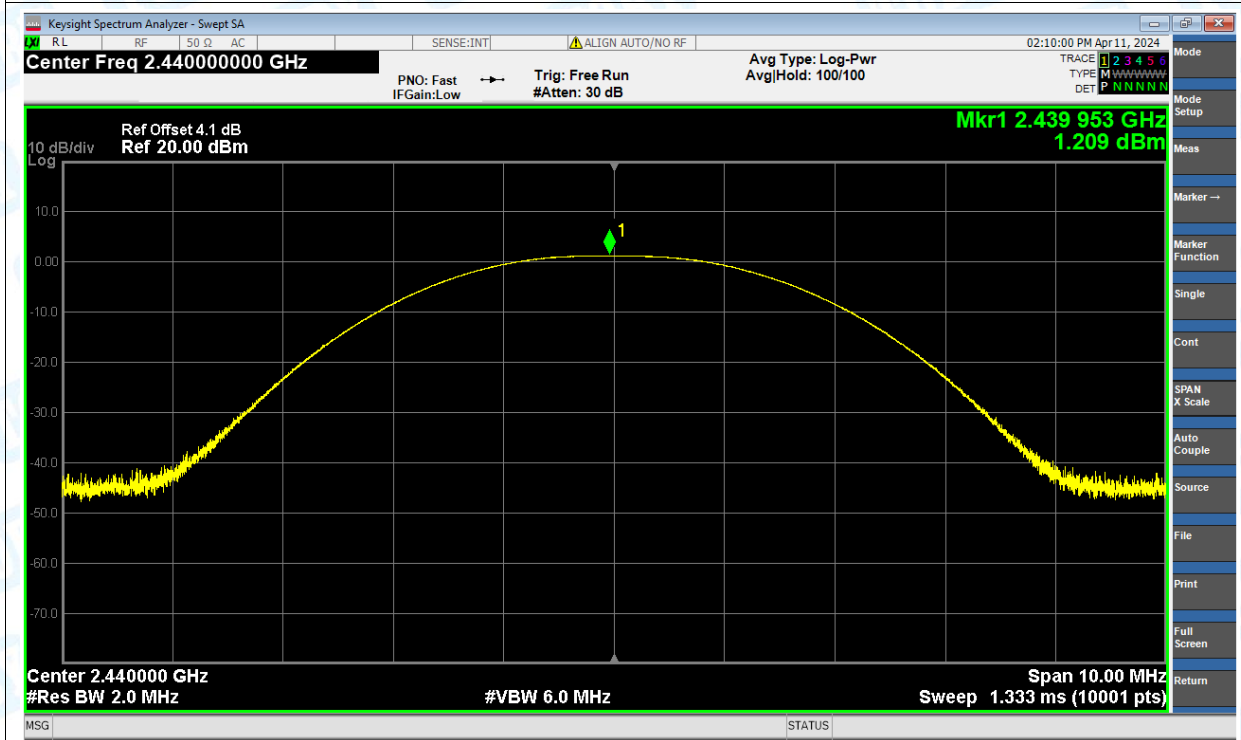
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	1.862	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	1.209	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	1.318	30	Pass
NVNT	BLE 2Mbps	2402	Ant1	3.103	30	Pass
NVNT	BLE 2Mbps	2440	Ant1	2.502	30	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.964	30	Pass

Test Graphs

Power NVNT BLE 1Mbps 2402MHz Ant1

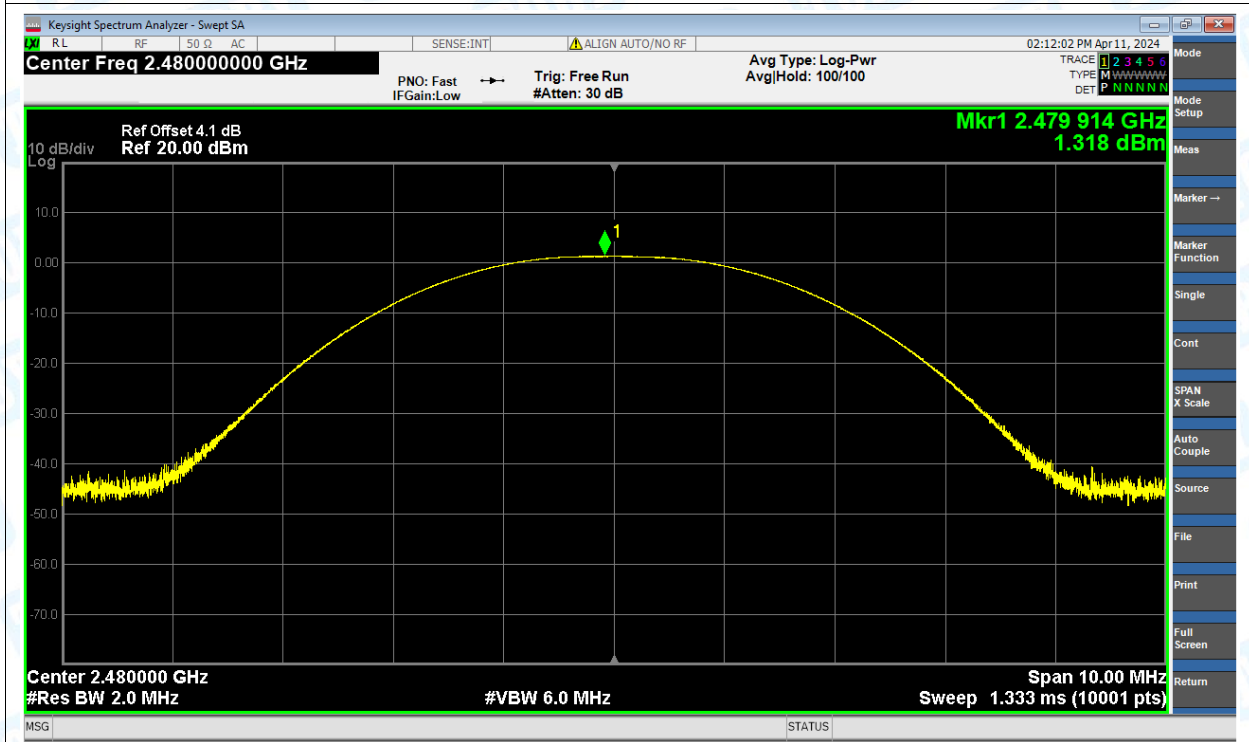


Power NVNT BLE 1Mbps 2440MHz Ant1

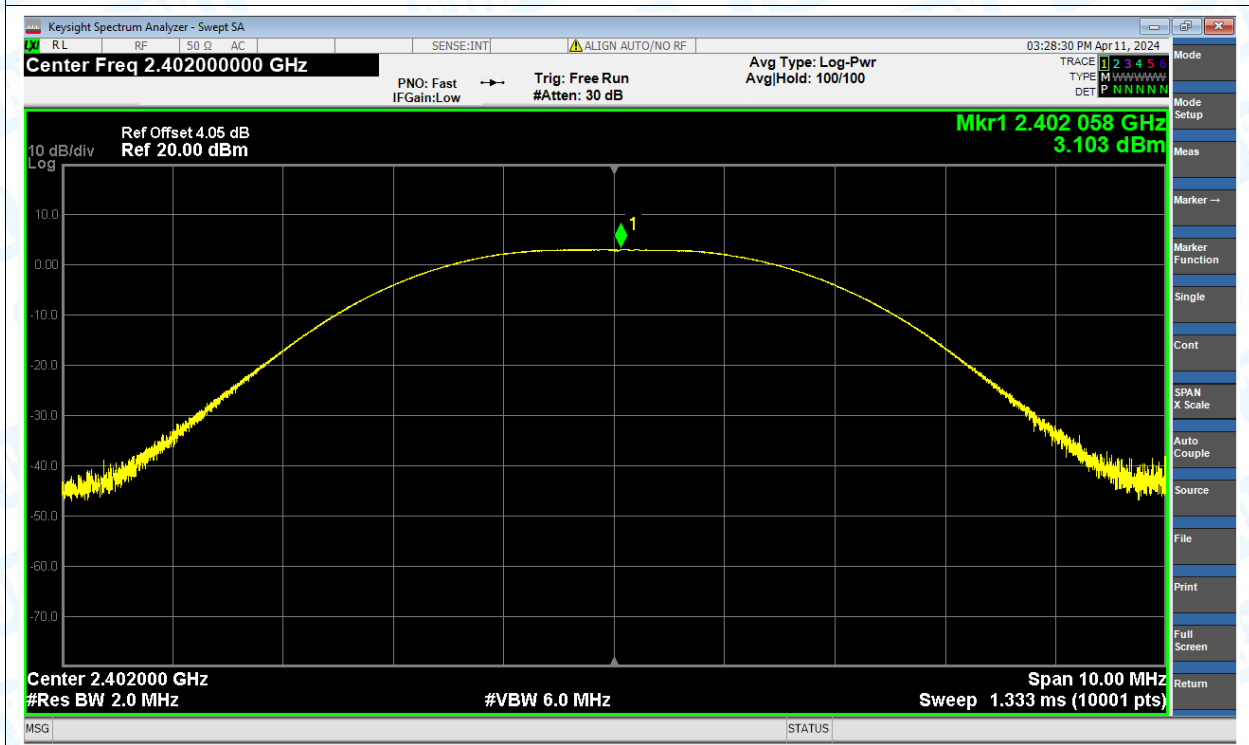




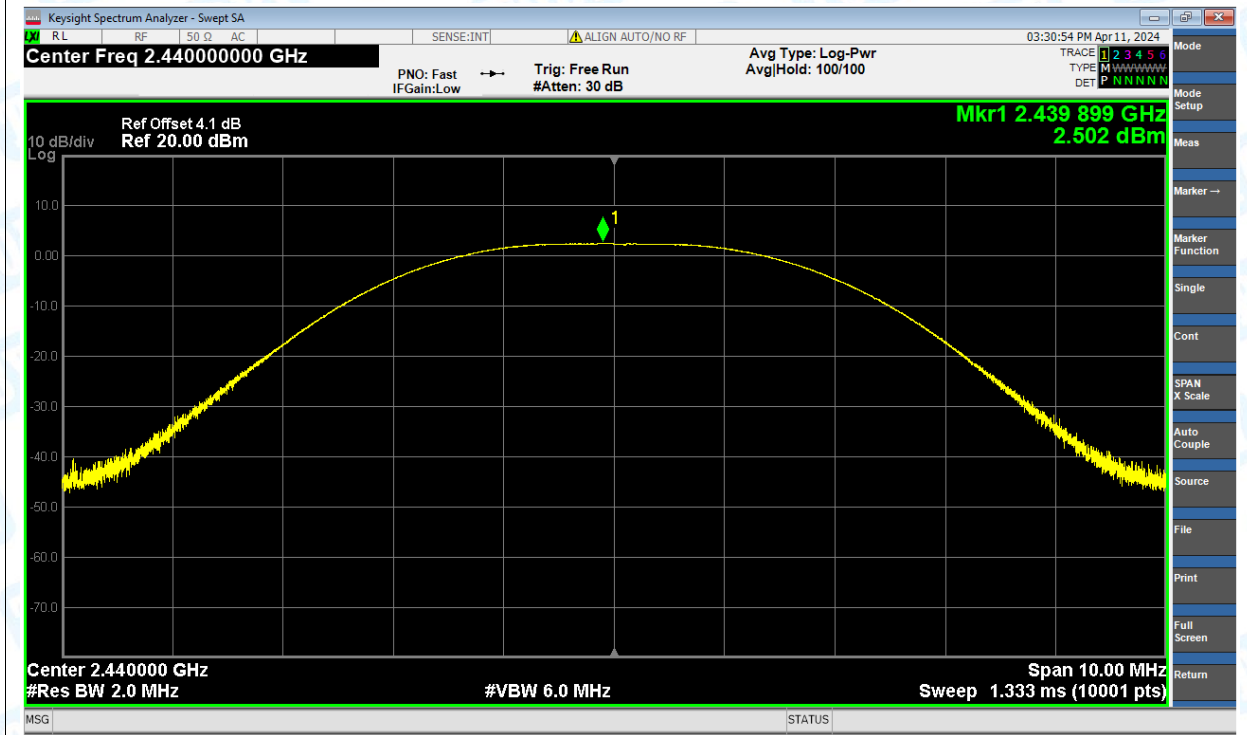
Power NVNT BLE 1Mbps 2480MHz Ant1



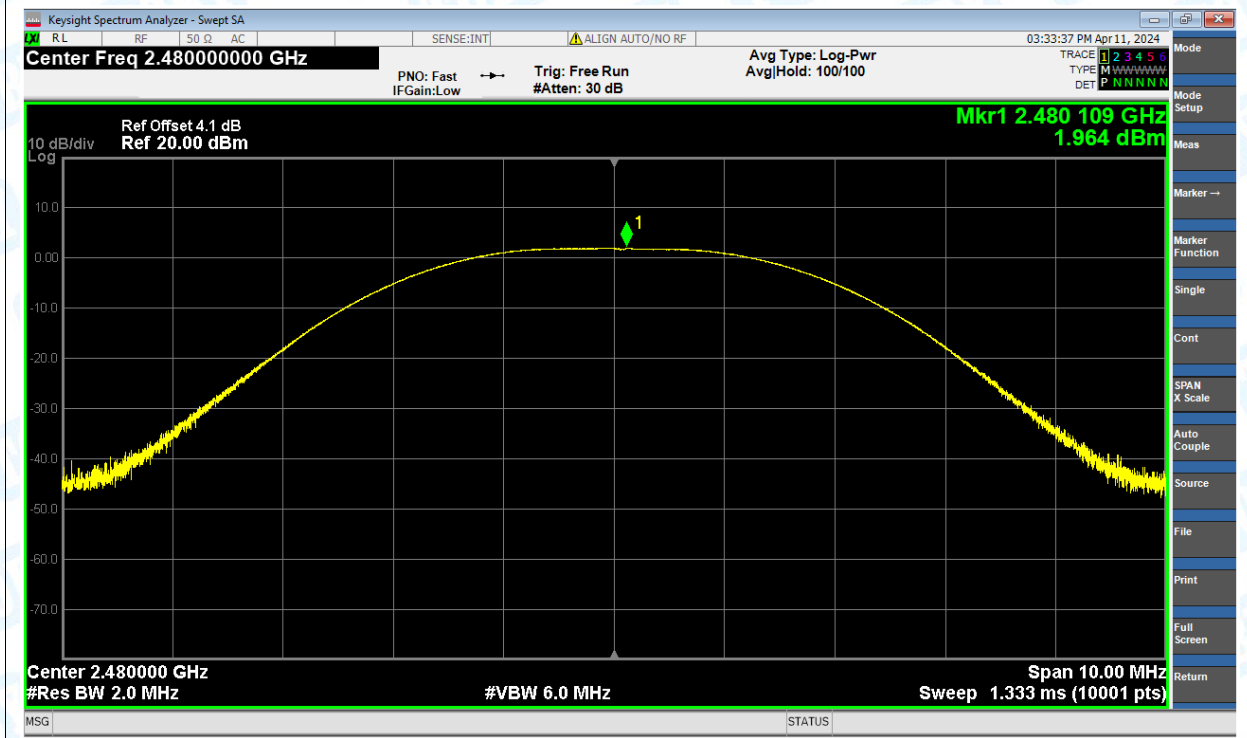
Power NVNT BLE 2Mbps 2402MHz Ant1



Power NVNT BLE 2Mbps 2440MHz Ant1



Power NVNT BLE 2Mbps 2480MHz Ant1

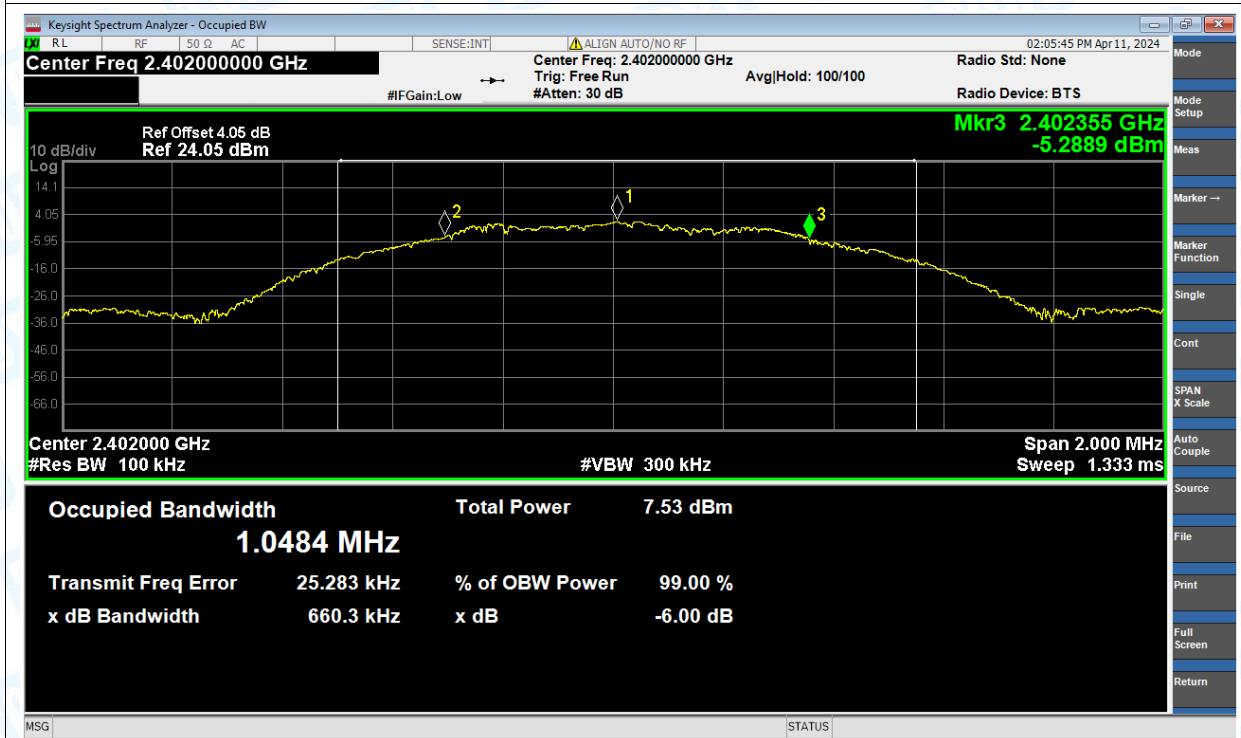


### 3. -6dB Bandwidth

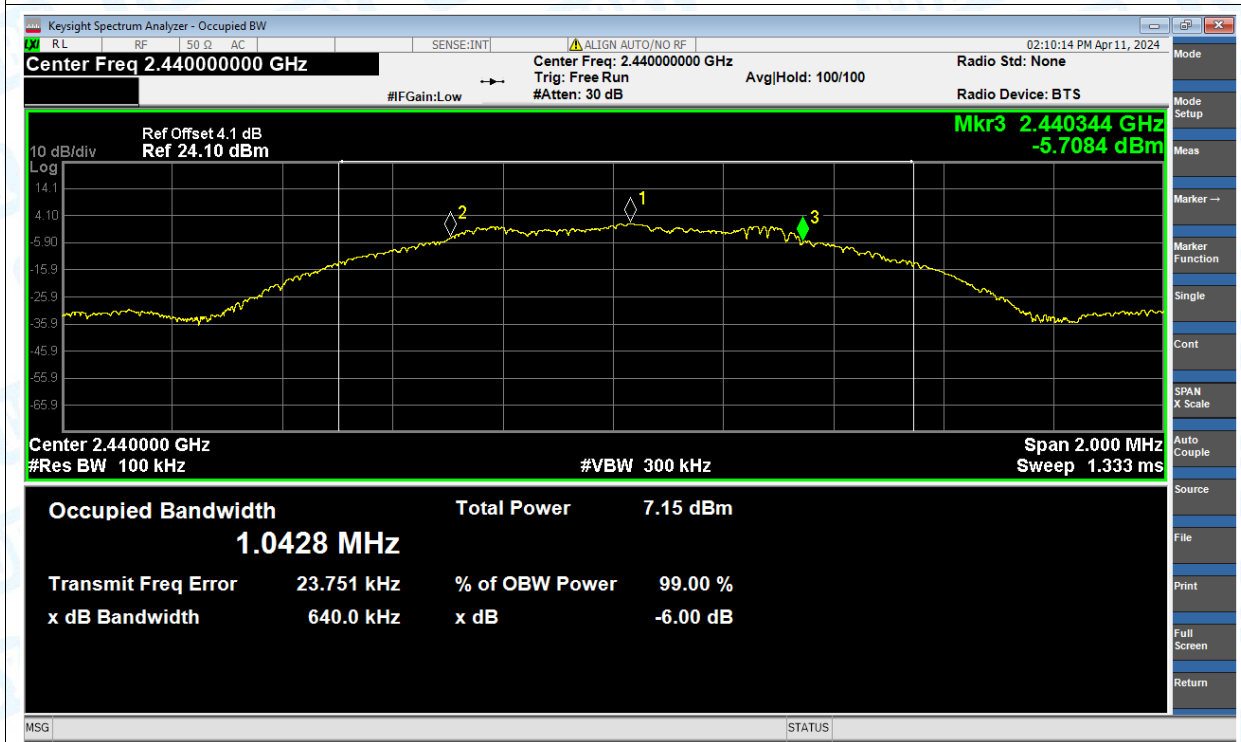
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.66	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.64	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.67	0.5	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.08	0.5	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.09	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	0.93	0.5	Pass

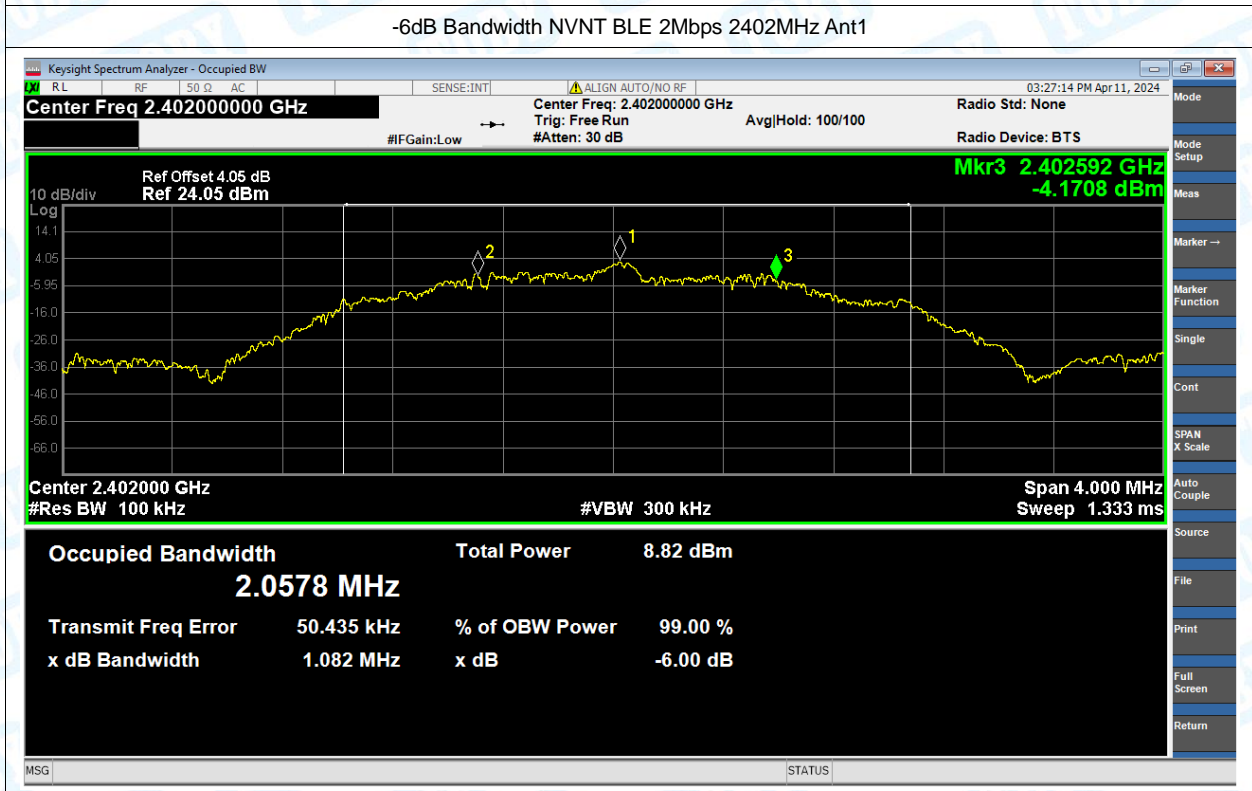
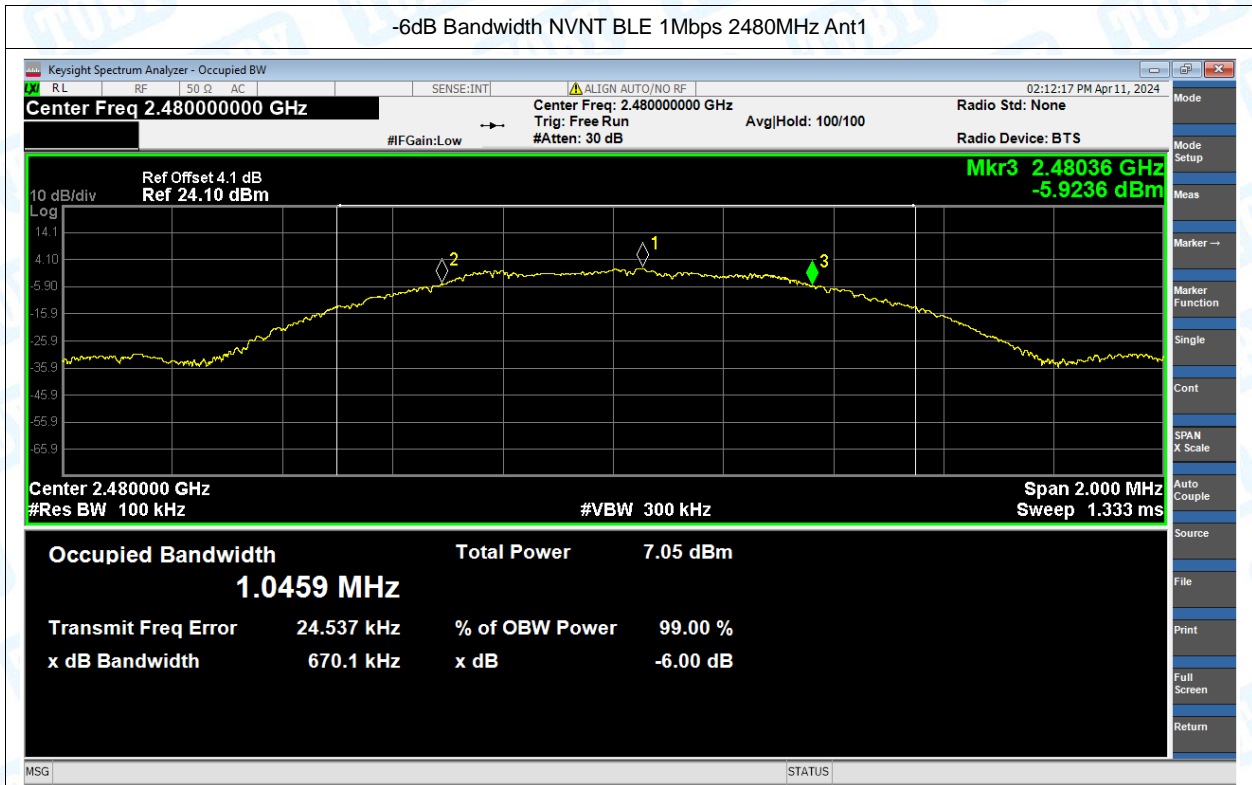
Test Graphs

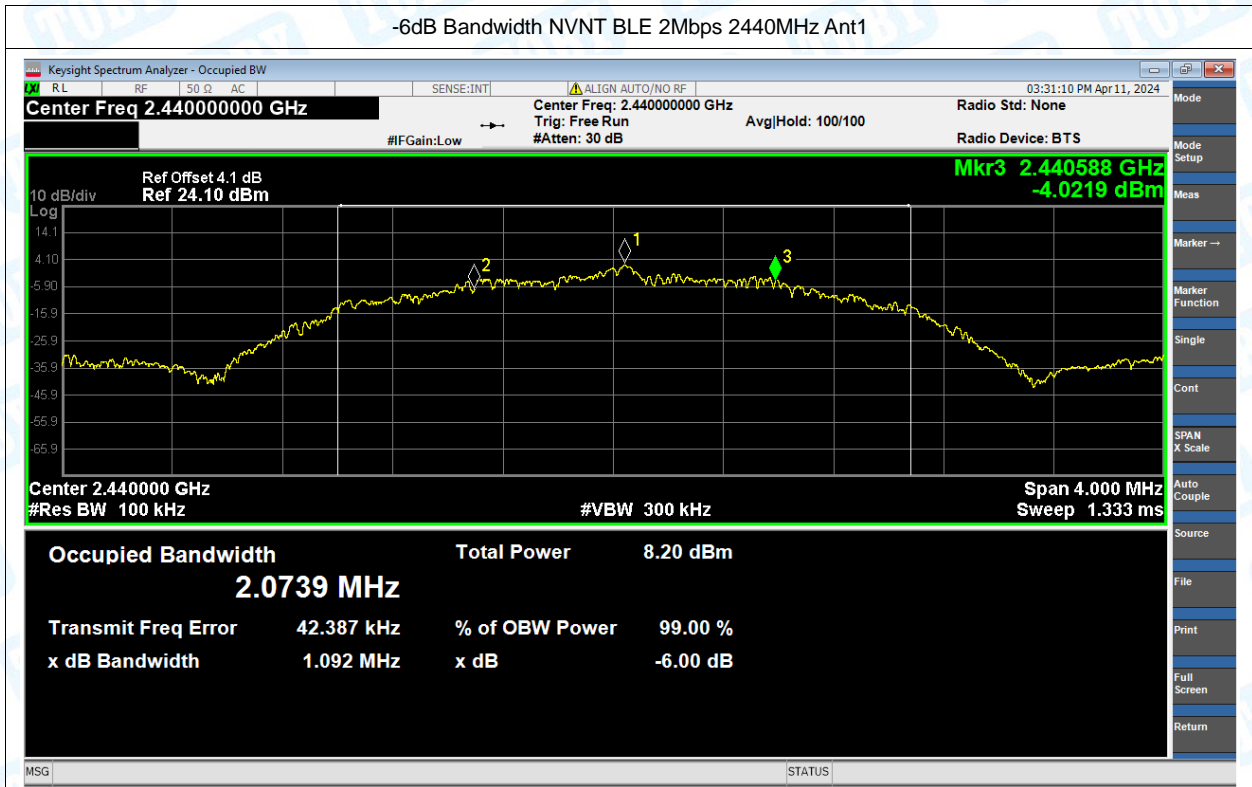
-6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1





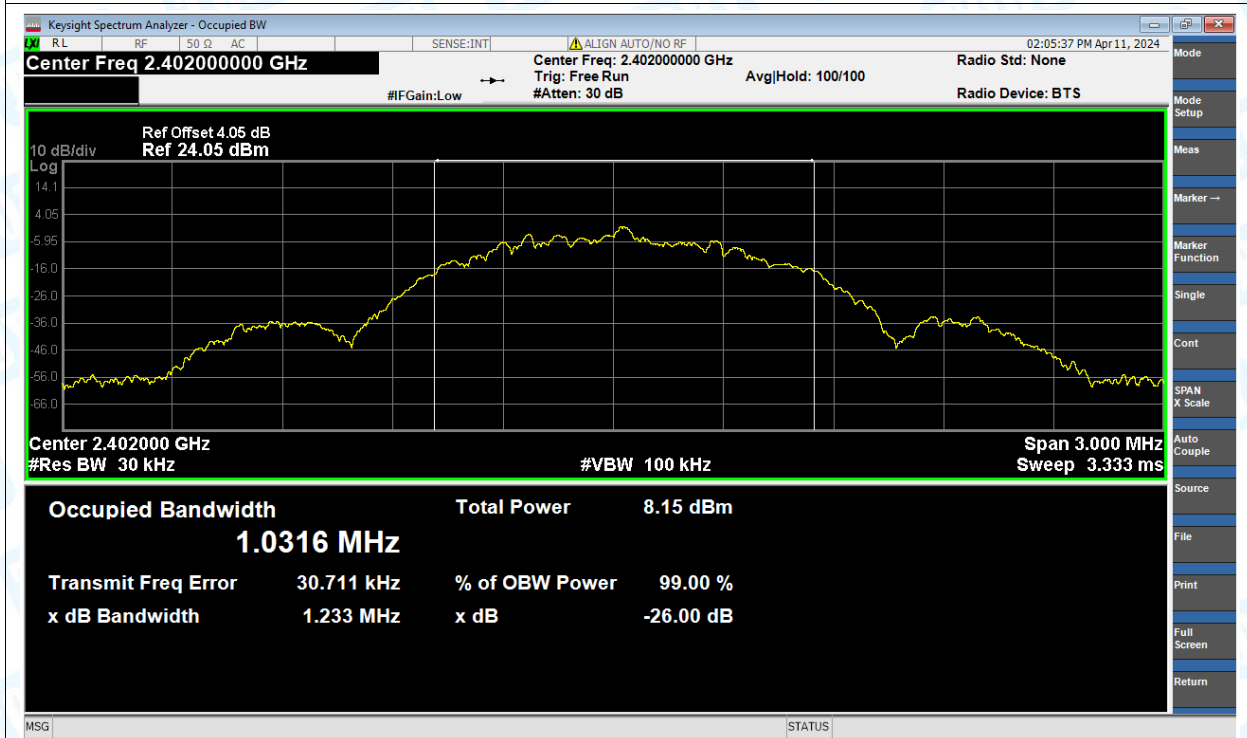


## 4. Occupied Channel Bandwidth

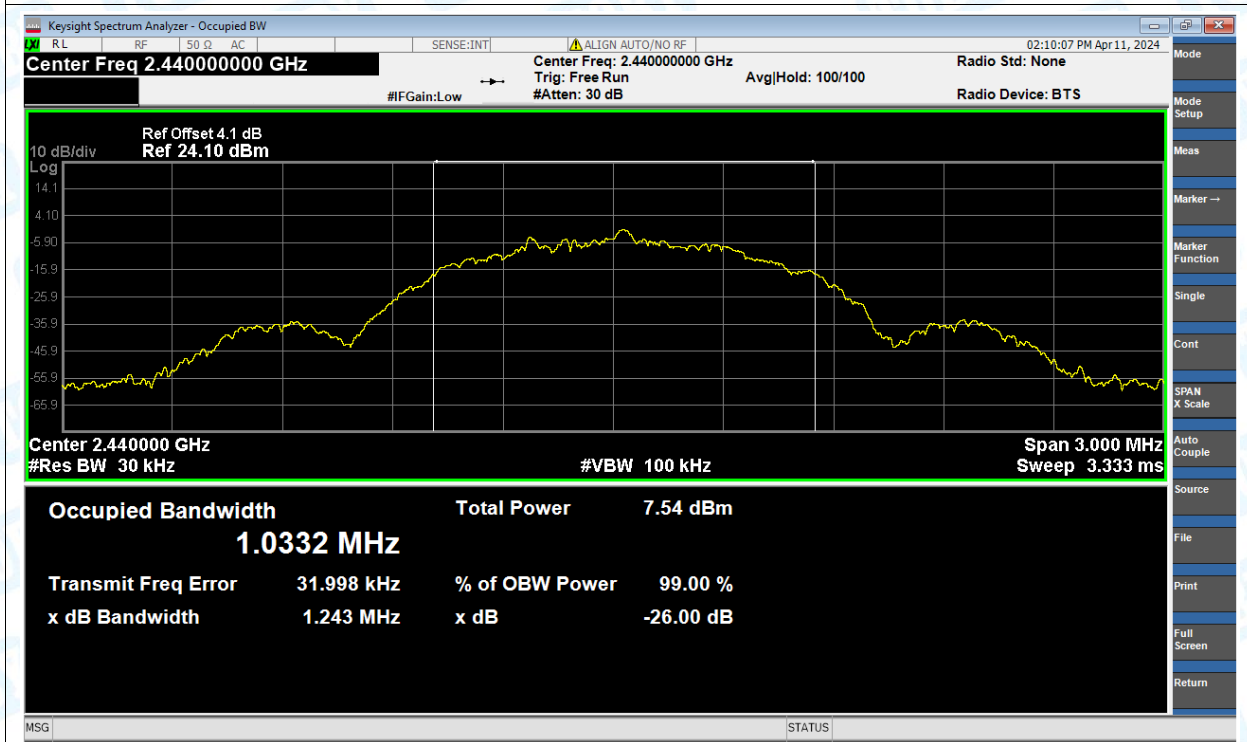
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.032
NVNT	BLE 1Mbps	2440	Ant1	1.033
NVNT	BLE 1Mbps	2480	Ant1	1.03
NVNT	BLE 2Mbps	2402	Ant1	2.043
NVNT	BLE 2Mbps	2440	Ant1	2.063
NVNT	BLE 2Mbps	2480	Ant1	2.041

Test Graphs

OBW NVNT BLE 1Mbps 2402MHz Ant1

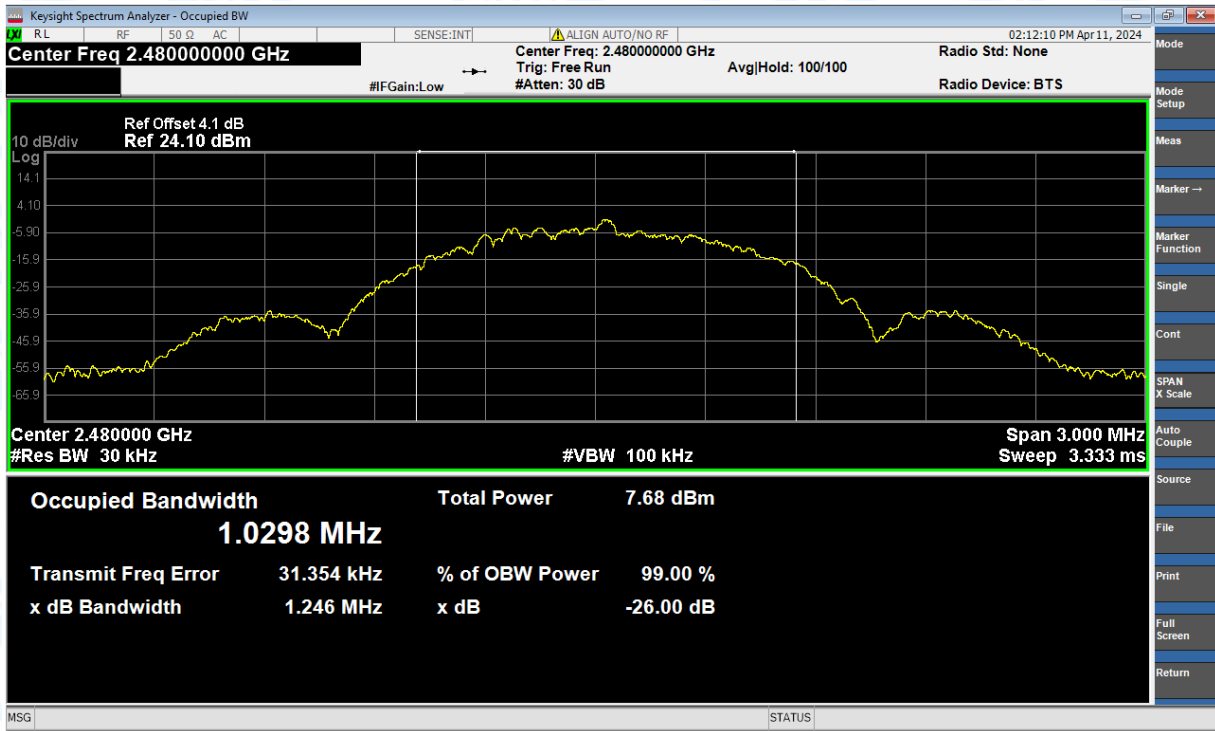


OBW NVNT BLE 1Mbps 2440MHz Ant1

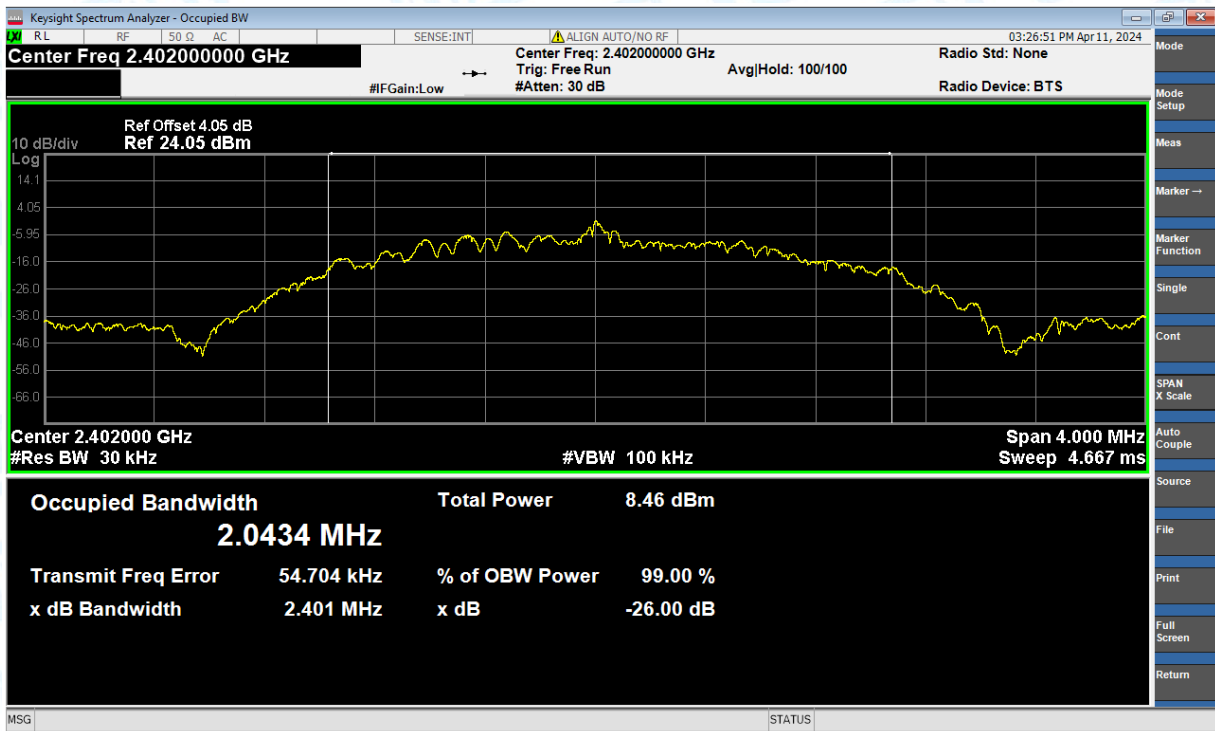




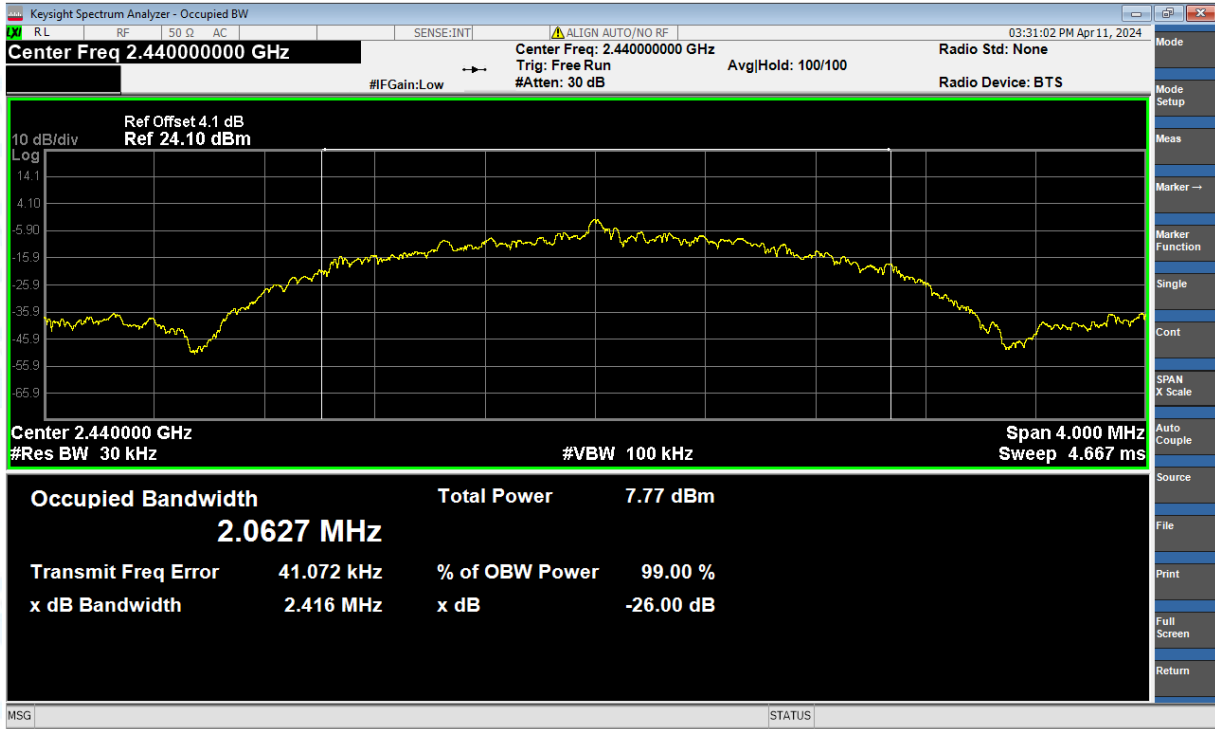
OBW NVNT BLE 1Mbps 2480MHz Ant1



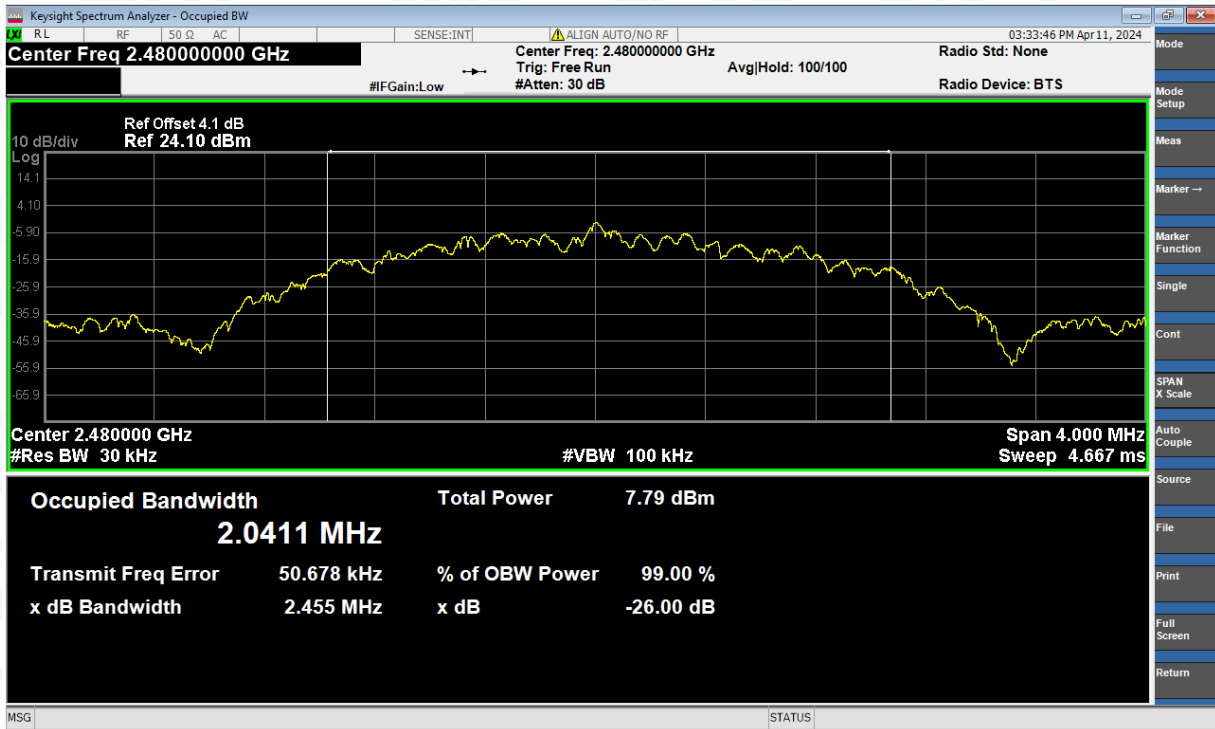
OBW NVNT BLE 2Mbps 2402MHz Ant1



OBW NVNT BLE 2Mbps 2440MHz Ant1



OBW NVNT BLE 2Mbps 2480MHz Ant1

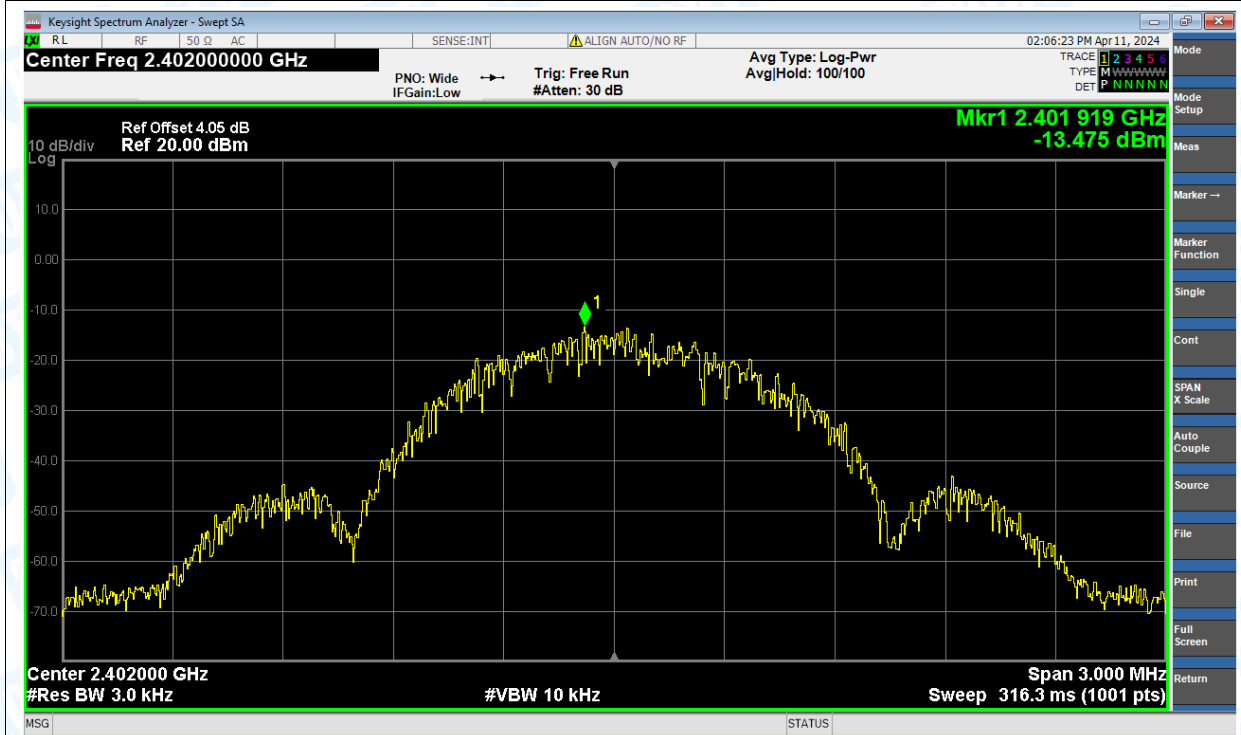


## 5. Maximum Power Spectral Density Level

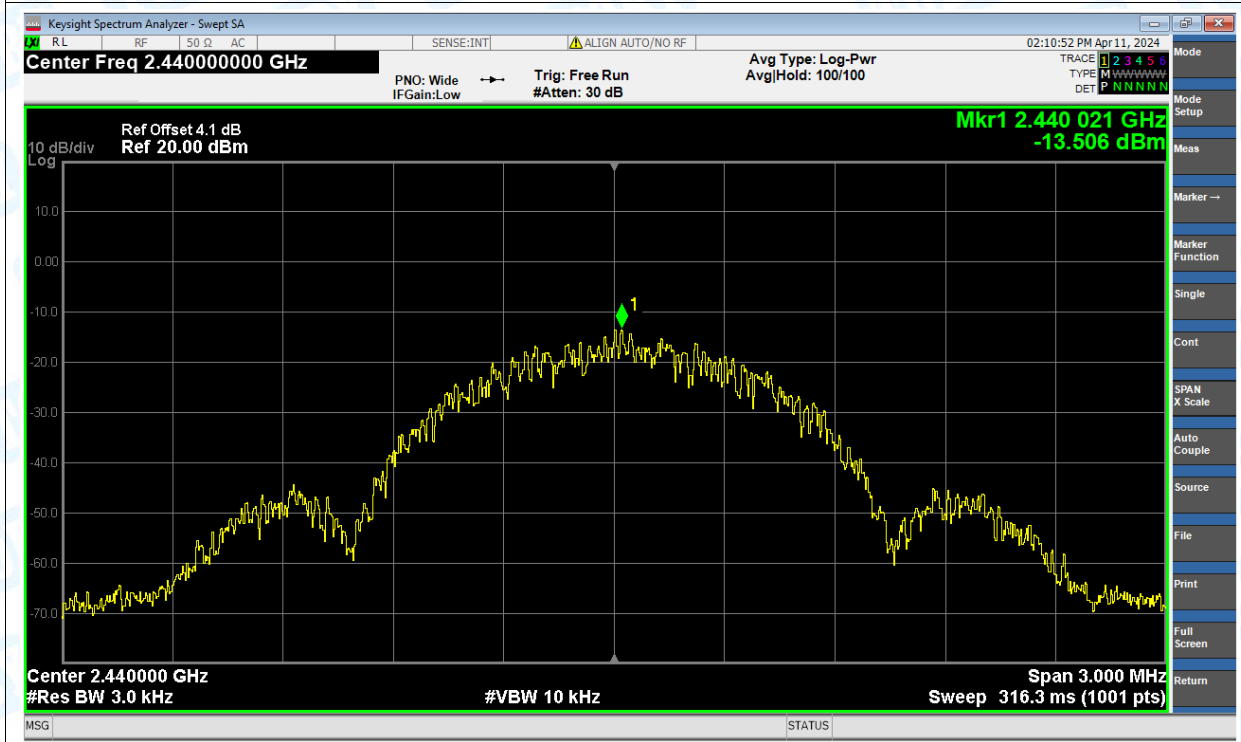
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-13.475	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-13.506	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-14.564	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-13.063	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-15.609	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-14.759	8	Pass

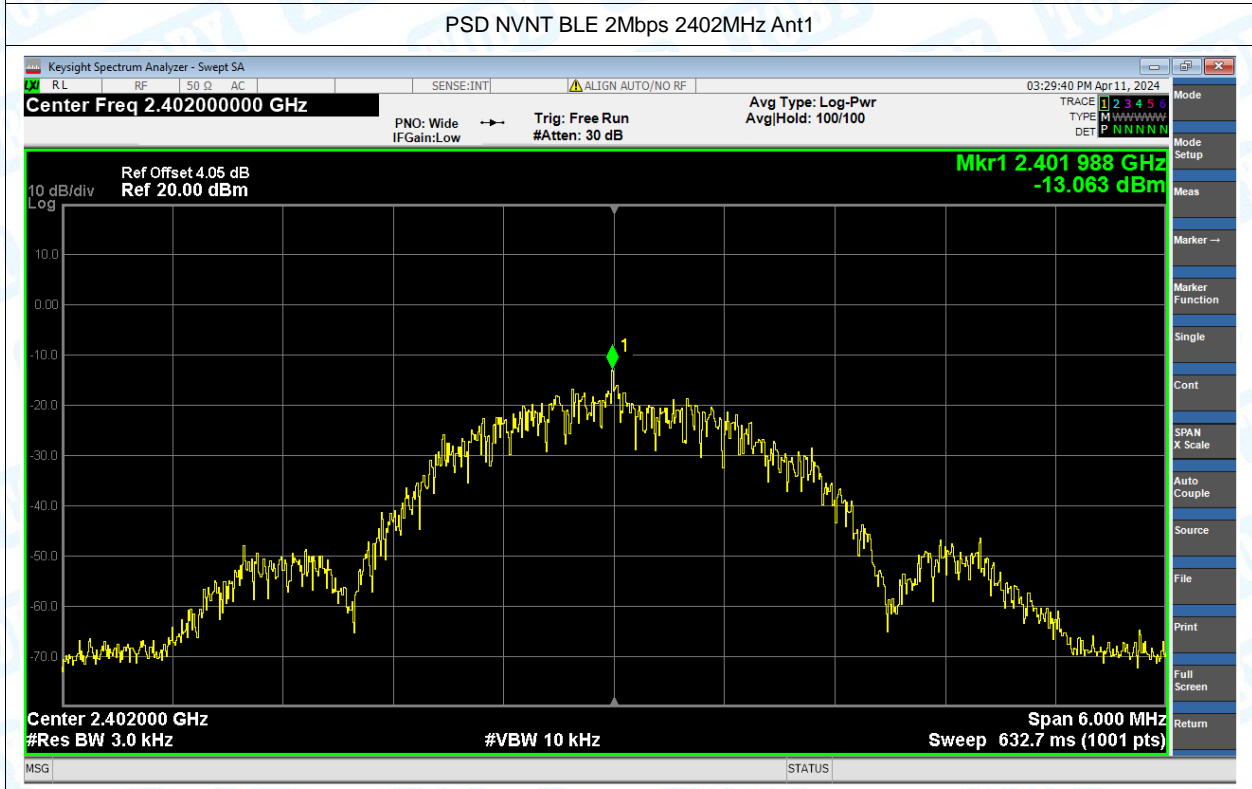
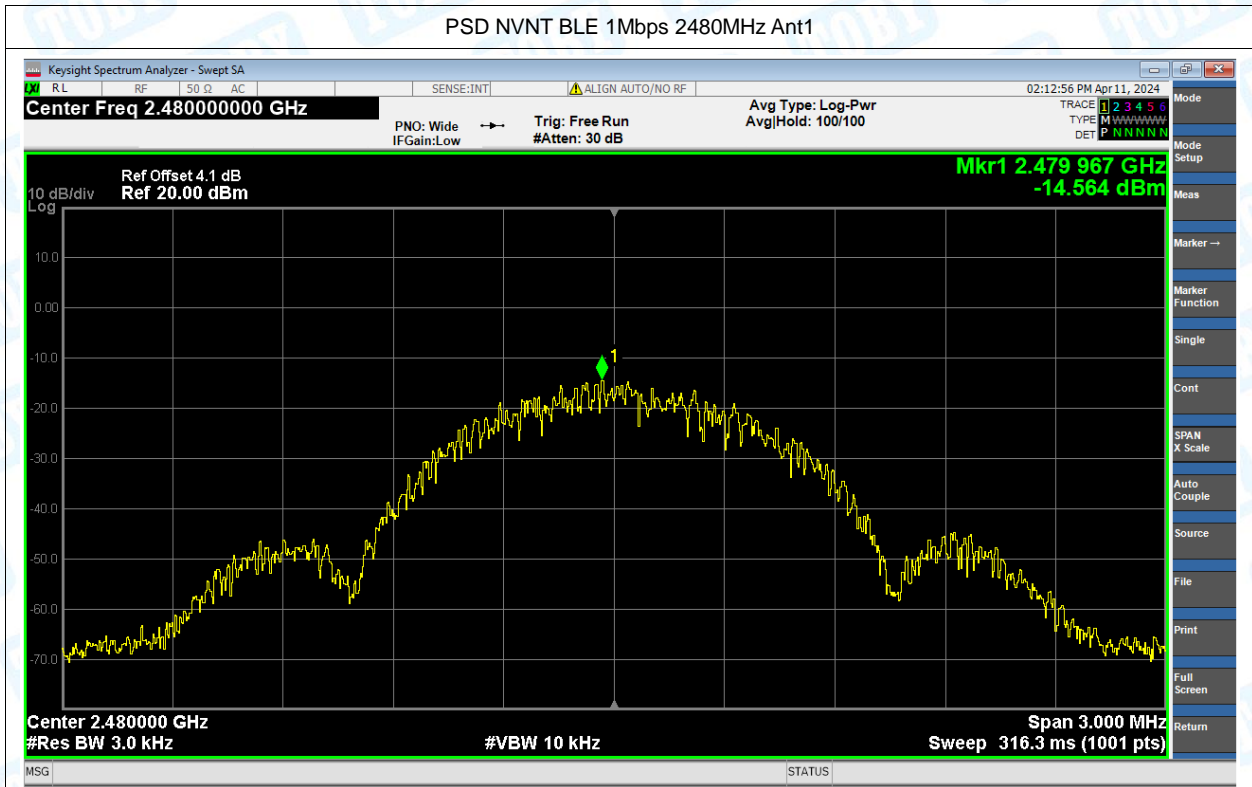
Test Graphs

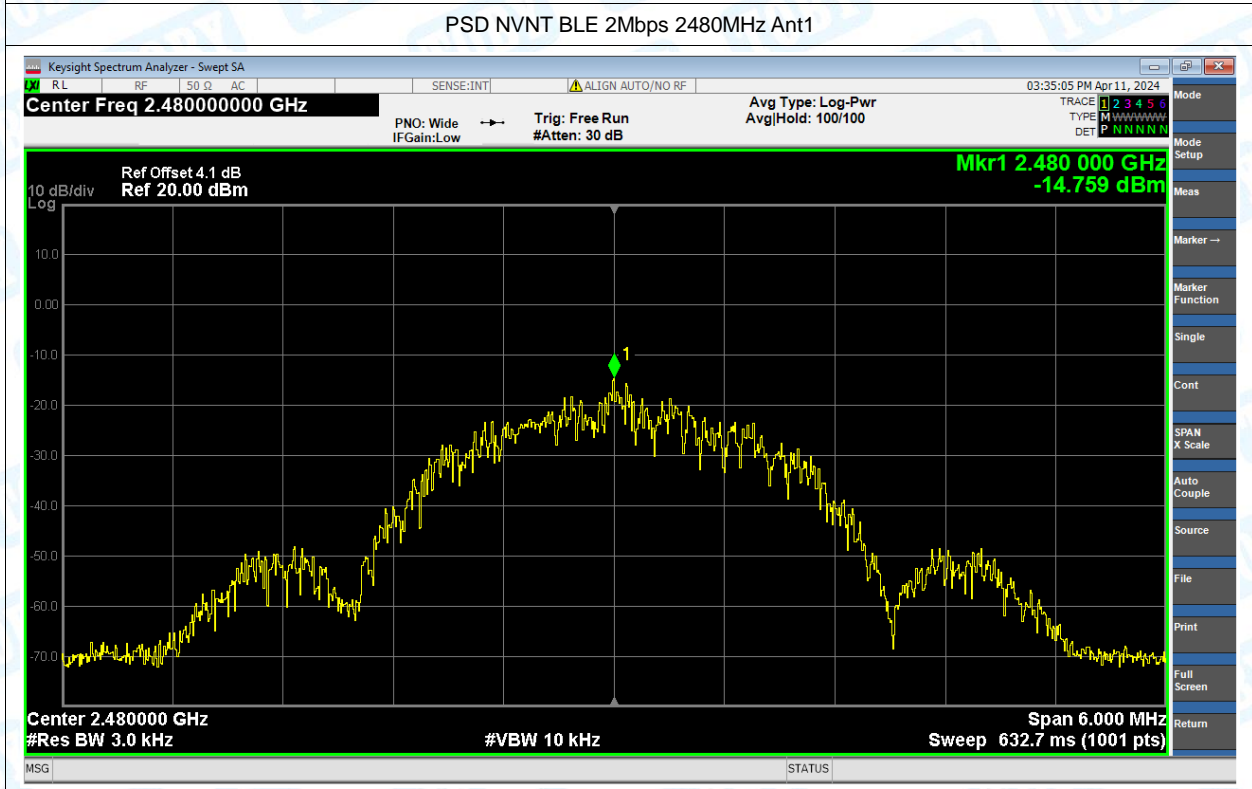
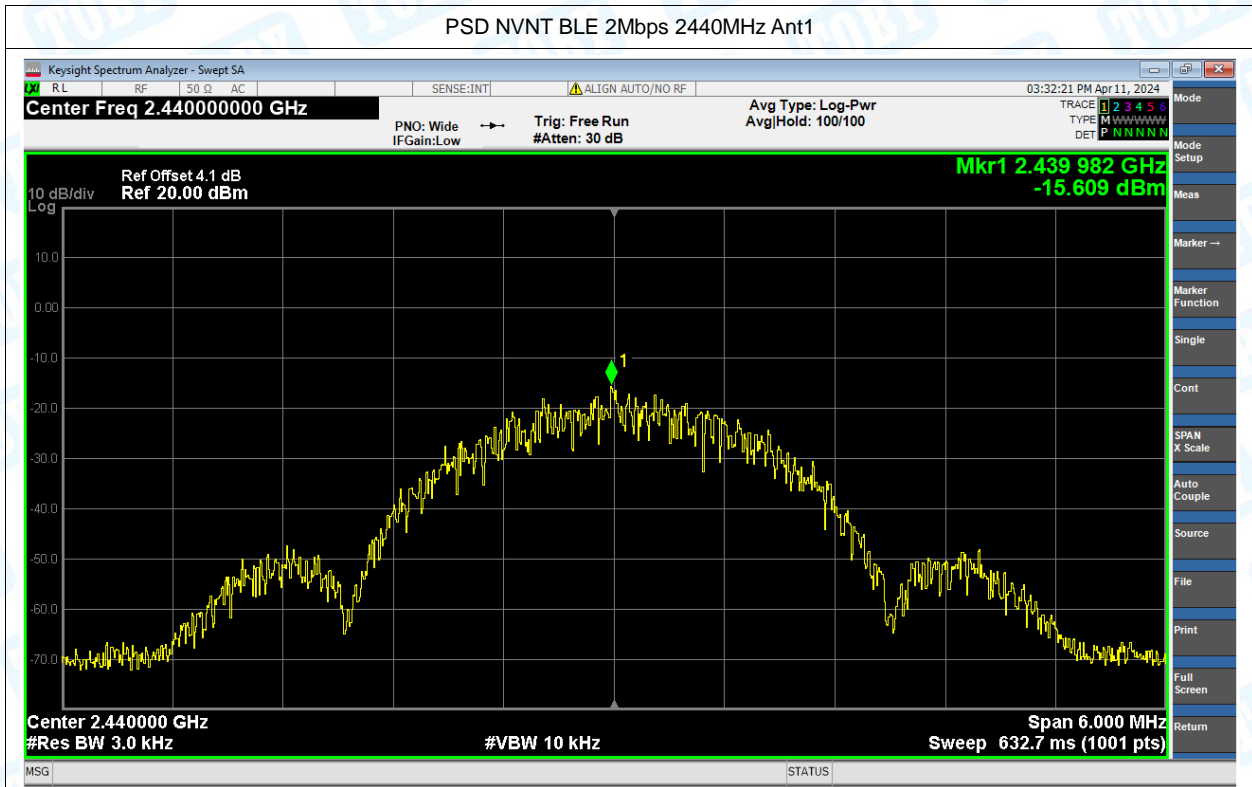
PSD NVNT BLE 1Mbps 2402MHz Ant1



PSD NVNT BLE 1Mbps 2440MHz Ant1





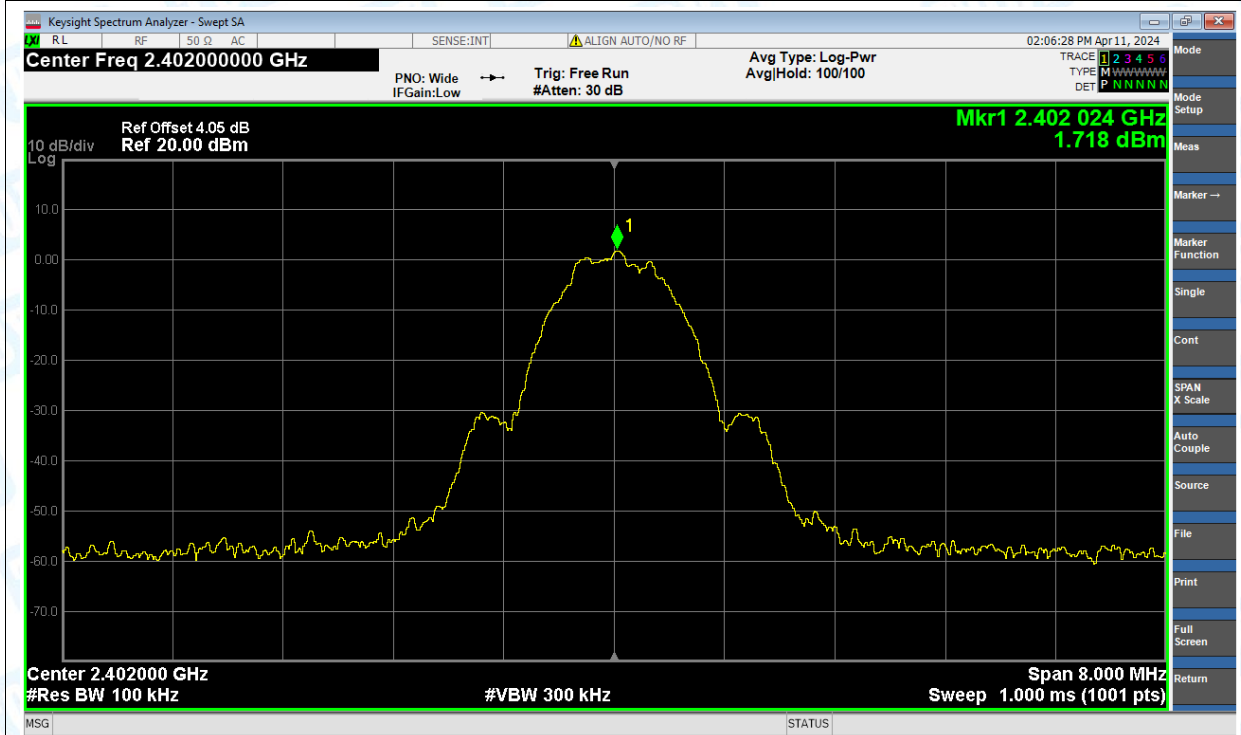


## 6. Band Edge

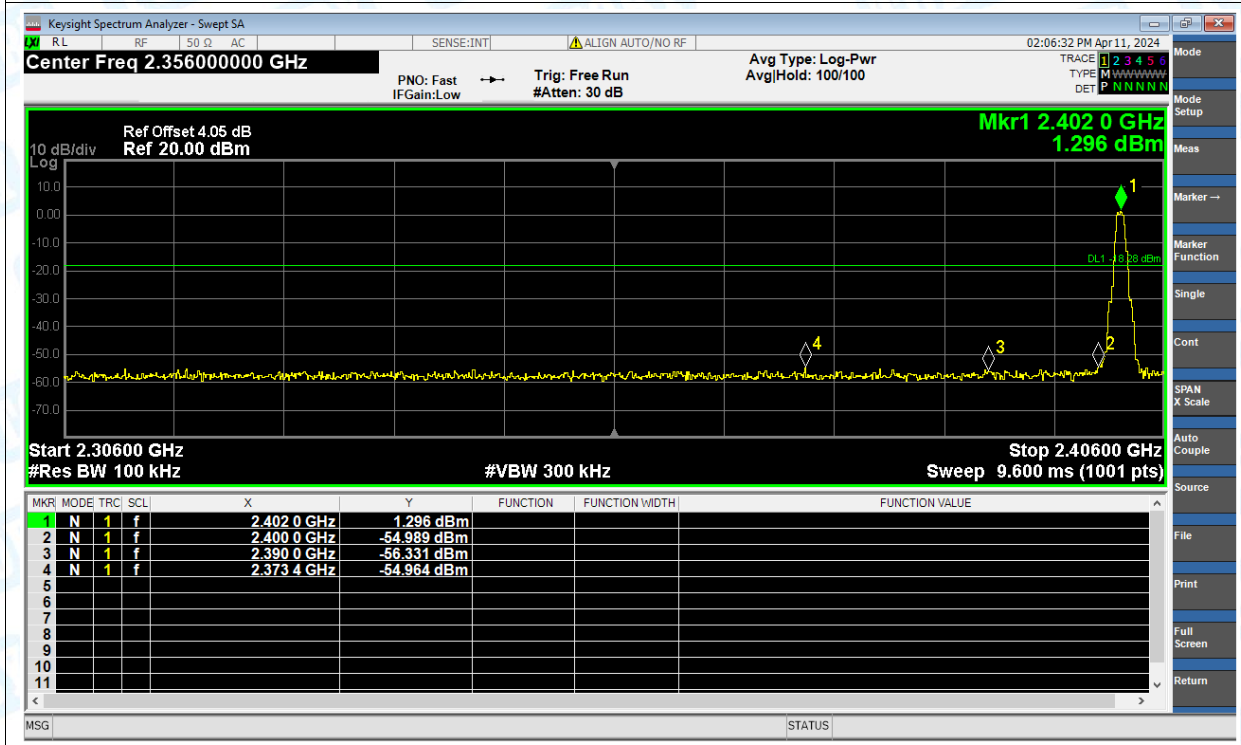
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-56.68	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-56.05	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-55.87	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-54.87	-20	Pass

Test Graphs

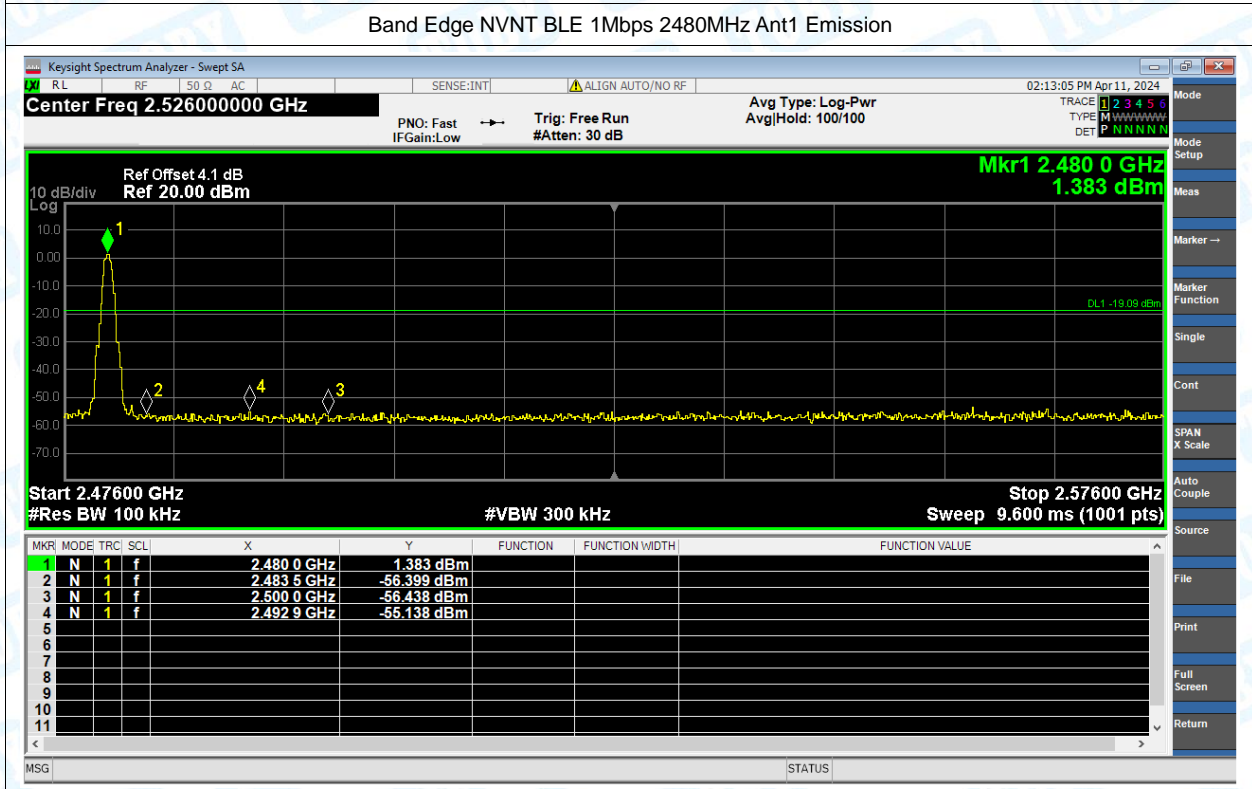
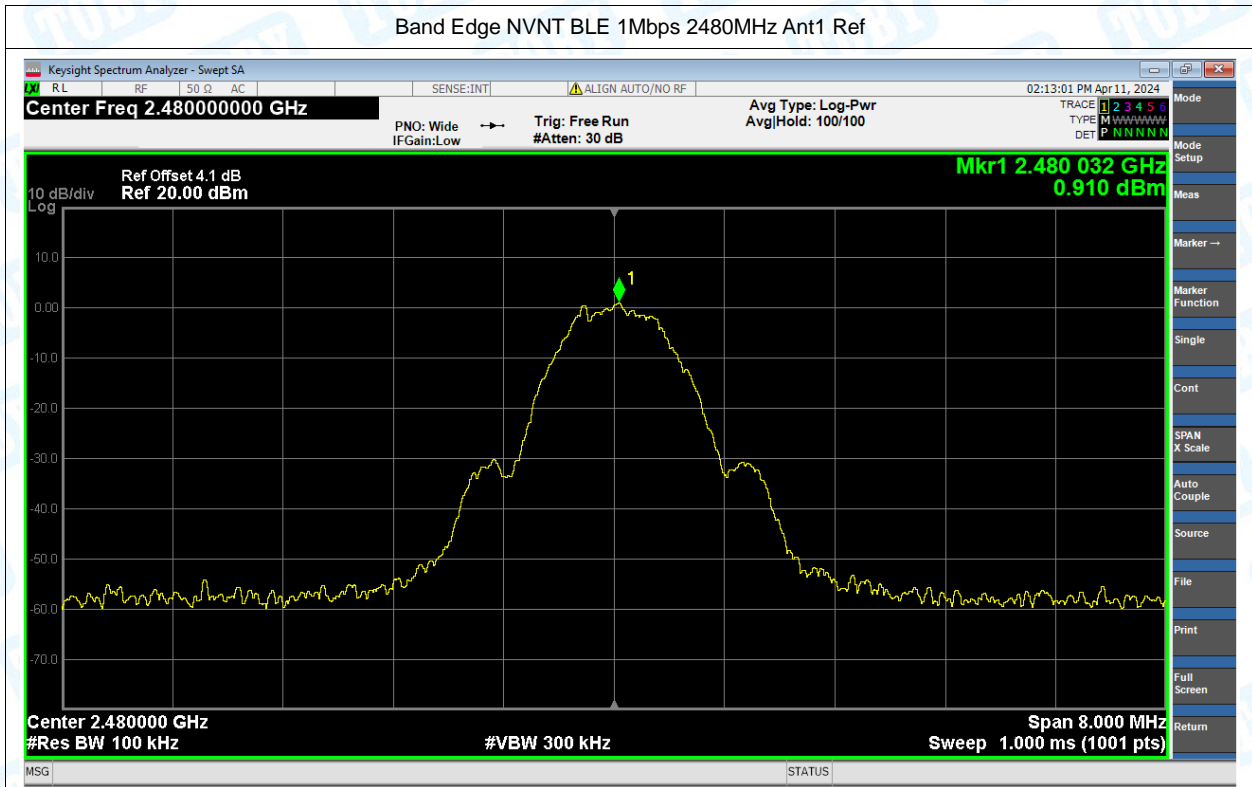
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref



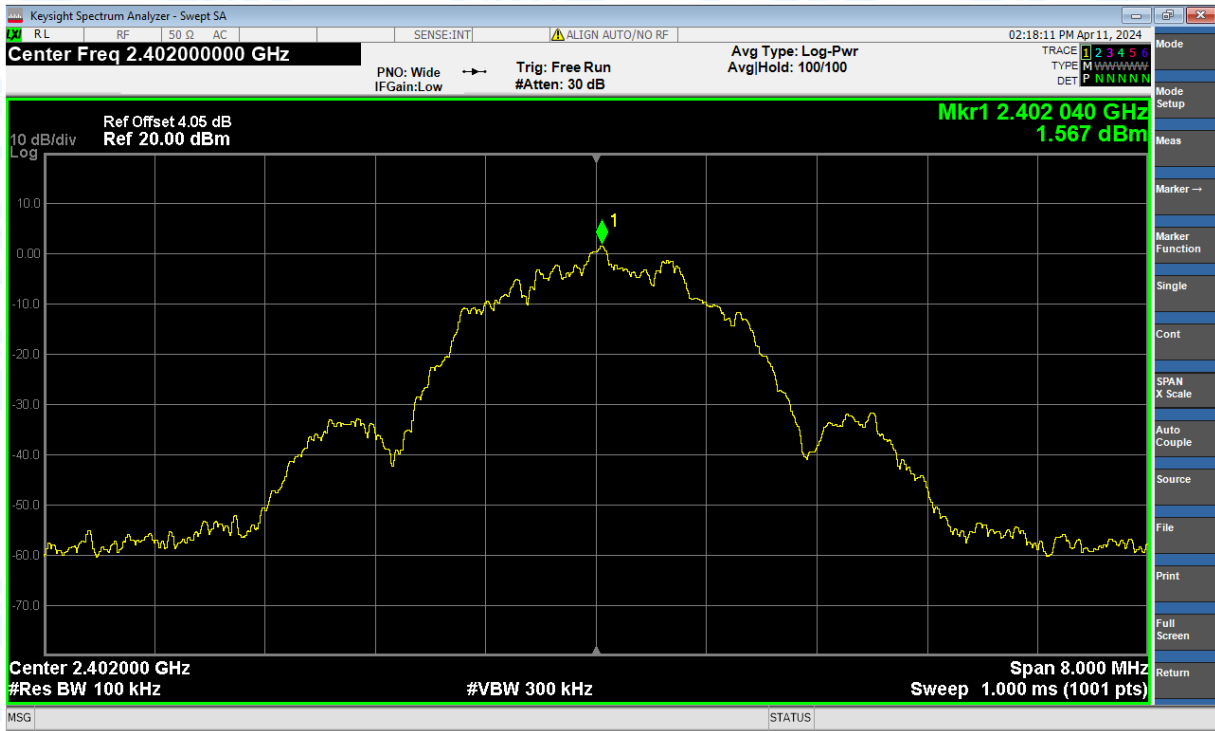
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission



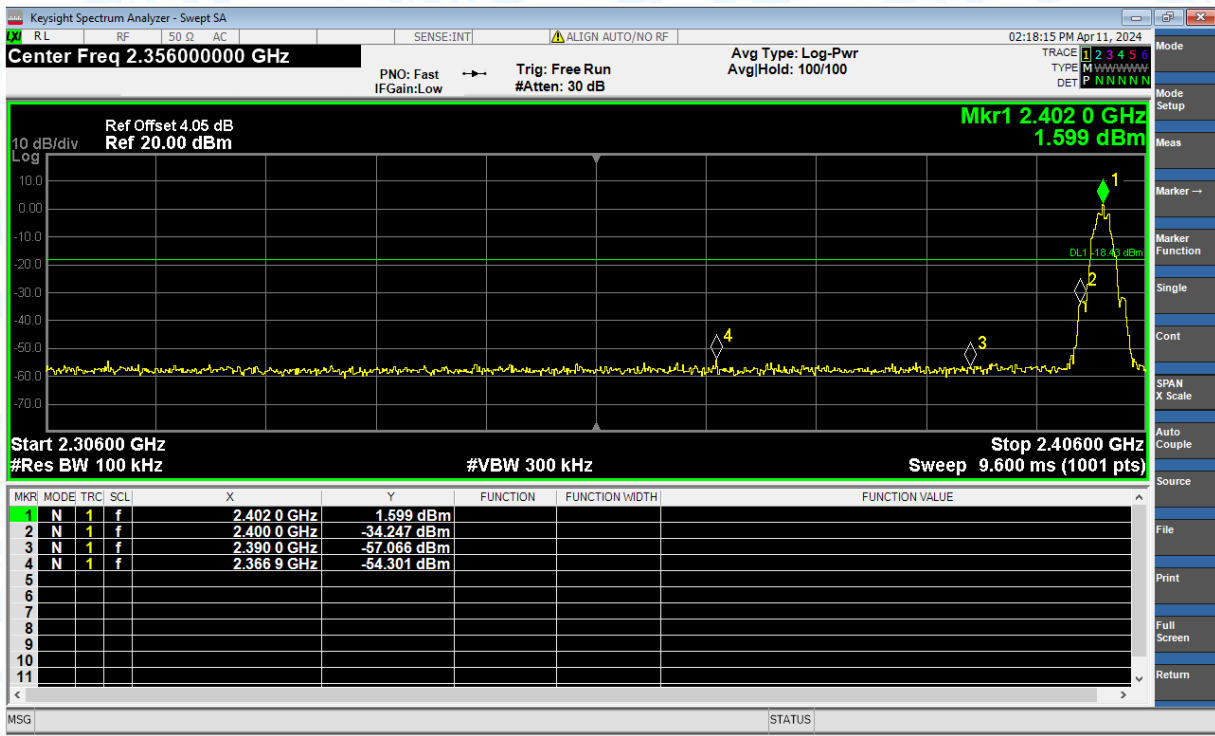




Band Edge NVNT BLE 2Mbps 2402MHz Ant1 Ref



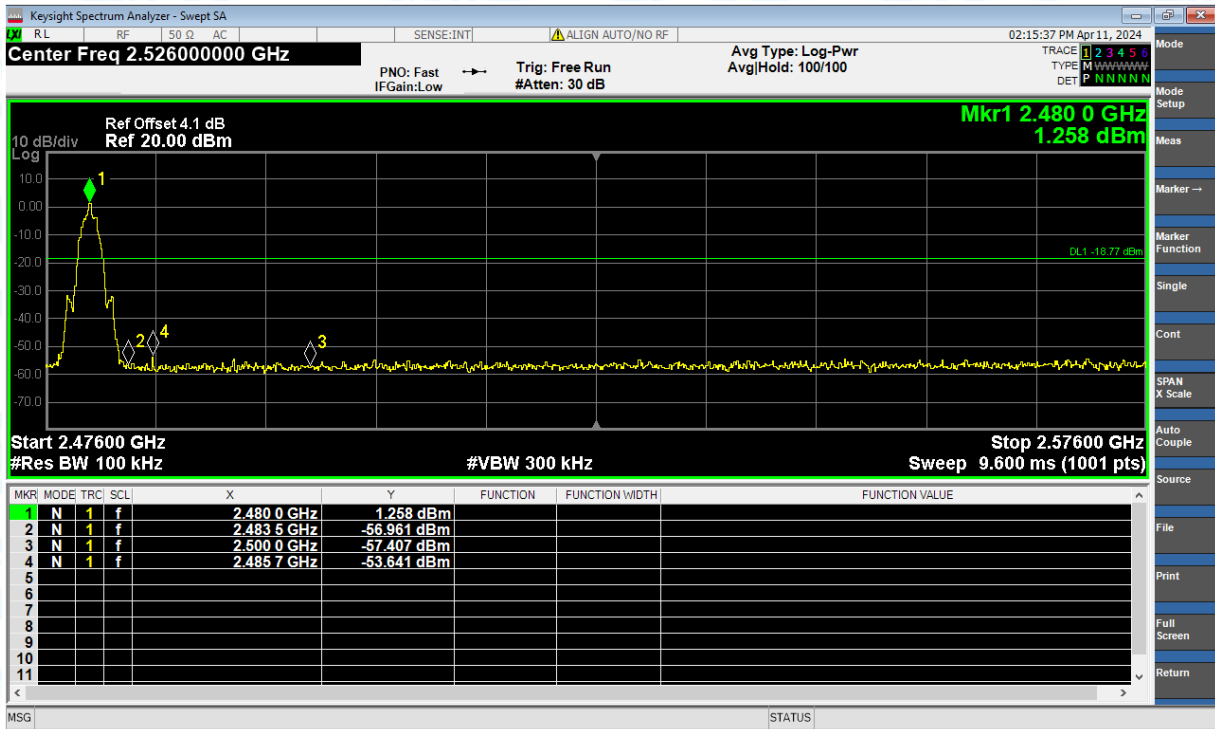
Band Edge NVNT BLE 2Mbps 2402MHz Ant1 Emission



Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Ref



Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Emission

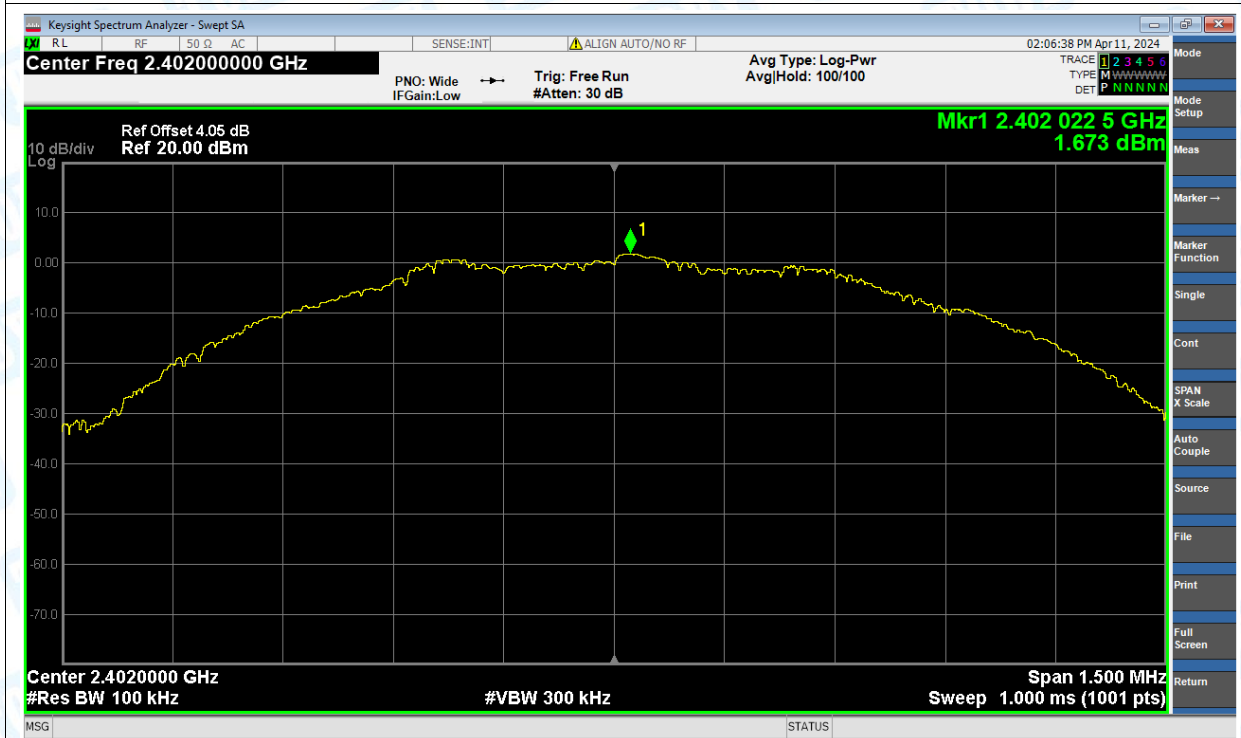


## 7. Conducted RF Spurious Emission

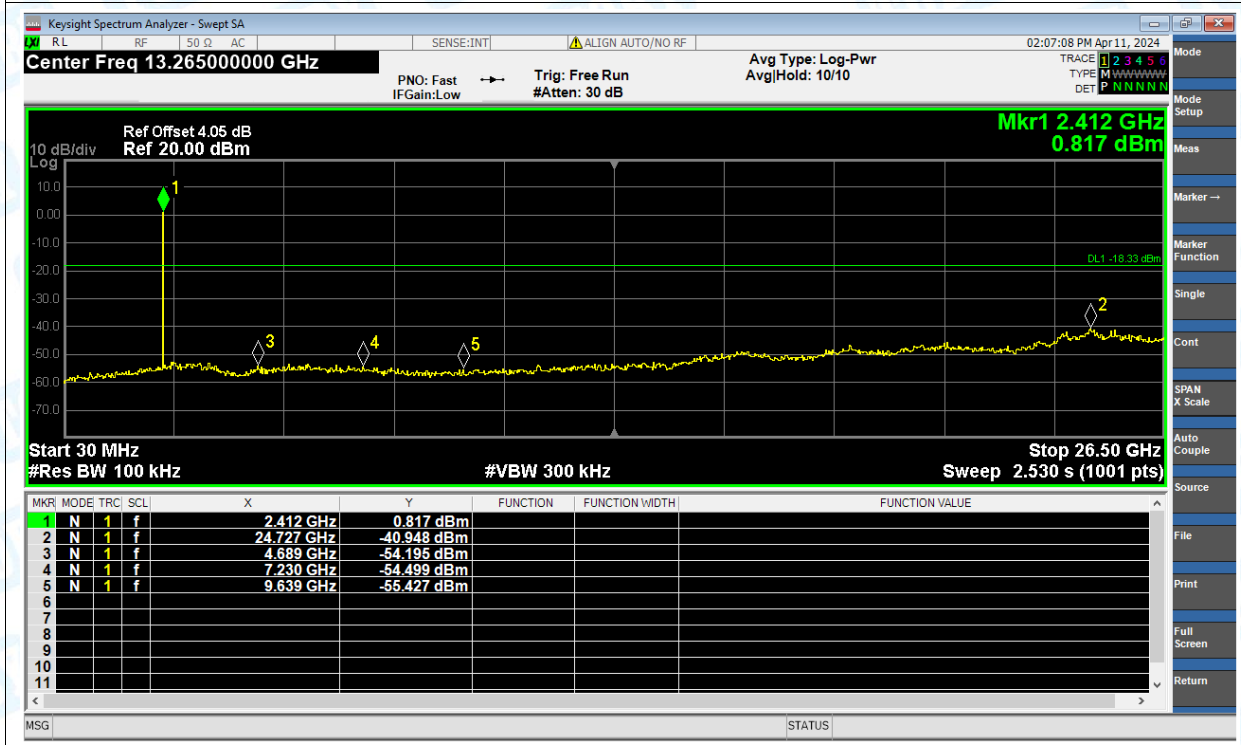
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-42.62	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-41.24	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-41.35	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-42.05	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-41.85	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-41.16	-20	Pass

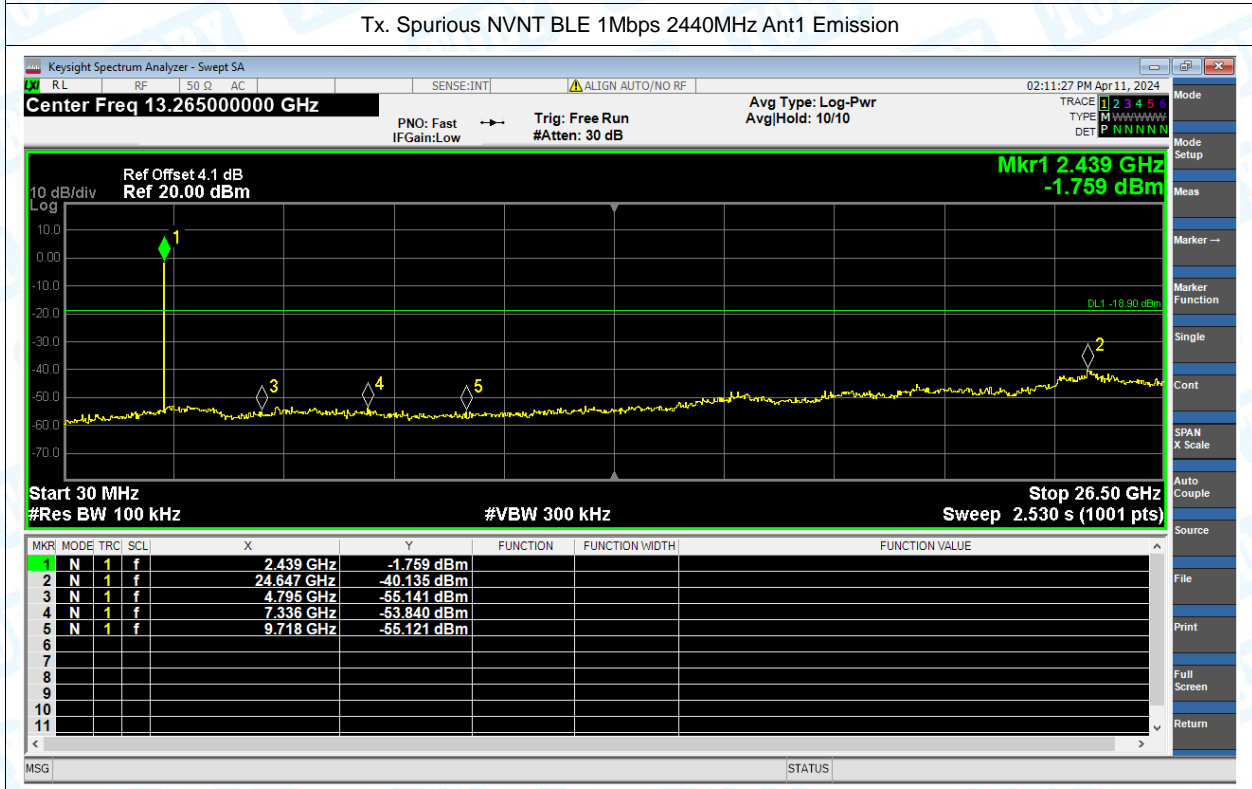
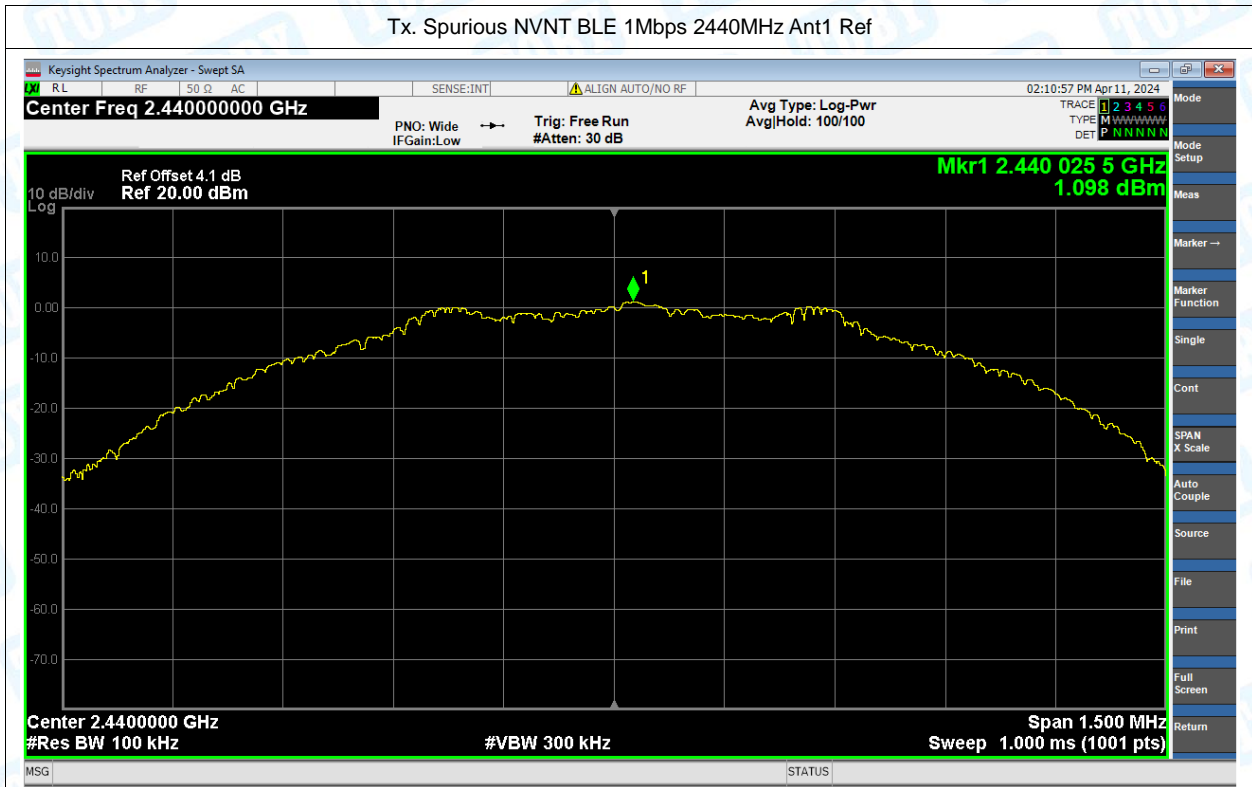
Test Graphs

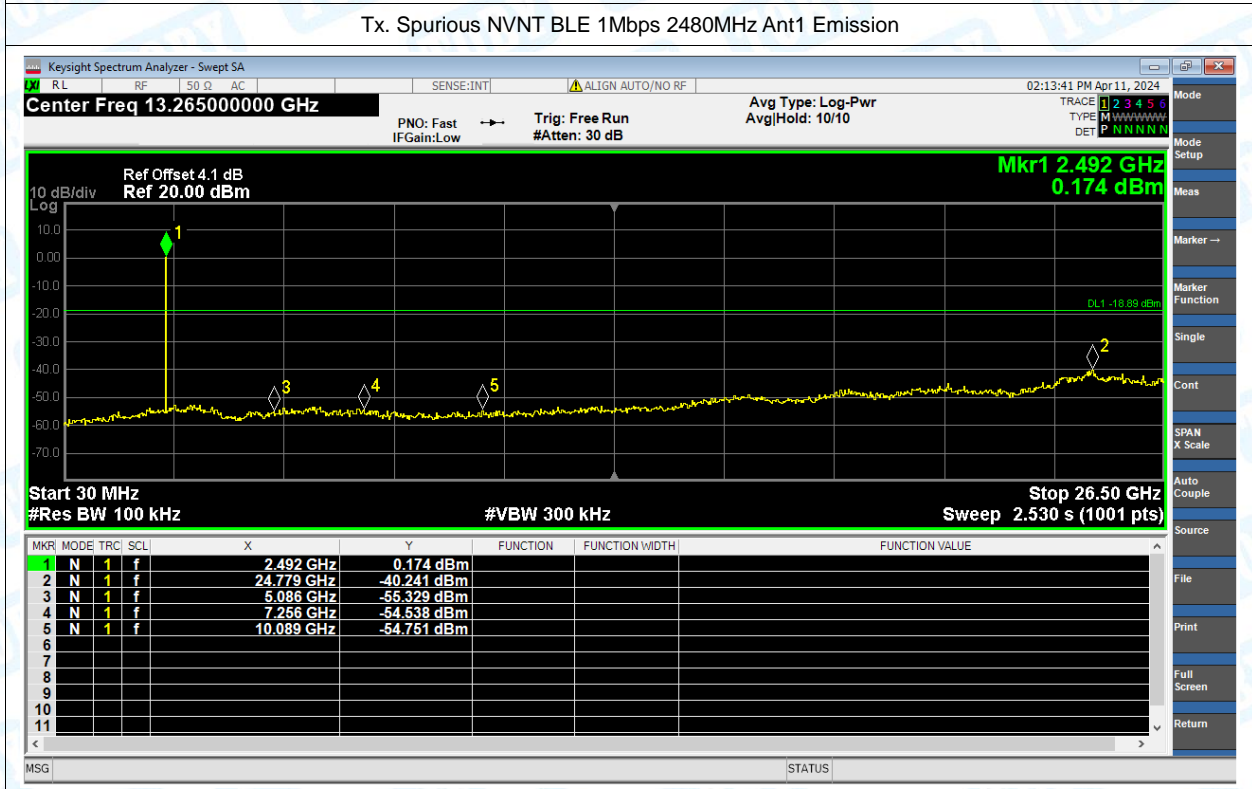
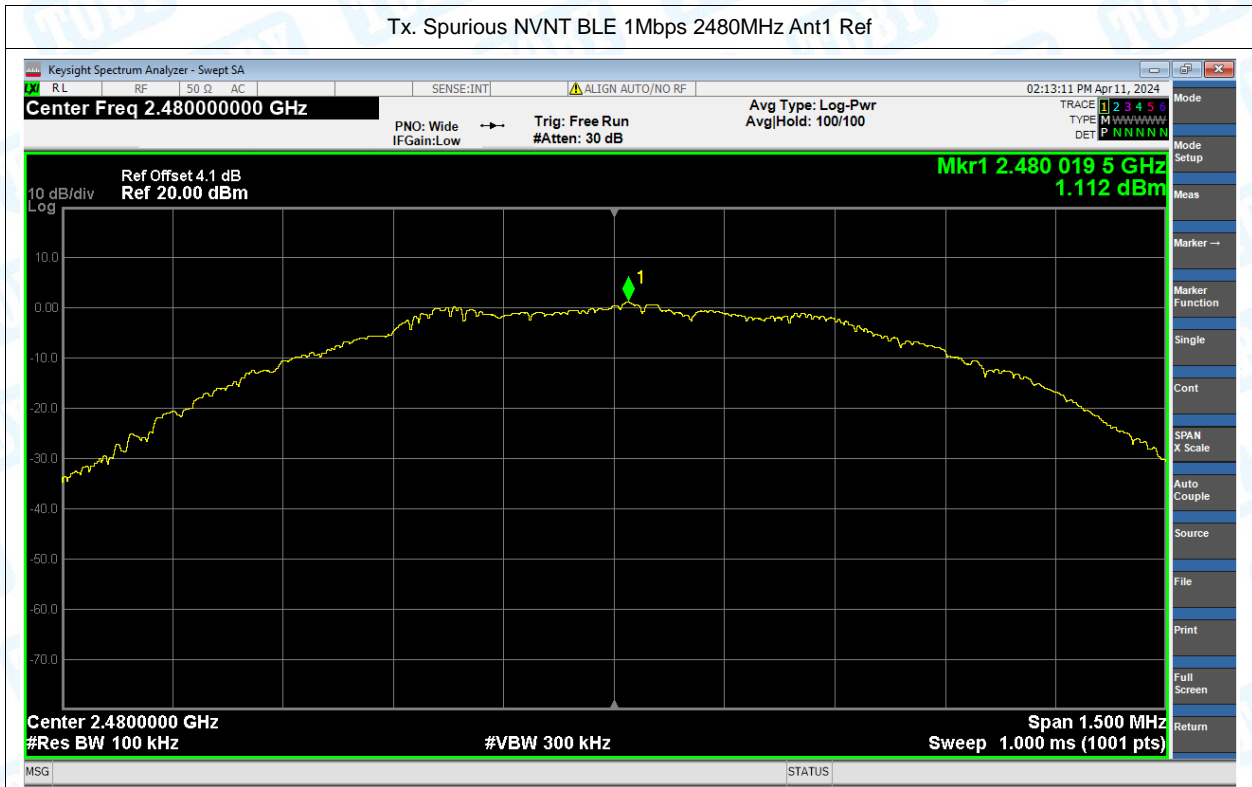
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref

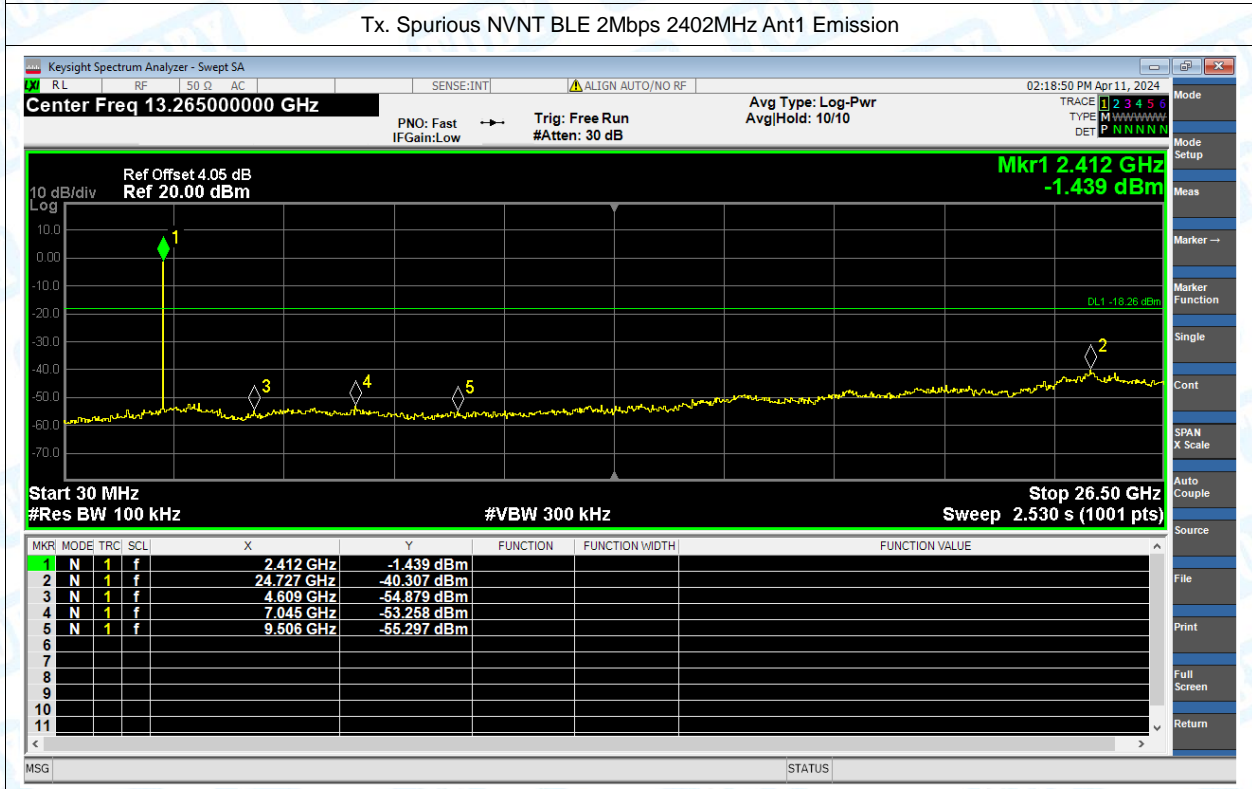
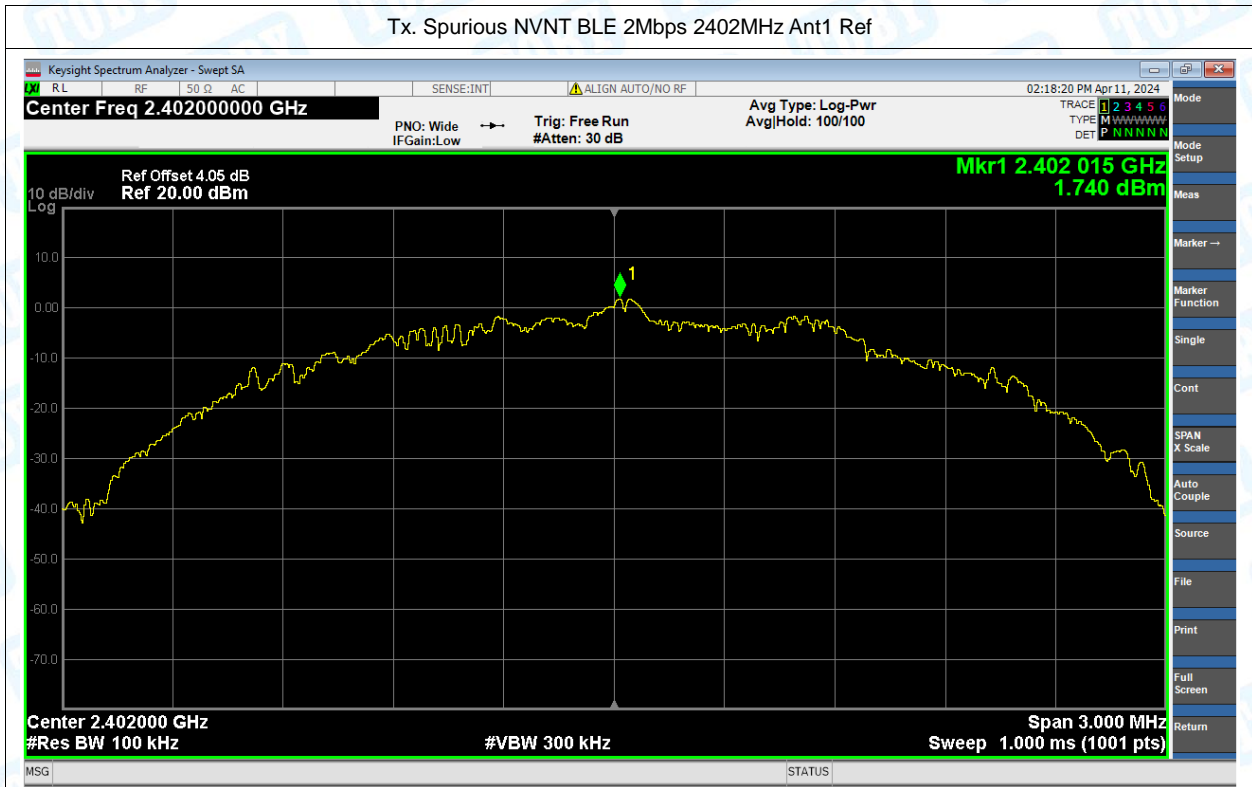


Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission

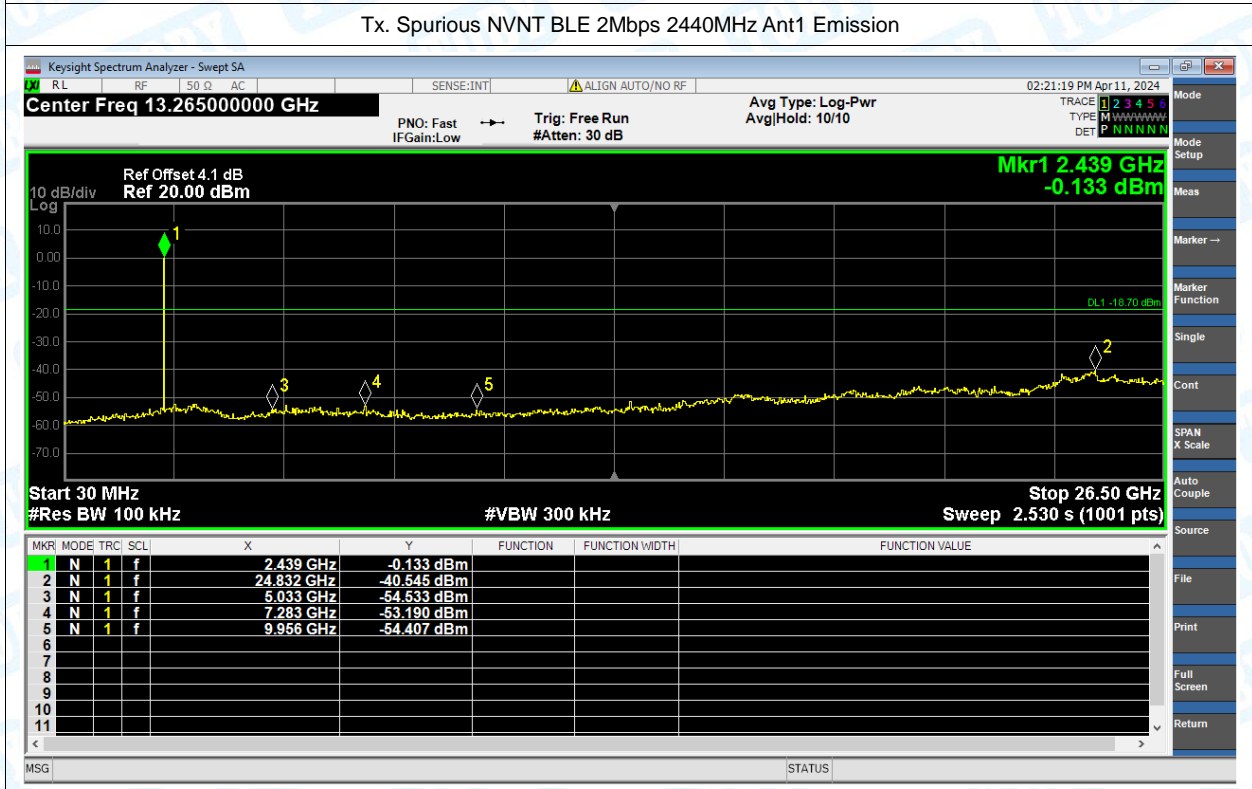
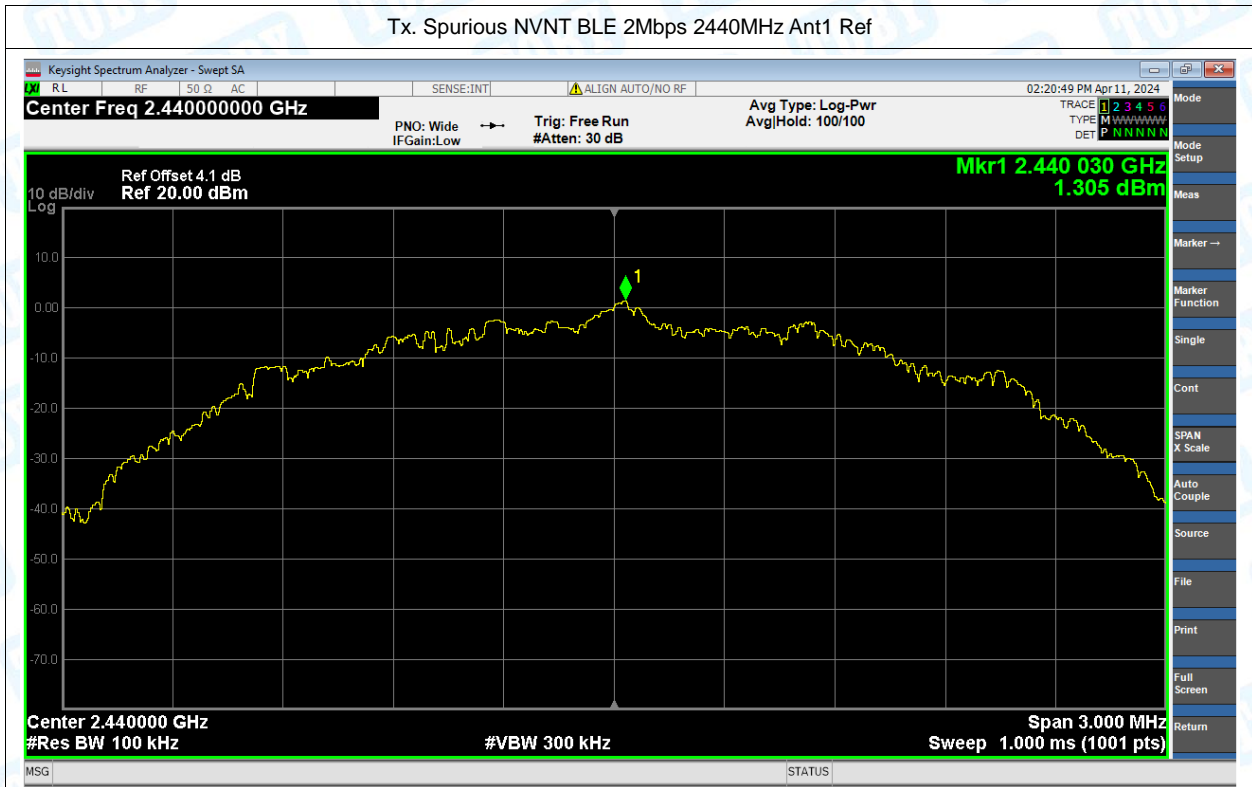


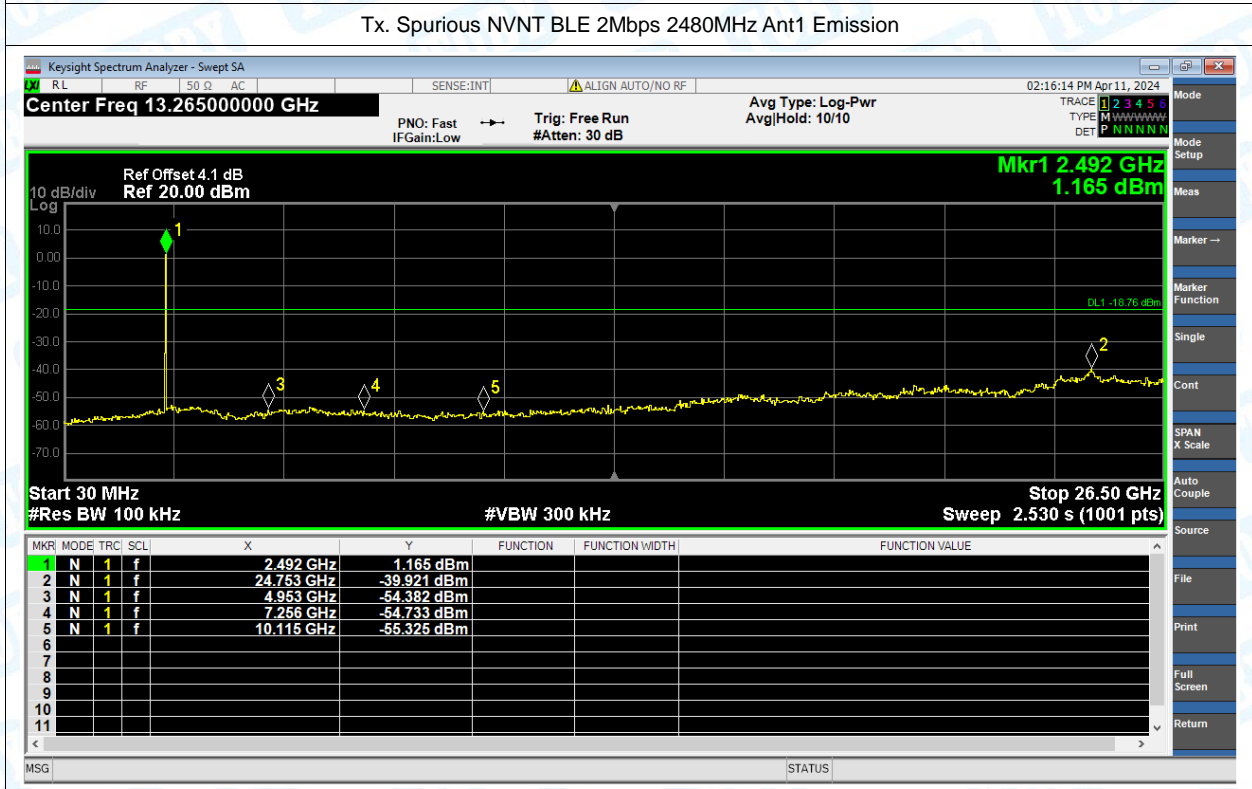
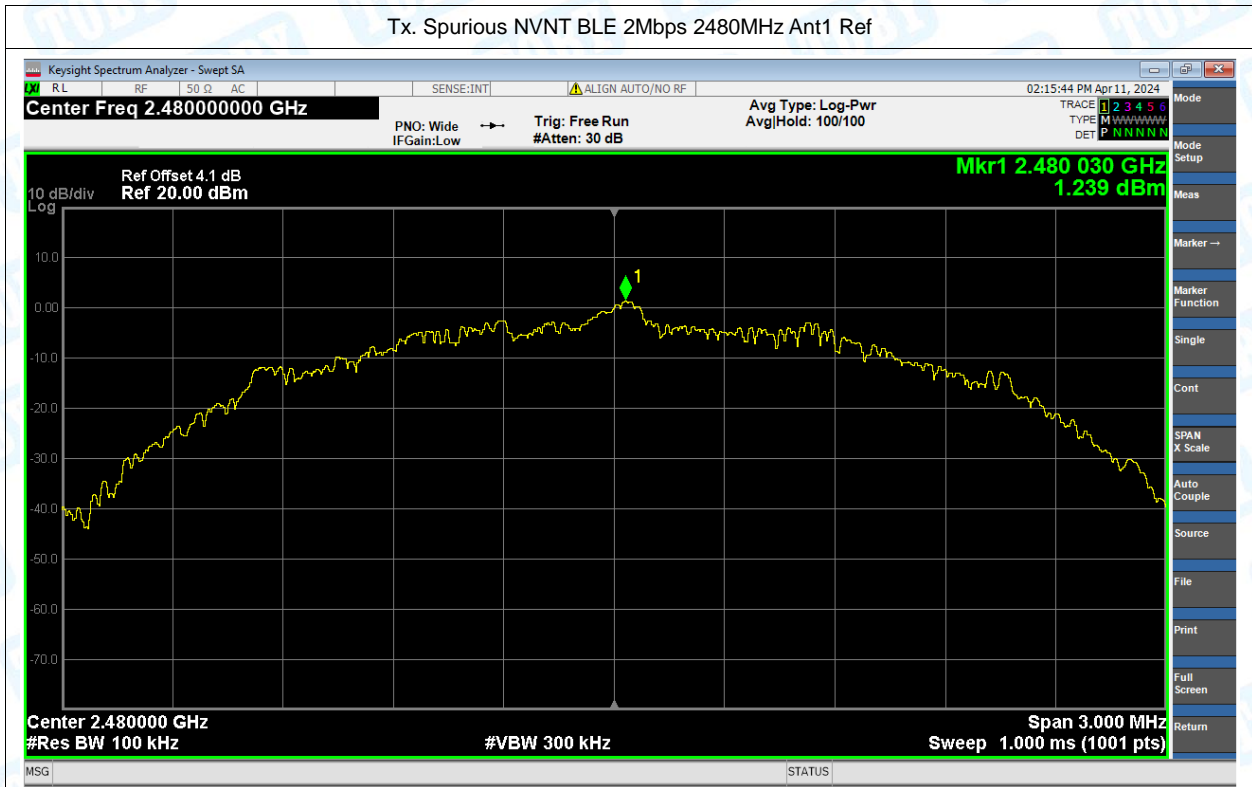










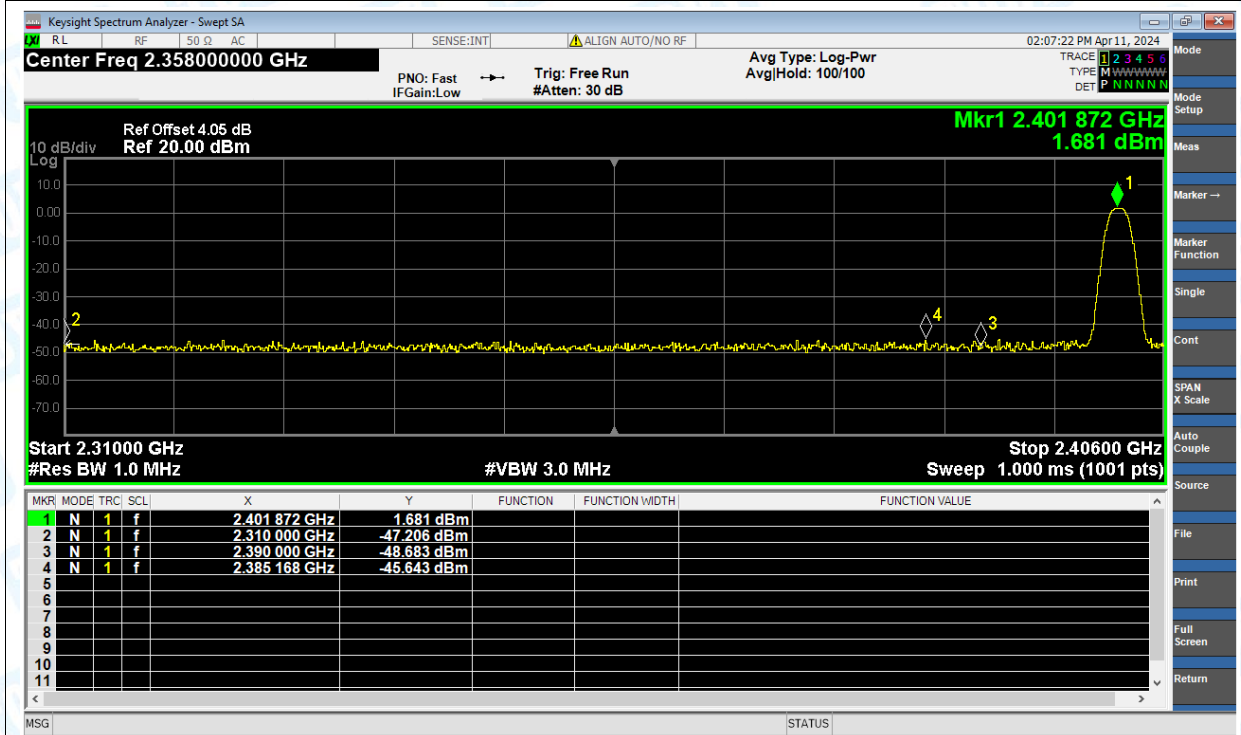


## 8. Restrict Band

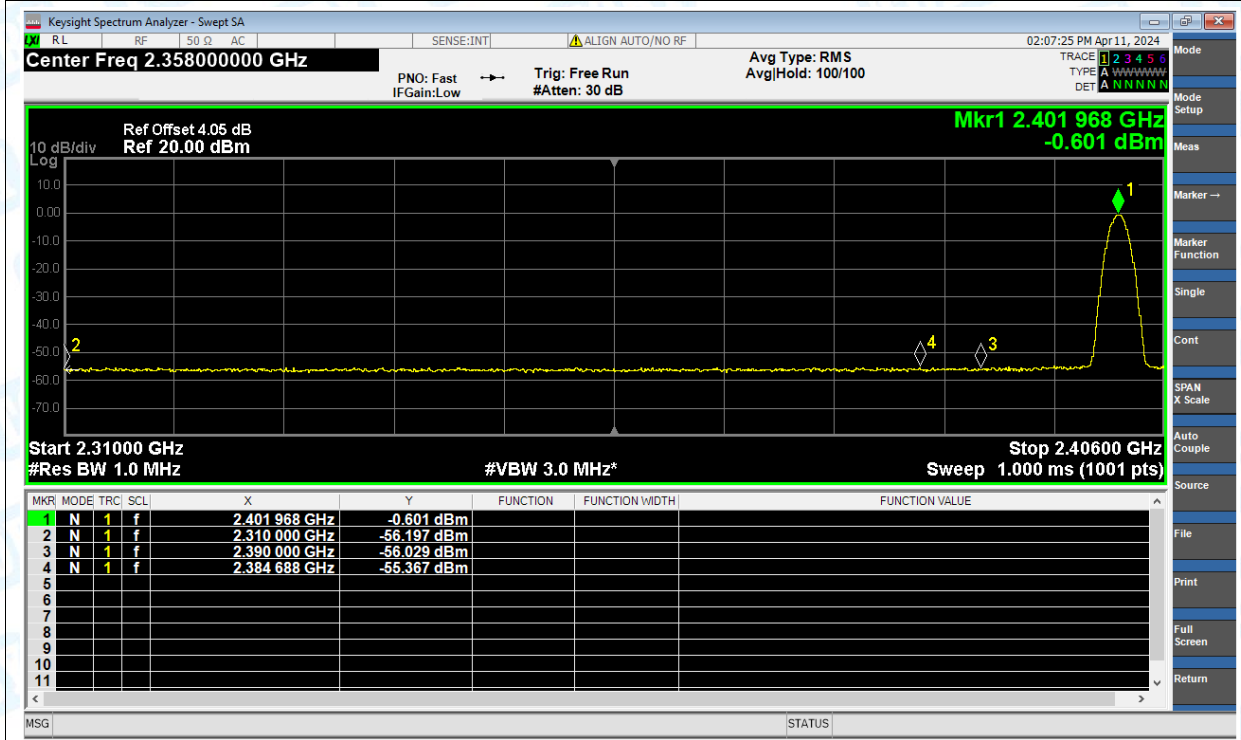
Condition	Mode	Frequency (MHz)	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1Mbps	2402	2310	-47.21	2	-	50.05	Peak	74	Pass
NVNT	BLE 1Mbps	2402	2310	-56.2	2	1.97	43.03	Average	54	Pass
NVNT	BLE 1Mbps	2402	2385.168	-45.64	2	-	51.62	Peak	74	Pass
NVNT	BLE 1Mbps	2402	2384.688	-55.37	2	1.97	43.86	Average	54	Pass
NVNT	BLE 1Mbps	2402	2390	-48.68	2	-	48.58	Peak	74	Pass
NVNT	BLE 1Mbps	2402	2390	-56.03	2	1.97	43.2	Average	54	Pass
NVNT	BLE 1Mbps	2480	2483.5	-45.96	2	-	51.3	Peak	74	Pass
NVNT	BLE 1Mbps	2480	2483.5	-55.29	2	1.97	43.94	Average	54	Pass
NVNT	BLE 1Mbps	2480	2483.536	-44.56	2	-	52.7	Peak	74	Pass
NVNT	BLE 1Mbps	2480	2483.872	-54.68	2	1.97	44.55	Average	54	Pass
NVNT	BLE 1Mbps	2480	2500	-47.38	2	-	49.88	Peak	74	Pass
NVNT	BLE 1Mbps	2480	2500	-56.16	2	1.97	43.07	Average	54	Pass
NVNT	BLE 2Mbps	2402	2310	-48.22	2	-	49.04	Peak	74	Pass
NVNT	BLE 2Mbps	2402	2310	-56.6	2	4.77	45.43	Average	54	Pass
NVNT	BLE 2Mbps	2402	2327.76	-44.87	2	-	52.39	Peak	74	Pass
NVNT	BLE 2Mbps	2402	2358.192	-55.21	2	4.77	46.82	Average	54	Pass
NVNT	BLE 2Mbps	2402	2390	-47.63	2	-	49.63	Peak	74	Pass
NVNT	BLE 2Mbps	2402	2390	-55.64	2	4.77	46.39	Average	54	Pass
NVNT	BLE 2Mbps	2480	2483.5	-46.93	2	-	50.33	Peak	74	Pass
NVNT	BLE 2Mbps	2480	2483.5	-55.82	2	4.91	46.35	Average	54	Pass
NVNT	BLE 2Mbps	2480	2483.584	-44.61	2	-	52.65	Peak	74	Pass
NVNT	BLE 2Mbps	2480	2486.152	-55.02	2	4.91	47.15	Average	54	Pass
NVNT	BLE 2Mbps	2480	2500	-48.6	2	-	48.66	Peak	74	Pass
NVNT	BLE 2Mbps	2480	2500	-55.95	2	4.91	46.22	Average	54	Pass

Test Graphs

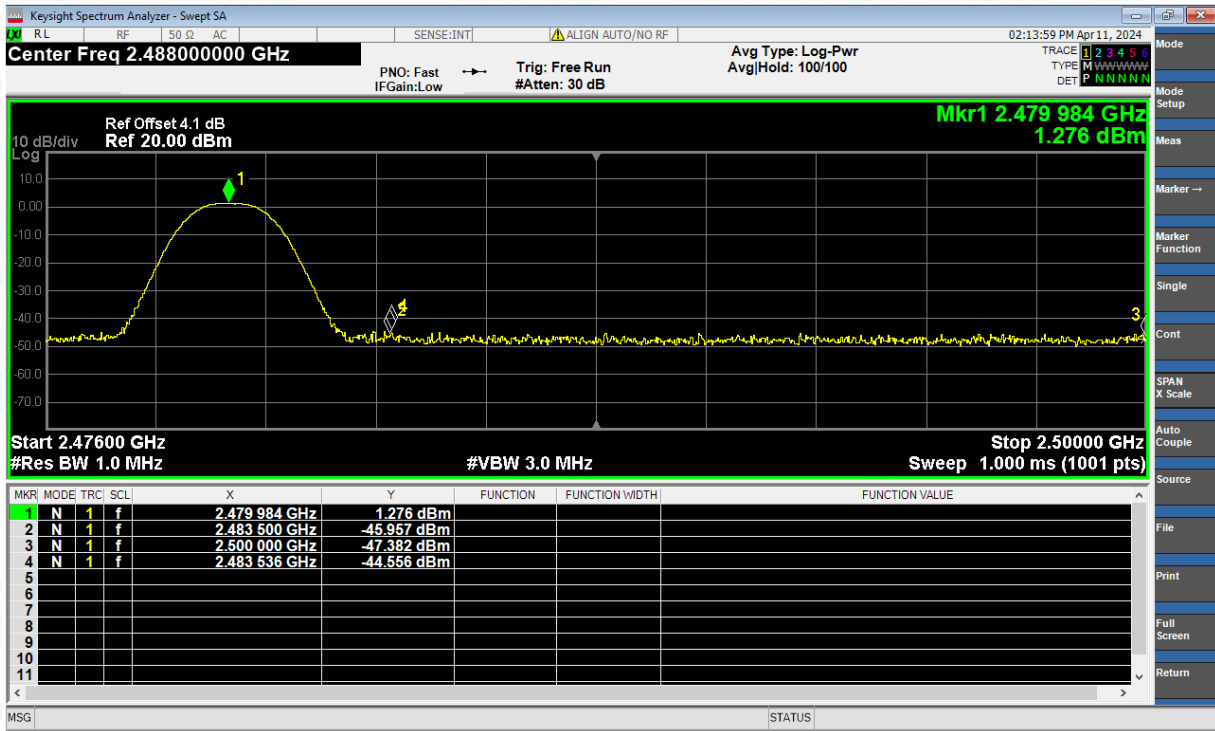
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



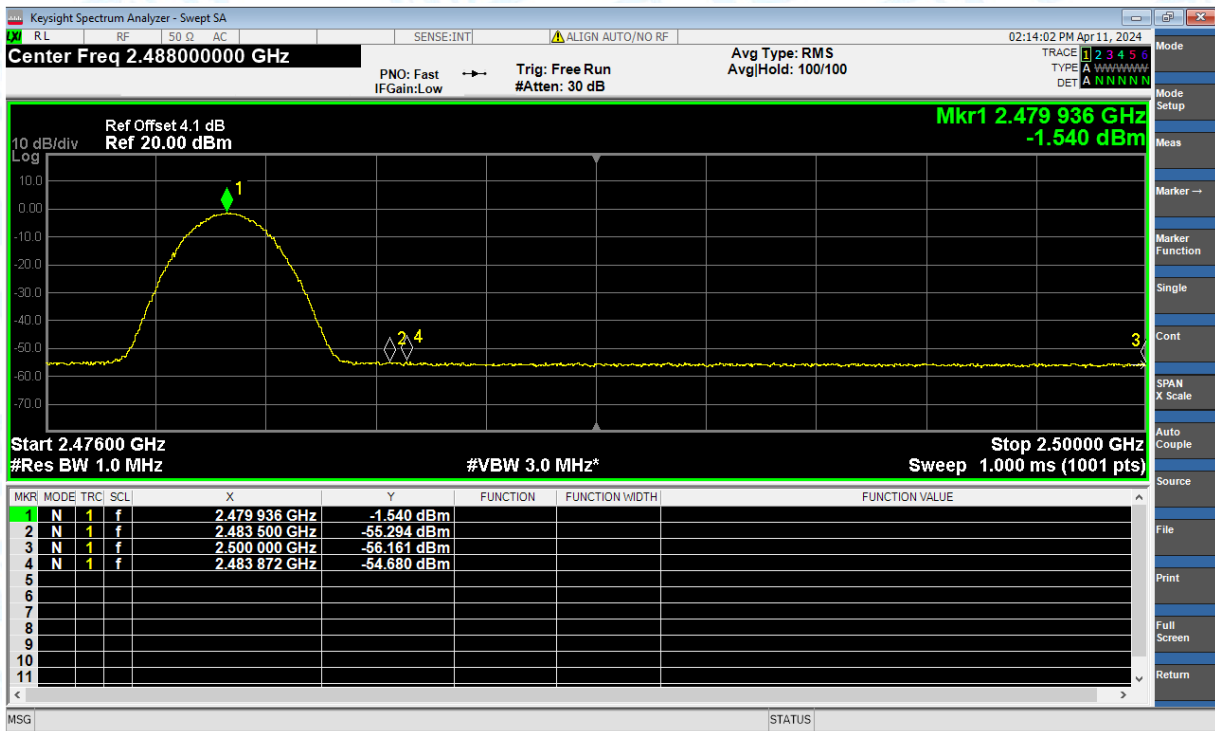
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average

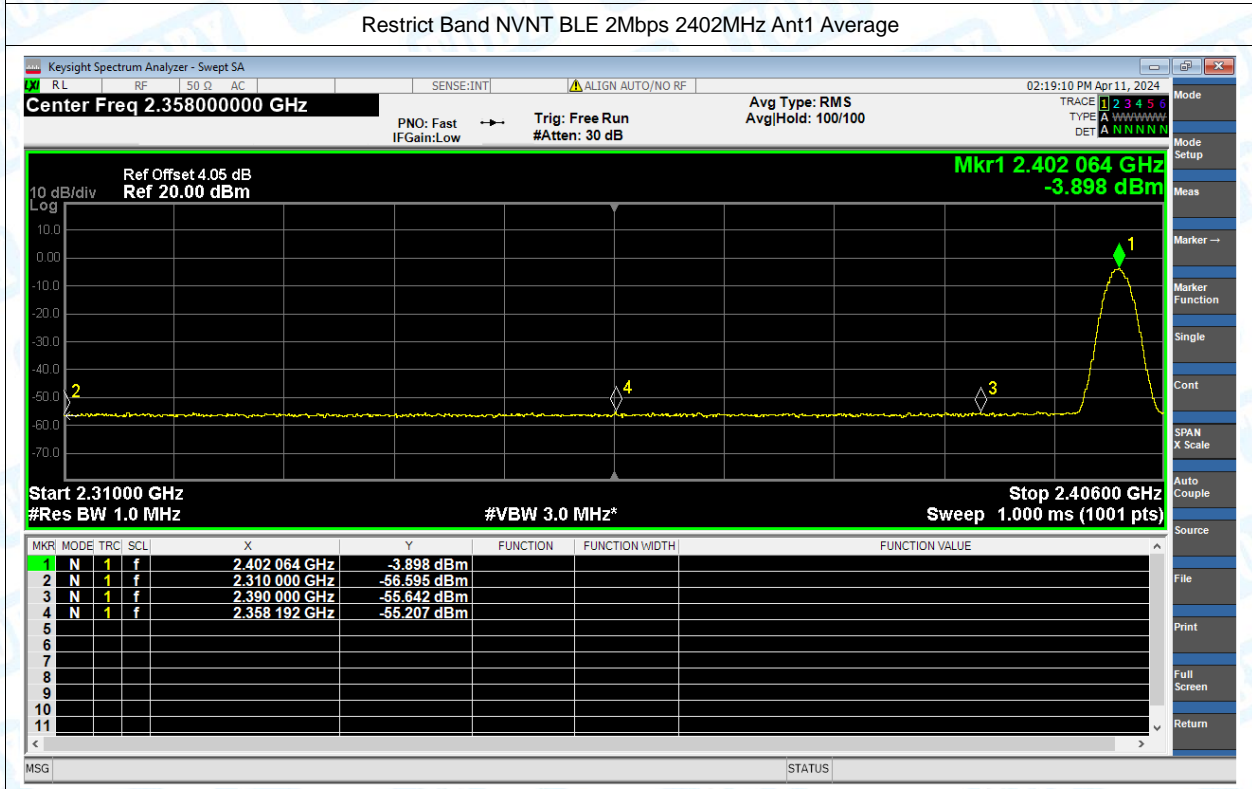
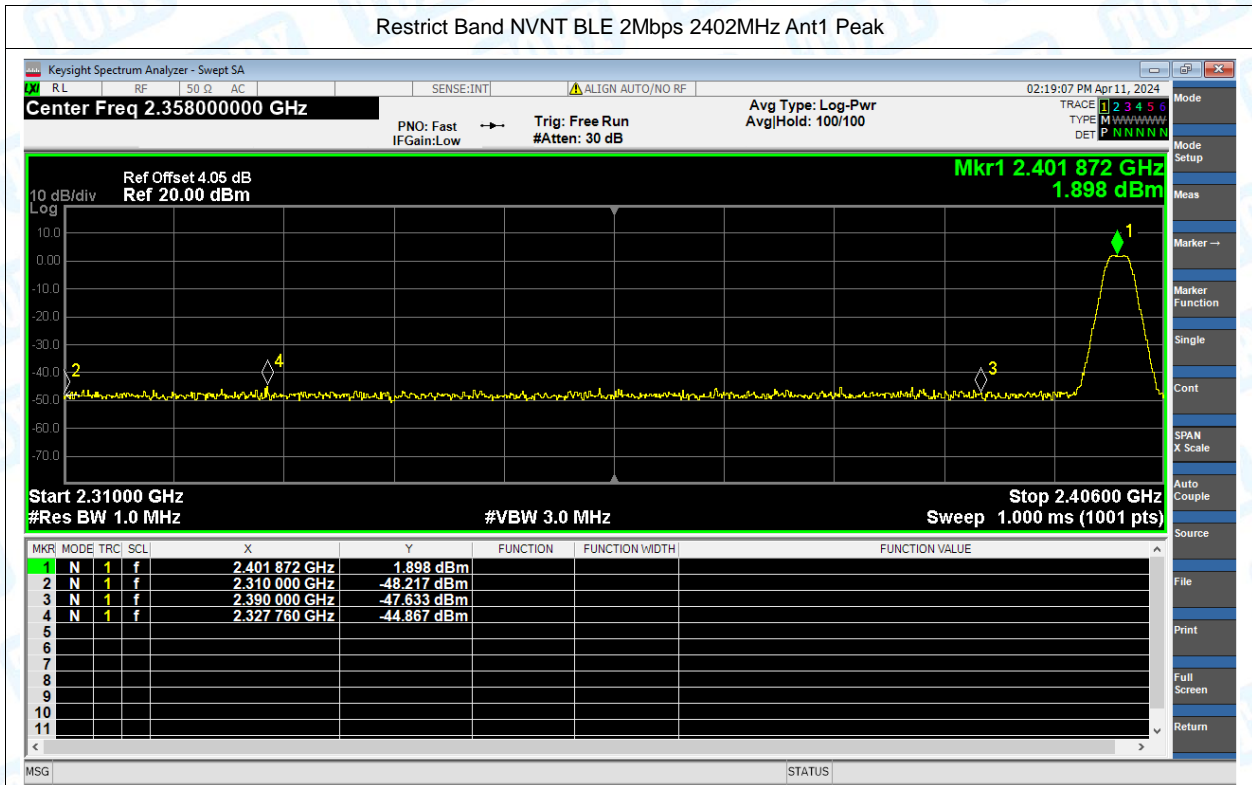


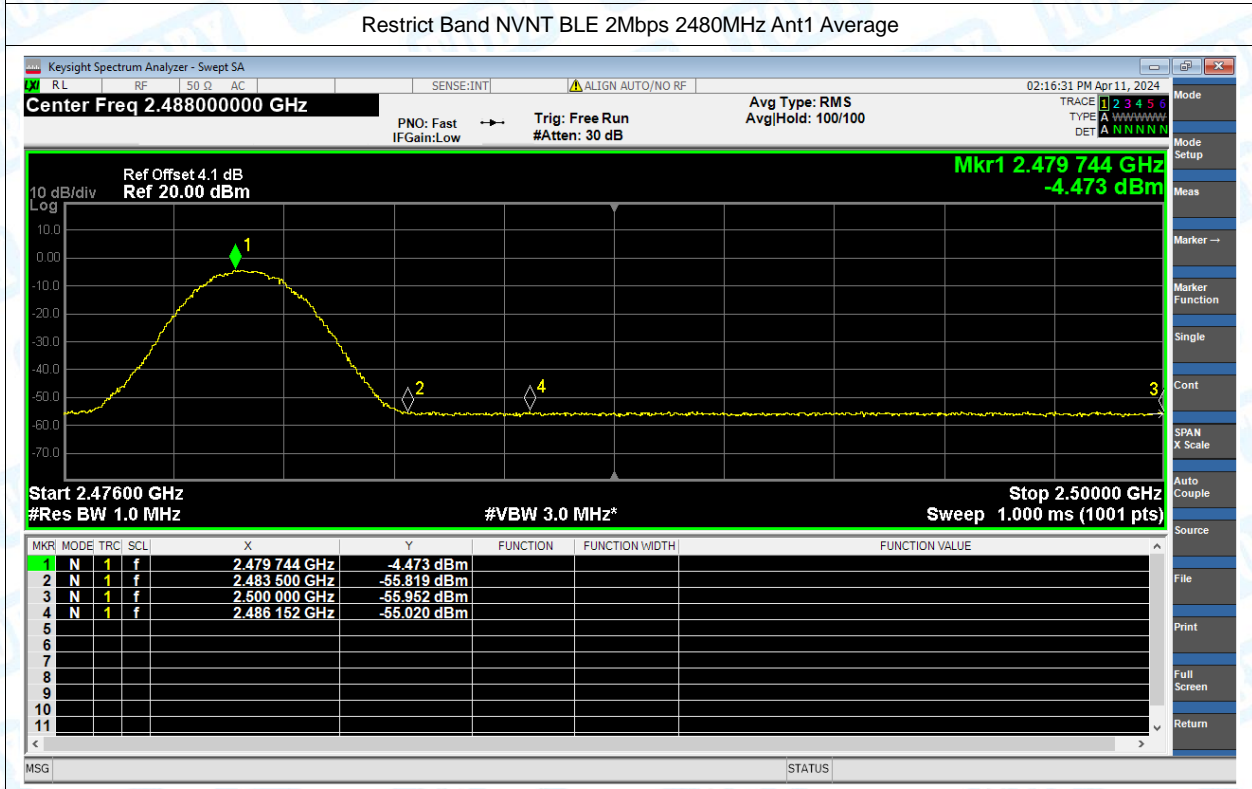
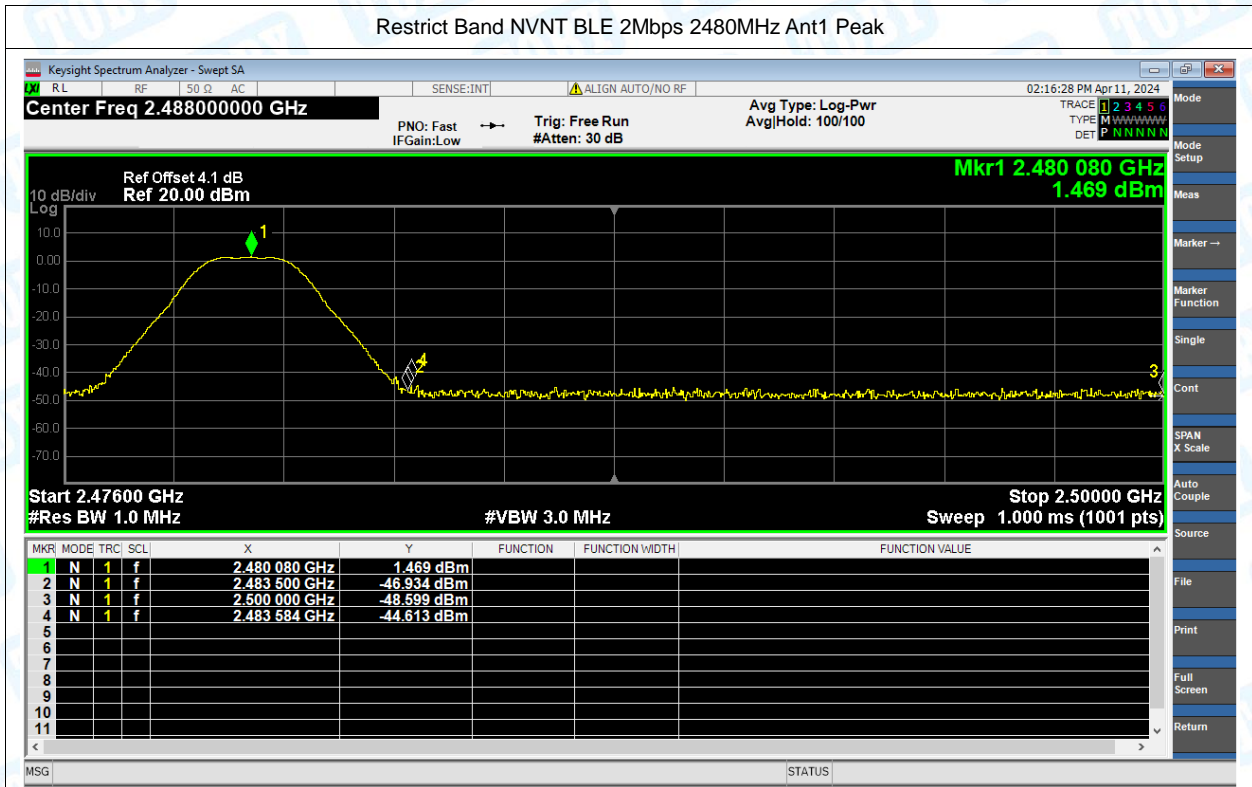
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Peak



Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Average







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