

# RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
<b>Product Name:</b>	Bluetooth Temperature & Humidity Sensor
<b>Test Model:</b>	TH05
<b>Sample ID:</b>	202312-0065-1-2#
Environmental Conditions	
<b>Temperature:</b>	25°C
<b>Relative Humidity:</b>	55%
<b>Test Voltage:</b>	DC 3V
<b>Test Engineer:</b>	Li ying jing
Note: For a more detailed features description, please refer to the report TBR-C-202312-0065-2 The report only show the worst case data.	

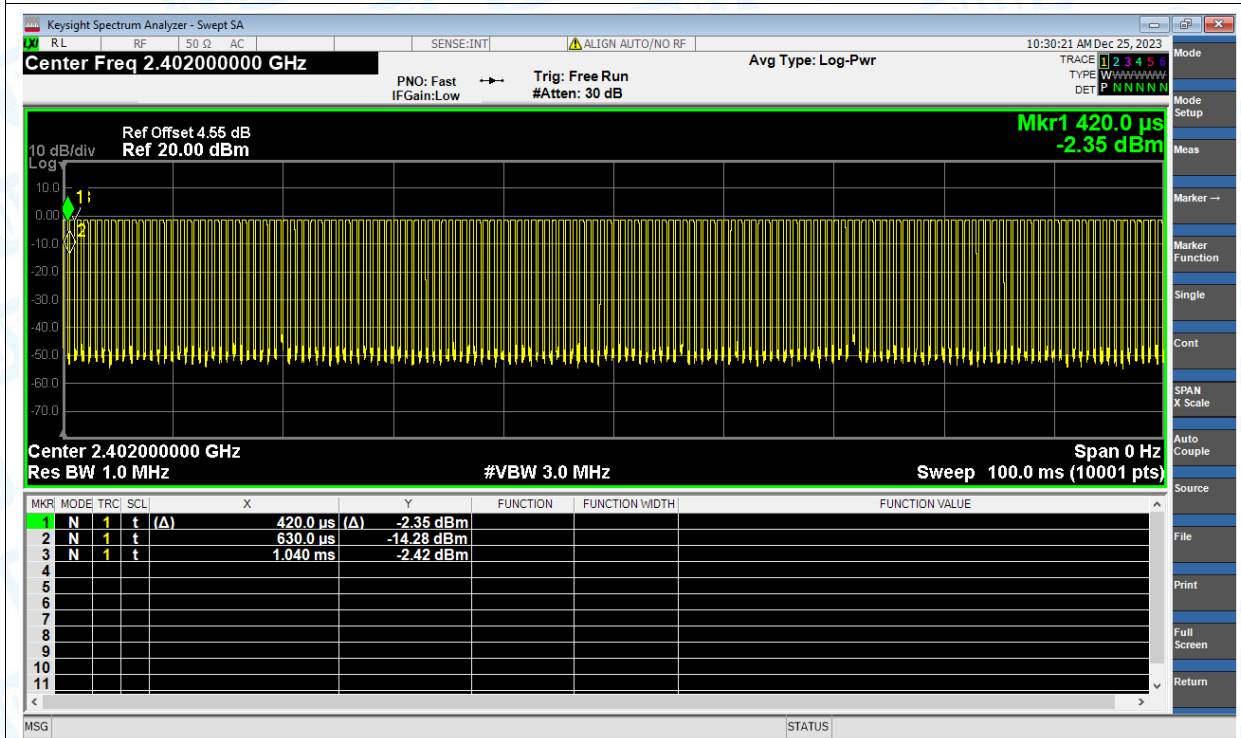


## Duty Cycle

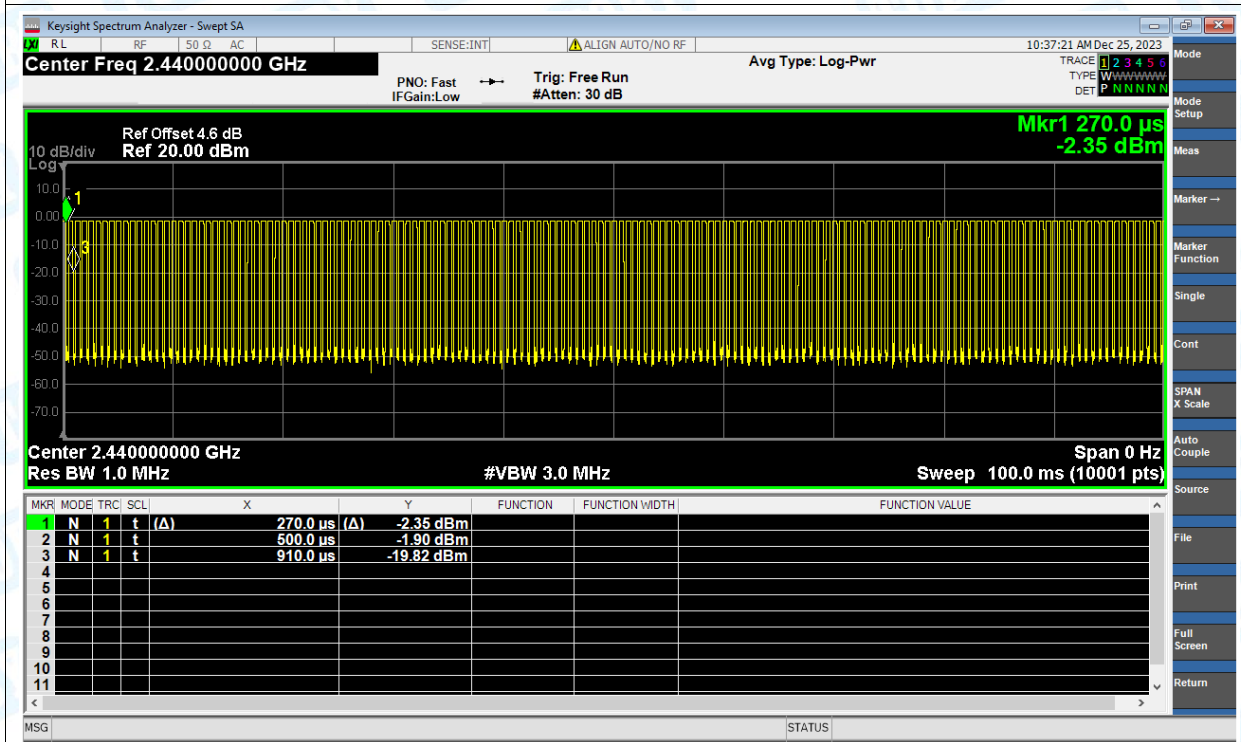
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	66.13	1.8	2.44
NVNT	BLE 1Mbps	2440	Ant1	64.06	1.93	2.44
NVNT	BLE 1Mbps	2480	Ant1	63.49	1.97	2.5
NVNT	BLE 2Mbps	2402	Ant1	31.75	4.98	5
NVNT	BLE 2Mbps	2440	Ant1	33.33	4.77	4.76
NVNT	BLE 2Mbps	2480	Ant1	31.75	4.98	5

Test Graphs

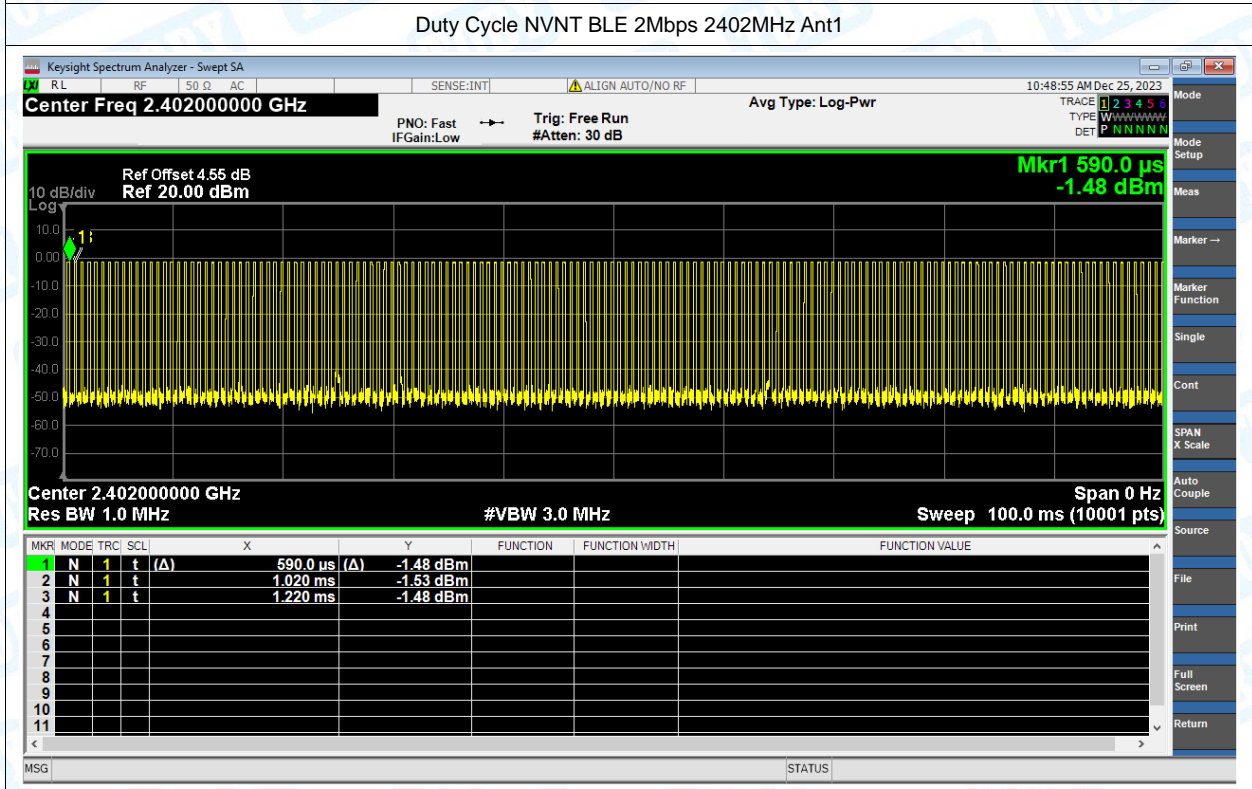
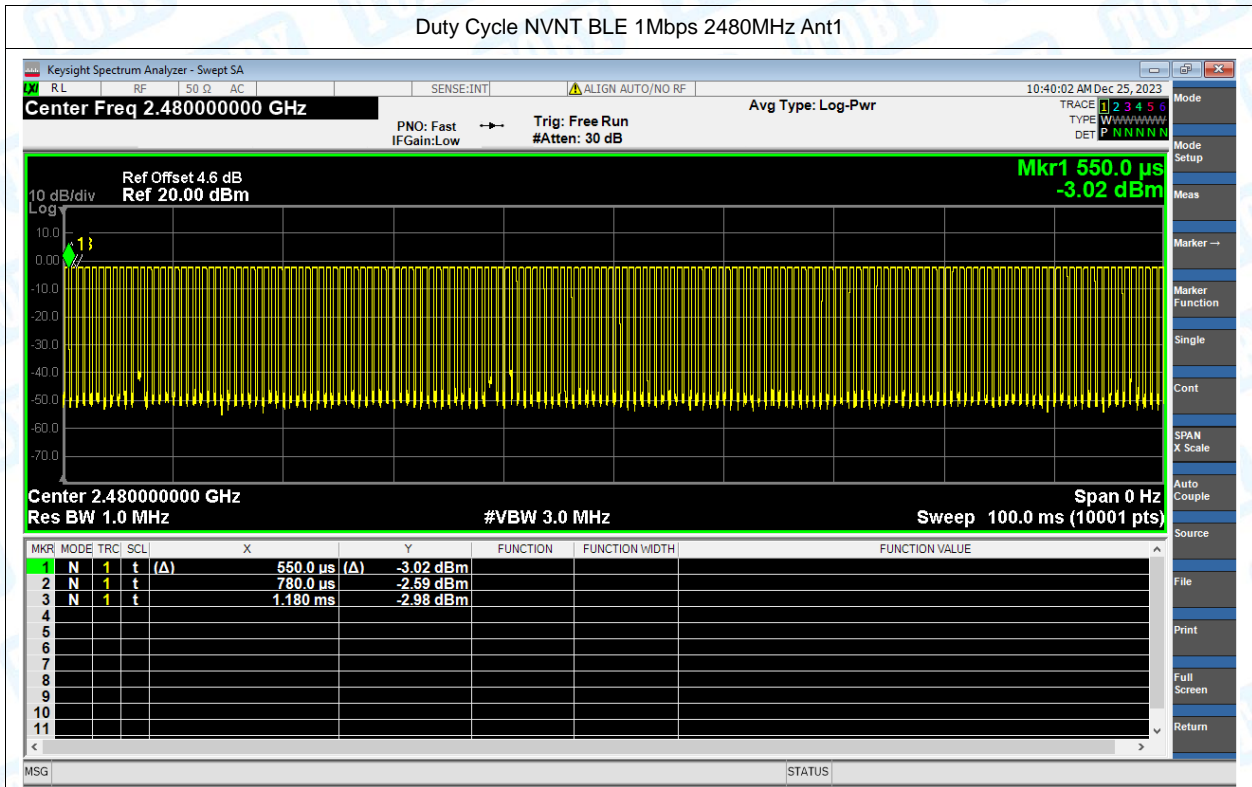
Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1

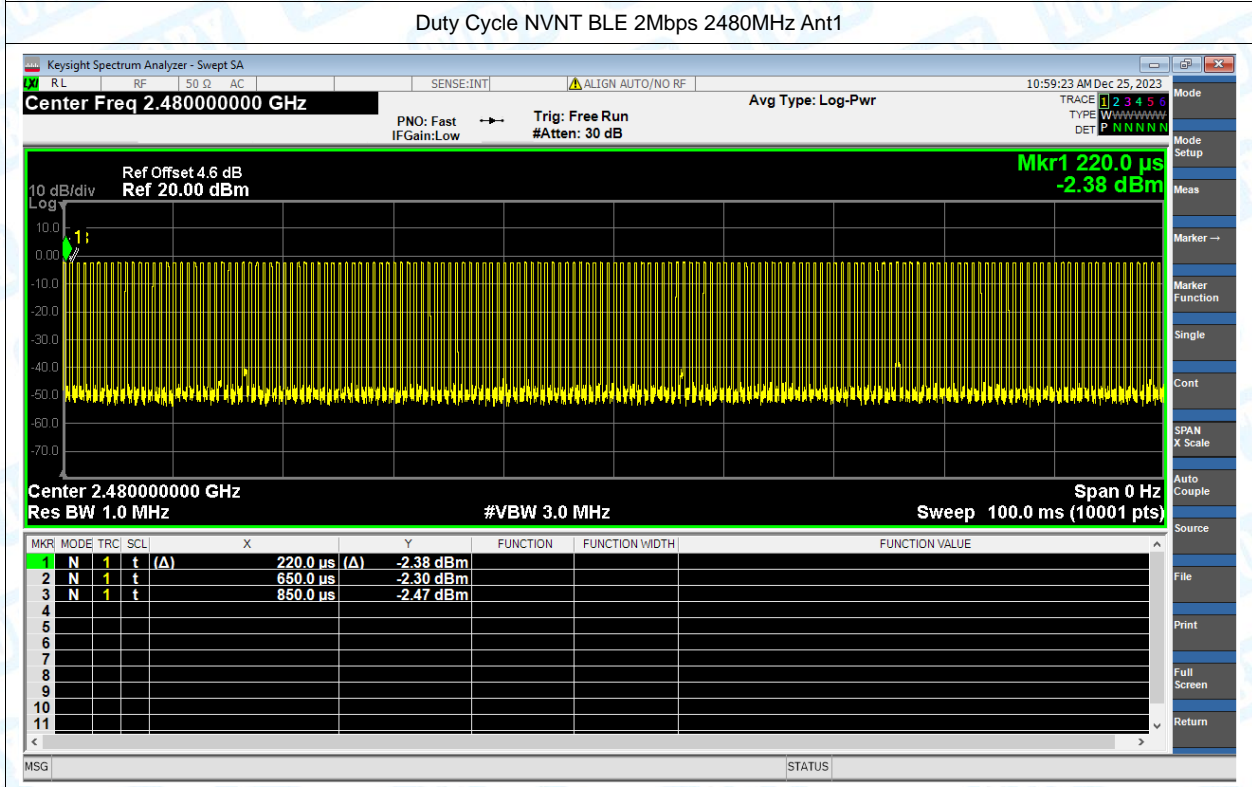
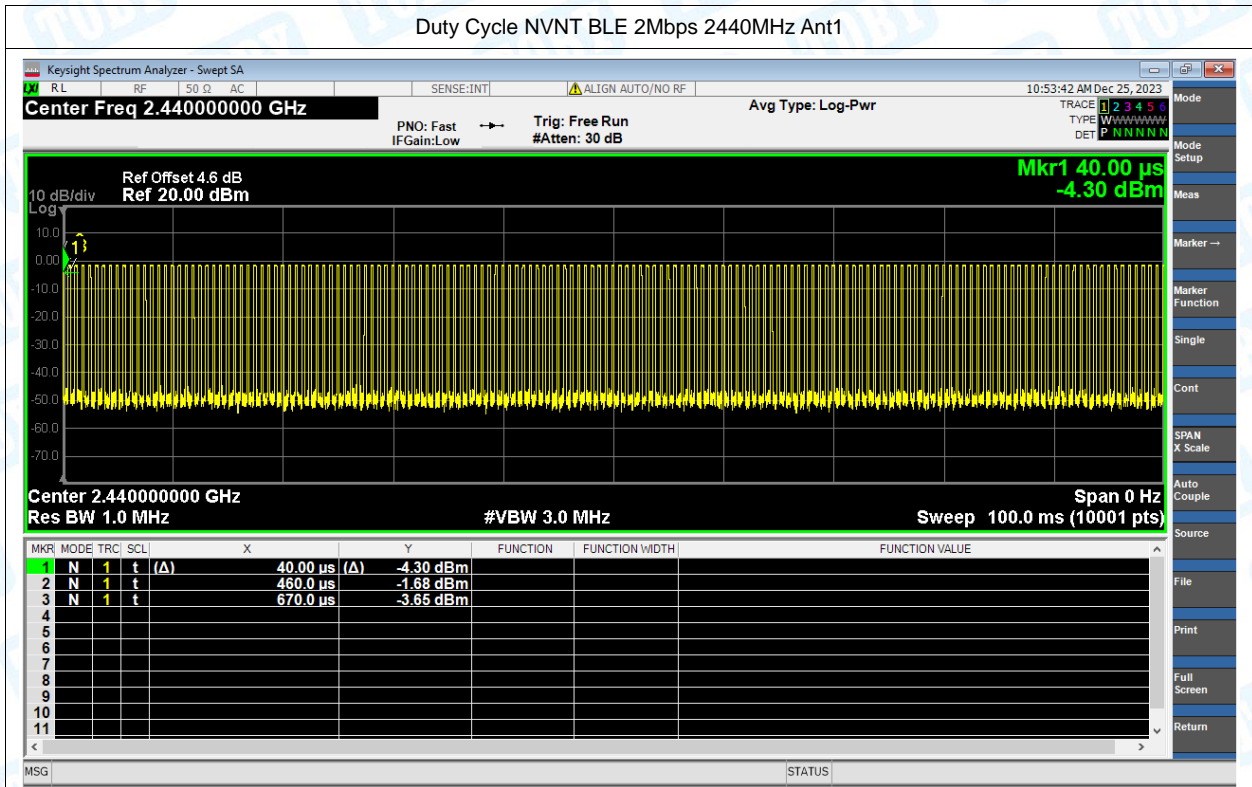


Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1









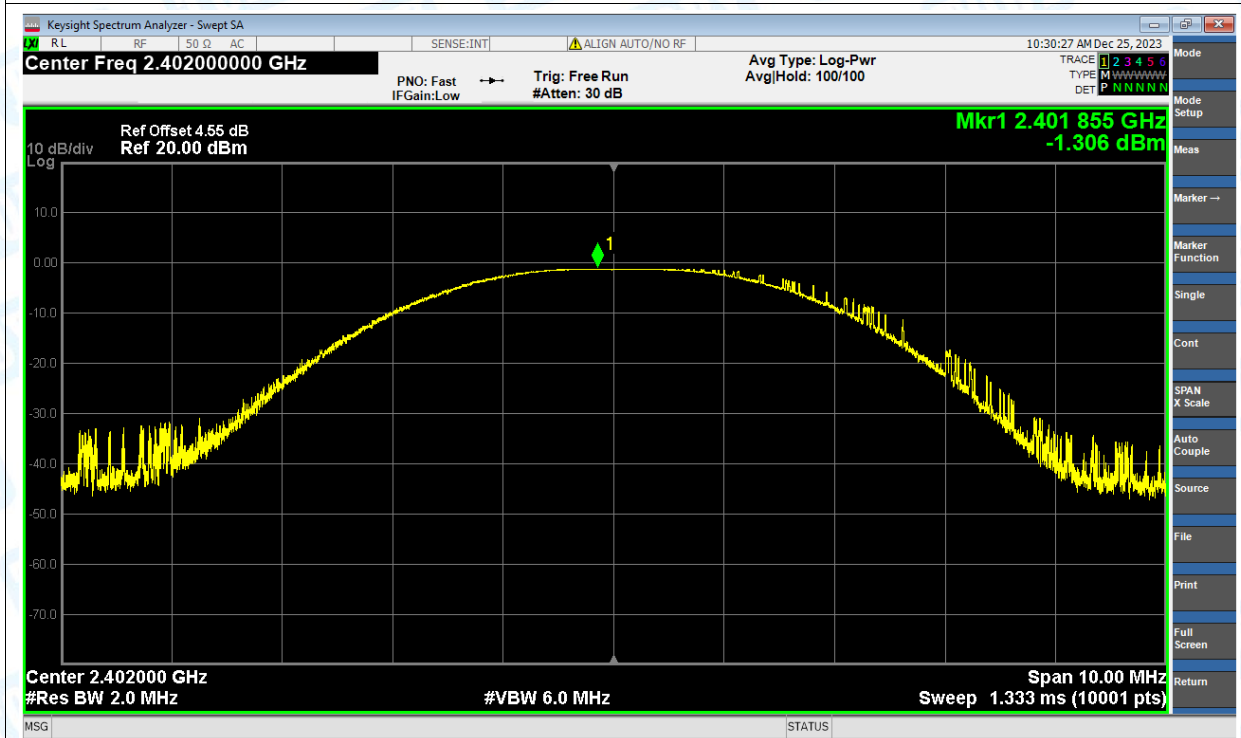


## Maximum Conducted Output Power

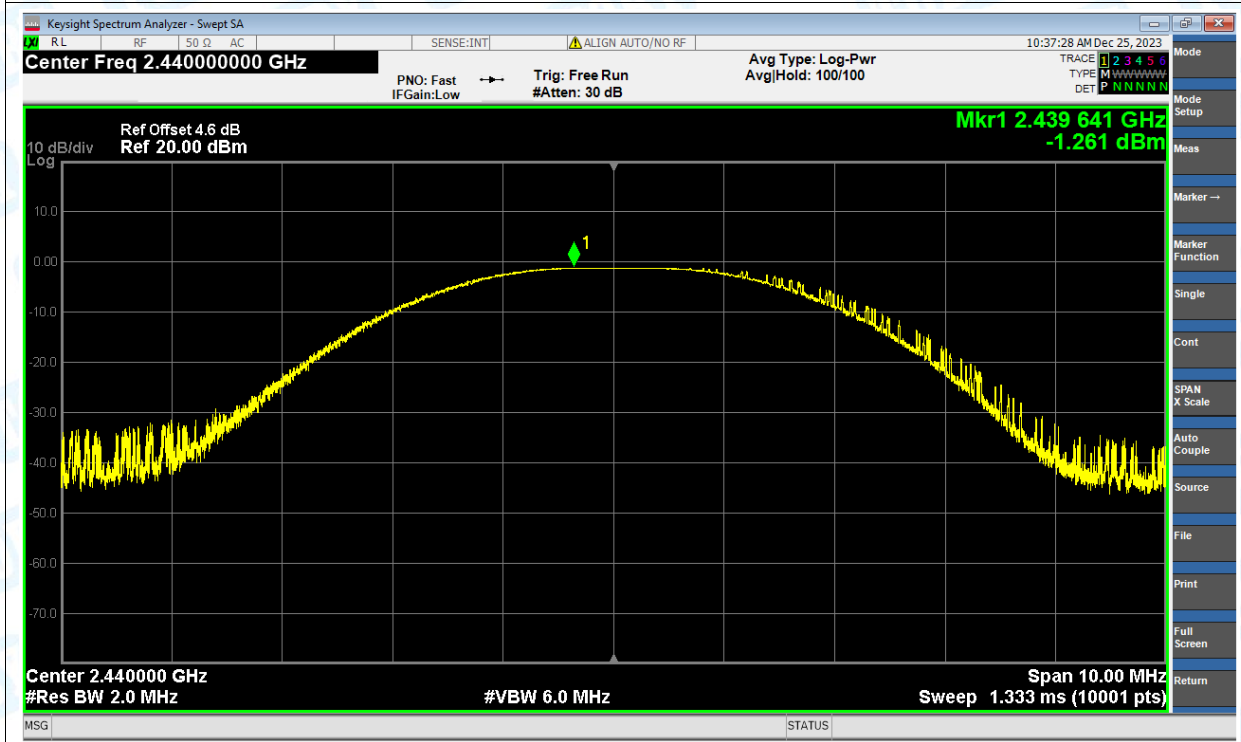
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-1.306	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	-1.261	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	-2.046	30	Pass
NVNT	BLE 2Mbps	2402	Ant1	-0.96	30	Pass
NVNT	BLE 2Mbps	2440	Ant1	-1.103	30	Pass
NVNT	BLE 2Mbps	2480	Ant1	-1.879	30	Pass

Test Graphs

Power NVNT BLE 1Mbps 2402MHz Ant1

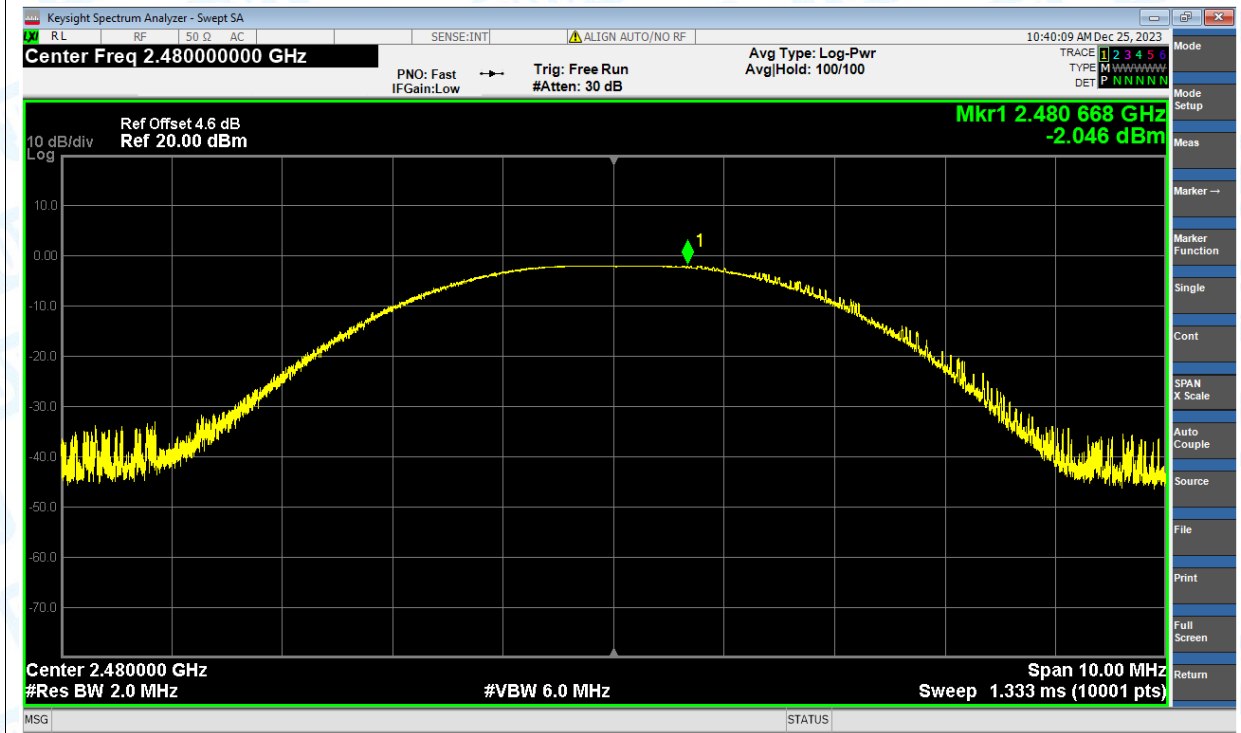


Power NVNT BLE 1Mbps 2440MHz Ant1

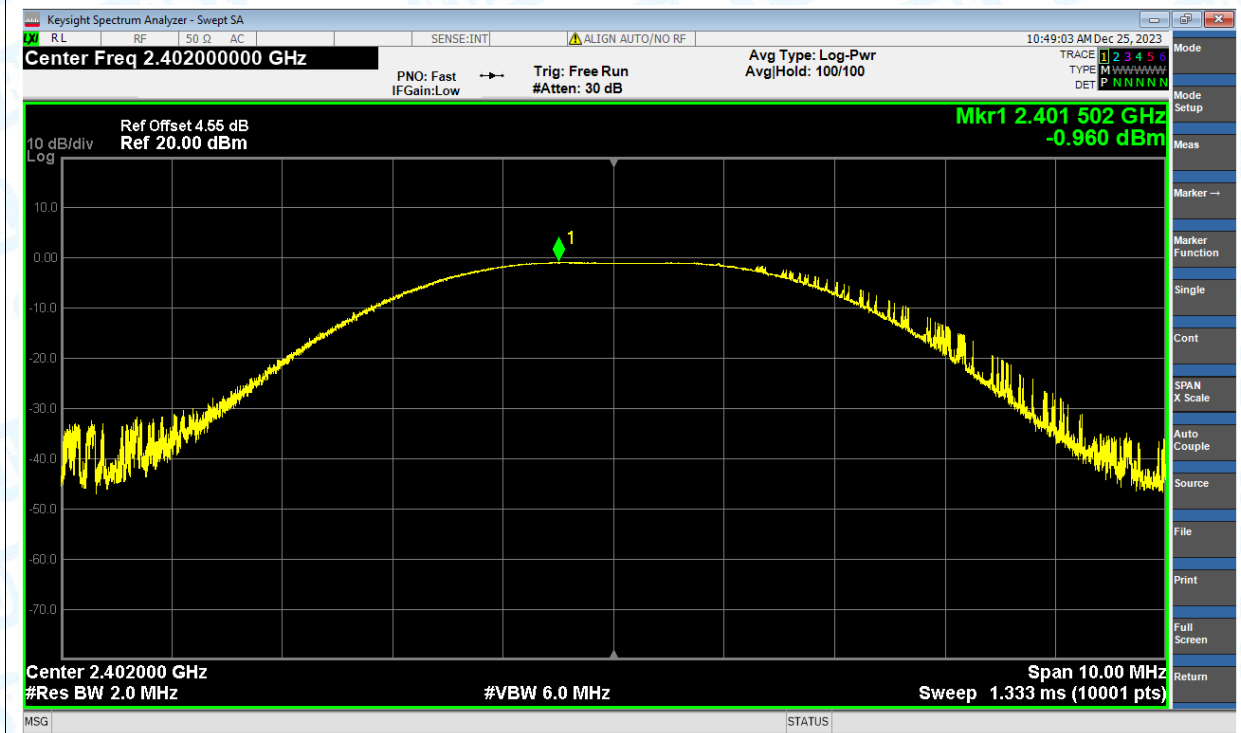




Power NVNT BLE 1Mbps 2480MHz Ant1

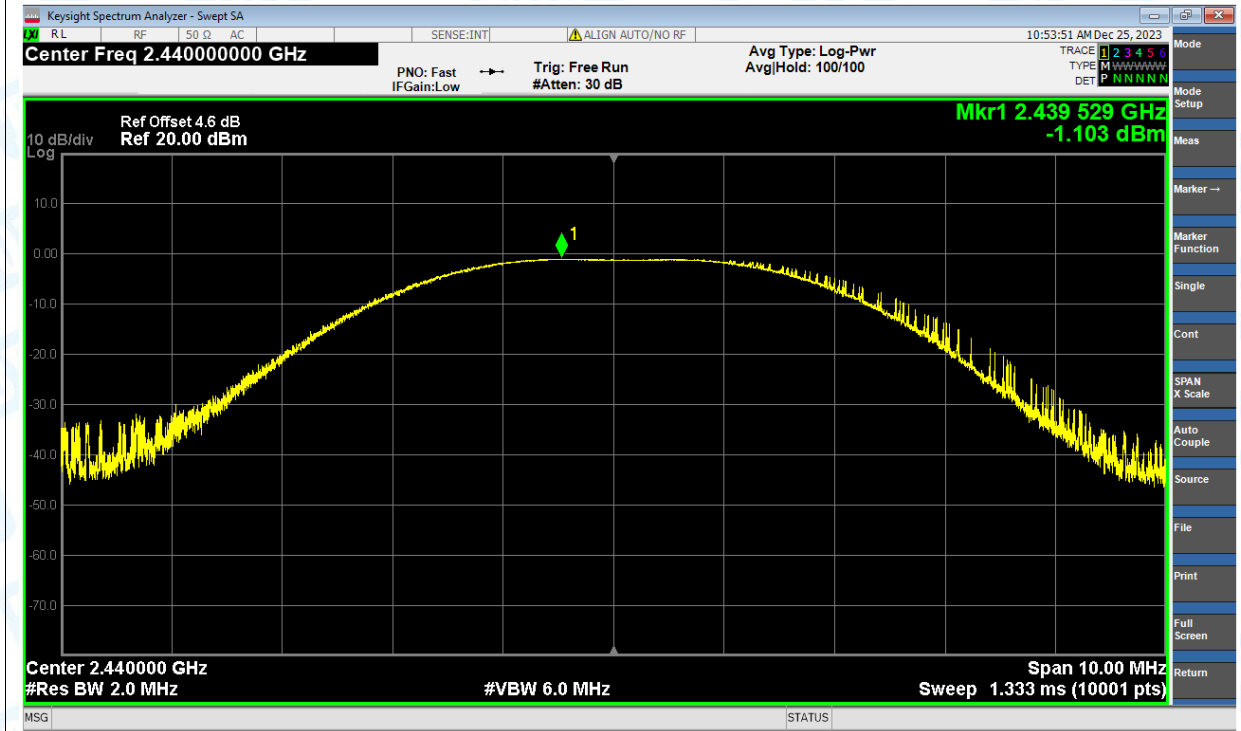


Power NVNT BLE 2Mbps 2402MHz Ant1

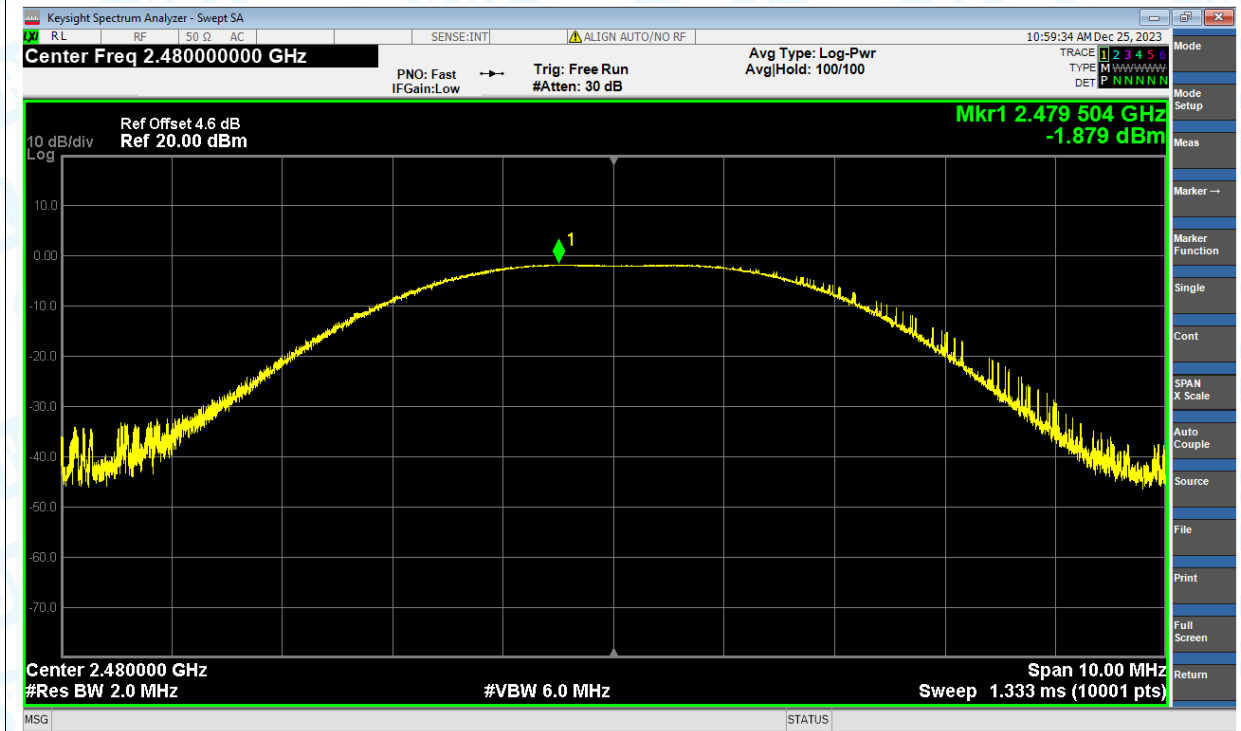




Power NVNT BLE 2Mbps 2440MHz Ant1



Power NVNT BLE 2Mbps 2480MHz Ant1



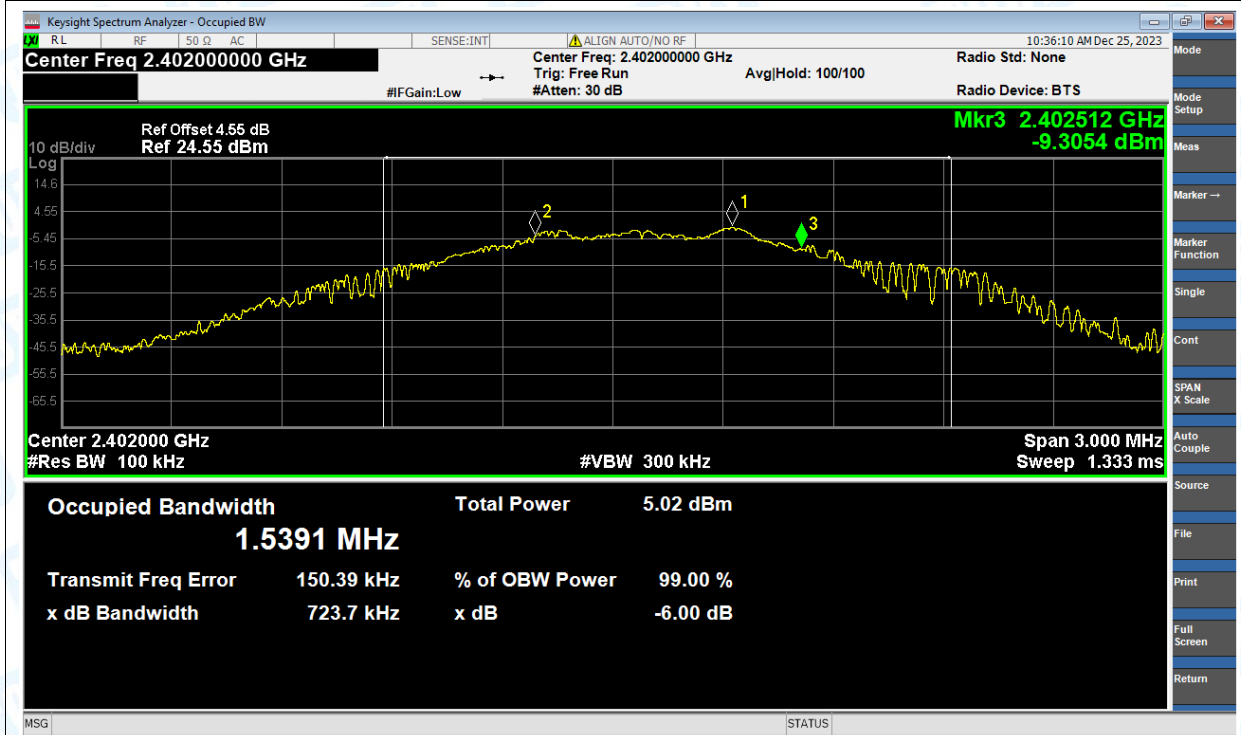
## -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.72	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.78	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.74	0.5	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.11	0.5	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.11	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.13	0.5	Pass

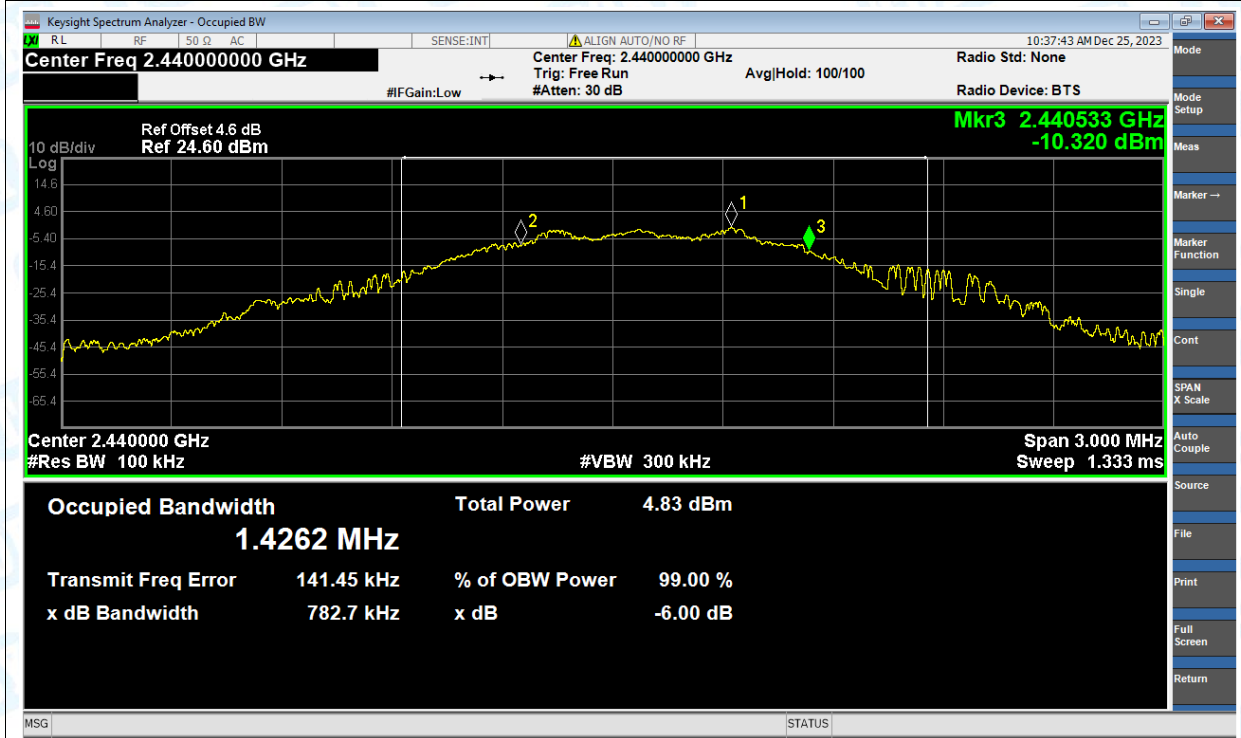


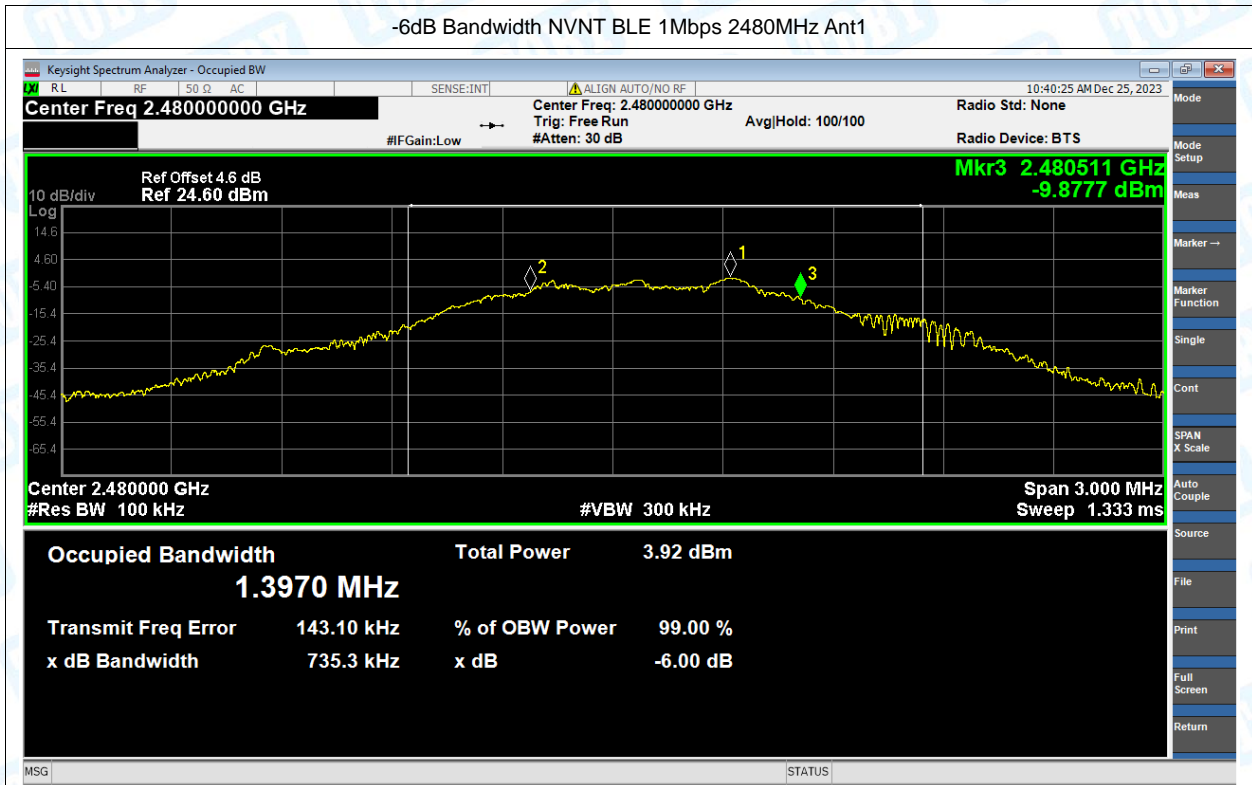
Test Graphs

-6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1

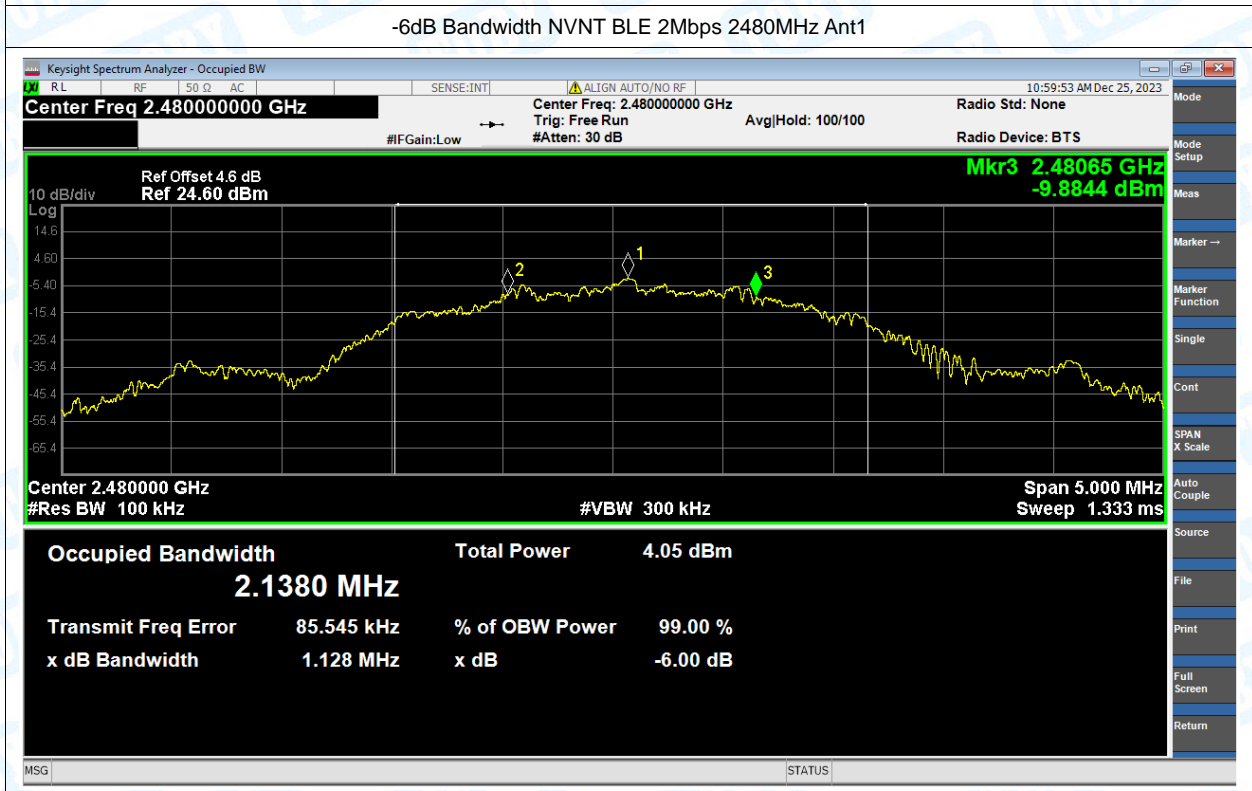
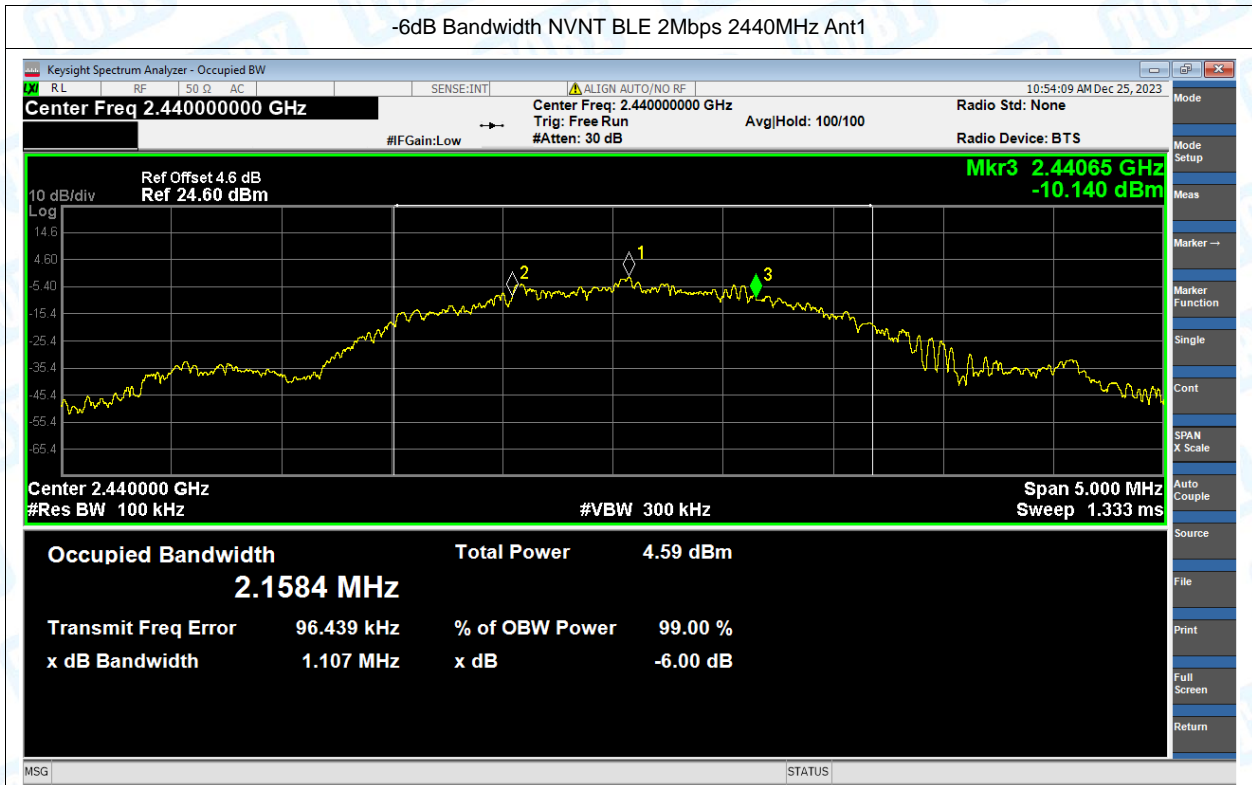


-6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1









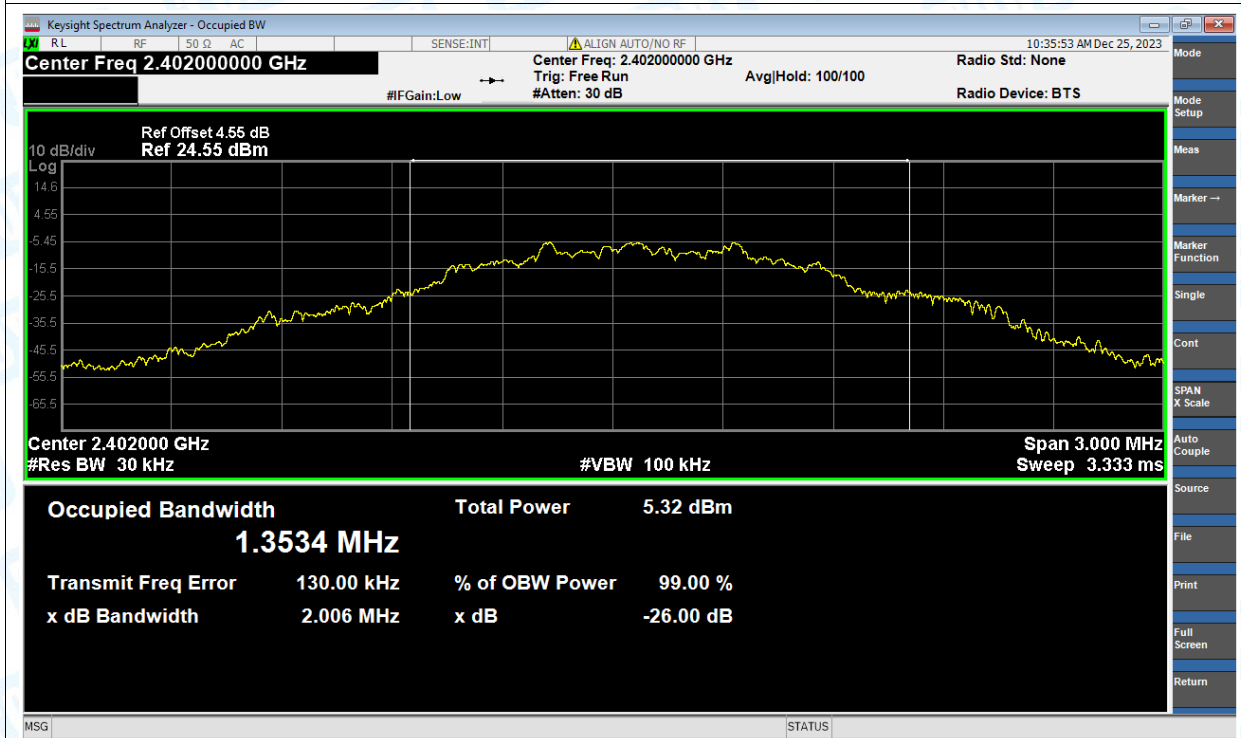
## Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.353
NVNT	BLE 1Mbps	2440	Ant1	1.307
NVNT	BLE 1Mbps	2480	Ant1	1.281
NVNT	BLE 2Mbps	2402	Ant1	2.11
NVNT	BLE 2Mbps	2440	Ant1	2.107
NVNT	BLE 2Mbps	2480	Ant1	2.106

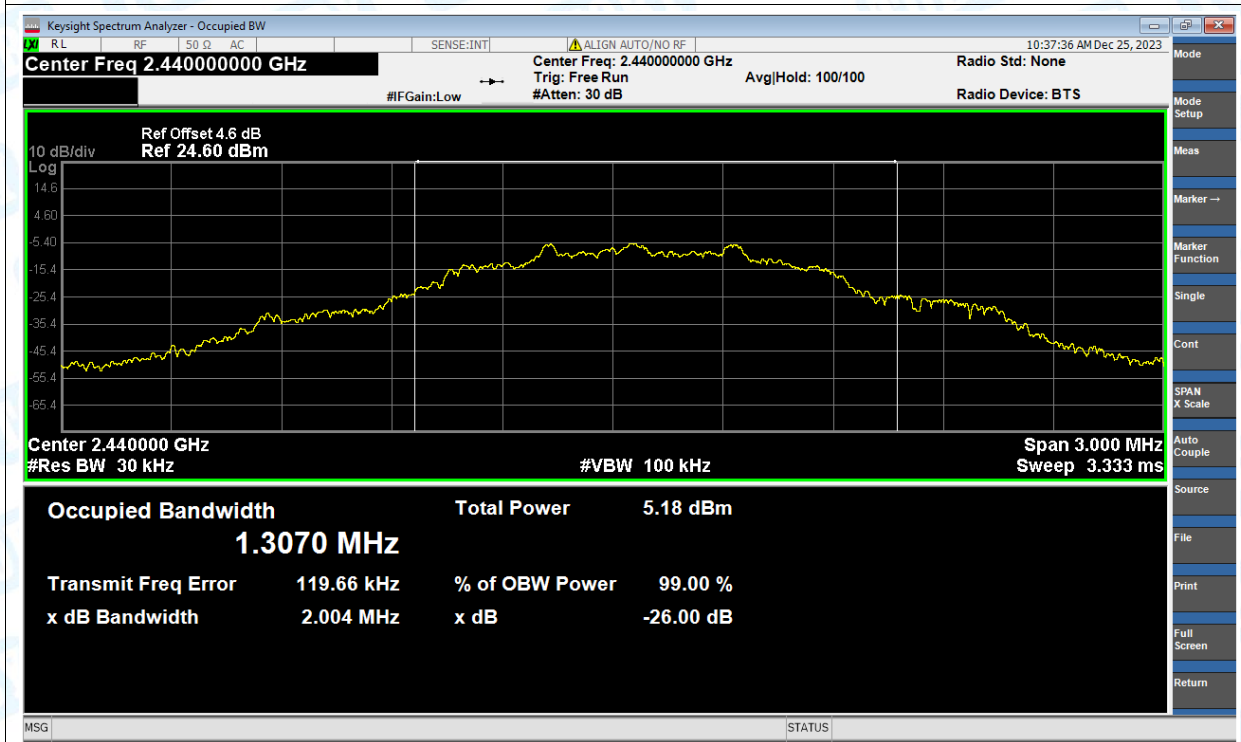


Test Graphs

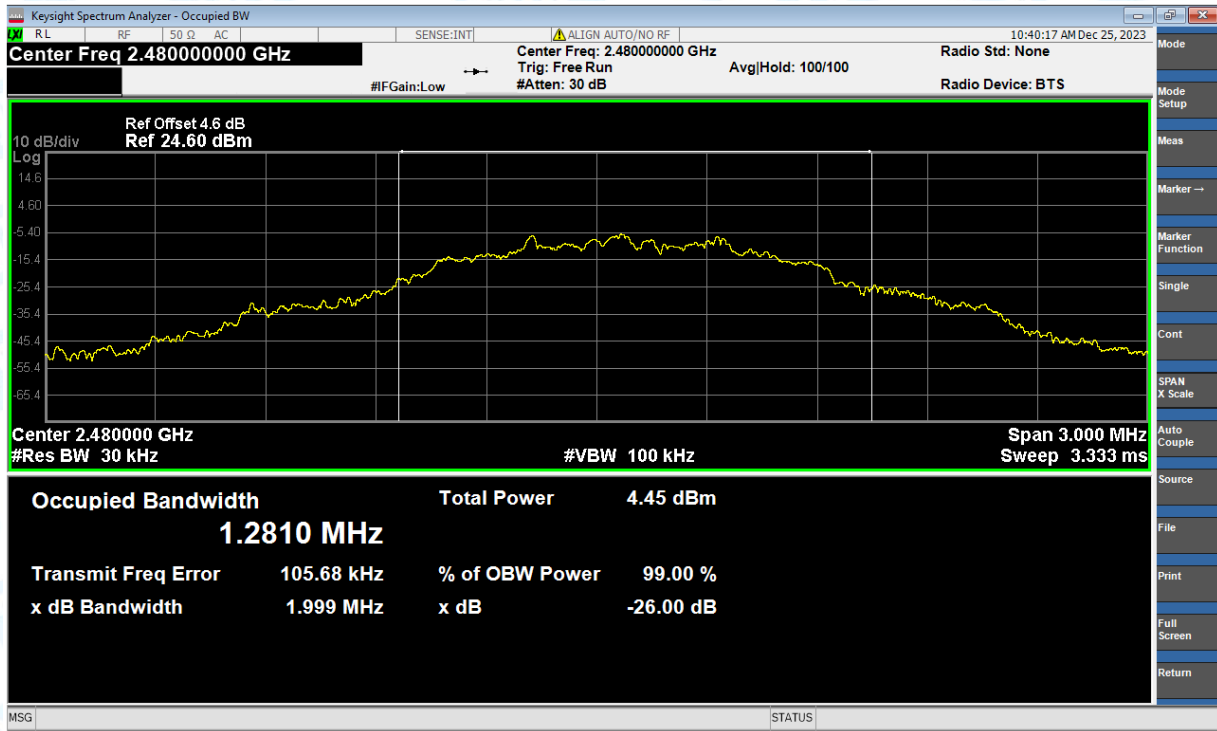
OBW NVNT BLE 1Mbps 2402MHz Ant1



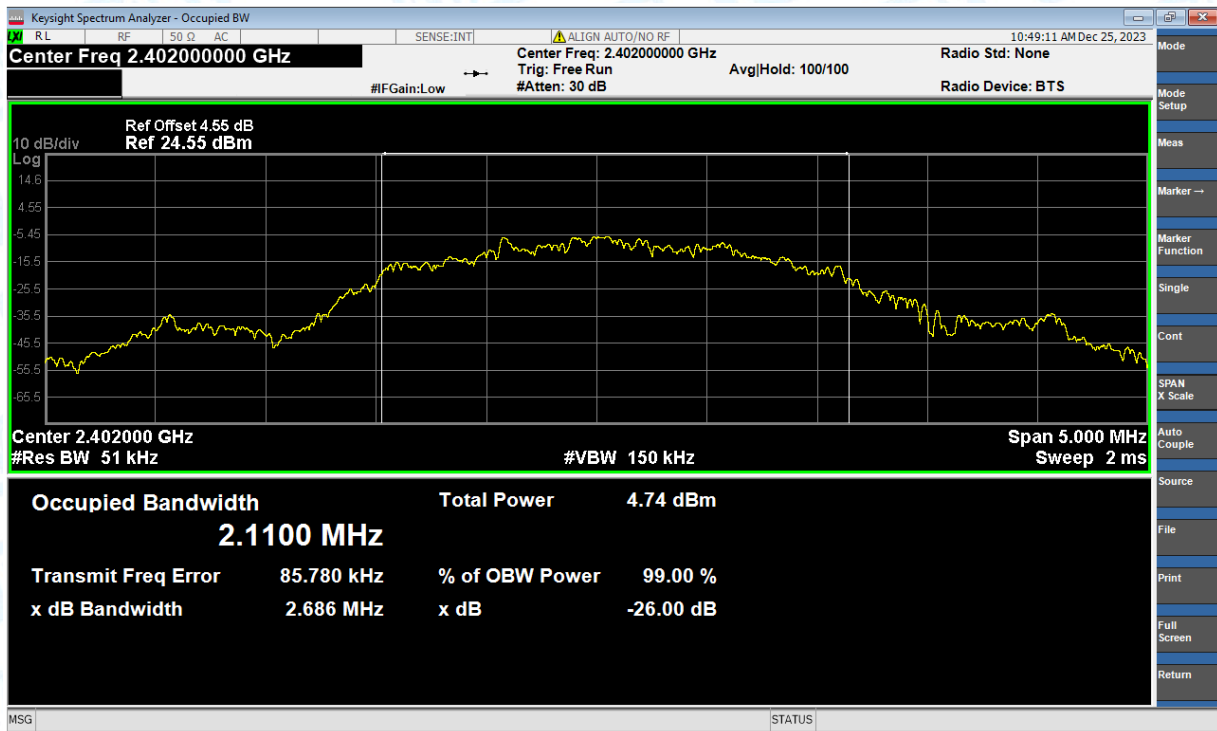
OBW NVNT BLE 1Mbps 2440MHz Ant1



OBW NVNT BLE 1Mbps 2480MHz Ant1

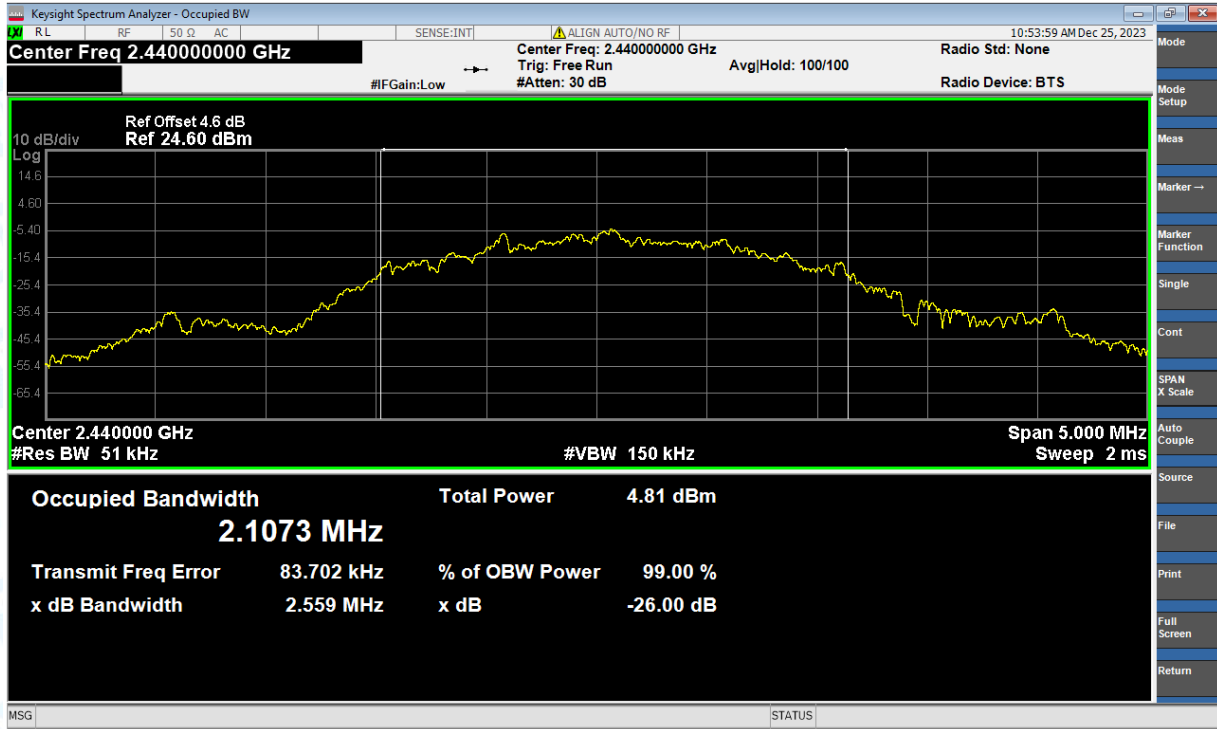


OBW NVNT BLE 2Mbps 2402MHz Ant1

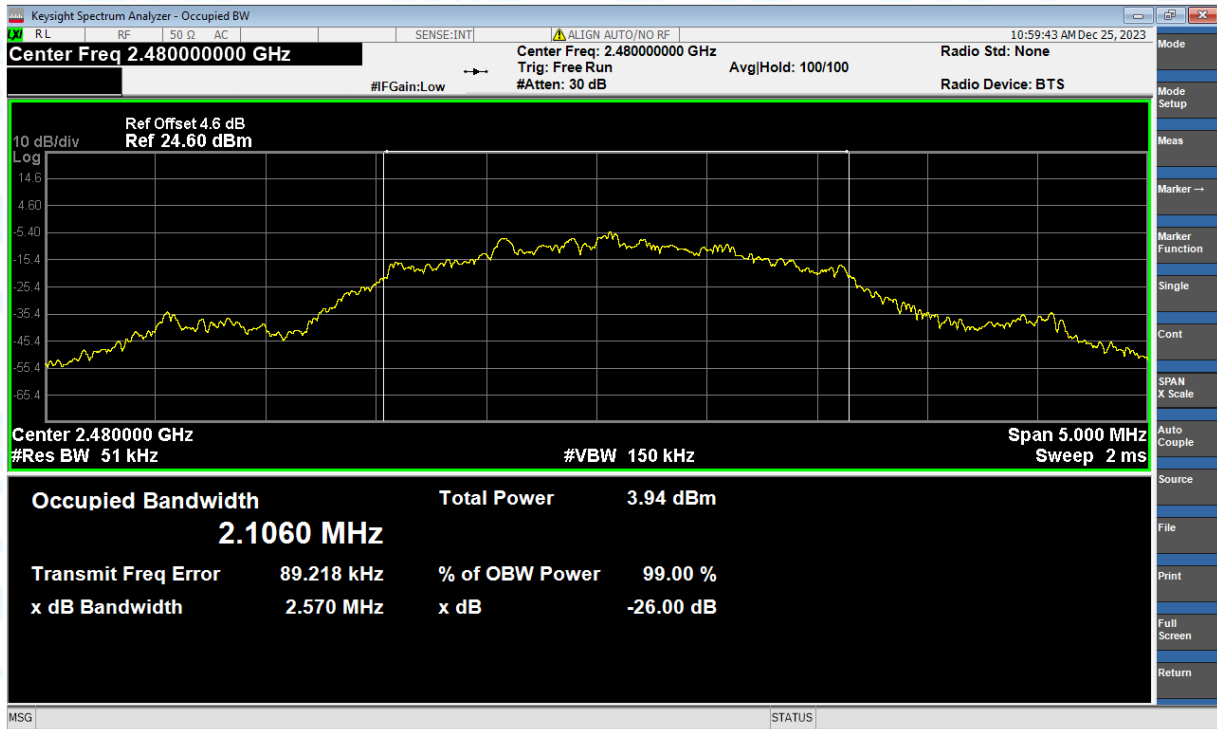




OBW NVNT BLE 2Mbps 2440MHz Ant1



OBW NVNT BLE 2Mbps 2480MHz Ant1



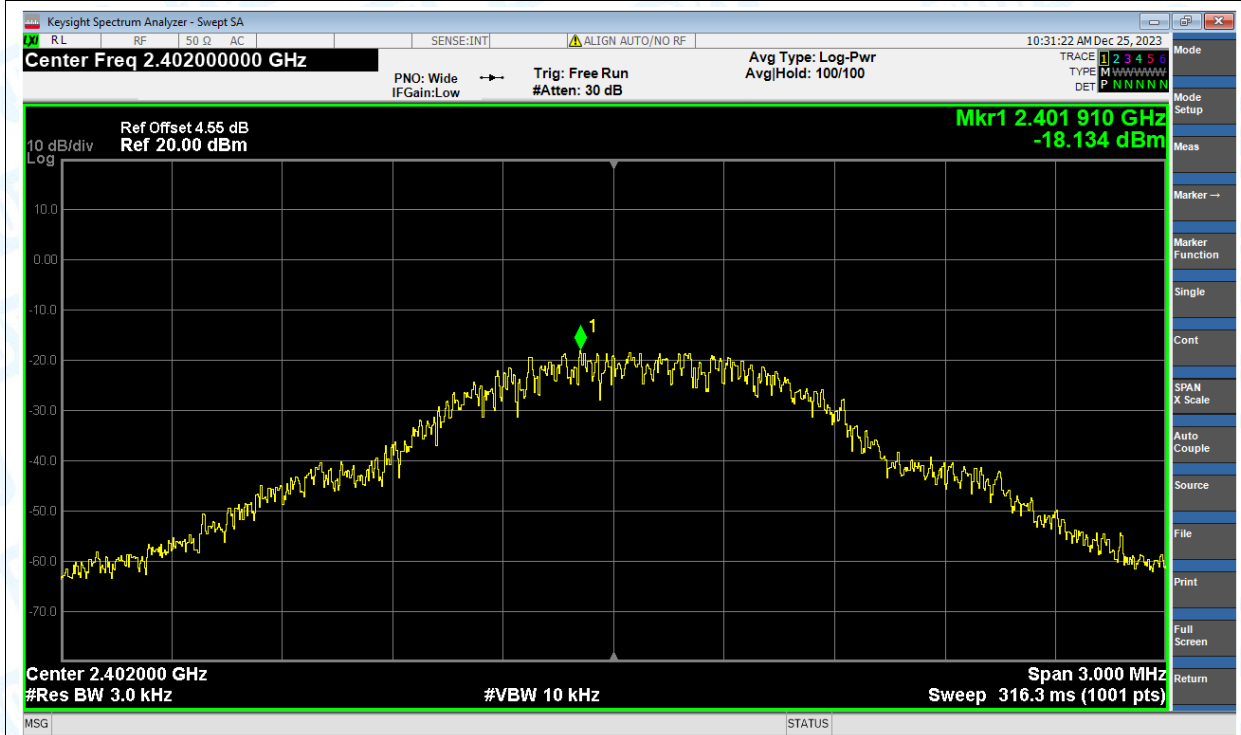
## Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-18.134	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-17.724	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-18.366	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-19.691	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-20.01	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-20.851	8	Pass

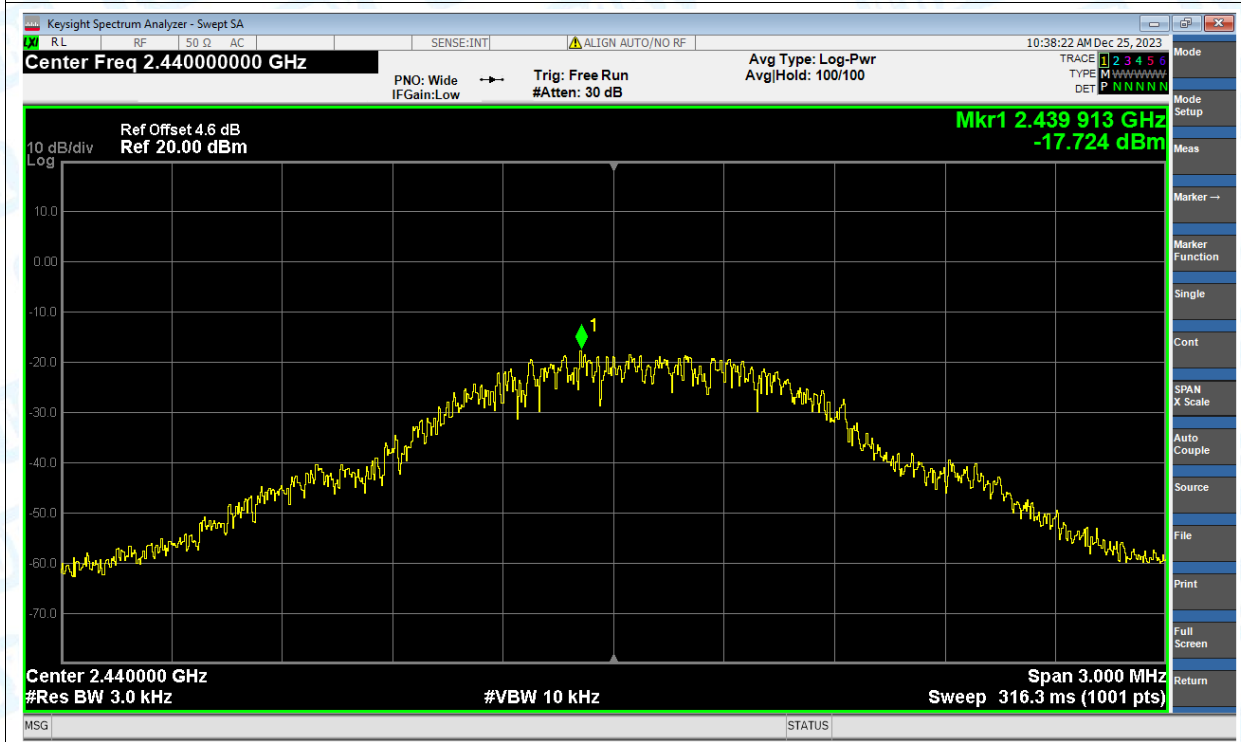


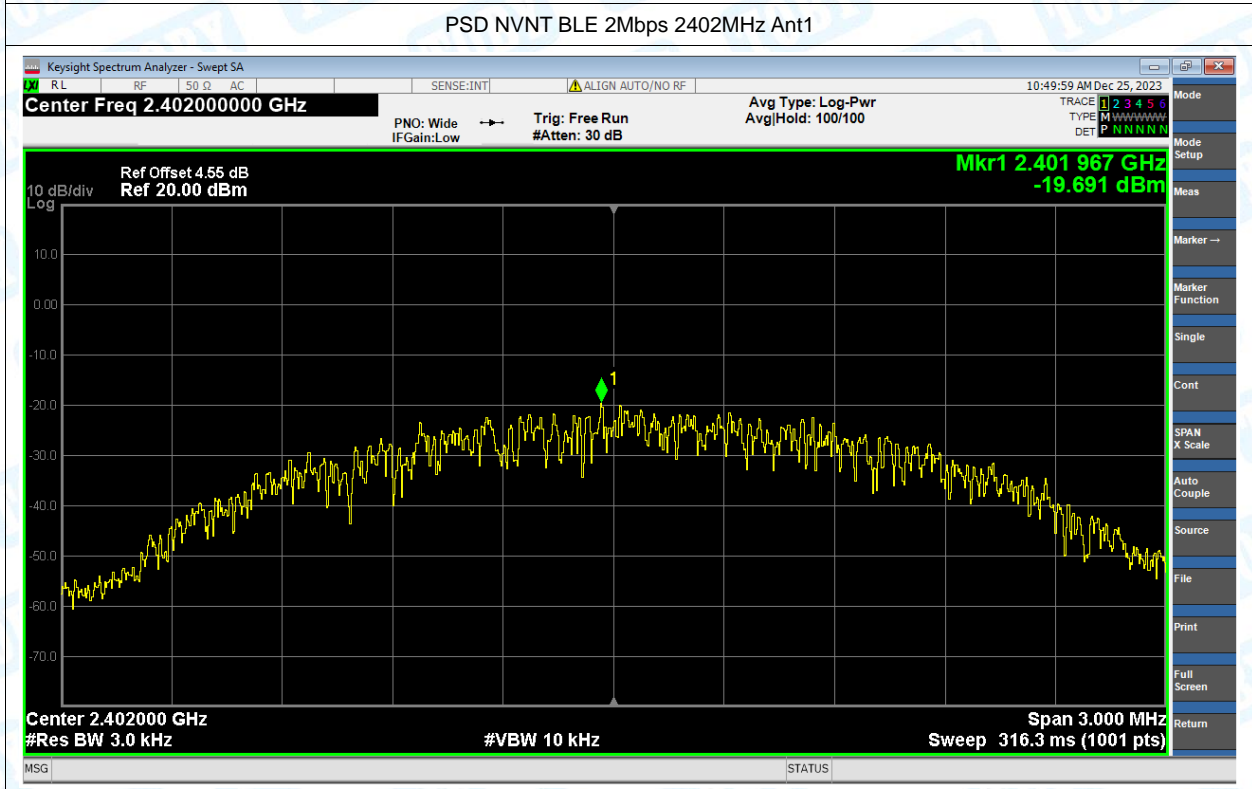
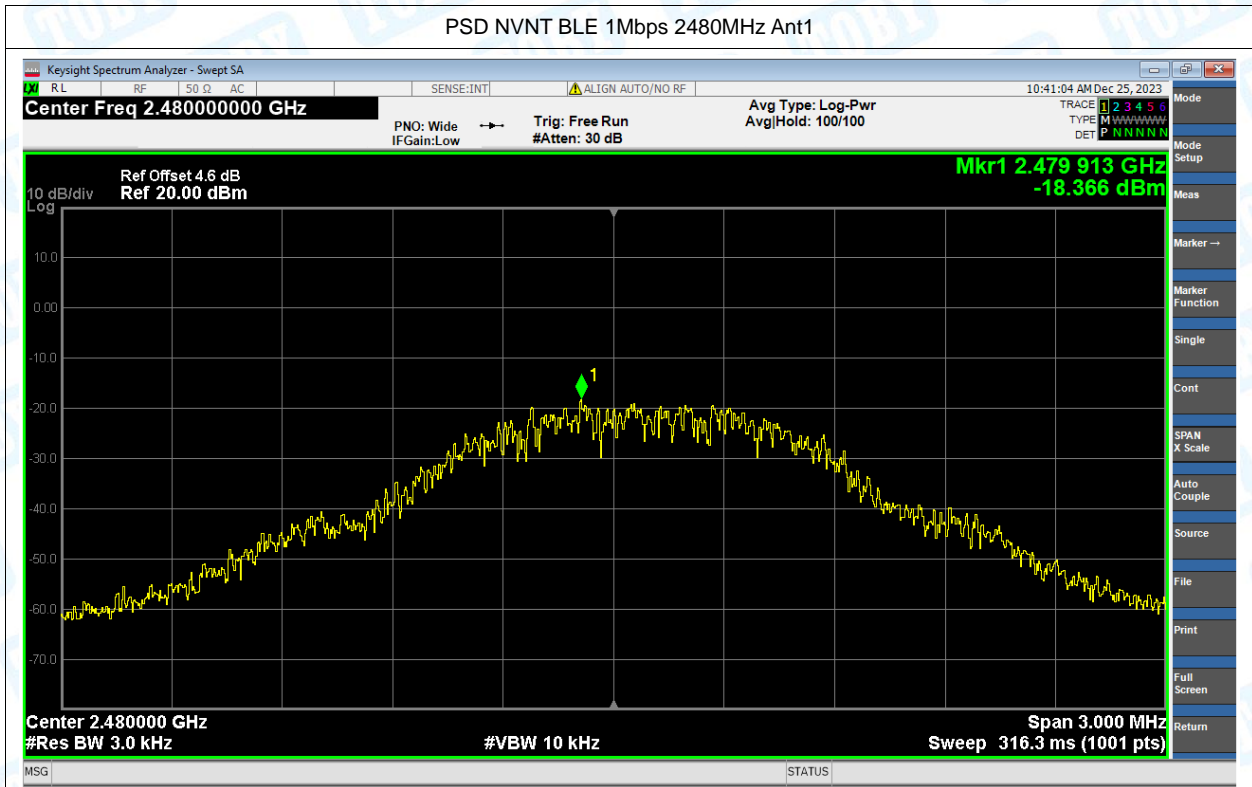
Test Graphs

PSD NVNT BLE 1Mbps 2402MHz Ant1

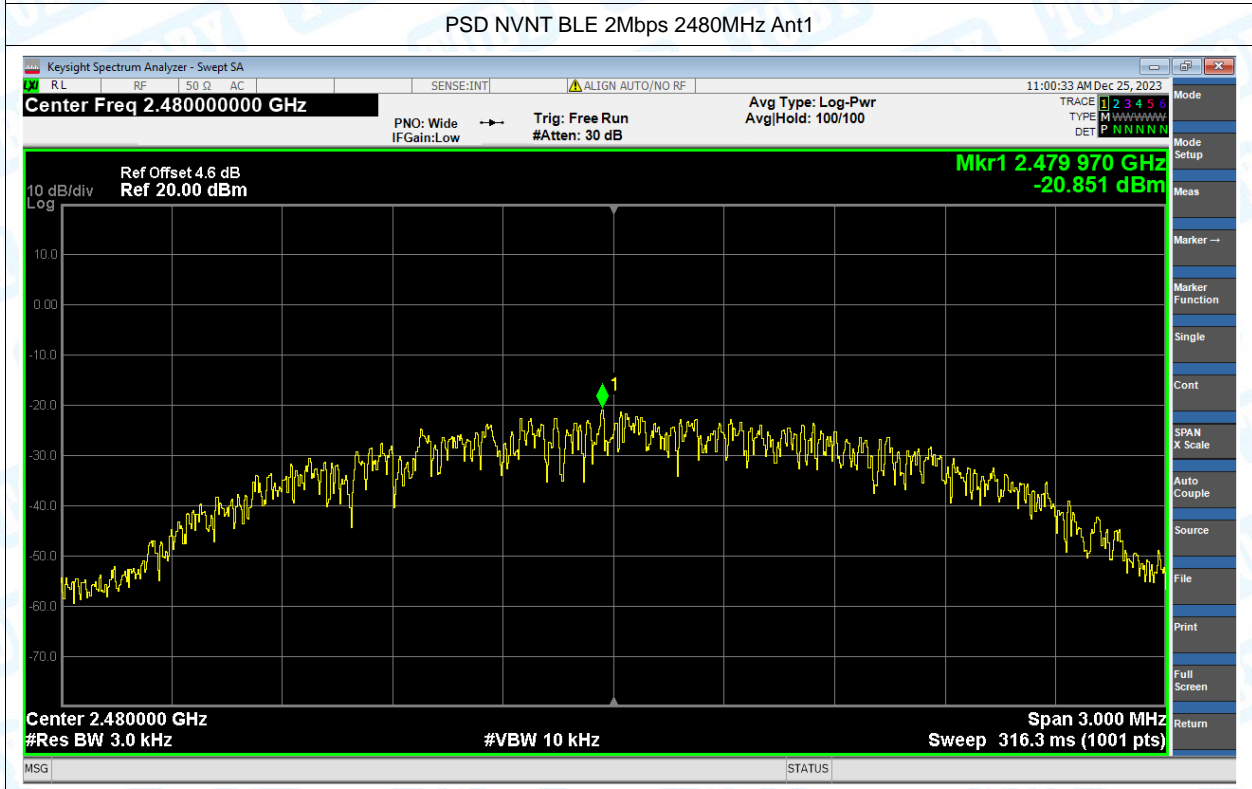
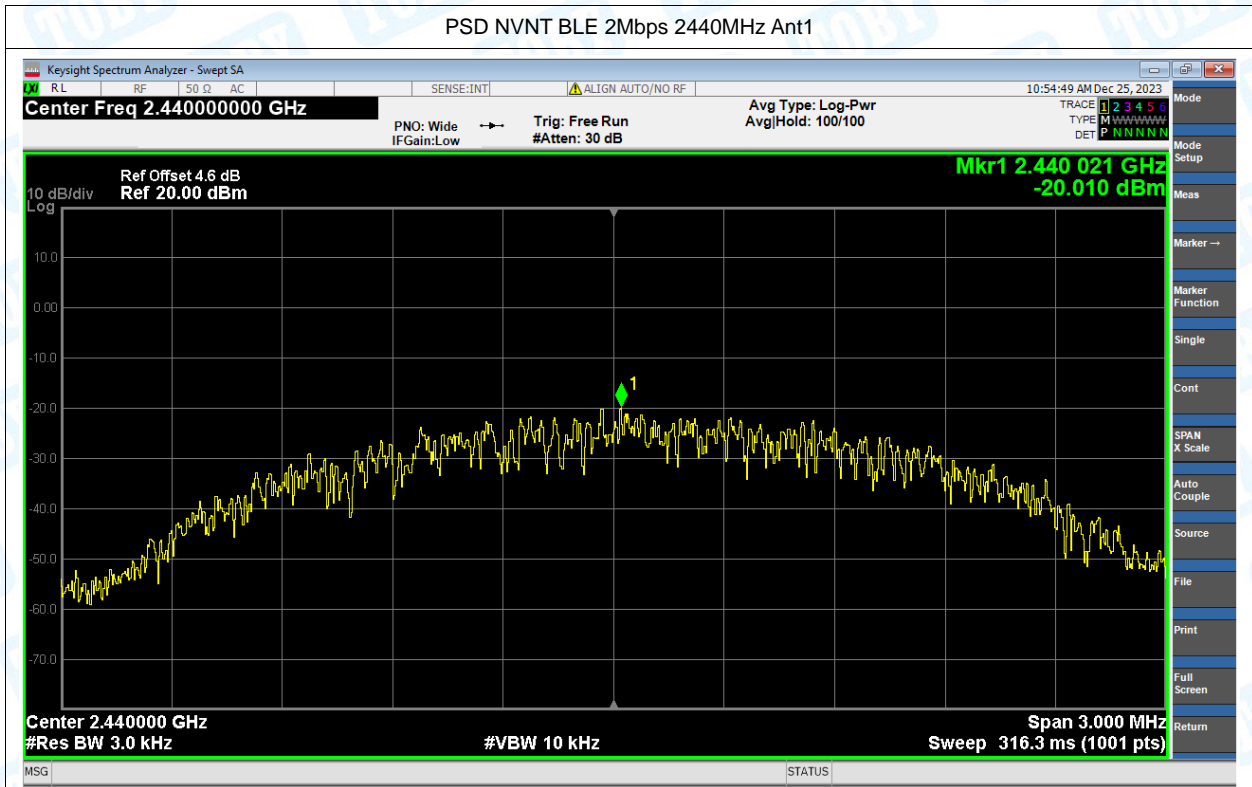


PSD NVNT BLE 1Mbps 2440MHz Ant1









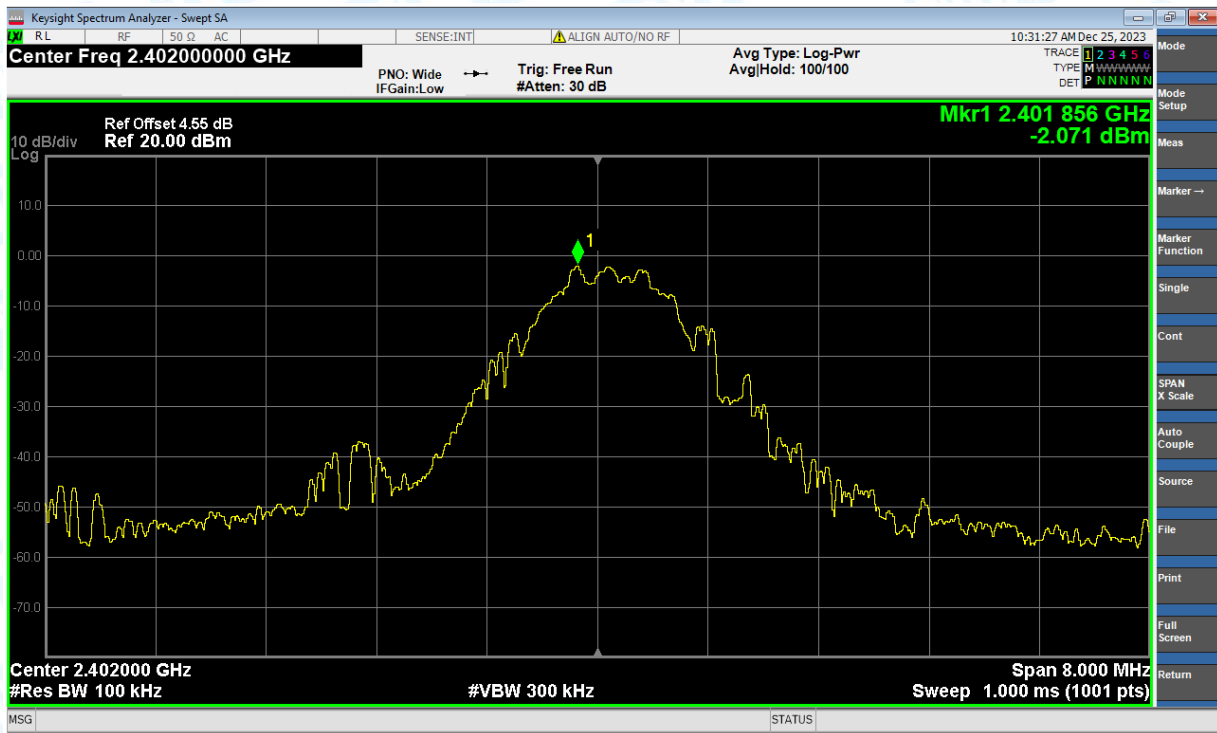
## Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-40.86	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-44.82	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-40.23	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-45.73	-20	Pass

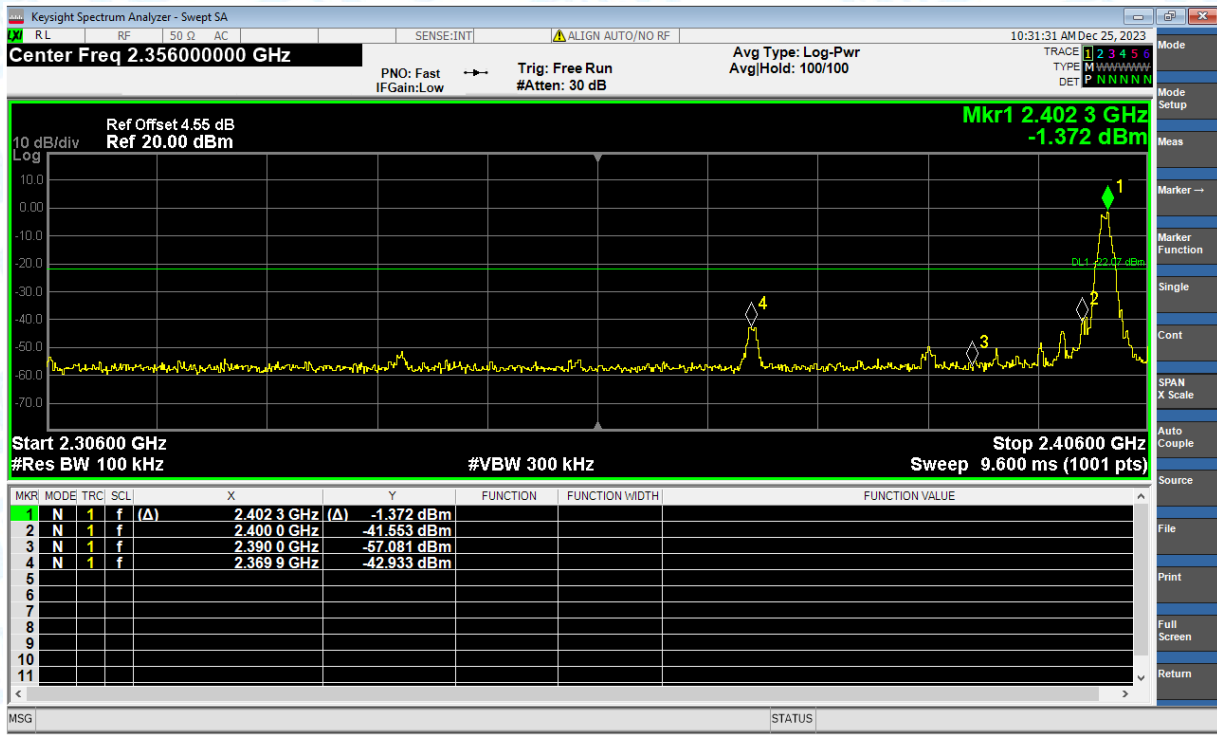


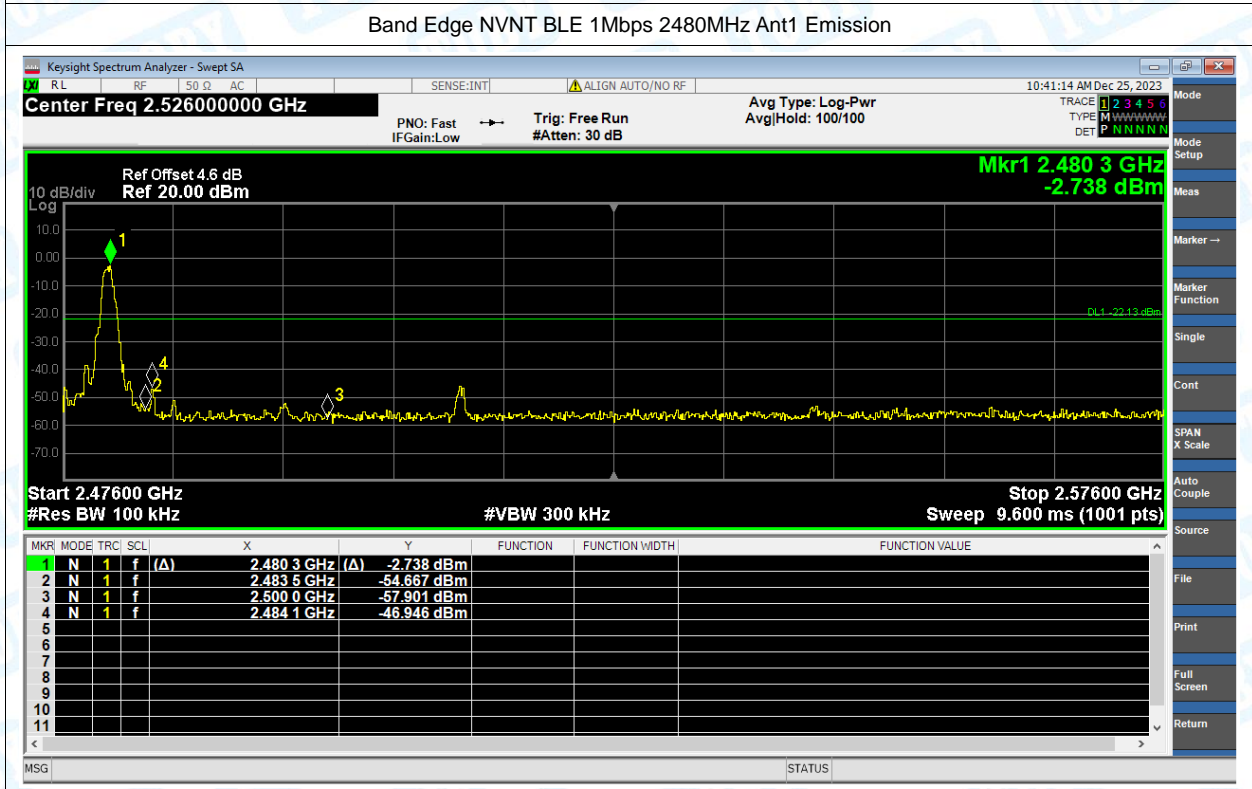
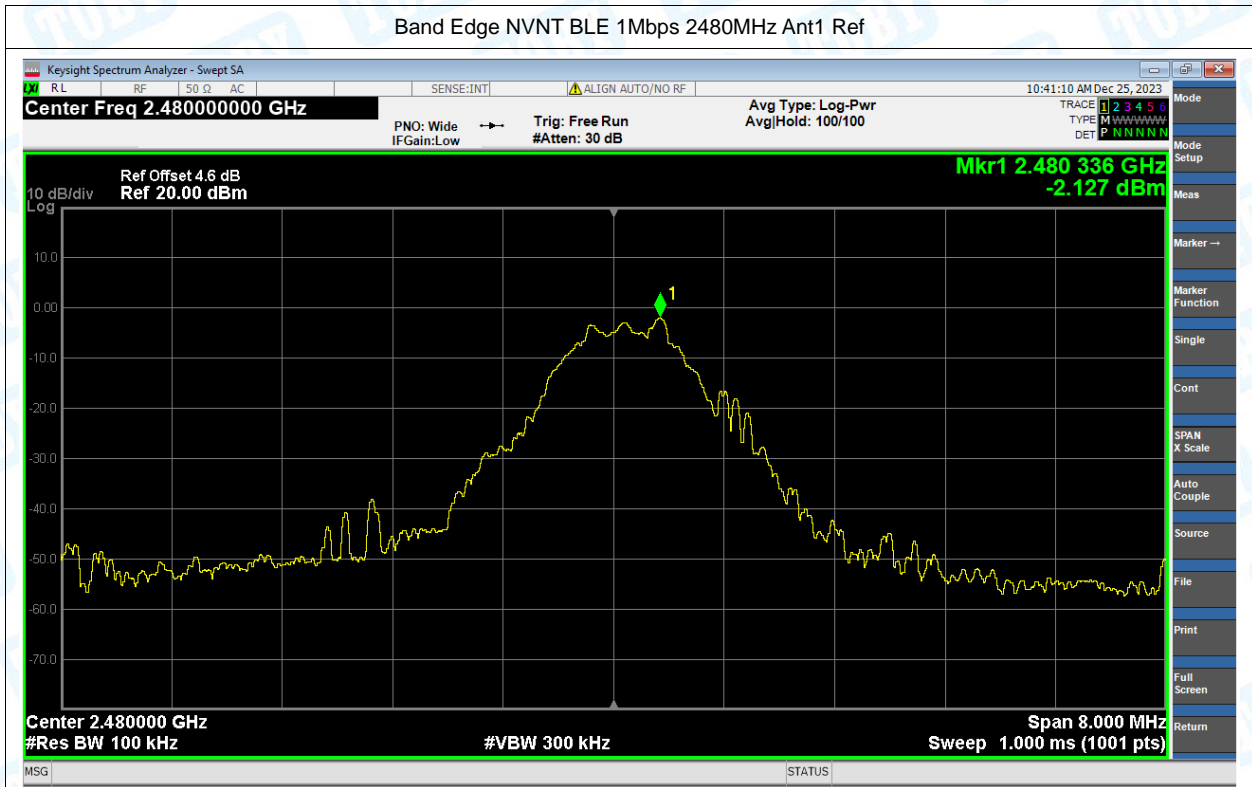
Test Graphs

Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref

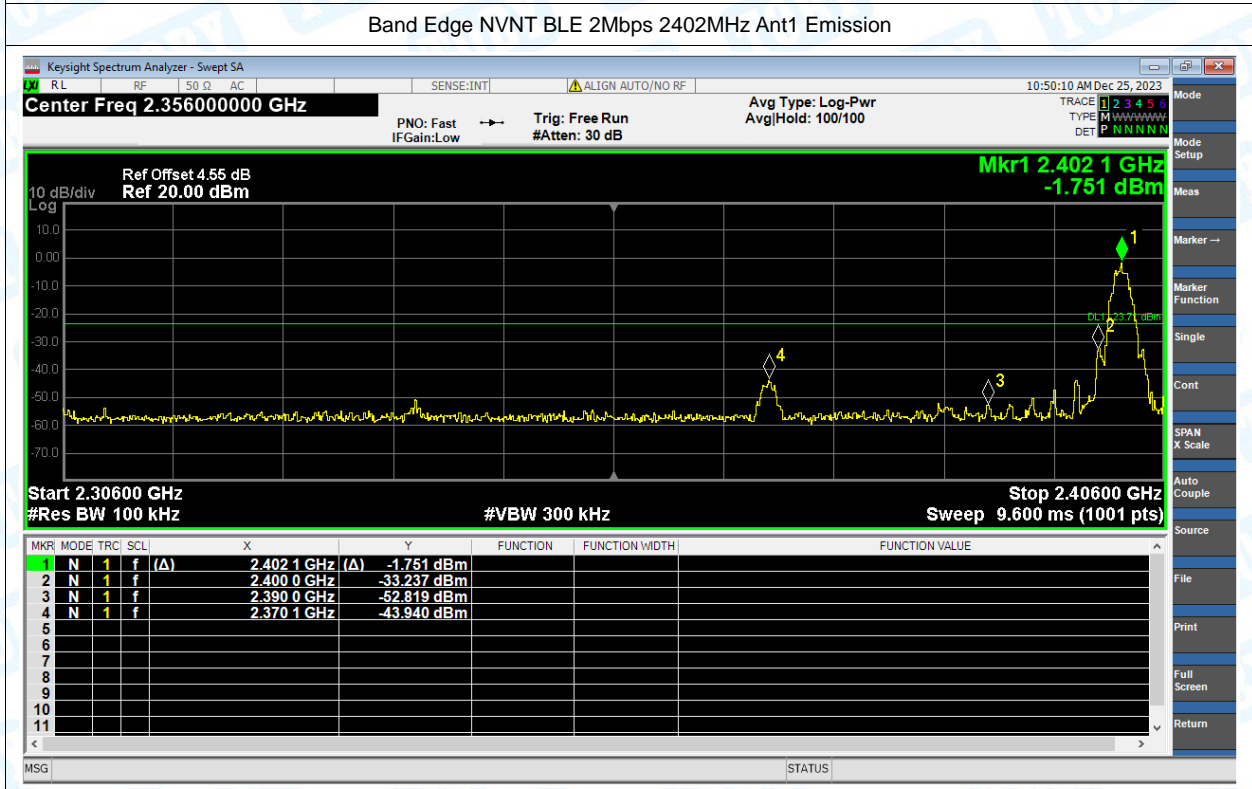
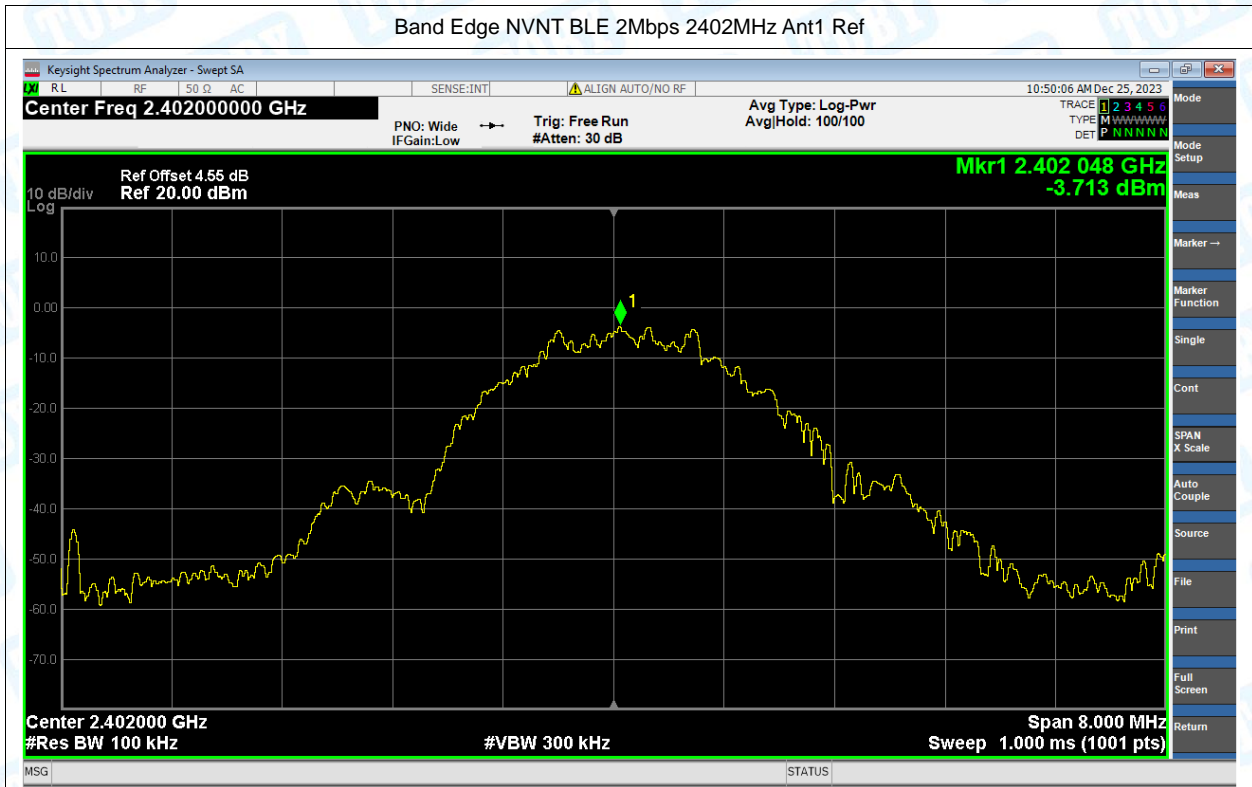


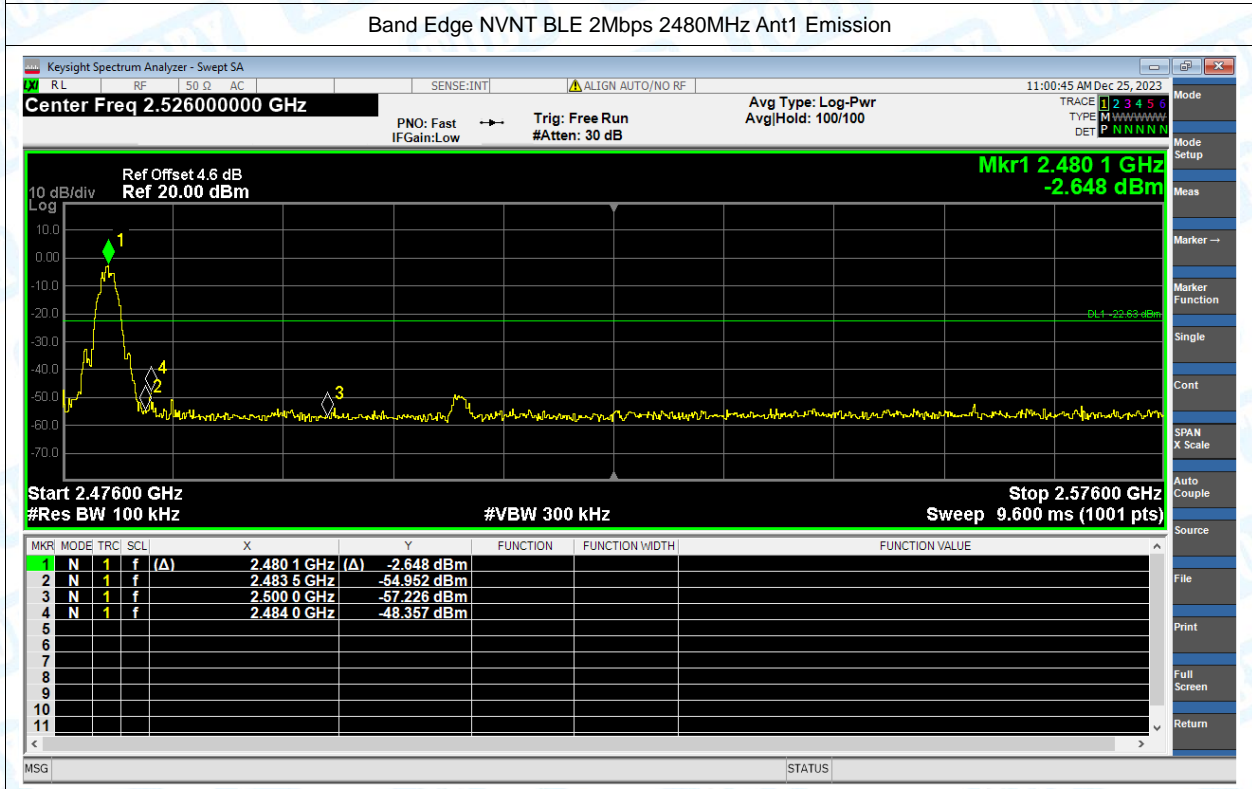
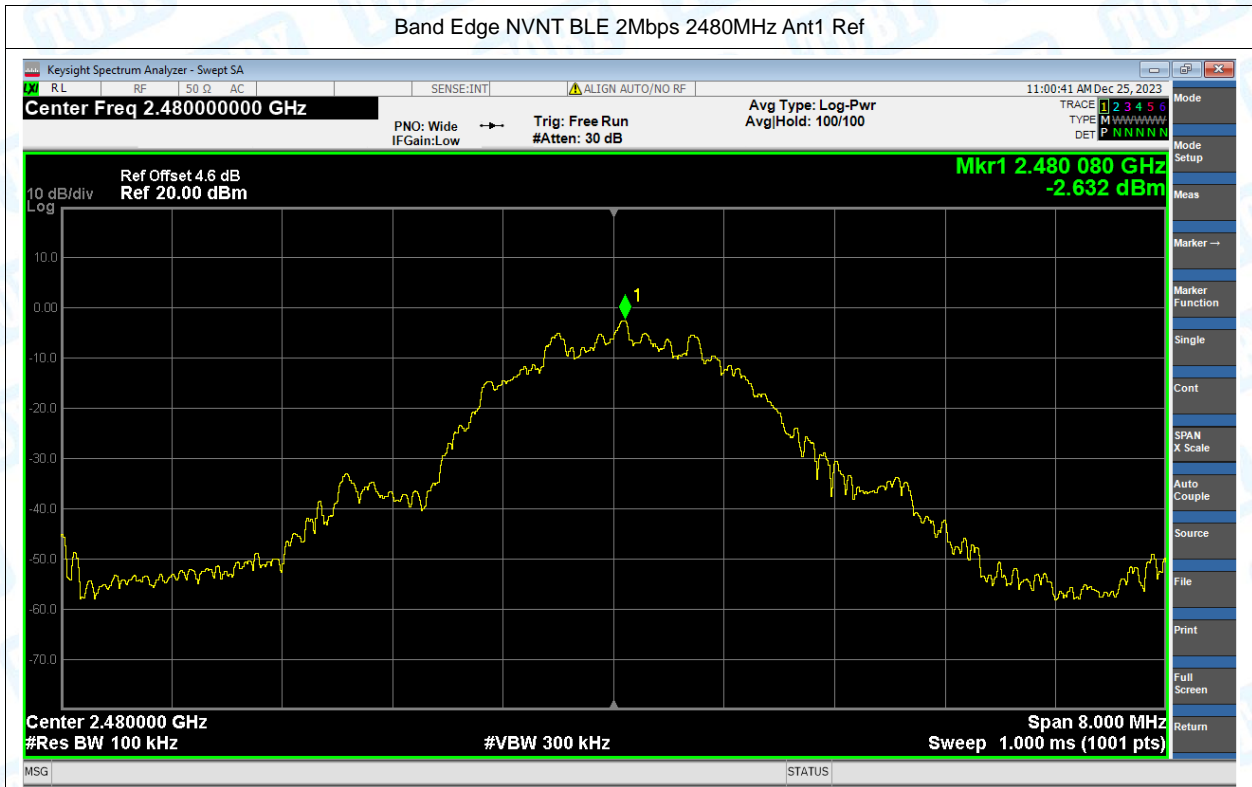
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission











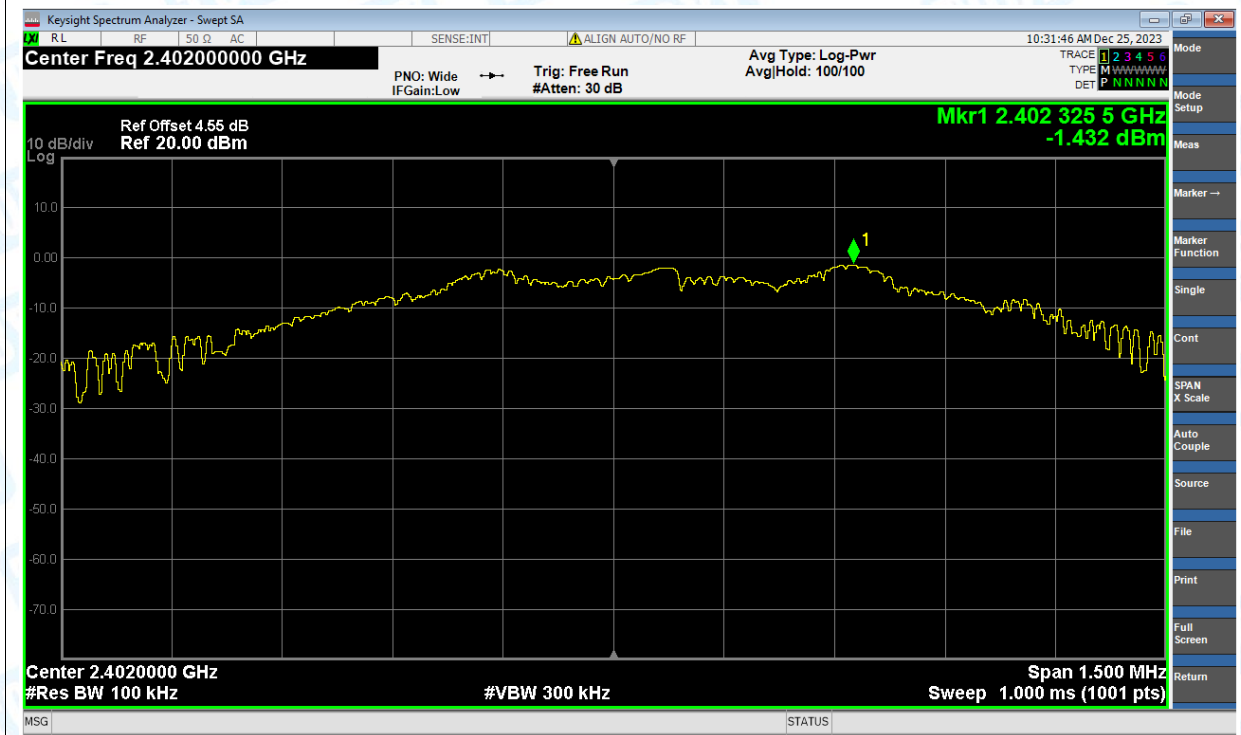


## Conducted RF Spurious Emission

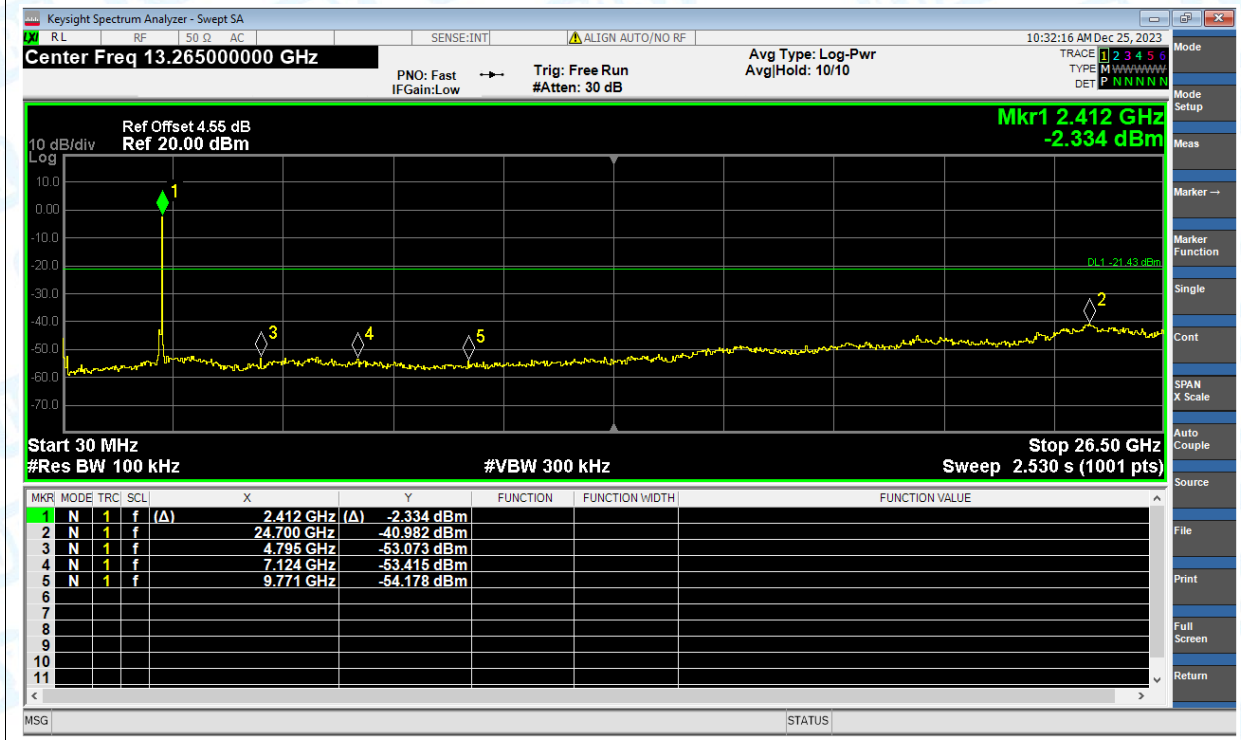
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-39.55	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-38.48	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-38.12	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-39.07	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-37.03	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-37.71	-20	Pass

Test Graphs

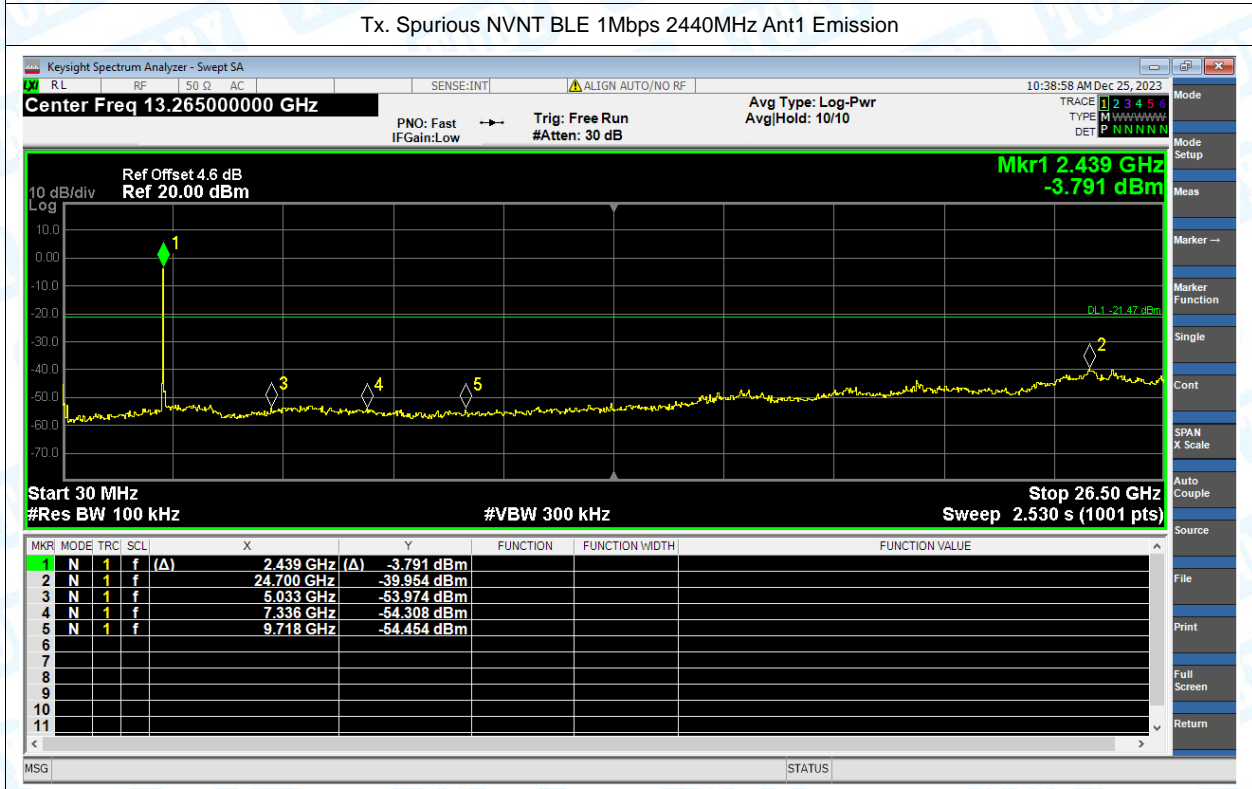
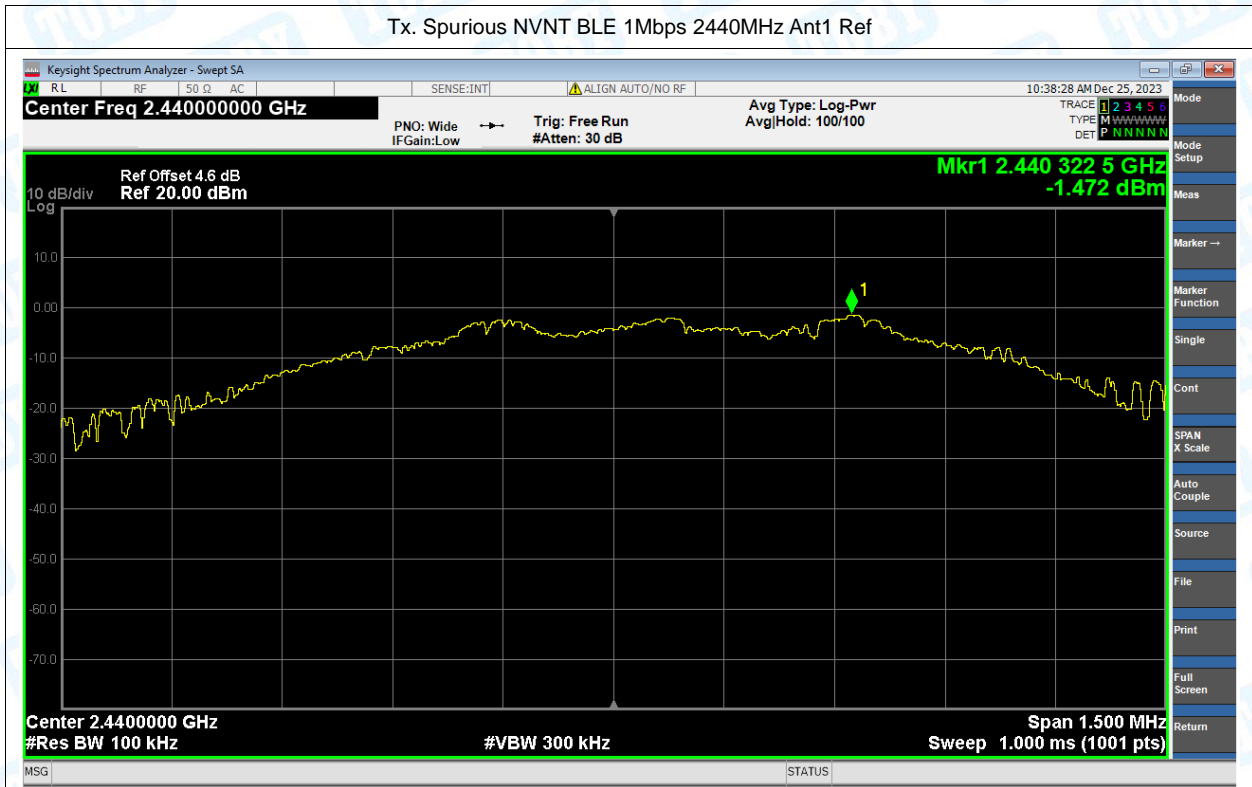
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission



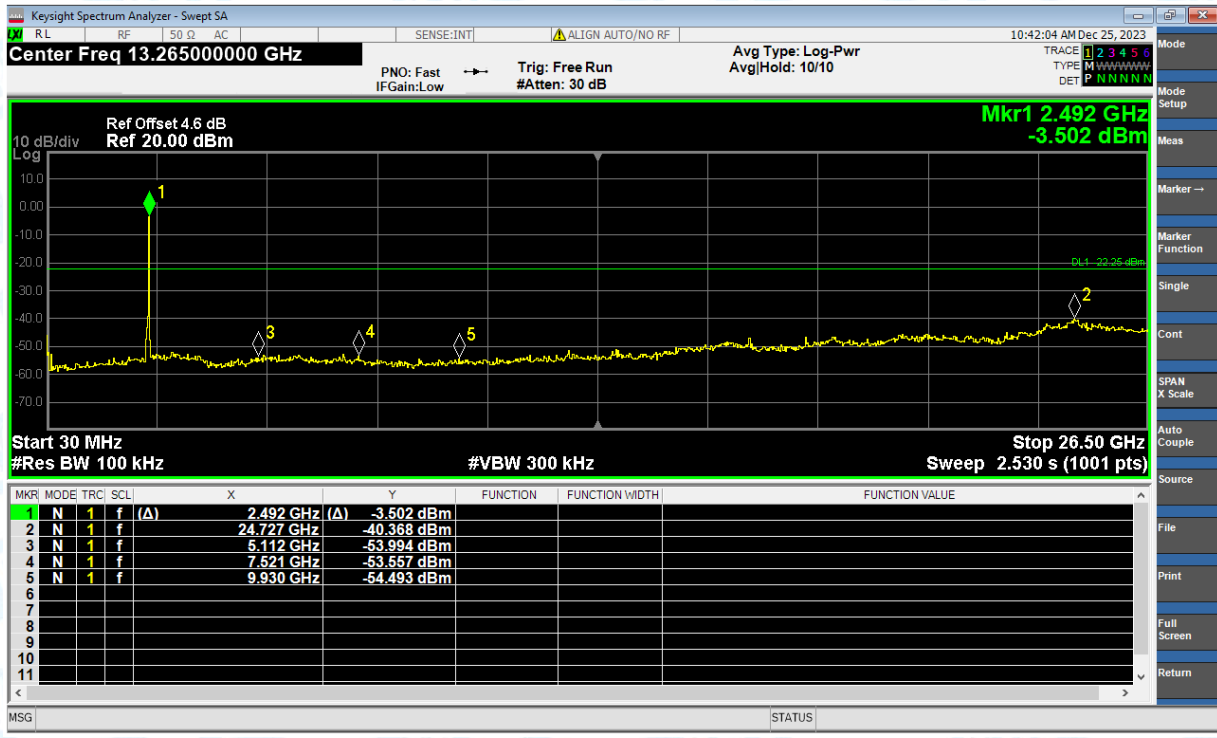




Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Emission

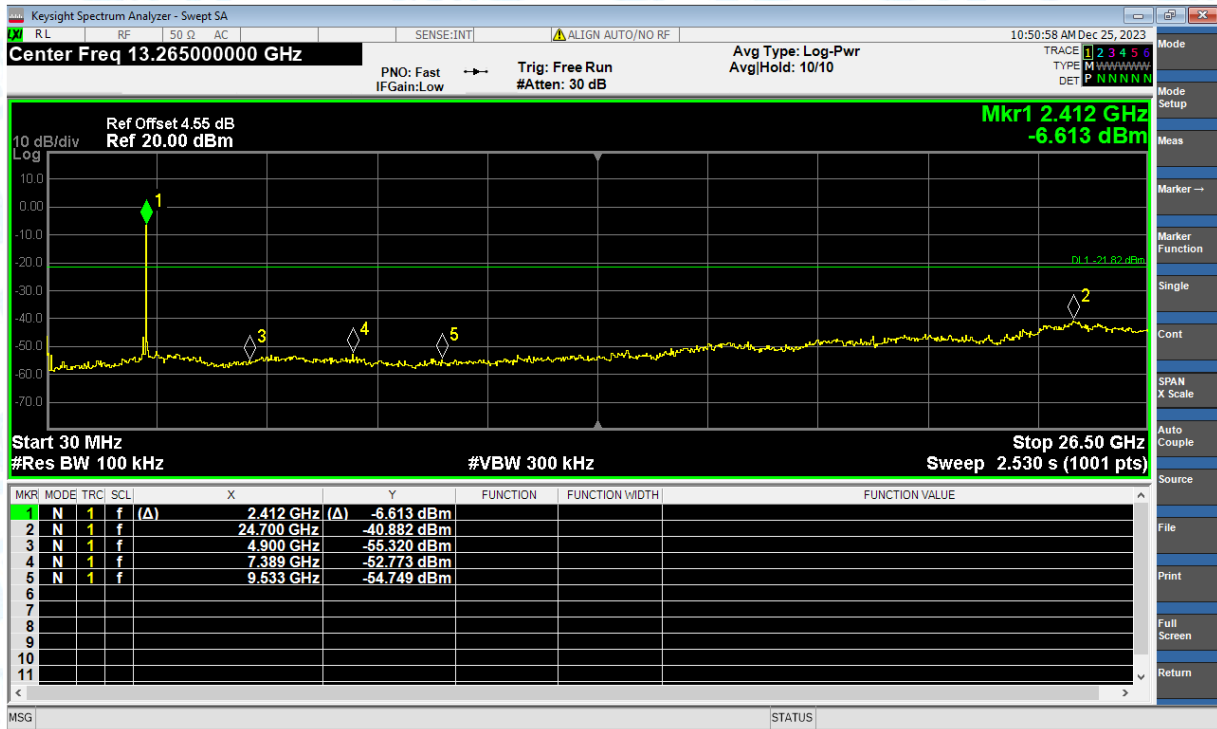




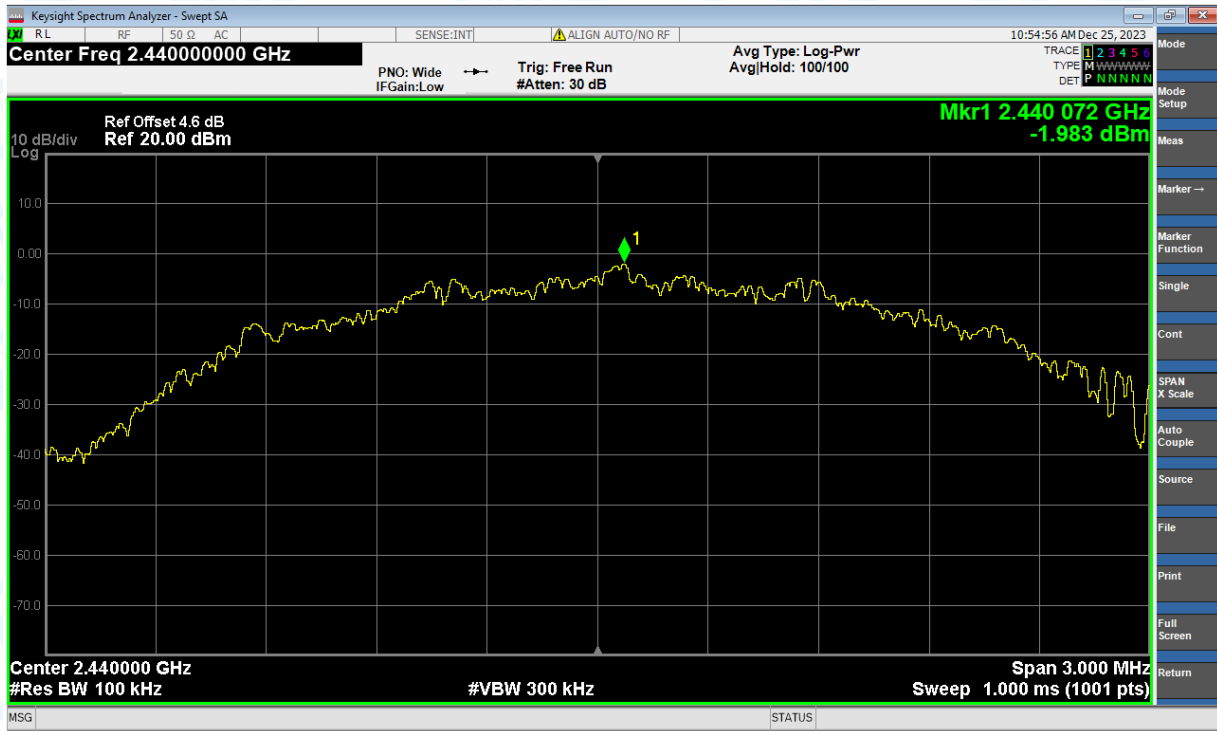
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Ref



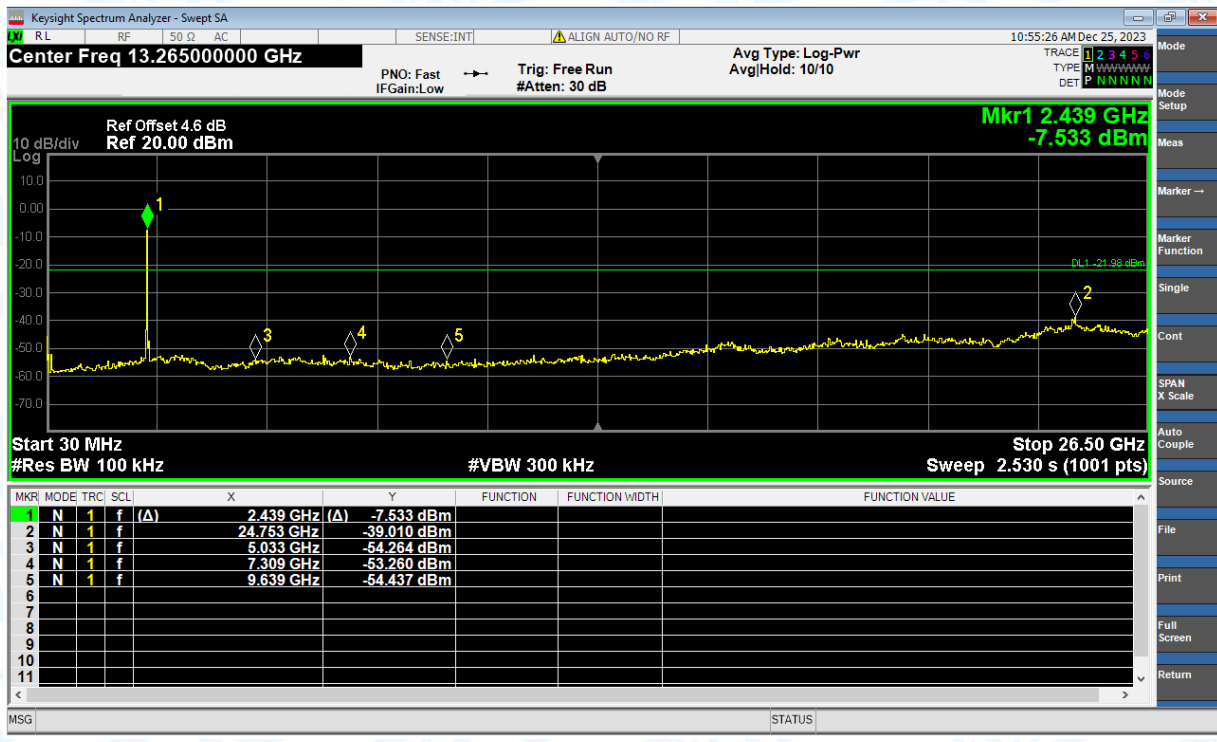
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Emission



Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Ref

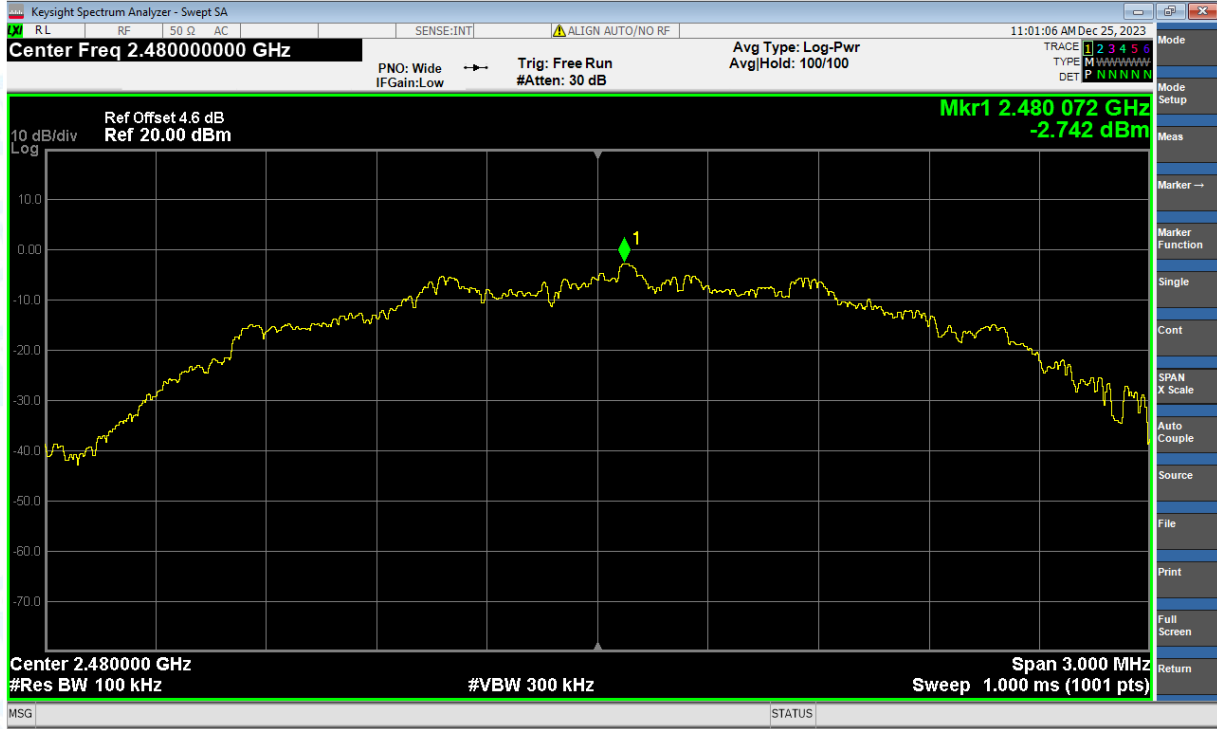


Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Emission

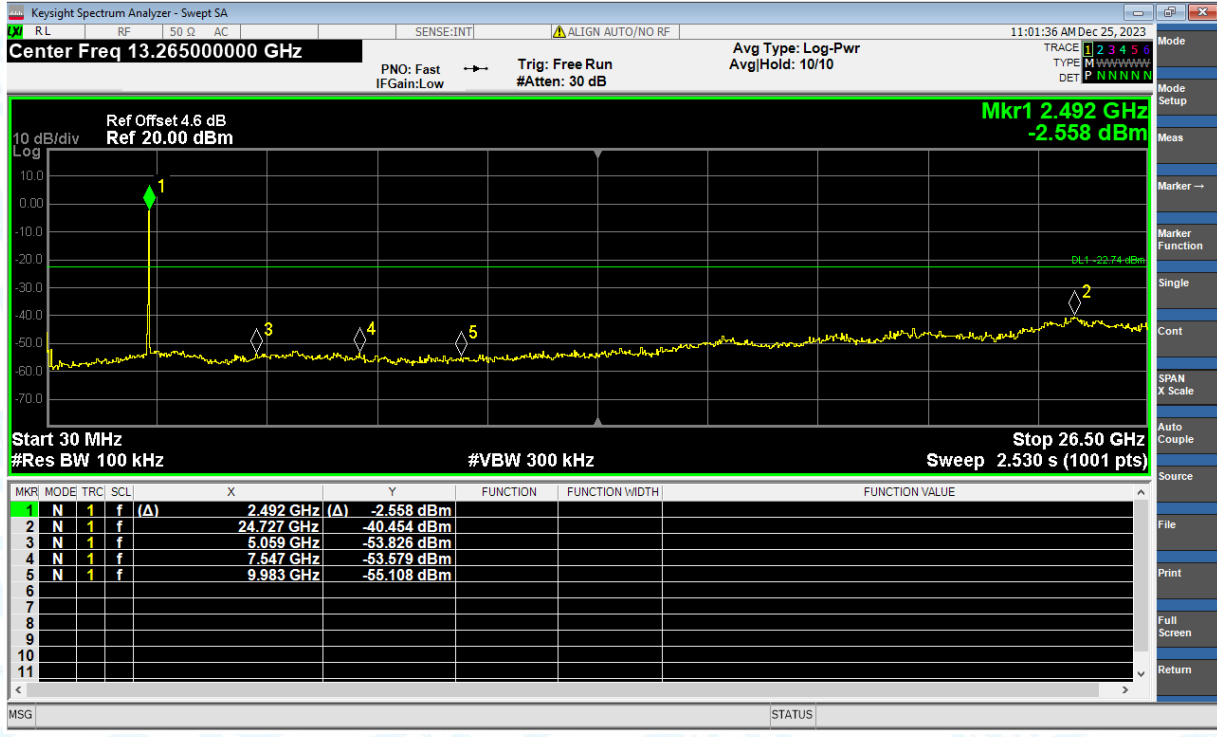




Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Emission



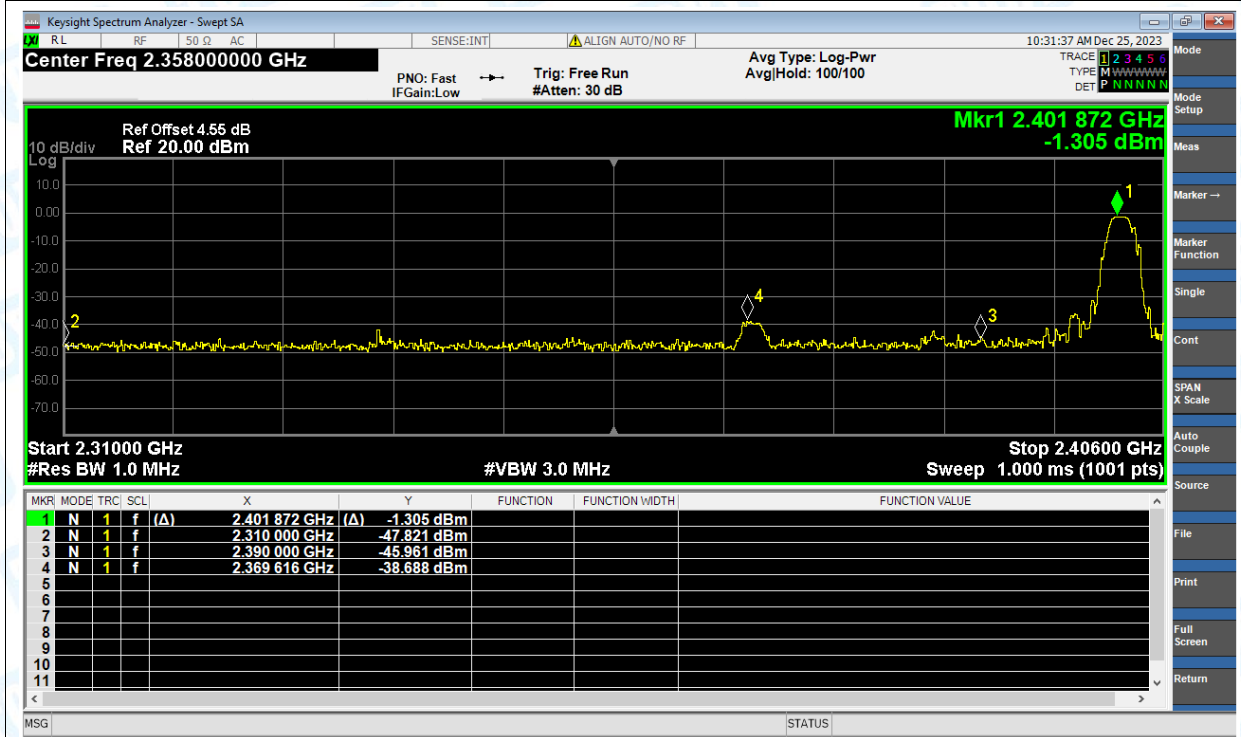
## Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	2310	-47.82	2.21	-	49.65	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2310	-54.83	2.21	1.8	44.44	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2369.616	-38.69	2.21	-	58.78	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2370.384	-45.74	2.21	1.8	53.53	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-45.96	2.21	-	51.51	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-54.63	2.21	1.8	44.64	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-43.19	2.21	-	54.28	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-55.74	2.21	1.97	43.7	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2484.424	-39.24	2.21	-	58.23	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.992	-48.57	2.21	1.97	50.87	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-48.3	2.21	-	49.17	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-54.94	2.21	1.97	44.5	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-47.43	2.21	-	50.04	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-56.21	2.21	4.98	46.24	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2370.672	-38.35	2.21	-	59.12	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2370.096	-49.9	2.21	4.98	52.55	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-47.68	2.21	-	49.79	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-55.32	2.21	4.98	47.13	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-44.01	2.21	-	53.46	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-55.54	2.21	4.98	46.91	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.68	-39.07	2.21	-	58.4	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.608	-49.63	2.21	4.98	52.82	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-48.54	2.21	-	48.93	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-55.22	2.21	4.98	47.23	Average	54	Pass

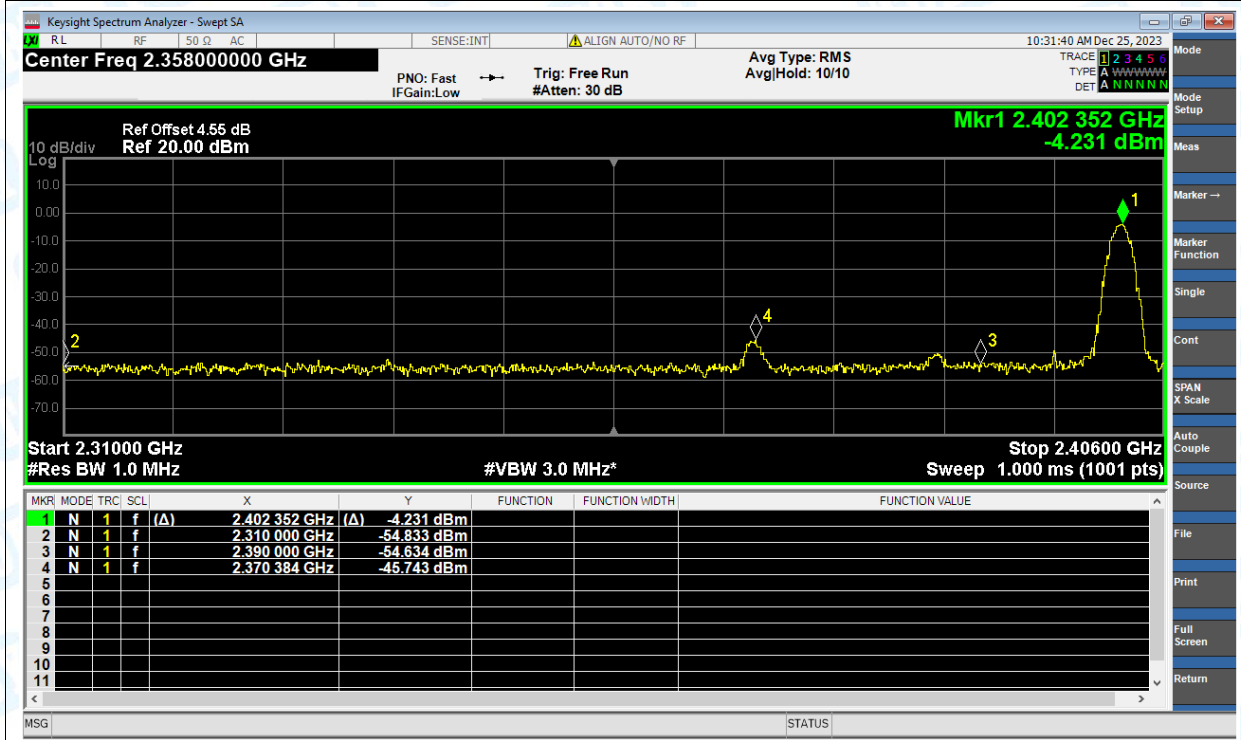


Test Graphs

Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



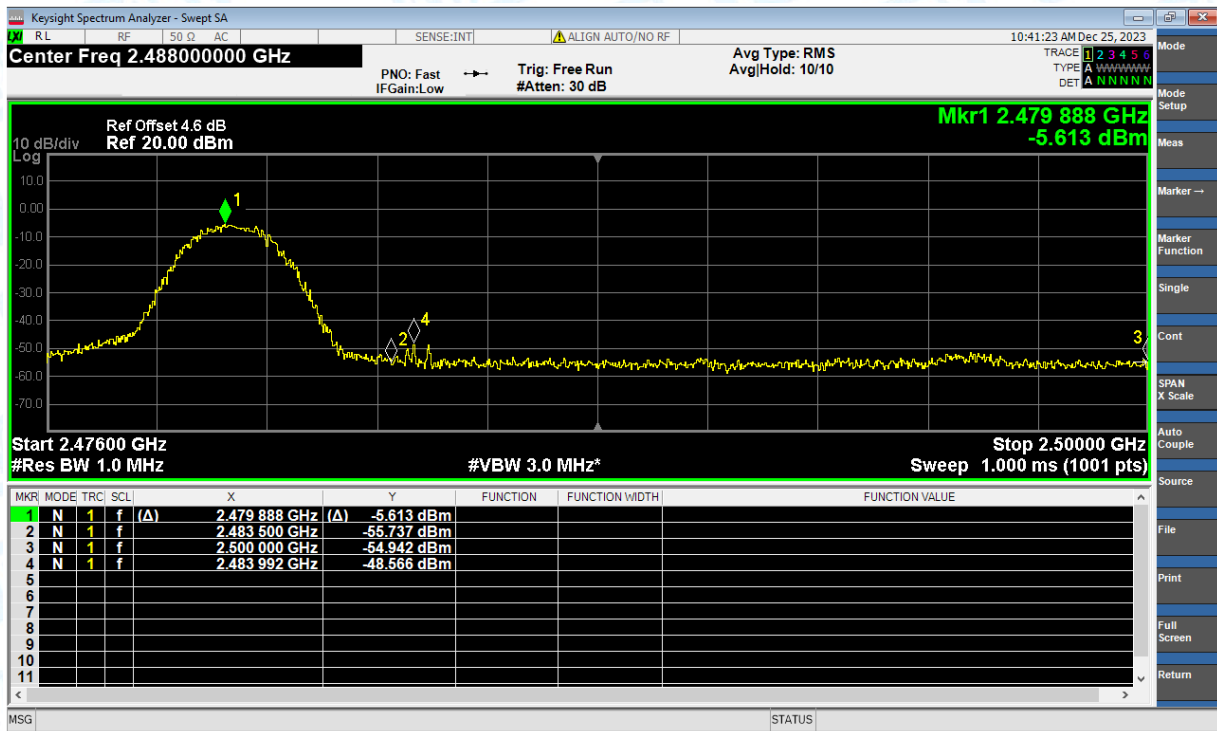
Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average



Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Peak

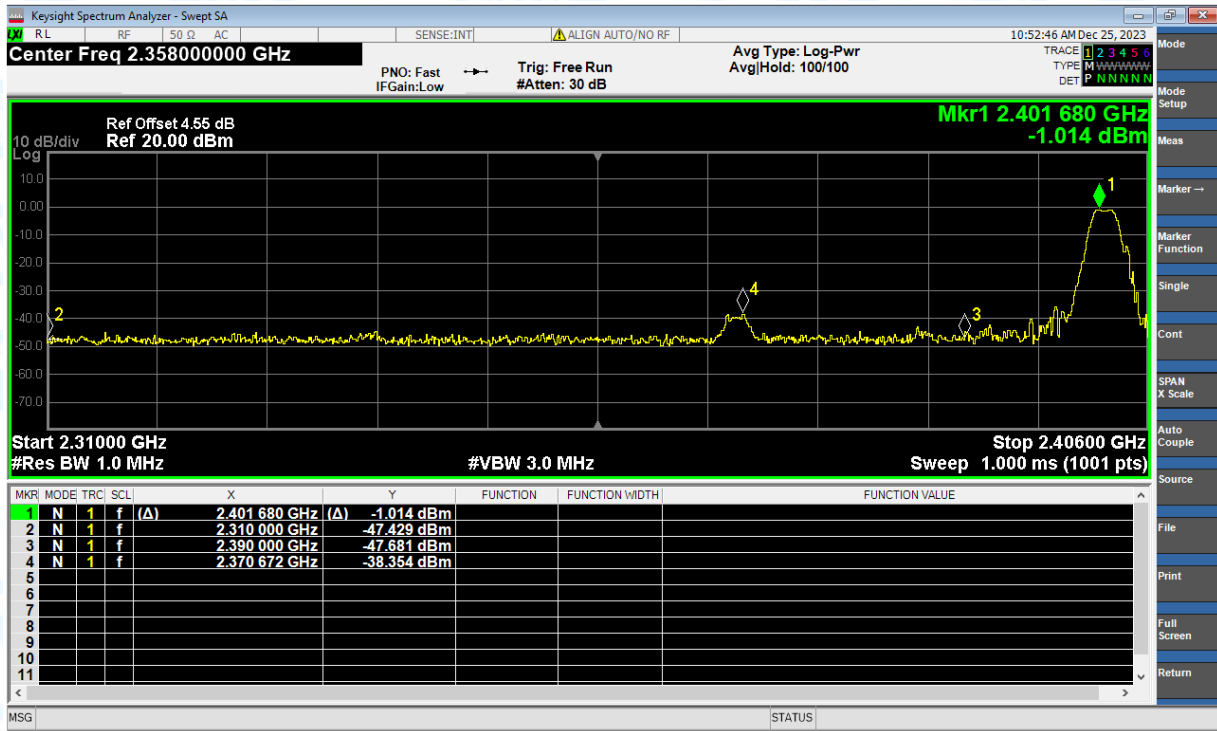


Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Average

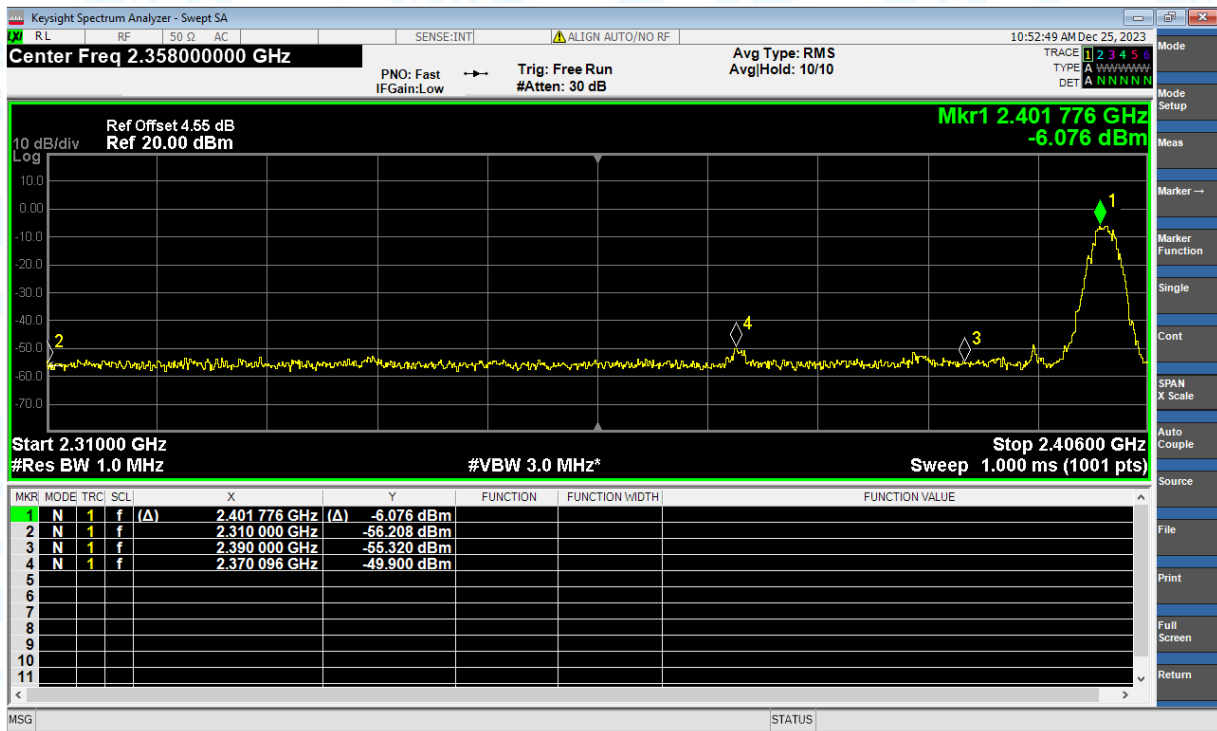




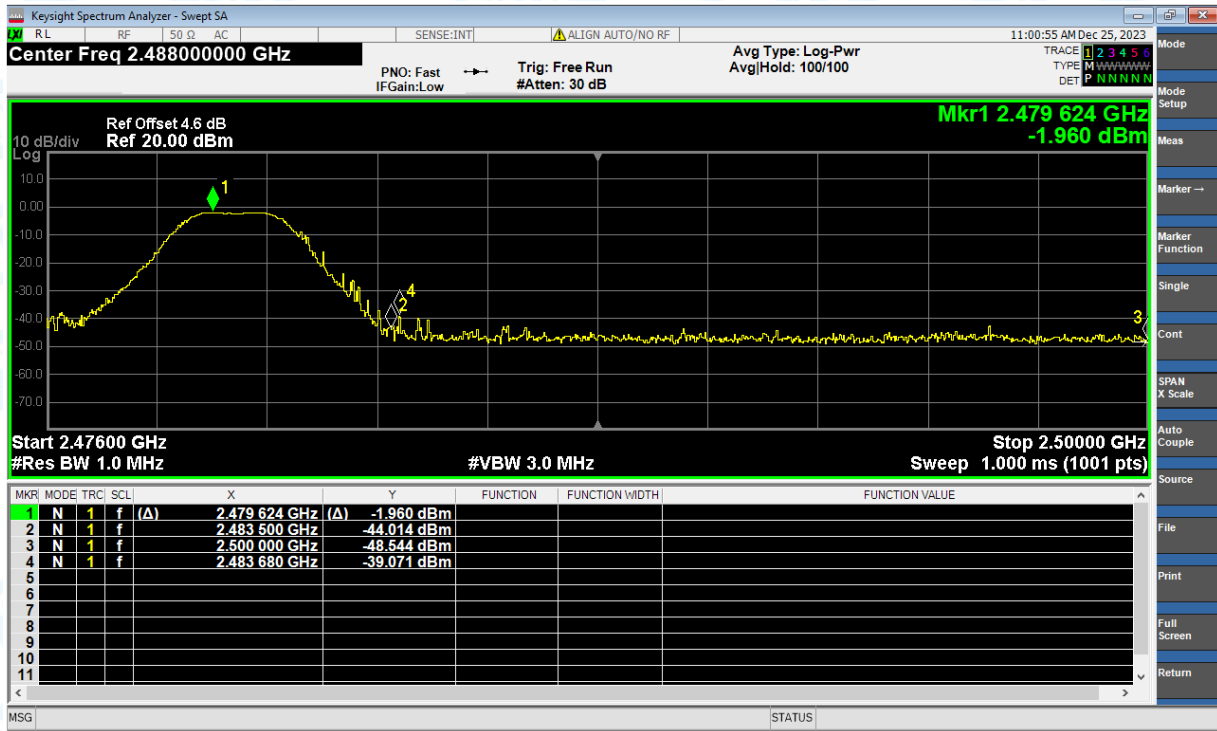
Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Average



Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Average

