

# RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Wireless mini shell
Test Model:	HT-CT62
Sample ID:	HC-C-202406-0198-04-01-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 5V
Test Engineer:	Mike Yan
Note: For a more detailed features description, please refer to the report TBR-C-202406-0198-12 The report only show the worst case data.	



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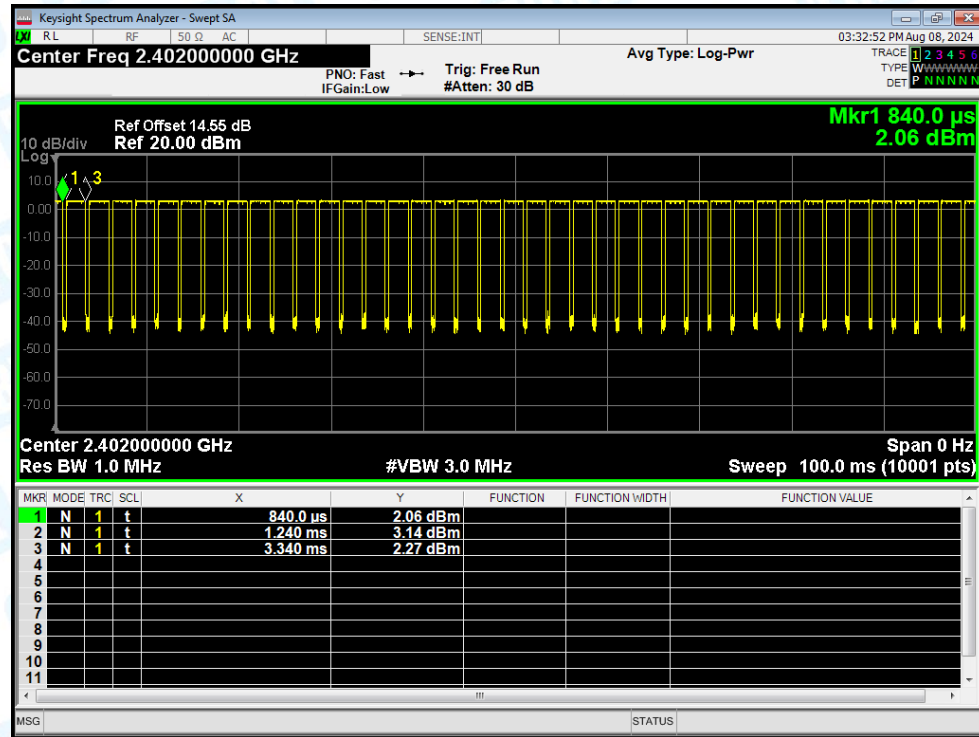


# 1. Duty Cycle

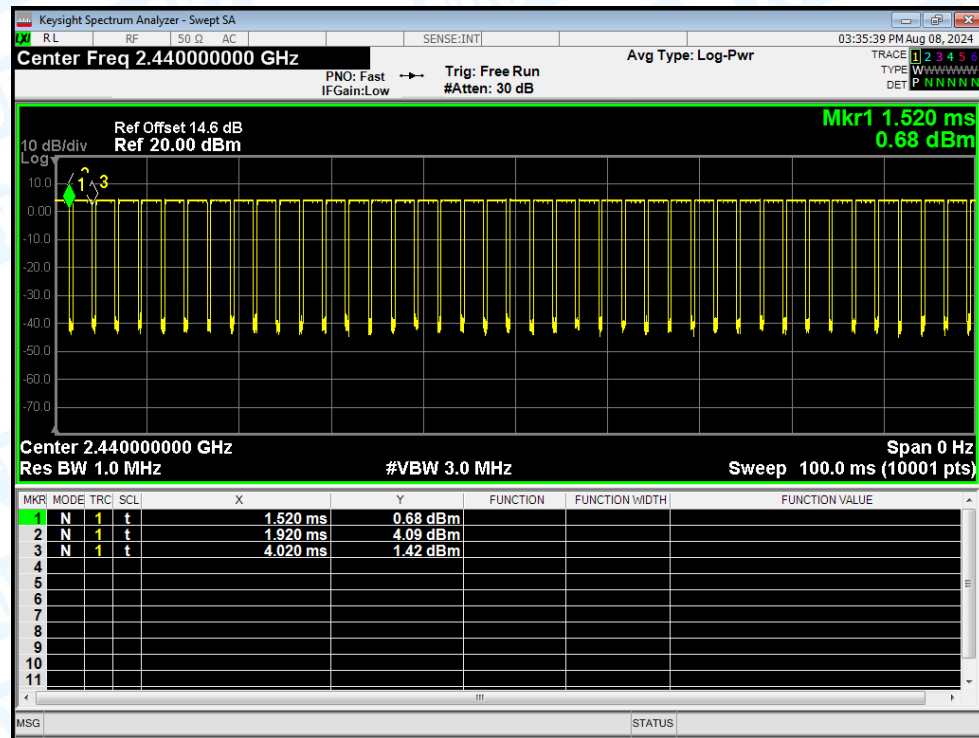
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	84	0.76	0.48
NVNT	BLE 1Mbps	2440	Ant1	84	0.76	0.48
NVNT	BLE 1Mbps	2480	Ant1	84	0.76	0.48
NVNT	BLE 2Mbps	2402	Ant1	56.38	2.49	0.94
NVNT	BLE 2Mbps	2440	Ant1	56.38	2.49	0.94
NVNT	BLE 2Mbps	2480	Ant1	56.91	2.45	0.93

### Test Graphs

#### Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1

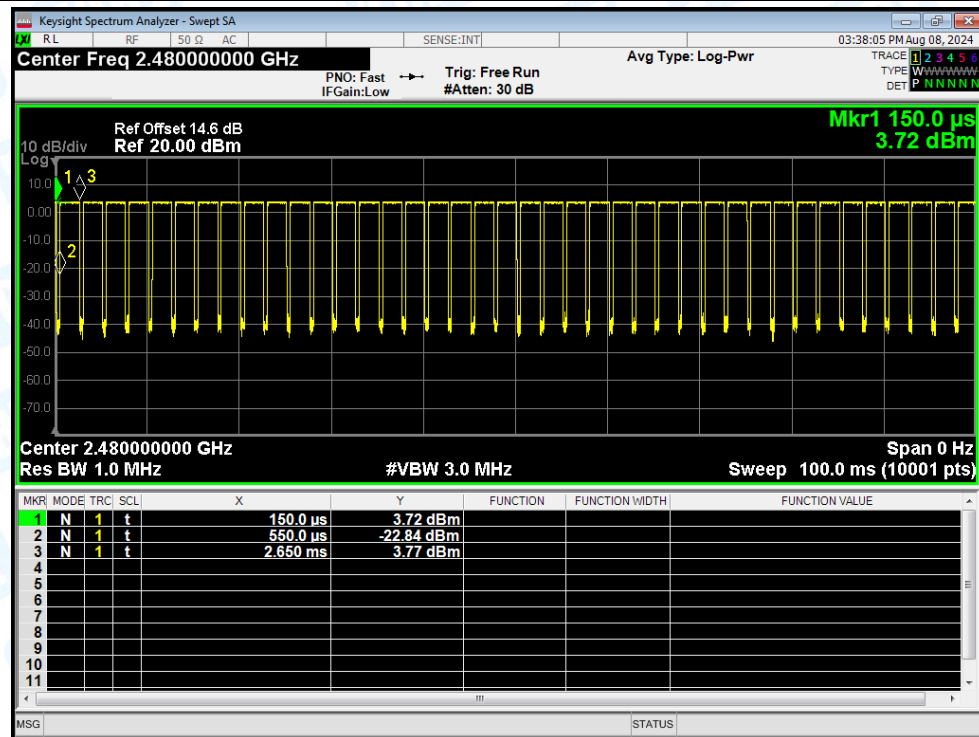


#### Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1

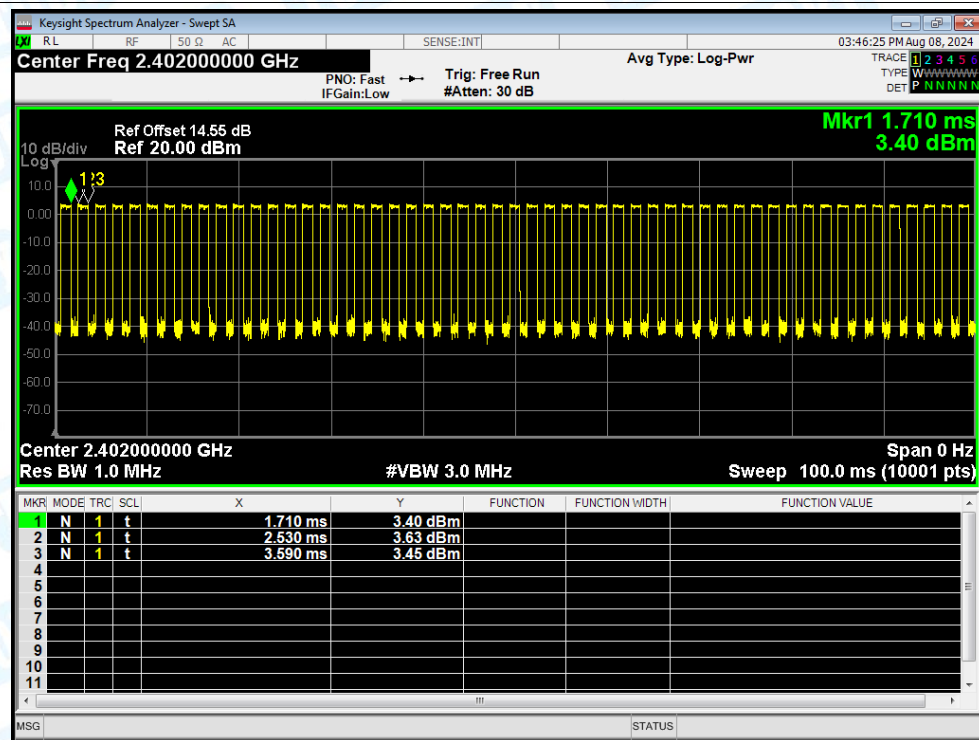




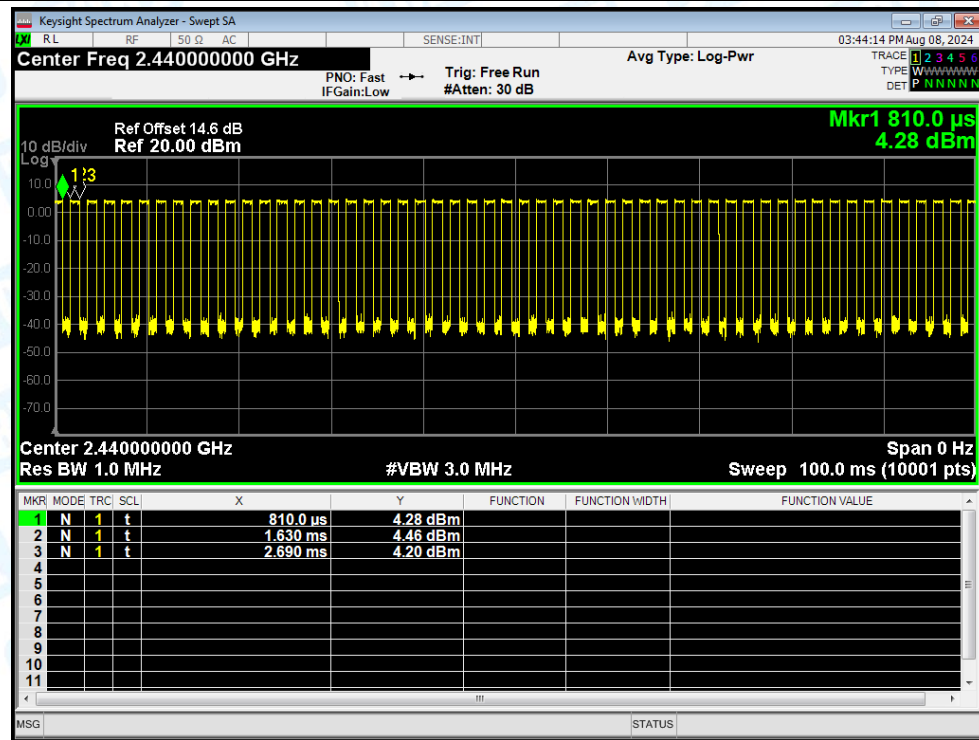
Duty Cycle NVNT BLE 1Mbps 2480MHz Ant1



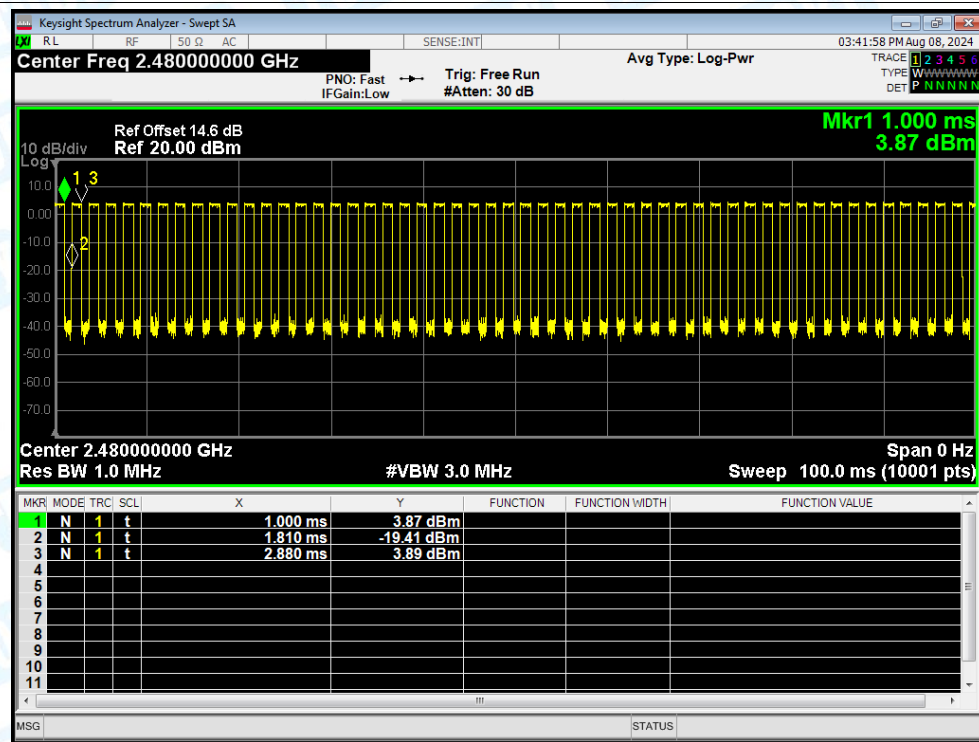
Duty Cycle NVNT BLE 2Mbps 2402MHz Ant1



Duty Cycle NVNT BLE 2Mbps 2440MHz Ant1



Duty Cycle NVNT BLE 2Mbps 2480MHz Ant1



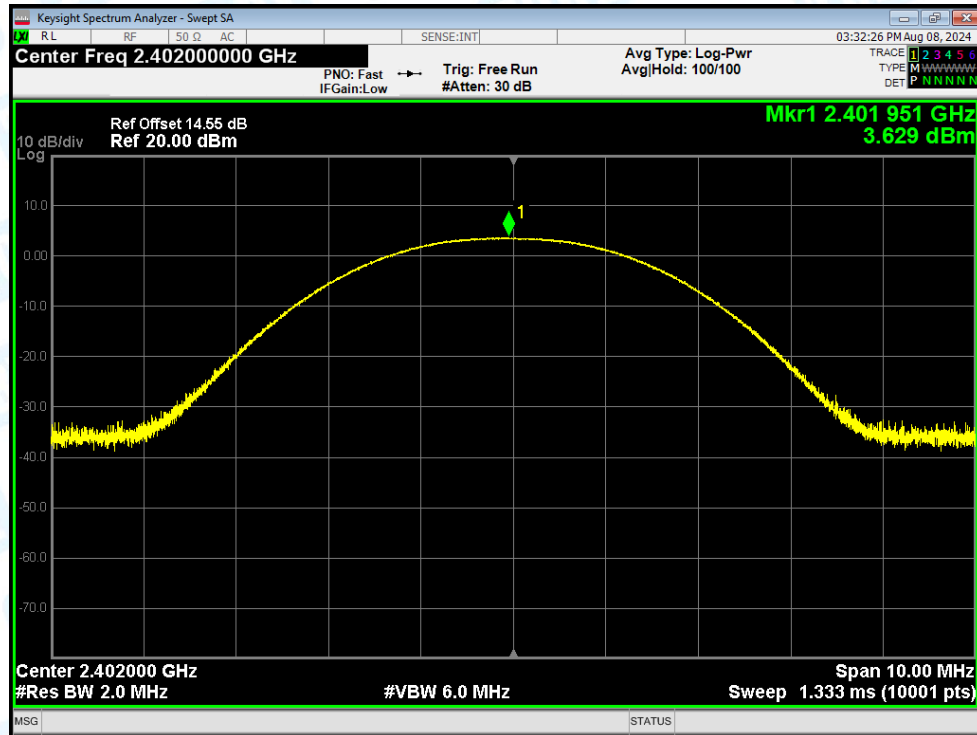


## 2. Maximum Conducted Output Power

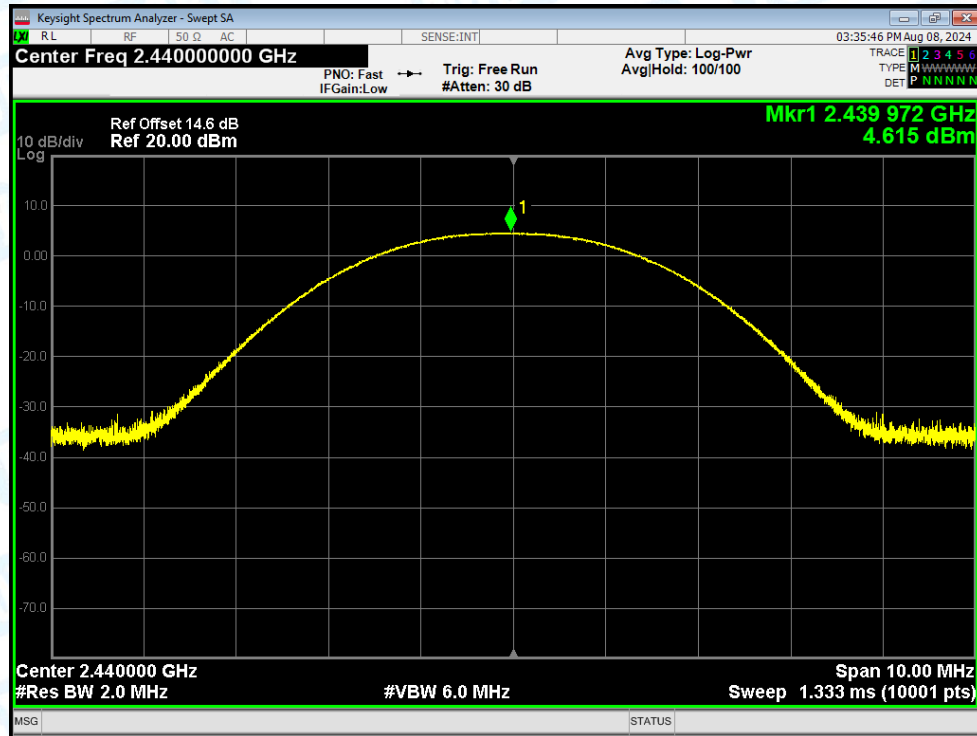
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	3.629	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	4.615	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	4.185	30	Pass
NVNT	BLE 2Mbps	2402	Ant1	3.737	30	Pass
NVNT	BLE 2Mbps	2440	Ant1	4.724	30	Pass
NVNT	BLE 2Mbps	2480	Ant1	4.395	30	Pass

### Test Graphs

Power NVNT BLE 1Mbps 2402MHz Ant1

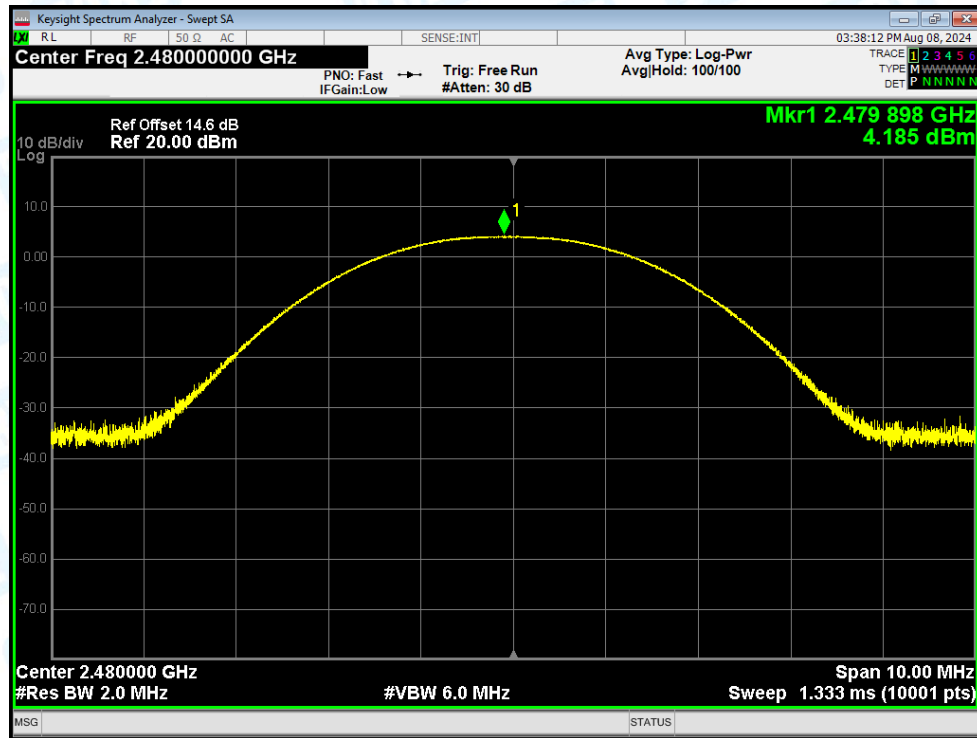


Power NVNT BLE 1Mbps 2440MHz Ant1

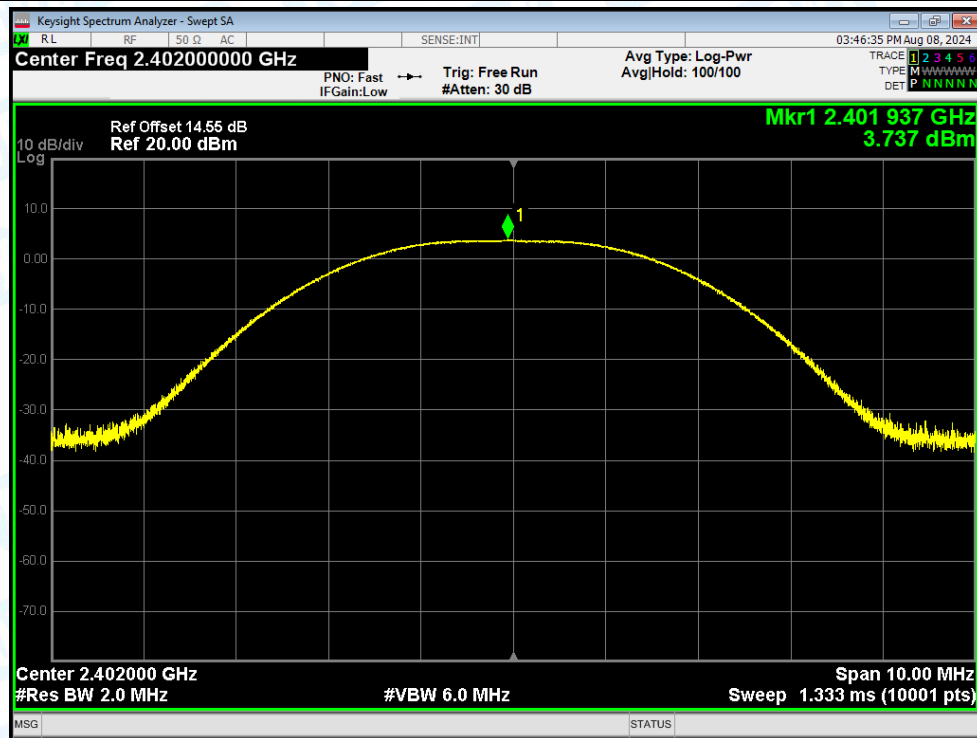




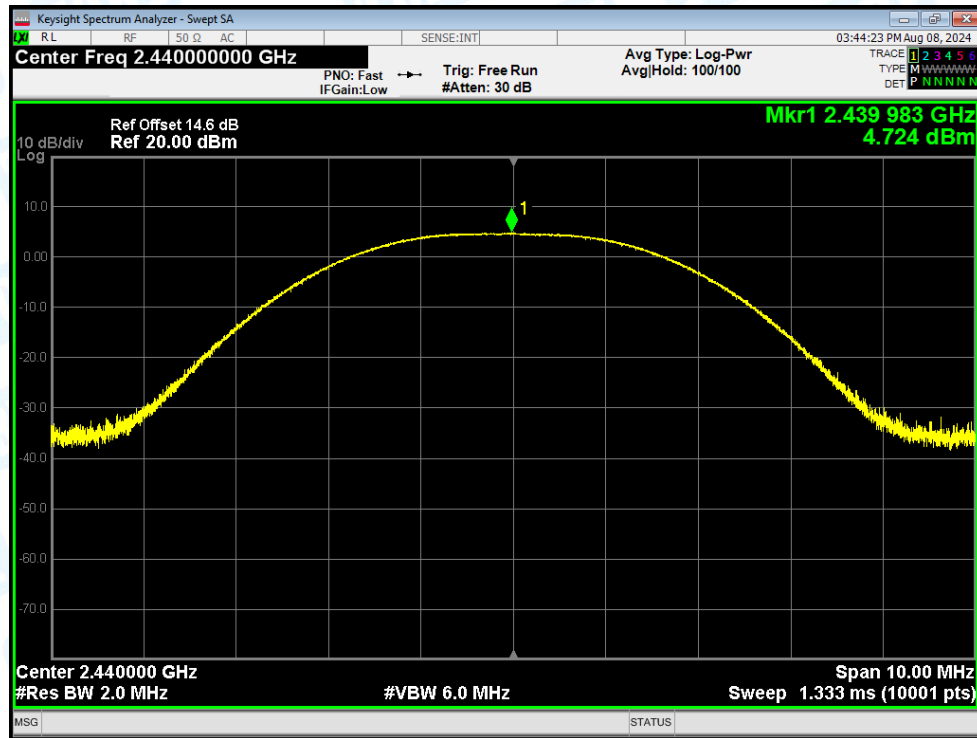
Power NVNT BLE 1Mbps 2480MHz Ant1



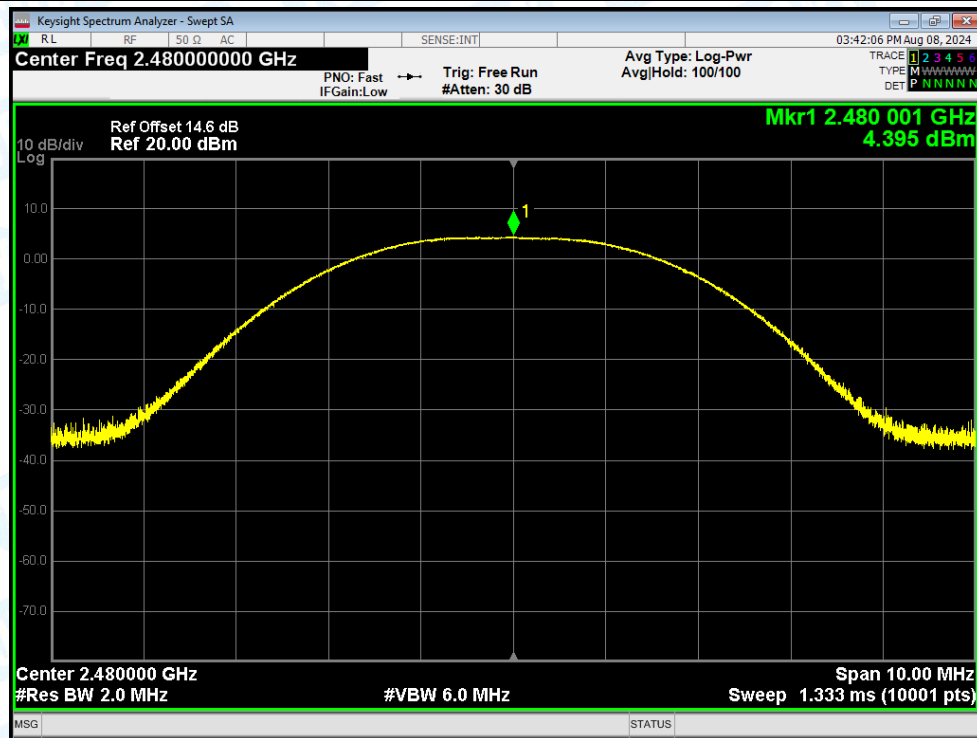
Power NVNT BLE 2Mbps 2402MHz Ant1



Power NVNT BLE 2Mbps 2440MHz Ant1



Power NVNT BLE 2Mbps 2480MHz Ant1



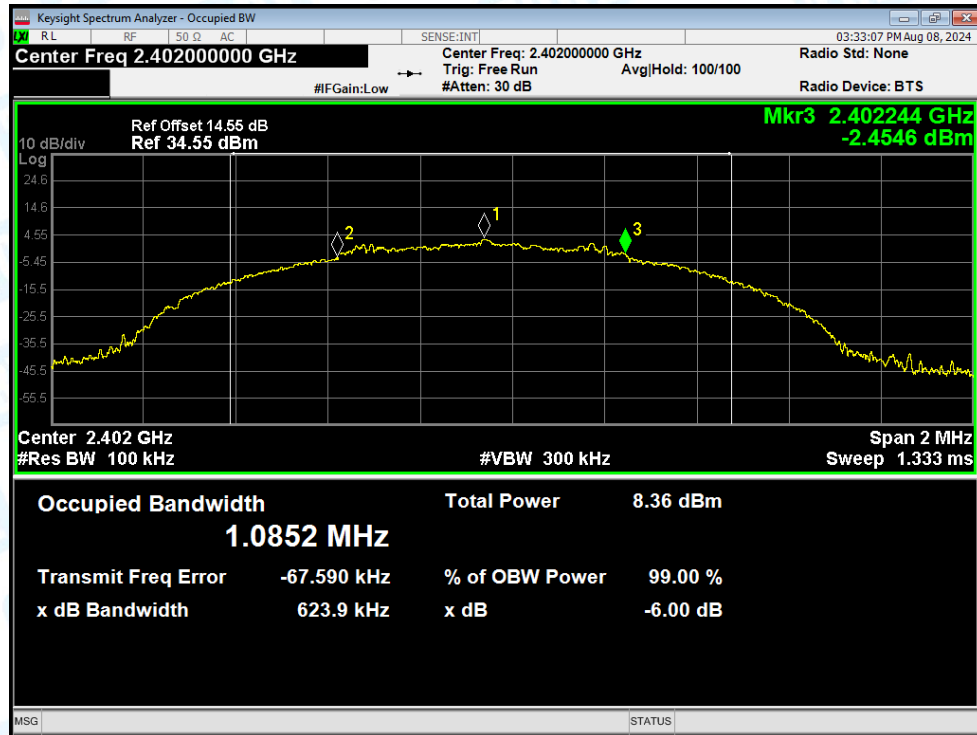


### 3. -6dB Bandwidth

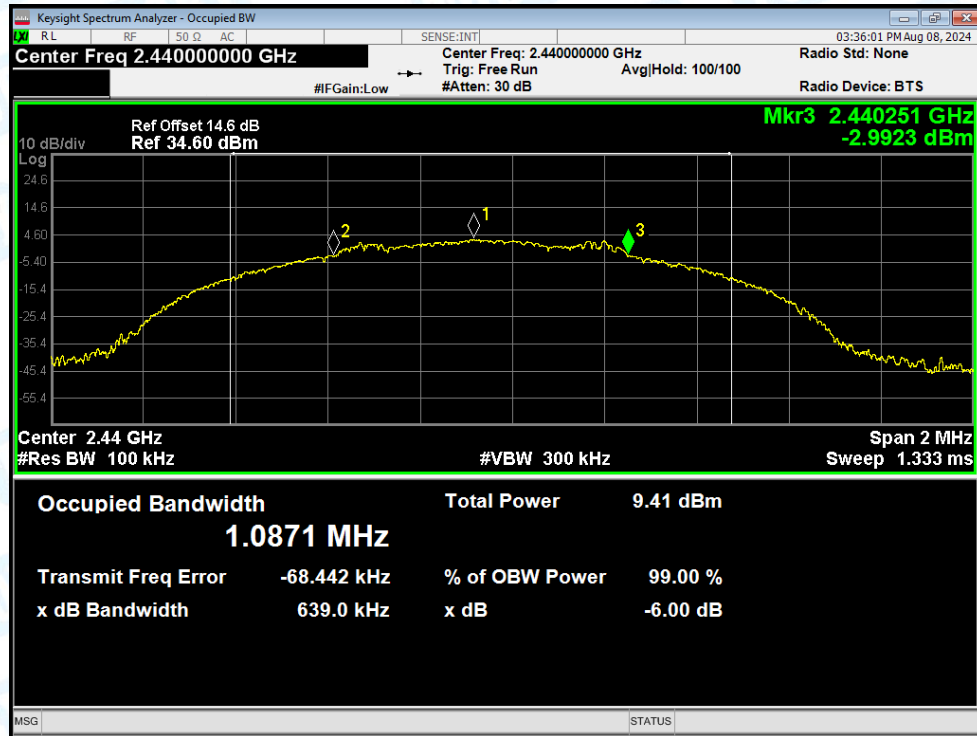
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.62	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.64	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.64	0.5	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.17	0.5	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.06	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.09	0.5	Pass

### Test Graphs

#### -6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1

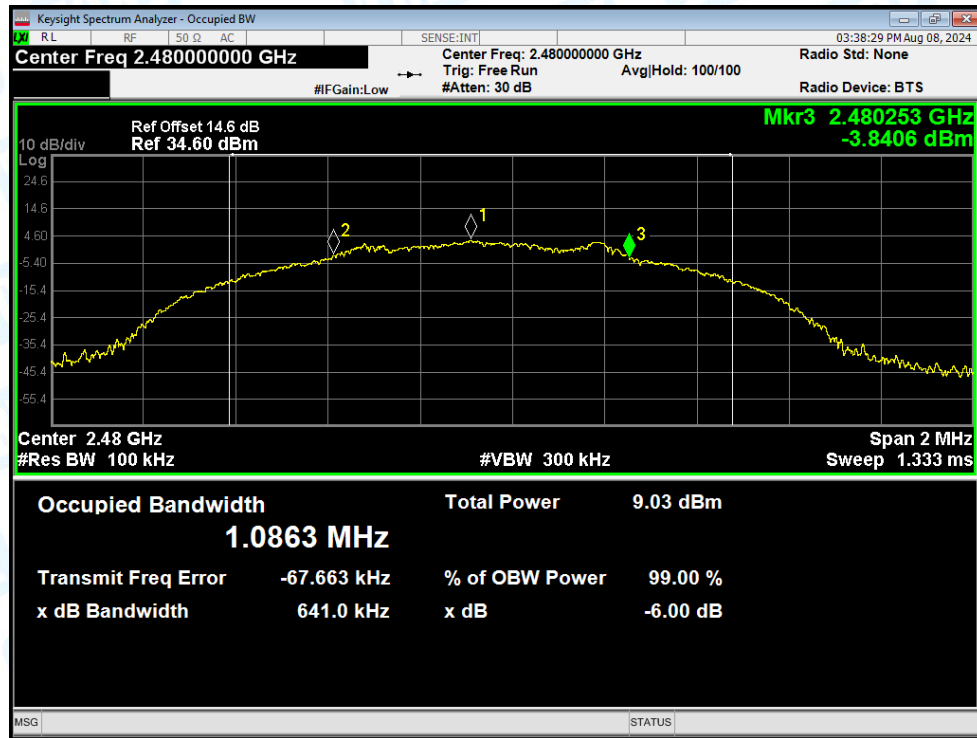


#### -6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1

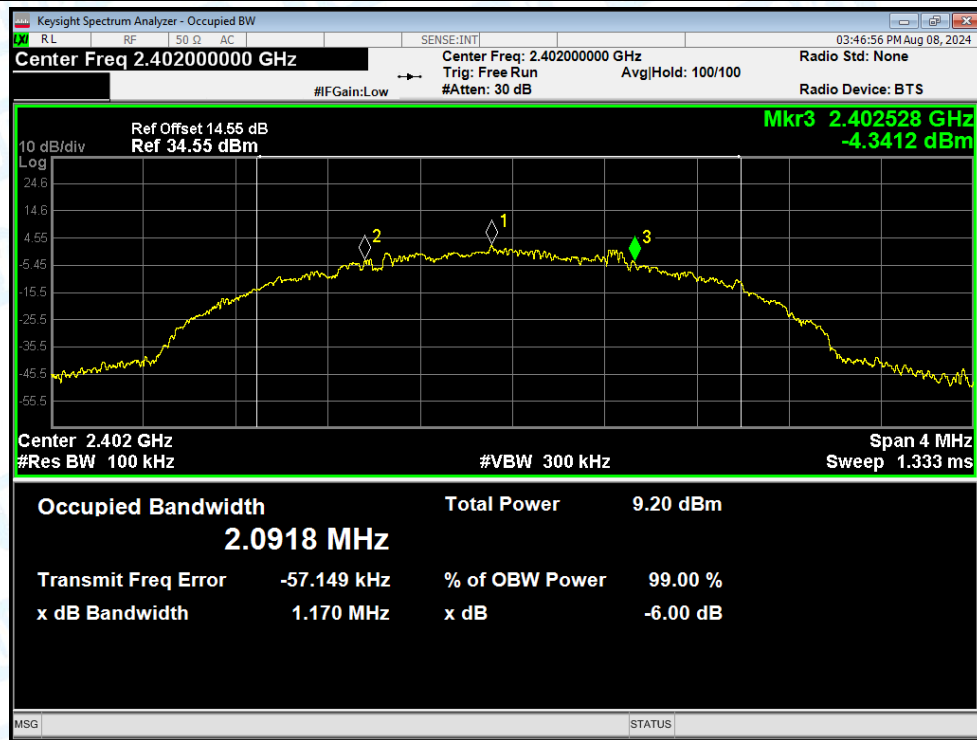




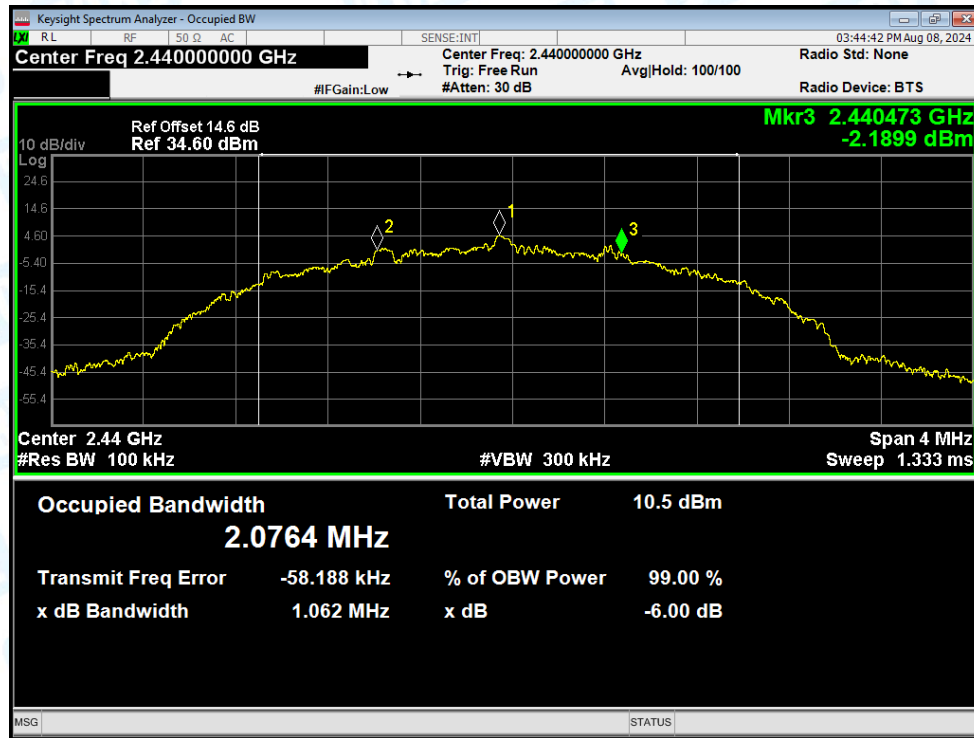
-6dB Bandwidth NVNT BLE 1Mbps 2480MHz Ant1



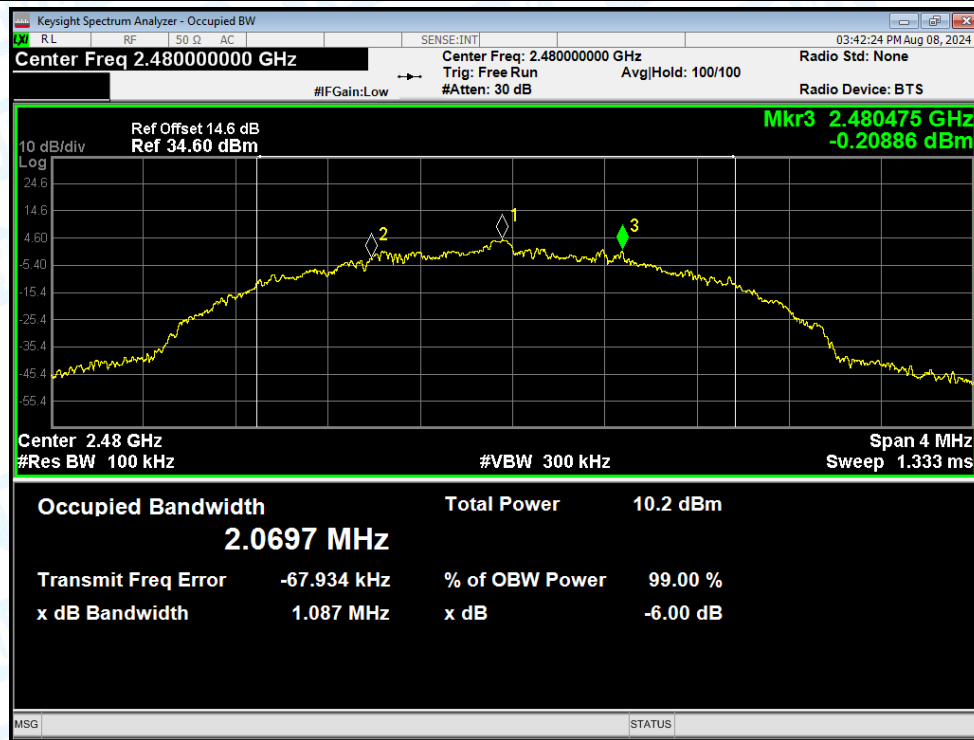
-6dB Bandwidth NVNT BLE 2Mbps 2402MHz Ant1



-6dB Bandwidth NVNT BLE 2Mbps 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2Mbps 2480MHz Ant1



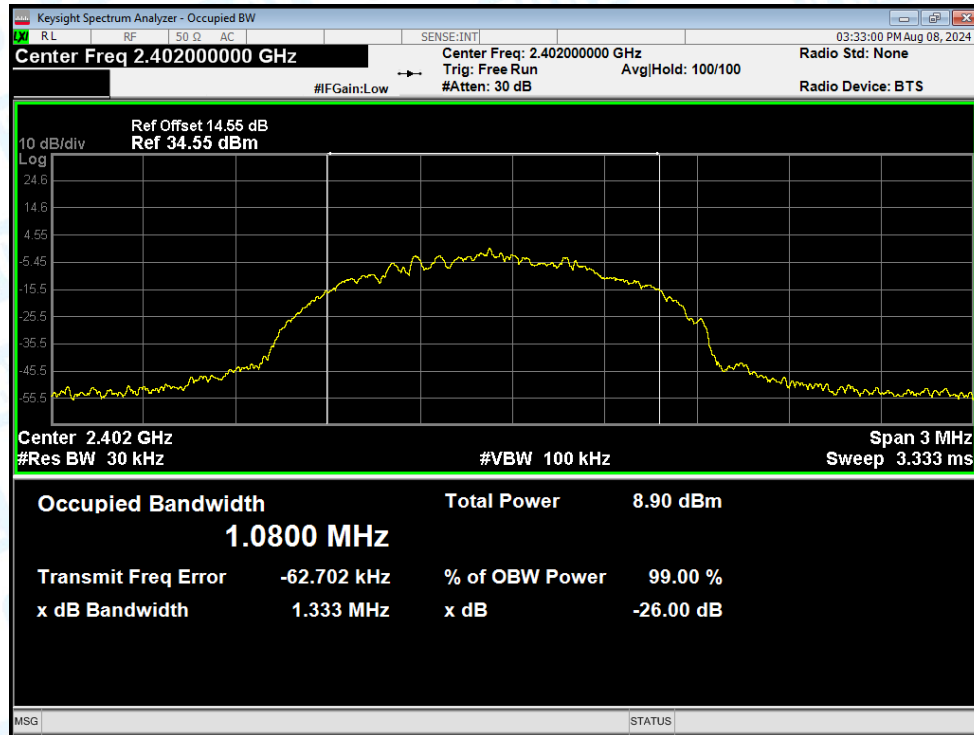


## 4. Occupied Channel Bandwidth

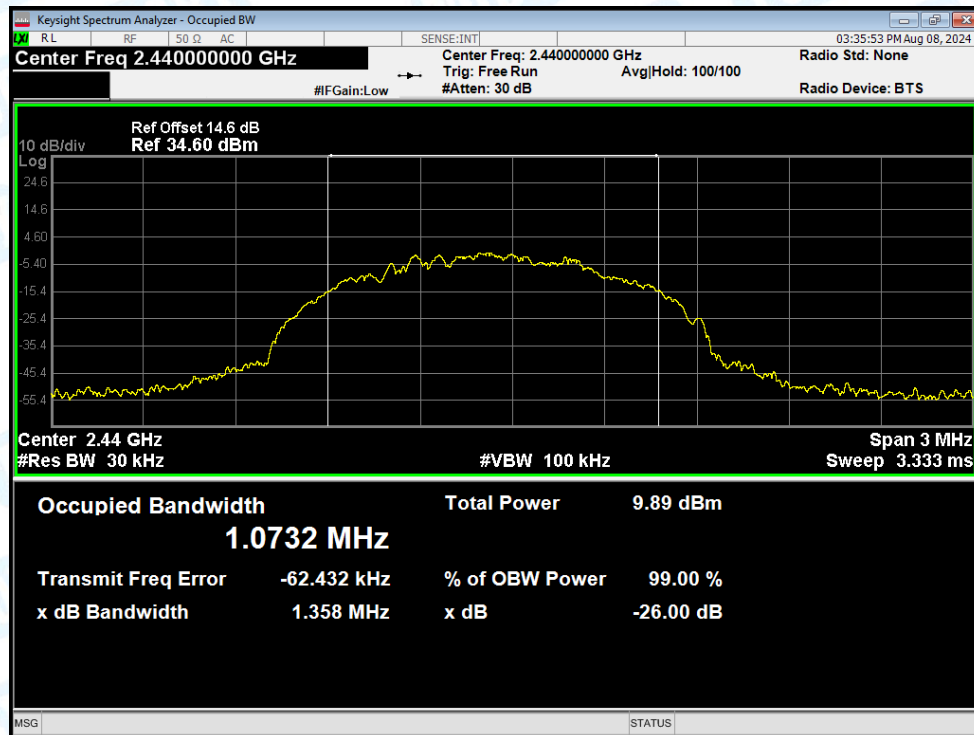
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.08
NVNT	BLE 1Mbps	2440	Ant1	1.073
NVNT	BLE 1Mbps	2480	Ant1	1.084
NVNT	BLE 2Mbps	2402	Ant1	2.099
NVNT	BLE 2Mbps	2440	Ant1	2.103
NVNT	BLE 2Mbps	2480	Ant1	2.113

### Test Graphs

#### OBW NVNT BLE 1Mbps 2402MHz Ant1

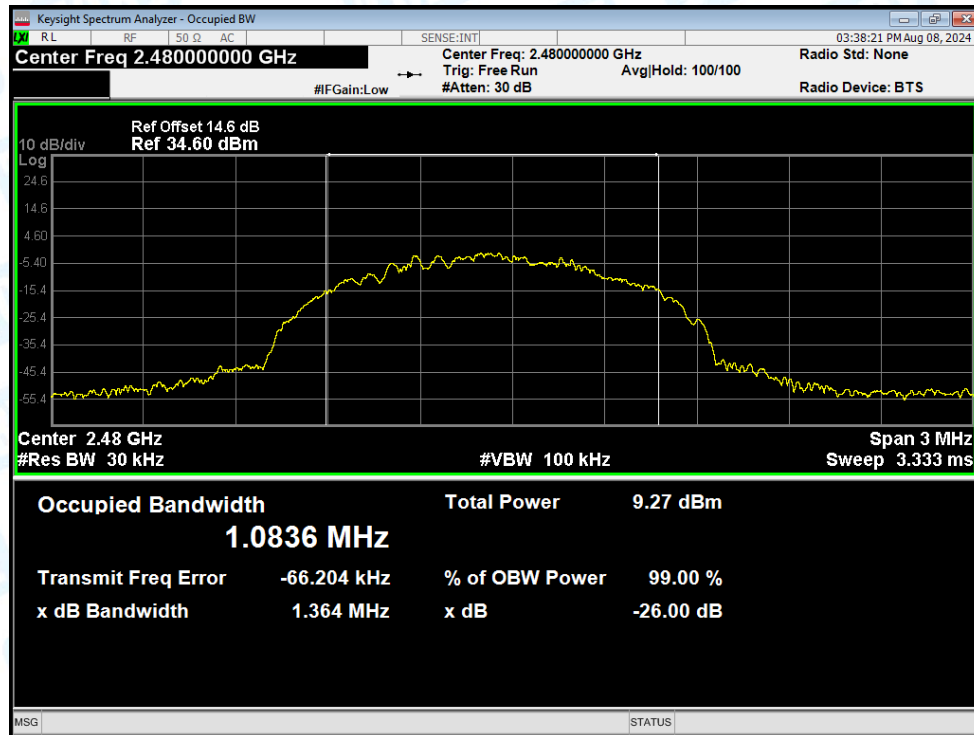


#### OBW NVNT BLE 1Mbps 2440MHz Ant1

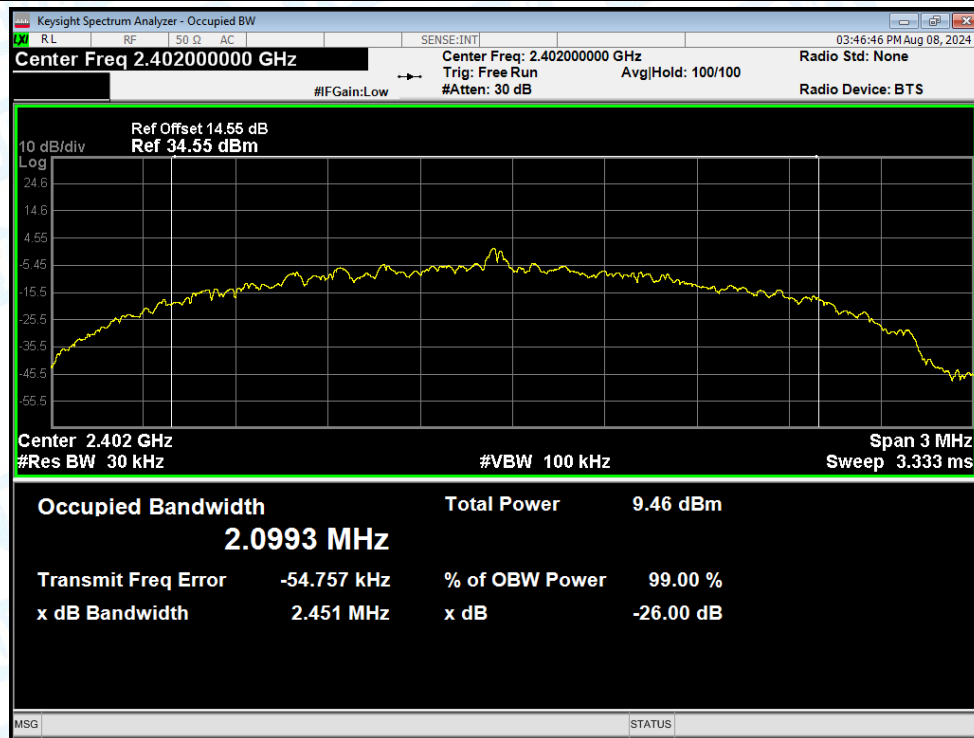




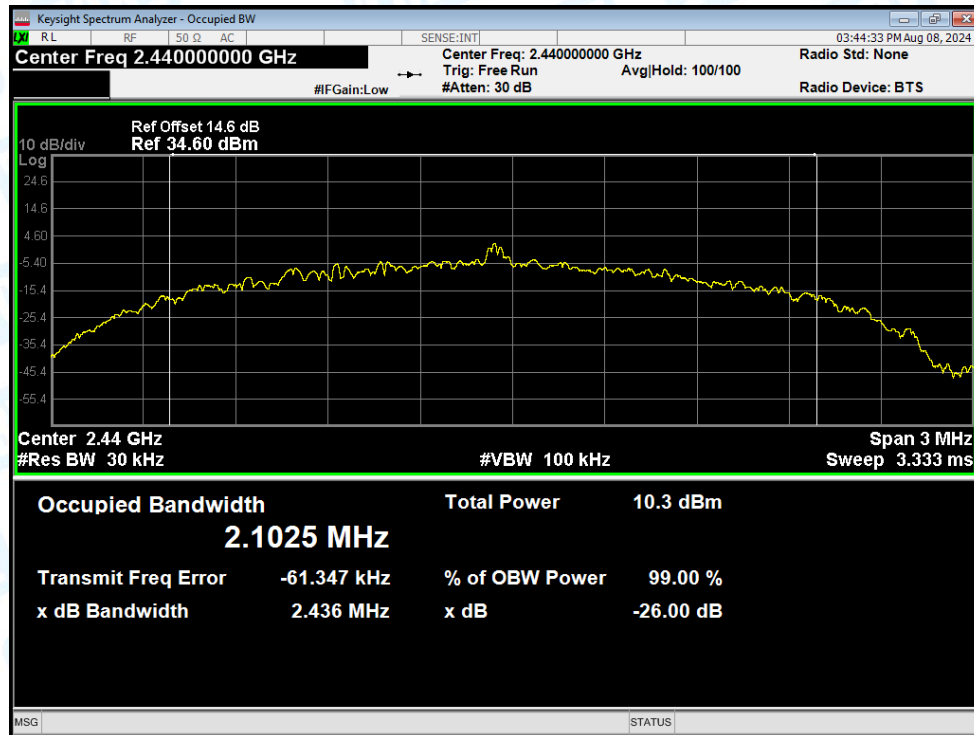
OBW NVNT BLE 1Mbps 2480MHz Ant1



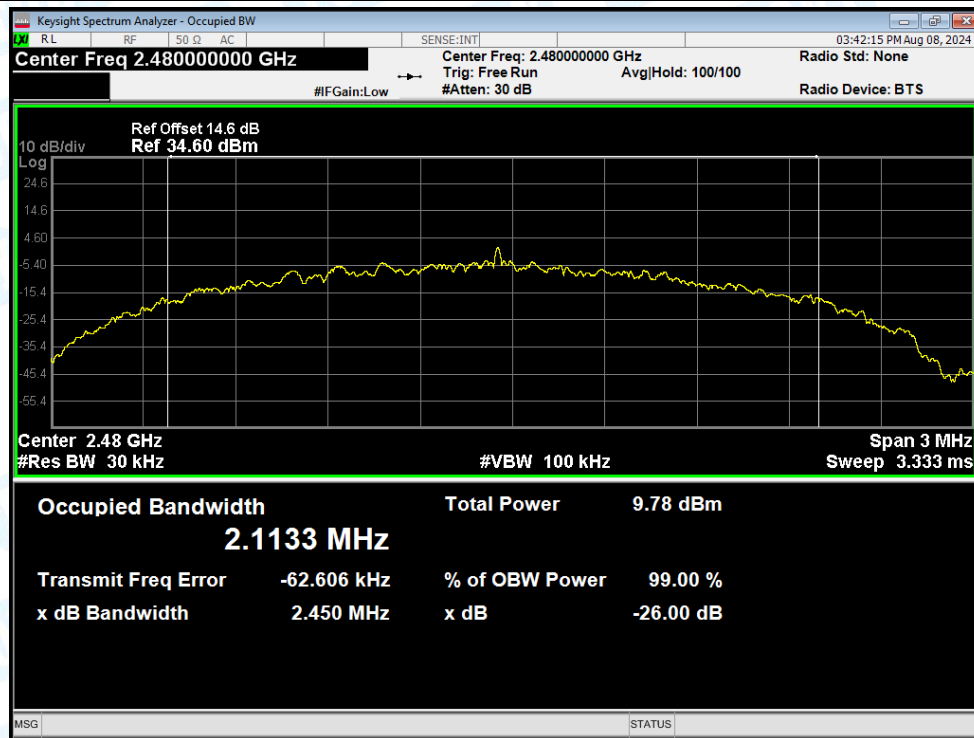
OBW NVNT BLE 2Mbps 2402MHz Ant1



OBW NVNT BLE 2Mbps 2440MHz Ant1



OBW NVNT BLE 2Mbps 2480MHz Ant1



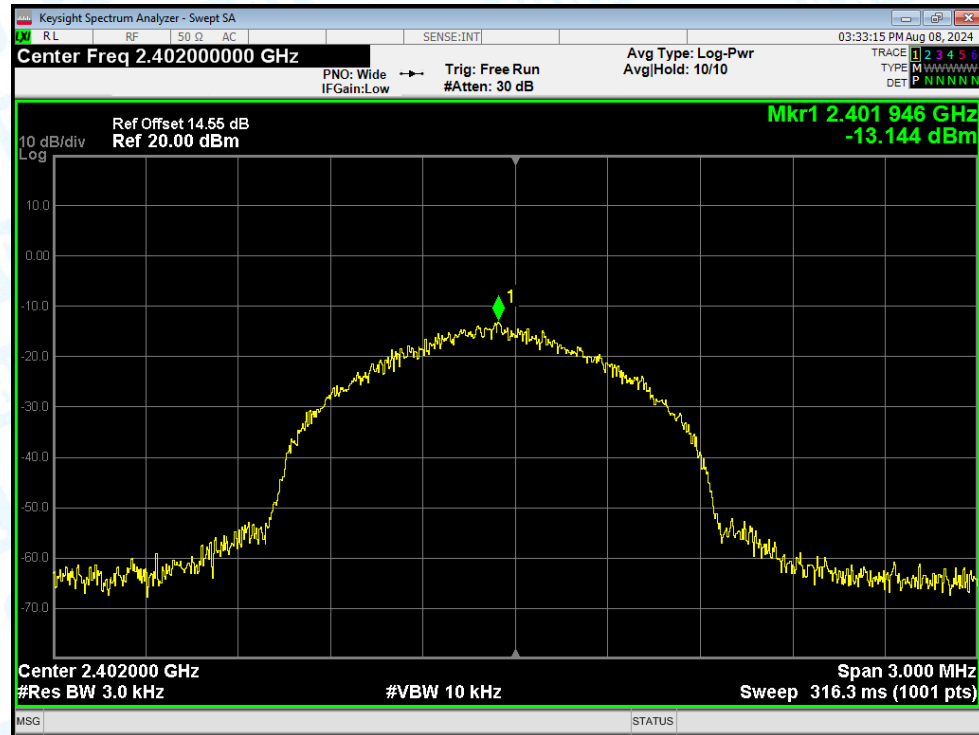


## 5. Maximum Power Spectral Density Level

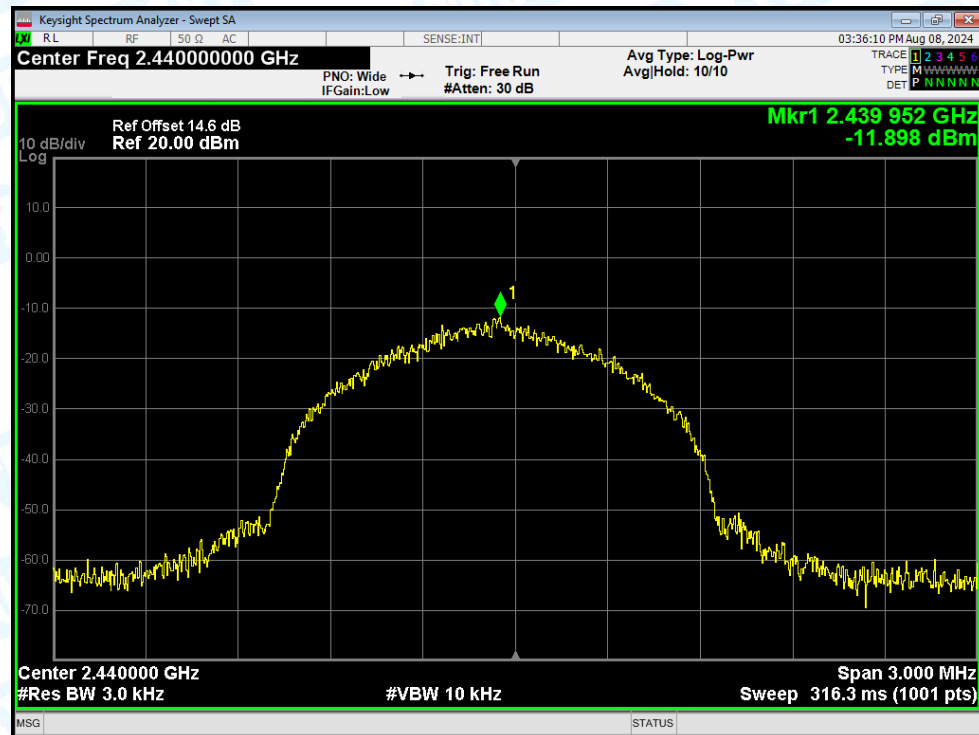
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-13.144	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-11.898	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-11.462	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-14.087	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-12.764	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-12.96	8	Pass

### Test Graphs

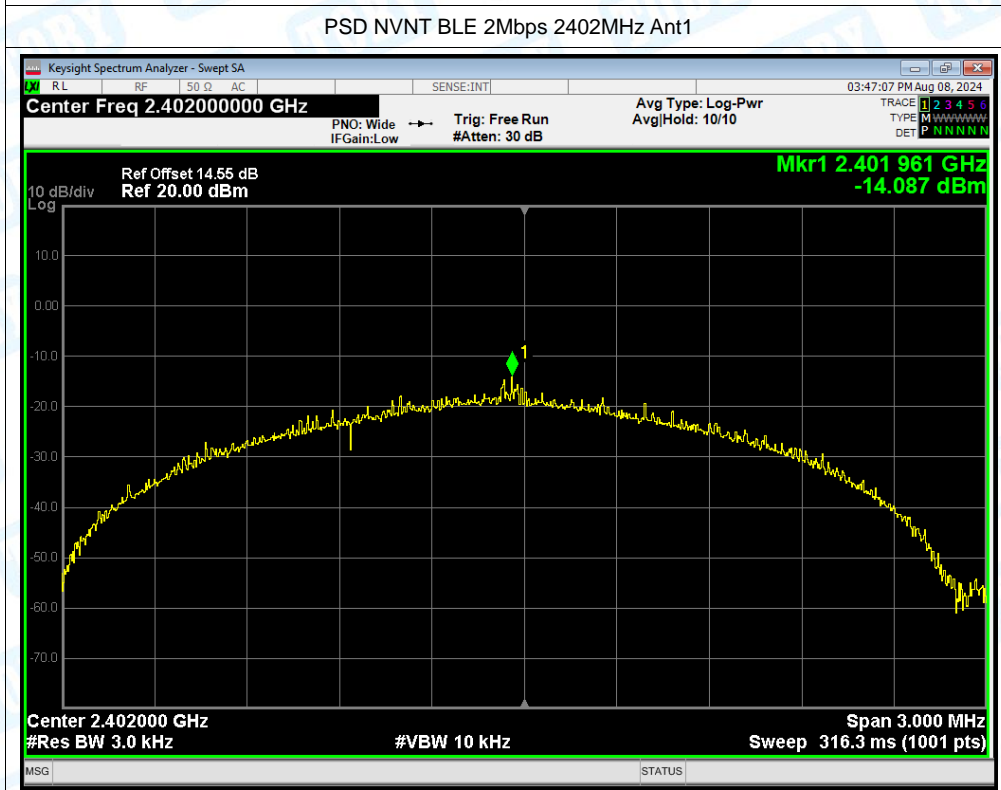
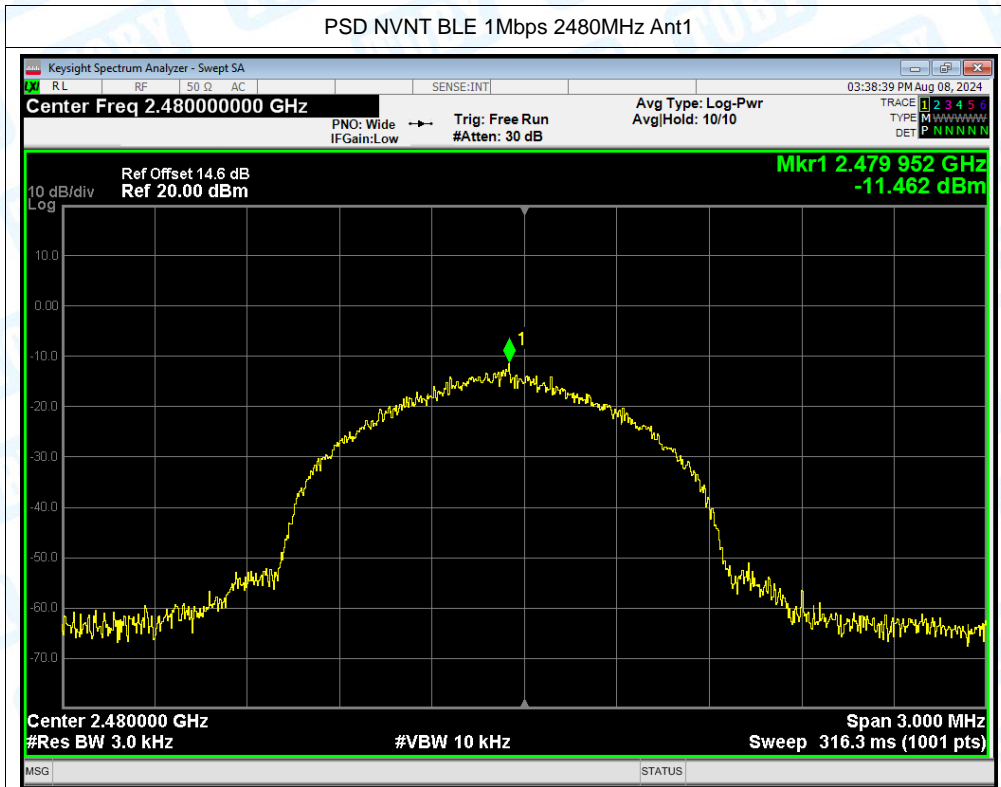
PSD NVNT BLE 1Mbps 2402MHz Ant1

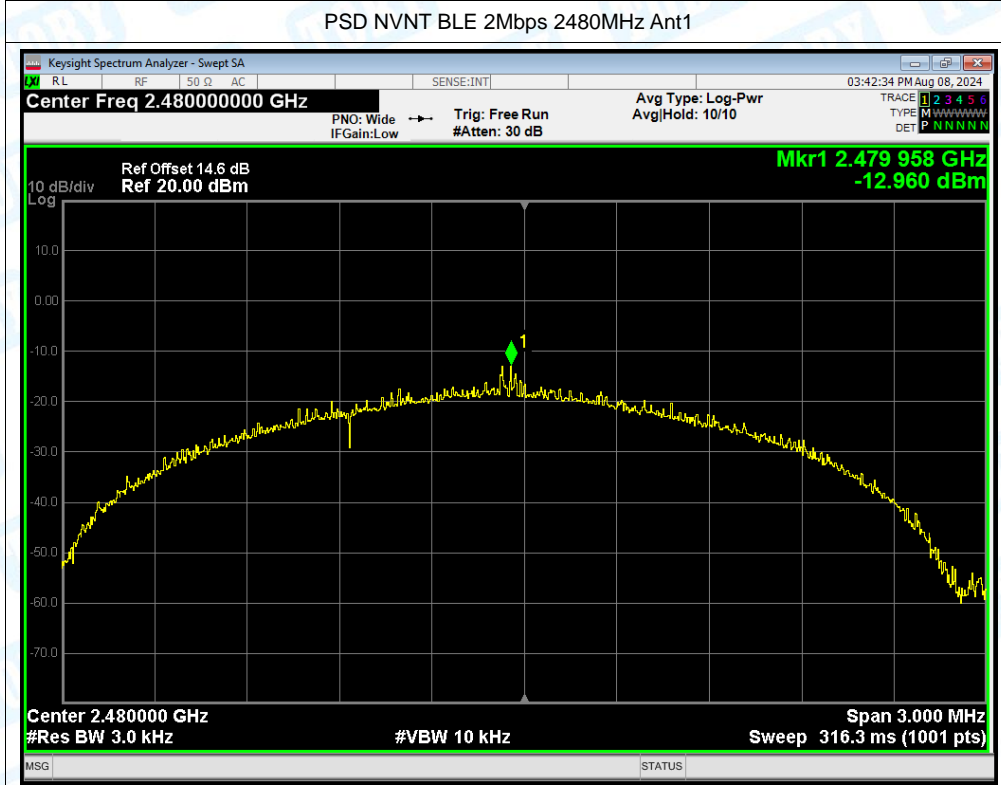
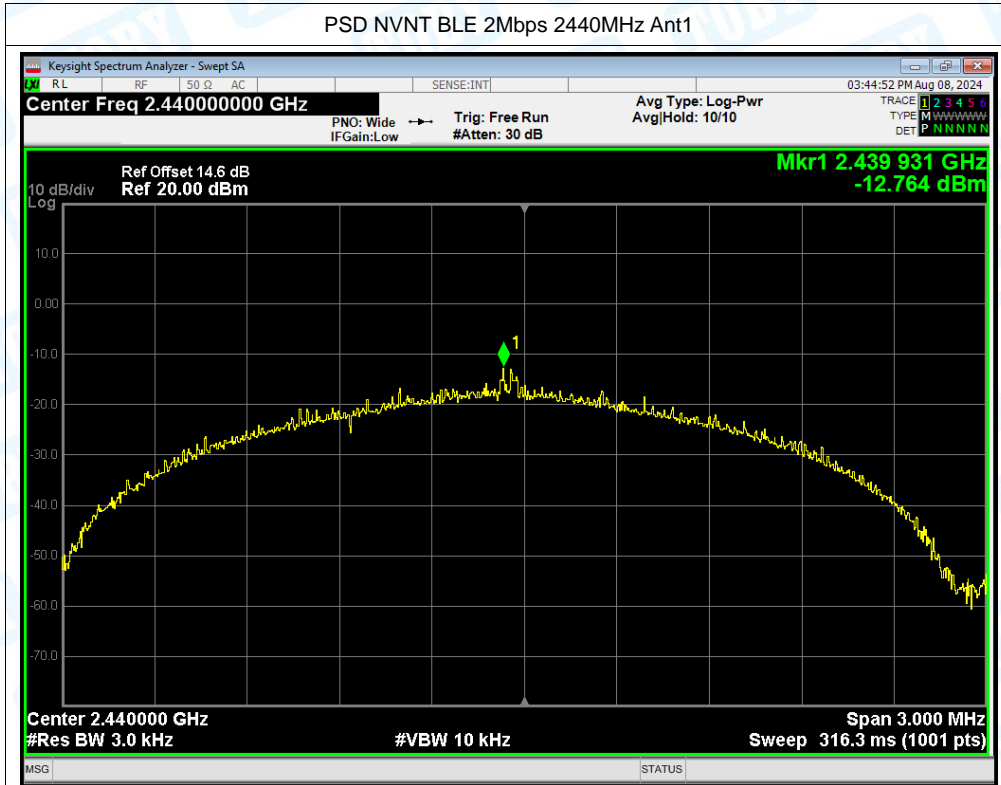


PSD NVNT BLE 1Mbps 2440MHz Ant1









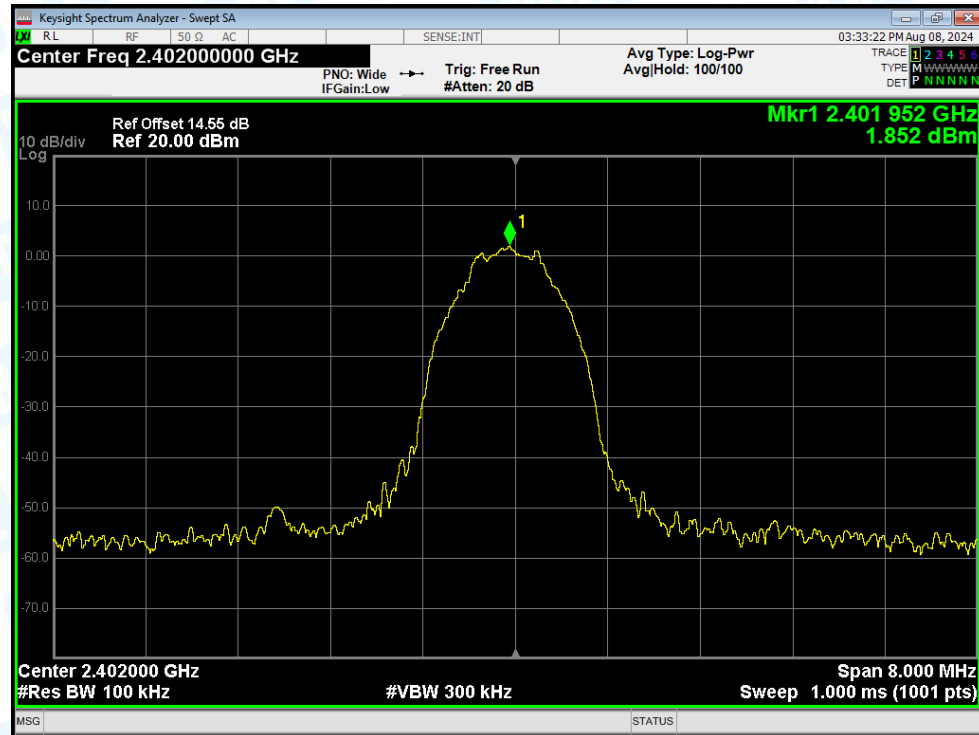


## 6. Band Edge

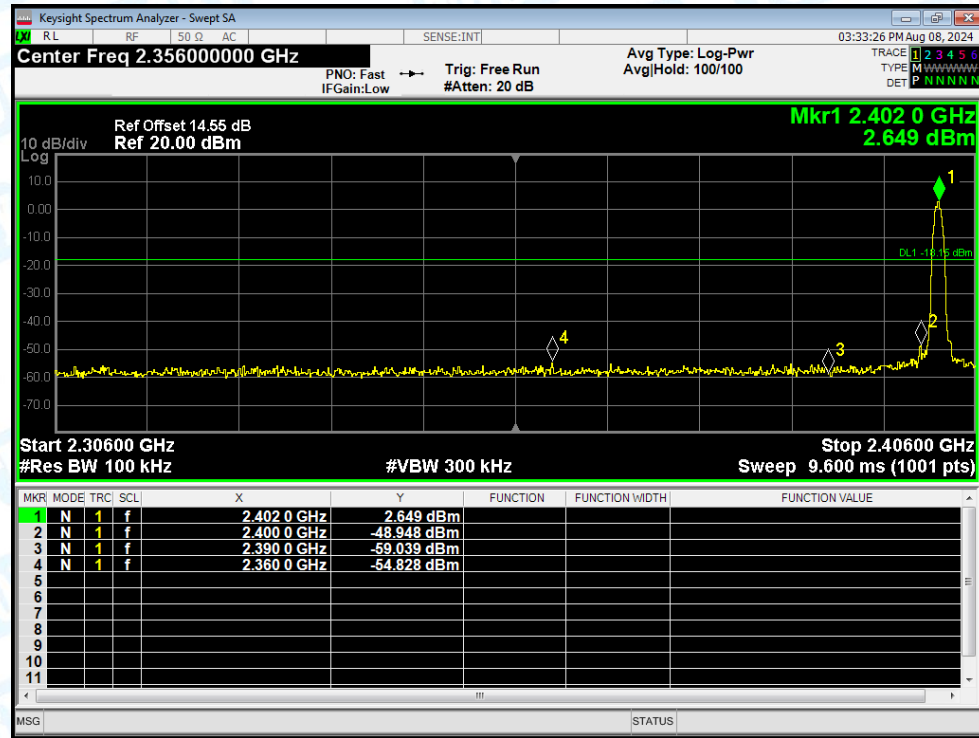
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-56.68	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-55.99	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-56.33	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-57.6	-20	Pass

### Test Graphs

#### Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref

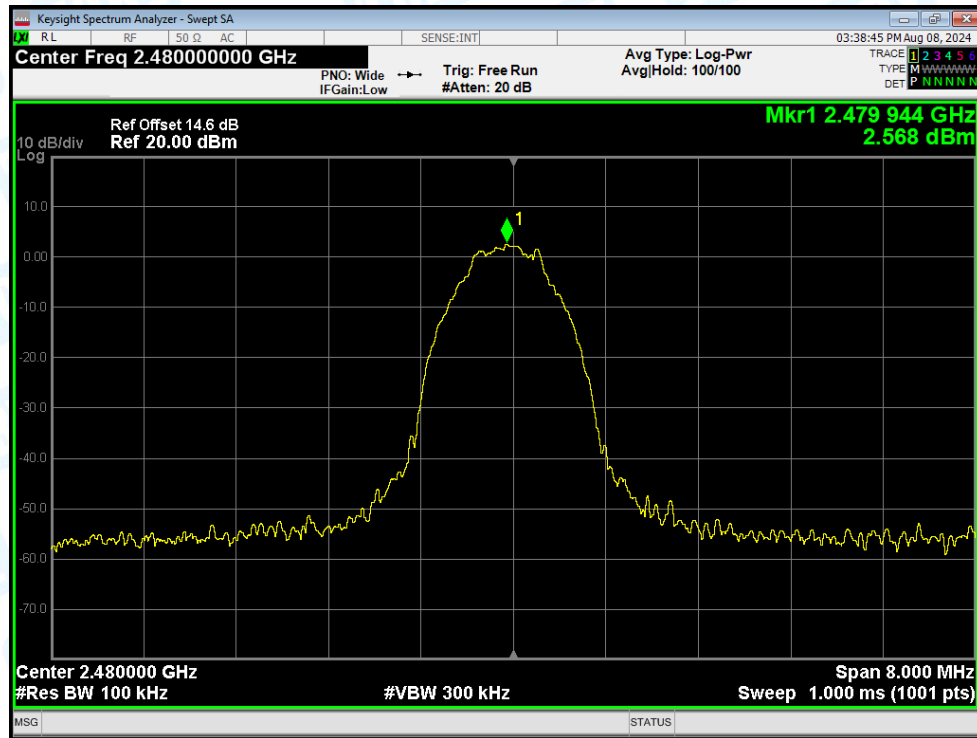


#### Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission

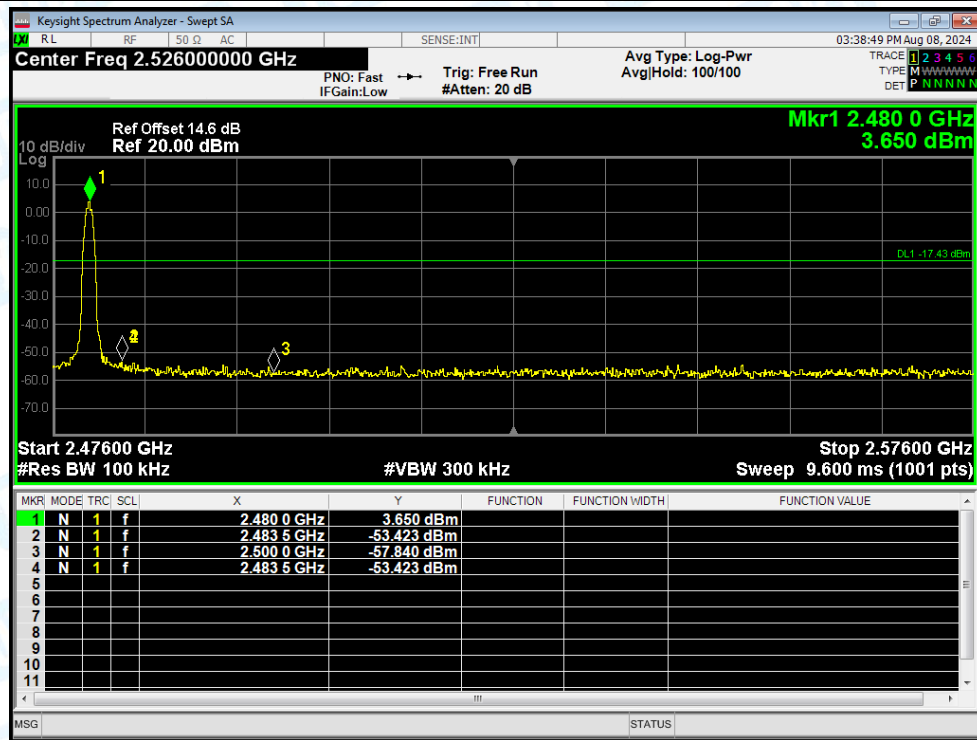


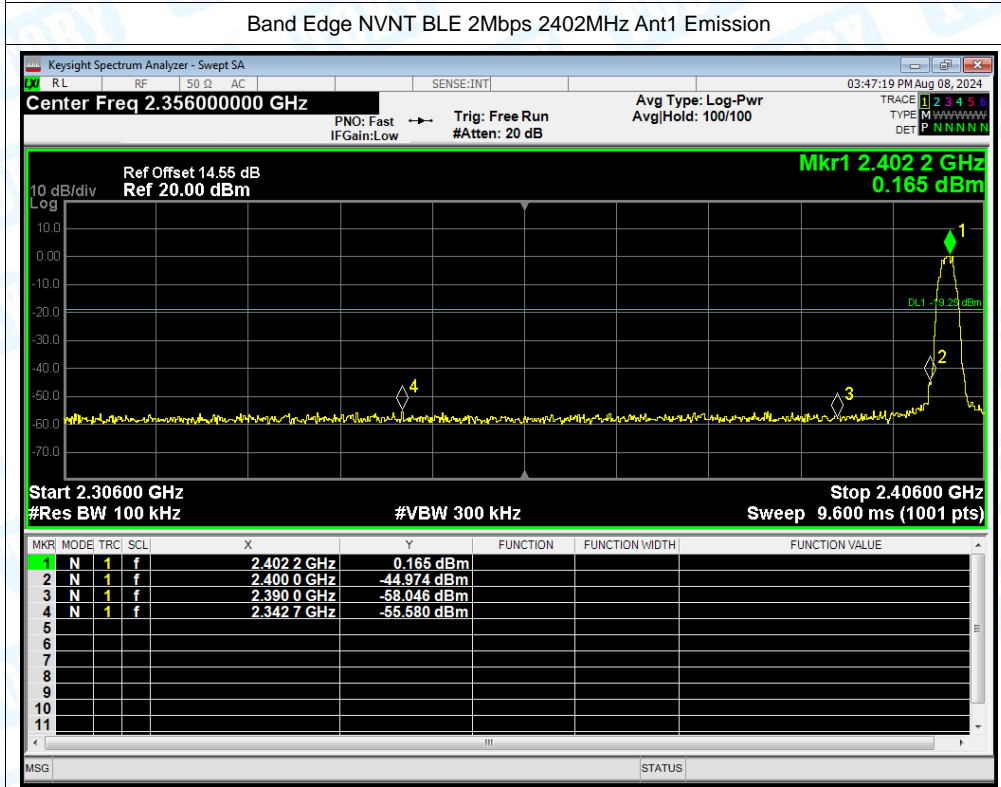
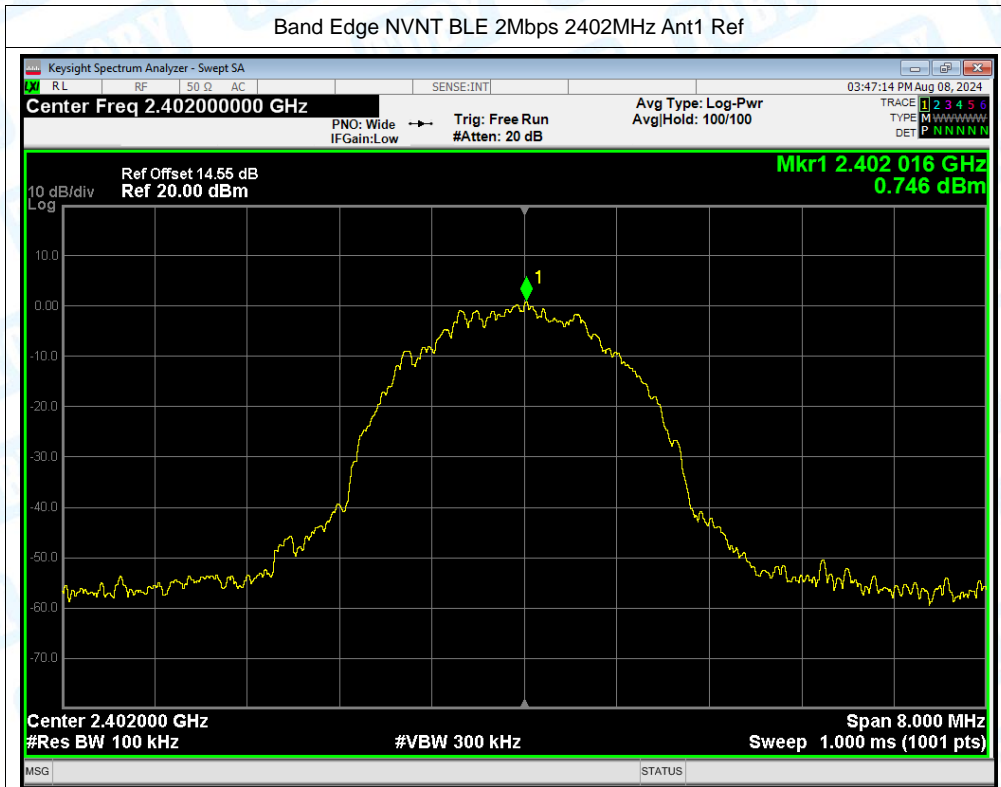


Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Ref



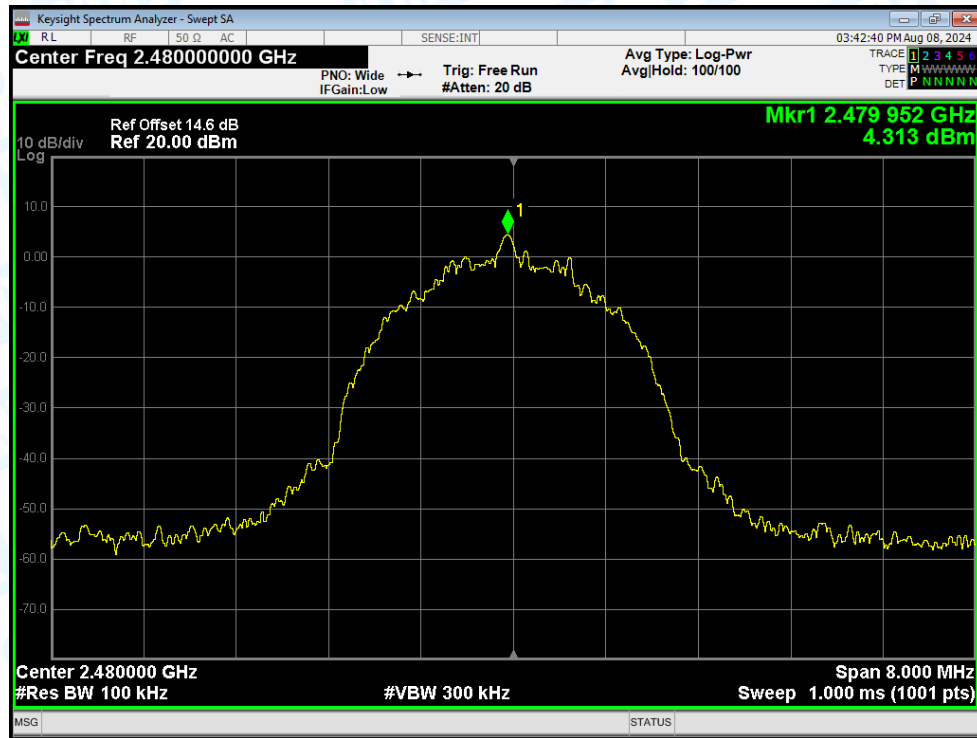
Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Emission



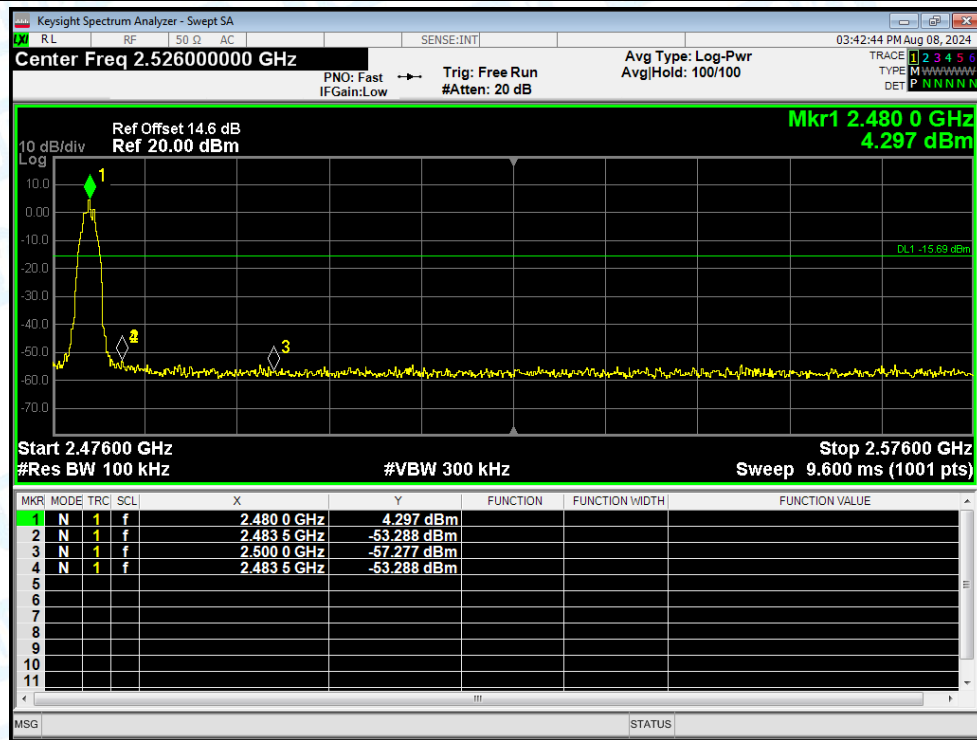




Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Ref



Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Emission



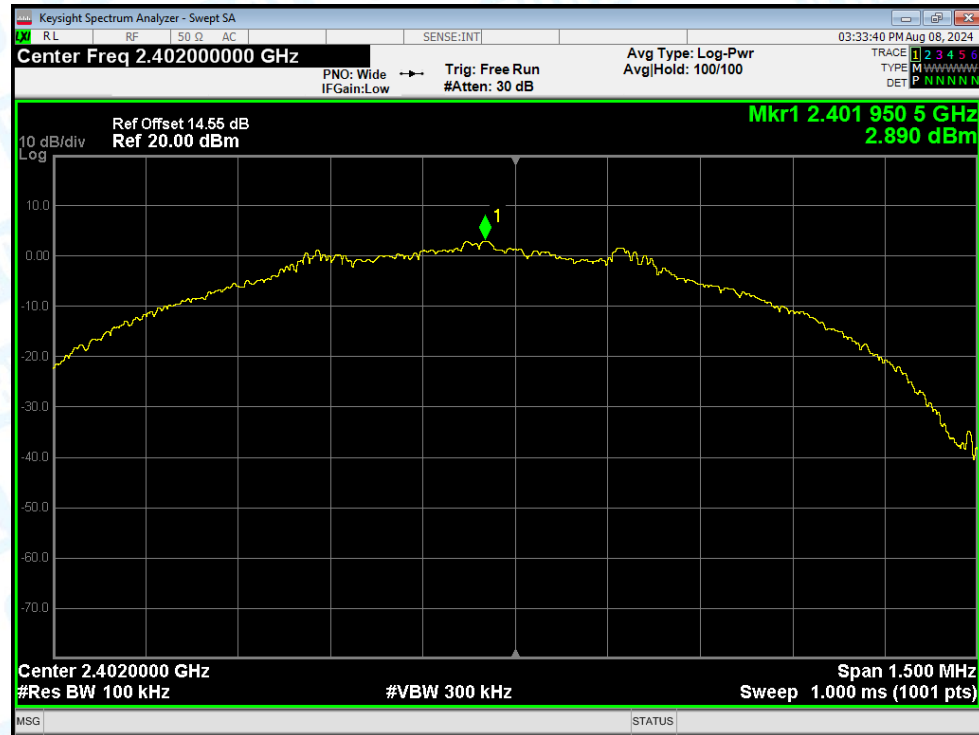
## 7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-35.38	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-36.89	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-36.76	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-36.75	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-37.87	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-36.91	-20	Pass

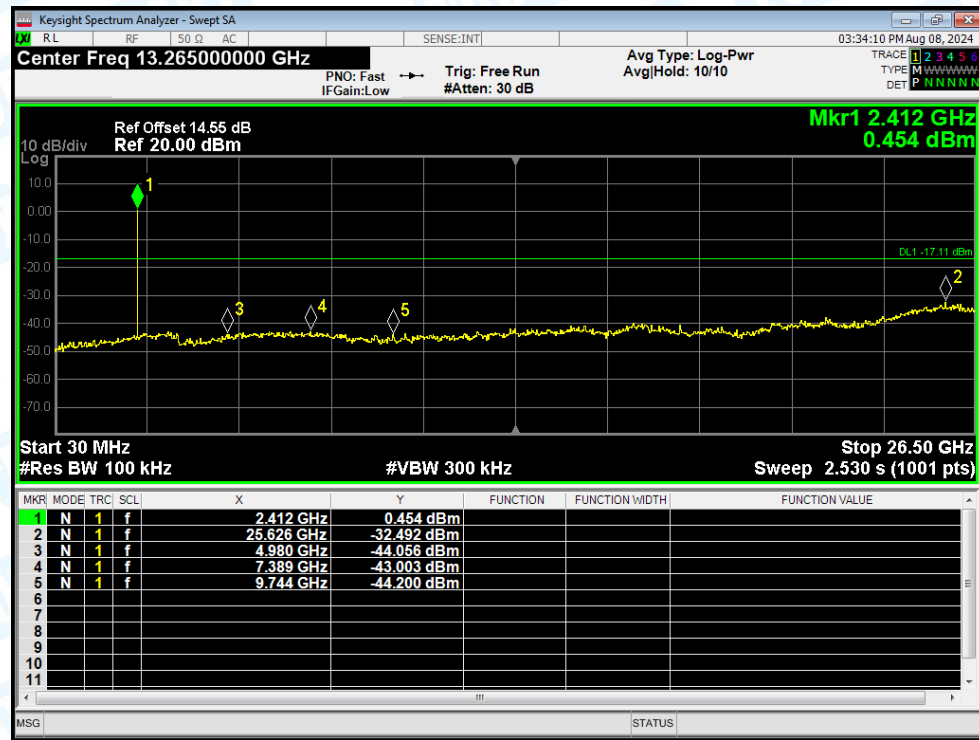


### Test Graphs

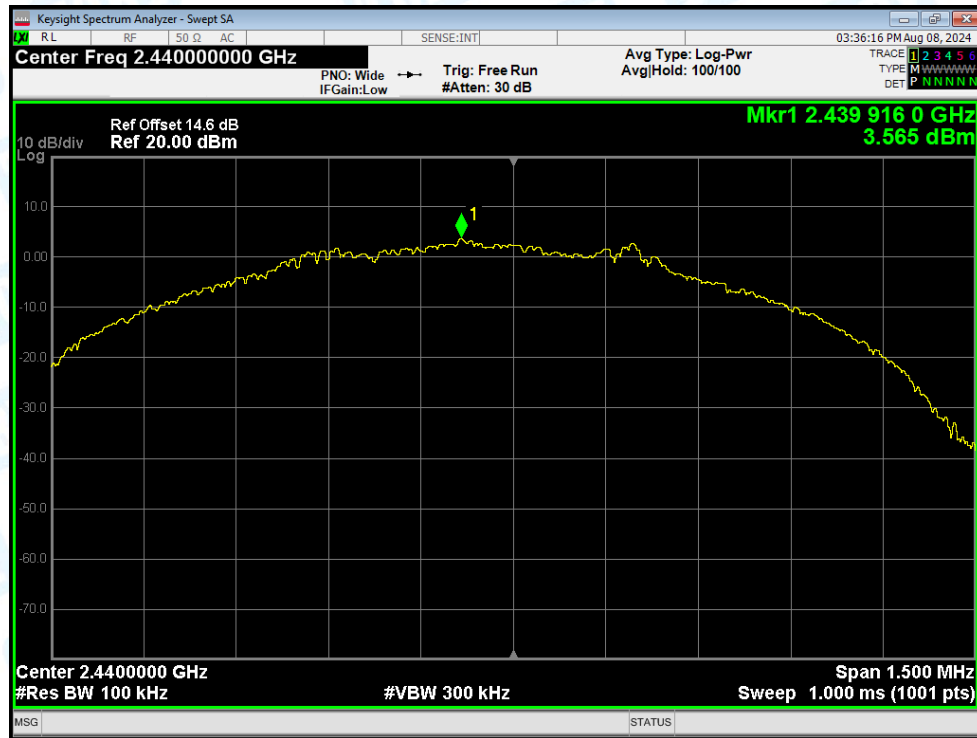
#### Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref



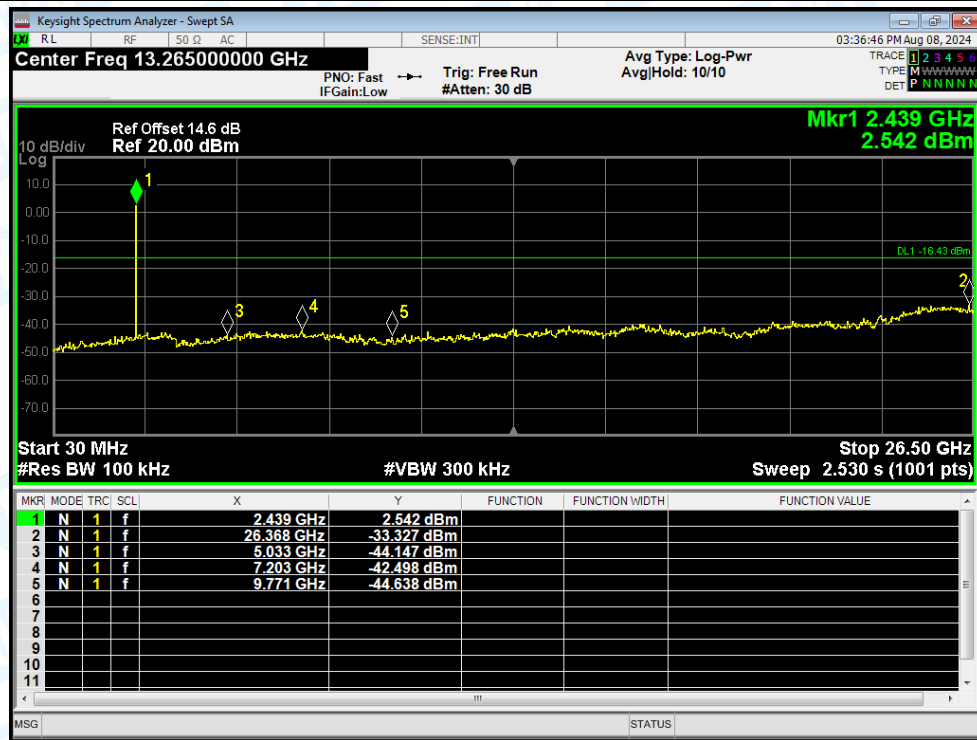
#### Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission



Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Ref

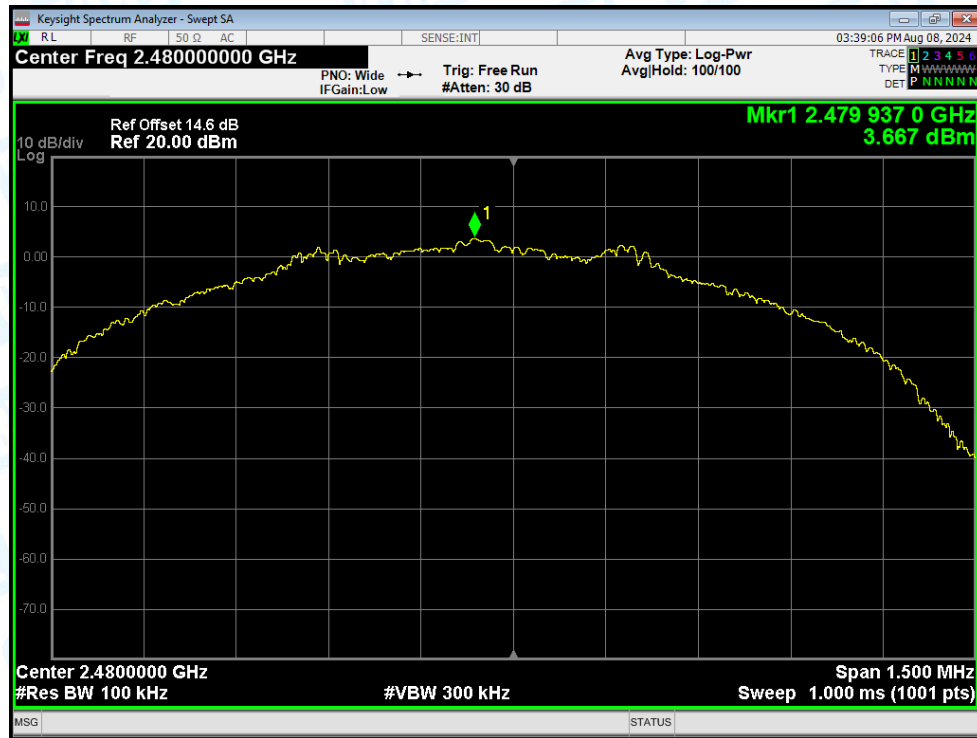


Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Emission

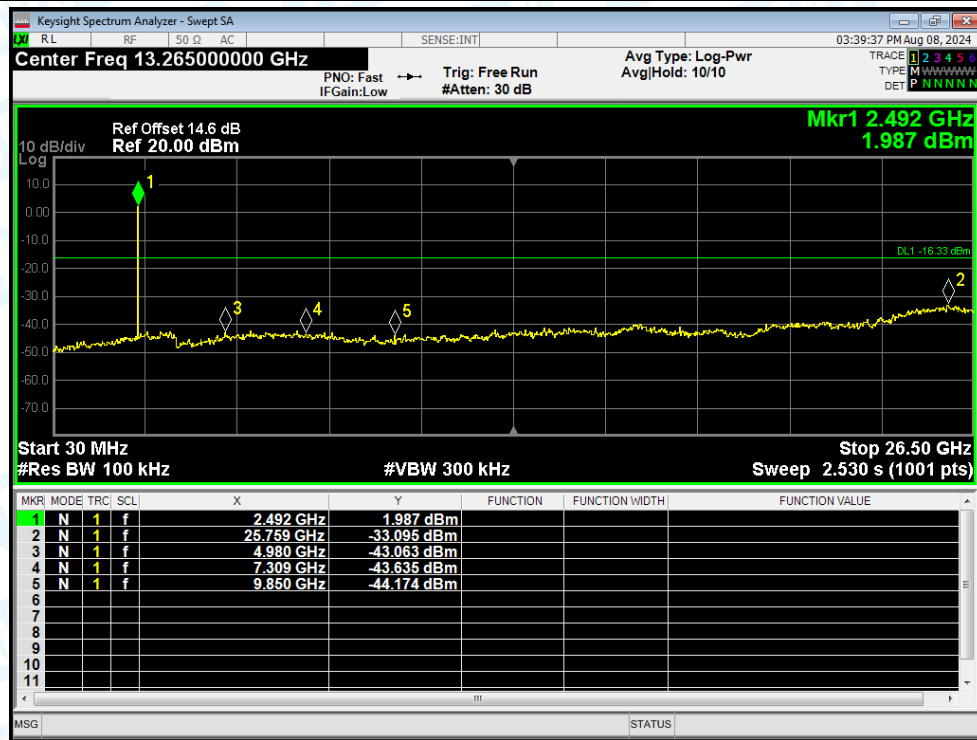




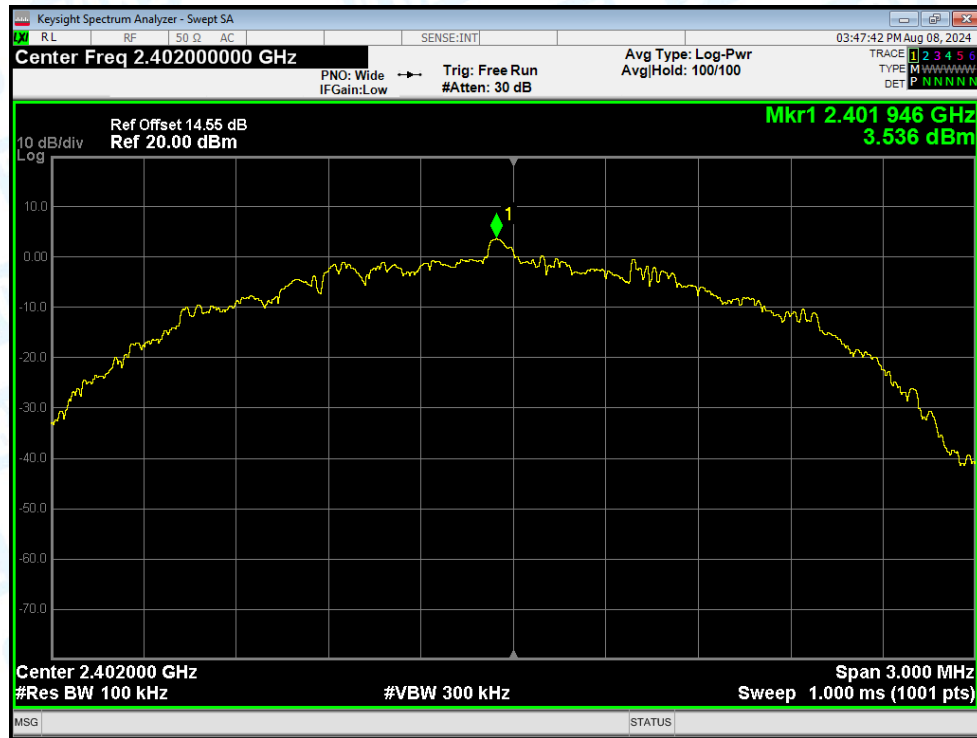
Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Ref



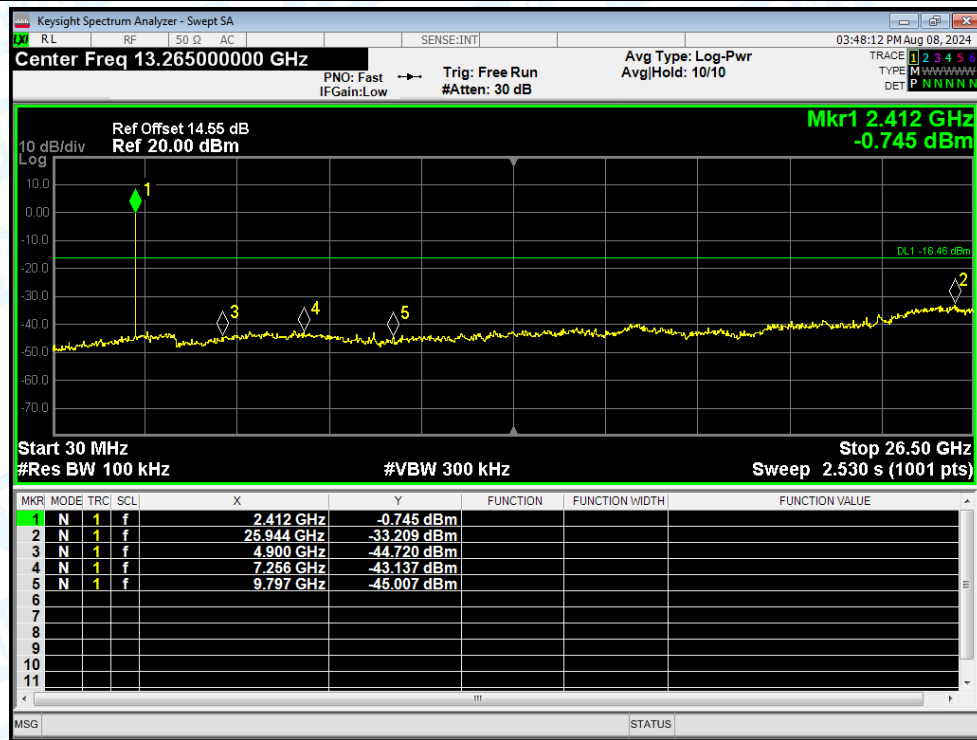
Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Emission



Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Emission

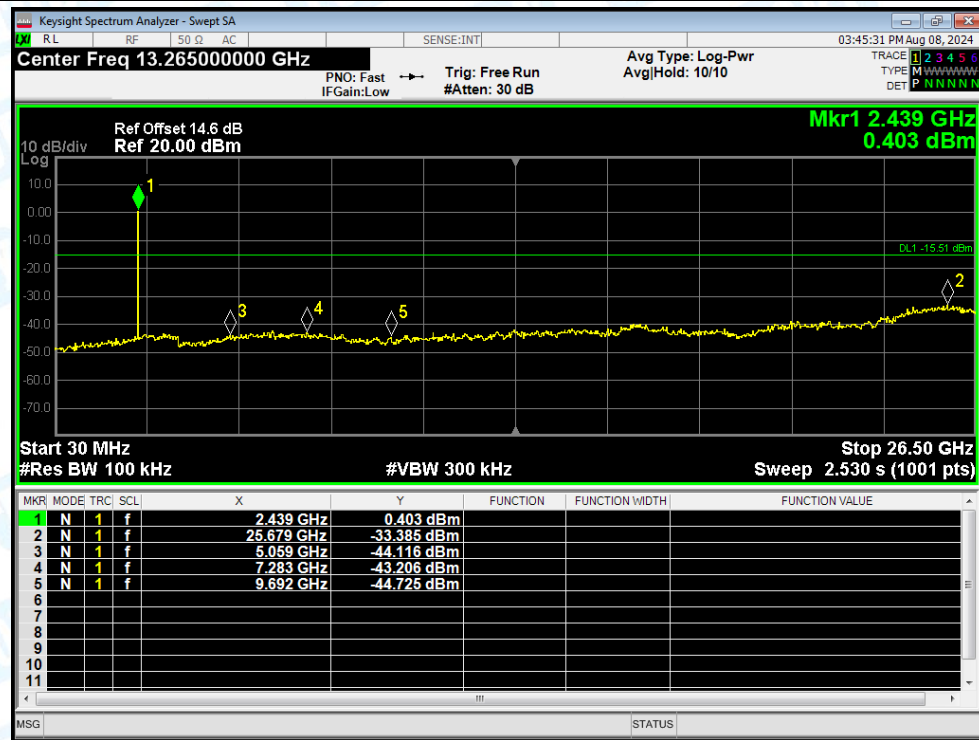




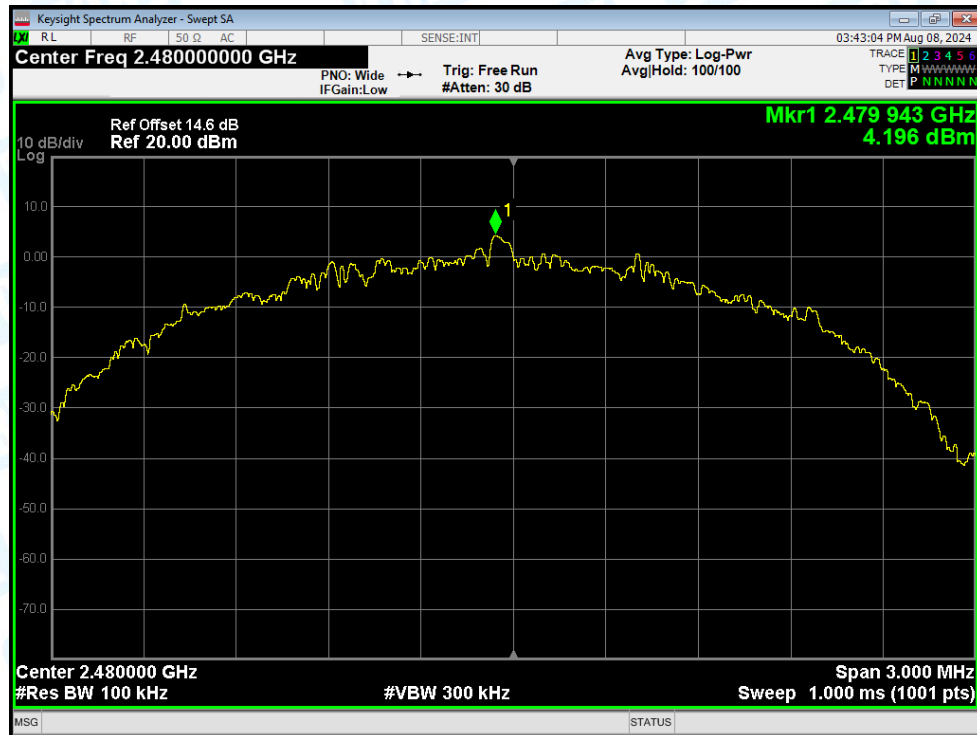
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Ref



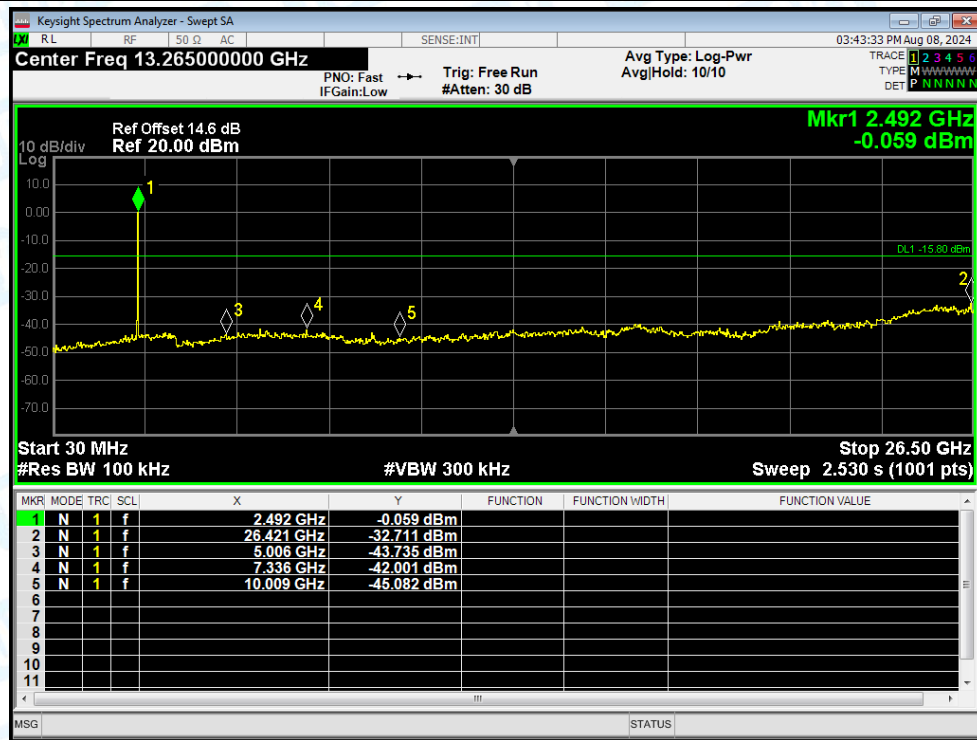
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Emission



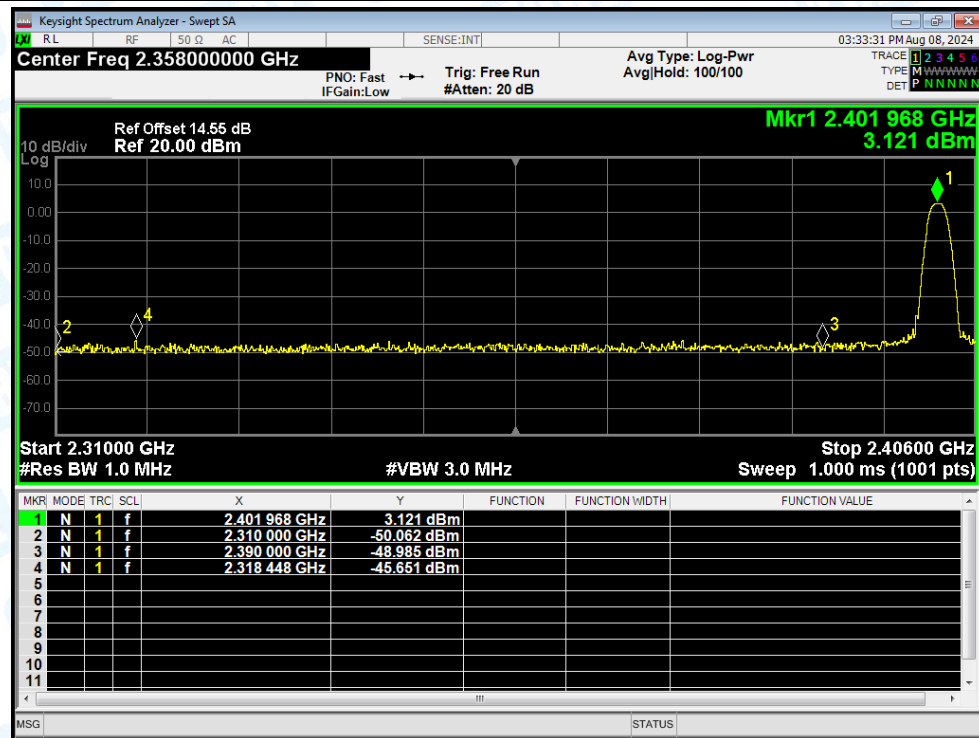


## 8. Restrict Band

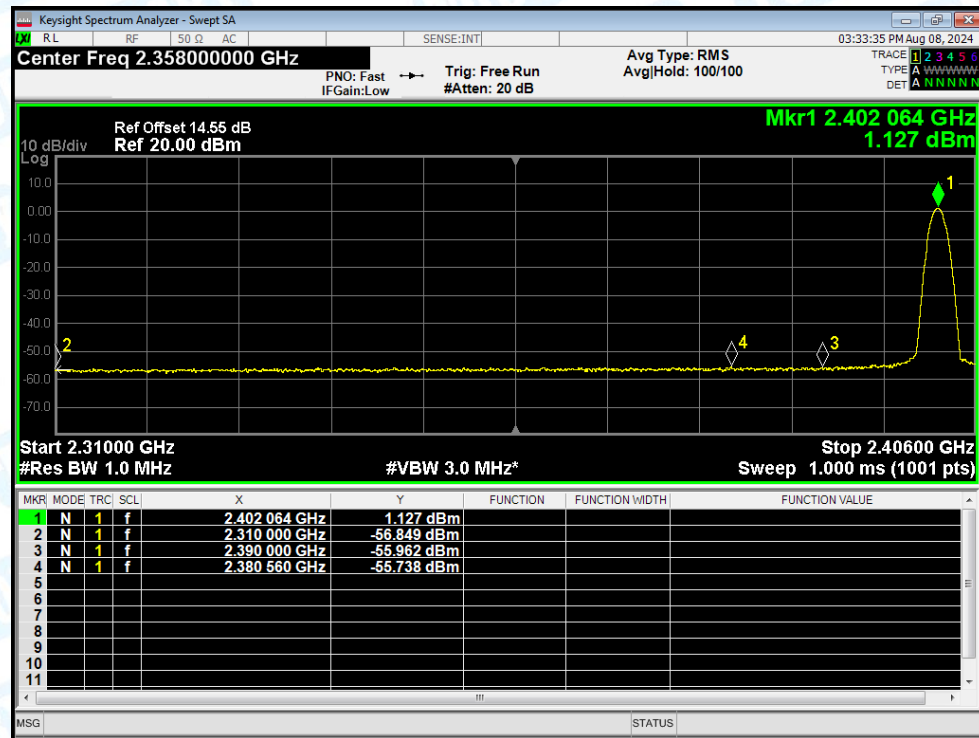
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	2310	-50.06	3	-	48.2	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2310	-56.85	3	0.76	42.17	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2318.448	-45.65	3	-	52.61	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2380.56	-55.74	3	0.76	43.28	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-48.99	3	-	49.27	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-55.96	3	0.76	43.06	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-45.66	3	-	52.6	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-53.96	3	0.76	45.06	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.56	-42.83	3	-	55.43	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2484.616	-53.72	3	0.76	45.3	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-49.09	3	-	49.17	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-56.53	3	0.76	42.49	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-49.1	3	-	49.16	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2310	-57.05	3	2.49	43.7	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2352.816	-45.97	3	-	52.29	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2389.872	-55.62	3	2.49	45.13	Average	54	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-48.66	3	-	49.6	Peak	74	Pass
NVNT	BLE 2Mbps	2402	Ant1	2390	-56.11	3	2.49	44.64	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-43.93	3	-	54.33	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.5	-53.83	3	2.45	46.88	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.728	-43.31	3	-	54.95	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2483.584	-53.32	3	2.45	47.39	Average	54	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-46.95	3	-	51.31	Peak	74	Pass
NVNT	BLE 2Mbps	2480	Ant1	2500	-55.37	3	2.45	45.34	Average	54	Pass

### Test Graphs

#### Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak

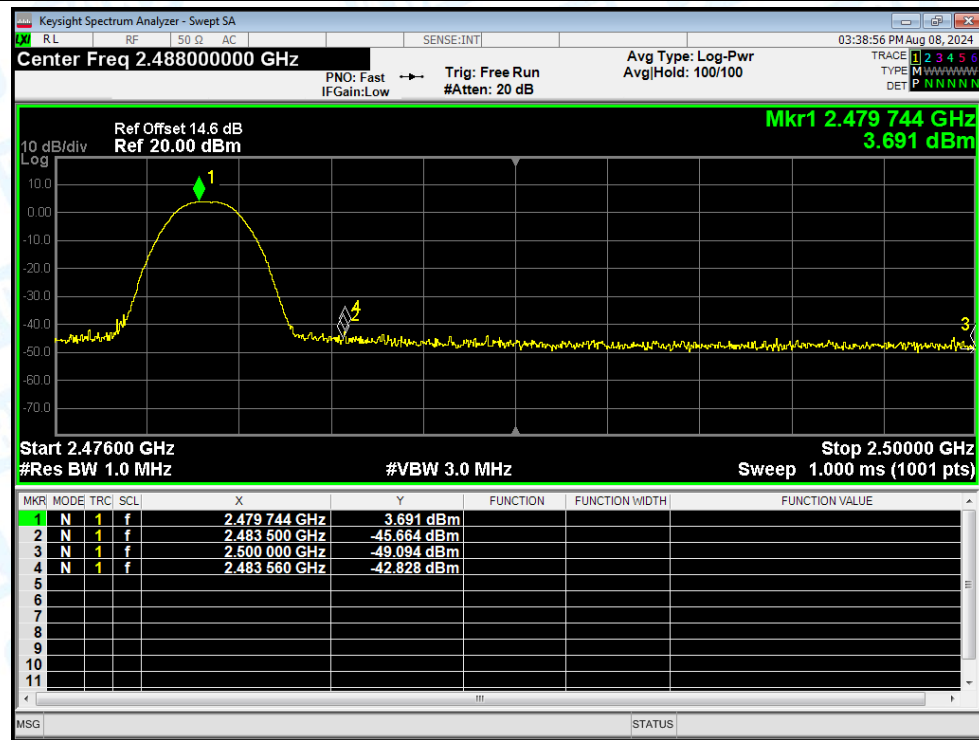


#### Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average

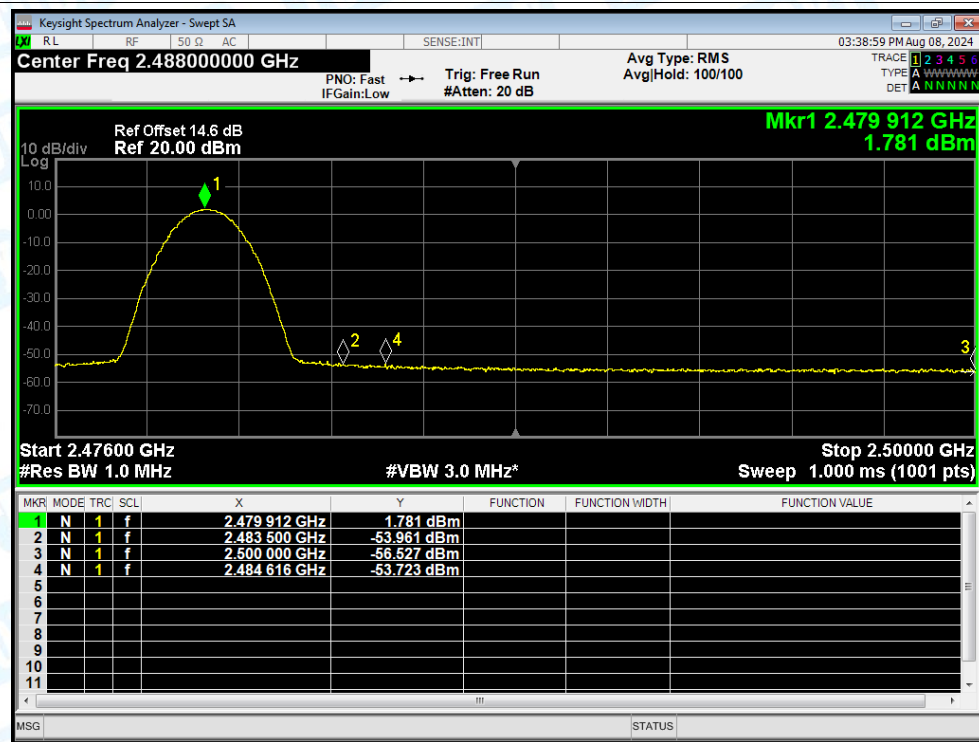




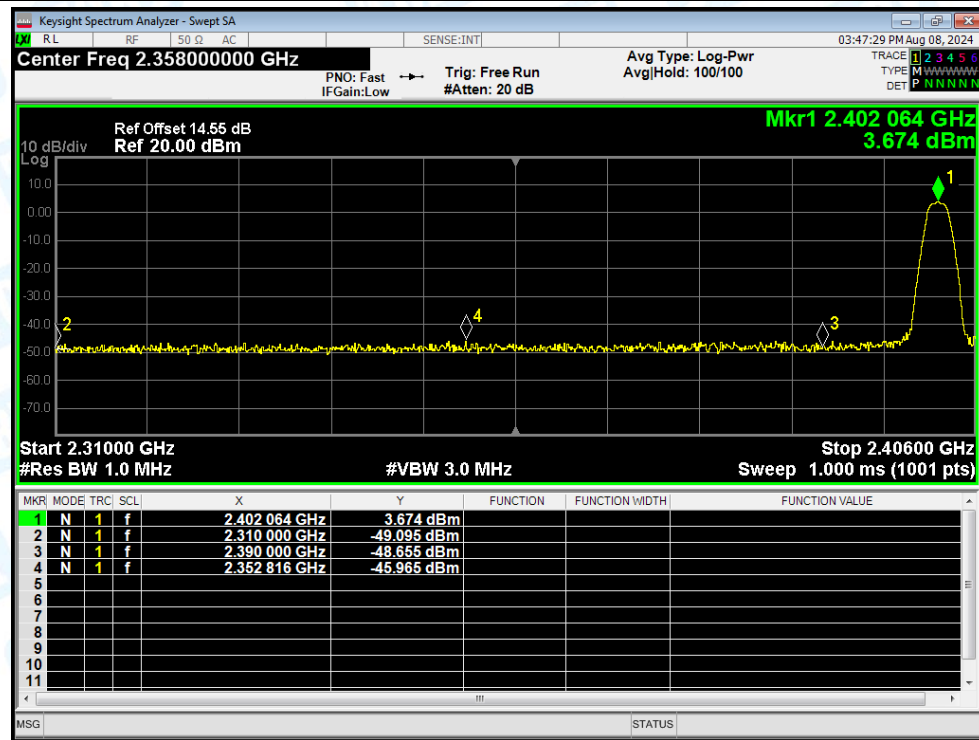
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Peak



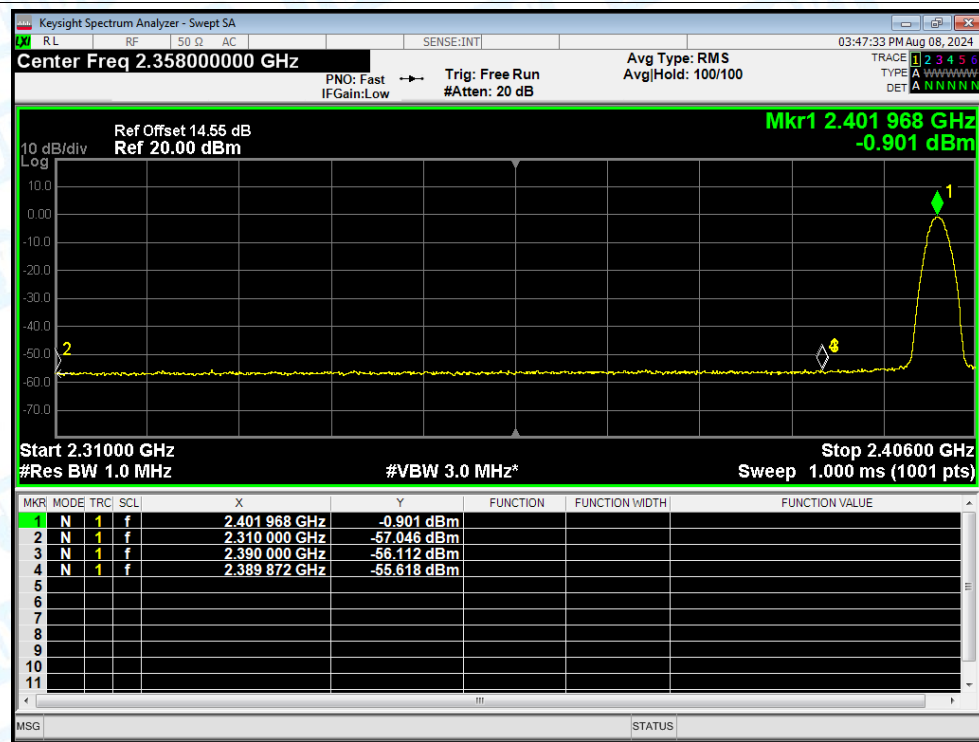
Restrict Band NVNT BLE 1Mbps 2480MHz Ant1 Average



Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Peak

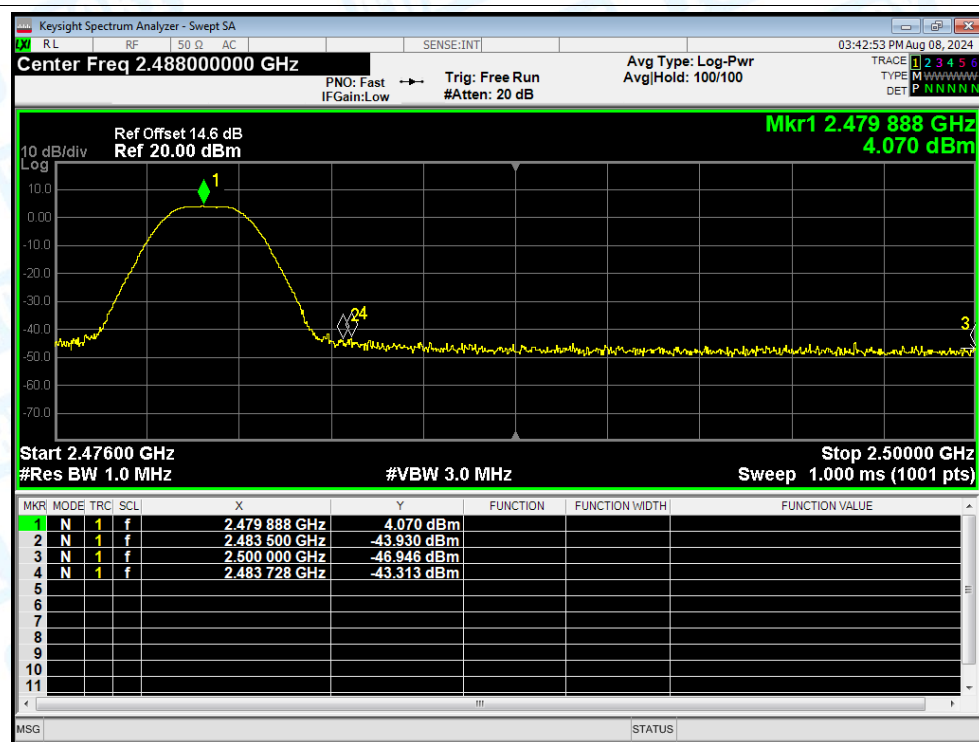


Restrict Band NVNT BLE 2Mbps 2402MHz Ant1 Average

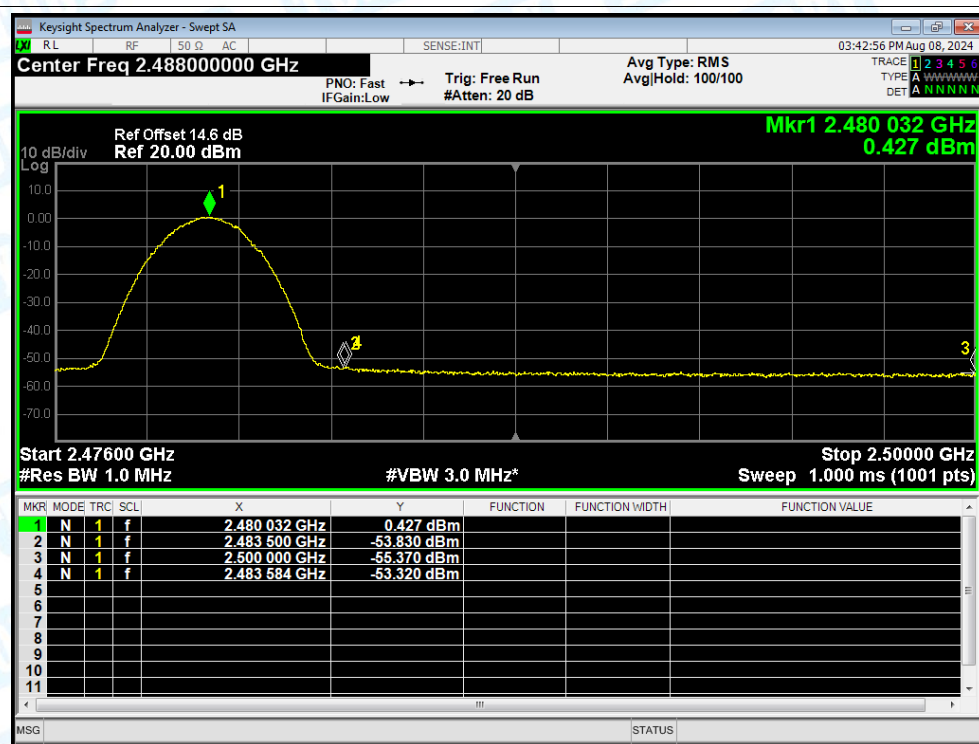




Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Peak



Restrict Band NVNT BLE 2Mbps 2480MHz Ant1 Average



-----END OF THE REPORT-----