

Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: Electric Scooter

Test Model: W3

Environmental Conditions

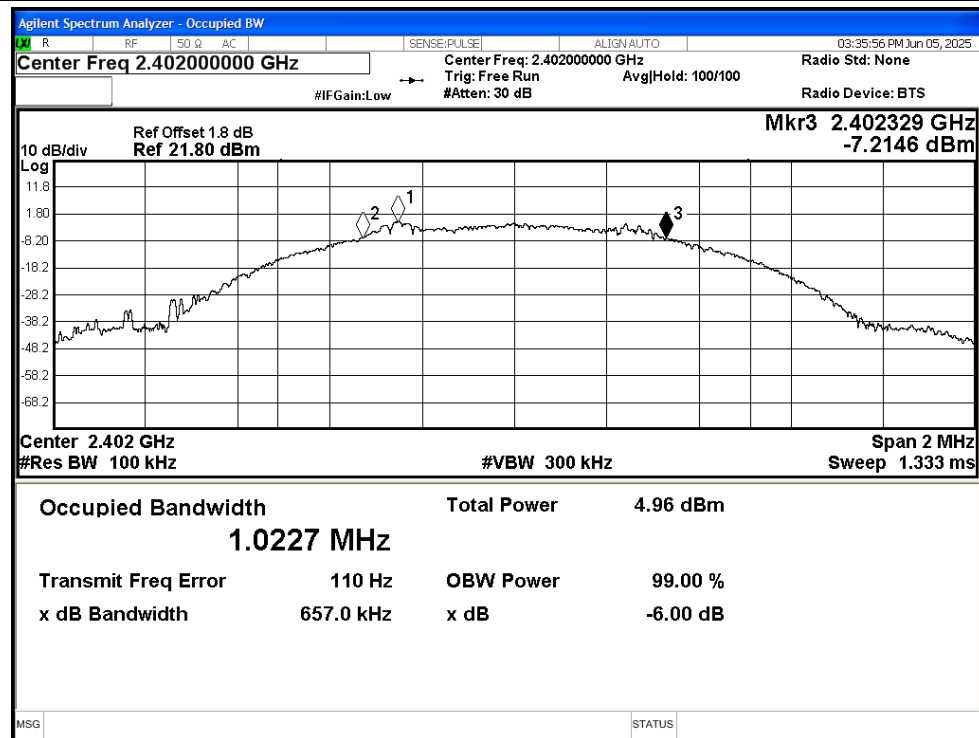
Temperature:	23.7° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

A.1 -6dB Bandwidth

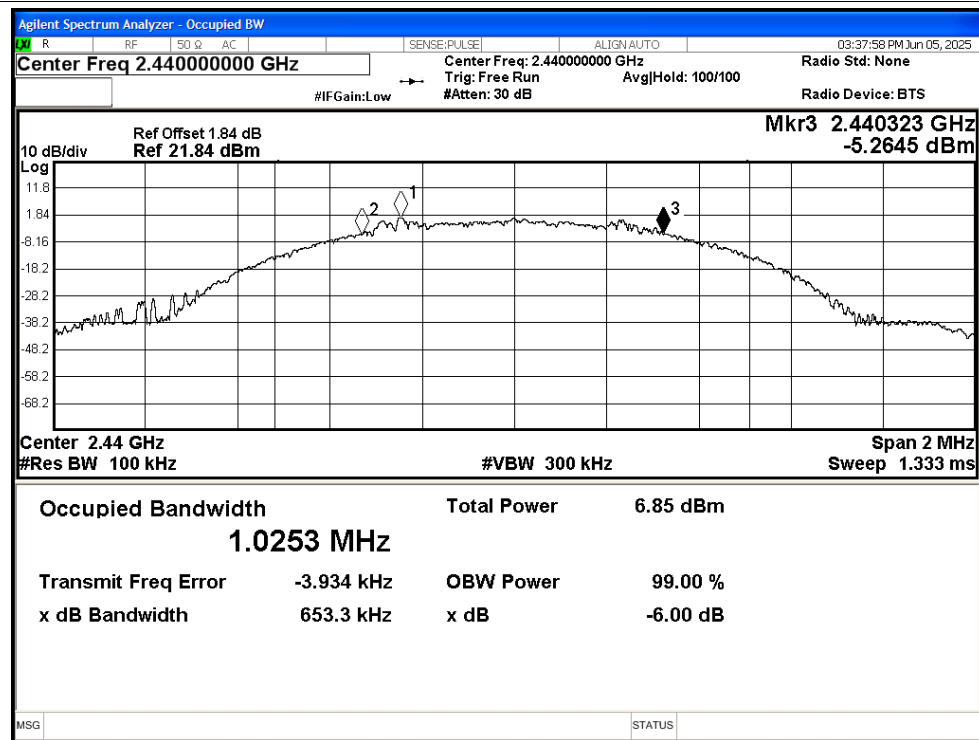
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant	0.657	≥ 0.5	Pass
NVNT	BLE 1M	2440	Ant	0.653	≥ 0.5	Pass
NVNT	BLE 1M	2480	Ant	0.669	≥ 0.5	Pass
NVNT	BLE 2M	2402	Ant	1.158	≥ 0.5	Pass
NVNT	BLE 2M	2440	Ant	1.135	≥ 0.5	Pass
NVNT	BLE 2M	2480	Ant	1.203	≥ 0.5	Pass

Test Graphs

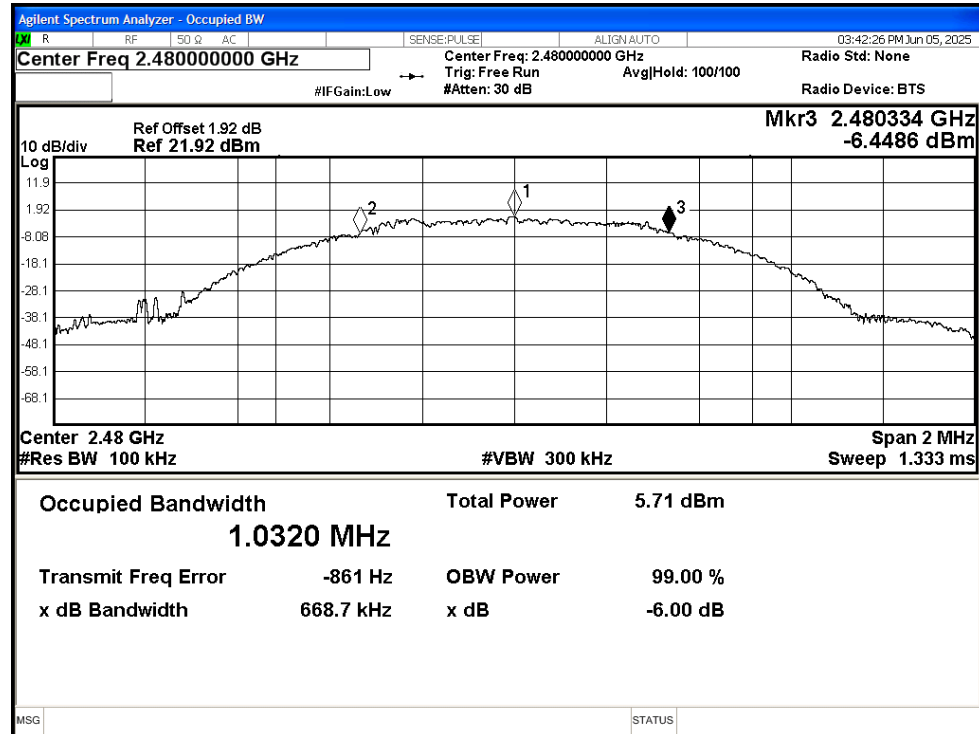
-6dB Bandwidth NVNT BLE 1M 2402MHz Ant



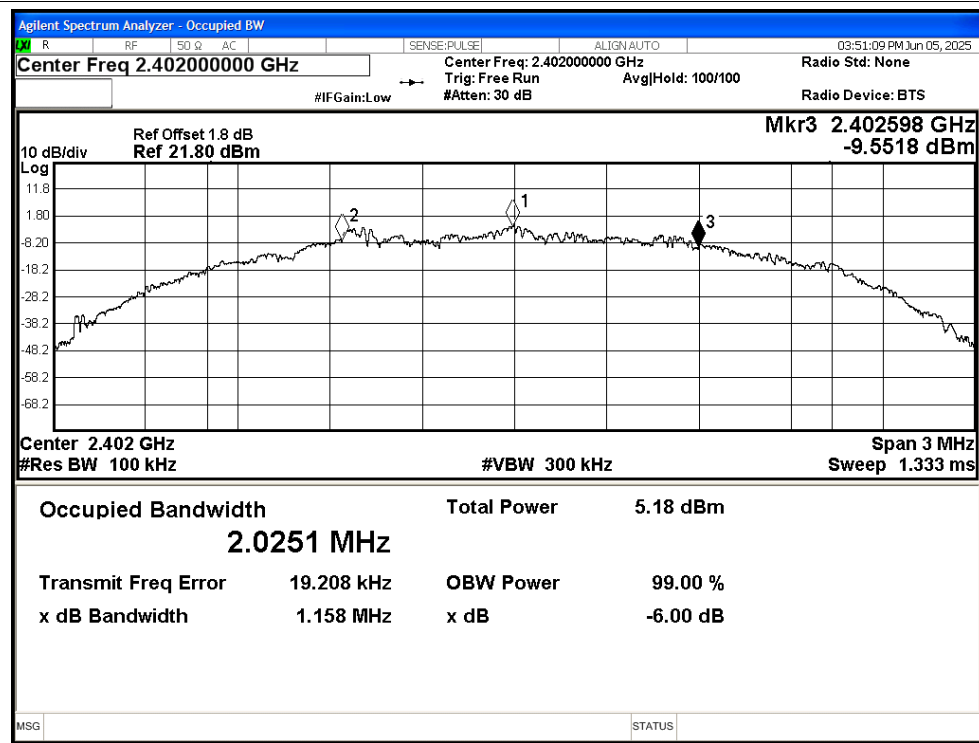
-6dB Bandwidth NVNT BLE 1M 2440MHz Ant



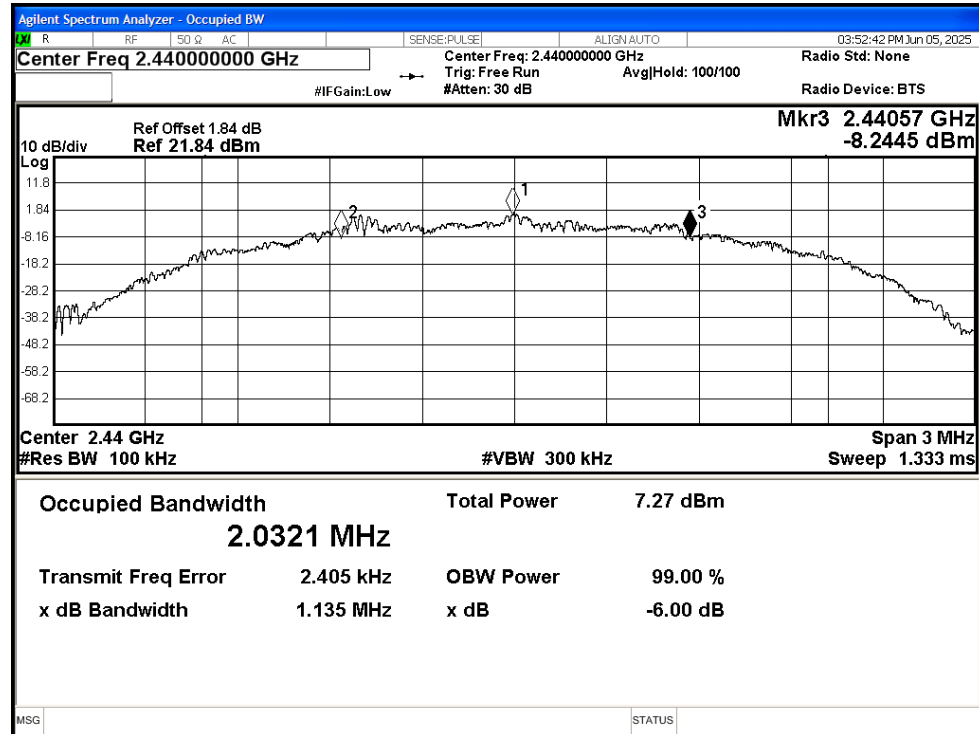
-6dB Bandwidth NVNT BLE 1M 2480MHz Ant



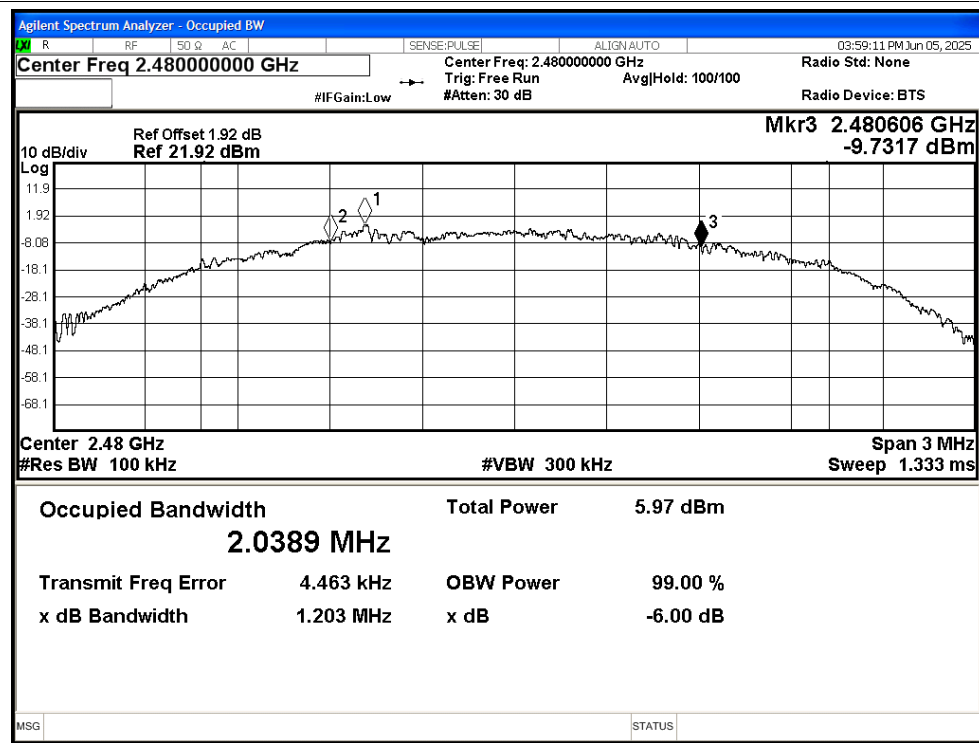
-6dB Bandwidth NVNT BLE 2M 2402MHz Ant



-6dB Bandwidth NVNT BLE 2M 2440MHz Ant



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant

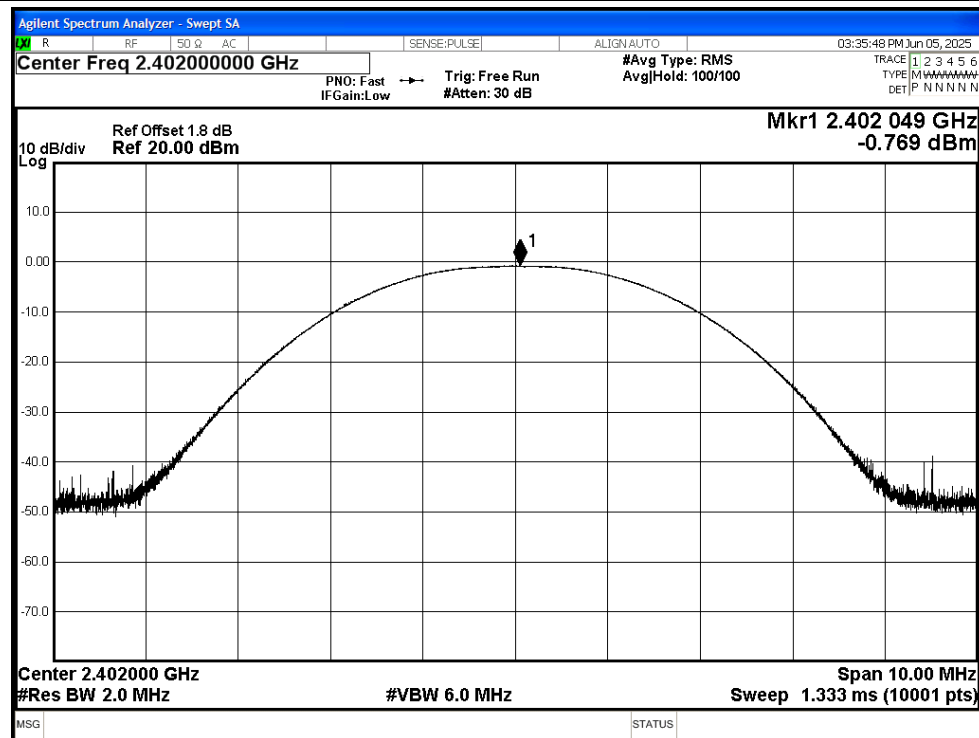


A.2 Maximum Peak Conducted Output Power

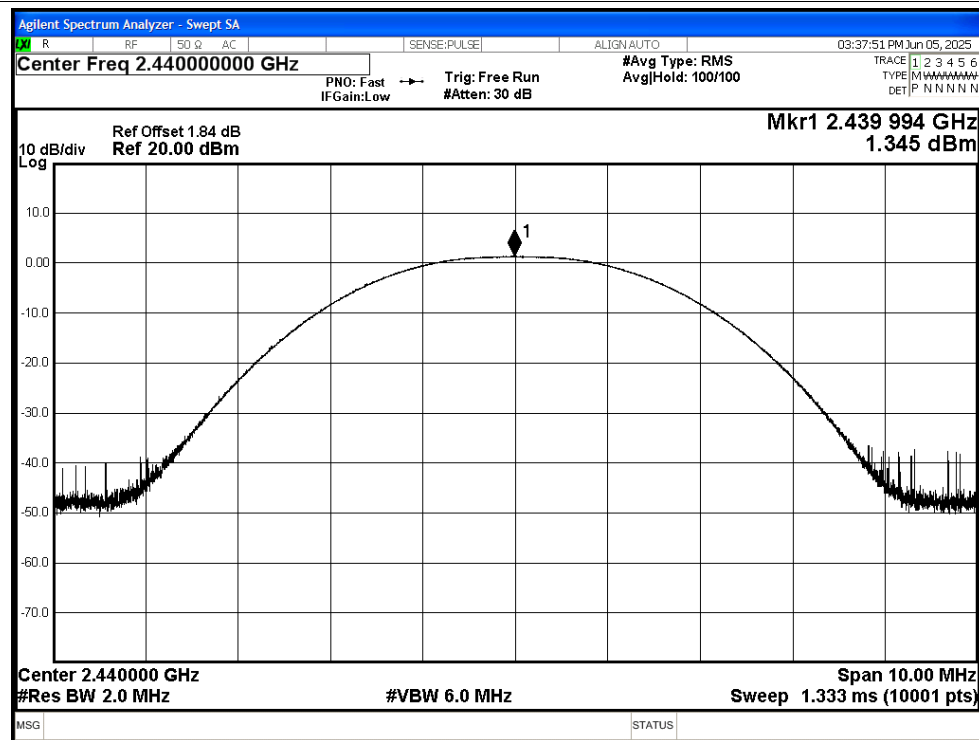
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant	-0.77	30	Pass
NVNT	BLE 1M	2440	Ant	1.35	30	Pass
NVNT	BLE 1M	2480	Ant	0.3	30	Pass
NVNT	BLE 2M	2402	Ant	-0.95	30	Pass
NVNT	BLE 2M	2440	Ant	1.16	30	Pass
NVNT	BLE 2M	2480	Ant	0.14	30	Pass

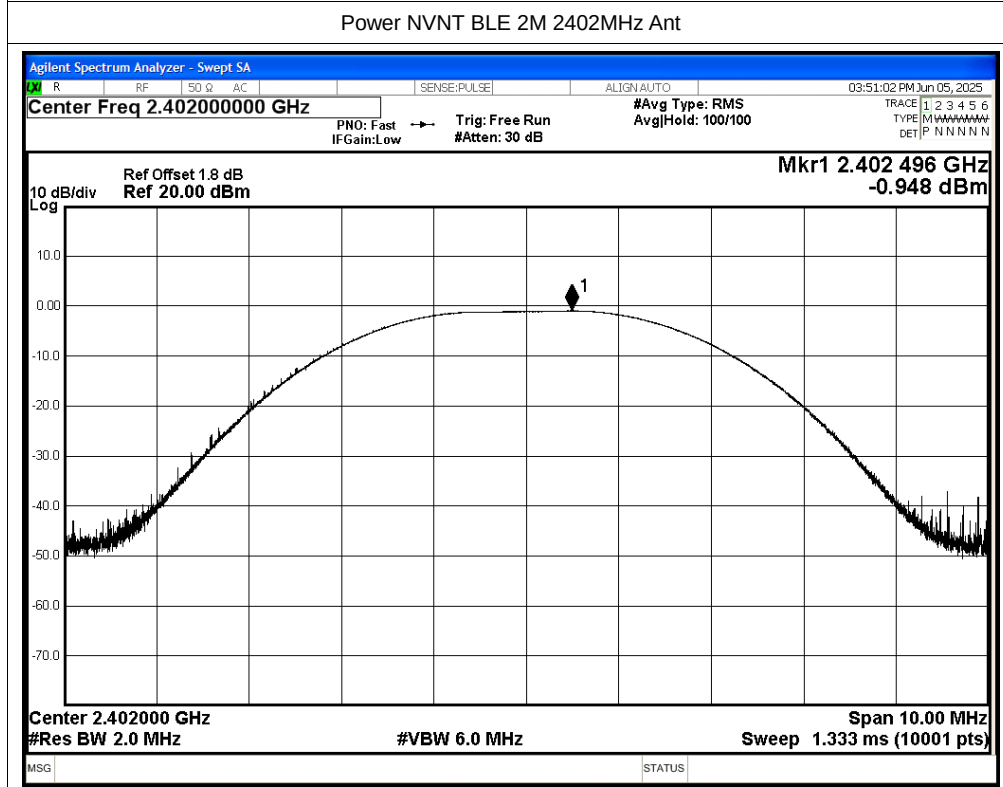
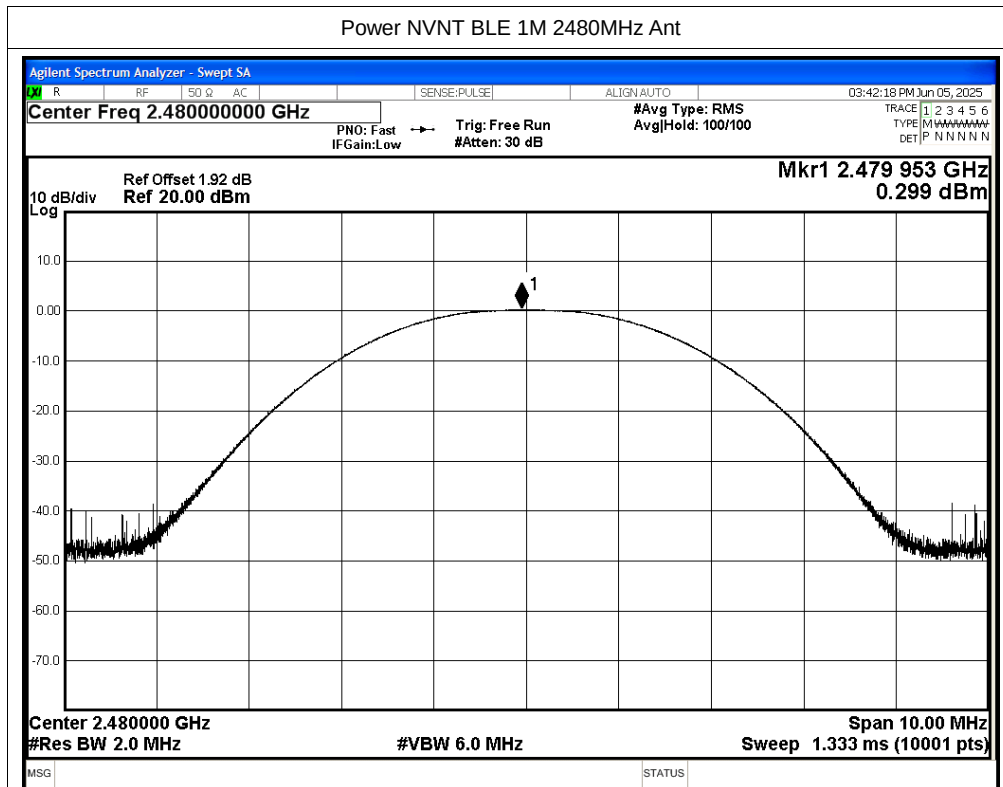
Test Graphs

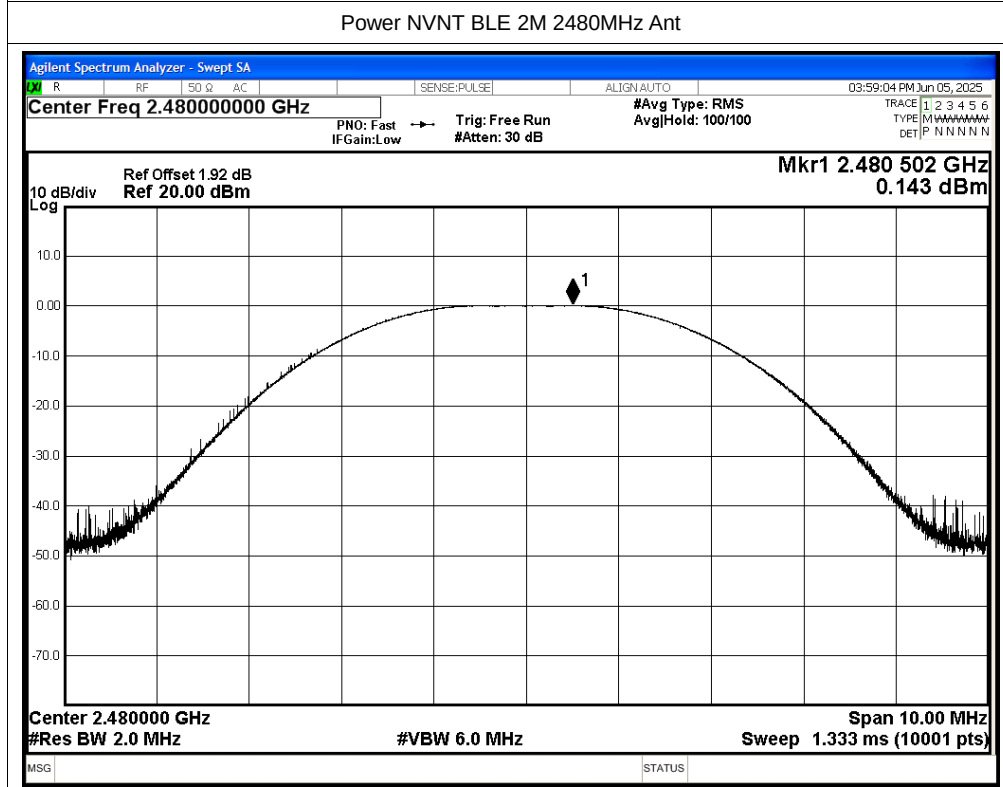
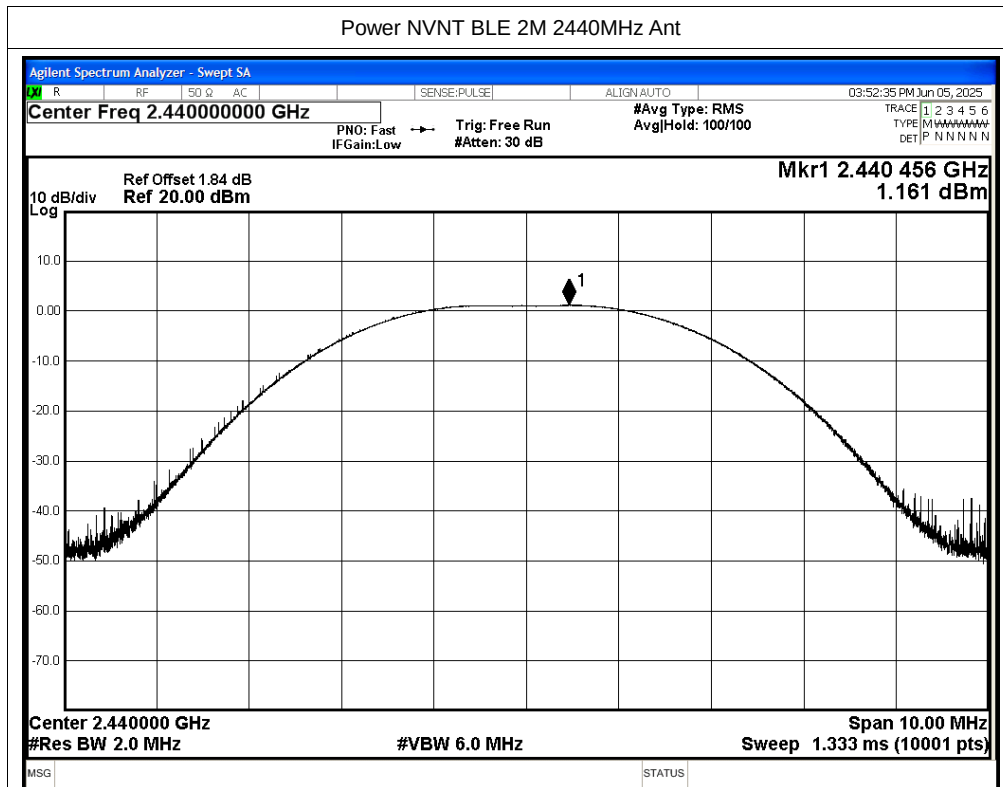
Power NVNT BLE 1M 2402MHz Ant



Power NVNT BLE 1M 2440MHz Ant





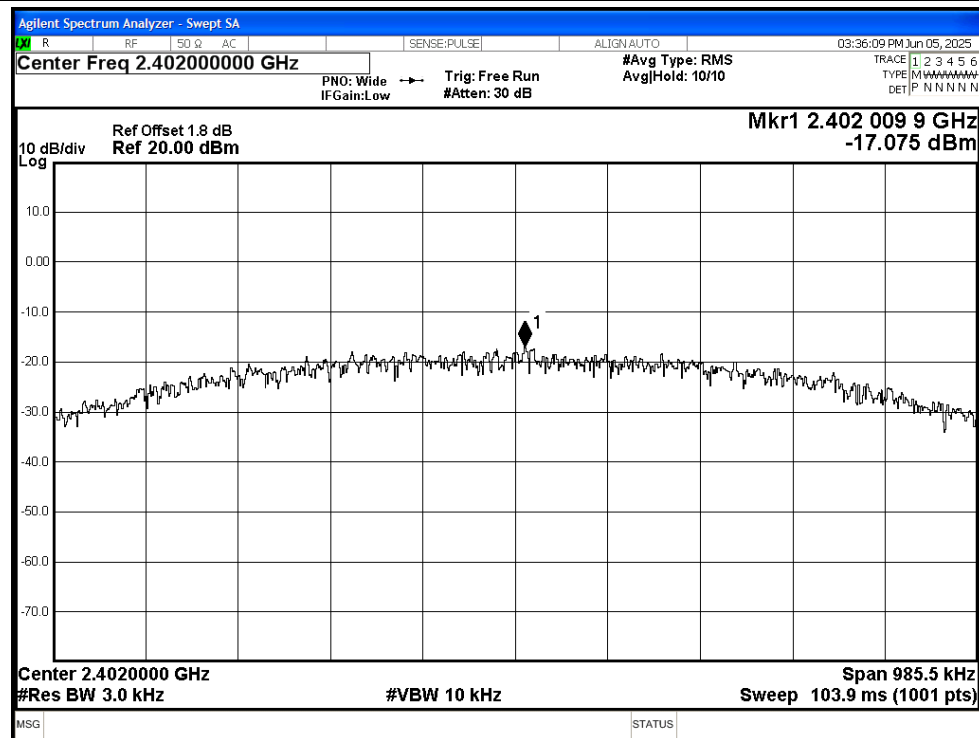


A.3 Maximum Power Spectral Density Level

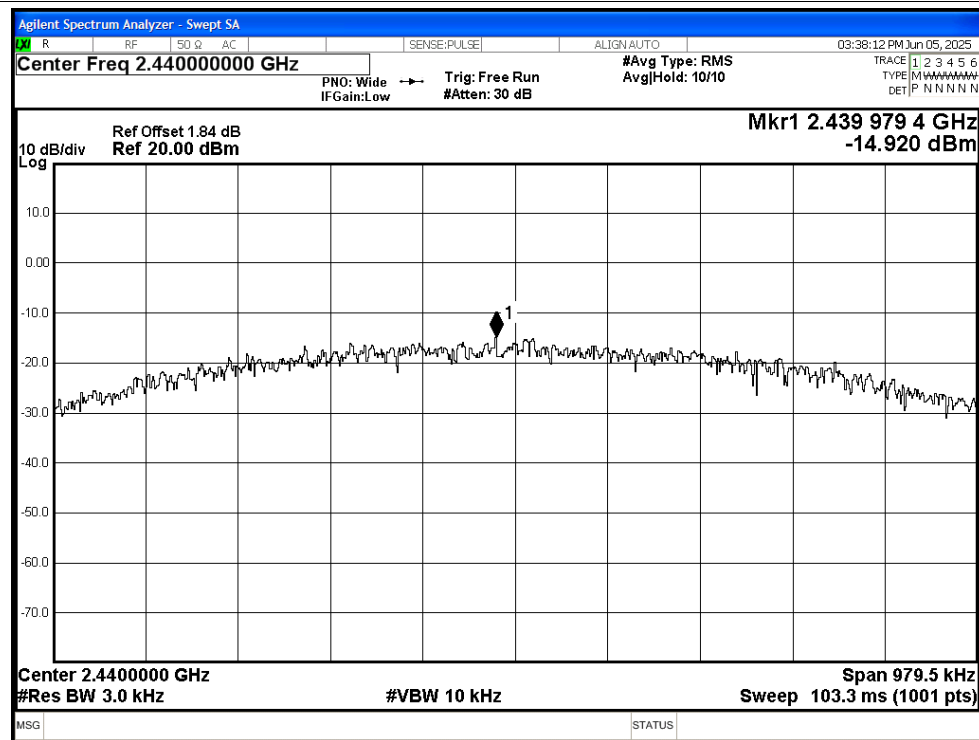
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant	-17.08	8	Pass
NVNT	BLE 1M	2440	Ant	-14.92	8	Pass
NVNT	BLE 1M	2480	Ant	-16.05	8	Pass
NVNT	BLE 2M	2402	Ant	-20.76	8	Pass
NVNT	BLE 2M	2440	Ant	-17.96	8	Pass
NVNT	BLE 2M	2480	Ant	-19.63	8	Pass

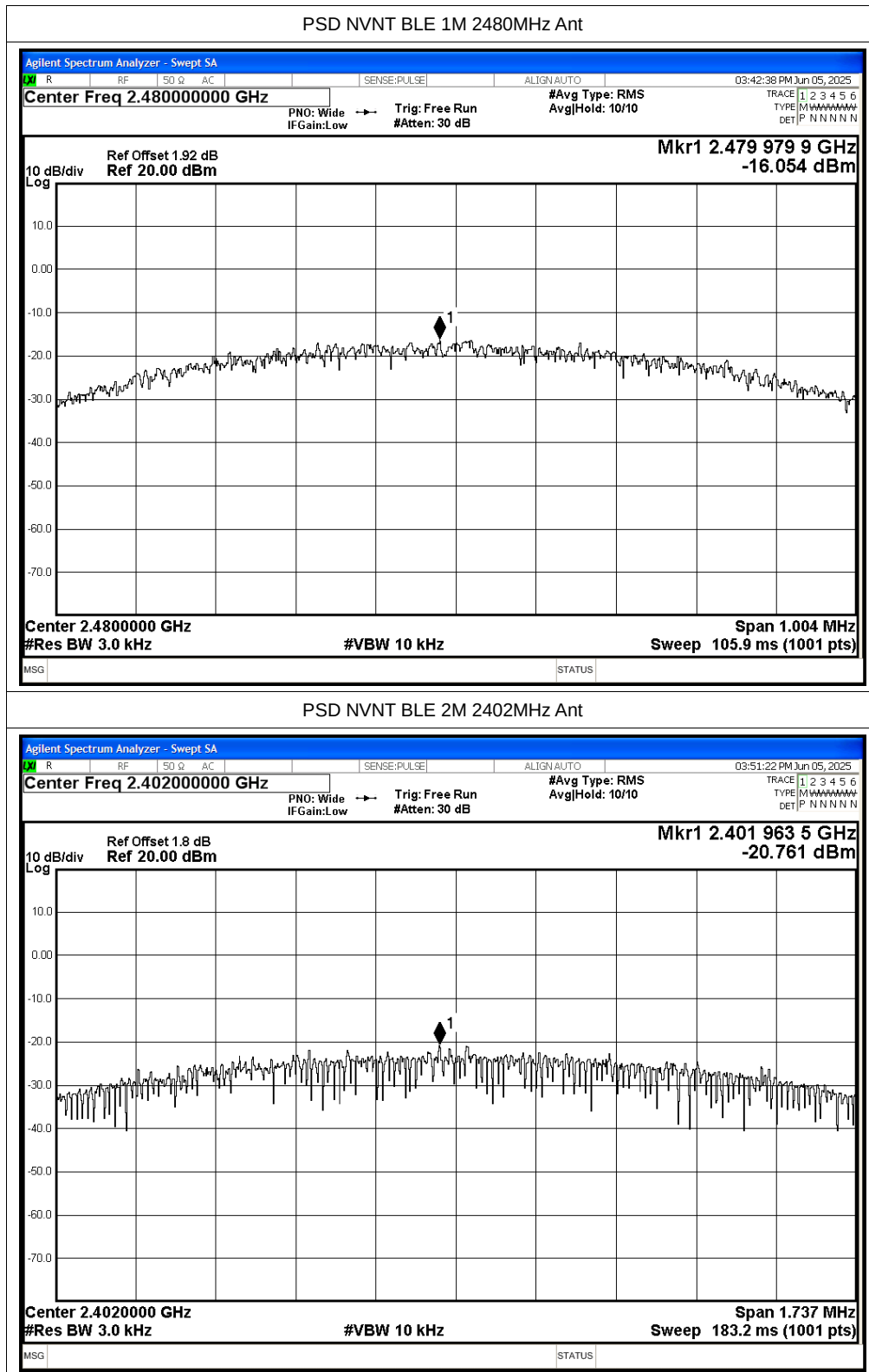
Test Graphs

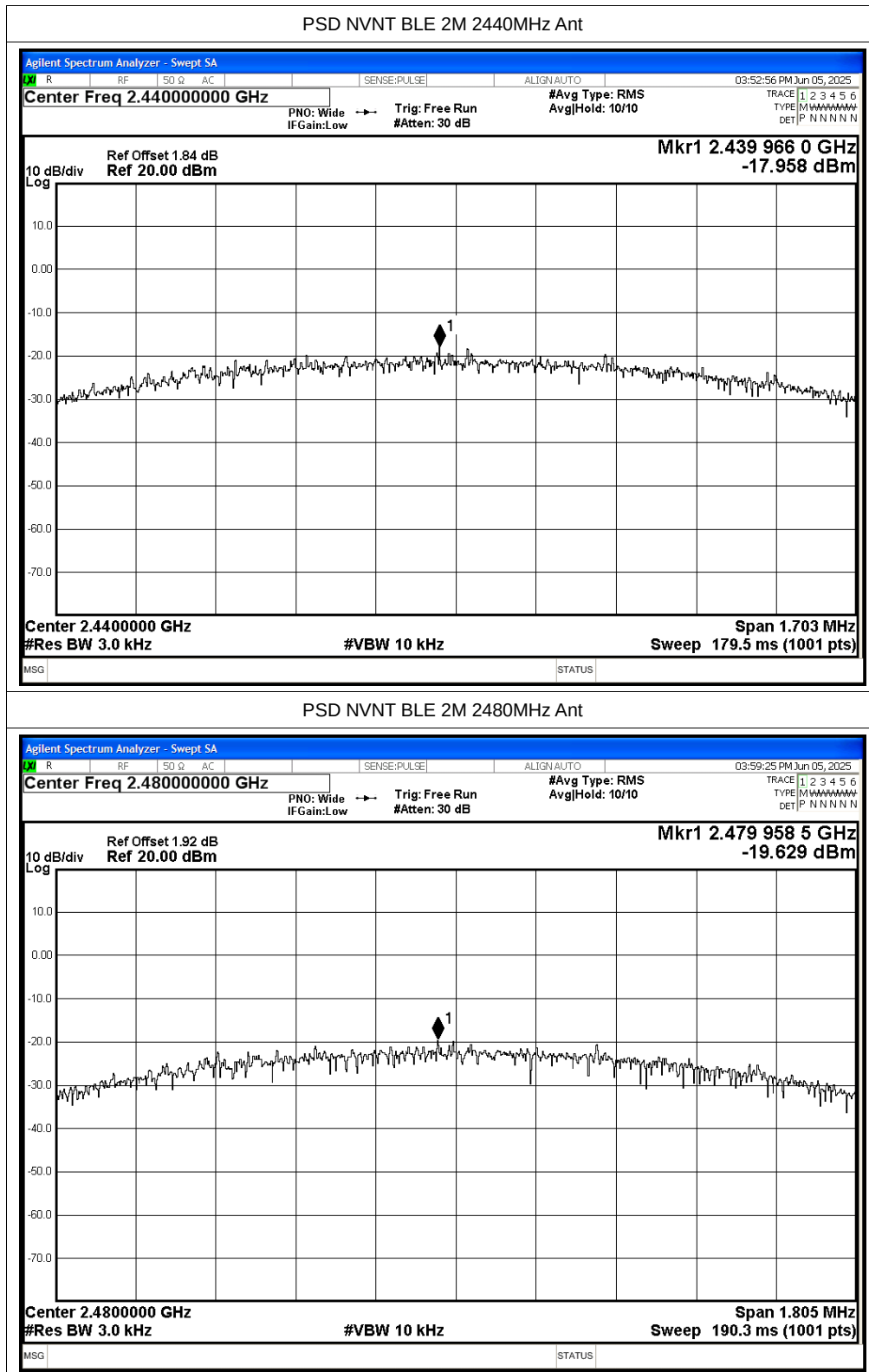
PSD NVNT BLE 1M 2402MHz Ant



PSD NVNT BLE 1M 2440MHz Ant





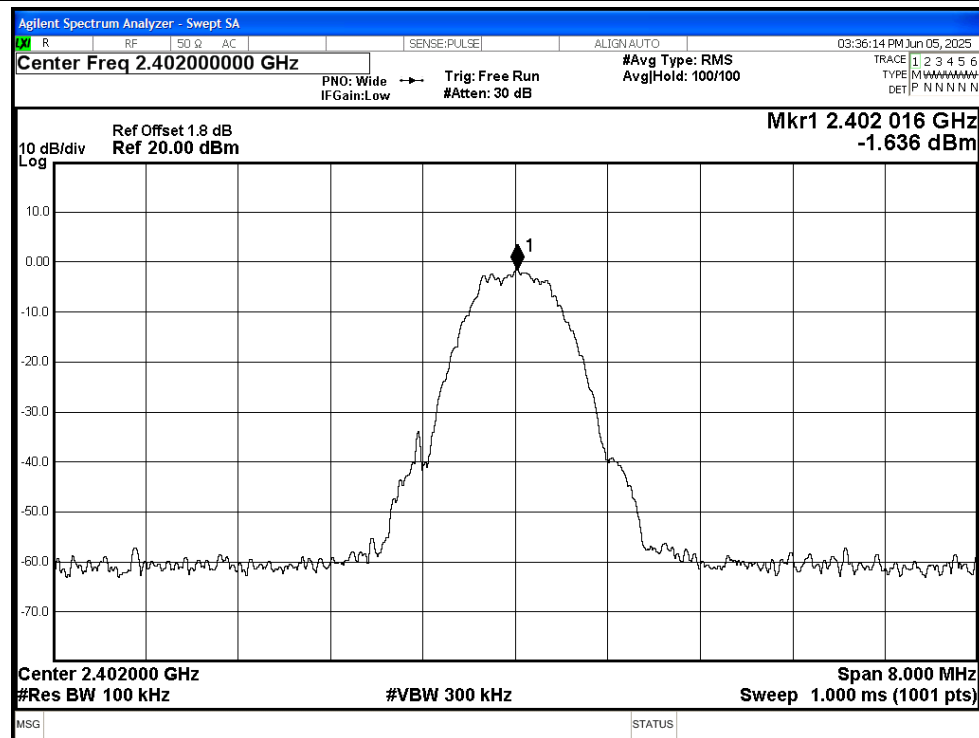


A.4 Band Edge

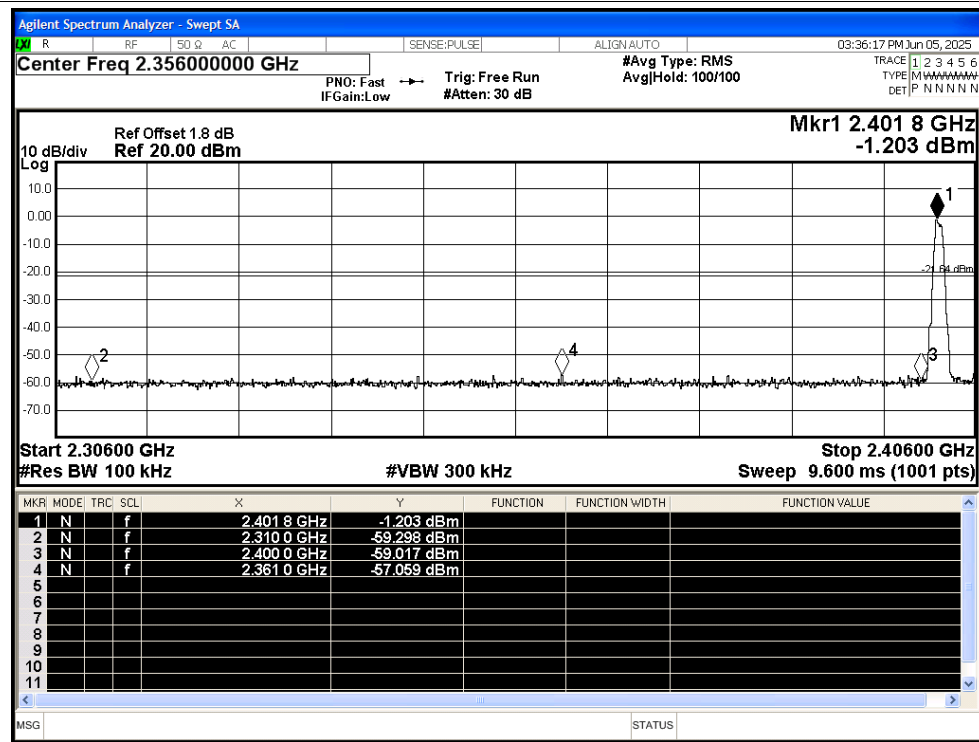
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant	-55.42	-20	Pass
NVNT	BLE 1M	2480	Ant	-56.98	-20	Pass
NVNT	BLE 2M	2402	Ant	-44.88	-20	Pass
NVNT	BLE 2M	2480	Ant	-56.48	-20	Pass

Test Graphs

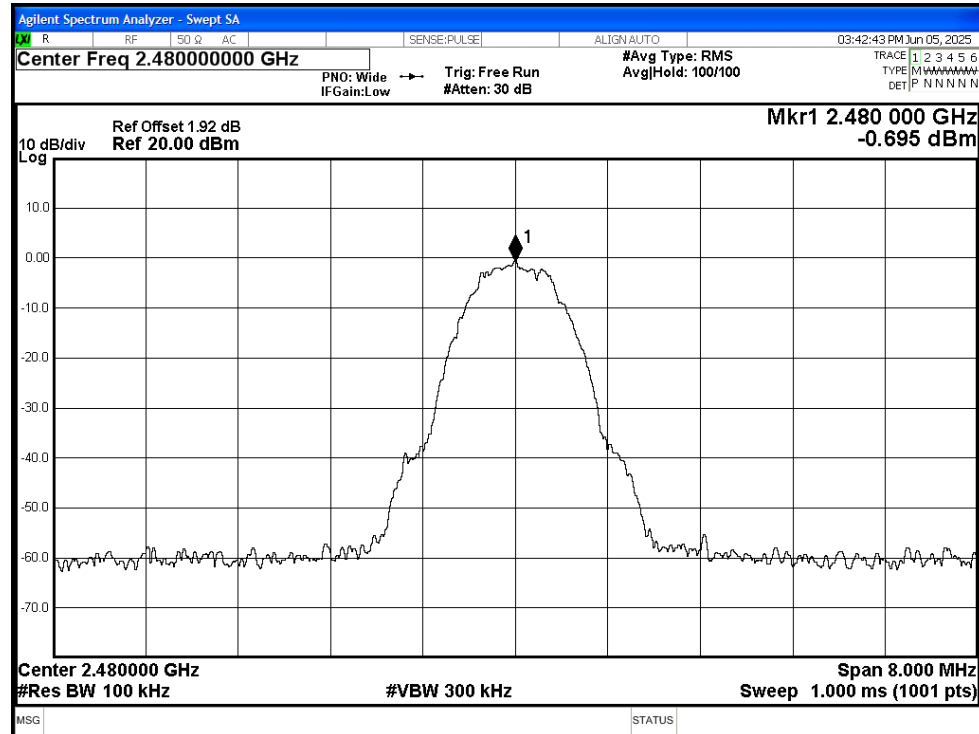
Band Edge NVNT BLE 1M 2402MHz Ant Ref



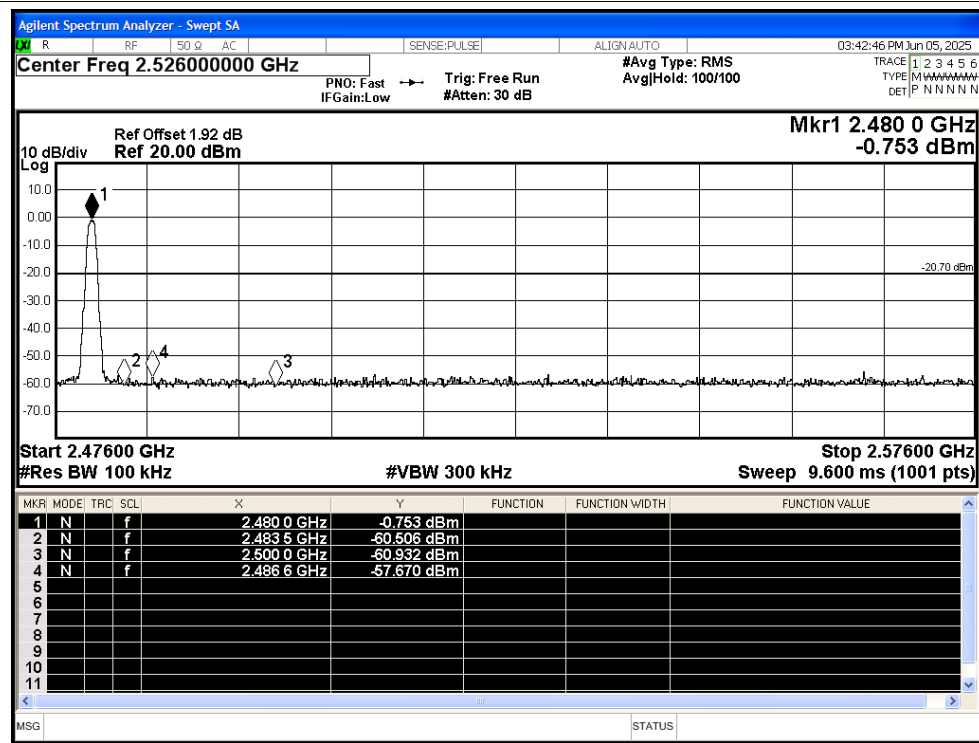
Band Edge NVNT BLE 1M 2402MHz Ant Emission



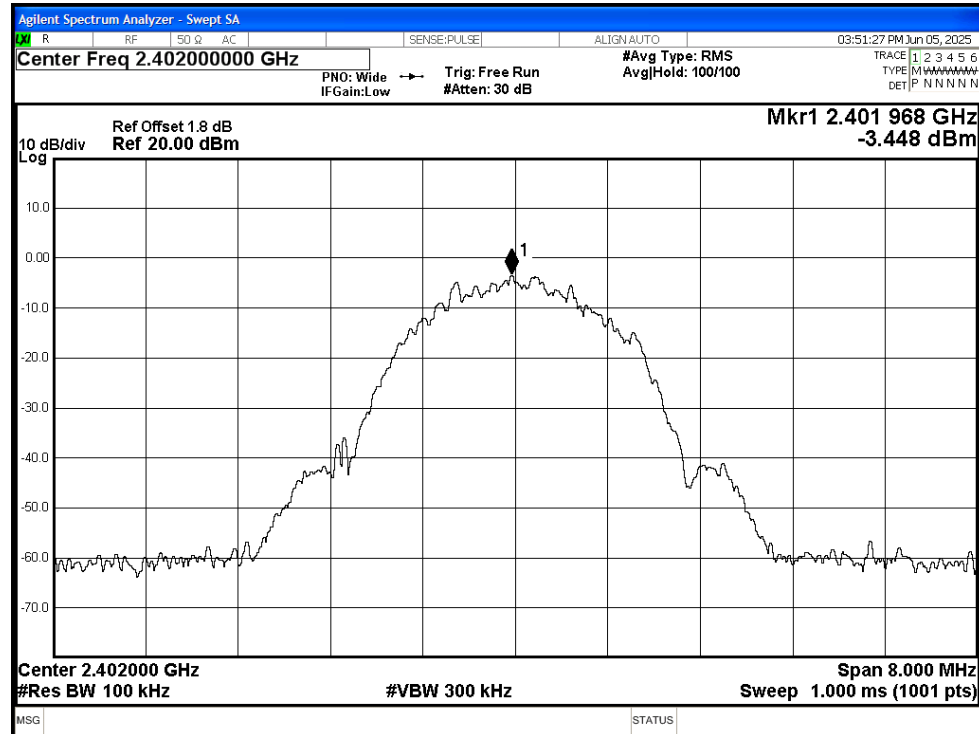
Band Edge NVNT BLE 1M 2480MHz Ant Ref



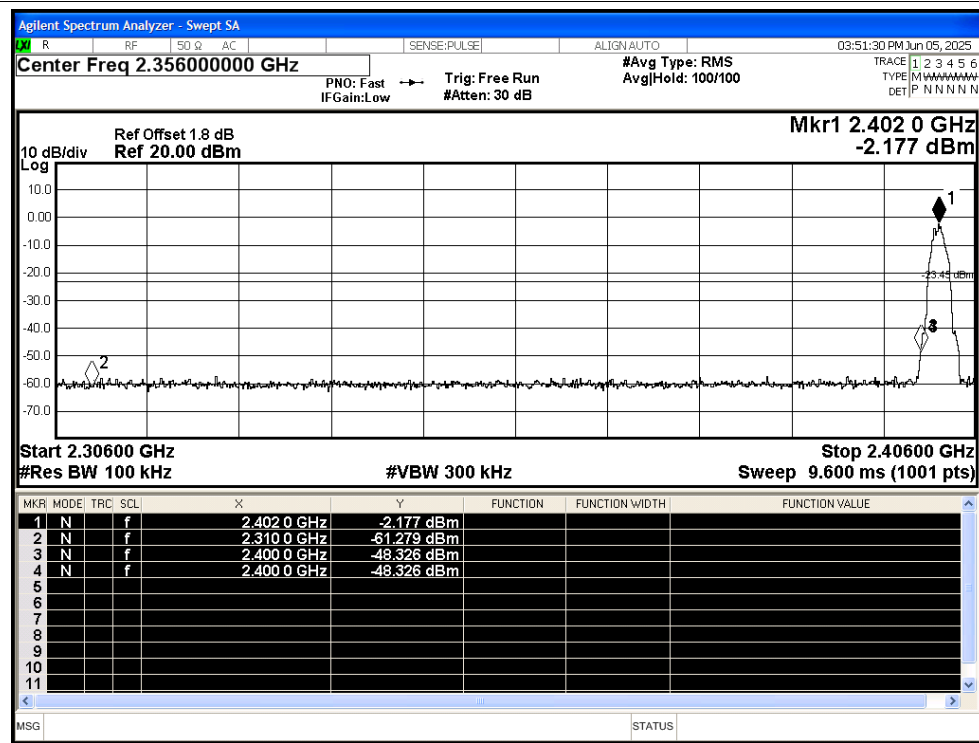
Band Edge NVNT BLE 1M 2480MHz Ant Emission



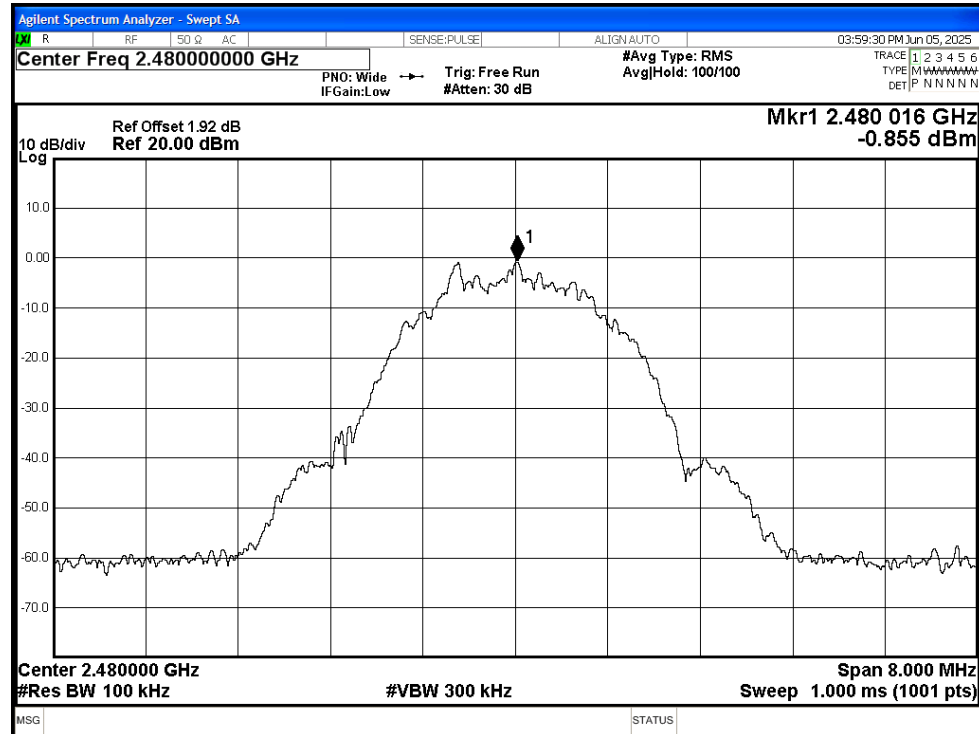
Band Edge NVNT BLE 2M 2402MHz Ant Ref



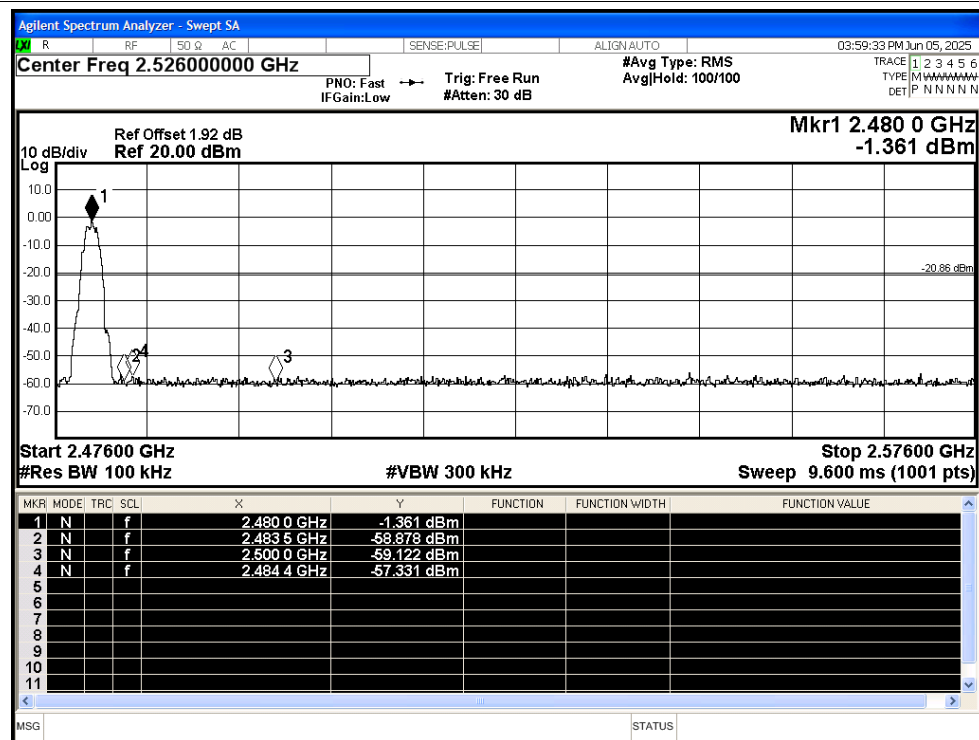
Band Edge NVNT BLE 2M 2402MHz Ant Emission



Band Edge NVNT BLE 2M 2480MHz Ant Ref



Band Edge NVNT BLE 2M 2480MHz Ant Emission

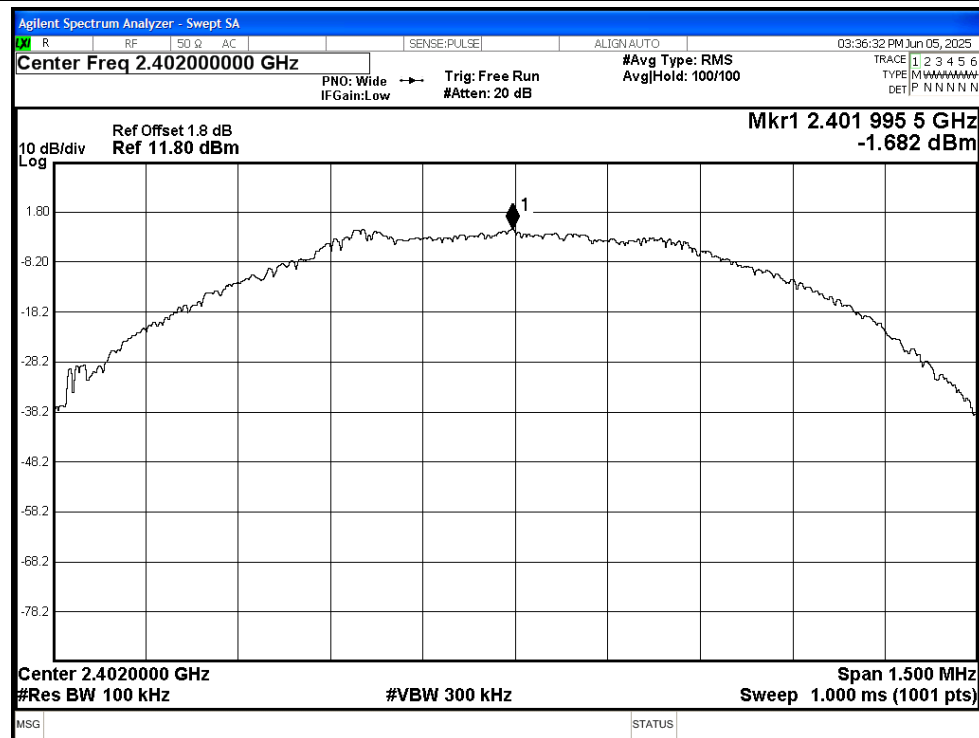


A.5 Conducted RF Spurious Emission

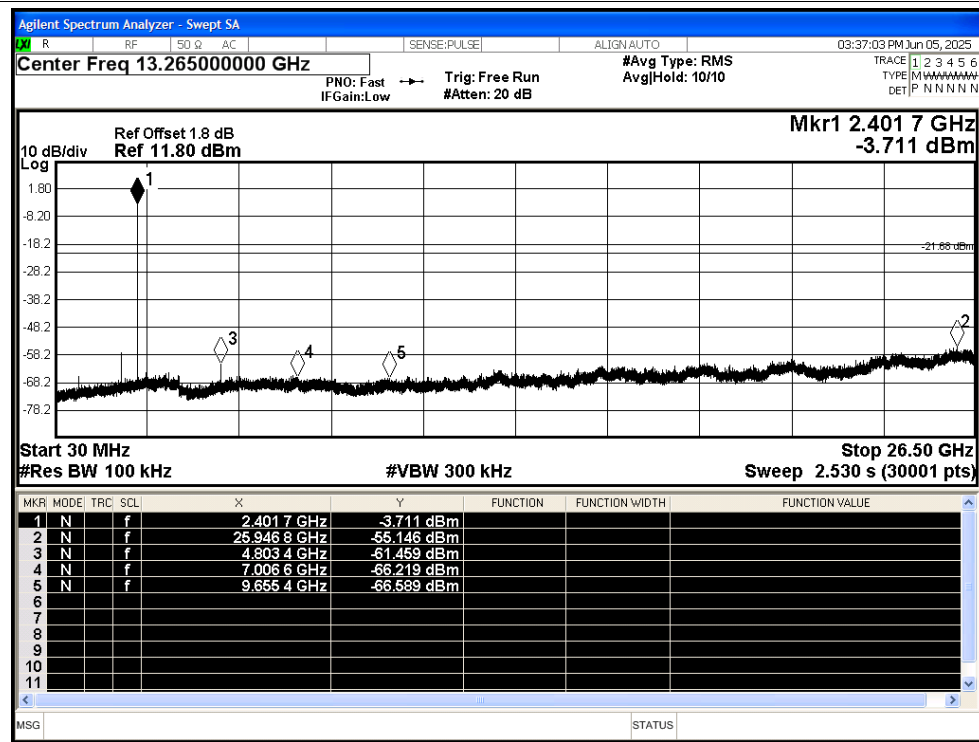
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant	-53.46	-20	Pass
NVNT	BLE 1M	2440	Ant	-56.29	-20	Pass
NVNT	BLE 1M	2480	Ant	-55.1	-20	Pass
NVNT	BLE 2M	2402	Ant	-52.87	-20	Pass
NVNT	BLE 2M	2440	Ant	-55.78	-20	Pass
NVNT	BLE 2M	2480	Ant	-54.23	-20	Pass

Test Graphs

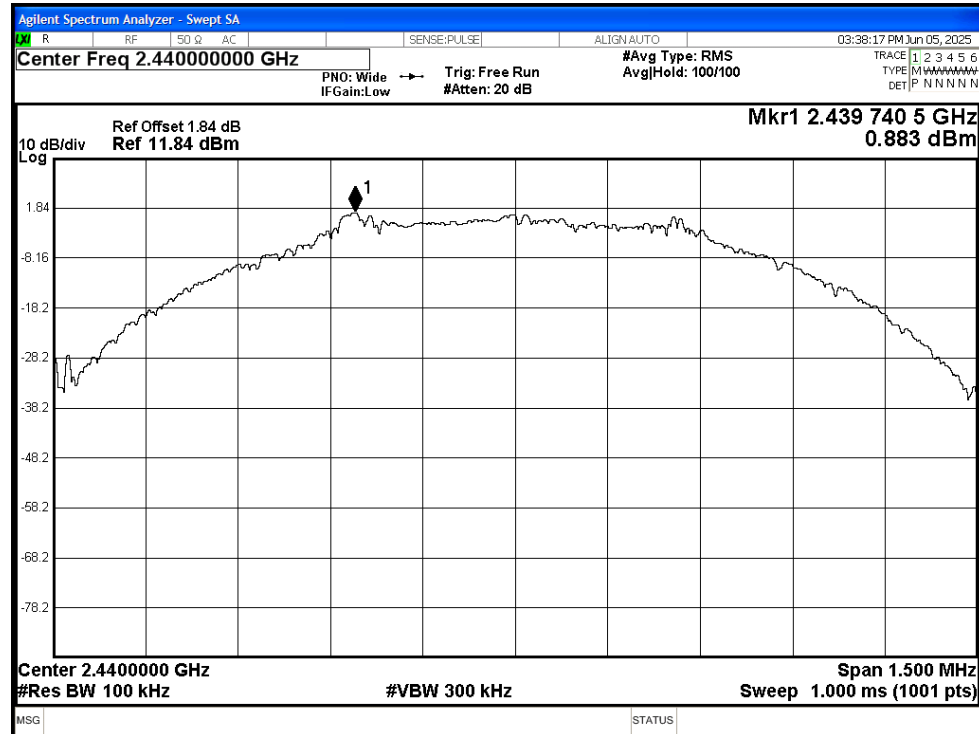
Tx. Spurious NVNT BLE 1M 2402MHz Ant Ref



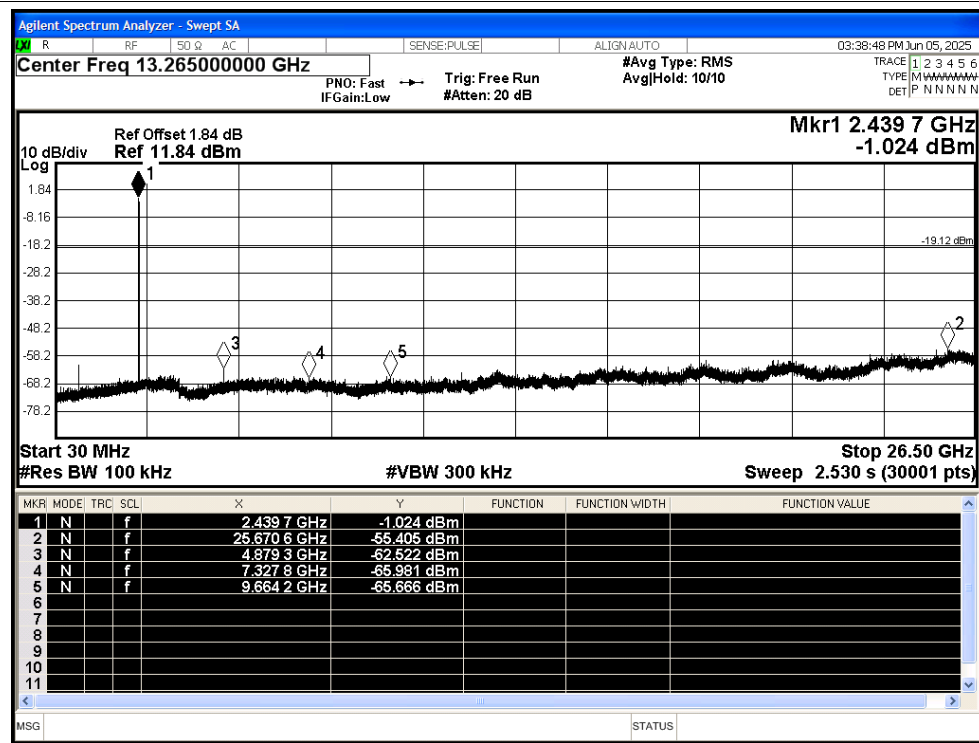
Tx. Spurious NVNT BLE 1M 2402MHz Ant Emission



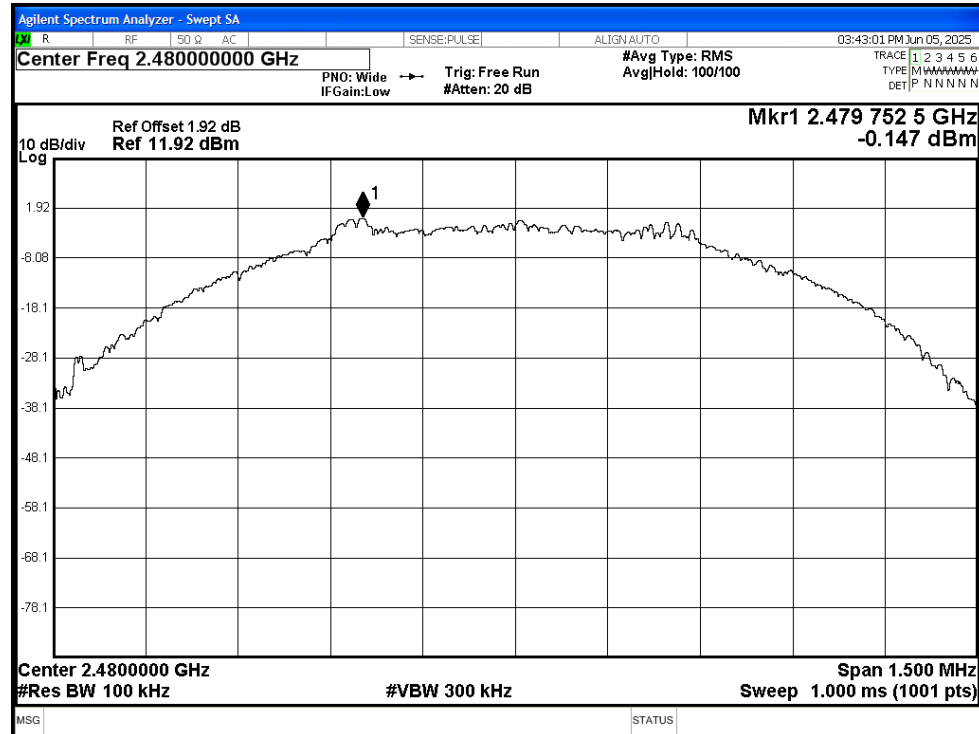
Tx. Spurious NVNT BLE 1M 2440MHz Ant Ref



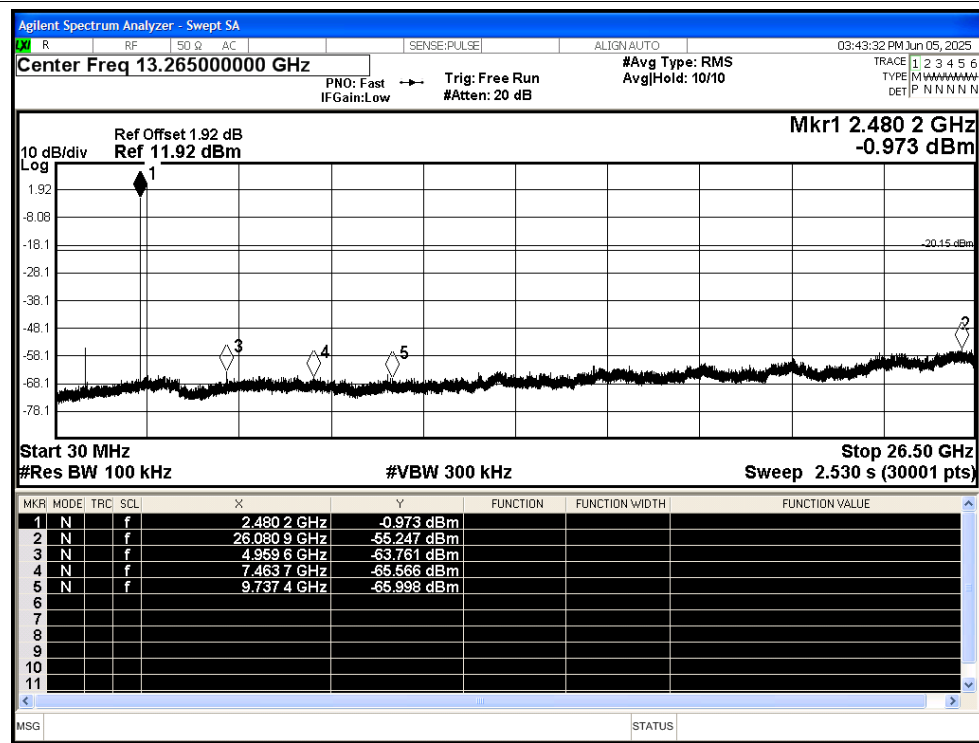
Tx. Spurious NVNT BLE 1M 2440MHz Ant Emission



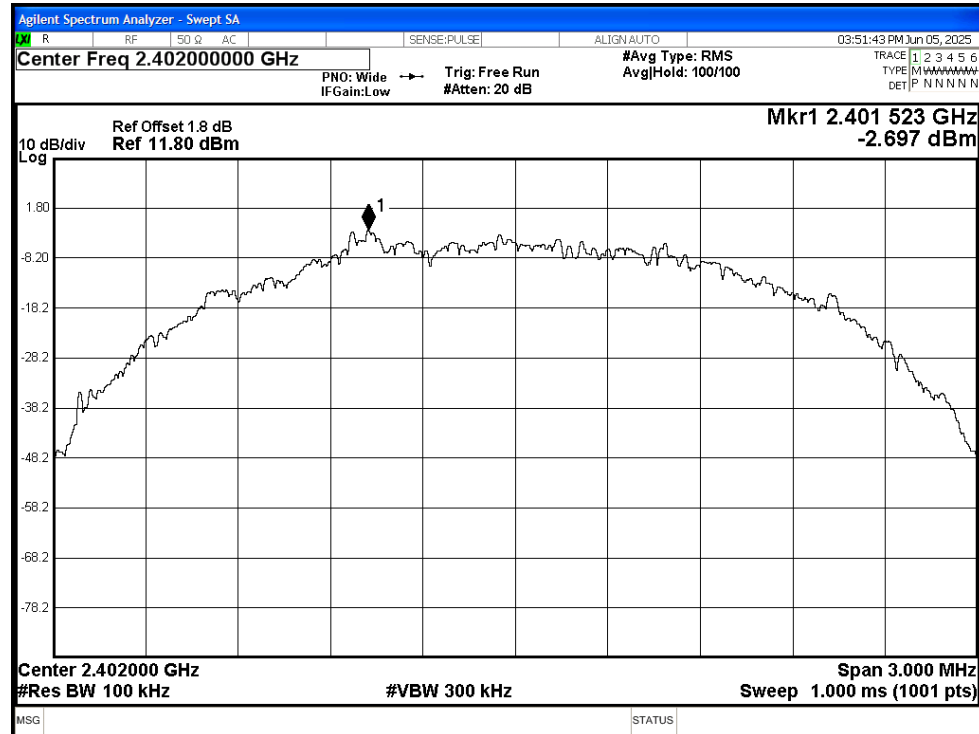
Tx. Spurious NVNT BLE 1M 2480MHz Ant Ref



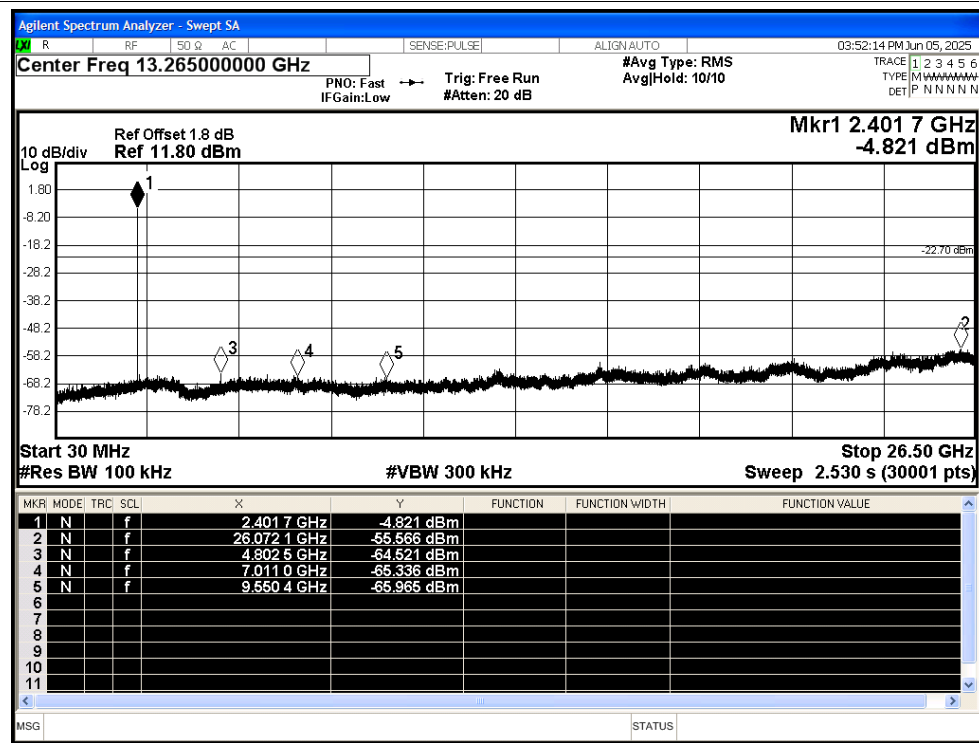
Tx. Spurious NVNT BLE 1M 2480MHz Ant Emission



Tx. Spurious NVNT BLE 2M 2402MHz Ant Ref



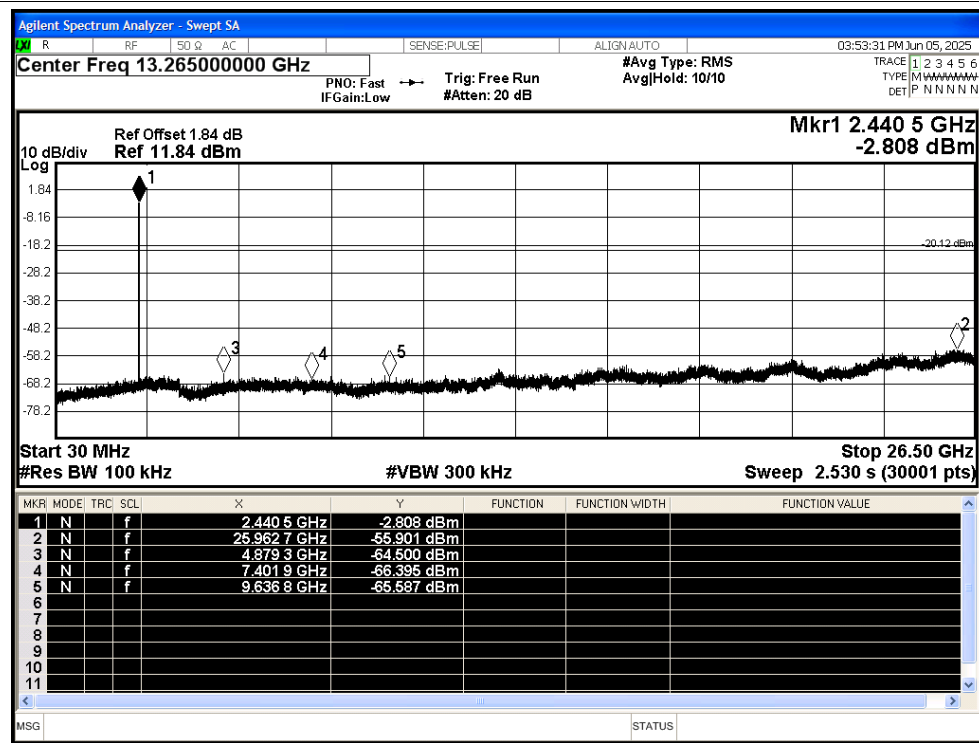
Tx. Spurious NVNT BLE 2M 2402MHz Ant Emission



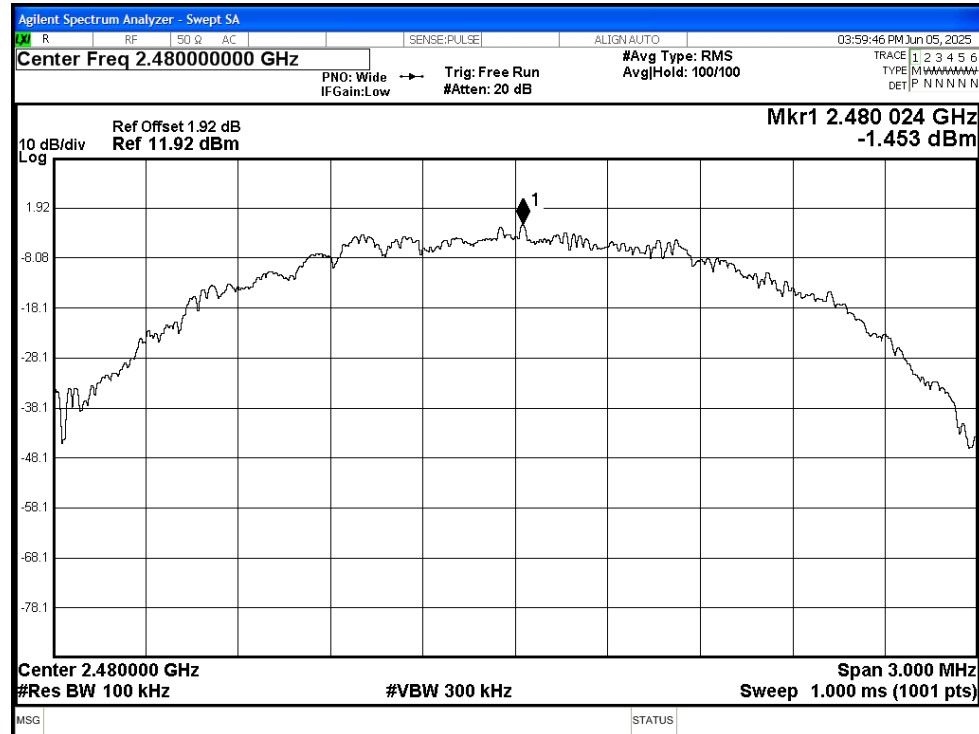
Tx. Spurious NVNT BLE 2M 2440MHz Ant Ref



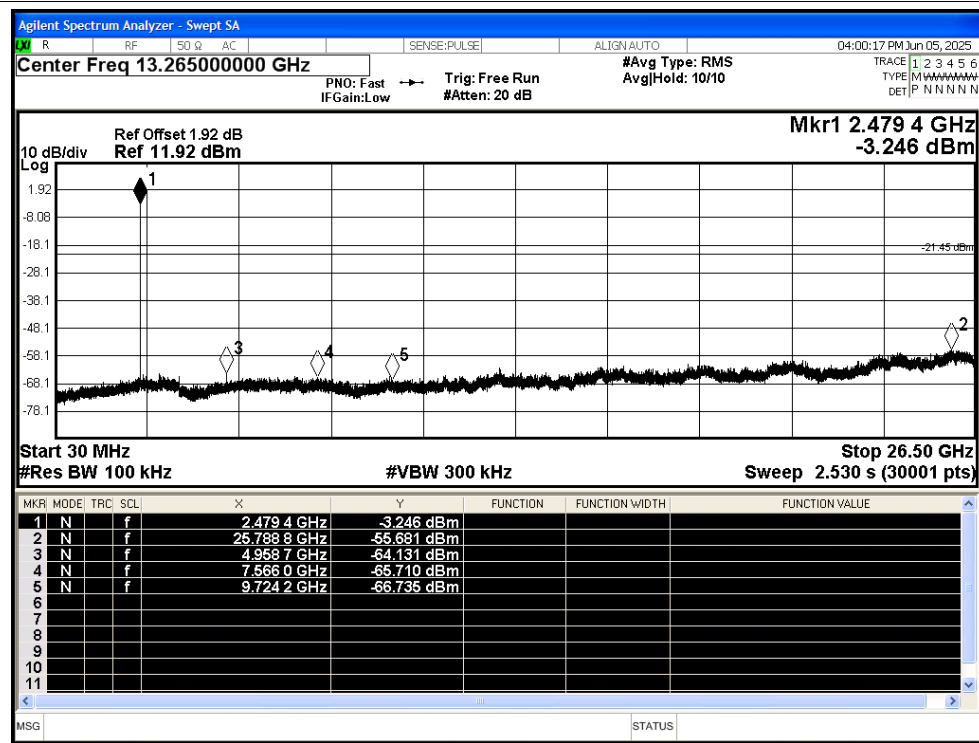
Tx. Spurious NVNT BLE 2M 2440MHz Ant Emission



Tx. Spurious NVNT BLE 2M 2480MHz Ant Ref



Tx. Spurious NVNT BLE 2M 2480MHz Ant Emission

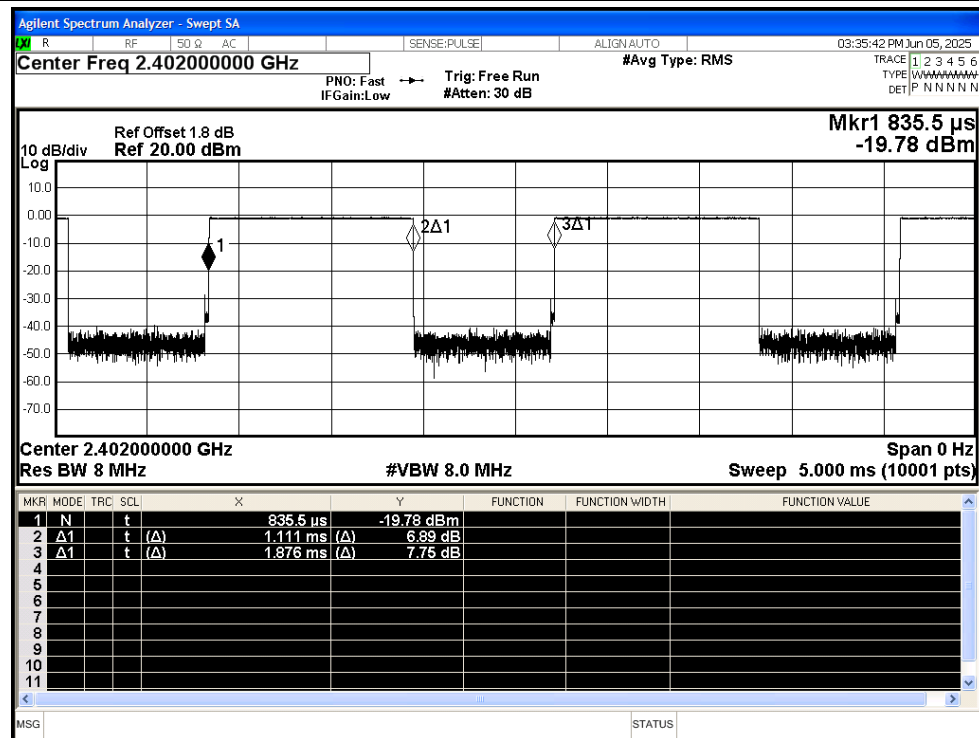


A.6 Duty Cycle

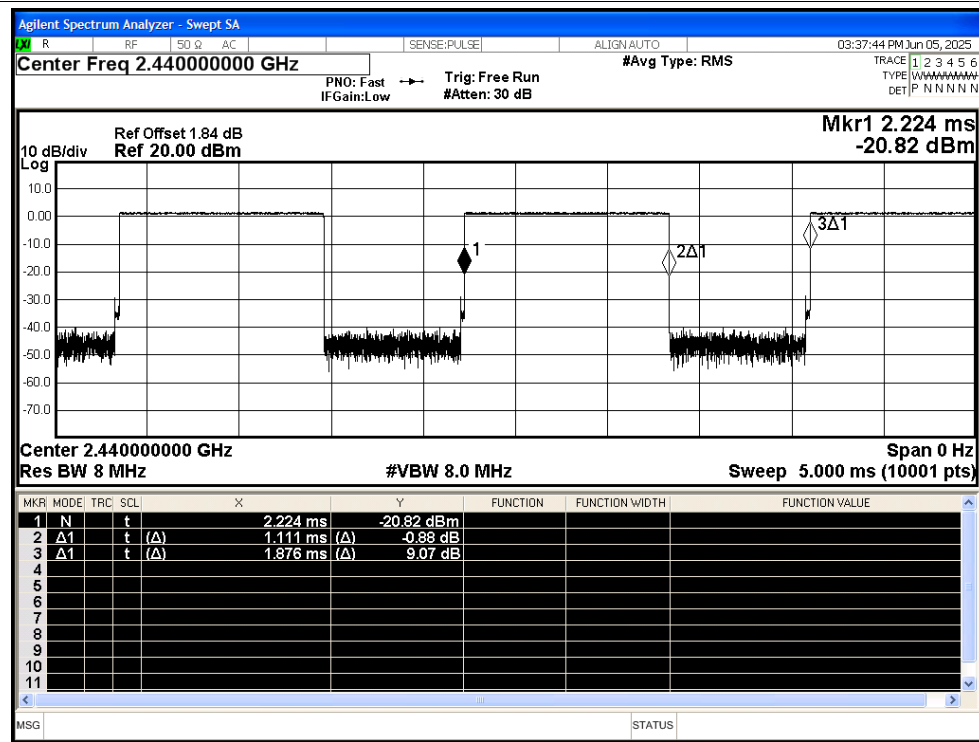
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant	59.21	2.28	0.9
NVNT	BLE 1M	2440	Ant	59.24	2.27	0.9
NVNT	BLE 1M	2480	Ant	59.21	2.28	0.9
NVNT	BLE 2M	2402	Ant	44.82	3.49	1.78
NVNT	BLE 2M	2440	Ant	44.82	3.49	1.79
NVNT	BLE 2M	2480	Ant	44.8	3.49	1.79

Test Graphs

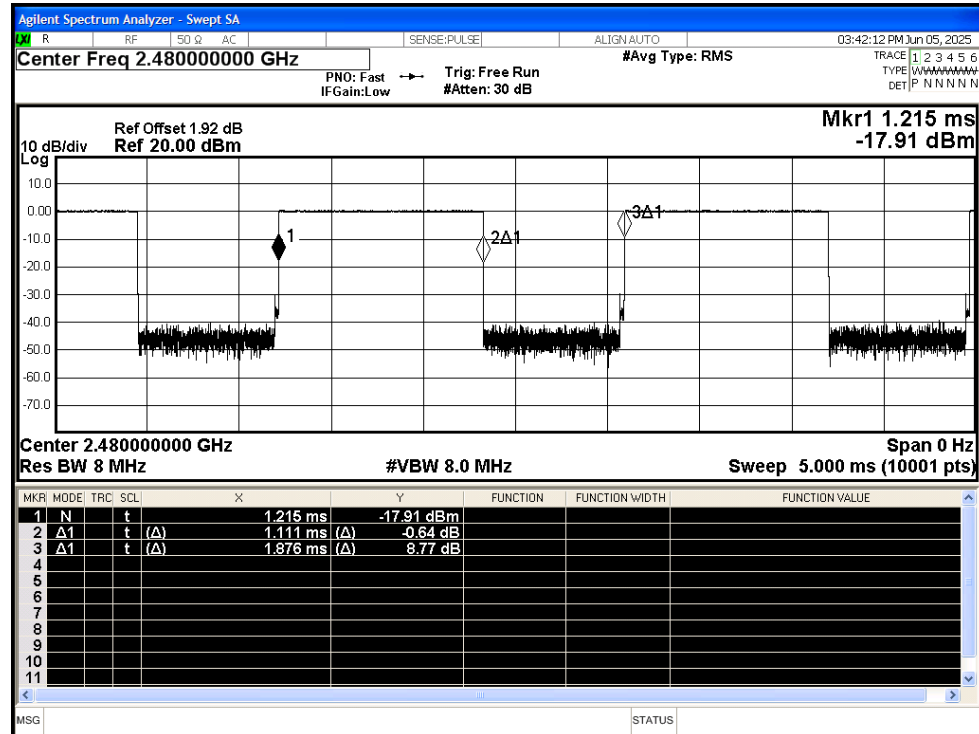
Duty Cycle NVNT BLE 1M 2402MHz Ant



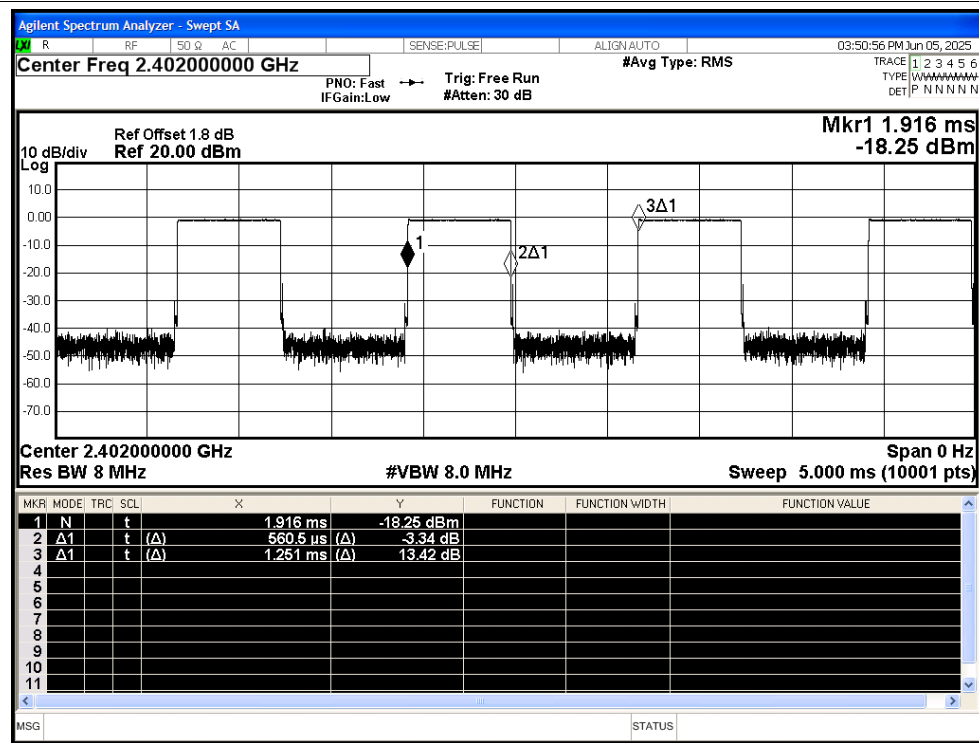
Duty Cycle NVNT BLE 1M 2440MHz Ant



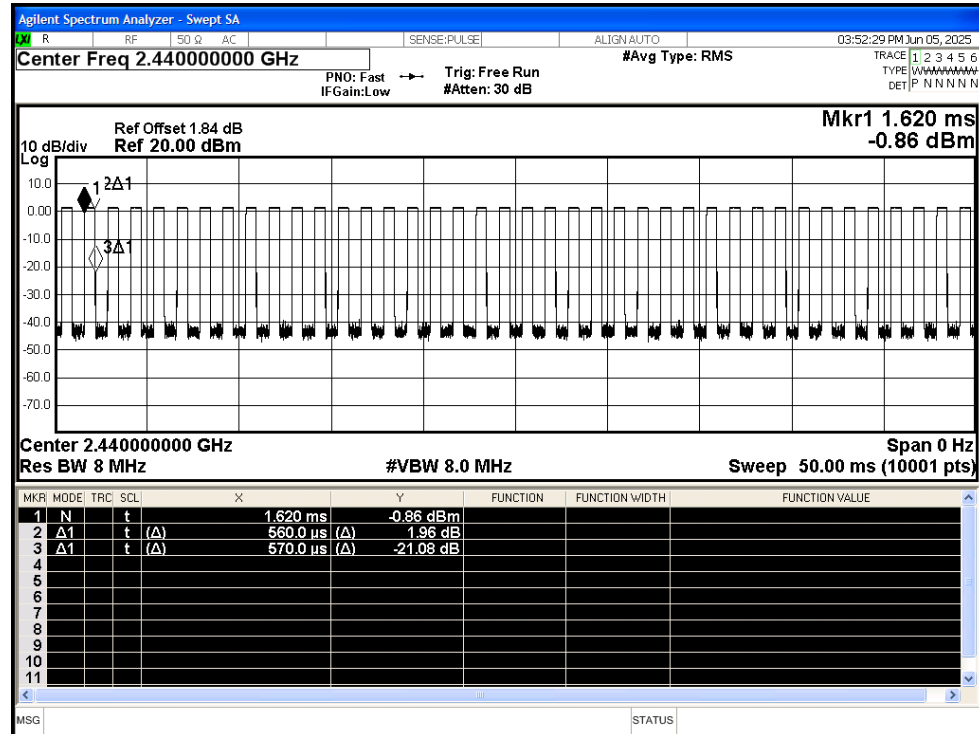
Duty Cycle NVNT BLE 1M 2480MHz Ant



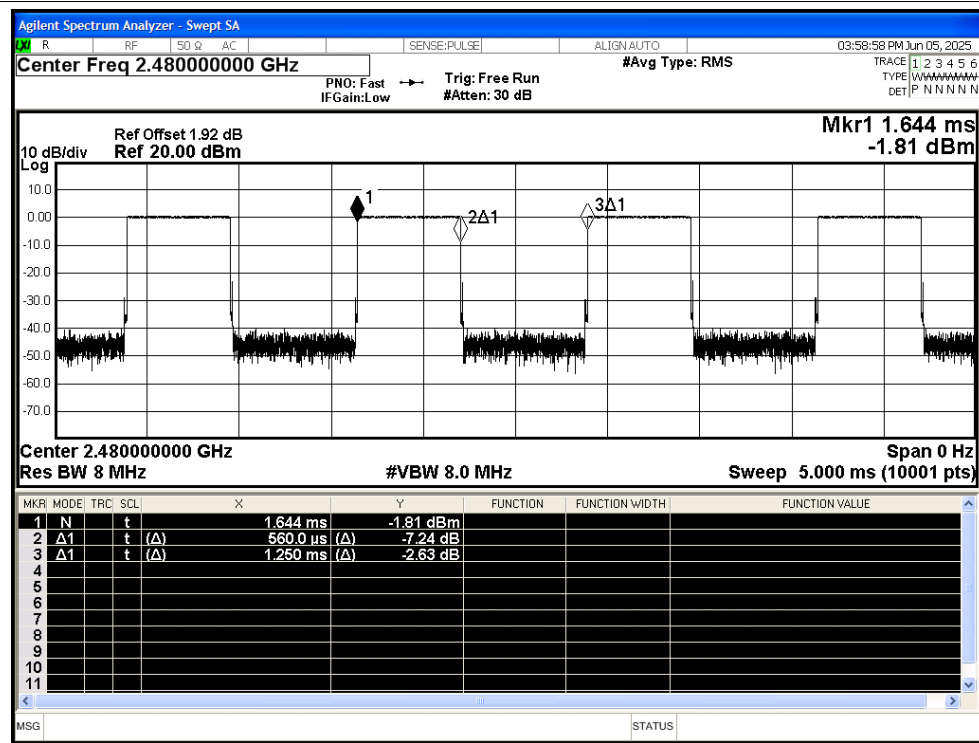
Duty Cycle NVNT BLE 2M 2402MHz Ant



Duty Cycle NVNT BLE 2M 2440MHz Ant



Duty Cycle NVNT BLE 2M 2480MHz Ant

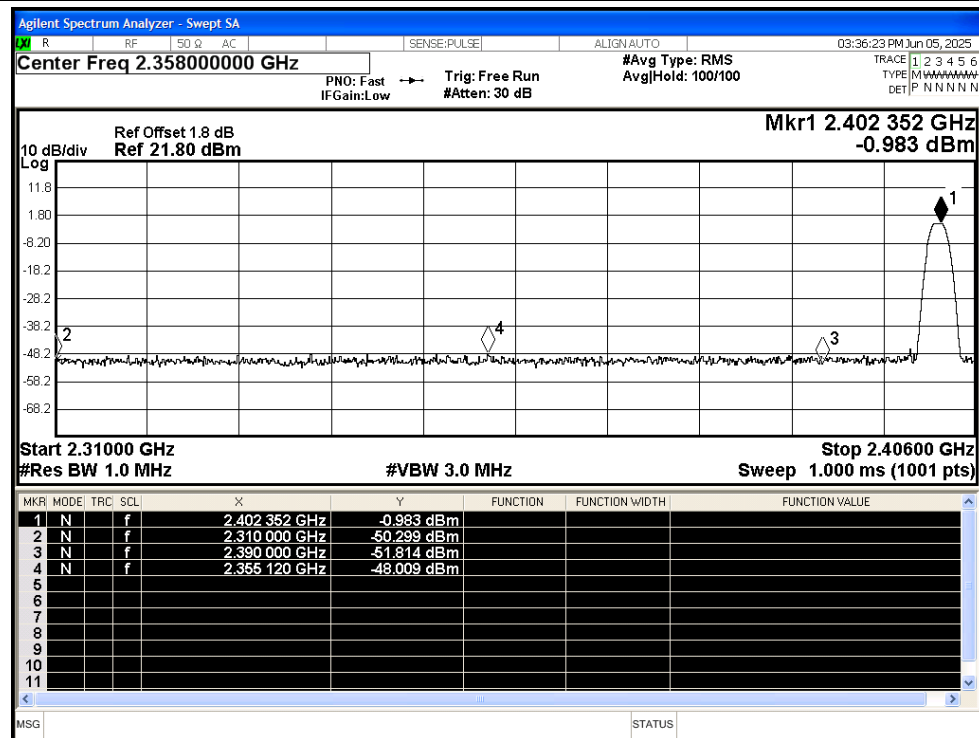


A.7 Restrict Band

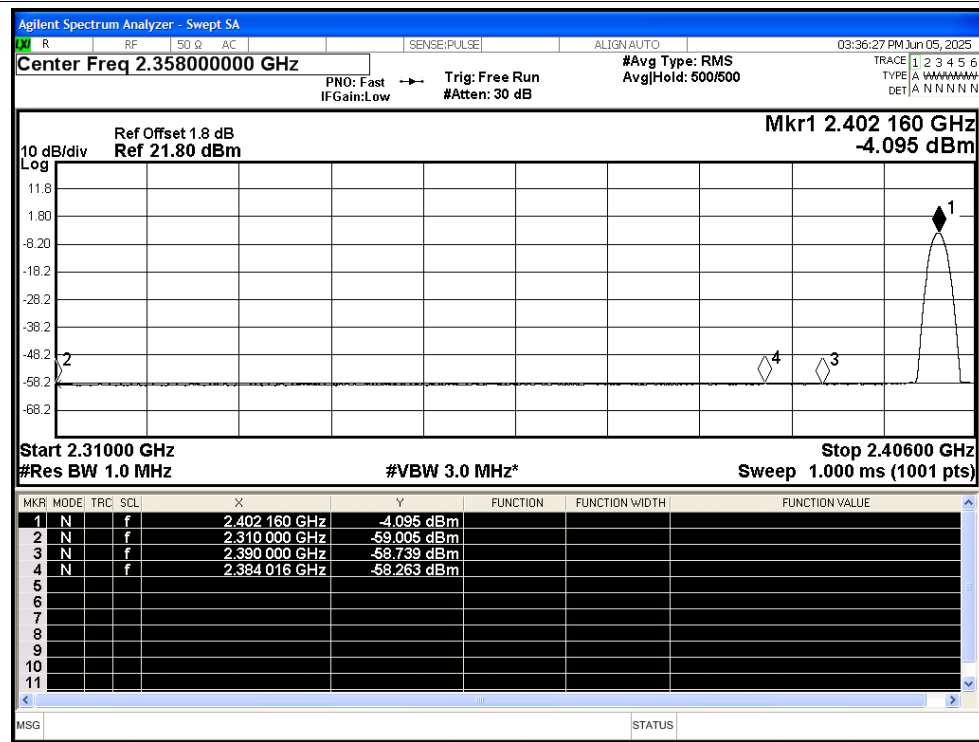
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant	2310	-50.3	2.54	-	47.50	Peak	74	Pass
NVNT	BLE 1M	2402	Ant	2310	-59.01	2.54	2.28	41.07	Average	54	Pass
NVNT	BLE 1M	2402	Ant	2355.12	-48.01	2.54	-	49.79	Peak	74	Pass
NVNT	BLE 1M	2402	Ant	2384.016	-58.26	2.54	2.28	41.82	Average	54	Pass
NVNT	BLE 1M	2402	Ant	2390	-51.81	2.54	-	45.99	Peak	74	Pass
NVNT	BLE 1M	2402	Ant	2390	-58.74	2.54	2.28	41.34	Average	54	Pass
NVNT	BLE 1M	2480	Ant	2483.5	-49.66	2.54	-	48.14	Peak	74	Pass
NVNT	BLE 1M	2480	Ant	2483.5	-57.89	2.54	2.28	42.19	Average	54	Pass
NVNT	BLE 1M	2480	Ant	2484.232	-44.43	2.54	-	53.37	Peak	74	Pass
NVNT	BLE 1M	2480	Ant	2483.536	-57.72	2.54	2.28	42.36	Average	54	Pass
NVNT	BLE 1M	2480	Ant	2500	-49.87	2.54	-	47.93	Peak	74	Pass
NVNT	BLE 1M	2480	Ant	2500	-58.29	2.54	2.28	41.79	Average	54	Pass
NVNT	BLE 2M	2402	Ant	2310	-51.03	2.54	-	46.77	Peak	74	Pass
NVNT	BLE 2M	2402	Ant	2310	-59.05	2.54	3.49	42.24	Average	54	Pass
NVNT	BLE 2M	2402	Ant	2349.84	-47.76	2.54	-	50.04	Peak	74	Pass
NVNT	BLE 2M	2402	Ant	2377.968	-57.92	2.54	3.49	43.37	Average	54	Pass
NVNT	BLE 2M	2402	Ant	2390	-50.45	2.54	-	47.35	Peak	74	Pass
NVNT	BLE 2M	2402	Ant	2390	-58.71	2.54	3.49	42.58	Average	54	Pass
NVNT	BLE 2M	2480	Ant	2483.5	-45.63	2.54	-	52.17	Peak	74	Pass
NVNT	BLE 2M	2480	Ant	2483.5	-57.87	2.54	3.49	43.42	Average	54	Pass
NVNT	BLE 2M	2480	Ant	2484.952	-43.59	2.54	-	54.21	Peak	74	Pass
NVNT	BLE 2M	2480	Ant	2484.232	-57.38	2.54	3.49	43.91	Average	54	Pass
NVNT	BLE 2M	2480	Ant	2500	-51.68	2.54	-	46.12	Peak	74	Pass
NVNT	BLE 2M	2480	Ant	2500	-58.74	2.54	3.49	42.55	Average	54	Pass

Test Graphs

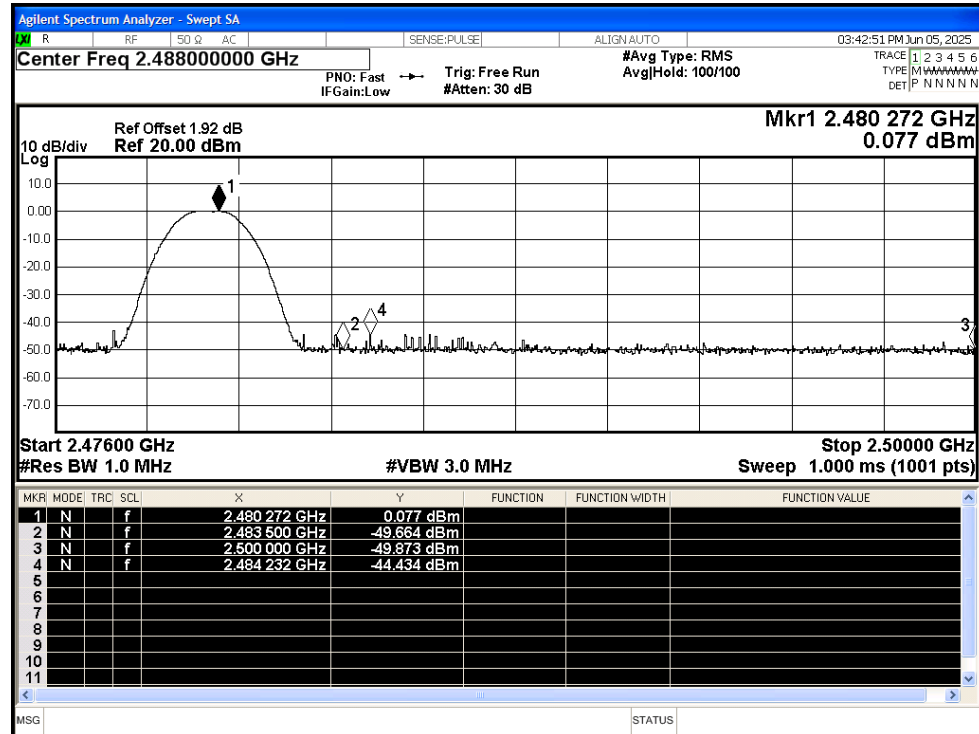
Restrict Band NVNT BLE 1M 2402MHz Ant Peak



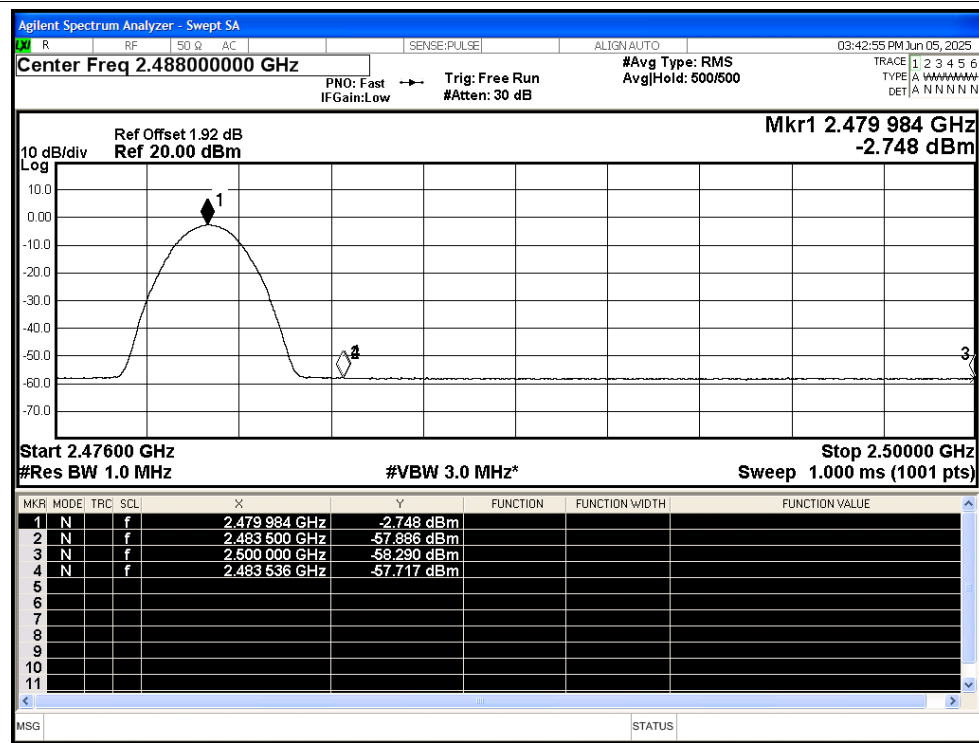
Restrict Band NVNT BLE 1M 2402MHz Ant Average



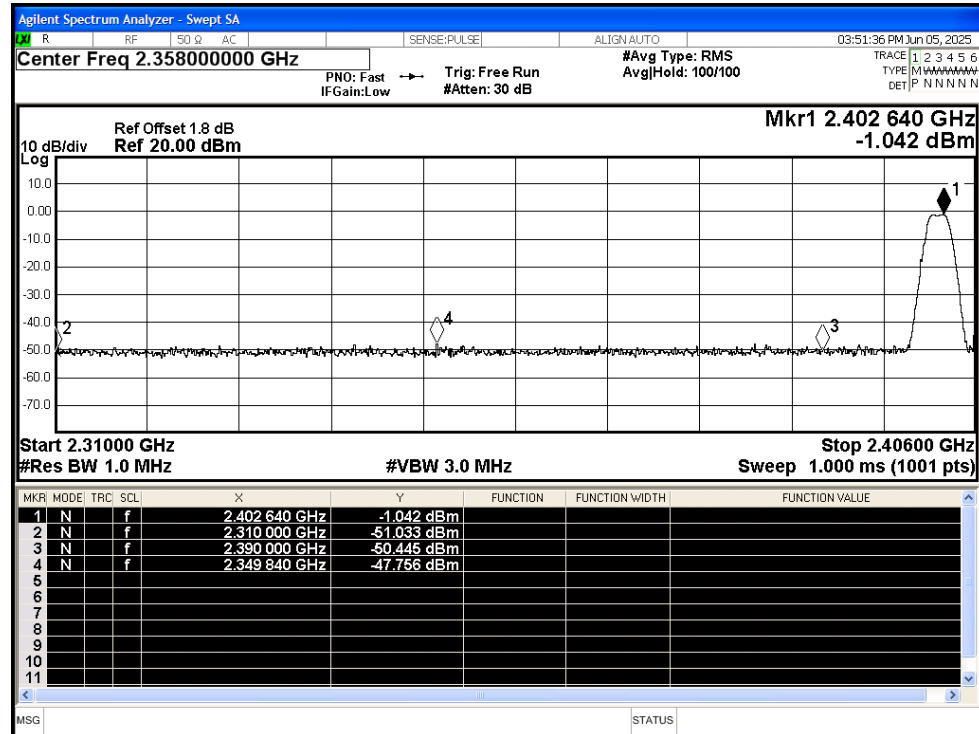
Restrict Band NVNT BLE 1M 2480MHz Ant Peak



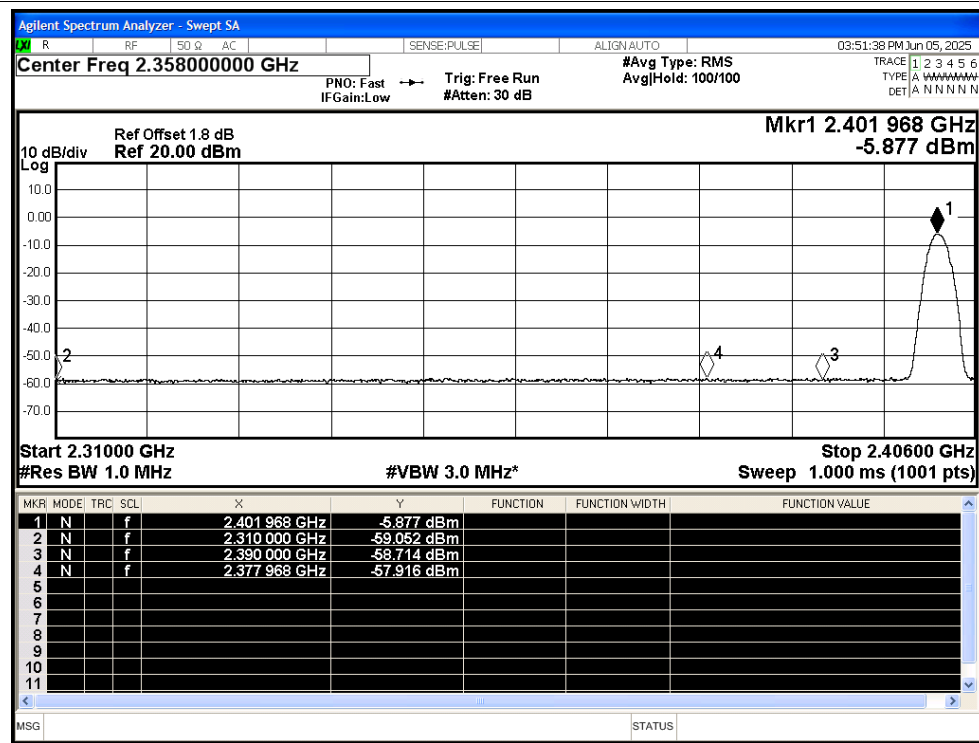
Restrict Band NVNT BLE 1M 2480MHz Ant Average



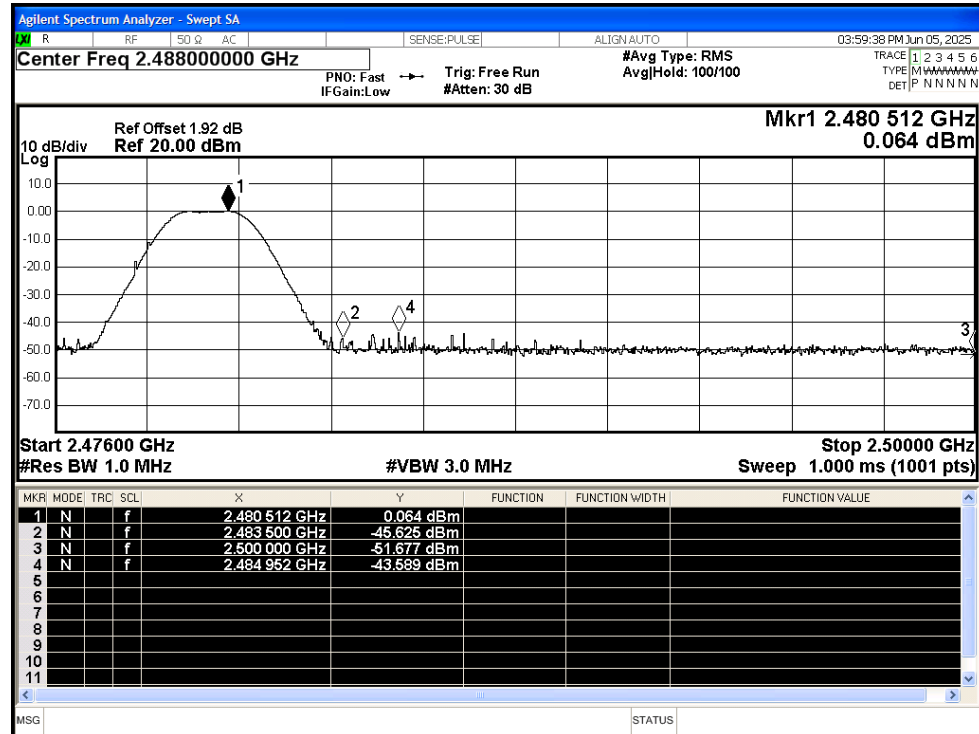
Restrict Band NVNT BLE 2M 2402MHz Ant Peak



Restrict Band NVNT BLE 2M 2402MHz Ant Average



Restrict Band NVNT BLE 2M 2480MHz Ant Peak



Restrict Band NVNT BLE 2M 2480MHz Ant Average

