



Appendix A

RF Test Data for 2.4G (Conducted Measurement)

Product Name: Ergonomic Wireless Mouse

Test Model: HM8190

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Joker Hu
Supervised by:	Li Huan



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A.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	2.4G	2402	Ant1	0.583	≥ 0.5	Pass
NVNT	2.4G	2440	Ant1	0.544	≥ 0.5	Pass
NVNT	2.4G	2480	Ant1	0.641	≥ 0.5	Pass



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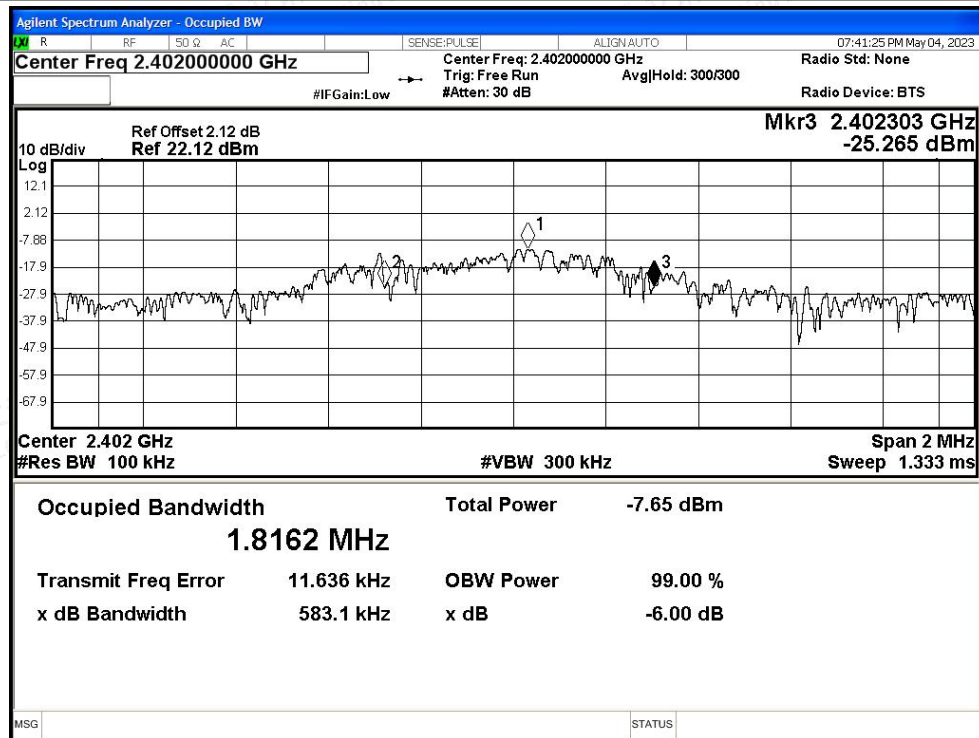
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Test Graphs

-6dB Bandwidth NVNT 2.4G 2402MHz Ant1



-6dB Bandwidth NVNT 2.4G 2440MHz Ant1

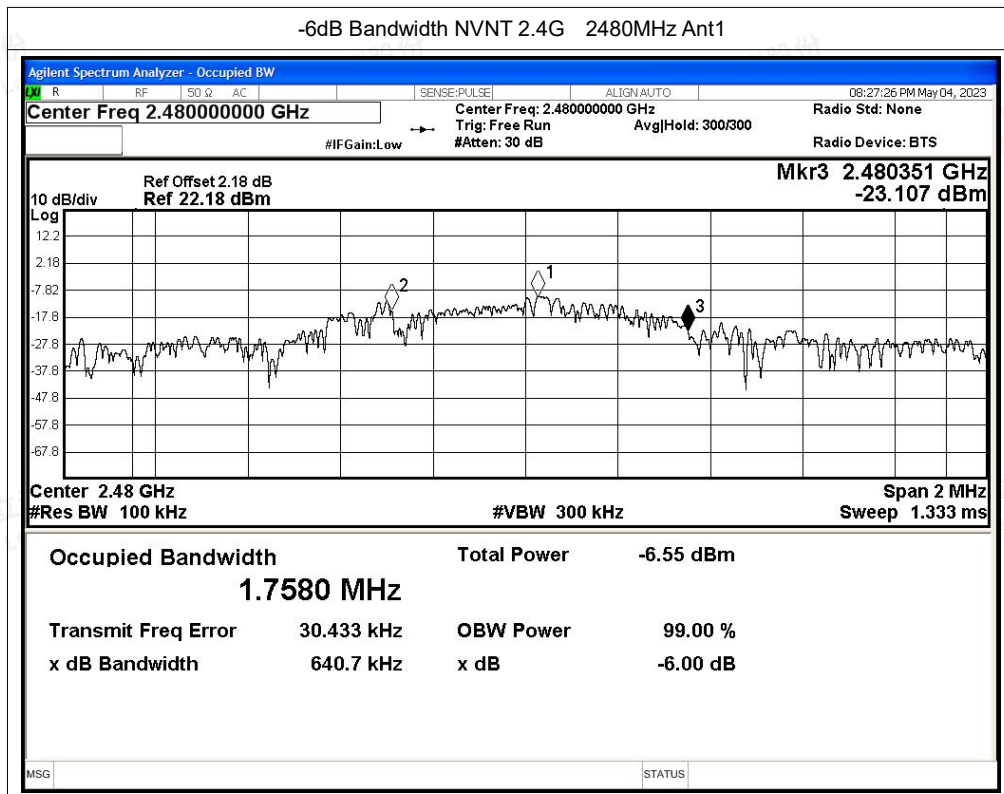


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A.2 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	2.4G	2402	Ant1	1.999
NVNT	2.4G	2440	Ant1	2.006
NVNT	2.4G	2480	Ant1	2.005



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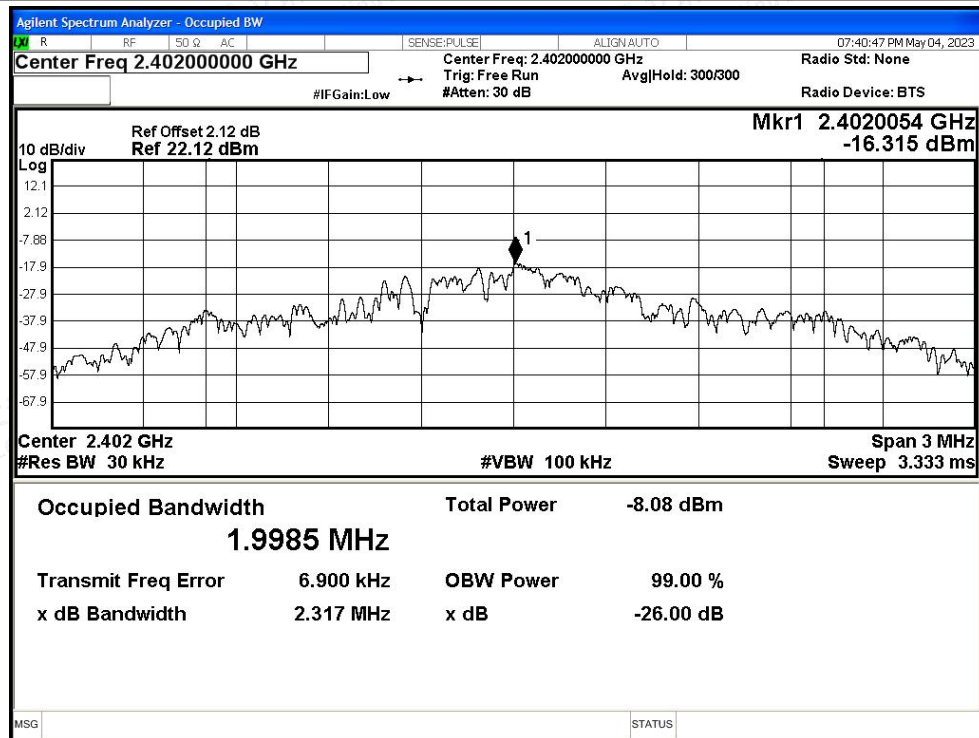
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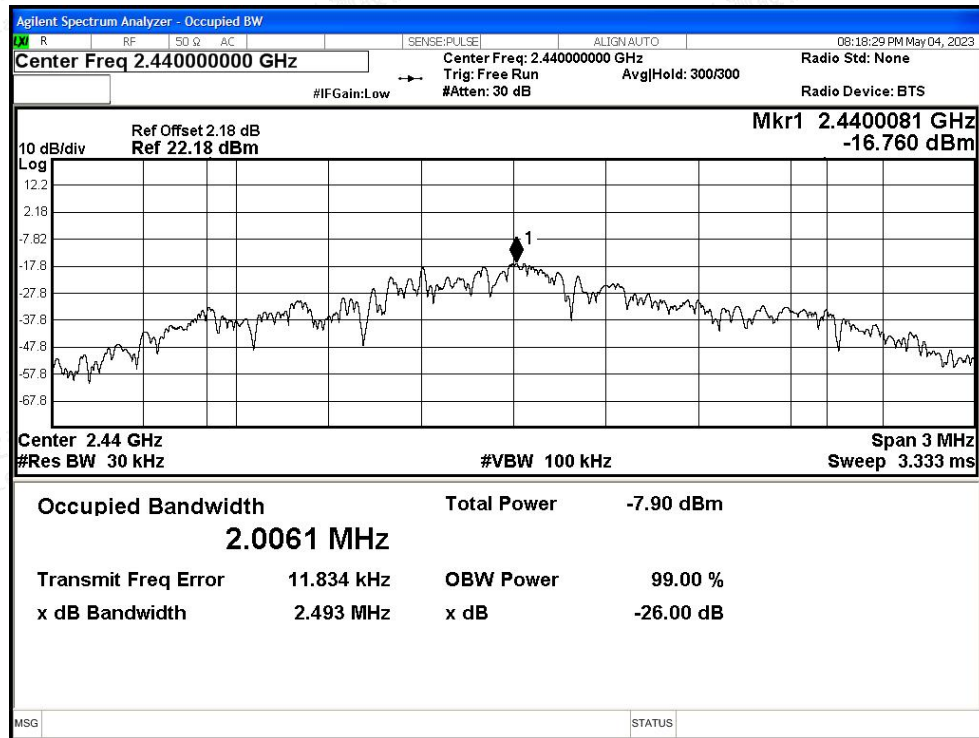


Test Graphs

OBW NVNT 2.4G 2402MHz Ant1



OBW NVNT 2.4G 2440MHz Ant1

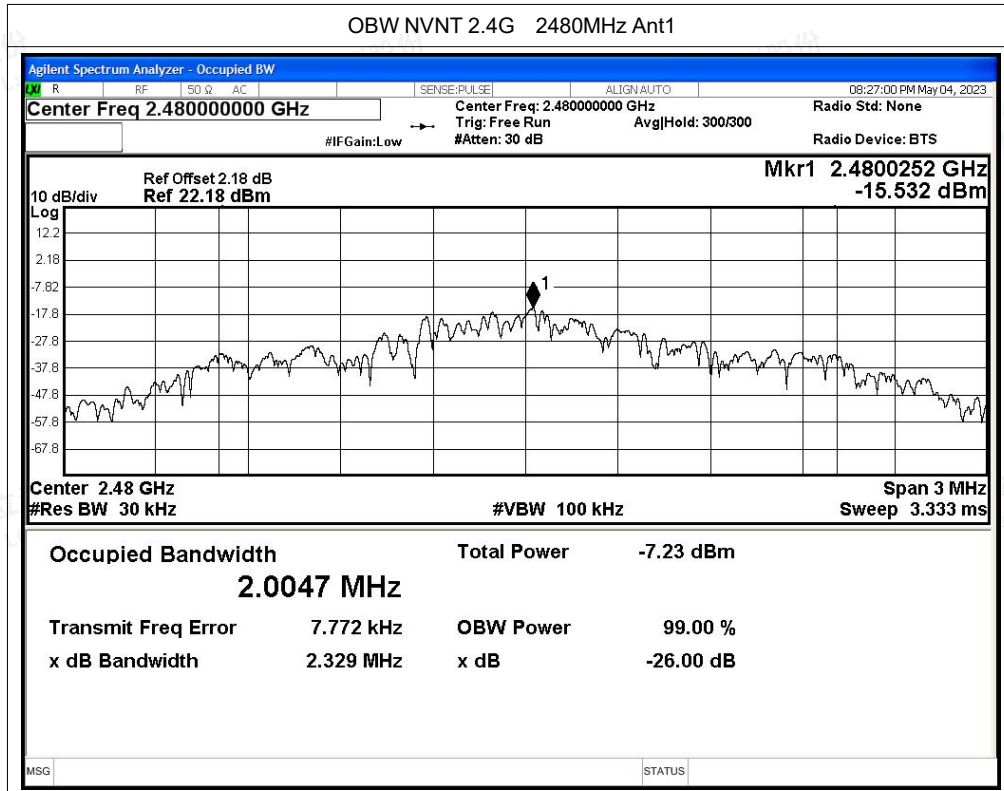


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A.3 Maximum Conducted Output Power and e.i.r.p.

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2402	Ant1	-10.71	30	Pass
NVNT	2.4G	2440	Ant1	-10.46	30	Pass
NVNT	2.4G	2480	Ant1	-9.86	30	Pass

EIRP

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Antenna Gain	Report EIRP Power(dBm)	Limit[dBm]	Verdict
NVNT	2.4G	2402	Ant1	-10.71	-4.62	-15.33	36	Pass
NVNT	2.4G	2440	Ant1	-10.46	-4.62	-15.08	36	Pass
NVNT	2.4G	2480	Ant1	-9.86	-4.62	-14.48	36	Pass



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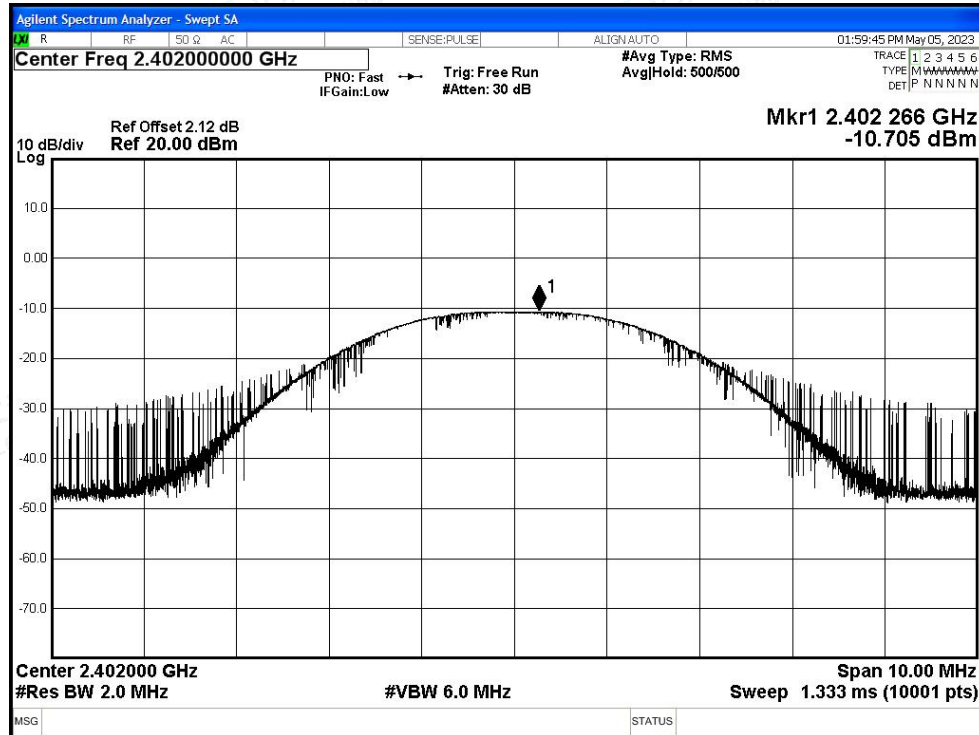
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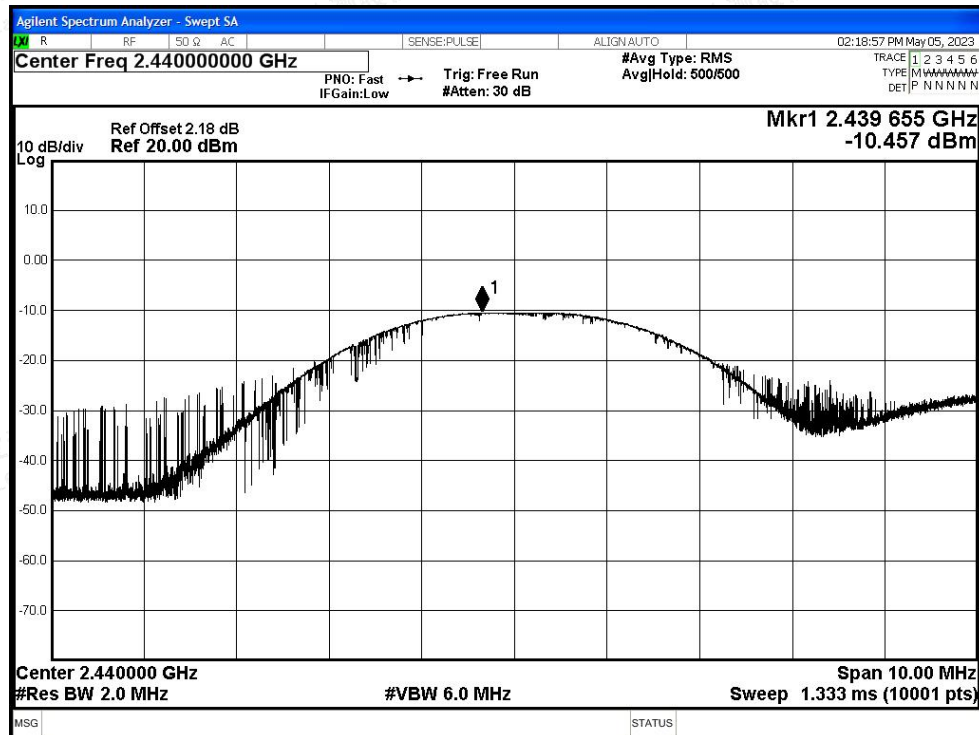


Test Graphs

Power NVNT 2.4G 2402MHz Ant1



Power NVNT 2.4G 2440MHz Ant1

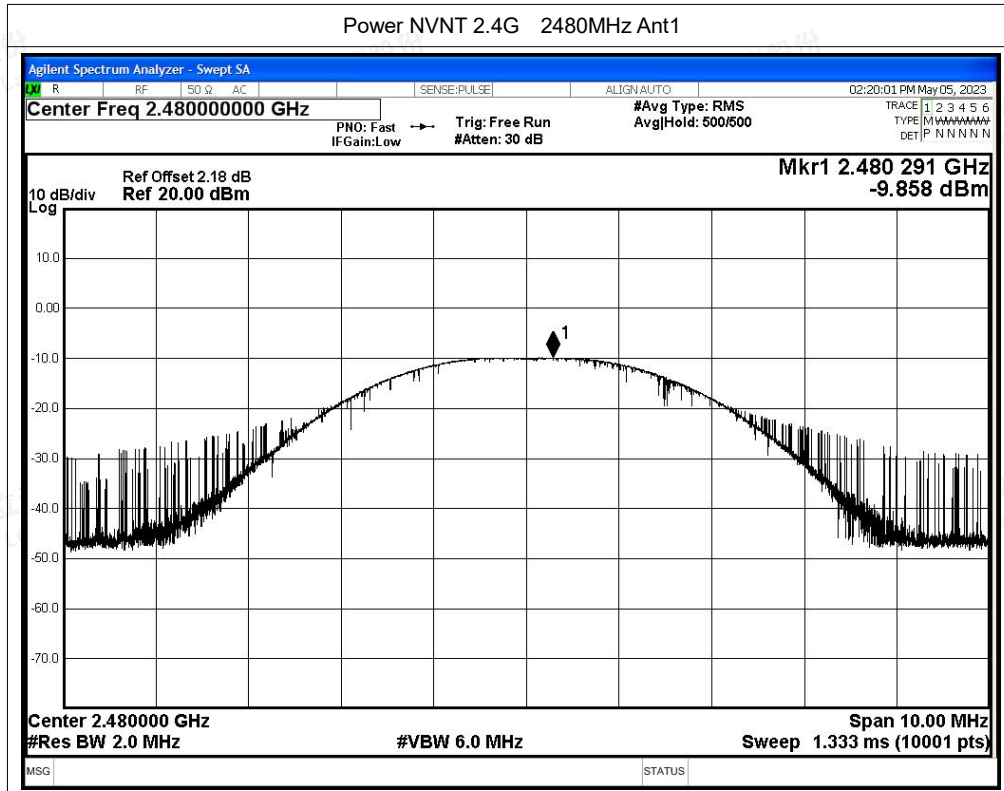


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A.4 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	2.4G	2402	Ant1	-29.73	-29.73	8	Pass
NVNT	2.4G	2440	Ant1	-29.78	-29.78	8	Pass
NVNT	2.4G	2480	Ant1	-29.18	-29.18	8	Pass



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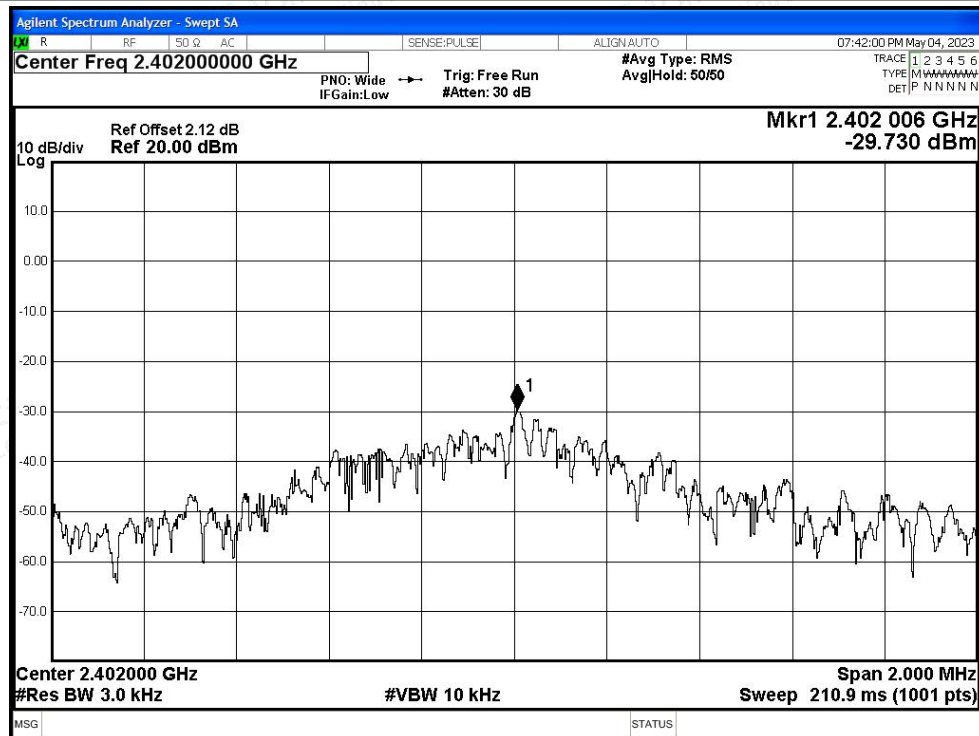
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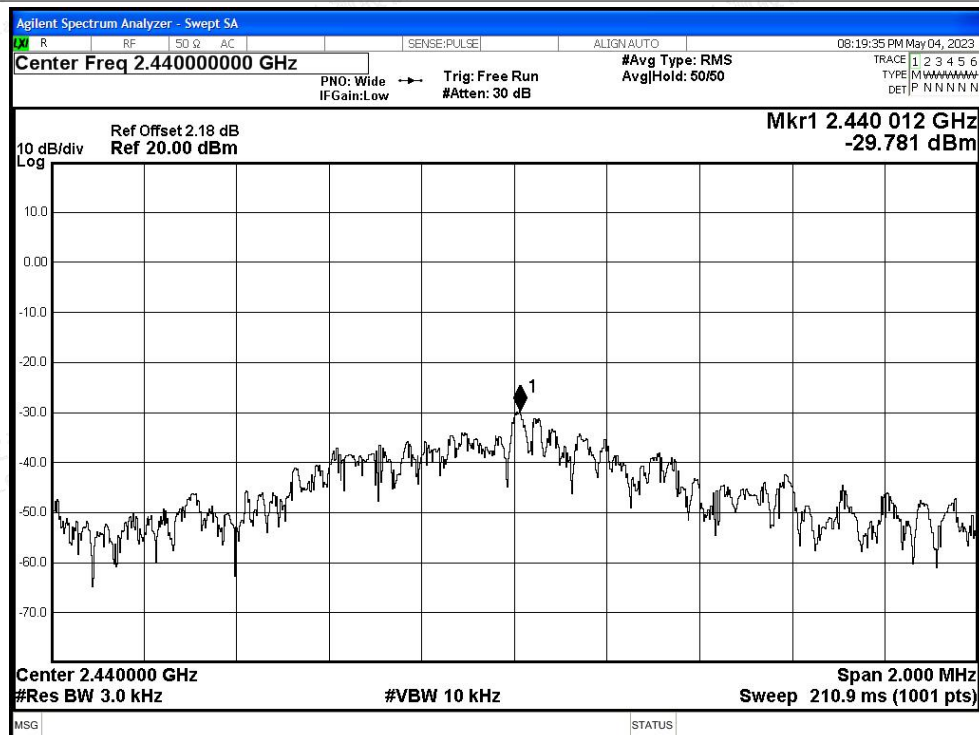


Test Graphs

PSD NVNT 2.4G 2402MHz Ant1



PSD NVNT 2.4G 2440MHz Ant1

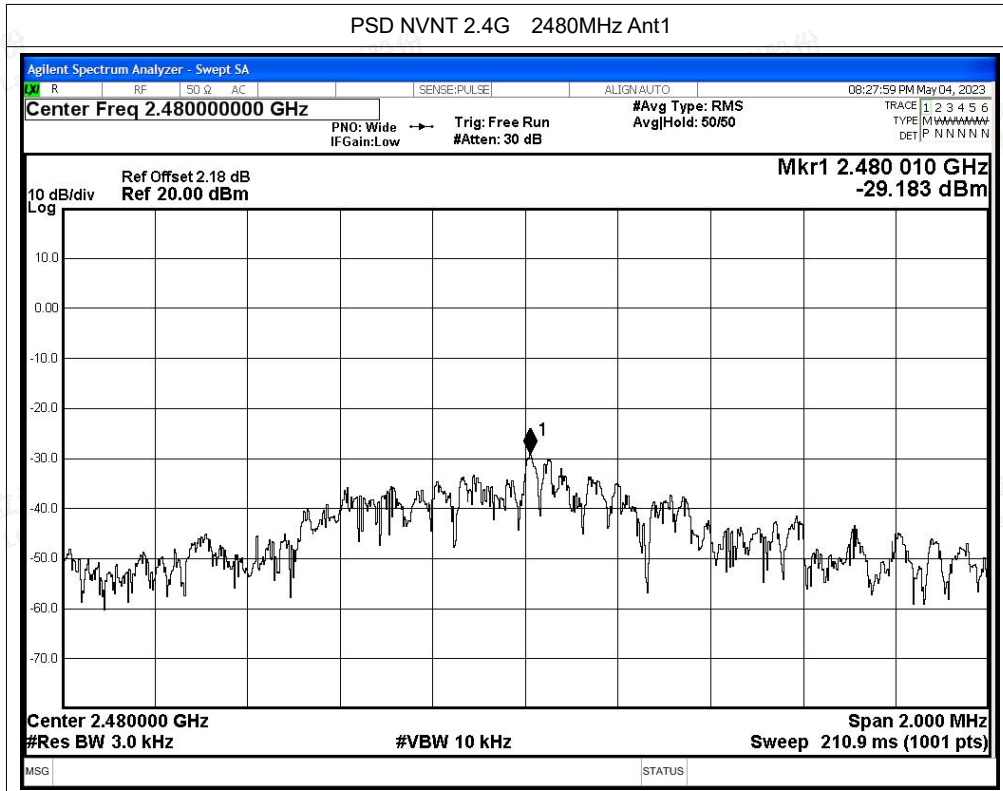


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A.5 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	-34.78	-20	Pass
NVNT	2.4G	2480	Ant1	-40.6	-20	Pass



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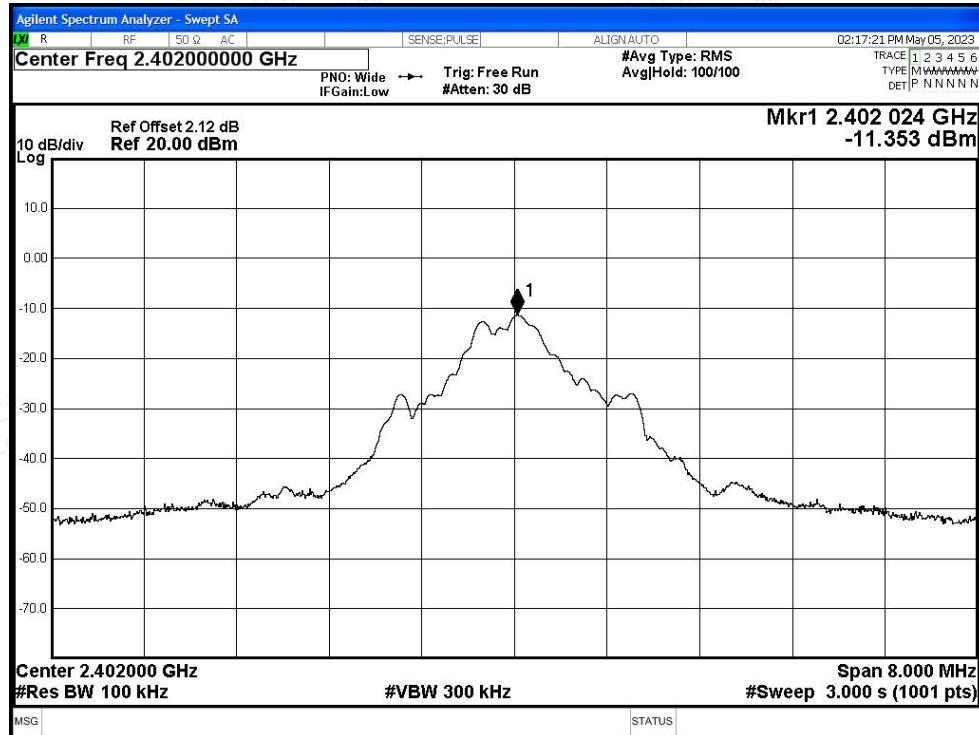
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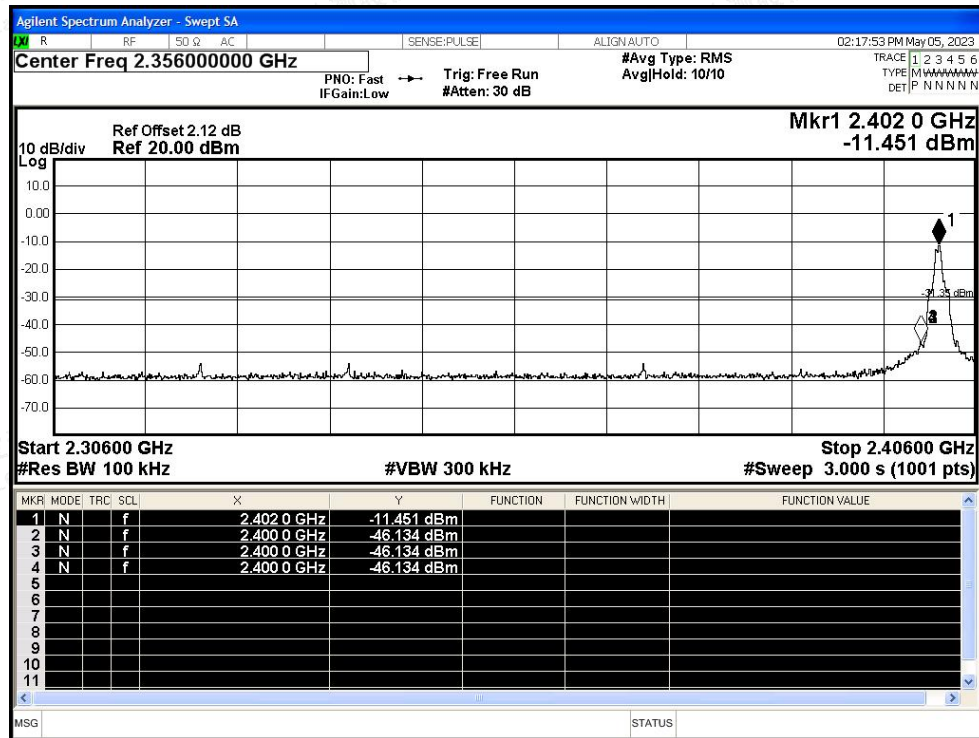


Test Graphs

Band Edge NVNT 2.4G 2402MHz Ant1 Ref



Band Edge NVNT 2.4G 2402MHz Ant1 Emission

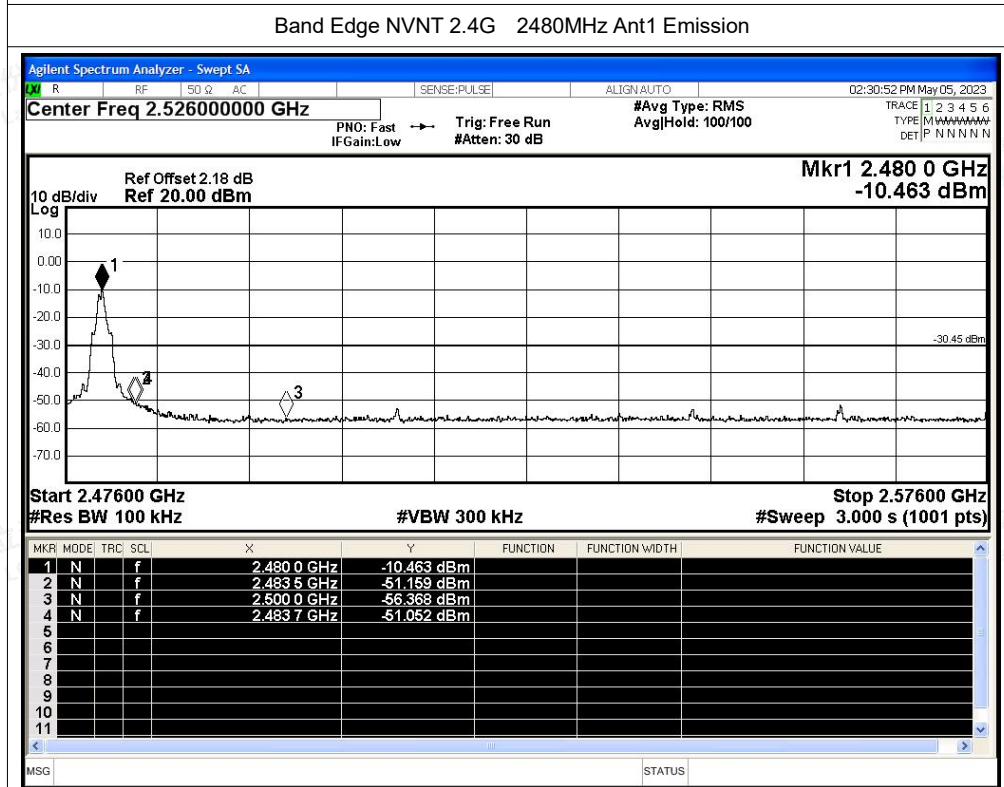
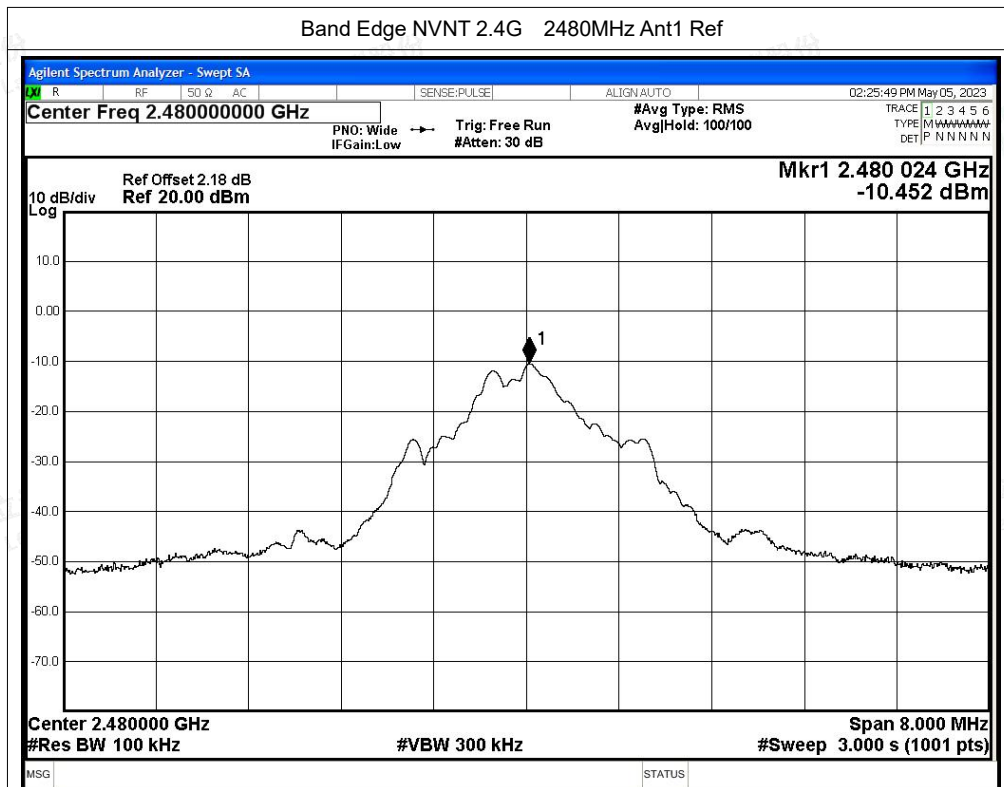


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A.6 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	-38.96	-20	Pass
NVNT	2.4G	2440	Ant1	-39.56	-20	Pass
NVNT	2.4G	2480	Ant1	-39.99	-20	Pass



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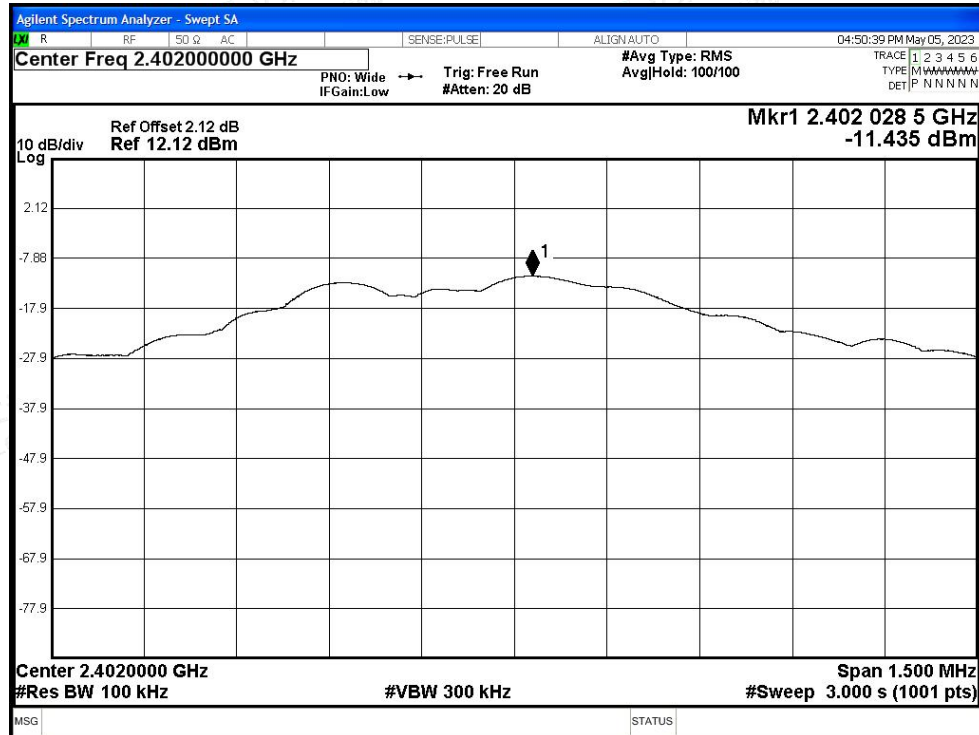
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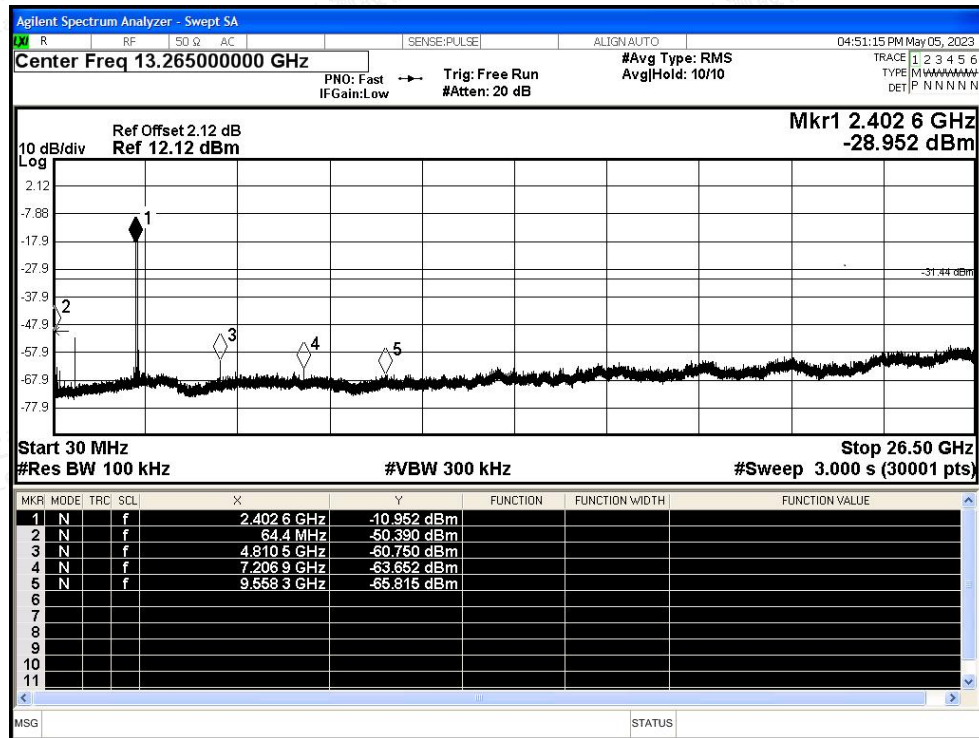


Test Graphs

Tx. Spurious NVNT 2.4G 2402MHz Ant1 Ref



Tx. Spurious NVNT 2.4G 2402MHz Ant1 Emission



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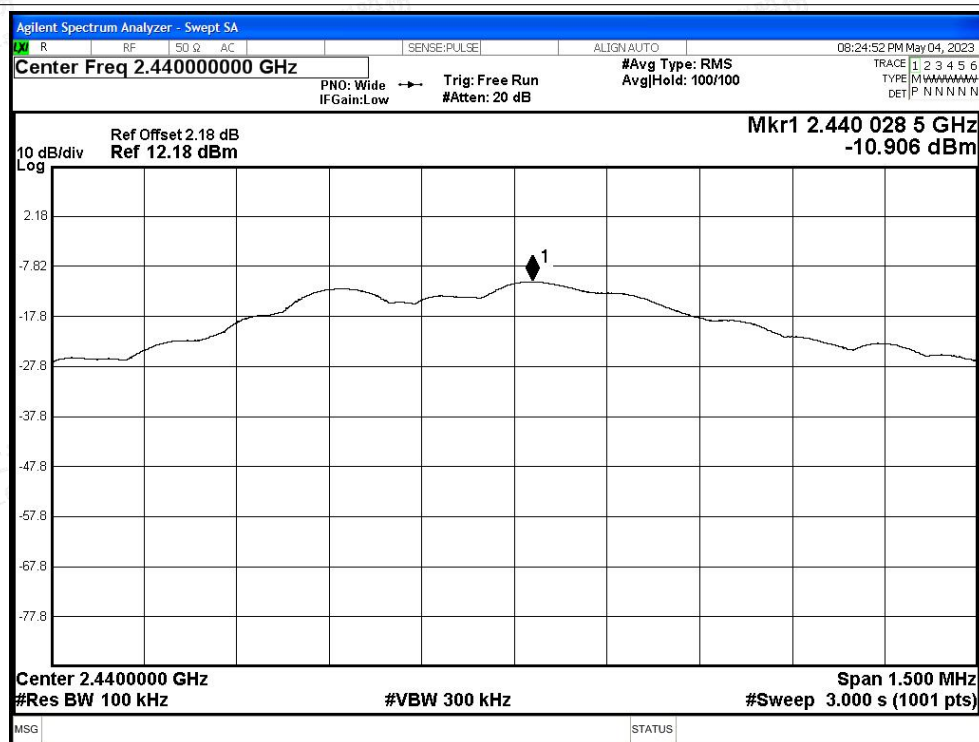
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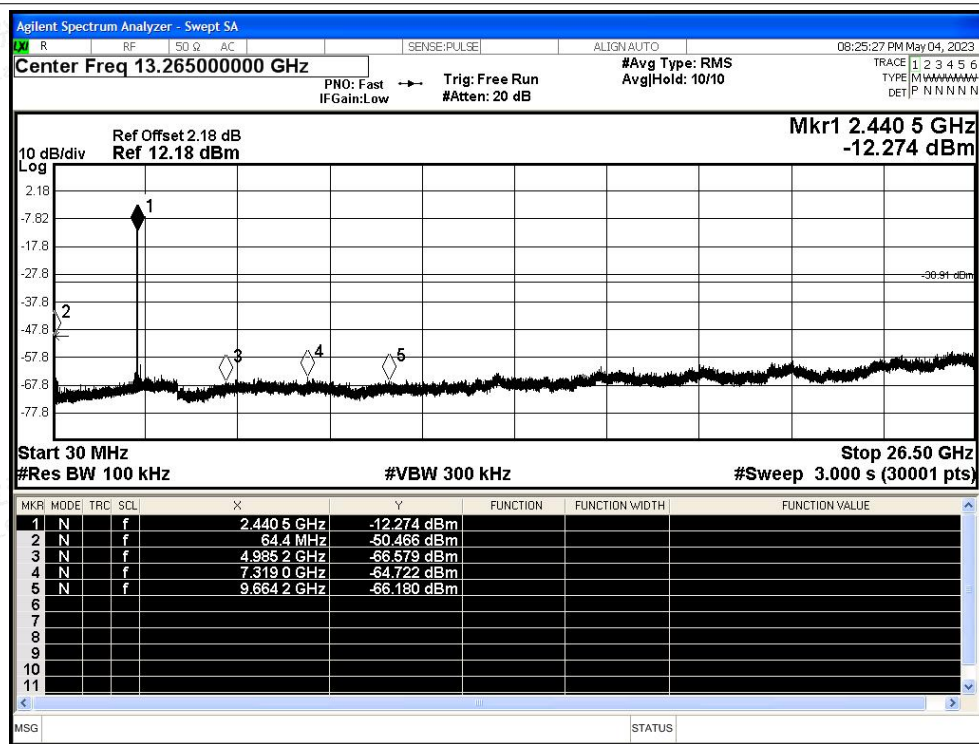
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Tx. Spurious NVNT 2.4G 2440MHz Ant1 Ref



Tx. Spurious NVNT 2.4G 2440MHz Ant1 Emission



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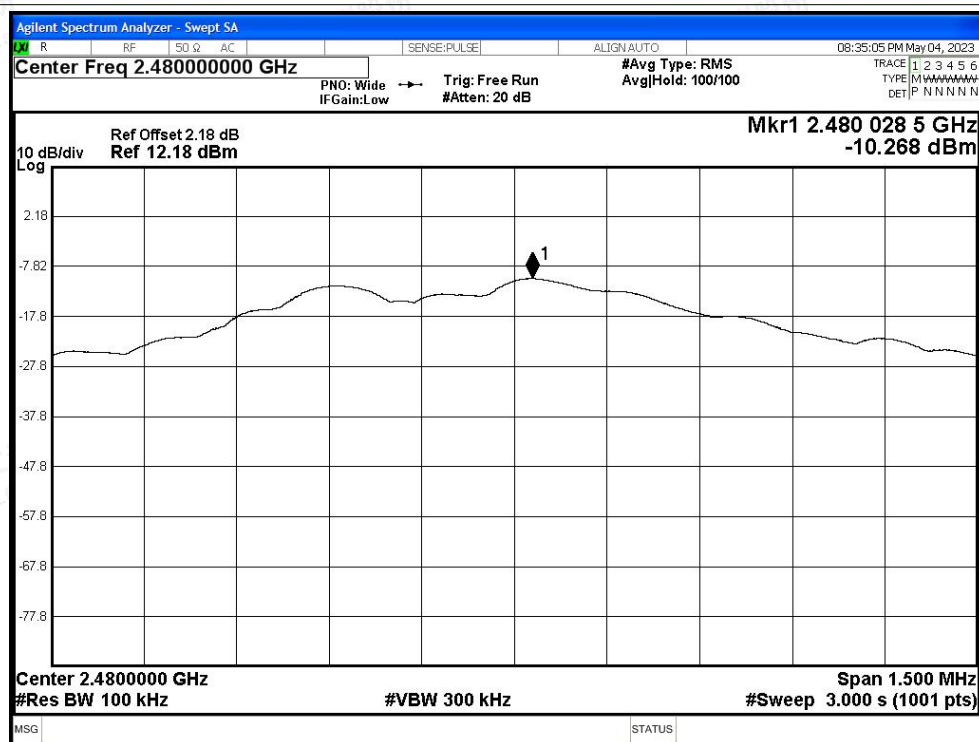
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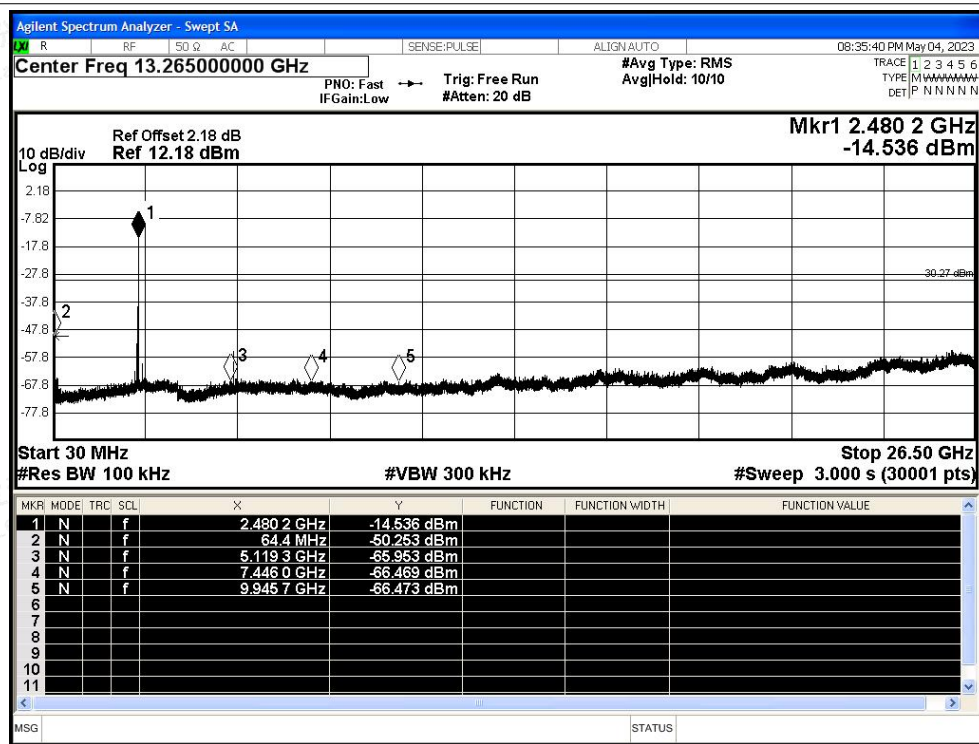
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Tx. Spurious NVNT 2.4G 2480MHz Ant1 Ref



Tx. Spurious NVNT 2.4G 2480MHz Ant1 Emission



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A.7 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	2.4G	2402	Ant1	1.4	18.54	17.86
NVNT	2.4G	2440	Ant1	1.4	18.54	17.86
NVNT	2.4G	2480	Ant1	1.4	18.54	17.86



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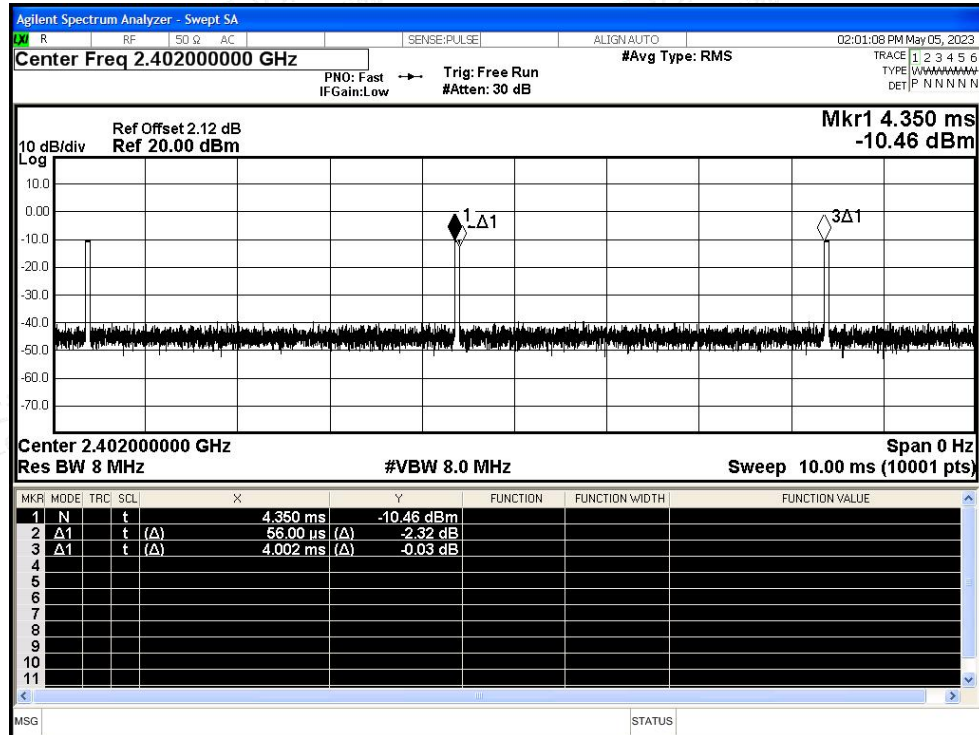
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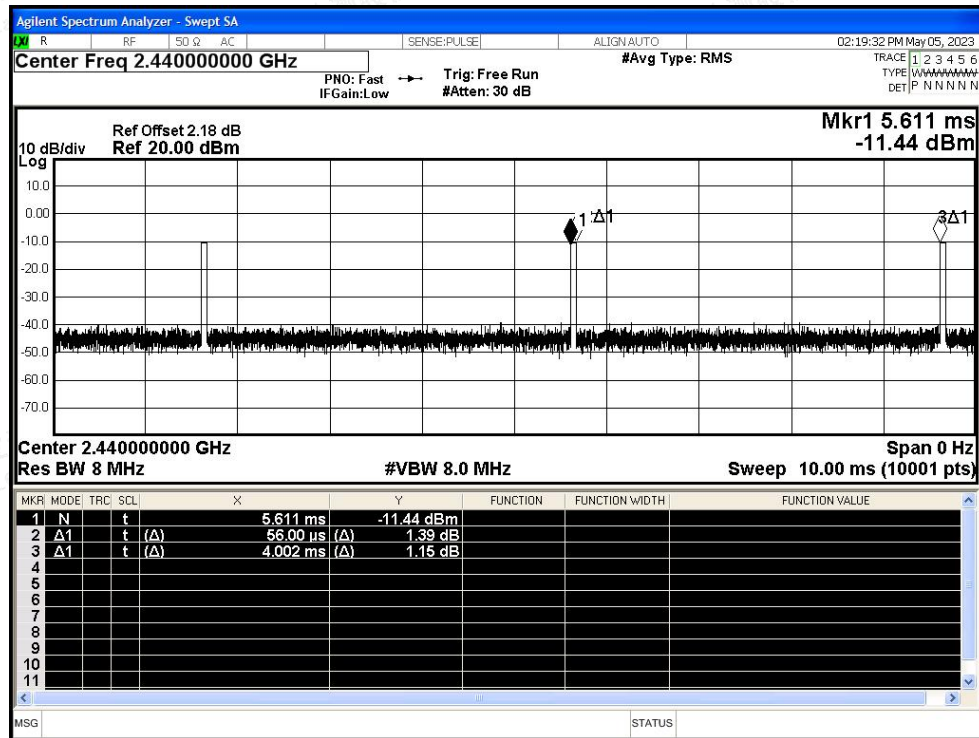


Test Graphs

Duty Cycle NVNT 2.4G 2402MHz Ant1



Duty Cycle NVNT 2.4G 2440MHz Ant1

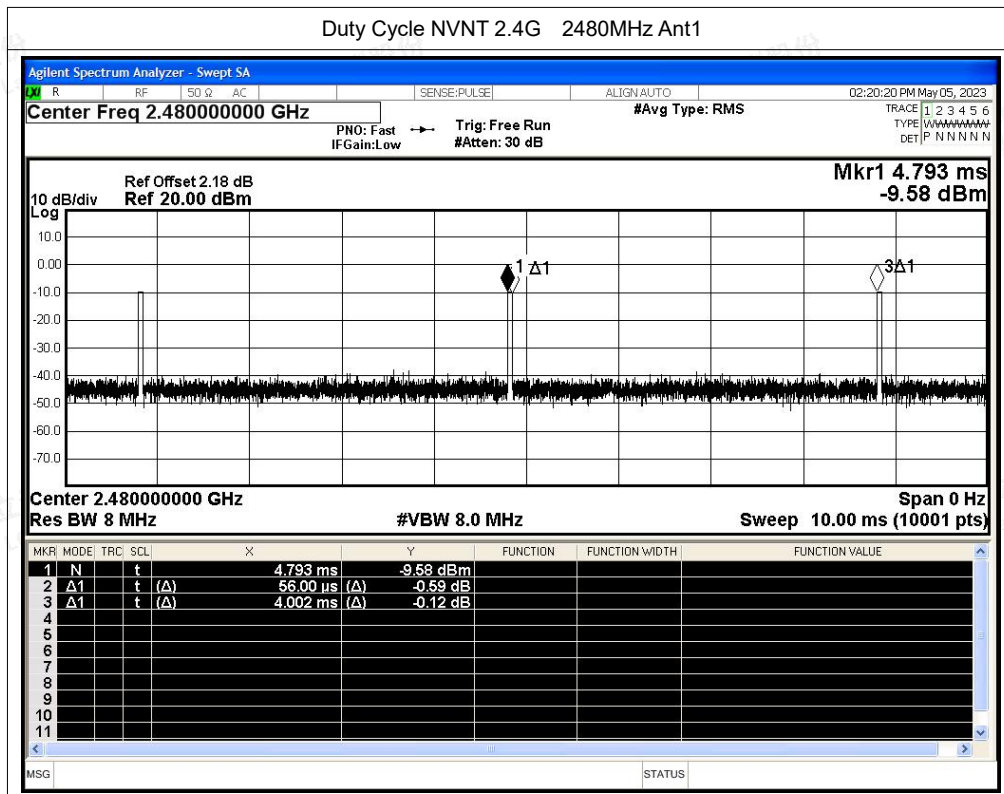


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A.8 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	2.4G	2402	Ant1	2310	-51.47	2	45.79	Peak	74	Pass
NVNT	2.4G	2402	Ant1	2310	-55.62	2	41.64	Average	54	Pass
NVNT	2.4G	2402	Ant1	2386.704	-46.39	2	50.87	Peak	74	Pass
NVNT	2.4G	2402	Ant1	2370.096	-52.98	2	44.28	Average	54	Pass
NVNT	2.4G	2402	Ant1	2390	-50.47	2	46.79	Peak	74	Pass
NVNT	2.4G	2402	Ant1	2390	-56.07	2	41.19	Average	54	Pass
NVNT	2.4G	2480	Ant1	2483.5	-32.63	2	64.63	Peak	74	Pass
NVNT	2.4G	2480	Ant1	2483.5	-44.87	2	52.39	Average	54	Pass
NVNT	2.4G	2480	Ant1	2483.512	-32.63	2	64.63	Peak	74	Pass
NVNT	2.4G	2480	Ant1	2483.512	-44.87	2	52.39	Average	54	Pass
NVNT	2.4G	2480	Ant1	2500	-45.26	2	52	Peak	74	Pass
NVNT	2.4G	2480	Ant1	2500	-54.07	2	43.19	Average	54	Pass



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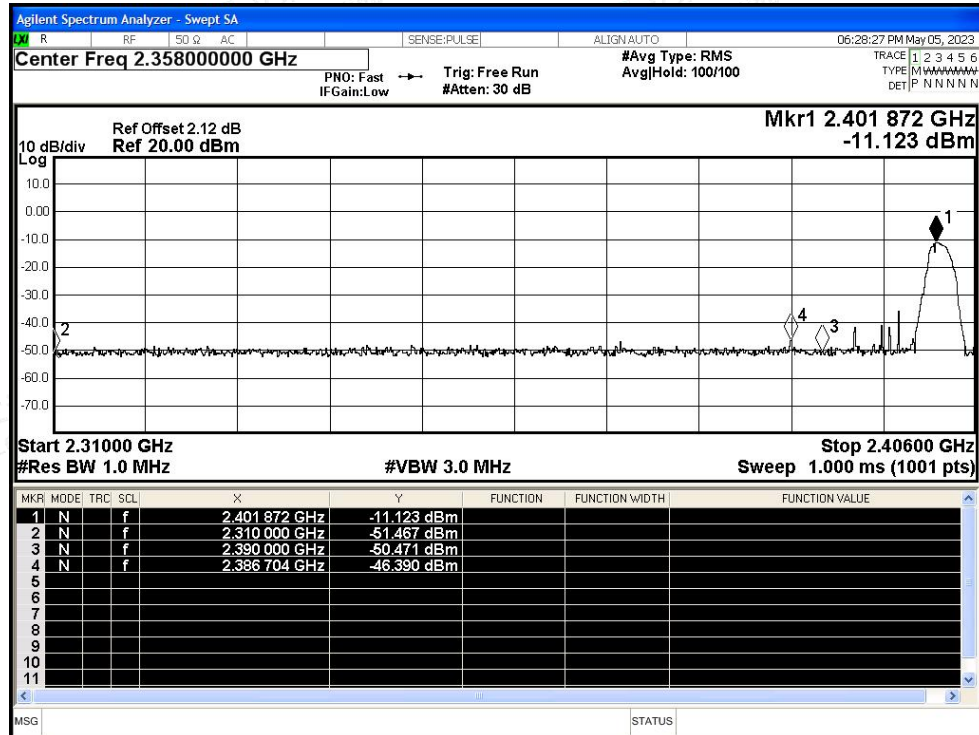
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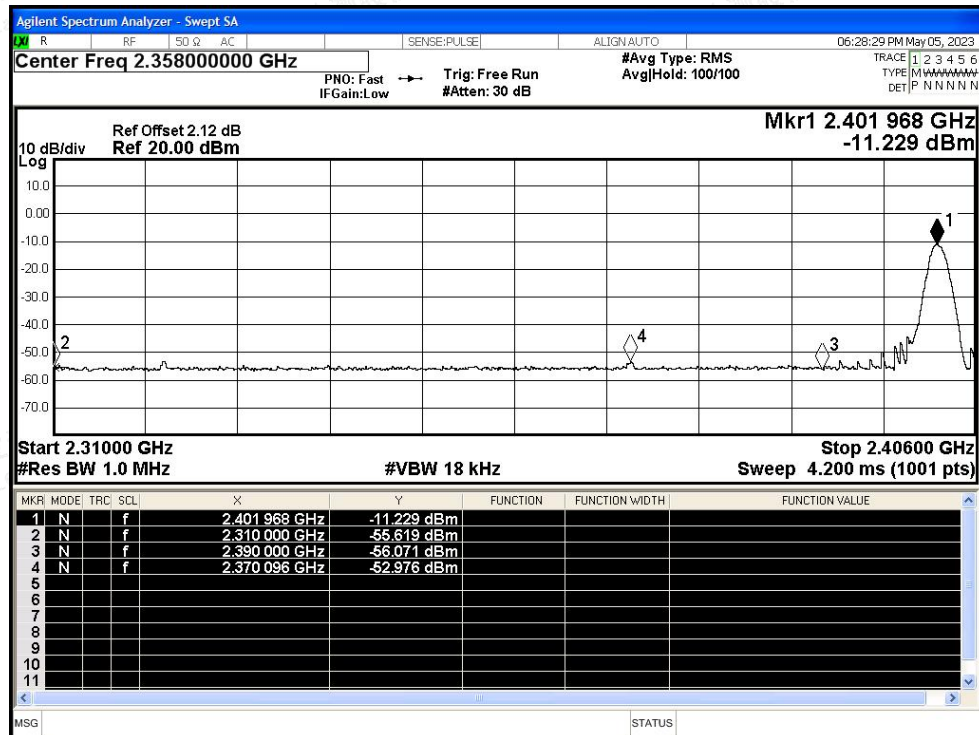


Test Graphs

Restrict Band NVNT 2.4G 2402MHz Ant1 Peak



Restrict Band NVNT 2.4G 2402MHz Ant1 Average



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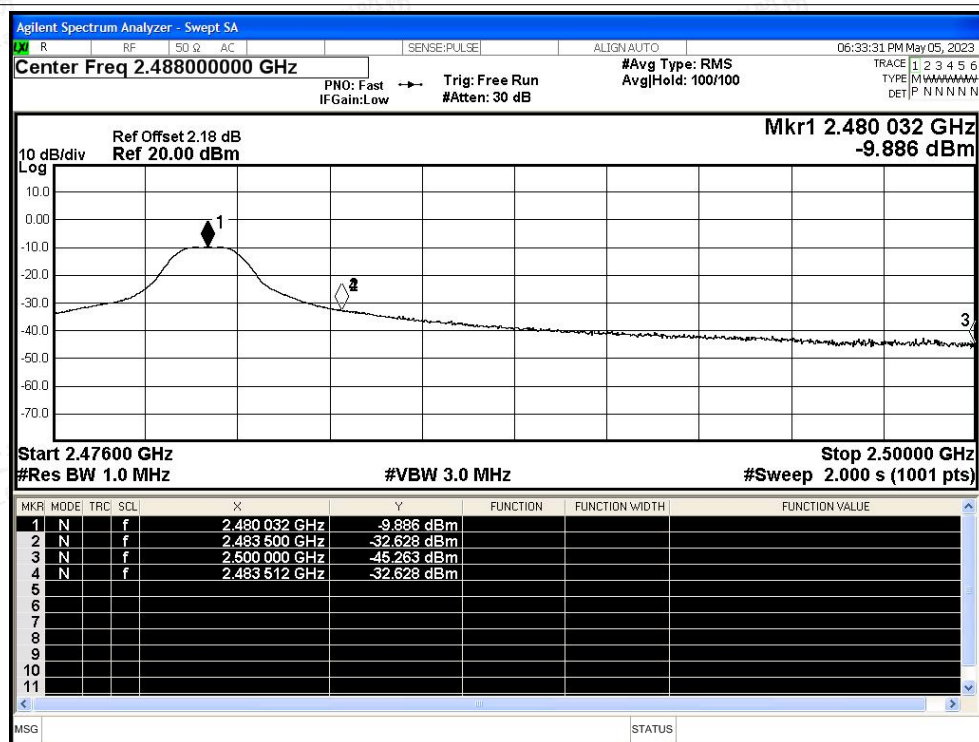
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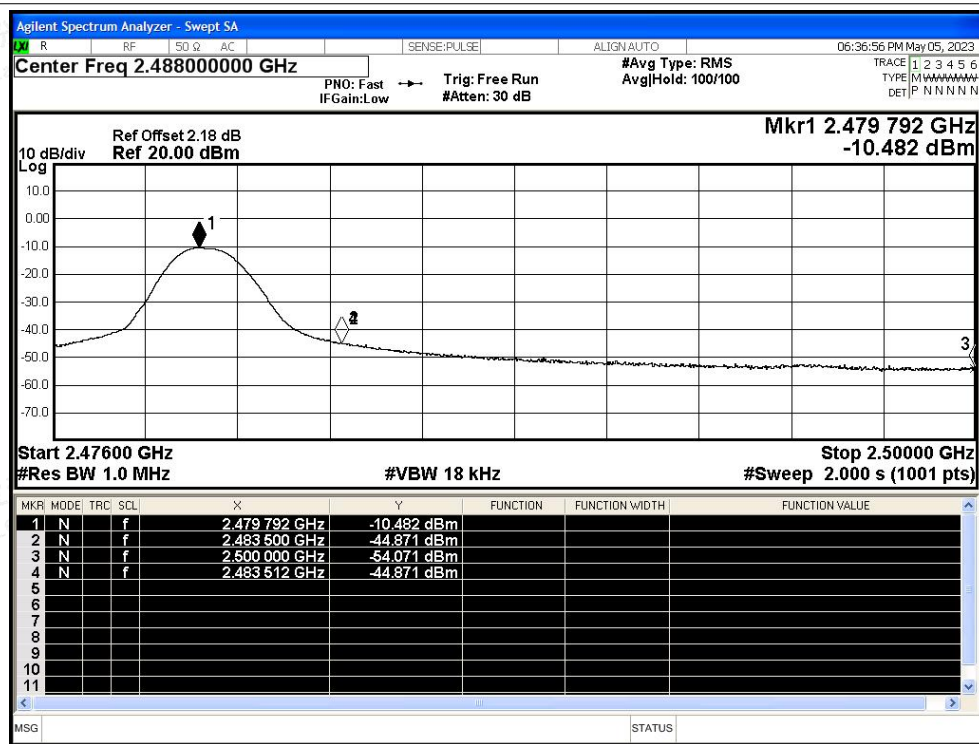
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Restrict Band NVNT 2.4G 2480MHz Ant1 Peak



Restrict Band NVNT 2.4G 2480MHz Ant1 Average



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