



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





A.1 -6dB Bandwidth

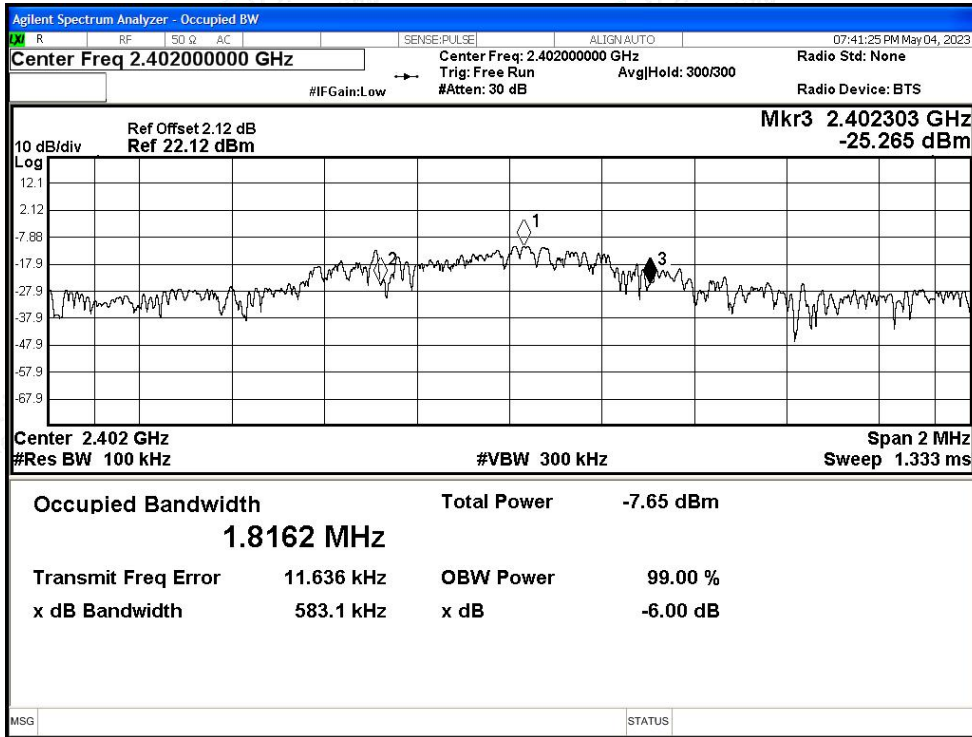
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	2.4G	2402	Ant1	0.583	≥ 0.5	Pass
NVNT	2.4G	2440	Ant1	0.544	≥ 0.5	Pass
NVNT	2.4G	2480	Ant1	0.641	≥ 0.5	Pass



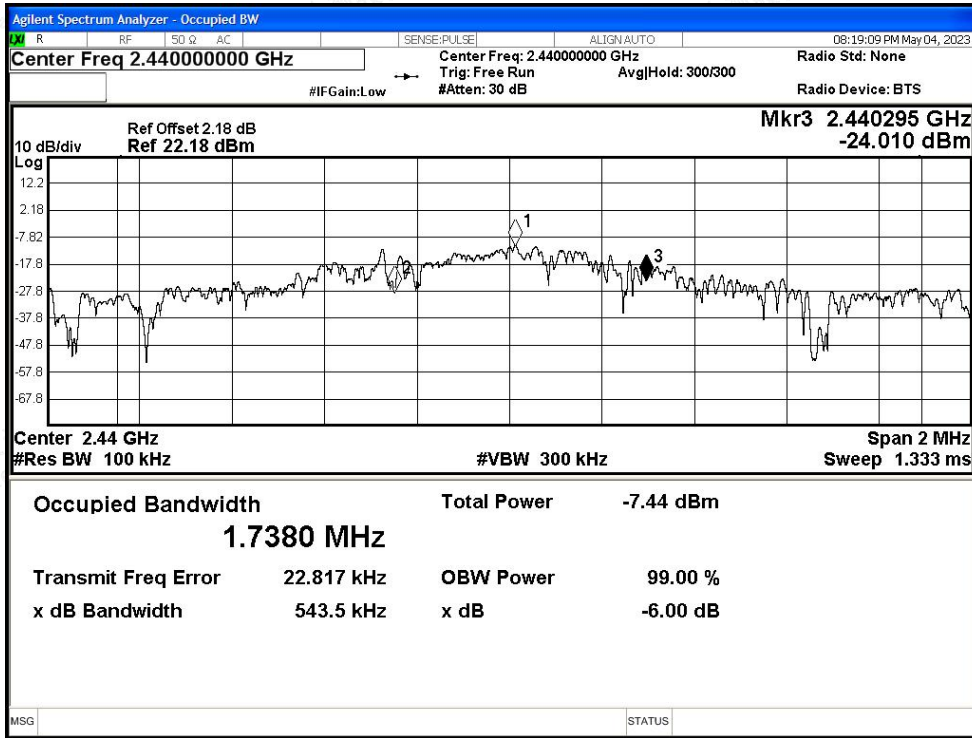


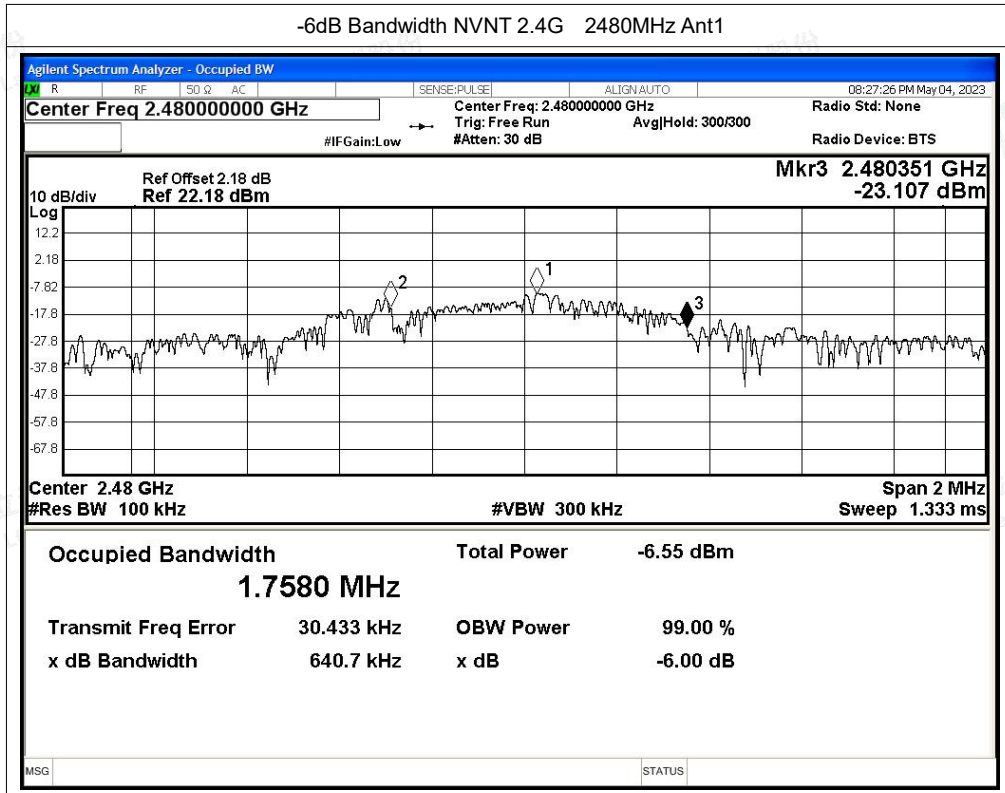
Test Graphs

-6dB Bandwidth NVNT 2.4G 2402MHz Ant1



-6dB Bandwidth NVNT 2.4G 2440MHz Ant1







A.2 Occupied Channel Bandwidth

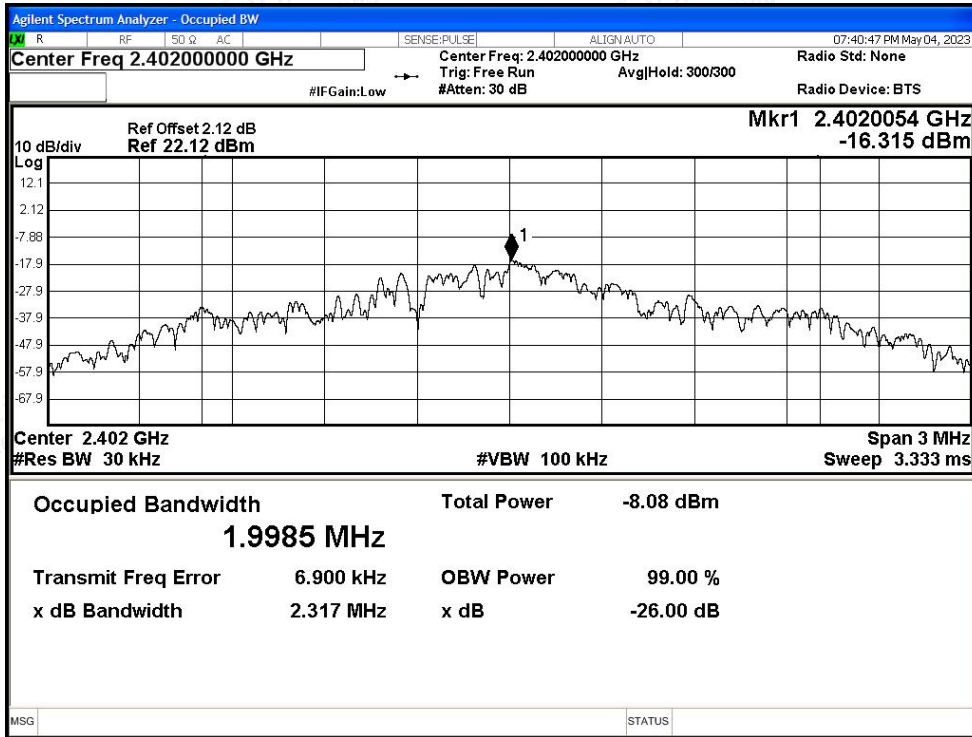
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	2.4G	2402	Ant1	1.999
NVNT	2.4G	2440	Ant1	2.006
NVNT	2.4G	2480	Ant1	2.005



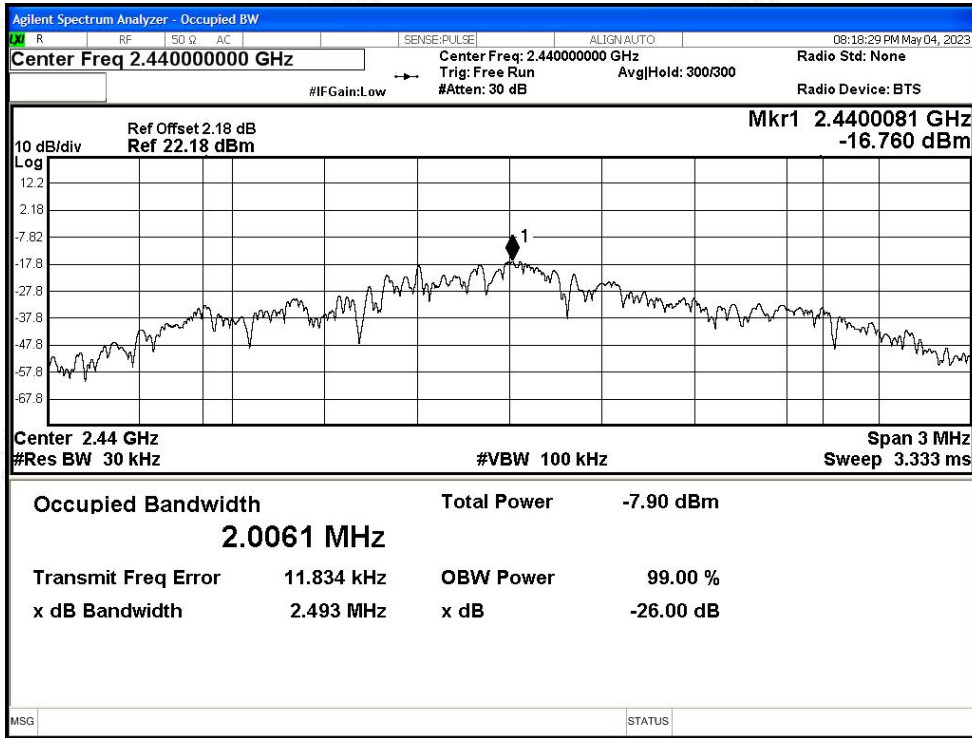


Test Graphs

OBW NVNT 2.4G 2402MHz Ant1



OBW NVNT 2.4G 2440MHz Ant1

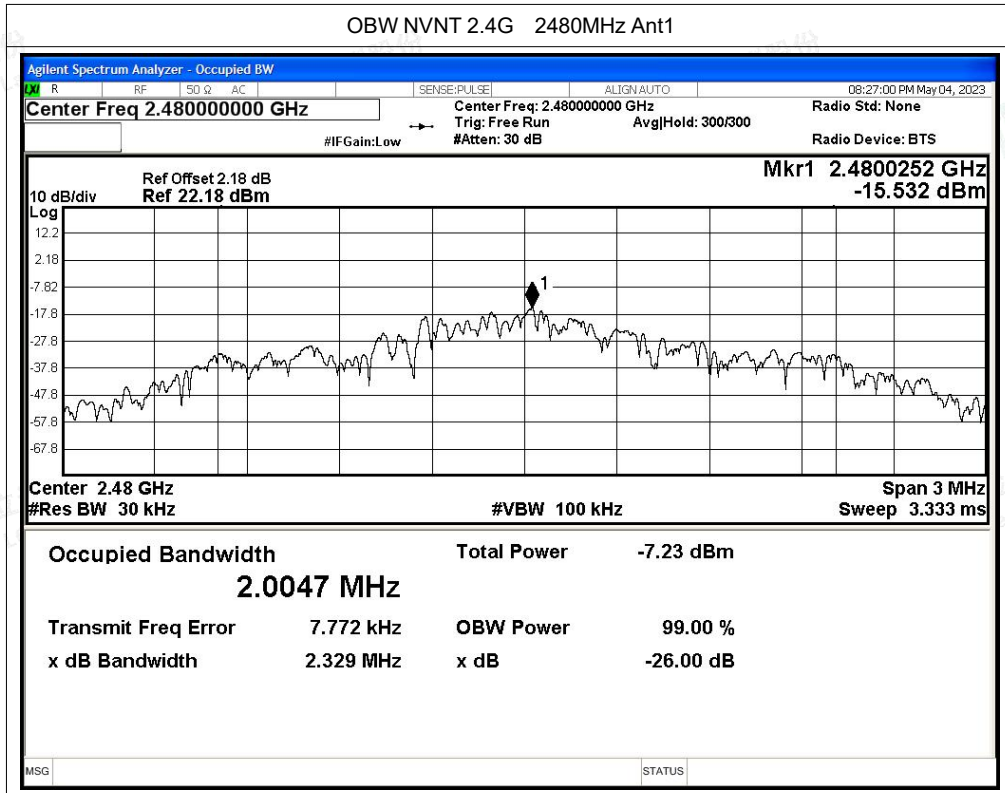


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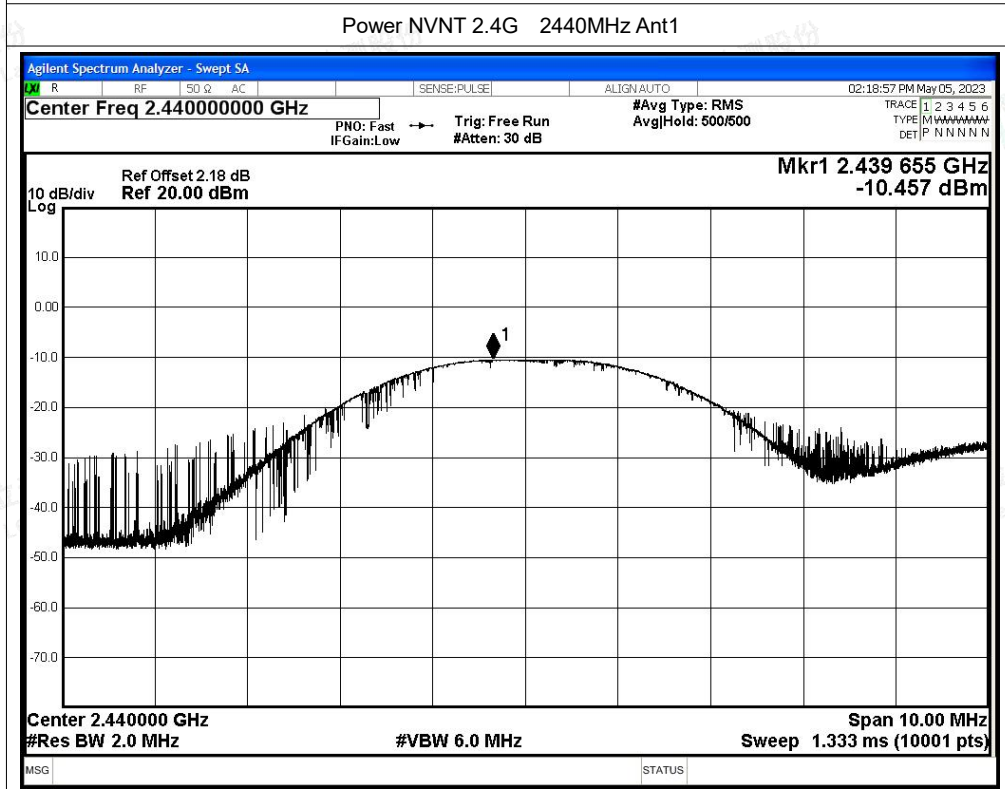
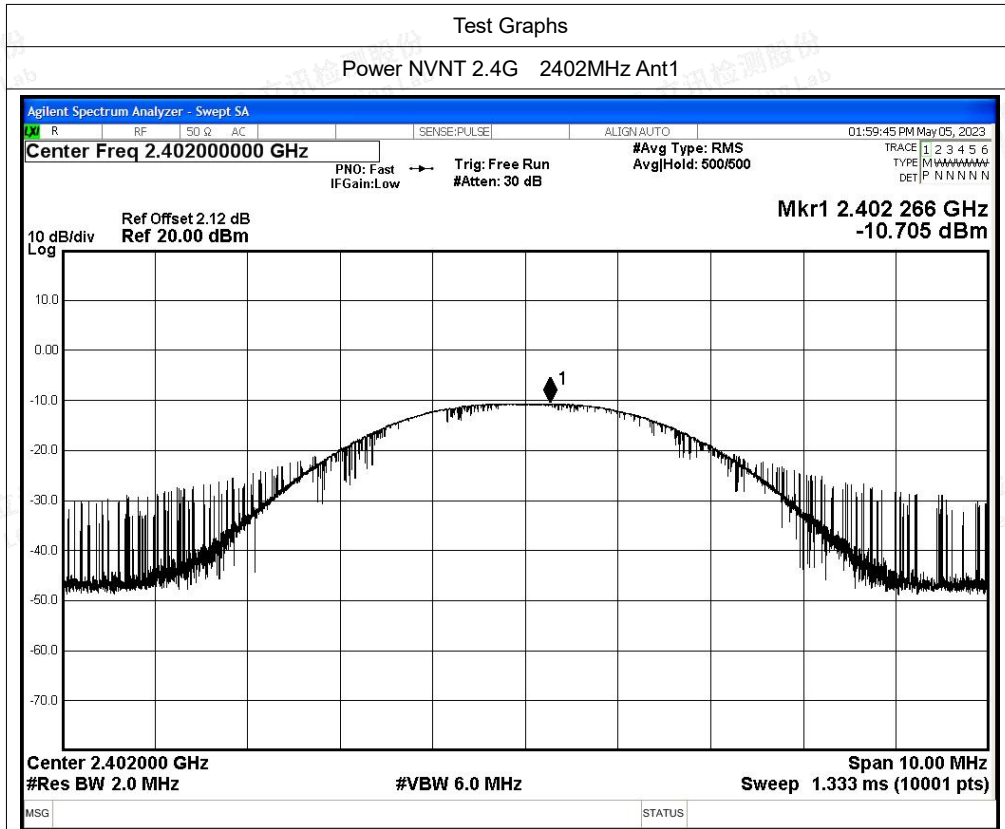
A.3 Maximum Conducted Output Power and e.i.r.p.

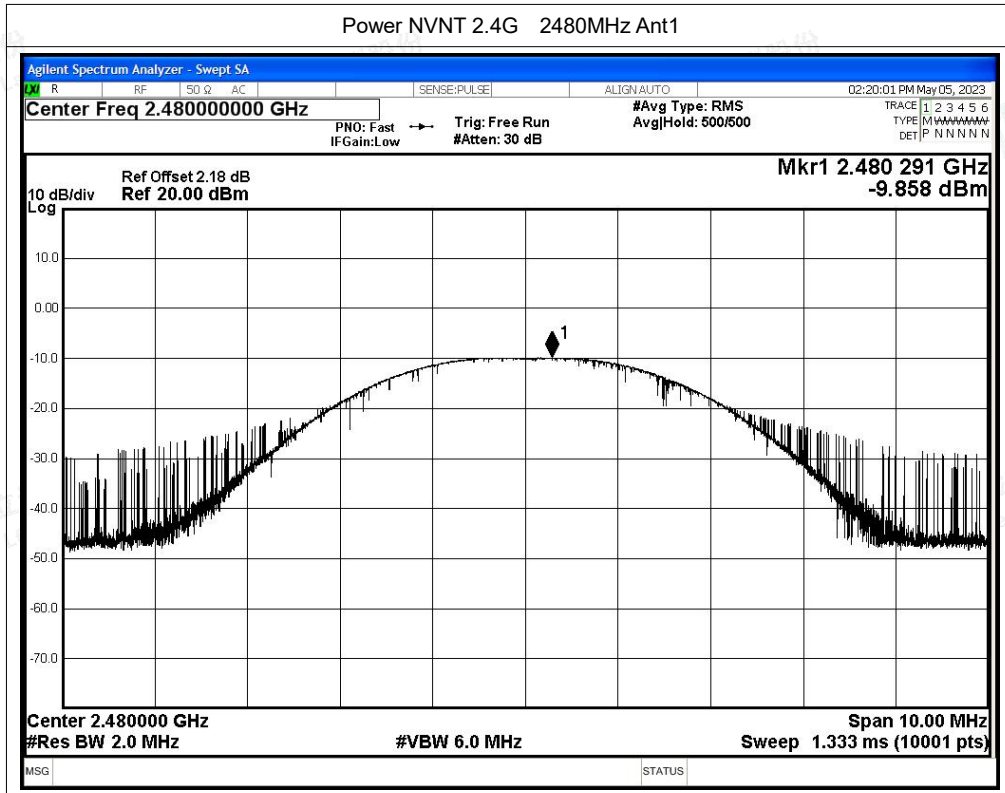
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2402	Ant1	-10.71	30	Pass
NVNT	2.4G	2440	Ant1	-10.46	30	Pass
NVNT	2.4G	2480	Ant1	-9.86	30	Pass

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





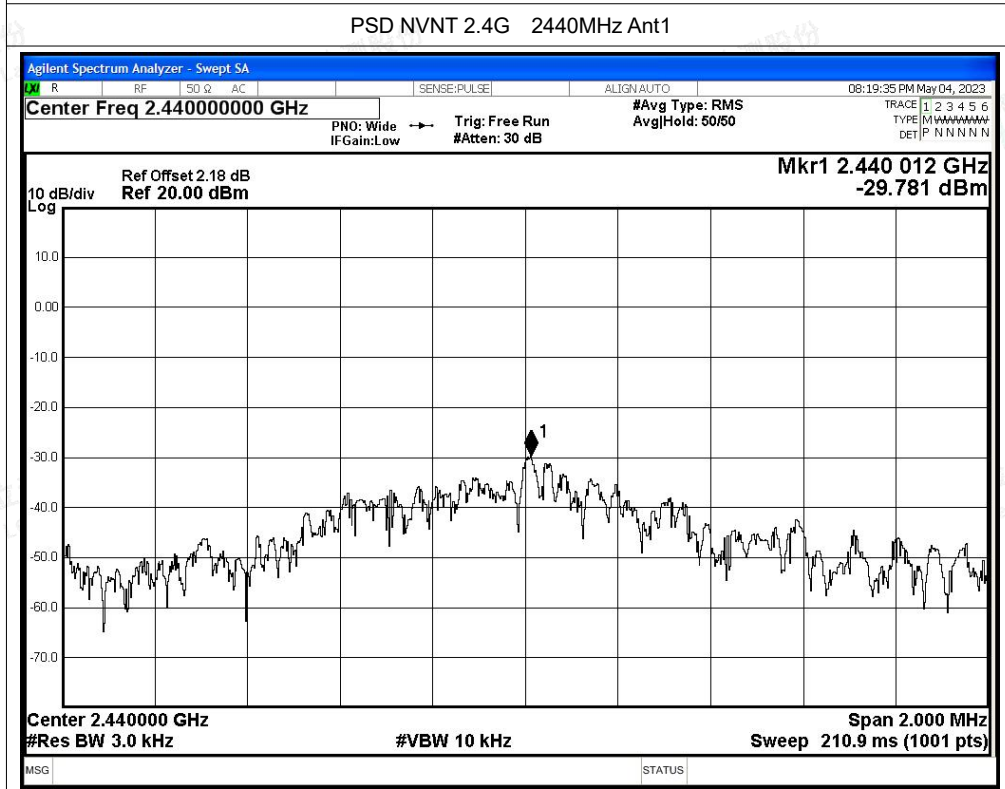
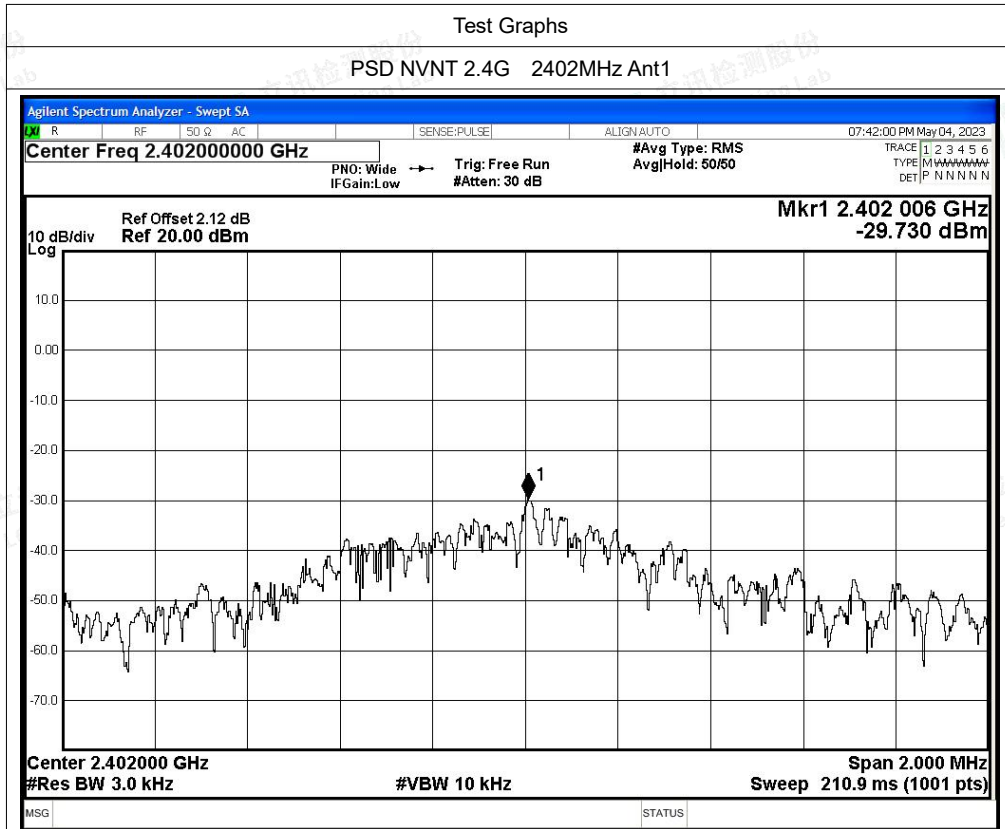


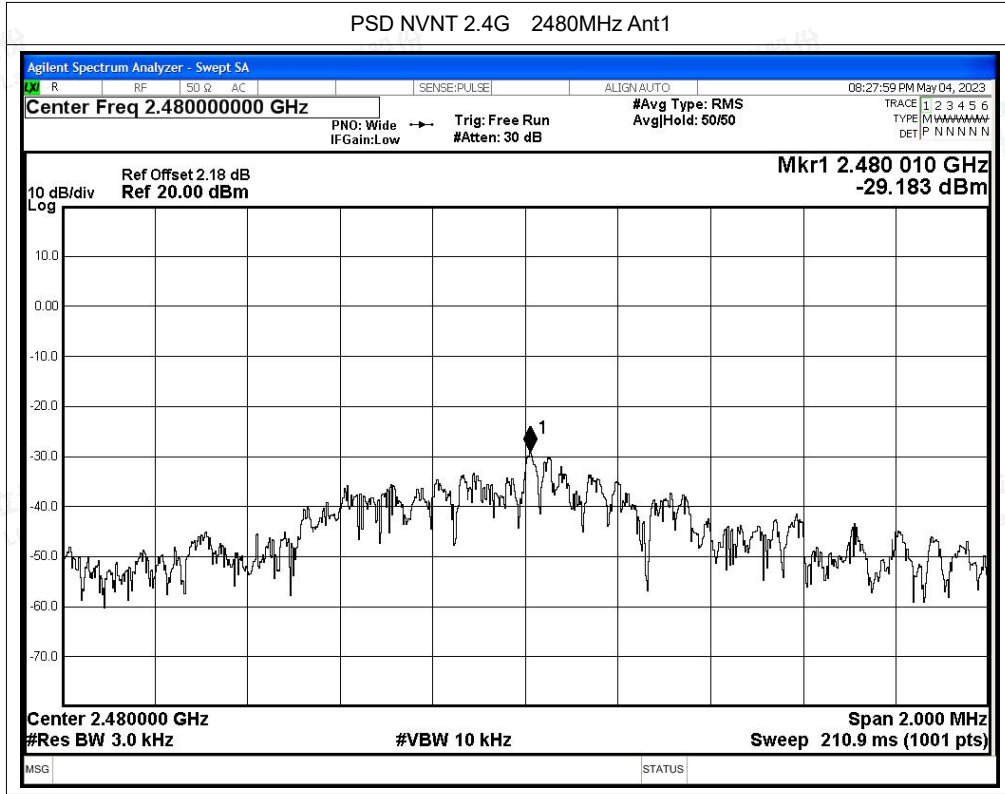


A.4 Maximum Power Spectral Density Level

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









A.5 Band Edge

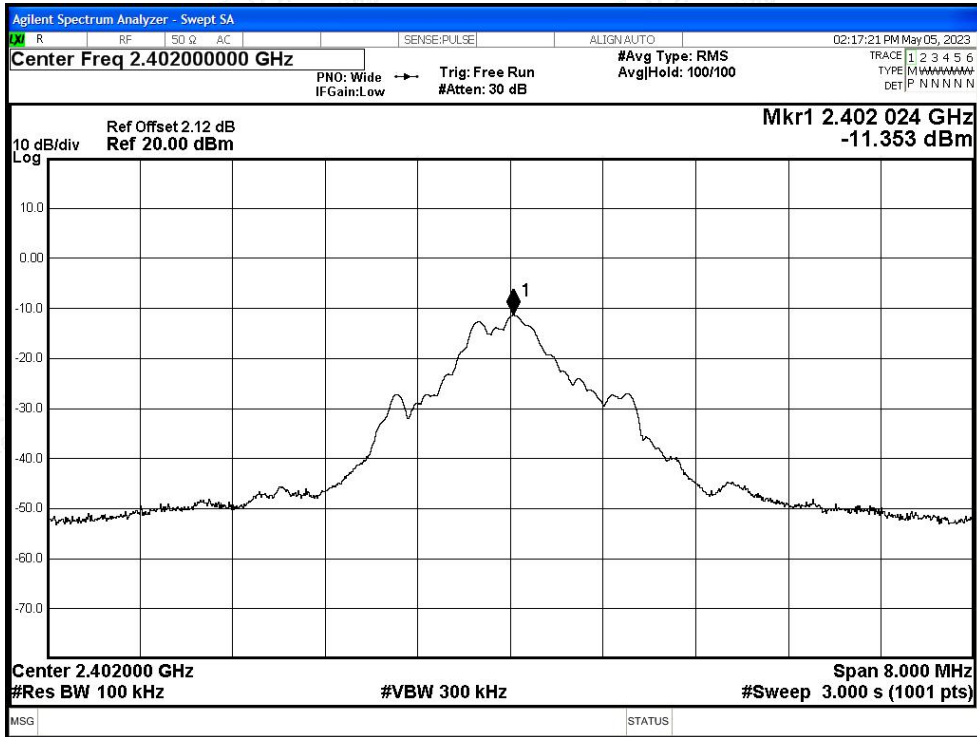
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	-34.78	-20	Pass
NVNT	2.4G	2480	Ant1	-40.6	-20	Pass



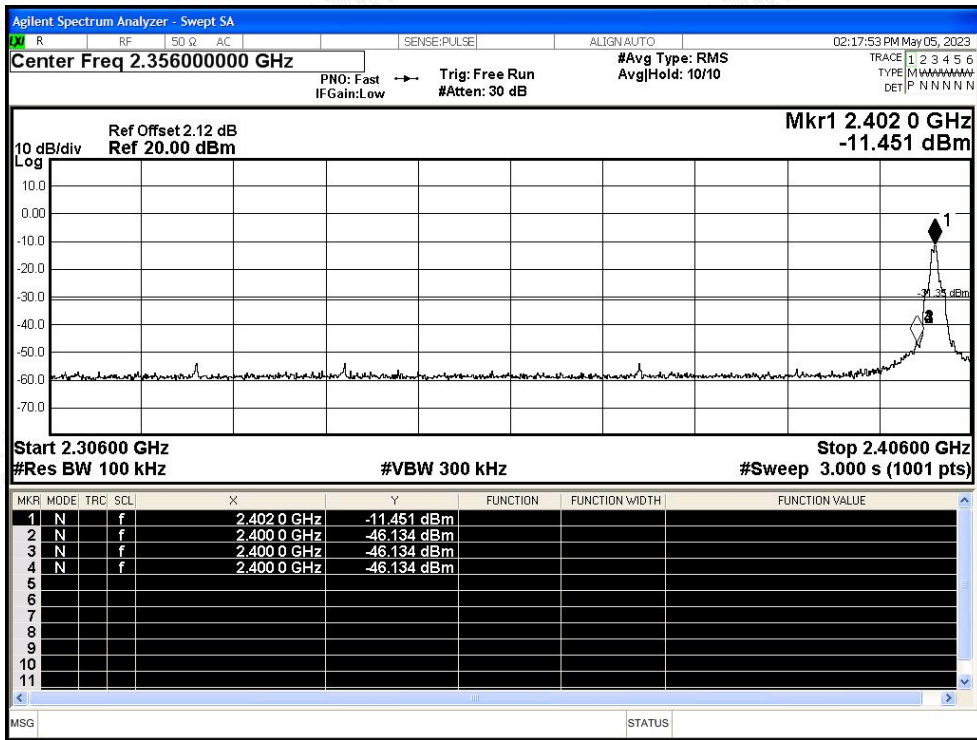


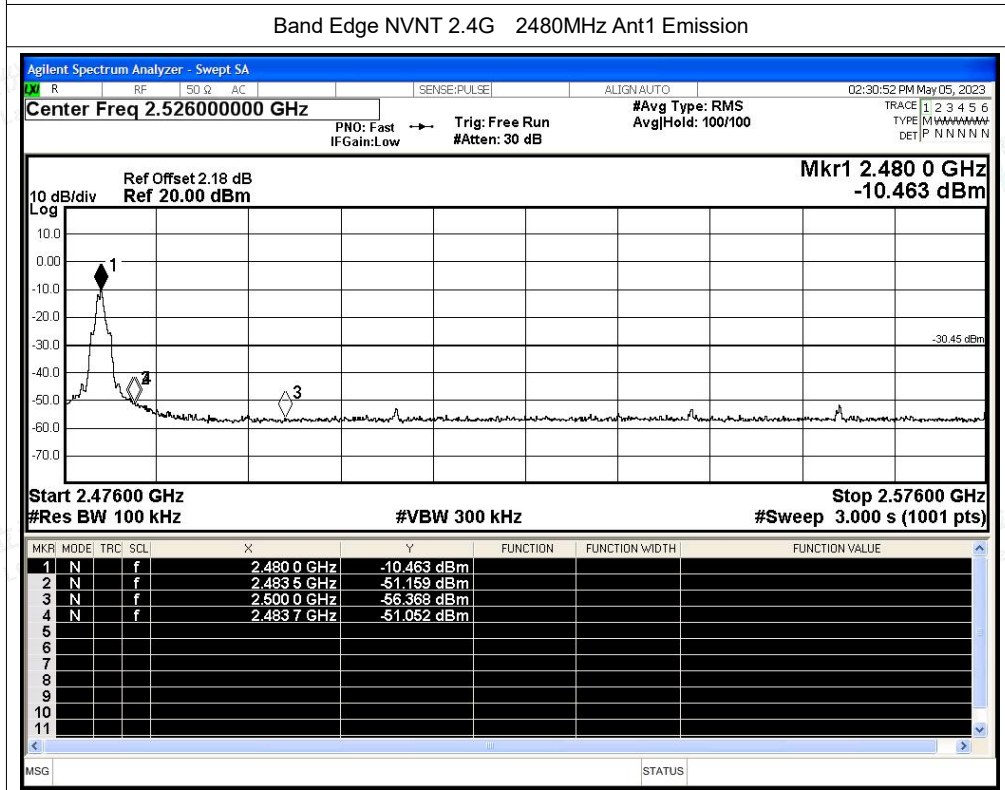
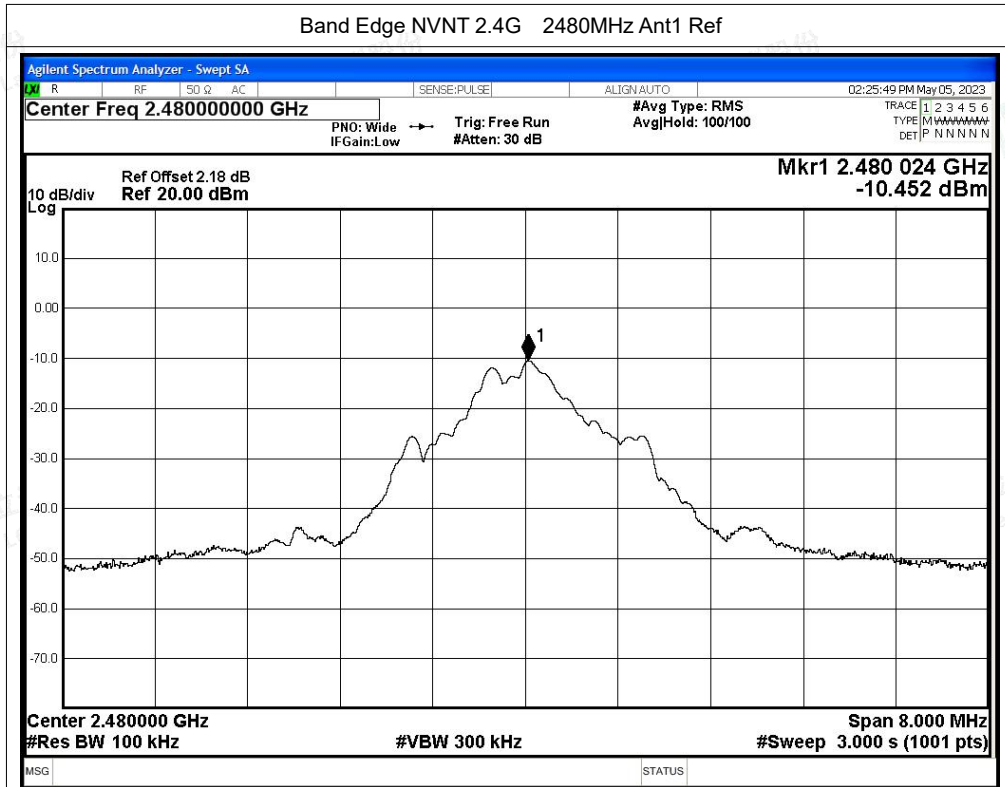
Test Graphs

Band Edge NVNT 2.4G 2402MHz Ant1 Ref



Band Edge NVNT 2.4G 2402MHz Ant1 Emission







A.6 Conducted RF Spurious Emission

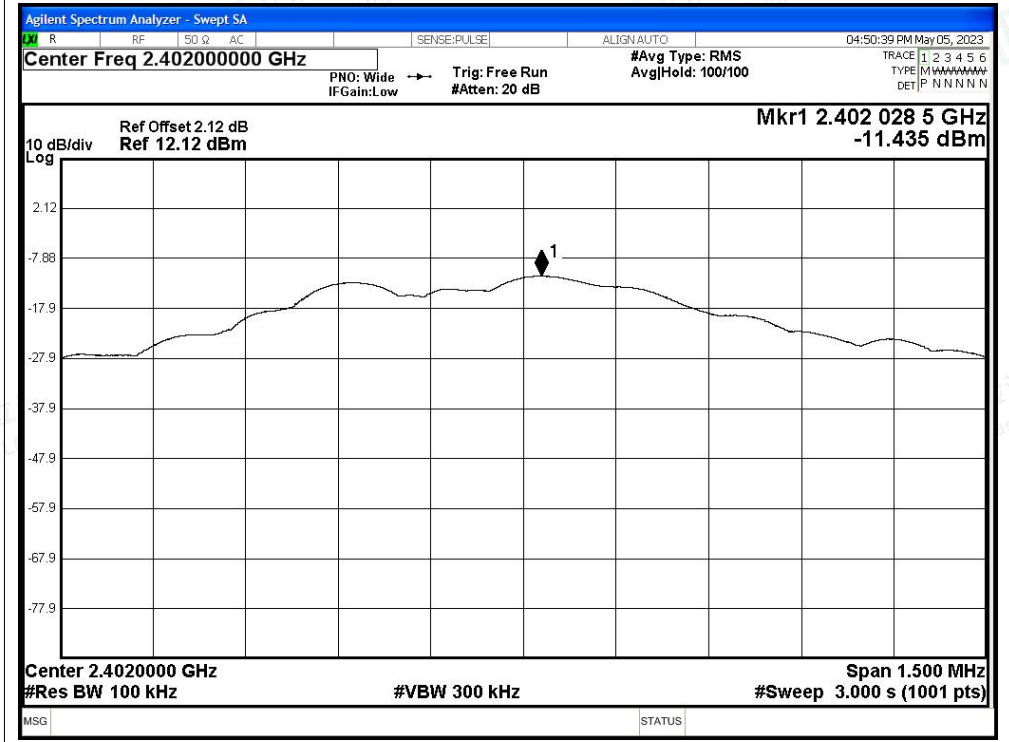
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	-38.96	-20	Pass
NVNT	2.4G	2440	Ant1	-39.56	-20	Pass
NVNT	2.4G	2480	Ant1	-39.99	-20	Pass



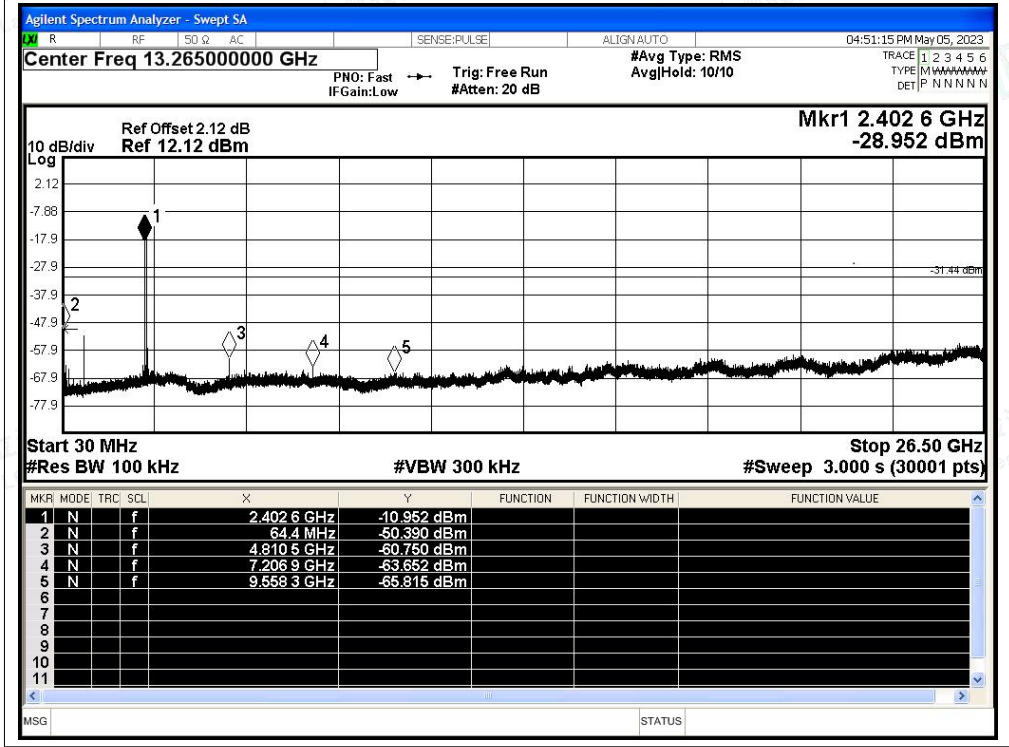


Test Graphs

Tx. Spurious NVNT 2.4G 2402MHz Ant1 Ref



Tx. Spurious NVNT 2.4G 2402MHz Ant1 Emission

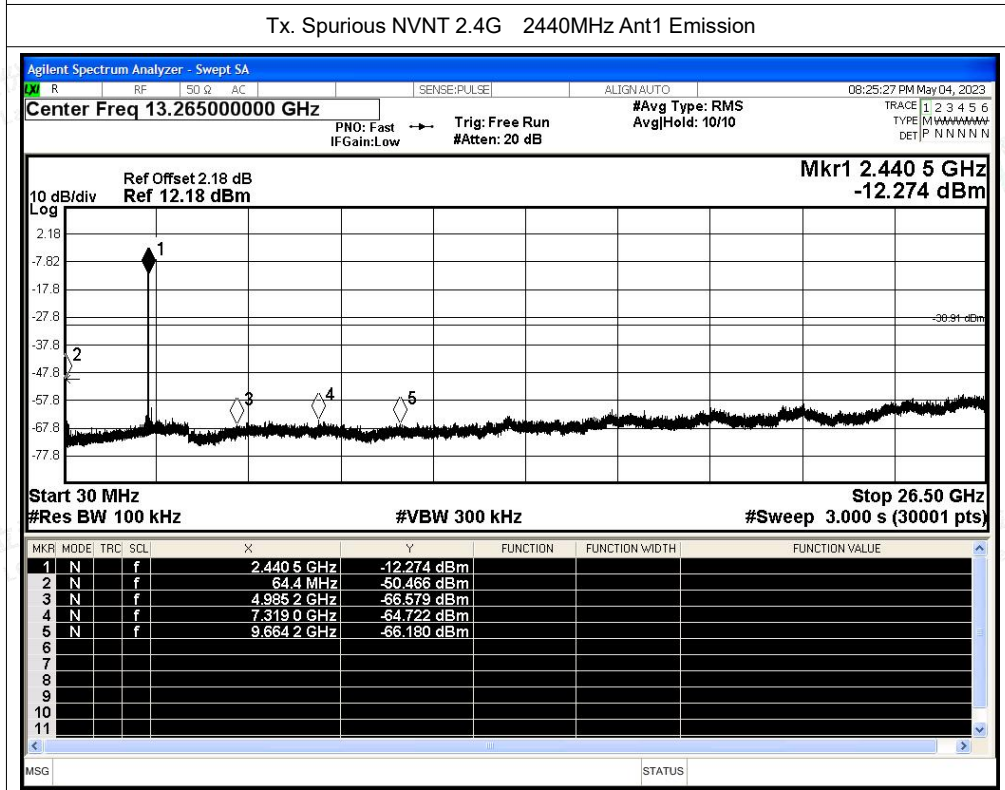
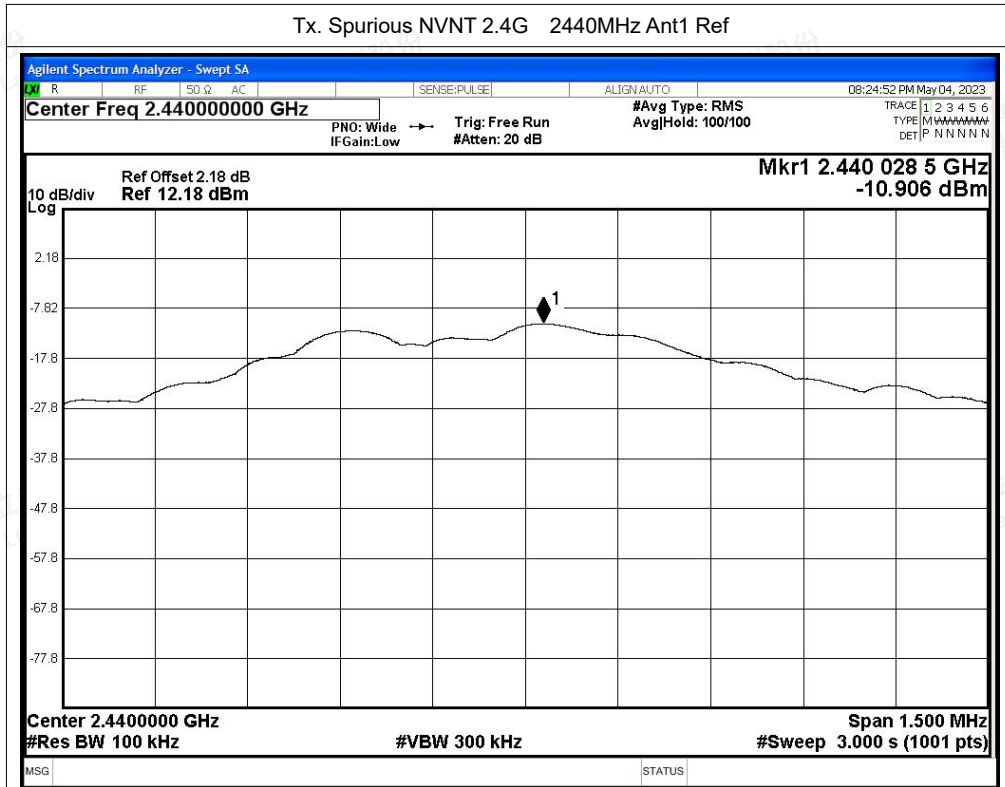


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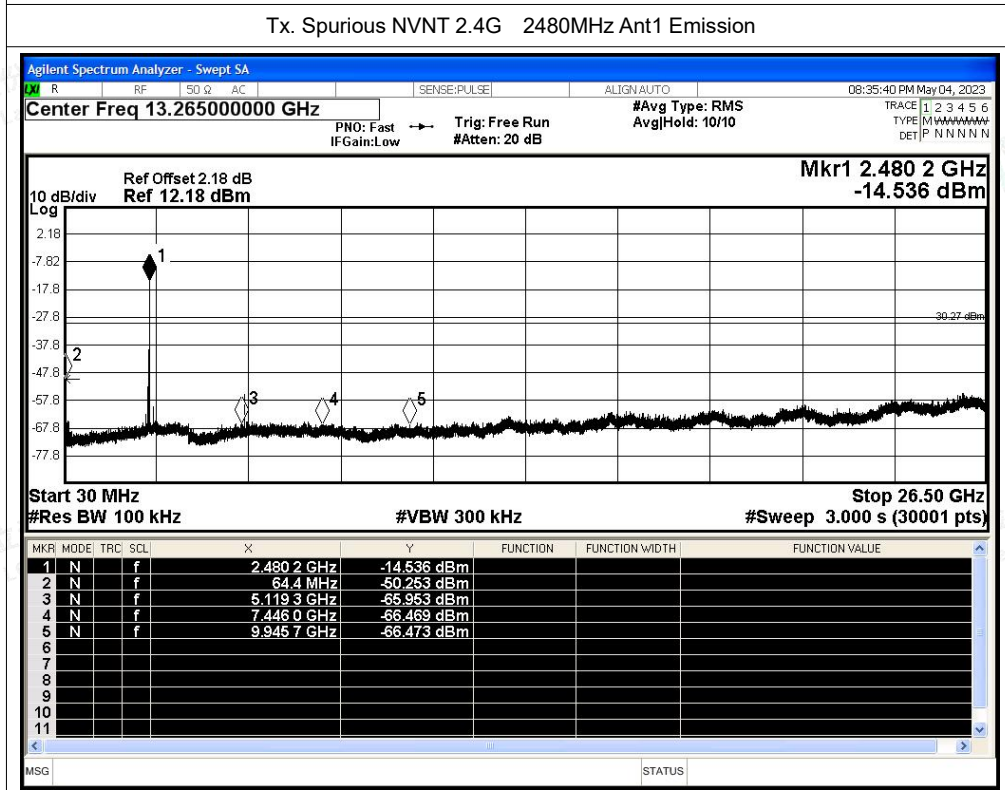
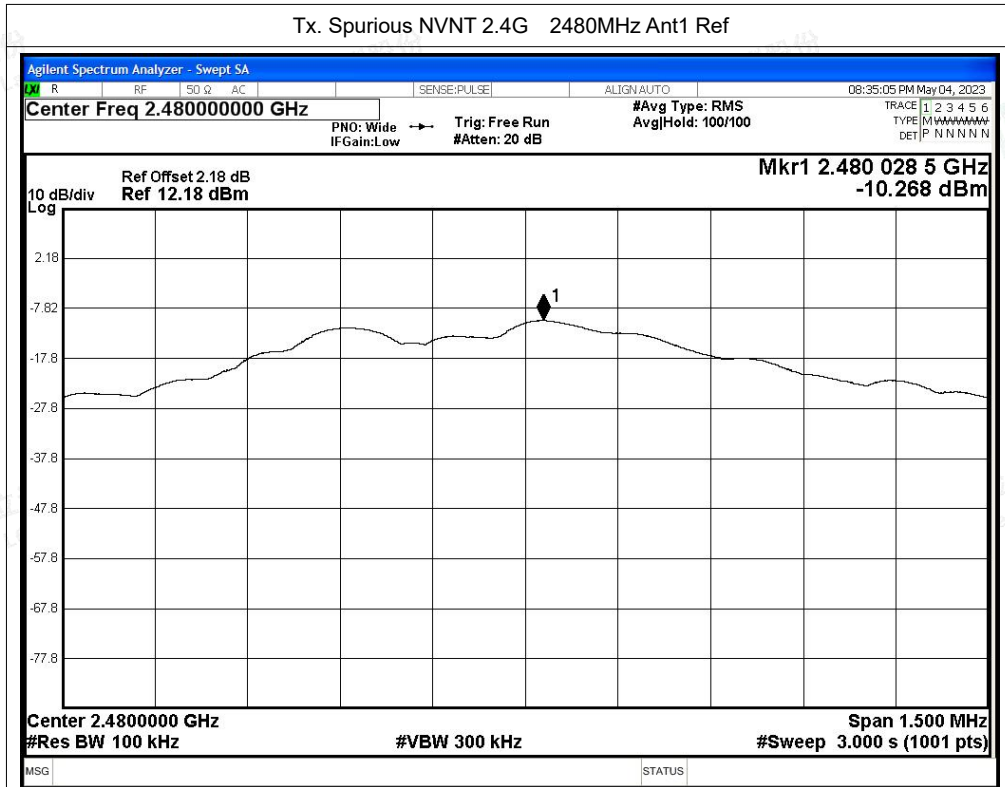


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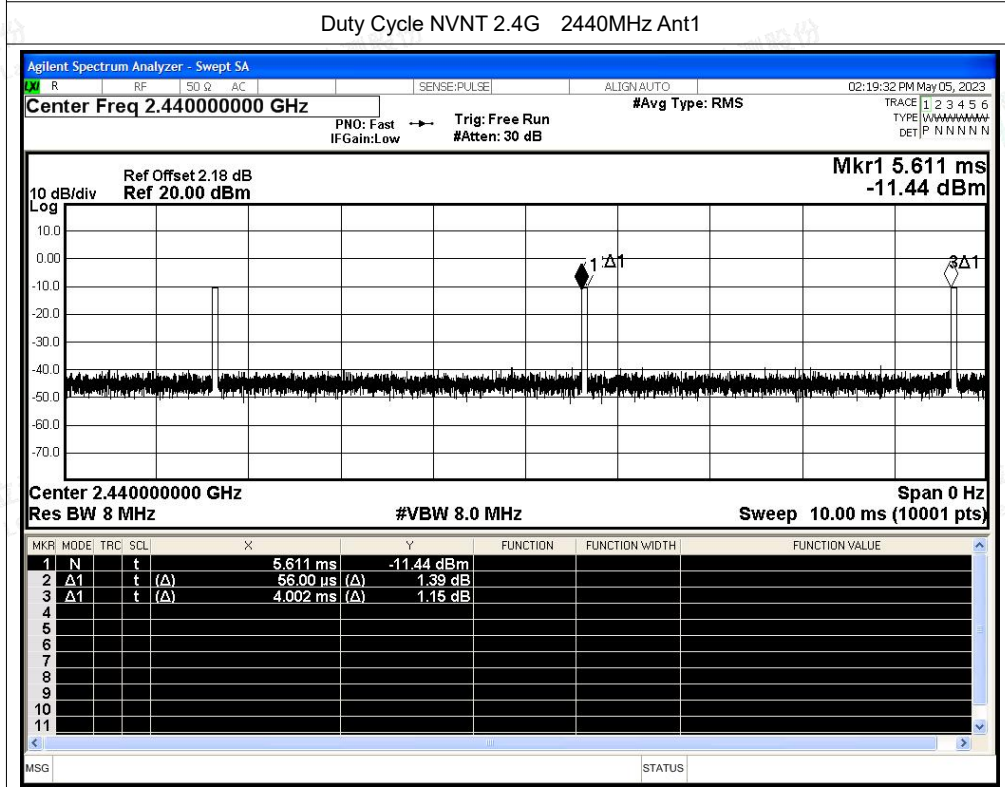
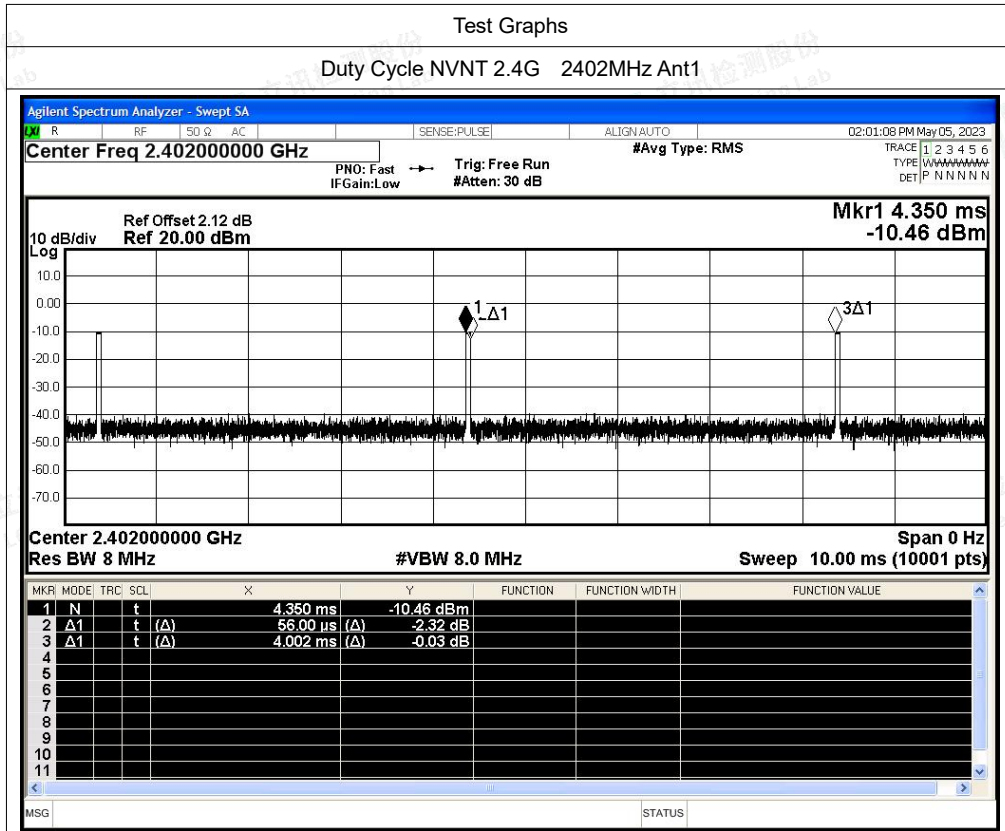




A.7 Duty Cycle

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



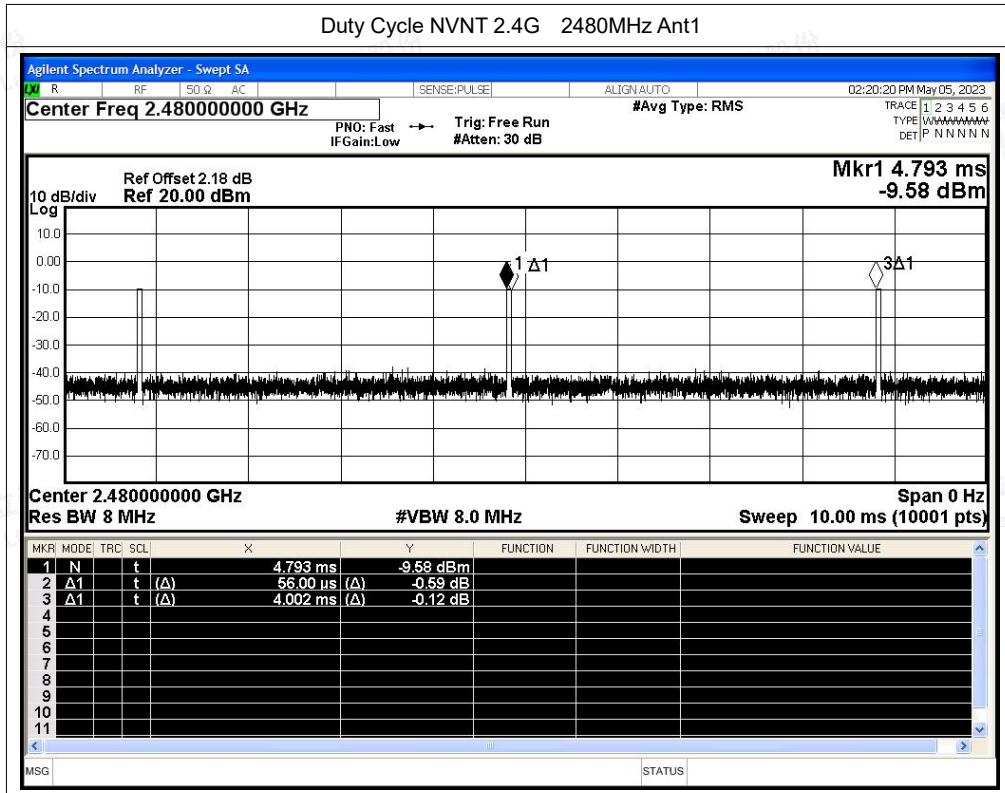


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A.8 Restrict Band

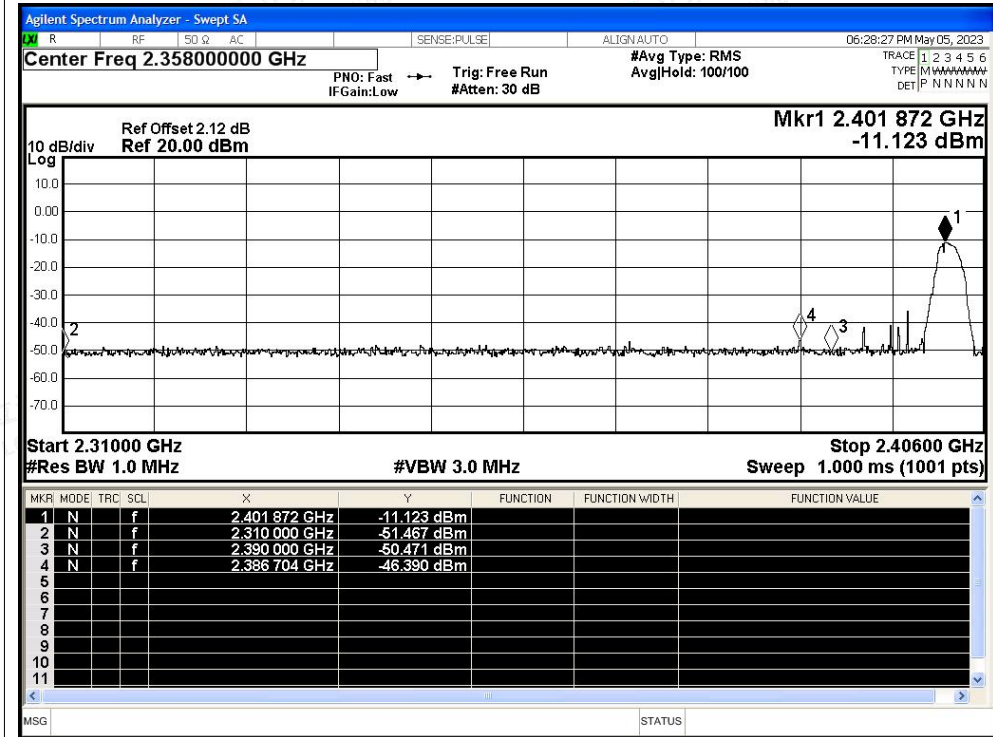
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	2.4G	2402	Ant1	2310	-51.47	2	45.79	Peak	74	Pass
NVNT	2.4G	2402	Ant1	2310	-55.62	2	41.64	Average	54	Pass
NVNT	2.4G	2402	Ant1	2386.704	-46.39	2	50.87	Peak	74	Pass
NVNT	2.4G	2402	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



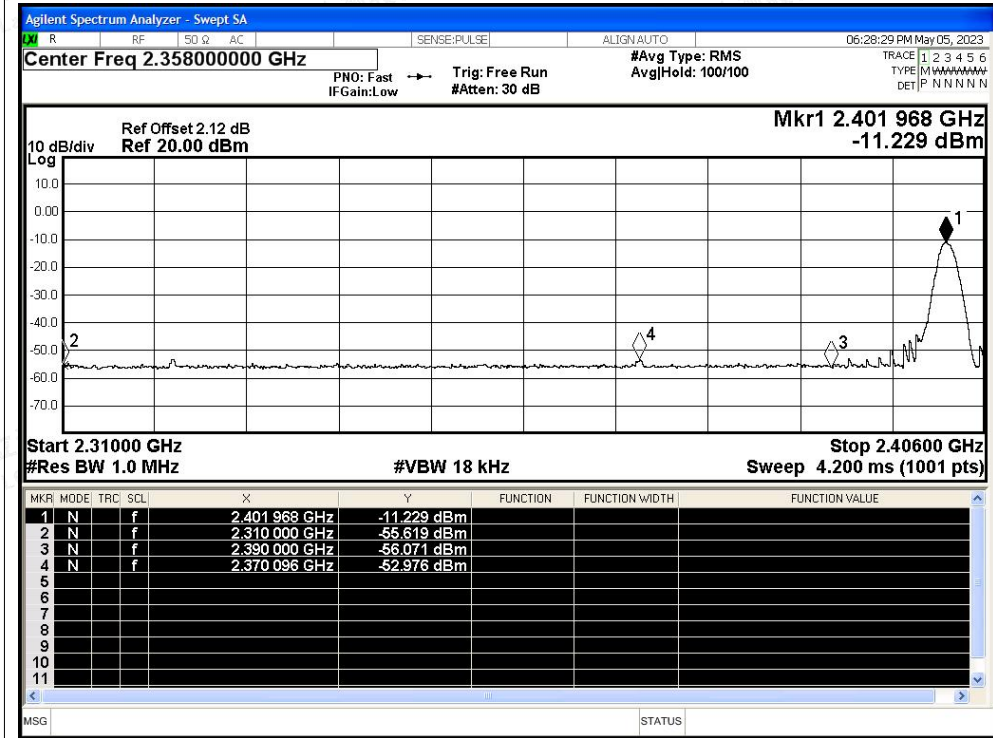


Test Graphs

Restrict Band NVNT 2.4G 2402MHz Ant1 Peak



Restrict Band NVNT 2.4G 2402MHz Ant1 Average



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