



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: SG Timer GO

Test Model: SST4B

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng <i>Nick Peng</i>
Supervised by:	Li Huan <i>Li Huan</i>





A.1 -6dB Bandwidth

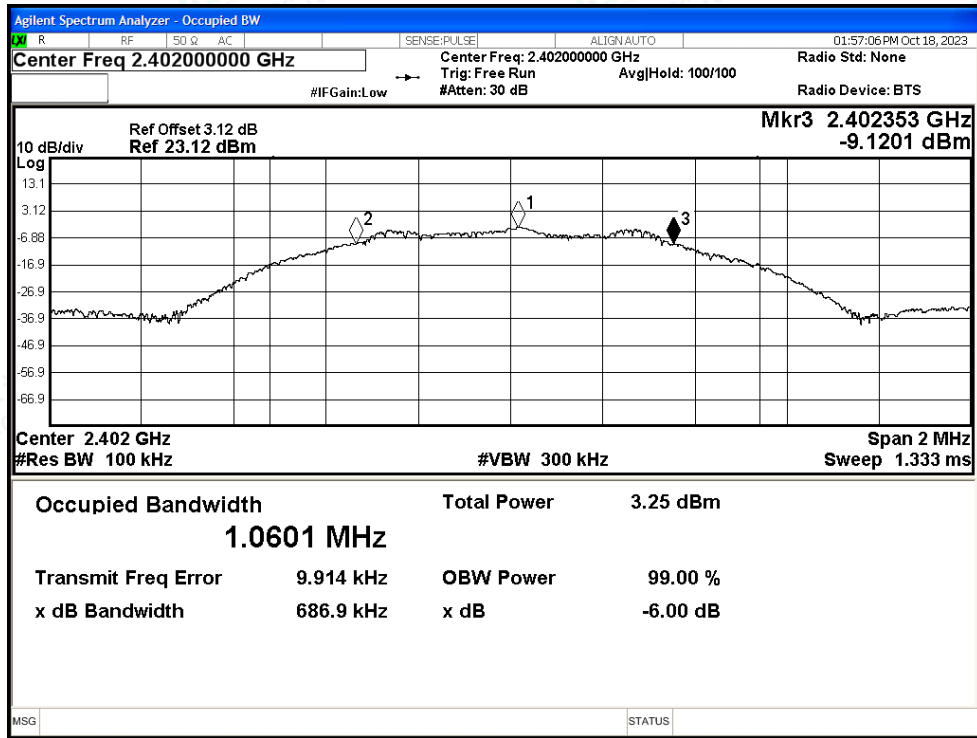
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant	0.687	≥ 0.5	Pass
NVNT	BLE 1M	2440	Ant	0.711	≥ 0.5	Pass
NVNT	BLE 1M	2480	Ant	0.68	≥ 0.5	Pass
NVNT	BLE 2M	2402	Ant	1.123	≥ 0.5	Pass
NVNT	BLE 2M	2440	Ant	1.122	≥ 0.5	Pass
NVNT	BLE 2M	2480	Ant	1.128	≥ 0.5	Pass



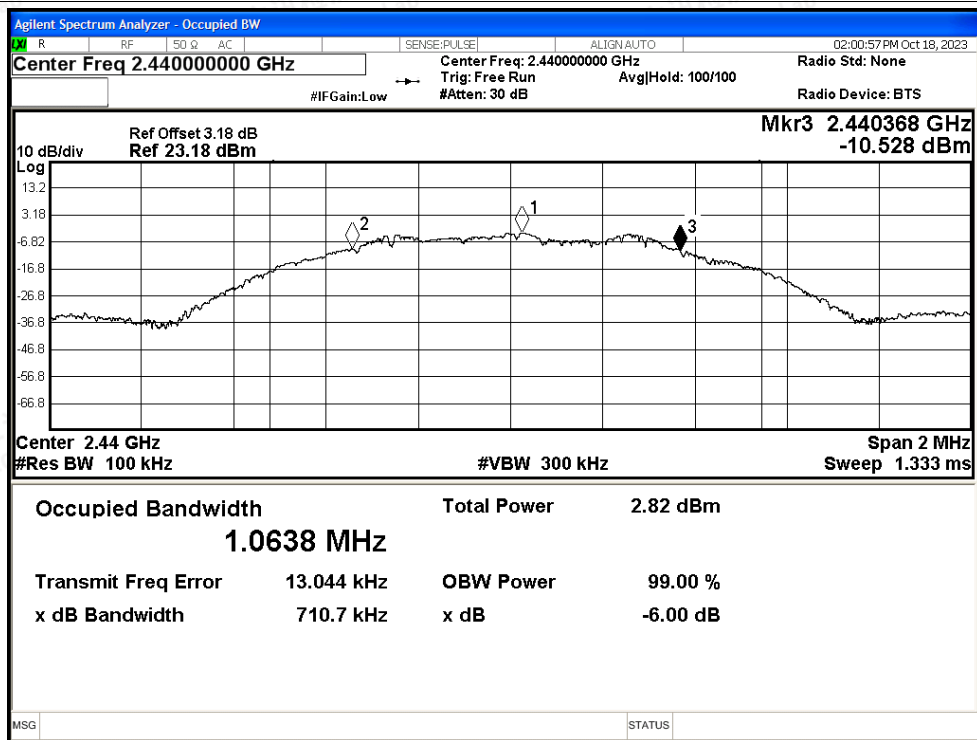


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant

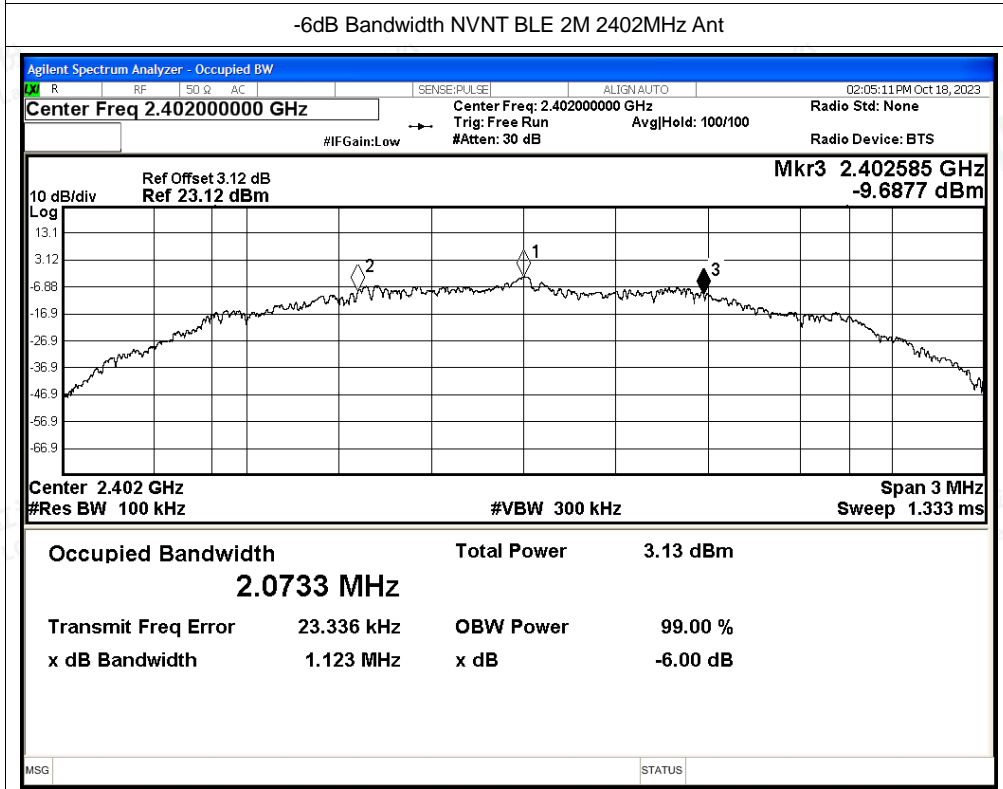
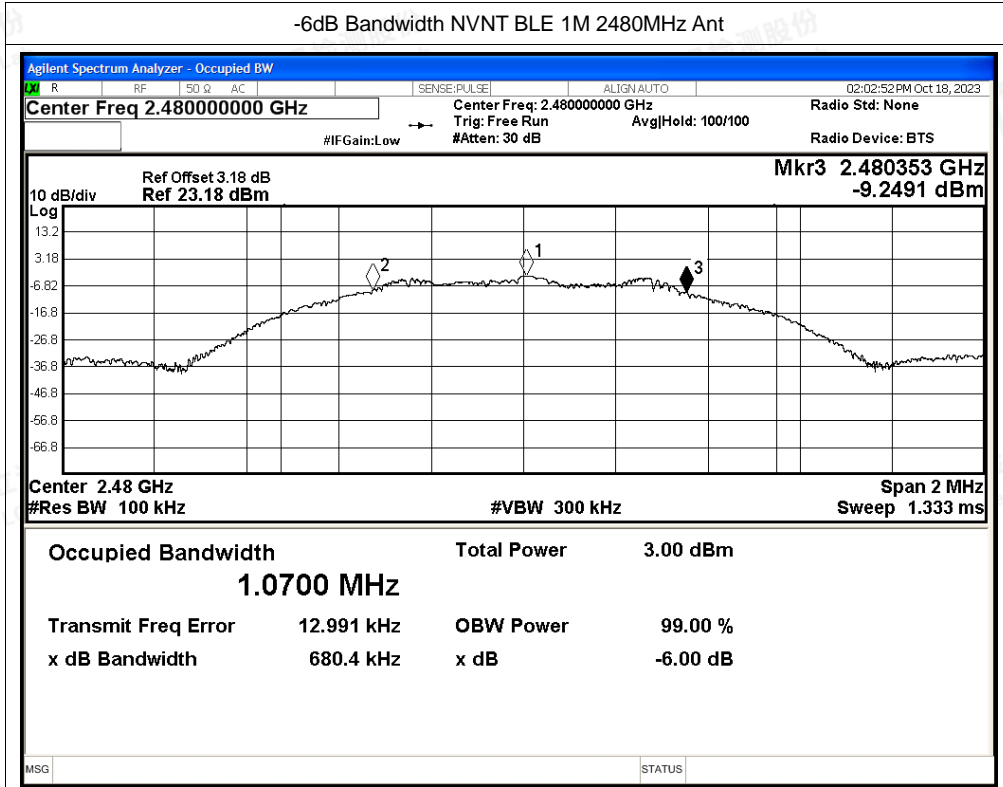


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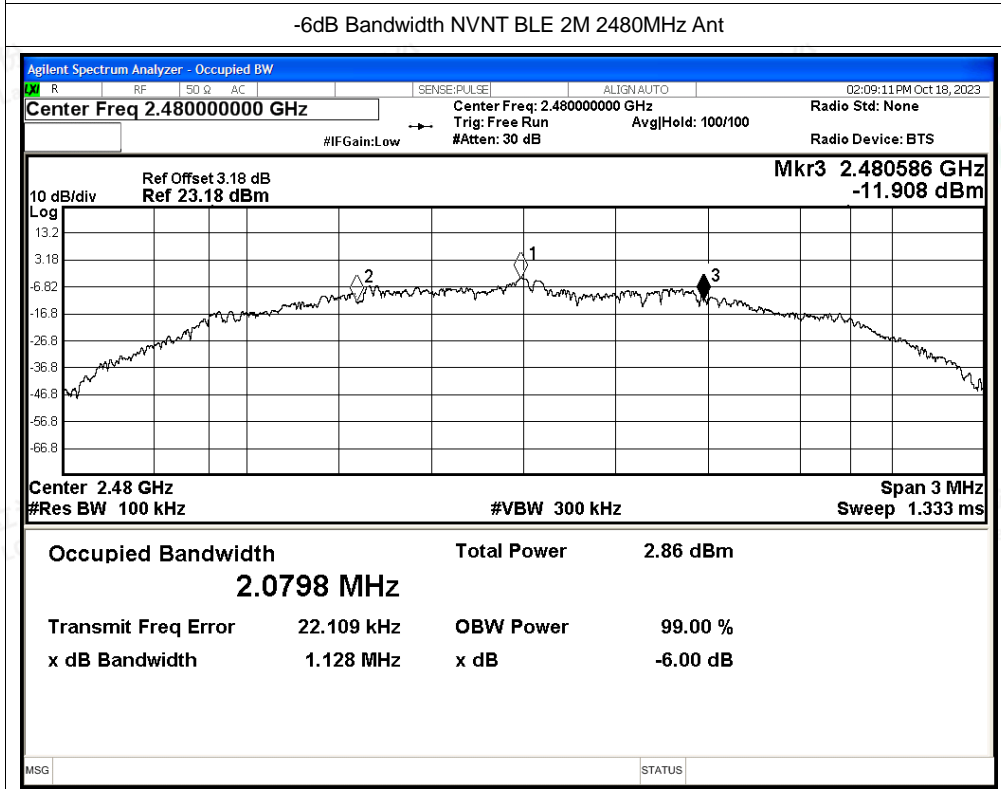
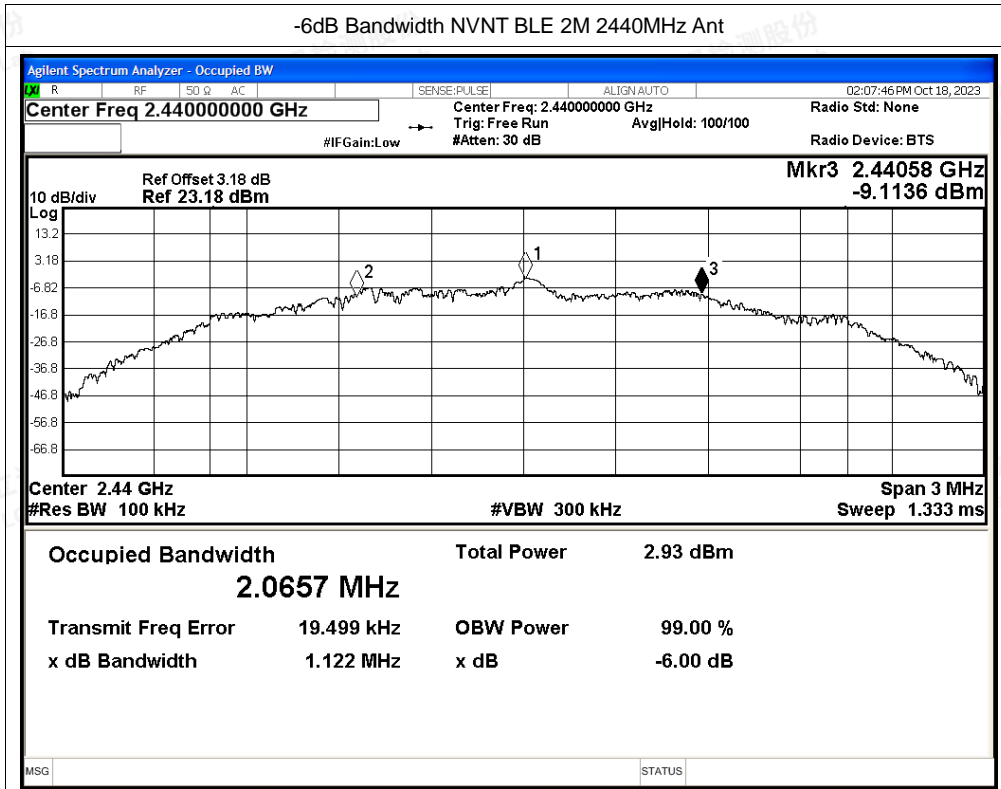


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A.2 Maximum Conducted Output Power

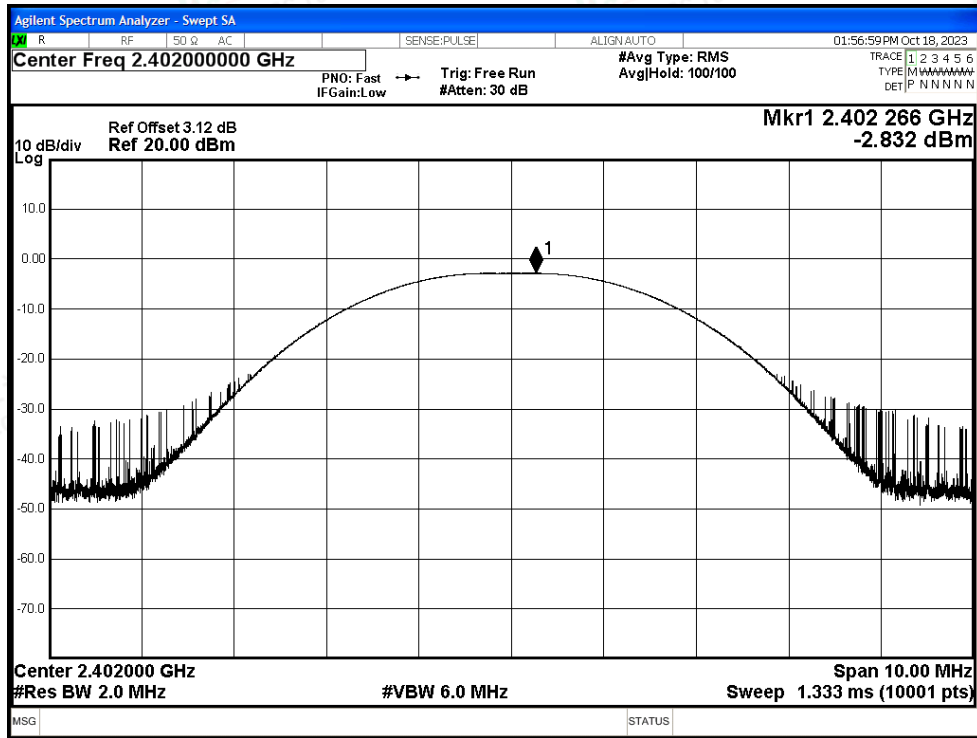
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant	-2.83	30	Pass
NVNT	BLE 1M	2440	Ant	-3.16	30	Pass
NVNT	BLE 1M	2480	Ant	-3.01	30	Pass
NVNT	BLE 2M	2402	Ant	-2.82	30	Pass
NVNT	BLE 2M	2440	Ant	-3.17	30	Pass
NVNT	BLE 2M	2480	Ant	-3.04	30	Pass



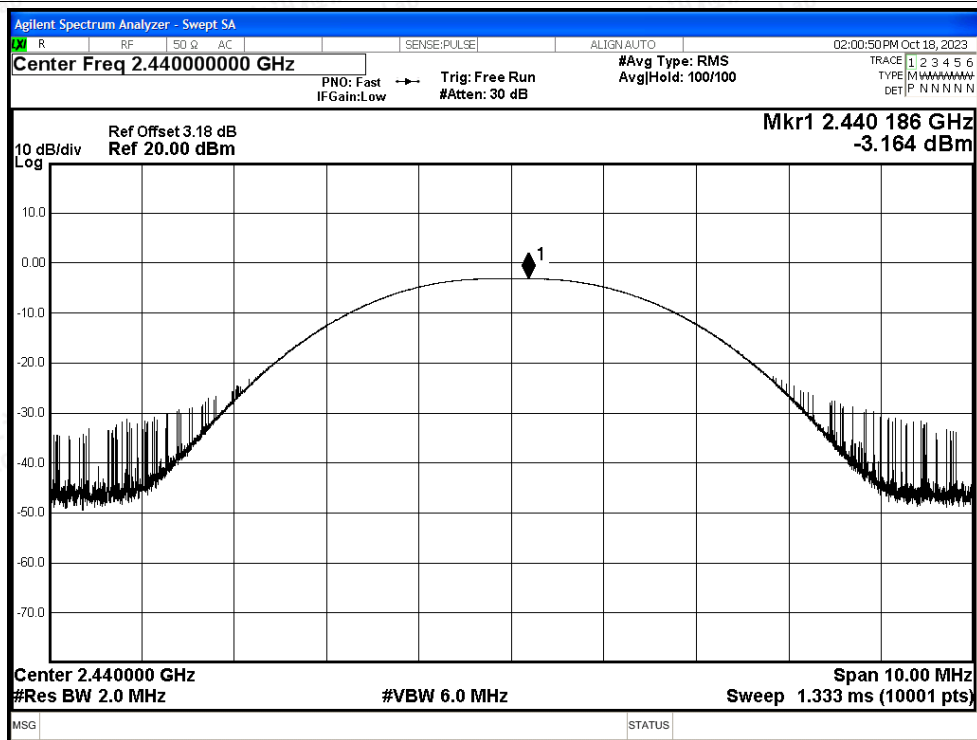


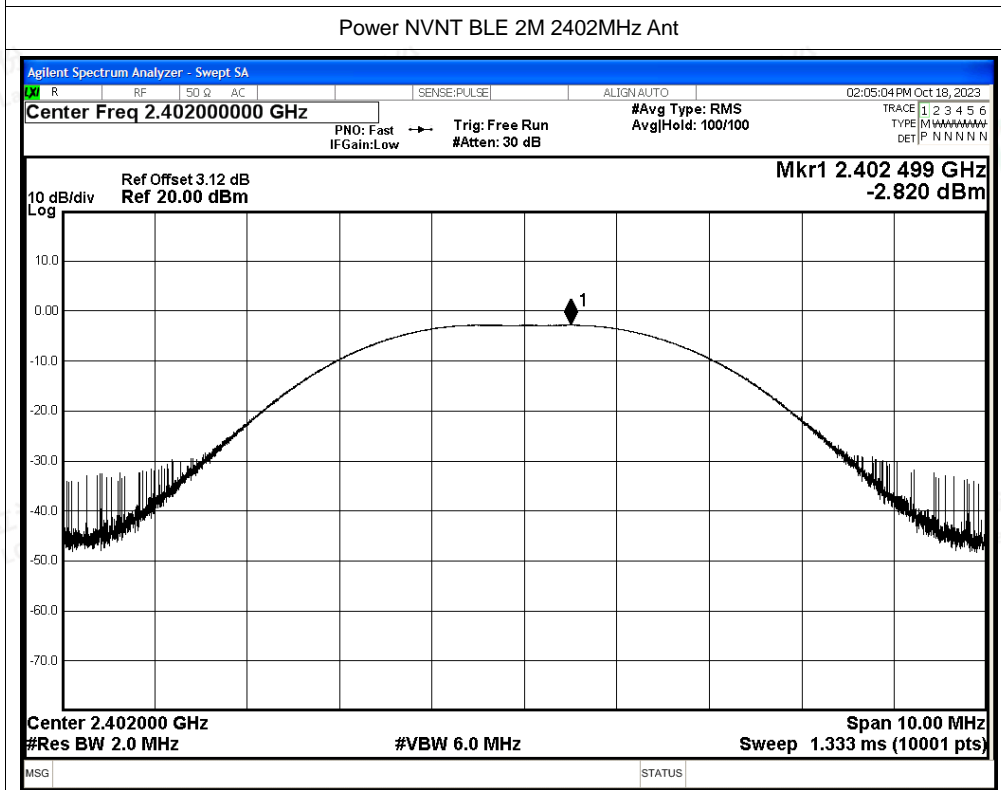
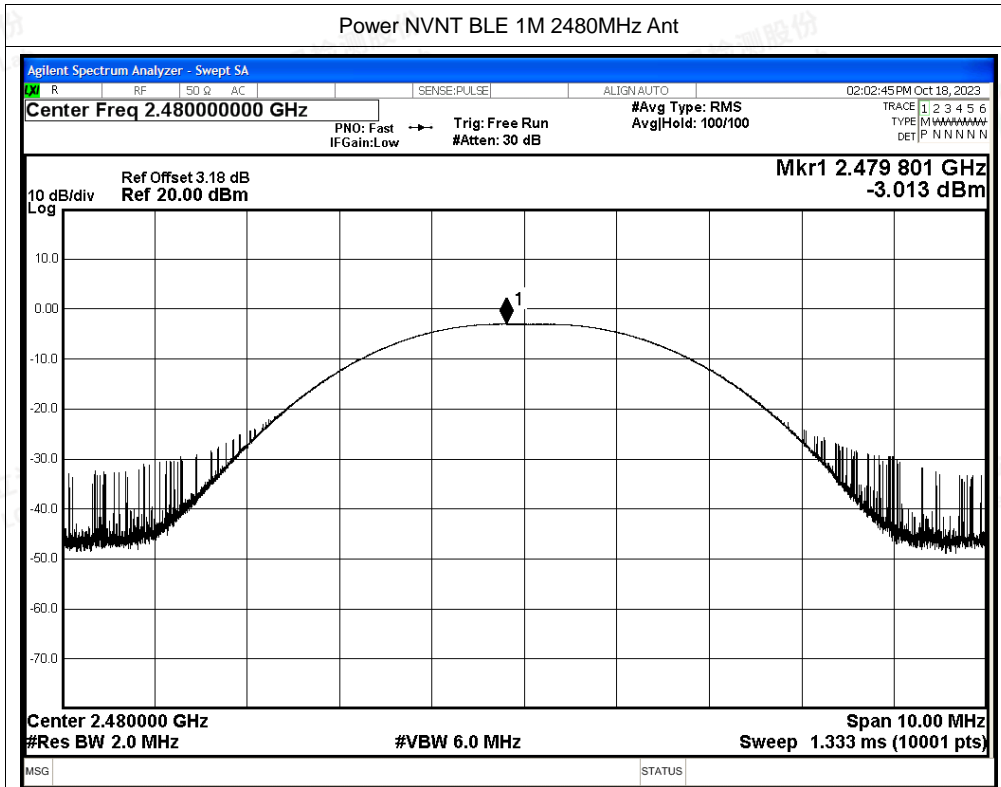
Test Graphs

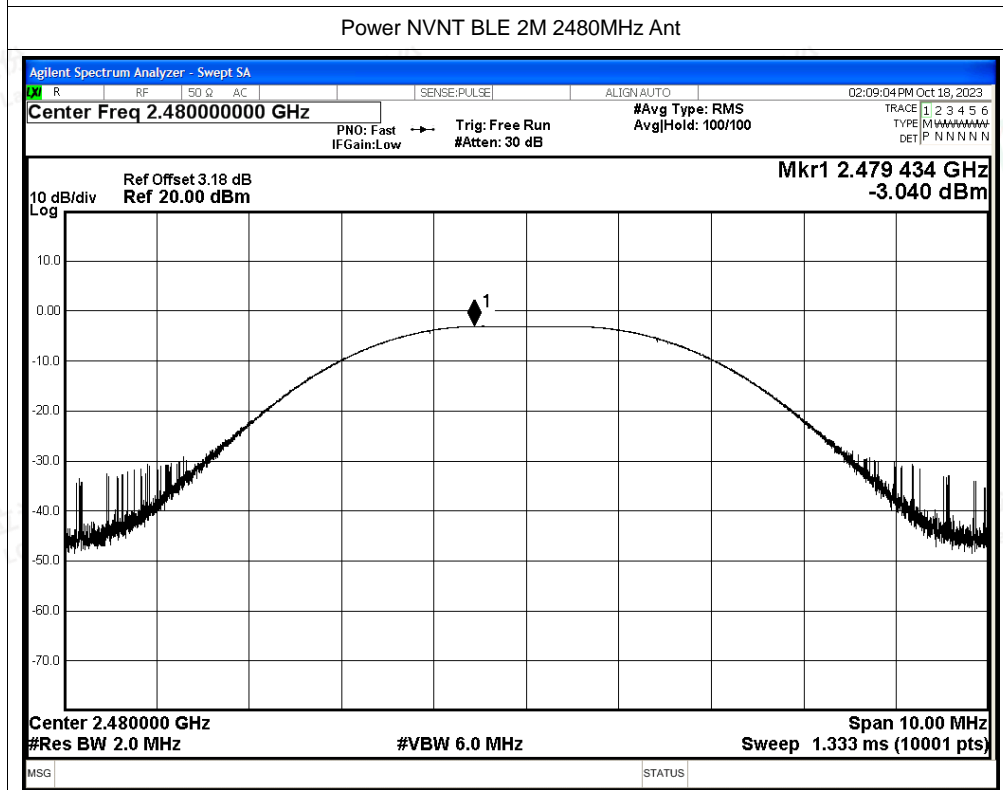
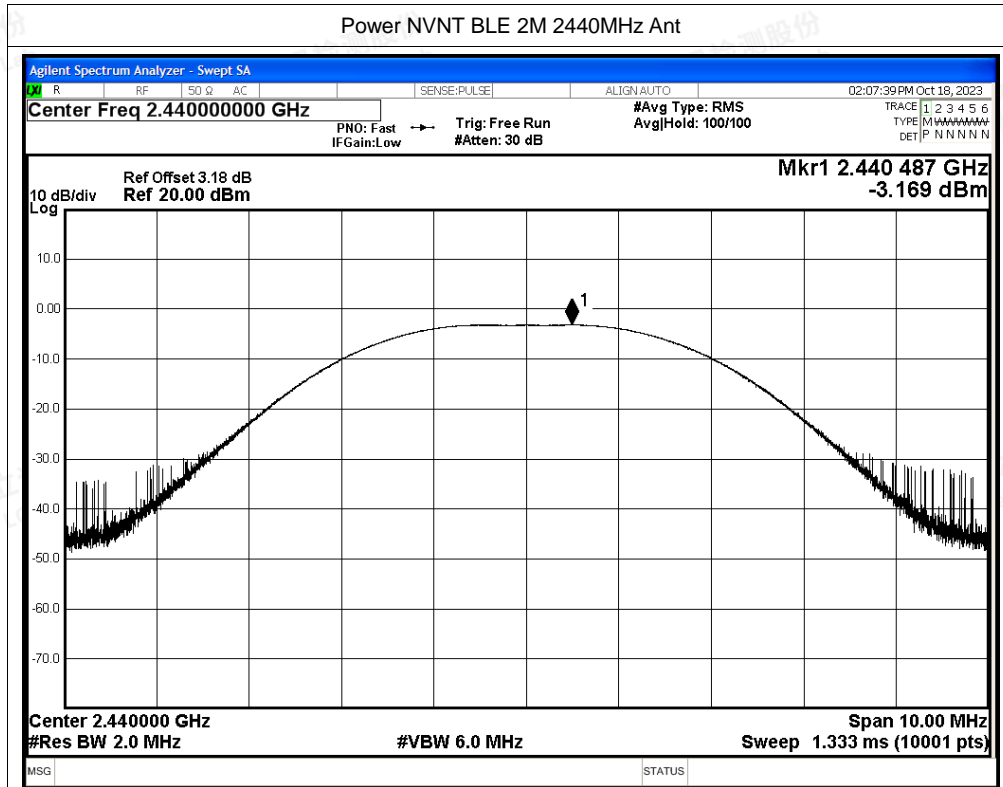
Power NVNT BLE 1M 2402MHz Ant



Power NVNT BLE 1M 2440MHz Ant









A.3 Maximum Power Spectral Density Level

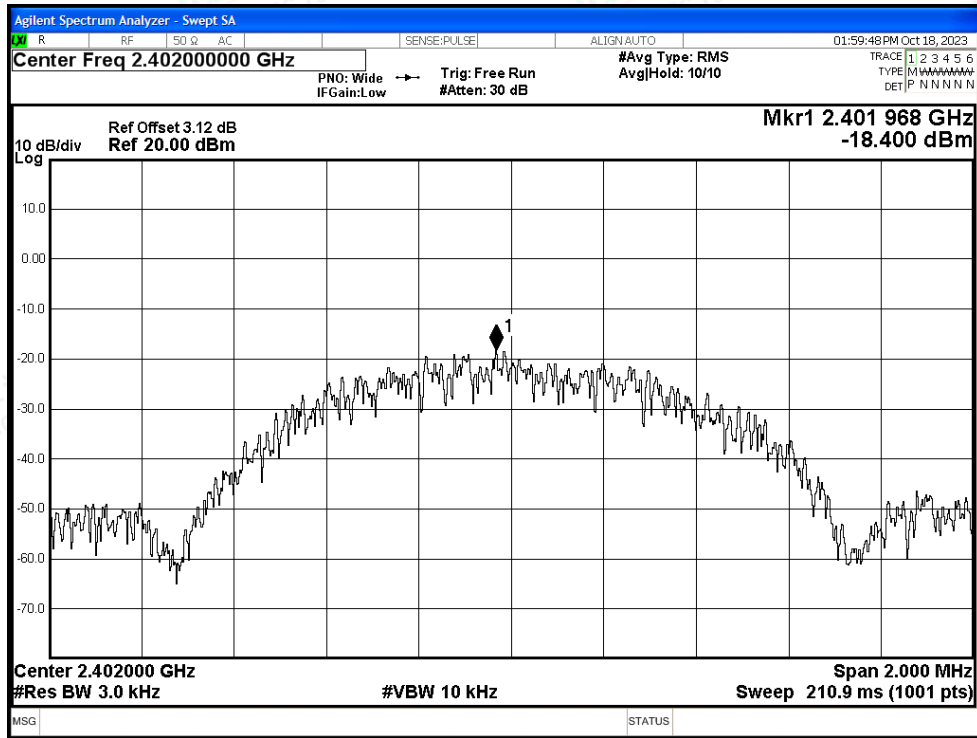
Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant	-18.4	8	Pass
NVNT	BLE 1M	2440	Ant	-18.78	8	Pass
NVNT	BLE 1M	2480	Ant	-18.7	8	Pass
NVNT	BLE 2M	2402	Ant	-21.05	8	Pass
NVNT	BLE 2M	2440	Ant	-21.36	8	Pass
NVNT	BLE 2M	2480	Ant	-21.53	8	Pass



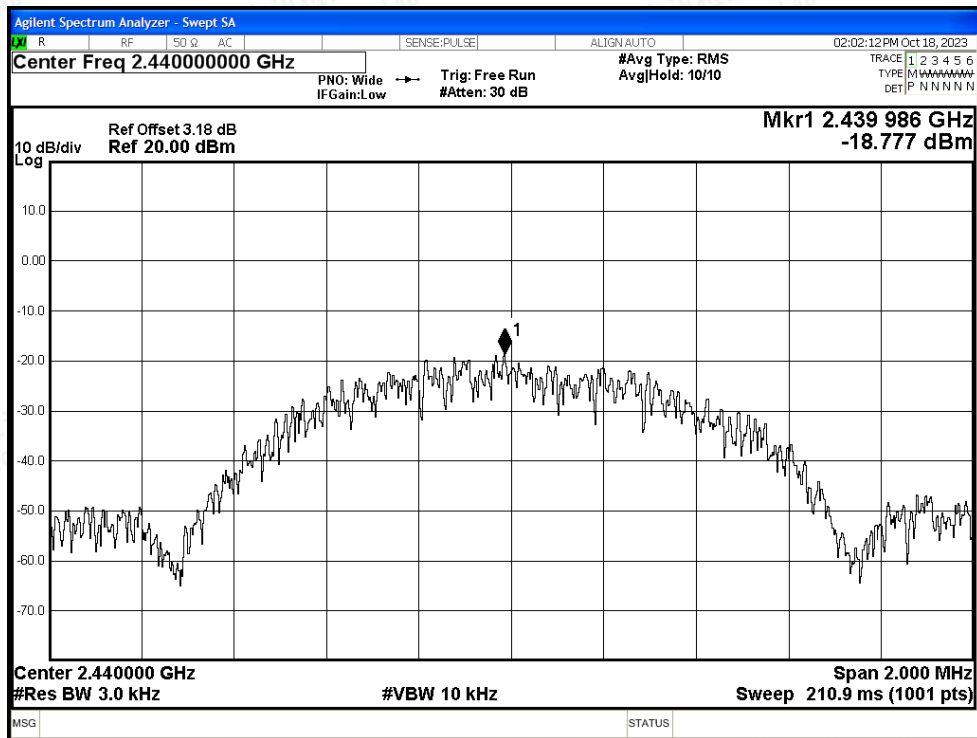


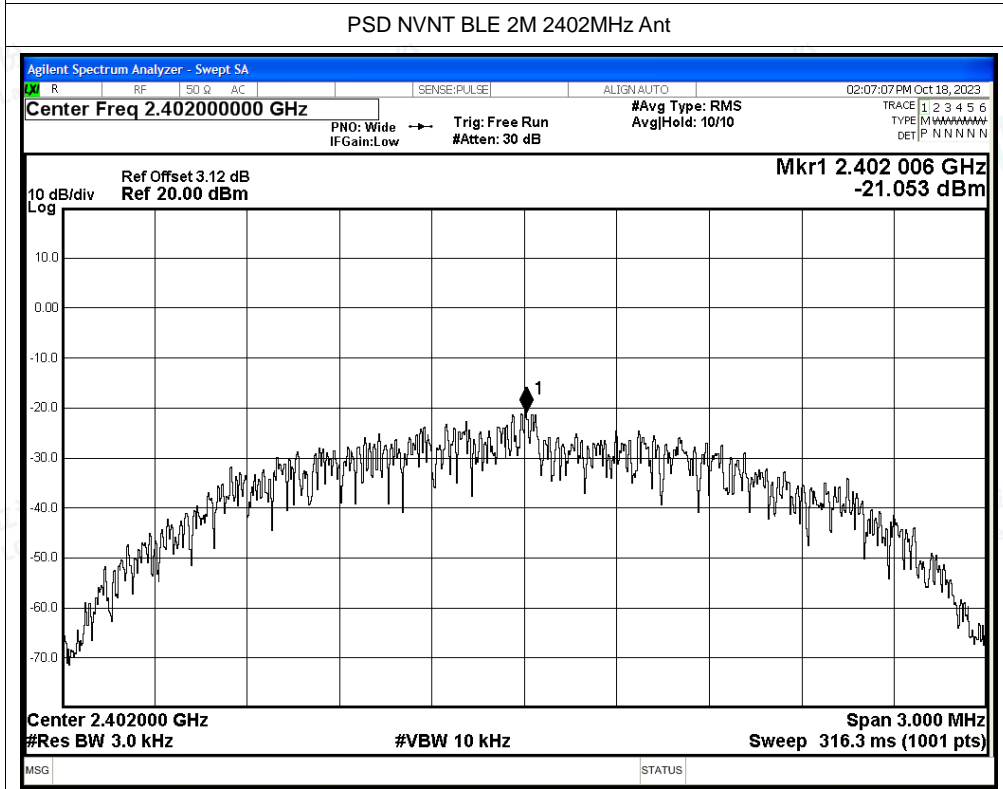
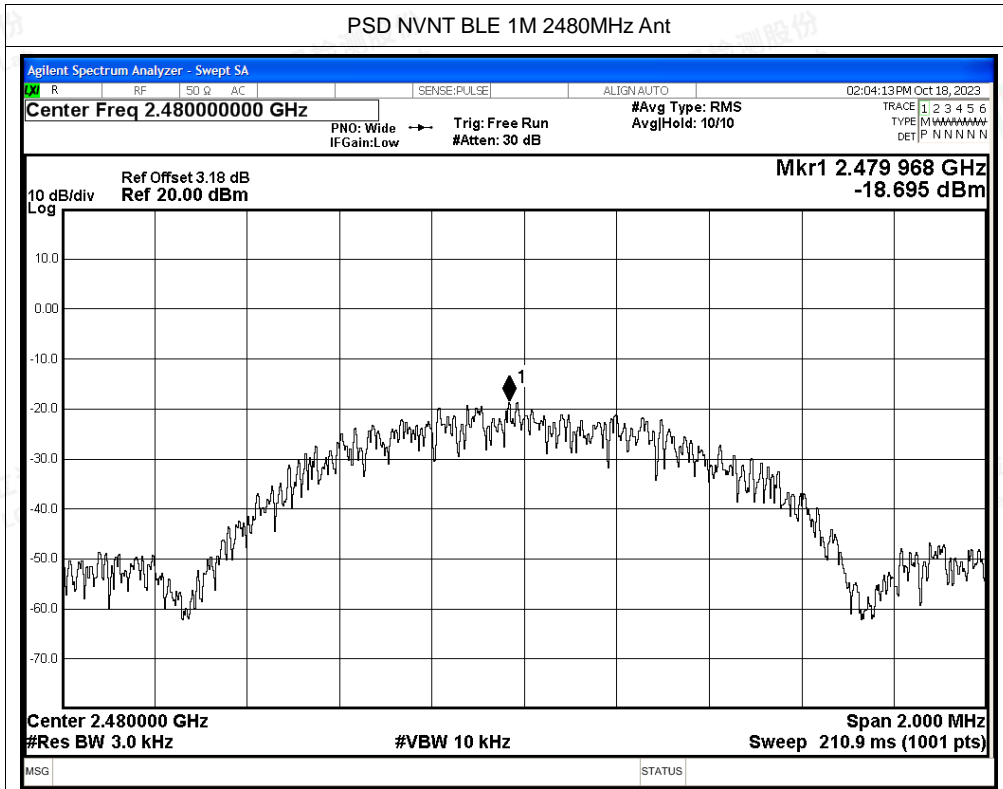
Test Graphs

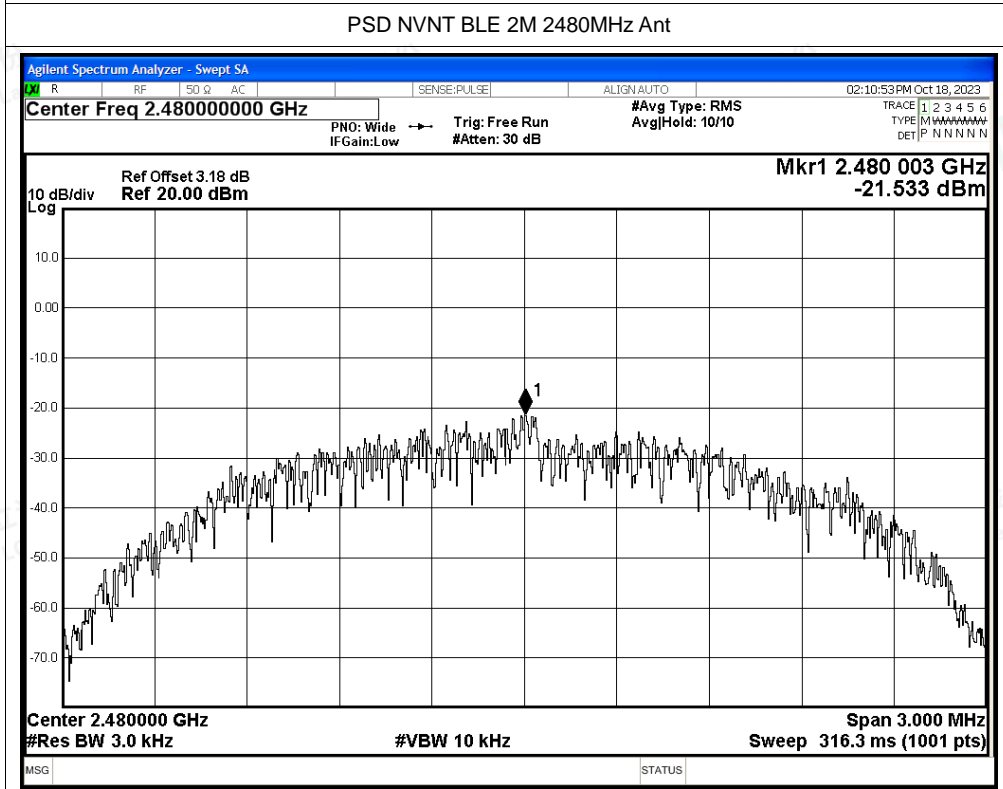
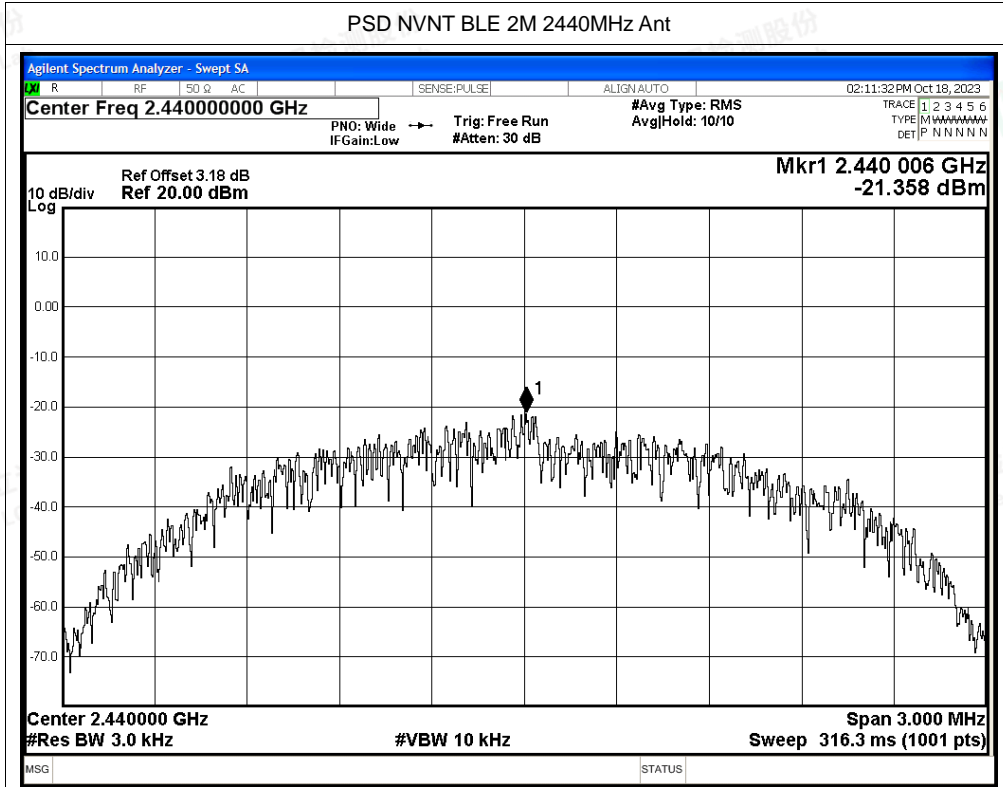
PSD NVNT BLE 1M 2402MHz Ant



PSD NVNT BLE 1M 2440MHz Ant









A.4 Band Edge

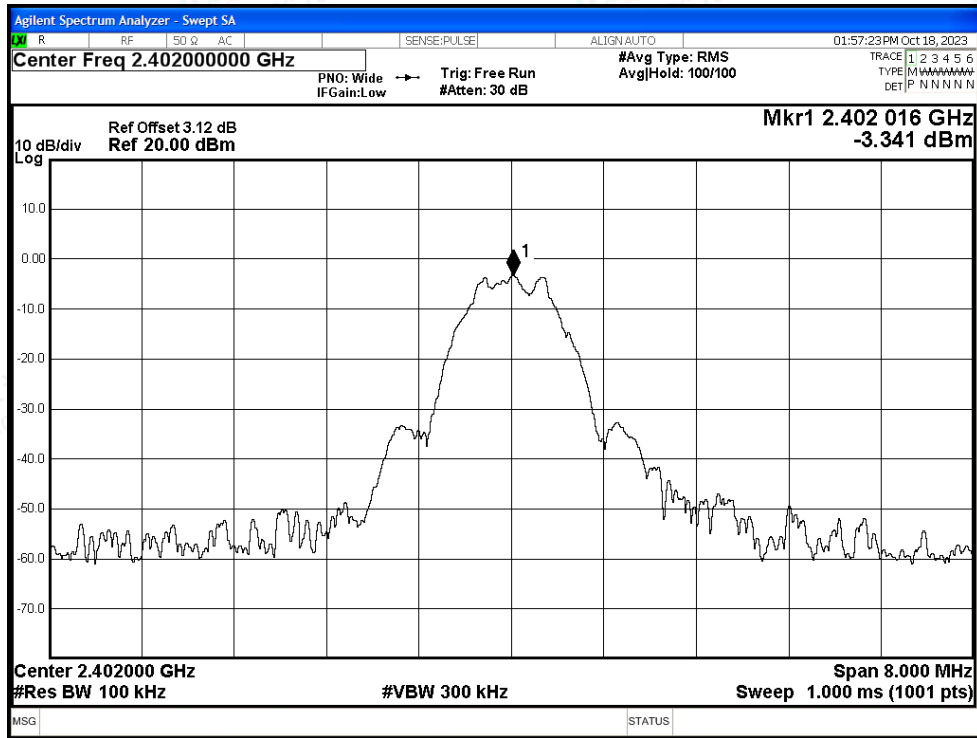
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant	-47.81	-20	Pass
NVNT	BLE 1M	2480	Ant	-49.64	-20	Pass
NVNT	BLE 2M	2402	Ant	-31.81	-20	Pass
NVNT	BLE 2M	2480	Ant	-51.4	-20	Pass



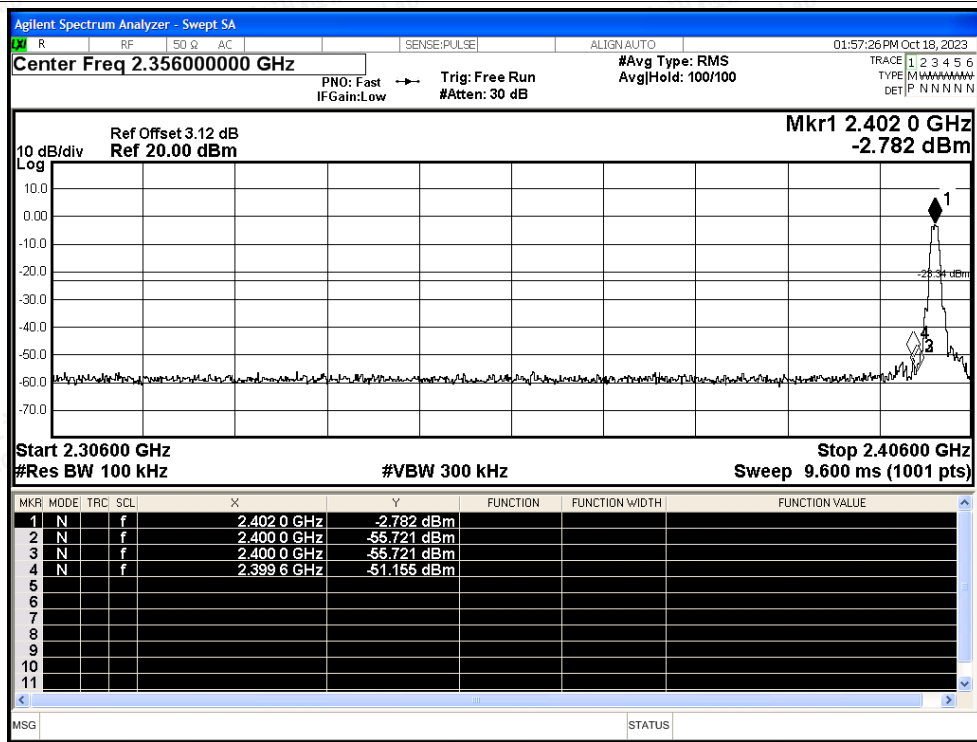


Test Graphs

Band Edge NVNT BLE 1M 2402MHz Ant Ref



Band Edge NVNT BLE 1M 2402MHz Ant Emission



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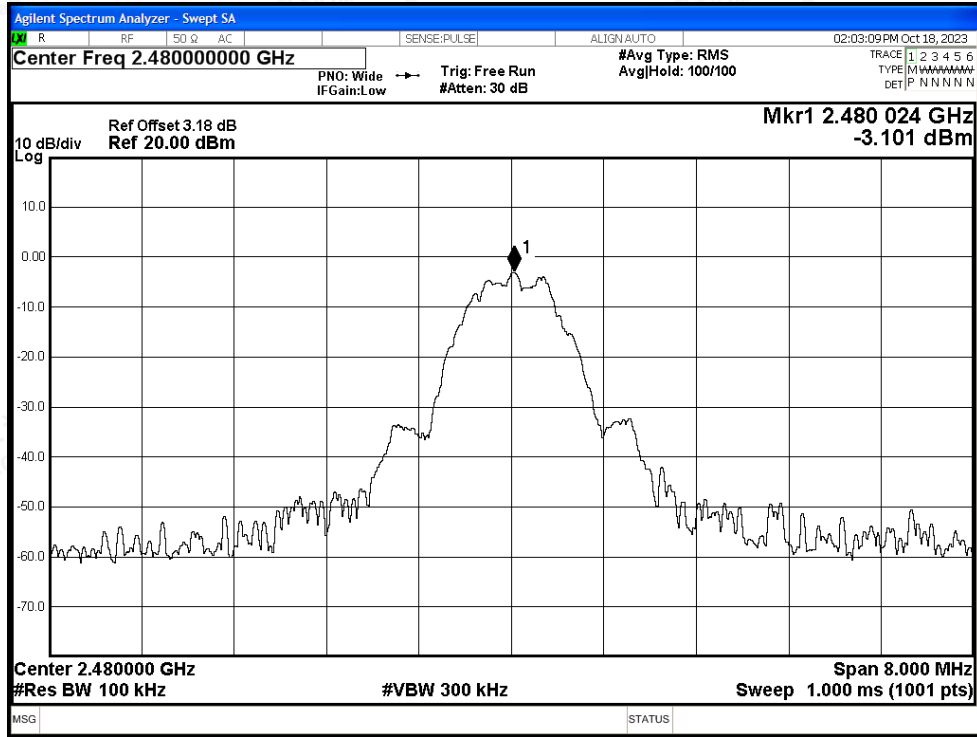
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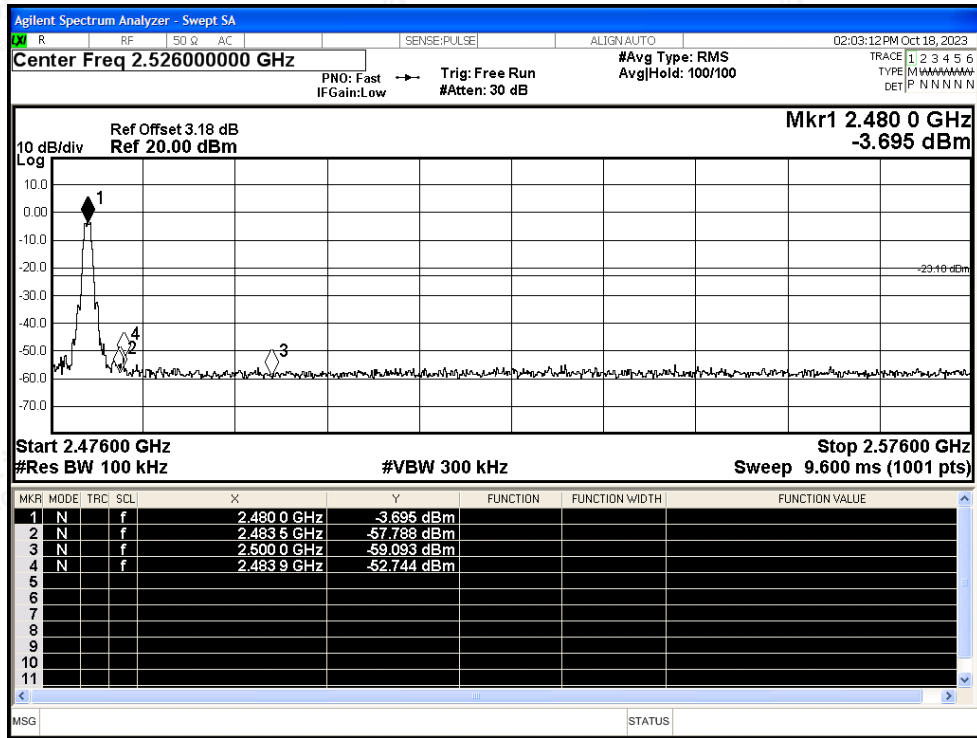
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Band Edge NVNT BLE 1M 2480MHz Ant Ref



Band Edge NVNT BLE 1M 2480MHz Ant Emission

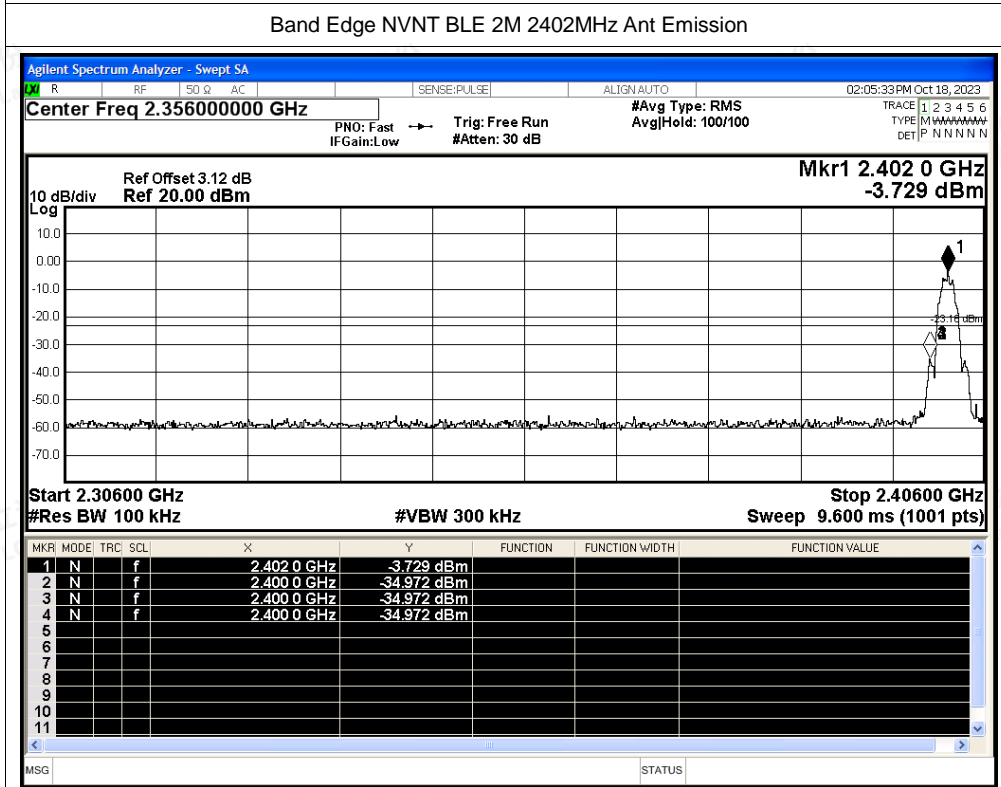
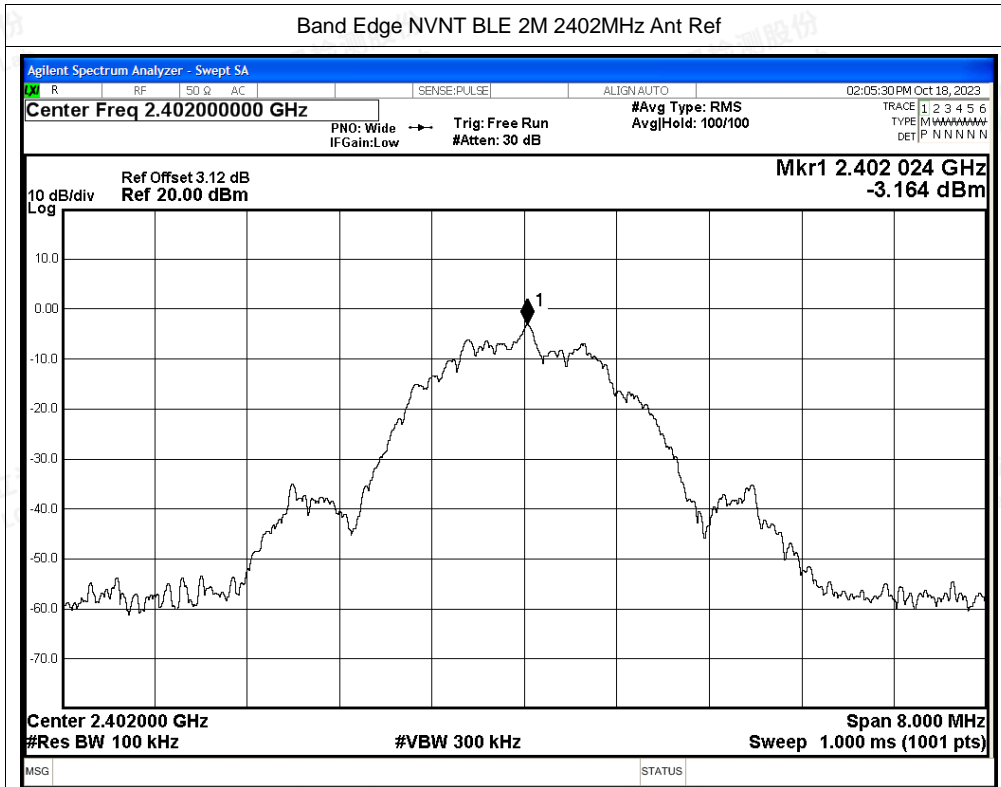


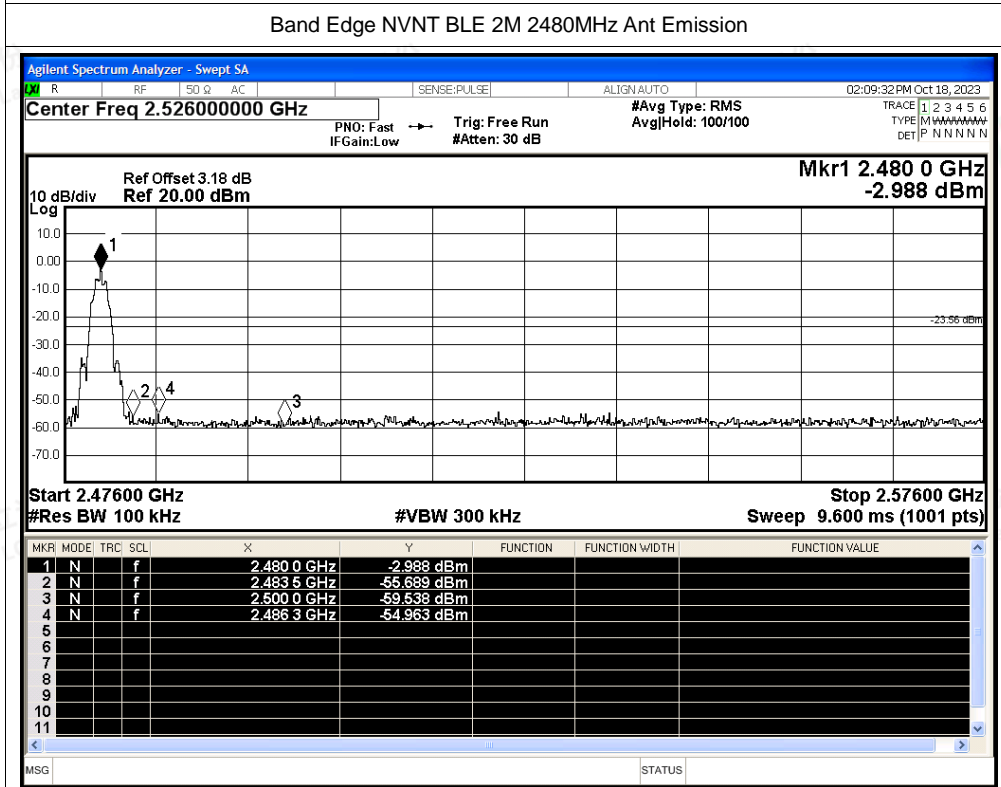
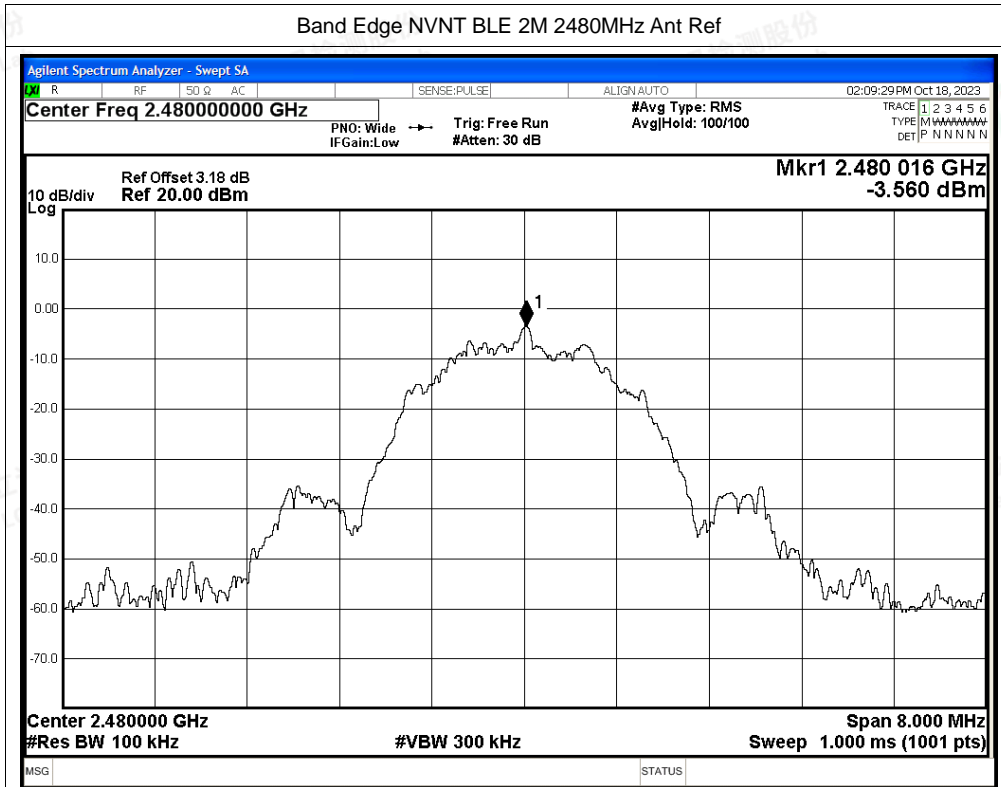
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A.5 Conducted RF Spurious Emission

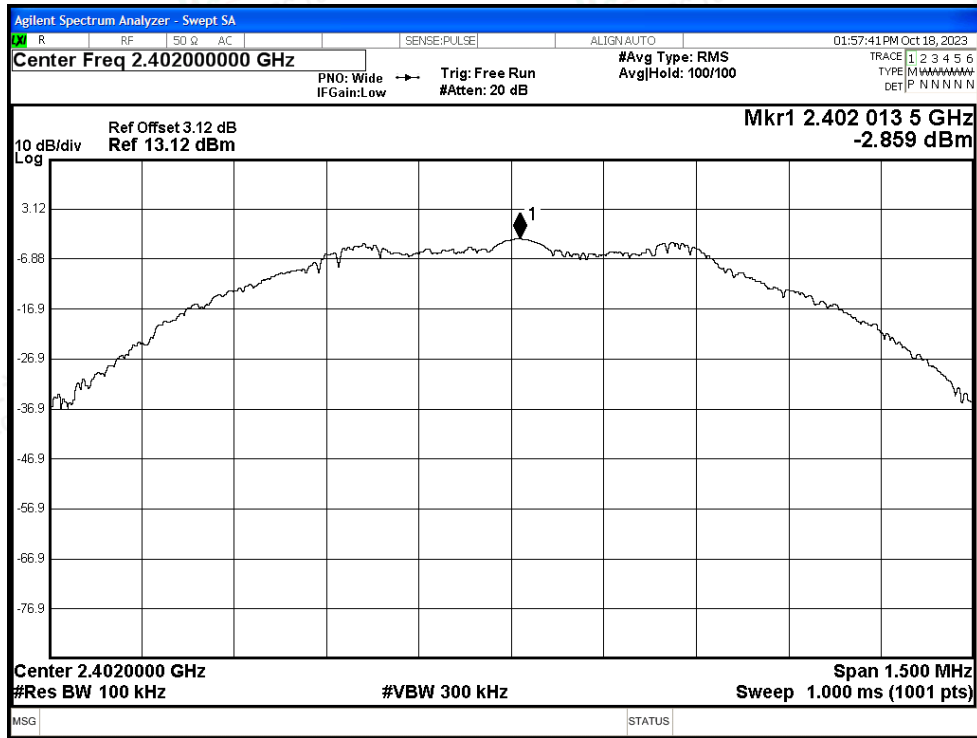
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant	-48.07	-20	Pass
NVNT	BLE 1M	2440	Ant	-44.62	-20	Pass
NVNT	BLE 1M	2480	Ant	-51.15	-20	Pass
NVNT	BLE 2M	2402	Ant	-51.34	-20	Pass
NVNT	BLE 2M	2440	Ant	-50.48	-20	Pass
NVNT	BLE 2M	2480	Ant	-48.03	-20	Pass



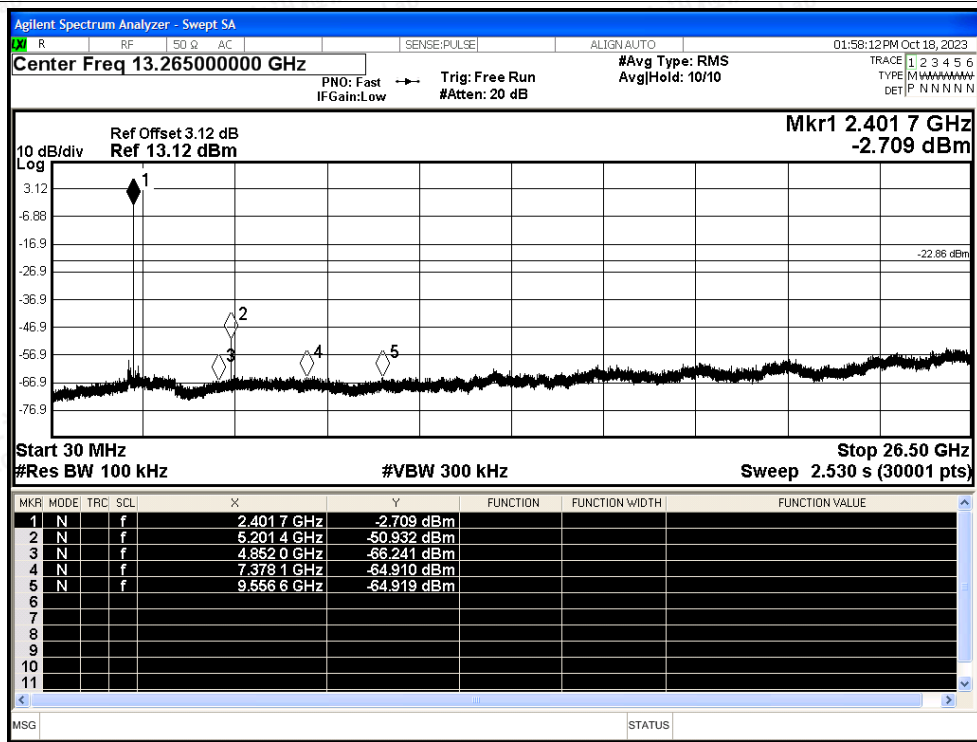


Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant Emission



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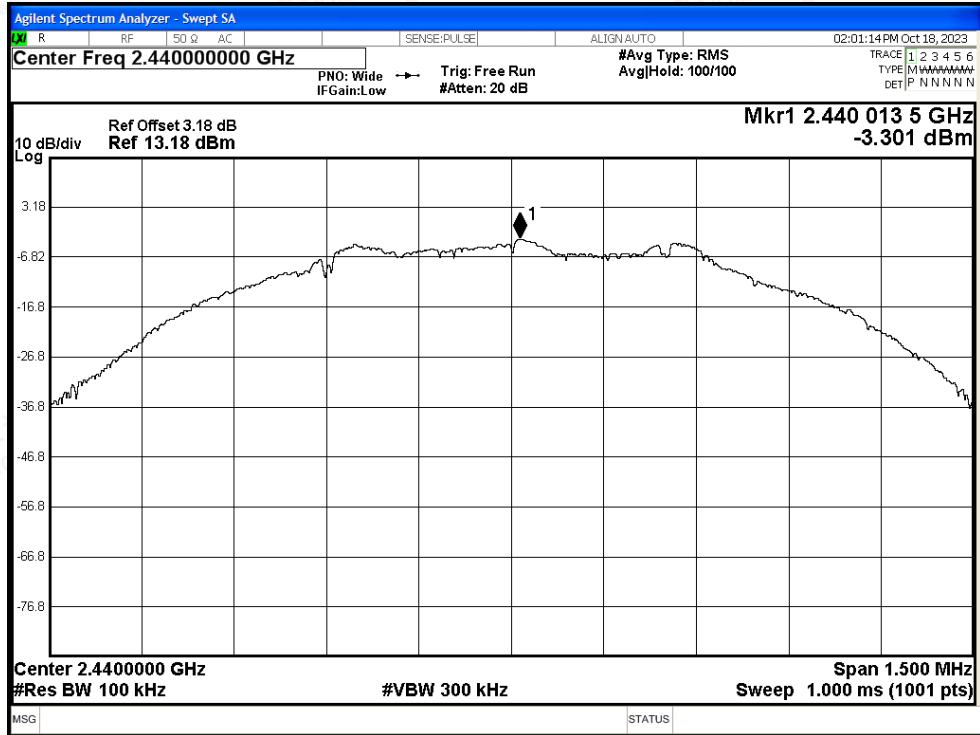
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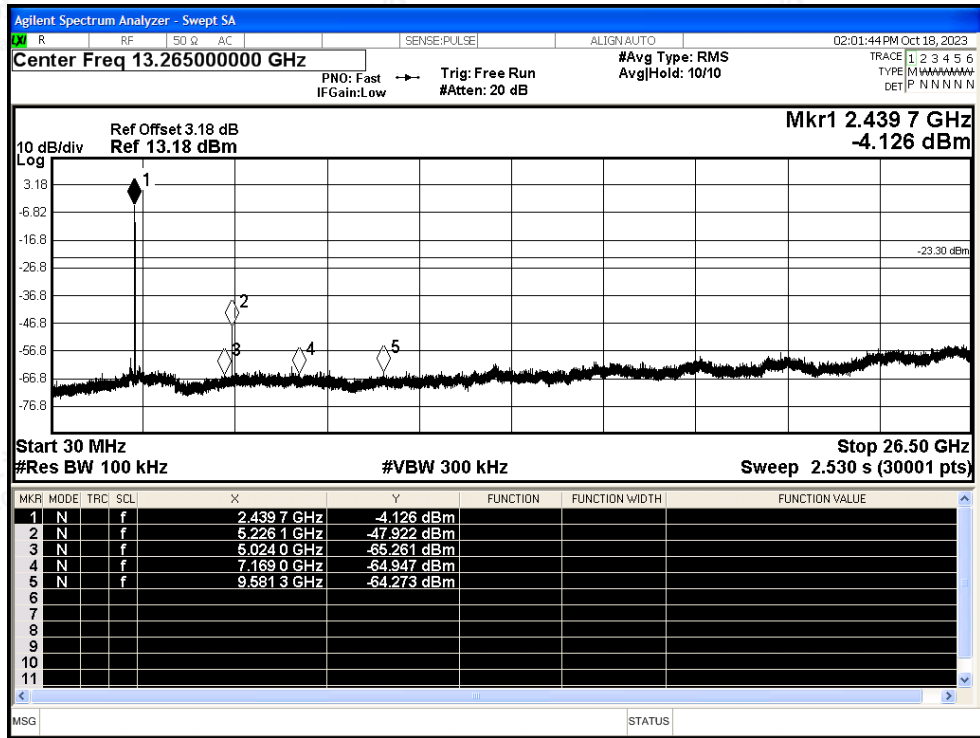
Scan code to check authenticity



Tx. Spurious NVNT BLE 1M 2440MHz Ant Ref



Tx. Spurious NVNT BLE 1M 2440MHz Ant Emission

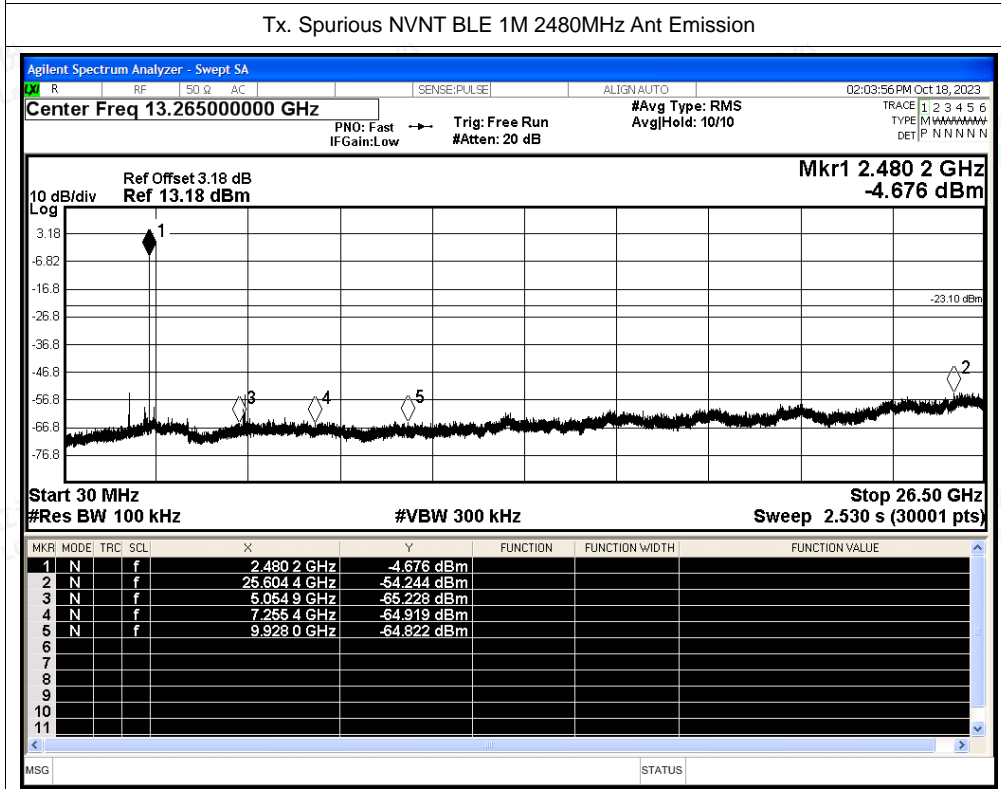
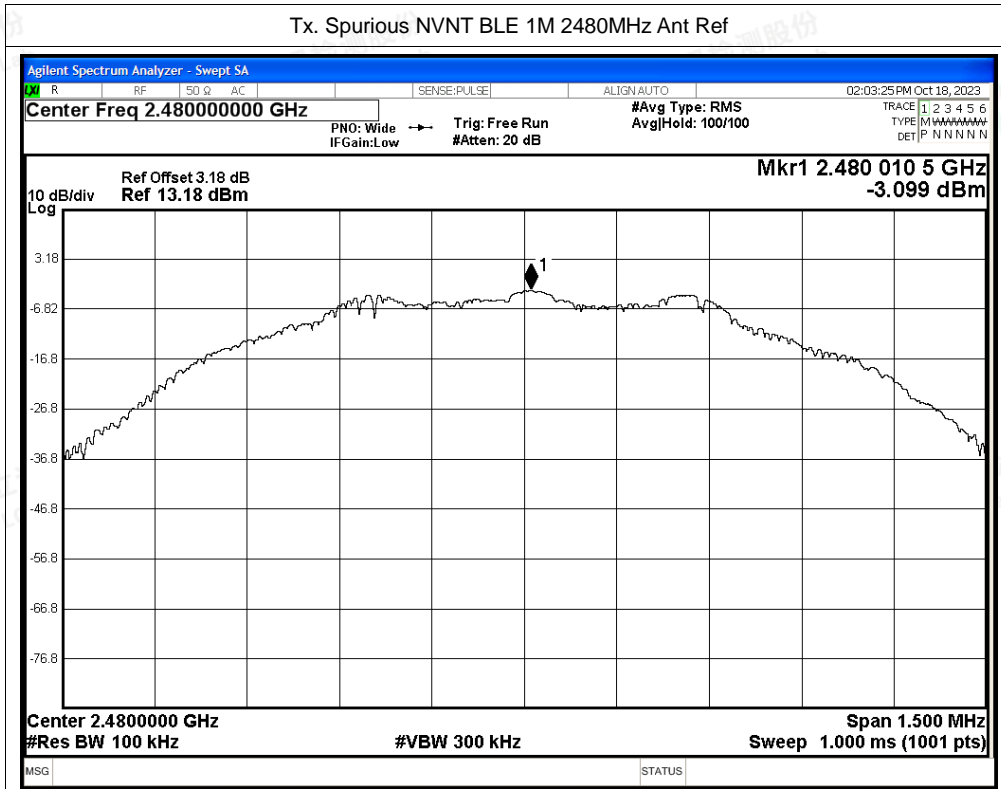


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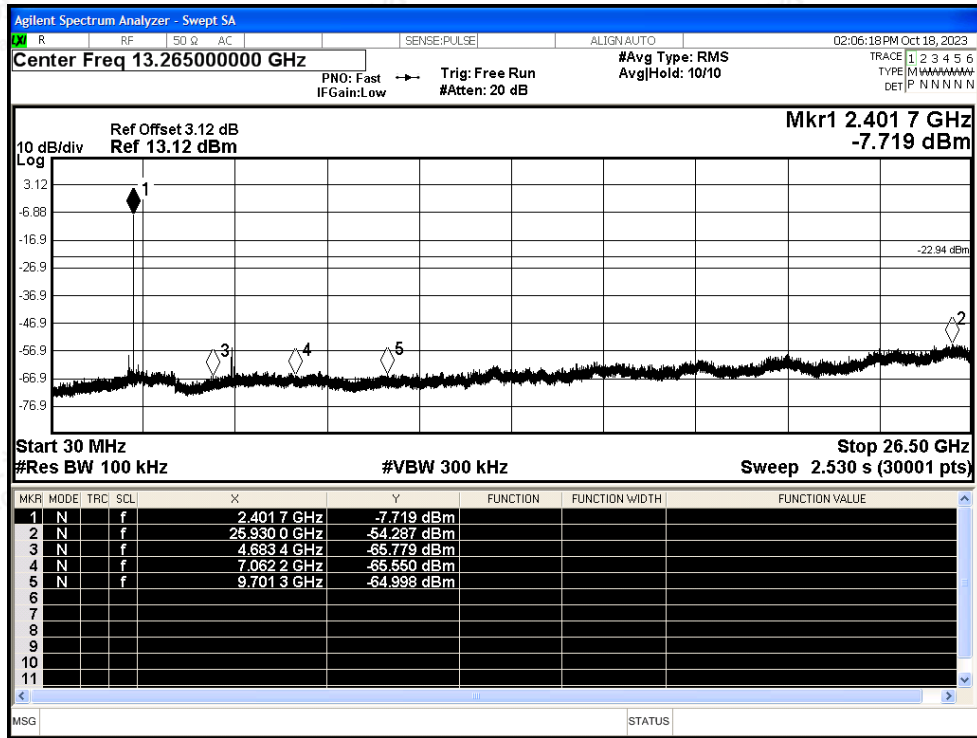




Tx. Spurious NVNT BLE 2M 2402MHz Ant Ref



Tx. Spurious NVNT BLE 2M 2402MHz Ant Emission



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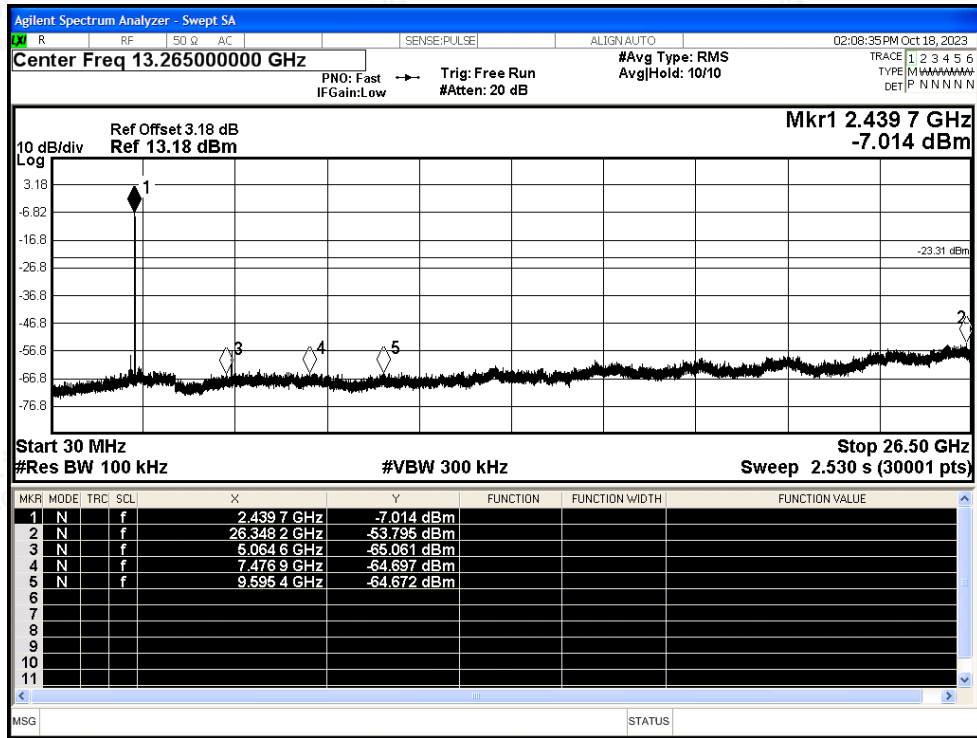
Scan code to check authenticity



Tx. Spurious NVNT BLE 2M 2440MHz Ant Ref



Tx. Spurious NVNT BLE 2M 2440MHz Ant Emission



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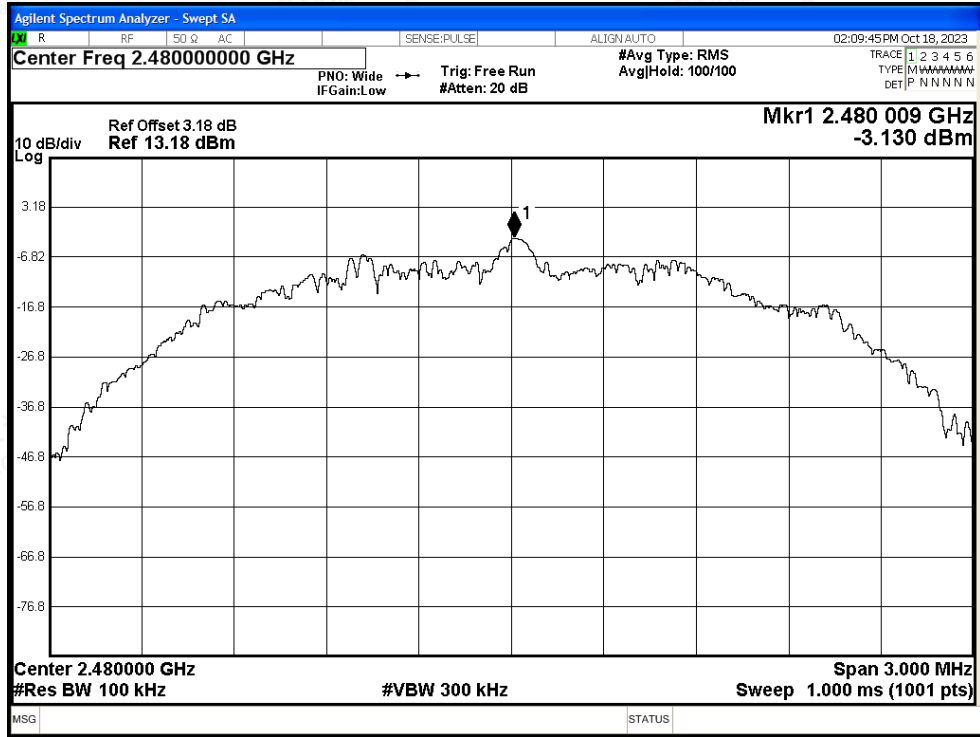
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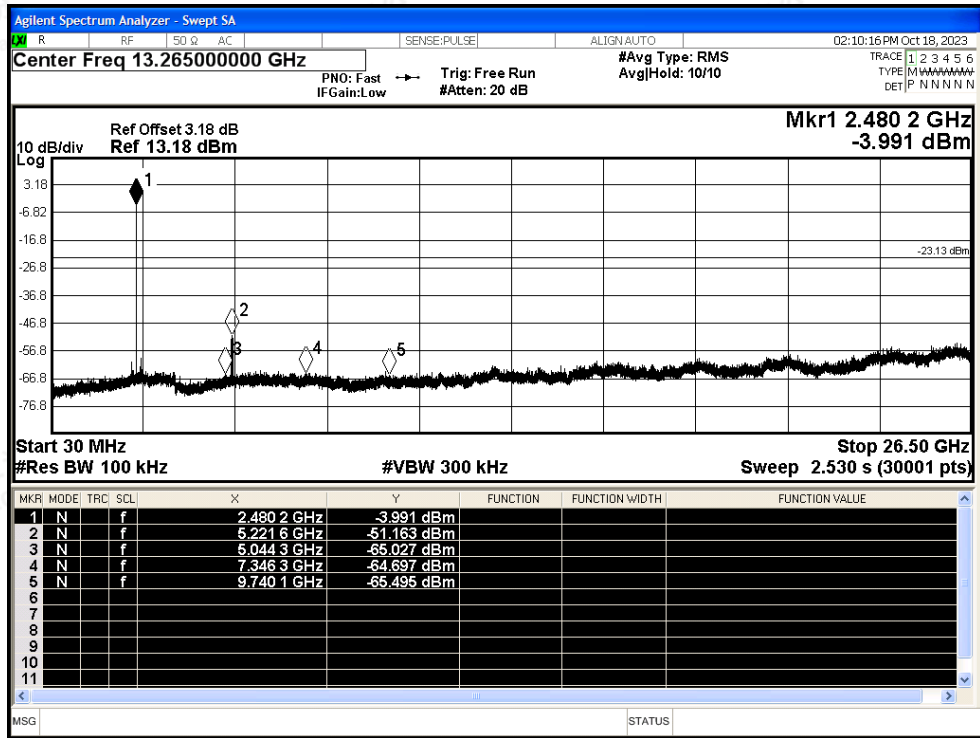
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Tx. Spurious NVNT BLE 2M 2480MHz Ant Ref



Tx. Spurious NVNT BLE 2M 2480MHz Ant Emission



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A.6 Duty Cycle

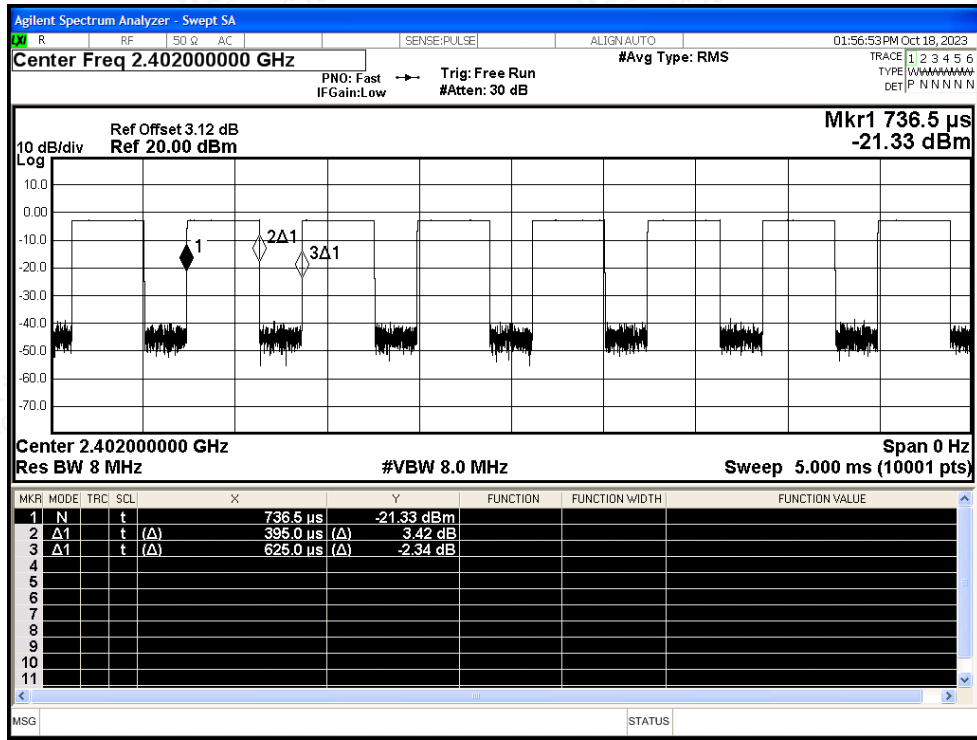
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant	63.2	1.99	2.53
NVNT	BLE 1M	2440	Ant	63.2	1.99	2.53
NVNT	BLE 1M	2480	Ant	63.2	1.99	2.53
NVNT	BLE 2M	2402	Ant	33.44	4.76	4.78
NVNT	BLE 2M	2440	Ant	33.44	4.76	4.78
NVNT	BLE 2M	2480	Ant	33.44	4.76	4.78



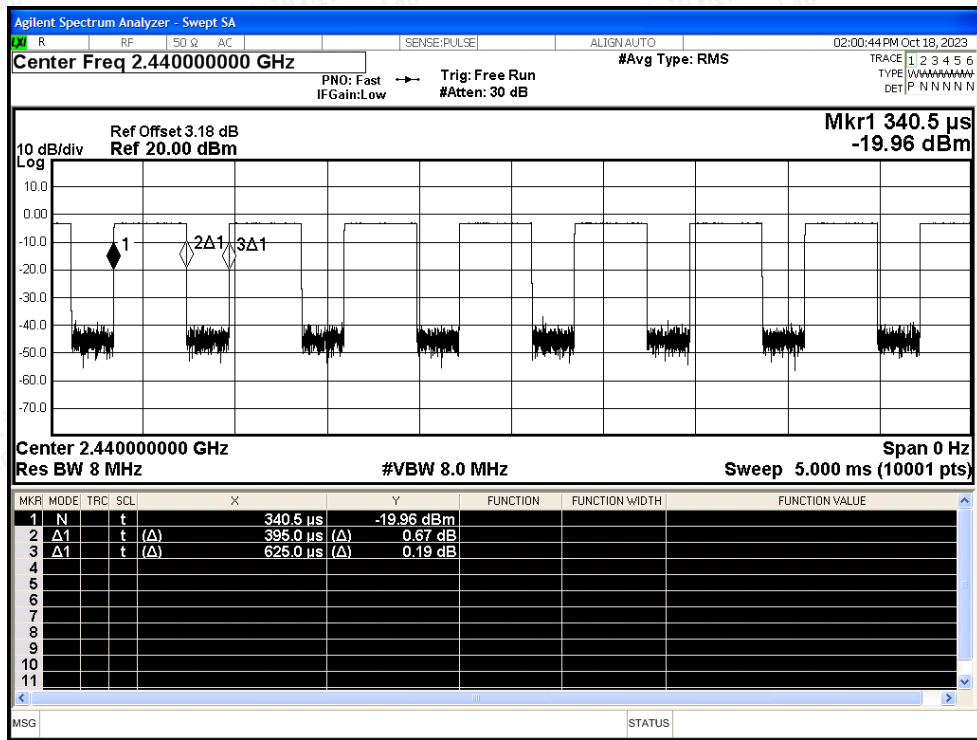


Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant

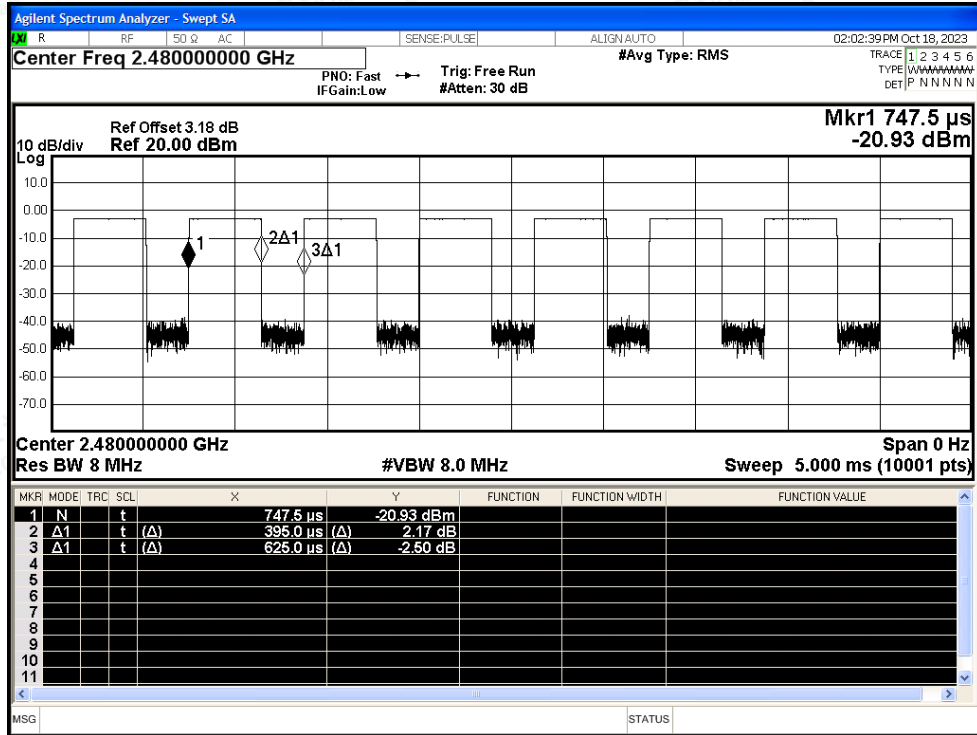


Duty Cycle NVNT BLE 1M 2440MHz Ant

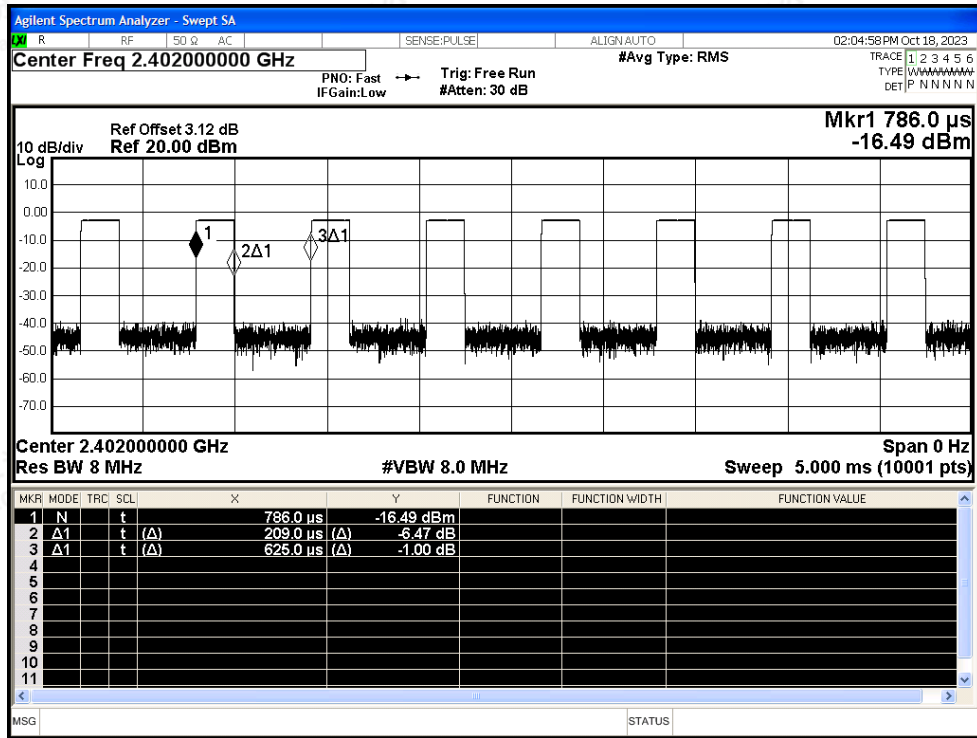




Duty Cycle NVNT BLE 1M 2480MHz Ant

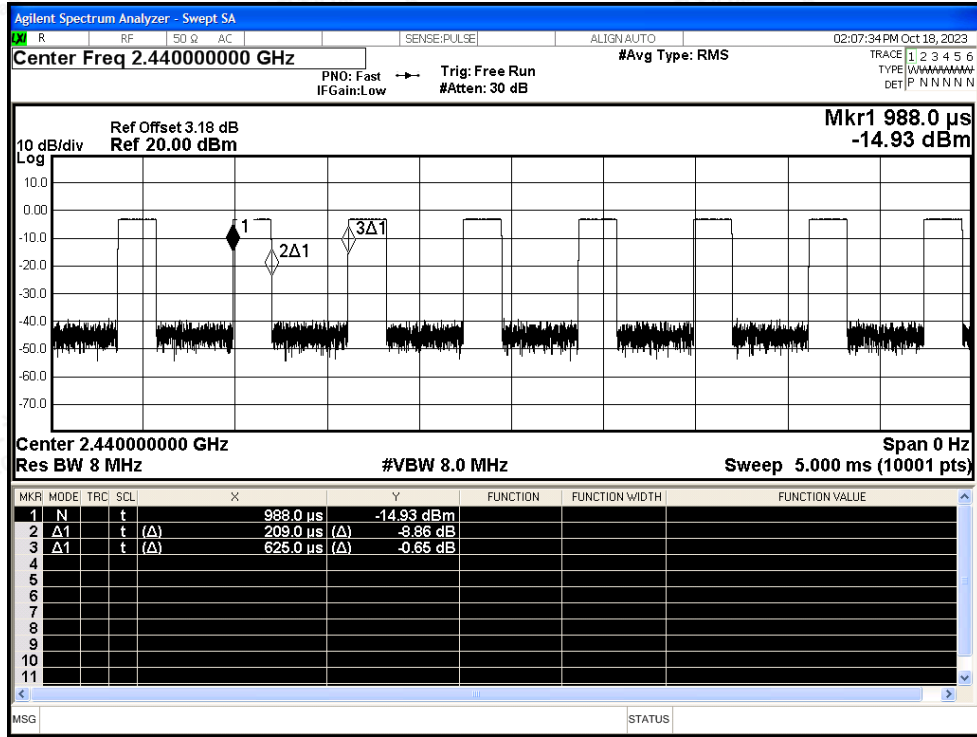


Duty Cycle NVNT BLE 2M 2402MHz Ant

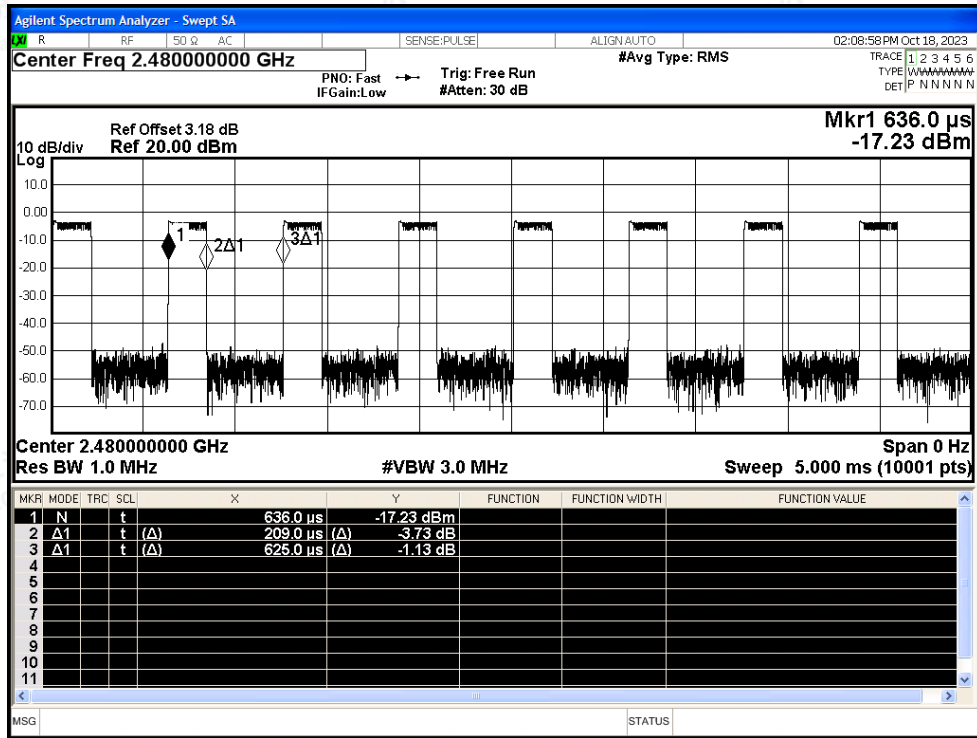




Duty Cycle NVNT BLE 2M 2440MHz Ant



Duty Cycle NVNT BLE 2M 2480MHz Ant





A.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant	2310	-48.48	2	48.78	Peak	74	Pass
NVNT	BLE 1M	2402	Ant	2310	-55.23	2	42.03	Average	54	Pass
NVNT	BLE 1M	2402	Ant	2384.688	-46.65	2	50.61	Peak	74	Pass
NVNT	BLE 1M	2402	Ant	2333.328	-55.09	2	42.17	Average	54	Pass
NVNT	BLE 1M	2402	Ant	2390	-49.52	2	47.74	Peak	74	Pass
NVNT	BLE 1M	2402	Ant	2390	-55.28	2	41.98	Average	54	Pass
NVNT	BLE 1M	2480	Ant	2483.5	-49.54	2	47.72	Peak	74	Pass
NVNT	BLE 1M	2480	Ant	2483.5	-52.6	2	44.66	Average	54	Pass
NVNT	BLE 1M	2480	Ant	2483.704	-35.6	2	61.66	Peak	74	Pass
NVNT	BLE 1M	2480	Ant	2483.536	-52.44	2	44.82	Average	54	Pass
NVNT	BLE 1M	2480	Ant	2500	-47.29	2	49.97	Peak	74	Pass
NVNT	BLE 1M	2480	Ant	2500	-55.41	2	41.85	Average	54	Pass
NVNT	BLE 2M	2402	Ant	2310	-50.15	2	47.11	Peak	74	Pass
NVNT	BLE 2M	2402	Ant	2310	-55.52	2	41.74	Average	54	Pass
NVNT	BLE 2M	2402	Ant	2331.984	-46.31	2	50.95	Peak	74	Pass
NVNT	BLE 2M	2402	Ant	2386.128	-54.58	2	42.68	Average	54	Pass
NVNT	BLE 2M	2402	Ant	2390	-49.1	2	48.16	Peak	74	Pass
NVNT	BLE 2M	2402	Ant	2390	-55.55	2	41.71	Average	54	Pass
NVNT	BLE 2M	2480	Ant	2483.5	-46.09	2	51.17	Peak	74	Pass
NVNT	BLE 2M	2480	Ant	2483.5	-51.41	2	45.85	Average	54	Pass
NVNT	BLE 2M	2480	Ant	2483.608	-36.26	2	61	Peak	74	Pass
NVNT	BLE 2M	2480	Ant	2483.584	-51.03	2	46.23	Average	54	Pass
NVNT	BLE 2M	2480	Ant	2500	-49.3	2	47.96	Peak	74	Pass
NVNT	BLE 2M	2480	Ant	2500	-55.35	2	41.91	Average	54	Pass



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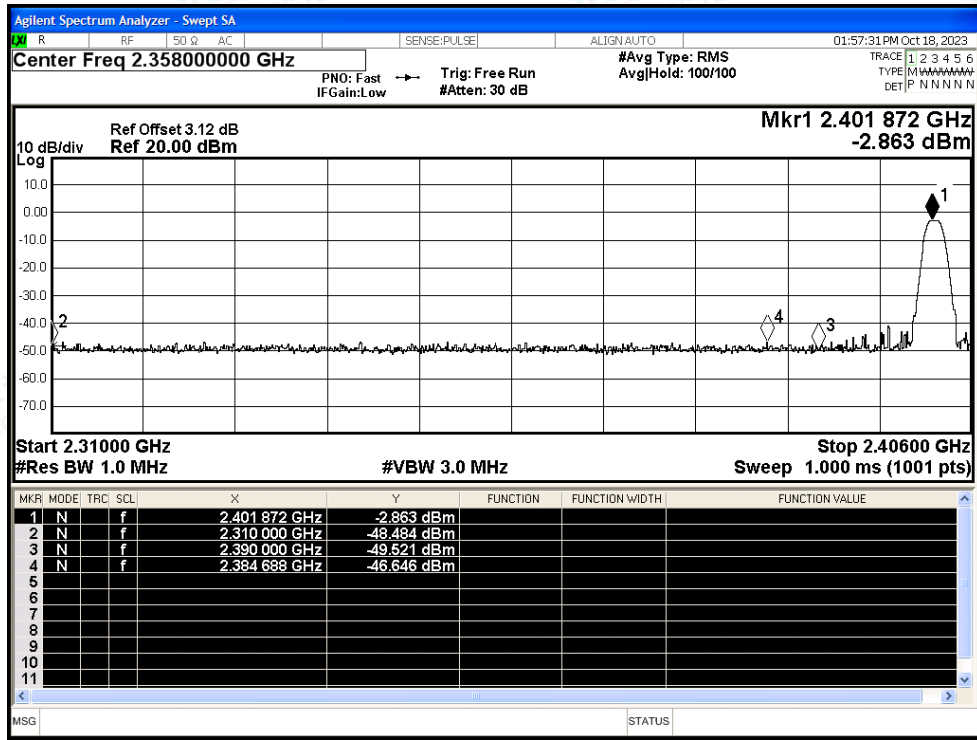
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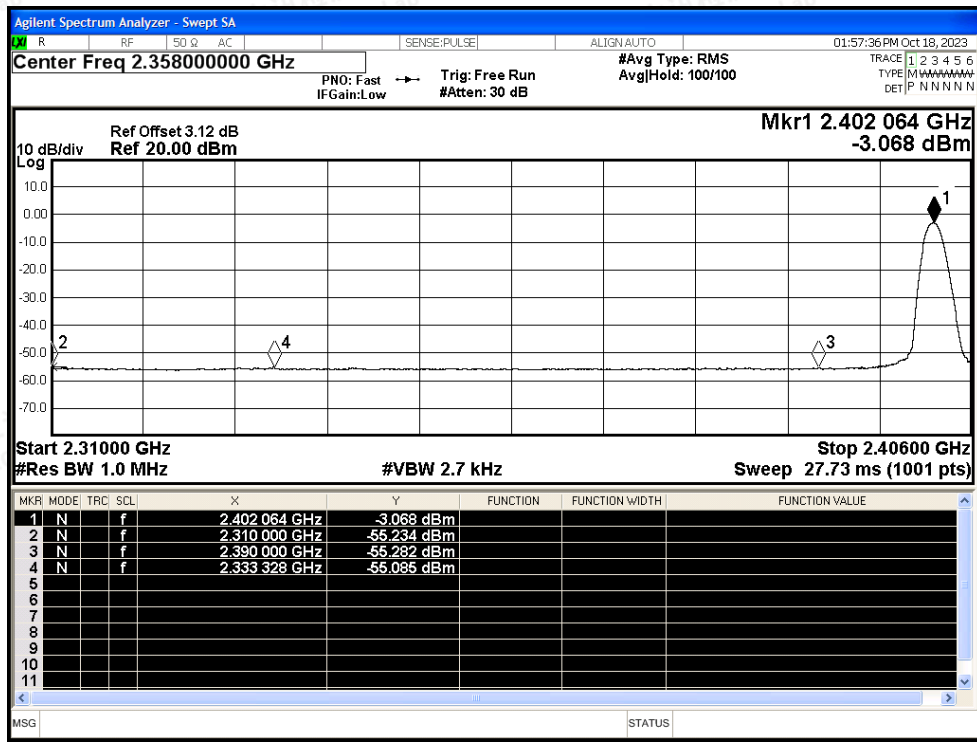


Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant Peak



Restrict Band NVNT BLE 1M 2402MHz Ant Average

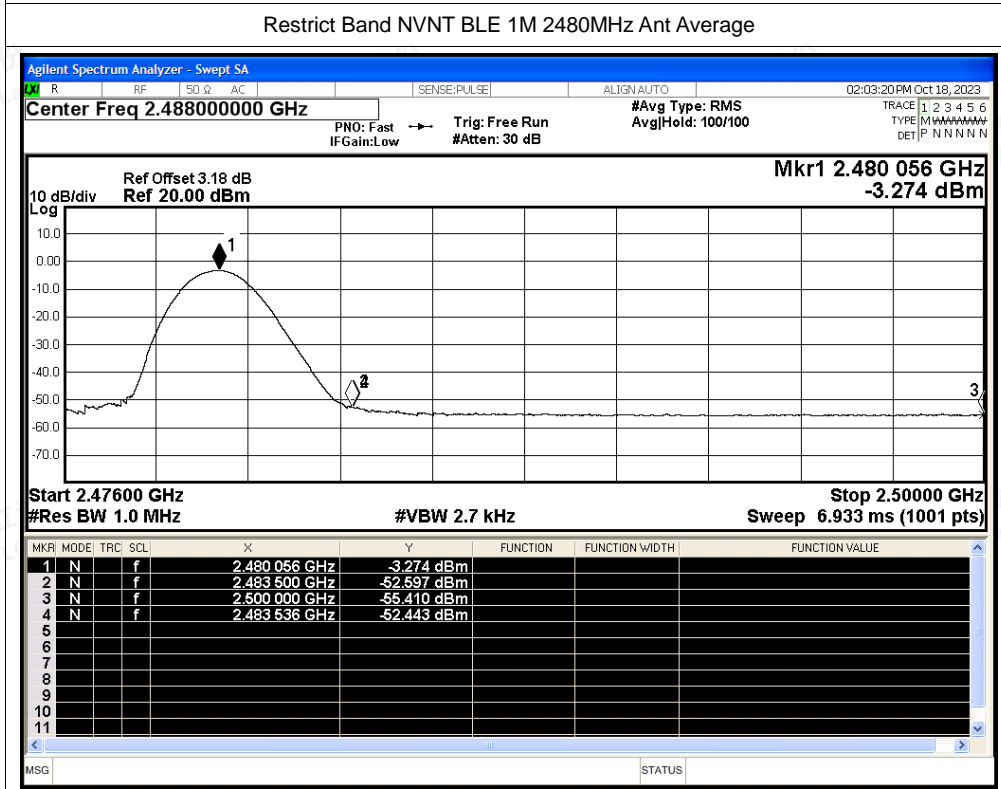
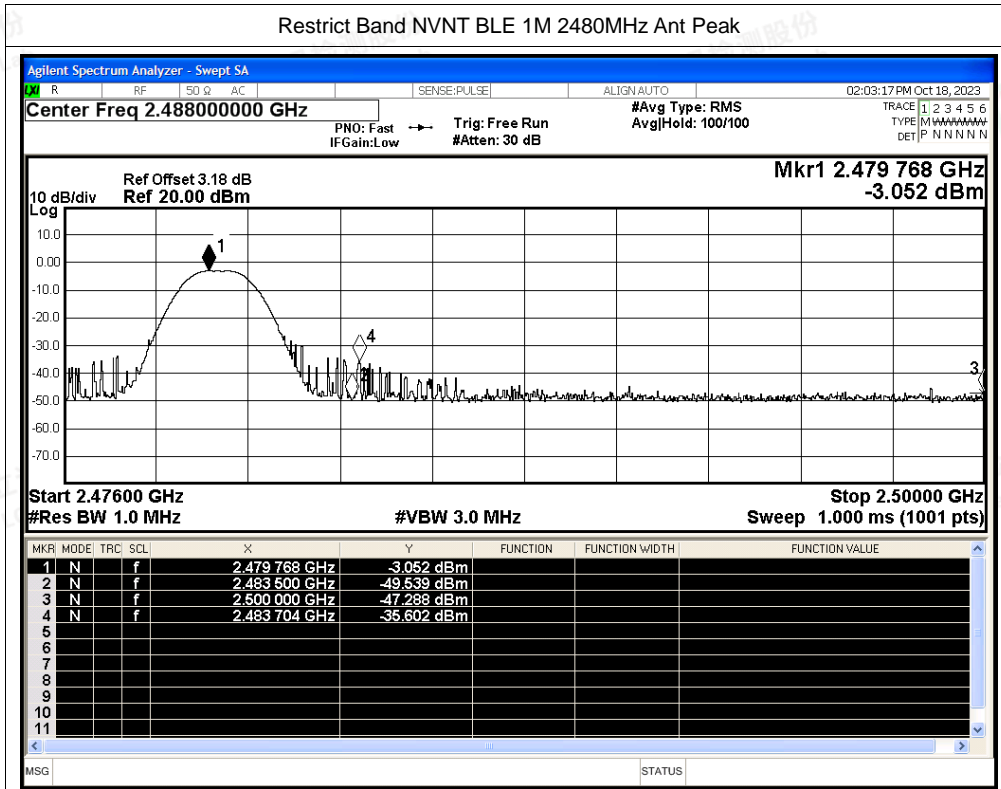


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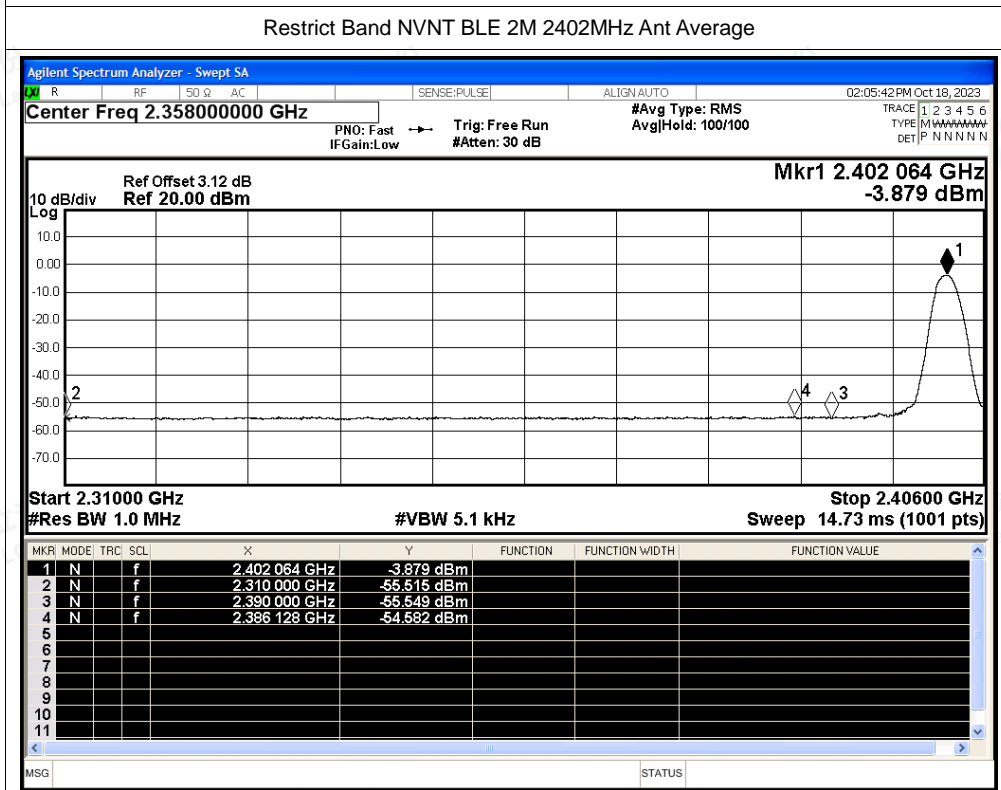
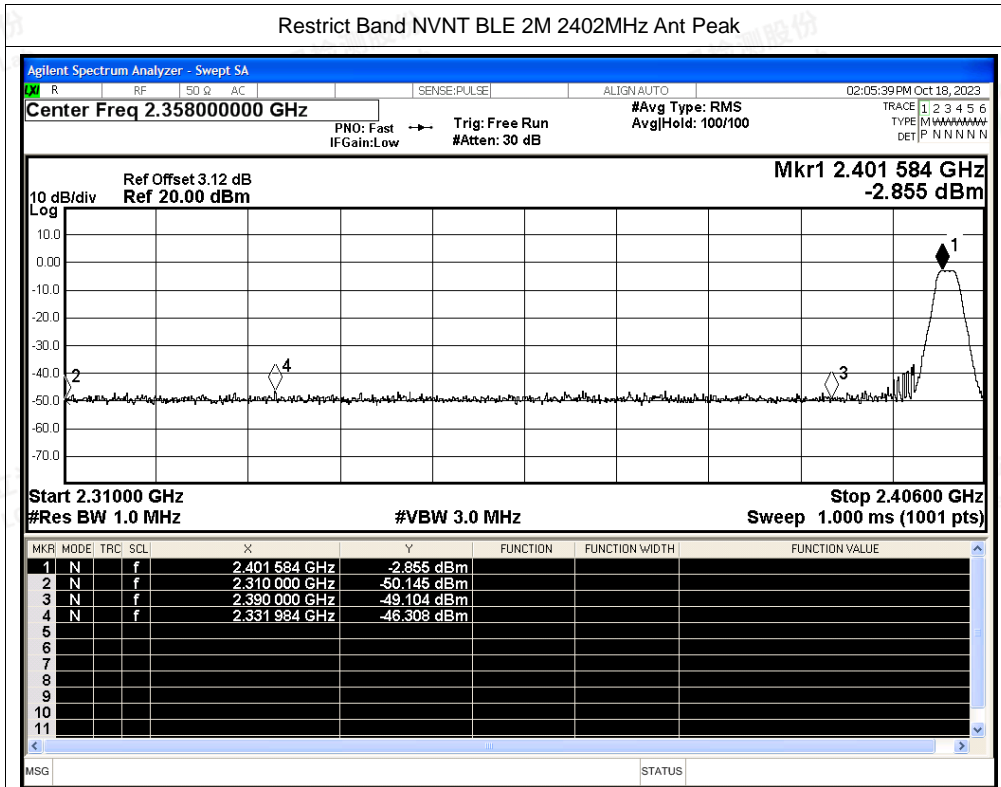


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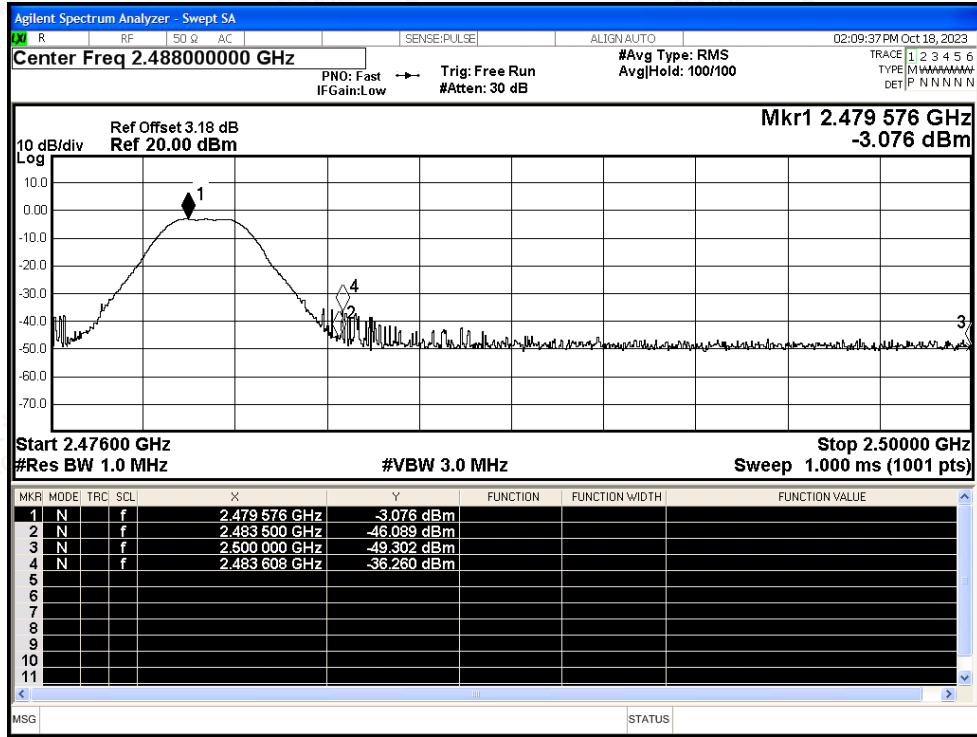
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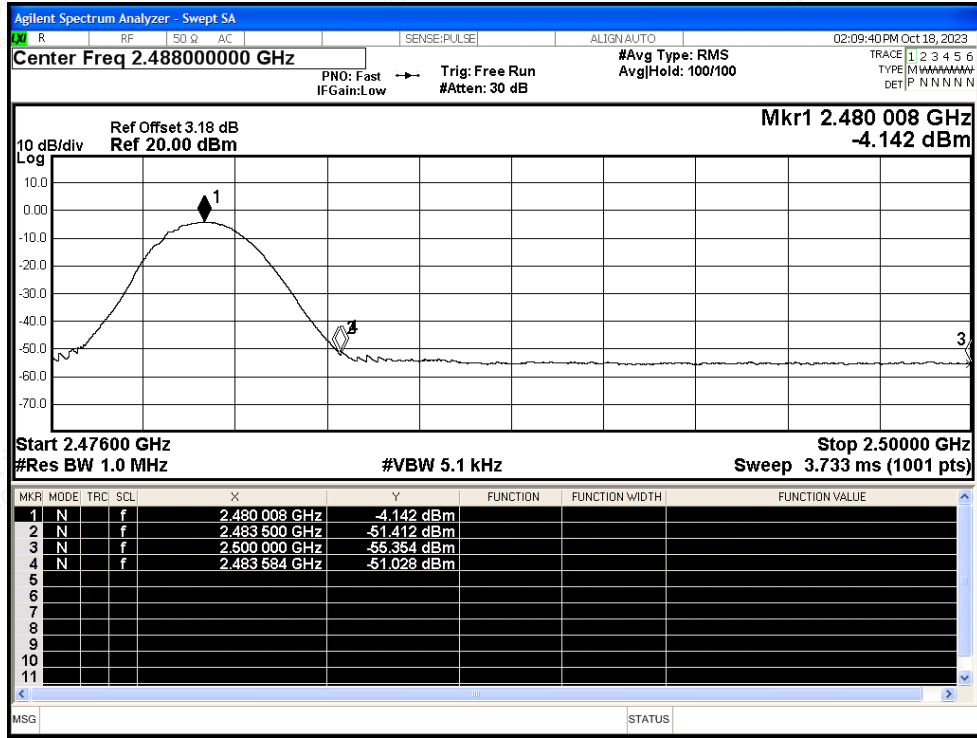




Restrict Band NVNT BLE 2M 2480MHz Ant Peak



Restrict Band NVNT BLE 2M 2480MHz Ant Average



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