



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: Smart Triangle Light

Test Model: KA-PL09

Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
	<i>Nick Peng</i>
Supervised by:	Ling Zhu
	<i>Ling Zhu</i>



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A.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 2M	2402	Ant1	1.134	≥ 0.5	Pass
NVNT	BLE 2M	2440	Ant1	1.11	≥ 0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.147	≥ 0.5	Pass



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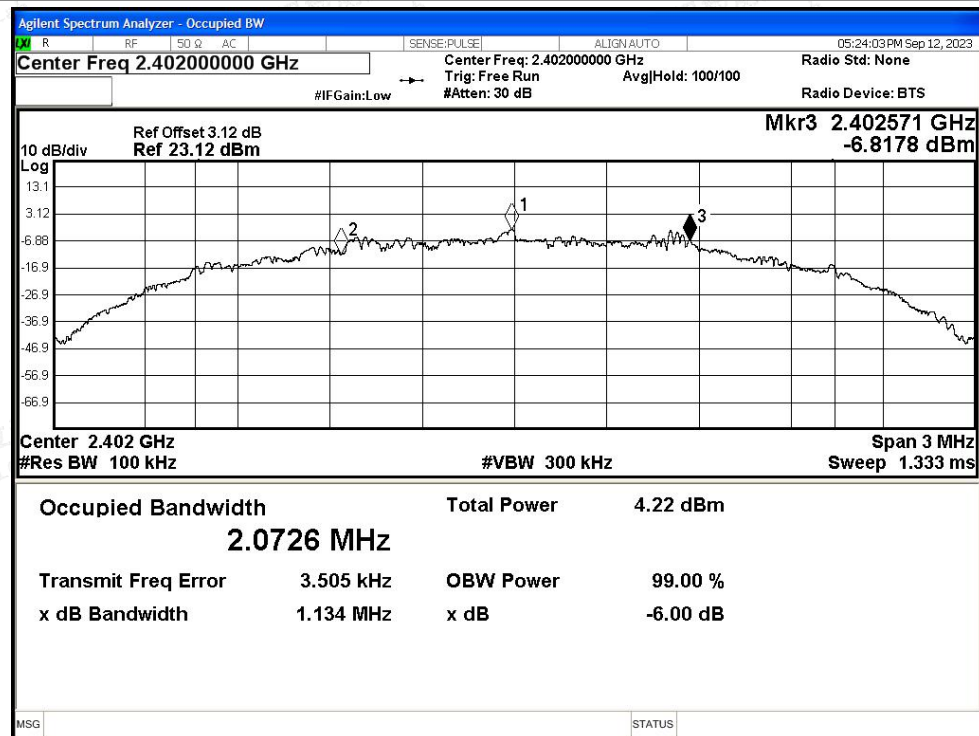
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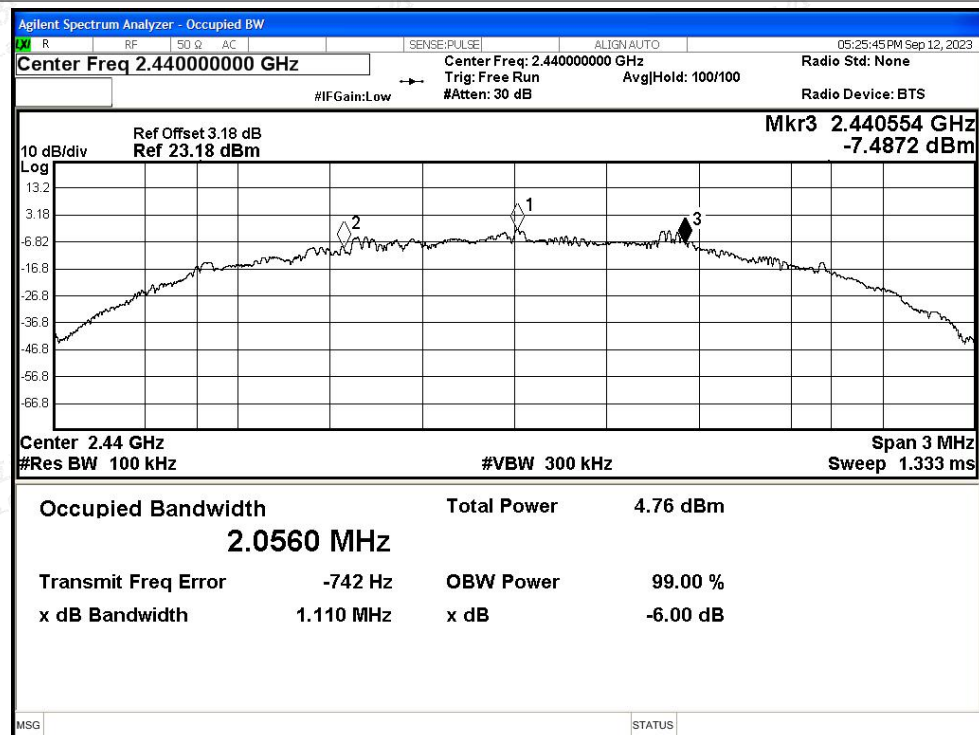


Test Graphs

-6dB Bandwidth NVNT BLE 2M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1

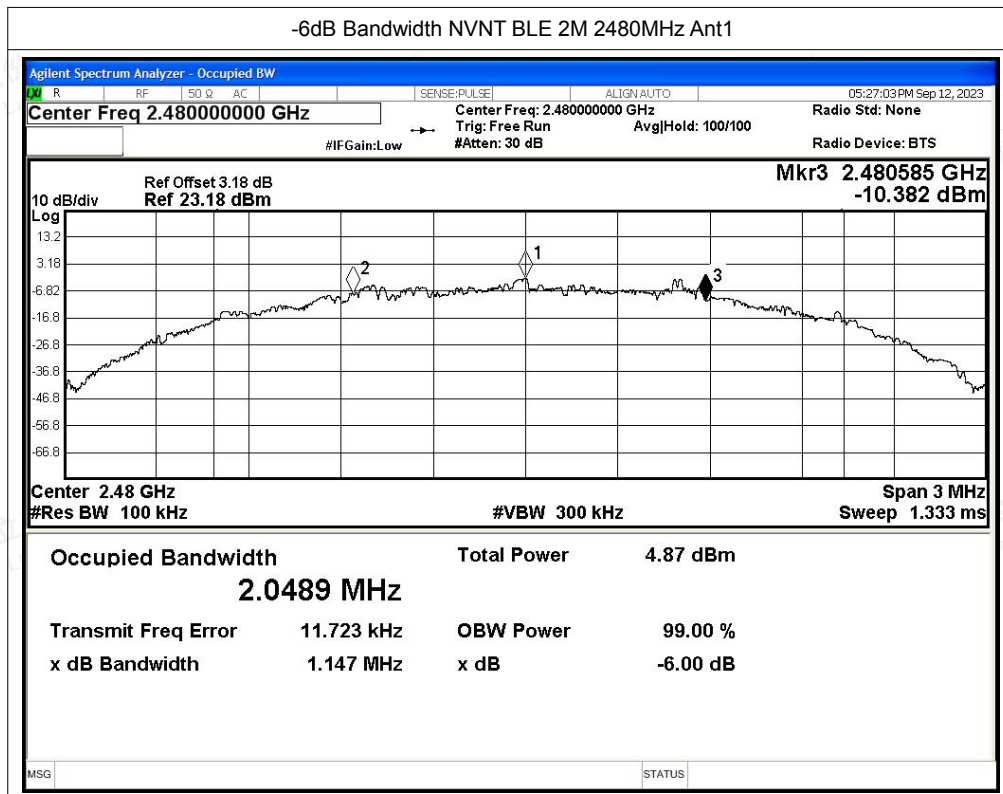


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A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 2M	2402	Ant1	-1.79	30	Pass
NVNT	BLE 2M	2440	Ant1	-1.4	30	Pass
NVNT	BLE 2M	2480	Ant1	-1.23	30	Pass



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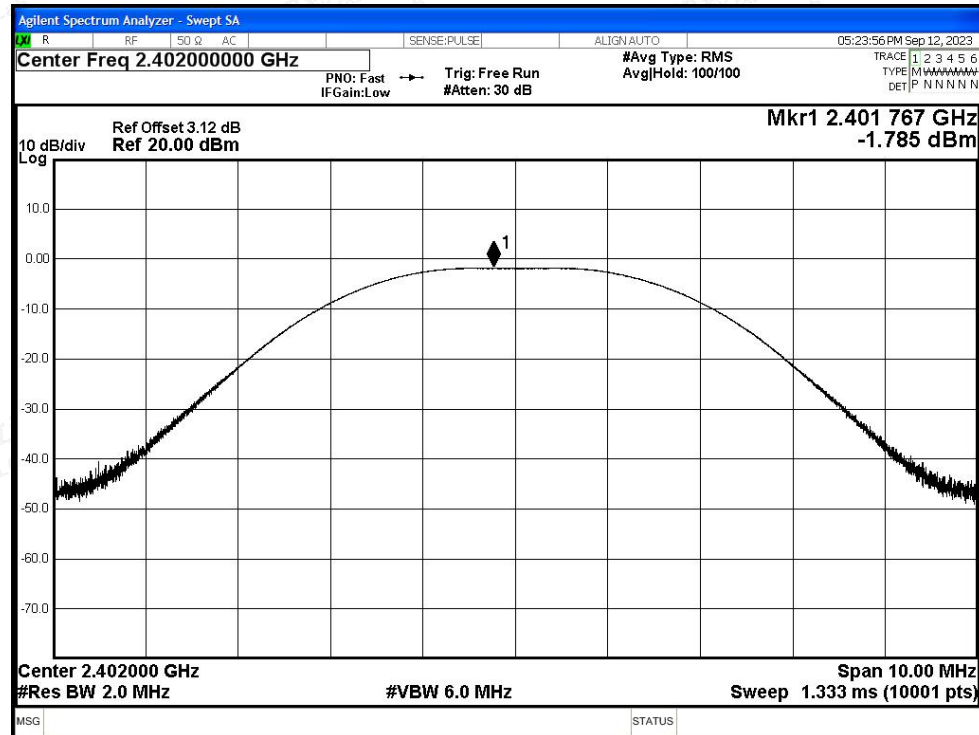
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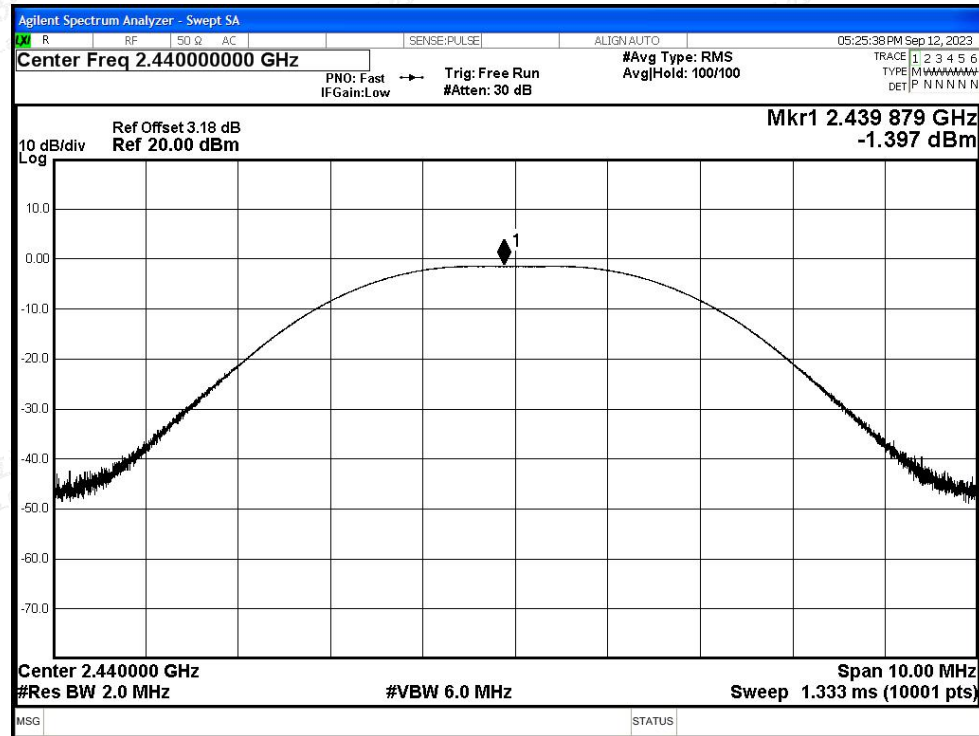


Test Graphs

Power NVNT BLE 2M 2402MHz Ant1



Power NVNT BLE 2M 2440MHz Ant1

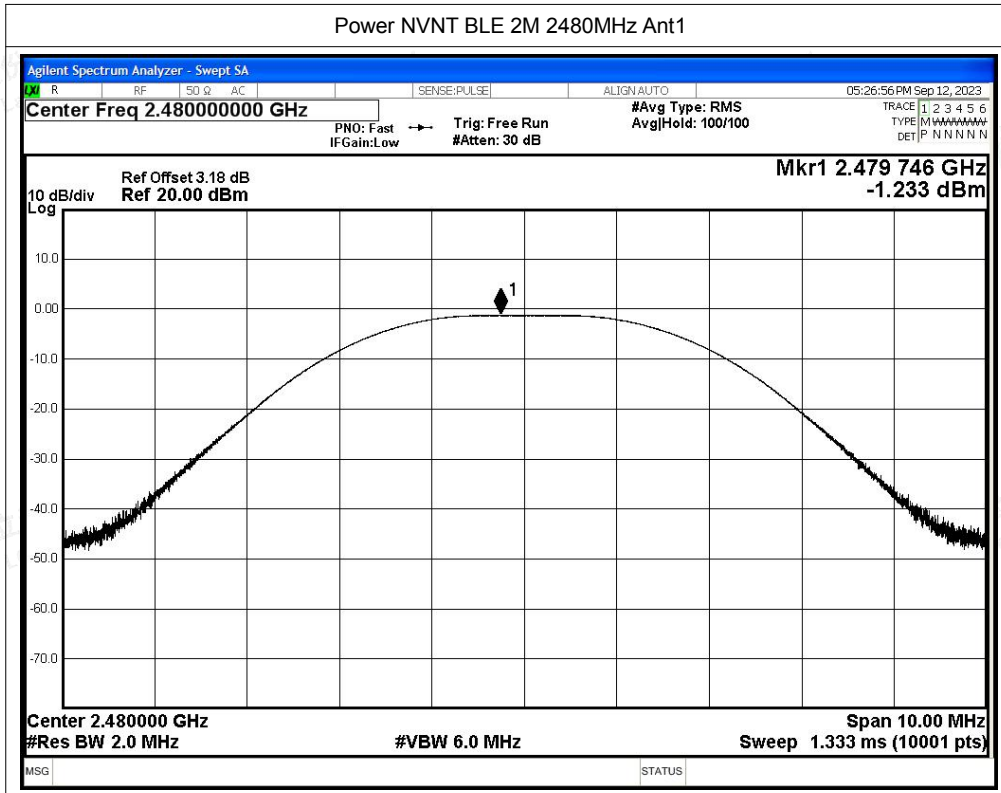


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A.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 2M	2402	Ant1	-20.86	8	Pass
NVNT	BLE 2M	2440	Ant1	-20.66	8	Pass
NVNT	BLE 2M	2480	Ant1	-19.99	8	Pass



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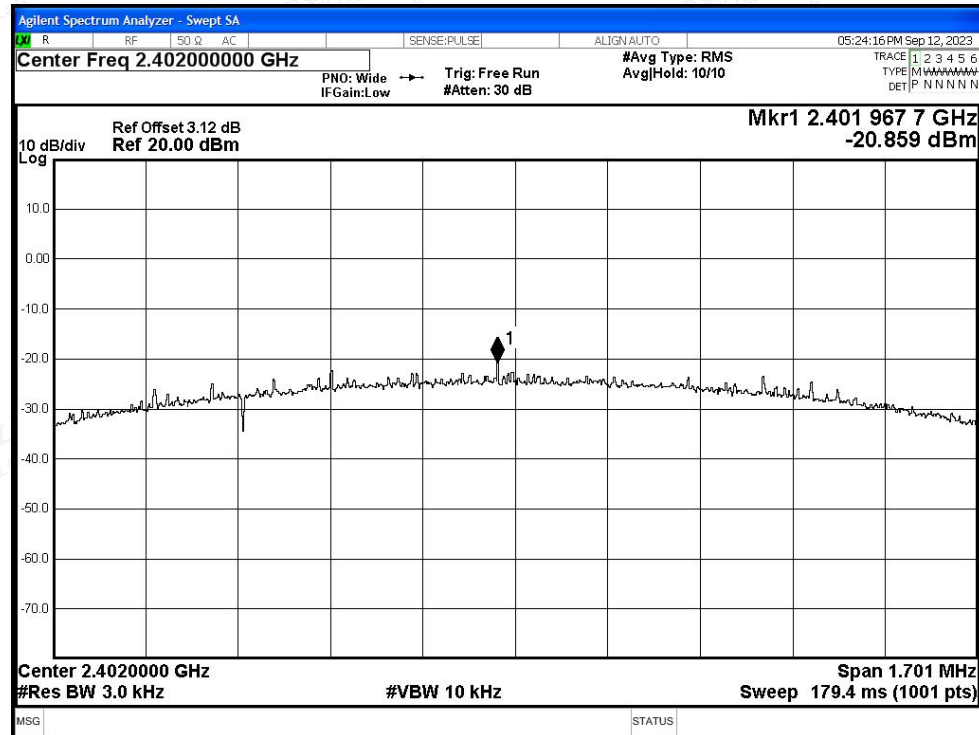
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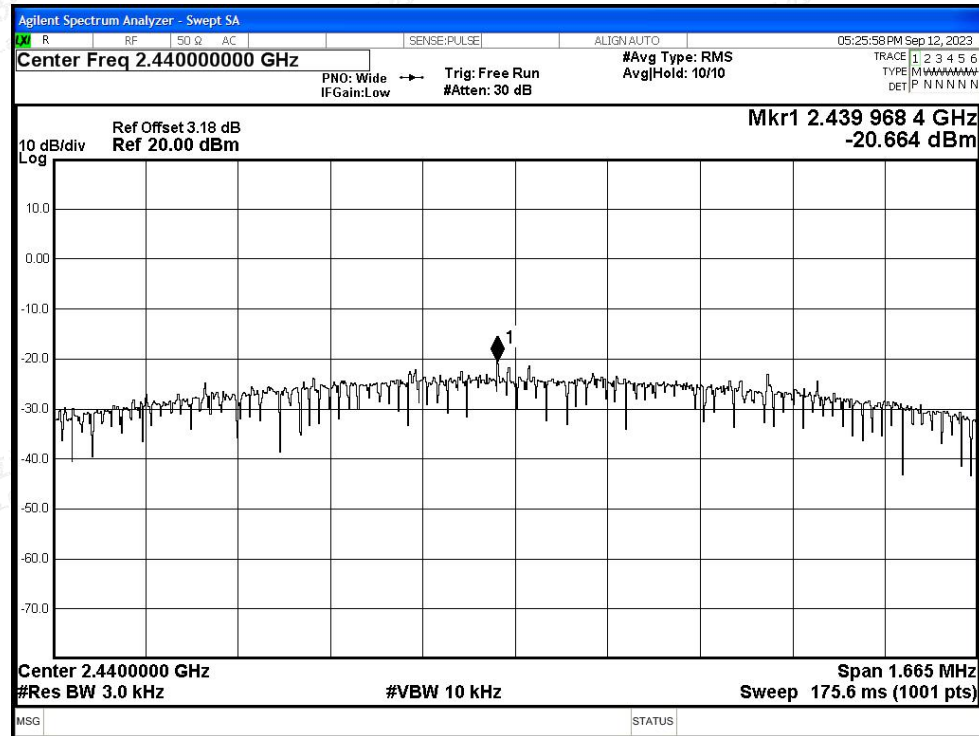


Test Graphs

PSD NVNT BLE 2M 2402MHz Ant1



PSD NVNT BLE 2M 2440MHz Ant1

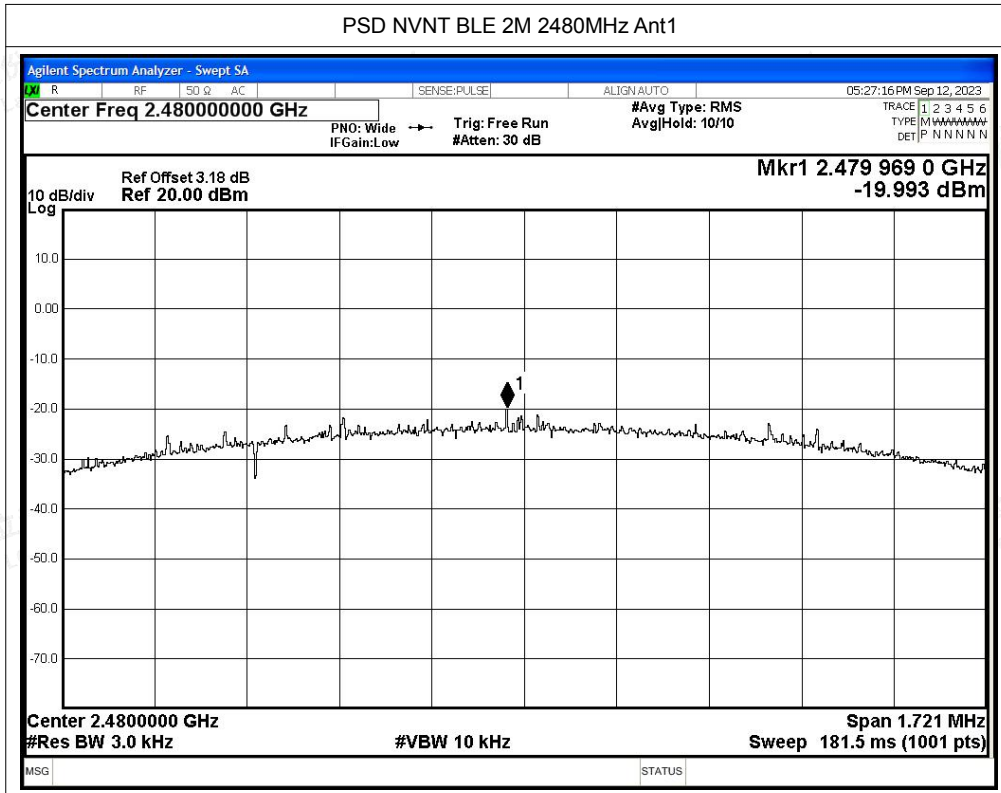


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A.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 2M	2402	Ant1	-34.43	-20	Pass
NVNT	BLE 2M	2480	Ant1	-53.4	-20	Pass



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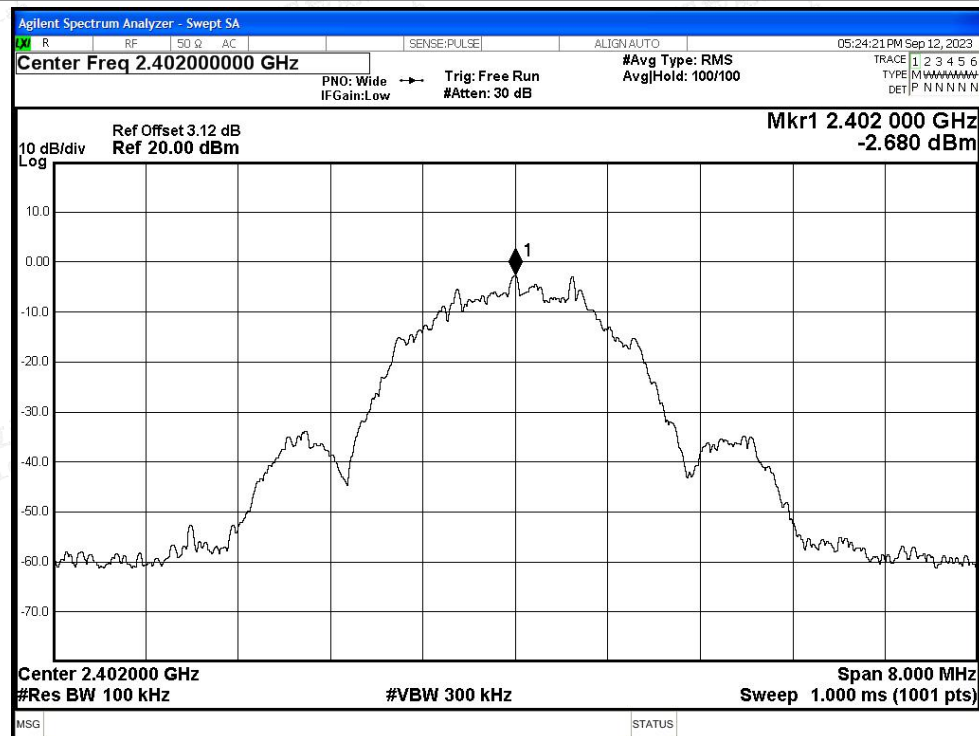
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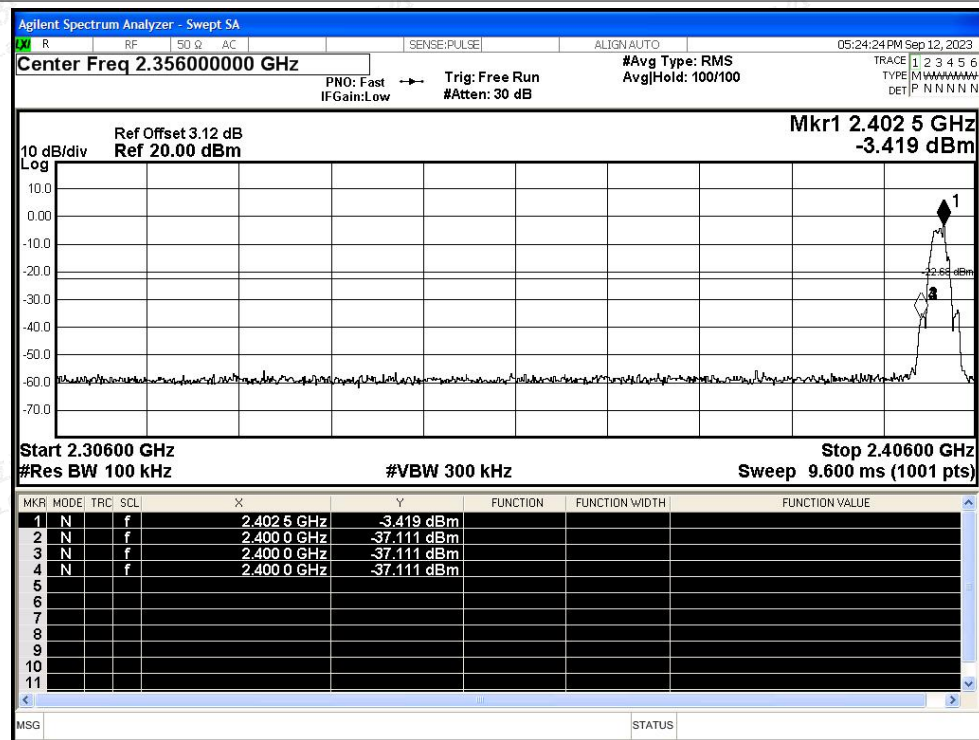


Test Graphs

Band Edge NVNT BLE 2M 2402MHz Ant1 Ref



Band Edge NVNT BLE 2M 2402MHz Ant1 Emission



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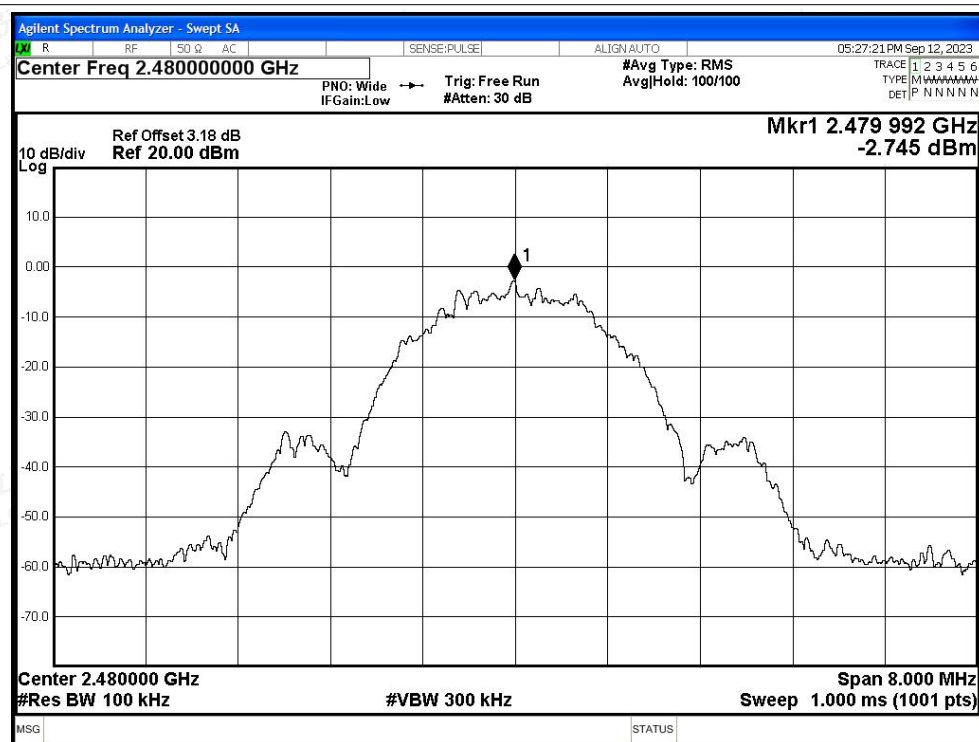
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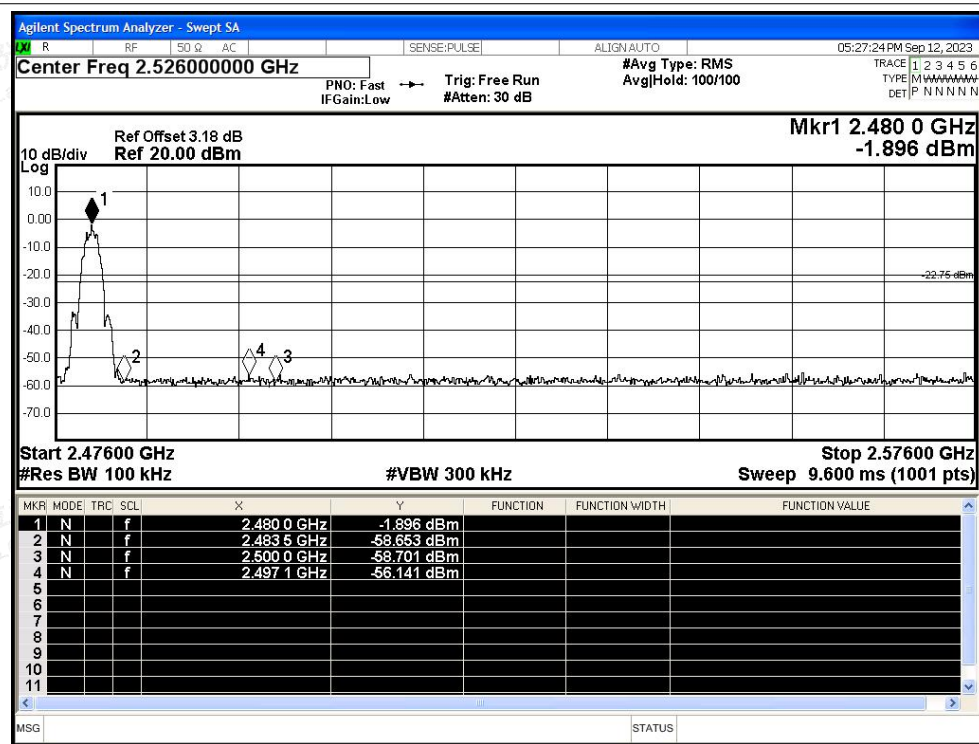
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Band Edge NVNT BLE 2M 2480MHz Ant1 Ref



Band Edge NVNT BLE 2M 2480MHz Ant1 Emission



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A.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 2M	2402	Ant1	-52.01	-20	Pass
NVNT	BLE 2M	2440	Ant1	-51.65	-20	Pass
NVNT	BLE 2M	2480	Ant1	-52.01	-20	Pass



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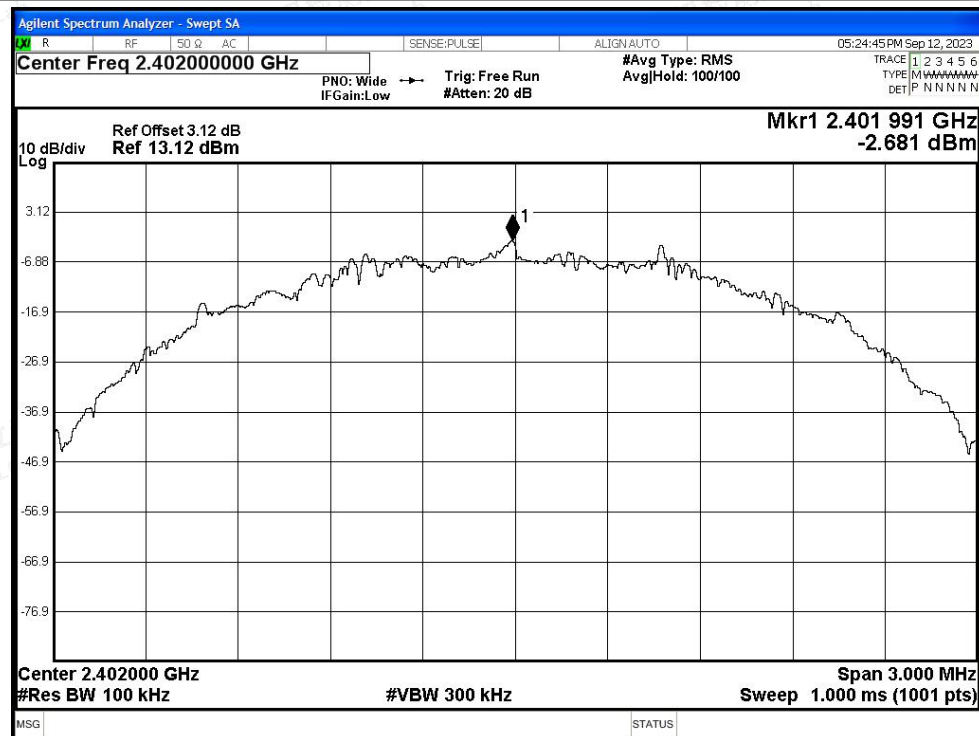
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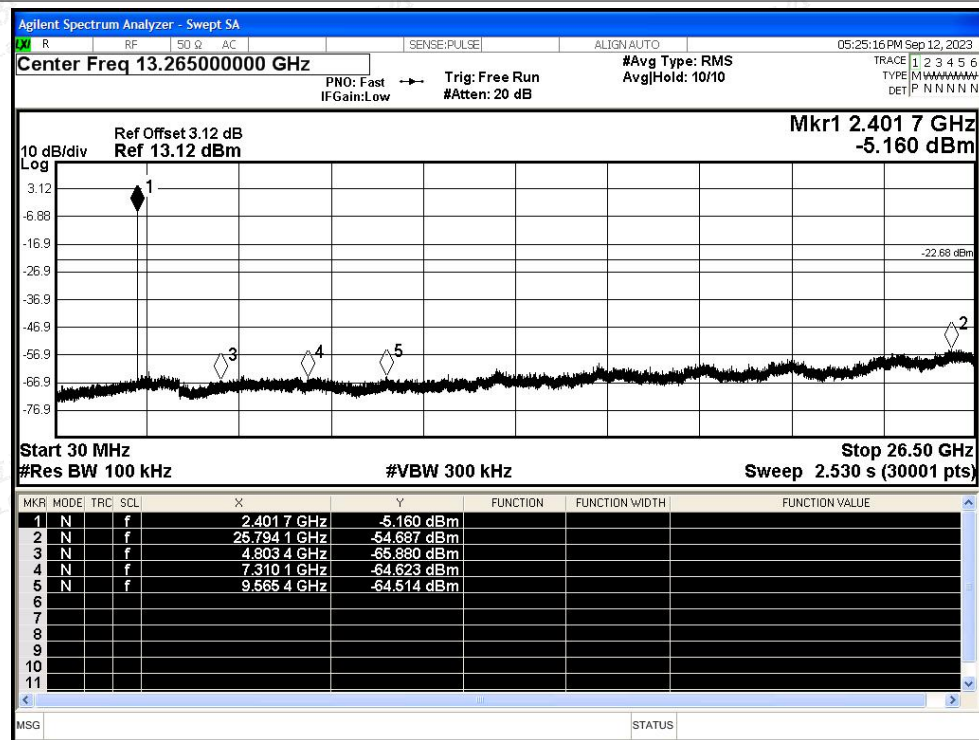


Test Graphs

Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission



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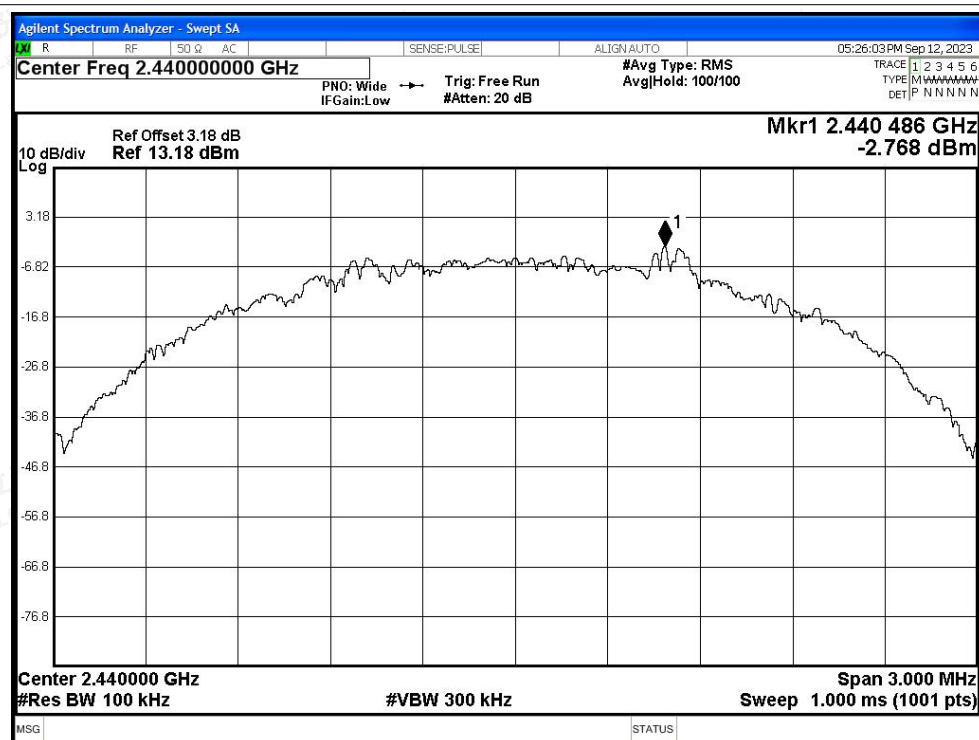
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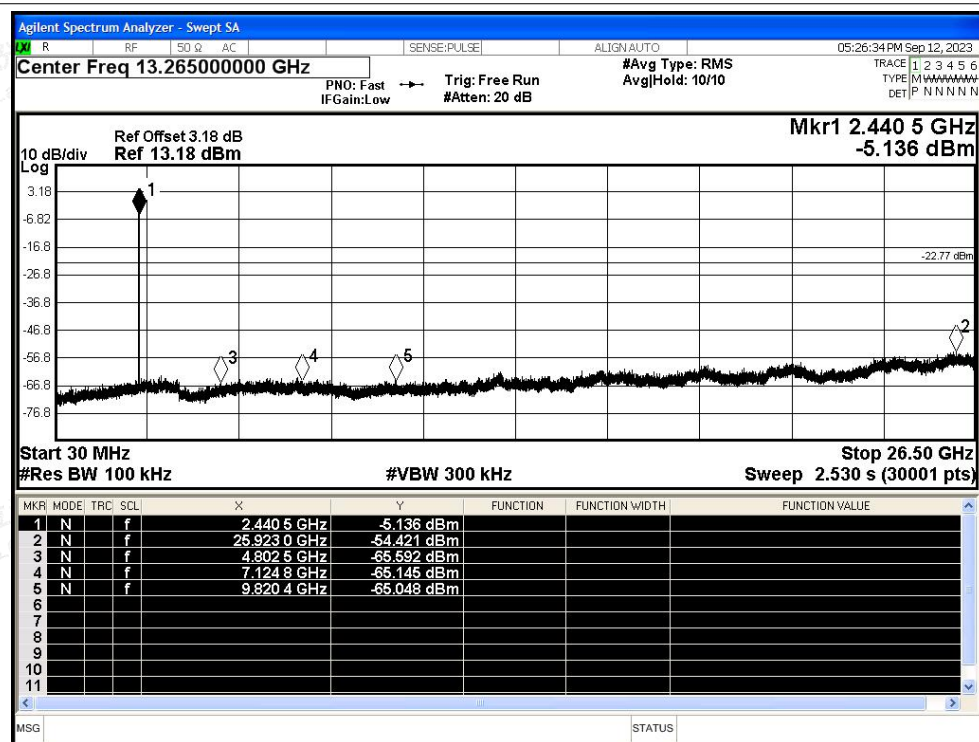
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Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission



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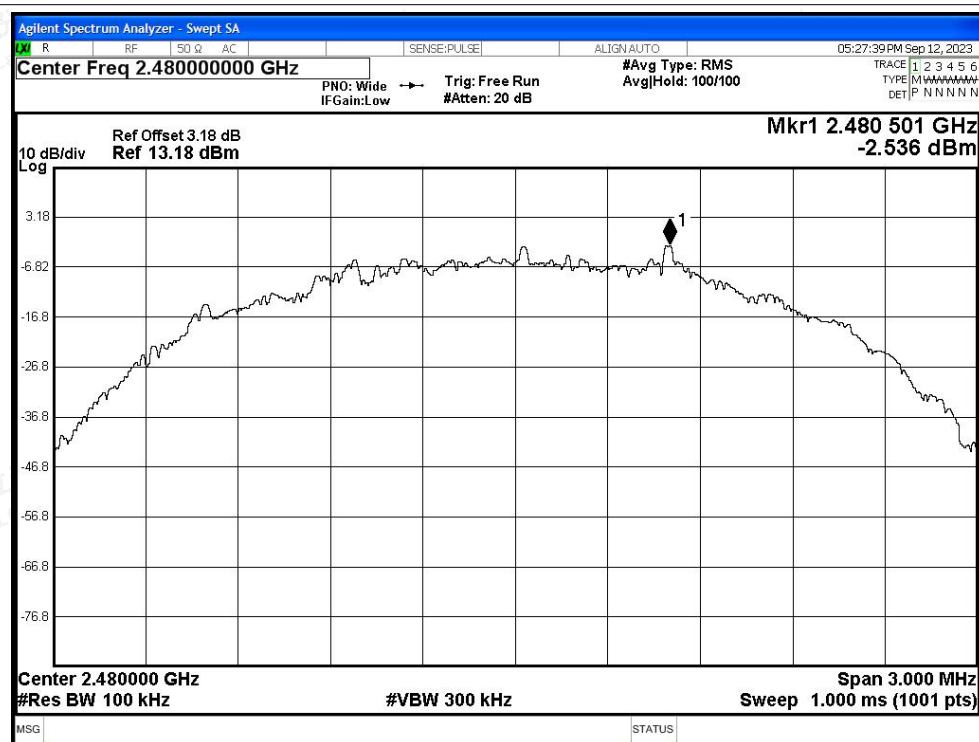
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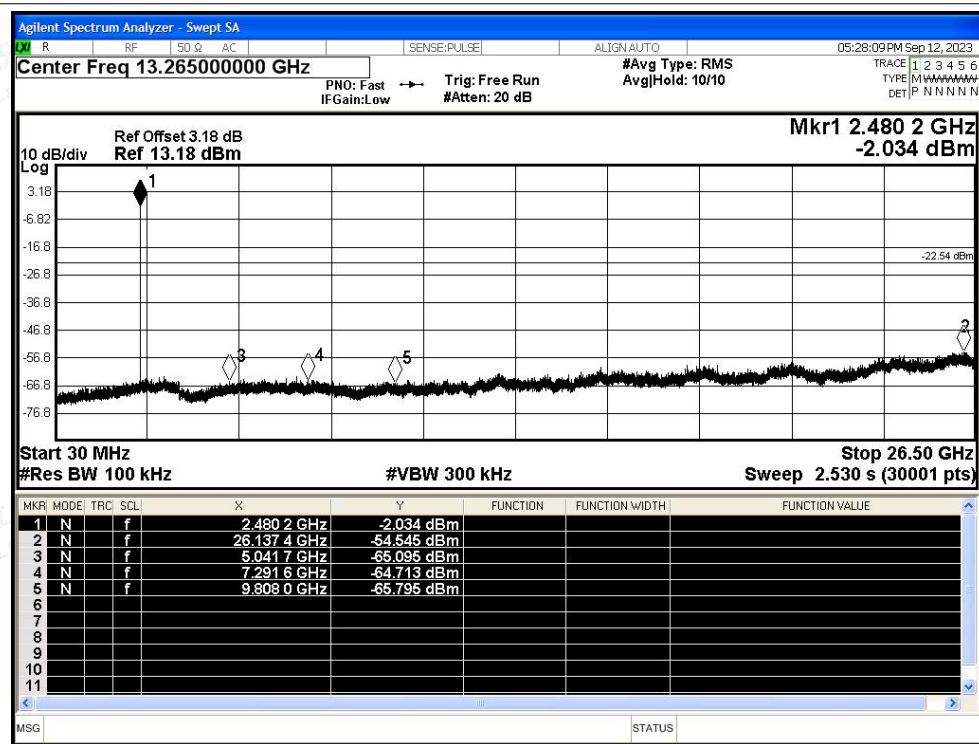
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Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission



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A.6 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 2M	2402	Ant1	57.15	2.43	0.93
NVNT	BLE 2M	2440	Ant1	57.16	2.43	0.93
NVNT	BLE 2M	2480	Ant1	57.16	2.43	0.93



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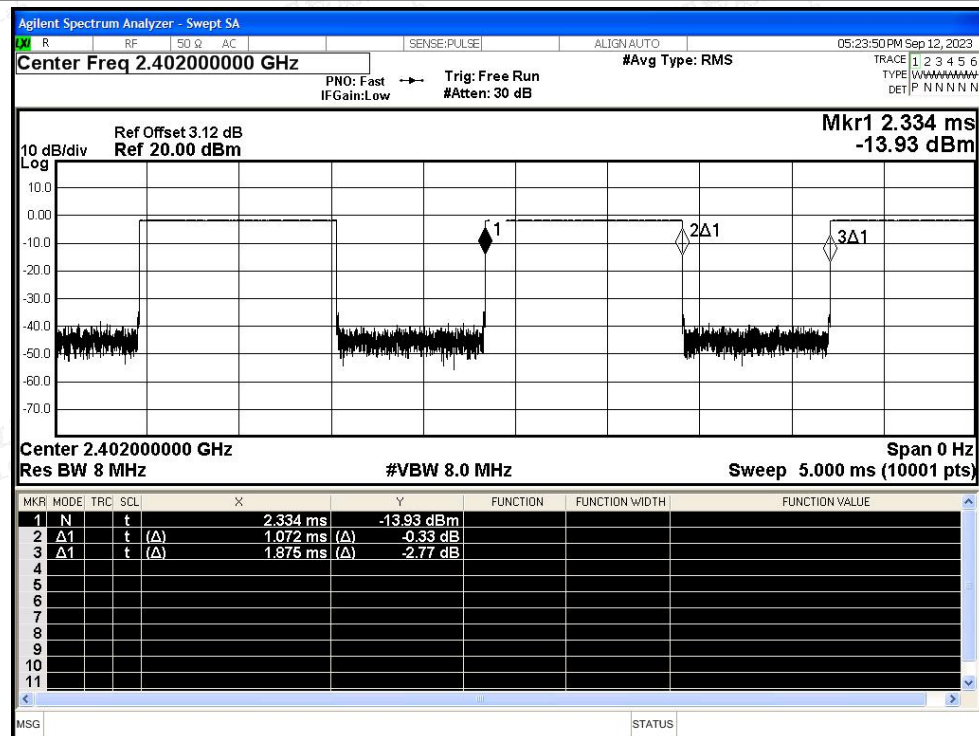
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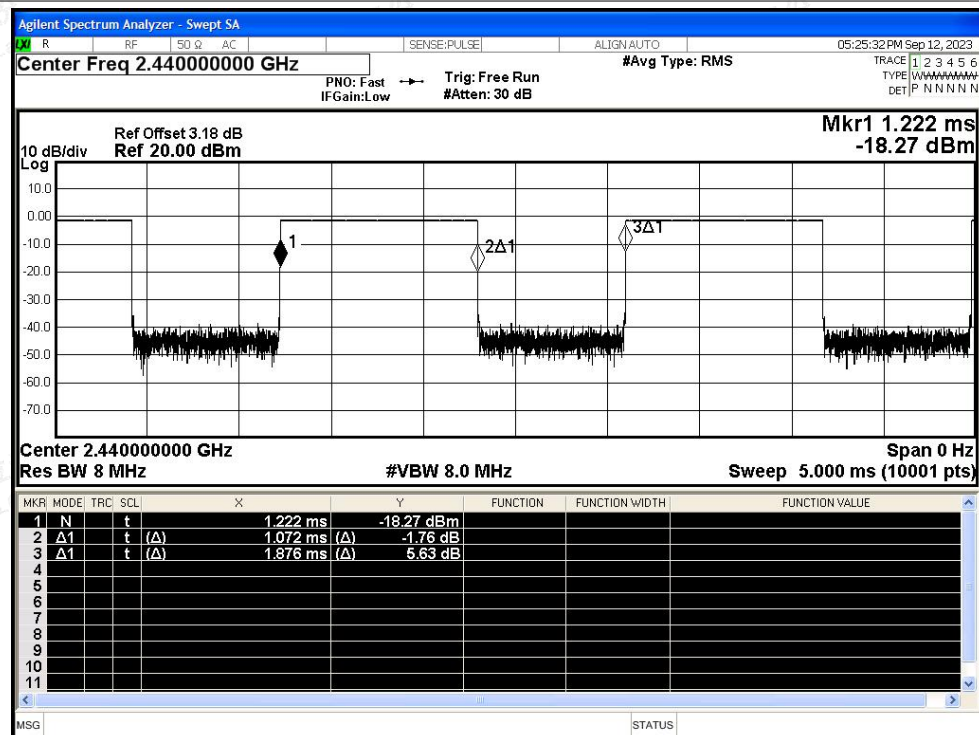


Test Graphs

Duty Cycle NVNT BLE 2M 2402MHz Ant1



Duty Cycle NVNT BLE 2M 2440MHz Ant1

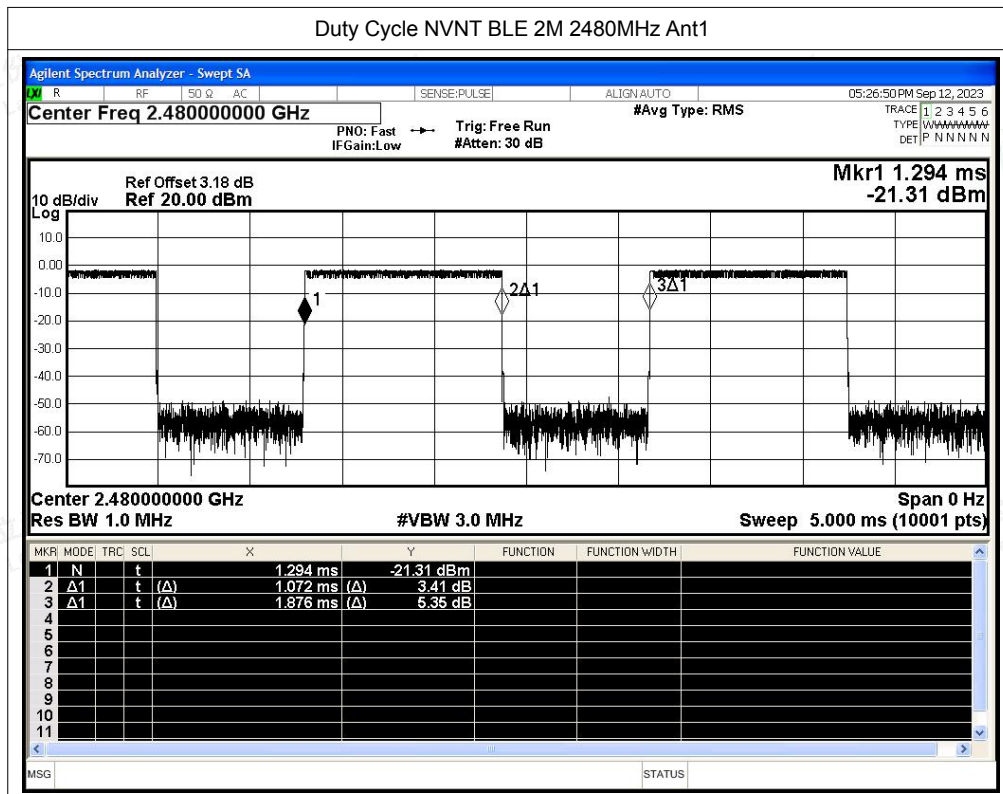


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A.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 2M	2402	Ant1	2310	-49.83	2.2	47.63	Peak	74	Pass
NVNT	BLE 2M	2402	Ant1	2310	-56.66	2.2	40.80	Average	54	Pass
NVNT	BLE 2M	2402	Ant1	2377.104	-46.53	2.2	50.93	Peak	74	Pass
NVNT	BLE 2M	2402	Ant1	2387.856	-55.87	2.2	41.59	Average	54	Pass
NVNT	BLE 2M	2402	Ant1	2390	-49.01	2.2	48.45	Peak	74	Pass
NVNT	BLE 2M	2402	Ant1	2390	-56.21	2.2	41.25	Average	54	Pass
NVNT	BLE 2M	2480	Ant1	2483.5	-48.6	2.2	48.86	Peak	74	Pass
NVNT	BLE 2M	2480	Ant1	2483.5	-51.83	2.2	45.63	Average	54	Pass
NVNT	BLE 2M	2480	Ant1	2489.512	-45.6	2.2	51.86	Peak	74	Pass
NVNT	BLE 2M	2480	Ant1	2483.512	-51.83	2.2	45.63	Average	54	Pass
NVNT	BLE 2M	2480	Ant1	2500	-49.6	2.2	47.86	Peak	74	Pass
NVNT	BLE 2M	2480	Ant1	2500	-55.98	2.2	41.48	Average	54	Pass



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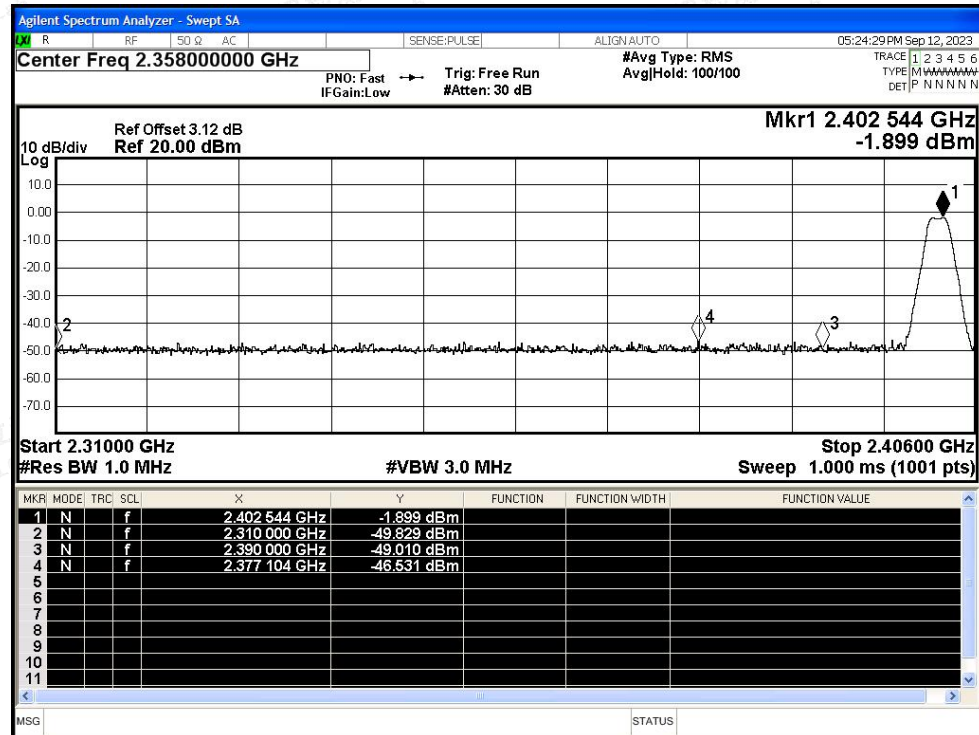
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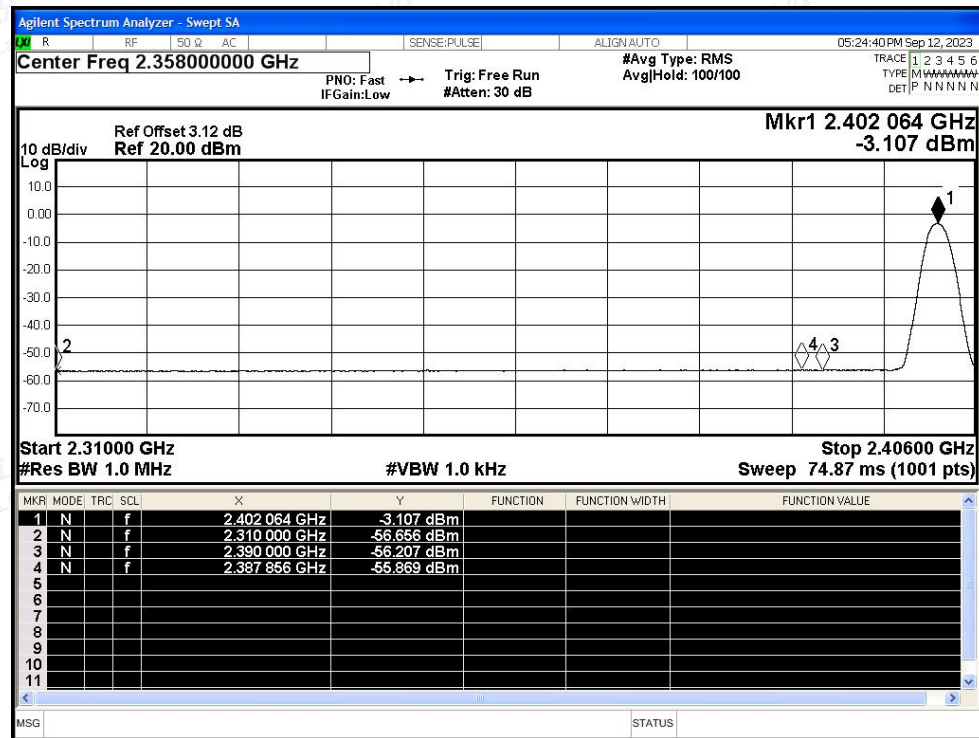


Test Graphs

Restrict Band NVNT BLE 2M 2402MHz Ant1 Peak



Restrict Band NVNT BLE 2M 2402MHz Ant1 Average



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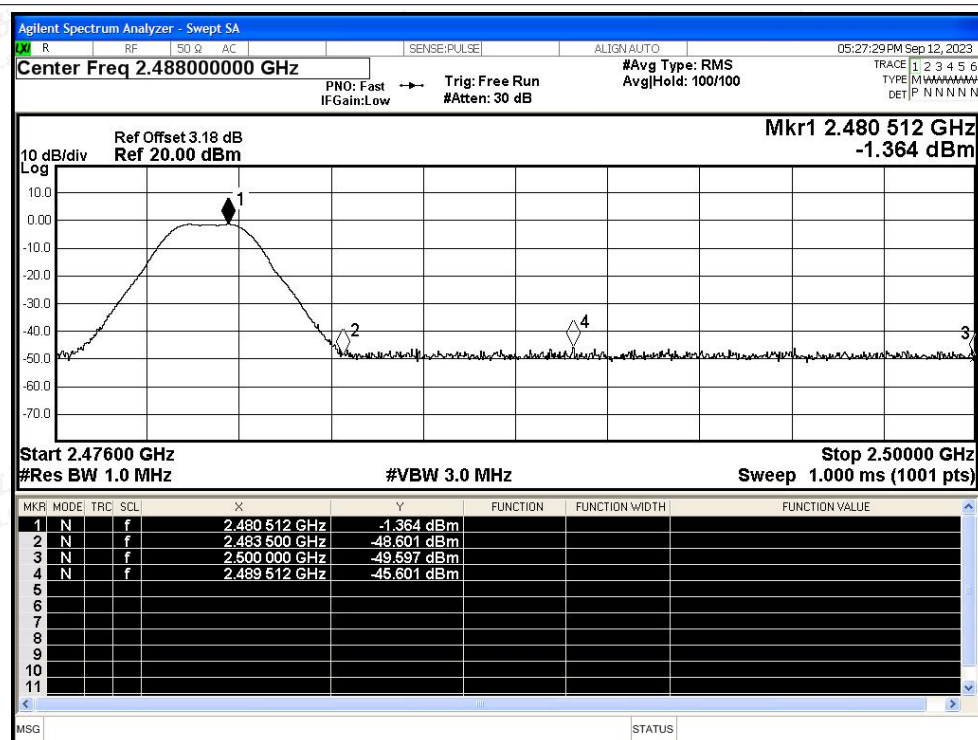
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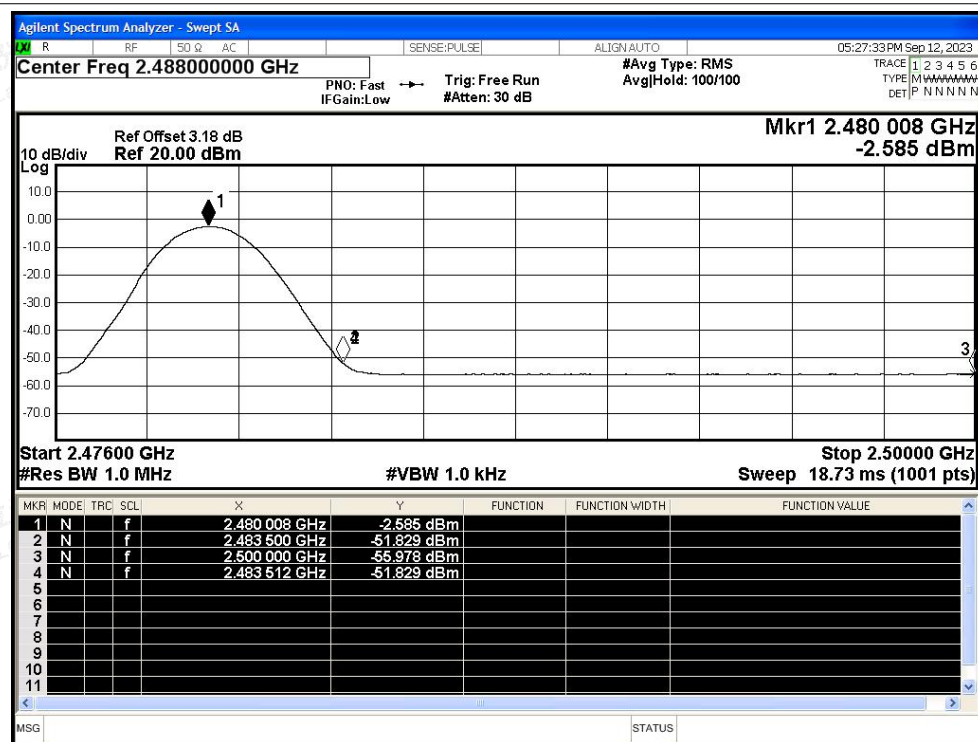
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Restrict Band NVNT BLE 2M 2480MHz Ant1 Peak



Restrict Band NVNT BLE 2M 2480MHz Ant1 Average



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