



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: LED PROJECTOR

Test Model: H1

Environmental Conditions

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



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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 1M	2402	Ant1	0.712	≥ 0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.709	≥ 0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.69	≥ 0.5	Pass

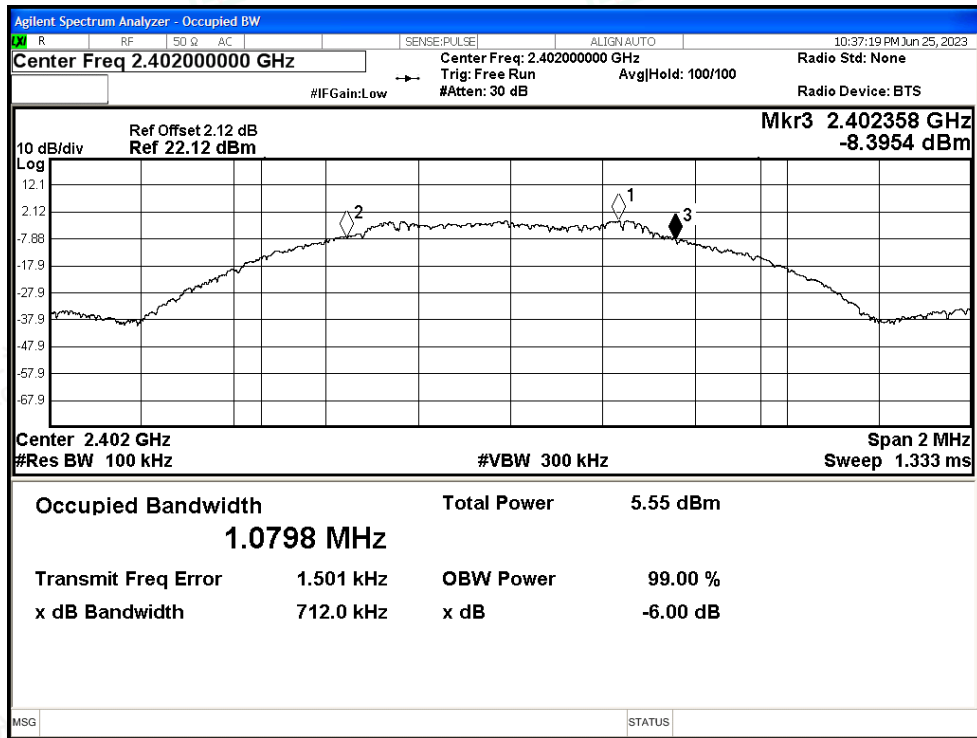


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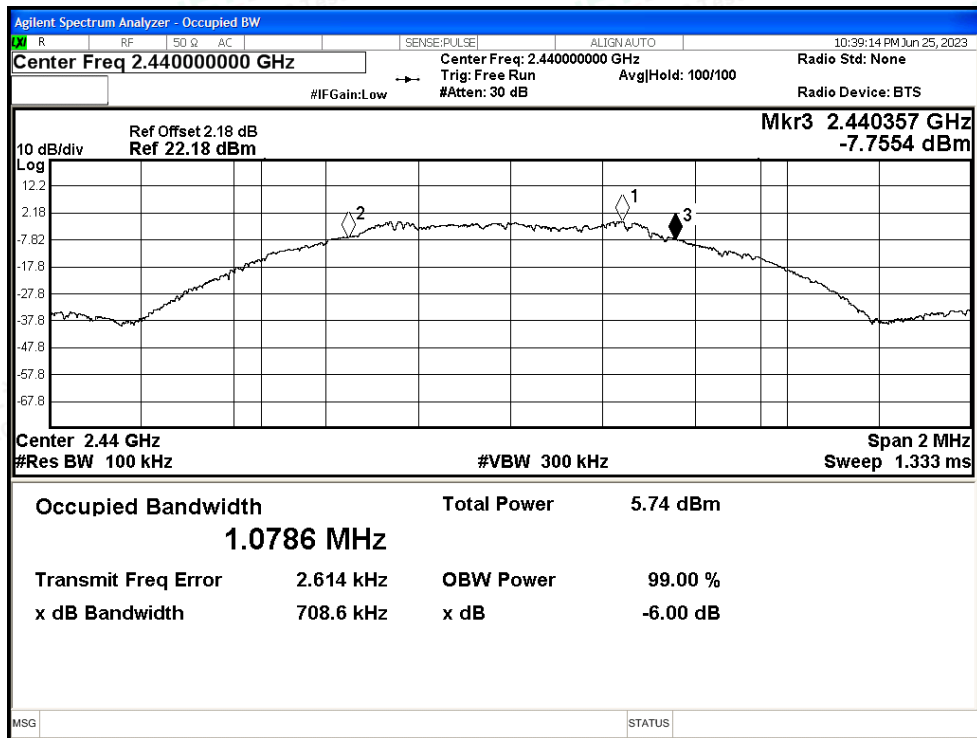


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

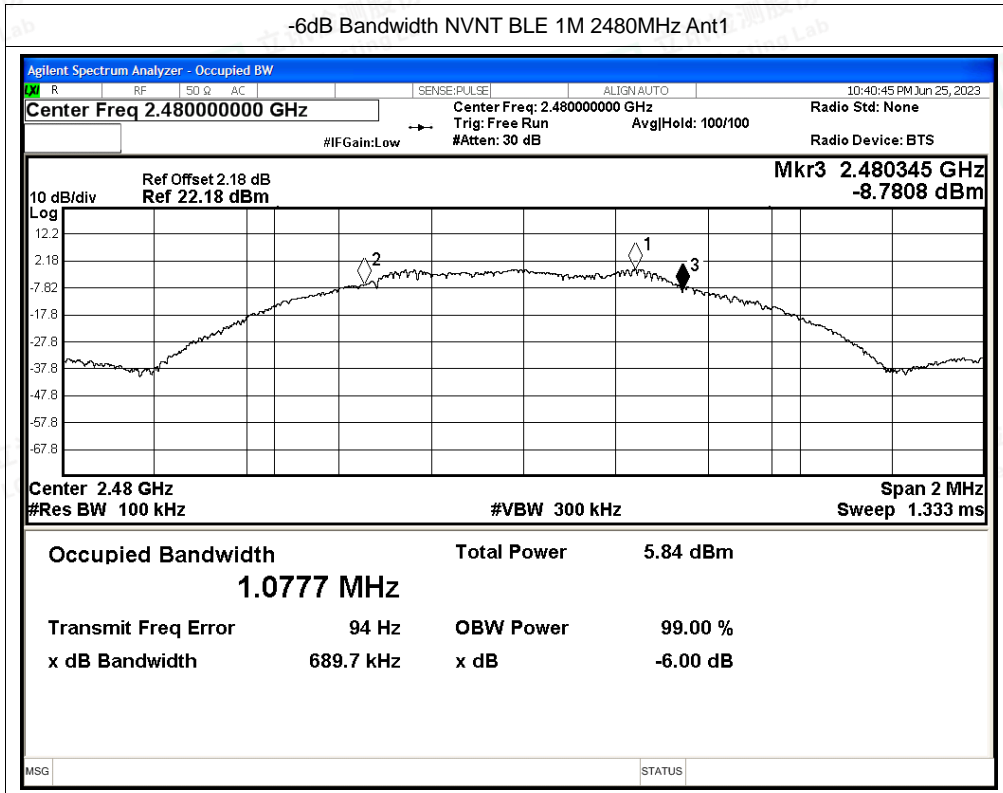


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A.2 Occupied Channel Bandwidth

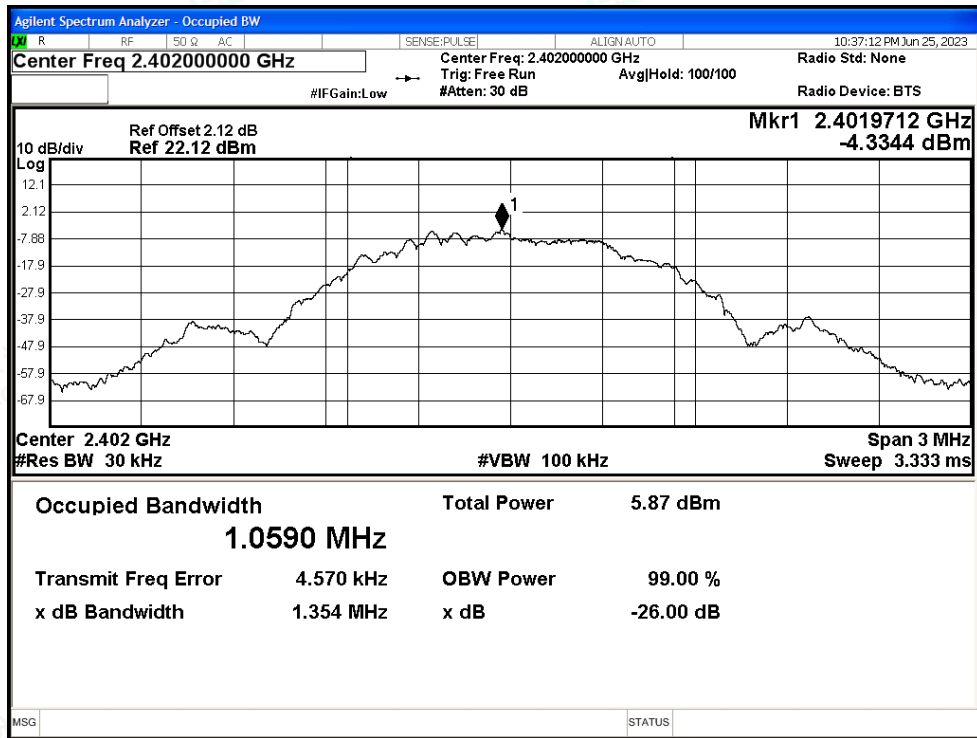
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.059
NVNT	BLE 1M	2440	Ant1	1.062
NVNT	BLE 1M	2480	Ant1	1.067



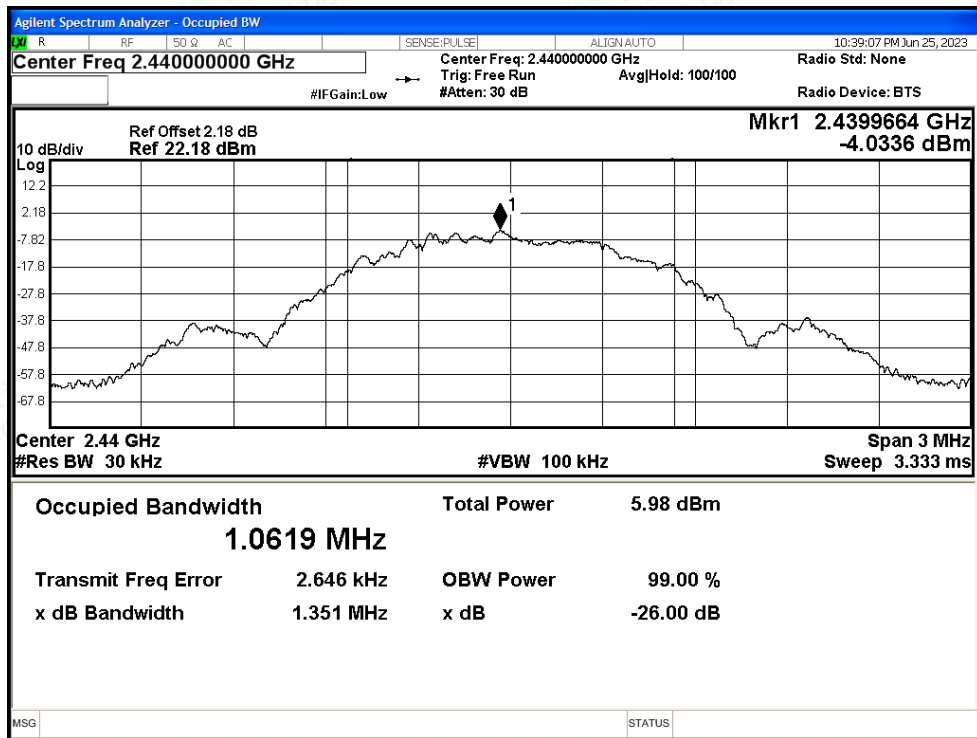


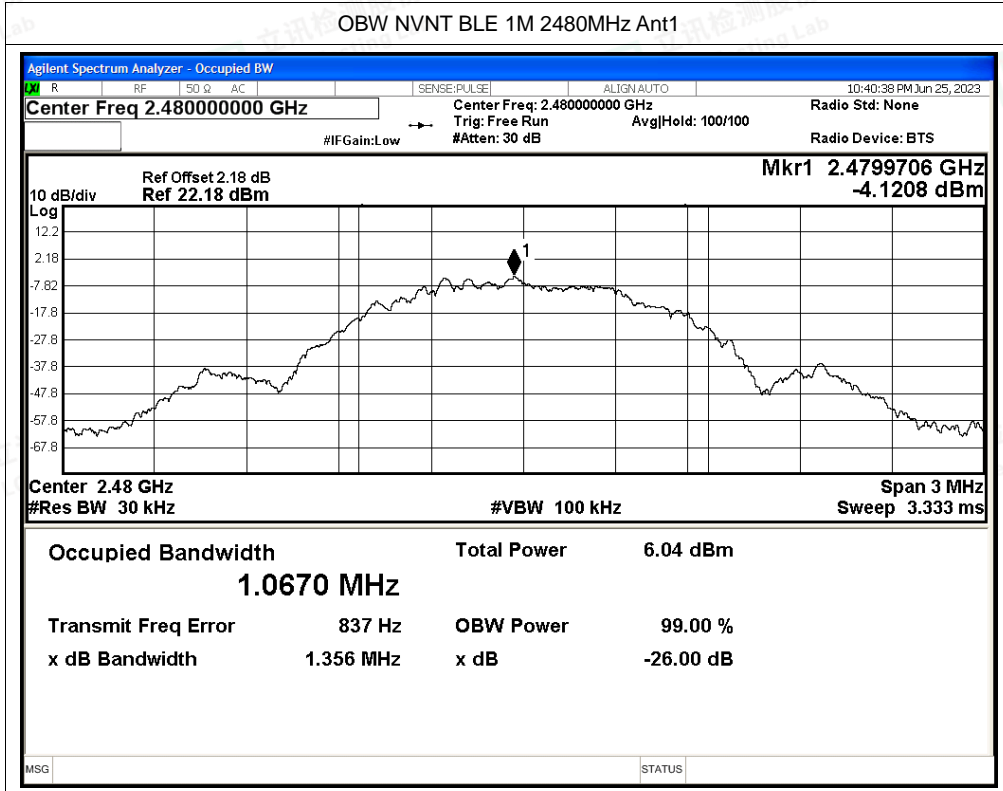
Test Graphs

OBW NVNT BLE 1M 2402MHz Ant1



OBW NVNT BLE 1M 2440MHz Ant1







A.3 Maximum Conducted Output Power

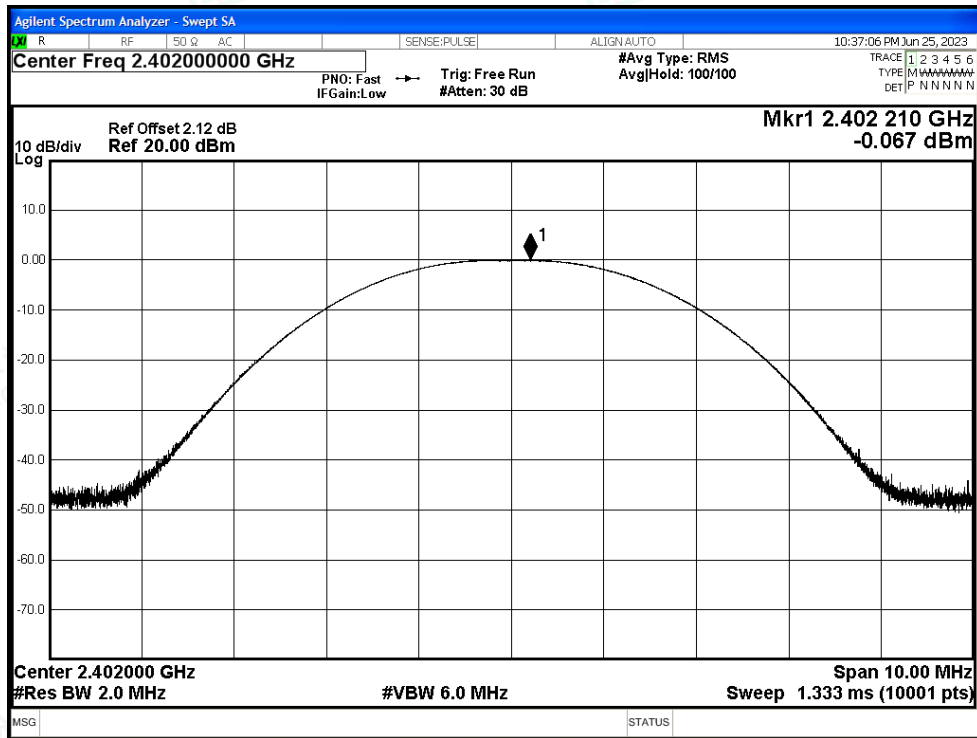
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Antenna Gain	Report EIRP Power(dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-0.07	30	-0.58	-0.65	36	Pass
NVNT	BLE 1M	2440	Ant1	0.11	30	-0.58	-0.47	36	Pass
NVNT	BLE 1M	2480	Ant1	0.15	30	-0.58	-0.43	36	Pass



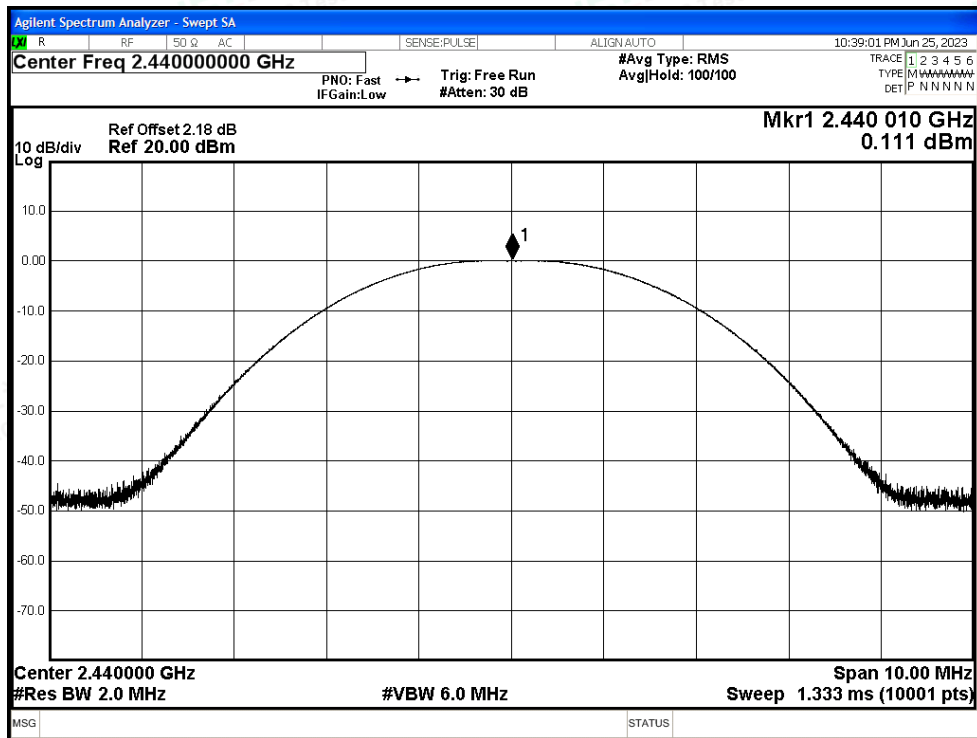


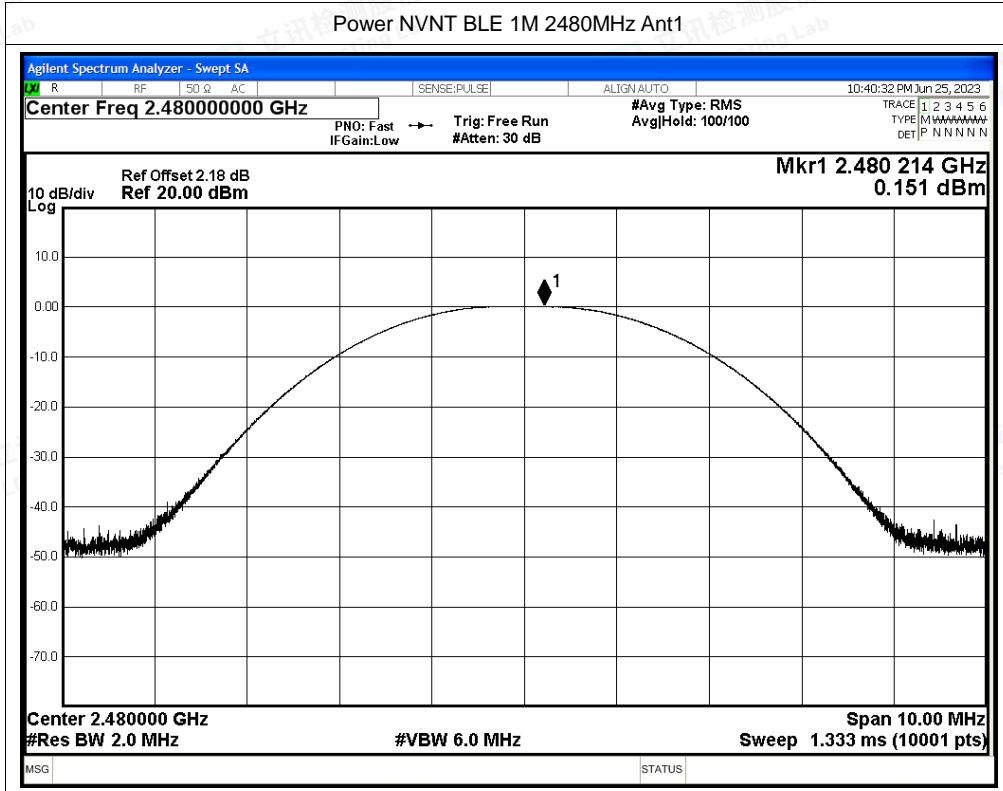
Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1







A.4 Maximum Power Spectral Density Level

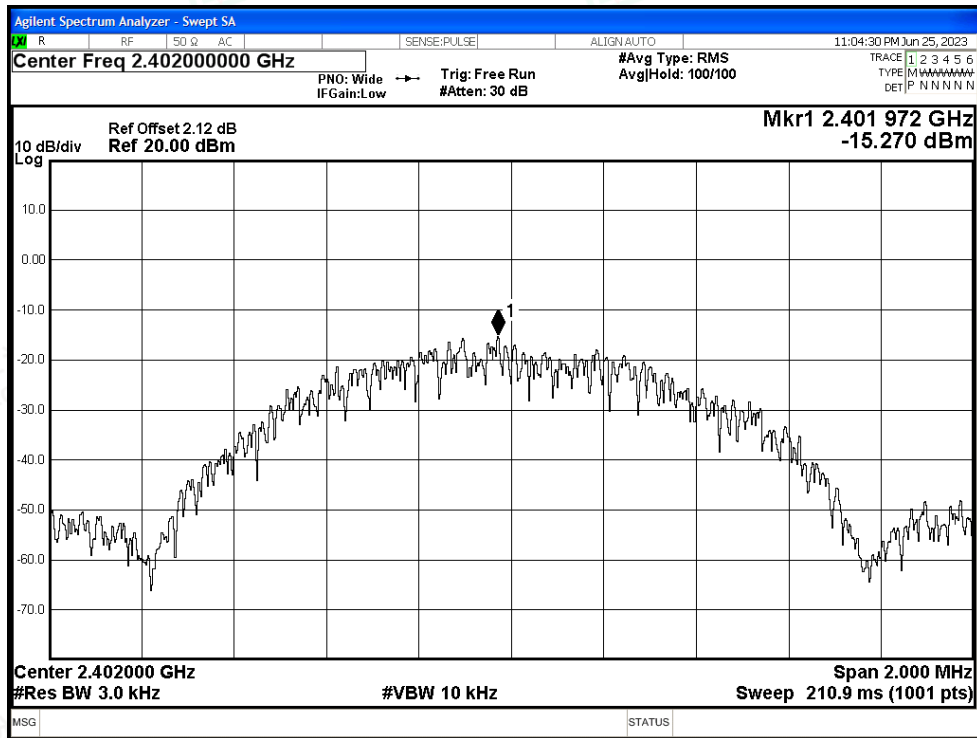
Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-15.27	8	Pass
NVNT	BLE 1M	2440	Ant1	-15.01	8	Pass
NVNT	BLE 1M	2480	Ant1	-14.97	8	Pass



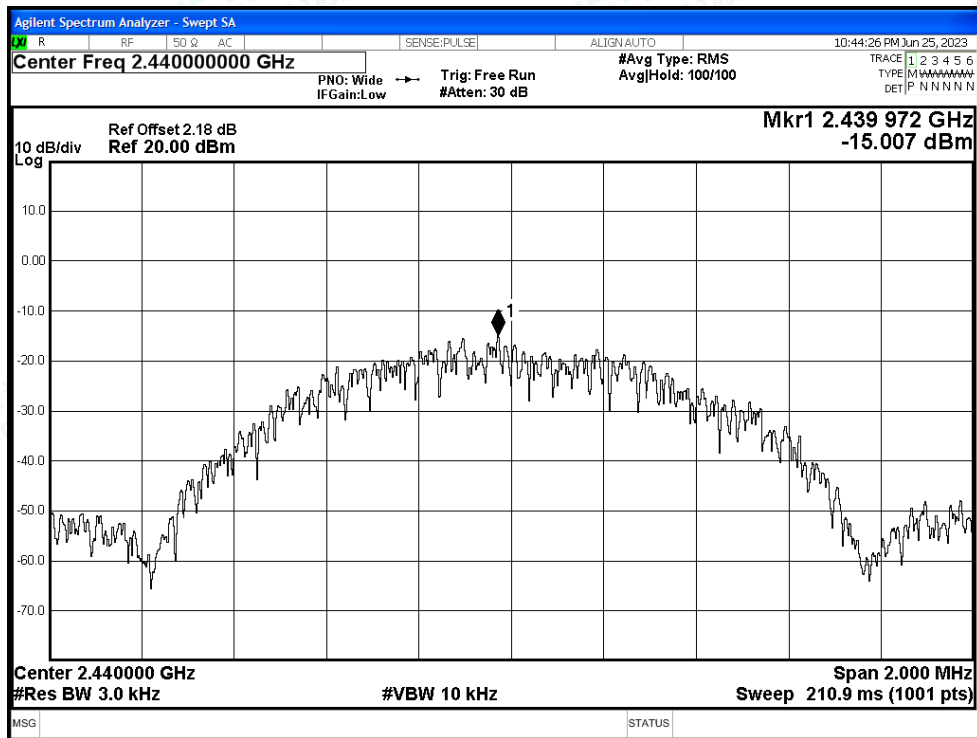


Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1

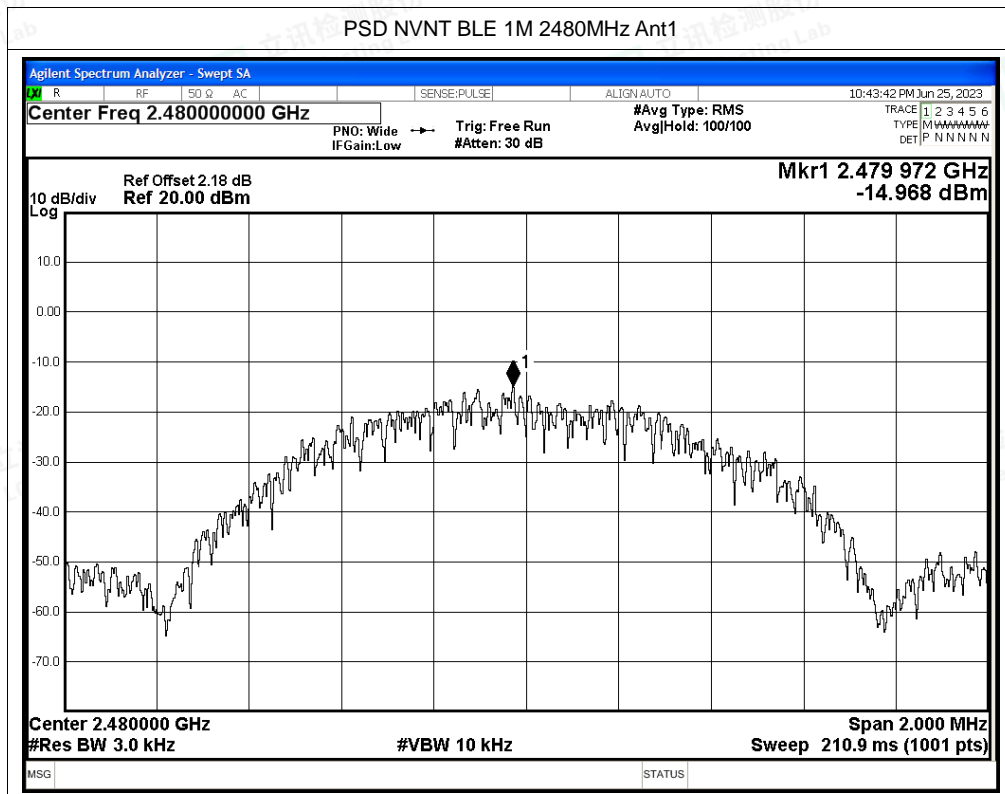


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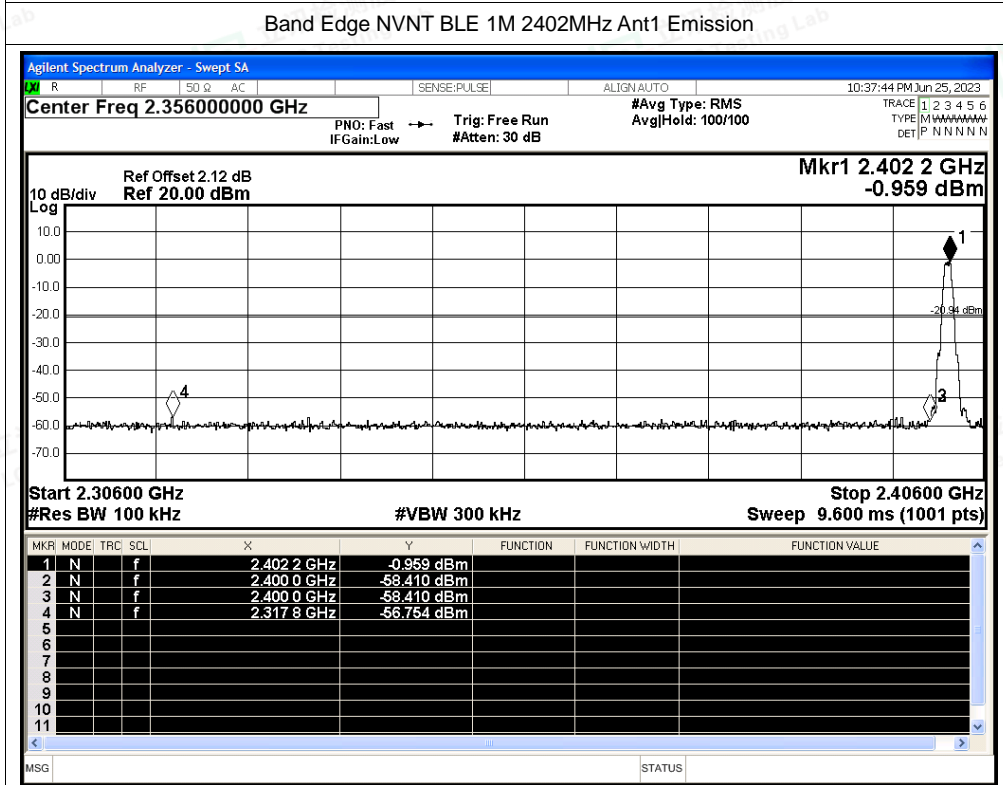
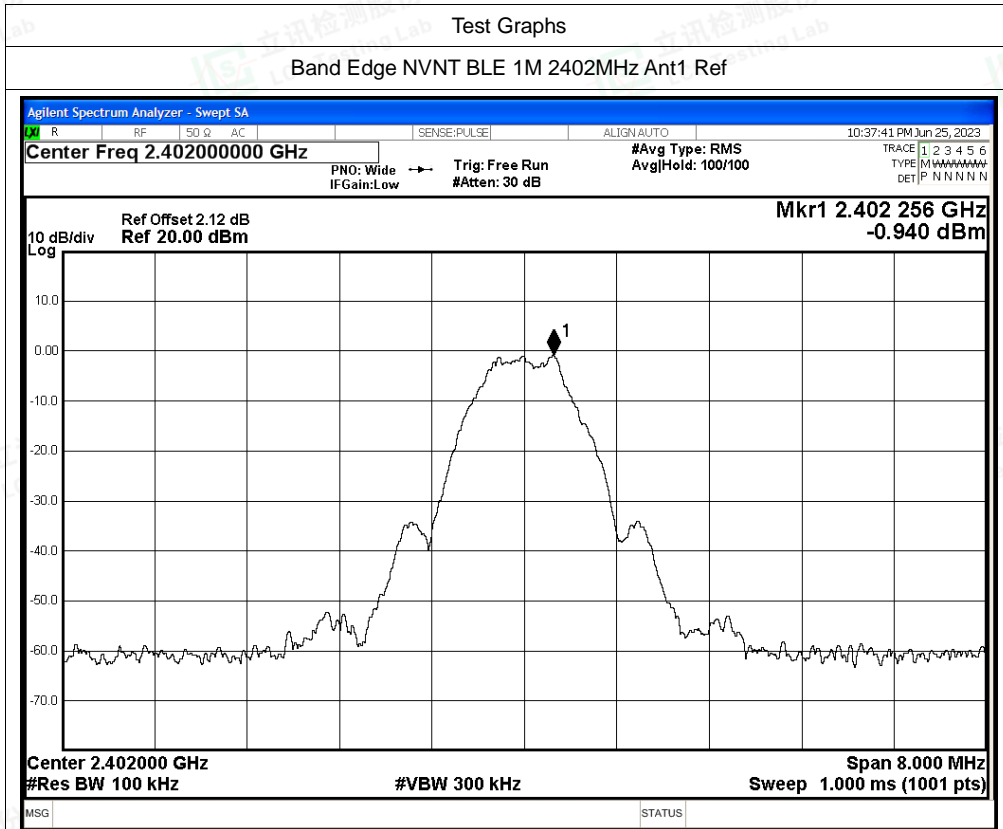


A.5 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-55.81	-20	Pass
NVNT	BLE 1M	2480	Ant1	-56.16	-20	Pass



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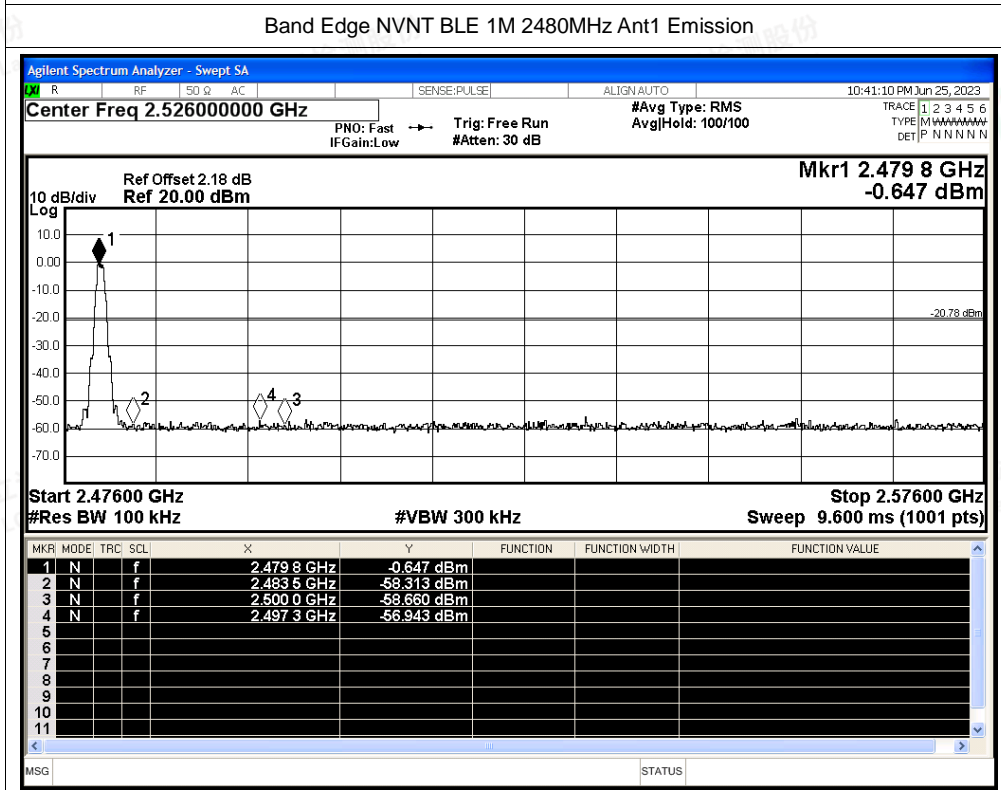
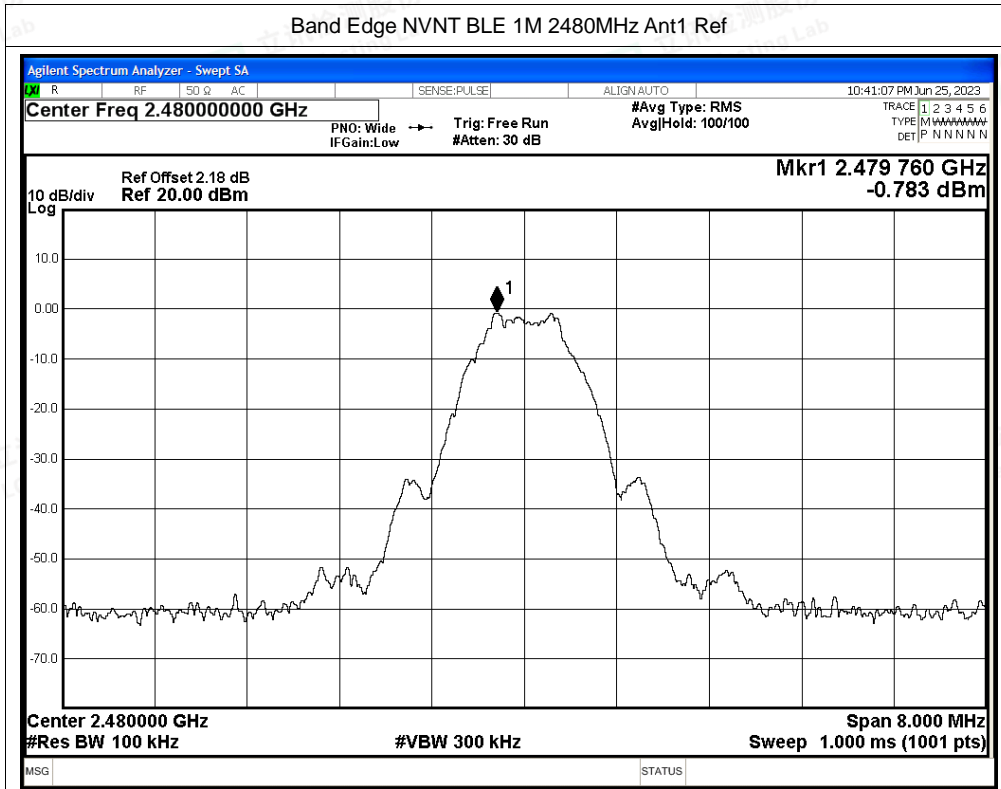


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A.6 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-53.61	-20	Pass
NVNT	BLE 1M	2440	Ant1	-52.38	-20	Pass
NVNT	BLE 1M	2480	Ant1	-53.95	-20	Pass

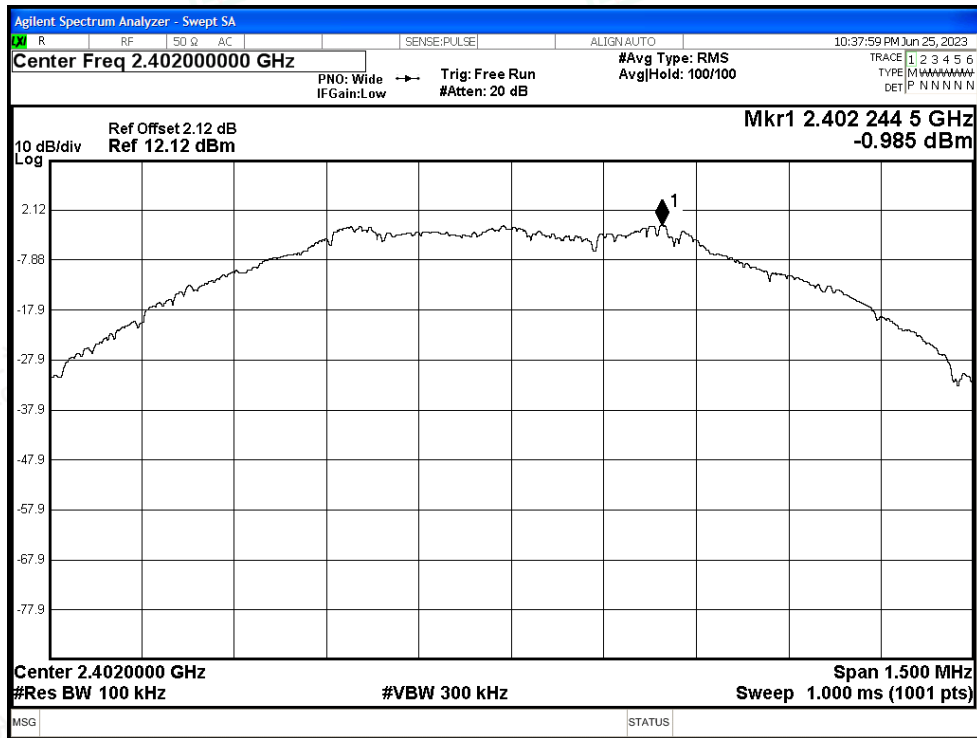


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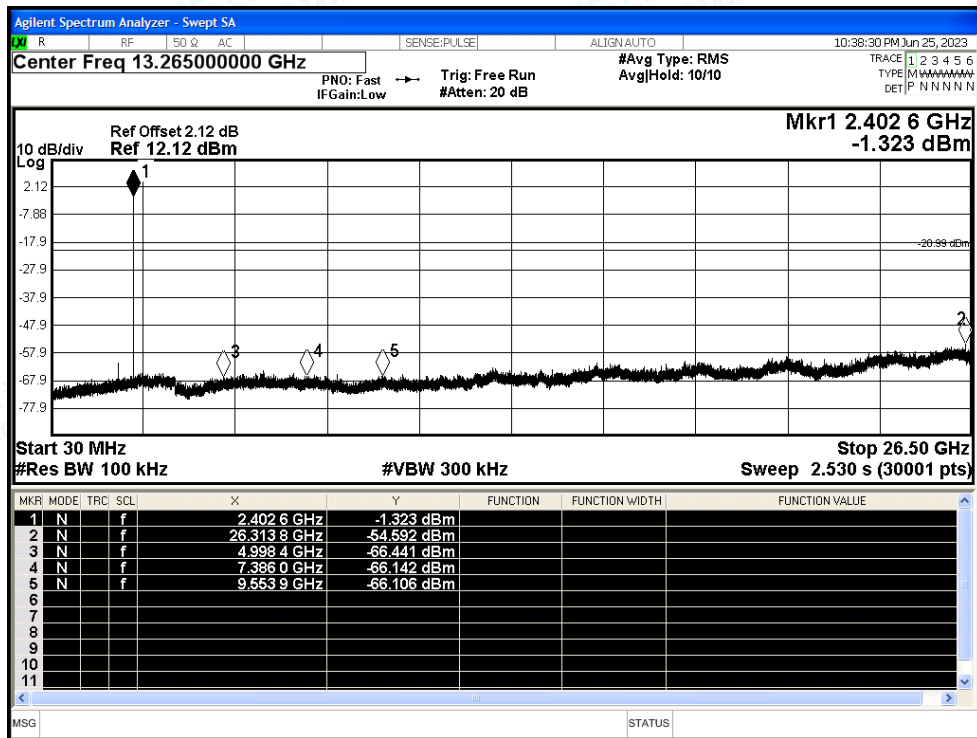


Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



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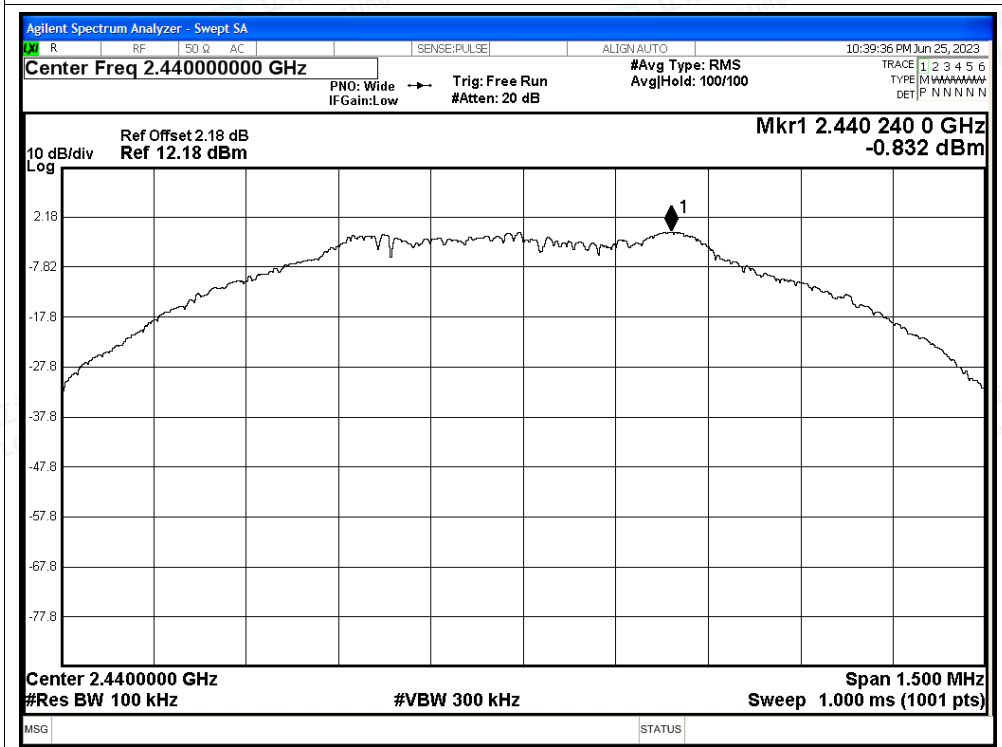
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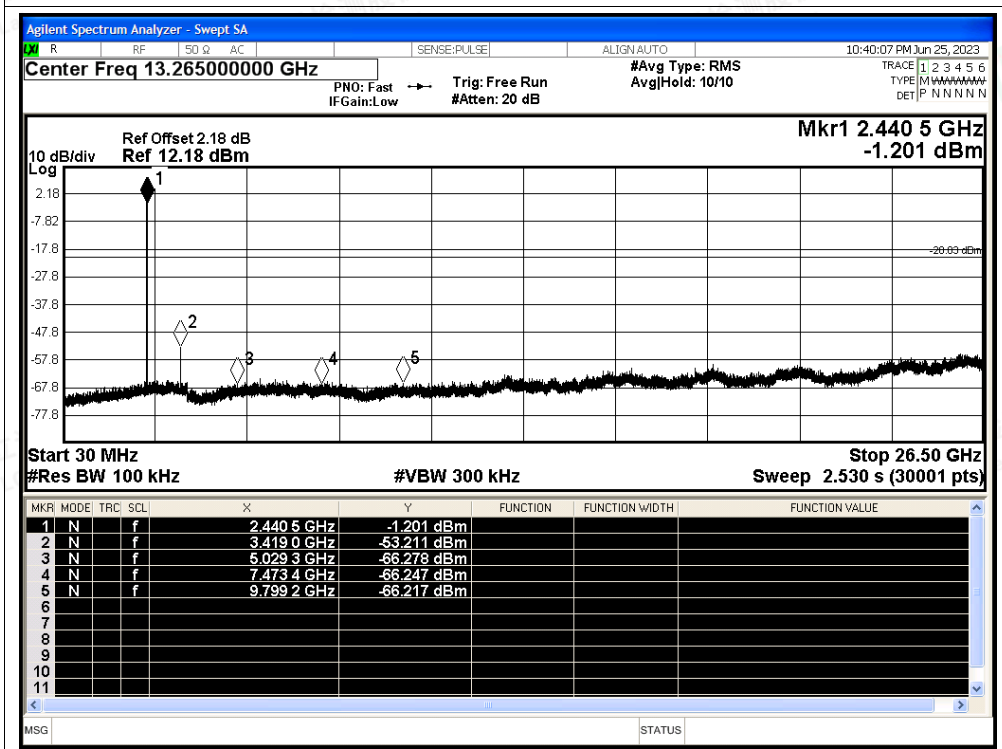
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Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



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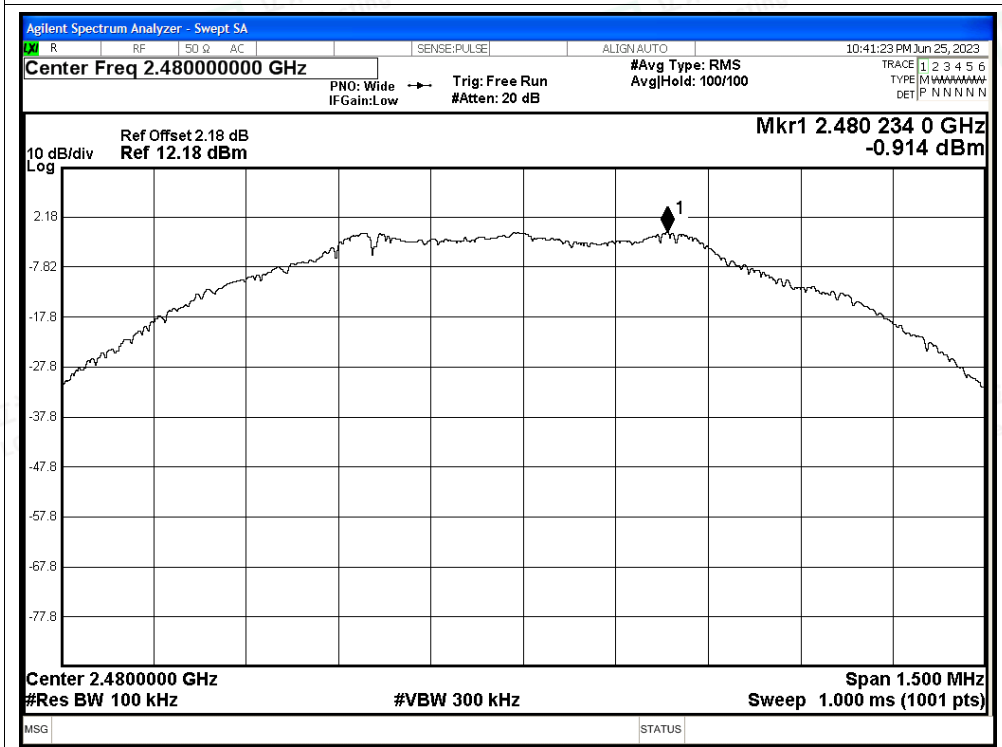
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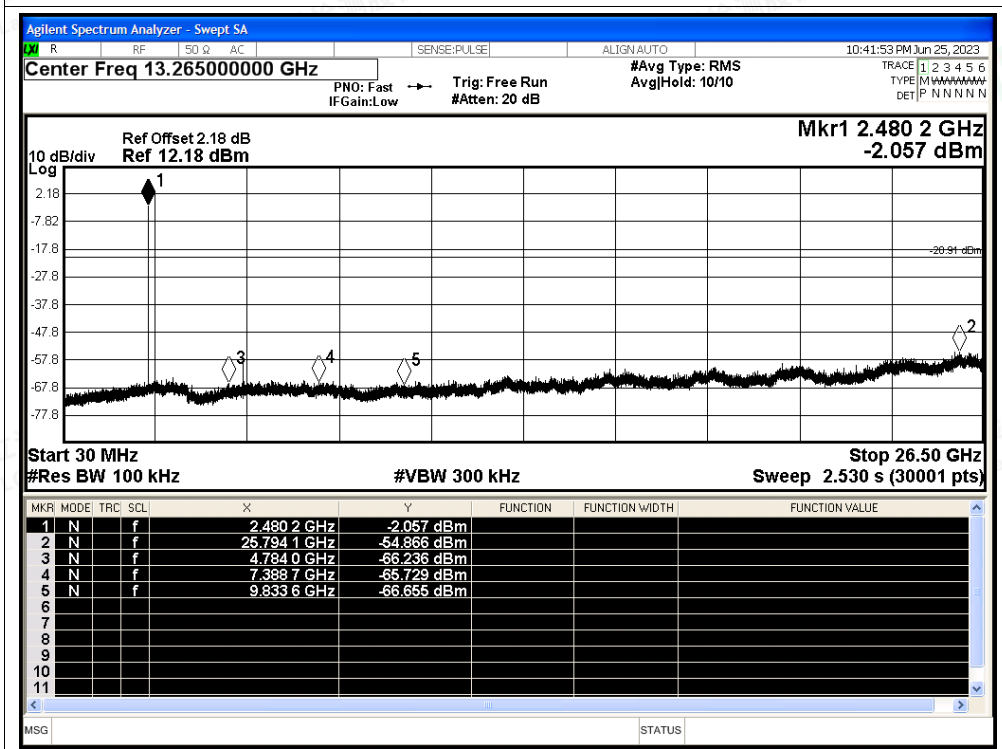
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Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 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	BLE 1M	2402	Ant1	61.39	2.12	2.6
NVNT	BLE 1M	2440	Ant1	61.44	2.12	2.6
NVNT	BLE 1M	2480	Ant1	61.36	2.12	2.61

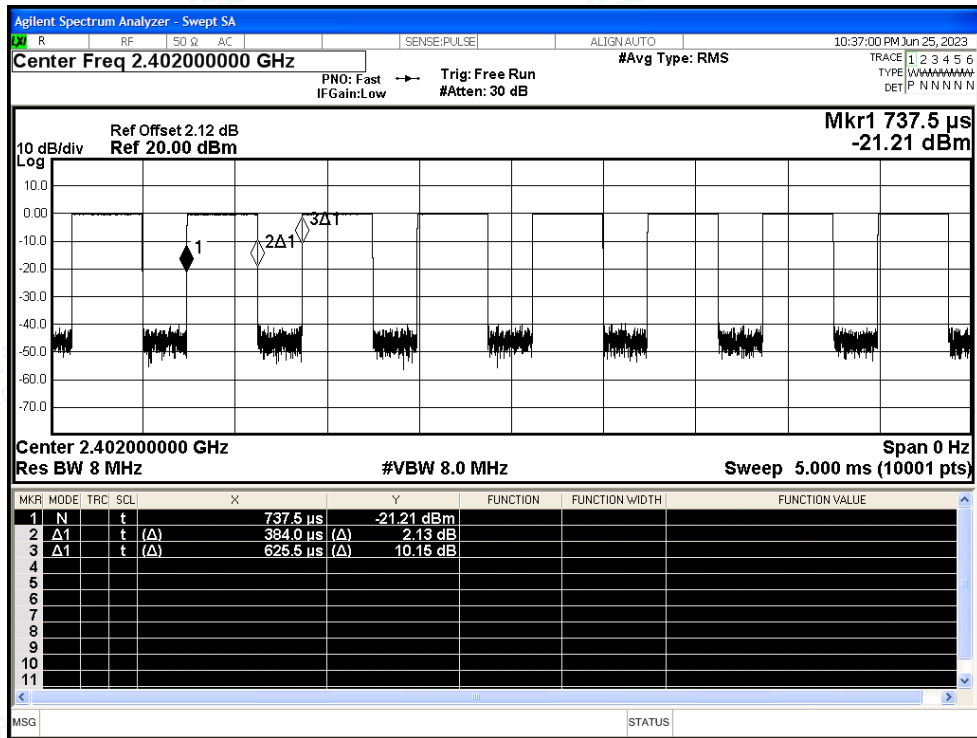


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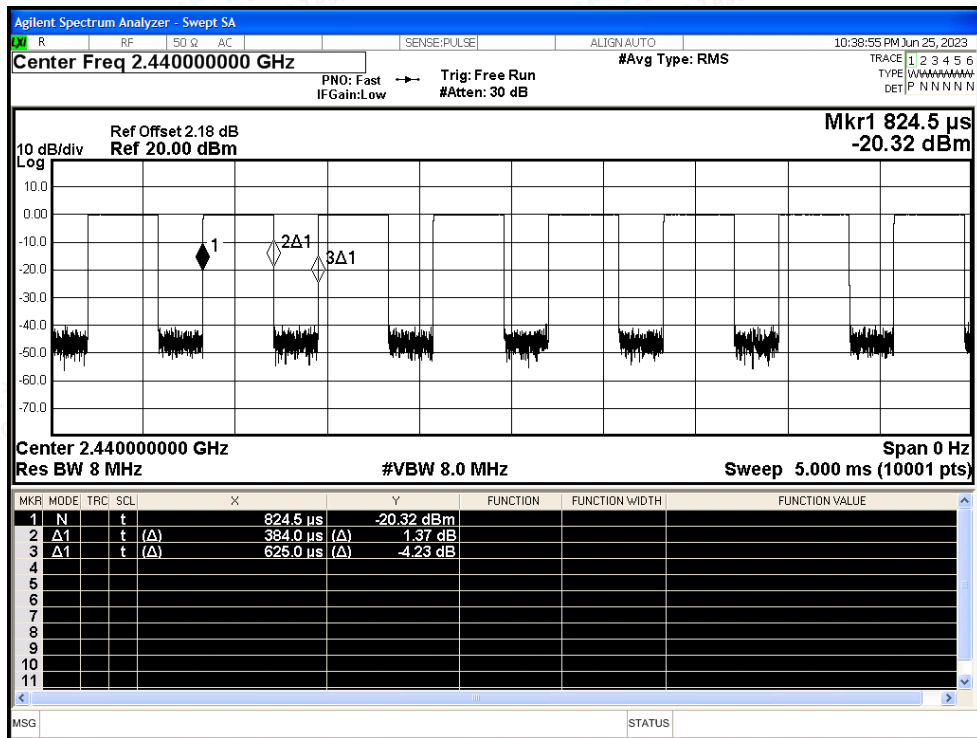


Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant1



Duty Cycle NVNT BLE 1M 2440MHz Ant1

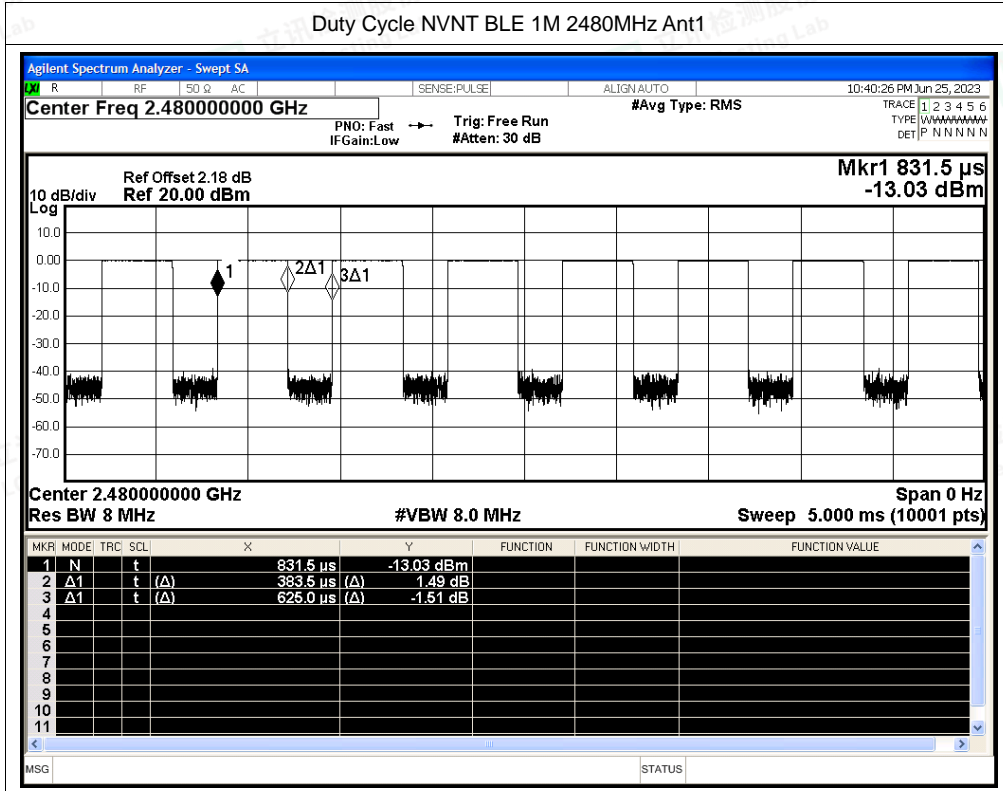


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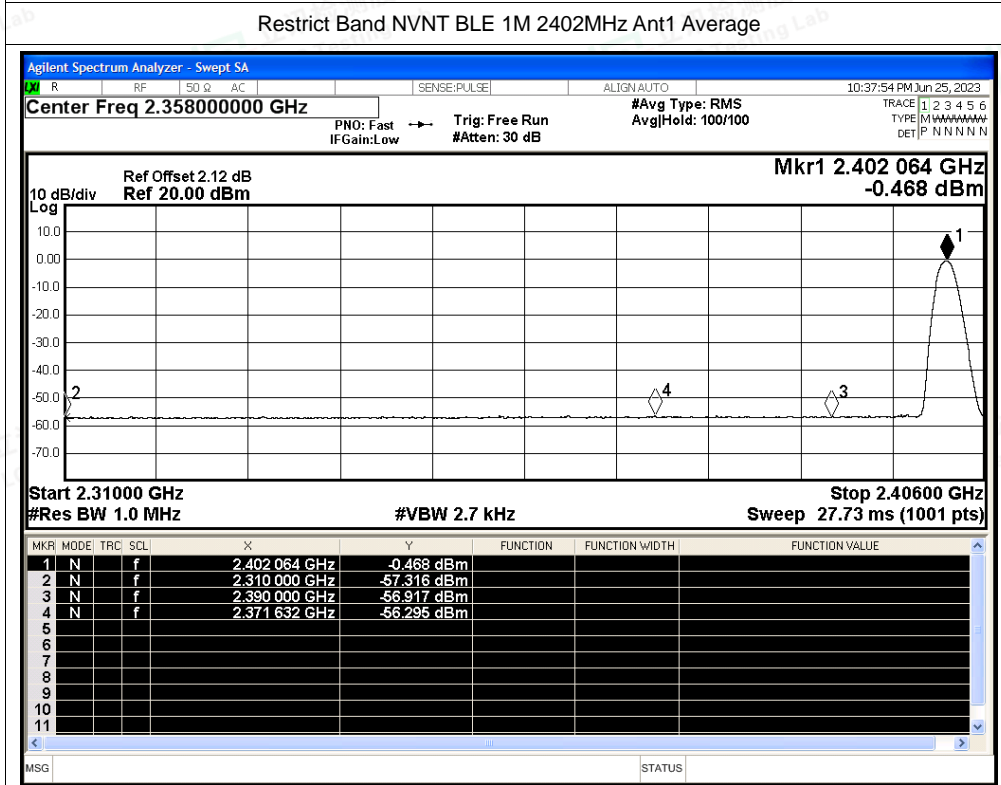
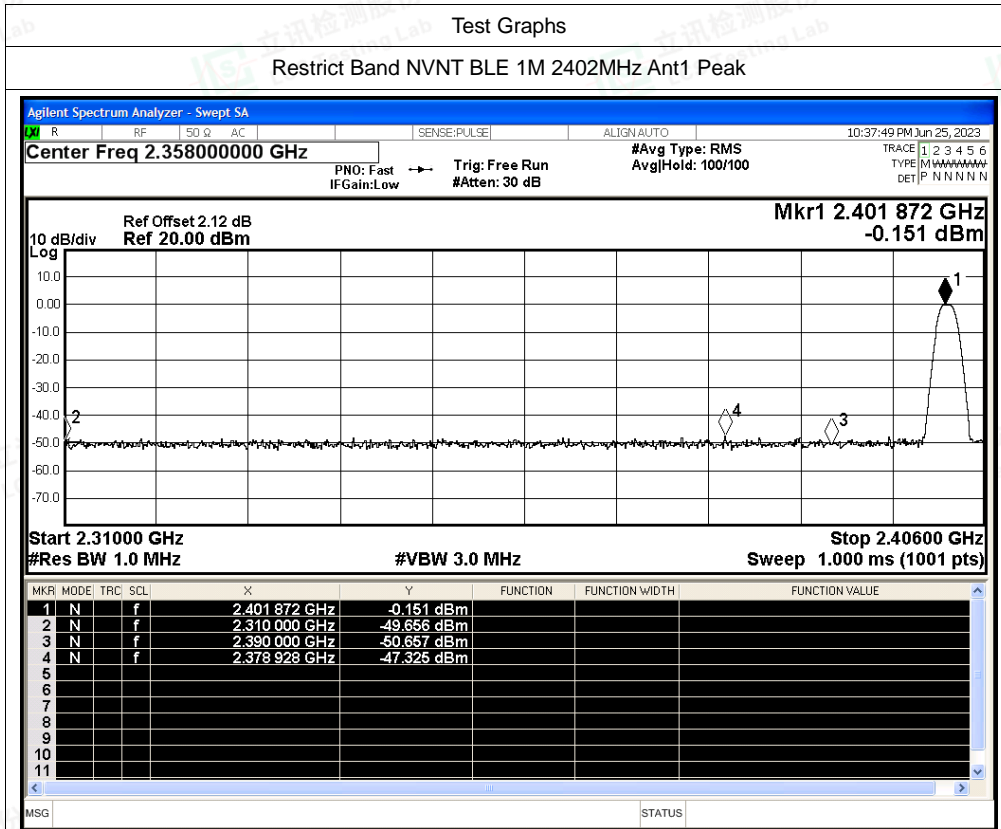


A.8 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant1	2310	-49.66	2	47.6	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2310	-57.32	2	39.94	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2378.928	-47.33	2	49.93	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2371.632	-56.3	2	40.96	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2390	-50.66	2	46.6	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2390	-56.92	2	40.34	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-48.91	2	48.35	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-54.64	2	42.62	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2493.784	-47.08	2	50.18	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.512	-54.64	2	42.62	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2500	-49.29	2	47.97	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2500	-56.7	2	40.56	Average	54	Pass



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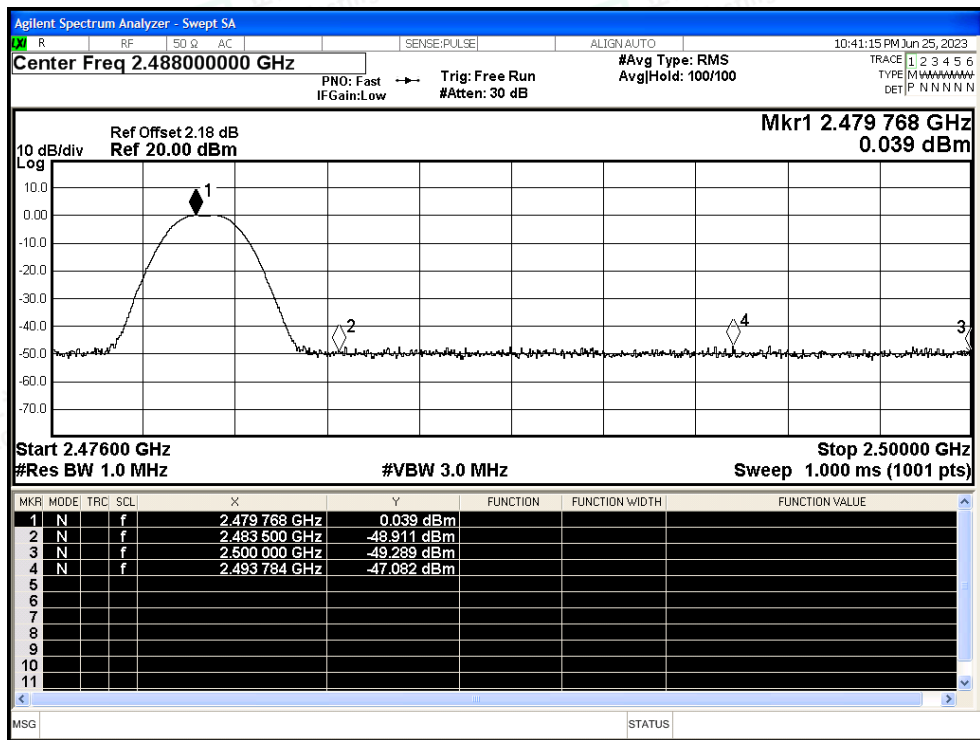
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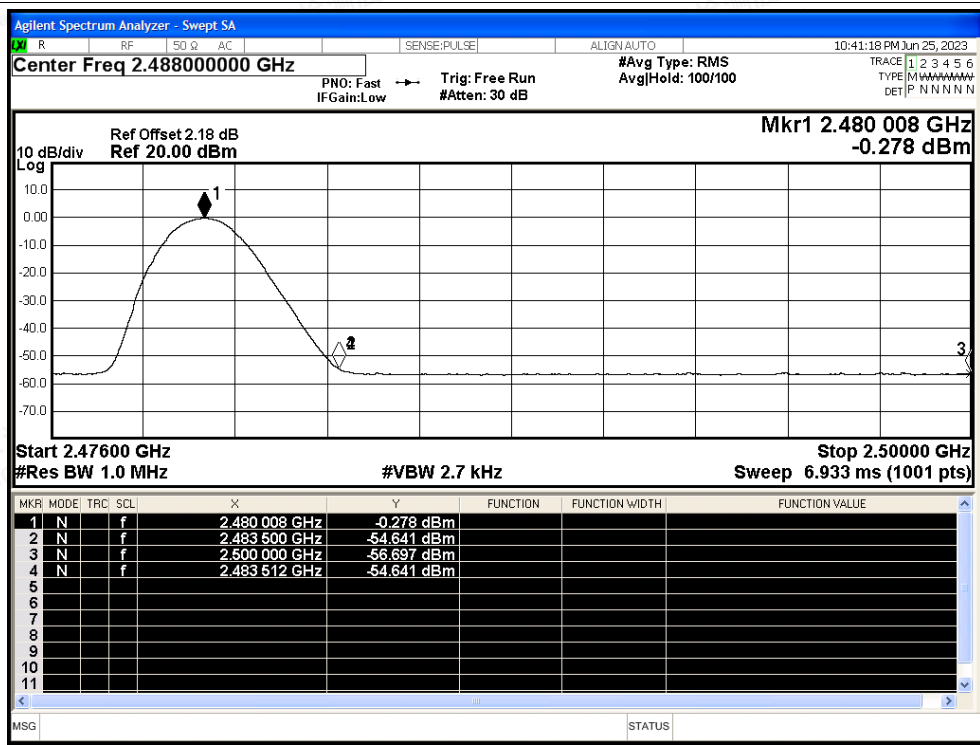
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Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2480MHz Ant1 Average



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