



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: ZS – ZONE SENSOR

Test Model: ZS2PL-7-HCMPV-BNK

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Taylor Hu





B.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE	2402	Ant	0.659	≥ 0.5	Pass
NVNT	BLE	2440	Ant	0.65	≥ 0.5	Pass
NVNT	BLE	2480	Ant	0.647	≥ 0.5	Pass



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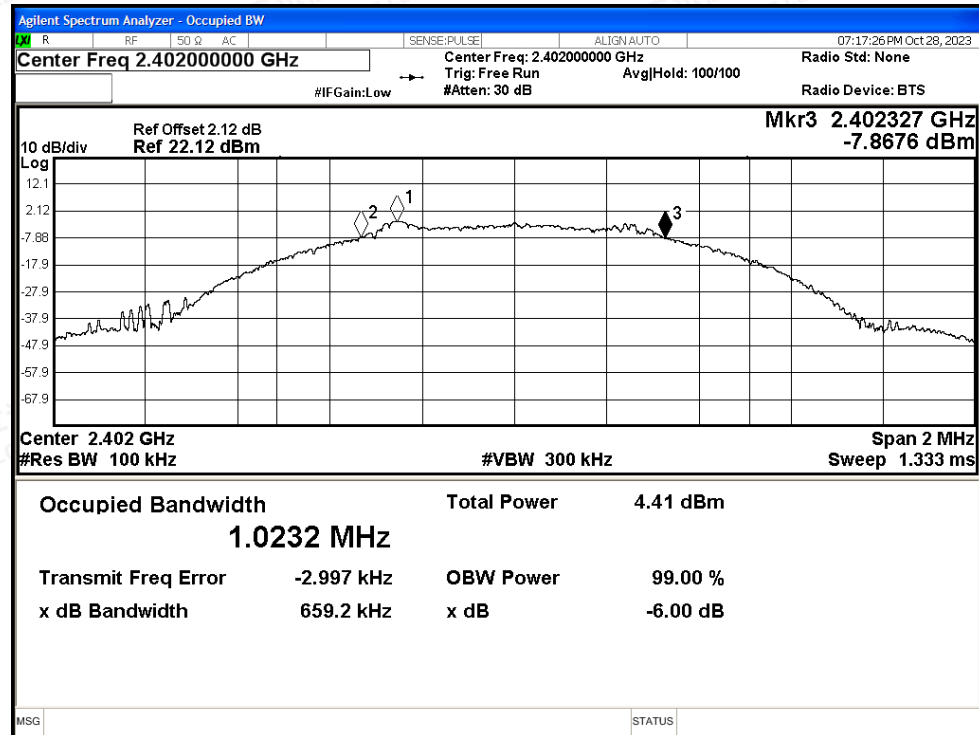
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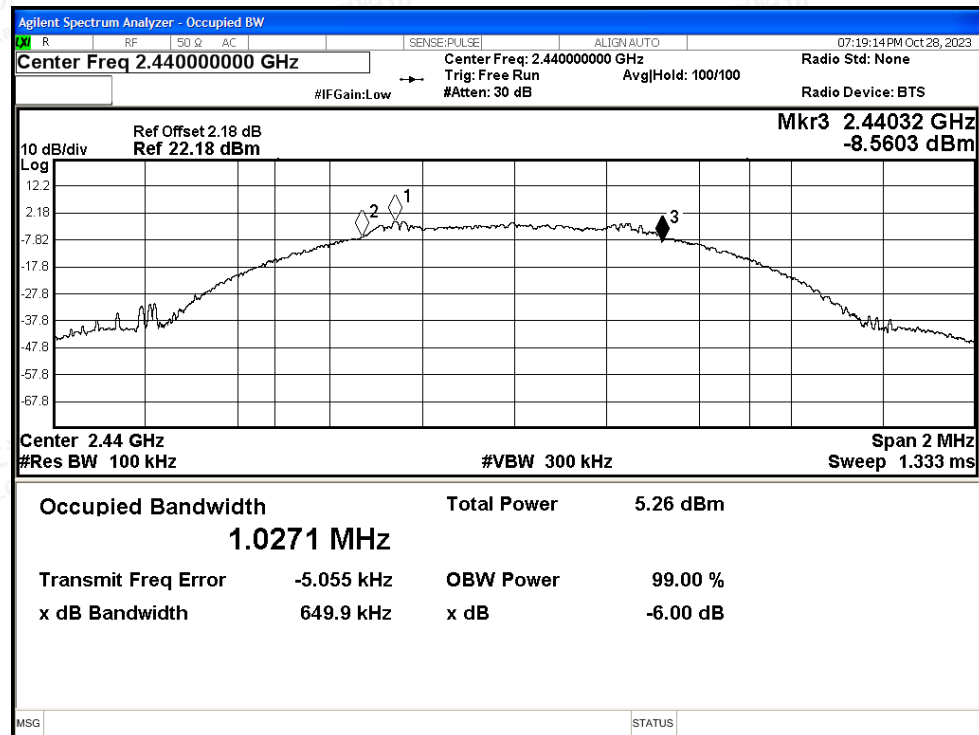


Test Graphs

-6dB Bandwidth NVNT BLE 2402MHz Ant



-6dB Bandwidth NVNT BLE 2440MHz Ant

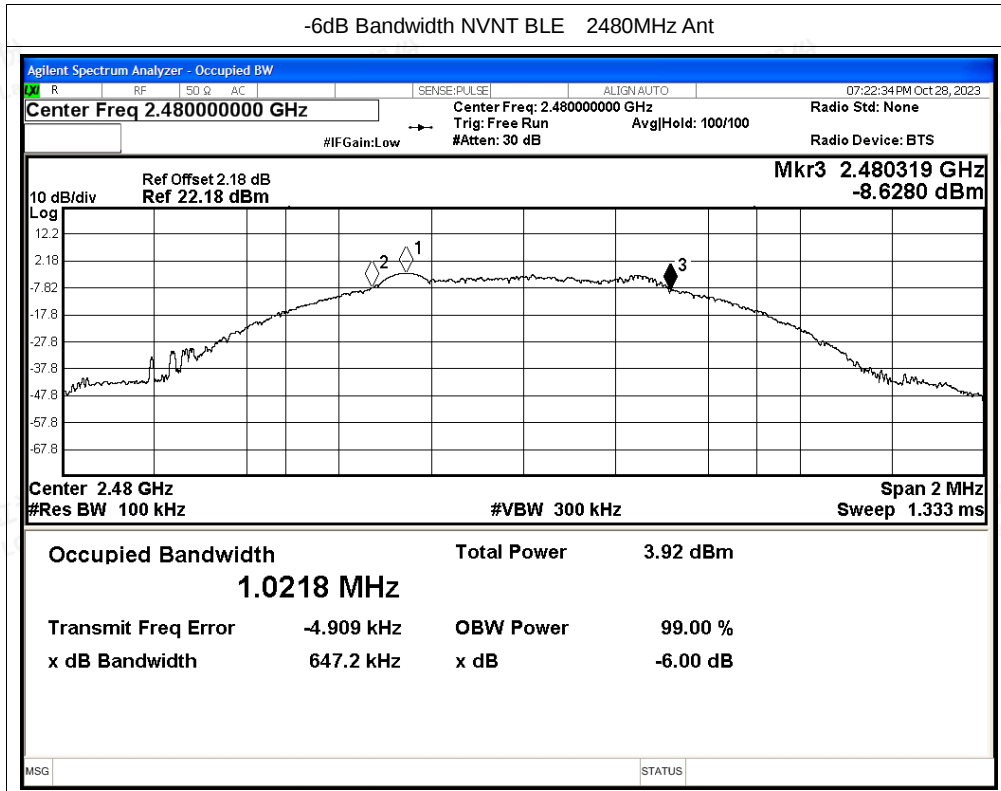


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B.2 Maximum Conducted Output Power

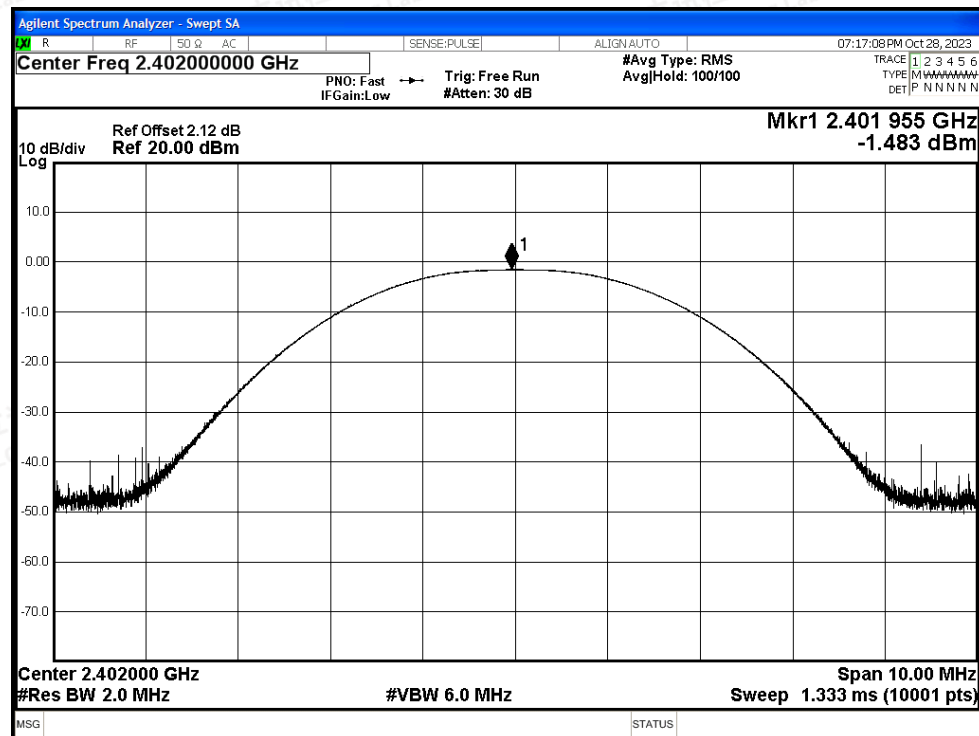
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant	-1.48	30	Pass
NVNT	BLE	2440	Ant	-0.55	30	Pass
NVNT	BLE	2480	Ant	-1.98	30	Pass



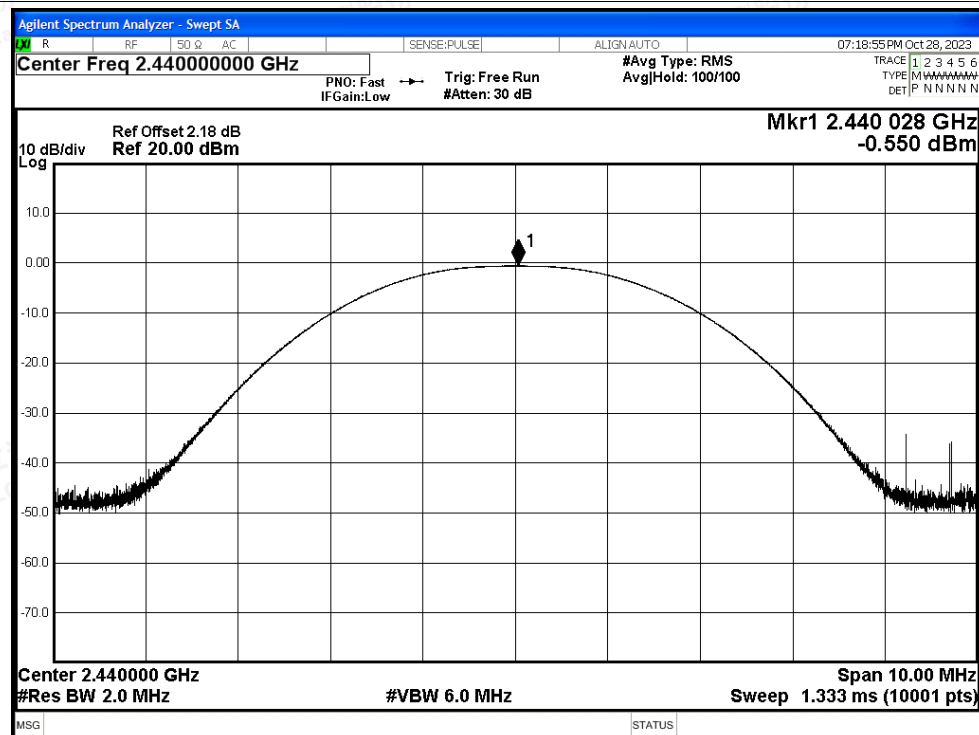


Test Graphs

Power NVNT BLE 2402MHz Ant



Power NVNT BLE 2440MHz Ant

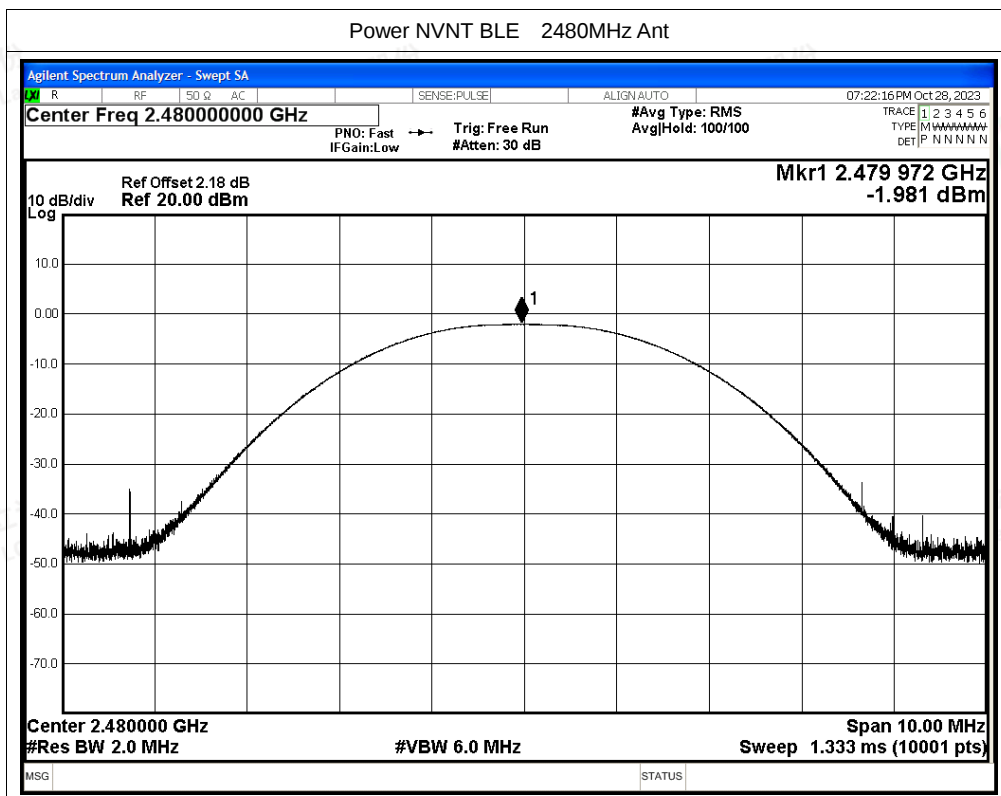


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B.3 Maximum Power Spectral Density Level

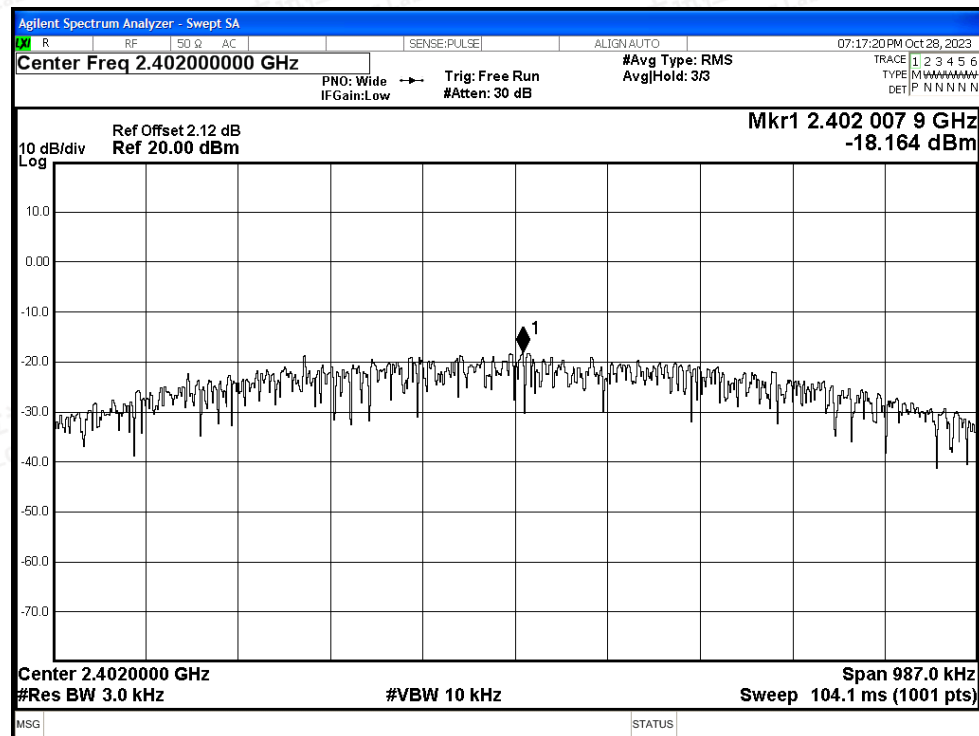
Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE	2402	Ant	-18.16	8	Pass
NVNT	BLE	2440	Ant	-17.25	8	Pass
NVNT	BLE	2480	Ant	-18.85	8	Pass



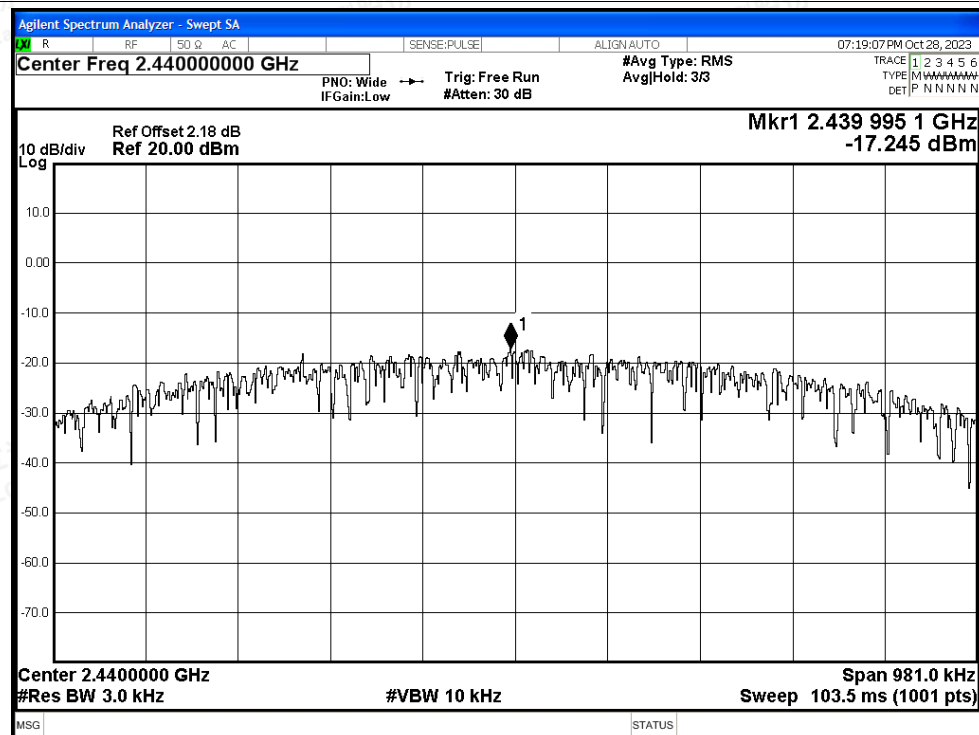


Test Graphs

PSD NVNT BLE 2402MHz Ant



PSD NVNT BLE 2440MHz Ant

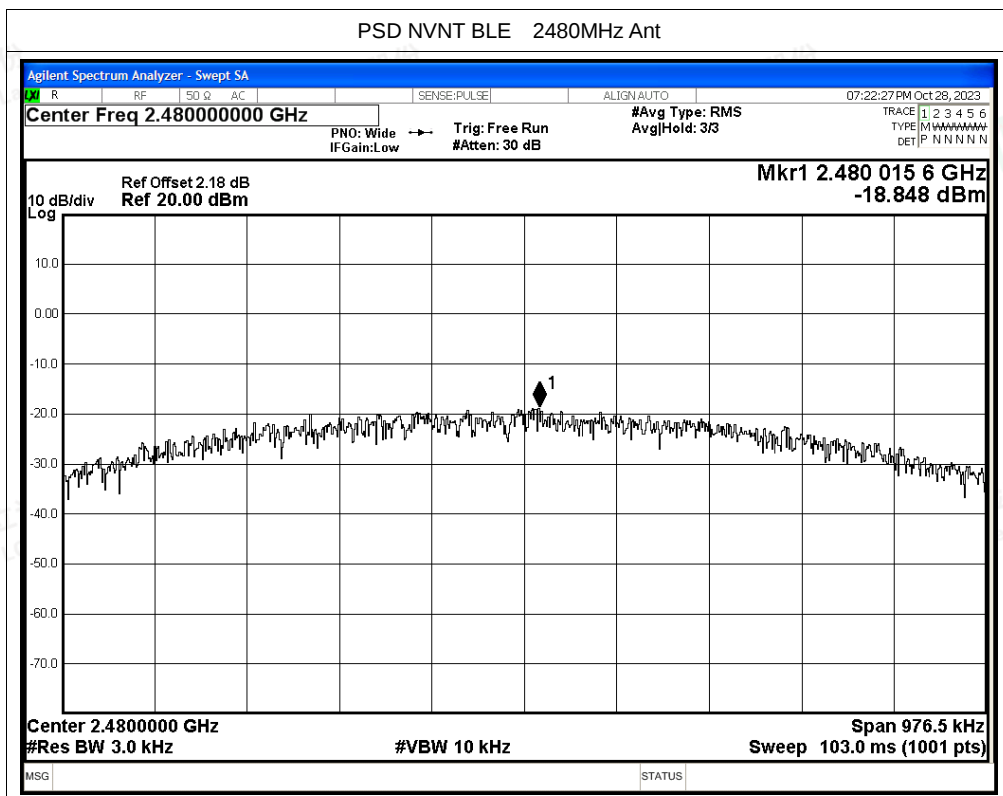


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B.4 Band Edge

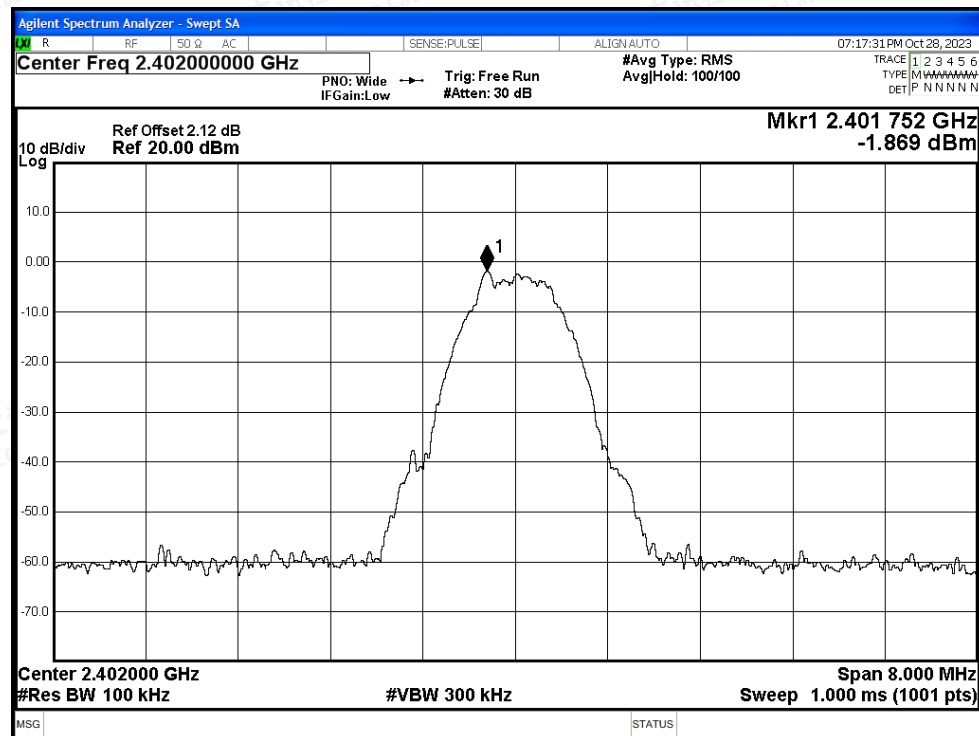
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2402	Ant	-55.04	-20	Pass
NVNT	BLE	2480	Ant	-54.92	-20	Pass



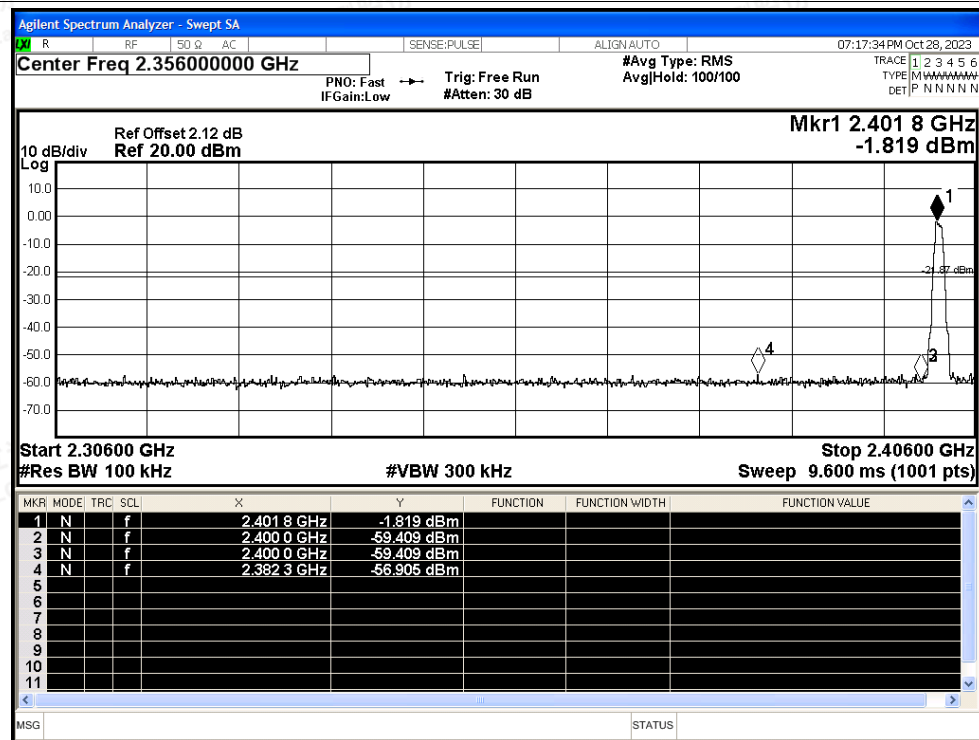


Test Graphs

Band Edge NVNT BLE 2402MHz Ant Ref



Band Edge NVNT BLE 2402MHz Ant Emission

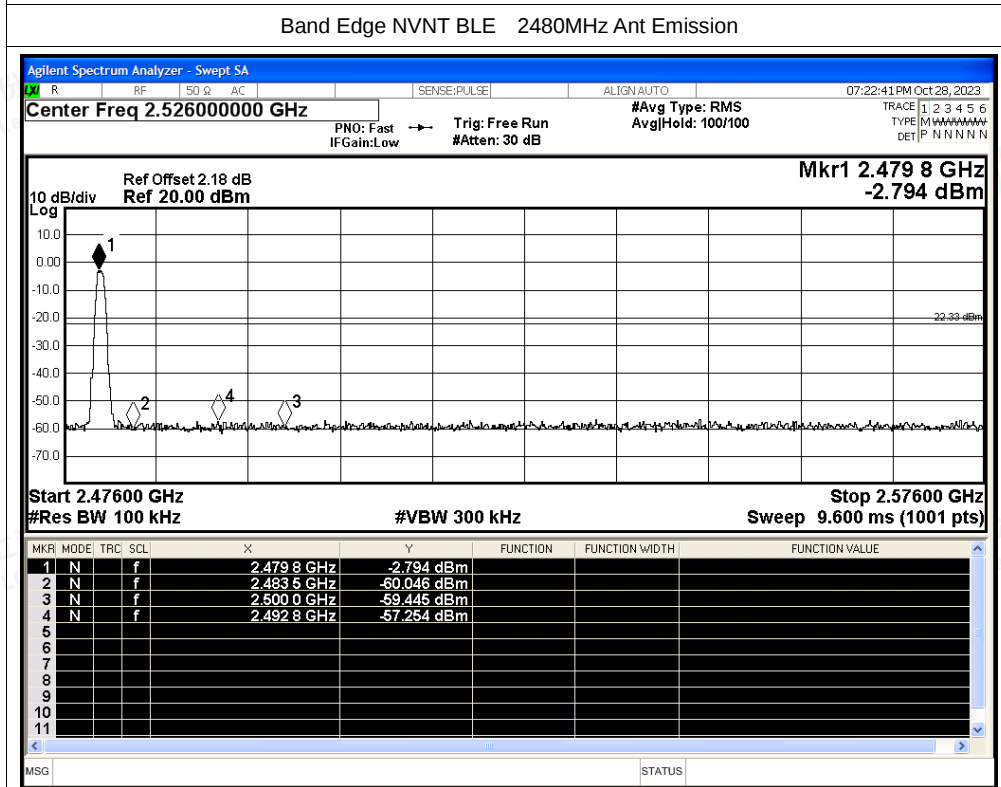
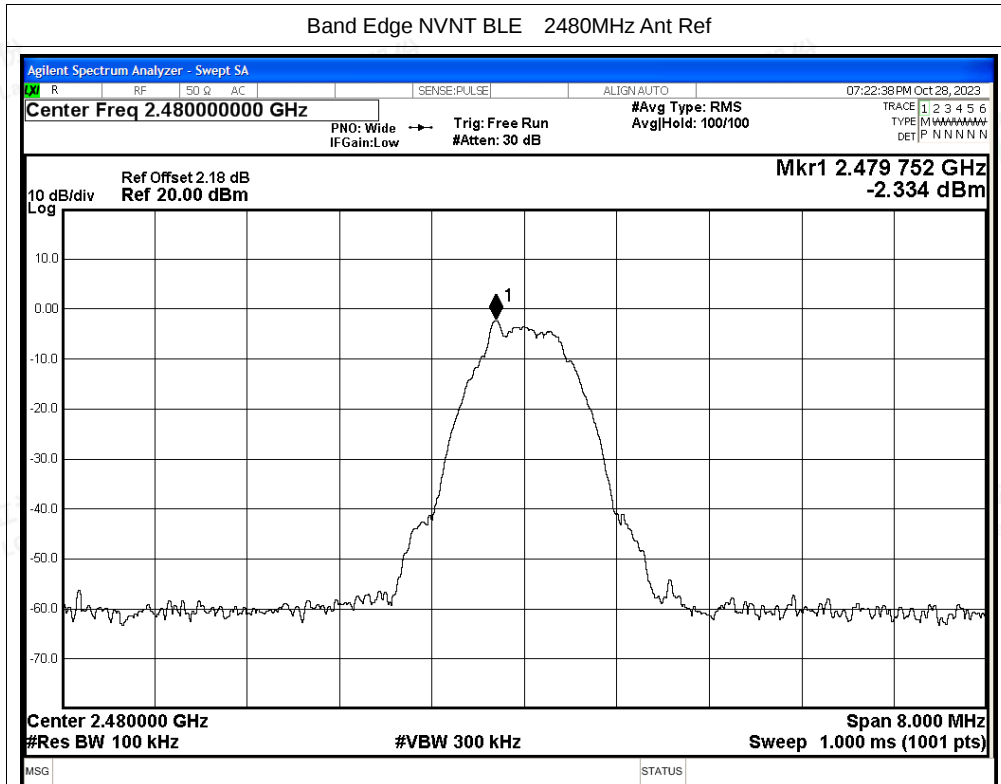


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B.5 Conducted RF Spurious Emission

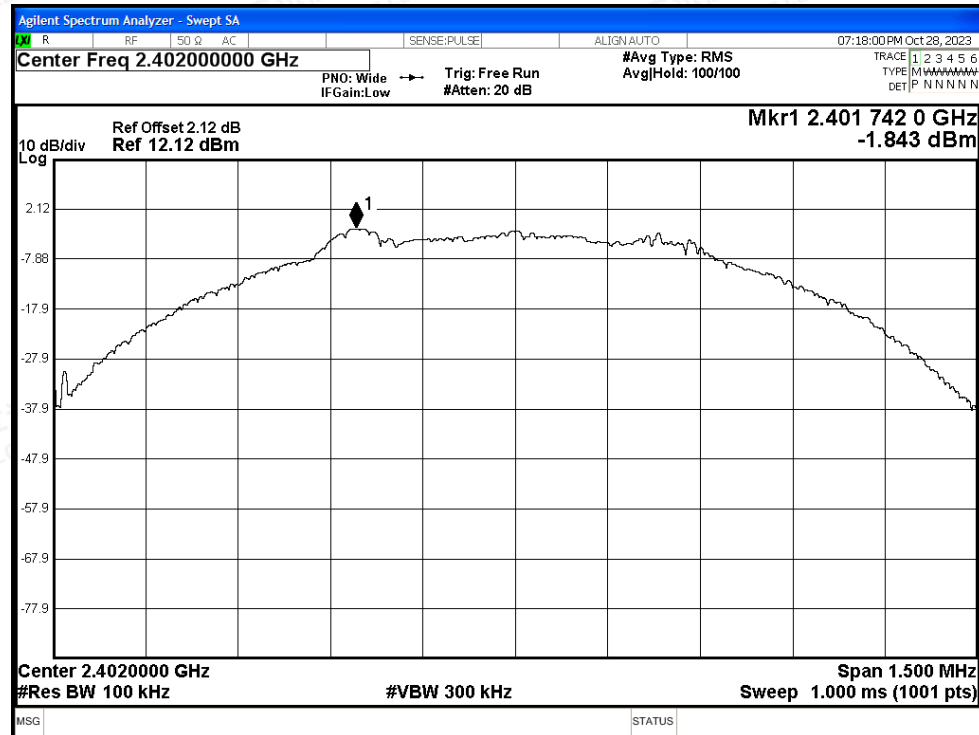
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2402	Ant	-53.39	-20	Pass
NVNT	BLE	2440	Ant	-54.42	-20	Pass
NVNT	BLE	2480	Ant	-52.9	-20	Pass



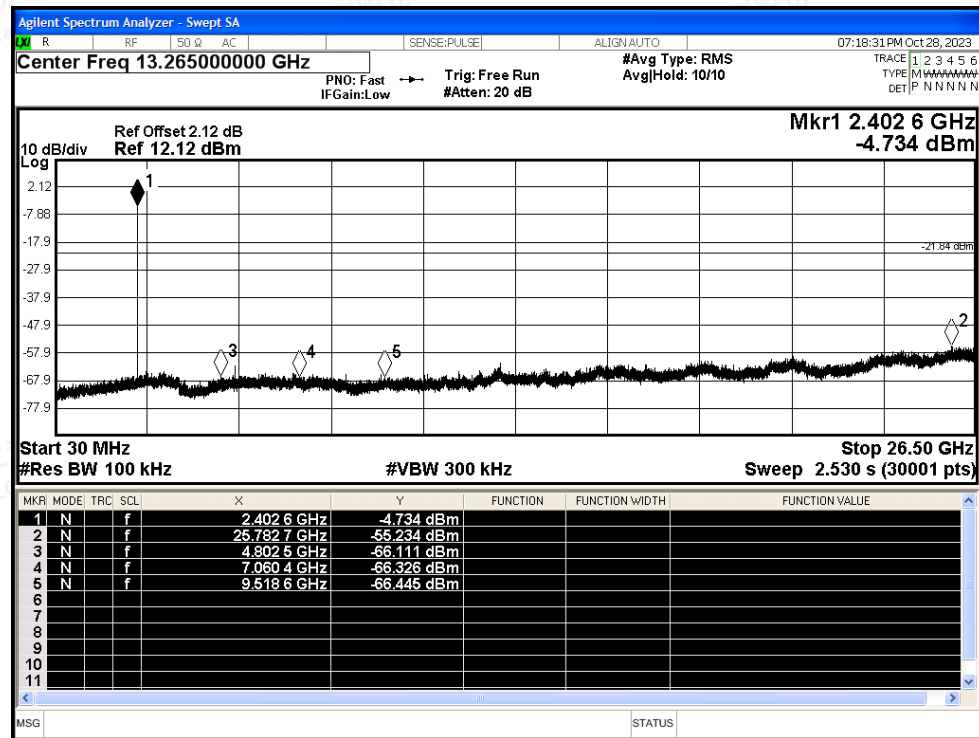


Test Graphs

Tx. Spurious NVNT BLE 2402MHz Ant Ref



Tx. Spurious NVNT BLE 2402MHz Ant Emission



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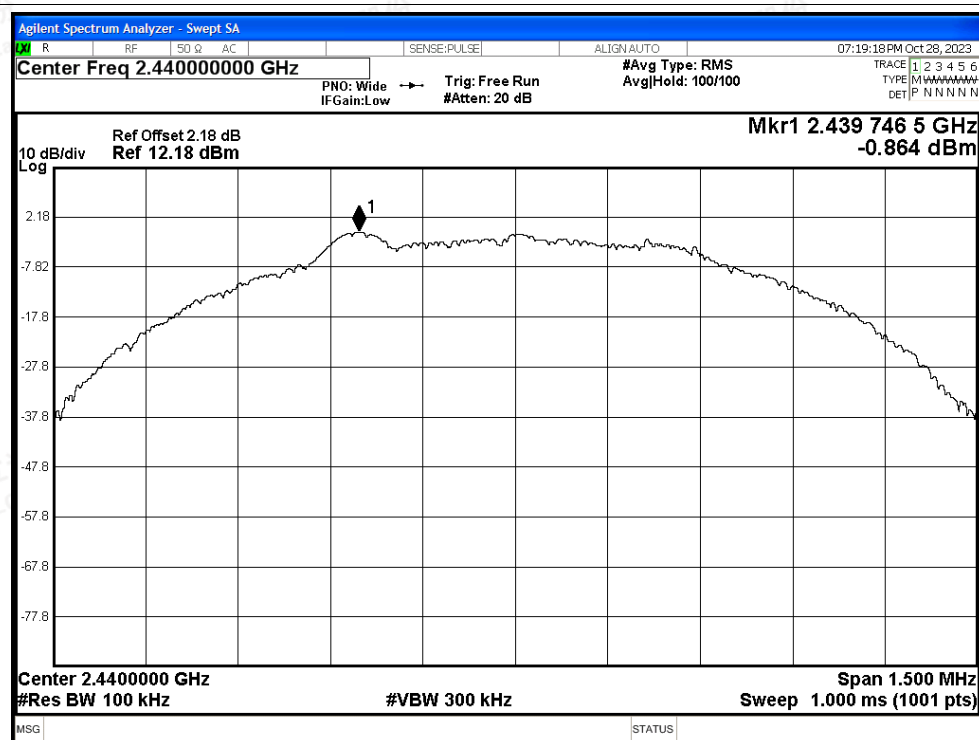
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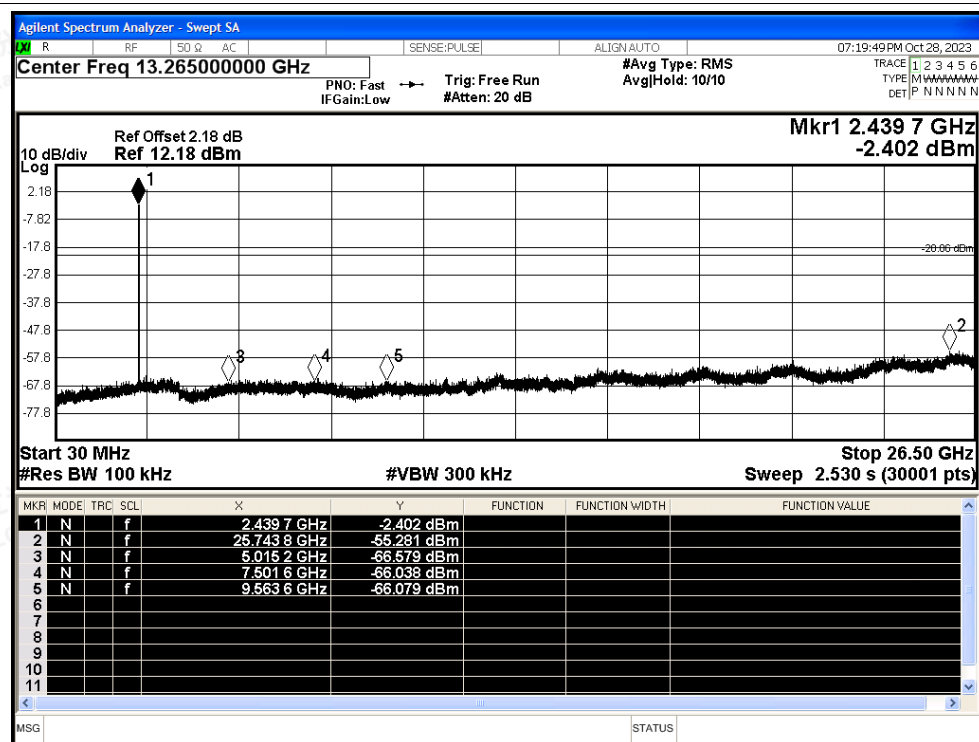
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Tx. Spurious NVNT BLE 2440MHz Ant Ref



Tx. Spurious NVNT BLE 2440MHz Ant Emission



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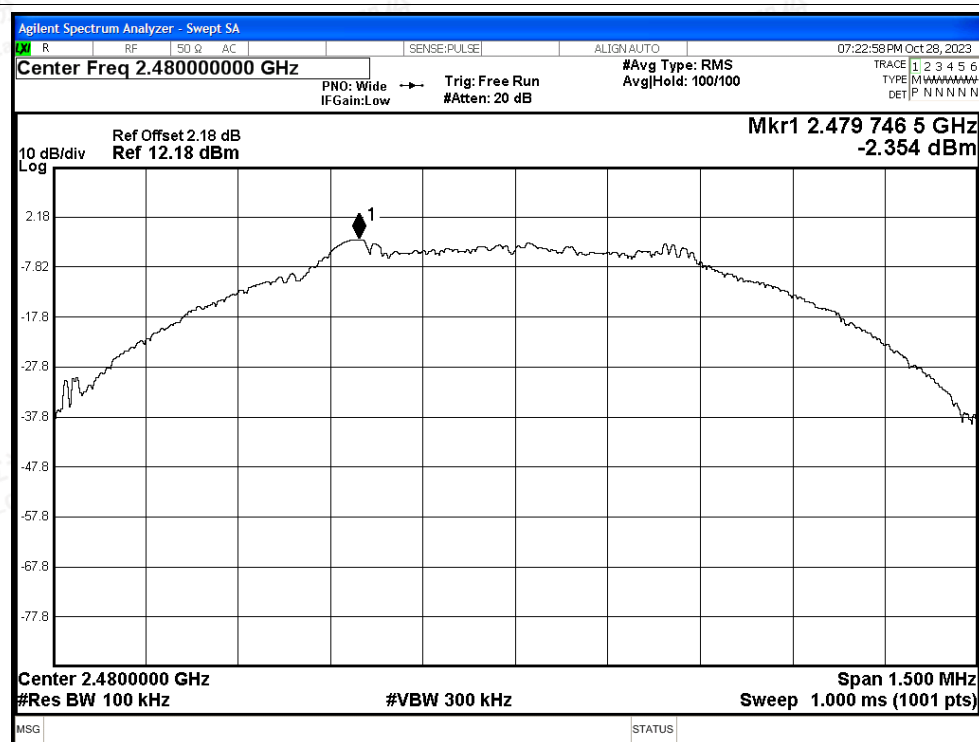
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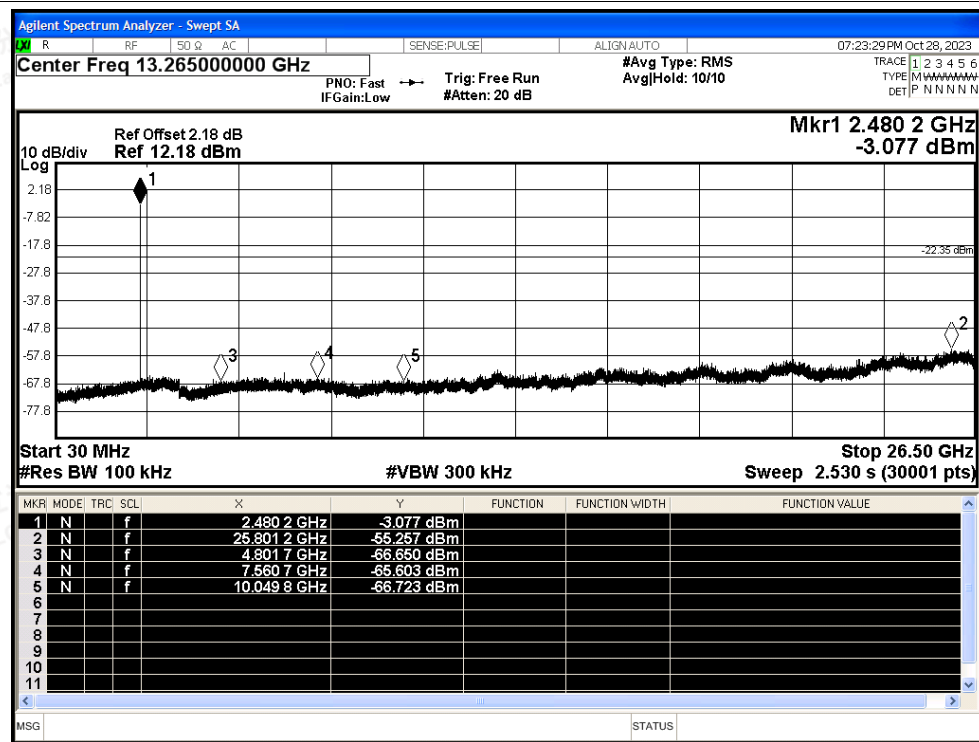
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Tx. Spurious NVNT BLE 2480MHz Ant Ref



Tx. Spurious NVNT BLE 2480MHz Ant Emission



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B.6 Duty Cycle

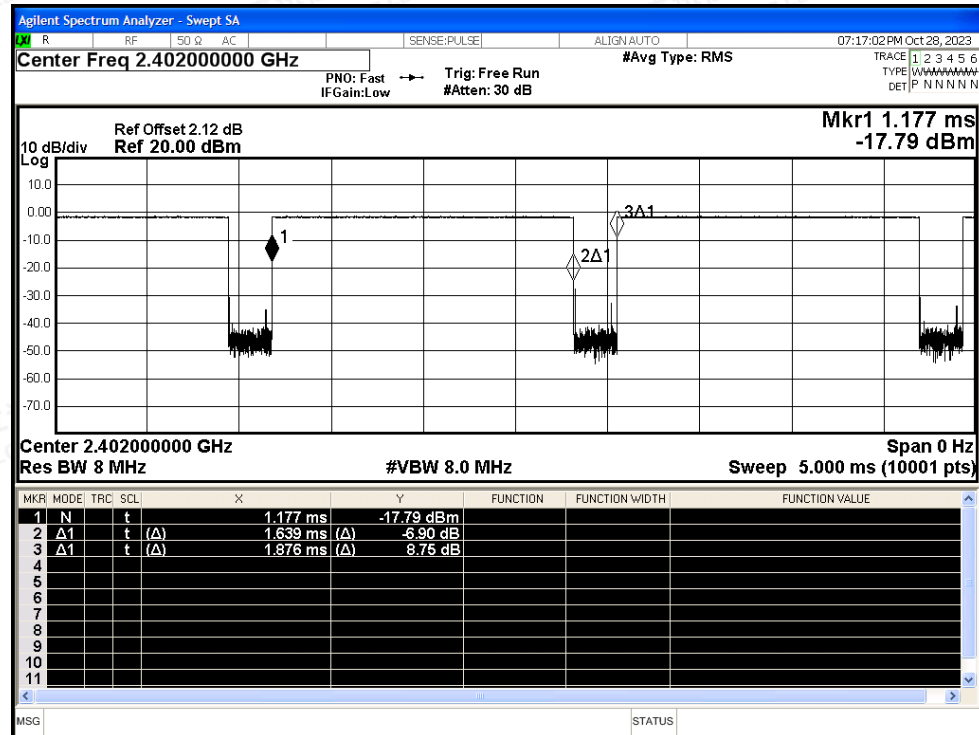
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE	2402	Ant	87.39	0.59	0.61
NVNT	BLE	2440	Ant	0	0	∞
NVNT	BLE	2480	Ant	87.39	0.59	0.61



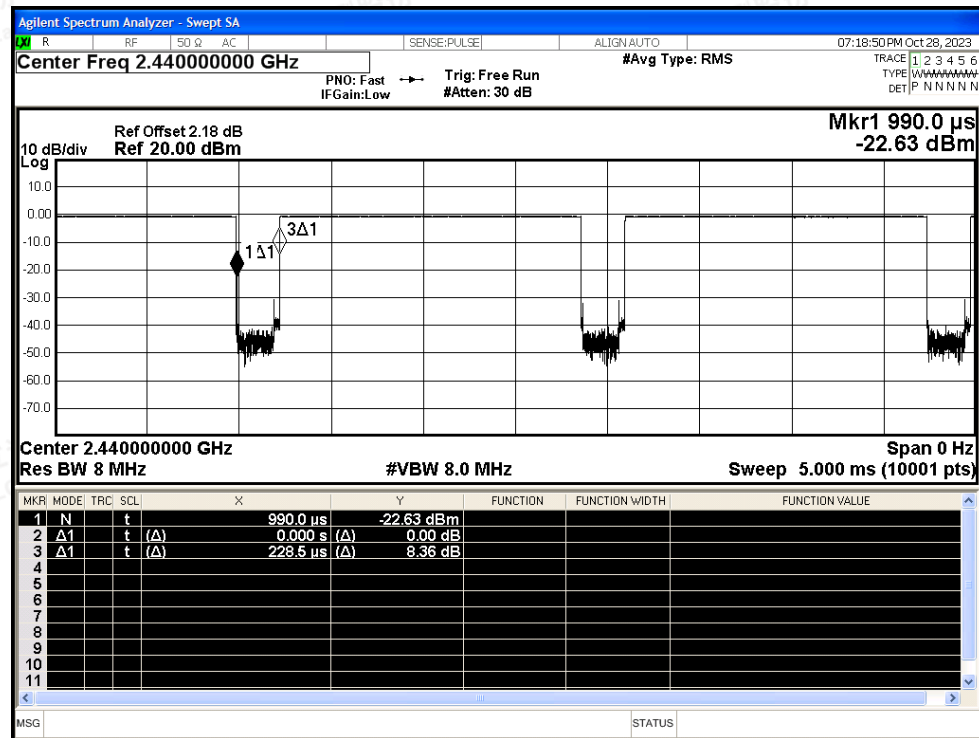


Test Graphs

Duty Cycle NVNT BLE 2402MHz Ant



Duty Cycle NVNT BLE 2440MHz Ant

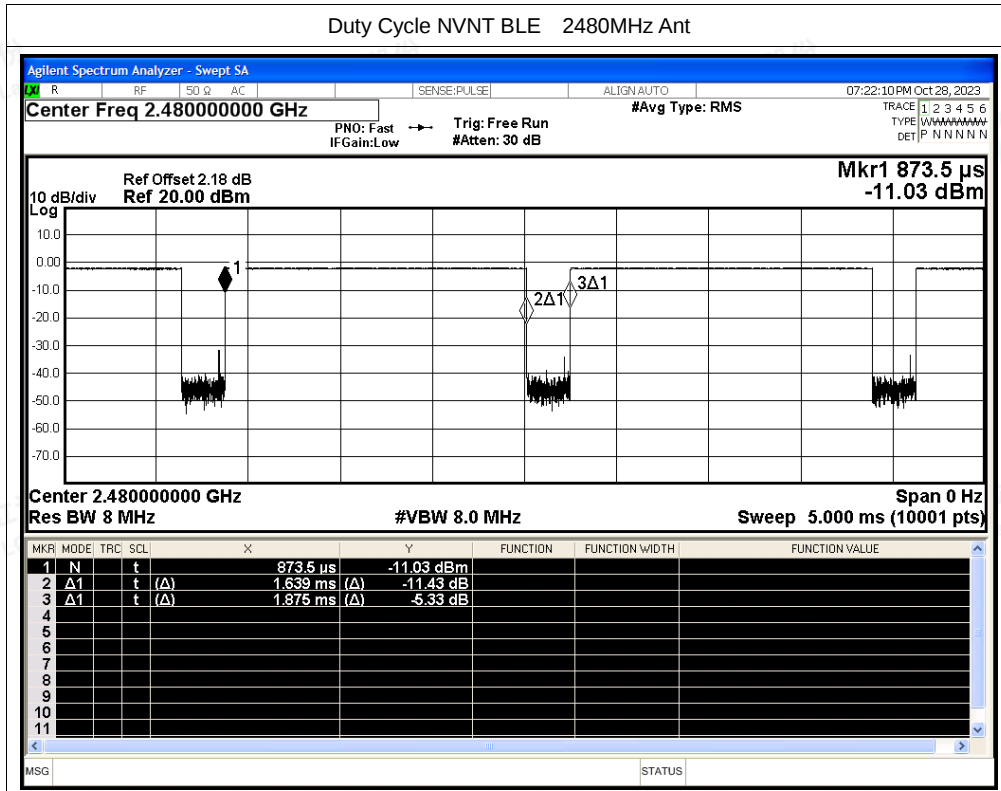


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B.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE	2402	Ant	2310	-48.47	3.42	50.21	Peak	74	Pass
NVNT	BLE	2402	Ant	2310	-57.67	3.42	41.01	Average	54	Pass
NVNT	BLE	2402	Ant	2360.208	-46.48	3.42	52.20	Peak	74	Pass
NVNT	BLE	2402	Ant	2372.88	-57.23	3.42	41.45	Average	54	Pass
NVNT	BLE	2402	Ant	2390	-48.8	3.42	49.88	Peak	74	Pass
NVNT	BLE	2402	Ant	2390	-57.24	3.42	41.44	Average	54	Pass
NVNT	BLE	2480	Ant	2483.5	-50.55	3.42	48.13	Peak	74	Pass
NVNT	BLE	2480	Ant	2483.5	-55.85	3.42	42.83	Average	54	Pass
NVNT	BLE	2480	Ant	2488.192	-45.95	3.42	52.73	Peak	74	Pass
NVNT	BLE	2480	Ant	2483.512	-55.85	3.42	42.83	Average	54	Pass
NVNT	BLE	2480	Ant	2500	-50.14	3.42	48.54	Peak	74	Pass
NVNT	BLE	2480	Ant	2500	-56.96	3.42	41.72	Average	54	Pass



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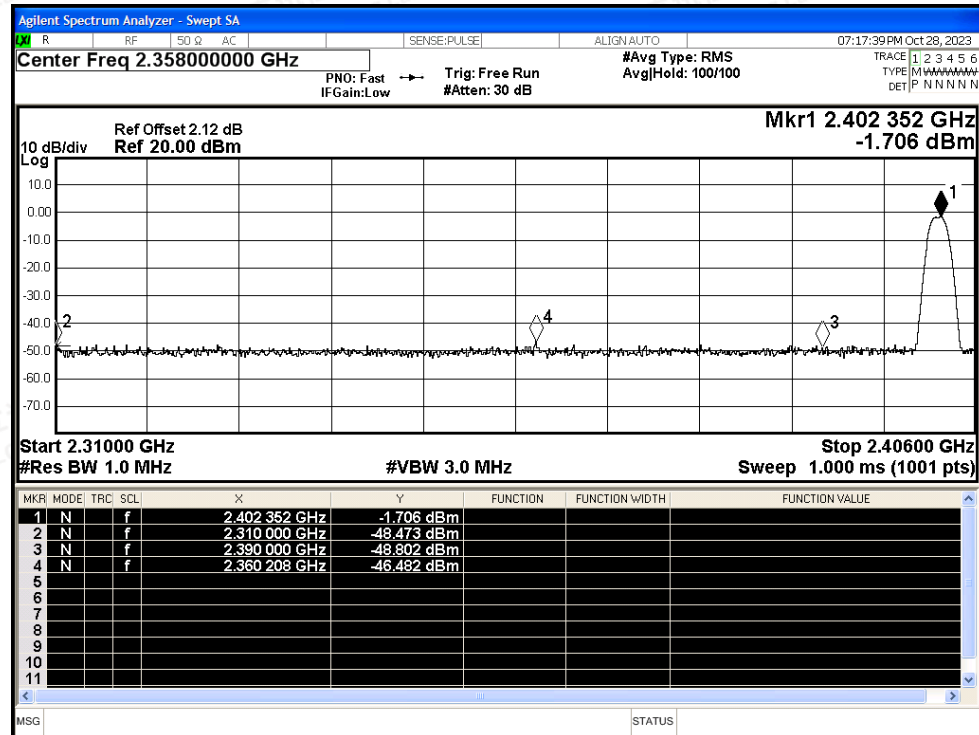
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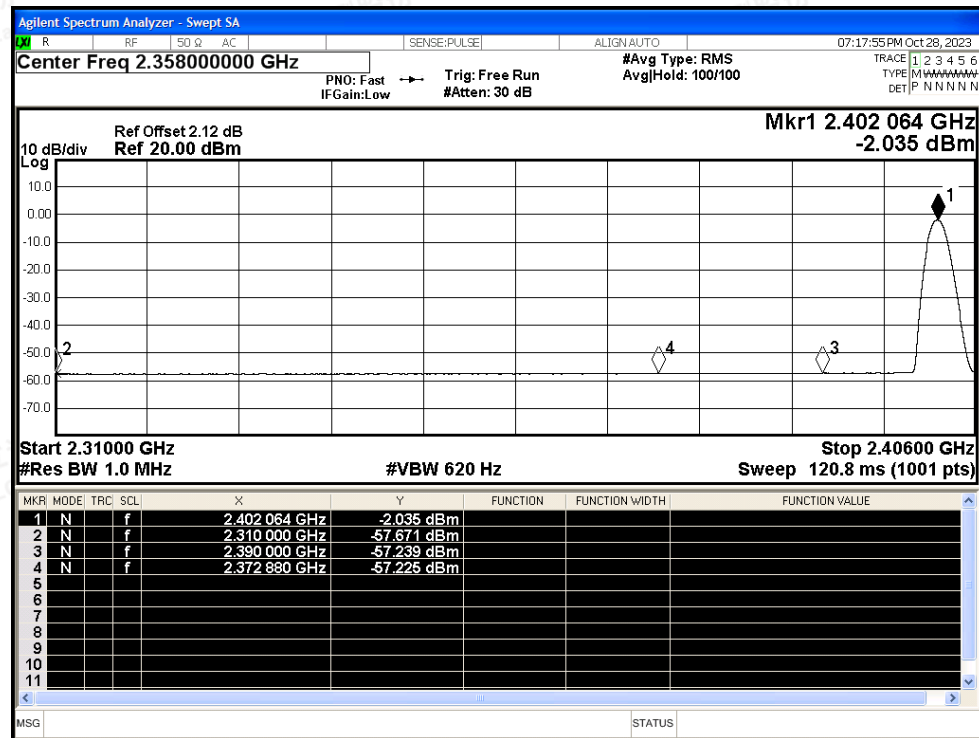


Test Graphs

Restrict Band NVNT BLE 2402MHz Ant Peak



Restrict Band NVNT BLE 2402MHz Ant Average

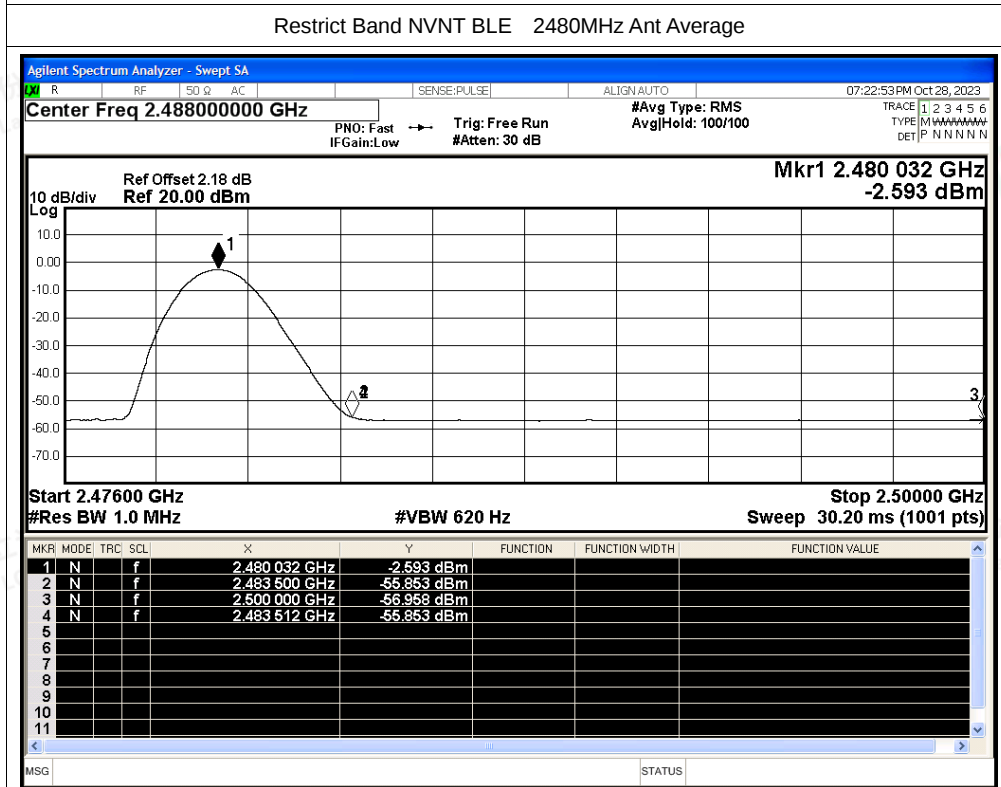
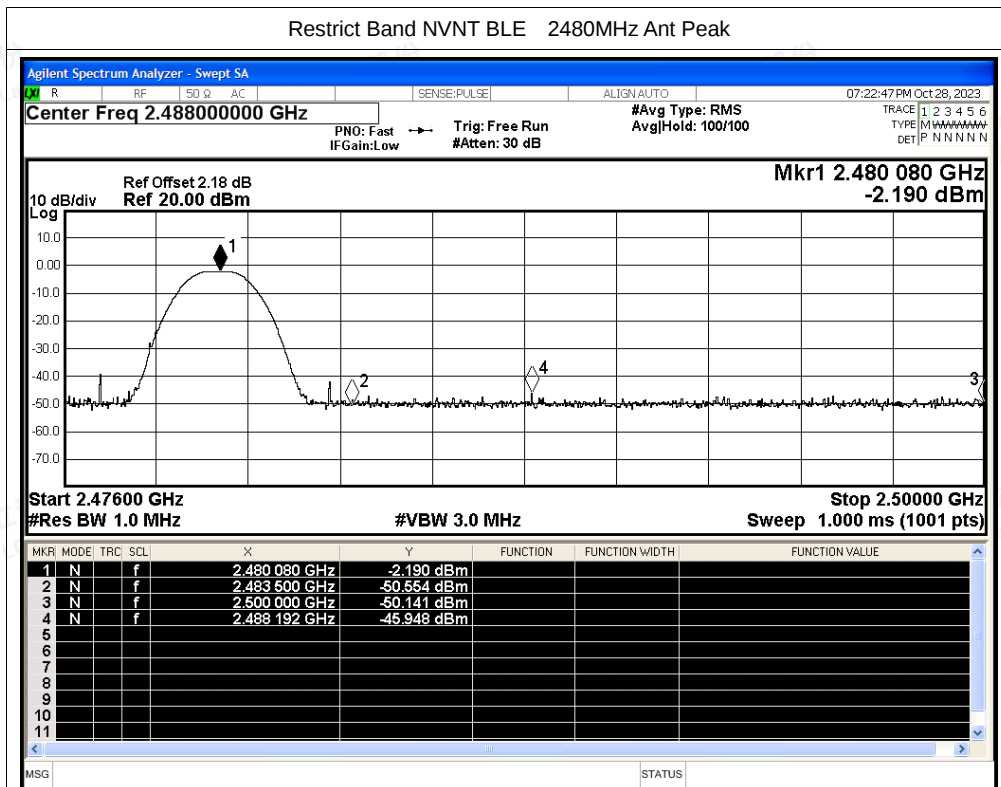


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