



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Formuler Z12 Ultra

Test Model: Z12 Ultra

Environmental Conditions

Temperature:	23.5°C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Can Kun
Supervised by:	Nick Peng



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B.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant0	0.656	≥ 0.5	Pass
NVNT	BLE 1M	2440	Ant0	0.657	≥ 0.5	Pass
NVNT	BLE 1M	2480	Ant0	0.655	≥ 0.5	Pass



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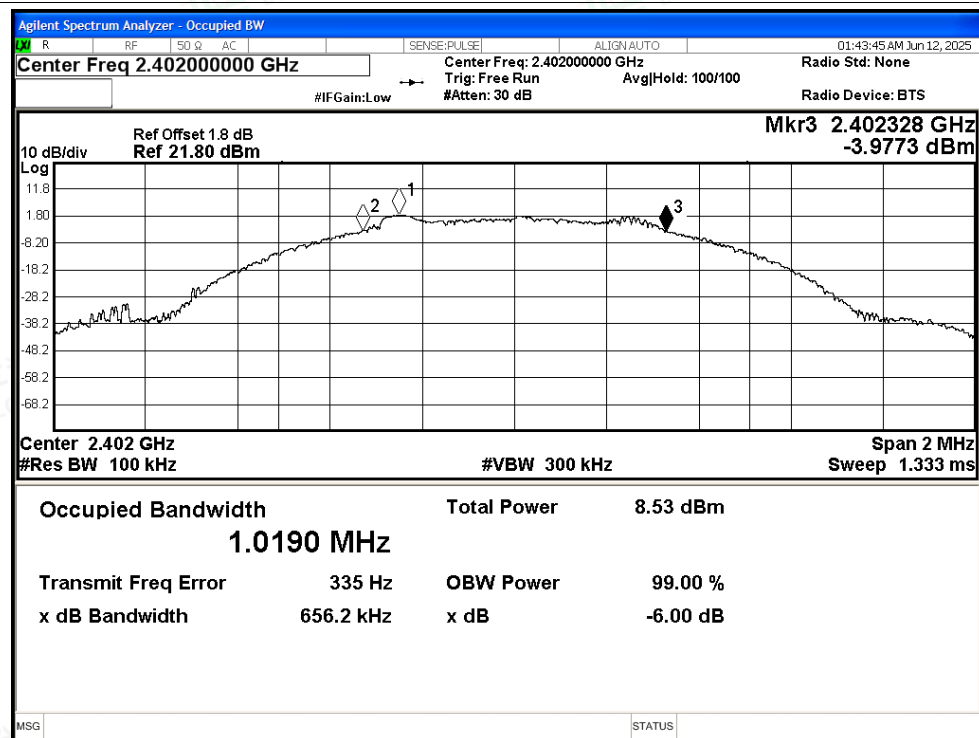
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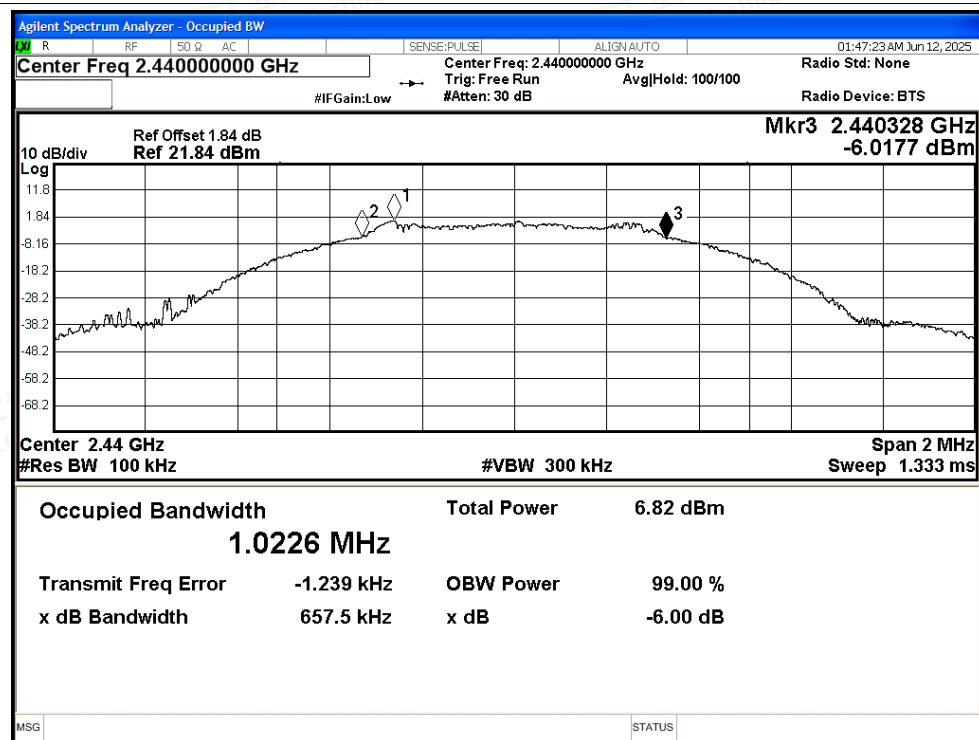


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant0



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant0

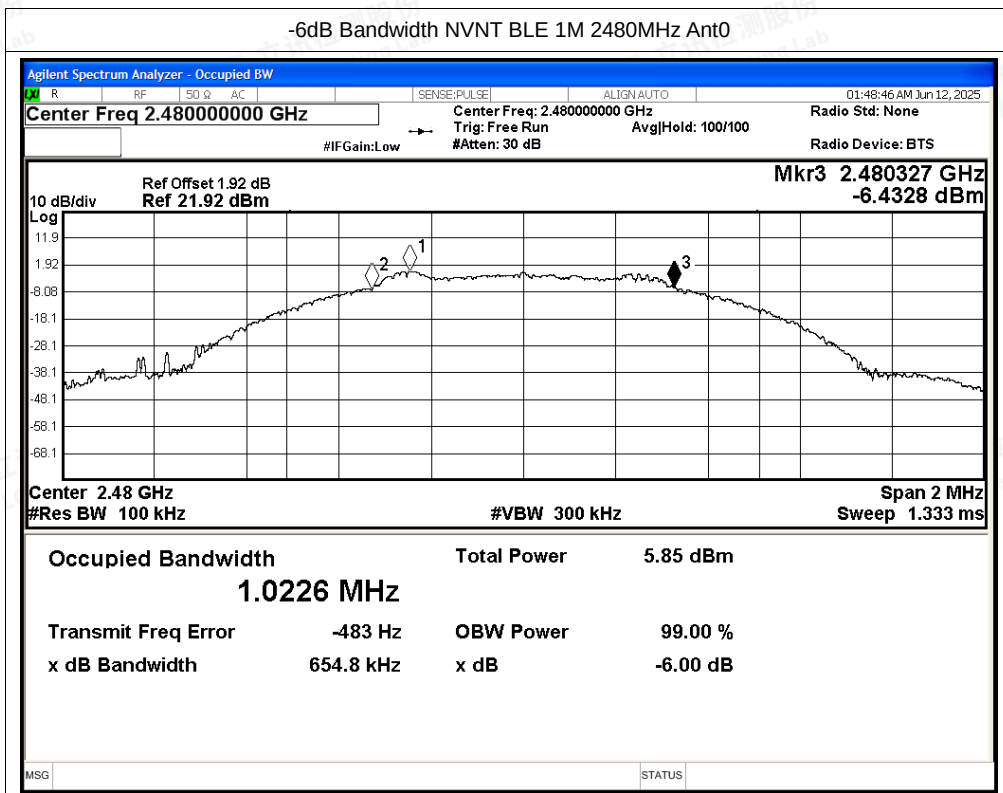


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B.2 Maximum Peak Conducted Output Power

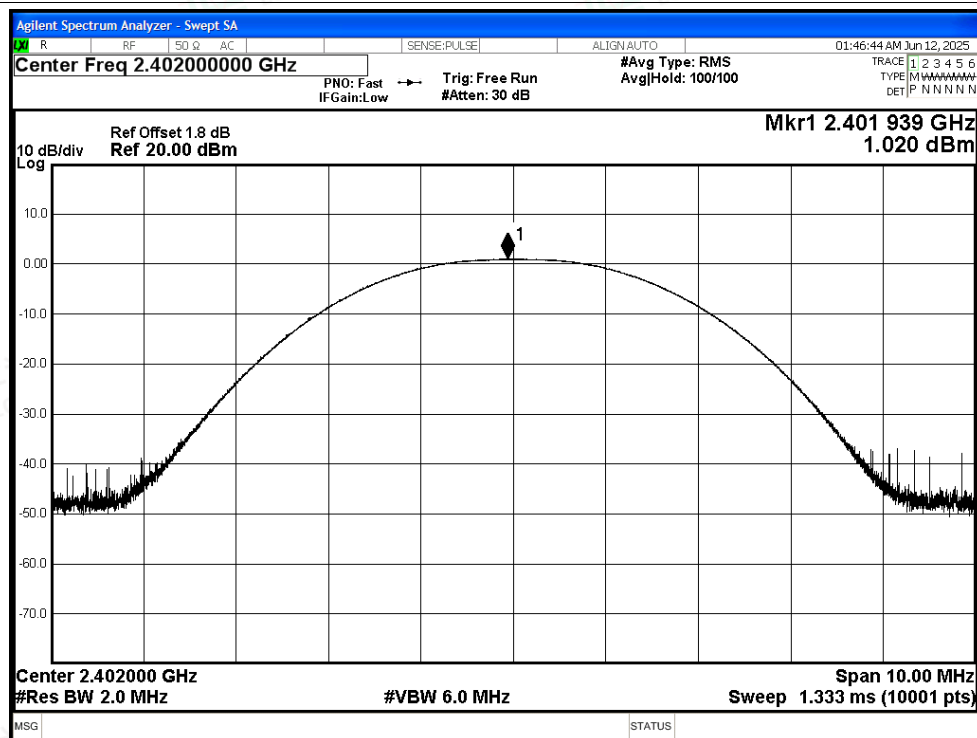
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant0	1.02	30	Pass
NVNT	BLE 1M	2440	Ant0	0.96	30	Pass
NVNT	BLE 1M	2480	Ant0	0.06	30	Pass



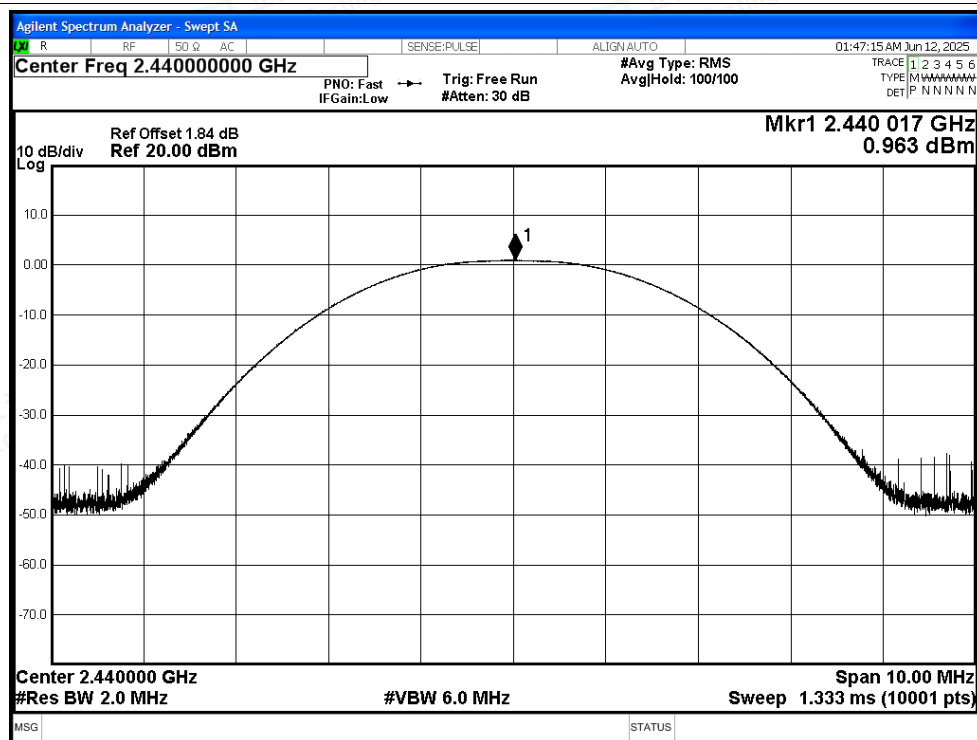


Test Graphs

Power NVNT BLE 1M 2402MHz Ant0



Power NVNT BLE 1M 2440MHz Ant0

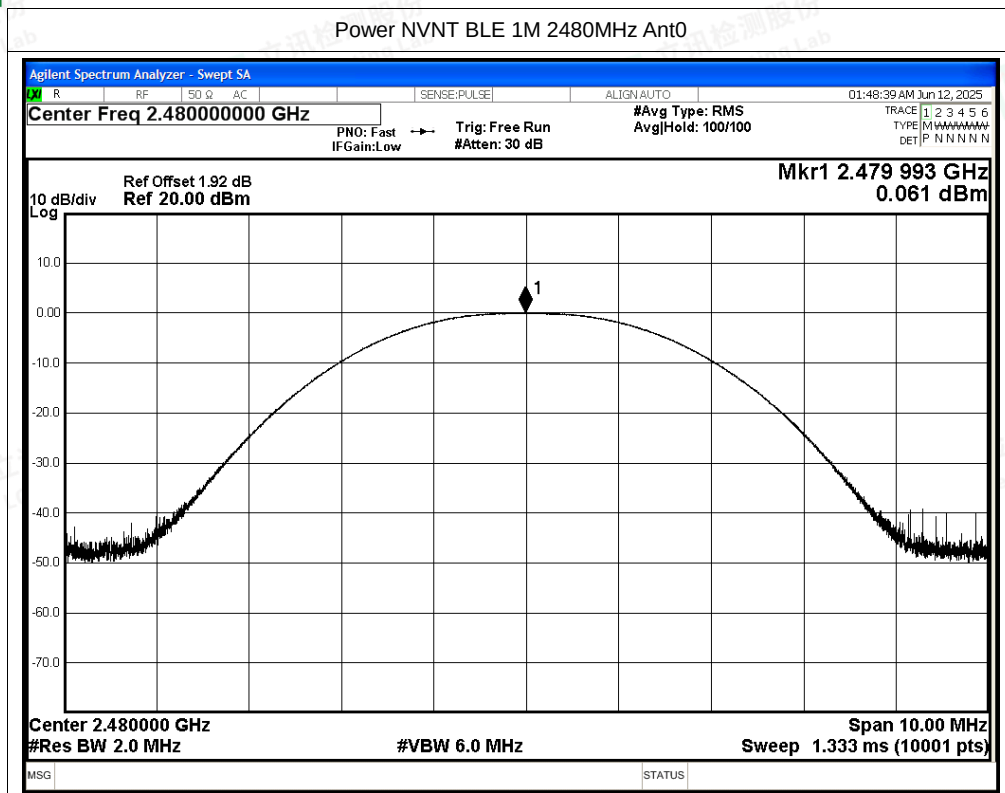


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B.3 Maximum Power Spectral Density Level

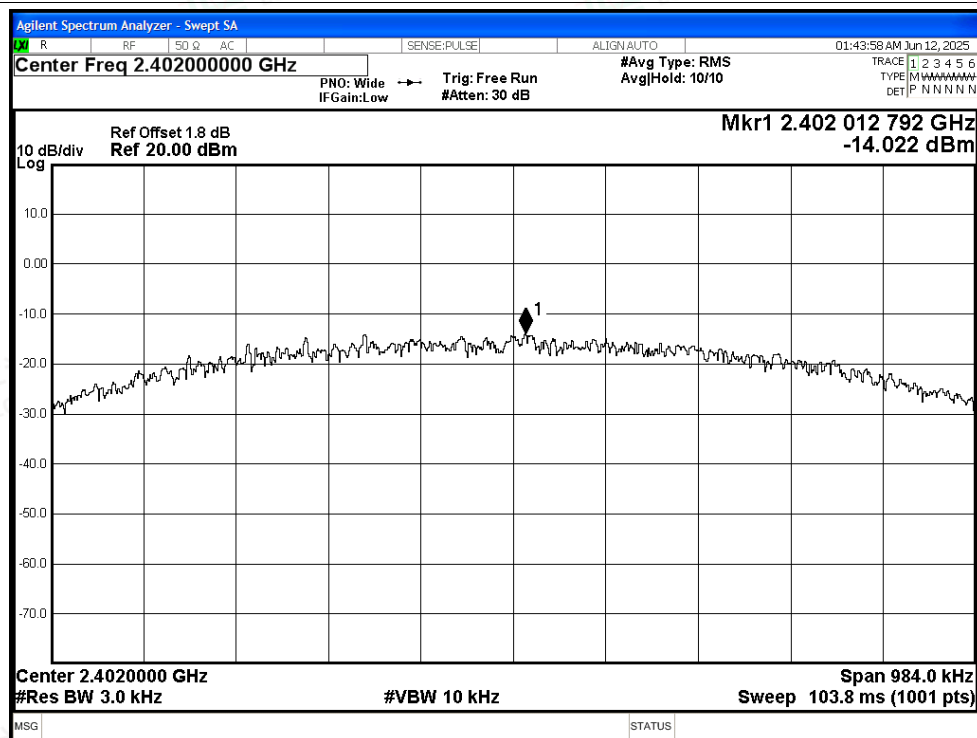
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant0	-14.02	8	Pass
NVNT	BLE 1M	2440	Ant0	-15.63	8	Pass
NVNT	BLE 1M	2480	Ant0	-16.62	8	Pass



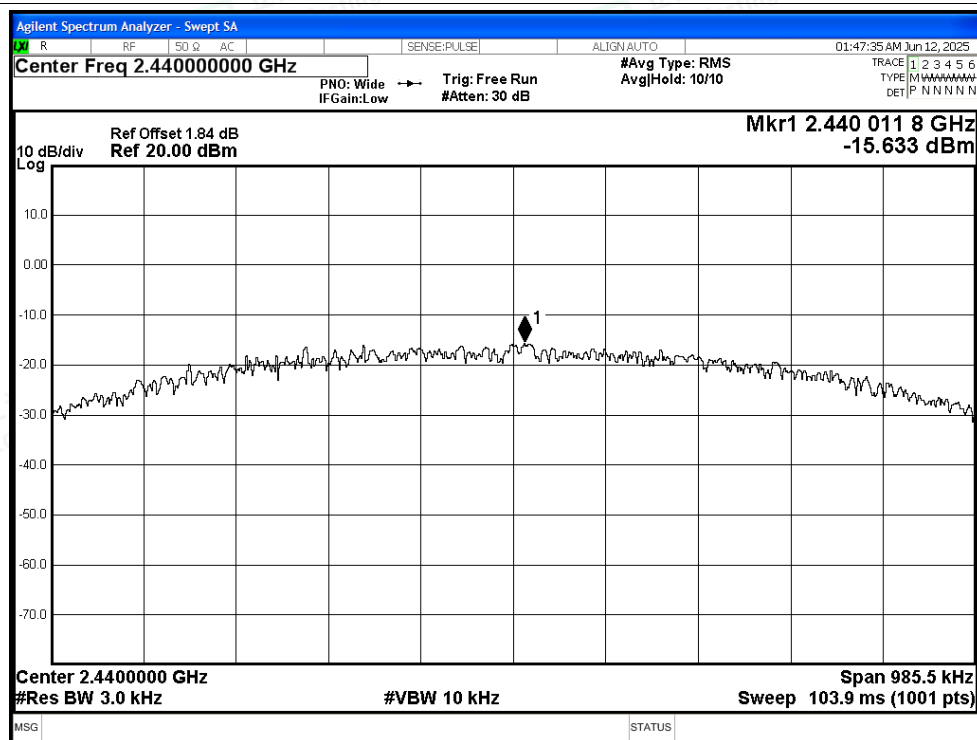


Test Graphs

PSD NVNT BLE 1M 2402MHz Ant0



PSD NVNT BLE 1M 2440MHz Ant0

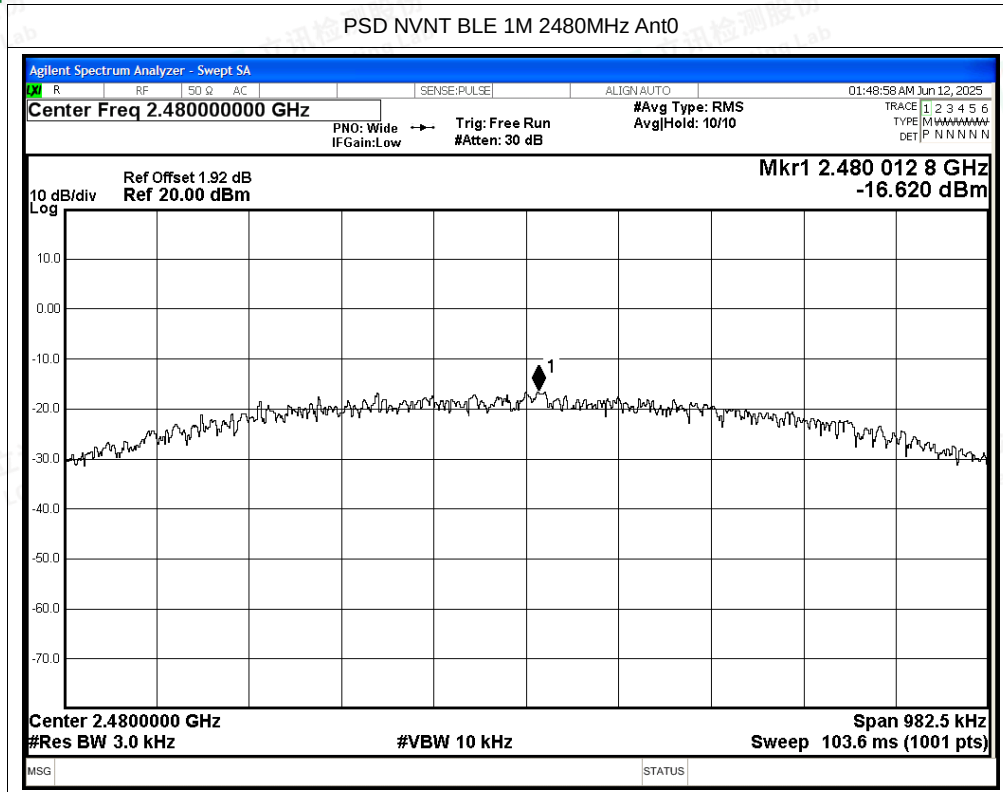


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B.4 Band Edge

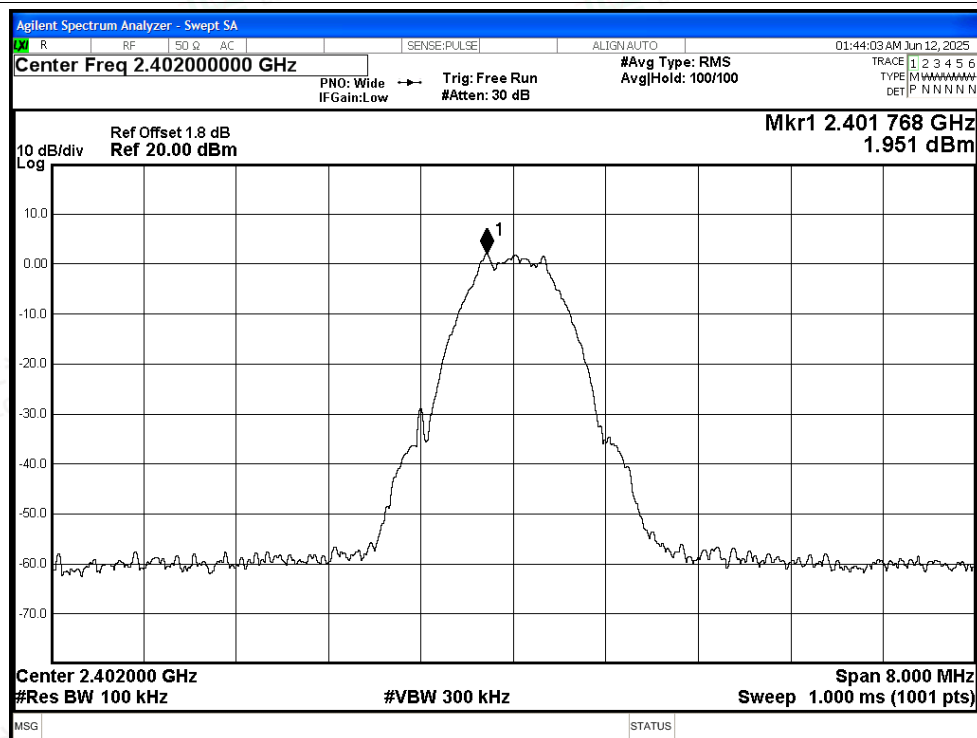
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant0	-58.96	-20	Pass
NVNT	BLE 1M	2480	Ant0	-56.34	-20	Pass



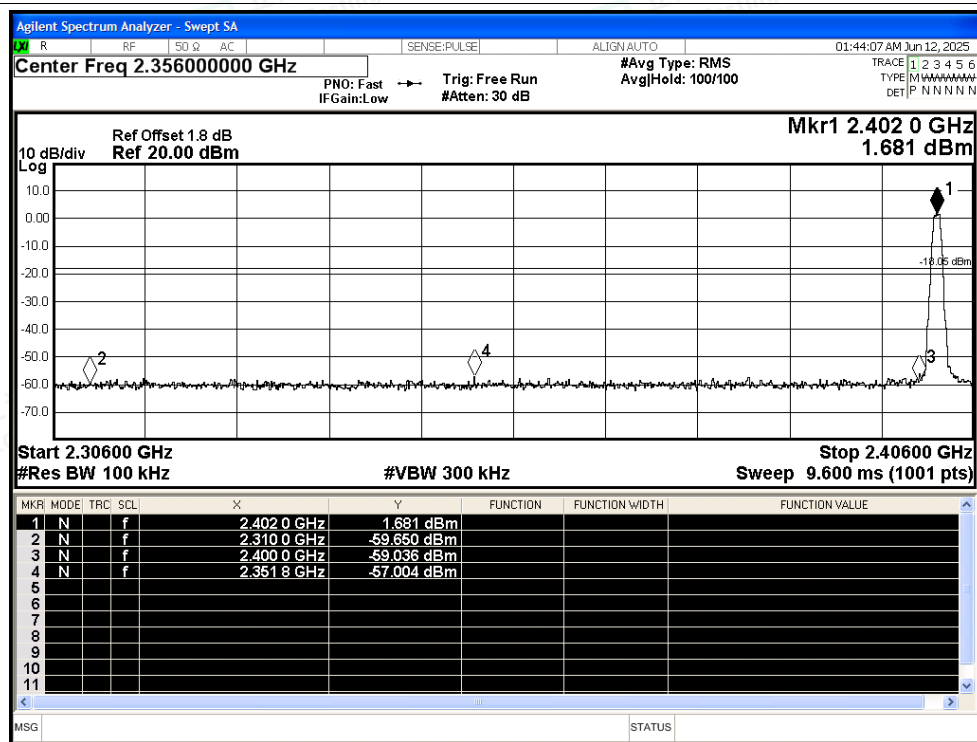


Test Graphs

Band Edge NVNT BLE 1M 2402MHz Ant0 Ref



Band Edge NVNT BLE 1M 2402MHz Ant0 Emission



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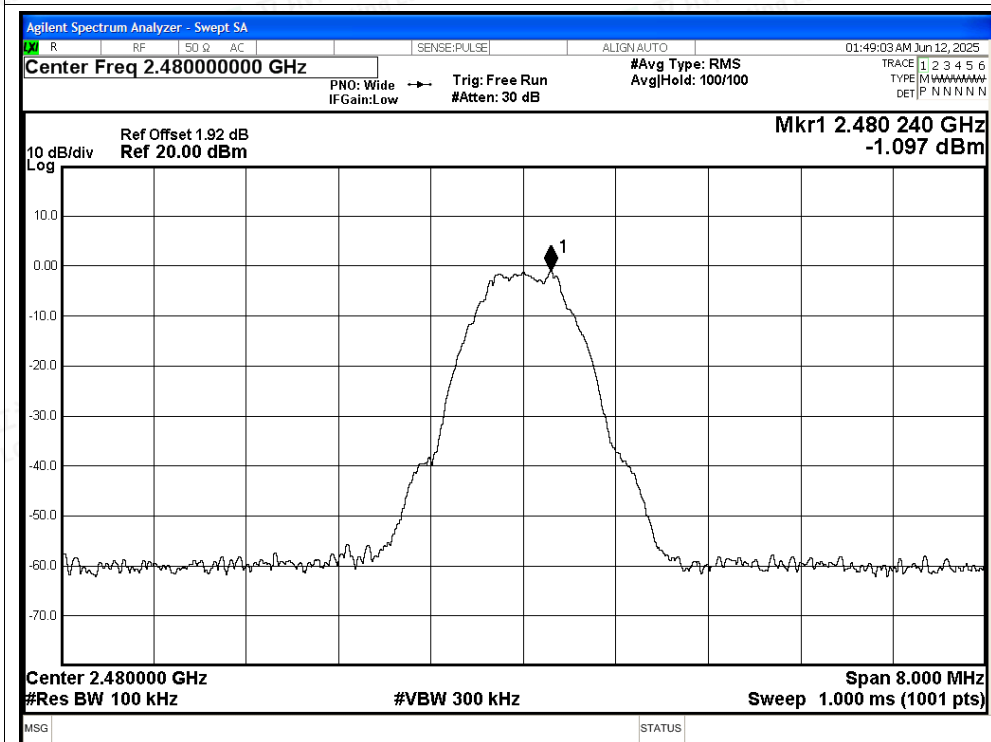
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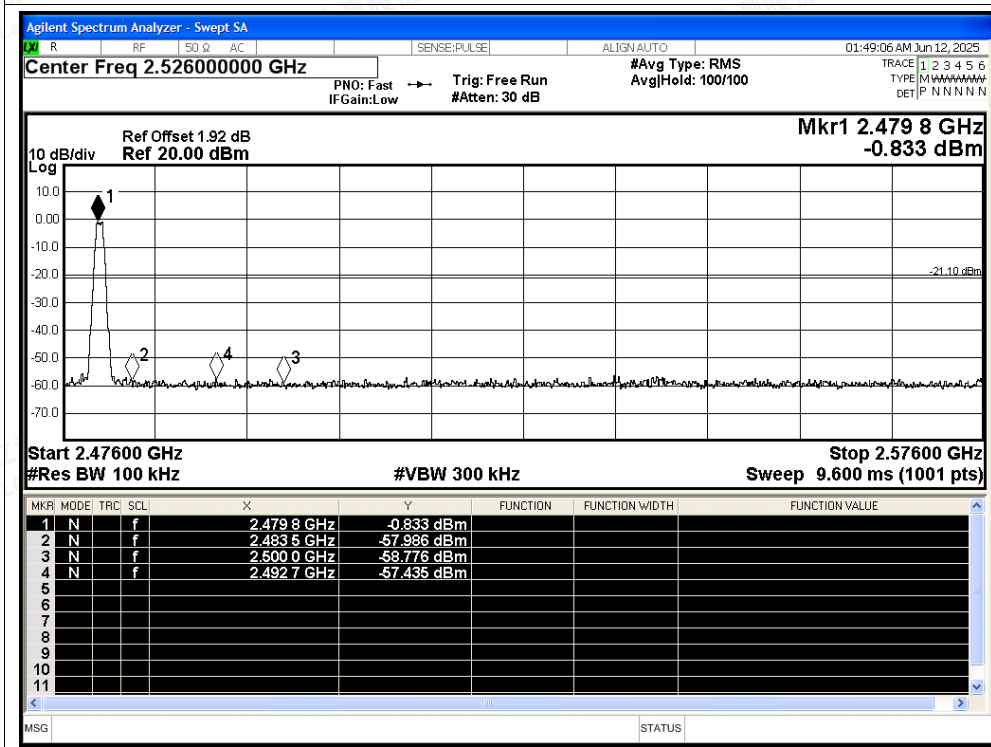
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Band Edge NVNT BLE 1M 2480MHz Ant0 Ref



Band Edge NVNT BLE 1M 2480MHz Ant0 Emission



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B.5 Conducted RF Spurious Emission

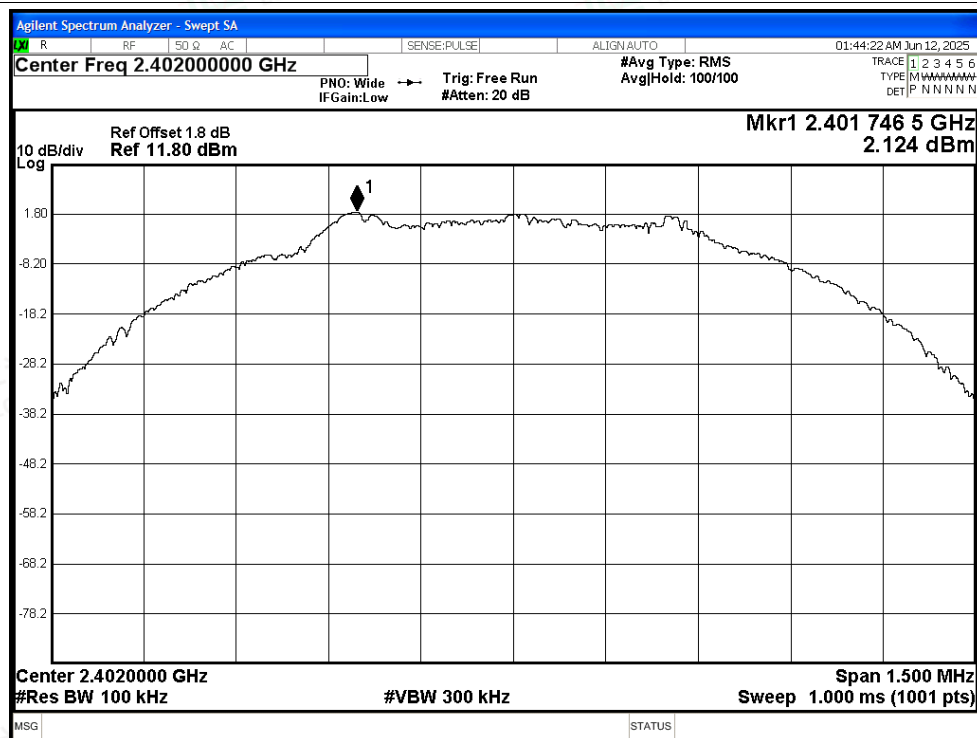
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant0	-57.58	-20	Pass
NVNT	BLE 1M	2440	Ant0	-55.88	-20	Pass
NVNT	BLE 1M	2480	Ant0	-54.24	-20	Pass



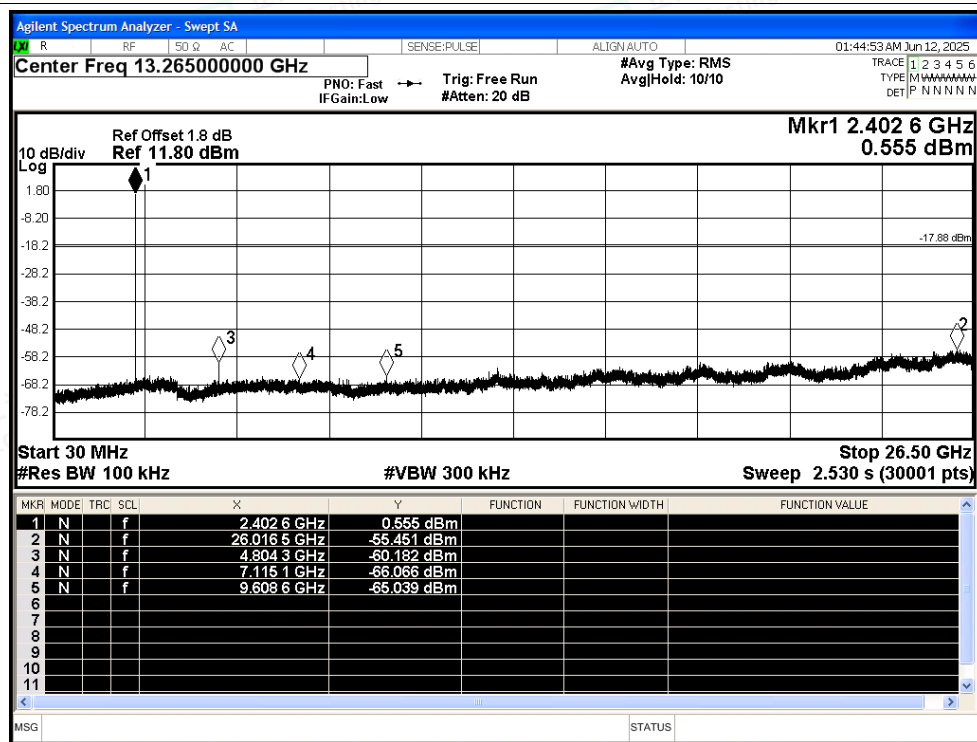


Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant0 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant0 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

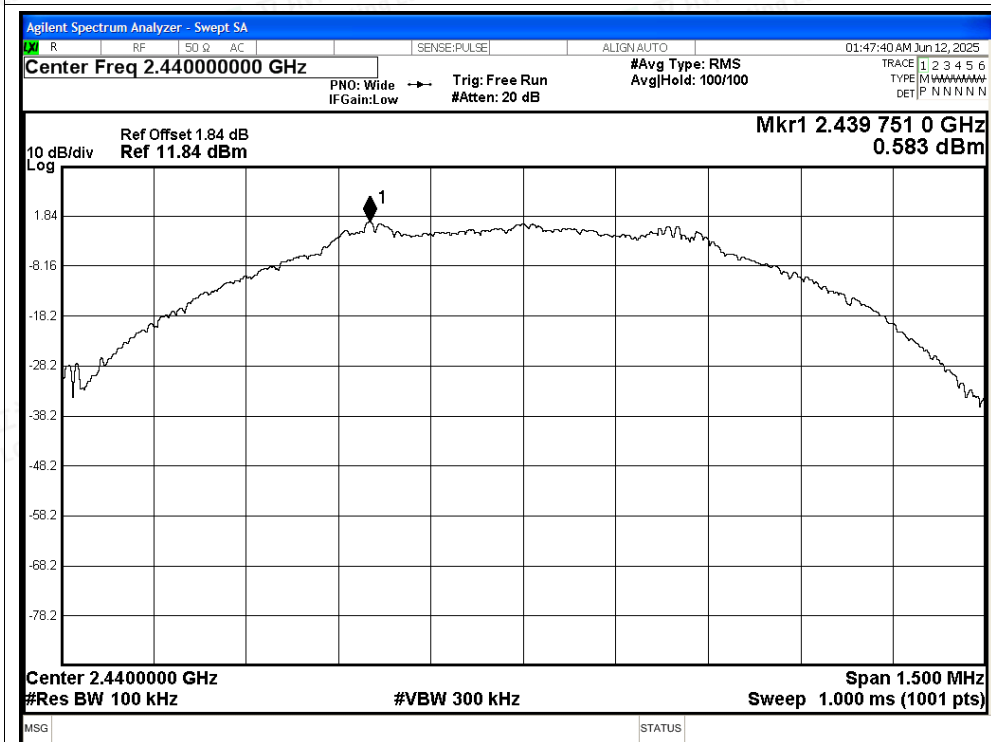
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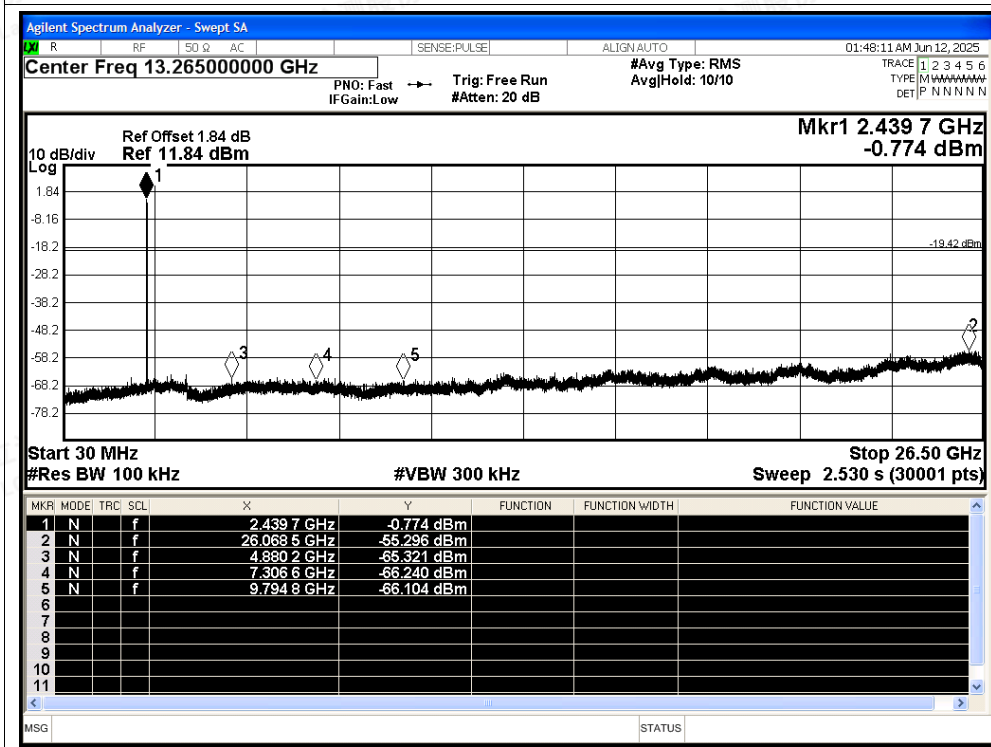
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Tx. Spurious NVNT BLE 1M 2440MHz Ant0 Ref



Tx. Spurious NVNT BLE 1M 2440MHz Ant0 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

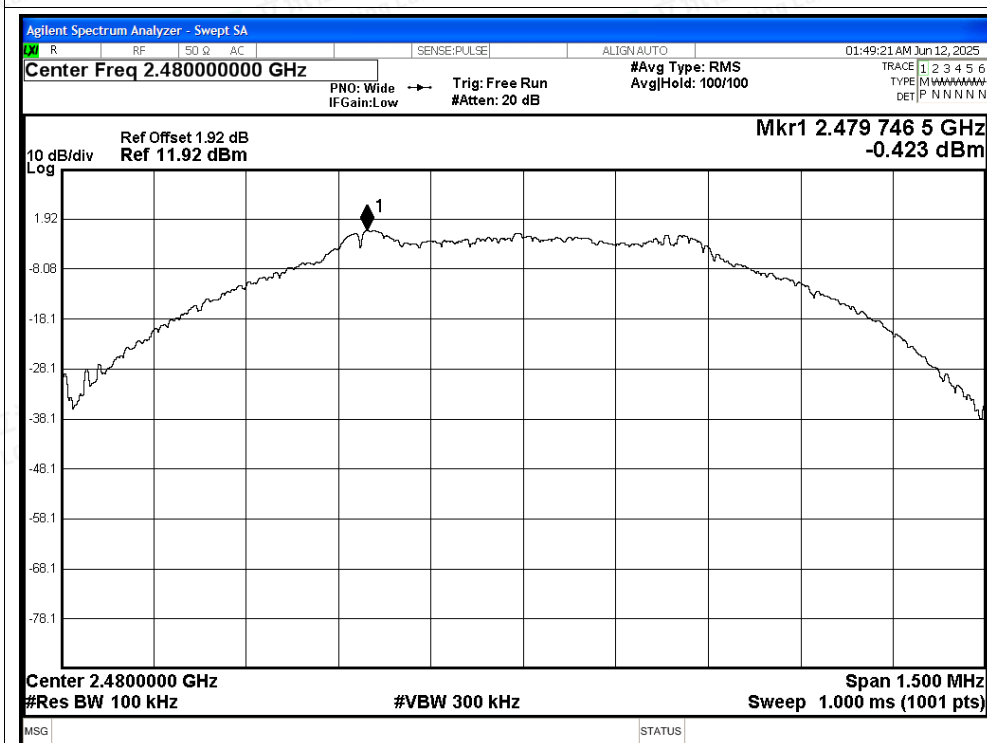
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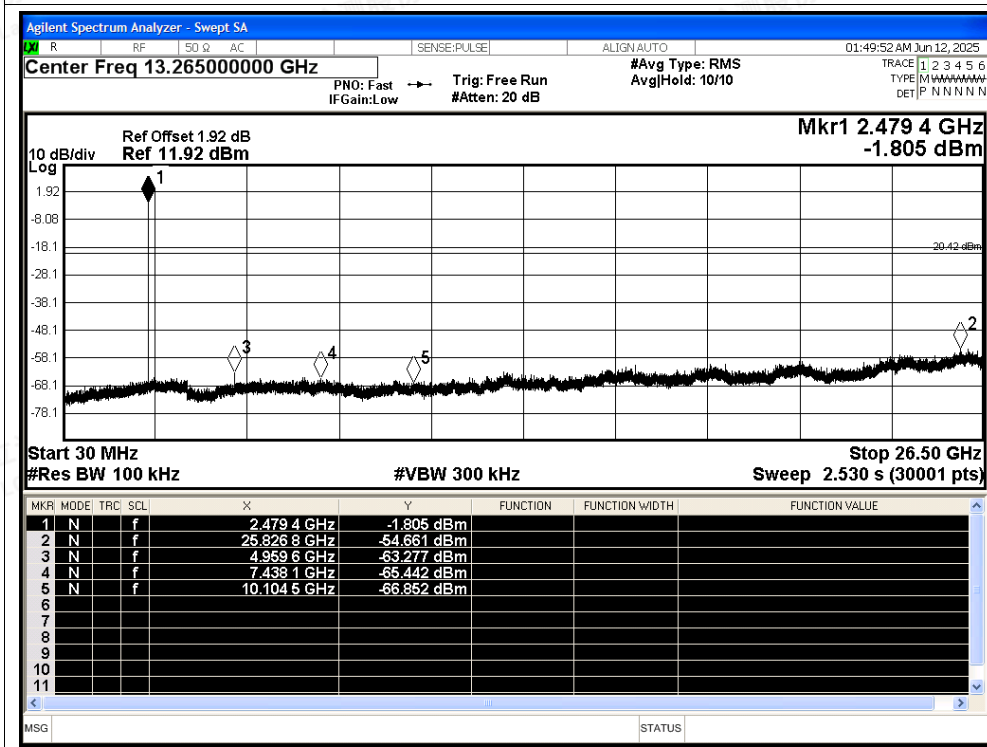
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Tx. Spurious NVNT BLE 1M 2480MHz Ant0 Ref



Tx. Spurious NVNT BLE 1M 2480MHz Ant0 Emission



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B.6 Duty Cycle

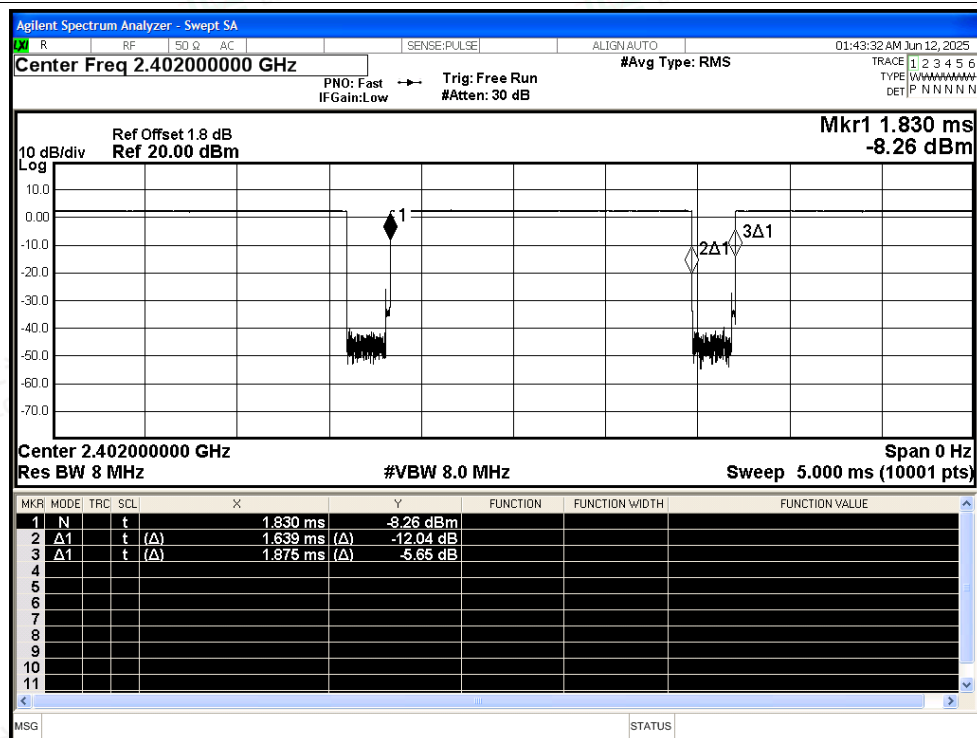
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant0	87.39	0.59	0.61
NVNT	BLE 1M	2440	Ant0	87.41	0.58	0.61
NVNT	BLE 1M	2480	Ant0	87.39	0.59	0.61



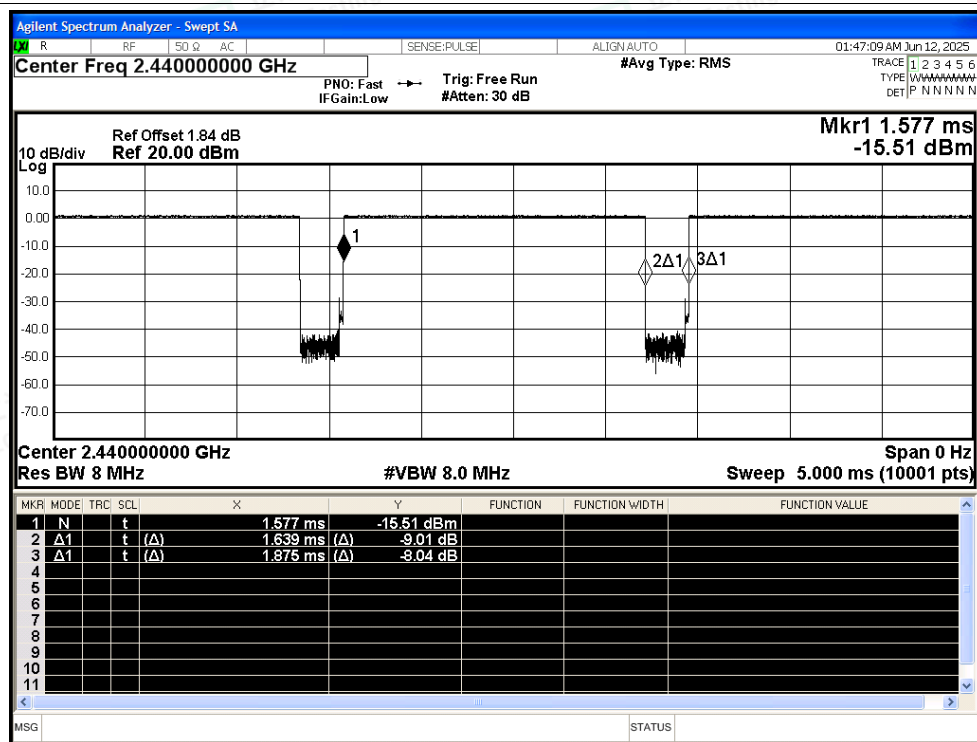


Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant0



Duty Cycle NVNT BLE 1M 2440MHz Ant0

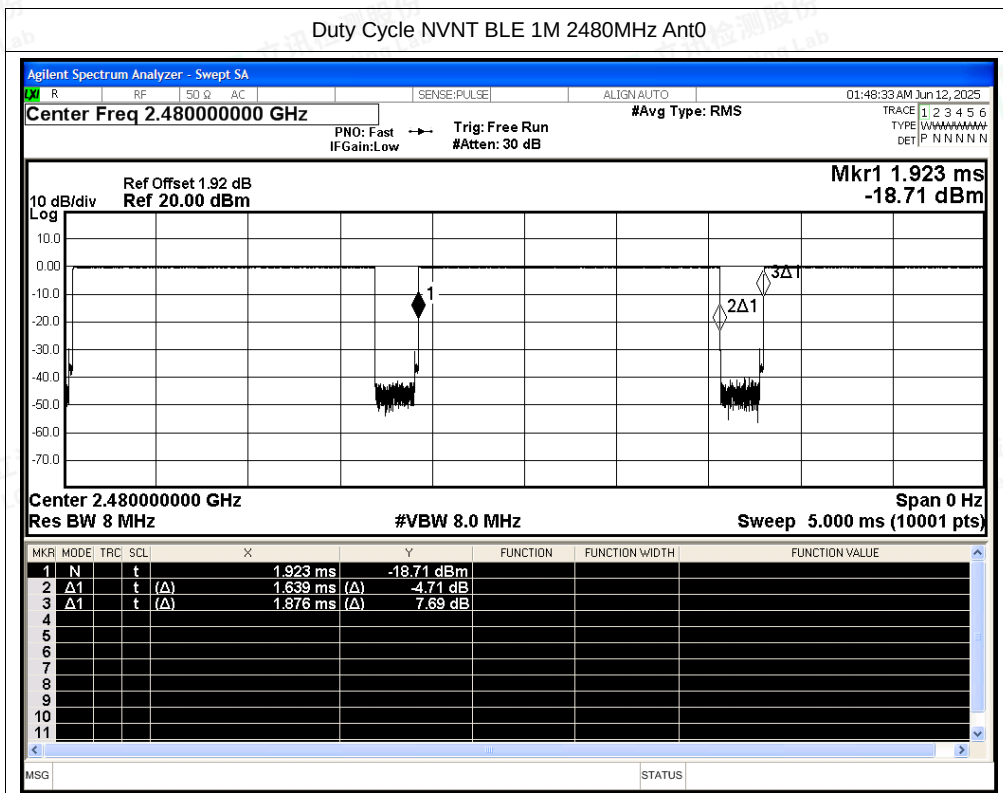


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B.7 Restrict Band

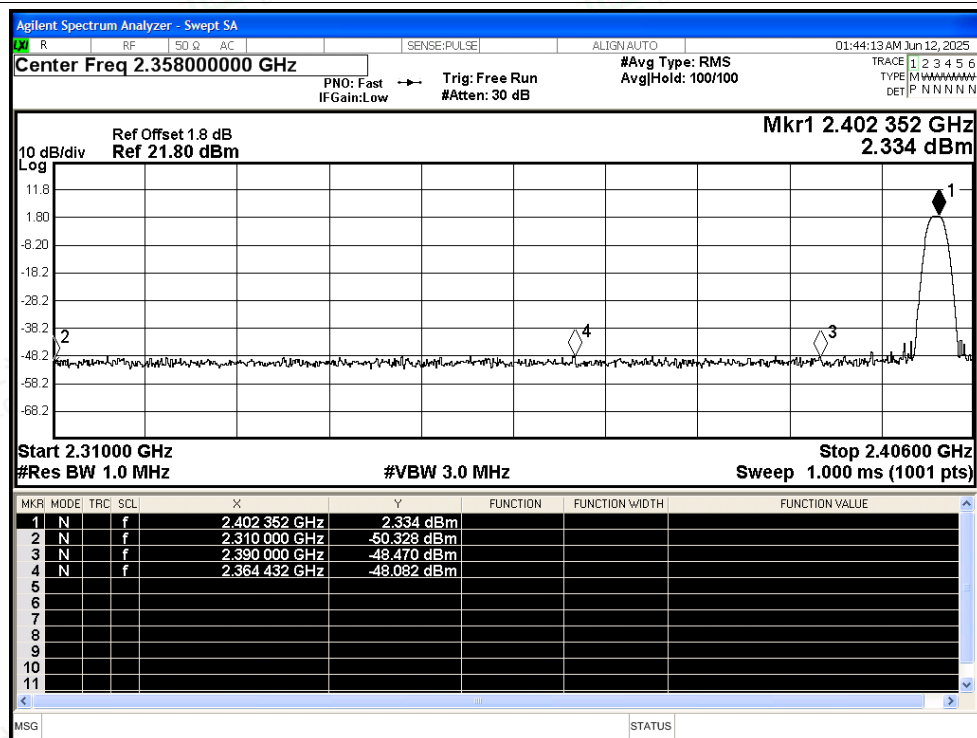
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant0	2310	-50.33	2	-	46.93	Peak	74	Pass
NVNT	BLE 1M	2402	Ant0	2310	-59.11	2	0.59	38.74	Average	54	Pass
NVNT	BLE 1M	2402	Ant0	2364.432	-48.08	2	-	49.18	Peak	74	Pass
NVNT	BLE 1M	2402	Ant0	2385.552	-58.26	2	0.59	39.59	Average	54	Pass
NVNT	BLE 1M	2402	Ant0	2390	-48.47	2	-	48.79	Peak	74	Pass
NVNT	BLE 1M	2402	Ant0	2390	-58.82	2	0.59	39.03	Average	54	Pass
NVNT	BLE 1M	2480	Ant0	2483.5	-49.55	2	-	47.71	Peak	74	Pass
NVNT	BLE 1M	2480	Ant0	2483.5	-57.7	2	0.59	40.15	Average	54	Pass
NVNT	BLE 1M	2480	Ant0	2487.352	-44.17	2	-	53.09	Peak	74	Pass
NVNT	BLE 1M	2480	Ant0	2483.536	-57.64	2	0.59	40.21	Average	54	Pass
NVNT	BLE 1M	2480	Ant0	2500	-50.59	2	-	46.67	Peak	74	Pass
NVNT	BLE 1M	2480	Ant0	2500	-58.07	2	0.59	39.78	Average	54	Pass



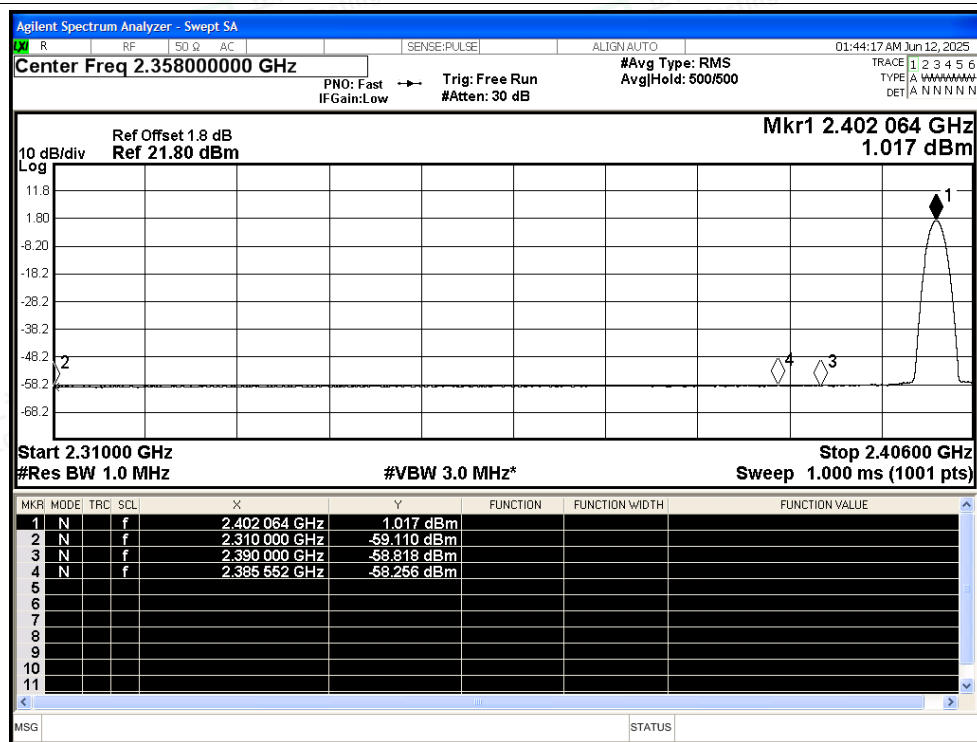


Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant0 Peak



Restrict Band NVNT BLE 1M 2402MHz Ant0 Average



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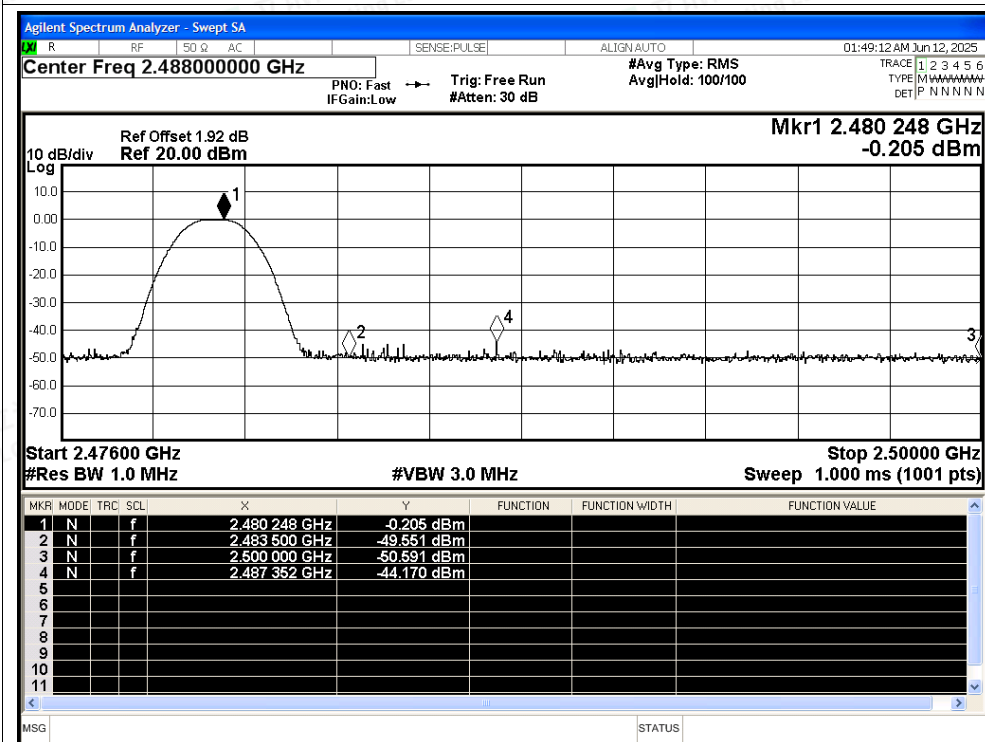
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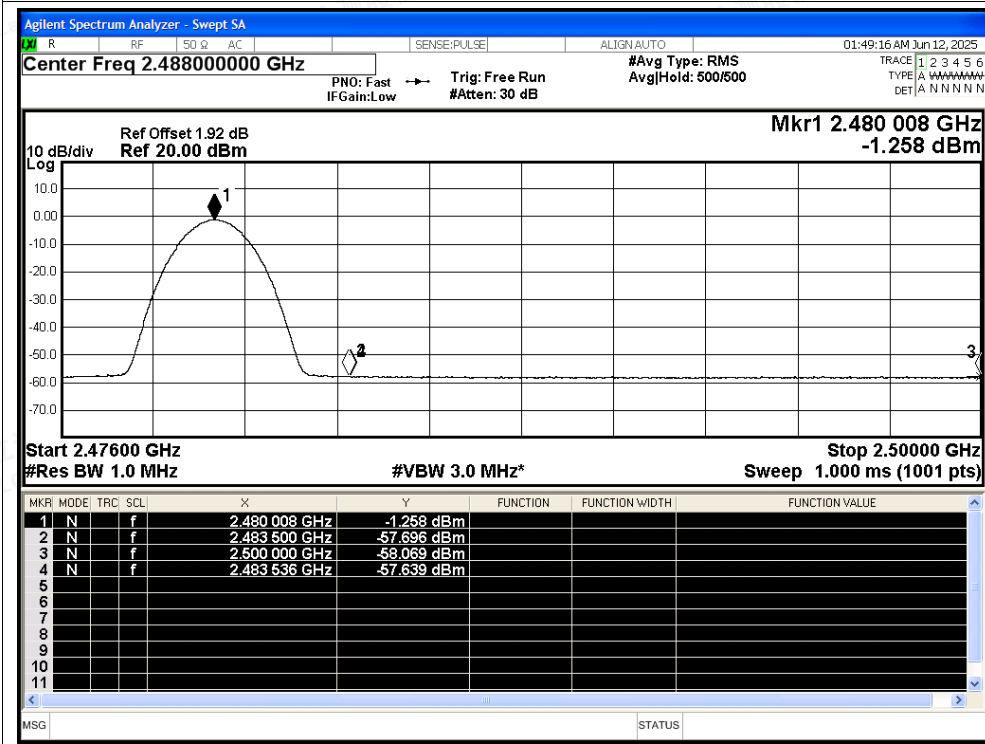
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Restrict Band NVNT BLE 1M 2480MHz Ant0 Peak



Restrict Band NVNT BLE 1M 2480MHz Ant0 Average



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