



Appendix A

RF Test Data for BT LE (Conducted Measurement)

Product Name: Orphek OR4 iCon LED Bars

Test Model: OR4 180 iCon

Environmental Conditions

Temperature:	23.9°C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry Chu
Supervised by:	Can Kun

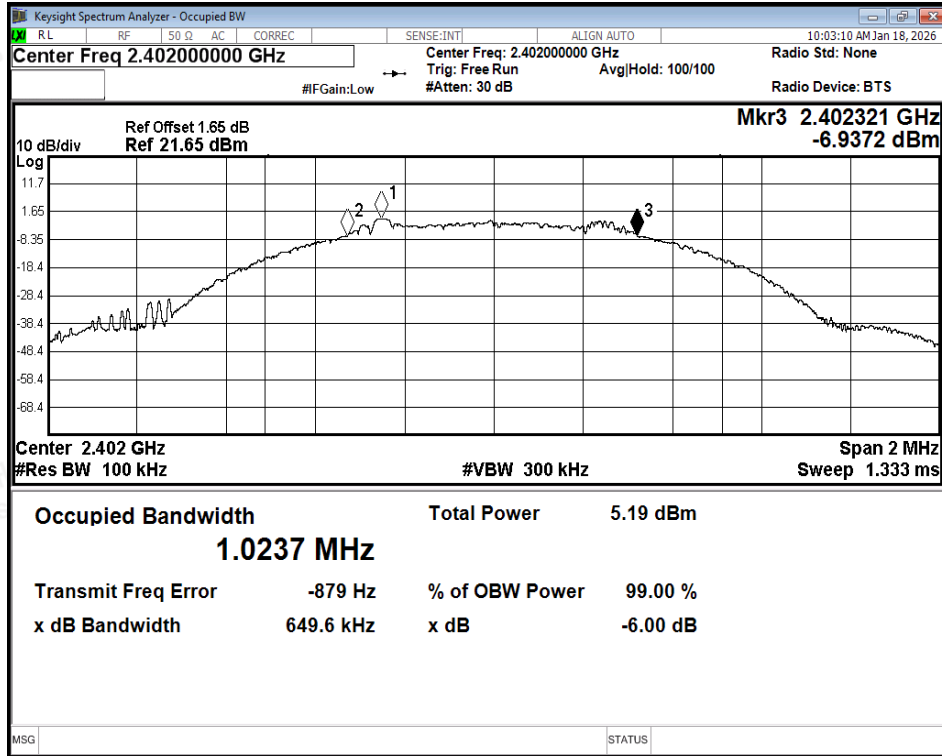




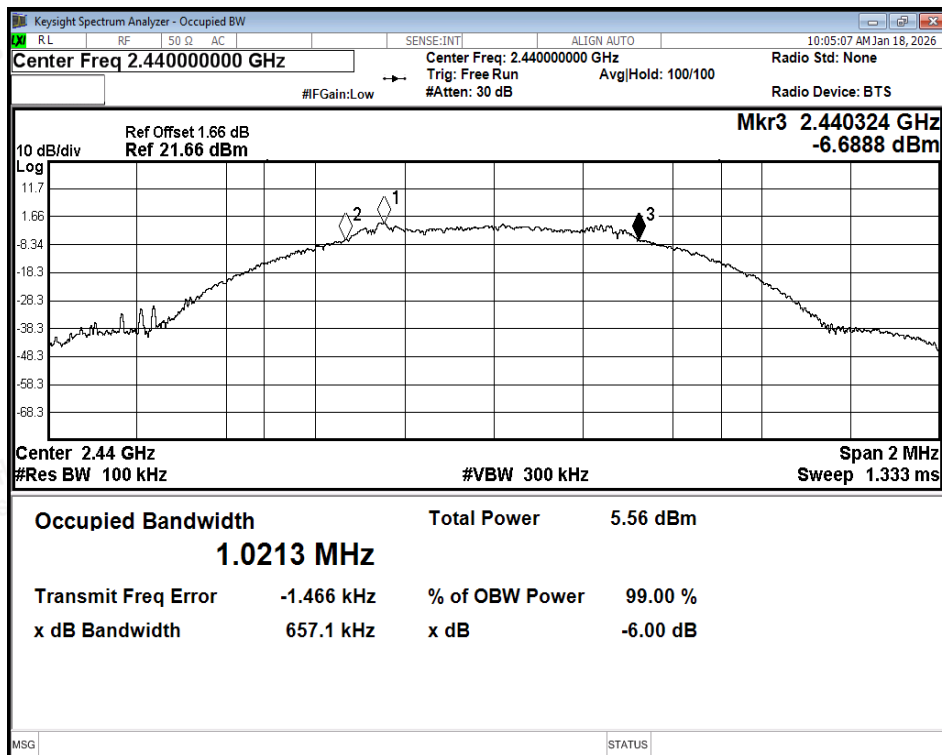
A.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.6496	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.6571	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.6613	0.5	Pass





-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

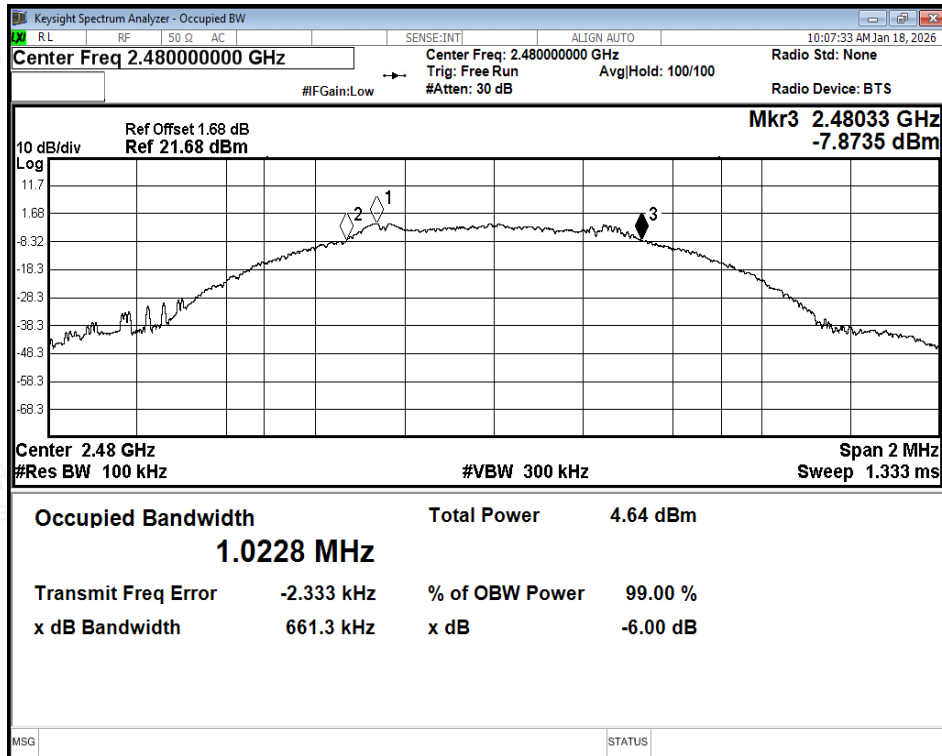


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-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1





A.2 Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit Conducted(dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-0.55	30	Pass
NVNT	BLE 1M	2440	Ant1	-0.22	30	Pass
NVNT	BLE 1M	2480	Ant1	-1.19	30	Pass

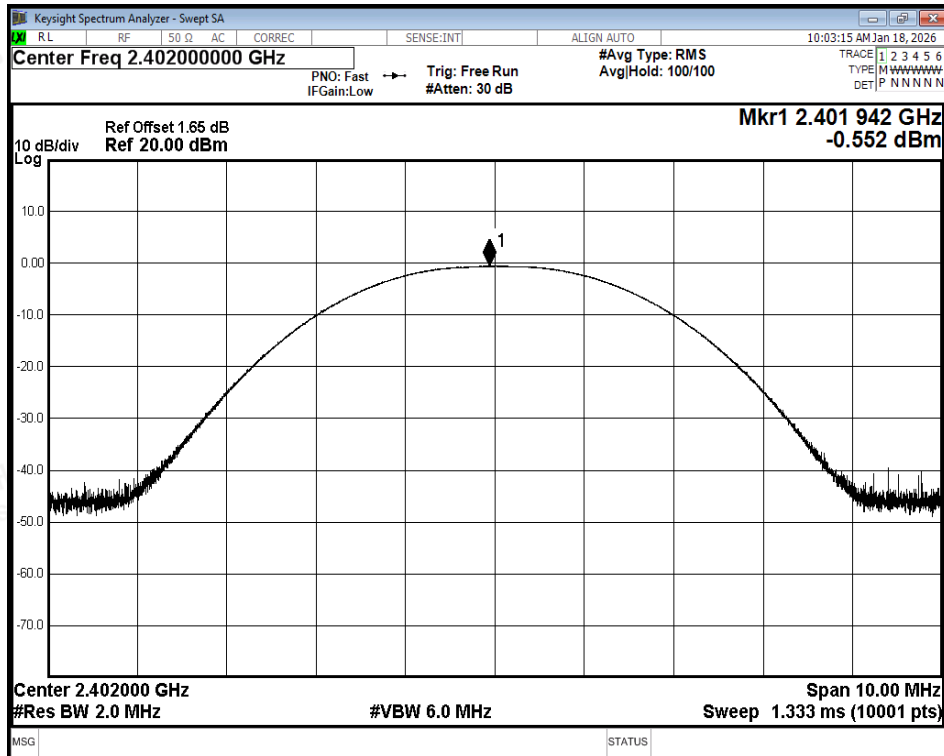


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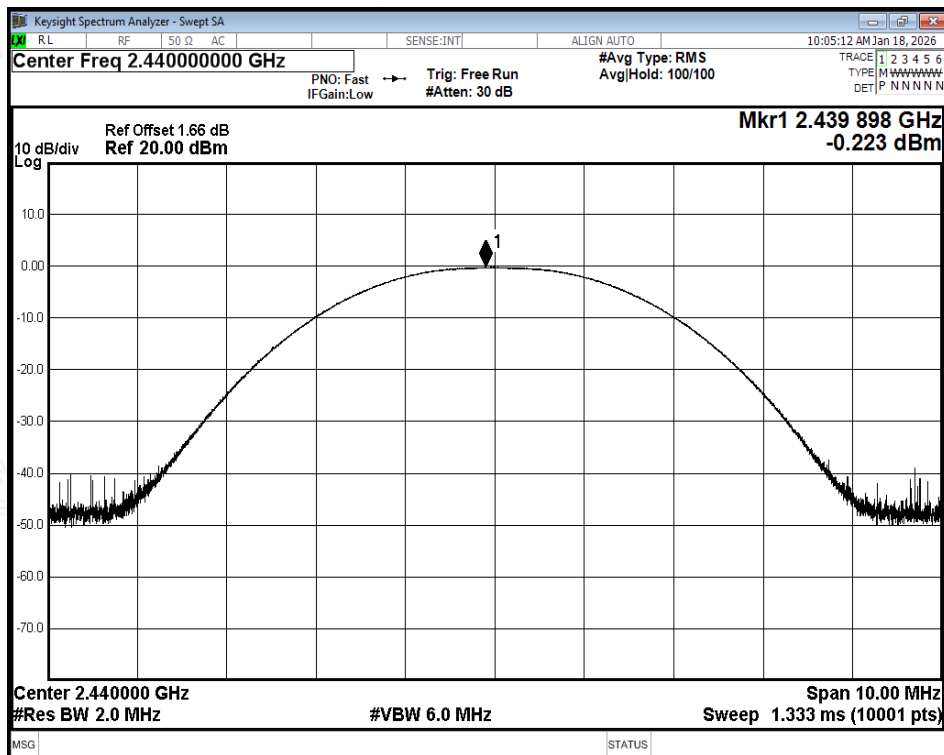
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Peak Power NVNT BLE 1M 2402MHz Ant1



Peak Power NVNT BLE 1M 2440MHz Ant1

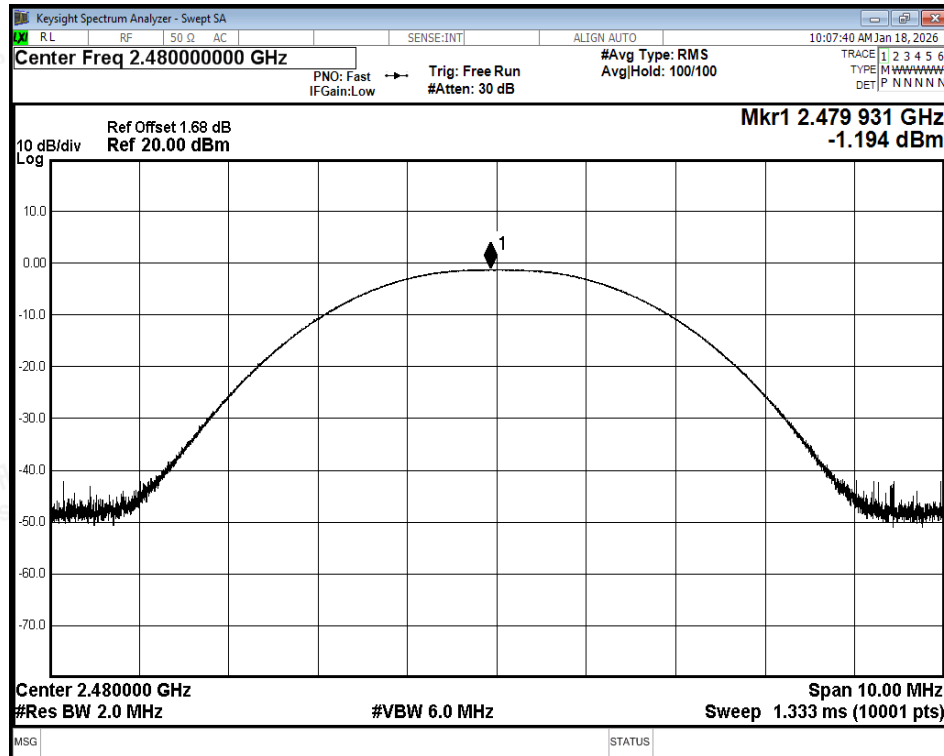


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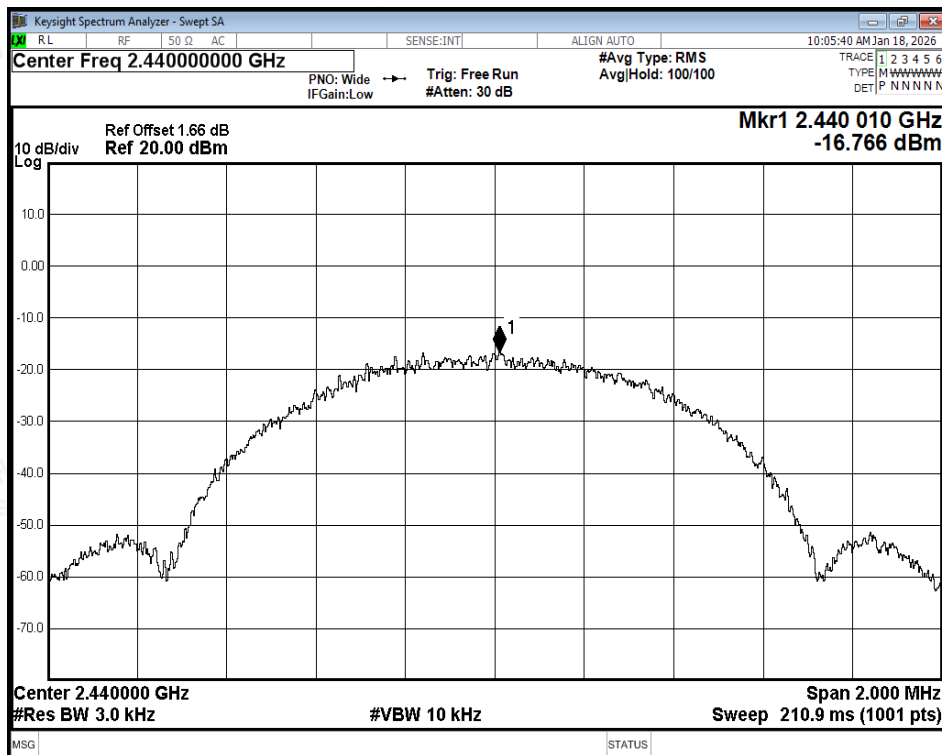
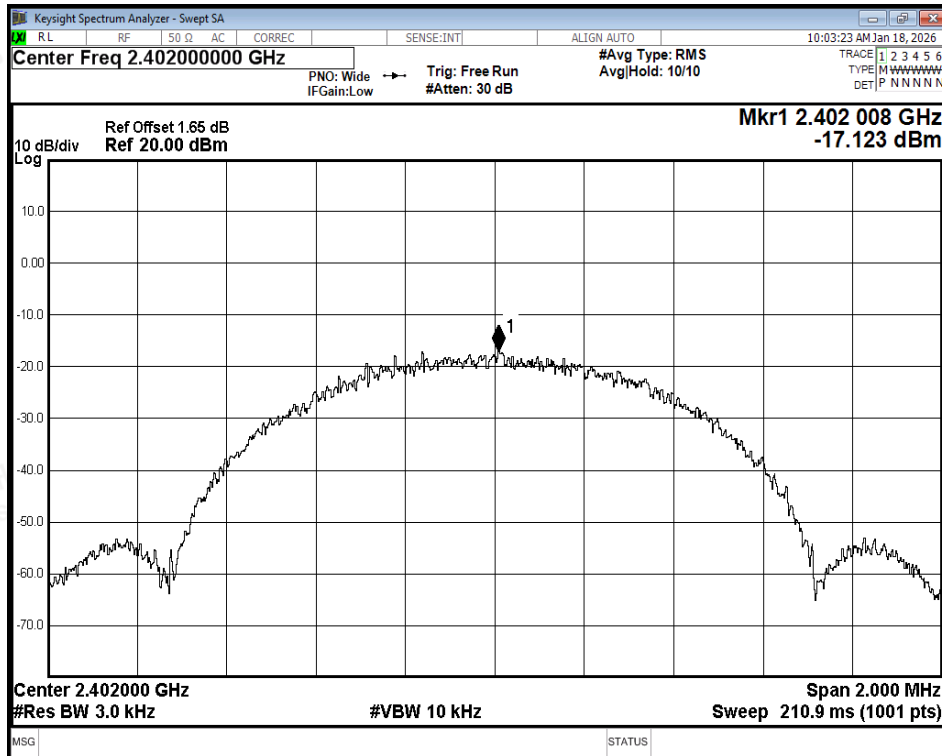




A.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-17.12	8	Pass
NVNT	BLE 1M	2440	Ant1	-16.77	8	Pass
NVNT	BLE 1M	2480	Ant1	-17.62	8	Pass



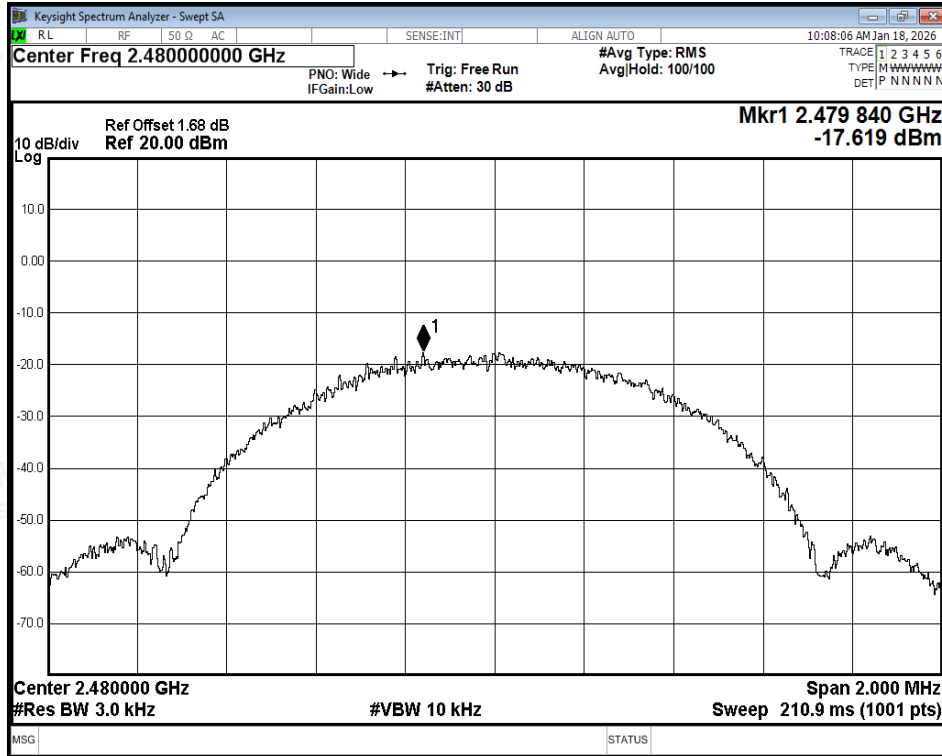


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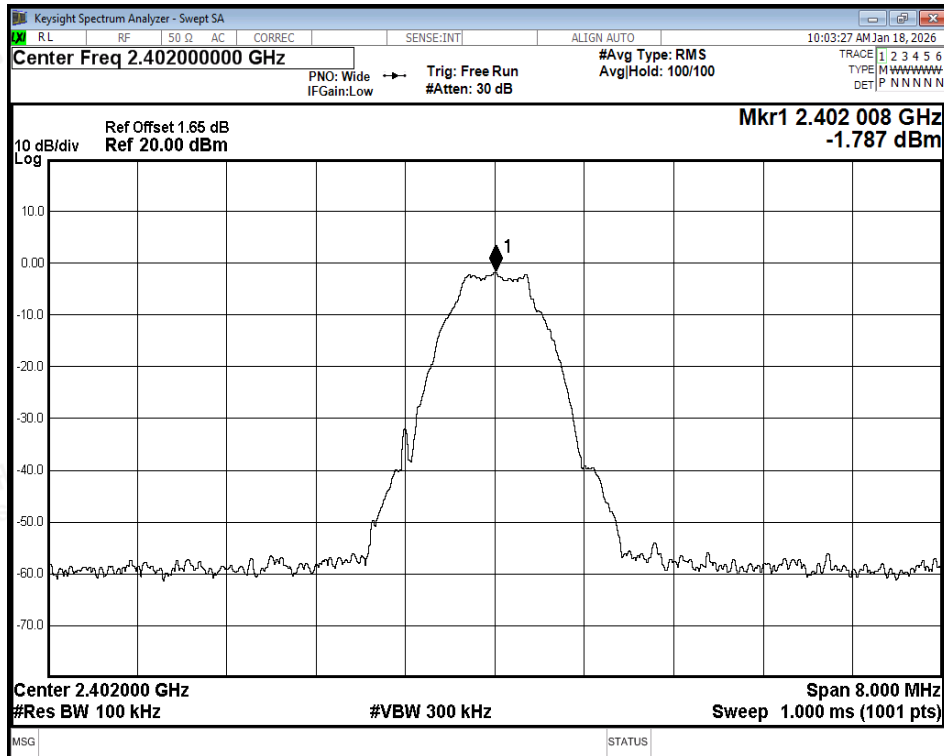
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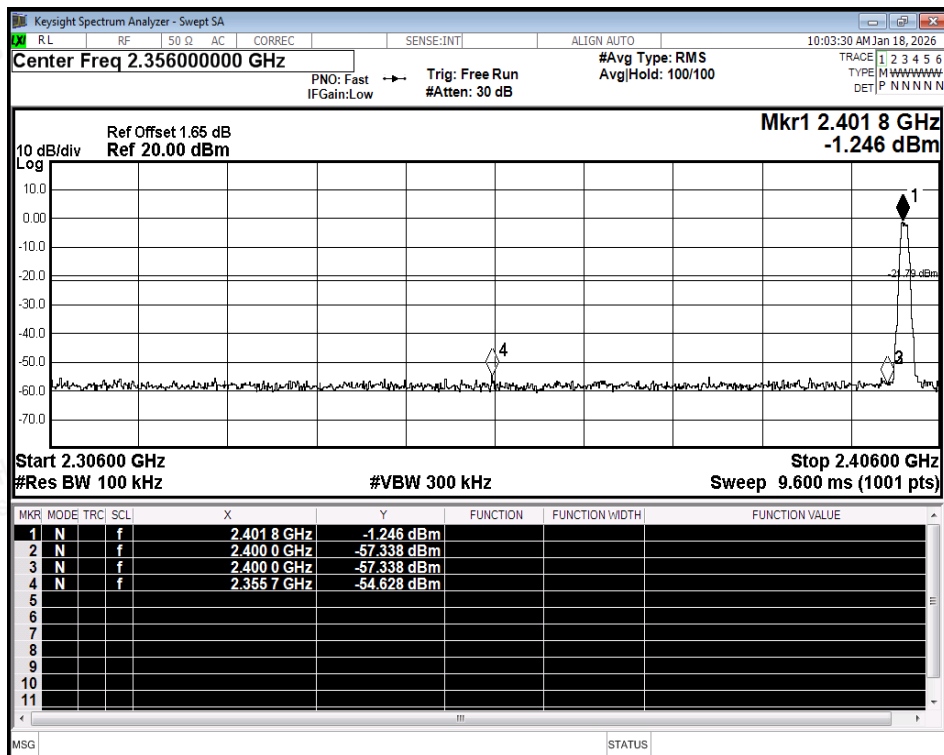
A.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-52.83	-20	Pass
NVNT	BLE 1M	2480	Ant1	-55.97	-20	Pass





Band Edge NVNT BLE 1M 2402MHz Ant1 Ref



Band Edge NVNT BLE 1M 2402MHz Ant1 Emission

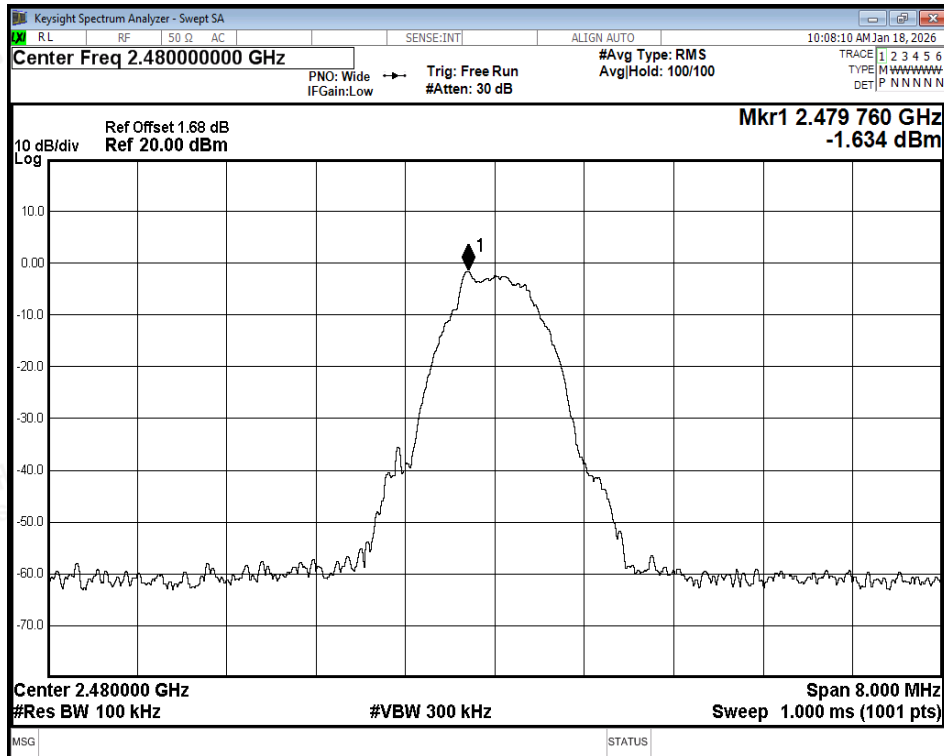


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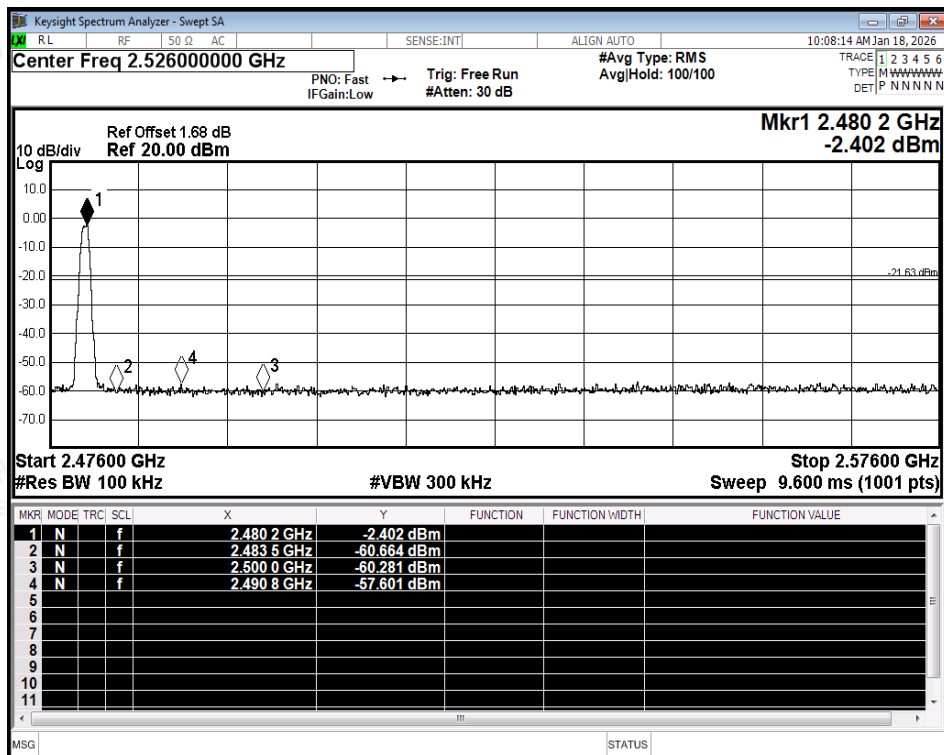
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Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



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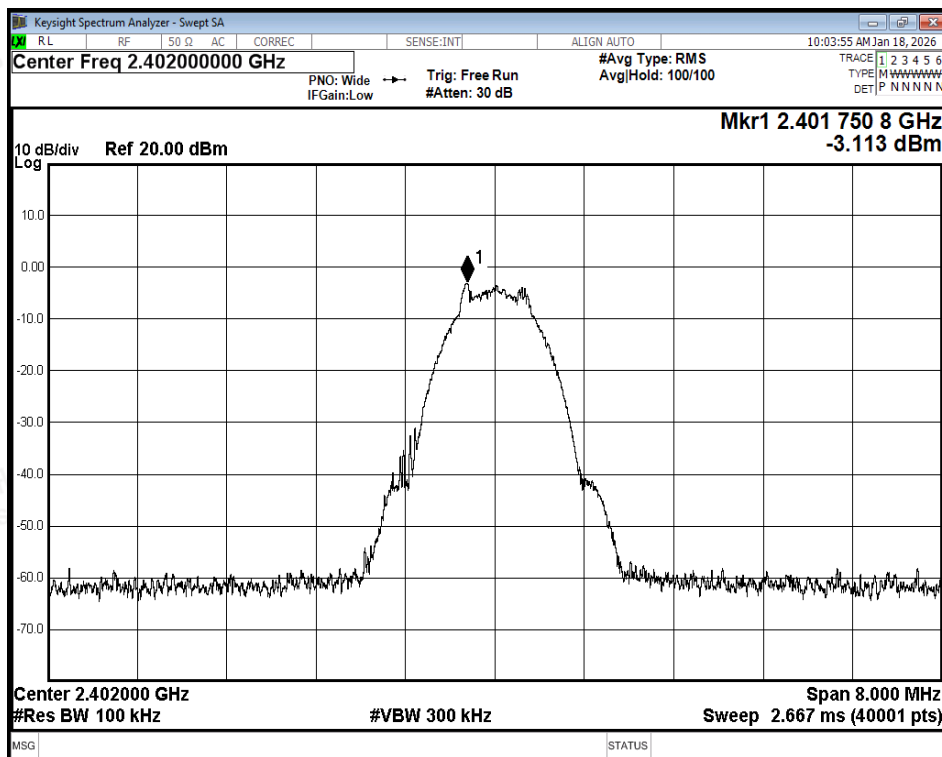
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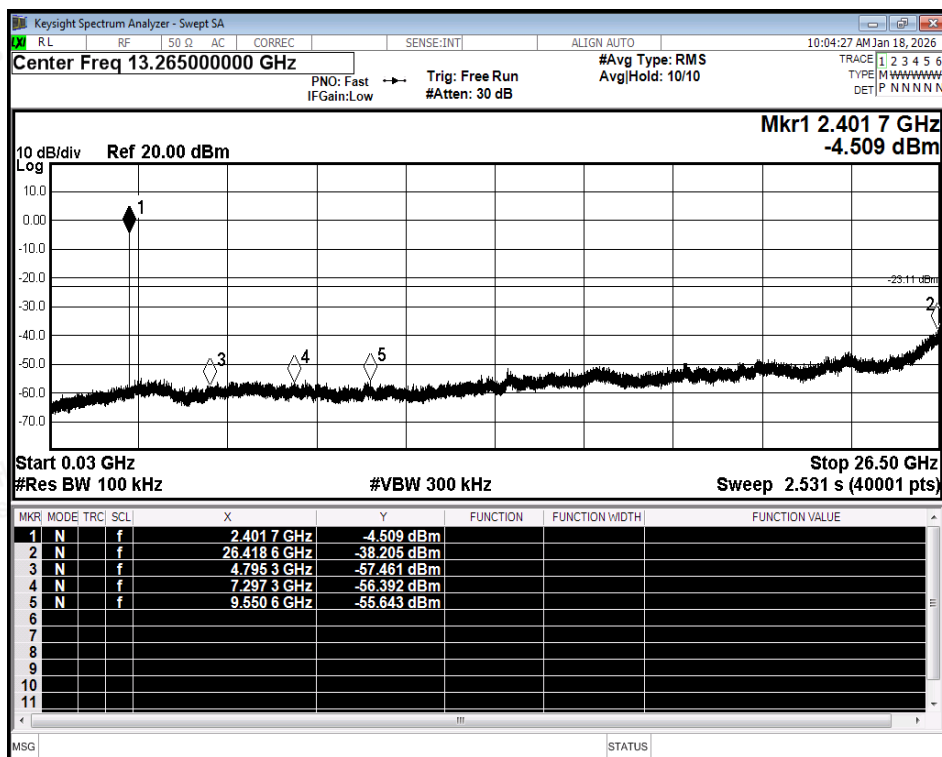
A.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-35.09	-20	Pass
NVNT	BLE 1M	2440	Ant1	-37.97	-20	Pass
NVNT	BLE 1M	2480	Ant1	-36.98	-20	Pass





Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission

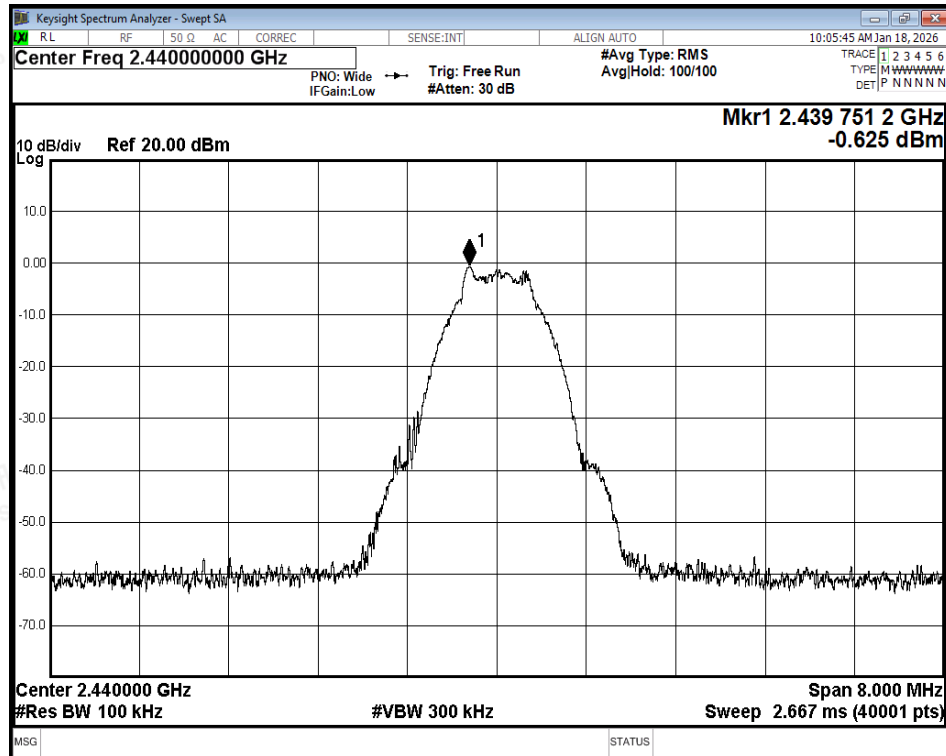


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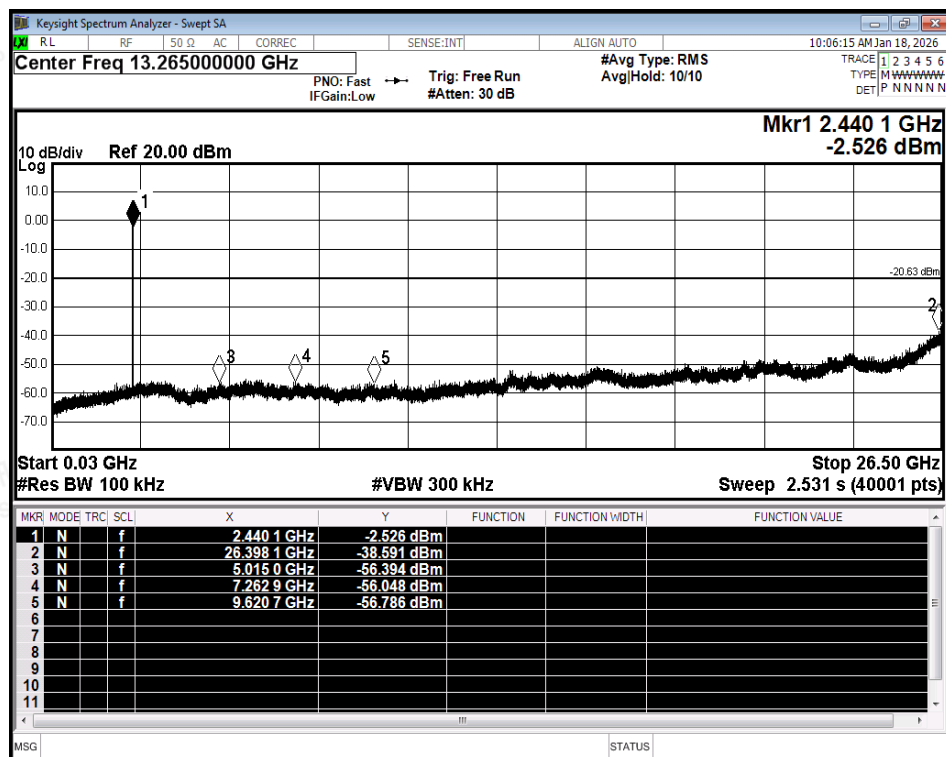
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Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission

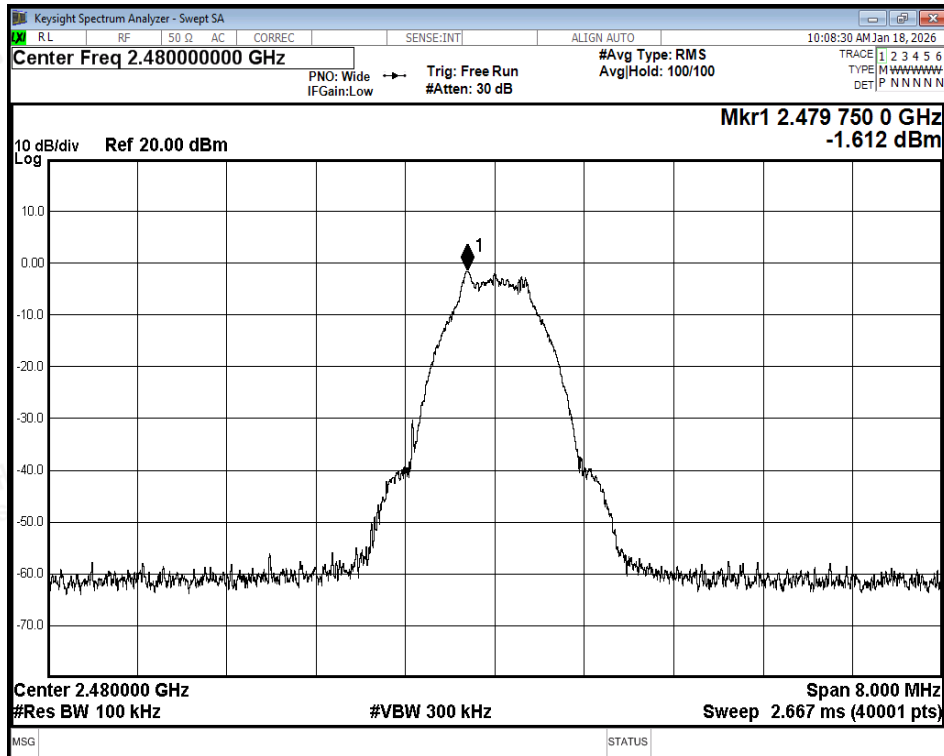


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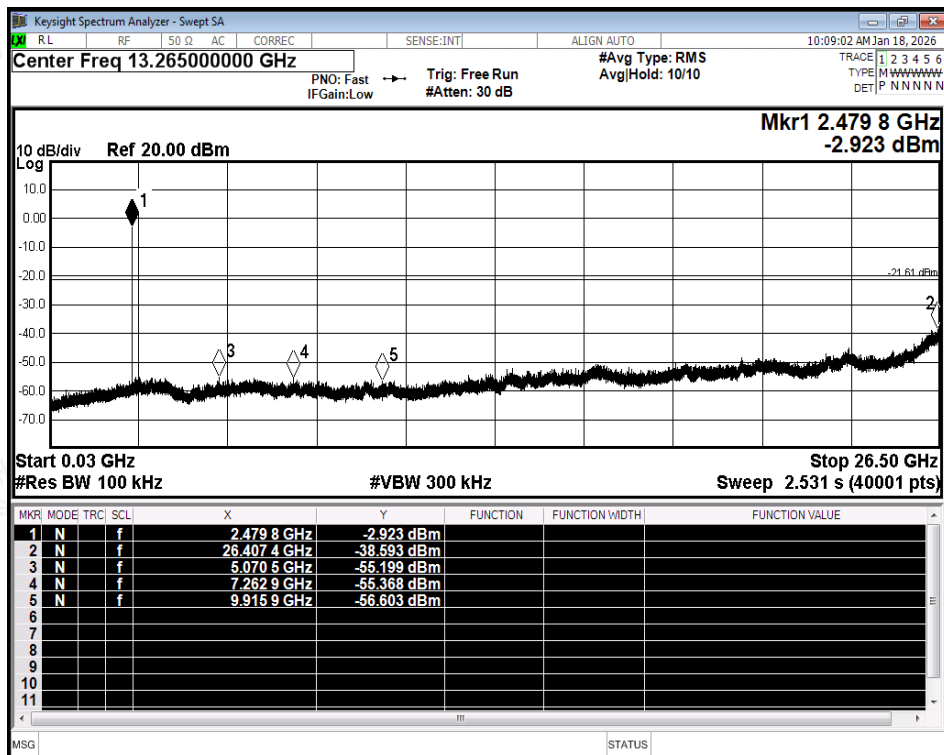
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Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



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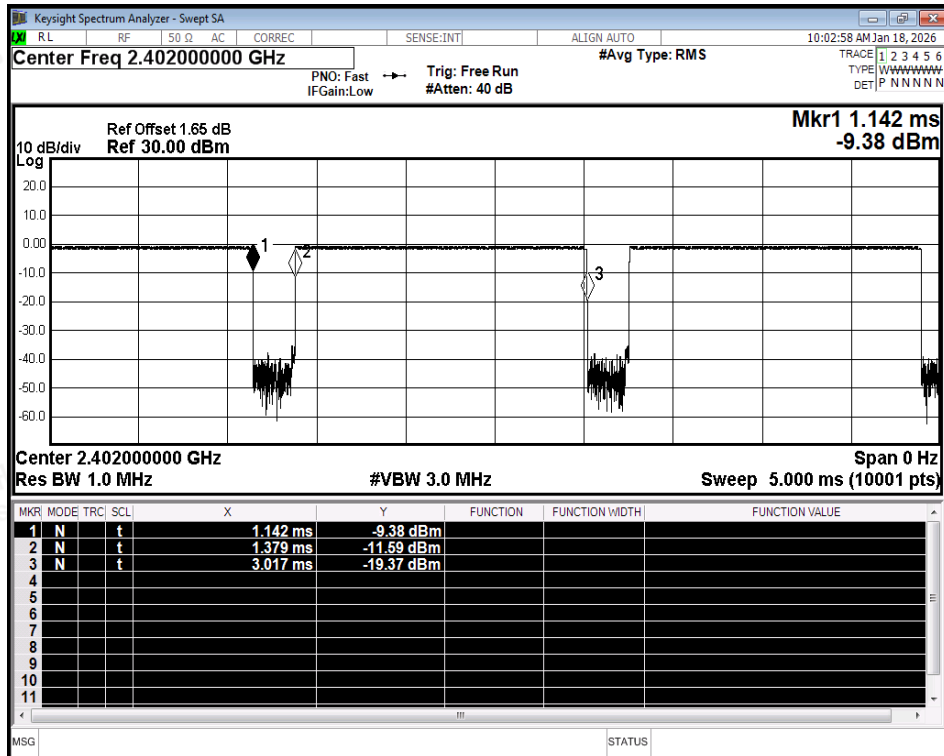
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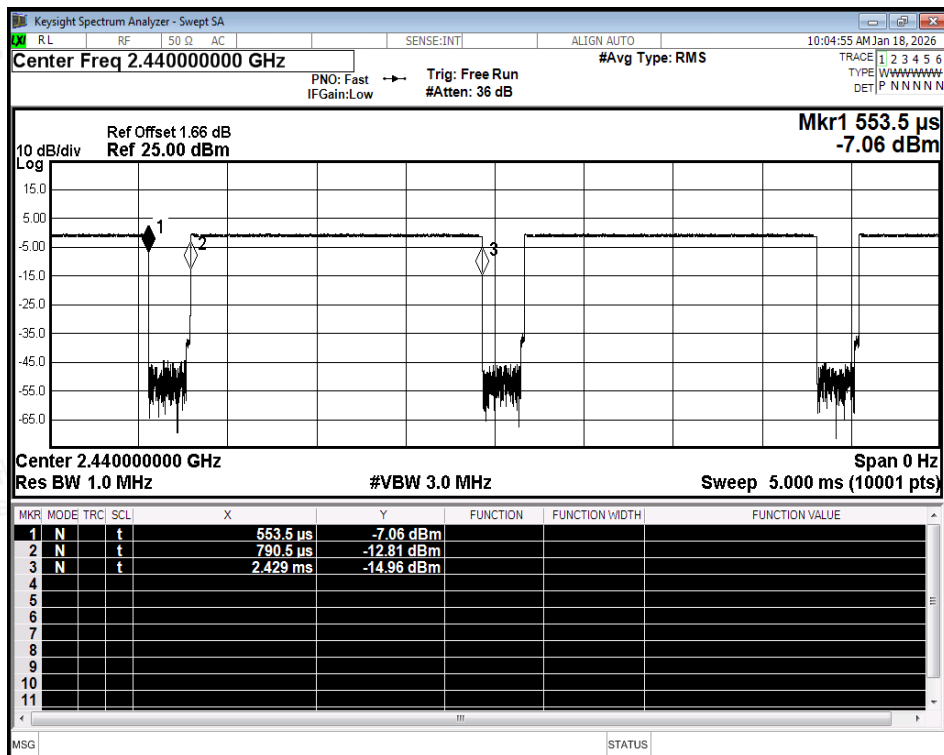
A.6 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant1	87.36	0.59	0.61
NVNT	BLE 1M	2440	Ant1	87.36	0.59	0.61
NVNT	BLE 1M	2480	Ant1	87.36	0.59	0.61





Duty Cycle NVNT BLE 1M 2402MHz Ant1



Duty Cycle NVNT BLE 1M 2440MHz Ant1

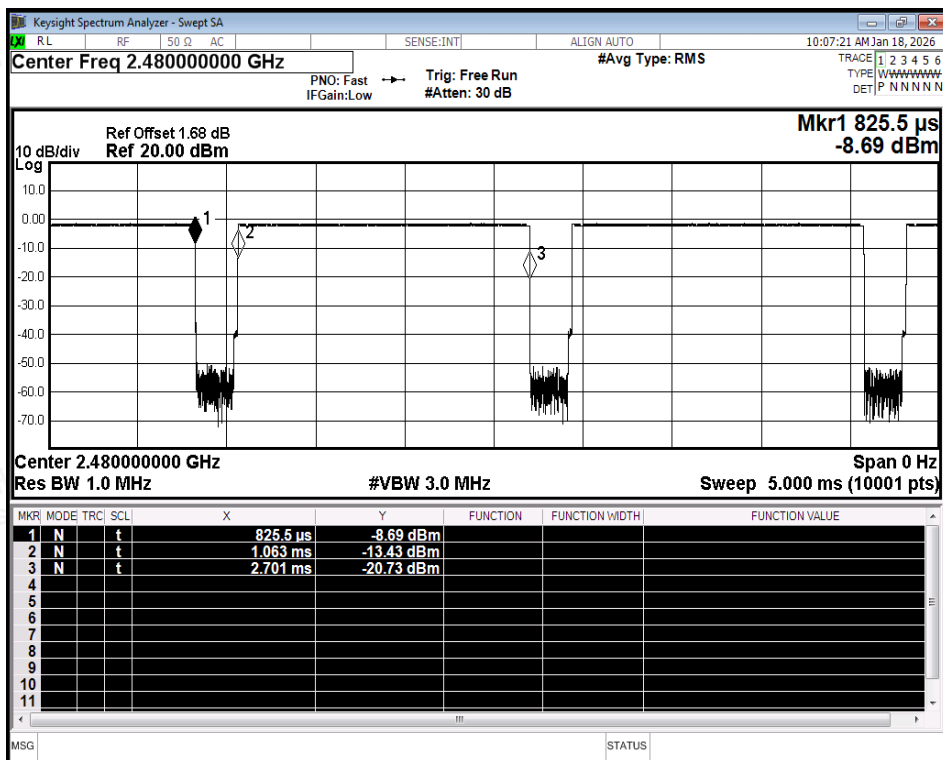


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Duty Cycle NVNT BLE 1M 2480MHz Ant1



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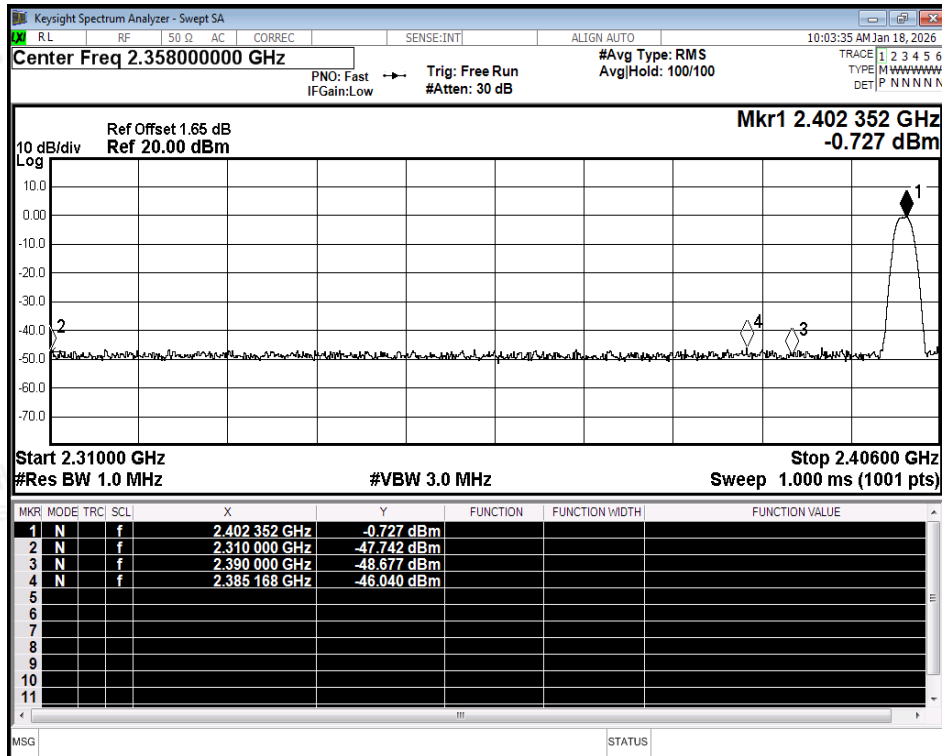
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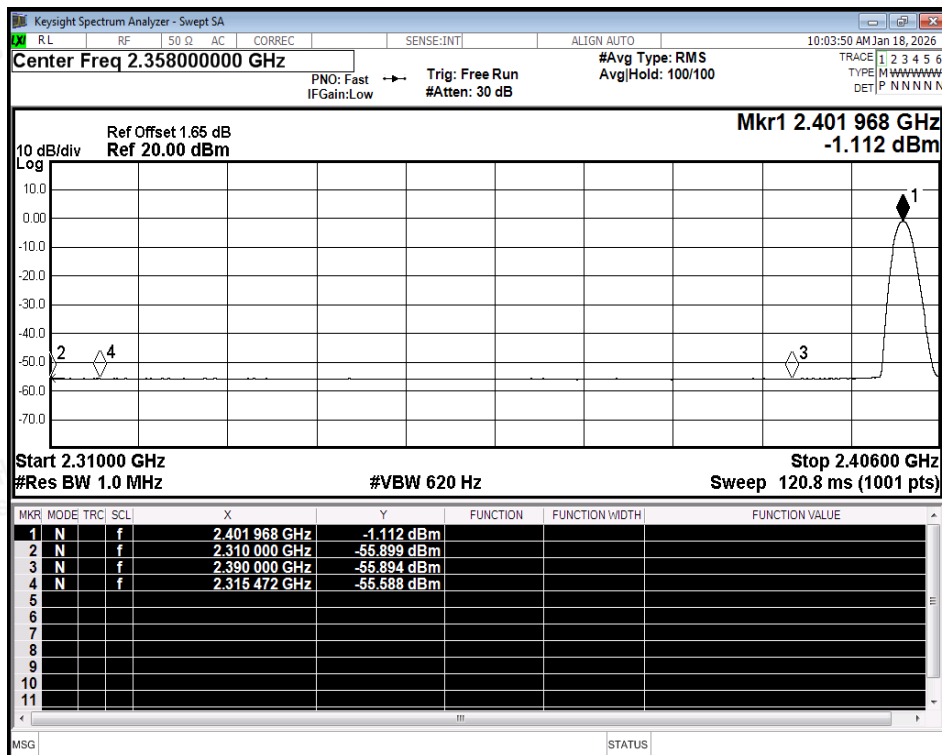
A.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant1	2310	-47.74	2.499	50.02	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2310	-55.89	2.499	41.87	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2385.168	-46.03	2.499	51.73	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2315.472	-55.58	2.499	42.18	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2390	-48.63	2.499	49.13	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2390	-55.89	2.499	41.87	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-50.11	2.499	47.65	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-56.12	2.499	41.64	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2483.536	-45.33	2.499	52.43	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.512	-56.12	2.499	41.64	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2500	-49.57	2.499	48.19	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2500	-57.82	2.499	39.94	Average	54	Pass





Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2402MHz Ant1 Average

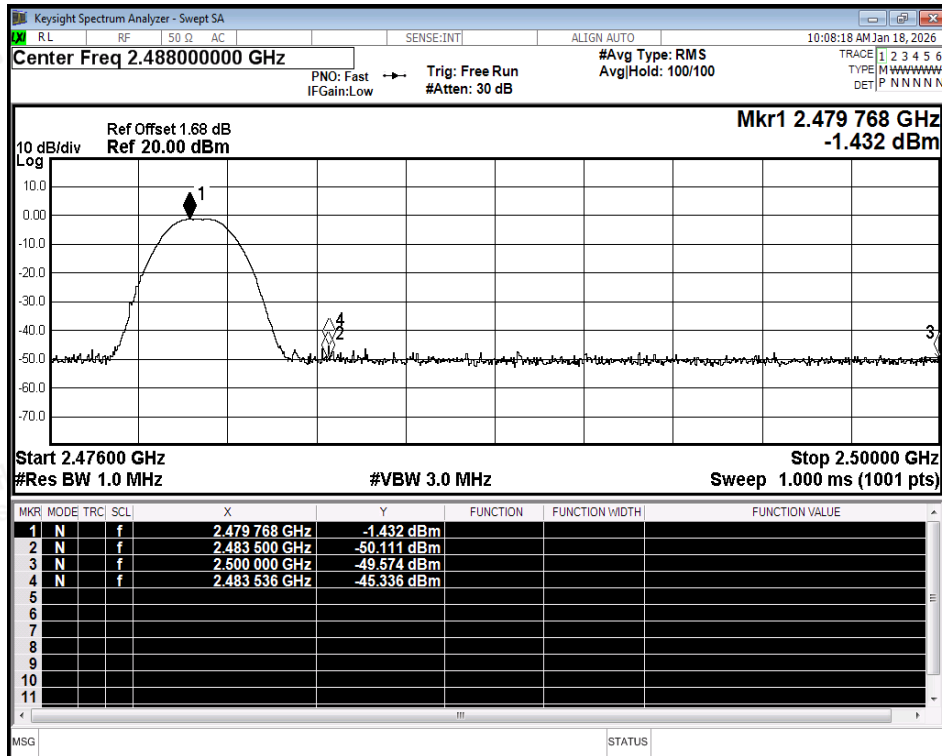


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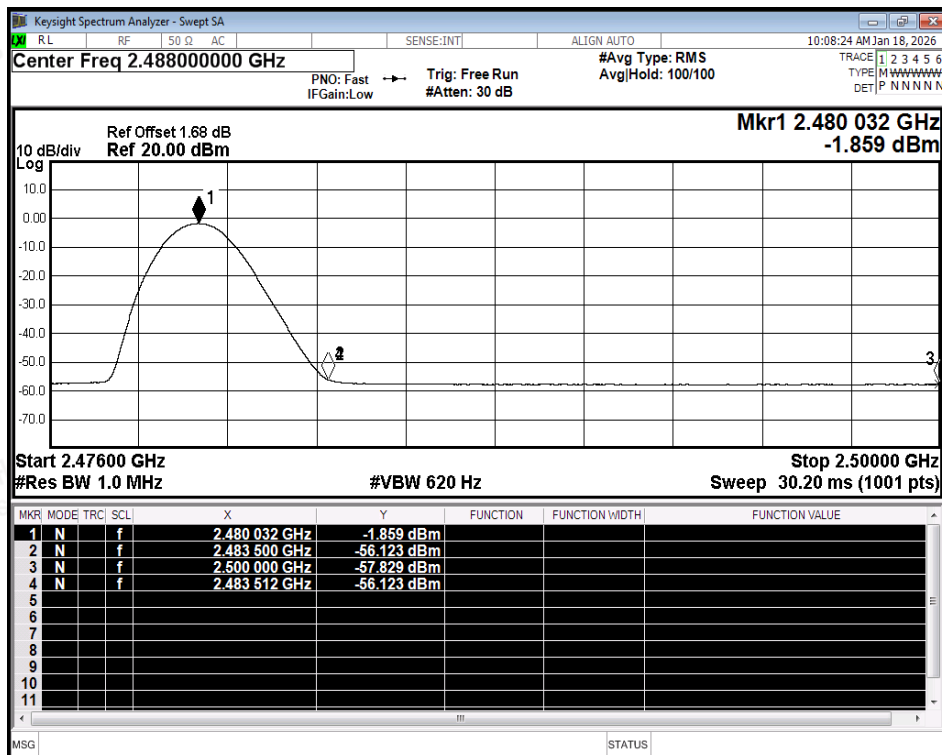
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Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2480MHz Ant1 Average



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