



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: WI-FI HUMIDITY AND TEMPERATURE SENSOR

Test Model: Shelly Plus H&T

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Nick Peng
Supervised by:	 Li Huan





B.1 -6dB Bandwidth

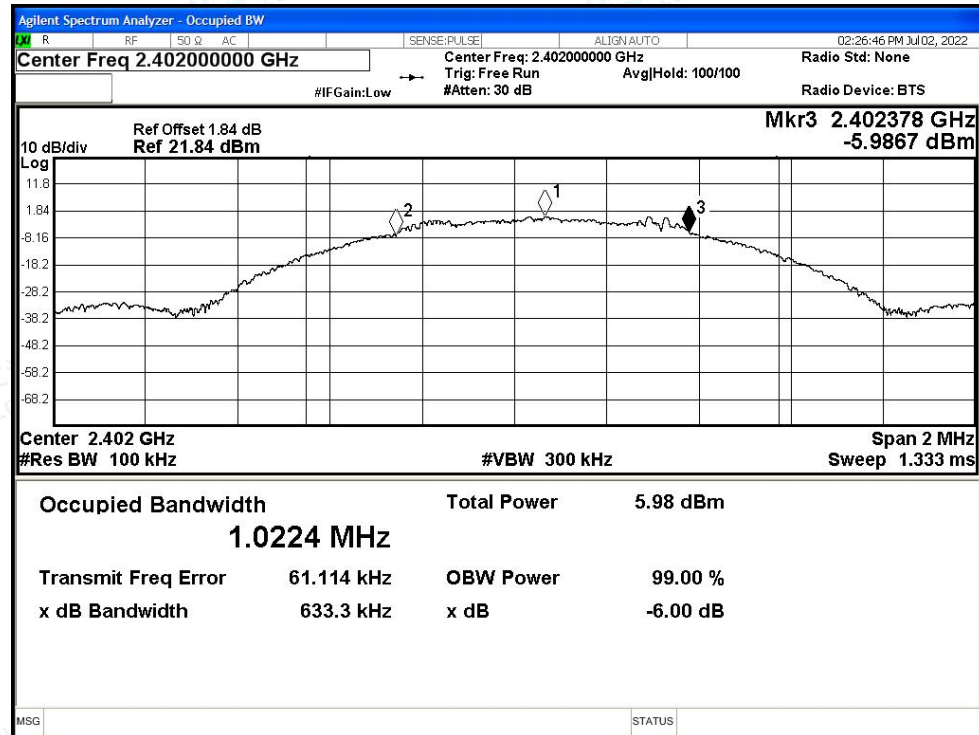
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.633	≥ 0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.631	≥ 0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.642	≥ 0.5	Pass



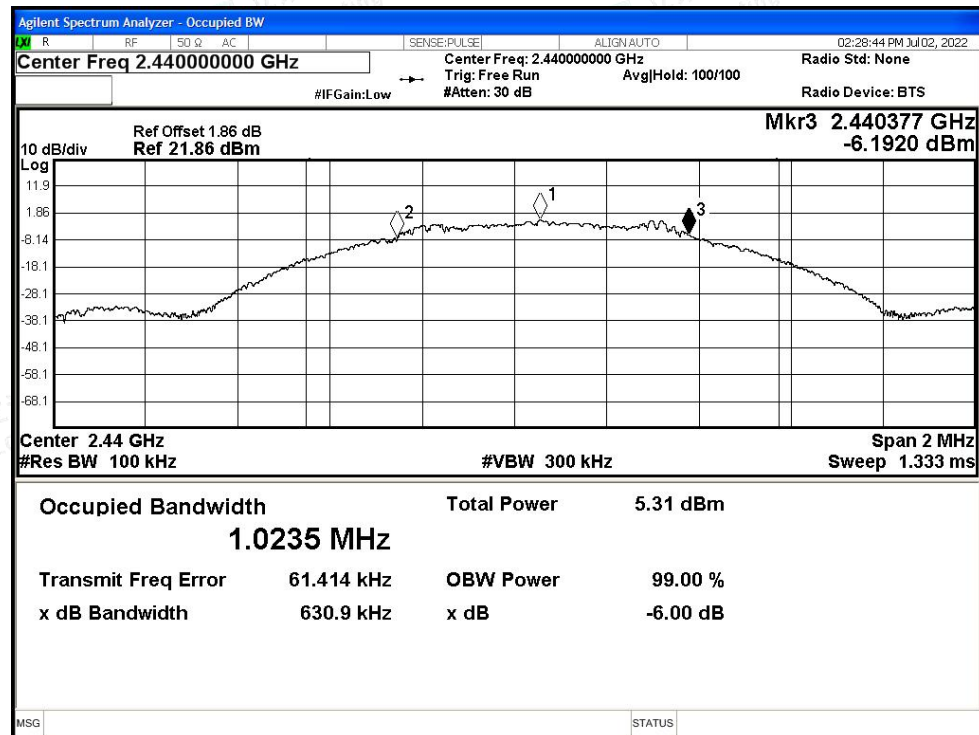


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

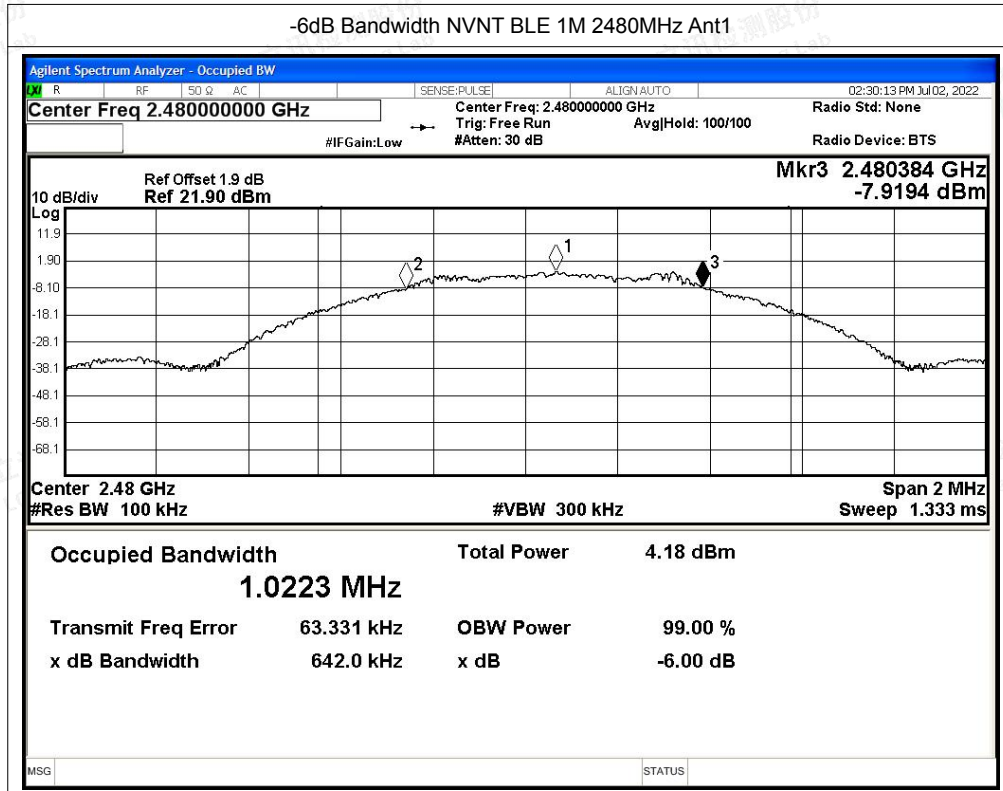


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B.2 Maximum Peak Conducted Output Power

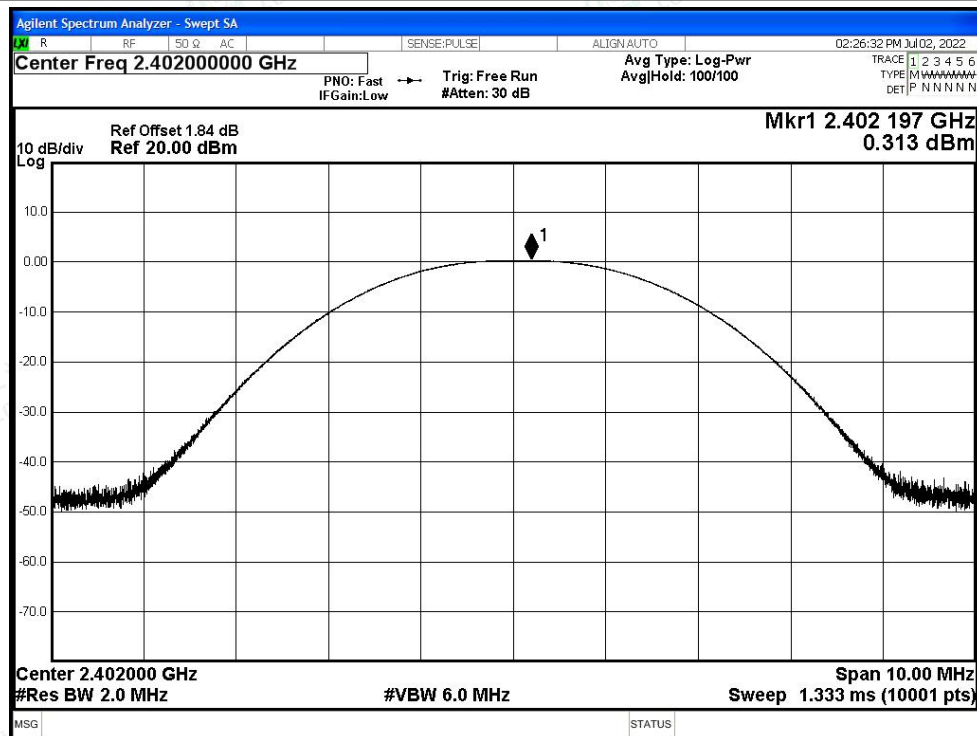
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	0.31	30	Pass
NVNT	BLE 1M	2440	Ant1	-0.41	30	Pass
NVNT	BLE 1M	2480	Ant1	-1.52	30	Pass



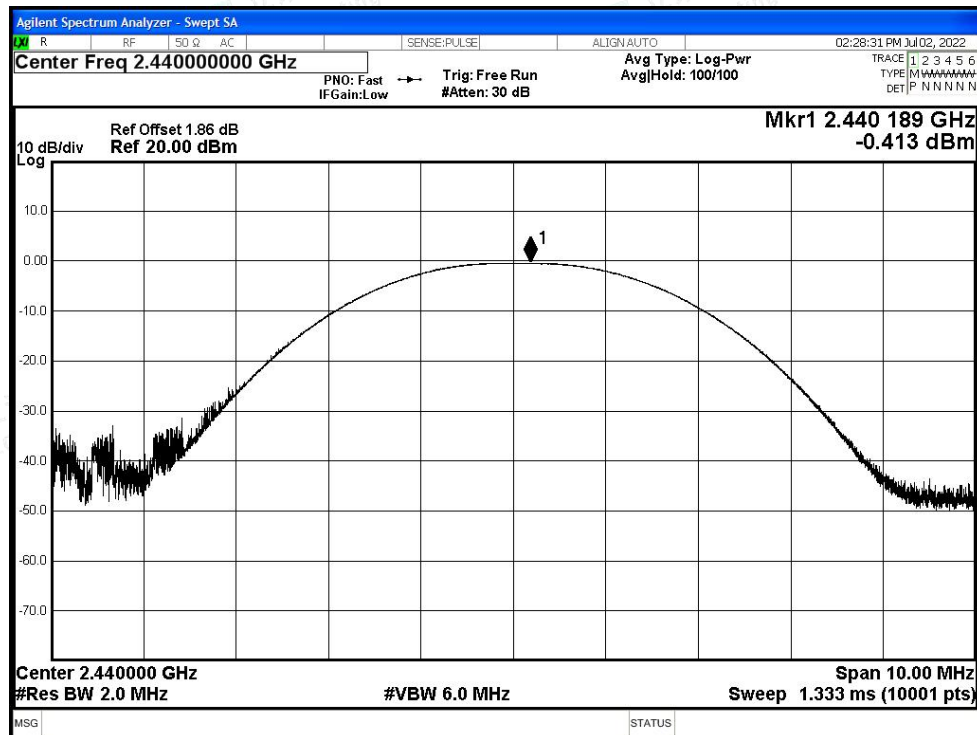


Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1

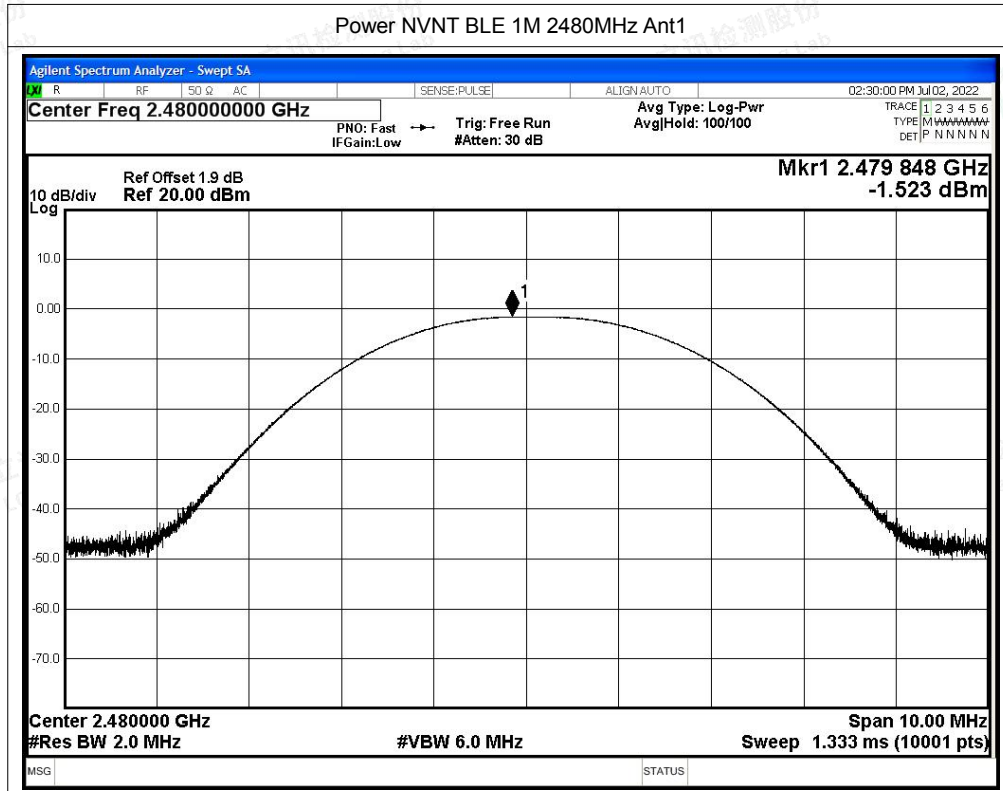


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B.3 Maximum Power Spectral Density Level

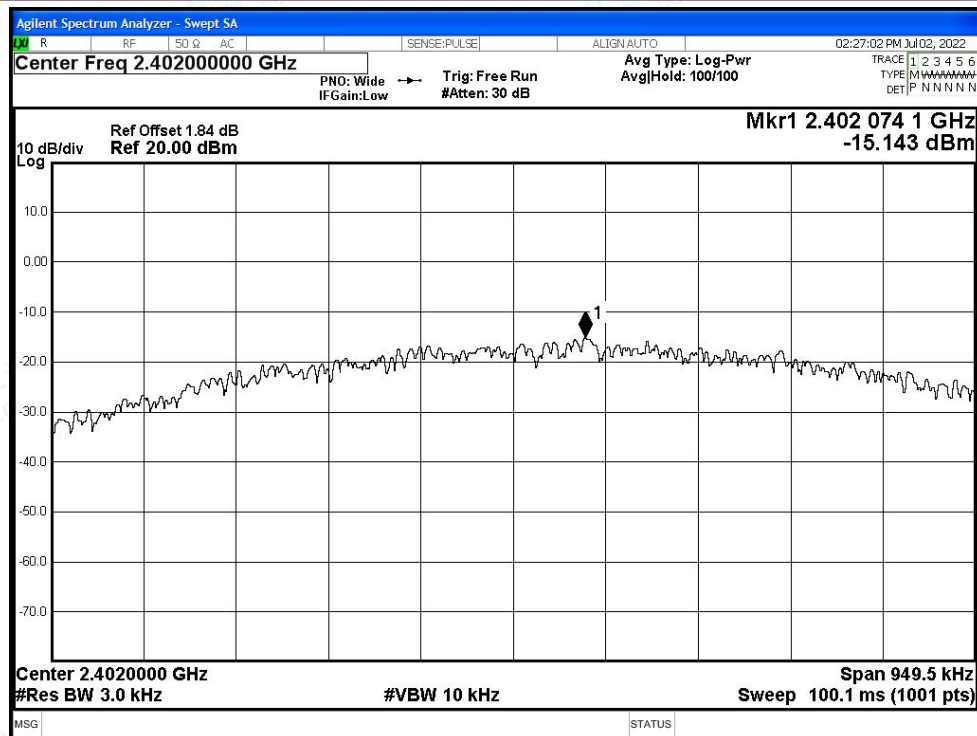
Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-15.14	8	Pass
NVNT	BLE 1M	2440	Ant1	-15.75	8	Pass
NVNT	BLE 1M	2480	Ant1	-16.87	8	Pass



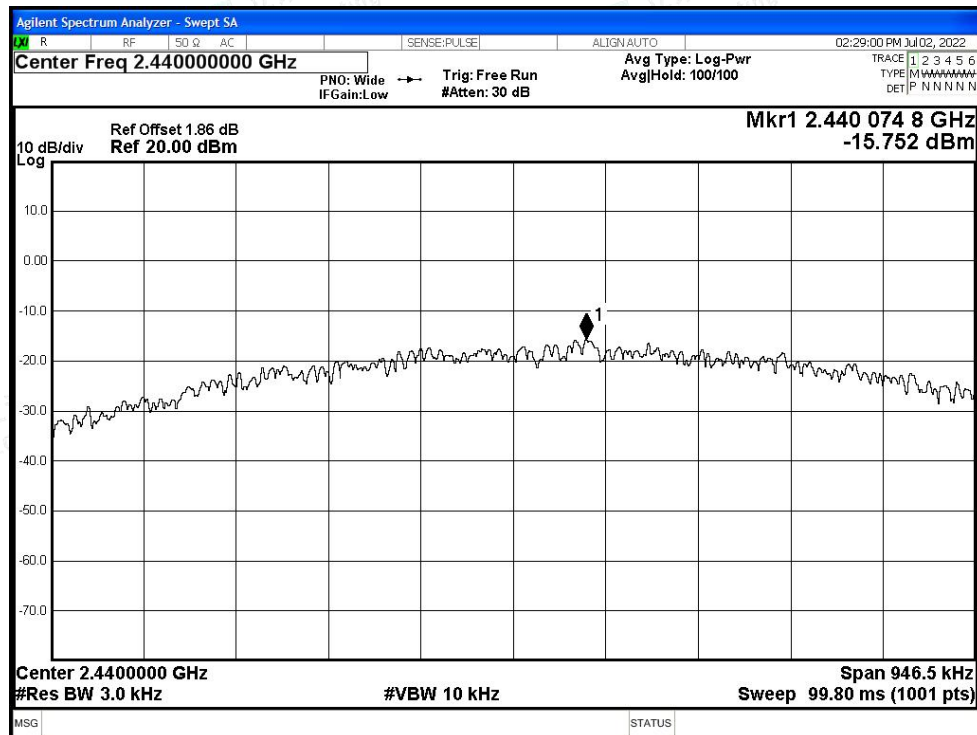


Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1

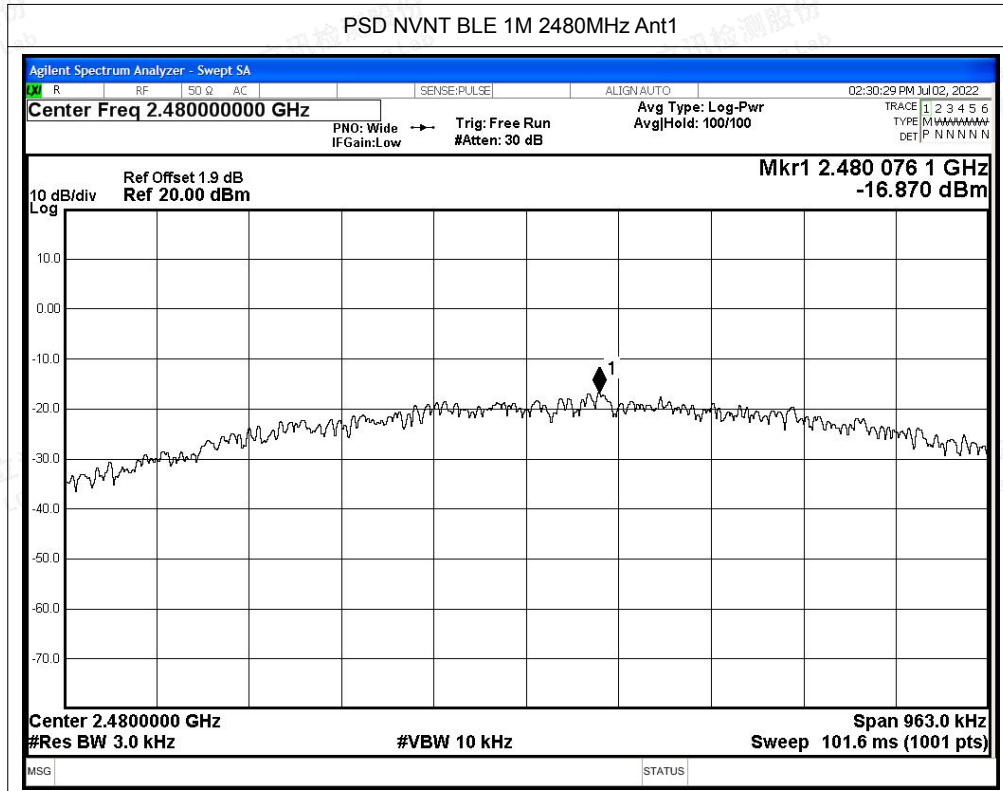


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B.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-54.02	-20	Pass
NVNT	BLE 1M	2480	Ant1	-55.99	-20	Pass

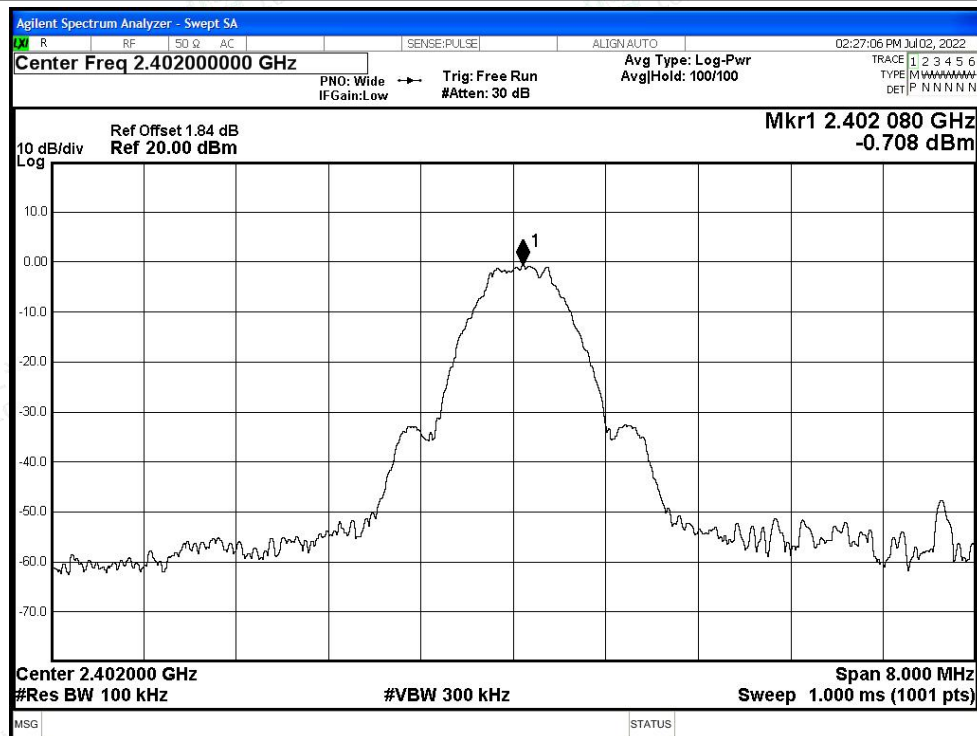


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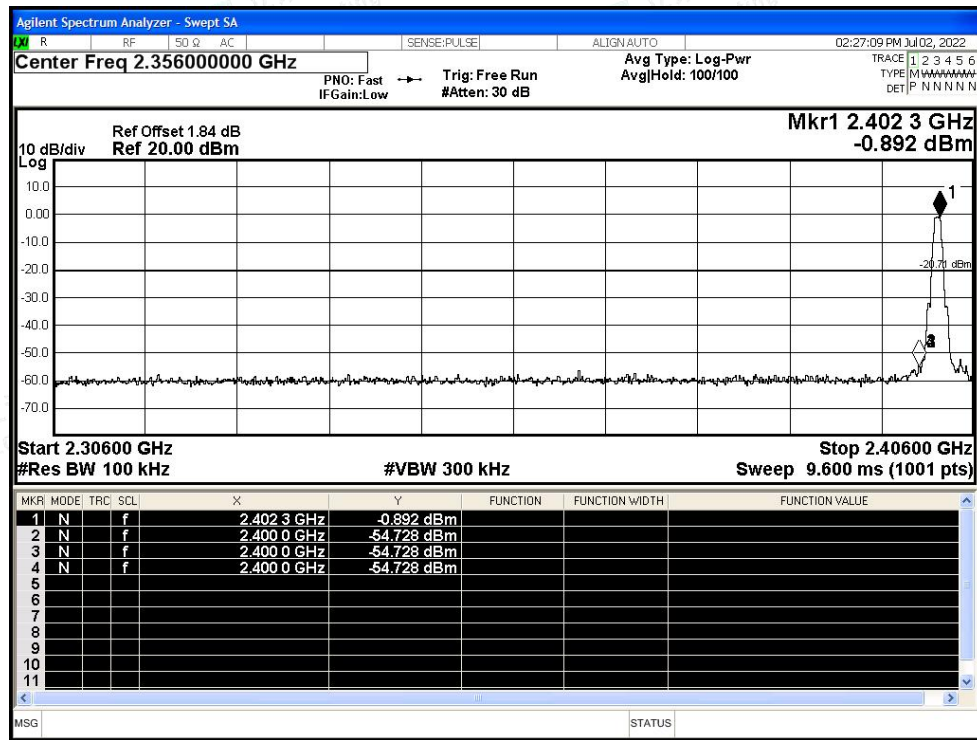


Test Graphs

Band Edge NVNT BLE 1M 2402MHz Ant1 Ref



Band Edge NVNT BLE 1M 2402MHz Ant1 Emission

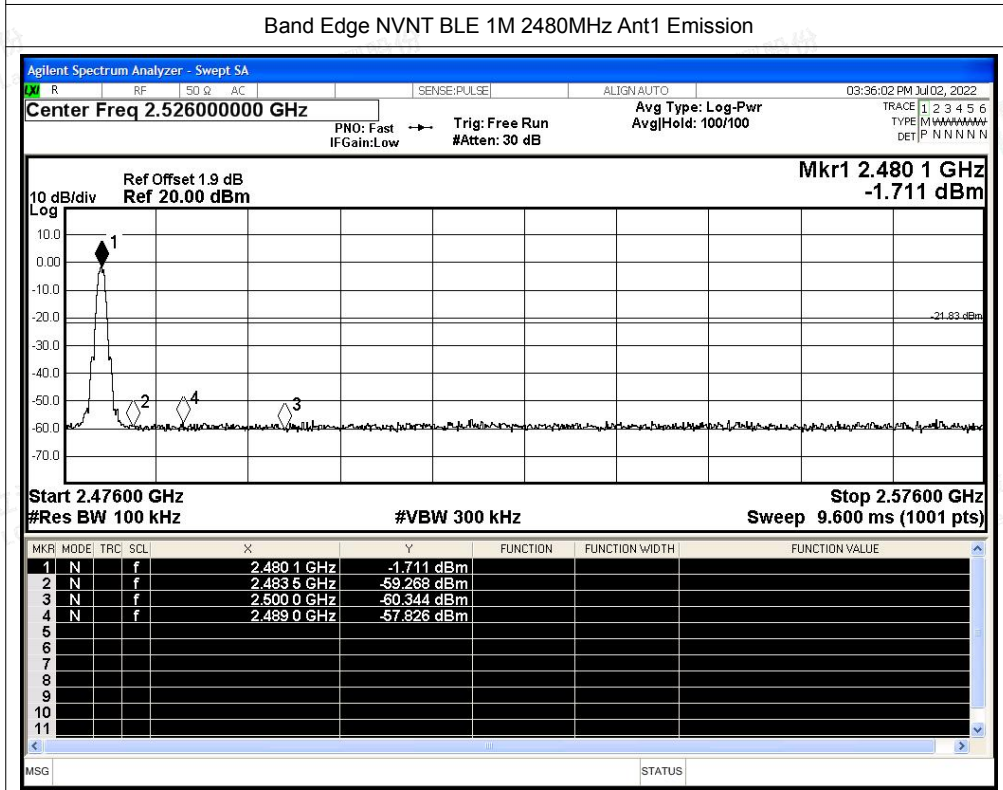
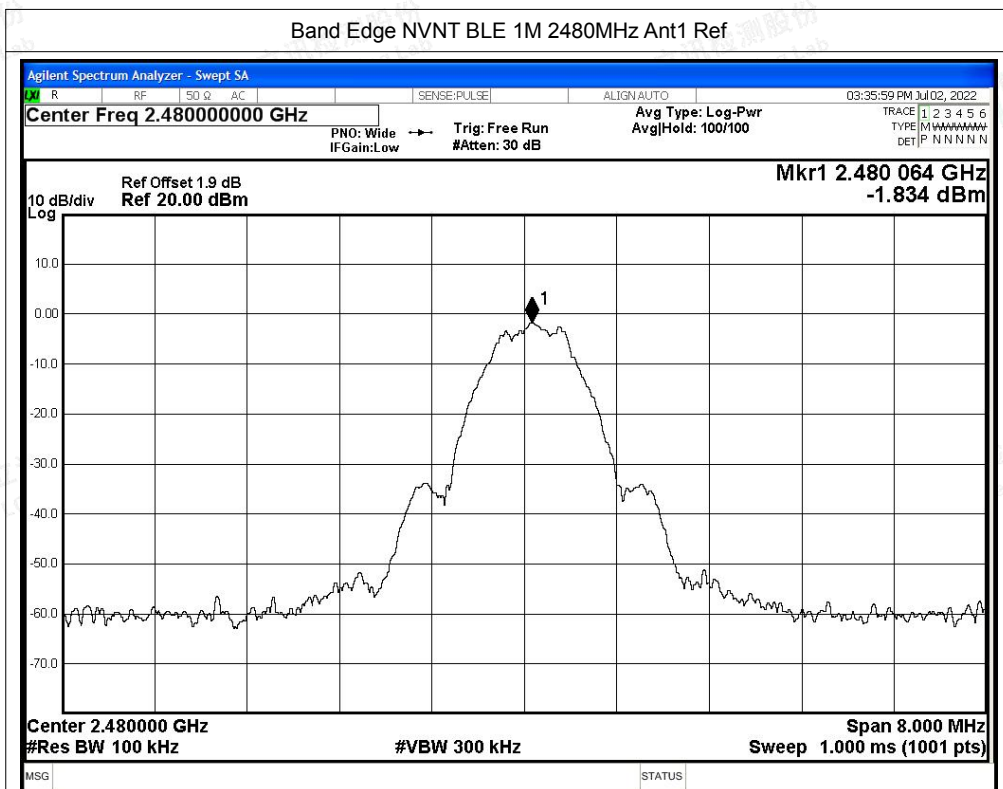


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B.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-45.7	-20	Pass
NVNT	BLE 1M	2440	Ant1	-46.22	-20	Pass
NVNT	BLE 1M	2480	Ant1	-45.85	-20	Pass

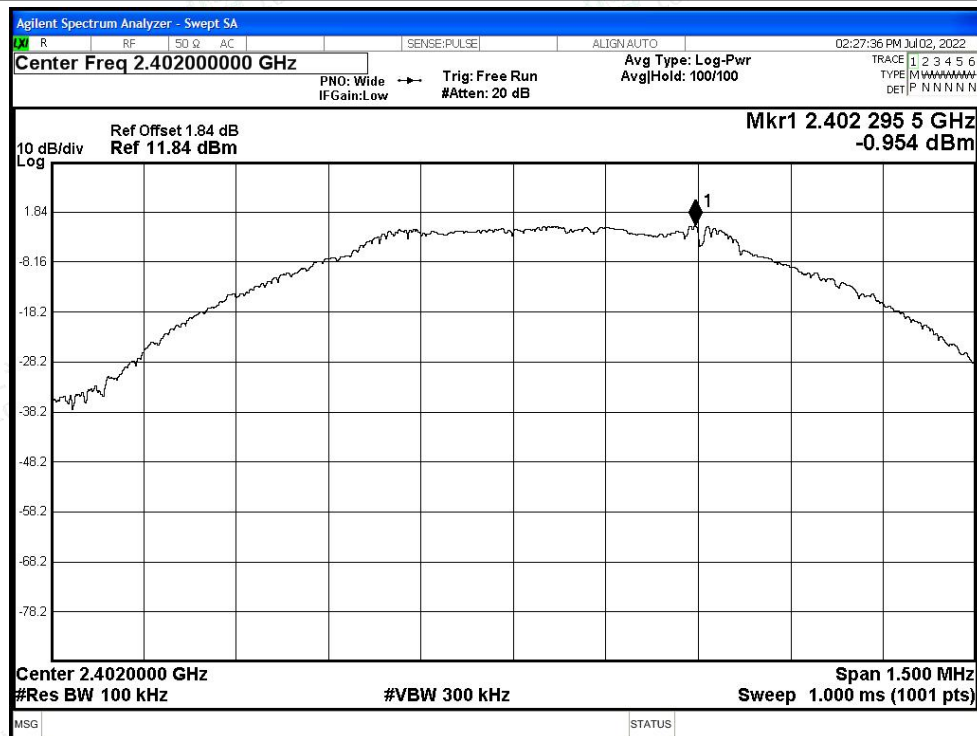


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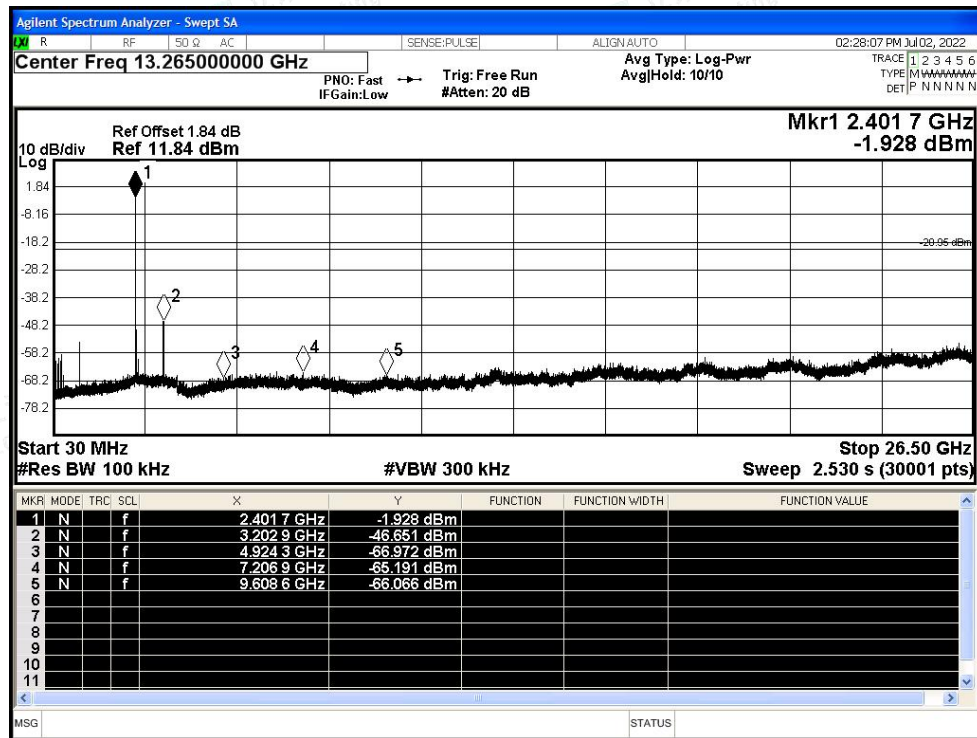


Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

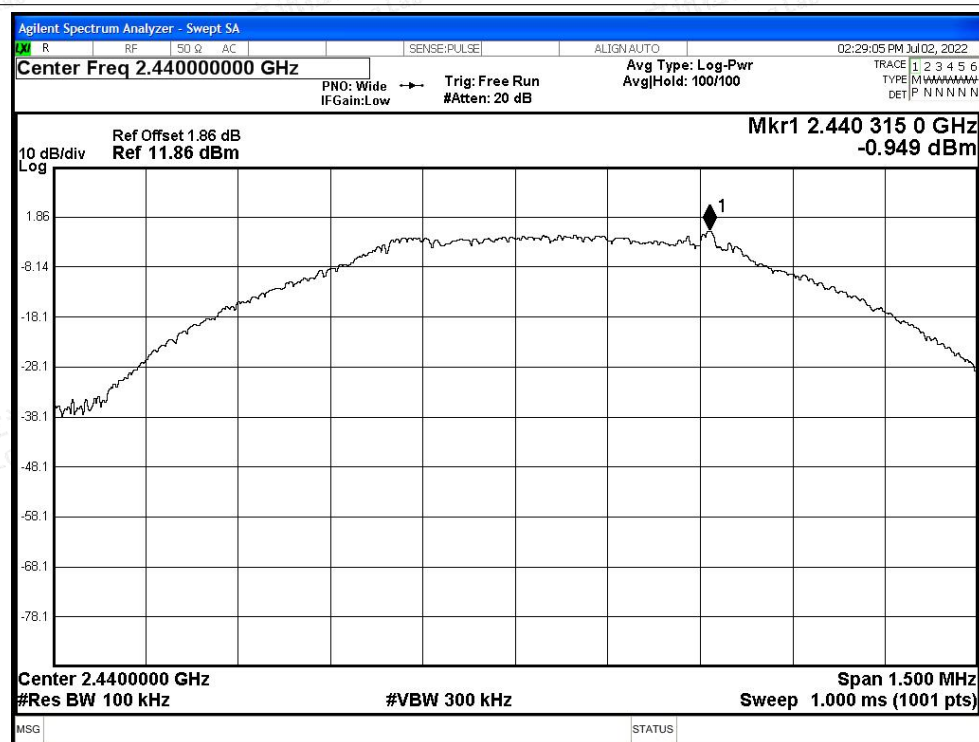
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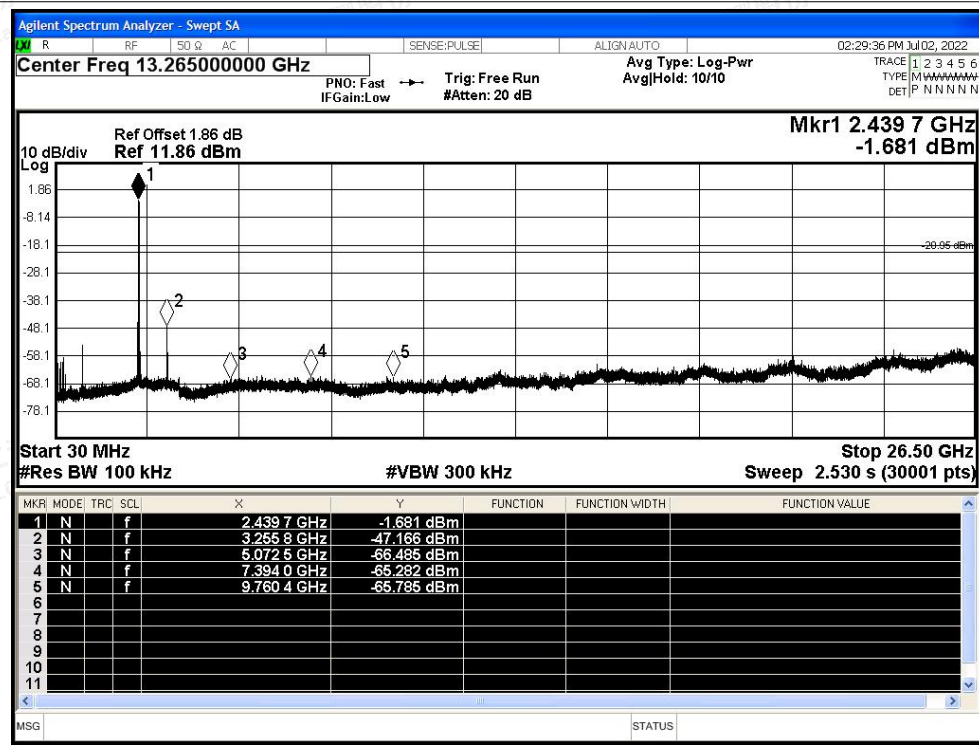
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Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



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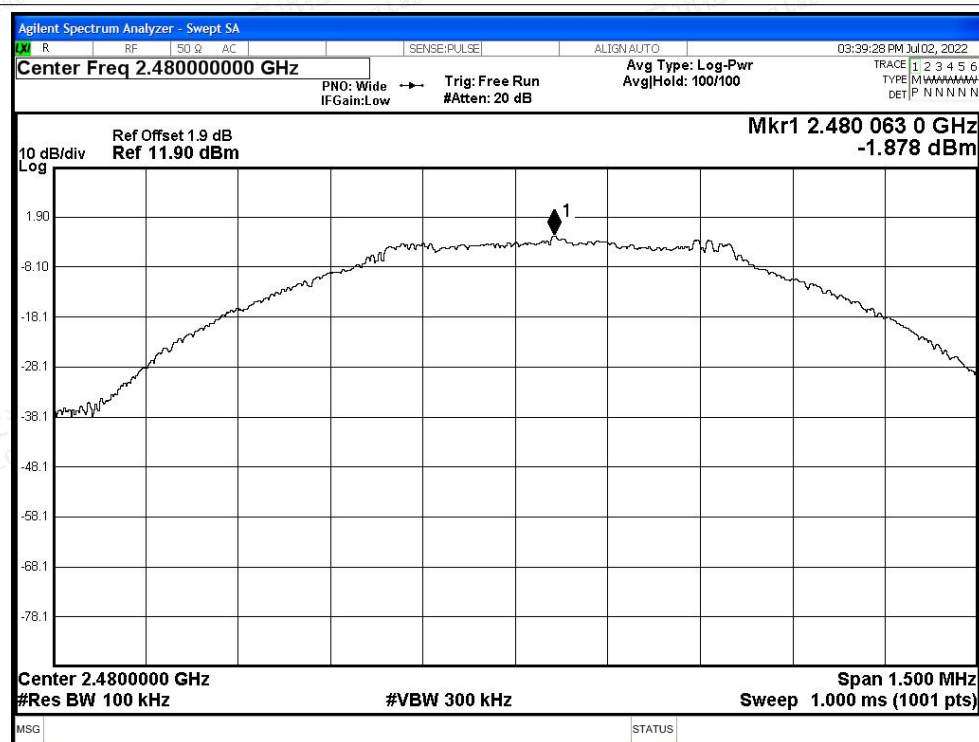
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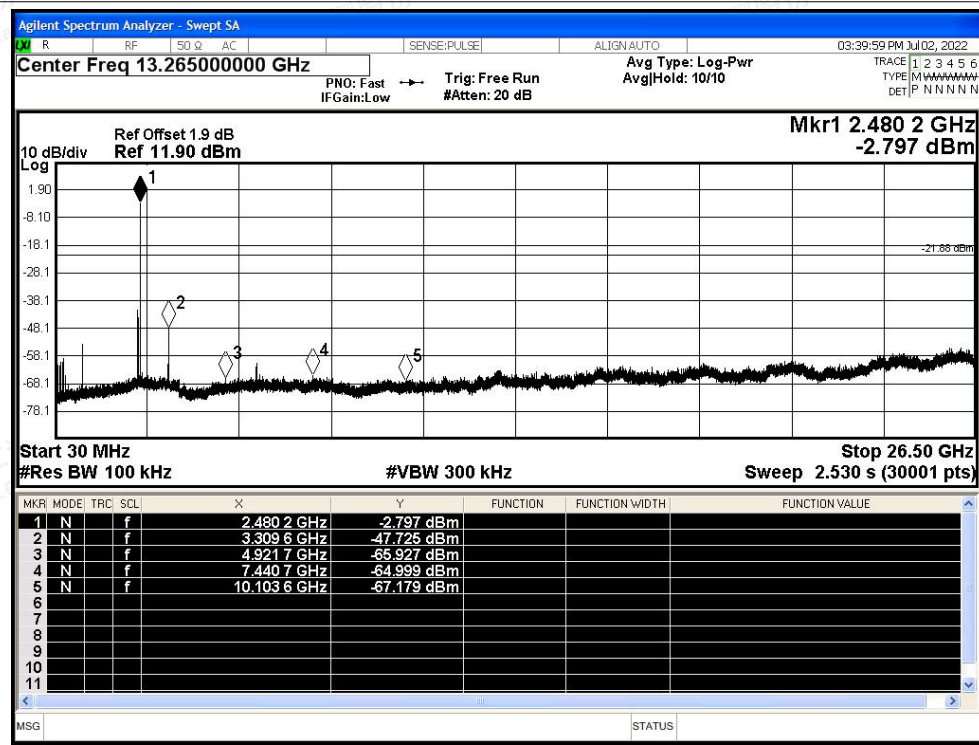
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Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



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B.6 Duty Cycle

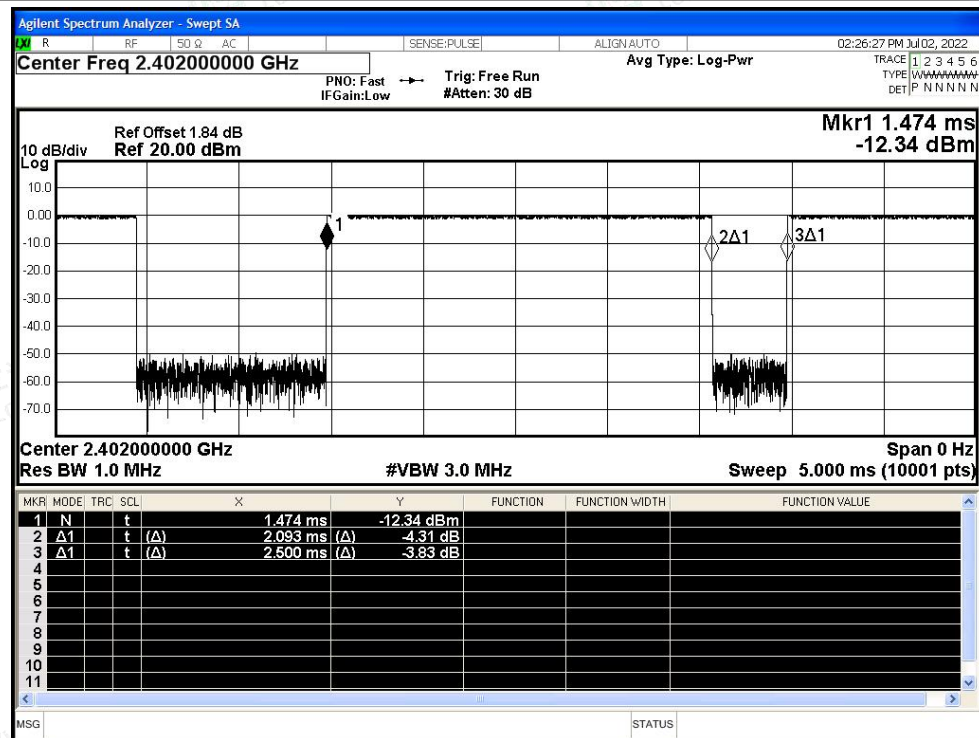
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant1	83.7	0.77	0.48
NVNT	BLE 1M	2440	Ant1	83.7	0.77	0.48
NVNT	BLE 1M	2480	Ant1	83.72	0.77	0



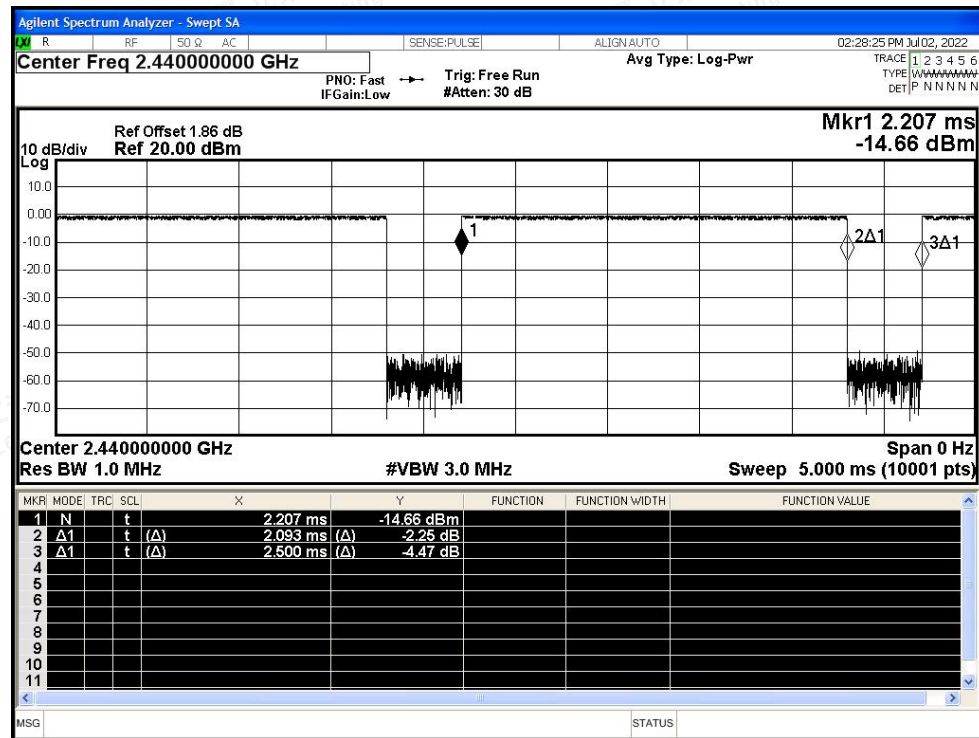


Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant1



Duty Cycle NVNT BLE 1M 2440MHz Ant1

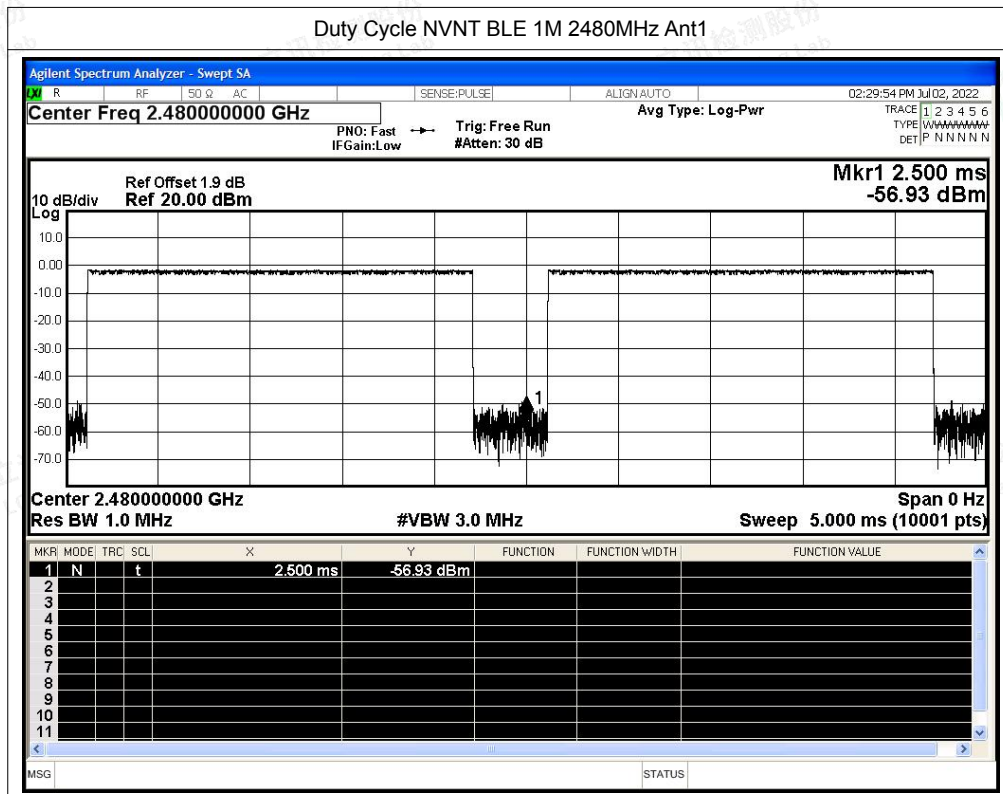


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B.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant1	2310	-51.39	2	45.87	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2310	-60.24	2	37.02	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2384.112	-47.28	2	49.98	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2373.936	-59.66	2	37.6	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2390	-48.23	2	49.03	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2390	-59.8	2	37.46	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-50.22	2	47.04	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-59.49	2	37.77	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2490.16	-46.68	2	50.58	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2498.944	-59.39	2	37.87	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2500	-49.19	2	48.07	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2500	-59.68	2	37.58	Average	54	Pass



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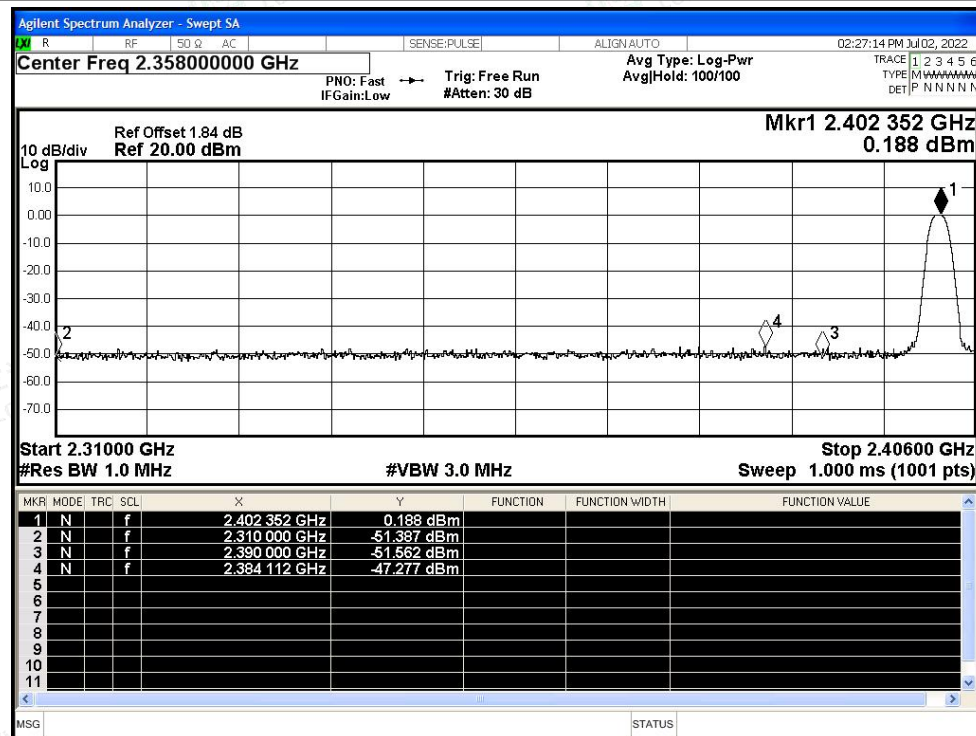
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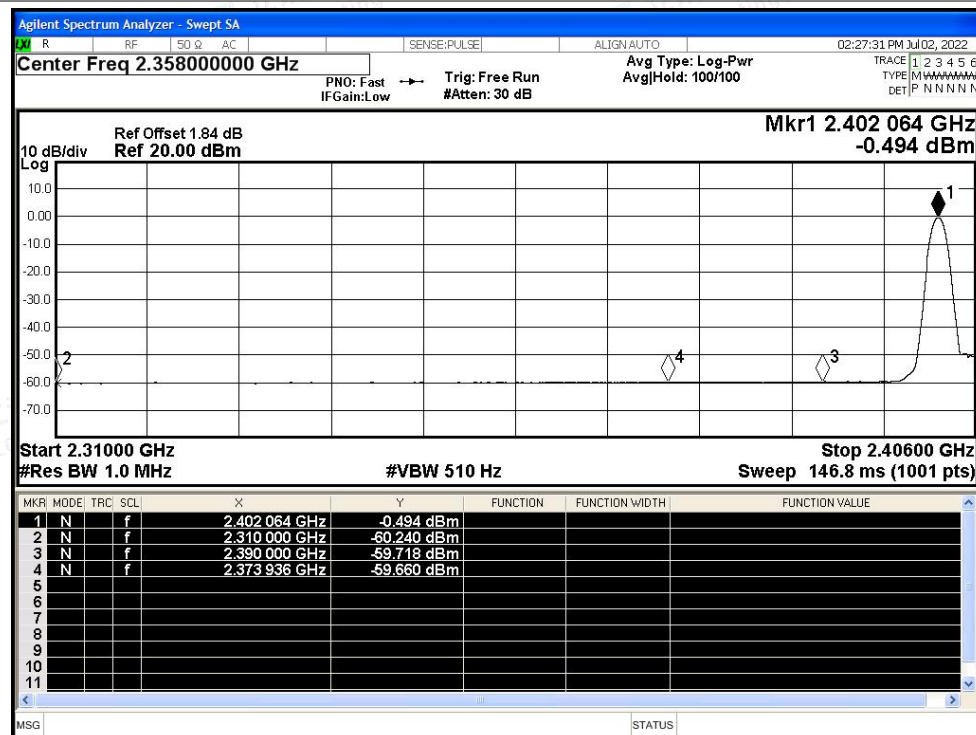


Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2402MHz Ant1 Average



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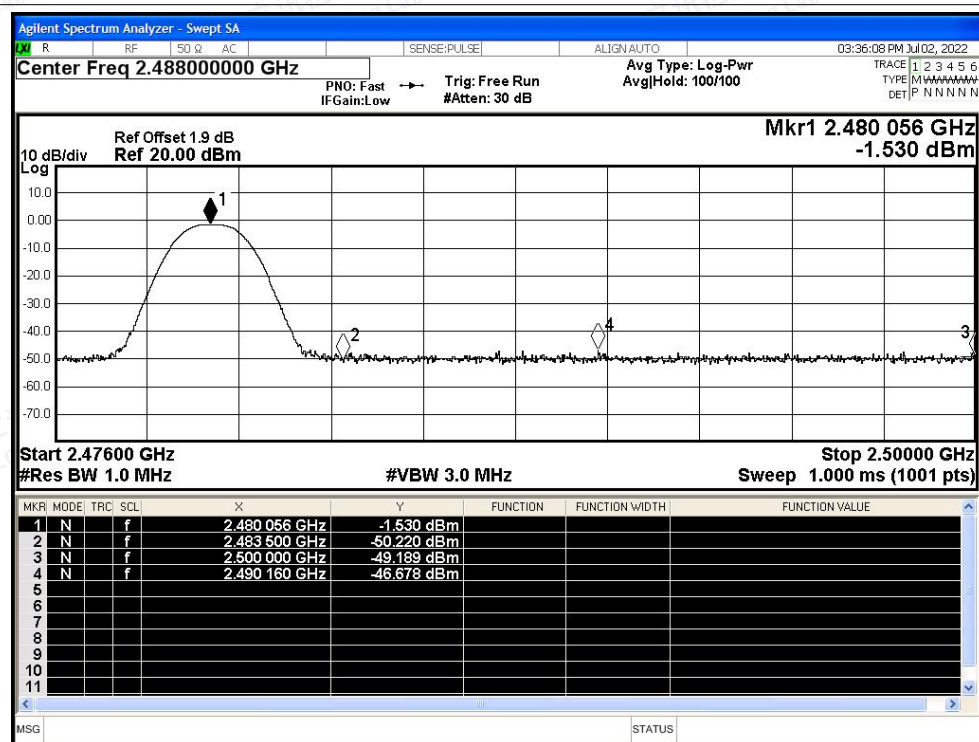
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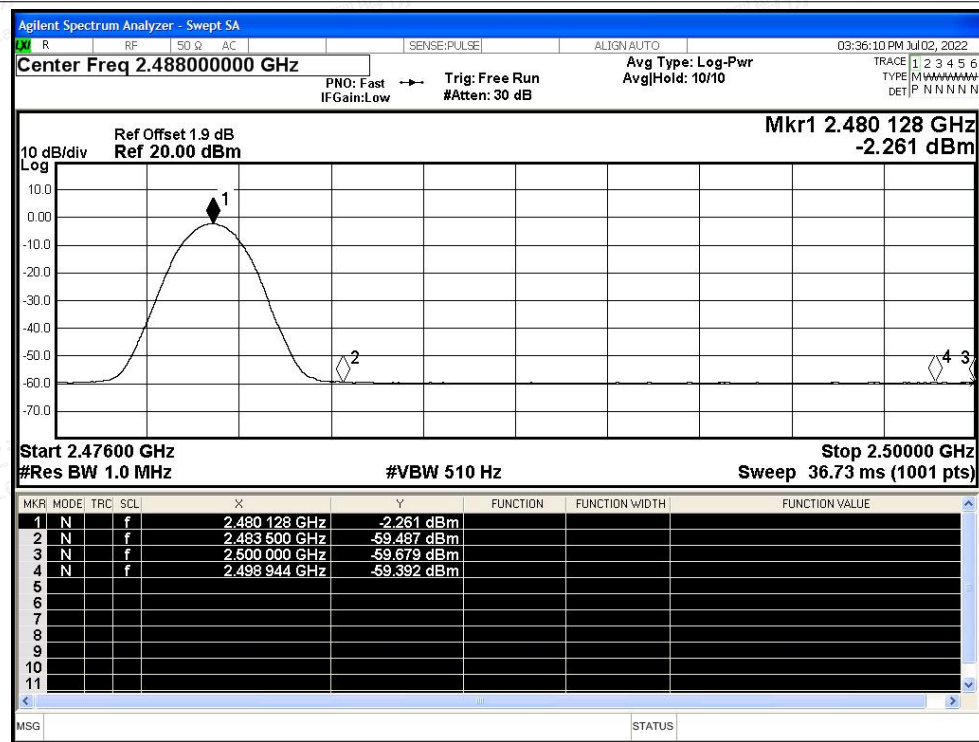
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Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2480MHz Ant1 Average



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