

Appendix A: Test Results

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Maximum Peak Conducted Output Power

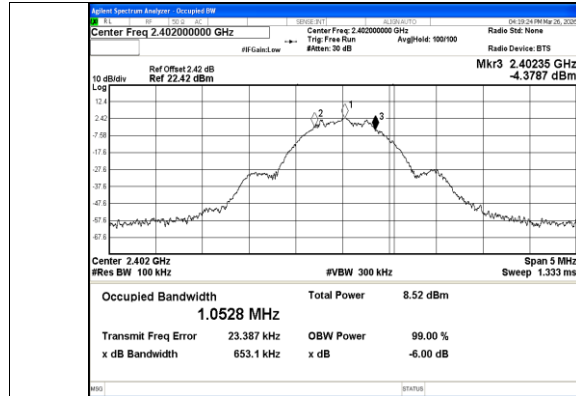
Condit ion	Mo de	Freque ncy (MHz)	Anten na	Conduc ted Power (dBm)	Dut y Fact or (dB)	Total Conduc ted Power (dBm)	Total Conduc ted Power (W)	Gai n (d Bi)	eirp (dB m)	eirp (W)	Limit Conducted(dBm)	Limi t EIR P (dB m)	Verd ict
NVNT	BLE 1M	2402	Ant1	2.64	0	2.64	0.00184	- 0.3 5	2.29	0.001 69	30	36	Pass
NVNT	BLE 1M	2440	Ant1	2.52	0	2.52	0.00179	- 0.3 5	2.17	0.001 65	30	36	Pass
NVNT	BLE 1M	2480	Ant1	2.22	0	2.22	0.00167	- 0.3 5	1.87	0.001 54	30	36	Pass
NVNT	BLE 2M	2404	Ant1	2.6	0	2.6	0.00182	- 0.3 5	2.25	0.001 68	30	36	Pass
NVNT	BLE 2M	2440	Ant1	2.54	0	2.54	0.00179	- 0.3 5	2.19	0.001 66	30	36	Pass
NVNT	BLE 2M	2478	Ant1	2.28	0	2.28	0.00169	- 0.3 5	1.93	0.001 56	30	36	Pass

Note:

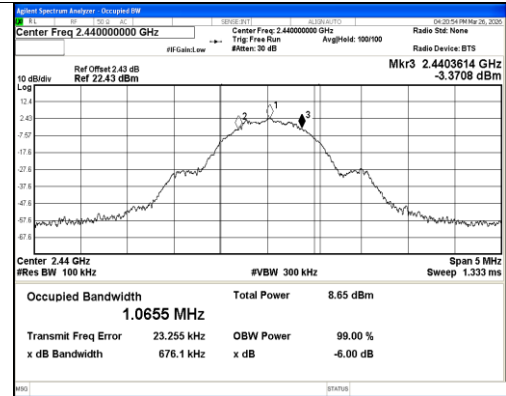
- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): -0.35 dBi.

-6dB Bandwidth

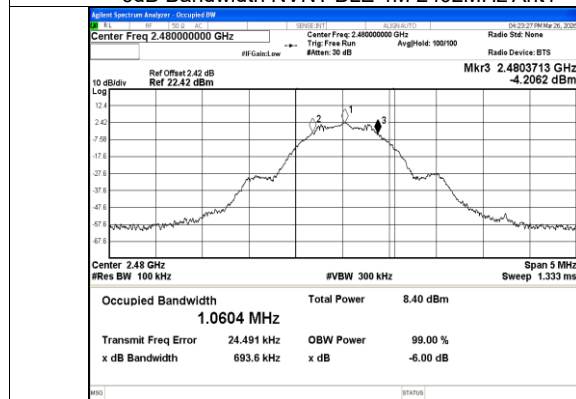
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.6531	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.6761	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.6936	0.5	Pass
NVNT	BLE 2M	2404	Ant1	0.8962	0.5	Pass
NVNT	BLE 2M	2440	Ant1	0.8659	0.5	Pass
NVNT	BLE 2M	2478	Ant1	1.117	0.5	Pass



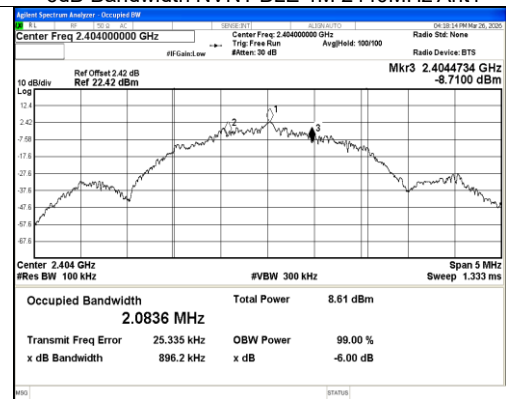
-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



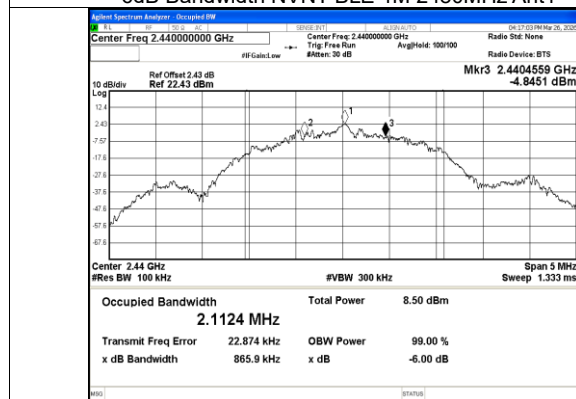
-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1



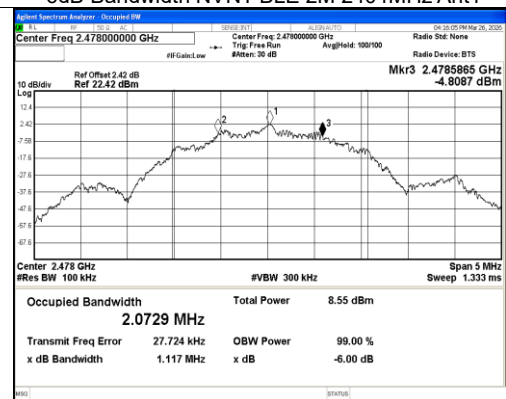
-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2404MHz Ant1



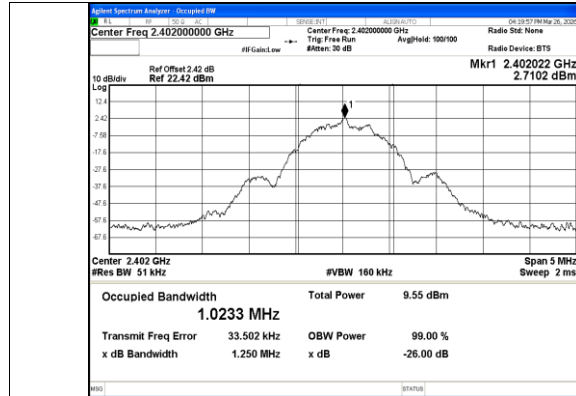
-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1



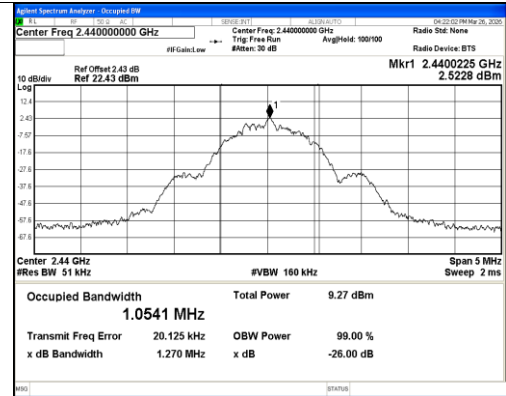
-6dB Bandwidth NVNT BLE 2M 2478MHz Ant1

Occupied Channel Bandwidth

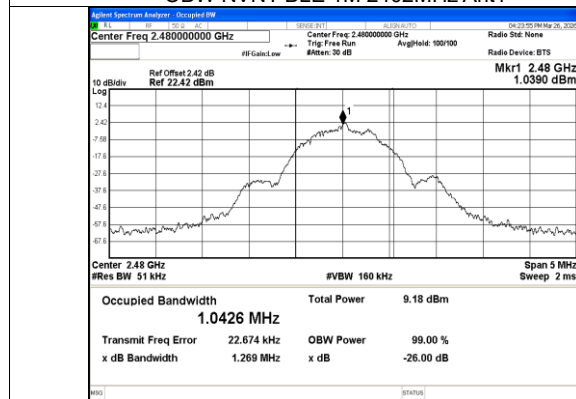
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.0233
NVNT	BLE 1M	2440	Ant1	1.0541
NVNT	BLE 1M	2480	Ant1	1.0426
NVNT	BLE 2M	2404	Ant1	2.0696
NVNT	BLE 2M	2440	Ant1	2.0841
NVNT	BLE 2M	2478	Ant1	2.0539



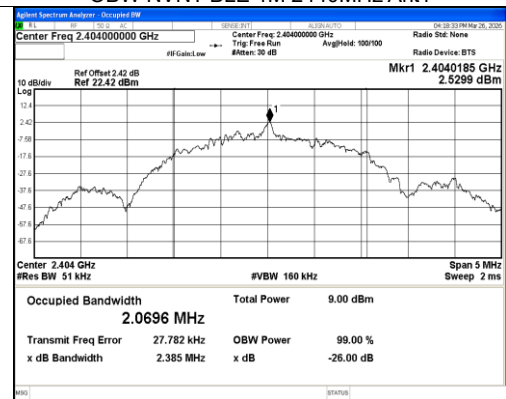
OBW NVNT BLE 1M 2402MHz Ant1



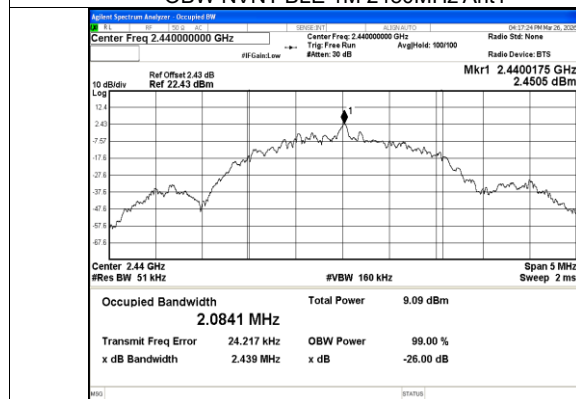
OBW NVNT BLE 1M 2440MHz Ant1



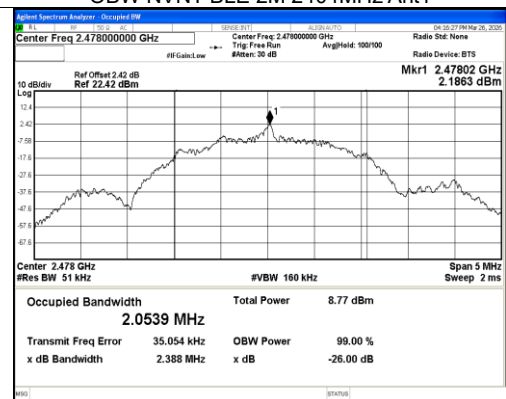
OBW NVNT BLE 1M 2480MHz Ant1



OBW NVNT BLE 2M 2404MHz Ant1



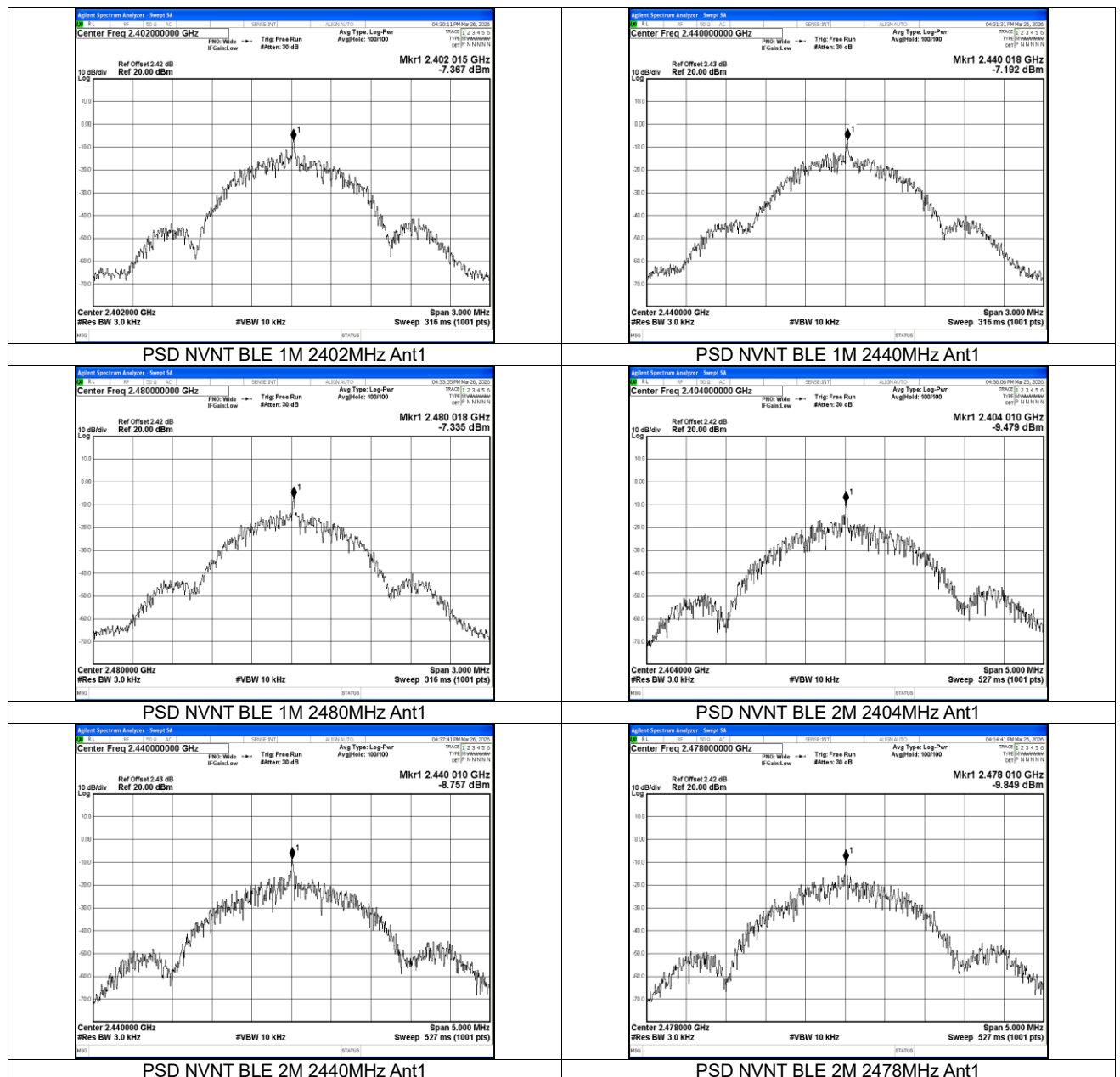
OBW NVNT BLE 2M 2440MHz Ant1



OBW NVNT BLE 2M 2478MHz Ant1

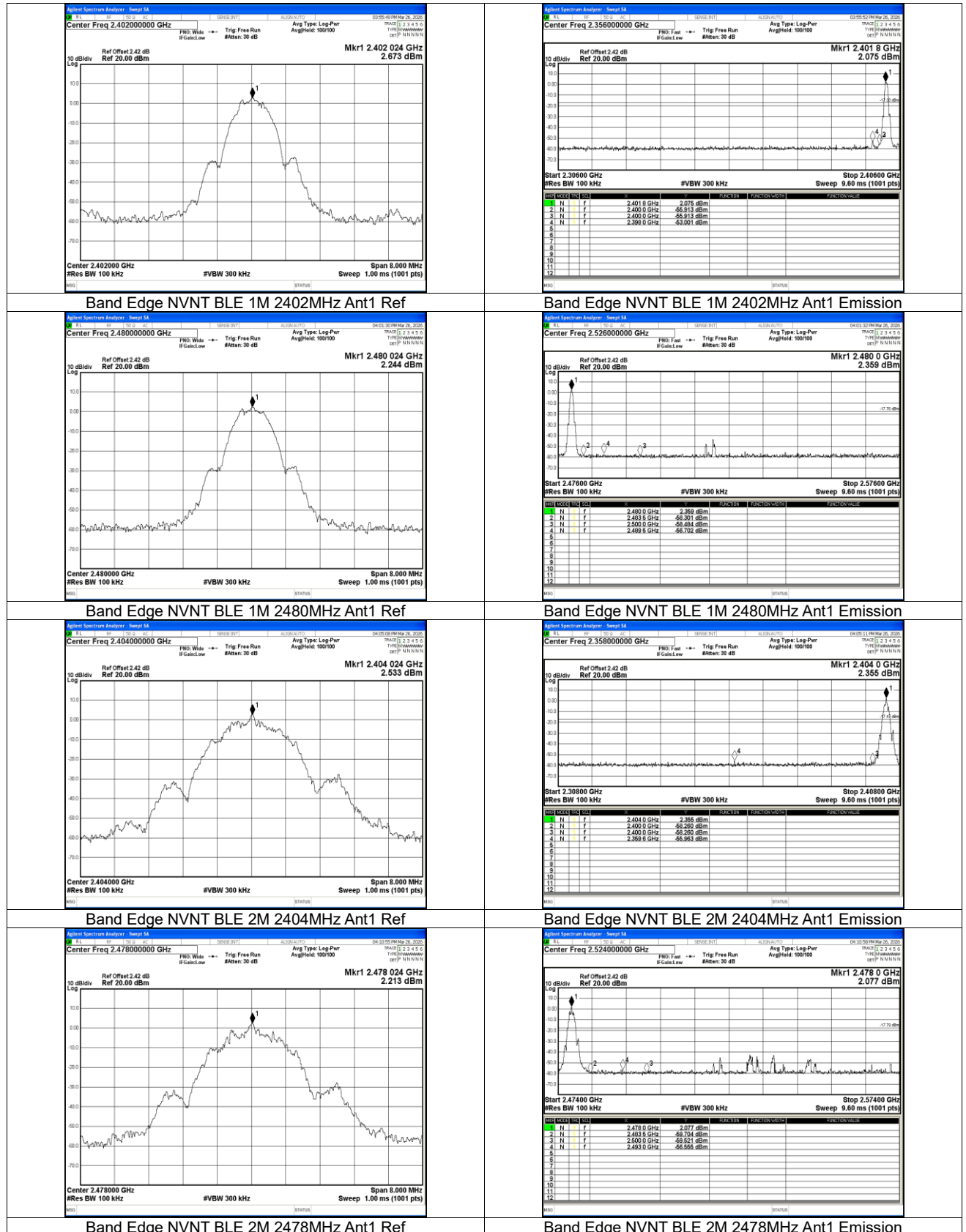
Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-7.37	0	-7.37	8	Pass
NVNT	BLE 1M	2440	Ant1	-7.19	0	-7.19	8	Pass
NVNT	BLE 1M	2480	Ant1	-7.34	0	-7.34	8	Pass
NVNT	BLE 2M	2404	Ant1	-9.48	0	-9.48	8	Pass
NVNT	BLE 2M	2440	Ant1	-8.76	0	-8.76	8	Pass
NVNT	BLE 2M	2478	Ant1	-9.85	0	-9.85	8	Pass



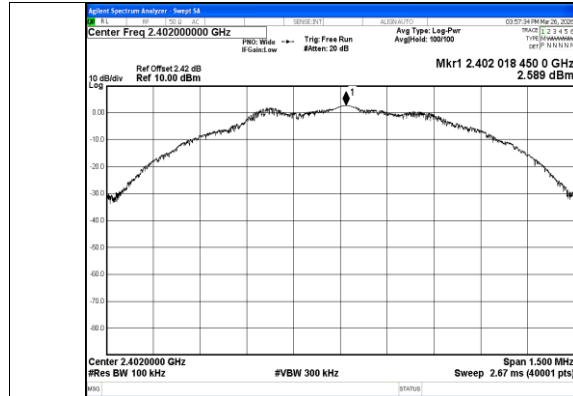
Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-55.67	-20	Pass
NVNT	BLE 1M	2480	Ant1	-58.94	-20	Pass
NVNT	BLE 2M	2404	Ant1	-58.49	-20	Pass
NVNT	BLE 2M	2478	Ant1	-58.76	-20	Pass

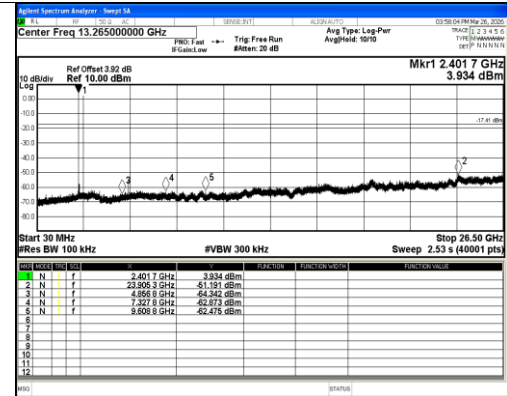


Conducted RF Spurious Emission

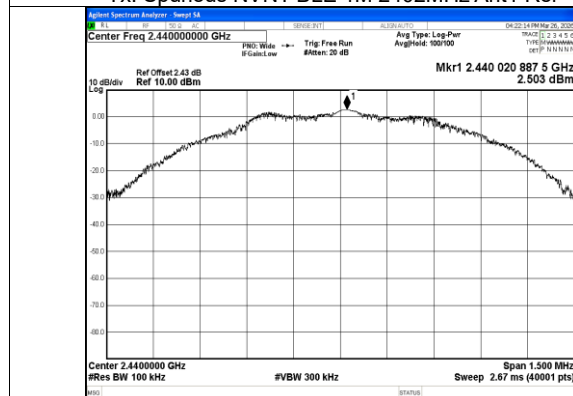
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-53.78	-20	Pass
NVNT	BLE 1M	2440	Ant1	-53.8	-20	Pass
NVNT	BLE 1M	2480	Ant1	-51.64	-20	Pass
NVNT	BLE 2M	2404	Ant1	-54.12	-20	Pass
NVNT	BLE 2M	2440	Ant1	-53.72	-20	Pass
NVNT	BLE 2M	2478	Ant1	-53.54	-20	Pass



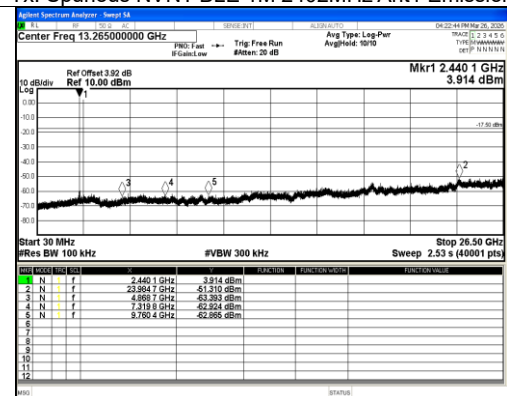
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



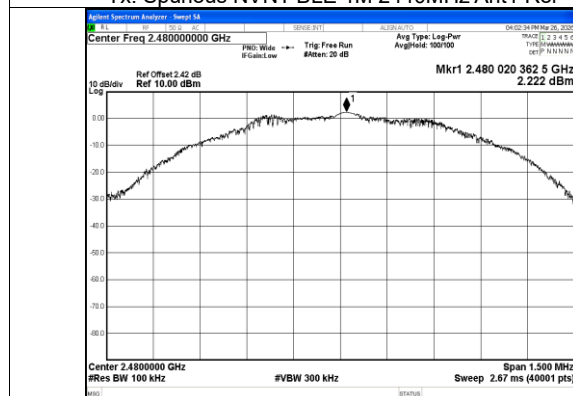
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



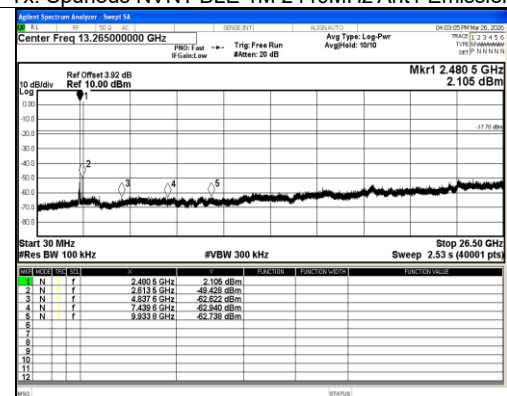
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



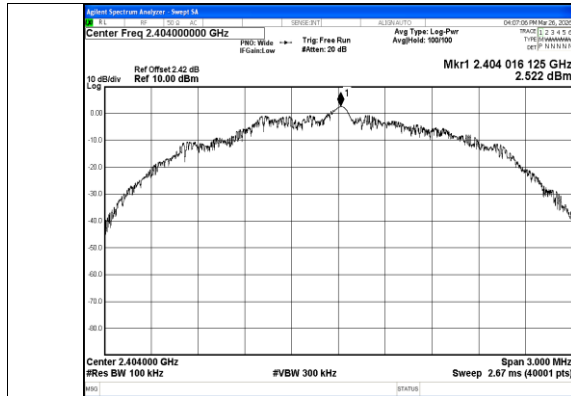
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



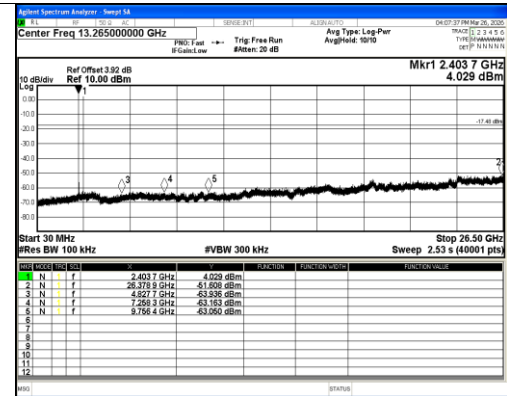
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



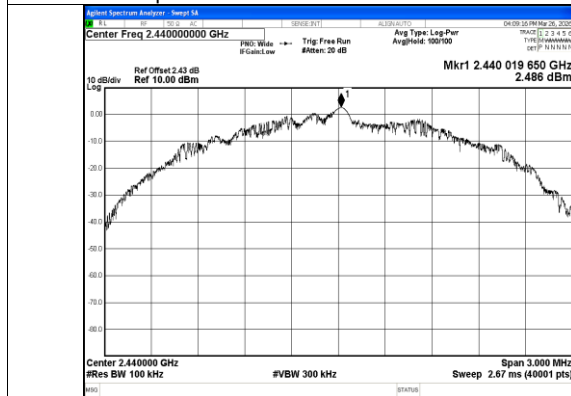
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



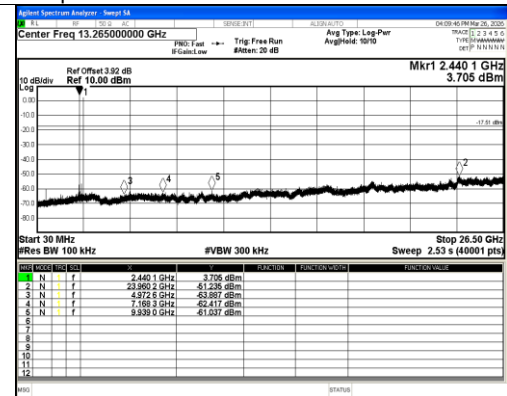
Tx. Spurious NVNT BLE 2M 2404MHz Ant1 Ref



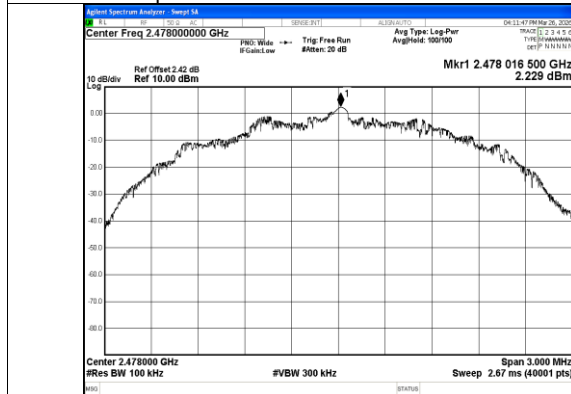
Tx. Spurious NVNT BLE 2M 2404MHz Ant1 Emission



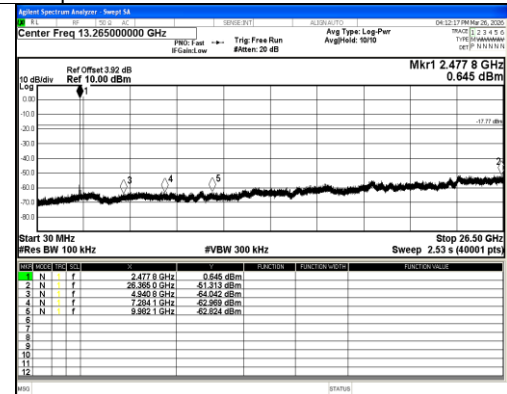
Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2M 2478MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2478MHz Ant1 Emission

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	-49.67	2	47.59	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2310	-60.48	2	36.78	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2371.92	-47.72	2	49.54	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2362.032	-59.98	2	37.28	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2390	-49.31	2	47.95	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2390	-60.07	2	37.19	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-49.23	2	48.03	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-59.27	2	37.99	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2484.352	-46.53	2	50.73	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.512	-59.27	2	37.99	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2500	-49.57	2	47.69	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2500	-59.92	2	37.34	Average	54	Pass
NVNT	BLE 2M	2404	Ant1	2310	-48.83	2	48.43	Peak	74	Pass
NVNT	BLE 2M	2404	Ant1	2310	-60.5	2	36.76	Average	54	Pass
NVNT	BLE 2M	2404	Ant1	2362.234	-46.95	2	50.31	Peak	74	Pass
NVNT	BLE 2M	2404	Ant1	2363.998	-60.11	2	37.15	Average	54	Pass
NVNT	BLE 2M	2404	Ant1	2390	-50.03	2	47.23	Peak	74	Pass
NVNT	BLE 2M	2404	Ant1	2390	-60.11	2	37.15	Average	54	Pass
NVNT	BLE 2M	2478	Ant1	2483.5	-49	2	48.26	Peak	74	Pass
NVNT	BLE 2M	2478	Ant1	2483.5	-59.77	2	37.49	Average	54	Pass
NVNT	BLE 2M	2478	Ant1	2495.788	-47.12	2	50.14	Peak	74	Pass
NVNT	BLE 2M	2478	Ant1	2483.516	-59.77	2	37.49	Average	54	Pass
NVNT	BLE 2M	2478	Ant1	2500	-50.82	2	46.44	Peak	74	Pass
NVNT	BLE 2M	2478	Ant1	2500	-59.95	2	37.31	Average	54	Pass

Note:

1. Convert the resultant EIRP to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20 \log d + 104.8$$

Where,

E is the electric field strength in dBuV/m.

EIRP is the equivalent isotropically radiated power in dBm.

d is the specified measurement distance in m.

2. Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP (see C63.10 11.12.2.6 for guidance on determining the applicable antenna gain), the EUT antenna gain(-0.35dBi) less than 2dBi, therefore, a minimum gain of 2 dBi is used.

