

Appendix RF test data for BLE



Duty Cycle Test Result

Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
BLE 1M	0	2.126	2.499	85.08	0.8508	0.7017	0.4704
	19	2.126	2.499	85.05	0.8505	0.7033	0.4704
	39	2.126	2.499	85.08	0.8508	0.7017	0.4704
BLE 2M	0	1.070	1.874	57.06	0.5706	2.4367	0.9346
	19	1.070	1.874	57.09	0.5709	2.4344	0.9346
	39	1.070	1.874	57.11	0.5711	2.4329	0.9346

Test Graphs

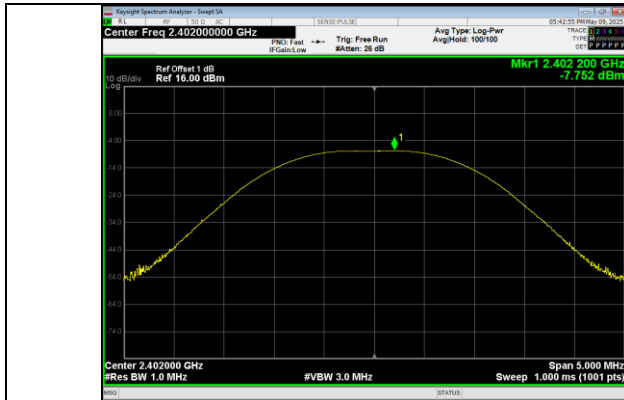


Conducted Output Power

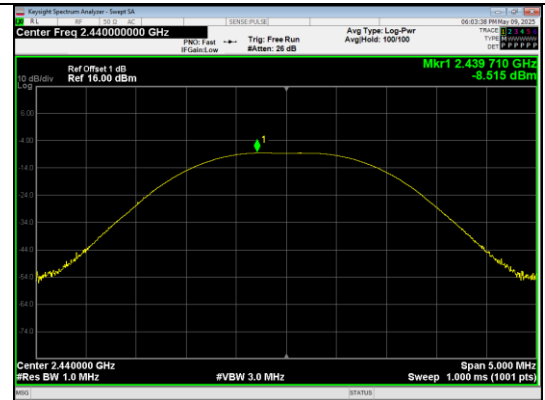
Test Result

Mode	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
BLE 1M	0	-7.75	0.17	None	≤30	PASS
	19	-8.52	0.14	None	≤30	PASS
	39	-7.21	0.19	None	≤30	PASS
BLE 2M	0	-7.47	0.18	None	≤30	PASS
	19	-8.43	0.14	None	≤30	PASS
	39	-6.65	0.22	None	≤30	PASS

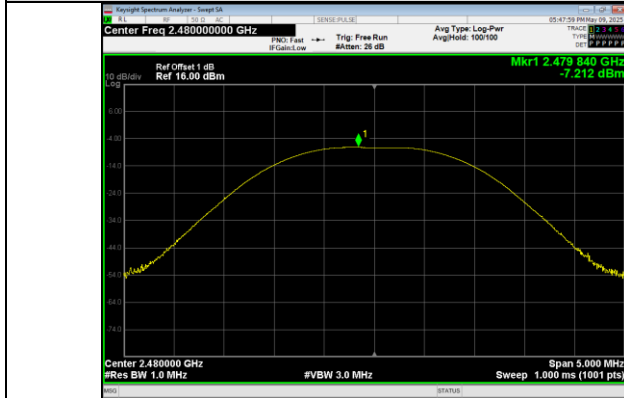
Test Graphs



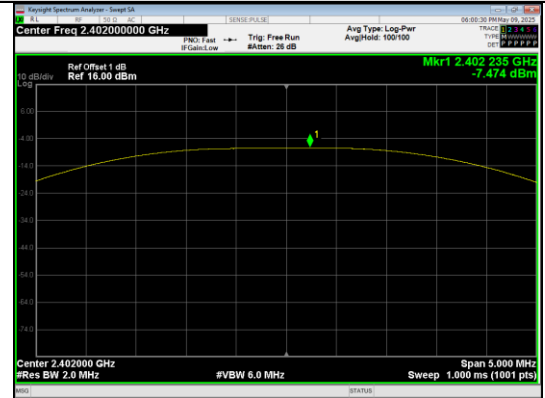
Peak Output Power
BLE 1M_Channel 0



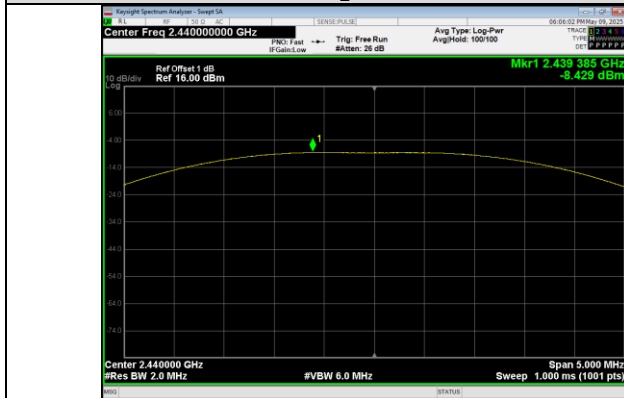
Peak Output Power
BLE 1M_Channel 19



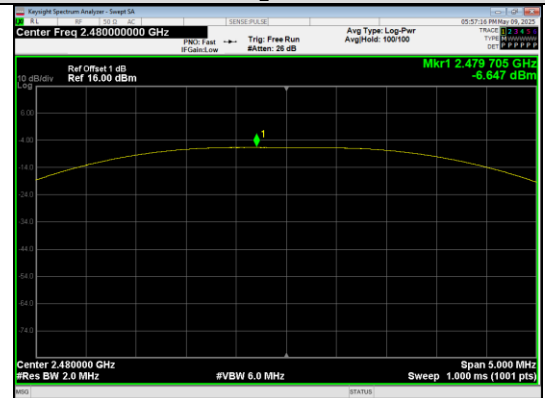
Peak Output Power
BLE 1M_Channel 39



Peak Output Power
BLE 2M_Channel 0



Peak Output Power
BLE 2M_Channel 19



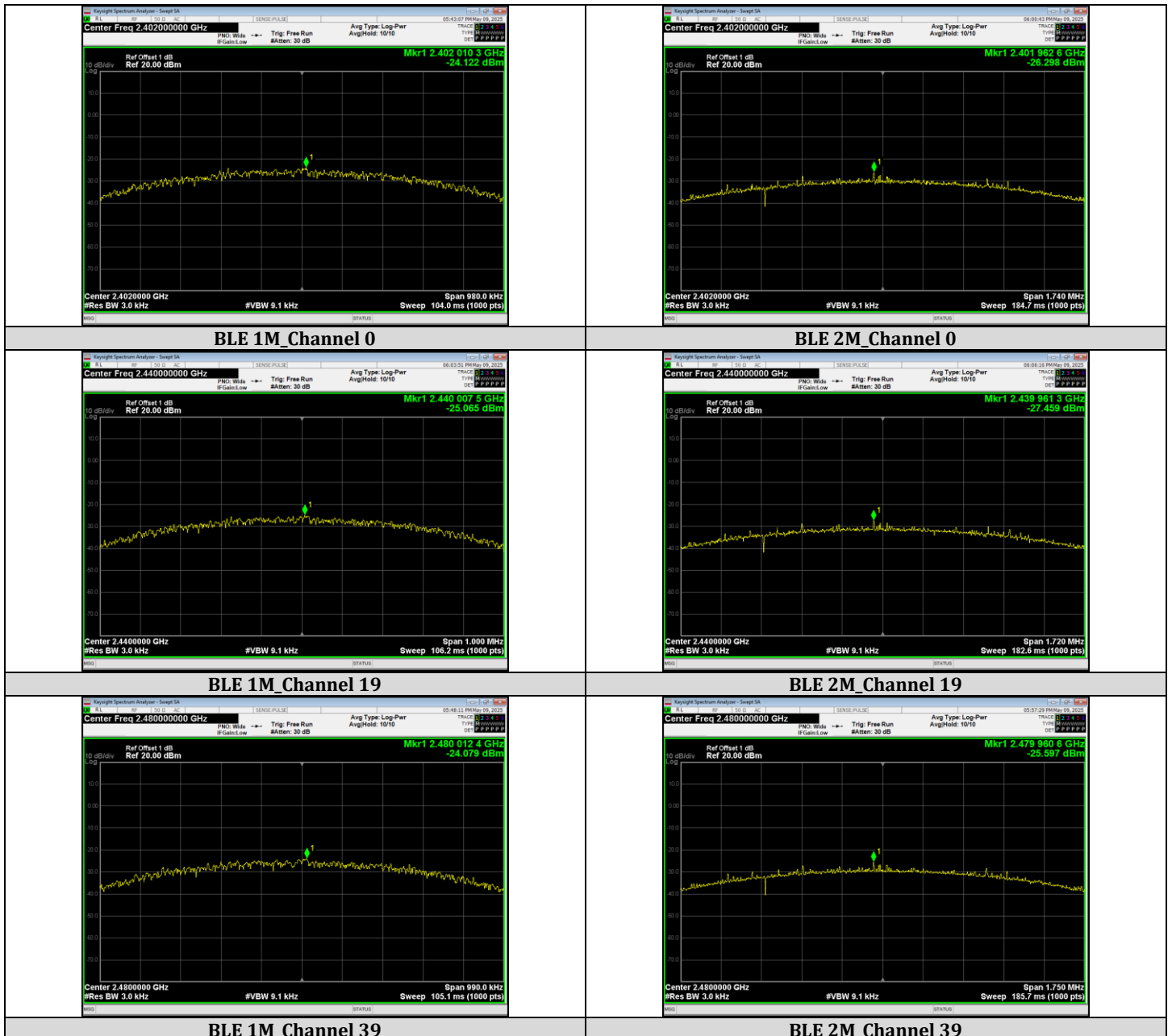
Peak Output Power
BLE 2M_Channel 39

Power Spectral Density

Test Result

Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE 1M	0	-24.122	≤8	PASS
BLE 1M	19	-25.065	≤8	PASS
BLE 1M	39	-24.079	≤8	PASS
BLE 2M	0	-26.298	≤8	PASS
BLE 2M	19	-27.459	≤8	PASS
BLE 2M	39	-25.597	≤8	PASS

Test Graphs

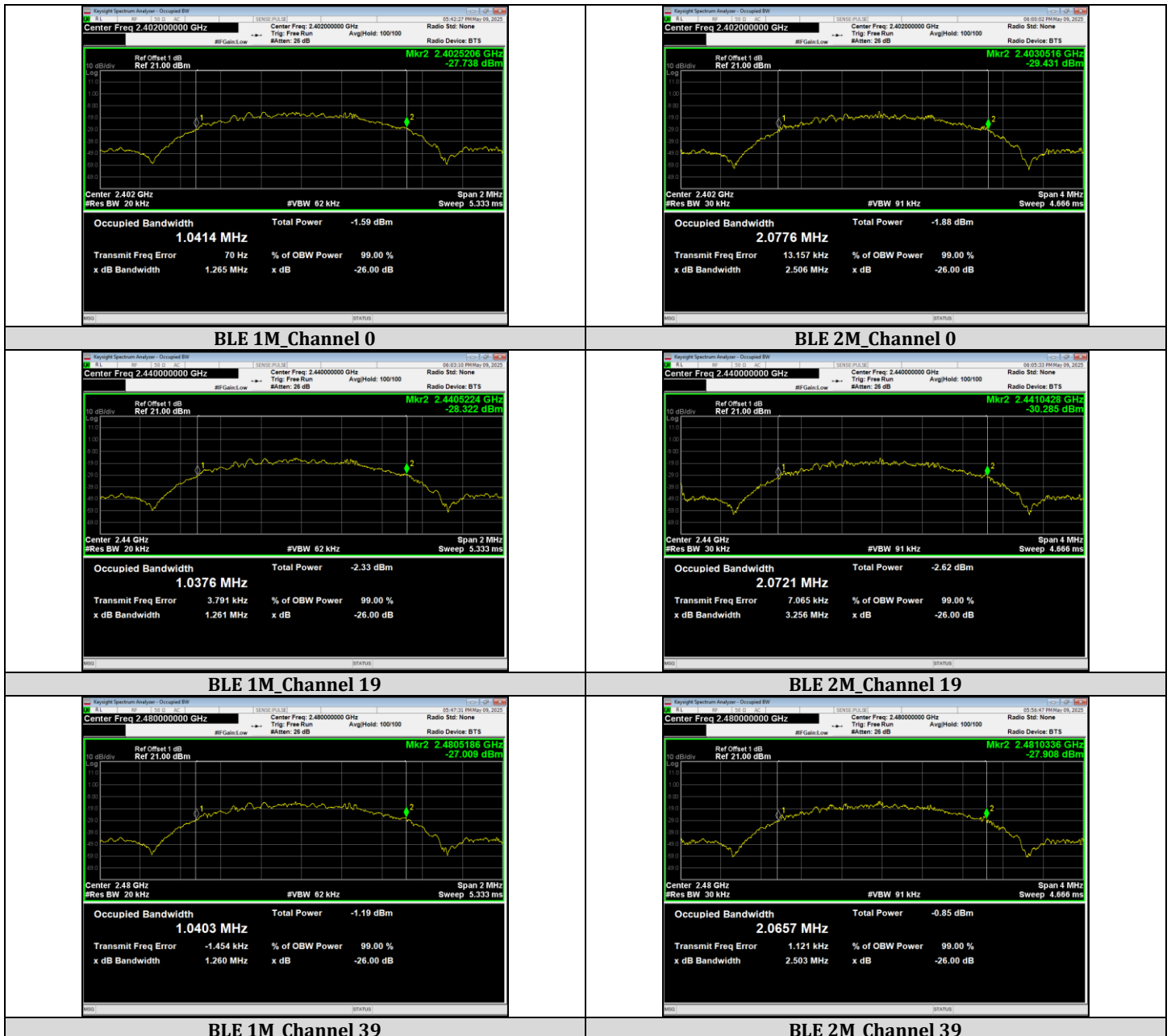


99% Bandwidth

Test Result

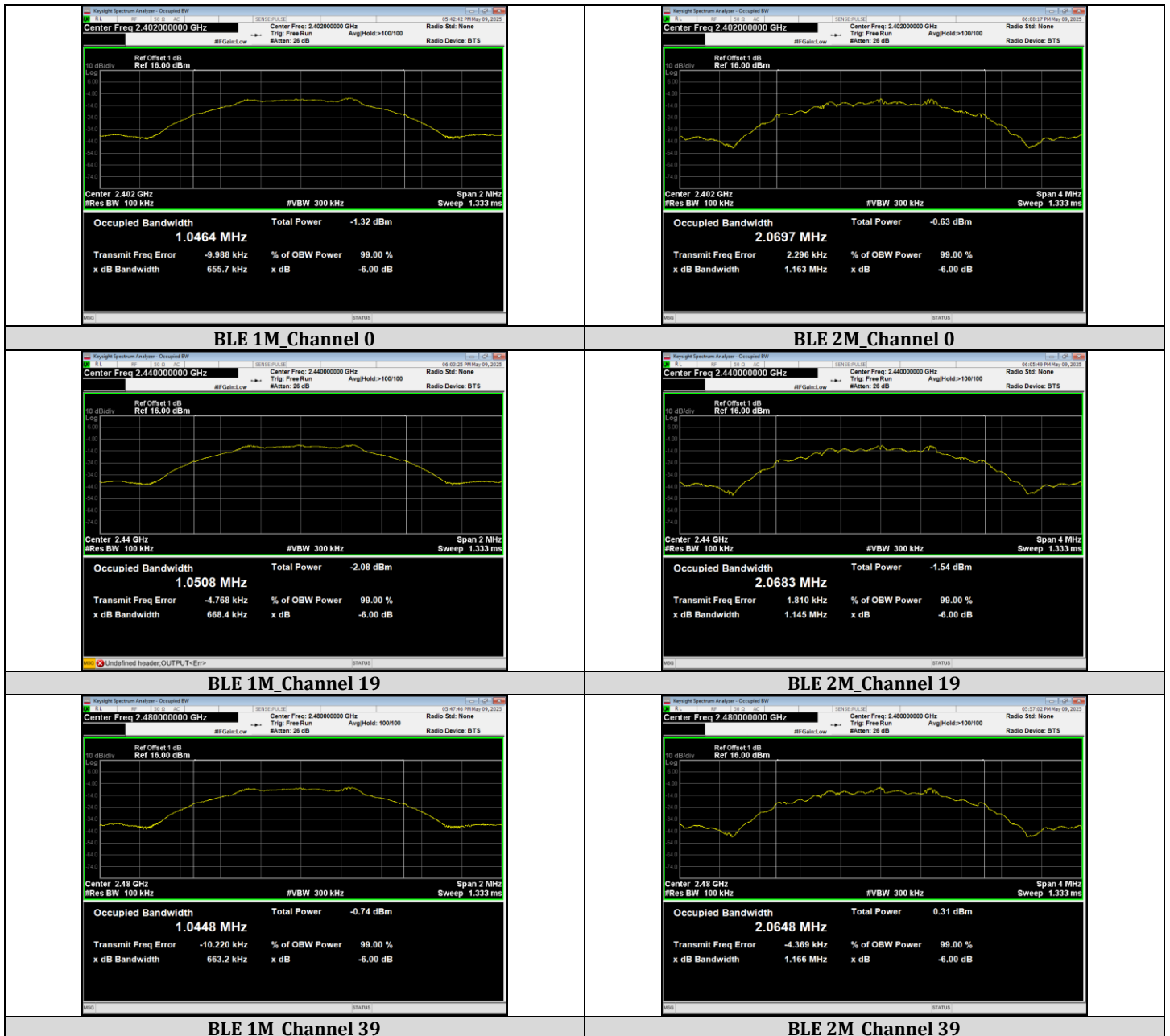
Mode	Channel	Center Frequency (MHz)	99% BW (MHz)
BLE 1M	0	2402	1.0414
BLE 1M	19	2440	1.0376
BLE 1M	39	2480	1.0403
BLE 2M	0	2402	2.0776
BLE 2M	19	2440	2.0721
BLE 2M	39	2480	2.0657

Test Graphs



**6dB Bandwidth****Test Result**

Mode	Channel	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
BLE 1M	0	2402	0.6557	≥0.5	PASS
	19	2440	0.6684		PASS
	39	2480	0.6632		PASS
BLE 2M	0	2402	1.163		PASS
	19	2440	1.145		PASS
	39	2480	1.166		PASS

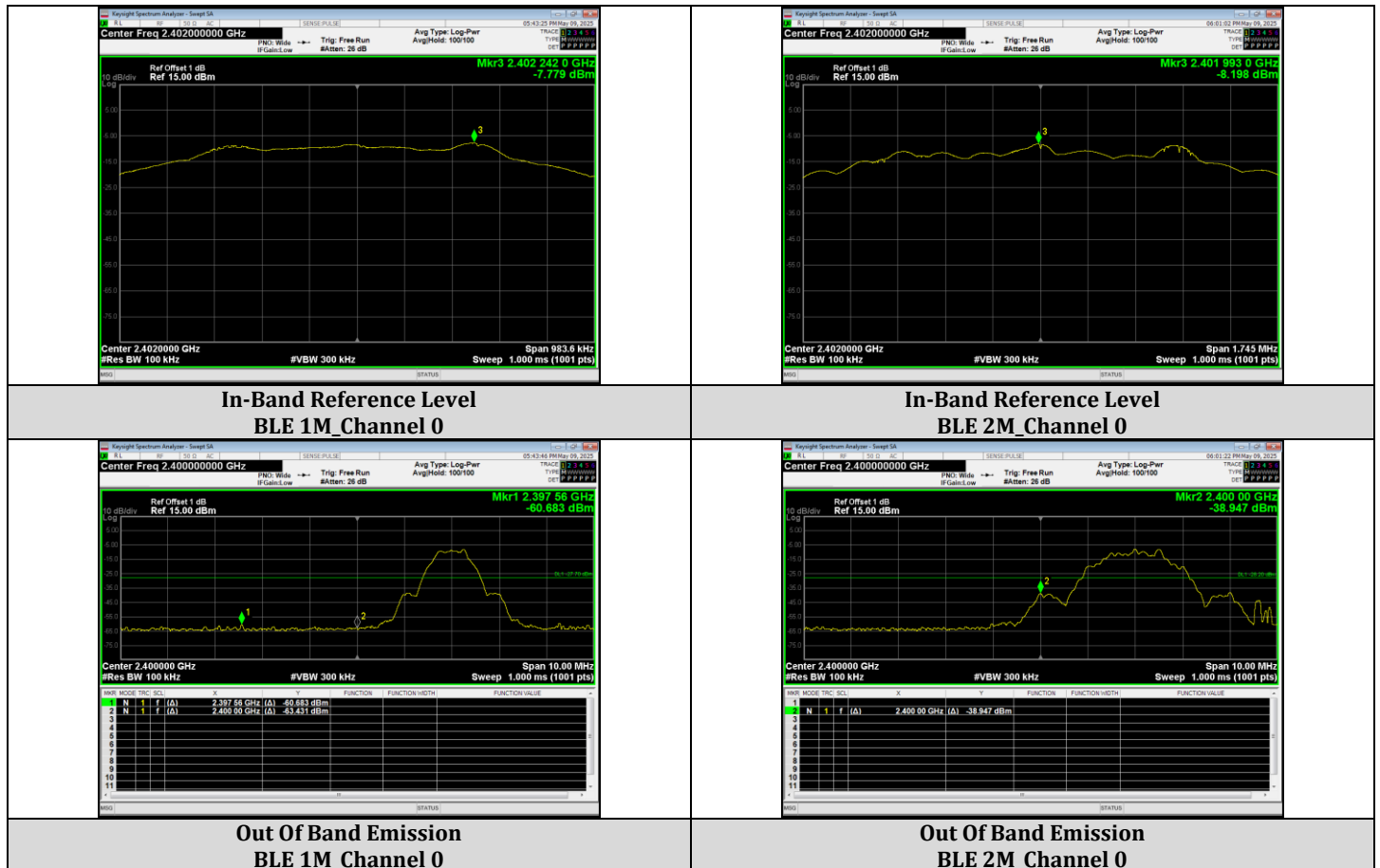
Test Graphs

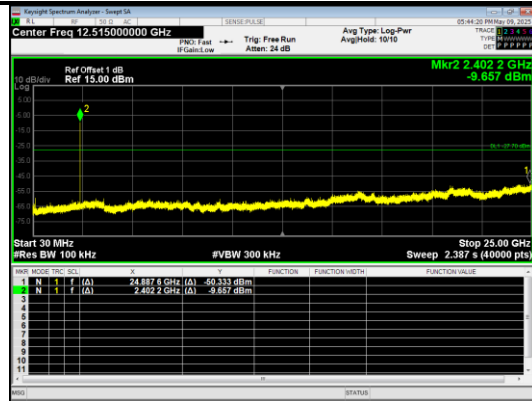
Conducted Out Of Band Emission

Test Result

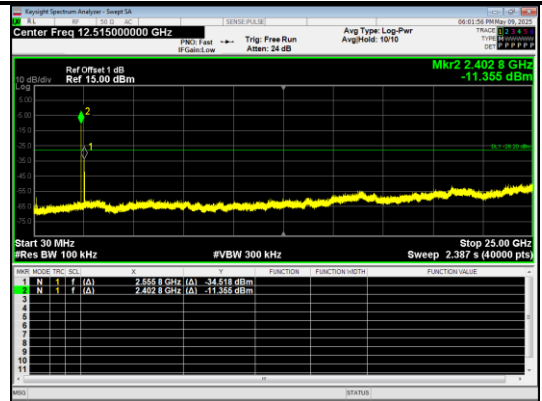
Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
BLE 1M	0	2397.56	-60.683	-27.78	-32.903	PASS
		2400.00	-63.431	-27.78	-35.651	PASS
		24887.6	-50.333	-27.78	-22.553	PASS
	19	2668.77	-39.548	-28.7	-10.848	PASS
		2483.50	-57.911	-27.71	-30.201	PASS
		2665.03	-36.926	-27.71	-9.216	PASS
BLE 2M	0	2400.00	-38.947	-28.2	-10.747	PASS
		2555.78	-34.518	-28.2	-6.318	PASS
	19	2671.27	-42.087	-29.16	-12.927	PASS
		2483.50	-63.028	-27.4	-35.628	PASS
	39	2635.68	-49.746	-27.4	-22.346	PASS

Test Graphs

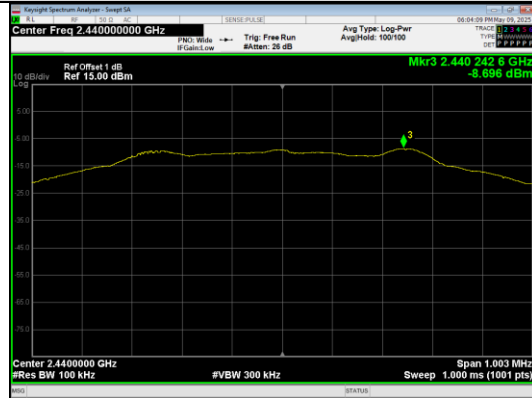




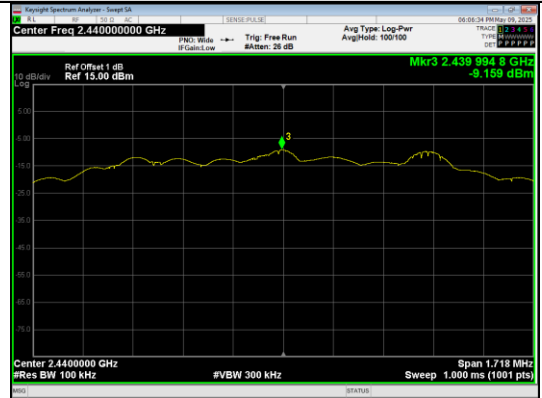
30.0 MHz - 25000.0 MHz
BLE 1M_Channel 0



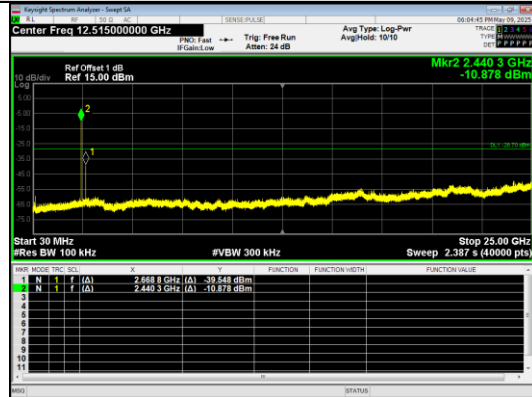
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 0



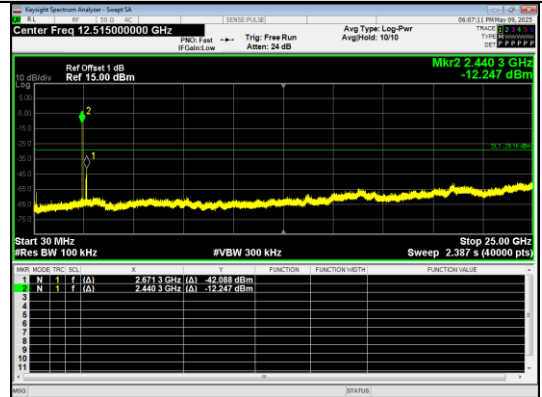
In-Band Reference Level
BLE 1M_Channel 19



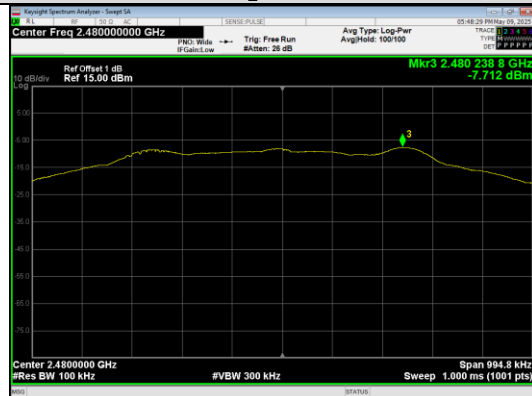
In-Band Reference Level
BLE 2M_Channel 19



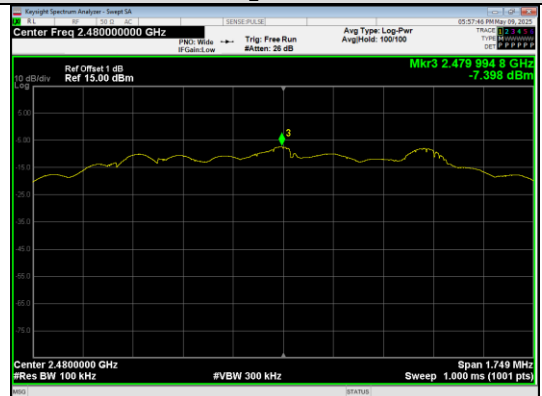
30.0 MHz - 25000.0 MHz
BLE 1M_Channel 19



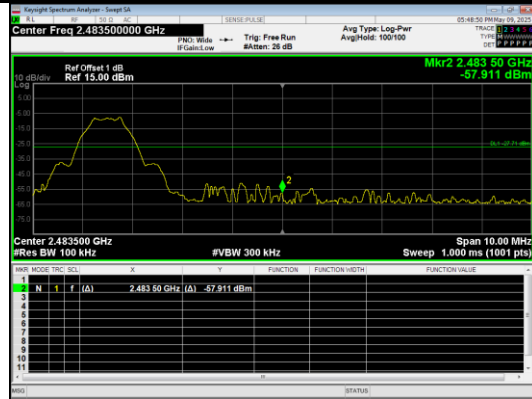
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 19



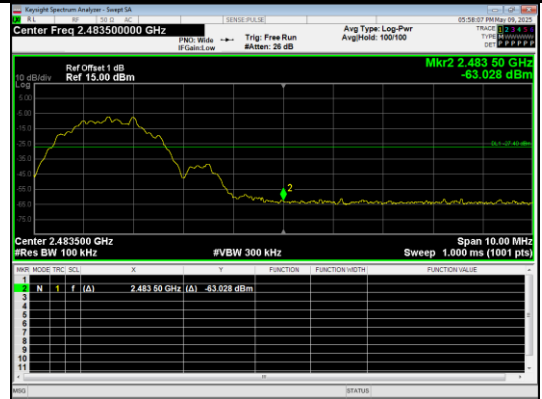
In-Band Reference Level
BLE 1M_Channel 39



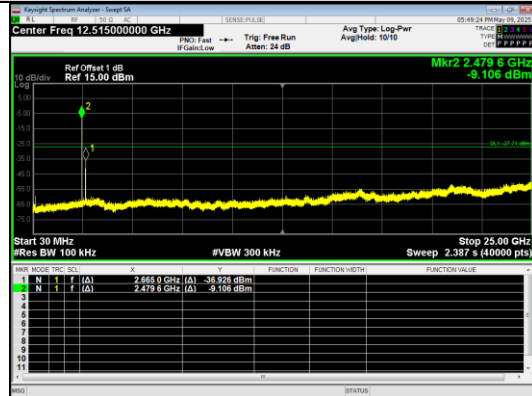
In-Band Reference Level
BLE 2M_Channel 39



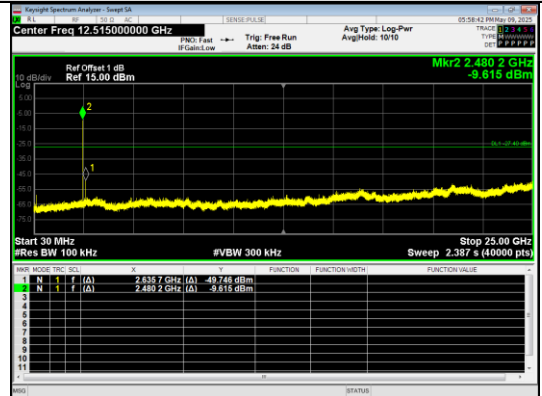
Out Of Band Emission
BLE 1M_Channel 39



Out Of Band Emission
BLE 2M_Channel 39



30.0 MHz - 25000.0 MHz
BLE 1M_Channel 39



30.0 MHz - 25000.0 MHz
BLE 2M_Channel 39

***** End of Report *****