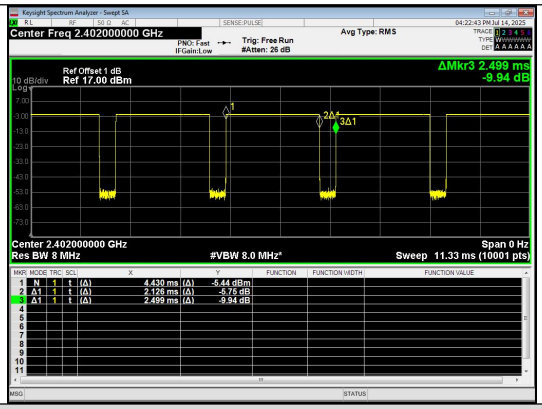
Appendix RF test data for BLE

Duty Cycle

Test Result

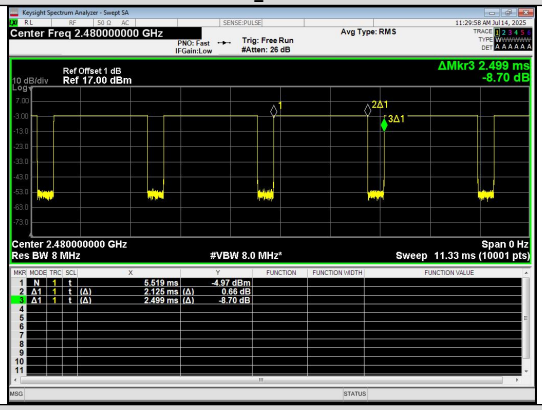
Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
BLE 1M	0	2.126	2.499	85.08	0.8508	0.7017	0.4704
	19	2.126	2.499	85.08	0.8508	0.7017	0.4704
	39	2.125	2.499	85.03	0.8503	0.7043	0.4706
BLE 2M	0	1.070	1.875	57.07	0.5707	2.4359	0.9346
	19	1.070	1.874	57.06	0.5706	2.4367	0.9346
	39	1.070	1.875	57.07	0.5707	2.4359	0.9346

Test Graphs

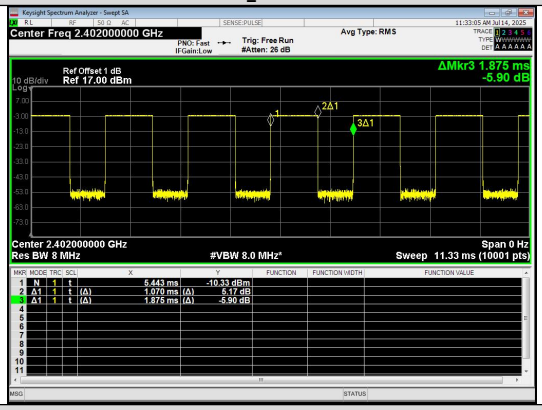


BLE 1M_Channel 0

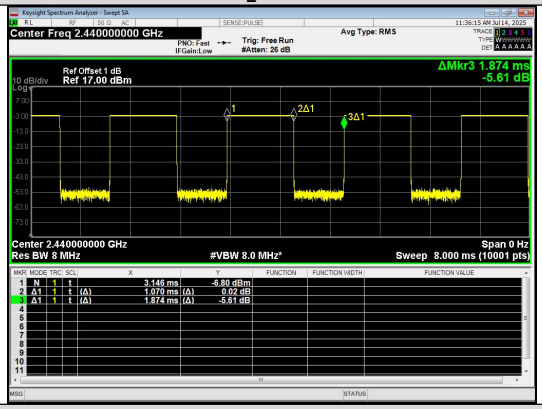
BLE 1M_Channel 19



BLE 1M_Channel 39



BLE 2M_Channel 0



BLE 2M_Channel 19

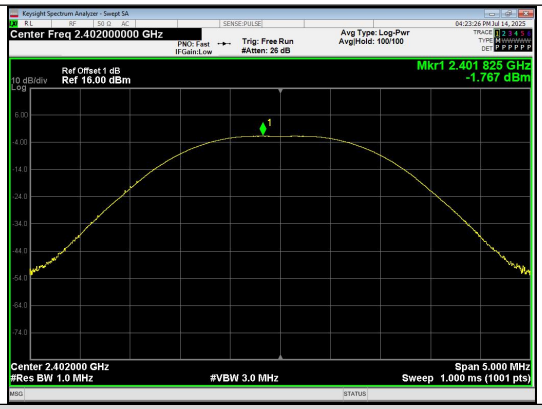
BLE 2M_Channel 39

Conducted Output Power

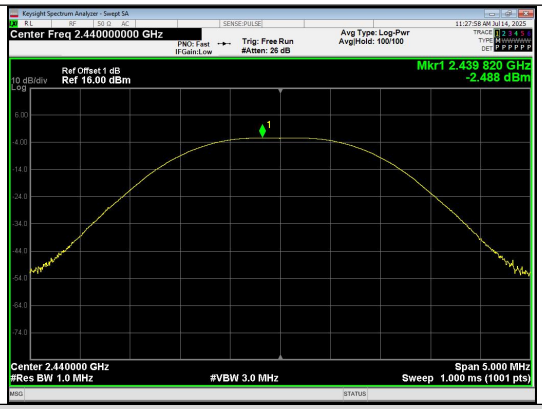
Test Result

Mode	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
BLE 1M	0	-1.77	0.67	≤30	PASS
	19	-2.49	0.56	≤30	PASS
	39	-2.24	0.6	≤30	PASS
BLE 2M	0	-2.26	0.59	≤30	PASS
	19	-2.41	0.57	≤30	PASS
	39	-2.15	0.61	≤30	PASS

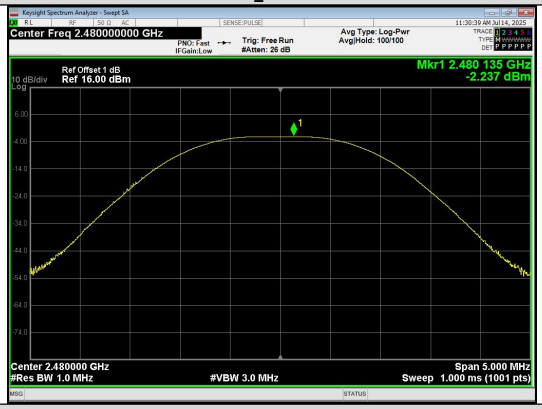
Test Graphs



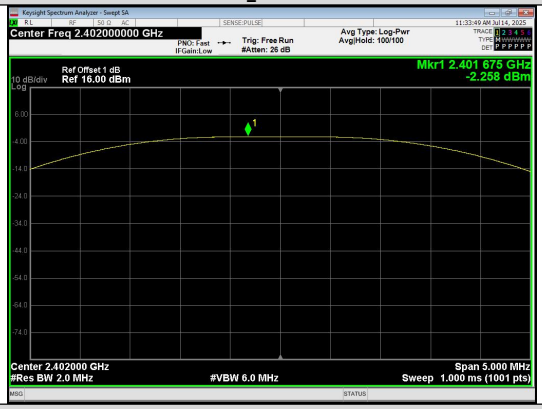
Peak Output Power
BLE 1M_Channel 0



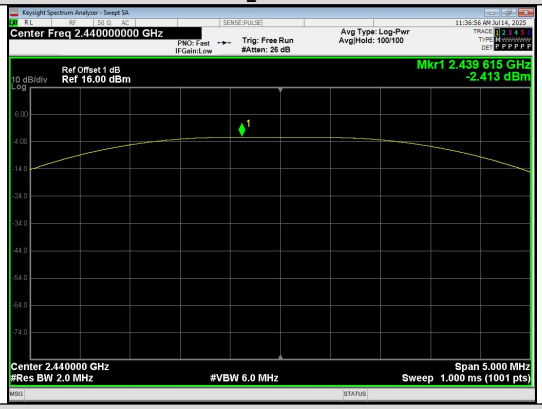
Peak Output Power
BLE 1M_Channel 19



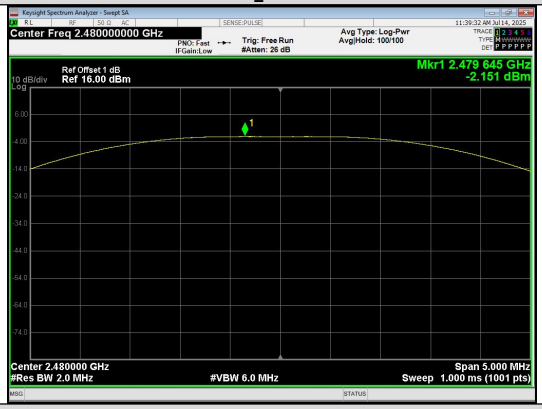
Peak Output Power
BLE 1M_Channel 39



Peak Output Power
BLE 2M_Channel 0



Peak Output Power
BLE 2M_Channel 19



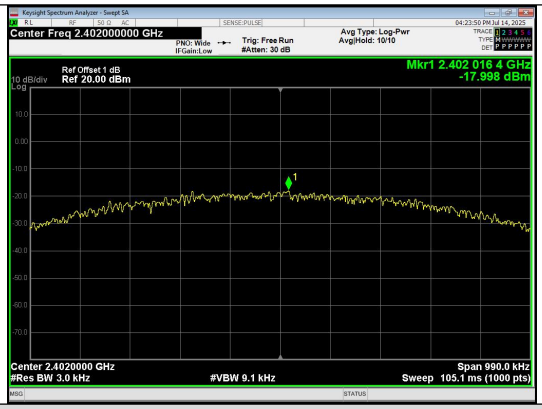
Peak Output Power
BLE 2M_Channel 39

Power Spectral Density

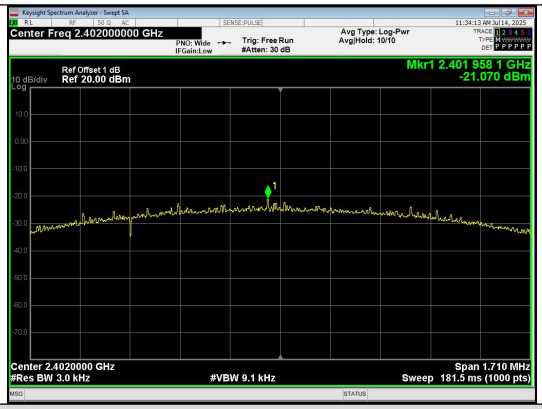
Test Result

Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE 1M	0	-18.000	≤8	PASS
BLE 1M	19	-18.790	≤8	PASS
BLE 1M	39	-18.370	≤8	PASS
BLE 2M	0	-21.070	≤8	PASS
BLE 2M	19	-21.170	≤8	PASS
BLE 2M	39	-20.850	≤8	PASS

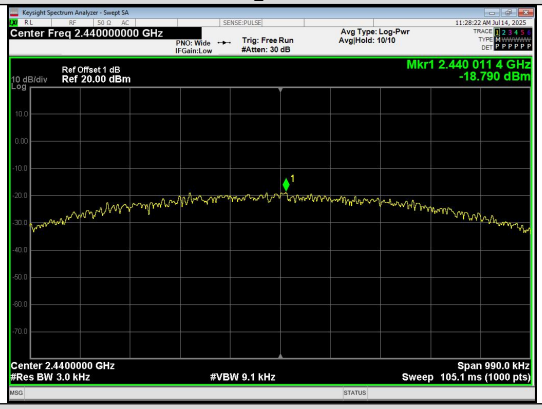
Test Graphs



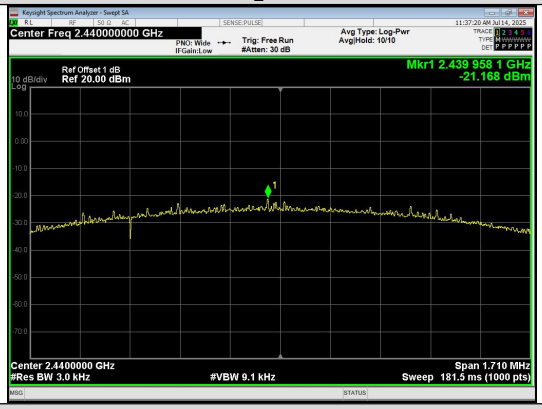
BLE 1M_Channel 0



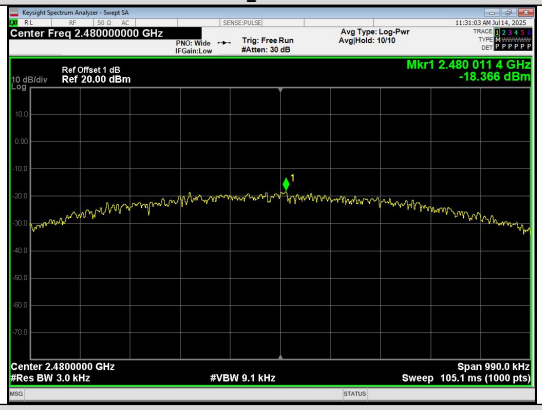
BLE 2M_Channel 0



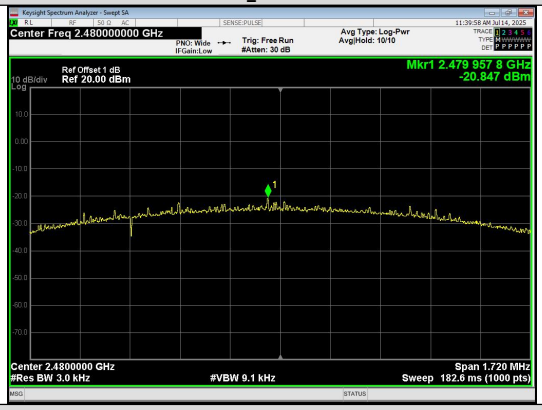
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



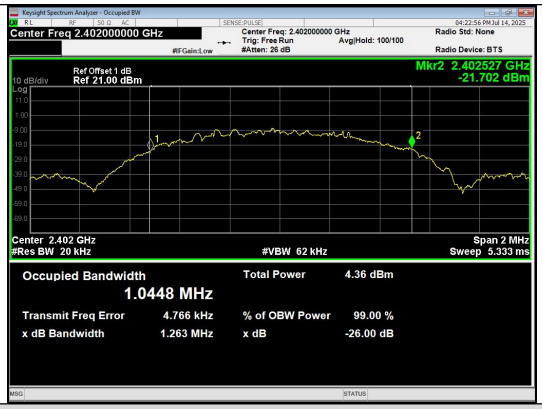
BLE 2M_Channel 39

99% Bandwidth

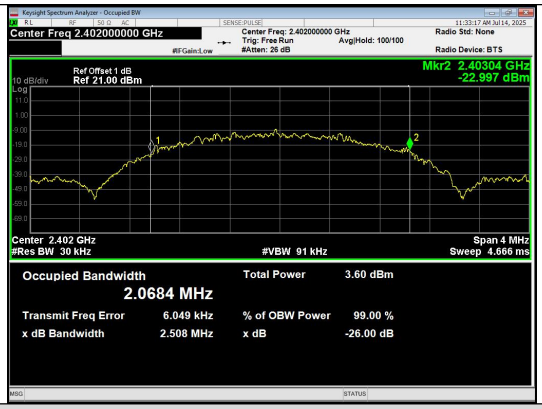
Test Result

Mode	Channel	Center Frequency (MHz)	99% BW (MHz)
BLE 1M	0	2402	1.0448
BLE 1M	19	2440	1.0425
BLE 1M	39	2480	1.0411
BLE 2M	0	2402	2.0684
BLE 2M	19	2440	2.0679
BLE 2M	39	2480	2.0714

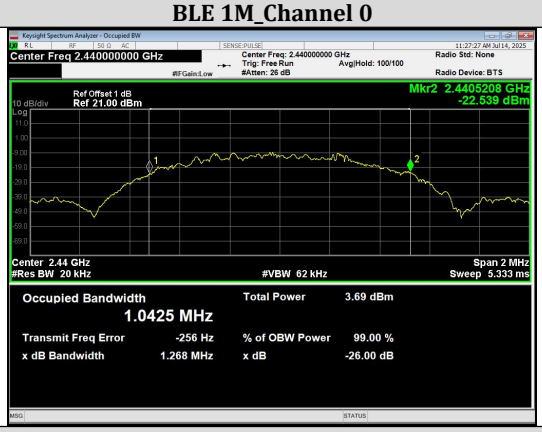
Test Graphs



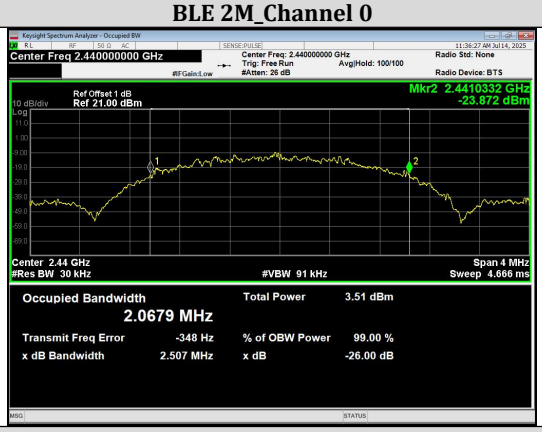
BLE 1M_Channel 0



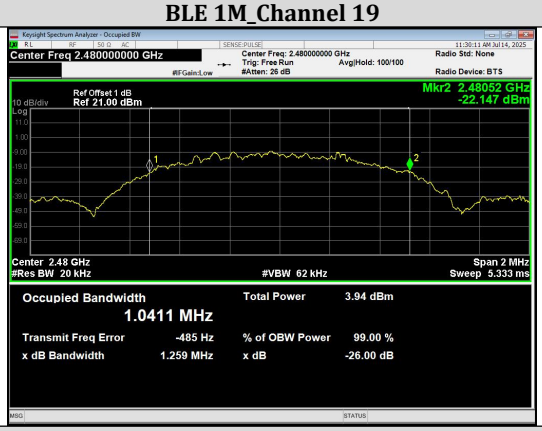
BLE 2M_Channel 0



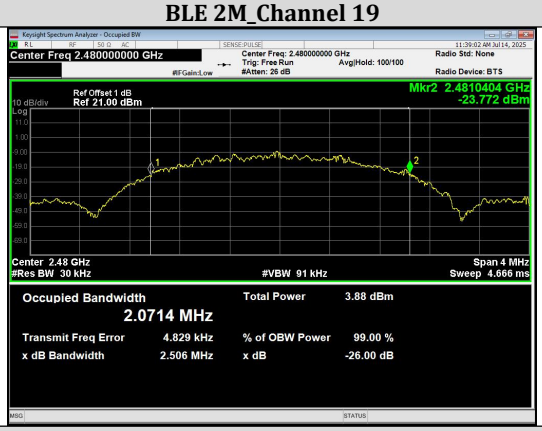
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



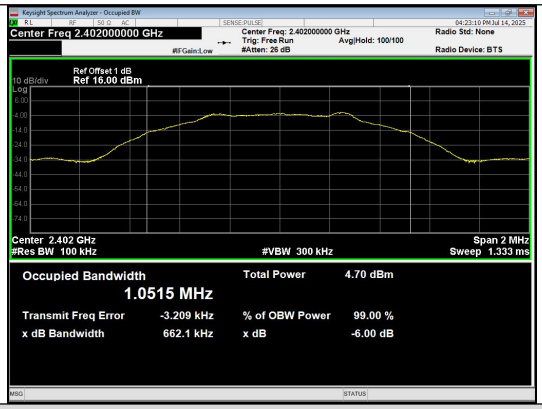
BLE 2M_Channel 39

6dB Bandwidth

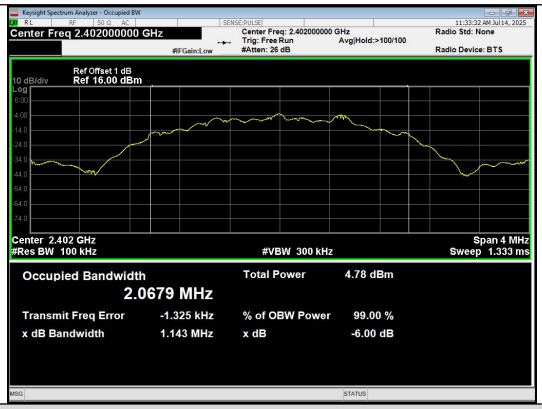
Test Result

Mode	Channel	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
BLE 1M	0	2402	0.6600	≥0.5	PASS
	19	2440	0.6600		PASS
	39	2480	0.6600		PASS
BLE 2M	0	2402	1.140		PASS
	19	2440	1.140		PASS
	39	2480	1.150		PASS

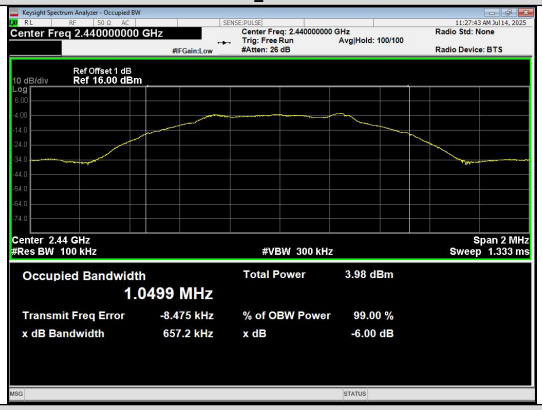
Test Graphs



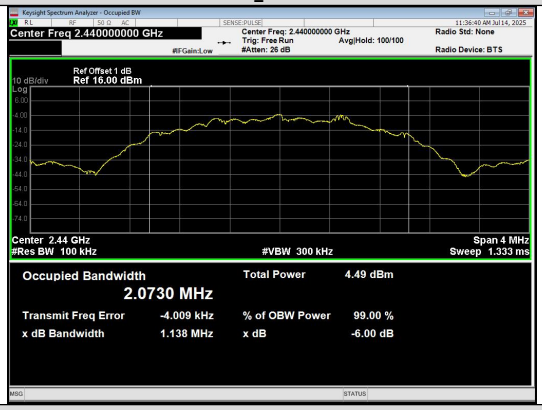
BLE 1M_Channel 0



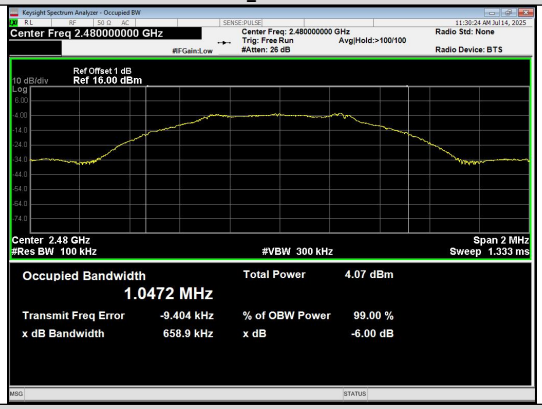
BLE 2M_Channel 0



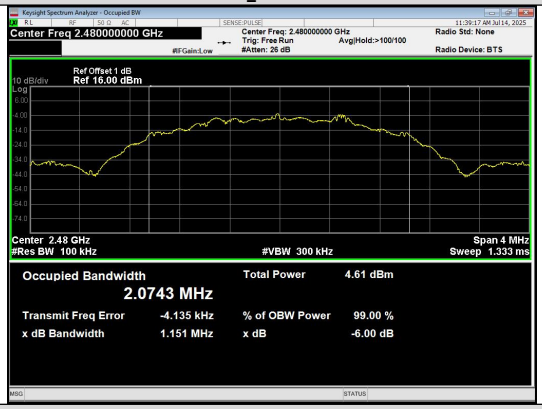
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



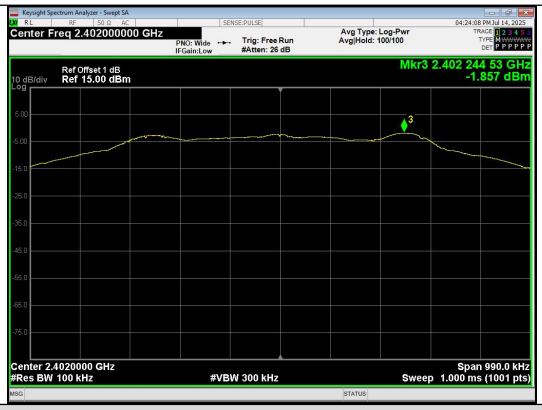
BLE 2M_Channel 39

Conducted Out Of Band Emission

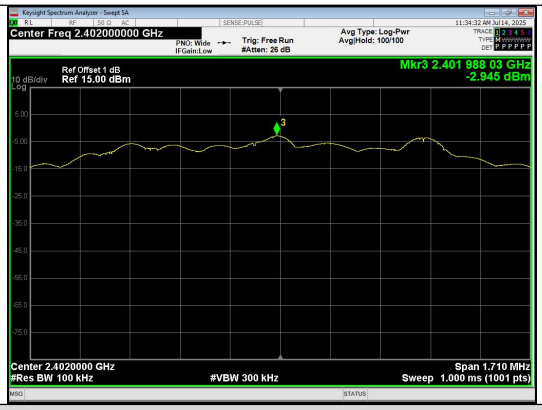
Test Result

Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
BLE 1M	0	2395.58	-60.782	-21.86	-38.922	PASS
		2400.00	-61.640	-21.86	-39.780	PASS
		24818.3	-49.283	-21.86	-27.423	PASS
	19	24938.2	-49.409	-22.58	-26.829	PASS
	39	2483.50	-63.020	-22.31	-40.710	PASS
		24307.1	-49.723	-22.31	-27.413	PASS
BLE 2M	0	2400.00	-33.850	-22.94	-10.910	PASS
		24996.9	-49.484	-22.94	-26.544	PASS
	19	24365.1	-49.563	-23.05	-26.513	PASS
	39	2483.50	-61.100	-22.8	-38.300	PASS
		24891.4	-48.821	-22.8	-26.021	PASS

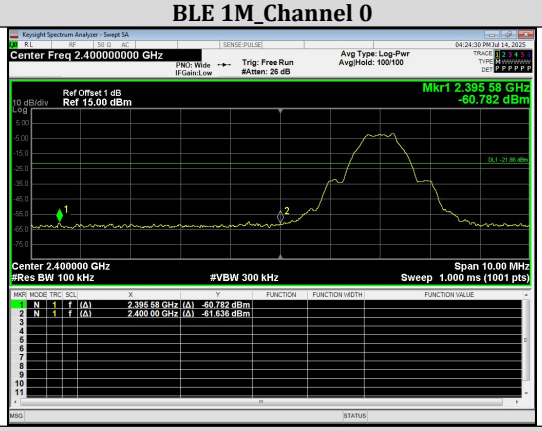
Test Graphs



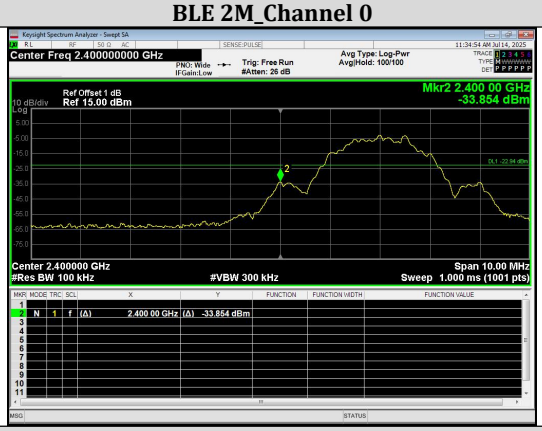
In-Band Reference Level
BLE 1M_Channel 0



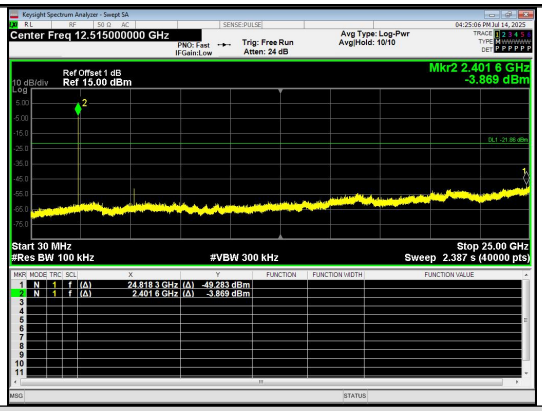
In-Band Reference Level
BLE 2M_Channel 0



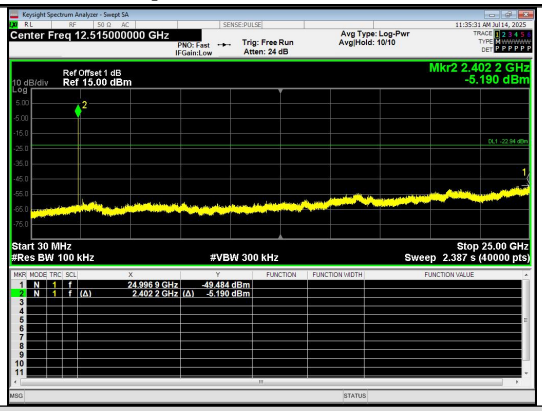
Out Of Band Emission
BLE 1M_Channel 0



Out Of Band Emission
BLE 2M_Channel 0

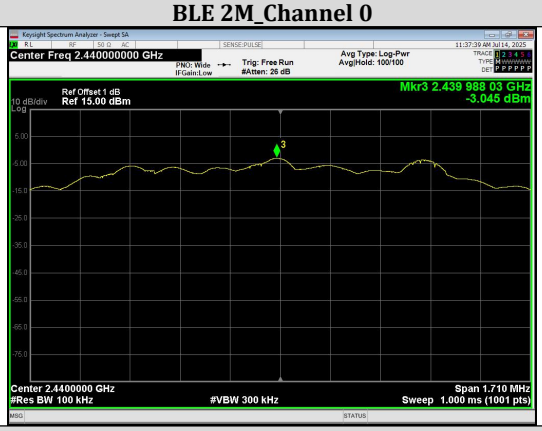


30.0 MHz - 25000.0 MHz
BLE 1M_Channel 0

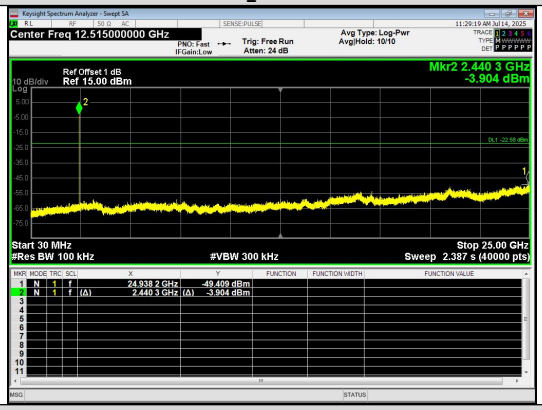


30.0 MHz - 25000.0 MHz
BLE 2M_Channel 0

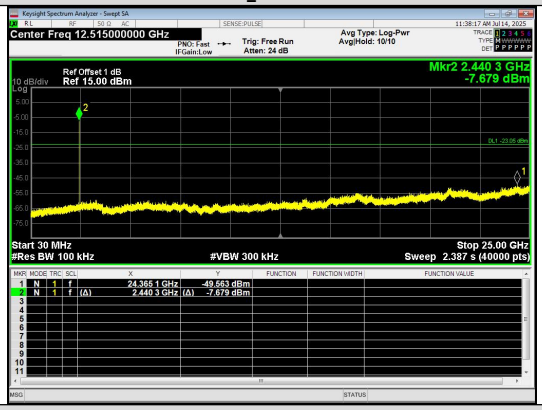
In-Band Reference Level
BLE 1M_Channel 19



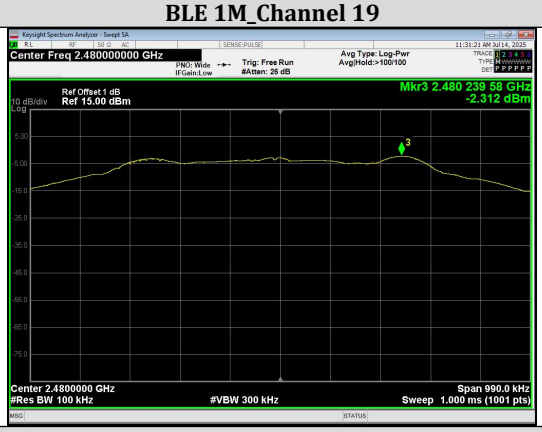
In-Band Reference Level
BLE 2M_Channel 19



30.0 MHz - 25000.0 MHz
BLE 1M_Channel 19

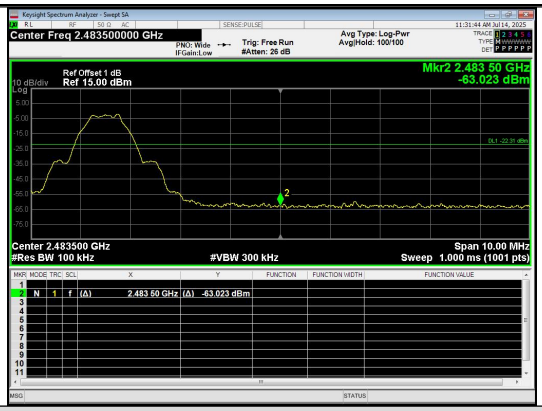


30.0 MHz - 25000.0 MHz
BLE 2M_Channel 19

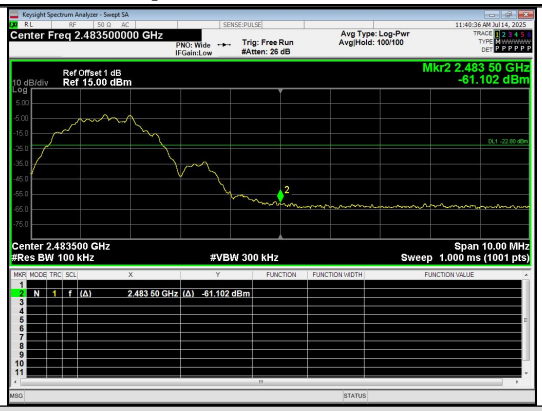


In-Band Reference Level
BLE 1M_Channel 39

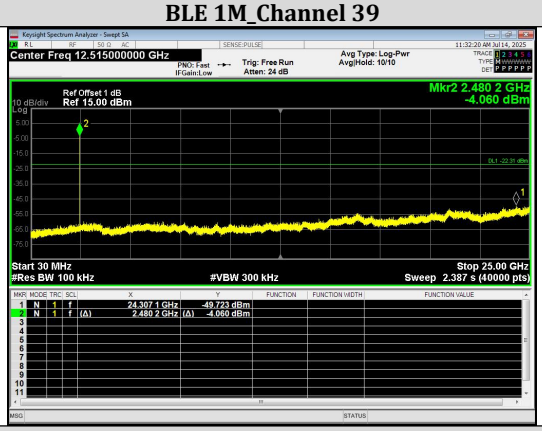
In-Band Reference Level
BLE 2M_Channel 39



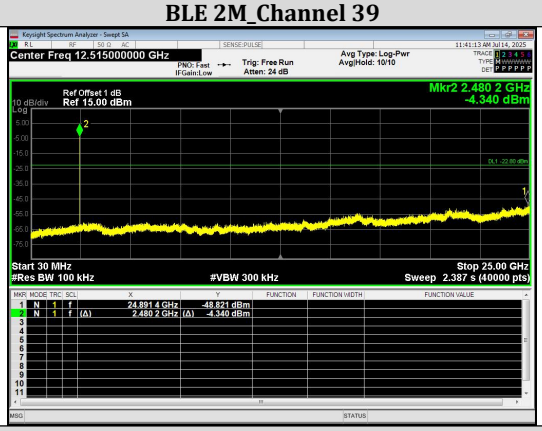
Out Of Band Emission
BLE 1M_Channel 39



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 **********