

Appendix

Report No.:	CISRR241113087
FCC ID:	2BDZJ-S20
Product Name:	wireless headphone
Model No.:	S20
Test Engineer:	Lucas Huang
Supervised by:	Rory Huang

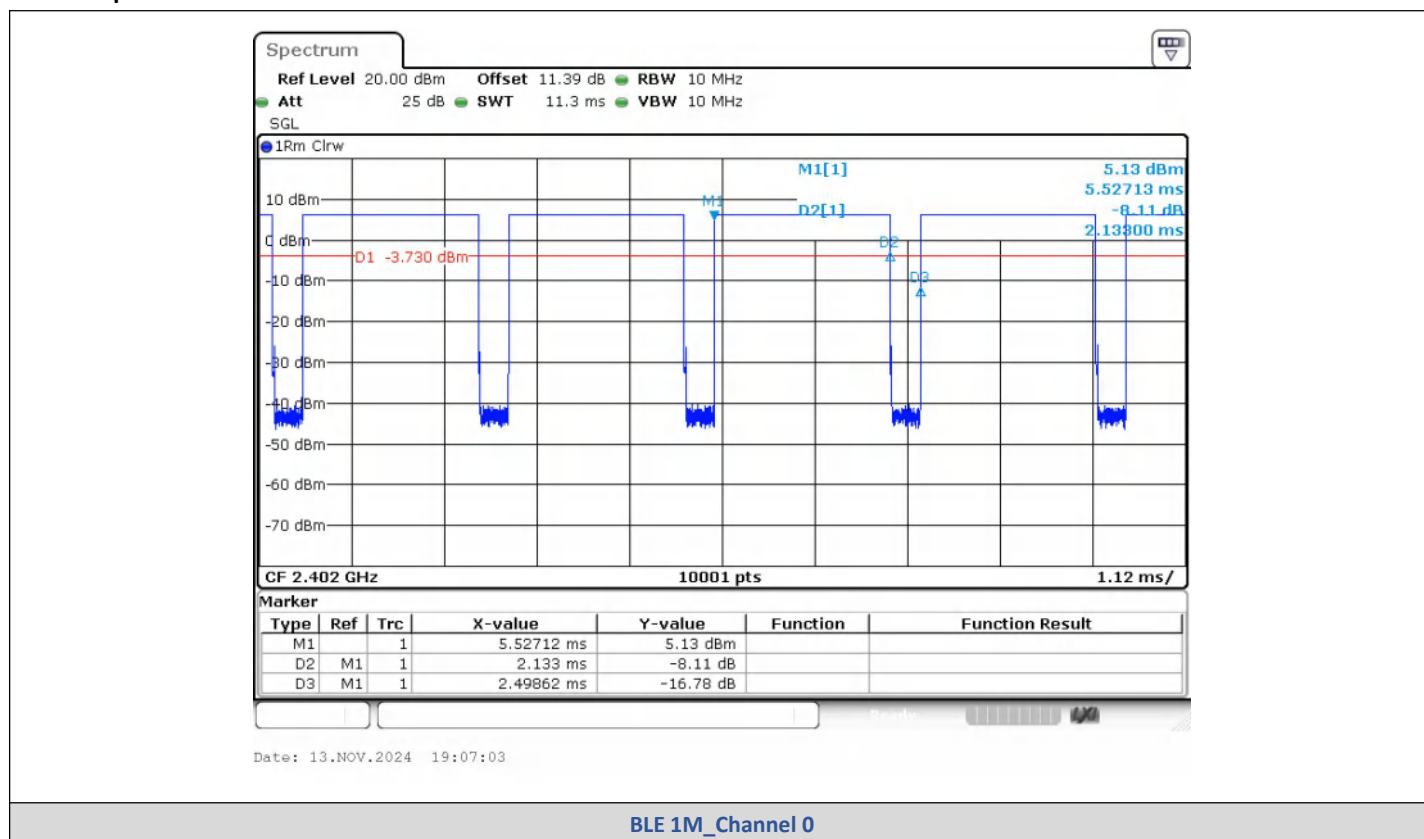
1) Duty Cycle

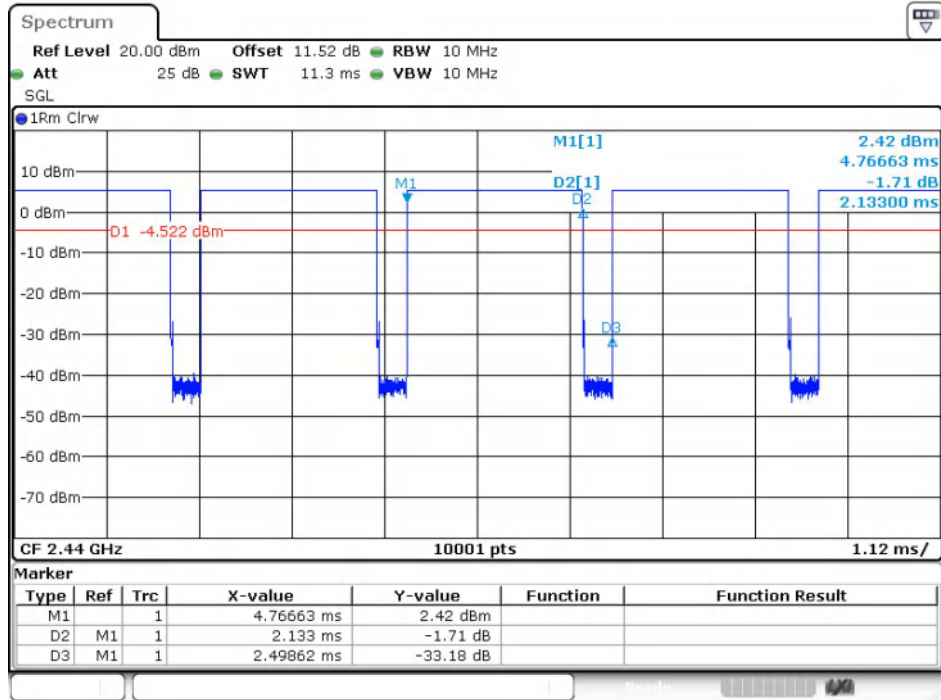
Test Result

Left:

Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
BLE 1M	0	2.133	2.499	85.37	0.8537	0.6869	0.4688
	19	2.133	2.499	85.37	0.8537	0.6869	0.4688
	39	2.133	2.499	85.37	0.8537	0.6869	0.4688
BLE 2M	0	1.081	2.500	43.25	0.4325	3.6401	0.9251
	19	1.081	2.499	43.27	0.4327	3.6381	0.9251
	39	1.080	2.499	43.22	0.4322	3.6432	0.9259

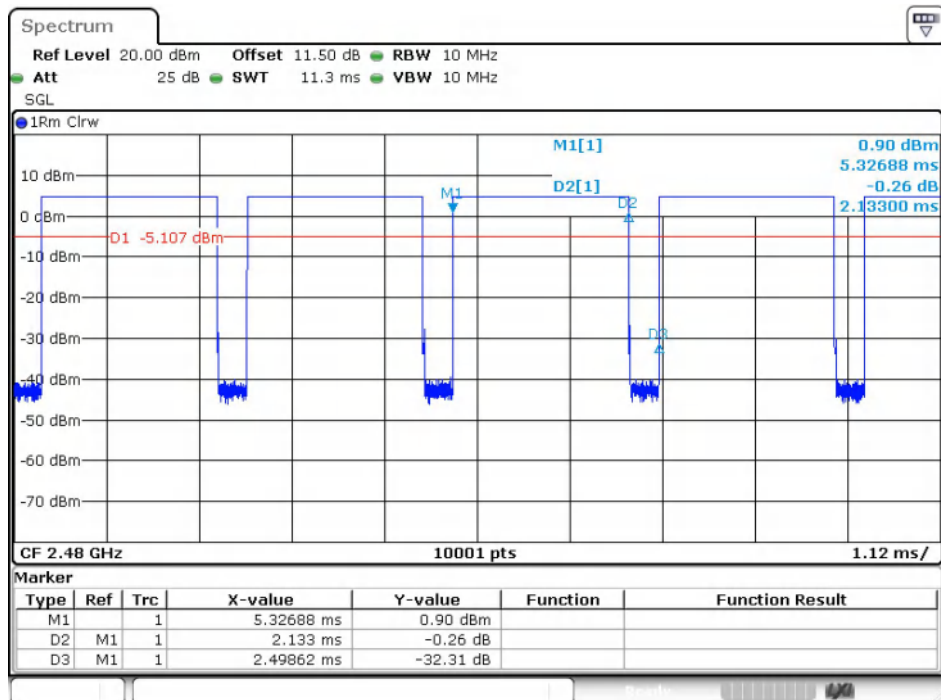
Test Graphs





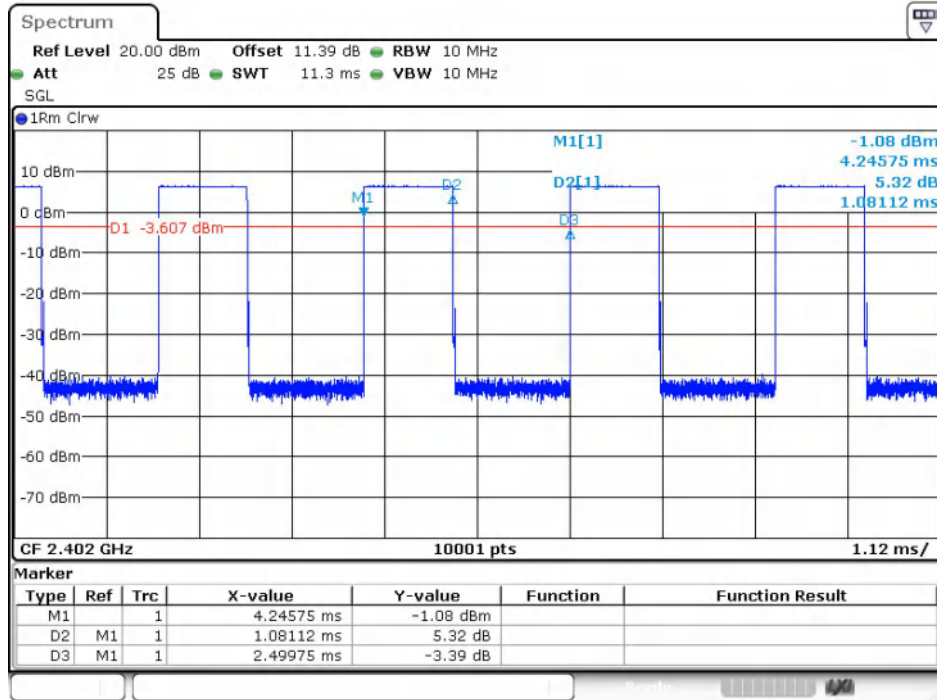
Date: 13.NOV.2024 19:09:58

BLE 1M_Channel 19



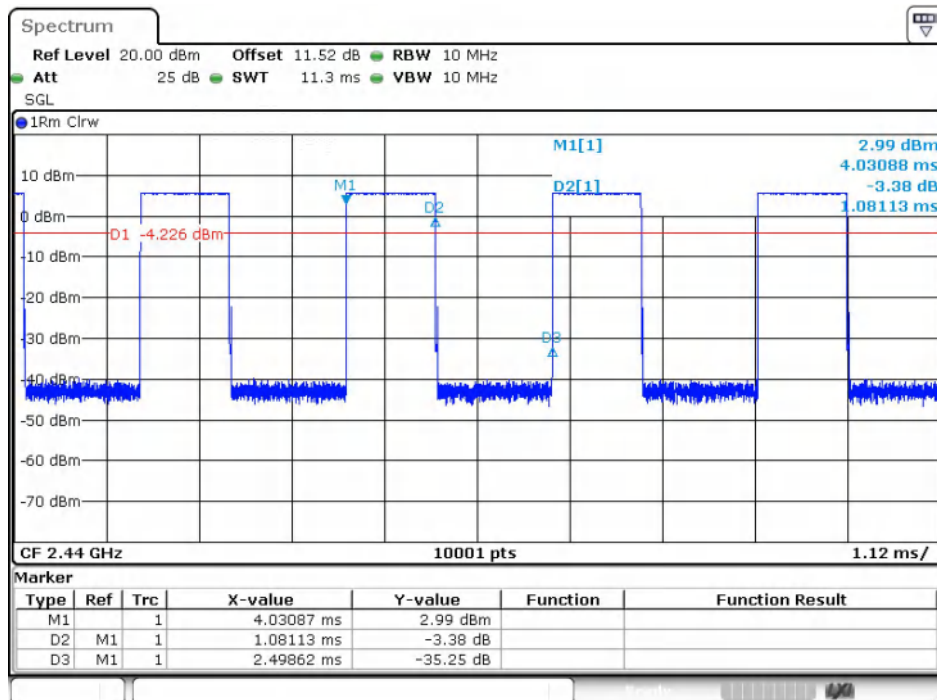
Date: 13.NOV.2024 19:12:11

BLE 1M_Channel 39



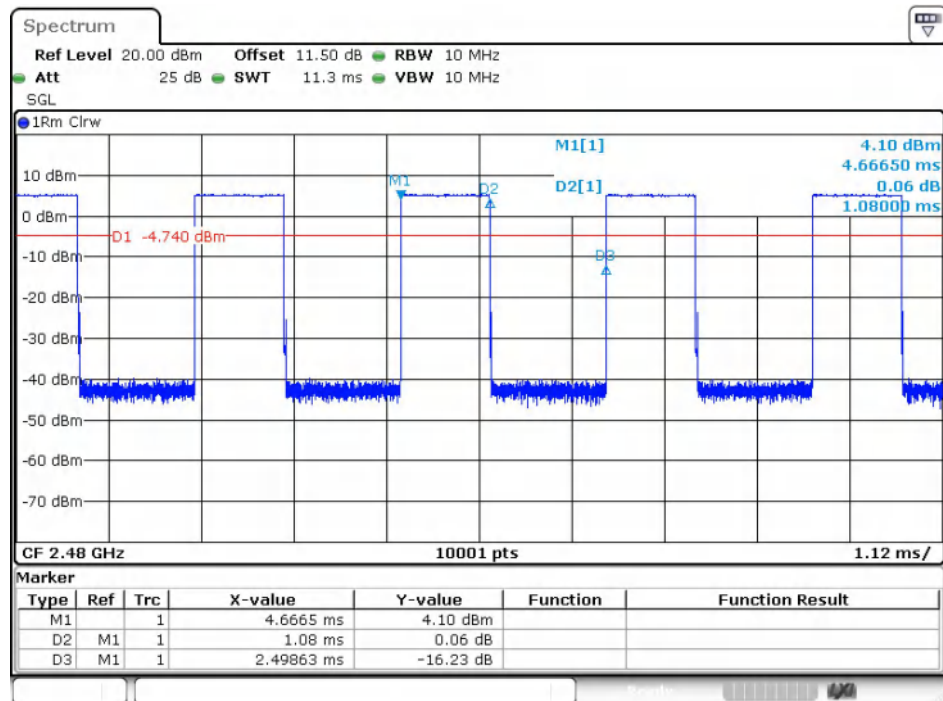
Date: 13.NOV.2024 19:14:49

BLE 2M_Channel 0



Date: 13.NOV.2024 19:17:38

BLE 2M_Channel 19



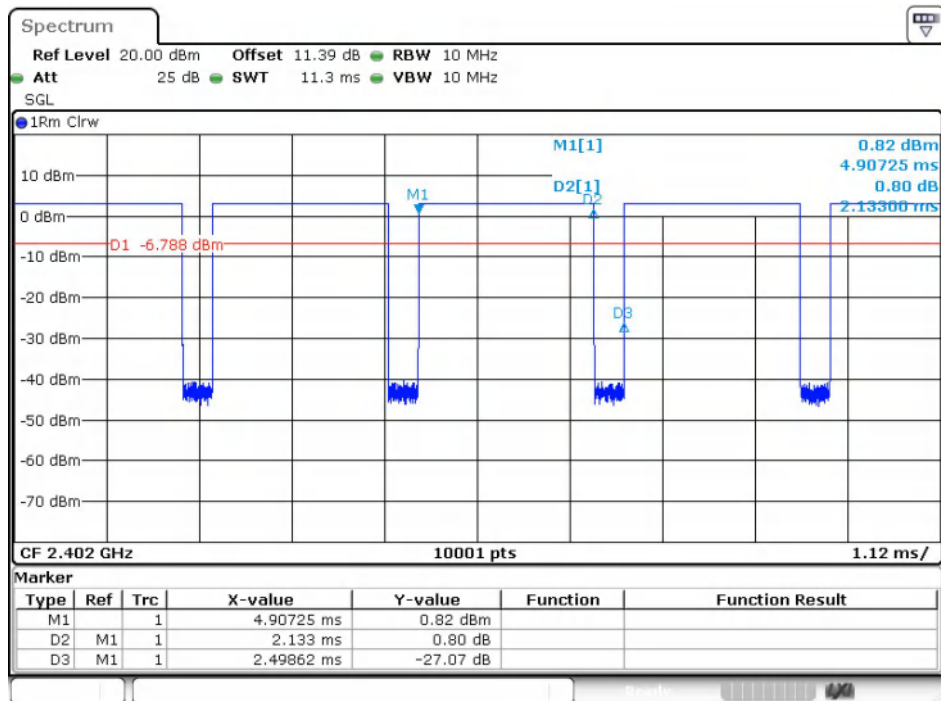
Date: 13.NOV.2024 19:19:51

BLE 2M_Channel 39

Right:

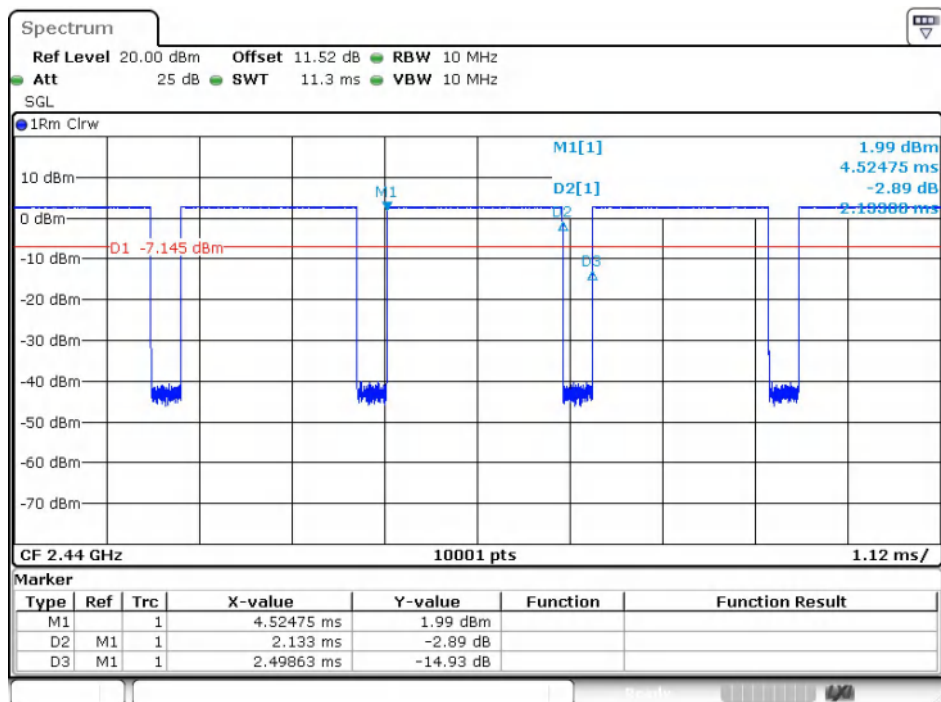
Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
BLE 1M	0	2.133	2.499	85.37	0.8537	0.6869	0.4688
	19	2.133	2.499	85.37	0.8537	0.6869	0.4688
	39	2.133	2.499	85.37	0.8537	0.6869	0.4688
BLE 2M	0	1.081	2.499	43.27	0.4327	3.6381	0.9251
	19	1.081	2.499	43.27	0.4327	3.6381	0.9251
	39	1.081	2.499	43.27	0.4327	3.6381	0.9251

Test Graphs



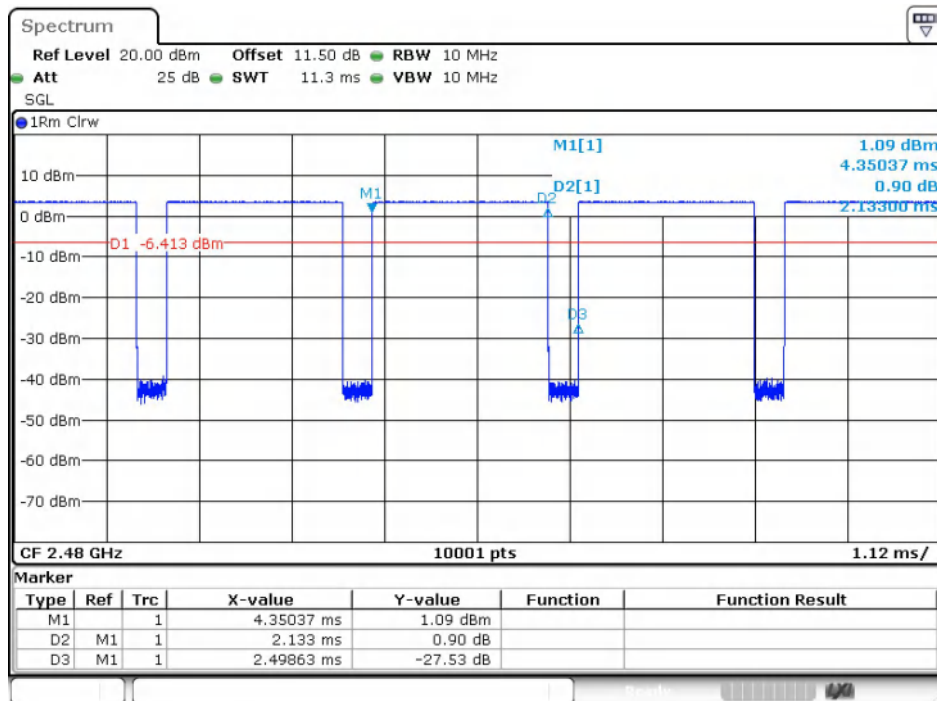
Date: 14.NOV.2024 17:46:52

BLE 1M_Channel 0



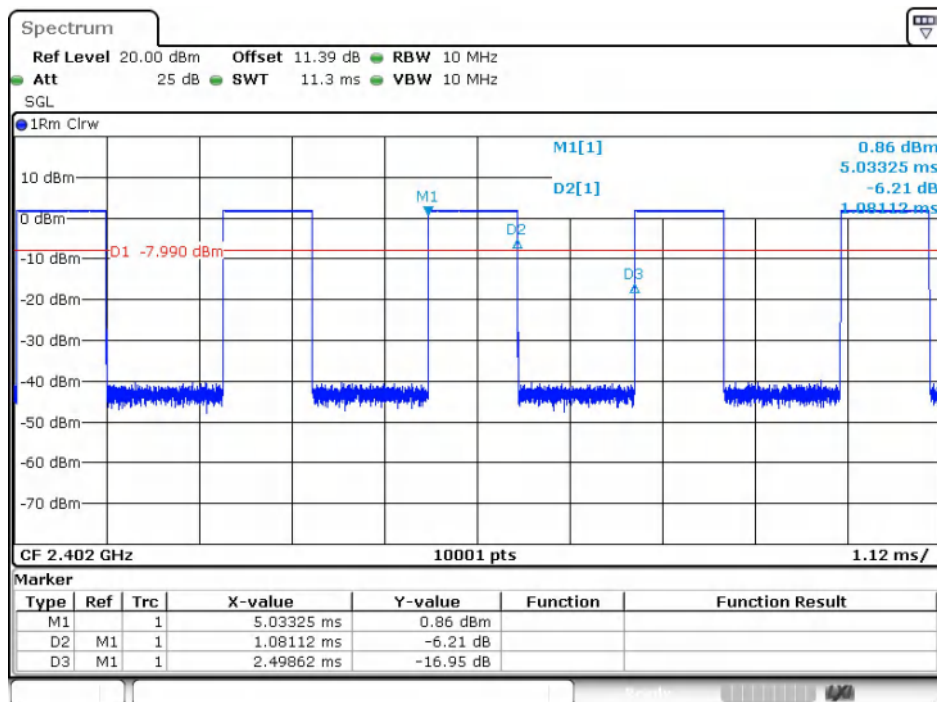
Date: 14.NOV.2024 17:49:26

BLE 1M_Channel 19



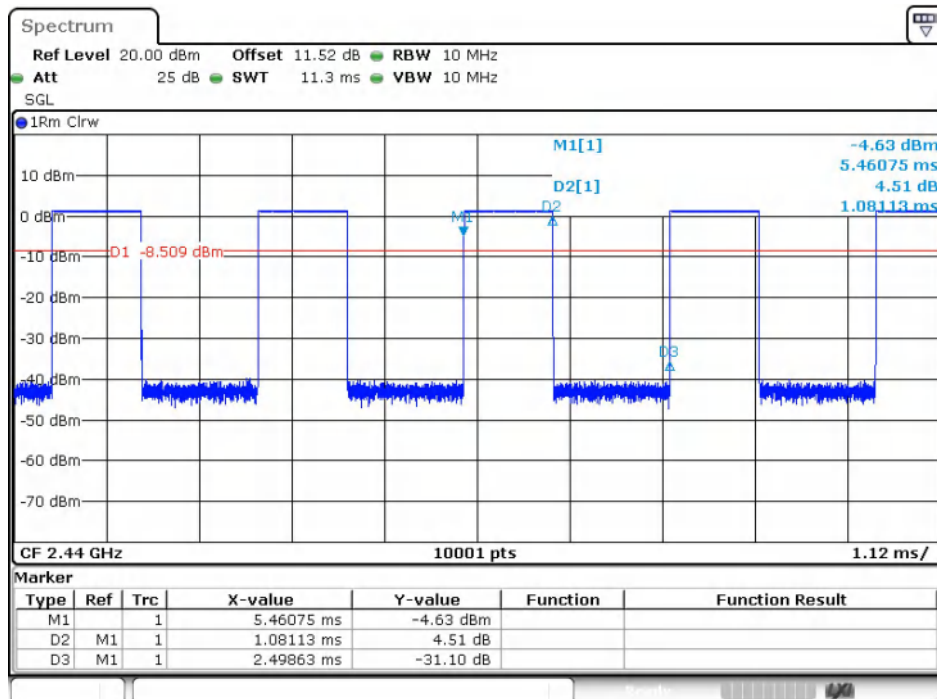
Date: 14.NOV.2024 17:51:42

BLE 1M_Channel 39



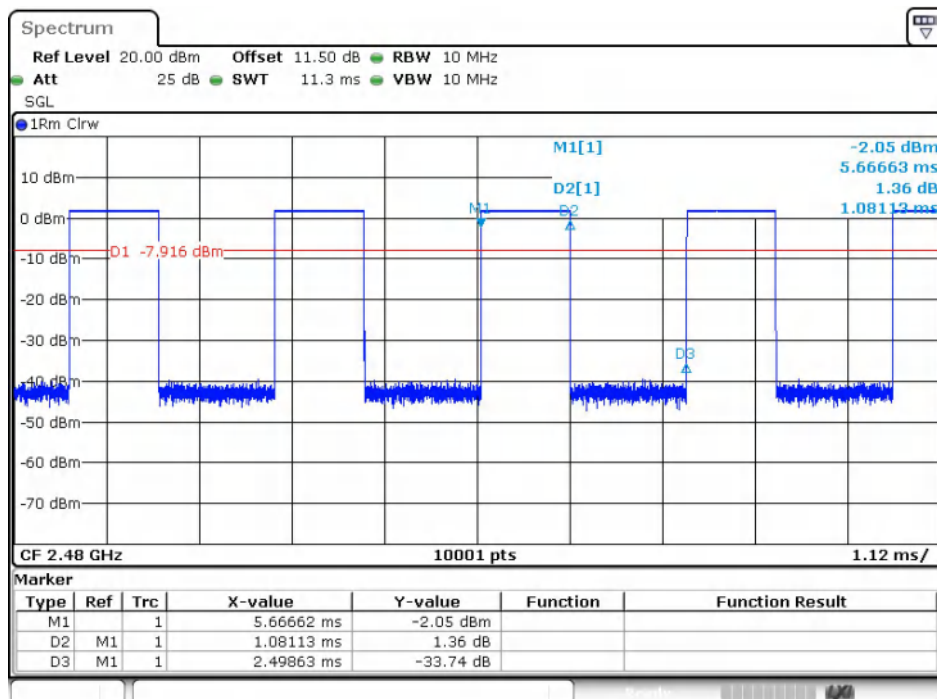
Date: 15.NOV.2024 09:48:42

BLE 2M_Channel 0



Date: 15.NOV.2024 09:52:08

BLE 2M_Channel 19



Date: 15.NOV.2024 10:12:41

BLE 2M_Channel 39

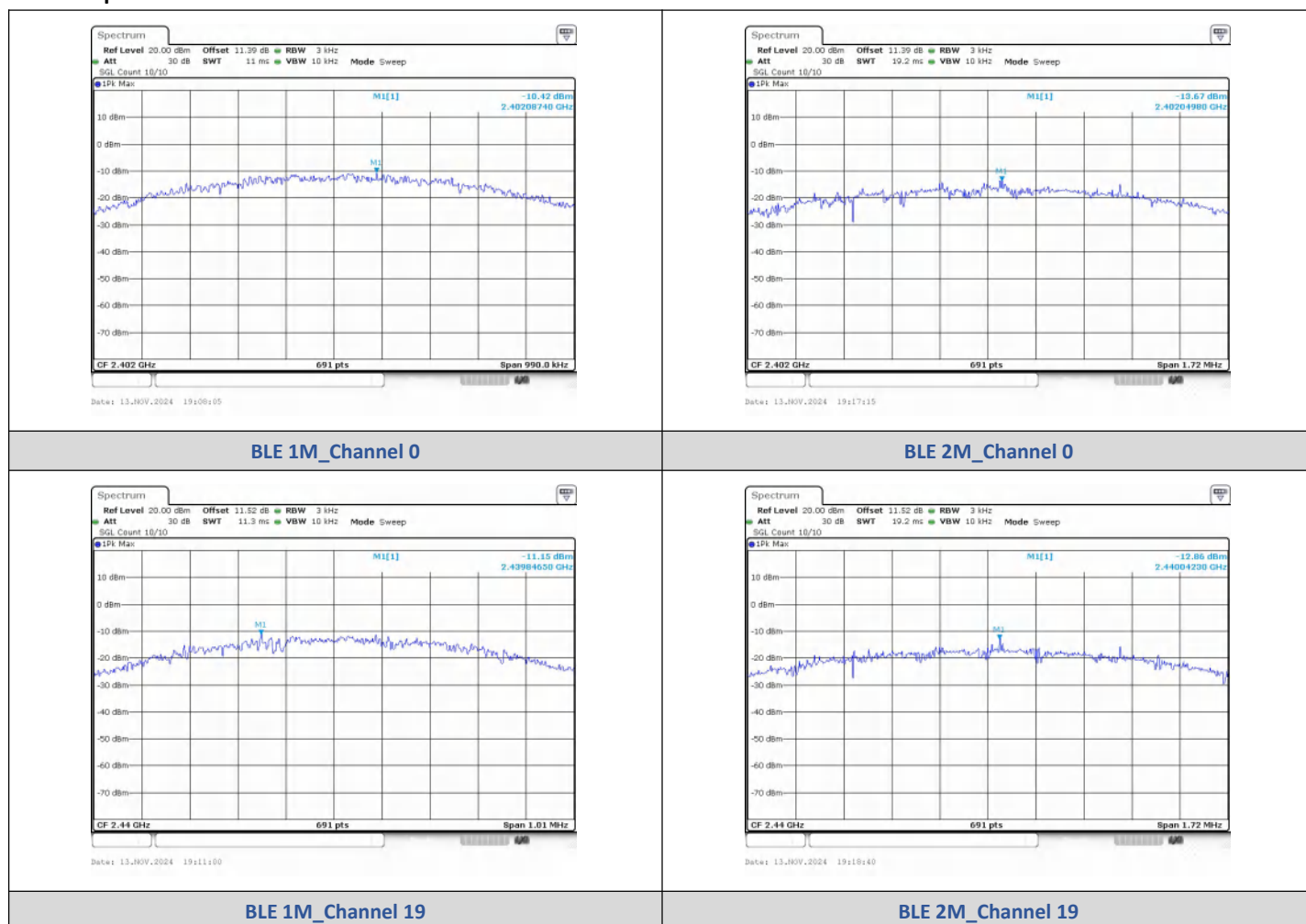
2) Power Spectral Density

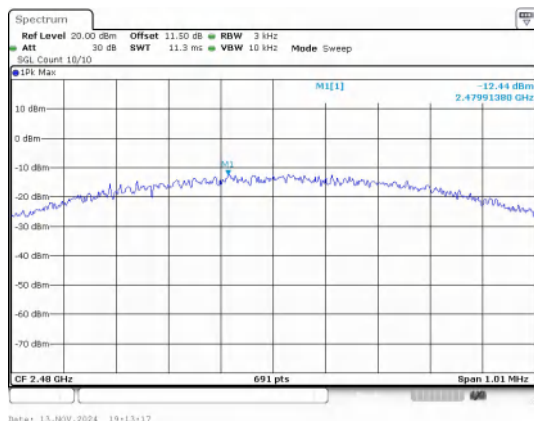
Test Result

Left:

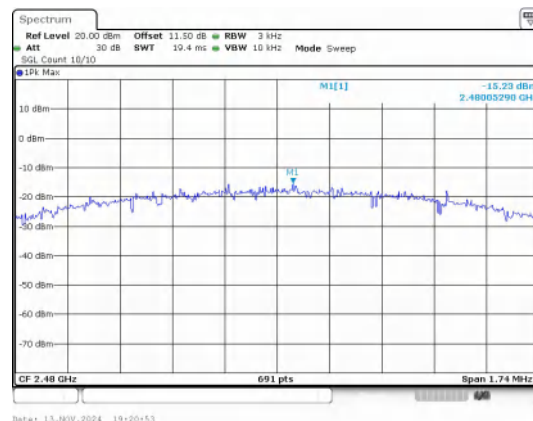
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE 1M	0	-10.420	≤8	PASS
BLE 1M	19	-11.150	≤8	PASS
BLE 1M	39	-12.440	≤8	PASS
BLE 2M	0	-13.670	≤8	PASS
BLE 2M	19	-12.860	≤8	PASS
BLE 2M	39	-15.230	≤8	PASS

Test Graphs





BLE 1M_Channel 39

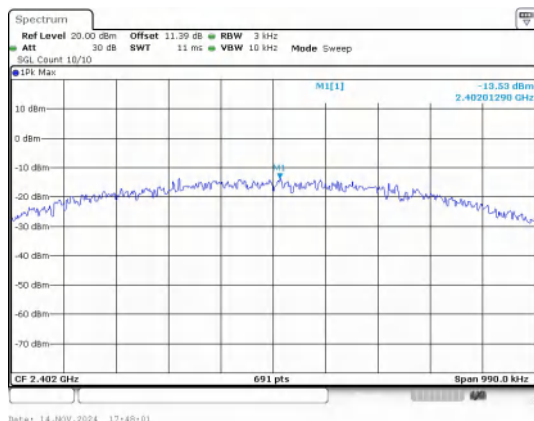


BLE 2M_Channel 39

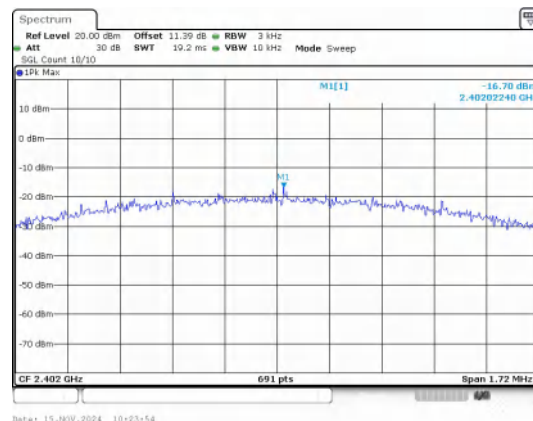
Right:

Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE 1M	0	-13.530	≤8	PASS
BLE 1M	19	-14.270	≤8	PASS
BLE 1M	39	-13.010	≤8	PASS
BLE 2M	0	-16.700	≤8	PASS
BLE 2M	19	-18.990	≤8	PASS
BLE 2M	39	-18.250	≤8	PASS

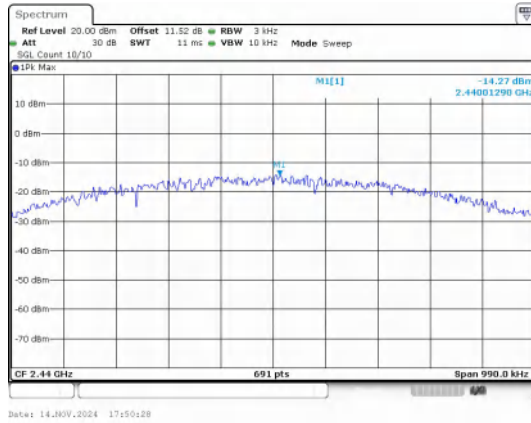
Test Graphs



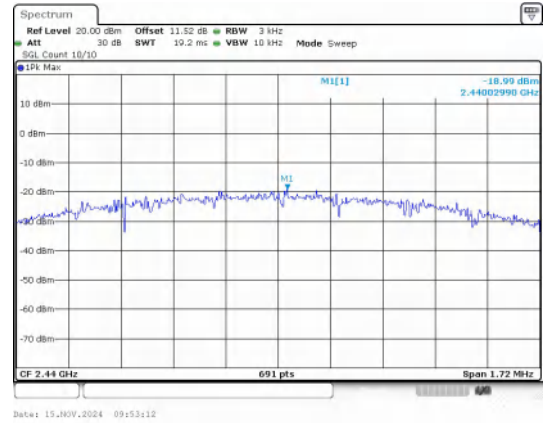
BLE 1M_Channel 0



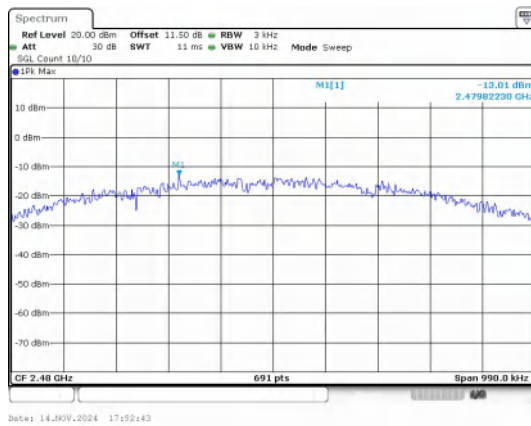
BLE 2M_Channel 0



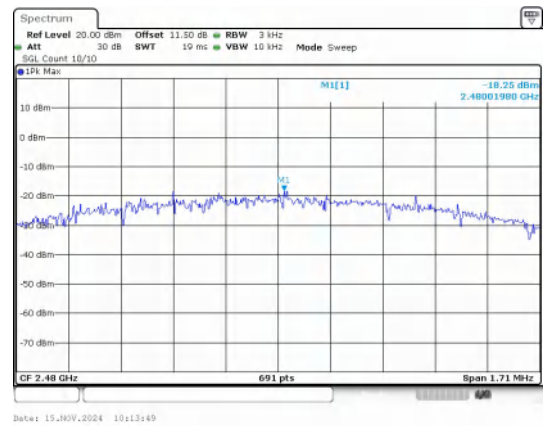
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



BLE 2M_Channel 39

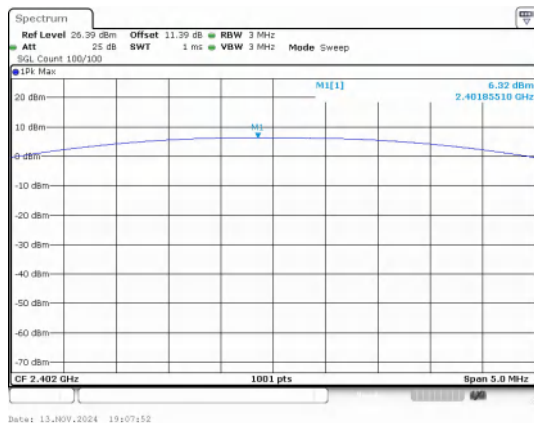
3) Conducted Output Power

Test Result

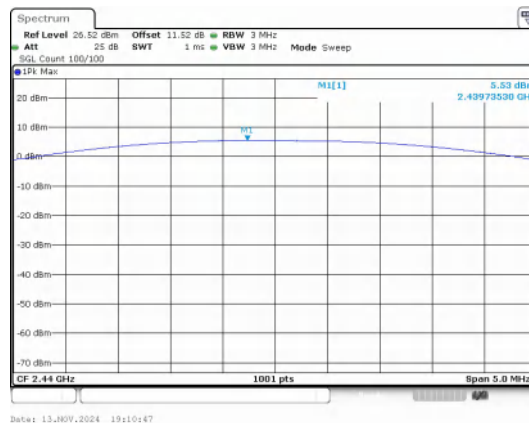
Left:

Mode	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
BLE 1M	0	6.32	4.29	≤30	PASS
	19	5.53	3.57	≤30	PASS
	39	4.98	3.15	≤30	PASS
BLE 2M	0	6.52	4.49	≤30	PASS
	19	5.85	3.85	≤30	PASS
	39	5.33	3.41	≤30	PASS

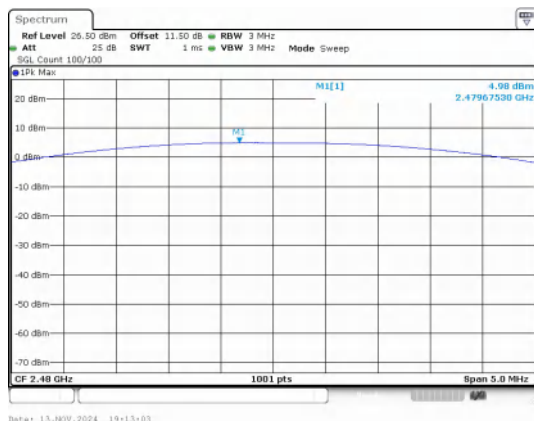
Test Graphs



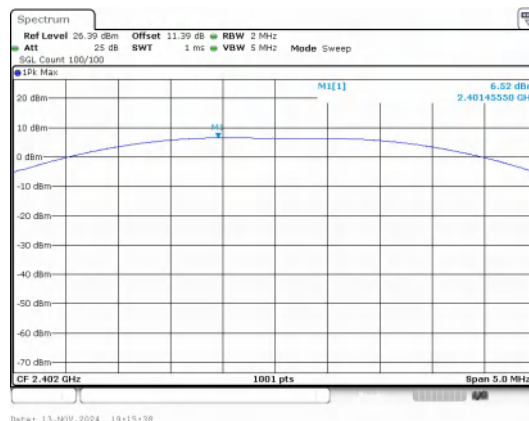
Peak Output Power
BLE 1M_Channel 0



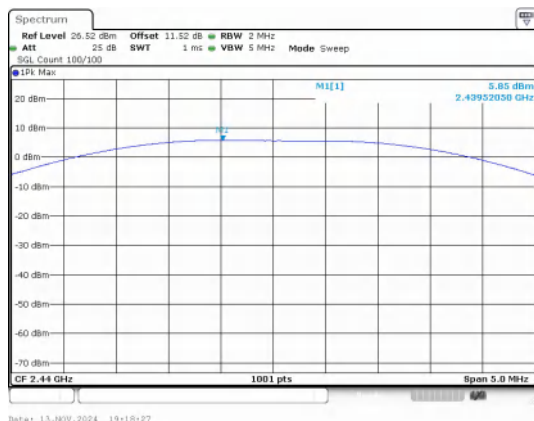
Peak Output Power
BLE 1M_Channel 19



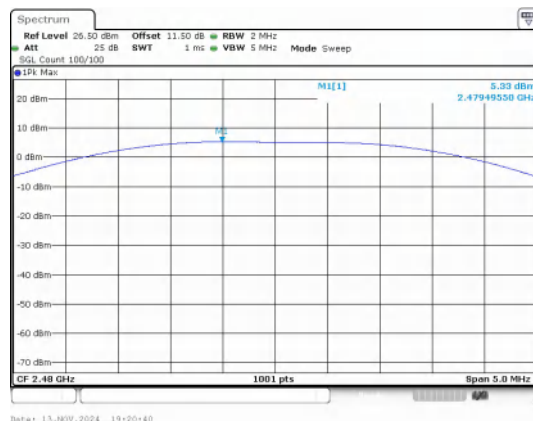
Peak Output Power
BLE 1M_Channel 39



Peak Output Power
BLE 2M_Channel 0



Peak Output Power
BLE 2M_Channel 19

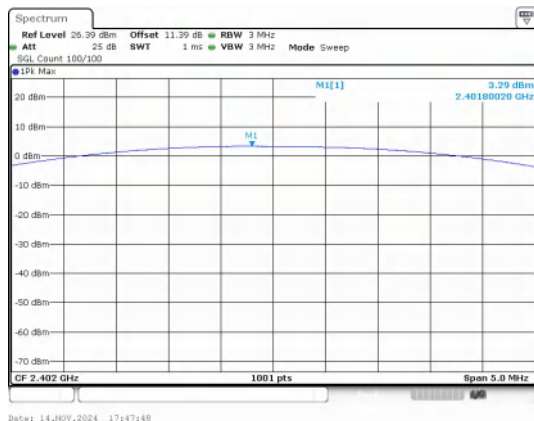


Peak Output Power
BLE 2M_Channel 39

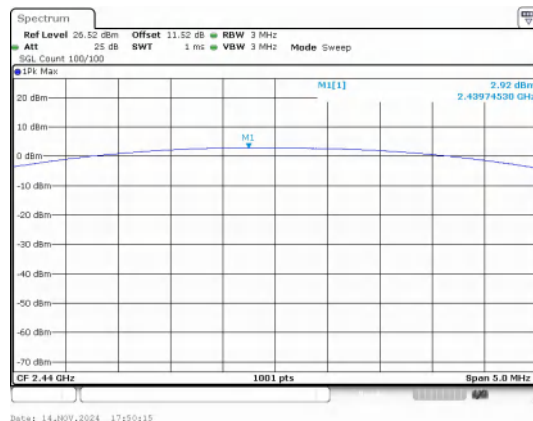
Right:

Mode	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
BLE 1M	0	3.29	2.13	≤30	PASS
	19	2.92	1.96	≤30	PASS
	39	3.62	2.3	≤30	PASS
BLE 2M	0	2.18	1.65	≤30	PASS
	19	1.54	1.43	≤30	PASS
	39	2.04	1.6	≤30	PASS

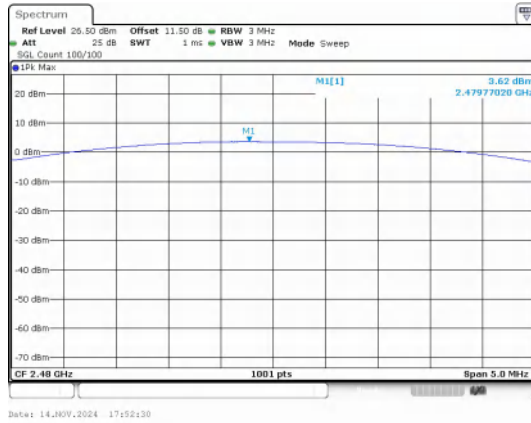
Test Graphs



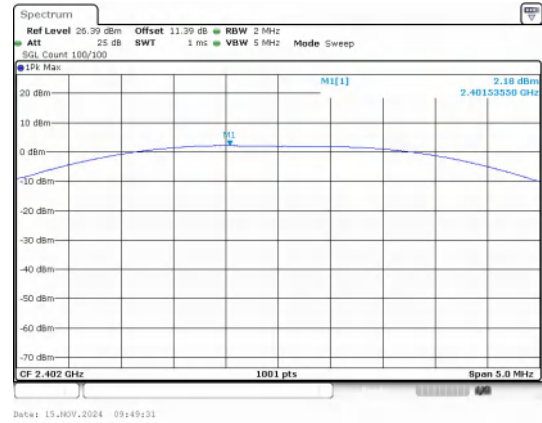
Peak Output Power
BLE 1M_Channel 0



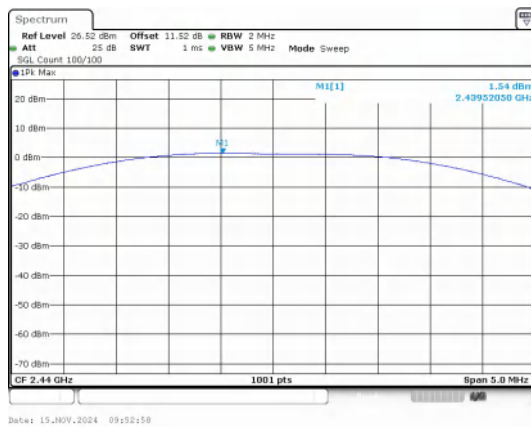
Peak Output Power
BLE 1M_Channel 19



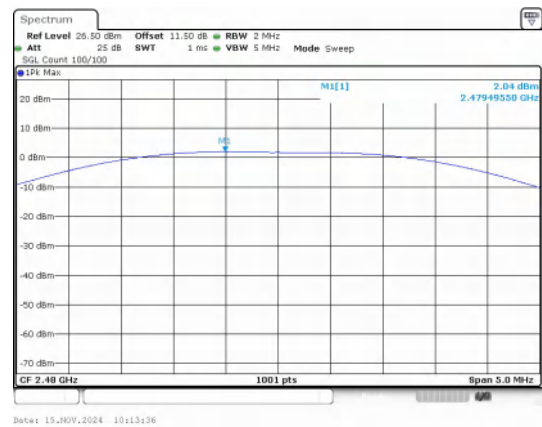
Peak Output Power
BLE 1M_Channel 39



Peak Output Power
BLE 2M_Channel 0



Peak Output Power
BLE 2M_Channel 19



Peak Output Power
BLE 2M_Channel 39

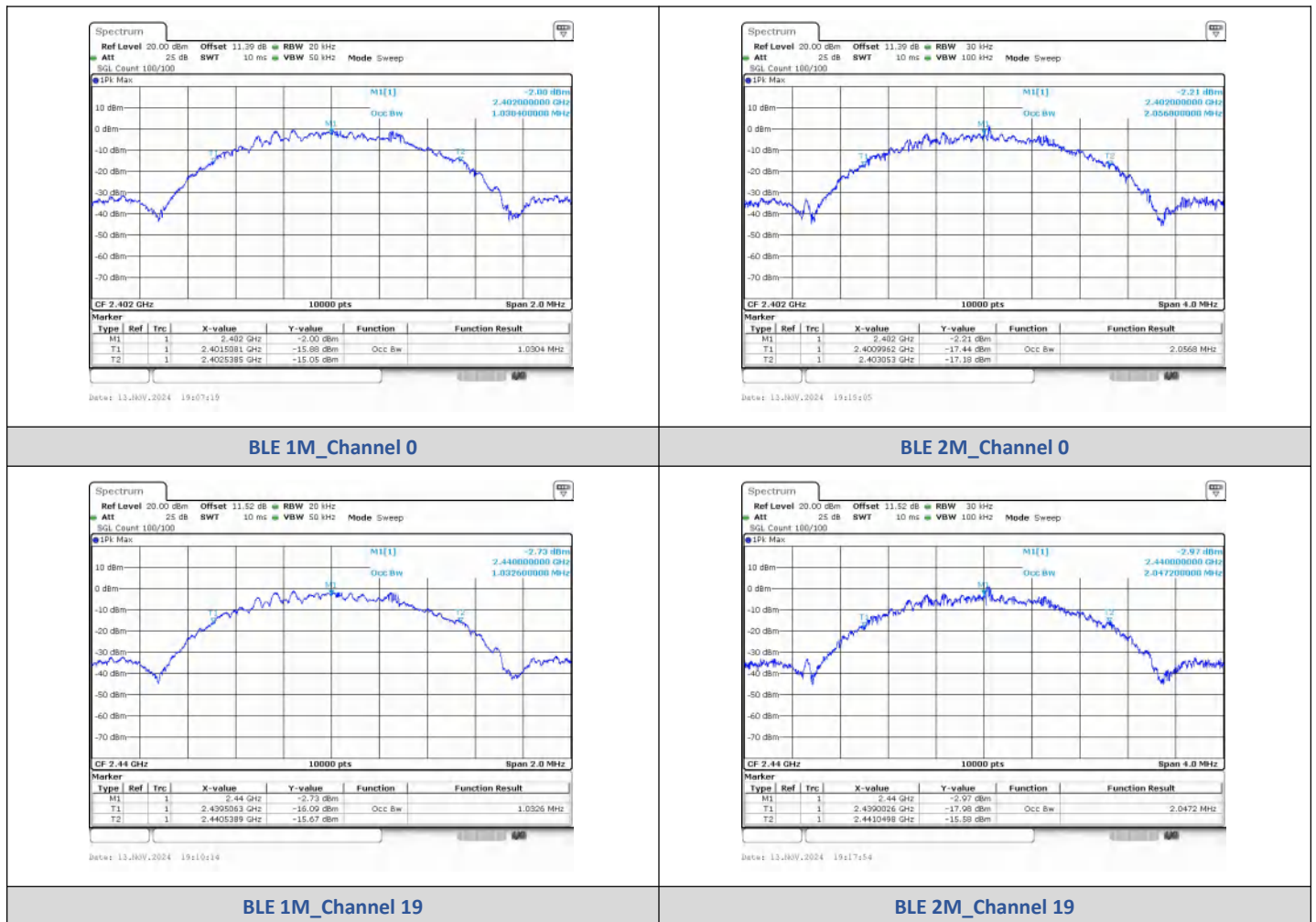
4) 99% Bandwidth

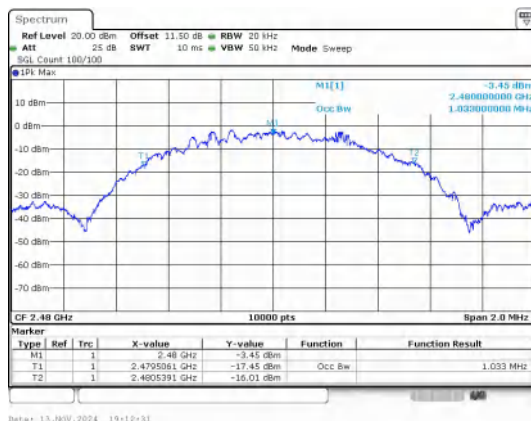
Test Result

Left:

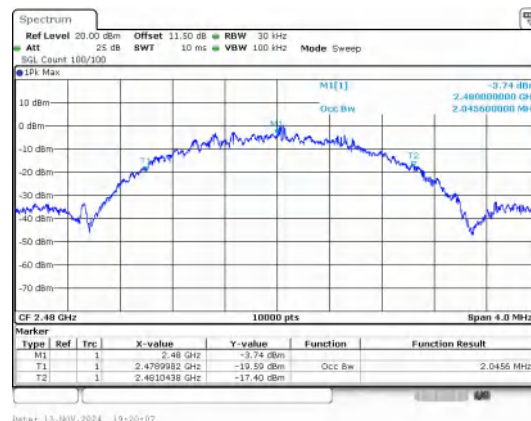
Mode	Channel	Center Frequency (MHz)	99% BW (MHz)
BLE 1M	0	2402	1.0304
BLE 1M	19	2440	1.0326
BLE 1M	39	2480	1.0330
BLE 2M	0	2402	2.0568
BLE 2M	19	2440	2.0472
BLE 2M	39	2480	2.0456

Test Graphs





BLE 1M_Channel 39

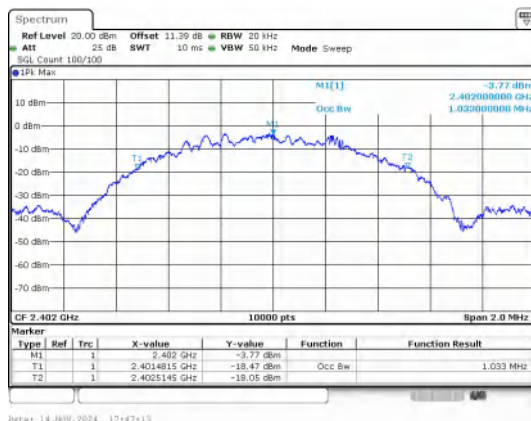


BLE 2M_Channel 39

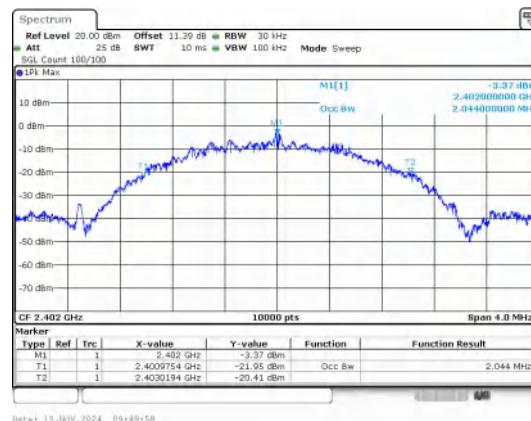
Right:

Mode	Channel	Center Frequency (MHz)	99% BW (MHz)
BLE 1M	0	2402	1.0330
BLE 1M	19	2440	1.0318
BLE 1M	39	2480	1.0322
BLE 2M	0	2402	2.0440
BLE 2M	19	2440	2.0512
BLE 2M	39	2480	2.0440

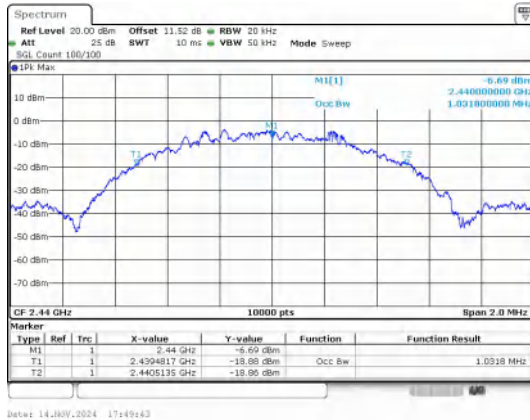
Test Graphs



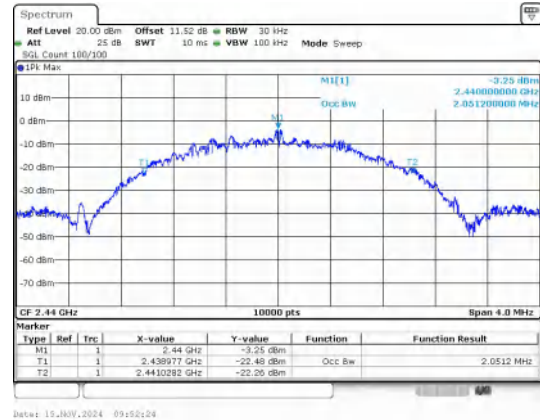
BLE 1M_Channel 0



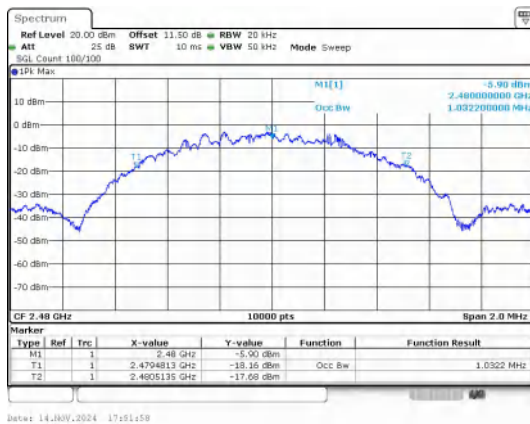
BLE 2M_Channel 0



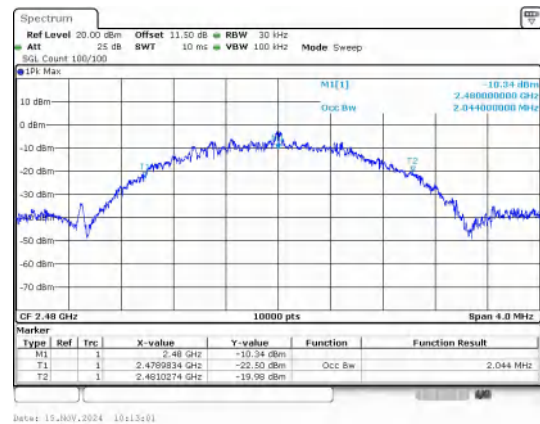
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



BLE 2M_Channel 39

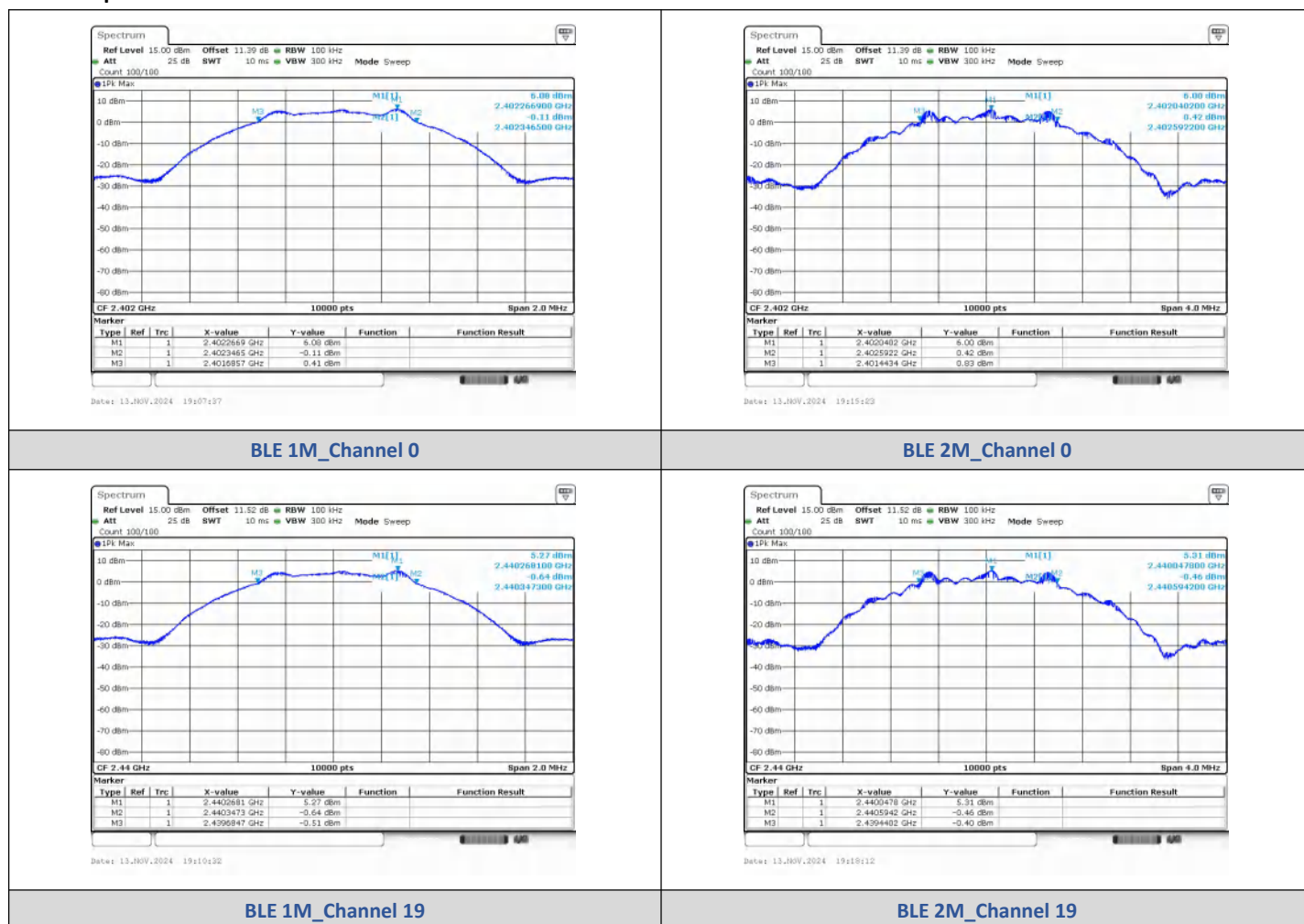
5) 6dB Bandwidth

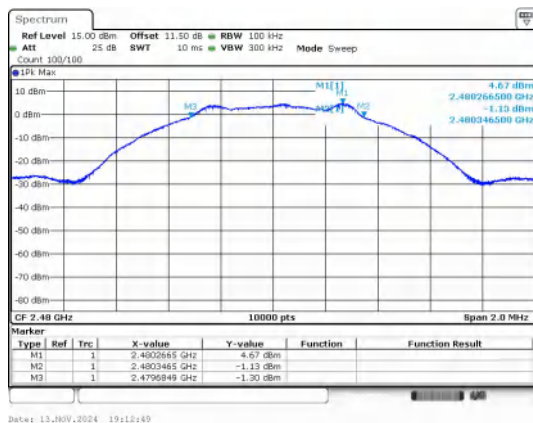
Test Result

Left:

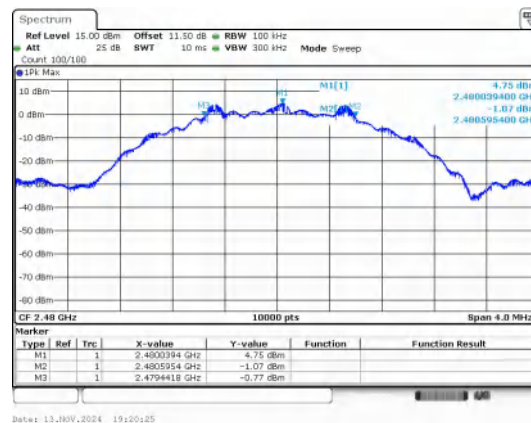
Mode	Channel	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
BLE 1M	0	2402	0.6600	≥0.5	PASS
	19	2440	0.6700		PASS
	39	2480	0.6700		PASS
BLE 2M	0	2402	1.150		PASS
	19	2440	1.150		PASS
	39	2480	1.160		PASS

Test Graphs





BLE 1M_Channel 39

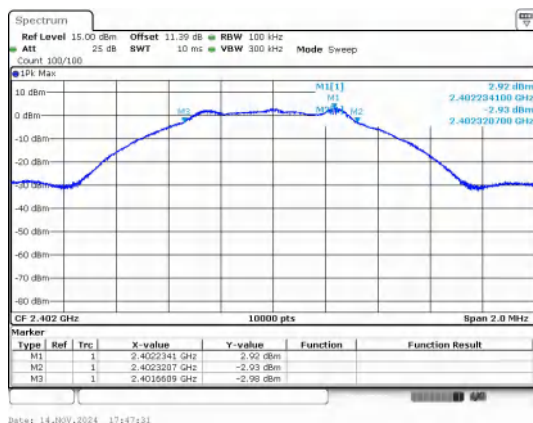


BLE 2M_Channel 39

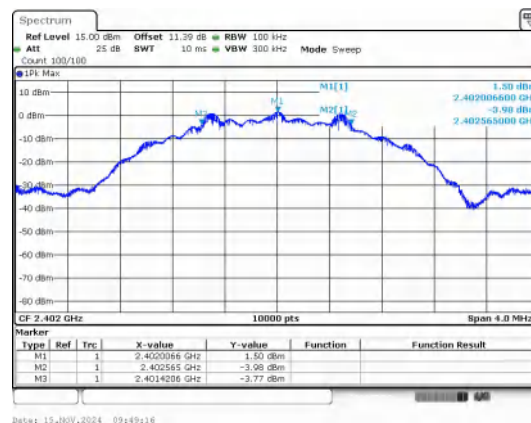
Right:

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	1.150		PASS
	19	2440	1.150		PASS
	39	2480	1.140		PASS

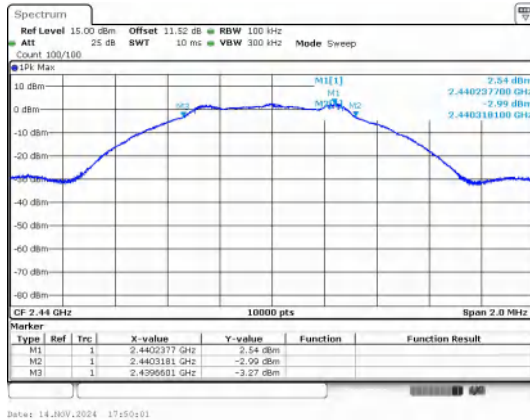
Test Graphs



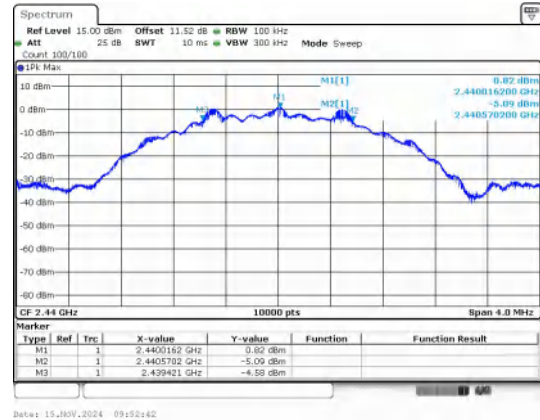
BLE 1M_Channel 0



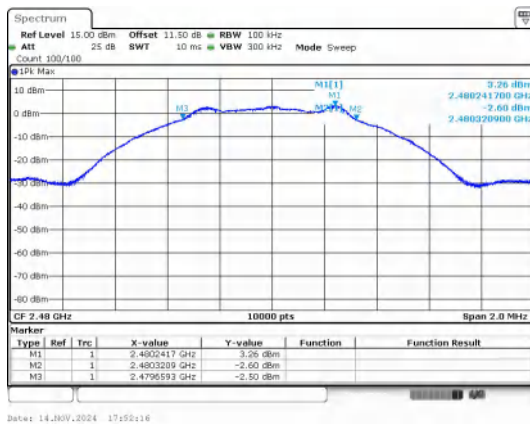
BLE 2M_Channel 0



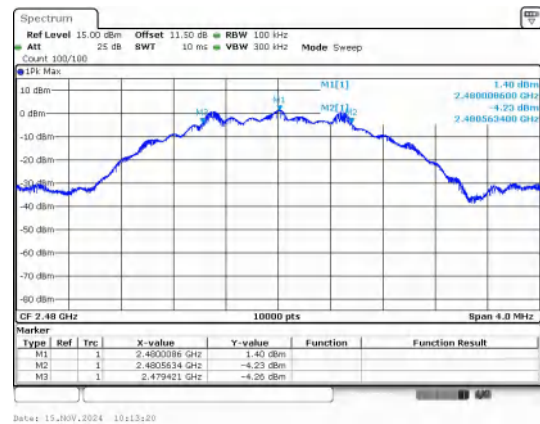
BLE 1M_Channel 19



BLE 2M_Channel 19



BLE 1M_Channel 39



BLE 2M_Channel 39

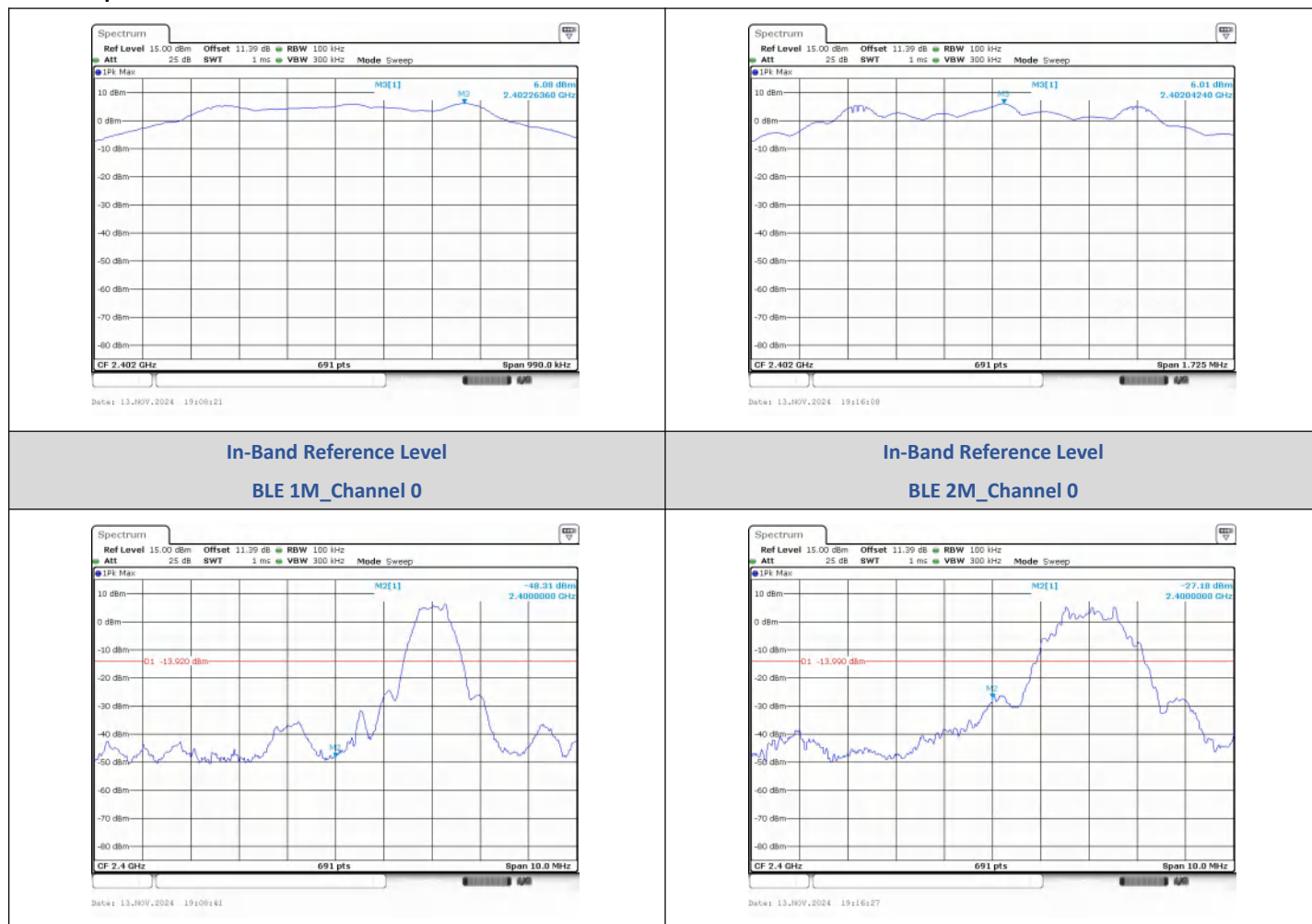
6) Conducted Out Of Band Emission

Test Result

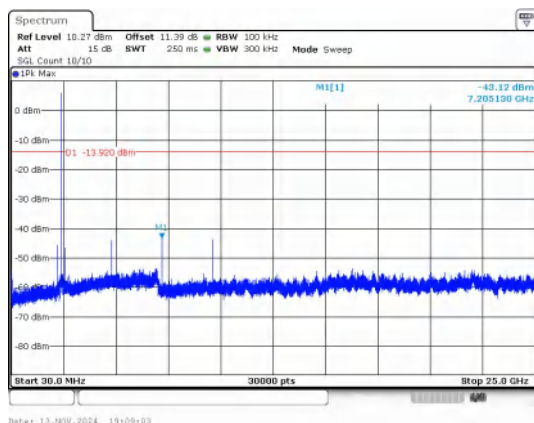
Left:

Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
BLE 1M	0	2399.00	-36.927	-13.92	-23.007	PASS
		2400.00	-48.310	-13.92	-34.390	PASS
		7205.10	-43.119	-13.92	-29.199	PASS
	19	9753.73	-39.917	-14.72	-25.197	PASS
	39	2483.50	-44.710	-15.32	-29.390	PASS
		9914.37	-40.253	-15.32	-24.933	PASS
BLE 2M	0	2400.00	-27.180	-13.99	-13.190	PASS
		4803.02	-43.615	-13.99	-29.625	PASS
	19	9753.73	-40.179	-14.67	-25.509	PASS
	39	2483.50	-48.860	-15.23	-33.630	PASS
		9914.37	-40.143	-15.23	-24.913	PASS

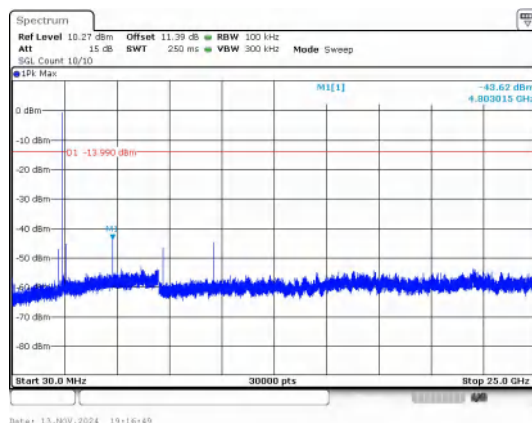
Test Graphs



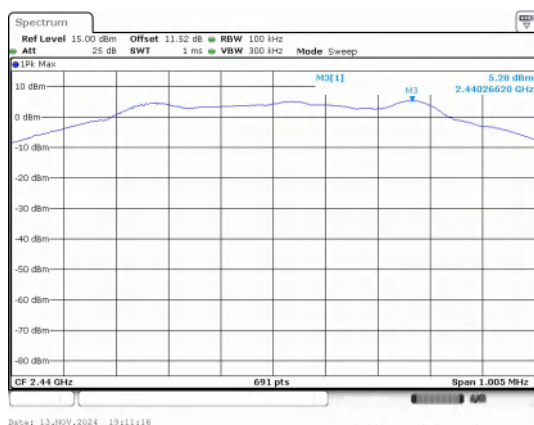
Out Of Band Emission
BLE 1M_Channel 0



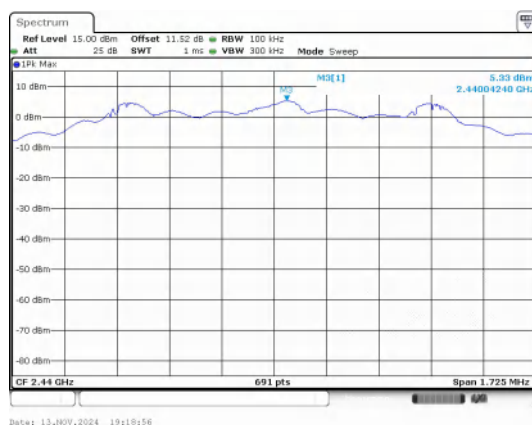
Out Of Band Emission
BLE 2M_Channel 0



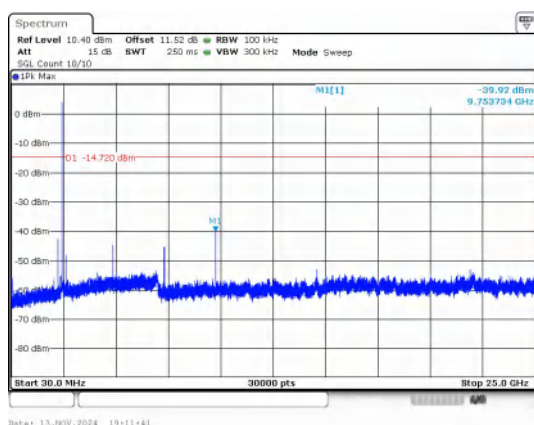
30.0 MHz - 25000.0 MHz
BLE 1M_Channel 0



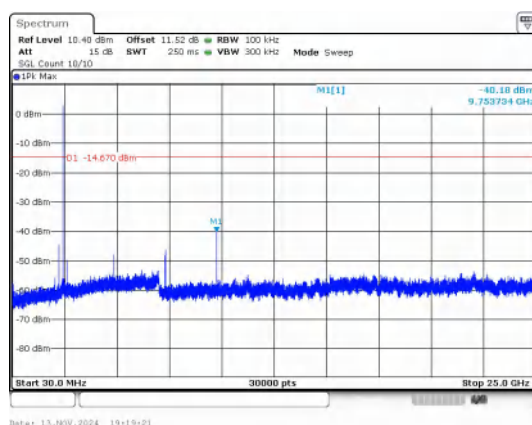
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 0



In-Band Reference Level
BLE 1M_Channel 19

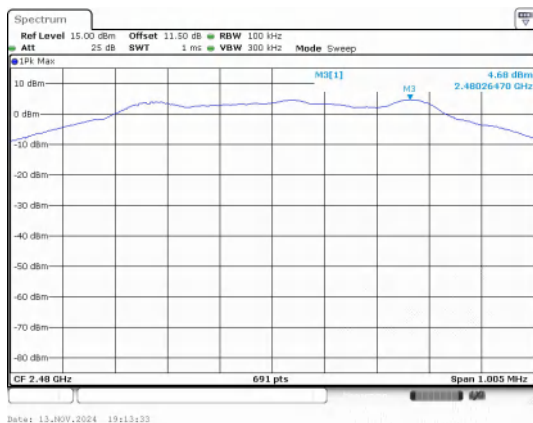


In-Band Reference Level
BLE 2M_Channel 19

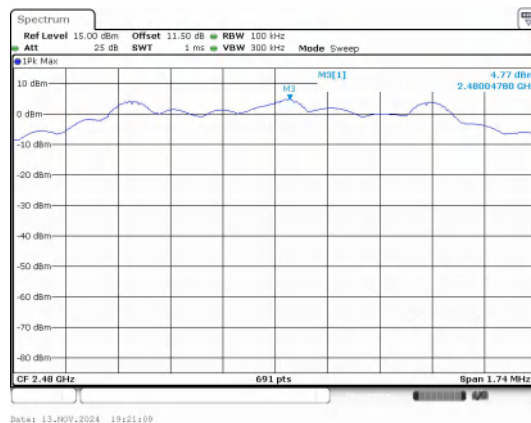


30.0 MHz - 25000.0 MHz
BLE 1M_Channel 19

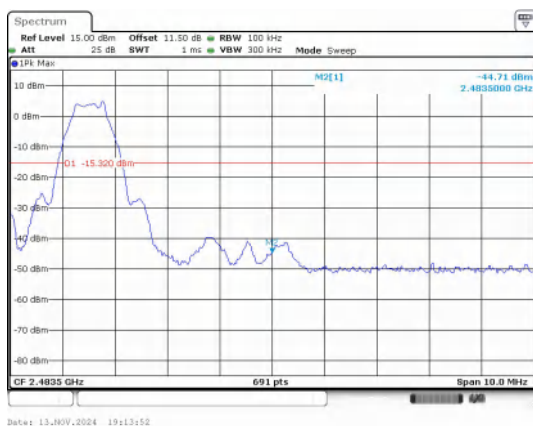
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 19



In-Band Reference Level
BLE 1M_Channel 39



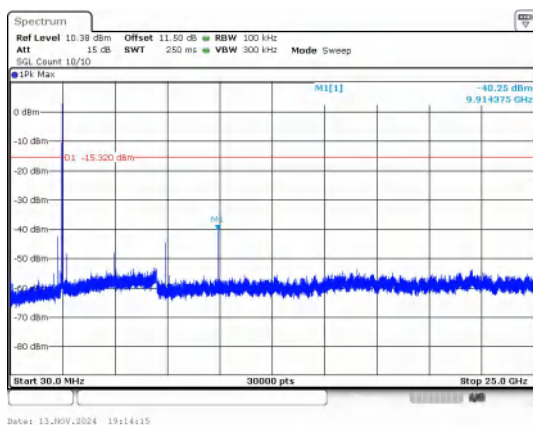
In-Band Reference Level
BLE 2M_Channel 39



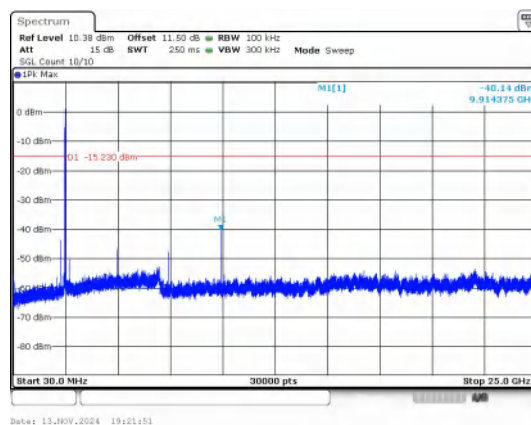
Out Of Band Emission
BLE 1M_Channel 39



Out Of Band Emission
BLE 2M_Channel 39



30.0 MHz - 25000.0 MHz
BLE 1M_Channel 39



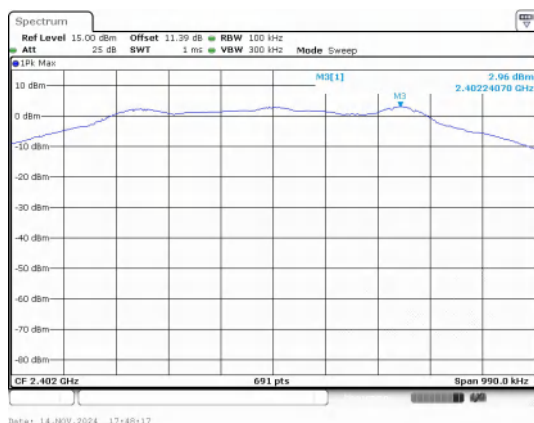
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 39

Right:

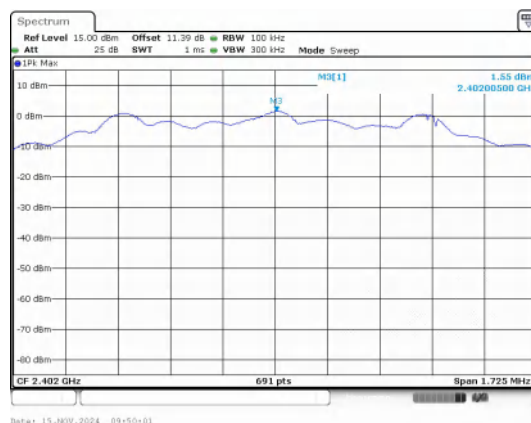
Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
BLE 1M	0	2399.00	-41.416	-17.04	-24.376	PASS
		2400.00	-48.120	-17.04	-31.080	PASS

BLE 2M	19	9602.20	-43.691	-17.04	-26.651	PASS
		9753.73	-42.772	-17.46	-25.312	PASS
	39	2483.50	-42.130	-16.76	-25.370	PASS
		9914.37	-41.289	-16.76	-24.529	PASS
	0	1729.21	-37.574	-18.45	-19.124	PASS
BLE 1M	19	2400.00	-30.480	-18.45	-12.030	PASS
		9753.73	-42.240	-19.09	-23.150	PASS
	39	2483.50	-50.700	-18.6	-32.100	PASS
		9914.37	-41.930	-18.6	-23.330	PASS
	0	1729.21	-37.574	-18.45	-19.124	PASS

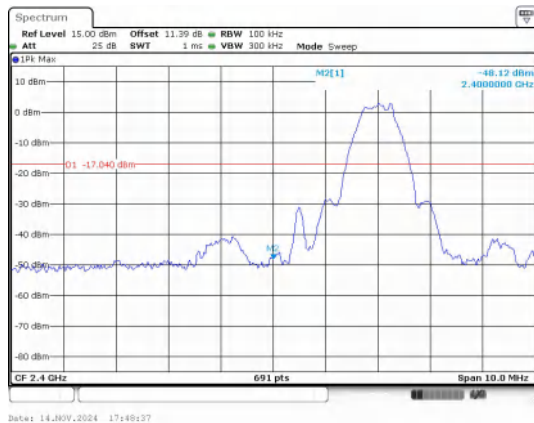
Test Graphs



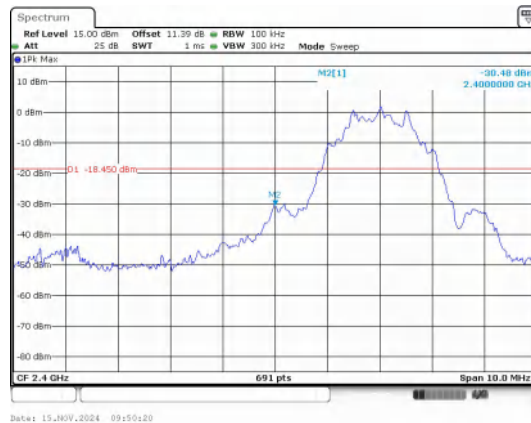
In-Band Reference Level
BLE 1M_Channel 0



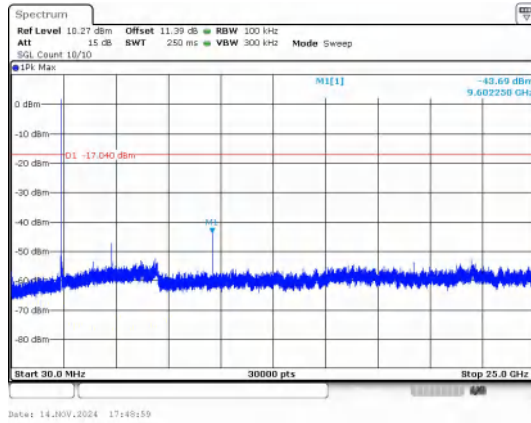
In-Band Reference Level
BLE 2M_Channel 0



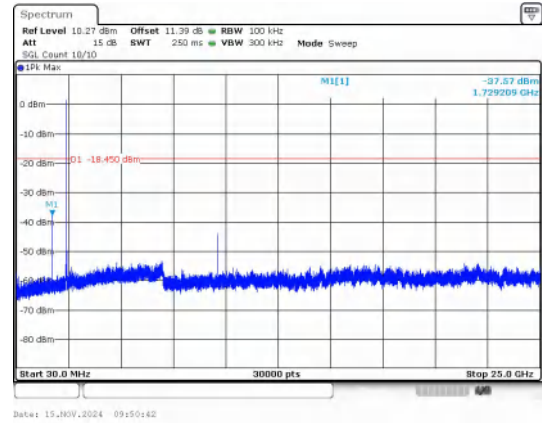
Out Of Band Emission
BLE 1M_Channel 0



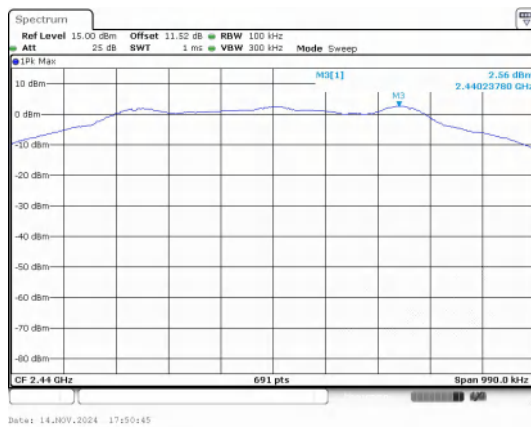
Out Of Band Emission
BLE 2M_Channel 0



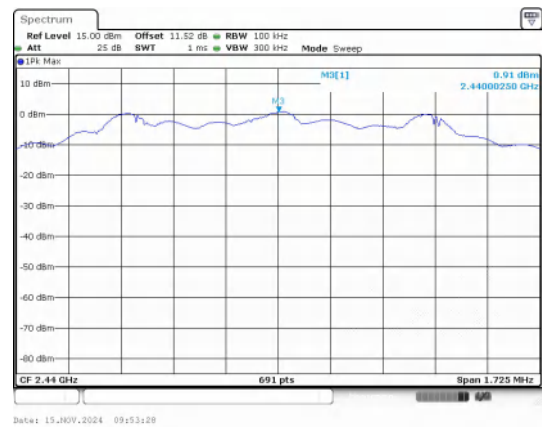
30.0 MHz - 25000.0 MHz
BLE 1M_Channel 0



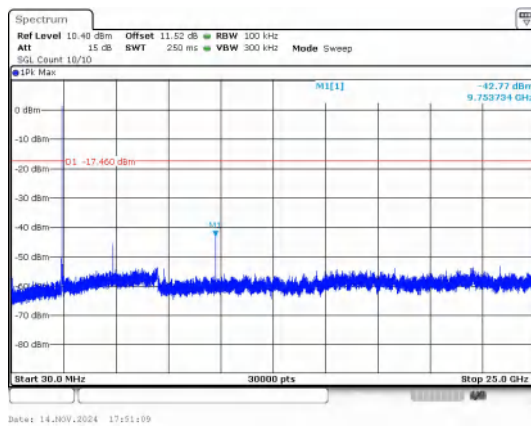
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 0



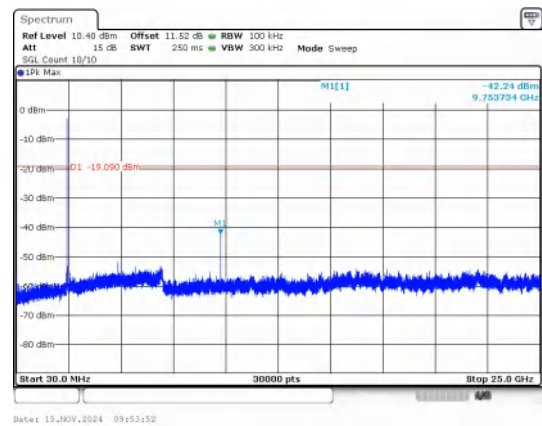
In-Band Reference Level
BLE 1M_Channel 19



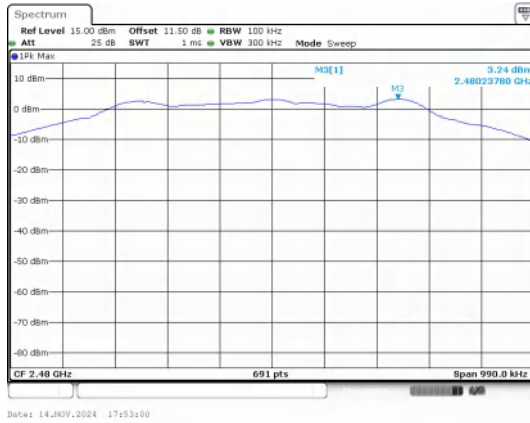
In-Band Reference Level
BLE 2M_Channel 19



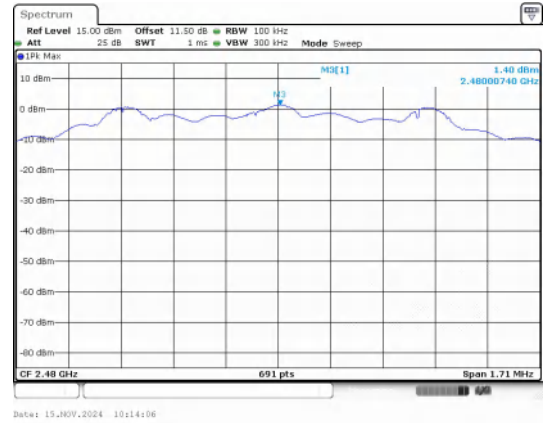
30.0 MHz - 25000.0 MHz
BLE 1M_Channel 19



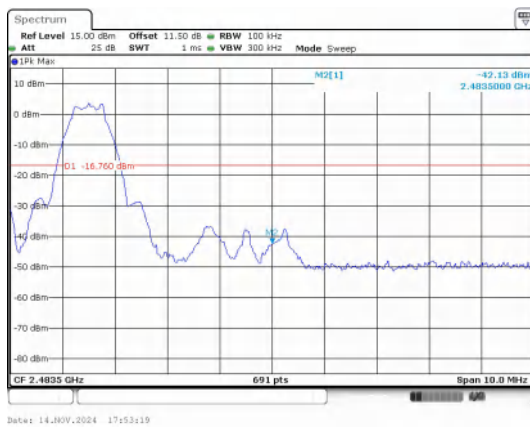
30.0 MHz - 25000.0 MHz
BLE 2M_Channel 19



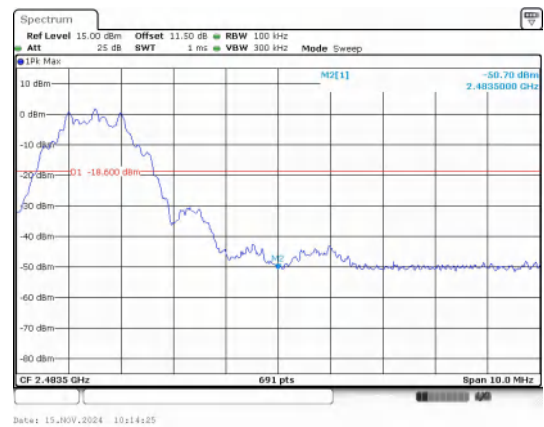
In-Band Reference Level
BLE 1M_Channel 39



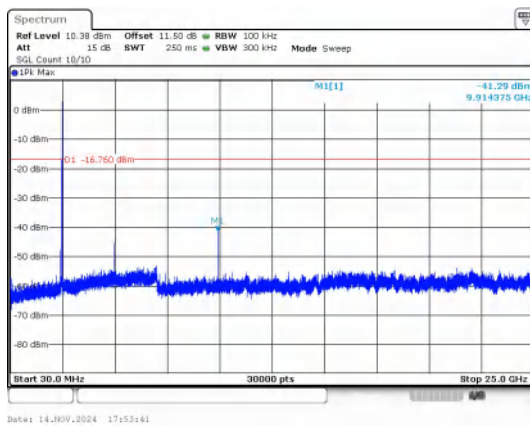
In-Band Reference Level
BLE 2M_Channel 39



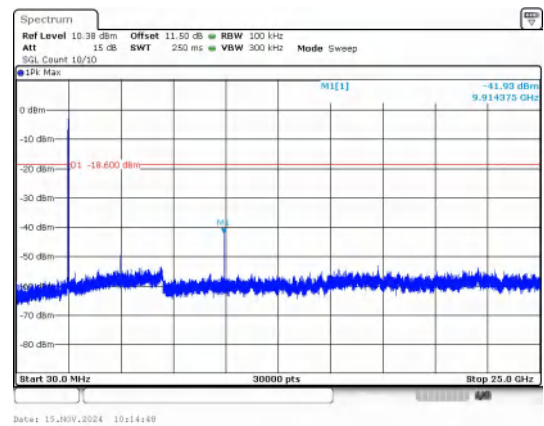
Out Of Band Emission
BLE 1M_Channel 39



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 the report-----