

## Appendix A

Report No.:	CISRR240604033
FCC ID:	2BGXU-MR-BLE001
Product Name:	Bluetooth Module
Model No.:	MR_BLE001
Test Engineer:	Lucas Huang
Supervised by:	Rory Huang

# 1) Conducted Output Power

## Test Result

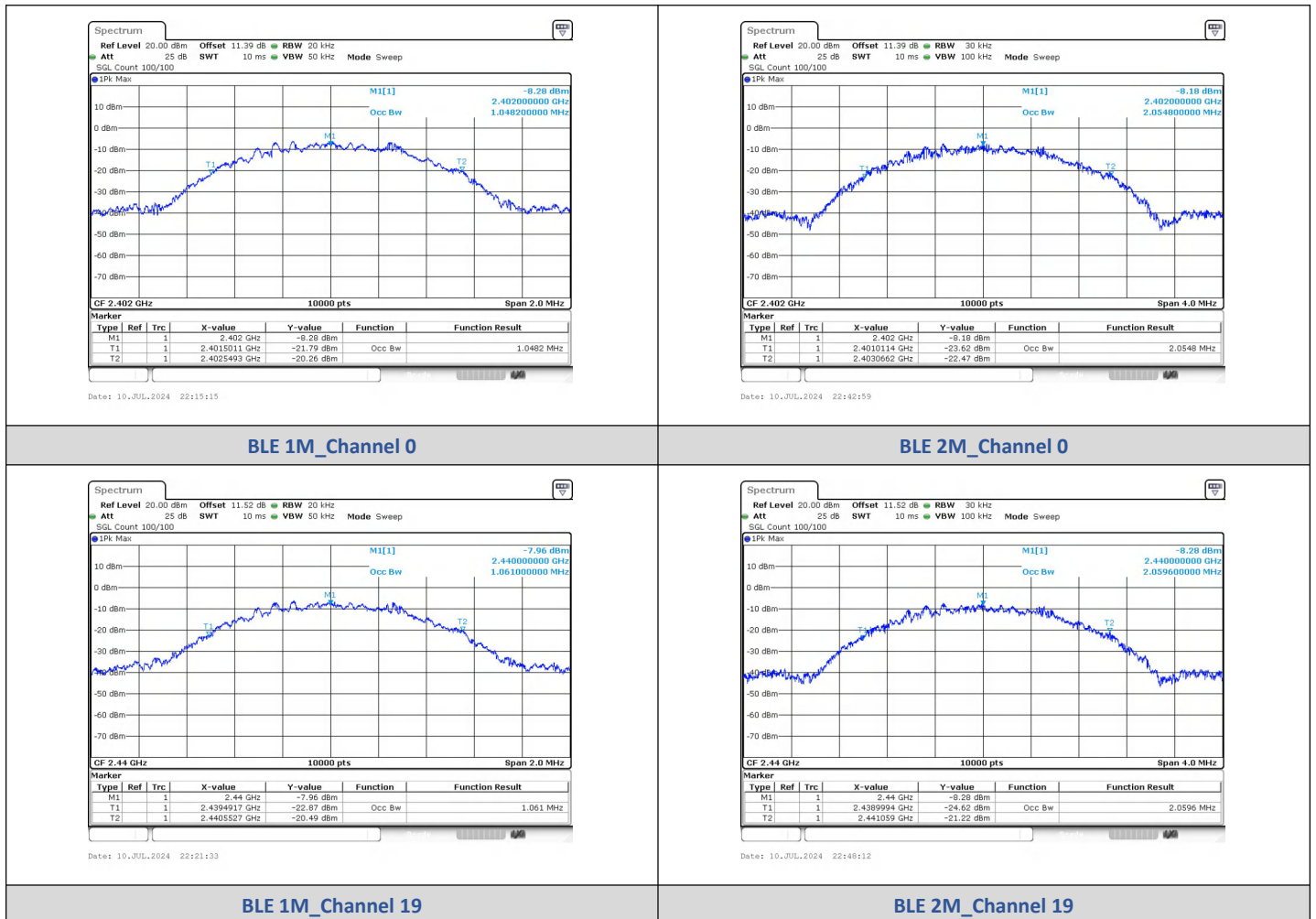
Mode	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
BLE 1M	0	9.903	9.78	None	≤30	PASS
	19	9.629	9.18	None	≤30	PASS
	39	9.054	8.04	None	≤30	PASS
BLE 2M	0	9.405	8.72	None	≤30	PASS
	19	9.527	8.97	None	≤30	PASS
	39	9.153	8.23	None	≤30	PASS

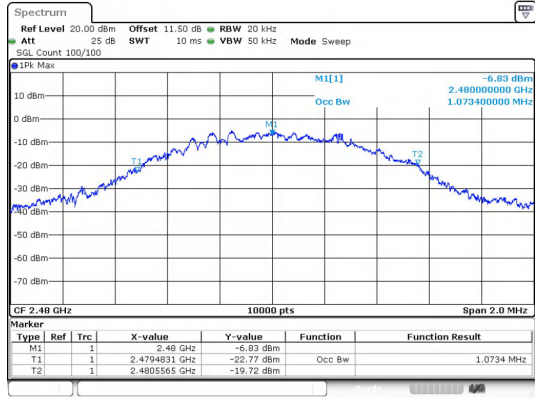
## 2) 99% Bandwidth

### Test Result

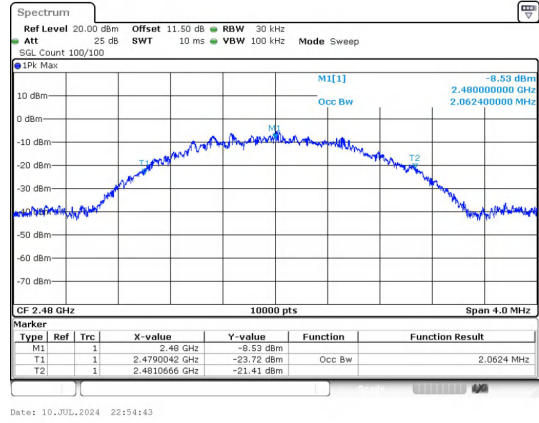
Mode	Channel	Center Frequency (MHz)	99% BW (MHz)
BLE 1M	0	2402	1.0482
BLE 1M	19	2440	1.0610
BLE 1M	39	2480	1.0734
BLE 2M	0	2402	2.0548
BLE 2M	19	2440	2.0596
BLE 2M	39	2480	2.0624

### Test Graphs





BLE 1M\_Channel 39



BLE 2M\_Channel 39

### 3) 6dB Bandwidth

**Test Result**

Mode	Channel	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
BLE 1M	0	2402	0.6700	≥0.5	PASS
	19	2440	0.6800		PASS
	39	2480	0.6900		PASS
BLE 2M	0	2402	1.160		PASS
	19	2440	1.150		PASS
	39	2480	1.150		PASS

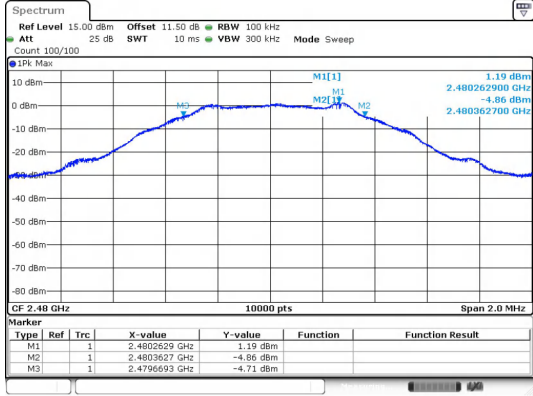
**Test Graphs**

**BLE 1M\_Channel 0**

**BLE 2M\_Channel 0**

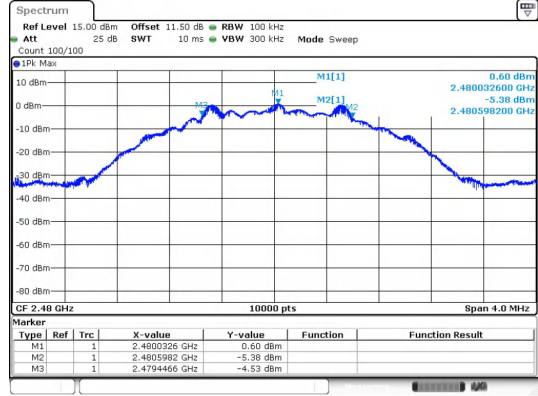
**BLE 1M\_Channel 19**

**BLE 2M\_Channel 19**



Date: 10\_JUL\_2024 22:24:01

BLE 1M\_Channel 39



Date: 10\_JUL\_2024 22:54:59

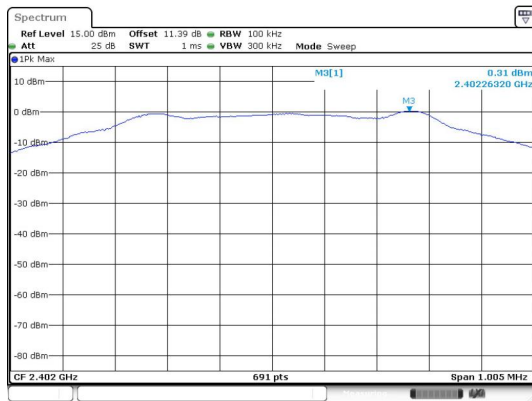
BLE 2M\_Channel 39

## 4) Conducted Out Of Band Emission

### Test Result

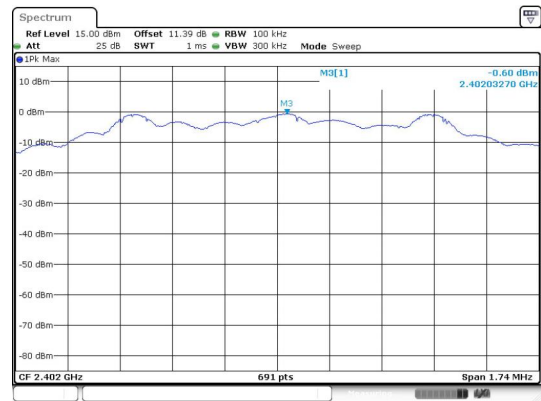
Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
BLE 1M	0	2400.00	-47.917	-19.69	-28.227	PASS
		9608.08	-47.931	-19.69	-28.241	PASS
	19	2535.74	-46.652	-19.85	-26.802	PASS
	39	1735.03	-28.817	-18.79	-10.027	PASS
		2483.50	-49.813	-18.79	-31.023	PASS
BLE 2M	0	2400.00	-33.753	-20.6	-13.153	PASS
		9608.08	-48.660	-20.6	-28.060	PASS
	19	9760.39	-48.576	-20.6	-27.976	PASS
	39	2483.50	-50.209	-19.4	-30.809	PASS
		9920.20	-47.377	-19.4	-27.977	PASS

### Test Graphs



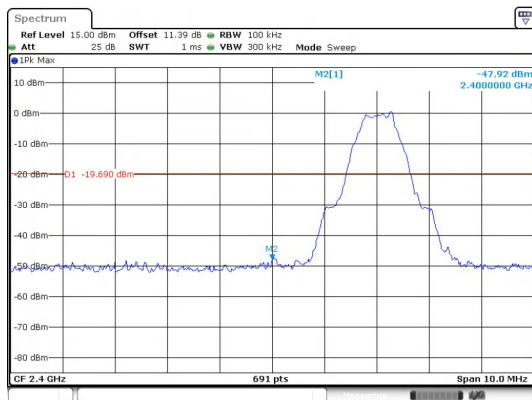
Date: 10.JUL.2024 22:16:09

**In-Band Reference Level  
BLE 1M\_Channel 0**



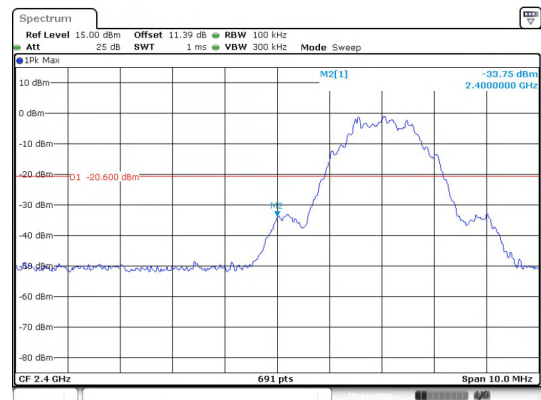
Date: 10.JUL.2024 22:44:04

**In-Band Reference Level  
BLE 2M\_Channel 0**



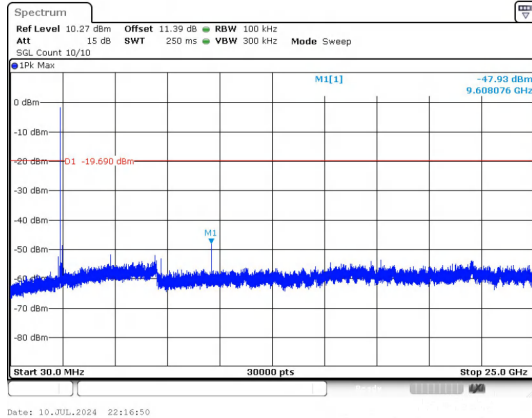
Date: 10.JUL.2024 22:16:28

**Out Of Band Emission  
BLE 1M\_Channel 0**



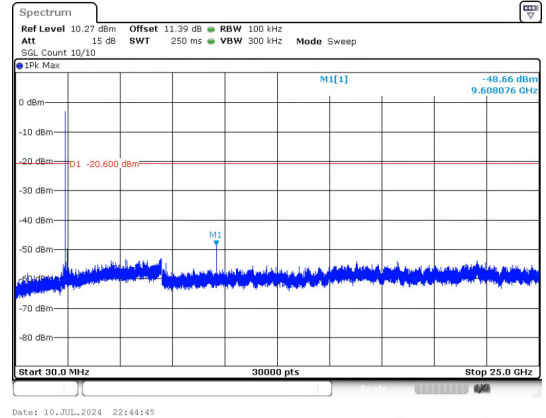
Date: 10.JUL.2024 22:44:23

**Out Of Band Emission  
BLE 2M\_Channel 0**



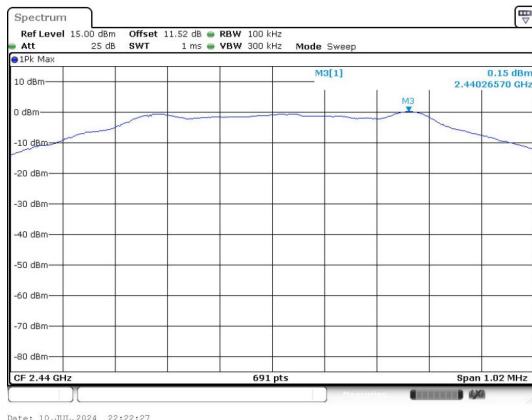
Date: 10\_JUL\_2024 22:16:50

30.0 MHz - 25000.0 MHz  
BLE 1M\_Channel 0



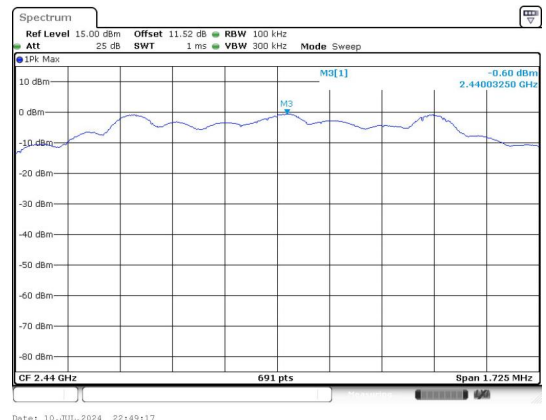
Date: 10\_JUL\_2024 22:44:45

30.0 MHz - 25000.0 MHz  
BLE 2M\_Channel 0



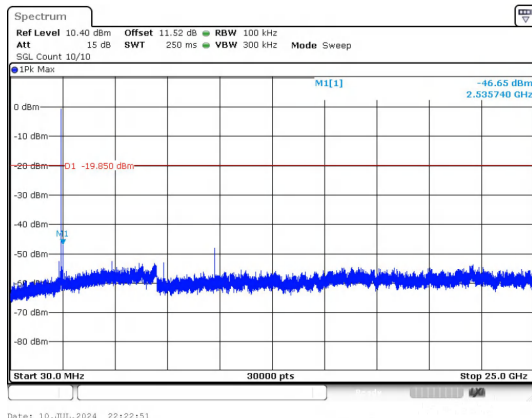
Date: 10\_JUL\_2024 22:22:27

In-Band Reference Level  
BLE 1M\_Channel 19



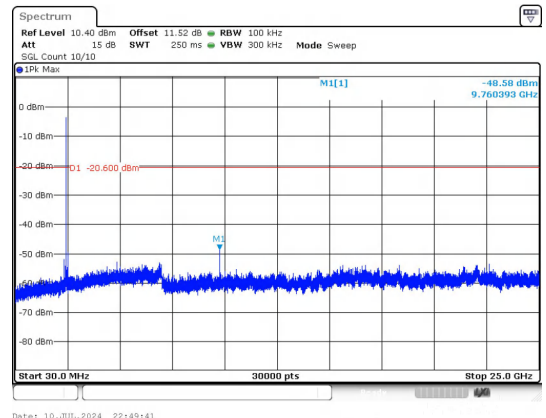
Date: 10\_JUL\_2024 22:49:17

In-Band Reference Level  
BLE 2M\_Channel 19



Date: 10\_JUL\_2024 22:22:51

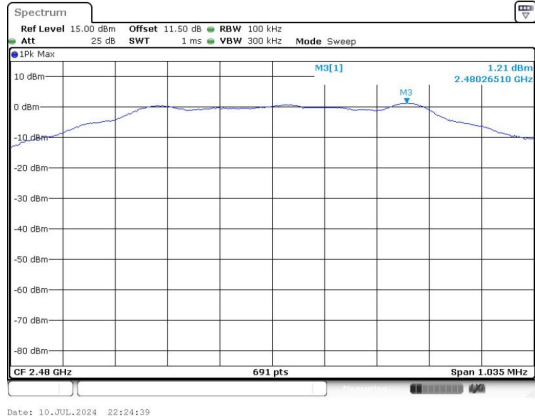
30.0 MHz - 25000.0 MHz  
BLE 1M\_Channel 19



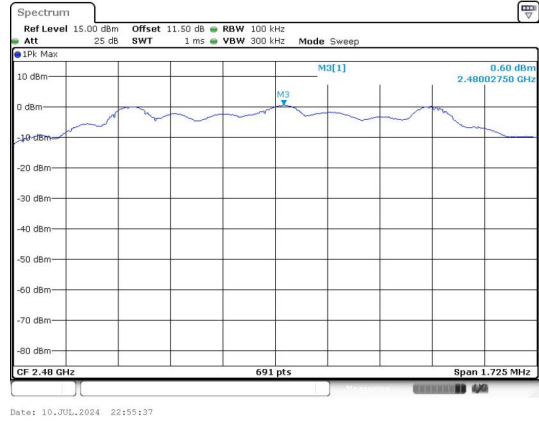
Date: 10\_JUL\_2024 22:49:41

30.0 MHz - 25000.0 MHz  
BLE 2M\_Channel 19

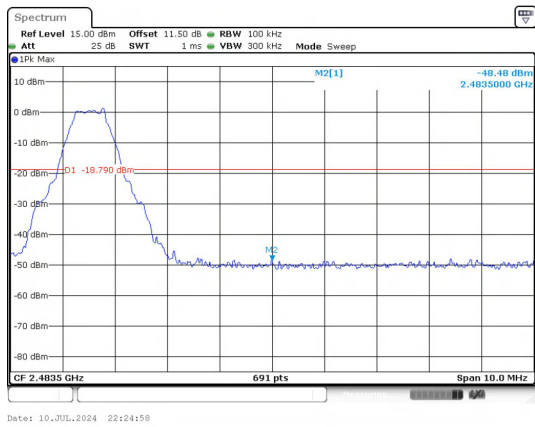




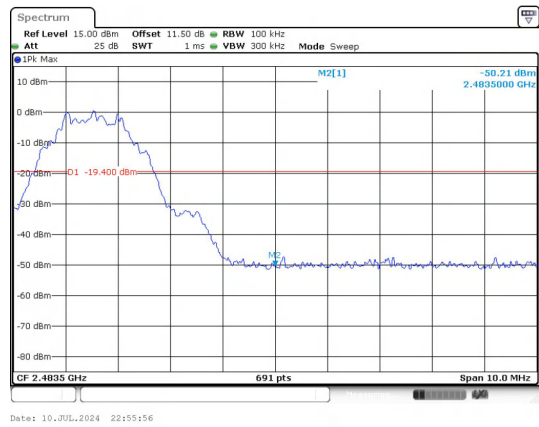
**In-Band Reference Level  
BLE 1M\_Channel 39**



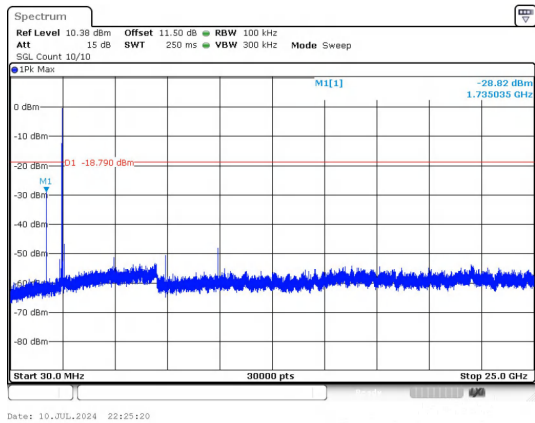
**In-Band Reference Level  
BLE 2M\_Channel 39**



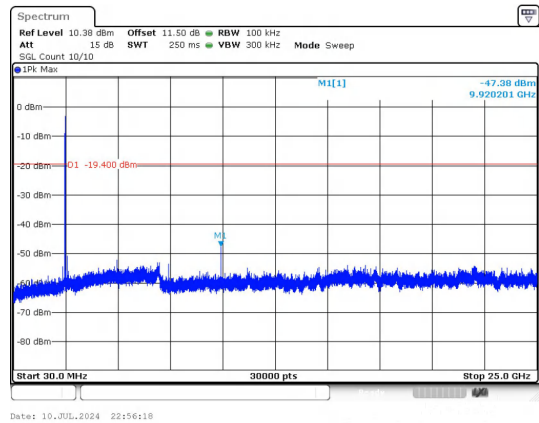
**Out Of Band Emission  
BLE 1M\_Channel 39**



**Out Of Band Emission  
BLE 2M\_Channel 39**



**30.0 MHz - 25000.0 MHz  
BLE 1M\_Channel 39**



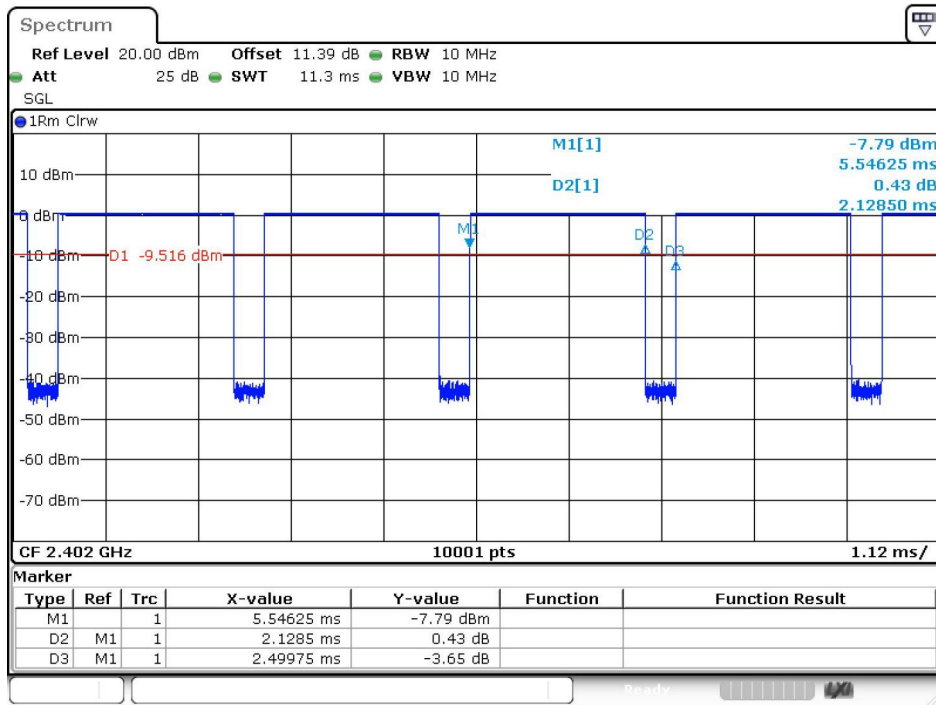
**30.0 MHz - 25000.0 MHz  
BLE 2M\_Channel 39**

## 5) Duty Cycle

### Test Result

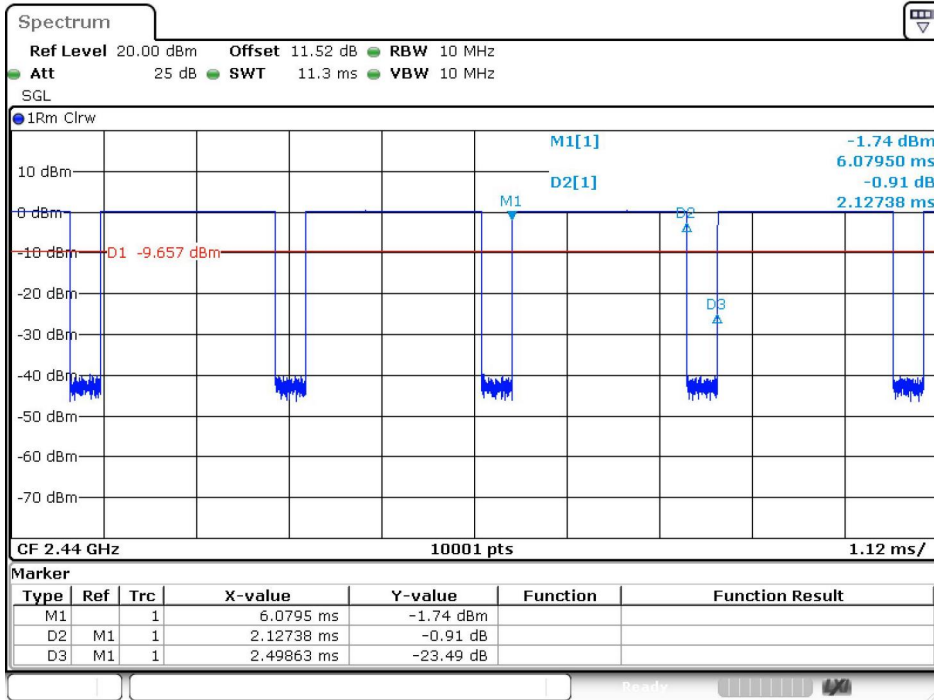
Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
BLE 1M	0	2.129	2.500	85.15	0.8515	0.6982	0.47
	19	2.127	2.499	85.14	0.8514	0.6987	0.47
	39	2.127	2.499	85.14	0.8514	0.6987	0.47
BLE 2M	0	1.070	2.488	43.01	0.4301	3.6643	0.93
	19	1.076	2.499	43.04	0.4304	3.6613	0.93
	39	1.077	2.500	43.07	0.4307	3.6583	0.93

### Test Graphs



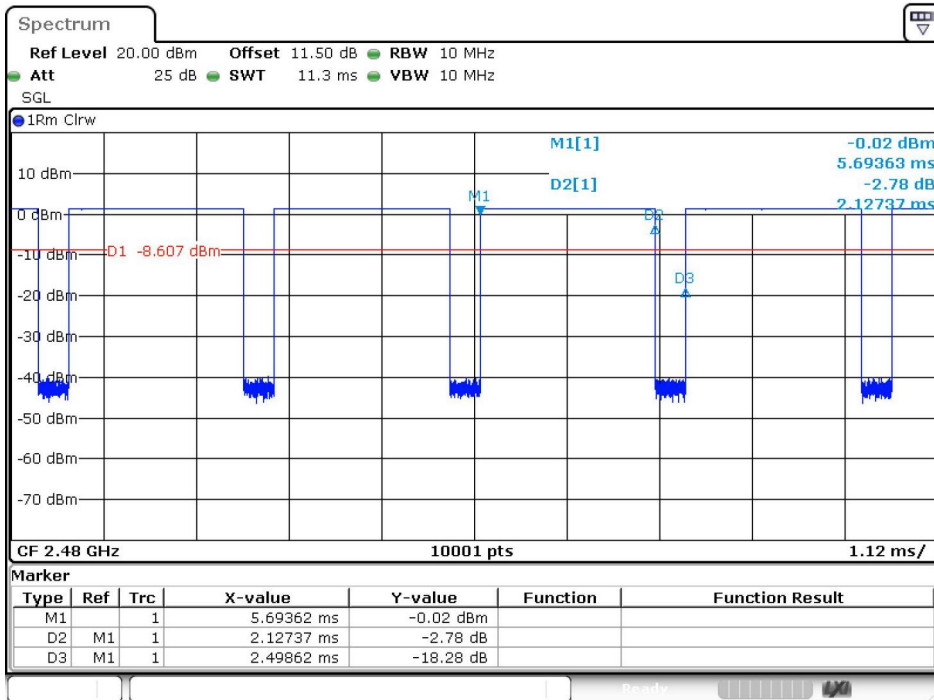
Date: 10.JUL.2024 22:15:01

BLE 1M\_Channel 0



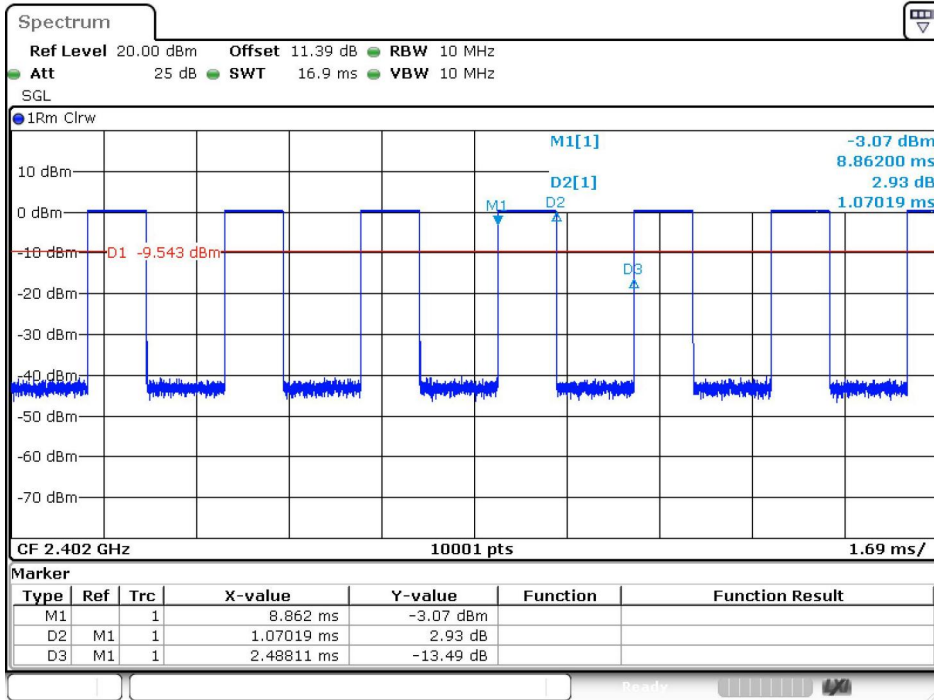
Date: 10.JUL.2024 22:21:18

BLE 1M\_Channel 19



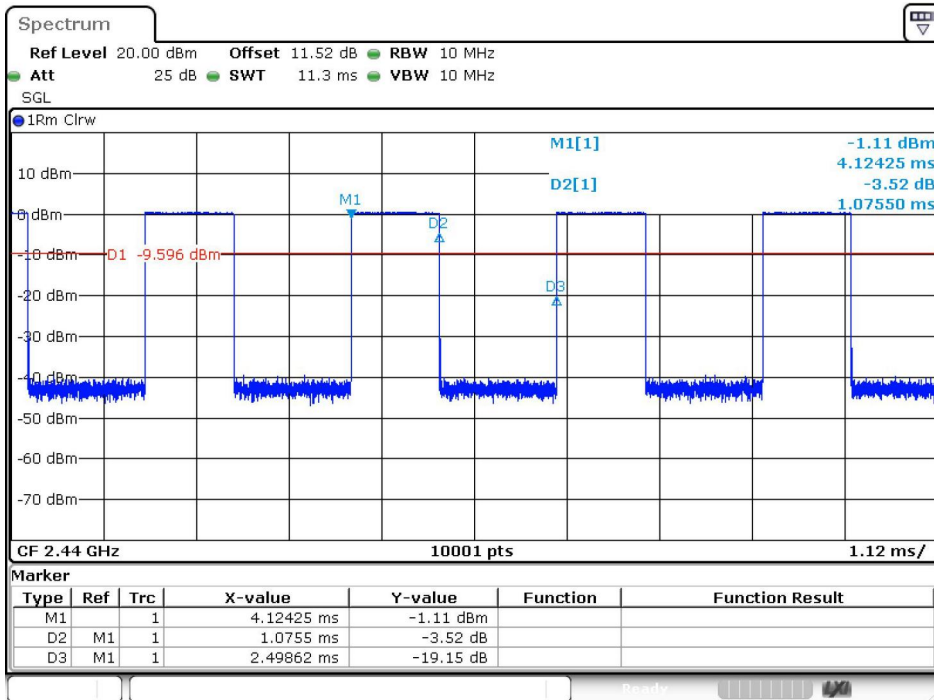
Date: 10.JUL.2024 22:23:30

BLE 1M\_Channel 39



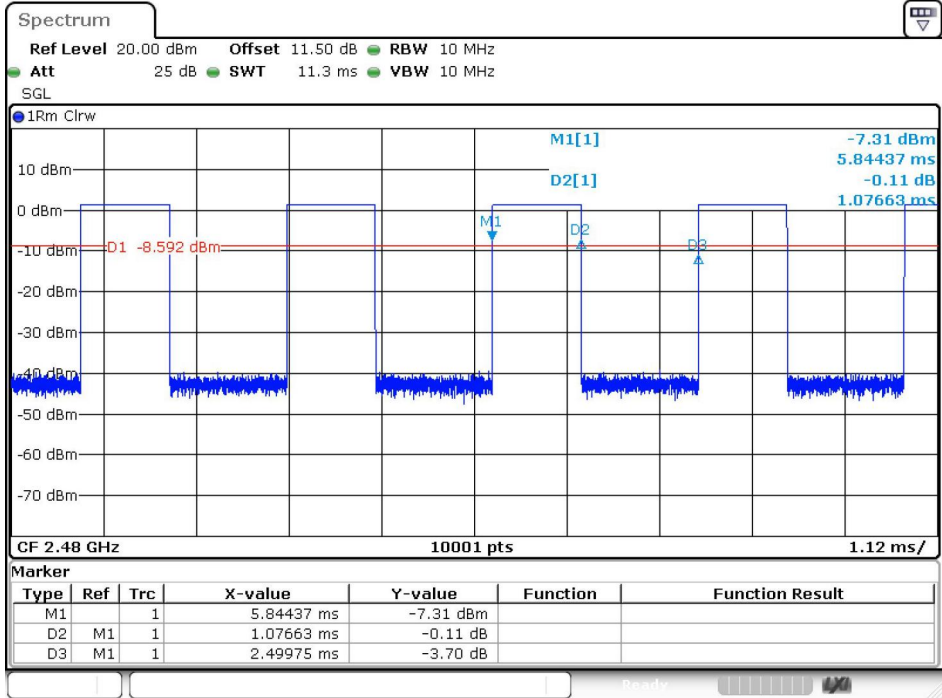
Date: 10.JUL.2024 22:42:44

BLE 2M\_Channel 0



Date: 10.JUL.2024 22:47:58

BLE 2M\_Channel 19



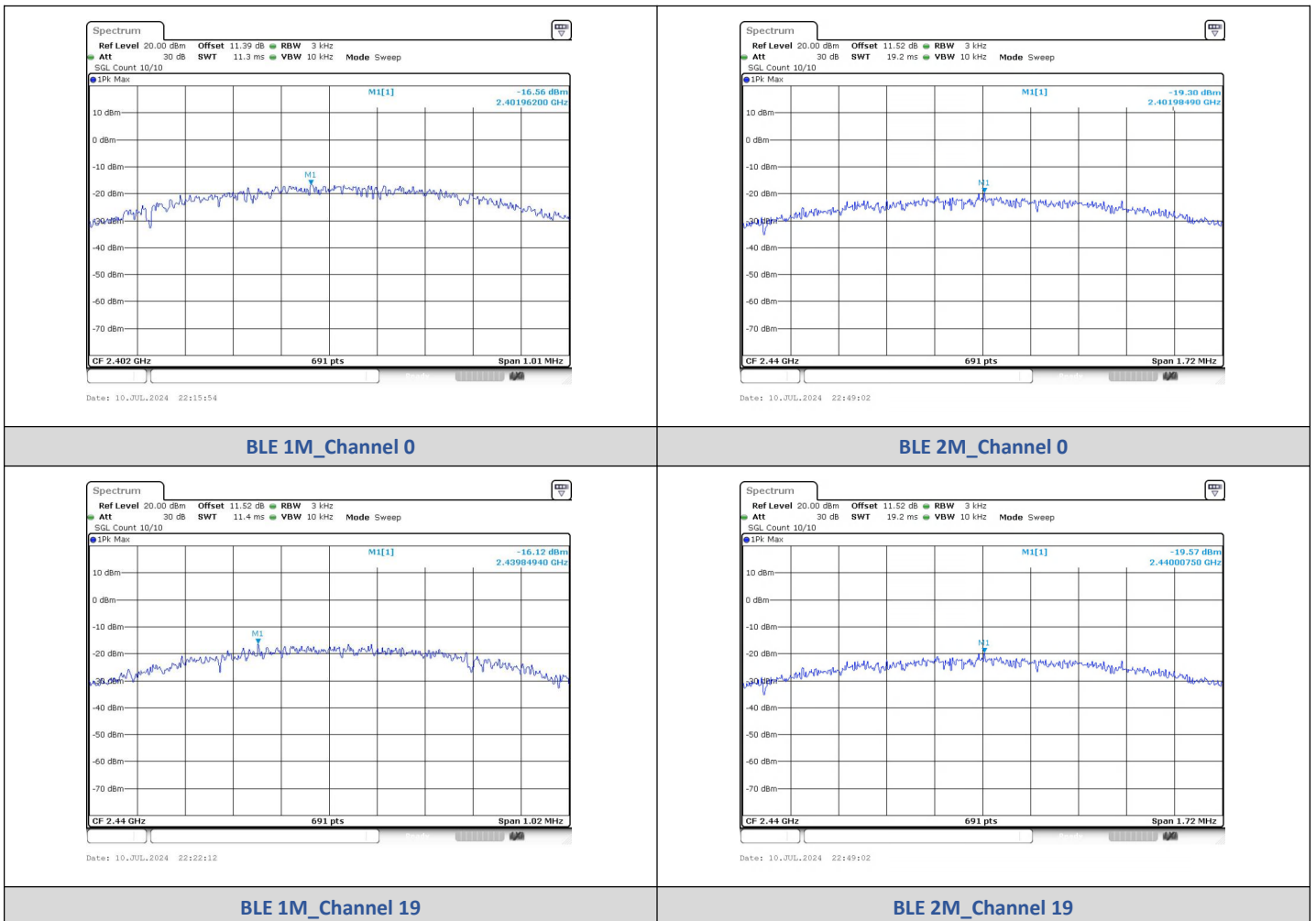
Date: 10.JUL.2024 22:54:28

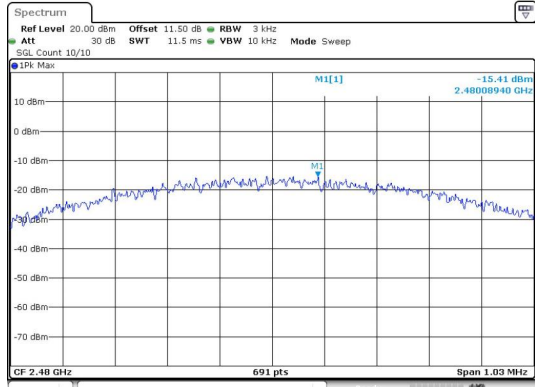
## 6) Power Spectral Density

### Test Result

Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
BLE 1M	0	-16.559	≤8	PASS
BLE 1M	19	-16.121	≤8	PASS
BLE 1M	39	-15.409	≤8	PASS
BLE 2M	0	-19.299	≤8	PASS
BLE 2M	19	-19.567	≤8	PASS
BLE 2M	39	-18.431	≤8	PASS

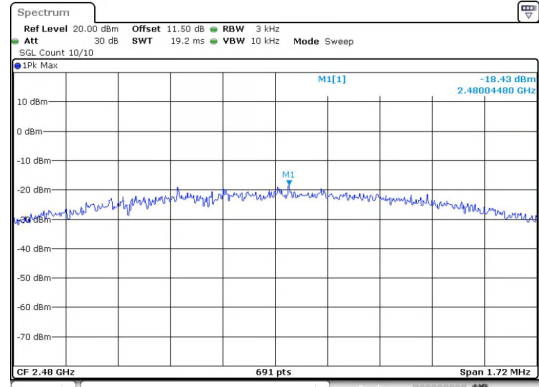
### Test Graphs





Date: 10\_JUL\_2024 22:24:24

BLE 1M\_Channel 39



Date: 10\_JUL\_2024 22:55:22

BLE 2M\_Channel 39