



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: Cloud Speaker

Test Model:CS20-1

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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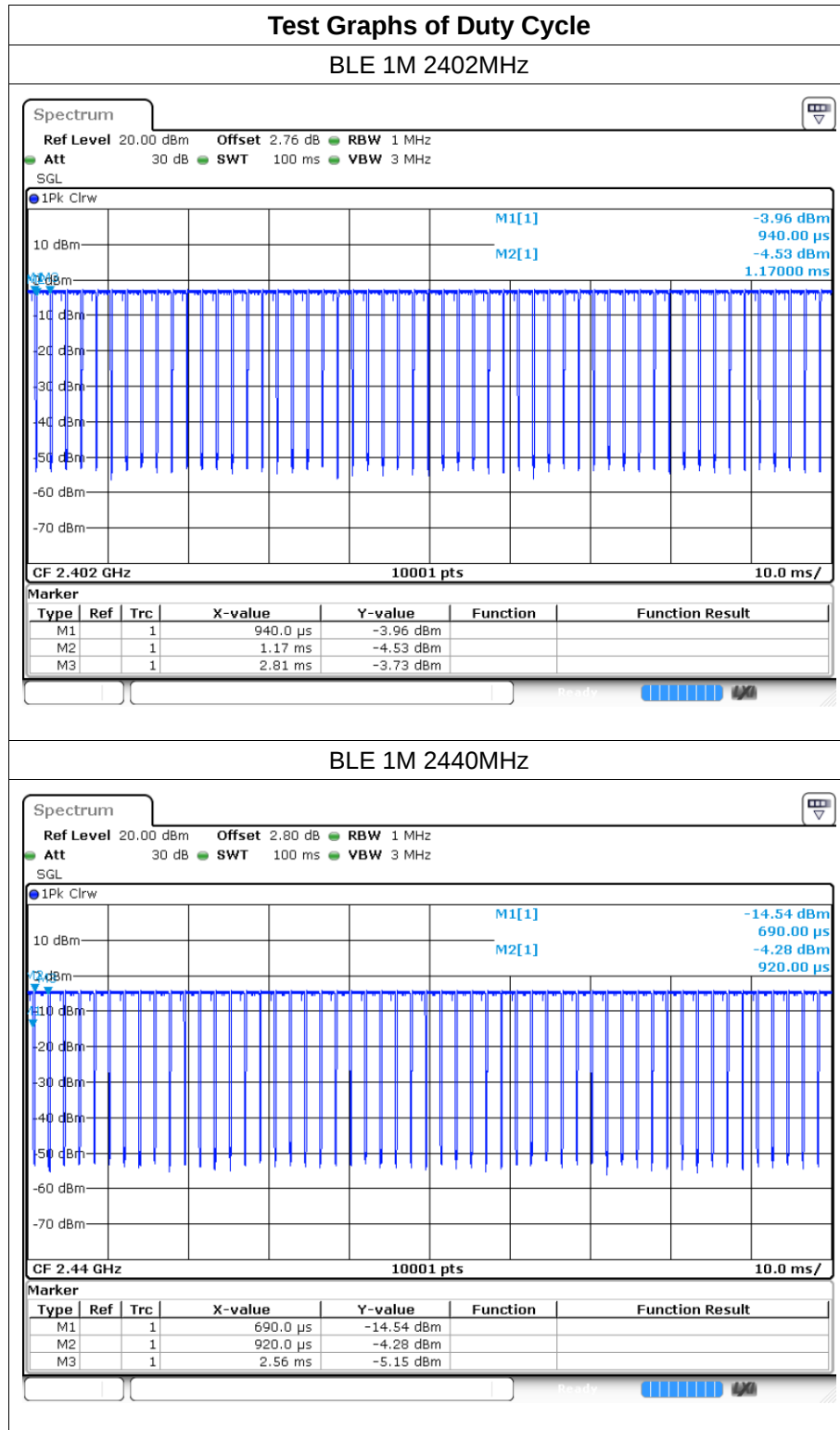


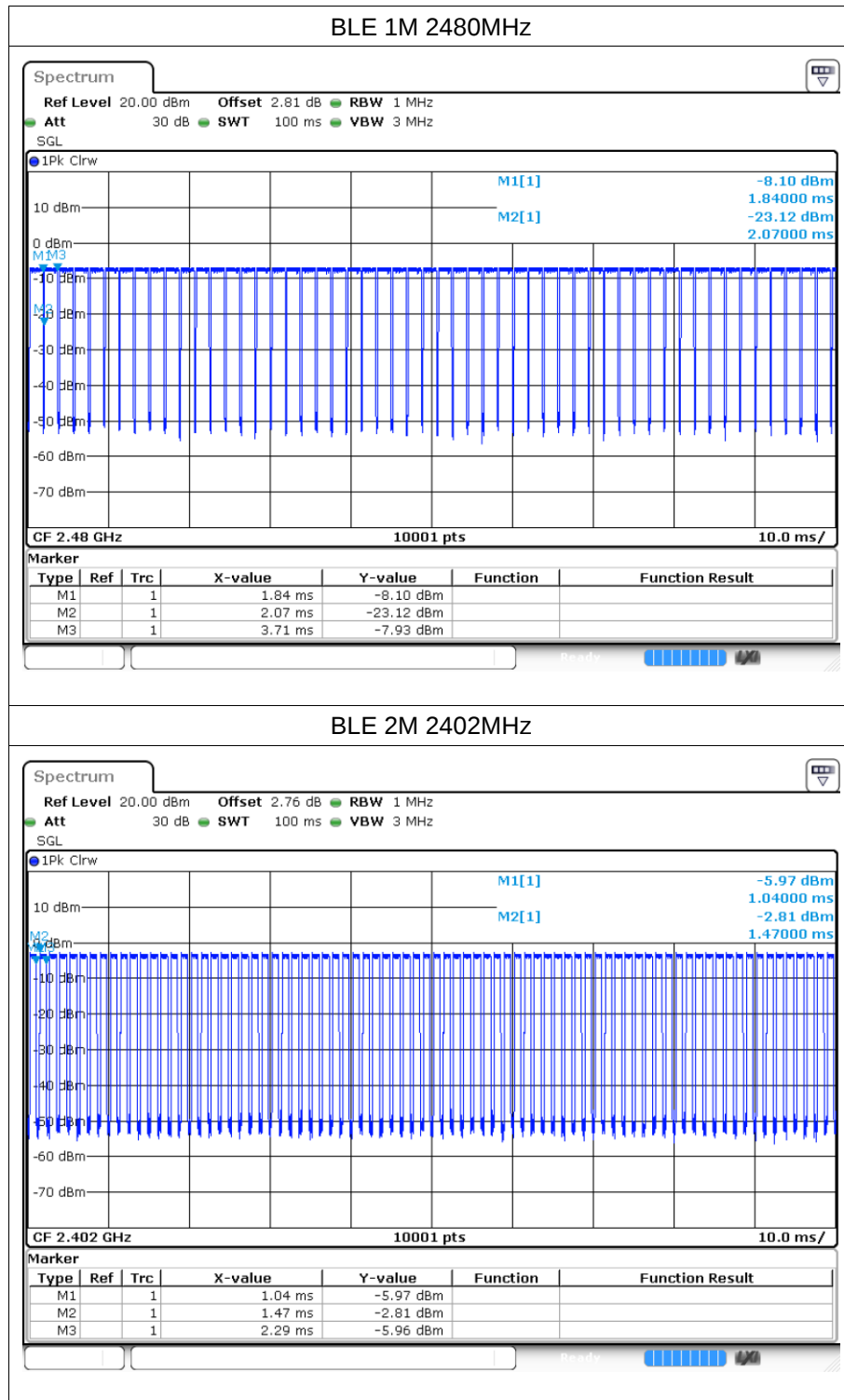
1 Duty Cycle

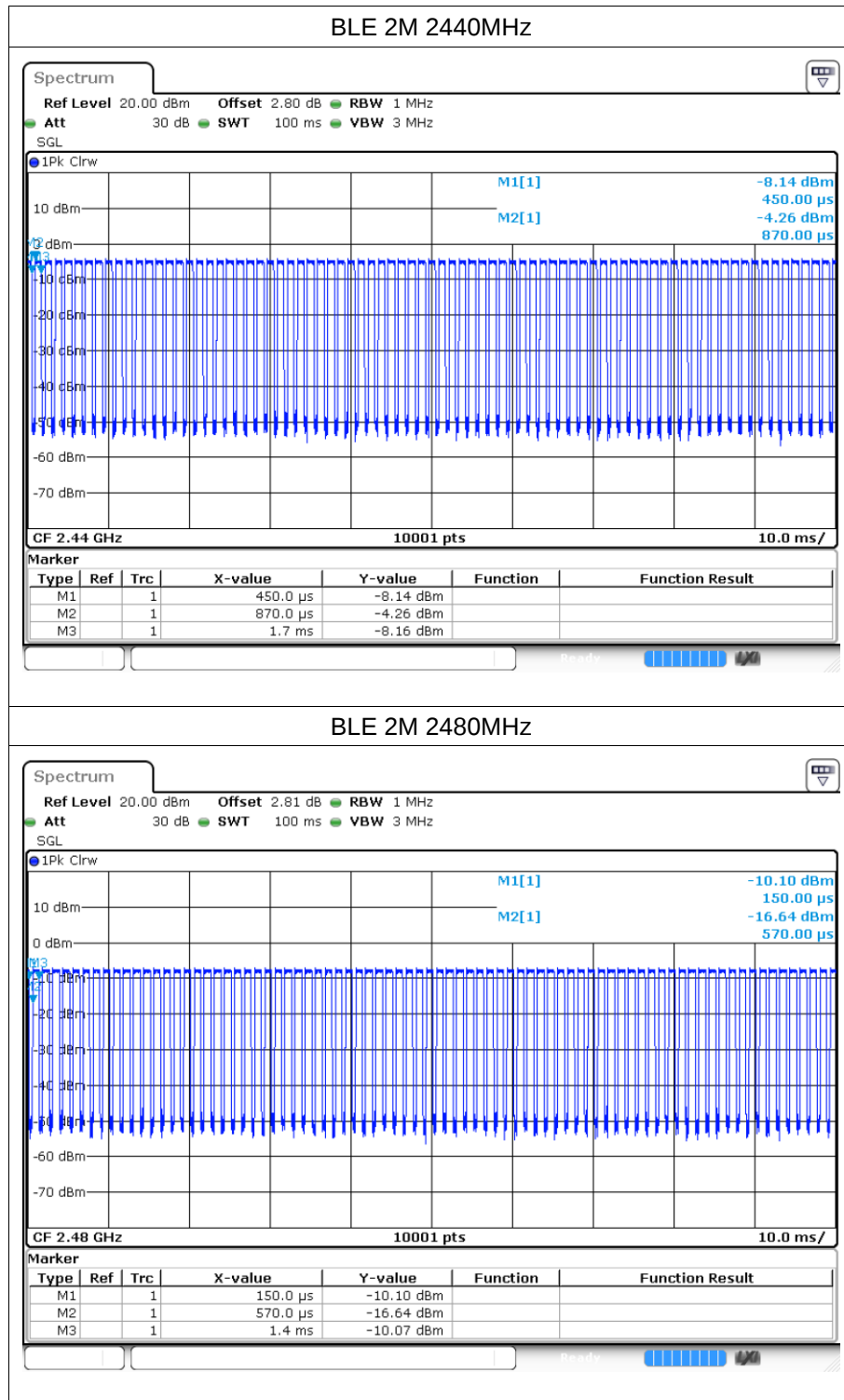
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	1/T (kHz)
GFSK 1M	2402	Ant1	88.08	0.61
GFSK 1M	2440	Ant1	88.08	0.61
GFSK 1M	2480	Ant1	87.73	0.61
GFSK 2M	2402	Ant1	66.39	1.22
GFSK 2M	2440	Ant1	67.2	1.2
GFSK 2M	2480	Ant1	67.2	1.2

1.2 Test Graphs







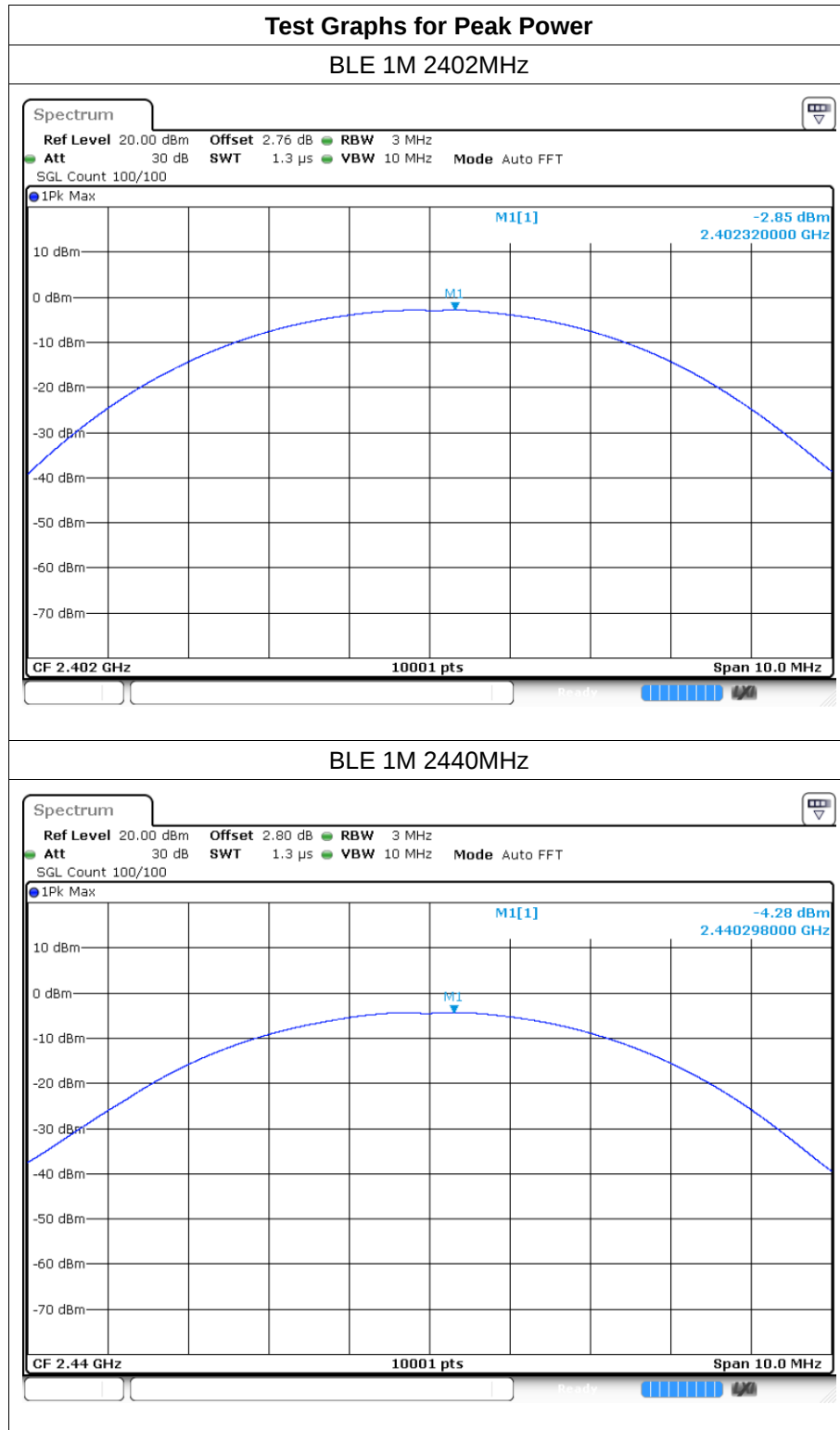


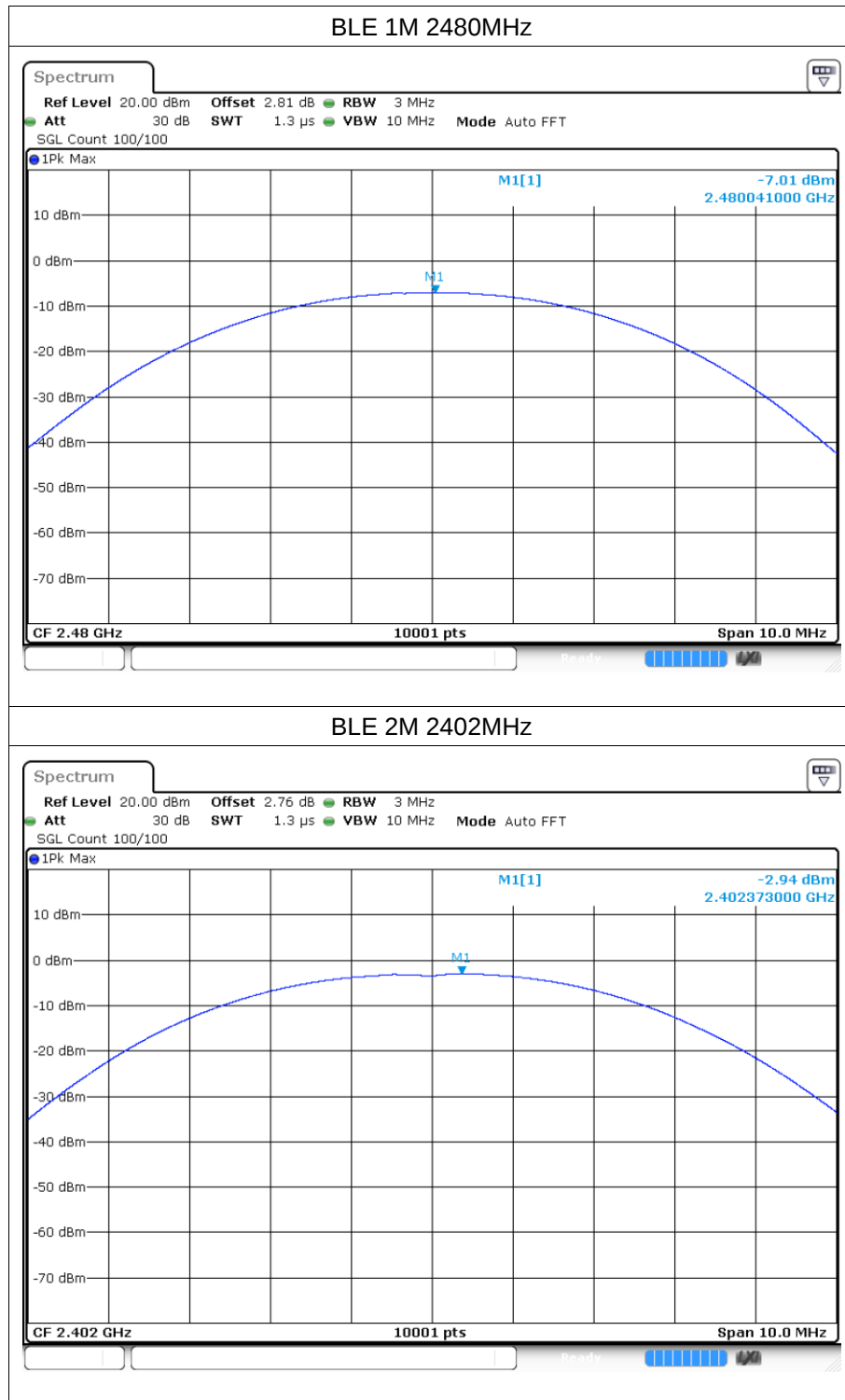
2 Maximum Conducted Output Power

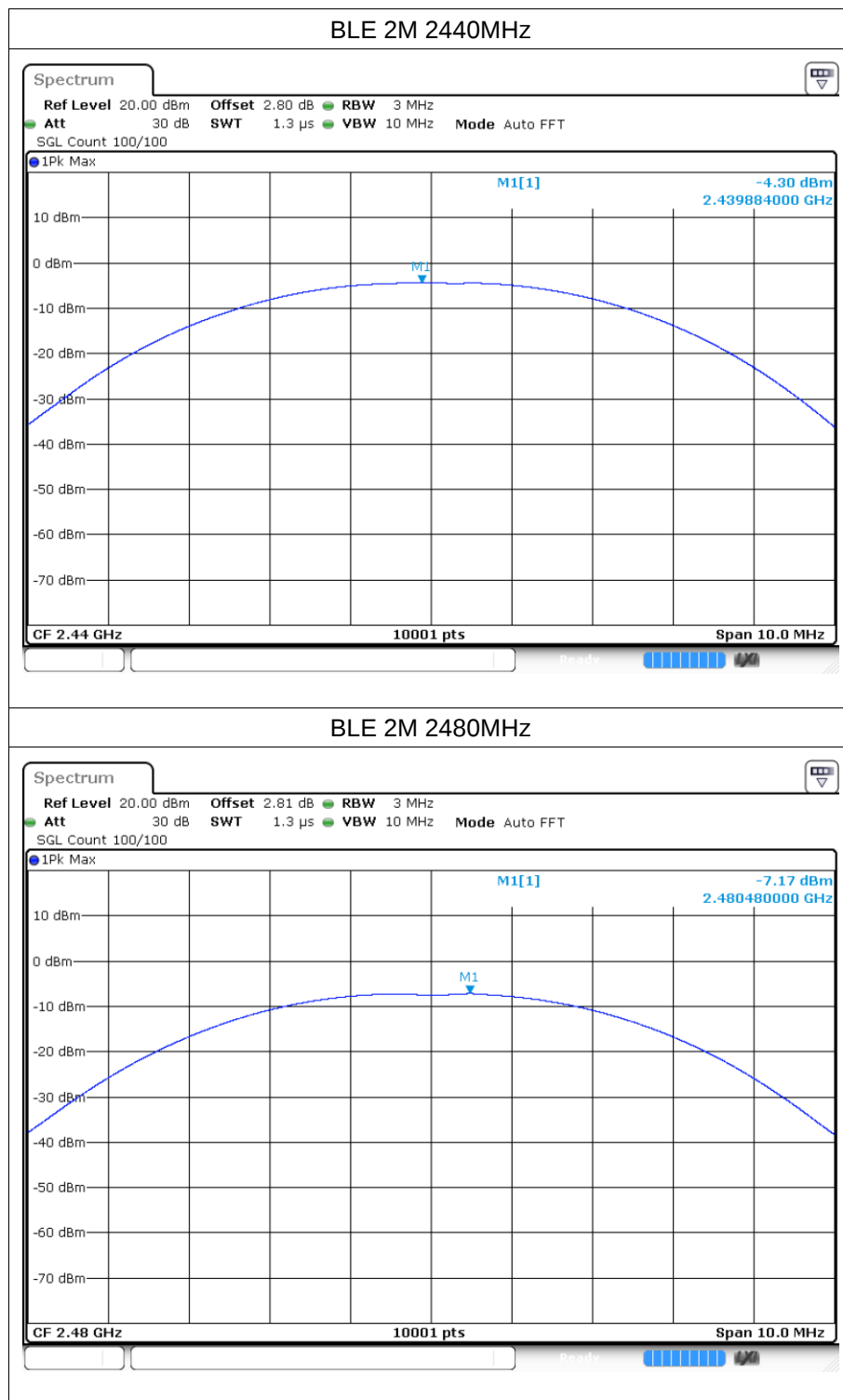
2.1 Test Result

Test Data of Conducted Output Power				
Test Mode	Test Channel (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail
GFSK 1M	2402	-2.85	≤ 30	Pass
	2440	-4.28	≤ 30	Pass
	2480	-7.01	≤ 30	Pass
GFSK 2M	2402	-2.94	≤ 30	Pass
	2440	-4.3	≤ 30	Pass
	2480	-7.17	≤ 30	Pass

2.2 Test Graphs







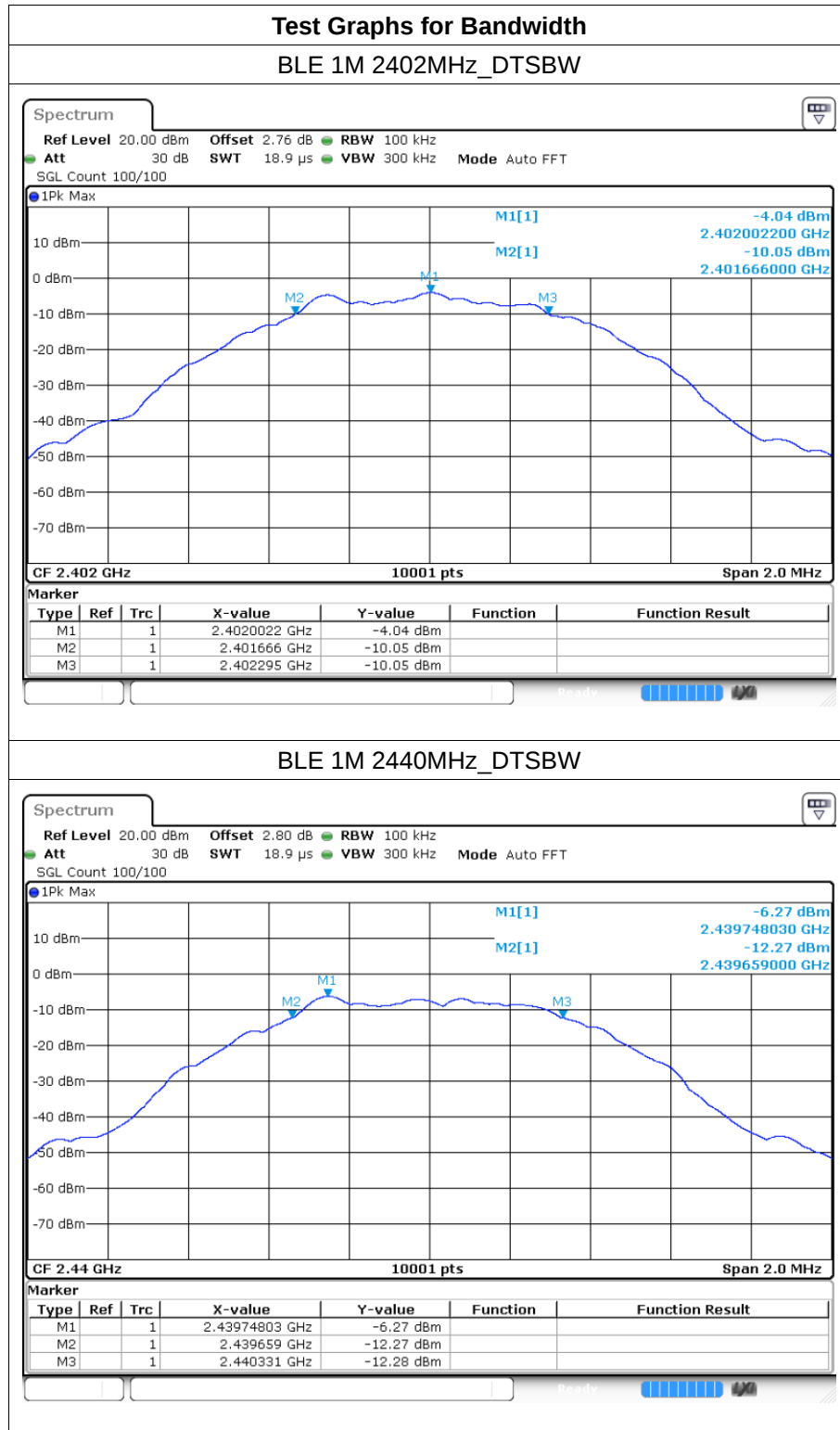


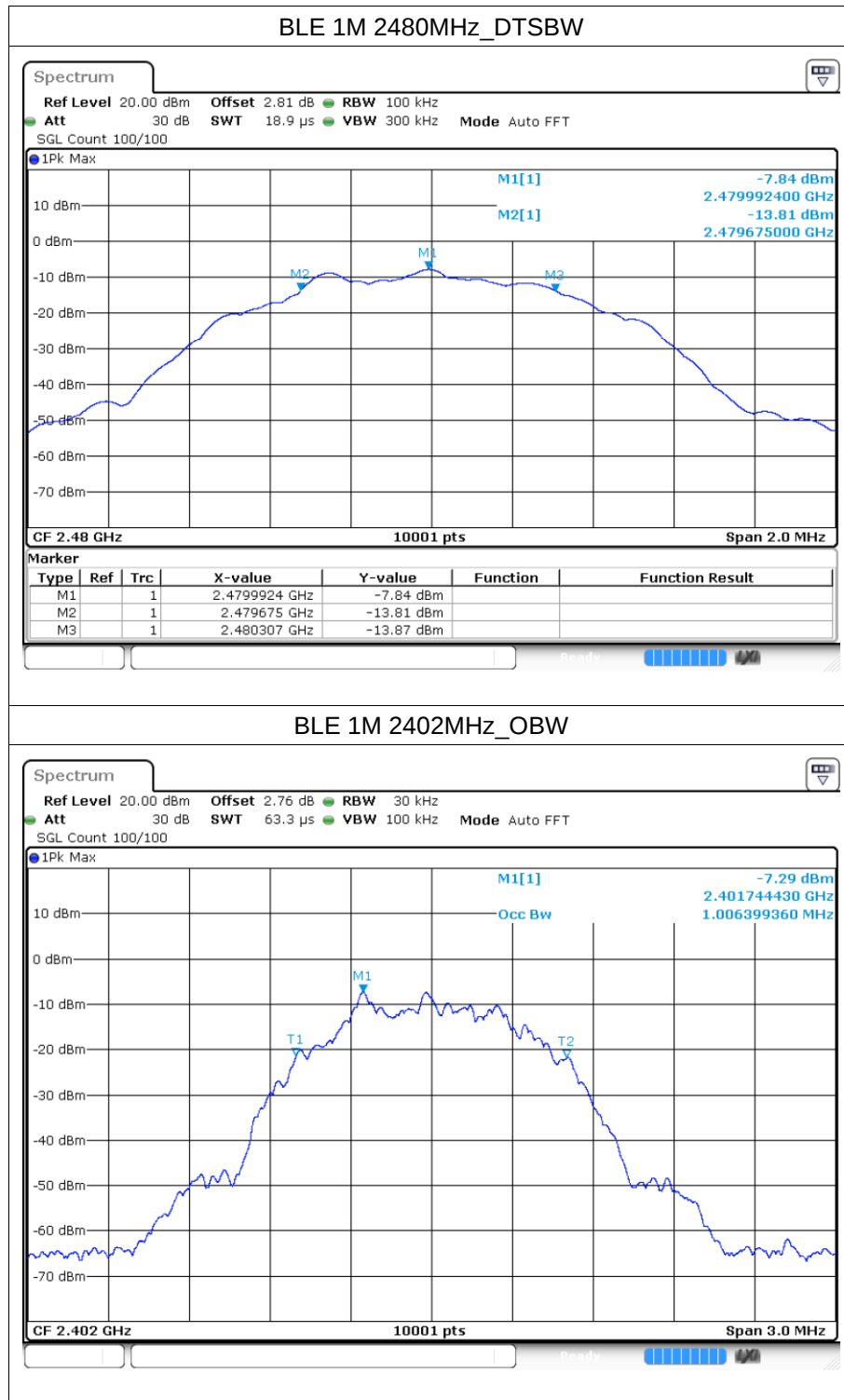
3 -6dB Bandwidth

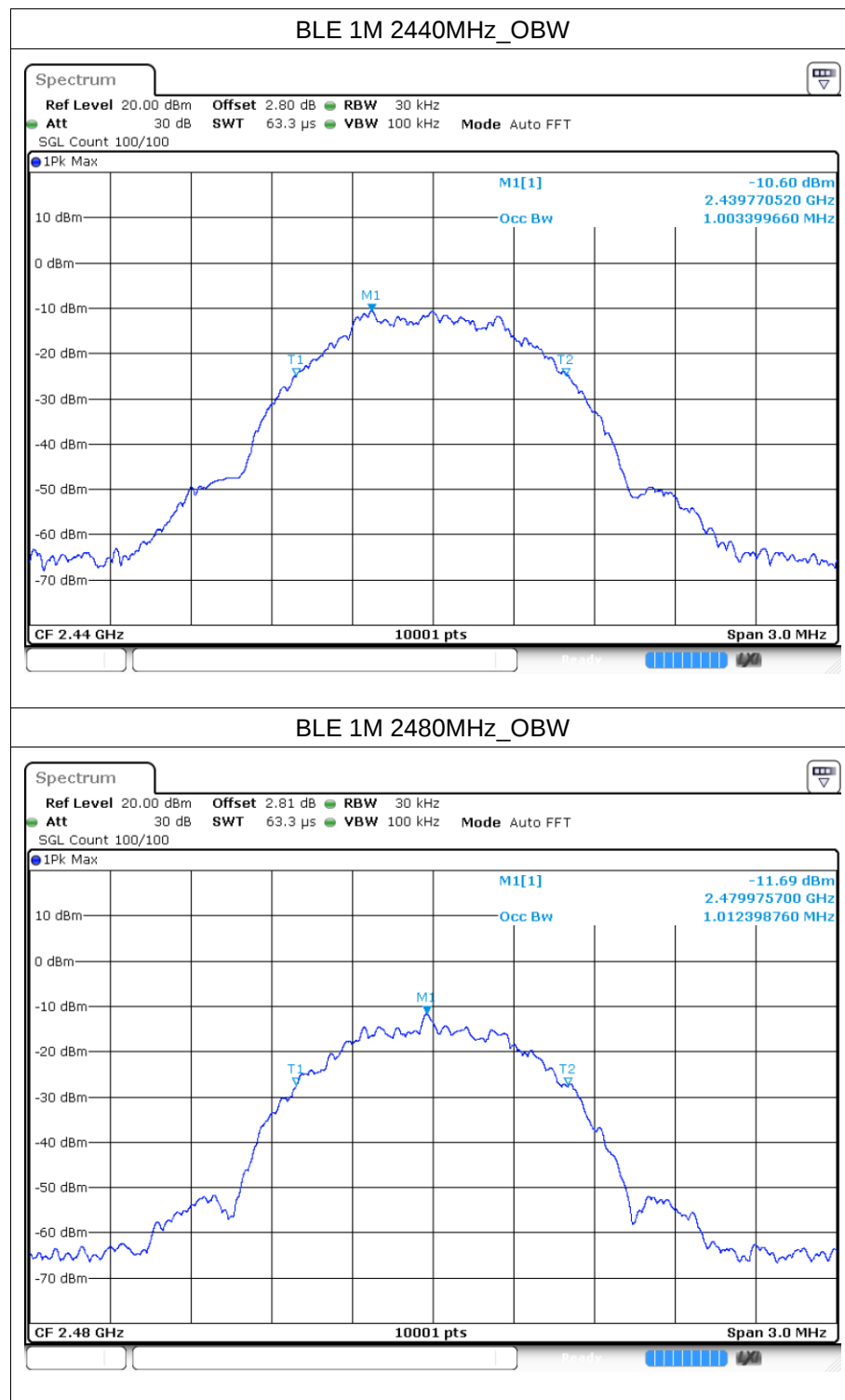
3.1 Test Result

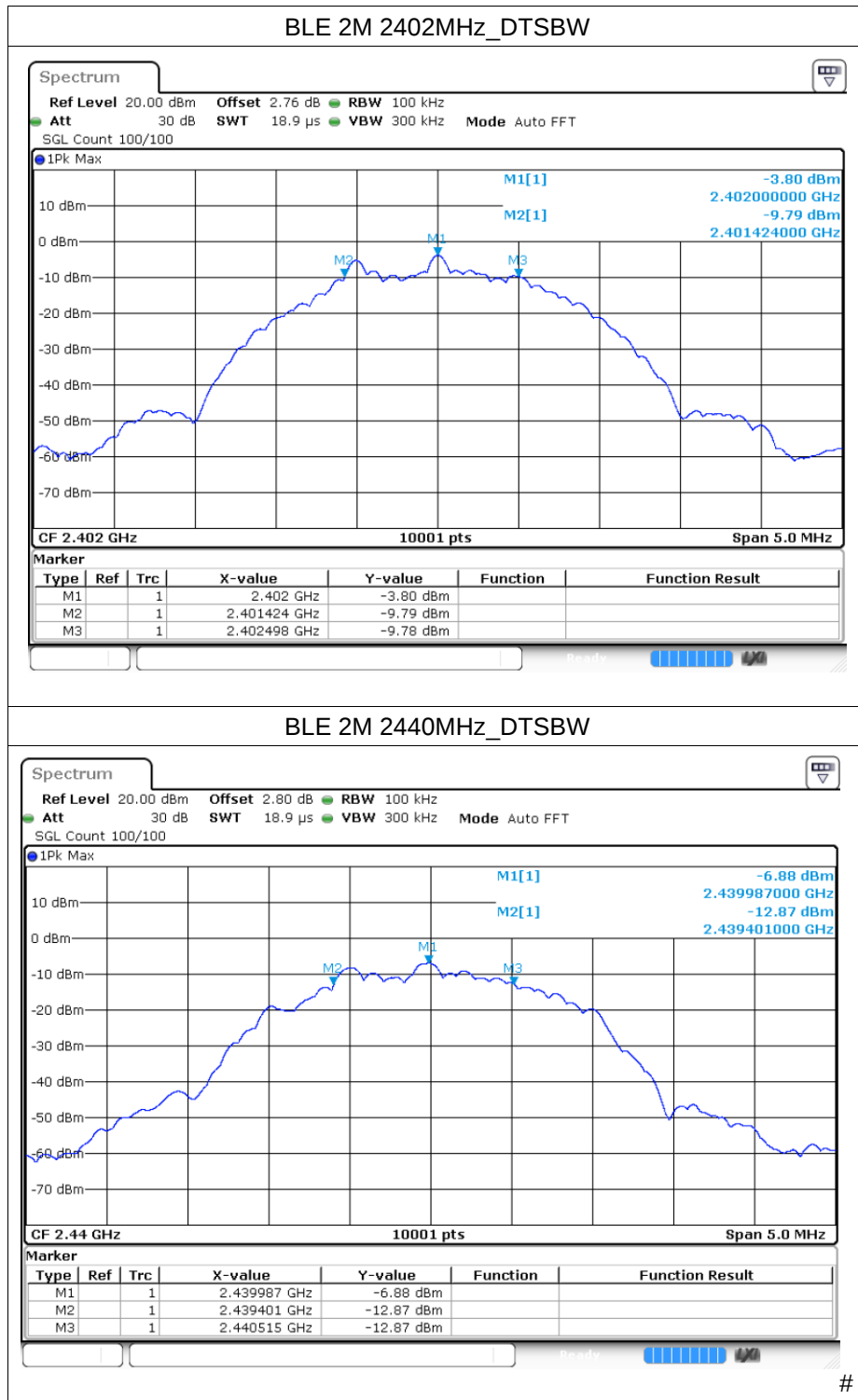
Test Data of Occupied Bandwidth and DTS Bandwidth					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-6dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
GFSK 1M	2402	1.006	0.629	≥ 0.5	Pass
	2440	1.003	0.672	≥ 0.5	Pass
	2480	1.012	0.632	≥ 0.5	Pass
GFSK 2M	2402	1.987	1.074	≥ 0.5	Pass
	2440	2.008	1.114	≥ 0.5	Pass
	2480	2.006	1.127	≥ 0.5	Pass

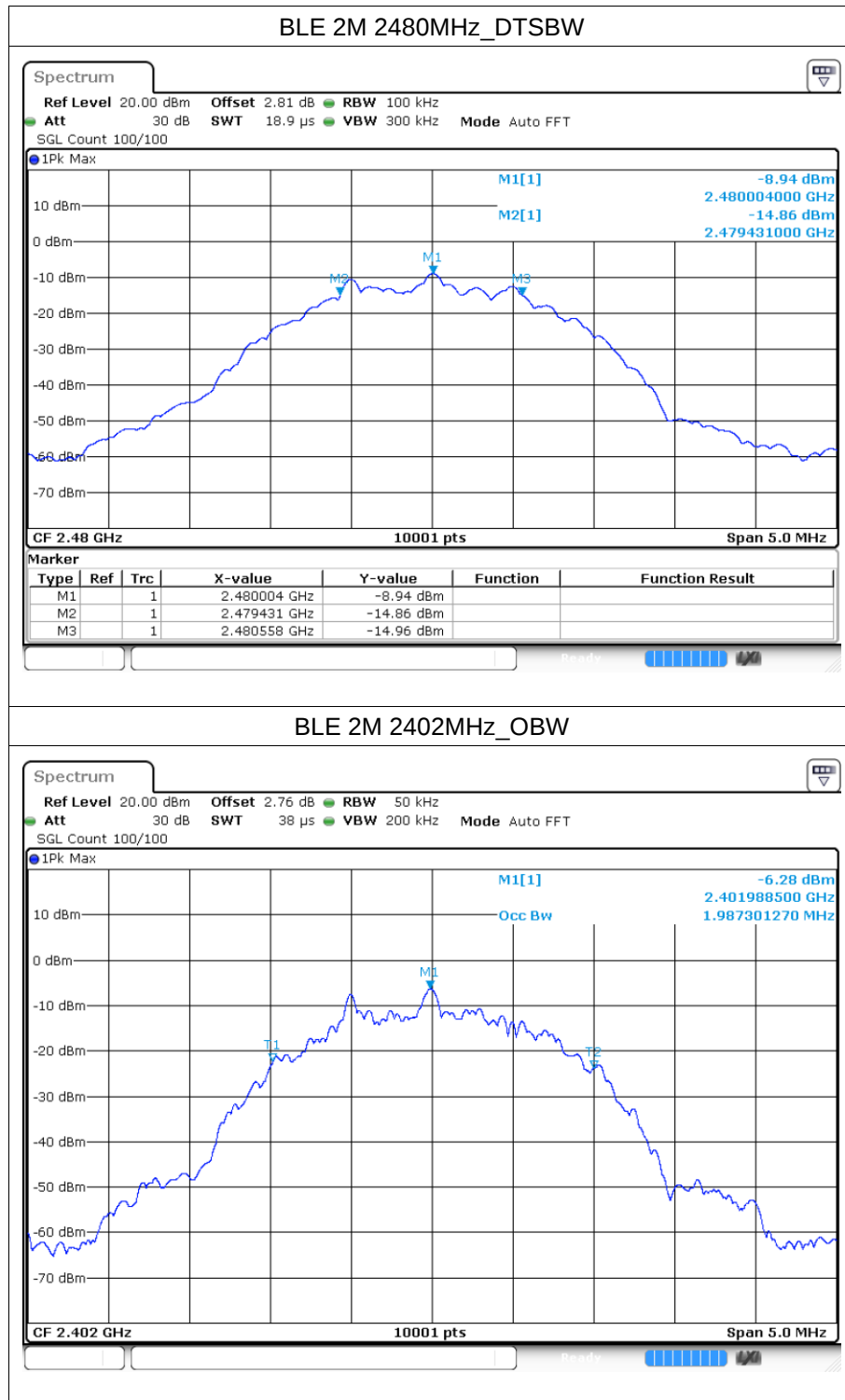
3.2 Test Graphs

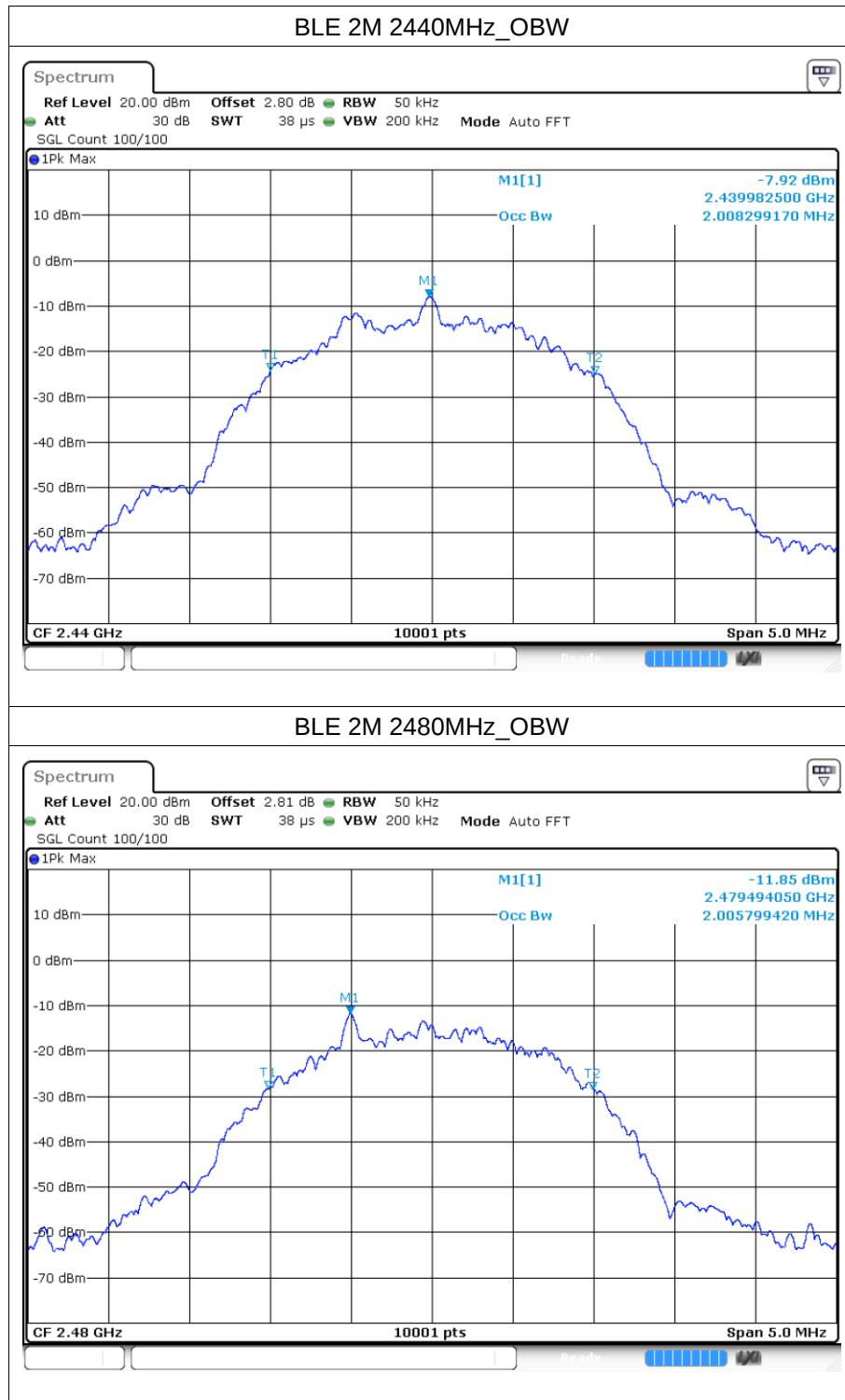










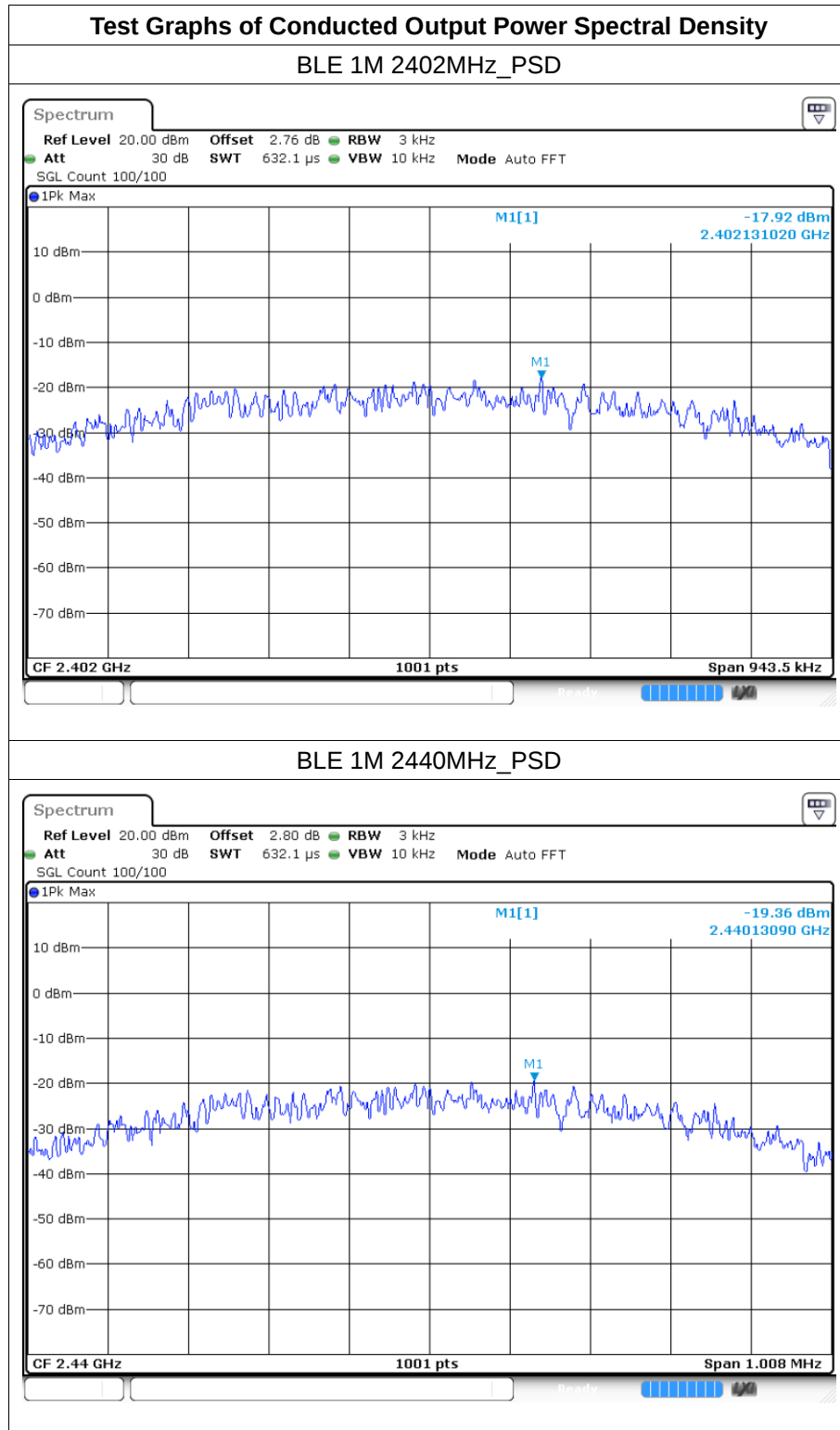


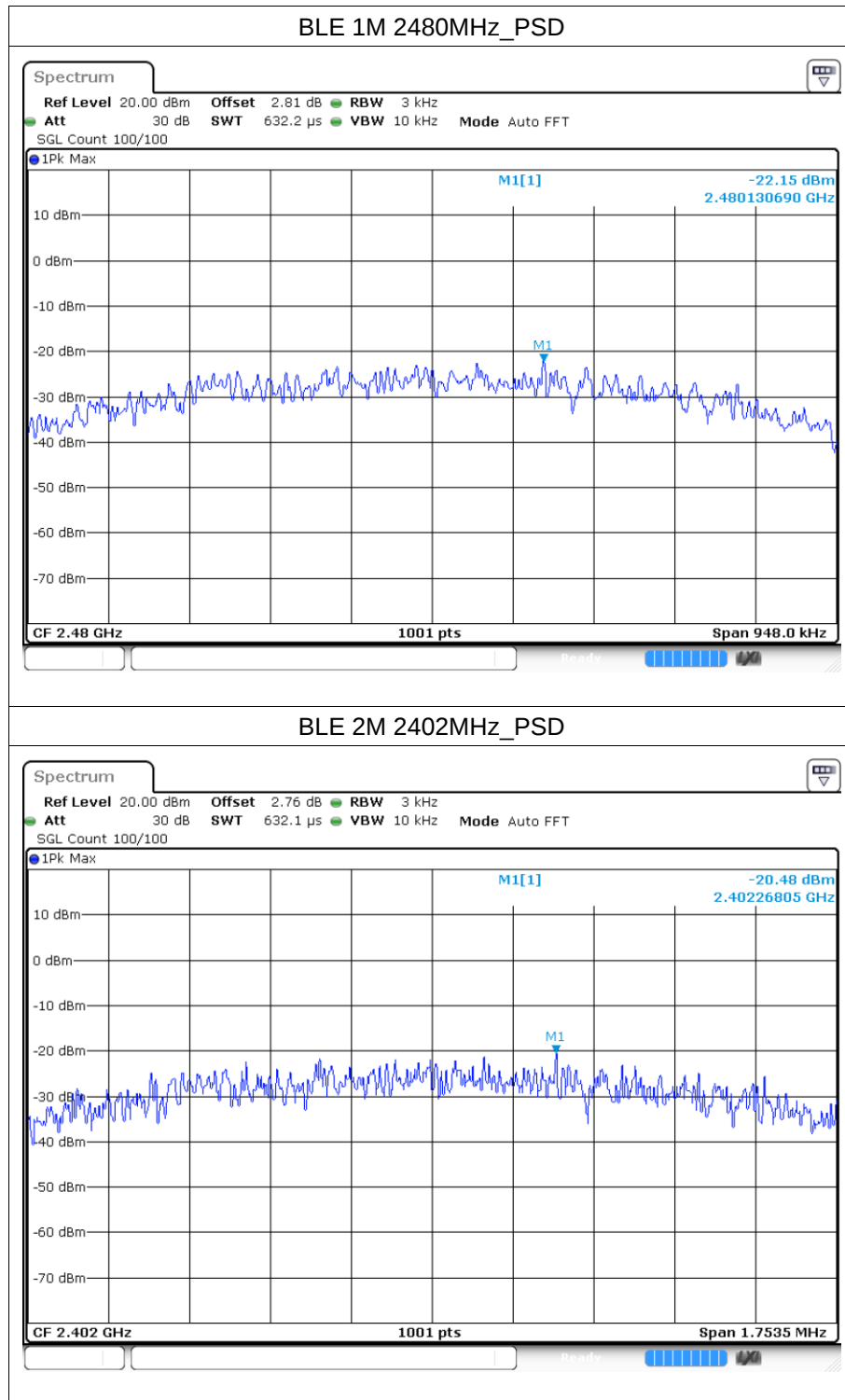
4 Maximum Power Spectral Density Level

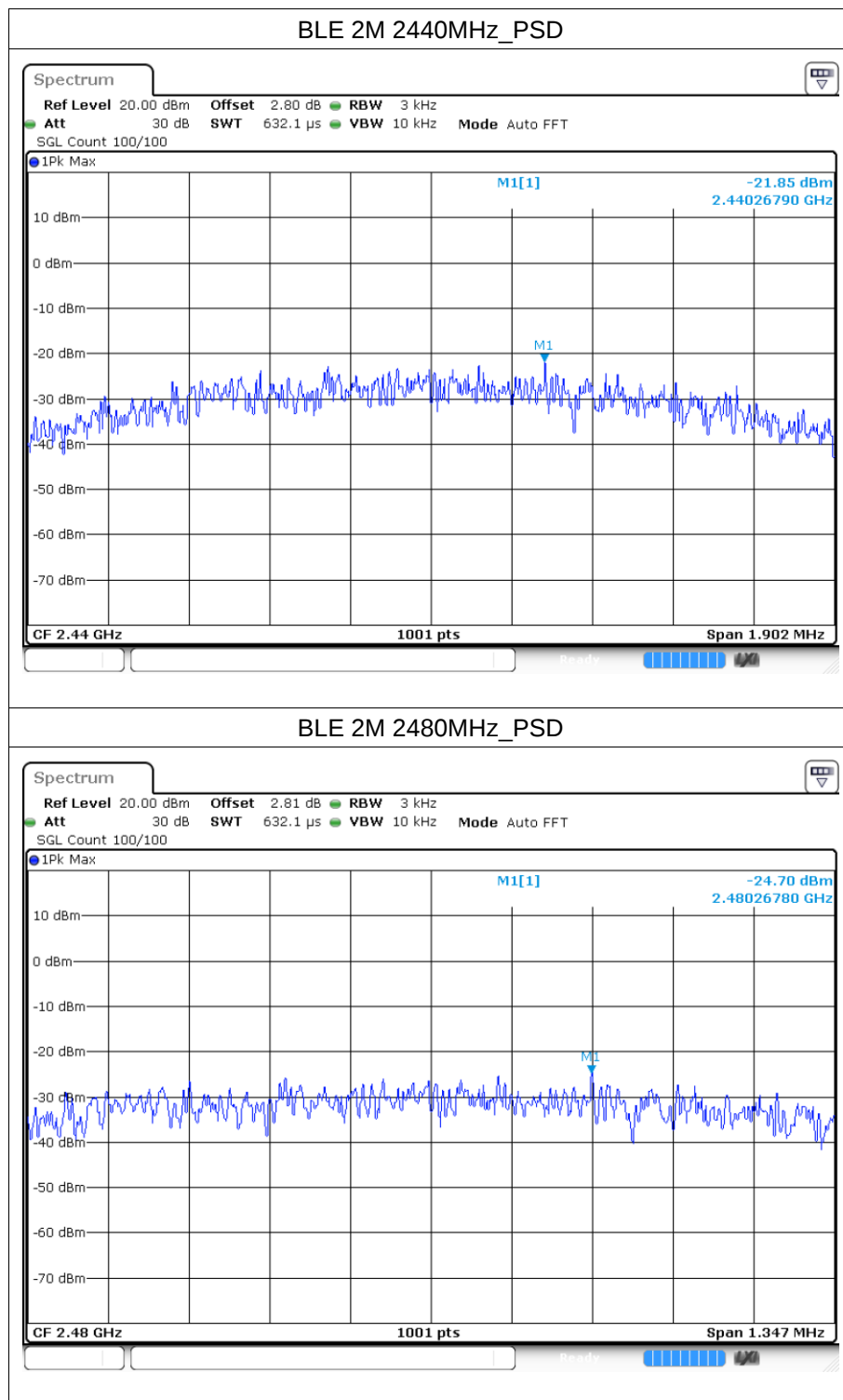
4.1 Test Result

Test Data of Conducted Output Power Spectral Density				
Test Mode	Test Channel (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail
GFSK 1M	2402	-17.92	≤ 8	Pass
	2440	-19.36	≤ 8	Pass
	2480	-22.15	≤ 8	Pass
GFSK 2M	2402	-20.48	≤ 8	Pass
	2440	-21.85	≤ 8	Pass
	2480	-24.7	≤ 8	Pass

4.2 Test Graphs





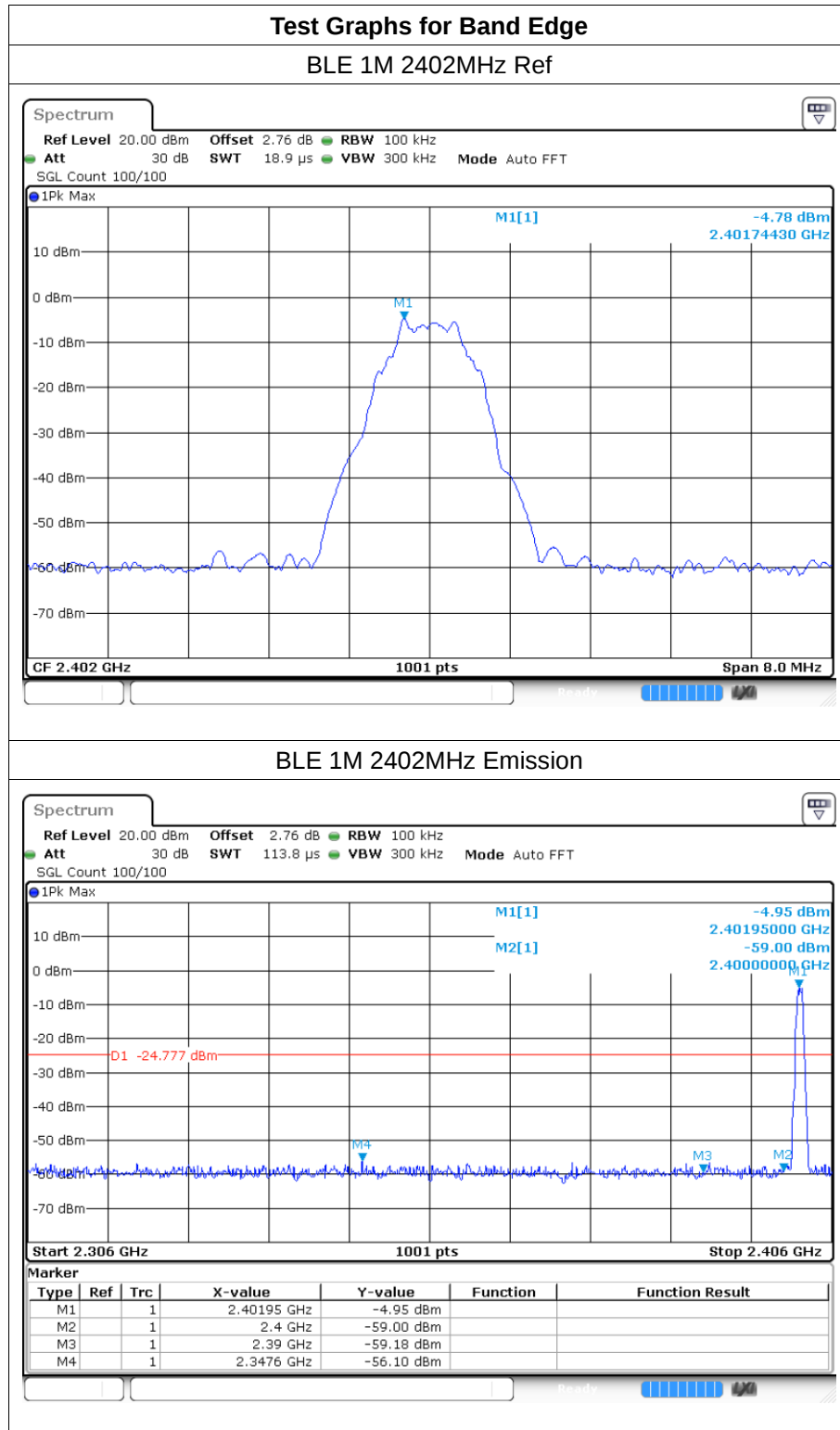


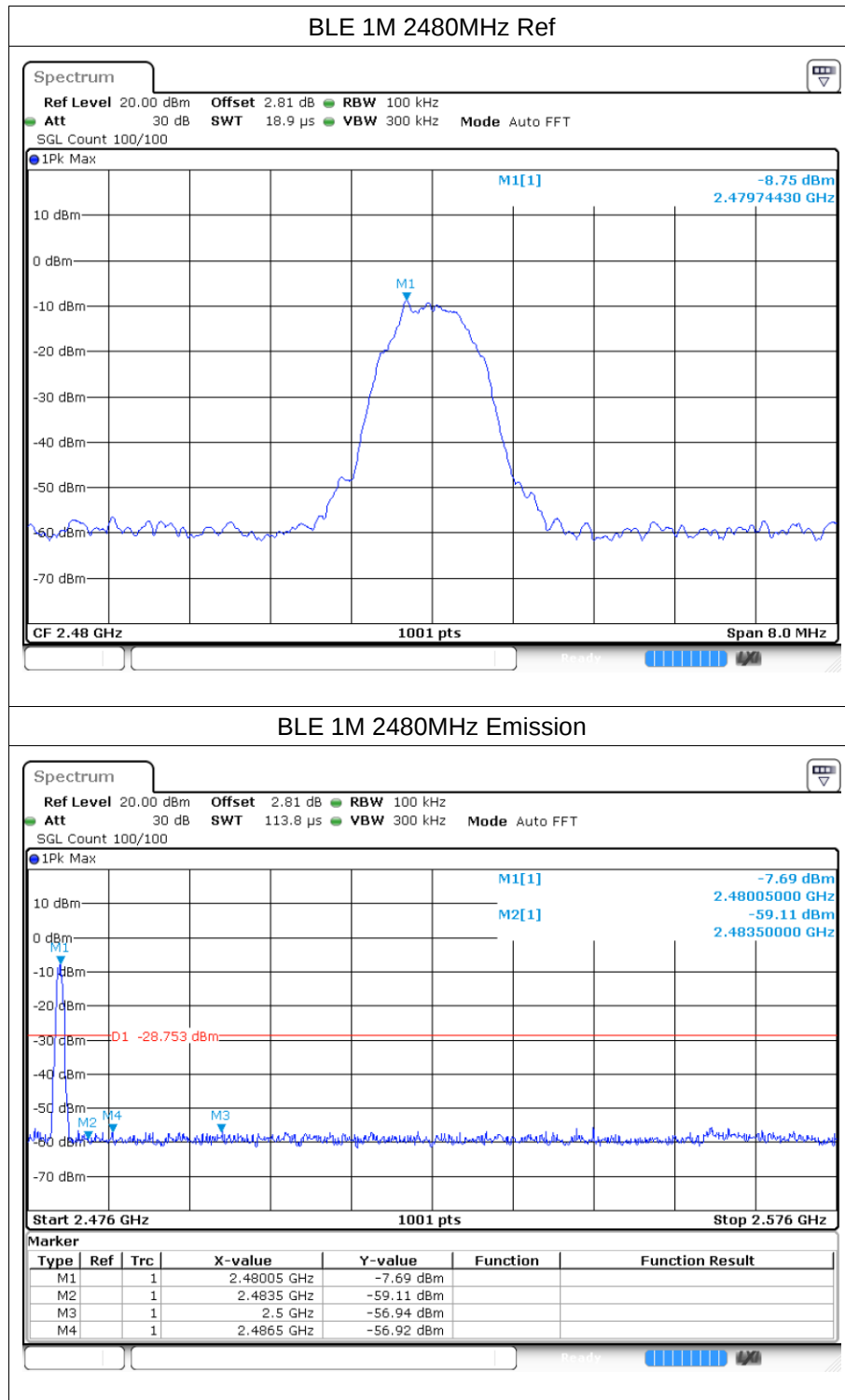
5 Band Edge

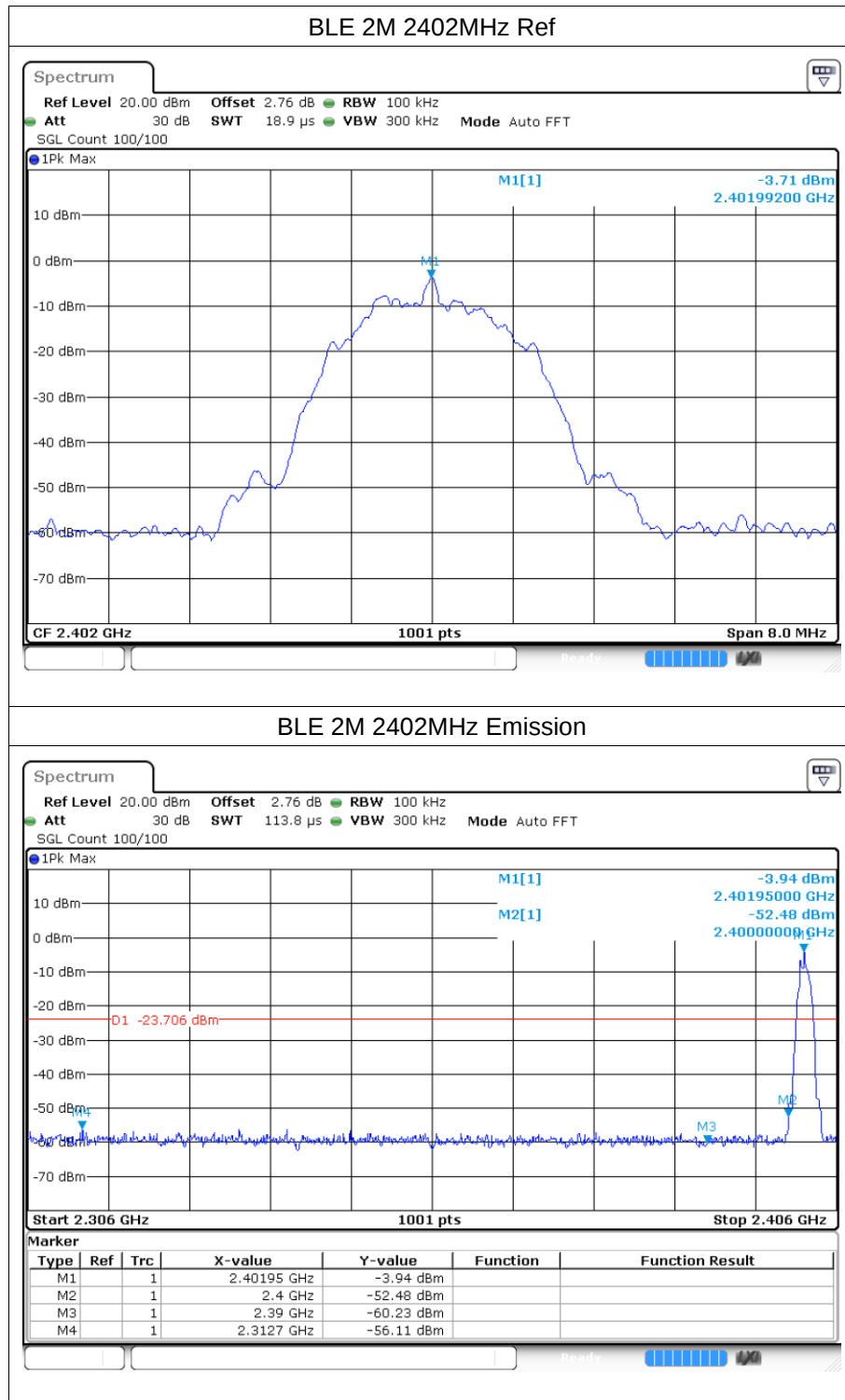
5.1 Test Result

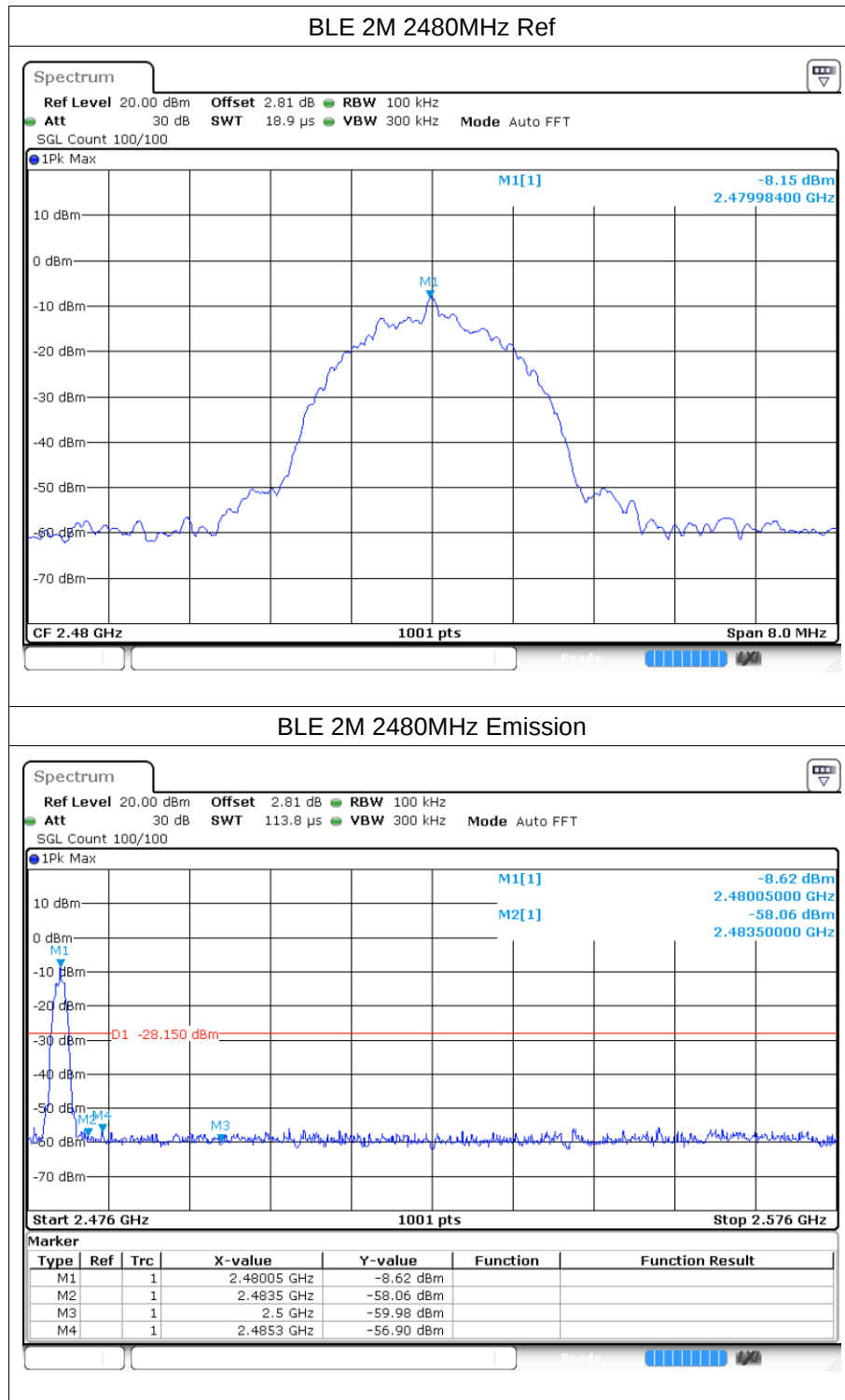
Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
GFSK 1M	2402	-51.31	-20	Pass
GFSK 1M	2480	-48.16	-20	Pass
GFSK 2M	2402	-52.39	-20	Pass
GFSK 2M	2480	-48.74	-20	Pass

5.2 Test Graphs







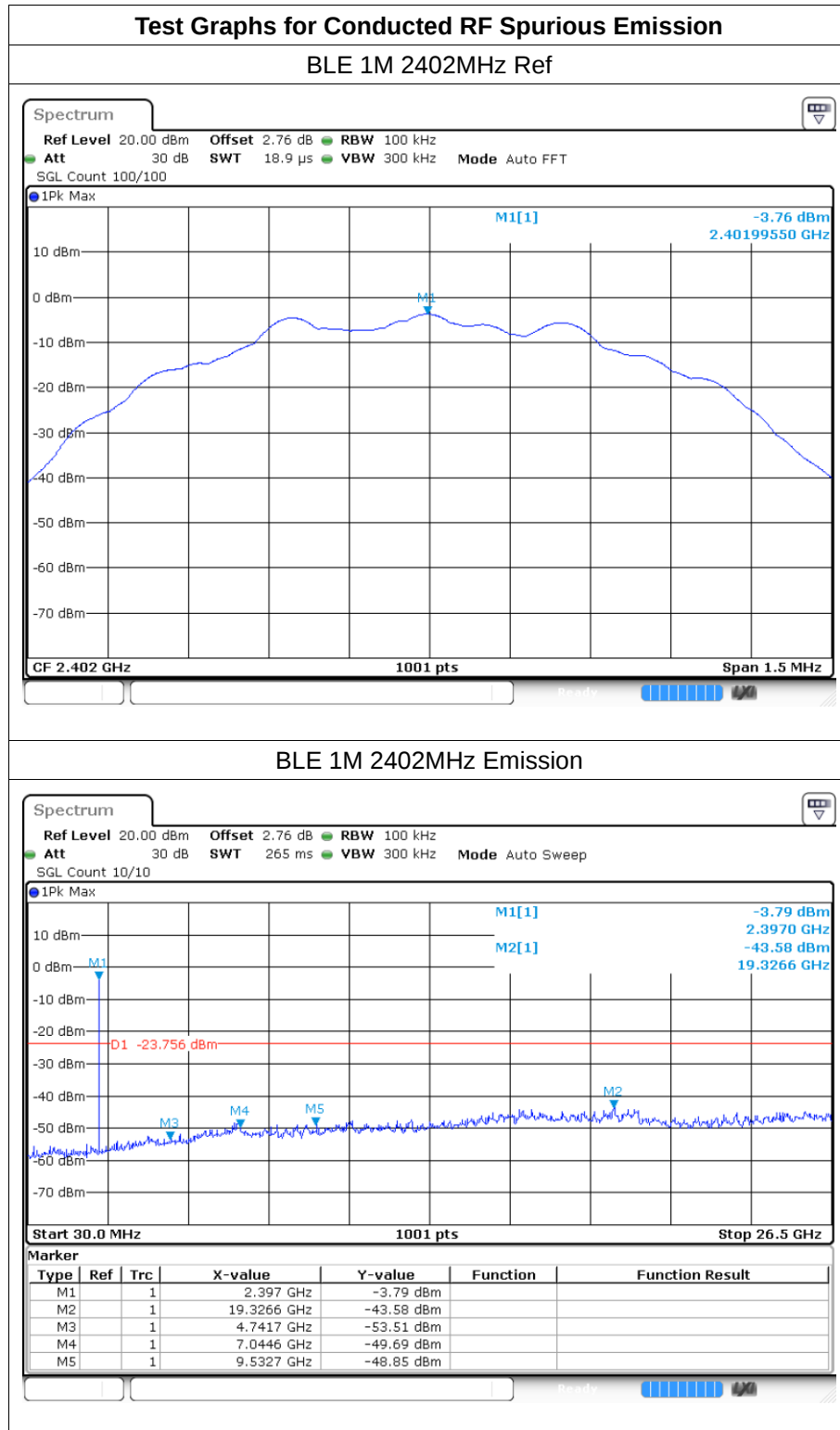


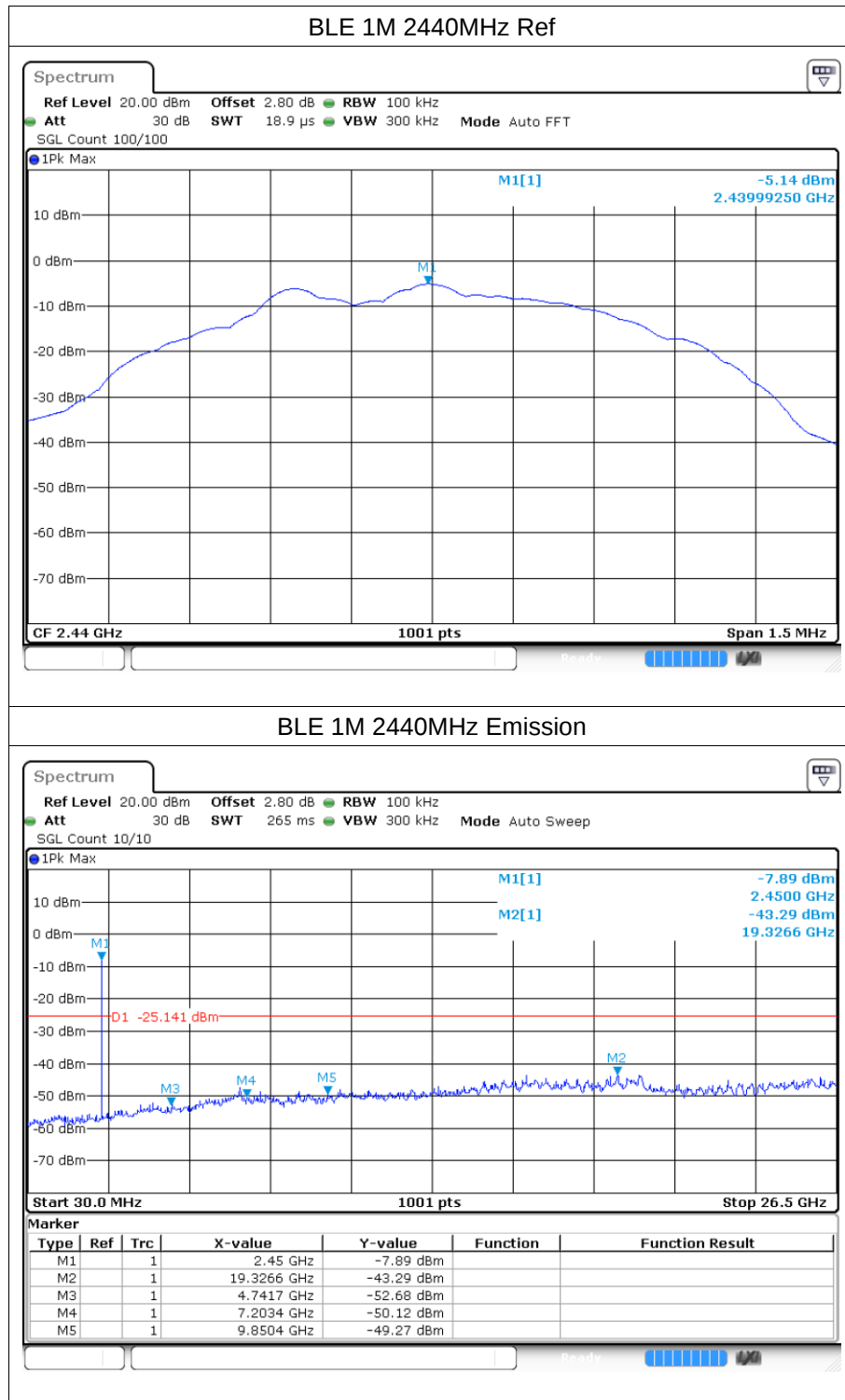
6 Conducted RF Spurious Emission

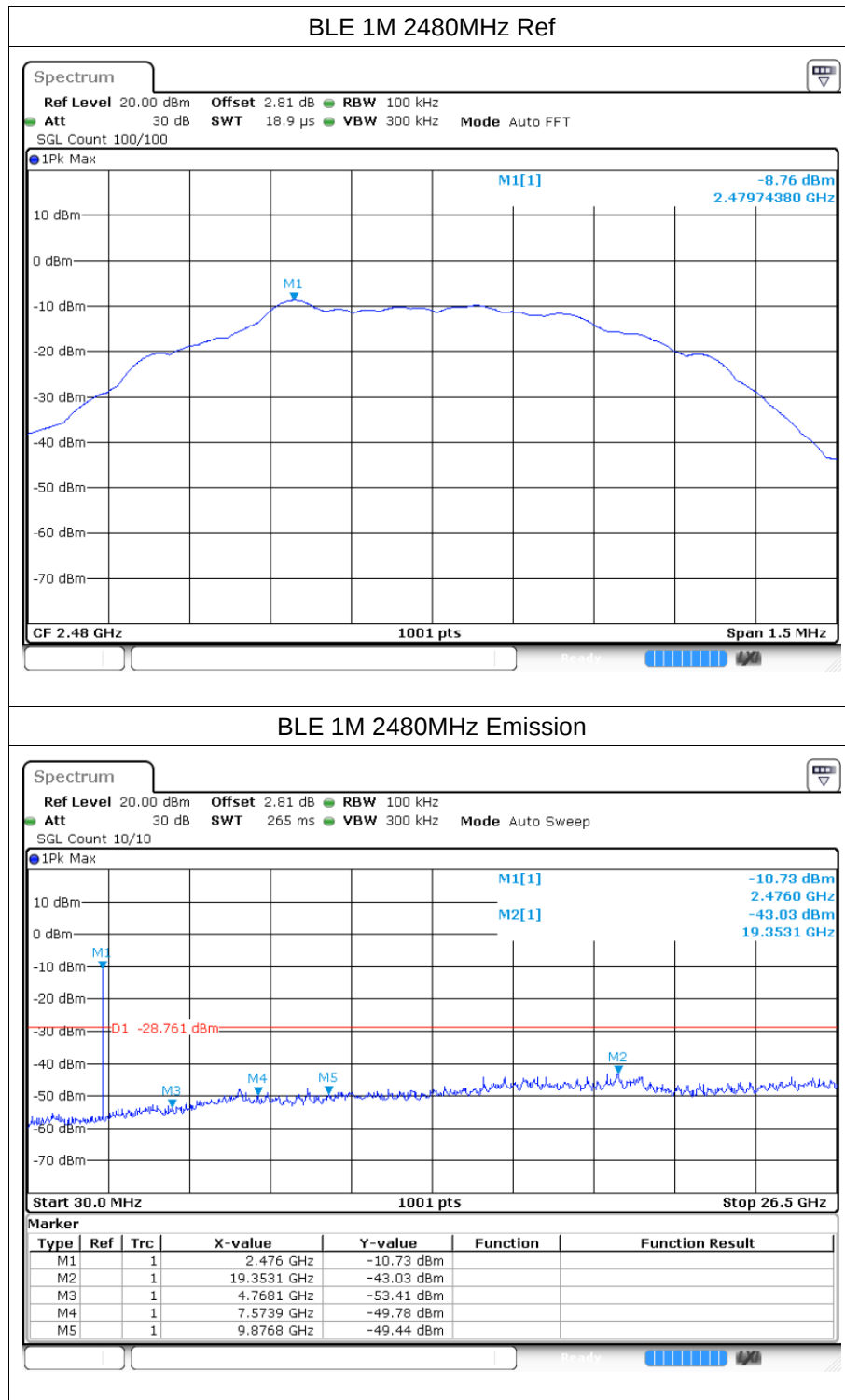
6.1 Test Result

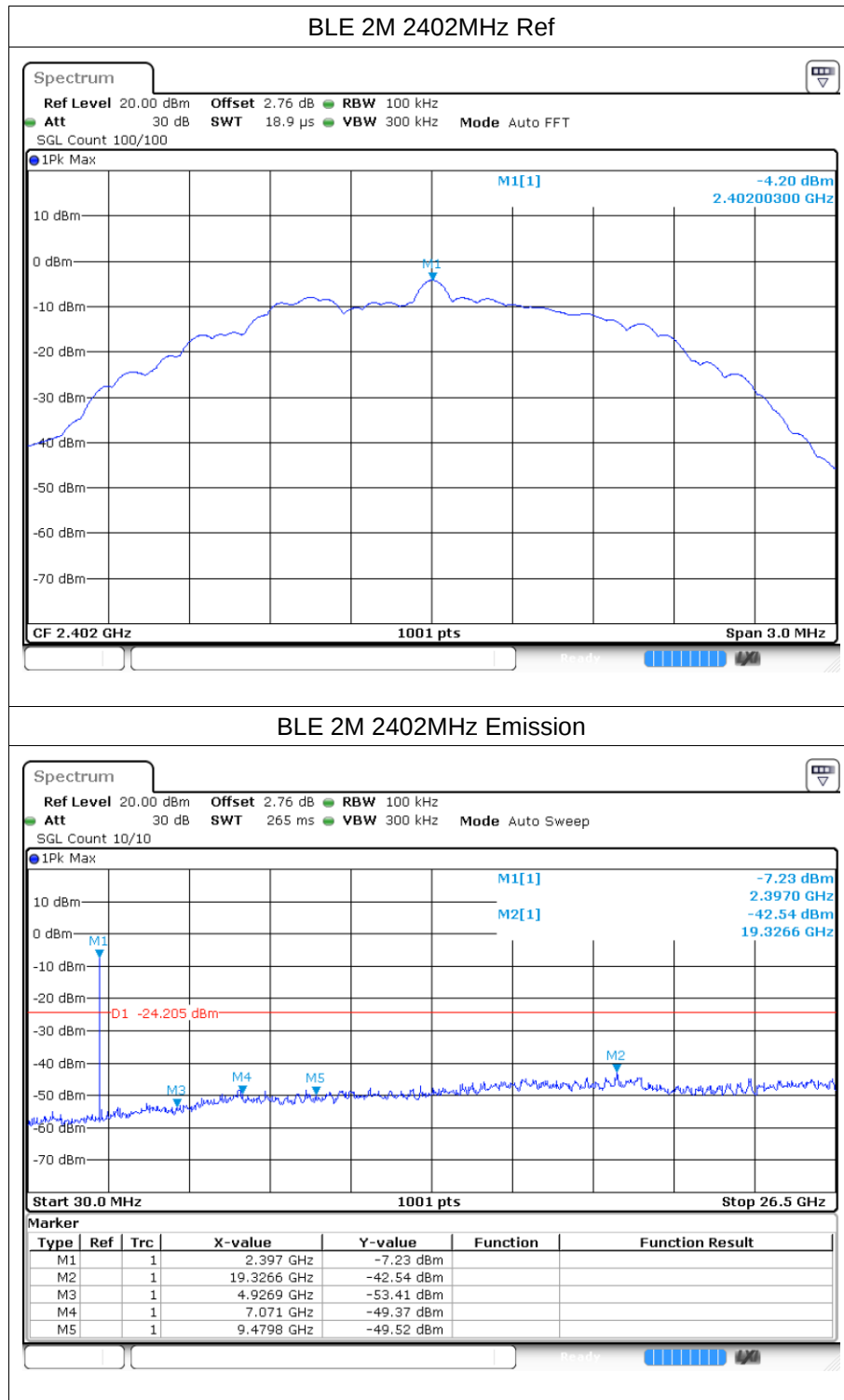
Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
GFSK 1M	2402	-39.81	-20	Pass
GFSK 1M	2440	-38.14	-20	Pass
GFSK 1M	2480	-34.26	-20	Pass
GFSK 2M	2402	-38.33	-20	Pass
GFSK 2M	2440	-37.65	-20	Pass
GFSK 2M	2480	-33.09	-20	Pass

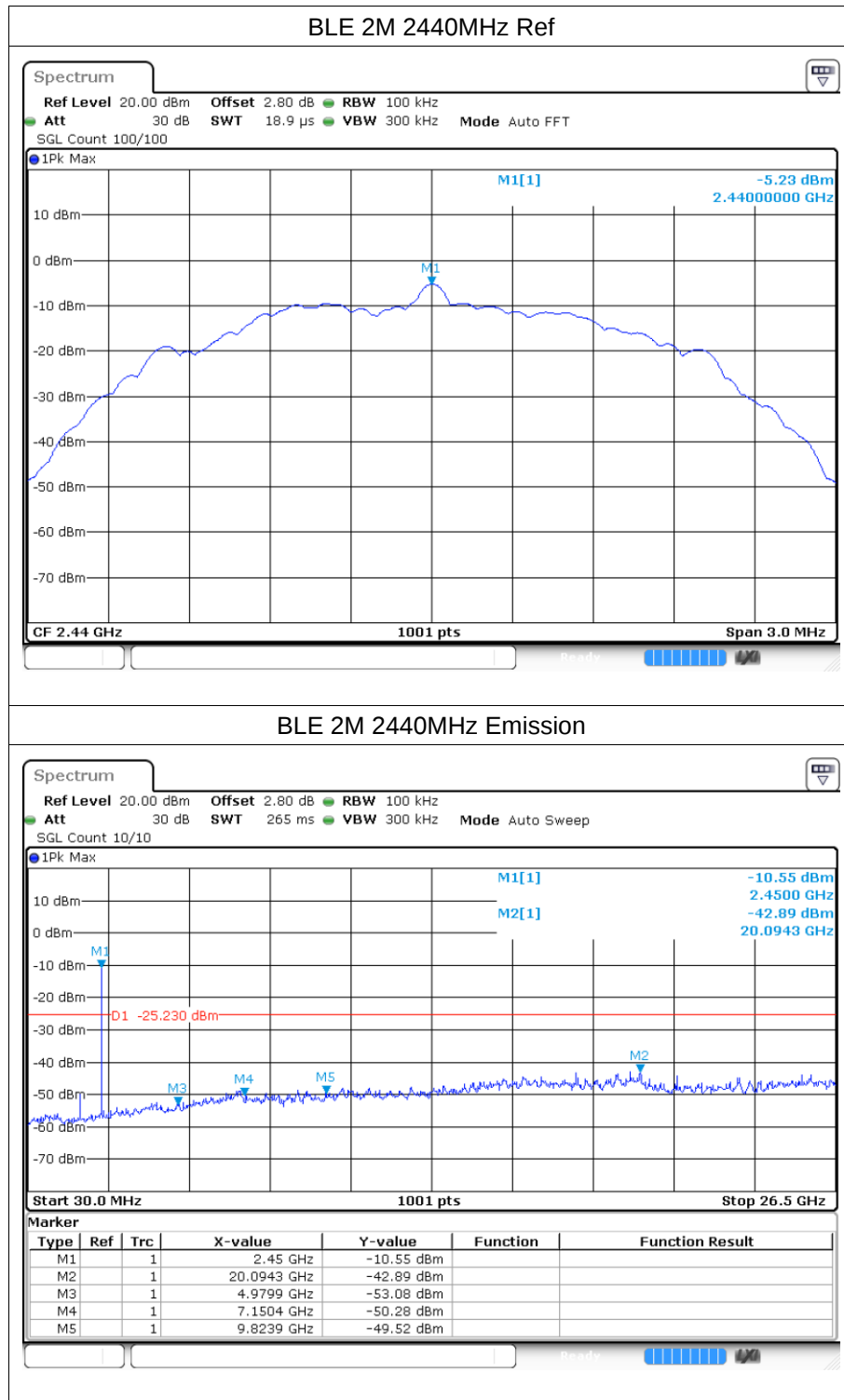
6.2 Test Graphs

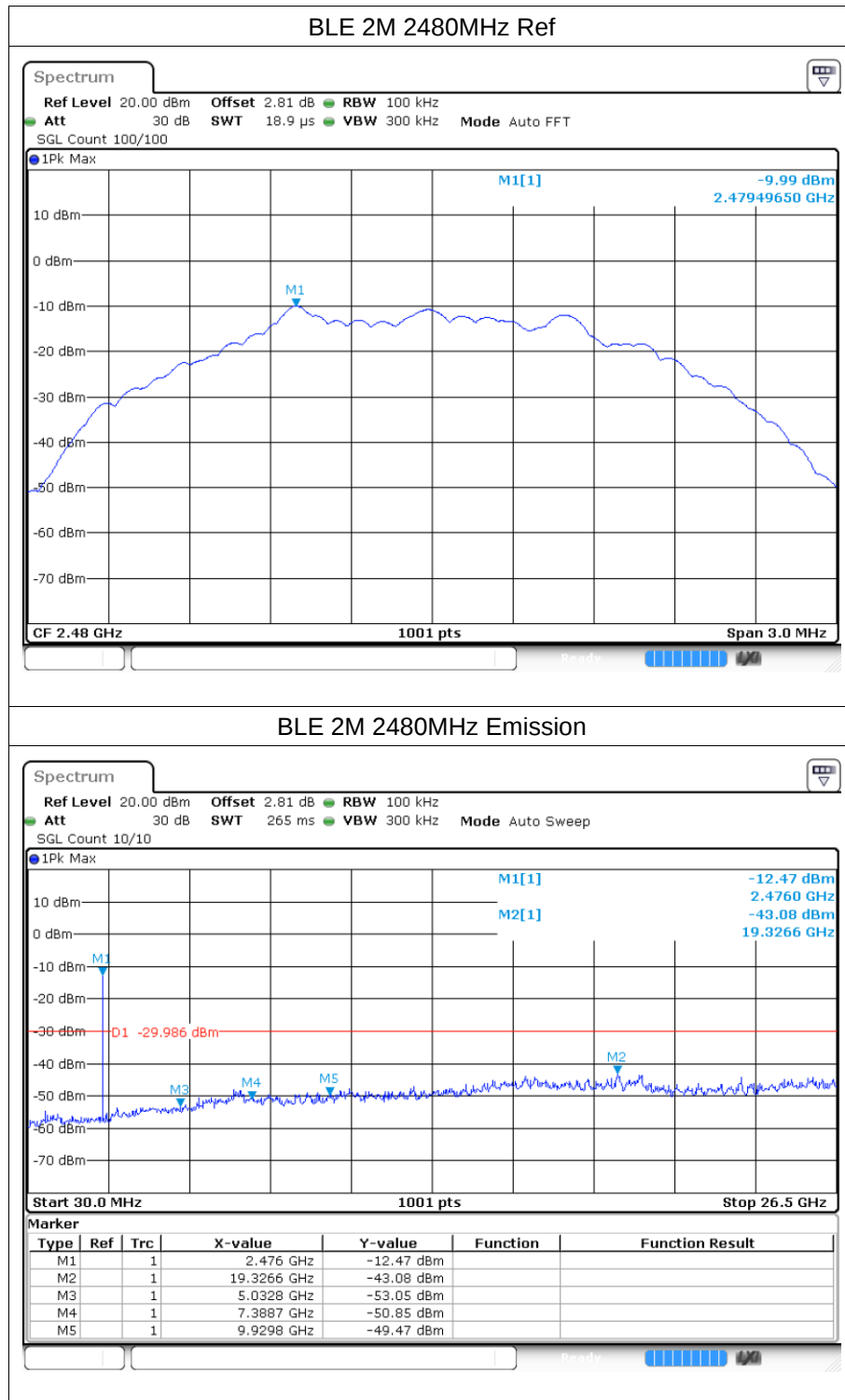














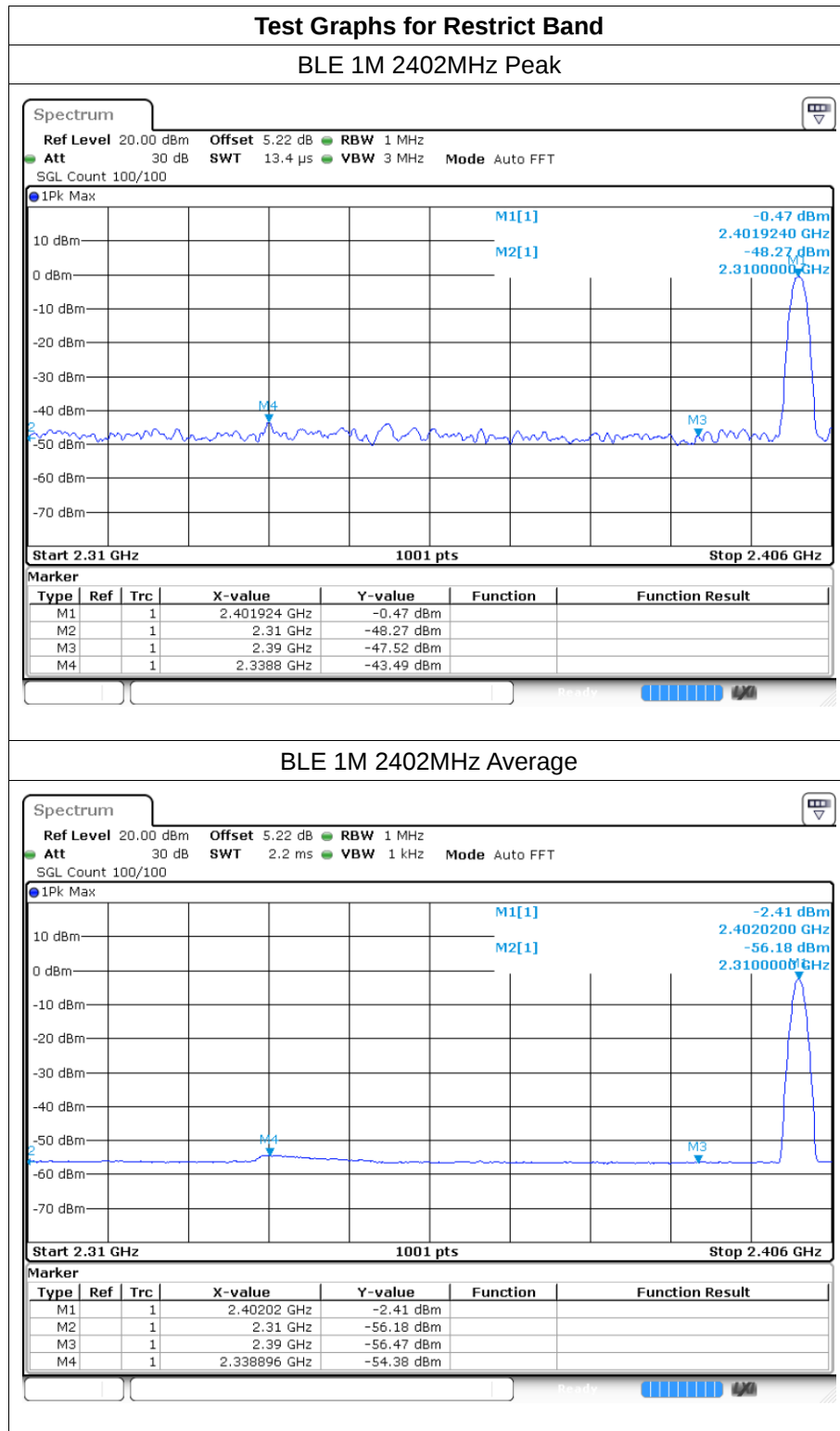
7 Restrict Band

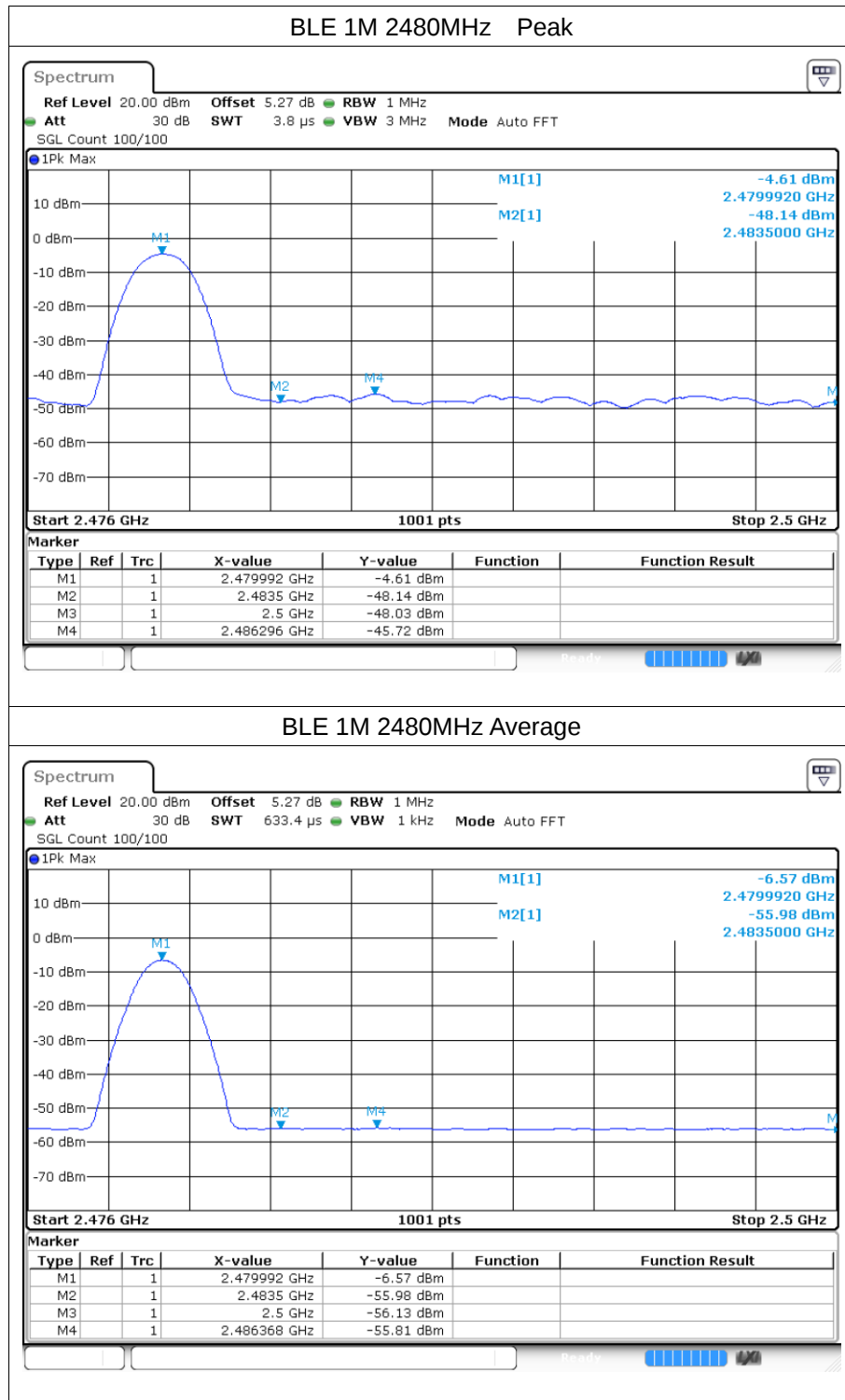
7.1 Test Result

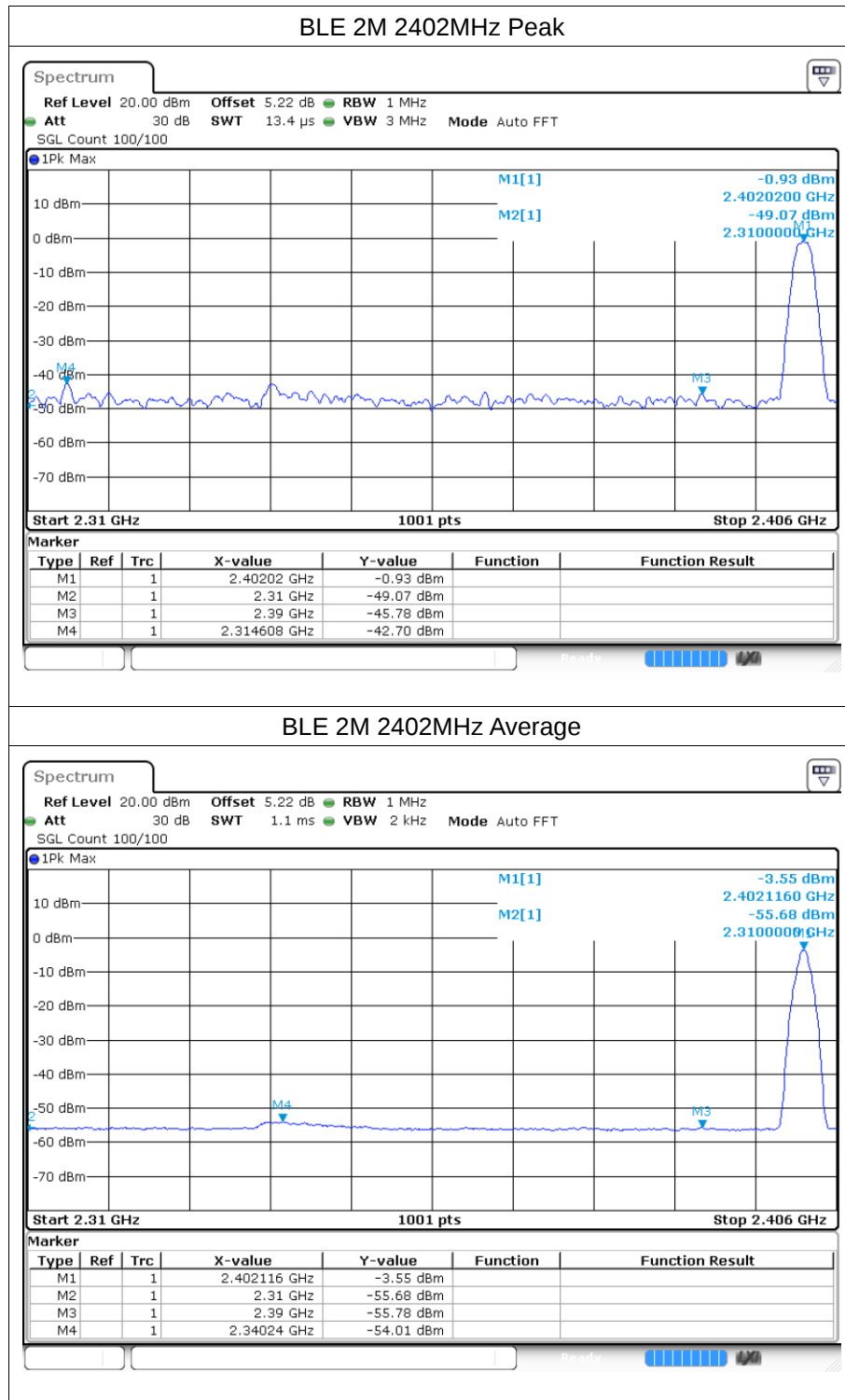
Mode	Frequency (MHz)	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
GFSK 1M	2402	2310	-48.27	2.46	49.45	Peak	74	Pass
GFSK 1M	2402	2310	-56.18	2.46	41.54	Average	54	Pass
GFSK 1M	2402	2338.8	-43.49	2.46	54.23	Peak	74	Pass
GFSK 1M	2402	2338.896	-54.38	2.46	43.34	Average	54	Pass
GFSK 1M	2402	2390	-47.51	2.46	50.21	Peak	74	Pass
GFSK 1M	2402	2390	-56.46	2.46	41.26	Average	54	Pass
GFSK 1M	2480	2483.5	-48.06	2.46	49.66	Peak	74	Pass
GFSK 1M	2480	2483.5	-55.96	2.46	41.76	Average	54	Pass
GFSK 1M	2480	2486.296	-45.71	2.46	52.01	Peak	74	Pass
GFSK 1M	2480	2486.368	-55.8	2.46	41.92	Average	54	Pass
GFSK 1M	2480	2500	-48.02	2.46	49.7	Peak	74	Pass
GFSK 1M	2480	2500	-56.12	2.46	41.6	Average	54	Pass

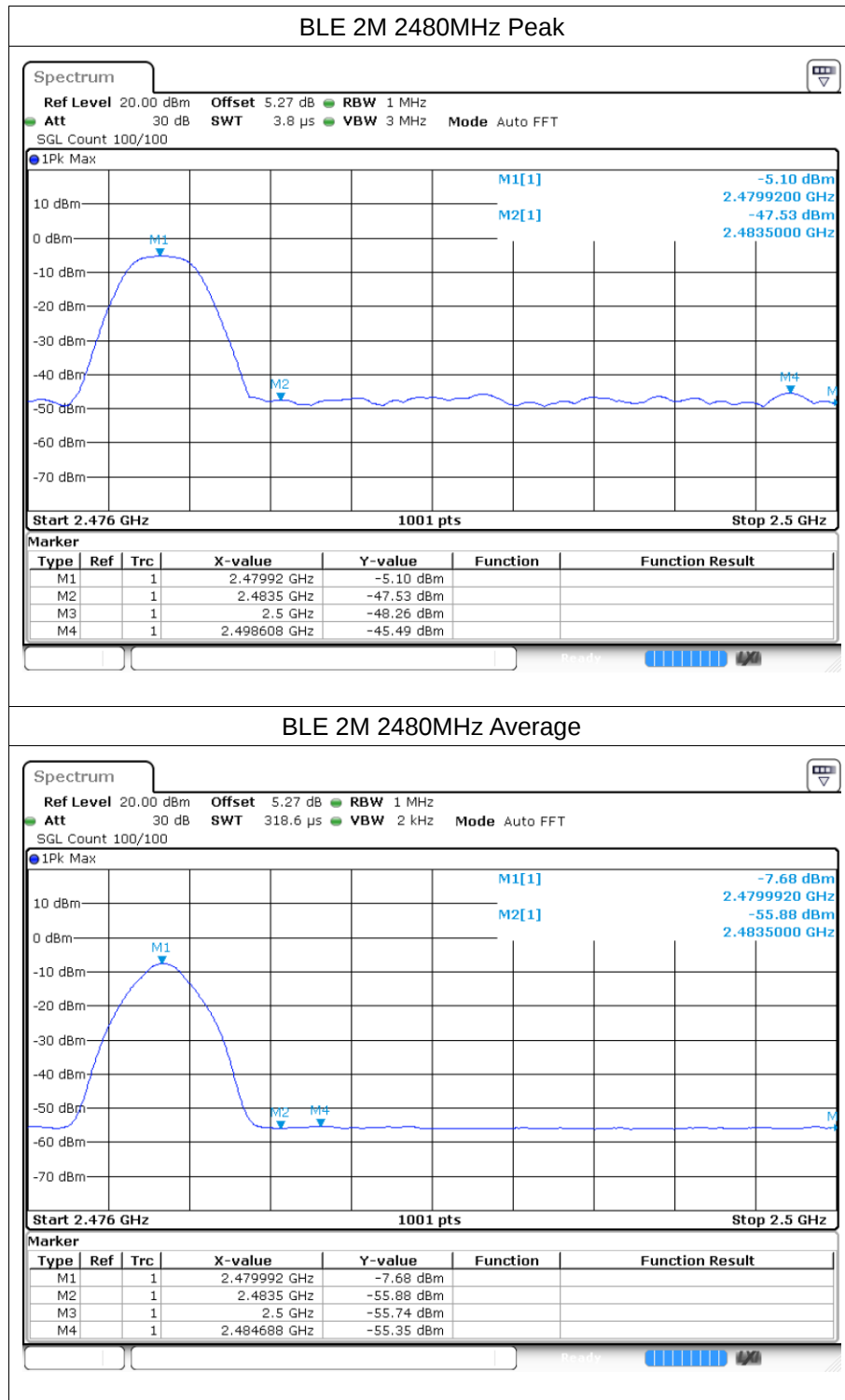
GFSK 2M	2402	2310	-49.06	2.46	48.66	Peak	74	Pass
GFSK 2M	2402	2310	-55.67	2.46	42.05	Average	54	Pass
GFSK 2M	2402	2314.608	-42.69	2.46	55.03	Peak	74	Pass
GFSK 2M	2402	2340.24	-54.01	2.46	43.71	Average	54	Pass
GFSK 2M	2402	2390	-45.77	2.46	51.95	Peak	74	Pass
GFSK 2M	2402	2390	-55.78	2.46	41.94	Average	54	Pass
GFSK 2M	2480	2483.5	-47.51	2.46	50.21	Peak	74	Pass
GFSK 2M	2480	2483.5	-55.88	2.46	41.84	Average	54	Pass
GFSK 2M	2480	2498.608	-45.48	2.46	52.24	Peak	74	Pass
GFSK 2M	2480	2484.688	-55.34	2.46	42.38	Average	54	Pass
GFSK 2M	2480	2500	-48.26	2.46	49.46	Peak	74	Pass
GFSK 2M	2480	2500	-55.74	2.46	41.98	Average	54	Pass

7.2 Test Graphs









---The End---