Appendix B

RF Test Data for BT (BLE) (Conducted Measurement)

Product Name: Bluetooth module

Trade Mark: N/A

Test Model: CHF8ML

Environmental Conditions

Temperature:	25.6° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung

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1 Duty Cycle

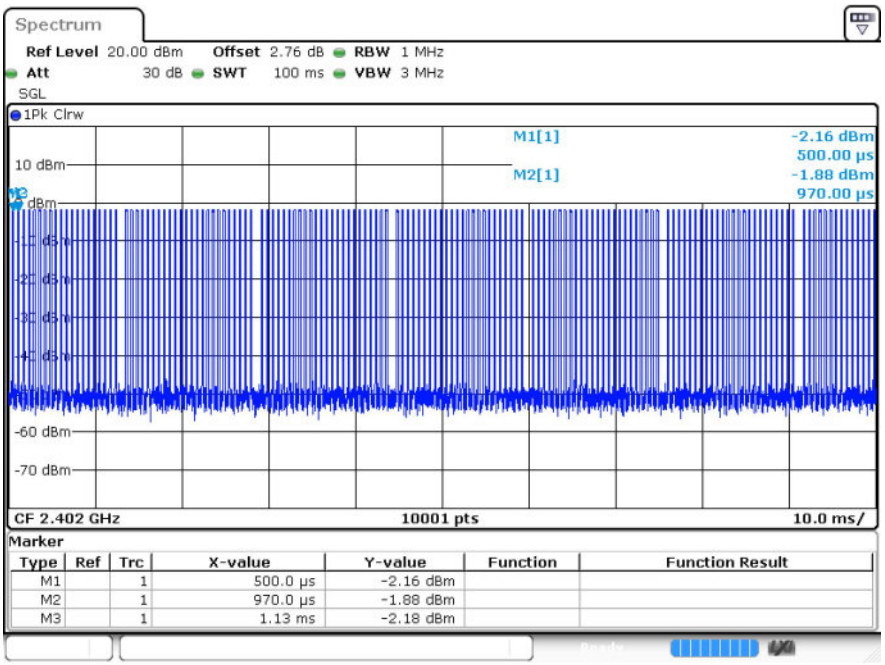
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
BLE 1M	2402	26.22	5.81	6.25
BLE 1M	2440	26.78	5.72	6.25
BLE 1M	2480	26.18	5.82	6.25
BLE 2M	2402	16.17	7.91	11.11
BLE 2M	2440	16.07	7.94	10
BLE 2M	2480	15.8	8.01	10

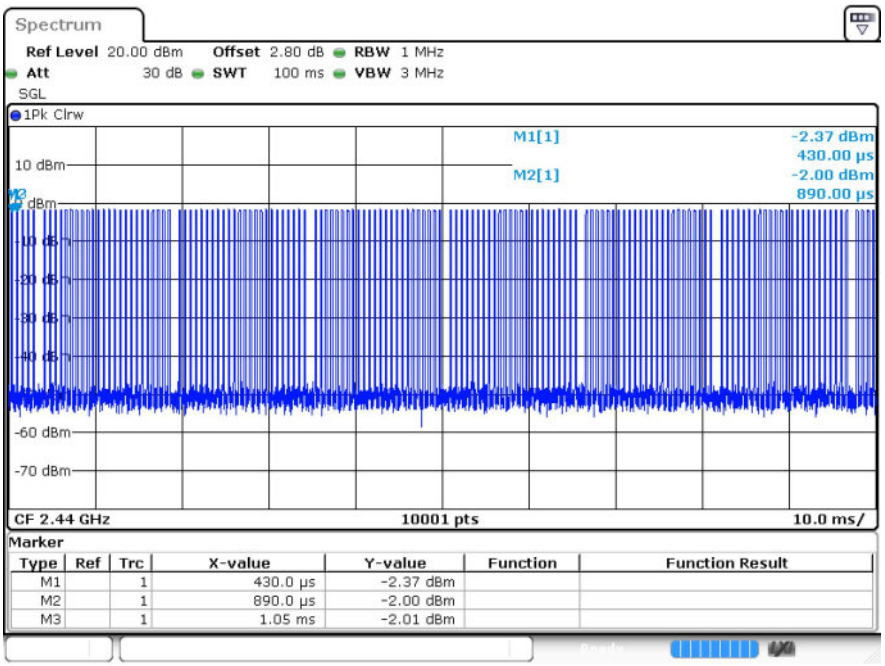
1.2 Test Graphs

Test Graphs

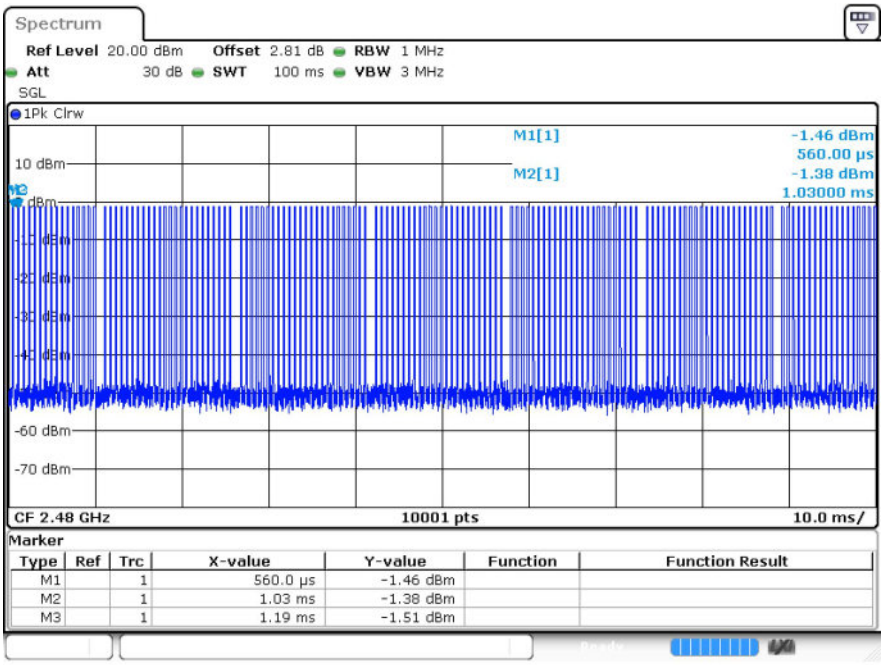
BLE 1M 2402MHz



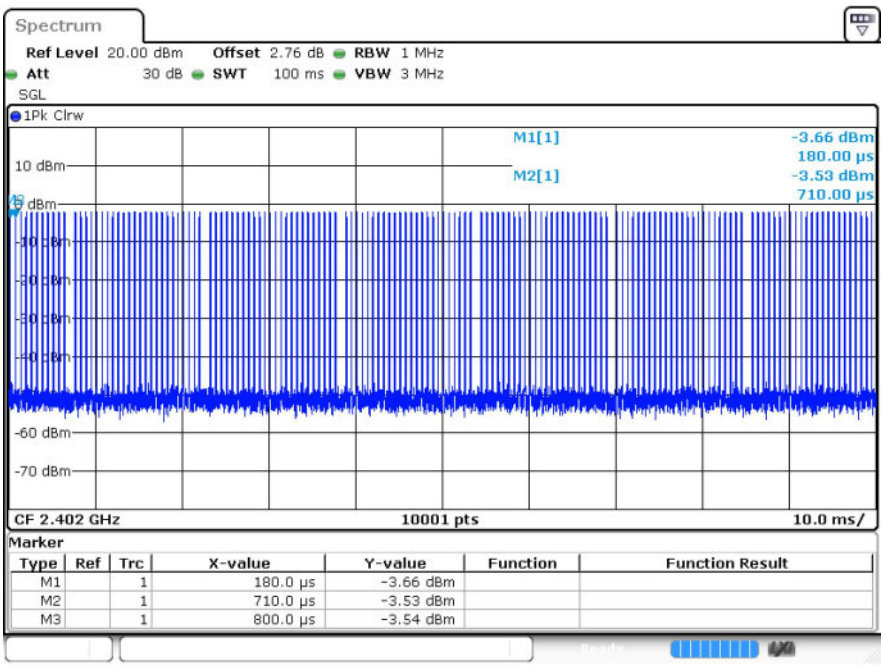
BLE 1M 2440MHz



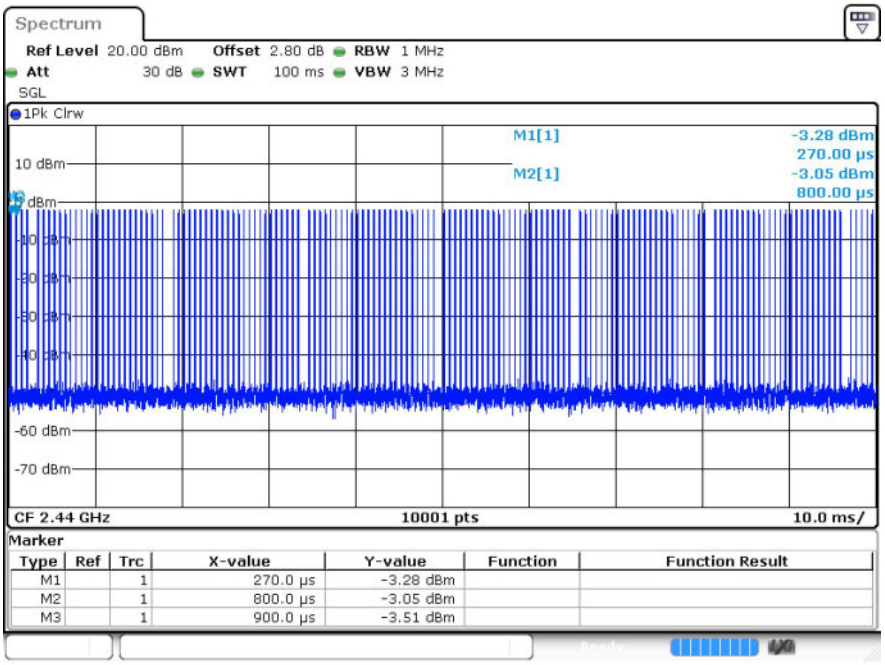
BLE 1M 2480MHz



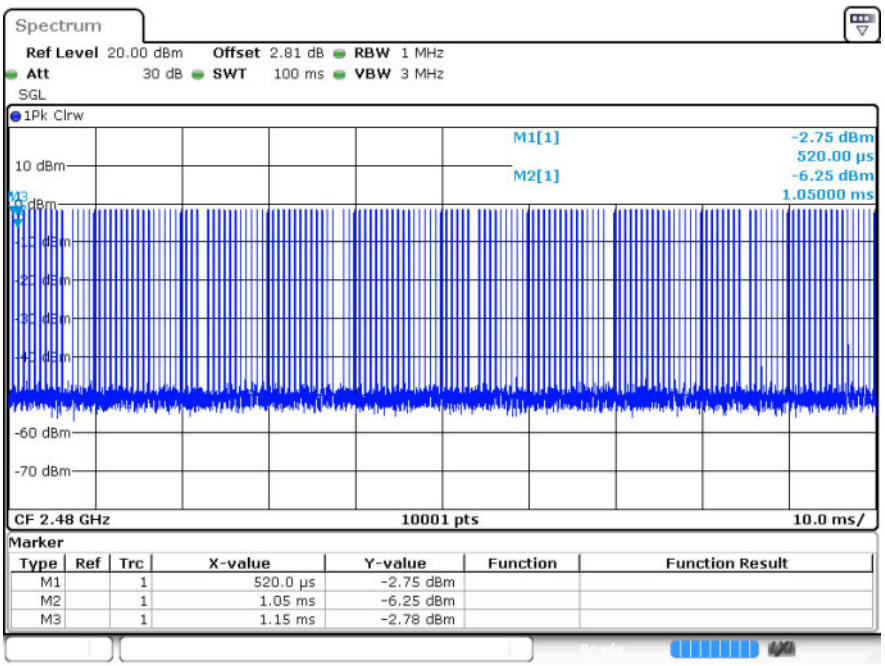
BLE 2M 2402MHz



BLE 2M 2440MHz



BLE 2M 2480MHz



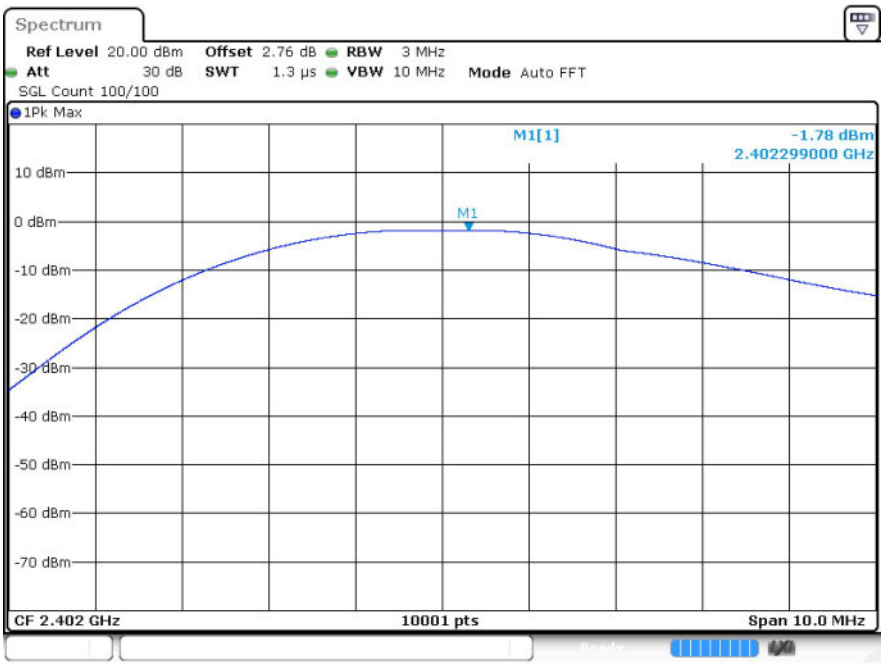
2 Maximum Conducted Output Power

2.1 Test Result

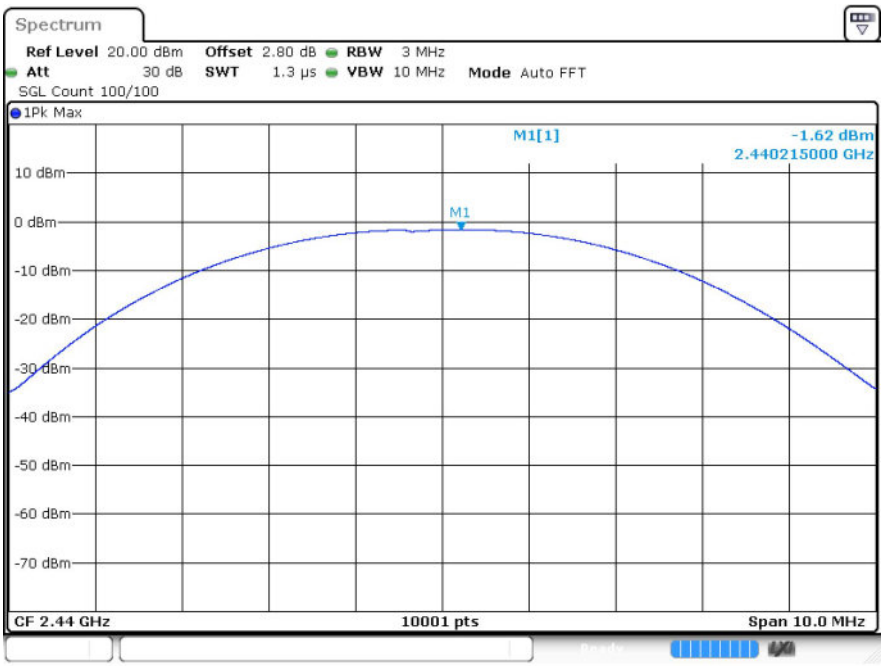
Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
BLE 1M	2402	-1.78	30	Pass
BLE 1M	2440	-1.62	30	Pass
BLE 1M	2480	-1.08	30	Pass
BLE 2M	2402	-1.76	30	Pass
BLE 2M	2440	-1.59	30	Pass
BLE 2M	2480	-1.06	30	Pass

2.2 Test Graphs

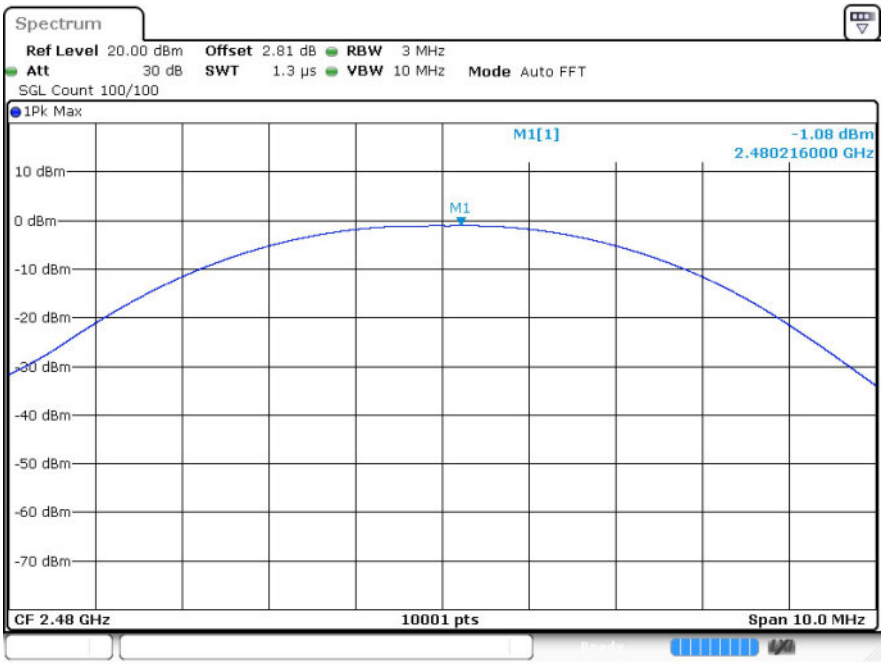
Test Graphs
BLE 1M 2402MHz



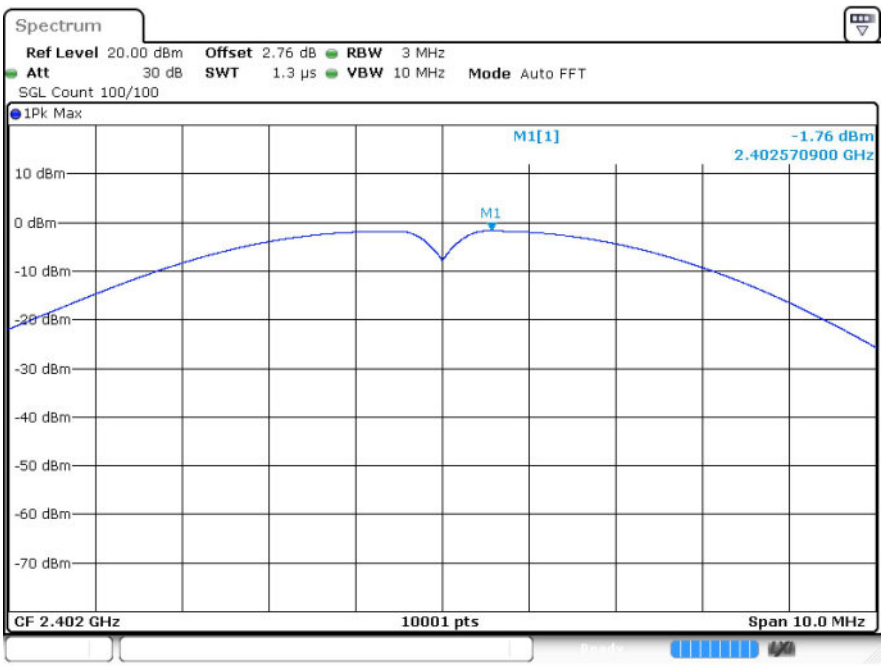
BLE 1M 2440MHz



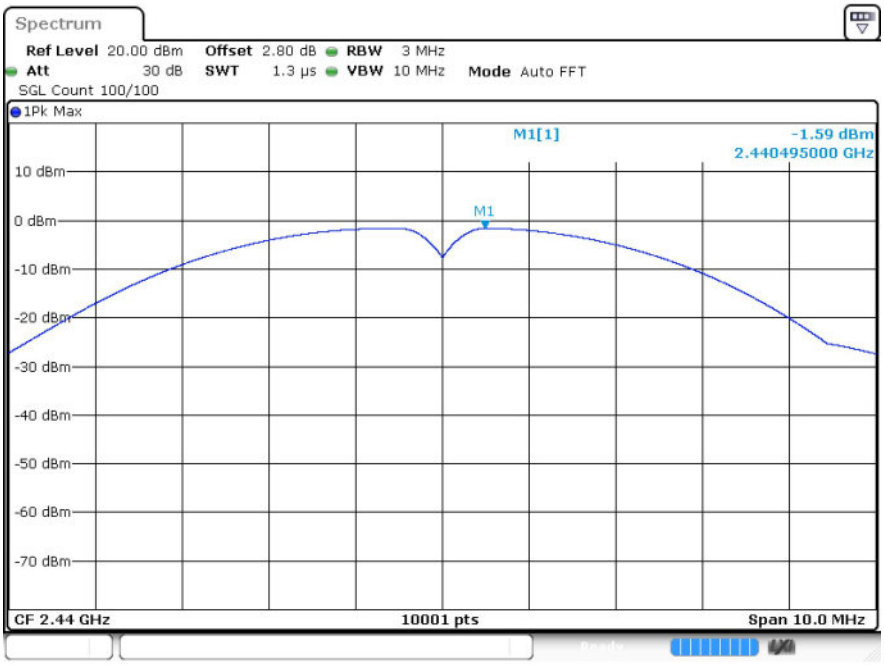
BLE 1M 2480MHz



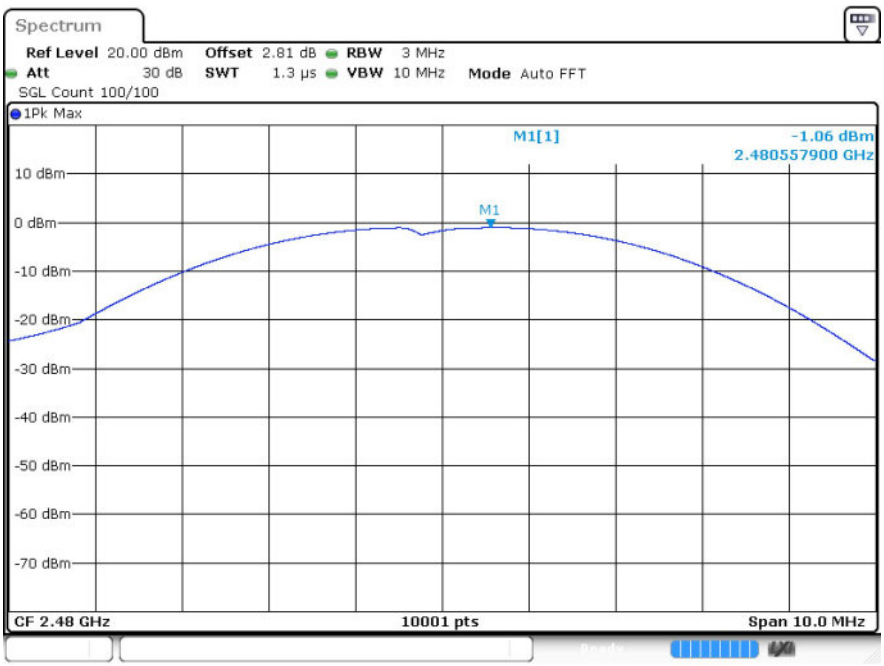
BLE 2M 2402MHz



BLE 2M 2440MHz



BLE 2M 2480MHz



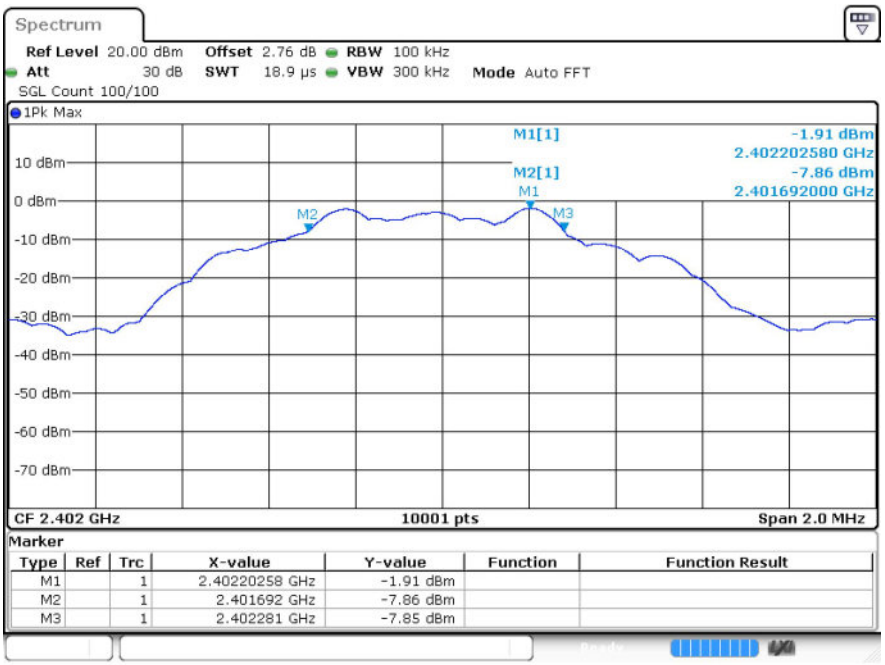
3 -6dB Bandwidth

3.1 Test Result

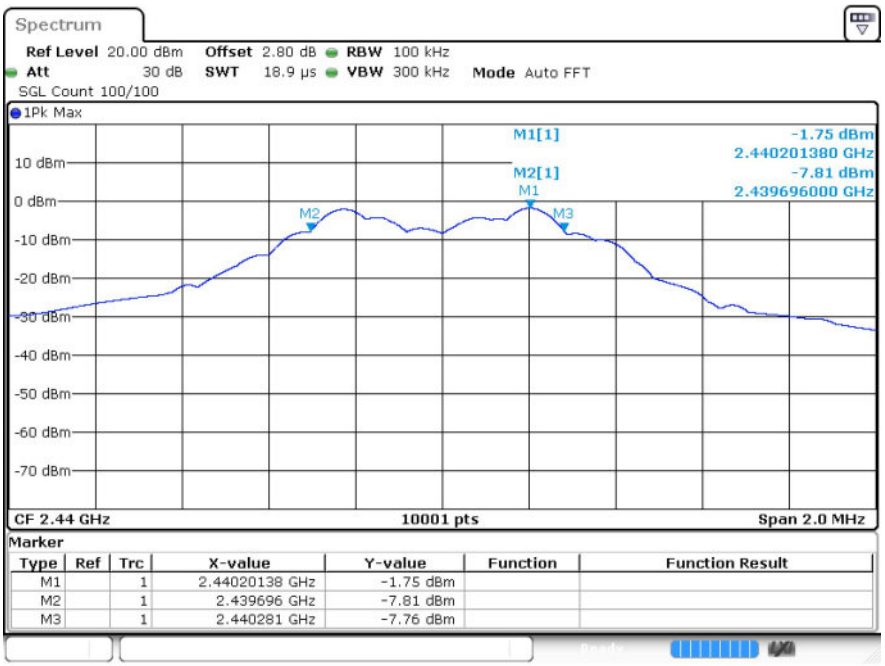
Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
BLE 1M	2402	0.59	0.5	Pass
BLE 1M	2440	0.584	0.5	Pass
BLE 1M	2480	0.614	0.5	Pass
BLE 2M	2402	1.04	0.5	Pass
BLE 2M	2440	1.052	0.5	Pass
BLE 2M	2480	1.042	0.5	Pass

3.2 Test Graphs

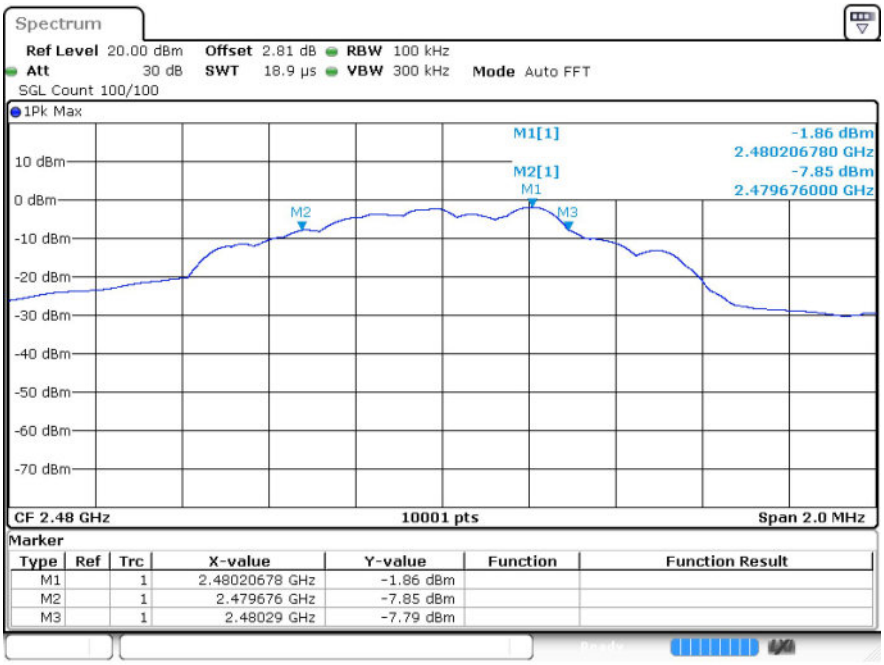
Test Graphs
BLE 1M 2402MHz



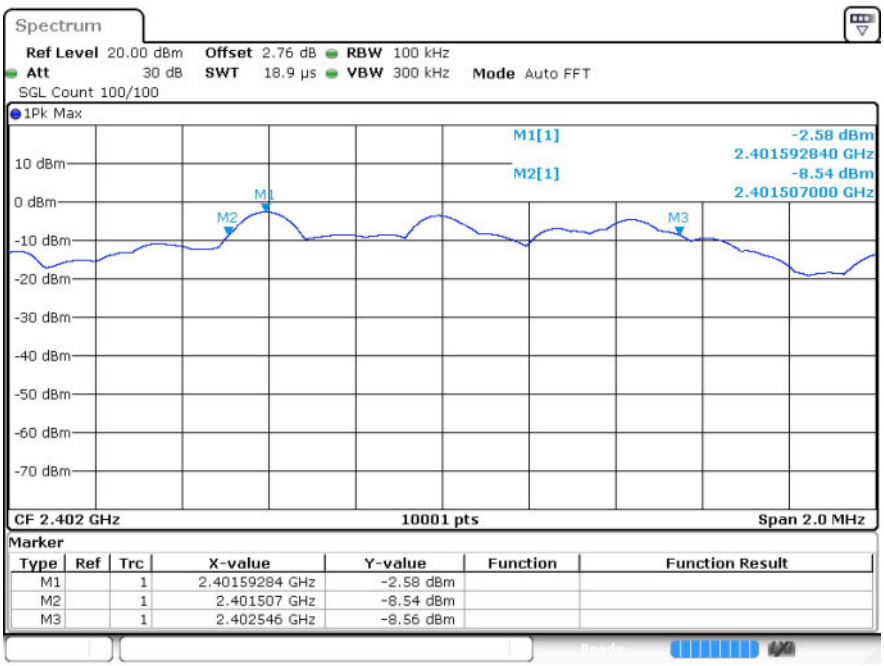
BLE 1M 2440MHz



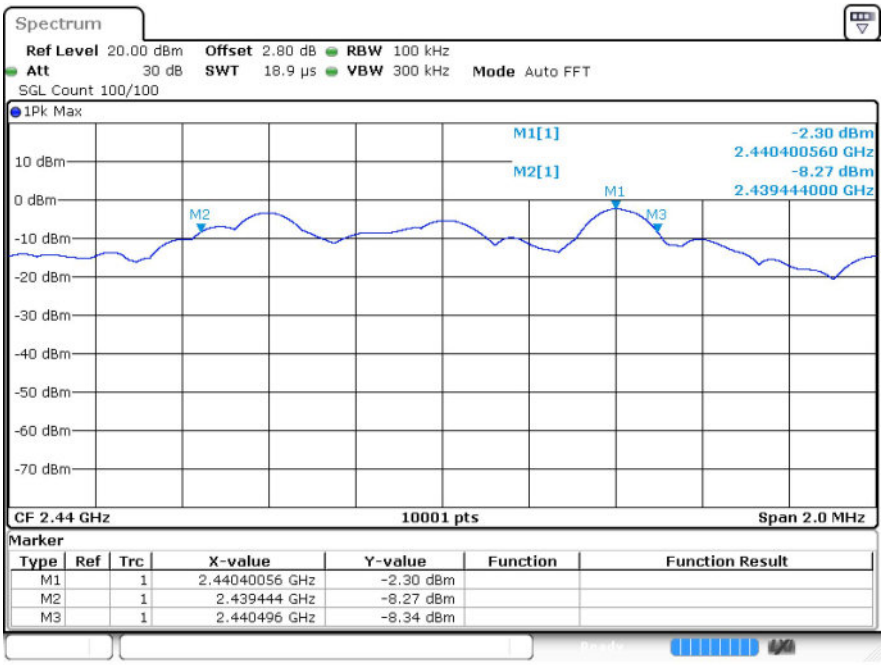
BLE 1M 2480MHz



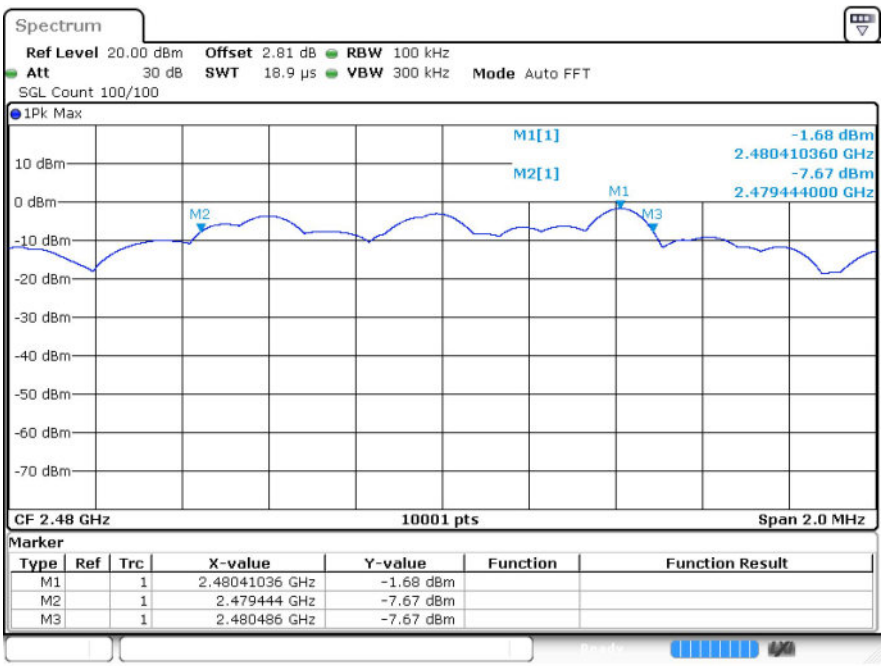
BLE 2M 2402MHz



BLE 2M 2440MHz



BLE 2M 2480MHz



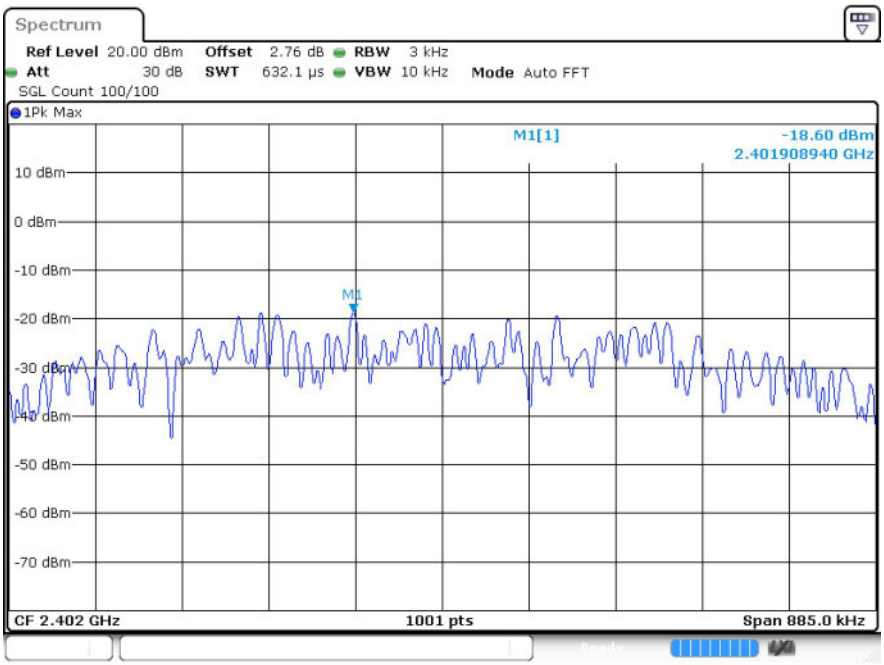
4 Maximum Power Spectral Density Level

4.1 Test Result

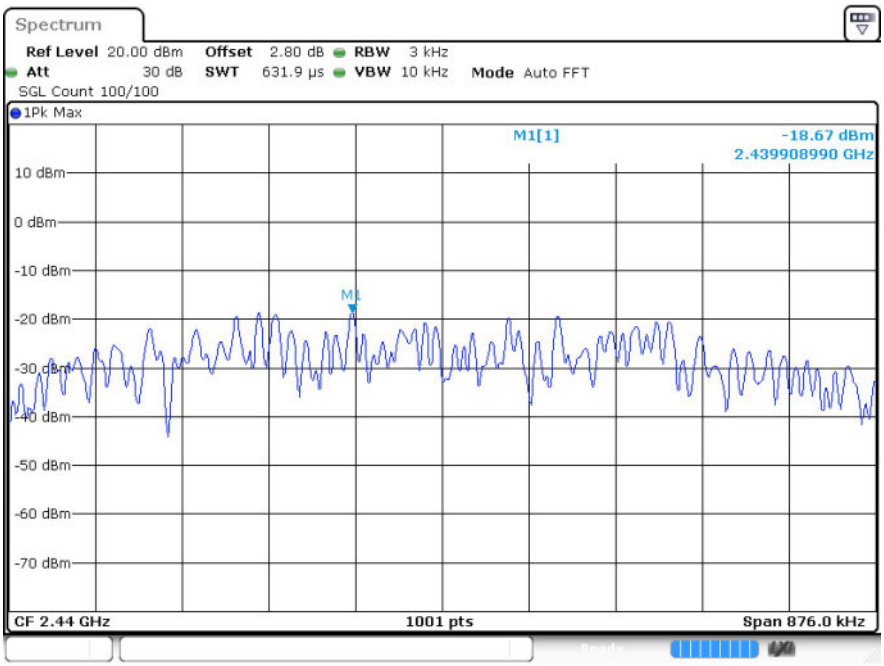
Mode	Frequency (MHz)	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
BLE 1M	2402	-18.6	≤8	Pass
BLE 1M	2440	-18.67	≤8	Pass
BLE 1M	2480	-18	≤8	Pass
BLE 2M	2402	-22.82	≤8	Pass
BLE 2M	2440	-22.69	≤8	Pass
BLE 2M	2480	-21.96	≤8	Pass

4.2 Test Graphs

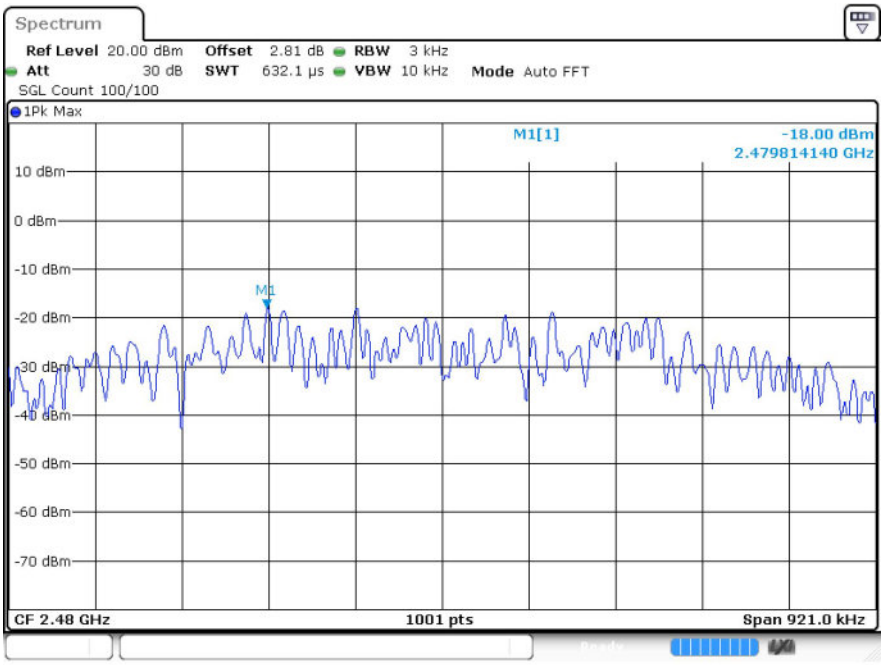
Test Graphs
BLE 1M 2402MHz



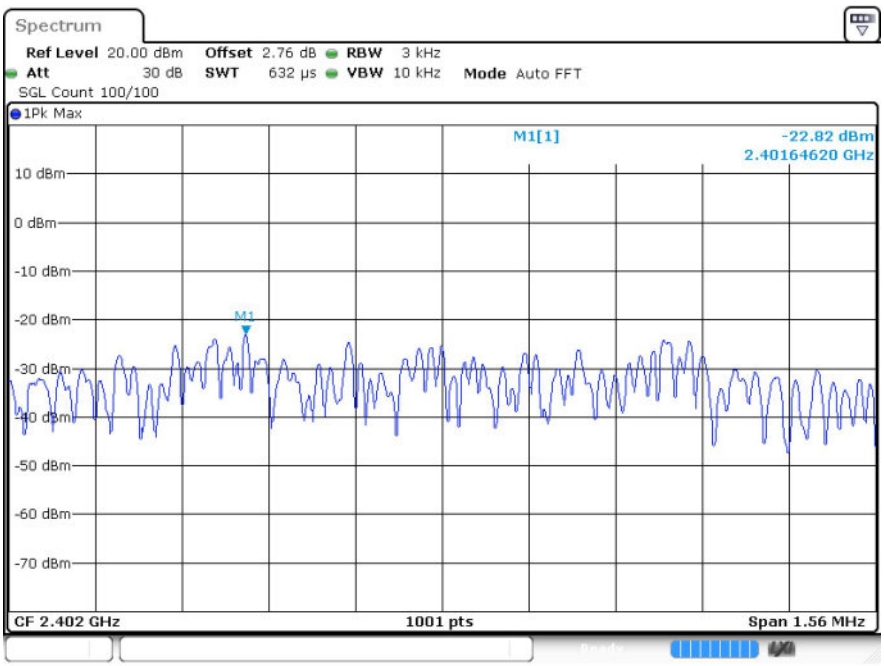
BLE 1M 2440MHz



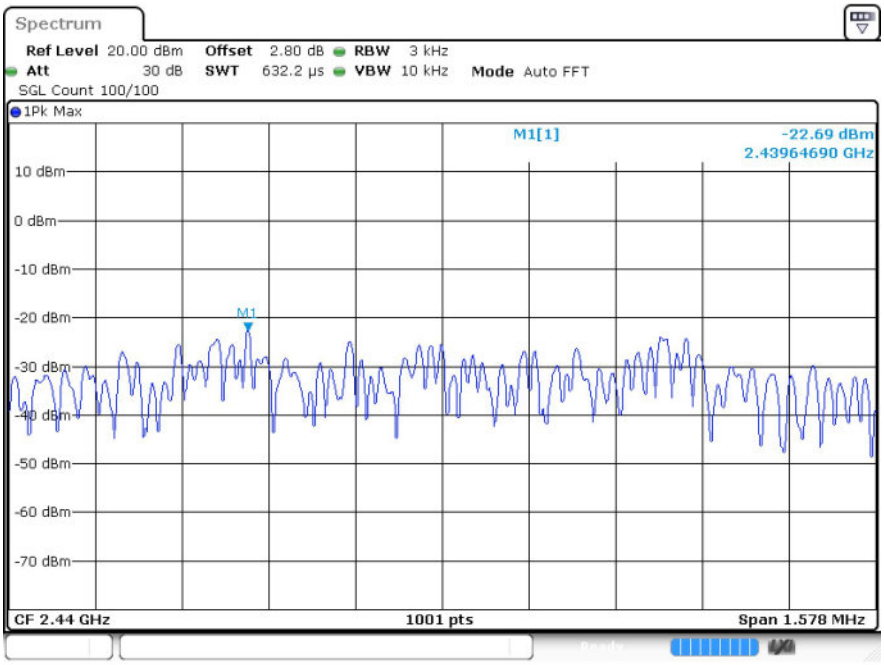
BLE 1M 2480MHz



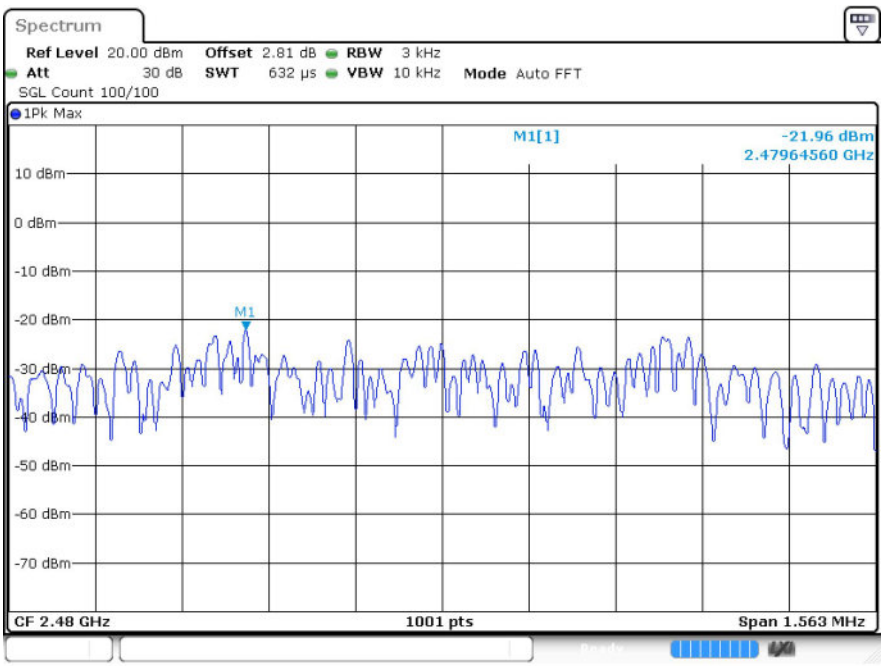
BLE 2M 2402MHz



BLE 2M 2440MHz



BLE 2M 2480MHz



5 Band Edge

5.1 Test Result

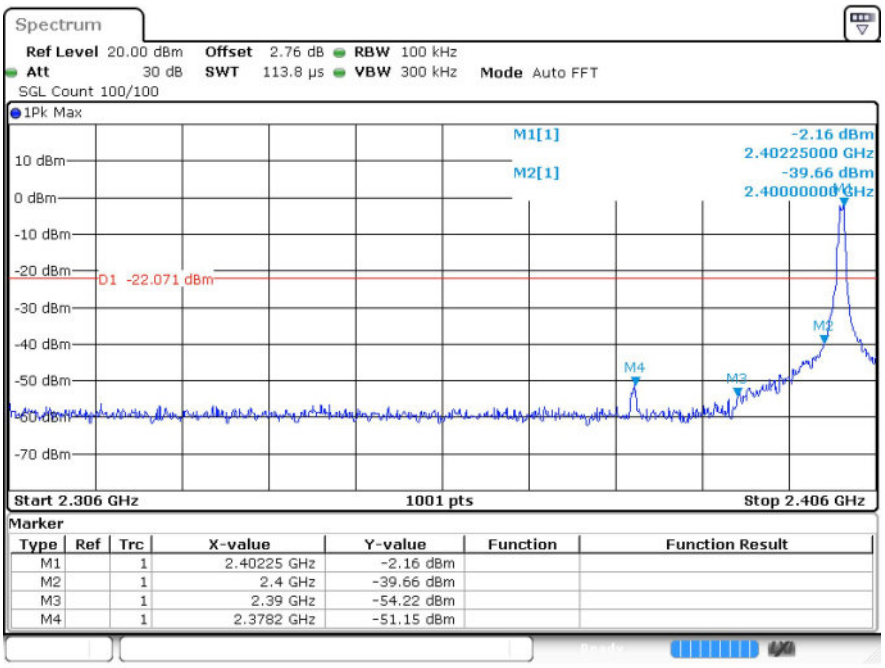
Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
BLE 1M	2402	-49.07	-20	Pass
BLE 1M	2480	-44.26	-20	Pass
BLE 2M	2402	-48.24	-20	Pass
BLE 2M	2480	-35.38	-20	Pass

5.2 Test Graphs

Test Graphs

BLE 1M 2402MHz Ref

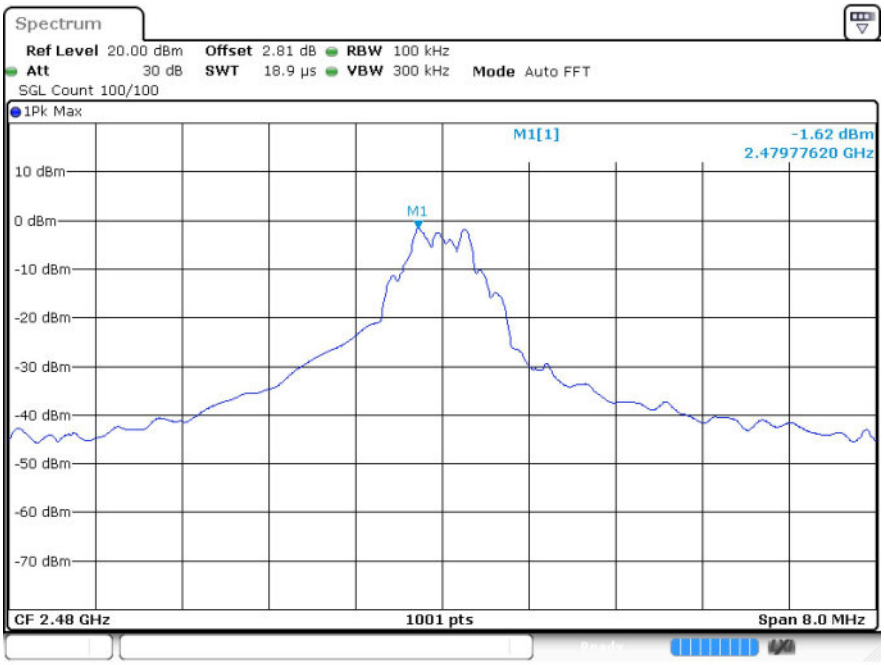
BLE 1M 2402MHz Emission



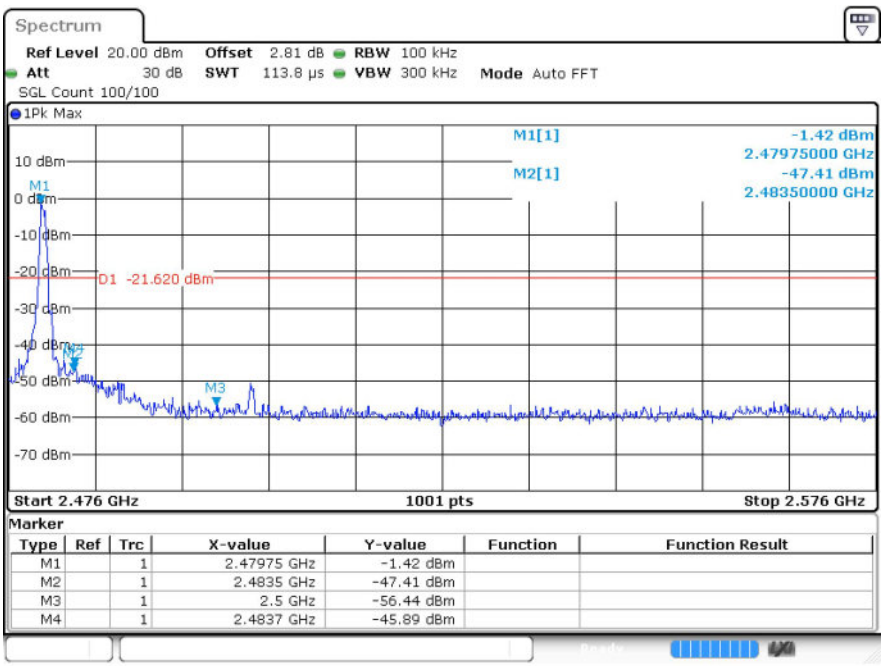
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40225 GHz	-2.16 dBm		
M2		1	2.4 GHz	-39.66 dBm		
M3		1	2.39 GHz	-54.22 dBm		
M4		1	2.3782 GHz	-51.15 dBm		

BLE 1M 2480MHz Ref



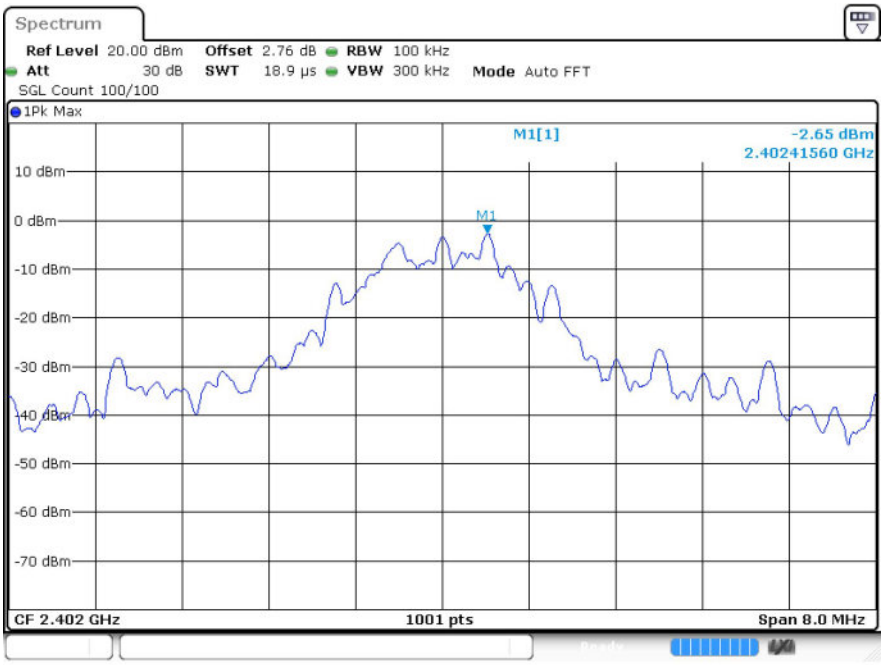
BLE 1M 2480MHz Emission



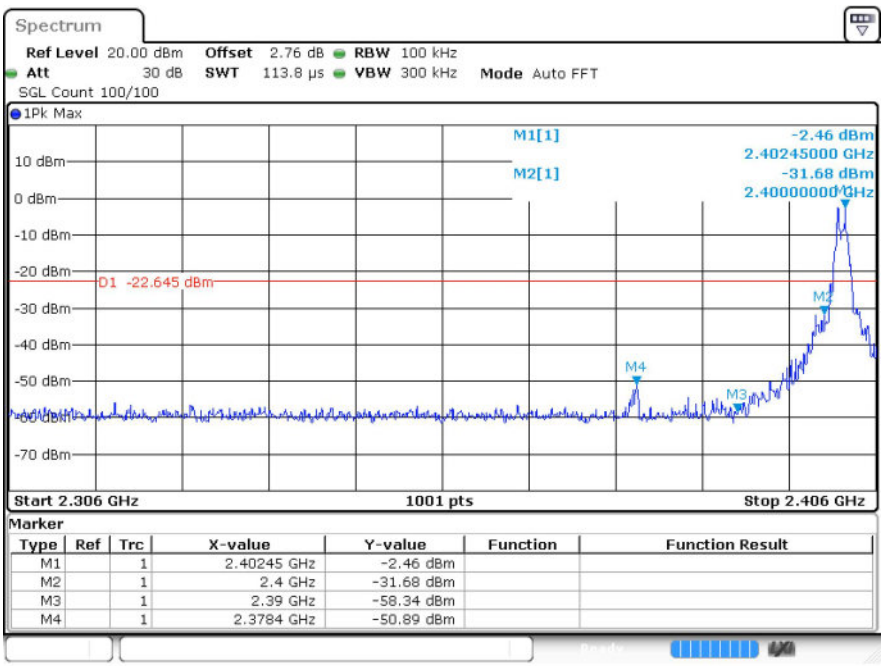
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47975 GHz	-1.42 dBm		
M2		1	2.4835 GHz	-47.41 dBm		
M3		1	2.5 GHz	-56.44 dBm		
M4		1	2.4837 GHz	-45.89 dBm		

BLE 2M 2402MHz Ref

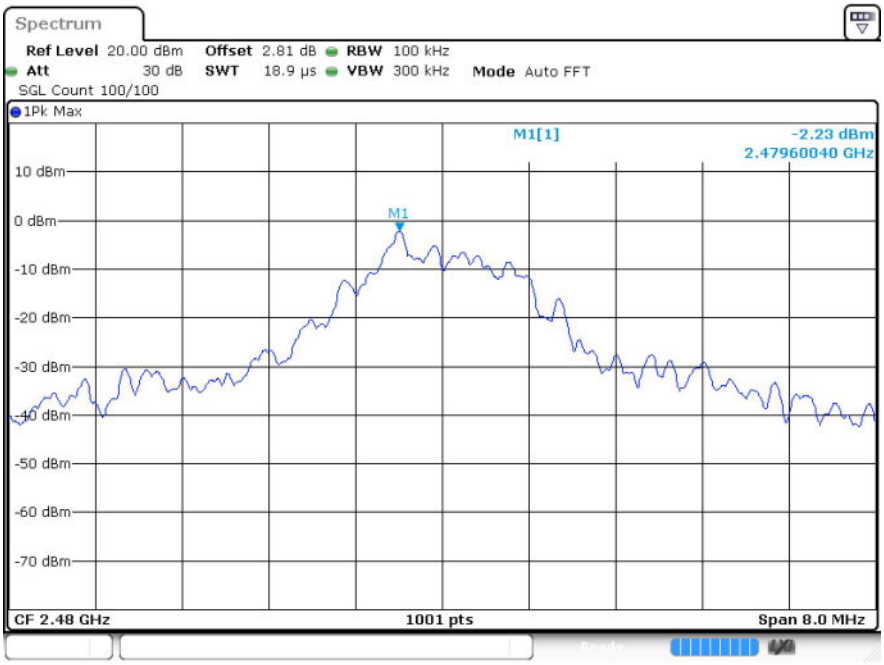


BLE 2M 2402MHz Emission

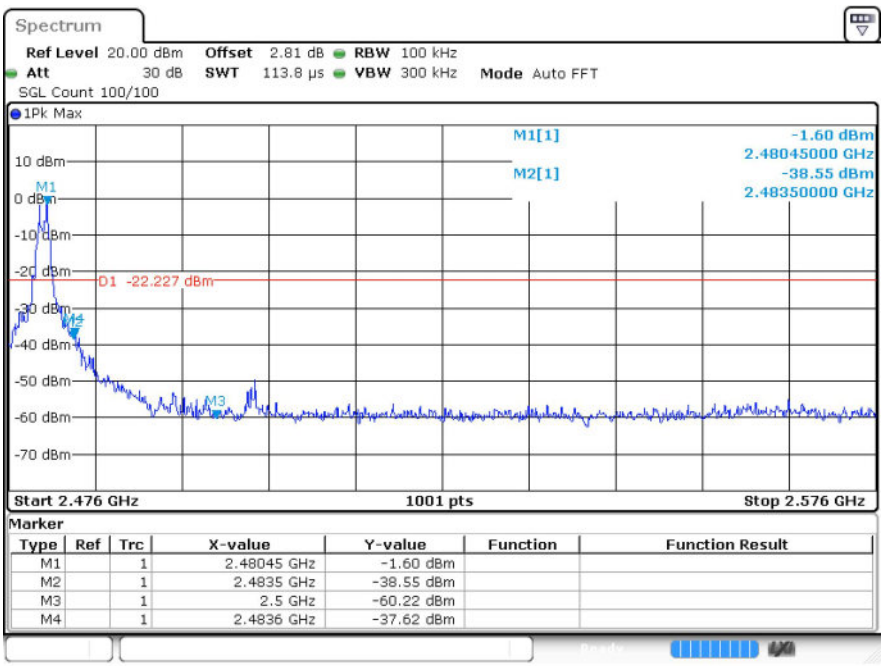


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40245 GHz	-2.46 dBm		
M2		1	2.4 GHz	-31.68 dBm		
M3		1	2.39 GHz	-58.34 dBm		
M4		1	2.3784 GHz	-50.89 dBm		

BLE 2M 2480MHz Ref



BLE 2M 2480MHz Emission



6 Conducted RF Spurious Emission

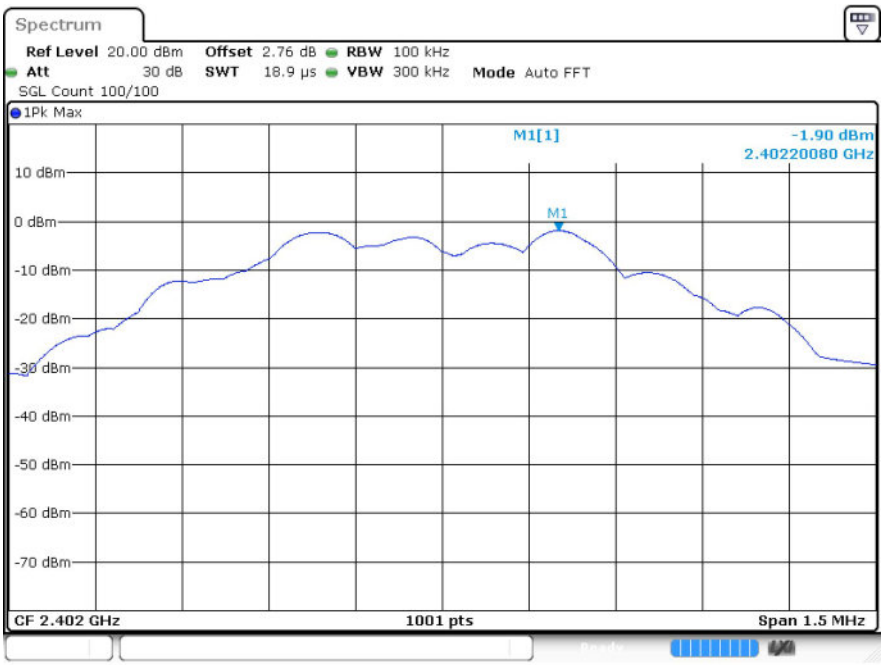
6.1 Test Result

Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
BLE 1M	2402	-42.2	-20	Pass
BLE 1M	2440	-41.34	-20	Pass
BLE 1M	2480	-41.64	-20	Pass
BLE 2M	2402	-40.83	-20	Pass
BLE 2M	2440	-39.47	-20	Pass
BLE 2M	2480	-41.62	-20	Pass

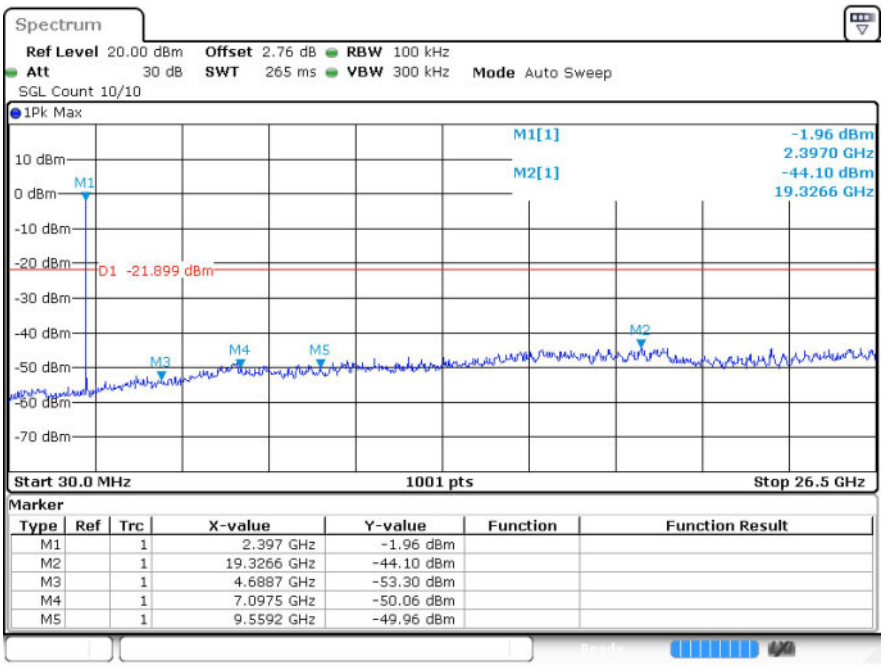
6.2 Test Graphs

Test Graphs

BLE 1M 2402MHz Ref



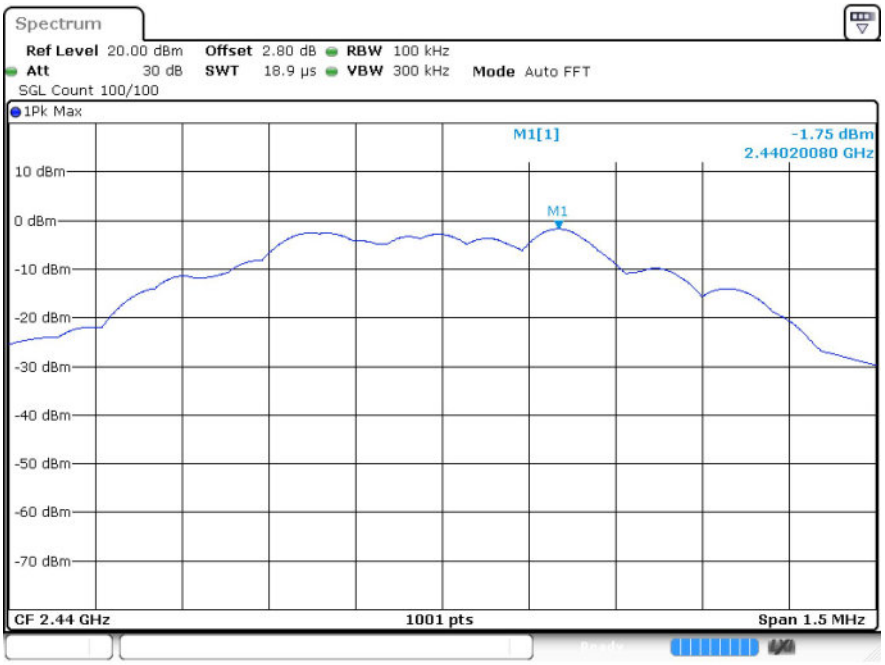
BLE 1M 2402MHz Emission



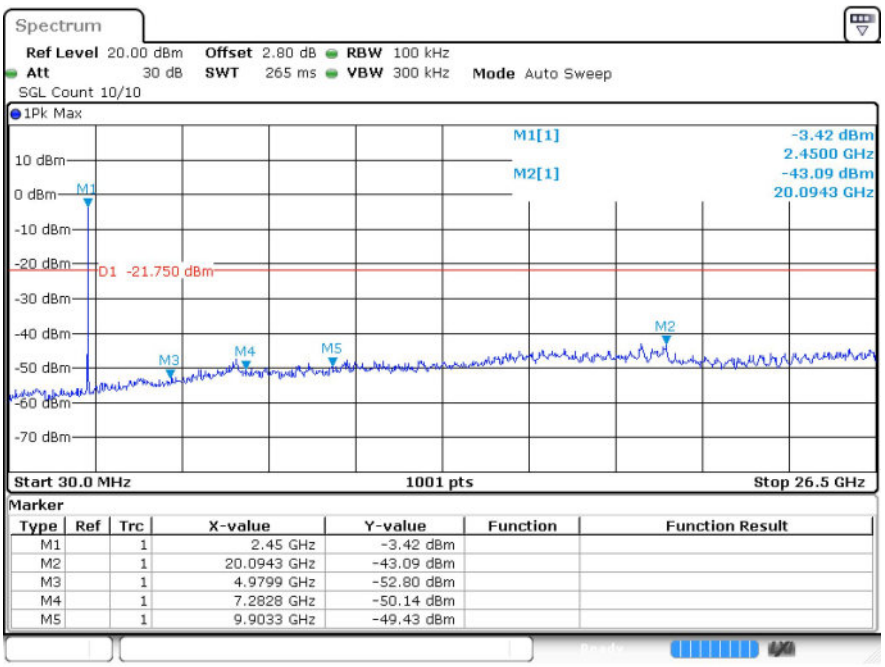
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.397 GHz	-1.96 dBm		
M2		1	19.3266 GHz	-44.10 dBm		
M3		1	4.6887 GHz	-53.30 dBm		
M4		1	7.0975 GHz	-50.06 dBm		
M5		1	9.5592 GHz	-49.96 dBm		

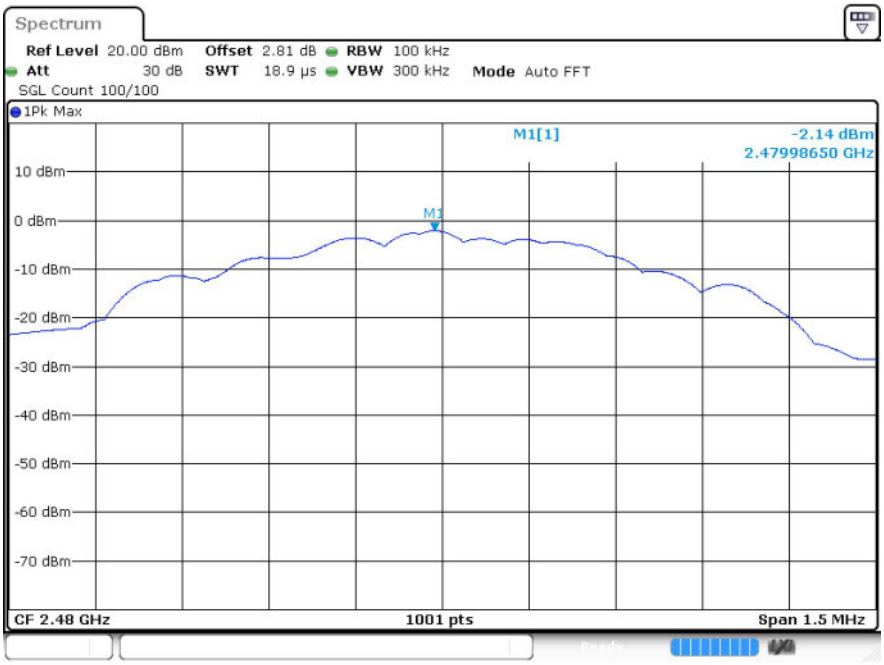
BLE 1M 2440MHz Ref



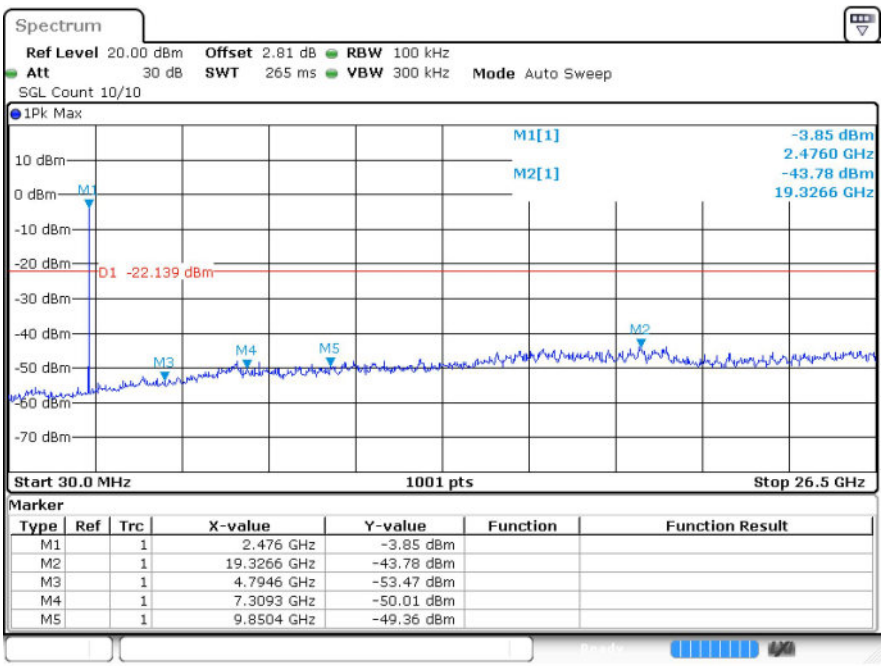
BLE 1M 2440MHz Emission



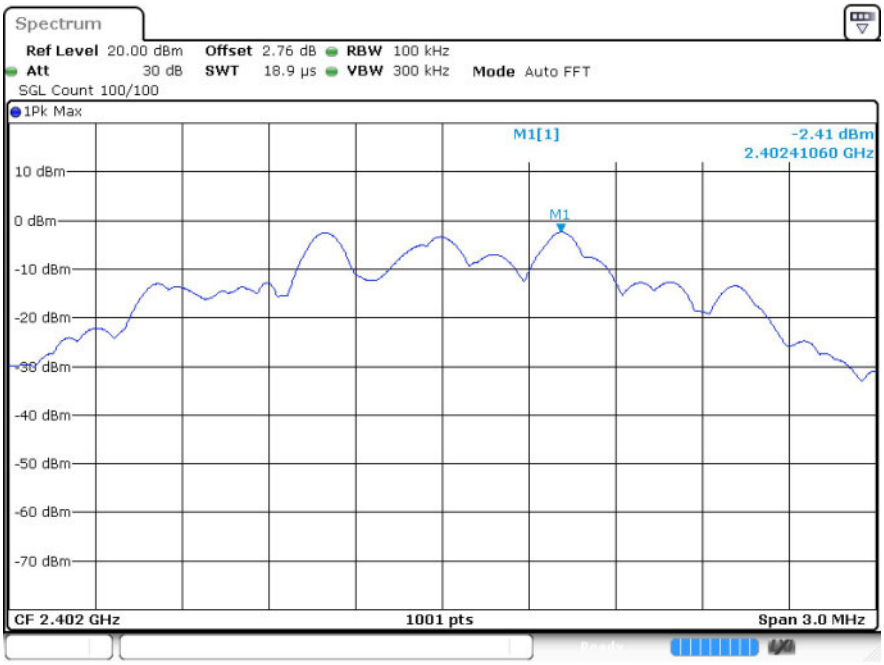
BLE 1M 2480MHz Ref



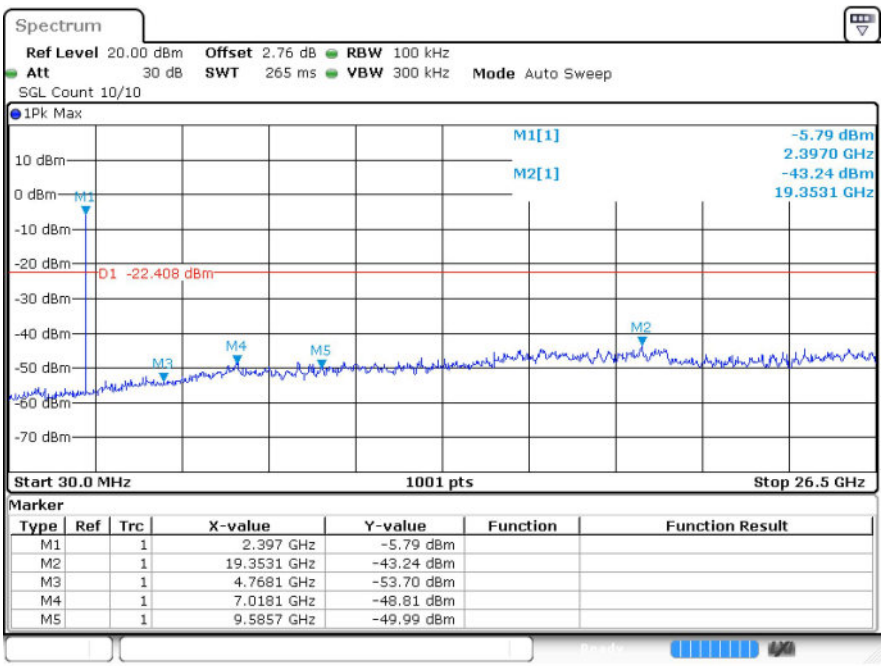
BLE 1M 2480MHz Emission



BLE 2M 2402MHz Ref



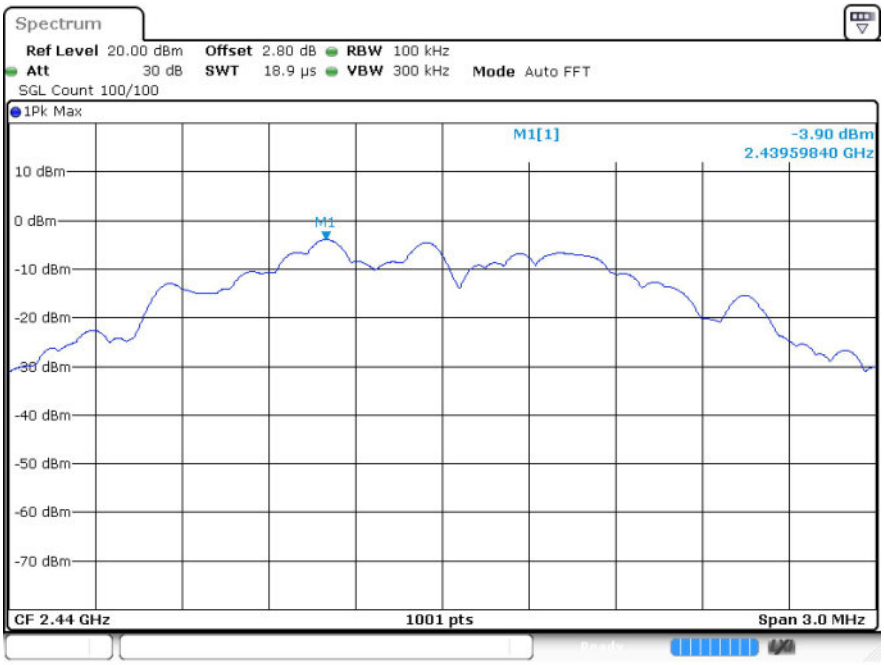
BLE 2M 2402MHz Emission



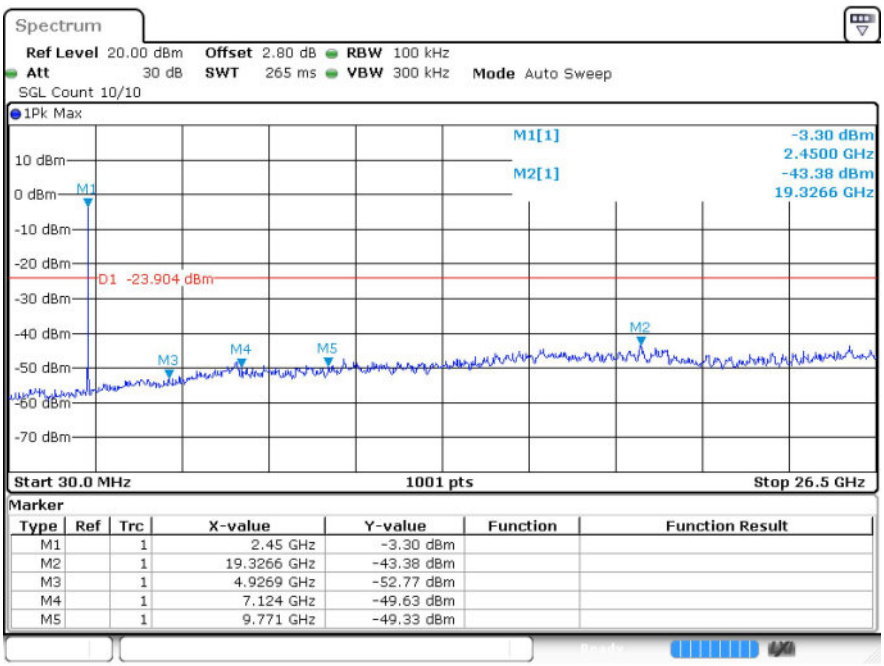
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.397 GHz	-5.79 dBm		
M2		1	19.3531 GHz	-43.24 dBm		
M3		1	4.7681 GHz	-53.70 dBm		
M4		1	7.0181 GHz	-48.81 dBm		
M5		1	9.5857 GHz	-49.99 dBm		

BLE 2M 2440MHz Ref



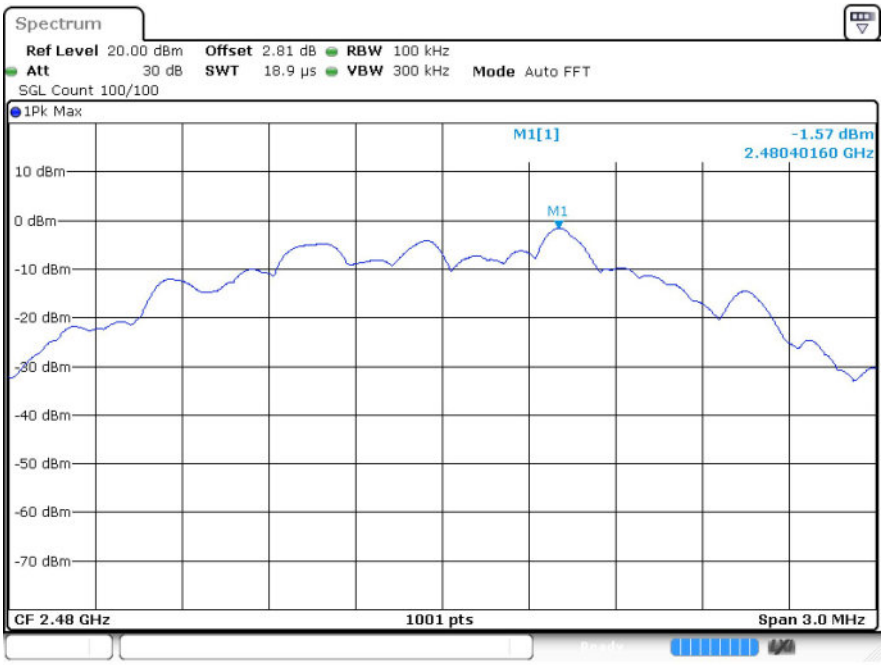
BLE 2M 2440MHz Emission



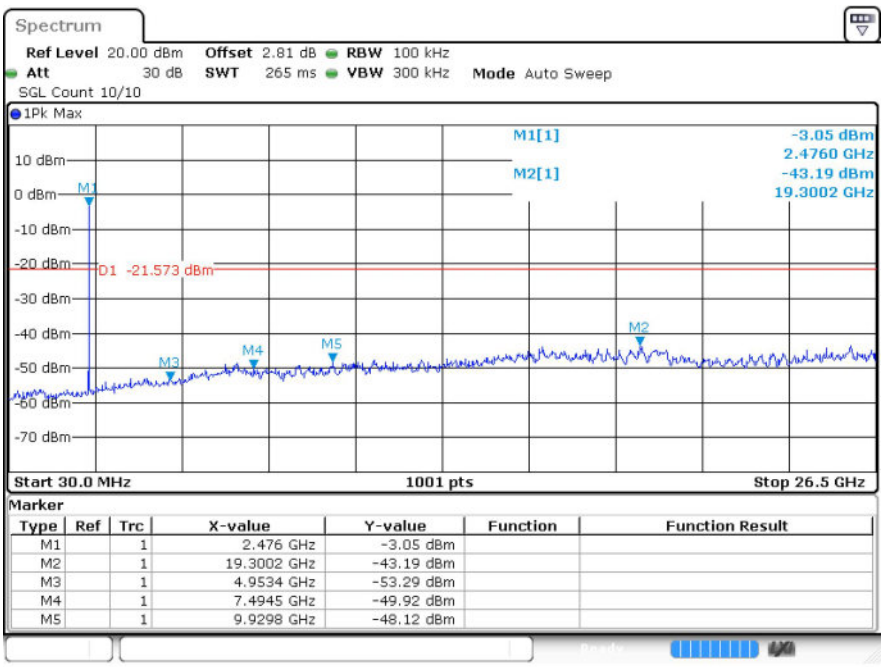
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-3.30 dBm		
M2		1	19.3266 GHz	-43.38 dBm		
M3		1	4.9269 GHz	-52.77 dBm		
M4		1	7.124 GHz	-49.63 dBm		
M5		1	9.771 GHz	-49.33 dBm		

BLE 2M 2480MHz Ref



BLE 2M 2480MHz Emission



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.476 GHz	-3.05 dBm		
M2		1	19.3002 GHz	-43.19 dBm		
M3		1	4.9534 GHz	-53.29 dBm		
M4		1	7.4945 GHz	-49.92 dBm		
M5		1	9.9298 GHz	-48.12 dBm		

---The End---