Appendix B

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

Product Name: Spirometer

Trade Mark: N/A

Test Model: Air Smart TT-Y

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

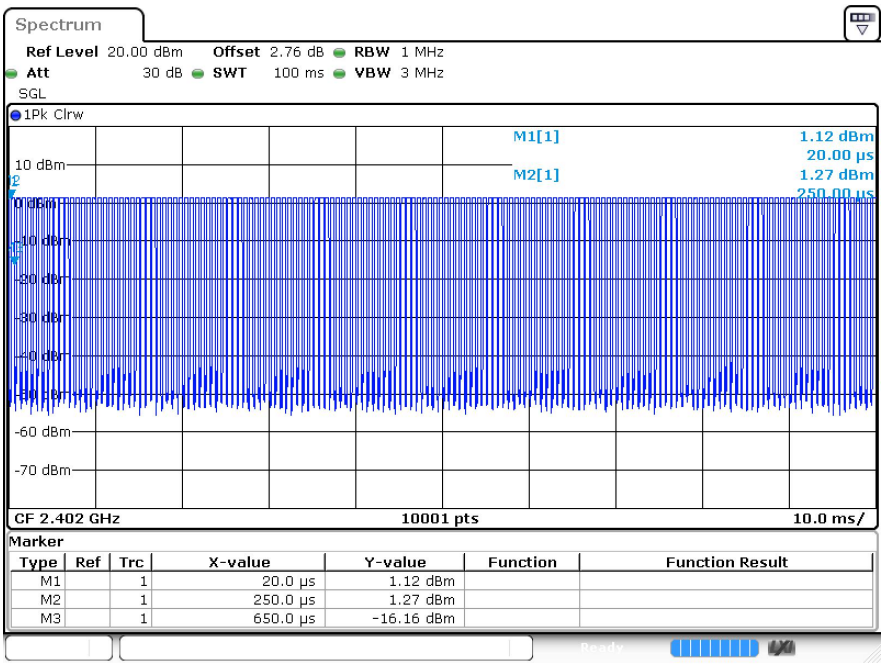
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
BLE 1M	2402	64.8	2.5
BLE 1M	2440	64.22	2.5
BLE 1M	2480	64	2.56

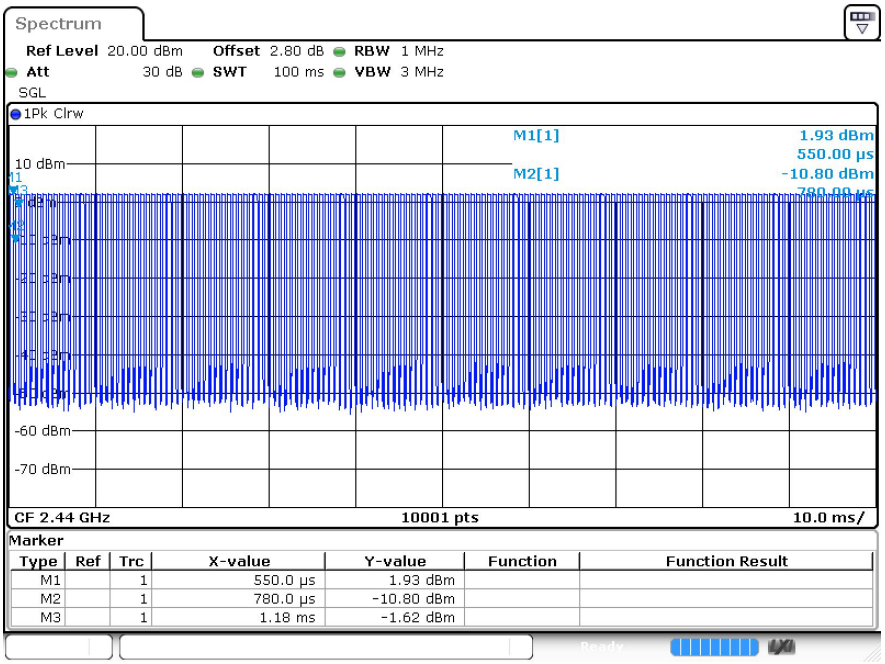
1.2 Test Graphs

Test Graphs

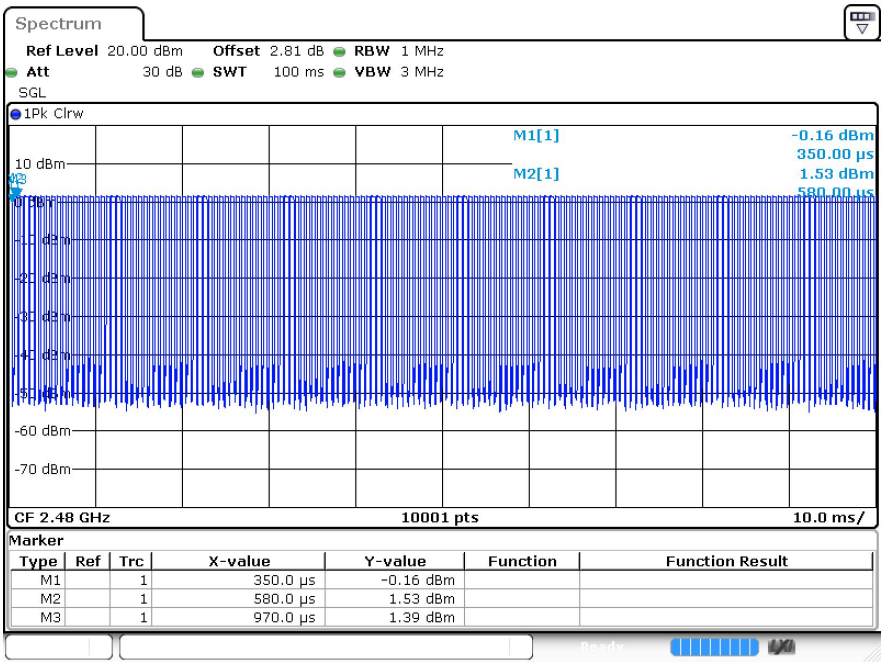
BLE 1M 2402MHz



BLE 1M 2440MHz



BLE 1M 2480MHz



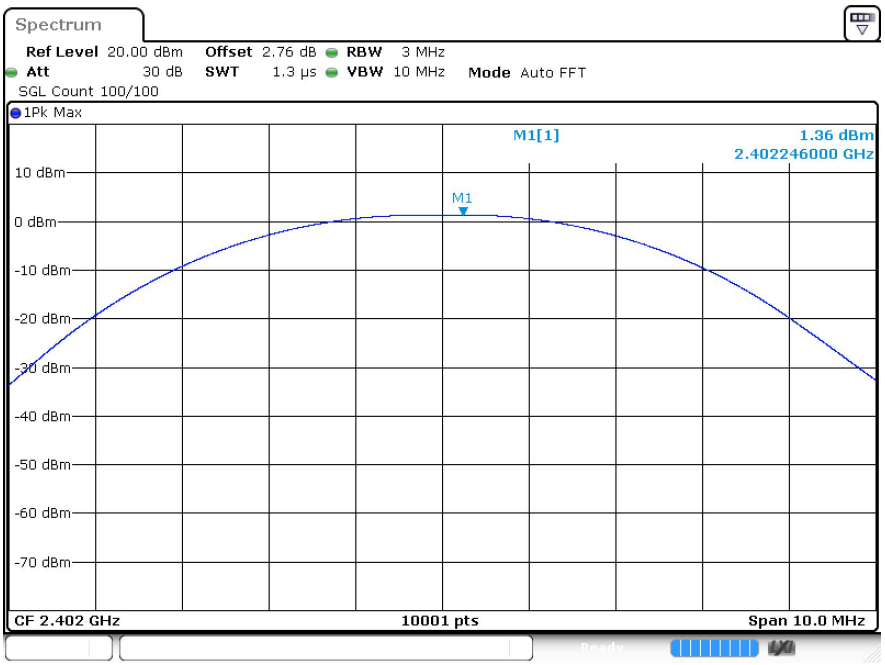
2 Maximum Conducted Output Power

2.1 Test Result

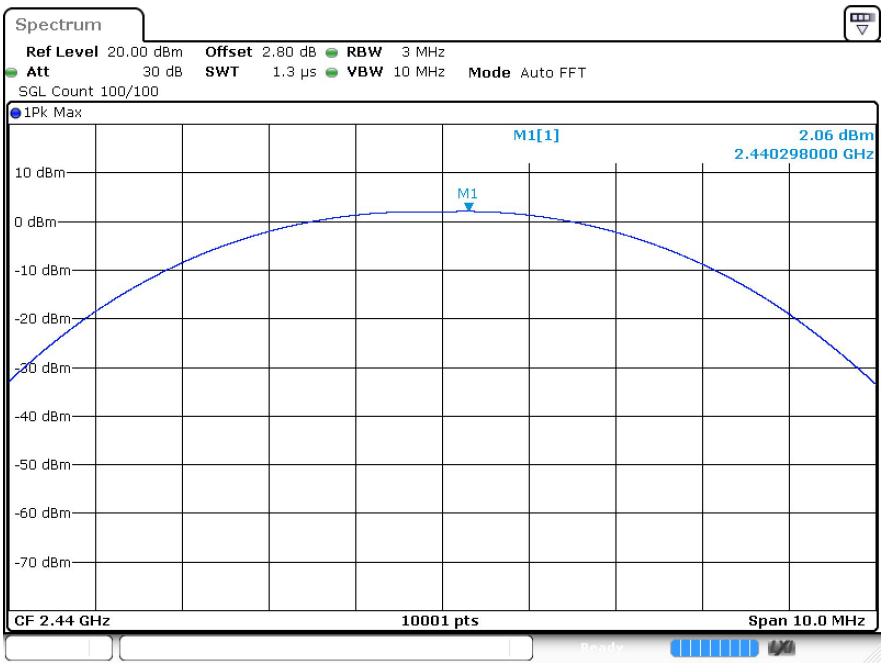
Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
BLE 1M	2402	1.36	30	Pass
BLE 1M	2440	2.06	30	Pass
BLE 1M	2480	1.54	30	Pass

2.2 Test Graphs

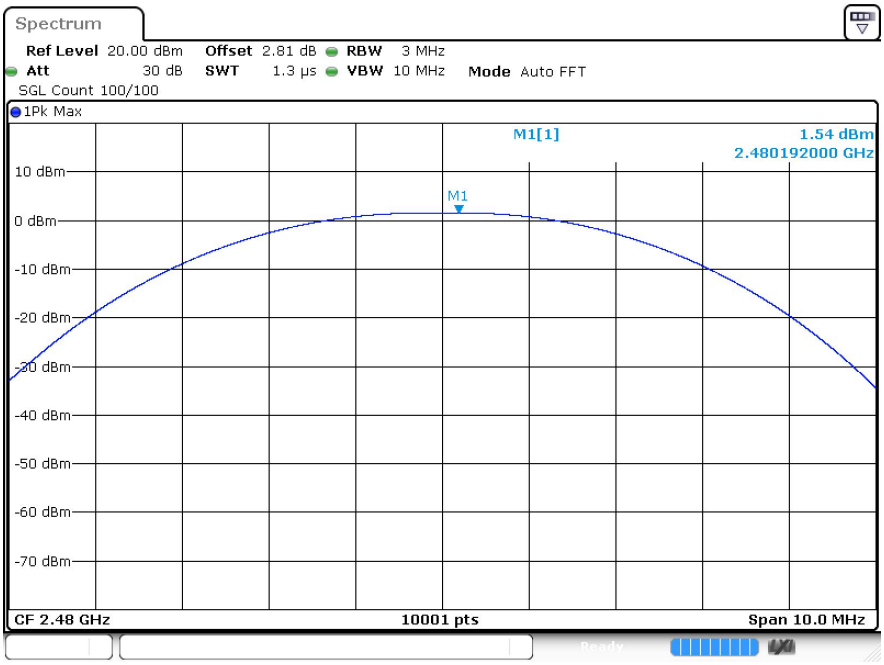
Test Graphs
BLE 1M 2402MHz



BLE 1M 2440MHz



BLE 1M 2480MHz



3 -6dB Bandwidth

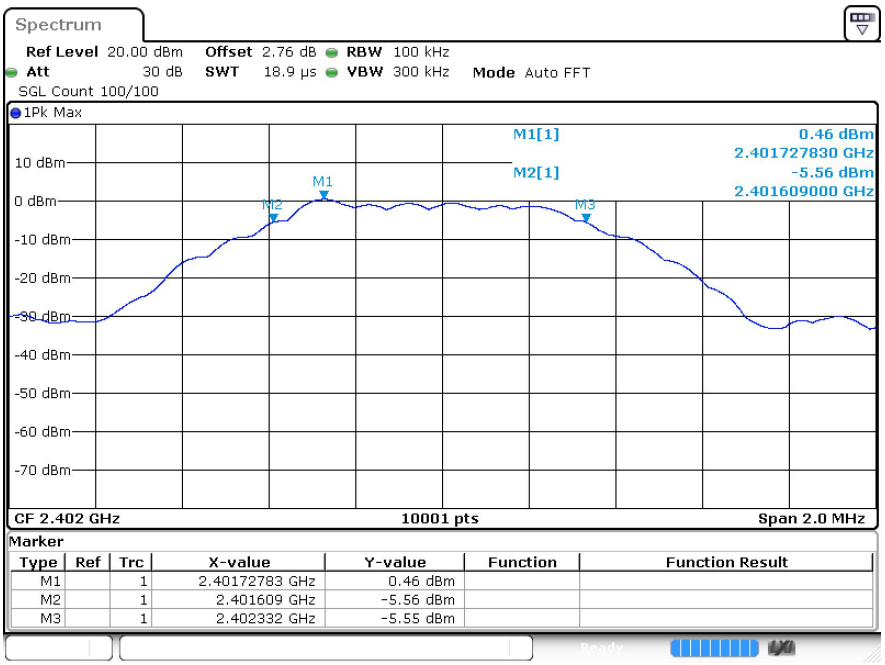
3.1 Test Result

Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
BLE 1M	2402	0.723	0.5	Pass
BLE 1M	2440	0.665	0.5	Pass
BLE 1M	2480	0.705	0.5	Pass

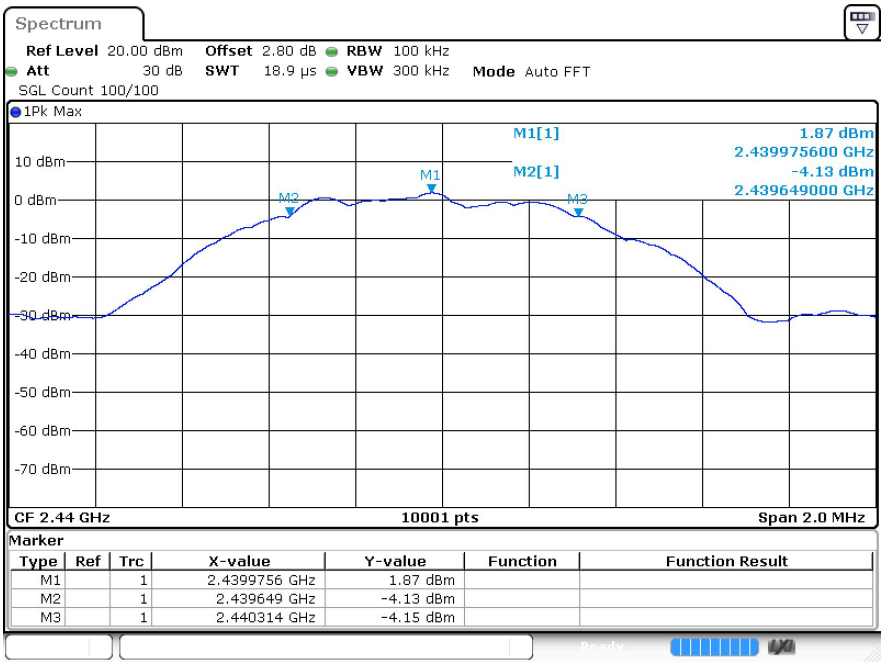
3.2 Test Graphs

Test Graphs

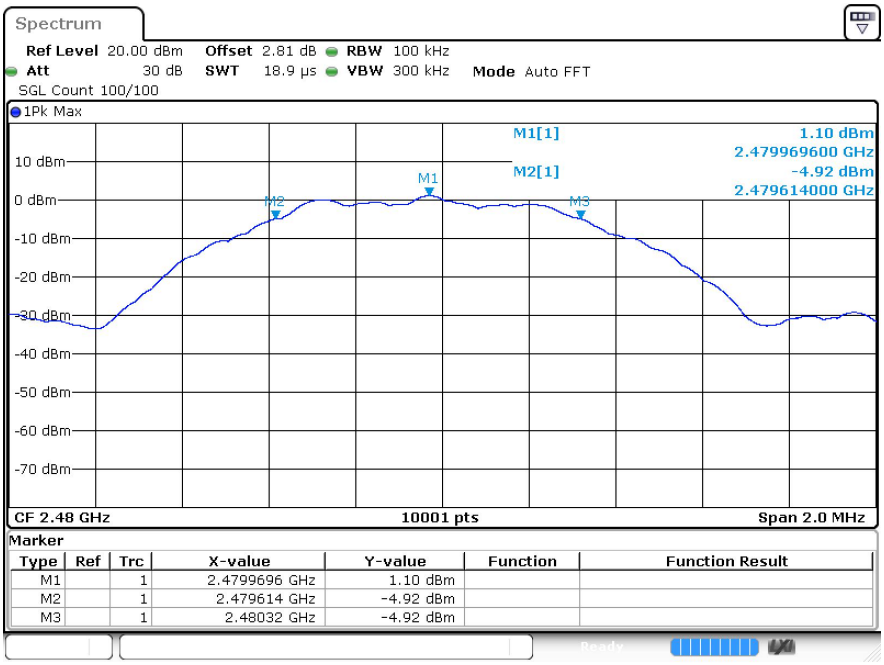
BLE 1M 2402MHz



BLE 1M 2440MHz



BLE 1M 2480MHz



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4799696 GHz	1.10 dBm		
M2		1	2.479614 GHz	-4.92 dBm		
M3		1	2.48032 GHz	-4.92 dBm		

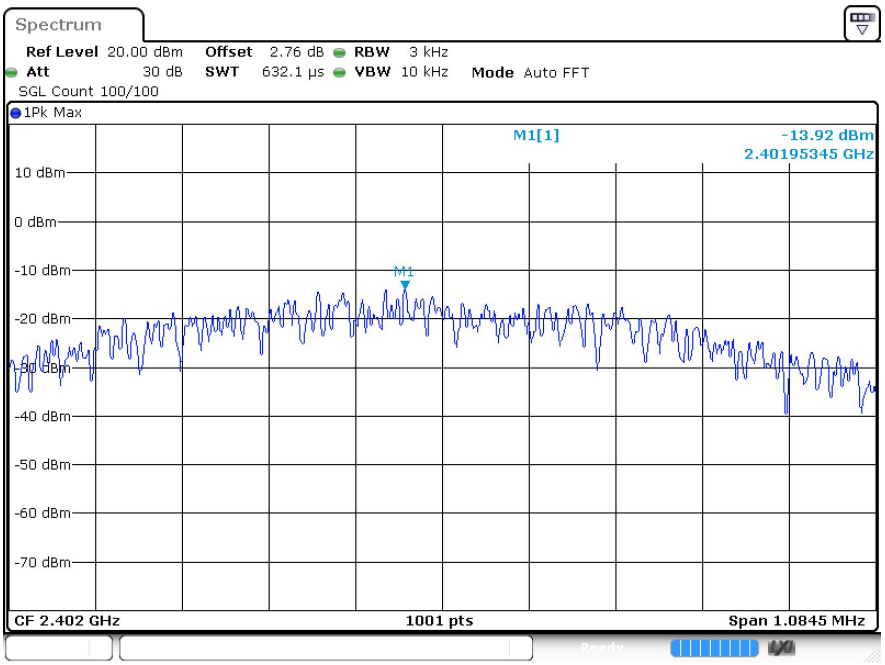
4 Maximum Power Spectral Density Level

4.1 Test Result

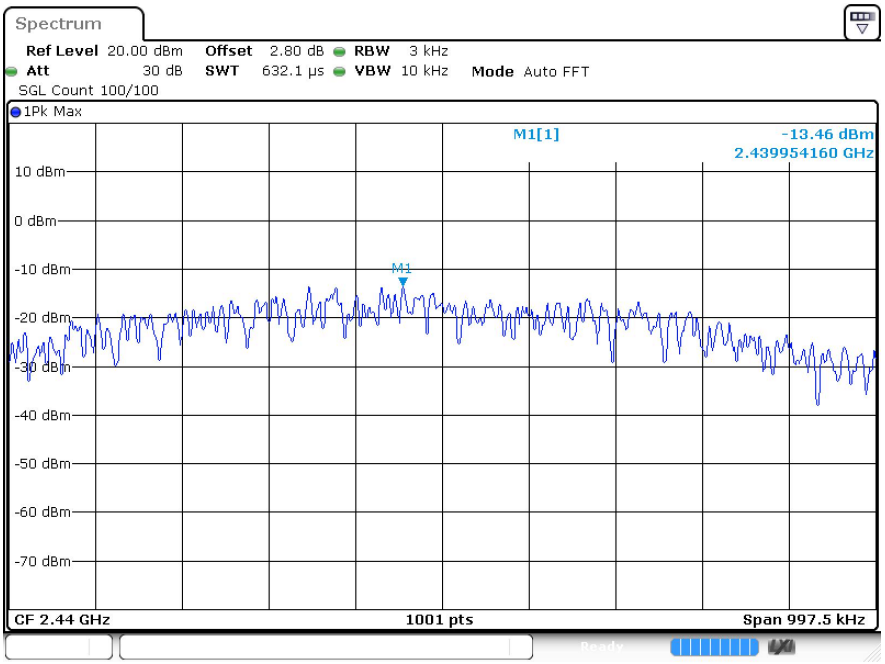
Mode	Frequency (MHz)	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
BLE 1M	2402	-13.92	≤8	Pass
BLE 1M	2440	-13.46	≤8	Pass
BLE 1M	2480	-14.08	≤8	Pass

4.2 Test Graphs

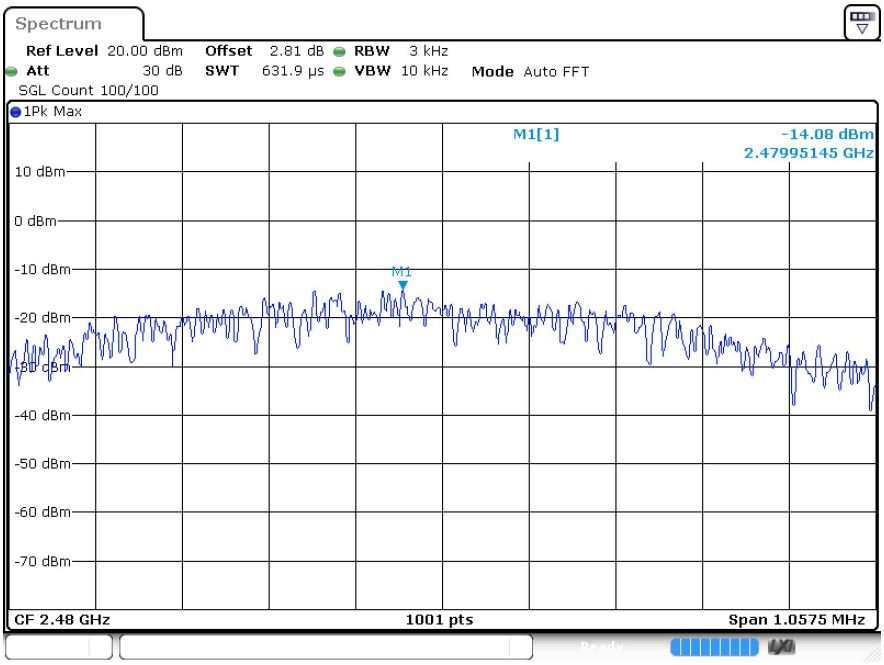
Test Graphs
BLE 1M 2402MHz



BLE 1M 2440MHz



BLE 1M 2480MHz



5 Band Edge

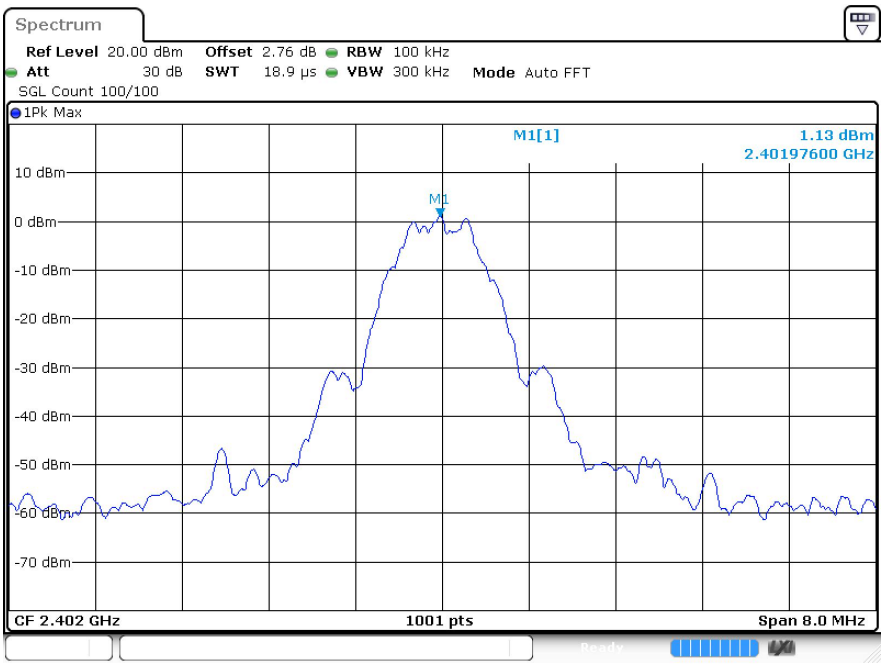
5.1 Test Result

Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
BLE 1M	2402	-56.82	-20	Pass
BLE 1M	2480	-47.26	-20	Pass

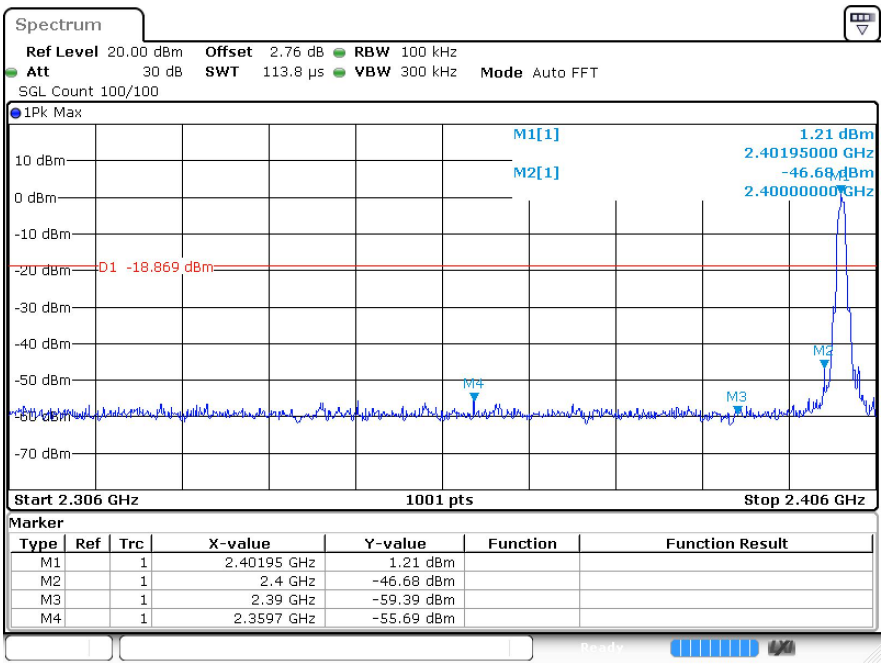
5.2 Test Graphs

Test Graphs

BLE 1M 2402MHz Ref

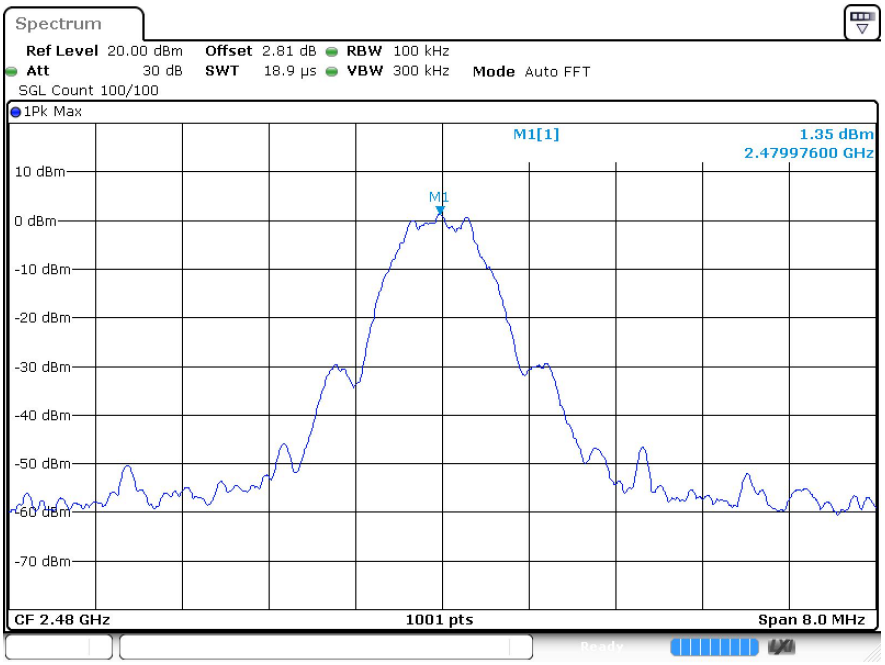


BLE 1M 2402MHz Emission

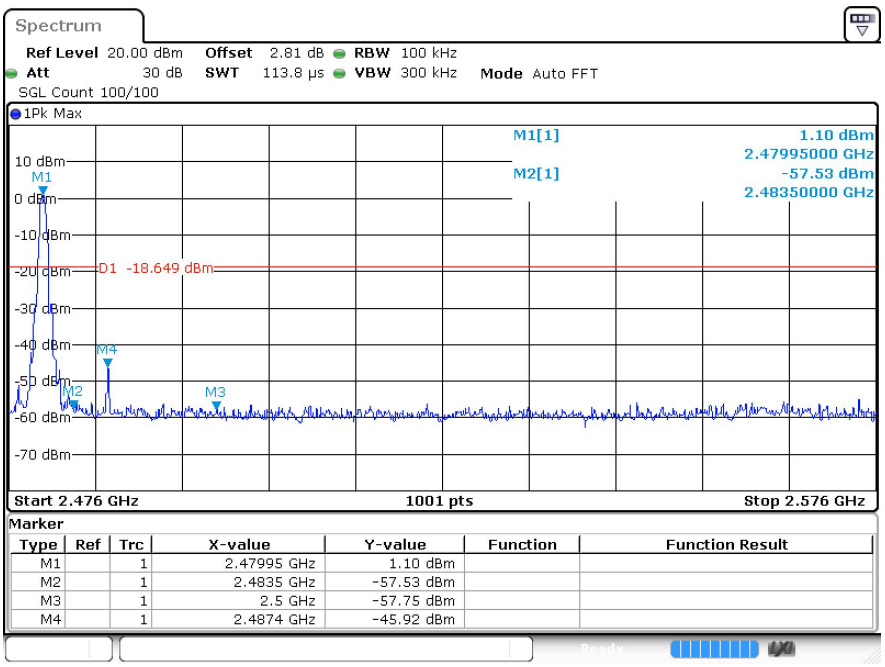


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40195 GHz	1.21 dBm		
M2		1	2.4 GHz	-46.68 dBm		
M3		1	2.39 GHz	-59.39 dBm		
M4		1	2.3597 GHz	-55.69 dBm		

BLE 1M 2480MHz Ref



BLE 1M 2480MHz Emission



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47995 GHz	1.10 dBm		
M2		1	2.4835 GHz	-57.53 dBm		
M3		1	2.5 GHz	-57.75 dBm		
M4		1	2.4874 GHz	-45.92 dBm		

6 Conducted RF Spurious Emission

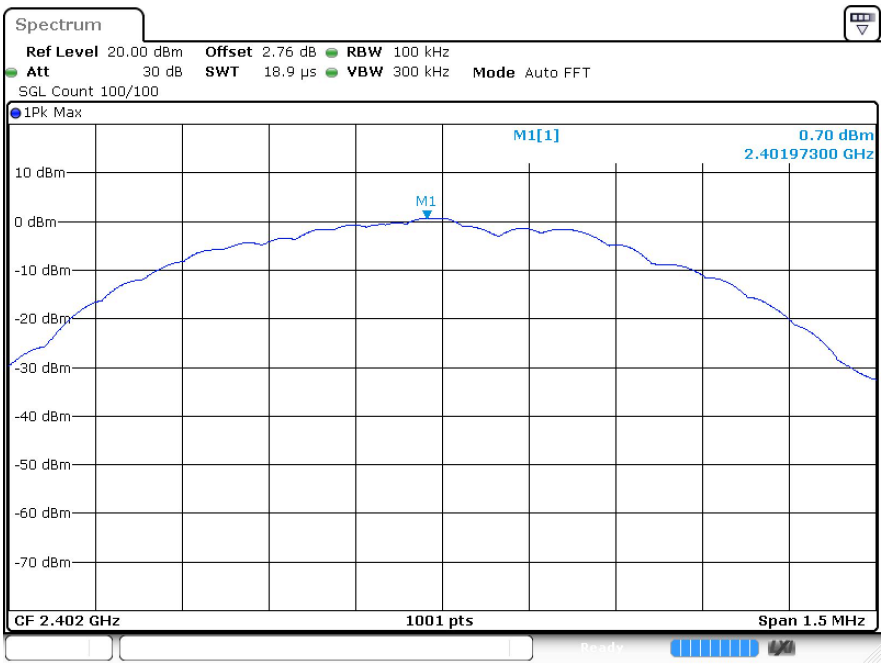
6.1 Test Result

Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
BLE 1M	2402	-43.67	-20	Pass
BLE 1M	2440	-44.51	-20	Pass
BLE 1M	2480	-44.66	-20	Pass

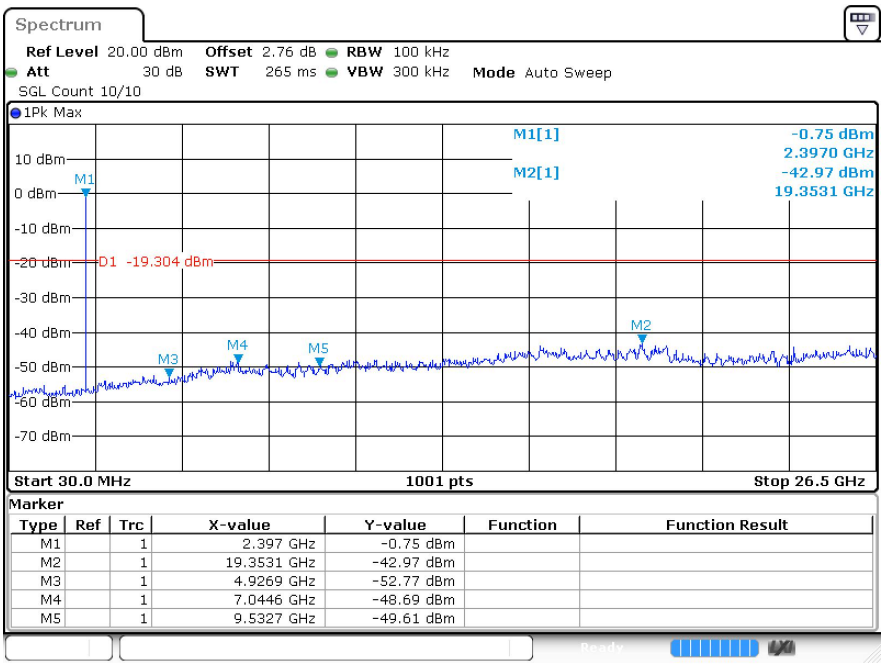
6.2 Test Graphs

Test Graphs

BLE 1M 2402MHz Ref



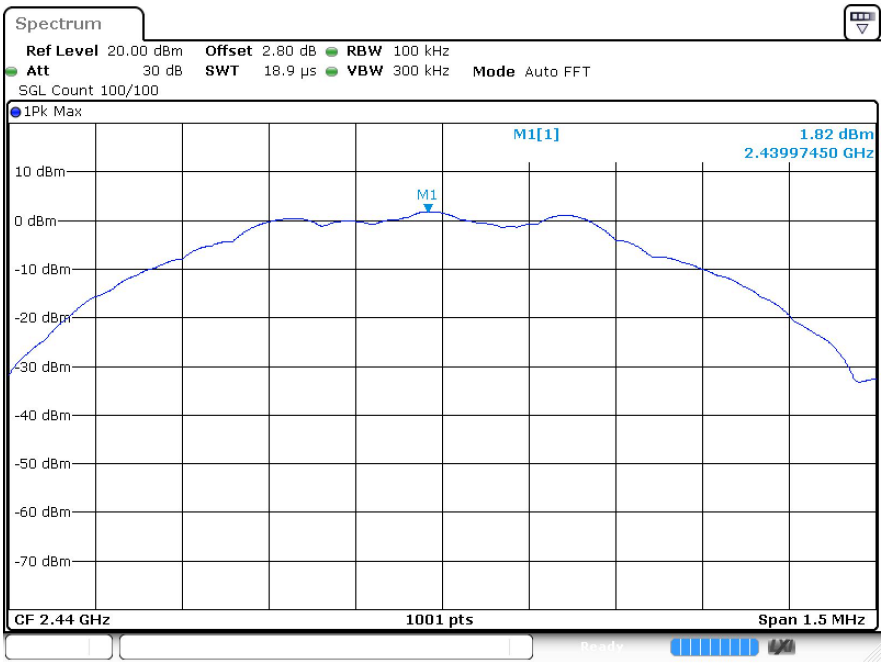
BLE 1M 2402MHz Emission



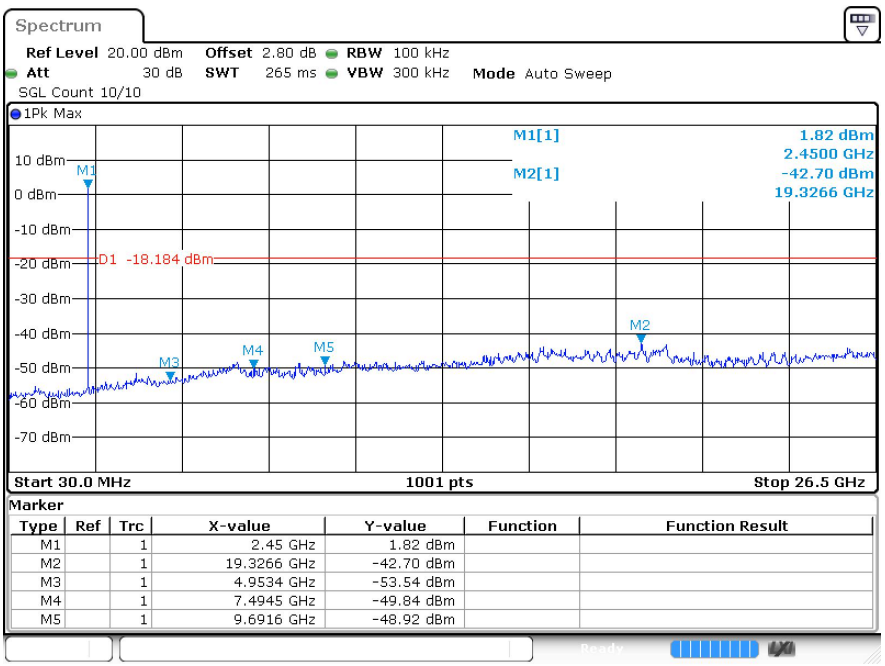
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.397 GHz	-0.75 dBm		
M2		1	19.3531 GHz	-42.97 dBm		
M3		1	4.9269 GHz	-52.77 dBm		
M4		1	7.0446 GHz	-48.69 dBm		
M5		1	9.5327 GHz	-49.61 dBm		

BLE 1M 2440MHz Ref



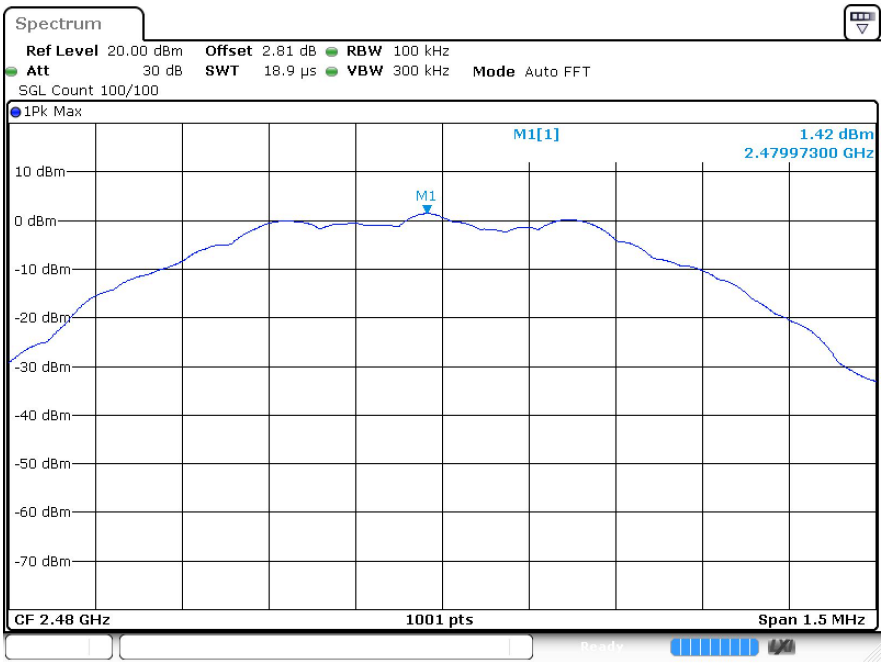
BLE 1M 2440MHz Emission



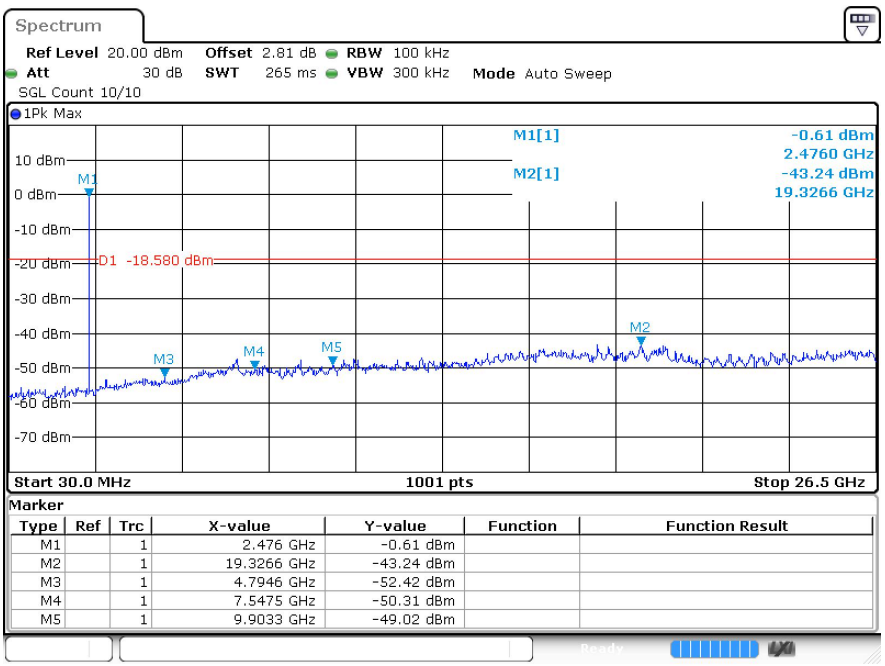
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	1.82 dBm		
M2		1	19.3266 GHz	-42.70 dBm		
M3		1	4.9534 GHz	-53.54 dBm		
M4		1	7.4945 GHz	-49.84 dBm		
M5		1	9.6916 GHz	-48.92 dBm		

BLE 1M 2480MHz Ref



BLE 1M 2480MHz Emission



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.476 GHz	-0.61 dBm		
M2		1	19.3266 GHz	-43.24 dBm		
M3		1	4.7946 GHz	-52.42 dBm		
M4		1	7.5475 GHz	-50.31 dBm		
M5		1	9.9033 GHz	-49.02 dBm		

7 Restrict Band

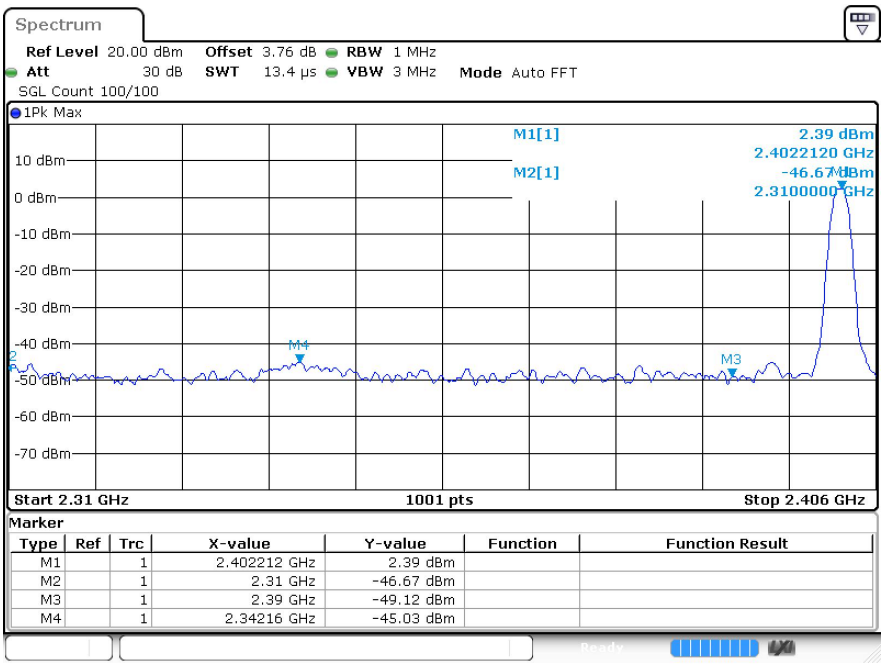
7.1 Test Result

Mode	Frequency (MHz)	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
BLE 1M	2402	2310	-46.66	2	50.6	Peak	74	Pass
BLE 1M	2402	2310	-56.84	2	40.42	Average	54	Pass
BLE 1M	2402	2342.16	-45.02	2	52.24	Peak	74	Pass
BLE 1M	2402	2341.872	-54.4	2	42.86	Average	54	Pass
BLE 1M	2402	2390	-49.12	2	48.14	Peak	74	Pass
BLE 1M	2402	2390	-56.82	2	40.44	Average	54	Pass
BLE 1M	2480	2483.5	-47.53	2	49.73	Peak	74	Pass
BLE 1M	2480	2483.5	-55.21	2	42.05	Average	54	Pass
BLE 1M	2480	2487.376	-44.44	2	52.82	Peak	74	Pass
BLE 1M	2480	2483.512	-55.21	2	42.05	Average	54	Pass
BLE 1M	2480	2500	-48.86	2	48.4	Peak	74	Pass
BLE 1M	2480	2500	-56.8	2	40.46	Average	54	Pass

7.2 Test Graphs

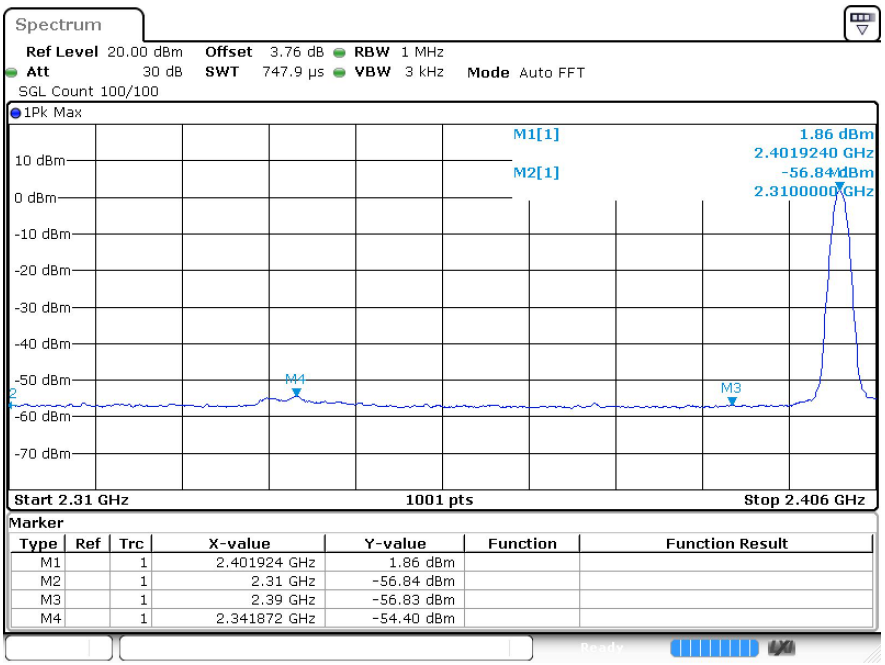
Test Graphs

BLE 1M 2402MHz Peak



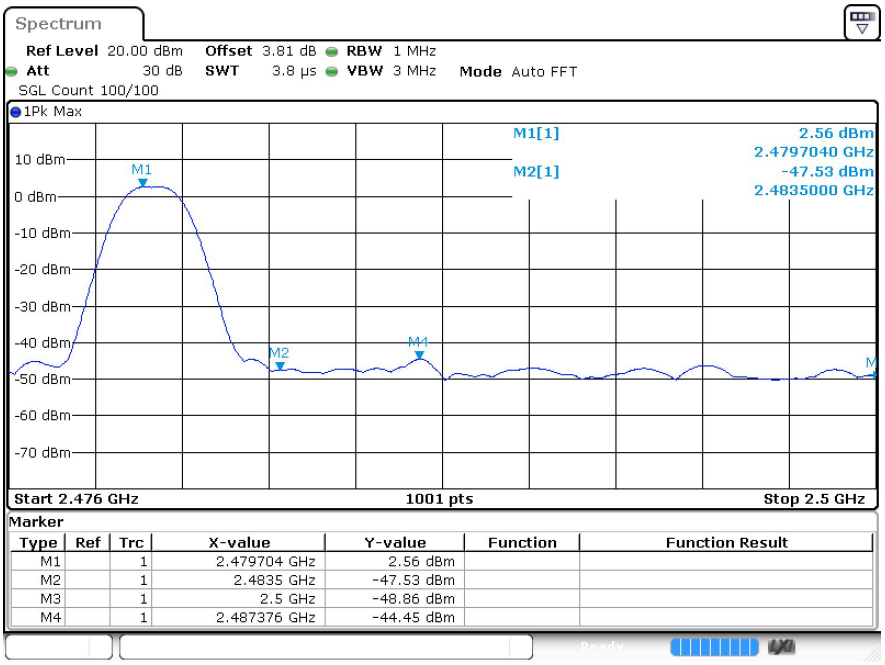
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.402212 GHz	2.39 dBm		
M2		1	2.31 GHz	-46.67 dBm		
M3		1	2.39 GHz	-49.12 dBm		
M4		1	2.34216 GHz	-45.03 dBm		

BLE 1M 2402MHz Average

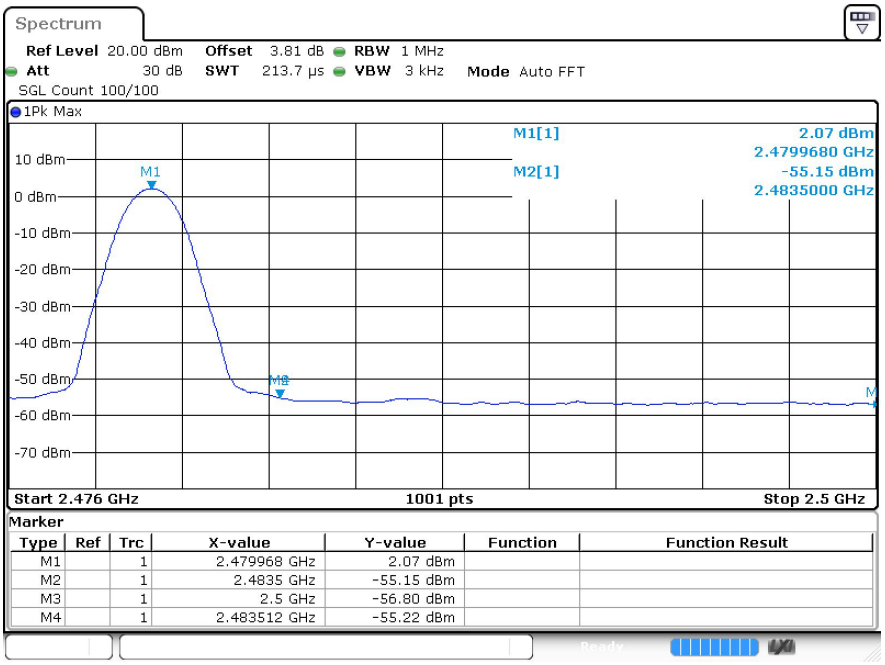


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.401924 GHz	1.86 dBm		
M2		1	2.31 GHz	-56.84 dBm		
M3		1	2.39 GHz	-56.83 dBm		
M4		1	2.341872 GHz	-54.40 dBm		

BLE 1M 2480MHz Peak



BLE 1M 2480MHz Average



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