



## Appendix C

### RF Test Data for 2.4GHz WIFI (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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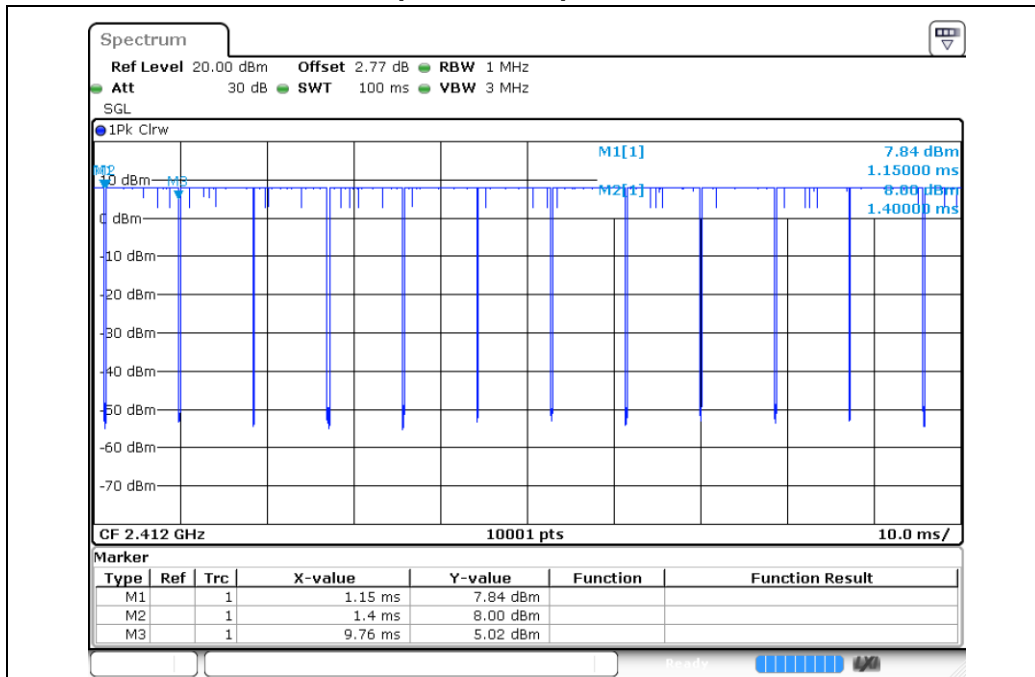
# 1 Duty Cycle

## 1.1 Test Result

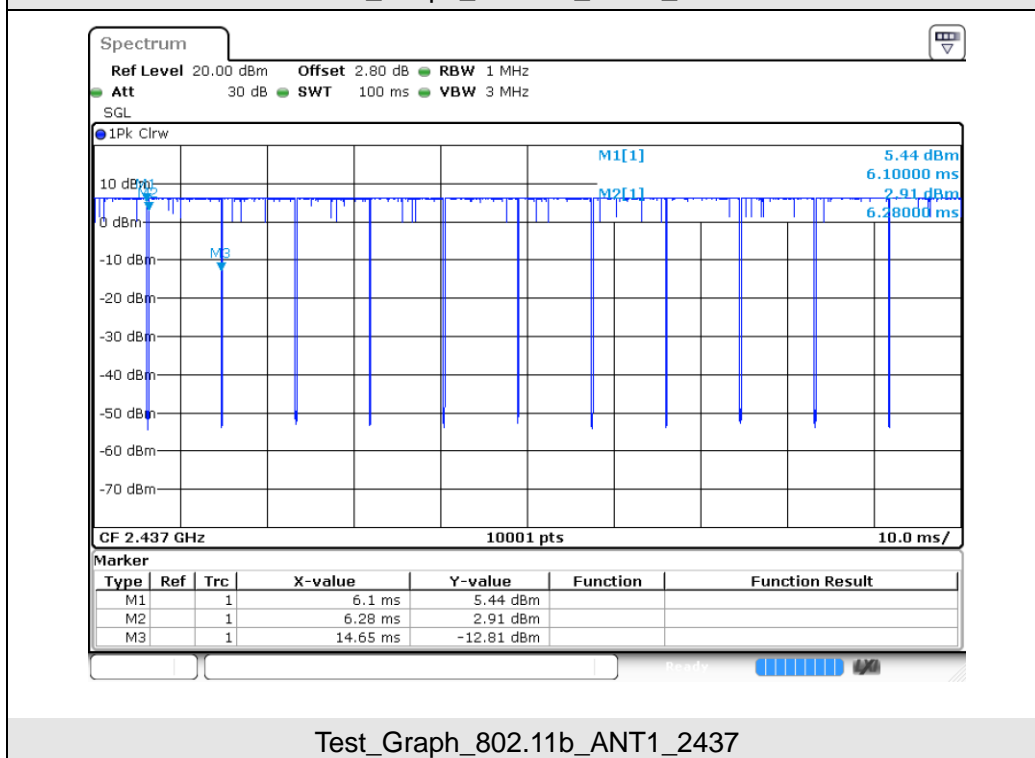
Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	1/T (kHz)
802.11b	2412	Ant1	97.39	0.12
802.11b	2437	Ant1	98.03	0.12
802.11b	2462	Ant1	97.96	0.12
802.11g	2412	Ant1	97.81	0.72
802.11g	2437	Ant1	88.41	0.72
802.11g	2462	Ant1	88.56	0.72
802.11n20	2412	Ant1	86.09	0.85
802.11n20	2437	Ant1	86.71	0.85
802.11n20	2462	Ant1	86.74	0.85
802.11n40	2422	Ant1	76.51	1.72
802.11n40	2437	Ant1	76.53	1.69
802.11n40	2452	Ant1	76.84	1.69

## 1.2 Test Graphs

### Test Graphs of Occupied Bandwidth

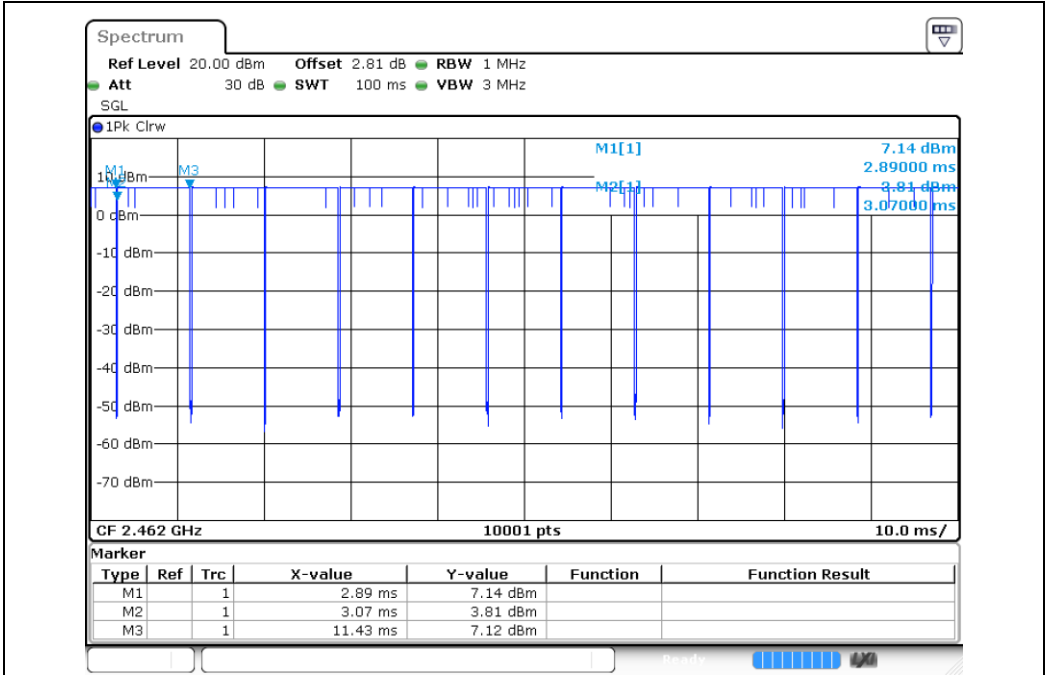


Test\_Graph\_802.11b\_ANT1\_2412

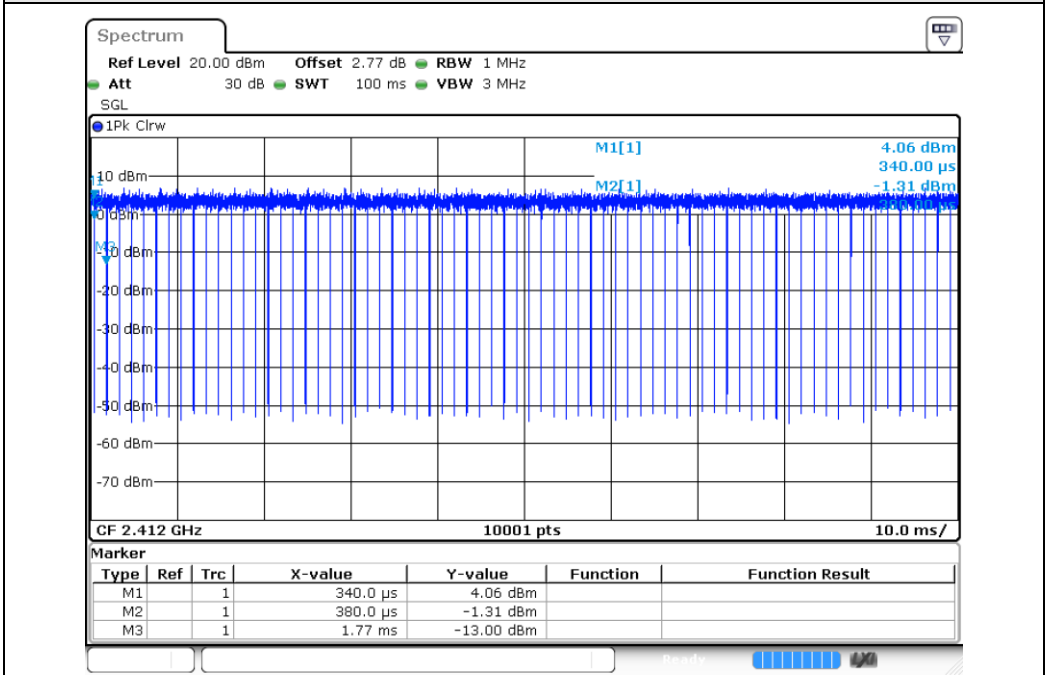


Test\_Graph\_802.11b\_ANT1\_2437

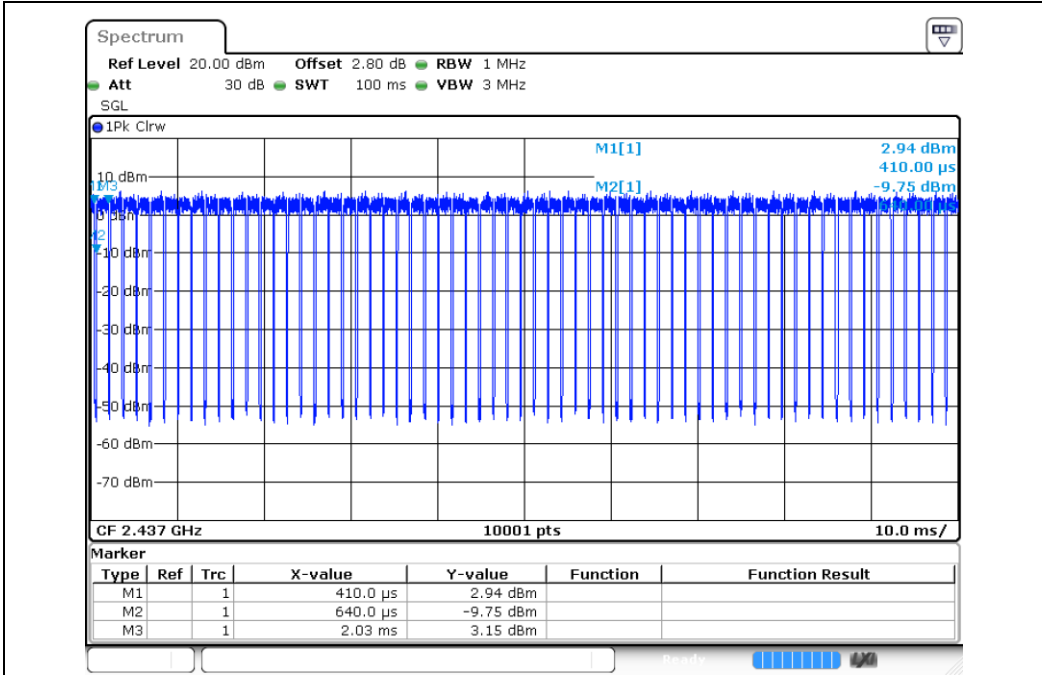




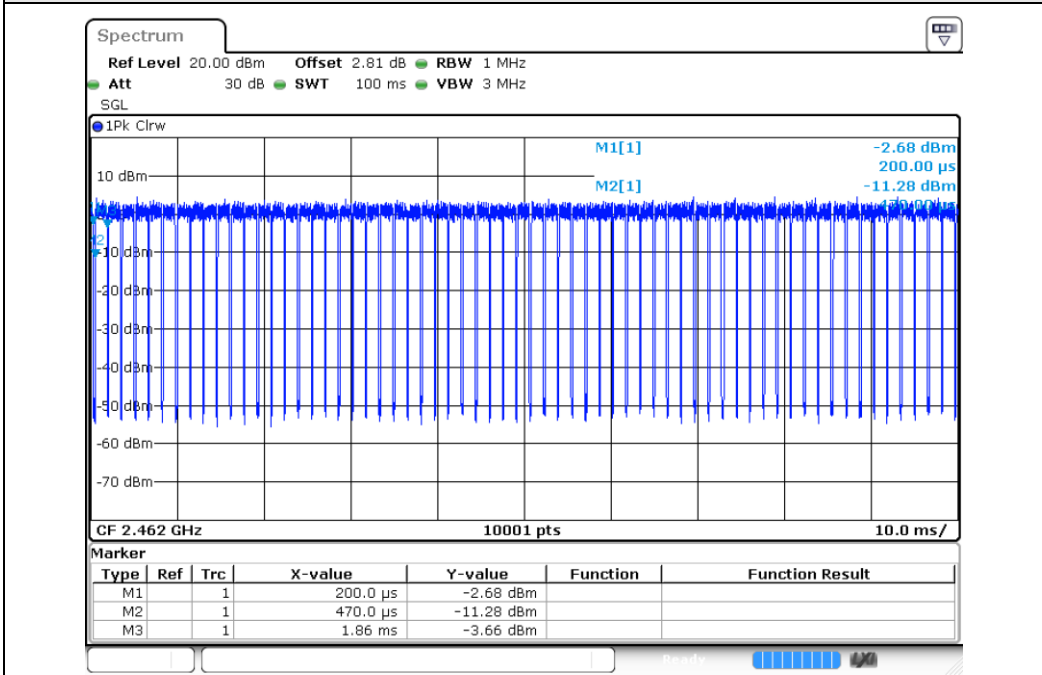
Test\_Graph\_802.11b\_ANT1\_2462



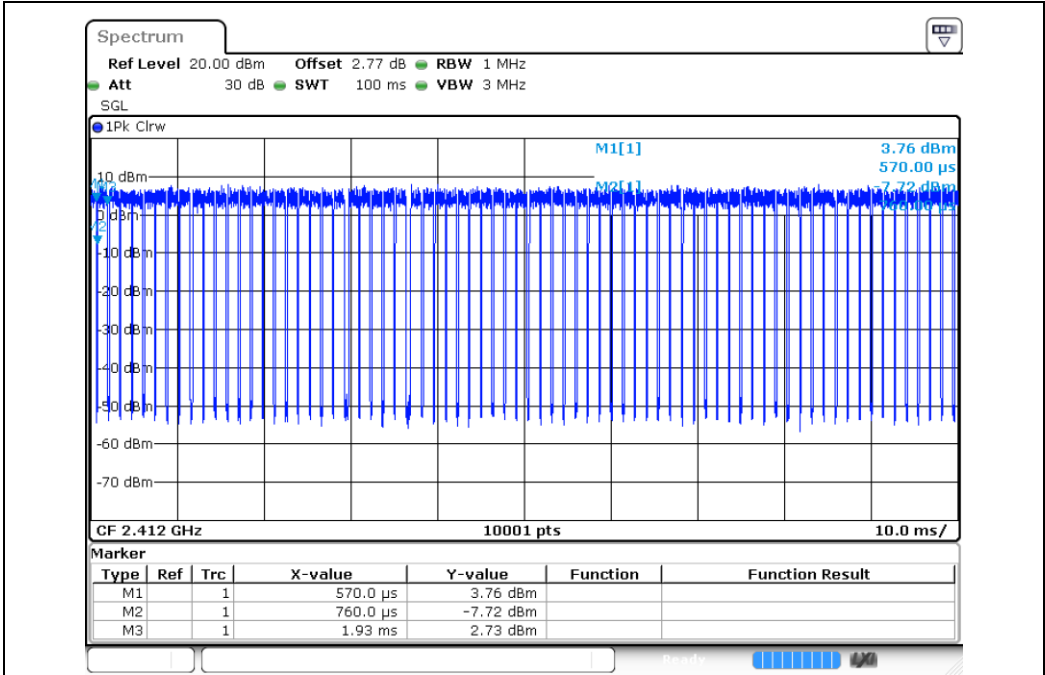
Test\_Graph\_802.11g\_ANT1\_2412



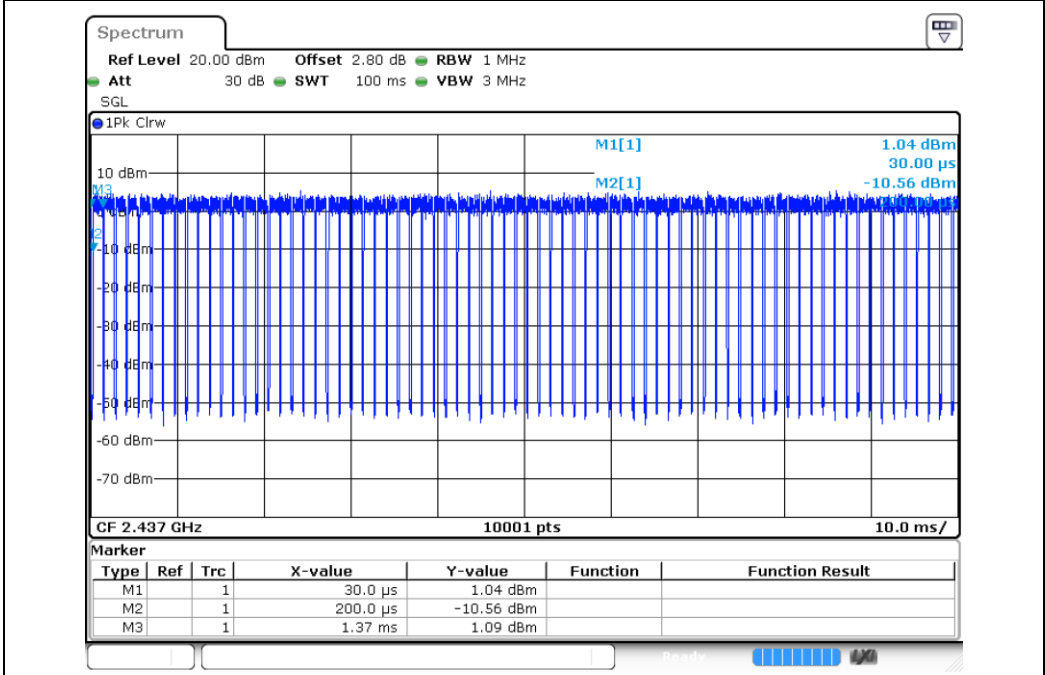
Test\_Graph\_802.11g\_ANT1\_2437



Test\_Graph\_802.11g\_ANT1\_2462

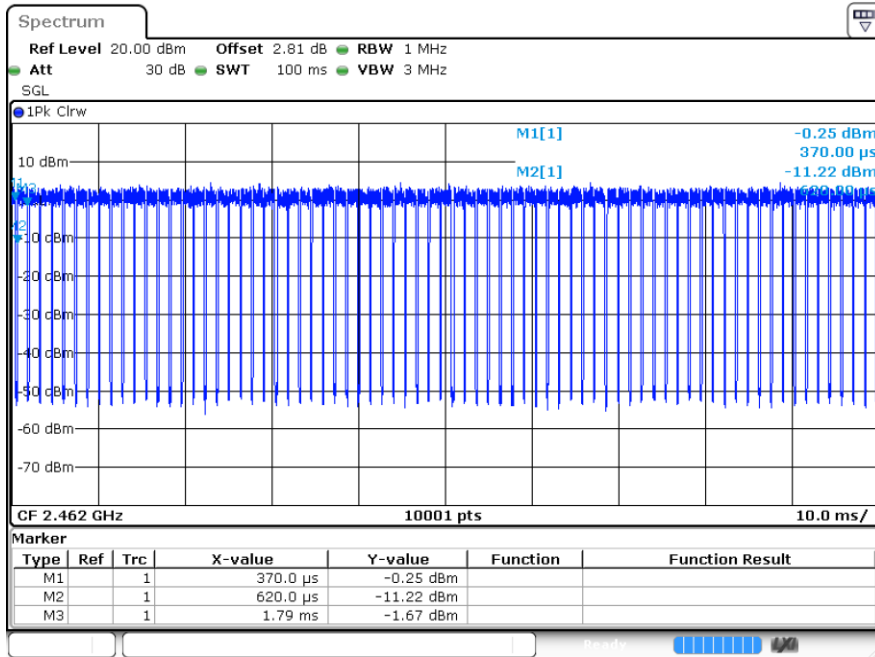


Test\_Graph\_802.11n20\_ANT1\_2412

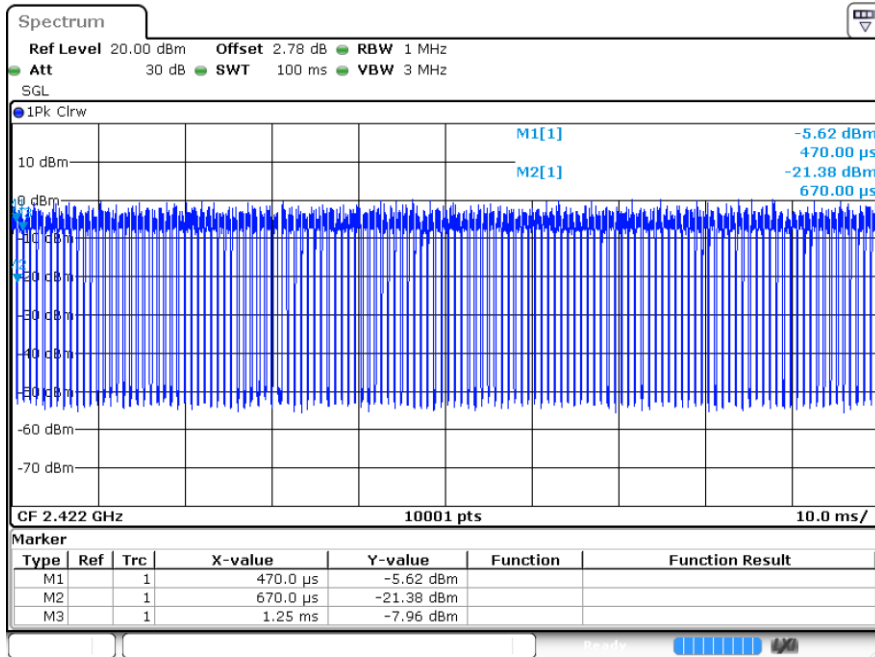


Test\_Graph\_802.11n20\_ANT1\_2437

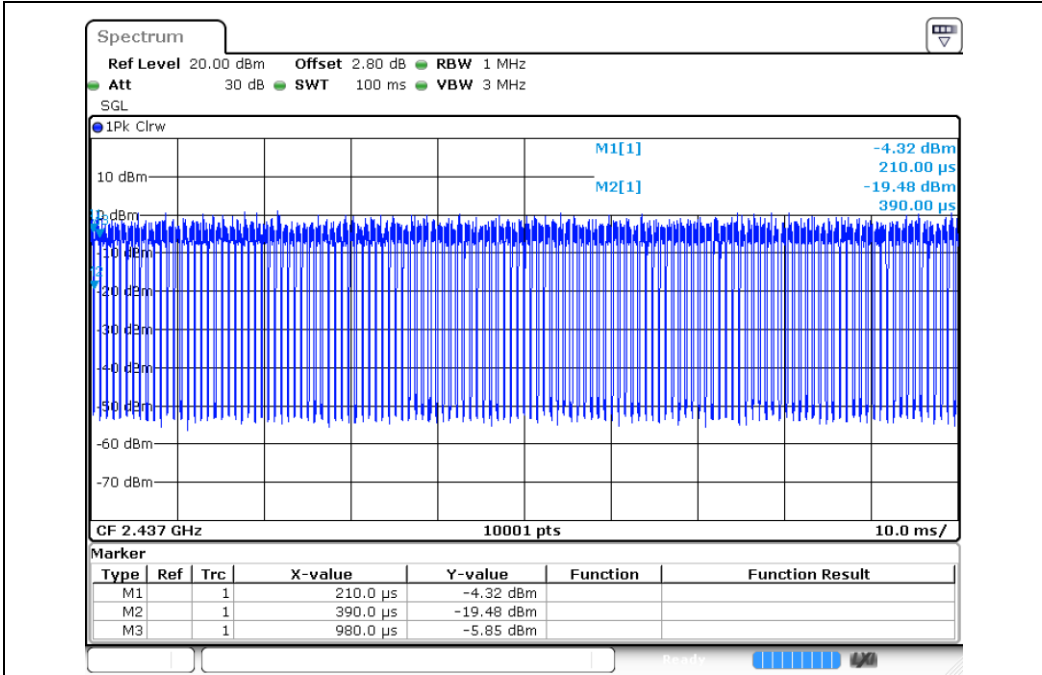




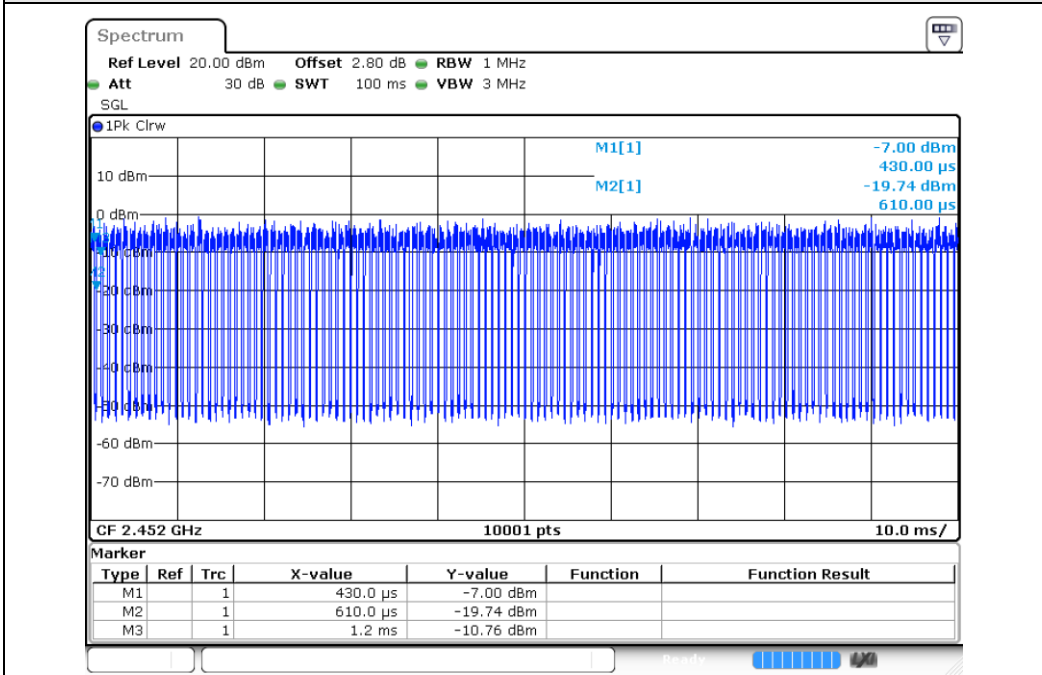
Test\_Graph\_802.11n20\_ANT1\_2462



Test\_Graph\_802.11n40\_ANT1\_2422



Test\_Graph\_802.11n40\_ANT1\_2437



Test\_Graph\_802.11n40\_ANT1\_2452



## 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
802.11b	2412	18.65	≤30	Pass
	2437	15.9	≤30	Pass
	2462	17.84	≤30	Pass
802.11g	2412	17.28	≤30	Pass
	2437	15.52	≤30	Pass
	2462	14.37	≤30	Pass
802.11n20	2412	18.39	≤30	Pass
	2437	14.48	≤30	Pass
	2462	14.49	≤30	Pass
802.11n40	2422	16.38	≤30	Pass
	2437	14.78	≤30	Pass
	2452	15.73	≤30	Pass



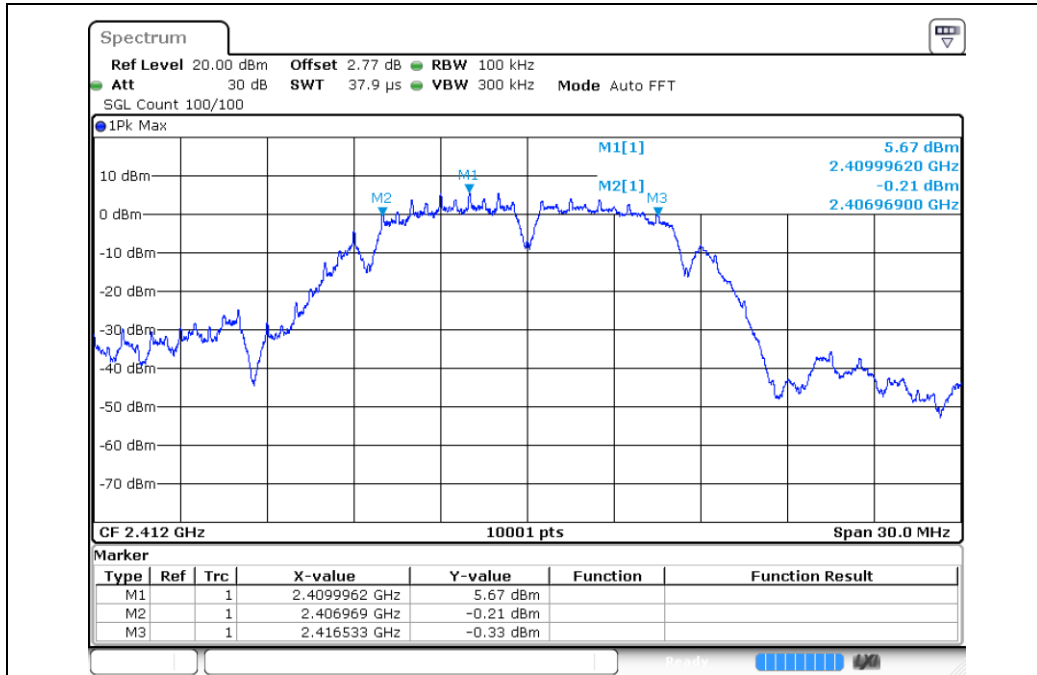
### 3 -6dB Bandwidth

#### 3.1 Test Result

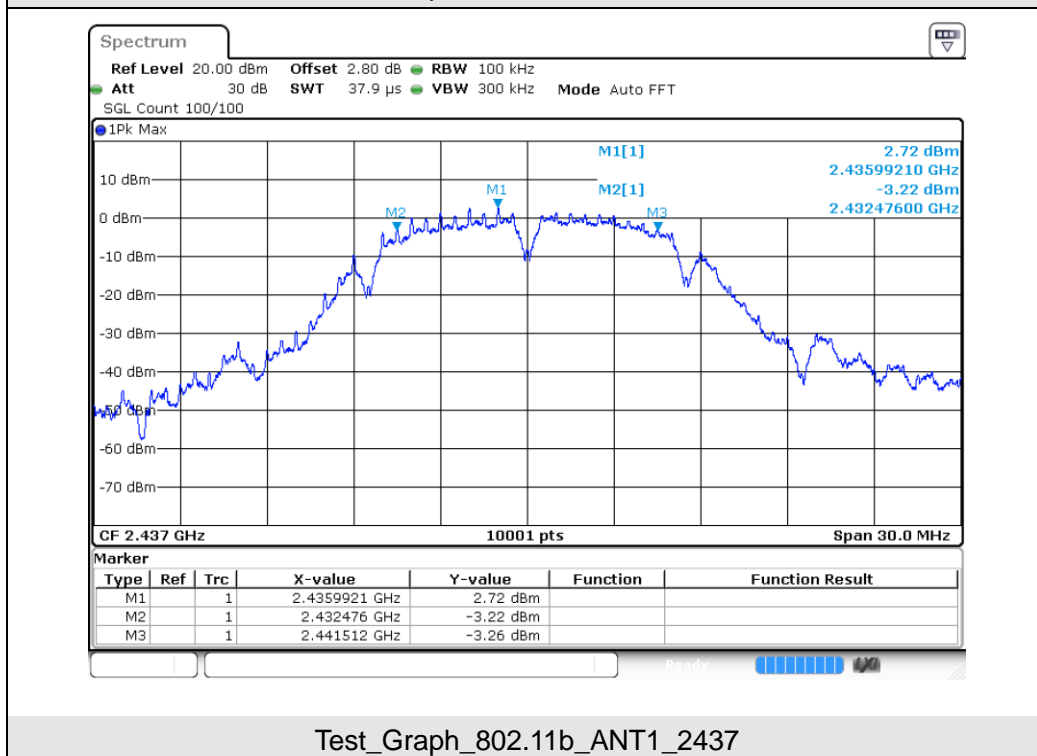
Test Data of Occupied Bandwidth and DTS Bandwidth				
Test Mode	Test Channel (MHz)	-6dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11b	2412	9.564	$\geq 0.5$	Pass
	2437	9.036	$\geq 0.5$	Pass
	2462	9.084	$\geq 0.5$	Pass
802.11g	2412	10.047	$\geq 0.5$	Pass
	2437	15.728	$\geq 0.5$	Pass
	2462	16.158	$\geq 0.5$	Pass
802.11n20	2412	16.269	$\geq 0.5$	Pass
	2437	15.321	$\geq 0.5$	Pass
	2462	12.414	$\geq 0.5$	Pass
802.11n40	2422	36.45	$\geq 0.5$	Pass
	2437	27.552	$\geq 0.5$	Pass
	2452	21.312	$\geq 0.5$	Pass

### 3.2 Test Graphs

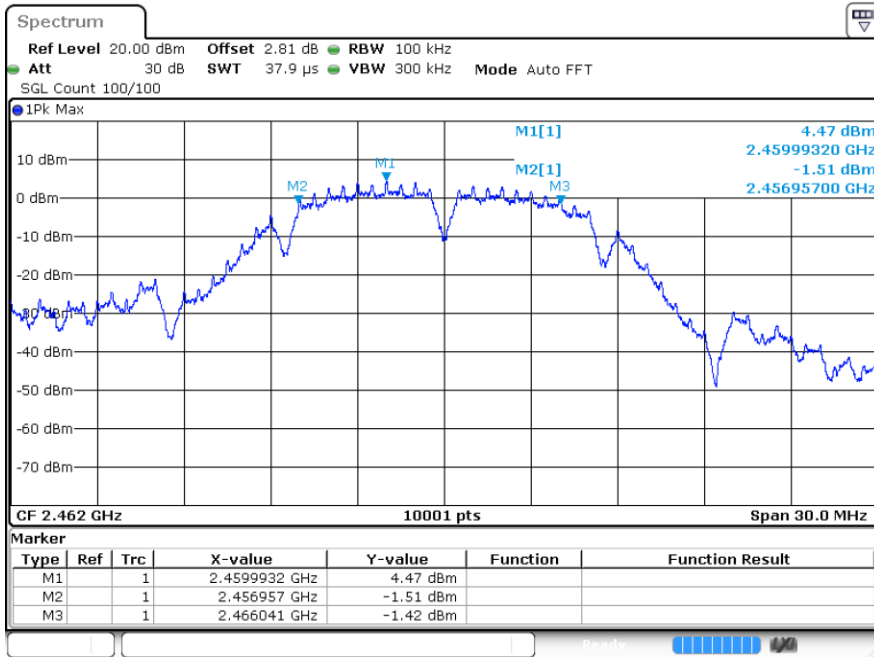
#### Test Graphs of Occupied Bandwidth



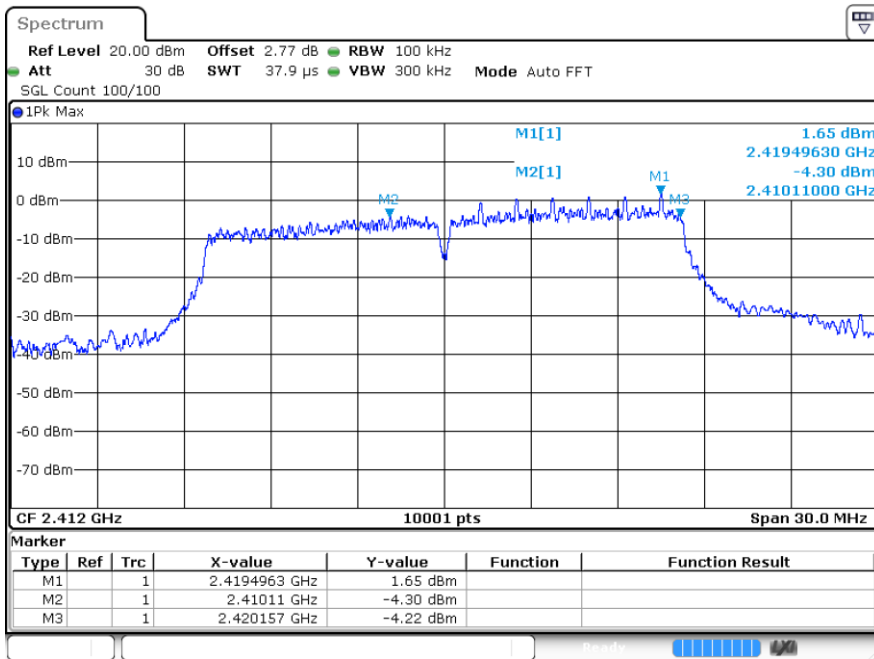
Test\_Graph\_802.11b\_ANT1\_2412



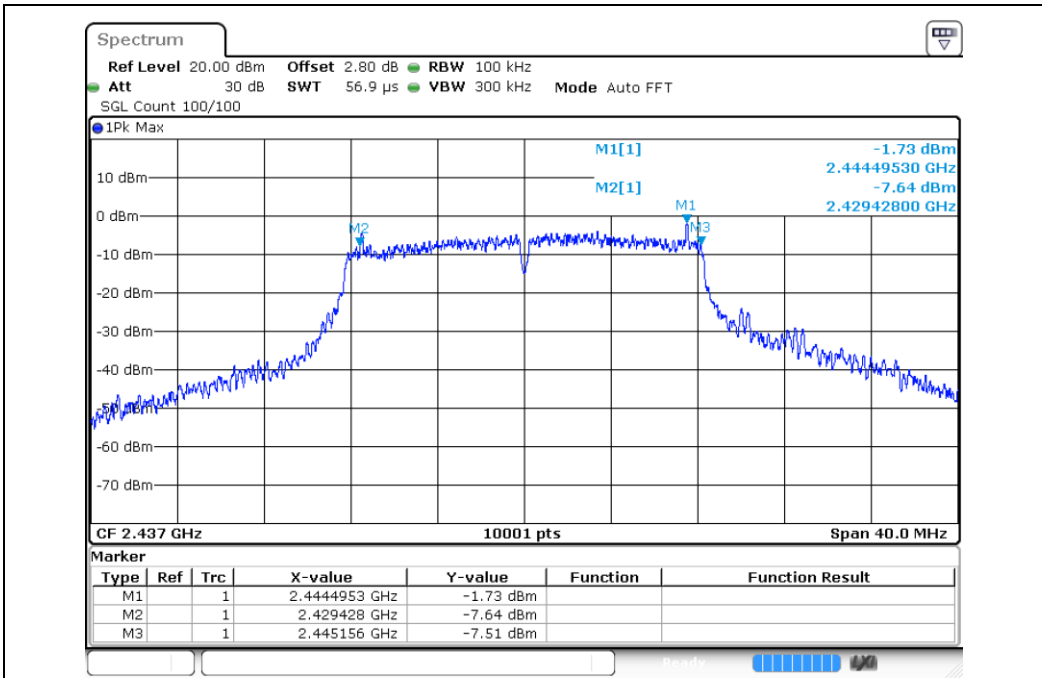
Test\_Graph\_802.11b\_ANT1\_2437



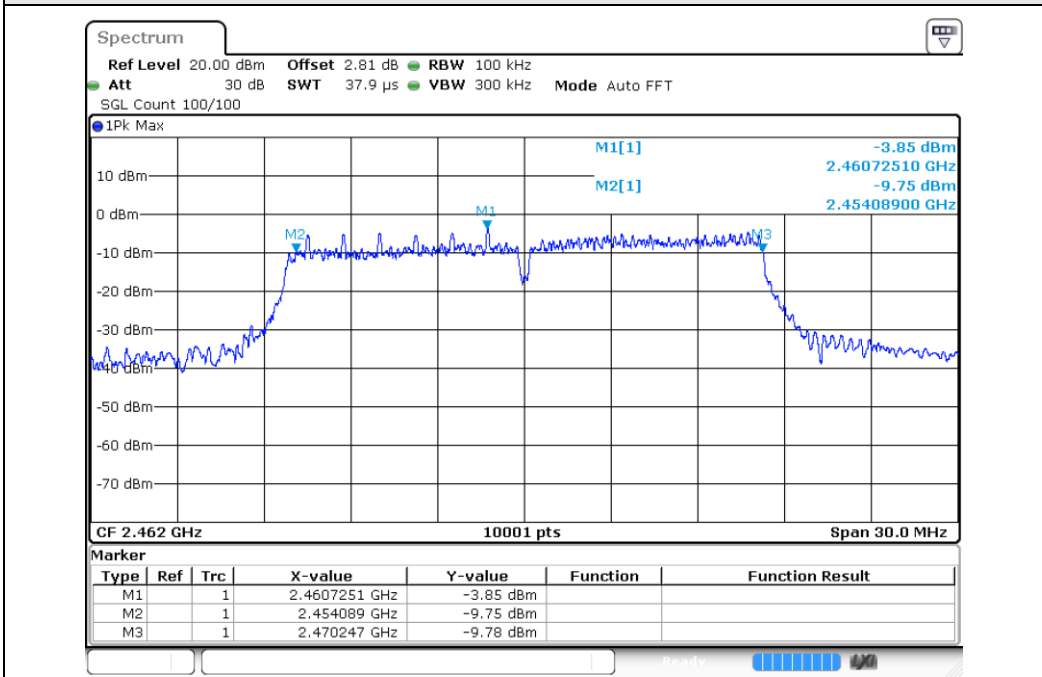
Test\_Graph\_802.11b\_ANT1\_2462



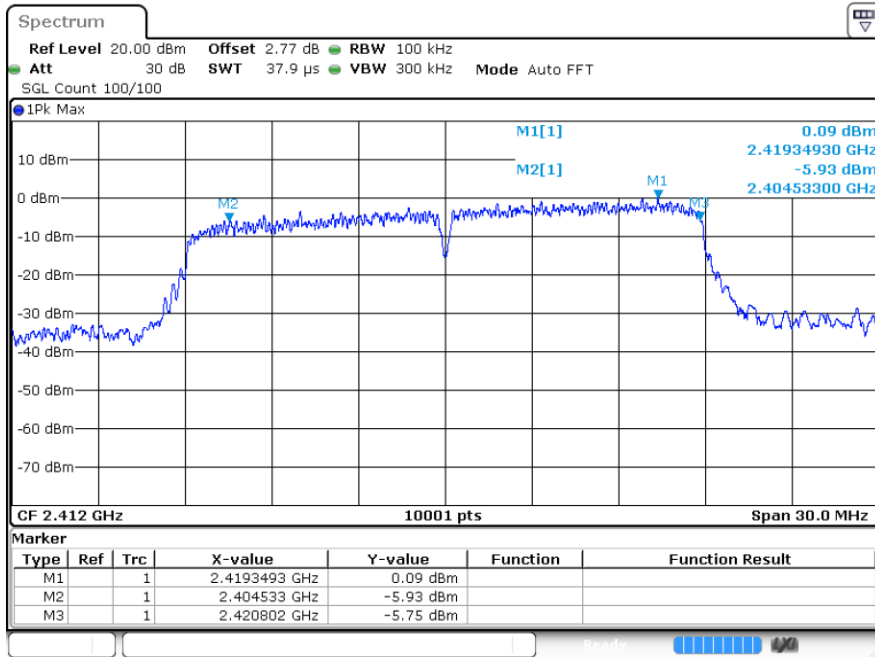
Test\_Graph\_802.11g\_ANT1\_2412



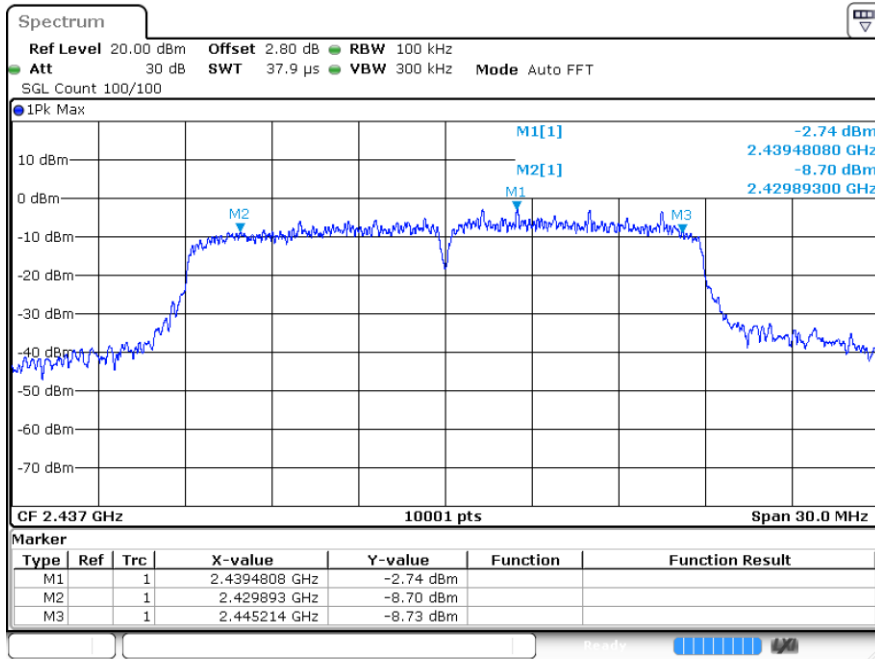
Test\_Graph\_802.11g\_ANT1\_2437



Test\_Graph\_802.11g\_ANT1\_2462

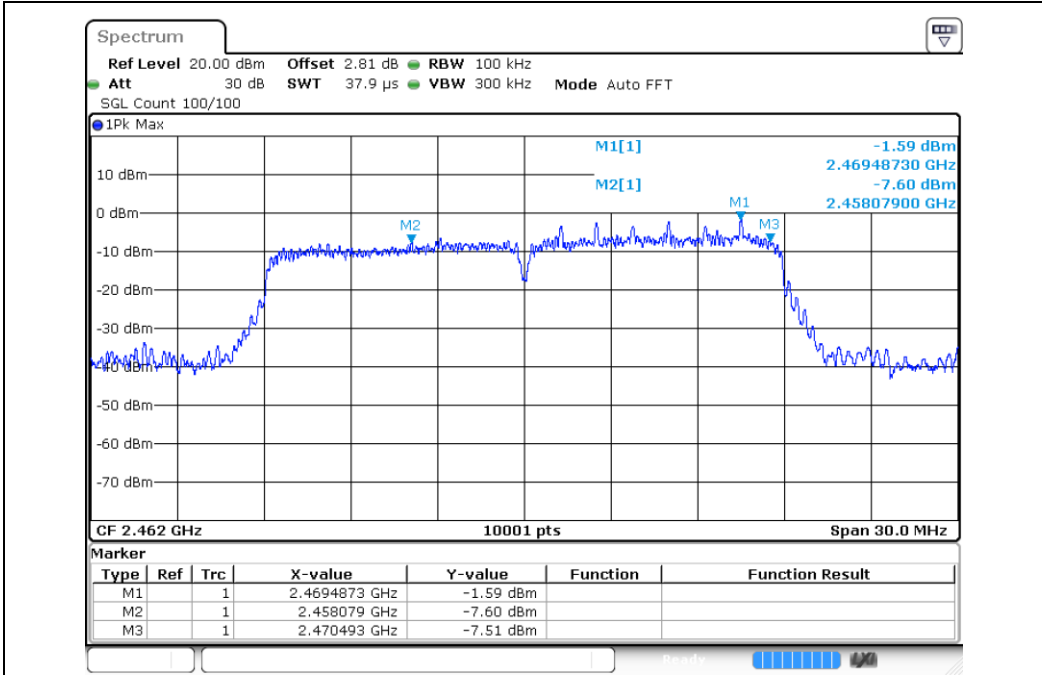


Test\_Graph\_802.11n20\_ANT1\_2412

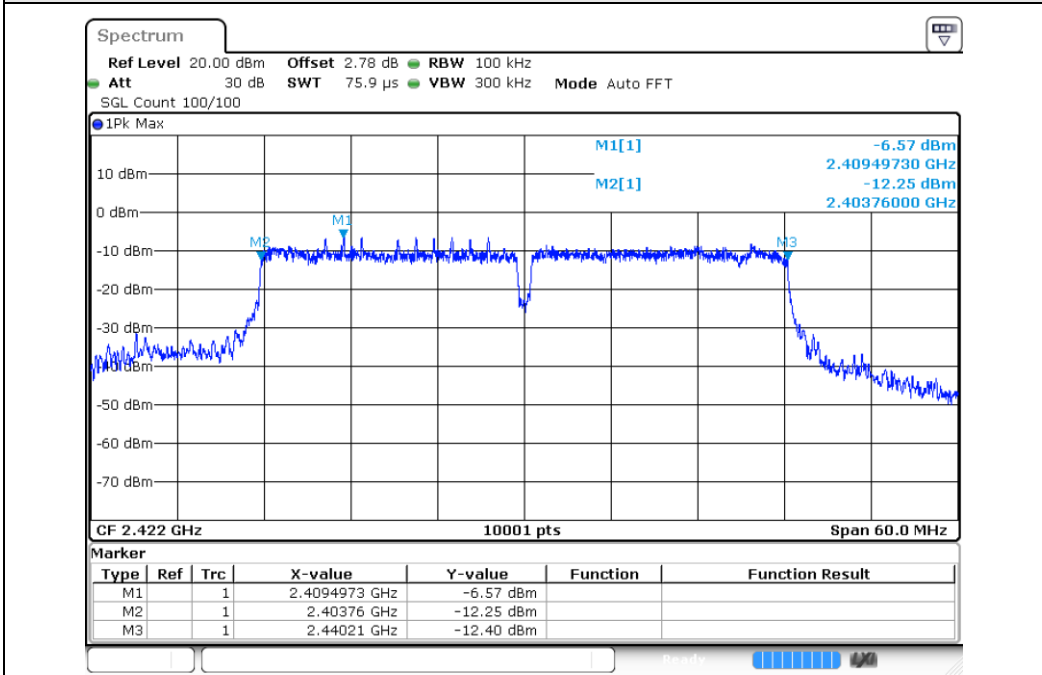


Test\_Graph\_802.11n20\_ANT1\_2437

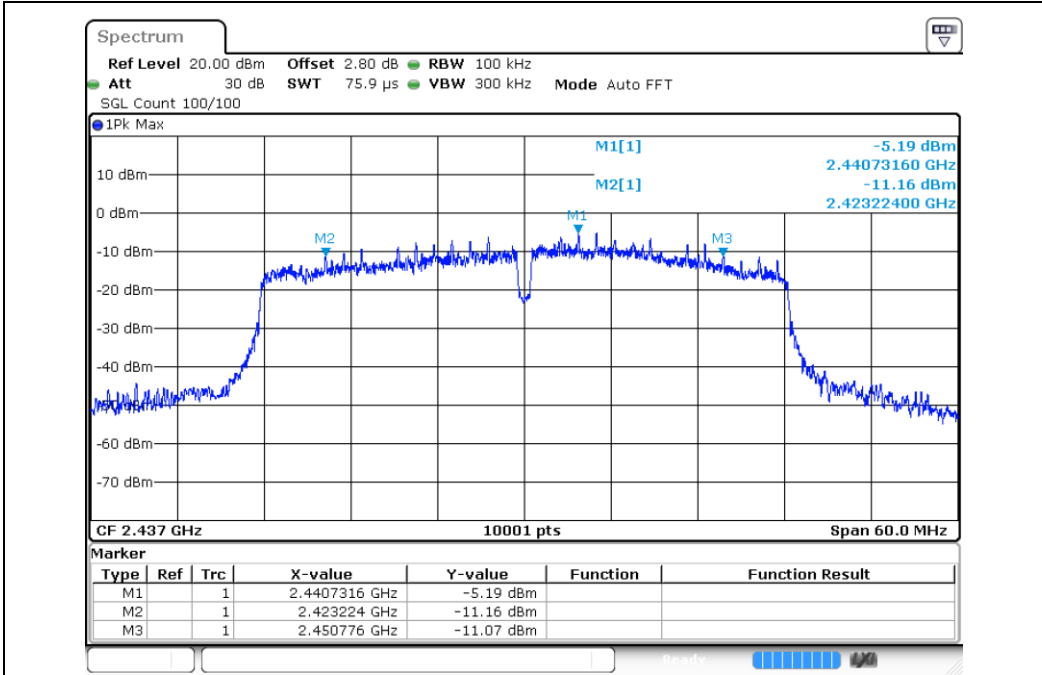




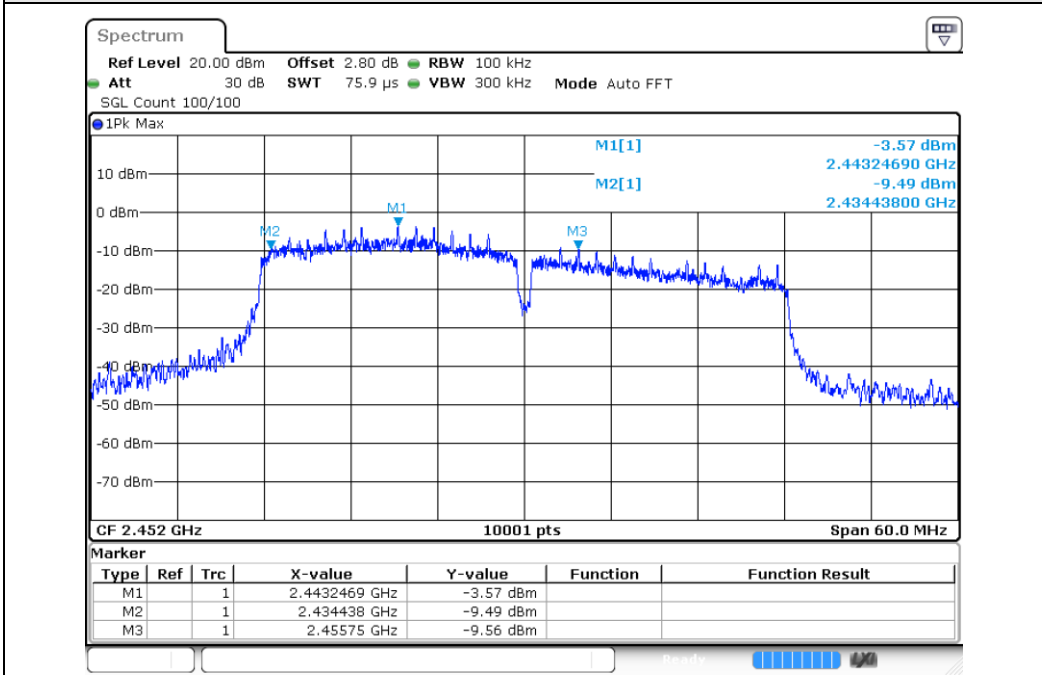
Test\_Graph\_802.11n20\_ANT1\_2462



Test\_Graph\_802.11n40\_ANT1\_2422



Test\_Graph\_802.11n40\_ANT1\_2437



Test\_Graph\_802.11n40\_ANT1\_2452



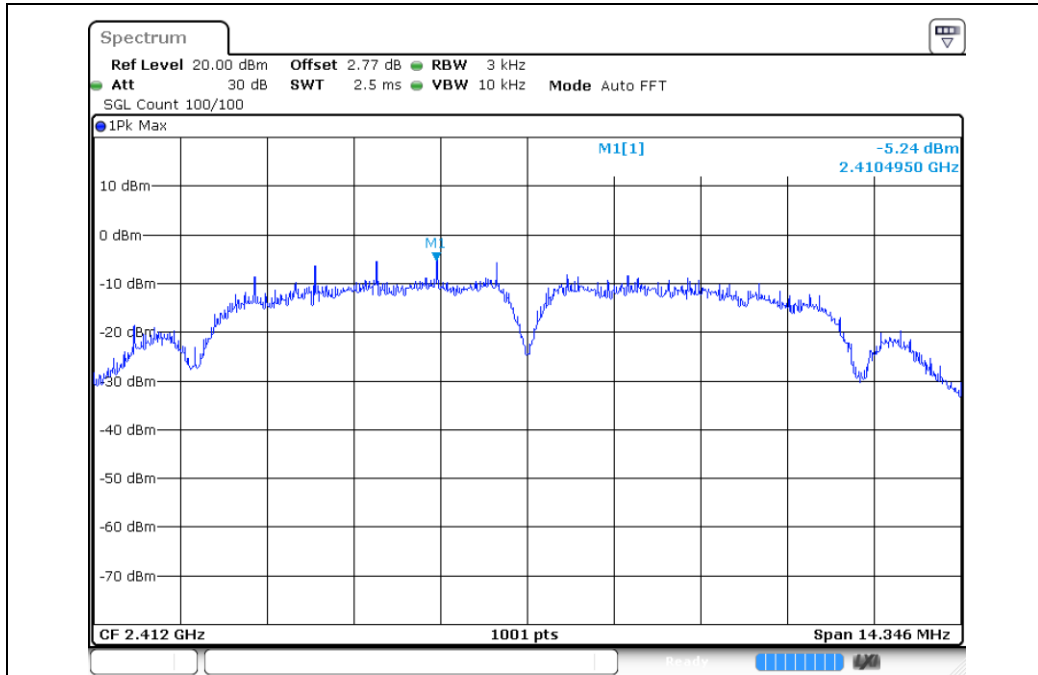
## 4 Maximum Power Spectral Density Level

### 4.1 Test Result

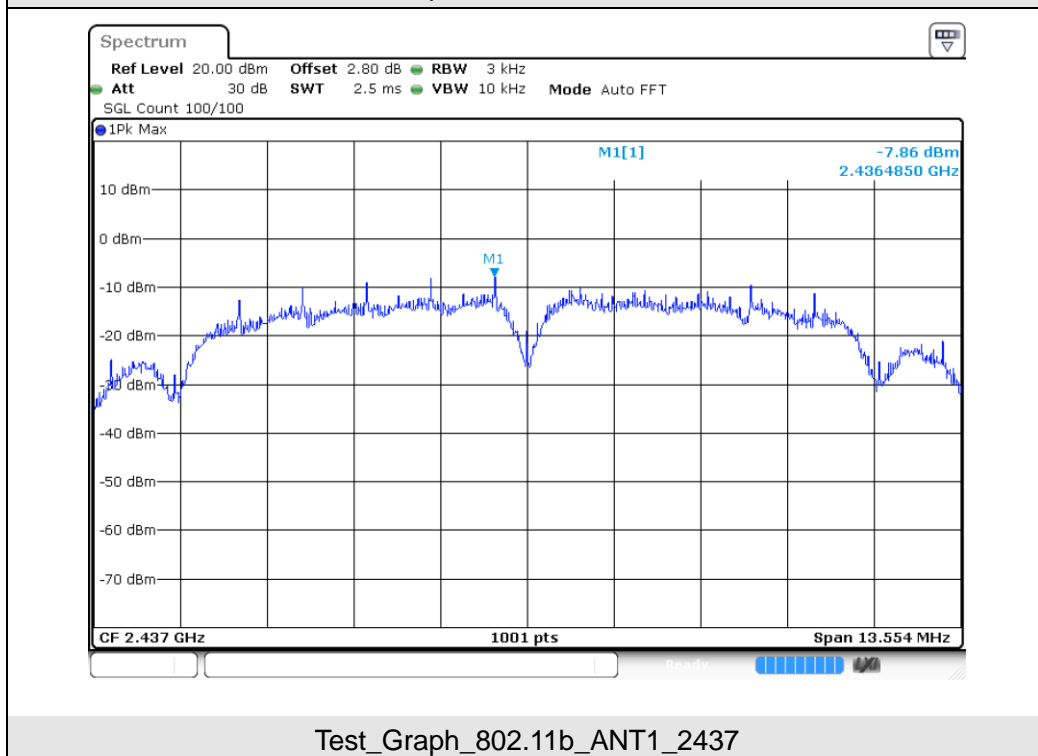
Test Data of Conducted Output Power Spectral Density				
Test Mode	Test Channel	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail
802.11b	2412	-5.24	≤8	Pass
	2437	-7.86	≤8	Pass
	2462	-5.7	≤8	Pass
802.11g	2412	-12.76	≤8	Pass
	2437	-14.88	≤8	Pass
	2462	-16.78	≤8	Pass
802.11n20	2412	-11.3	≤8	Pass
	2437	-16.51	≤8	Pass
	2462	-16.04	≤8	Pass
802.11n40	2422	-19.64	≤8	Pass
	2437	-20.47	≤8	Pass
	2452	-18.81	≤8	Pass

## 4.2 Test Graphs

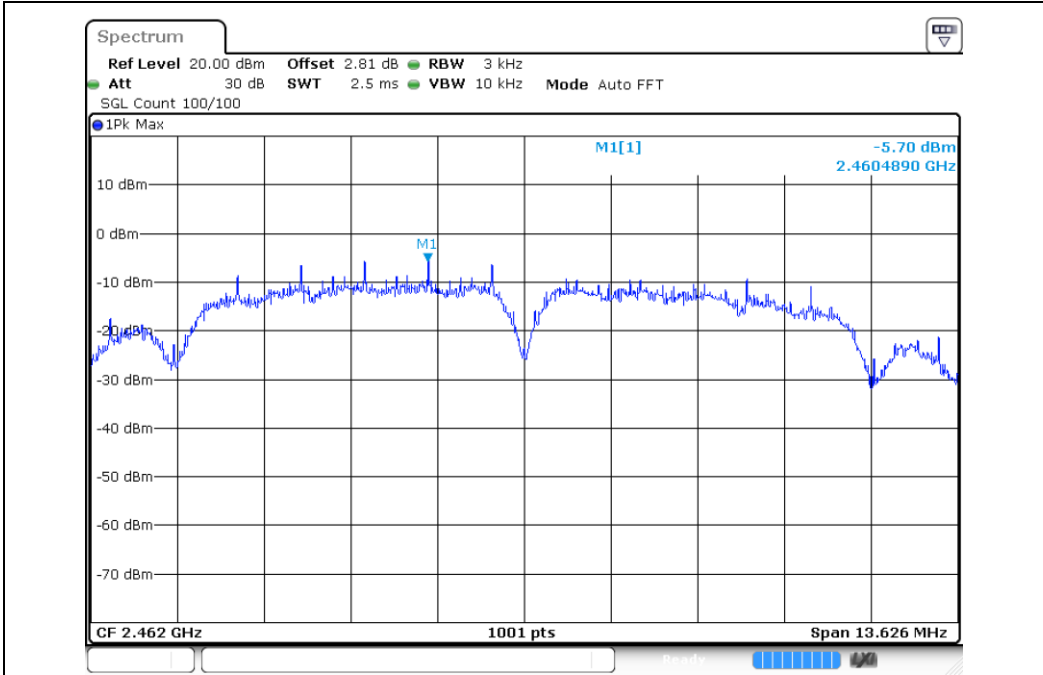
### Test Graphs of Conducted Output Power Spectral Density



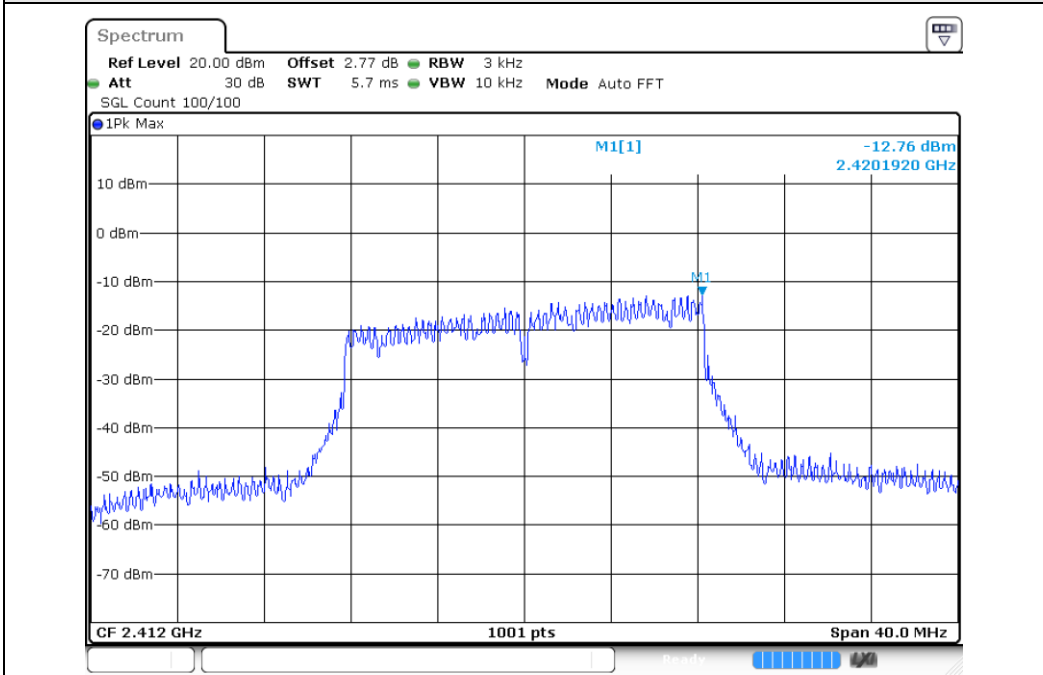
Test\_Graph\_802.11b\_ANT1\_2412



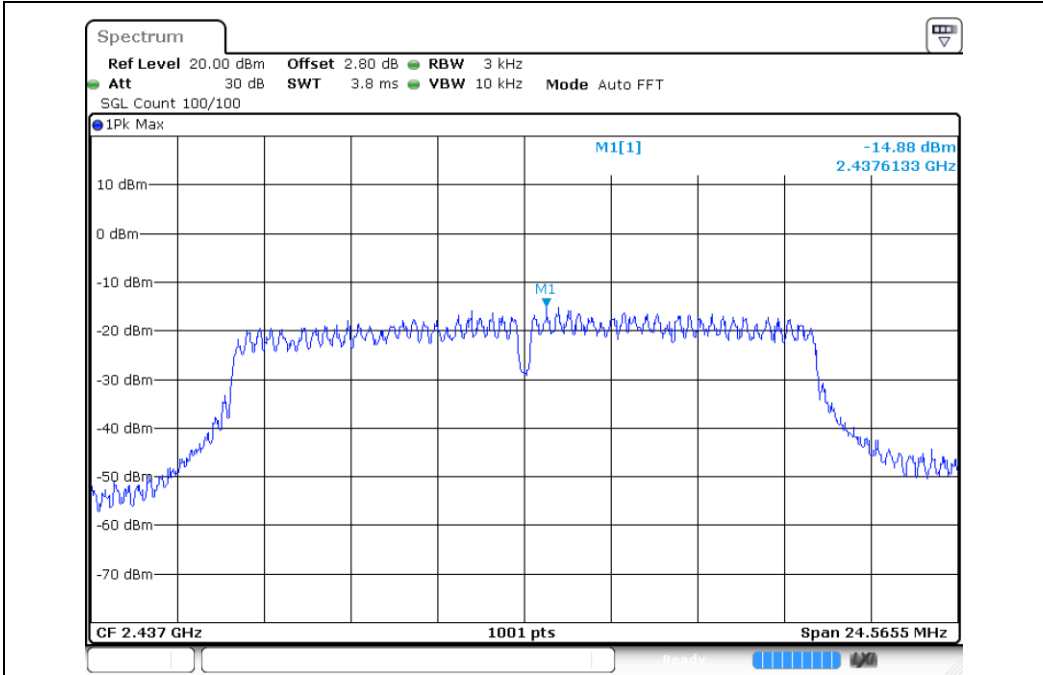
Test\_Graph\_802.11b\_ANT1\_2437



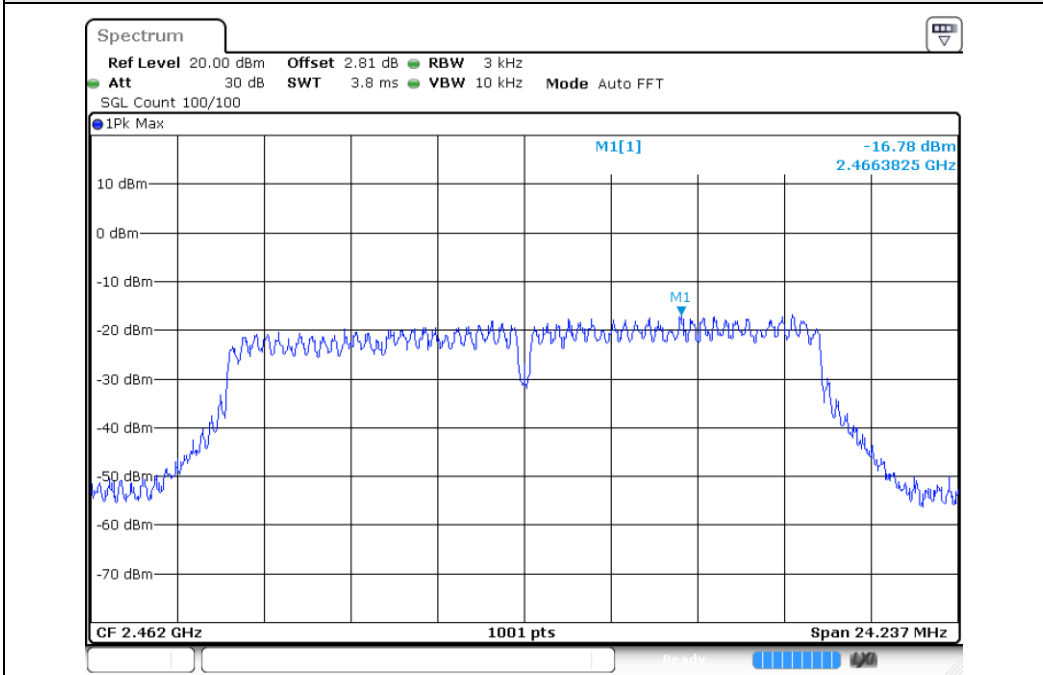
Test\_Graph\_802.11b\_ANT1\_2462



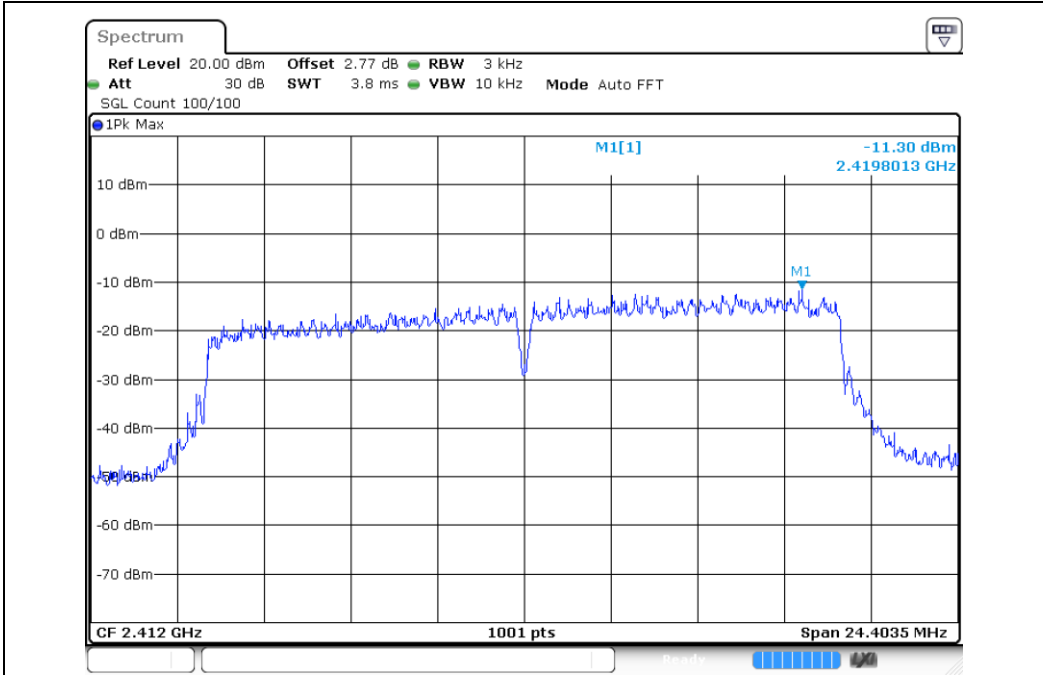
Test\_Graph\_802.11g\_ANT1\_2412



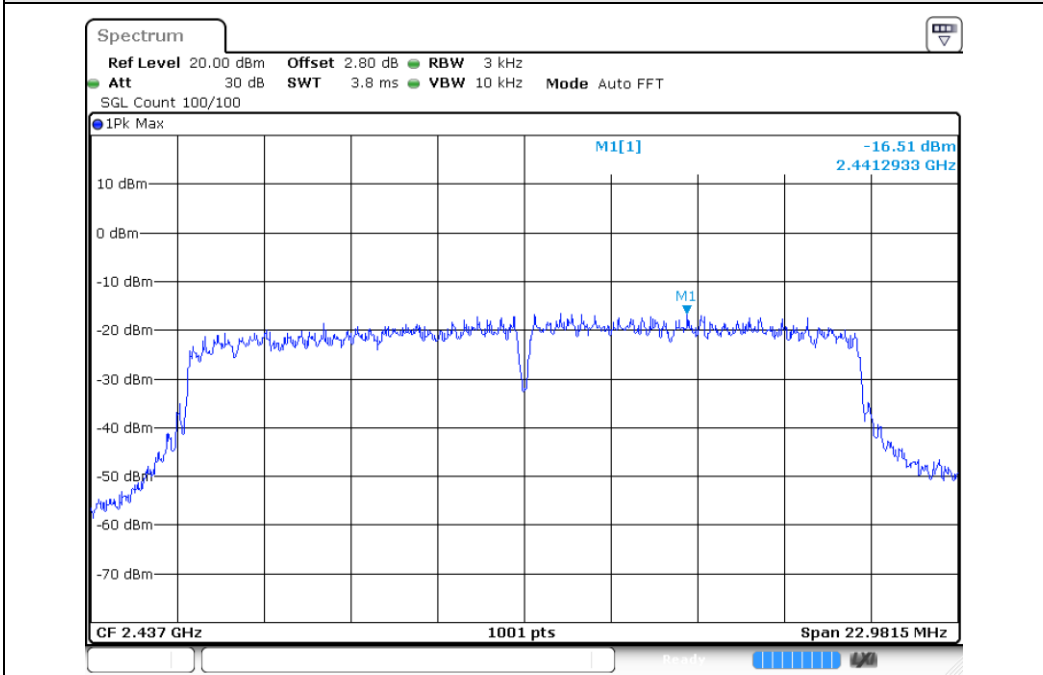
Test\_Graph\_802.11g\_ANT1\_2437



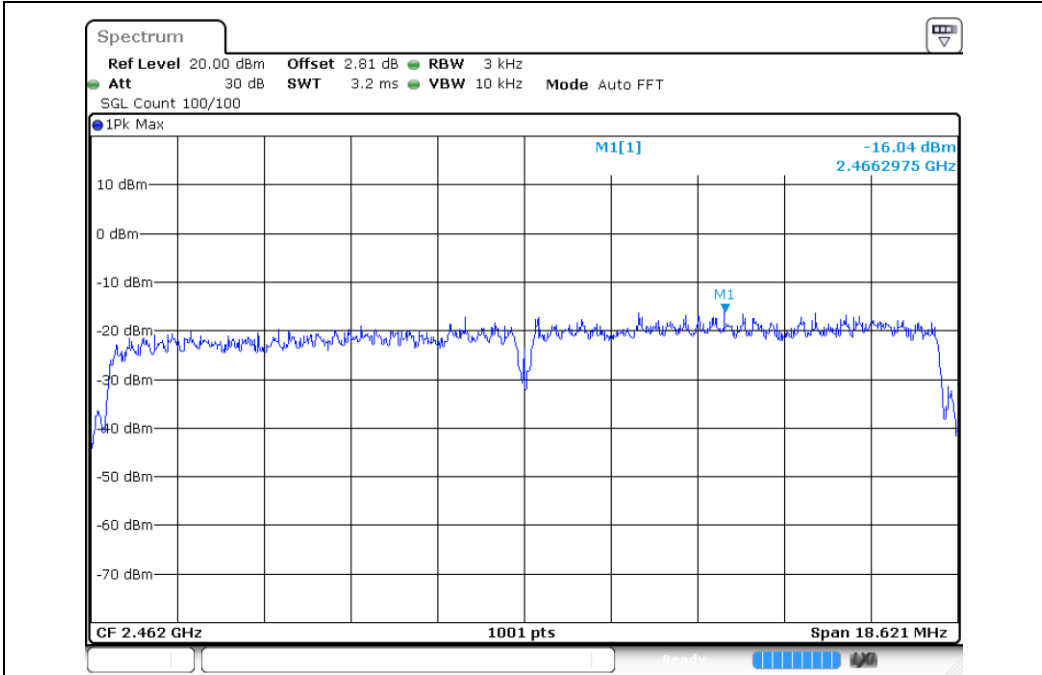
Test\_Graph\_802.11g\_ANT1\_2462



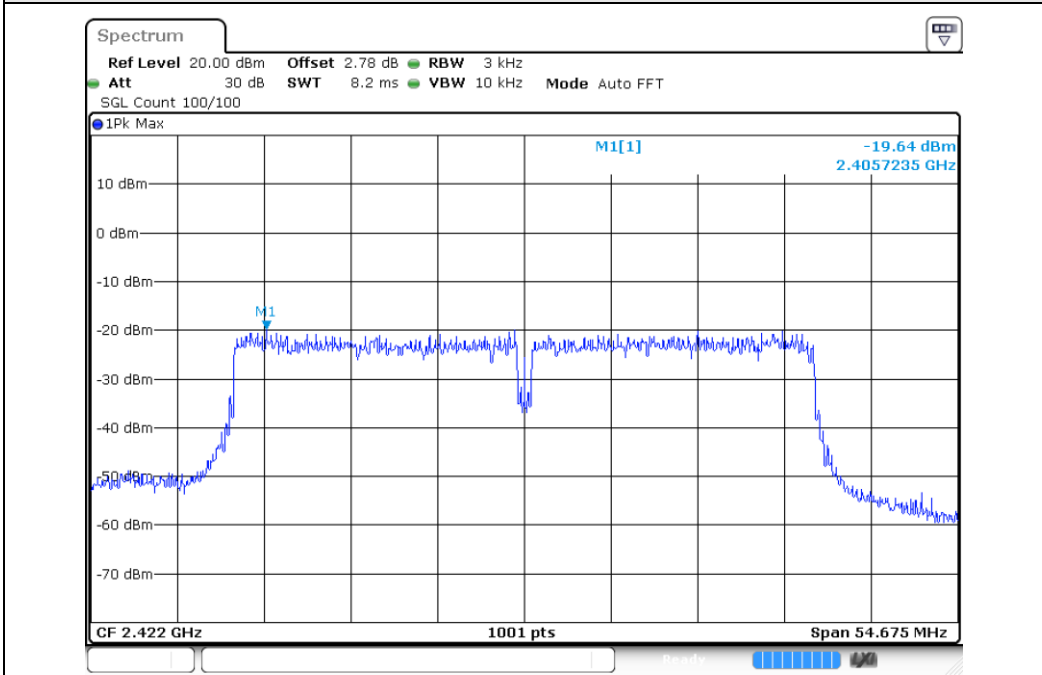
Test\_Graph\_802.11n20\_ANT1\_2412



Test\_Graph\_802.11n20\_ANT1\_2437

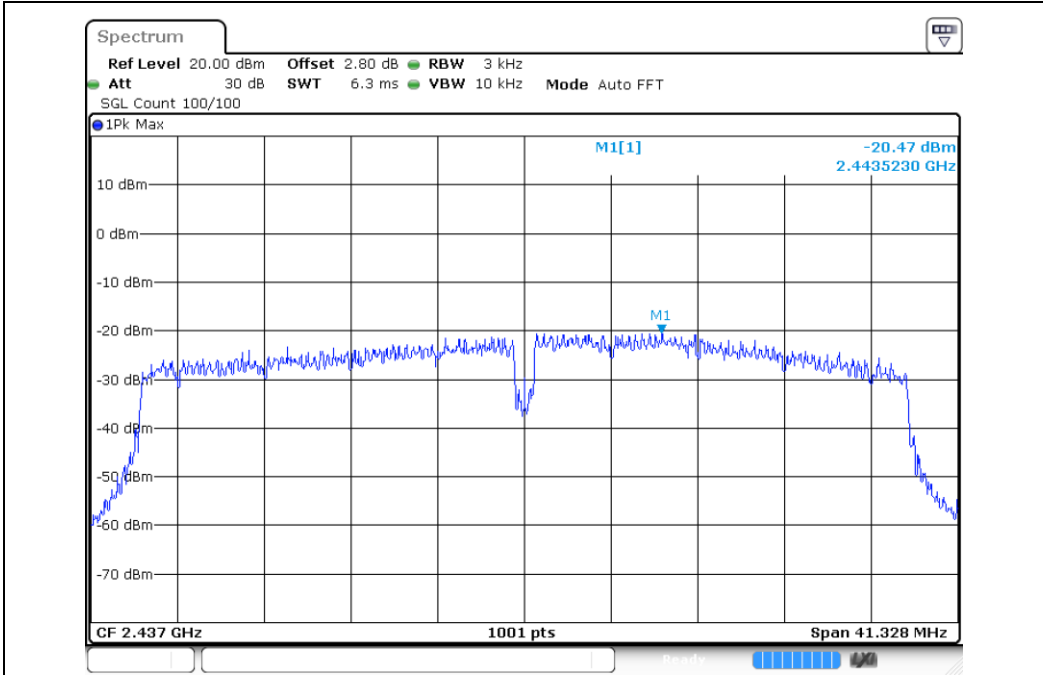


Test\_Graph\_802.11n20\_ANT1\_2462

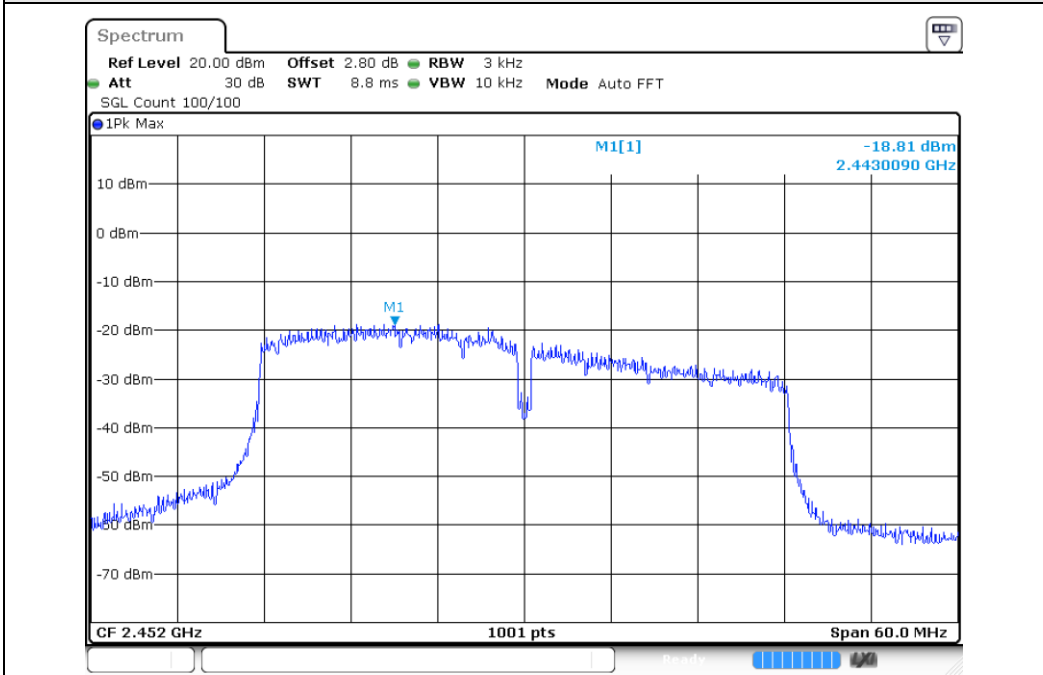


Test\_Graph\_802.11n40\_ANT1\_2412





Test\_Graph\_802.11n40\_ANT1\_2437



Test\_Graph\_802.11n40\_ANT1\_2452

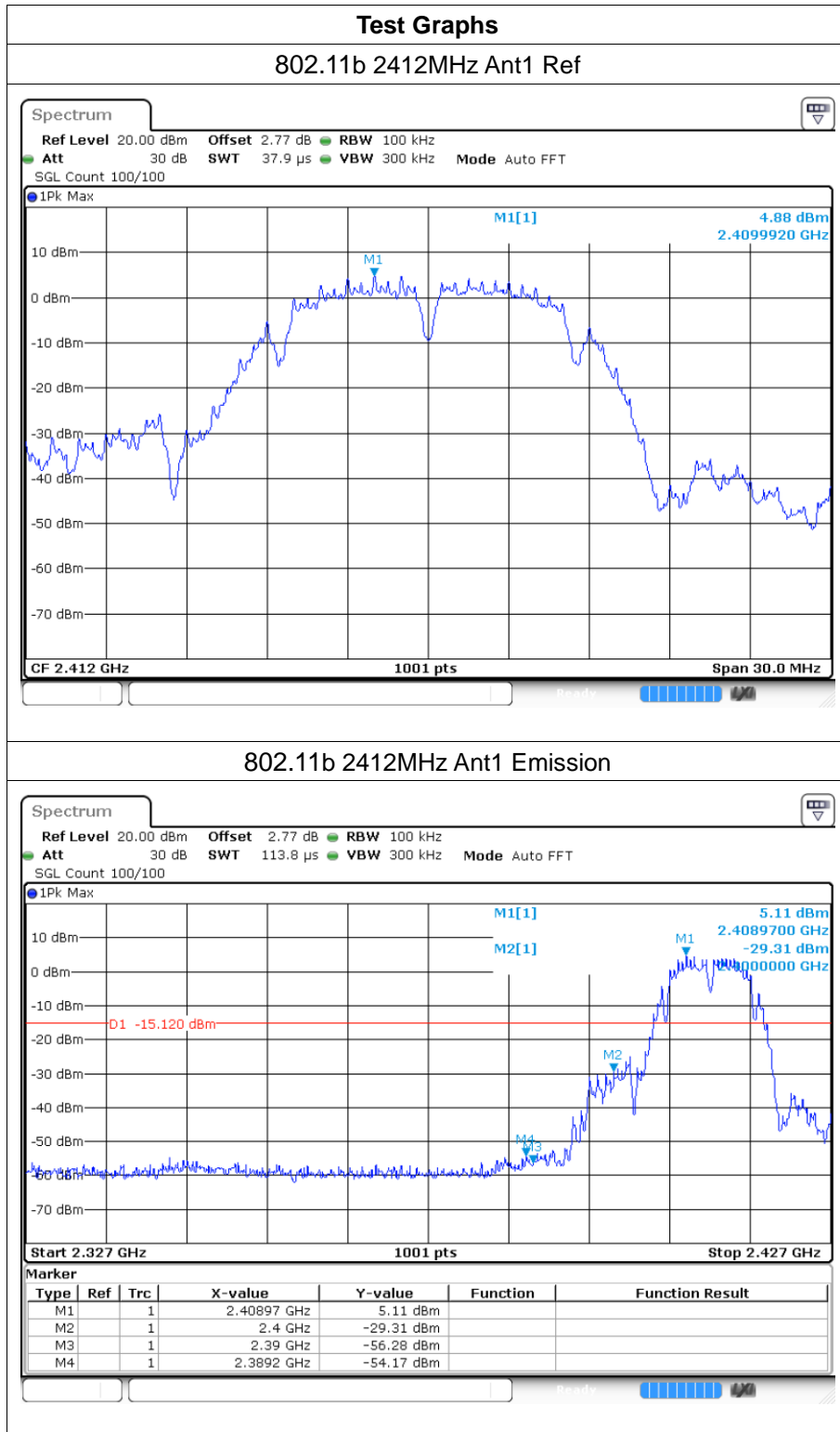


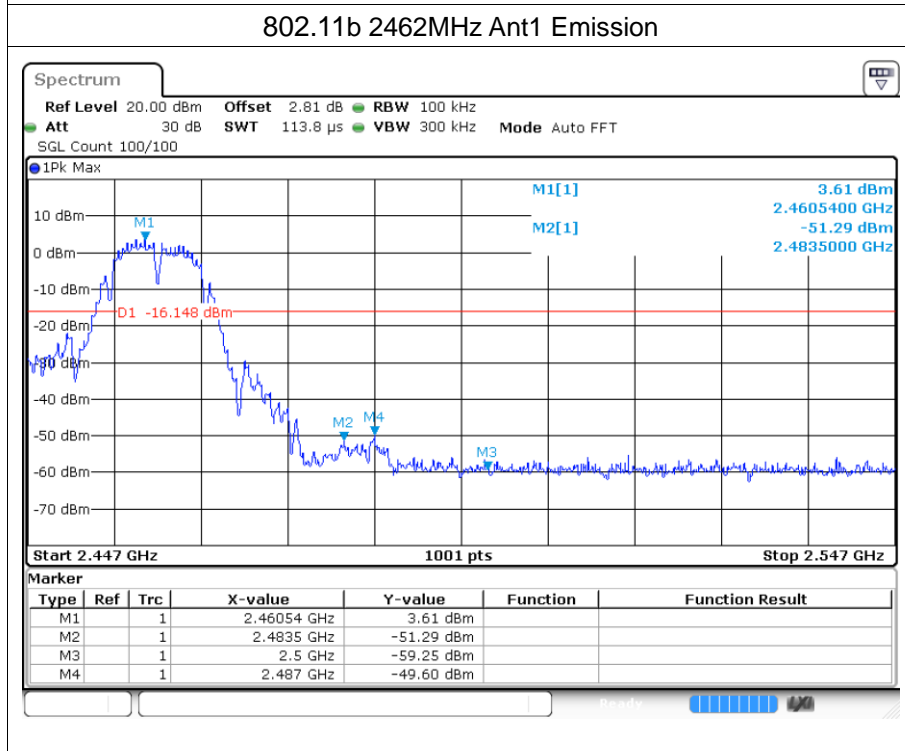
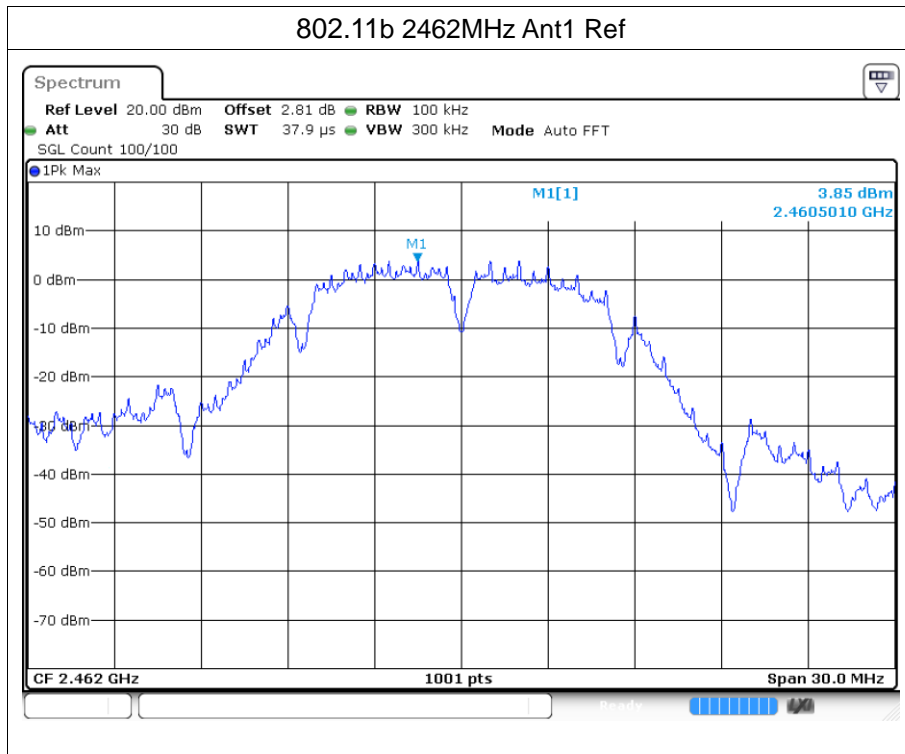
## 5 Band Edge

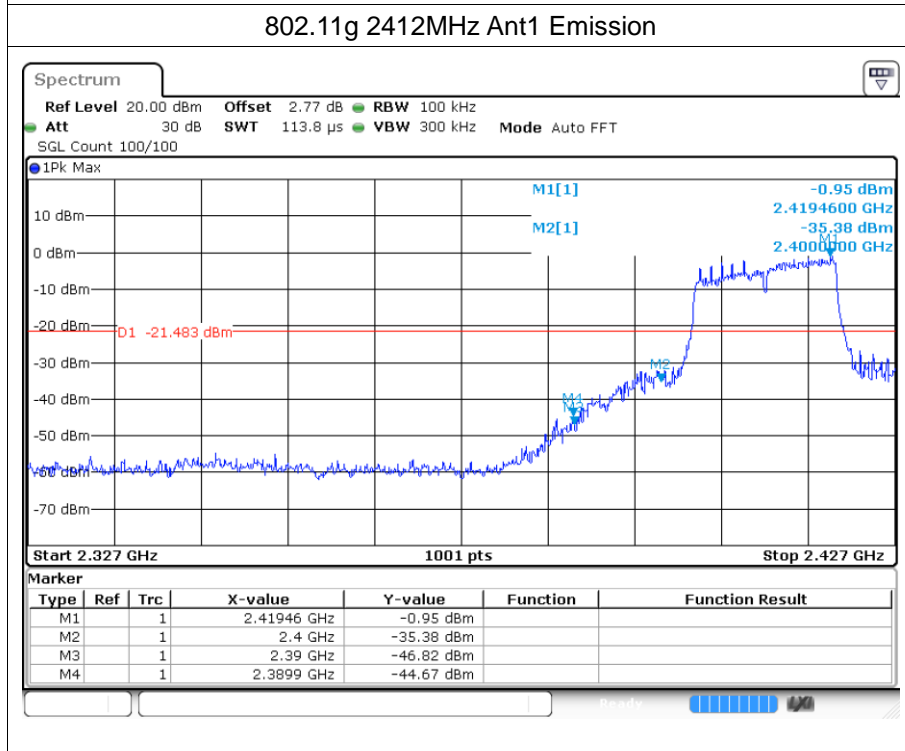
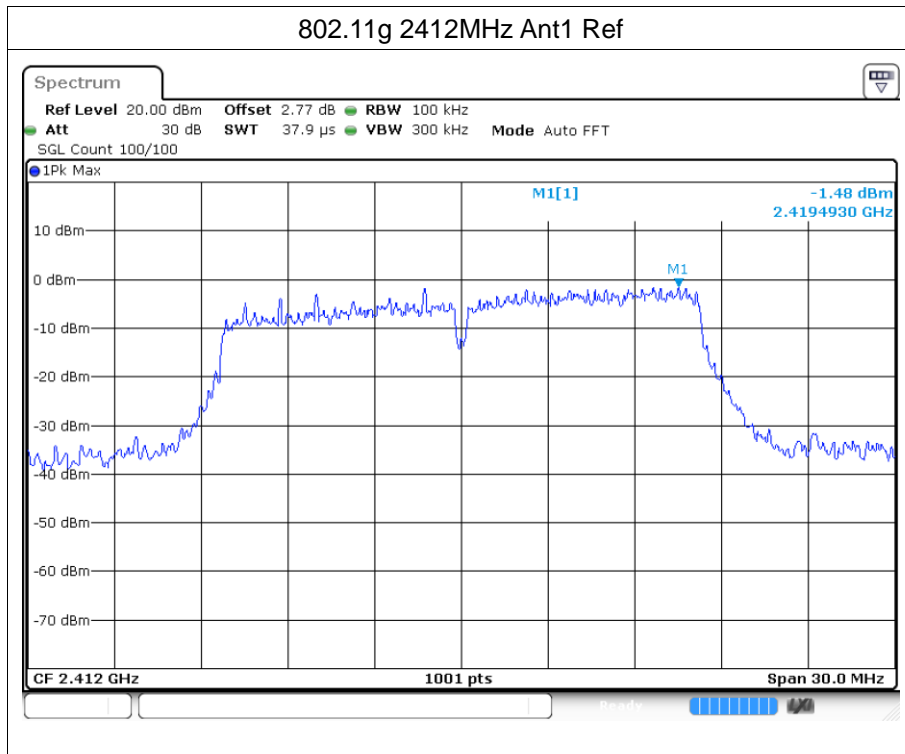
### 5.1 Test Result

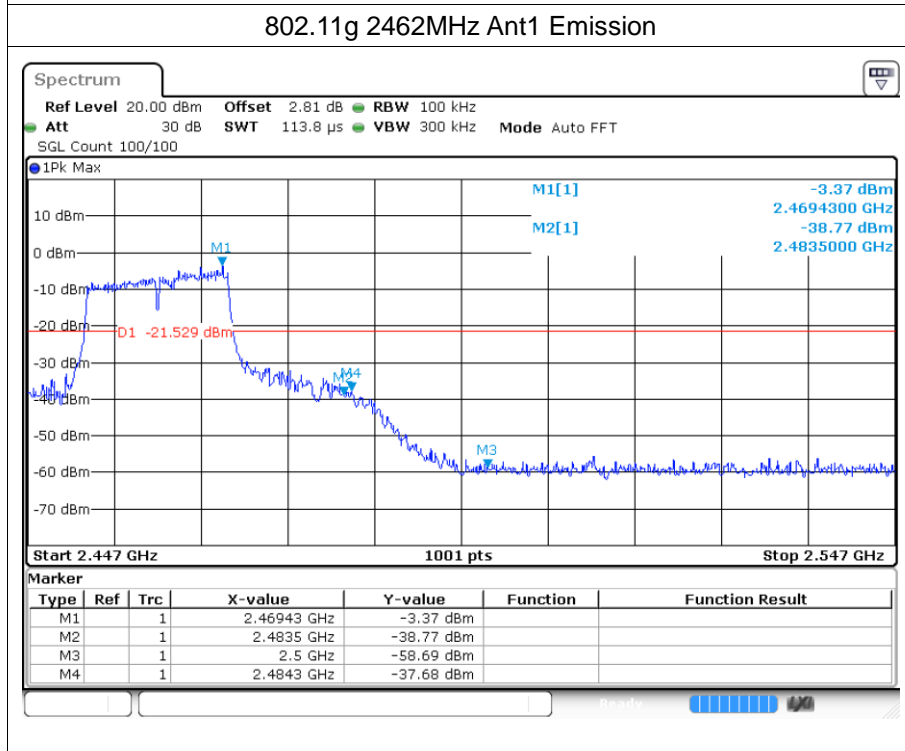
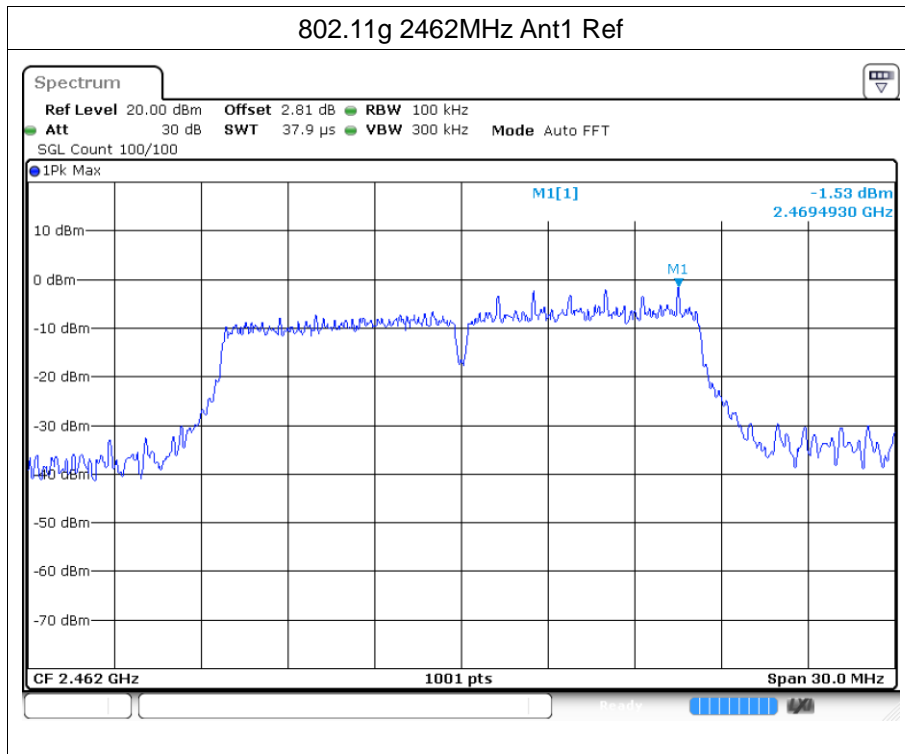
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
802.11b	2412	Ant1	-59.05	-20	-59.05
802.11b	2462	Ant1	-53.45	-20	Pass
802.11g	2412	Ant1	-43.19	-20	Pass
802.11g	2462	Ant1	-36.15	-20	Pass
802.11n20	2412	Ant1	-42.92	-20	Pass
802.11n20	2462	Ant1	-34	-20	Pass
802.11n40	2422	Ant1	-35.47	-20	Pass
802.11n40	2452	Ant1	-43.97	-20	Pass

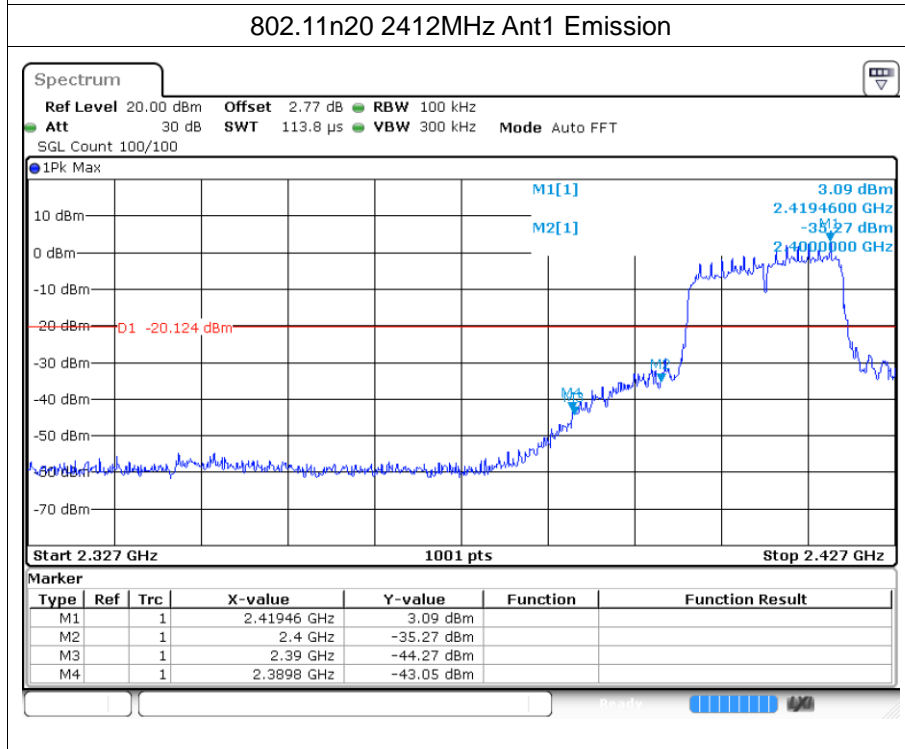
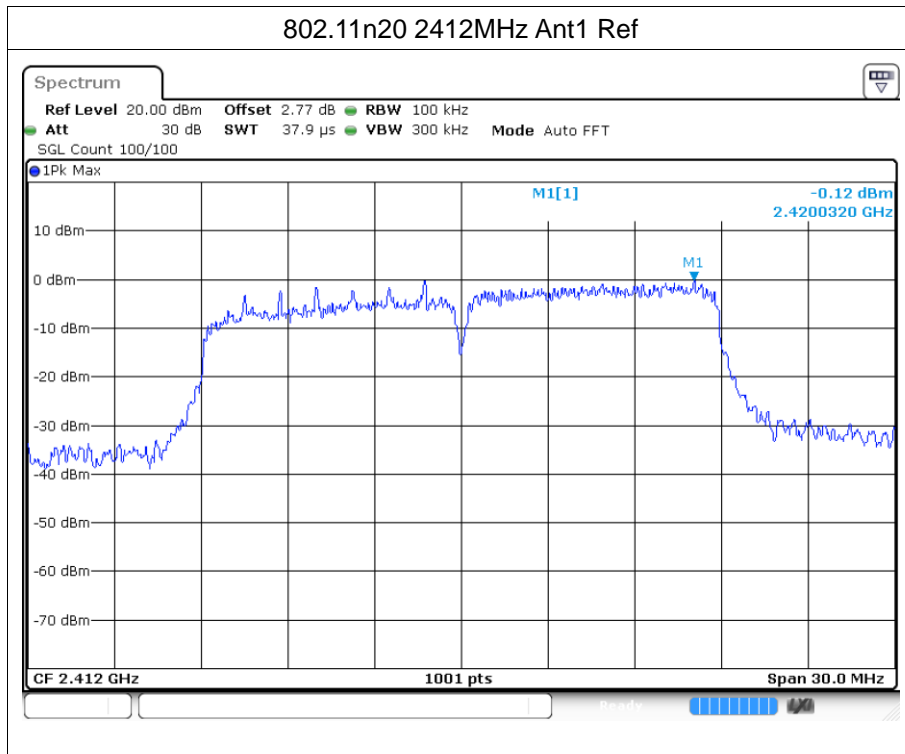
## 5.2 Test Graphs

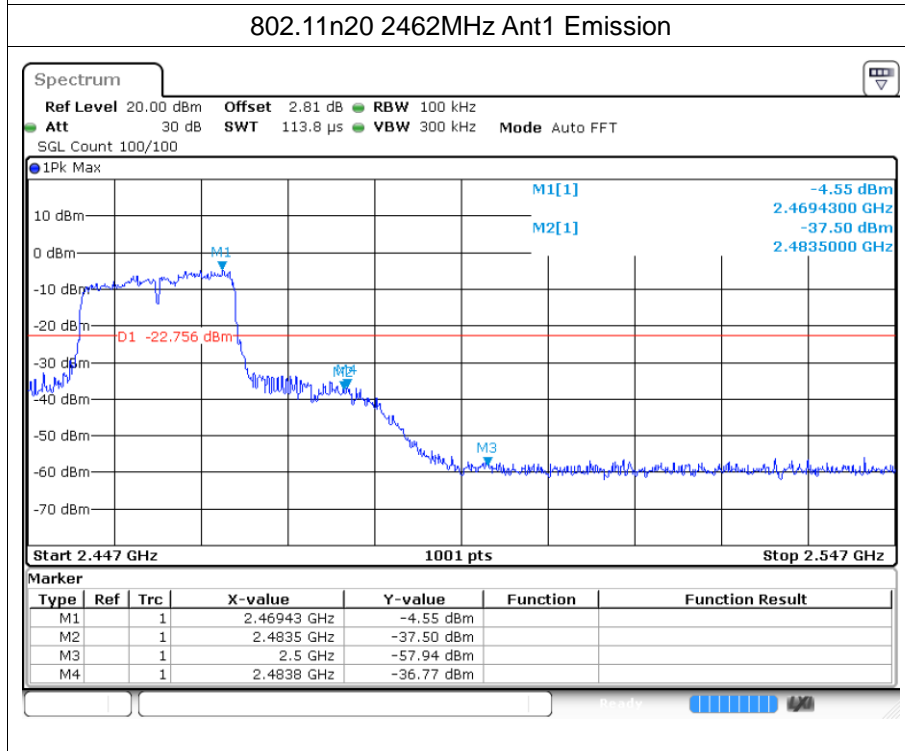
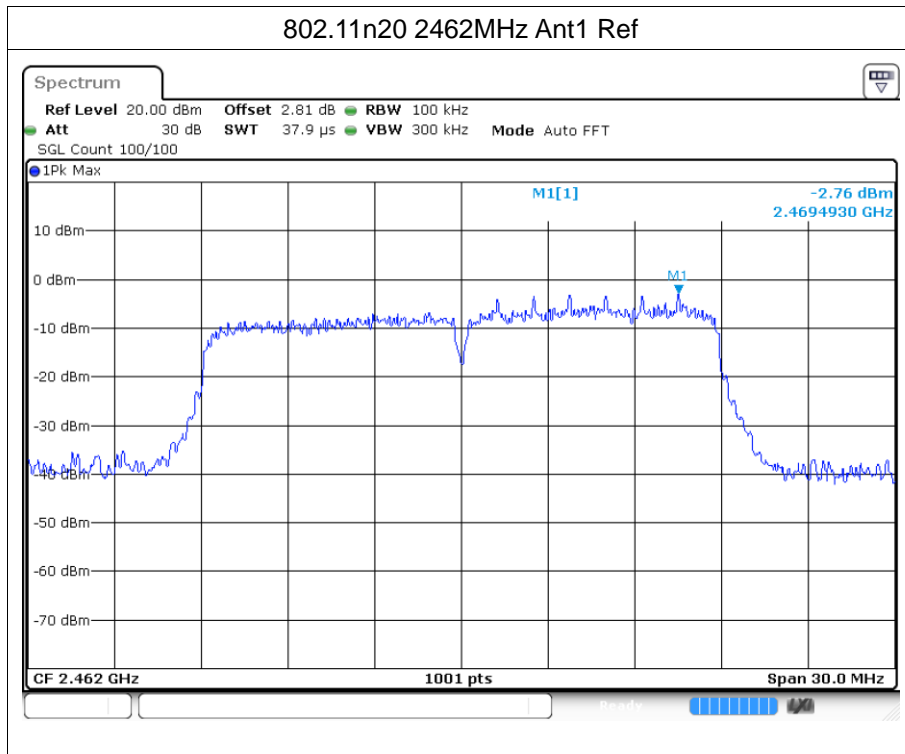




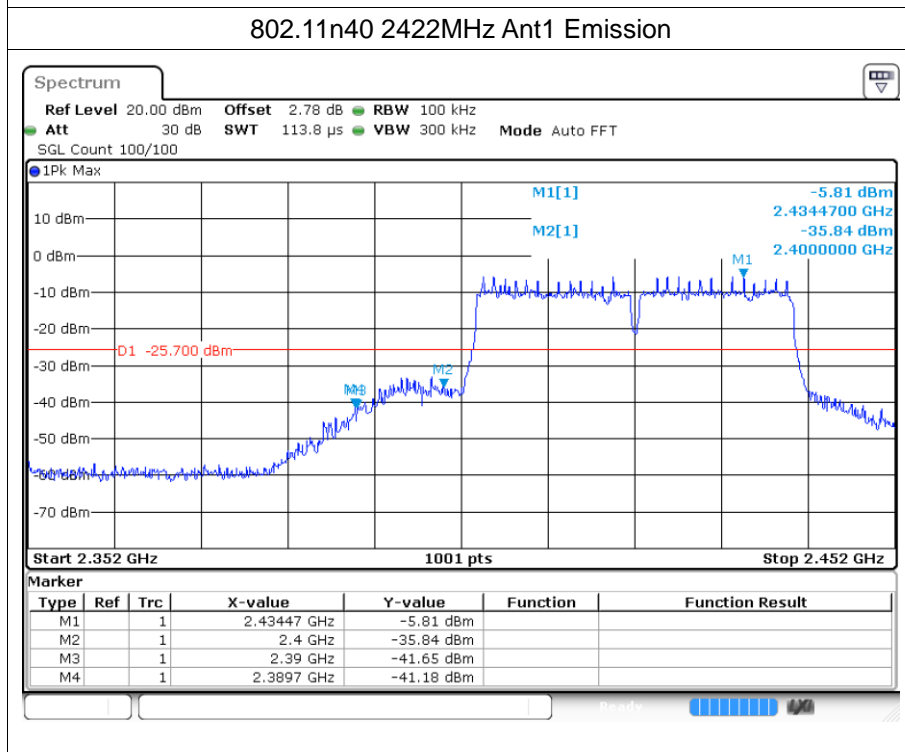
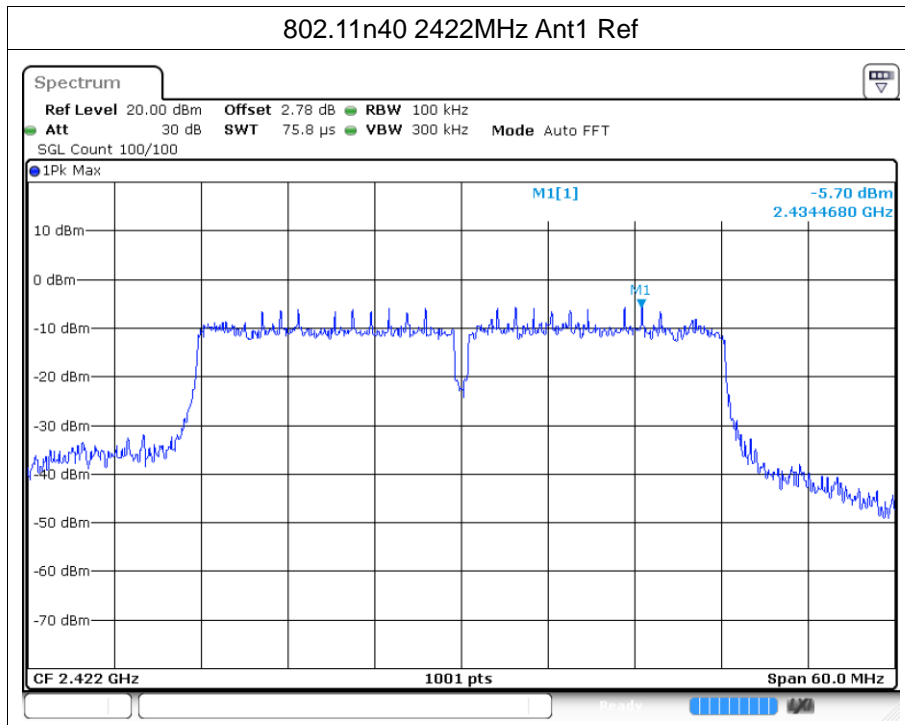


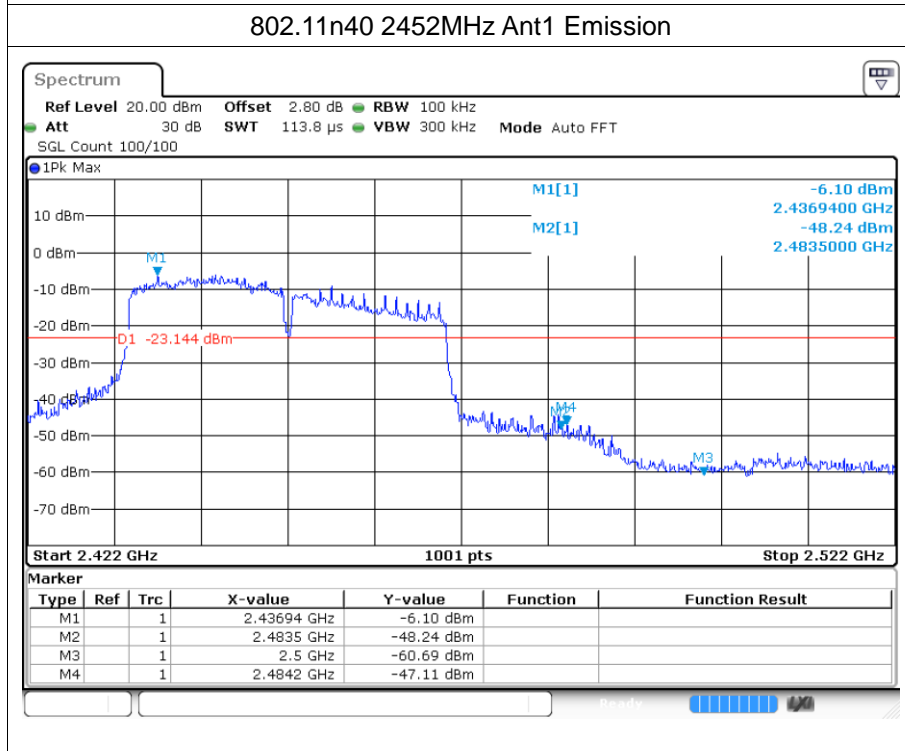
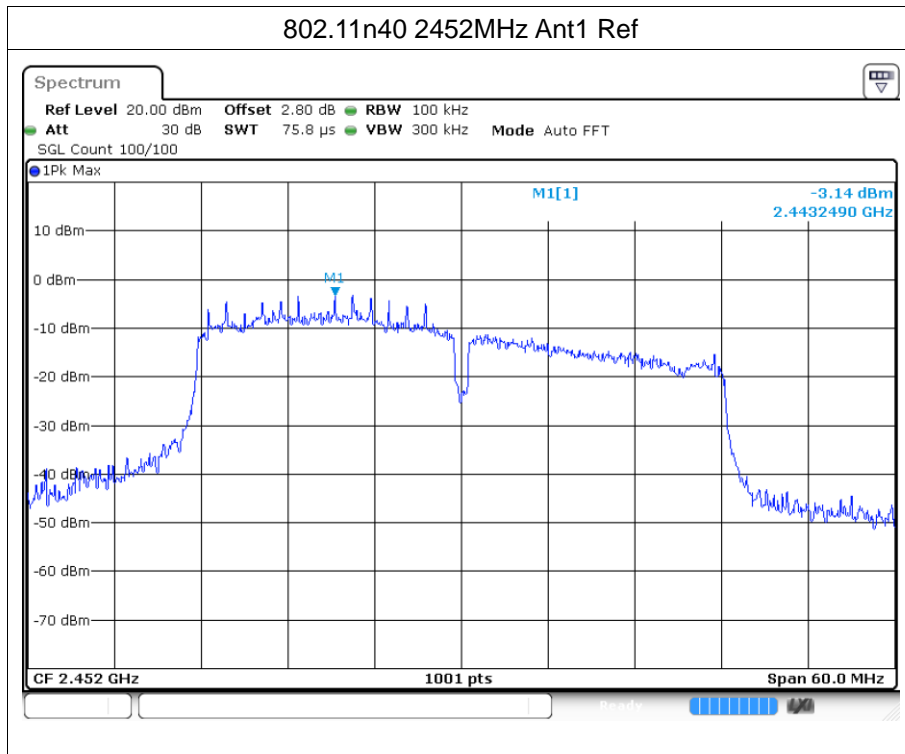














## 6 Conducted RF Spurious Emission

### 6.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
802.11b	2412	Ant1	-47.15	-20	Pass
802.11b	2437	Ant1	-46.17	-20	Pass
802.11b	2462	Ant1	-46.85	-20	Pass
802.11g	2412	Ant1	-43.26	-20	Pass
802.11g	2437	Ant1	-41.75	-20	Pass
802.11g	2462	Ant1	-37.75	-20	Pass
802.11n20	2412	Ant1	-45.4	-20	Pass
802.11n20	2437	Ant1	-38.21	-20	Pass
802.11n20	2462	Ant1	-41.41	-20	Pass
802.11n40	2422	Ant1	-33.55	-20	Pass
802.11n40	2437	Ant1	-38.78	-20	Pass
802.11n40	2452	Ant1	-39.65	-20	Pass

## 6.2 Test Graphs

