Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: laser engraving machine

Trade Mark: MR.CARVE

Test Model: V1

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung

Contents

Page

COVER PAGE

1 Duty Cycle 3
1.1 Test Result 3
1.2 Test Graphs 4
2 Maximum Conducted Output Power 10
2.1 Test Result 10
3 -6dB Bandwidth 11
3.1 Test Result 11
3.2 Test Graphs 12
4 Maximum Power Spectral Density Level 18
4.1 Test Result 18
4.2 Test Graphs 19
5 Band Edge 25
5.1 Test Result 25
5.2 Test Graphs 26
6 Conducted RF Spurious Emission 34
6.1 Test Result 34
6.2 Test Graphs 35
7 Restrict Band 47
7.1 Test Result 47
7.2 Test Graphs 49

1 Duty Cycle

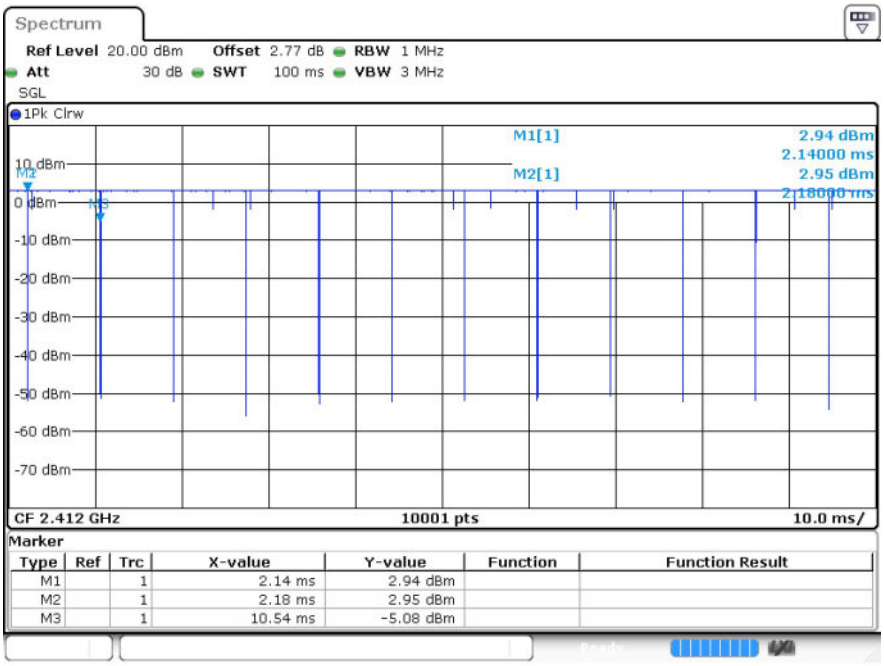
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor	1/T (kHz)
b	2412	Ant1	99.62	0.02	0.12
b	2437	Ant1	99.6	0.02	0.12
b	2462	Ant1	99.6	0.02	0.12
g	2412	Ant1	86.76	0.62	4.55
g	2437	Ant1	86.76	0.62	4.76
g	2462	Ant1	86.89	0.61	4.76
n20	2412	Ant1	87.56	0.58	4.17
n20	2437	Ant1	87.6	0.57	4.35
n20	2462	Ant1	87.55	0.58	4.35
n40	2422	Ant1	88.08	0.55	4
n40	2437	Ant1	88.04	0.55	4.17
n40	2452	Ant1	88.03	0.55	4.17

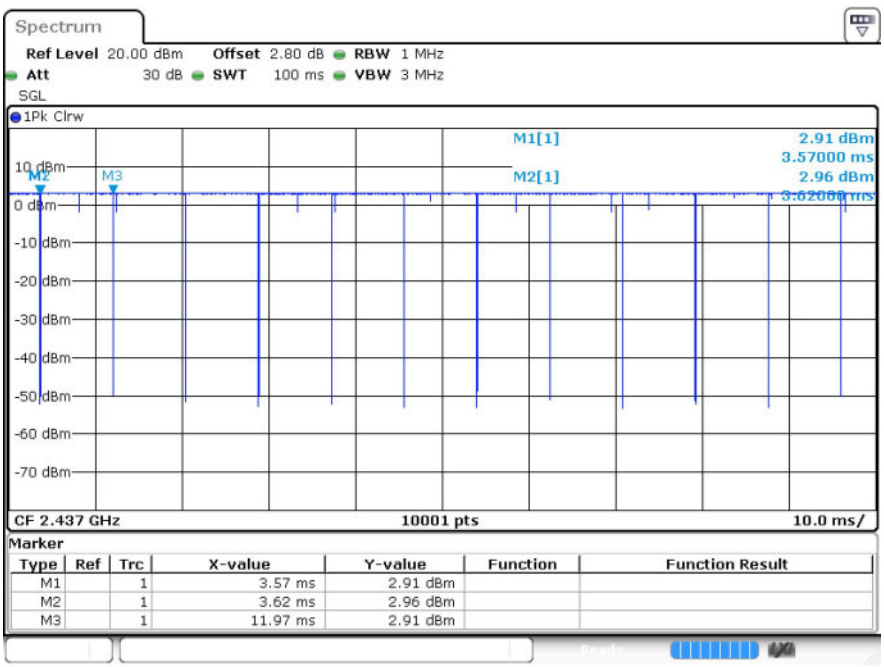
1.2 Test Graphs

Test Graphs

b 2412MHz Ant1

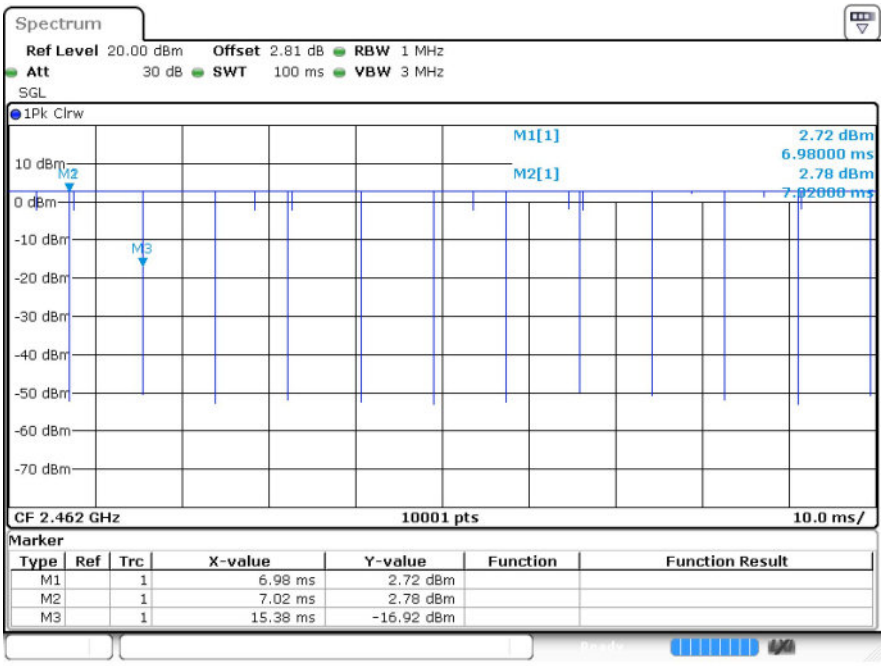


b 2437MHz Ant1

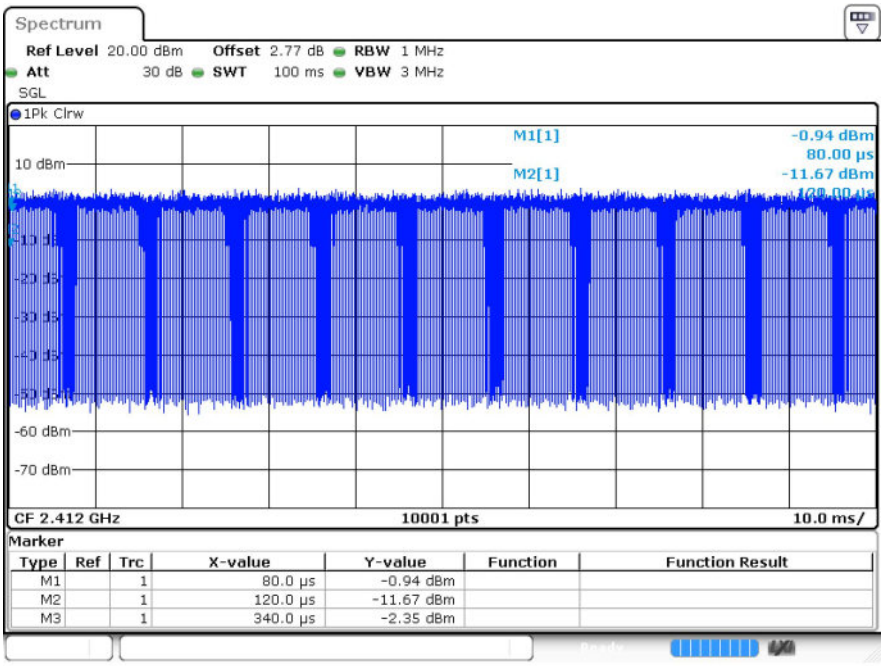


Test Graphs

b 2462MHz Ant1

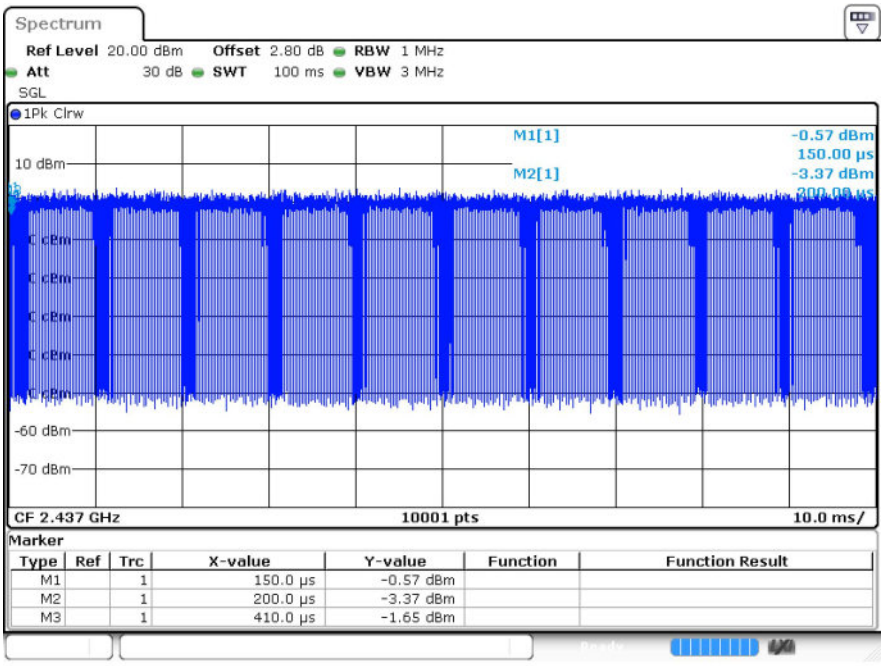


g 2412MHz Ant1

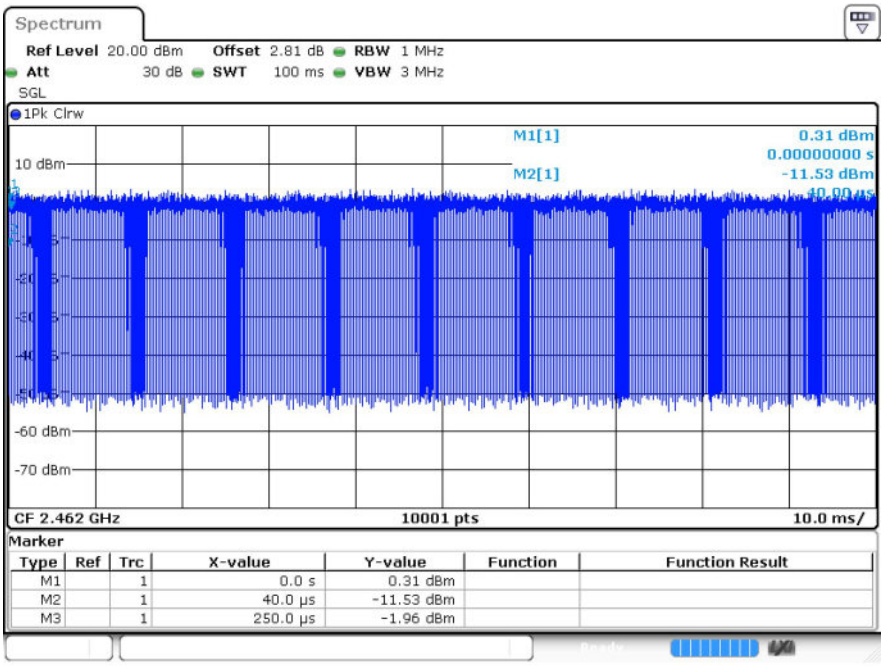


Test Graphs

g 2437MHz Ant1

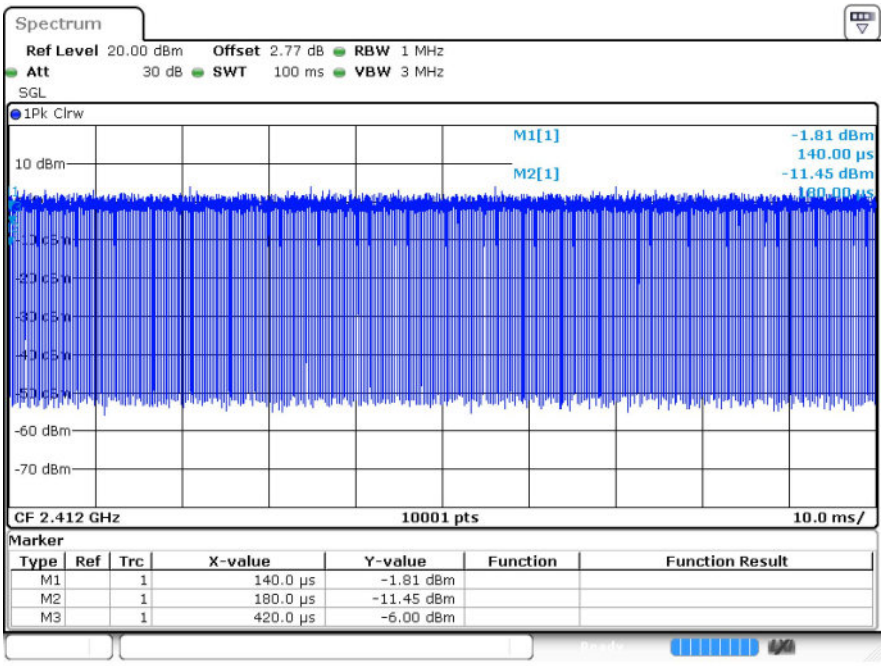


g 2462MHz Ant1

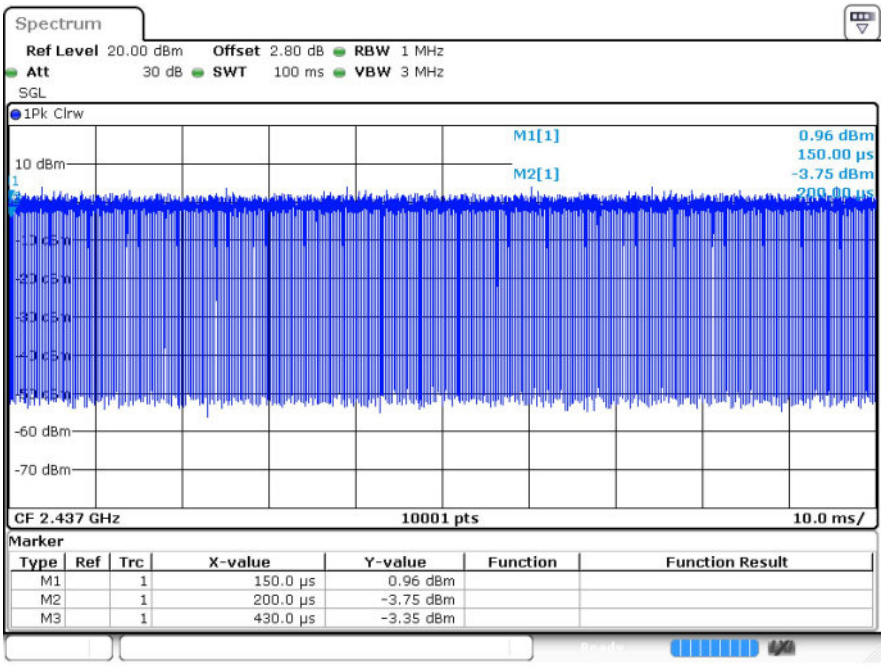


Test Graphs

n20 2412MHz Ant1

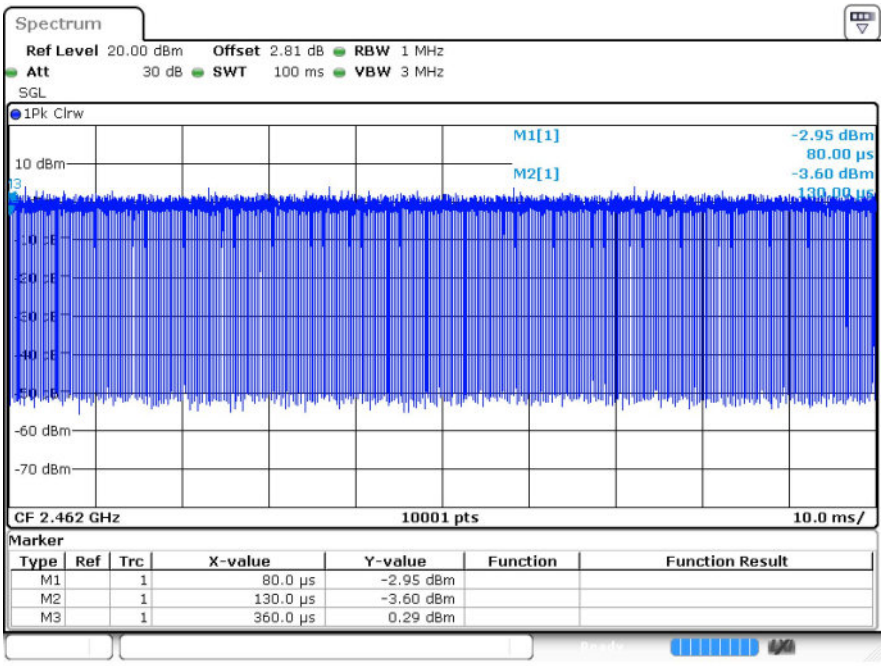


n20 2437MHz Ant1

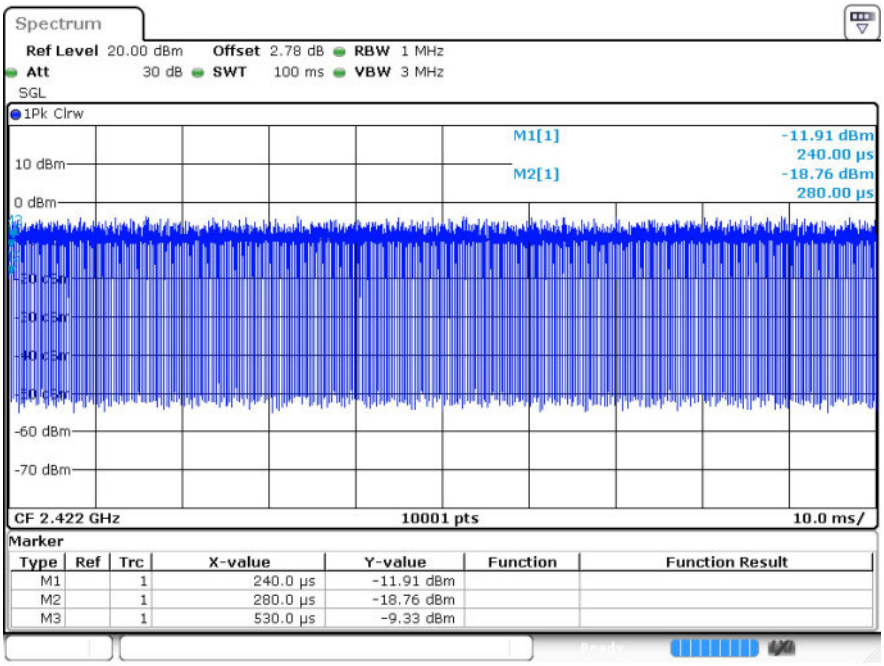


Test Graphs

n20 2462MHz Ant1

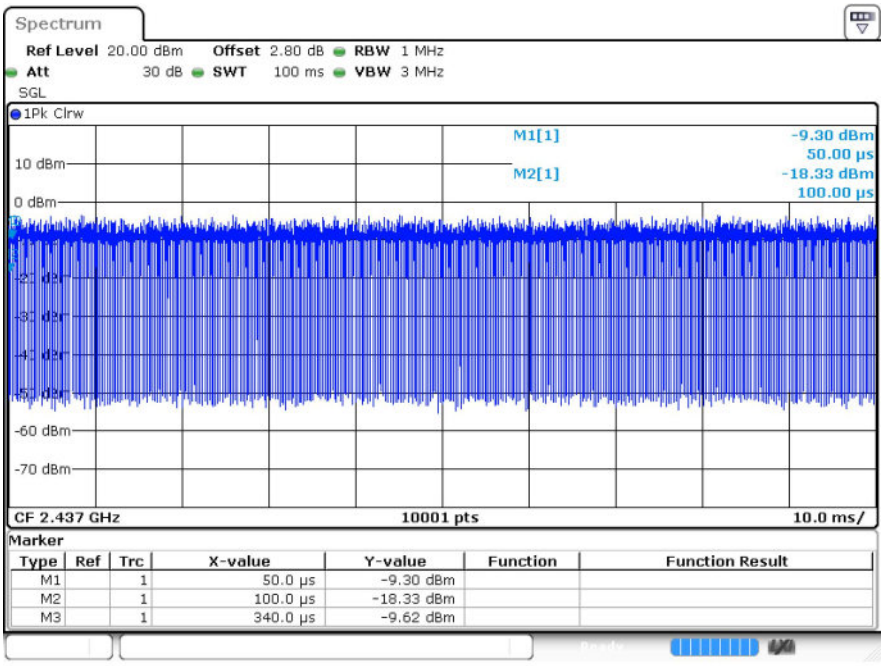


n40 2422MHz Ant1

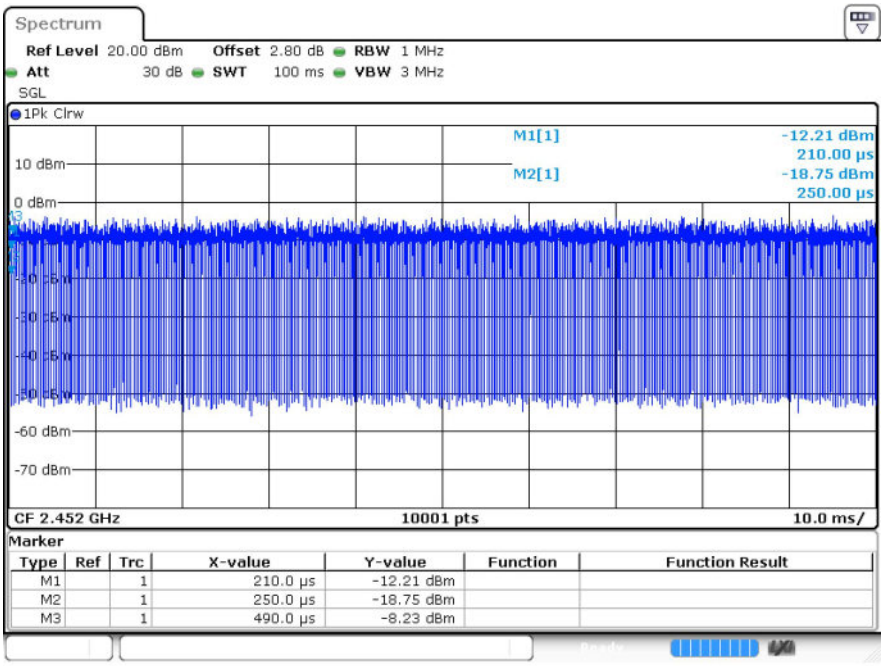


Test Graphs

n40 2437MHz Ant1



n40 2452MHz Ant1



2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	13.43	30	Pass
b	2437	Ant1	13.4	30	Pass
b	2462	Ant1	13.27	30	Pass
g	2412	Ant1	13.02	30	Pass
g	2437	Ant1	12.89	30	Pass
g	2462	Ant1	13	30	Pass
n20	2412	Ant1	12.92	30	Pass
n20	2437	Ant1	12.91	30	Pass
n20	2462	Ant1	12.72	30	Pass
n40	2422	Ant1	12.7	30	Pass
n40	2437	Ant1	12.72	30	Pass
n40	2452	Ant1	12.72	30	Pass

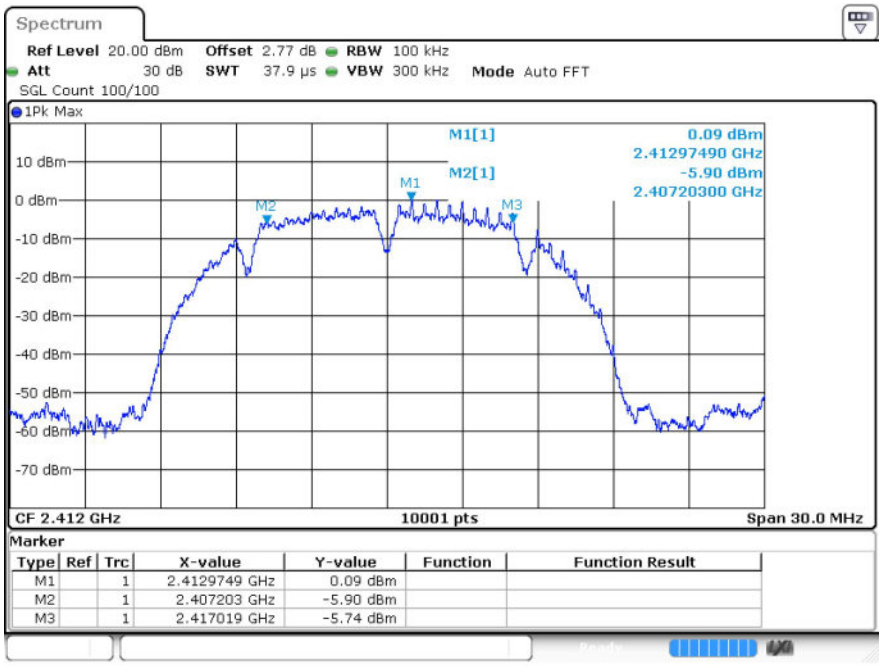
3 -6dB Bandwidth

3.1 Test Result

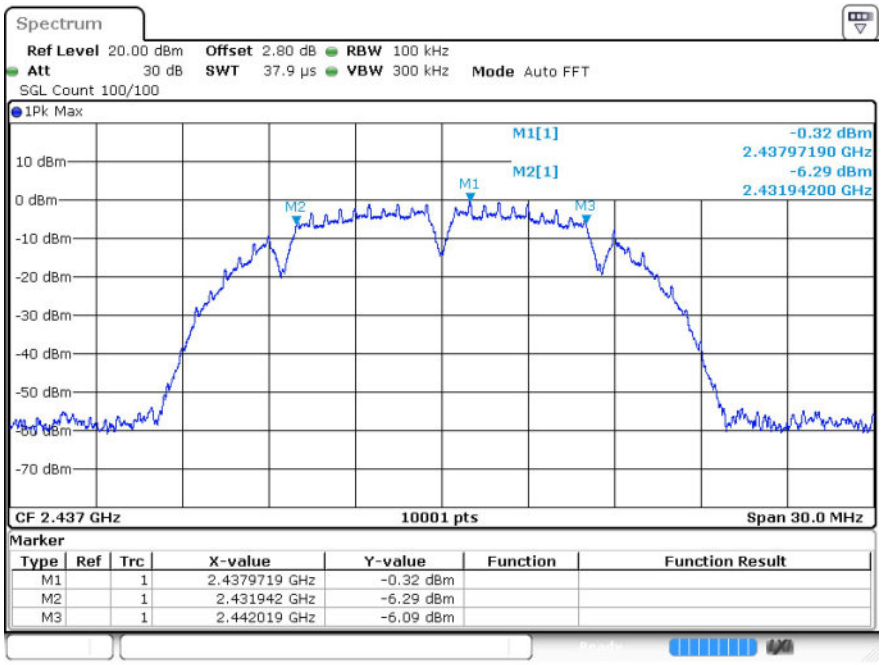
Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	9.816	0.5	Pass
b	2437	Ant1	10.077	0.5	Pass
b	2462	Ant1	10.074	0.5	Pass
g	2412	Ant1	15.105	0.5	Pass
g	2437	Ant1	15.111	0.5	Pass
g	2462	Ant1	15.108	0.5	Pass
n20	2412	Ant1	15.111	0.5	Pass
n20	2437	Ant1	15.063	0.5	Pass
n20	2462	Ant1	16.422	0.5	Pass
n40	2422	Ant1	33.846	0.5	Pass
n40	2437	Ant1	35.07	0.5	Pass
n40	2452	Ant1	35.076	0.5	Pass

3.2 Test Graphs

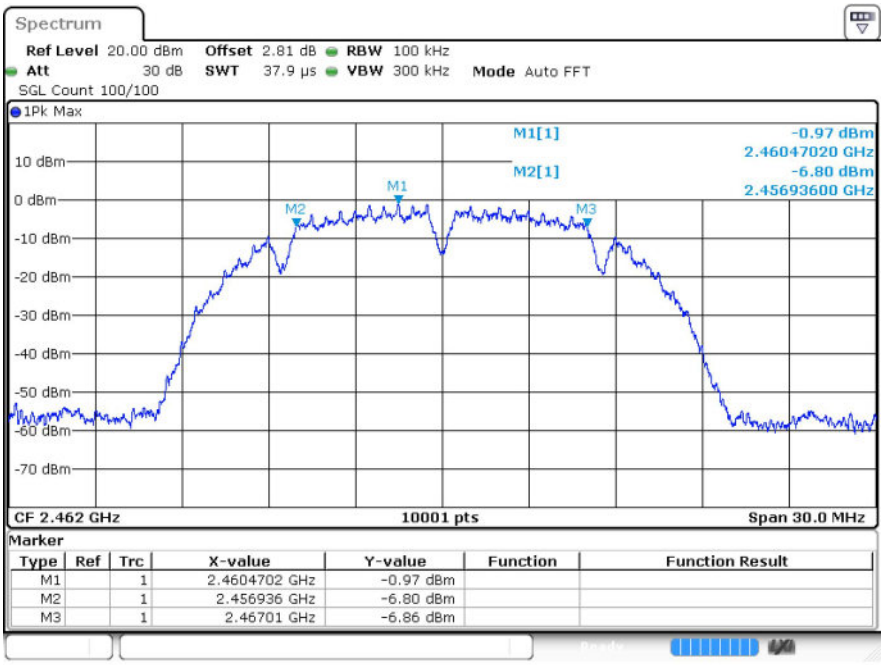
Test Graphs
b 2412MHz Ant1



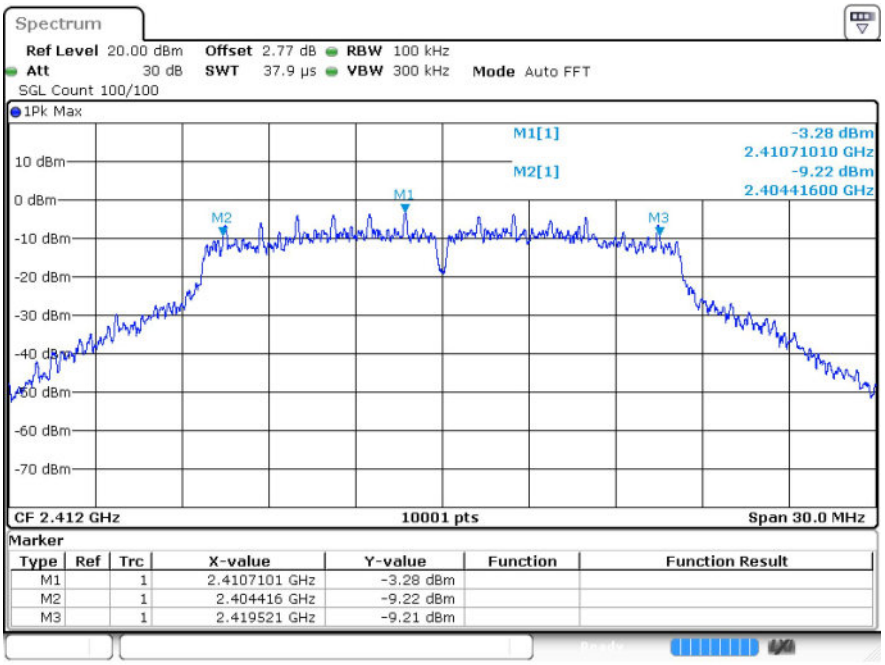
b 2437MHz Ant1



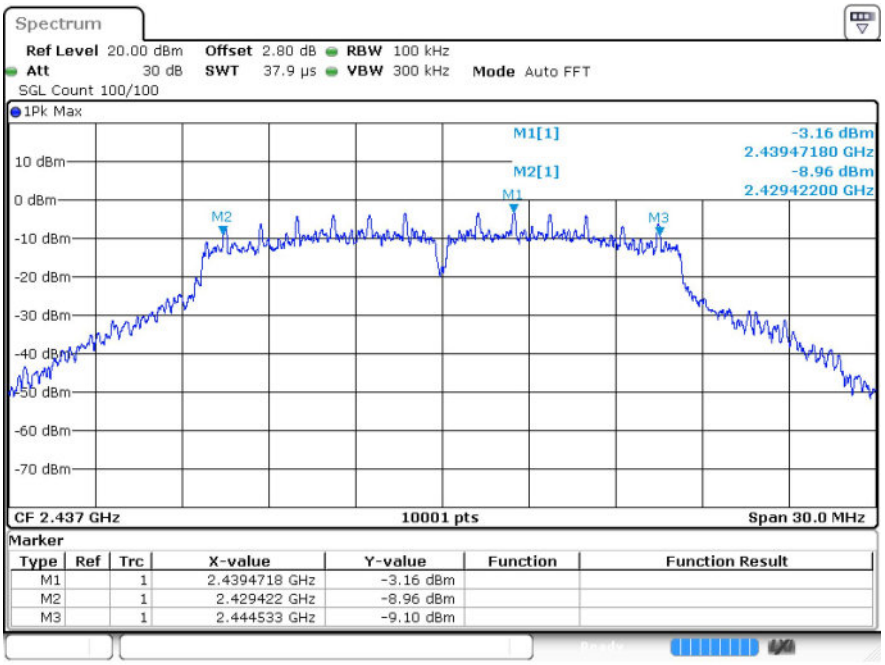
b 2462MHz Ant1



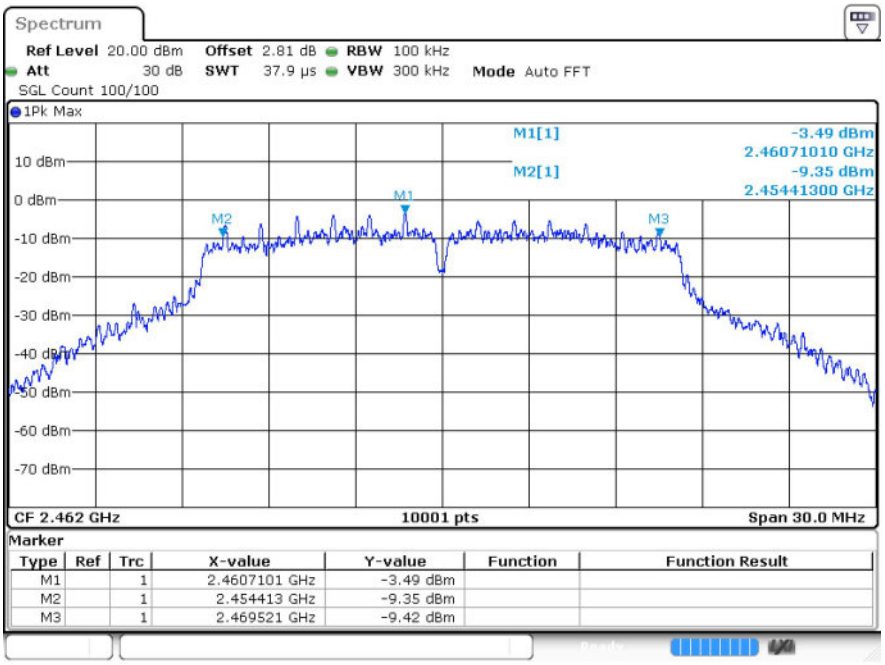
g 2412MHz Ant1



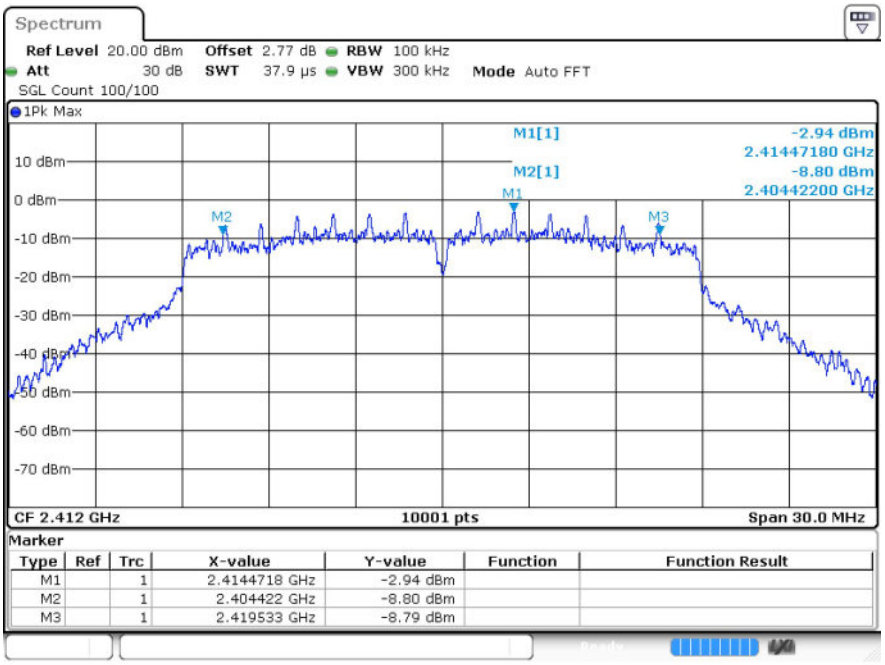
g 2437MHz Ant1



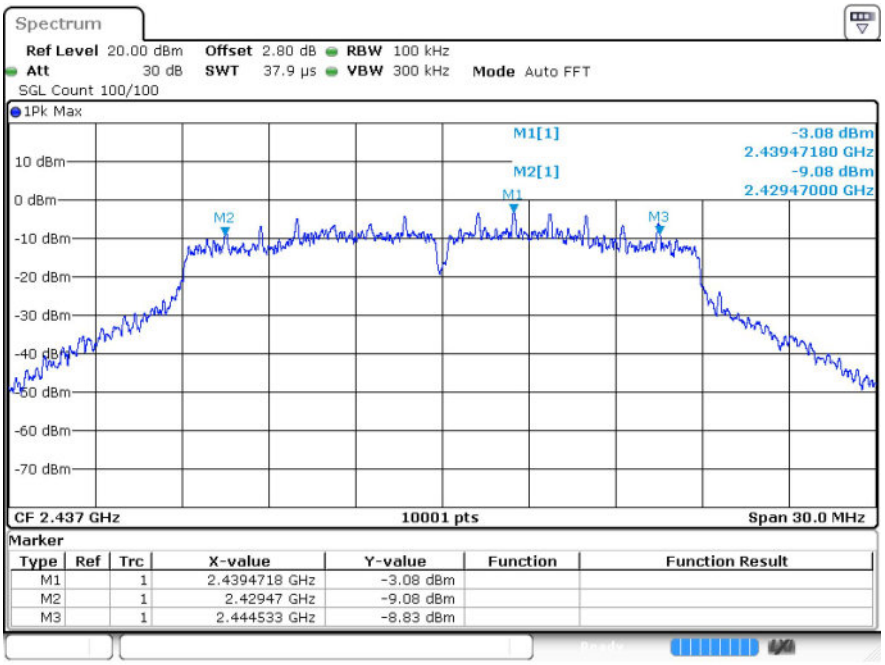
g 2462MHz Ant1



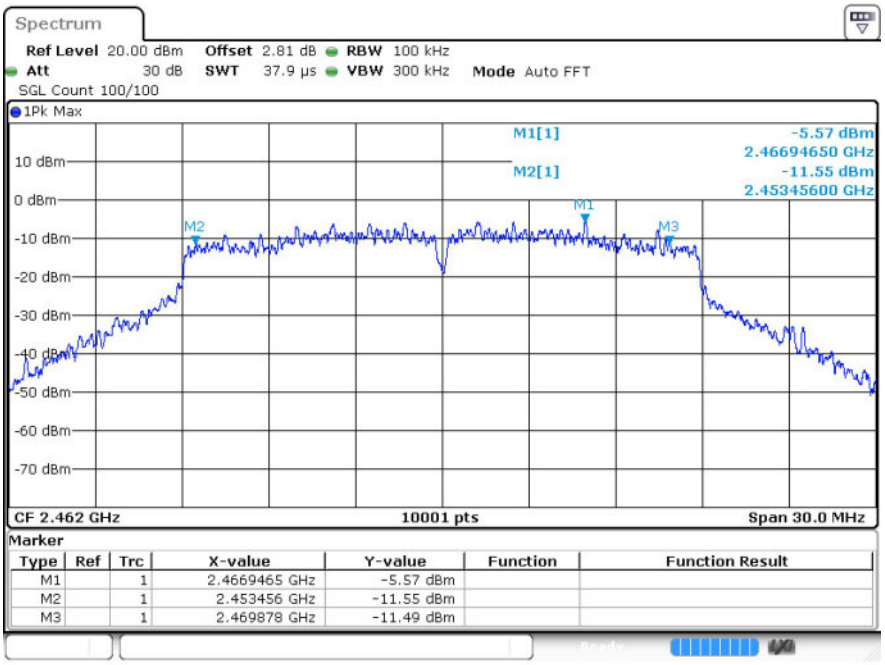
n20 2412MHz Ant1



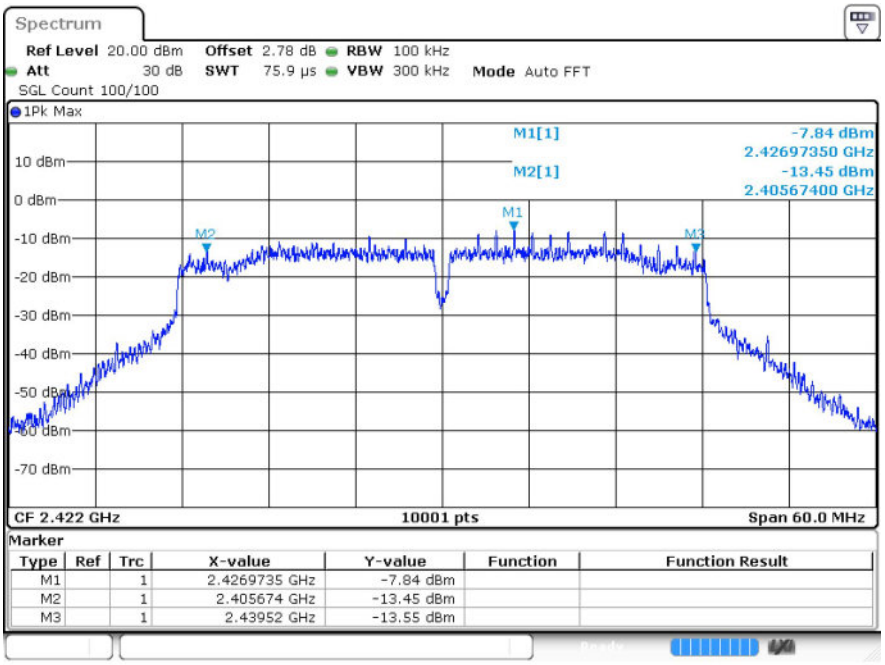
n20 2437MHz Ant1



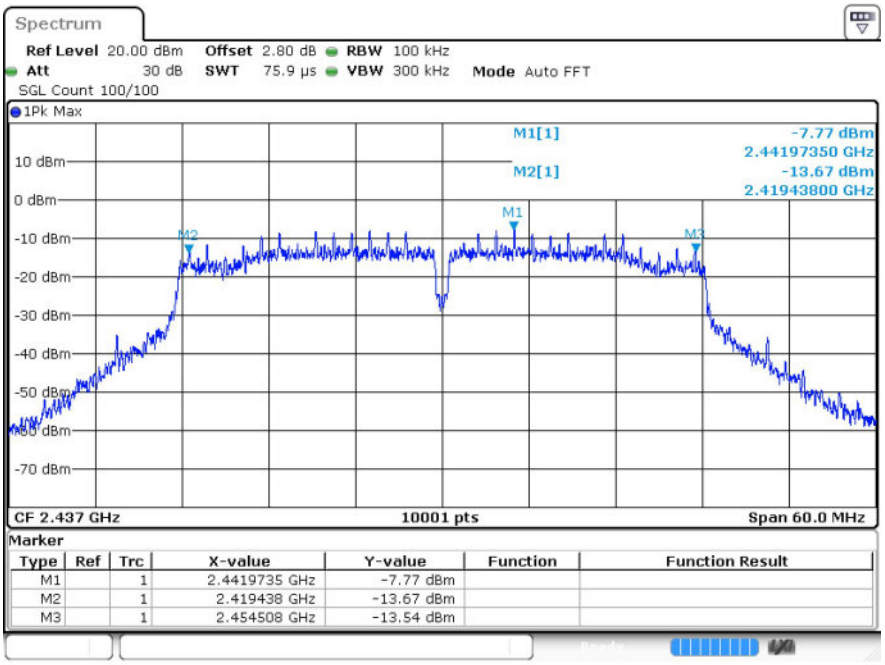
n20 2462MHz Ant1



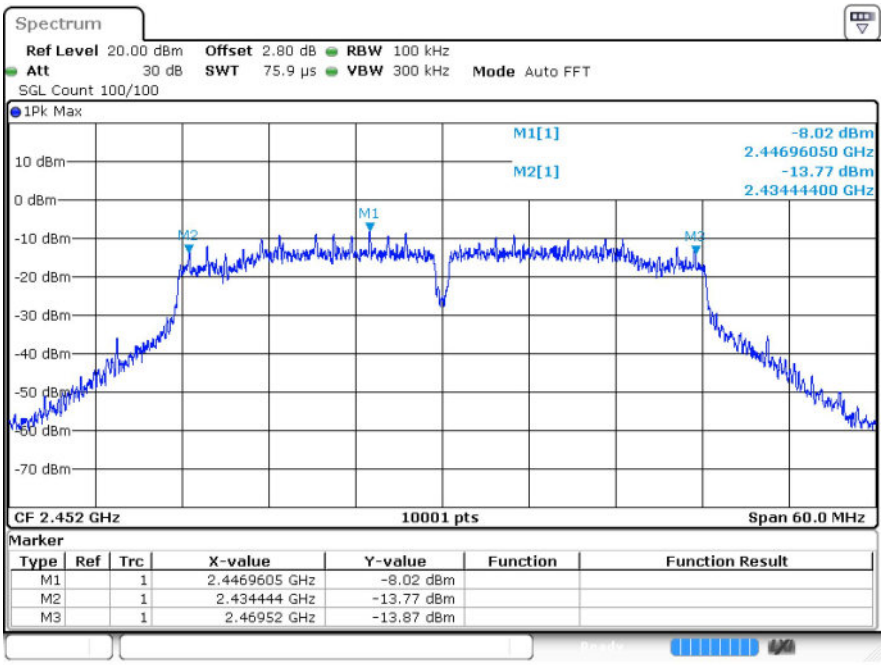
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1

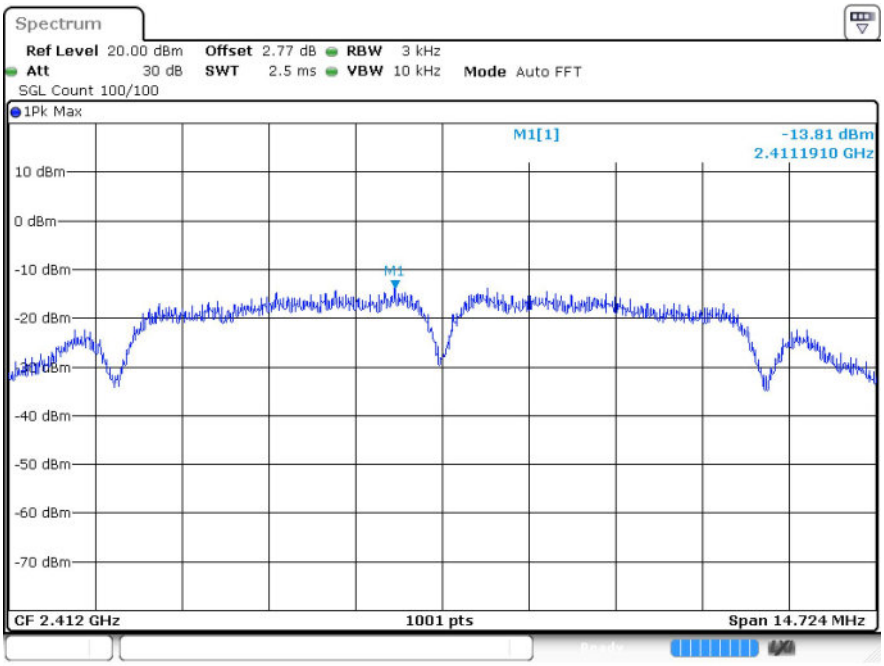
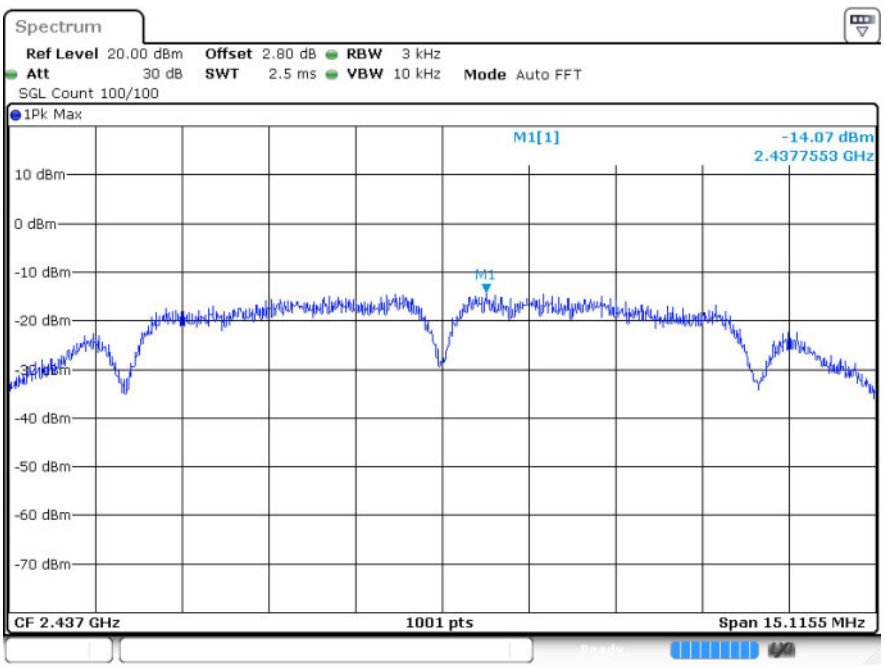


4 Maximum Power Spectral Density Level

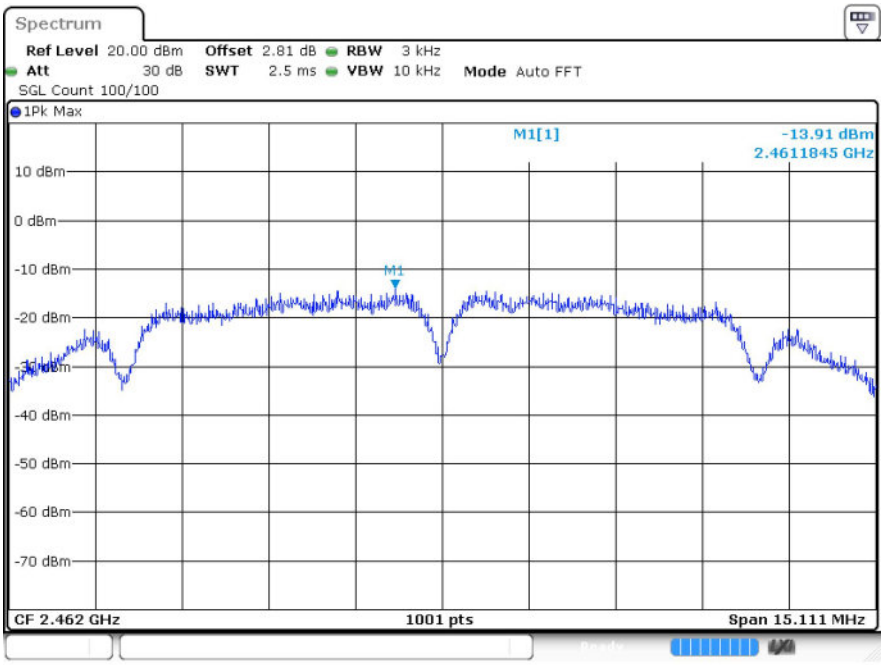
4.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
b	2412	Ant1	-13.81	≤8	Pass
b	2437	Ant1	-14.07	≤8	Pass
b	2462	Ant1	-13.91	≤8	Pass
g	2412	Ant1	-17.58	≤8	Pass
g	2437	Ant1	-18.12	≤8	Pass
g	2462	Ant1	-18.35	≤8	Pass
n20	2412	Ant1	-18.02	≤8	Pass
n20	2437	Ant1	-18.05	≤8	Pass
n20	2462	Ant1	-17.19	≤8	Pass
n40	2422	Ant1	-21.82	≤8	Pass
n40	2437	Ant1	-21.66	≤8	Pass
n40	2452	Ant1	-21.31	≤8	Pass

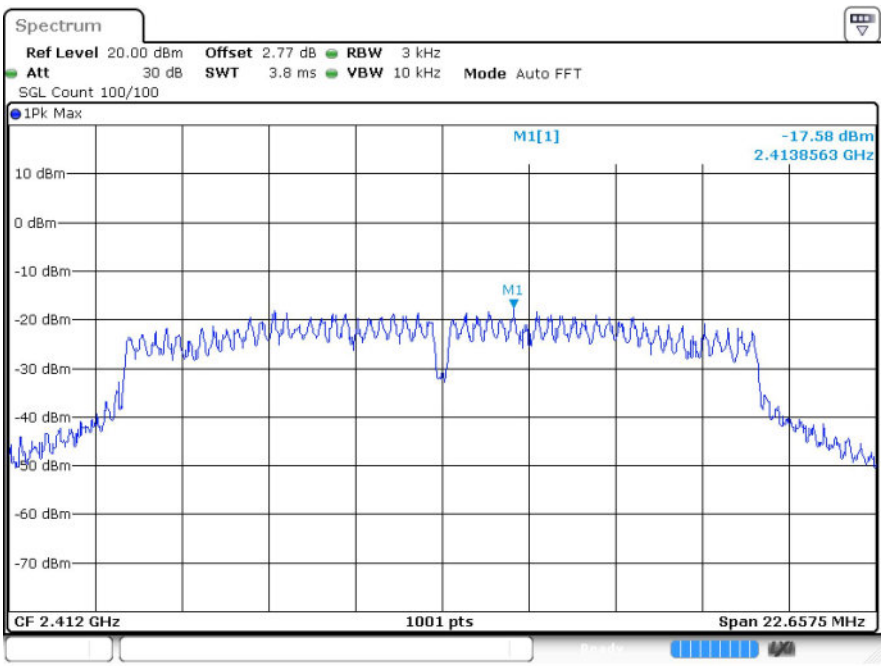
4.2 Test Graphs

Test Graphs
b 2412MHz Ant1

b 2437MHz Ant1


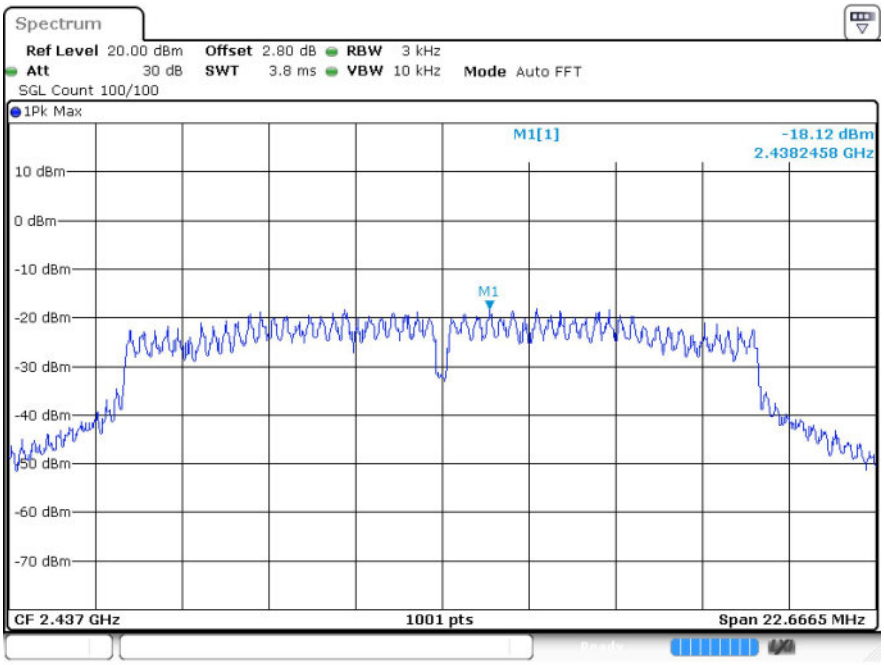
b 2462MHz Ant1



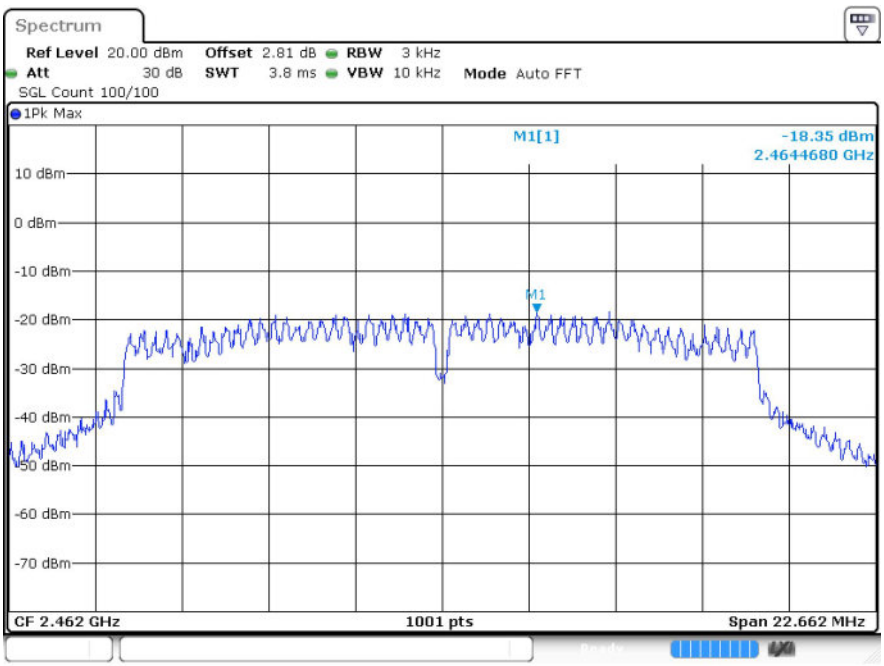
g 2412MHz Ant1



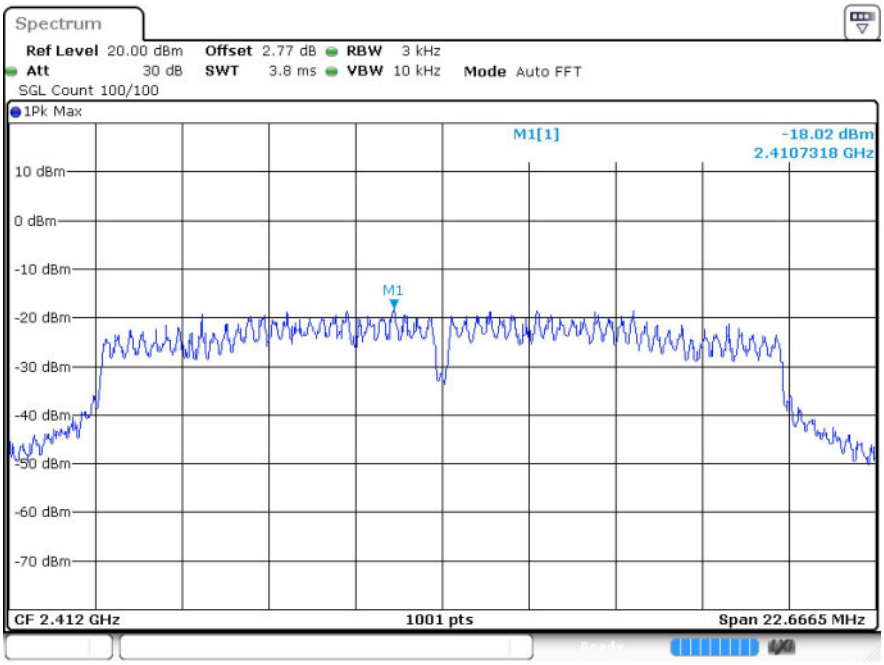
g 2437MHz Ant1



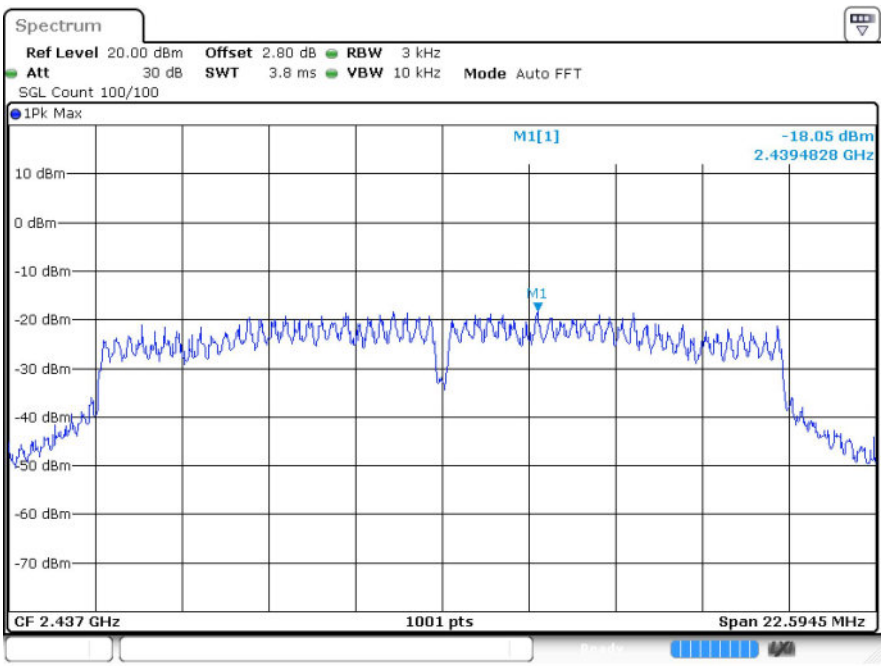
g 2462MHz Ant1



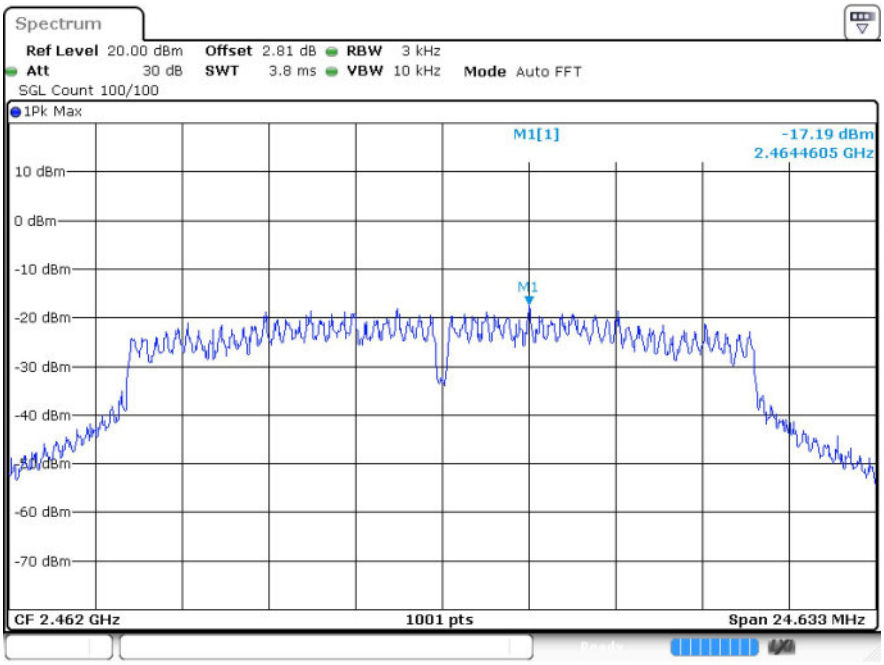
n20 2412MHz Ant1



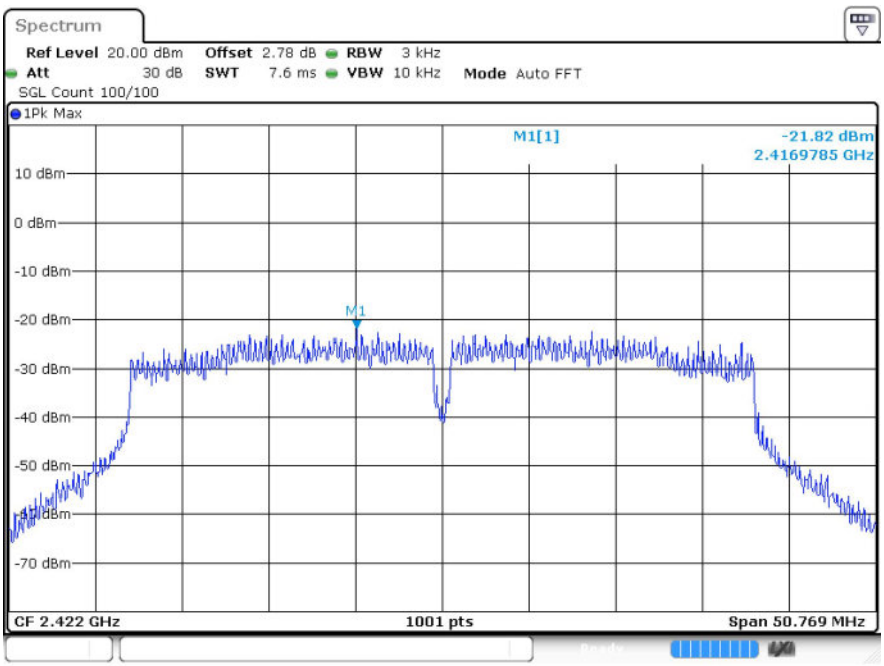
n20 2437MHz Ant1



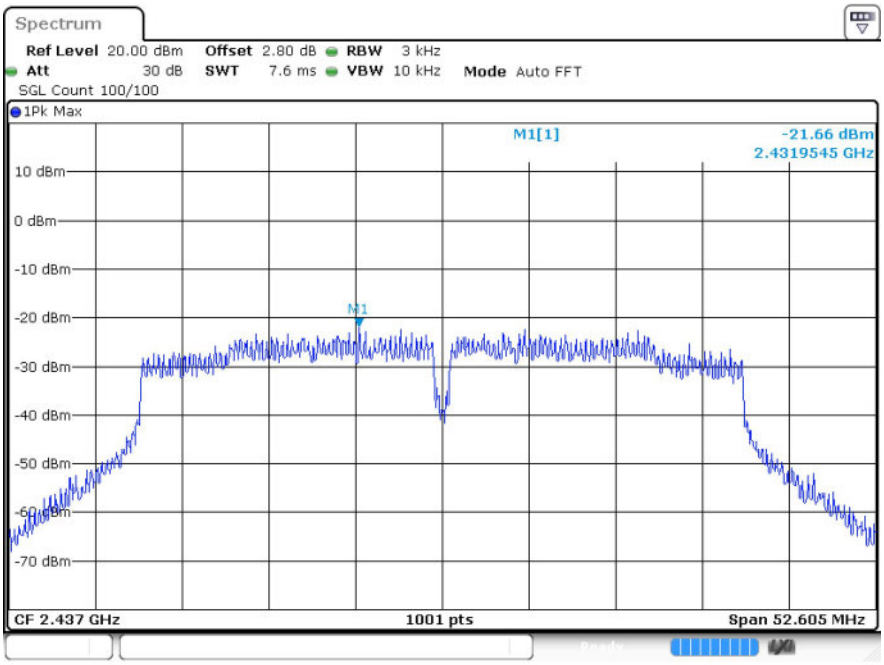
n20 2462MHz Ant1



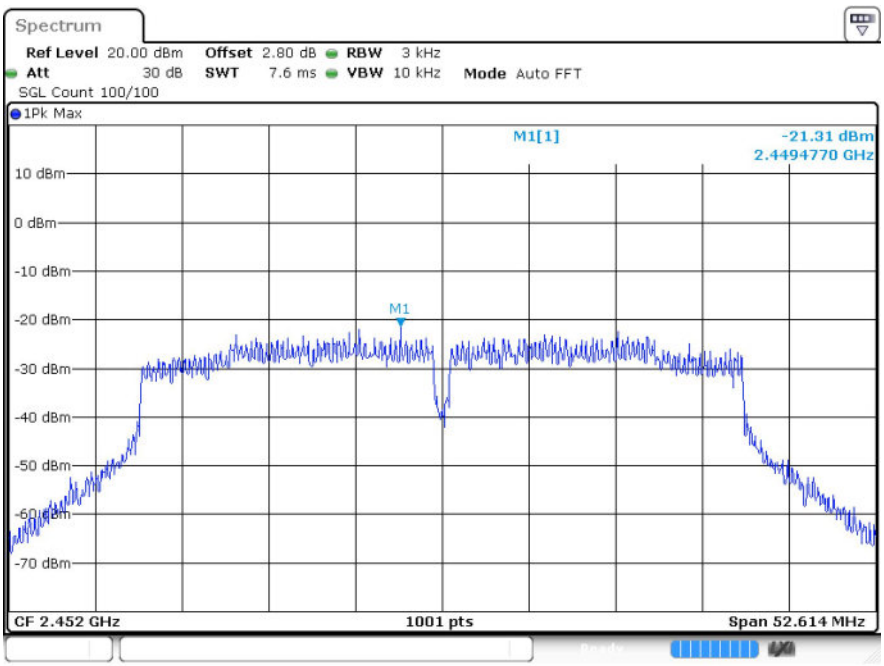
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1



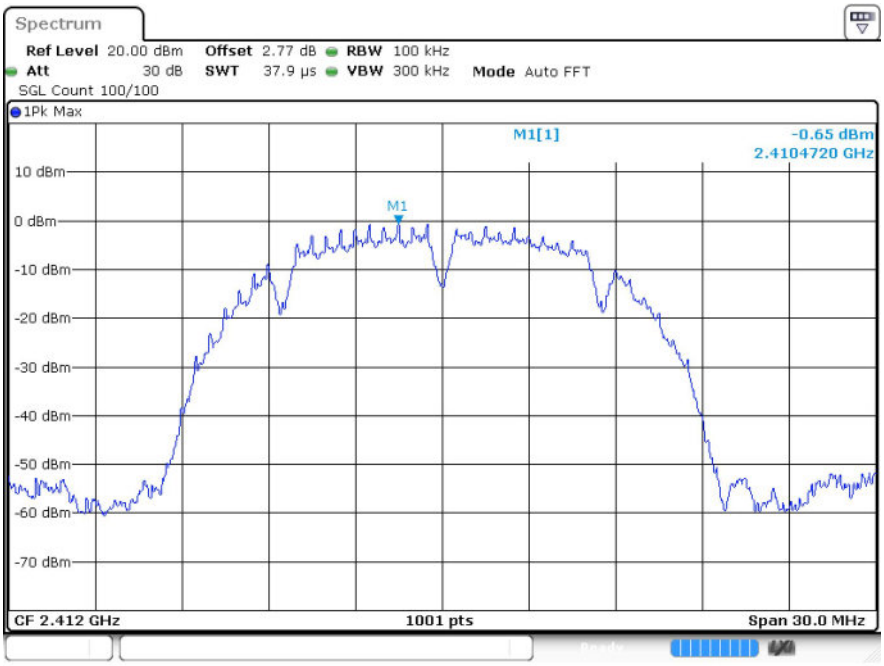
5 Band Edge

5.1 Test Result

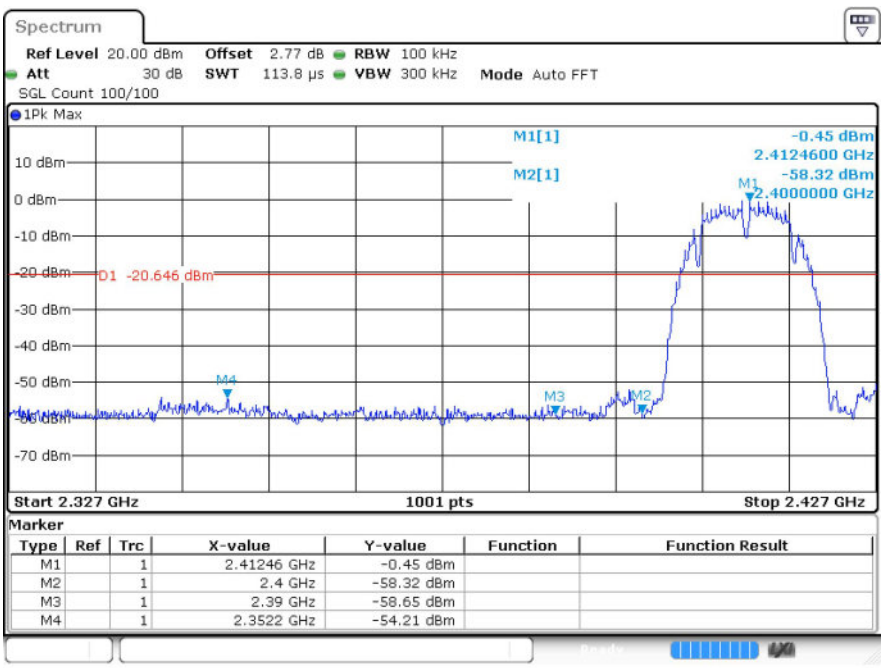
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-53.56	-20	Pass
b	2462	Ant1	-54.06	-20	Pass
g	2412	Ant1	-51.87	-20	Pass
g	2462	Ant1	-52.46	-20	Pass
n20	2412	Ant1	-51.11	-20	Pass
n20	2462	Ant1	-53.2	-20	Pass
n40	2422	Ant1	-47.84	-20	Pass
n40	2452	Ant1	-47.55	-20	Pass

5.2 Test Graphs

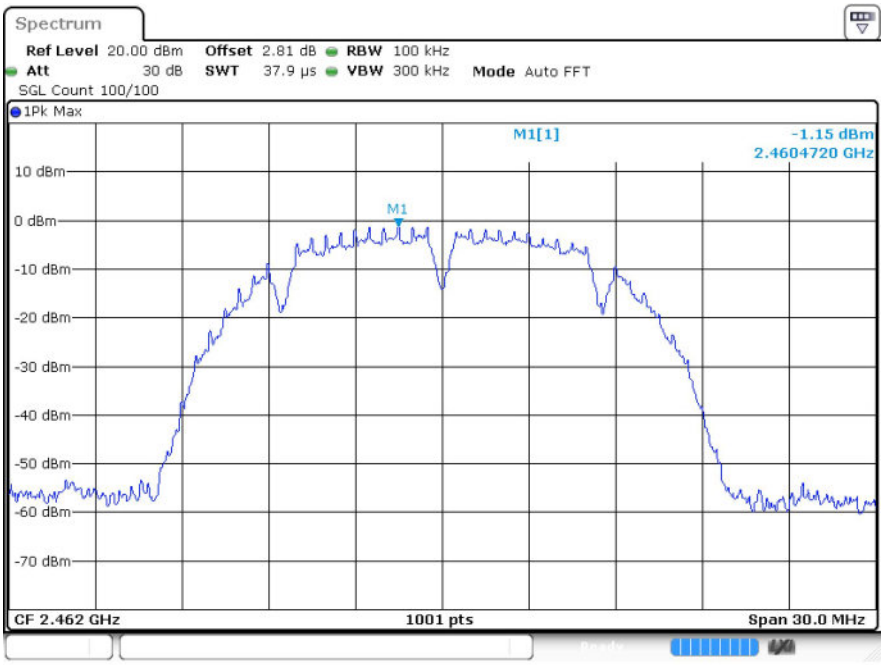
Test Graphs
b 2412MHz Ant1 Ref



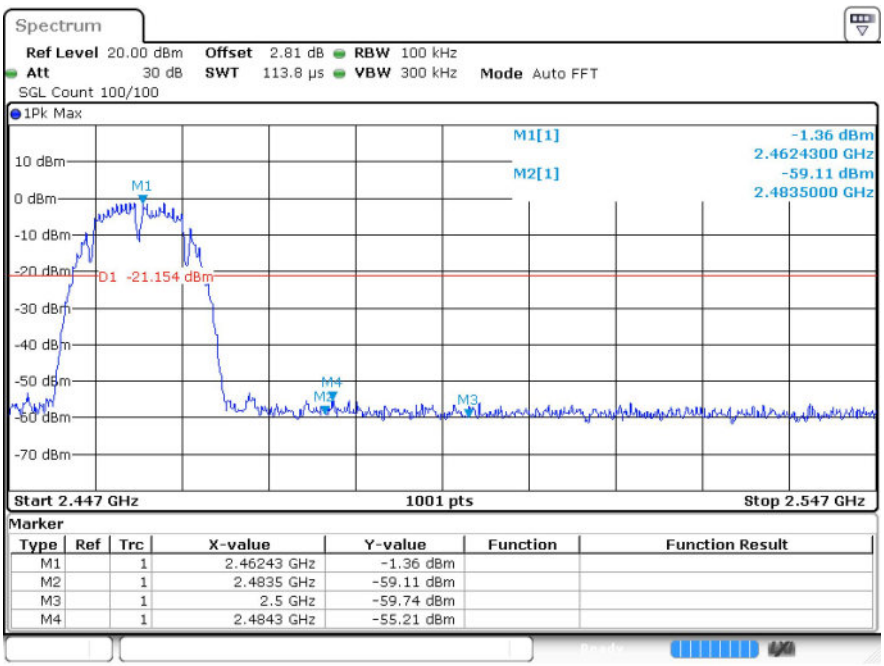
b 2412MHz Ant1 Emission



b 2462MHz Ant1 Ref



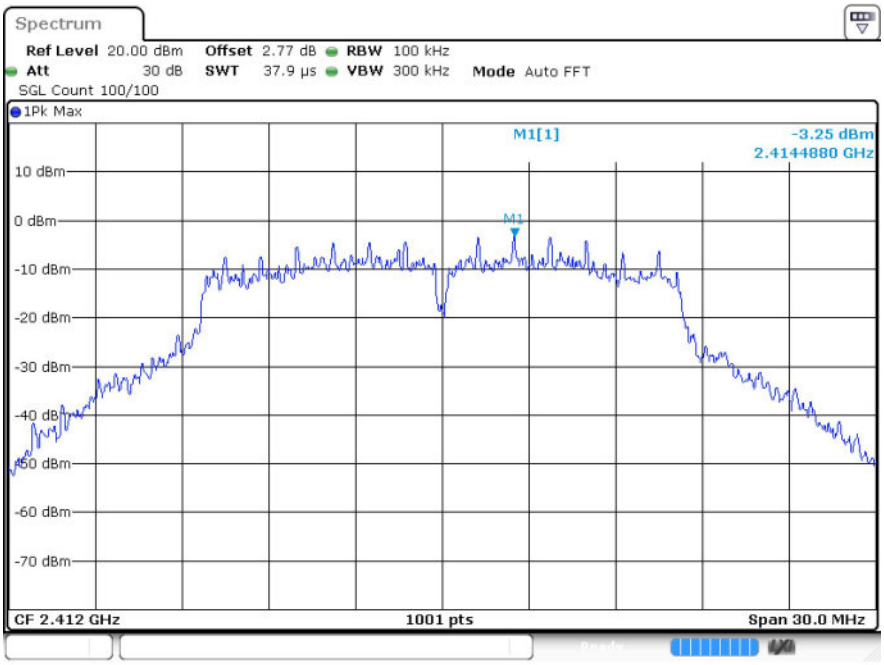
b 2462MHz Ant1 Emission



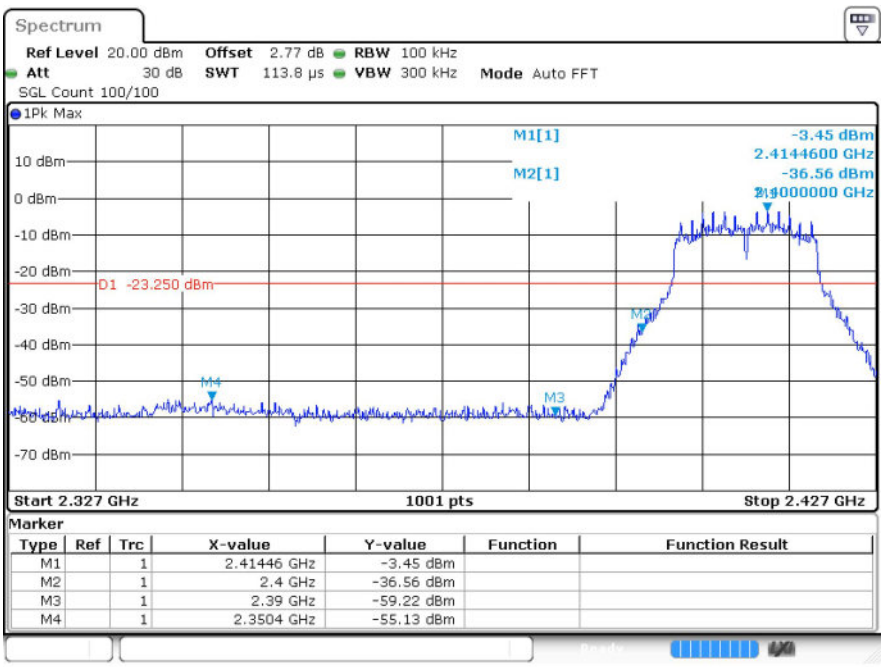
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46243 GHz	-1.36 dBm		
M2		1	2.4835 GHz	-59.11 dBm		
M3		1	2.5 GHz	-59.74 dBm		
M4		1	2.4843 GHz	-55.21 dBm		

g 2412MHz Ant1 Ref



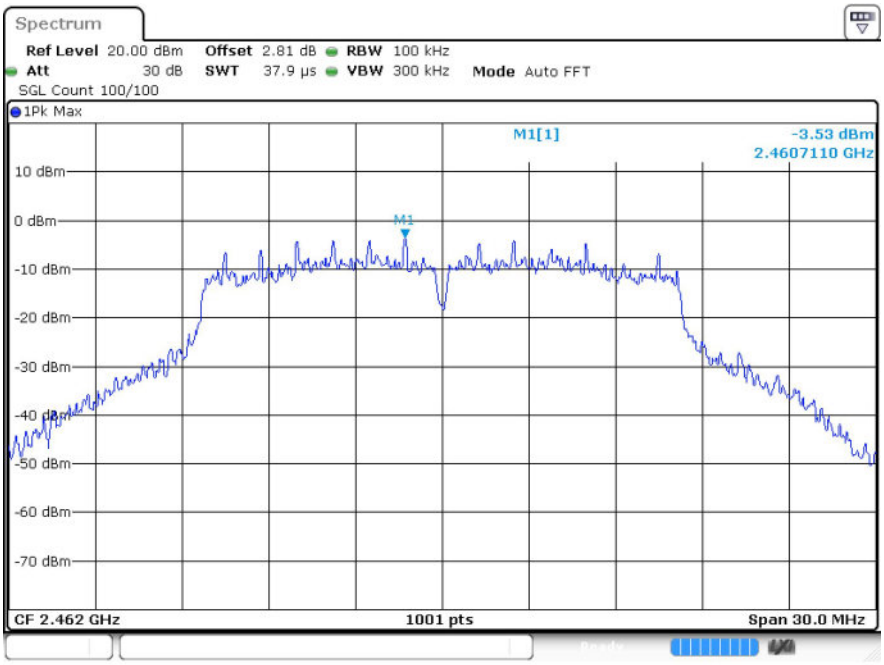
g 2412MHz Ant1 Emission



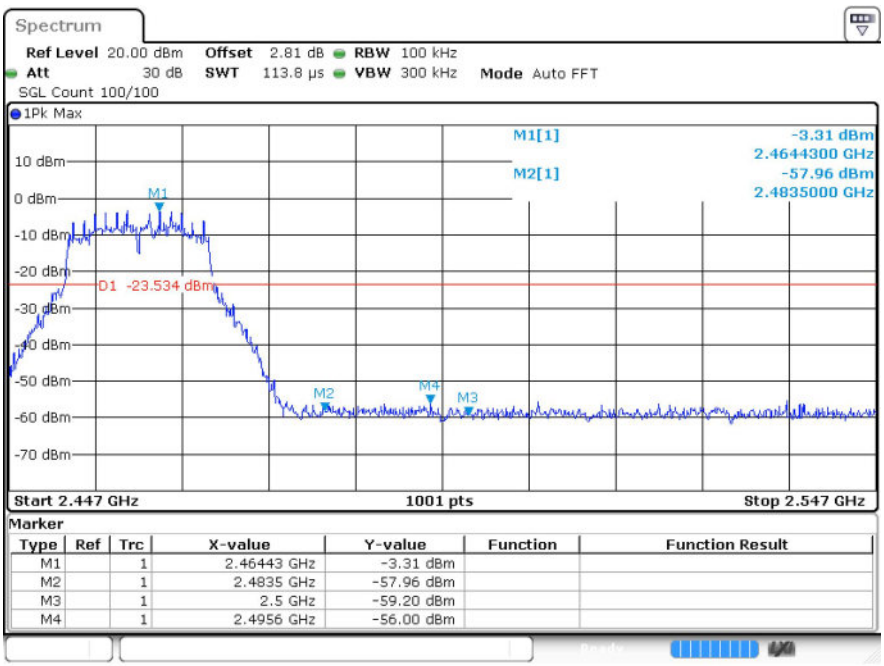
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41446 GHz	-3.45 dBm		
M2		1	2.4 GHz	-36.56 dBm		
M3		1	2.39 GHz	-59.22 dBm		
M4		1	2.3504 GHz	-55.13 dBm		

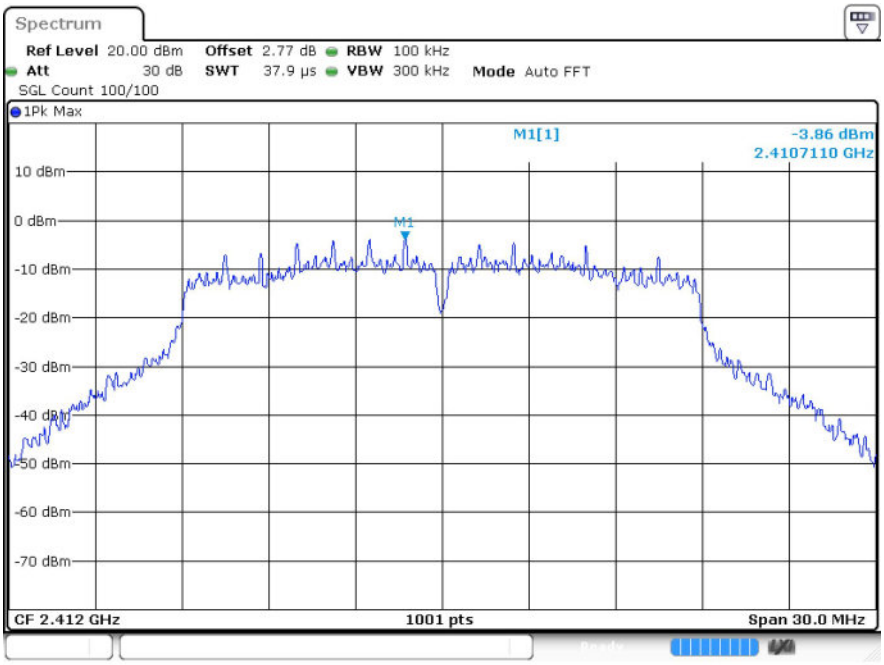
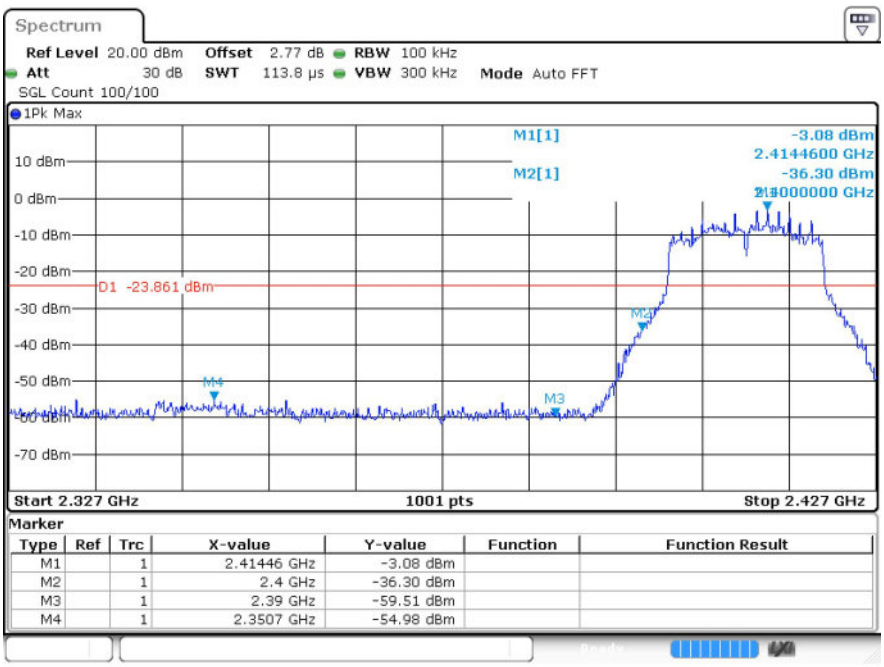
g 2462MHz Ant1 Ref



g 2462MHz Ant1 Emission



n20 2412MHz Ant1 Ref



n20 2412MHz Ant1 Emission