Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Intelligent Vacuum Cleaner

Trade Mark: N/A

Test Model: F8S

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 Maximum Conducted Output Power

1.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	13.21	30	Pass
b	2437	Ant1	13.25	30	Pass
b	2462	Ant1	12.52	30	Pass
g	2412	Ant1	11.74	30	Pass
g	2437	Ant1	11.72	30	Pass
g	2462	Ant1	11.39	30	Pass
n20	2412	Ant1	10.28	30	Pass
n20	2437	Ant1	10.71	30	Pass
n20	2462	Ant1	10	30	Pass
n40	2422	Ant1	9.65	30	Pass
n40	2437	Ant1	10.14	30	Pass
n40	2452	Ant1	9.98	30	Pass

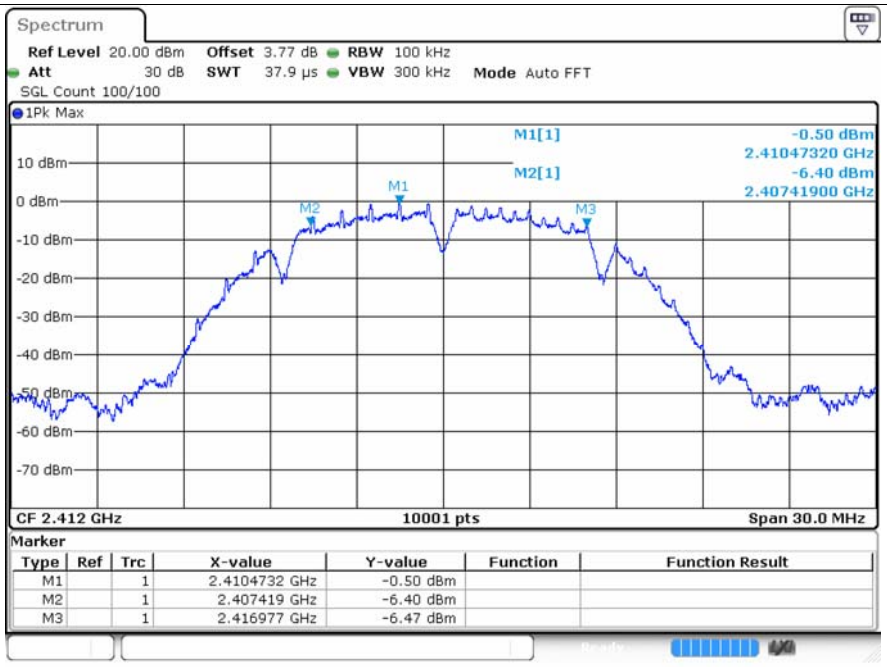
2 -6dB Bandwidth

2.1 Test Result

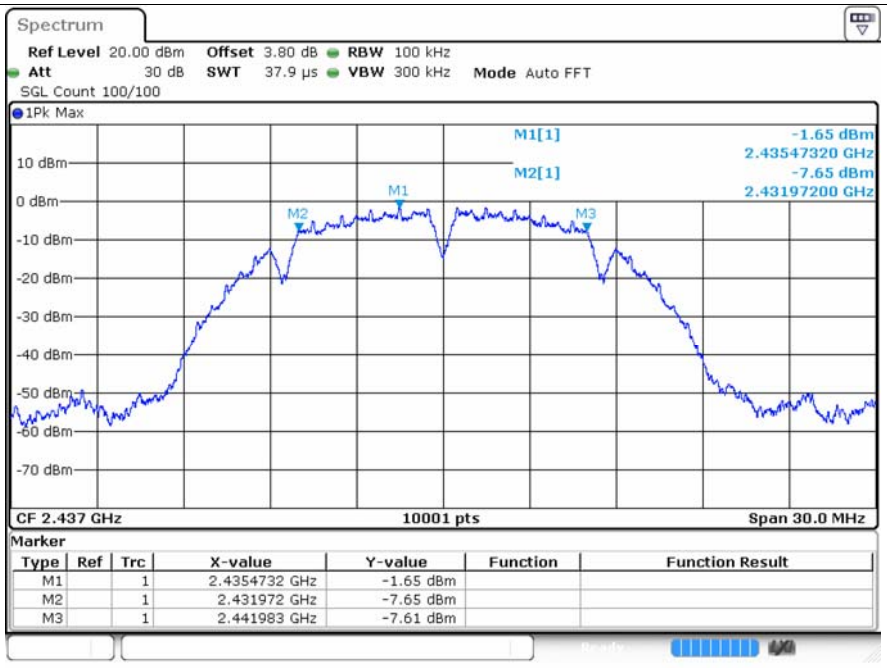
Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	9.558	0.5	Pass
b	2437	Ant1	10.011	0.5	Pass
b	2462	Ant1	9.888	0.5	Pass
g	2412	Ant1	13.575	0.5	Pass
g	2437	Ant1	16.311	0.5	Pass
g	2462	Ant1	16.047	0.5	Pass
n20	2412	Ant1	15.681	0.5	Pass
n20	2437	Ant1	15.051	0.5	Pass
n20	2462	Ant1	13.851	0.5	Pass
n40	2422	Ant1	30.084	0.5	Pass
n40	2437	Ant1	33.81	0.5	Pass
n40	2452	Ant1	35.124	0.5	Pass

2.2 Test Graphs

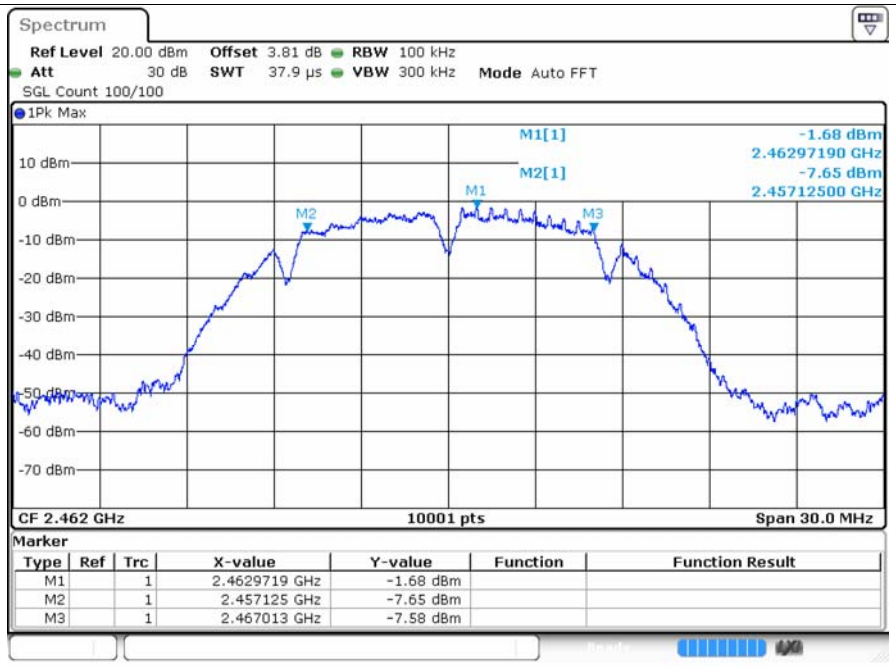
Test Graphs
b 2412MHz Ant1



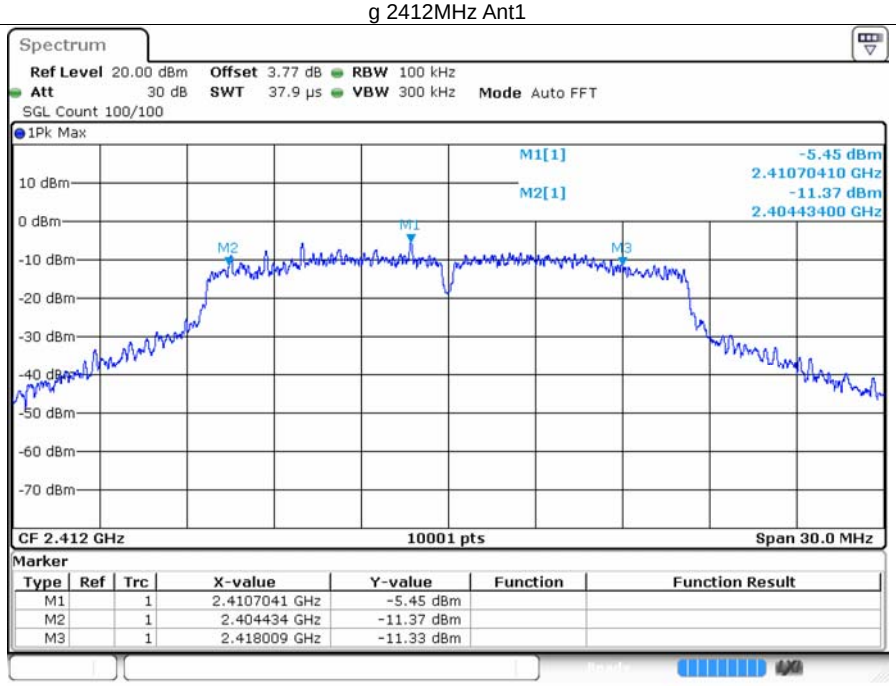
b 2437MHz Ant1



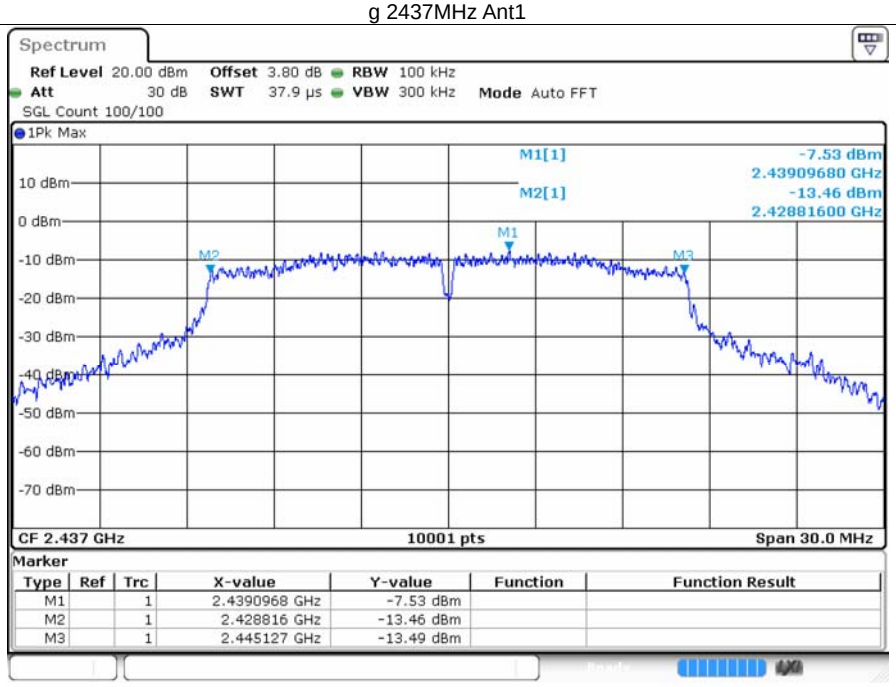
b 2462MHz Ant1



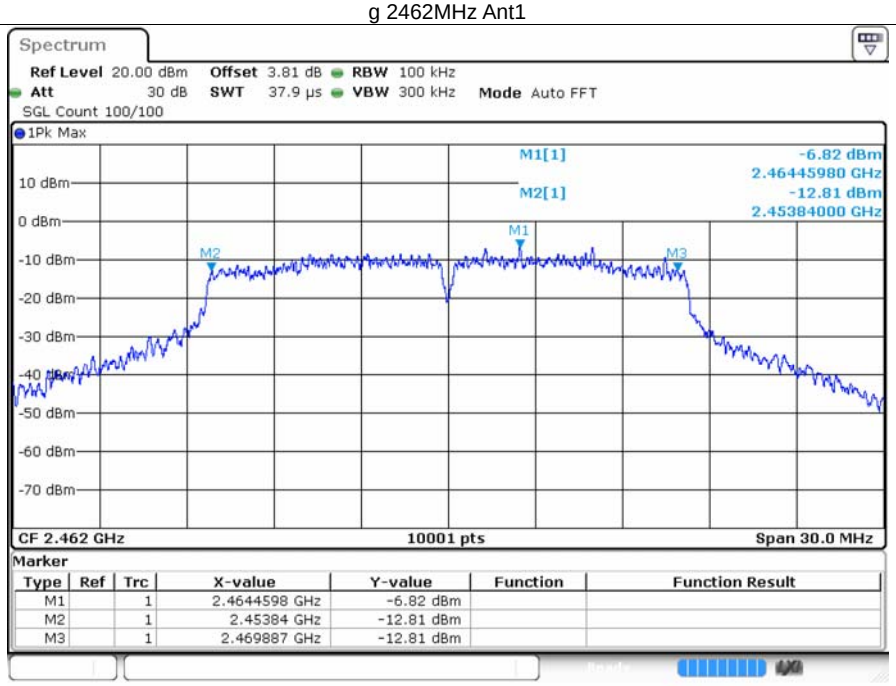
g 2412MHz Ant1



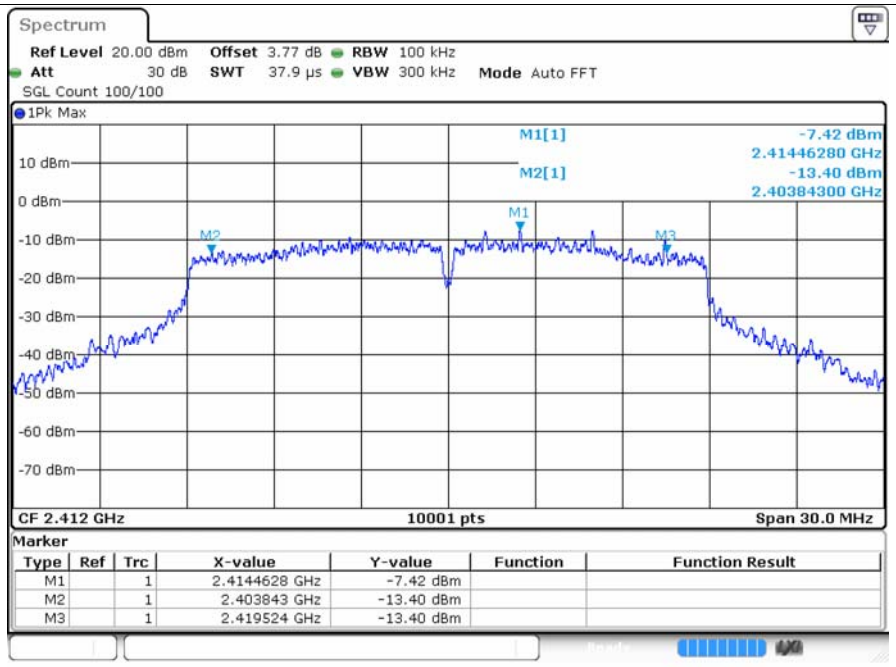
g 2437MHz Ant1



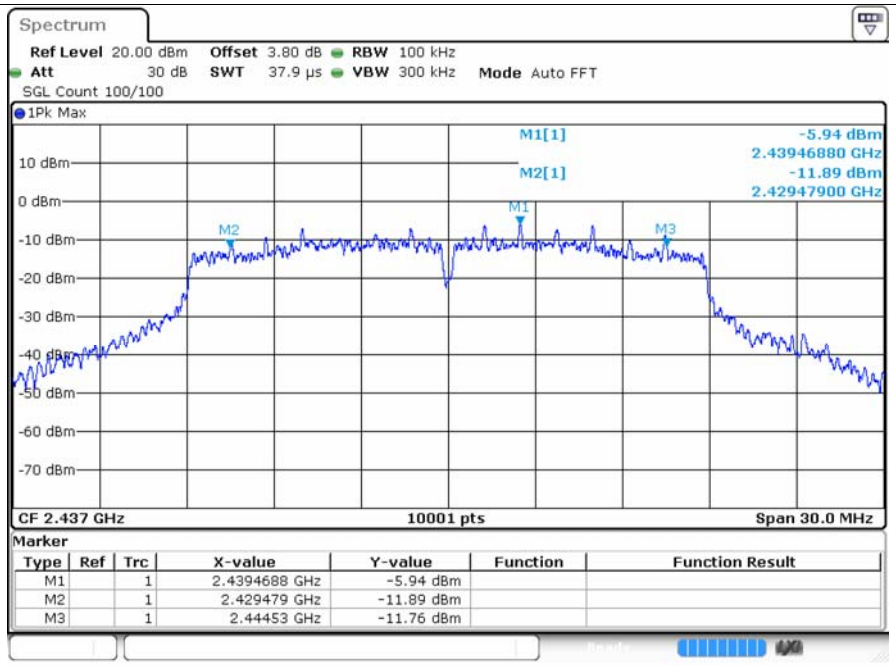
g 2462MHz Ant1



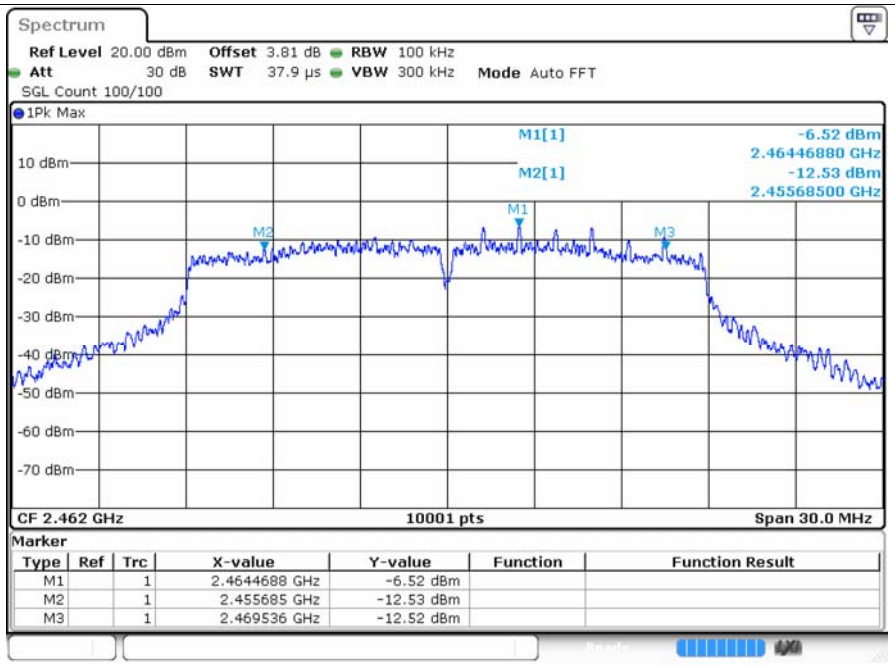
n20 2412MHz Ant1



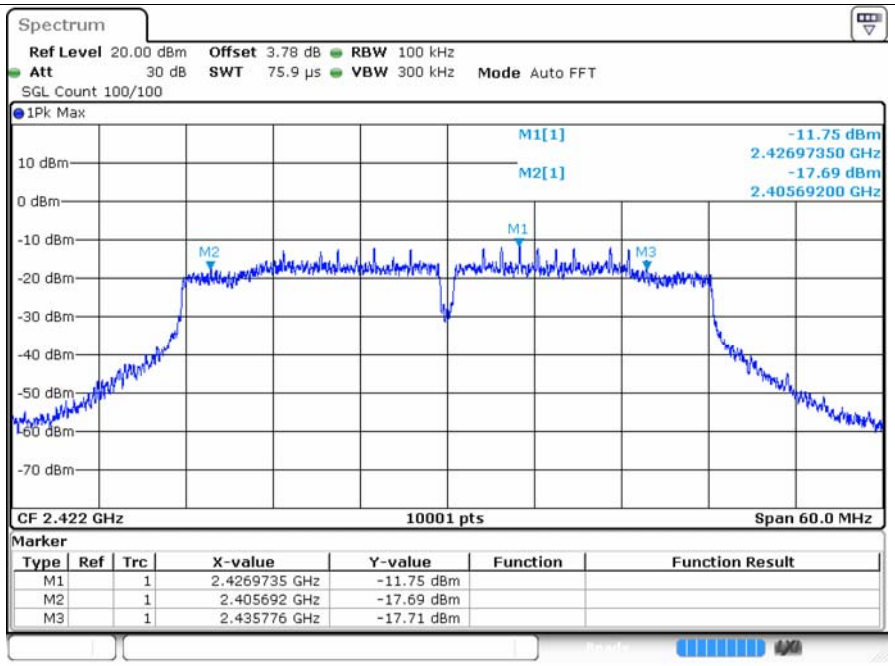
n20 2437MHz Ant1



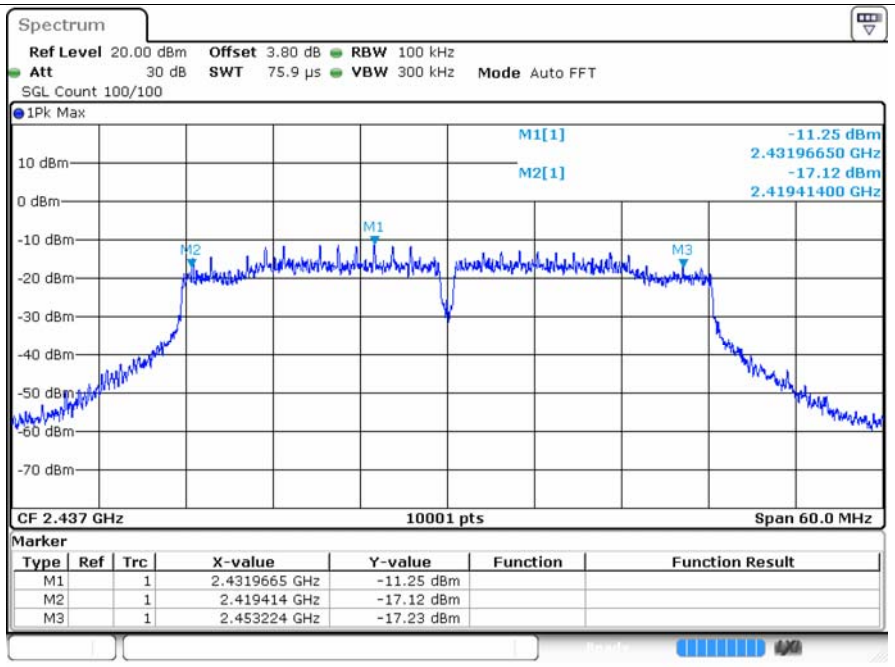
n20 2462MHz Ant1



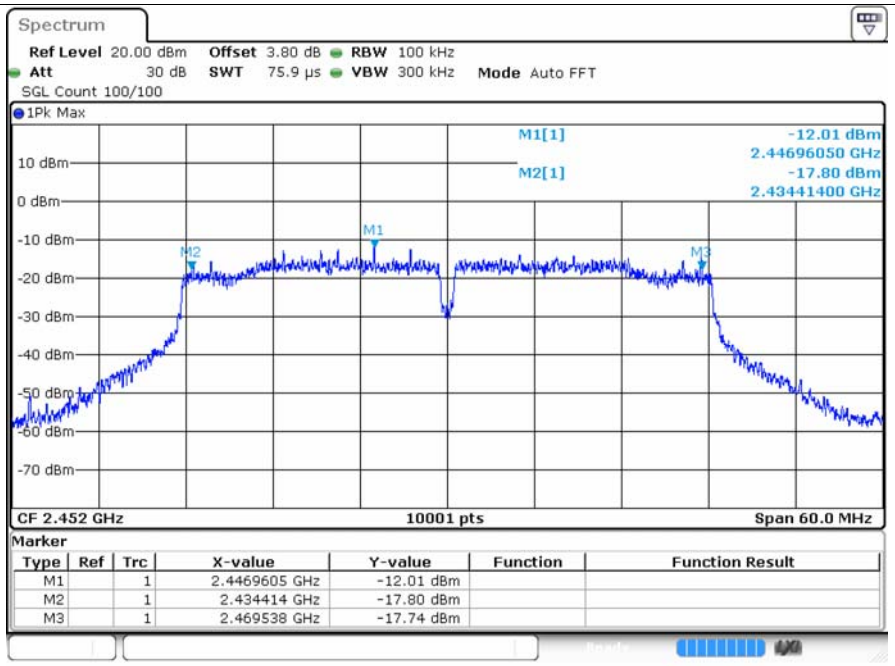
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1

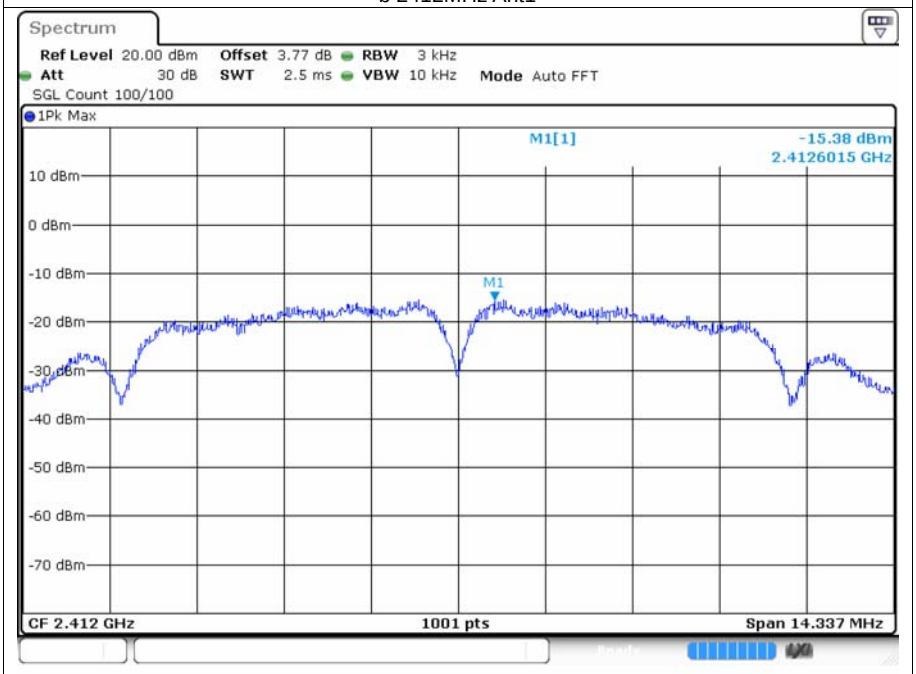
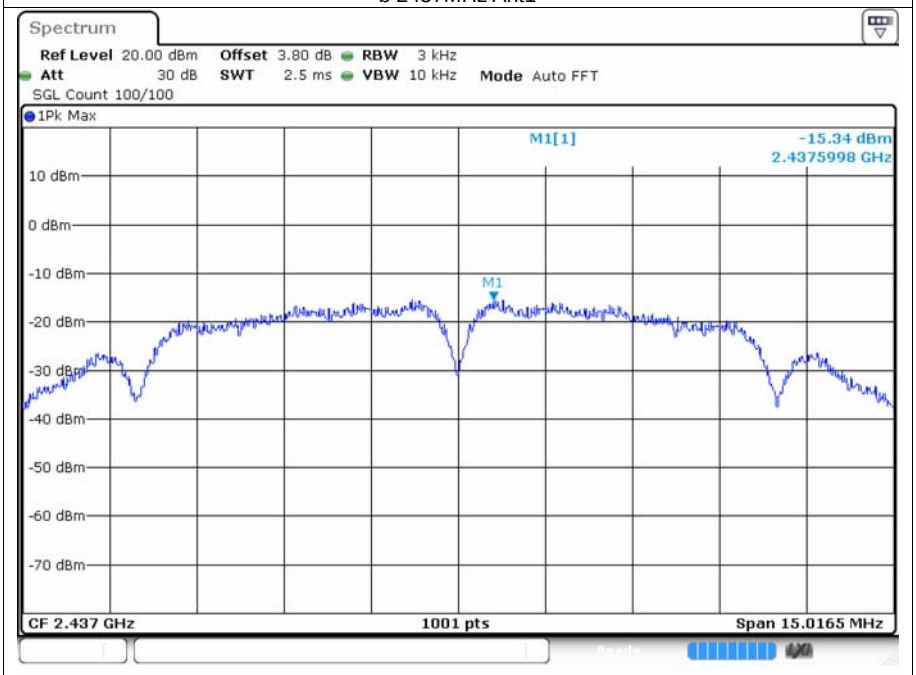


3 Maximum Power Spectral Density Level

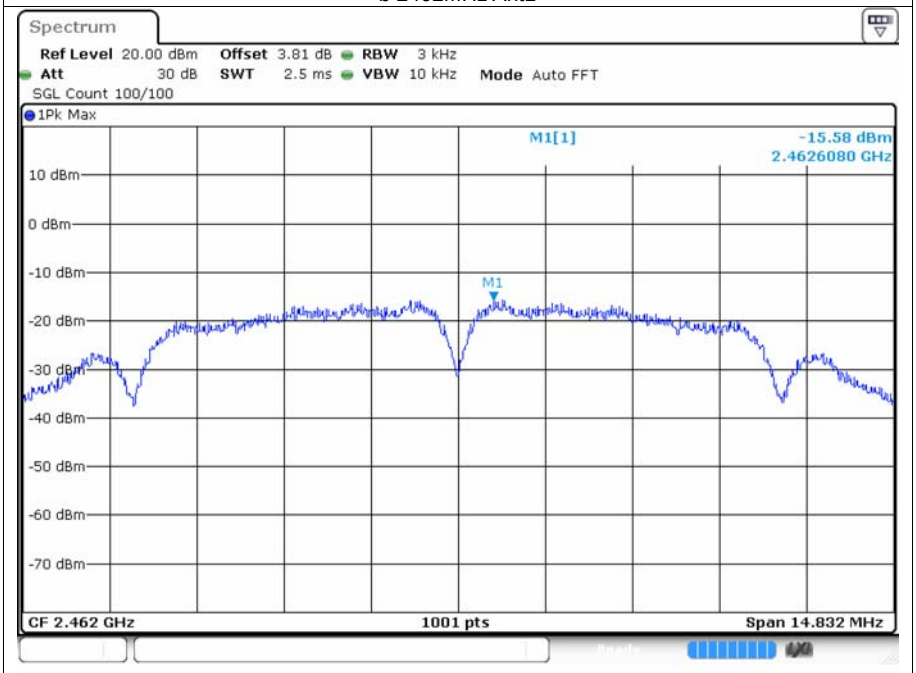
3.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	-15.38	8	Pass
b	2437	Ant1	-15.34	8	Pass
b	2462	Ant1	-15.58	8	Pass
g	2412	Ant1	-18.94	8	Pass
g	2437	Ant1	-18.84	8	Pass
g	2462	Ant1	-19.51	8	Pass
n20	2412	Ant1	-19.71	8	Pass
n20	2437	Ant1	-18.87	8	Pass
n20	2462	Ant1	-20.28	8	Pass
n40	2422	Ant1	-25.05	8	Pass
n40	2437	Ant1	-24.46	8	Pass
n40	2452	Ant1	-24.55	8	Pass

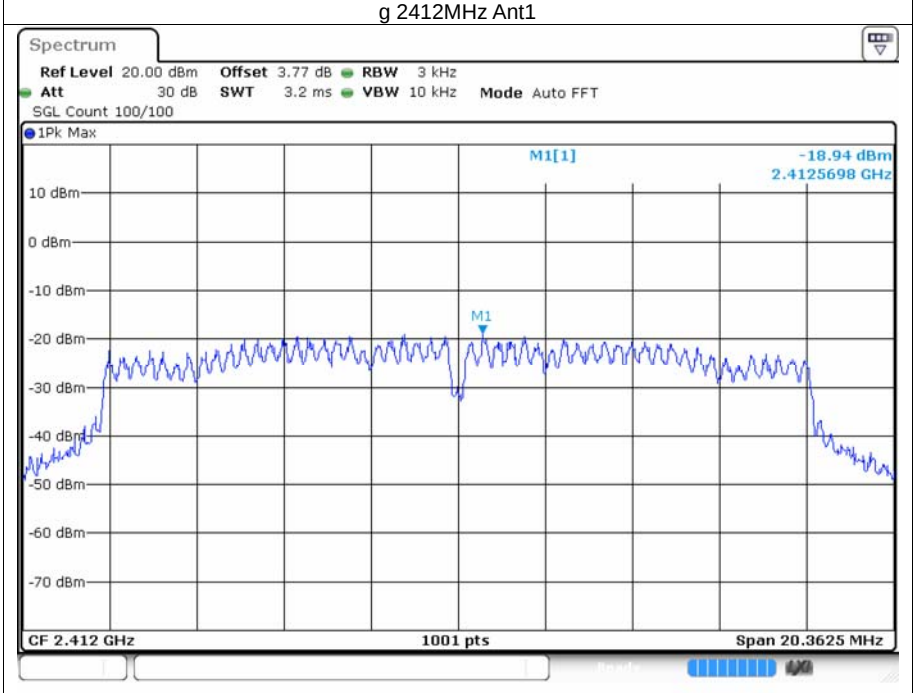
3.2 Test Graphs

Test Graphs
b 2412MHz Ant1

b 2437MHz Ant1


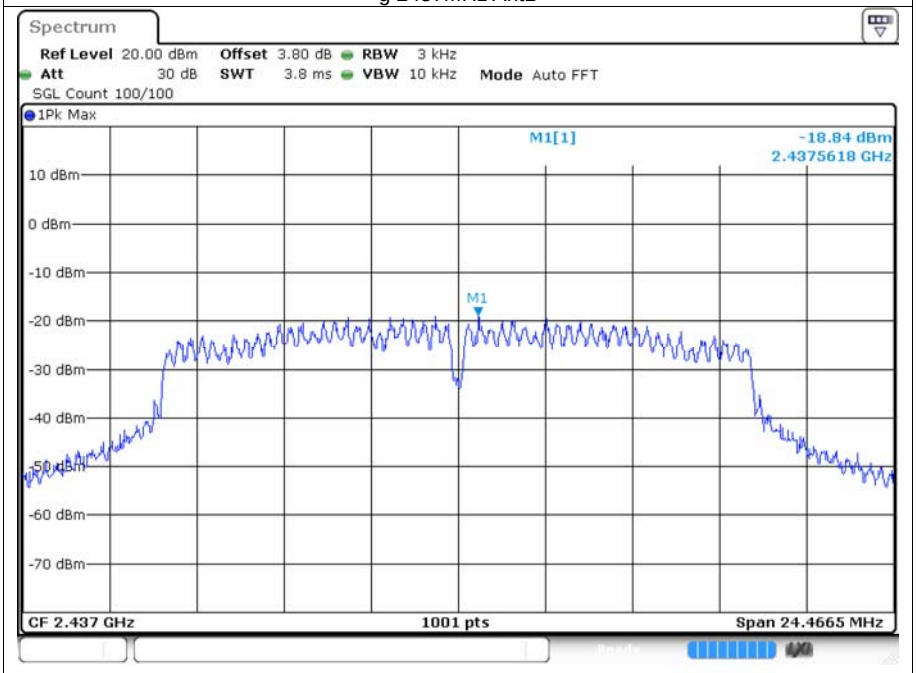
b 2462MHz Ant1



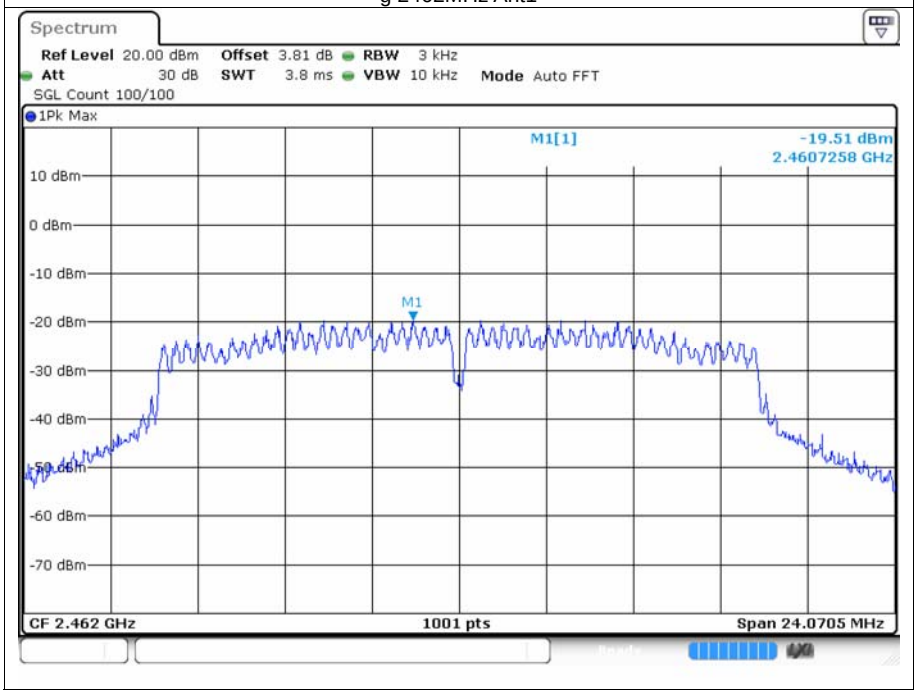
g 2412MHz Ant1



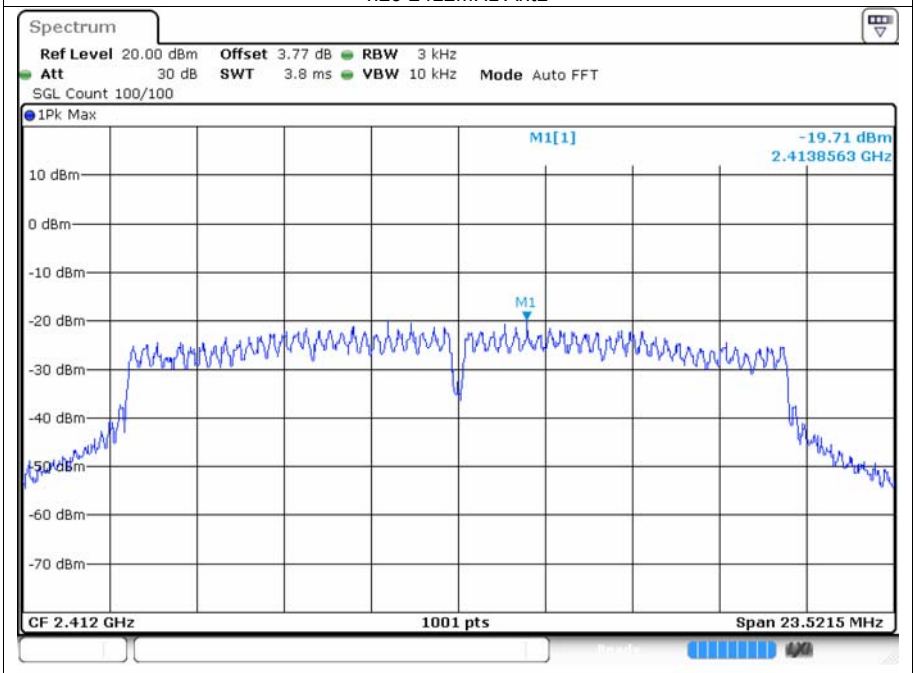
g 2437MHz Ant1



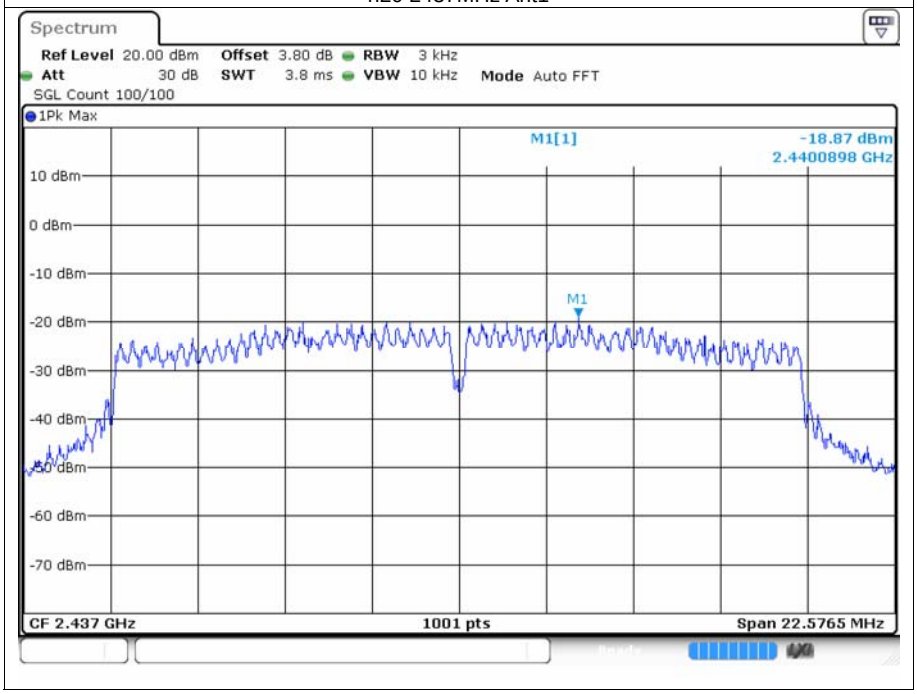
g 2462MHz Ant1



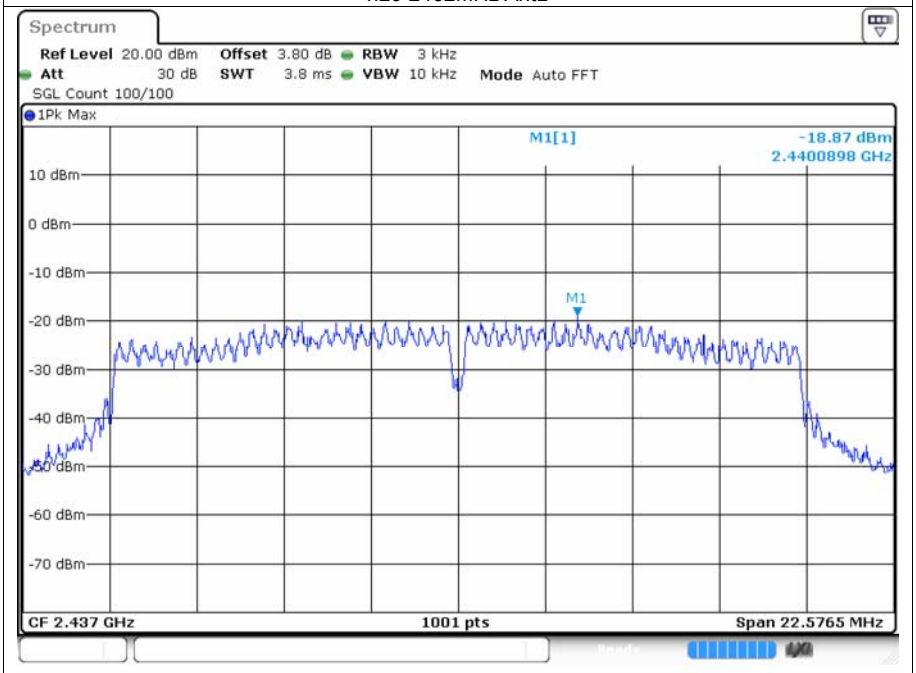
n20 2412MHz Ant1



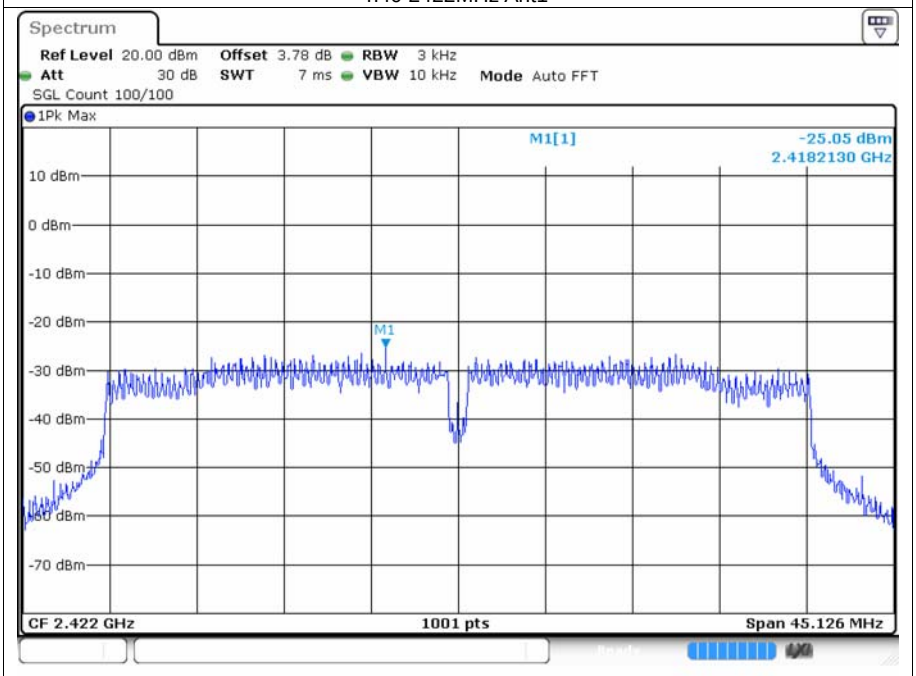
n20 2437MHz Ant1



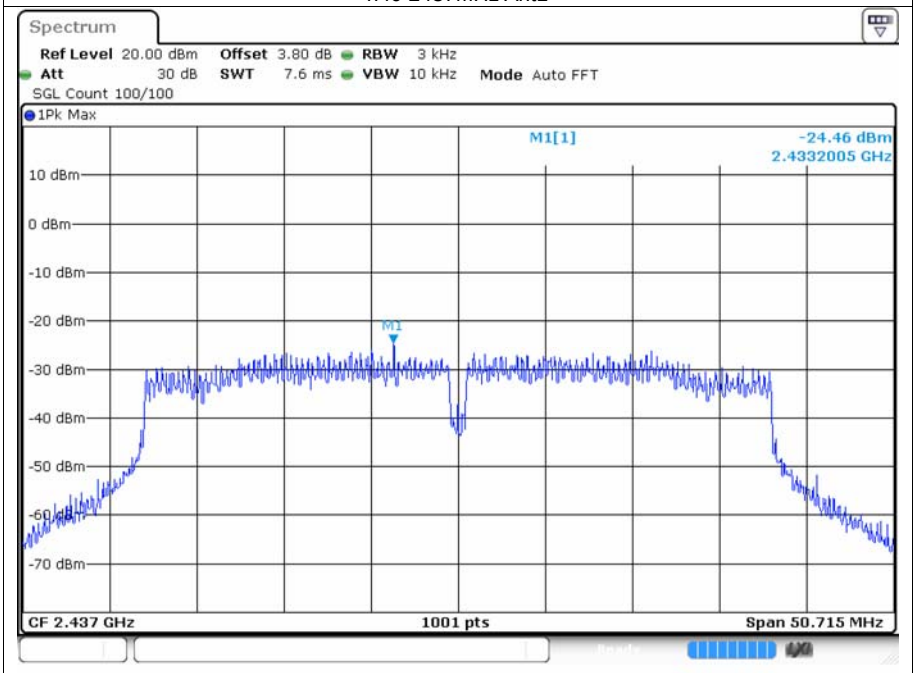
n20 2462MHz Ant1



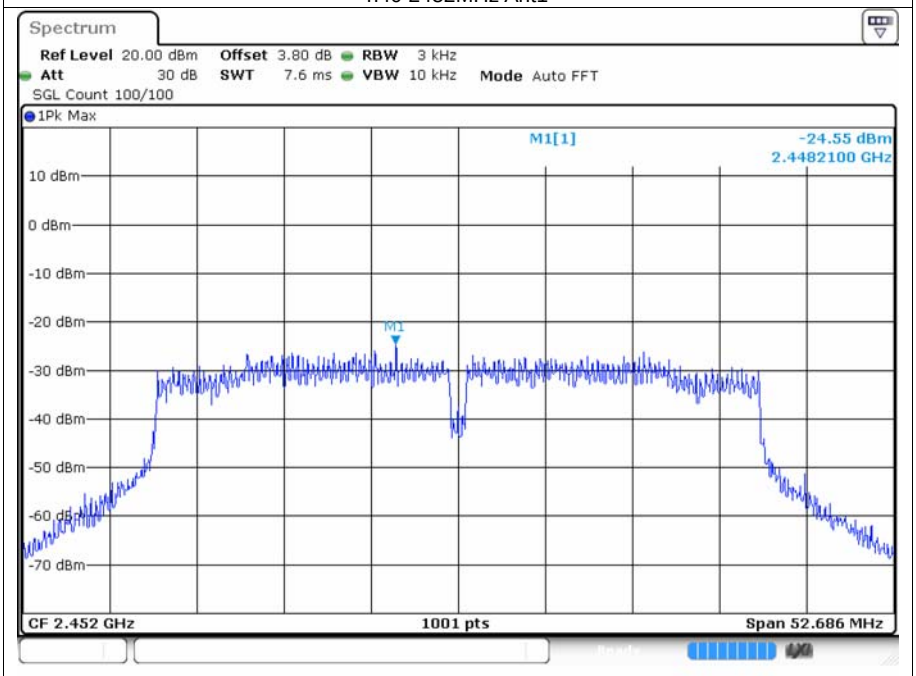
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1



4 Band Edge

4.1 Test Result

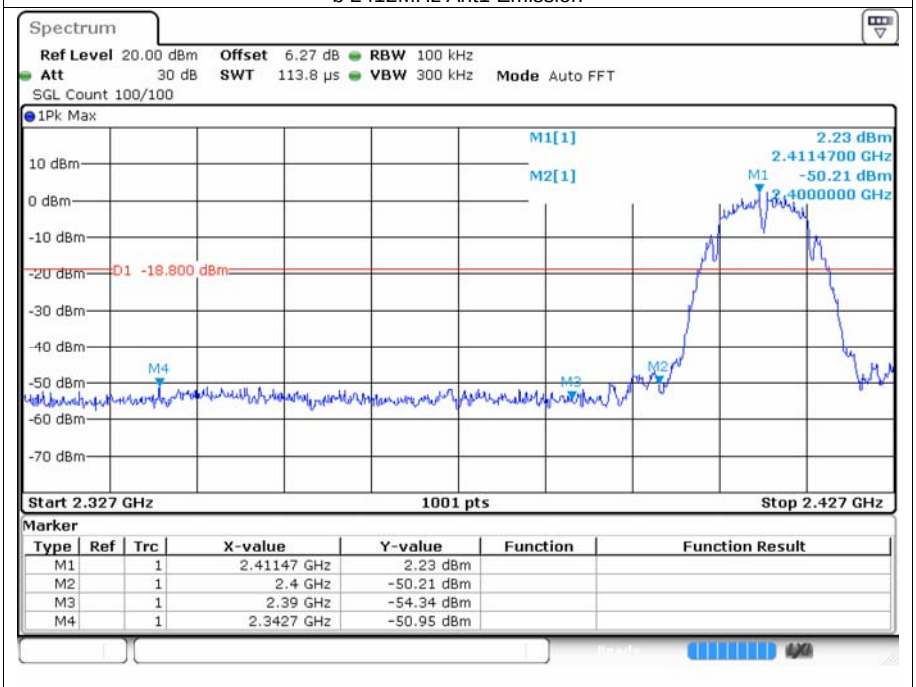
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-52.15	-20	-52.15
b	2462	Ant1	-52.03	-20	Pass
g	2412	Ant1	-44.68	-20	Pass
g	2462	Ant1	-46.89	-20	Pass
n20	2412	Ant1	-44.88	-20	Pass
n20	2462	Ant1	-44.48	-20	Pass
n40	2422	Ant1	-41.03	-20	Pass
n40	2452	Ant1	-43.38	-20	Pass

4.2 Test Graphs

Test Graphs

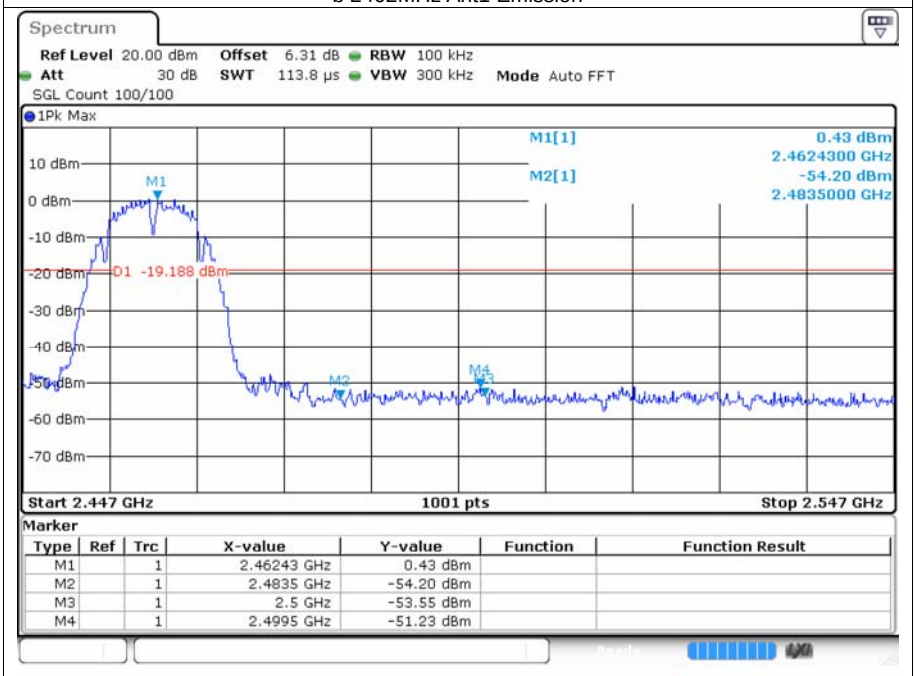
b 2412MHz Ant1 Ref

b 2412MHz Ant1 Emission

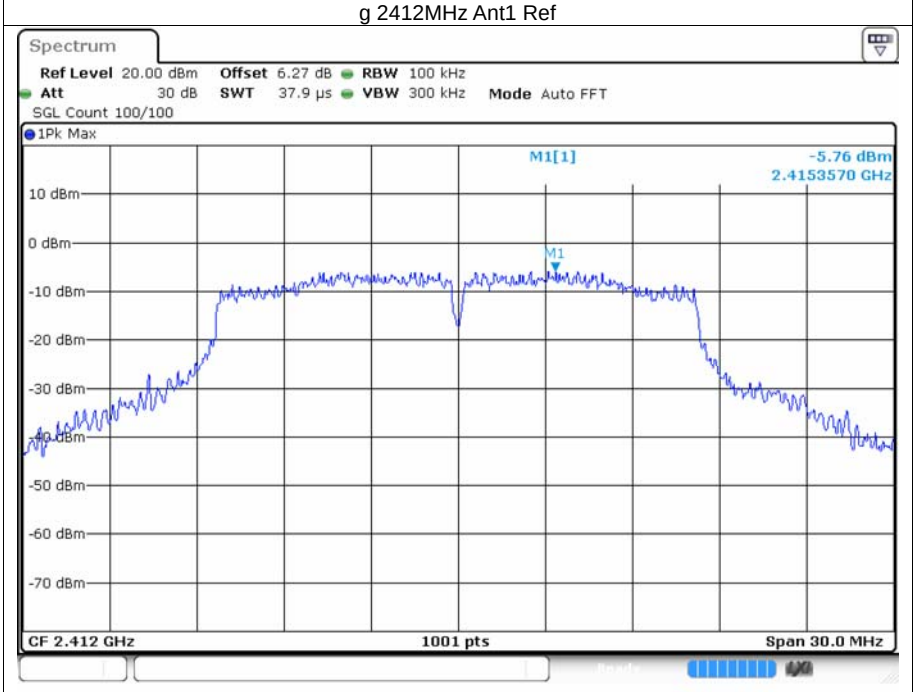


b 2462MHz Ant1 Ref

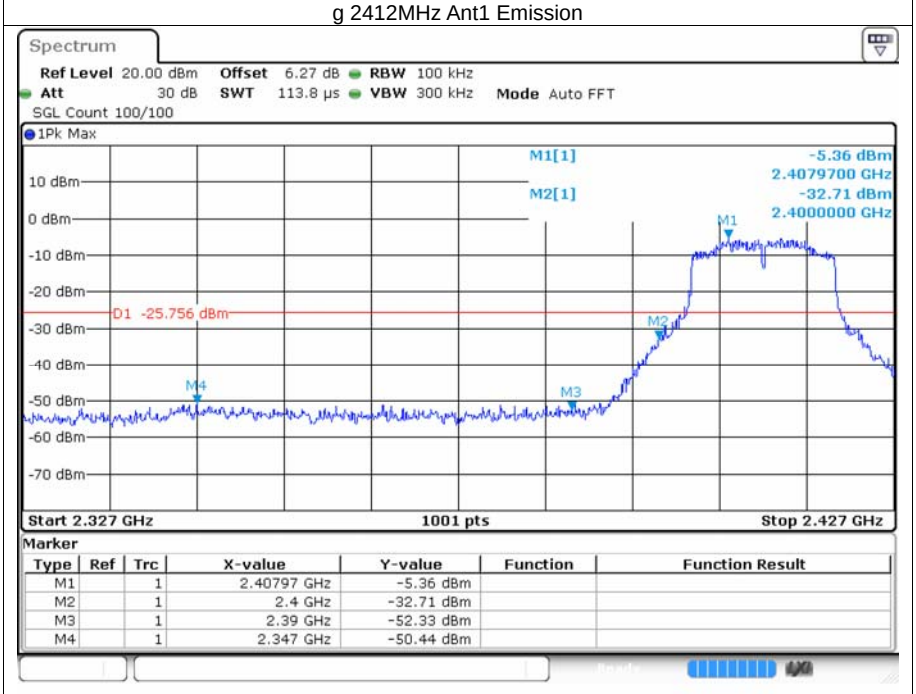
b 2462MHz Ant1 Emission



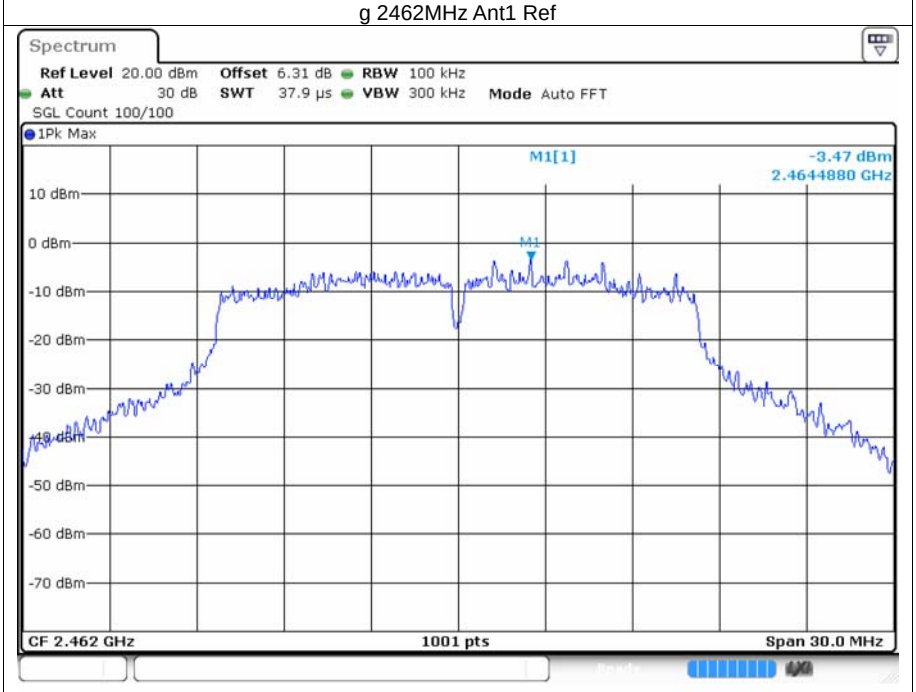
g 2412MHz Ant1 Ref



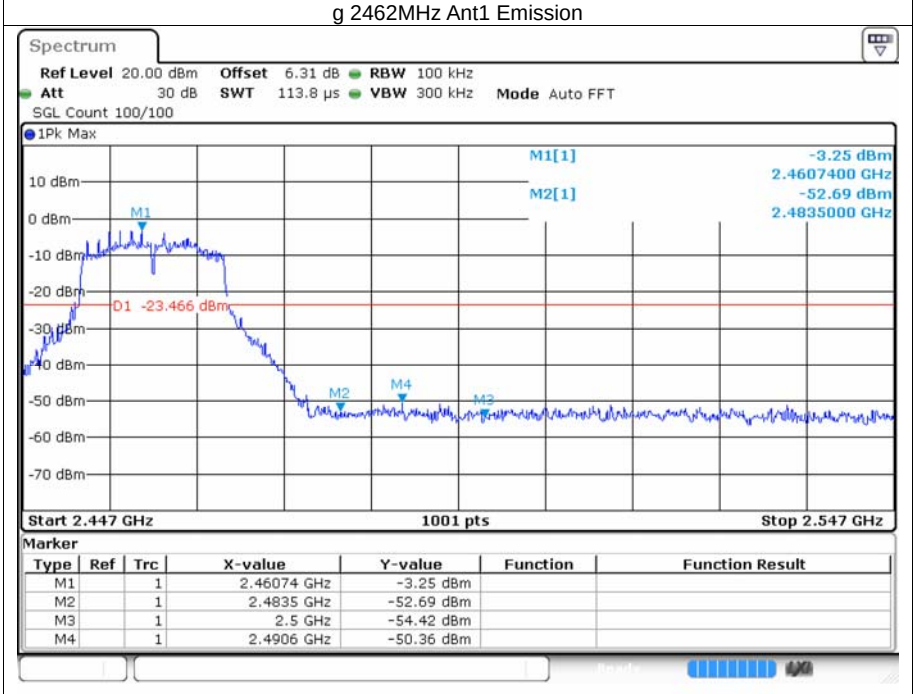
g 2412MHz Ant1 Emission



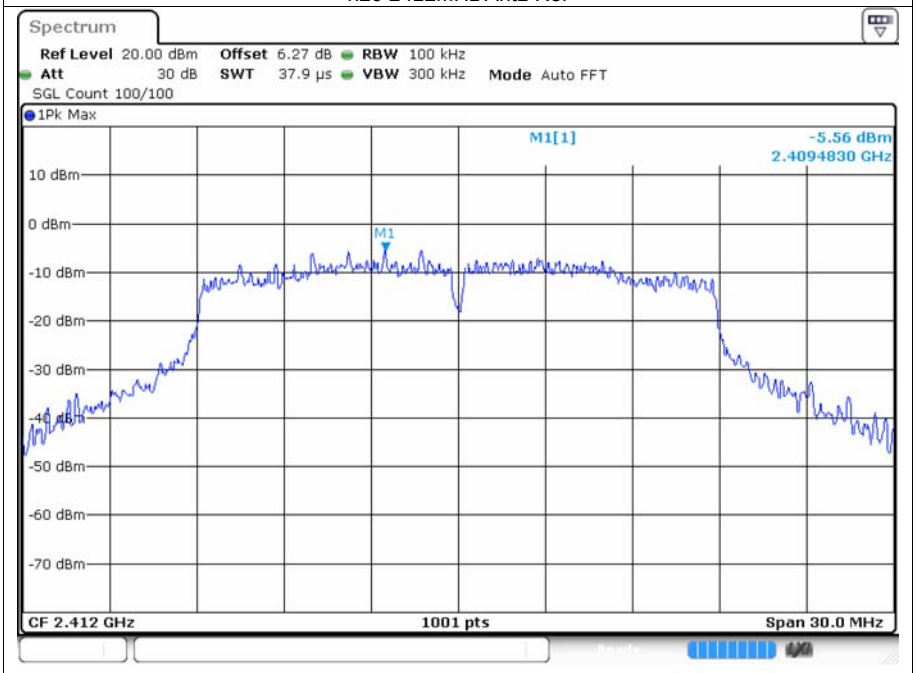
g 2462MHz Ant1 Ref



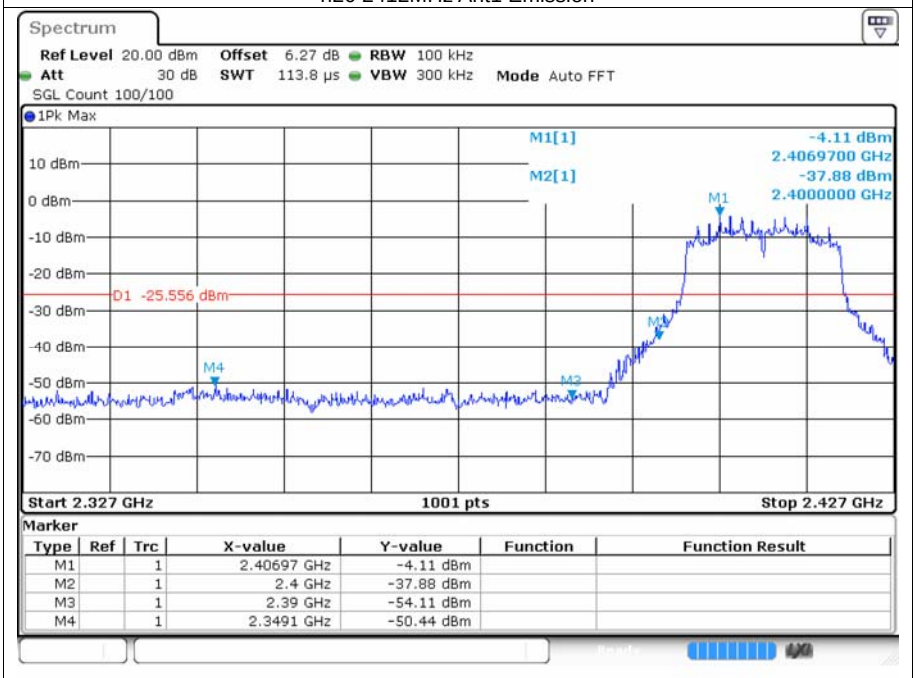
g 2462MHz Ant1 Emission



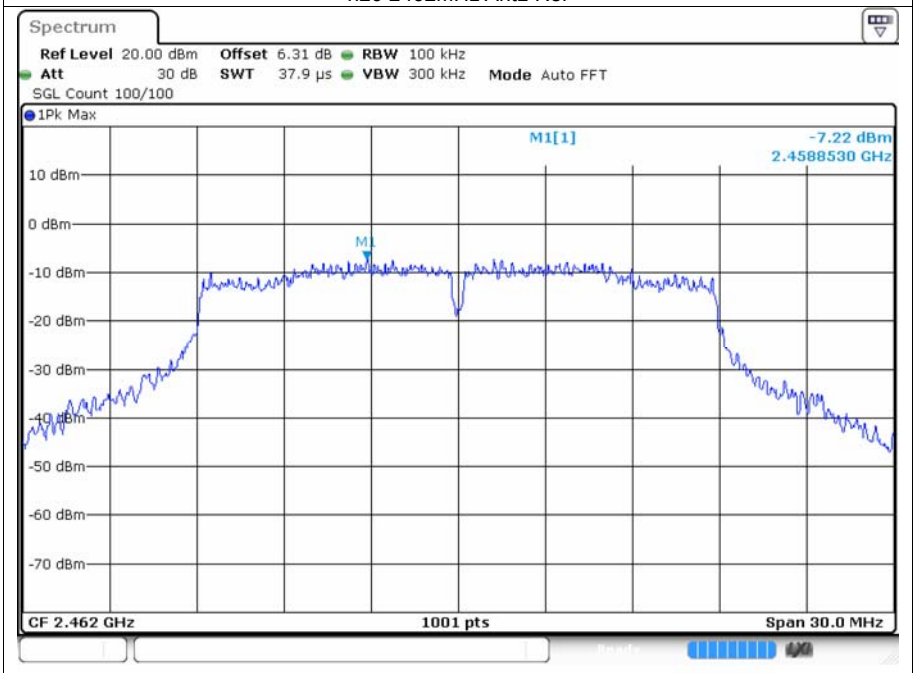
n20 2412MHz Ant1 Ref



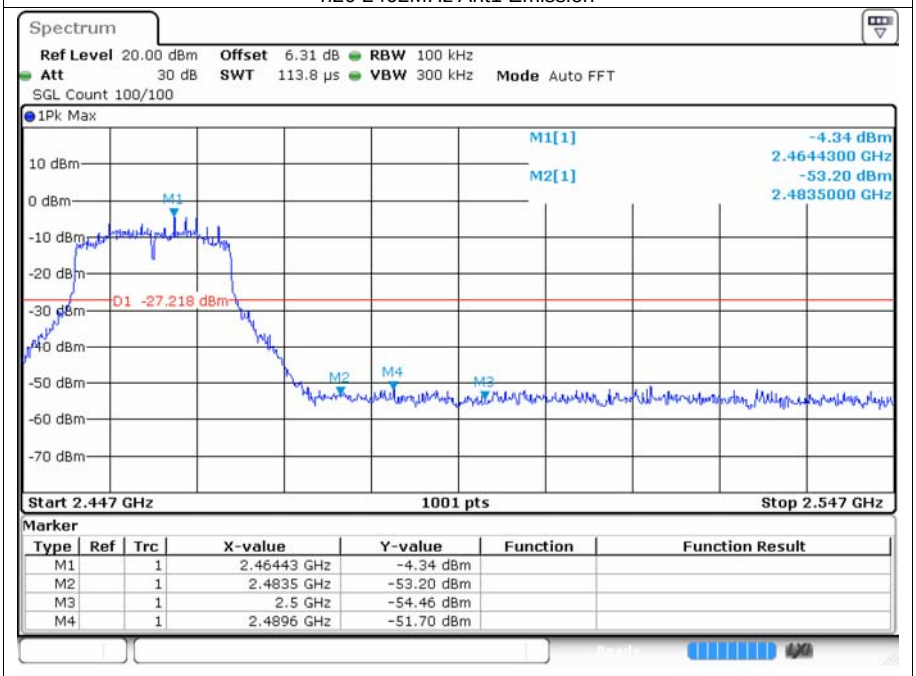
n20 2412MHz Ant1 Emission



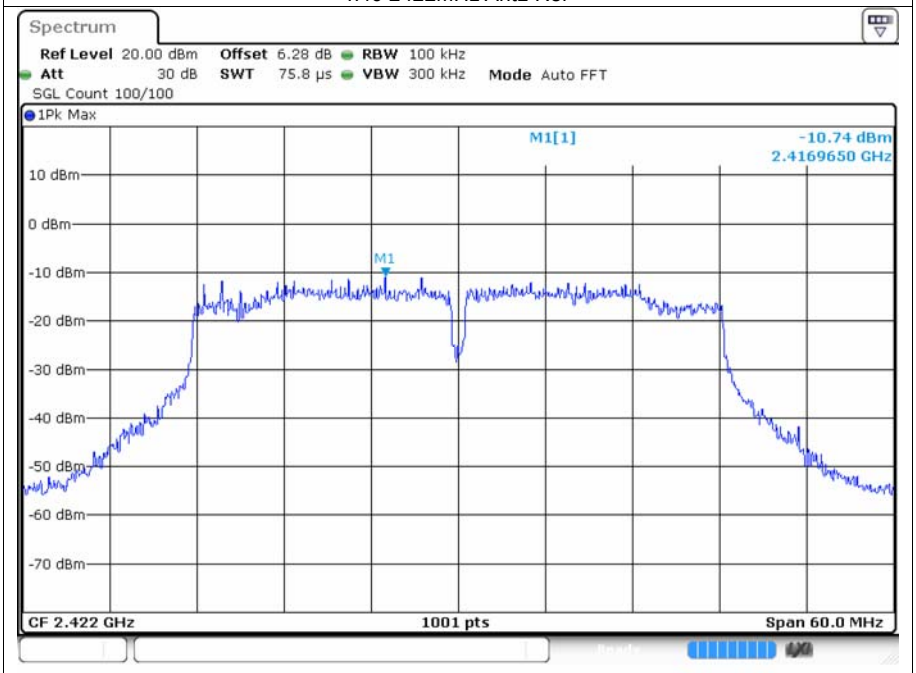
n20 2462MHz Ant1 Ref



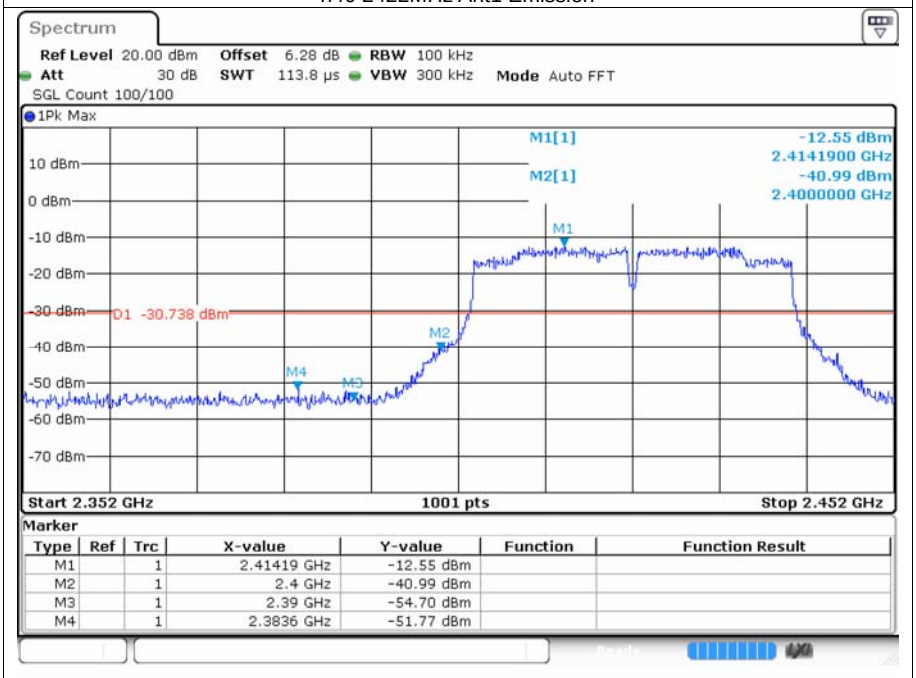
n20 2462MHz Ant1 Emission



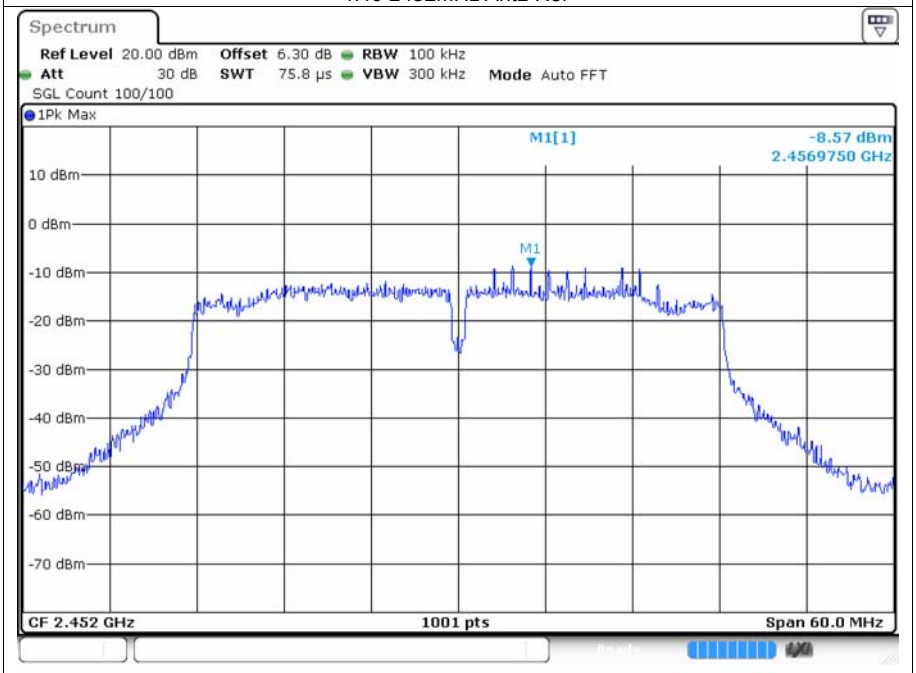
n40 2422MHz Ant1 Ref



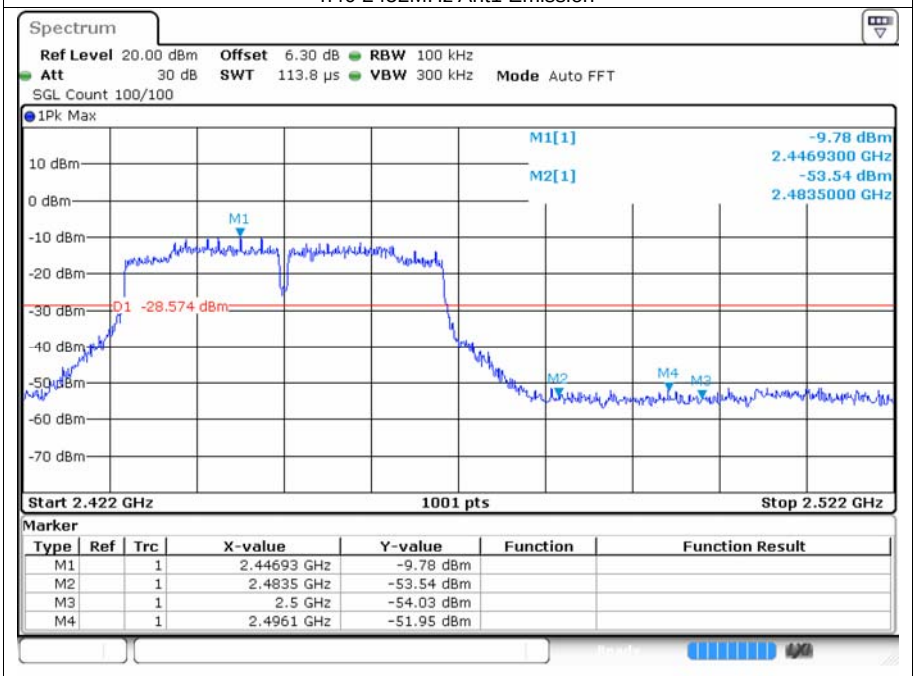
n40 2422MHz Ant1 Emission



n40 2452MHz Ant1 Ref



n40 2452MHz Ant1 Emission



5 Conducted RF Spurious Emission

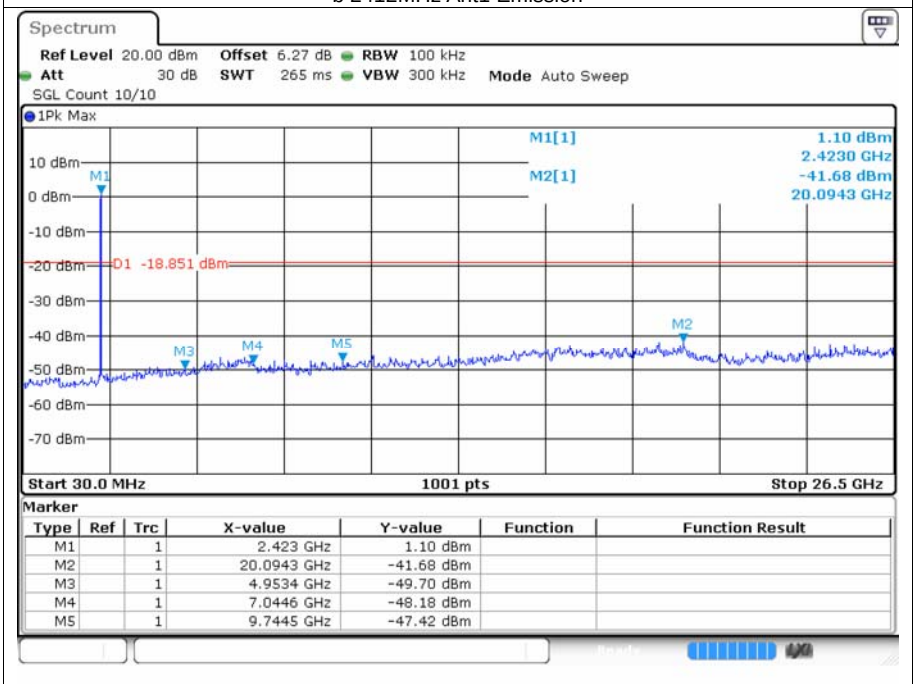
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-42.83	-20	Pass
b	2437	Ant1	-43.28	-20	Pass
b	2462	Ant1	-43.52	-20	Pass
g	2412	Ant1	-35.97	-20	Pass
g	2437	Ant1	-39.87	-20	Pass
g	2462	Ant1	-38.85	-20	Pass
n20	2412	Ant1	-36.97	-20	Pass
n20	2437	Ant1	-36.3	-20	Pass
n20	2462	Ant1	-37.75	-20	Pass
n40	2422	Ant1	-31.11	-20	Pass
n40	2437	Ant1	-33.11	-20	Pass
n40	2452	Ant1	-34.09	-20	Pass

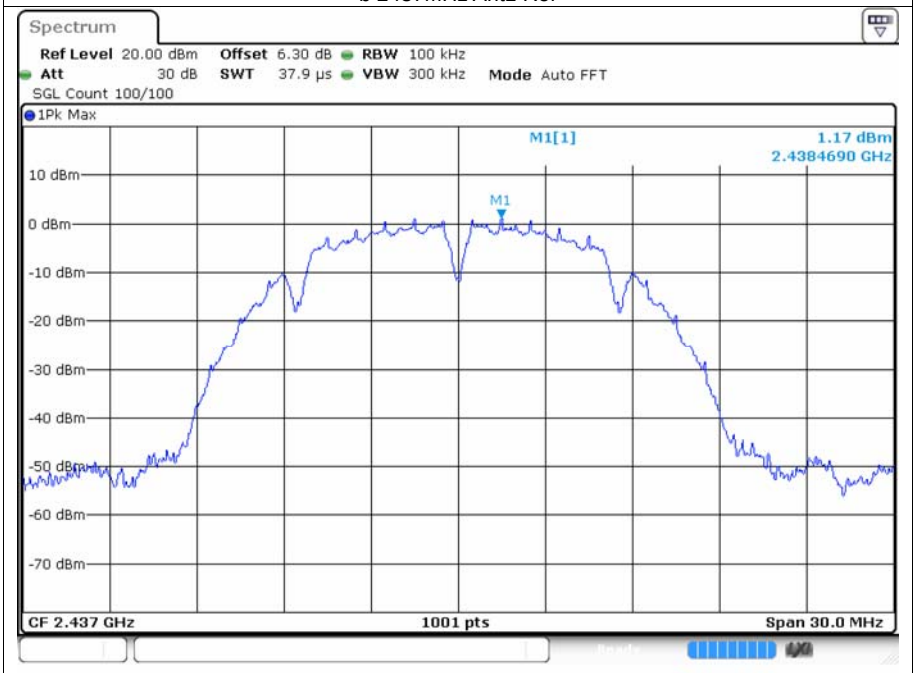
5.2 Test Graphs

Test Graphs
b 2412MHz Ant1 Ref

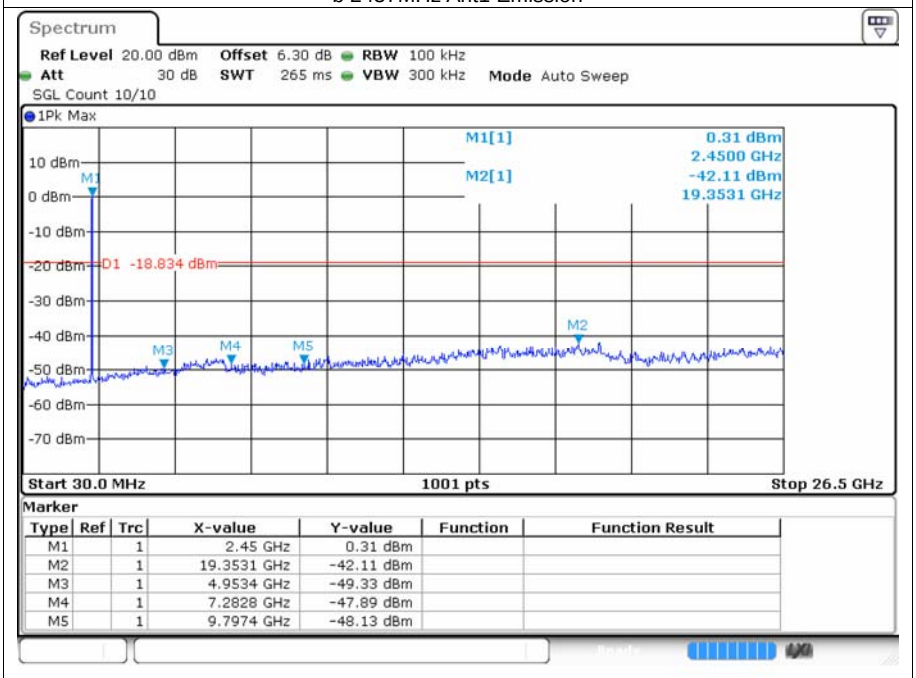
b 2412MHz Ant1 Emission



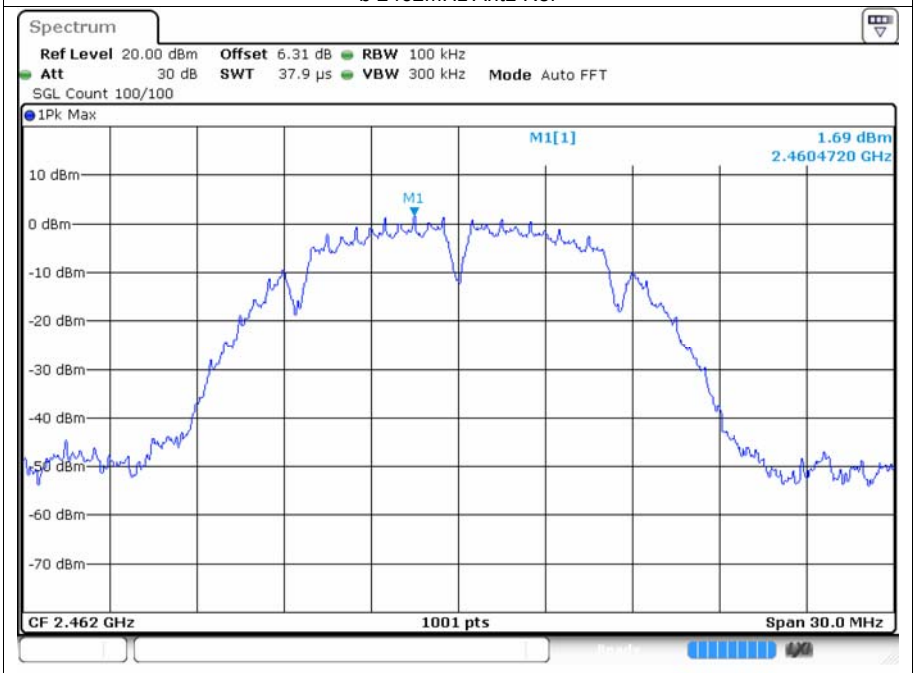
b 2437MHz Ant1 Ref



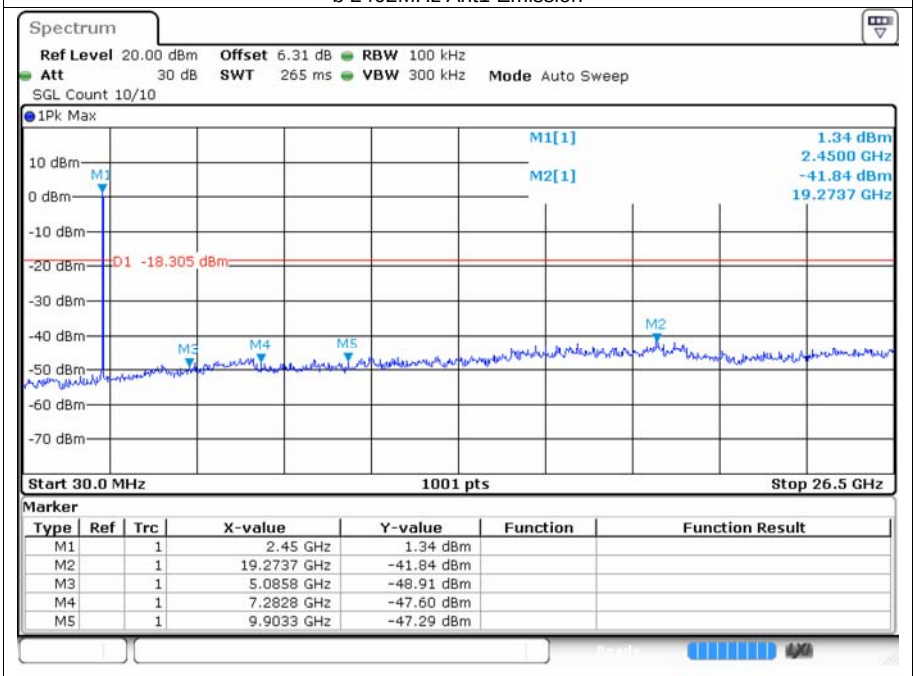
b 2437MHz Ant1 Emission



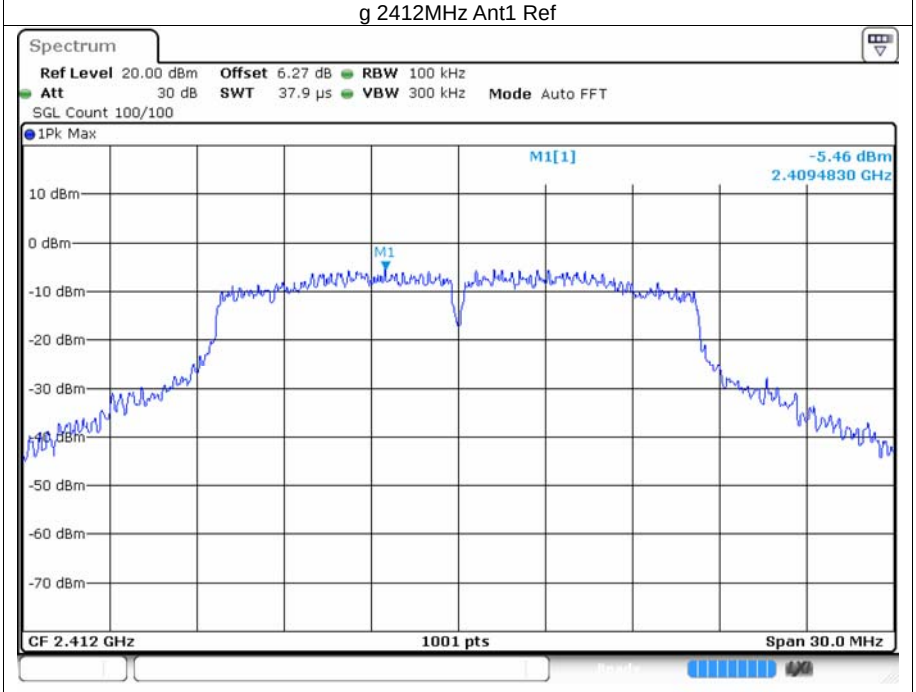
b 2462MHz Ant1 Ref



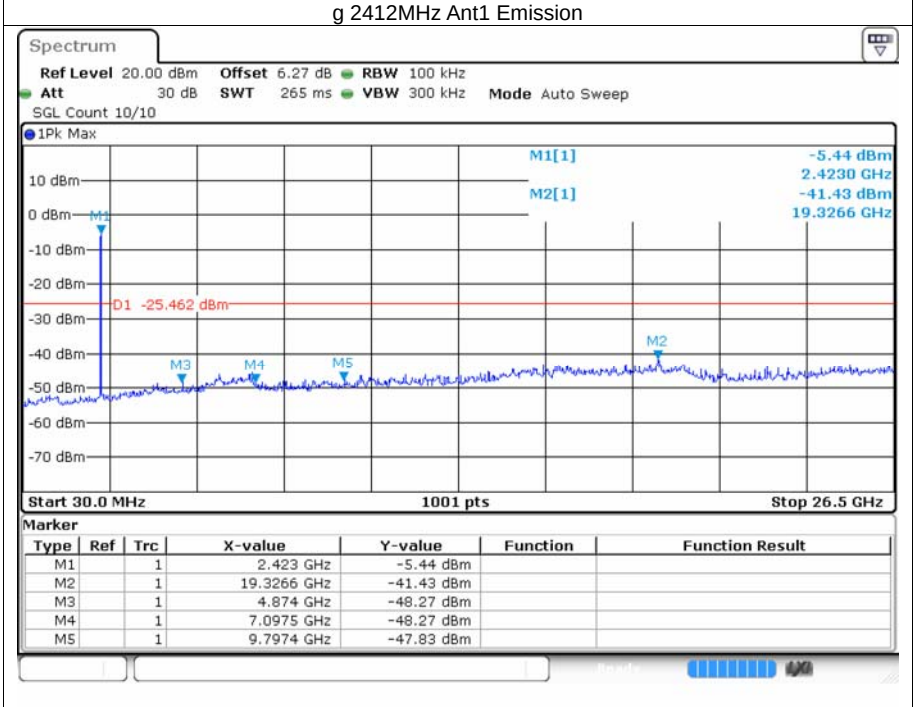
b 2462MHz Ant1 Emission



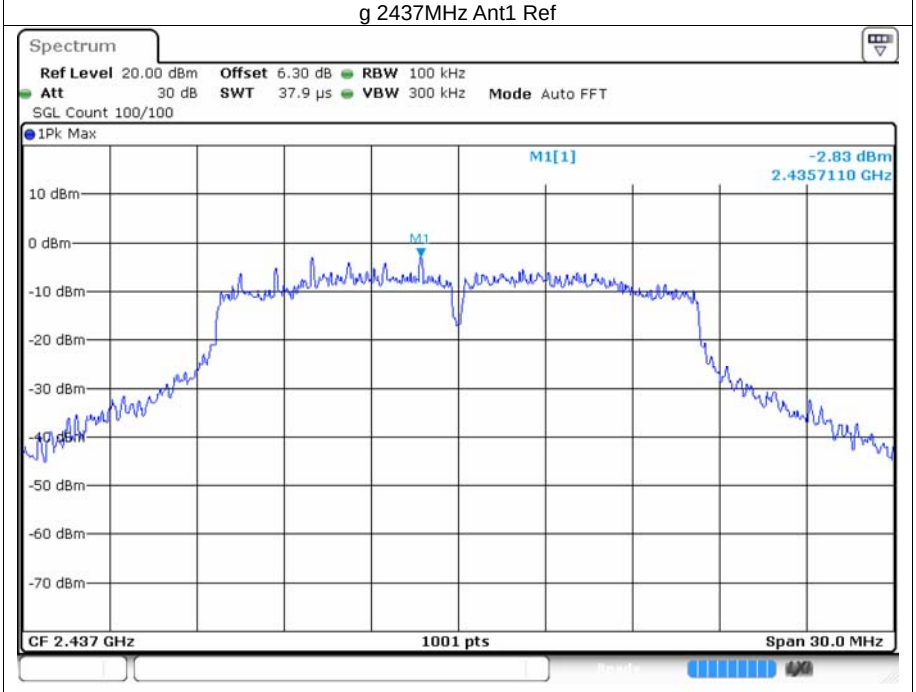
g 2412MHz Ant1 Ref



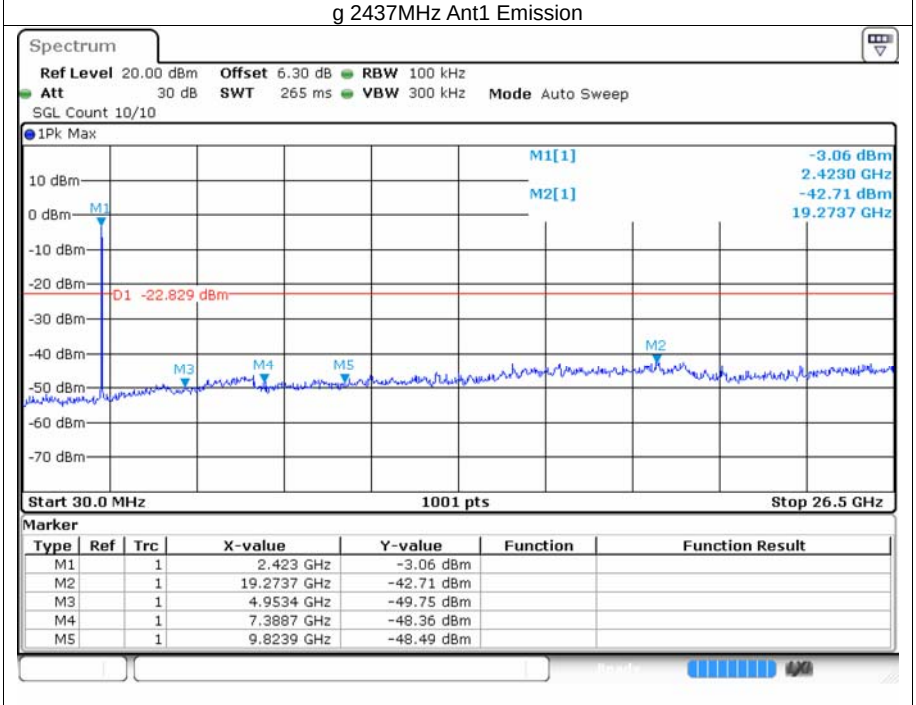
g 2412MHz Ant1 Emission



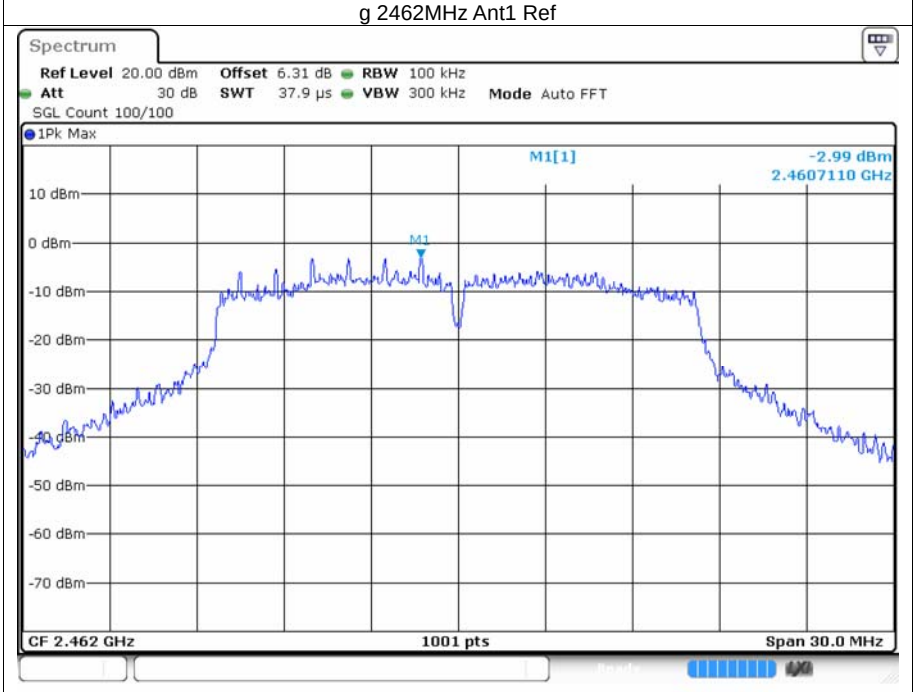
g 2437MHz Ant1 Ref



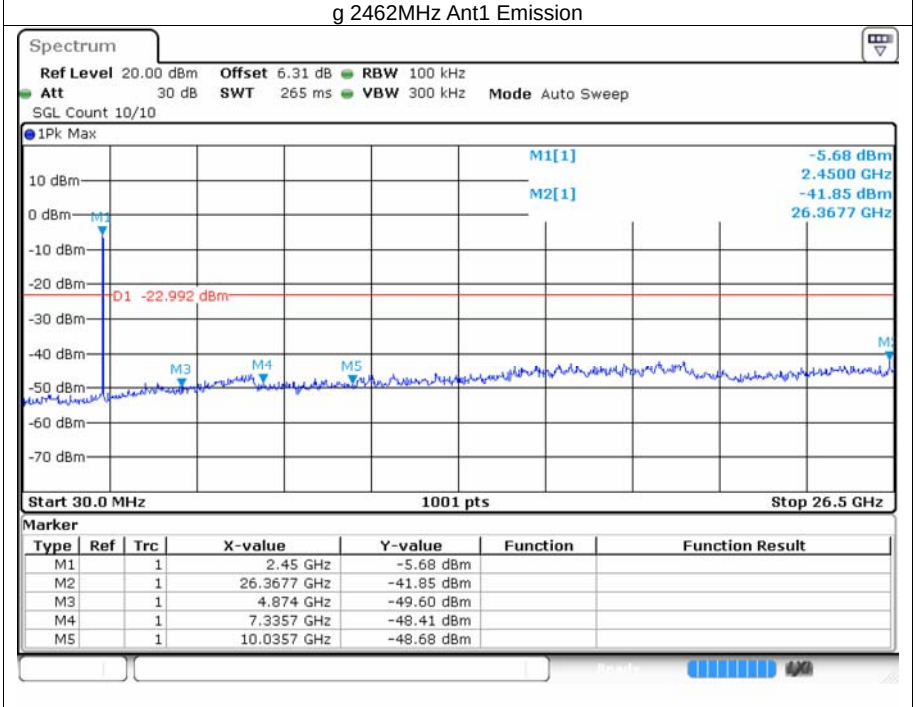
g 2437MHz Ant1 Emission



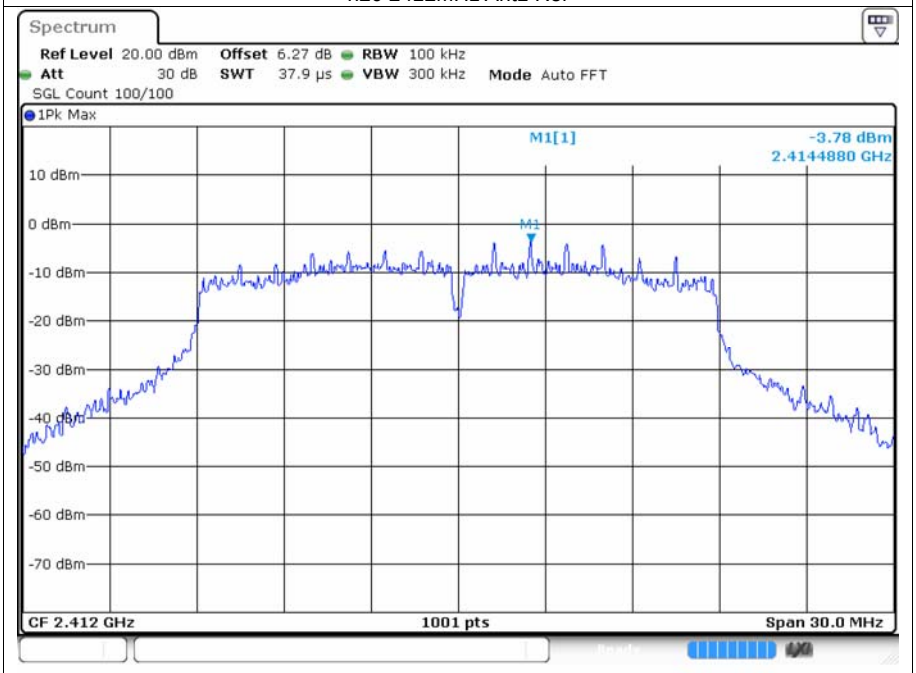
g 2462MHz Ant1 Ref



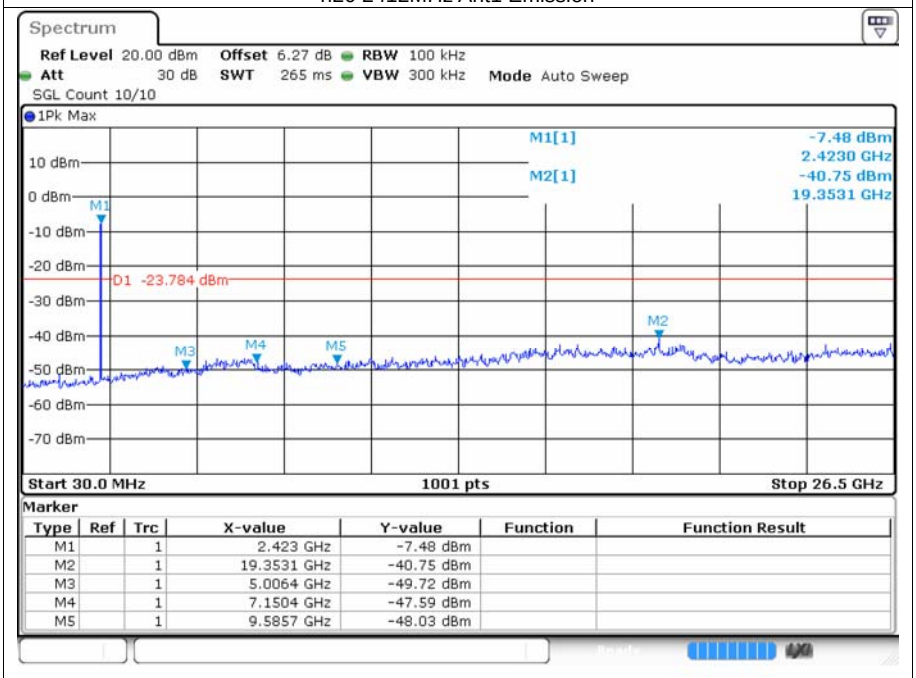
g 2462MHz Ant1 Emission



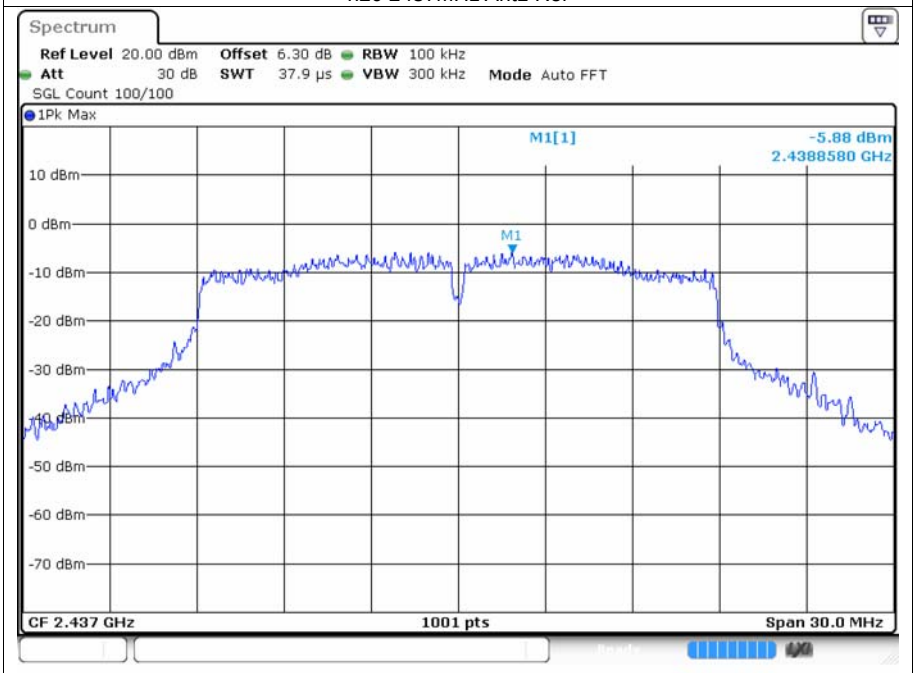
n20 2412MHz Ant1 Ref



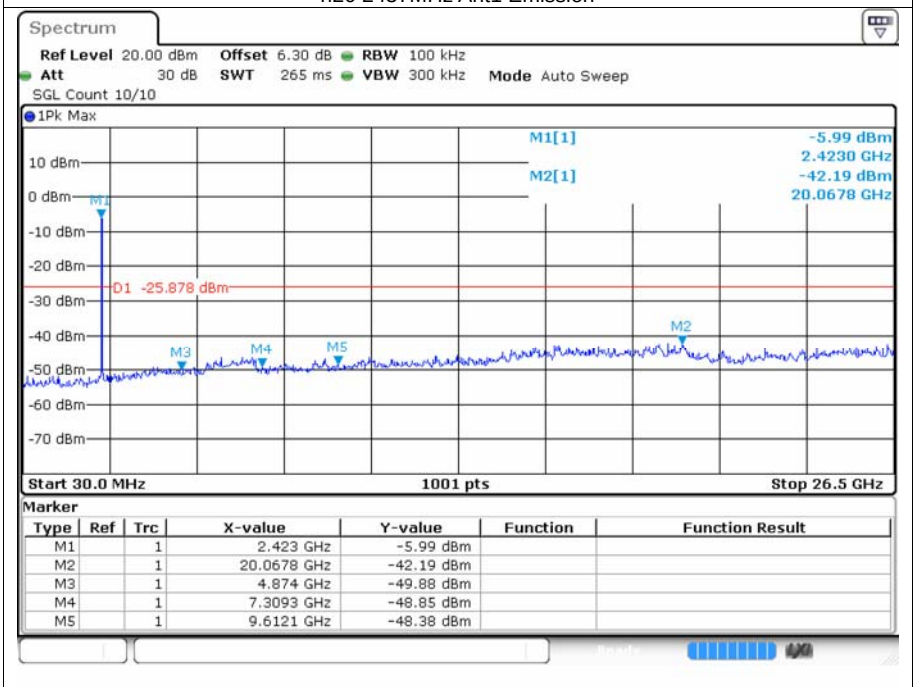
n20 2412MHz Ant1 Emission



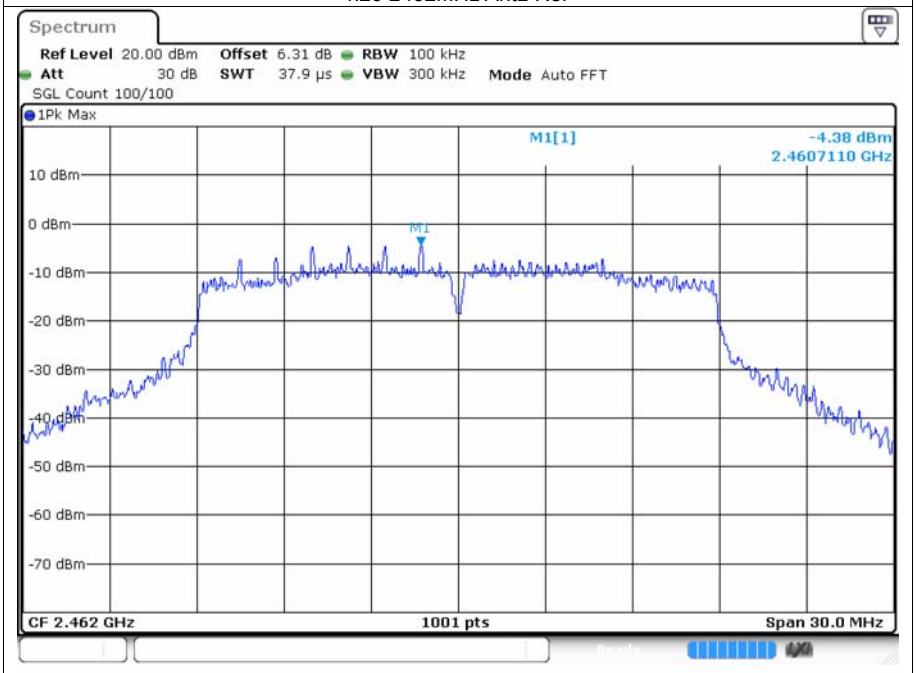
n20 2437MHz Ant1 Ref



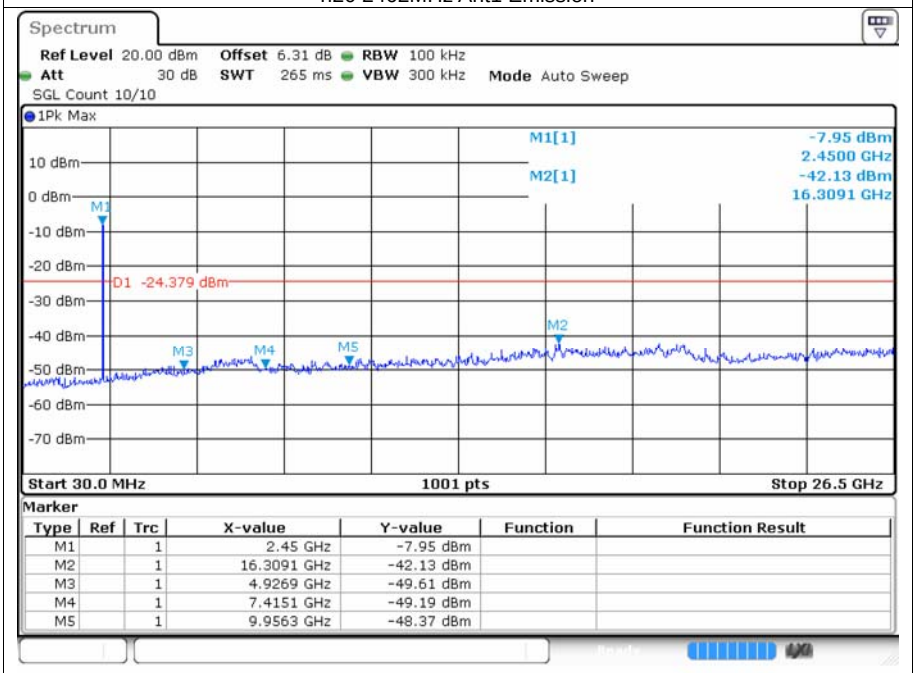
n20 2437MHz Ant1 Emission



n20 2462MHz Ant1 Ref



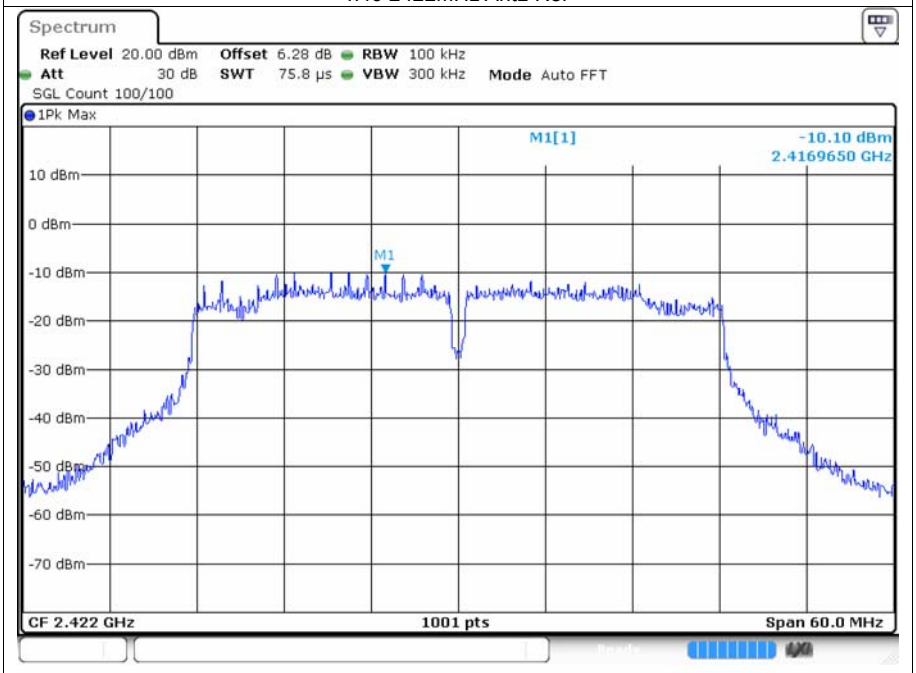
n20 2462MHz Ant1 Emission



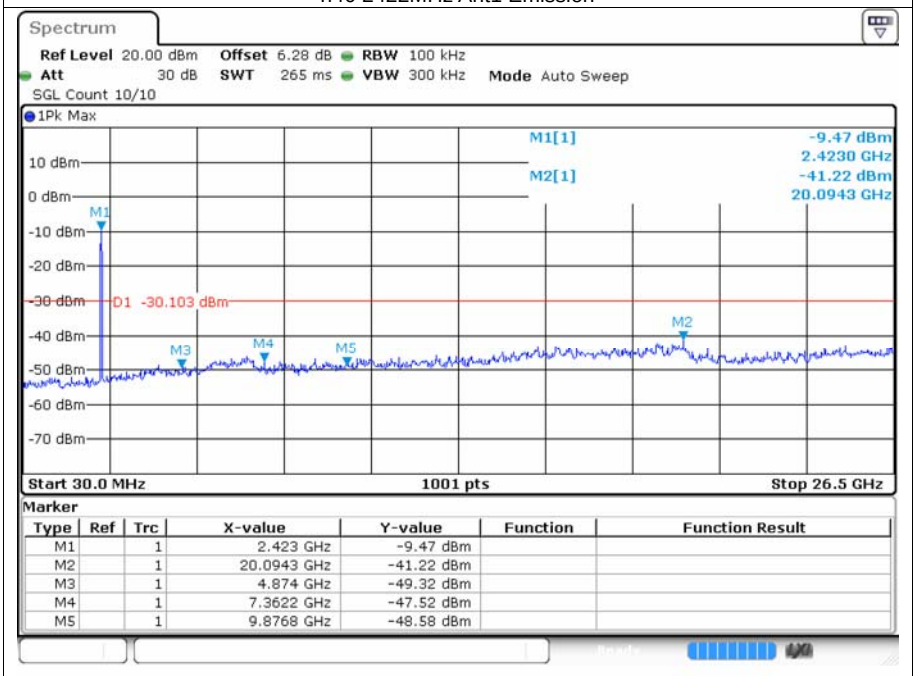
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-7.95 dBm		
M2		1	16.3091 GHz	-42.13 dBm		
M3		1	4.9269 GHz	-49.61 dBm		
M4		1	7.4151 GHz	-49.19 dBm		
M5		1	9.9563 GHz	-48.37 dBm		

n40 2422MHz Ant1 Ref



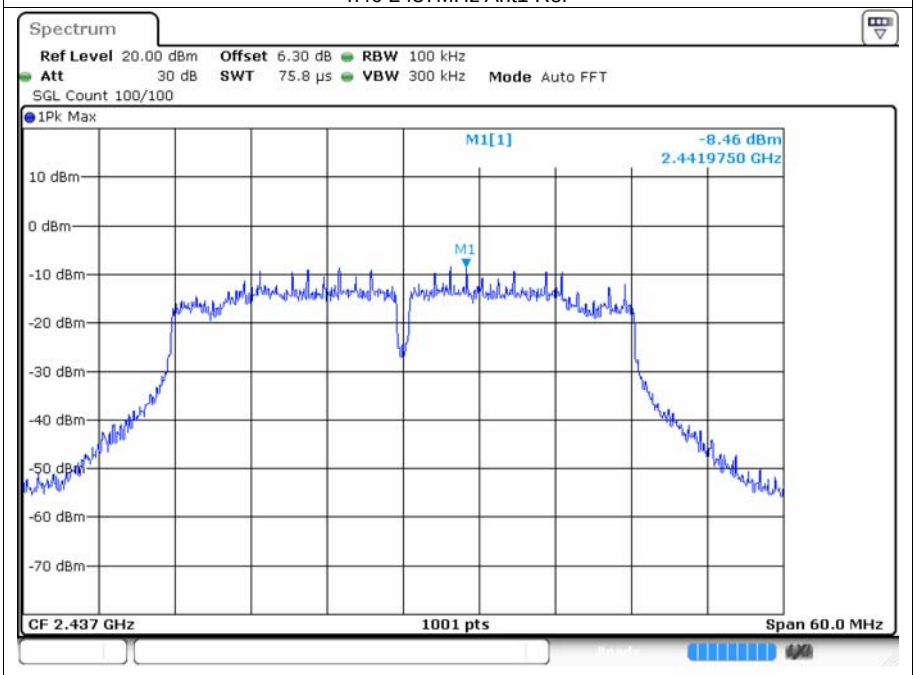
n40 2422MHz Ant1 Emission



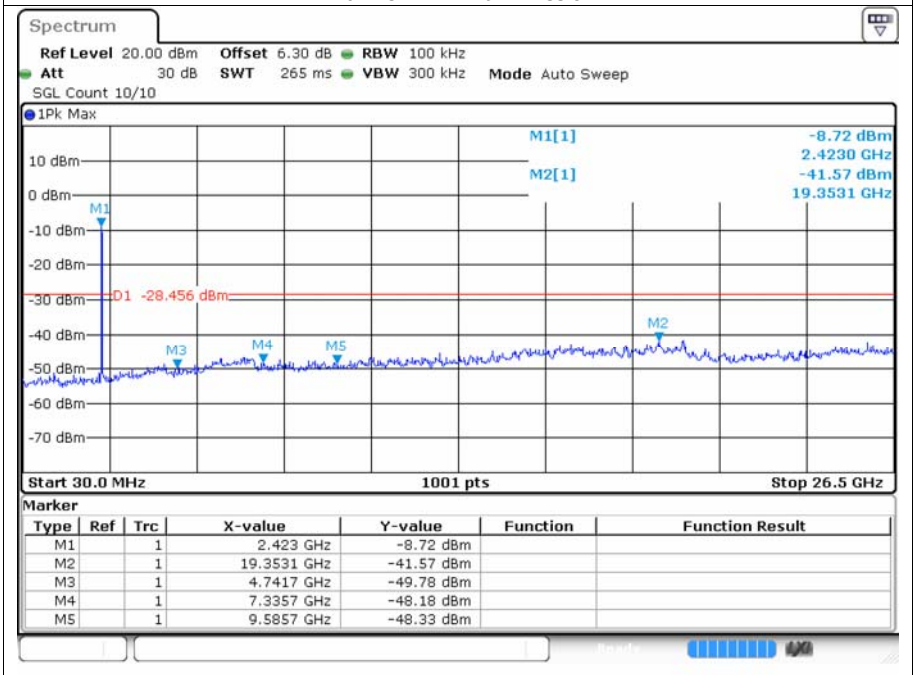
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-9.47 dBm		
M2		1	20.0943 GHz	-41.22 dBm		
M3		1	4.874 GHz	-49.32 dBm		
M4		1	7.3622 GHz	-47.52 dBm		
M5		1	9.8768 GHz	-48.58 dBm		

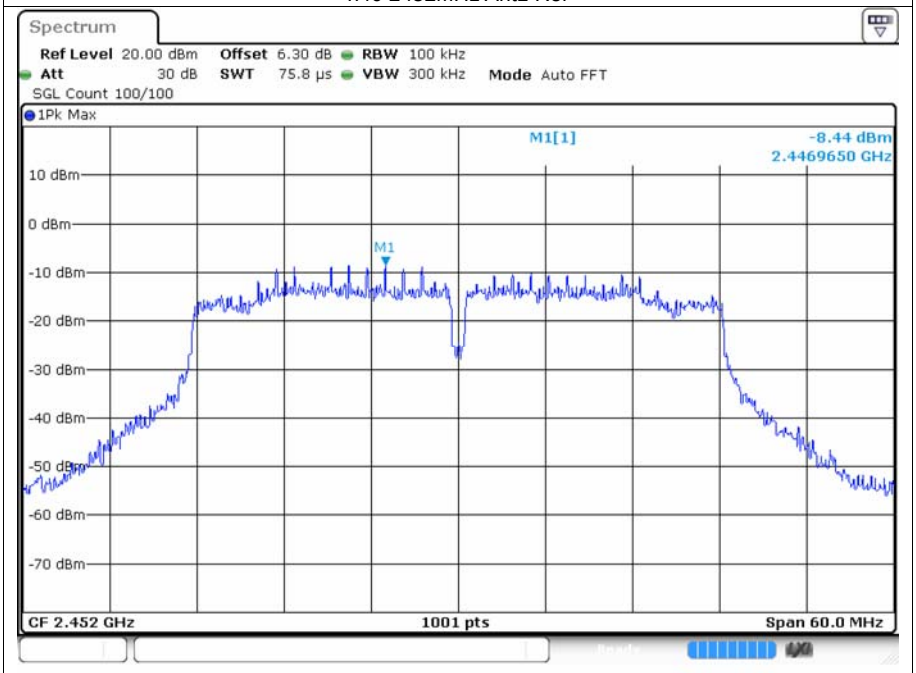
n40 2437MHz Ant1 Ref



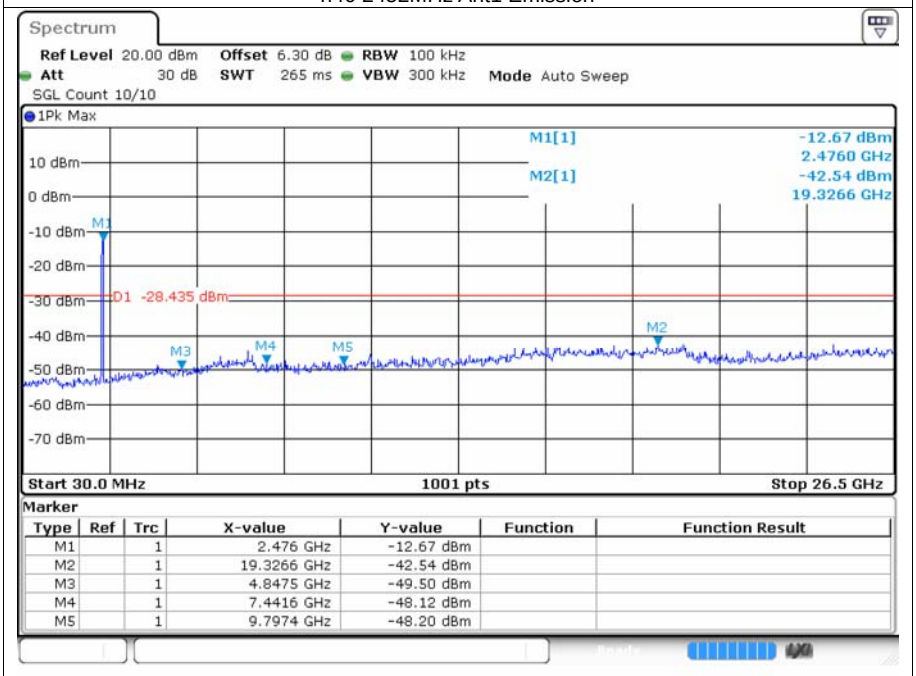
n40 2437MHz Ant1 Emission



n40 2452MHz Ant1 Ref



n40 2452MHz Ant1 Emission



6 Restrict Band

6.1 Test Result

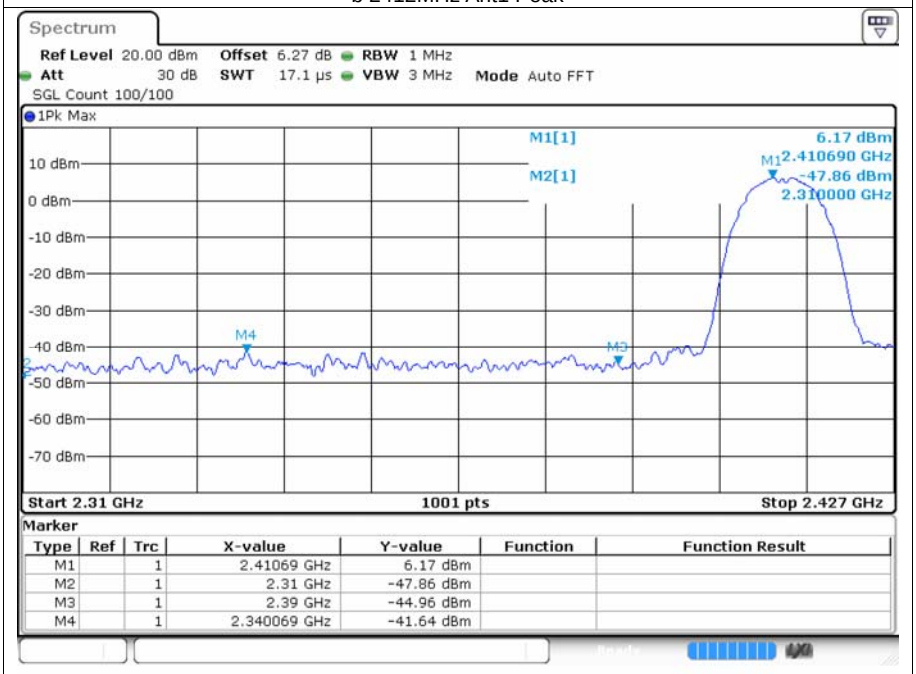
Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
b	2412	Ant1	2310	-47.86	2.5	49.9	Peak	74	Pass
b	2412	Ant1	2310	-54.68	2.5	43.08	Average	54	Pass
b	2412	Ant1	2340.069	-41.64	2.5	56.12	Peak	74	Pass
b	2412	Ant1	2337.027	-52.89	2.5	44.87	Average	54	Pass
b	2412	Ant1	2390	-44.96	2.5	52.8	Peak	74	Pass
b	2412	Ant1	2390	-54.51	2.5	43.25	Average	54	Pass
b	2462	Ant1	2483.5	-45.98	2.5	51.78	Peak	74	51.78
b	2462	Ant1	2483.5	-54.26	2.5	43.5	Average	54	Pass
b	2462	Ant1	2487.386	-41.82	2.5	55.94	Peak	74	Pass
b	2462	Ant1	2499.205	-52.83	2.5	44.93	Average	54	Pass
b	2462	Ant1	2500	-44.03	2.5	53.73	Peak	74	Pass
b	2462	Ant1	2500	-53.6	2.5	44.16	Average	54	Pass
g	2412	Ant1	2310	-44.78	2.5	52.98	Peak	74	Pass
g	2412	Ant1	2310	-55.12	2.5	42.64	Average	54	Pass
g	2412	Ant1	2381.253	-41.79	2.5	55.97	Peak	74	Pass
g	2412	Ant1	2336.676	-53.25	2.5	44.51	Average	54	Pass
g	2412	Ant1	2390	-45.46	2.5	52.8	Peak	74	Pass
g	2412	Ant1	2390	-53.58	2.5	44.18	Average	54	Pass
g	2462	Ant1	2483.5	-41.07	2.5	56.69	Peak	74	Pass
g	2462	Ant1	2483.5	-53.38	2.5	44.38	Average	54	Pass
g	2462	Ant1	2487.386	-40.87	2.5	56.89	Peak	74	Pass
g	2462	Ant1	2483.517	-53.38	2.5	44.38	Average	54	Pass
g	2462	Ant1	2500	-44.35	2.5	53.73	Peak	74	Pass
g	2462	Ant1	2500	-53.71	2.5	44.05	Average	54	Pass
n20	2412	Ant1	2310	-46.5	2.5	51.26	Peak	74	Pass
n20	2412	Ant1	2310	-55.28	2.5	42.48	Average	54	Pass
n20	2412	Ant1	2337.027	-42.18	2.5	55.58	Peak	74	Pass
n20	2412	Ant1	2336.676	-53.42	2.5	44.34	Average	54	Pass
n20	2412	Ant1	2390	-45.15	2.5	52.61	Peak	74	Pass
n20	2412	Ant1	2390	-54.38	2.5	43.38	Average	54	Pass
n20	2462	Ant1	2483.5	-45.96	2.5	51.8	Peak	74	Pass
n20	2462	Ant1	2483.5	-53.99	2.5	43.77	Average	54	Pass
n20	2462	Ant1	2488.552	-42.66	2.5	55.1	Peak	74	Pass
n20	2462	Ant1	2483.517	-53.99	2.5	43.77	Average	54	Pass

n20	2462	Ant1	2500	-43.08	2.5	54.68	Peak	74	Pass
n20	2462	Ant1	2500	-54.29	2.5	43.47	Average	54	Pass
n40	2422	Ant1	2310	-45.86	2.5	51.9	Peak	74	Pass
n40	2422	Ant1	2310	-55.18	2.5	42.58	Average	54	Pass
n40	2422	Ant1	2348.624	-42.41	2.5	55.35	Peak	74	Pass
n40	2422	Ant1	2339.252	-53.45	2.5	44.31	Average	54	Pass
n40	2422	Ant1	2390	-43.84	2.5	53.92	Peak	74	Pass
n40	2422	Ant1	2390	-54.81	2.5	42.95	Average	54	Pass
n40	2452	Ant1	2483.5	-46.63	2.5	51.13	Peak	74	Pass
n40	2452	Ant1	2483.5	-54.21	2.5	43.55	Average	54	Pass
n40	2452	Ant1	2484.946	-42.44	2.5	55.32	Peak	74	Pass
n40	2452	Ant1	2483.542	-54.21	2.5	43.55	Average	54	Pass
n40	2452	Ant1	2500	-45.9	2.5	51.86	Peak	74	Pass
n40	2452	Ant1	2500	-54.42	2.5	43.34	Average	54	Pass

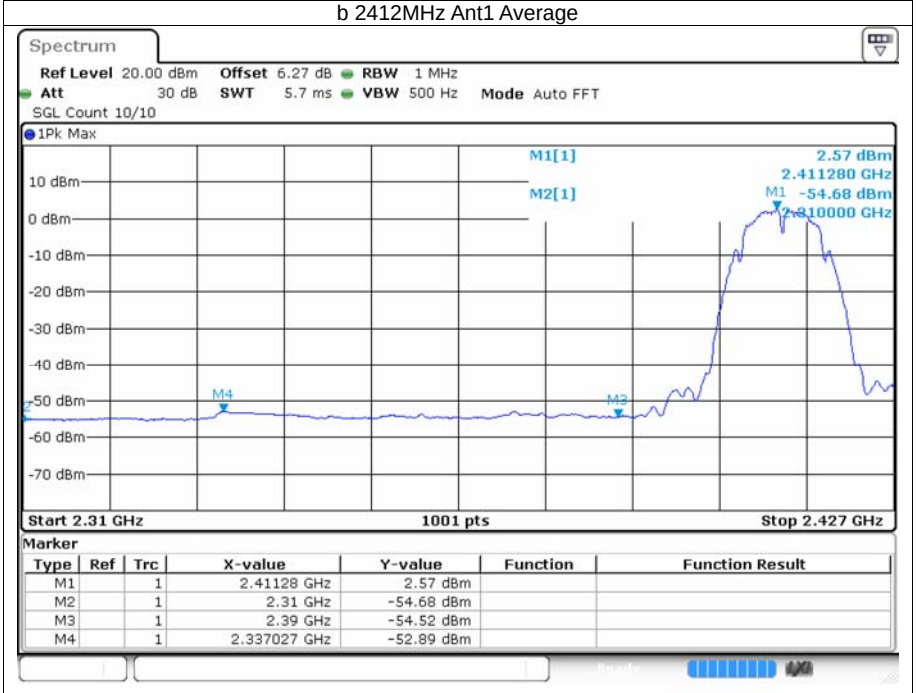
6.2 Test Graphs

Test Graphs

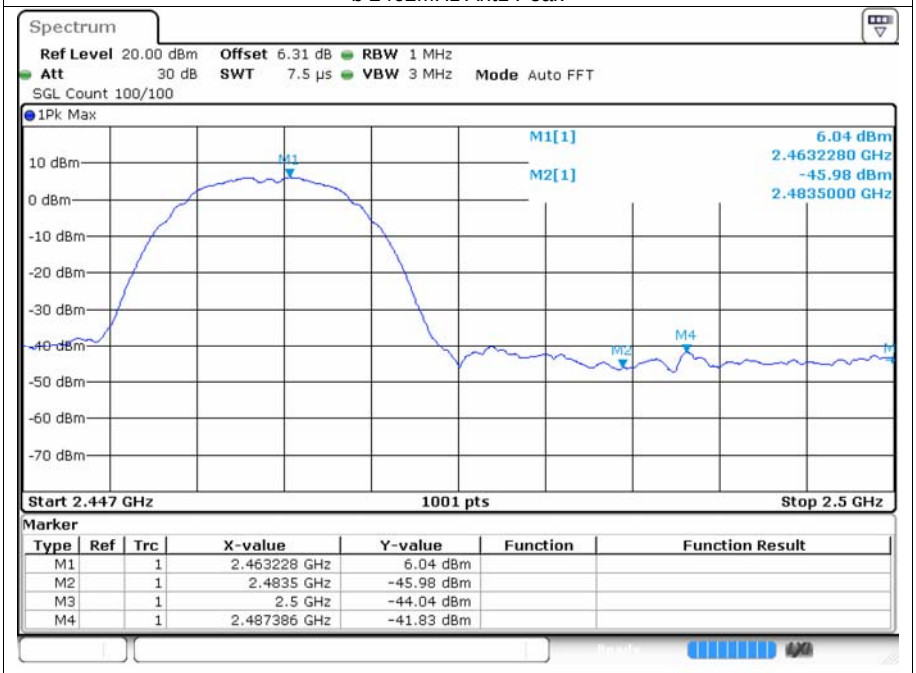
b 2412MHz Ant1 Peak



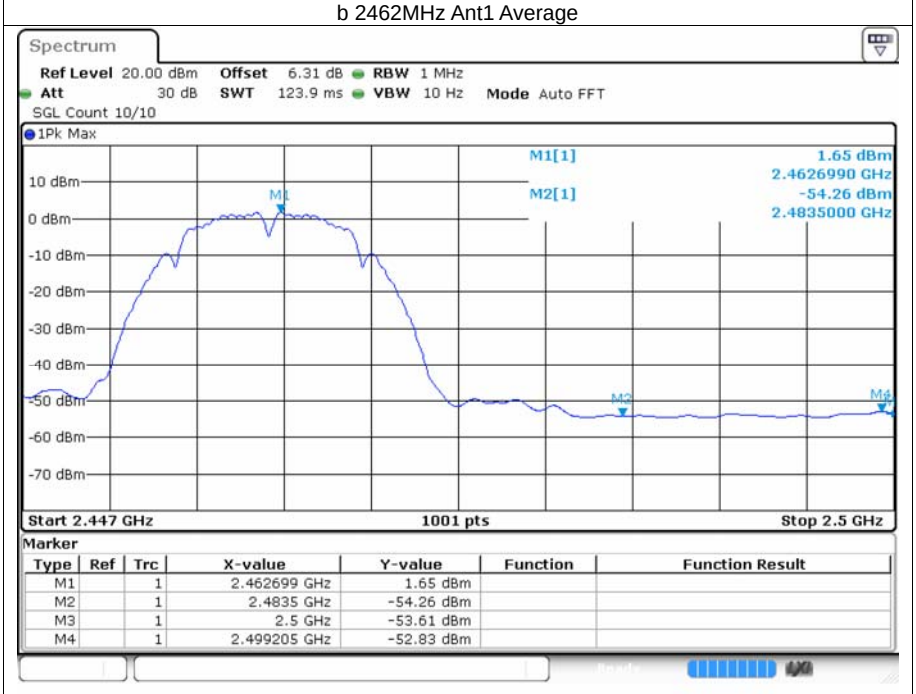
b 2412MHz Ant1 Average



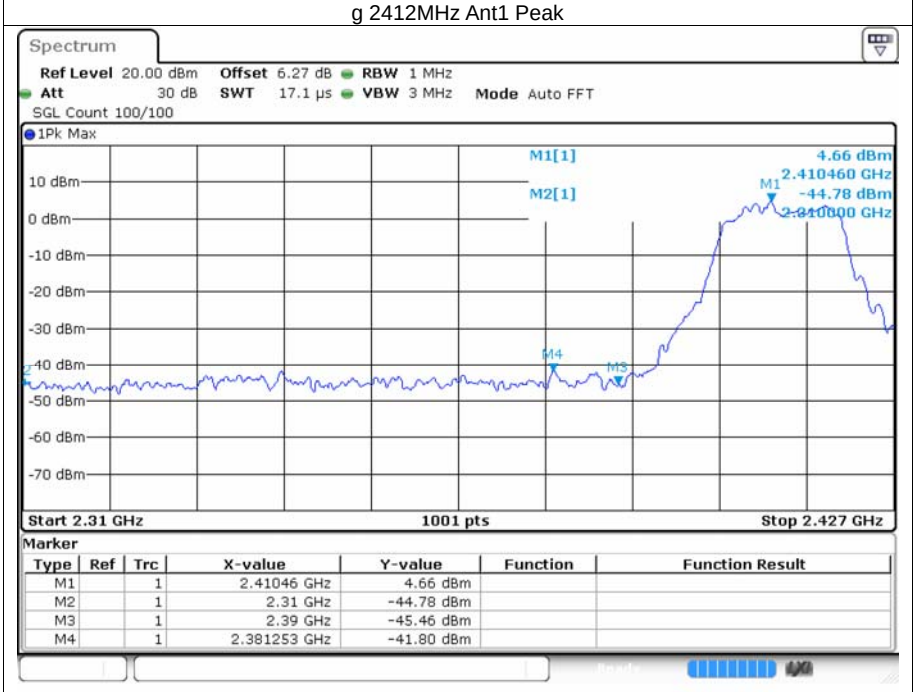
b 2462MHz Ant1 Peak



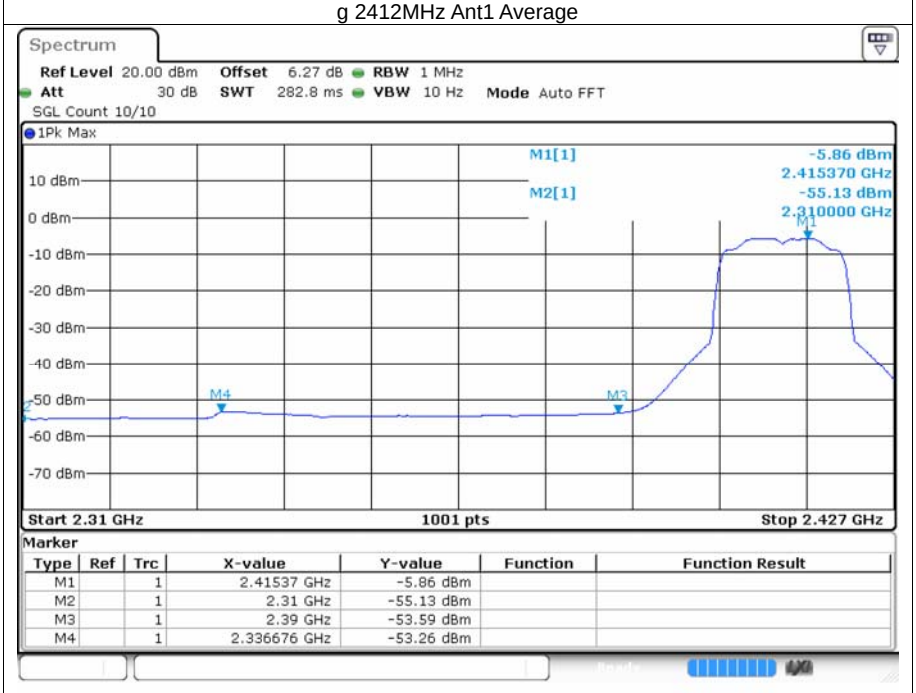
b 2462MHz Ant1 Average



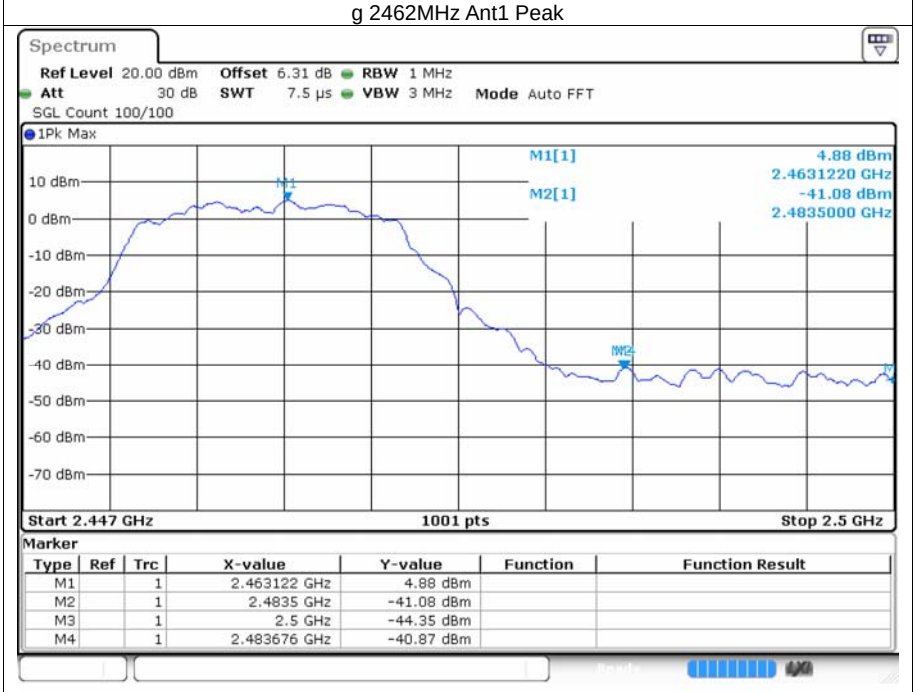
g 2412MHz Ant1 Peak



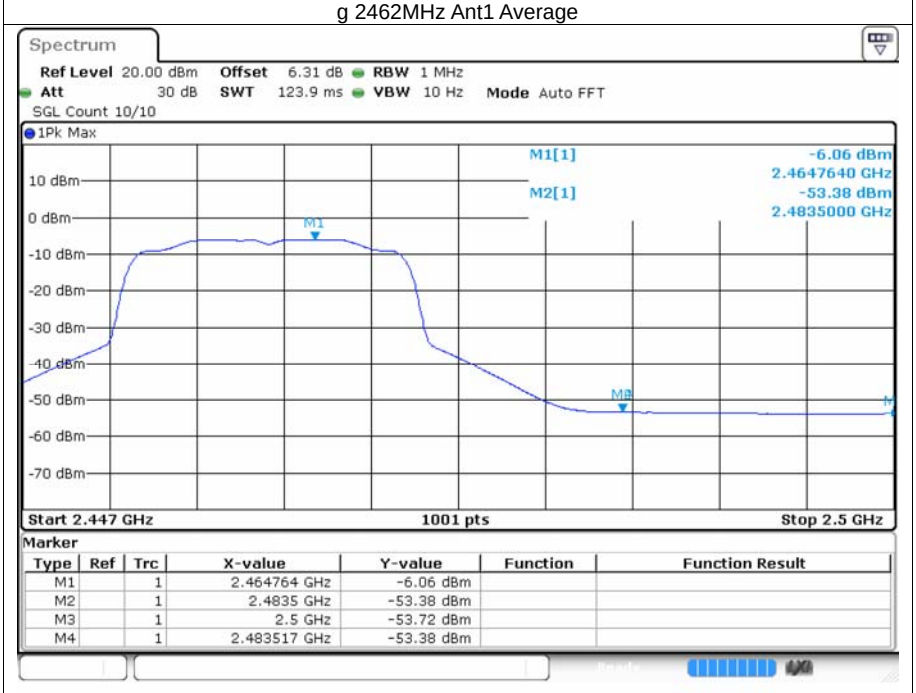
g 2412MHz Ant1 Average



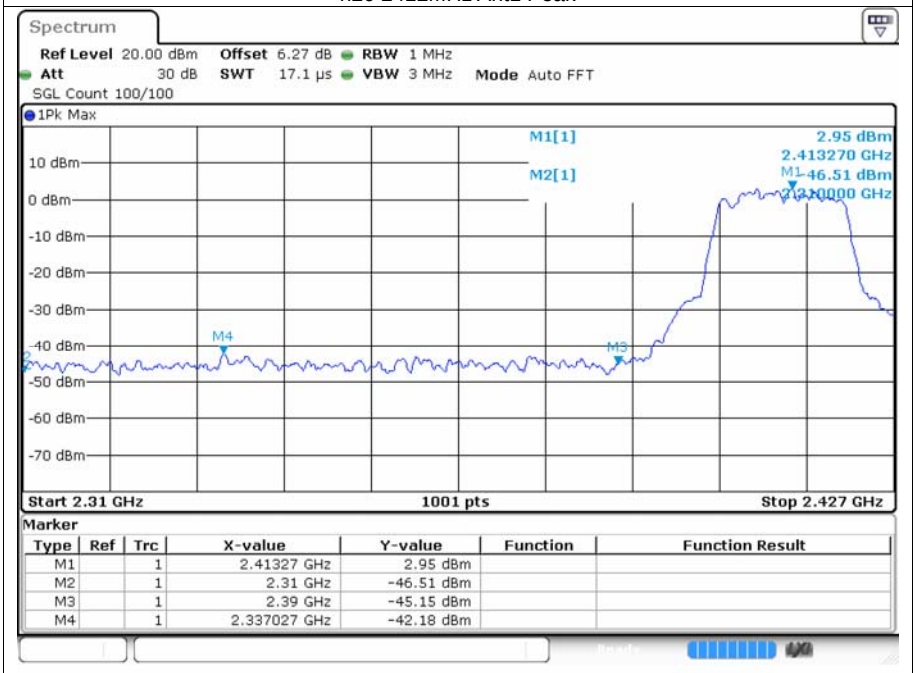
g 2462MHz Ant1 Peak



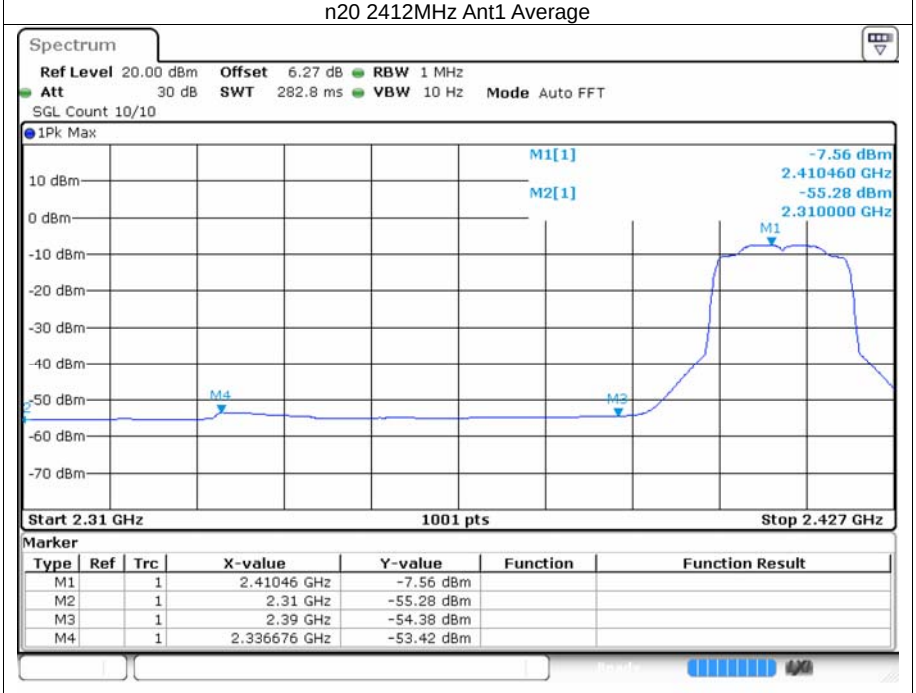
g 2462MHz Ant1 Average



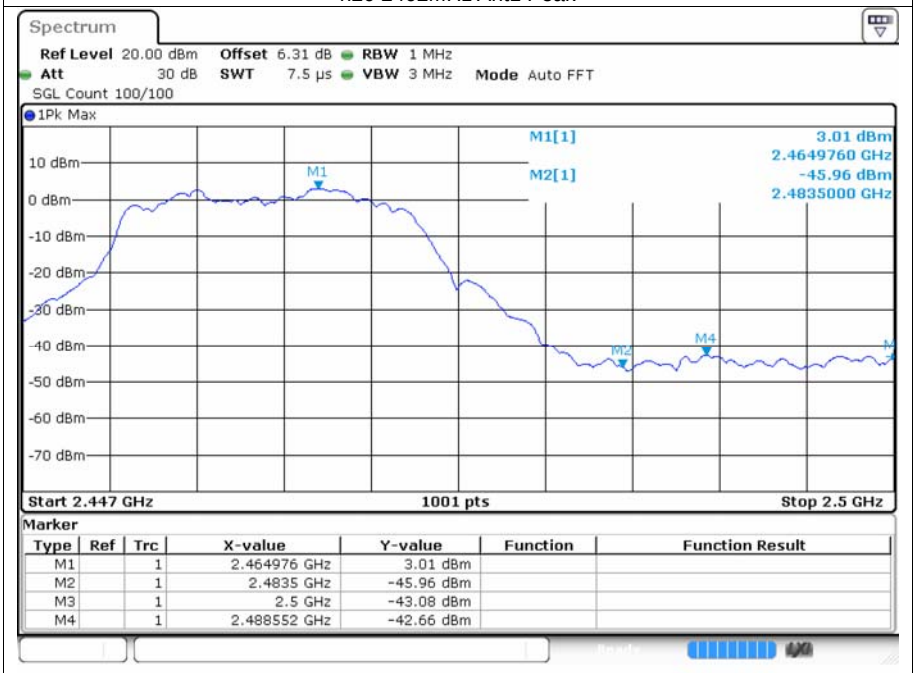
n20 2412MHz Ant1 Peak



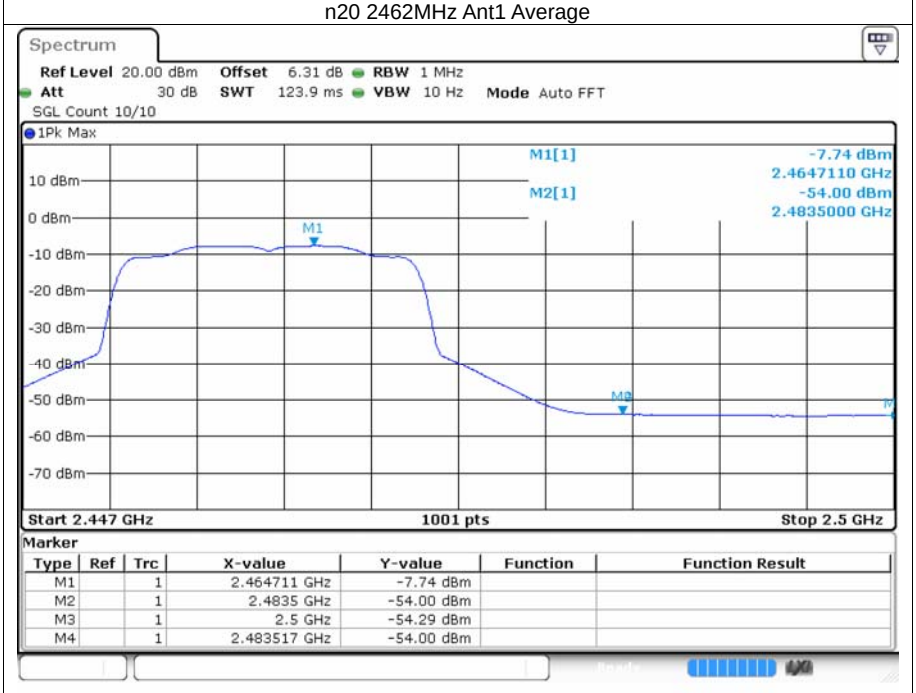
n20 2412MHz Ant1 Average



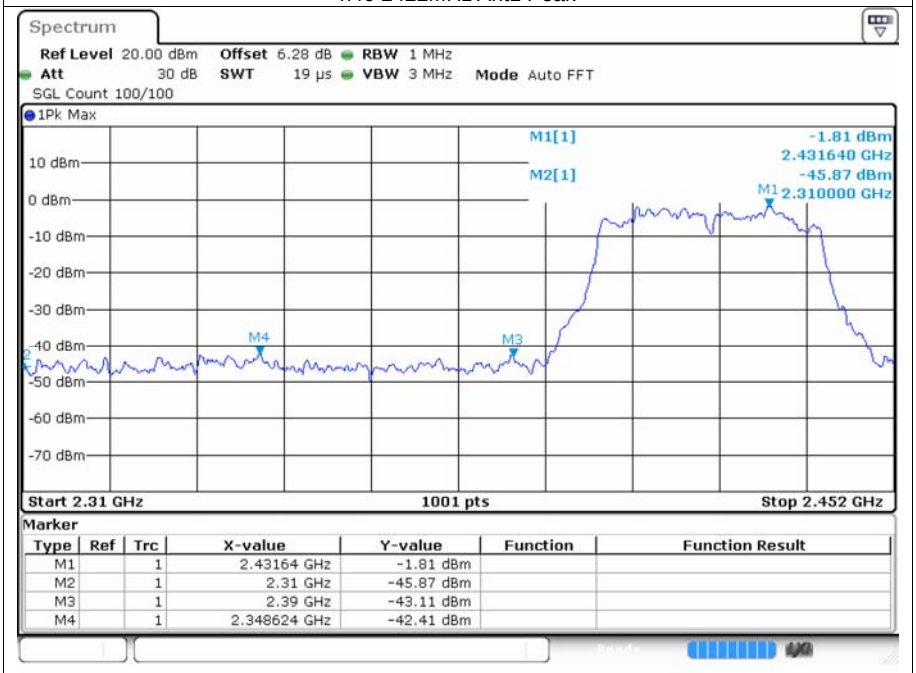
n20 2462MHz Ant1 Peak



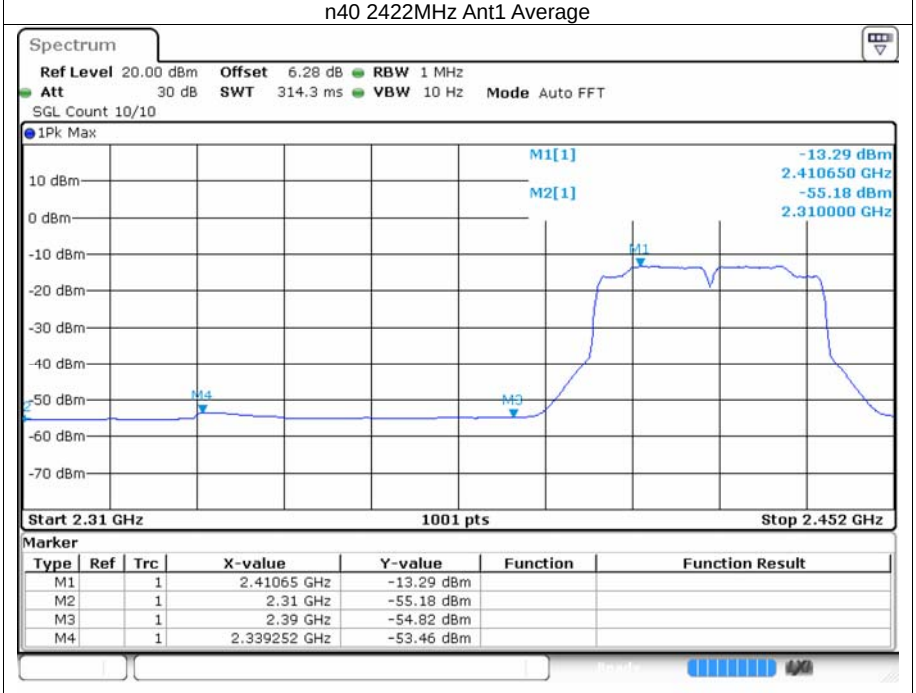
n20 2462MHz Ant1 Average



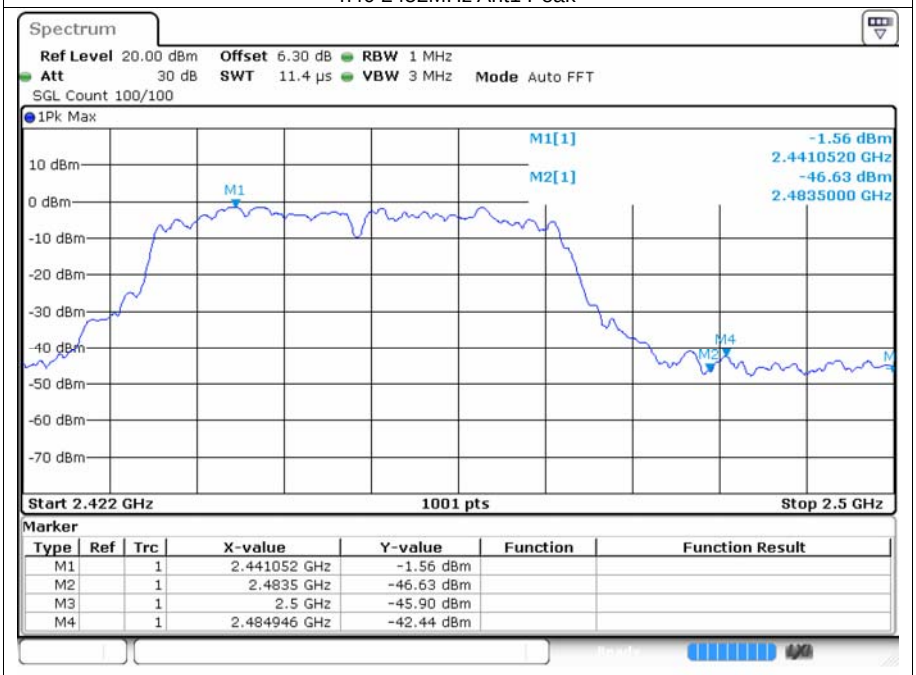
n40 2422MHz Ant1 Peak



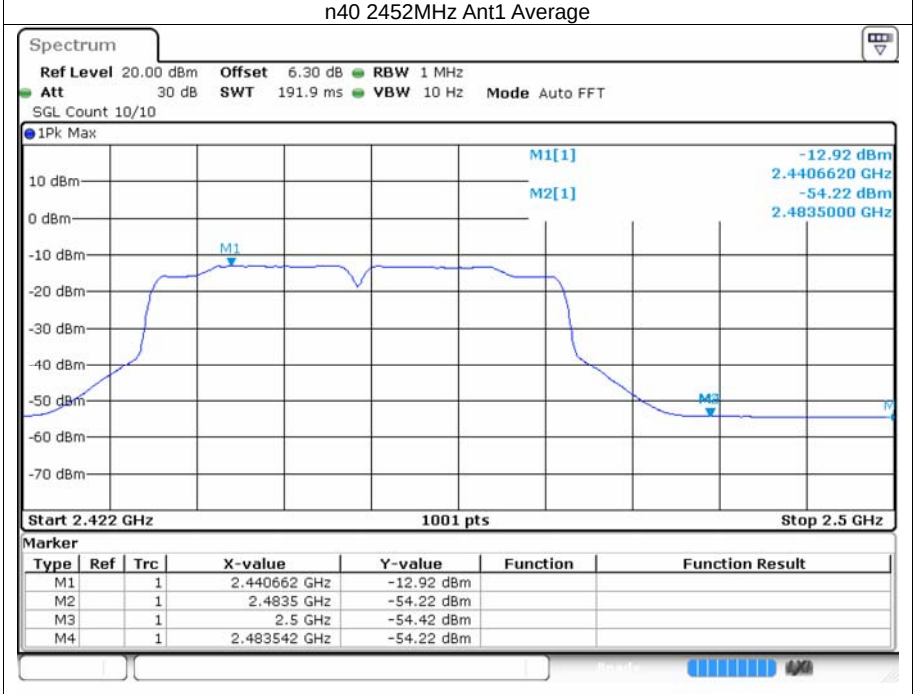
n40 2422MHz Ant1 Average



n40 2452MHz Ant1 Peak



n40 2452MHz Ant1 Average



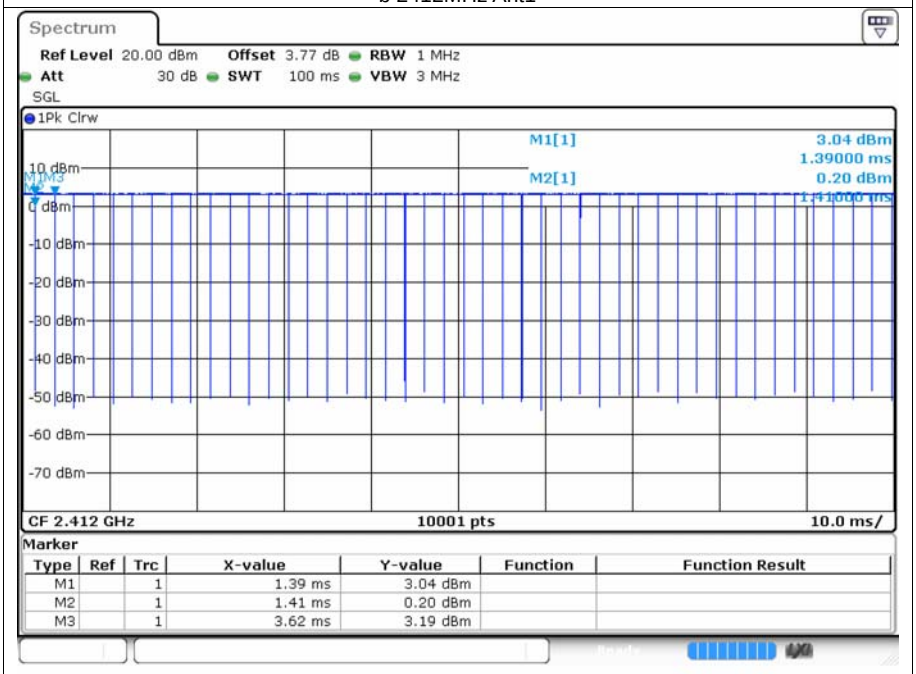
7 Duty Cycle

7.1 Test Result

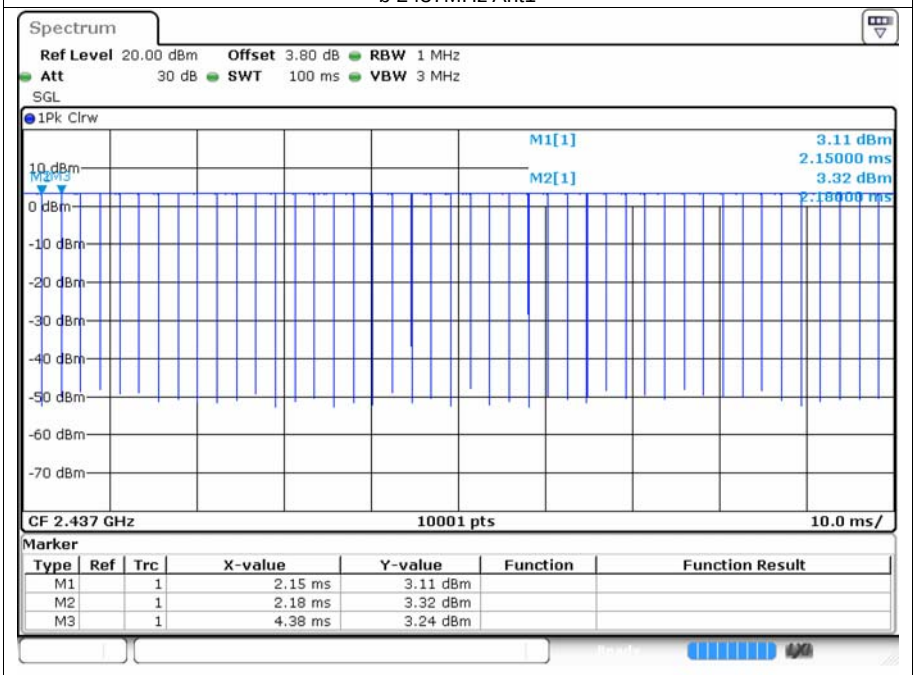
Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	1/T (kHz)
b	2412	Ant1	99.29	0.45
b	2437	Ant1	99.18	0.45
b	2462	Ant1	99.32	0.45
g	2412	Ant1	99.19	0.49
g	2437	Ant1	99.22	0.49
g	2462	Ant1	99.2	0.49
n20	2412	Ant1	99.14	0.52
n20	2437	Ant1	99.15	0.53
n20	2462	Ant1	99.15	0.53
n40	2422	Ant1	98.28	1.06
n40	2437	Ant1	98.27	1.08
n40	2452	Ant1	98.28	1.06

7.2 Test Graphs

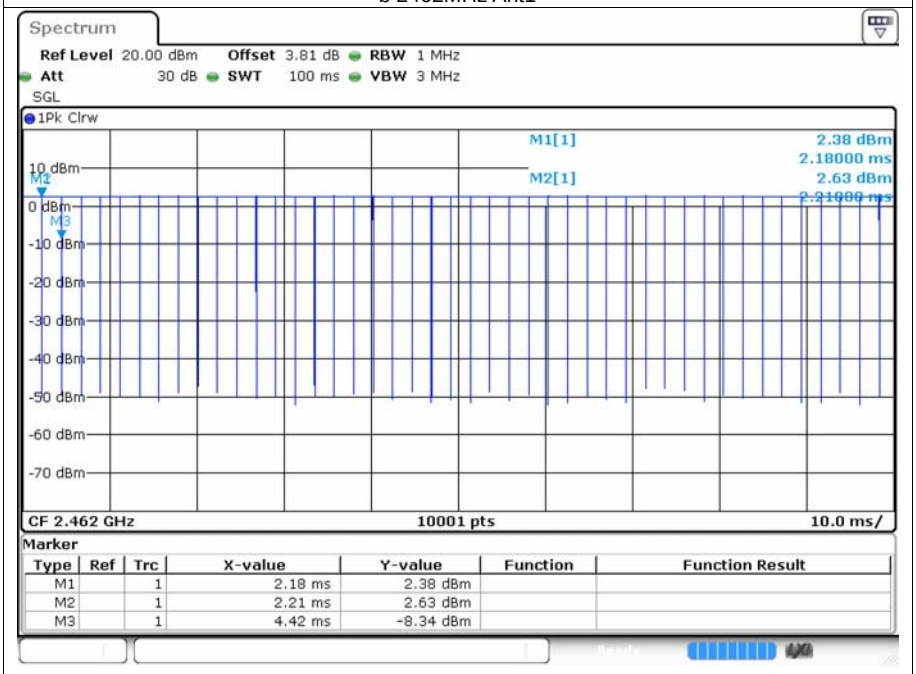
Test Graphs
b 2412MHz Ant1



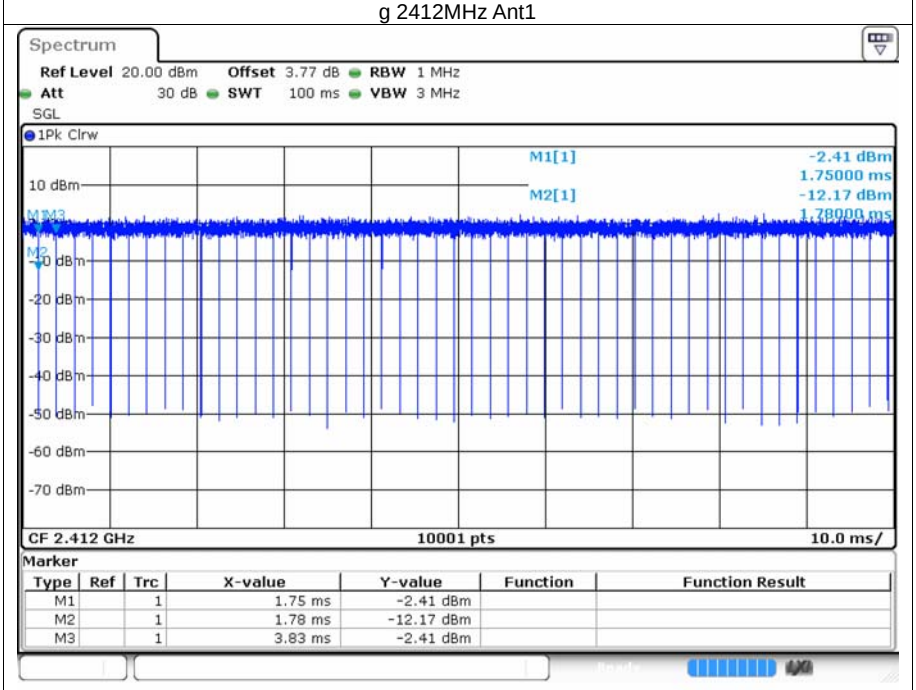
b 2437MHz Ant1



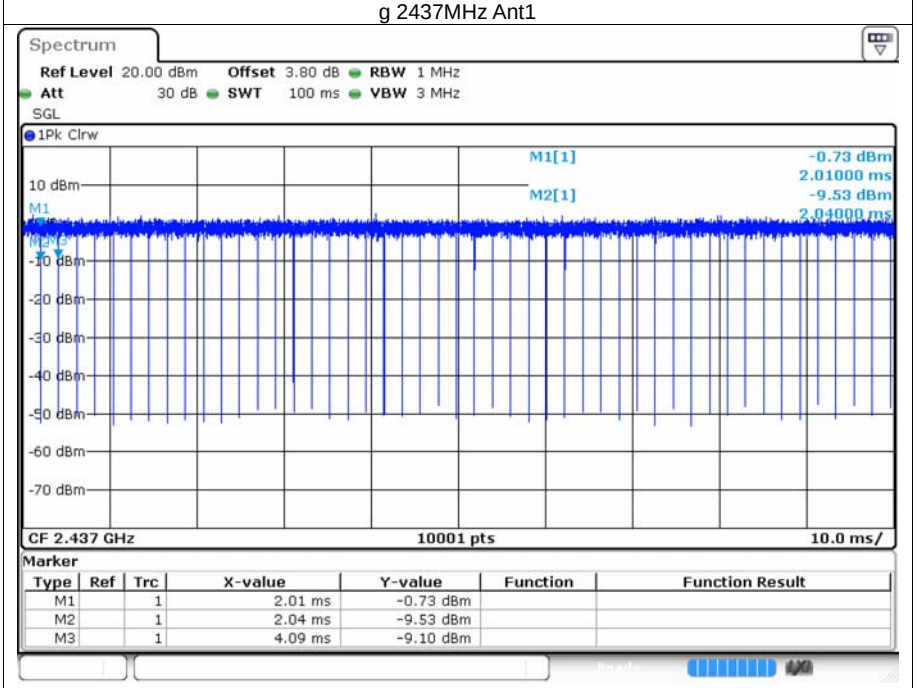
Test Graphs
b 2462MHz Ant1



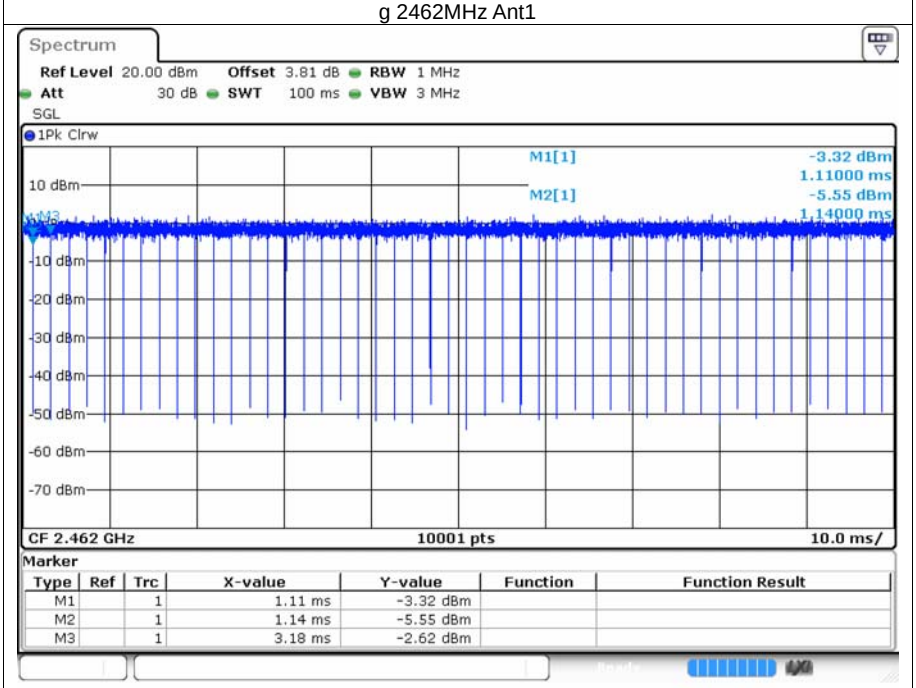
g 2412MHz Ant1



Test Graphs
g 2437MHz Ant1

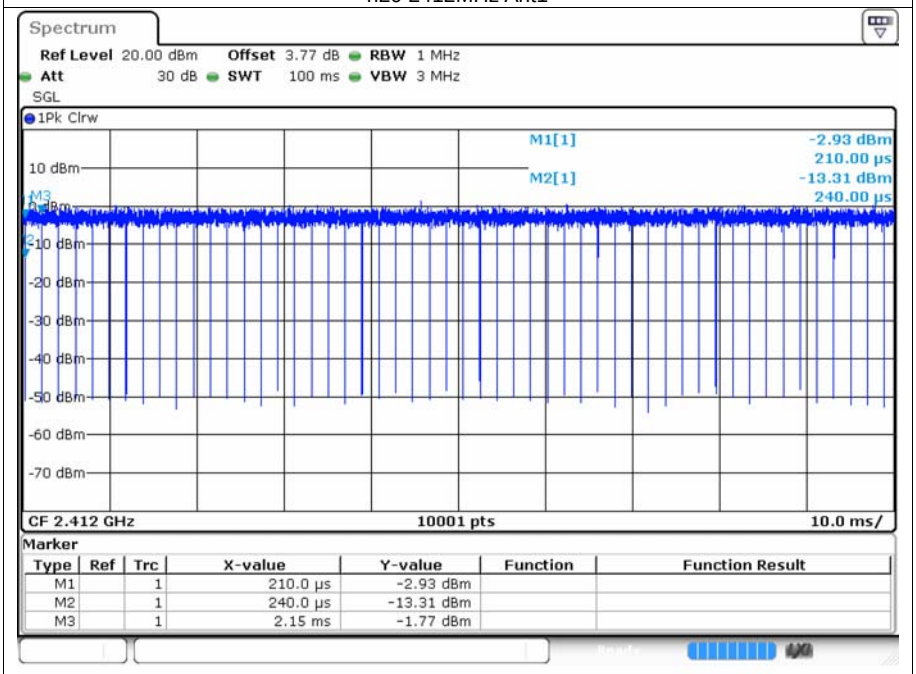


g 2462MHz Ant1

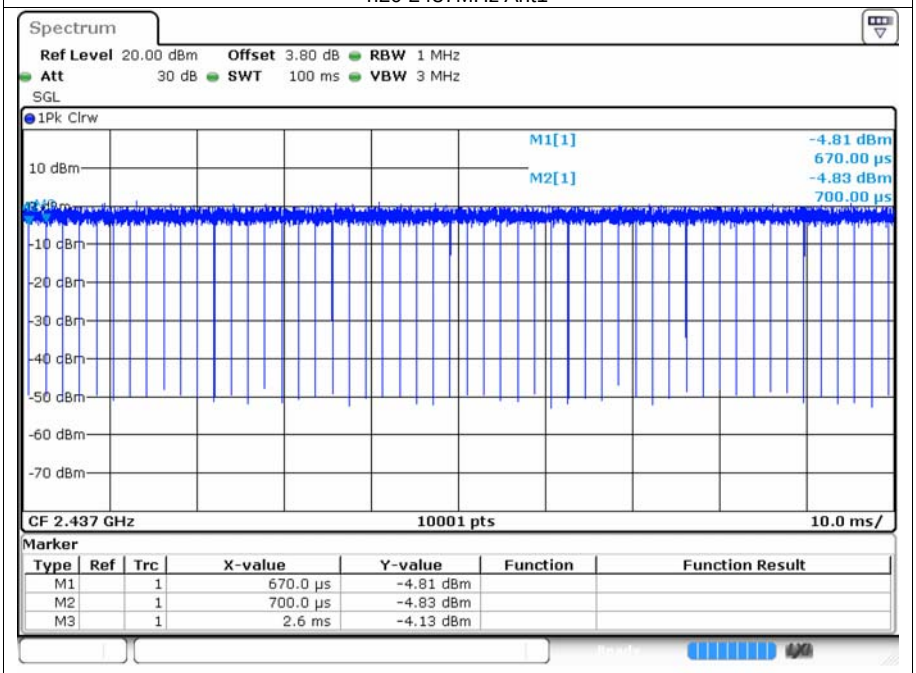


Test Graphs

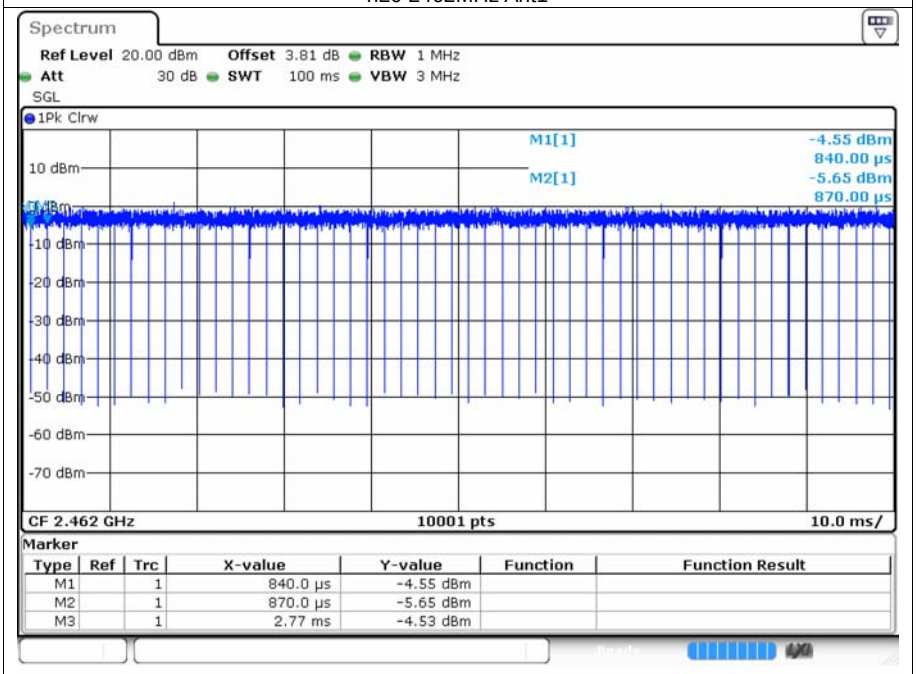
n20 2412MHz Ant1



n20 2437MHz Ant1



Test Graphs
n20 2462MHz Ant1



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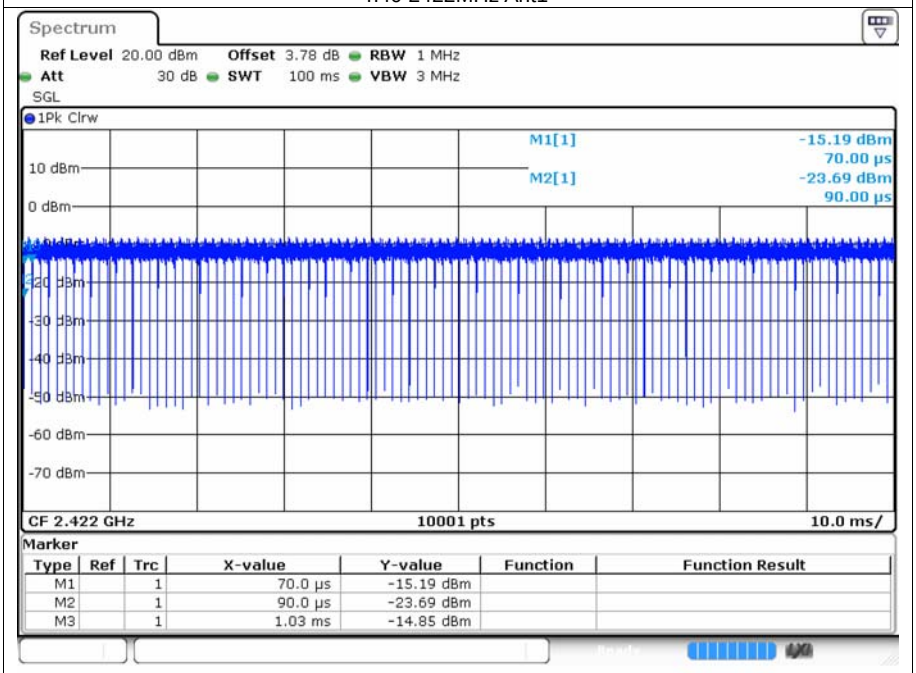

Test Graphs
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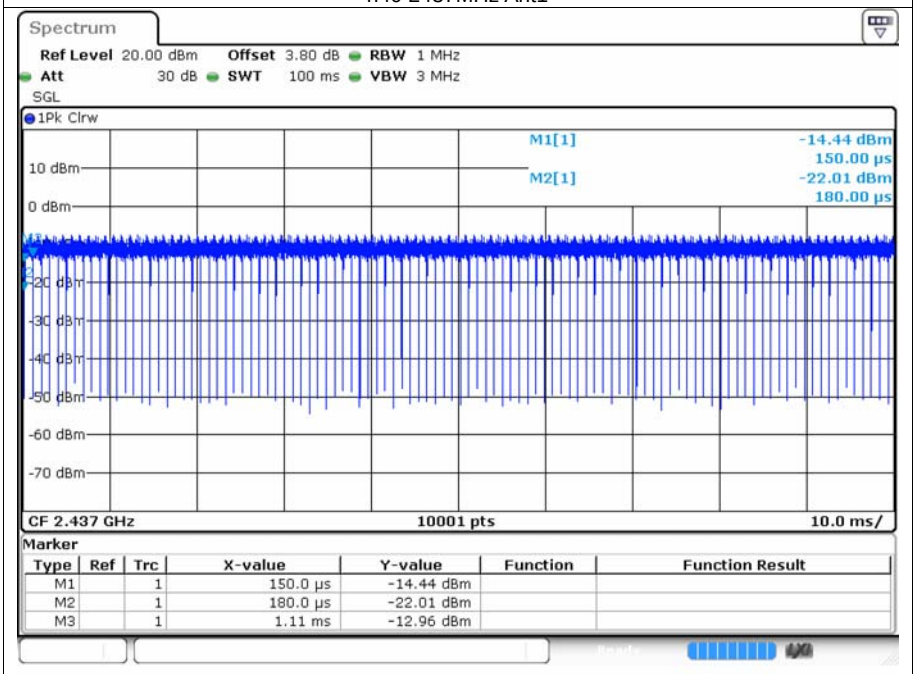
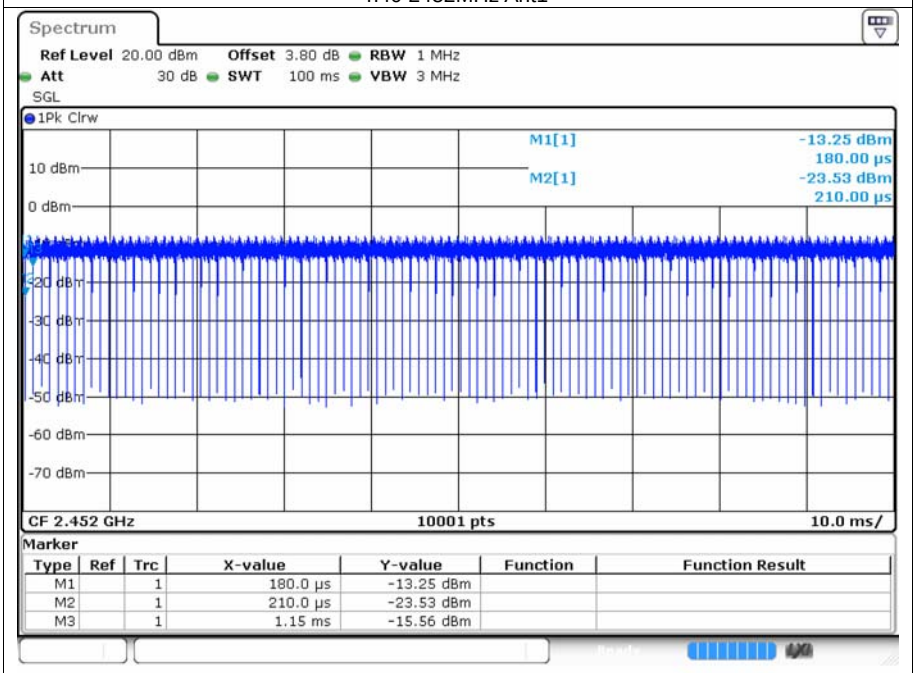


n40 2452MHz Ant1



---The End---