Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Digital Night Vision

Trade Mark: Bestguarder,Digicool

Test Model: NV-880/VC-2000

Environmental Conditions

Temperature:	25.2° 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

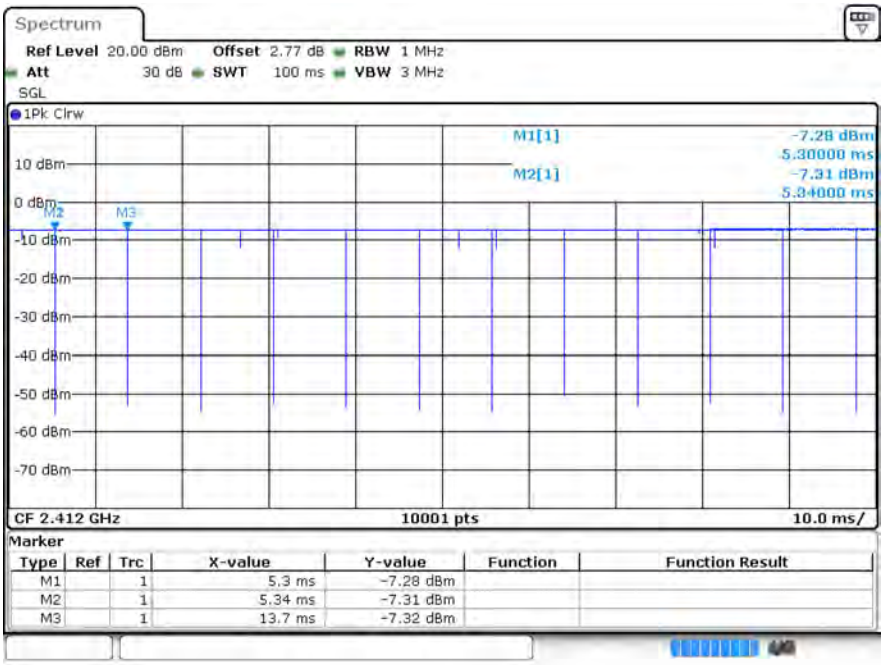
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	1/T (kHz)
b	2412	Ant1	99.6	0.12
b	2437	Ant1	99.6	0.12
b	2462	Ant1	99.59	0.12
g	2412	Ant1	86.75	4.55
g	2437	Ant1	86.59	4.76
g	2462	Ant1	86.81	4.55
n20	2412	Ant1	87.4	4.17
n20	2437	Ant1	87.08	4.35
n20	2462	Ant1	87.47	4.35
n40	2422	Ant1	76.73	4.76
n40	2437	Ant1	78.93	4.55
n40	2452	Ant1	80.31	4.35

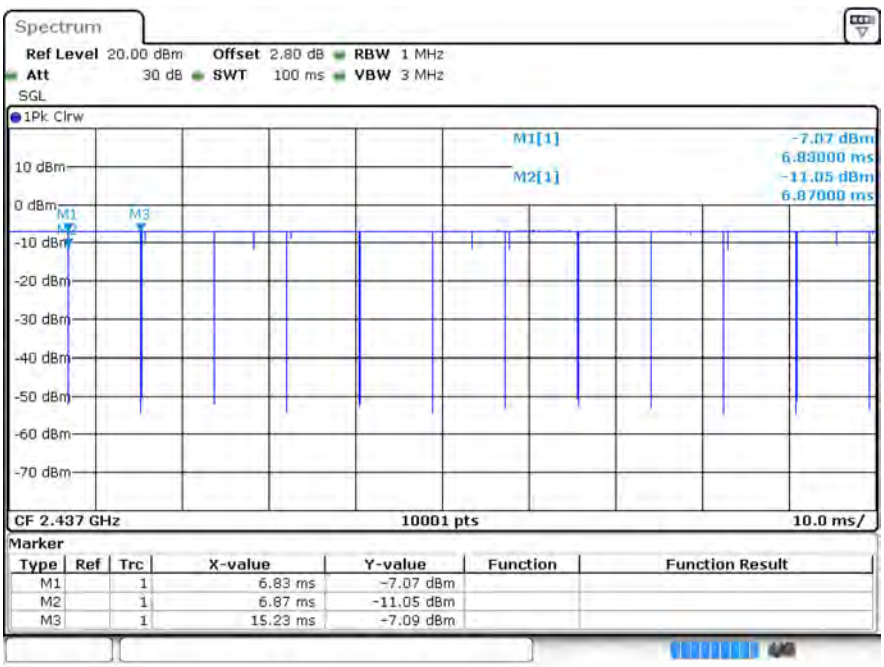
1.2 Test Graphs

Test Graphs

b 2412MHz Ant1

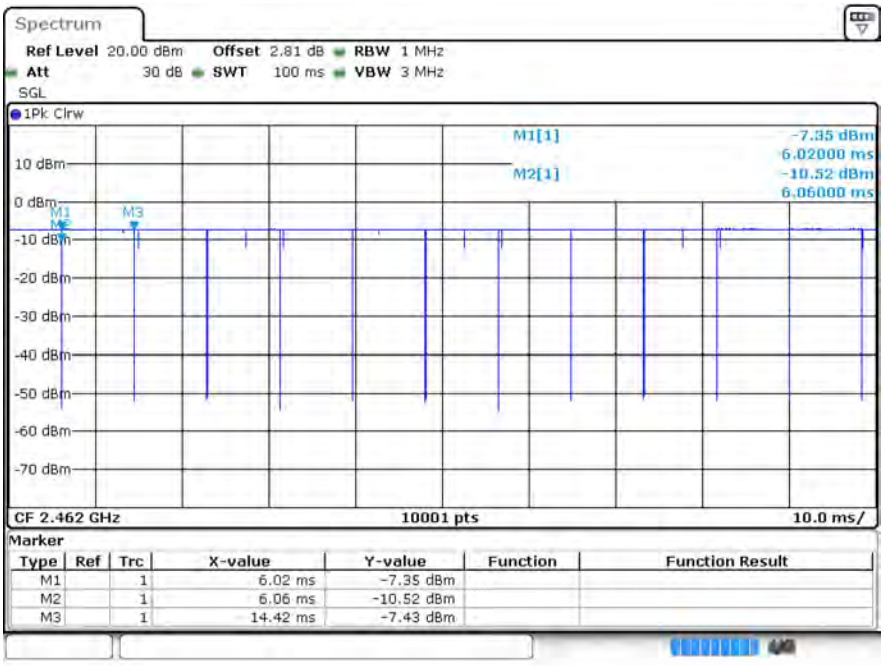


b 2437MHz Ant1

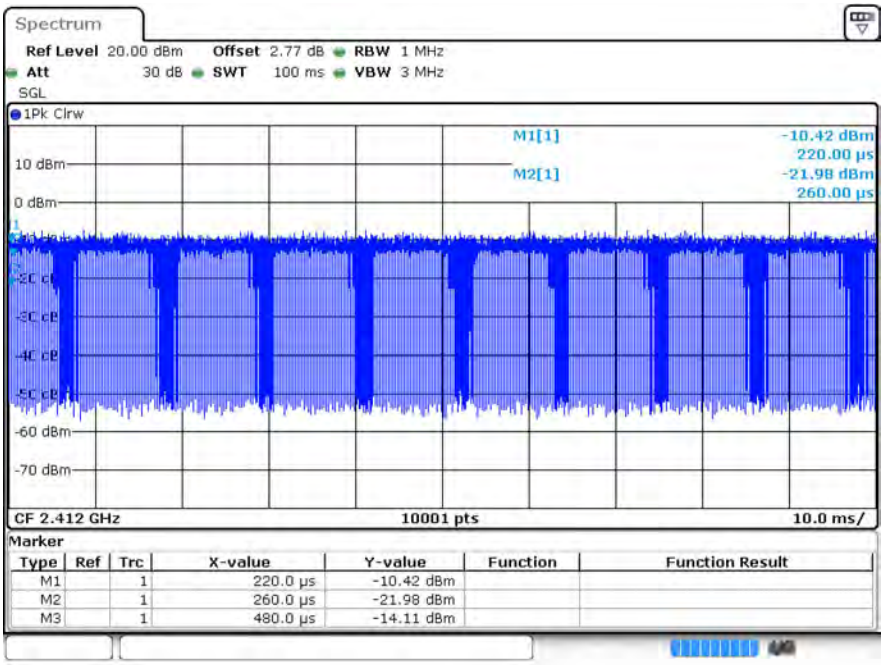


Test Graphs

b 2462MHz Ant1

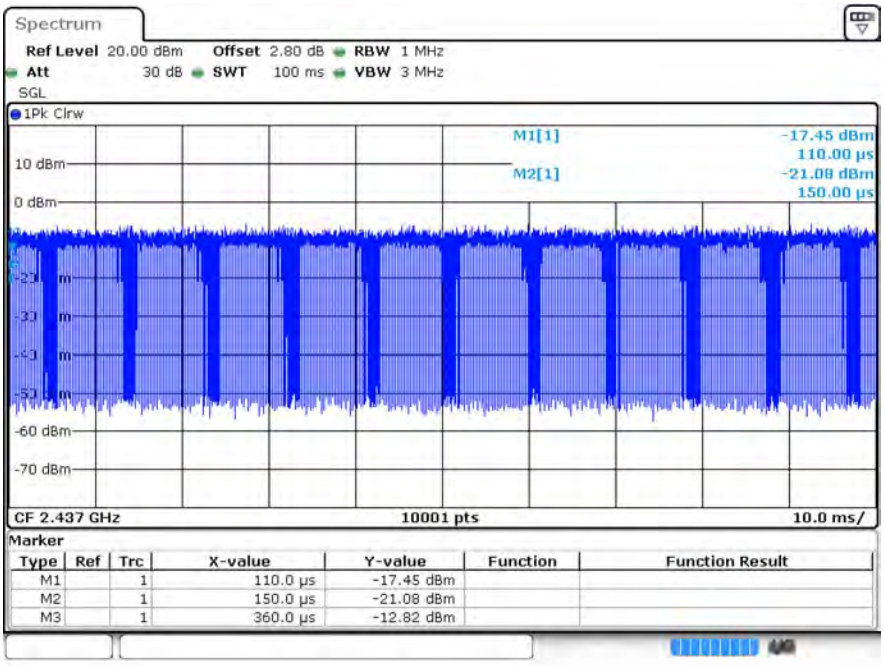


g 2412MHz Ant1

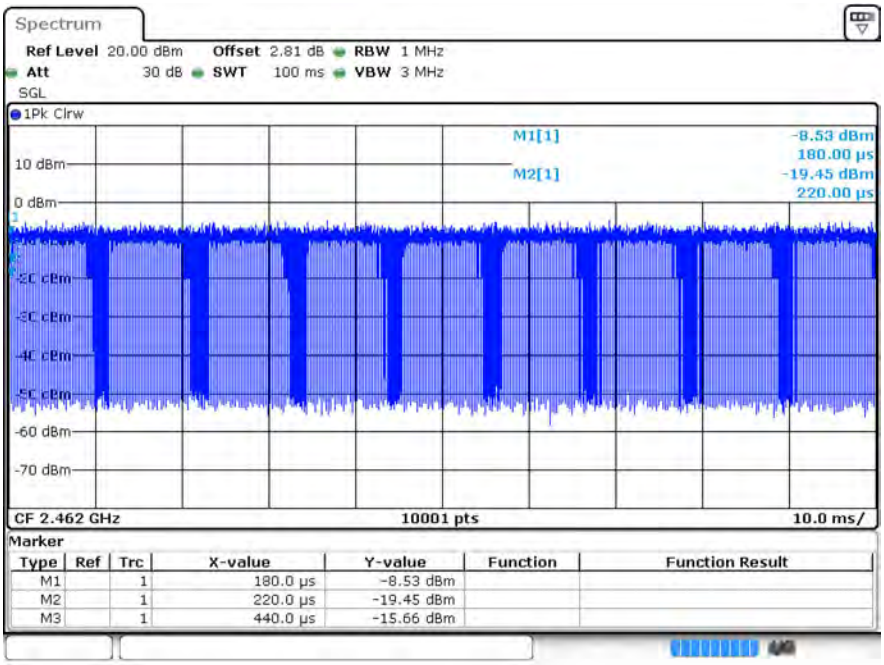


Test Graphs

g 2437MHz Ant1

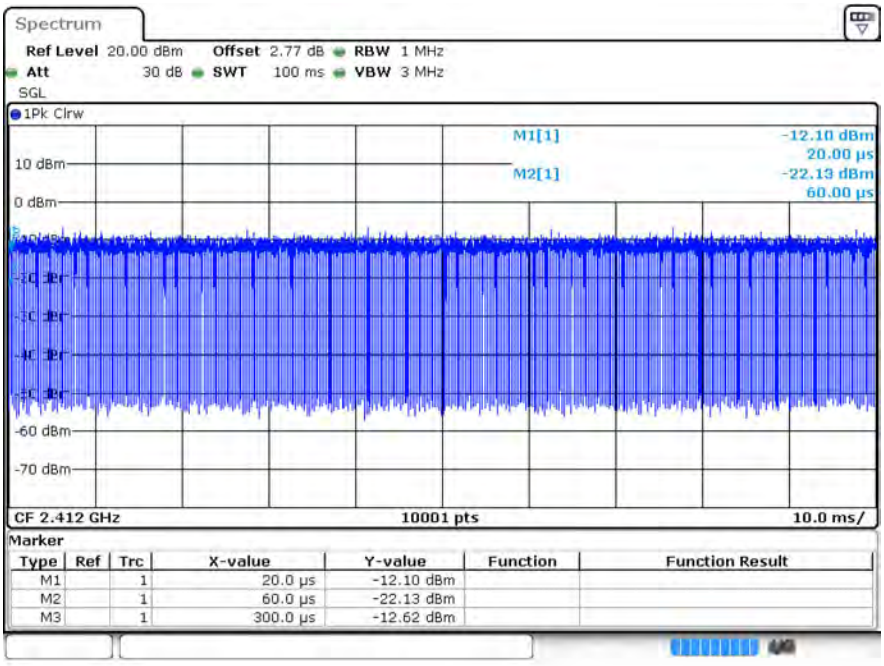


g 2462MHz Ant1

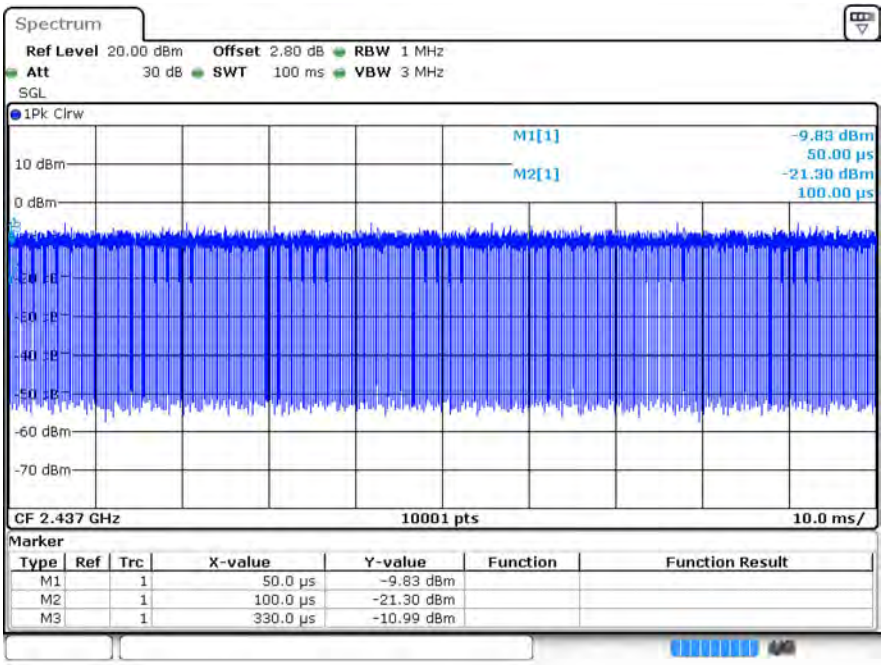


Test Graphs

n20 2412MHz Ant1

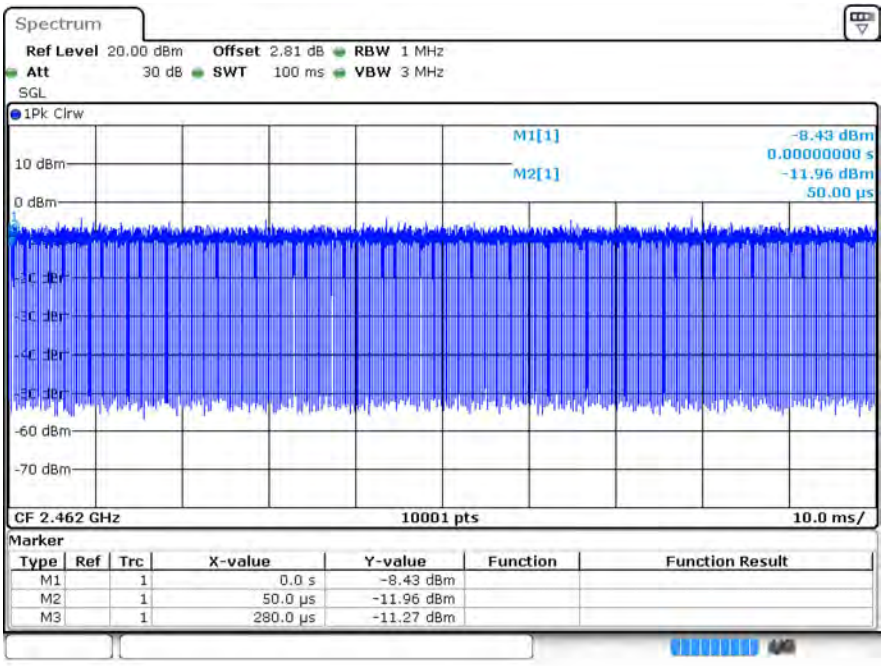


n20 2437MHz Ant1

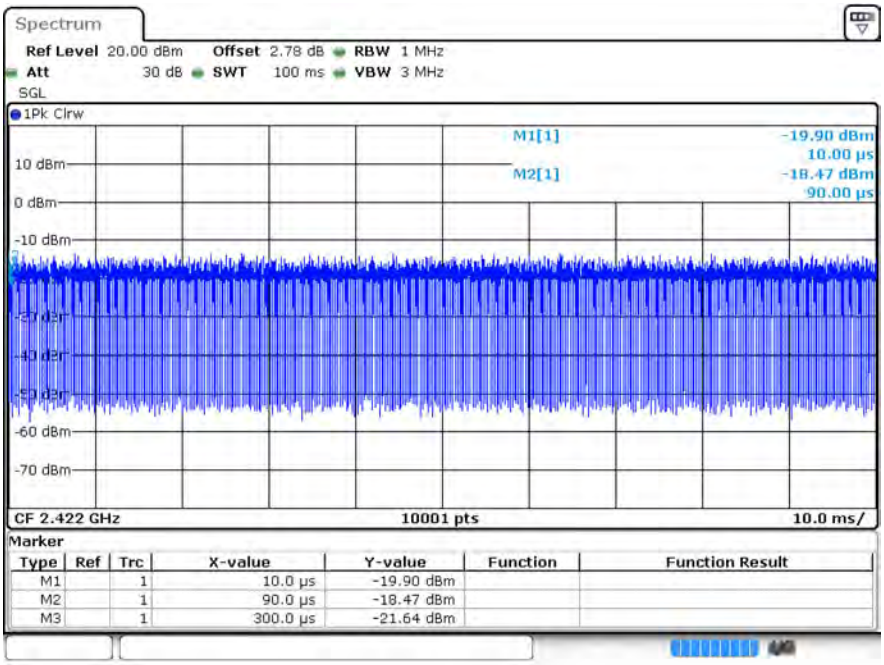


Test Graphs

n20 2462MHz Ant1

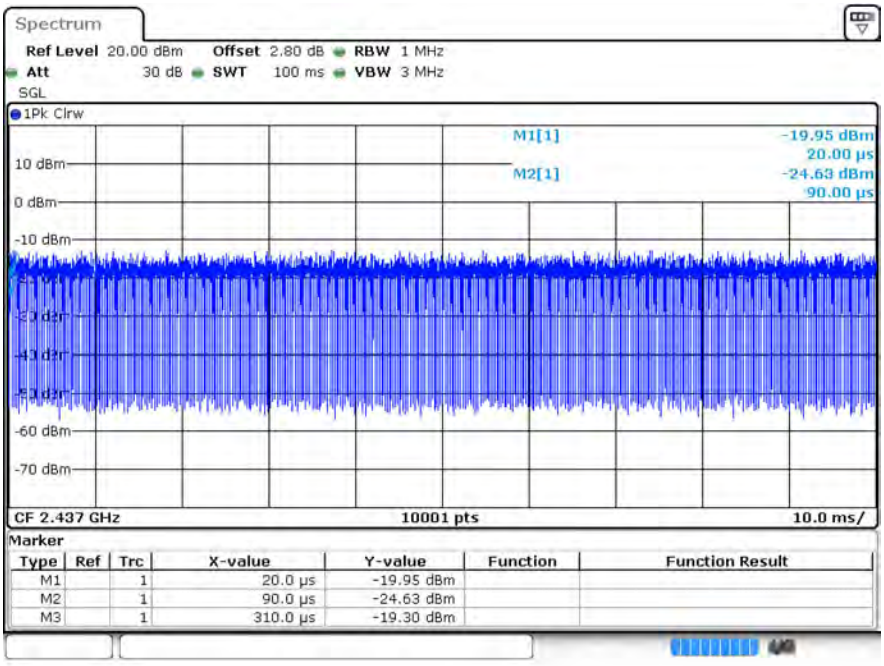


n40 2422MHz Ant1

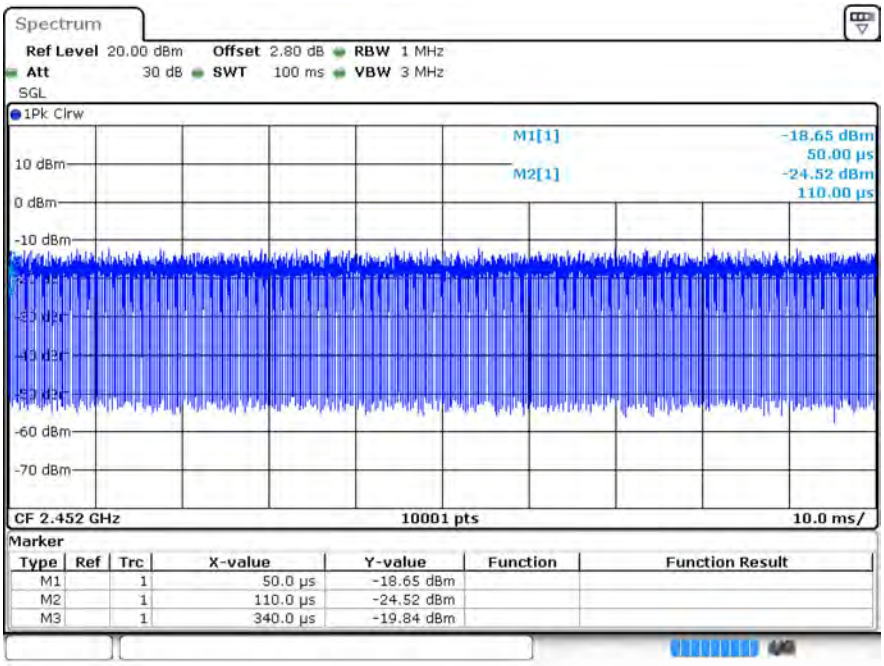


Test Graphs

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	3.46	30	Pass
b	2437	Ant1	3.41	30	Pass
b	2462	Ant1	3.14	30	Pass
g	2412	Ant1	2.04	30	Pass
g	2437	Ant1	3.31	30	Pass
g	2462	Ant1	3.43	30	Pass
n20	2412	Ant1	2.01	30	Pass
n20	2437	Ant1	3.40	30	Pass
n20	2462	Ant1	3.33	30	Pass
n40	2422	Ant1	2.87	30	Pass
n40	2437	Ant1	3.42	30	Pass
n40	2452	Ant1	3.29	30	Pass

3 -6dB Bandwidth

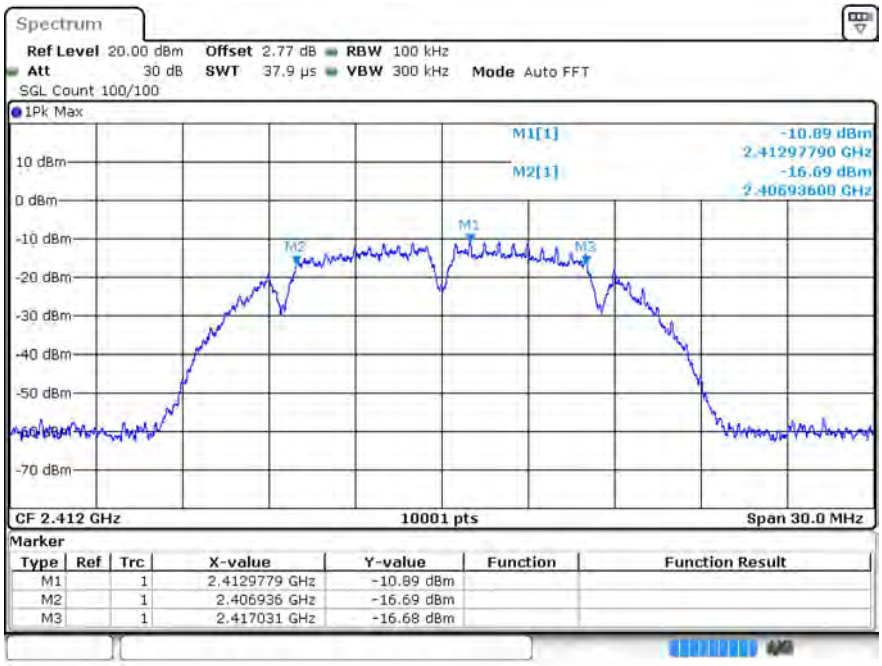
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	10.095	0.5	Pass
b	2437	Ant1	10.074	0.5	Pass
b	2462	Ant1	10.086	0.5	Pass
g	2412	Ant1	15.111	0.5	Pass
g	2437	Ant1	16.299	0.5	Pass
g	2462	Ant1	15.126	0.5	Pass
n20	2412	Ant1	15.111	0.5	Pass
n20	2437	Ant1	12.666	0.5	Pass
n20	2462	Ant1	15.051	0.5	Pass
n40	2422	Ant1	35.082	0.5	Pass
n40	2437	Ant1	35.058	0.5	Pass
n40	2452	Ant1	31.32	0.5	Pass

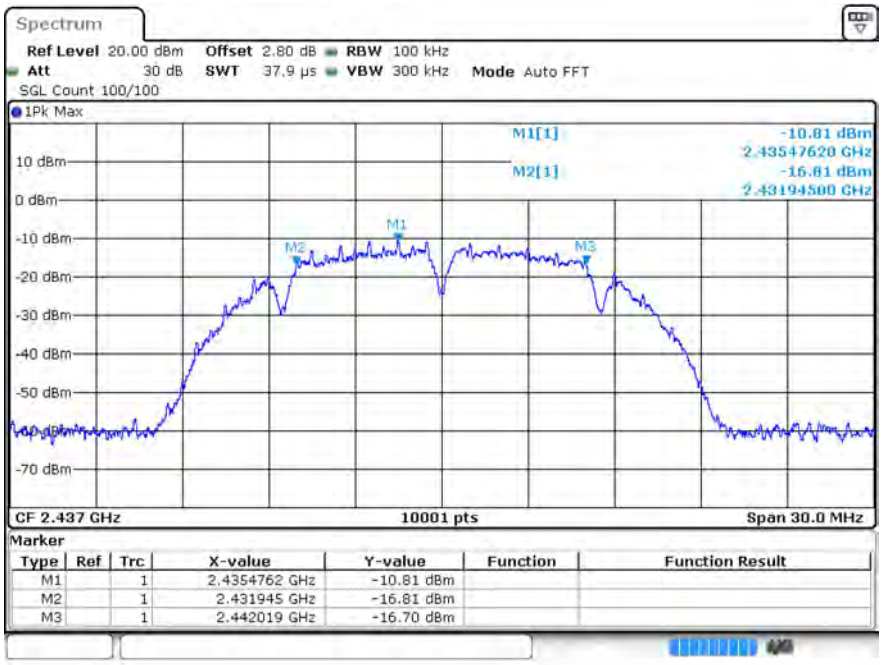
3.2 Test Graphs

Test Graphs

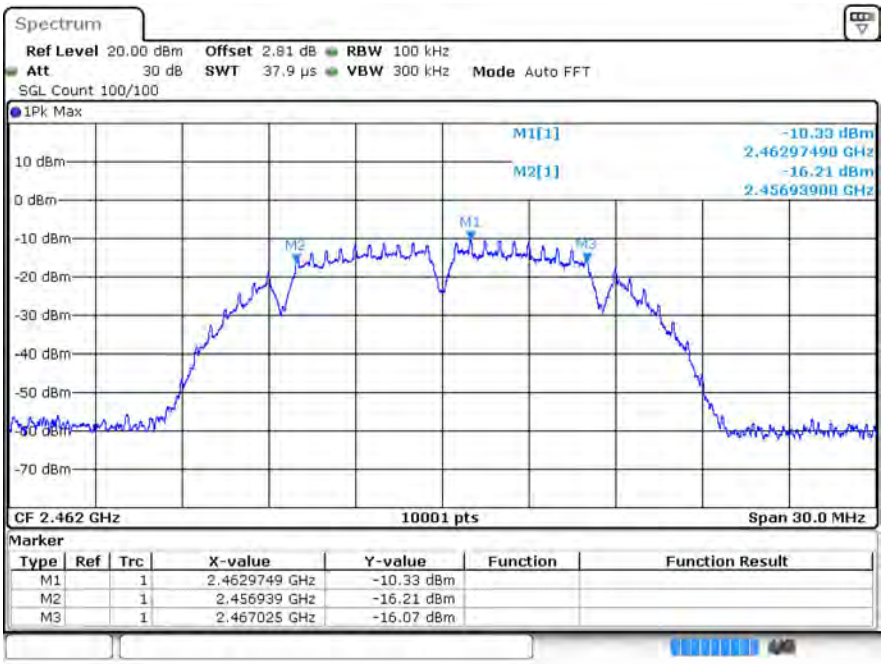
b 2412MHz Ant1



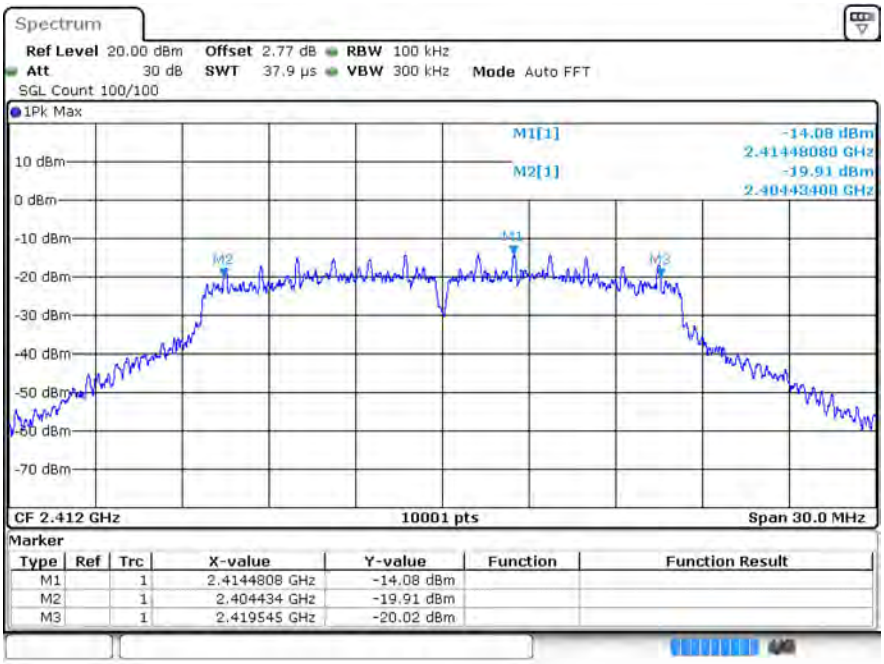
b 2437MHz Ant1



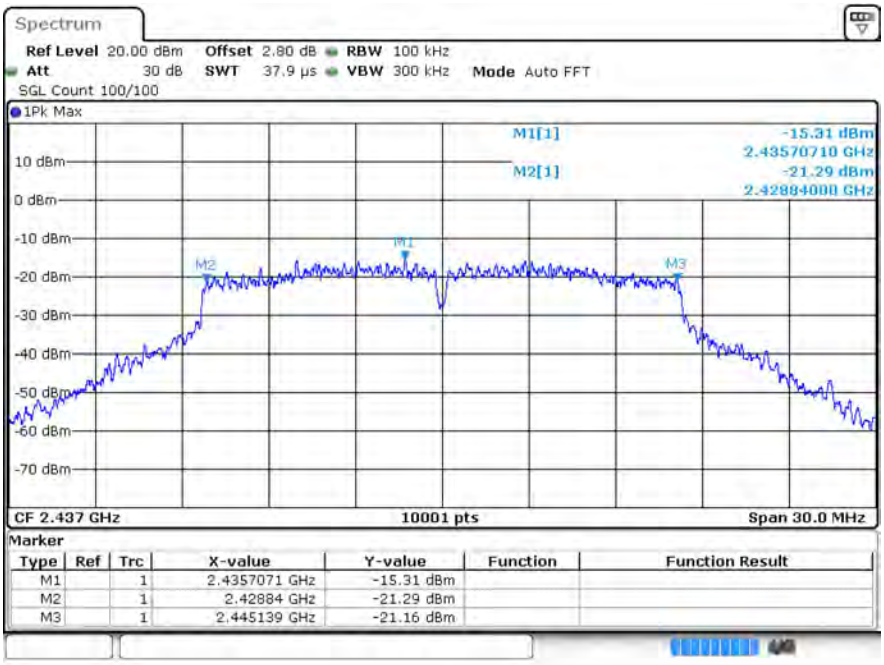
b 2462MHz Ant1



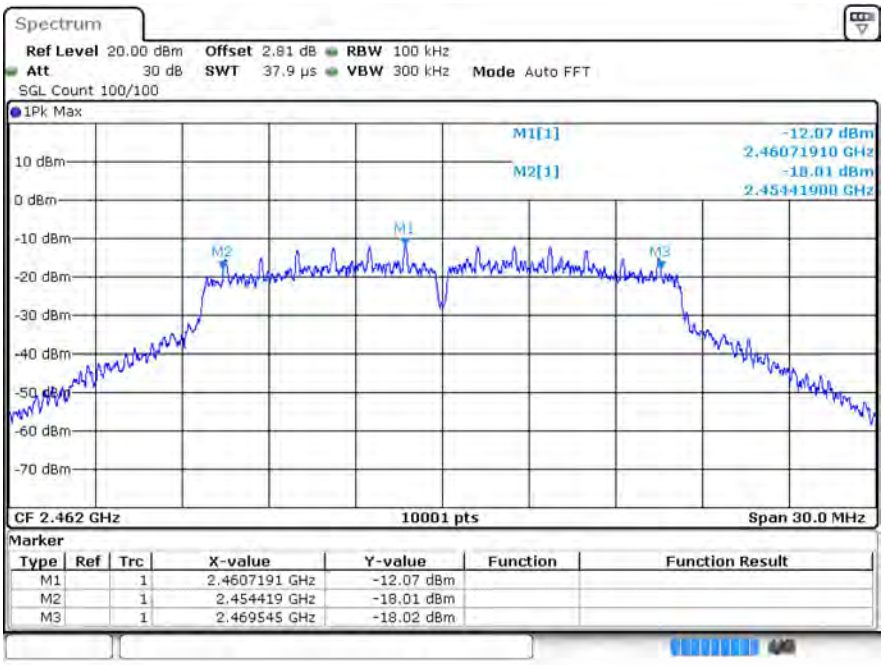
g 2412MHz Ant1



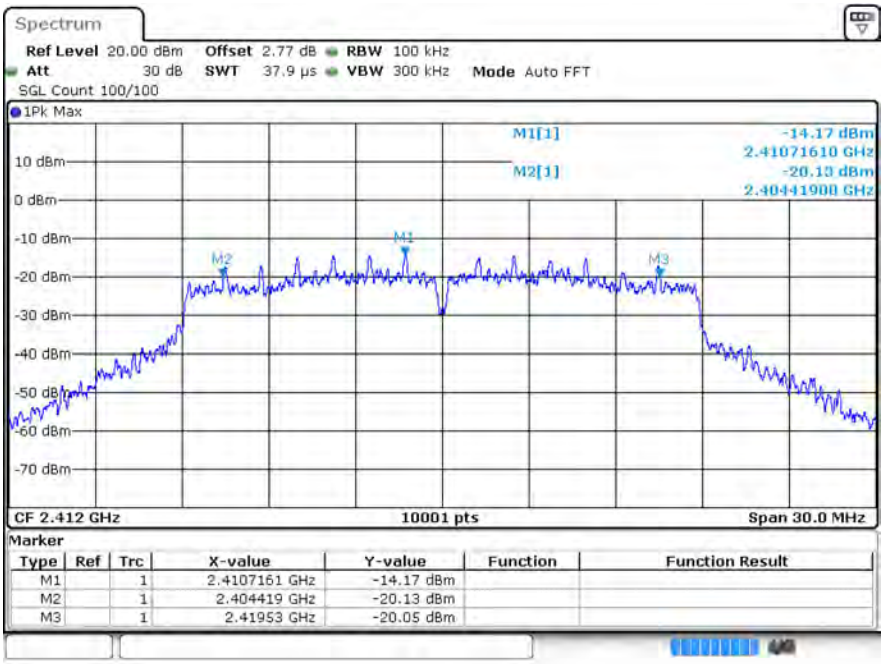
g 2437MHz Ant1



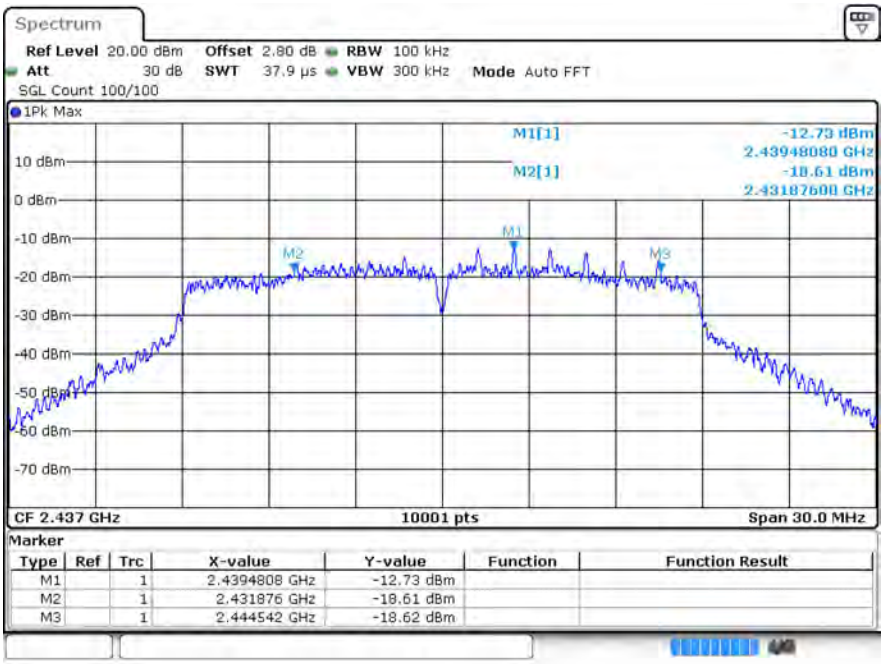
g 2462MHz Ant1



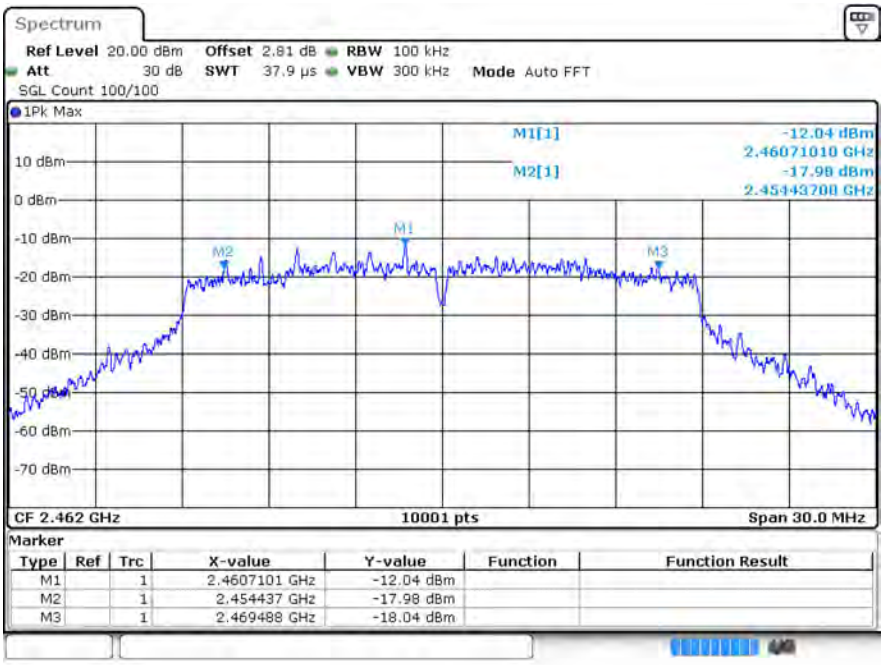
n20 2412MHz Ant1



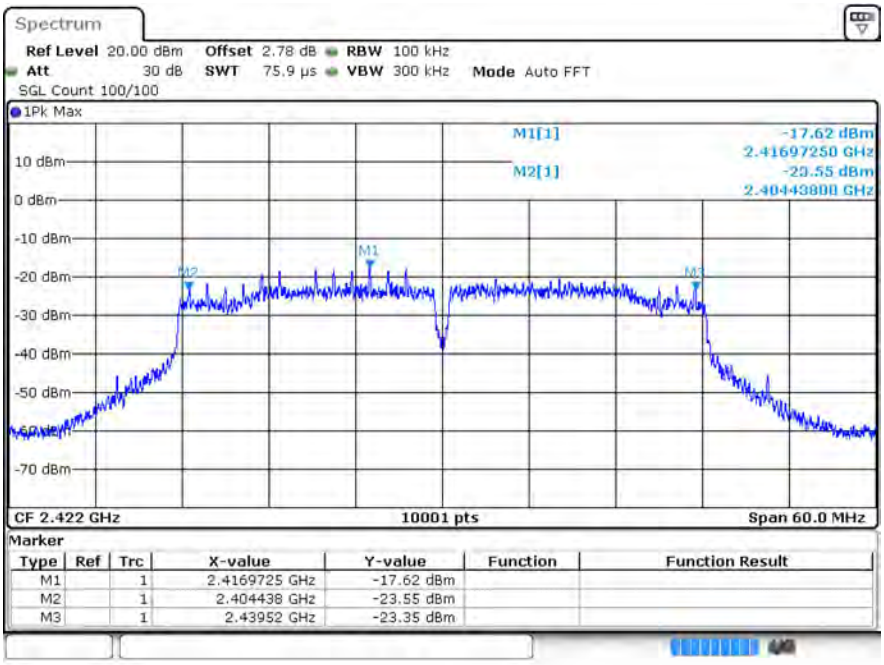
n20 2437MHz Ant1



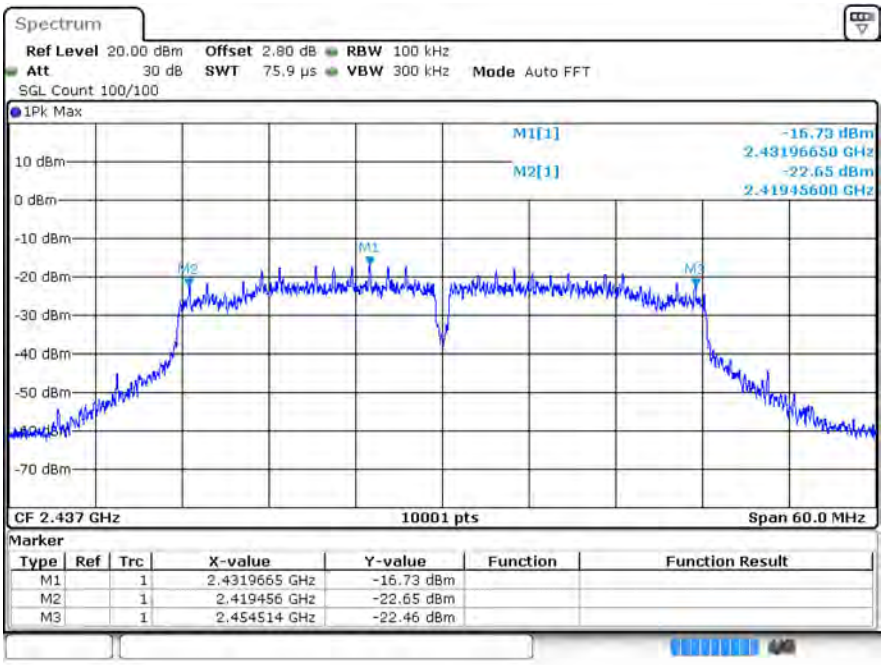
n20 2462MHz Ant1



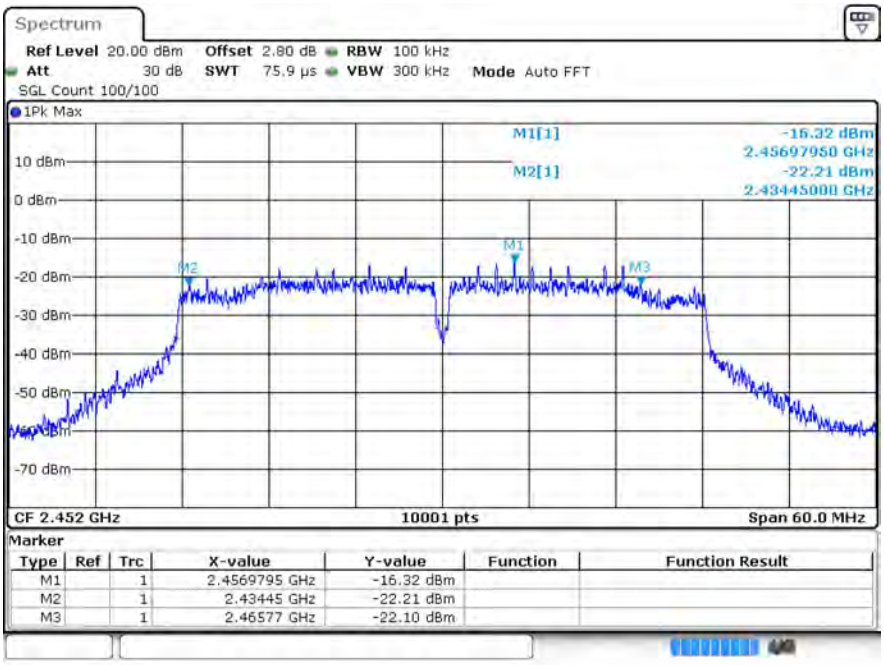
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1

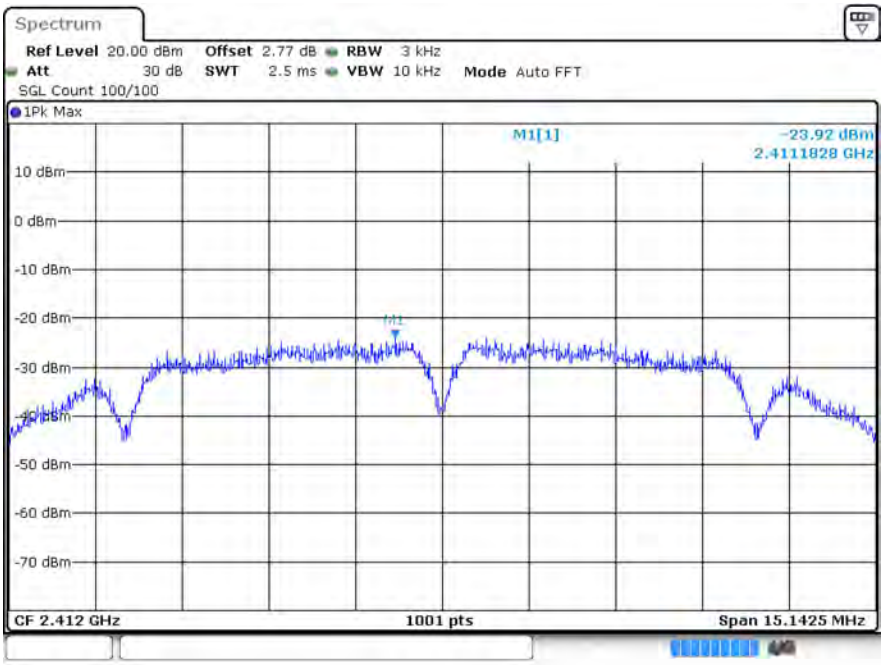
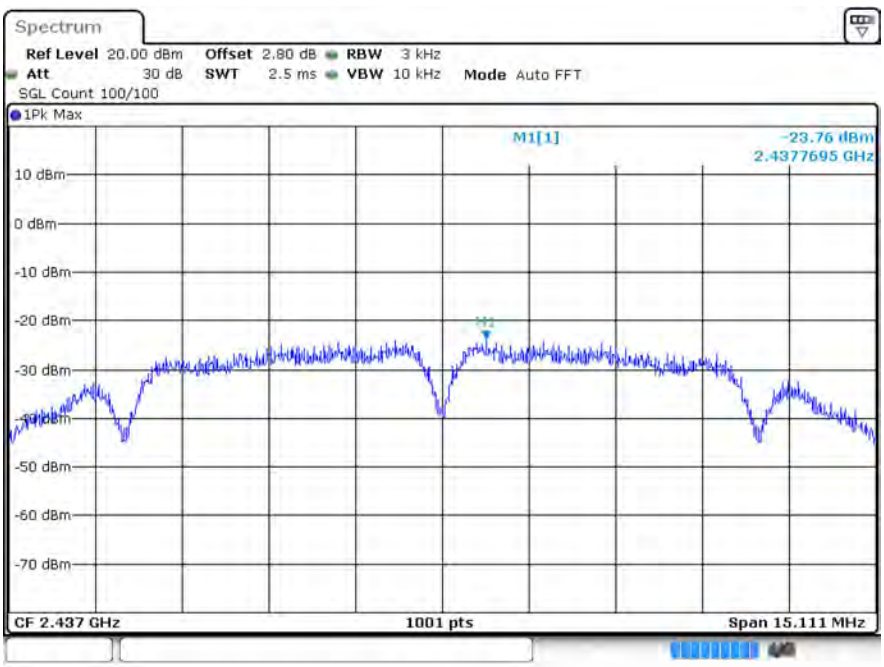


4 Maximum Power Spectral Density Level

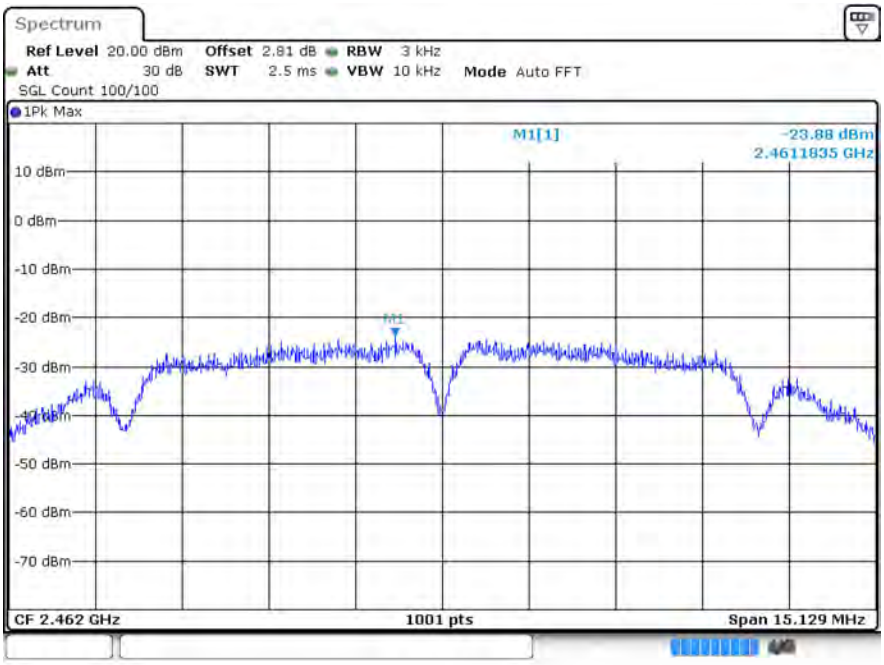
4.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
b	2412	Ant1	-23.92	≤8	Pass
b	2437	Ant1	-23.76	≤8	Pass
b	2462	Ant1	-23.88	≤8	Pass
g	2412	Ant1	-29.45	≤8	Pass
g	2437	Ant1	-26.71	≤8	Pass
g	2462	Ant1	-26.49	≤8	Pass
n20	2412	Ant1	-28.98	≤8	Pass
n20	2437	Ant1	-27.14	≤8	Pass
n20	2462	Ant1	-25.74	≤8	Pass
n40	2422	Ant1	-31.31	≤8	Pass
n40	2437	Ant1	-30.9	≤8	Pass
n40	2452	Ant1	-31.06	≤8	Pass

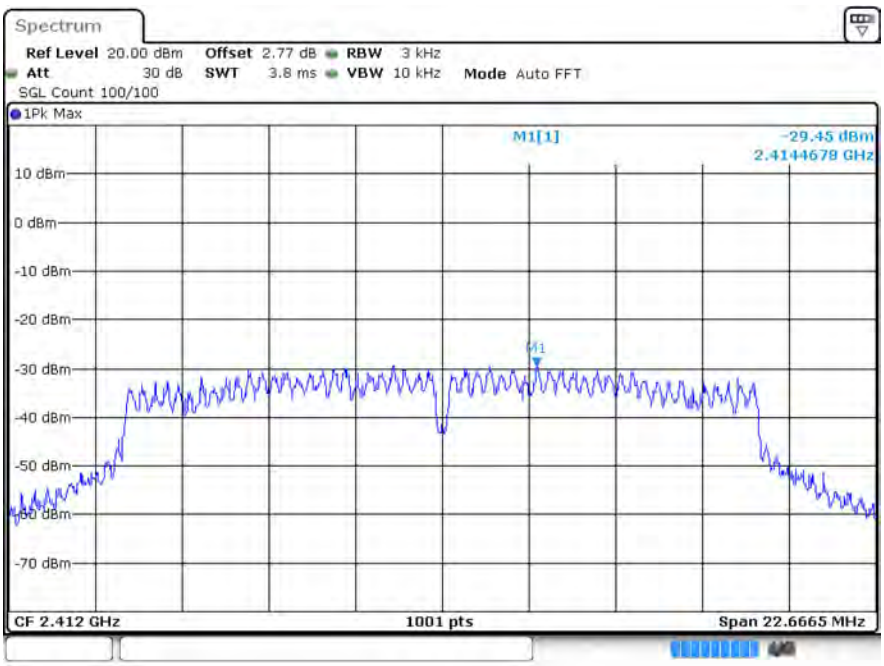
4.2 Test Graphs

Test Graphs
b 2412MHz Ant1

b 2437MHz Ant1


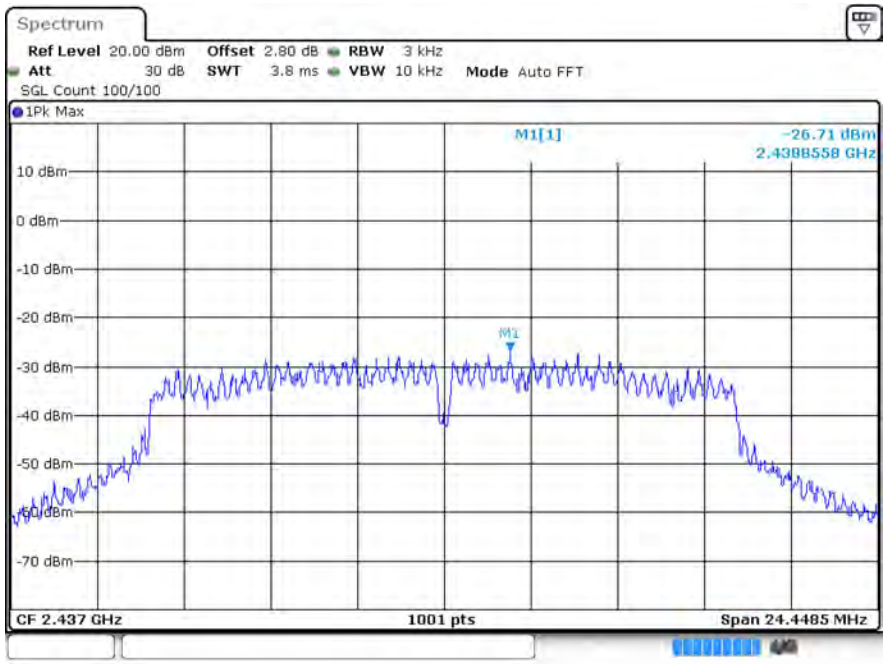
b 2462MHz Ant1



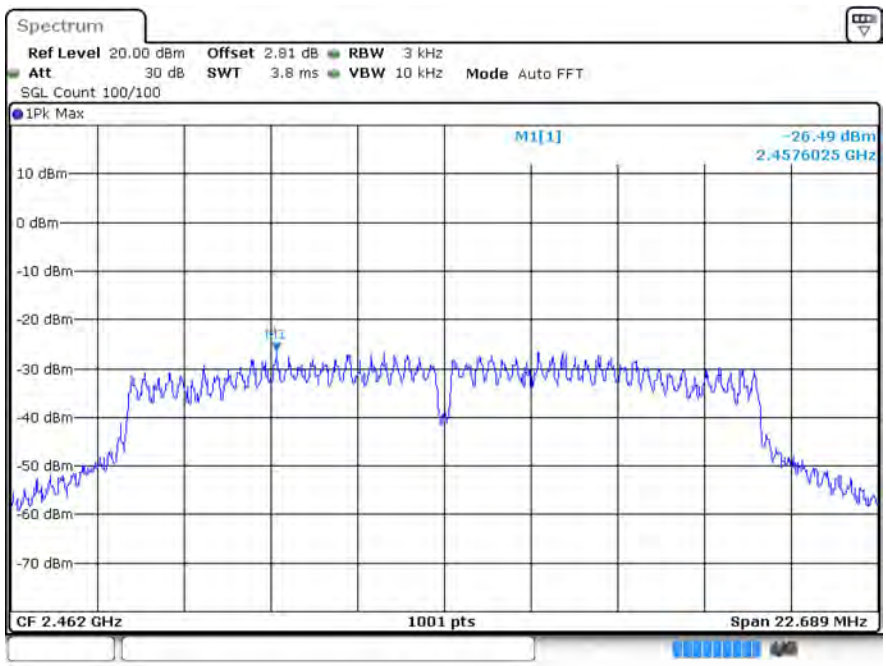
g 2412MHz Ant1



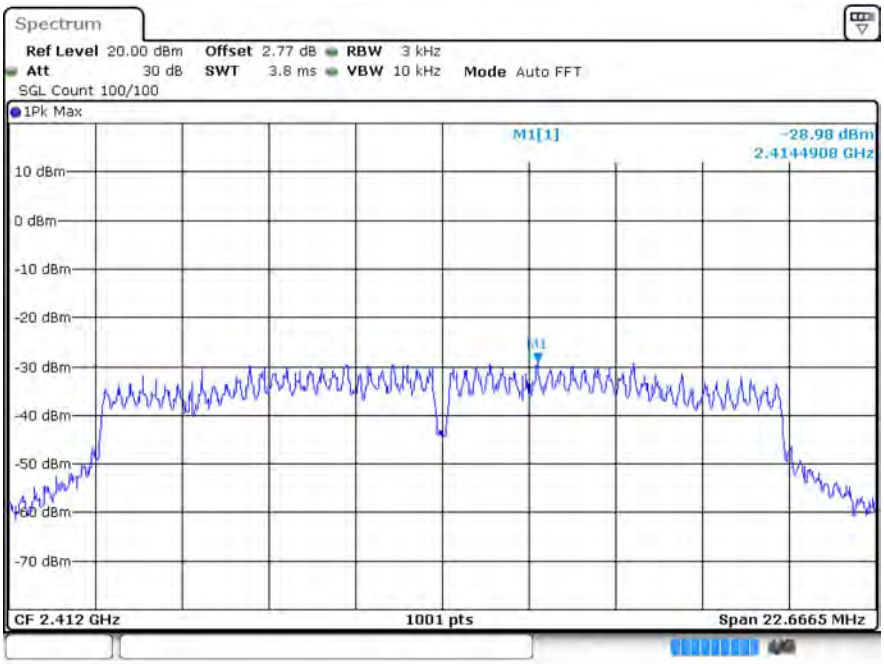
g 2437MHz Ant1



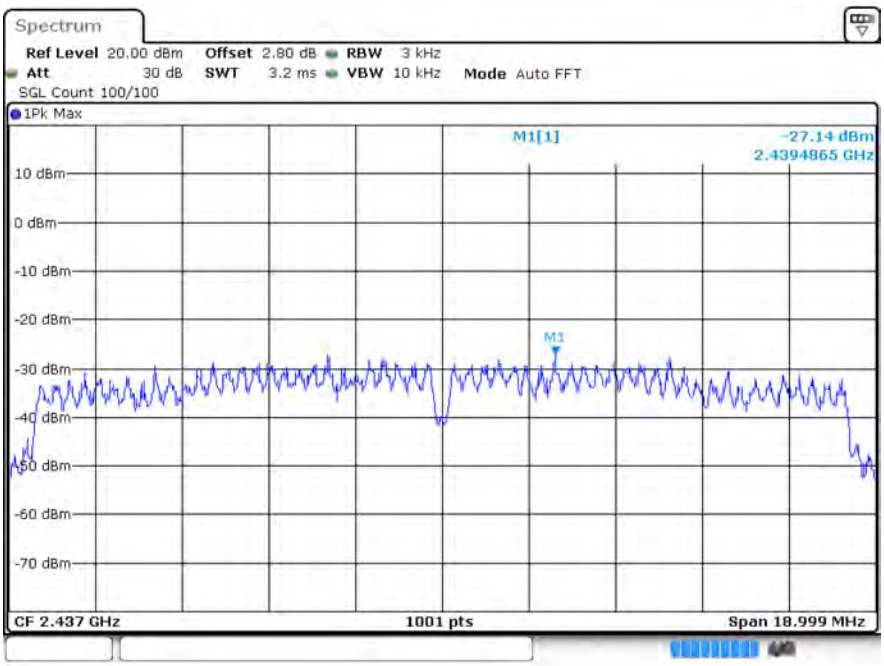
g 2462MHz Ant1



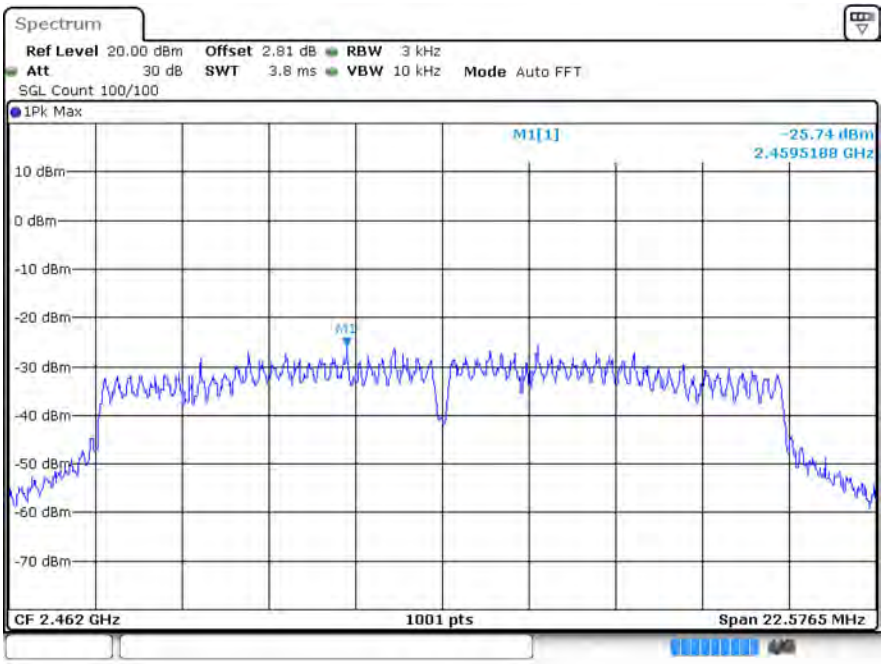
n20 2412MHz Ant1



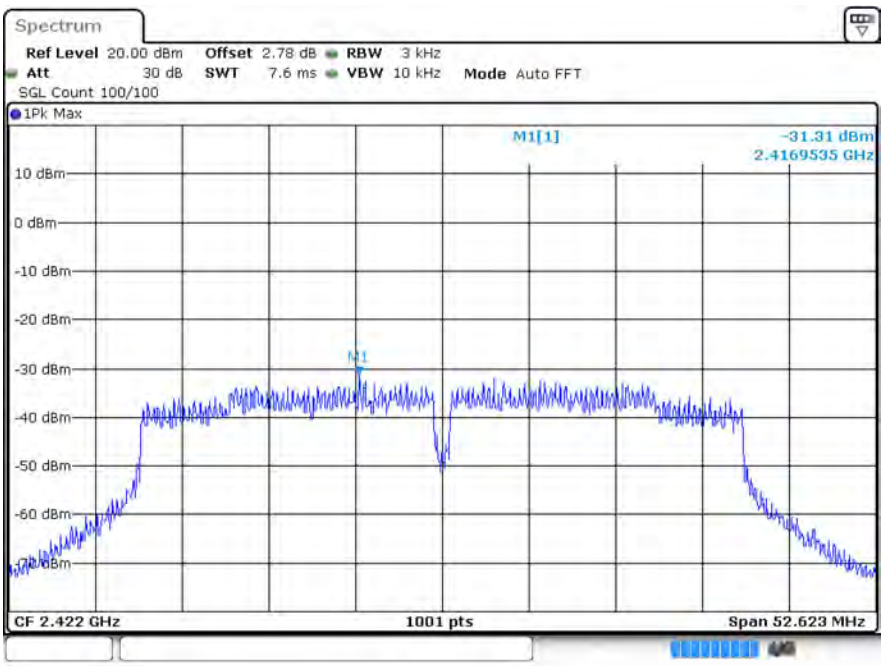
n20 2437MHz Ant1



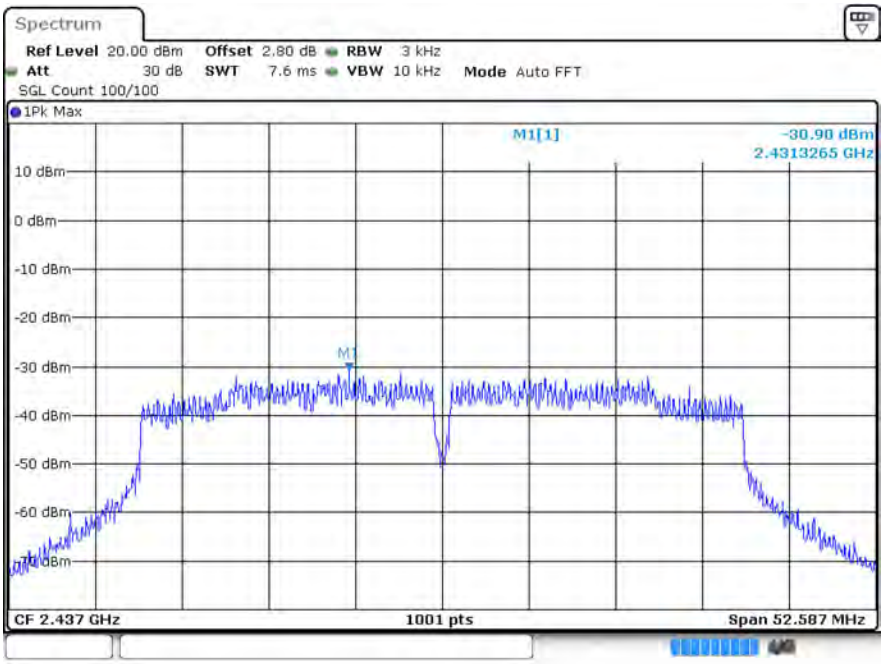
n20 2462MHz Ant1



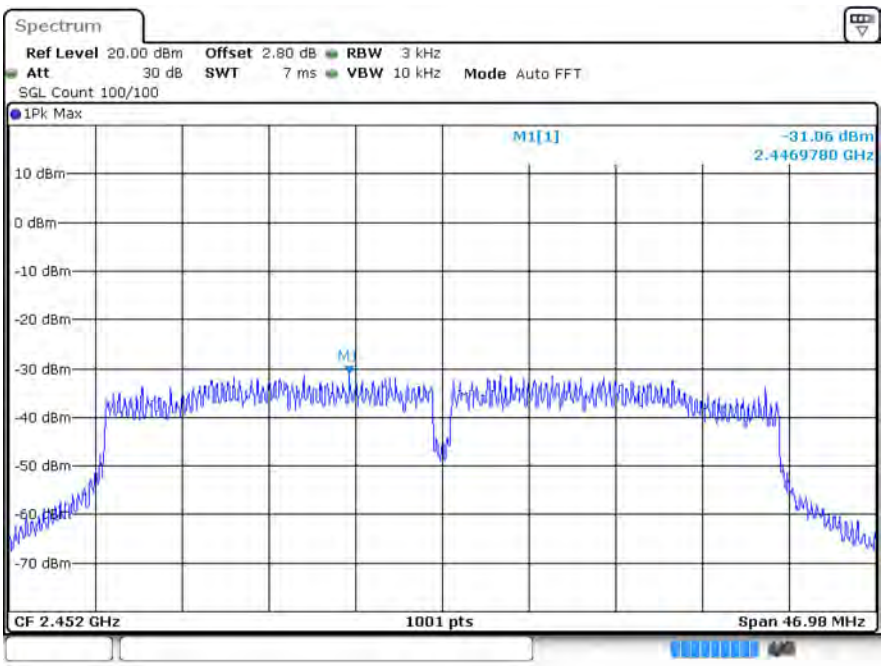
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1



5 Band Edge

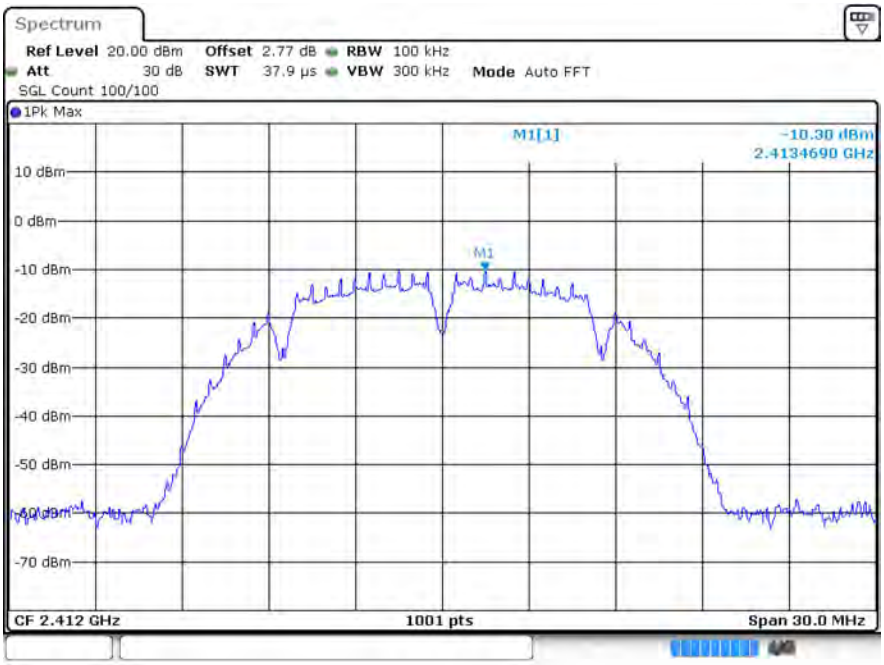
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-45.32	-20	-45.32
b	2462	Ant1	-45.64	-20	Pass
g	2412	Ant1	-39.75	-20	Pass
g	2462	Ant1	-45.56	-20	Pass
n20	2412	Ant1	-40.22	-20	Pass
n20	2462	Ant1	-45.1	-20	Pass
n40	2422	Ant1	-37.28	-20	Pass
n40	2452	Ant1	-41.06	-20	Pass

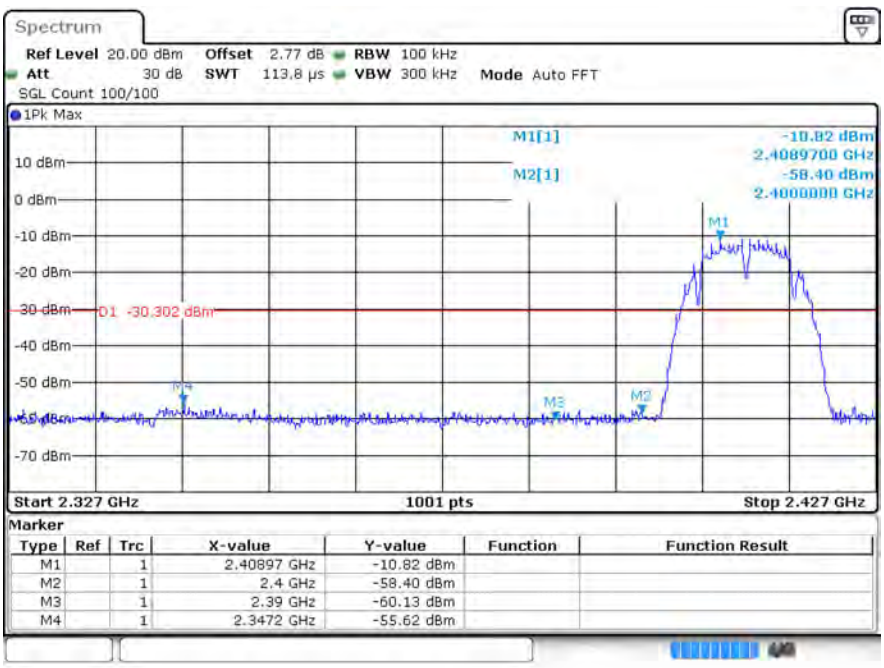
5.2 Test Graphs

Test Graphs

b 2412MHz Ant1 Ref



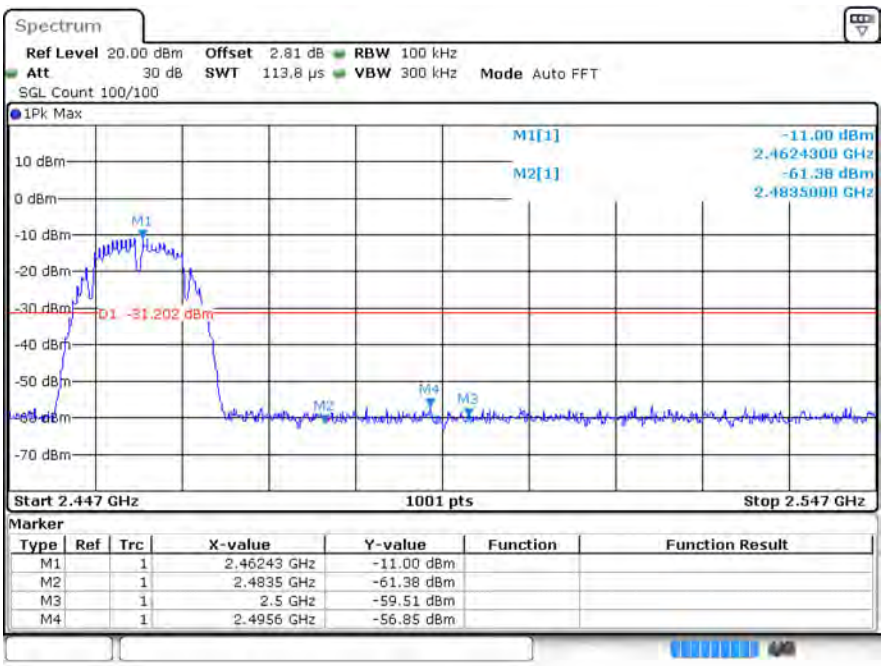
b 2412MHz Ant1 Emission



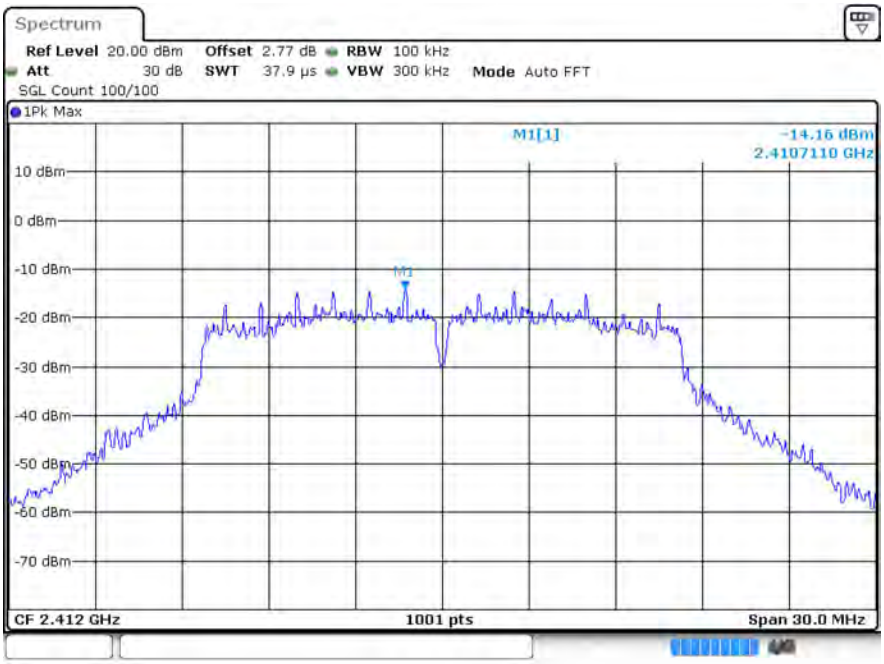
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40897 GHz	-10.82 dBm		
M2		1	2.4 GHz	-58.40 dBm		
M3		1	2.39 GHz	-60.13 dBm		
M4		1	2.3472 GHz	-55.62 dBm		

b 2462MHz Ant1 Ref

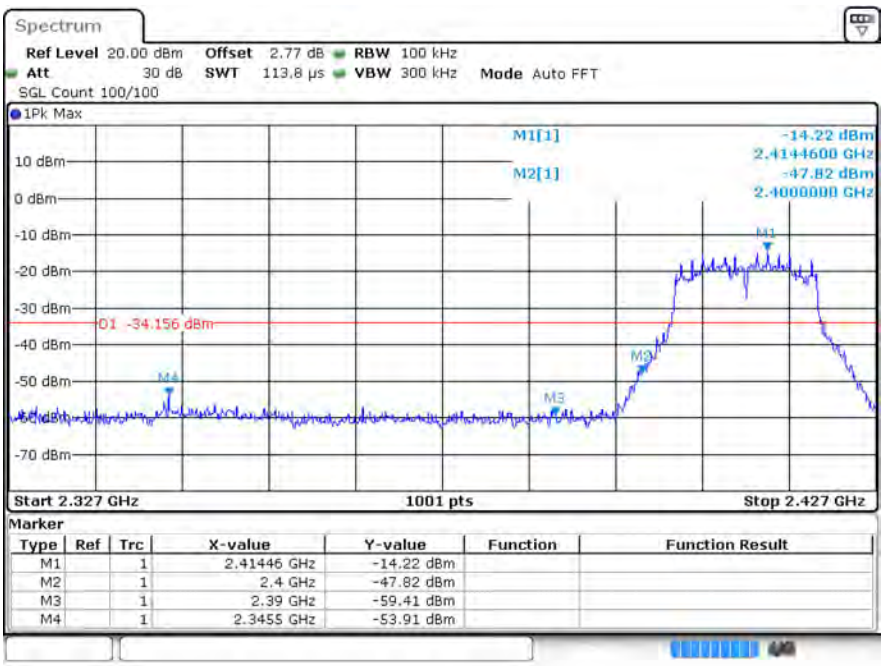
b 2462MHz Ant1 Emission



g 2412MHz Ant1 Ref



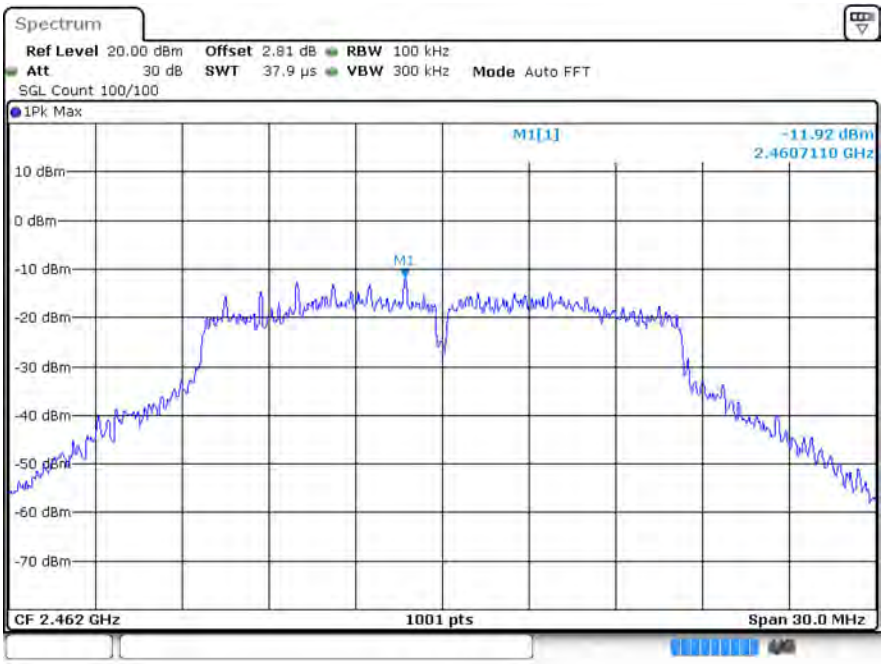
g 2412MHz Ant1 Emission



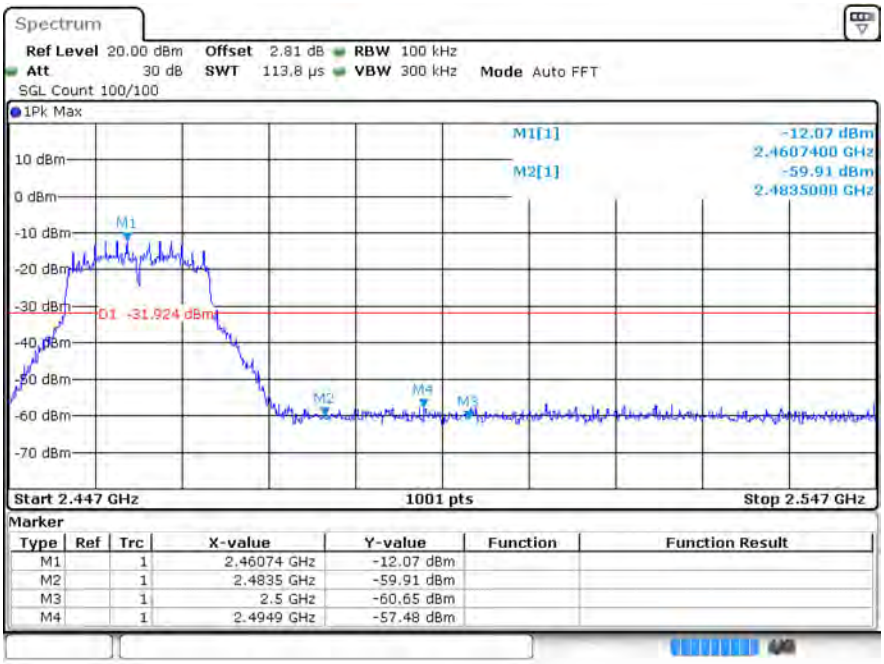
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41446 GHz	-14.22 dBm		
M2		1	2.4 GHz	-47.82 dBm		
M3		1	2.39 GHz	-59.41 dBm		
M4		1	2.3455 GHz	-53.91 dBm		

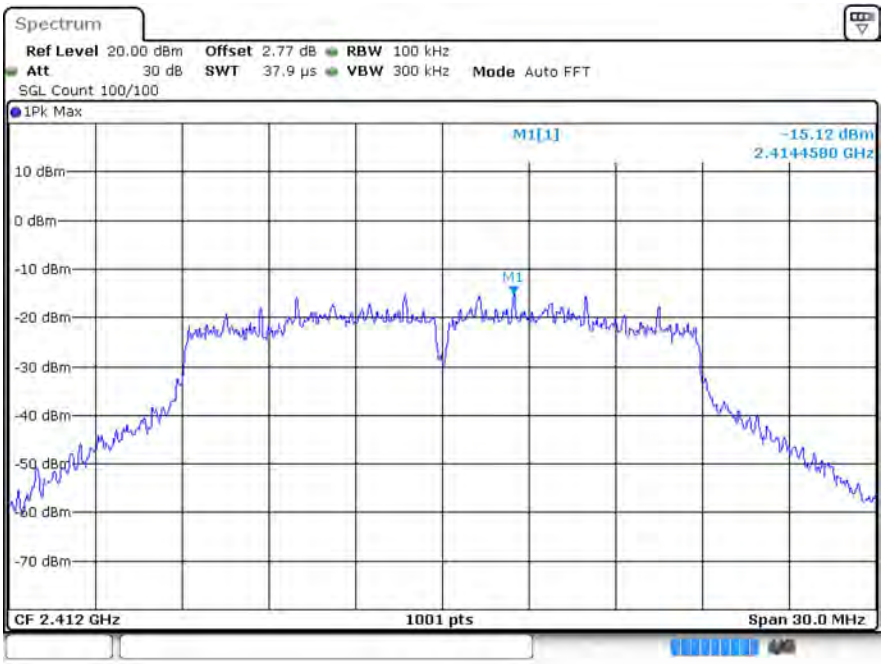
g 2462MHz Ant1 Ref



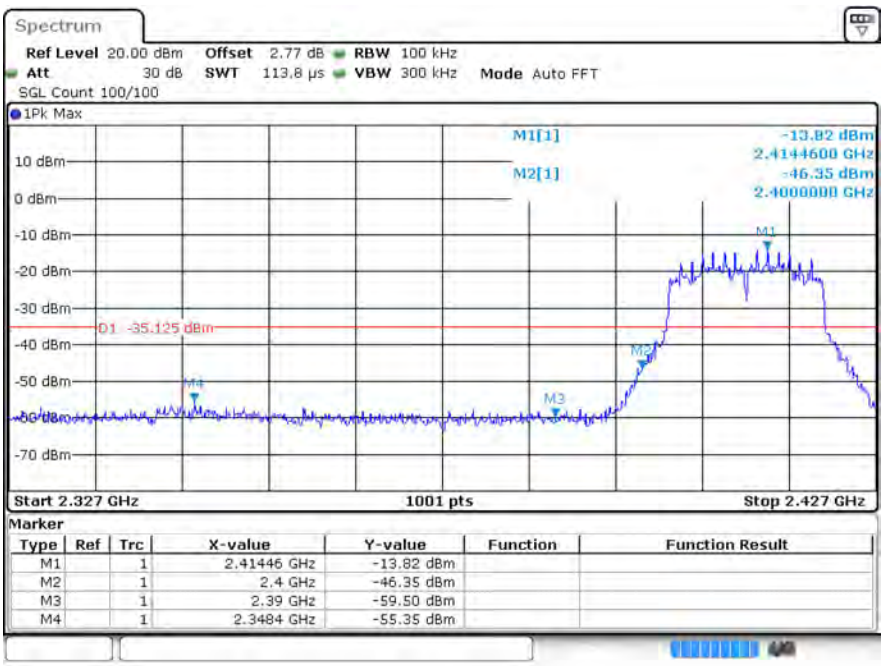
g 2462MHz Ant1 Emission



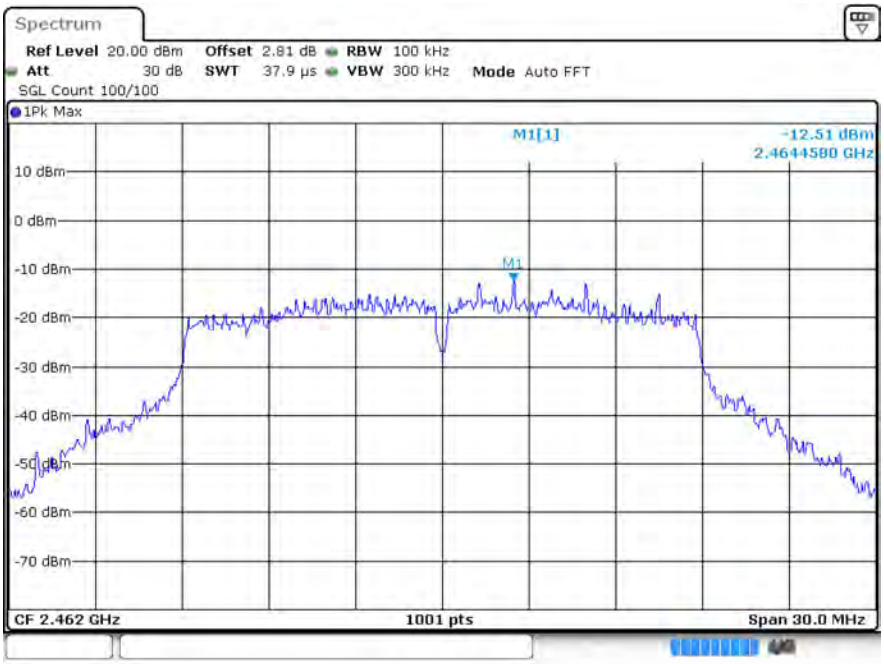
n20 2412MHz Ant1 Ref



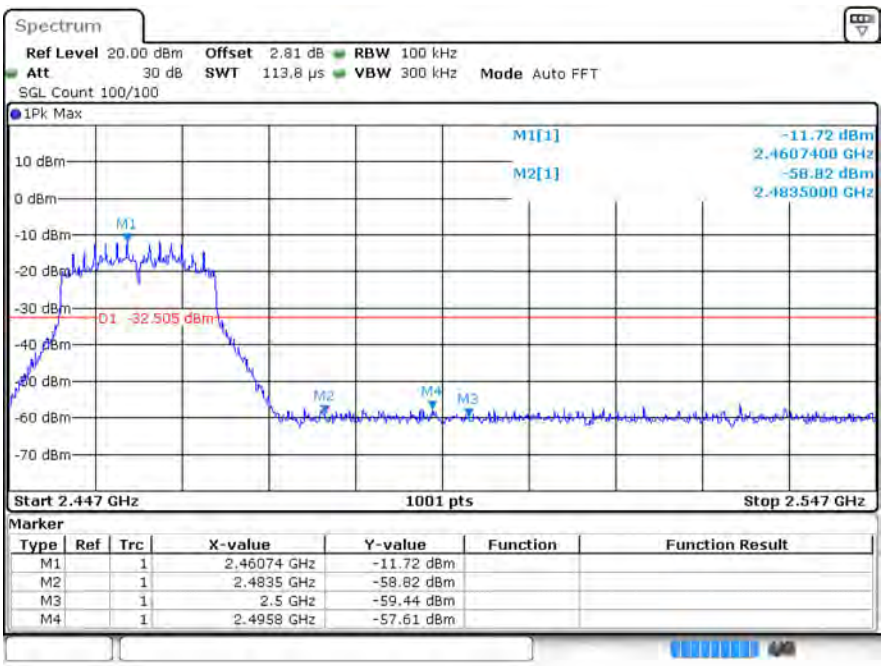
n20 2412MHz Ant1 Emission



n20 2462MHz Ant1 Ref



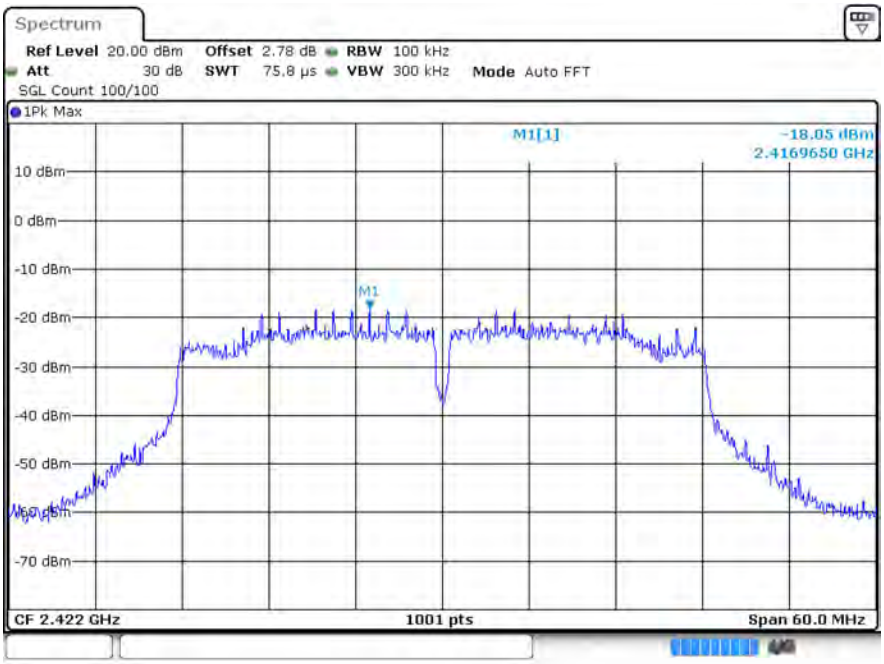
n20 2462MHz Ant1 Emission



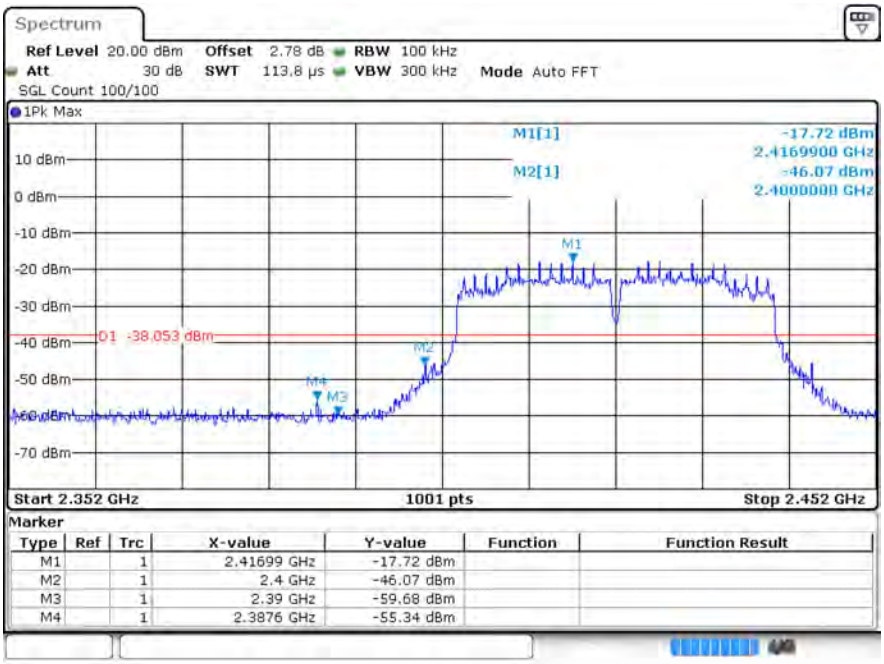
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46074 GHz	-11.72 dBm		
M2		1	2.4835 GHz	-58.82 dBm		
M3		1	2.5 GHz	-59.44 dBm		
M4		1	2.4958 GHz	-57.61 dBm		

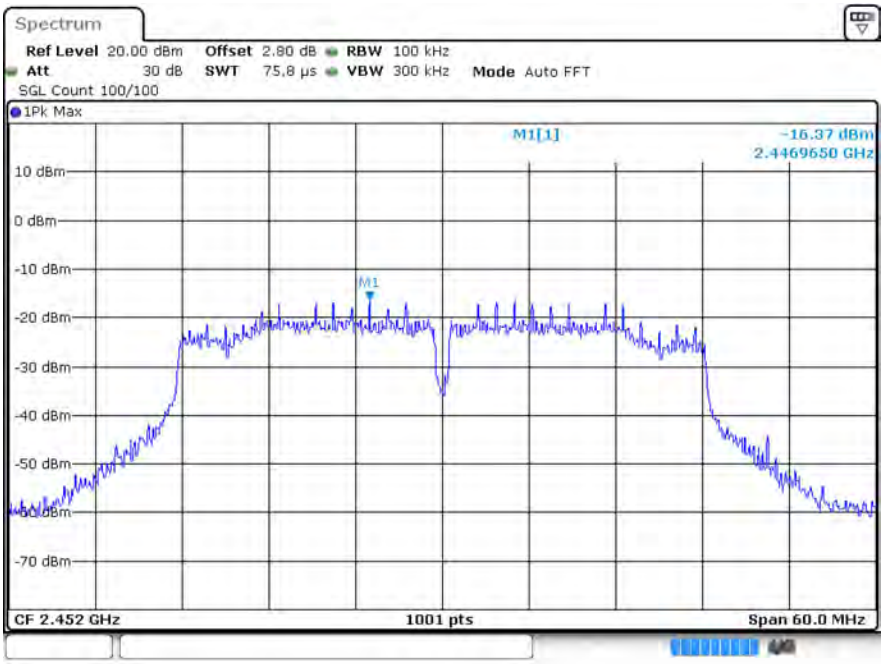
n40 2422MHz Ant1 Ref



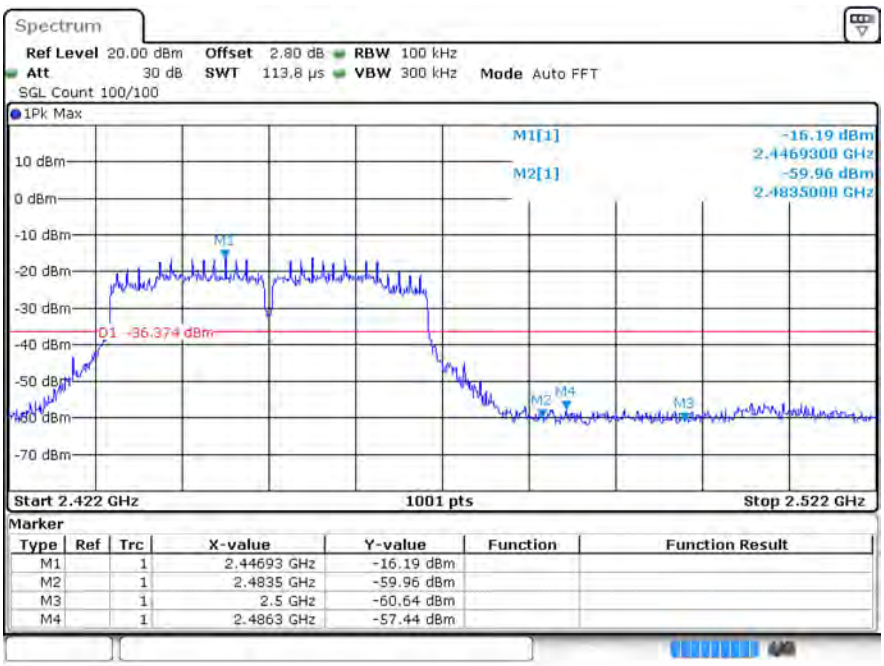
n40 2422MHz Ant1 Emission



n40 2452MHz Ant1 Ref



n40 2452MHz Ant1 Emission



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.44693 GHz	-16.19 dBm		
M2		1	2.4835 GHz	-59.96 dBm		
M3		1	2.5 GHz	-60.64 dBm		
M4		1	2.4863 GHz	-57.44 dBm		

6 Conducted RF Spurious Emission

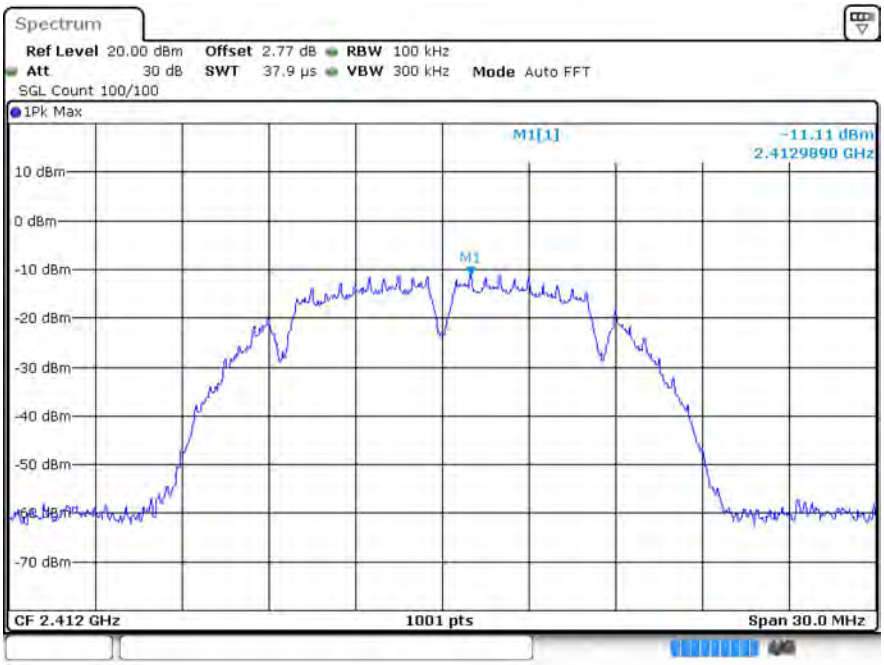
6.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-32.73	-20	Pass
b	2437	Ant1	-33.09	-20	Pass
b	2462	Ant1	-33.17	-20	Pass
g	2412	Ant1	-30.18	-20	Pass
g	2437	Ant1	-31.16	-20	Pass
g	2462	Ant1	-31.86	-20	Pass
n20	2412	Ant1	-29.96	-20	Pass
n20	2437	Ant1	-32.05	-20	Pass
n20	2462	Ant1	-31.88	-20	Pass
n40	2422	Ant1	-27.14	-20	Pass
n40	2437	Ant1	-25.95	-20	Pass
n40	2452	Ant1	-27.15	-20	Pass

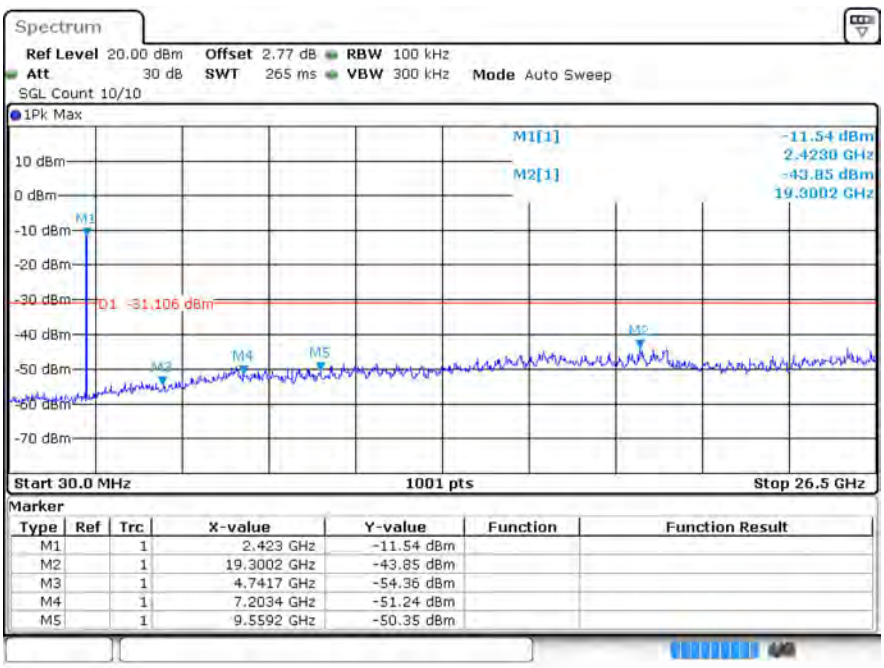
6.2 Test Graphs

Test Graphs

b 2412MHz Ant1 Ref



b 2412MHz Ant1 Emission

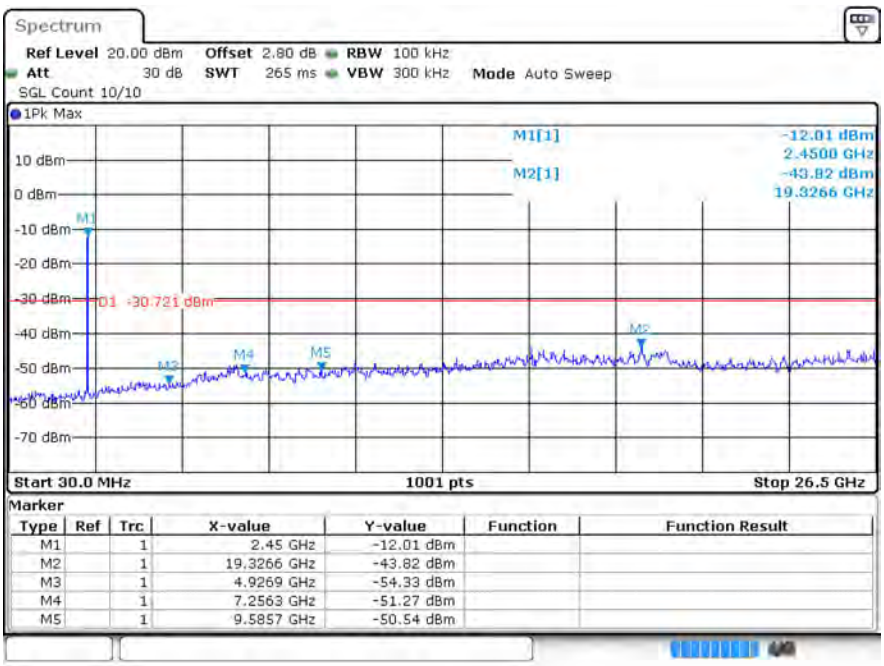


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-11.54 dBm		
M2		1	19.3002 GHz	-43.85 dBm		
M3		1	4.7417 GHz	-54.36 dBm		
M4		1	7.2034 GHz	-51.24 dBm		
M5		1	9.5592 GHz	-50.35 dBm		

b 2437MHz Ant1 Ref

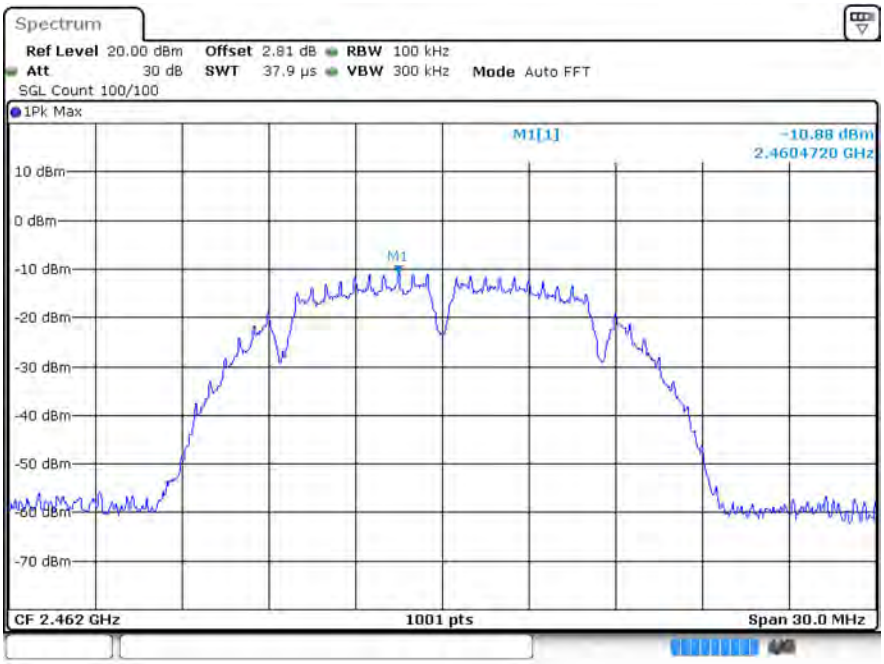
b 2437MHz Ant1 Emission



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-12.01 dBm		
M2		1	19.3266 GHz	-43.82 dBm		
M3		1	4.9269 GHz	-54.33 dBm		
M4		1	7.2563 GHz	-51.27 dBm		
M5		1	9.5857 GHz	-50.54 dBm		

b 2462MHz Ant1 Ref

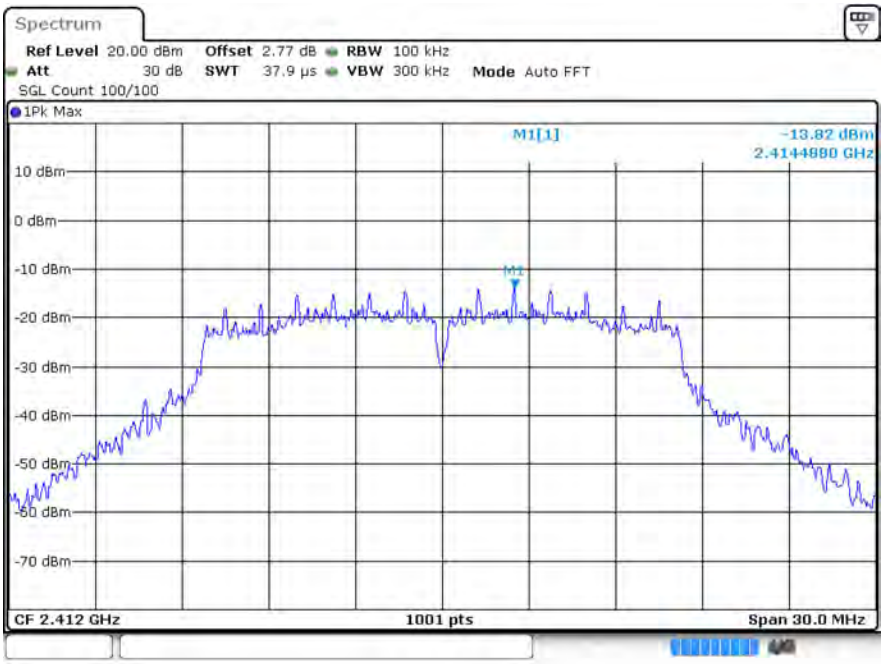


b 2462MHz Ant1 Emission

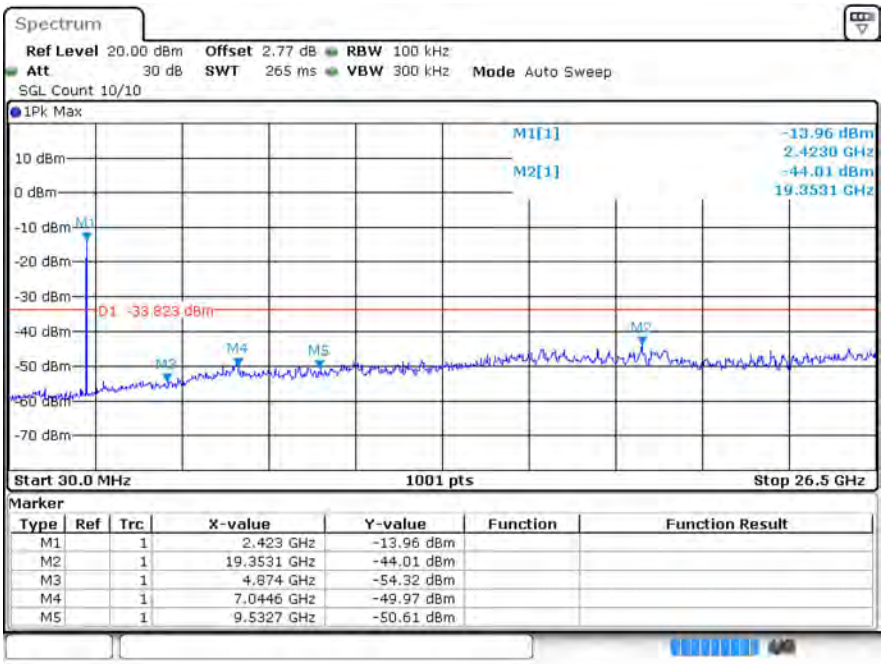
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-10.77 dBm		
M2		1	20.0678 GHz	-44.06 dBm		
M3		1	4.9534 GHz	-53.85 dBm		
M4		1	7.521 GHz	-51.00 dBm		
M5		1	9.8768 GHz	-49.64 dBm		

g 2412MHz Ant1 Ref



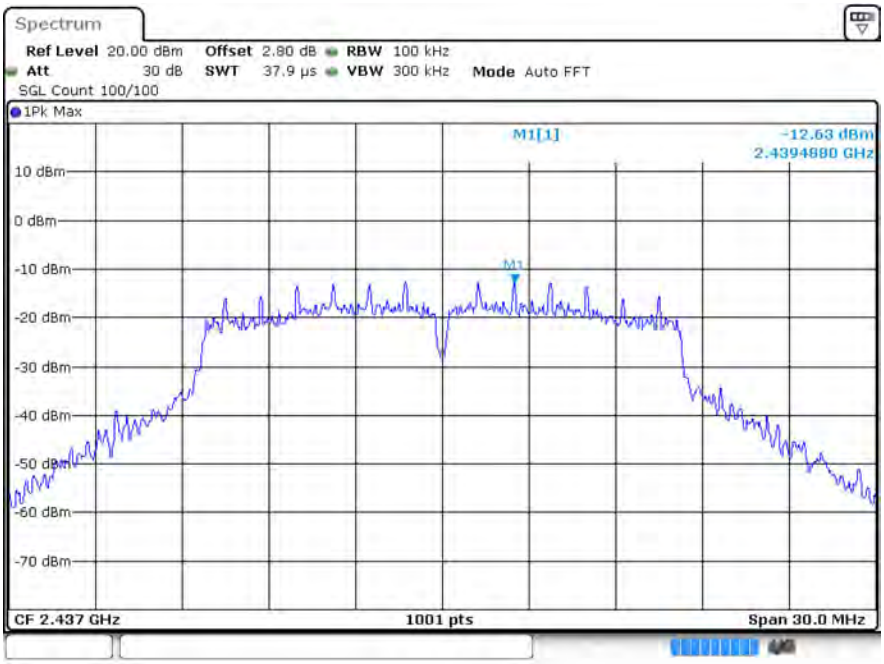
g 2412MHz Ant1 Emission



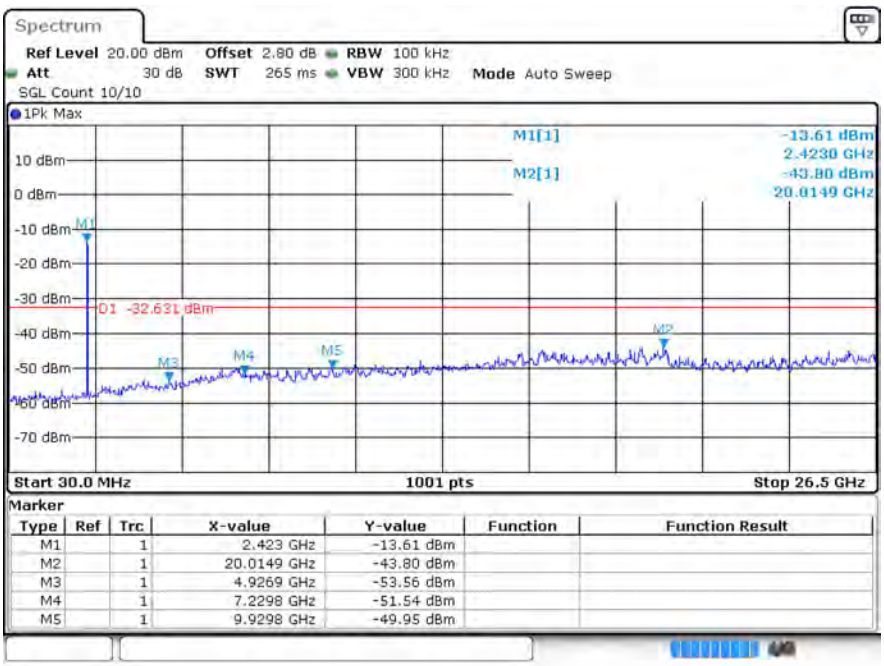
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-13.96 dBm		
M2		1	19.3531 GHz	-44.01 dBm		
M3		1	4.874 GHz	-54.32 dBm		
M4		1	7.0446 GHz	-49.97 dBm		
M5		1	9.5327 GHz	-50.61 dBm		

g 2437MHz Ant1 Ref



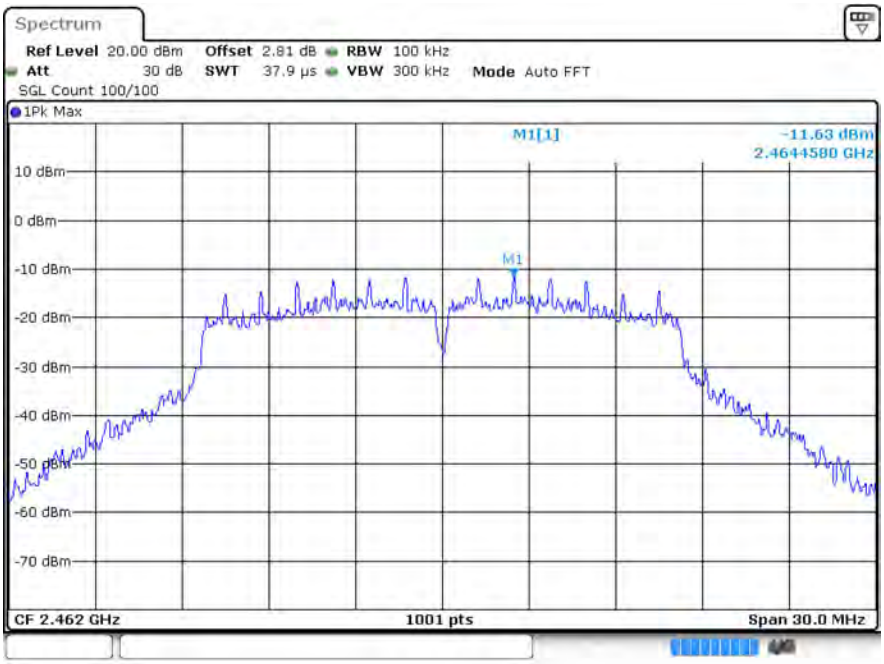
g 2437MHz Ant1 Emission



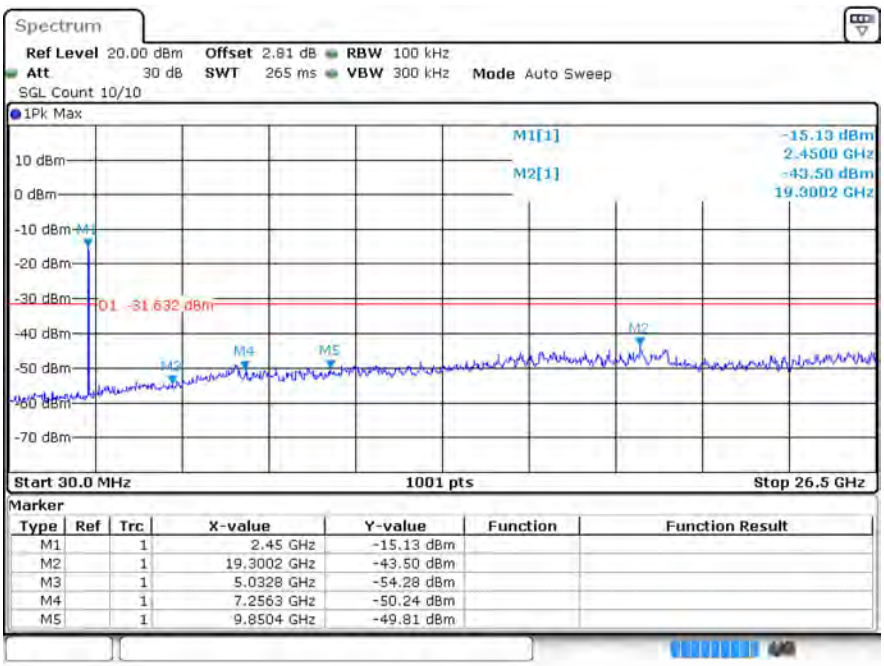
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-13.61 dBm		
M2		1	20.0149 GHz	-43.80 dBm		
M3		1	4.9269 GHz	-53.56 dBm		
M4		1	7.2298 GHz	-51.54 dBm		
M5		1	9.9298 GHz	-49.95 dBm		

g 2462MHz Ant1 Ref



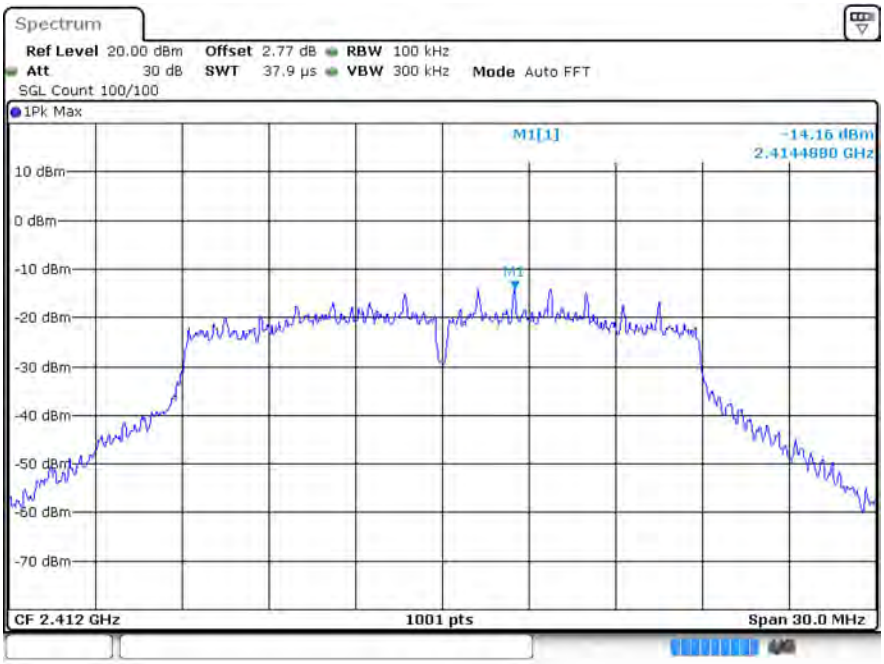
g 2462MHz Ant1 Emission



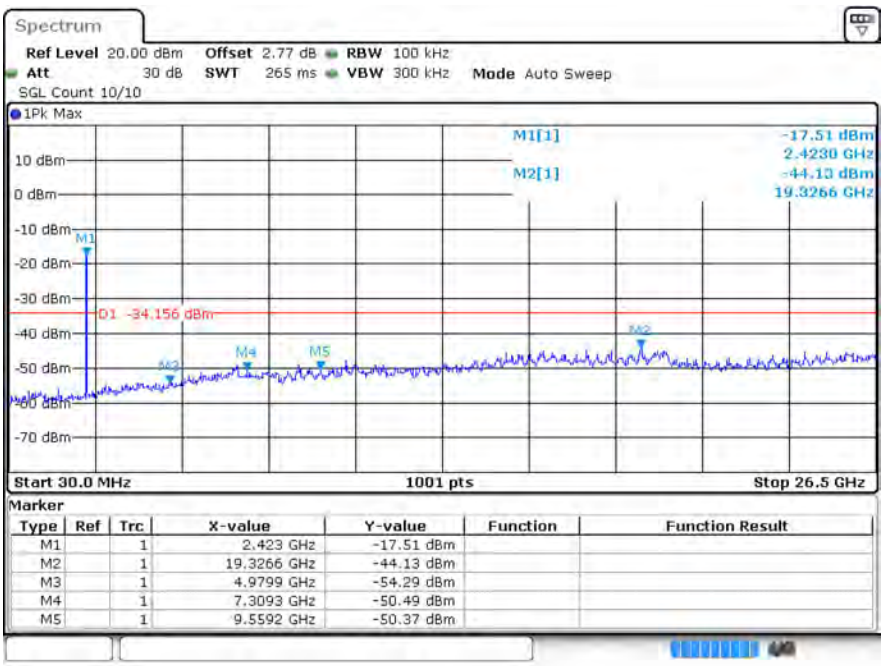
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-15.13 dBm		
M2		1	19.3002 GHz	-43.50 dBm		
M3		1	5.0328 GHz	-54.28 dBm		
M4		1	7.2563 GHz	-50.24 dBm		
M5		1	9.8504 GHz	-49.81 dBm		

n20 2412MHz Ant1 Ref



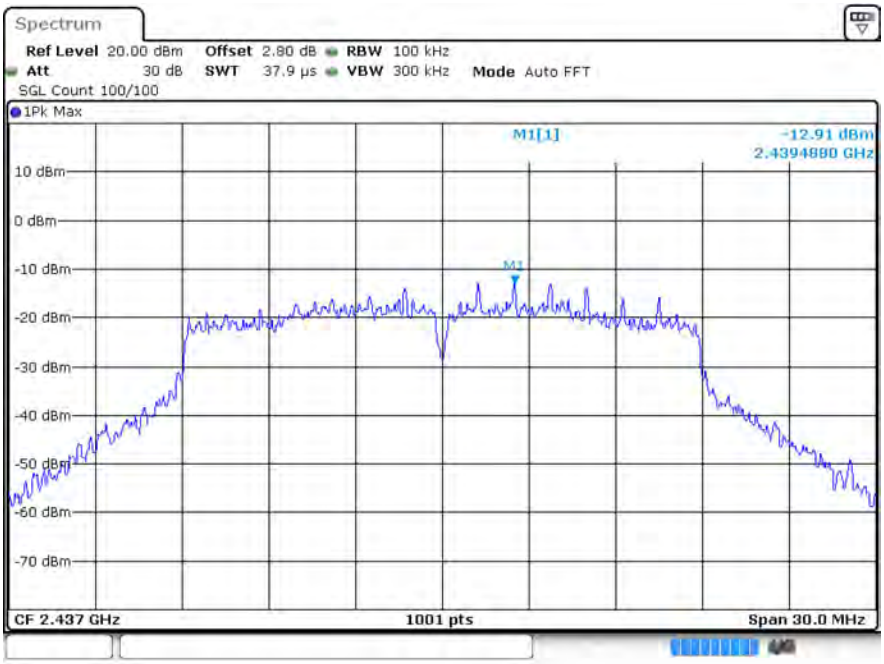
n20 2412MHz Ant1 Emission



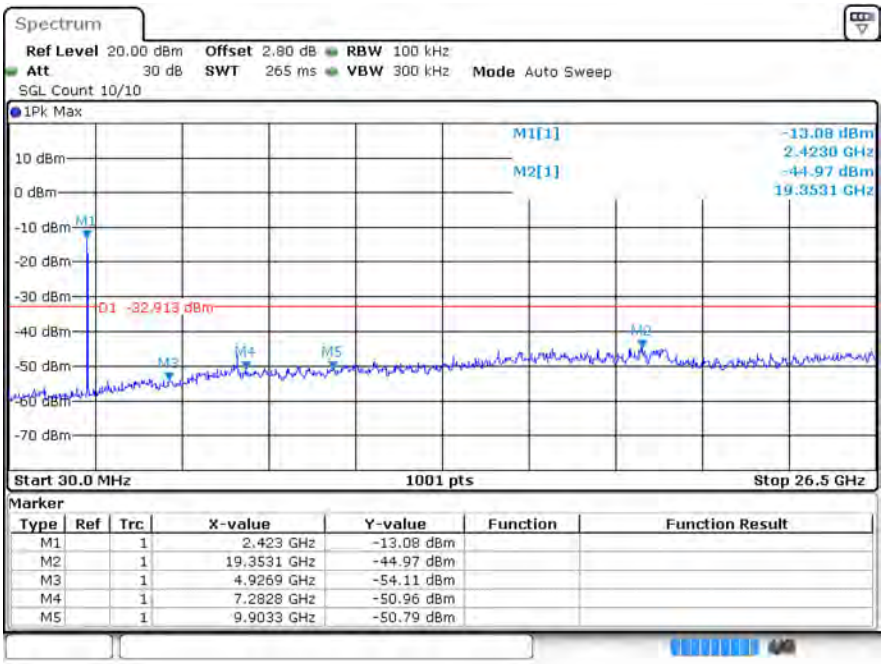
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-17.51 dBm		
M2		1	19.3266 GHz	-44.13 dBm		
M3		1	4.9799 GHz	-54.29 dBm		
M4		1	7.3093 GHz	-50.49 dBm		
M5		1	9.5592 GHz	-50.37 dBm		

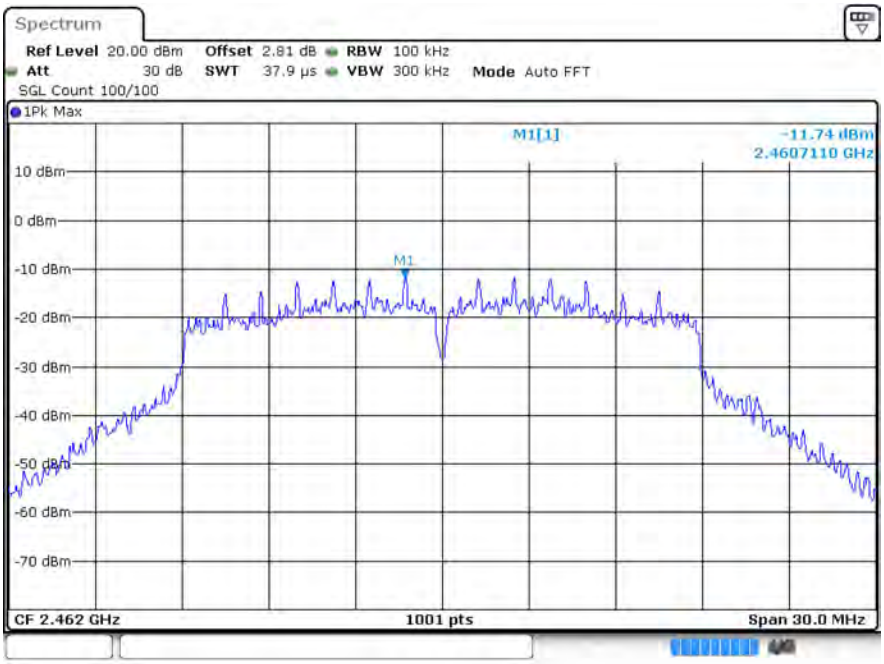
n20 2437MHz Ant1 Ref



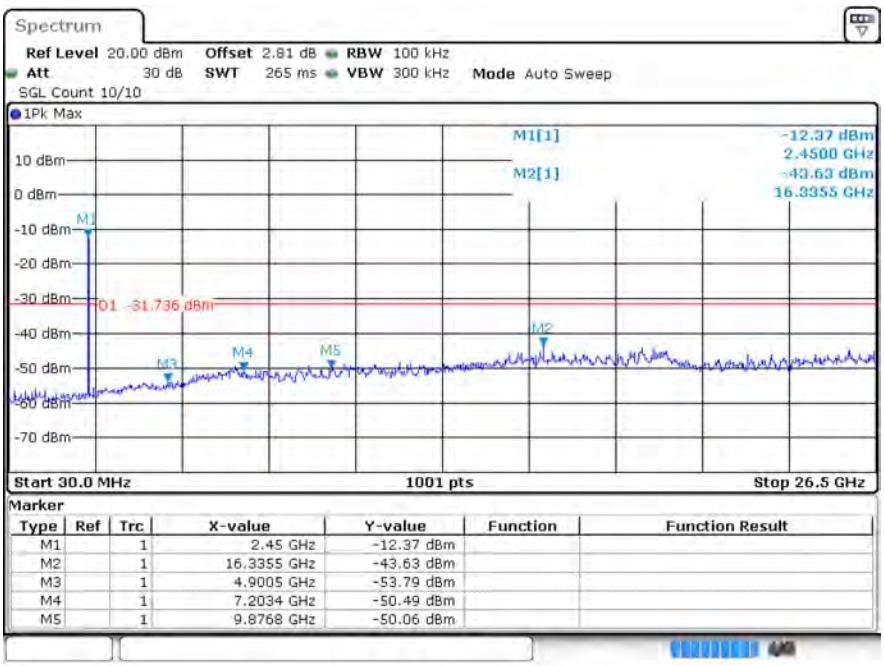
n20 2437MHz Ant1 Emission



n20 2462MHz Ant1 Ref



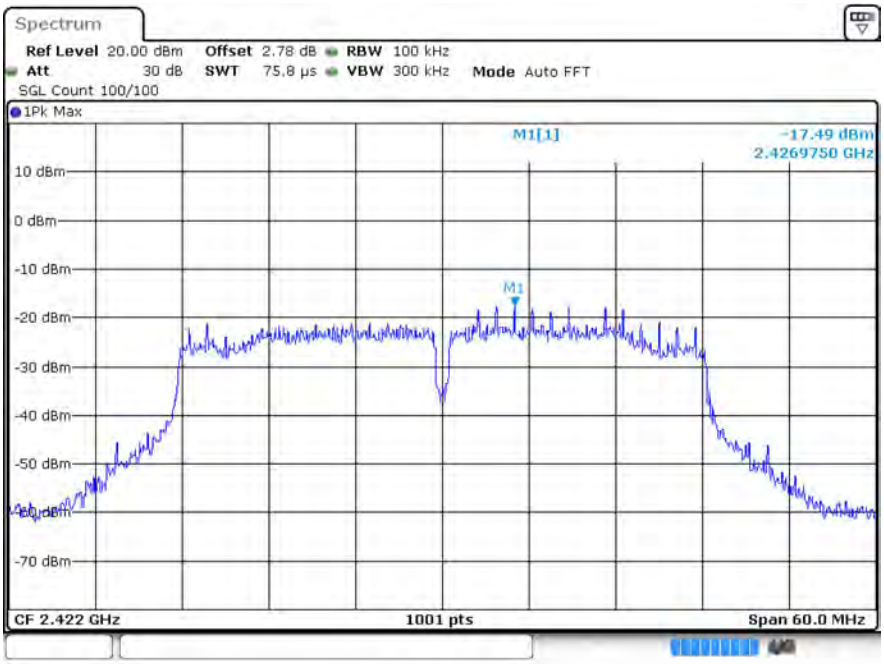
n20 2462MHz Ant1 Emission



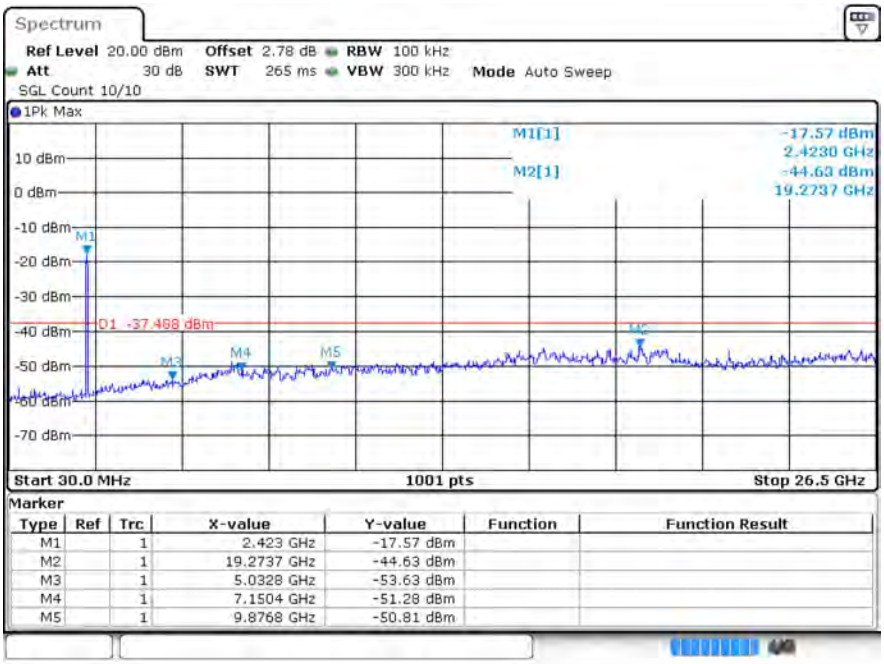
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-12.37 dBm		
M2		1	16.3355 GHz	-43.63 dBm		
M3		1	4.9005 GHz	-53.79 dBm		
M4		1	7.2034 GHz	-50.49 dBm		
M5		1	9.8768 GHz	-50.06 dBm		

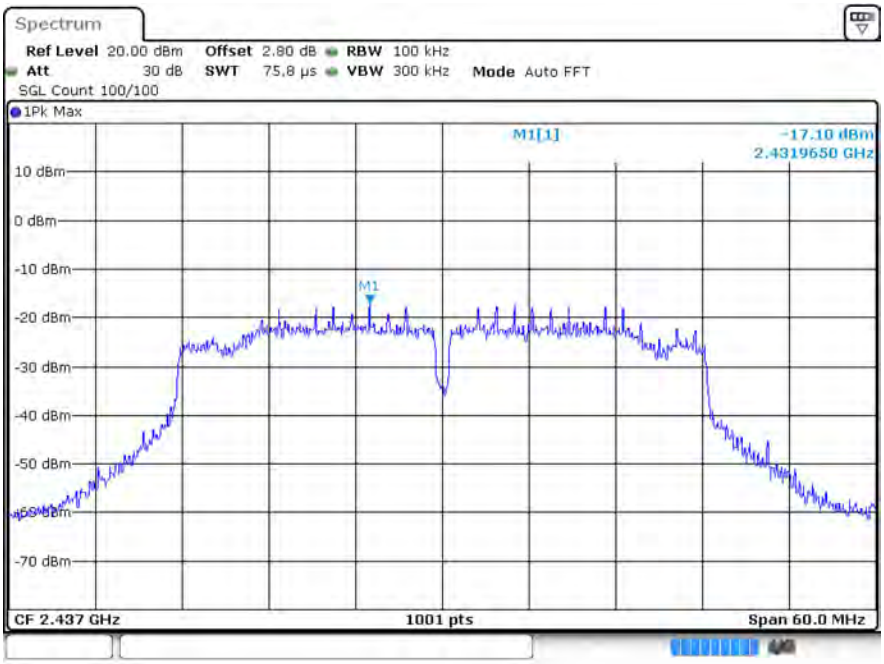
n40 2422MHz Ant1 Ref



n40 2422MHz Ant1 Emission



n40 2437MHz Ant1 Ref

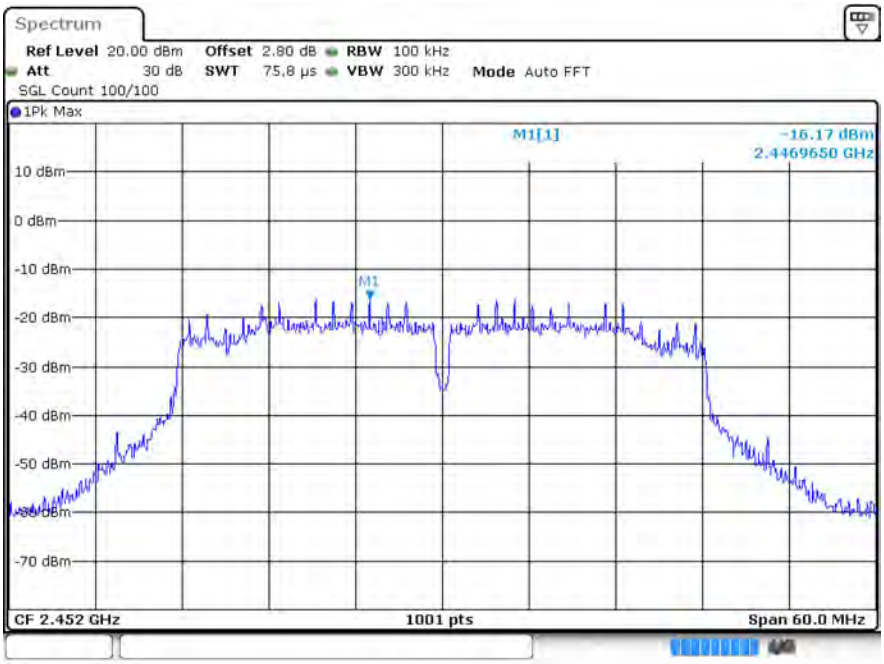


n40 2437MHz Ant1 Emission

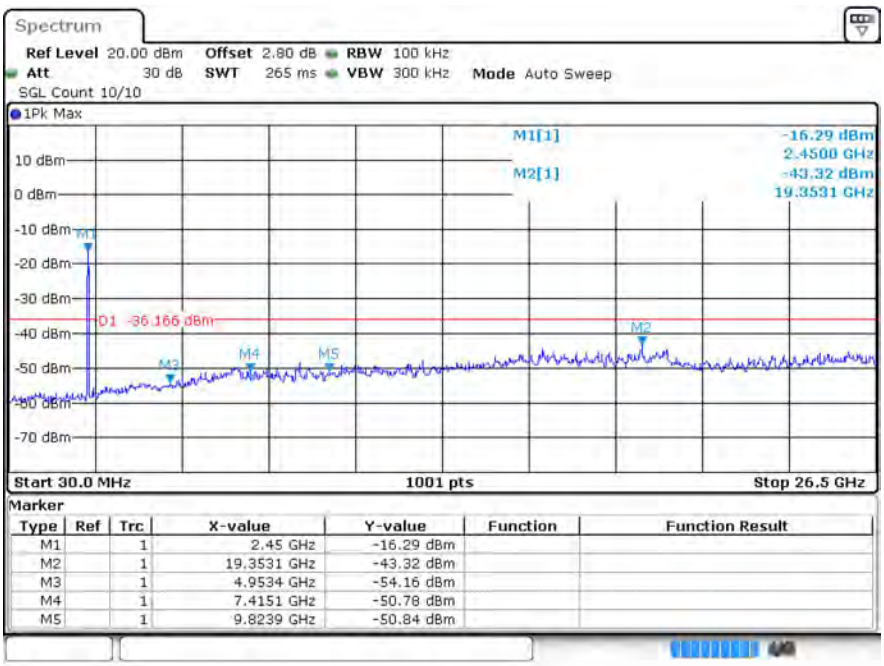
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-16.98 dBm		
M2		1	19.3266 GHz	-43.05 dBm		
M3		1	4.7681 GHz	-53.75 dBm		
M4		1	7.4945 GHz	-50.56 dBm		
M5		1	9.9033 GHz	-50.69 dBm		

n40 2452MHz Ant1 Ref



n40 2452MHz Ant1 Emission



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-16.29 dBm		
M2		1	19.3531 GHz	-43.32 dBm		
M3		1	4.9534 GHz	-54.16 dBm		
M4		1	7.4151 GHz	-50.78 dBm		
M5		1	9.8239 GHz	-50.84 dBm		

7 Restrict Band

7.1 Test Result

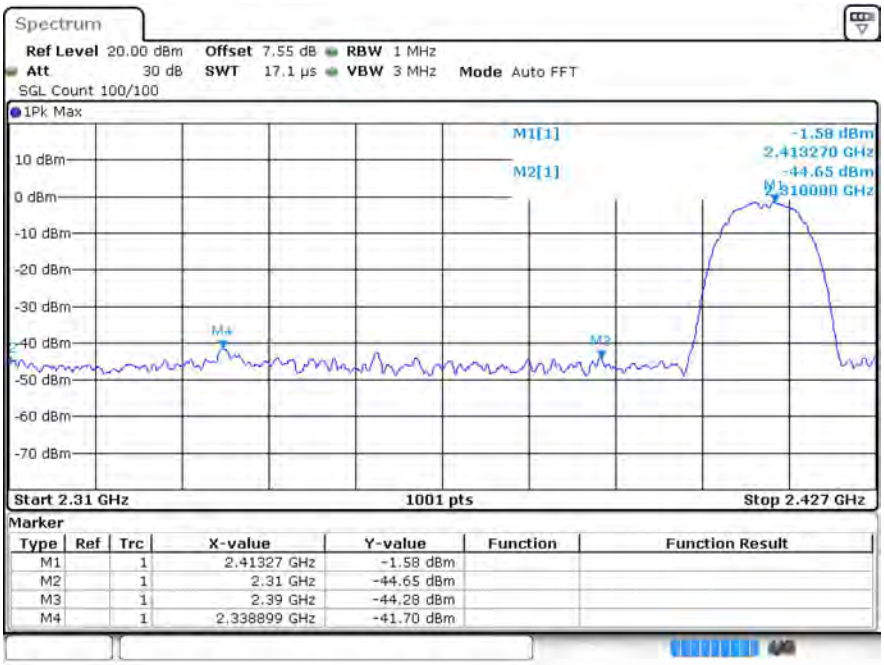
Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
b	2412	Ant1	2310	-44.65	4.78	55.39	Peak	74	Pass
b	2412	Ant1	2310	-55	4.78	45.04	Average	54	Pass
b	2412	Ant1	2338.899	-41.69	4.78	58.35	Peak	74	Pass
b	2412	Ant1	2336.559	-53.08	4.78	46.96	Average	54	Pass
b	2412	Ant1	2390	-44.27	4.78	55.77	Peak	74	Pass
b	2412	Ant1	2390	-55.4	4.78	44.64	Average	54	Pass
b	2462	Ant1	2483.5	-45.97	4.78	54.07	Peak	74	54.07
b	2462	Ant1	2483.5	-55.01	4.78	45.03	Average	54	Pass
b	2462	Ant1	2489.241	-43.64	4.78	56.4	Peak	74	Pass
b	2462	Ant1	2486.22	-54.92	4.78	45.12	Average	54	Pass
b	2462	Ant1	2500	-46.91	4.78	53.13	Peak	74	Pass
b	2462	Ant1	2500	-55.02	4.78	45.02	Average	54	Pass
g	2412	Ant1	2310	-46.69	4.78	53.35	Peak	74	Pass
g	2412	Ant1	2310	-53.81	4.78	46.23	Average	54	Pass
g	2412	Ant1	2341.005	-41.82	4.78	58.22	Peak	74	Pass
g	2412	Ant1	2337.027	-51.87	4.78	48.17	Average	54	Pass
g	2412	Ant1	2390	-44.95	4.78	55.77	Peak	74	Pass
g	2412	Ant1	2390	-54.16	4.78	45.88	Average	54	Pass
g	2462	Ant1	2483.5	-46.75	4.78	53.29	Peak	74	Pass
g	2462	Ant1	2483.5	-53.53	4.78	46.51	Average	54	Pass
g	2462	Ant1	2489.241	-44.11	4.78	55.93	Peak	74	Pass
g	2462	Ant1	2498.781	-52.74	4.78	47.3	Average	54	Pass
g	2462	Ant1	2500	-45.66	4.78	53.13	Peak	74	Pass
g	2462	Ant1	2500	-53.43	4.78	46.61	Average	54	Pass
n20	2412	Ant1	2310	-44.56	4.78	55.48	Peak	74	Pass
n20	2412	Ant1	2310	-53.74	4.78	46.3	Average	54	Pass
n20	2412	Ant1	2336.676	-41	4.78	59.04	Peak	74	Pass
n20	2412	Ant1	2336.793	-51.7	4.78	48.34	Average	54	Pass
n20	2412	Ant1	2390	-45.16	4.78	54.88	Peak	74	Pass
n20	2412	Ant1	2390	-54	4.78	46.04	Average	54	Pass
n20	2462	Ant1	2483.5	-46.39	4.78	53.65	Peak	74	Pass
n20	2462	Ant1	2483.5	-53.8	4.78	46.24	Average	54	Pass
n20	2462	Ant1	2491.202	-43.05	4.78	56.99	Peak	74	Pass
n20	2462	Ant1	2499.841	-52.65	4.78	47.39	Average	54	Pass

n20	2462	Ant1	2500	-47.03	4.78	53.01	Peak	74	Pass
n20	2462	Ant1	2500	-52.75	4.78	47.29	Average	54	Pass
n40	2422	Ant1	2310	-44.99	4.78	55.05	Peak	74	Pass
n40	2422	Ant1	2310	-53.36	4.78	46.68	Average	54	Pass
n40	2422	Ant1	2339.11	-41.59	4.78	58.45	Peak	74	Pass
n40	2422	Ant1	2340.246	-51.34	4.78	48.7	Average	54	Pass
n40	2422	Ant1	2390	-47.44	4.78	52.6	Peak	74	Pass
n40	2422	Ant1	2390	-54.13	4.78	45.91	Average	54	Pass
n40	2452	Ant1	2483.5	-44.51	4.78	55.53	Peak	74	Pass
n40	2452	Ant1	2483.5	-53.59	4.78	46.45	Average	54	Pass
n40	2452	Ant1	2500	-43.51	4.78	56.53	Peak	74	Pass
n40	2452	Ant1	2498.518	-52.75	4.78	47.29	Average	54	Pass
n40	2452	Ant1	2500	-43.51	4.78	56.53	Peak	74	Pass
n40	2452	Ant1	2500	-53.77	4.78	46.27	Average	54	Pass

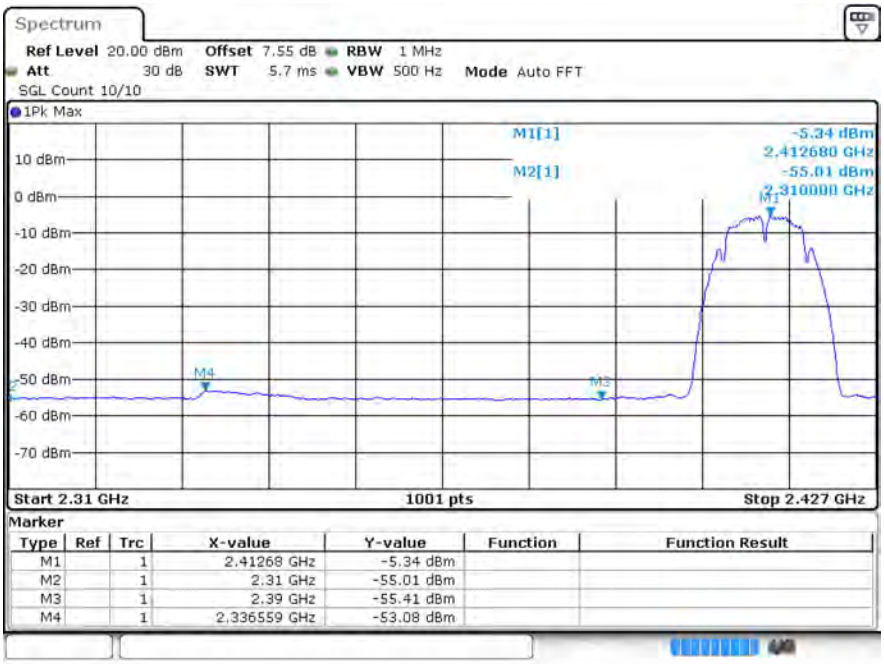
7.2 Test Graphs

Test Graphs

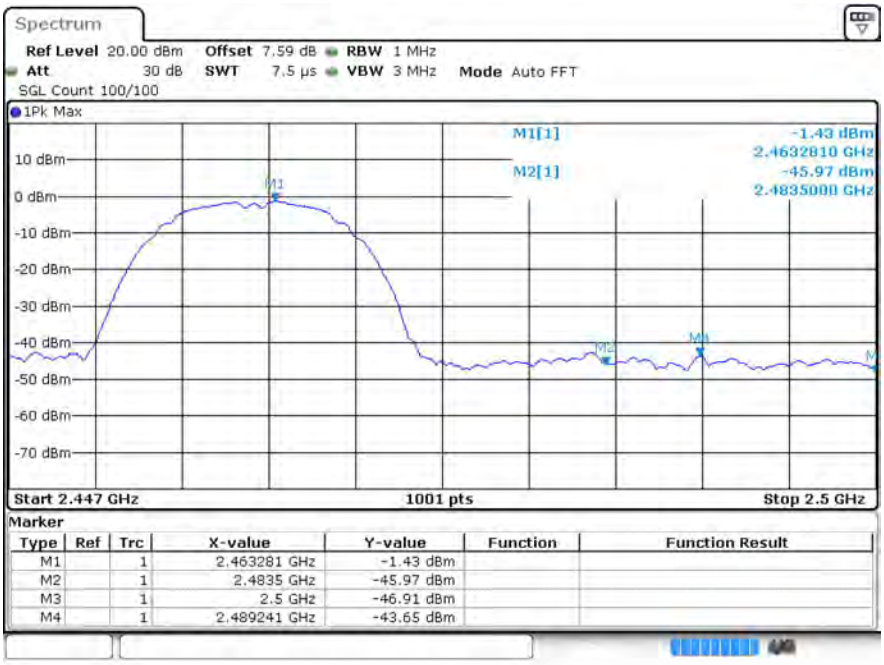
b 2412MHz Ant1 Peak



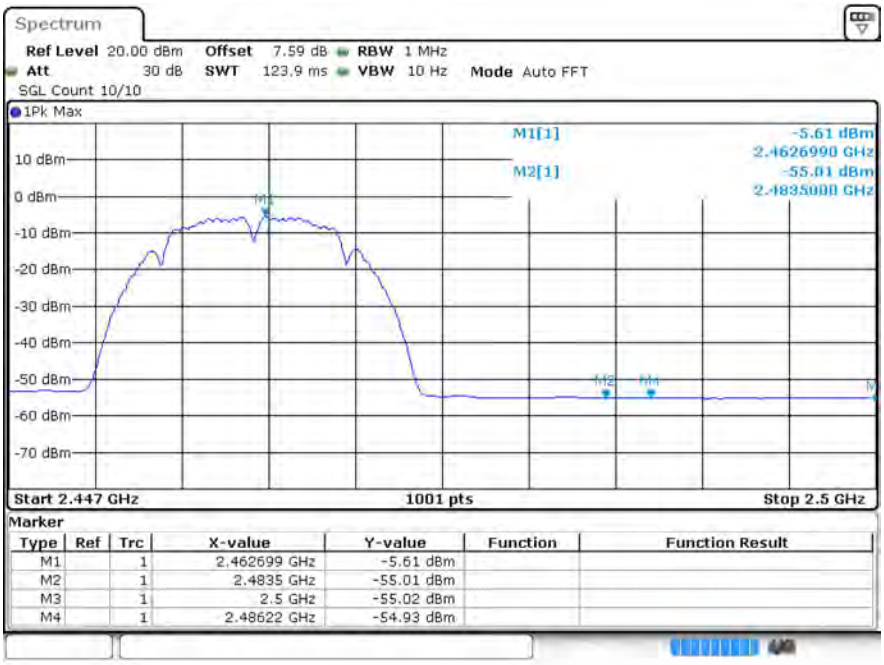
b 2412MHz Ant1 Average



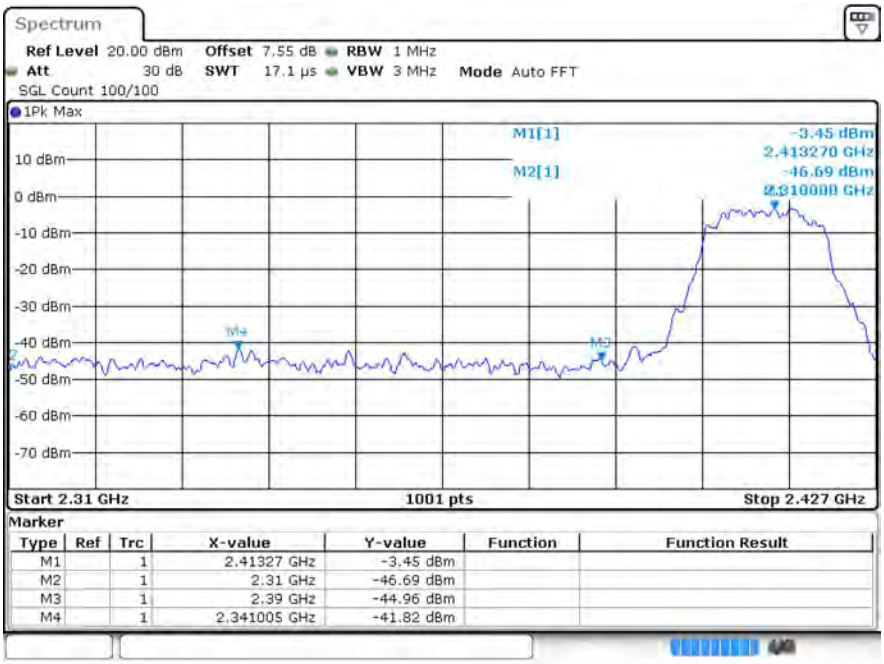
b 2462MHz Ant1 Peak



b 2462MHz Ant1 Average

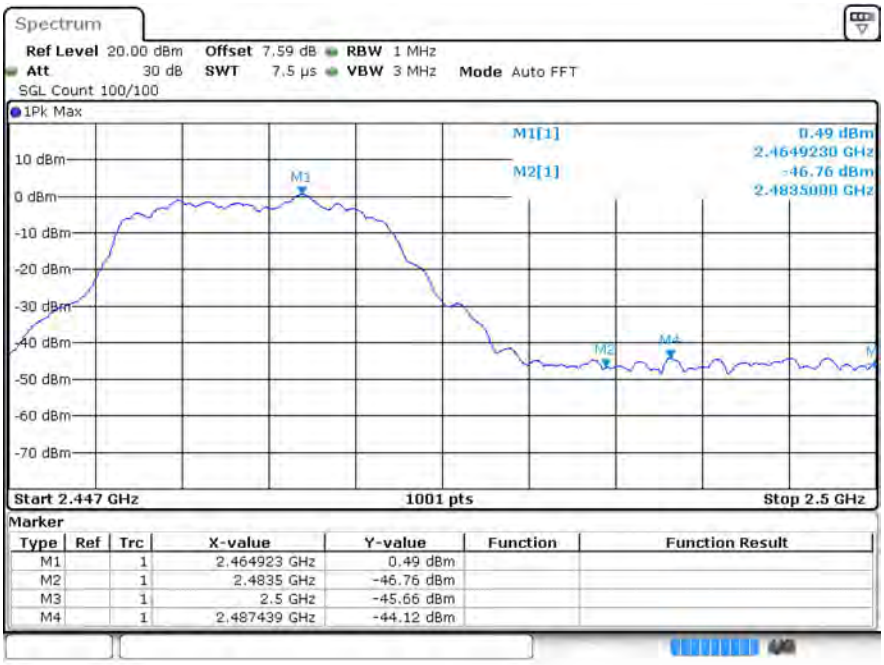


g 2412MHz Ant1 Peak

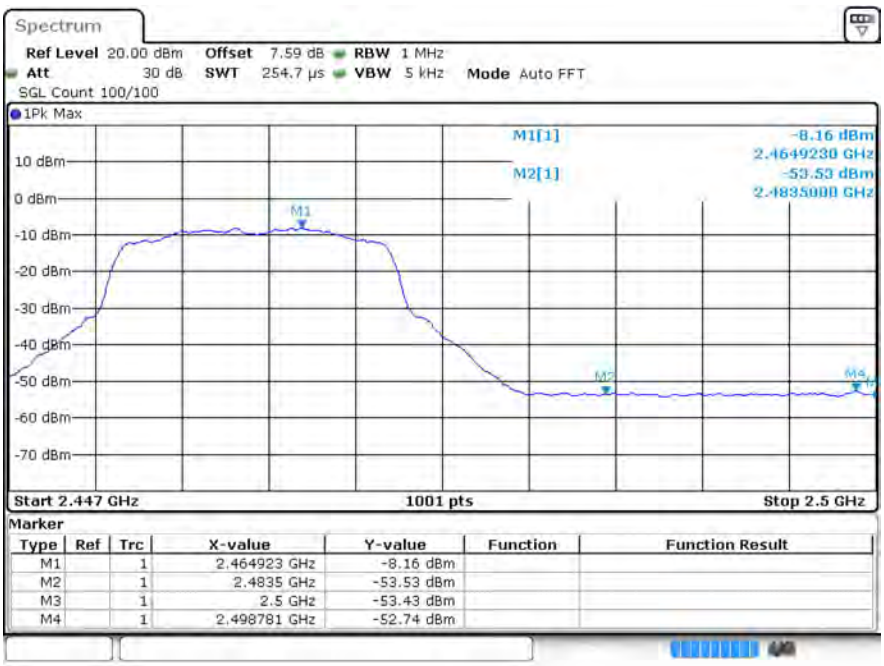


g 2412MHz Ant1 Average

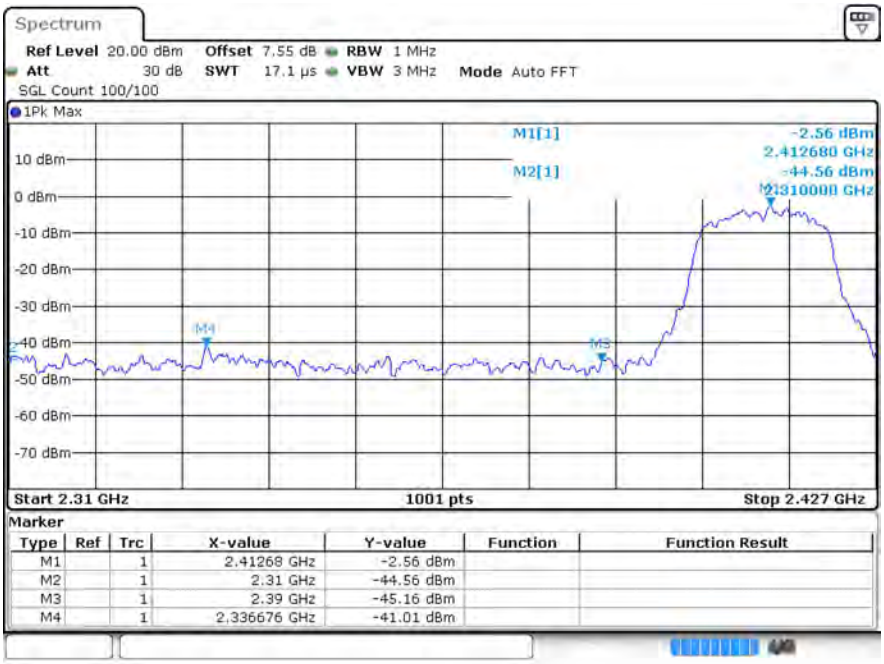
g 2462MHz Ant1 Peak



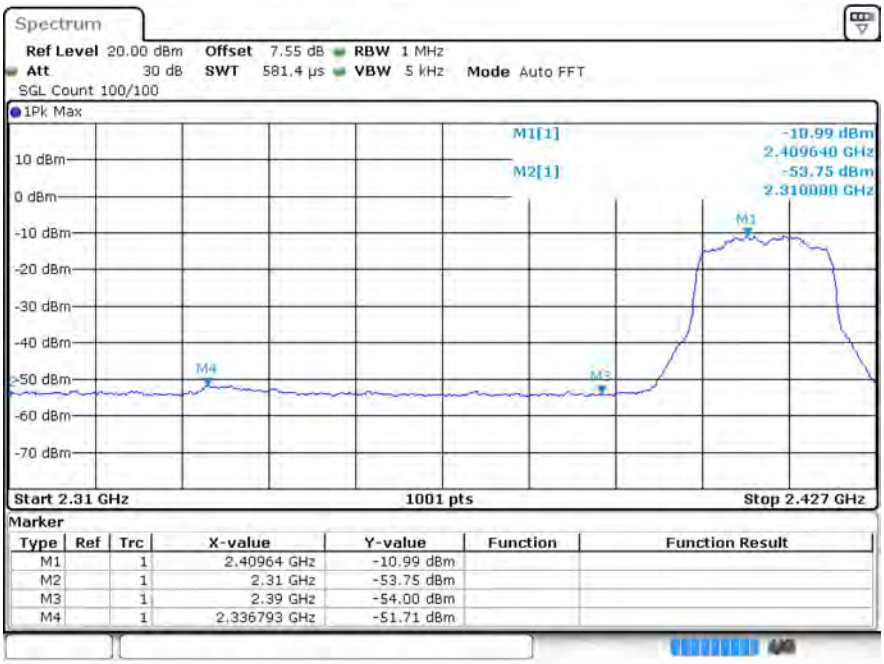
g 2462MHz Ant1 Average



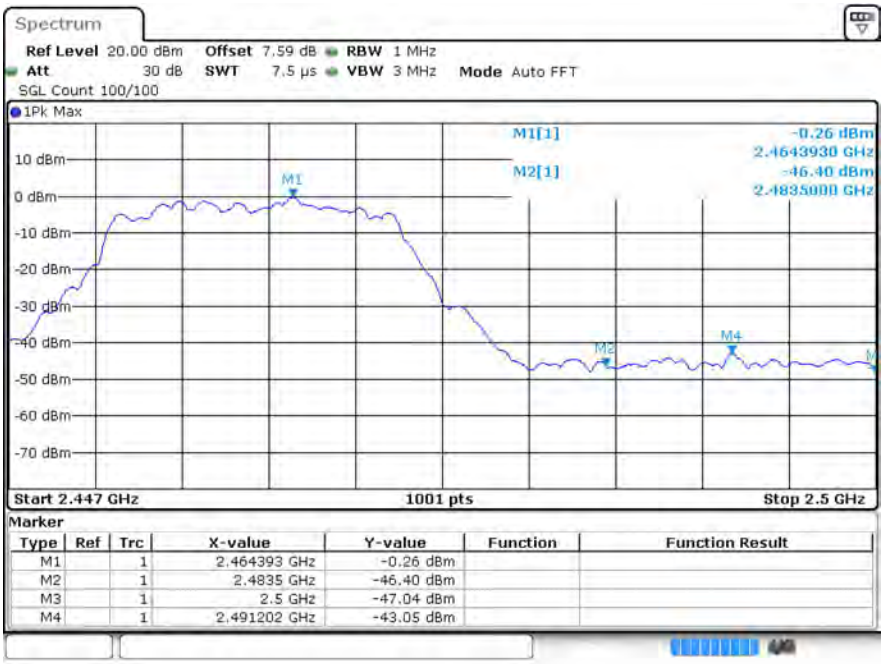
n20 2412MHz Ant1 Peak



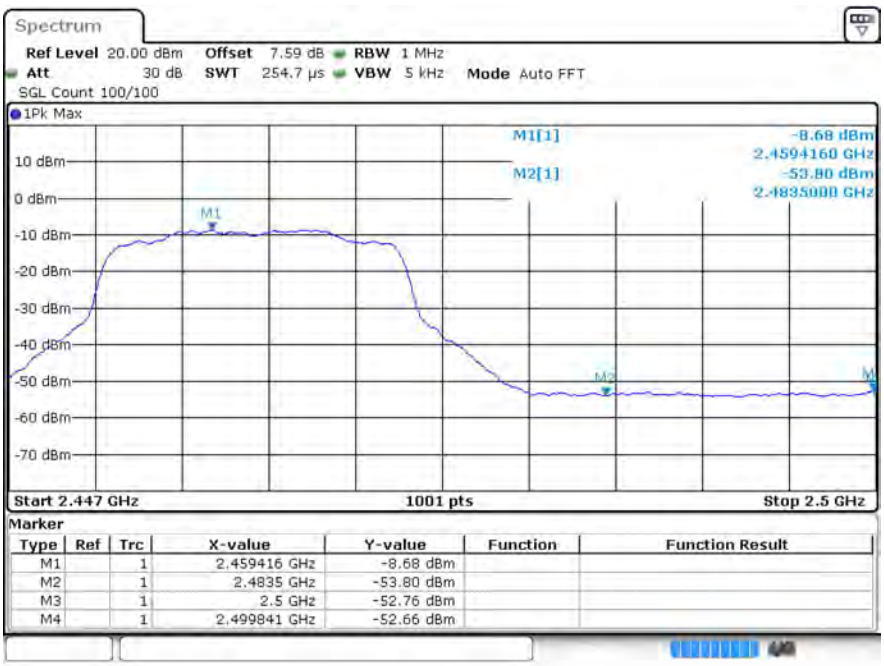
n20 2412MHz Ant1 Average



n20 2462MHz Ant1 Peak

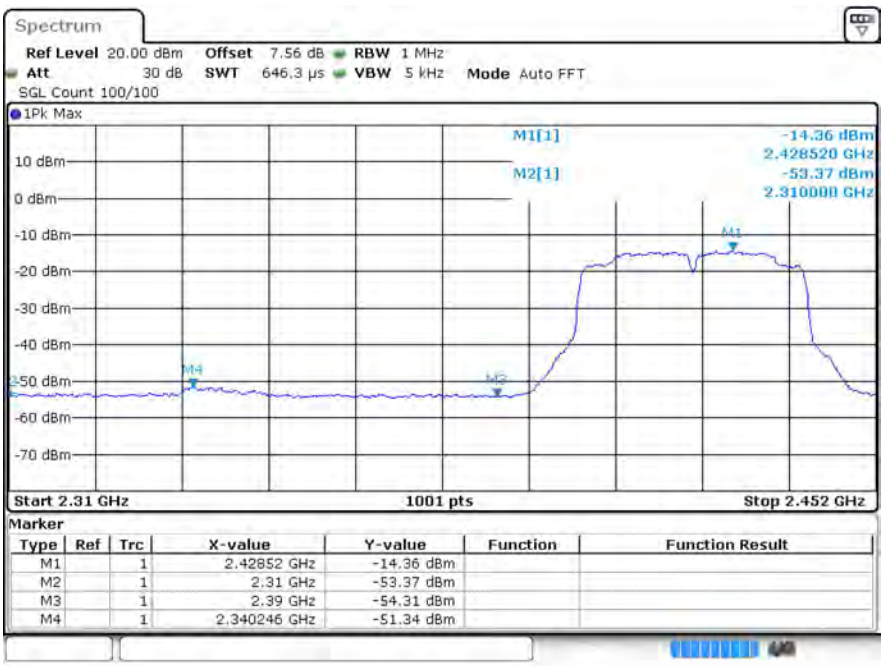


n20 2462MHz Ant1 Average

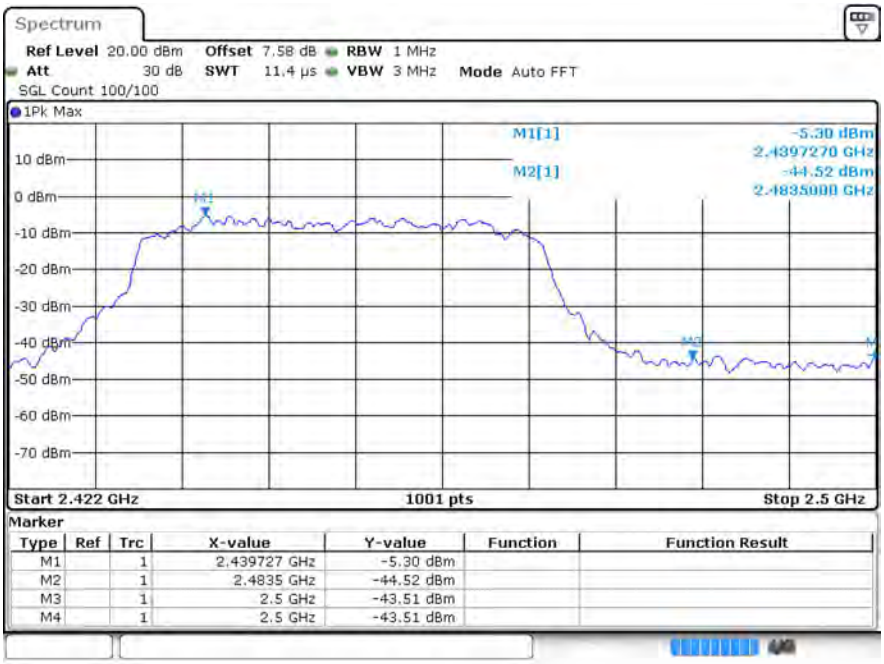


n40 2422MHz Ant1 Peak

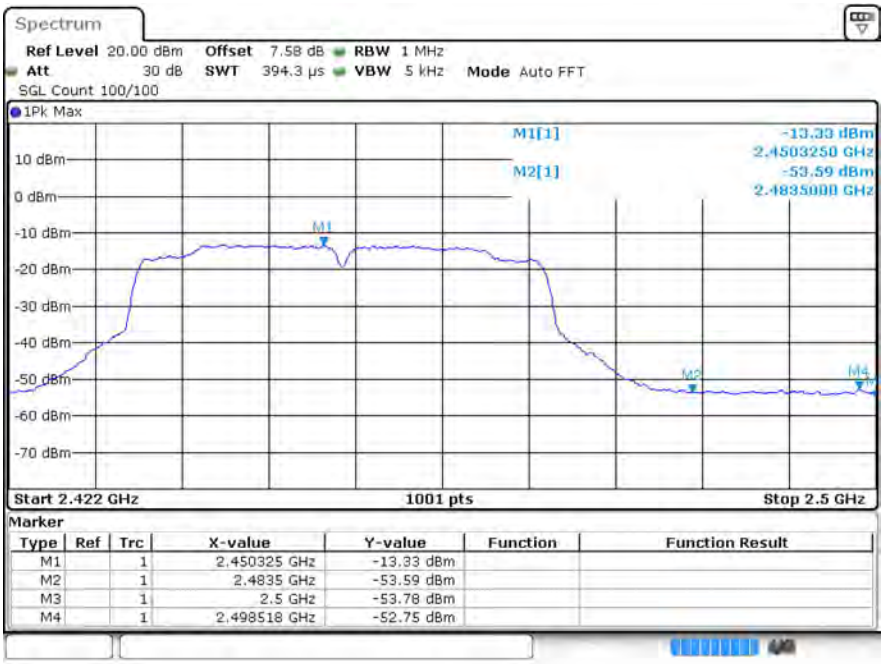
n40 2422MHz Ant1 Average



n40 2452MHz Ant1 Peak



n40 2452MHz Ant1 Average



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