Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Intelligent visual ear scoop

Trade Mark: N/A

Test Model: S8

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

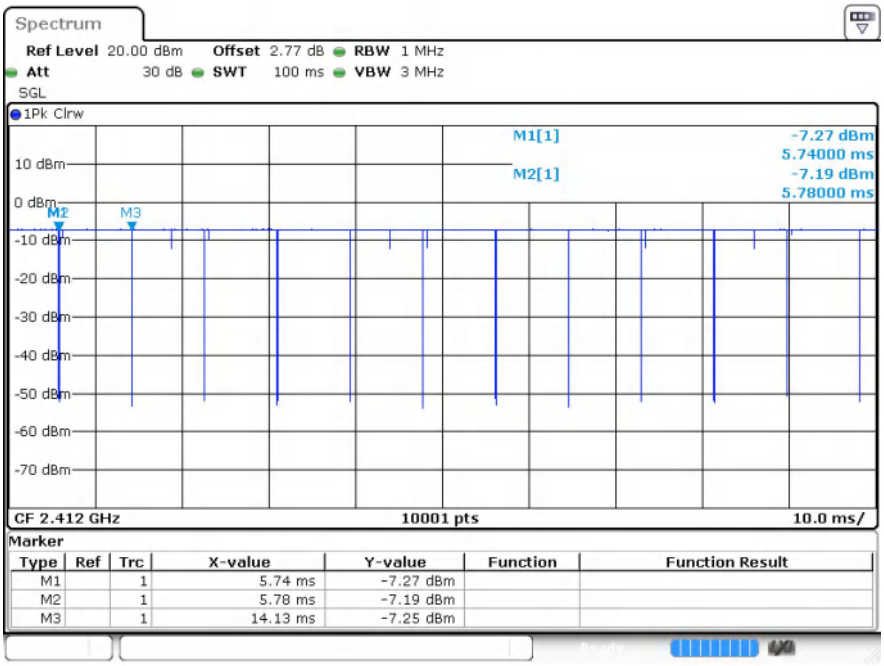
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor	1/T (kHz)
b	2412	Ant1	99.6	0.02	0.12
b	2437	Ant1	99.59	0.02	0.12
b	2462	Ant1	99.6	0.02	0.12
g	2412	Ant1	86.76	0.62	4.76
g	2437	Ant1	86.91	0.61	4.76
g	2462	Ant1	86.47	0.63	4.76
n20	2412	Ant1	87.42	0.58	4.35
n20	2437	Ant1	87.39	0.59	4.35
n20	2462	Ant1	87.43	0.58	4.35
n40	2422	Ant1	76.79	1.15	4.76
n40	2437	Ant1	76.85	1.14	4.55
n40	2452	Ant1	76.8	1.15	4.76

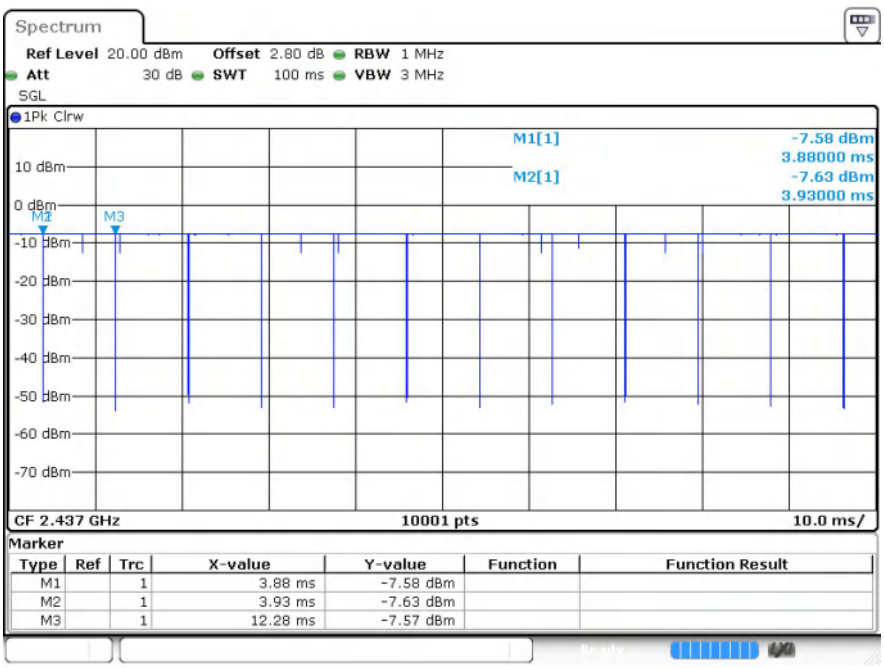
1.2 Test Graphs

Test Graphs

b 2412MHz Ant1

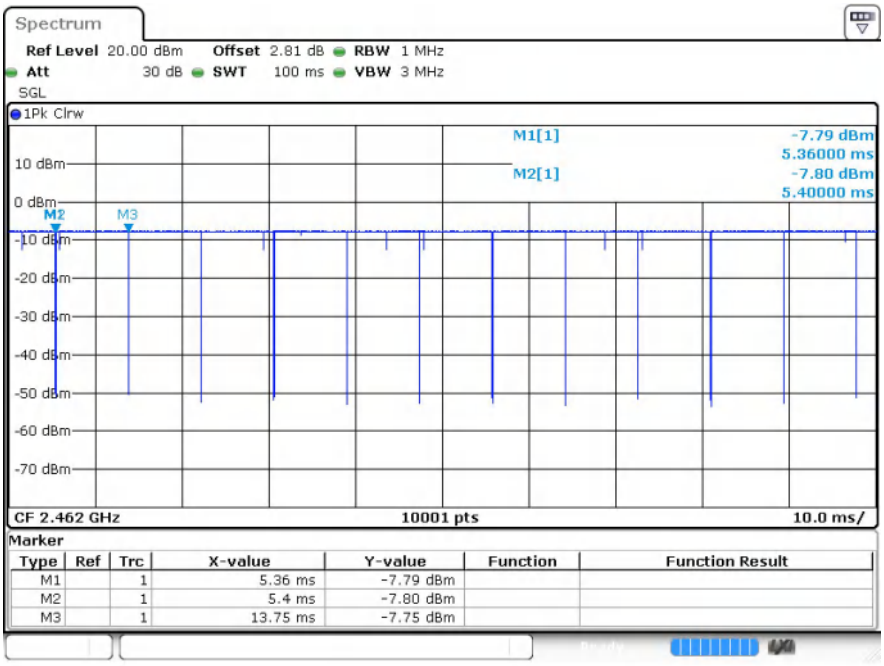


b 2437MHz Ant1

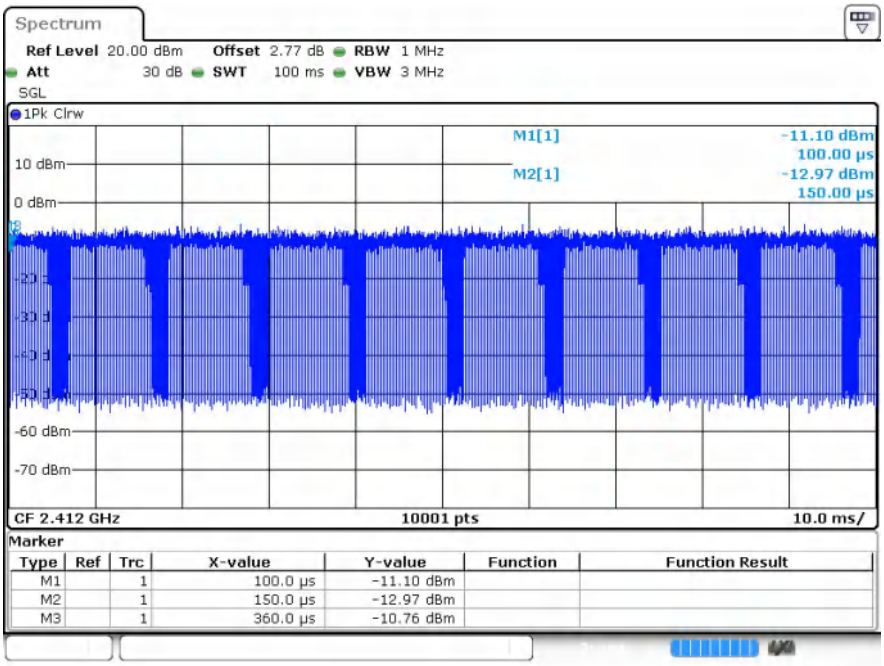


Test Graphs

b 2462MHz Ant1

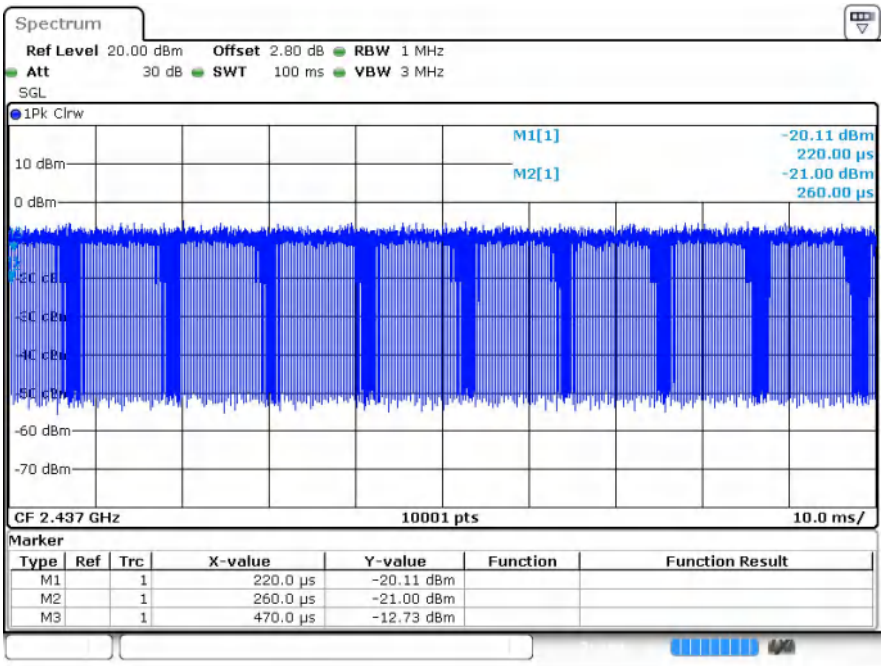


g 2412MHz Ant1

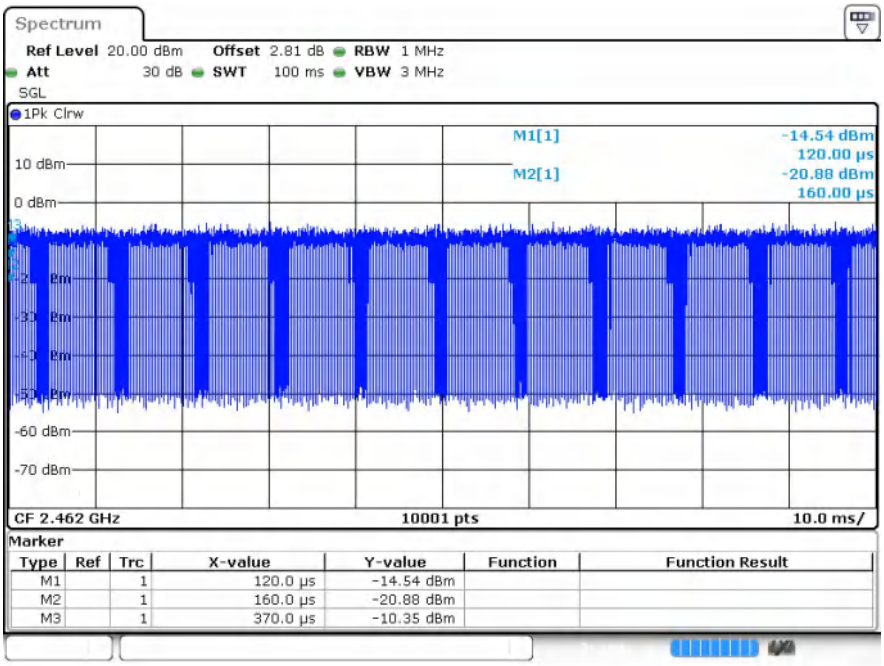


Test Graphs

g 2437MHz Ant1

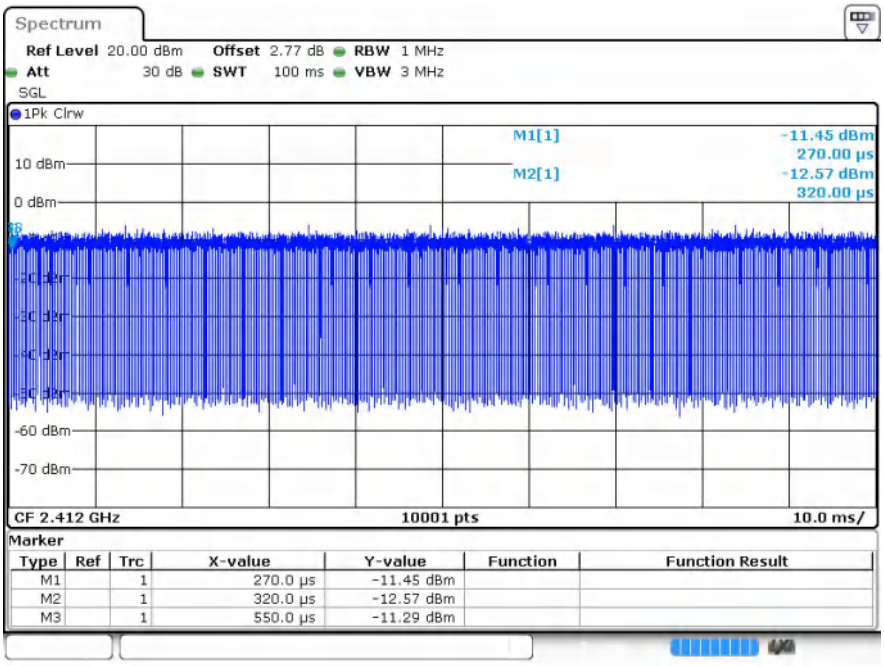


g 2462MHz Ant1

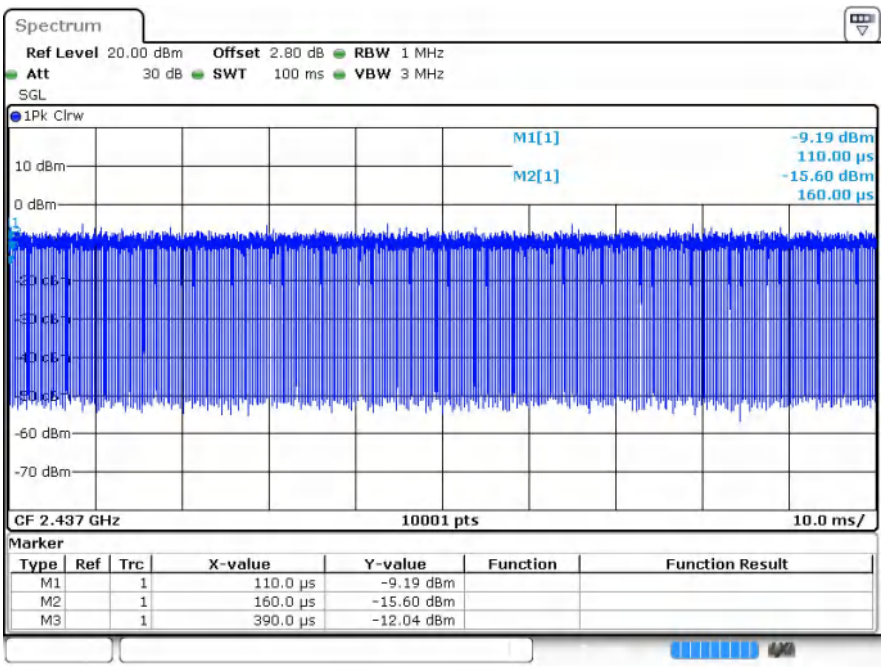


Test Graphs

n20 2412MHz Ant1

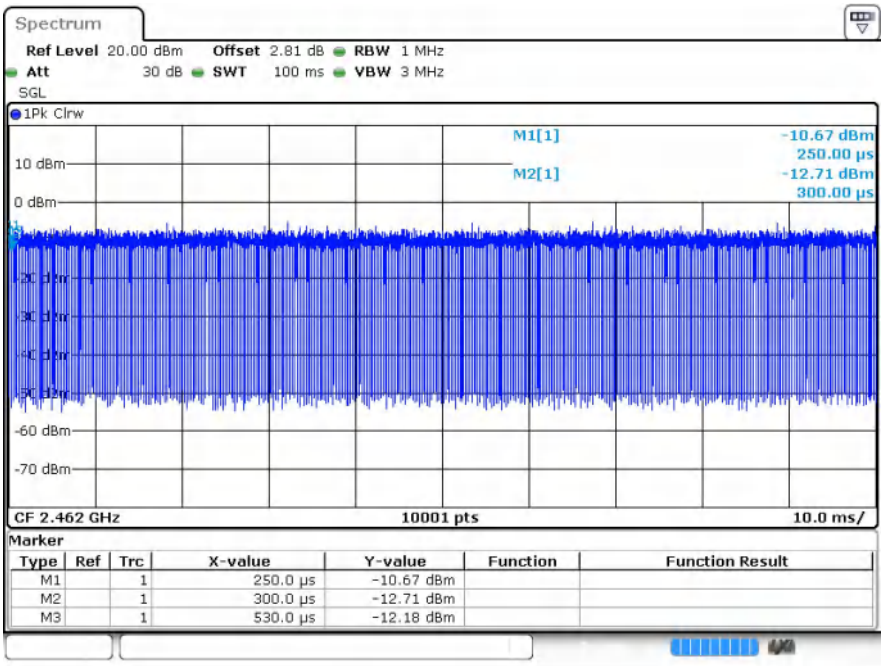


n20 2437MHz Ant1

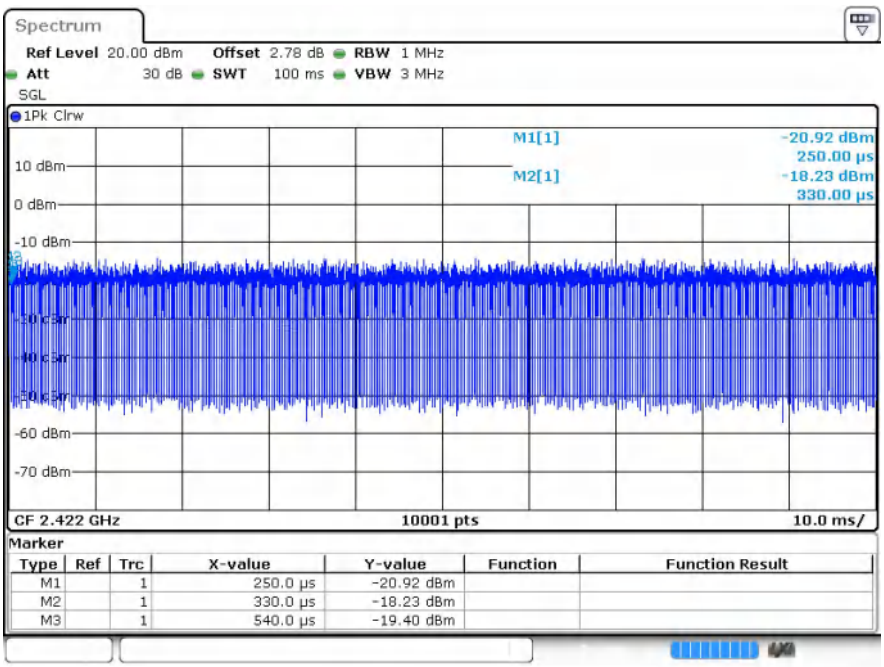


Test Graphs

n20 2462MHz Ant1

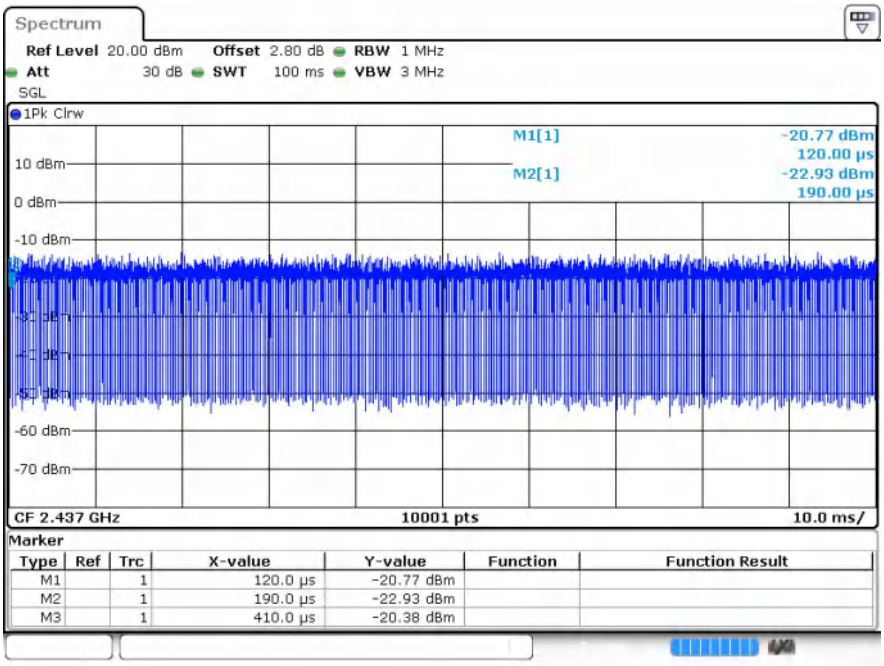


n40 2422MHz Ant1

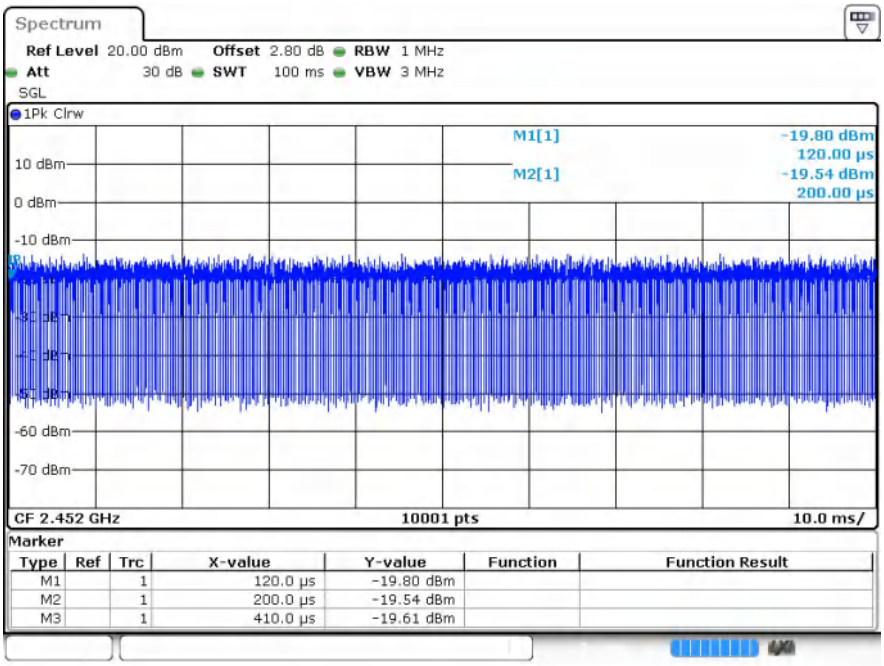


Test Graphs

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	3.28	30	Pass
b	2437	Ant1	2.86	30	Pass
b	2462	Ant1	2.74	30	Pass
g	2412	Ant1	3.12	30	Pass
g	2437	Ant1	3.76	30	Pass
g	2462	Ant1	3.89	30	Pass
n20	2412	Ant1	2.96	30	Pass
n20	2437	Ant1	3.59	30	Pass
n20	2462	Ant1	3.59	30	Pass
n40	2422	Ant1	2.46	30	Pass
n40	2437	Ant1	2.77	30	Pass
n40	2452	Ant1	2.82	30	Pass

3 -6dB Bandwidth

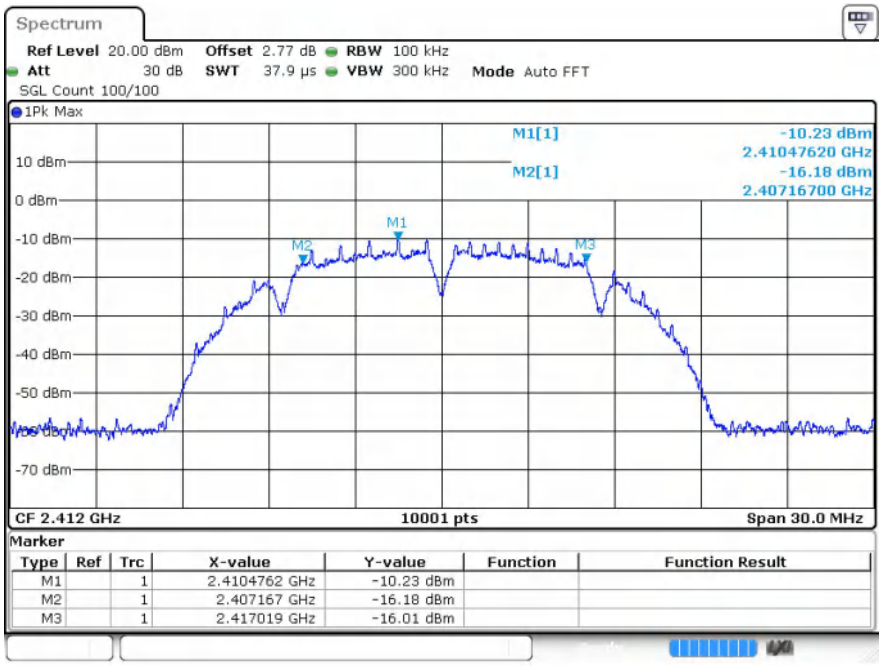
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	9.852	0.5	Pass
b	2437	Ant1	9.729	0.5	Pass
b	2462	Ant1	10.074	0.5	Pass
g	2412	Ant1	15.099	0.5	Pass
g	2437	Ant1	14.199	0.5	Pass
g	2462	Ant1	15.12	0.5	Pass
n20	2412	Ant1	15.111	0.5	Pass
n20	2437	Ant1	15.117	0.5	Pass
n20	2462	Ant1	15.108	0.5	Pass
n40	2422	Ant1	35.07	0.5	Pass
n40	2437	Ant1	35.07	0.5	Pass
n40	2452	Ant1	31.338	0.5	Pass

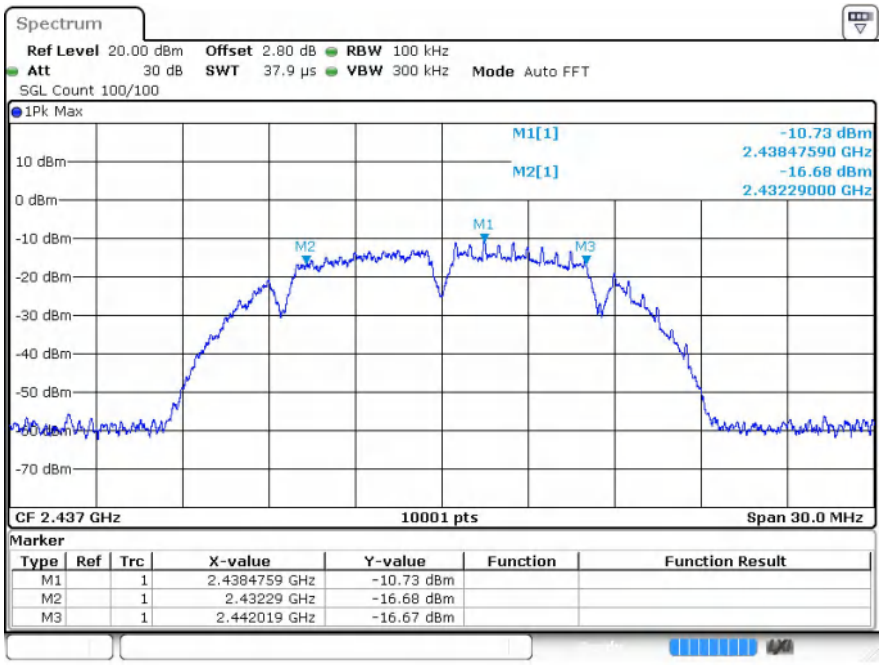
3.2 Test Graphs

Test Graphs

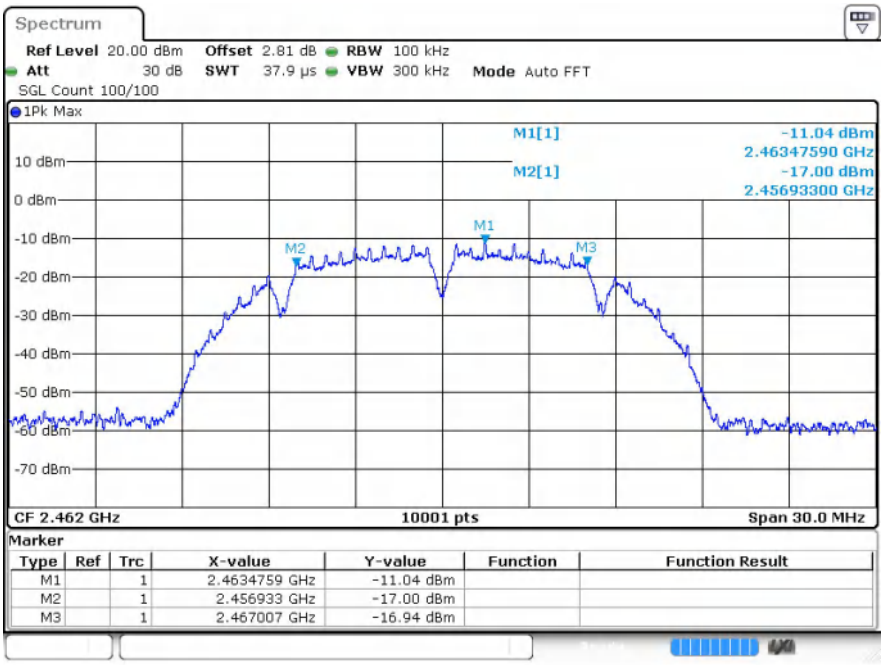
b 2412MHz Ant1



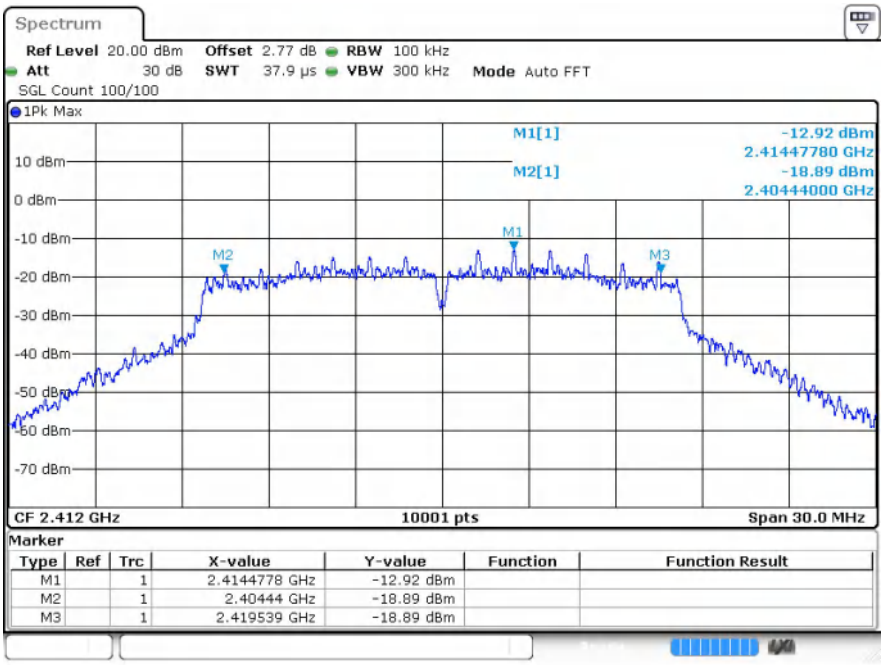
b 2437MHz Ant1



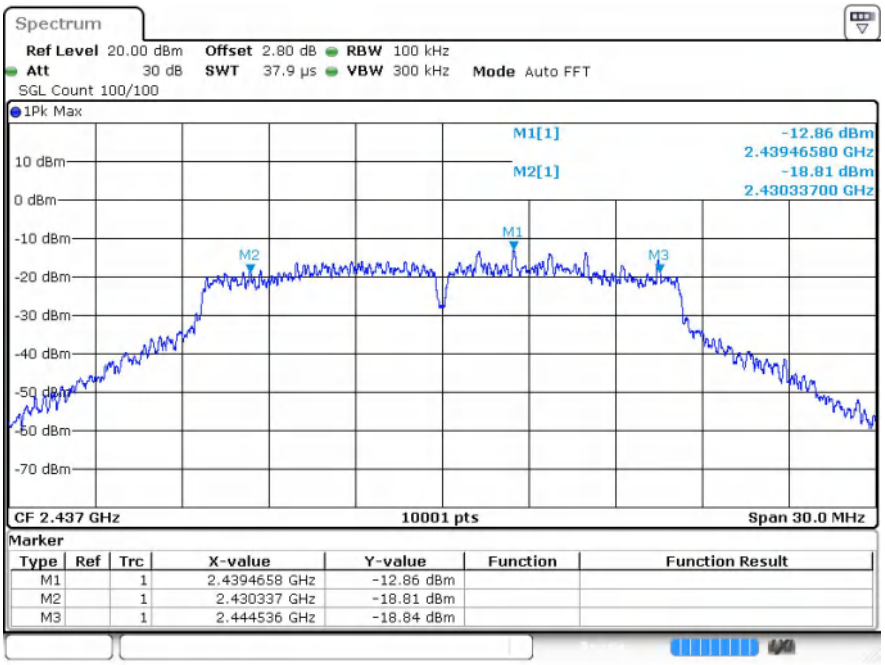
b 2462MHz Ant1



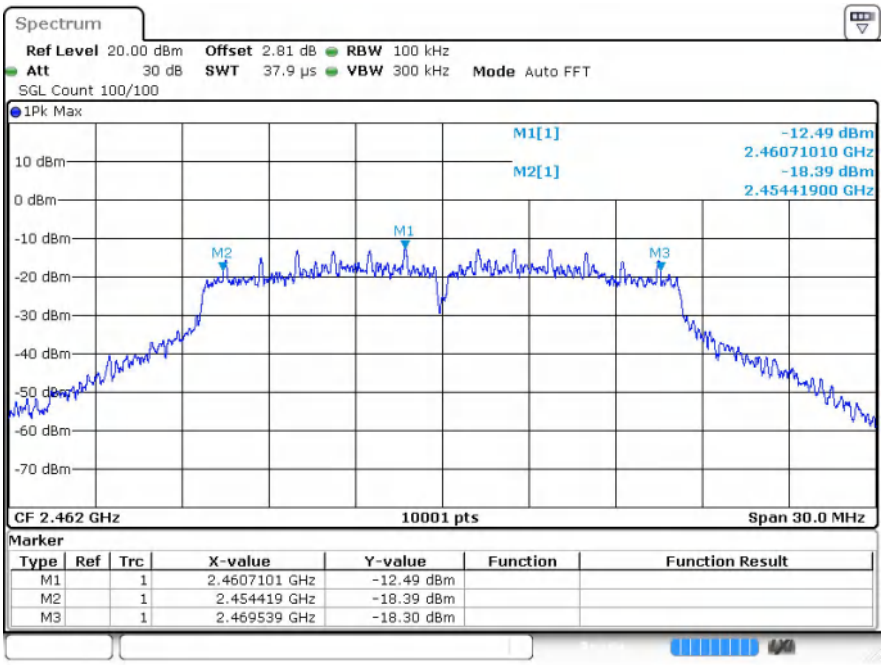
g 2412MHz Ant1



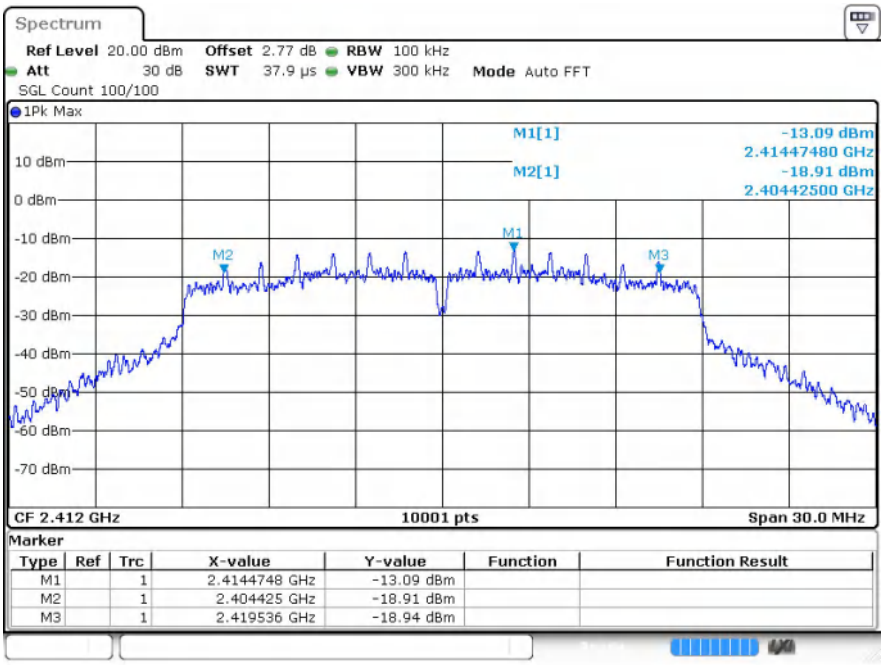
g 2437MHz Ant1



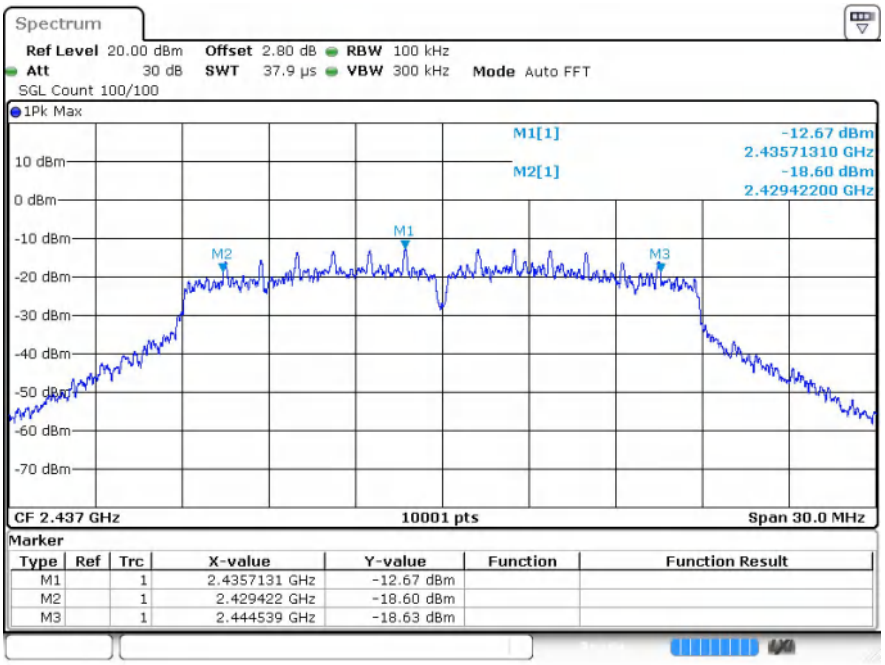
g 2462MHz Ant1



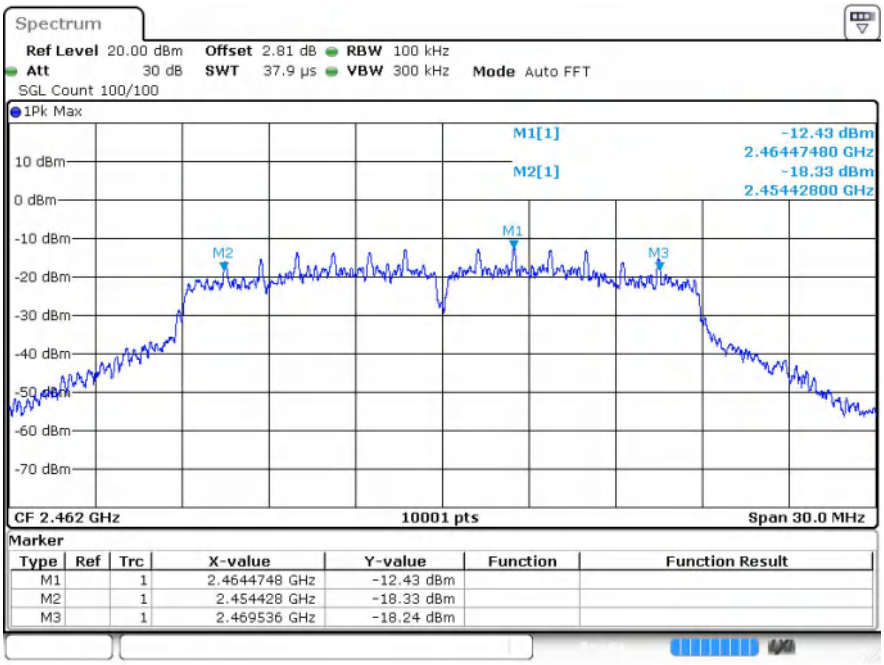
n20 2412MHz Ant1



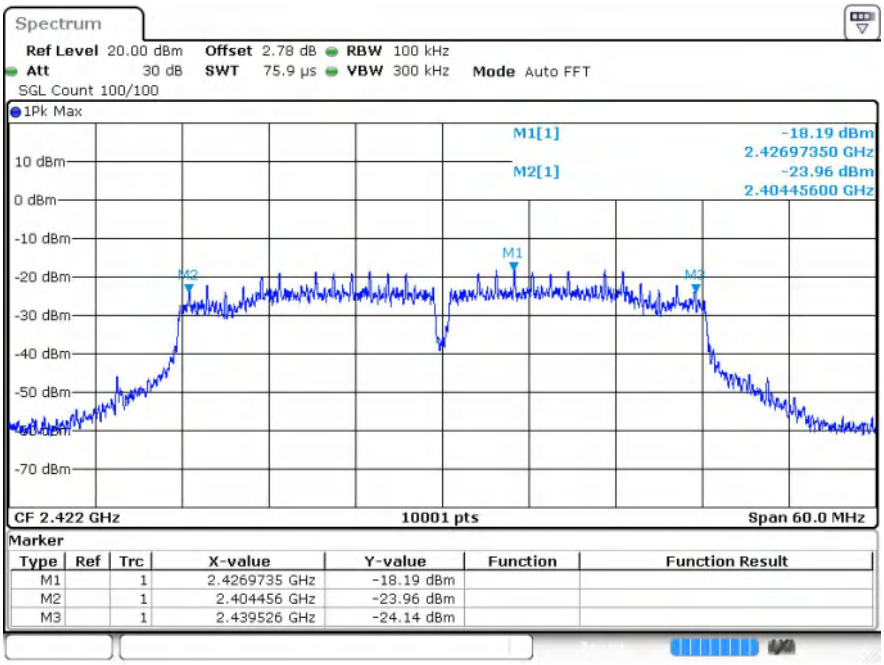
n20 2437MHz Ant1



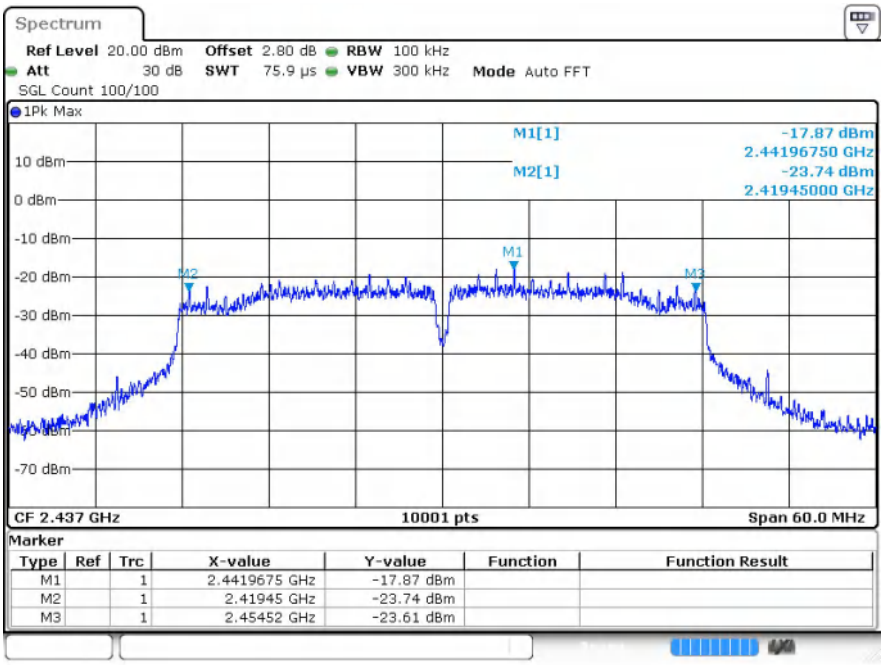
n20 2462MHz Ant1



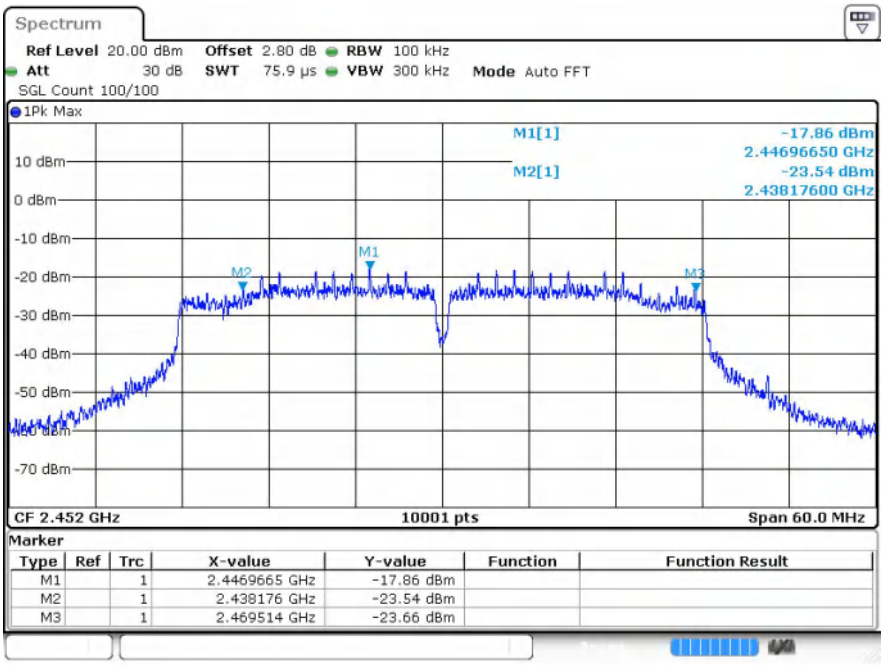
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1

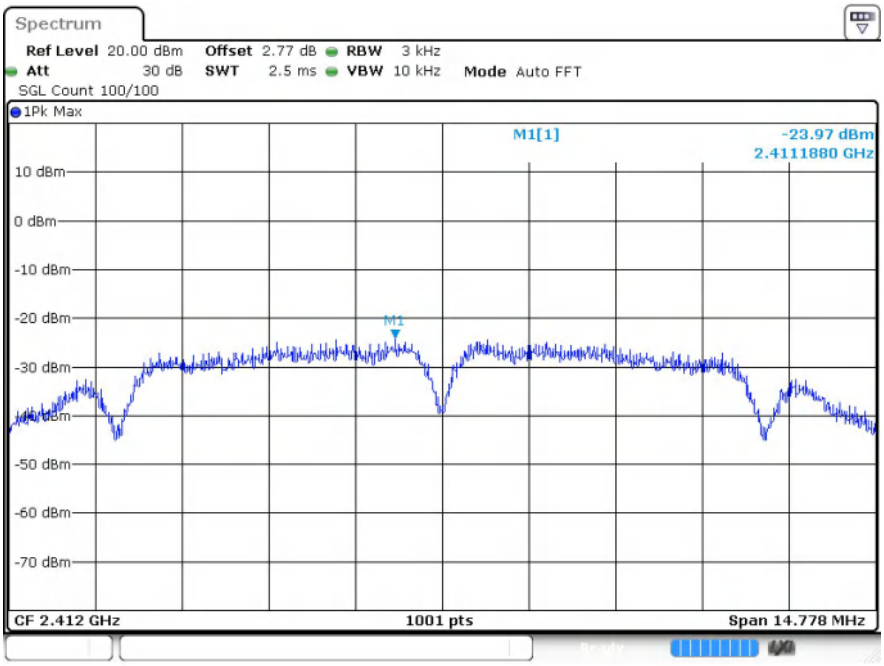
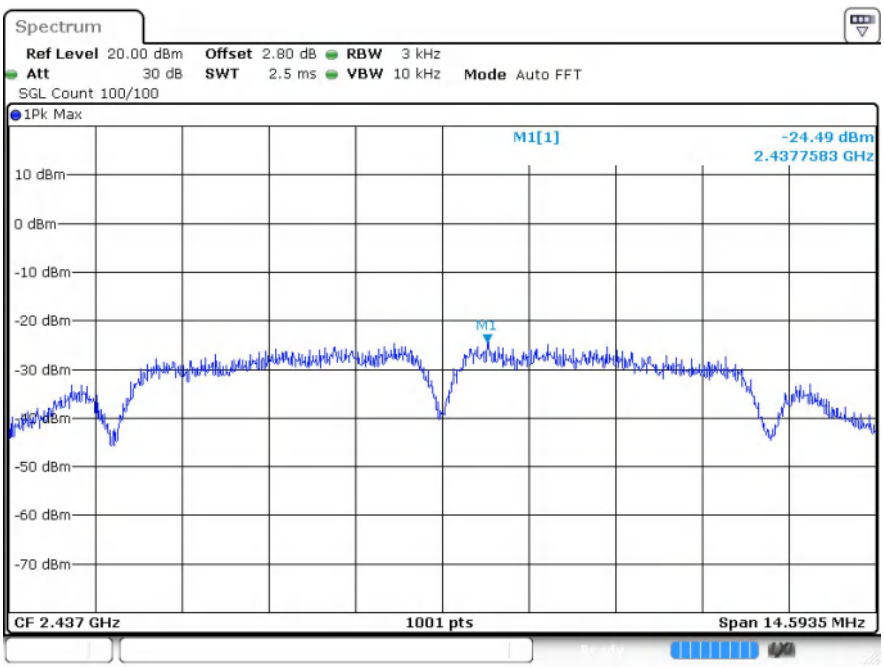


4 Maximum Power Spectral Density Level

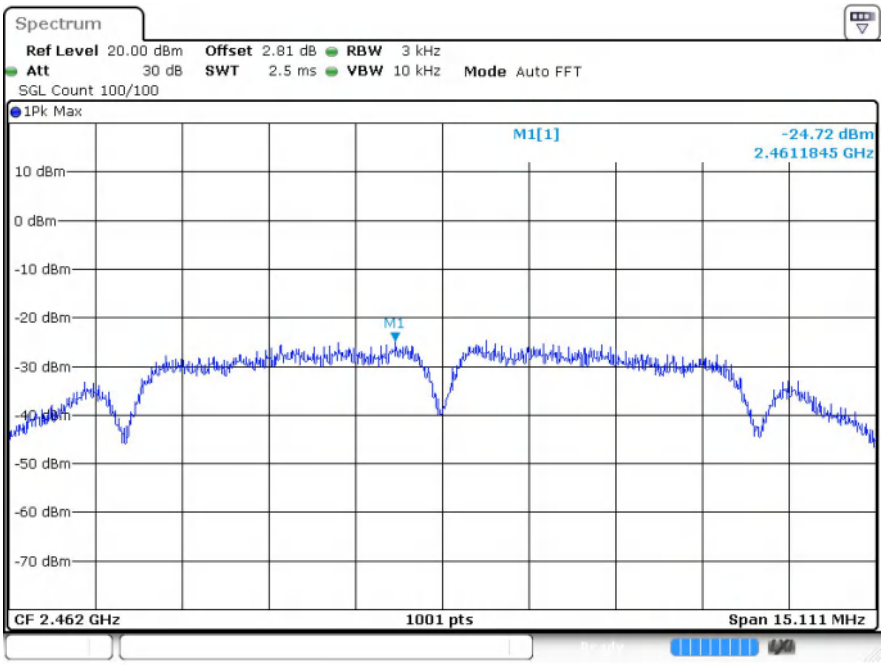
4.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
b	2412	Ant1	-23.97	≤8	Pass
b	2437	Ant1	-24.49	≤8	Pass
b	2462	Ant1	-24.72	≤8	Pass
g	2412	Ant1	-27.47	≤8	Pass
g	2437	Ant1	-27.02	≤8	Pass
g	2462	Ant1	-26.91	≤8	Pass
n20	2412	Ant1	-27.82	≤8	Pass
n20	2437	Ant1	-27.24	≤8	Pass
n20	2462	Ant1	-27.3	≤8	Pass
n40	2422	Ant1	-32.65	≤8	Pass
n40	2437	Ant1	-32.34	≤8	Pass
n40	2452	Ant1	-31.62	≤8	Pass

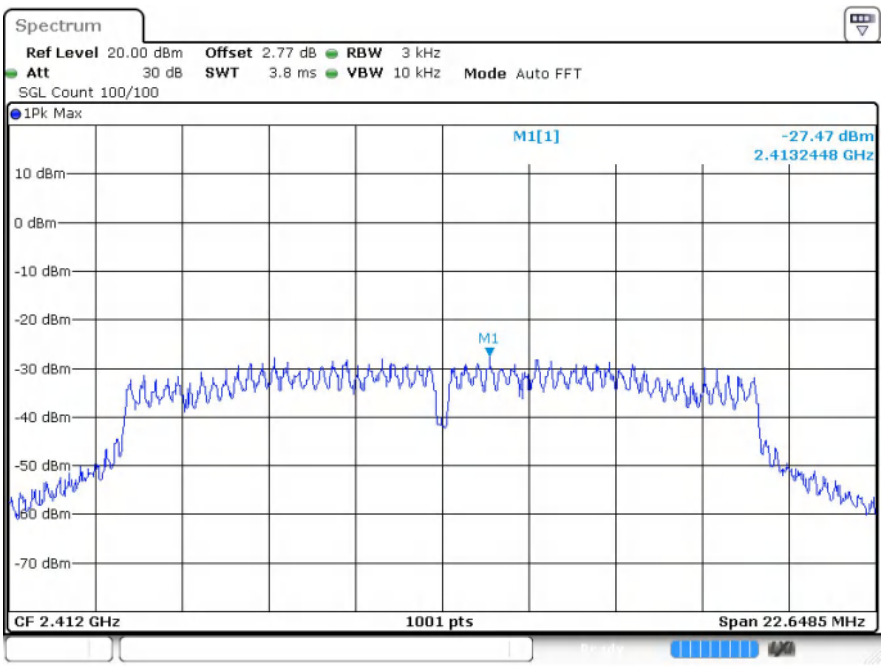
4.2 Test Graphs

Test Graphs
b 2412MHz Ant1

b 2437MHz Ant1


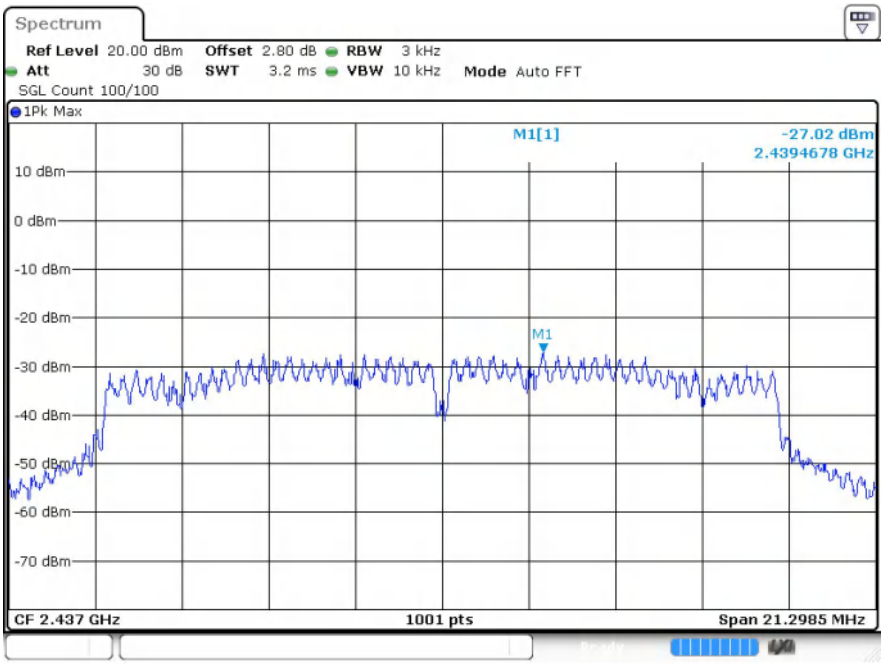
b 2462MHz Ant1



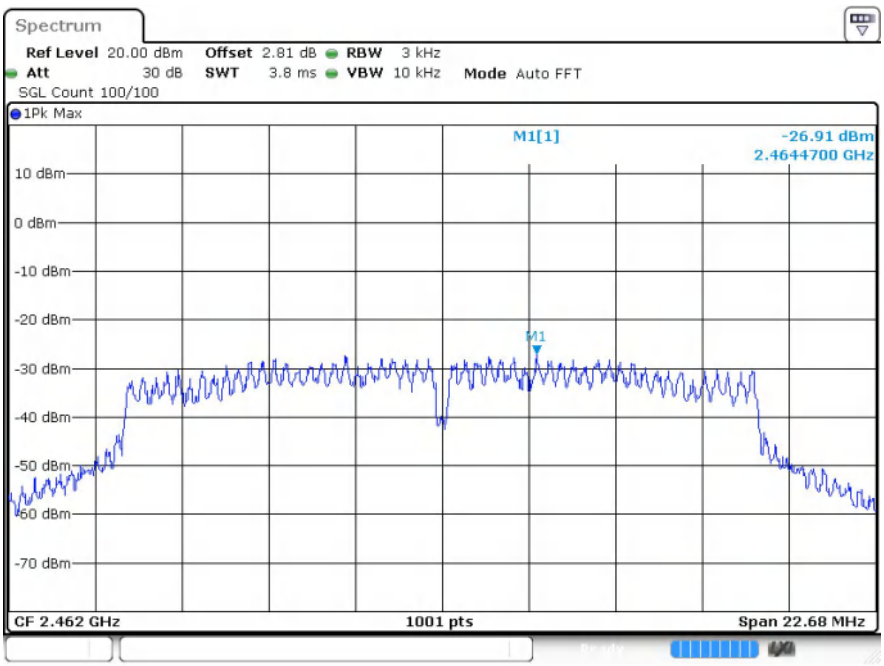
g 2412MHz Ant1



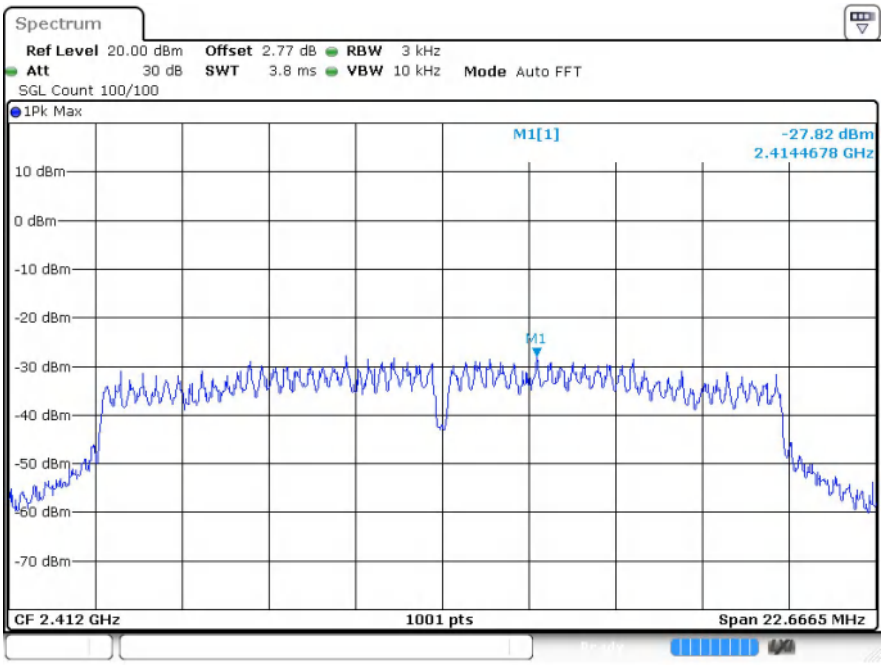
g 2437MHz Ant1



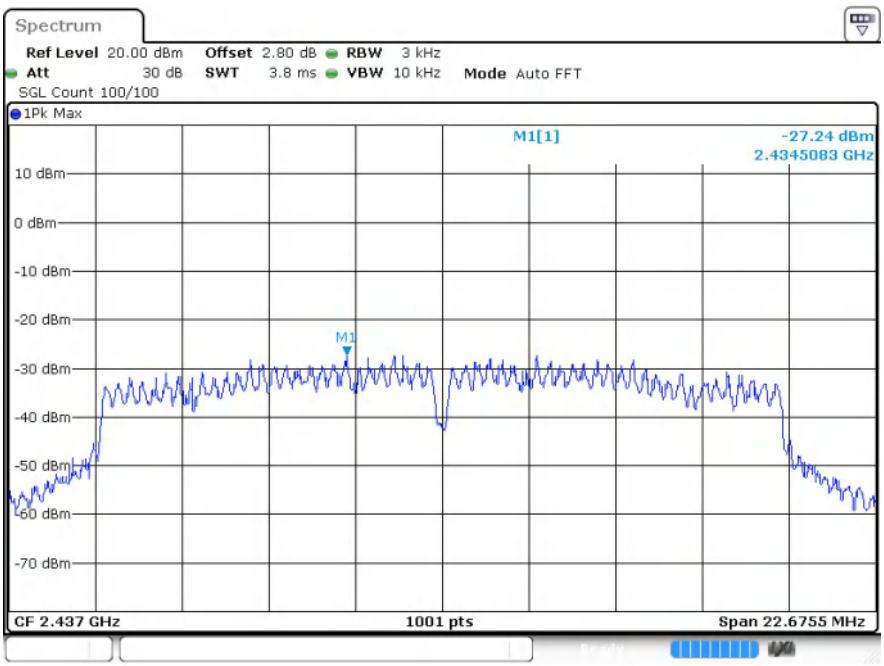
g 2462MHz Ant1



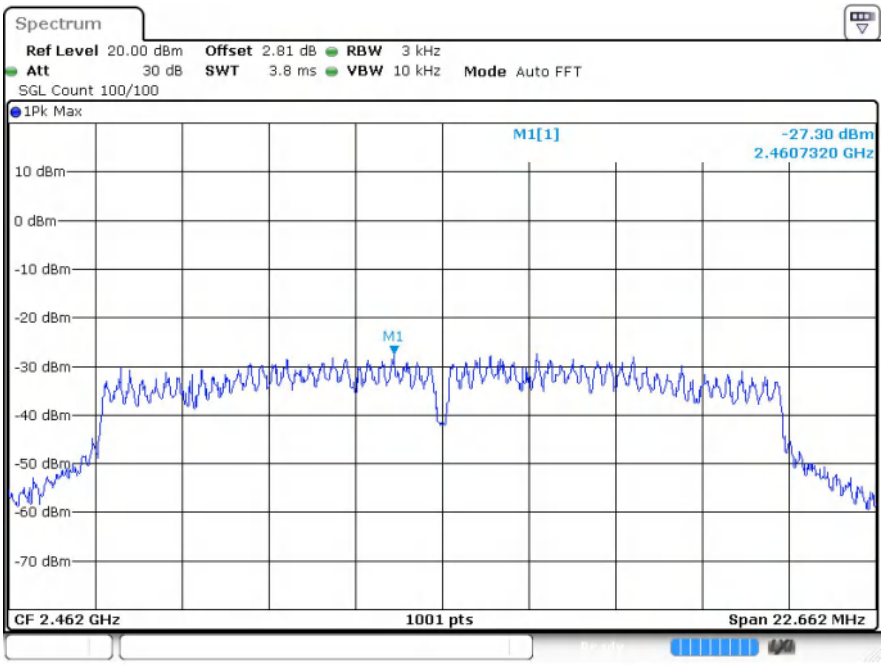
n20 2412MHz Ant1



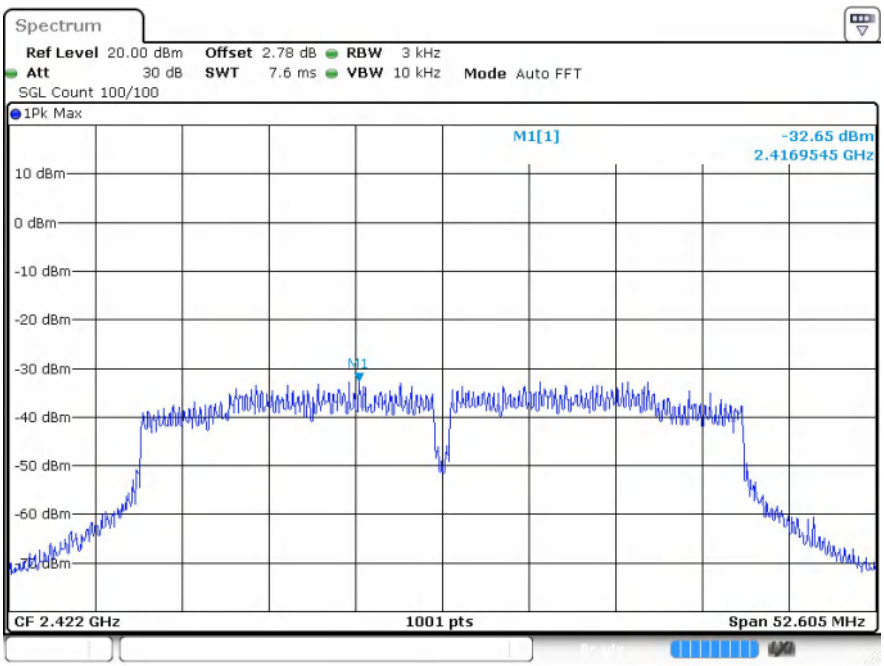
n20 2437MHz Ant1



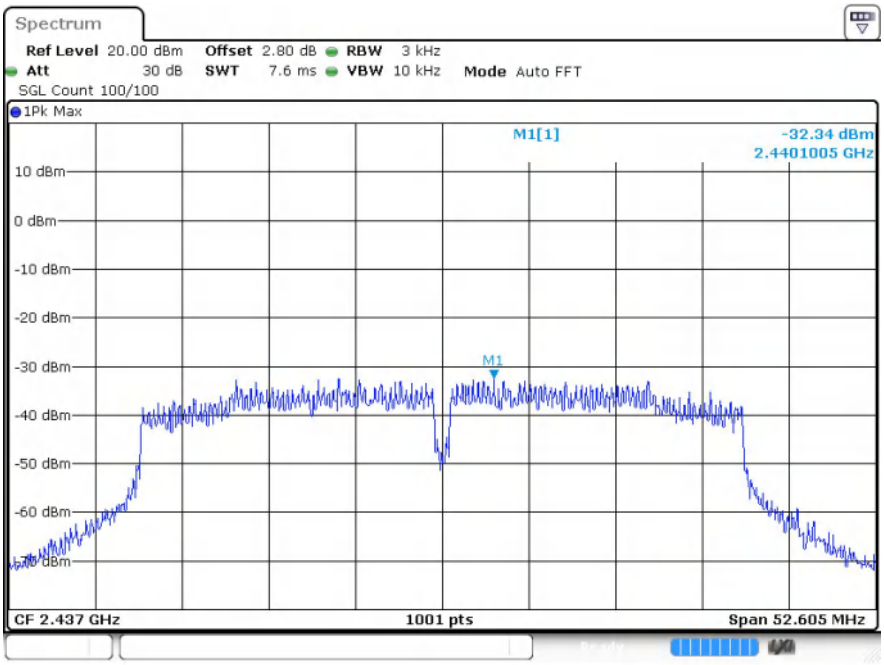
n20 2462MHz Ant1



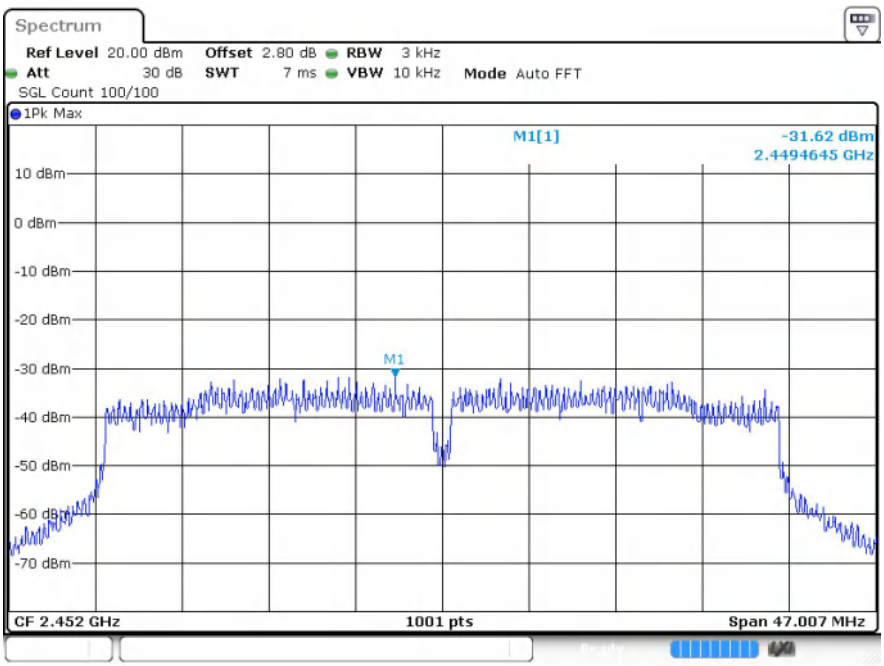
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1



5 Band Edge

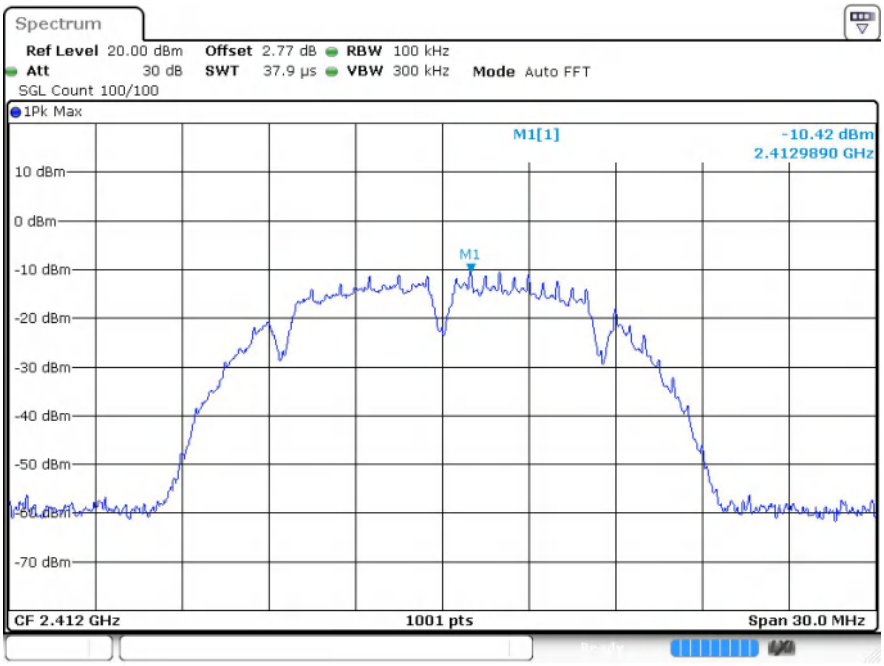
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-44.77	-20	Pass
b	2462	Ant1	-45.31	-20	Pass
g	2412	Ant1	-41.16	-20	Pass
g	2462	Ant1	-44.01	-20	Pass
n20	2412	Ant1	-41.26	-20	Pass
n20	2462	Ant1	-43.35	-20	Pass
n40	2422	Ant1	-37.3	-20	Pass
n40	2452	Ant1	-38.4	-20	Pass

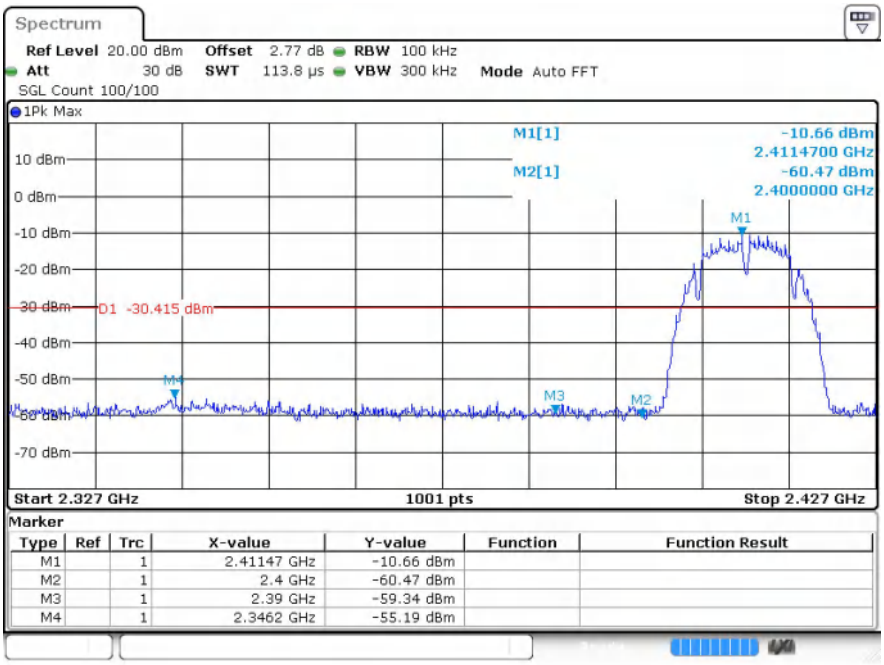
5.2 Test Graphs

Test Graphs

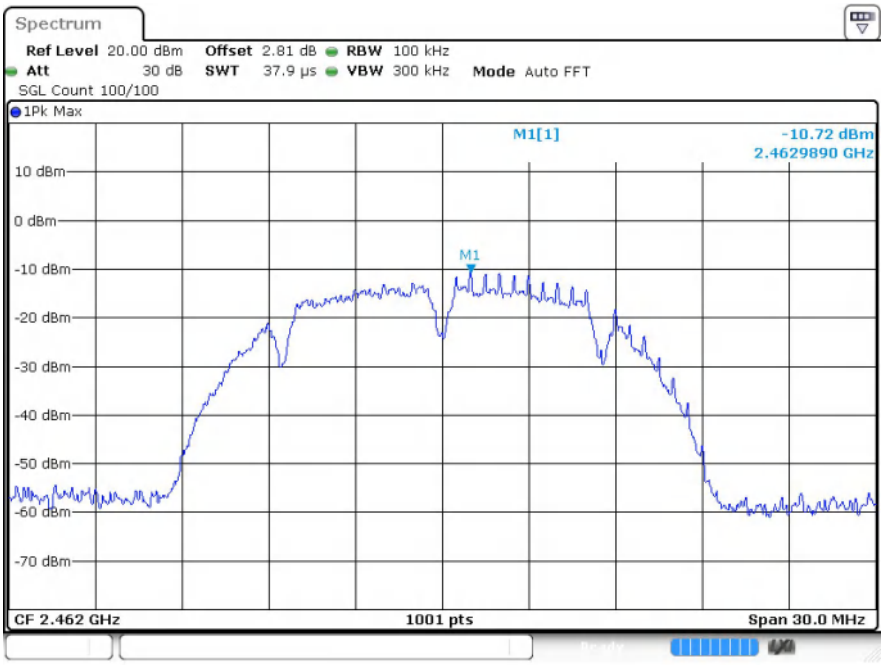
b 2412MHz Ant1 Ref



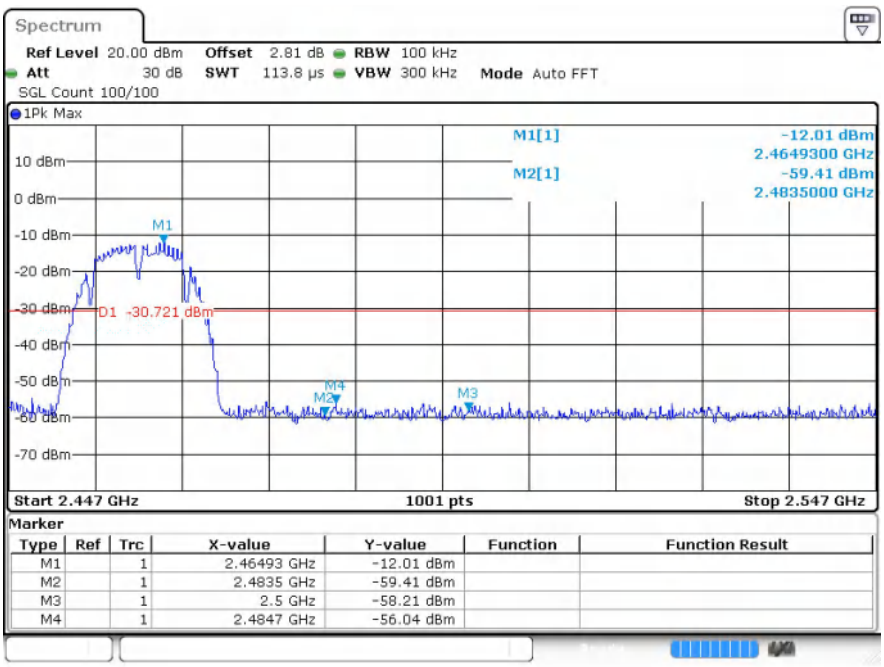
b 2412MHz Ant1 Emission



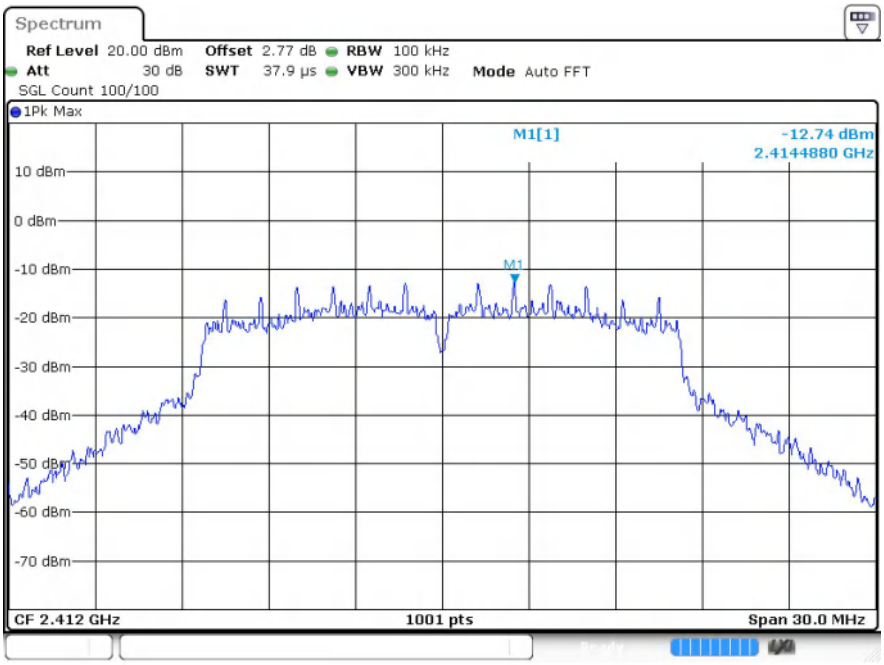
b 2462MHz Ant1 Ref



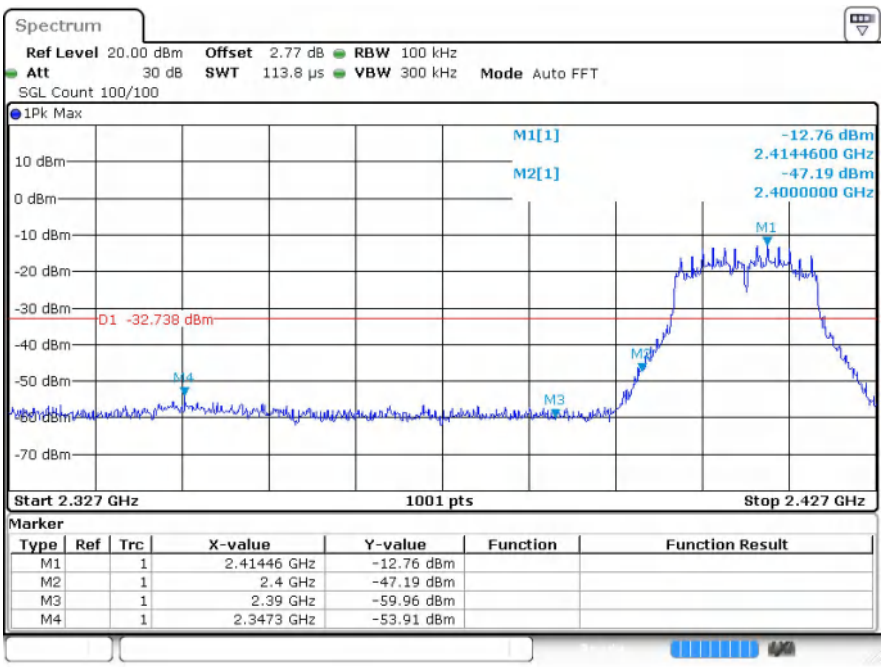
b 2462MHz Ant1 Emission



g 2412MHz Ant1 Ref



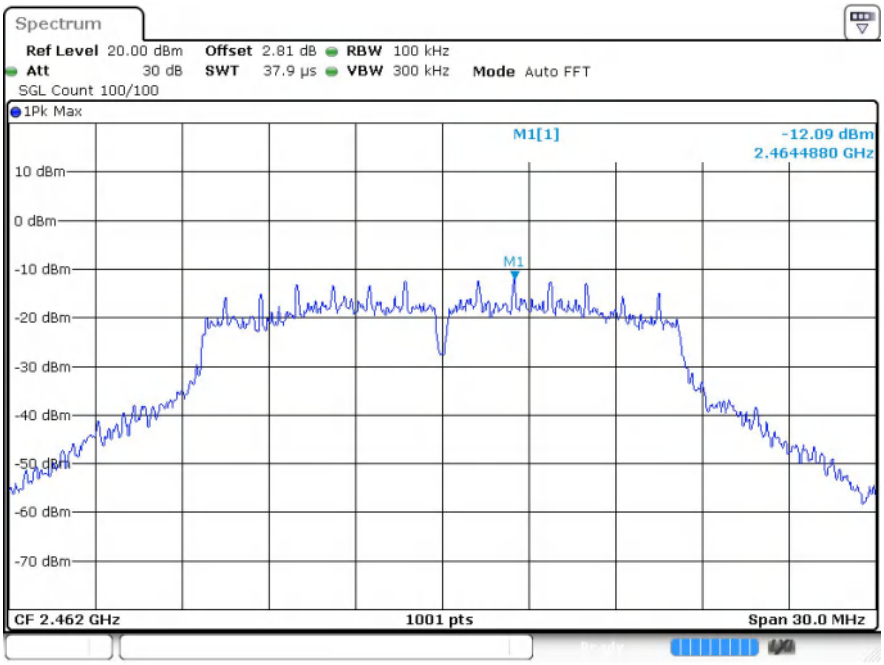
g 2412MHz Ant1 Emission



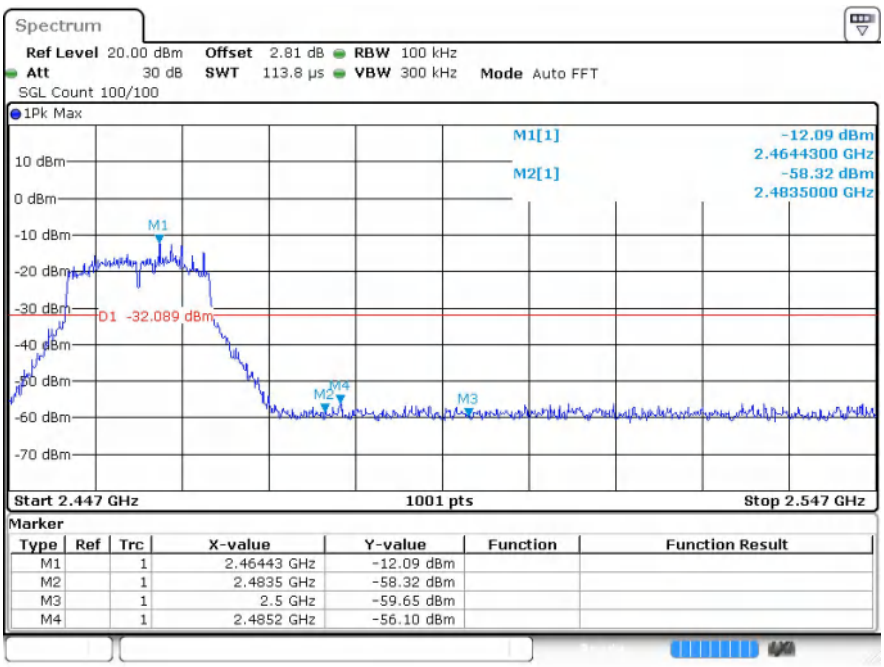
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41446 GHz	-12.76 dBm		
M2		1	2.4 GHz	-47.19 dBm		
M3		1	2.39 GHz	-59.96 dBm		
M4		1	2.3473 GHz	-53.91 dBm		

g 2462MHz Ant1 Ref

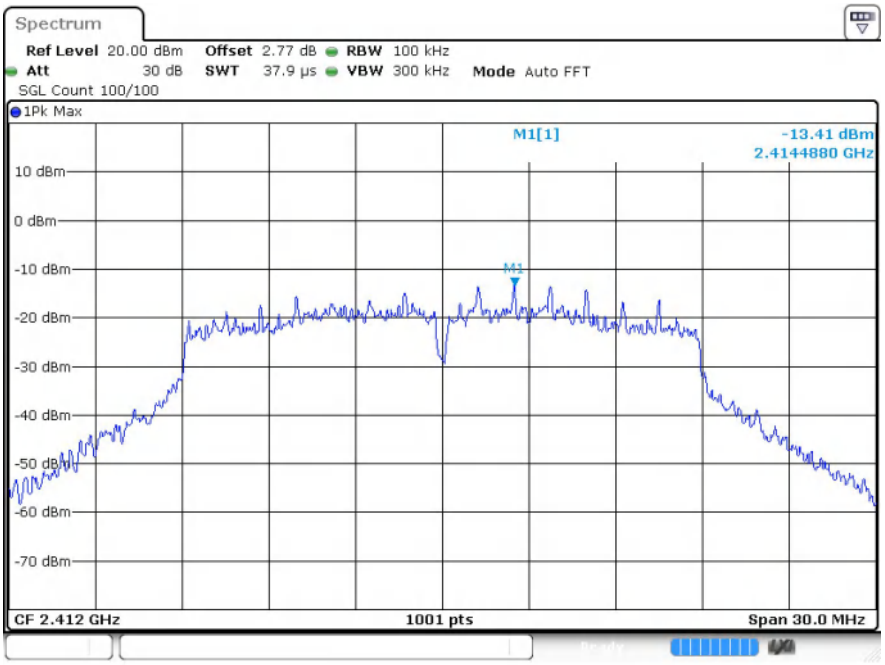


g 2462MHz Ant1 Emission

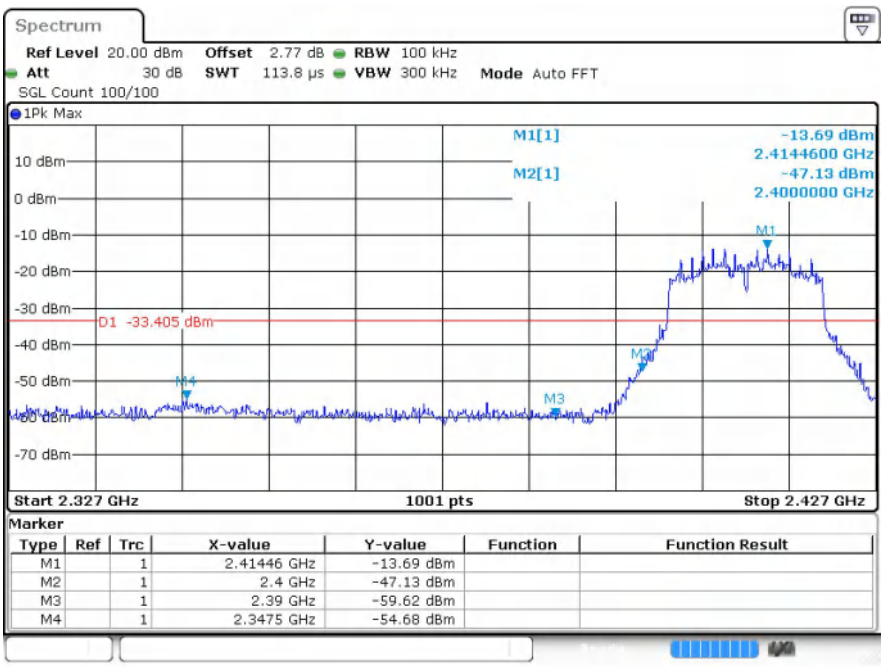


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46443 GHz	-12.09 dBm		
M2		1	2.4835 GHz	-58.32 dBm		
M3		1	2.5 GHz	-59.65 dBm		
M4		1	2.4852 GHz	-56.10 dBm		

n20 2412MHz Ant1 Ref



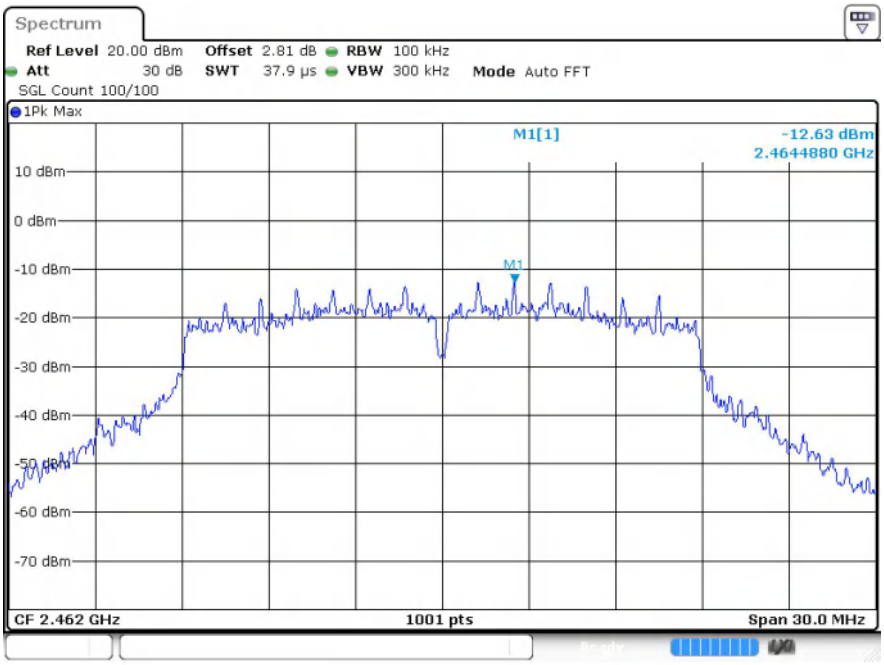
n20 2412MHz Ant1 Emission



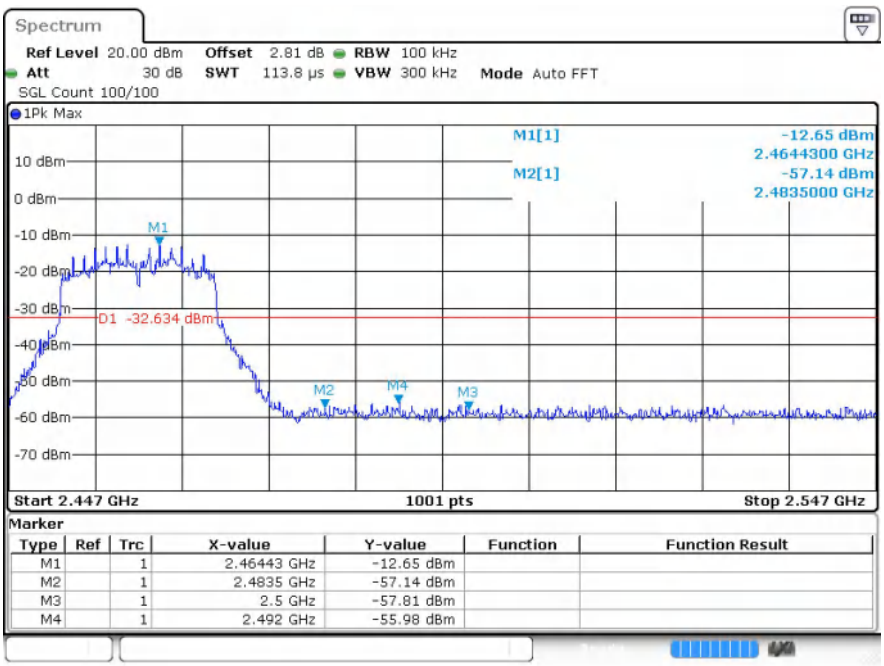
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41446 GHz	-13.69 dBm		
M2		1	2.4 GHz	-47.13 dBm		
M3		1	2.39 GHz	-59.62 dBm		
M4		1	2.3475 GHz	-54.68 dBm		

n20 2462MHz Ant1 Ref

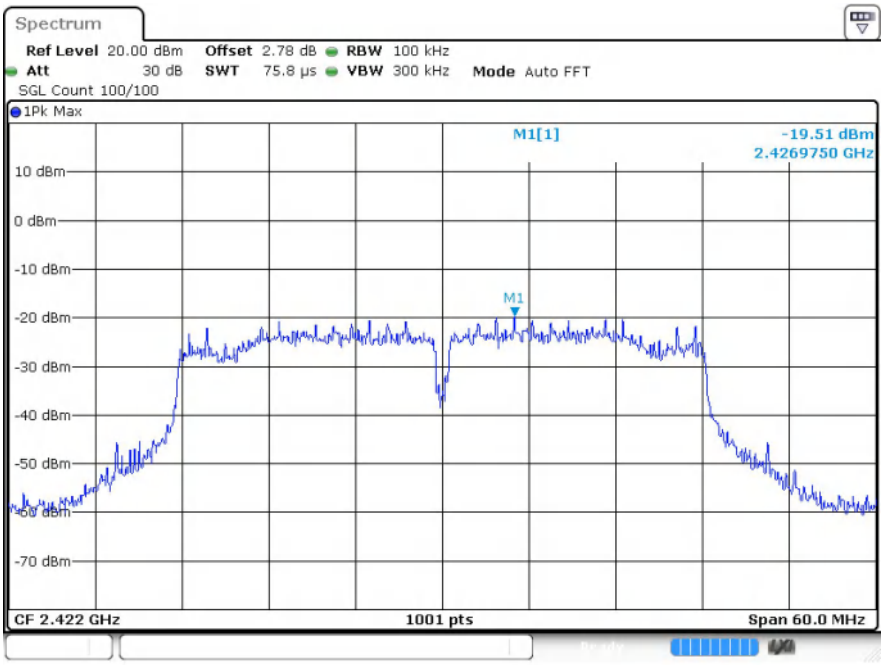


n20 2462MHz Ant1 Emission

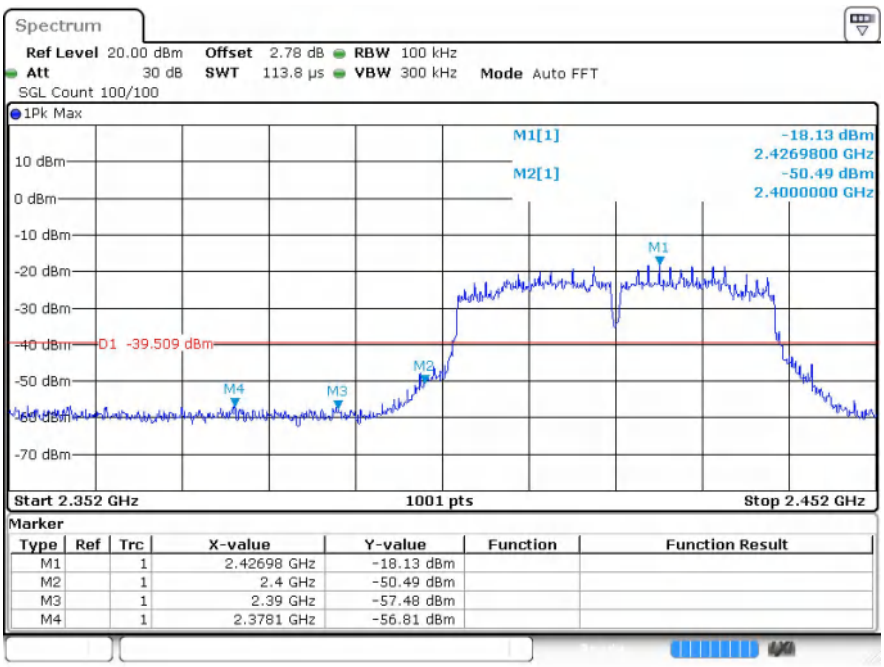


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46443 GHz	-12.65 dBm		
M2		1	2.4835 GHz	-57.14 dBm		
M3		1	2.5 GHz	-57.81 dBm		
M4		1	2.492 GHz	-55.98 dBm		

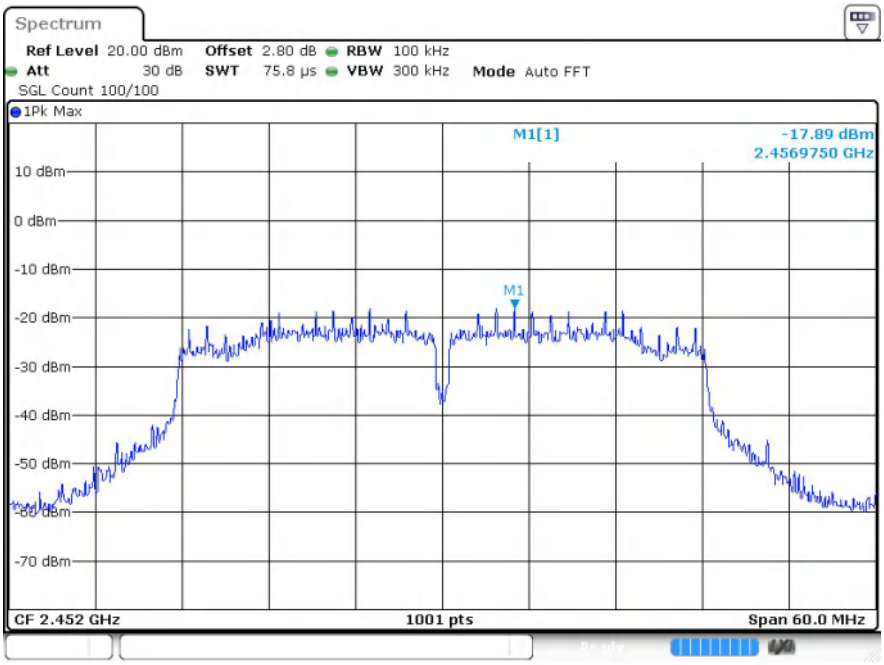
n40 2422MHz Ant1 Ref



n40 2422MHz Ant1 Emission



n40 2452MHz Ant1 Ref



n40 2452MHz Ant1 Emission

6 Conducted RF Spurious Emission

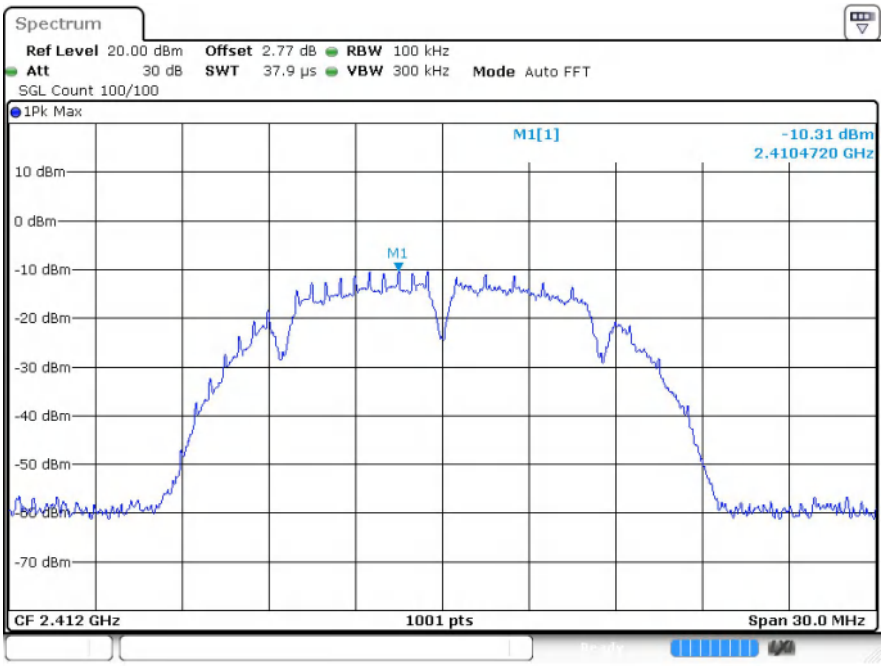
6.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-32.66	-20	Pass
b	2437	Ant1	-30.64	-20	Pass
b	2462	Ant1	-32.17	-20	Pass
g	2412	Ant1	-29.83	-20	Pass
g	2437	Ant1	-31.36	-20	Pass
g	2462	Ant1	-30.99	-20	Pass
n20	2412	Ant1	-29.75	-20	Pass
n20	2437	Ant1	-30.28	-20	Pass
n20	2462	Ant1	-30.15	-20	Pass
n40	2422	Ant1	-24.25	-20	Pass
n40	2437	Ant1	-25.34	-20	Pass
n40	2452	Ant1	-23.67	-20	Pass

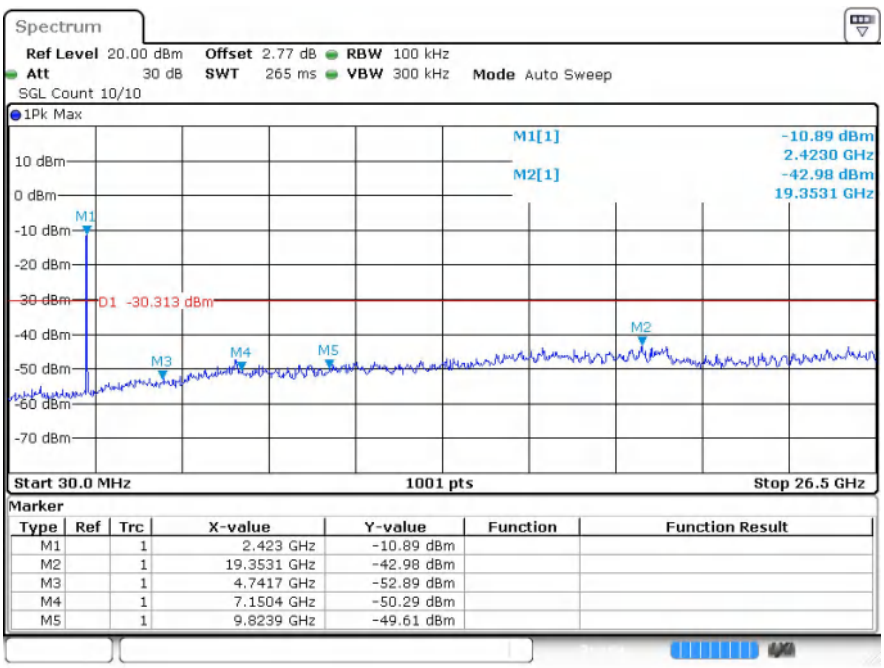
6.2 Test Graphs

Test Graphs

b 2412MHz Ant1 Ref



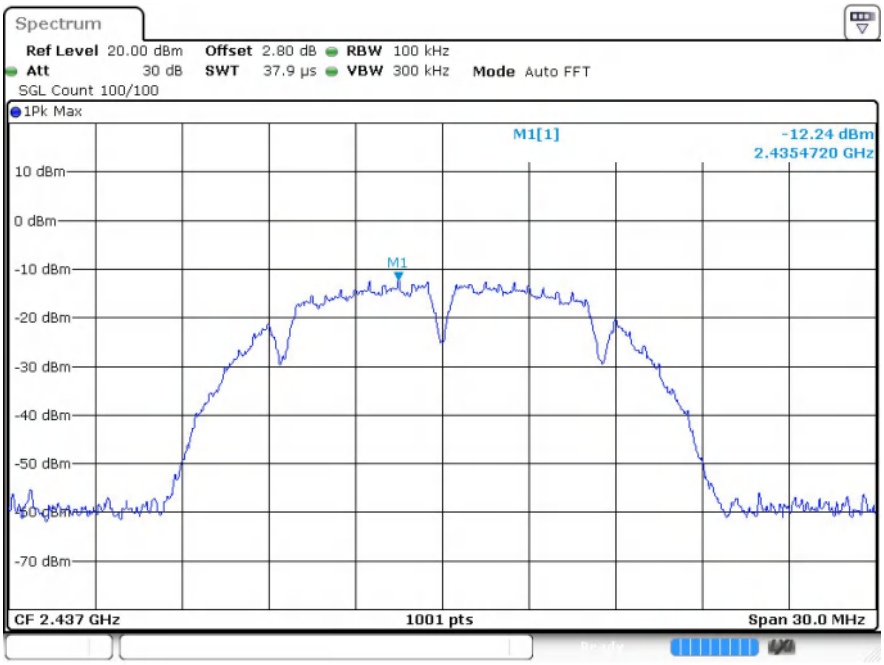
b 2412MHz Ant1 Emission



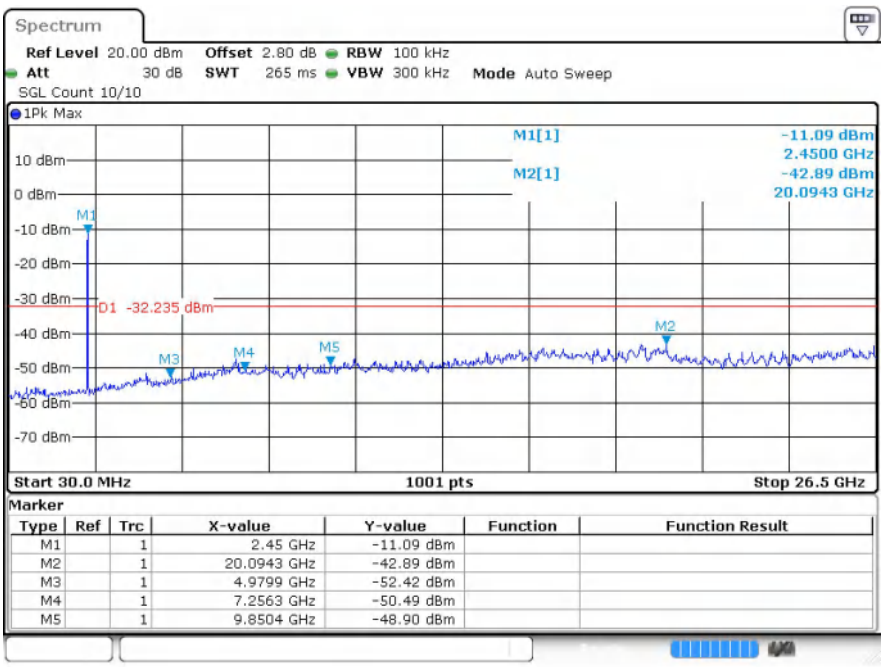
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-10.89 dBm		
M2		1	19.3531 GHz	-42.98 dBm		
M3		1	4.7417 GHz	-52.89 dBm		
M4		1	7.1504 GHz	-50.29 dBm		
M5		1	9.8239 GHz	-49.61 dBm		

b 2437MHz Ant1 Ref



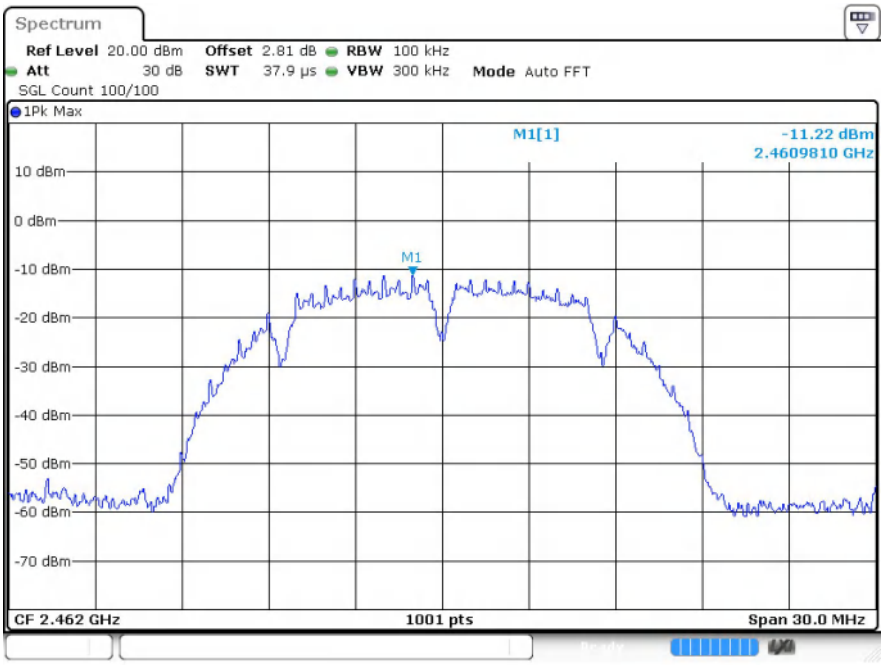
b 2437MHz Ant1 Emission



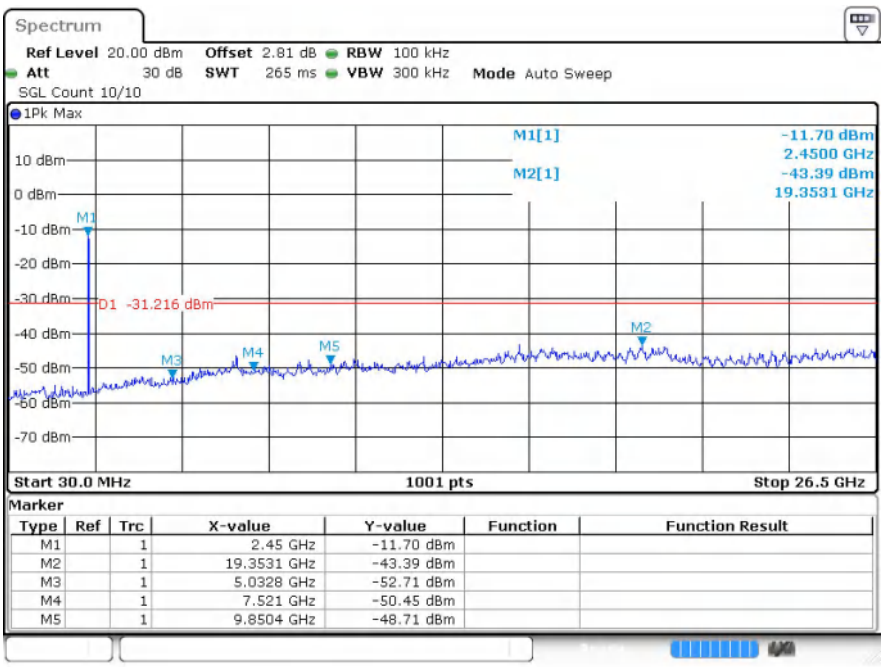
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-11.09 dBm		
M2		1	20.0943 GHz	-42.89 dBm		
M3		1	4.9799 GHz	-52.42 dBm		
M4		1	7.2563 GHz	-50.49 dBm		
M5		1	9.8504 GHz	-48.90 dBm		

b 2462MHz Ant1 Ref

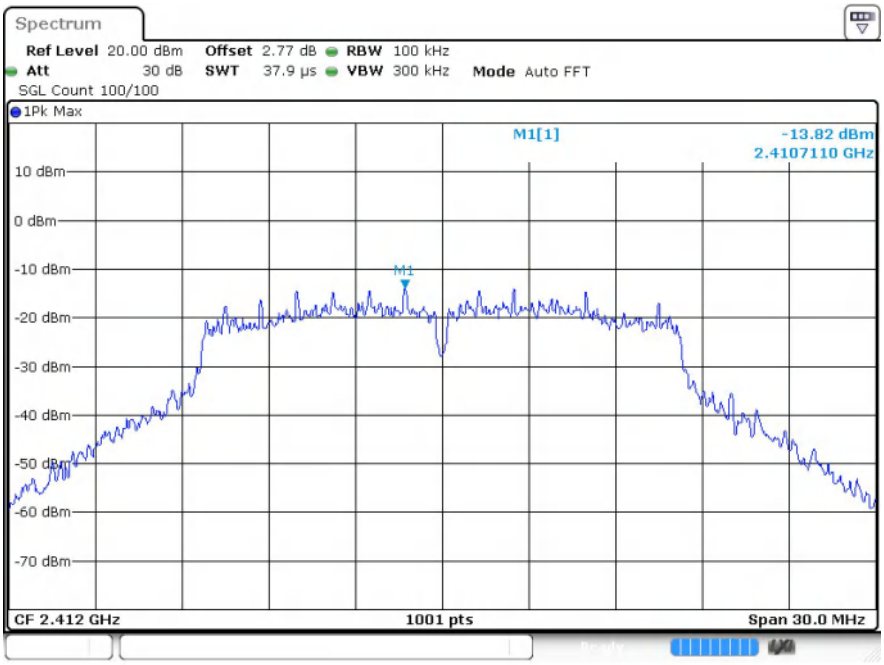


b 2462MHz Ant1 Emission

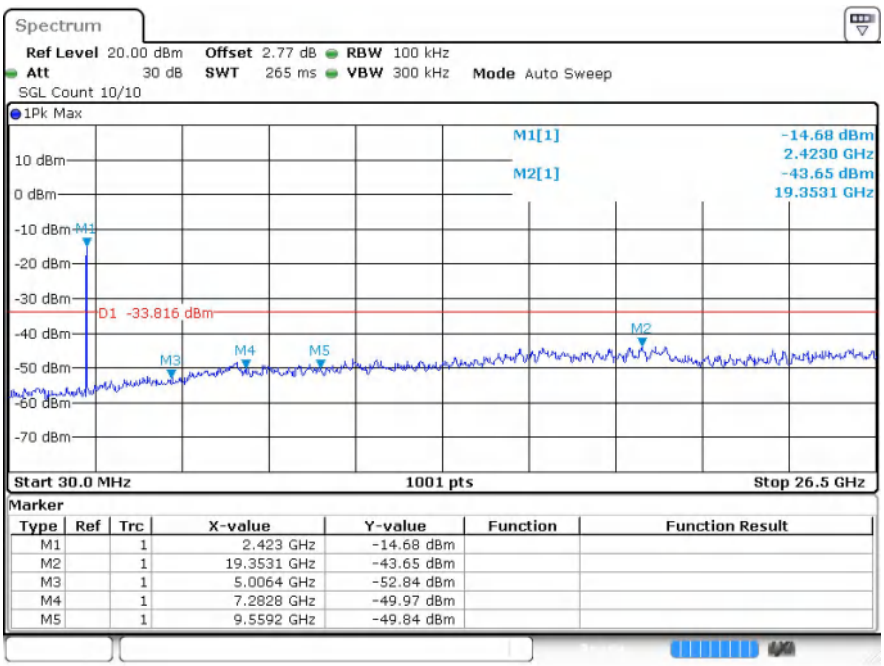


Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-11.70 dBm		
M2		1	19.3531 GHz	-43.39 dBm		
M3		1	5.0328 GHz	-52.71 dBm		
M4		1	7.521 GHz	-50.45 dBm		
M5		1	9.8504 GHz	-48.71 dBm		

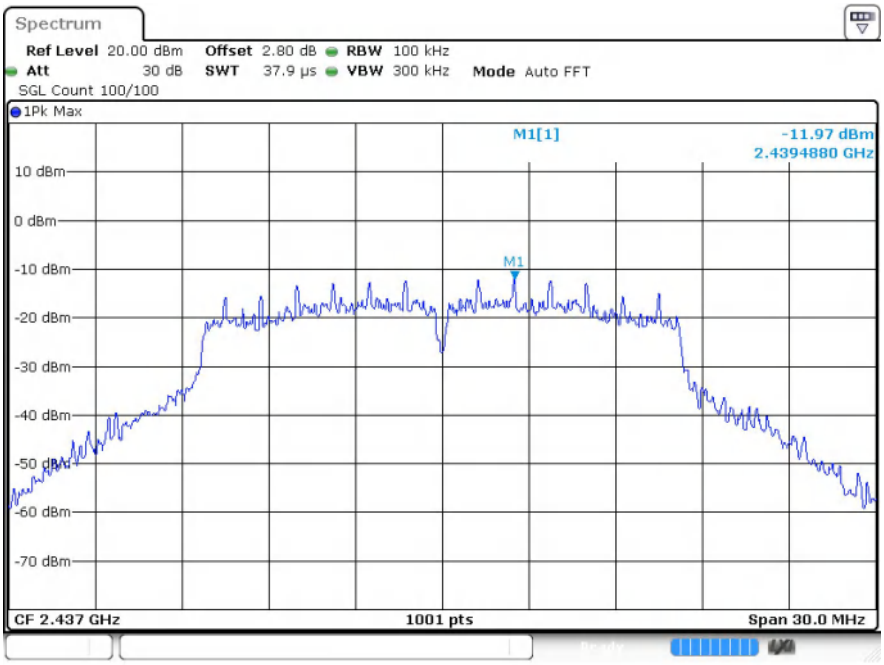
g 2412MHz Ant1 Ref



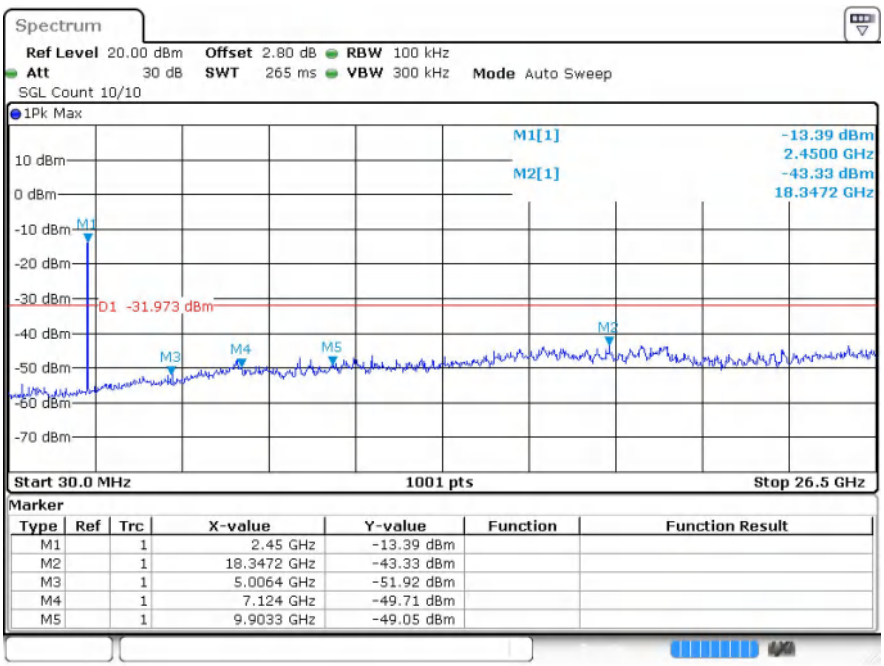
g 2412MHz Ant1 Emission



g 2437MHz Ant1 Ref



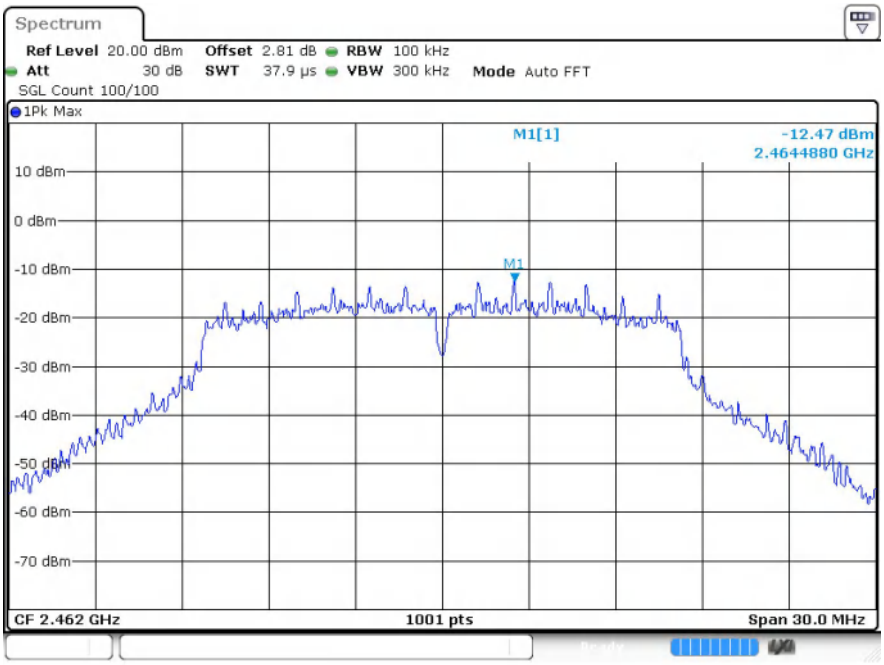
g 2437MHz Ant1 Emission



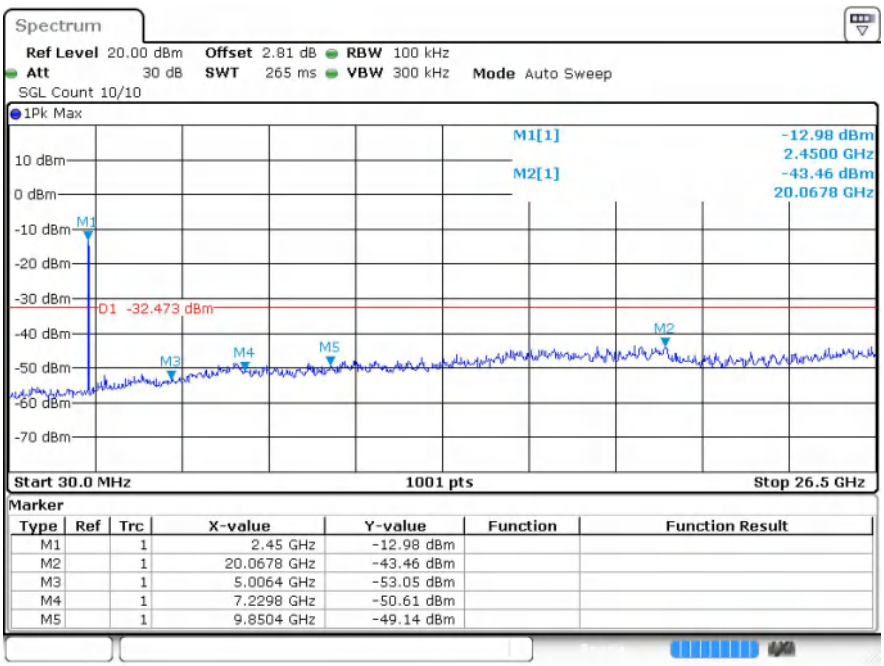
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-13.39 dBm		
M2		1	18.3472 GHz	-43.33 dBm		
M3		1	5.0064 GHz	-51.92 dBm		
M4		1	7.124 GHz	-49.71 dBm		
M5		1	9.9033 GHz	-49.05 dBm		

g 2462MHz Ant1 Ref



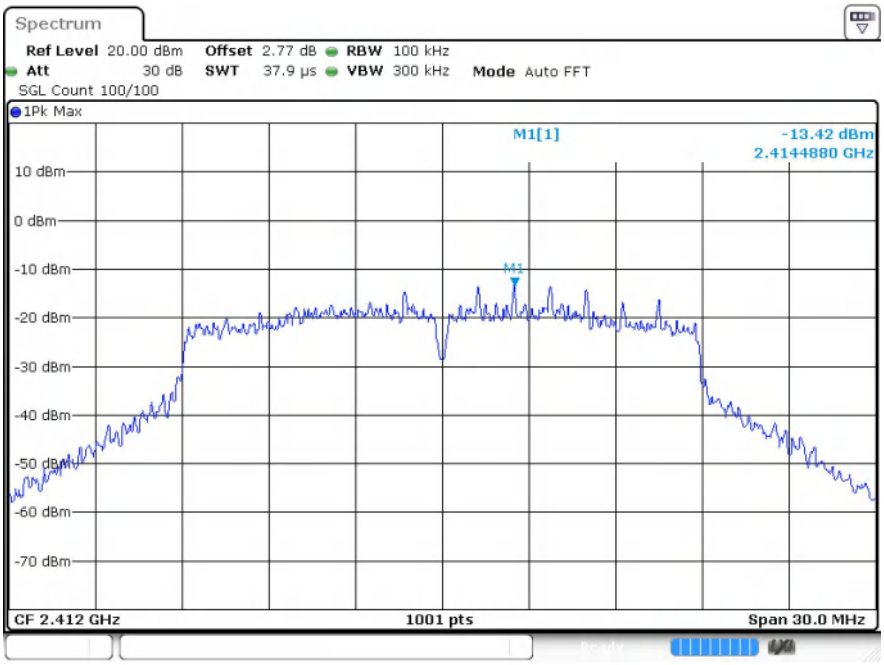
g 2462MHz Ant1 Emission



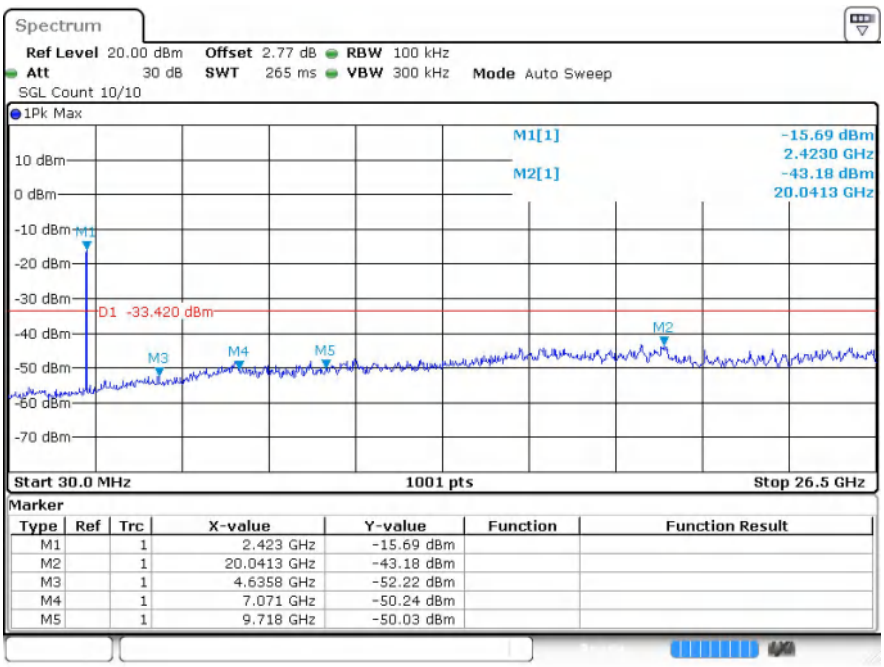
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-12.98 dBm		
M2		1	20.0678 GHz	-43.46 dBm		
M3		1	5.0064 GHz	-53.05 dBm		
M4		1	7.2298 GHz	-50.61 dBm		
M5		1	9.8504 GHz	-49.14 dBm		

n20 2412MHz Ant1 Ref



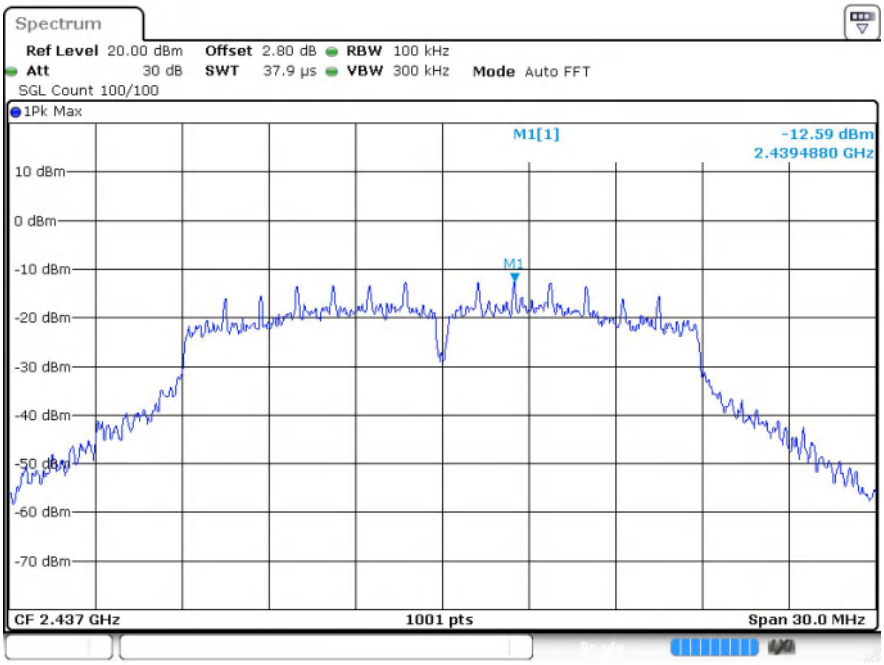
n20 2412MHz Ant1 Emission



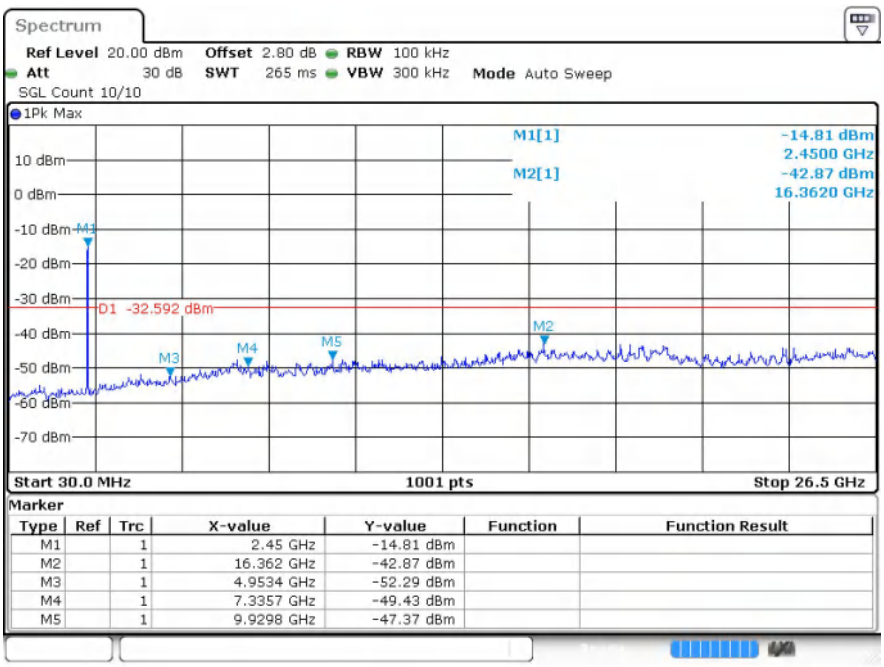
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-15.69 dBm		
M2		1	20.0413 GHz	-43.18 dBm		
M3		1	4.6358 GHz	-52.22 dBm		
M4		1	7.071 GHz	-50.24 dBm		
M5		1	9.718 GHz	-50.03 dBm		

n20 2437MHz Ant1 Ref



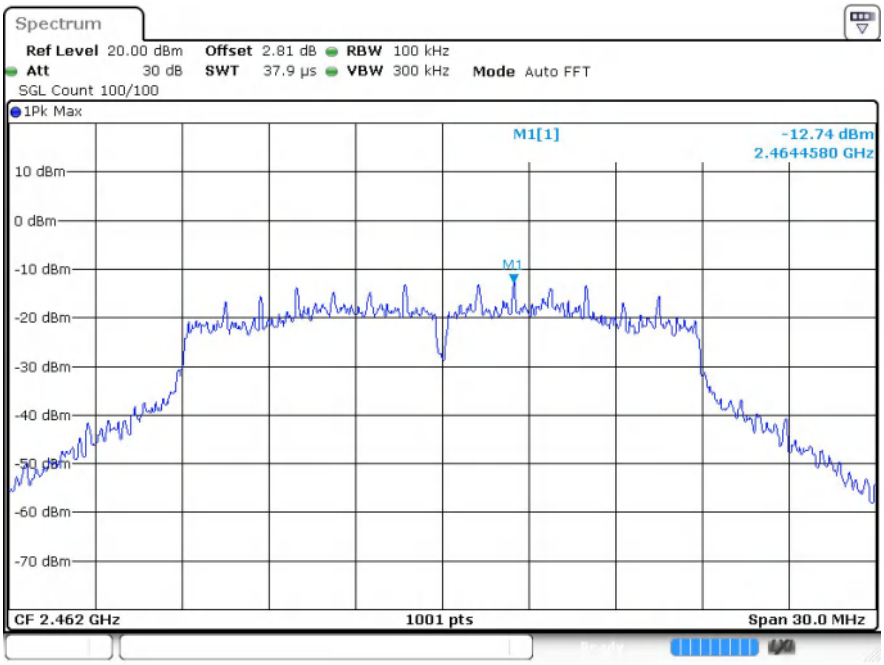
n20 2437MHz Ant1 Emission



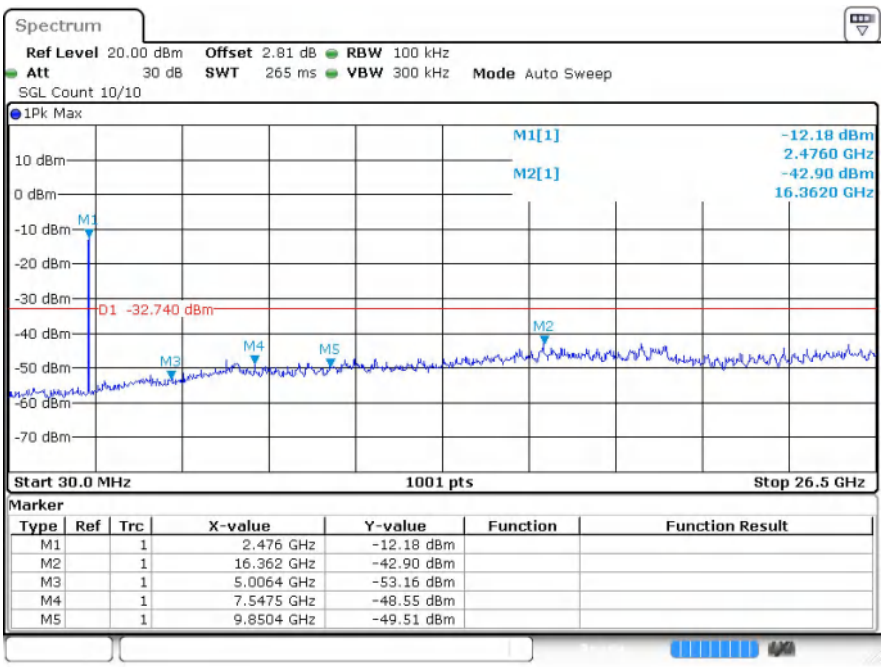
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	-14.81 dBm		
M2		1	16.362 GHz	-42.87 dBm		
M3		1	4.9534 GHz	-52.29 dBm		
M4		1	7.3357 GHz	-49.43 dBm		
M5		1	9.9298 GHz	-47.37 dBm		

n20 2462MHz Ant1 Ref



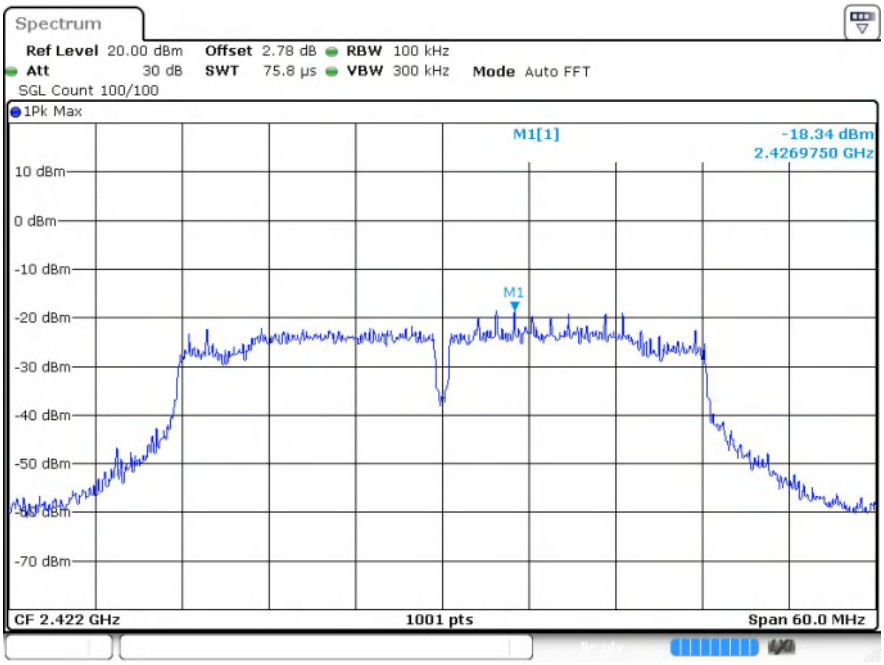
n20 2462MHz Ant1 Emission



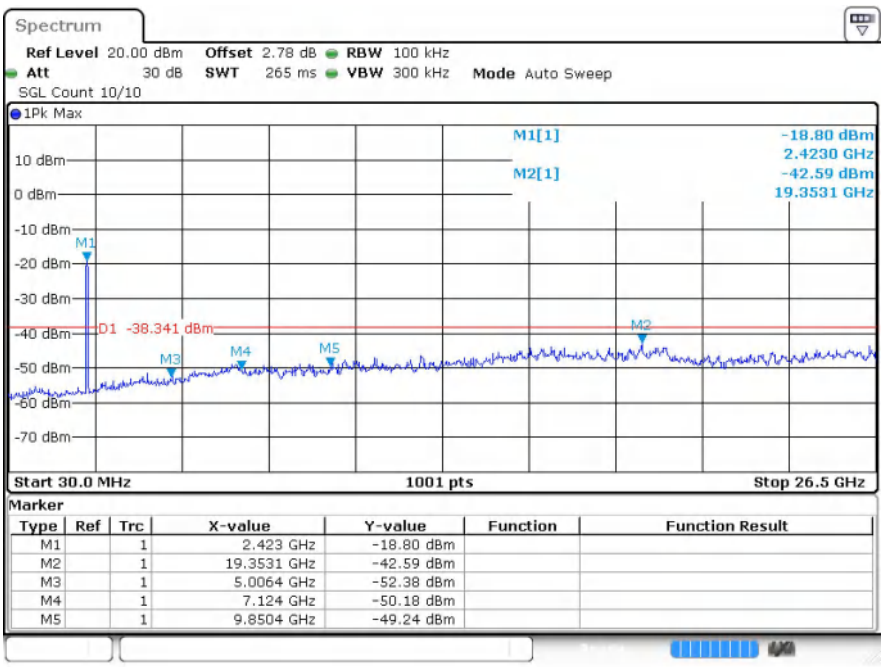
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.476 GHz	-12.18 dBm		
M2		1	16.362 GHz	-42.90 dBm		
M3		1	5.0064 GHz	-53.16 dBm		
M4		1	7.5475 GHz	-48.55 dBm		
M5		1	9.8504 GHz	-49.51 dBm		

n40 2422MHz Ant1 Ref



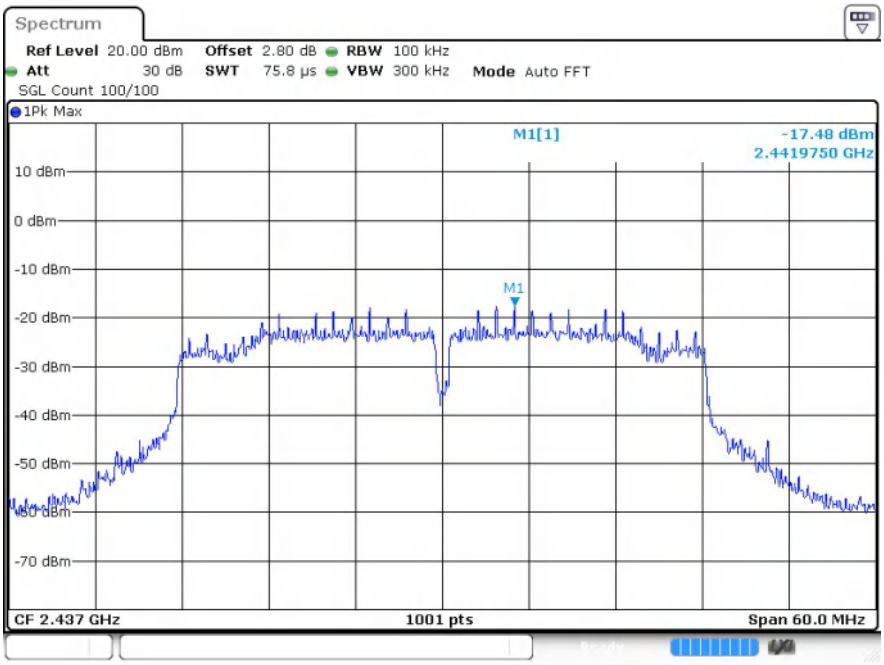
n40 2422MHz Ant1 Emission



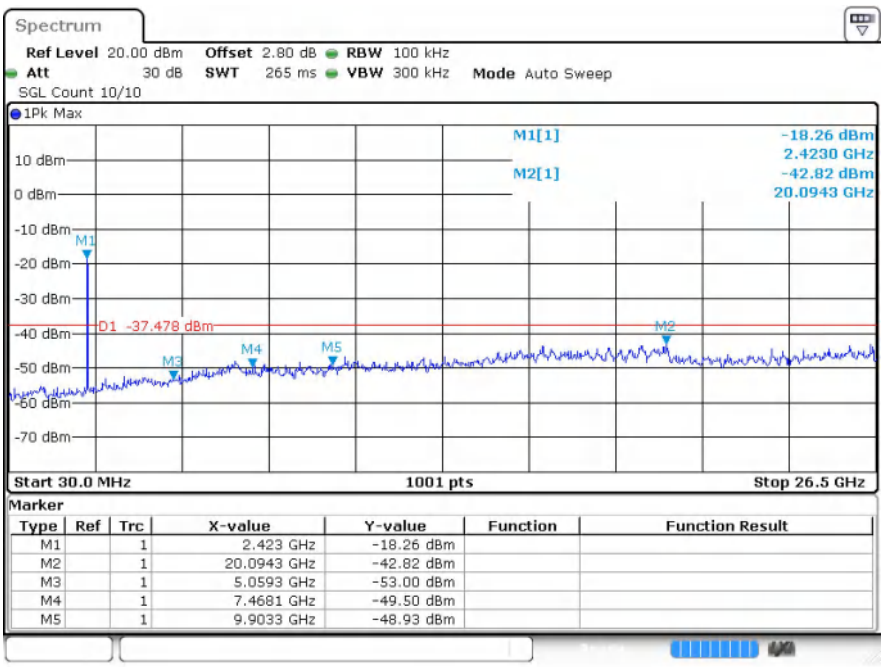
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-18.80 dBm		
M2		1	19.3531 GHz	-42.59 dBm		
M3		1	5.0064 GHz	-52.38 dBm		
M4		1	7.124 GHz	-50.18 dBm		
M5		1	9.8504 GHz	-49.24 dBm		

n40 2437MHz Ant1 Ref



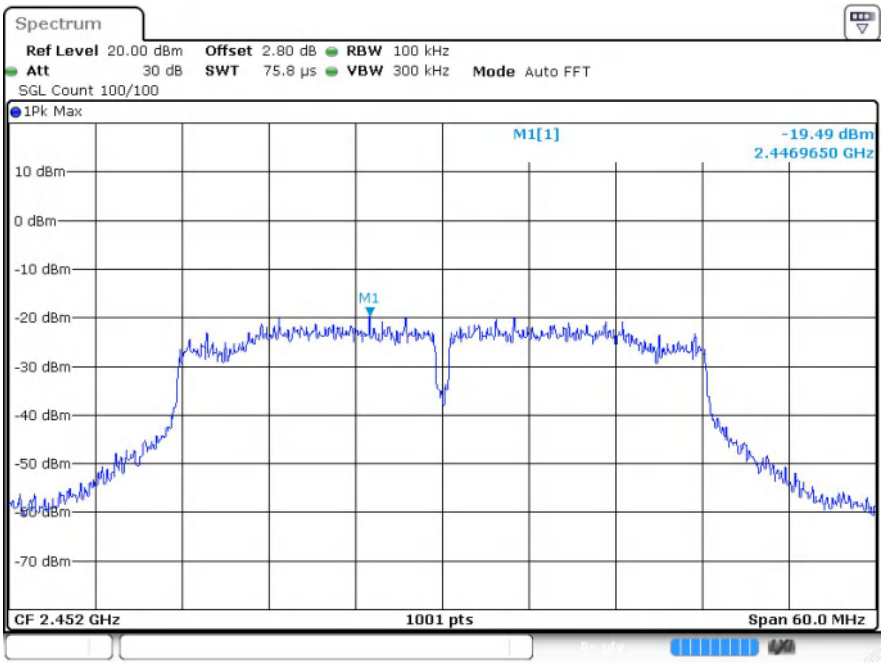
n40 2437MHz Ant1 Emission



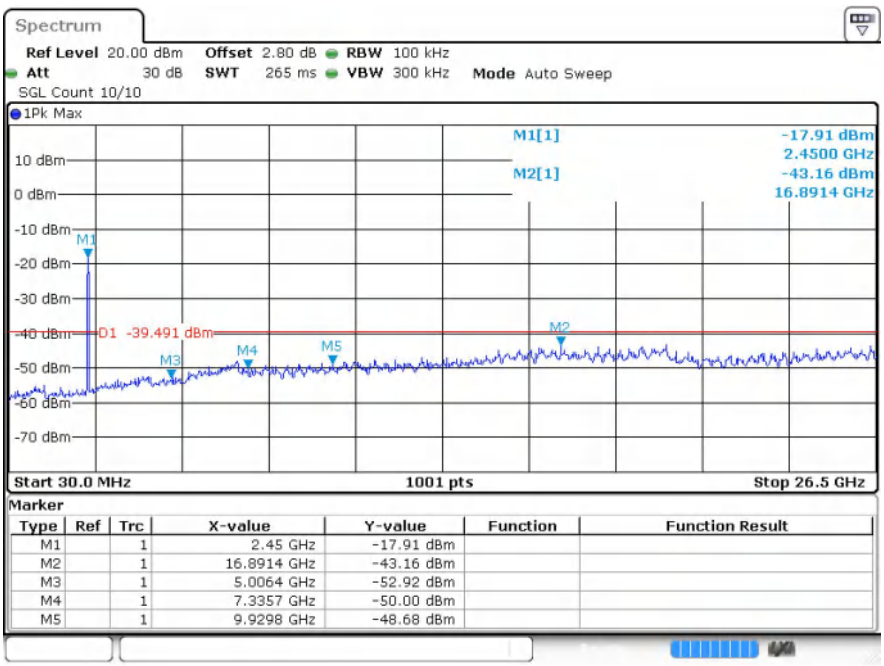
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	-18.26 dBm		
M2		1	20.0943 GHz	-42.82 dBm		
M3		1	5.0593 GHz	-53.00 dBm		
M4		1	7.4681 GHz	-49.50 dBm		
M5		1	9.9033 GHz	-48.93 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	-17.91 dBm		
M2		1	16.8914 GHz	-43.16 dBm		
M3		1	5.0064 GHz	-52.92 dBm		
M4		1	7.3357 GHz	-50.00 dBm		
M5		1	9.9298 GHz	-48.68 dBm		

7 Restrict Band

7.1 Test Result

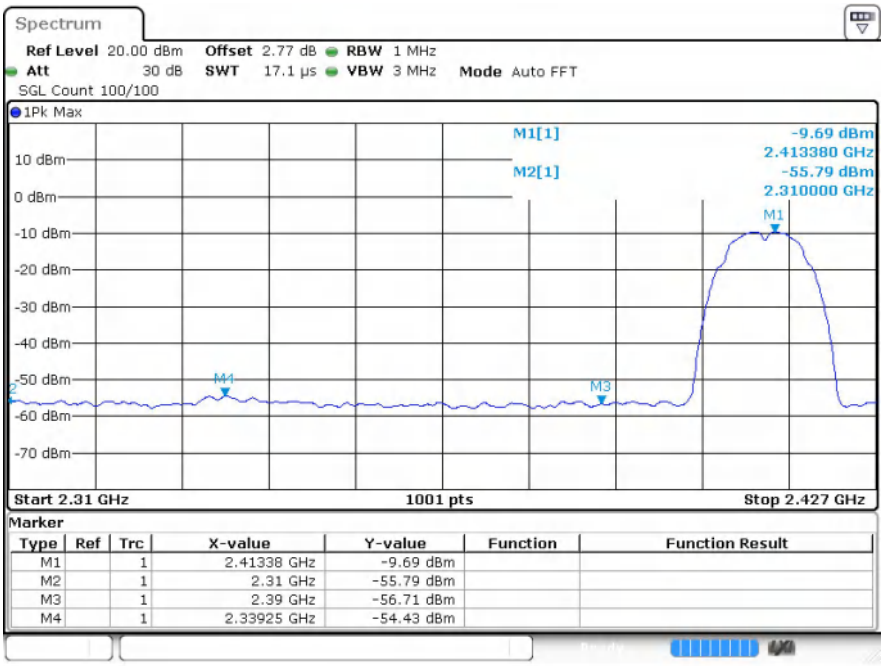
Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
b	2412	Ant1	2310	-55.79	2	-	41.47	Peak	74	Pass
b	2412	Ant1	2310	-56.56	2	0	40.7	Average	54	Pass
b	2412	Ant1	2339.25	-54.42	2	-	42.84	Peak	74	Pass
b	2412	Ant1	2336.676	-54.42	2	0	42.84	Average	54	Pass
b	2412	Ant1	2390	-56.71	2	-	40.55	Peak	74	Pass
b	2412	Ant1	2390	-56.9	2	0	40.36	Average	54	Pass
b	2462	Ant1	2483.5	-48.5	2	-	48.76	Peak	74	Pass
b	2462	Ant1	2483.5	-56.38	2	0	40.88	Average	54	Pass
b	2462	Ant1	2495.124	-47.8	2	-	49.46	Peak	74	Pass
b	2462	Ant1	2488.976	-55.21	2	0	42.05	Average	54	Pass
b	2462	Ant1	2500	-48.59	2	-	48.67	Peak	74	Pass
b	2462	Ant1	2500	-56.42	2	0	40.84	Average	54	Pass
g	2412	Ant1	2310	-48.05	2	-	49.21	Peak	74	Pass
g	2412	Ant1	2310	-57.01	2	0.62	40.87	Average	54	Pass
g	2412	Ant1	2336.676	-45.46	2	-	51.8	Peak	74	Pass
g	2412	Ant1	2340.654	-55.04	2	0.62	42.84	Average	54	Pass
g	2412	Ant1	2390	-48.95	2	-	40.55	Peak	74	Pass
g	2412	Ant1	2390	-56.73	2	0.62	41.15	Average	54	Pass
g	2462	Ant1	2483.5	-49.49	2	-	47.77	Peak	74	Pass
g	2462	Ant1	2483.5	-55.76	2	0.63	42.13	Average	54	Pass
g	2462	Ant1	2495.124	-46.6	2	-	50.66	Peak	74	Pass
g	2462	Ant1	2485.001	-55.56	2	0.63	42.33	Average	54	Pass
g	2462	Ant1	2500	-48.84	2	-	48.67	Peak	74	Pass
g	2462	Ant1	2500	-56.4	2	0.63	41.49	Average	54	Pass
n20	2412	Ant1	2310	-49.77	2	-	47.49	Peak	74	Pass
n20	2412	Ant1	2310	-56.29	2	0.58	41.55	Average	54	Pass
n20	2412	Ant1	2343.93	-46.37	2	-	50.89	Peak	74	Pass
n20	2412	Ant1	2341.473	-54.46	2	0.58	43.38	Average	54	Pass
n20	2412	Ant1	2390	-51.27	2	-	45.99	Peak	74	Pass
n20	2412	Ant1	2390	-57.16	2	0.58	40.68	Average	54	Pass
n20	2462	Ant1	2483.5	-49.76	2	-	47.5	Peak	74	Pass
n20	2462	Ant1	2483.5	-56.23	2	0.58	41.61	Average	54	Pass
n20	2462	Ant1	2495.177	-46.62	2	-	50.64	Peak	74	Pass
n20	2462	Ant1	2487.757	-55.74	2	0.58	42.1	Average	54	Pass

n20	2462	Ant1	2500	-50.41	2	-	46.85	Peak	74	Pass
n20	2462	Ant1	2500	-56.25	2	0.58	41.59	Average	54	Pass
n40	2422	Ant1	2310	-49.83	2	-	47.43	Peak	74	Pass
n40	2422	Ant1	2310	-56.36	2	1.15	42.05	Average	54	Pass
n40	2422	Ant1	2341.95	-45.24	2	-	52.02	Peak	74	Pass
n40	2422	Ant1	2342.092	-53.89	2	1.15	44.52	Average	54	Pass
n40	2422	Ant1	2390	-50.08	2	-	47.18	Peak	74	Pass
n40	2422	Ant1	2390	-57.4	2	1.15	41.01	Average	54	Pass
n40	2452	Ant1	2483.5	-48.87	2	-	48.39	Peak	74	Pass
n40	2452	Ant1	2483.5	-56.59	2	1.15	41.82	Average	54	Pass
n40	2452	Ant1	2491.342	-48.25	2	-	49.01	Peak	74	Pass
n40	2452	Ant1	2497.348	-55.98	2	1.15	42.43	Average	54	Pass
n40	2452	Ant1	2500	-49.63	2	-	47.63	Peak	74	Pass
n40	2452	Ant1	2500	-56.5	2	1.15	41.91	Average	54	Pass

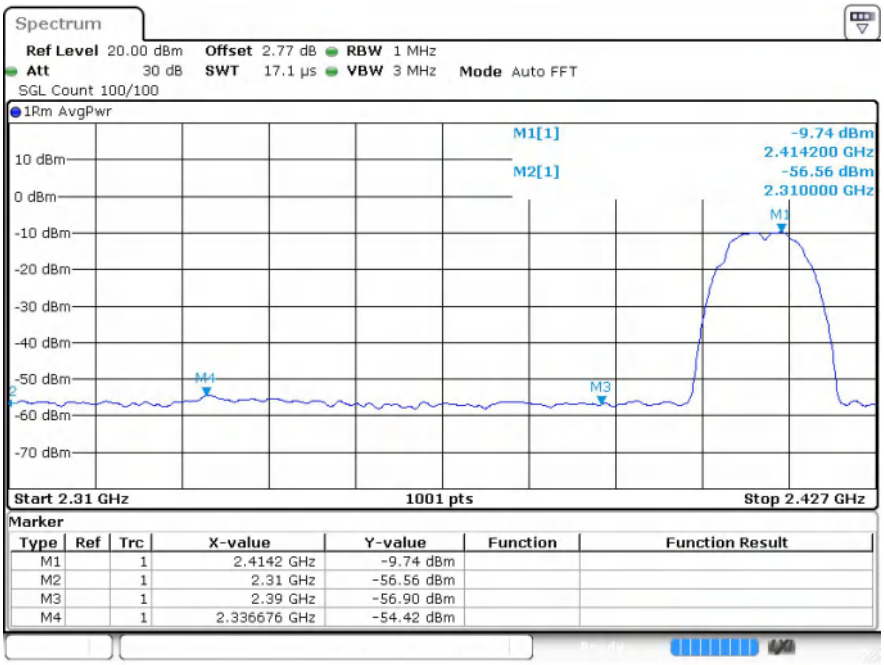
7.2 Test Graphs

Test Graphs

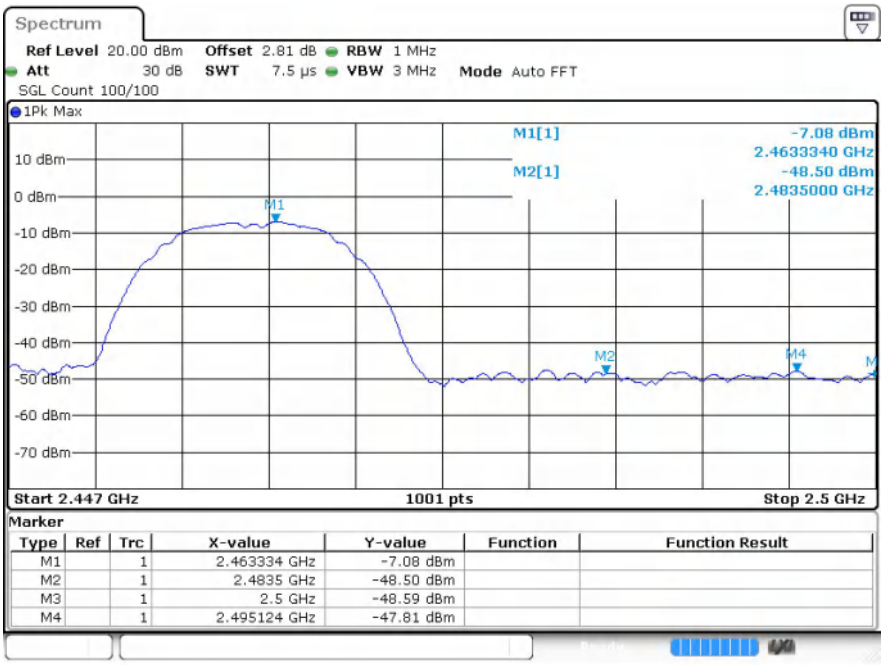
b 2412MHz Ant1 Peak



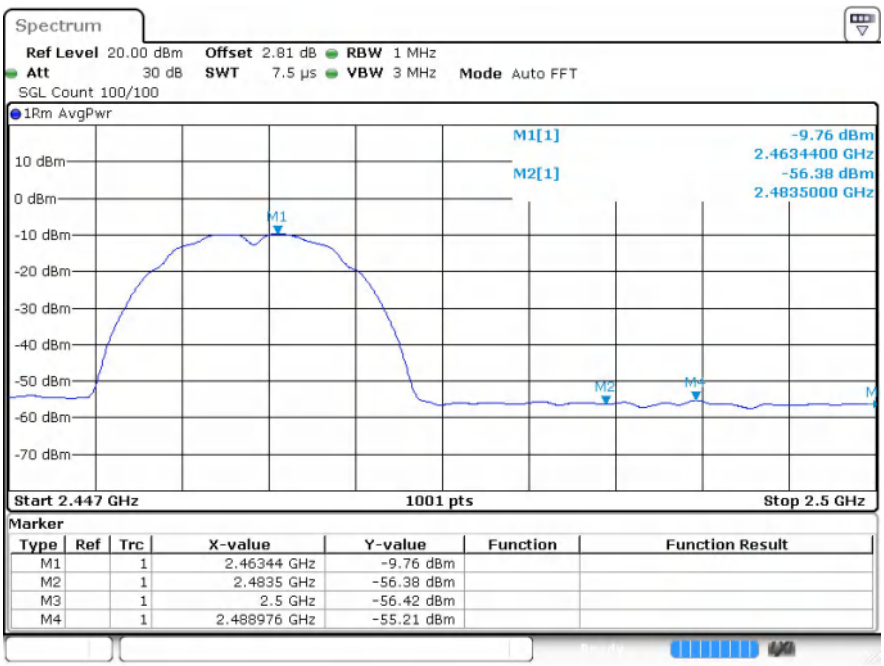
b 2412MHz Ant1 Average



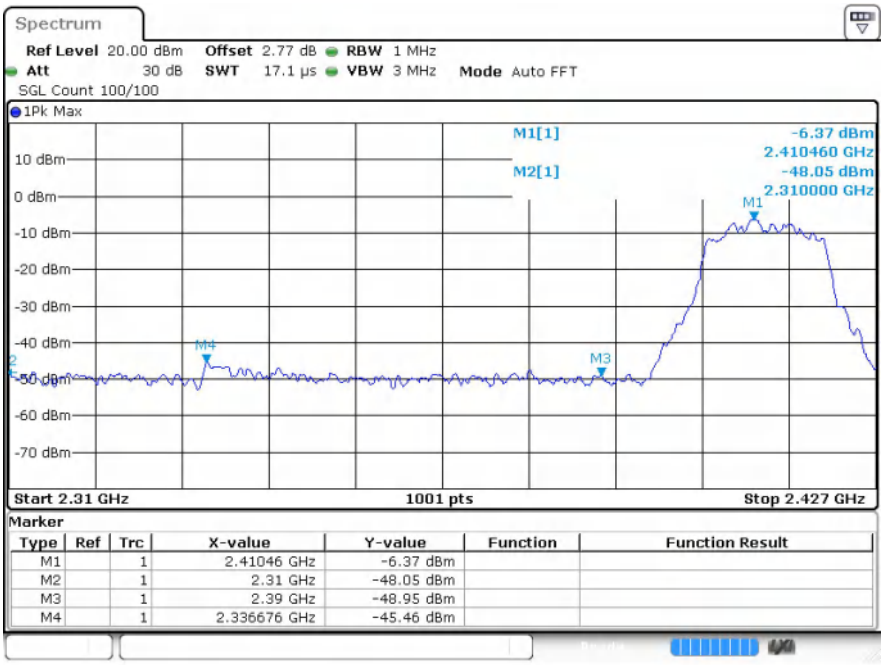
b 2462MHz Ant1 Peak



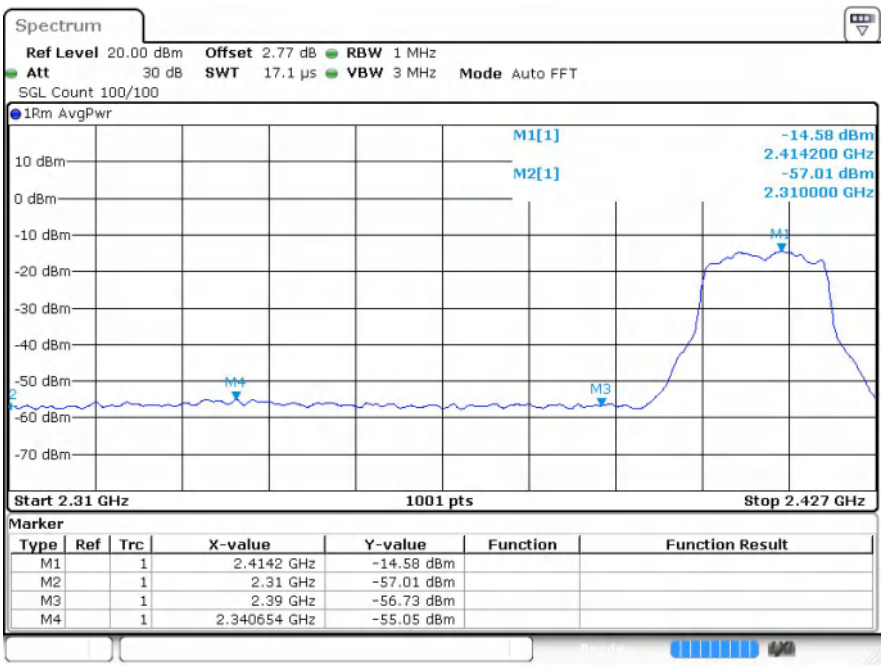
b 2462MHz Ant1 Average



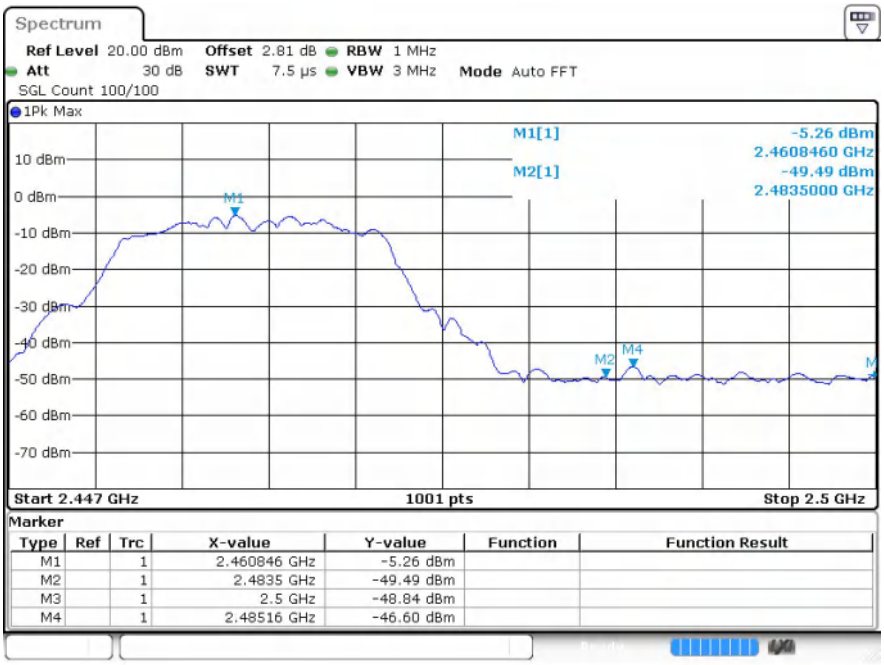
g 2412MHz Ant1 Peak



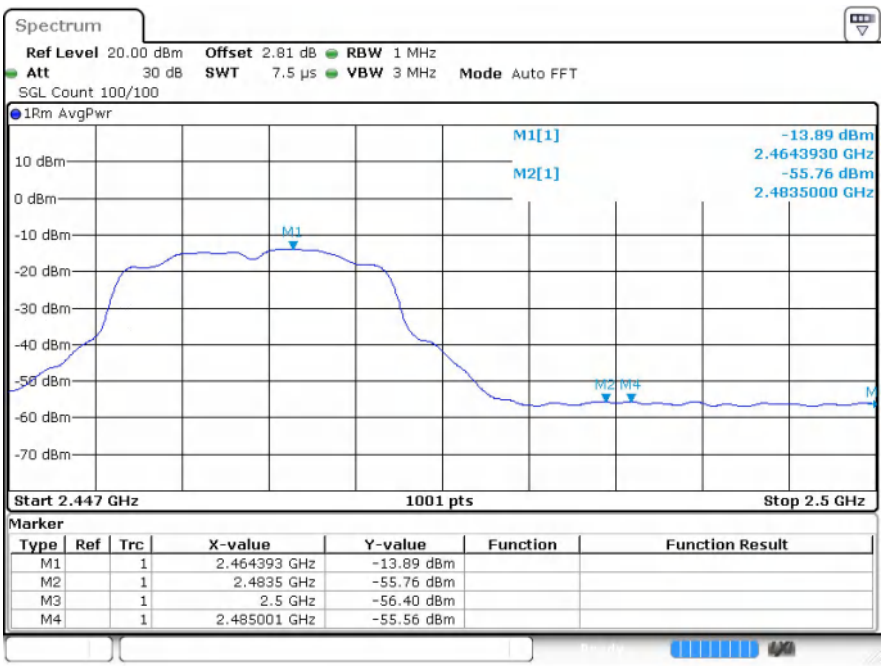
g 2412MHz Ant1 Average



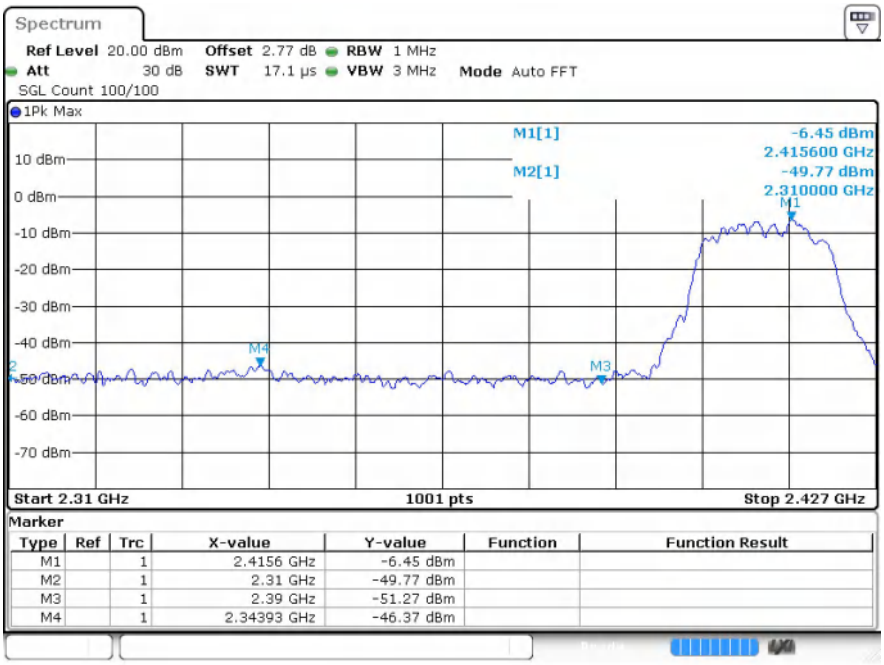
g 2462MHz Ant1 Peak



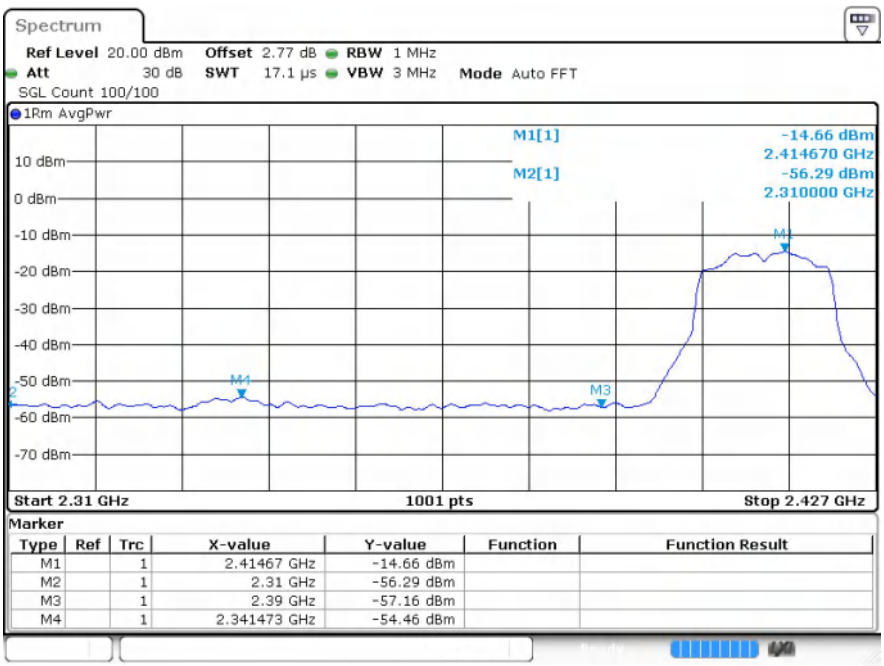
g 2462MHz Ant1 Average



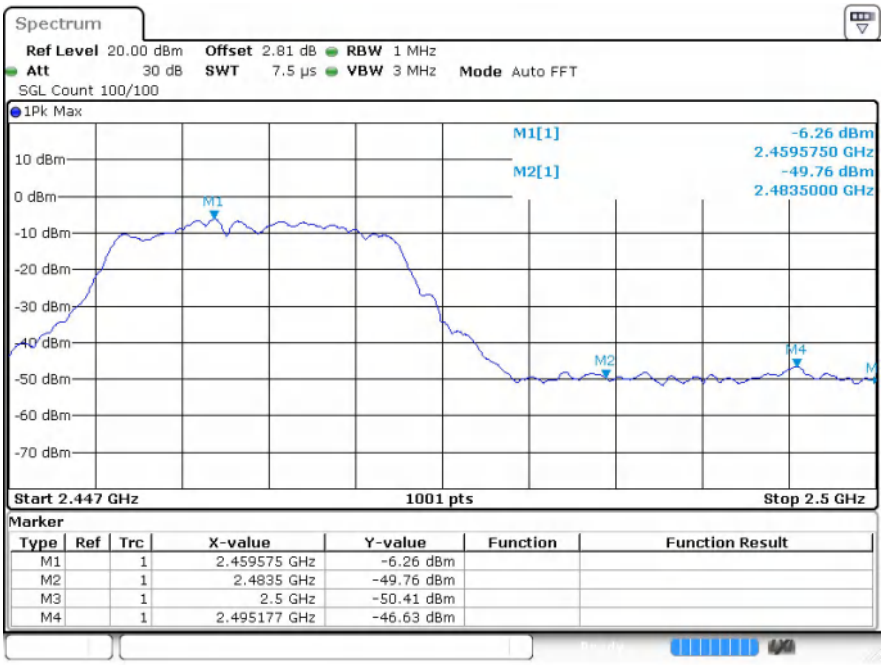
n20 2412MHz Ant1 Peak



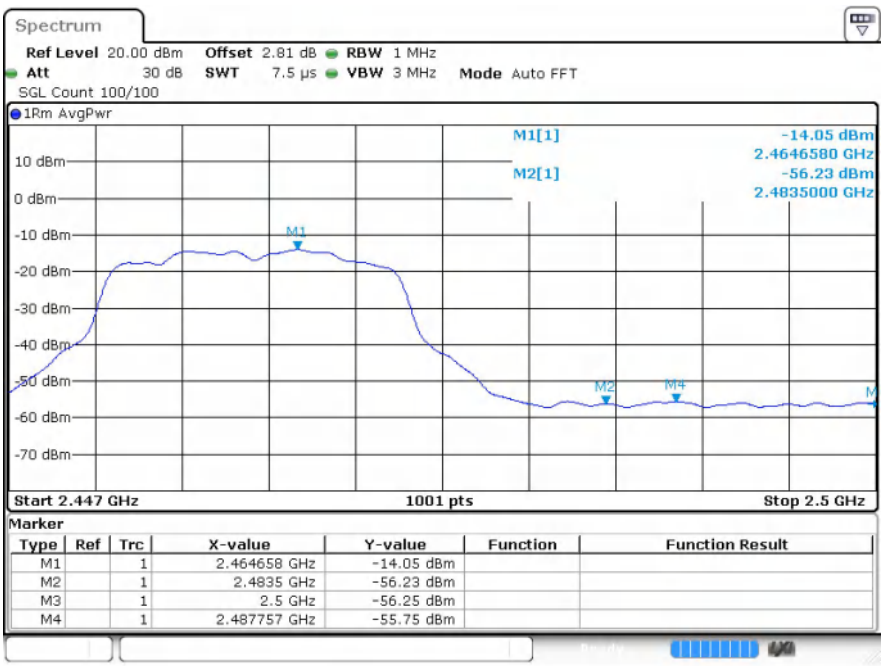
n20 2412MHz Ant1 Average



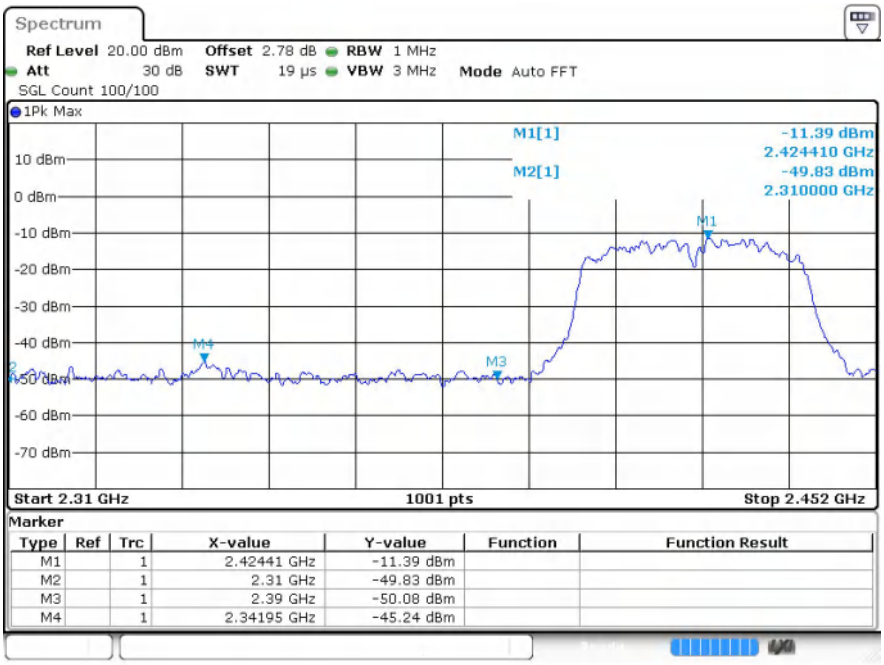
n20 2462MHz Ant1 Peak



n20 2462MHz Ant1 Average



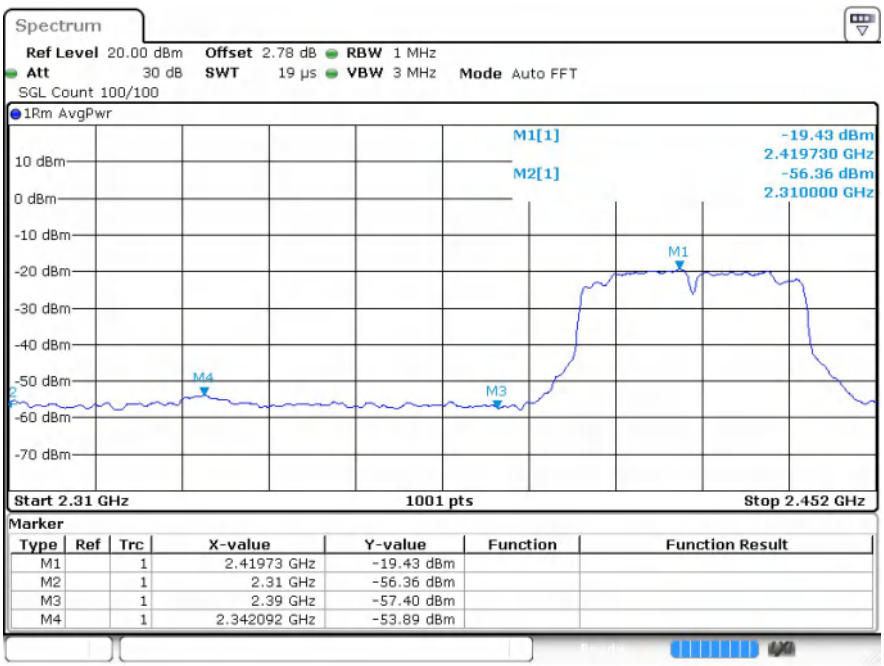
n40 2422MHz Ant1 Peak



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.42441 GHz	-11.39 dBm		
M2		1	2.31 GHz	-49.83 dBm		
M3		1	2.39 GHz	-50.08 dBm		
M4		1	2.34195 GHz	-45.24 dBm		

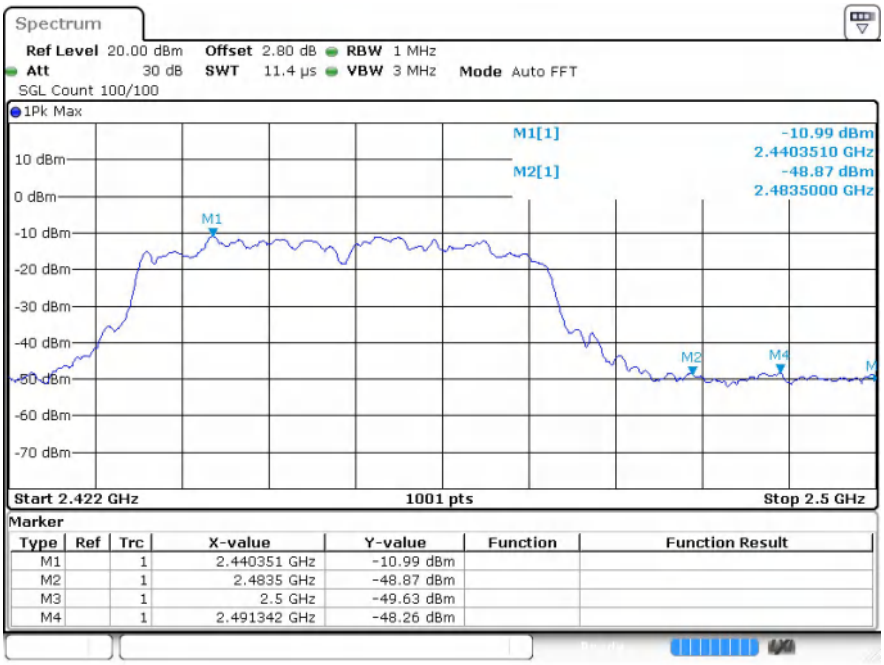
n40 2422MHz Ant1 Average



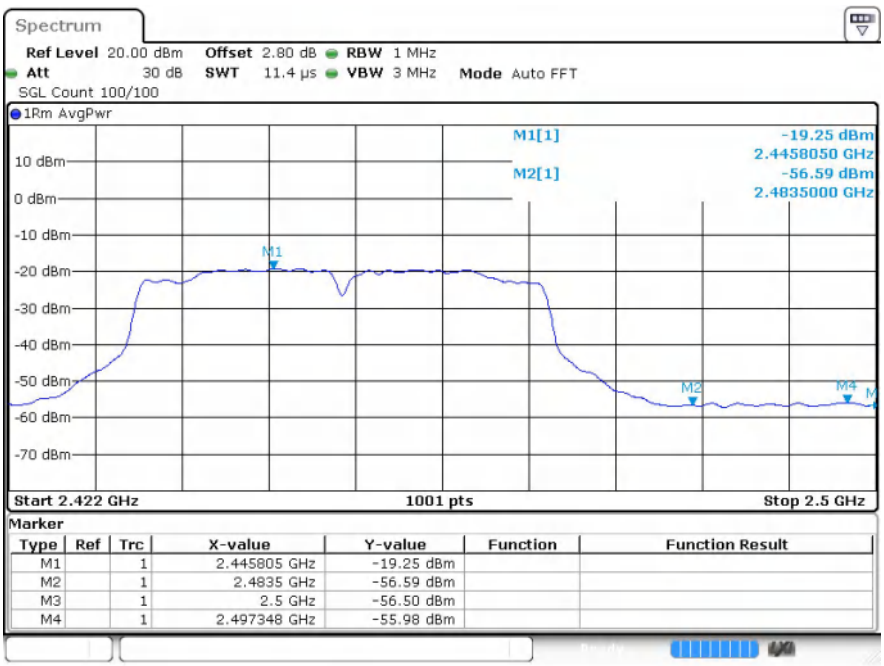
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41973 GHz	-19.43 dBm		
M2		1	2.31 GHz	-56.36 dBm		
M3		1	2.39 GHz	-57.40 dBm		
M4		1	2.342092 GHz	-53.89 dBm		

n40 2452MHz Ant1 Peak



n40 2452MHz Ant1 Average



---The End---