



Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Central controller

Trade Mark: Lime

Test Model: Lime-4.1-GL

Environmental Conditions

Temperature:	20.1° C
Relative Humidity:	42.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



Contents

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

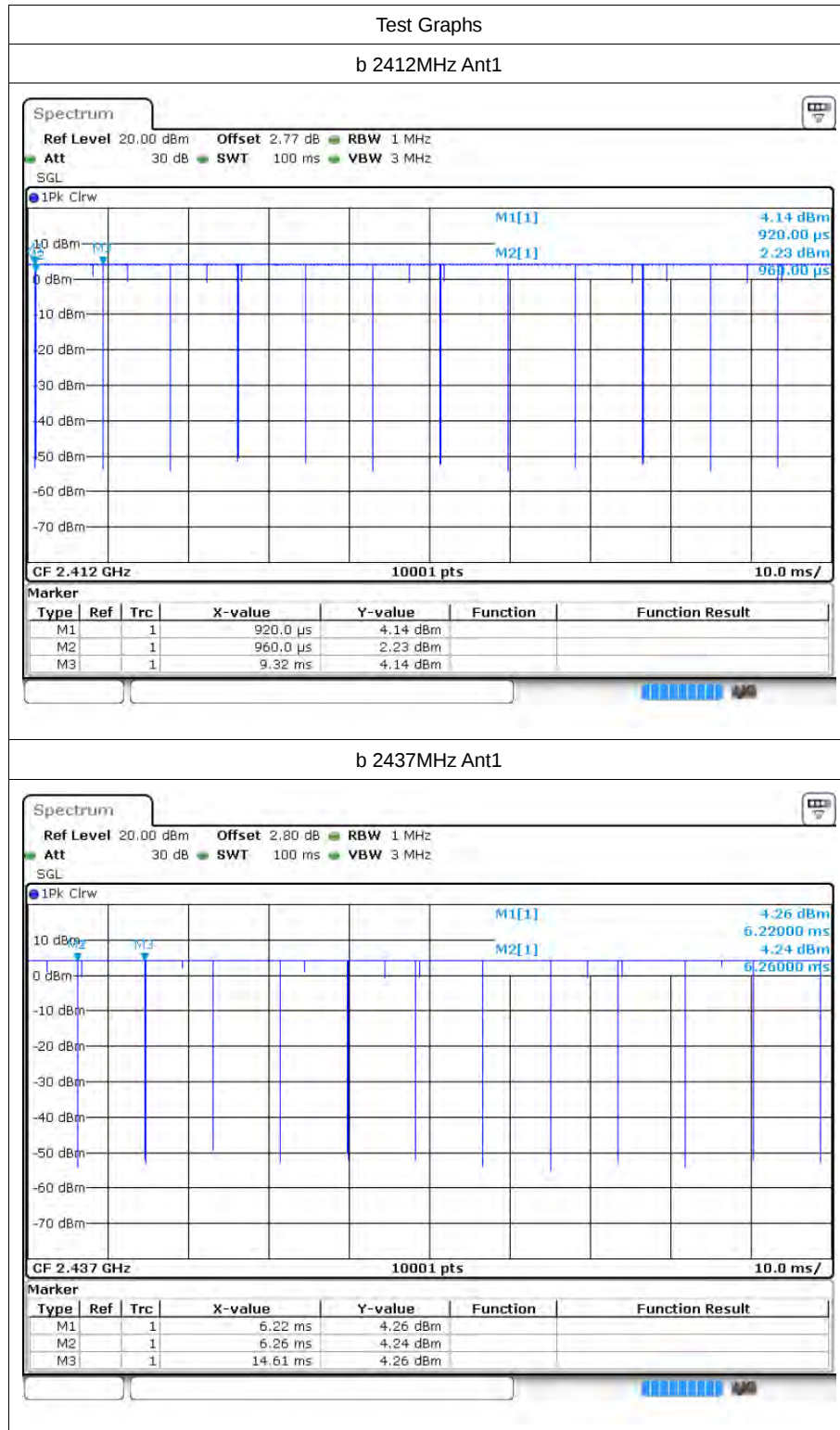


1 Duty Cycle

1.1 Test Result

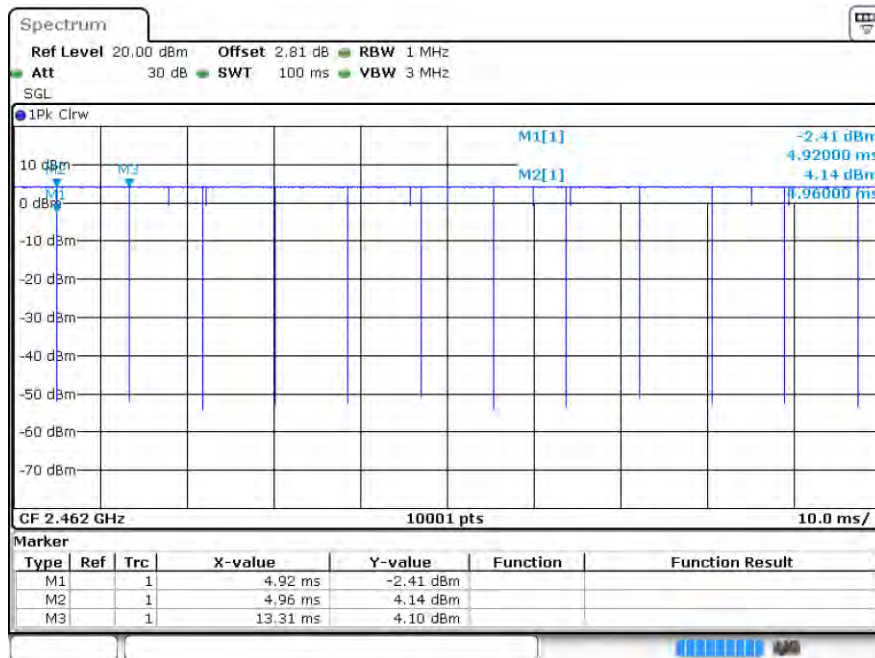
Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	1/T (kHz)
b	2412	Ant1	99.61	0.12
b	2437	Ant1	99.61	0.12
b	2462	Ant1	99.61	0.12
g	2412	Ant1	86.93	4.55
g	2437	Ant1	86.97	4.76
g	2462	Ant1	86.91	4.76
n20	2412	Ant1	87.6	4.35
n20	2437	Ant1	87.54	4.35
n20	2462	Ant1	87.58	4.35
n40	2422	Ant1	88.01	4
n40	2437	Ant1	88.04	4
n40	2452	Ant1	88.04	4.17

1.2 Test Graphs

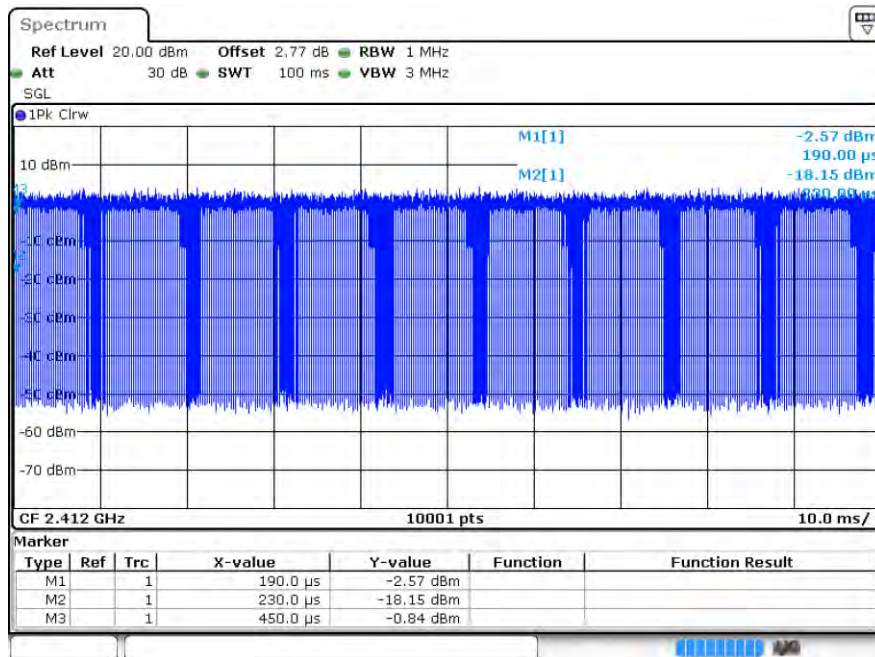


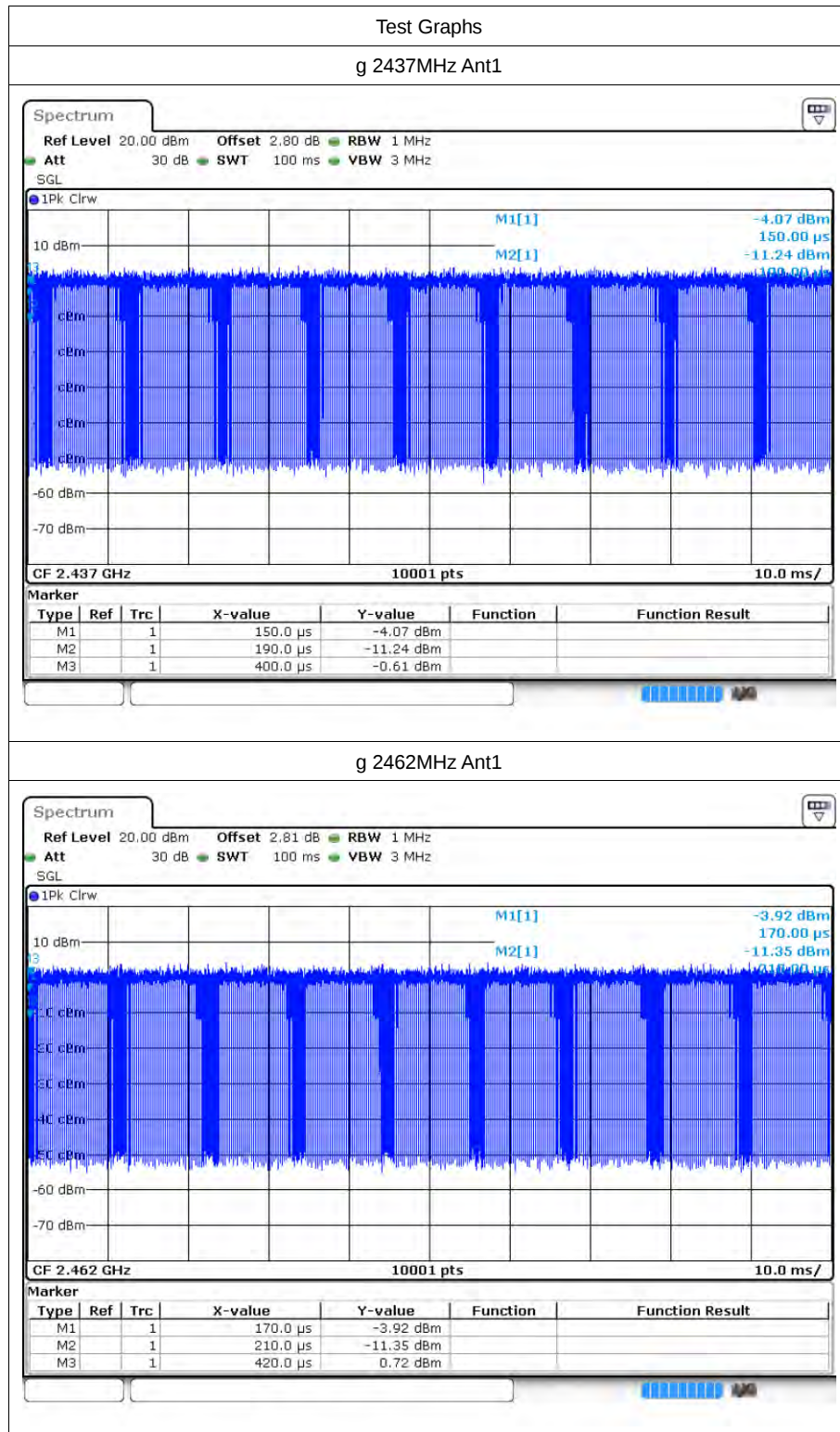
Test Graphs

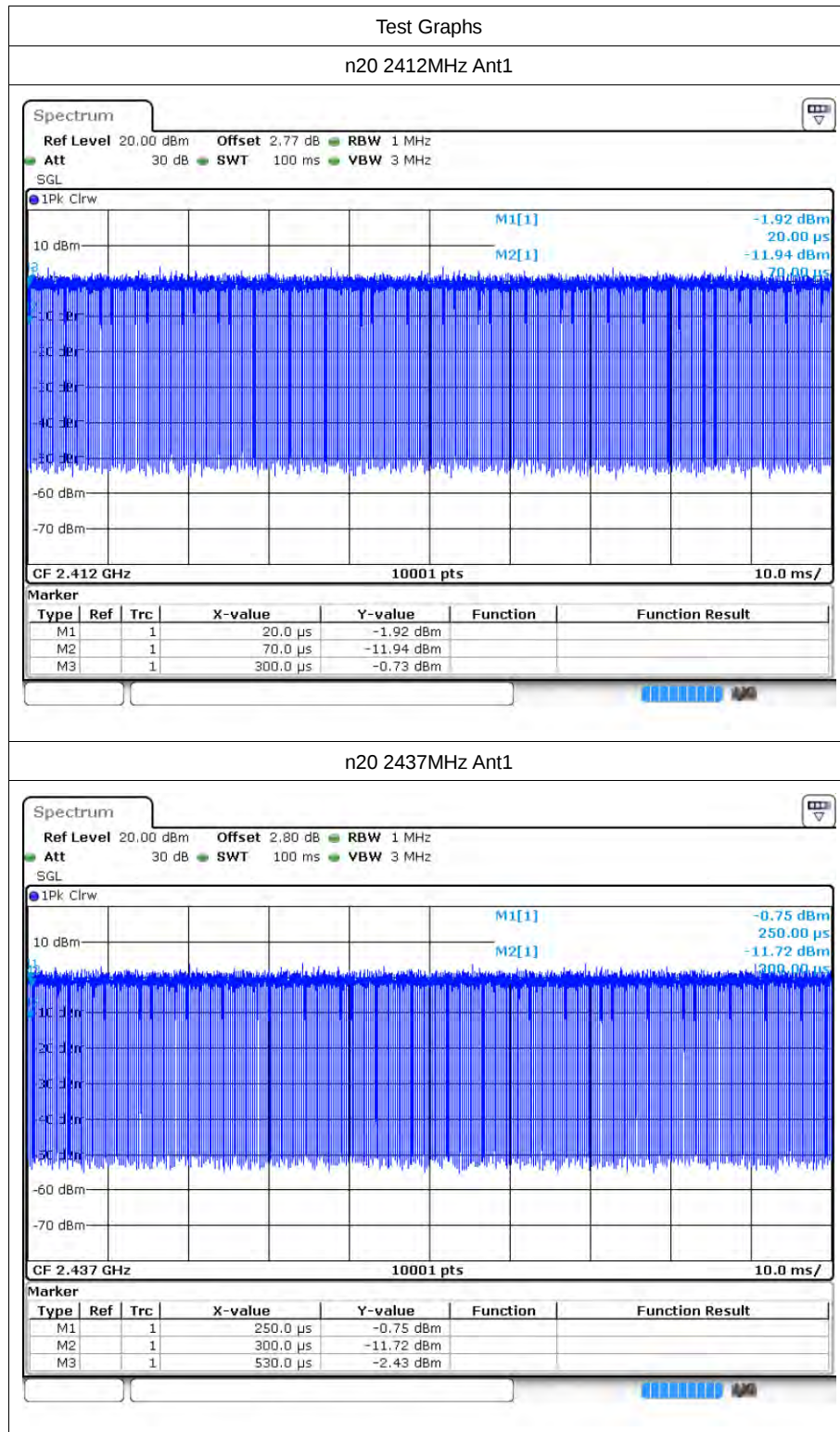
b 2462MHz Ant1

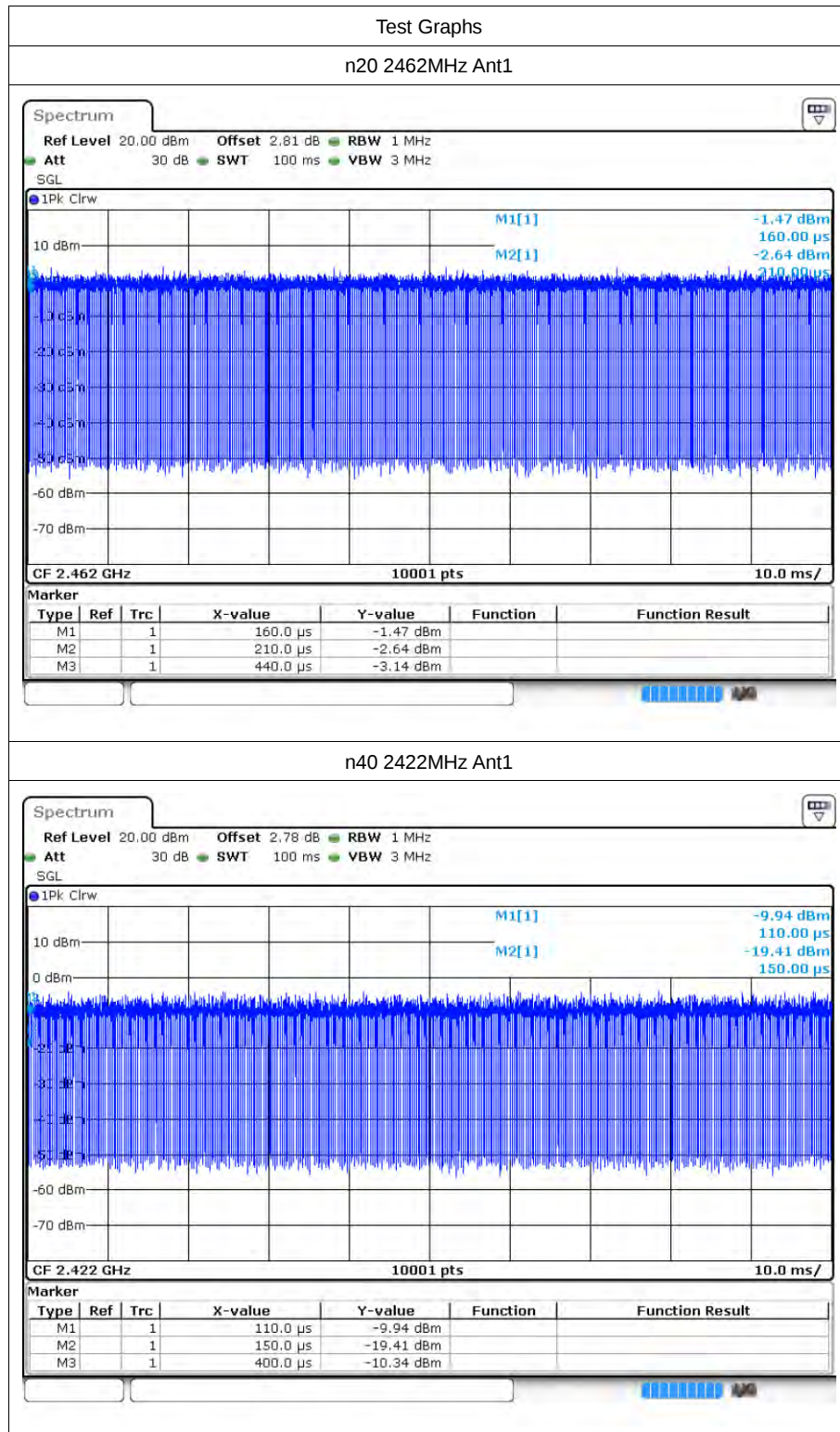


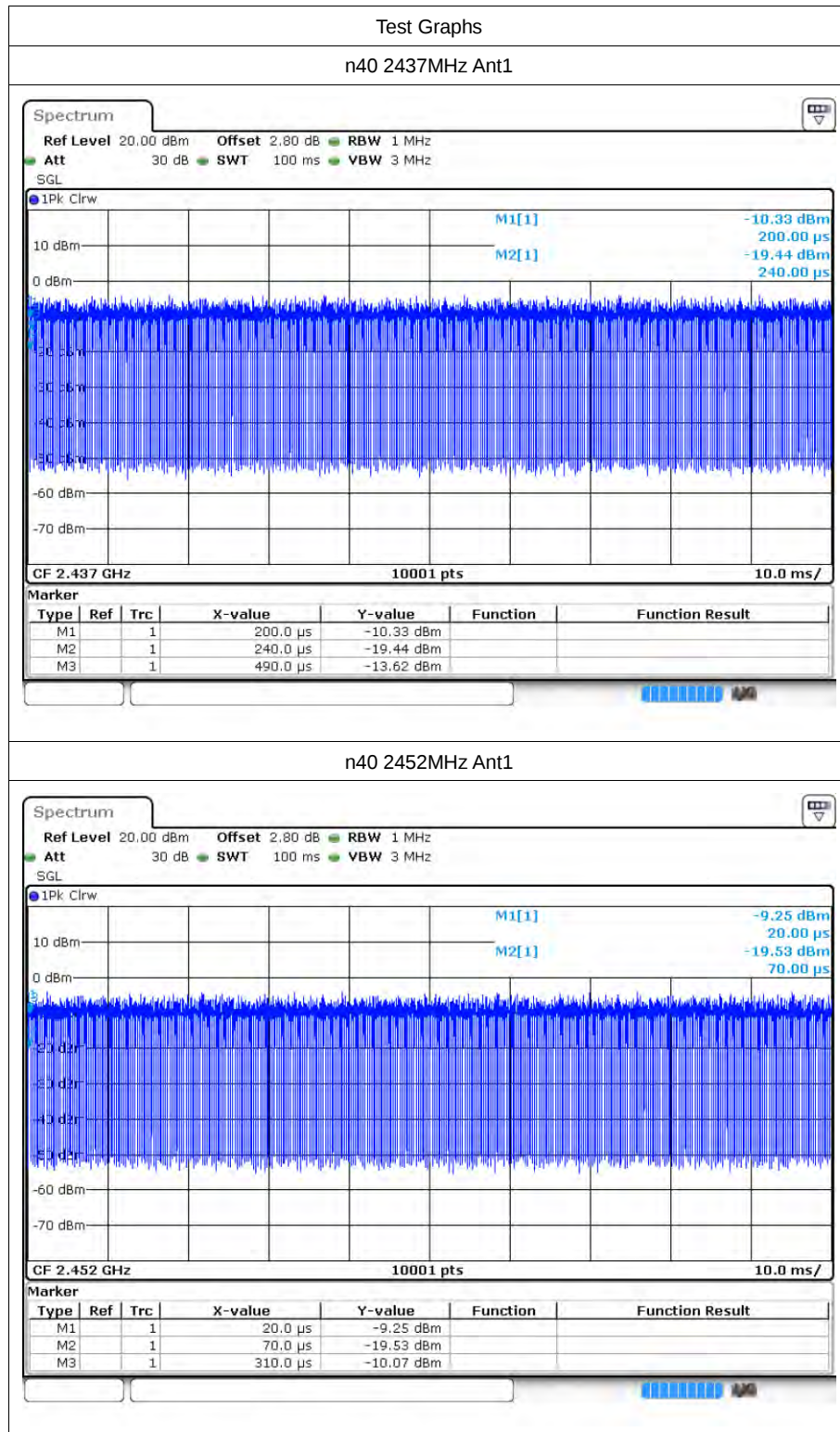
g 2412MHz Ant1











2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	14.63	30	Pass
b	2437	Ant1	14.71	30	Pass
b	2462	Ant1	14.68	30	Pass
g	2412	Ant1	13.37	30	Pass
g	2437	Ant1	13.35	30	Pass
g	2462	Ant1	13.27	30	Pass
n20	2412	Ant1	12.81	30	Pass
n20	2437	Ant1	12.8	30	Pass
n20	2462	Ant1	12.68	30	Pass
n40	2422	Ant1	12.31	30	Pass
n40	2437	Ant1	12.18	30	Pass
n40	2452	Ant1	12.23	30	Pass

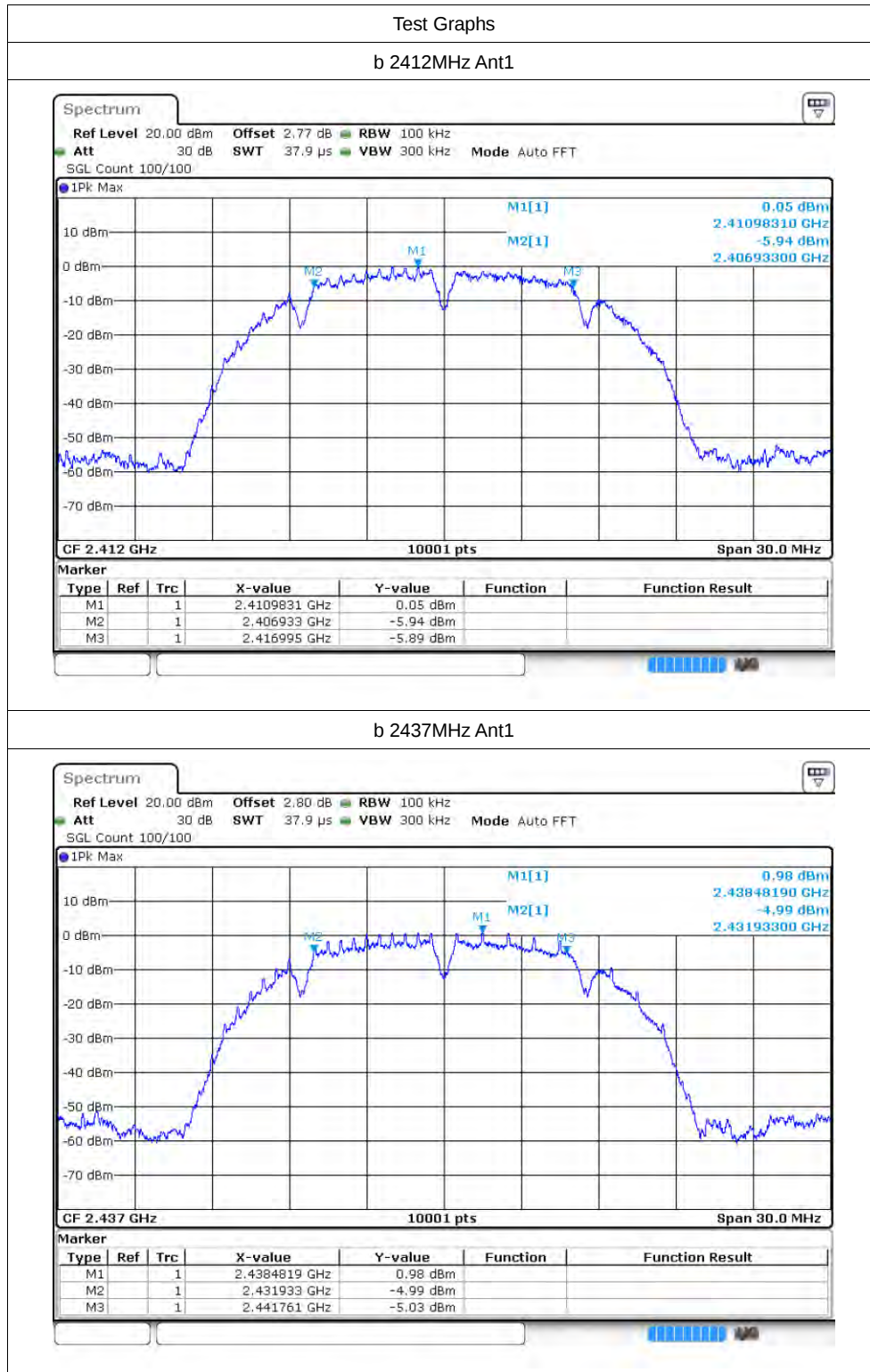


3 -6dB Bandwidth

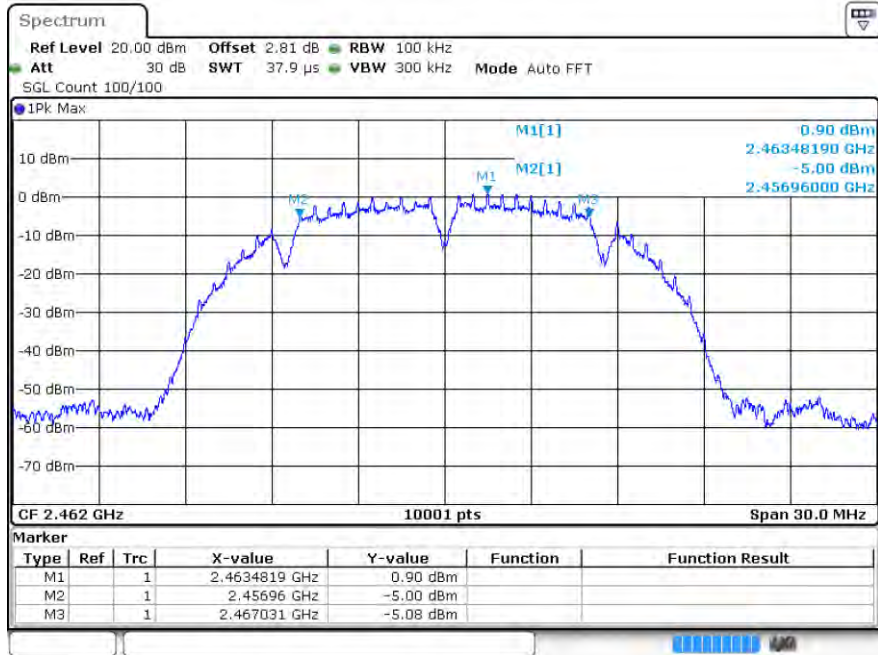
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	10.062	0.5	Pass
b	2437	Ant1	9.828	0.5	Pass
b	2462	Ant1	10.071	0.5	Pass
g	2412	Ant1	15.12	0.5	Pass
g	2437	Ant1	15.096	0.5	Pass
g	2462	Ant1	15.117	0.5	Pass
n20	2412	Ant1	15.111	0.5	Pass
n20	2437	Ant1	15.117	0.5	Pass
n20	2462	Ant1	16.437	0.5	Pass
n40	2422	Ant1	35.01	0.5	Pass
n40	2437	Ant1	35.076	0.5	Pass
n40	2452	Ant1	35.07	0.5	Pass

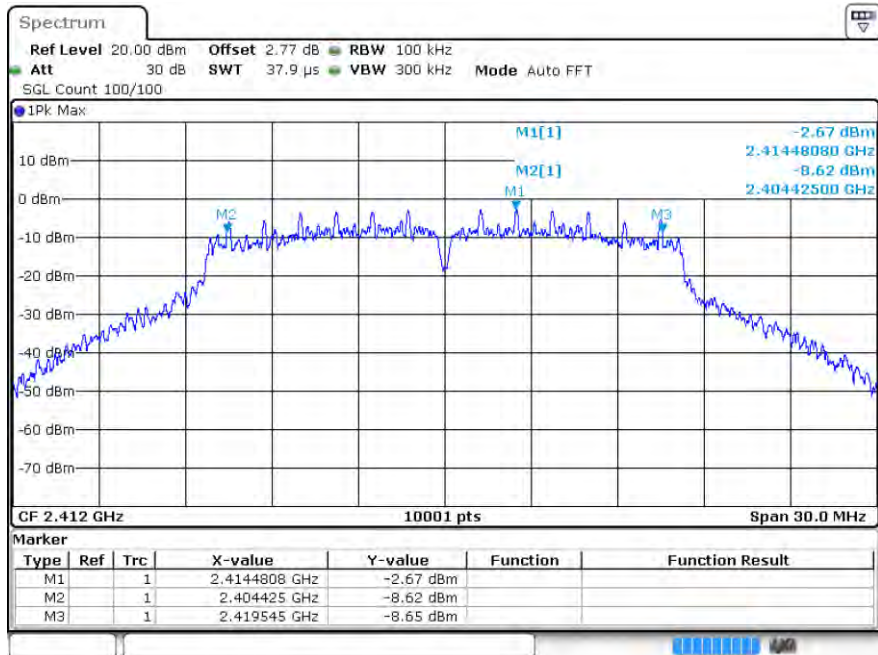
3.2 Test Graphs



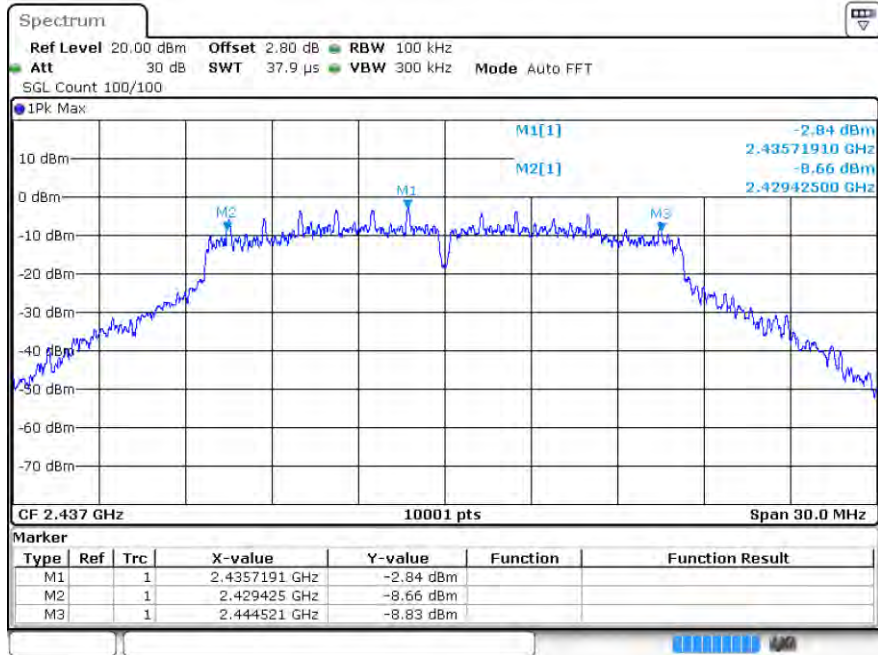
b 2462MHz Ant1



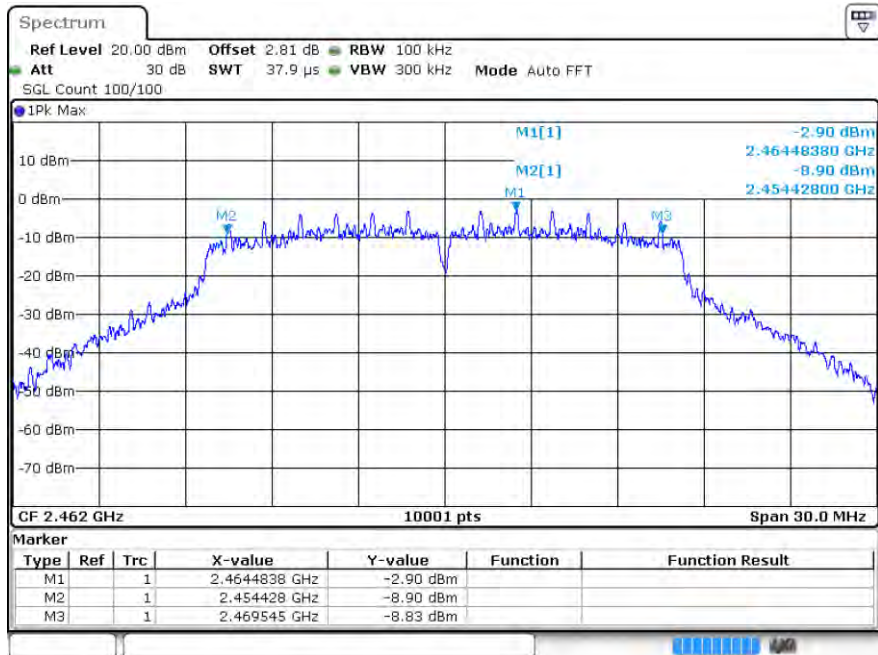
g 2412MHz Ant1

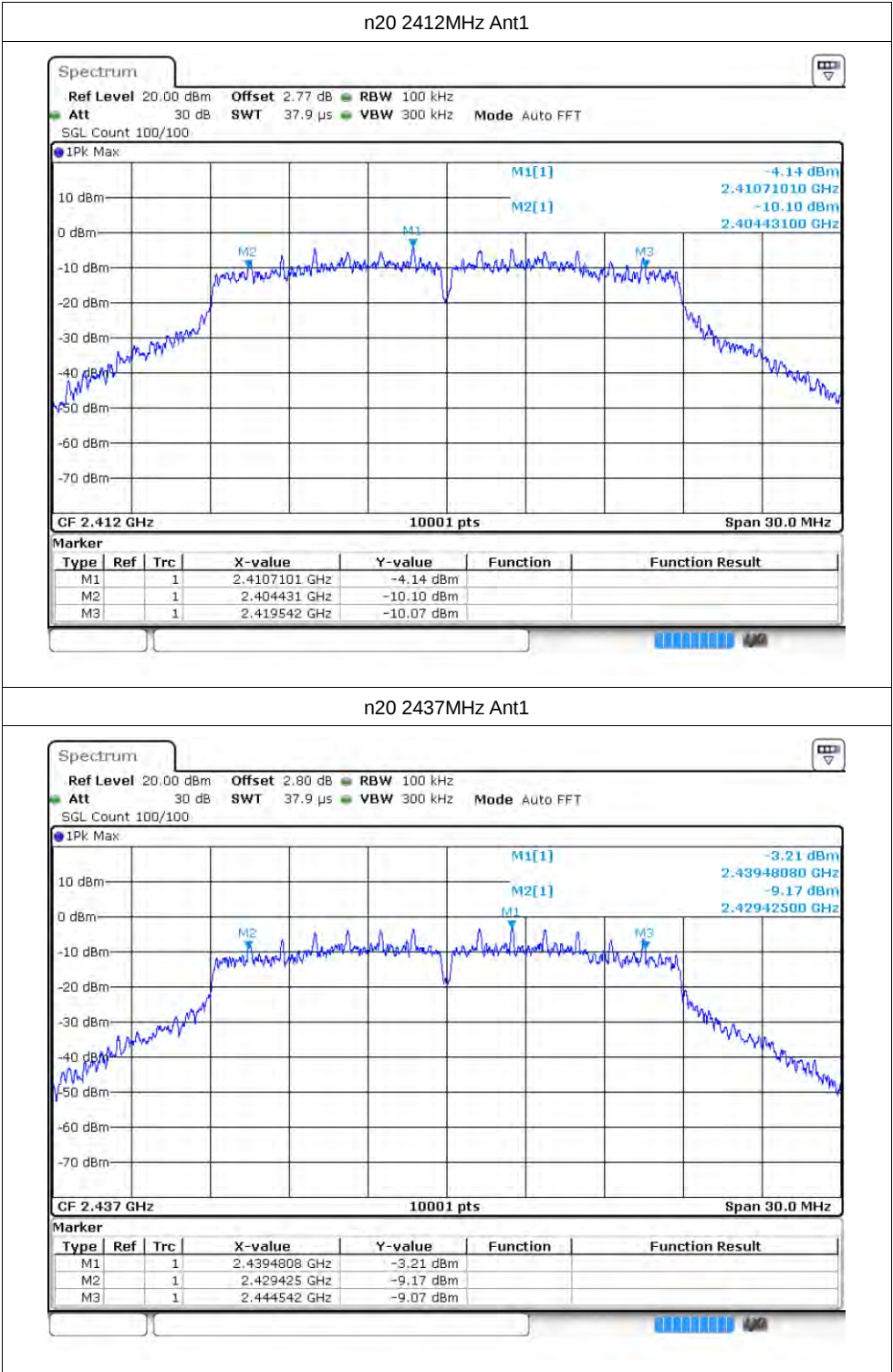


g 2437MHz Ant1



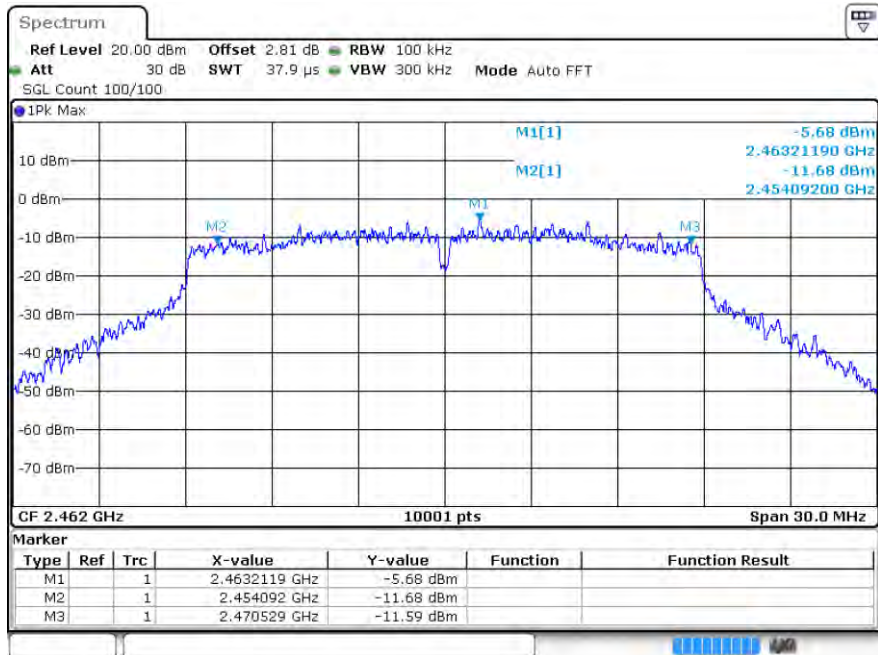
g 2462MHz Ant1



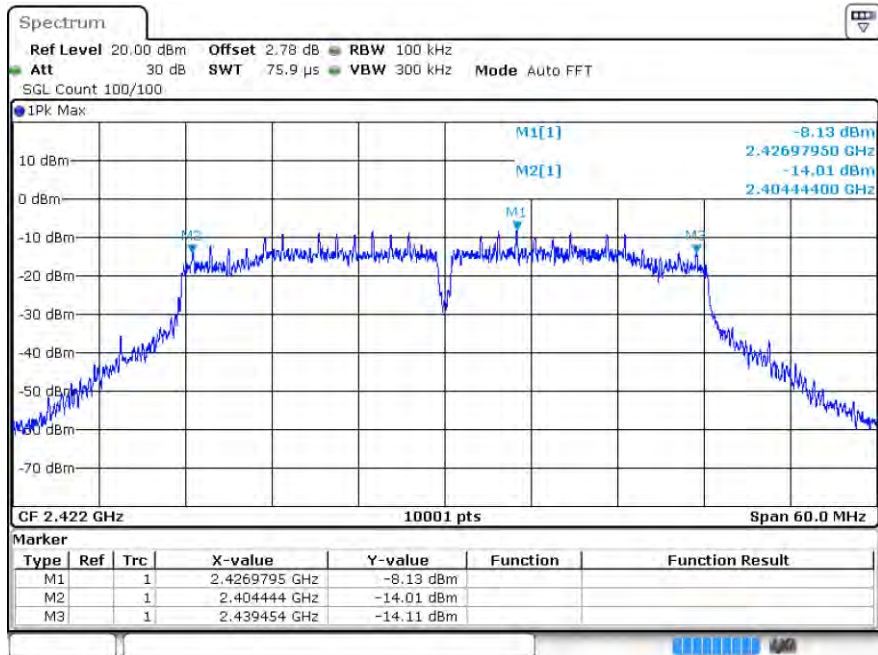


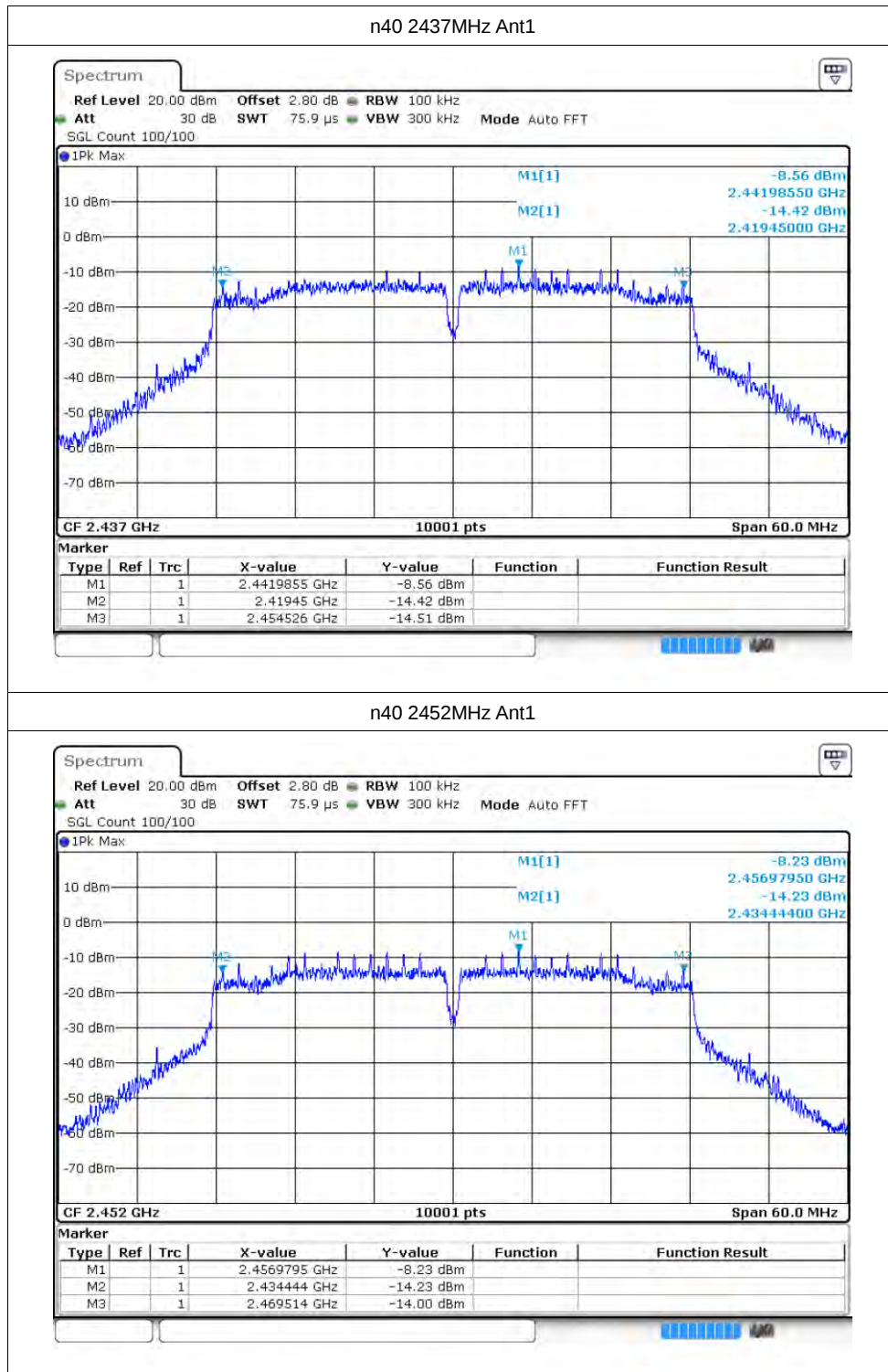


n20 2462MHz Ant1



n40 2422MHz Ant1



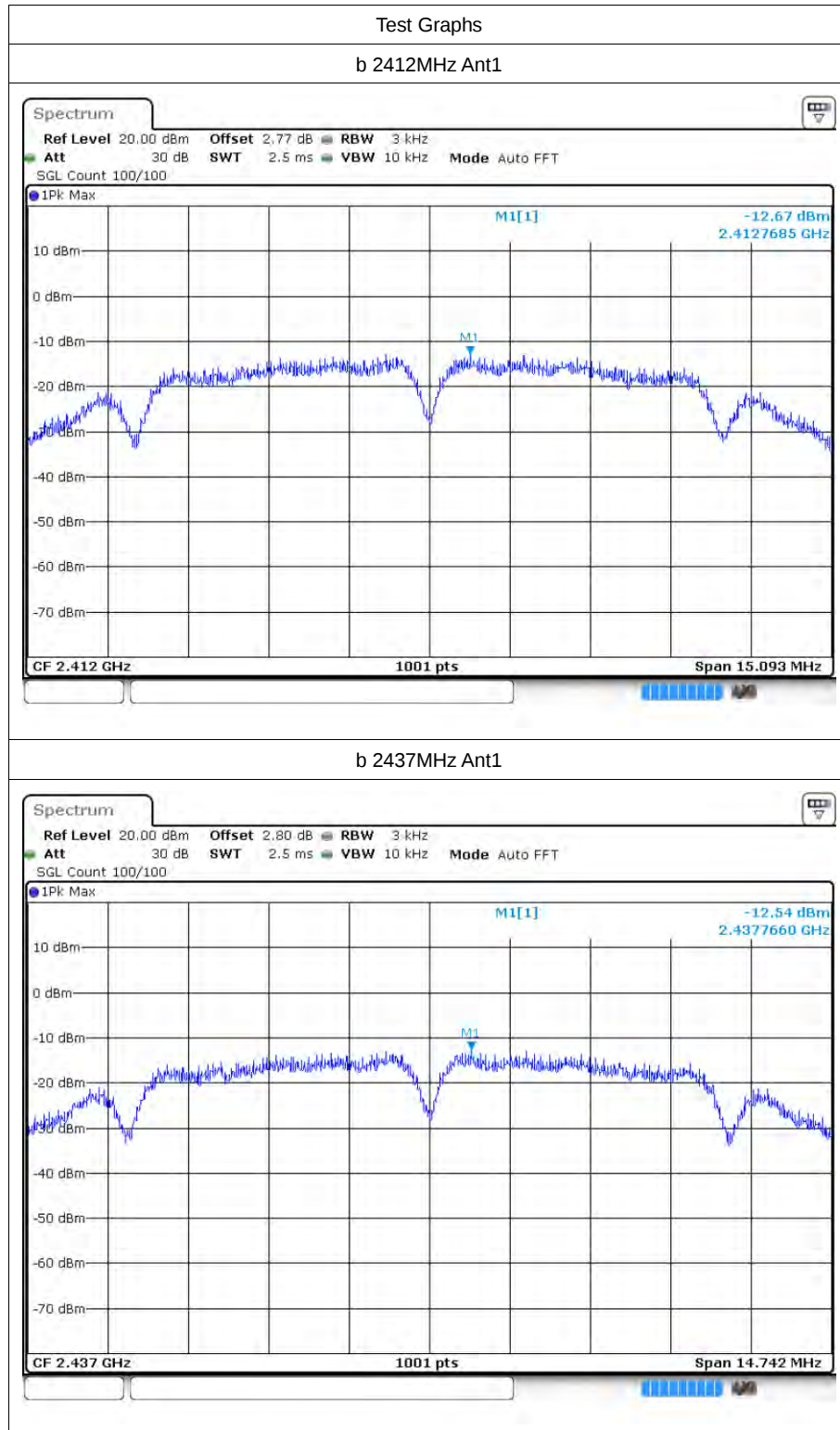


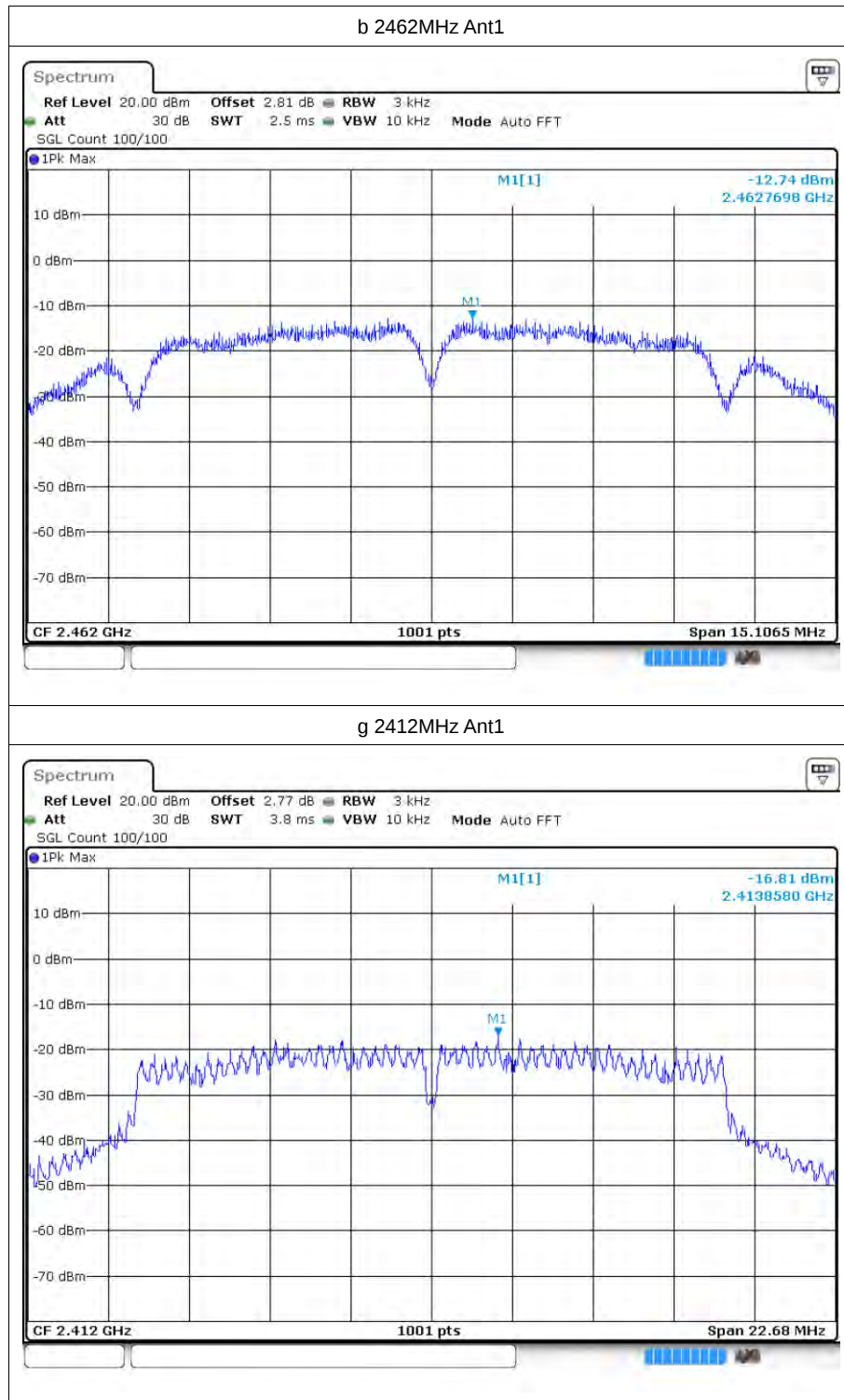
4 Maximum Power Spectral Density Level

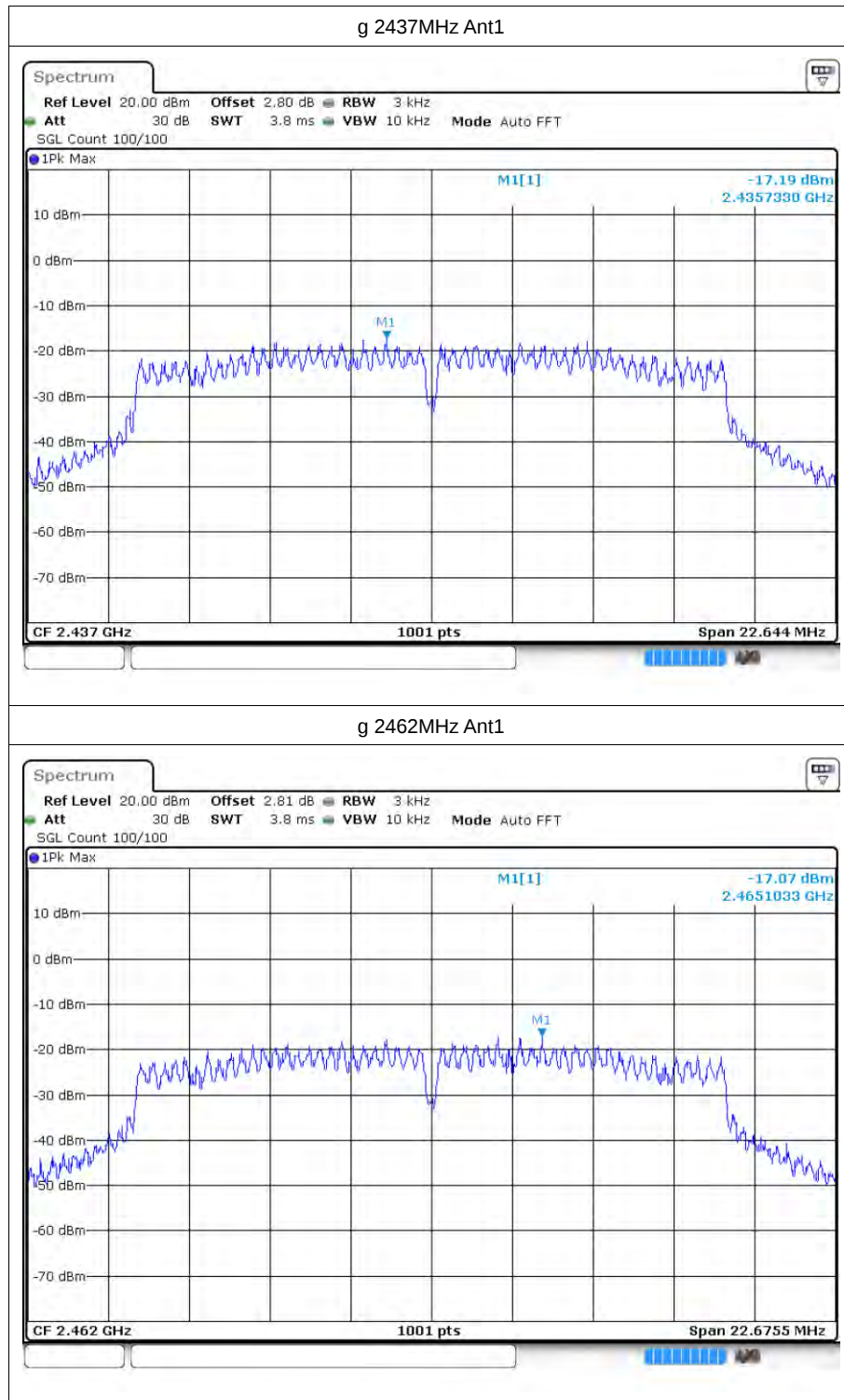
4.1 Test Result

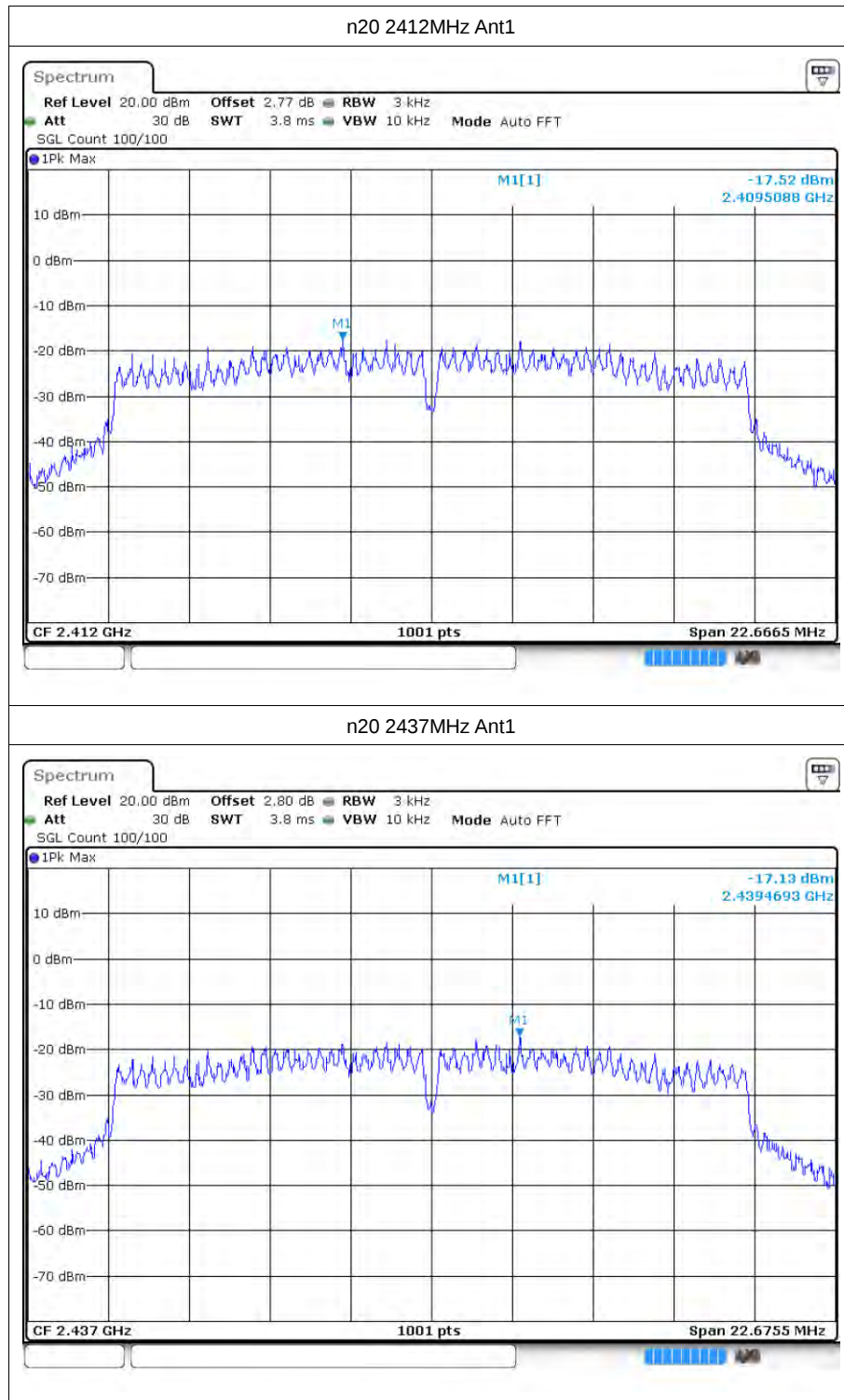
Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
b	2412	Ant1	-12.67	≤ 8	Pass
b	2437	Ant1	-12.54	≤ 8	Pass
b	2462	Ant1	-12.74	≤ 8	Pass
g	2412	Ant1	-16.81	≤ 8	Pass
g	2437	Ant1	-17.19	≤ 8	Pass
g	2462	Ant1	-17.07	≤ 8	Pass
n20	2412	Ant1	-17.52	≤ 8	Pass
n20	2437	Ant1	-17.13	≤ 8	Pass
n20	2462	Ant1	-17.57	≤ 8	Pass
n40	2422	Ant1	-22.37	≤ 8	Pass
n40	2437	Ant1	-22.08	≤ 8	Pass
n40	2452	Ant1	-22.82	≤ 8	Pass

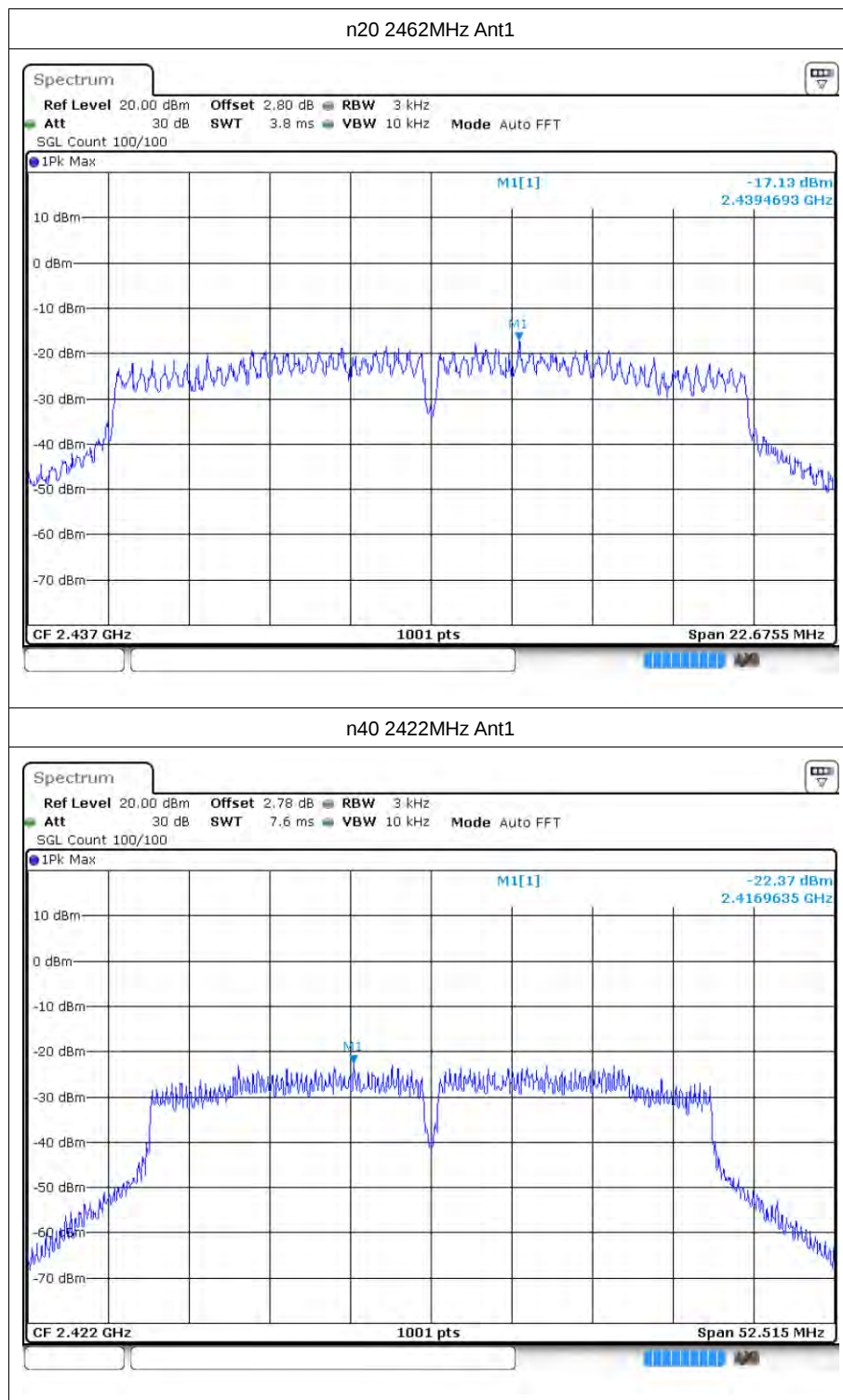
4.2 Test Graphs

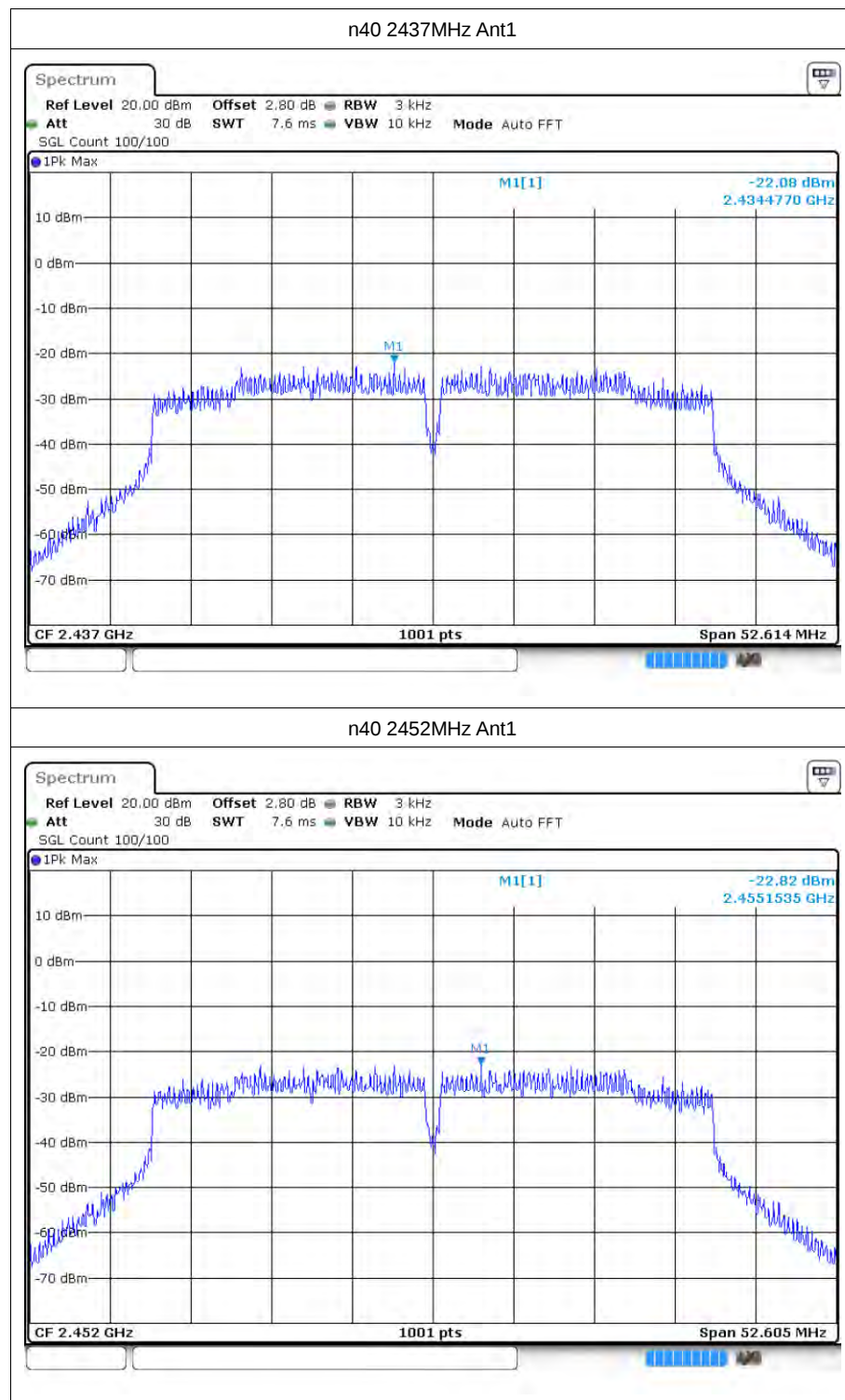












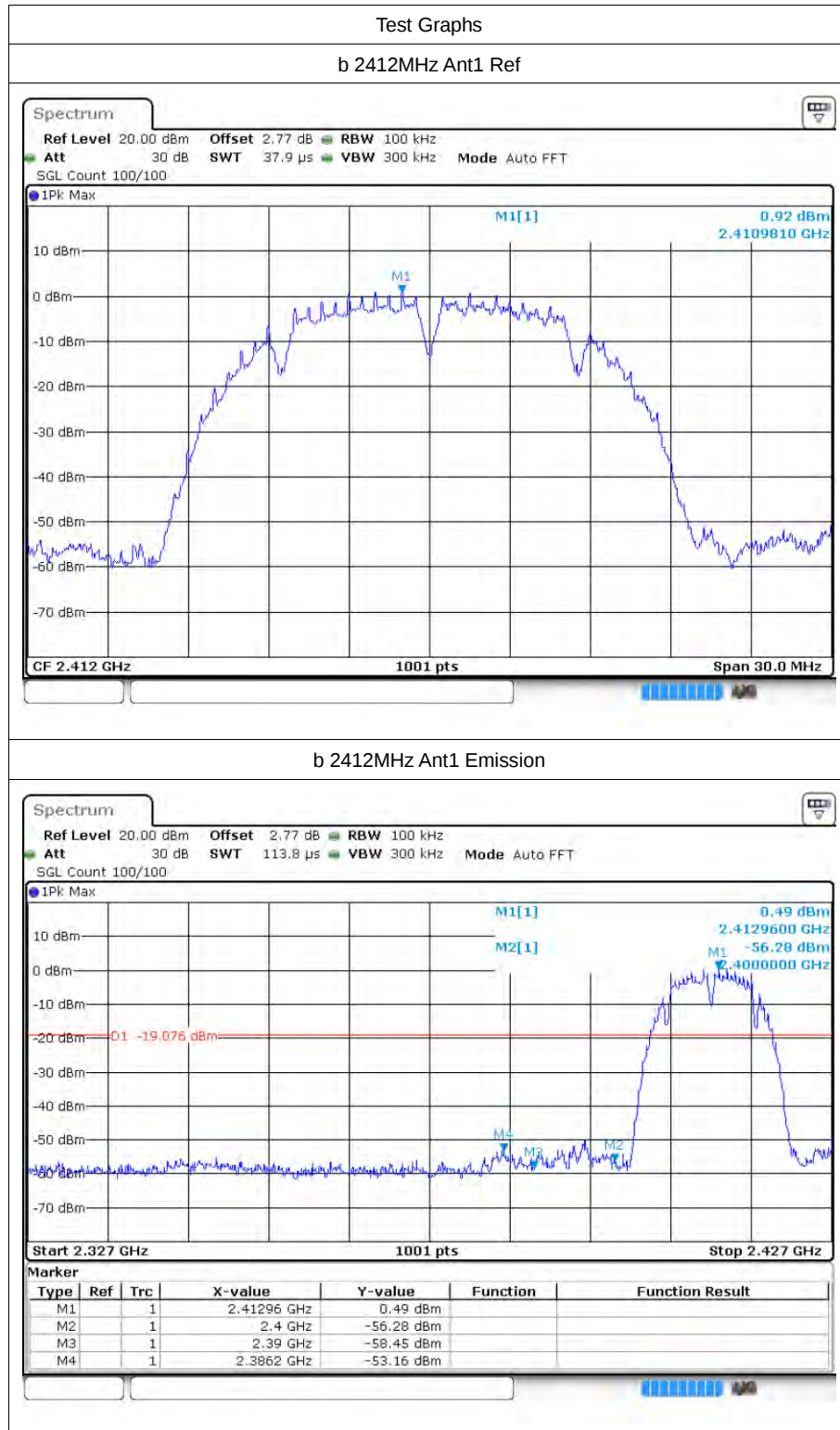


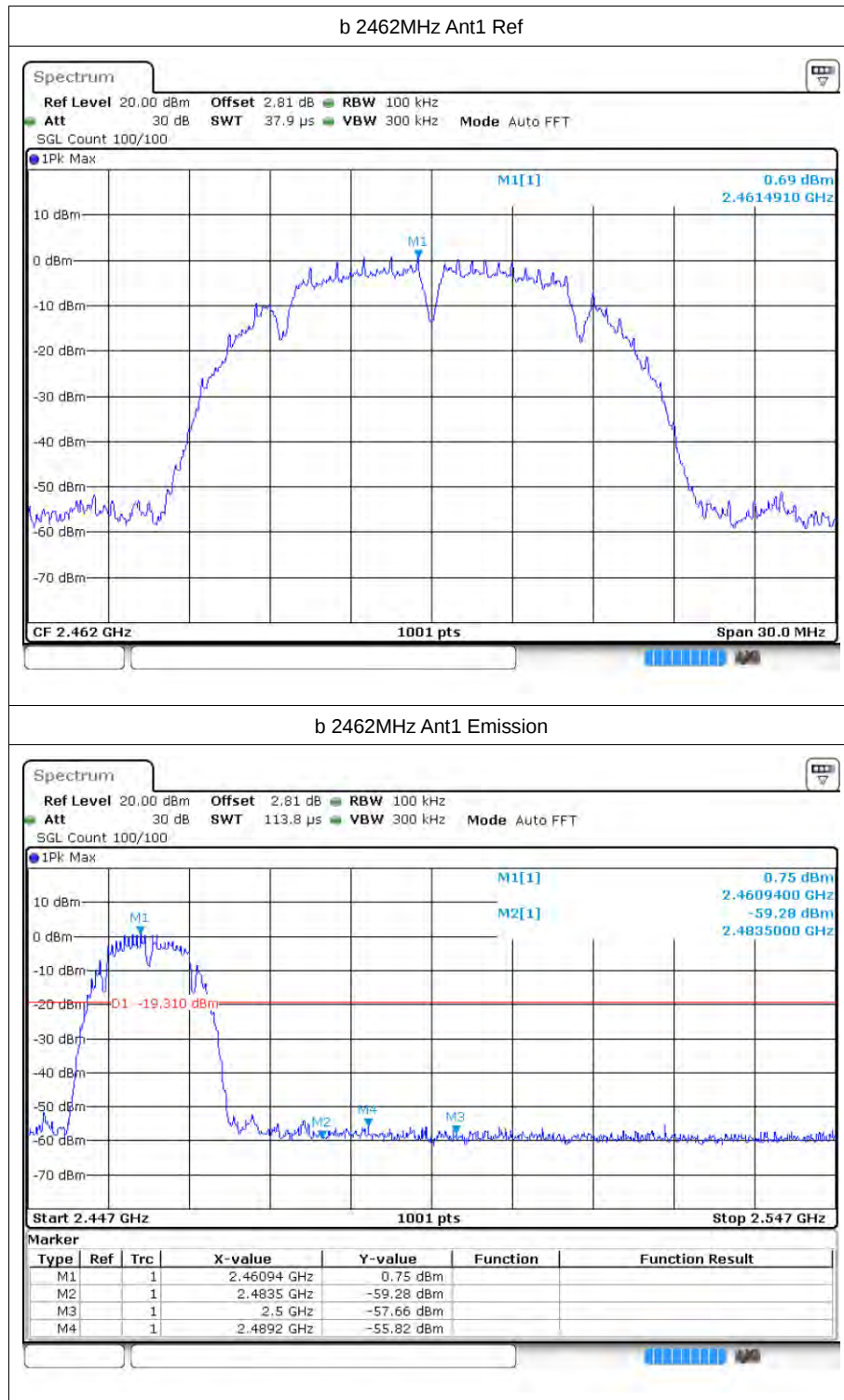
5 Band Edge

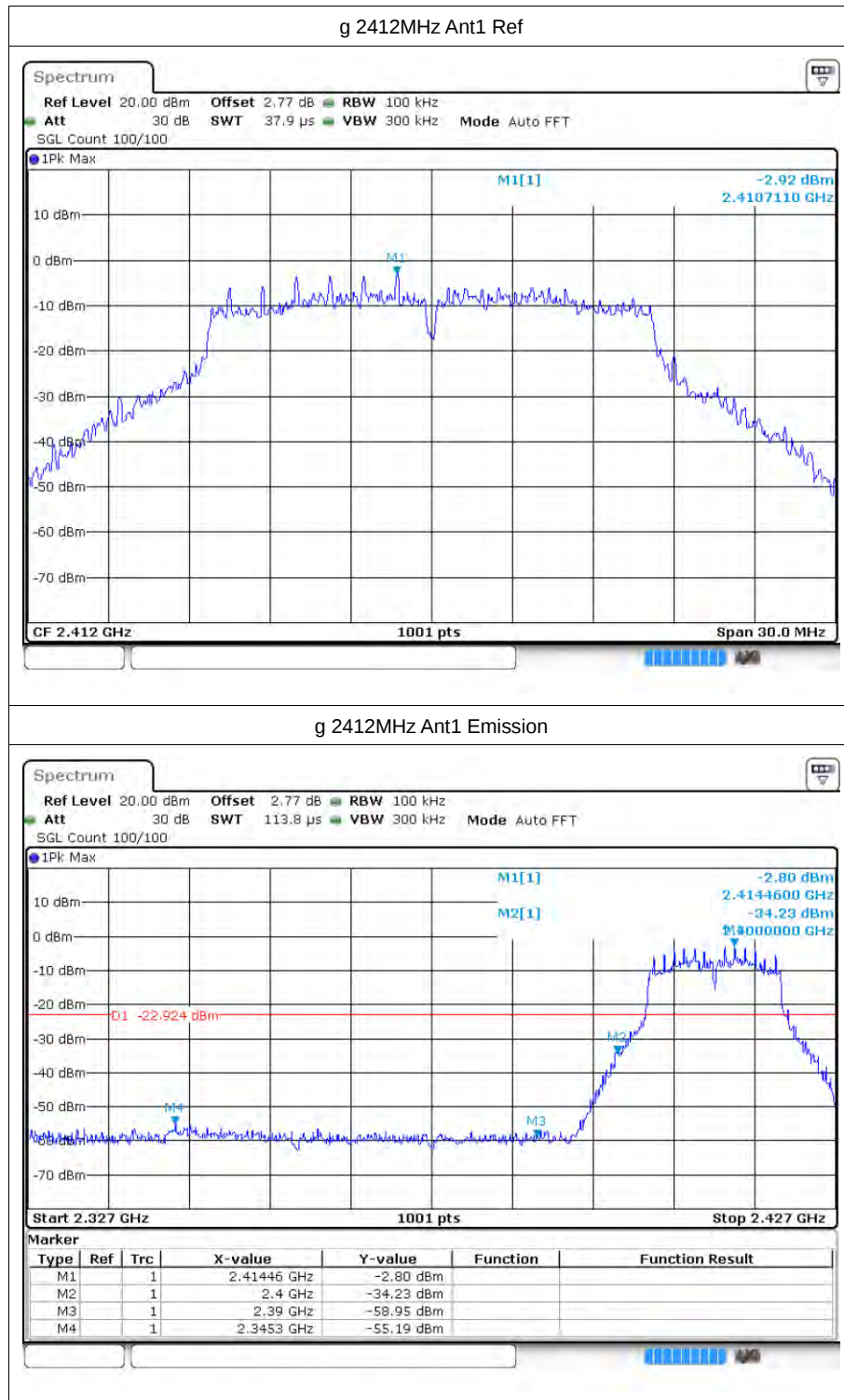
5.1 Test Result

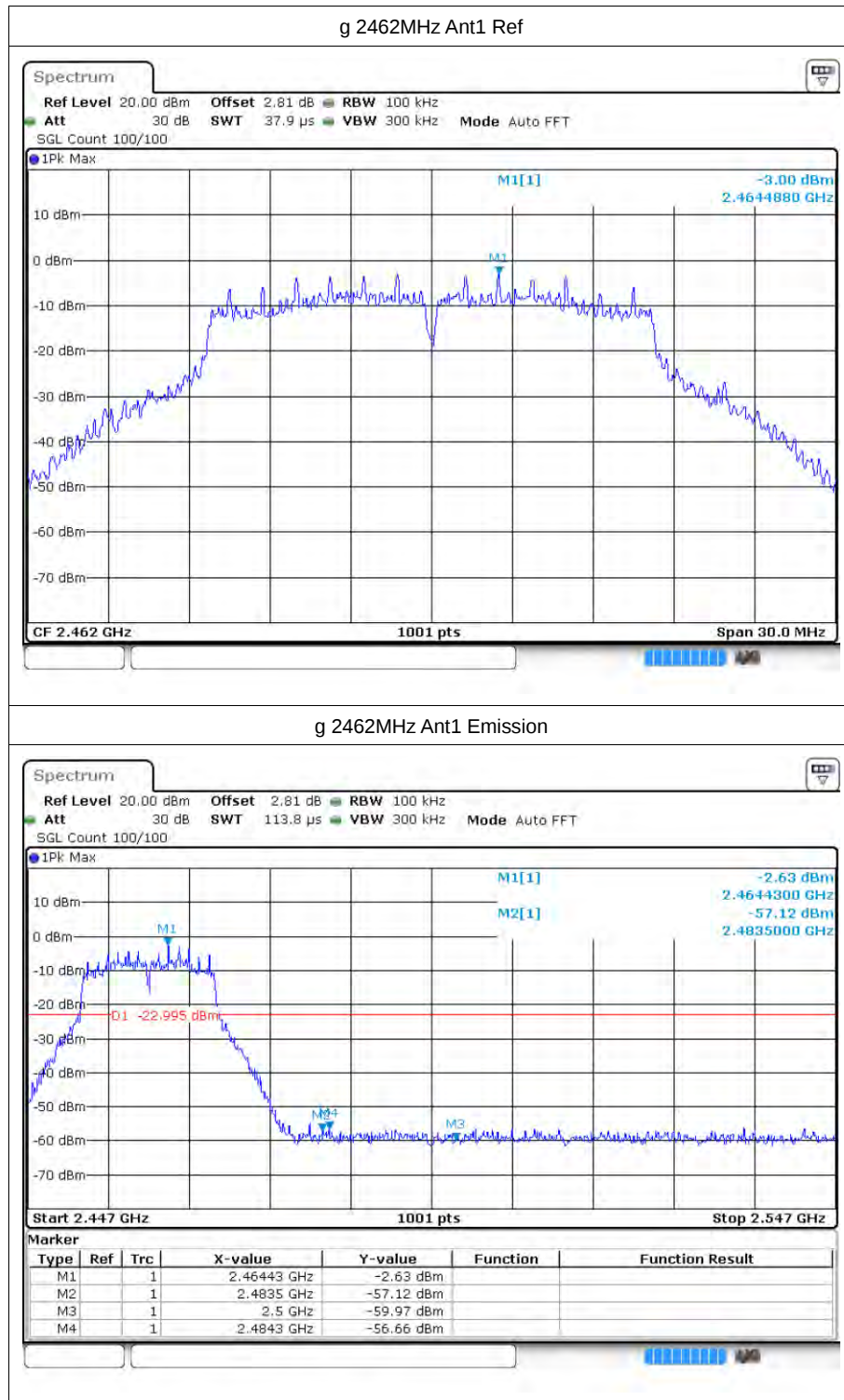
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-54.08	-20	-54.08
b	2462	Ant1	-56.51	-20	Pass
g	2412	Ant1	-52.27	-20	Pass
g	2462	Ant1	-53.66	-20	Pass
n20	2412	Ant1	-51.73	-20	Pass
n20	2462	Ant1	-51.74	-20	Pass
n40	2422	Ant1	-48.53	-20	Pass
n40	2452	Ant1	-47.65	-20	Pass

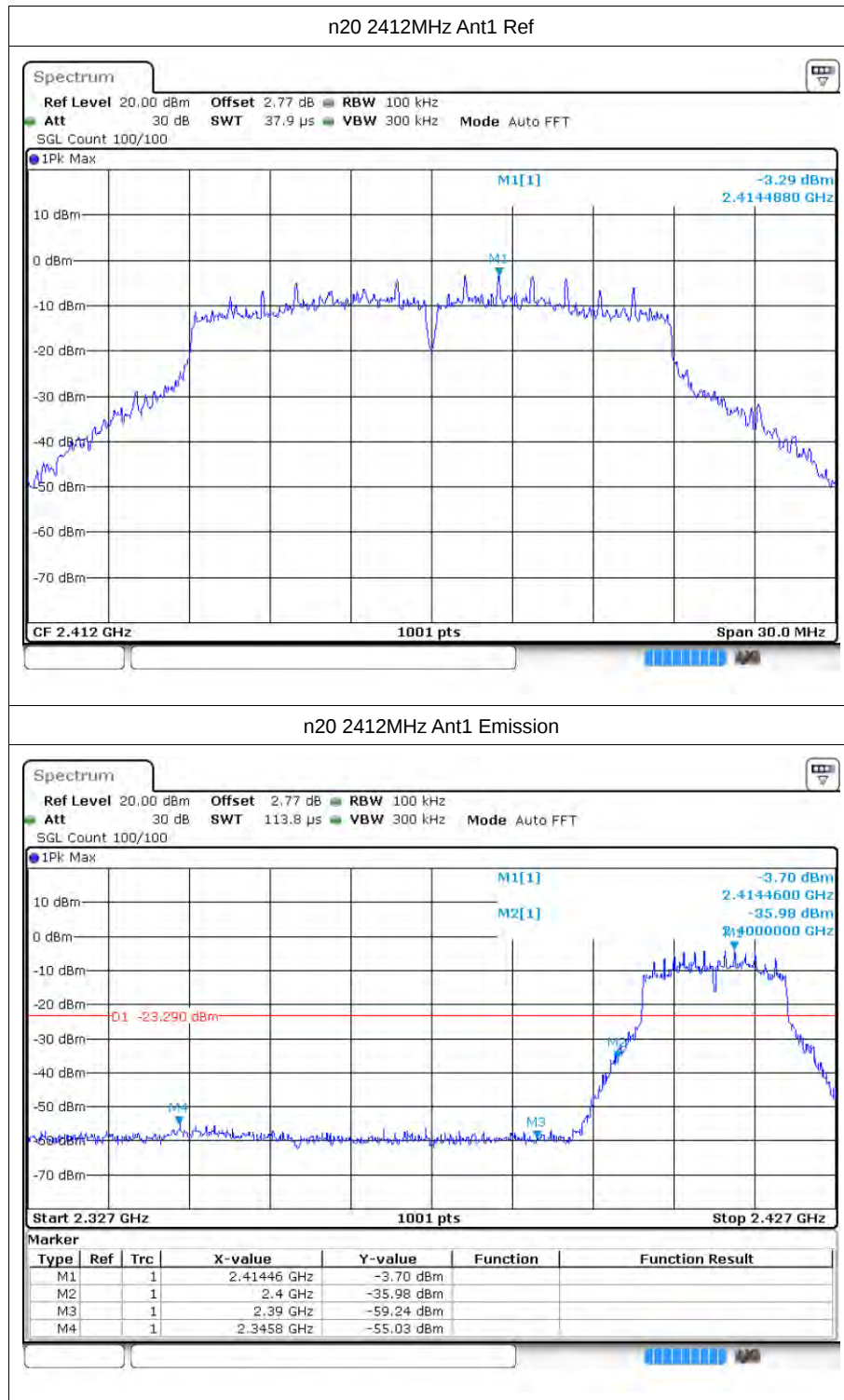
5.2 Test Graphs

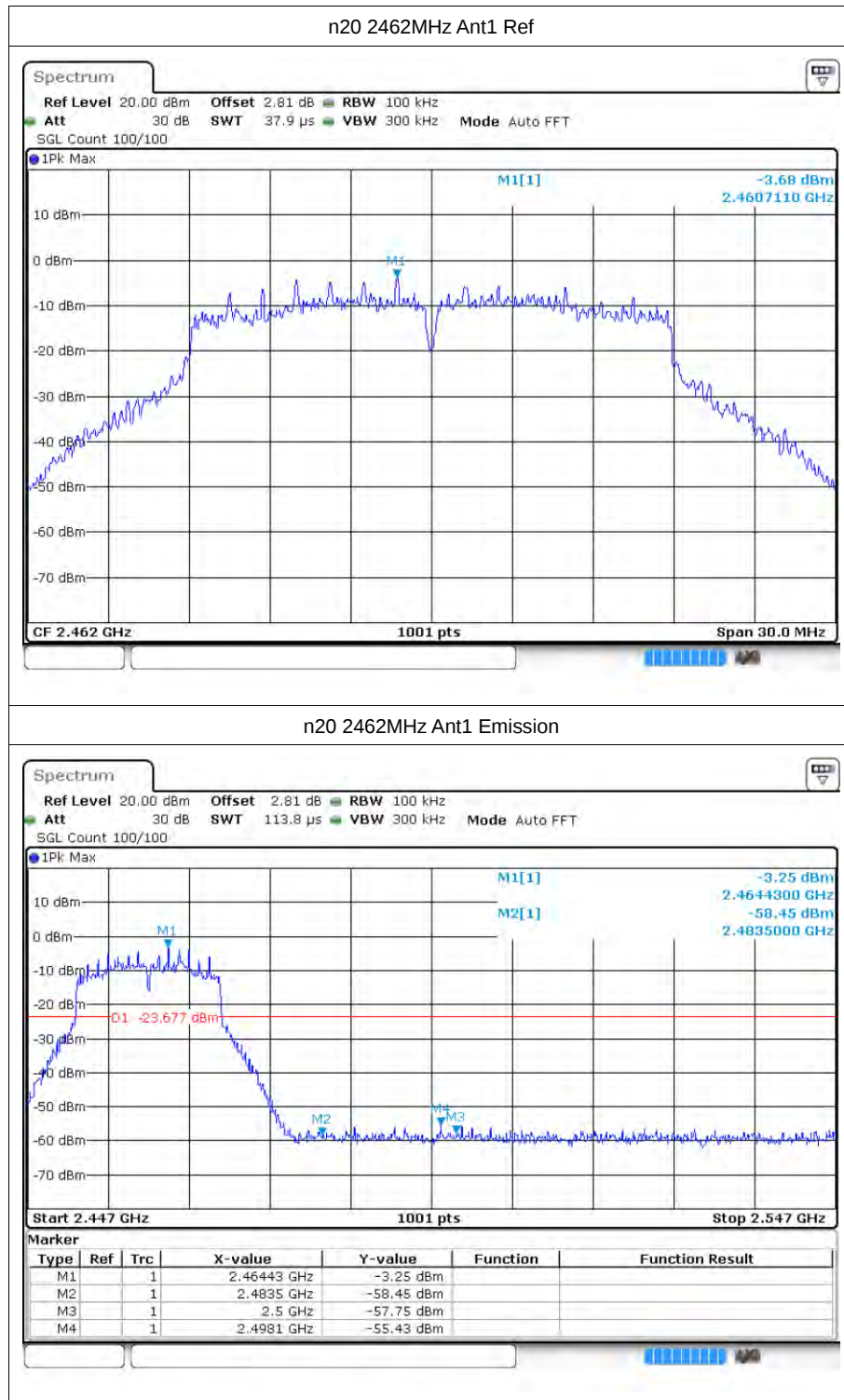


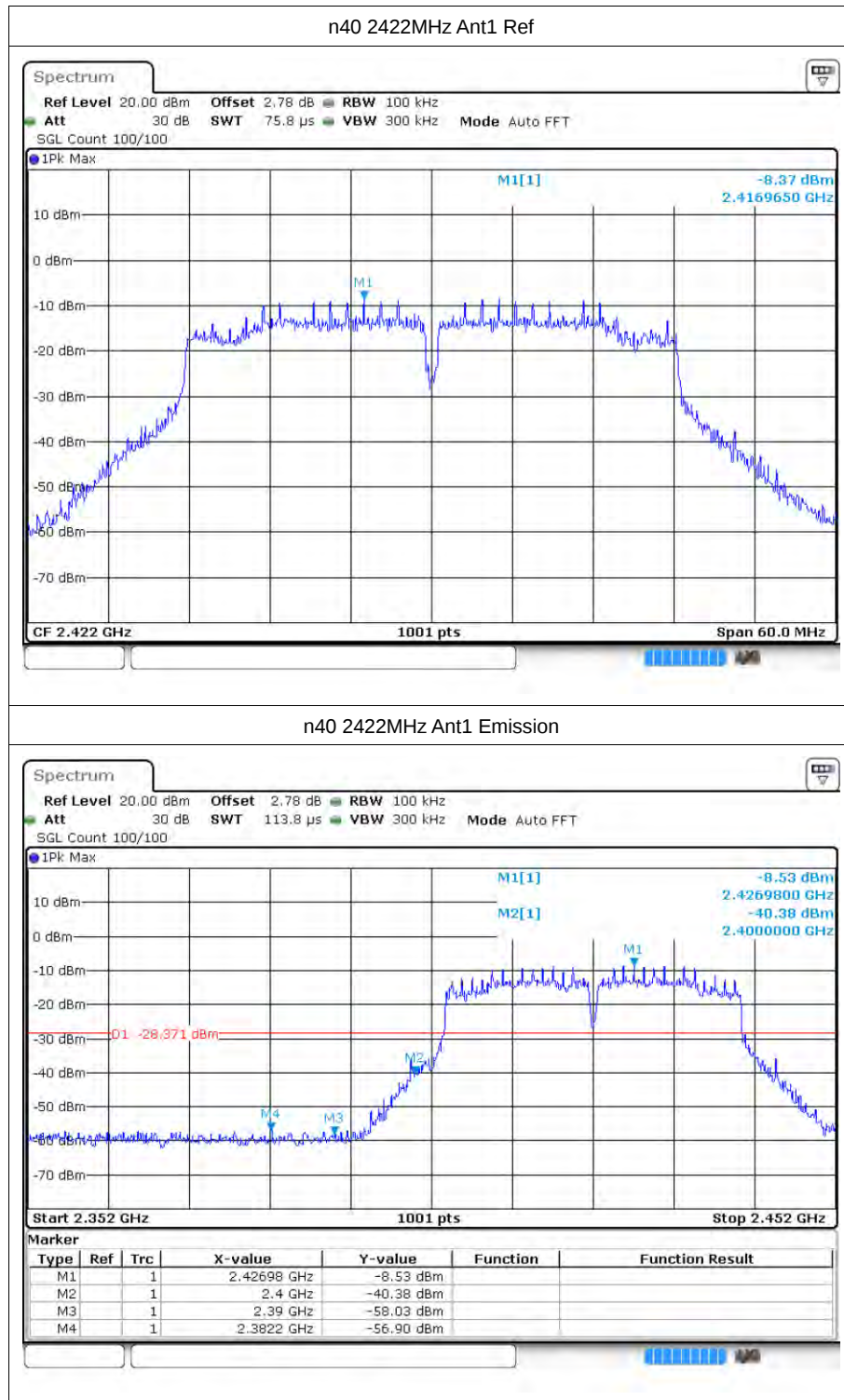


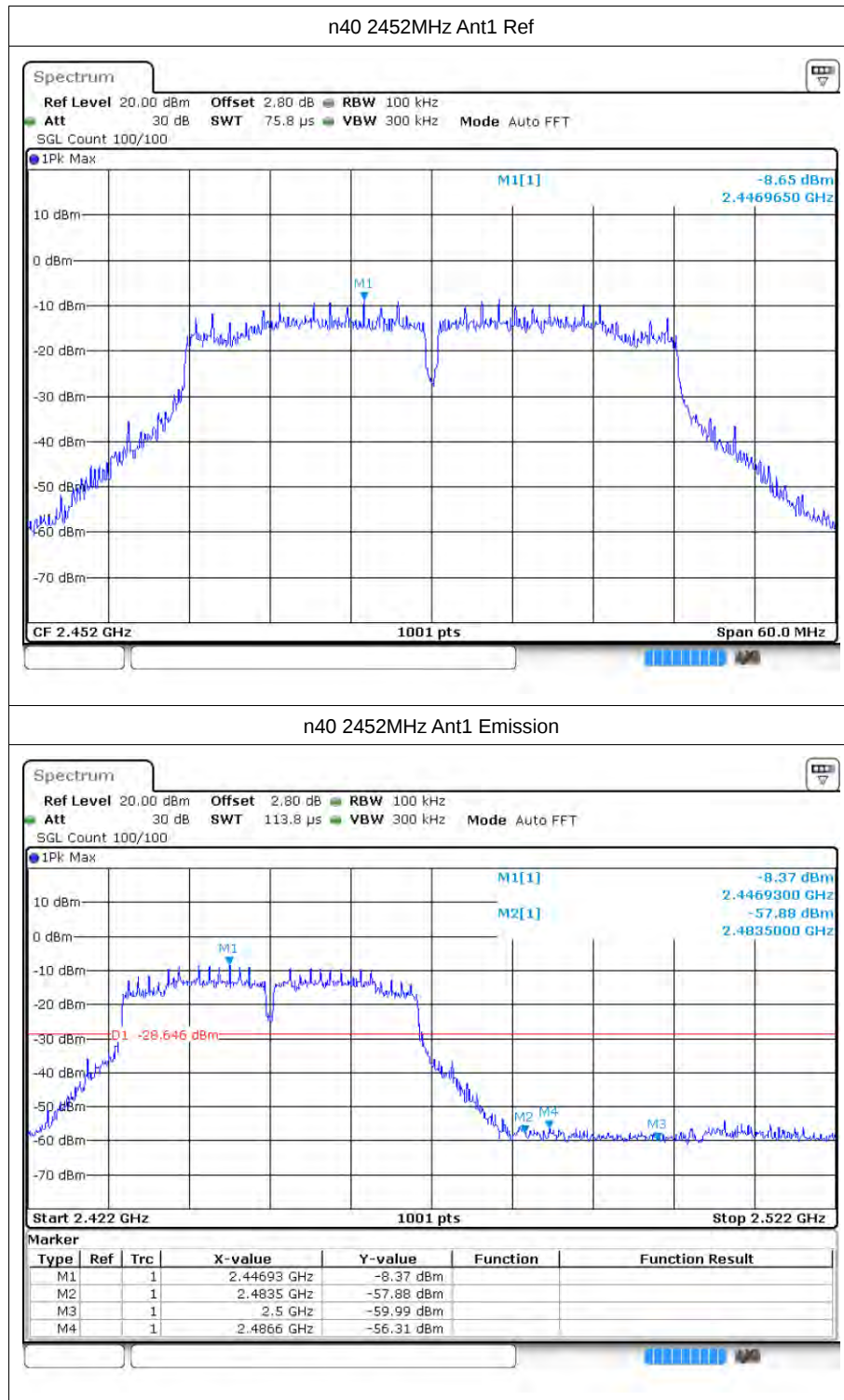












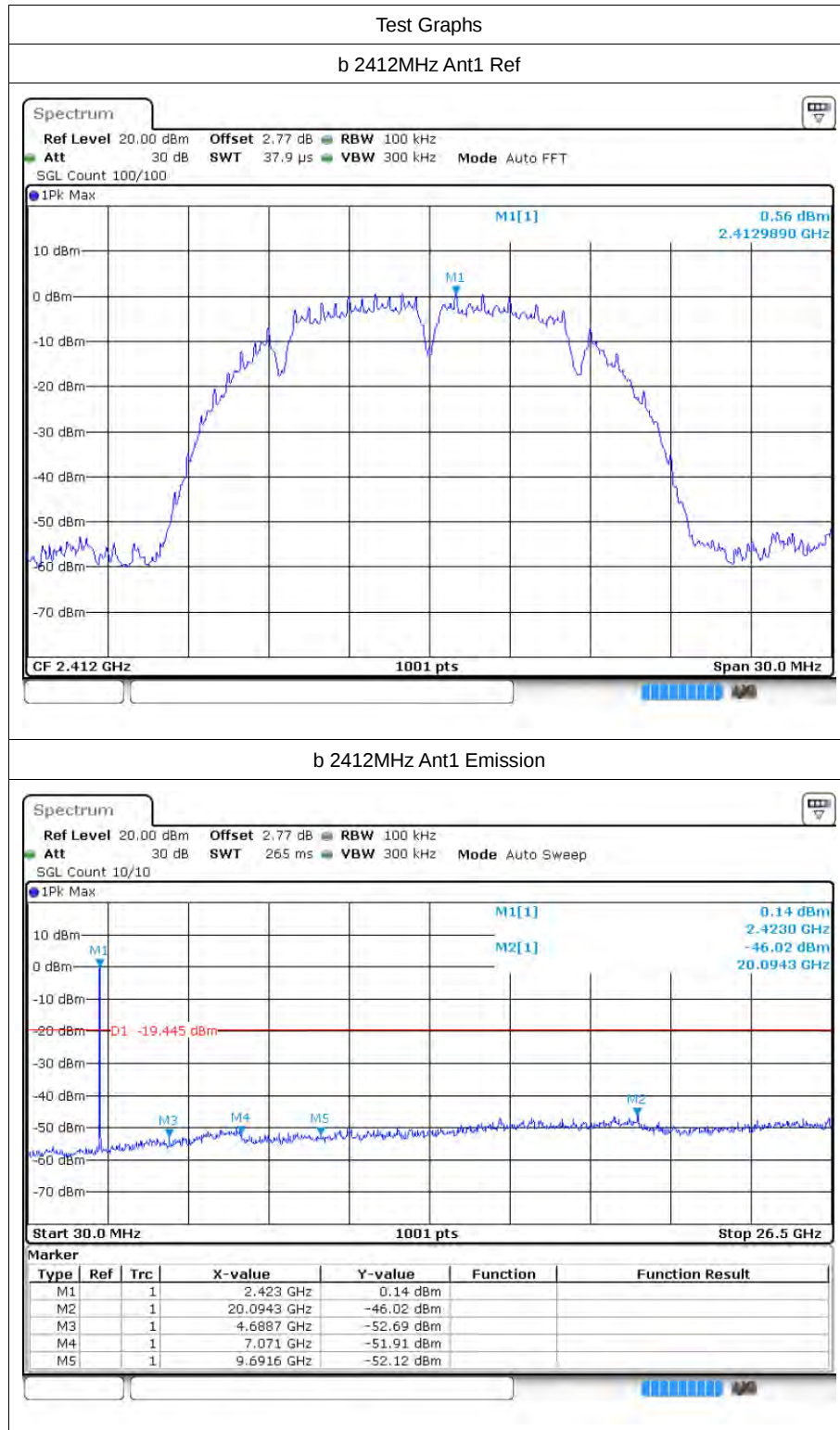


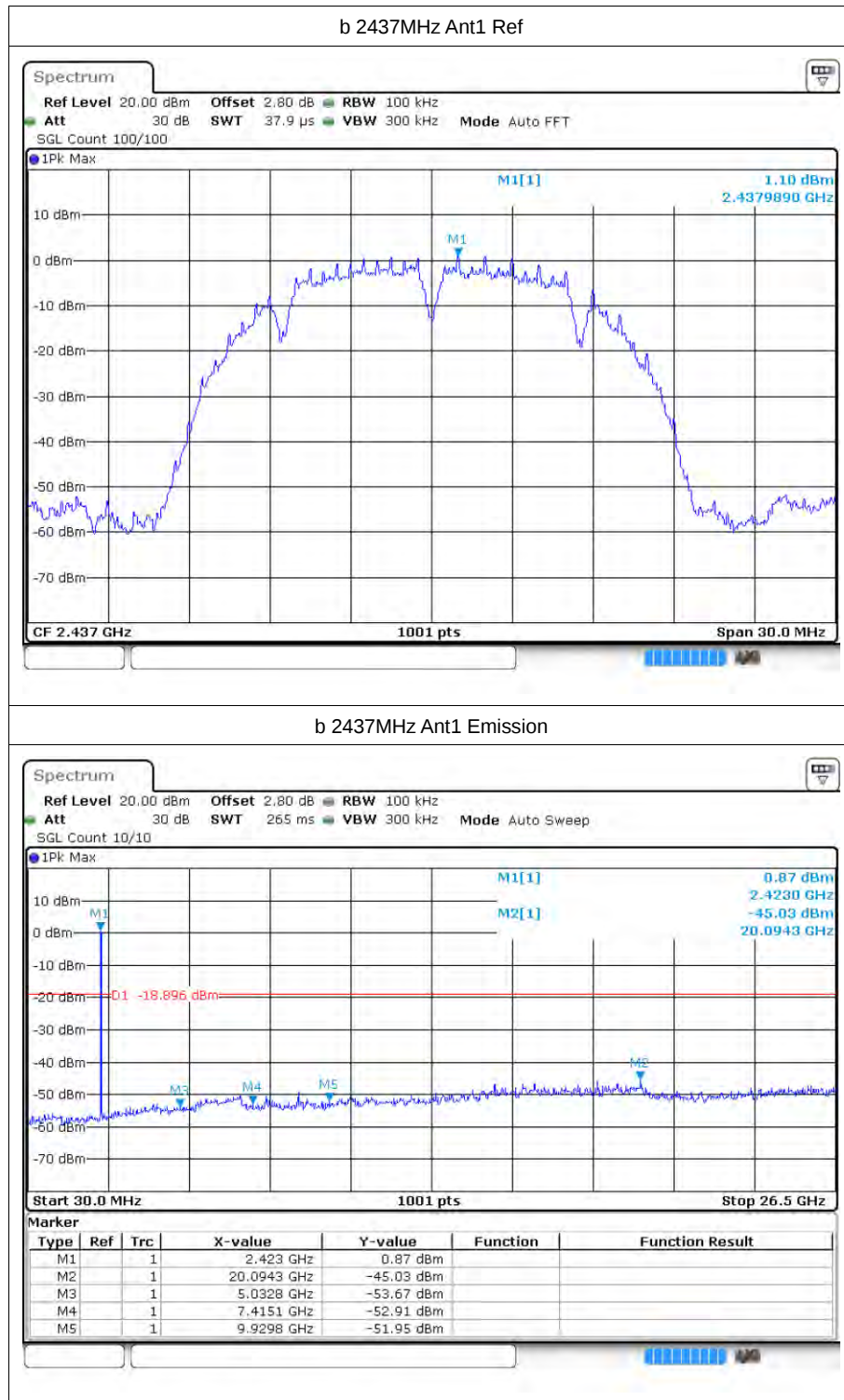
6 Conducted RF Spurious Emission

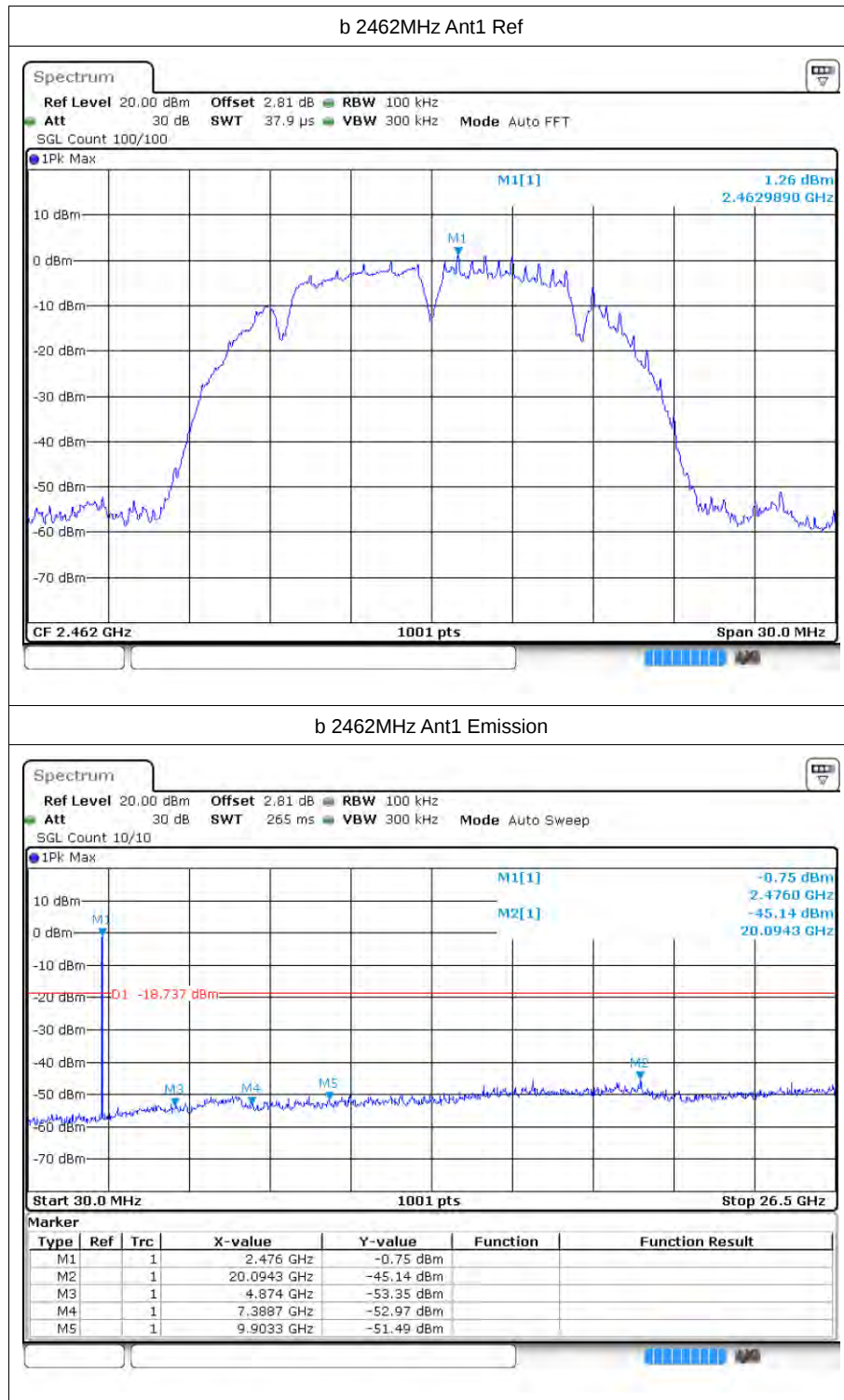
6.1 Test Result

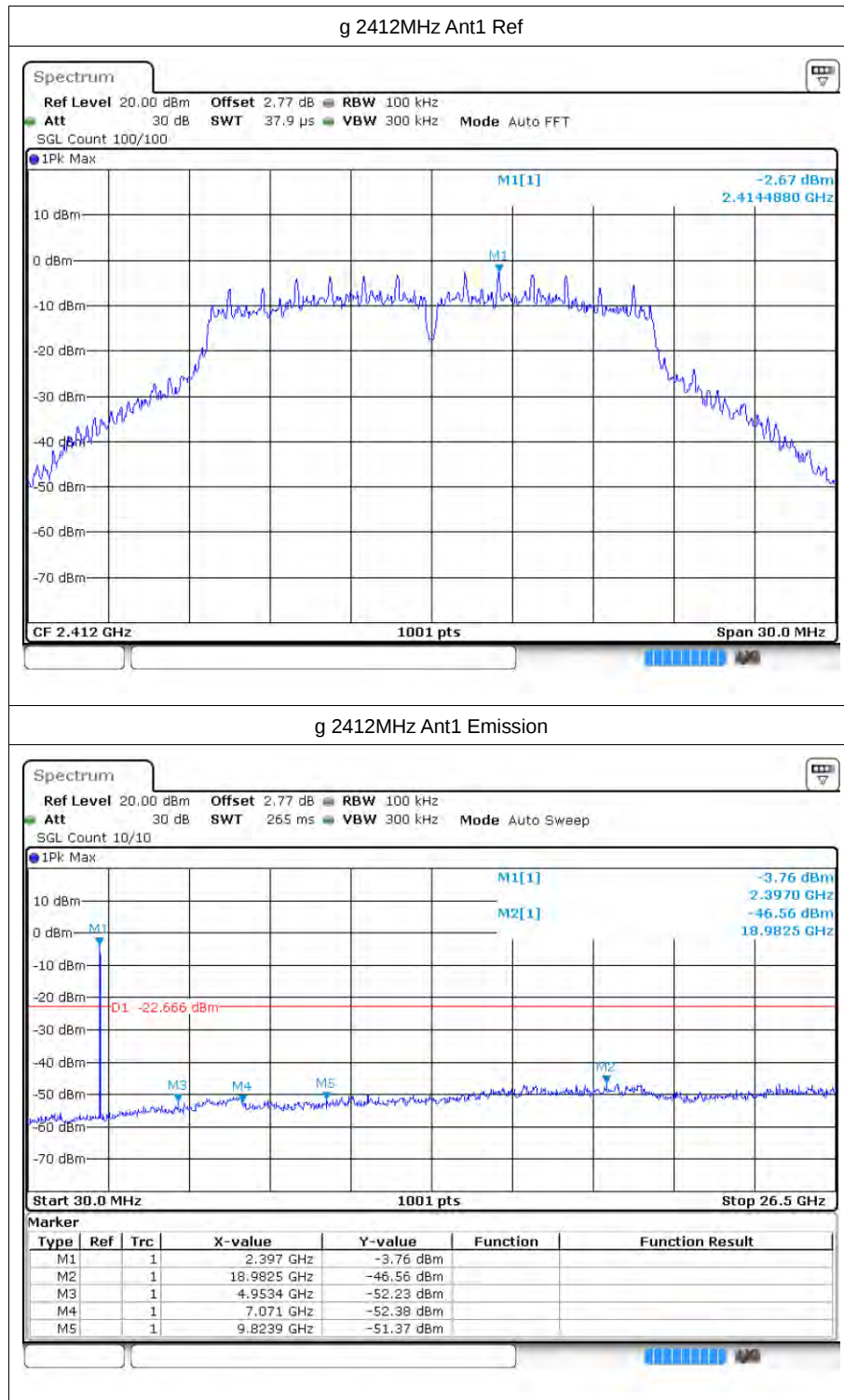
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-46.58	-20	Pass
b	2437	Ant1	-46.13	-20	Pass
b	2462	Ant1	-46.39	-20	Pass
g	2412	Ant1	-43.88	-20	Pass
g	2437	Ant1	-43.3	-20	Pass
g	2462	Ant1	-43.83	-20	Pass
n20	2412	Ant1	-42.55	-20	Pass
n20	2437	Ant1	-42.39	-20	Pass
n20	2462	Ant1	-42.91	-20	Pass
n40	2422	Ant1	-36.7	-20	Pass
n40	2437	Ant1	-37	-20	Pass
n40	2452	Ant1	-37.55	-20	Pass

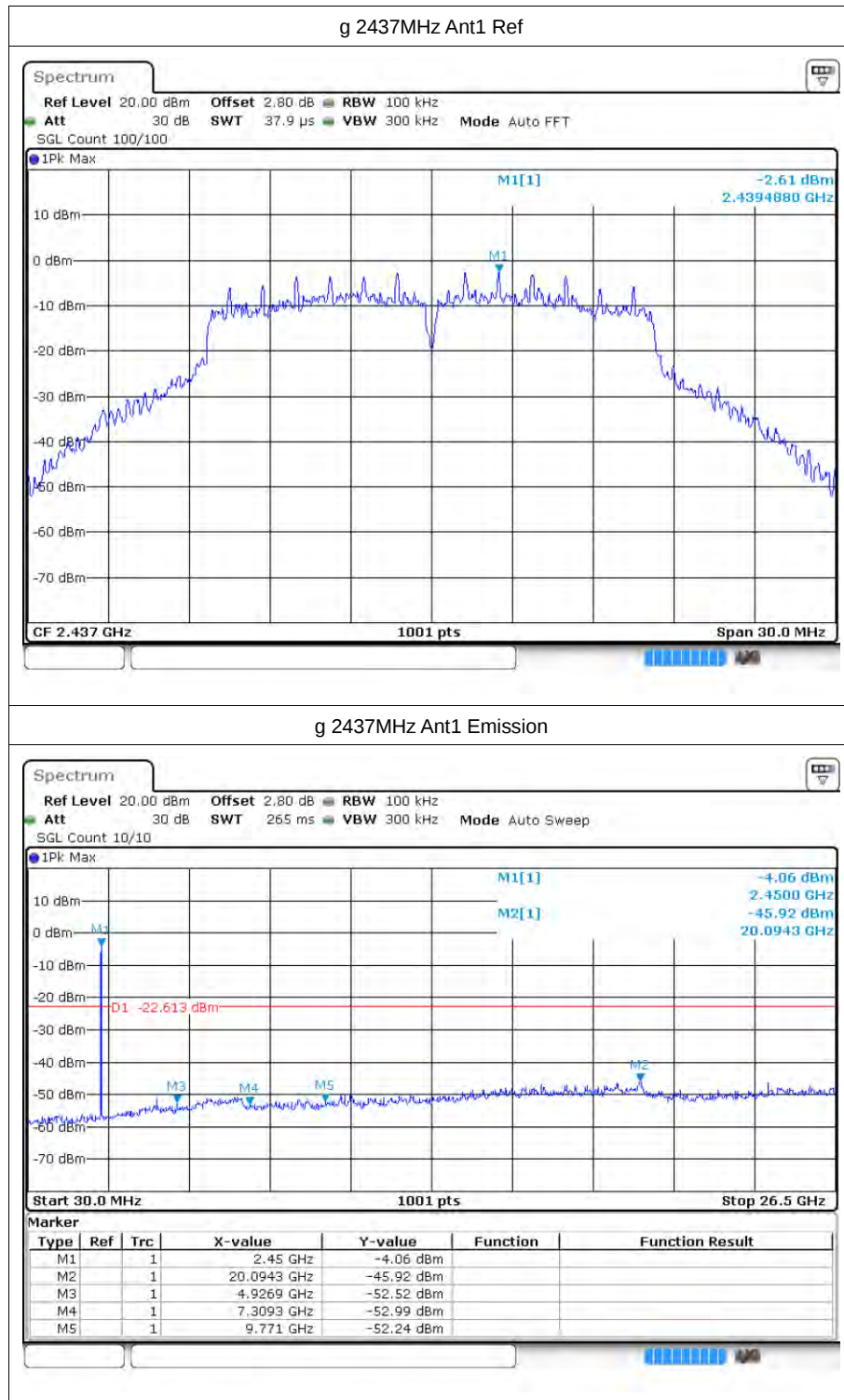
6.2 Test Graphs

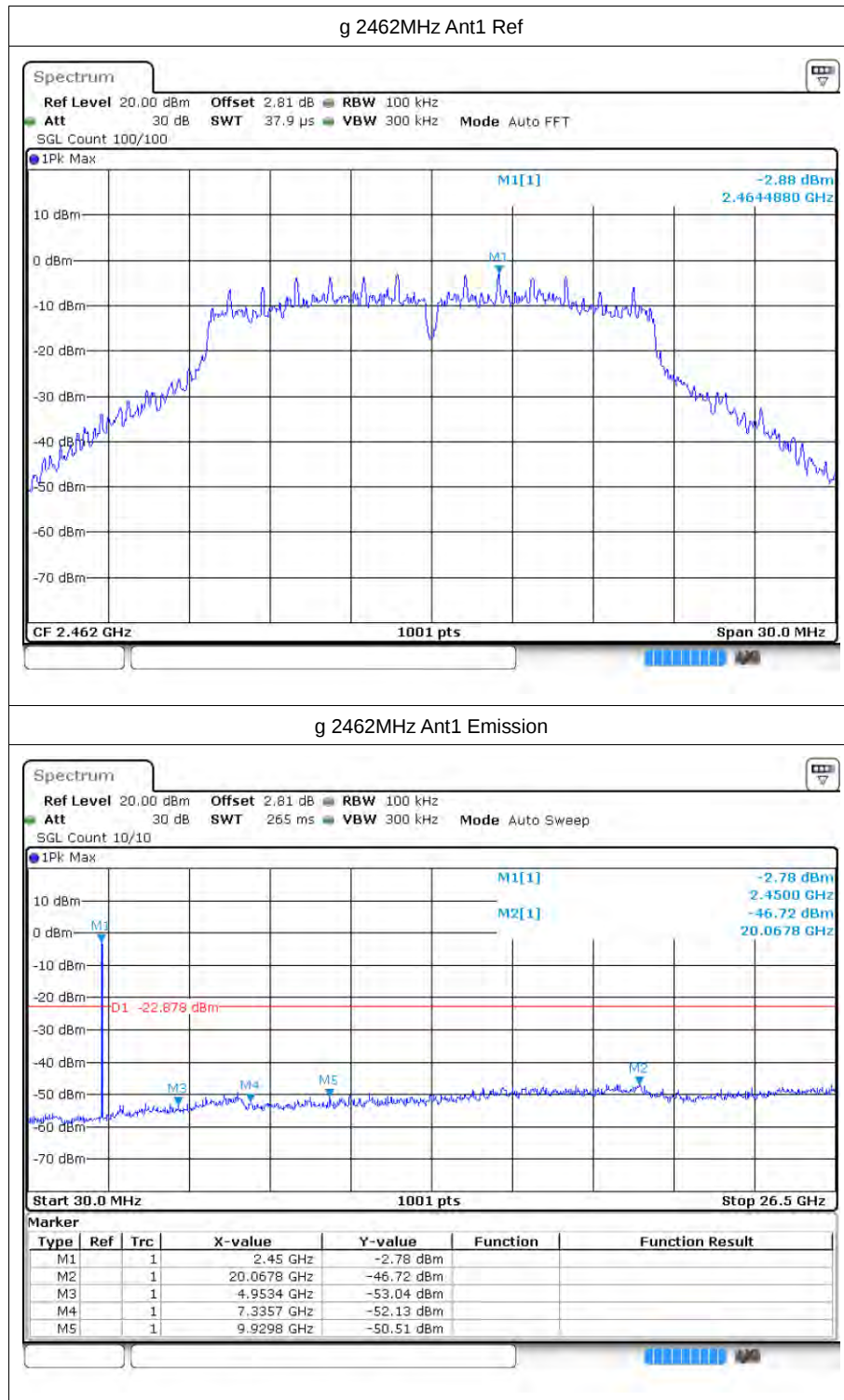


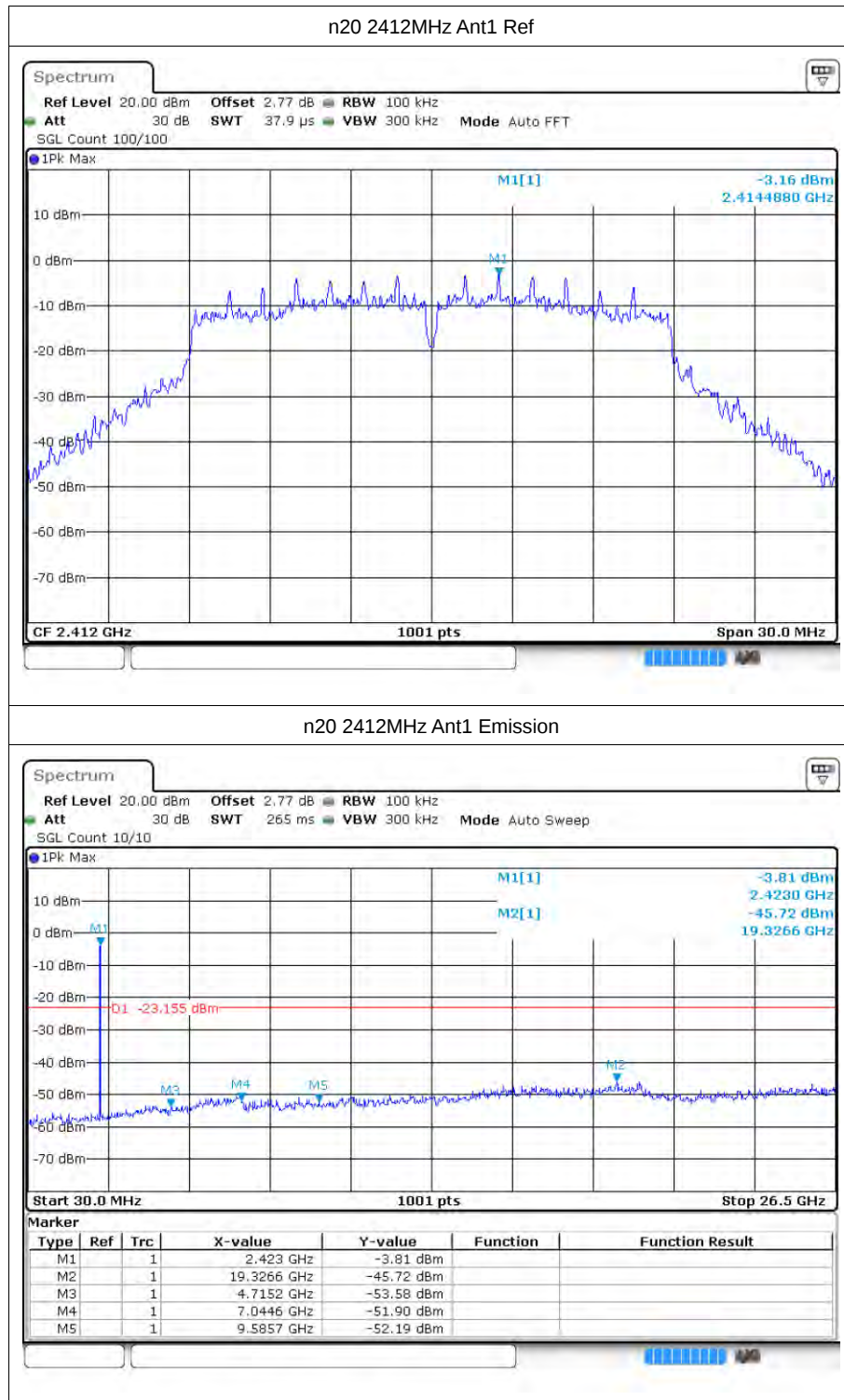


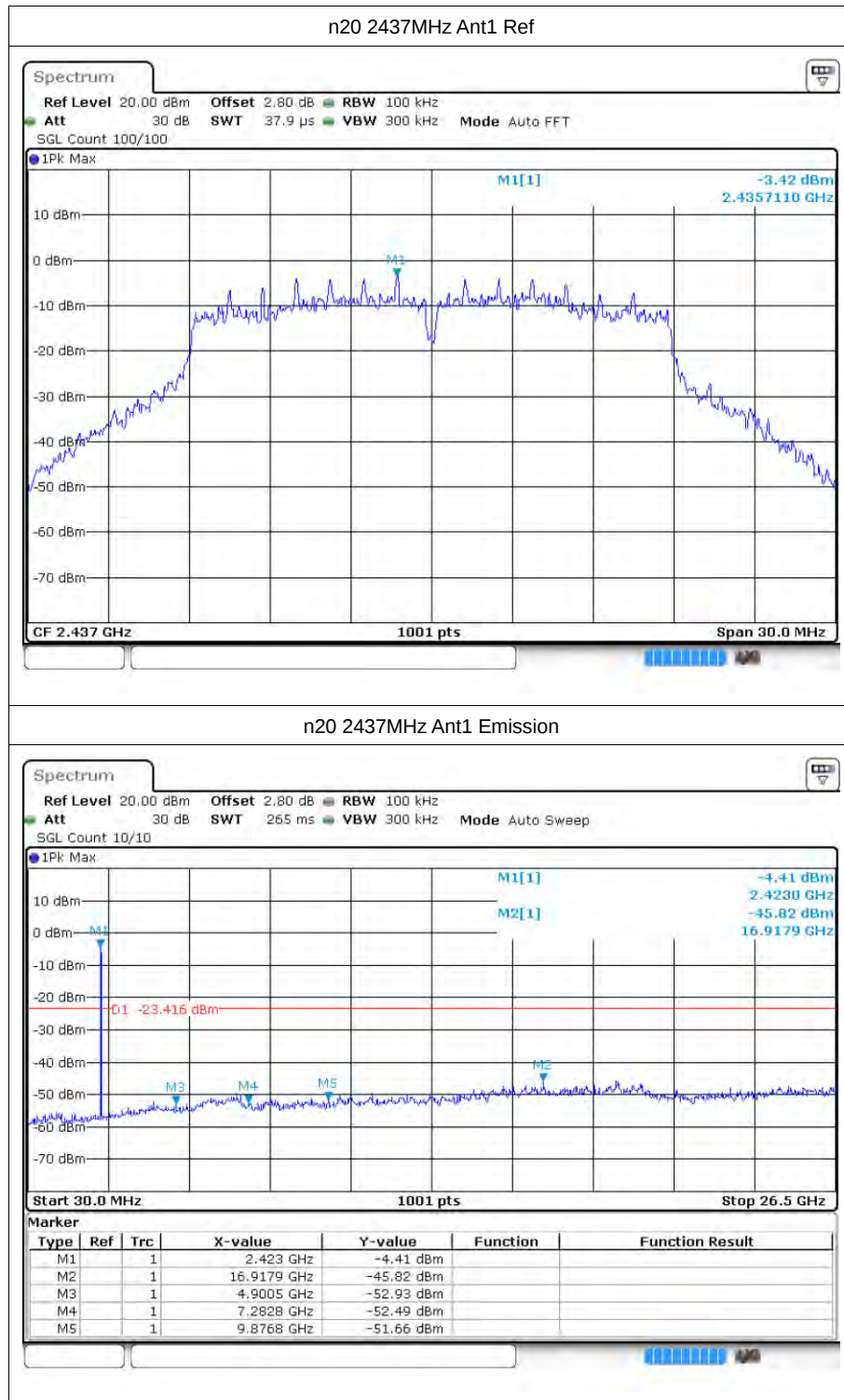


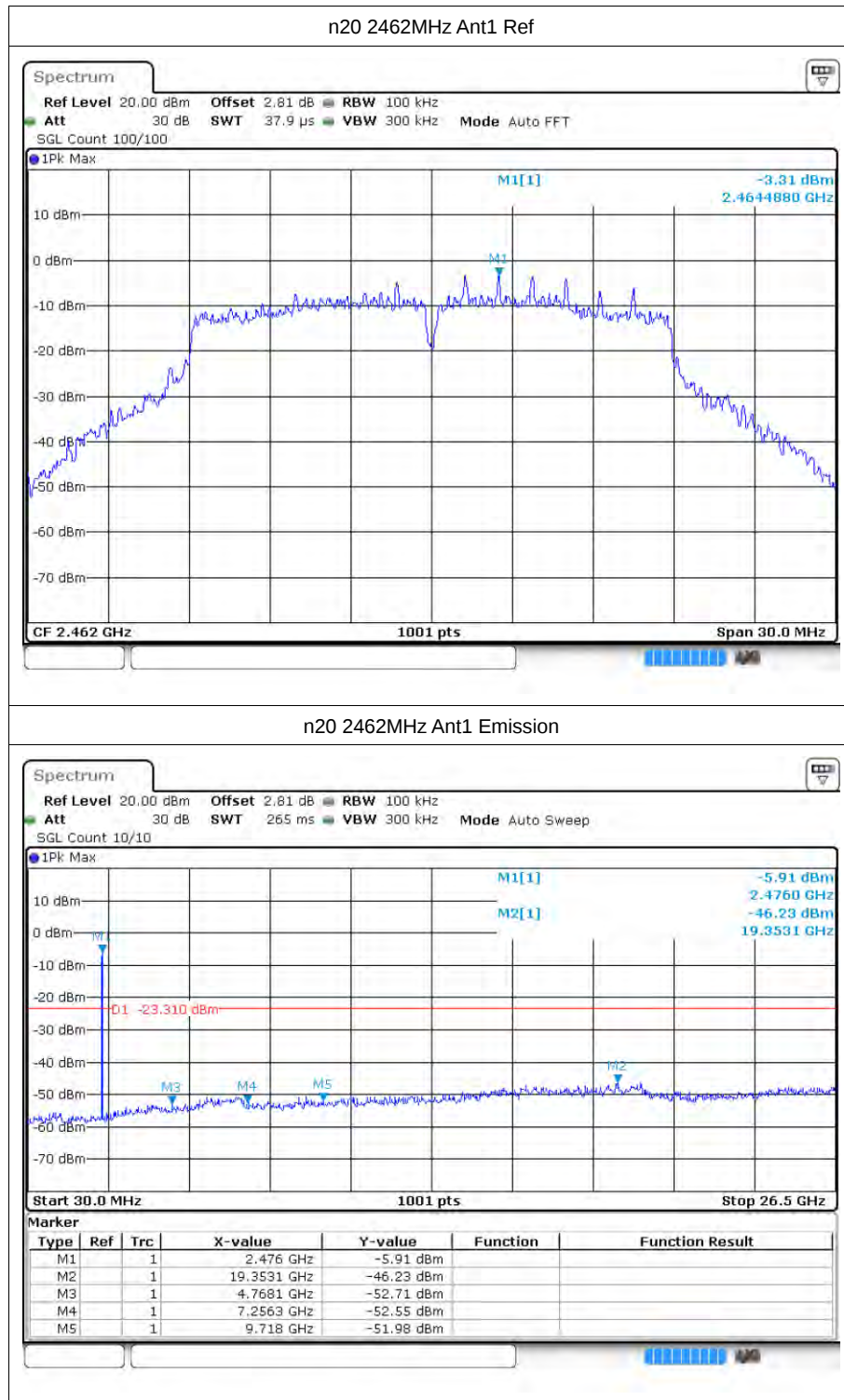


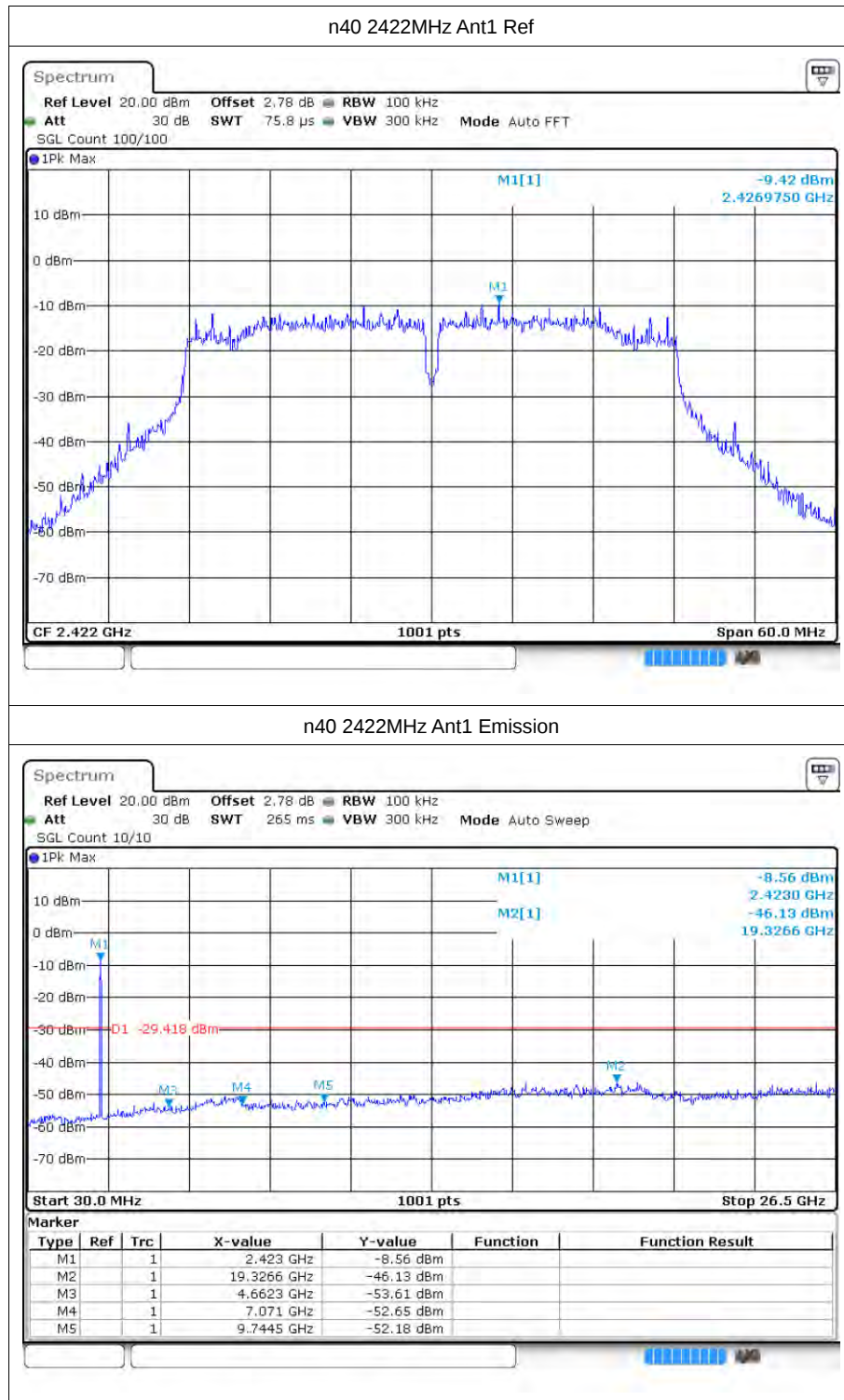


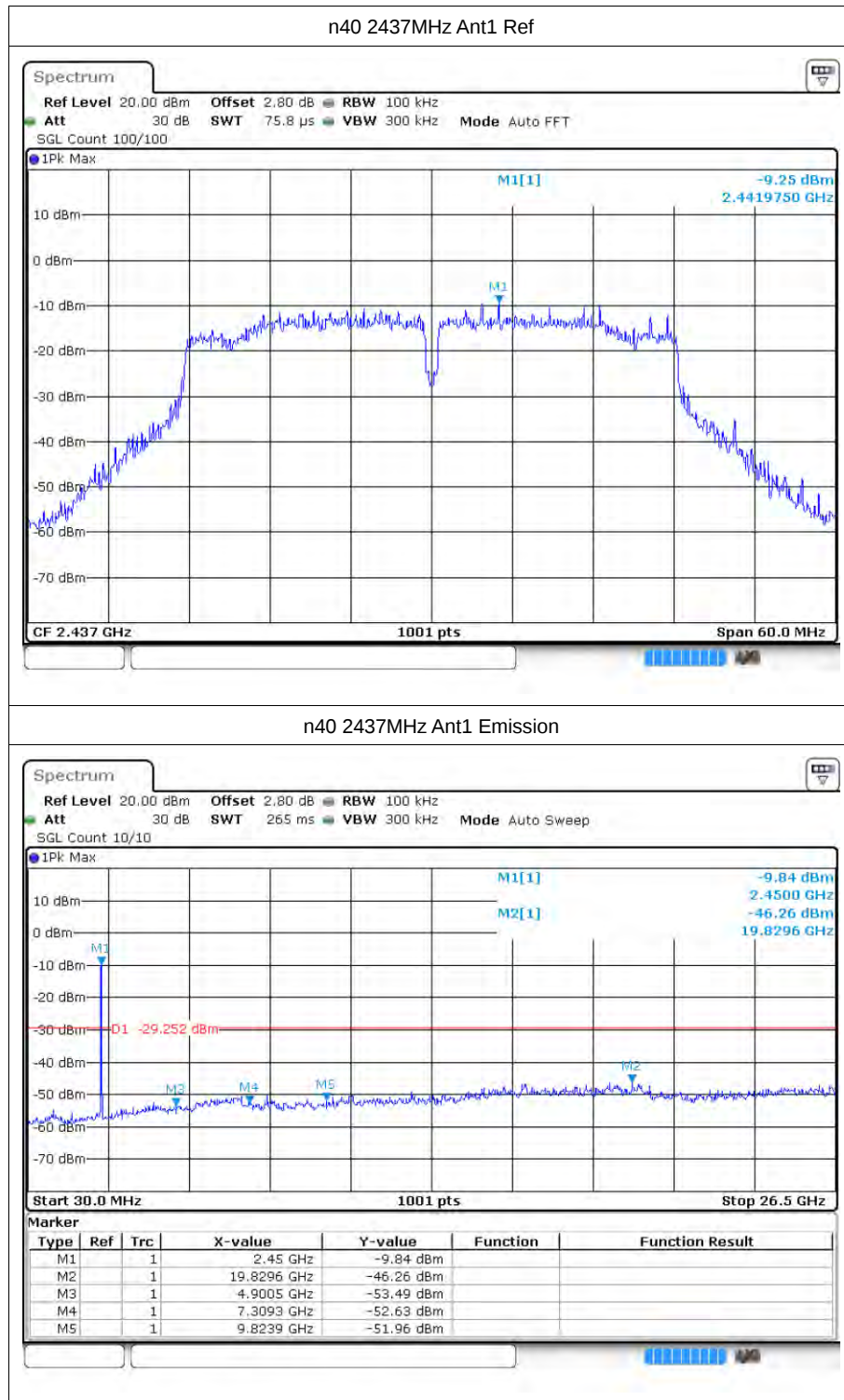


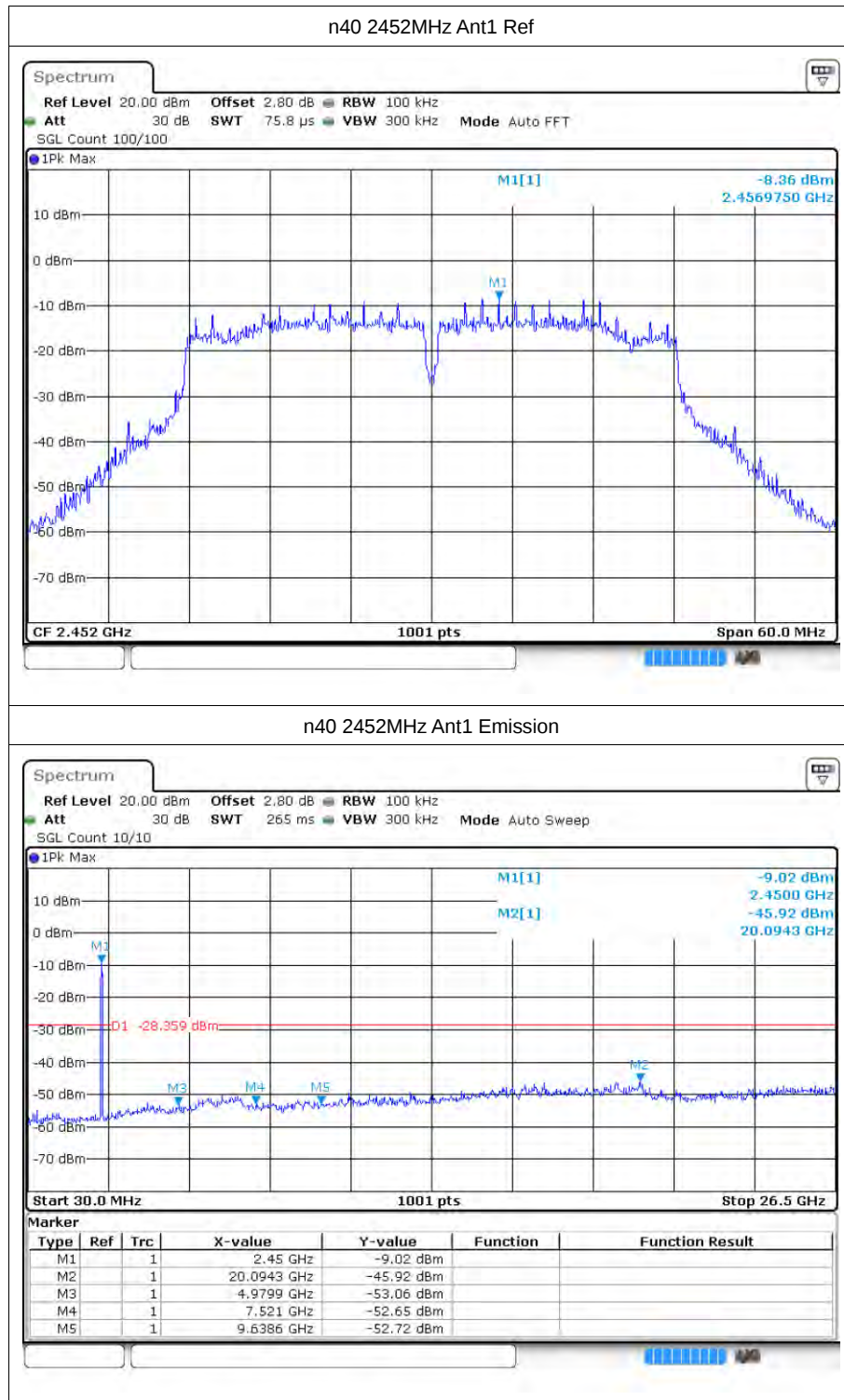














7 Restrict Band

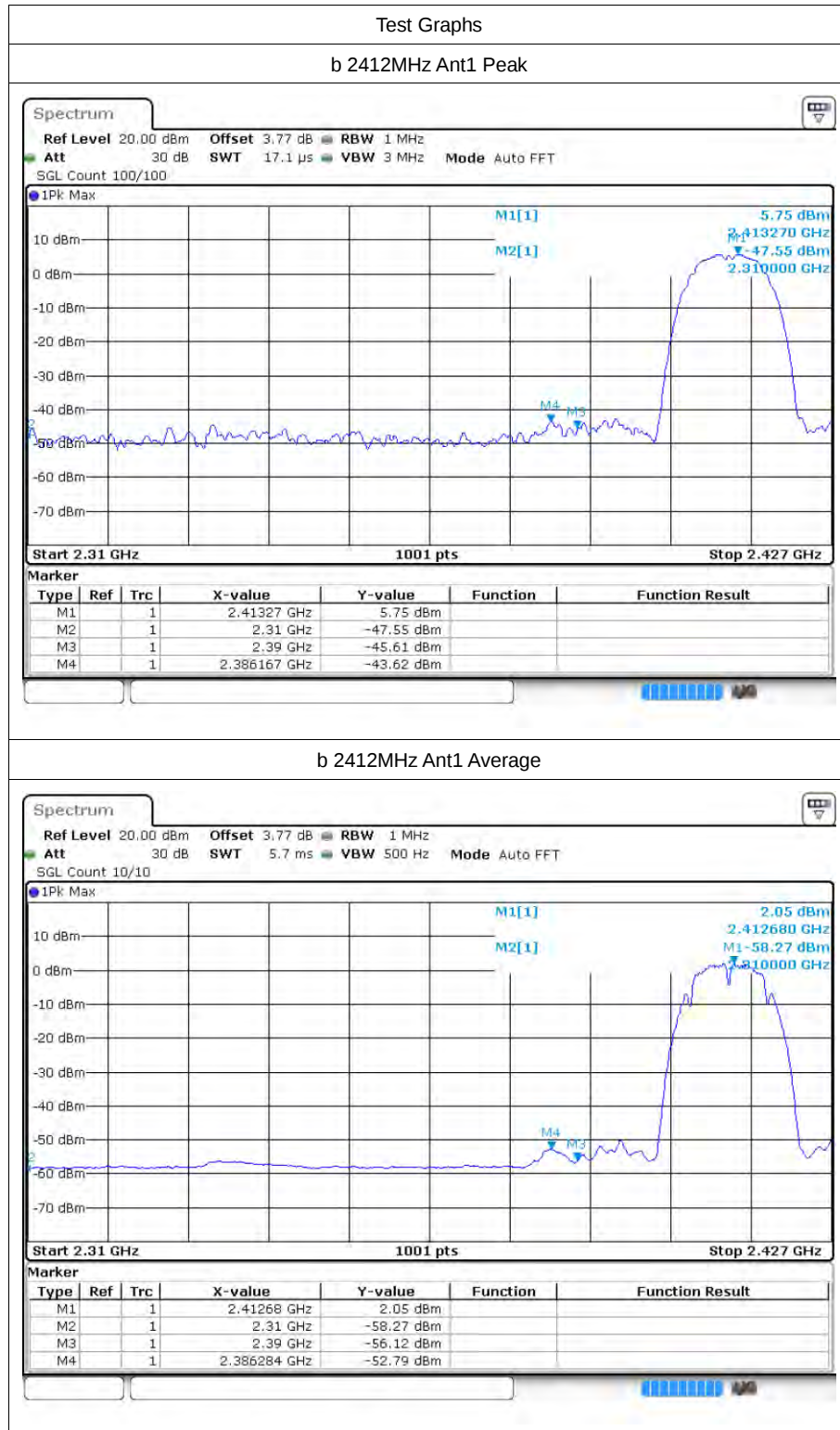
7.1 Test Result

Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
b	2412	Ant1	2310	-47.54	2	49.72	Peak	74	Pass
b	2412	Ant1	2310	-58.26	2	39	Average	54	Pass
b	2412	Ant1	2386.167	-43.62	2	53.64	Peak	74	Pass
b	2412	Ant1	2386.284	-52.78	2	44.48	Average	54	Pass
b	2412	Ant1	2390	-45.6	2	51.66	Peak	74	Pass
b	2412	Ant1	2390	-56.11	2	41.15	Average	54	Pass
b	2462	Ant1	2483.5	-47.02	2	50.24	Peak	74	50.24
b	2462	Ant1	2483.5	-57.52	2	39.74	Average	54	Pass
b	2462	Ant1	2483.888	-45.92	2	51.34	Peak	74	Pass
b	2462	Ant1	2488.552	-56.85	2	40.41	Average	54	Pass
b	2462	Ant1	2500	-48.22	2	49.04	Peak	74	Pass
b	2462	Ant1	2500	-57.58	2	39.68	Average	54	Pass
g	2412	Ant1	2310	-48.34	2	48.92	Peak	74	Pass
g	2412	Ant1	2310	-56.84	2	40.42	Average	54	Pass
g	2412	Ant1	2337.378	-44.67	2	52.59	Peak	74	Pass
g	2412	Ant1	2337.261	-55.01	2	42.25	Average	54	Pass
g	2412	Ant1	2390	-49.85	2	51.66	Peak	74	Pass
g	2412	Ant1	2390	-56.93	2	40.33	Average	54	Pass
g	2462	Ant1	2483.5	-48.22	2	49.04	Peak	74	Pass
g	2462	Ant1	2483.5	-56.11	2	41.15	Average	54	Pass
g	2462	Ant1	2483.888	-46.13	2	51.13	Peak	74	Pass
g	2462	Ant1	2492.262	-55.39	2	41.87	Average	54	Pass
g	2462	Ant1	2500	-48.55	2	49.04	Peak	74	Pass
g	2462	Ant1	2500	-56.54	2	40.72	Average	54	Pass
n20	2412	Ant1	2310	-49.53	2	47.73	Peak	74	Pass
n20	2412	Ant1	2310	-56.72	2	40.54	Average	54	Pass
n20	2412	Ant1	2337.729	-45.68	2	51.58	Peak	74	Pass
n20	2412	Ant1	2338.548	-54.99	2	42.27	Average	54	Pass
n20	2412	Ant1	2390	-49.25	2	48.01	Peak	74	Pass
n20	2412	Ant1	2390	-56.7	2	40.56	Average	54	Pass
n20	2462	Ant1	2483.5	-49.26	2	48	Peak	74	Pass
n20	2462	Ant1	2483.5	-56.6	2	40.66	Average	54	Pass
n20	2462	Ant1	2489.877	-45.45	2	51.81	Peak	74	Pass
n20	2462	Ant1	2500	-55.79	2	41.47	Average	54	Pass

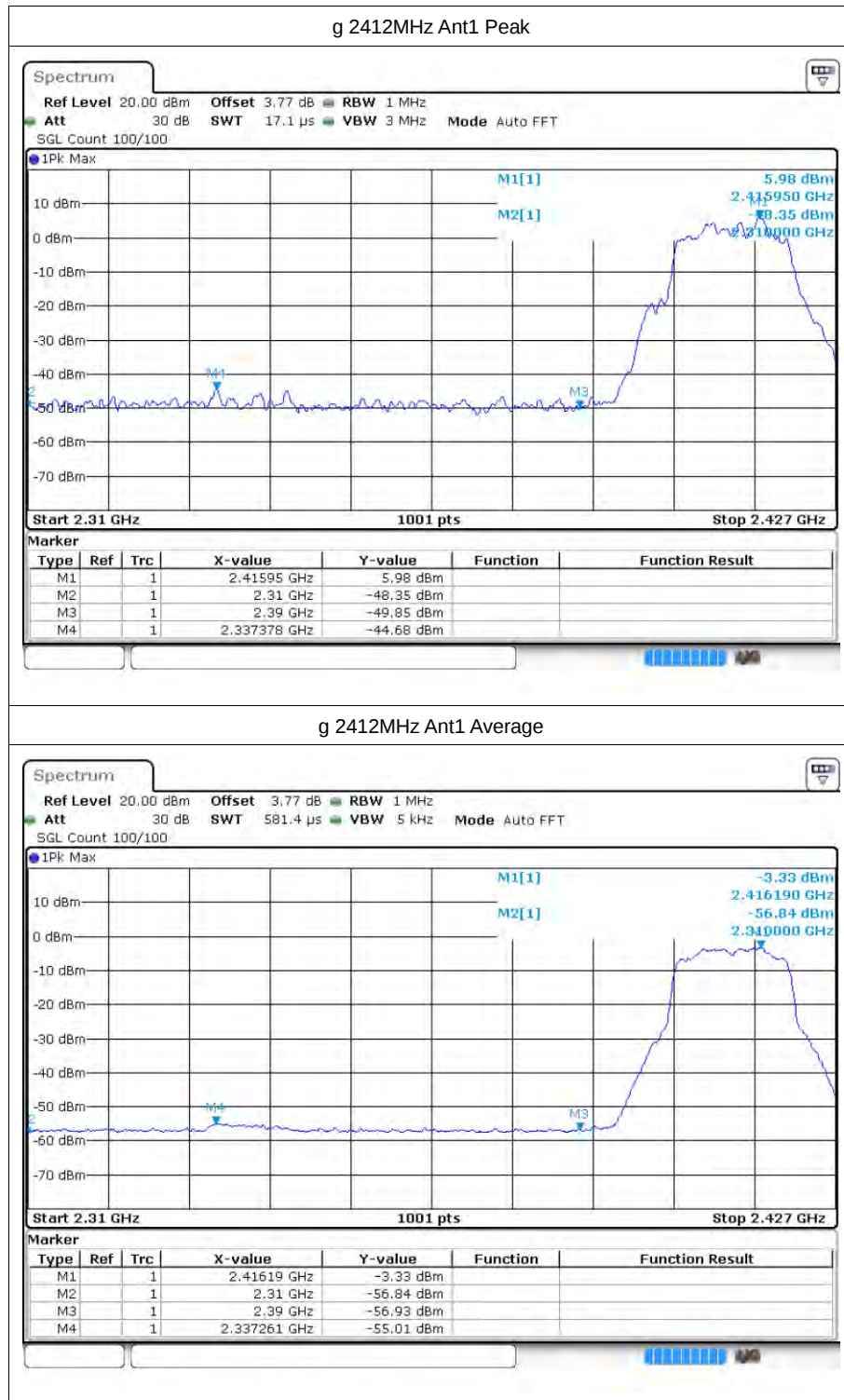


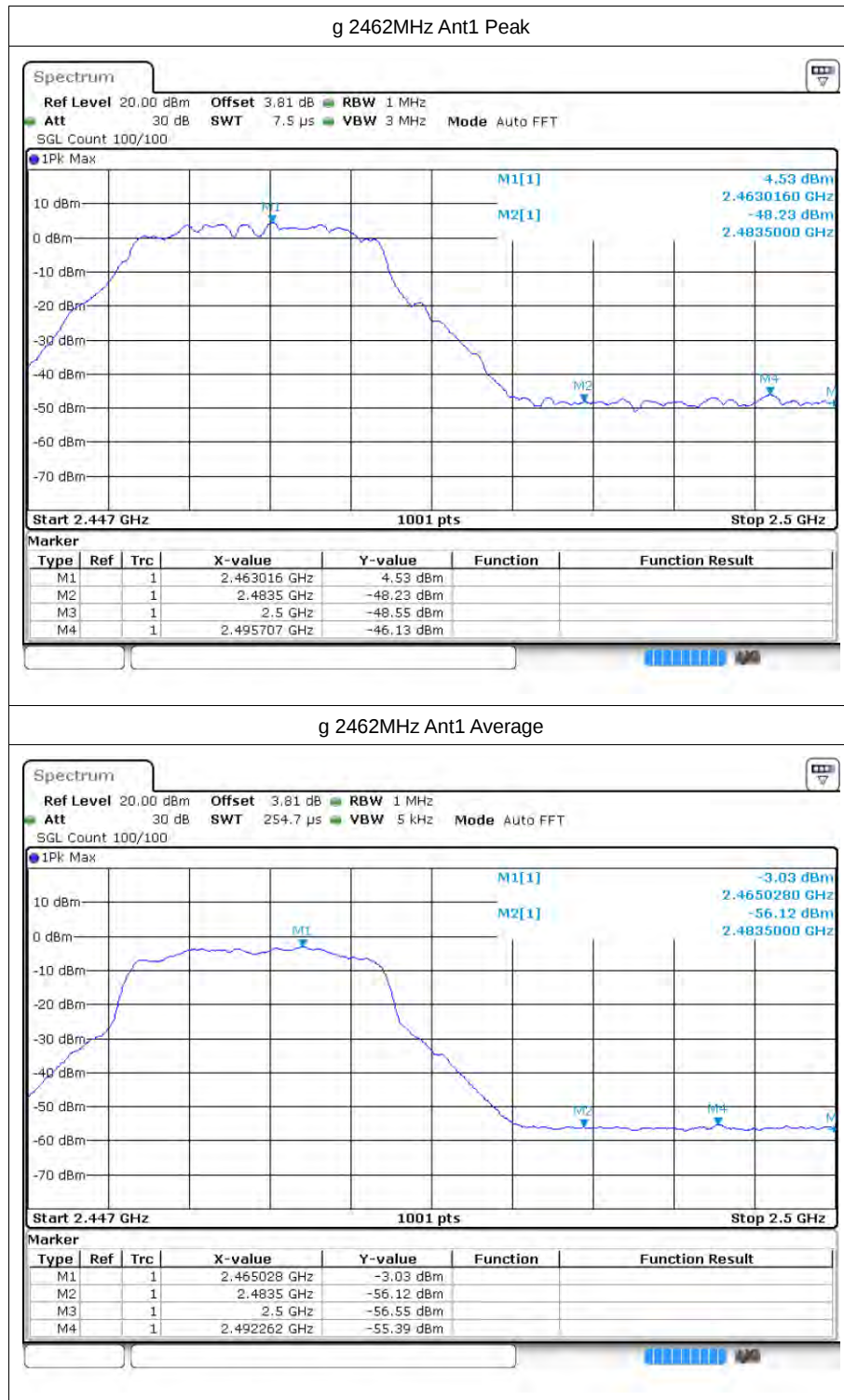
n20	2462	Ant1	2500	-45.8	2	51.46	Peak	74	Pass
n20	2462	Ant1	2500	-55.79	2	41.47	Average	54	Pass
n40	2422	Ant1	2310	-47.46	2	49.8	Peak	74	Pass
n40	2422	Ant1	2310	-56.61	2	40.65	Average	54	Pass
n40	2422	Ant1	2340.104	-44.76	2	52.5	Peak	74	Pass
n40	2422	Ant1	2343.796	-54.07	2	43.19	Average	54	Pass
n40	2422	Ant1	2390	-49.22	2	48.04	Peak	74	Pass
n40	2422	Ant1	2390	-57.07	2	40.19	Average	54	Pass
n40	2452	Ant1	2483.5	-48.25	2	49.01	Peak	74	Pass
n40	2452	Ant1	2483.5	-55.69	2	41.57	Average	54	Pass
n40	2452	Ant1	2485.414	-45.37	2	51.89	Peak	74	Pass
n40	2452	Ant1	2488.846	-55.46	2	41.8	Average	54	Pass
n40	2452	Ant1	2500	-49.18	2	48.08	Peak	74	Pass
n40	2452	Ant1	2500	-56.02	2	41.24	Average	54	Pass

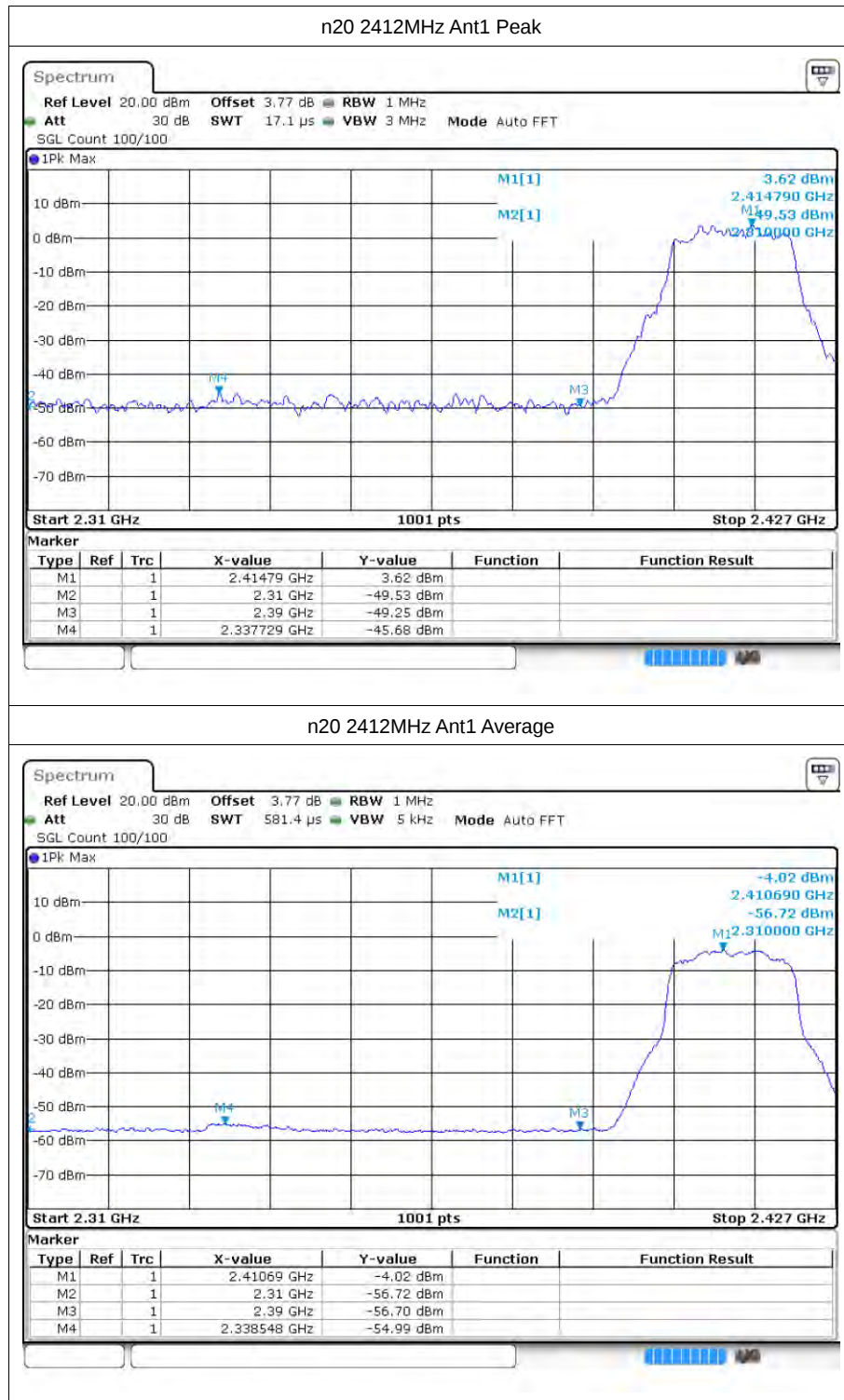
7.2 Test Graphs

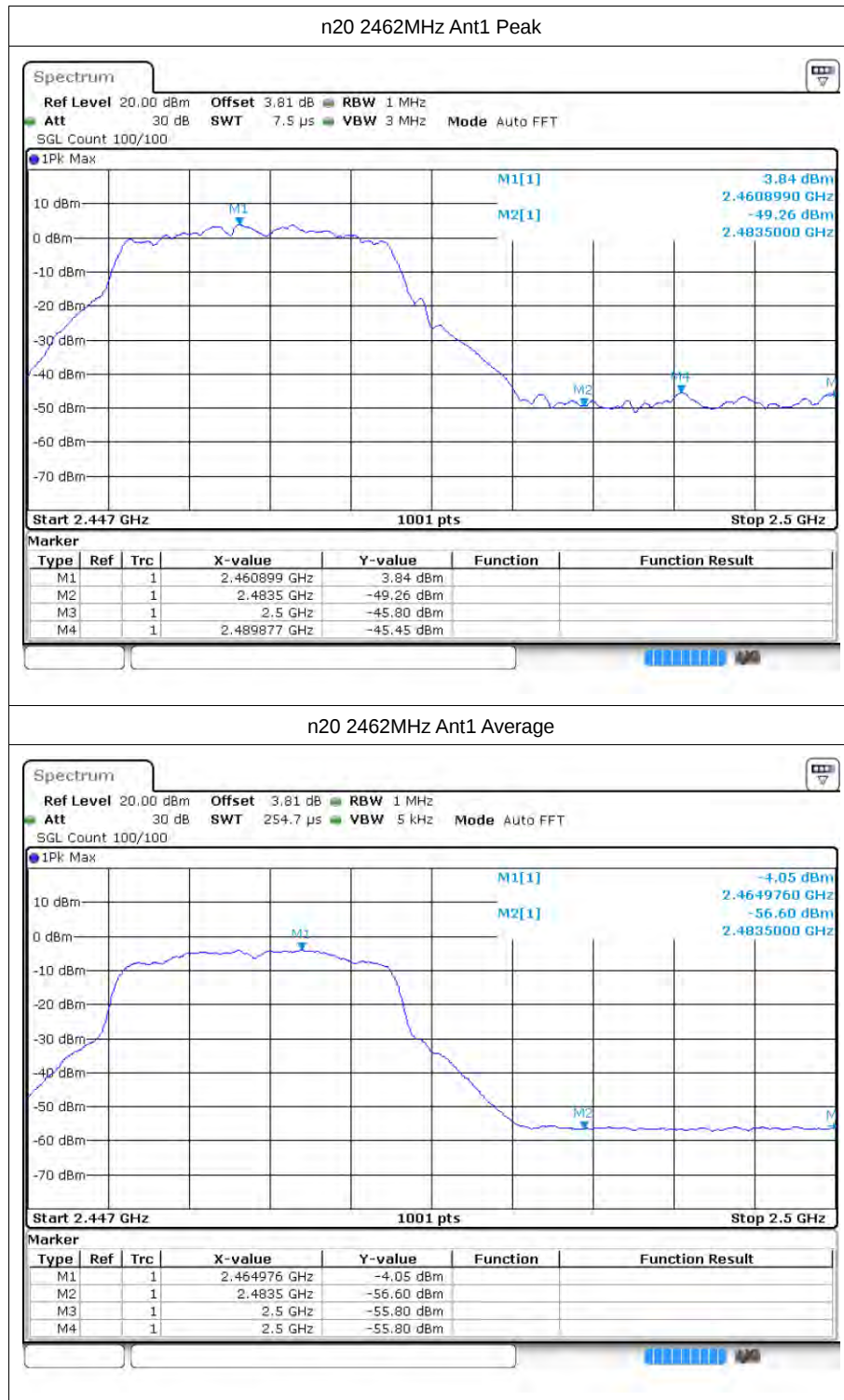


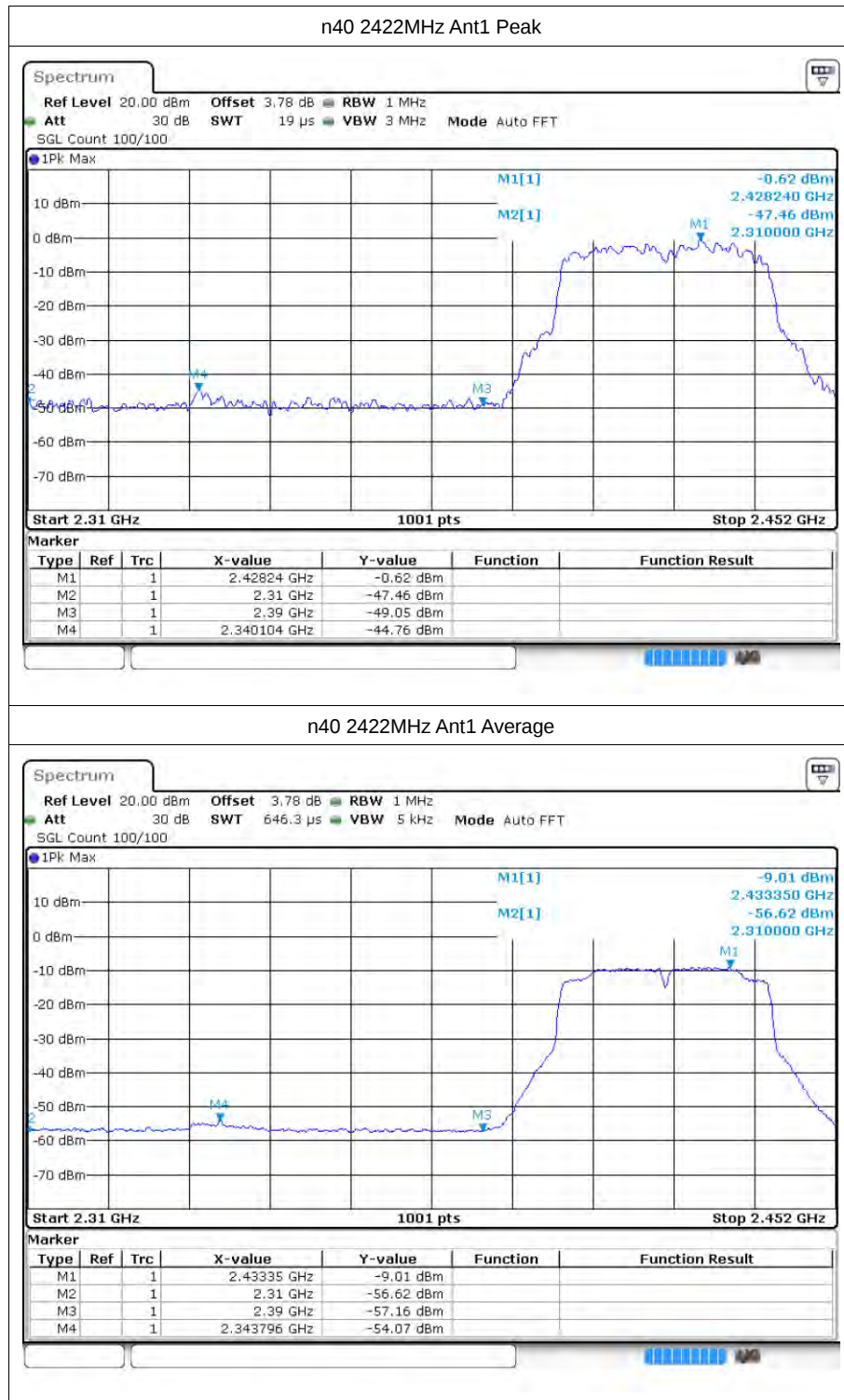














---The End---