



Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Smart Camera

Trade Mark: Owltron

Test Model: R1

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	52.4%
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 Occupied Channel Bandwidth	18
4.1 Test Result	18
4.2 Test Graphs	19
5 Maximum Power Spectral Density Level	25
5.1 Test Result	25
5.2 Test Graphs	26
6 Band Edge	32
6.1 Test Result	32
6.2 Test Graphs	33
7 Conducted RF Spurious Emission	41
7.1 Test Result	41
7.2 Test Graphs	42
8 Restrict Band	54
8.1 Test Result	54
8.2 Test Graphs	56



1 Duty Cycle

1.1 Test Result

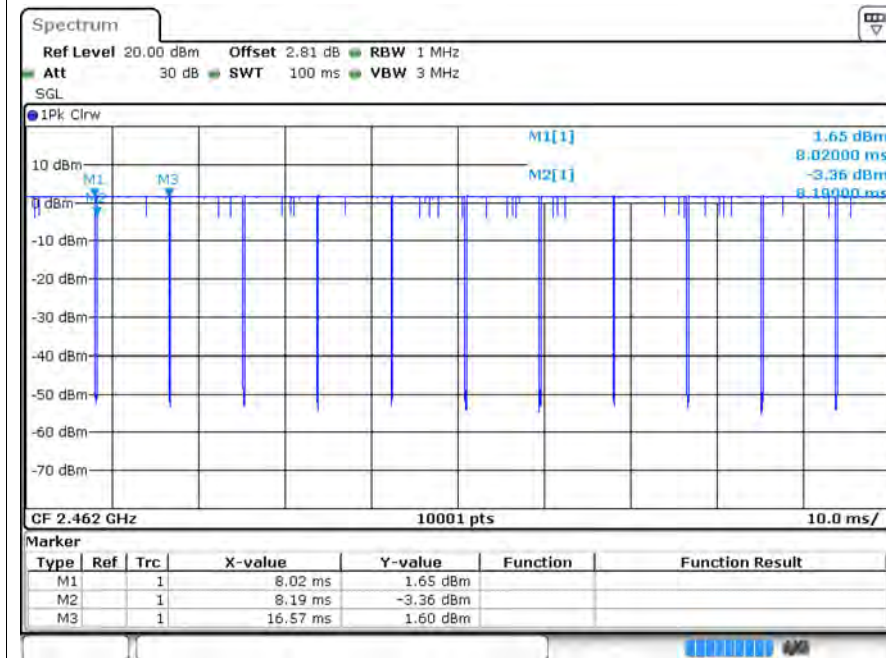
Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	1/T (kHz)
b	2412	Ant1	98.02	0.12
b	2437	Ant1	97.77	0.12
b	2462	Ant1	98.01	0.12
g	2412	Ant1	88.8	0.72
g	2437	Ant1	88.68	0.72
g	2462	Ant1	89.17	0.72
n20	2412	Ant1	87.51	0.85
n20	2437	Ant1	87.3	0.85
n20	2462	Ant1	87.26	0.85
n40	2422	Ant1	76.92	1.69
n40	2437	Ant1	77.05	1.72
n40	2452	Ant1	76.28	1.72

1.2 Test Graphs

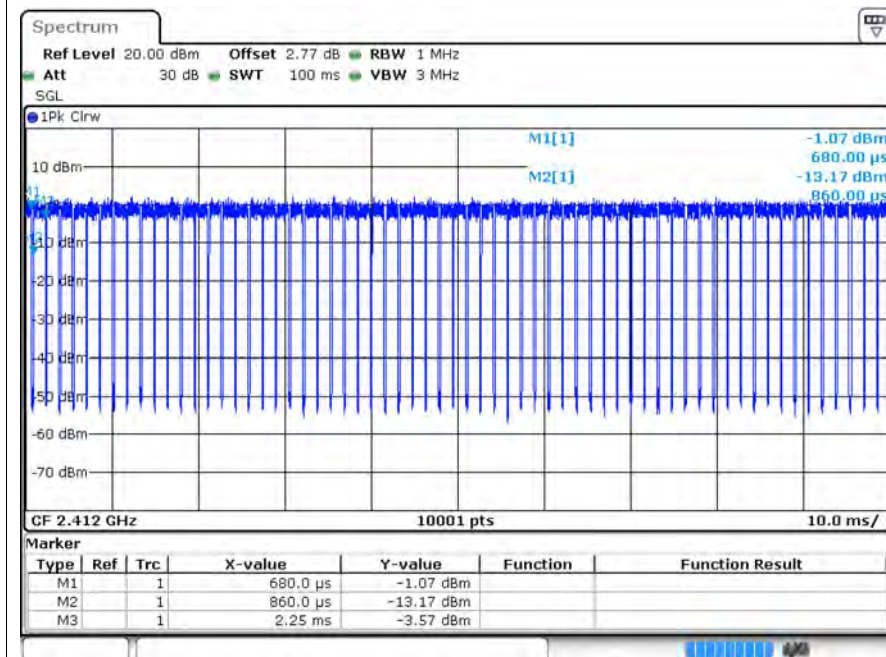


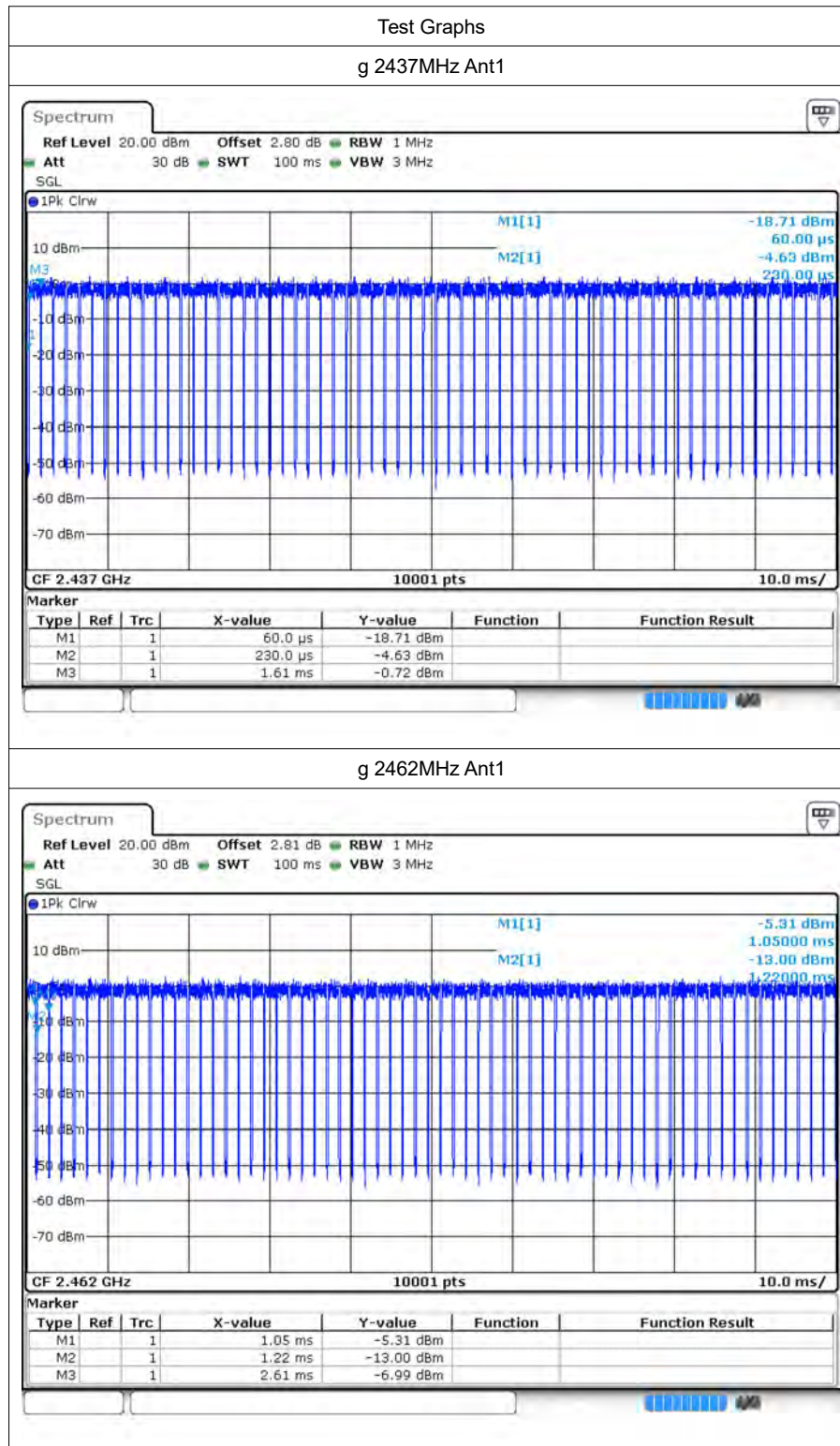
Test Graphs

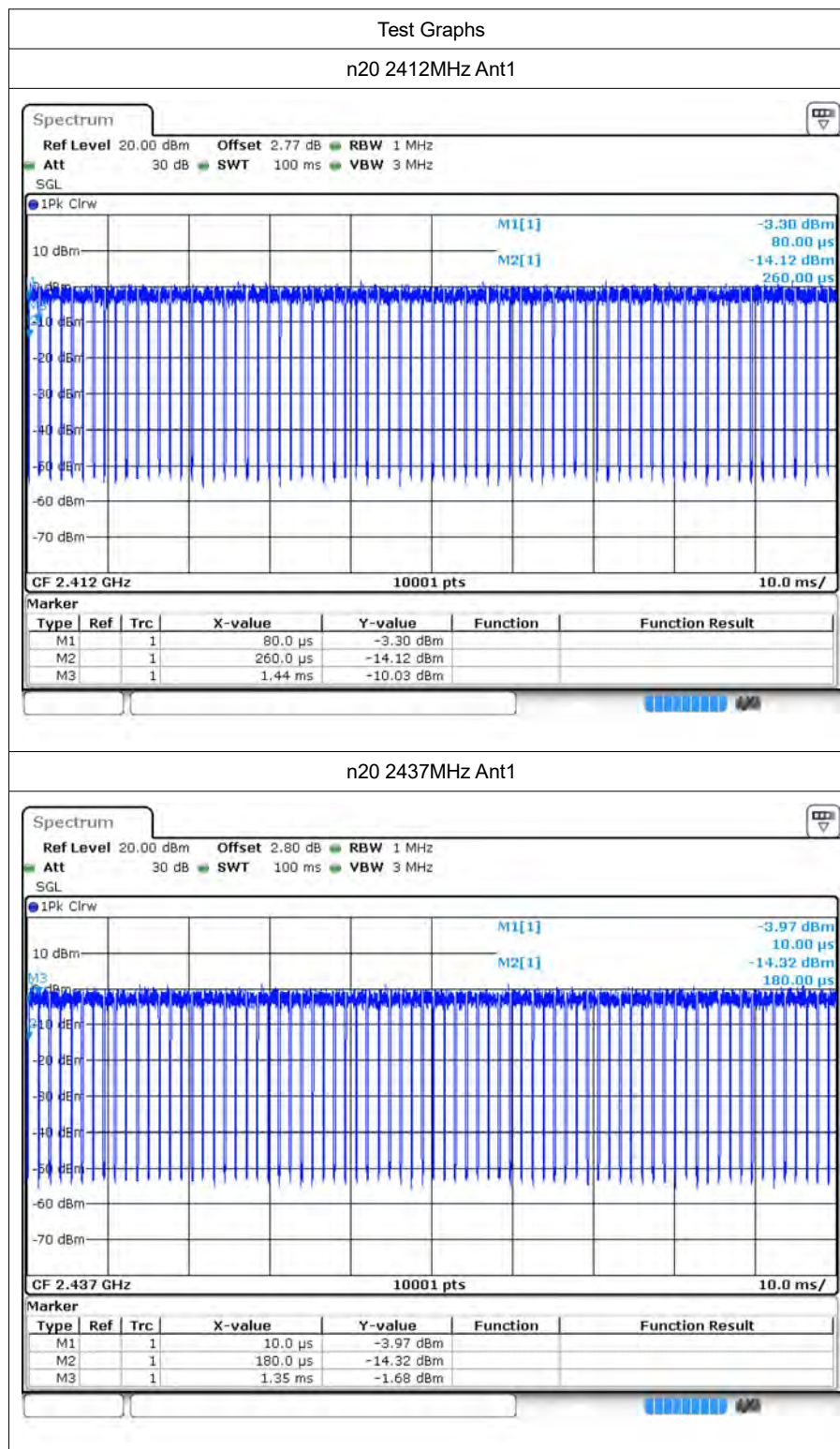
b 2462MHz Ant1

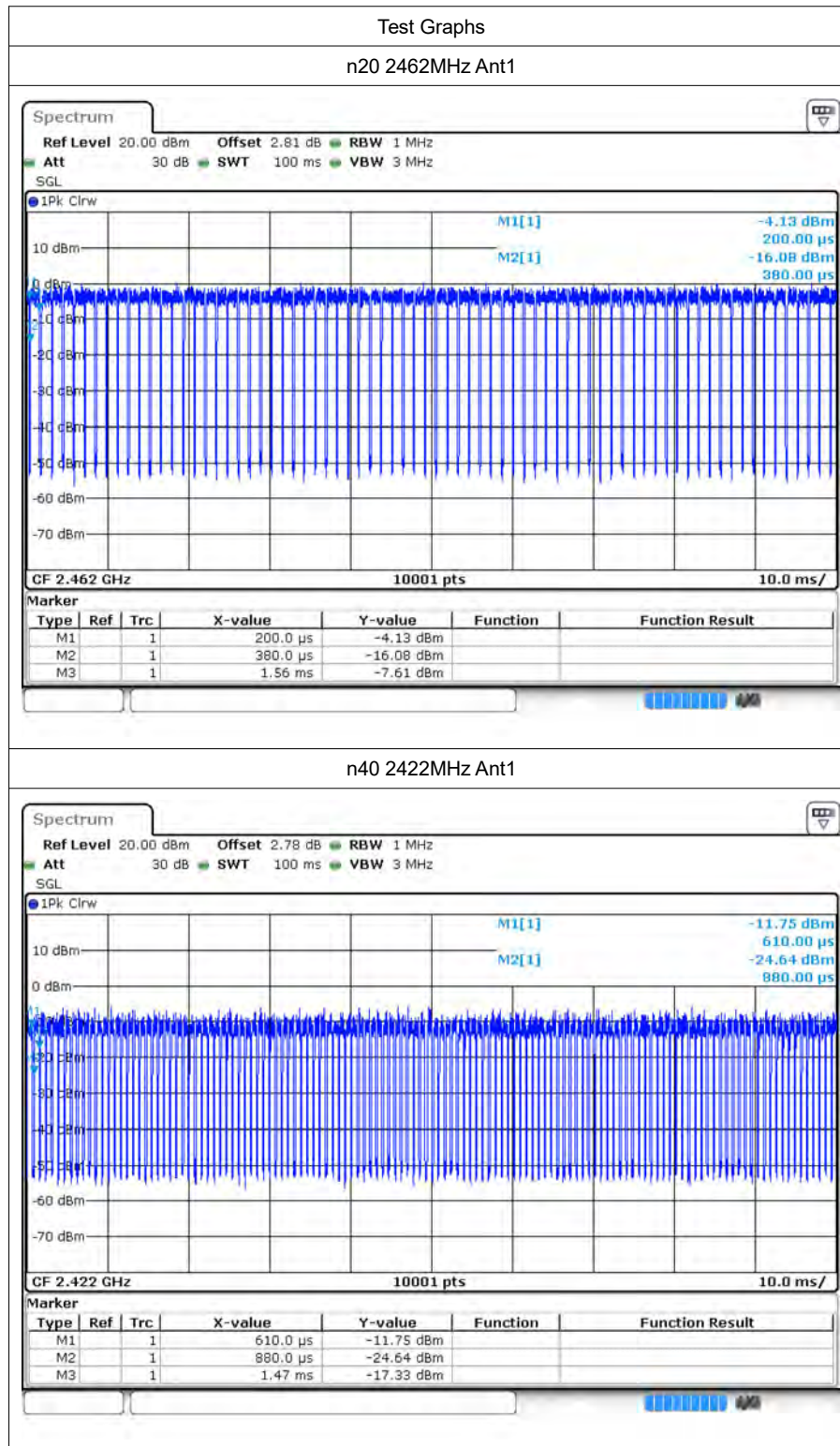


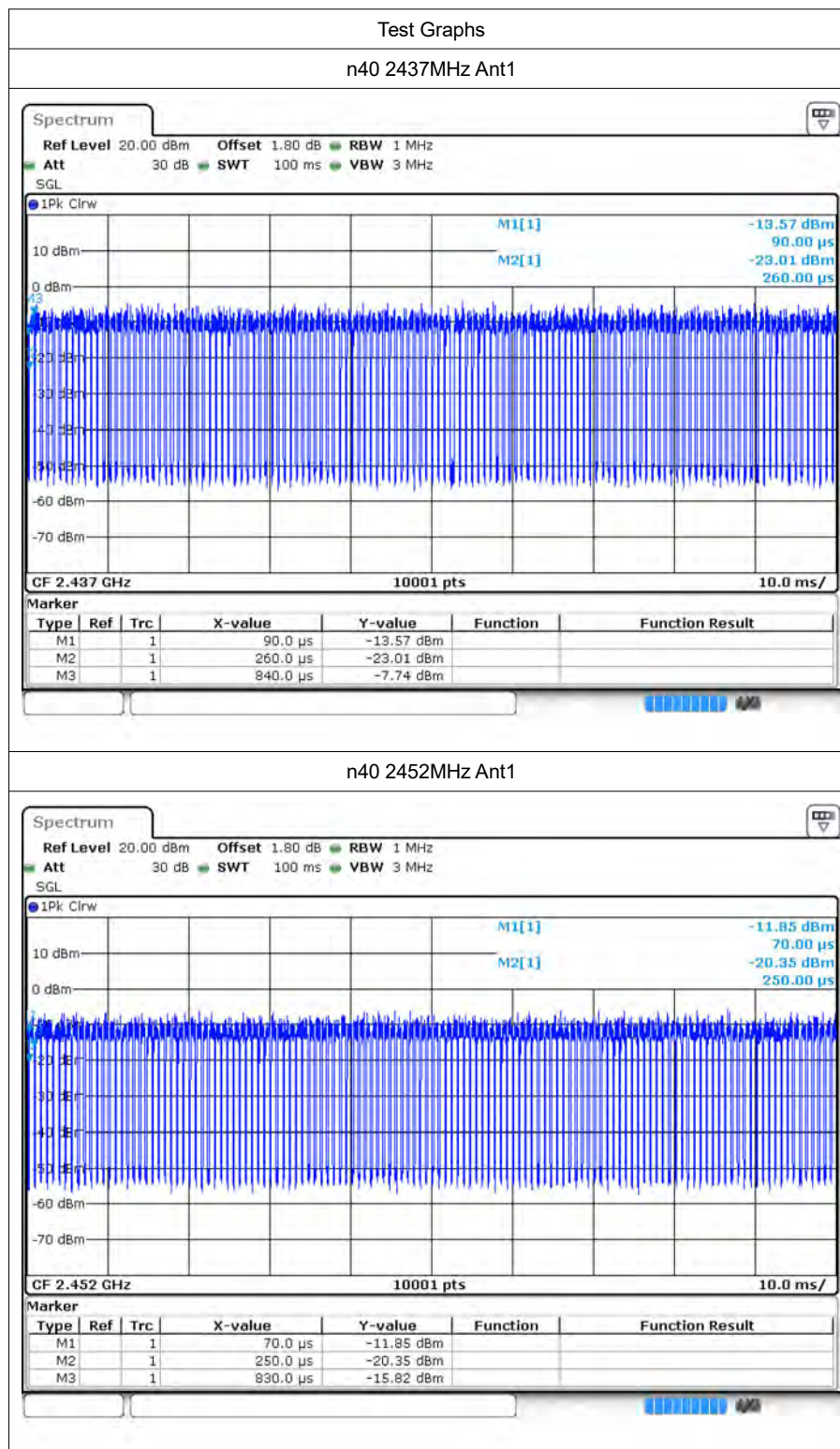
g 2412MHz Ant1











2 Maximum Conducted Output Power

2.1 Test Result

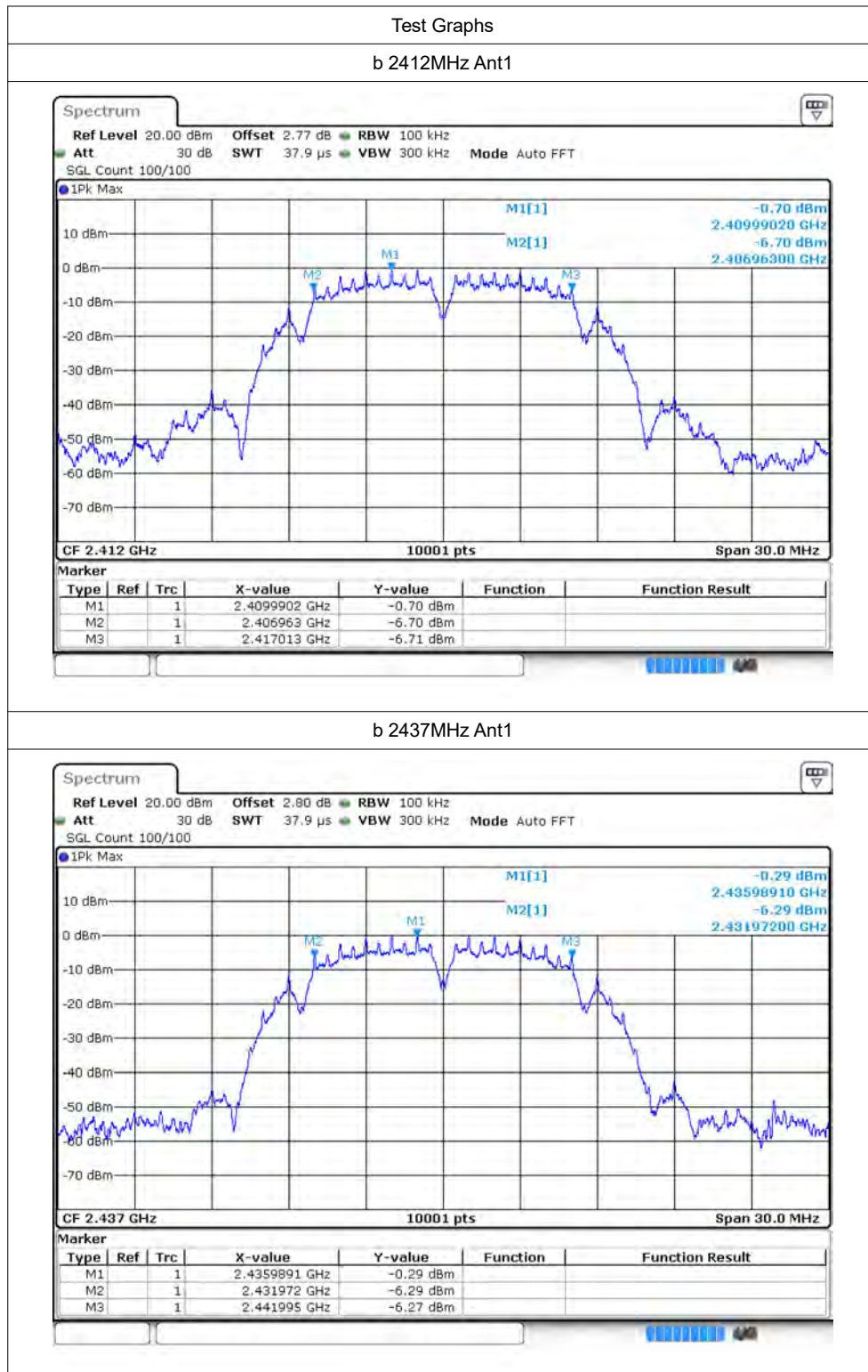
Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	9.93	≤30	Pass
b	2437	Ant1	10.06	≤30	Pass
b	2462	Ant1	9.62	≤30	Pass
g	2412	Ant1	9.59	≤30	Pass
g	2437	Ant1	9.62	≤30	Pass
g	2462	Ant1	10.07	≤30	Pass
n20	2412	Ant1	8.6	≤30	Pass
n20	2437	Ant1	7.96	≤30	Pass
n20	2462	Ant1	7.61	≤30	Pass
n40	2422	Ant1	7.88	≤30	Pass
n40	2437	Ant1	8.27	≤30	Pass
n40	2452	Ant1	7.29	≤30	Pass

3 -6dB Bandwidth

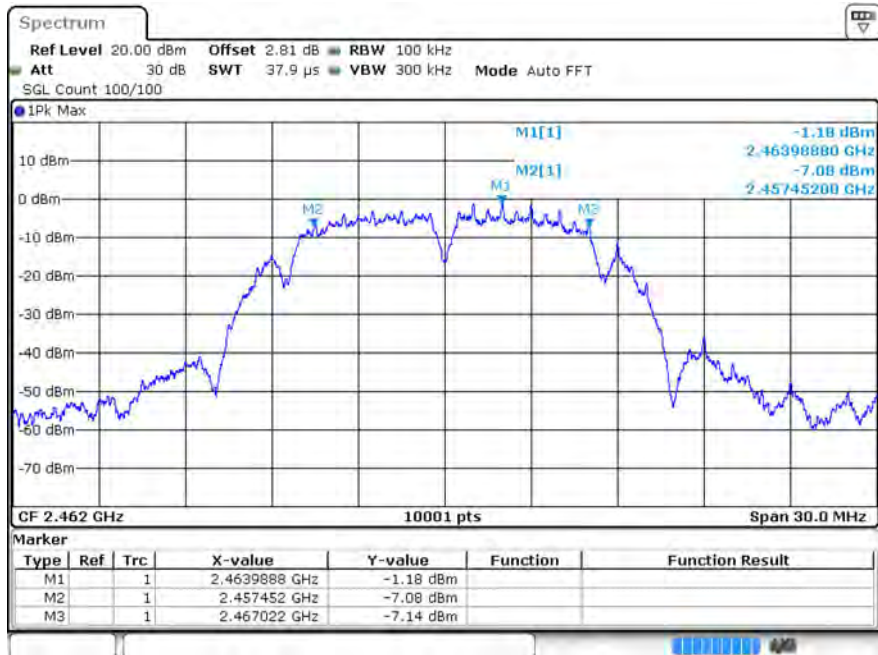
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	10.05	0.5	Pass
b	2437	Ant1	10.023	0.5	Pass
b	2462	Ant1	9.57	0.5	Pass
g	2412	Ant1	16.086	0.5	Pass
g	2437	Ant1	15.708	0.5	Pass
g	2462	Ant1	16.416	0.5	Pass
n20	2412	Ant1	16.845	0.5	Pass
n20	2437	Ant1	16.701	0.5	Pass
n20	2462	Ant1	17.679	0.5	Pass
n40	2422	Ant1	36.144	0.5	Pass
n40	2437	Ant1	33.918	0.5	Pass
n40	2452	Ant1	35.622	0.5	Pass

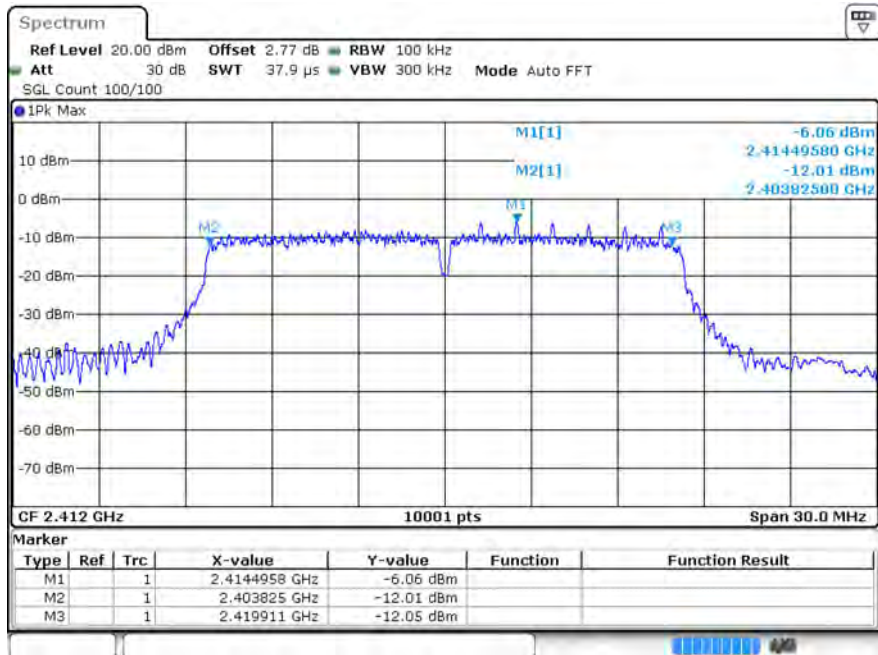
3.2 Test Graphs



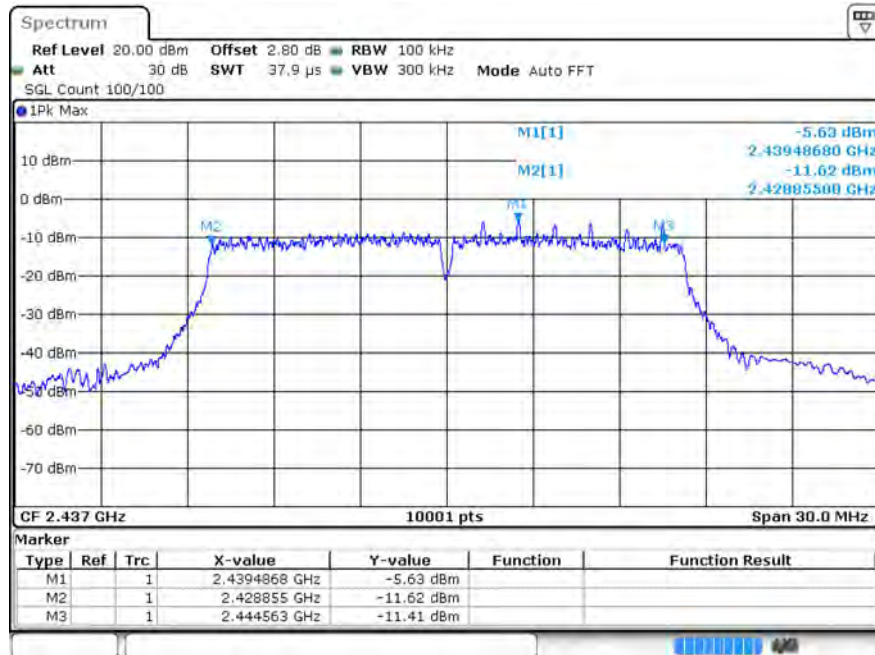
b 2462MHz Ant1



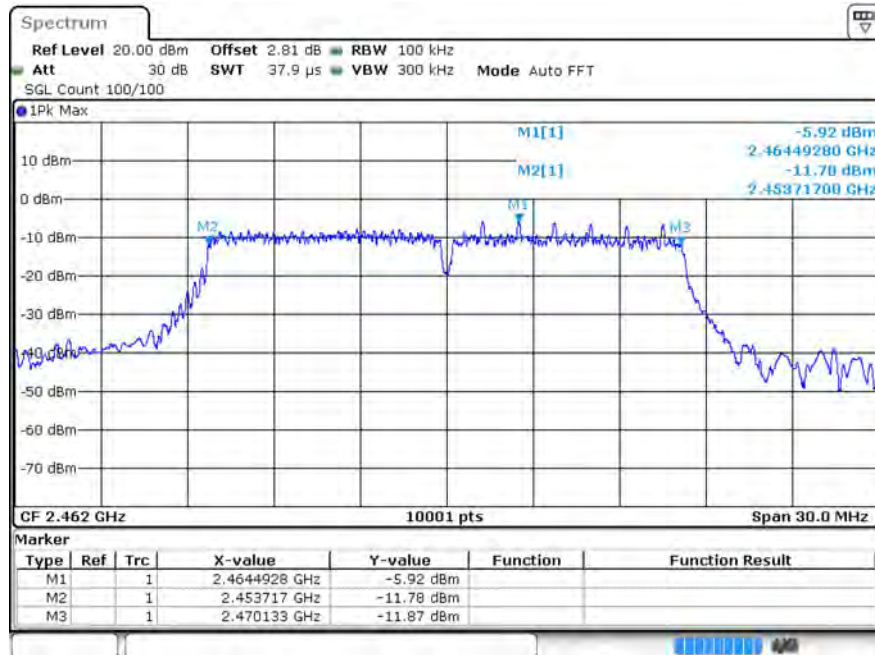
g 2412MHz Ant1



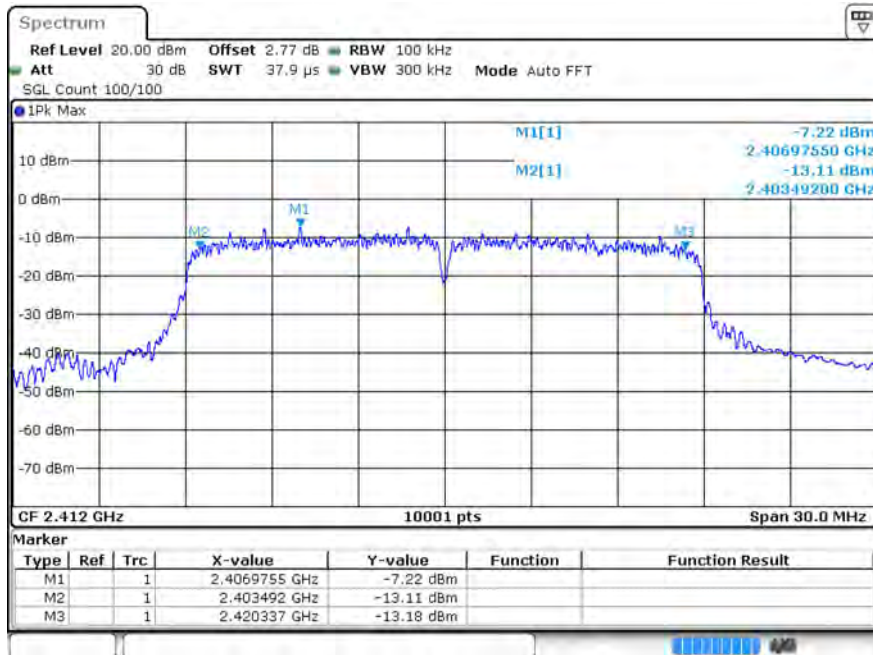
g 2437MHz Ant1



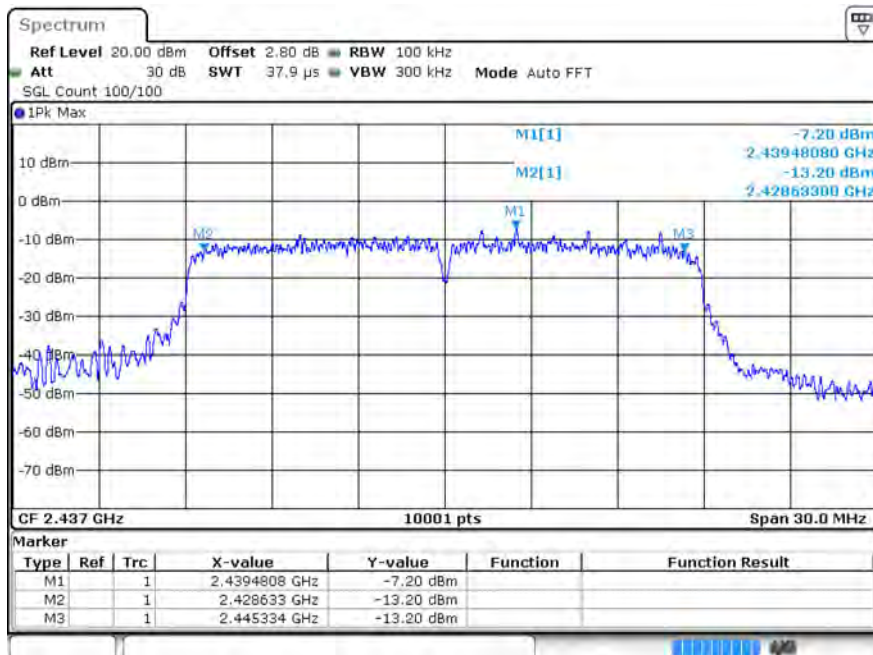
g 2462MHz Ant1



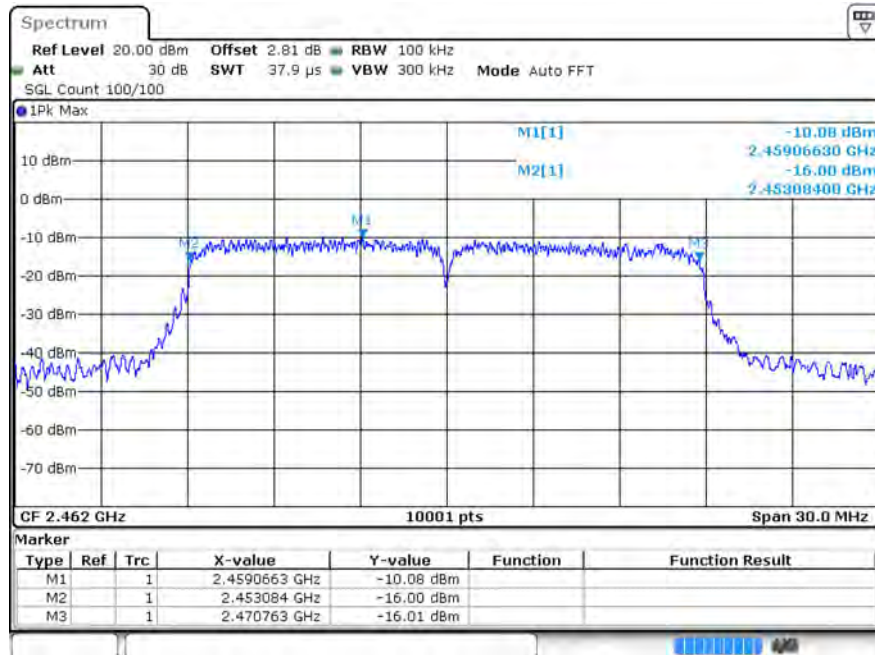
n20 2412MHz Ant1



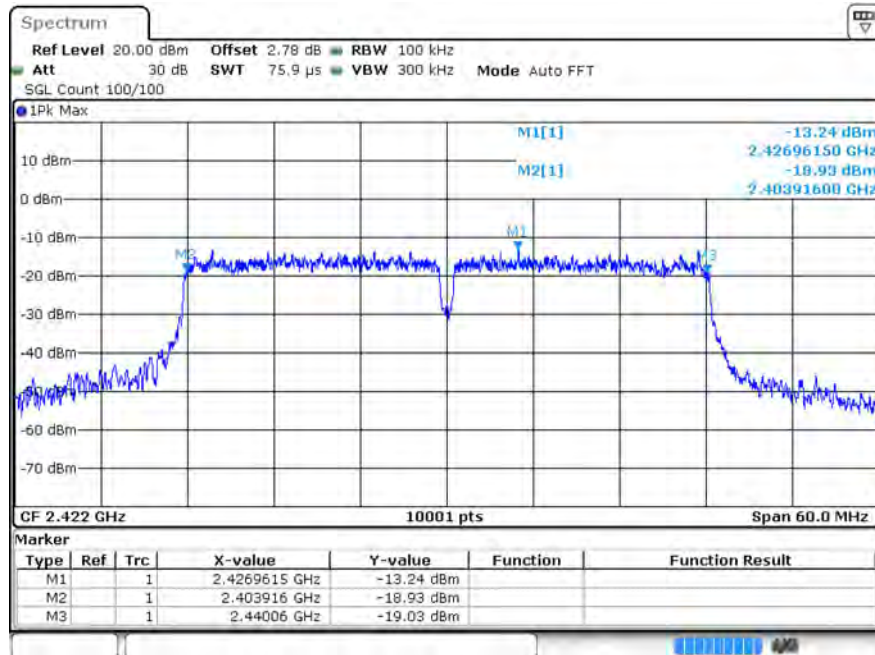
n20 2437MHz Ant1



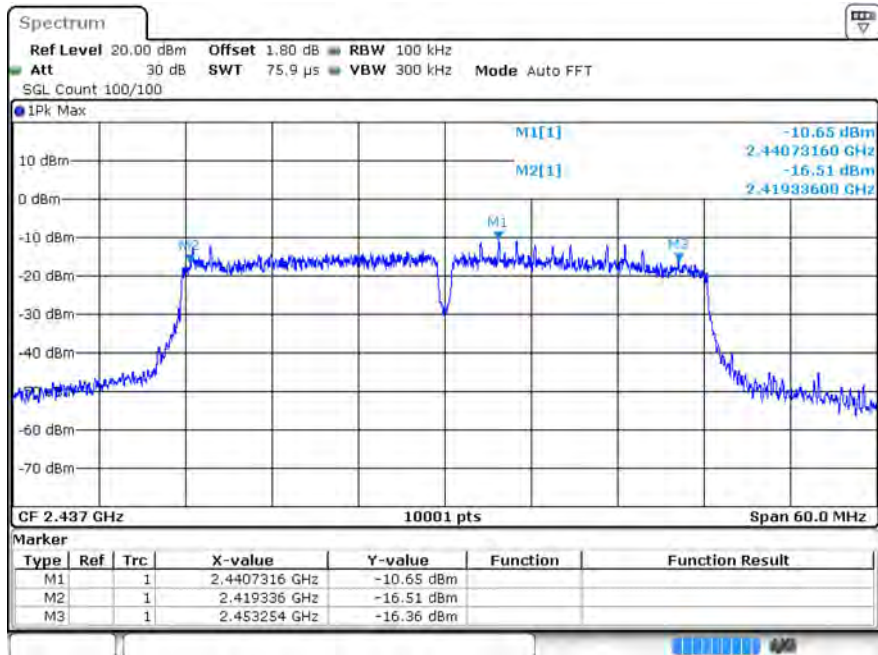
n20 2462MHz Ant1



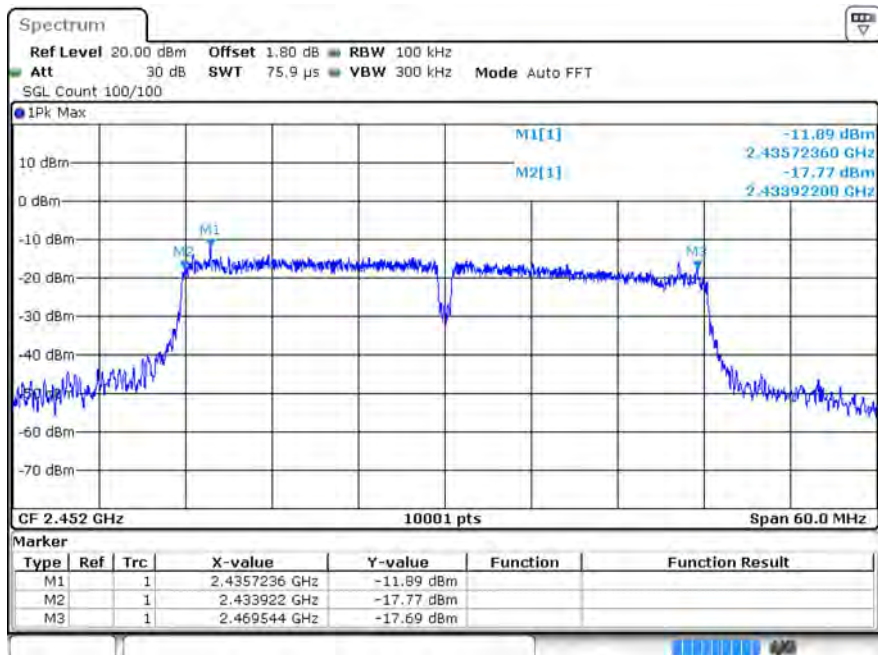
n40 2422MHz Ant1



n40 2437MHz Ant1



n40 2452MHz Ant1

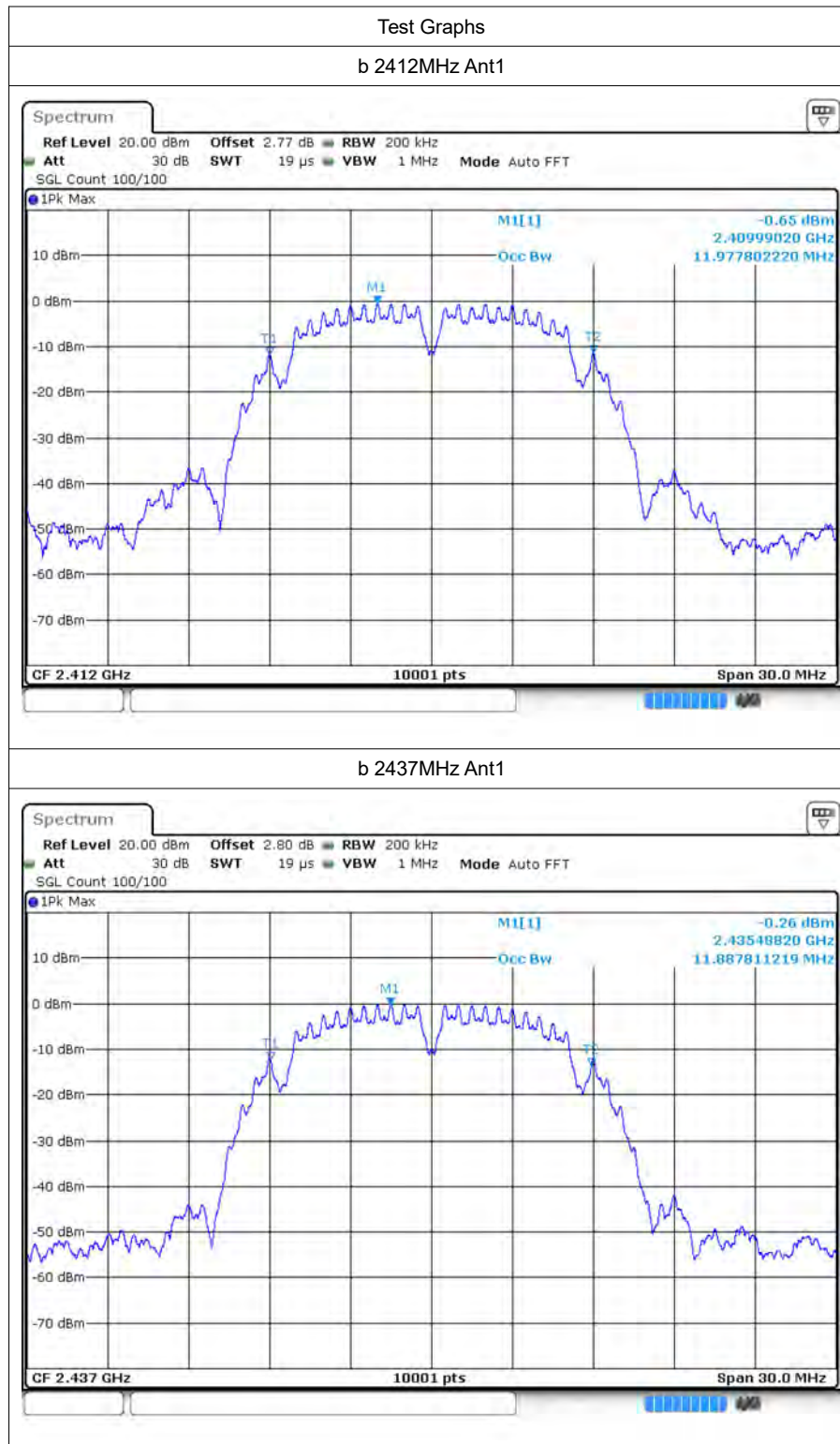


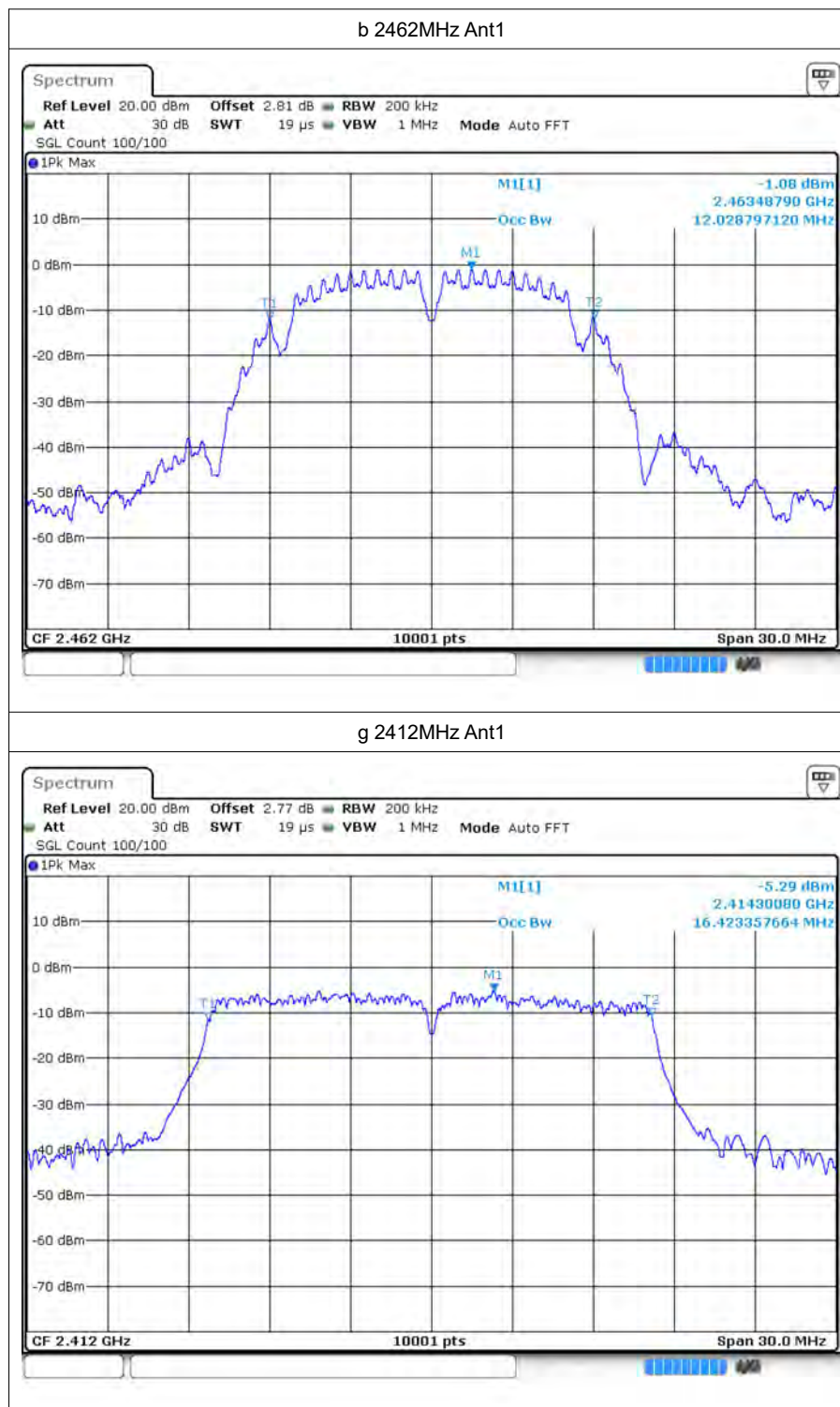
4 Occupied Channel Bandwidth

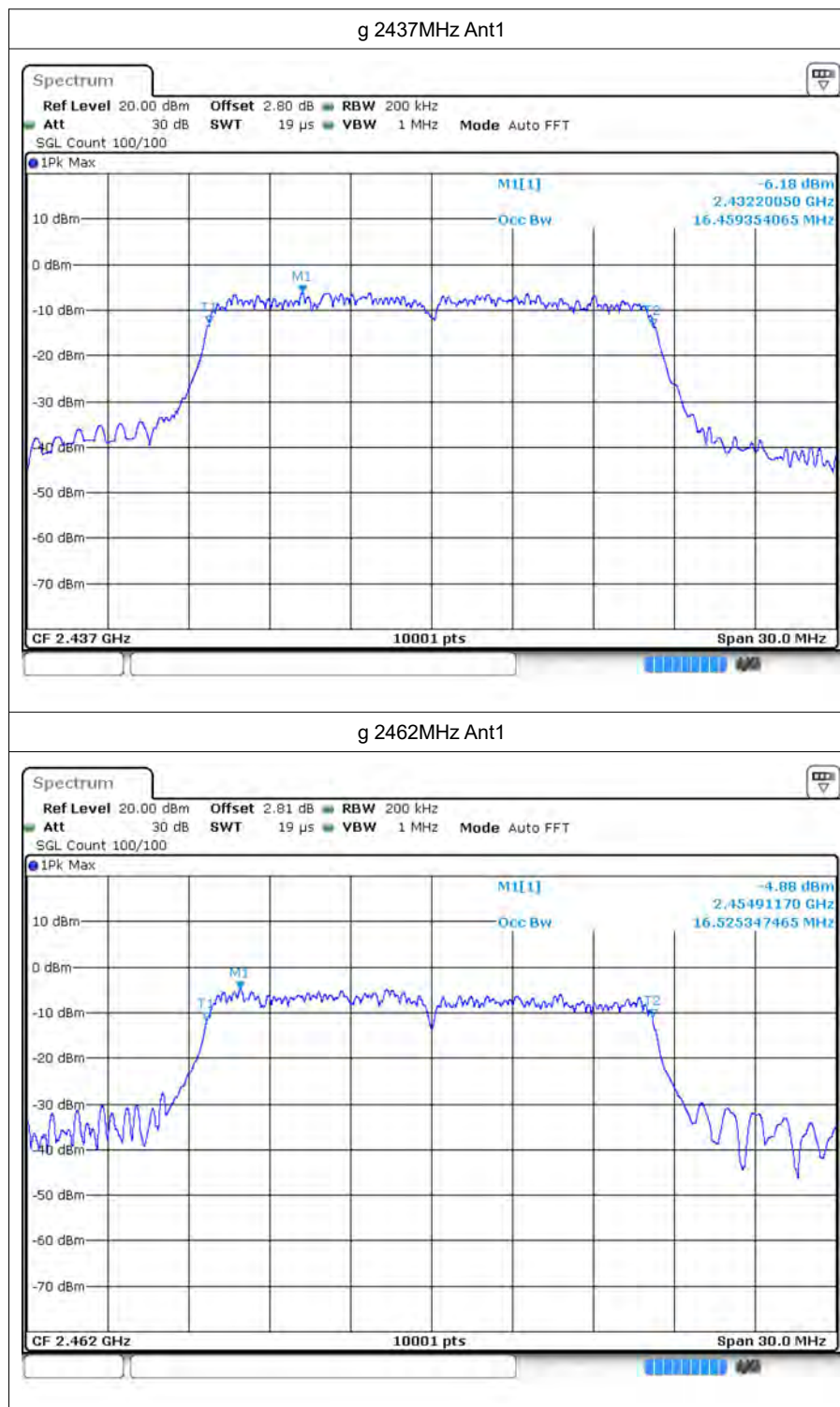
4.1 Test Result

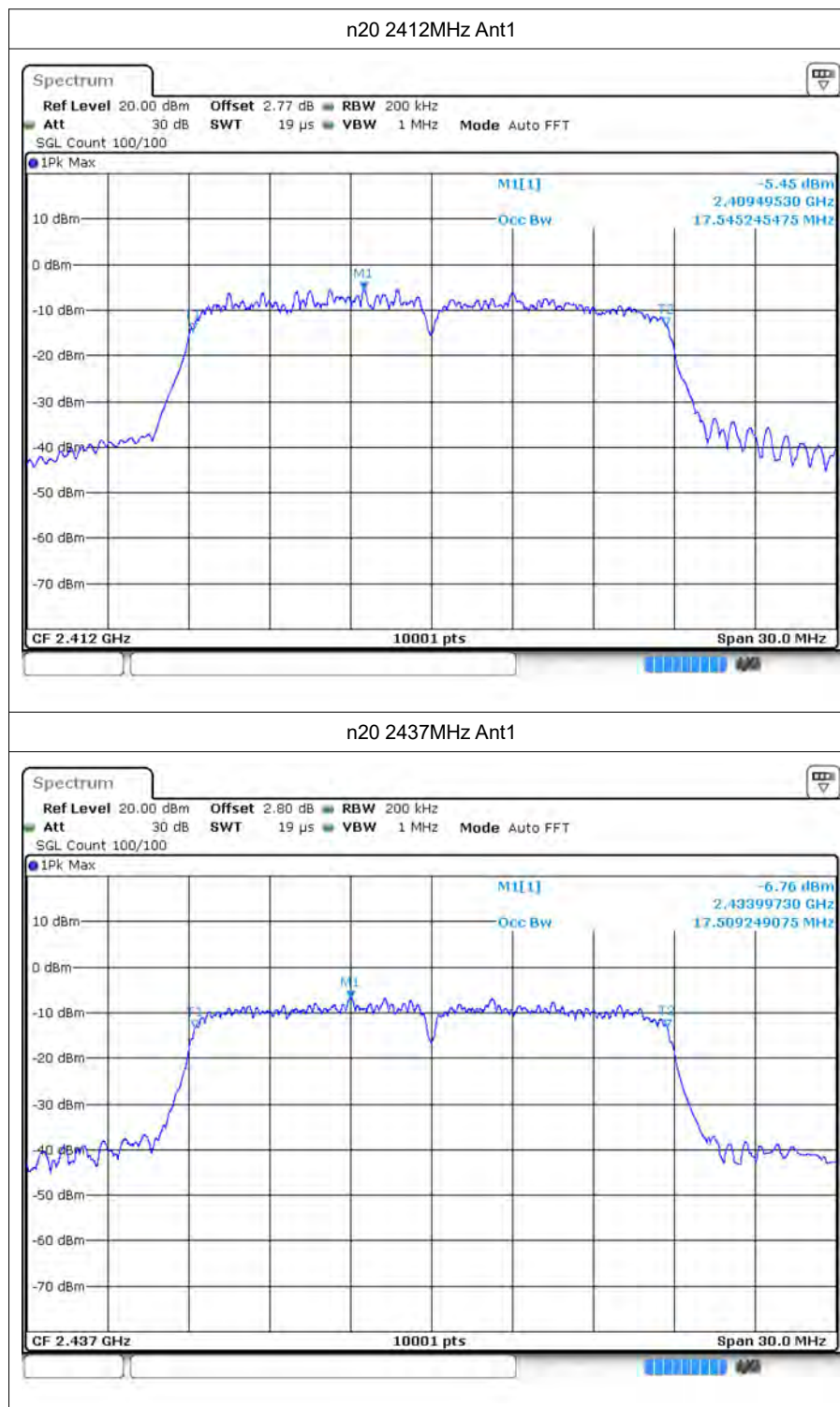
Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
b	2412	Ant1	11.978
b	2437	Ant1	11.888
b	2462	Ant1	12.029
g	2412	Ant1	16.423
g	2437	Ant1	16.459
g	2462	Ant1	16.525
n20	2412	Ant1	17.545
n20	2437	Ant1	17.509
n20	2462	Ant1	17.545
n40	2422	Ant1	36.14
n40	2437	Ant1	35.894
n40	2452	Ant1	36.032

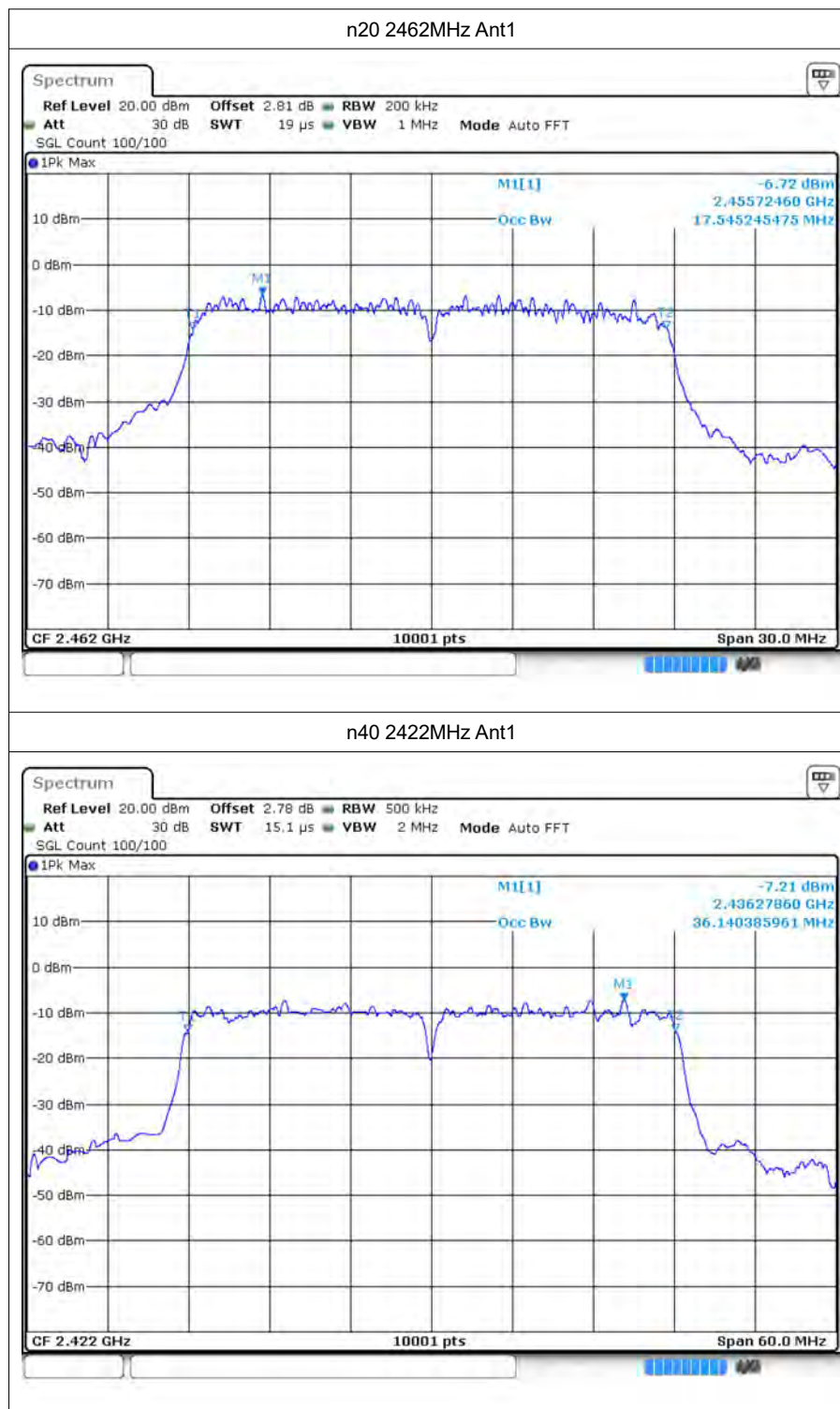
4.2 Test Graphs

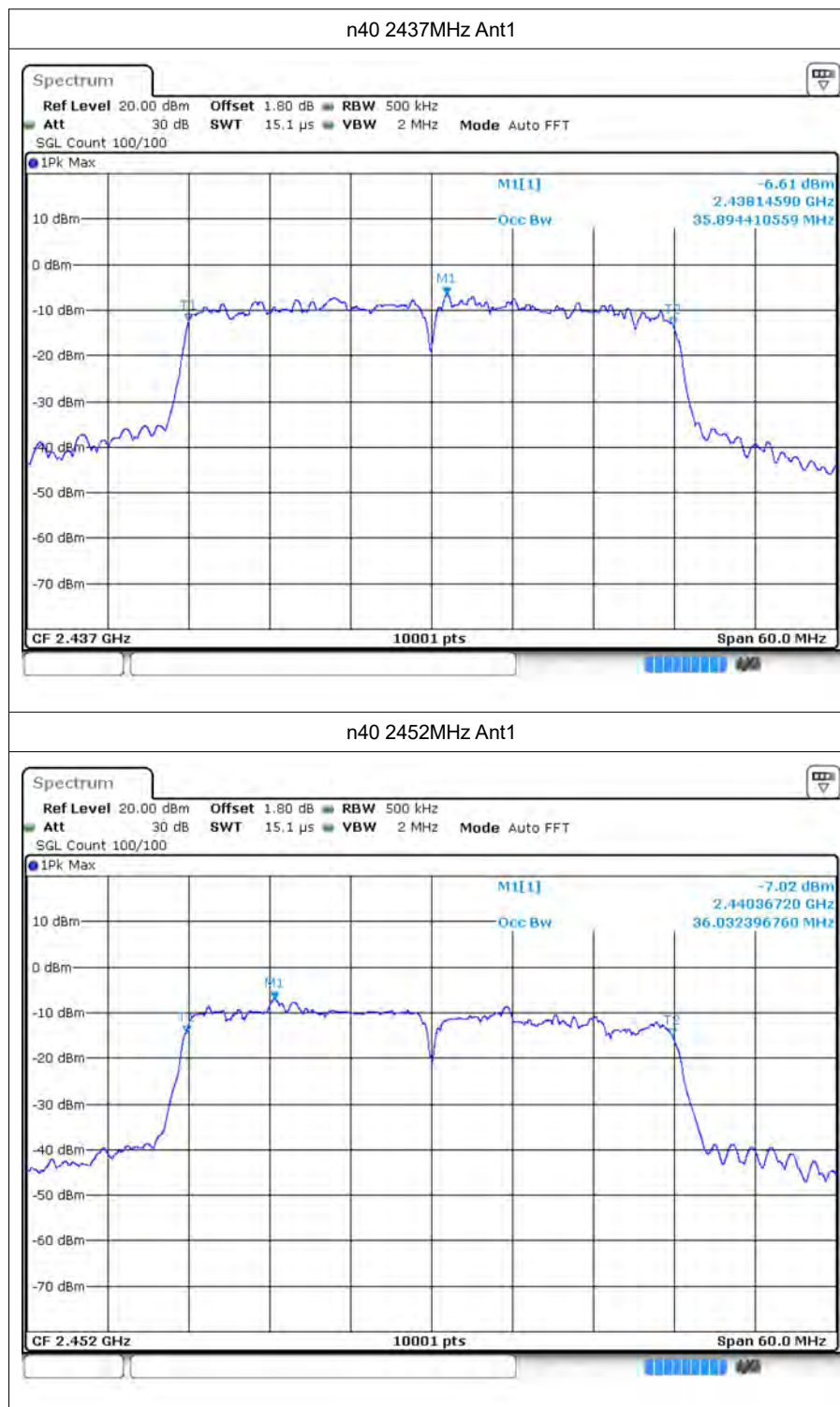












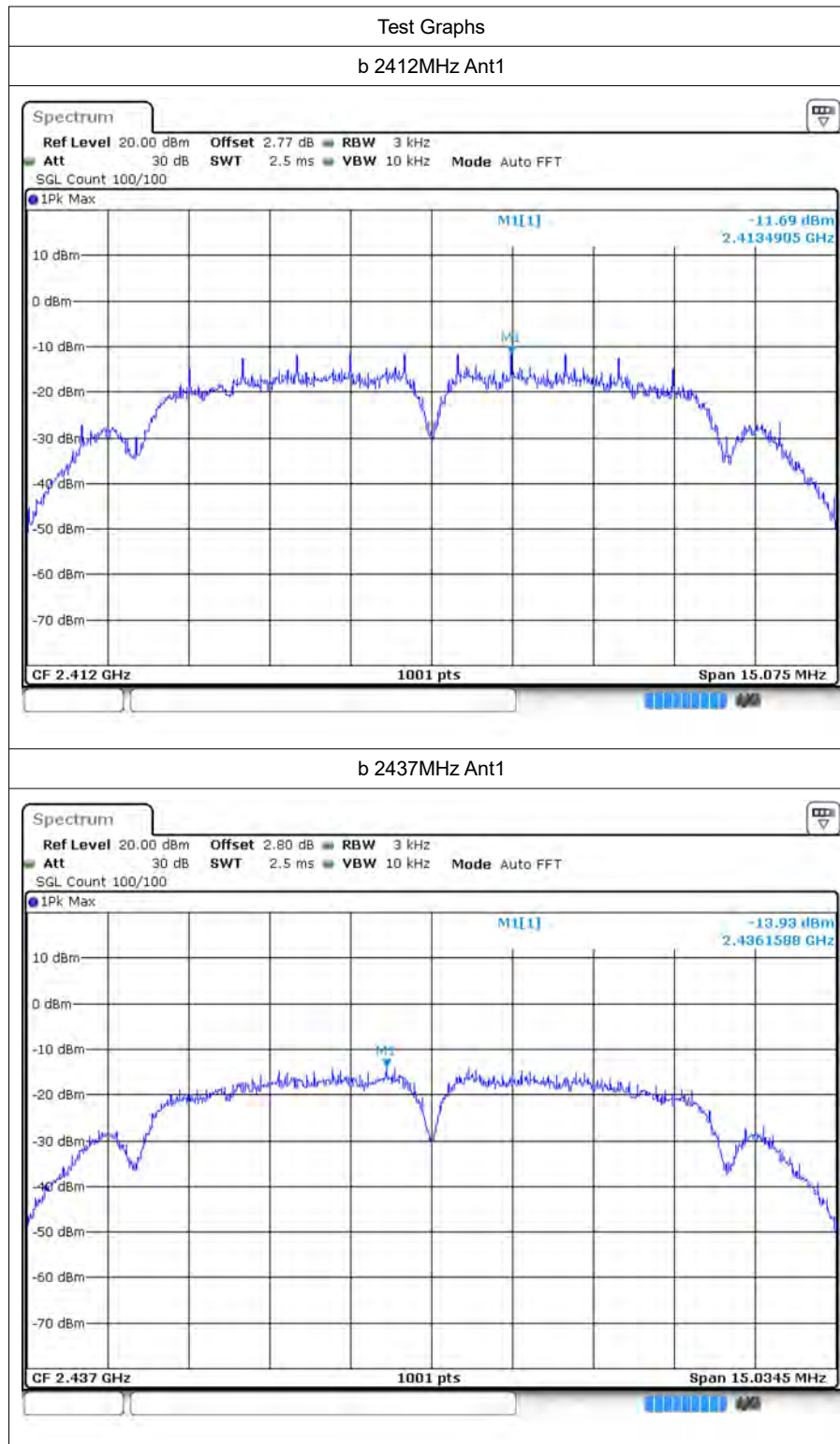
5 Maximum Power Spectral Density Level

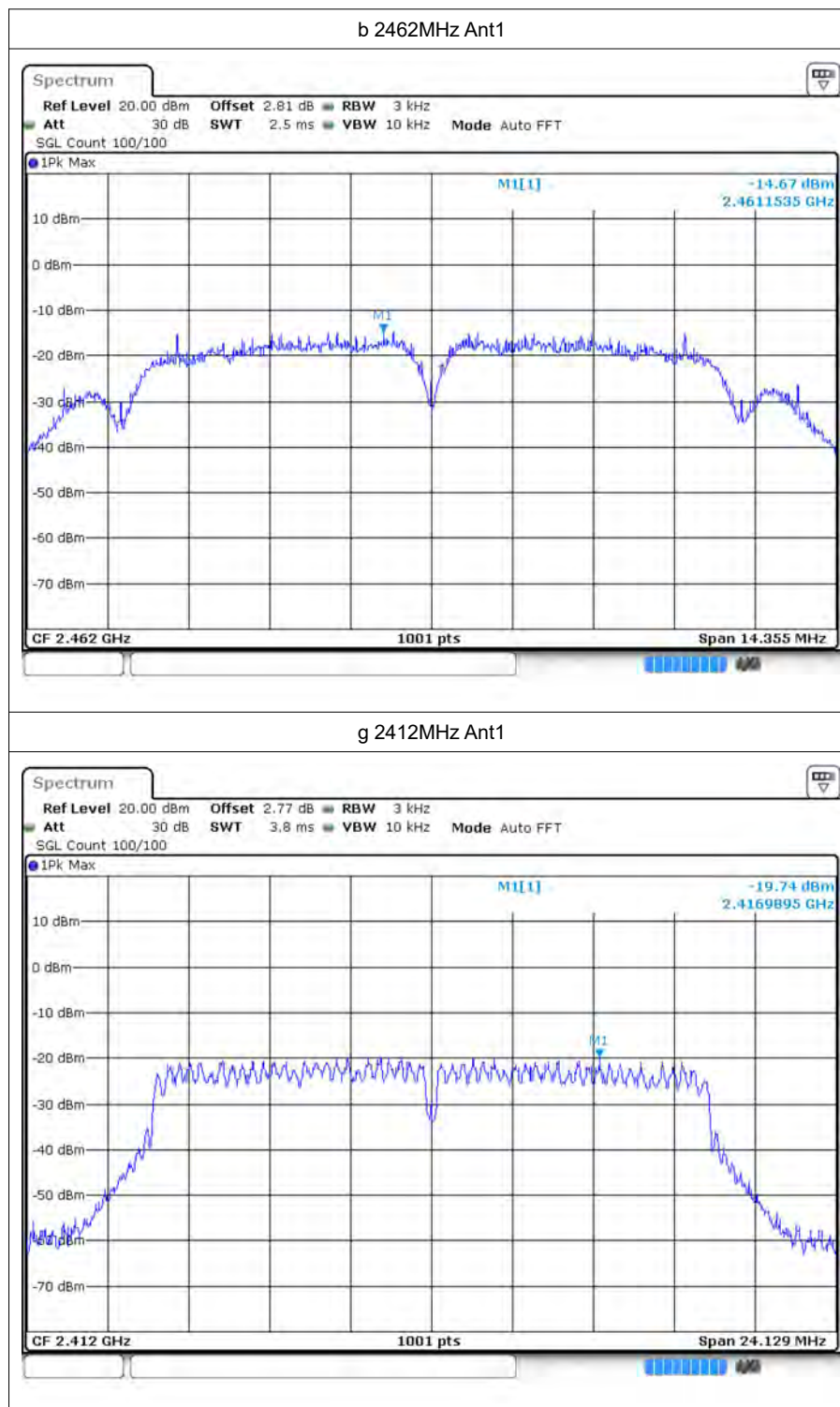
5.1 Test Result

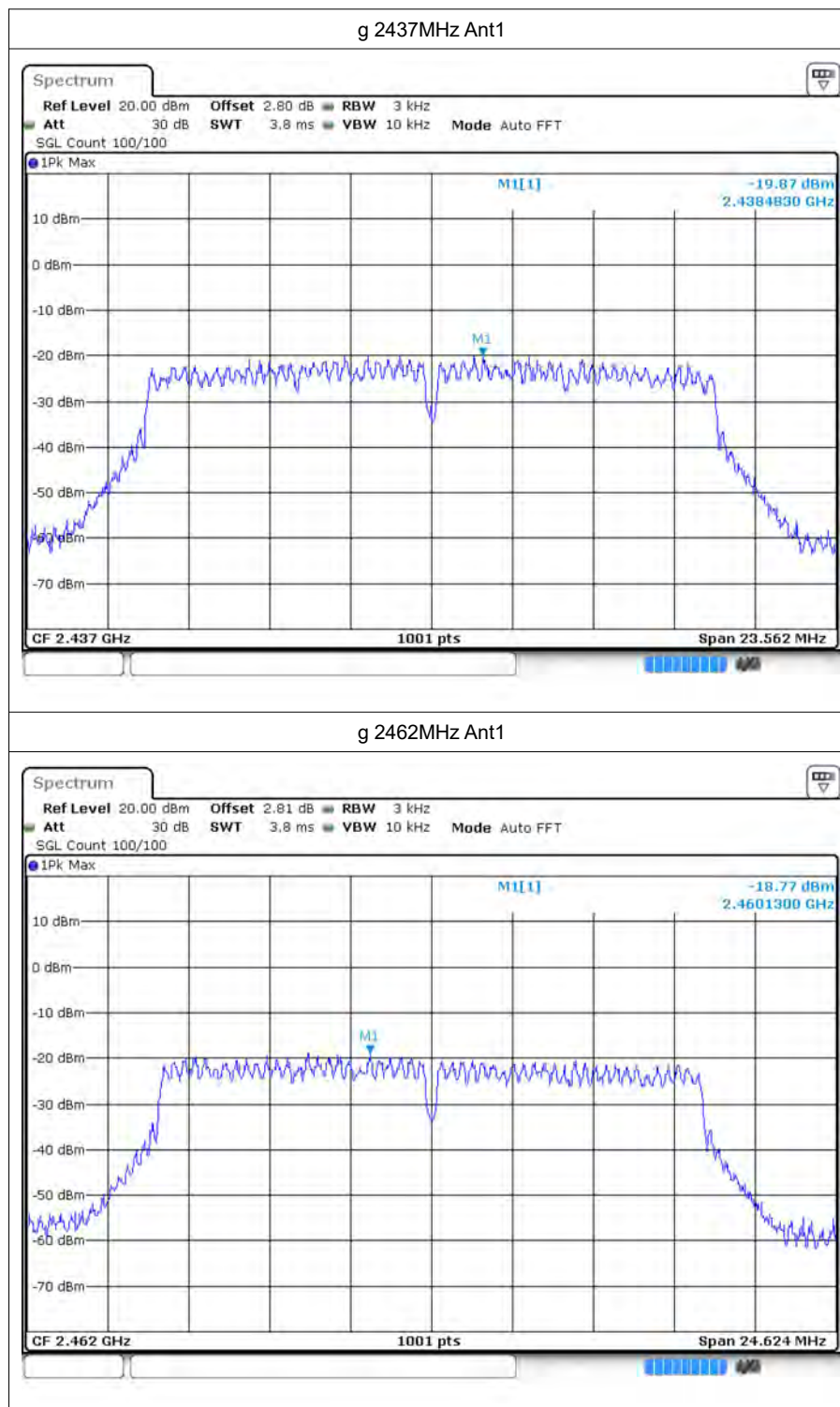
Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
b	2412	Ant1	-11.69	≤ 8	Pass
b	2437	Ant1	-13.93	≤ 8	Pass
b	2462	Ant1	-14.67	≤ 8	Pass
g	2412	Ant1	-19.74	≤ 8	Pass
g	2437	Ant1	-19.87	≤ 8	Pass
g	2462	Ant1	-18.77	≤ 8	Pass
n20	2412	Ant1	-20.27	≤ 8	Pass
n20	2437	Ant1	-20.71	≤ 8	Pass
n20	2462	Ant1	-21.35	≤ 8	Pass
n40	2422	Ant1	-26.22	≤ 8	Pass
n40	2437	Ant1	-24.08	≤ 8	Pass
n40	2452	Ant1	-26.05	≤ 8	Pass

Note: Duty cycle and antenna factor have been compensated in the test results.

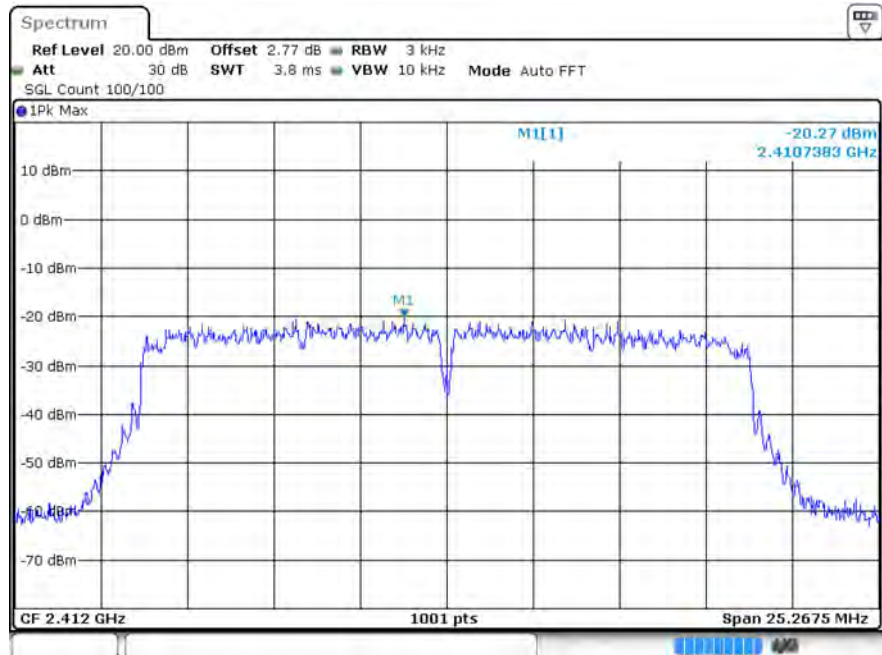
Test Graphs





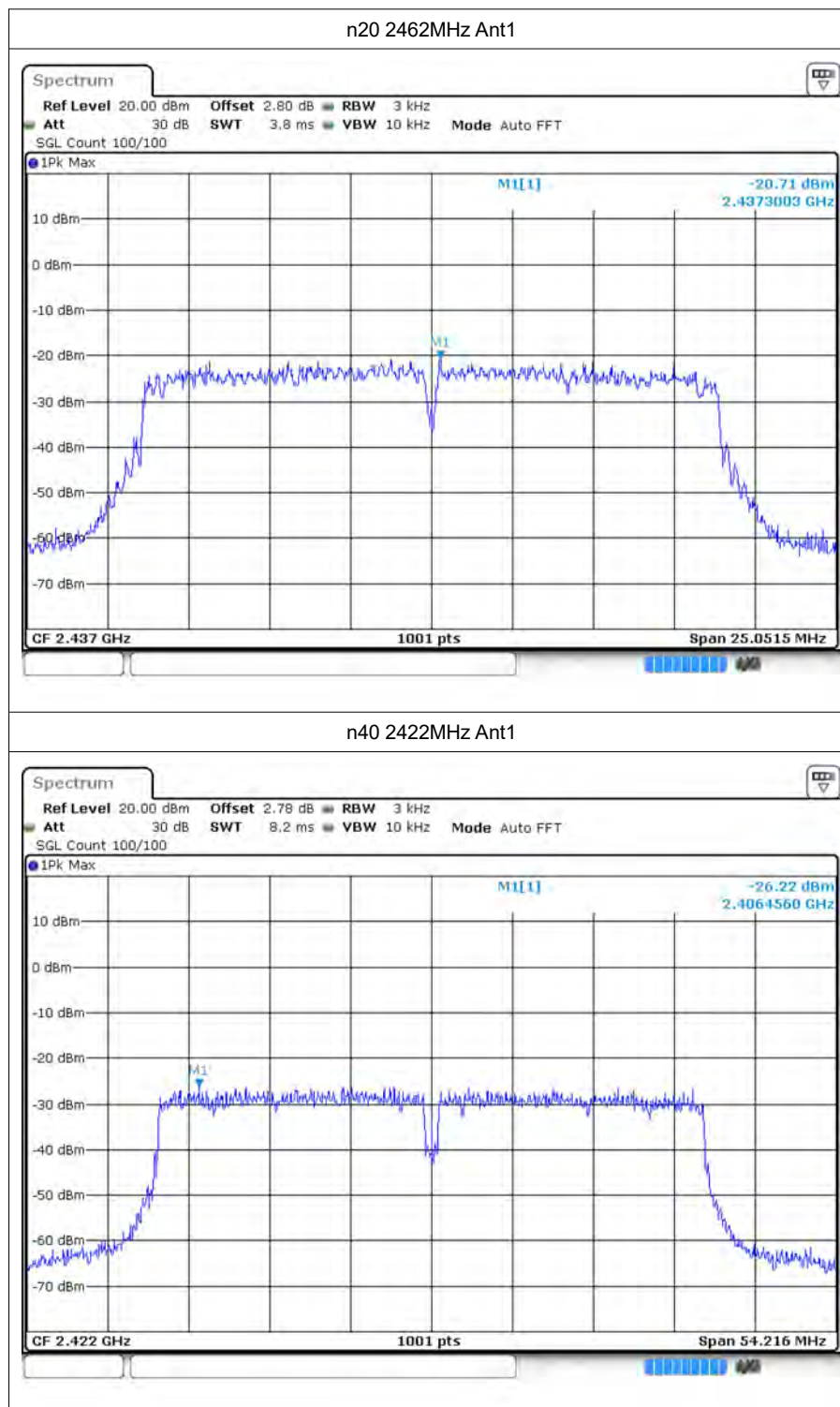


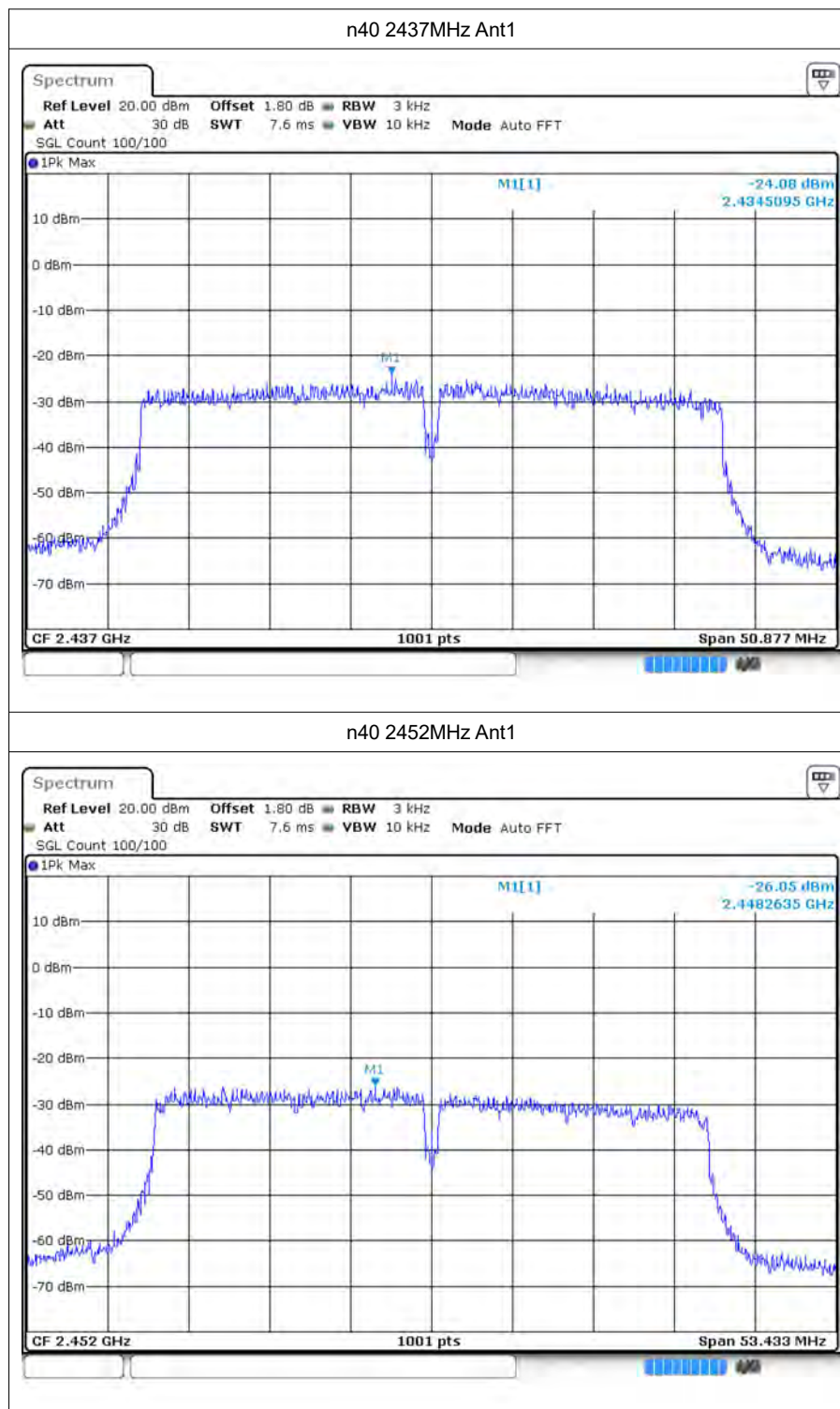
n20 2412MHz Ant1



n20 2437MHz Ant1





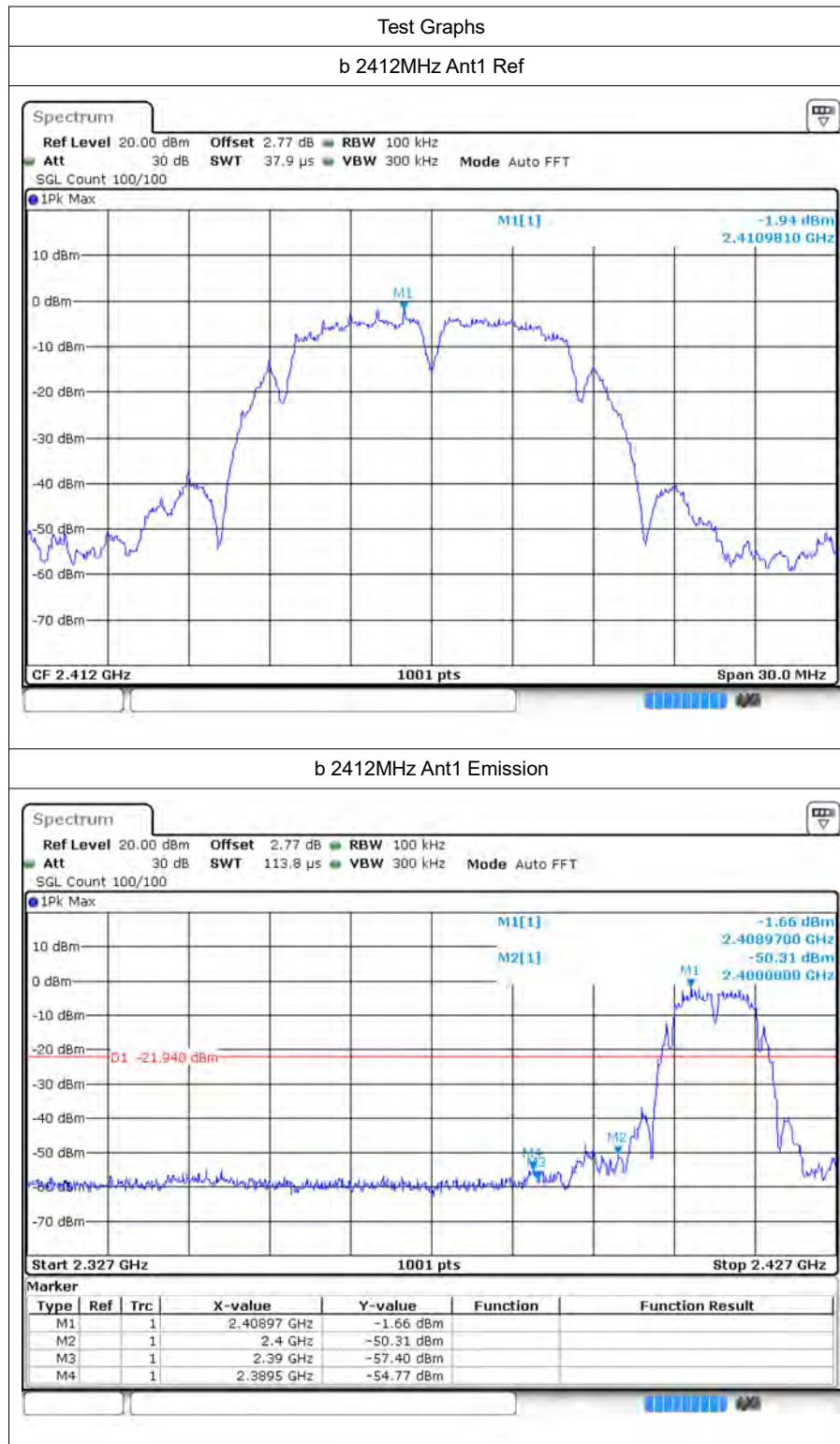


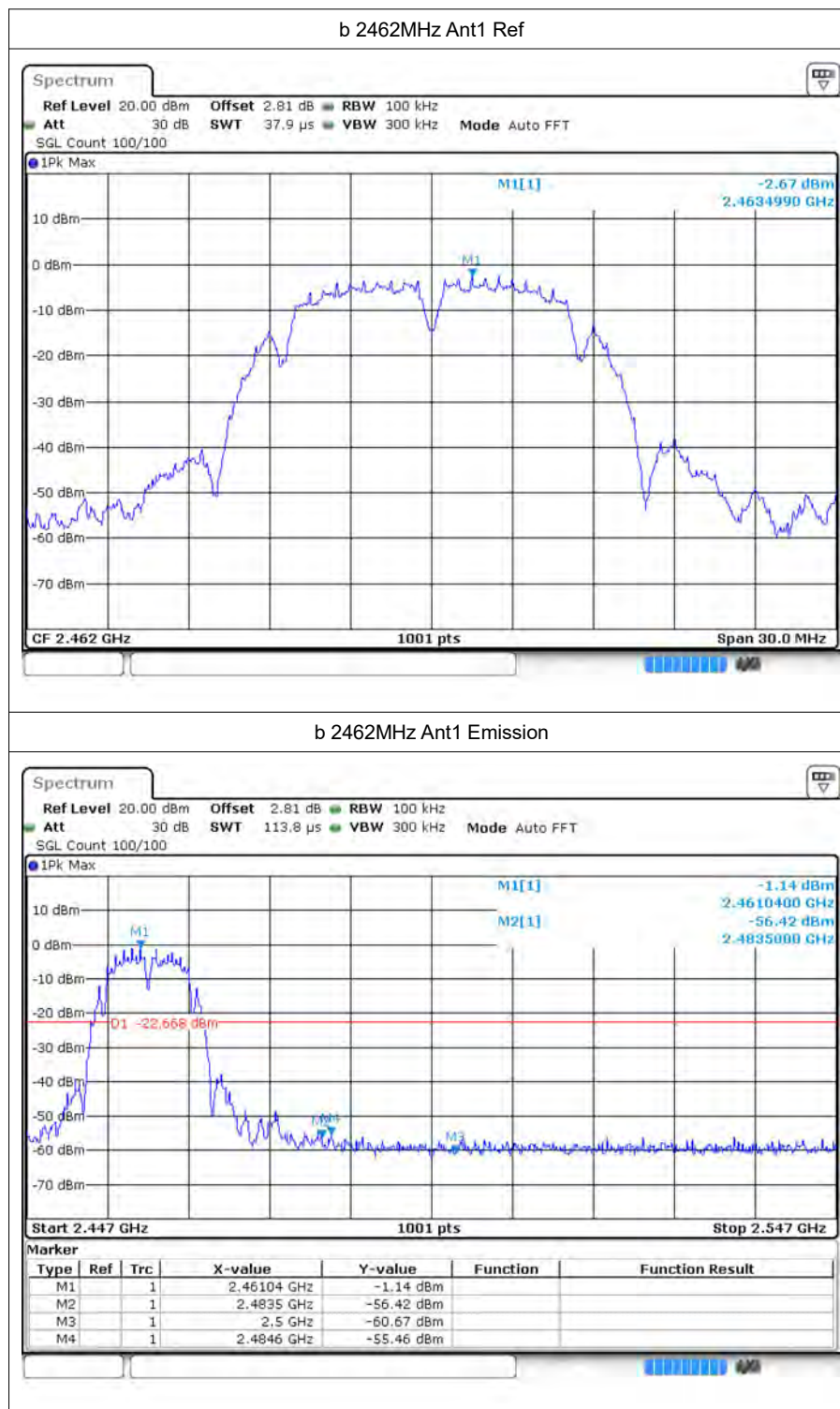
6 Band Edge

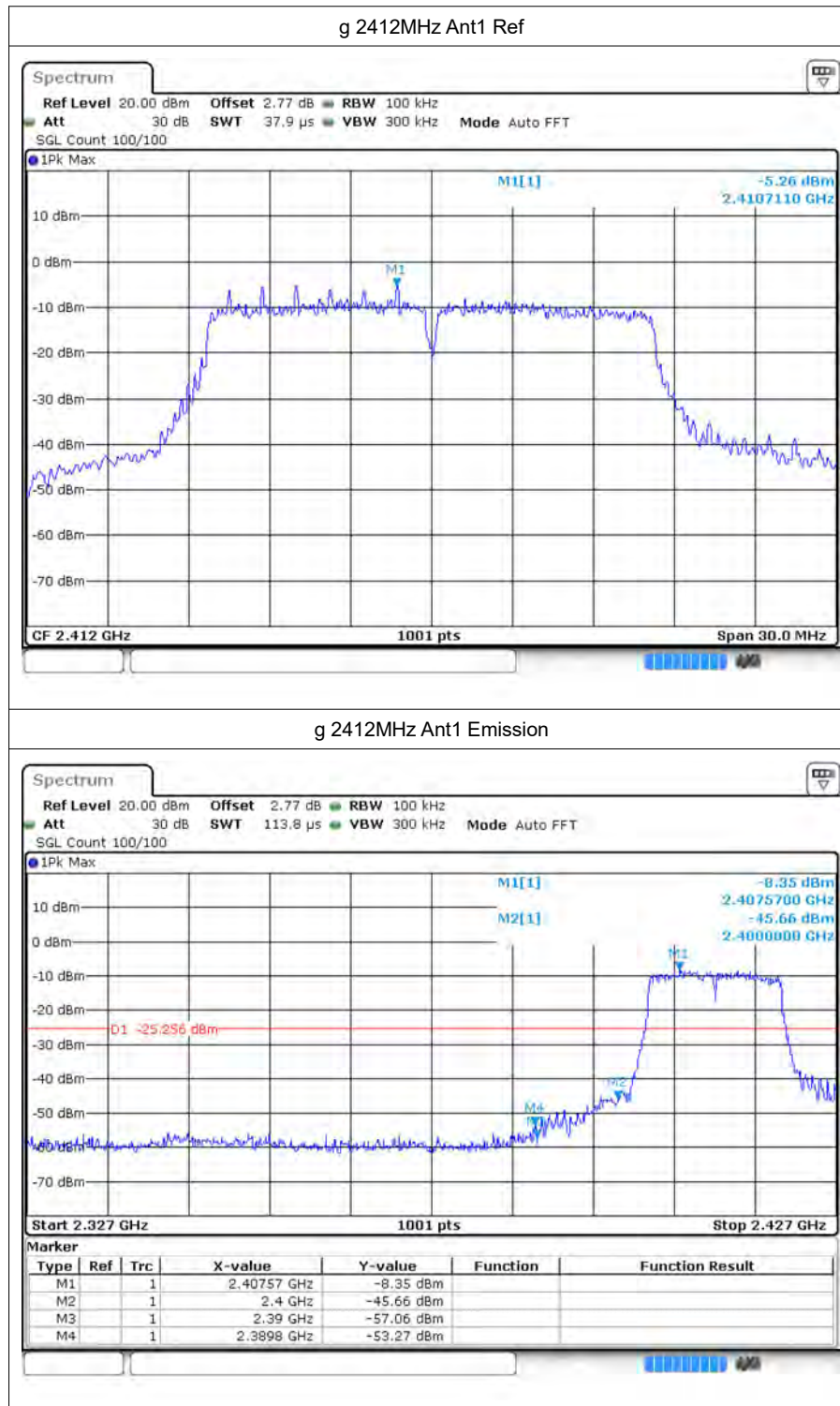
6.1 Test Result

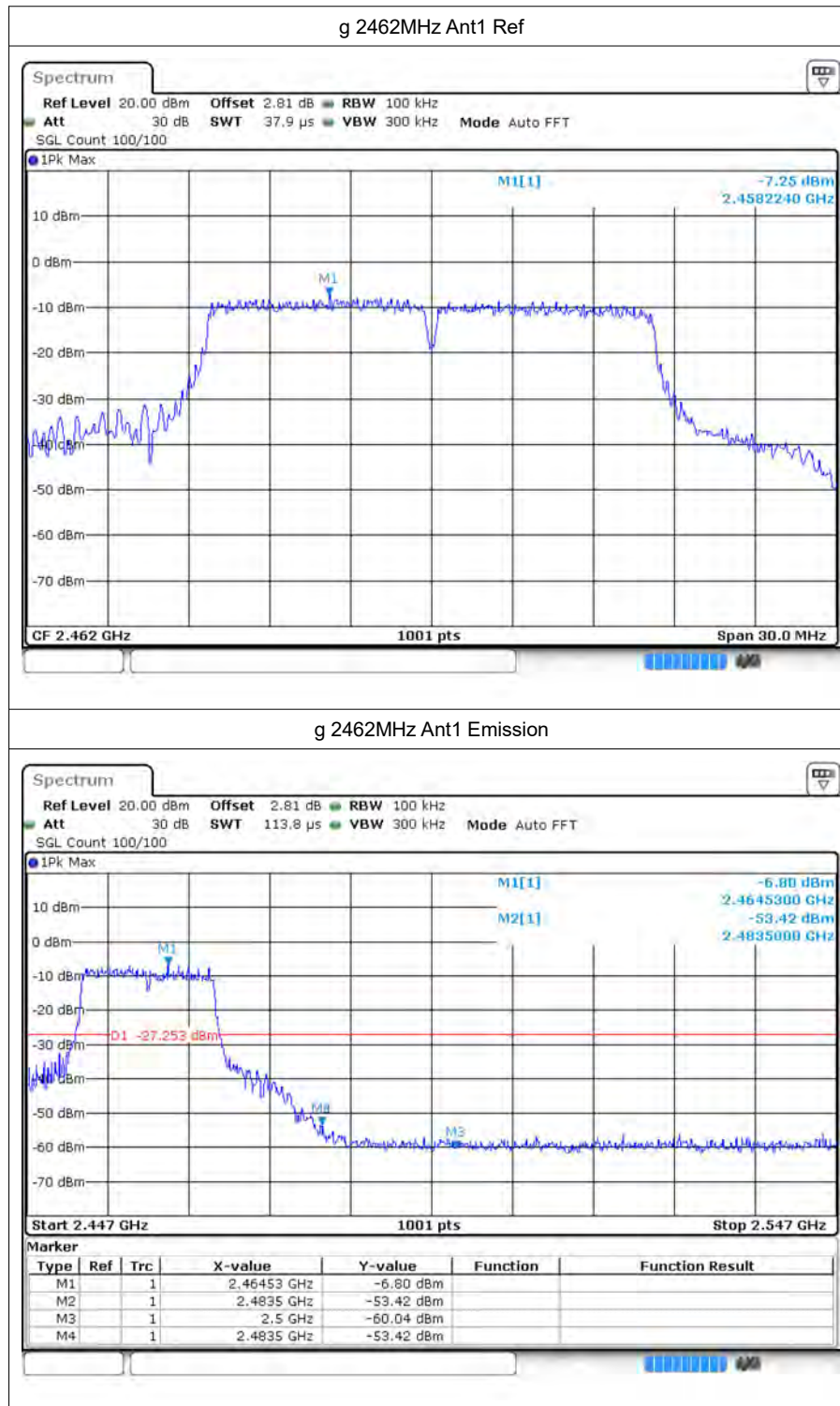
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-52.82	-20	-52.82
b	2462	Ant1	-52.78	-20	Pass
g	2412	Ant1	-48	-20	Pass
g	2462	Ant1	-46.16	-20	Pass
n20	2412	Ant1	-46.21	-20	Pass
n20	2462	Ant1	-45.71	-20	Pass
n40	2422	Ant1	-39.26	-20	Pass
n40	2452	Ant1	-42.9	-20	Pass

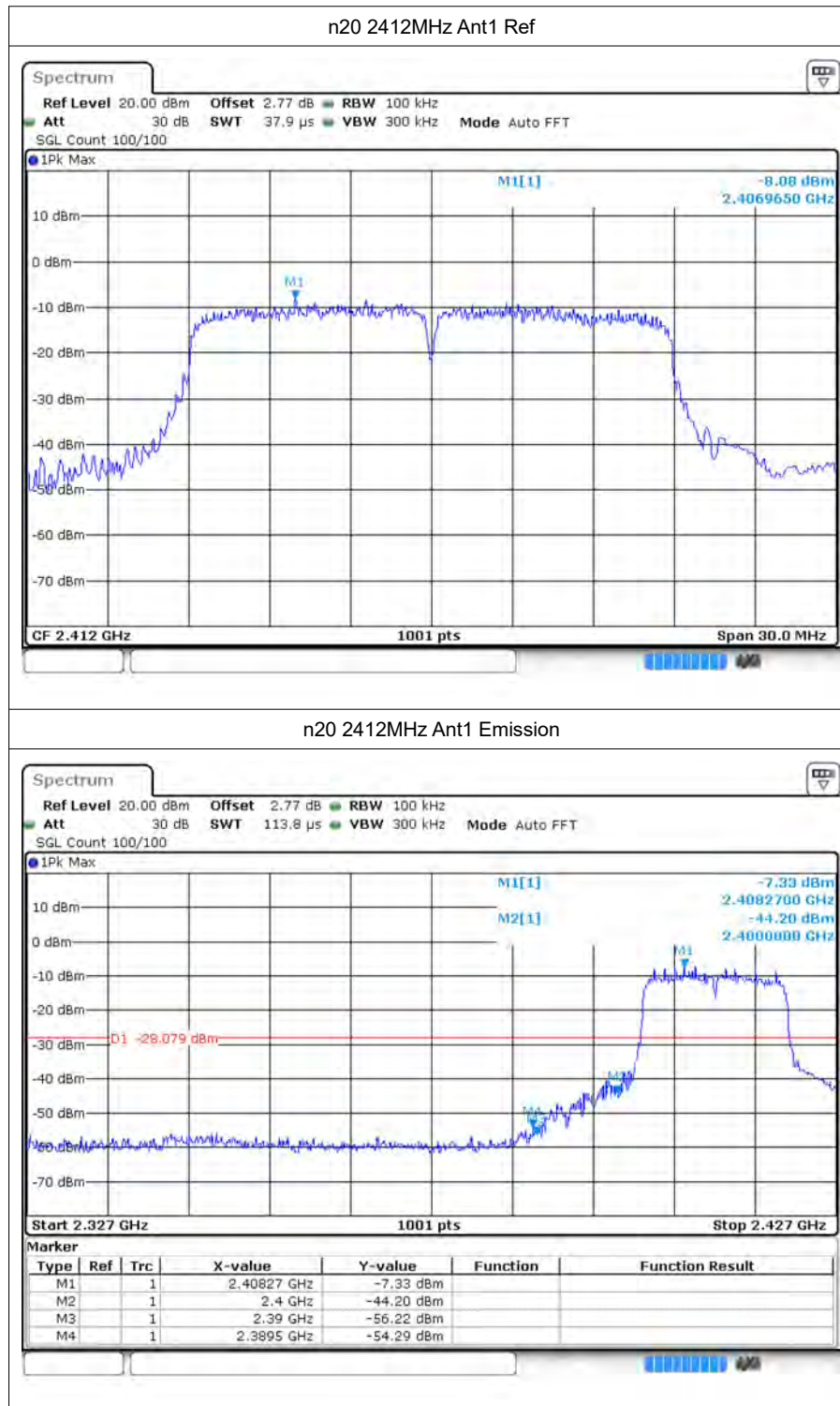
6.2 Test Graphs

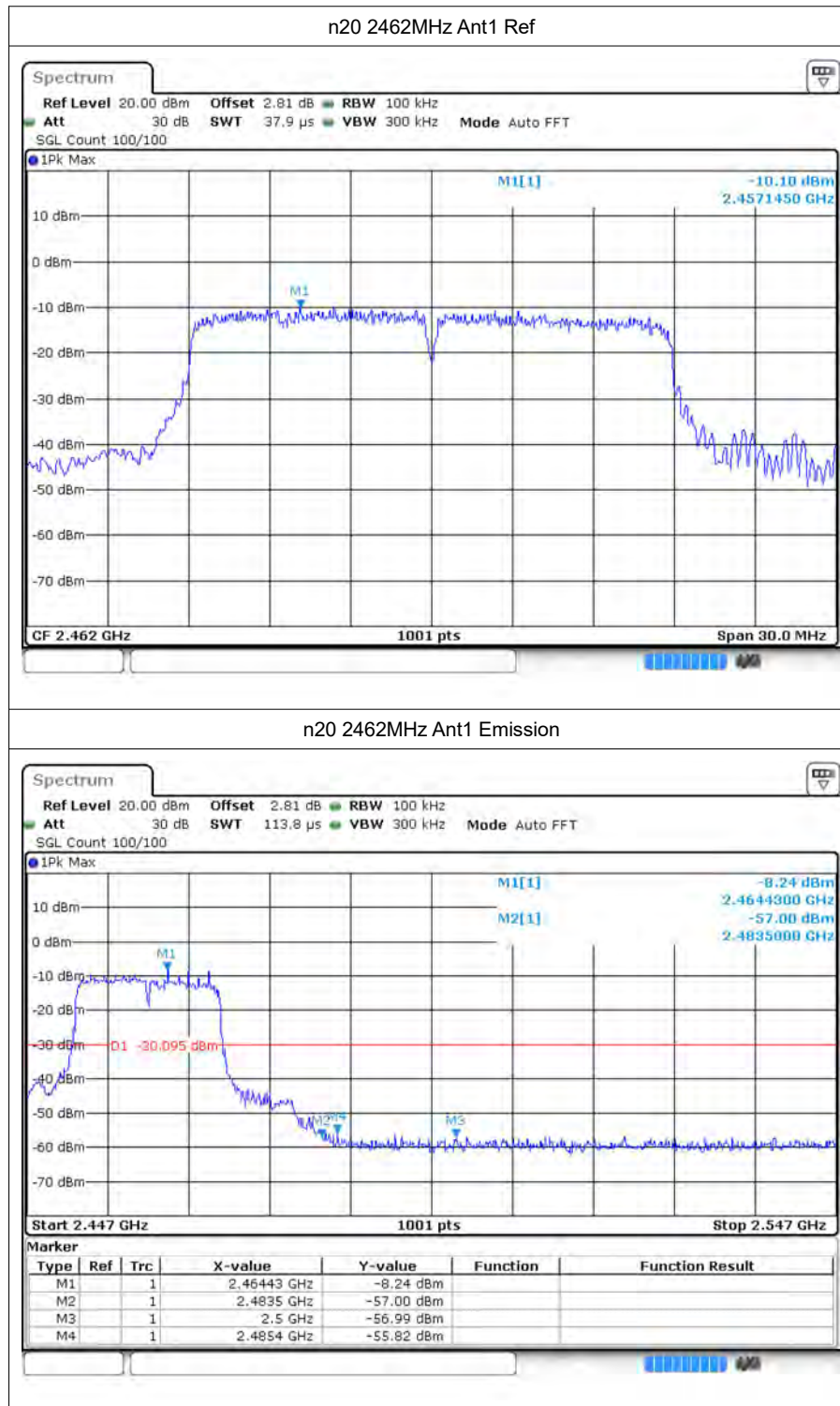


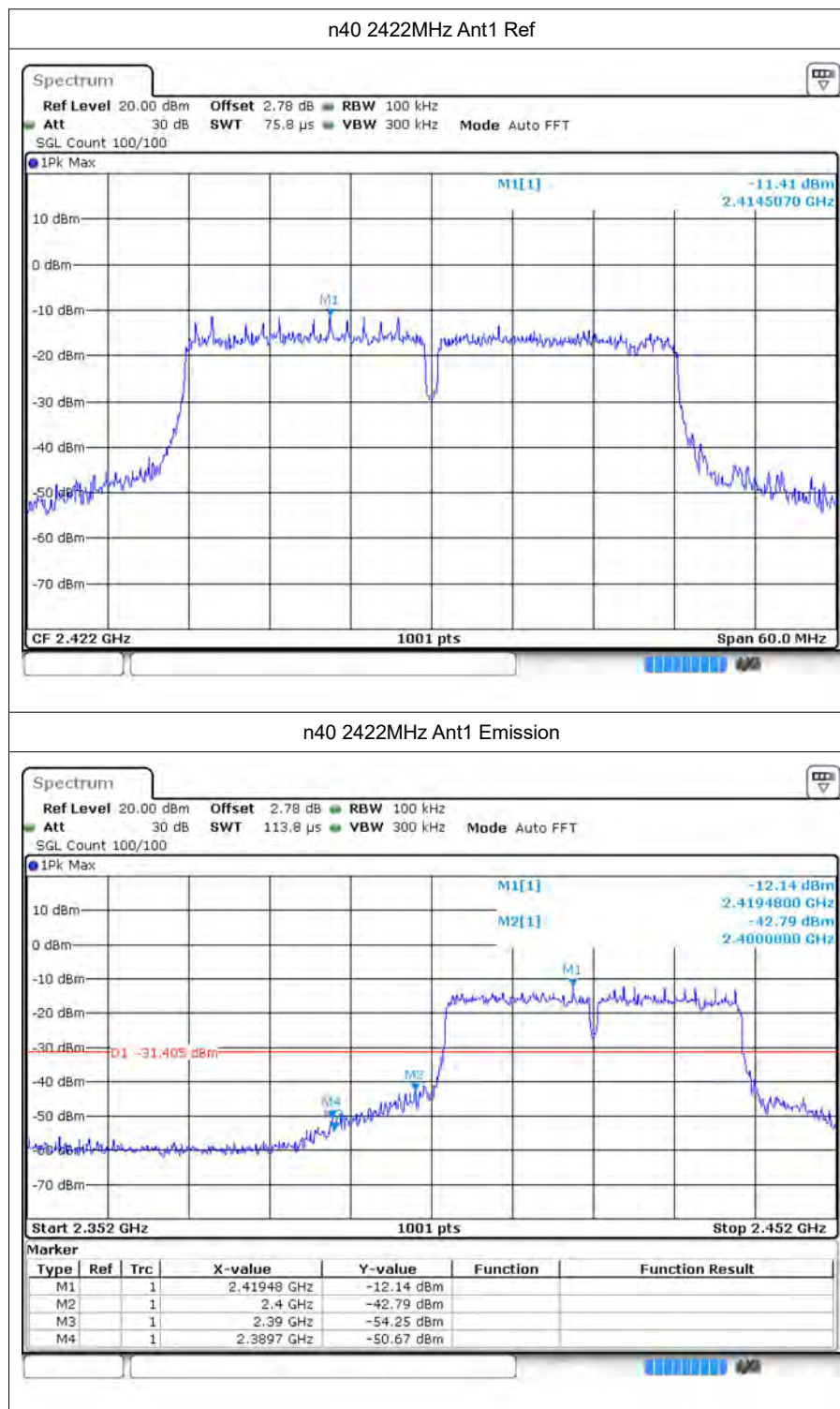


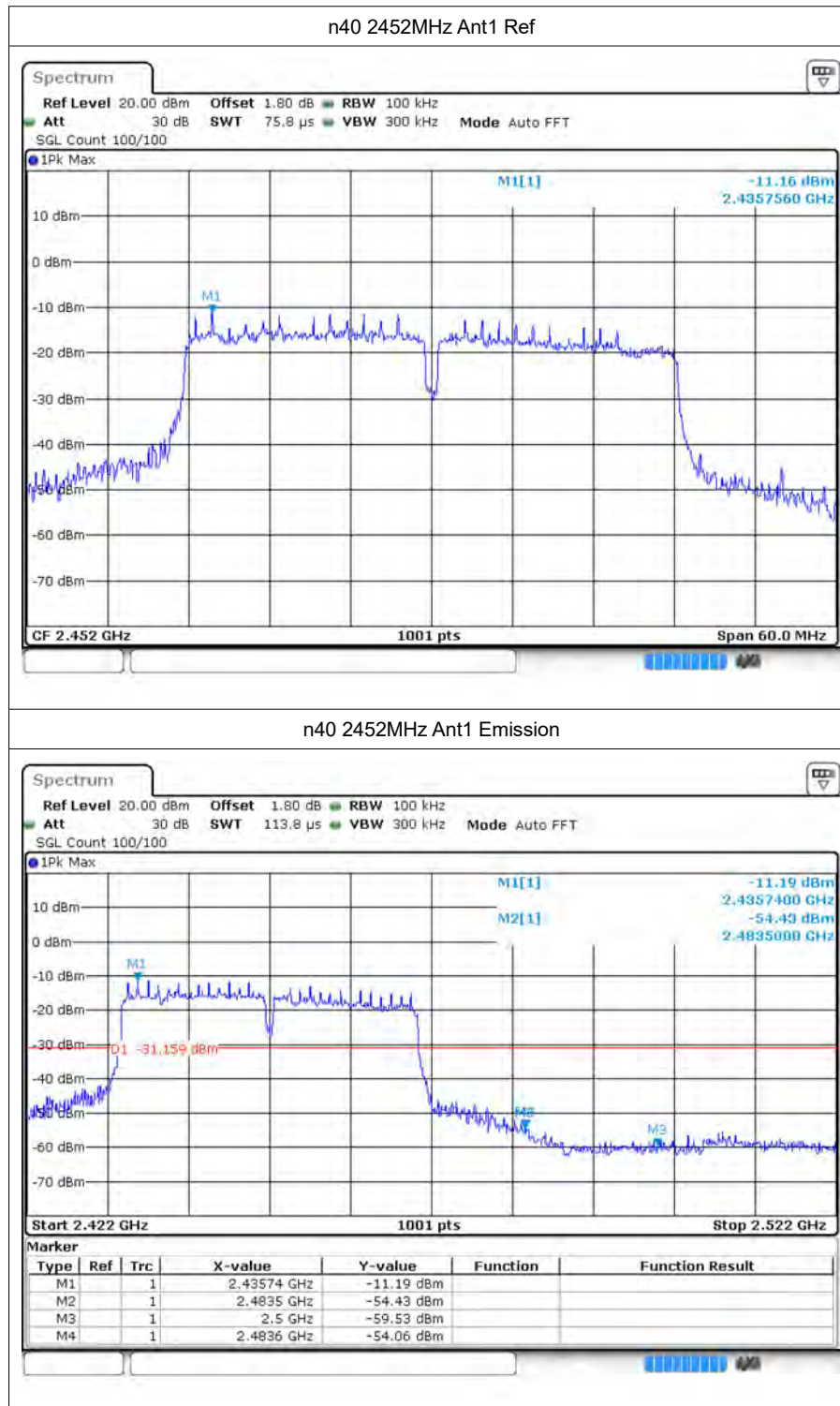










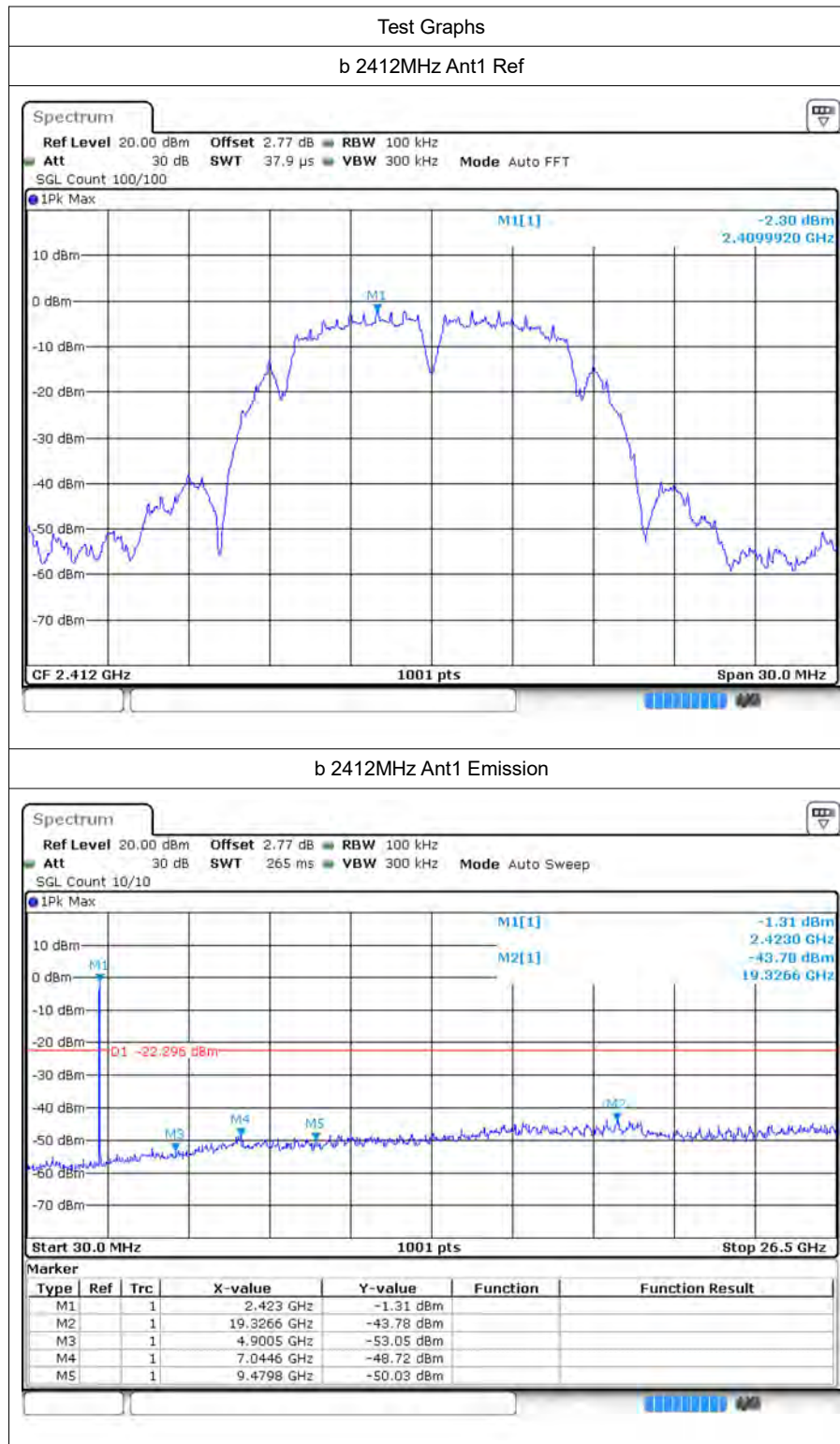


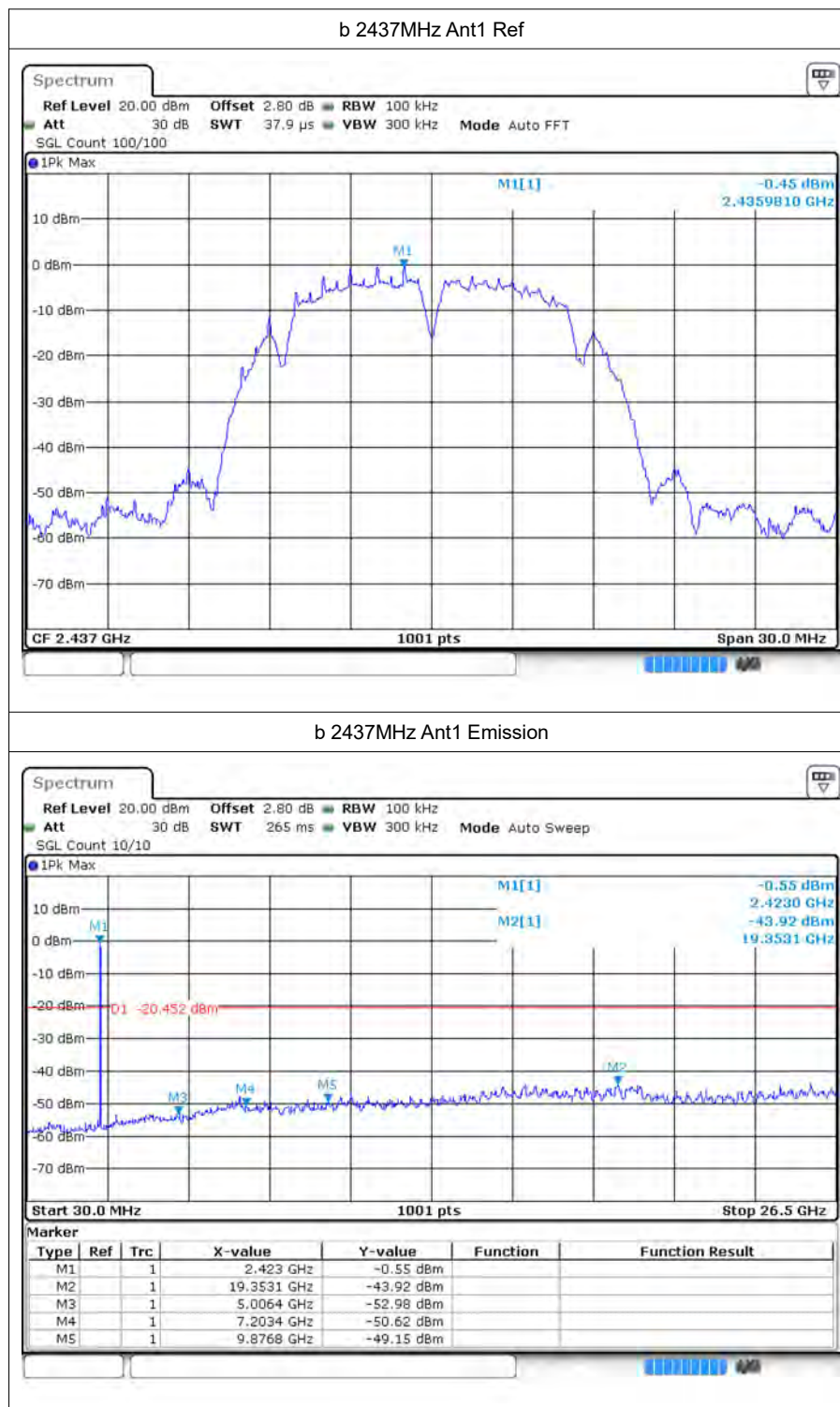
7 Conducted RF Spurious Emission

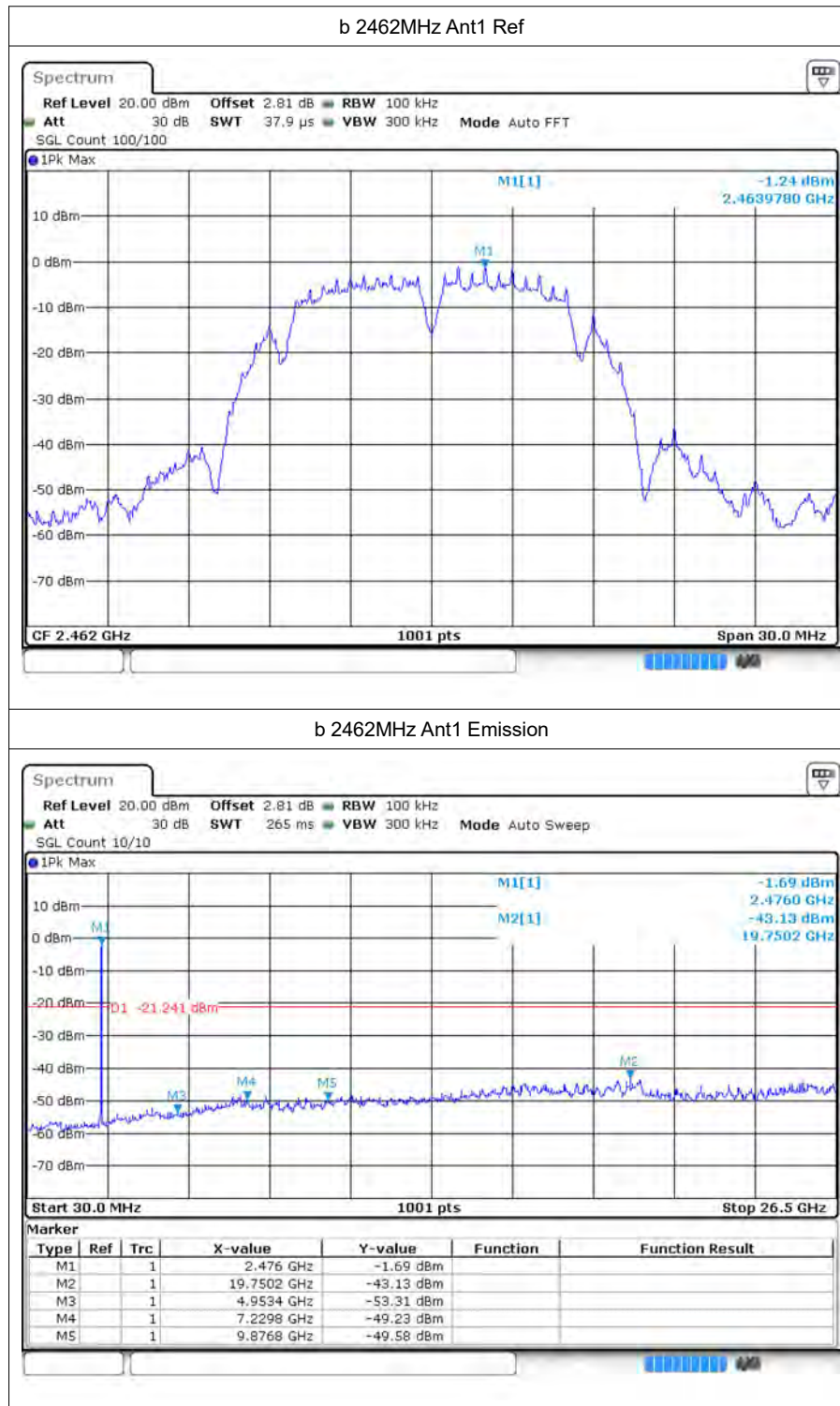
7.1 Test Result

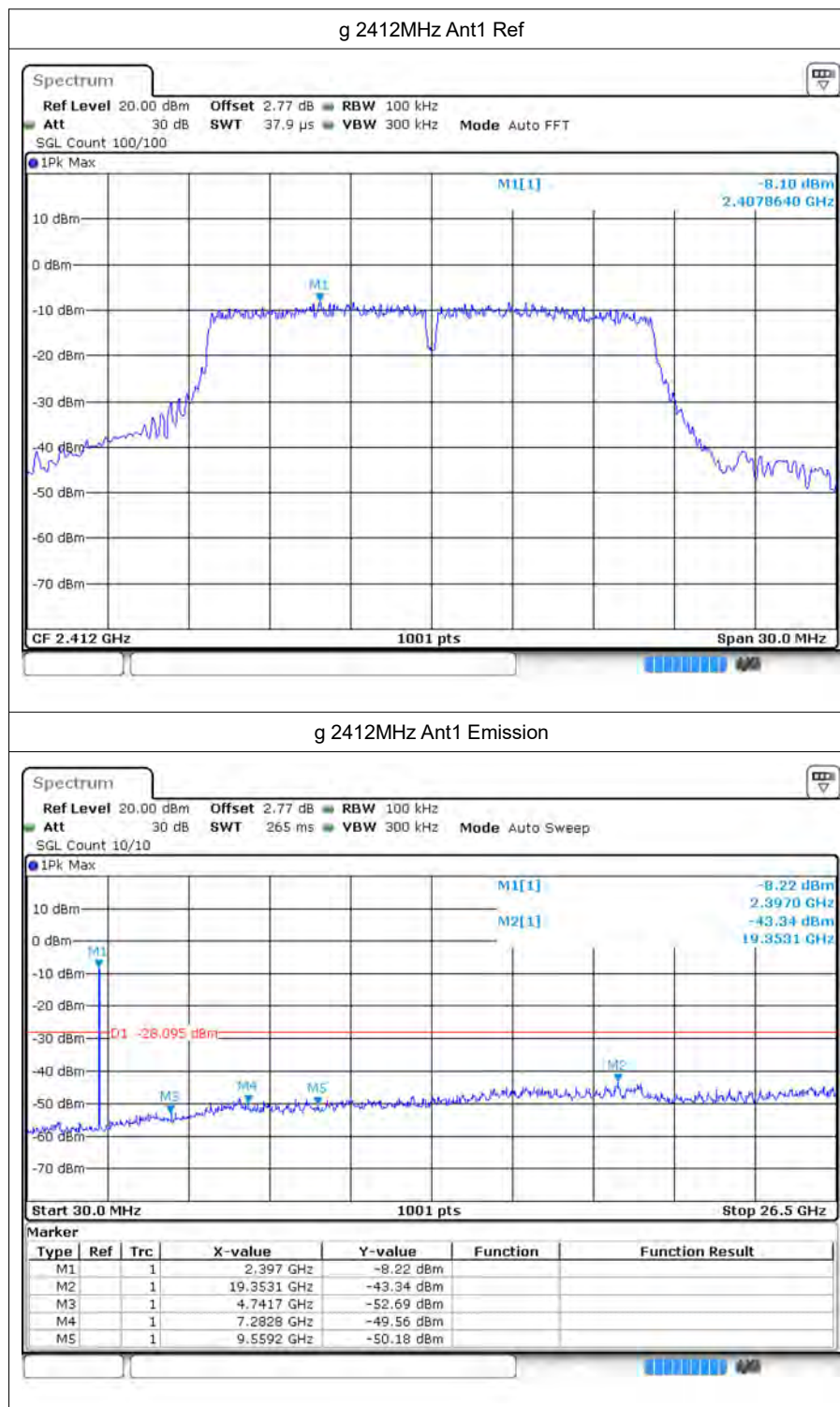
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-41.48	-20	Pass
b	2437	Ant1	-43.46	-20	Pass
b	2462	Ant1	-41.89	-20	Pass
g	2412	Ant1	-35.24	-20	Pass
g	2437	Ant1	-35.11	-20	Pass
g	2462	Ant1	-39.26	-20	Pass
n20	2412	Ant1	-36.01	-20	Pass
n20	2437	Ant1	-35.23	-20	Pass
n20	2462	Ant1	-36.99	-20	Pass
n40	2422	Ant1	-30.34	-20	Pass
n40	2437	Ant1	-33.94	-20	Pass
n40	2452	Ant1	-32.4	-20	Pass

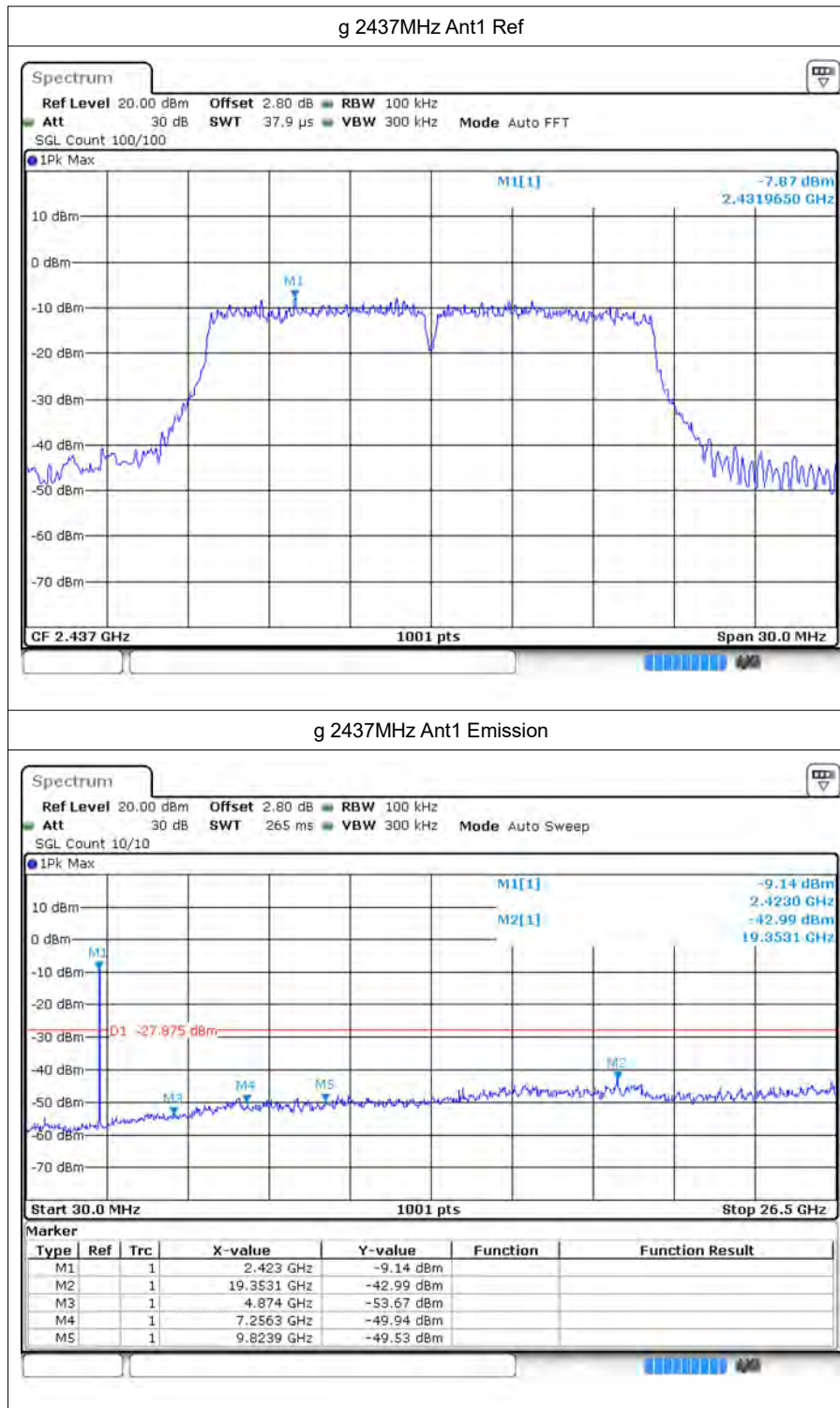
7.2 Test Graphs

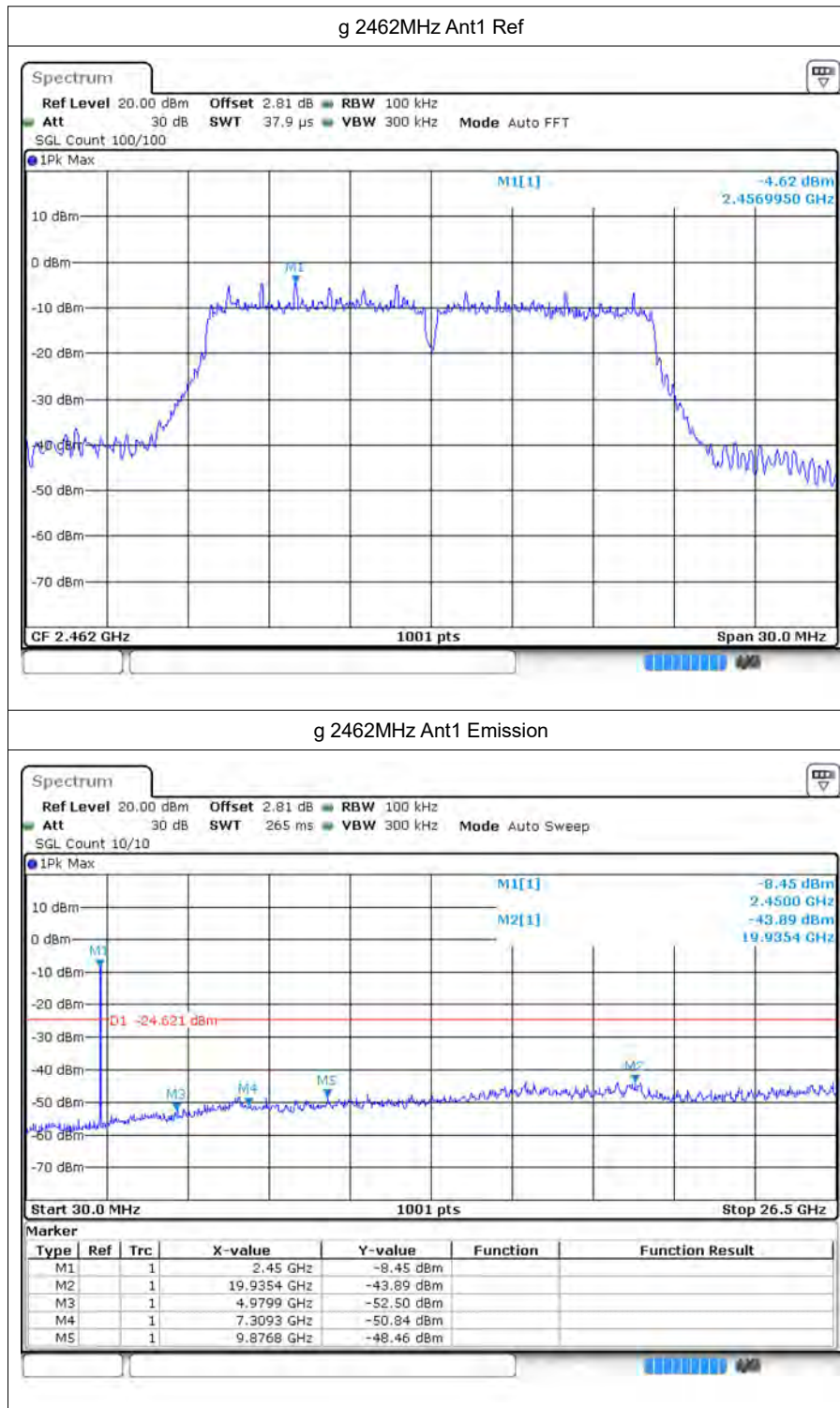


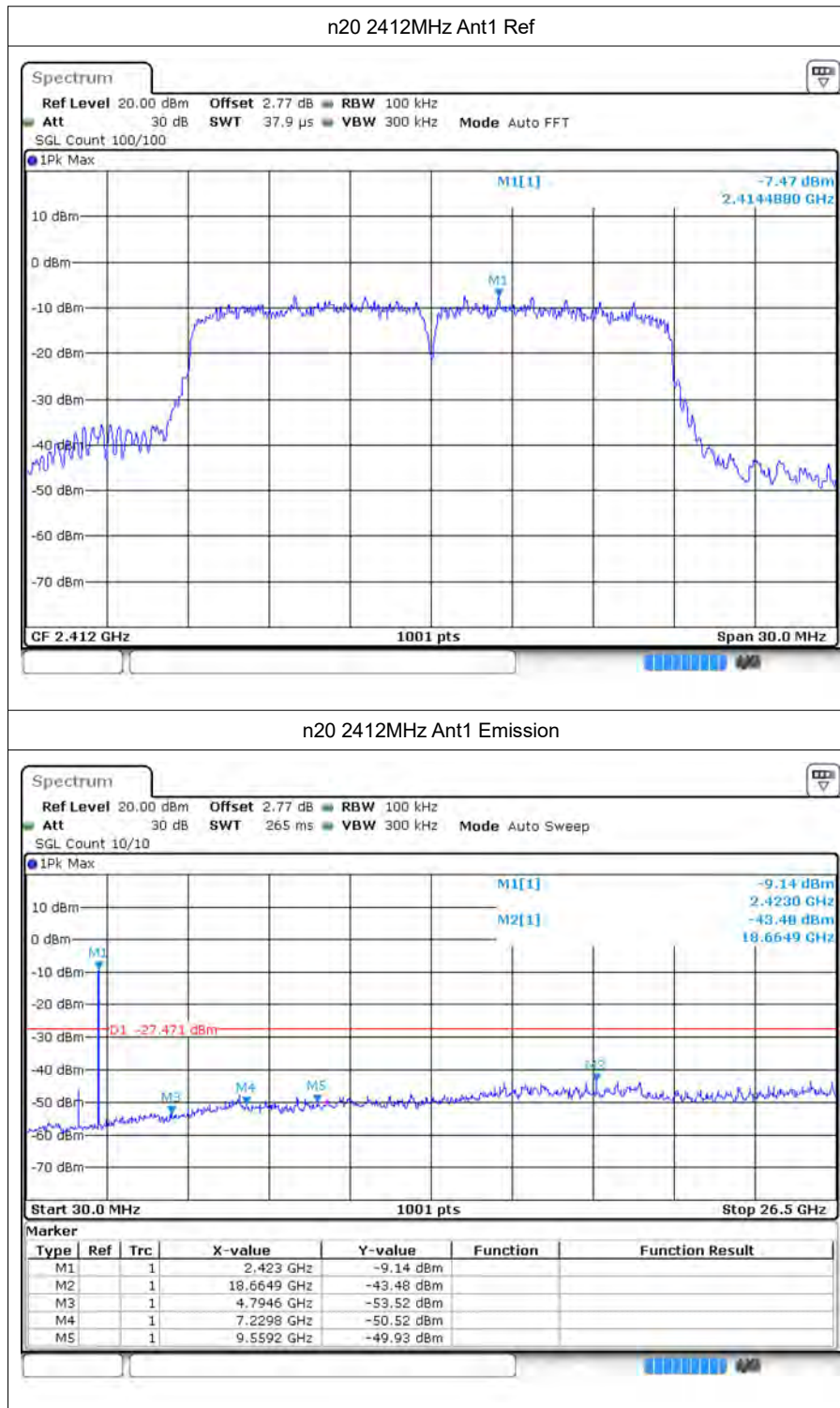


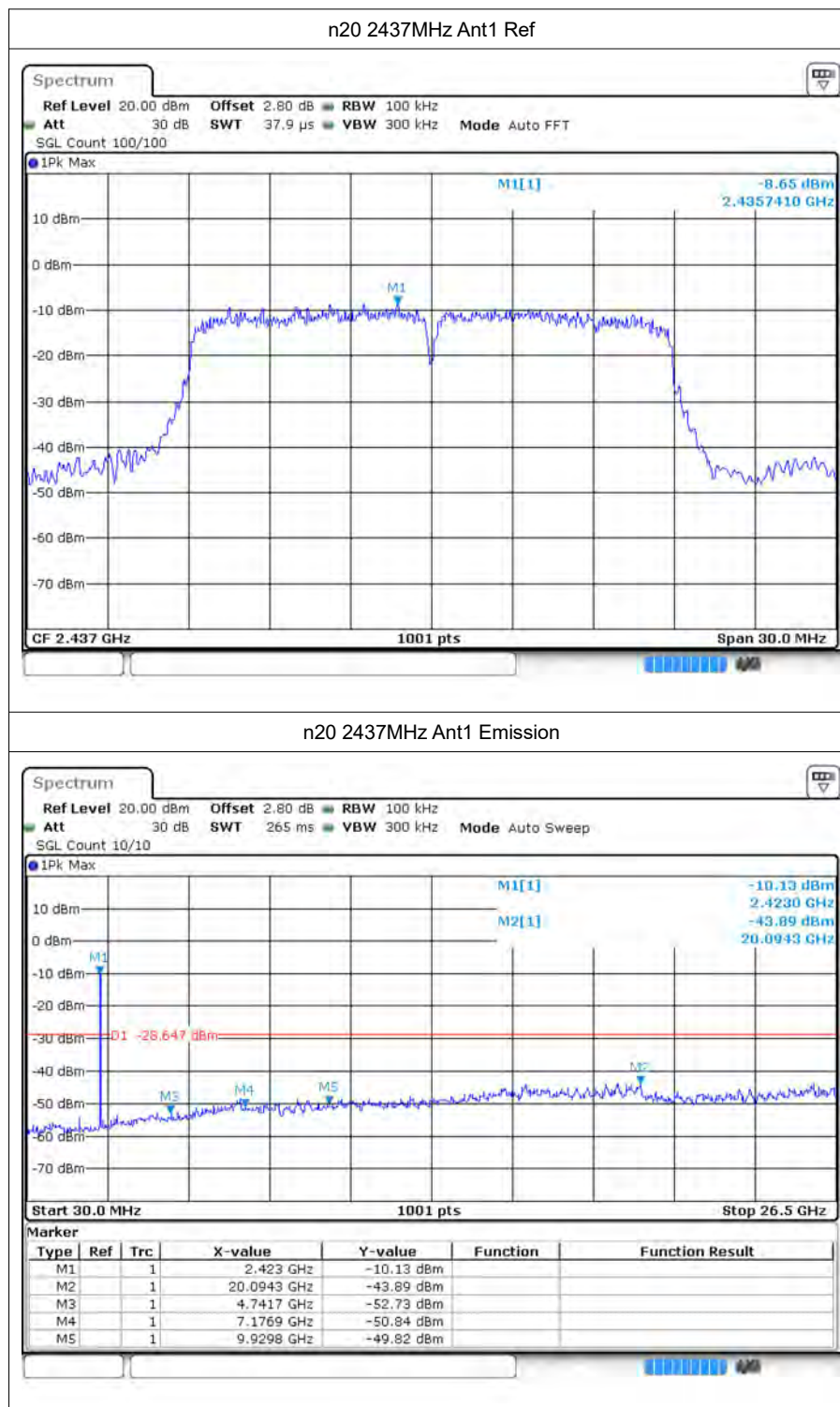


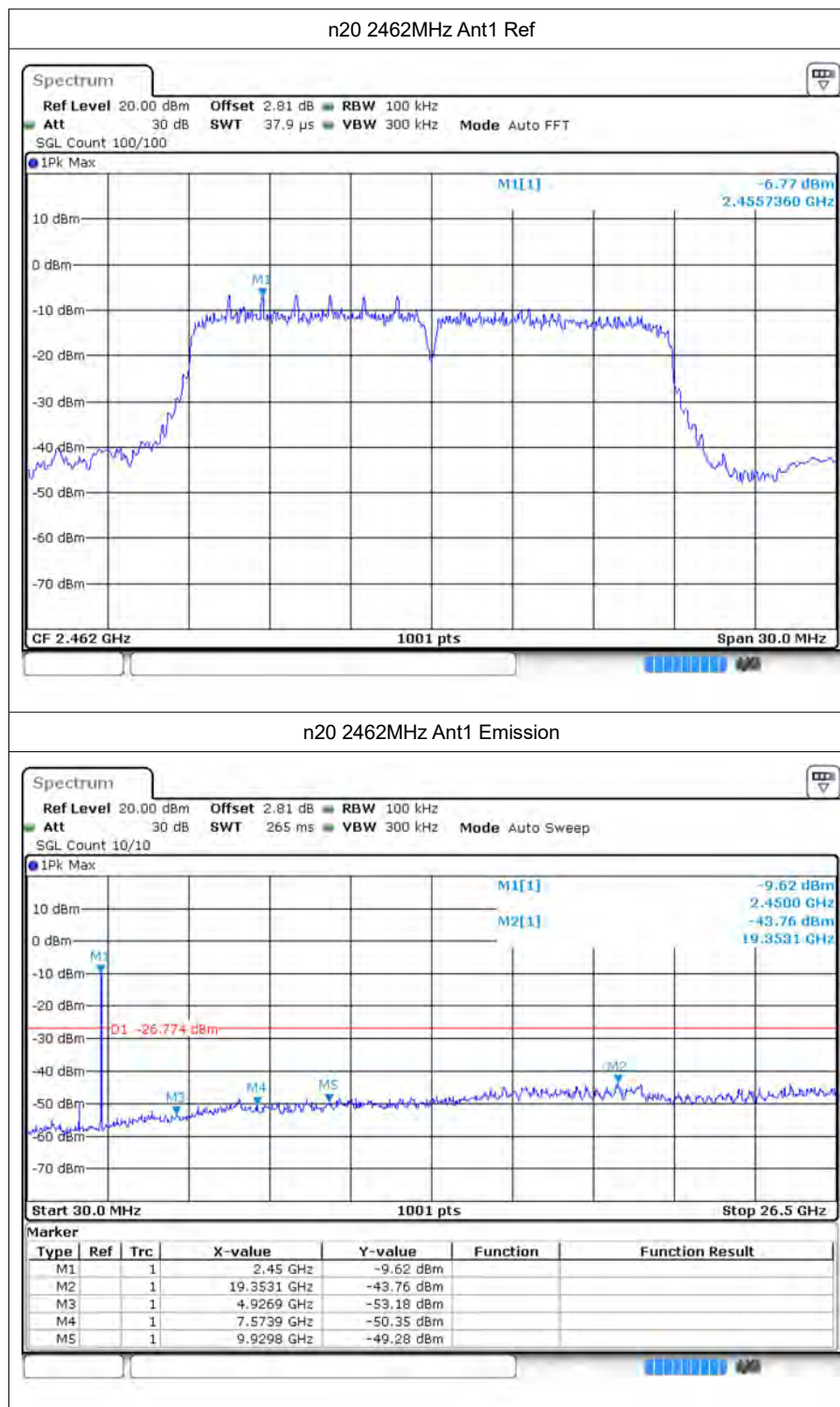


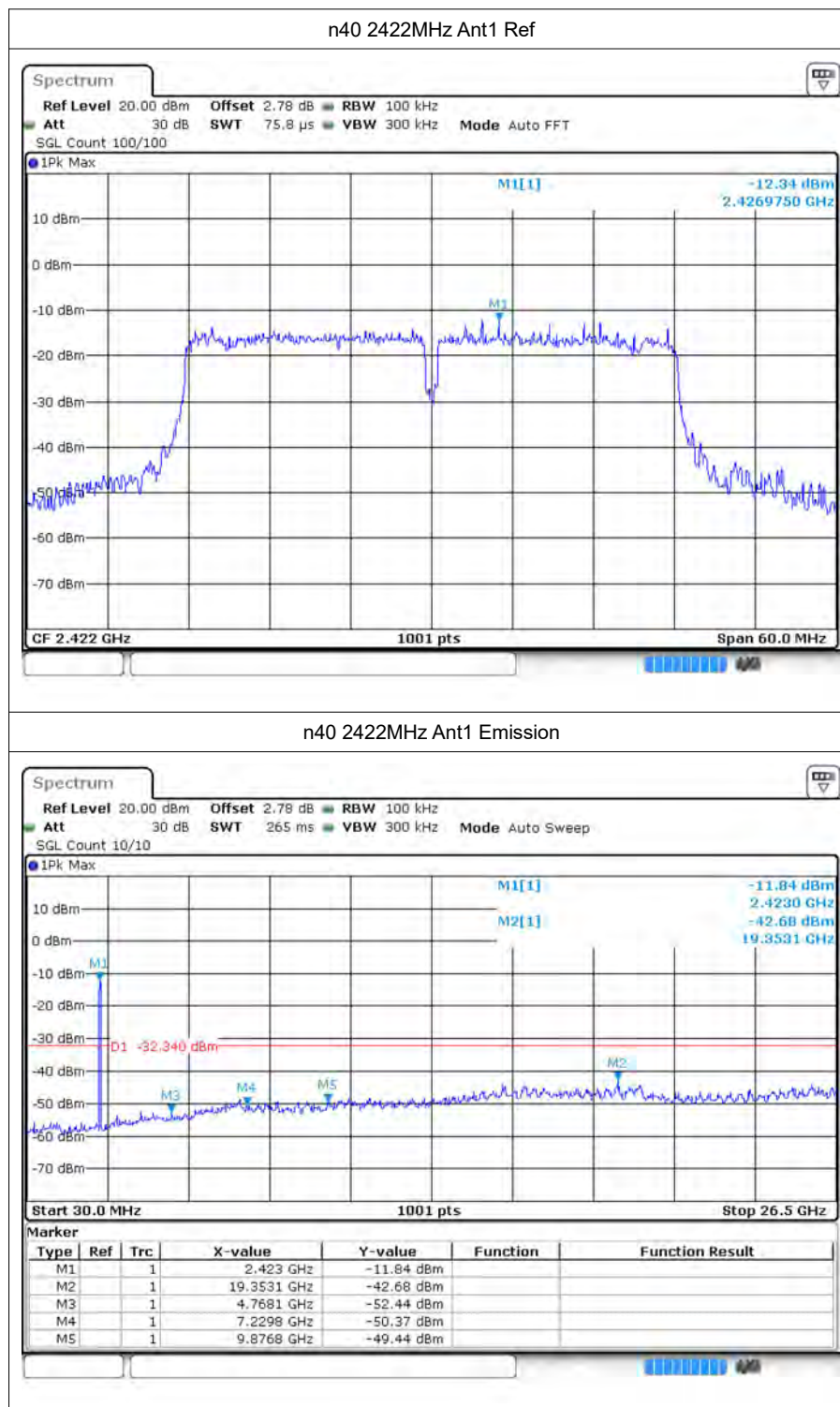


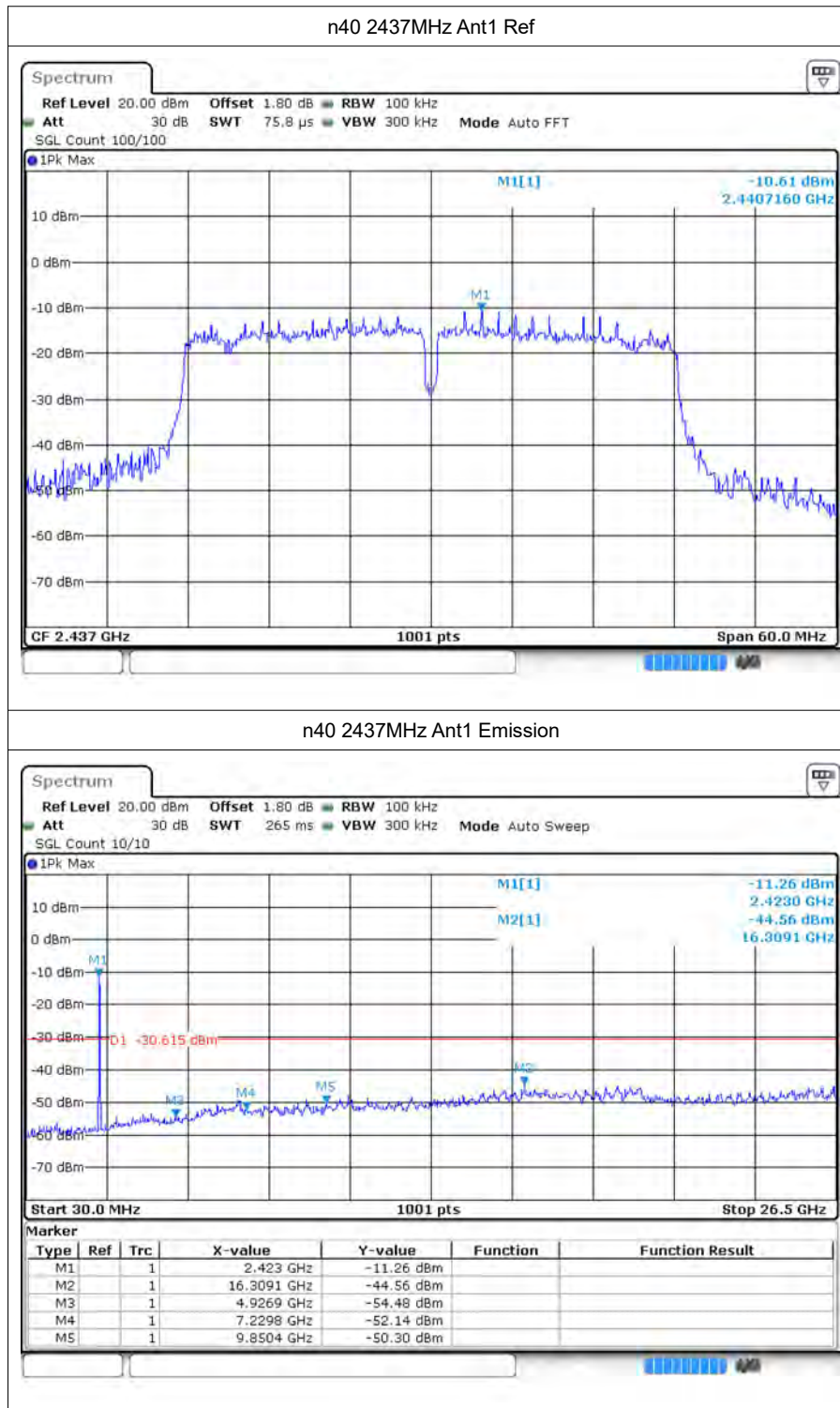


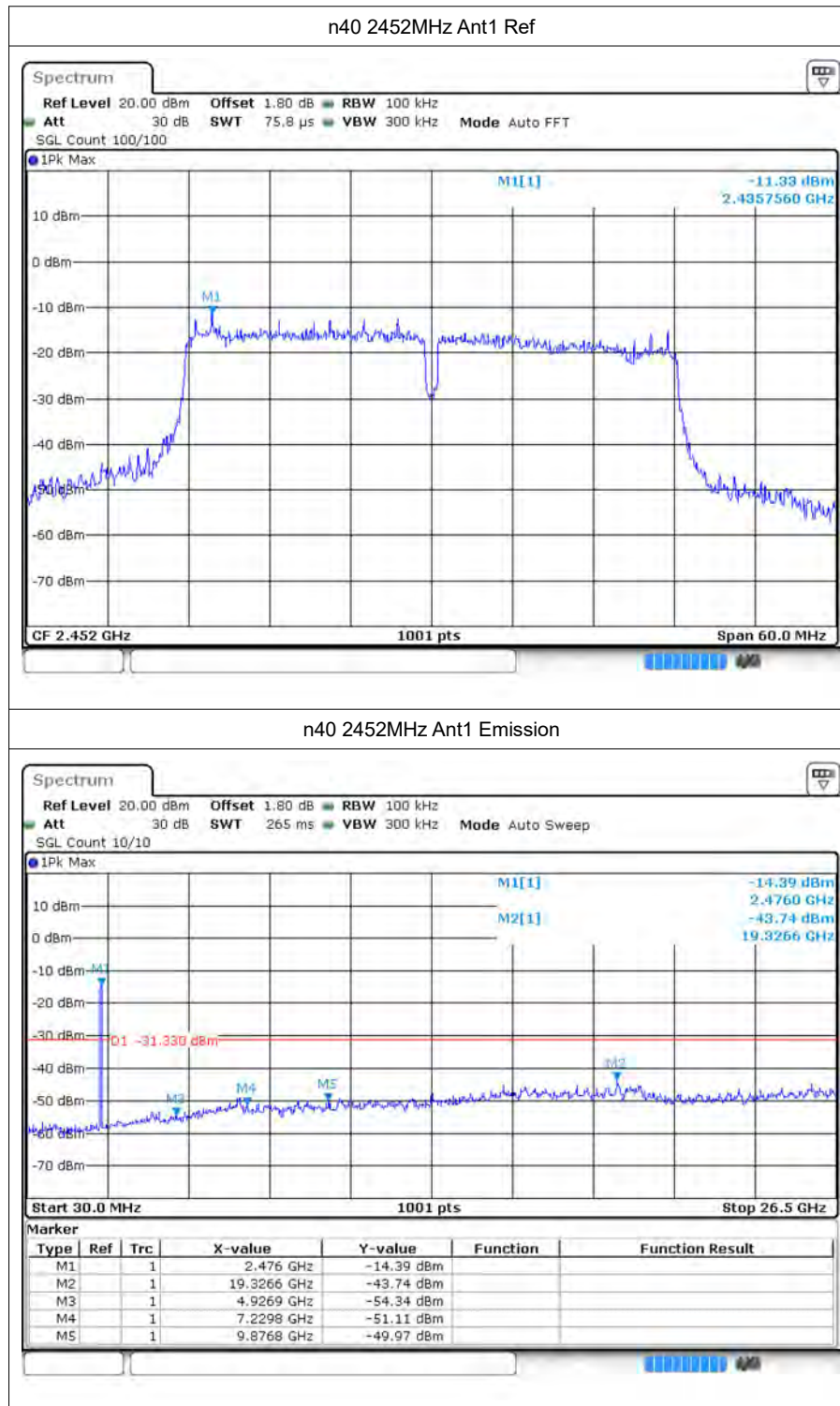














8 Restrict Band

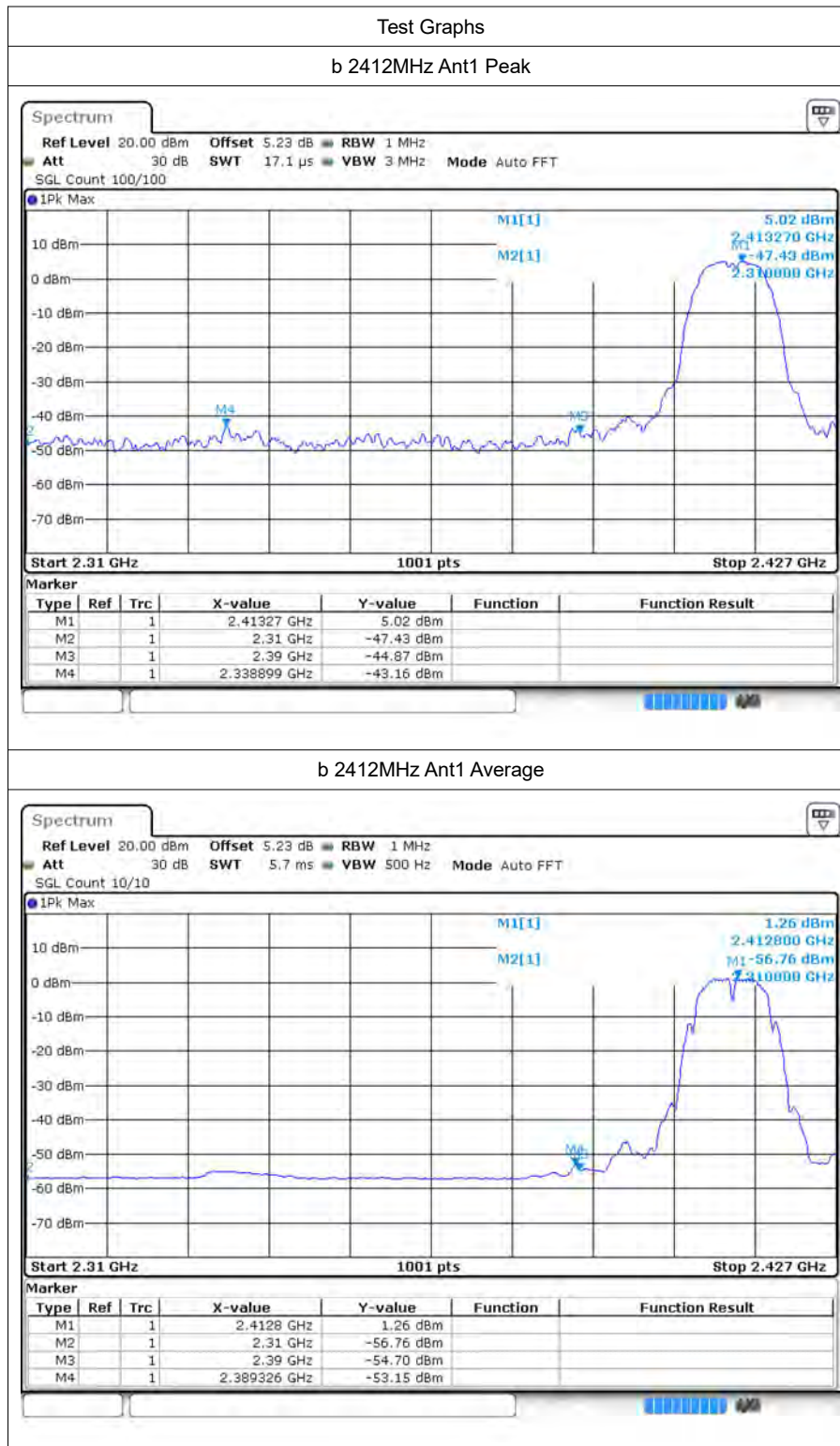
8.1 Test Result

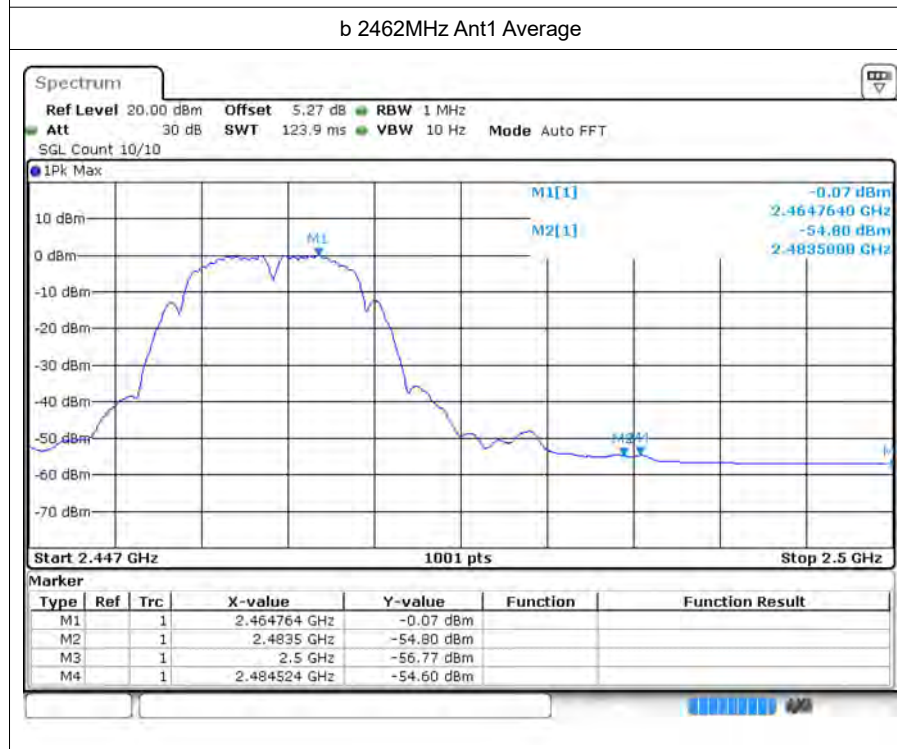
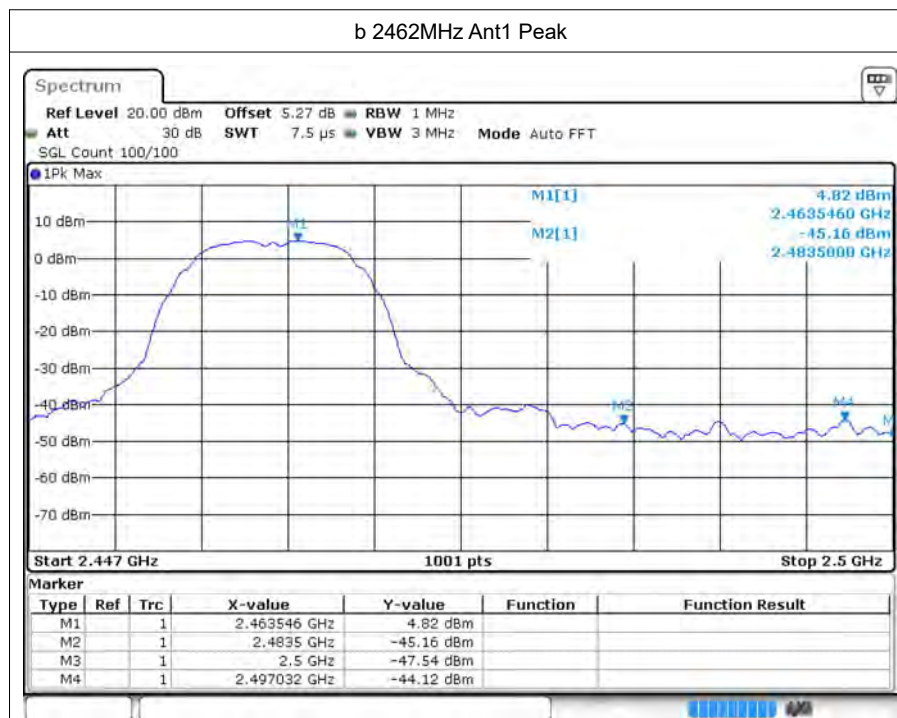
Mode	Frequency (MHz)	Ant.	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
b	2412	Ant1	2310	-47.43	2.46	50.29	Peak	74	Pass
b	2412	Ant1	2310	-56.75	2.46	40.97	Average	54	Pass
b	2412	Ant1	2338.899	-43.16	2.46	54.56	Peak	74	Pass
b	2412	Ant1	2389.326	-53.14	2.46	44.58	Average	54	Pass
b	2412	Ant1	2390	-44.86	2.46	52.86	Peak	74	Pass
b	2412	Ant1	2390	-54.7	2.46	43.02	Average	54	Pass
b	2462	Ant1	2483.5	-45.15	2.46	52.57	Peak	74	52.57
b	2462	Ant1	2483.5	-54.8	2.46	42.92	Average	54	Pass
b	2462	Ant1	2497.032	-44.11	2.46	53.61	Peak	74	Pass
b	2462	Ant1	2484.524	-54.59	2.46	43.13	Average	54	Pass
b	2462	Ant1	2500	-47.54	2.46	50.18	Peak	74	Pass
b	2462	Ant1	2500	-56.76	2.46	40.96	Average	54	Pass
g	2412	Ant1	2310	-48.78	2.46	48.94	Peak	74	Pass
g	2412	Ant1	2310	-56.3	2.46	41.42	Average	54	Pass
g	2412	Ant1	2389.911	-42.64	2.46	55.08	Peak	74	Pass
g	2412	Ant1	2336.793	-54.43	2.46	43.29	Average	54	Pass
g	2412	Ant1	2390	-42.5	2.46	52.86	Peak	74	Pass
g	2412	Ant1	2390	-54.94	2.46	42.78	Average	54	Pass
g	2462	Ant1	2483.5	-39.61	2.46	58.11	Peak	74	Pass
g	2462	Ant1	2483.5	-54.03	2.46	43.69	Average	54	Pass
g	2462	Ant1	2497.032	-39.61	2.46	58.11	Peak	74	Pass
g	2462	Ant1	2483.517	-54.03	2.46	43.69	Average	54	Pass
g	2462	Ant1	2500	-46.87	2.46	50.18	Peak	74	Pass
g	2462	Ant1	2500	-56.11	2.46	41.61	Average	54	Pass
n20	2412	Ant1	2310	-46.5	2.46	51.22	Peak	74	Pass
n20	2412	Ant1	2310	-56.38	2.46	41.34	Average	54	Pass
n20	2412	Ant1	2389.911	-38.9	2.46	58.82	Peak	74	Pass
n20	2412	Ant1	2336.91	-54.06	2.46	43.66	Average	54	Pass
n20	2412	Ant1	2390	-38.64	2.46	59.08	Peak	74	Pass
n20	2412	Ant1	2390	-55.32	2.46	42.4	Average	54	Pass
n20	2462	Ant1	2483.5	-45.34	2.46	52.38	Peak	74	Pass
n20	2462	Ant1	2483.5	-54.85	2.46	42.87	Average	54	Pass
n20	2462	Ant1	2483.729	-44.49	2.46	53.23	Peak	74	Pass
n20	2462	Ant1	2484.418	-54.71	2.46	43.01	Average	54	Pass

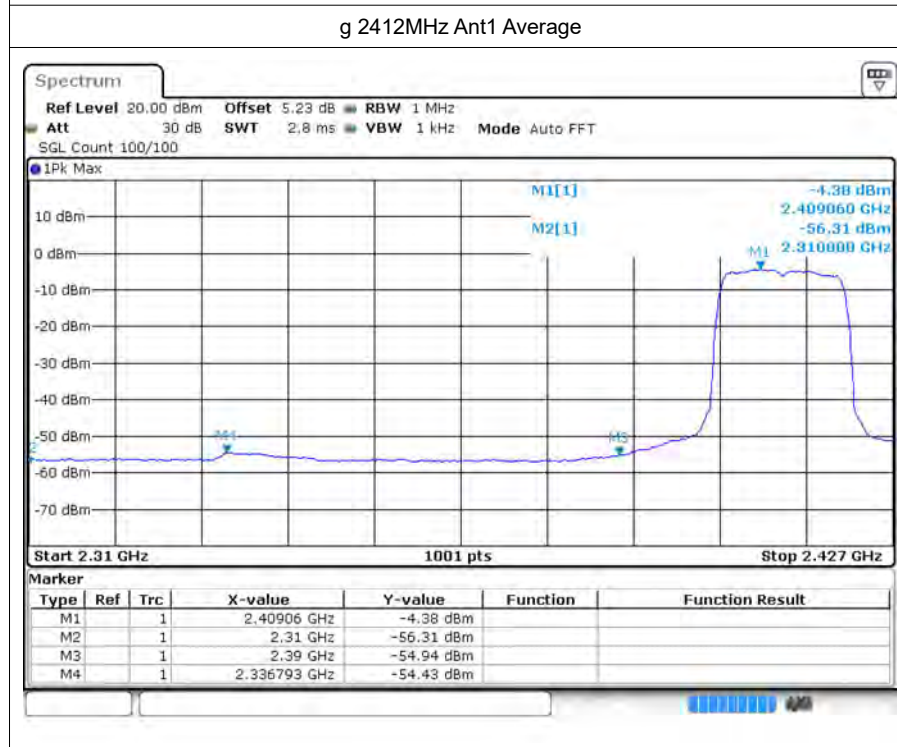
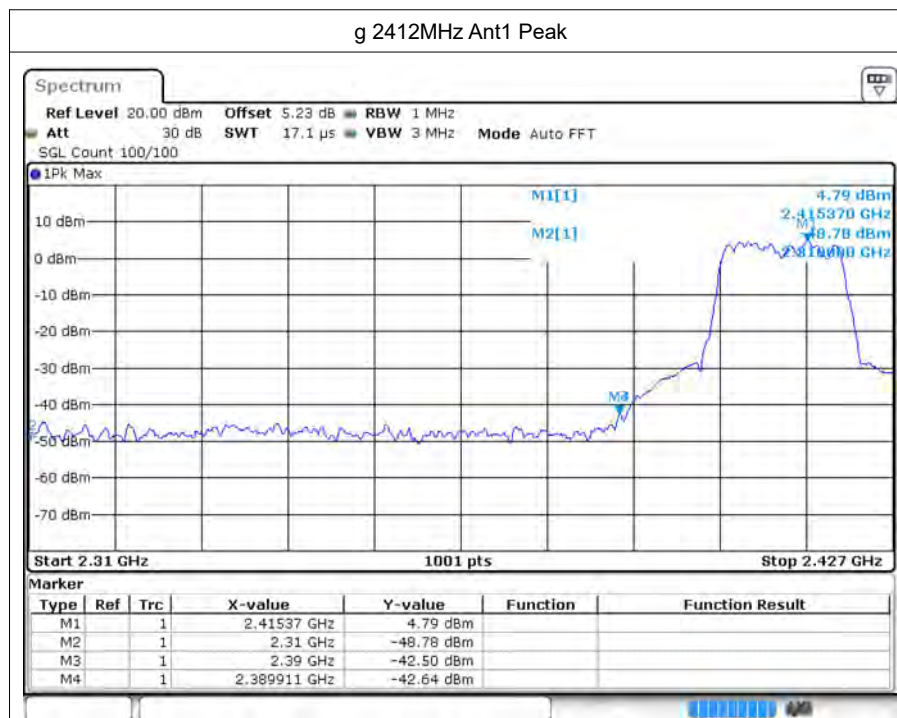


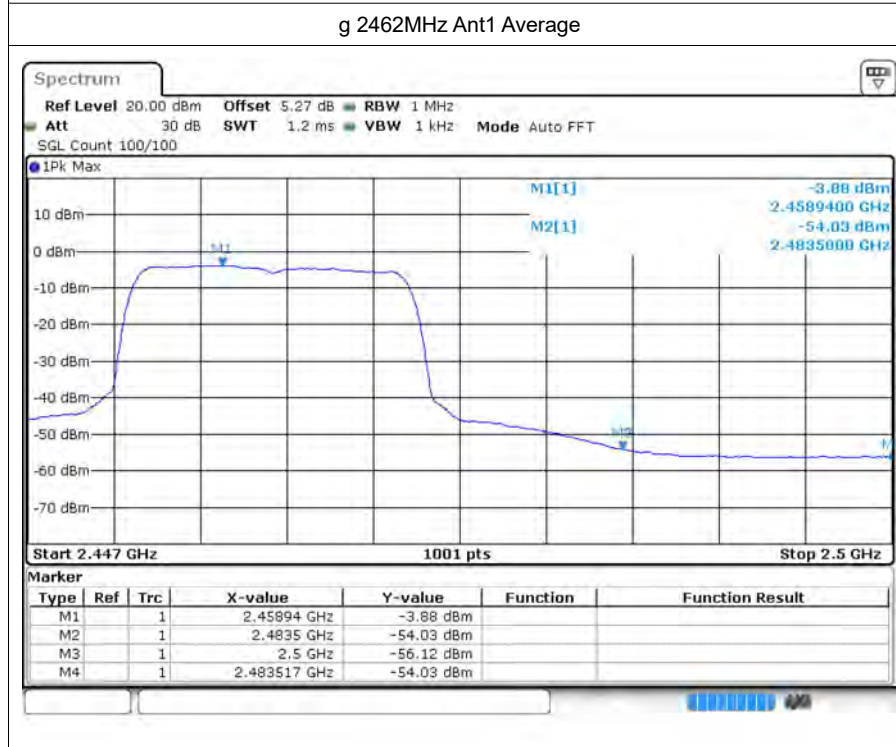
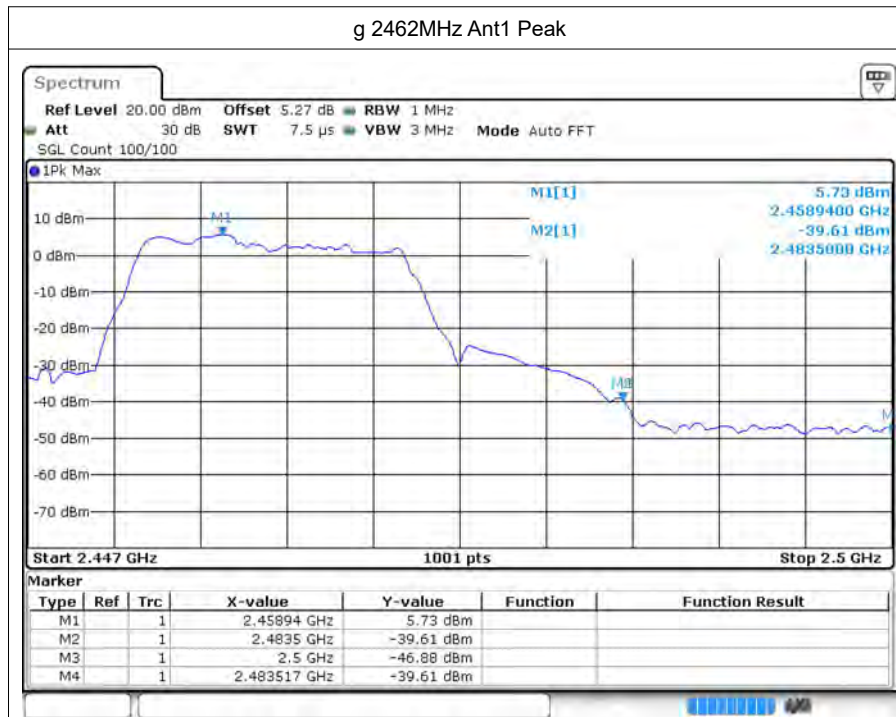
n20	2462	Ant1	2500	-46.33	2.46	51.39	Peak	74	Pass
n20	2462	Ant1	2500	-55.86	2.46	41.86	Average	54	Pass
n40	2422	Ant1	2310	-46.09	2.46	51.63	Peak	74	Pass
n40	2422	Ant1	2310	-55.68	2.46	42.04	Average	54	Pass
n40	2422	Ant1	2388.526	-38.48	2.46	59.24	Peak	74	Pass
n40	2422	Ant1	2389.804	-53.18	2.46	44.54	Average	54	Pass
n40	2422	Ant1	2390	-42.4	2.46	55.32	Peak	74	Pass
n40	2422	Ant1	2390	-53.31	2.46	44.41	Average	54	Pass
n40	2452	Ant1	2483.5	-42.21	2.46	55.51	Peak	74	Pass
n40	2452	Ant1	2483.5	-54.45	2.46	43.27	Average	54	Pass
n40	2452	Ant1	2484.634	-41.27	2.46	56.45	Peak	74	Pass
n40	2452	Ant1	2483.932	-54.24	2.46	43.48	Average	54	Pass
n40	2452	Ant1	2500	-48.05	2.46	49.67	Peak	74	Pass
n40	2452	Ant1	2500	-56.67	2.46	41.05	Average	54	Pass

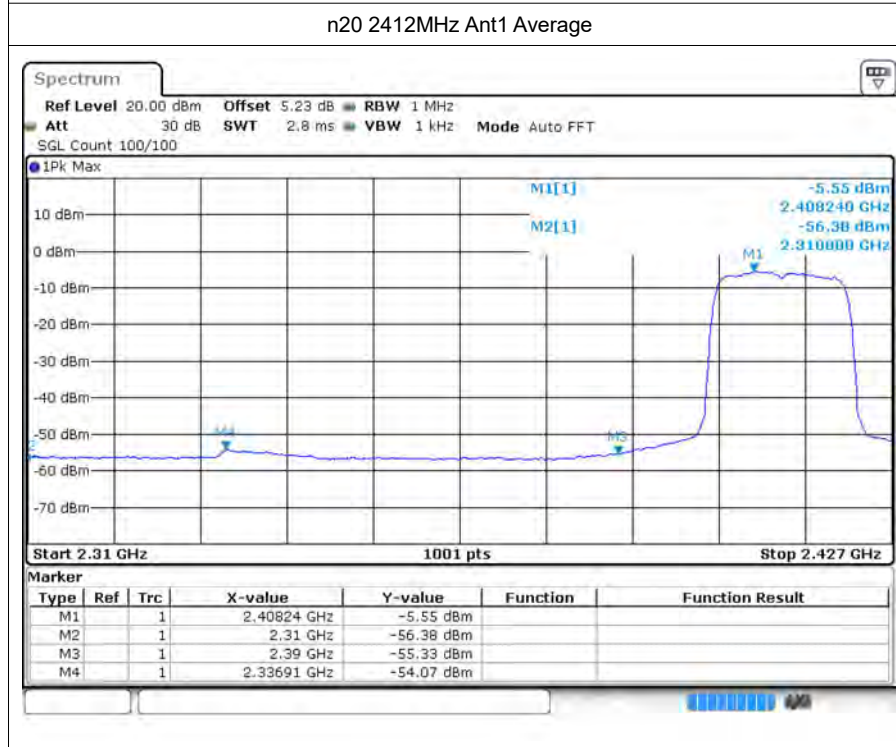
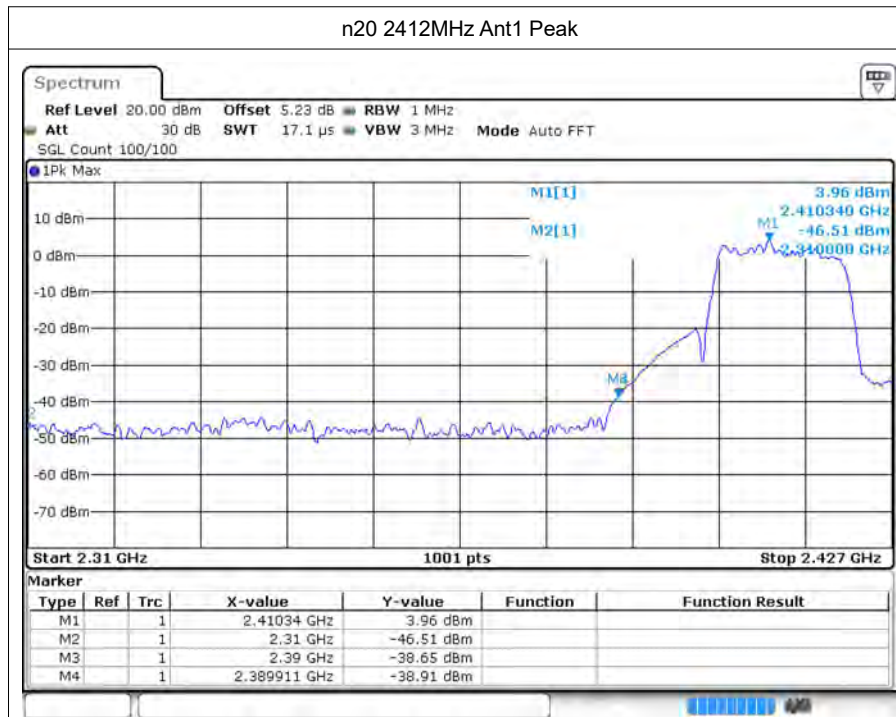
8.2 Test Graphs

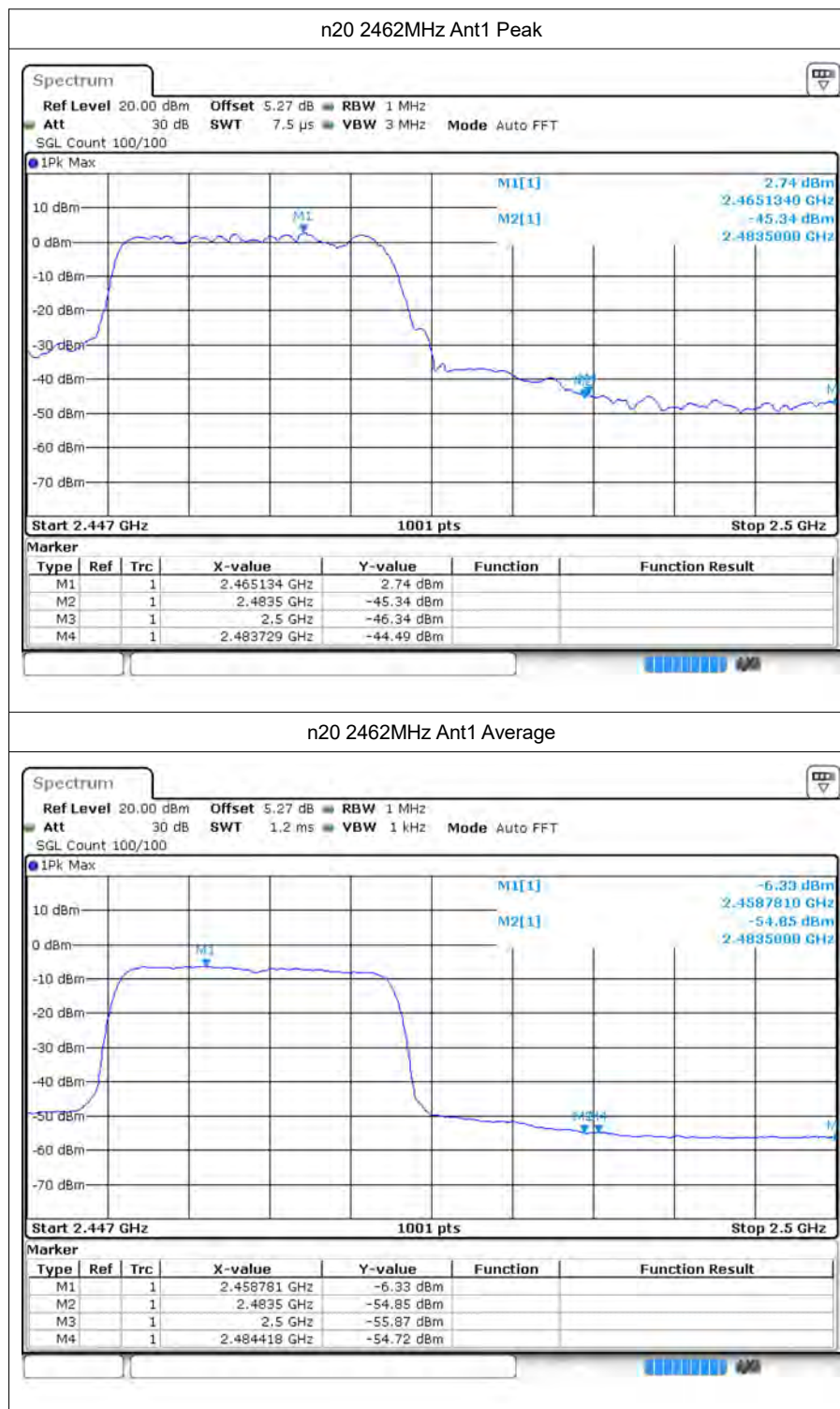


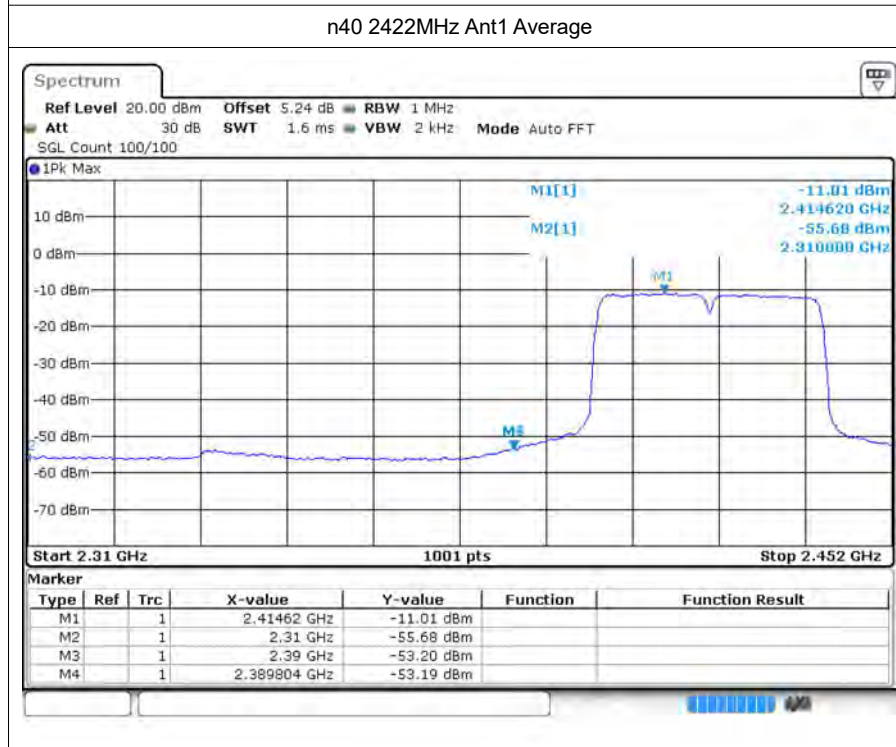
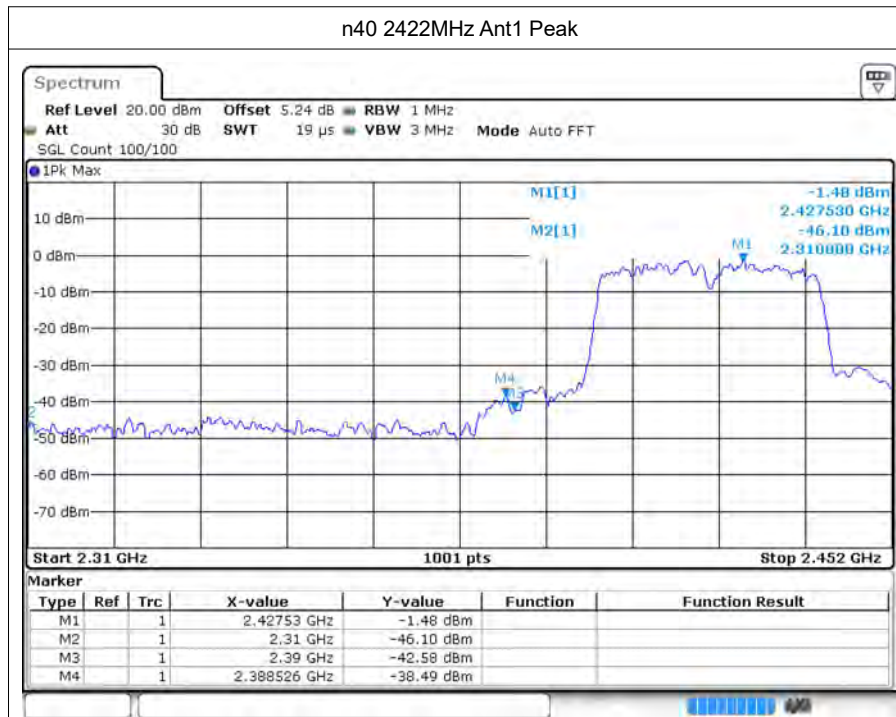


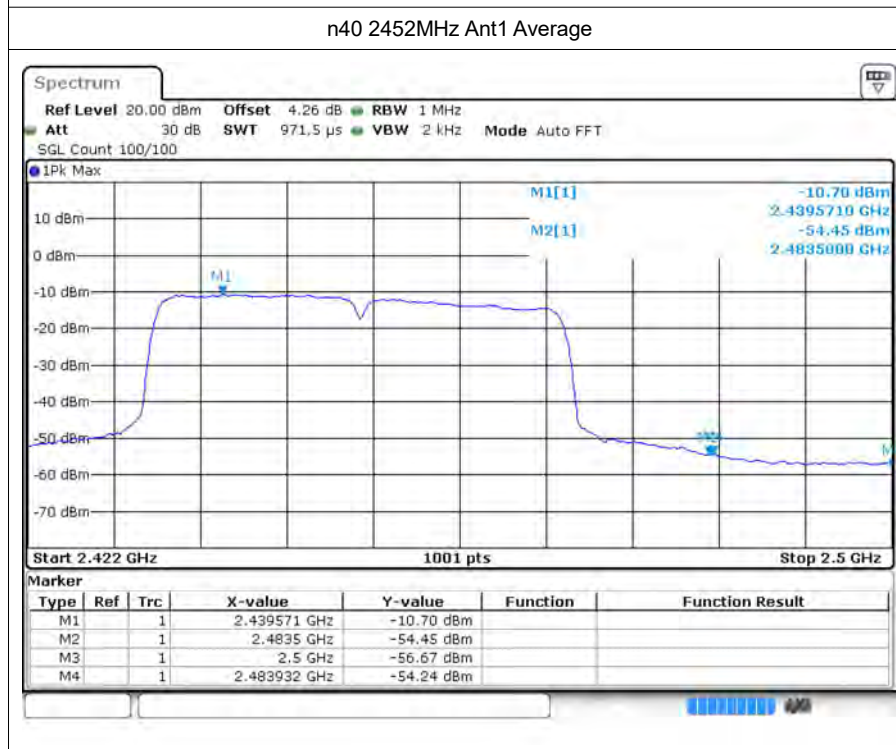












---The End---