



Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: M5Chain Captain



Trade Mark: M5STACK

Test Model: Chain Captain

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Emiya Lin
Supervised by:	Simba Huang



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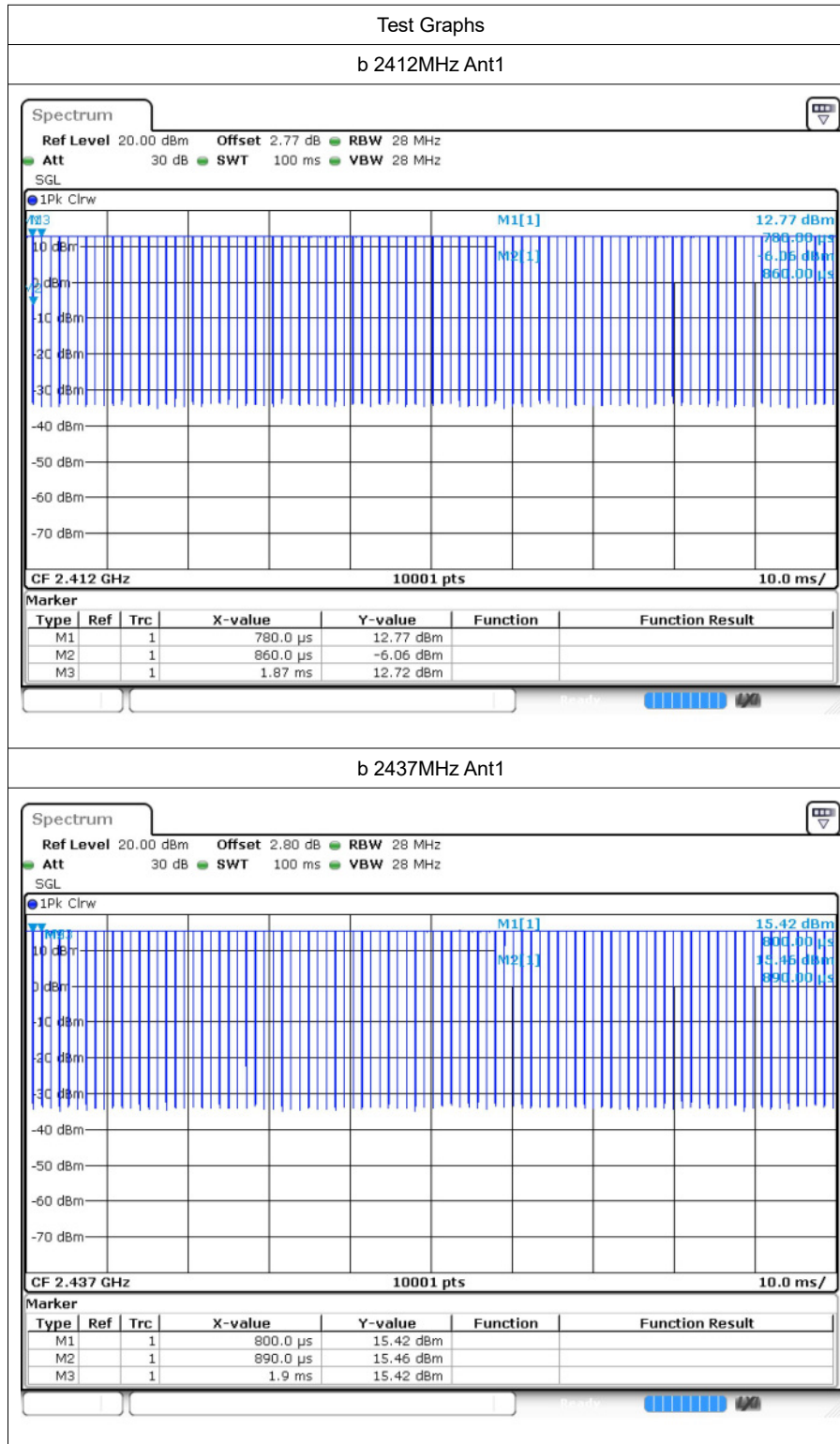
1 Duty Cycle

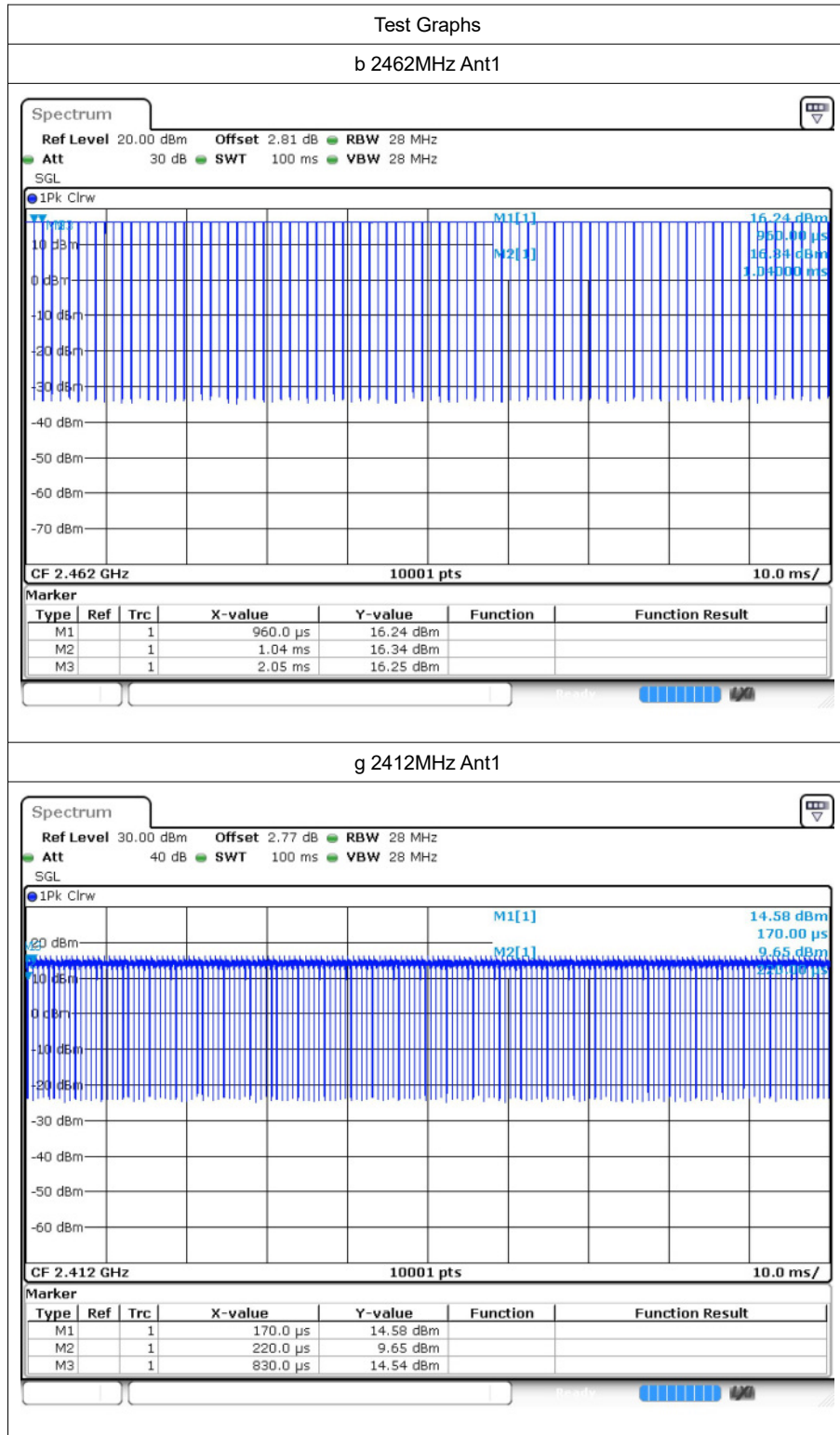
1.1 Test Result

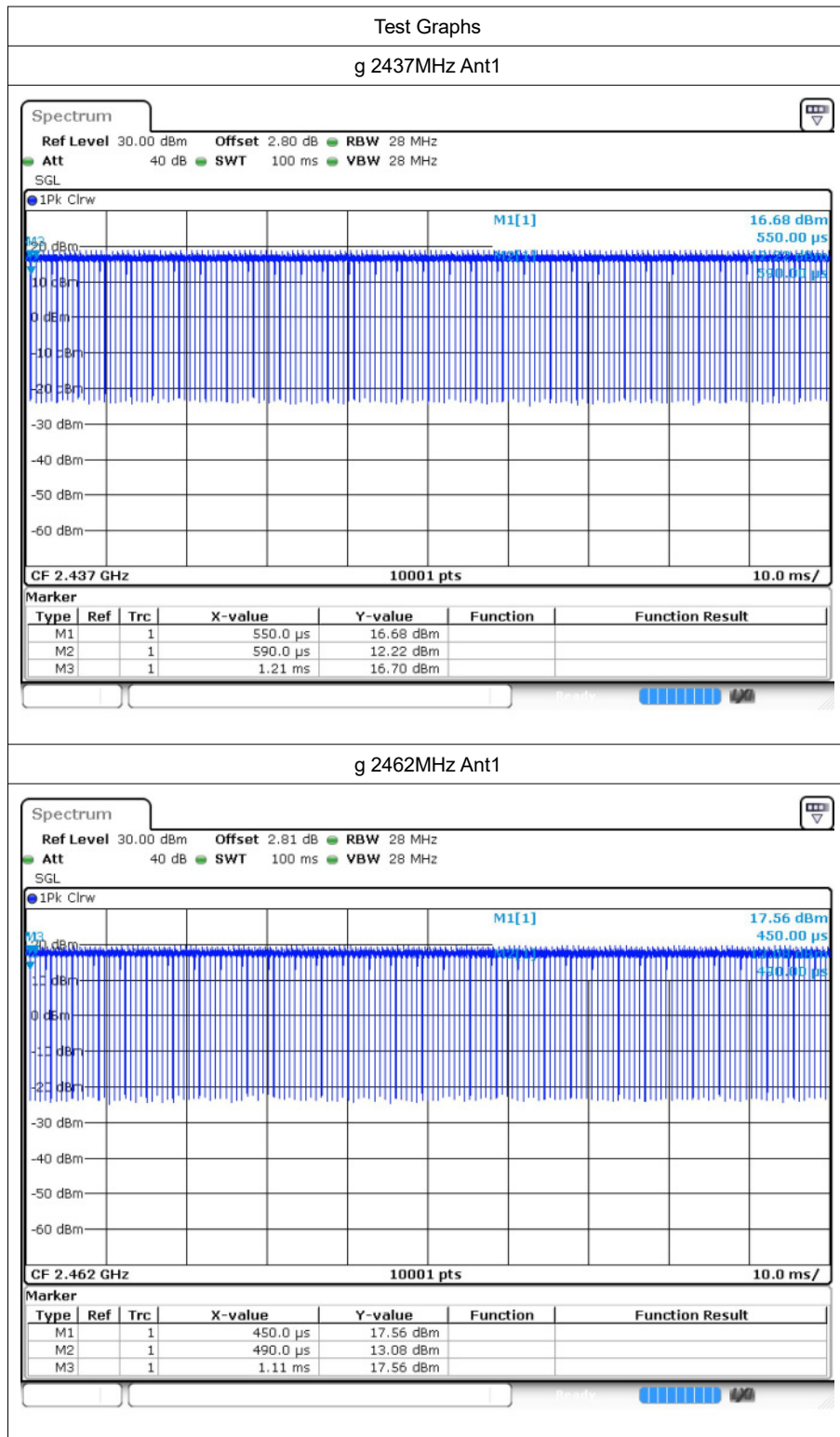
Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor	1/T (kHz)
b	2412	Ant1	92.8	0.32	0.99
b	2437	Ant1	92.86	0.32	0.99
b	2462	Ant1	92.83	0.32	0.99
g	2412	Ant1	93.92	0.27	1.64
g	2437	Ant1	95.47	0.2	1.61
g	2462	Ant1	95.47	0.2	1.61
n20	2412	Ant1	94.8	0.23	1.61
n20	2437	Ant1	94.8	0.23	1.64
n20	2462	Ant1	94.79	0.23	1.64
n40	2422	Ant1	94.83	0.23	1.64
n40	2437	Ant1	94.79	0.23	1.64
n40	2452	Ant1	94.83	0.23	1.64

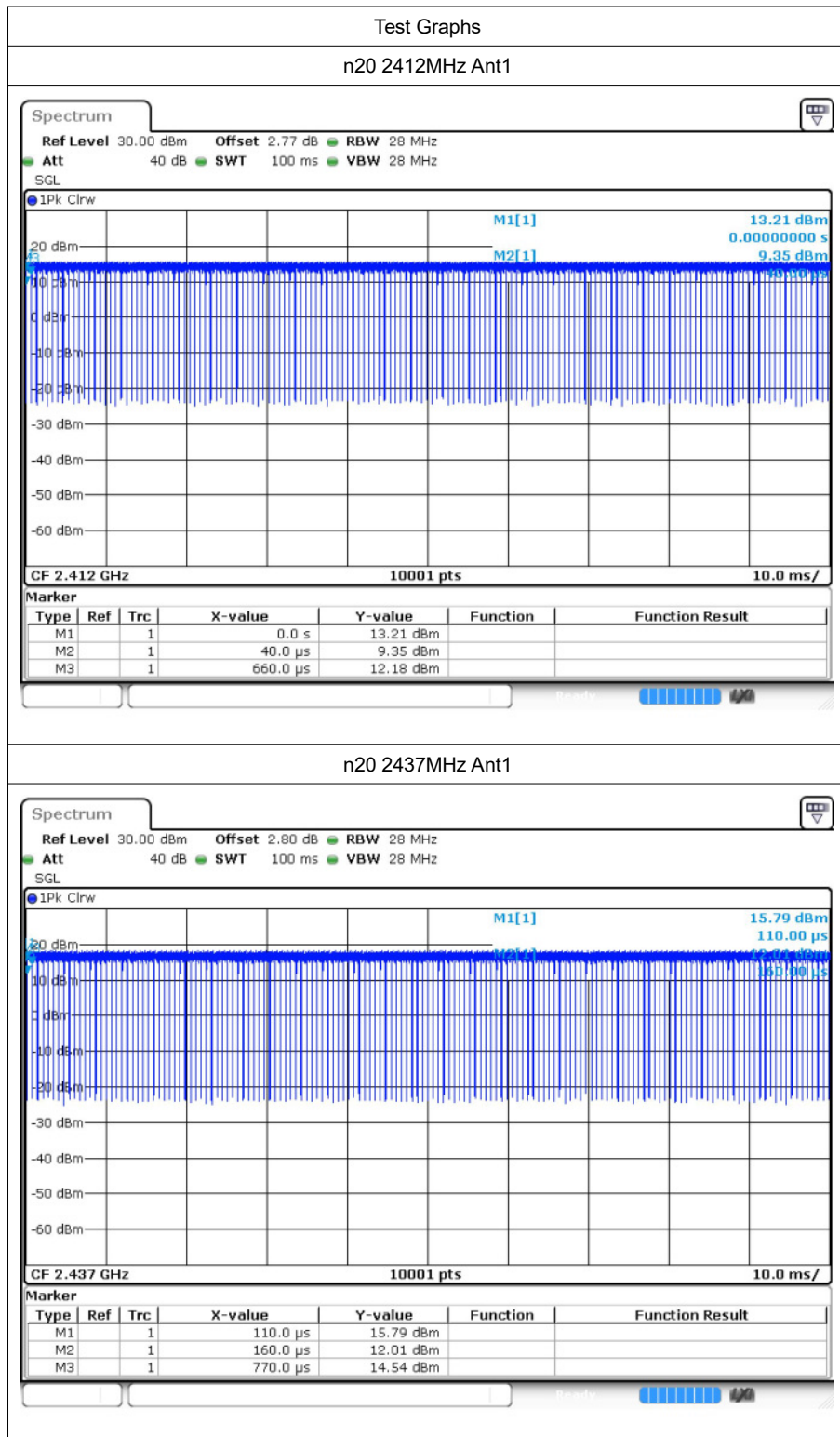


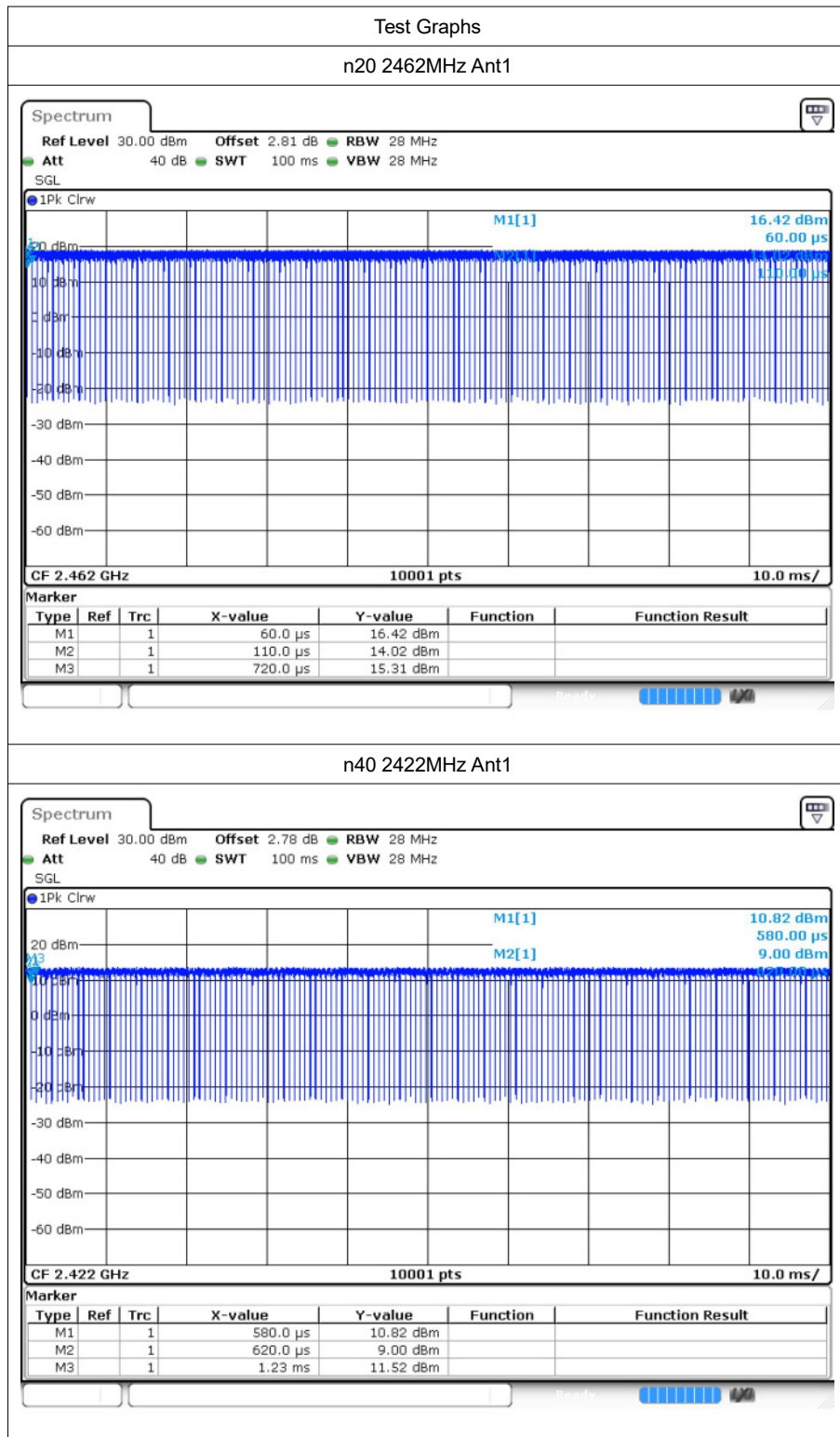
1.2 Test Graphs

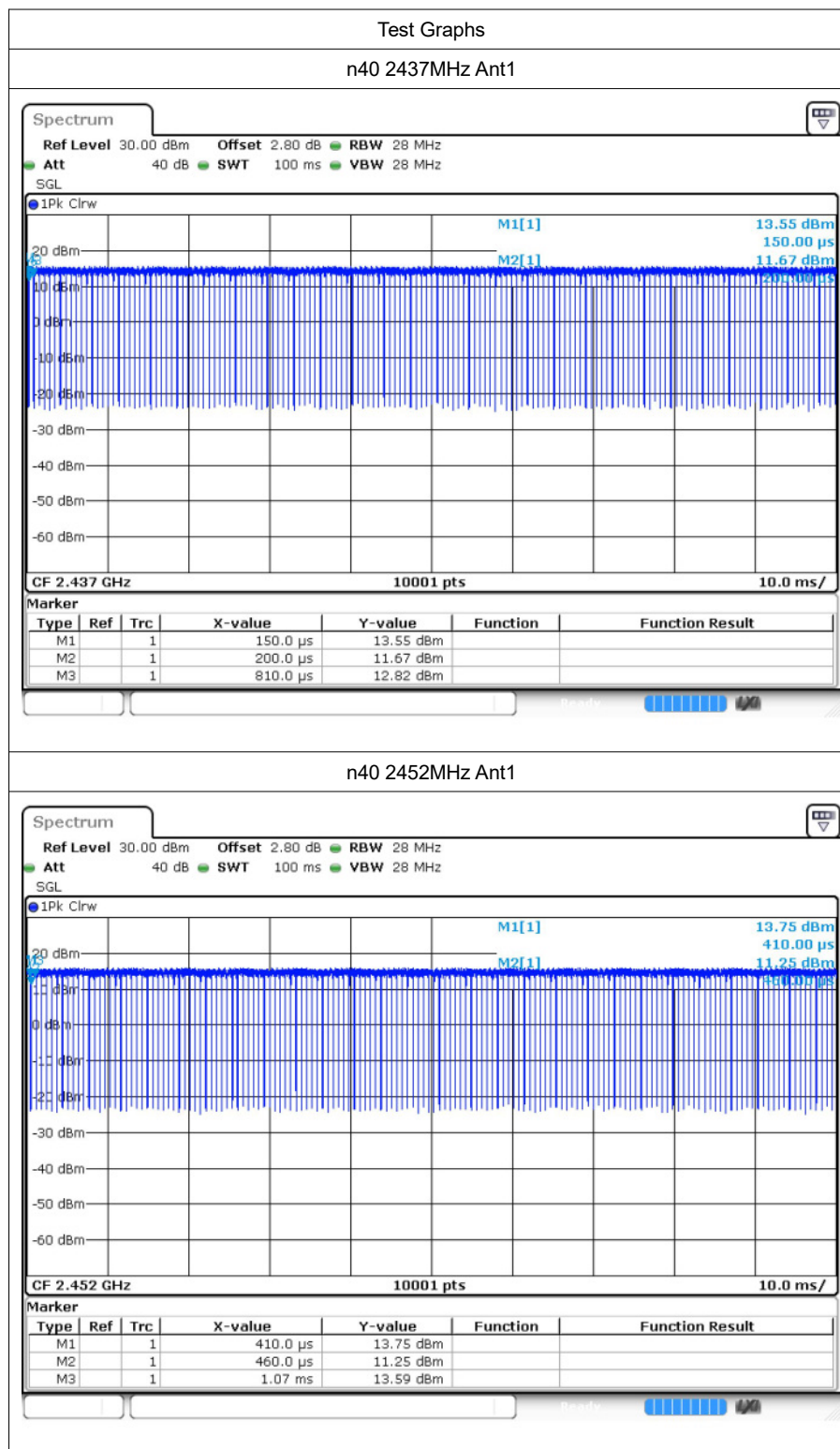












2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	14.01	30	Pass
b	2437	Ant1	16.59	30	Pass
b	2462	Ant1	17.43	30	Pass
g	2412	Ant1	13.26	30	Pass
g	2437	Ant1	15.76	30	Pass
g	2462	Ant1	16.61	30	Pass
n20	2412	Ant1	13.05	30	Pass
n20	2437	Ant1	15.49	30	Pass
n20	2462	Ant1	16.31	30	Pass
n40	2422	Ant1	13.3	30	Pass
n40	2437	Ant1	15.17	30	Pass
n40	2452	Ant1	15.65	30	Pass

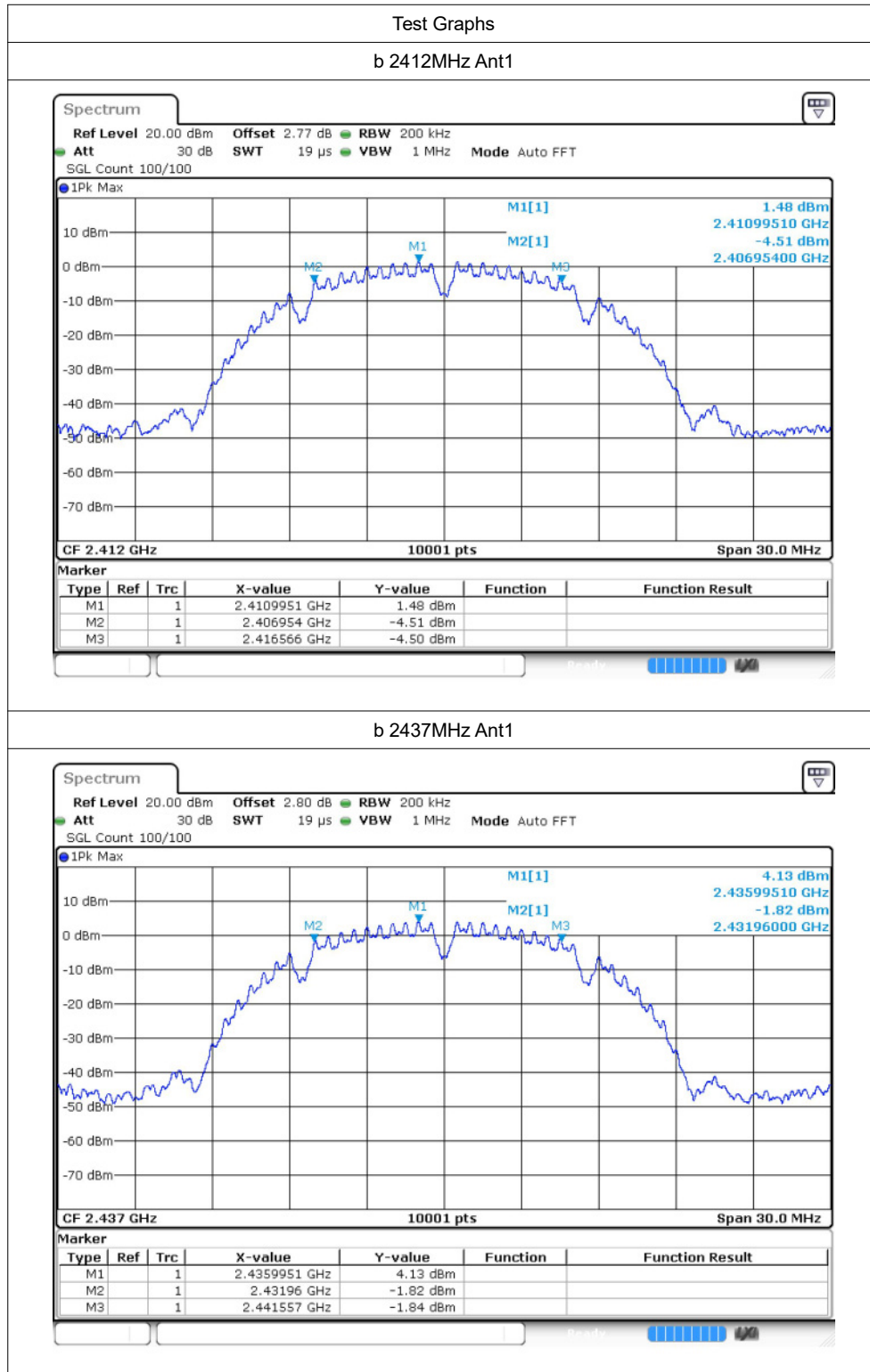


3 -6dB Bandwidth

3.1 Test Result

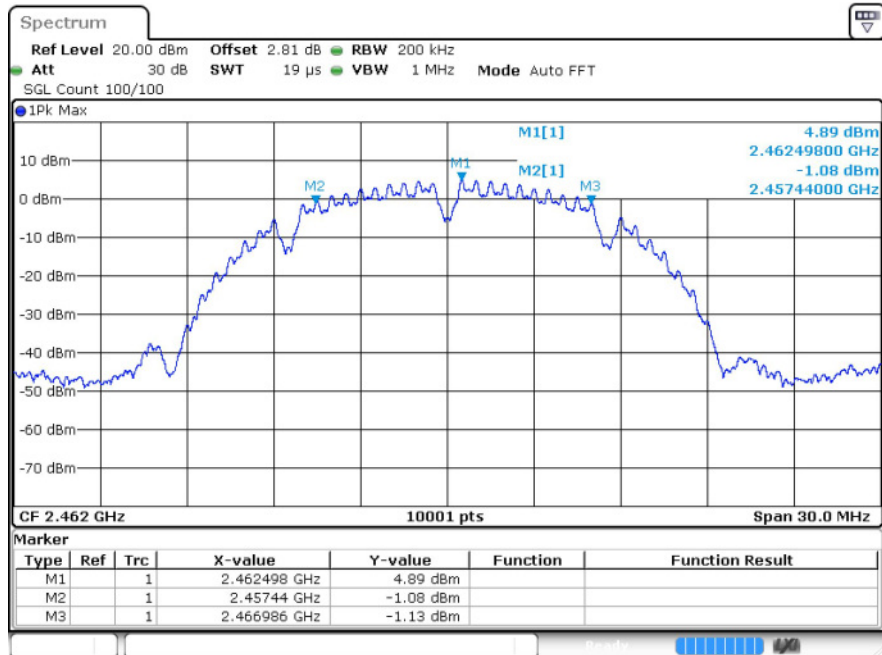
Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	9.612	0.5	Pass
b	2437	Ant1	9.597	0.5	Pass
b	2462	Ant1	9.546	0.5	Pass
g	2412	Ant1	16.374	0.5	Pass
g	2437	Ant1	16.29	0.5	Pass
g	2462	Ant1	16.374	0.5	Pass
n20	2412	Ant1	17.595	0.5	Pass
n20	2437	Ant1	17.568	0.5	Pass
n20	2462	Ant1	17.418	0.5	Pass
n40	2422	Ant1	36.174	0.5	Pass
n40	2437	Ant1	36.042	0.5	Pass
n40	2452	Ant1	36.432	0.5	Pass

3.2 Test Graphs

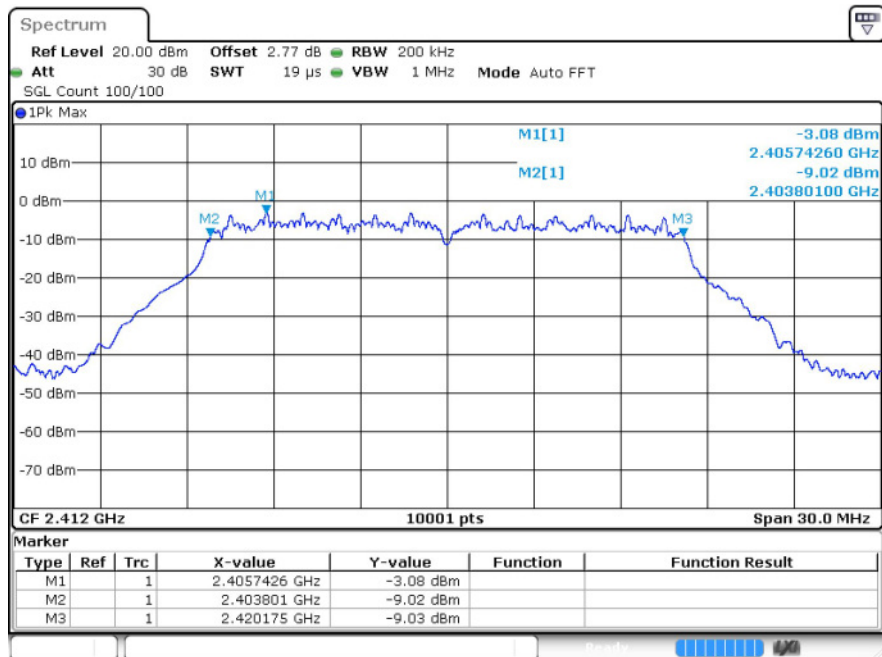




b 2462MHz Ant1

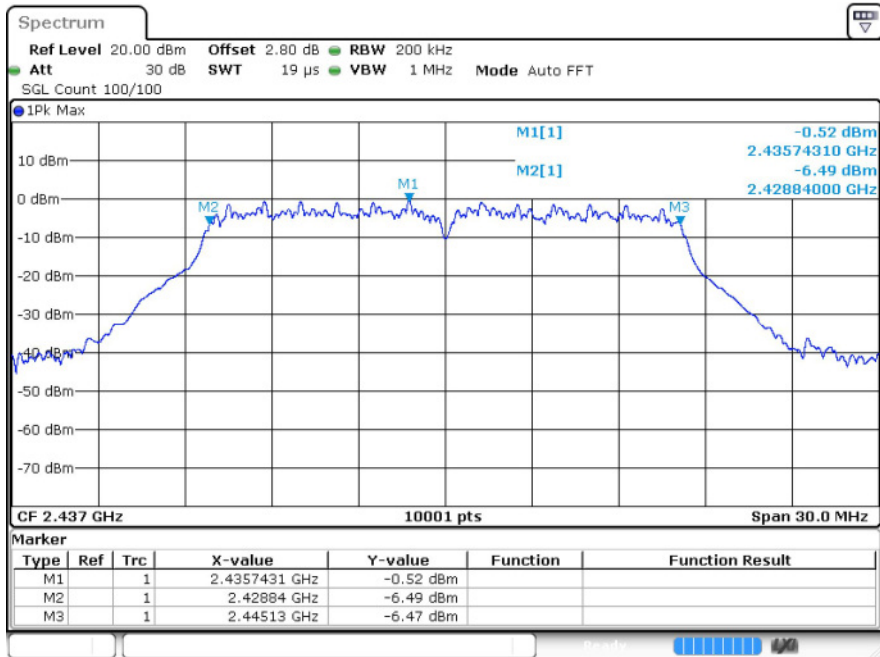


g 2412MHz Ant1

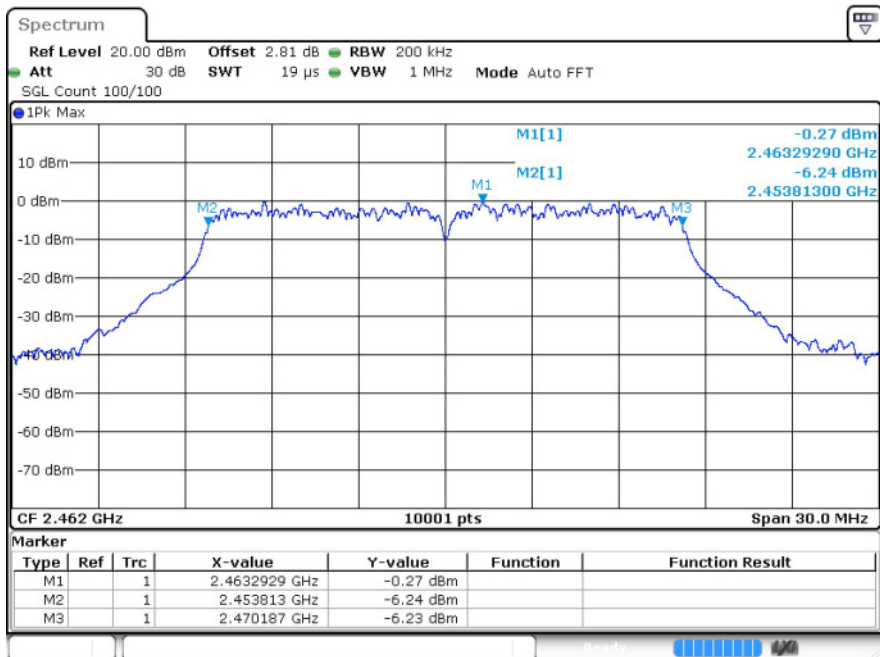


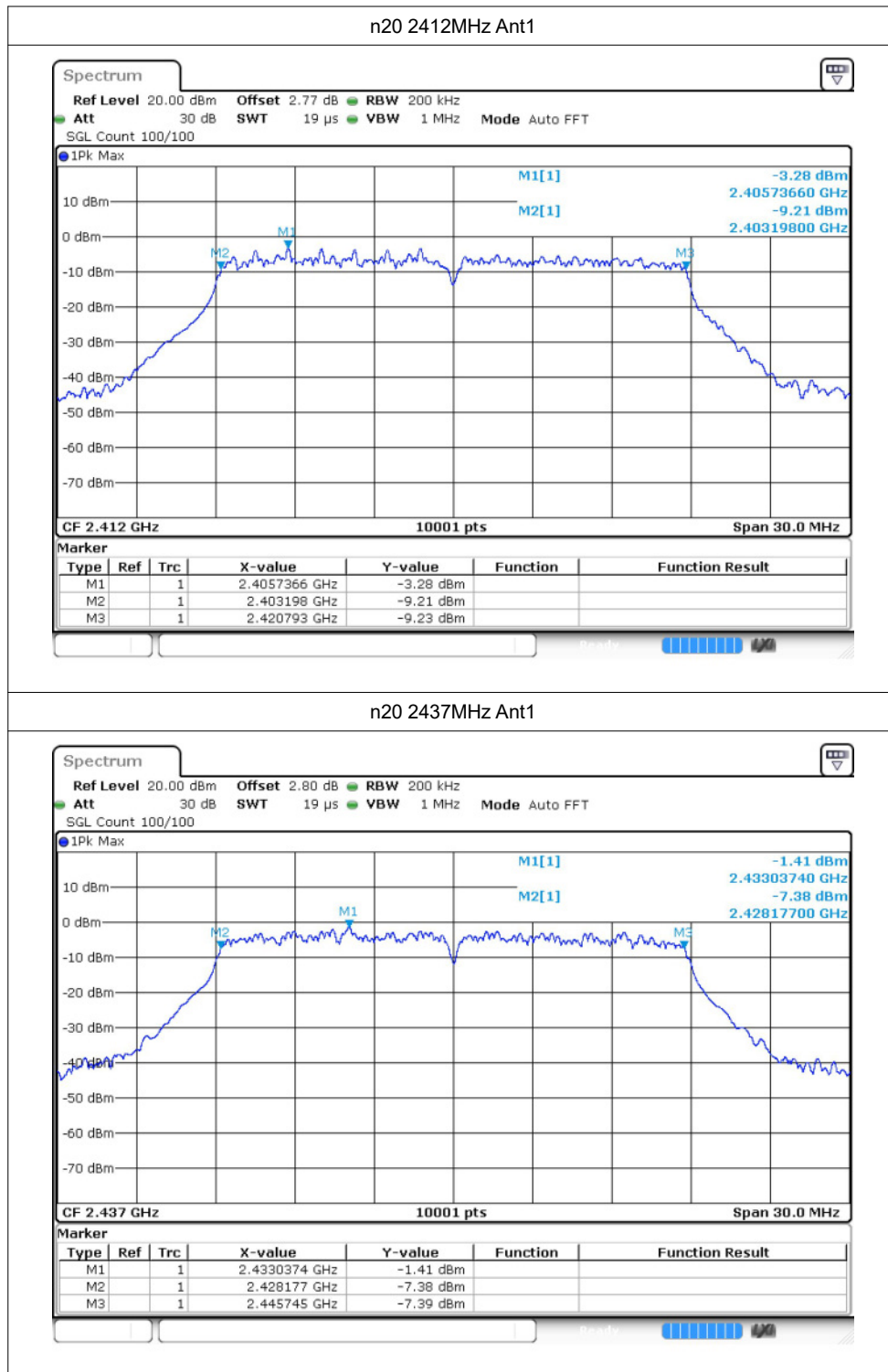


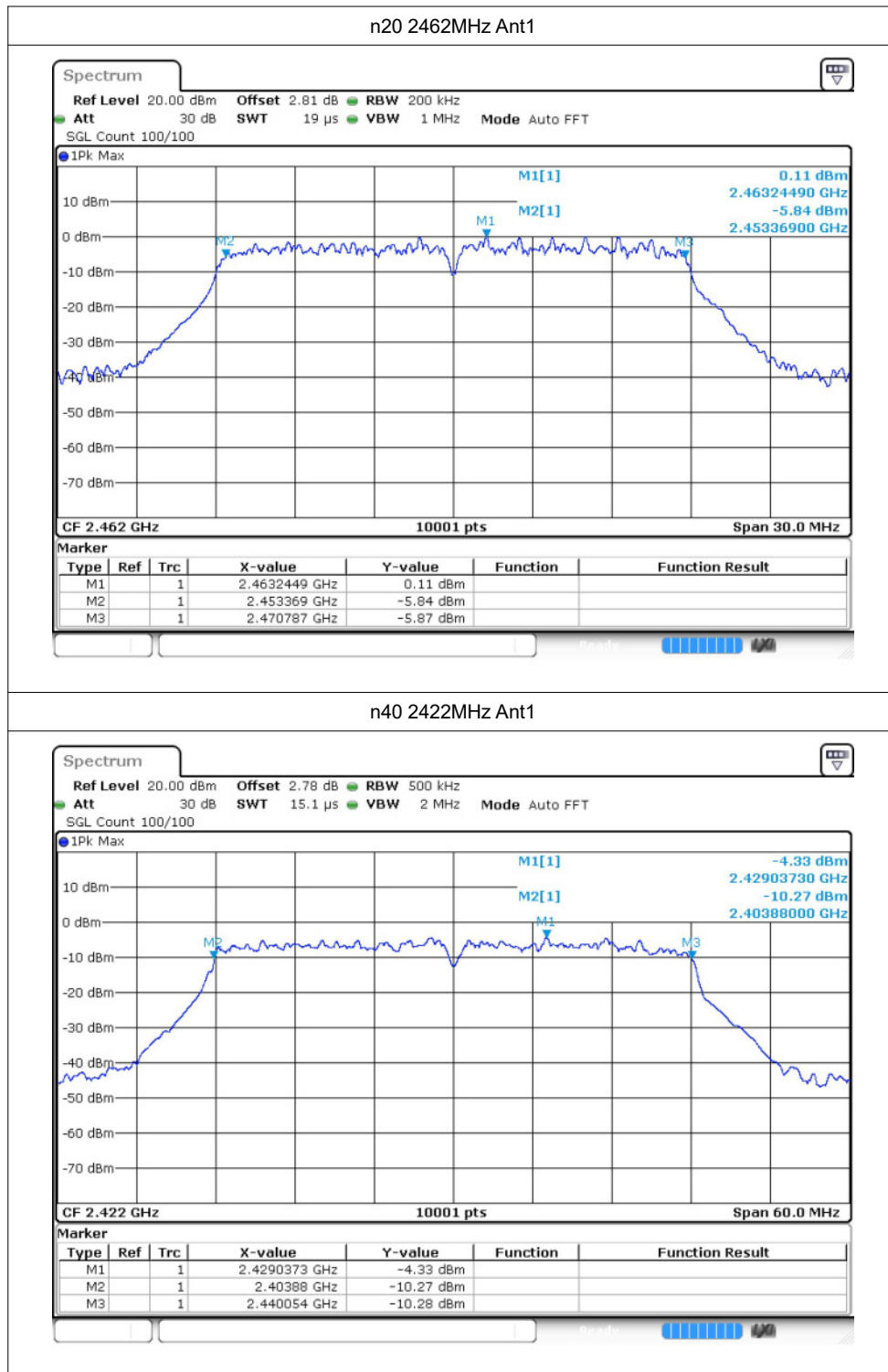
g 2437MHz Ant1



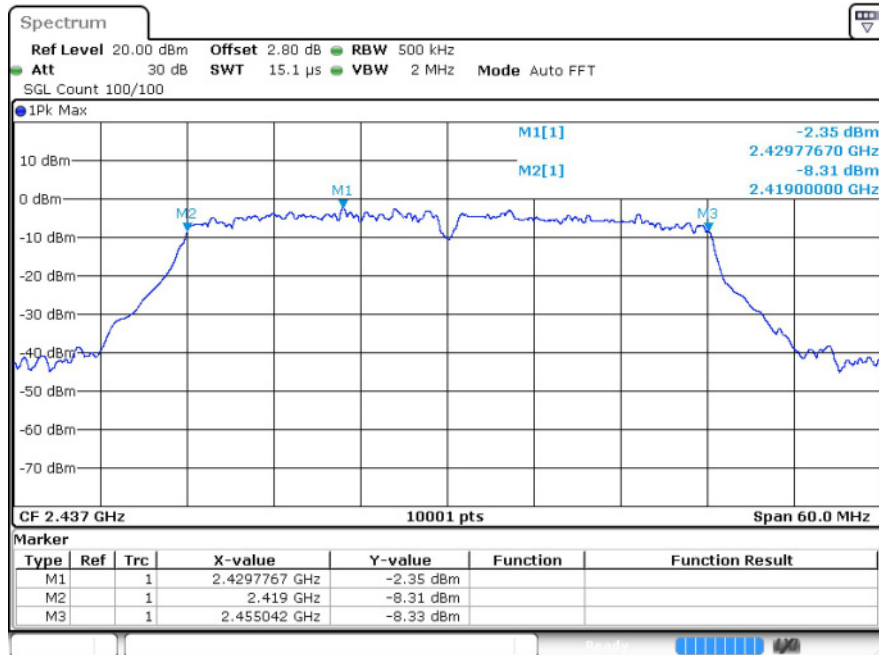
g 2462MHz Ant1



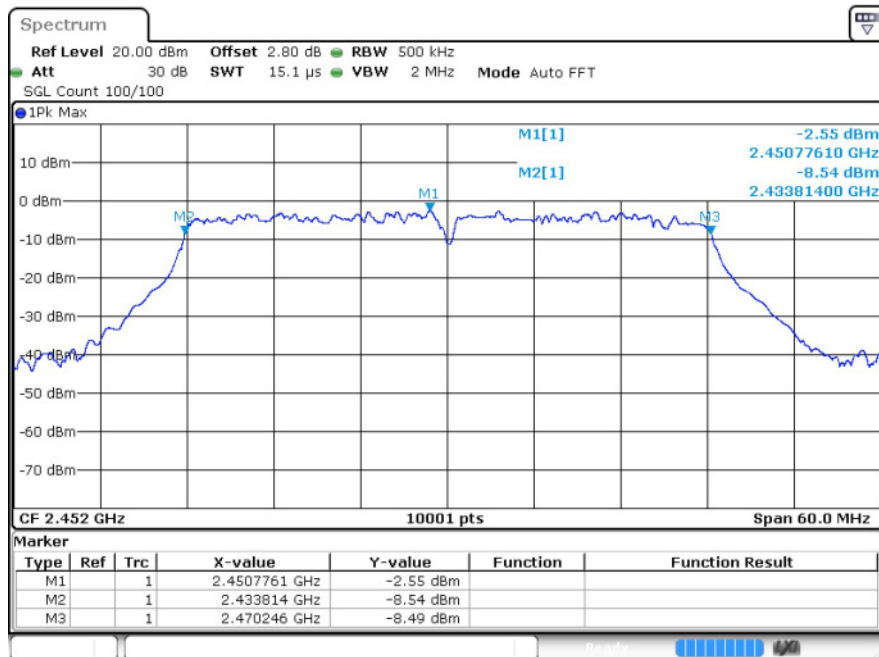




n40 2437MHz Ant1



n40 2452MHz Ant1

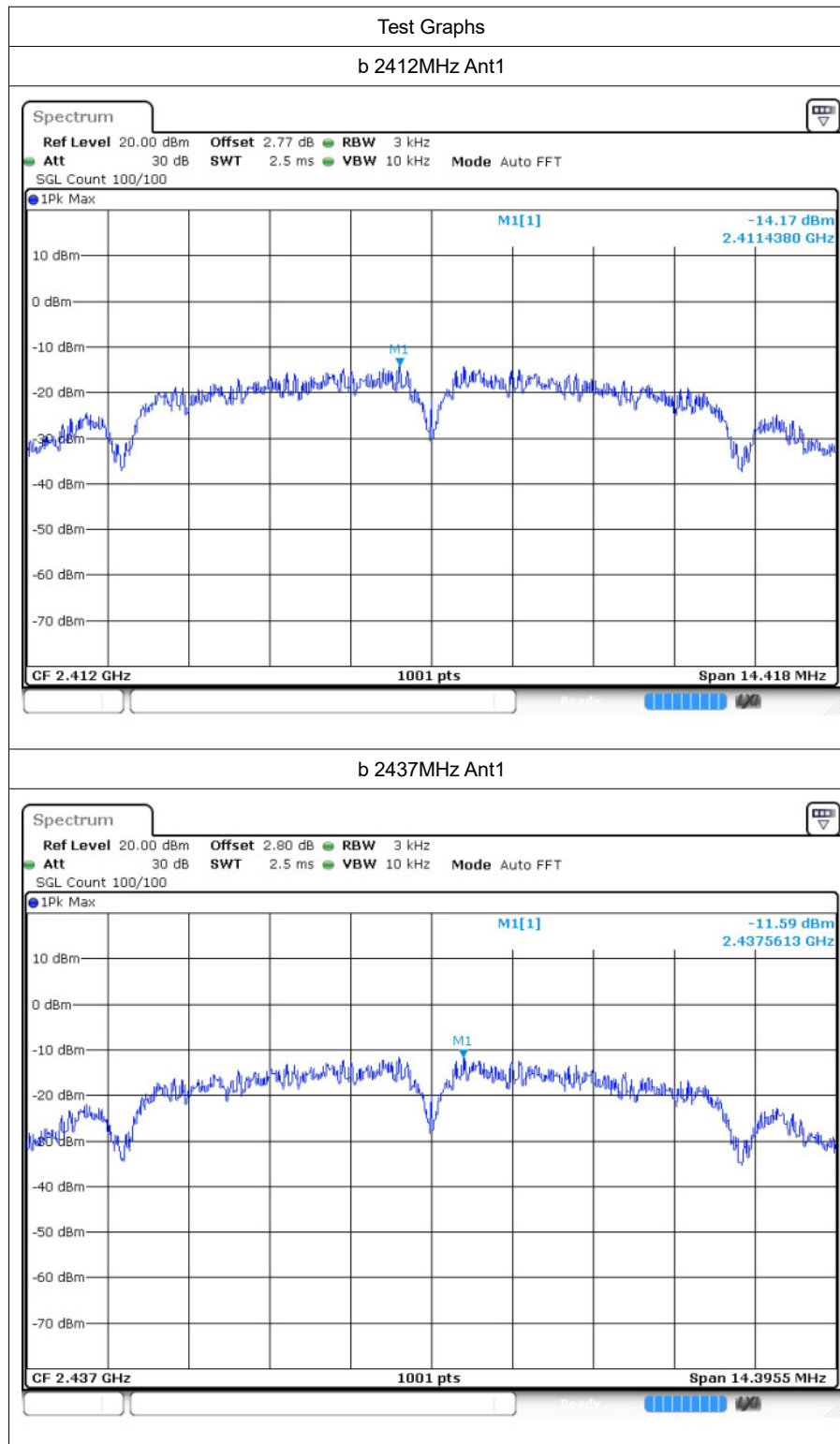


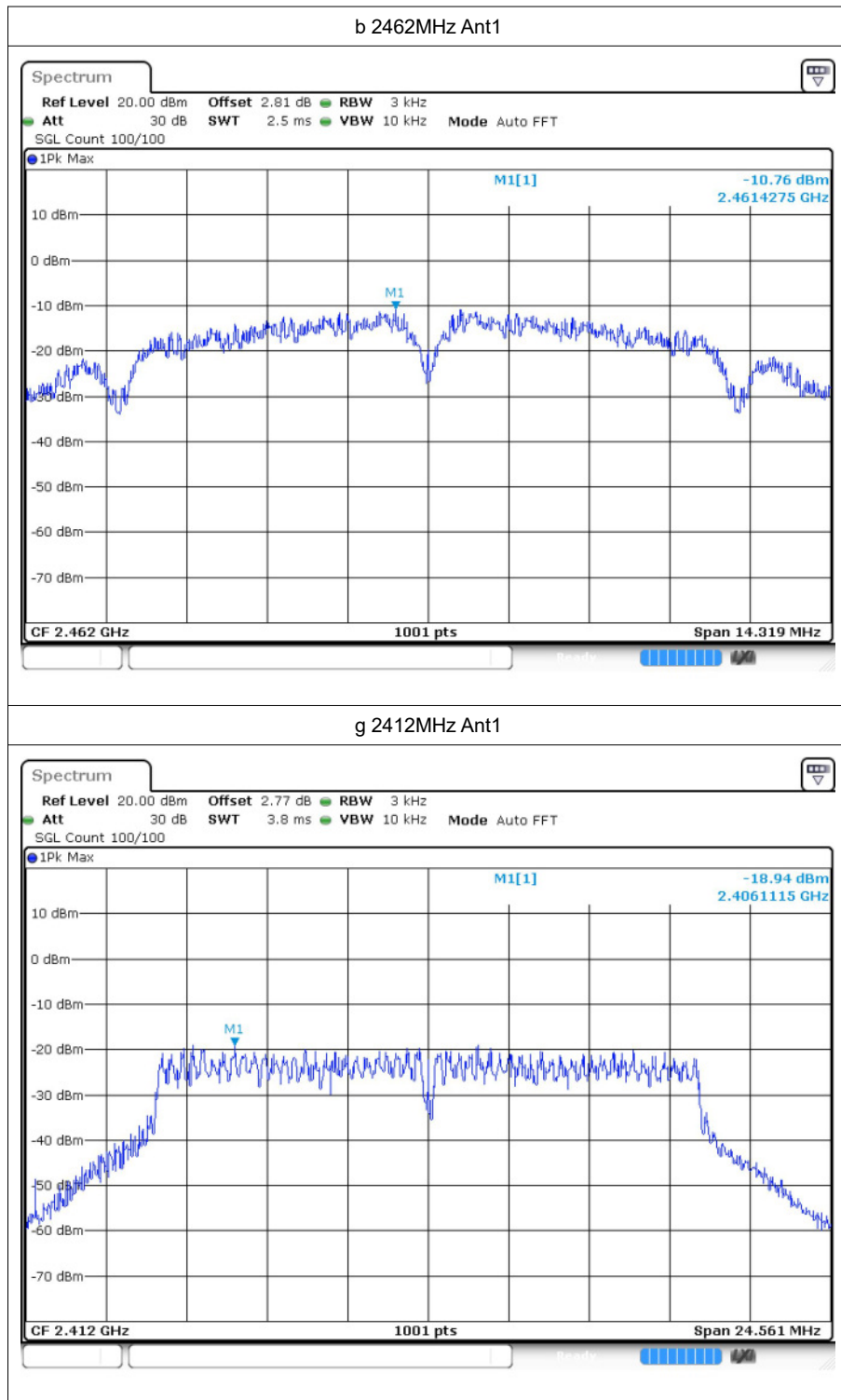
4 Maximum Power Spectral Density Level

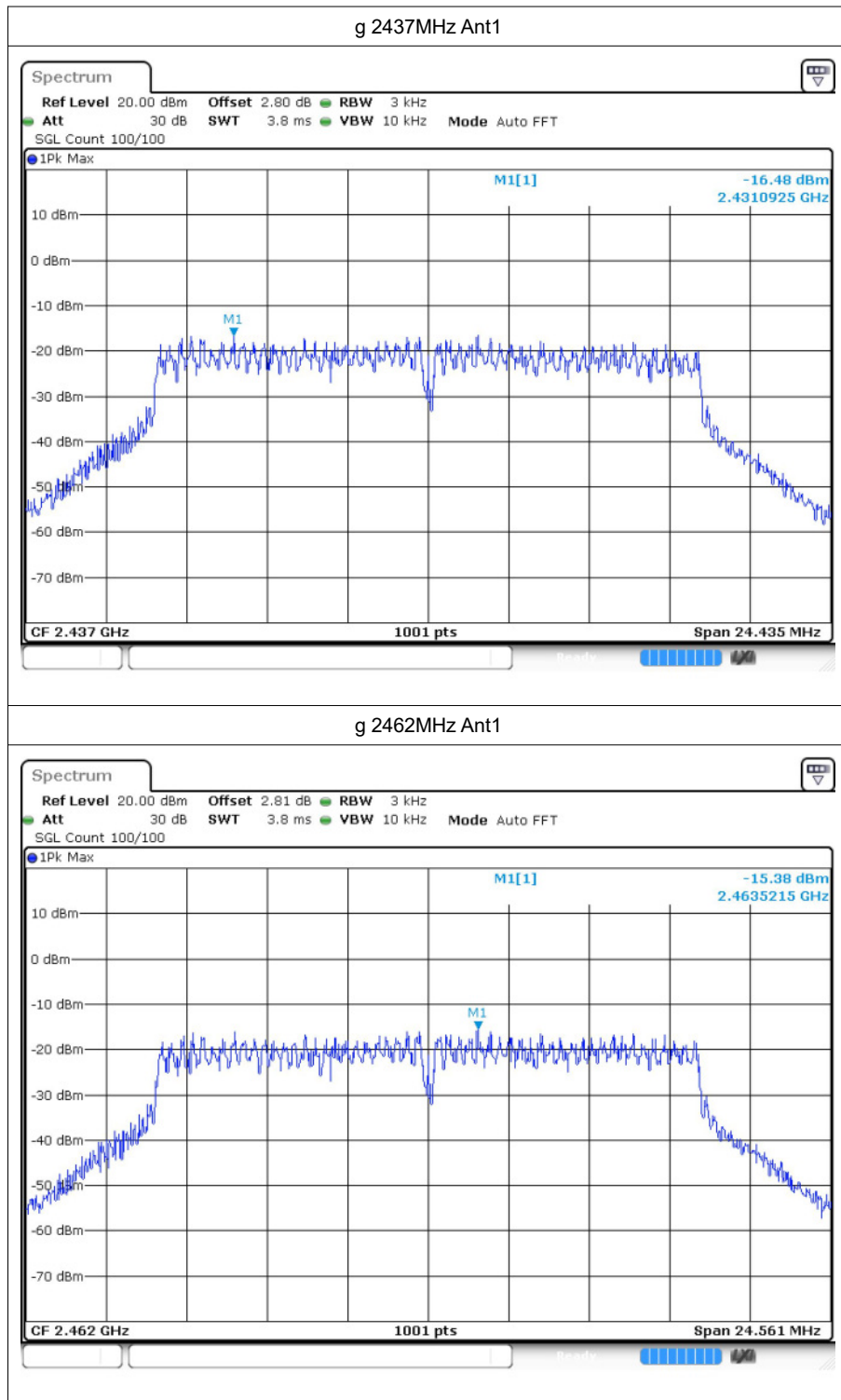
4.1 Test Result

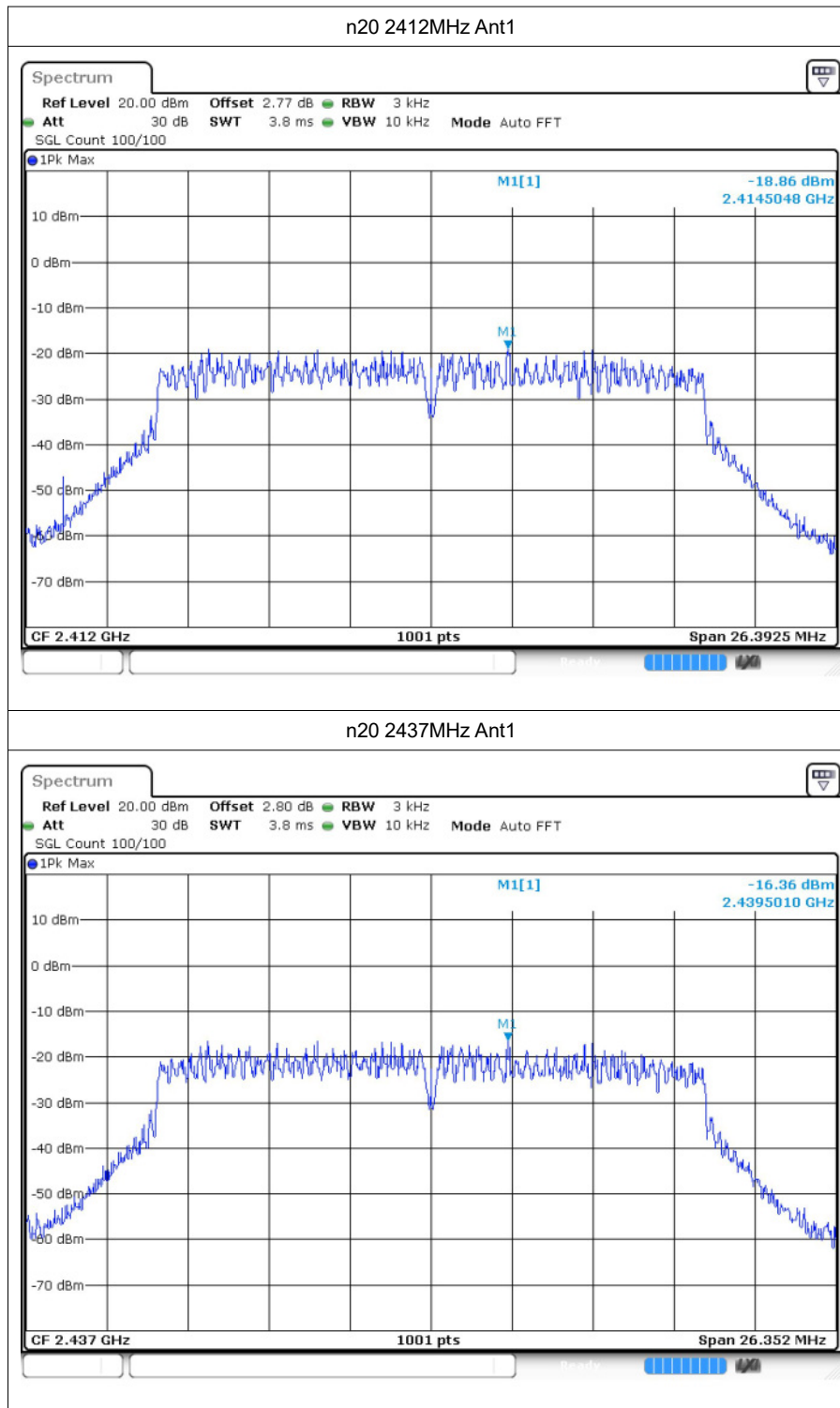
Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
b	2412	Ant1	-14.17	≤8	Pass
b	2437	Ant1	-11.59	≤8	Pass
b	2462	Ant1	-10.76	≤8	Pass
g	2412	Ant1	-18.94	≤8	Pass
g	2437	Ant1	-16.48	≤8	Pass
g	2462	Ant1	-15.38	≤8	Pass
n20	2412	Ant1	-18.86	≤8	Pass
n20	2437	Ant1	-16.36	≤8	Pass
n20	2462	Ant1	-15.2	≤8	Pass
n40	2422	Ant1	-21.15	≤8	Pass
n40	2437	Ant1	-19.42	≤8	Pass
n40	2452	Ant1	-19.26	≤8	Pass

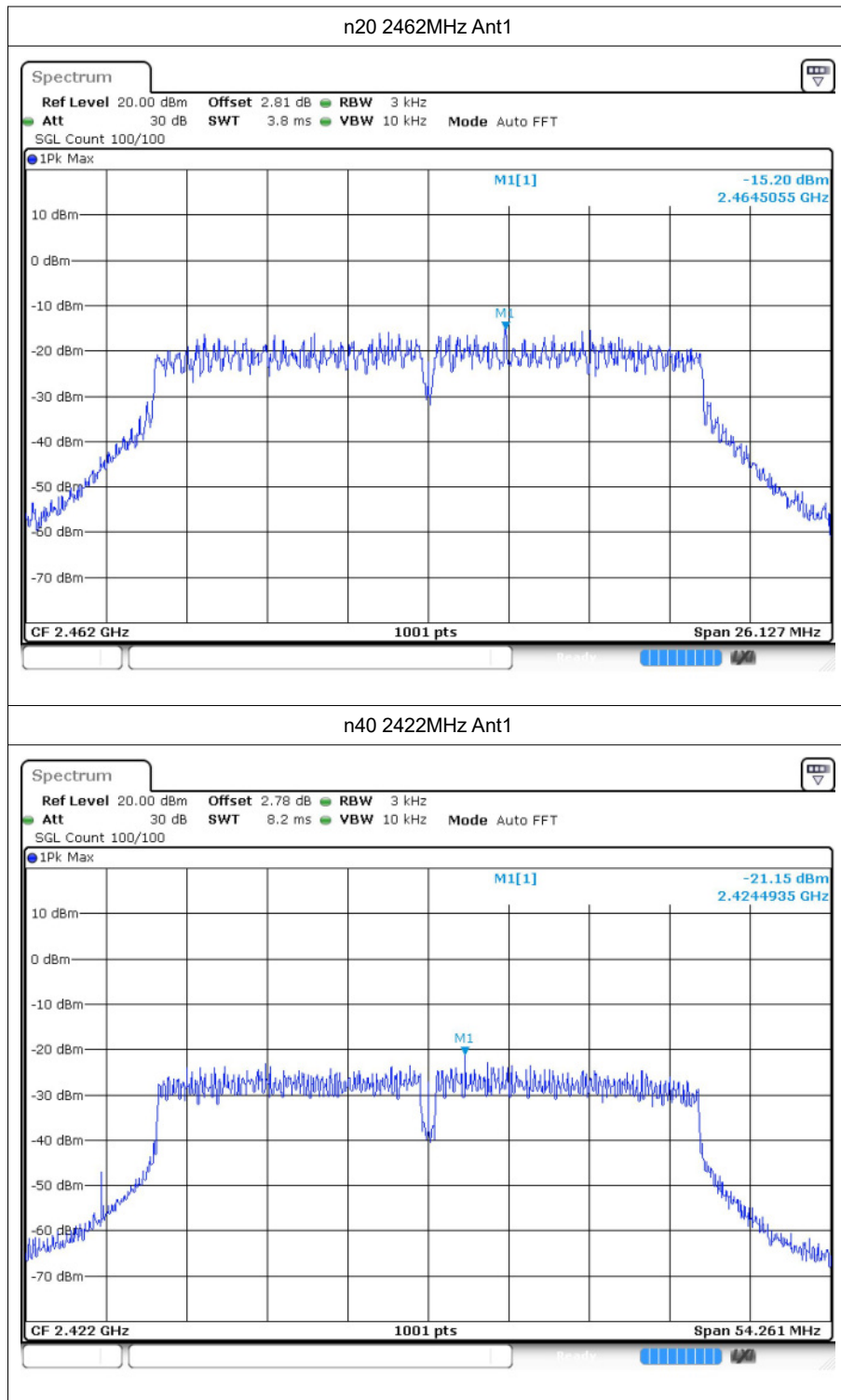
4.2 Test Graphs

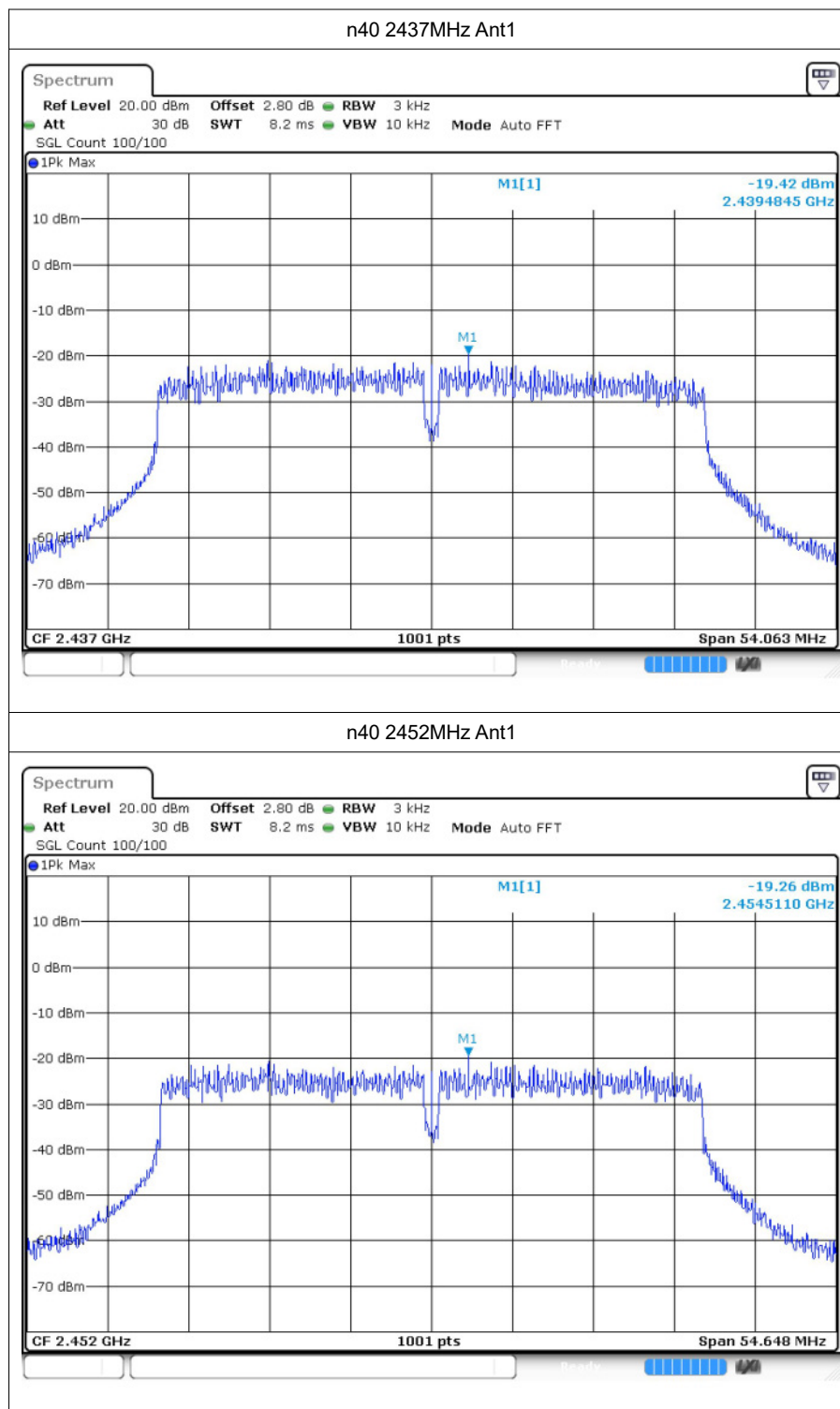












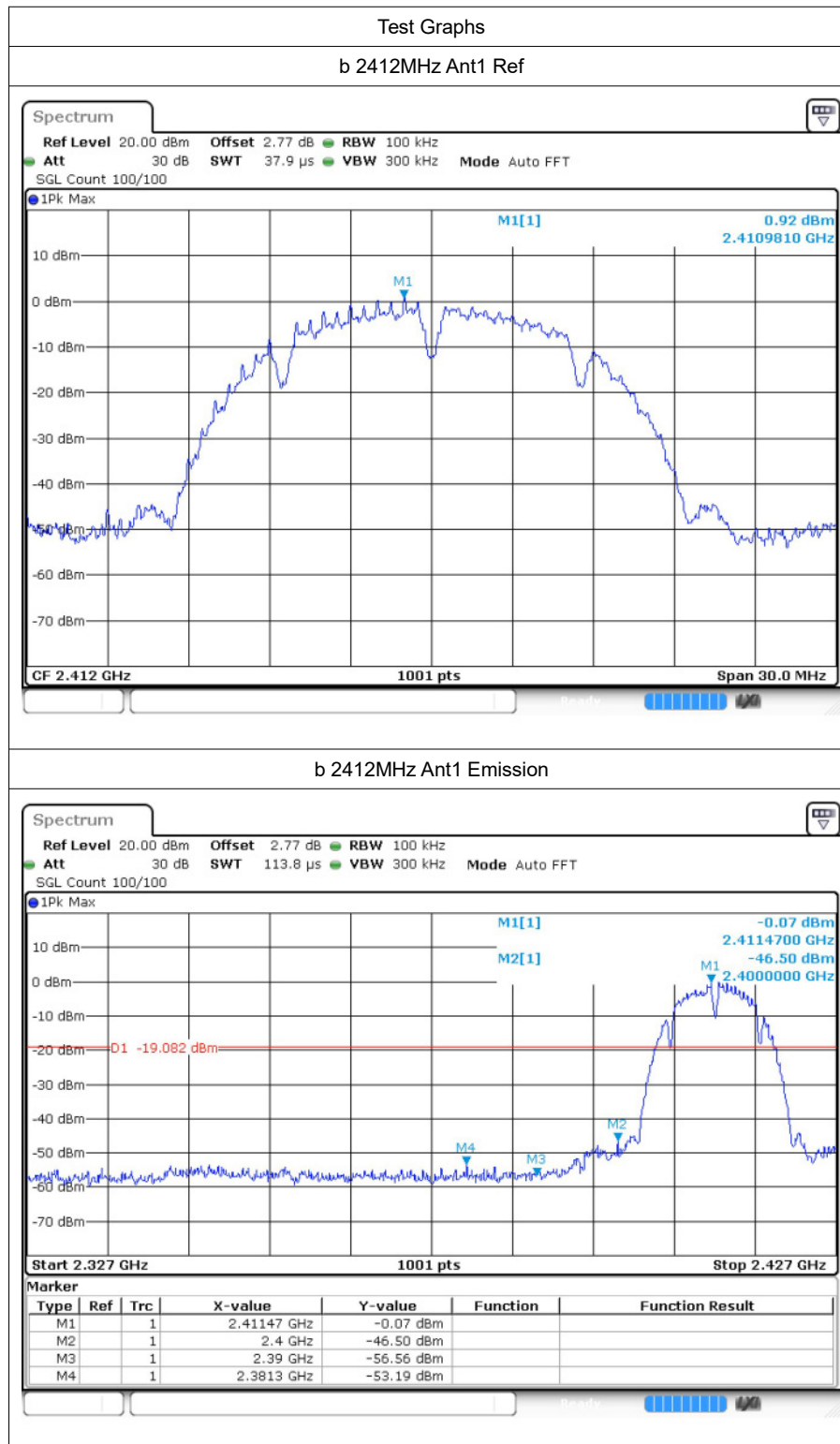


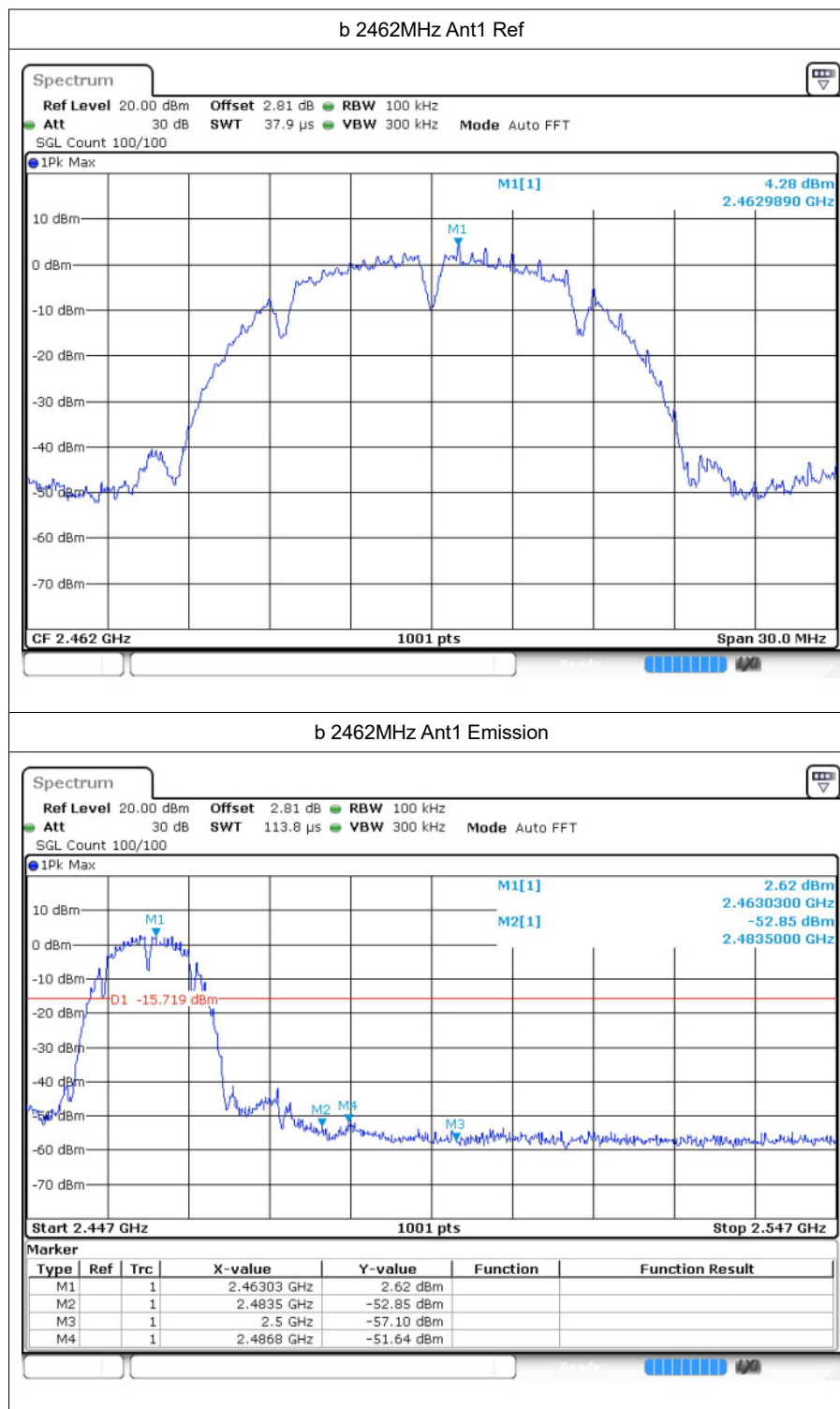
5 Band Edge

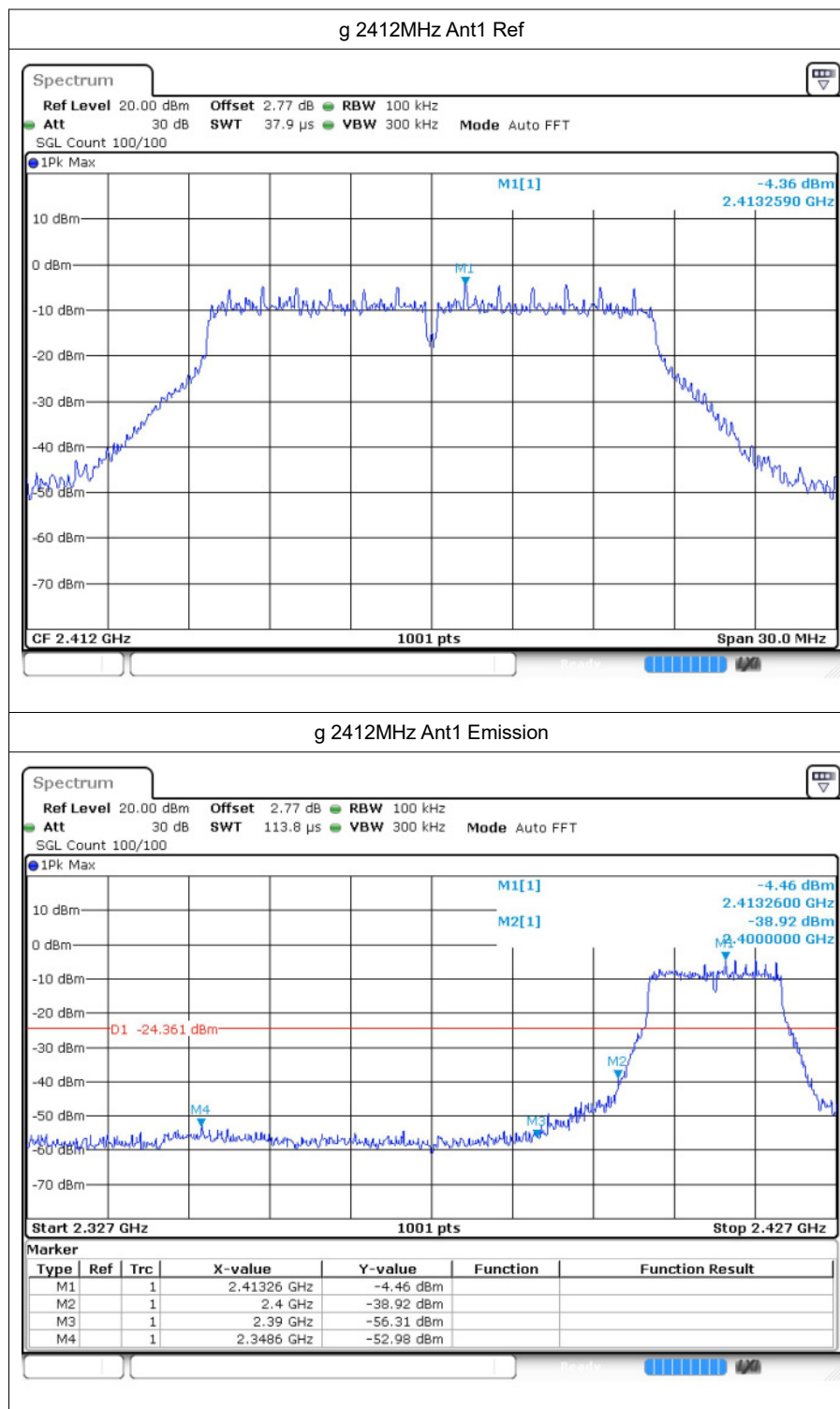
5.1 Test Result

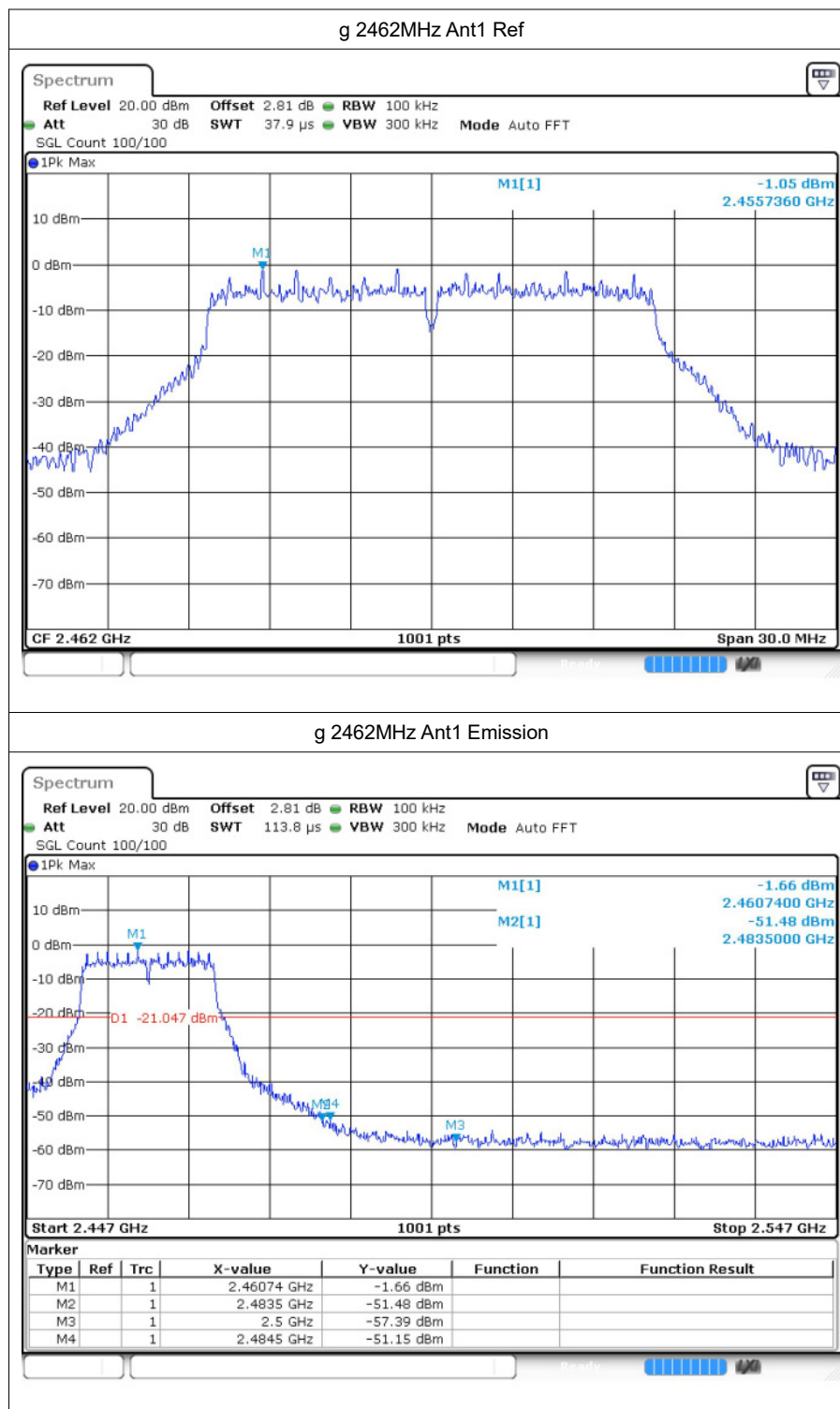
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-54.11	-20	Pass
b	2462	Ant1	-55.92	-20	Pass
g	2412	Ant1	-48.61	-20	Pass
g	2462	Ant1	-50.1	-20	Pass
n20	2412	Ant1	-49.7	-20	Pass
n20	2462	Ant1	-43.57	-20	Pass
n40	2422	Ant1	-39.01	-20	Pass
n40	2452	Ant1	-36.37	-20	Pass

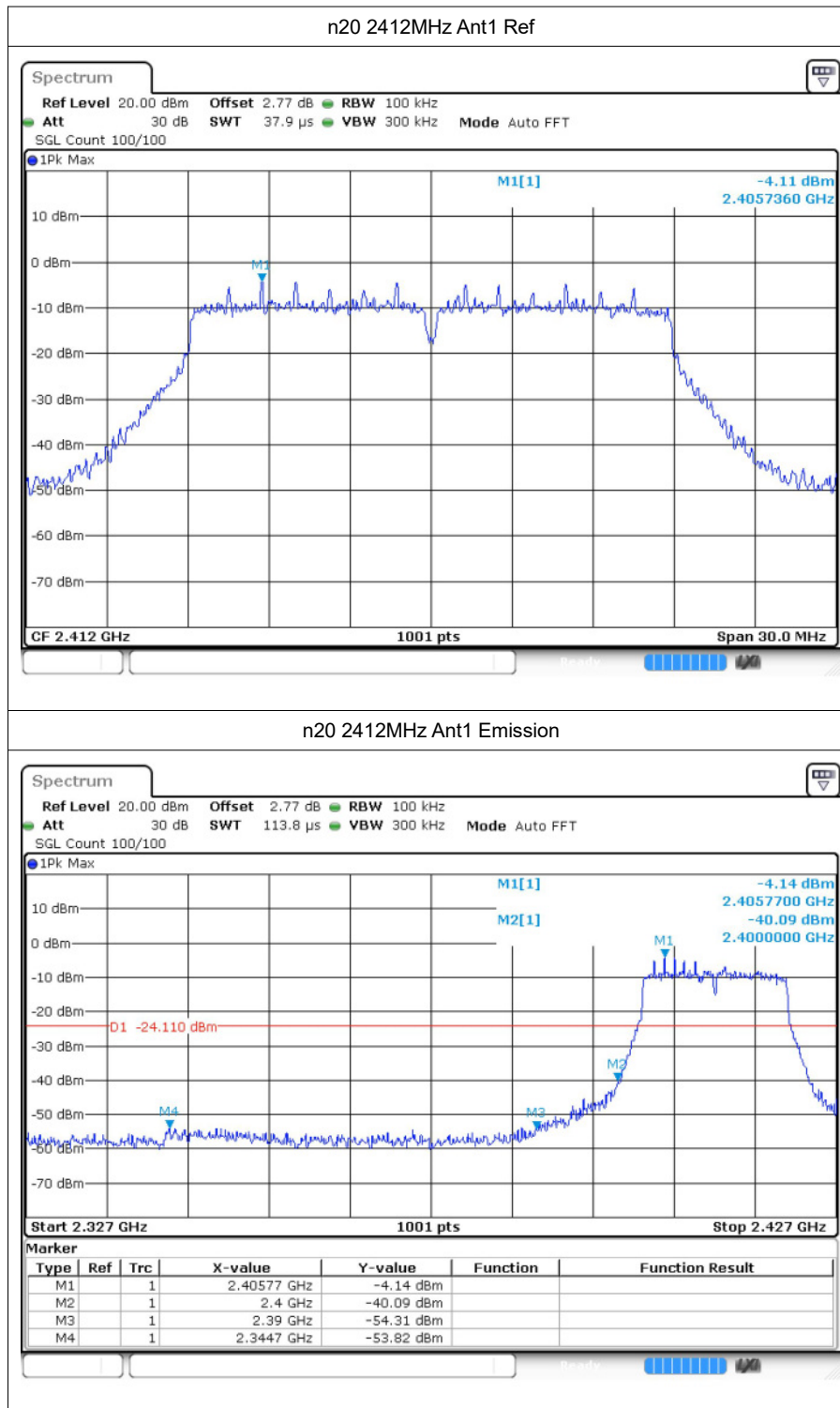
5.2 Test Graphs

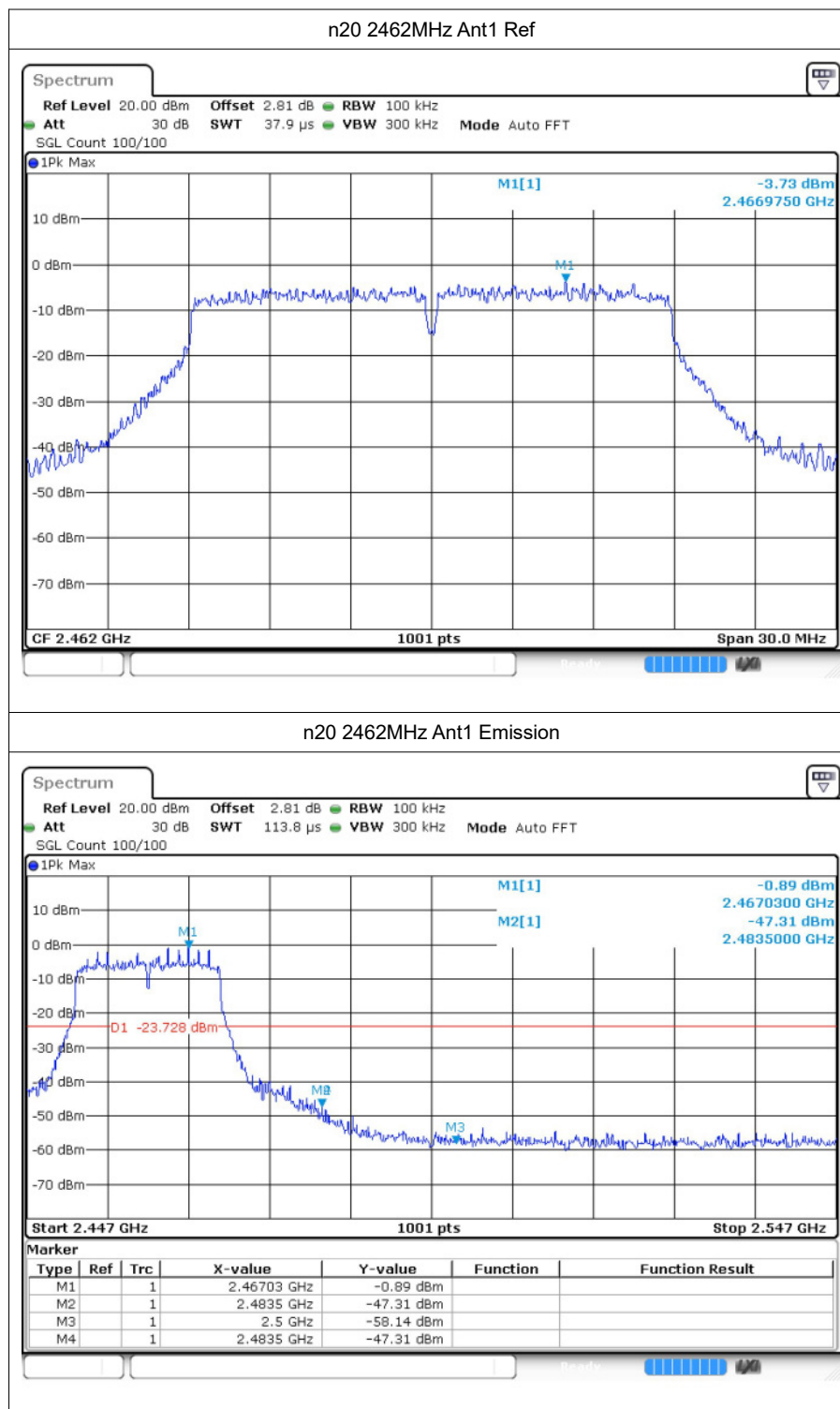


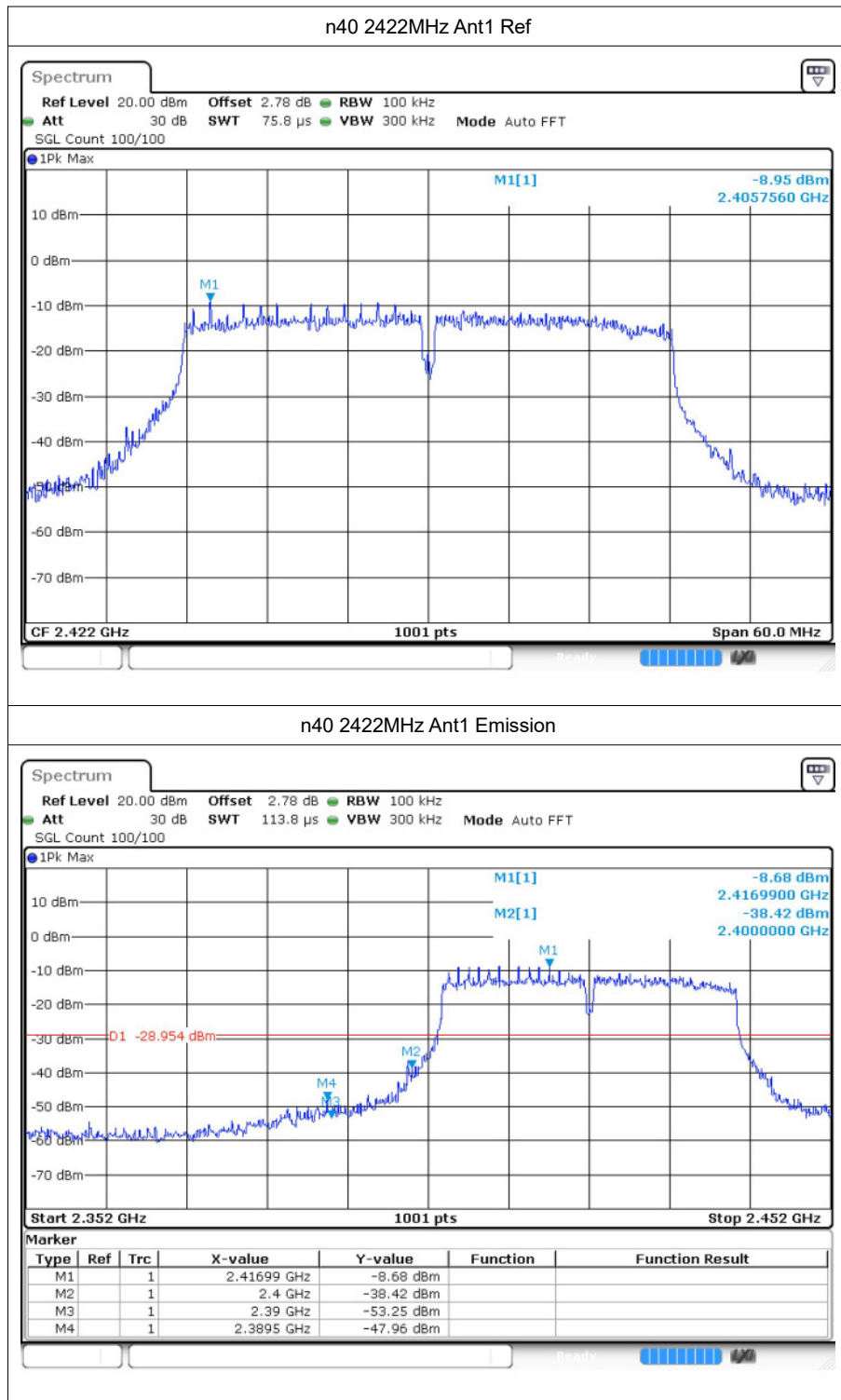


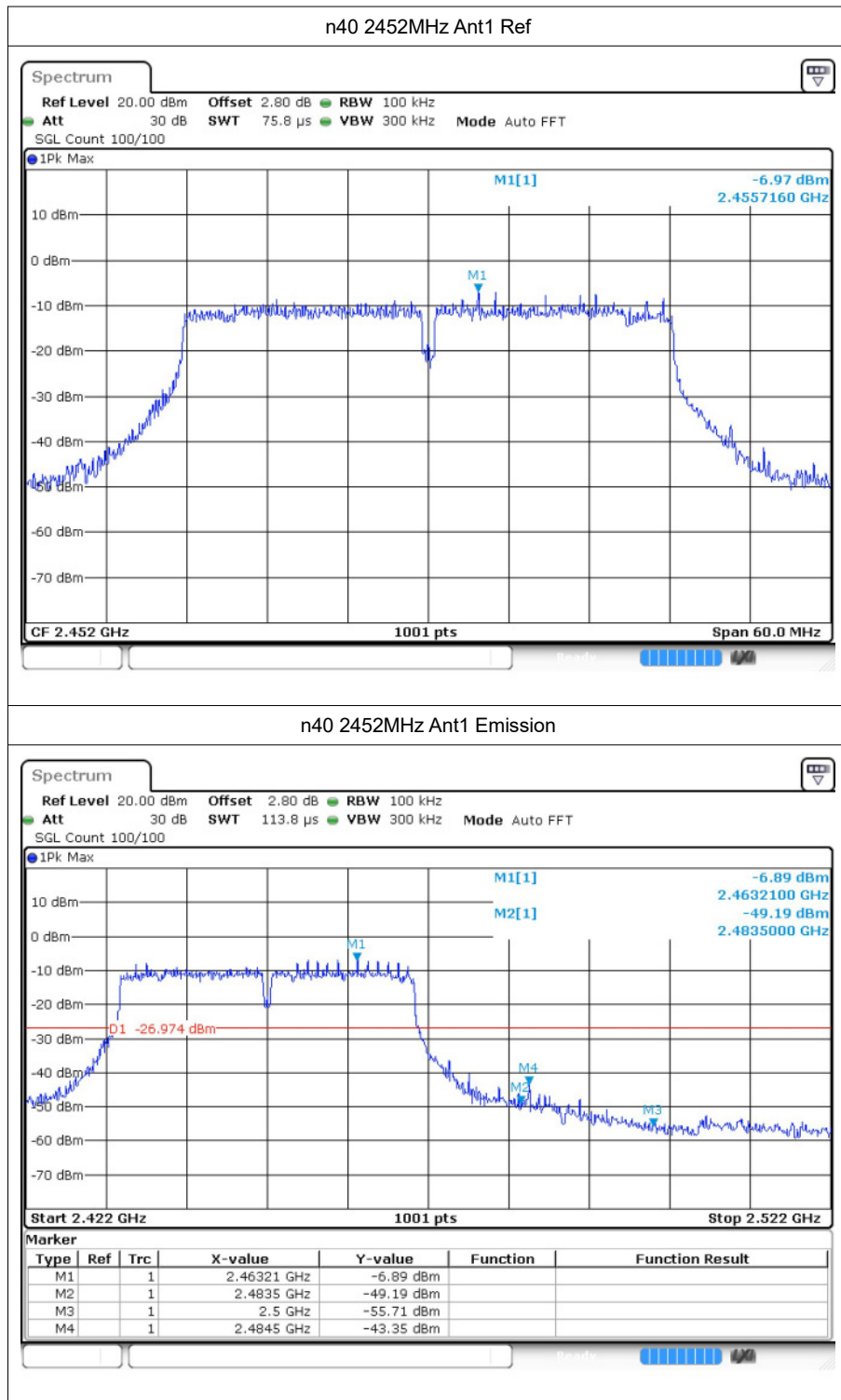














6 Conducted RF Spurious Emission

6.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-40.87	-20	Pass
b	2437	Ant1	-38.79	-20	Pass
b	2462	Ant1	-36.19	-20	Pass
g	2412	Ant1	-37.49	-20	Pass
g	2437	Ant1	-40.3	-20	Pass
g	2462	Ant1	-40.46	-20	Pass
n20	2412	Ant1	-37.22	-20	Pass
n20	2437	Ant1	-39.99	-20	Pass
n20	2462	Ant1	-40.32	-20	Pass
n40	2422	Ant1	-33.07	-20	Pass
n40	2437	Ant1	-35.26	-20	Pass
n40	2452	Ant1	-35.12	-20	Pass