



Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: M5 Atom EchoS3R



Trade Mark: M5STACK

Test Model: Atom EchoS3R

Environmental Conditions

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



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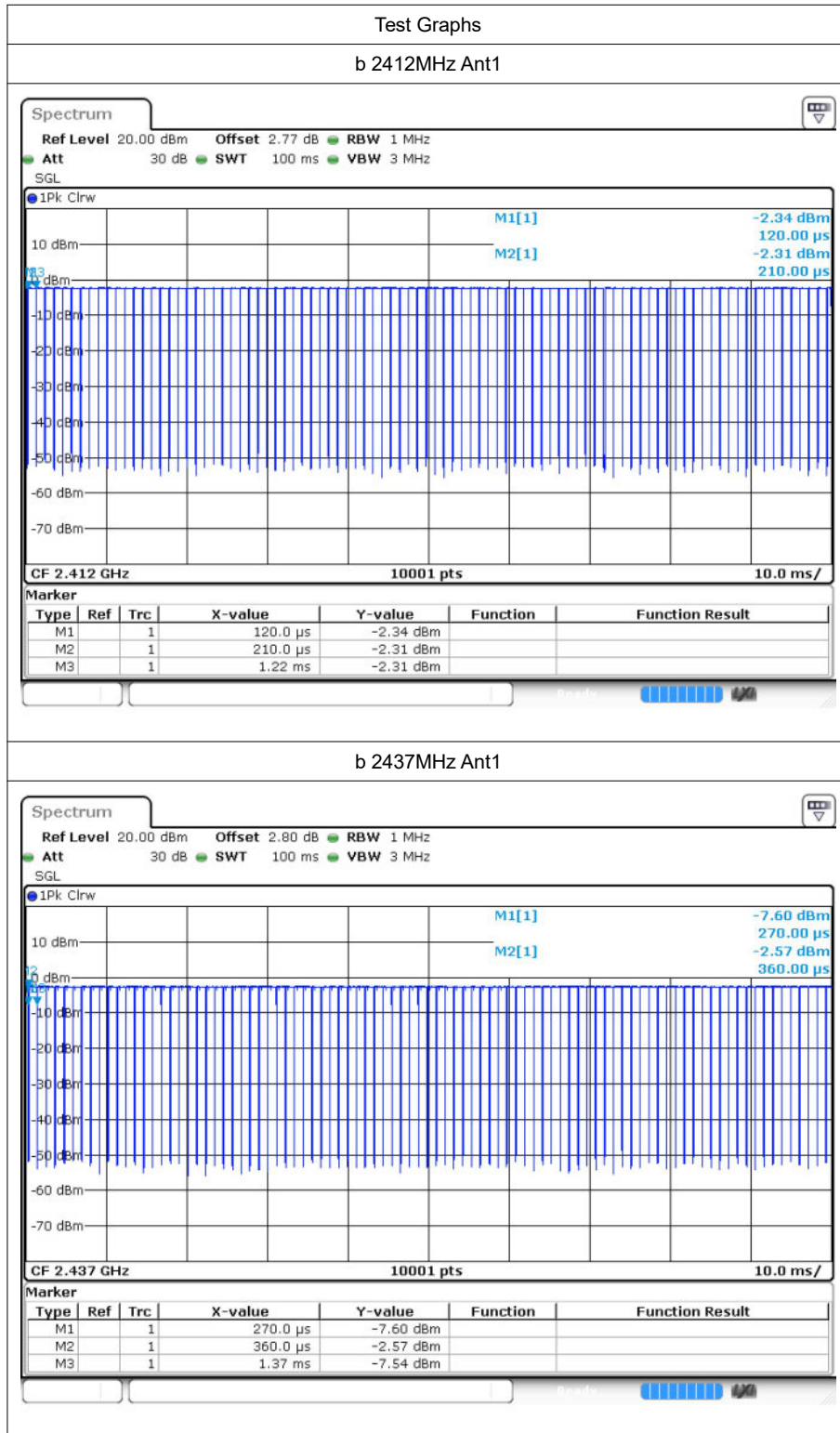


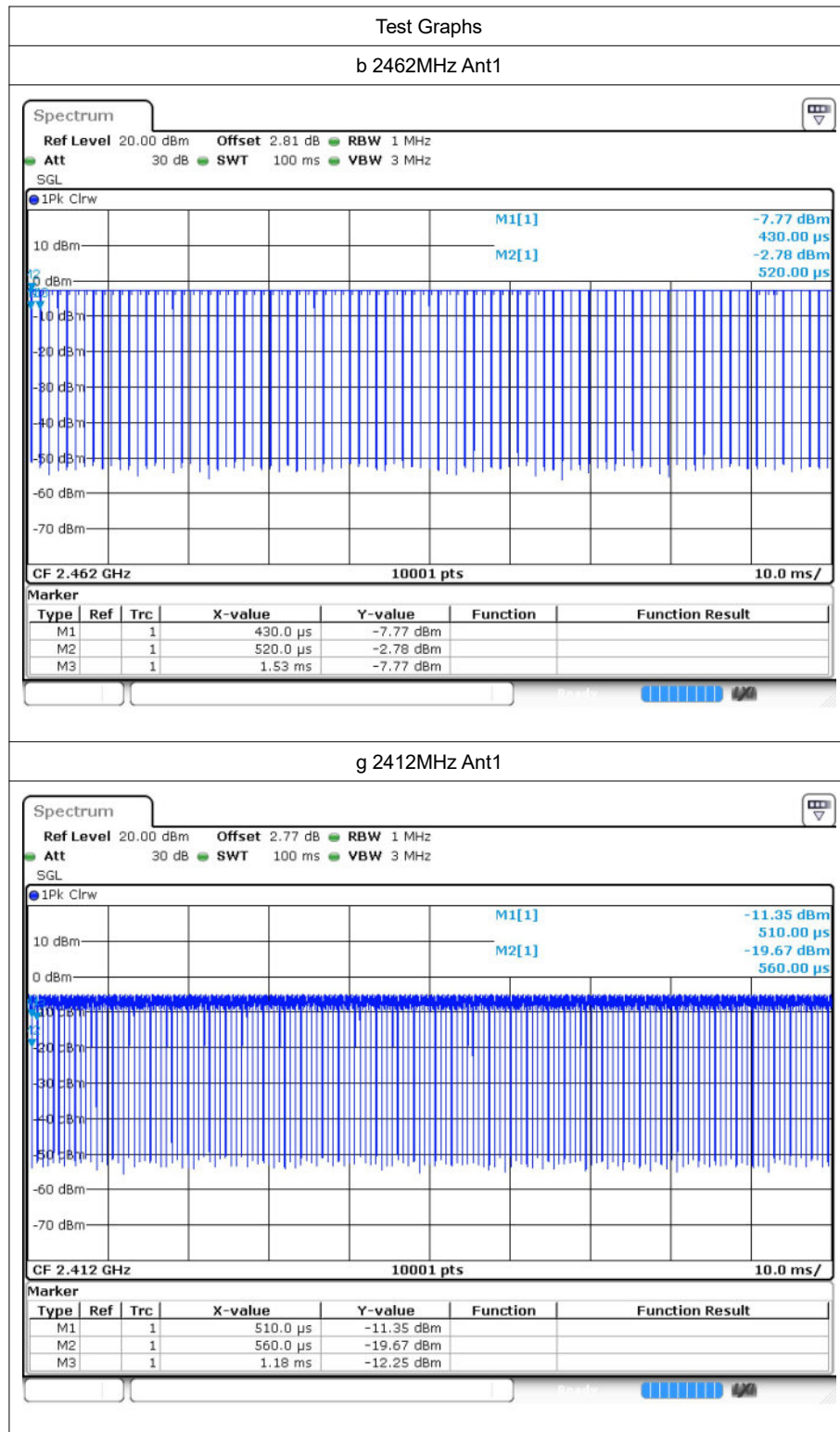
1 Duty Cycle

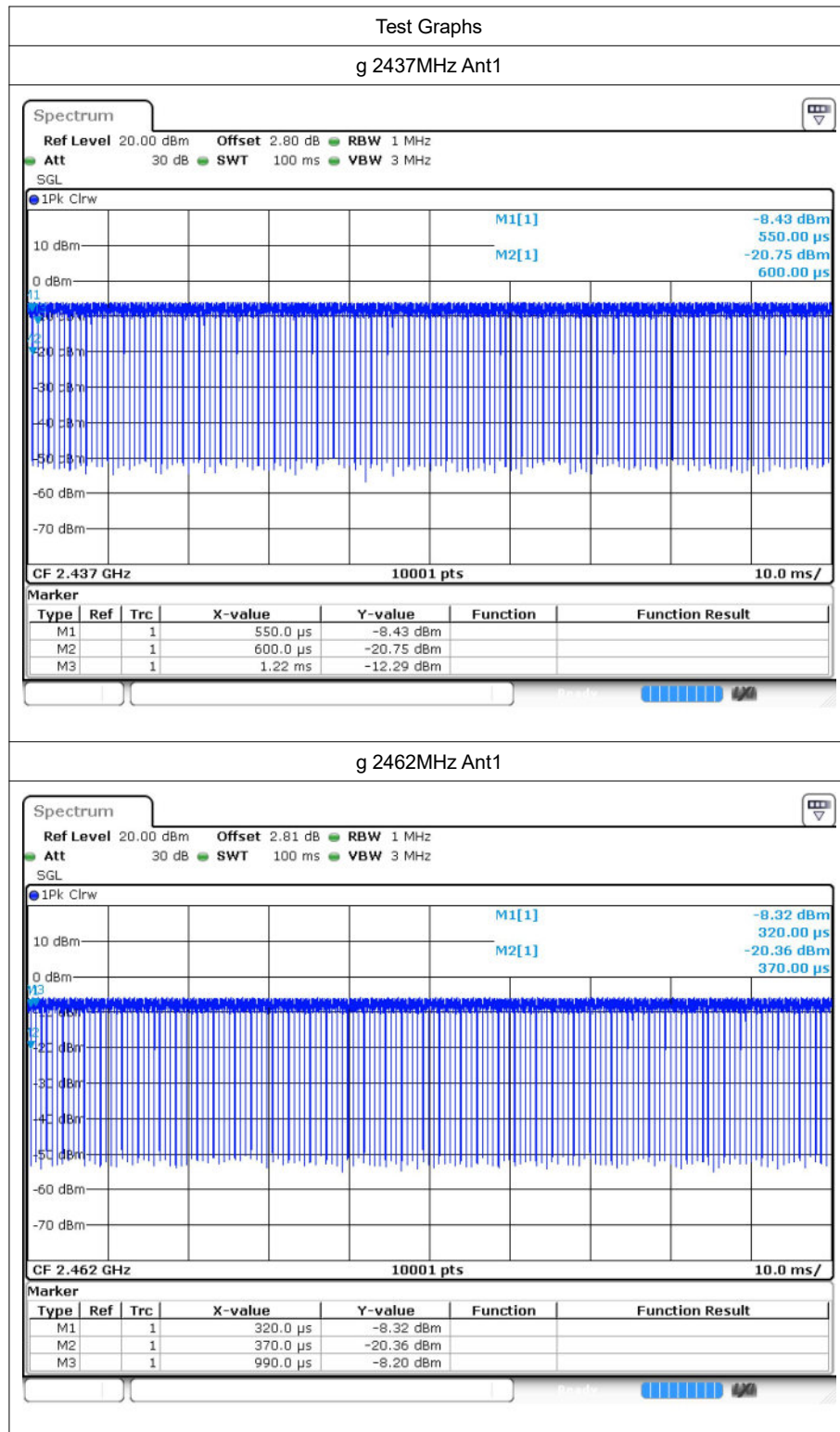
1.1 Test Result

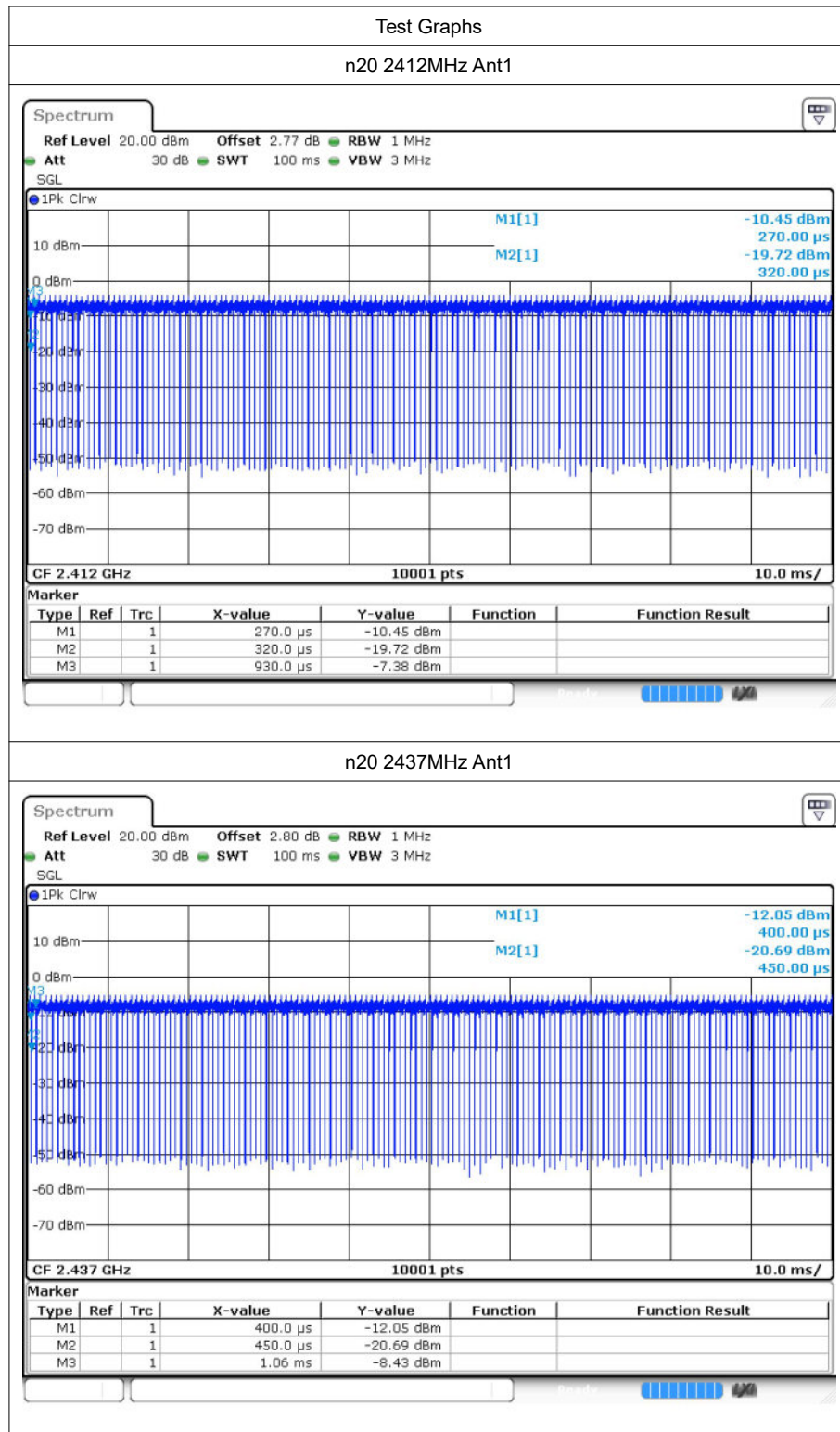
Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor	1/T (kHz)
b	2412	Ant1	92.39	0.34	0.99
b	2437	Ant1	92.72	0.33	0.99
b	2462	Ant1	92.71	0.33	0.99
g	2412	Ant1	93.62	0.29	1.61
g	2437	Ant1	93.6	0.29	1.61
g	2462	Ant1	93.64	0.29	1.61
n20	2412	Ant1	94	0.27	1.64
n20	2437	Ant1	94	0.27	1.64
n20	2462	Ant1	93.35	0.3	1.61
n40	2422	Ant1	90.47	0.43	1.67
n40	2437	Ant1	89.93	0.46	1.69
n40	2452	Ant1	89.34	0.49	1.72

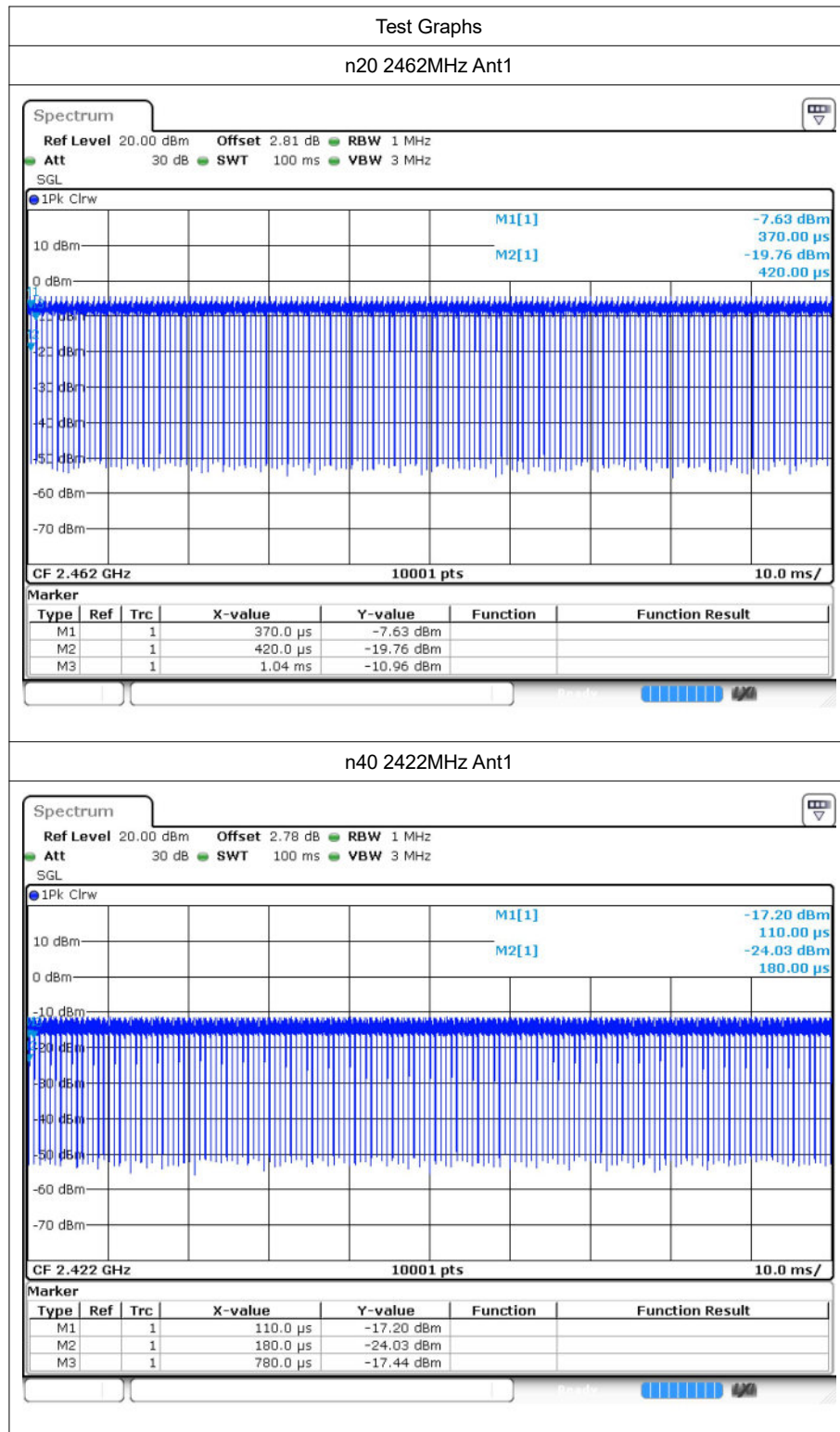
1.2 Test Graphs

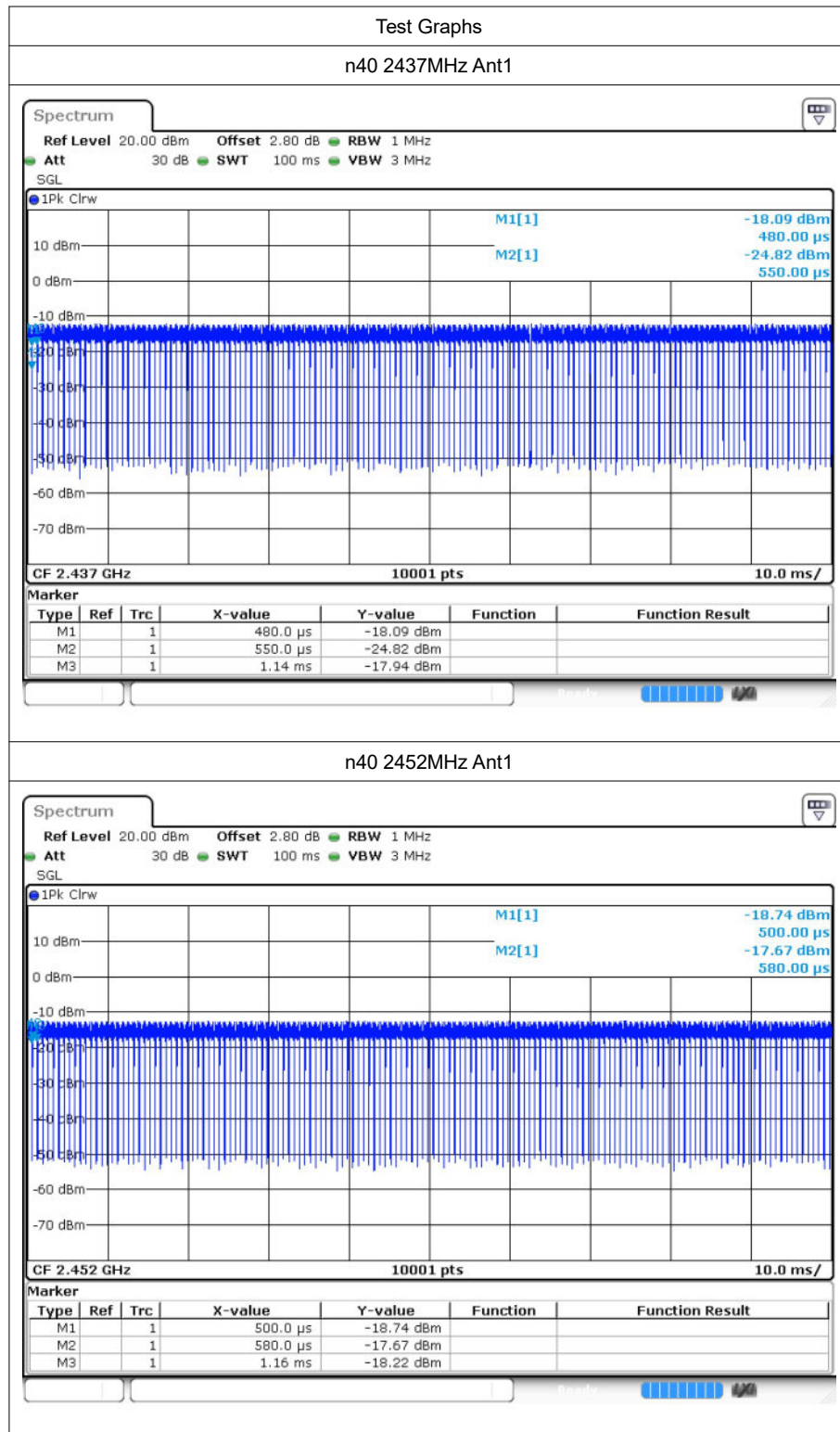












2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	6.97	30	Pass
b	2437	Ant1	6.67	30	Pass
b	2462	Ant1	6.49	30	Pass
g	2412	Ant1	6.3	30	Pass
g	2437	Ant1	5.34	30	Pass
g	2462	Ant1	5.92	30	Pass
n20	2412	Ant1	6.19	30	Pass
n20	2437	Ant1	5.28	30	Pass
n20	2462	Ant1	5.8	30	Pass
n40	2422	Ant1	5.72	30	Pass
n40	2437	Ant1	5.16	30	Pass
n40	2452	Ant1	4.8	30	Pass

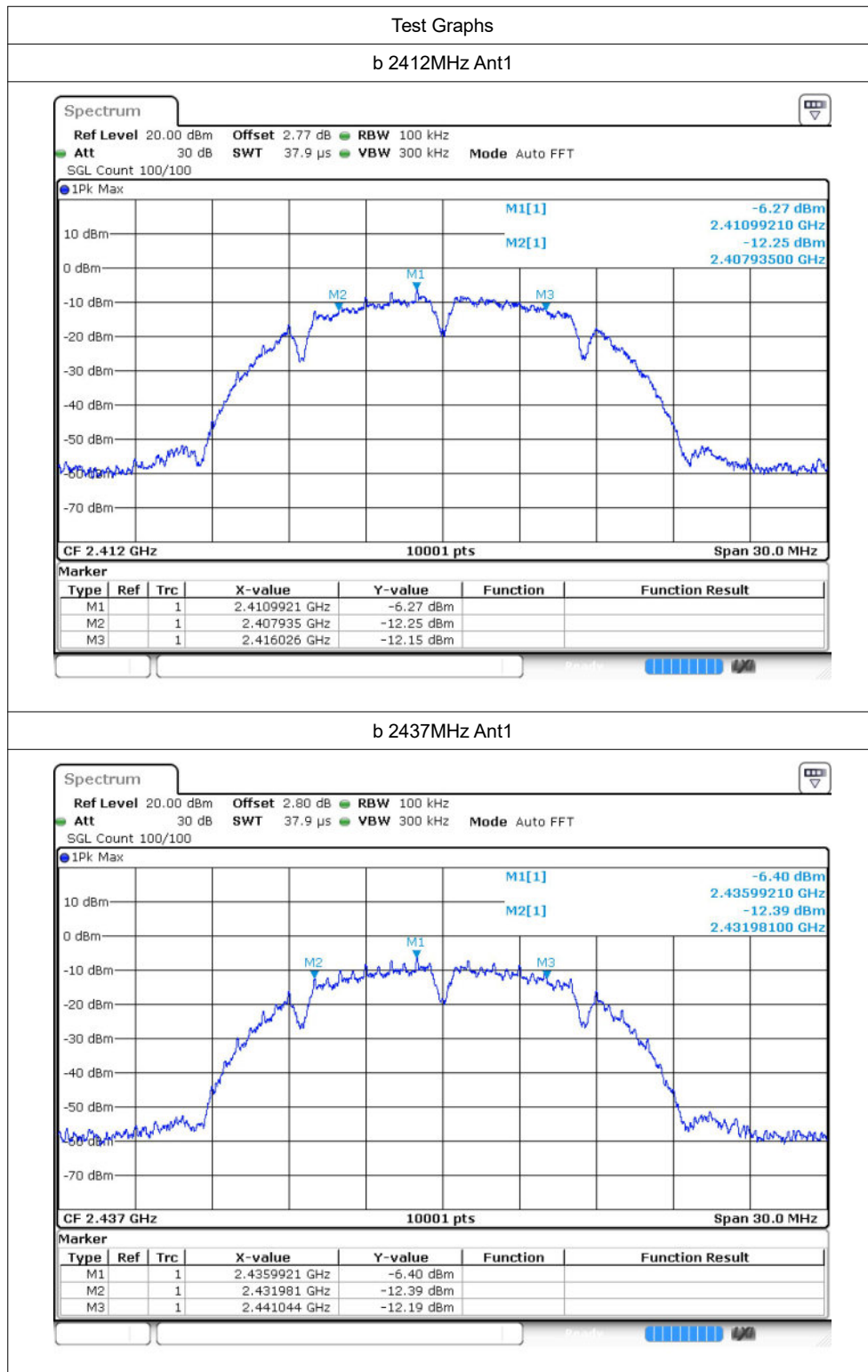


3 -6dB Bandwidth

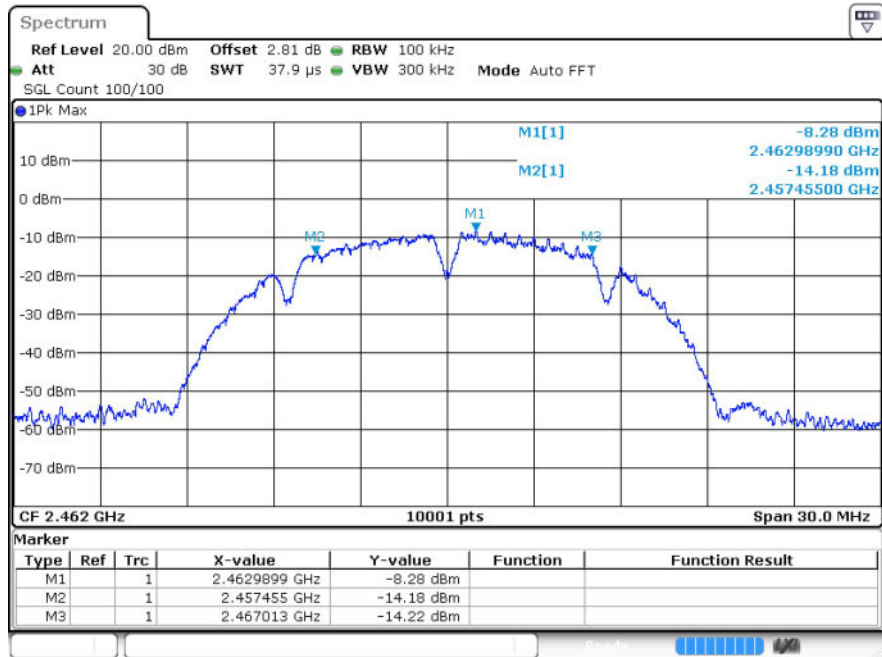
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	Ant1	8.091	0.5	Pass
b	2437	Ant1	9.063	0.5	Pass
b	2462	Ant1	9.558	0.5	Pass
g	2412	Ant1	16.329	0.5	Pass
g	2437	Ant1	16.332	0.5	Pass
g	2462	Ant1	16.068	0.5	Pass
n20	2412	Ant1	17.577	0.5	Pass
n20	2437	Ant1	17.535	0.5	Pass
n20	2462	Ant1	17.196	0.5	Pass
n40	2422	Ant1	35.106	0.5	Pass
n40	2437	Ant1	35.562	0.5	Pass
n40	2452	Ant1	35.094	0.5	Pass

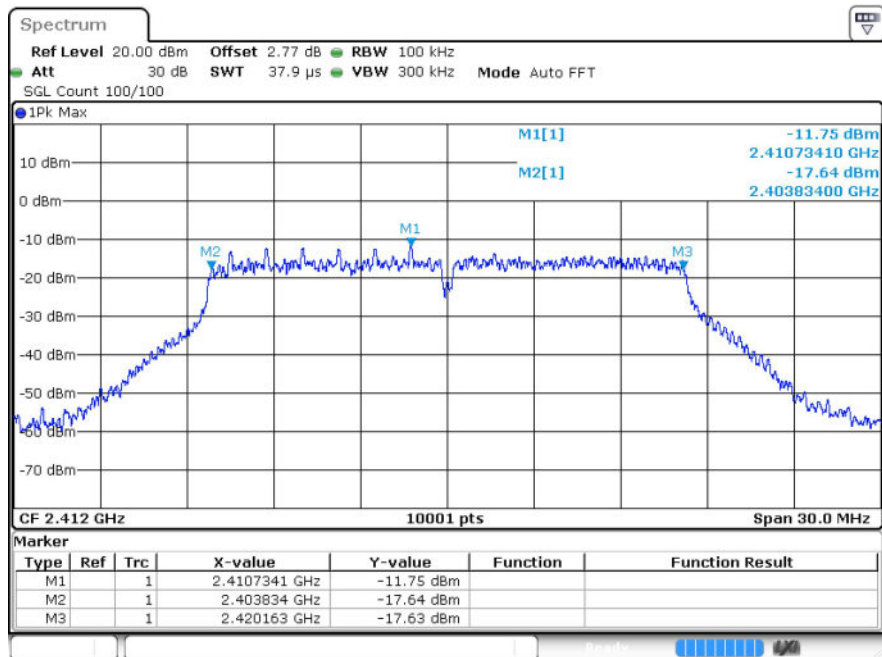
3.2 Test Graphs



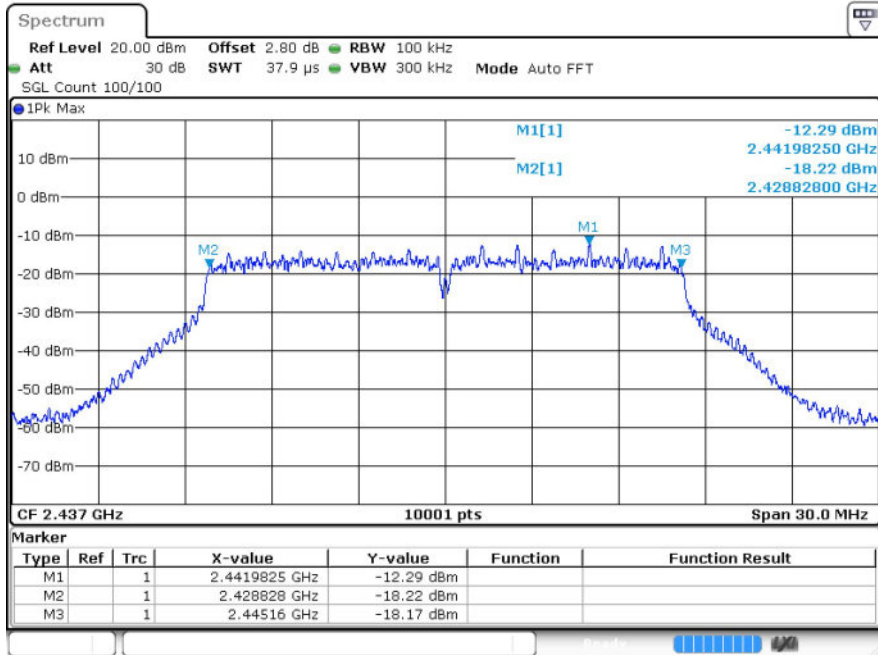
b 2462MHz Ant1



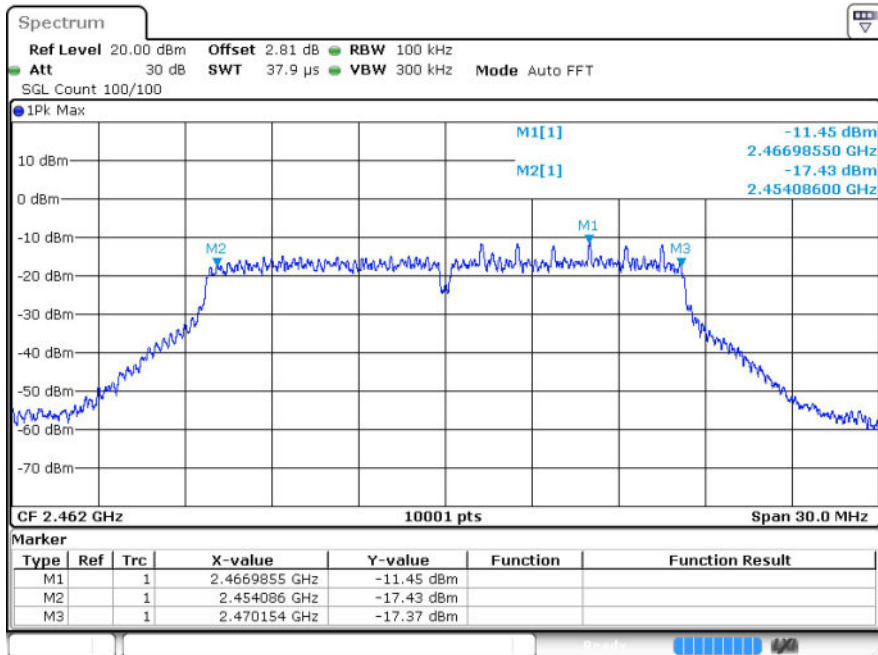
g 2412MHz Ant1

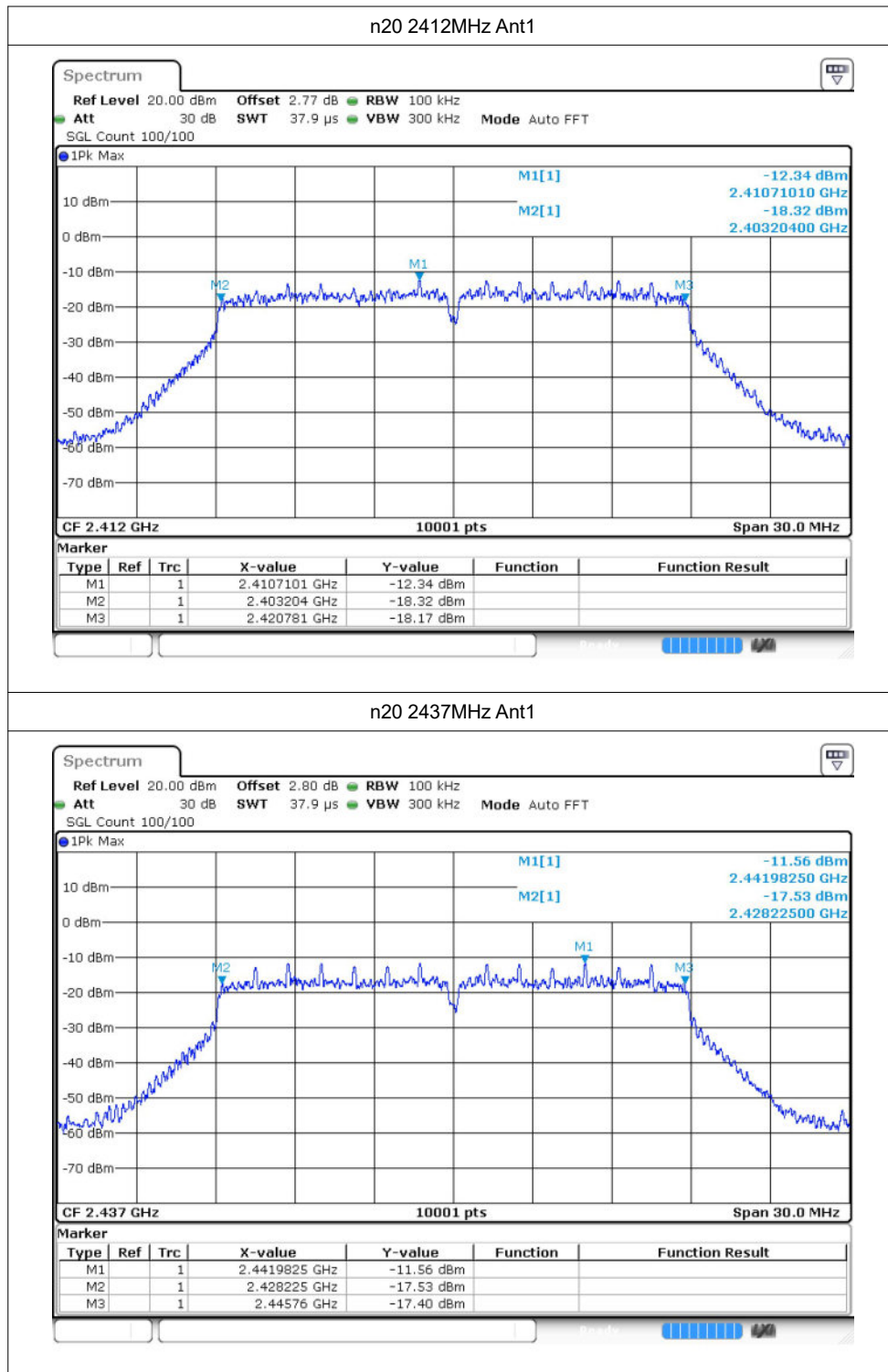


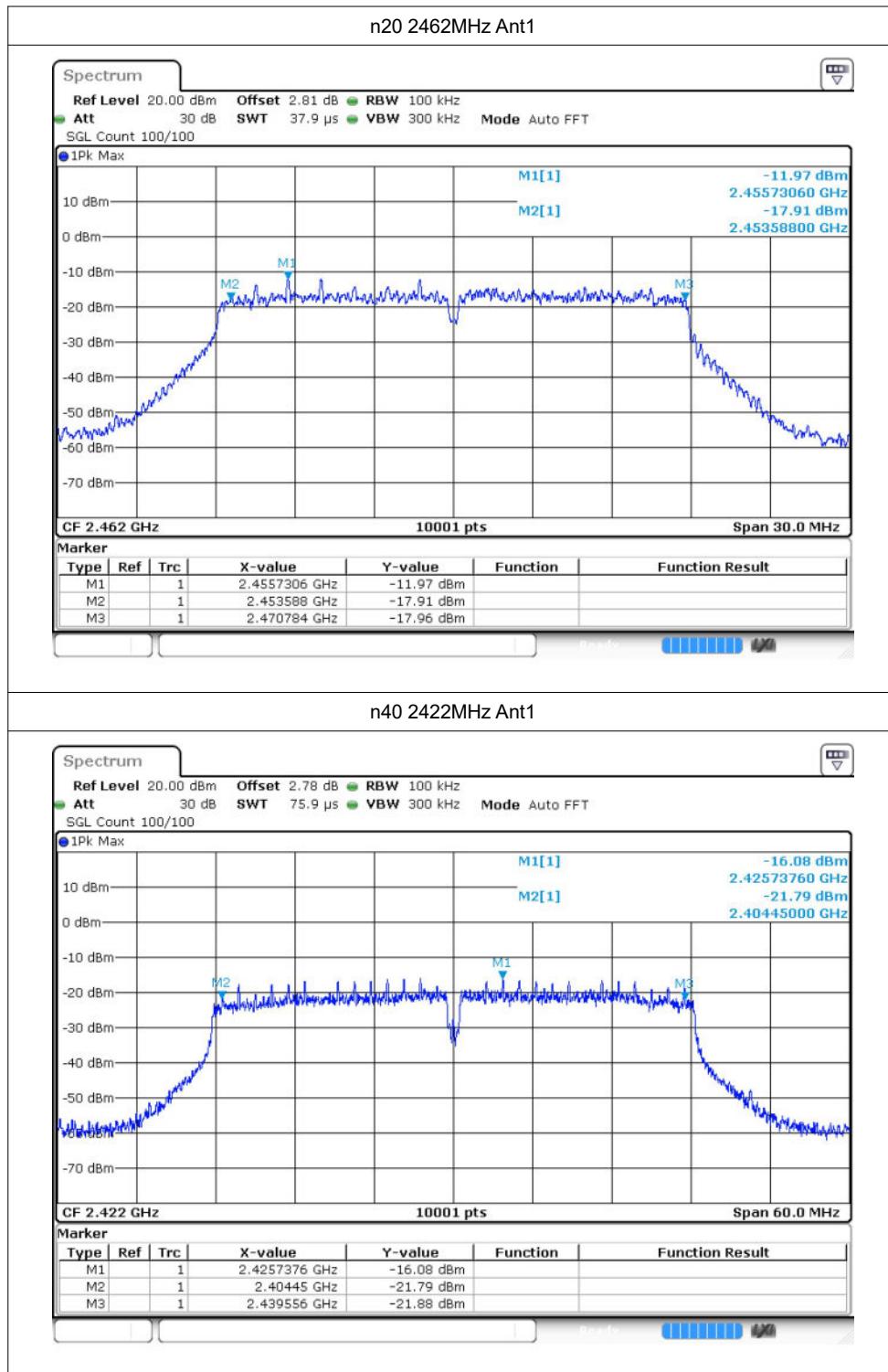
g 2437MHz Ant1



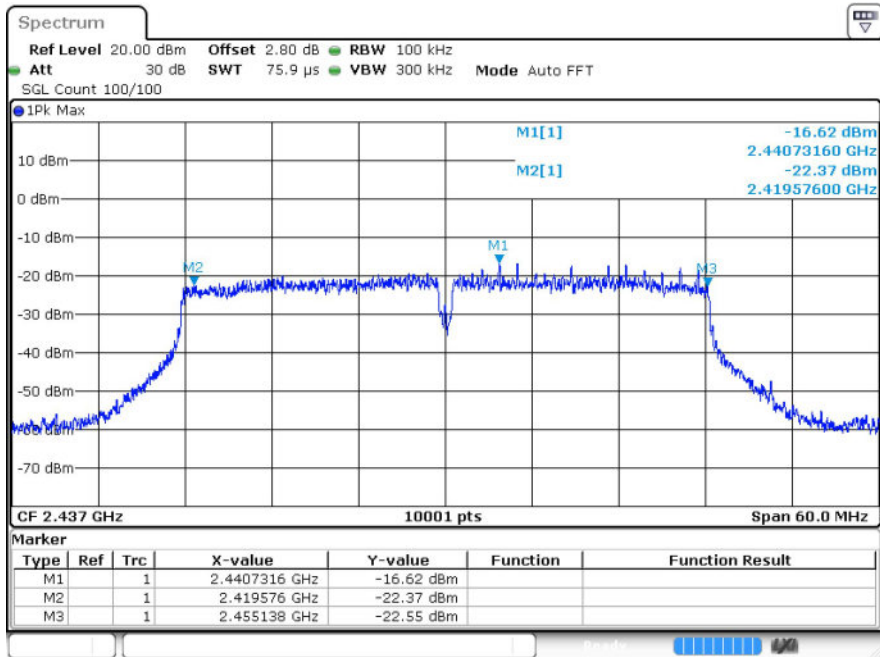
g 2462MHz Ant1



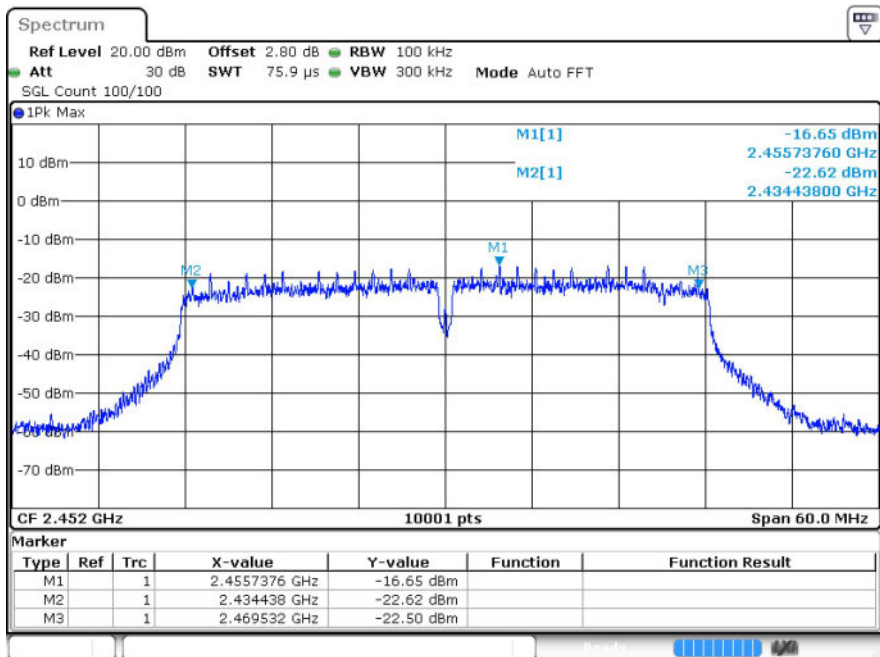




n40 2437MHz Ant1



n40 2452MHz Ant1

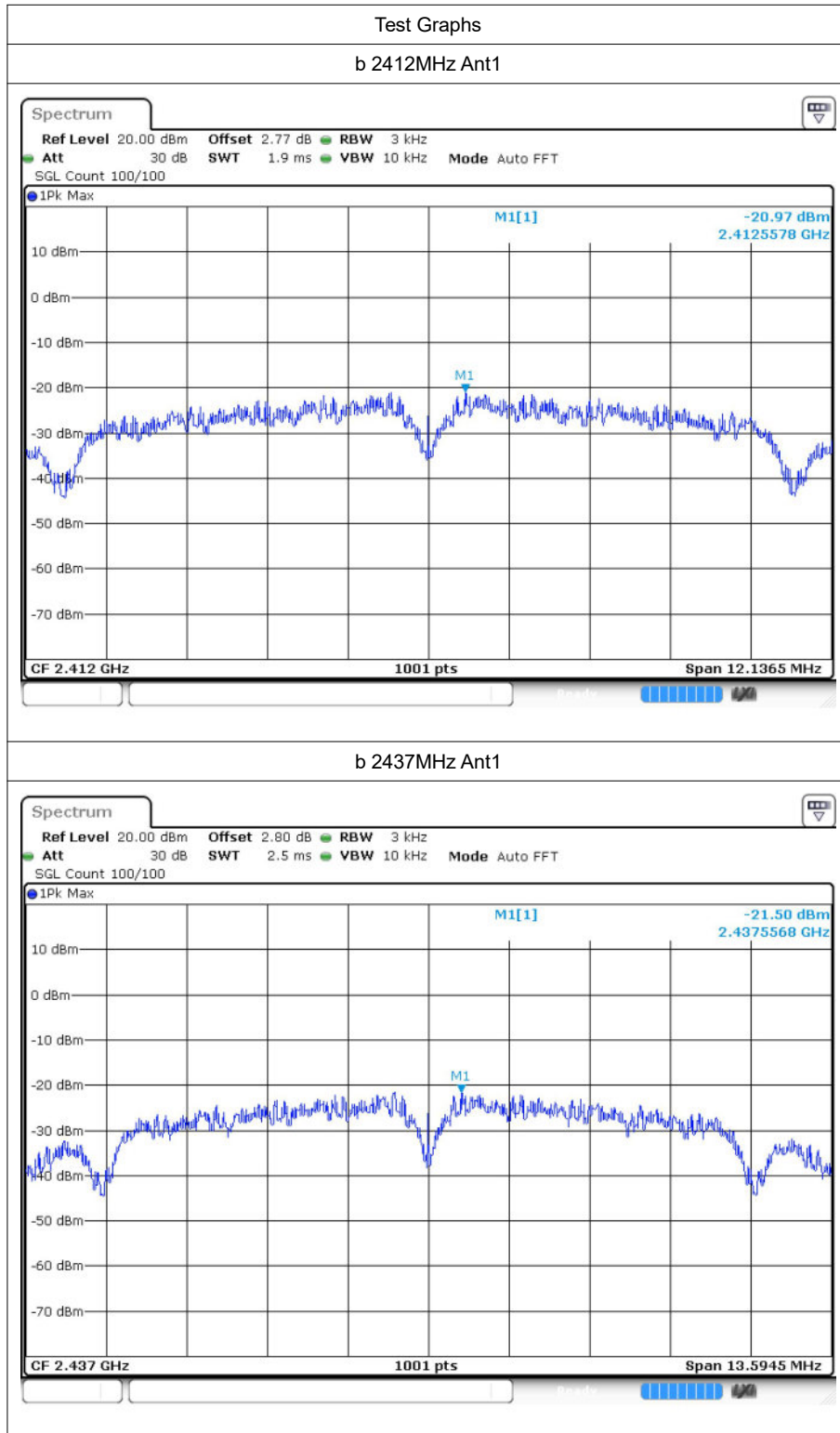


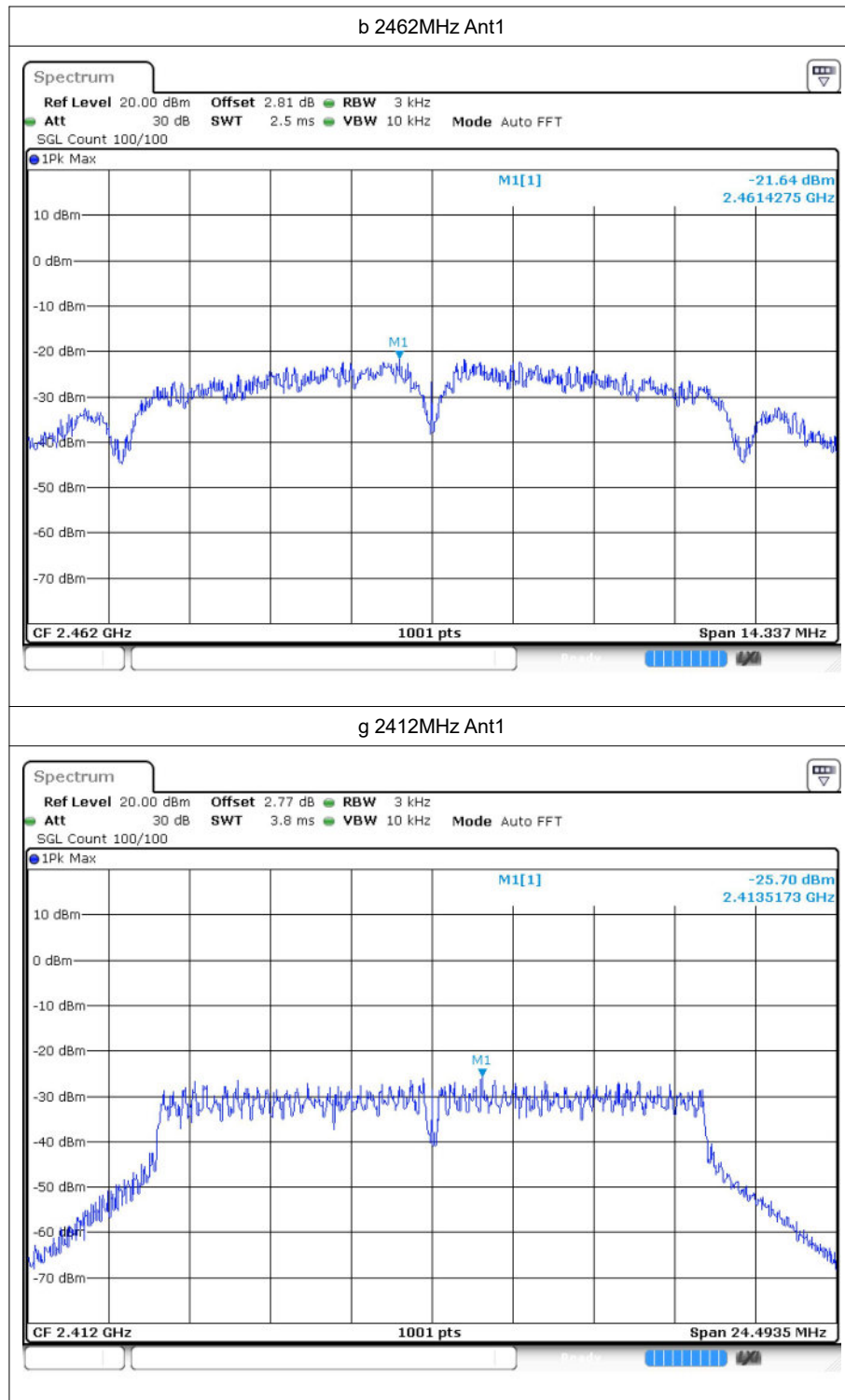
4 Maximum Power Spectral Density Level

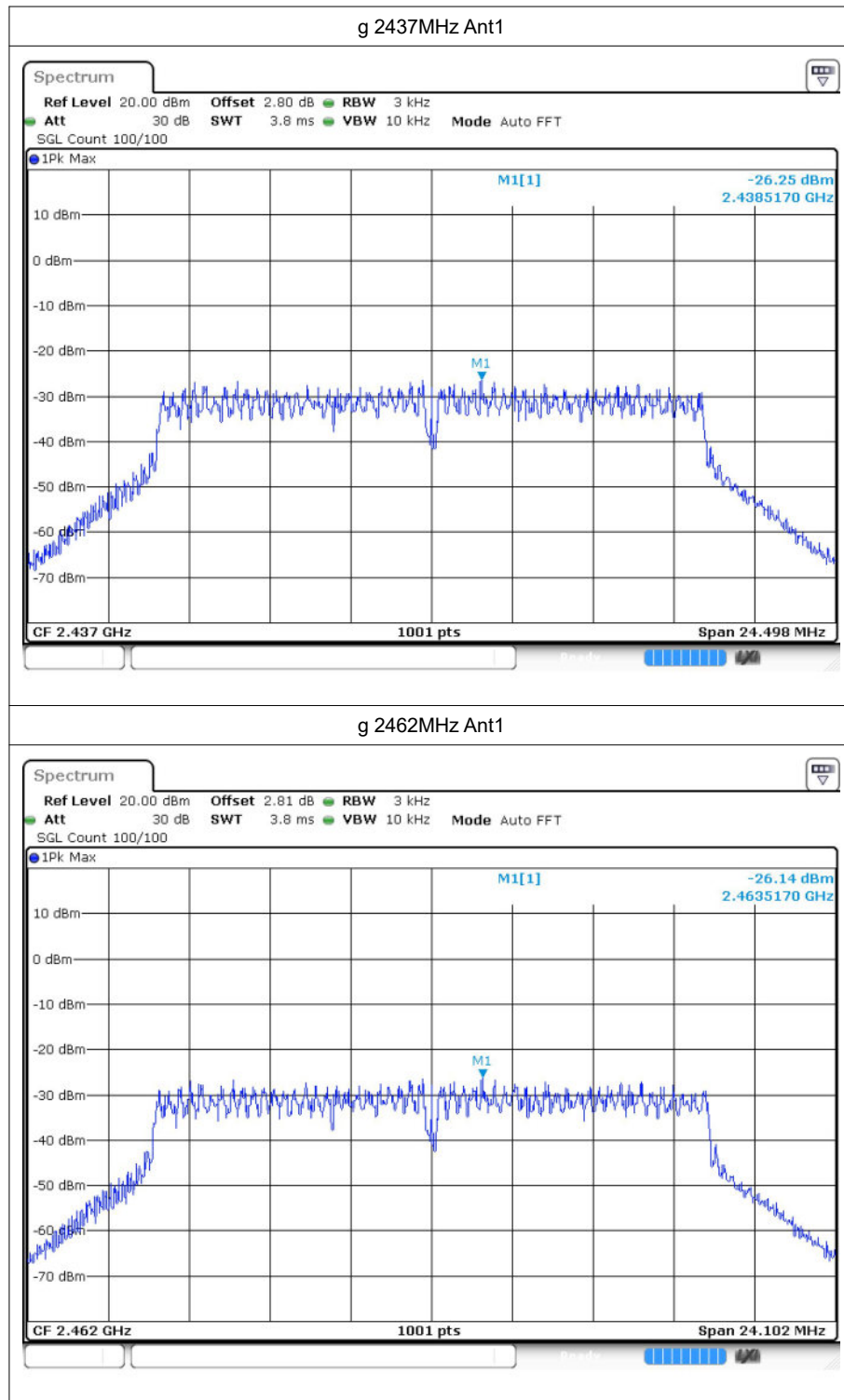
4.1 Test Result

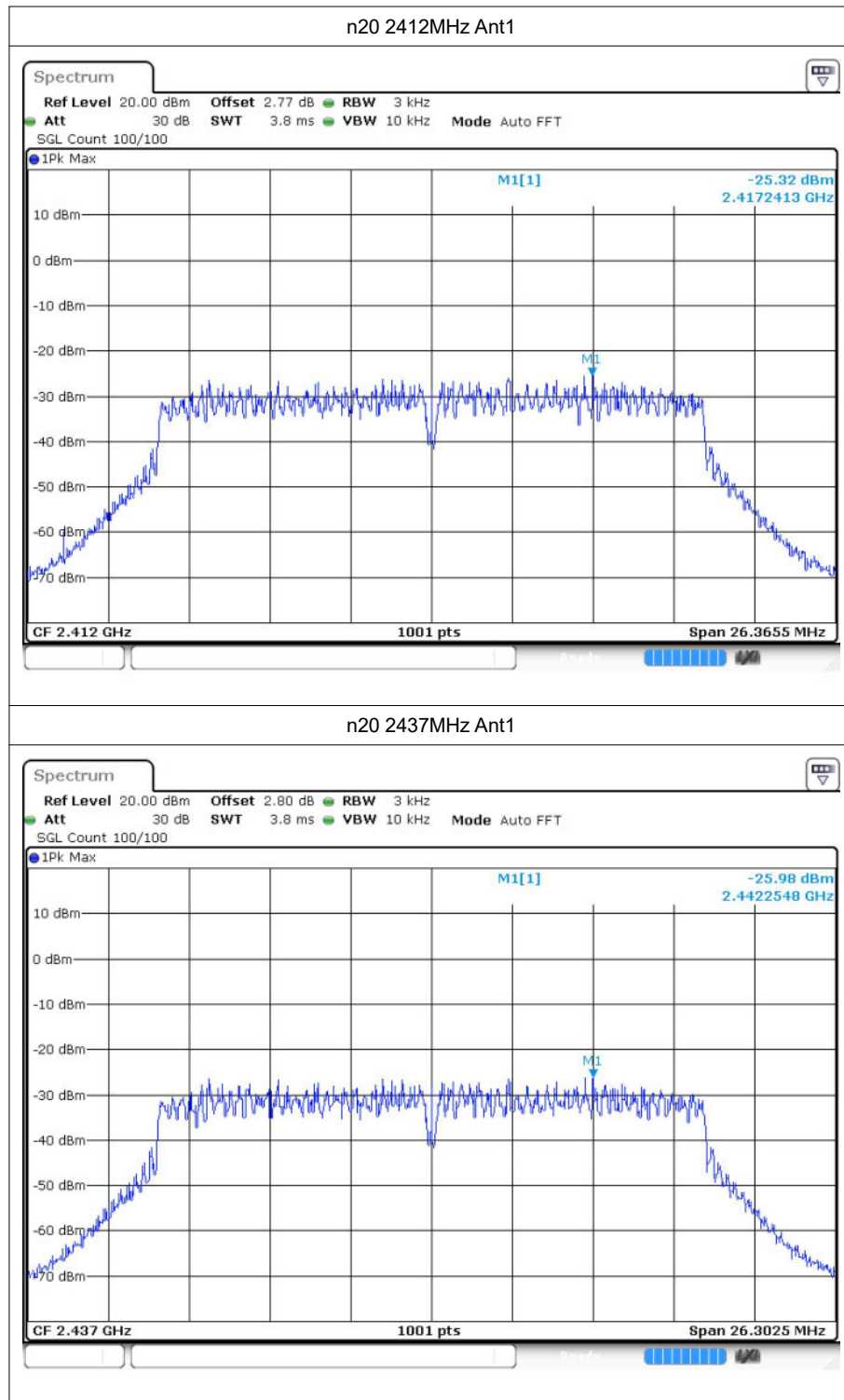
Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
b	2412	Ant1	-20.97	≤8	Pass
b	2437	Ant1	-21.5	≤8	Pass
b	2462	Ant1	-21.64	≤8	Pass
g	2412	Ant1	-25.7	≤8	Pass
g	2437	Ant1	-26.25	≤8	Pass
g	2462	Ant1	-26.14	≤8	Pass
n20	2412	Ant1	-25.32	≤8	Pass
n20	2437	Ant1	-25.98	≤8	Pass
n20	2462	Ant1	-25.93	≤8	Pass
n40	2422	Ant1	-28.5	≤8	Pass
n40	2437	Ant1	-29.31	≤8	Pass
n40	2452	Ant1	-29.46	≤8	Pass

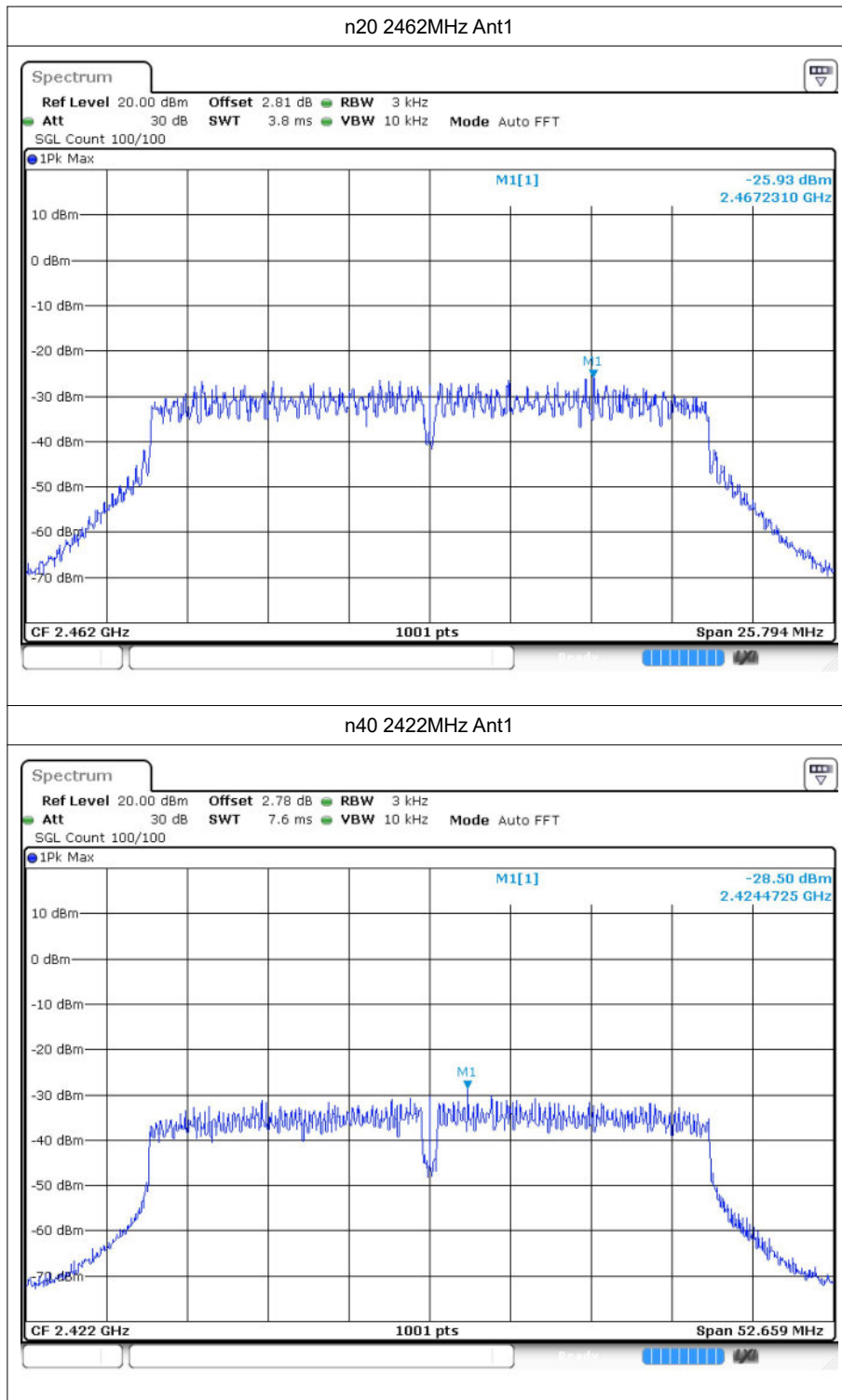
4.2 Test Graphs

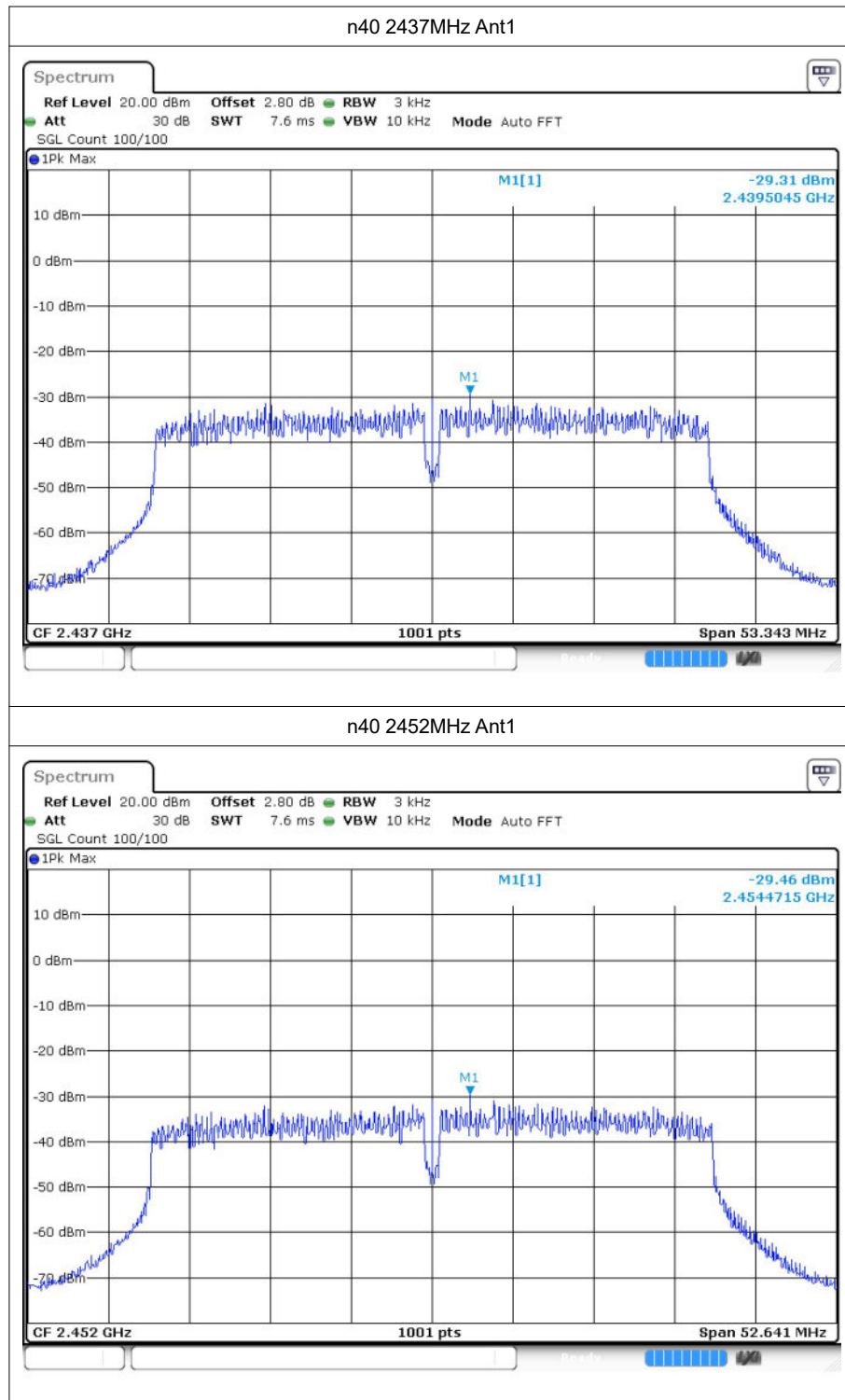














5 Band Edge

5.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
b	2412	Ant1	-48.69	-20	Pass
b	2462	Ant1	-49.34	-20	Pass
g	2412	Ant1	-44	-20	Pass
g	2462	Ant1	-42.63	-20	Pass
n20	2412	Ant1	-44.32	-20	Pass
n20	2462	Ant1	-44.19	-20	Pass
n40	2422	Ant1	-40.97	-20	Pass
n40	2452	Ant1	-38.39	-20	Pass

5.2 Test Graphs

