



Appendix D

RF Test Data for B1WIFI(Conducted Measurement)

Product Name: UV Photocuring 3D Printer

Trade Mark: ELEGOO

Test Model: Saturn 4 Ultra 16K

Environmental Conditions

Temperature:	24.8° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Emiya Lin
Supervised by:	Simba Huang



Contents

Page

COVER PAGE

1	Duty Cycle	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Maximum Conducted Output Power	11
2.1	Test Result	11
3	-26dB Bandwidth	12
3.1	Test Result	12
3.2	Test Graphs	13
4	Occupied Channel Bandwidth	20
4.1	Test Result	20
4.2	Test Graphs	21
5	Maximum Power Spectral Density Level	28
5.1	Test Result	28
5.2	Test Graphs	29
6	Frequency Stability	36
6.1	Test Result	36
7	Conducted RF Spurious Emission	40
7.1	Test Result	40
7.2	Test Graphs	41
8	Restrict Band	48
8.1	Test Result	48
8.2	Test Graphs	50

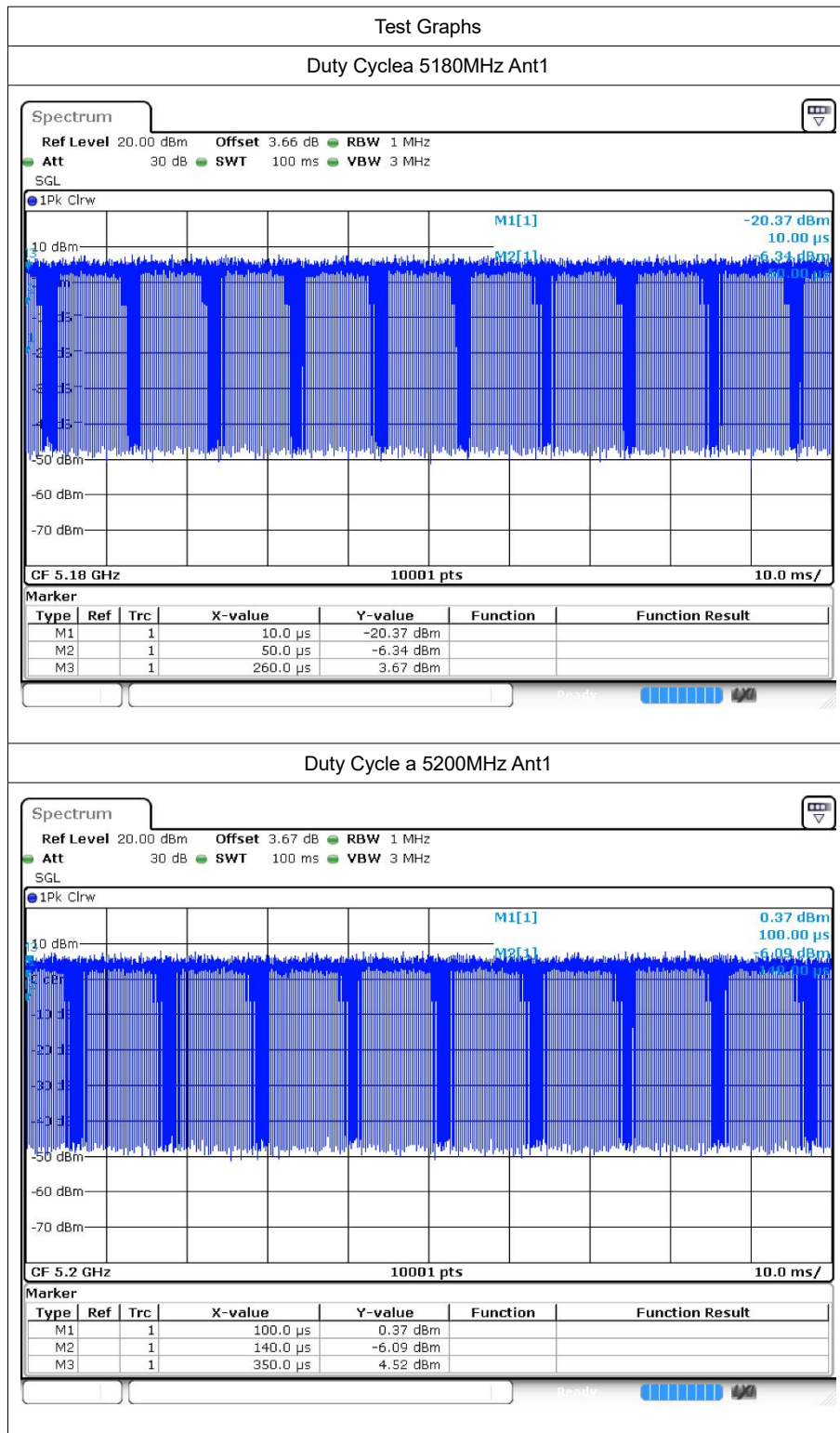


1 Duty Cycle

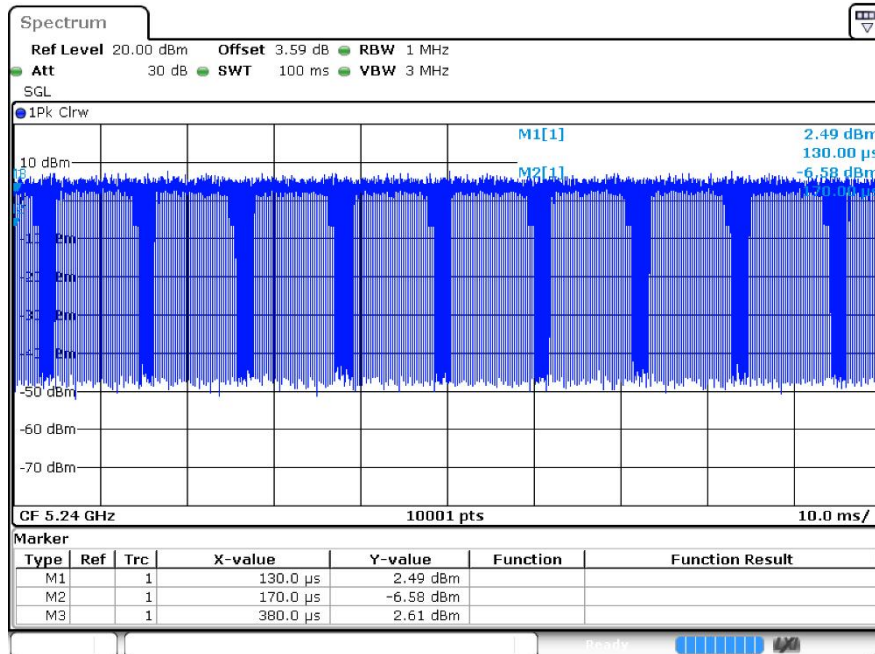
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5180	Ant1	86.85	0.61	4.76
a	5200	Ant1	87.06	0.6	4.76
a	5240	Ant1	87.06	0.6	4.76
n20	5180	Ant1	87.6	0.57	4.35
n20	5200	Ant1	87.64	0.57	4.35
n20	5240	Ant1	87.62	0.57	4.35
n40	5190	Ant1	88.11	0.55	4.17
n40	5230	Ant1	88.16	0.55	4
ac20	5180	Ant1	87.19	0.6	4.55
ac20	5200	Ant1	87.37	0.59	4.35
ac20	5240	Ant1	87.23	0.59	4.35
ac40	5190	Ant1	87.08	0.6	4.55
ac40	5230	Ant1	85.62	0.67	4.55
ac80	5210	Ant1	87.41	0.58	4.35

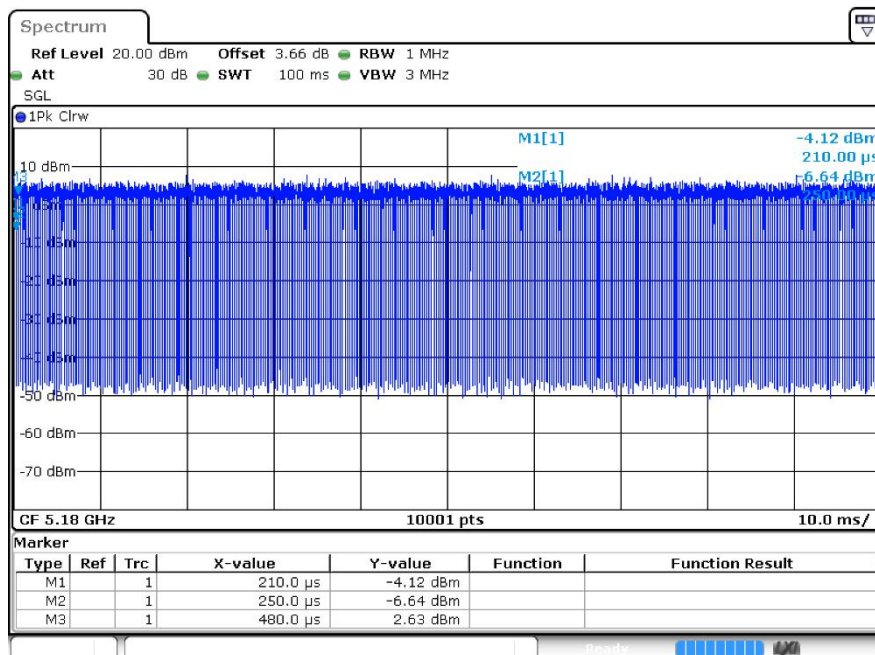
1.2 Test Graphs



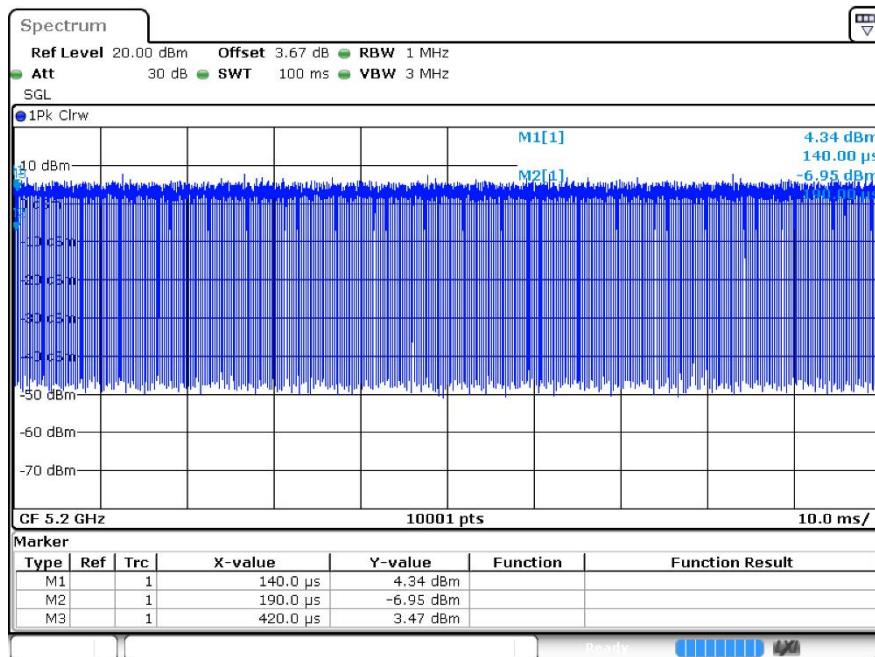
Duty Cyclea 5240MHz Ant1



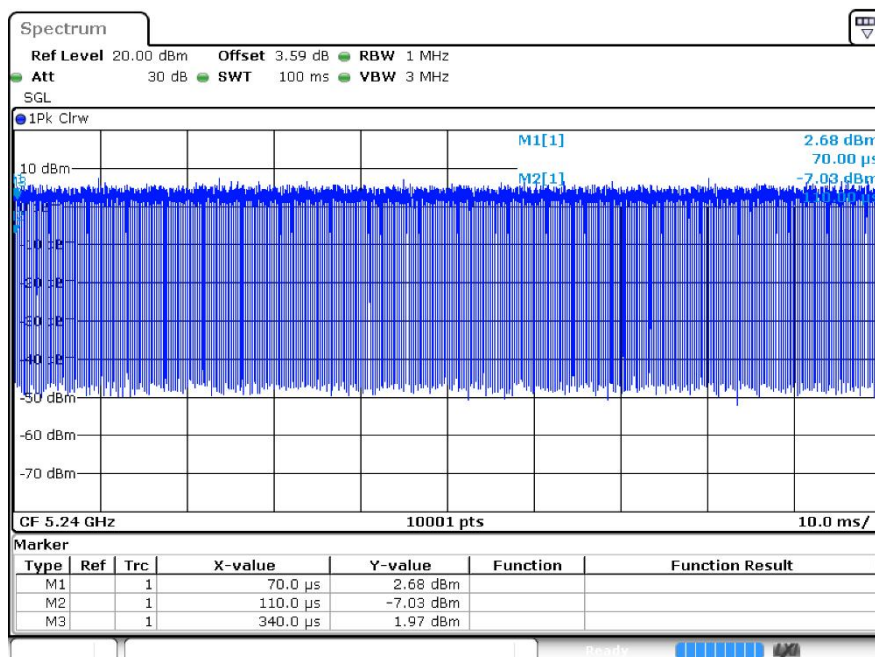
Duty Cycle n20 5180MHz Ant1



Duty Cycle n20 5200MHz Ant1

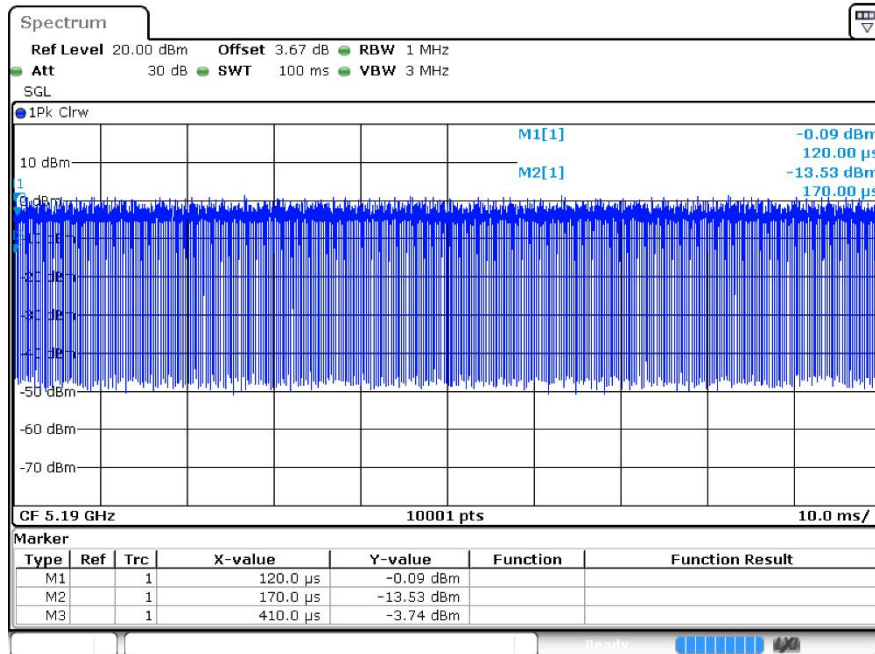


Duty Cycle n20 5240MHz Ant1

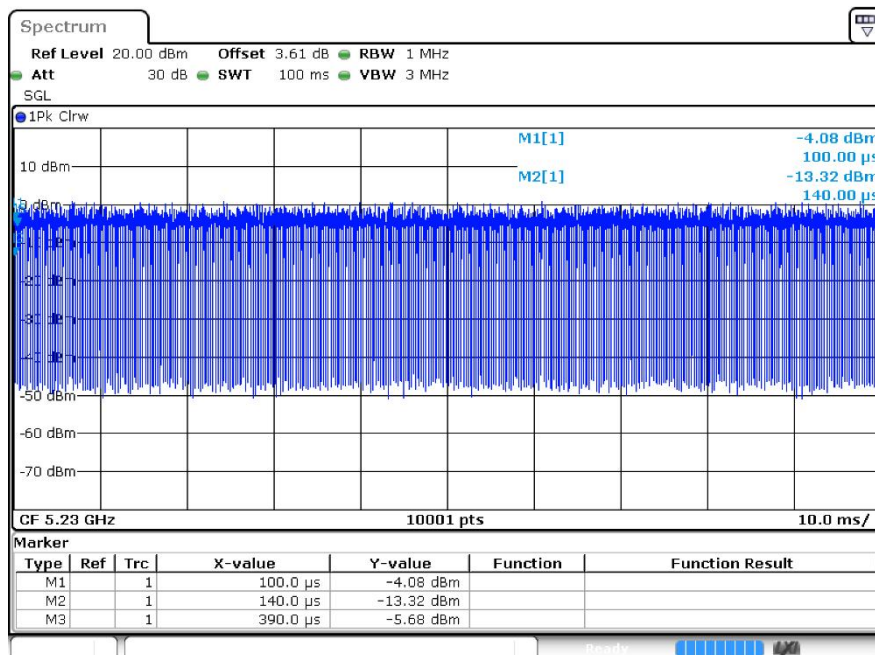




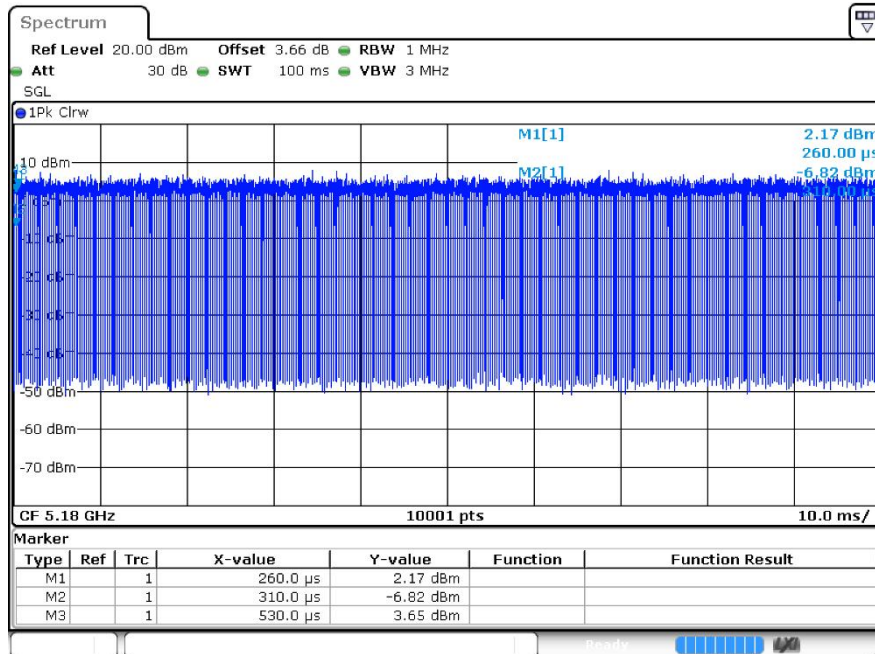
Duty Cyclen40 5190MHz Ant1



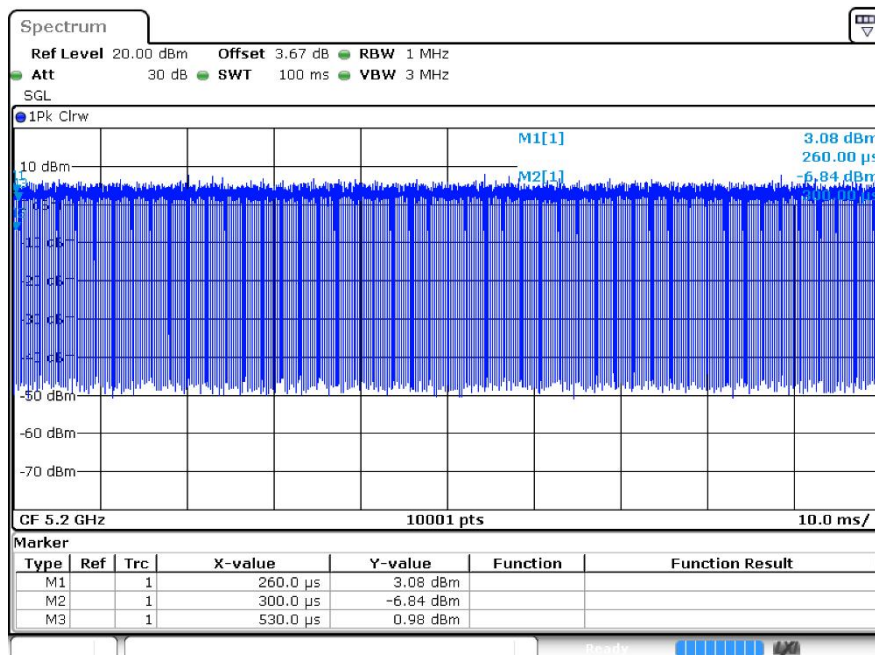
Duty Cyclen40 5230MHz Ant1



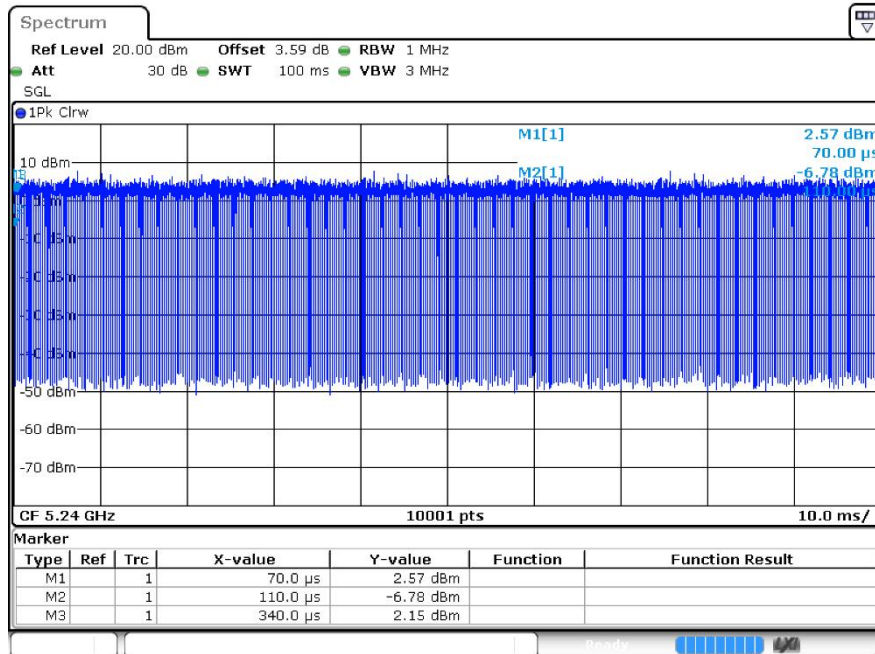
Duty Cycle ac20 5180MHz Ant1



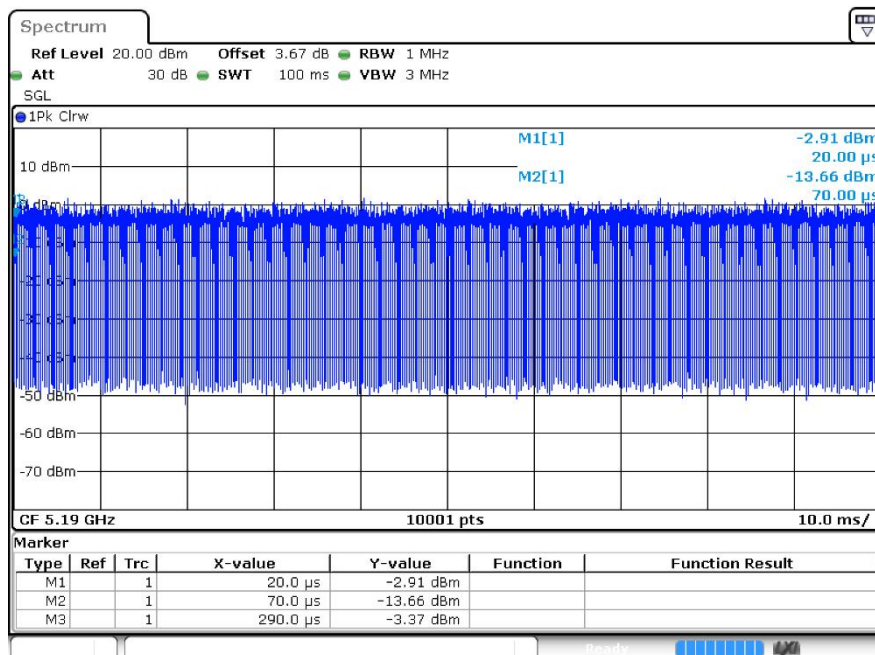
Duty Cycle ac20 5200MHz Ant1

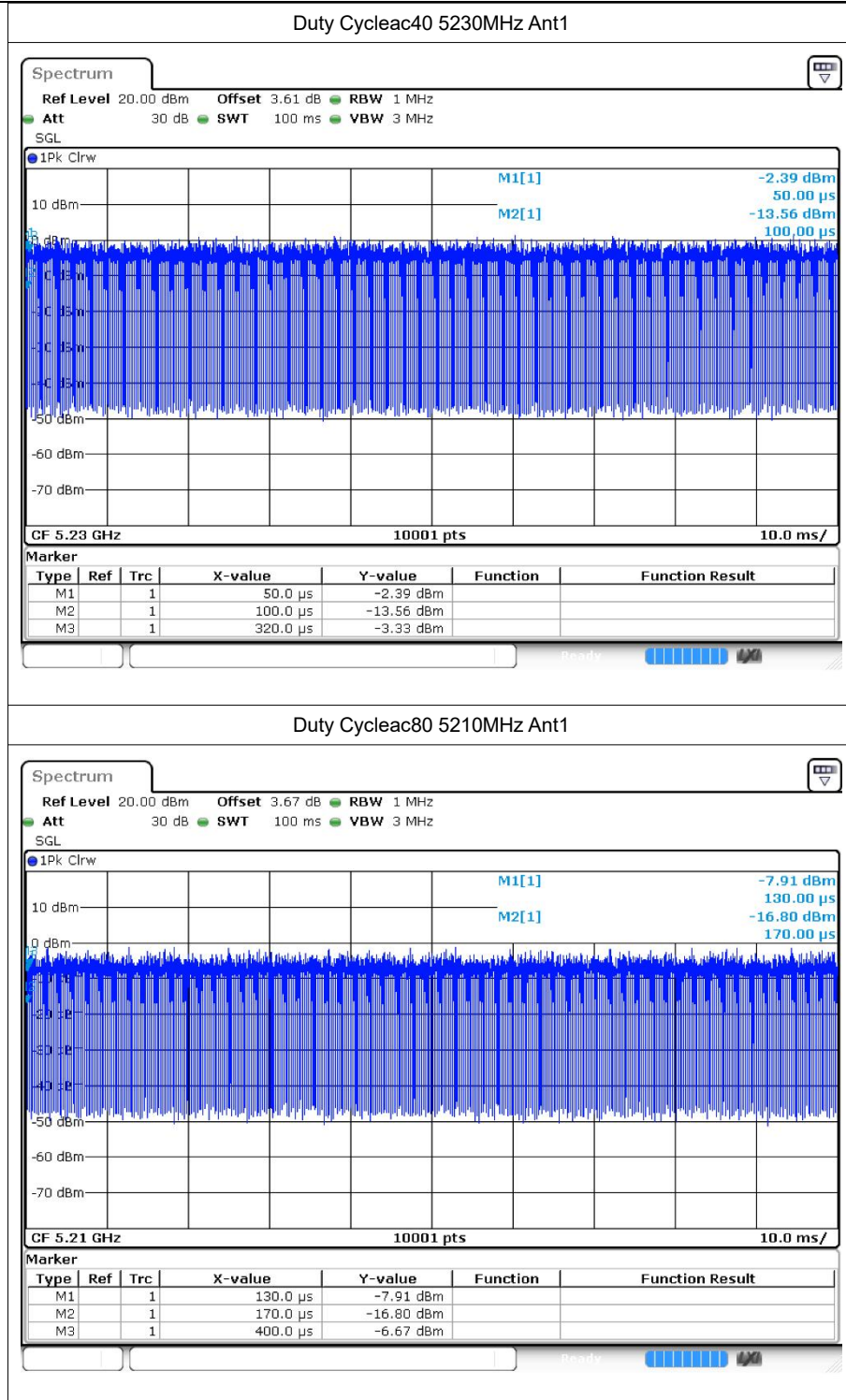


Duty Cycle ac20 5240MHz Ant1



Duty Cycleac40 5190MHz Ant1







2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
a	5180	Ant1	14.36	24	Pass
a	5200	Ant1	14.2	24	Pass
a	5240	Ant1	13.9	24	Pass
n20	5180	Ant1	13.83	24	Pass
n20	5200	Ant1	13.72	24	Pass
n20	5240	Ant1	13.46	24	Pass
n40	5190	Ant1	13.58	24	Pass
n40	5230	Ant1	13.18	24	Pass
ac20	5180	Ant1	13.78	24	Pass
ac20	5200	Ant1	13.65	24	Pass
ac20	5240	Ant1	13.35	24	Pass
ac40	5190	Ant1	13.44	24	Pass
ac40	5230	Ant1	13.18	24	Pass
ac80	5210	Ant1	13.25	24	Pass

Note:

The duty factor has been compensated into the result.

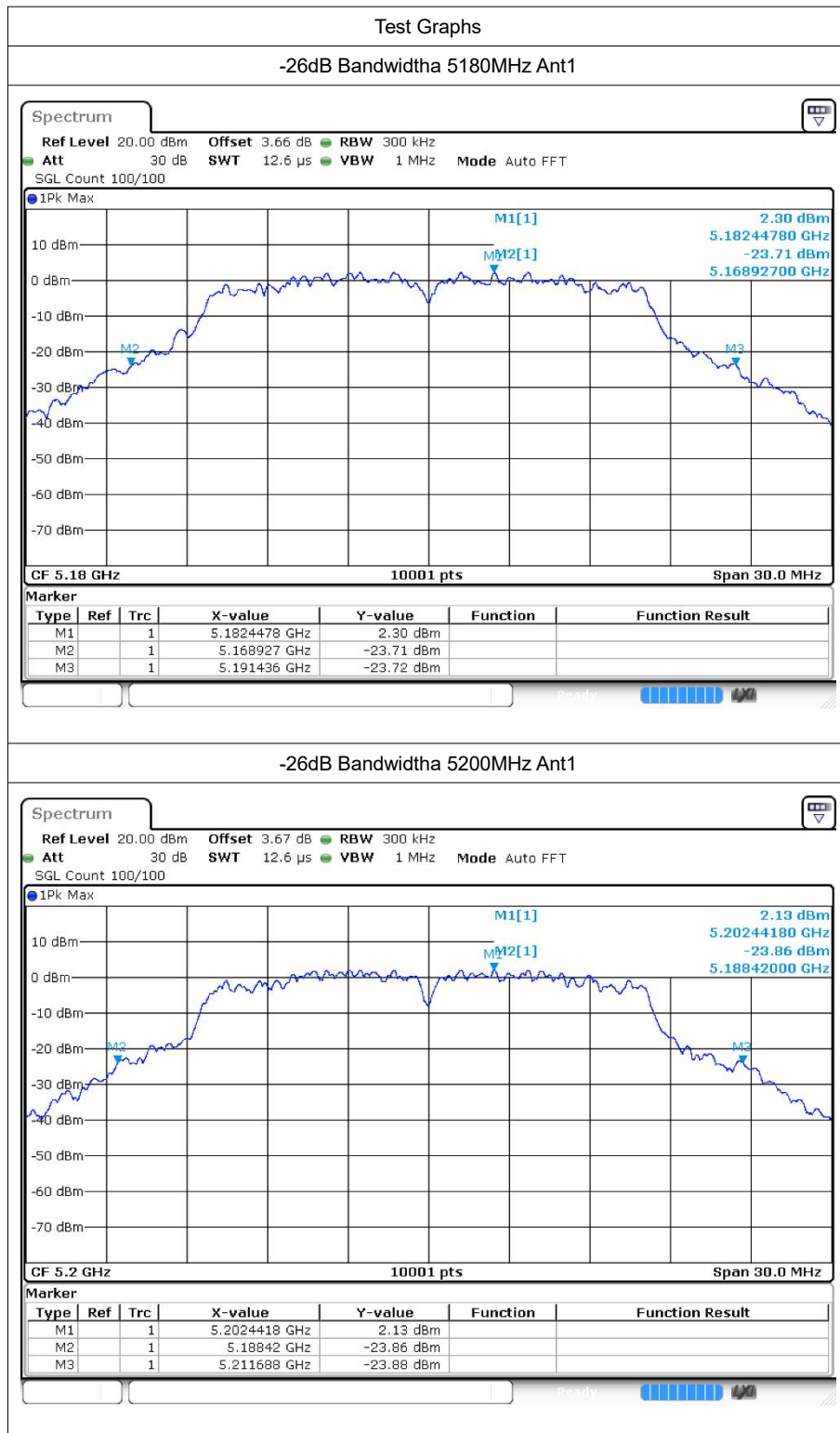


3 -26dB Bandwidth

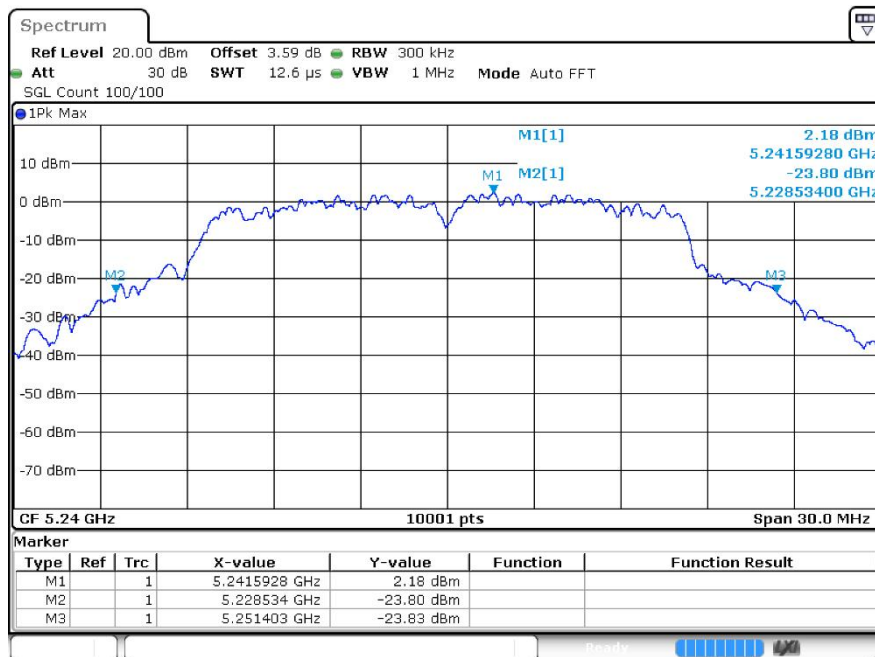
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
a	5180	Ant1	22.509	0.5	Pass
a	5200	Ant1	23.268	0.5	Pass
a	5240	Ant1	22.869	0.5	Pass
n20	5180	Ant1	22.218	0.5	Pass
n20	5200	Ant1	22.611	0.5	Pass
n20	5240	Ant1	23.289	0.5	Pass
n40	5190	Ant1	40.98	0.5	Pass
n40	5230	Ant1	42.048	0.5	Pass
ac20	5180	Ant1	22.155	0.5	Pass
ac20	5200	Ant1	22.23	0.5	Pass
ac20	5240	Ant1	23.046	0.5	Pass
ac40	5190	Ant1	41.478	0.5	Pass
ac40	5230	Ant1	42.54	0.5	Pass
ac80	5210	Ant1	82.944	0.5	Pass

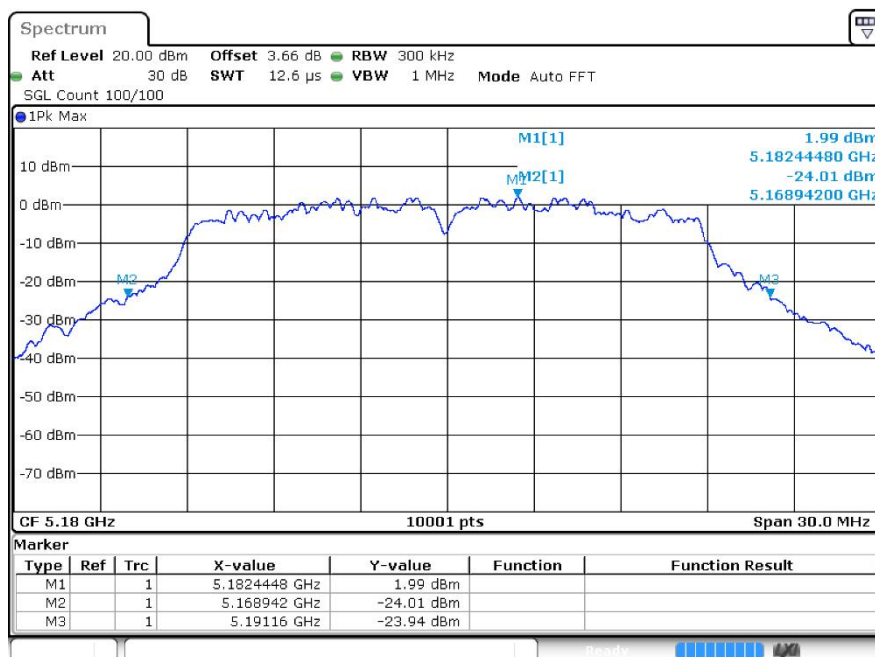
3.2 Test Graphs



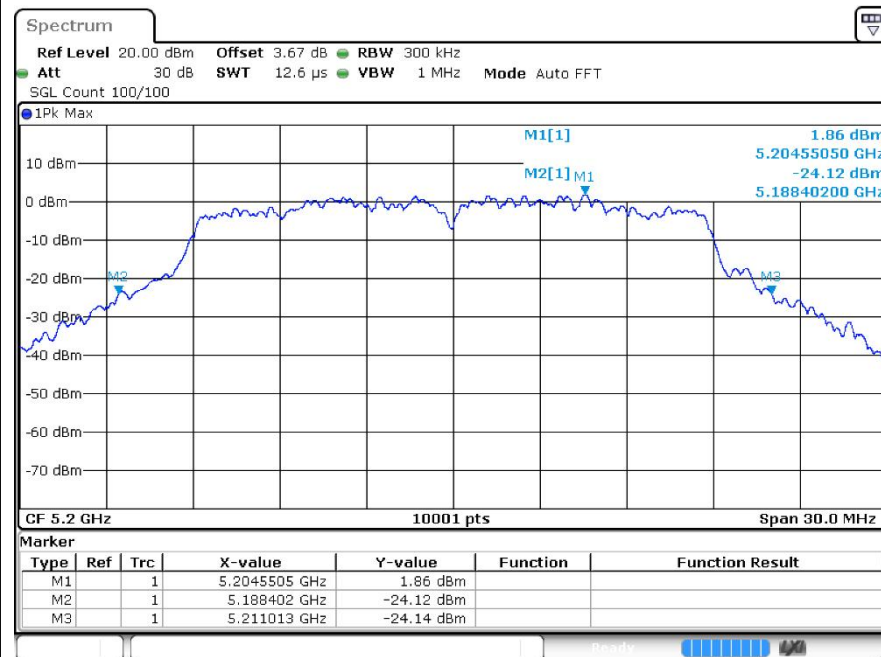
-26dB Bandwidth 5240MHz Ant1



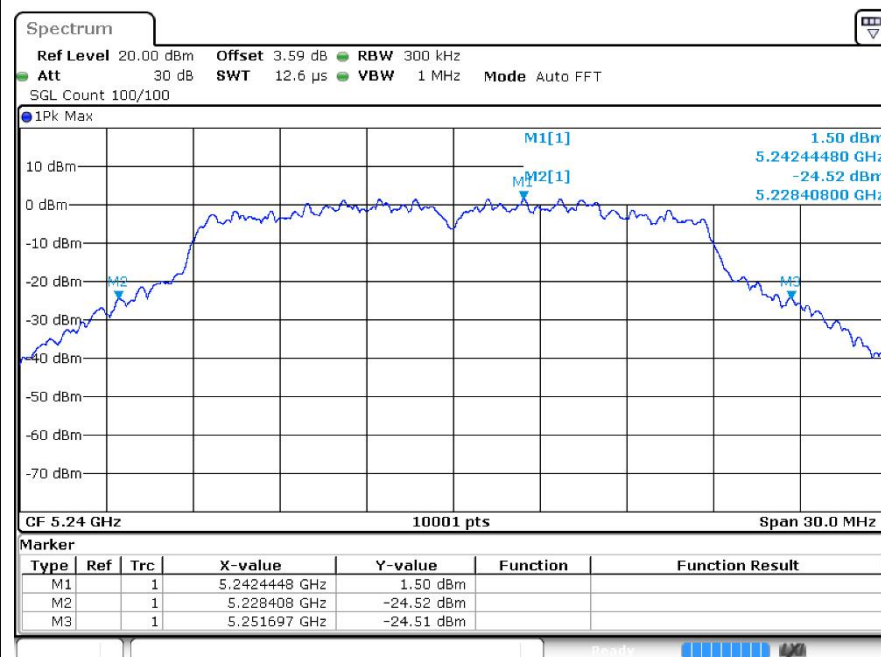
-26dB Bandwidth n20 5180MHz Ant1



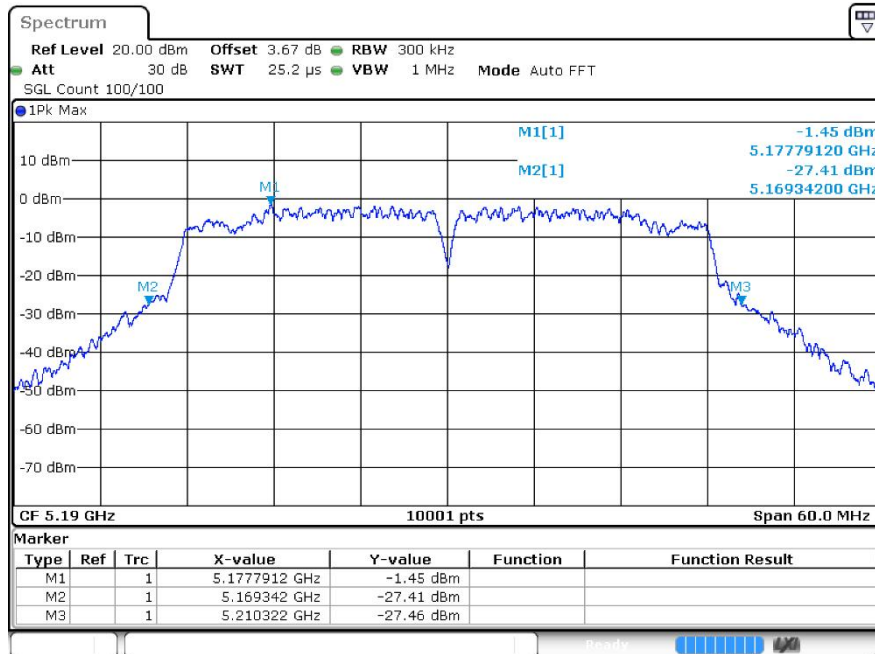
-26dB Bandwidth n20 5200MHz Ant1



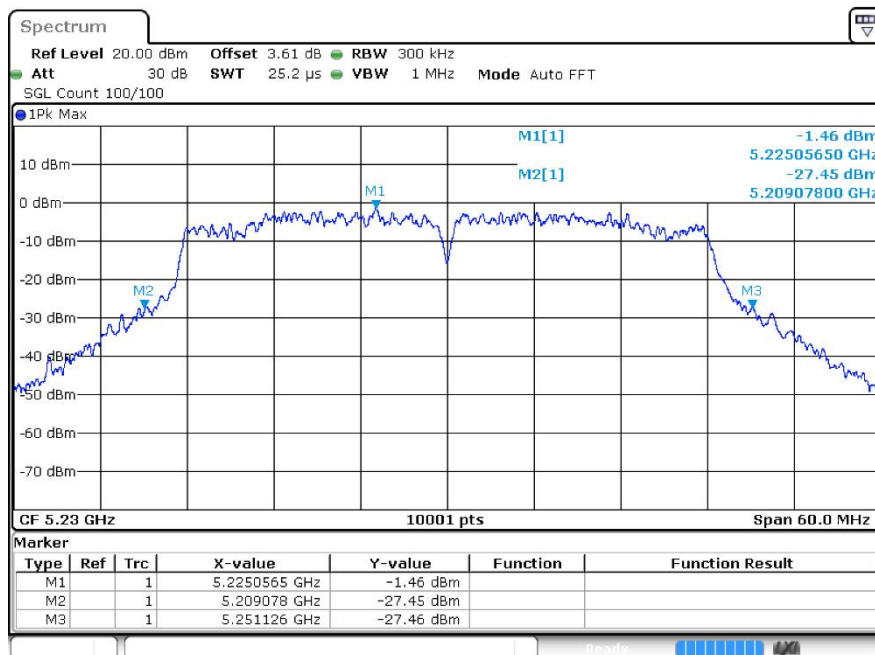
-26dB Bandwidth n20 5240MHz Ant1



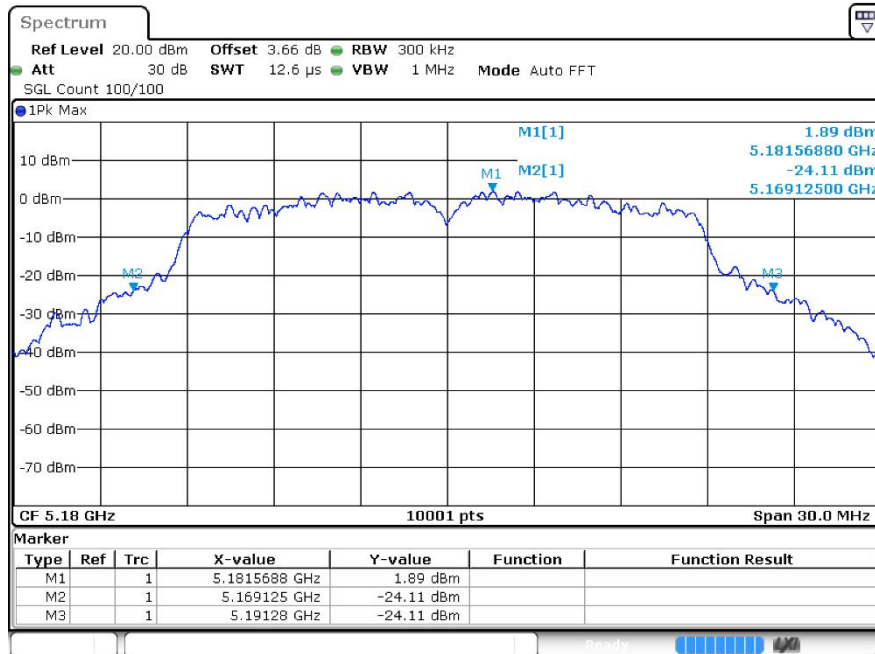
-26dB Bandwidthn40 5190MHz Ant1



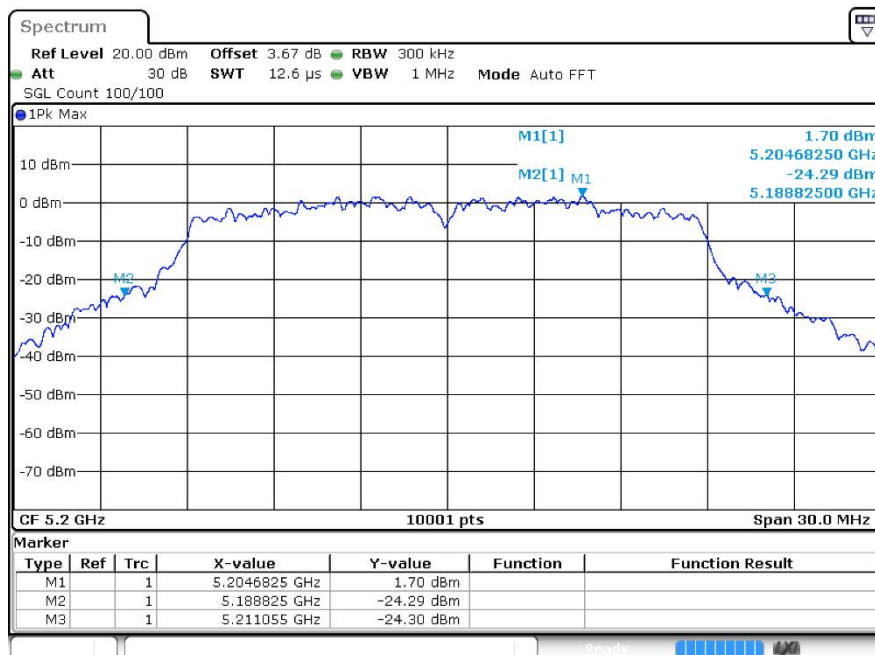
-26dB Bandwidthn40 5230MHz Ant1



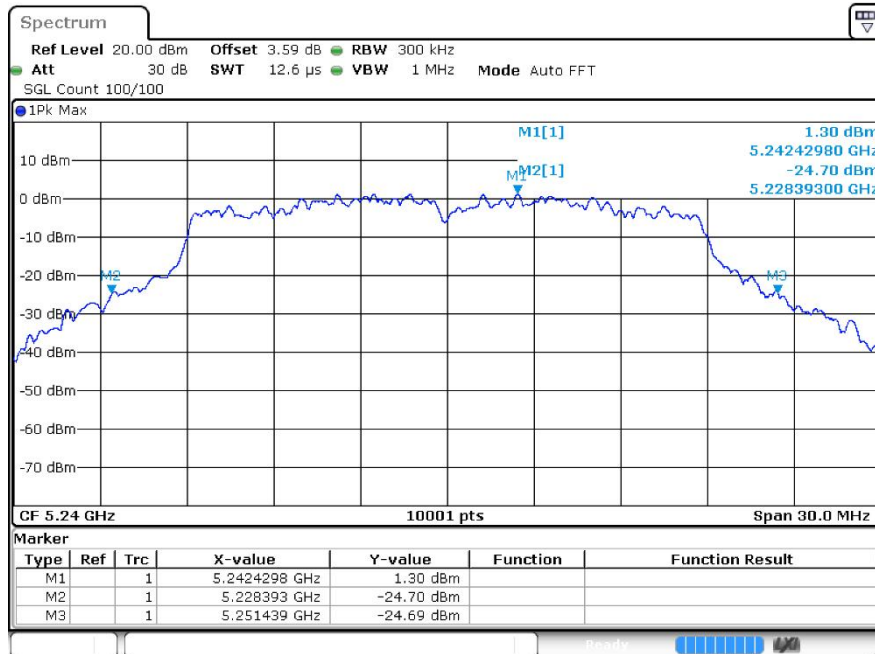
-26dB Bandwidth ac20 5180MHz Ant1



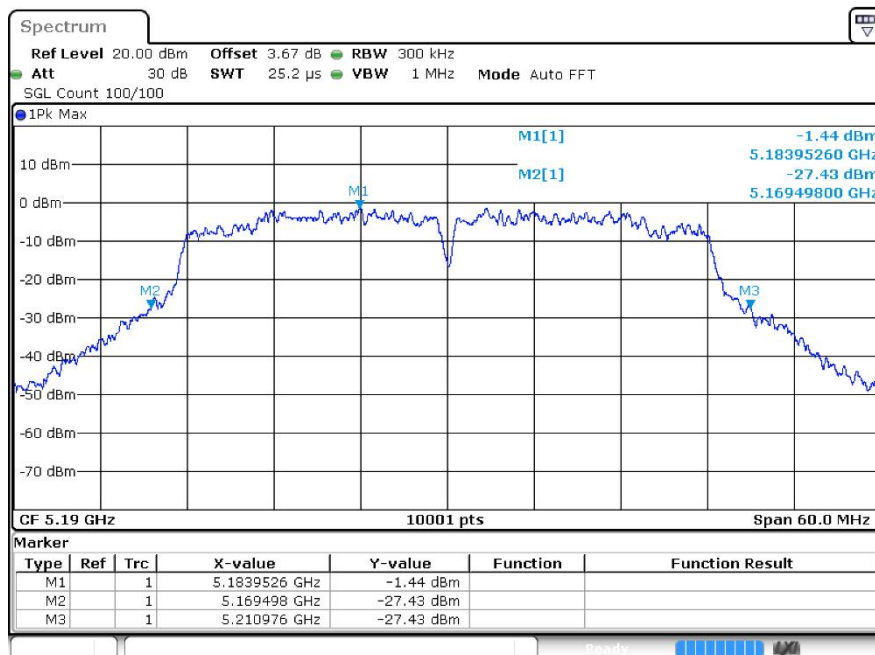
-26dB Bandwidth ac20 5200MHz Ant1



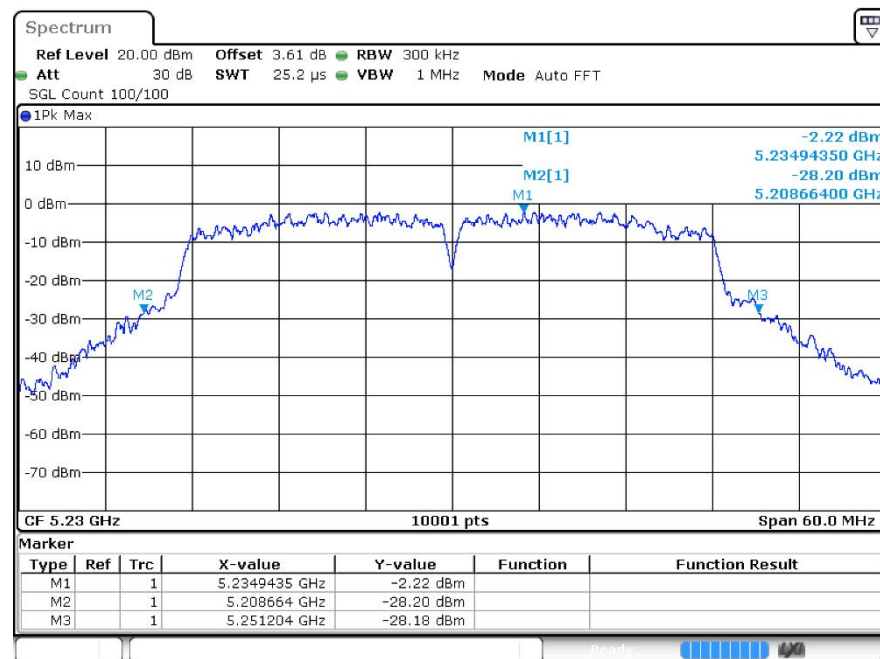
-26dB Bandwidth ac20 5240MHz Ant1



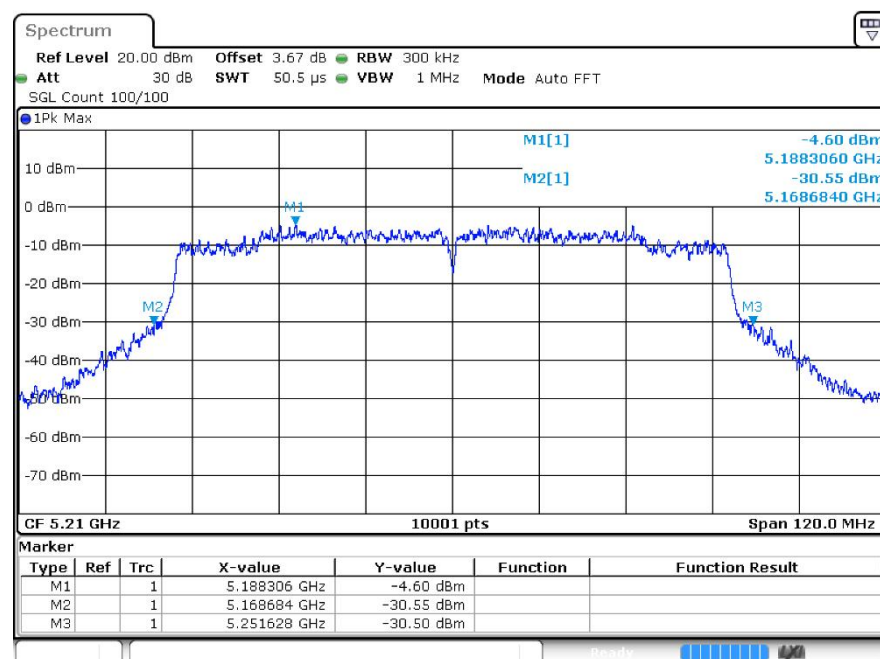
-26dB Bandwidthac40 5190MHz Ant1



-26dB Bandwidthac40 5230MHz Ant1



-26dB Bandwidthac80 5210MHz Ant1



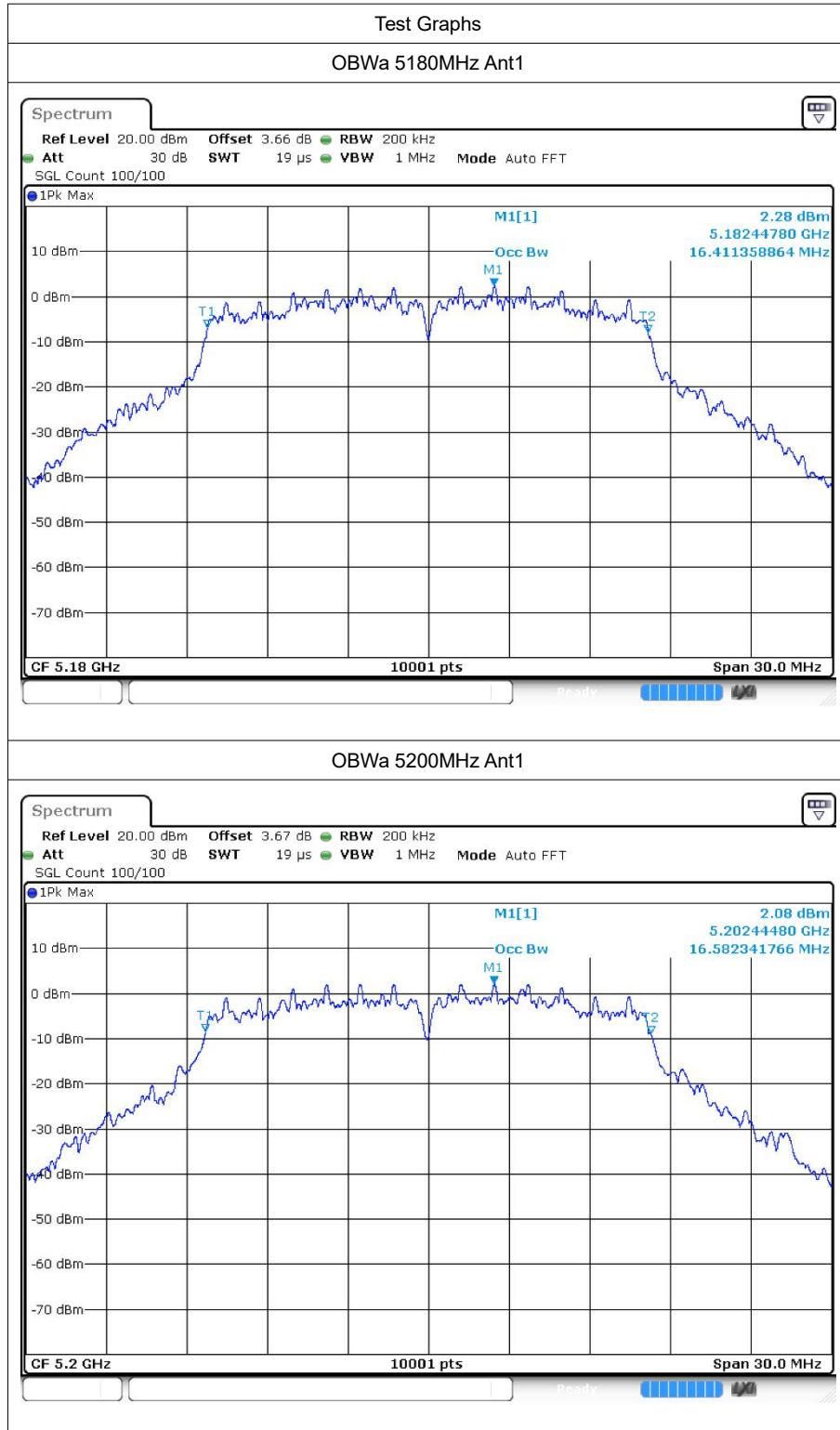


4 Occupied Channel Bandwidth

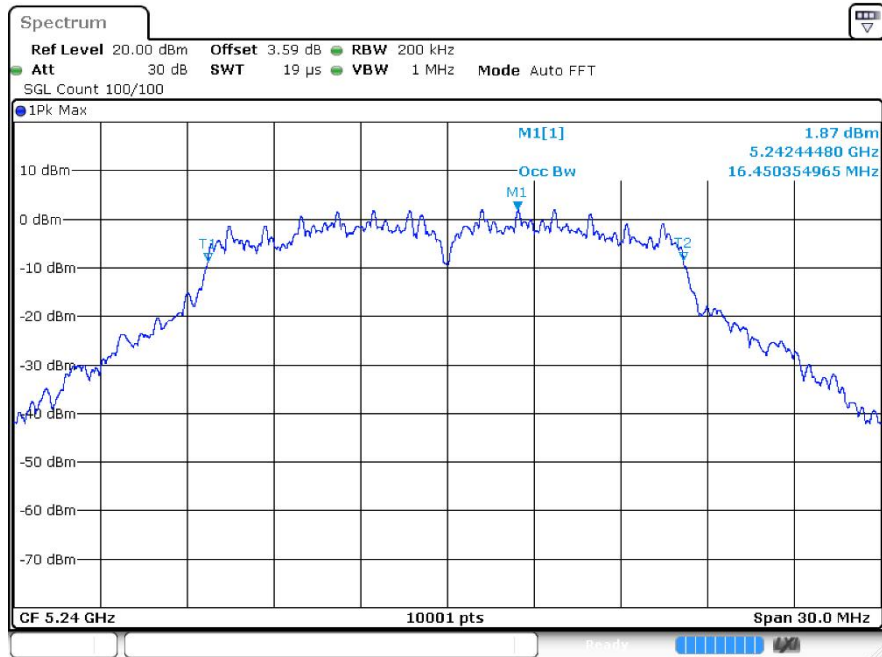
4.1 Test Result

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
a	5180	Ant1	16.411
a	5200	Ant1	16.582
a	5240	Ant1	16.45
n20	5180	Ant1	17.539
n20	5200	Ant1	17.611
n20	5240	Ant1	17.602
n40	5190	Ant1	35.936
n40	5230	Ant1	36.134
ac20	5180	Ant1	17.584
ac20	5200	Ant1	17.545
ac20	5240	Ant1	17.62
ac40	5190	Ant1	36.044
ac40	5230	Ant1	35.978
ac80	5210	Ant1	75.088

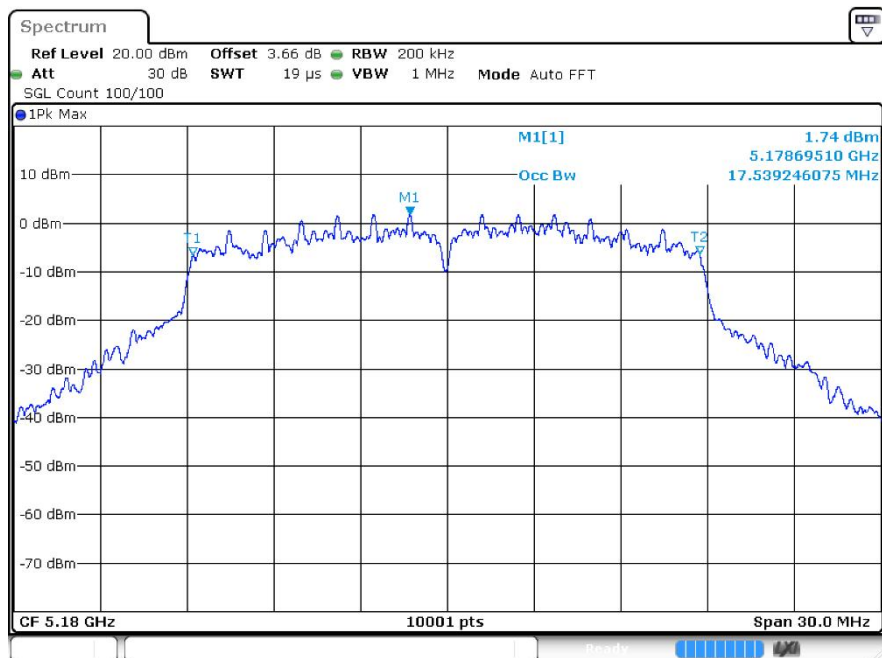
4.2 Test Graphs



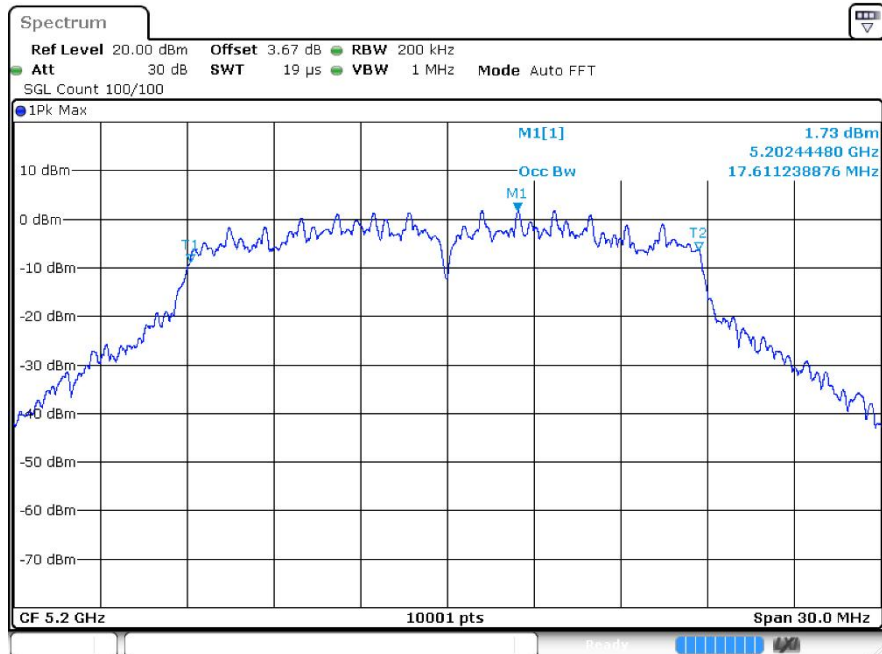
OBWa 5240MHz Ant1



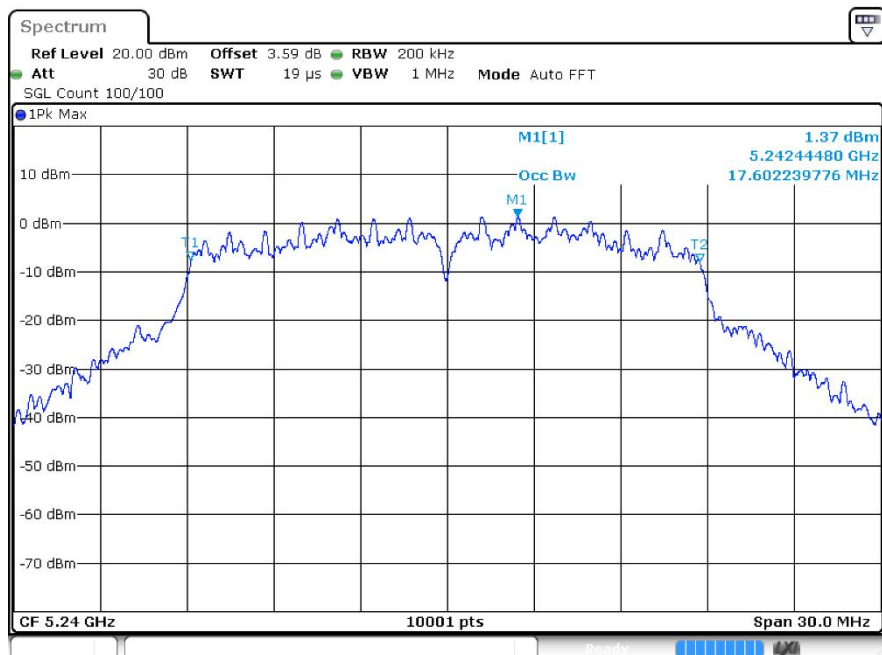
OBW n20 5180MHz Ant1



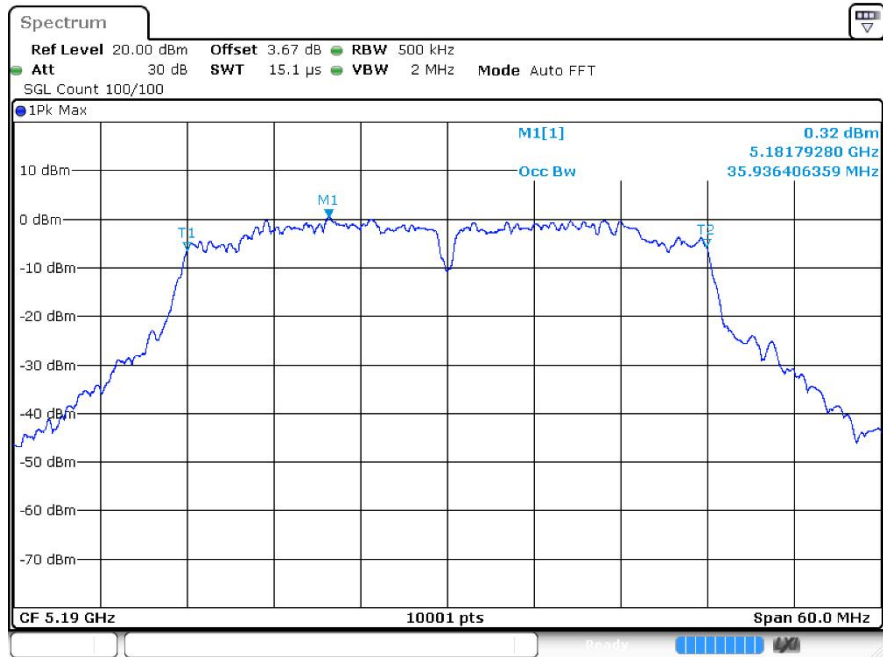
OBW n20 5200MHz Ant1



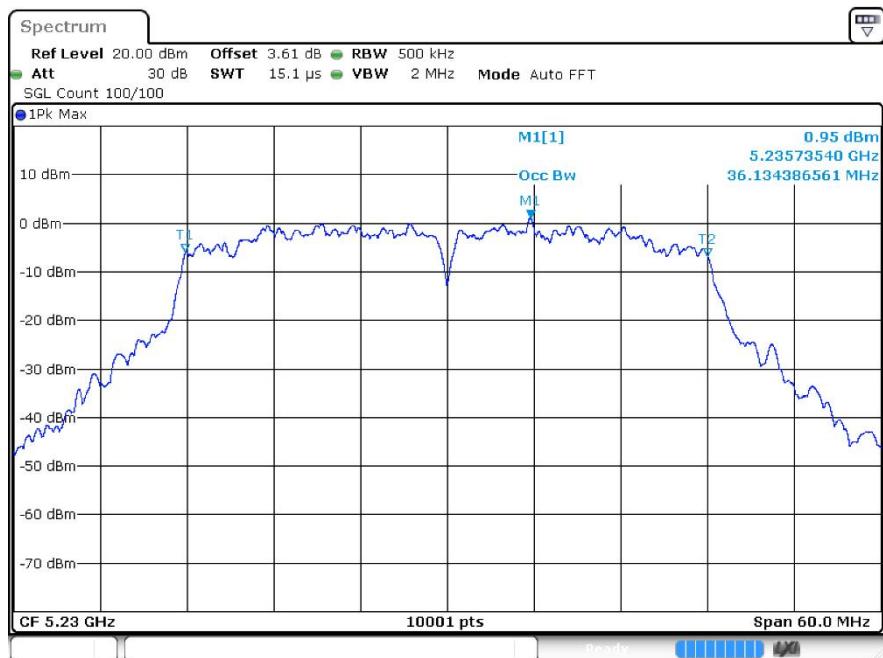
OBW n20 5240MHz Ant1



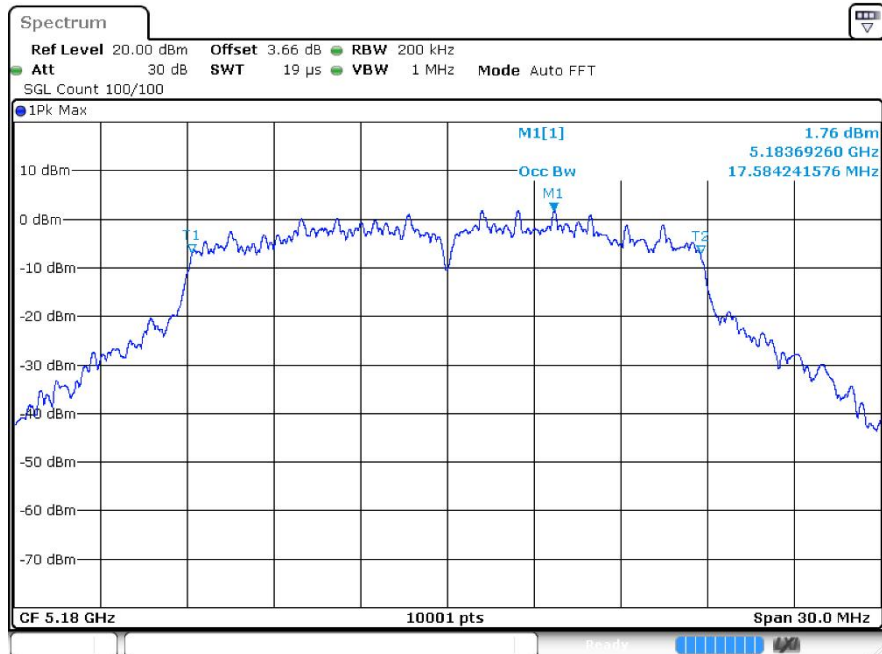
OBWn40 5190MHz Ant1



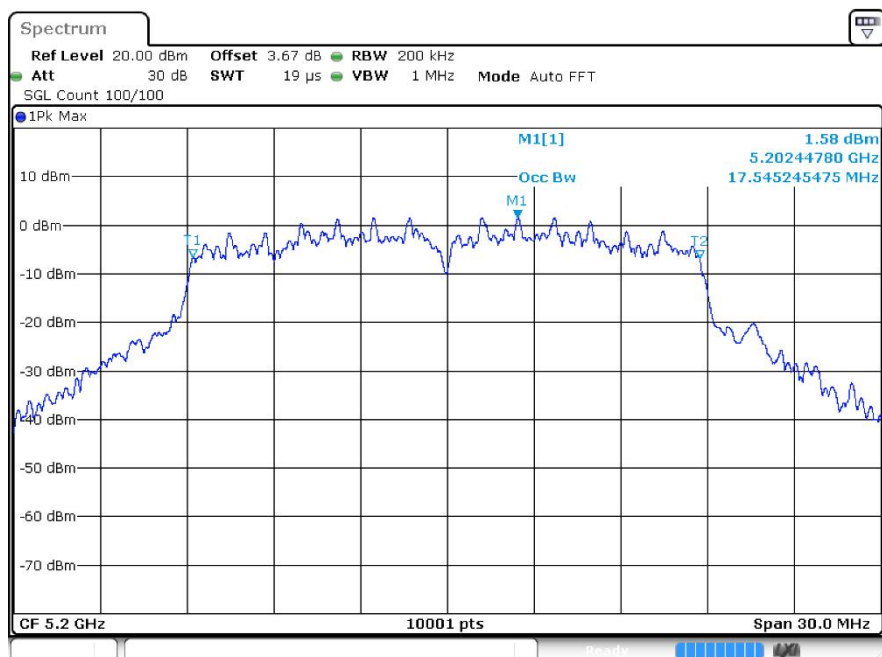
OBWn40 5230MHz Ant1



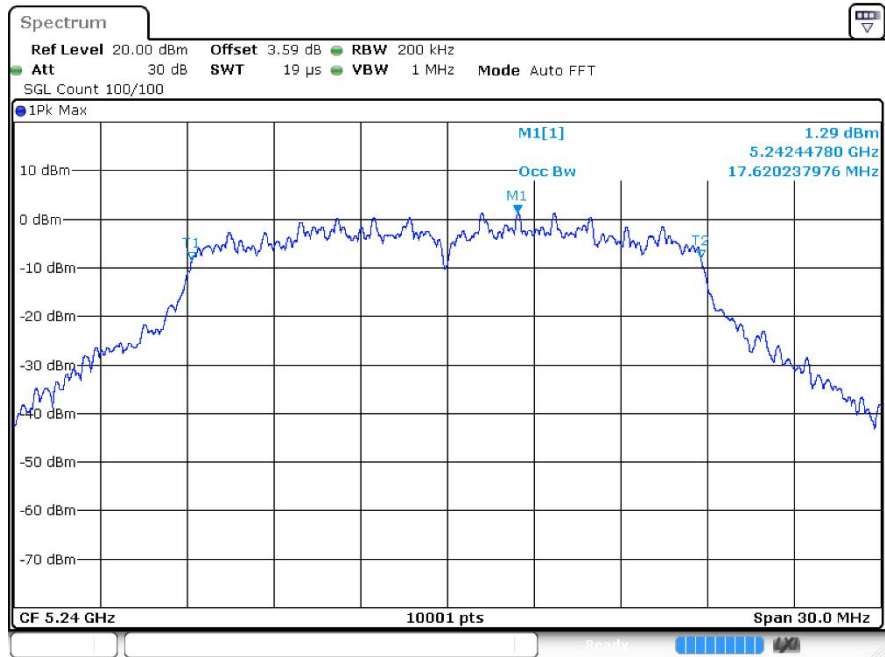
OBW ac20 5180MHz Ant1



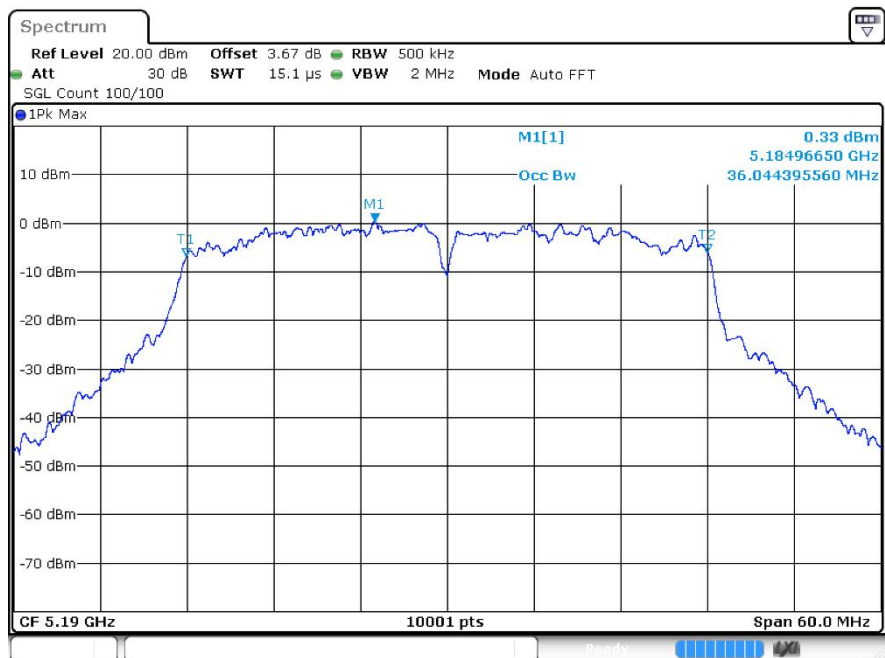
OBW ac20 5200MHz Ant1



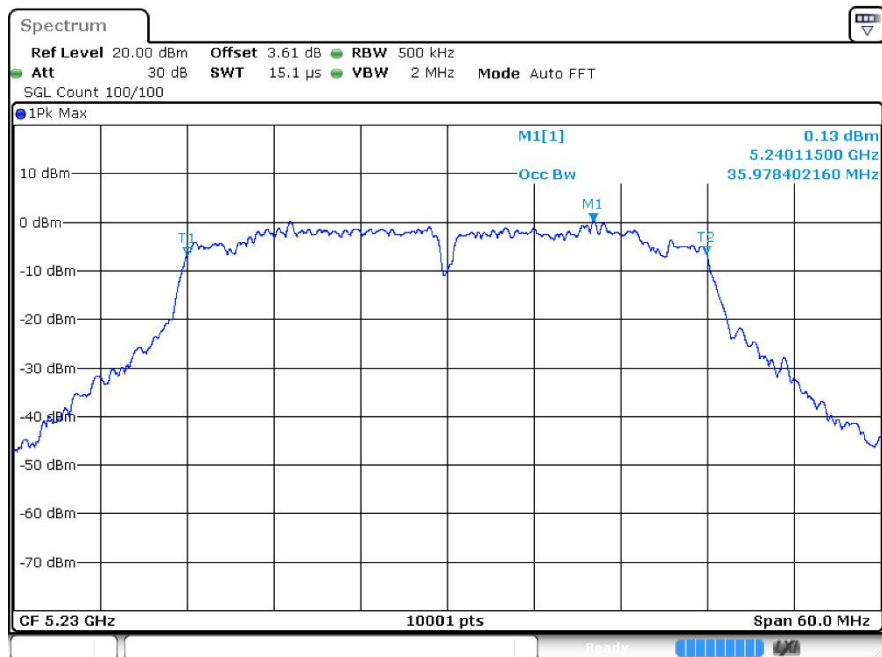
OBW ac20 5240MHz Ant1



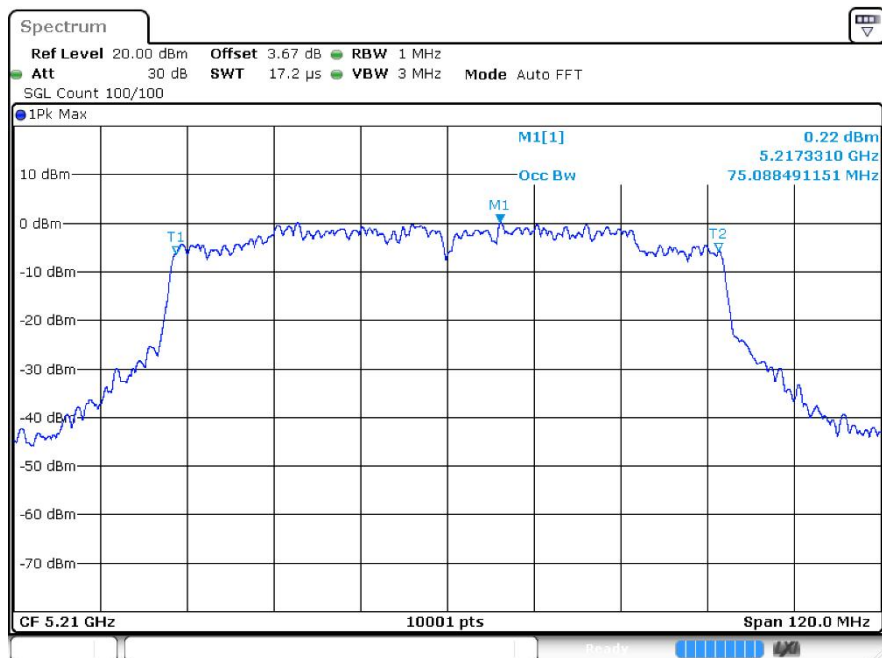
OBWac40 5190MHz Ant1



OBWac40 5230MHz Ant1



OBWac80 5210MHz Ant1

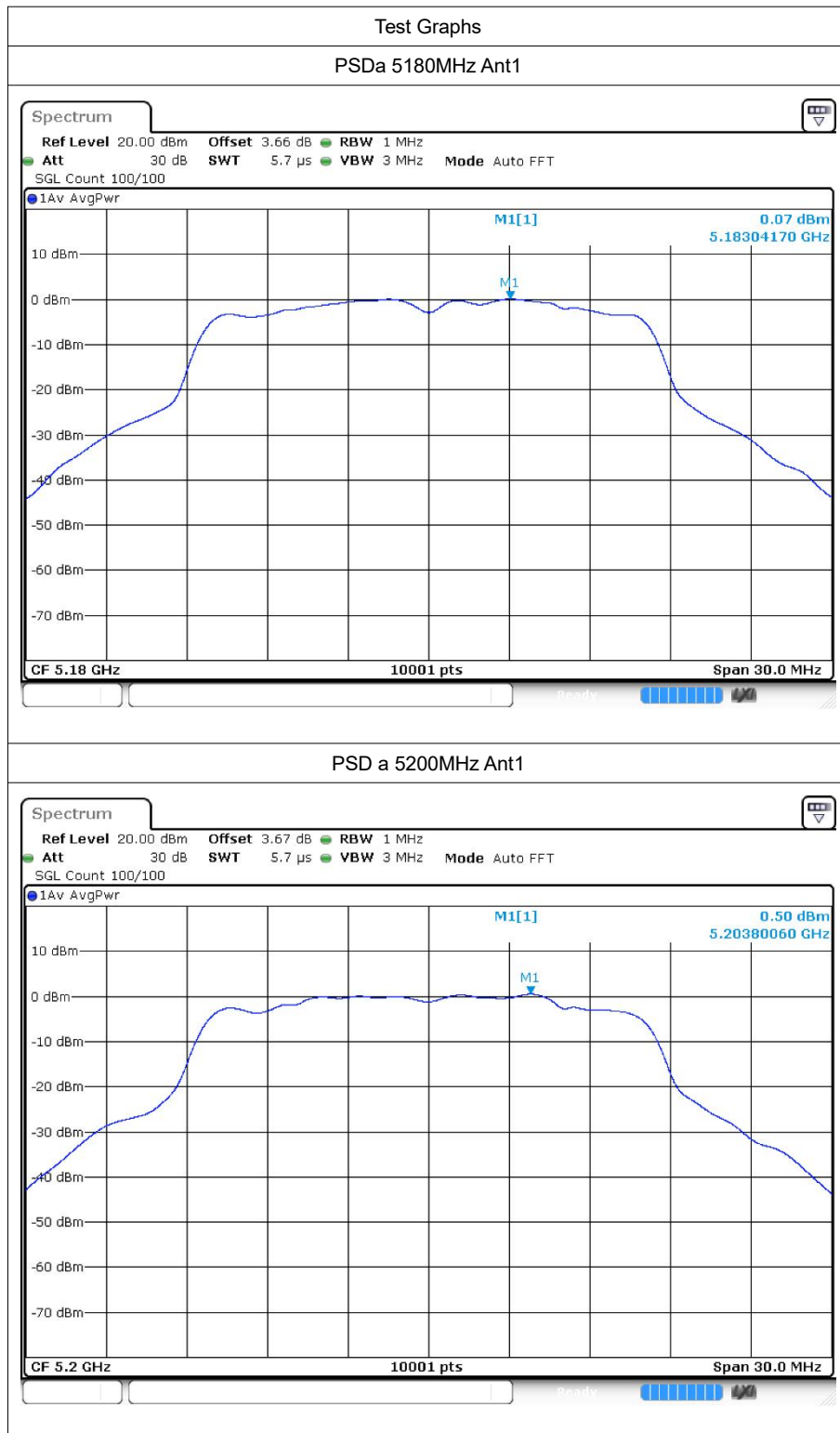


5 Maximum Power Spectral Density Level

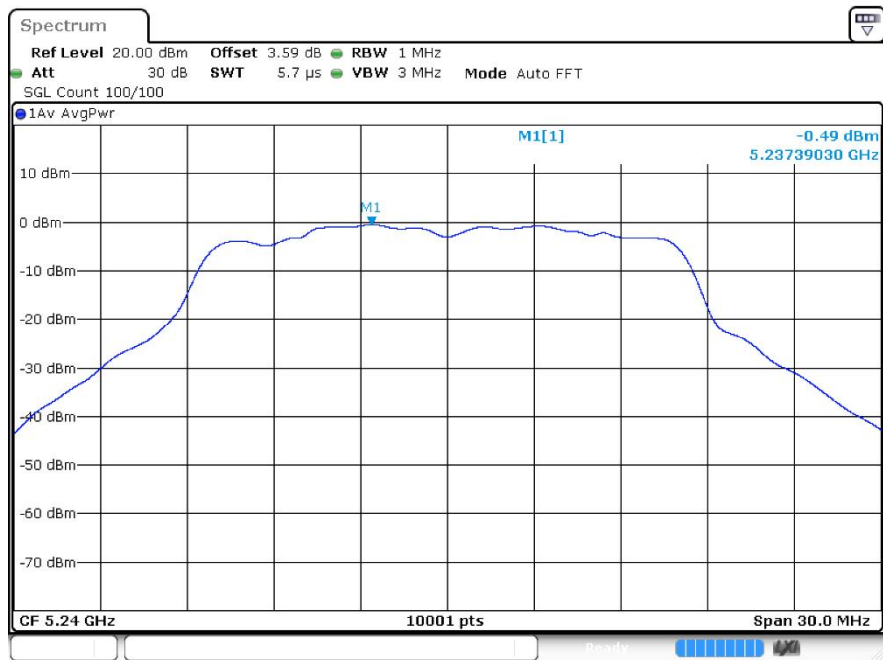
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
a	5180	Ant1	0.07	0.61	0.68	11	Pass
a	5200	Ant1	0.5	0.6	1.1	11	Pass
a	5240	Ant1	-0.49	0.6	0.11	11	Pass
n20	5180	Ant1	-0.36	0.57	0.21	11	Pass
n20	5200	Ant1	-0.43	0.57	0.14	11	Pass
n20	5240	Ant1	-0.67	0.57	-0.1	11	Pass
n40	5190	Ant1	-4.15	0.55	-3.6	11	Pass
n40	5230	Ant1	-5.11	0.55	-4.56	11	Pass
ac20	5180	Ant1	-1.42	0.6	-0.82	11	Pass
ac20	5200	Ant1	-1.23	0.59	-0.64	11	Pass
ac20	5240	Ant1	-1.12	0.59	-0.53	11	Pass
ac40	5190	Ant1	-4.98	0.6	-4.38	11	Pass
ac40	5230	Ant1	-4.33	0.67	-3.66	11	Pass
ac80	5210	Ant1	-7.53	0.58	-6.95	11	Pass

5.2 Test Graphs



PSDa 5240MHz Ant1



PSD n20 5180MHz Ant1

