



Appendix D

RF Test Data for B1WIFI(Conducted Measurement)

Product Name: RC Aircraft

Trade Mark: N/A

Test Model: X500

Environmental Conditions

Temperature:	25.6° 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

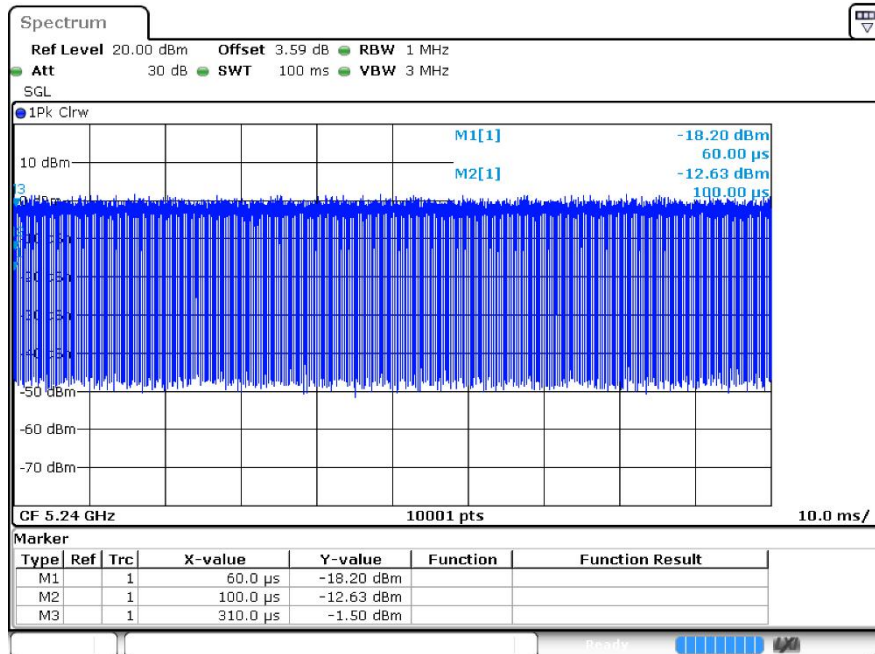
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5180	Ant1	86.82	0.61	4.76
a	5200	Ant1	86.58	0.63	4.76
a	5240	Ant1	86.86	0.61	4.76
n20	5180	Ant1	87.55	0.58	4.17
n20	5200	Ant1	87.56	0.58	4.35
n20	5240	Ant1	86.63	0.62	4.55
n40	5190	Ant1	88.01	0.55	4
n40	5230	Ant1	88.04	0.55	4

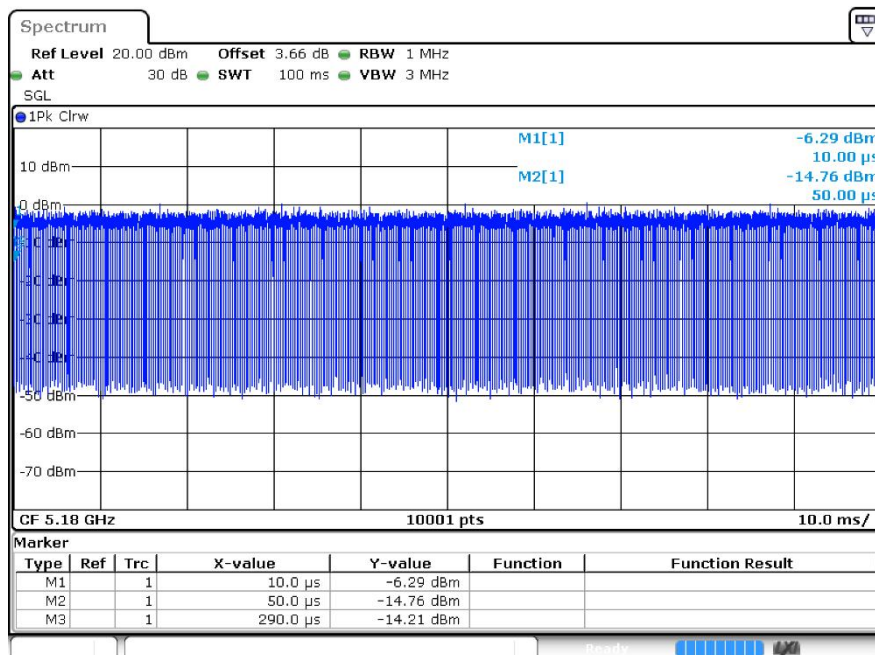
1.2 Test Graphs



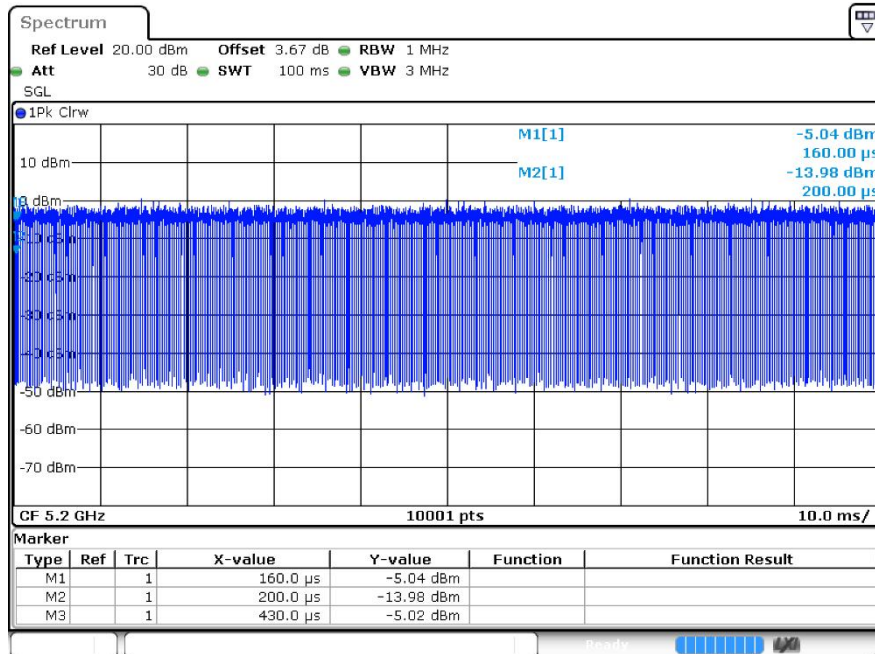
Duty Cycle a 5240MHz Ant1



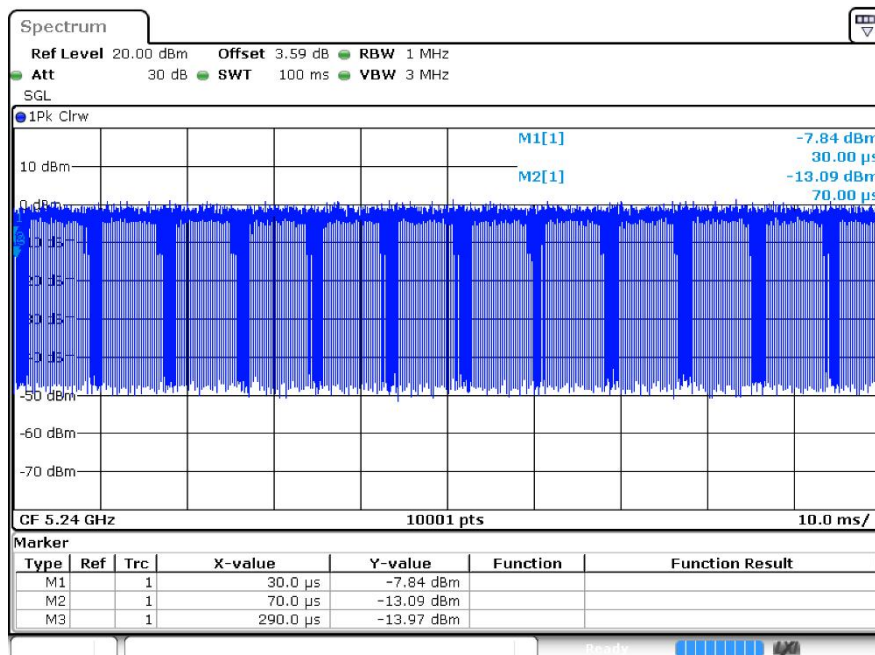
Duty Cycle n20 5180MHz Ant1



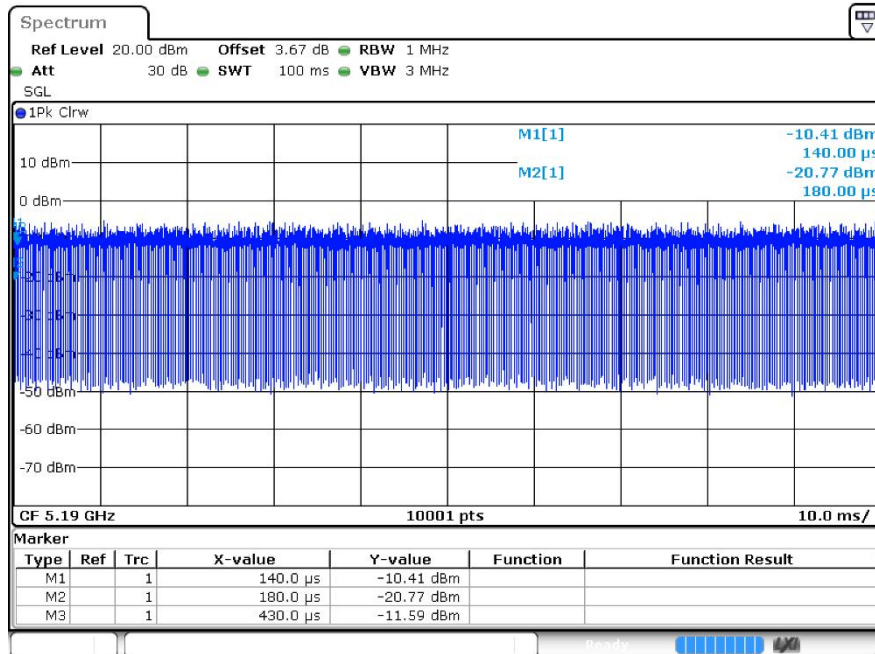
Duty Cycle n20 5200MHz Ant1



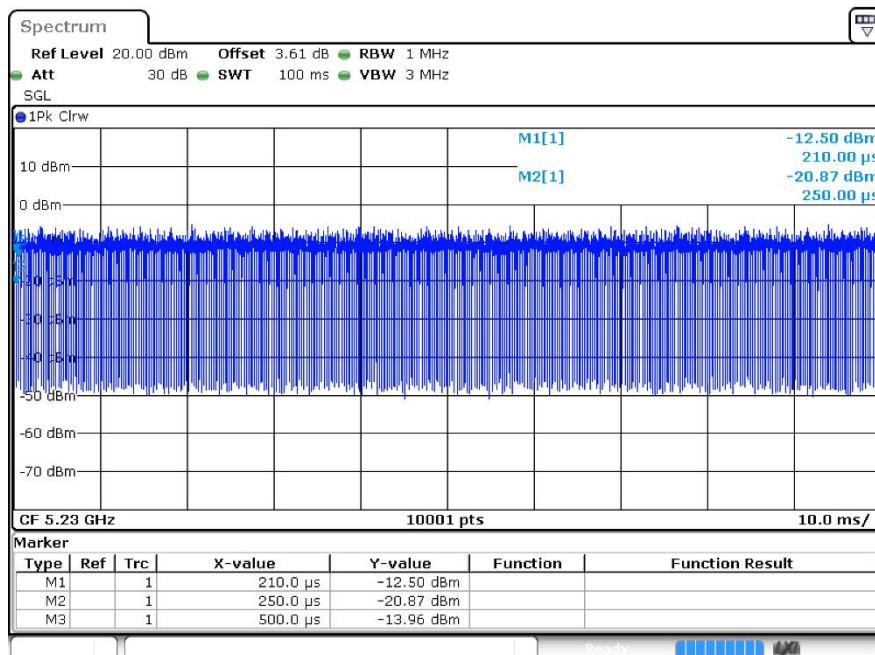
Duty Cycle n20 5240MHz Ant1



Duty Cycle n40 5190MHz Ant1



Duty Cycle n40 5230MHz Ant1



2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
a	5180	Ant1	7.83	24	Pass
a	5200	Ant1	8.04	24	Pass
a	5240	Ant1	8.05	24	Pass
n20	5180	Ant1	6.38	24	Pass
n20	5200	Ant1	6.48	24	Pass
n20	5240	Ant1	7.58	24	Pass
n40	5190	Ant1	6.78	24	Pass
n40	5230	Ant1	6.78	24	Pass

Note:

The duty factor has been compensated into the result.

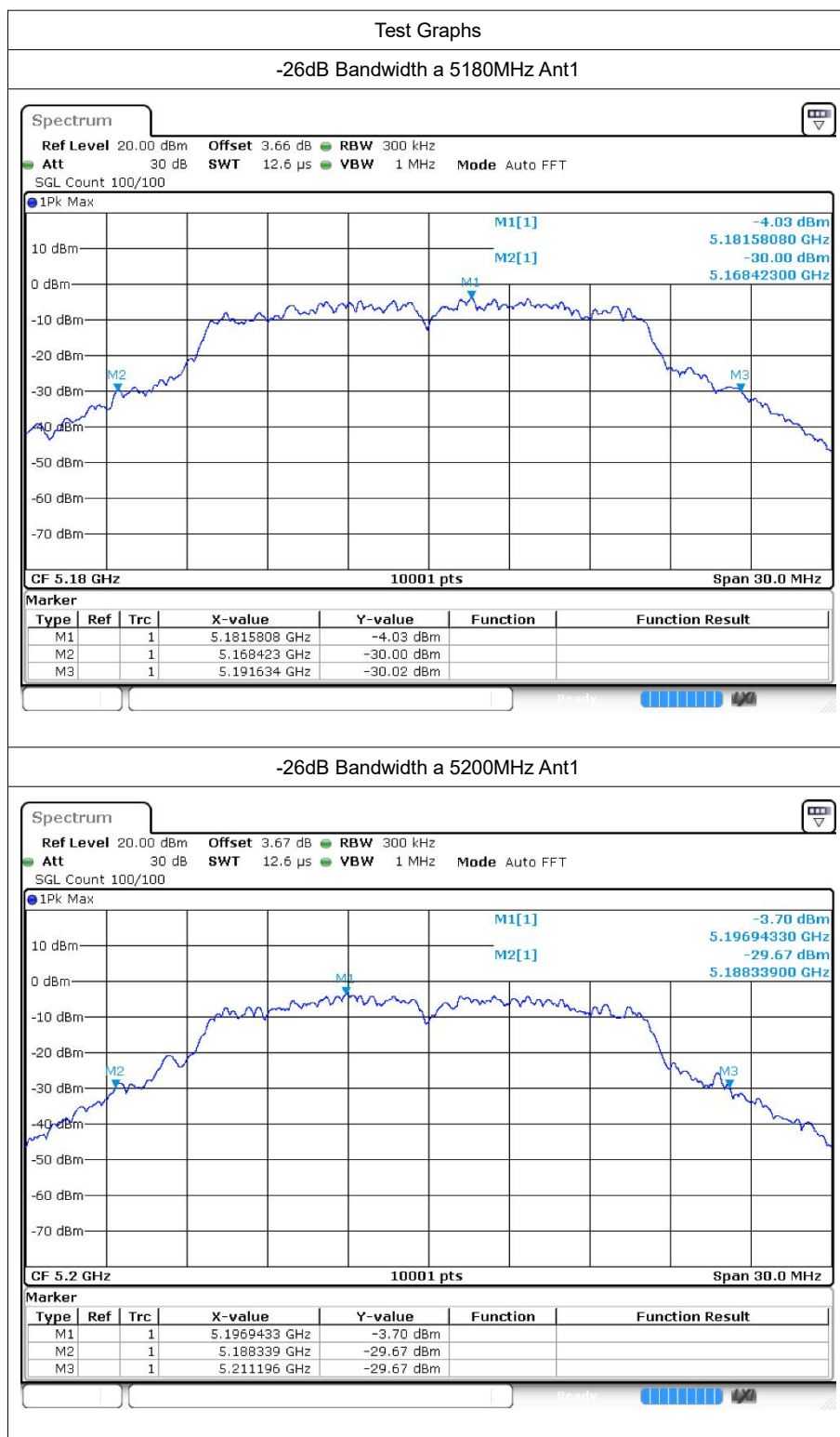


3 -26dB Bandwidth

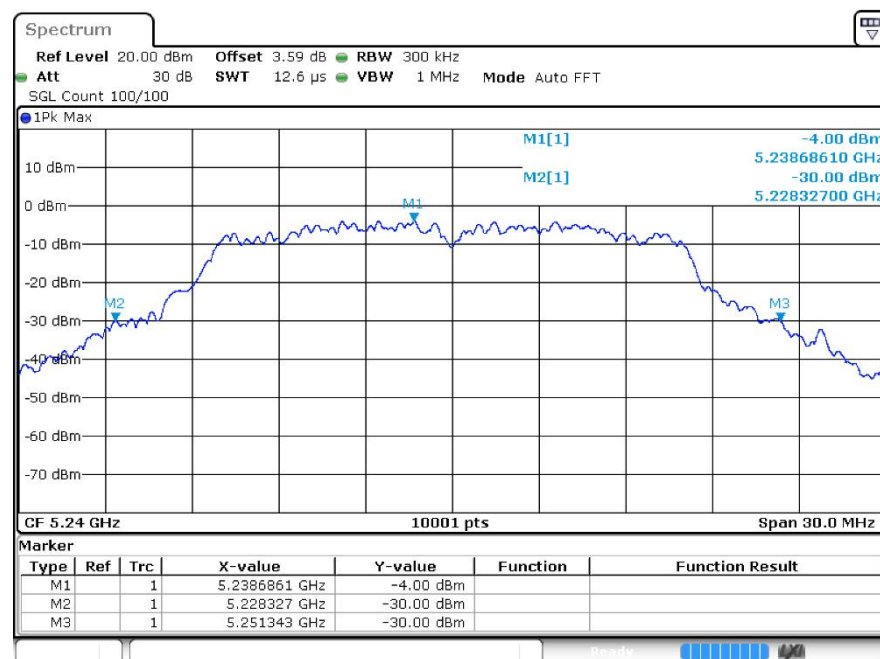
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
a	5180	Ant1	23.211	0.5	Pass
a	5200	Ant1	22.857	0.5	Pass
a	5240	Ant1	23.016	0.5	Pass
n20	5180	Ant1	23.166	0.5	Pass
n20	5200	Ant1	23.187	0.5	Pass
n20	5240	Ant1	23.121	0.5	Pass
n40	5190	Ant1	42.21	0.5	Pass
n40	5230	Ant1	41.76	0.5	Pass

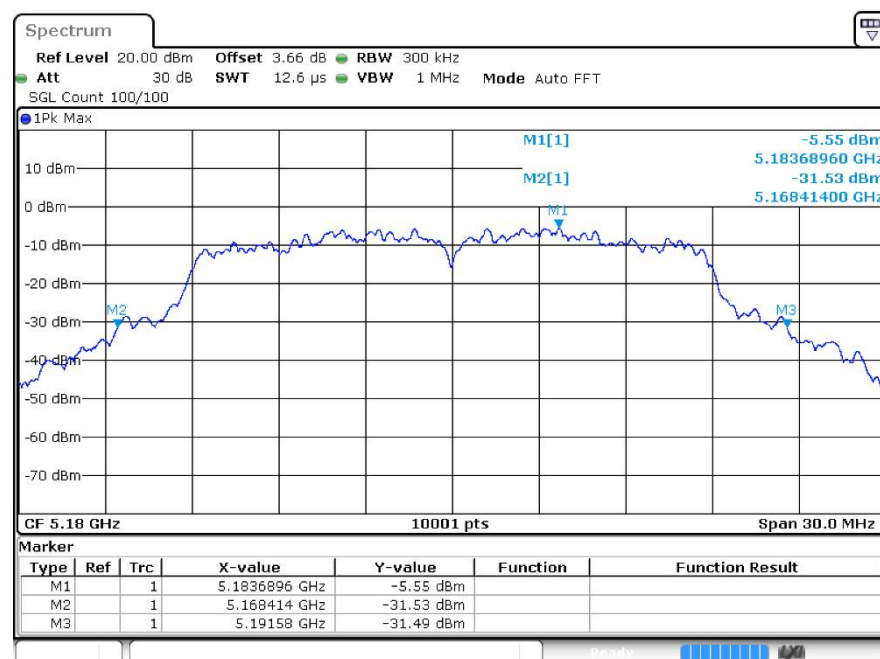
3.2 Test Graphs



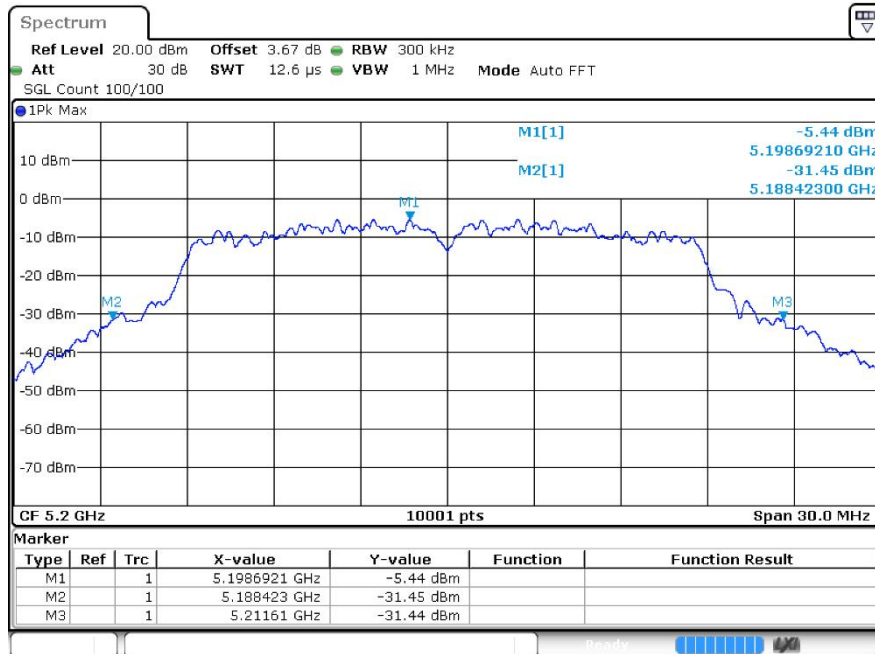
-26dB Bandwidth a 5240MHz Ant1



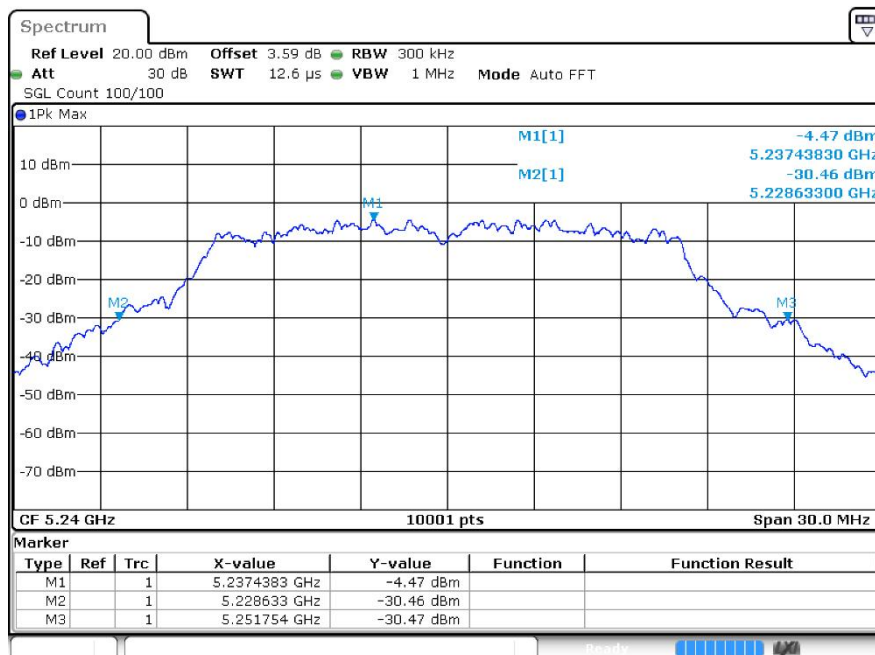
-26dB Bandwidth n20 5180MHz Ant1



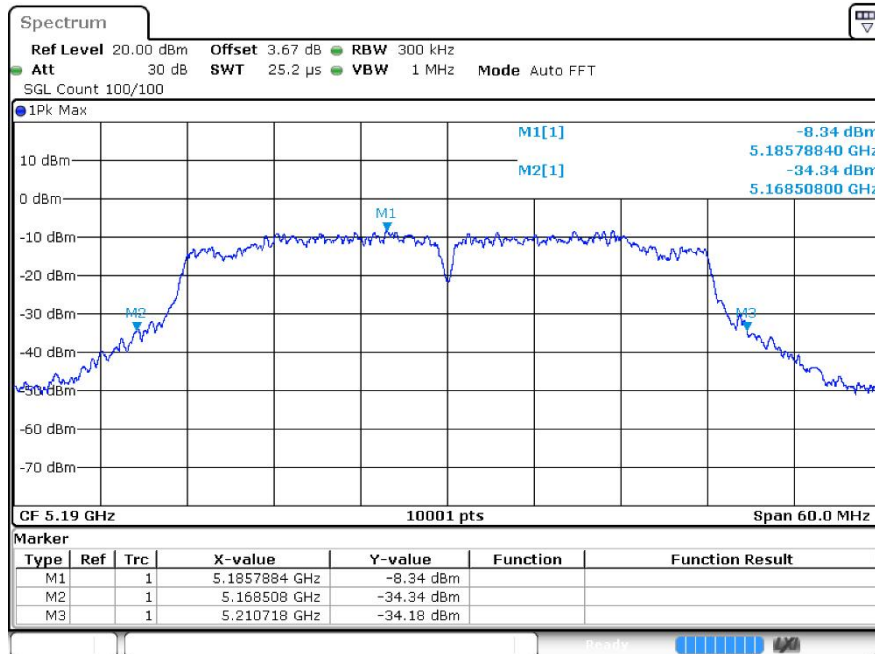
-26dB Bandwidth n20 5200MHz Ant1



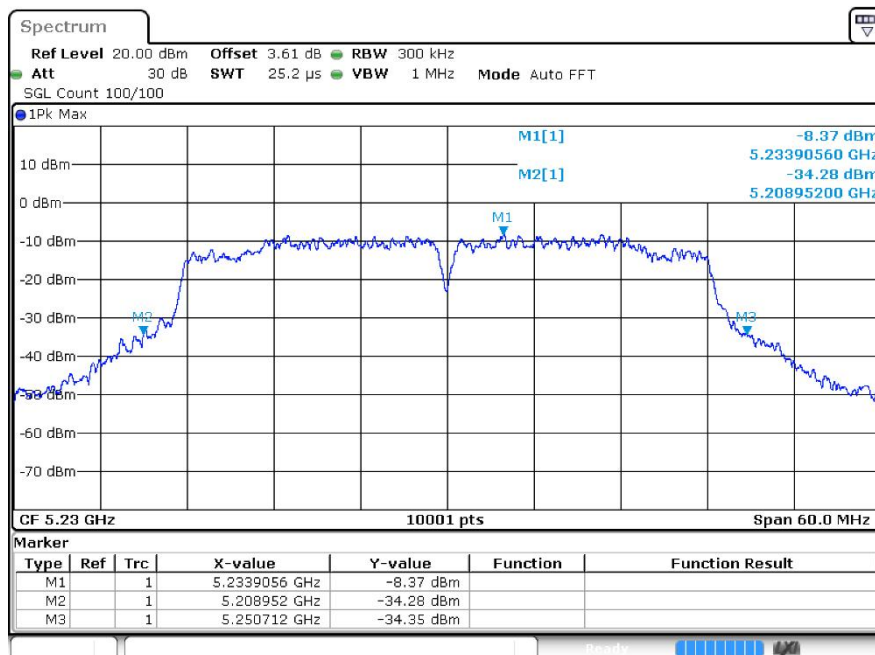
-26dB Bandwidth n20 5240MHz Ant1



-26dB Bandwidth n40 5190MHz Ant1



-26dB Bandwidth n40 5230MHz Ant1



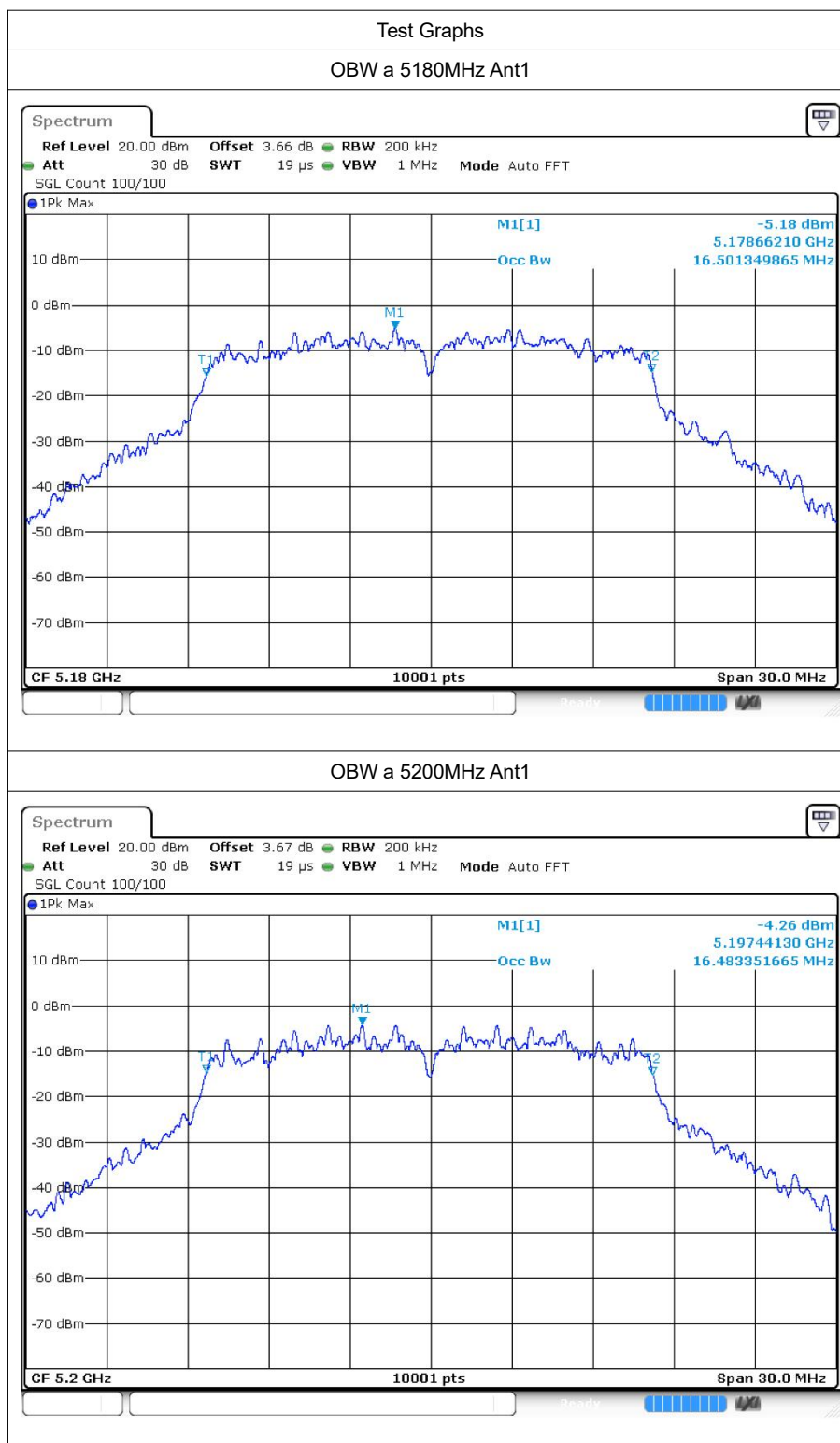


4 Occupied Channel Bandwidth

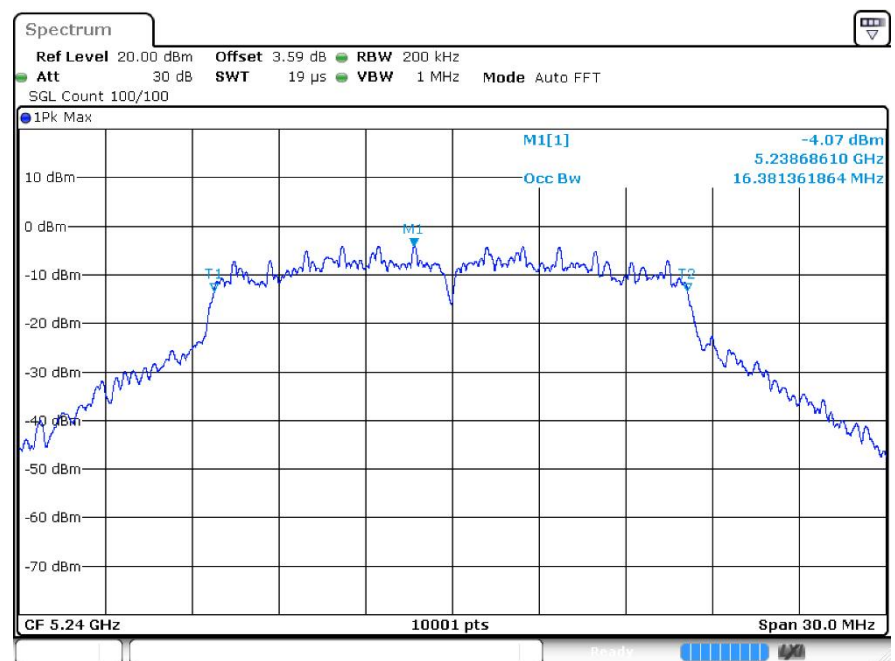
4.1 Test Result

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
a	5180	Ant1	16.501
a	5200	Ant1	16.483
a	5240	Ant1	16.381
n20	5180	Ant1	17.617
n20	5200	Ant1	17.626
n20	5240	Ant1	16.504
n40	5190	Ant1	35.87
n40	5230	Ant1	36.008

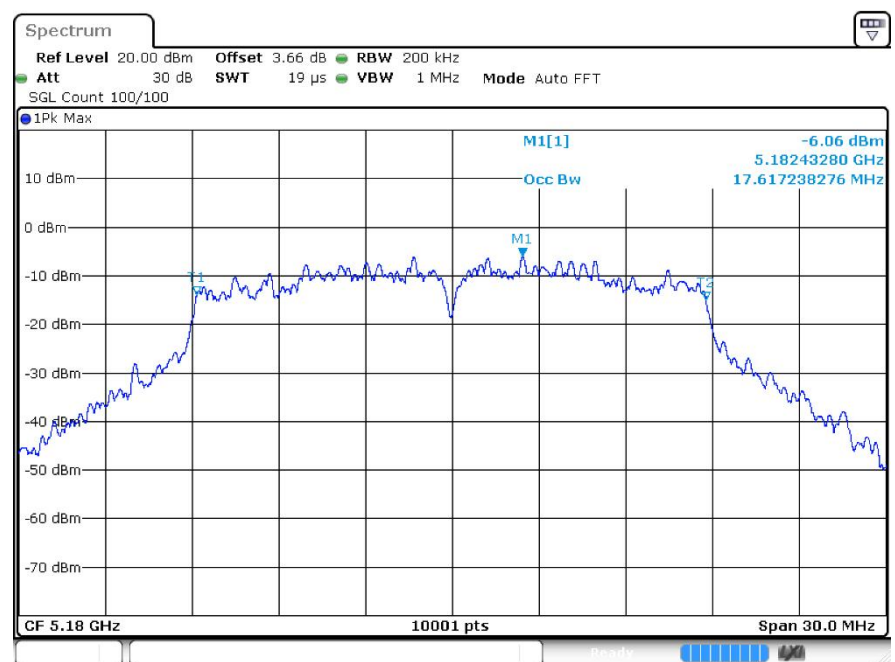
4.2 Test Graphs



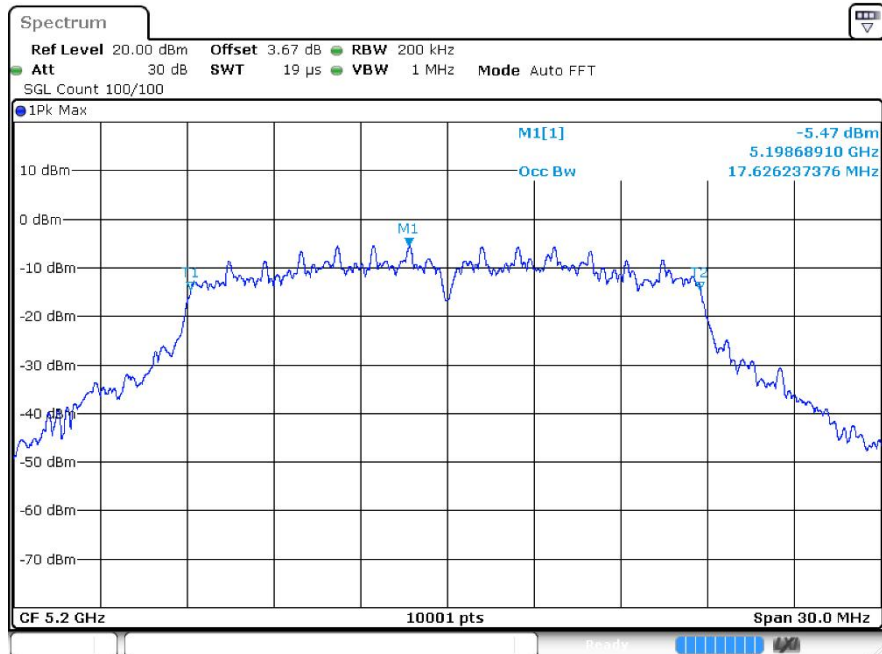
OBW a 5240MHz Ant1



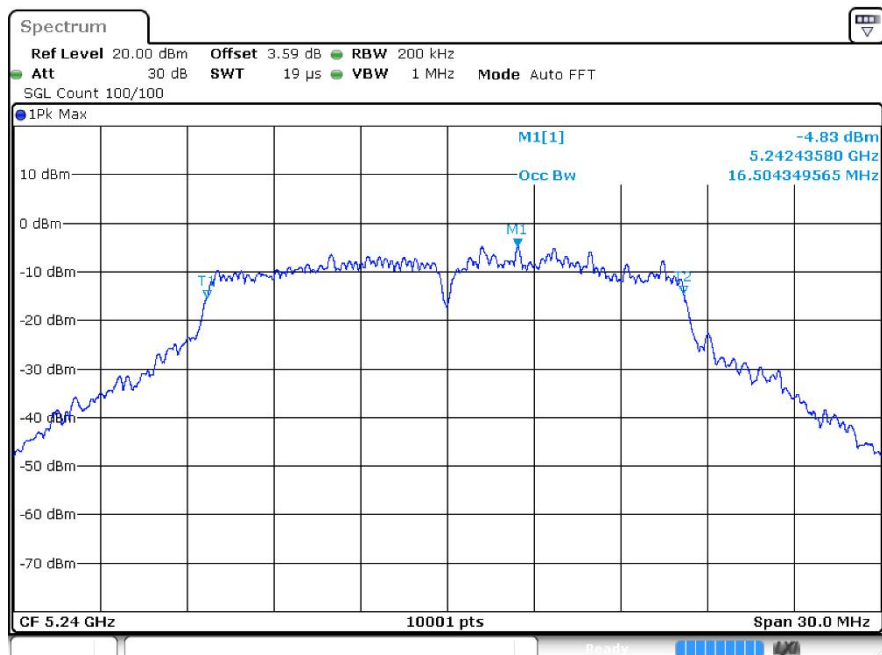
OBW n20 5180MHz Ant1



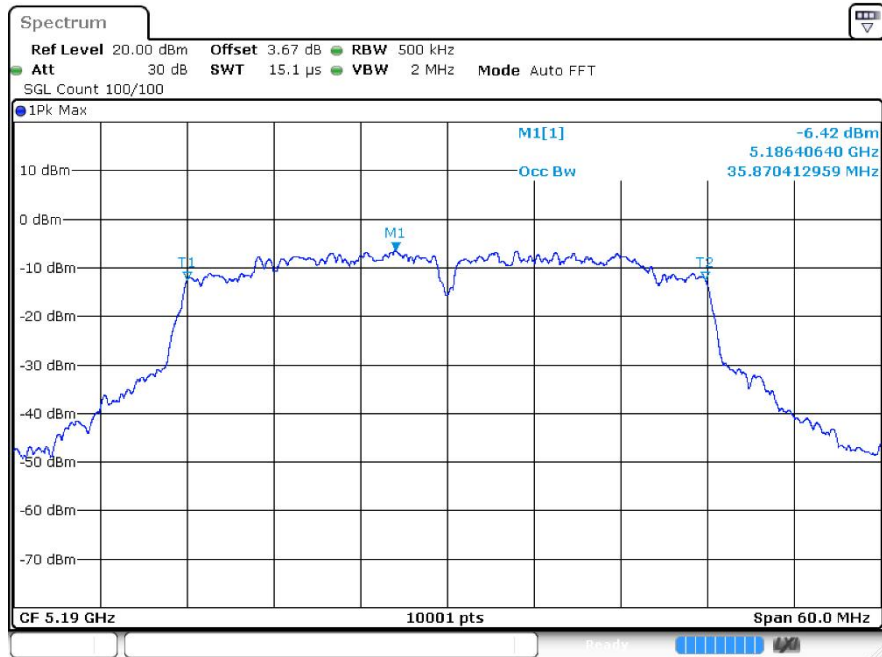
OBW n20 5200MHz Ant1



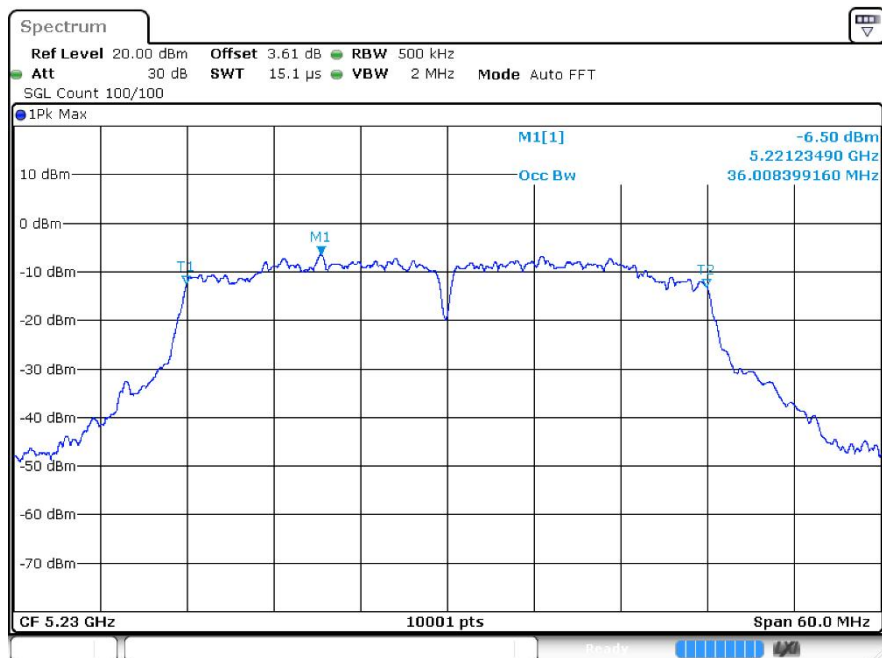
OBW n20 5240MHz Ant1



OBW n40 5190MHz Ant1



OBW n40 5230MHz Ant1

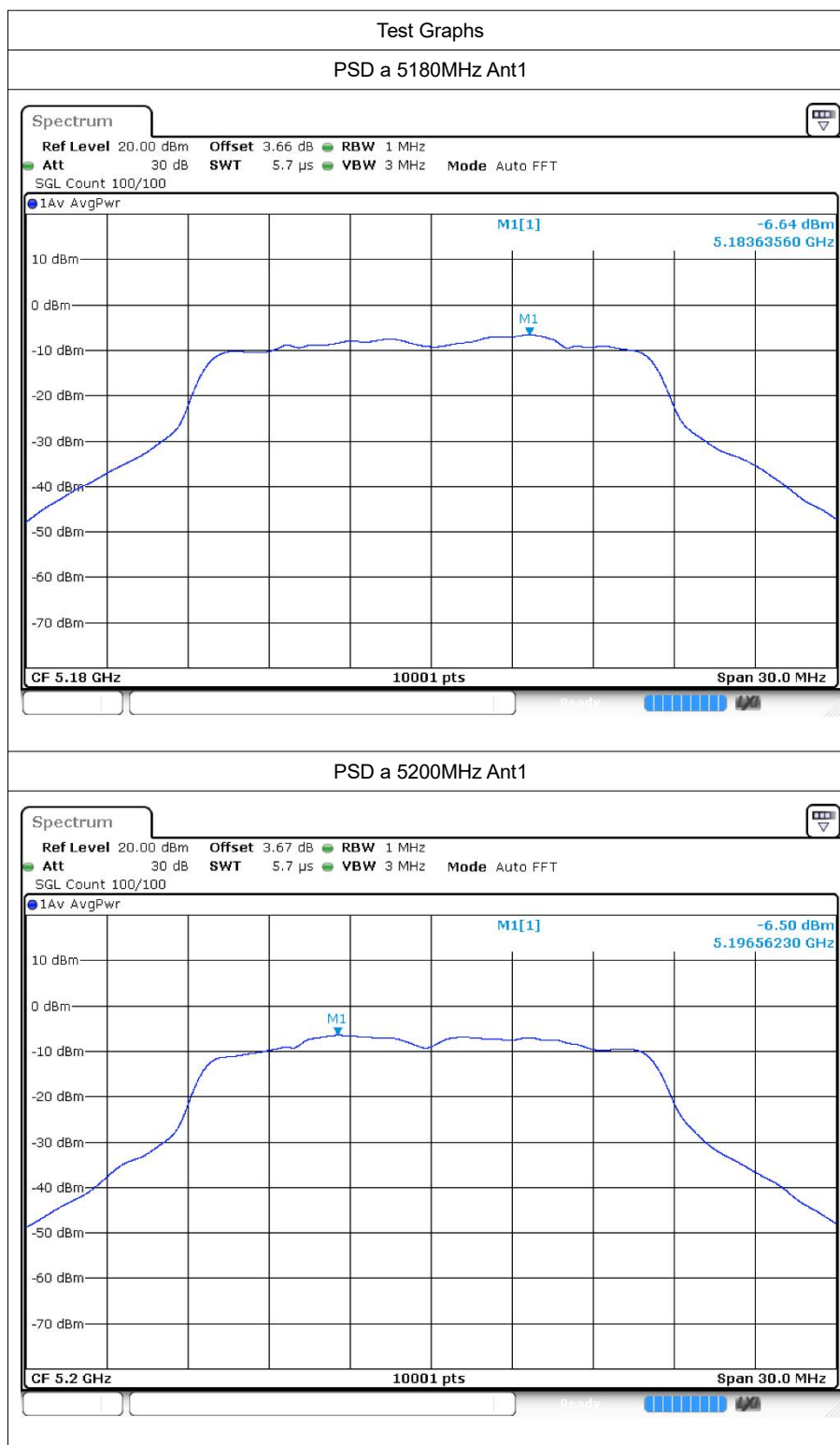


5 Maximum Power Spectral Density Level

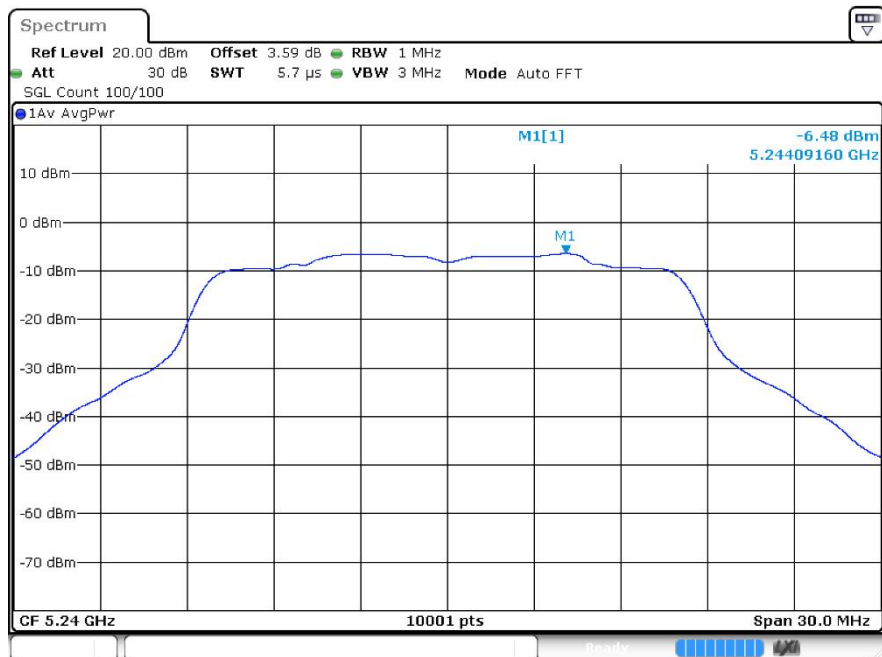
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
a	5180	Ant1	-6.64	0.61	-6.03	11	Pass
a	5200	Ant1	-6.5	0.63	-5.87	11	Pass
a	5240	Ant1	-6.48	0.61	-5.87	11	Pass
n20	5180	Ant1	-7.64	0.58	-7.06	11	Pass
n20	5200	Ant1	-8.09	0.58	-7.51	11	Pass
n20	5240	Ant1	-6.65	0.62	-6.03	11	Pass
n40	5190	Ant1	-10.89	0.55	-10.34	11	Pass
n40	5230	Ant1	-11.54	0.55	-10.99	11	Pass

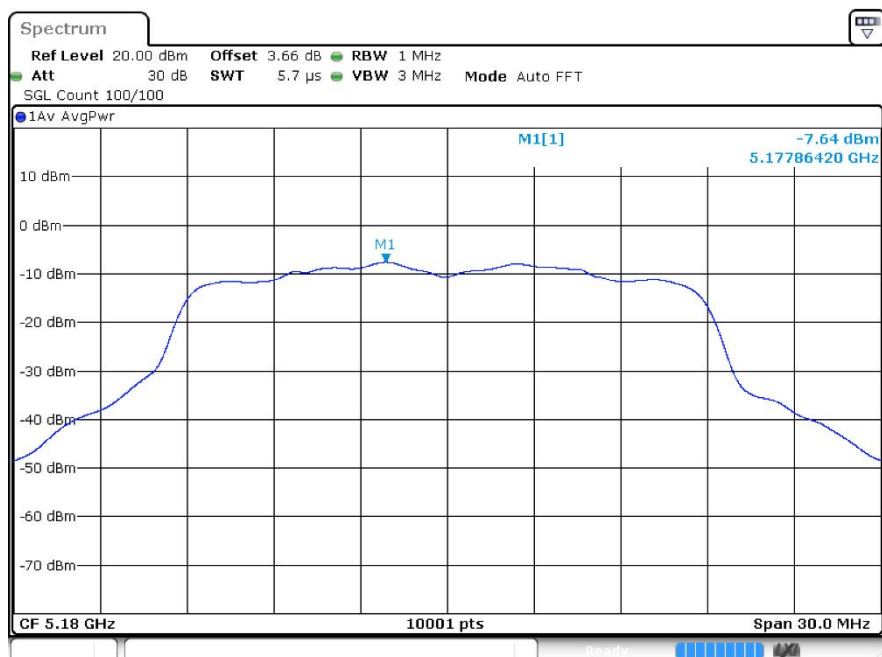
5.2 Test Graphs



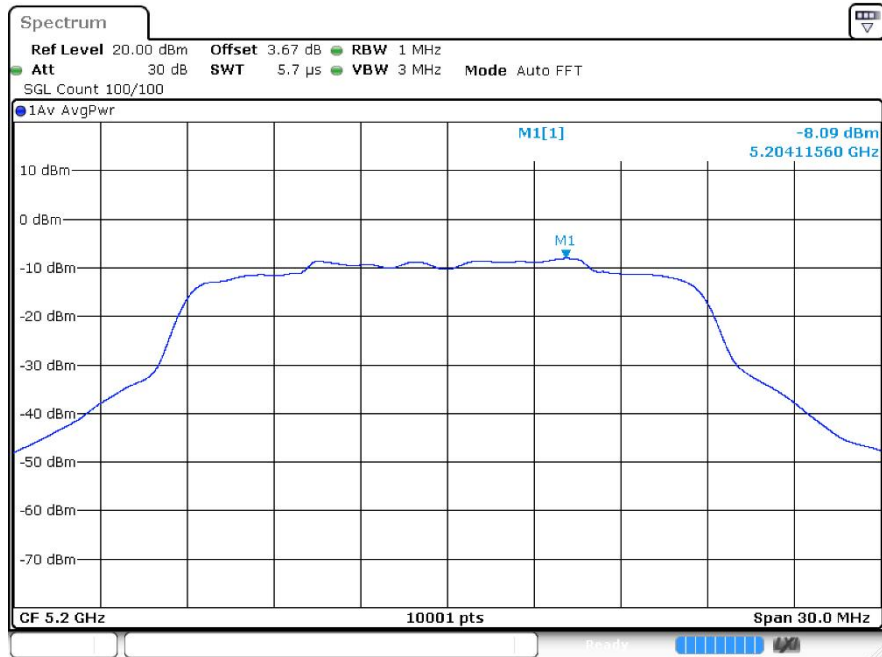
PSD a 5240MHz Ant1



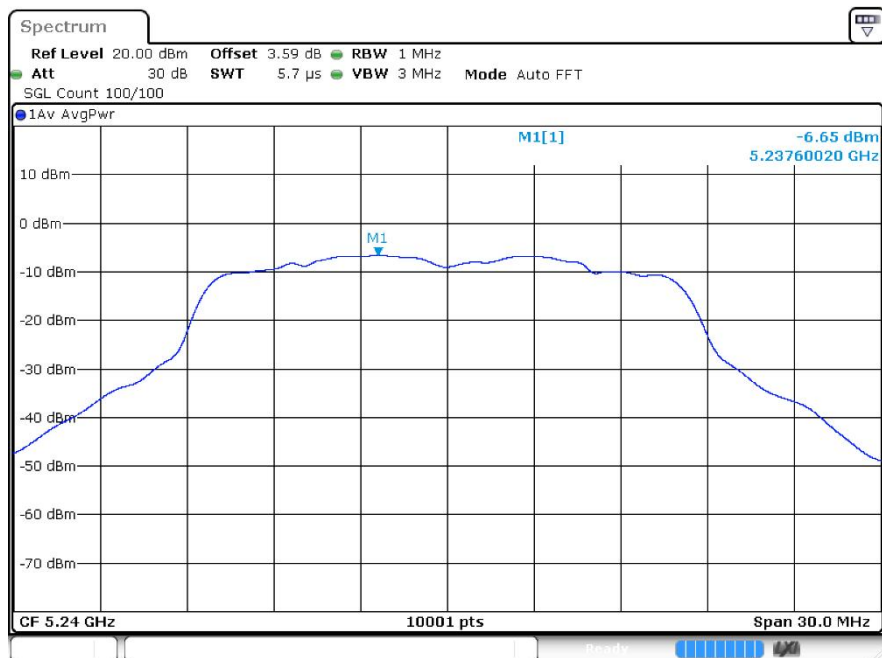
PSD n20 5180MHz Ant1



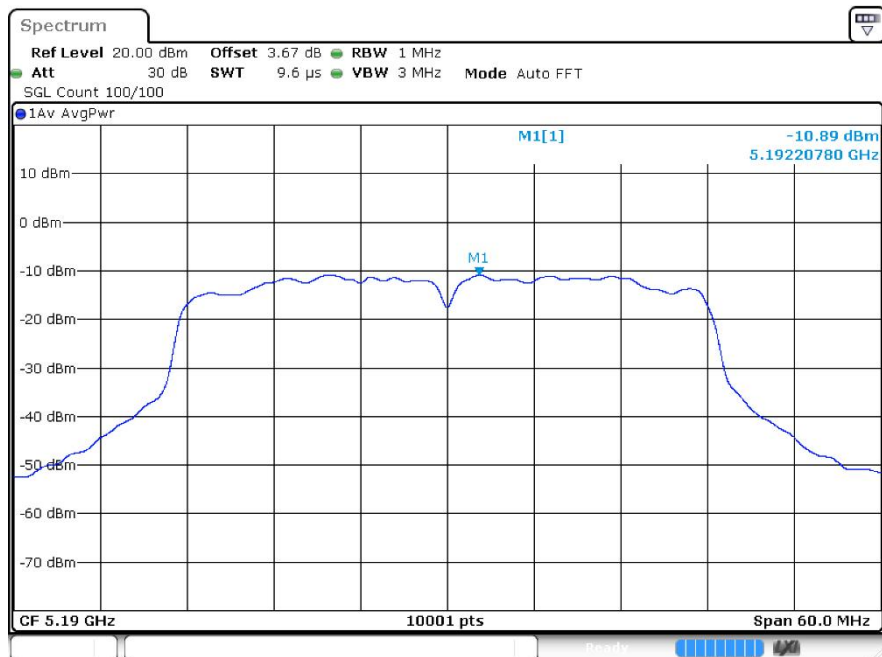
PSD n20 5200MHz Ant1



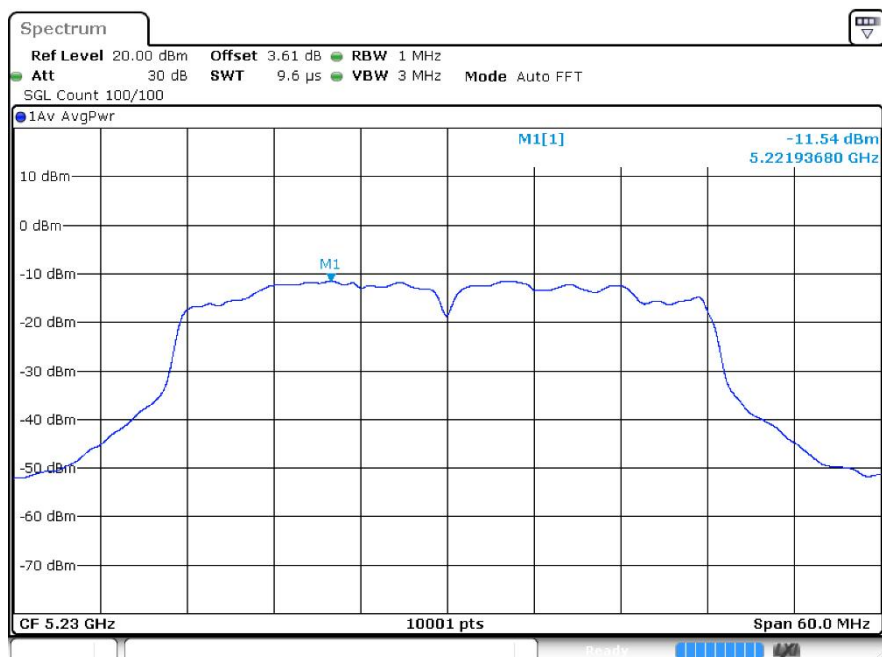
PSD n20 5240MHz Ant1



PSD n40 5190MHz Ant1



PSD n40 5230MHz Ant1





6 Frequency Stability

6.1 Test Result

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20C 102V	a	5180	Ant1	5179.96	-40000	-7.72	25	Pass
20C 120V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
20C 138V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
-20C 120V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
-10C 120V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
0C 120V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
10C 120V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
30C 120V	a	5180	Ant1	5179.96	-40000	-7.72	25	Pass
40C 120V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
50C 120V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
20C 102V	a	5200	Ant1	5199.92	-80000	-15.38	25	Pass
20C 120V	a	5200	Ant1	5199.94	-60000	-11.54	25	Pass
20C 138V	a	5200	Ant1	5199.94	-60000	-11.54	25	Pass
-20C 120V	a	5200	Ant1	5199.96	-40000	-7.69	25	Pass
-10C 120V	a	5200	Ant1	5199.94	-60000	-11.54	25	Pass
0C 120V	a	5200	Ant1	5199.92	-80000	-15.38	25	Pass
10C 120V	a	5200	Ant1	5199.94	-60000	-11.54	25	Pass
30C 120V	a	5200	Ant1	5199.96	-40000	-7.69	25	Pass
40C 120V	a	5200	Ant1	5199.9	-100000	-19.23	25	Pass
20C 102V	a	5200	Ant1	5199.92	-80000	-15.38	25	Pass
20C 102V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
20C 120V	a	5240	Ant1	5239.92	-80000	-15.27	25	Pass
20C 138V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
-20C 120V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
-10C 120V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
0C 120V	a	5240	Ant1	5239.92	-80000	-15.27	25	Pass
10C 120V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
30C 120V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
40C 120V	a	5240	Ant1	5239.92	-80000	-15.27	25	Pass
50C 120V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
20C 102V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
20C 120V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
20C 138V	n20	5180	Ant1	5179.98	-20000	-3.86	25	Pass
-20C 120V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
-10C 120V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass



0C 120V	n20	5180	Ant1	5179.94	-60000	-11.58	25	Pass
10C 120V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
30C 120V	n20	5180	Ant1	5179.94	-60000	-11.58	25	Pass
40C 120V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
50C 120V	n20	5180	Ant1	5179.98	-20000	-3.86	25	Pass
20C 102V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
20C 120V	n20	5200	Ant1	5199.94	-60000	-11.54	25	Pass
20C 138V	n20	5200	Ant1	5199.94	-60000	-11.54	25	Pass
-20C 120V	n20	5200	Ant1	5199.92	-80000	-15.38	25	Pass
-10C 120V	n20	5200	Ant1	5199.92	-80000	-15.38	25	Pass
0C 120V	n20	5200	Ant1	5199.92	-80000	-15.38	25	Pass
10C 120V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
30C 120V	n20	5200	Ant1	5199.94	-60000	-11.54	25	Pass
40C 120V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
50C 120V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
20C 102V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
20C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
20C 138V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
-20C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
-10C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
0C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
10C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
30C 120V	n20	5240	Ant1	5239.98	-20000	-3.82	25	Pass
40C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
50C 120V	n20	5240	Ant1	5239.9	-100000	-19.08	25	Pass
20C 102V	n40	5190	Ant1	5189.92	-80000	-15.41	25	Pass
20C 120V	n40	5190	Ant1	5189.96	-40000	-7.71	25	Pass
20C 138V	n40	5190	Ant1	5189.92	-80000	-15.41	25	Pass
-20C 120V	n40	5190	Ant1	5189.96	-40000	-7.71	25	Pass
-10C 120V	n40	5190	Ant1	5189.92	-80000	-15.41	25	Pass
0C 120V	n40	5190	Ant1	5189.92	-80000	-15.41	25	Pass
10C 120V	n40	5190	Ant1	5189.92	-80000	-15.41	25	Pass
30C 120V	n40	5190	Ant1	5189.92	-80000	-15.41	25	Pass
40C 120V	n40	5190	Ant1	5189.92	-80000	-15.41	25	Pass
50C 120V	n40	5190	Ant1	5189.96	-40000	-7.71	25	Pass
20C 102V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
20C 120V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
20C 138V	n40	5230	Ant1	5229.92	-80000	-15.3	25	Pass
-20C 120V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
-10C 120V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
0C 120V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
10C 120V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
30C 120V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass



40C 120V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
50C 120V	n40	5230	Ant1	5229.92	-80000	-15.3	25	Pass

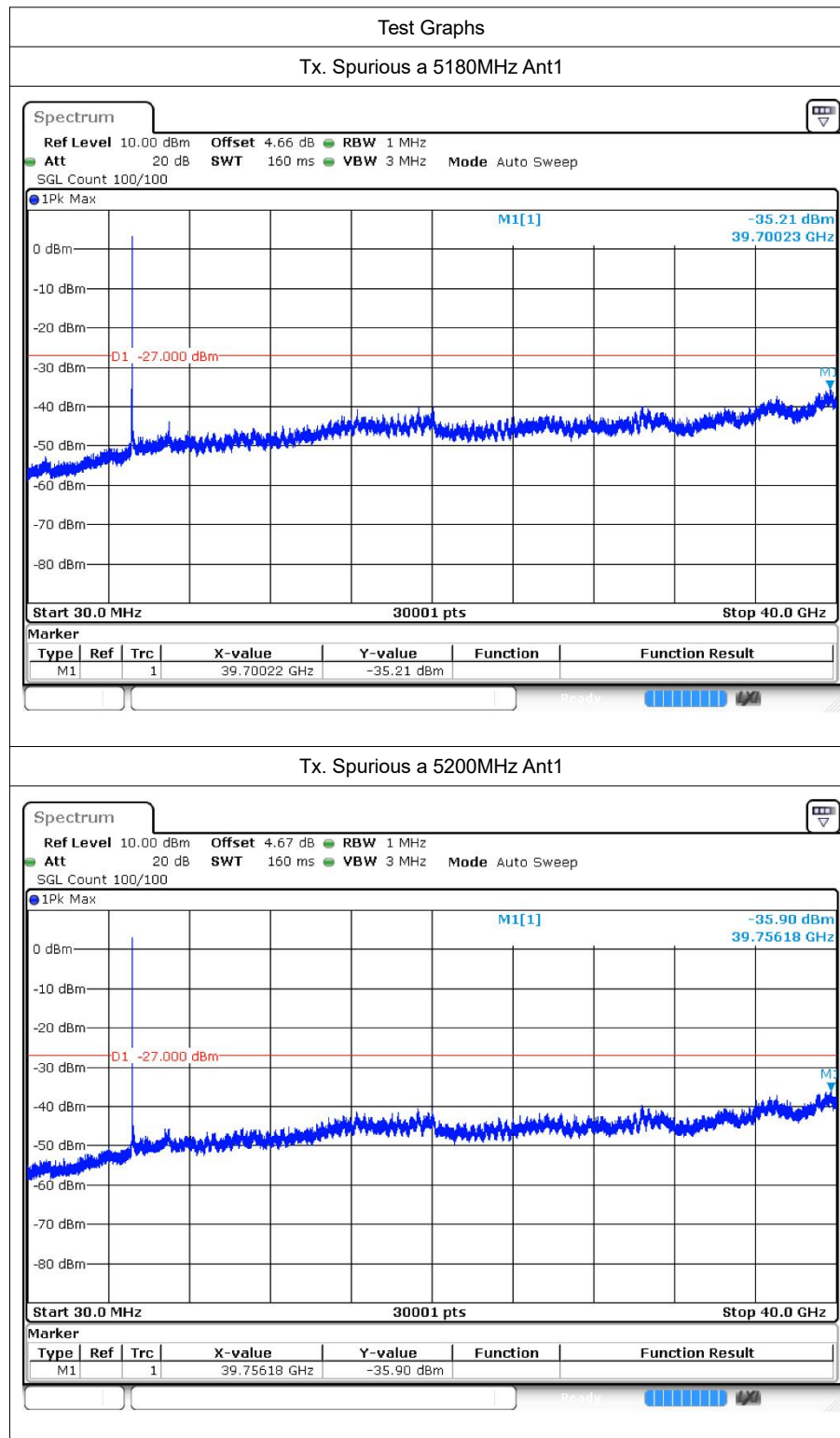


7 Conducted RF Spurious Emission

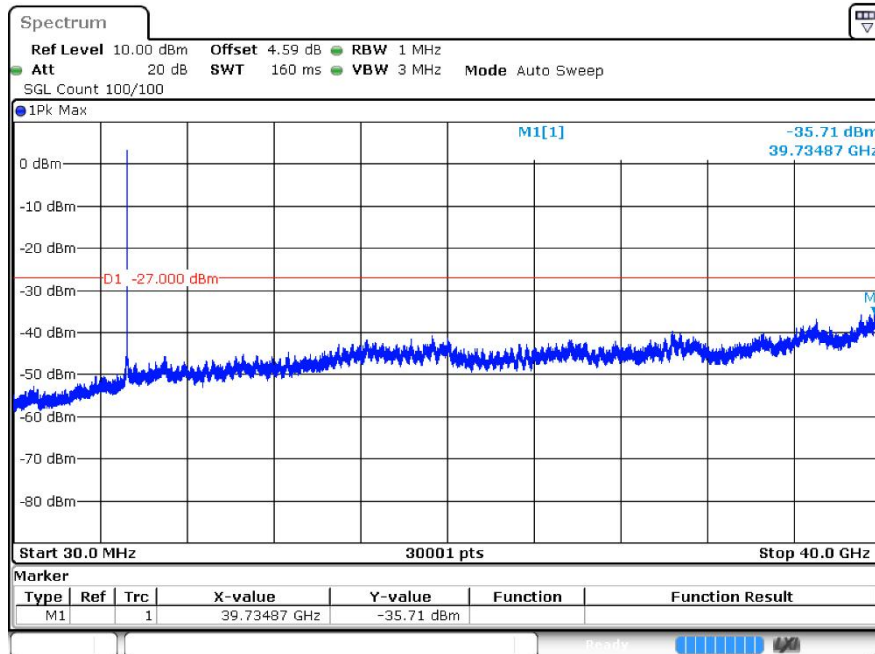
7.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
a	5180	Ant1	-35.21	-27	Pass
a	5200	Ant1	-35.9	-27	Pass
a	5240	Ant1	-35.71	-27	Pass
n20	5180	Ant1	-35.93	-27	Pass
n20	5200	Ant1	-34.52	-27	Pass
n20	5240	Ant1	-36.19	-27	Pass
n40	5190	Ant1	-35.73	-27	Pass
n40	5230	Ant1	-35.97	-27	Pass

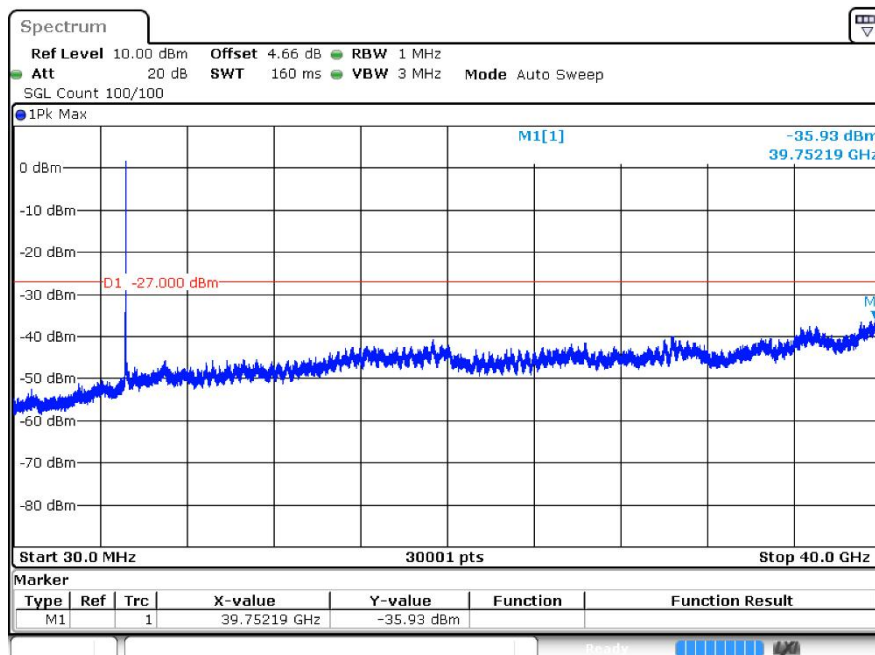
7.2 Test Graphs



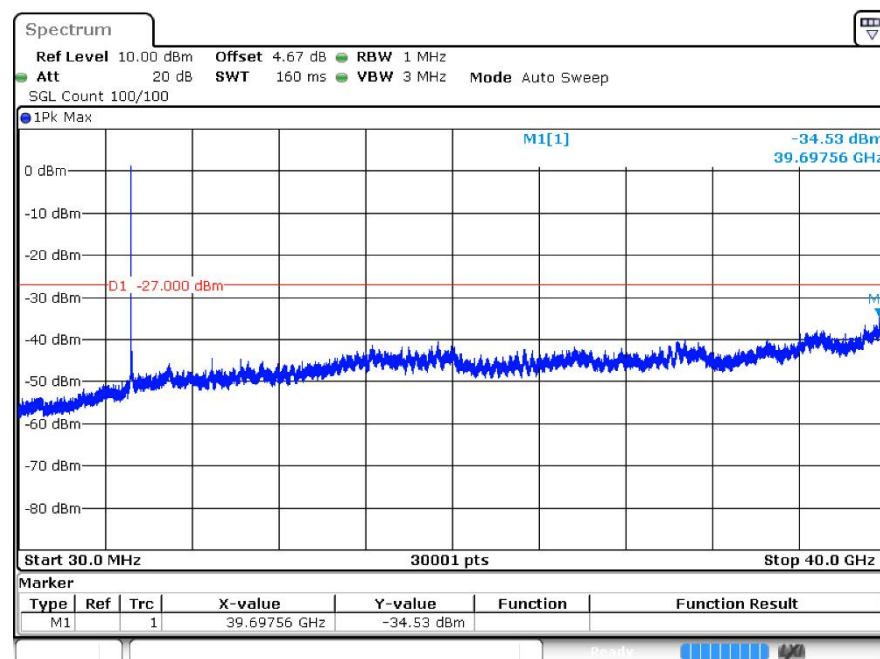
Tx. Spurious a 5240MHz Ant1



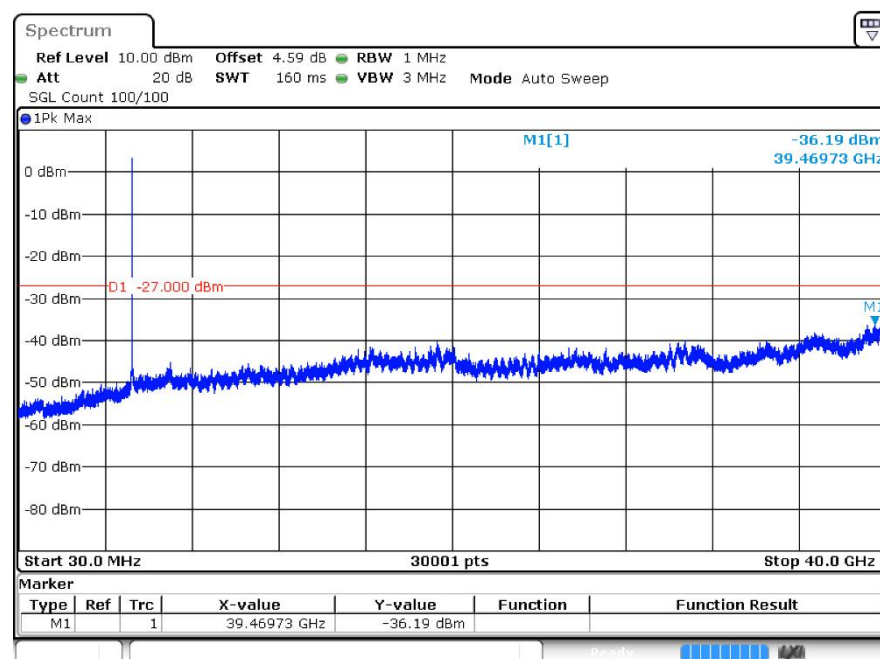
Tx. Spurious n20 5180MHz Ant1



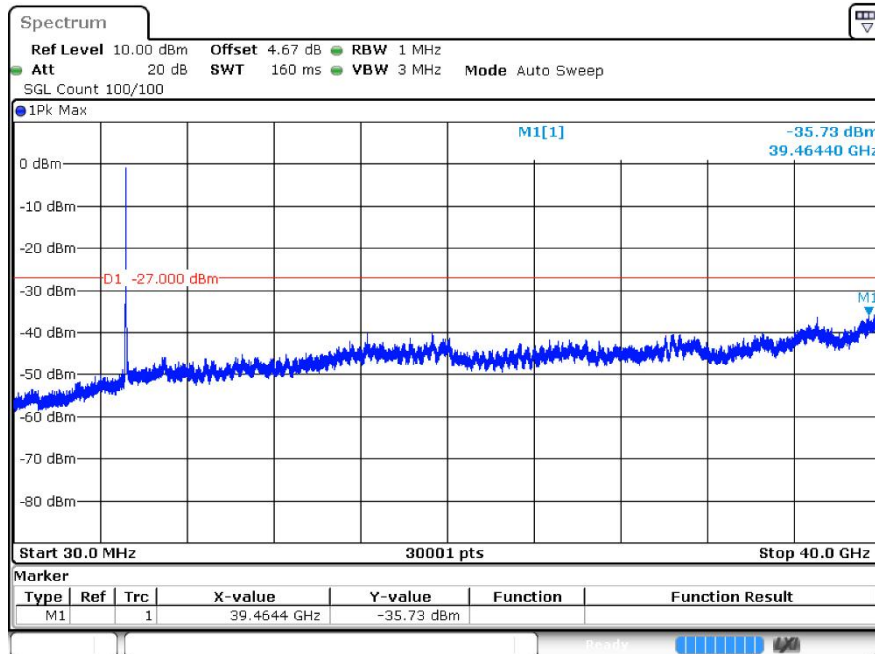
Tx. Spurious n20 5200MHz Ant1



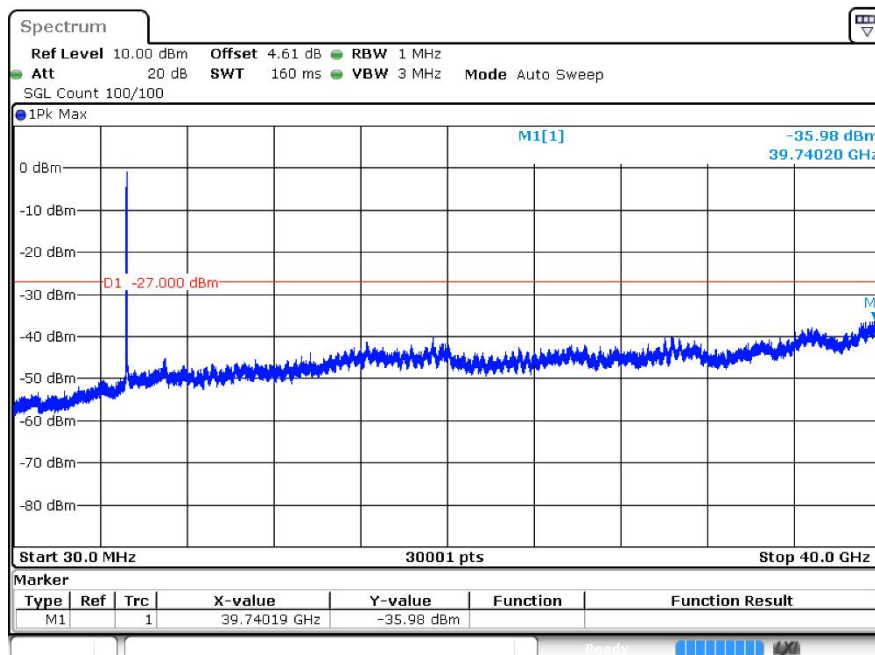
Tx. Spurious n20 5240MHz Ant1



Tx. Spurious n40 5190MHz Ant1



Tx. Spurious n40 5230MHz Ant1



8 Restrict Band

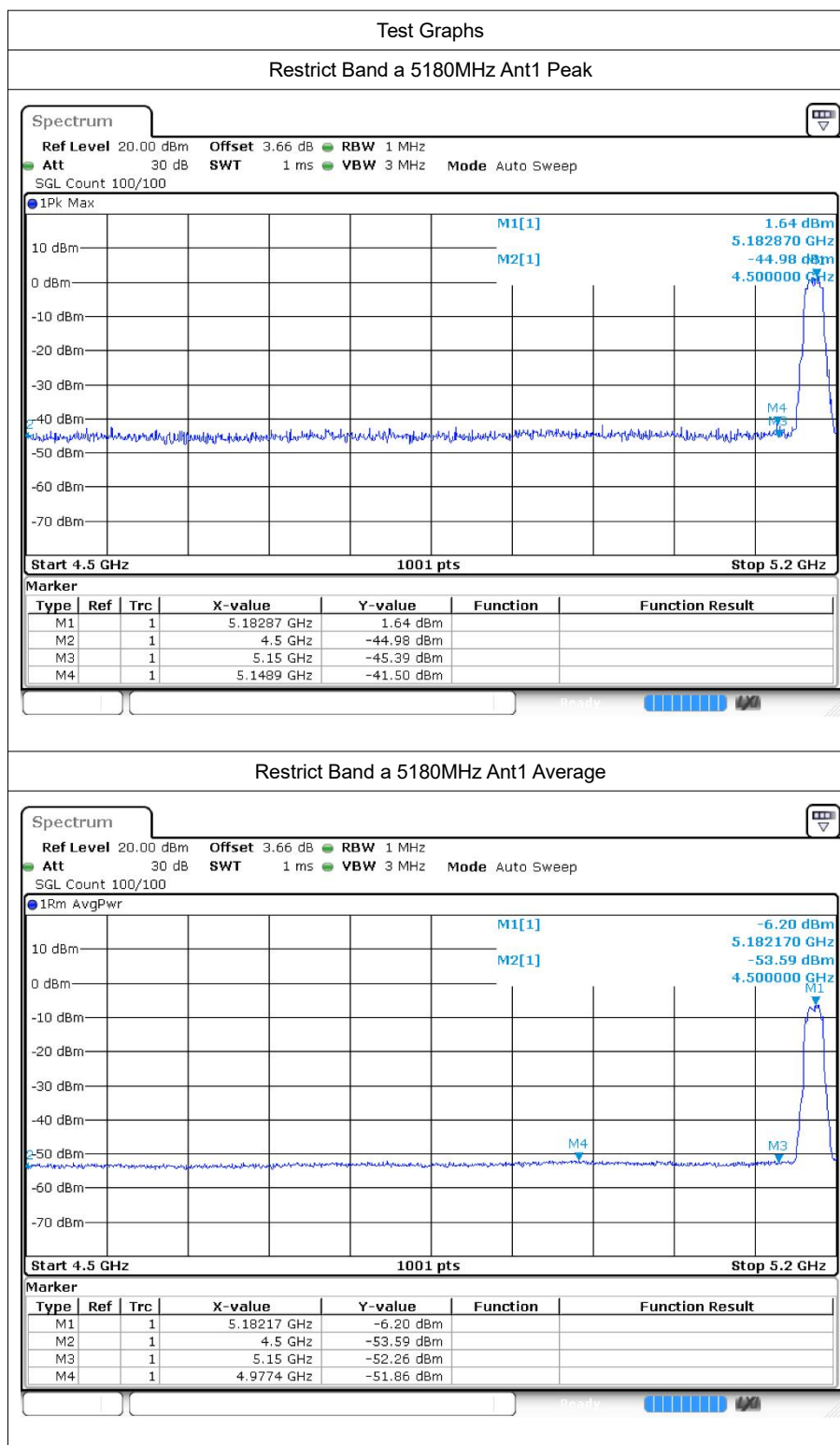
8.1 Test Result

Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
a	5180	Ant1	4500	-44.98	2.69	-	52.94	Peak	68.2	Pass
a	5180	Ant1	4500	-53.59	2.69	0.61	44.94	Average	54	Pass
a	5180	Ant1	5148.9	-41.5	2.69	-	56.42	Peak	68.2	Pass
a	5180	Ant1	4977.4	-51.86	2.69	0.61	46.67	Average	54	Pass
a	5180	Ant1	5150	-45.39	2.69	-	52.53	Peak	68.2	Pass
a	5180	Ant1	5150	-52.26	2.69	0.61	46.27	Average	54	Pass
a	5240	Ant1	5350	-47.1	2.69	-	50.82	Peak	68.2	Pass
a	5240	Ant1	5350	-52.8	2.69	0.61	45.73	Average	54	Pass
a	5240	Ant1	5448	-42.47	2.69	-	55.45	Peak	68.2	Pass
a	5240	Ant1	5450.88	-49.9	2.69	0.61	48.63	Average	54	Pass
a	5240	Ant1	5460	-45.29	2.69	-	52.63	Peak	68.2	Pass
a	5240	Ant1	5460	-52.21	2.69	0.61	46.32	Average	54	Pass
n20	5180	Ant1	4500	-45.79	2.69	-	52.13	Peak	68.2	Pass
n20	5180	Ant1	4500	-53.71	2.69	0.58	44.79	Average	54	Pass
n20	5180	Ant1	4883.6	-42.22	2.69	-	55.7	Peak	68.2	Pass
n20	5180	Ant1	5148.9	-51.92	2.69	0.58	46.58	Average	54	Pass
n20	5180	Ant1	5150	-43.52	2.69	-	54.4	Peak	68.2	Pass
n20	5180	Ant1	5150	-53.13	2.69	0.58	45.37	Average	54	Pass
n20	5240	Ant1	5350	-45.83	2.69	-	52.09	Peak	68.2	Pass
n20	5240	Ant1	5350	-51.72	2.69	0.62	46.82	Average	54	Pass
n20	5240	Ant1	5453.28	-41.36	2.69	-	56.56	Peak	68.2	Pass
n20	5240	Ant1	5446.56	-49.92	2.69	0.62	48.62	Average	54	Pass
n20	5240	Ant1	5460	-45.88	2.69	-	52.04	Peak	68.2	Pass
n20	5240	Ant1	5460	-51.87	2.69	0.62	46.67	Average	54	Pass
n40	5190	Ant1	4500	-45.54	2.69	-	52.38	Peak	68.2	Pass
n40	5190	Ant1	4500	-53.38	2.69	0.55	45.09	Average	54	Pass
n40	5190	Ant1	5024.87	-41.84	2.69	-	56.08	Peak	68.2	Pass
n40	5190	Ant1	4962.82	-51.79	2.69	0.55	46.68	Average	54	Pass
n40	5190	Ant1	5150	-44.52	2.69	-	53.4	Peak	68.2	Pass
n40	5190	Ant1	5150	-52.66	2.69	0.55	45.81	Average	54	Pass
n40	5230	Ant1	5350	-44.2	2.69	-	53.72	Peak	68.2	Pass
n40	5230	Ant1	5350	-53.08	2.69	0.55	45.39	Average	54	Pass
n40	5230	Ant1	5409.24	-41.74	2.69	-	56.18	Peak	68.2	Pass
n40	5230	Ant1	5448.39	-50.4	2.69	0.55	48.07	Average	54	Pass
n40	5230	Ant1	5460	-44.55	2.69	-	53.37	Peak	68.2	Pass

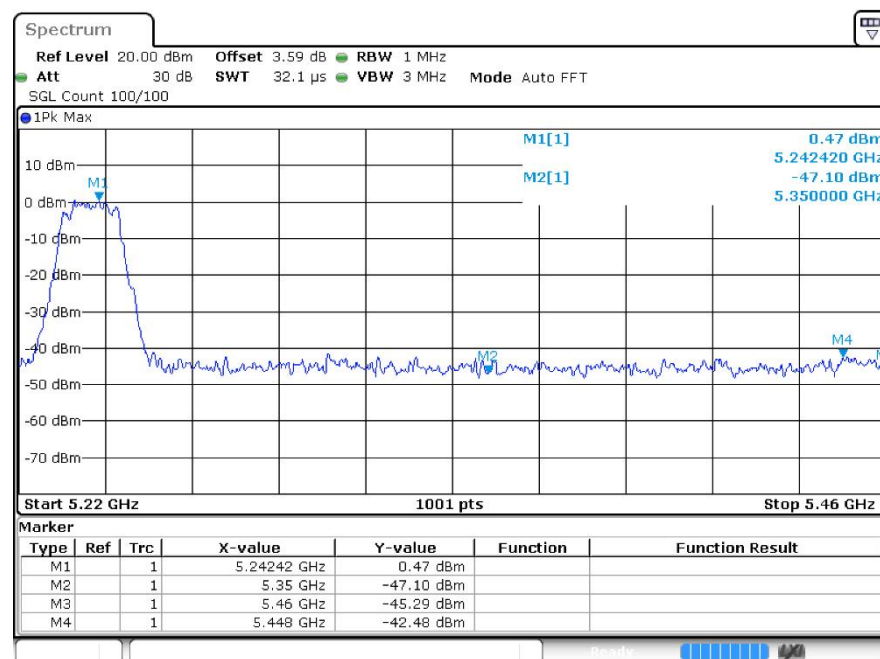


n40	5230	Ant1	5460	-51.65	2.69	0.55	46.82	Average	54	Pass
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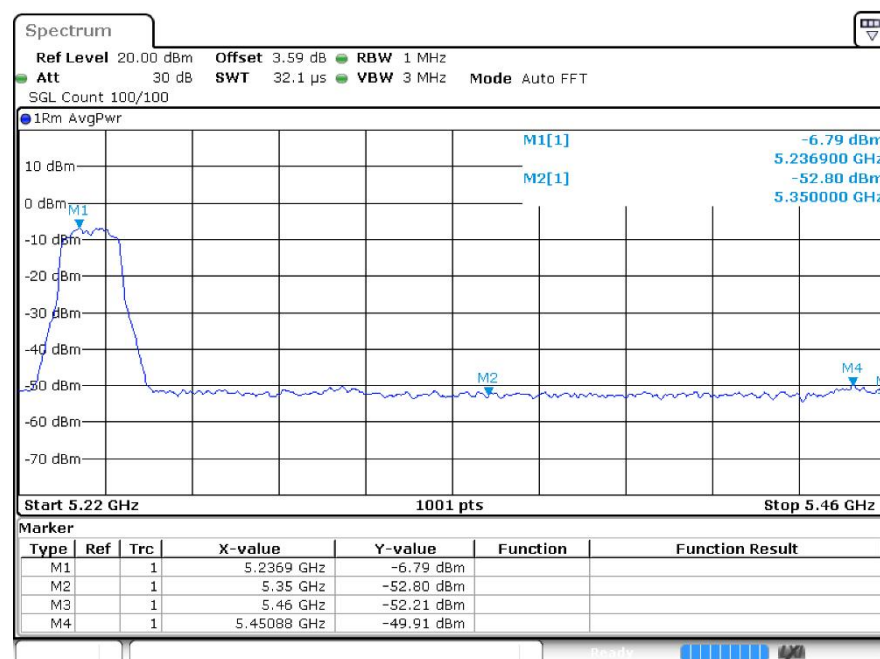
8.2 Test Graphs



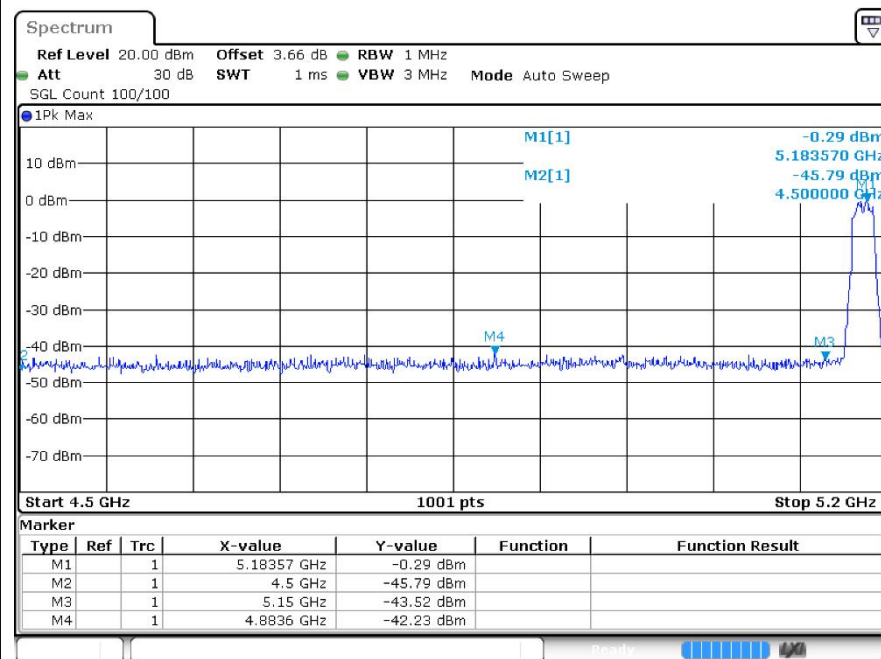
Restrict Band a 5240MHz Ant1 Peak



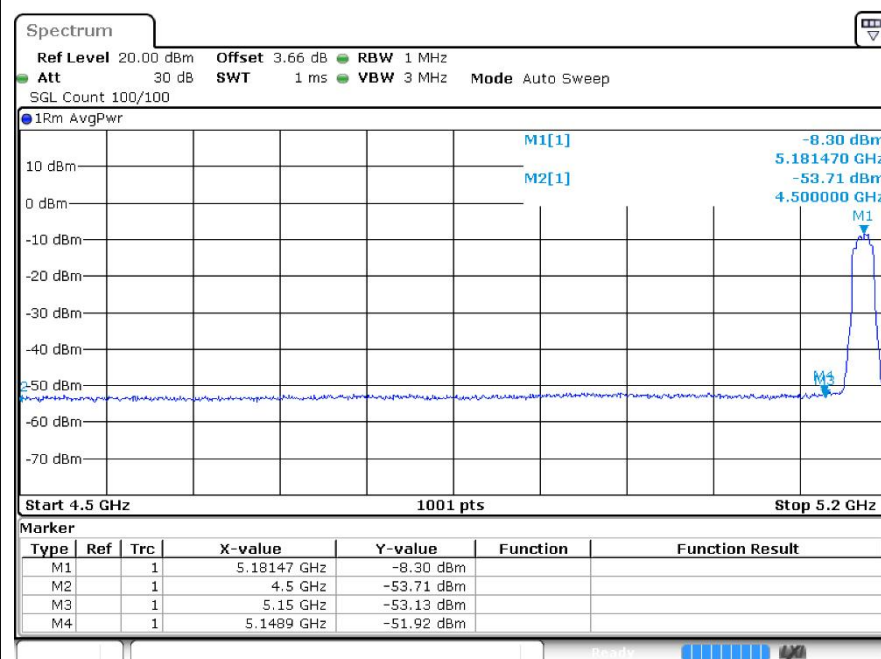
Restrict Band a 5240MHz Ant1 Average



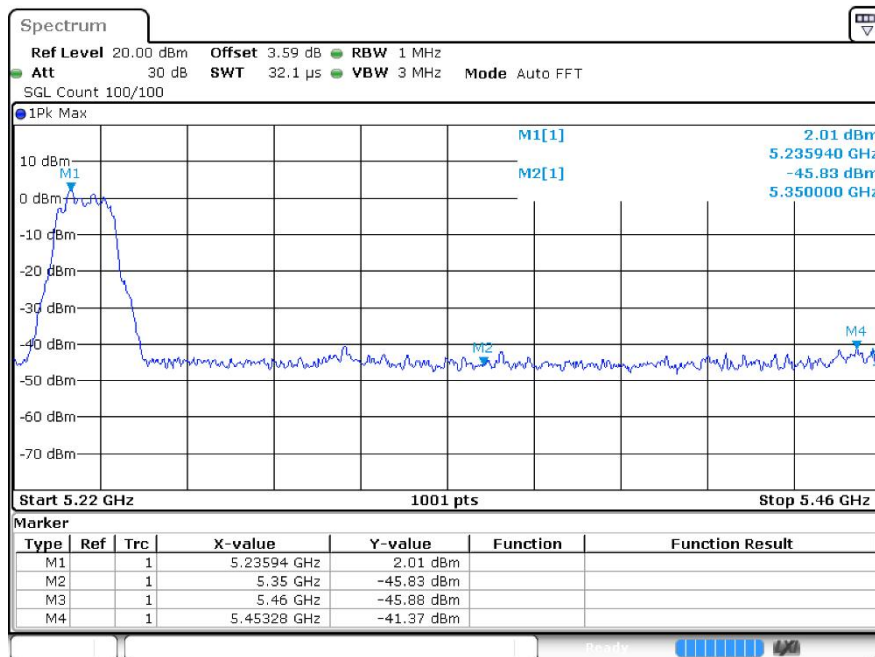
Restrict Band n20 5180MHz Ant1 Peak



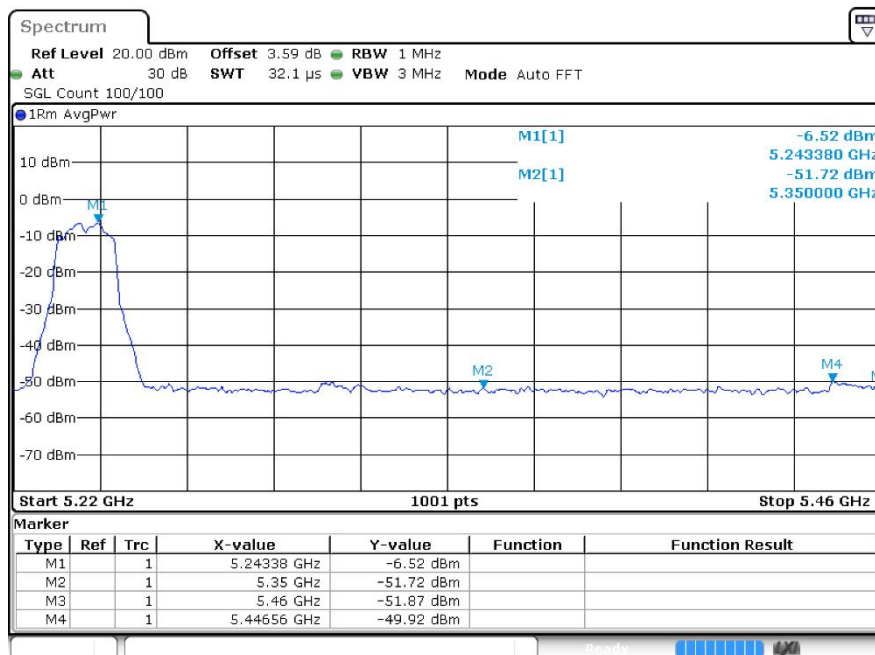
Restrict Band n20 5180MHz Ant1 Average



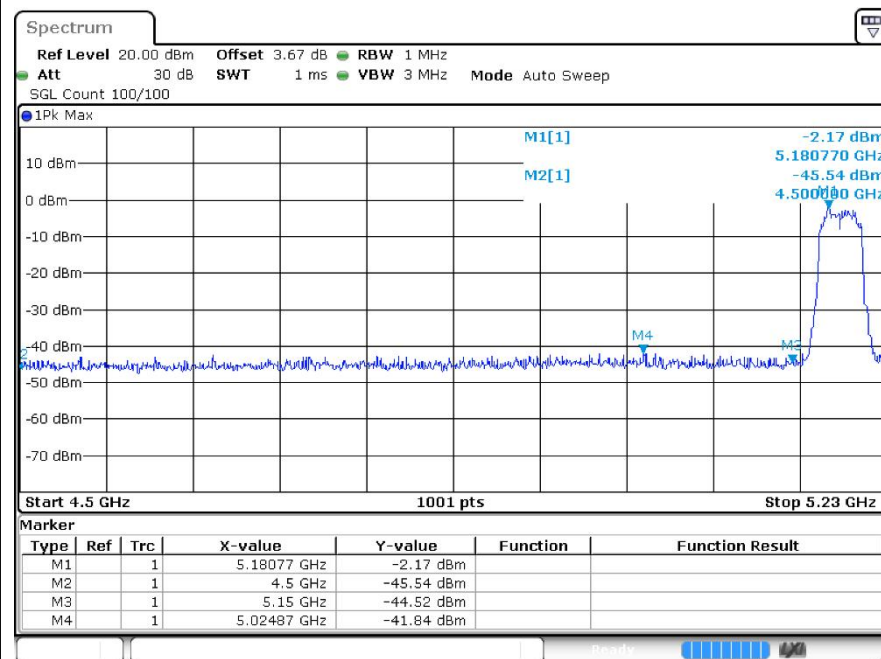
Restrict Band n20 5240MHz Ant1 Peak



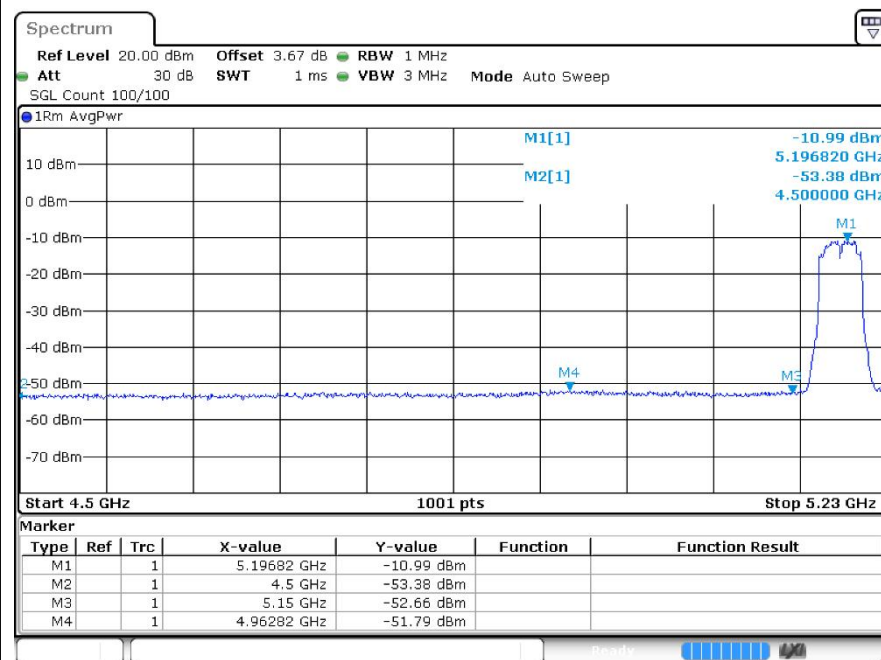
Restrict Band n20 5240MHz Ant1 Average



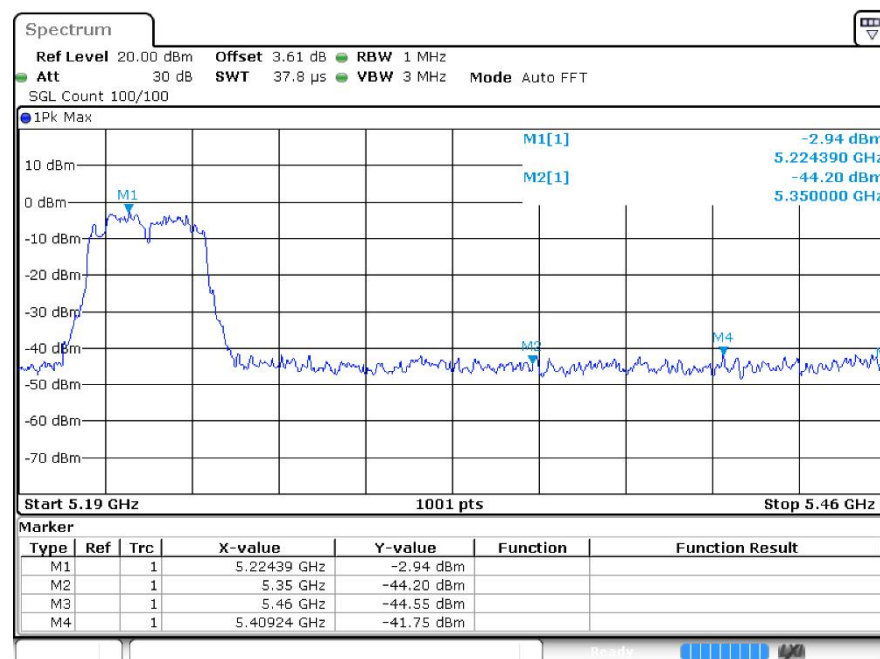
Restrict Band n40 5190MHz Ant1 Peak



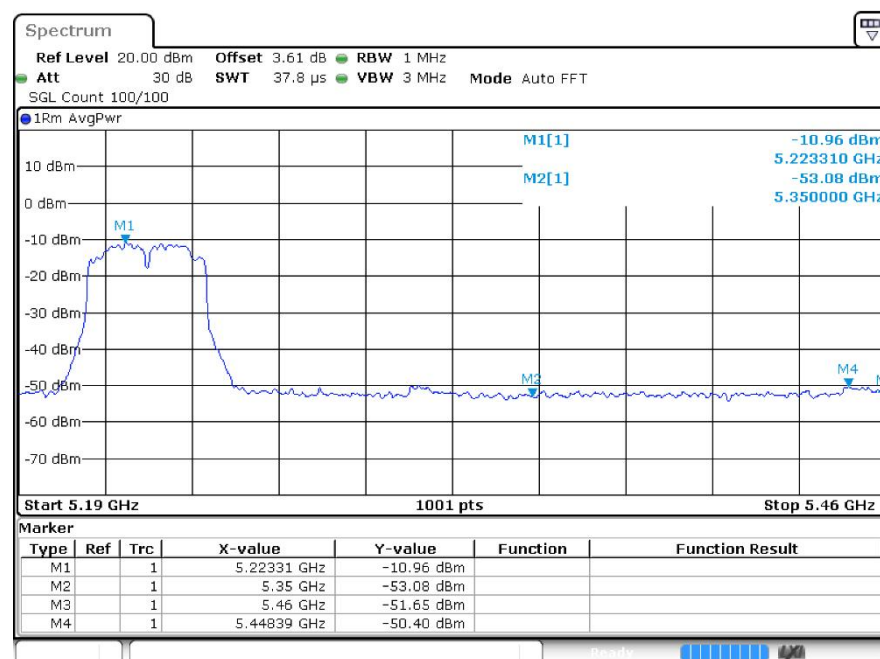
Restrict Band n40 5190MHz Ant1 Average



Restrict Band n40 5230MHz Ant1 Peak



Restrict Band n40 5230MHz Ant1 Average



---The End---