



Appendix D

RF Test Data for B1WIFI(Conducted Measurement)

Product Name: Carplay dash camera

Trade Mark: MIROIR

Test Model: M1003-7

Environmental Conditions

Temperature:	24.9℃
Relative Humidity:	52.6%
ATM Pressure:	101Kpa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung



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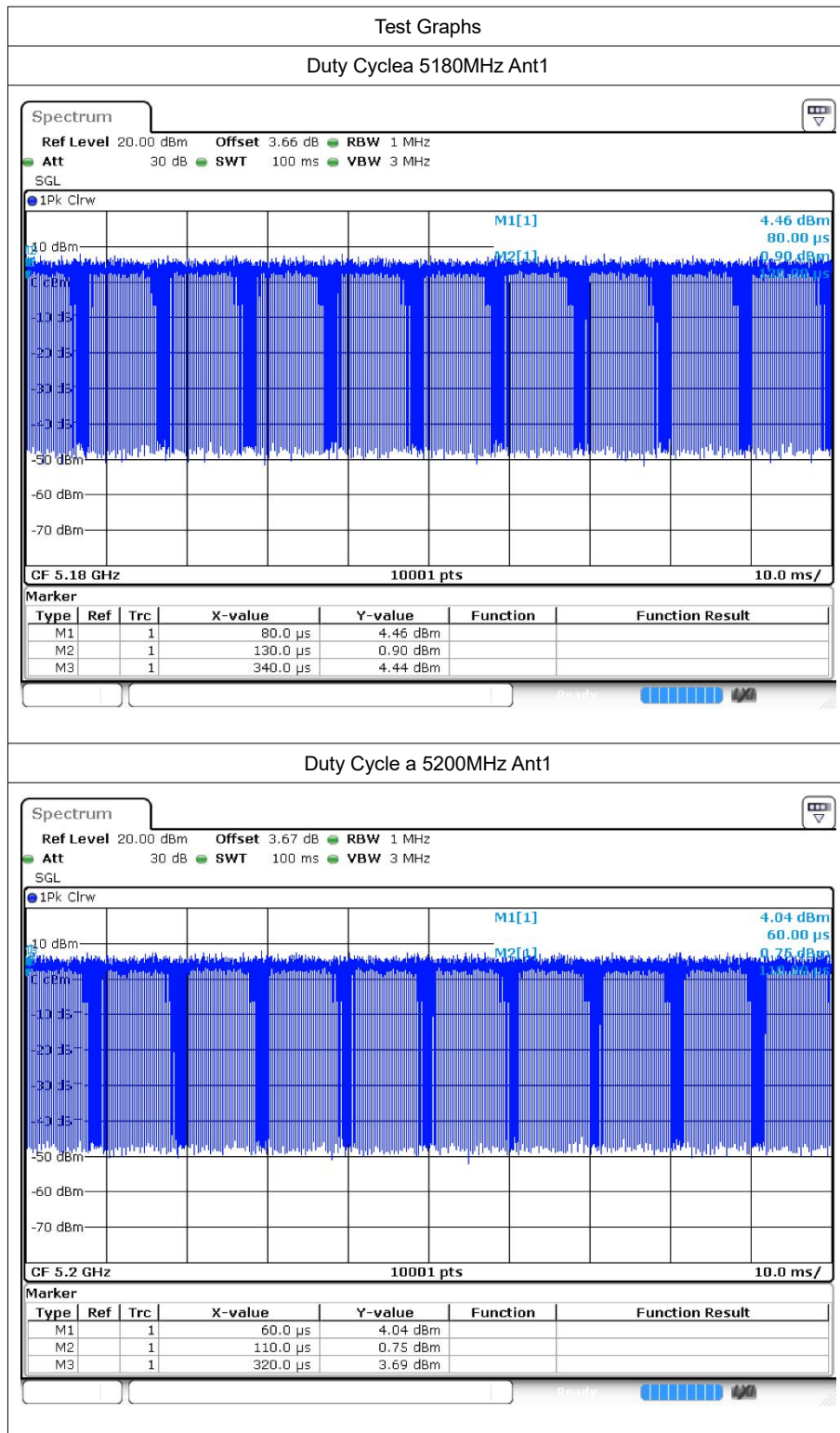


1 Duty Cycle

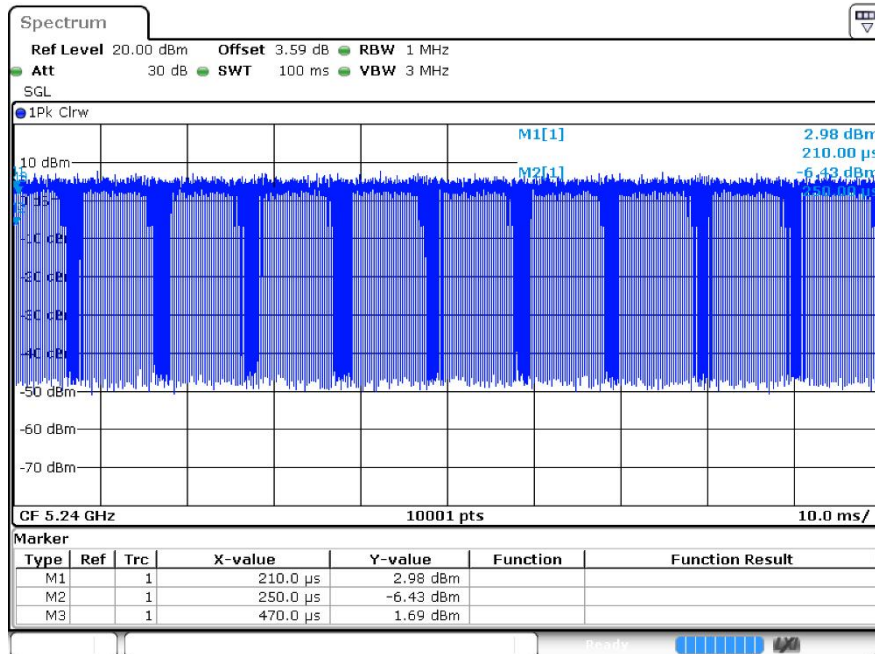
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5180	Ant1	86.94	0.61	4.76
a	5200	Ant1	86.9	0.61	4.76
a	5240	Ant1	86.96	0.61	4.55
n20	5180	Ant1	87.66	0.57	4.35
n20	5200	Ant1	87.6	0.57	4.17
n20	5240	Ant1	87.58	0.58	4.17

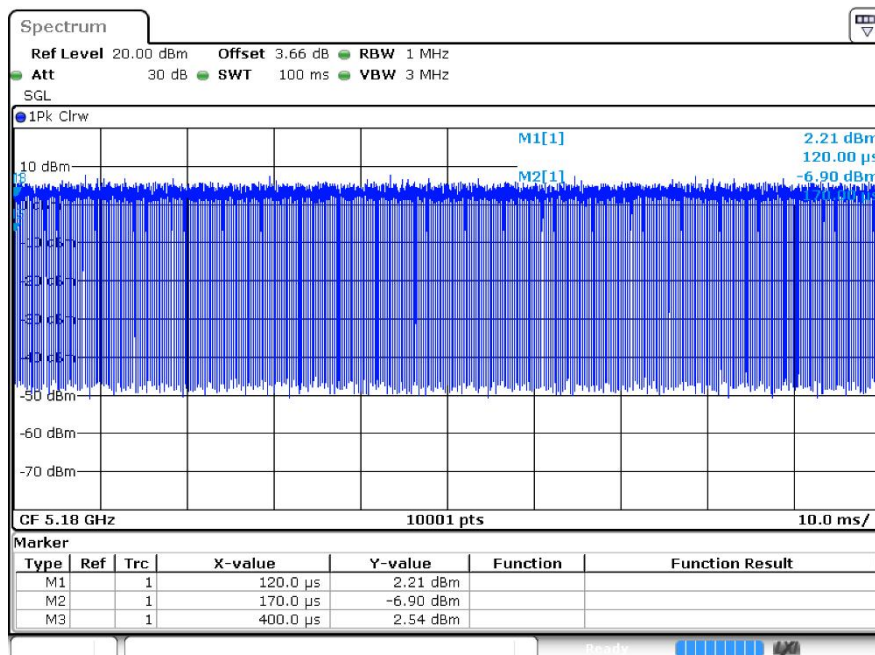
1.2 Test Graphs



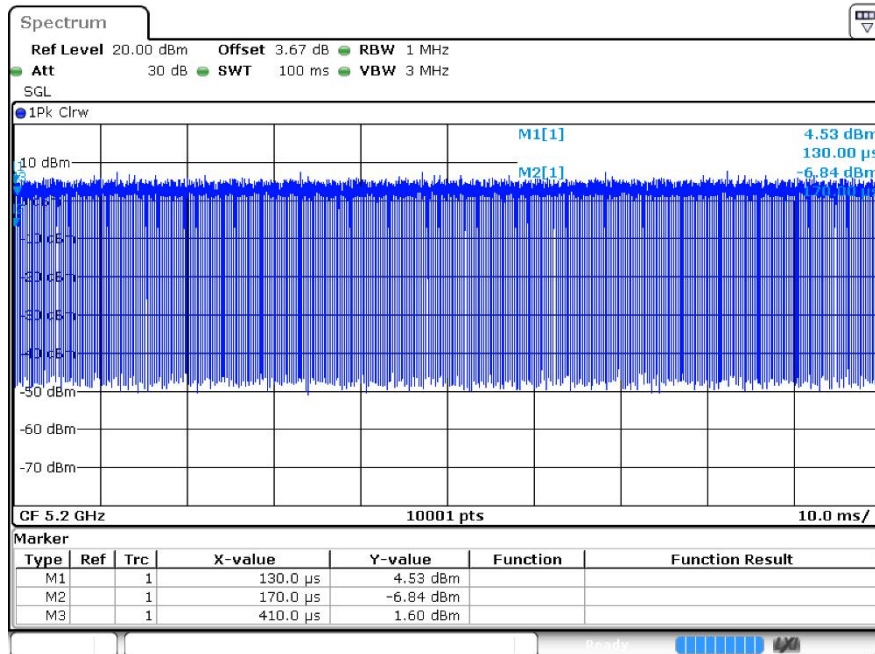
Duty Cyclea 5240MHz Ant1



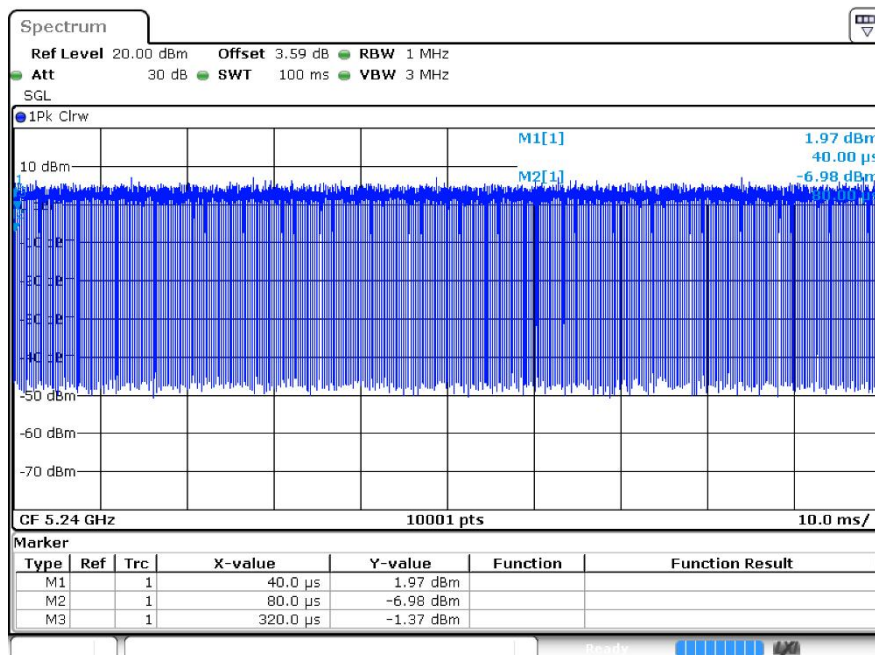
Duty Cycle n20 5180MHz Ant1



Duty Cycle n20 5200MHz Ant1



Duty Cycle n20 5240MHz Ant1





Maximum Conducted Output Power

1.3 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
a	5180	Ant1	14.18	24	Pass
a	5200	Ant1	14.21	24	Pass
a	5240	Ant1	13.91	24	Pass
n20	5180	Ant1	13.59	24	Pass
n20	5200	Ant1	13.52	24	Pass
n20	5240	Ant1	13.3	24	Pass

Note:

The duty factor has been compensated into the result.



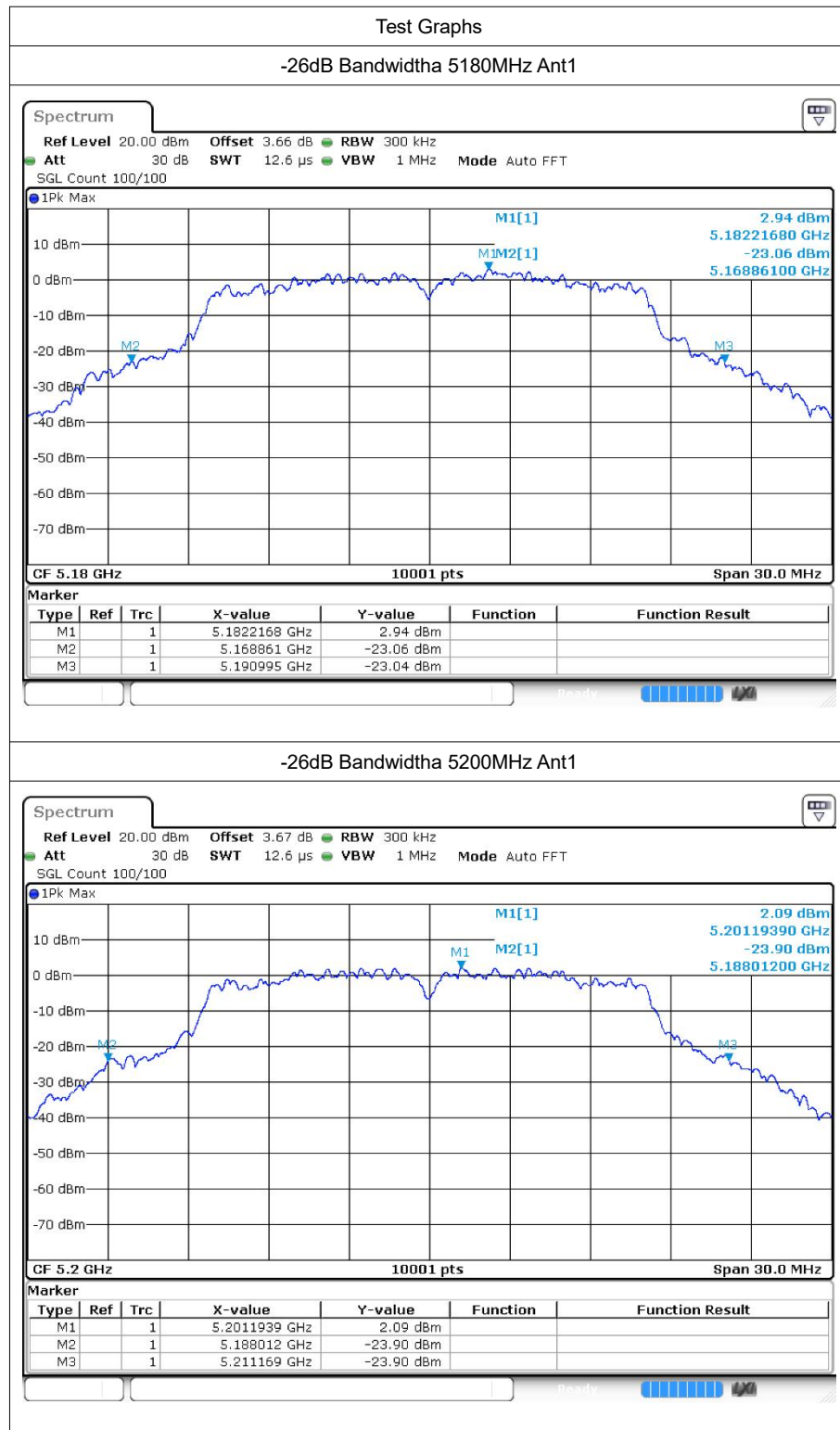
2 -26dB Bandwidth

2.1 Test Result

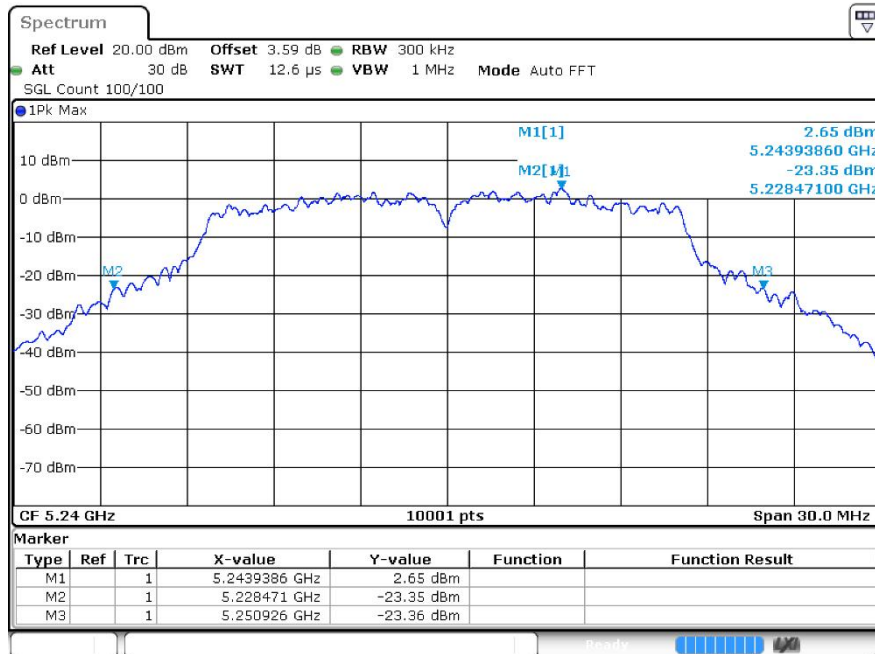
Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
a	5180	Ant1	22.134	0.5	Pass
a	5200	Ant1	23.157	0.5	Pass
a	5240	Ant1	22.455	0.5	Pass
n20	5180	Ant1	22.512	0.5	Pass
n20	5200	Ant1	23.082	0.5	Pass
n20	5240	Ant1	21.852	0.5	Pass



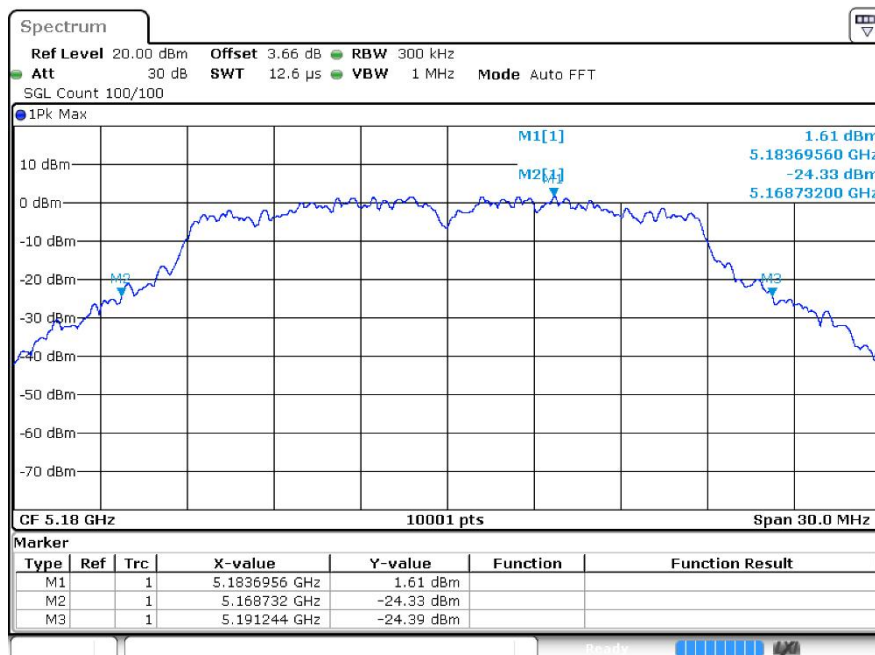
2.2 Test Graphs



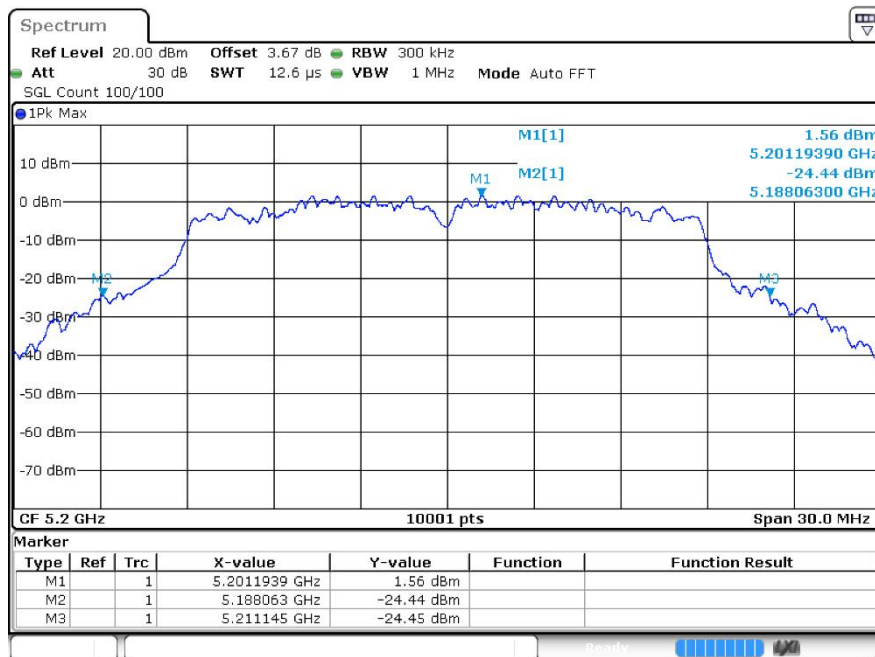
-26dB Bandwidth 5240MHz Ant1



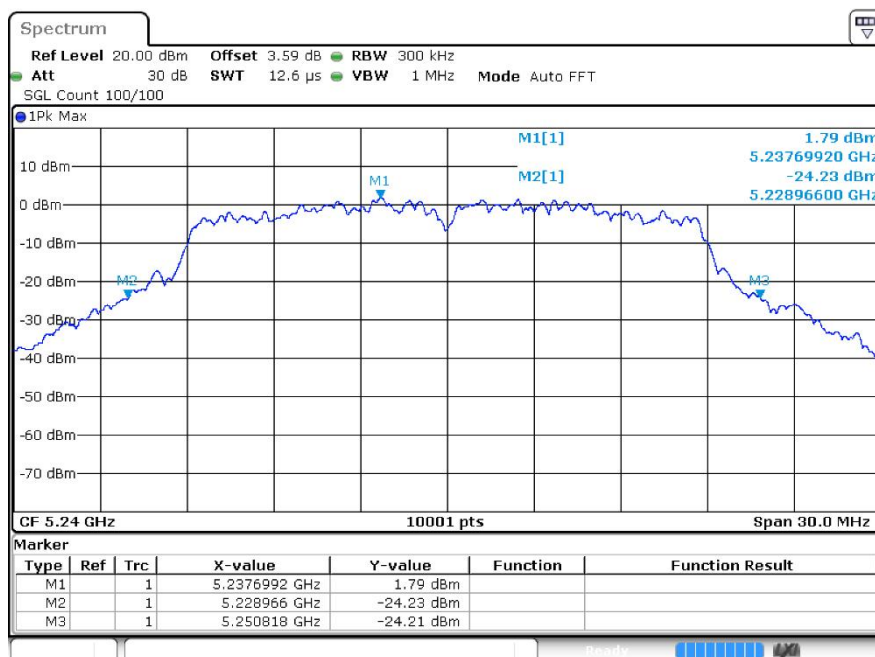
-26dB Bandwidth n20 5180MHz Ant1



-26dB Bandwidth n20 5200MHz Ant1



-26dB Bandwidth n20 5240MHz Ant1



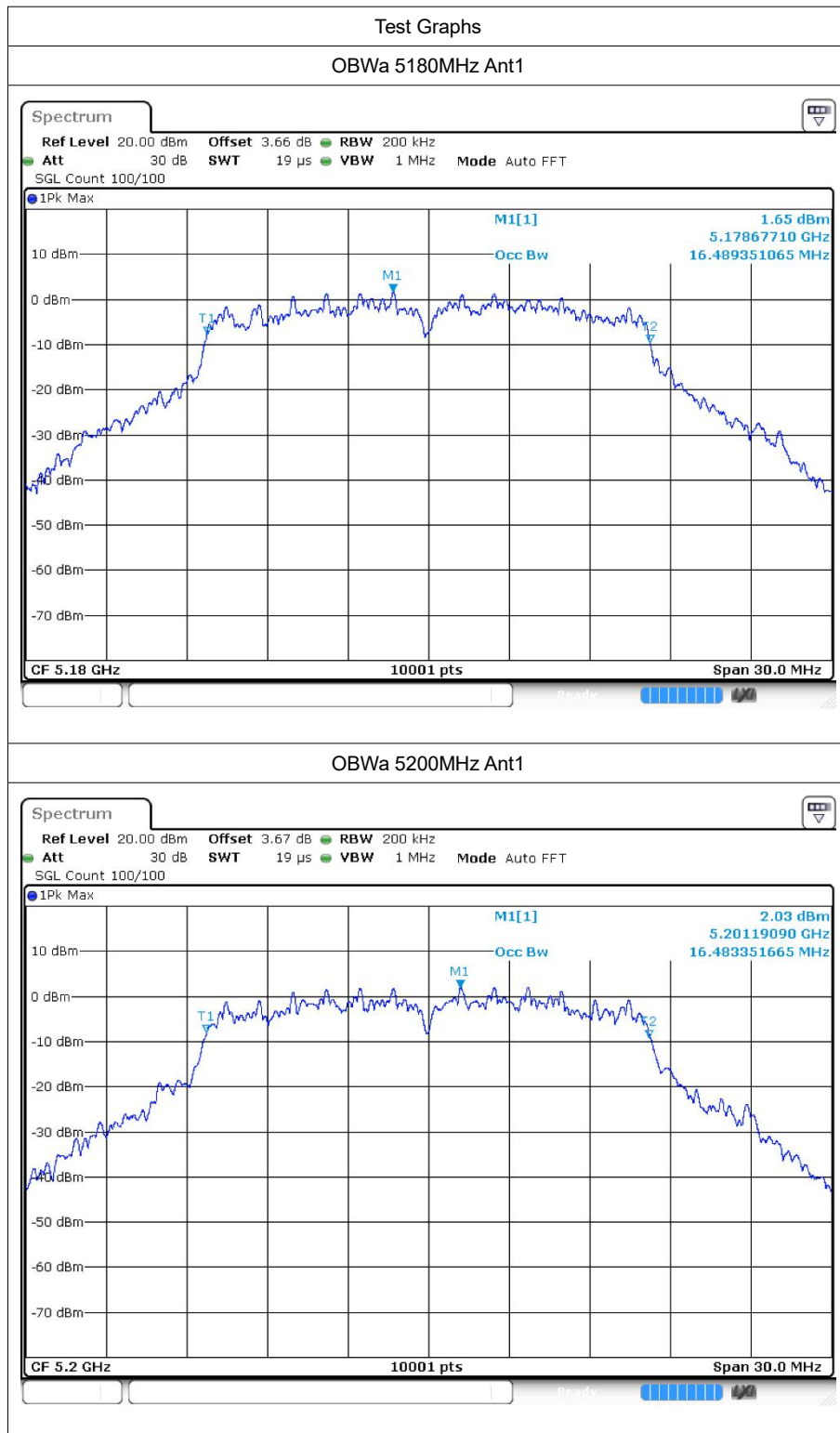


3 Occupied Channel Bandwidth

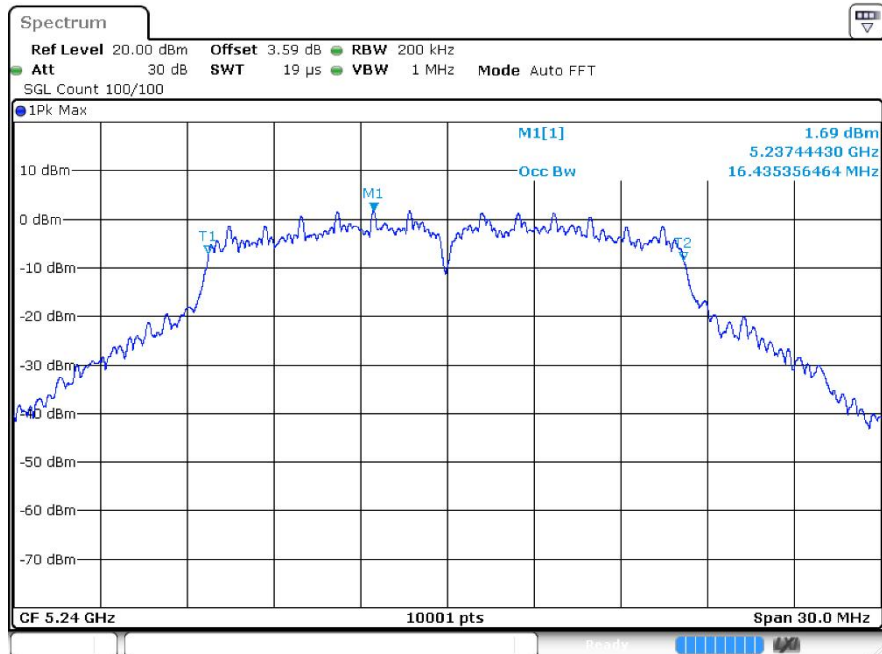
3.1 Test Result

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
a	5180	Ant1	16.489
a	5200	Ant1	16.483
a	5240	Ant1	16.435
n20	5180	Ant1	17.617
n20	5200	Ant1	17.617
n20	5240	Ant1	17.599

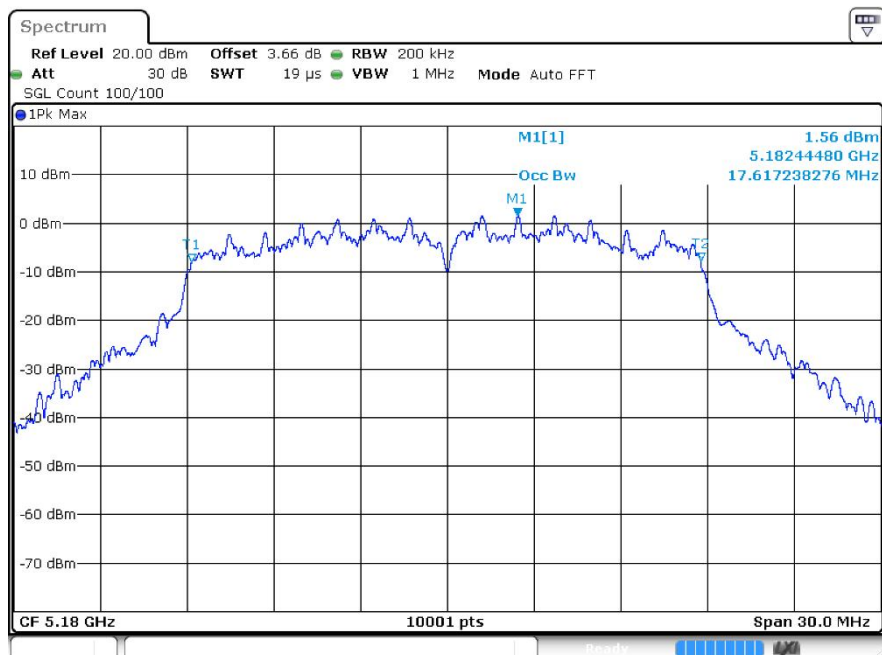
3.2 Test Graphs



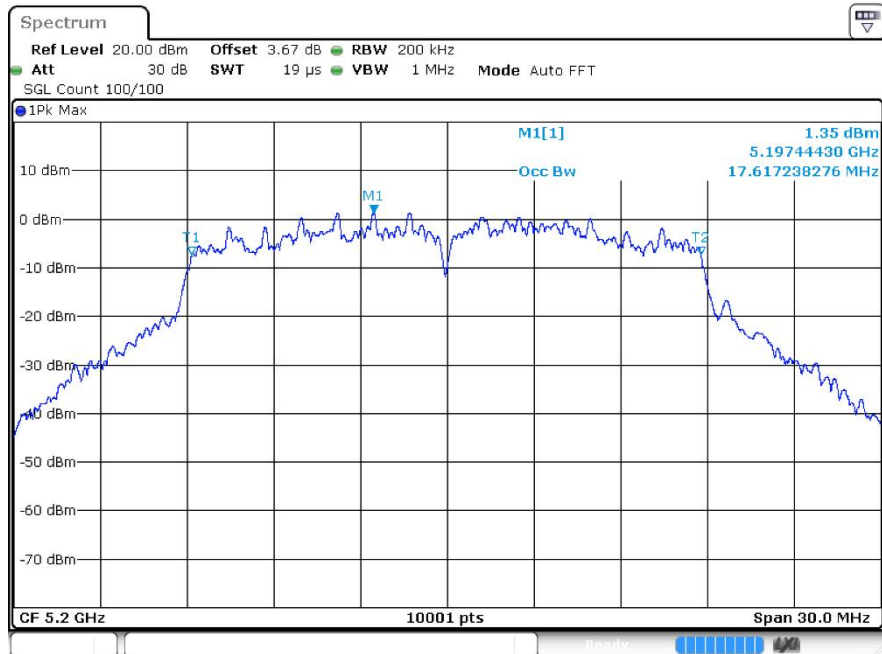
OBWa 5240MHz Ant1



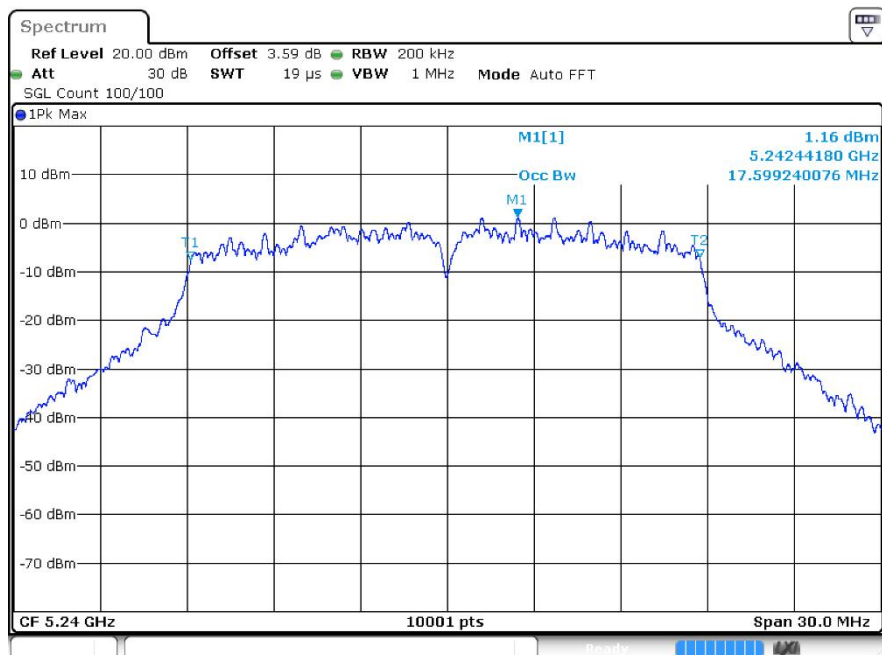
OBW n20 5180MHz Ant1



OBW n20 5200MHz Ant1



OBW n20 5240MHz Ant1



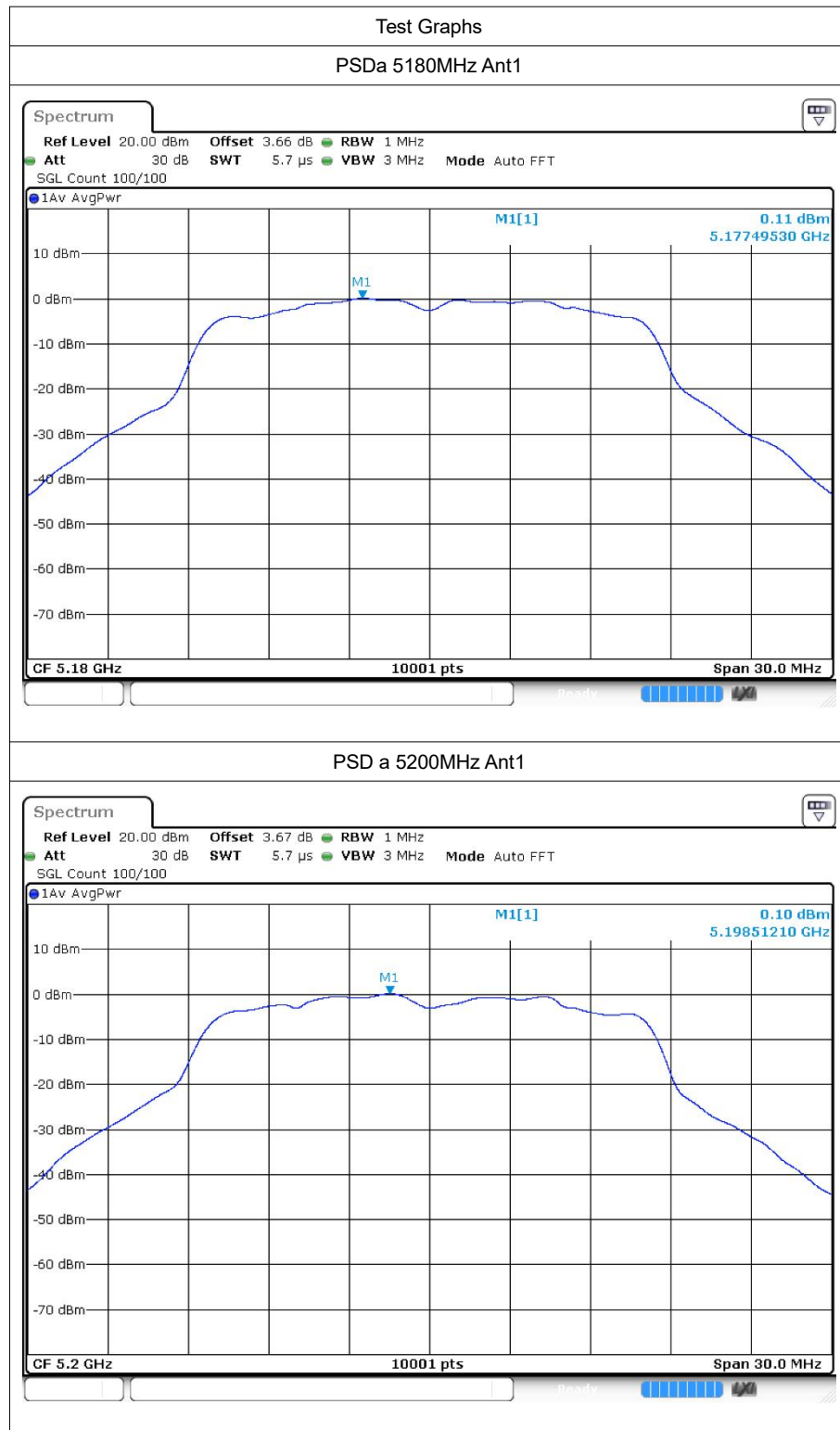


4 Maximum Power Spectral Density Level

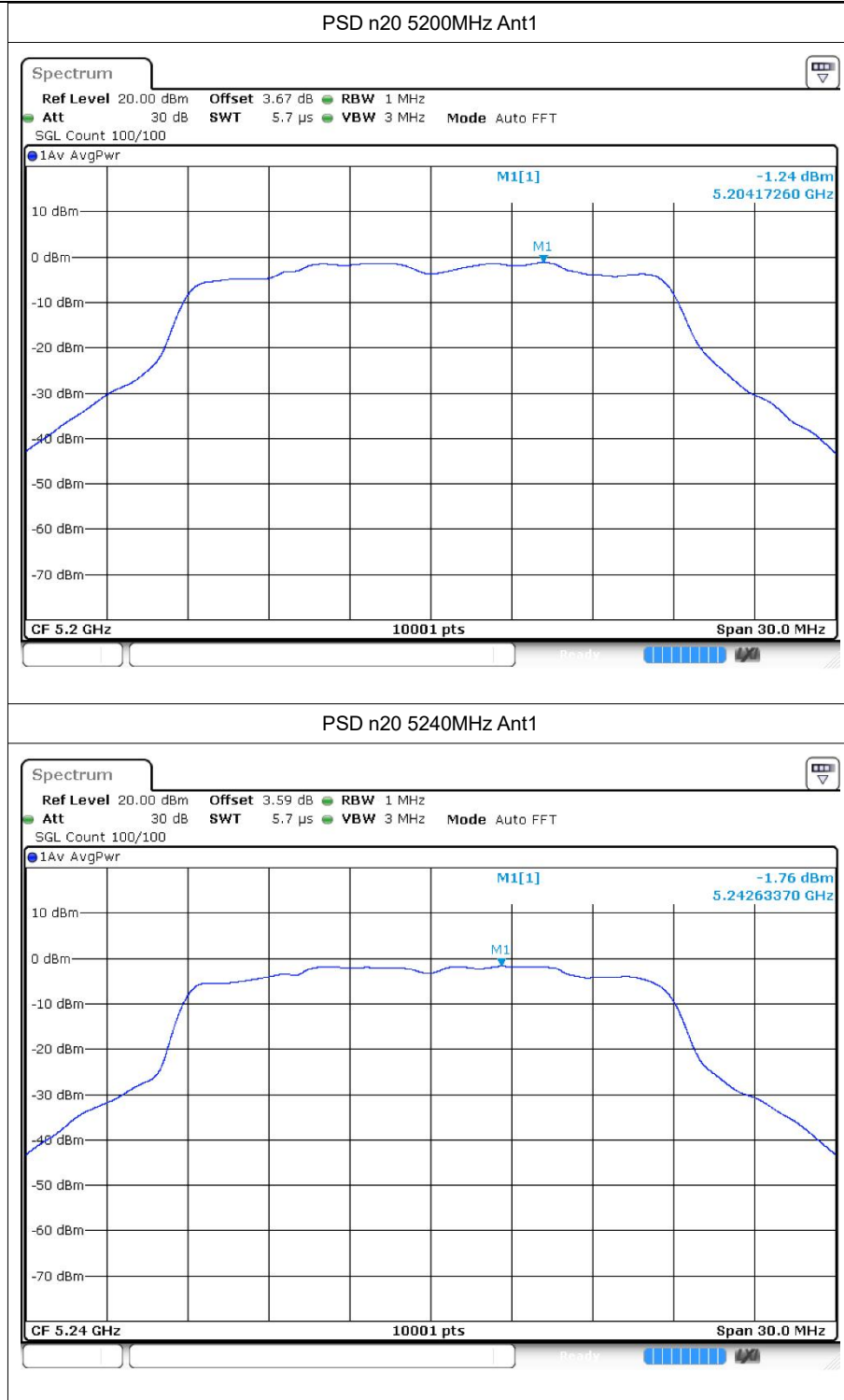
4.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
a	5180	Ant1	0.11	0.61	0.72	11	Pass
a	5200	Ant1	0.1	0.61	0.71	11	Pass
a	5240	Ant1	0.16	0.61	0.77	11	Pass
n20	5180	Ant1	-0.85	0.57	-0.28	11	Pass
n20	5200	Ant1	-1.24	0.57	-0.67	11	Pass
n20	5240	Ant1	-1.76	0.58	-1.18	11	Pass

4.2 Test Graphs









5 Frequency Stability

5.1 Test Result

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20C 102V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
20C 120V	a	5180	Ant1	5179.98	-20000	-3.86	25	Pass
20C 138V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
-20C 120V	a	5180	Ant1	5179.96	-40000	-7.72	25	Pass
-10C 120V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
0C 120V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
10C 120V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
30C 120V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
40C 120V	a	5180	Ant1	5179.92	-80000	-15.44	25	Pass
50C 120V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
20C 102V	a	5200	Ant1	5199.96	-40000	-7.69	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	5199.94	-60000	-11.54	25	Pass
-10C 120V	a	5200	Ant1	5199.96	-40000	-7.69	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	5199.98	-20000	-3.85	25	Pass
40C 120V	a	5200	Ant1	5199.96	-40000	-7.69	25	Pass
20C 102V	a	5200	Ant1	5199.96	-40000	-7.69	25	Pass
20C 102V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
20C 120V	a	5240	Ant1	5239.96	-40000	-7.63	25	Pass
20C 138V	a	5240	Ant1	5239.96	-40000	-7.63	25	Pass
-20C 120V	a	5240	Ant1	5239.96	-40000	-7.63	25	Pass
-10C 120V	a	5240	Ant1	5239.96	-40000	-7.63	25	Pass
0C 120V	a	5240	Ant1	5239.96	-40000	-7.63	25	Pass
10C 120V	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
30C 120V	a	5240	Ant1	5239.96	-40000	-7.63	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	5179.98	-20000	-3.86	25	Pass
20C 138V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
-20C 120V	n20	5180	Ant1	5179.94	-60000	-11.58	25	Pass
-10C 120V	n20	5180	Ant1	5179.94	-60000	-11.58	25	Pass



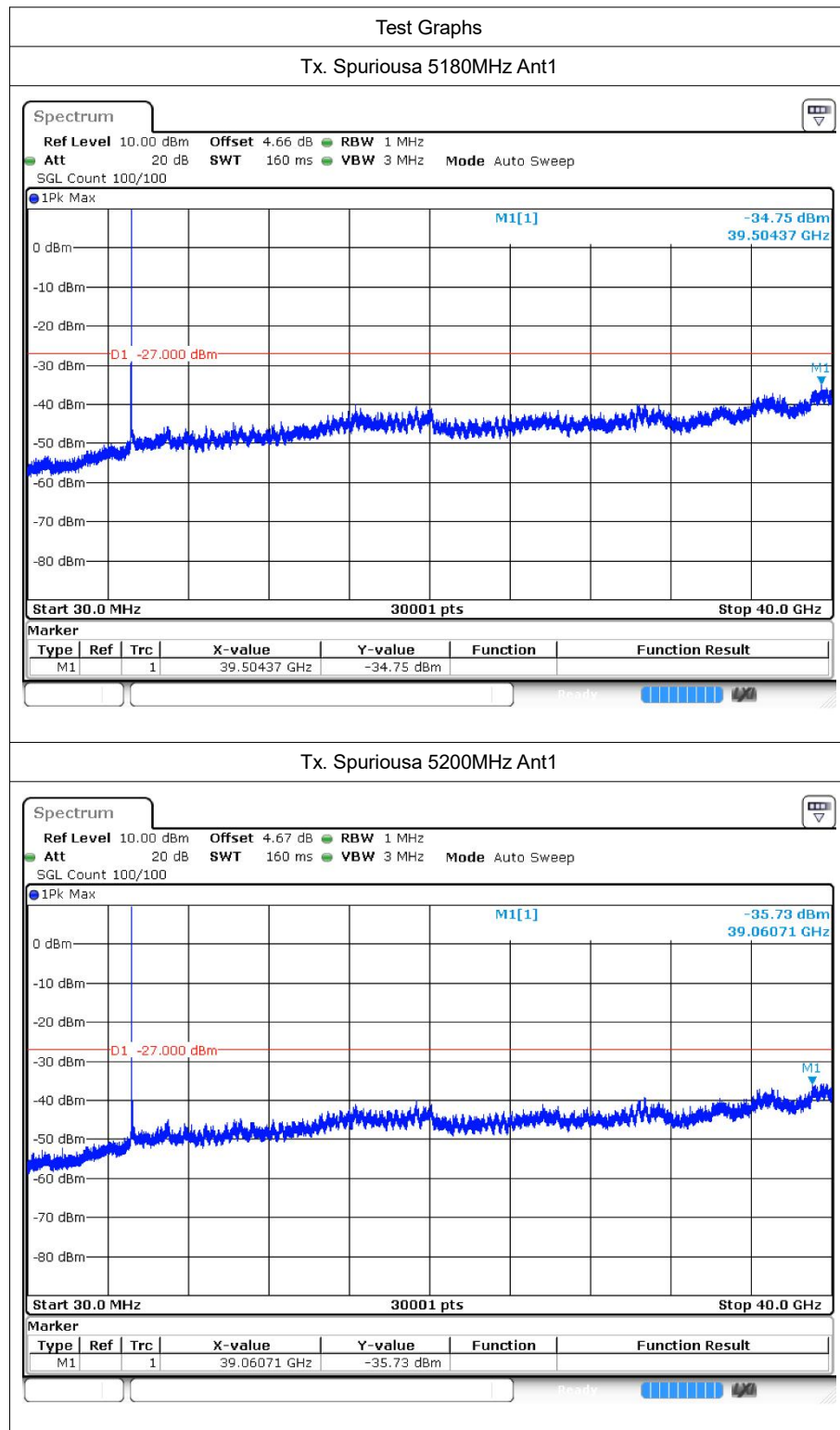
0C 120V	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
10C 120V	n20	5180	Ant1	5179.94	-60000	-11.58	25	Pass
30C 120V	n20	5180	Ant1	5179.94	-60000	-11.58	25	Pass
40C 120V	n20	5180	Ant1	5179.94	-60000	-11.58	25	Pass
50C 120V	n20	5180	Ant1	5180	0	0	25	Pass
20C 102V	n20	5200	Ant1	5199.94	-60000	-11.54	25	Pass
20C 120V	n20	5200	Ant1	5199.94	-60000	-11.54	25	Pass
20C 138V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
-20C 120V	n20	5200	Ant1	5199.94	-60000	-11.54	25	Pass
-10C 120V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
0C 120V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
10C 120V	n20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
30C 120V	n20	5200	Ant1	5199.96	-40000	-7.69	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	5239.96	-40000	-7.63	25	Pass
20C 138V	n20	5240	Ant1	5239.96	-40000	-7.63	25	Pass
-20C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
-10C 120V	n20	5240	Ant1	5239.98	-20000	-3.82	25	Pass
0C 120V	n20	5240	Ant1	5239.96	-40000	-7.63	25	Pass
10C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
30C 120V	n20	5240	Ant1	5239.92	-80000	-15.27	25	Pass
40C 120V	n20	5240	Ant1	5239.96	-40000	-7.63	25	Pass
50C 120V	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass

6 Conducted RF Spurious Emission

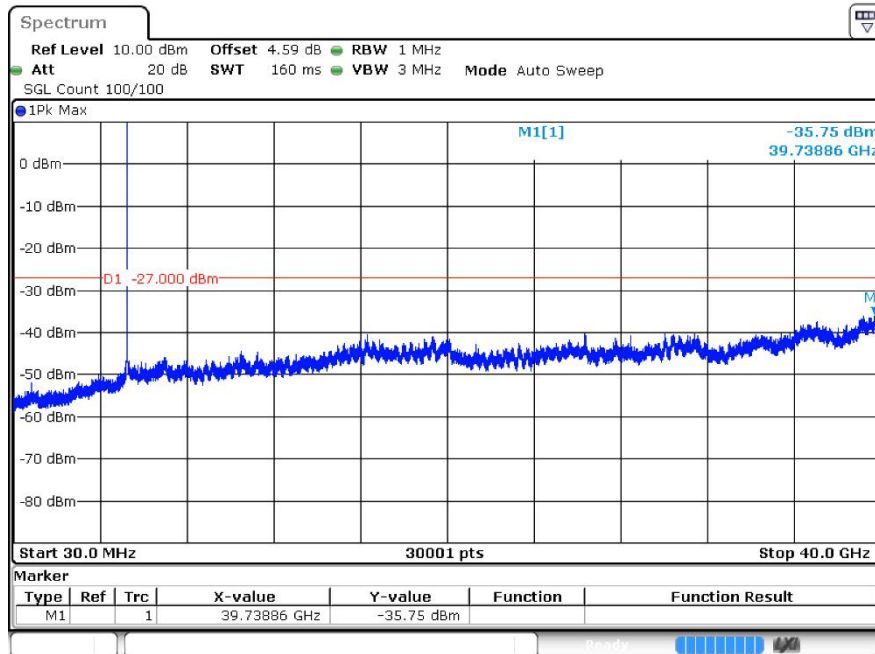
6.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
a	5180	Ant1	-34.74	-27	Pass
a	5200	Ant1	-35.73	-27	Pass
a	5240	Ant1	-35.75	-27	Pass
n20	5180	Ant1	-35.24	-27	Pass
n20	5200	Ant1	-34.67	-27	Pass
n20	5240	Ant1	-35.35	-27	Pass

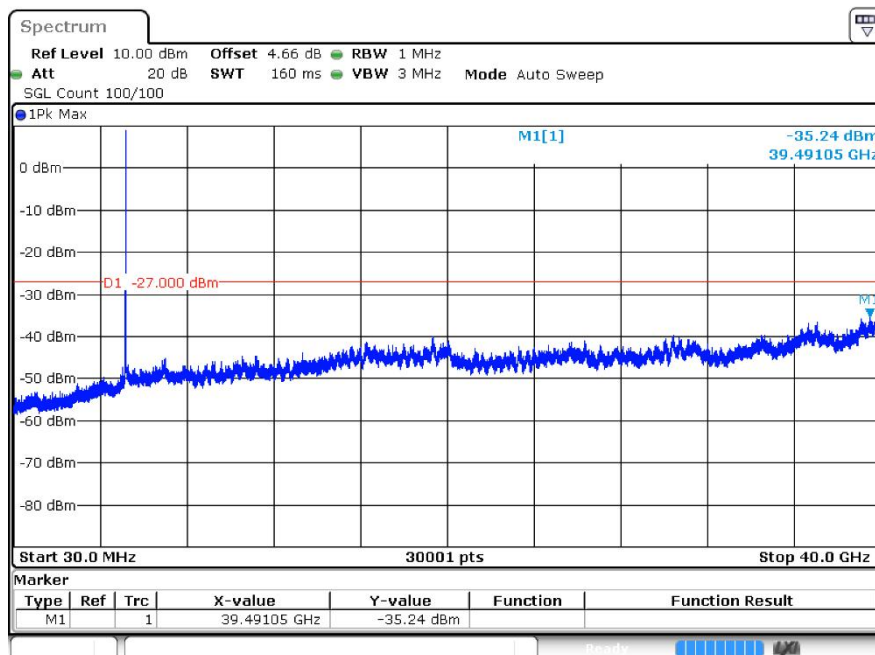
6.2 Test Graphs



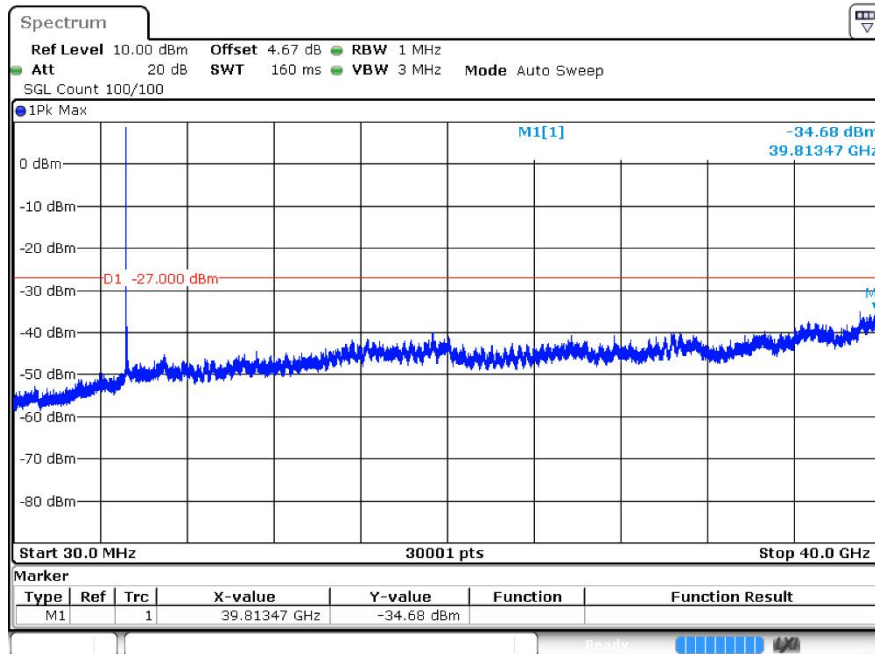
Tx. Spuriousa 5240MHz Ant1



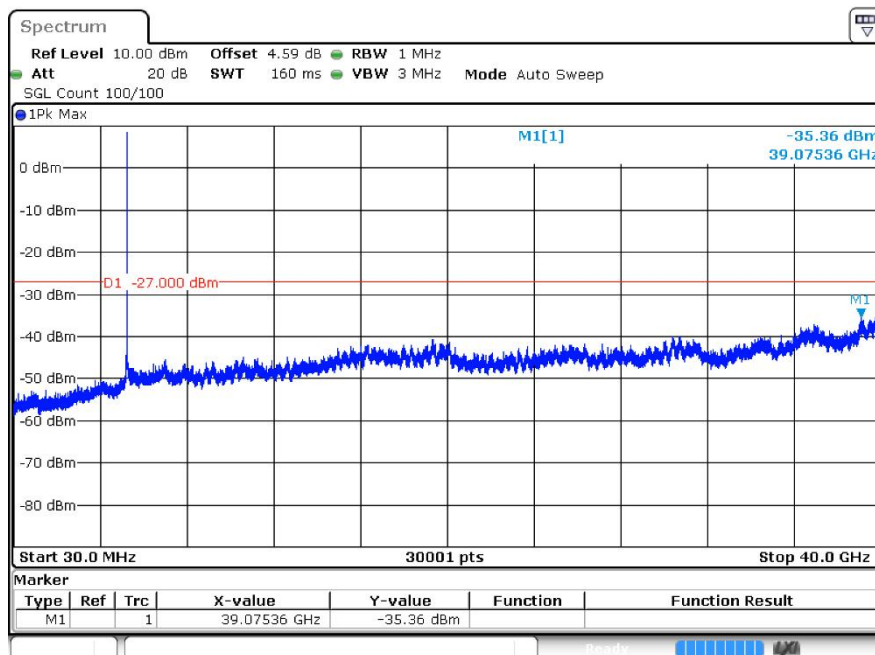
Tx. Spurious n20 5180MHz Ant1



Tx. Spurious n20 5200MHz Ant1



Tx. Spurious n20 5240MHz Ant1

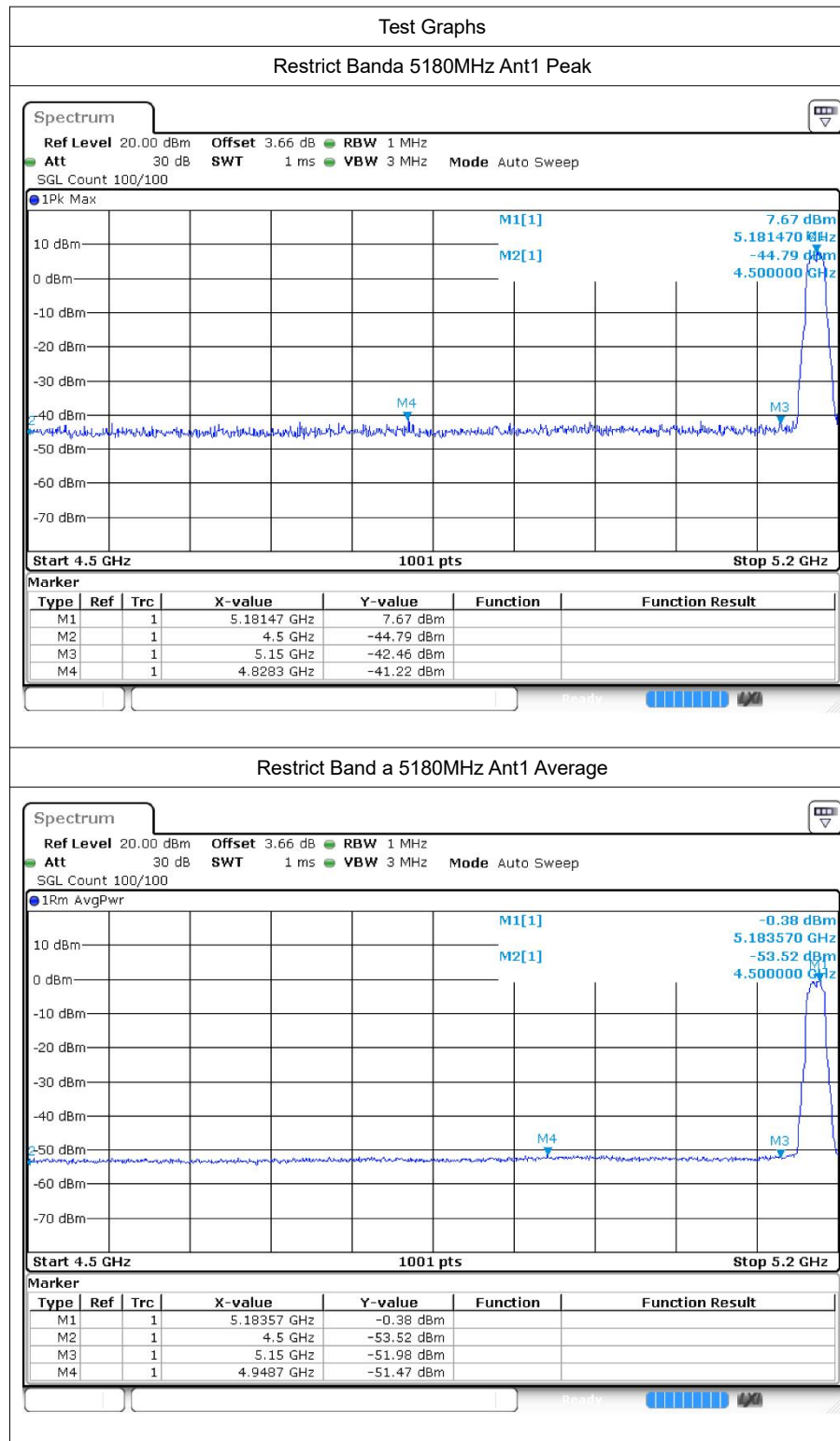


7 Restrict Band

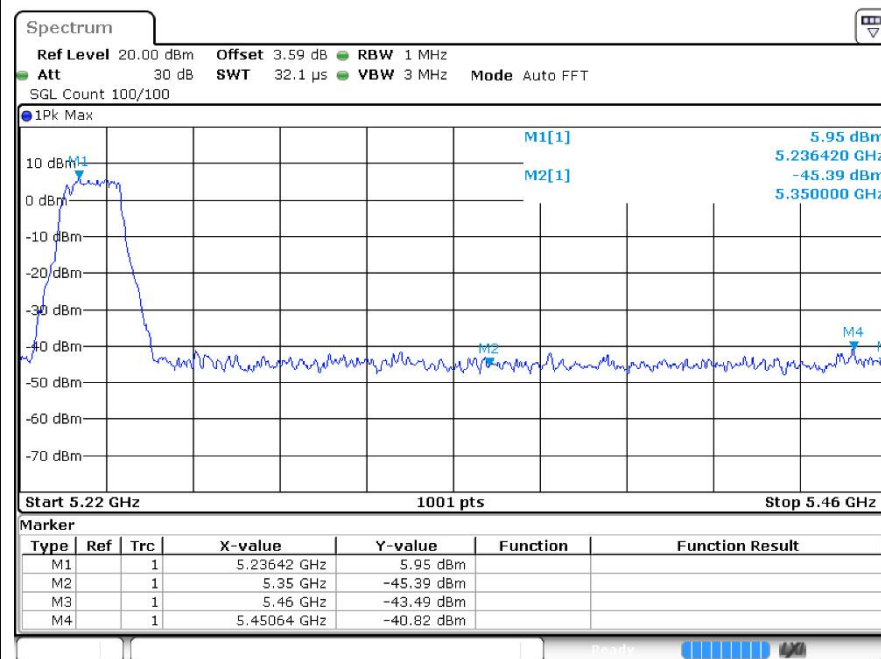
7.1 Test Result

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	-44.79	2	-	52.44	Peak	68.2	Pass
a	5180	Ant1	4500	-53.52	2	0.61	44.32	Average	54	Pass
a	5180	Ant1	4828.3	-41.21	2	-	56.02	Peak	68.2	Pass
a	5180	Ant1	4948.7	-51.47	2	0.61	46.37	Average	54	Pass
a	5180	Ant1	5150	-42.46	2	-	54.77	Peak	68.2	Pass
a	5180	Ant1	5150	-51.98	2	0.61	45.86	Average	54	Pass
a	5240	Ant1	5350	-45.39	2	-	51.84	Peak	68.2	Pass
a	5240	Ant1	5350	-52.2	2	0.61	45.64	Average	54	Pass
a	5240	Ant1	5450.64	-40.81	2	-	56.42	Peak	68.2	Pass
a	5240	Ant1	5450.4	-49.88	2	0.61	47.96	Average	54	Pass
a	5240	Ant1	5460	-43.49	2	-	53.74	Peak	68.2	Pass
a	5240	Ant1	5460	-51.73	2	0.61	46.11	Average	54	Pass
n20	5180	Ant1	4500	-44.92	2	-	52.31	Peak	68.2	Pass
n20	5180	Ant1	4500	-52.71	2	0.57	45.09	Average	54	Pass
n20	5180	Ant1	5069.8	-41.87	2	-	55.36	Peak	68.2	Pass
n20	5180	Ant1	4955	-51.46	2	0.57	46.34	Average	54	Pass
n20	5180	Ant1	5150	-43.64	2	-	53.59	Peak	68.2	Pass
n20	5180	Ant1	5150	-51.78	2	0.57	46.02	Average	54	Pass
n20	5240	Ant1	5350	-45.01	2	-	52.22	Peak	68.2	Pass
n20	5240	Ant1	5350	-52.01	2	0.58	45.8	Average	54	Pass
n20	5240	Ant1	5365.68	-40.97	2	-	56.26	Peak	68.2	Pass
n20	5240	Ant1	5448.72	-50.07	2	0.58	47.74	Average	54	Pass
n20	5240	Ant1	5460	-46.48	2	-	50.75	Peak	68.2	Pass
n20	5240	Ant1	5460	-51.78	2	0.58	46.03	Average	54	Pass

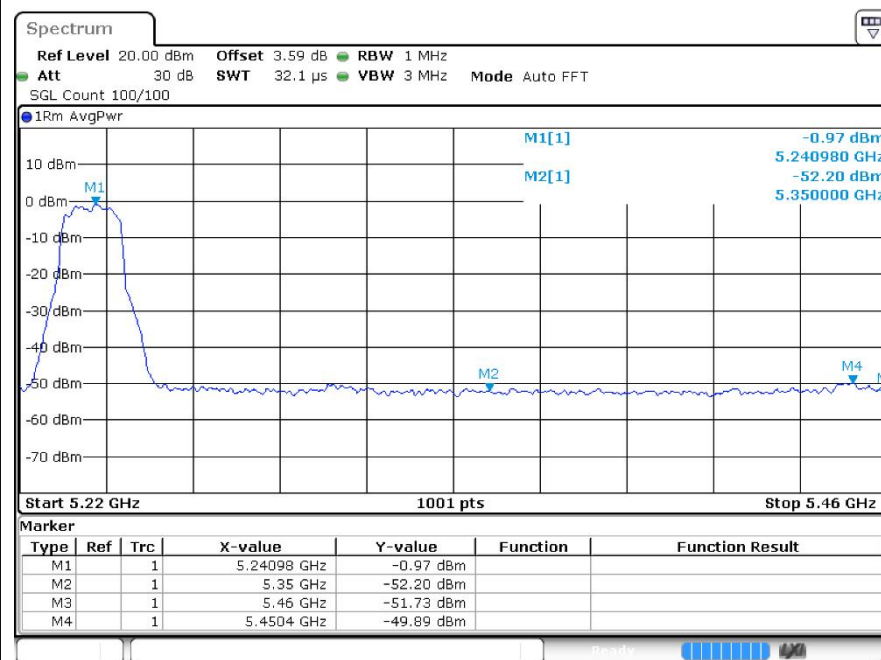
7.2 Test Graphs



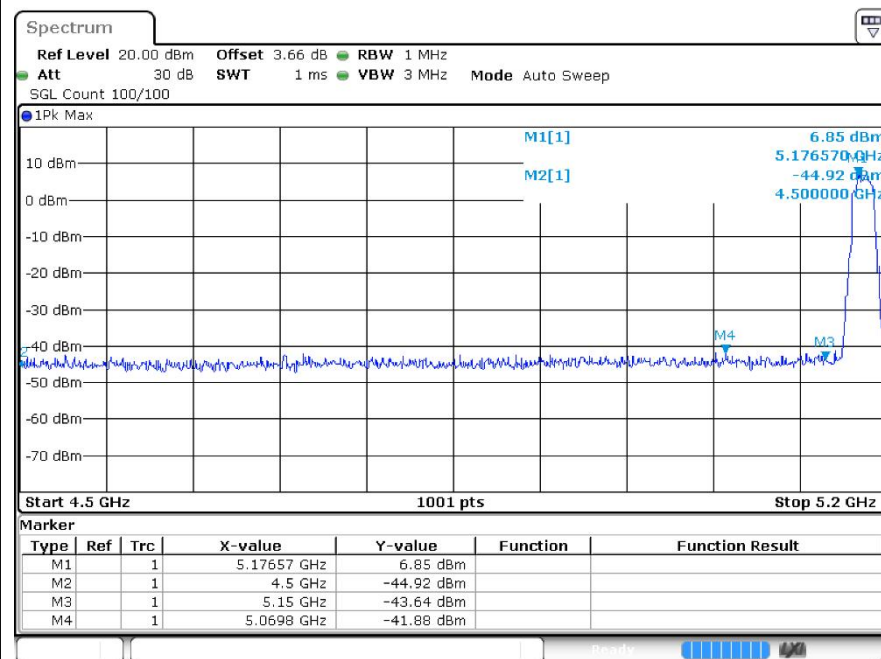
Restrict Banda 5240MHz Ant1 Peak



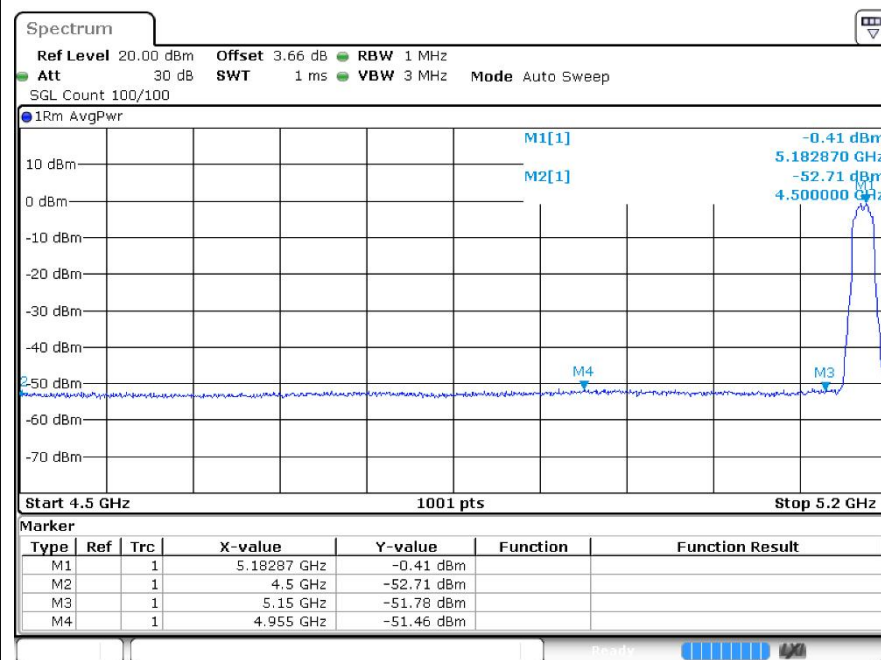
Restrict Band a 5240MHz Ant1 Average



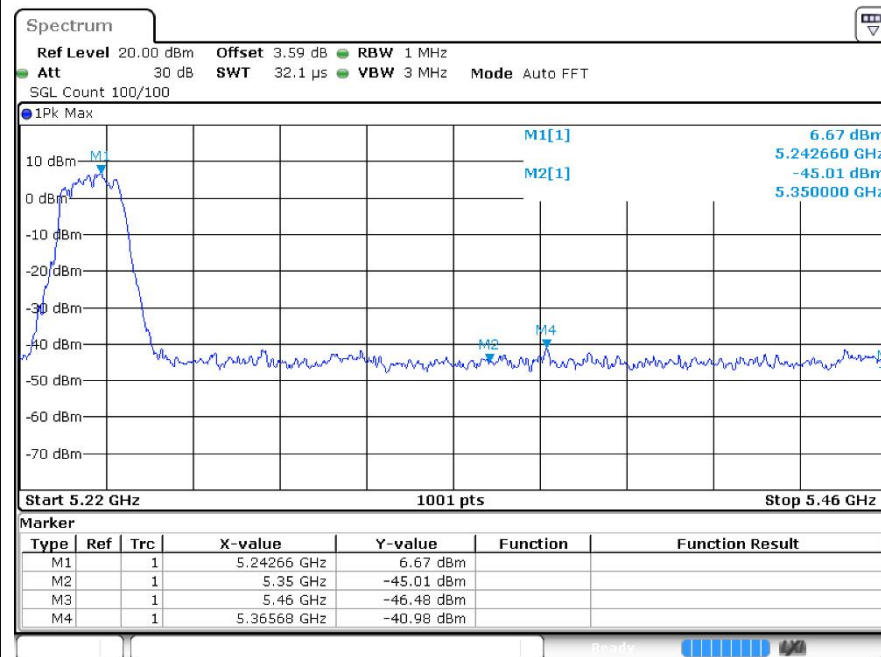
Restrict Bandn20 5180MHz Ant1 Peak



Restrict Band n20 5180MHz Ant1 Average



Restrict Bandn20 5240MHz Ant1 Peak



Restrict Band n20 5240MHz Ant1 Average

