



Appendix D

RF Test Data for B1WIFI(Conducted Measurement)

Product Name: Dash camera

Trade Mark: N/A

Test Model: M820

Environmental Conditions

Temperature:	25.4° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung



Contents

Page

COVER PAGE

1	Duty Cycle	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Maximum Conducted Output Power	8
2.1	Test Result	8
3	-26dB Bandwidth	9
3.1	Test Result	9
3.2	Test Graphs	10
4	Occupied Channel Bandwidth	14
4.1	Test Result	14
4.2	Test Graphs	15
5	Maximum Power Spectral Density Level	19
5.1	Test Result	19
5.2	Test Graphs	20
6	Frequency Stability	24
6.1	Test Result	24
7	Conducted RF Spurious Emission	27
7.1	Test Result	27
7.2	Test Graphs	28

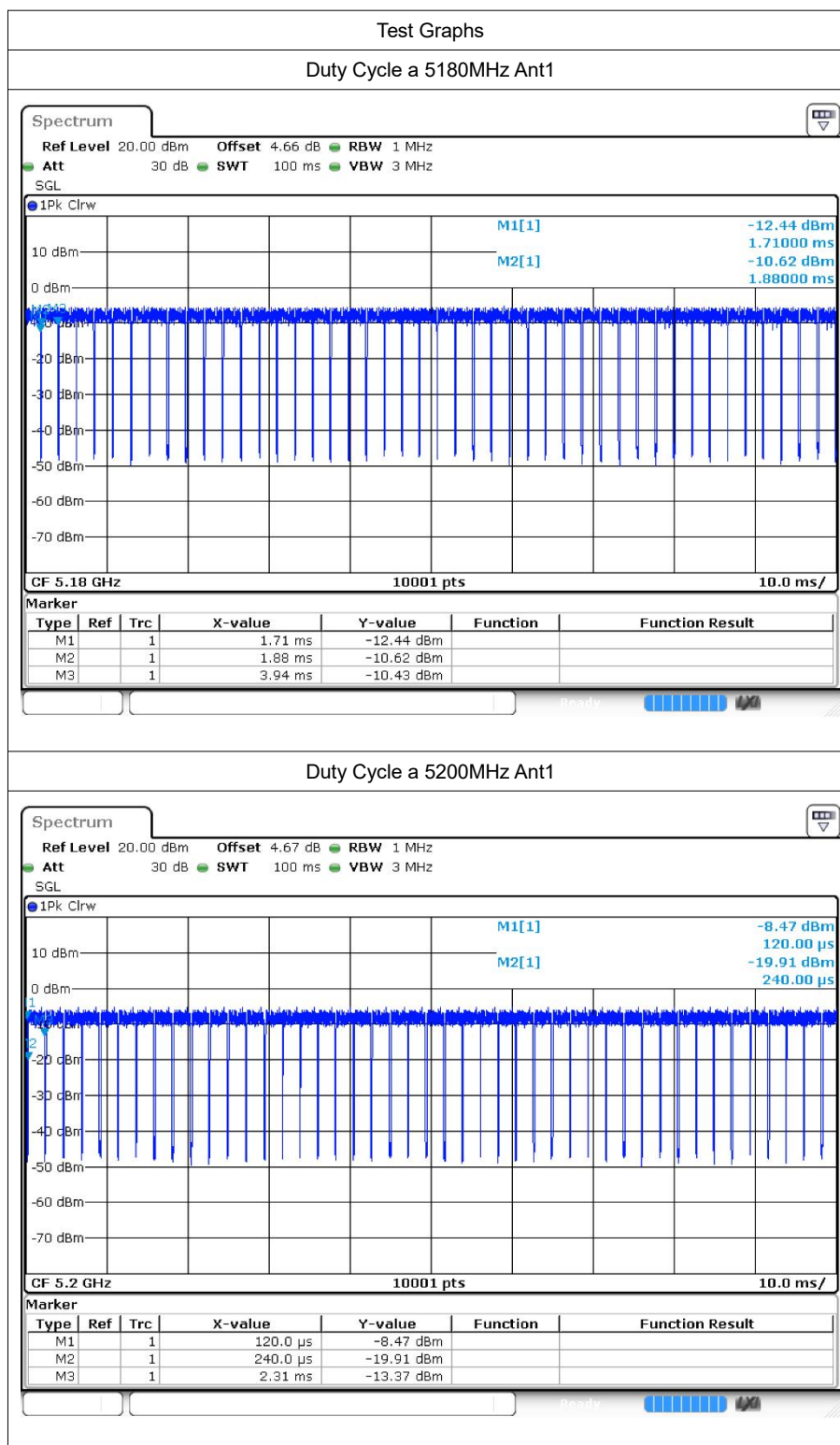


1 Duty Cycle

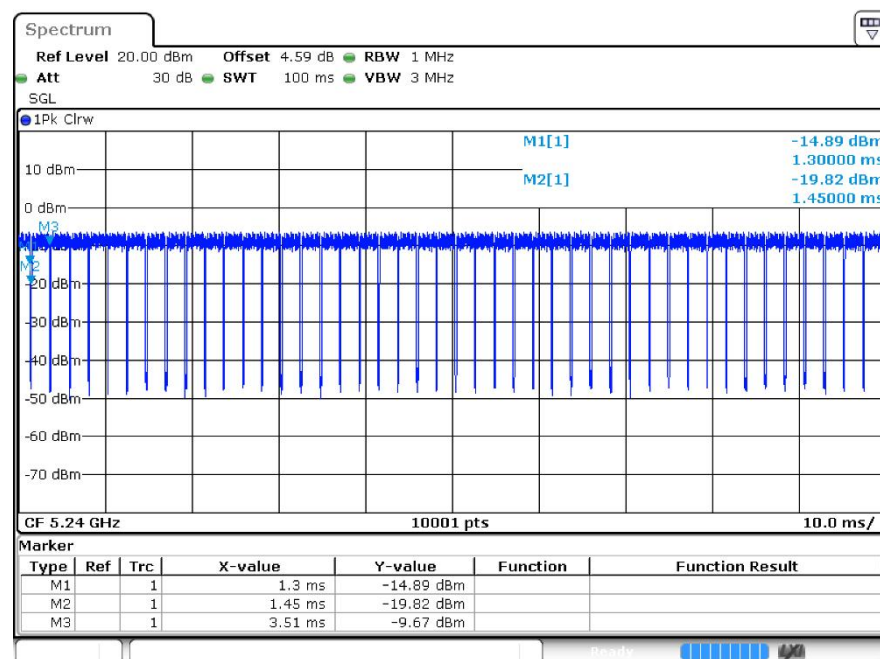
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5180	Ant1	93.01	0.31	0.49
a	5200	Ant1	93.09	0.31	0.48
a	5240	Ant1	92.89	0.32	0.49
n20	5180	Ant1	90.4	0.44	0.52
n20	5200	Ant1	90.08	0.45	0.52
n20	5240	Ant1	89.95	0.46	0.52
n40	5190	Ant1	81.46	0.89	1.09
n40	5230	Ant1	81.11	0.91	1.1

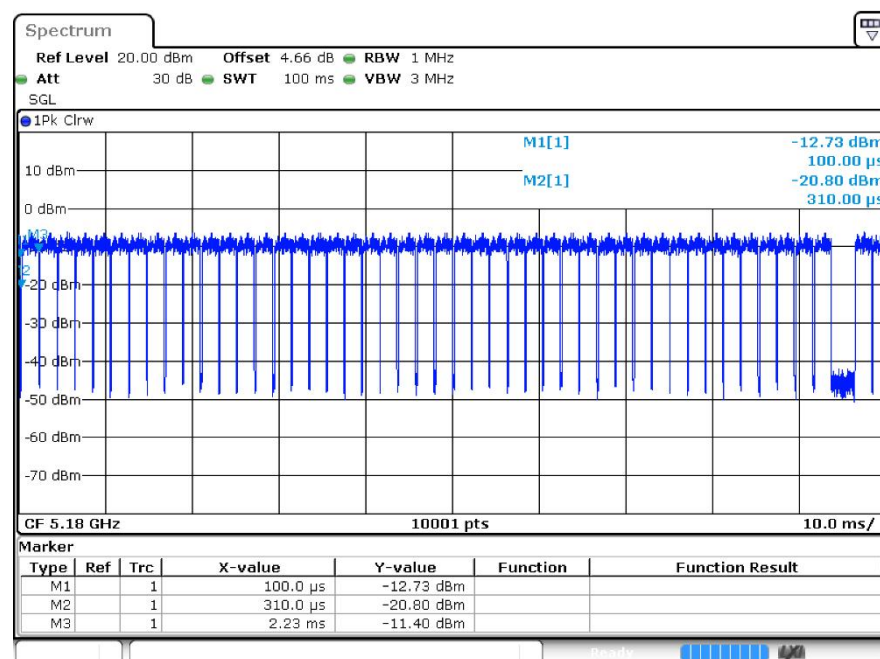
1.2 Test Graphs



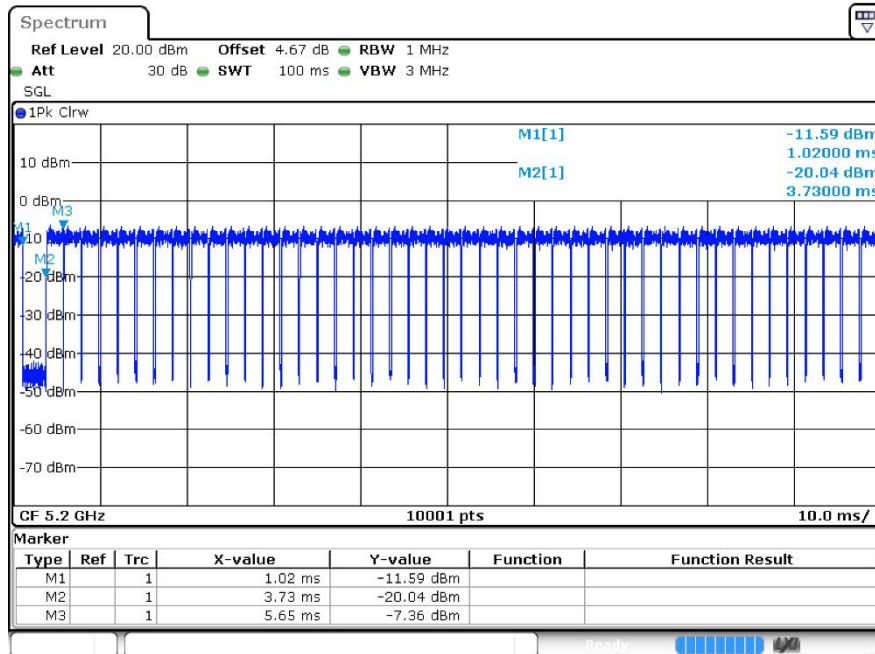
Duty Cycle a 5240MHz Ant1



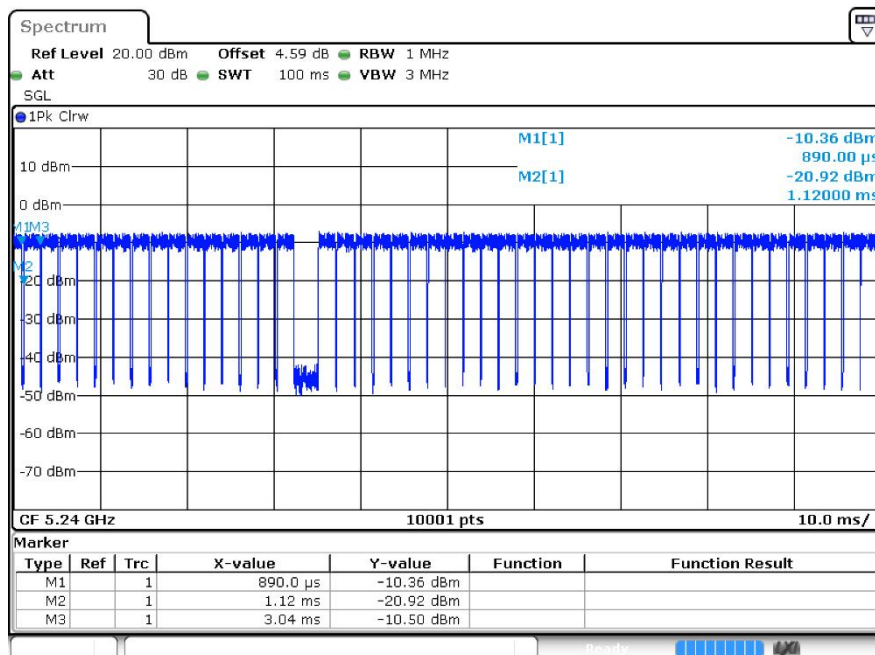
Duty Cycle n20 5180MHz Ant1



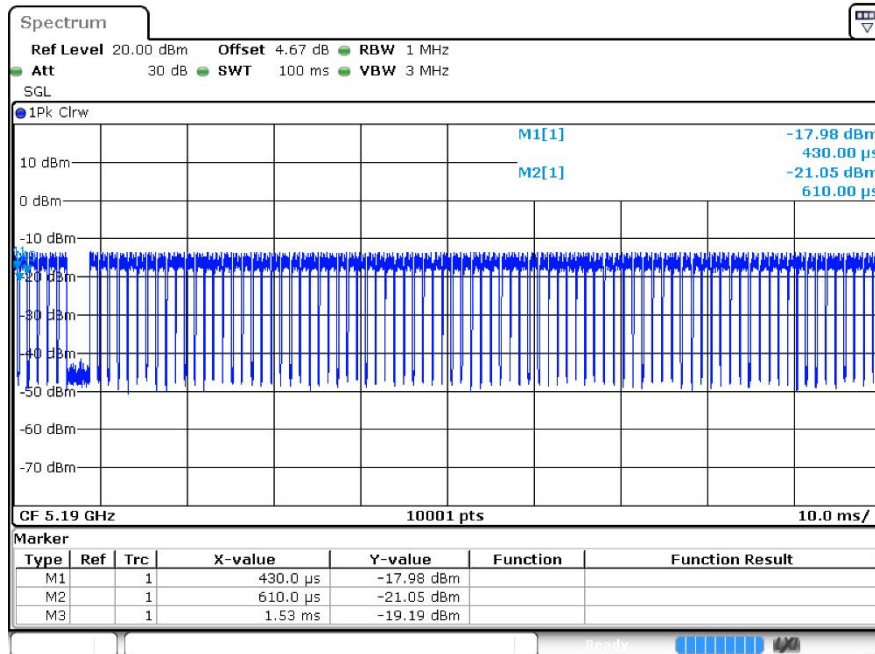
Duty Cycle n20 5200MHz Ant1



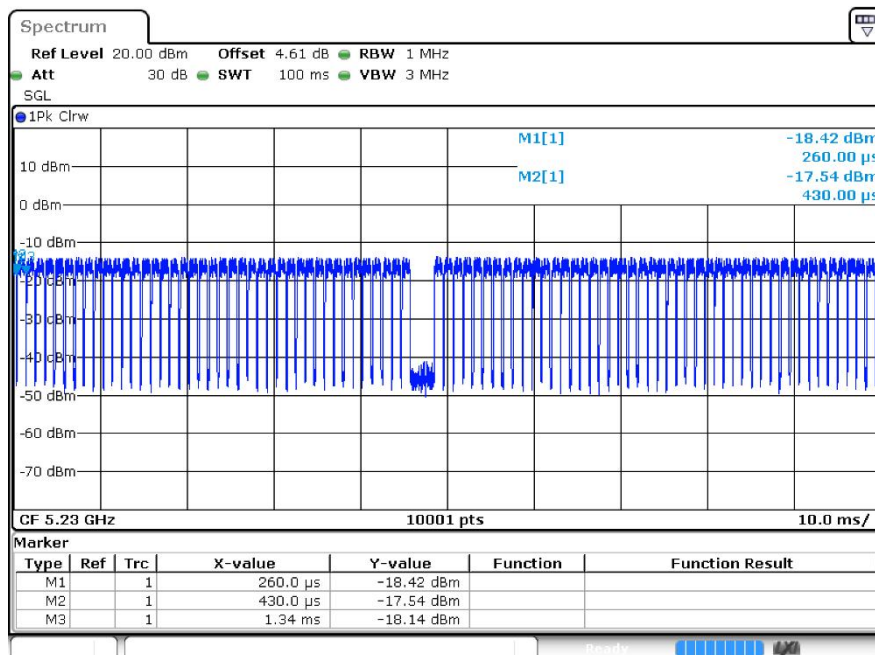
Duty Cycle n20 5240MHz Ant1



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	0.83	24	Pass
a	5200	Ant1	0.51	24	Pass
a	5240	Ant1	-0.1	24	Pass
n20	5180	Ant1	-0.59	24	Pass
n20	5200	Ant1	-0.78	24	Pass
n20	5240	Ant1	-0.94	24	Pass
n40	5190	Ant1	-0.59	24	Pass
n40	5230	Ant1	-0.77	24	Pass

Note:

The duty factor has been compensated into the result.

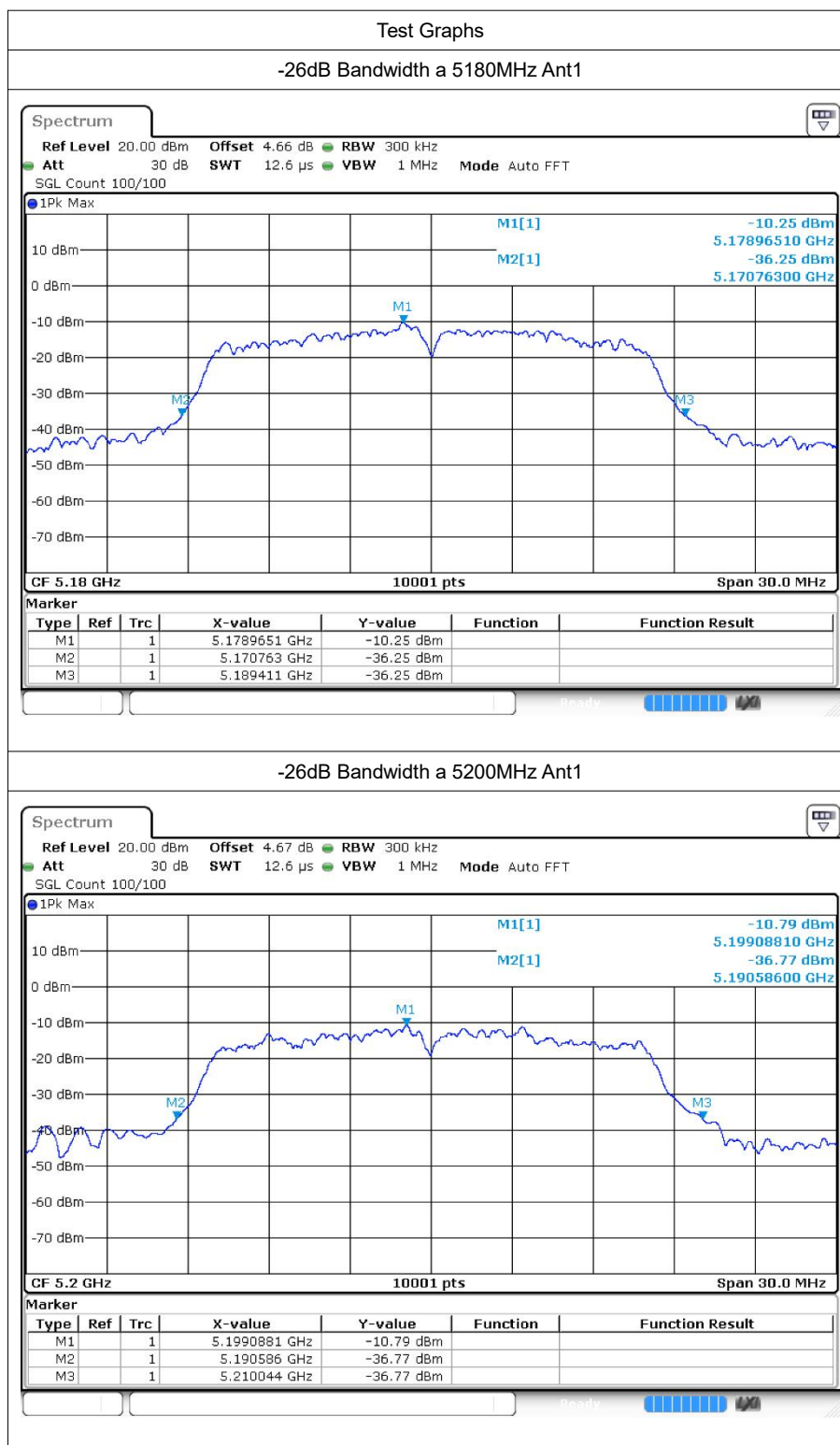


3 -26dB Bandwidth

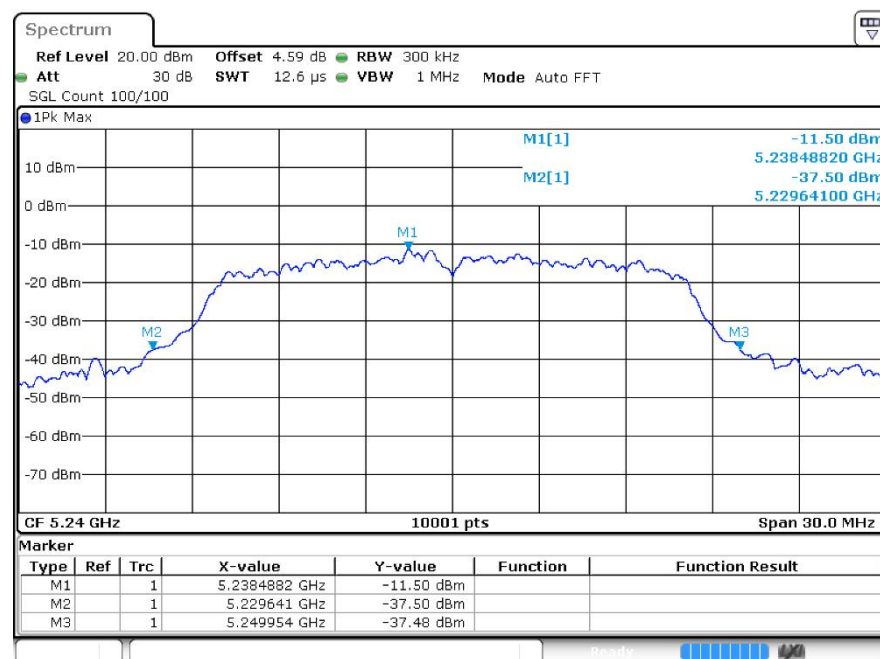
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
a	5180	Ant1	18.648	0.5	Pass
a	5200	Ant1	19.458	0.5	Pass
a	5240	Ant1	20.313	0.5	Pass
n20	5180	Ant1	20.352	0.5	Pass
n20	5200	Ant1	20.238	0.5	Pass
n20	5240	Ant1	20.238	0.5	Pass
n40	5190	Ant1	37.674	0.5	Pass
n40	5230	Ant1	37.572	0.5	Pass

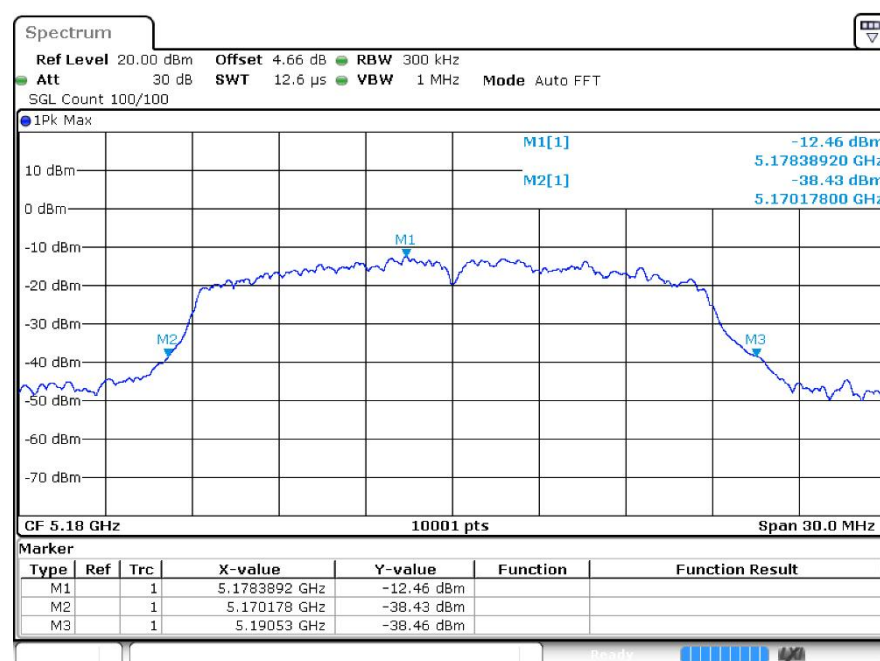
3.2 Test Graphs



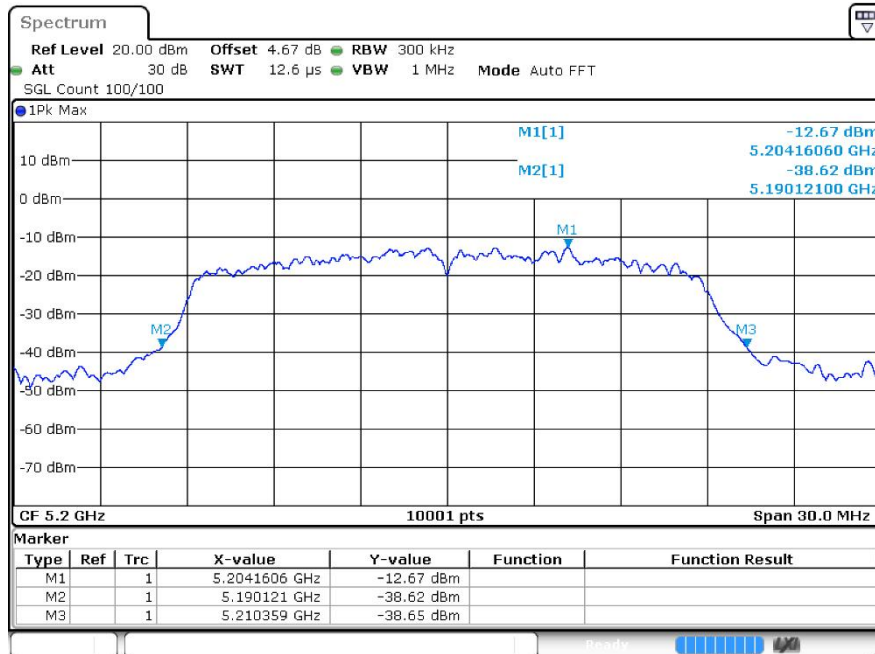
-26dB Bandwidth a 5240MHz Ant1



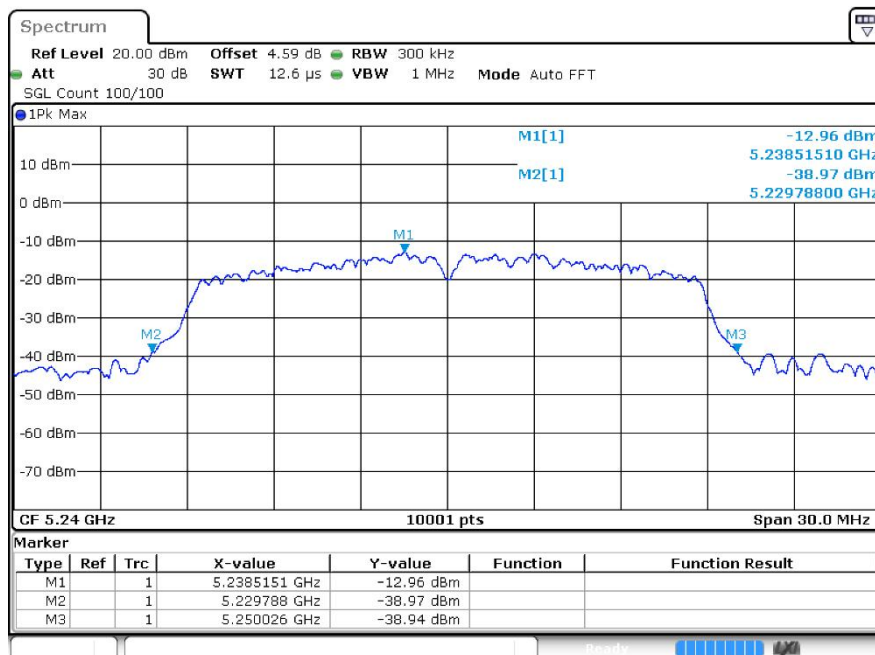
-26dB Bandwidth n20 5180MHz Ant1



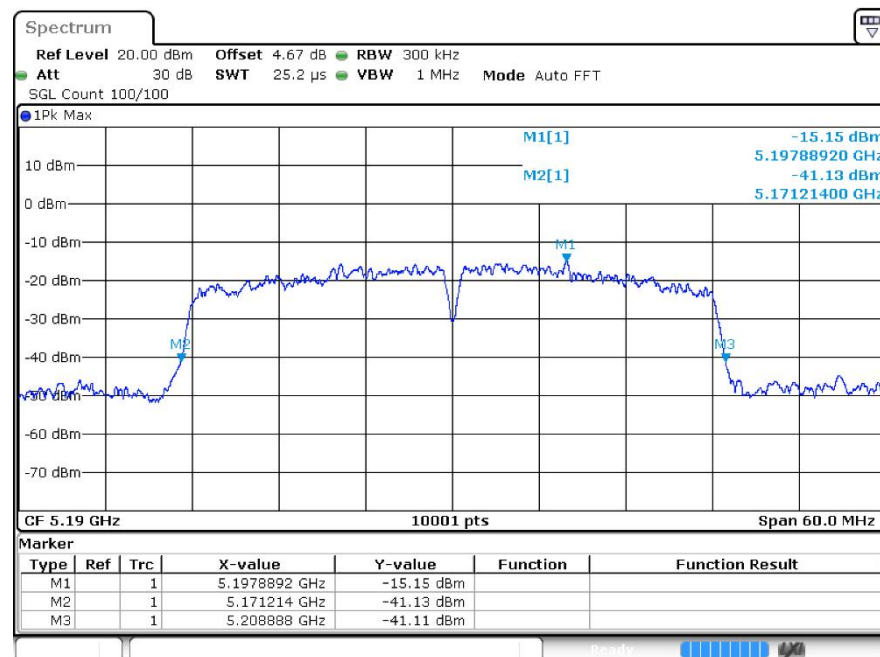
-26dB Bandwidth n20 5200MHz Ant1



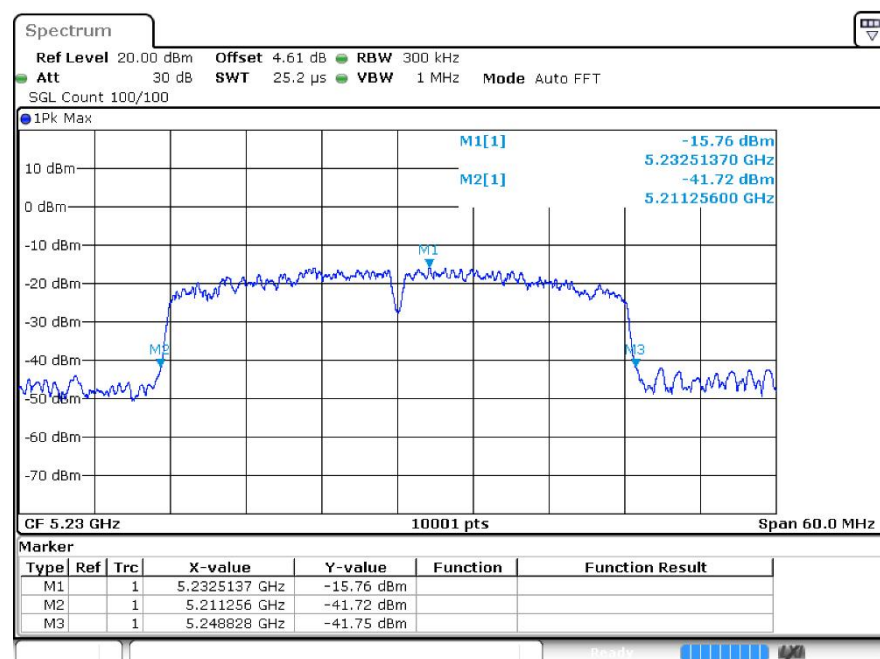
-26dB Bandwidth n20 5240MHz Ant1



-26dB Bandwidth n40 5190MHz Ant1



-26dB Bandwidth n40 5230MHz Ant1



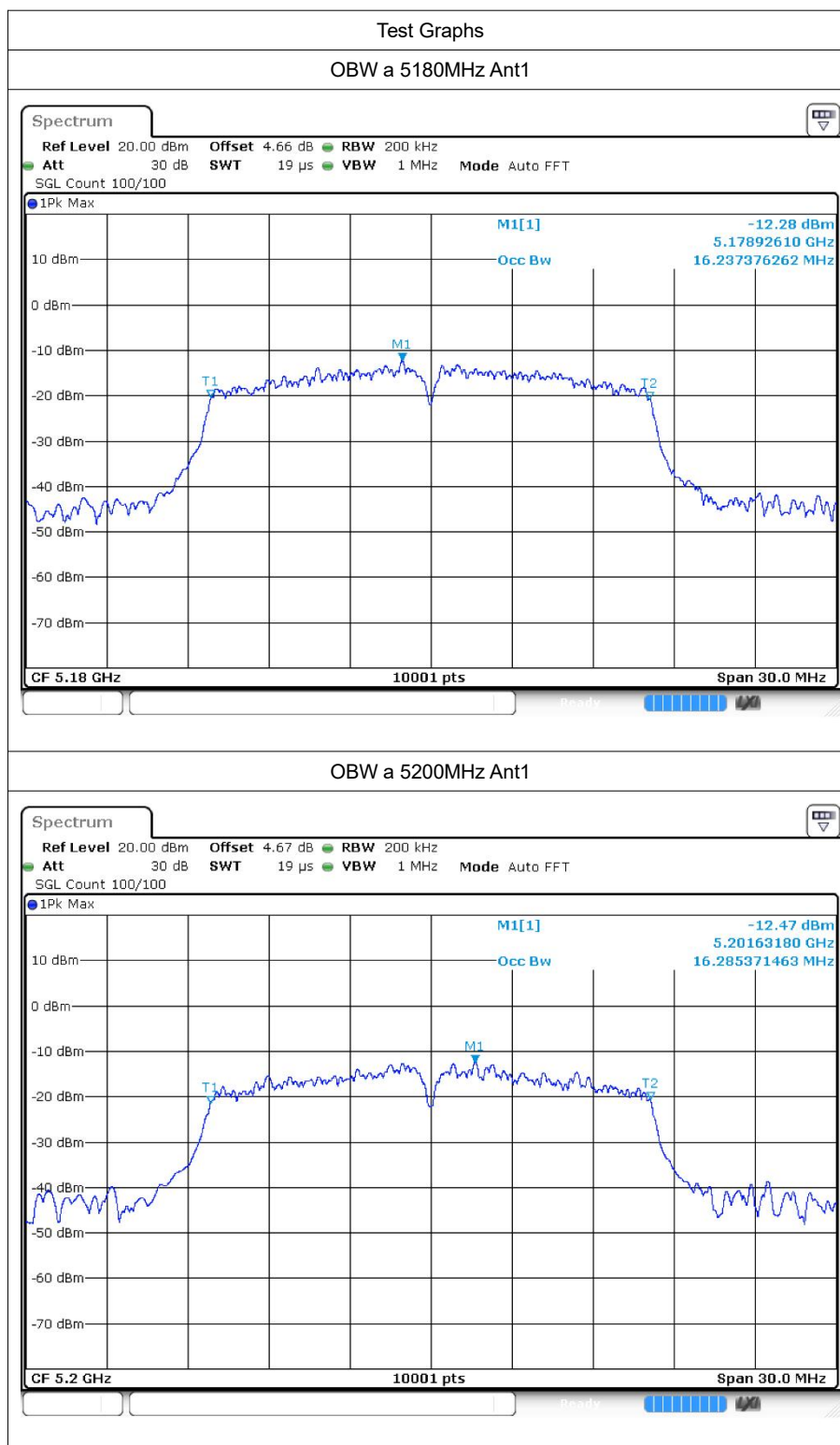


4 Occupied Channel Bandwidth

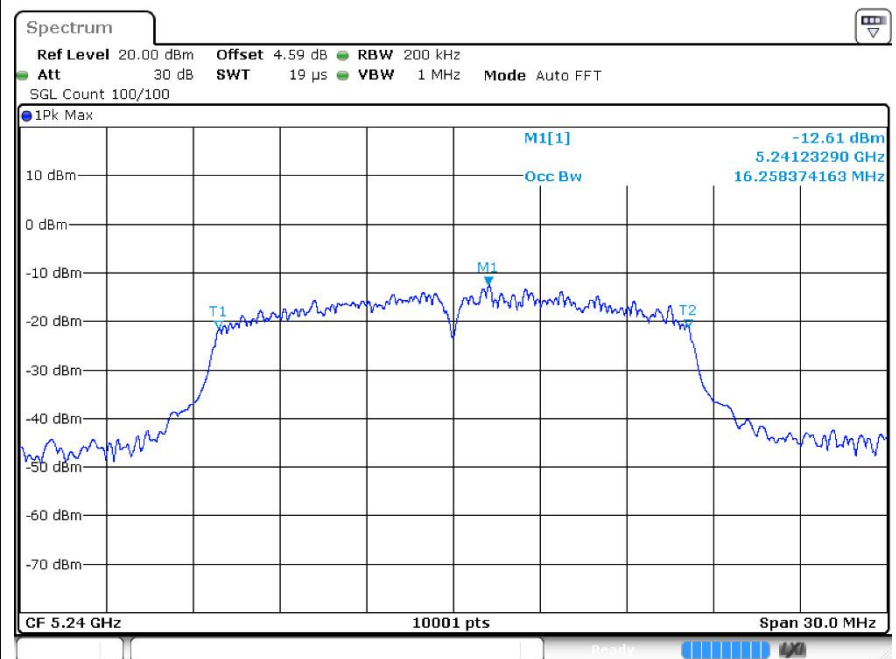
4.1 Test Result

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
a	5180	Ant1	16.237
a	5200	Ant1	16.285
a	5240	Ant1	16.258
n20	5180	Ant1	17.377
n20	5200	Ant1	17.332
n20	5240	Ant1	17.317
n40	5190	Ant1	35.324
n40	5230	Ant1	35.33

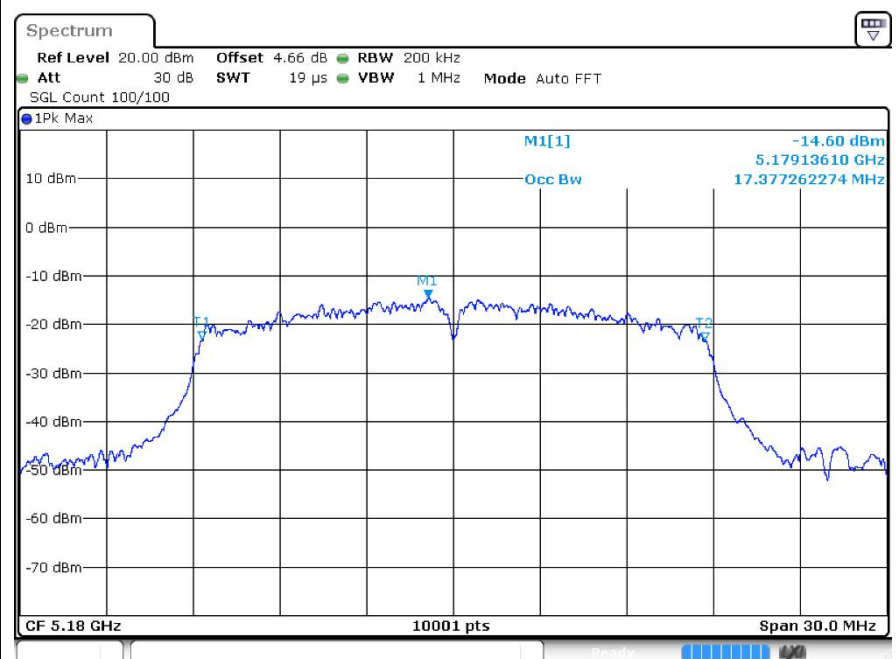
4.2 Test Graphs



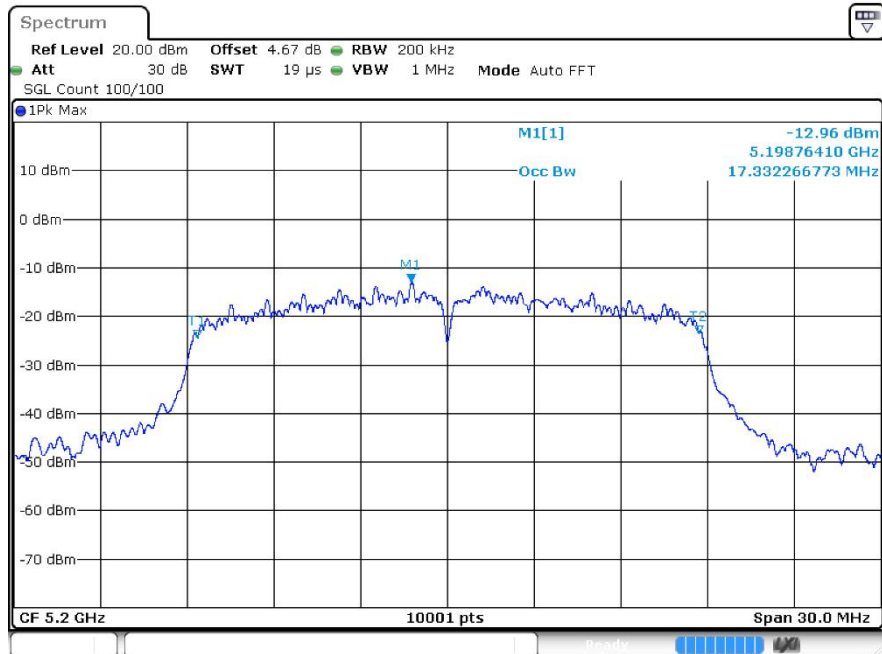
OBW a 5240MHz Ant1



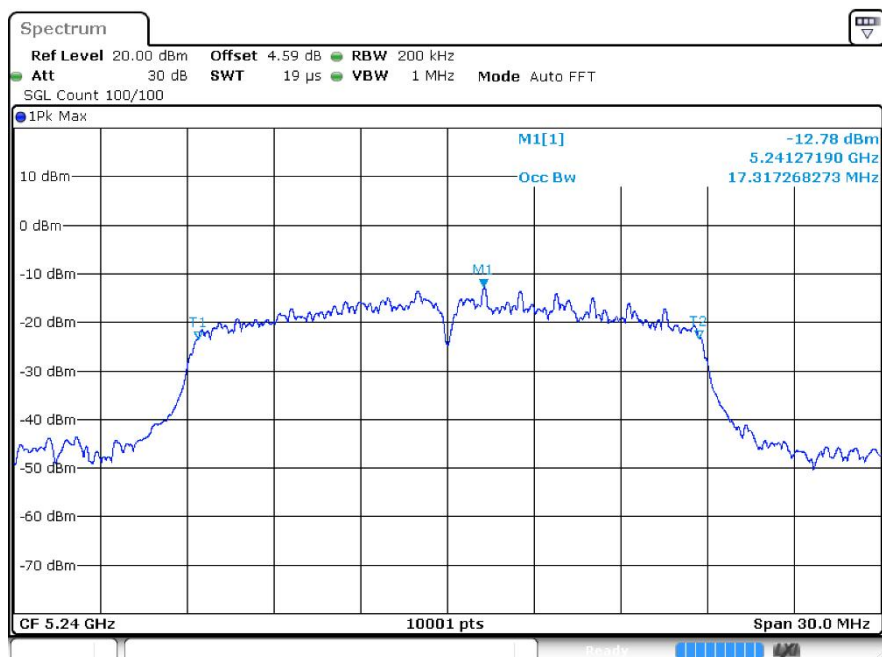
OBW n20 5180MHz Ant1



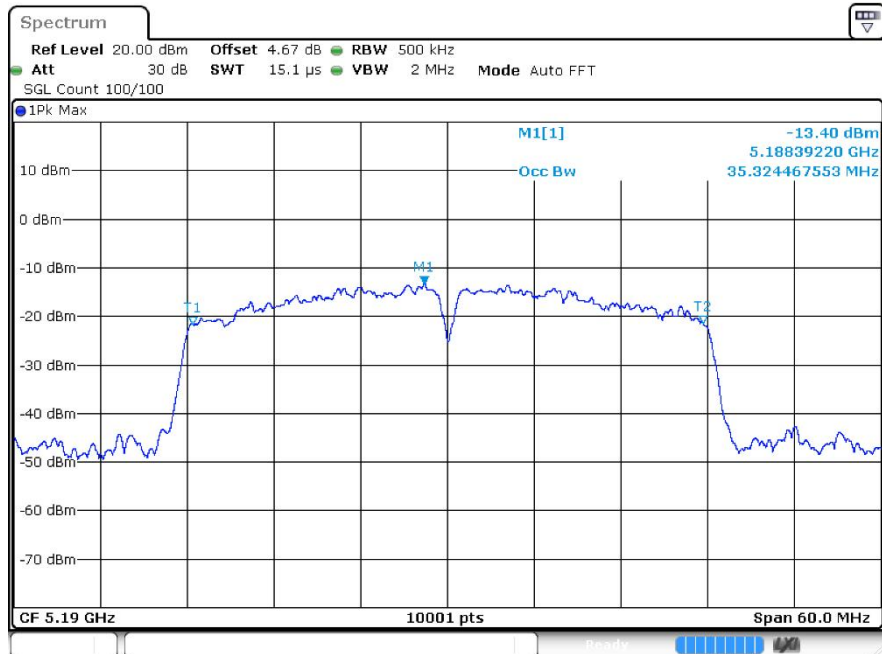
OBW n20 5200MHz Ant1



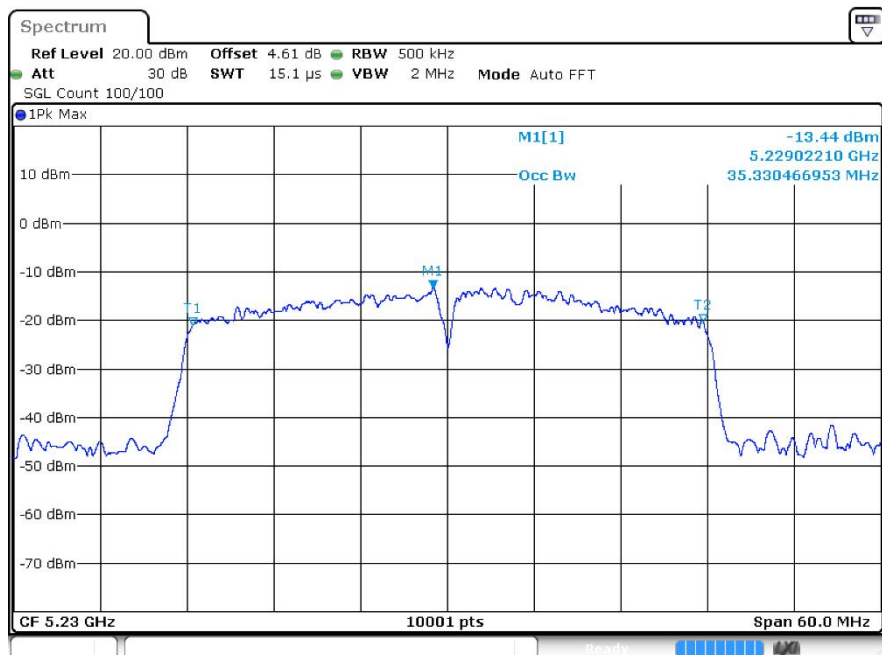
OBW n20 5240MHz Ant1



OBW n40 5190MHz Ant1



OBW n40 5230MHz Ant1

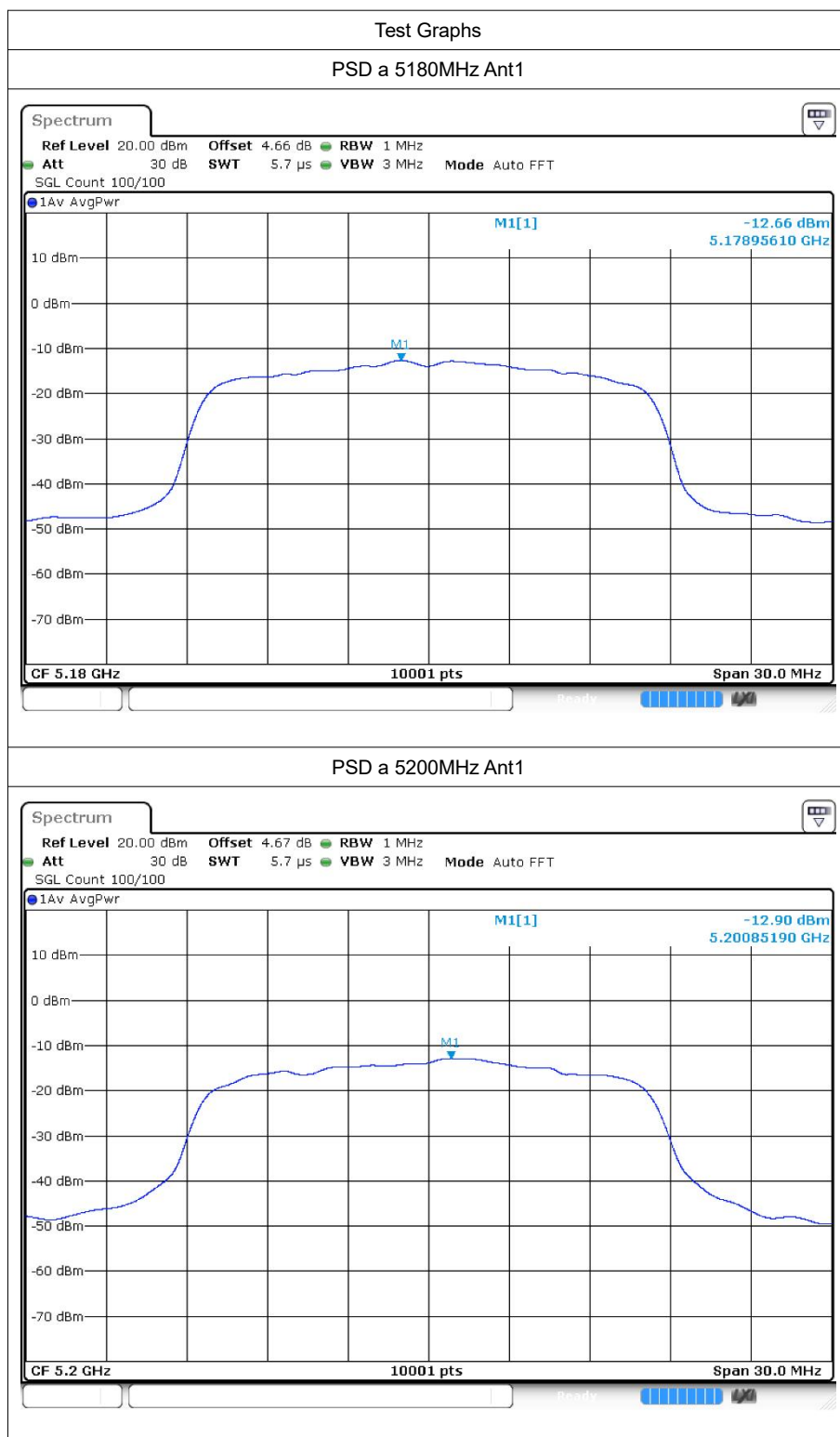


5 Maximum Power Spectral Density Level

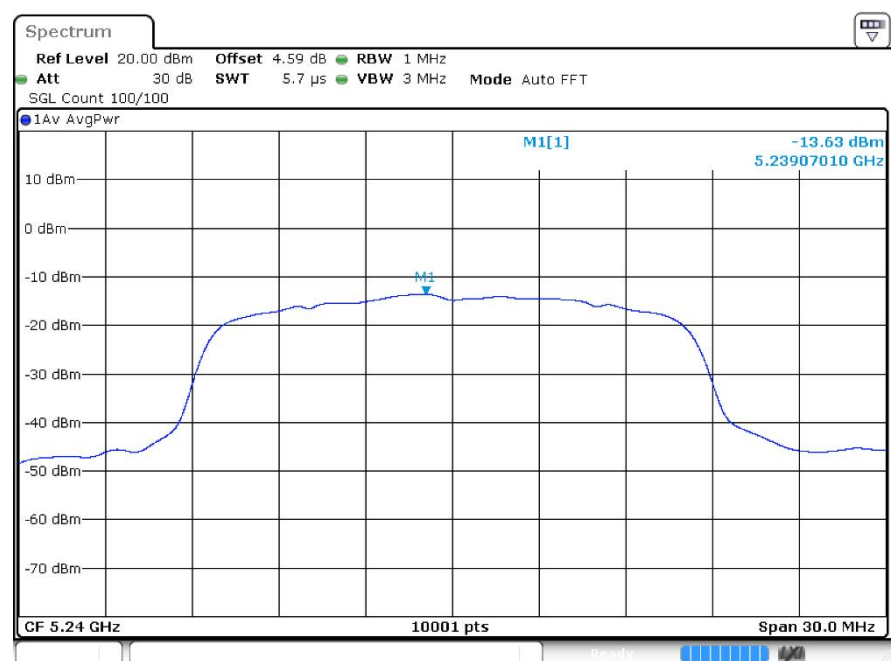
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
a	5180	Ant1	-12.66	0.31	-12.35	11	Pass
a	5200	Ant1	-12.9	0.31	-12.59	11	Pass
a	5240	Ant1	-13.63	0.32	-13.31	11	Pass
n20	5180	Ant1	-14.09	0.44	-13.65	11	Pass
n20	5200	Ant1	-14.3	0.45	-13.85	11	Pass
n20	5240	Ant1	-14.29	0.46	-13.83	11	Pass
n40	5190	Ant1	-16.82	0.89	-15.93	11	Pass
n40	5230	Ant1	-18.17	0.91	-17.26	11	Pass

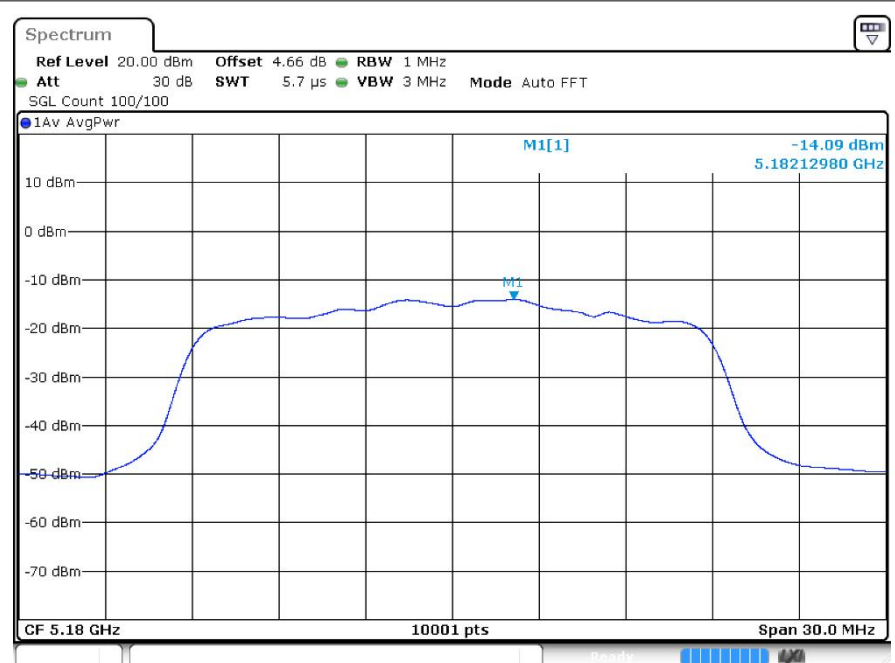
5.2 Test Graphs



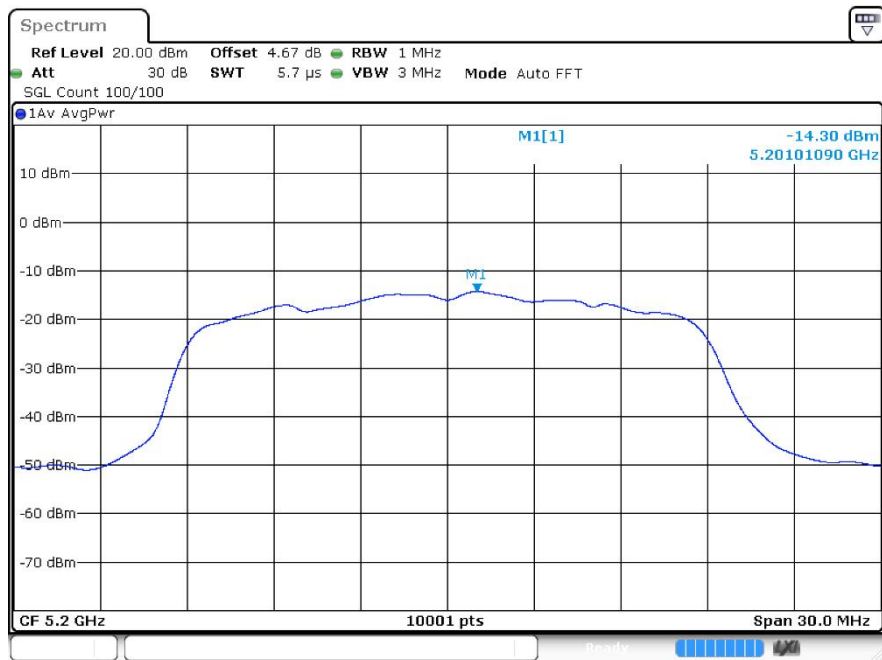
PSD a 5240MHz Ant1



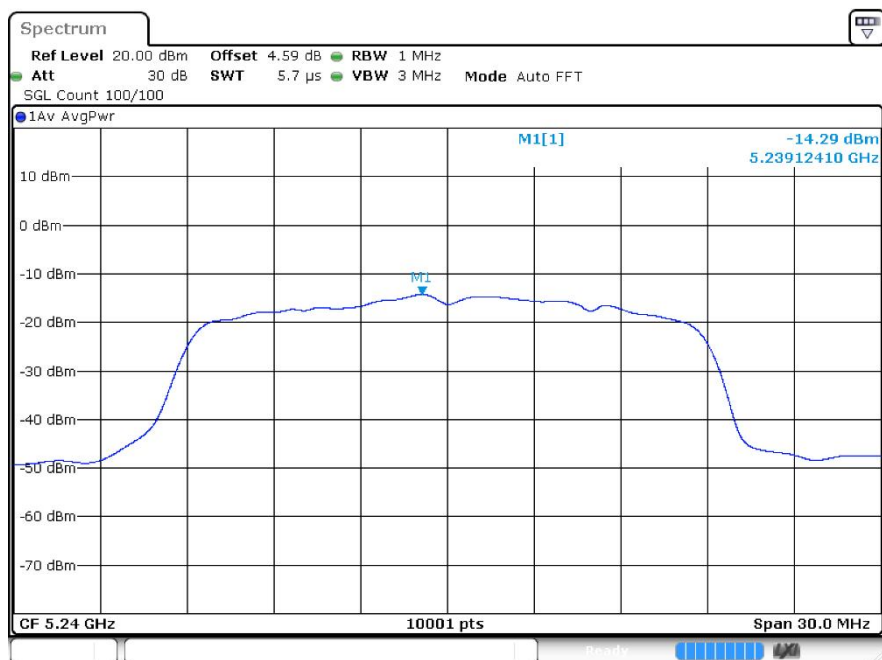
PSD n20 5180MHz Ant1



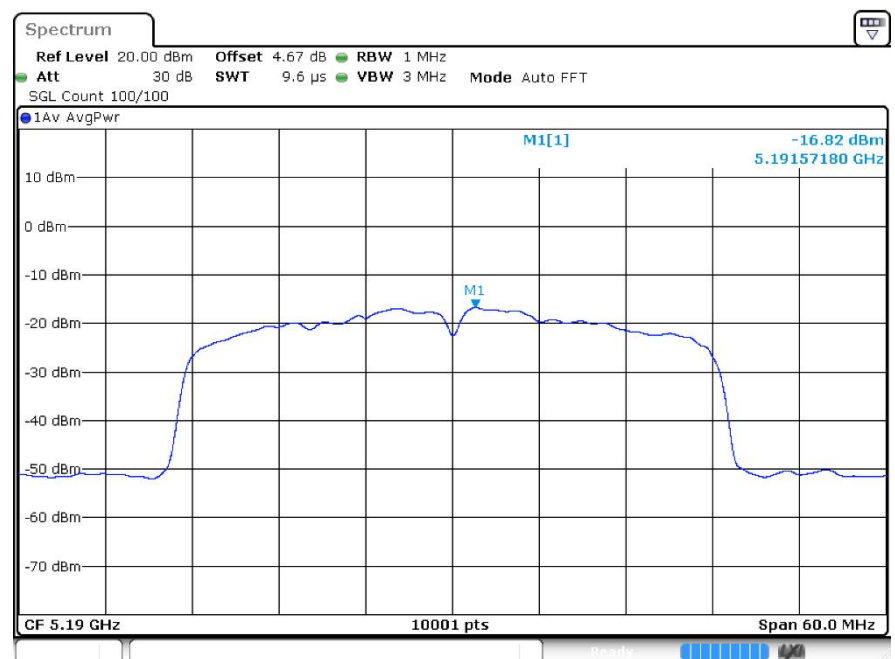
PSD n20 5200MHz Ant1



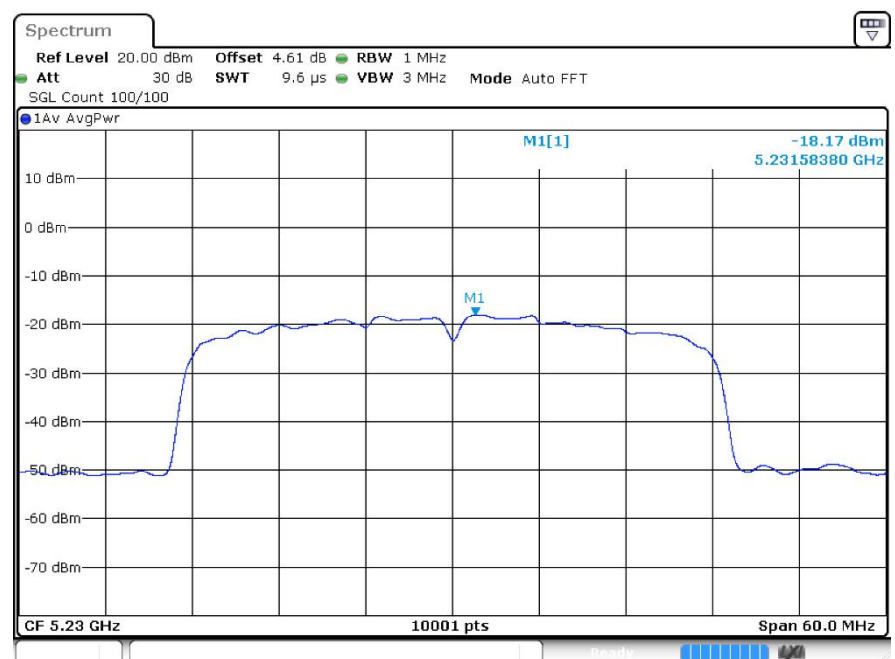
PSD n20 5240MHz Ant1



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 21.6V	a	5180	Ant1	5179.96	-40000	-7.72	25	Pass
20C 24V	a	5180	Ant1	5180	0	0	25	Pass
20C 26.4V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
-20C 24V	a	5180	Ant1	5179.96	-40000	-7.72	25	Pass
-10C 24V	a	5180	Ant1	5179.96	-40000	-7.72	25	Pass
0C 24V	a	5180	Ant1	5180.02	20000	3.86	25	Pass
10C 24V	a	5180	Ant1	5179.96	-40000	-7.72	25	Pass
30C 24V	a	5180	Ant1	5179.98	-20000	-3.86	25	Pass
40C 24V	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
50C 24V	a	5180	Ant1	5179.98	-20000	-3.86	25	Pass
20C 21.6V	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
20C 24V	a	5200	Ant1	5199.94	-60000	-11.54	25	Pass
20C 26.4V	a	5200	Ant1	5200	0	0	25	Pass
-20C 24V	a	5200	Ant1	5200	0	0	25	Pass
-10C 24V	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
0C 24V	a	5200	Ant1	5200.02	20000	3.85	25	Pass
10C 24V	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
30C 24V	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
40C 24V	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
20C 21.6V	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
20C 21.6V	a	5240	Ant1	5240.04	40000	7.63	25	Pass
20C 24V	a	5240	Ant1	5239.98	-20000	-3.82	25	Pass
20C 26.4V	a	5240	Ant1	5240	0	0	25	Pass
-20C 24V	a	5240	Ant1	5240.02	20000	3.82	25	Pass
-10C 24V	a	5240	Ant1	5240	0	0	25	Pass
0C 24V	a	5240	Ant1	5239.98	-20000	-3.82	25	Pass
10C 24V	a	5240	Ant1	5240	0	0	25	Pass
30C 24V	a	5240	Ant1	5240.02	20000	3.82	25	Pass
40C 24V	a	5240	Ant1	5240.02	20000	3.82	25	Pass
50C 24V	a	5240	Ant1	5240	0	0	25	Pass
20C 21.6V	n20	5180	Ant1	5180	0	0	25	Pass
20C 24V	n20	5180	Ant1	5180.02	20000	3.86	25	Pass
20C 26.4V	n20	5180	Ant1	5179.88	-120000	-23.17	25	Pass
-20C 24V	n20	5180	Ant1	5180.04	40000	7.72	25	Pass
-10C 24V	n20	5180	Ant1	5179.98	-20000	-3.86	25	Pass



0C 24V	n20	5180	Ant1	5180.02	20000	3.86	25	Pass
10C 24V	n20	5180	Ant1	5180.02	20000	3.86	25	Pass
30C 24V	n20	5180	Ant1	5180.06	60000	11.58	25	Pass
40C 24V	n20	5180	Ant1	5180.04	40000	7.72	25	Pass
50C 24V	n20	5180	Ant1	5180.06	60000	11.58	25	Pass
20C 21.6V	n20	5200	Ant1	5200.04	40000	7.69	25	Pass
20C 24V	n20	5200	Ant1	5200.02	20000	3.85	25	Pass
20C 26.4V	n20	5200	Ant1	5200.08	80000	15.38	25	Pass
-20C 24V	n20	5200	Ant1	5200.04	40000	7.69	25	Pass
-10C 24V	n20	5200	Ant1	5200.02	20000	3.85	25	Pass
0C 24V	n20	5200	Ant1	5200.02	20000	3.85	25	Pass
10C 24V	n20	5200	Ant1	5200.04	40000	7.69	25	Pass
30C 24V	n20	5200	Ant1	5200.04	40000	7.69	25	Pass
40C 24V	n20	5200	Ant1	5200.06	60000	11.54	25	Pass
50C 24V	n20	5200	Ant1	5200.08	80000	15.38	25	Pass
20C 21.6V	n20	5240	Ant1	5240.02	20000	3.82	25	Pass
20C 24V	n20	5240	Ant1	5240.02	20000	3.82	25	Pass
20C 26.4V	n20	5240	Ant1	5240.02	20000	3.82	25	Pass
-20C 24V	n20	5240	Ant1	5240	0	0	25	Pass
-10C 24V	n20	5240	Ant1	5240.04	40000	7.63	25	Pass
0C 24V	n20	5240	Ant1	5240	0	0	25	Pass
10C 24V	n20	5240	Ant1	5240	0	0	25	Pass
30C 24V	n20	5240	Ant1	5240	0	0	25	Pass
40C 24V	n20	5240	Ant1	5240.02	20000	3.82	25	Pass
50C 24V	n20	5240	Ant1	5240.02	20000	3.82	25	Pass
20C 21.6V	n40	5190	Ant1	5190.04	40000	7.71	25	Pass
20C 24V	n40	5190	Ant1	5190.04	40000	7.71	25	Pass
20C 26.4V	n40	5190	Ant1	5190.08	80000	15.41	25	Pass
-20C 24V	n40	5190	Ant1	5190.08	80000	15.41	25	Pass
-10C 24V	n40	5190	Ant1	5190	0	0	25	Pass
0C 24V	n40	5190	Ant1	5190	0	0	25	Pass
10C 24V	n40	5190	Ant1	5190	0	0	25	Pass
30C 24V	n40	5190	Ant1	5190	0	0	25	Pass
40C 24V	n40	5190	Ant1	5190	0	0	25	Pass
50C 24V	n40	5190	Ant1	5190	0	0	25	Pass
20C 21.6V	n40	5230	Ant1	5230.04	40000	7.65	25	Pass
20C 24V	n40	5230	Ant1	5230	0	0	25	Pass
20C 26.4V	n40	5230	Ant1	5230	0	0	25	Pass
-20C 24V	n40	5230	Ant1	5230.04	40000	7.65	25	Pass
-10C 24V	n40	5230	Ant1	5230.04	40000	7.65	25	Pass
0C 24V	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
10C 24V	n40	5230	Ant1	5230	0	0	25	Pass
30C 24V	n40	5230	Ant1	5230	0	0	25	Pass



40C 24V	n40	5230	Ant1	5230	0	0	25	Pass
50C 24V	n40	5230	Ant1	5230	0	0	25	Pass

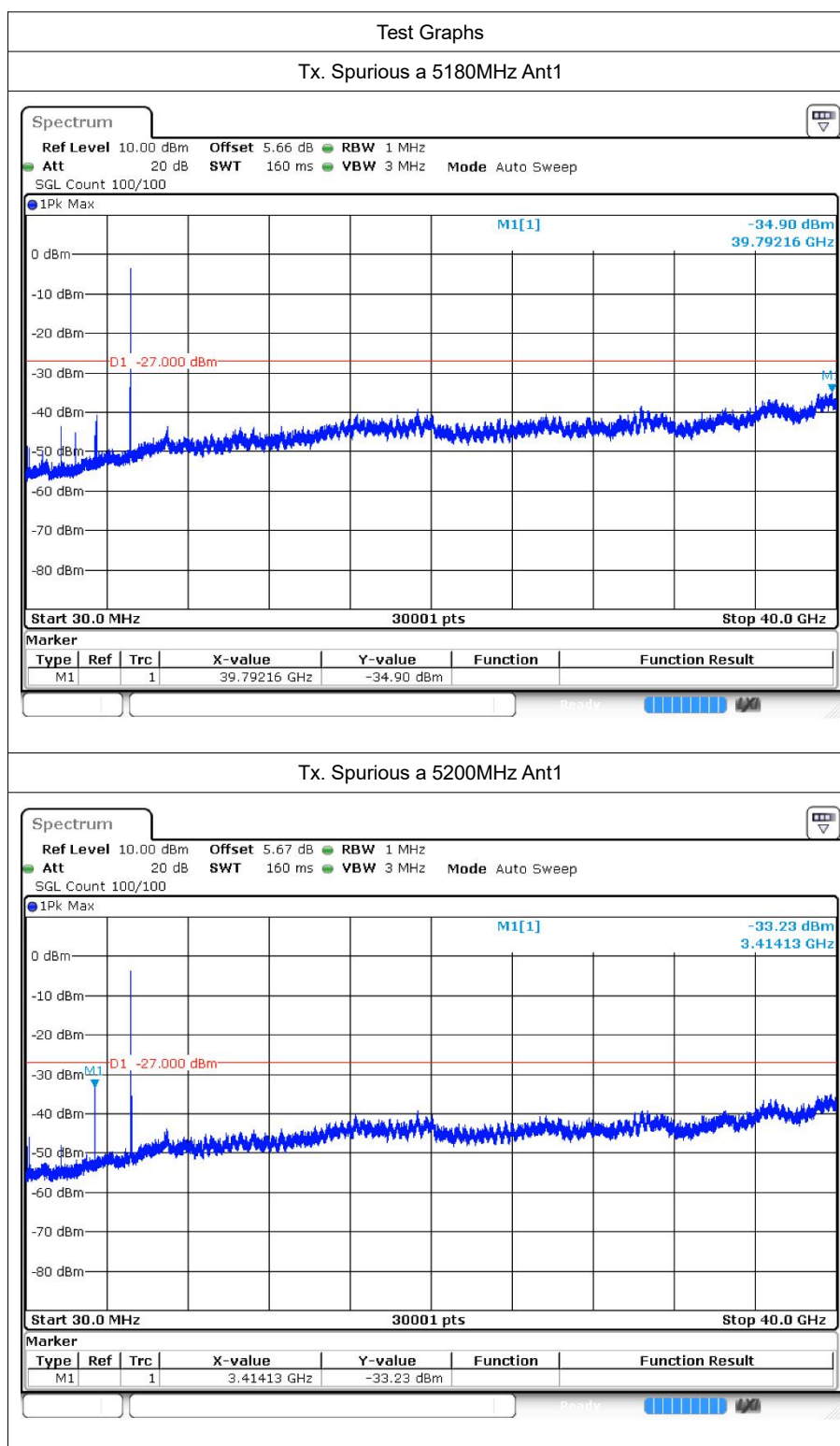


7 Conducted RF Spurious Emission

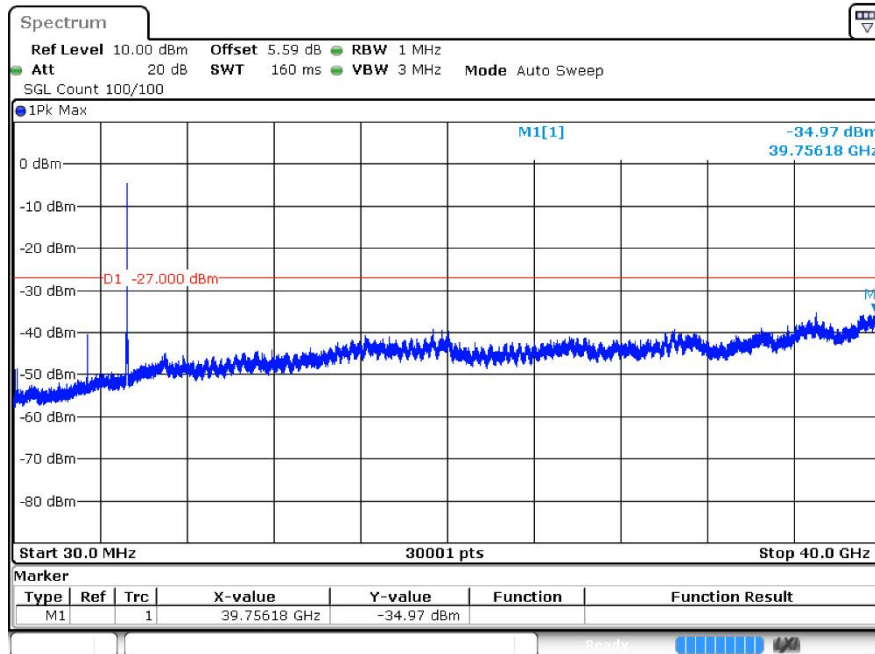
7.1 Test Result

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
a	5180	Ant1	-34.9	-27	Pass
a	5200	Ant1	-33.23	-27	Pass
a	5240	Ant1	-34.97	-27	Pass
n20	5180	Ant1	-33.25	-27	Pass
n20	5200	Ant1	-34.85	-27	Pass
n20	5240	Ant1	-34.55	-27	Pass
n40	5190	Ant1	-34.45	-27	Pass
n40	5230	Ant1	-34.94	-27	Pass

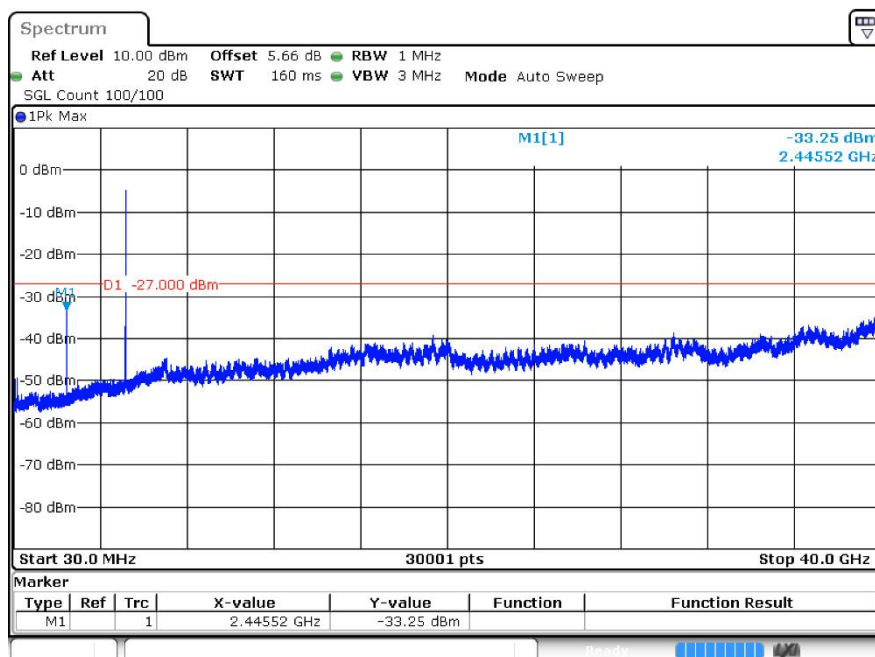
7.2 Test Graphs



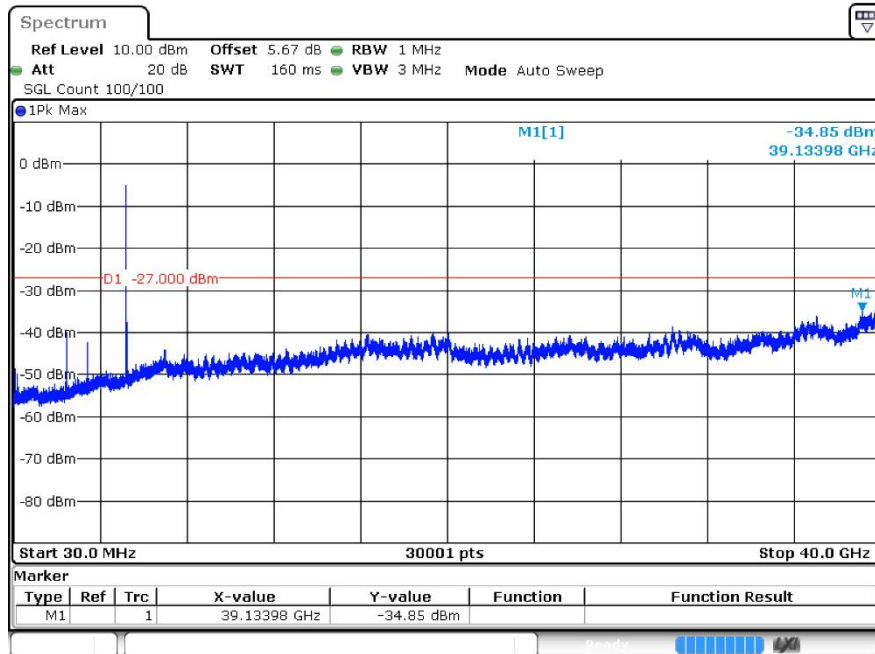
Tx. Spurious a 5240MHz Ant1



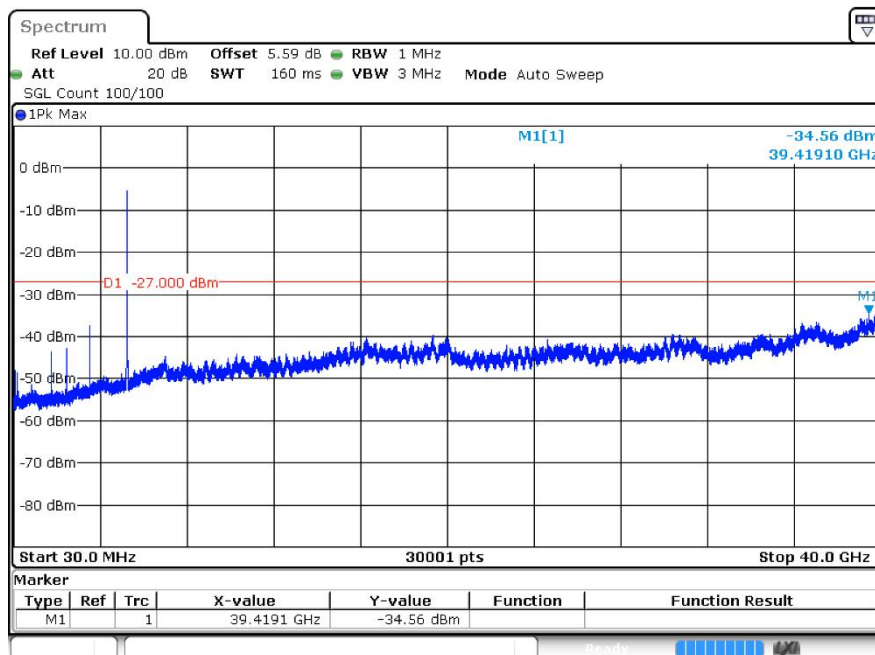
Tx. Spurious n20 5180MHz Ant1



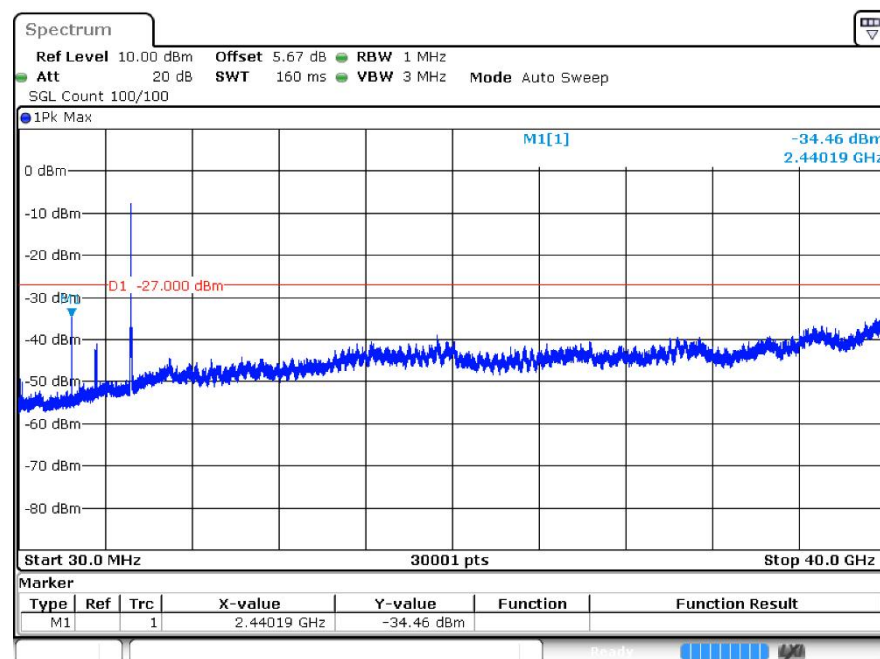
Tx. Spurious n20 5200MHz Ant1



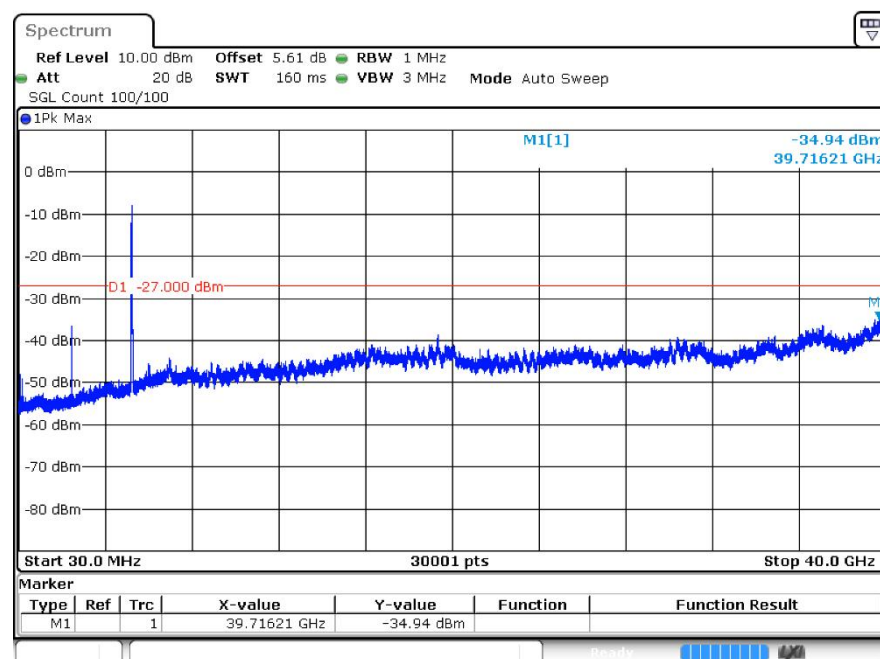
Tx. Spurious n20 5240MHz Ant1



Tx. Spurious n40 5190MHz Ant1



Tx. Spurious n40 5230MHz Ant1



---The End---