



Appendix RF test data for 5G WIFI Module 2

Product Name: Car Video Box

Trade Mark: N/A

Test Model: Y4

Environmental Conditions

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



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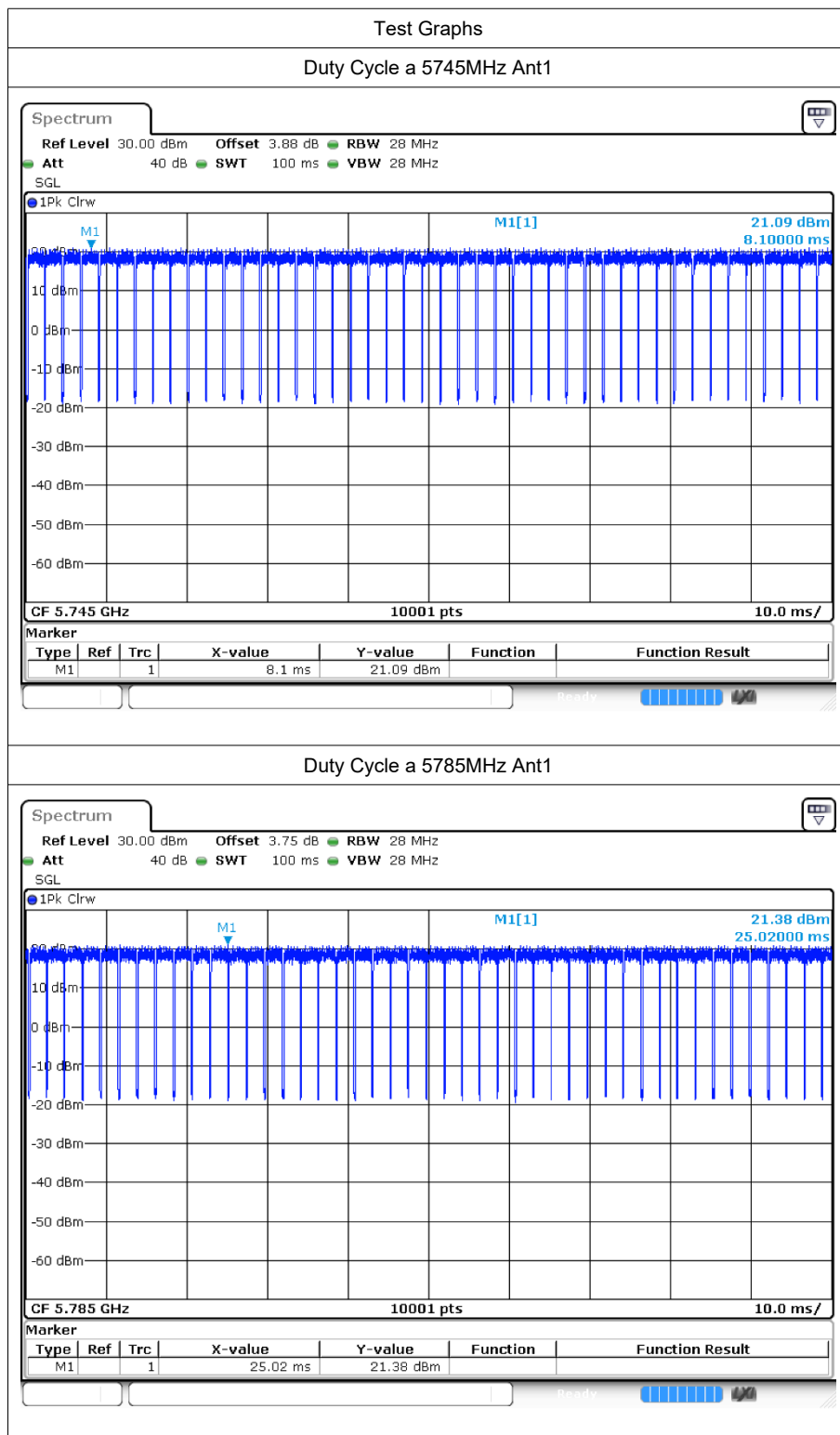
1 Duty Cycle

1.1 Test Result

Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5745	Ant1	100	0	0
a	5785	Ant1	100	0	0
a	5825	Ant1	100	0	0
n20	5745	Ant1	100	0	0
n20	5785	Ant1	100	0	0
n20	5825	Ant1	100	0	0
n40	5755	Ant1	100	0	0
n40	5795	Ant1	100	0	0

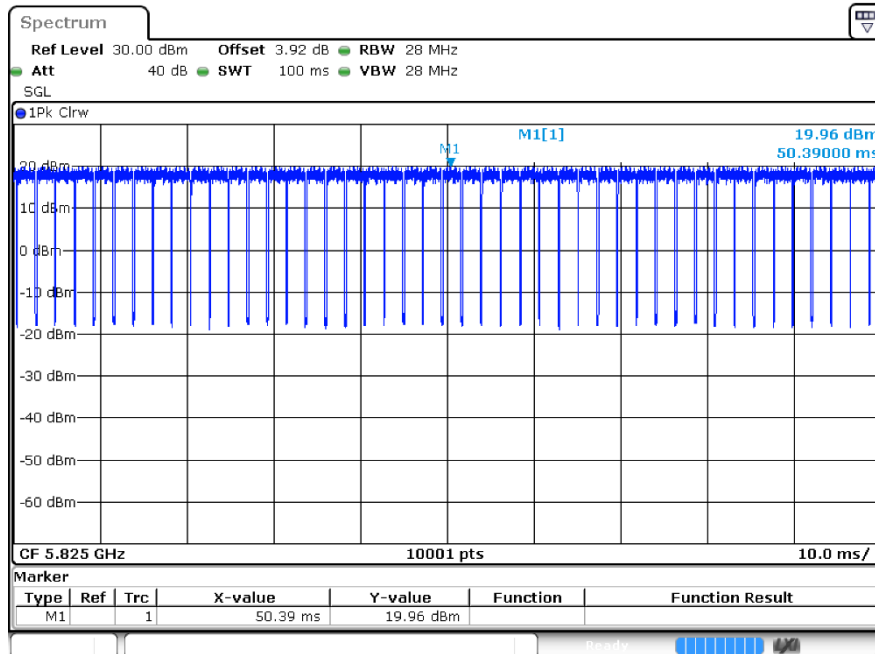


1.2 Test Graphs

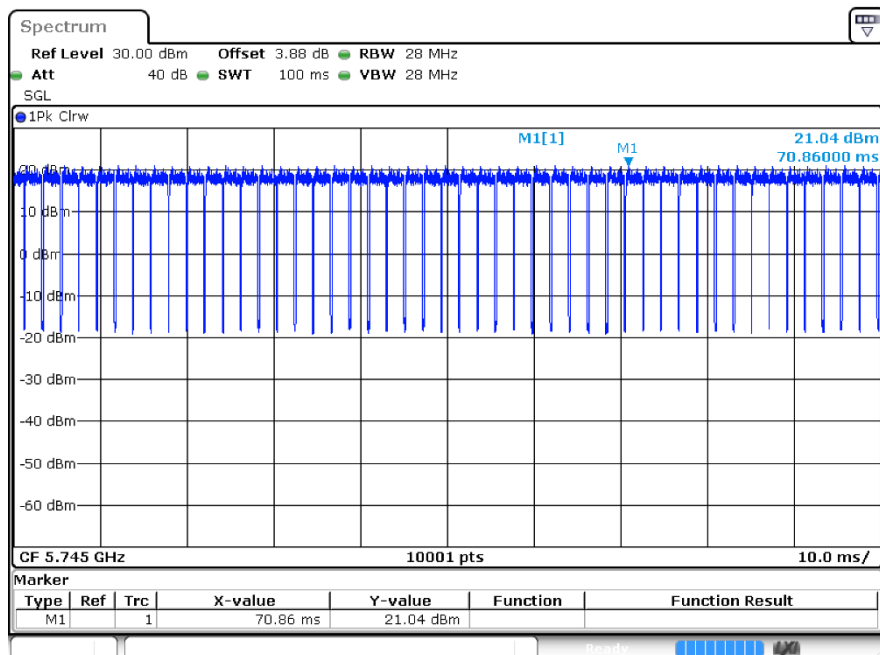


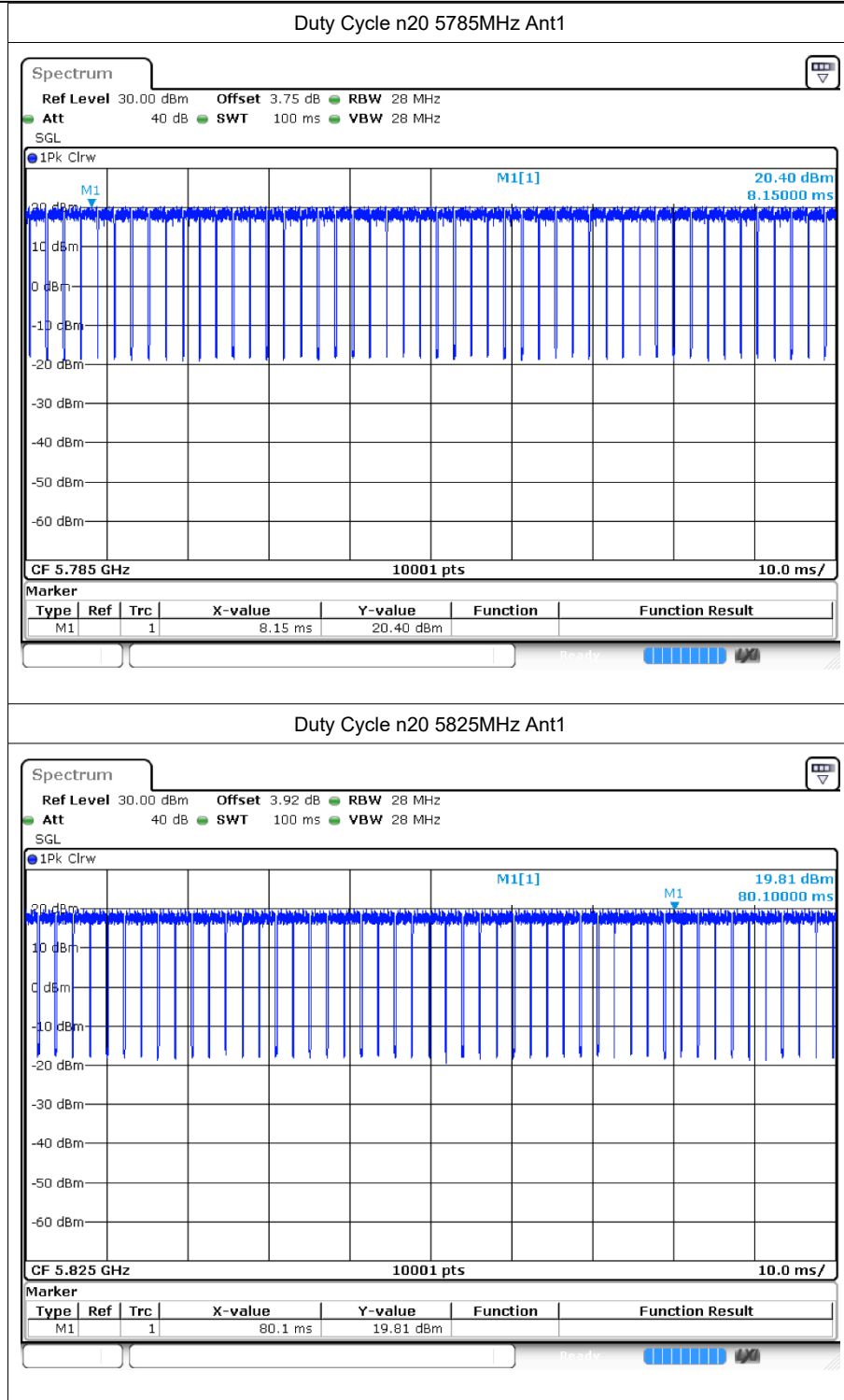


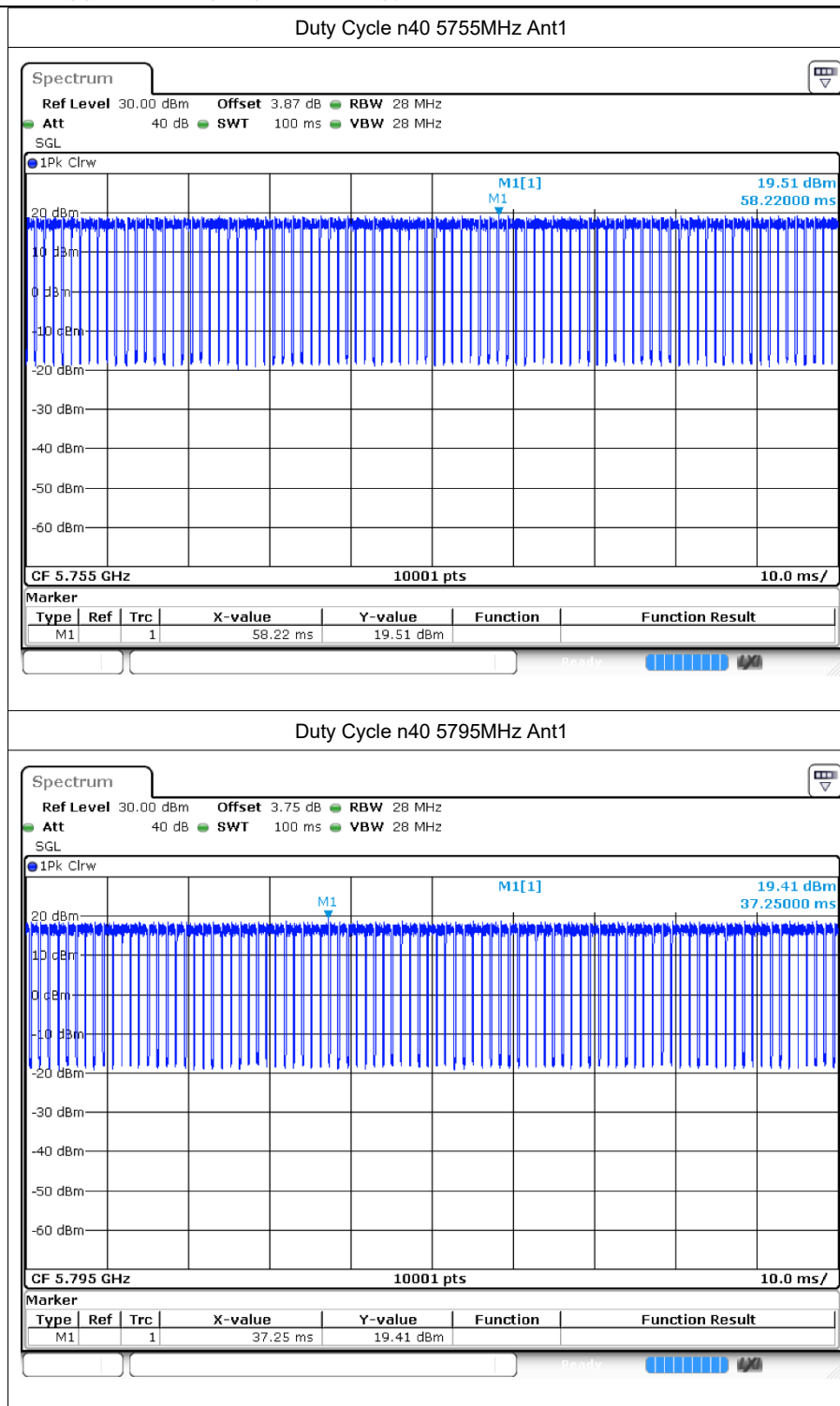
Duty Cycle a 5825MHz Ant1



Duty Cycle n20 5745MHz Ant1









2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
a	5745	Ant1	14.22	30	Pass
a	5785	Ant1	14.02	30	Pass
a	5825	Ant1	13.66	30	Pass
n20	5745	Ant1	13.87	30	Pass
n20	5785	Ant1	13.82	30	Pass
n20	5825	Ant1	13.5	30	Pass
n40	5755	Ant1	12.92	30	Pass
n40	5795	Ant1	12.67	30	Pass
ac20	5745	Ant1	14.22	30	Pass

Note:

The duty factor has been compensated into the result.

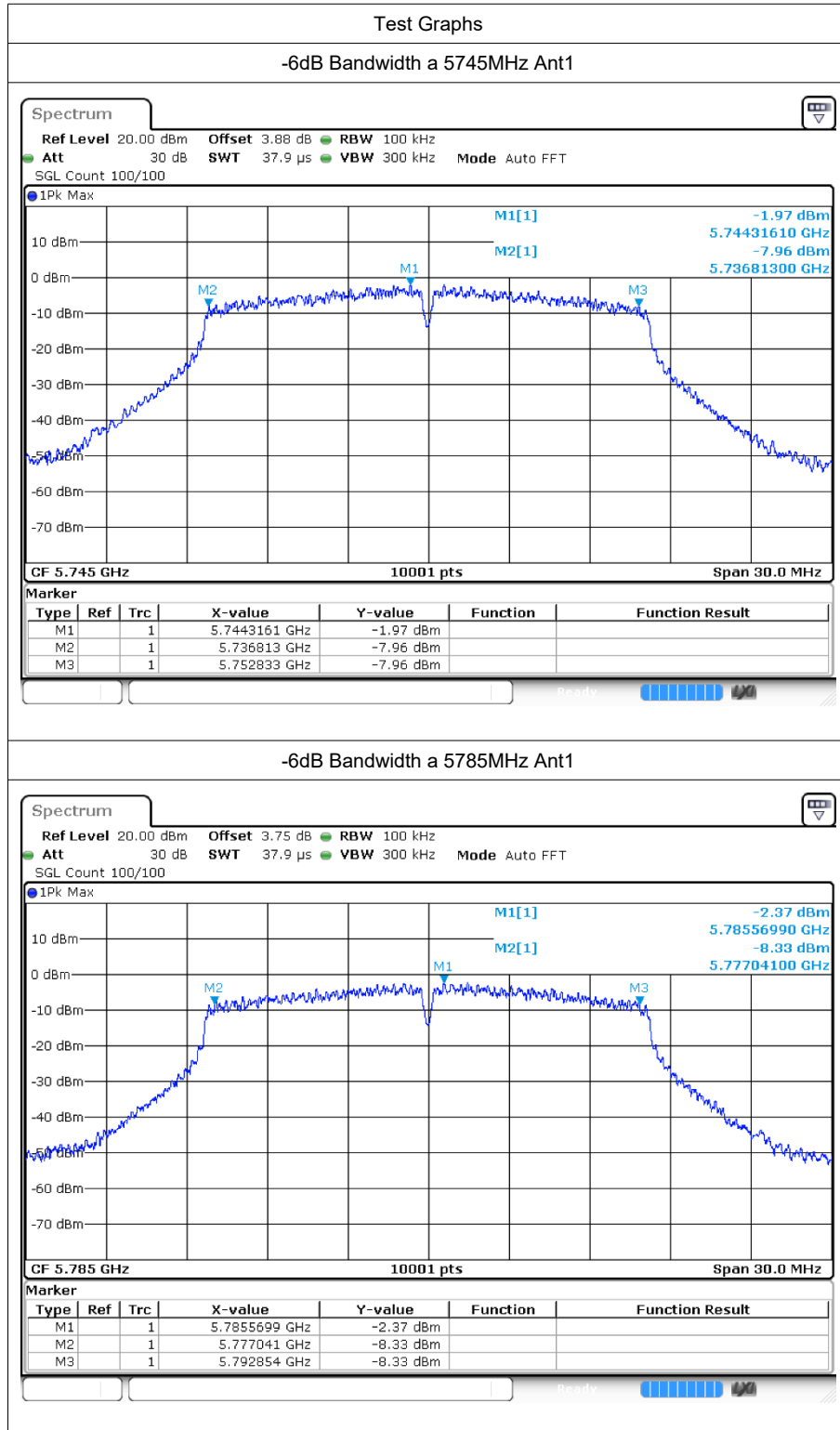


3 -6dB Bandwidth

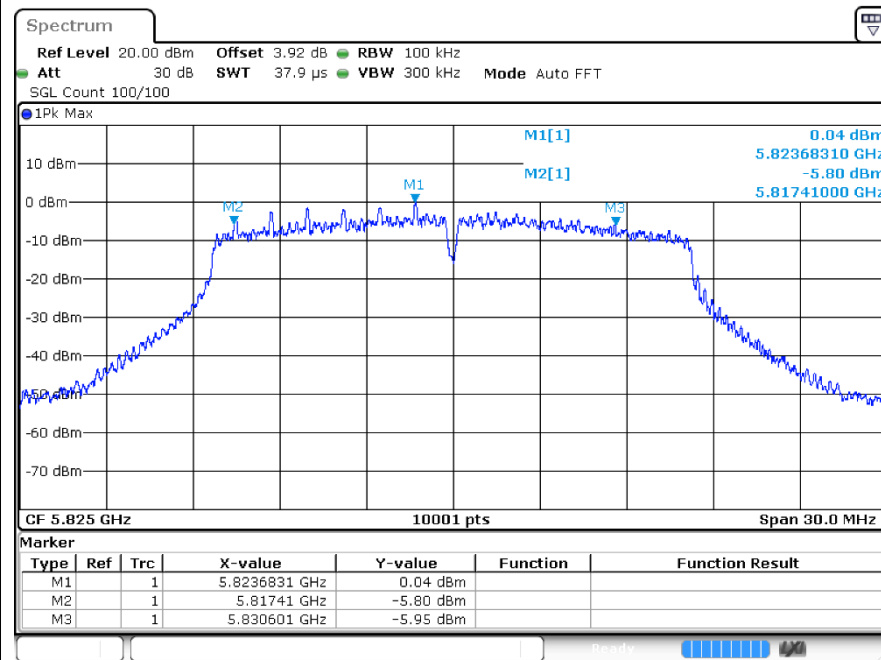
3.1 Test Result

Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
a	5745	Ant1	16.02	0.5	Pass
a	5785	Ant1	15.813	0.5	Pass
a	5825	Ant1	13.191	0.5	Pass
n20	5745	Ant1	14.085	0.5	Pass
n20	5785	Ant1	14.436	0.5	Pass
n20	5825	Ant1	15.054	0.5	Pass
n40	5755	Ant1	31.674	0.5	Pass
n40	5795	Ant1	25.116	0.5	Pass

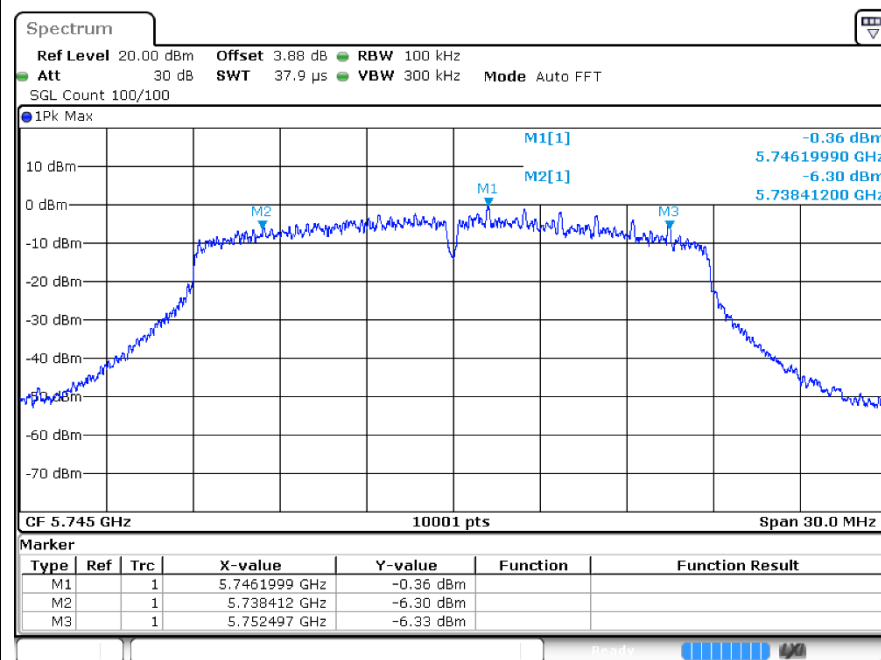
3.2 Test Graphs



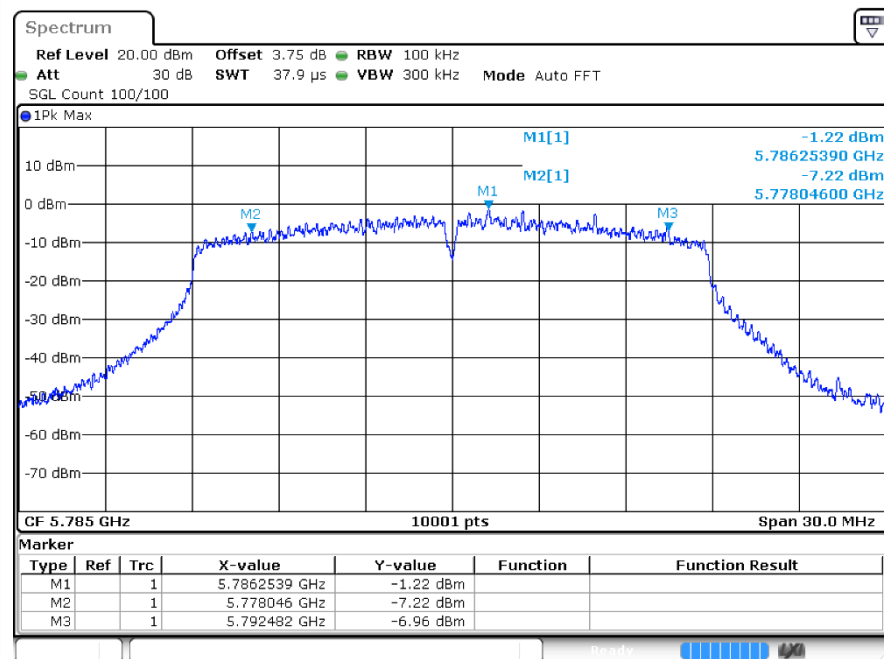
-6dB Bandwidth a 5825MHz Ant1



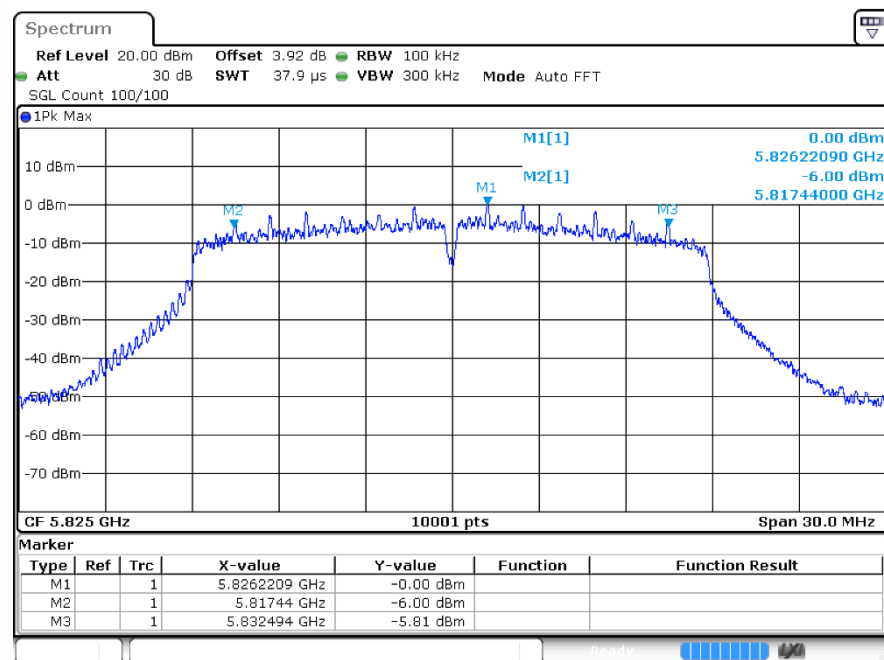
-6dB Bandwidth n20 5745MHz Ant1



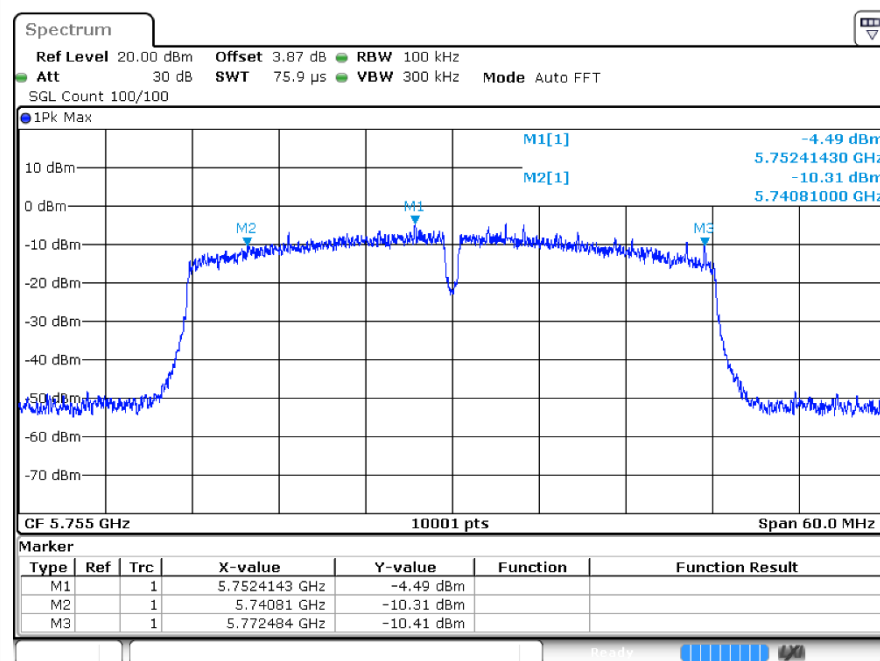
-6dB Bandwidth n20 5785MHz Ant1



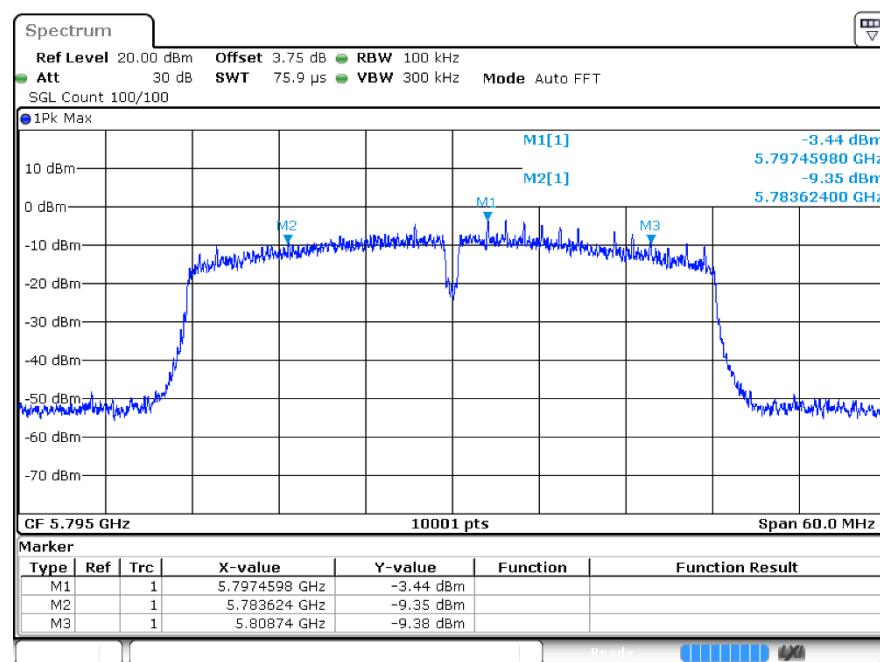
-6dB Bandwidth n20 5825MHz Ant1



-6dB Bandwidth n40 5755MHz Ant1



-6dB Bandwidth n40 5795MHz Ant1



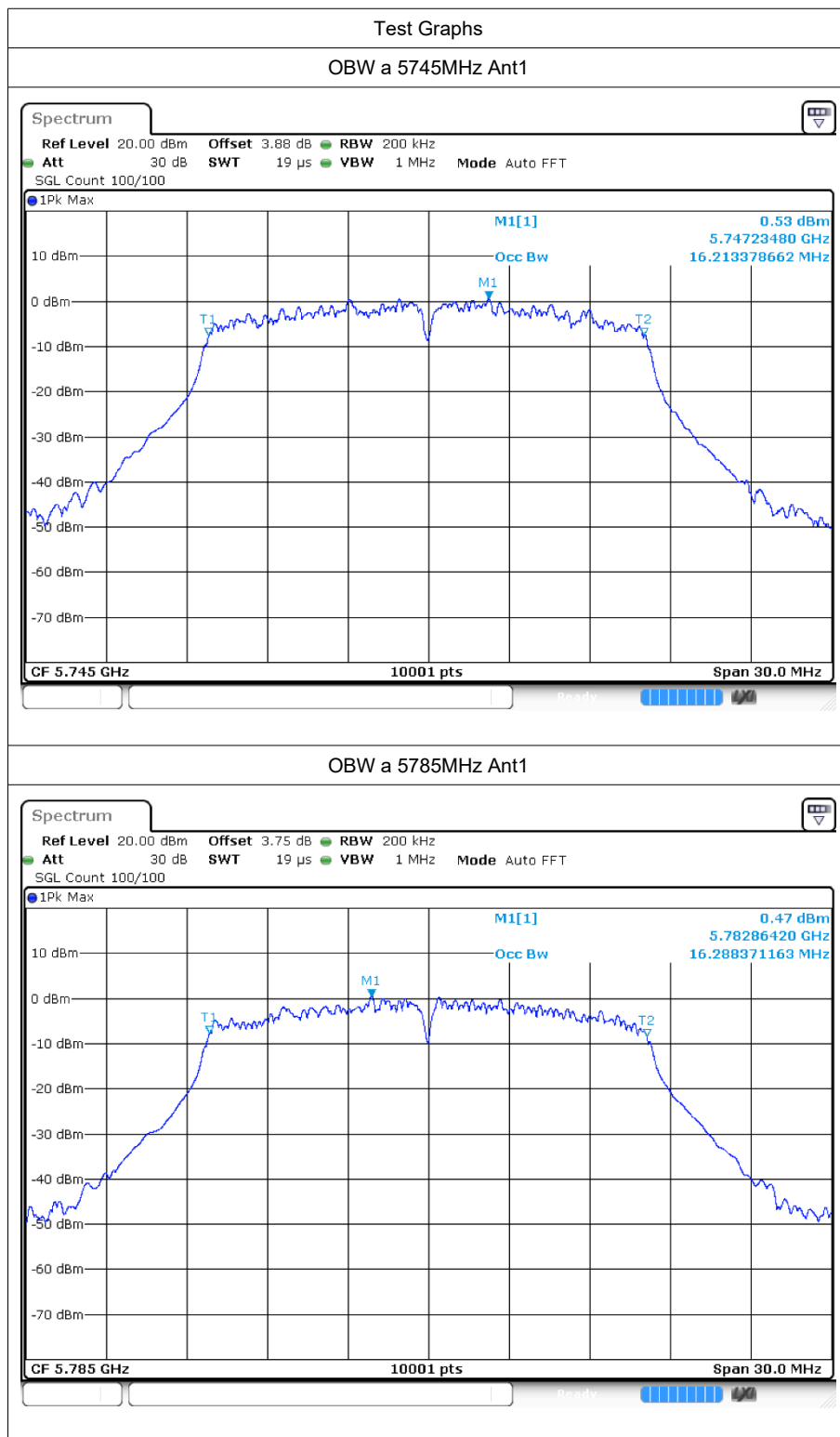


4 Occupied Channel Bandwidth

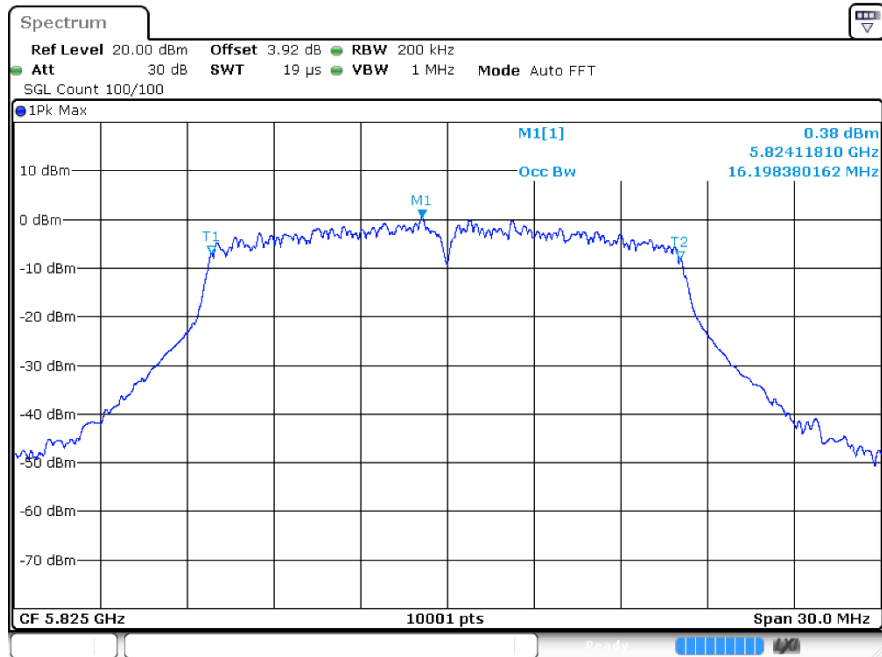
4.1 Test Result

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
a	5745	Ant1	16.213
a	5785	Ant1	16.288
a	5825	Ant1	16.198
n20	5745	Ant1	17.356
n20	5785	Ant1	17.362
n20	5825	Ant1	17.368
n40	5755	Ant1	35.342
n40	5795	Ant1	35.144

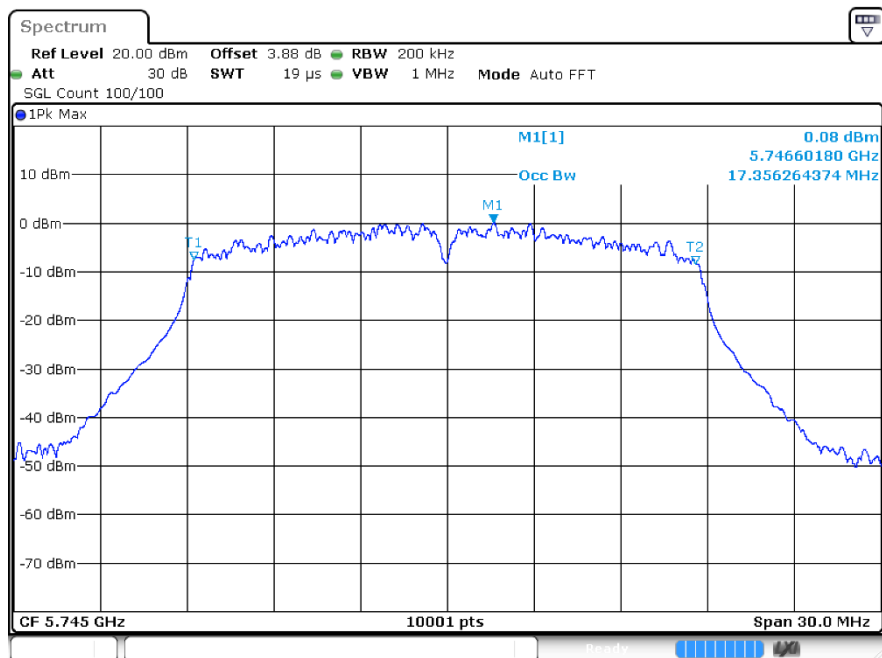
4.2 Test Graphs



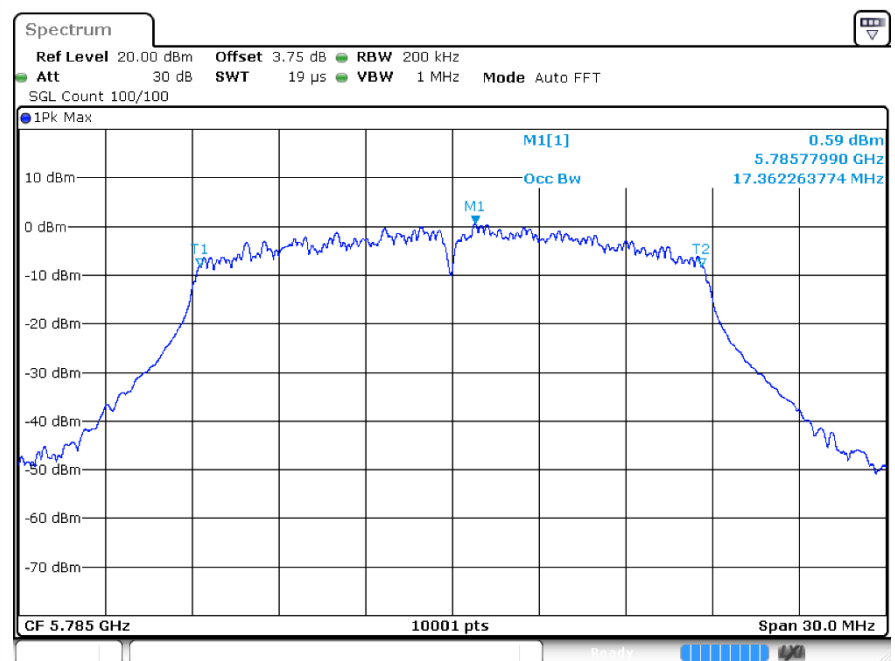
OBW a 5825MHz Ant1



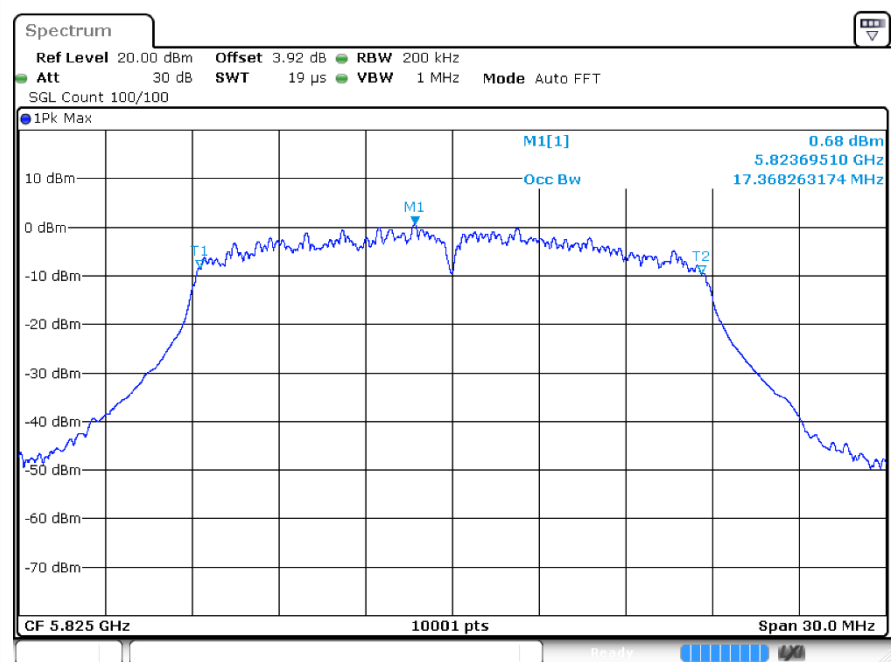
OBW n20 5745MHz Ant1



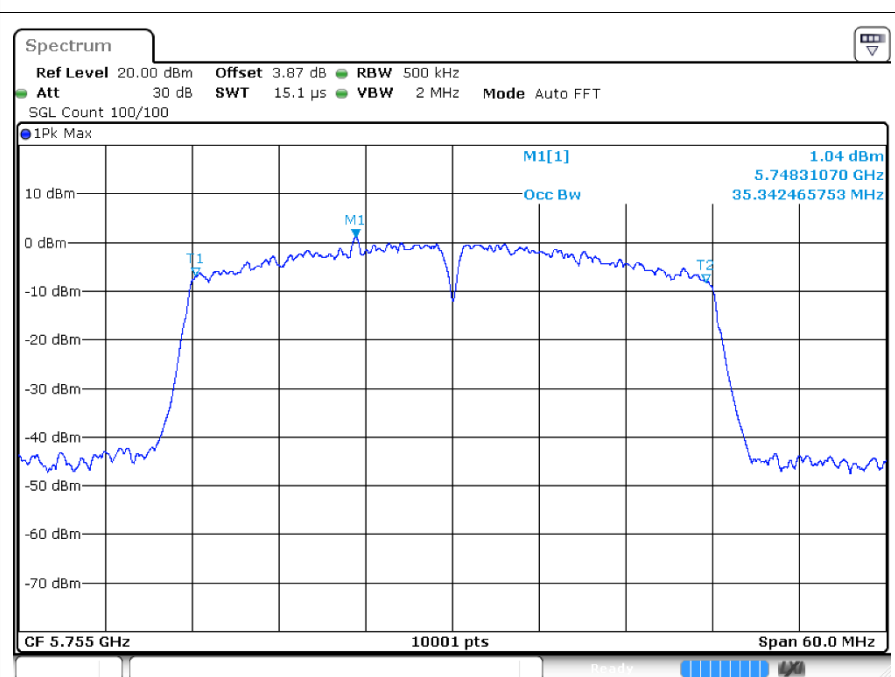
OBW n20 5785MHz Ant1



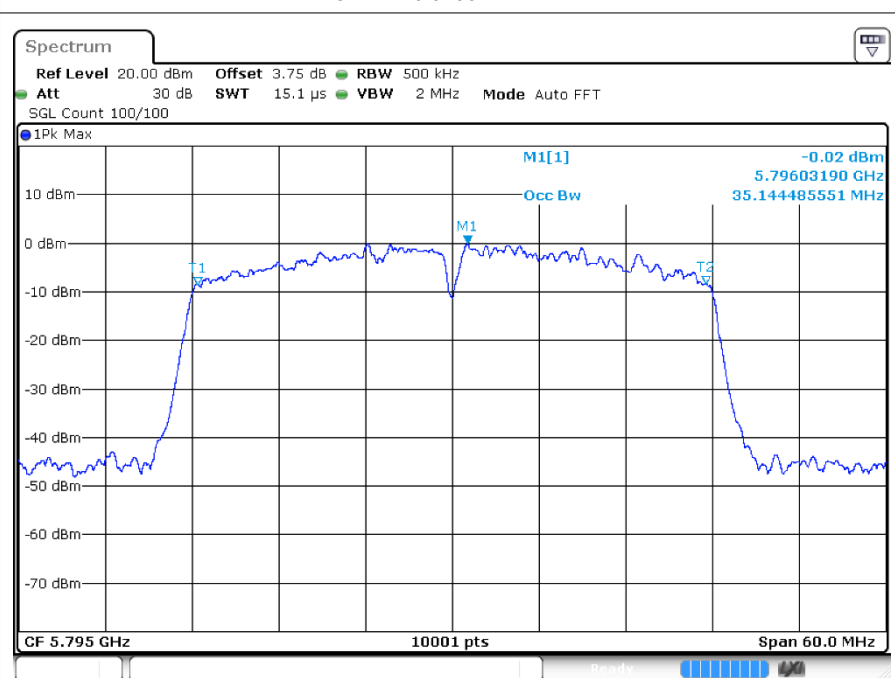
OBW n20 5825MHz Ant1



OBW n40 5755MHz Ant1



OBW n40 5795MHz Ant1



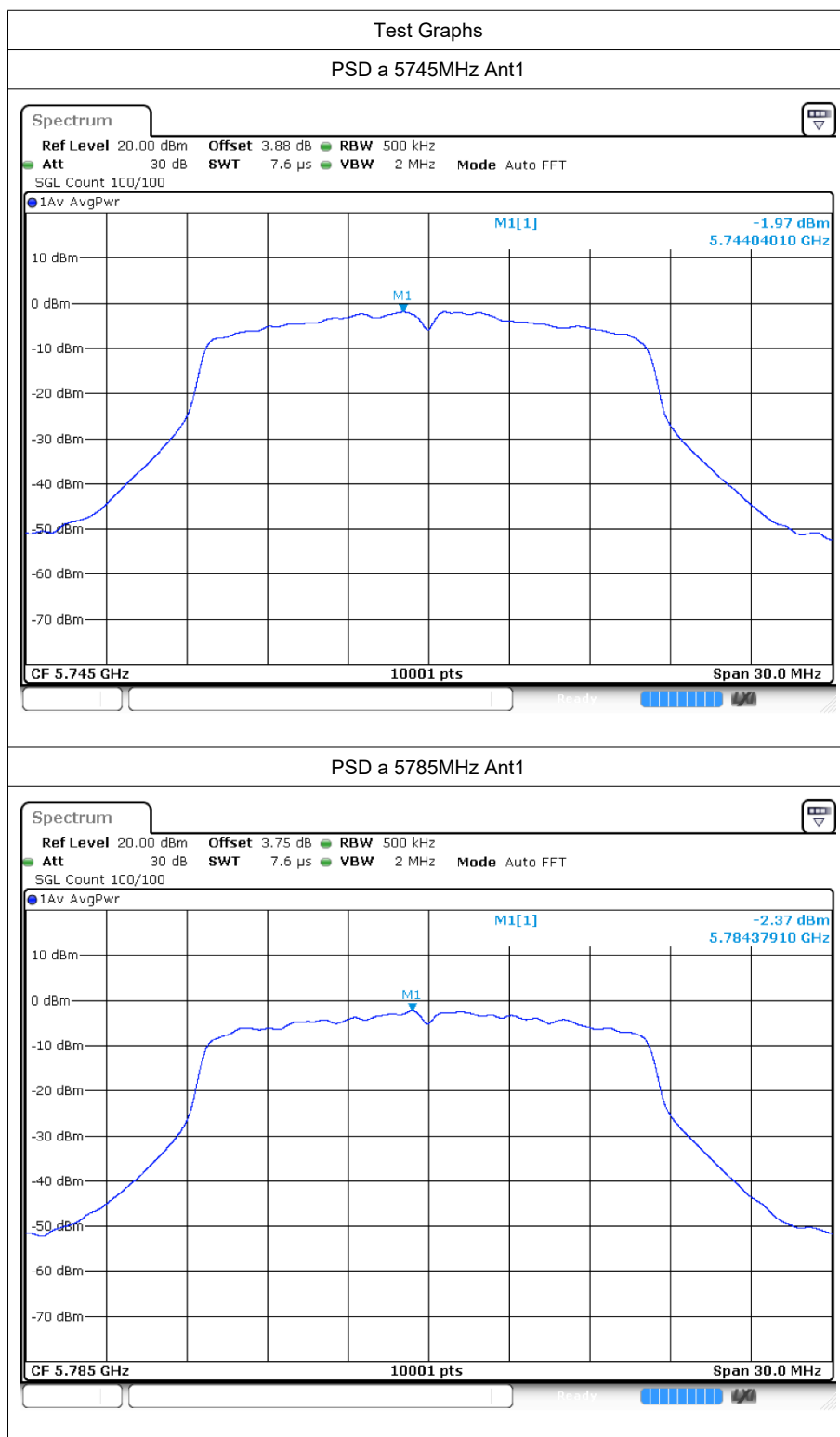


5 Maximum Power Spectral Density Level

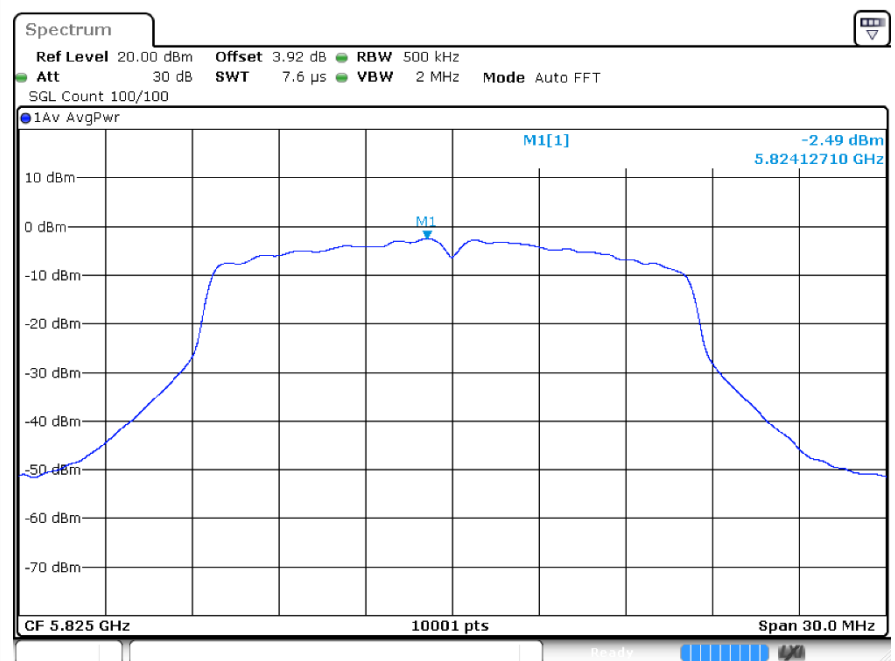
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
a	5745	Ant1	-1.97	0.32	-1.65	30	Pass
a	5785	Ant1	-2.37	0	-2.37	30	Pass
a	5825	Ant1	-2.49	0	-2.49	30	Pass
n20	5745	Ant1	-2.17	0	-2.17	30	Pass
n20	5785	Ant1	-1.98	0	-1.98	30	Pass
n20	5825	Ant1	-3.1	0	-3.1	30	Pass
n40	5755	Ant1	-6.87	0	-6.87	30	Pass
n40	5795	Ant1	-6.74	0	-6.74	30	Pass

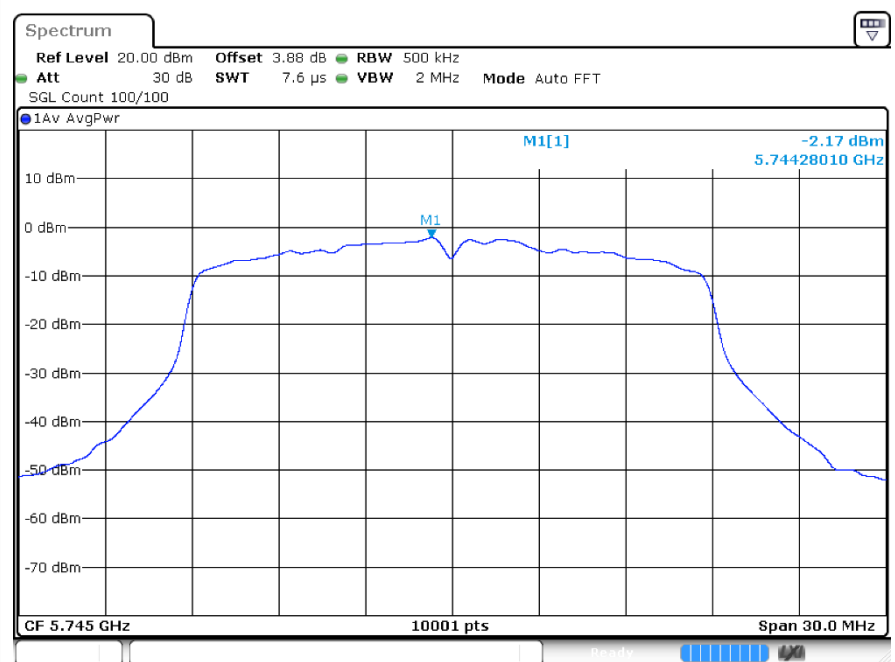
5.2 Test Graphs



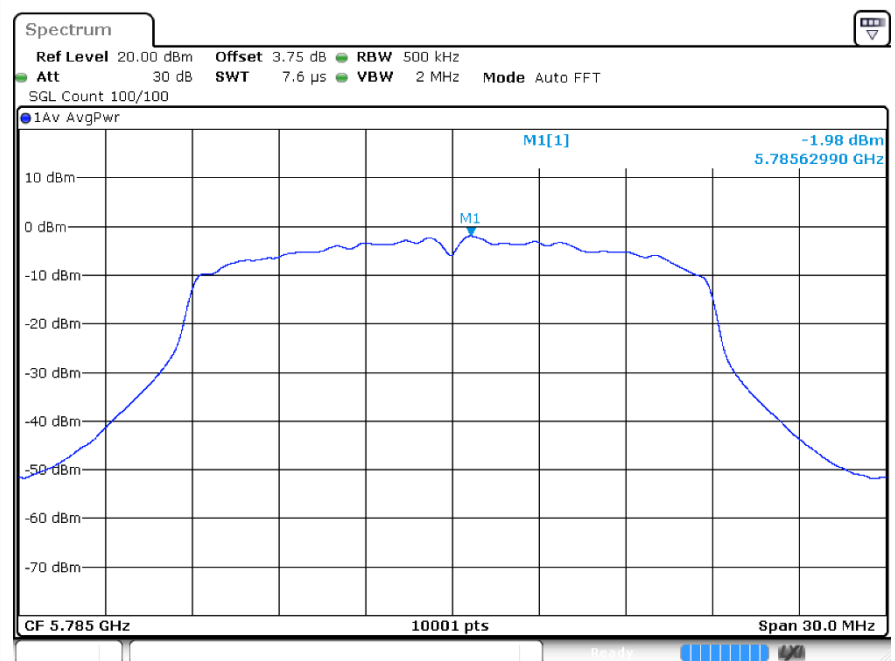
PSD a 5825MHz Ant1



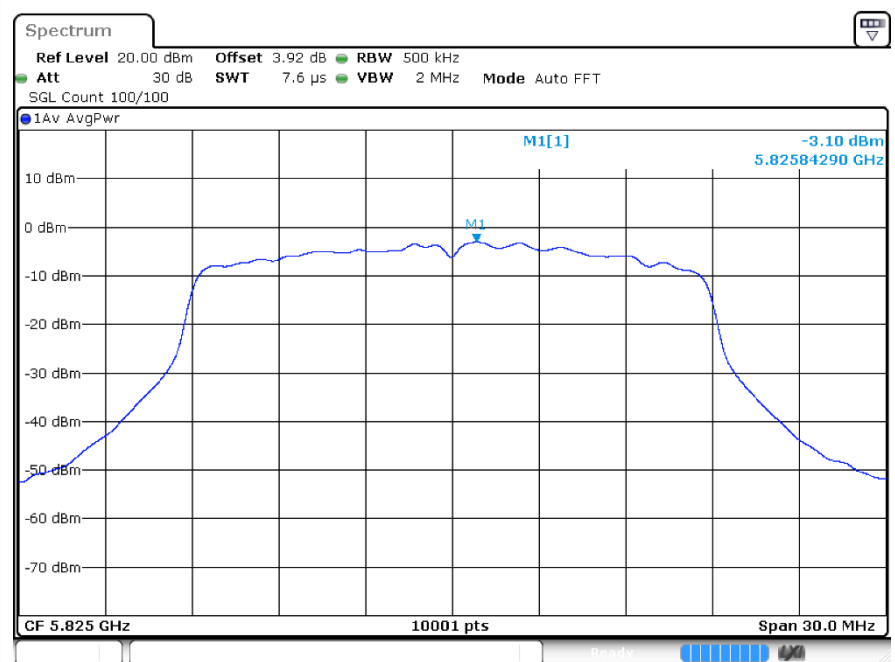
PSD n20 5745MHz Ant1



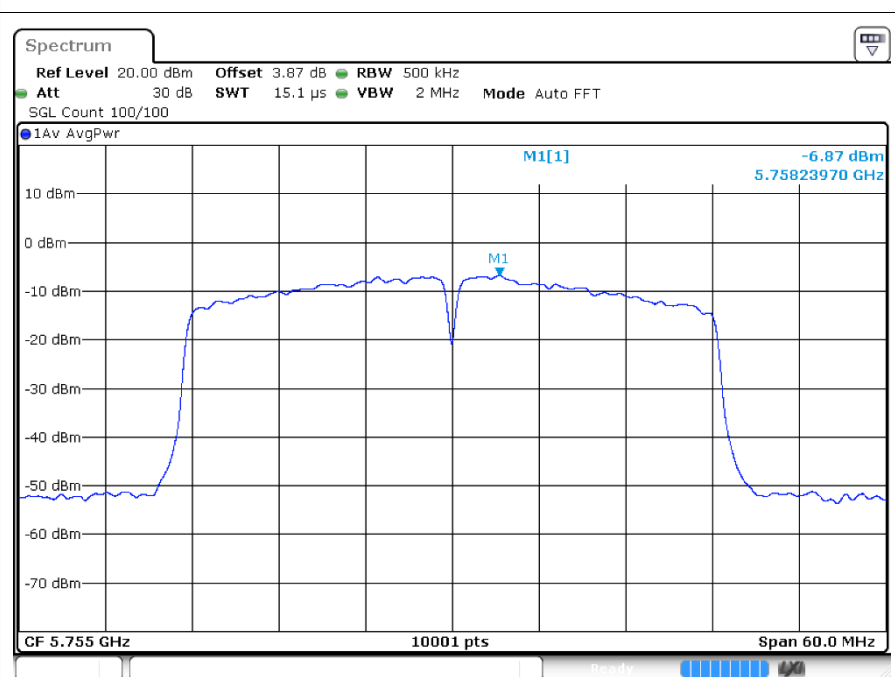
PSD n20 5785MHz Ant1



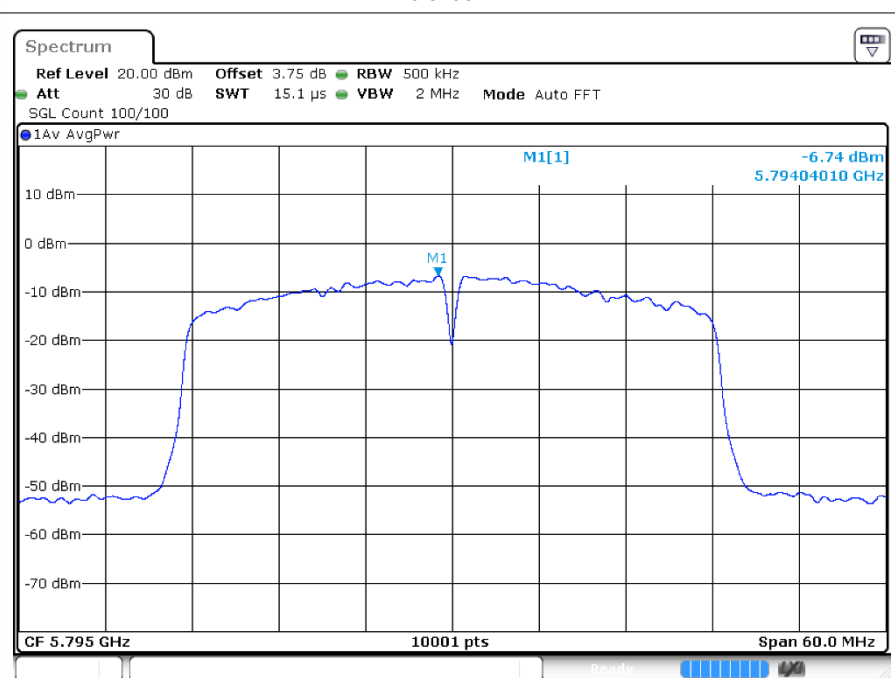
PSD n20 5825MHz Ant1



PSD n40 5755MHz Ant1



PSD n40 5795MHz Ant1





6 Frequency Stability

6.1 Test Result

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20°C 4.25V	a	5745	Ant1	5744.92	-80000	-13.93	25	Pass
20°C 5V	a	5745	Ant1	5744.96	-40000	-6.96	25	Pass
20°C 5.75V	a	5745	Ant1	5744.96	-40000	-6.96	25	Pass
-20°C 5V	a	5745	Ant1	5744.94	-60000	-10.44	25	Pass
-10°C 5V	a	5745	Ant1	5744.92	-80000	-13.93	25	Pass
0°C 5V	a	5745	Ant1	5744.96	-40000	-6.96	25	Pass
10°C 5V	a	5745	Ant1	5744.94	-60000	-10.44	25	Pass
30°C 5V	a	5745	Ant1	5744.94	-60000	-10.44	25	Pass
40°C 5V	a	5745	Ant1	5744.94	-60000	-10.44	25	Pass
50°C 5V	a	5745	Ant1	5744.92	-80000	-13.93	25	Pass
20°C 4.25V	a	5785	Ant1	5784.96	-40000	-6.91	25	Pass
20°C 5V	a	5785	Ant1	5784.96	-40000	-6.91	25	Pass
20°C 5.75V	a	5785	Ant1	5784.96	-40000	-6.91	25	Pass
-20°C 5V	a	5785	Ant1	5784.94	-60000	-10.37	25	Pass
-10°C 5V	a	5785	Ant1	5784.96	-40000	-6.91	25	Pass
0°C 5V	a	5785	Ant1	5785	0	0	25	Pass
10°C 5V	a	5785	Ant1	5784.96	-40000	-6.91	25	Pass
30°C 5V	a	5785	Ant1	5784.94	-60000	-10.37	25	Pass
40°C 5V	a	5785	Ant1	5784.96	-40000	-6.91	25	Pass
50°C 5V	a	5785	Ant1	5784.98	-20000	-3.46	25	Pass
20°C 4.25V	a	5825	Ant1	5824.94	-60000	-10.3	25	Pass
20°C 5V	a	5825	Ant1	5824.94	-60000	-10.3	25	Pass
20°C 5.75V	a	5825	Ant1	5824.94	-60000	-10.3	25	Pass
-20°C 5V	a	5825	Ant1	5824.96	-40000	-6.87	25	Pass
-10°C 5V	a	5825	Ant1	5824.92	-80000	-13.73	25	Pass
0°C 5V	a	5825	Ant1	5824.94	-60000	-10.3	25	Pass
10°C 5V	a	5825	Ant1	5824.96	-40000	-6.87	25	Pass
30°C 5V	a	5825	Ant1	5824.96	-40000	-6.87	25	Pass
40°C 5V	a	5825	Ant1	5824.94	-60000	-10.3	25	Pass
50°C 5V	a	5825	Ant1	5824.92	-80000	-13.73	25	Pass
20°C 4.25V	n20	5745	Ant1	5744.94	-60000	-10.44	25	Pass
20°C 5V	n20	5745	Ant1	5744.94	-60000	-10.44	25	Pass
20°C 5.75V	n20	5745	Ant1	5744.94	-60000	-10.44	25	Pass
-20°C 5V	n20	5745	Ant1	5744.94	-60000	-10.44	25	Pass
-10°C 5V	n20	5745	Ant1	5744.98	-20000	-3.48	25	Pass



0°C 5V	n20	5745	Ant1	5744.94	-60000	-10.44	25	Pass
10°C 5V	n20	5745	Ant1	5744.92	-80000	-13.93	25	Pass
30°C 5V	n20	5745	Ant1	5745.08	80000	13.93	25	Pass
40°C 5V	n20	5745	Ant1	5744.94	-60000	-10.44	25	Pass
50°C 5V	n20	5745	Ant1	5744.96	-40000	-6.96	25	Pass
20°C 4.25V	n20	5785	Ant1	5784.96	-40000	-6.91	25	Pass
20°C 5V	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
20°C 5.75V	n20	5785	Ant1	5784.96	-40000	-6.91	25	Pass
-20°C 5V	n20	5785	Ant1	5784.96	-40000	-6.91	25	Pass
-10°C 5V	n20	5785	Ant1	5785.1	100000	17.29	25	Pass
0°C 5V	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
10°C 5V	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
30°C 5V	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
40°C 5V	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
50°C 5V	n20	5785	Ant1	5784.96	-40000	-6.91	25	Pass
20°C 4.25V	n20	5825	Ant1	5824.96	-40000	-6.87	25	Pass
20°C 5V	n20	5825	Ant1	5824.96	-40000	-6.87	25	Pass
20°C 5.75V	n20	5825	Ant1	5824.96	-40000	-6.87	25	Pass
-20°C 5V	n20	5825	Ant1	5824.94	-60000	-10.3	25	Pass
-10°C 5V	n20	5825	Ant1	5824.96	-40000	-6.87	25	Pass
0°C 5V	n20	5825	Ant1	5824.96	-40000	-6.87	25	Pass
10°C 5V	n20	5825	Ant1	5824.94	-60000	-10.3	25	Pass
30°C 5V	n20	5825	Ant1	5824.94	-60000	-10.3	25	Pass
40°C 5V	n20	5825	Ant1	5824.92	-80000	-13.73	25	Pass
50°C 5V	n20	5825	Ant1	5824.94	-60000	-10.3	25	Pass
20°C 4.25V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
20°C 5V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
20°C 5.75V	n40	5755	Ant1	5755.12	5000	20.85	25	Pass
-20°C 5V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
-10°C 5V	n40	5755	Ant1	5755	0	0	25	Pass
0°C 5V	n40	5755	Ant1	5755	0	0	25	Pass
10°C 5V	n40	5755	Ant1	5755	0	0	25	Pass
30°C 5V	n40	5755	Ant1	5754.92	-80000	-13.9	25	Pass
40°C 5V	n40	5755	Ant1	5755.08	80000	13.9	25	Pass
50°C 5V	n40	5755	Ant1	5755	0	0	25	Pass
20°C 4.25V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
20°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
20°C 5.75V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
-20°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
-10°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
0°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
10°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
30°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass



40°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
50°C 5V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass

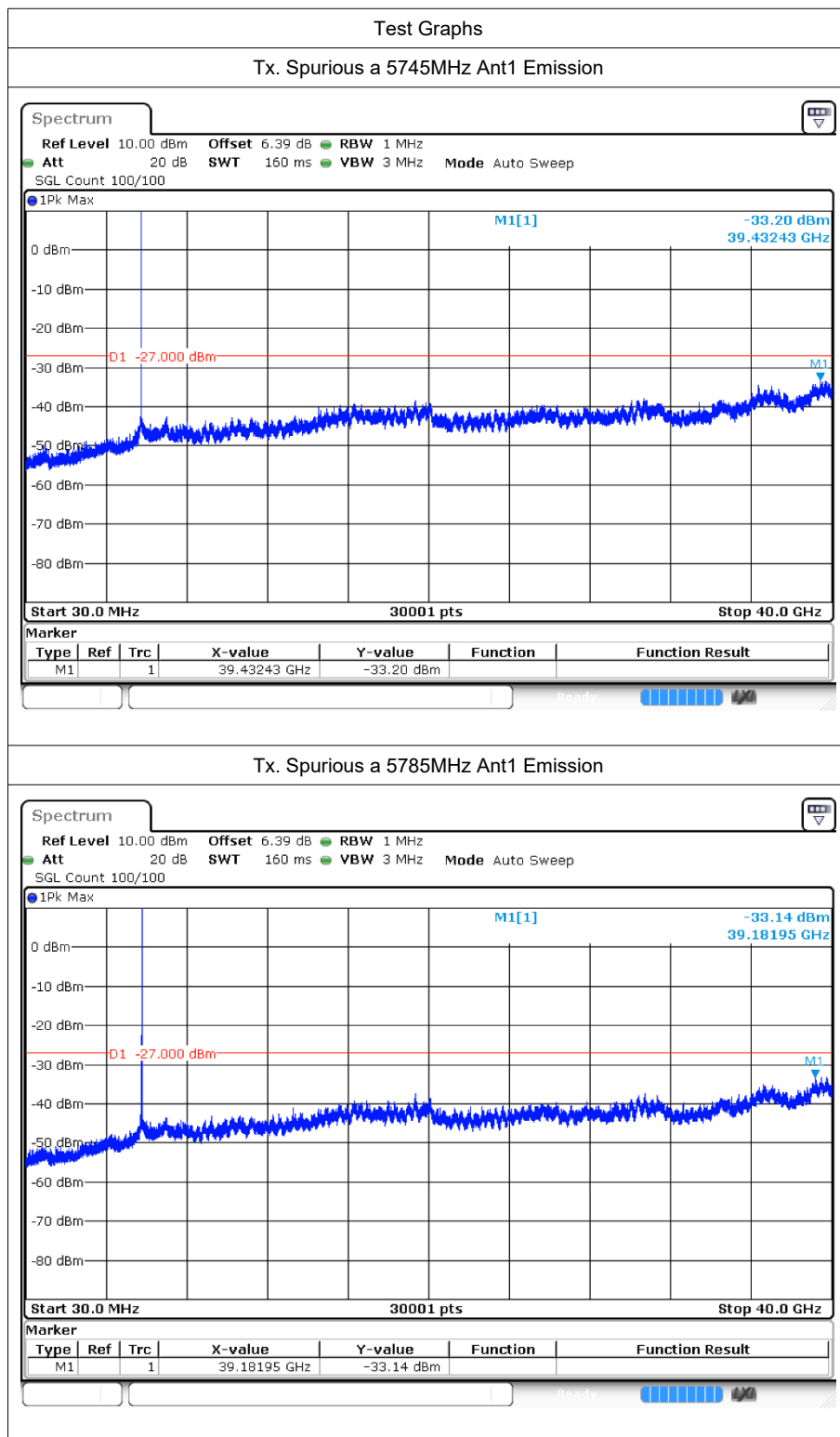


7 Conducted RF Spurious Emission

7.1 Test Result

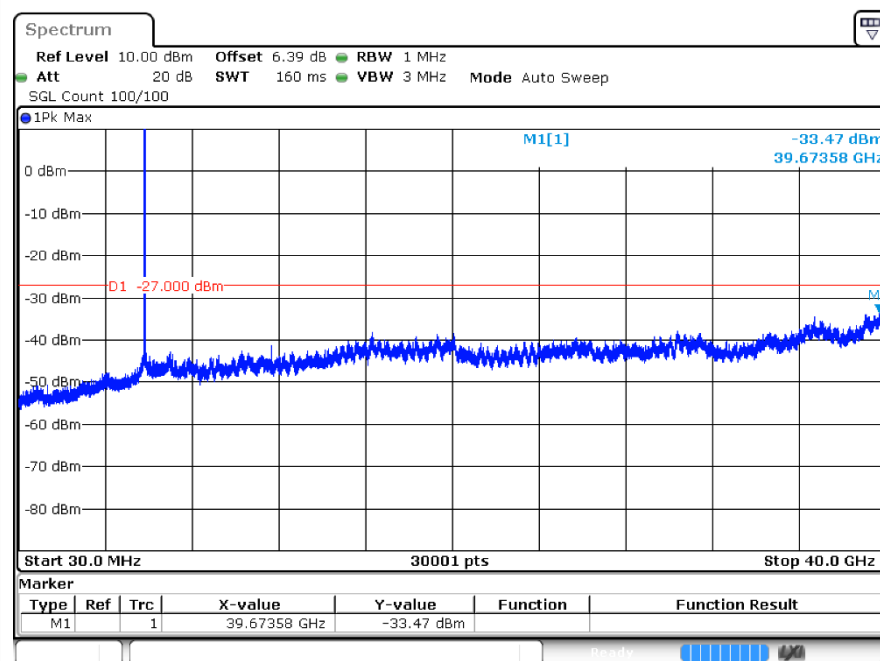
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
a	5745	Ant1	-33.19	-27	Pass
a	5785	Ant1	-33.14	-27	Pass
a	5825	Ant1	-33.47	-27	Pass
n20	5745	Ant1	-32.94	-27	Pass
n20	5785	Ant1	-31.94	-27	Pass
n20	5825	Ant1	-33.29	-27	Pass
n40	5755	Ant1	-33.31	-27	Pass
n40	5795	Ant1	-33.37	-27	Pass

7.2 Test Graphs

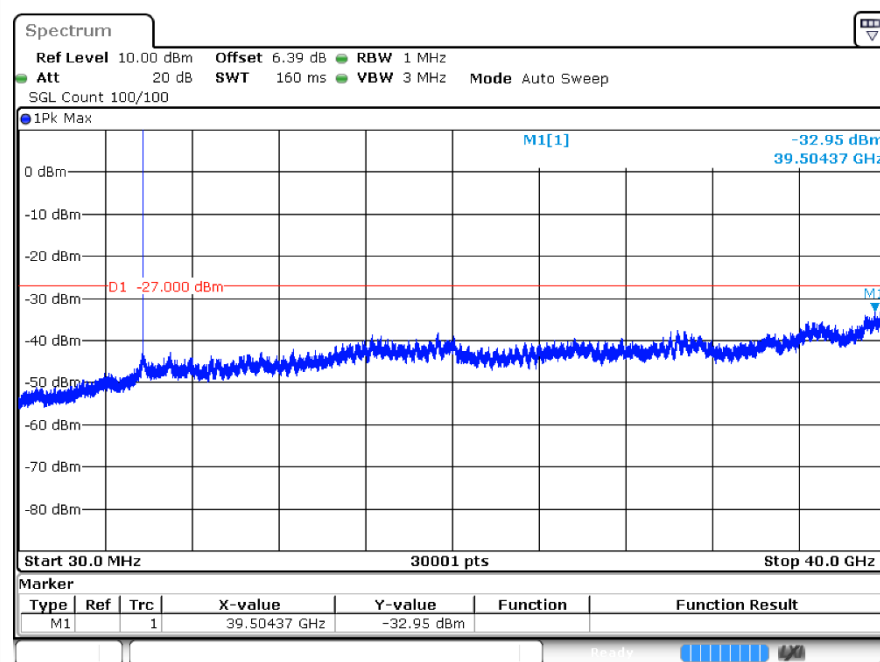




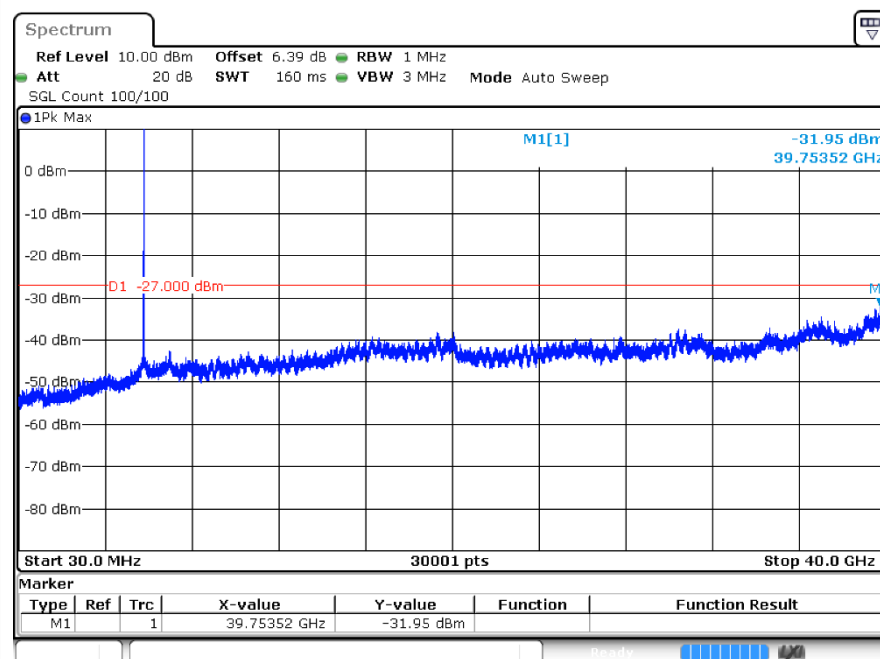
Tx. Spurious a 5825MHz Ant1 Emission



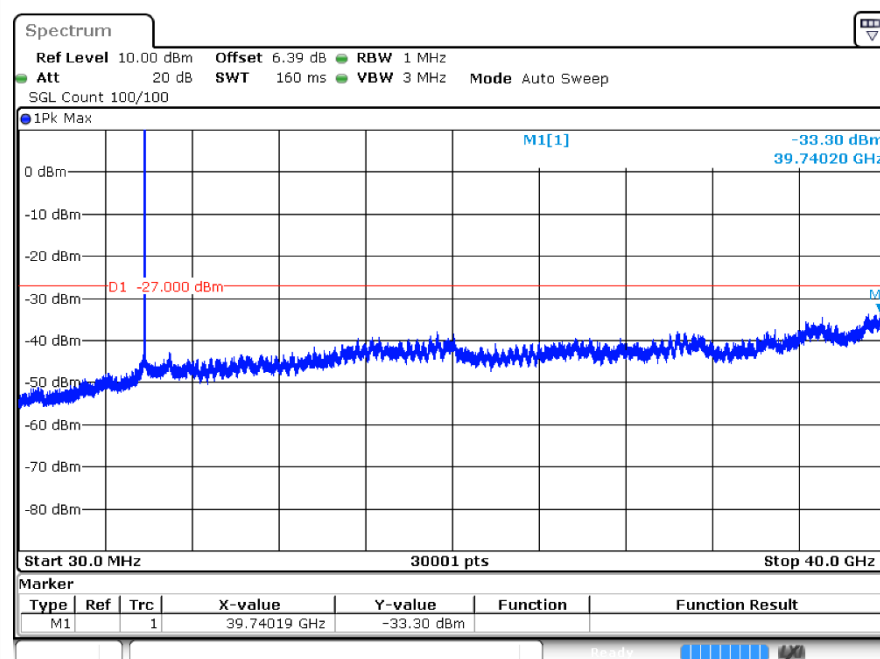
Tx. Spurious n20 5745MHz Ant1 Emission



Tx. Spurious n20 5785MHz Ant1 Emission

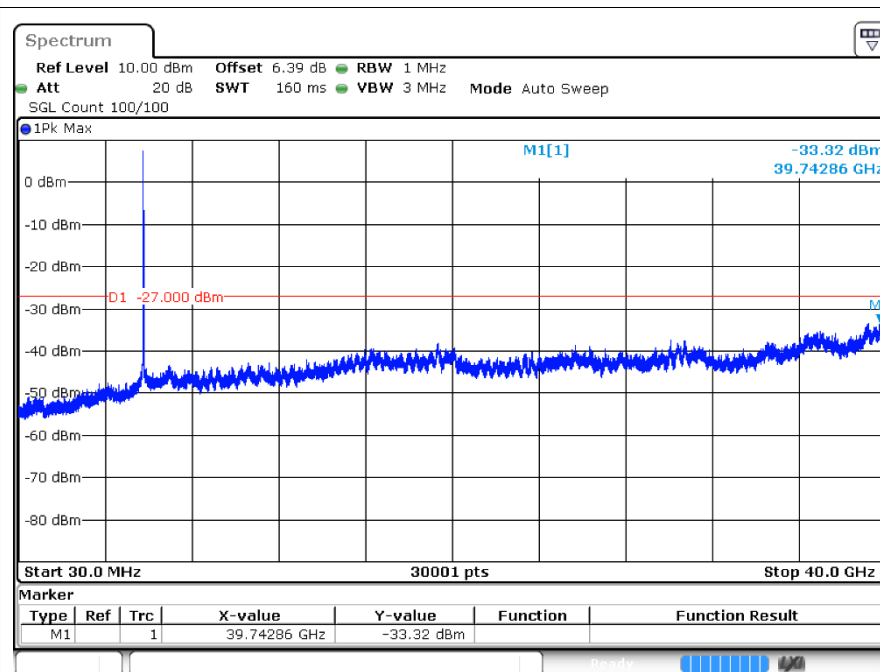


Tx. Spurious n20 5825MHz Ant1 Emission

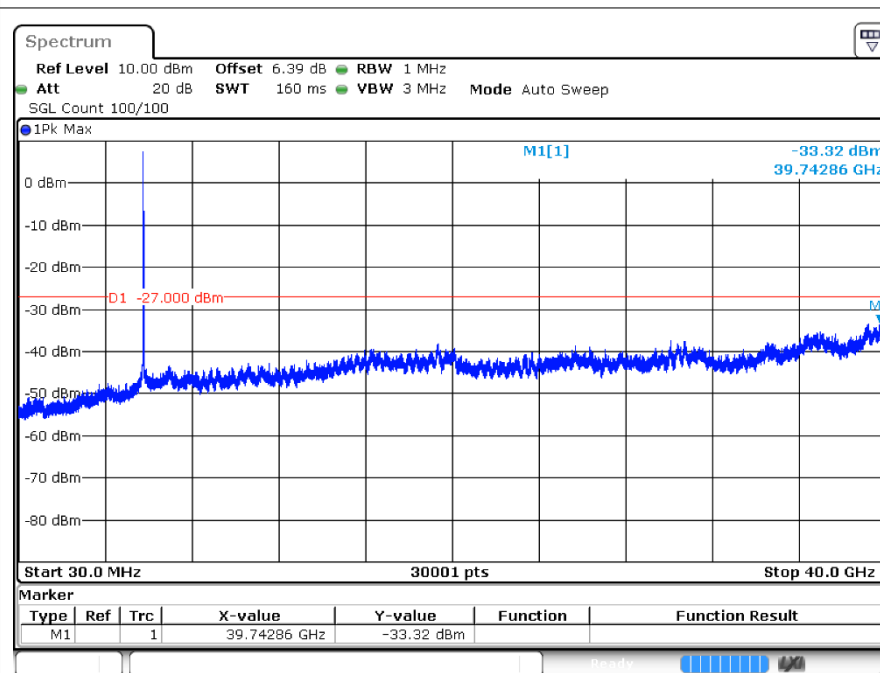




Tx. Spurious n40 5755MHz Ant1 Emission



Tx. Spurious n40 5795MHz Ant1 Emission



---The End---