Appendix E

RF Test Data for 5.8GWIFI(Conducted Measurement)

Product Name: RC Aircraft

Trade Mark: N/A

Test Model: X900

Environmental Conditions

Temperature:	25.6° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung

Contents

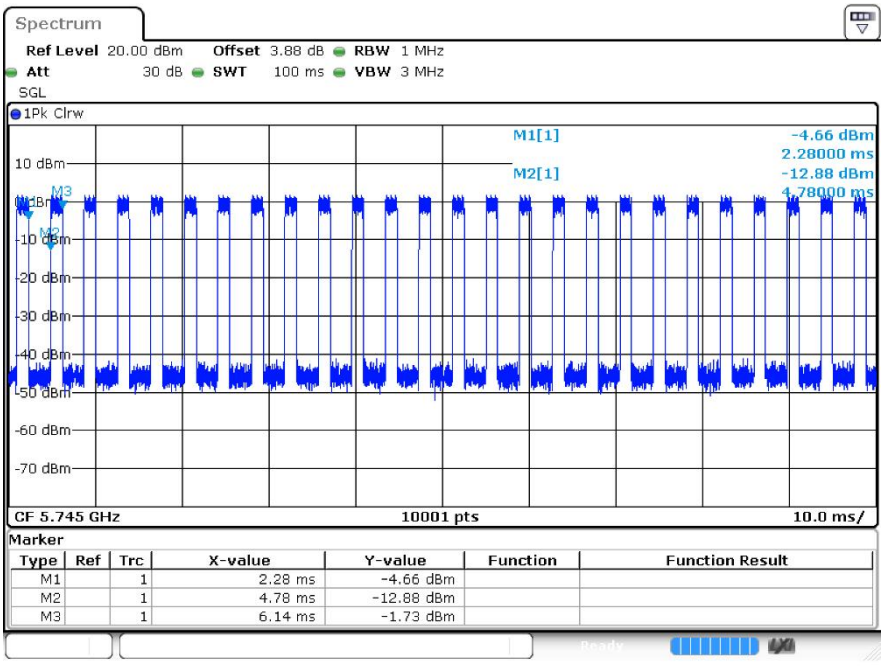
1 Duty Cycle

1.1 Test Result

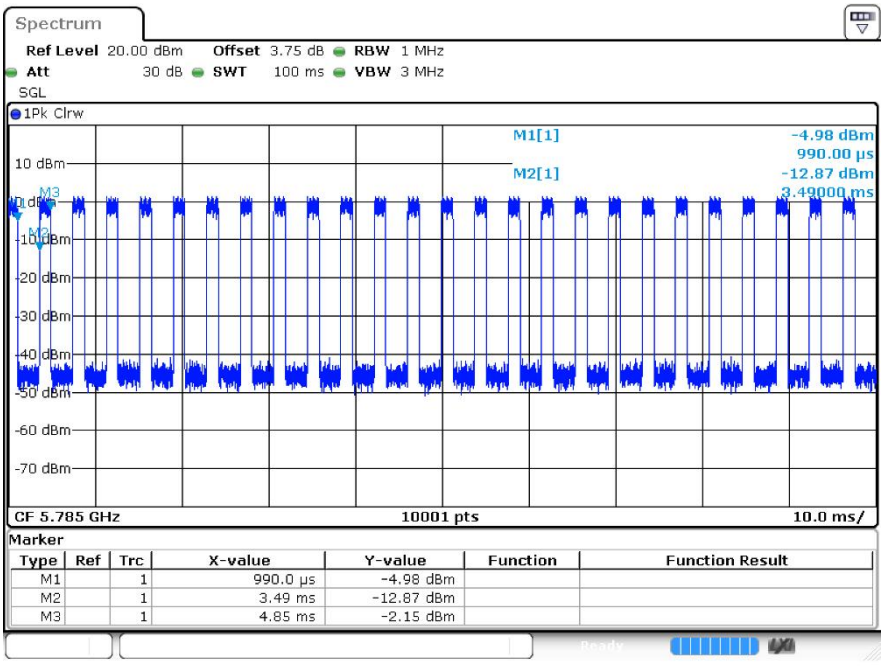
Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5745	Ant1	35.63	4.48	0.74
a	5785	Ant1	35.27	4.53	0.74
a	5825	Ant1	35.64	4.48	0.74
n20	5745	Ant1	34.34	4.64	0.79
n20	5785	Ant1	33.33	4.77	0.79
n20	5825	Ant1	34.07	4.68	0.78
n40	5755	Ant1	27.23	5.65	1.08
n40	5795	Ant1	27.23	5.65	1.08

1.2 Test Graphs

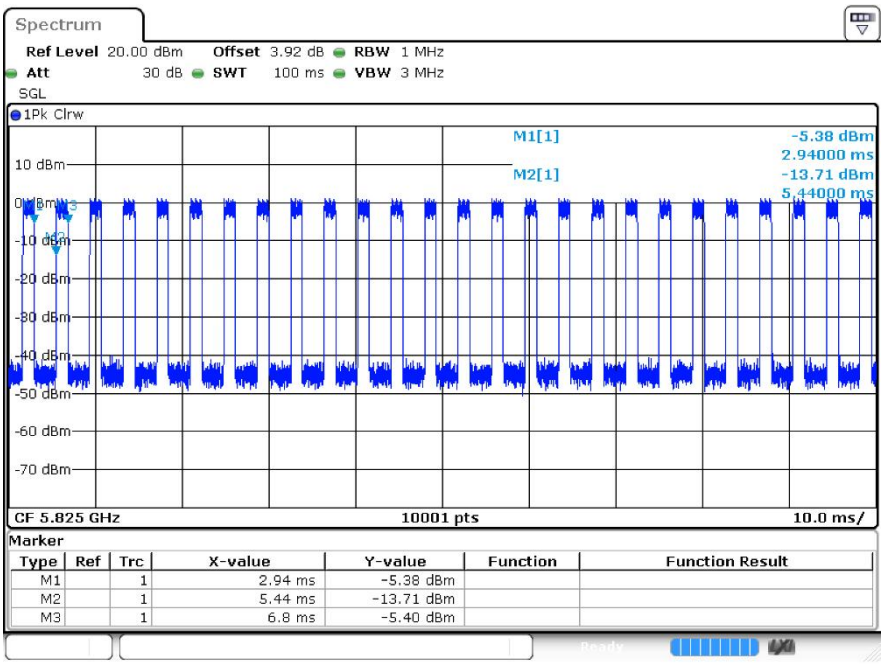
Test Graphs
Duty Cycle a 5745MHz Ant1



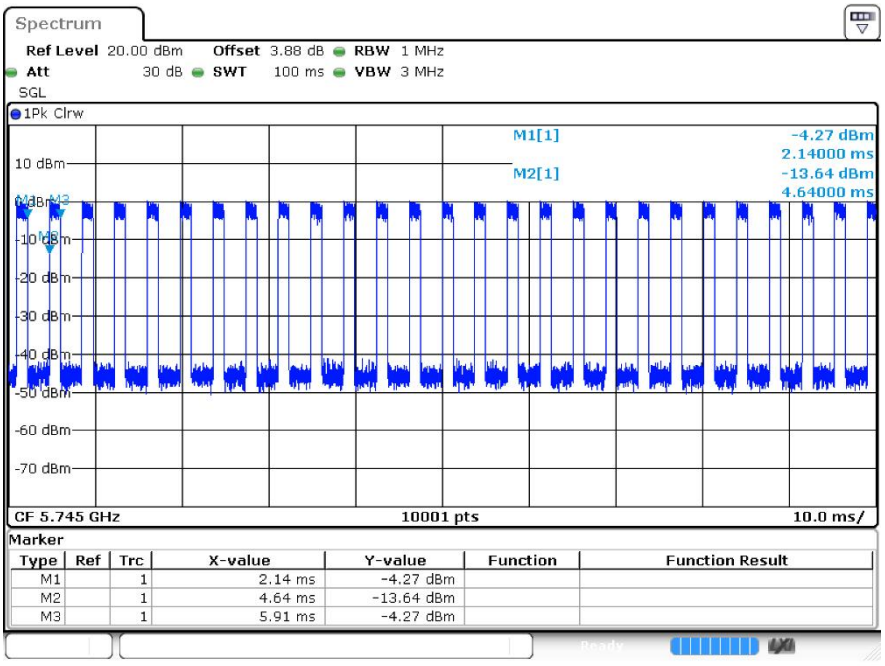
Duty Cycle a 5785MHz Ant1



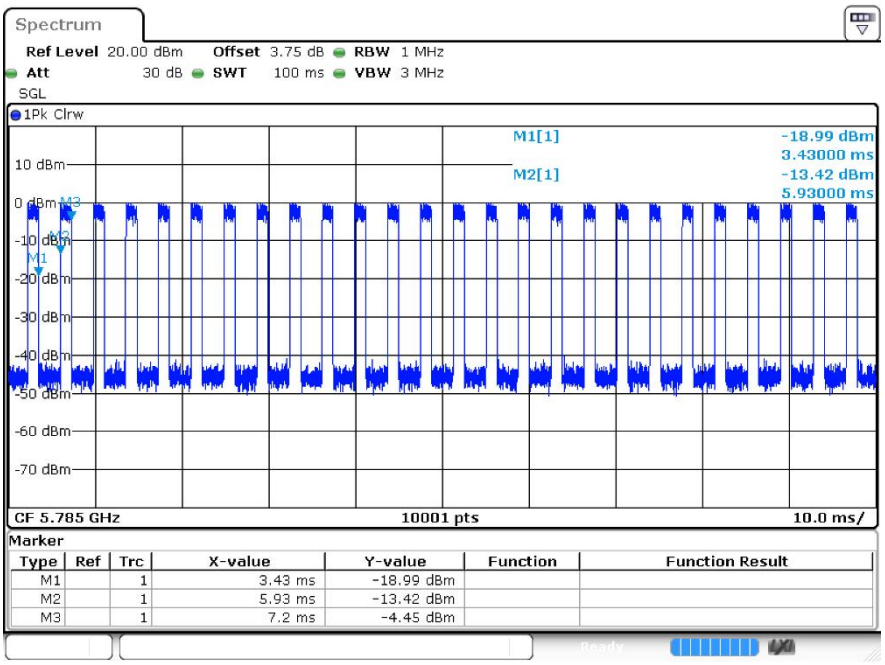
Duty Cycle a 5825MHz Ant1



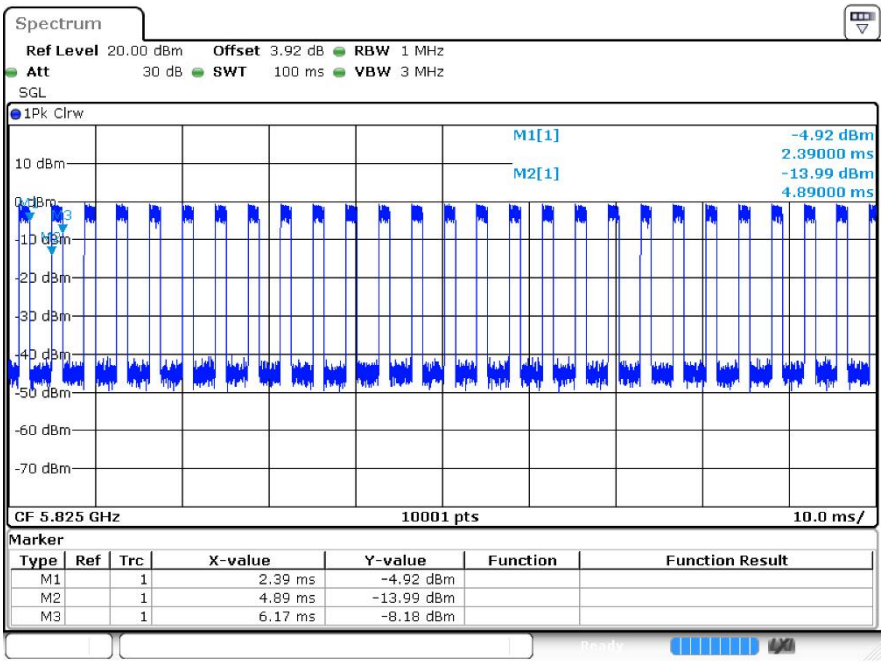
Duty Cycle n20 5745MHz Ant1



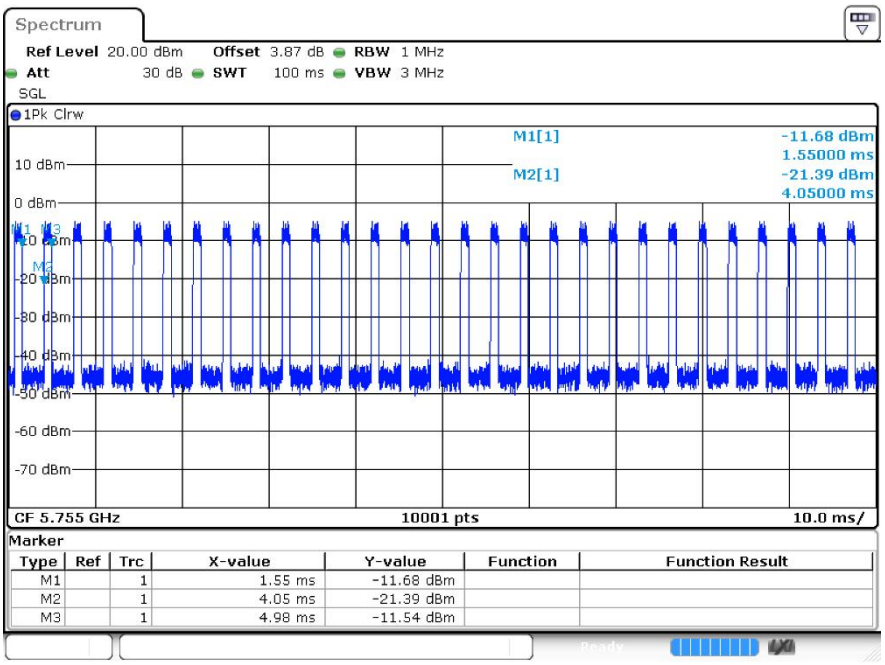
Duty Cycle n20 5785MHz Ant1



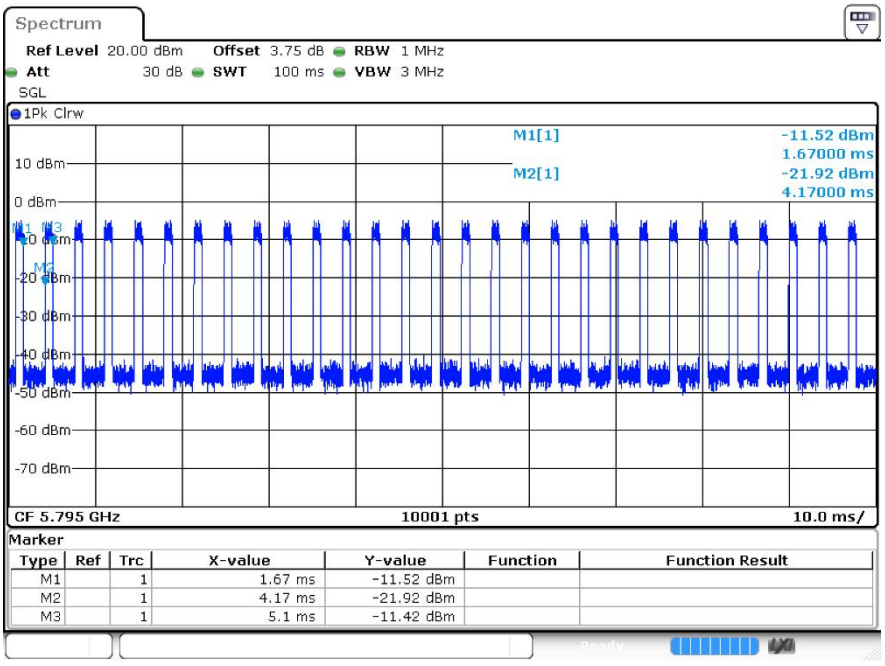
Duty Cycle n20 5825MHz Ant1



Duty Cycle n40 5755MHz Ant1



Duty Cycle n40 5795MHz Ant1



2 Maximum Conducted Output Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
a	5745	Ant1	7.77	30	Pass
a	5785	Ant1	7.54	30	Pass
a	5825	Ant1	7.06	30	Pass
n20	5745	Ant1	6.86	30	Pass
n20	5785	Ant1	6.66	30	Pass
n20	5825	Ant1	6.29	30	Pass
n40	5755	Ant1	6.94	30	Pass
n40	5795	Ant1	6.67	30	Pass

Note:

The duty factor has been compensated into the result.

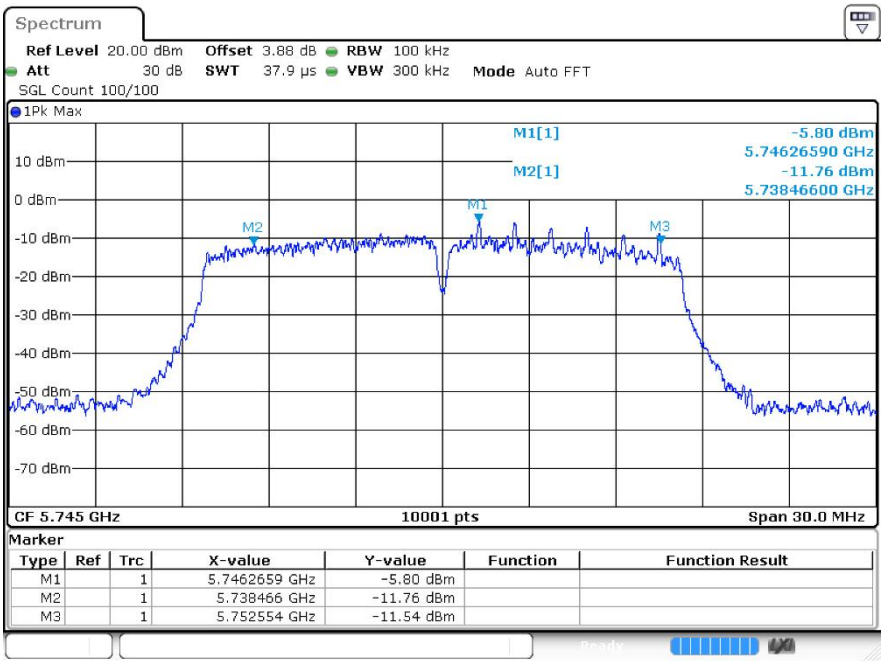
3 -6dB Bandwidth

3.1 Test Result

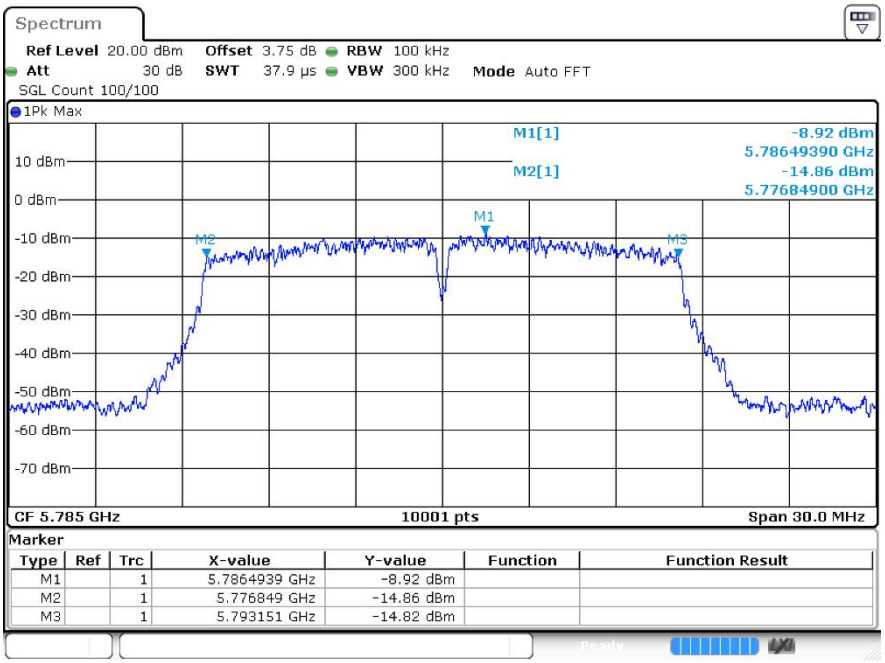
Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
a	5745	Ant1	14.088	0.5	Pass
a	5785	Ant1	16.302	0.5	Pass
a	5825	Ant1	16.293	0.5	Pass
n20	5745	Ant1	17.295	0.5	Pass
n20	5785	Ant1	17.541	0.5	Pass
n20	5825	Ant1	17.292	0.5	Pass
n40	5755	Ant1	34.632	0.5	Pass
n40	5795	Ant1	35.916	0.5	Pass

3.2 Test Graphs

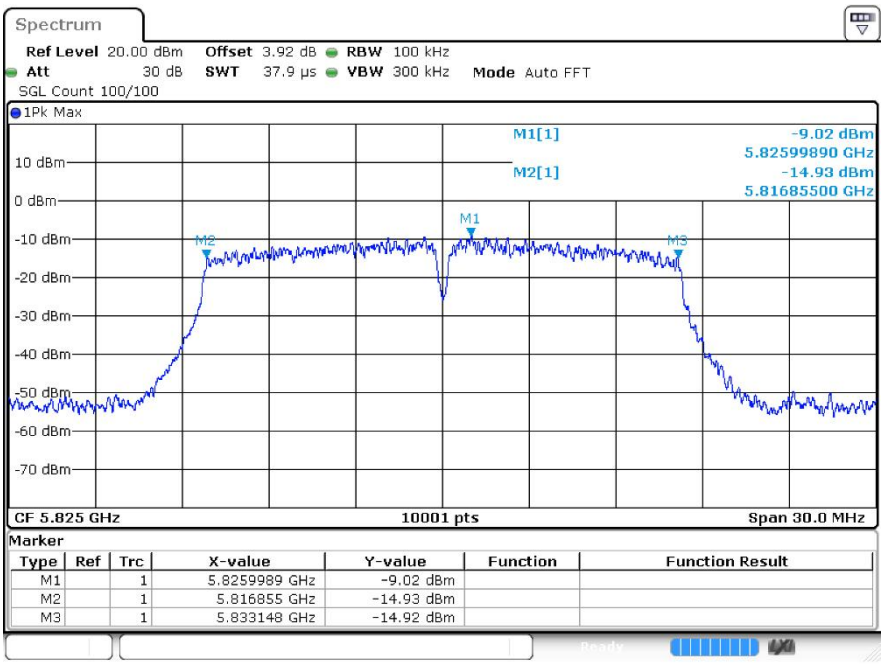
Test Graphs
-6dB Bandwidth a 5745MHz Ant1



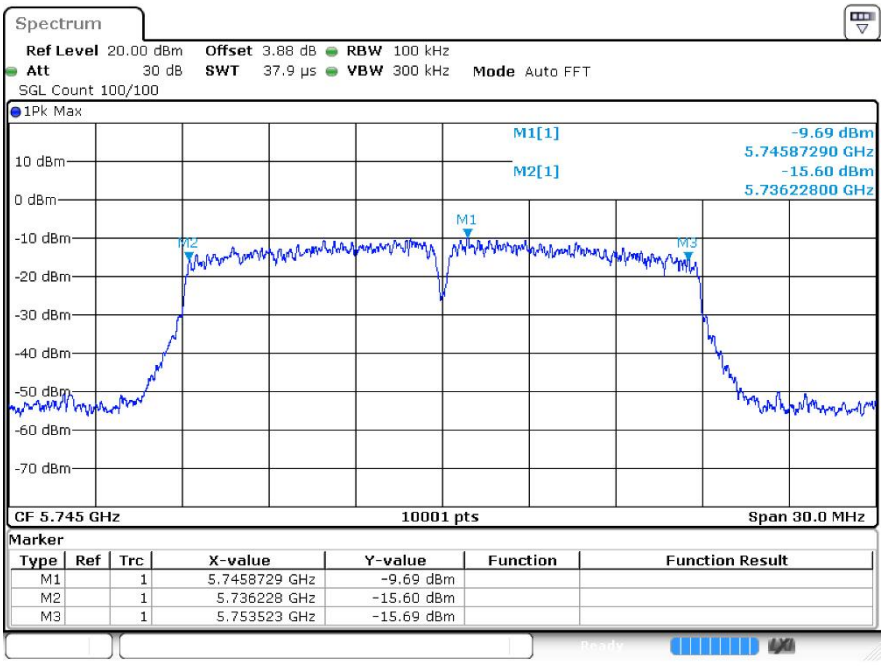
-6dB Bandwidth a 5785MHz Ant1



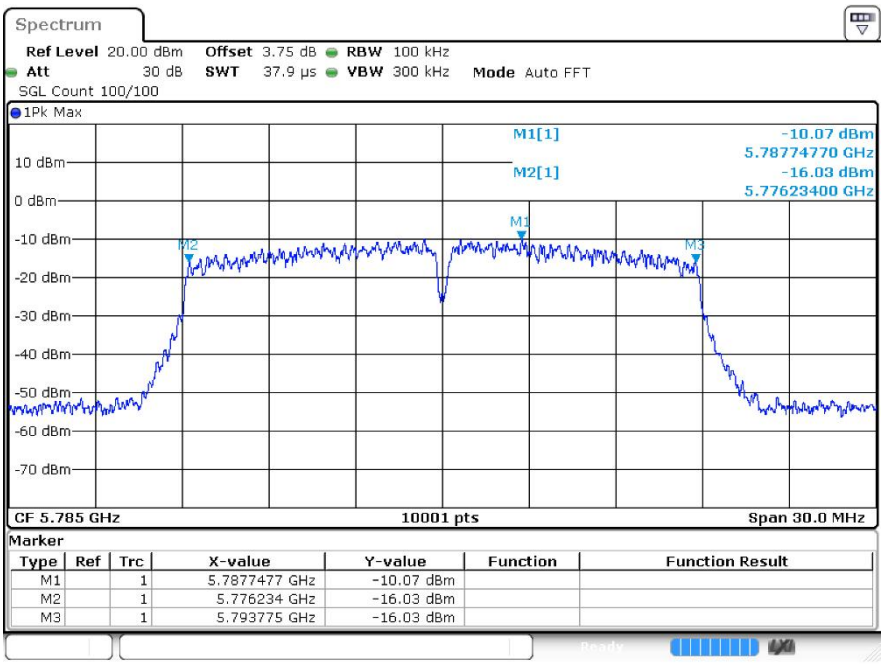
-6dB Bandwidth a 5825MHz Ant1



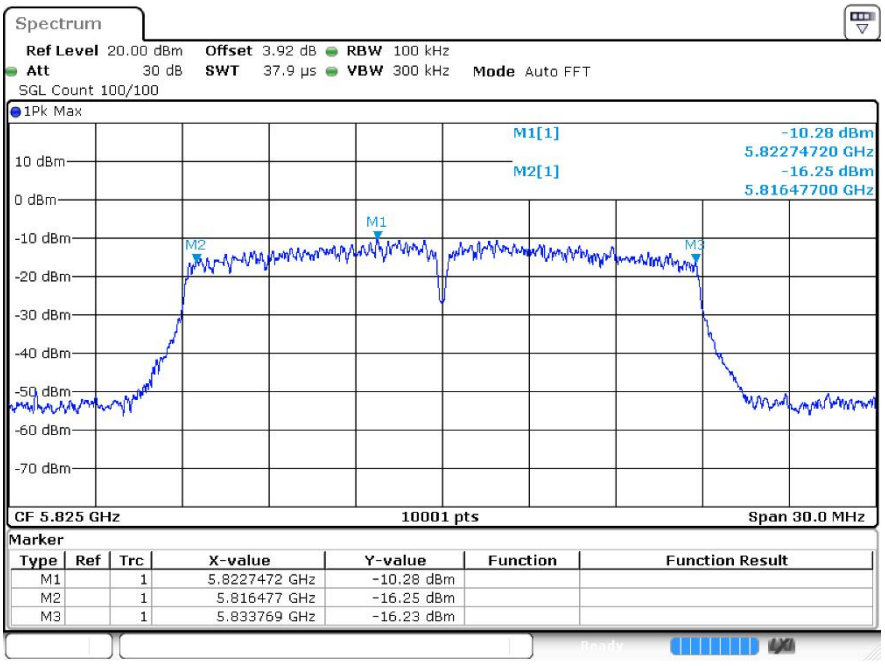
-6dB Bandwidth n20 5745MHz Ant1



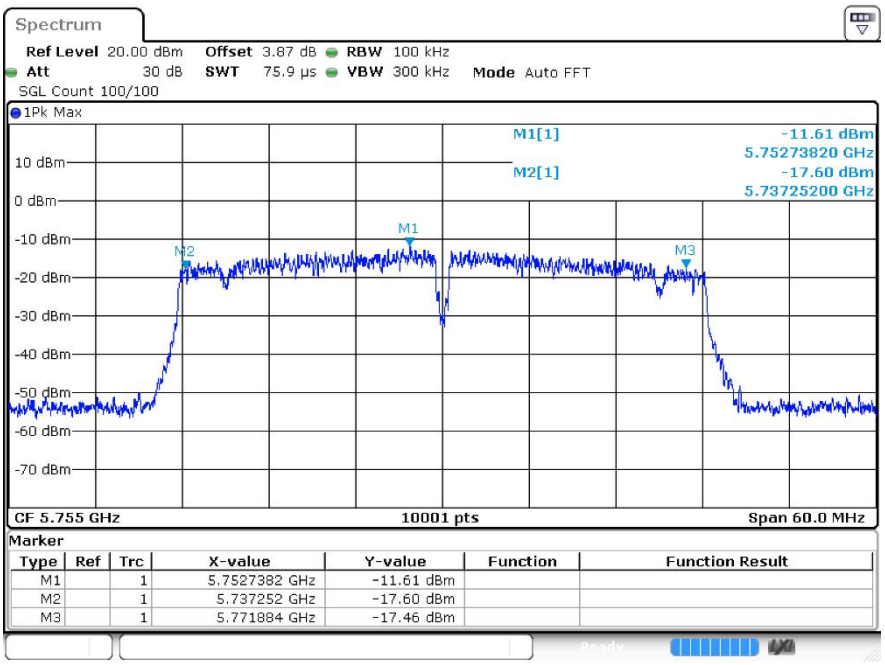
-6dB Bandwidth n20 5785MHz Ant1



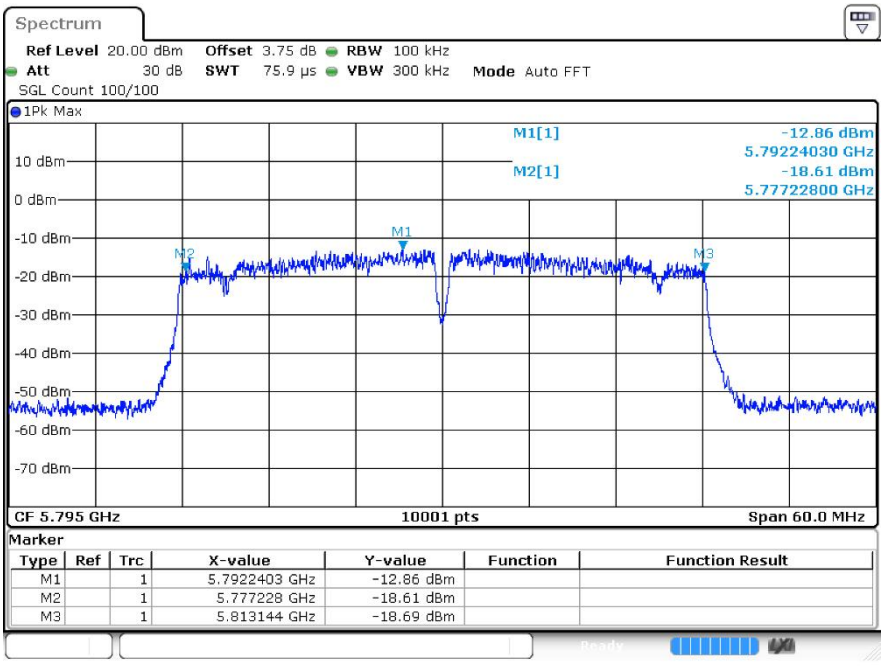
-6dB Bandwidth n20 5825MHz Ant1



-6dB Bandwidth n40 5755MHz Ant1



-6dB Bandwidth n40 5795MHz Ant1

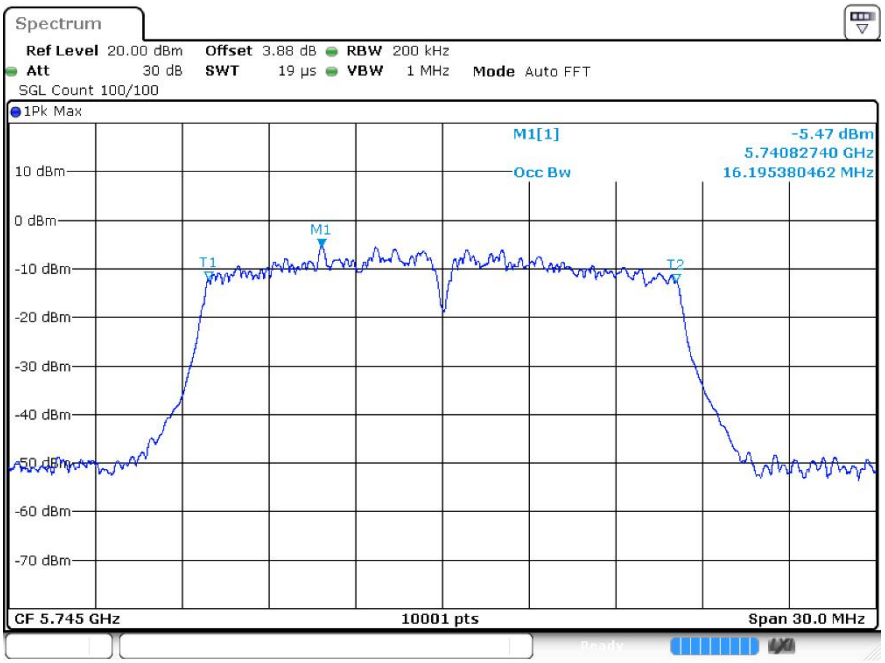
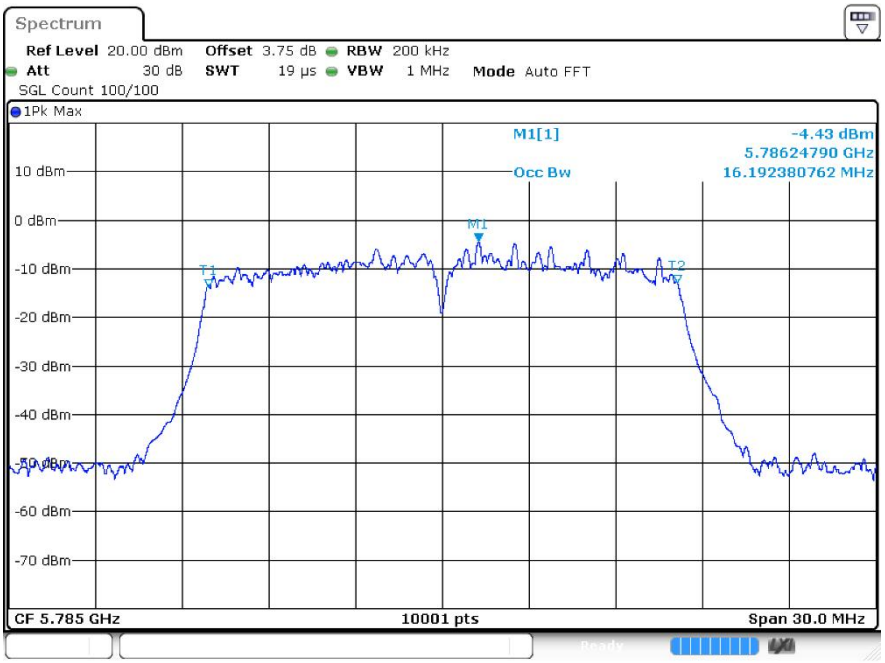


4 Occupied Channel Bandwidth

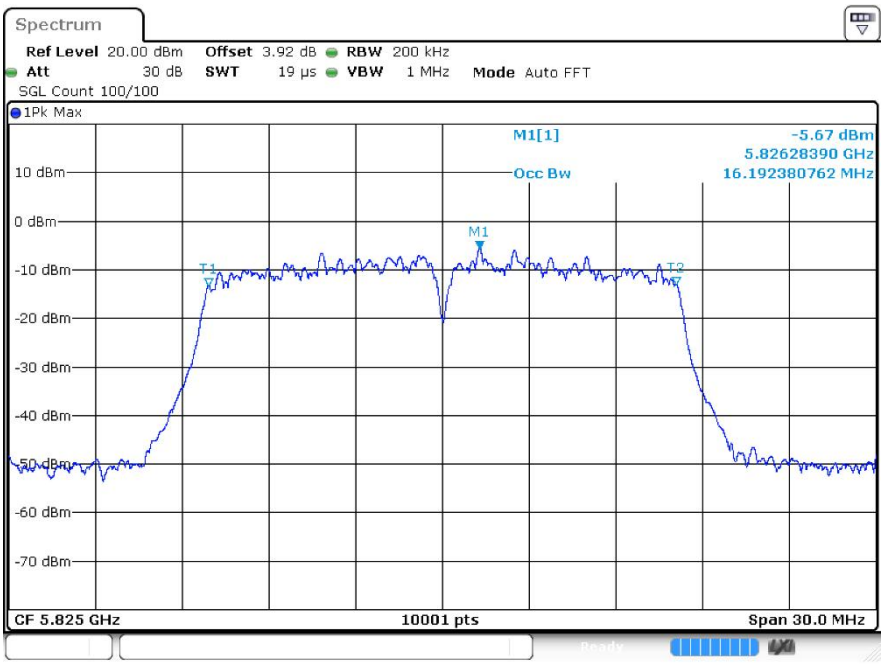
4.1 Test Result

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
a	5745	Ant1	16.195
a	5785	Ant1	16.192
a	5825	Ant1	16.192
n20	5745	Ant1	17.359
n20	5785	Ant1	17.371
n20	5825	Ant1	17.347
n40	5755	Ant1	35.81
n40	5795	Ant1	35.762

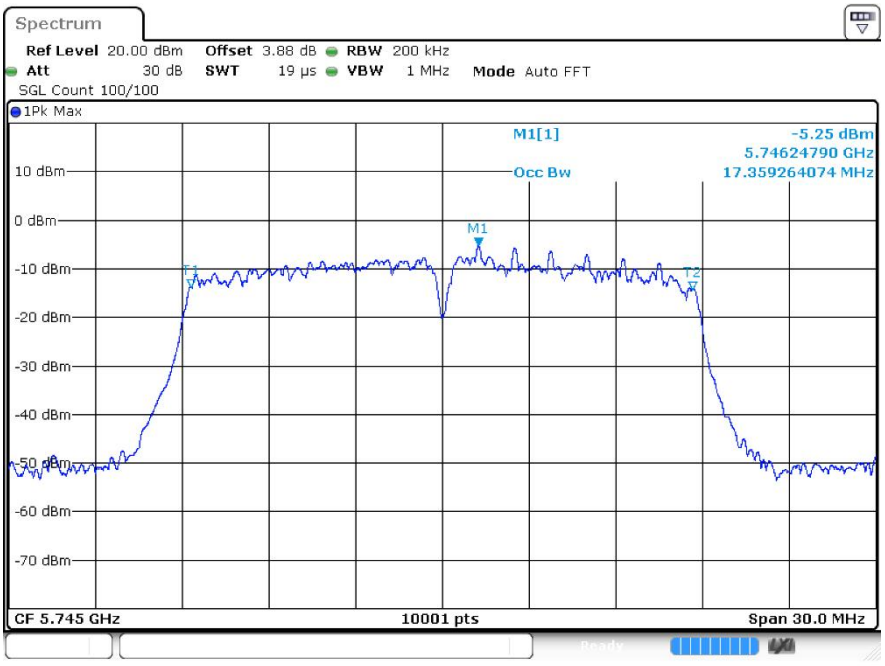
4.2 Test Graphs

Test Graphs
OBW a 5745MHz Ant1

OBW a 5785MHz Ant1


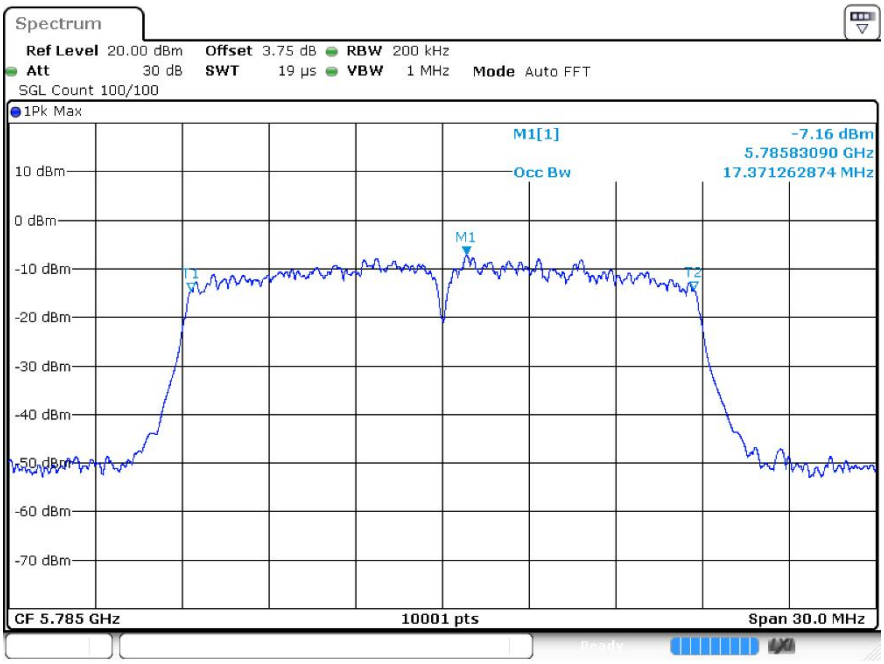
OBW a 5825MHz Ant1



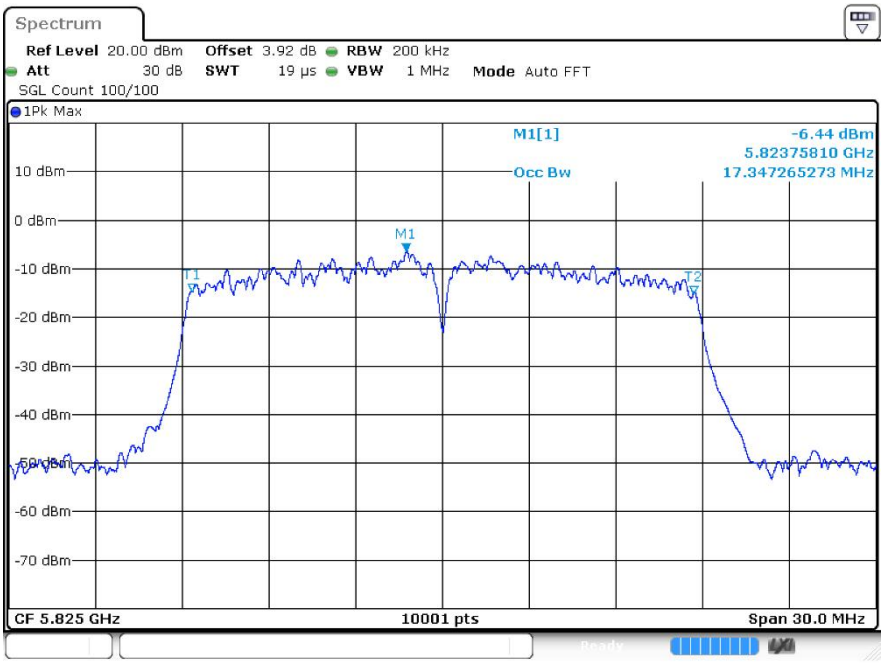
OBW n20 5745MHz Ant1



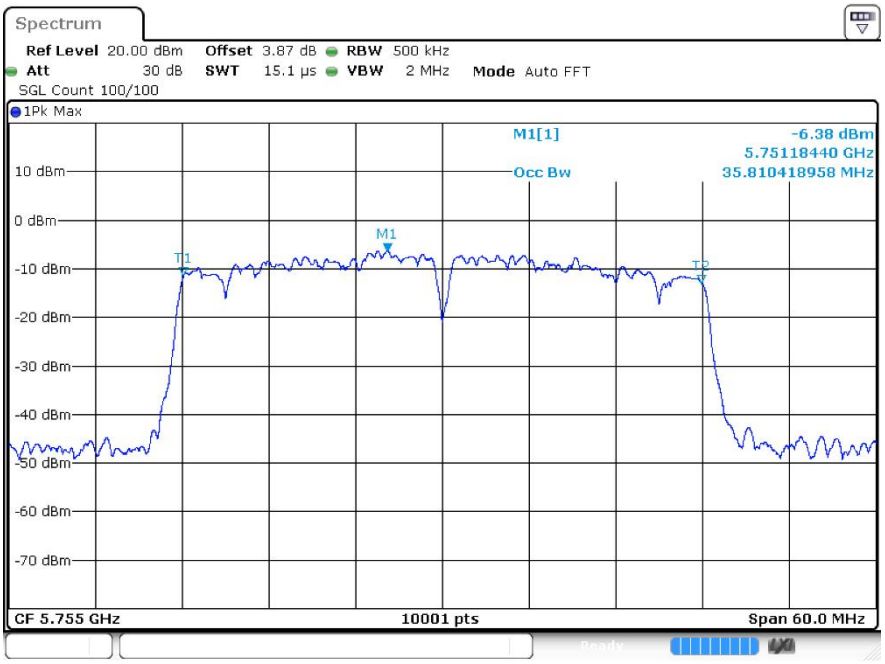
OBW n20 5785MHz Ant1



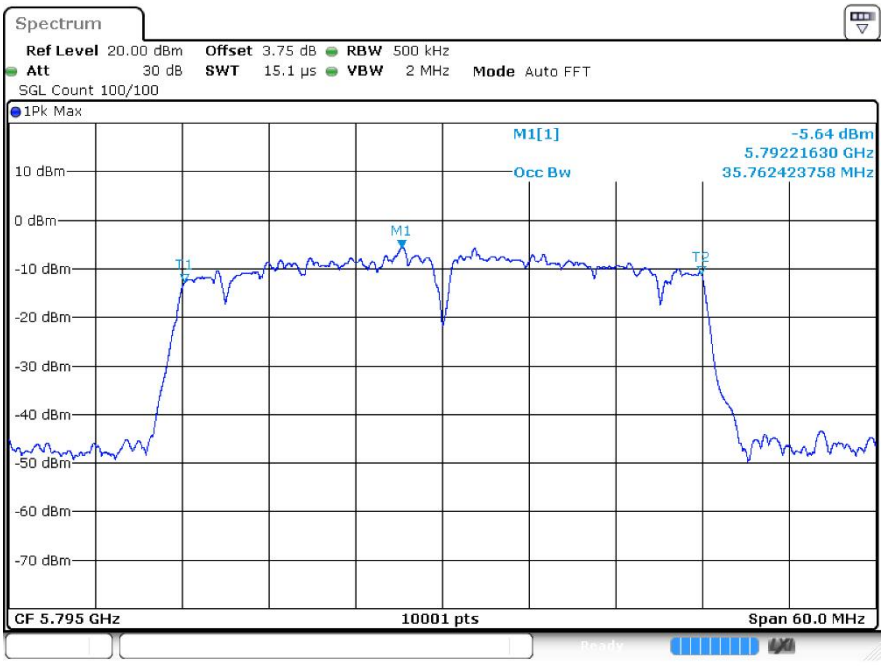
OBW n20 5825MHz Ant1



OBW n40 5755MHz Ant1



OBW n40 5795MHz Ant1

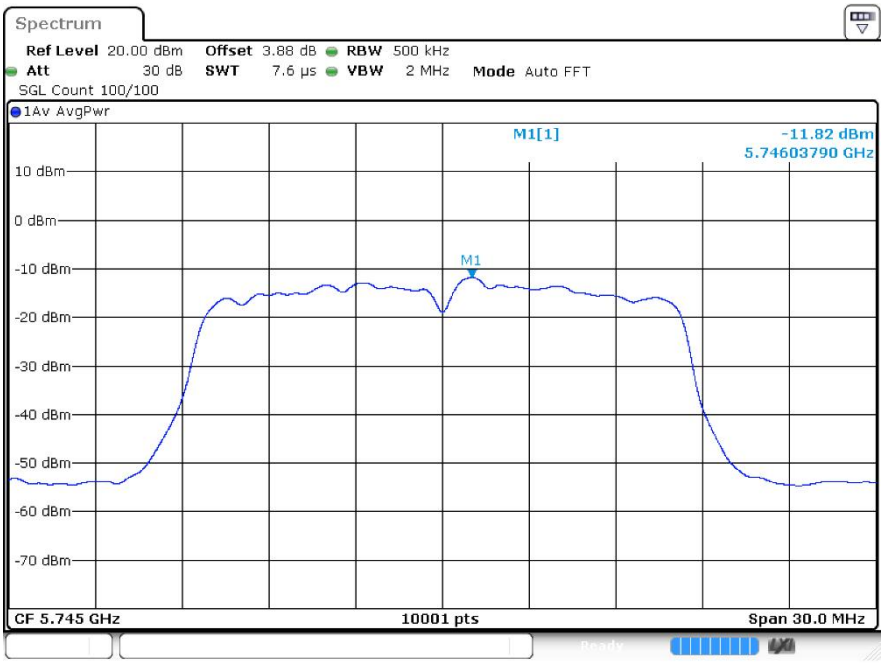
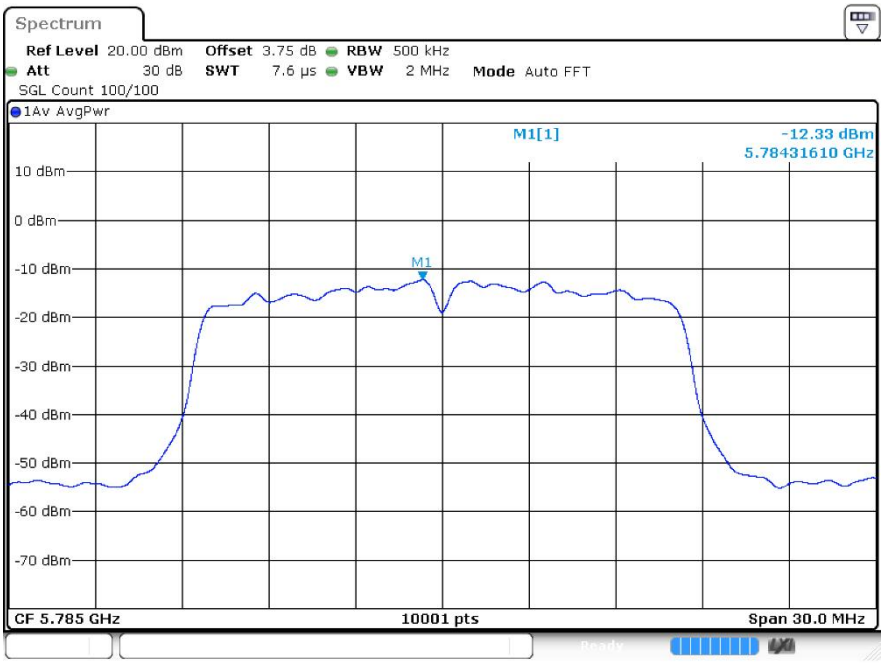


5 Maximum Power Spectral Density Level

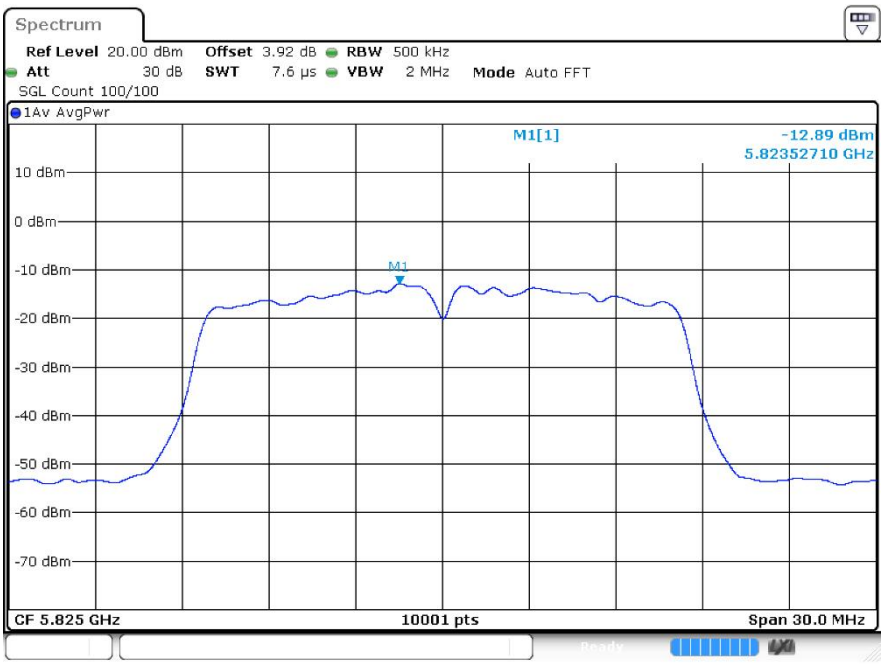
5.1 Test Result

Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
a	5745	Ant1	-11.82	4.48	-7.34	30	Pass
a	5785	Ant1	-12.33	4.53	-7.8	30	Pass
a	5825	Ant1	-12.89	4.48	-8.41	30	Pass
n20	5745	Ant1	-13.54	4.64	-8.9	30	Pass
n20	5785	Ant1	-13.31	4.77	-8.54	30	Pass
n20	5825	Ant1	-14.07	4.68	-9.39	30	Pass
n40	5755	Ant1	-16.88	5.65	-11.23	30	Pass
n40	5795	Ant1	-17.07	5.65	-11.42	30	Pass

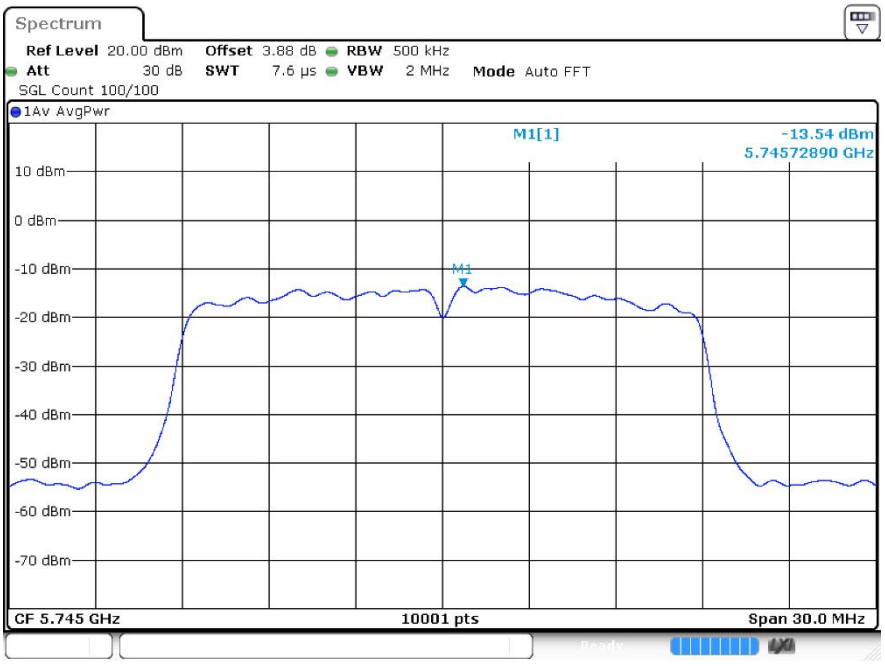
5.2 Test Graphs

Test Graphs
PSD a 5745MHz Ant1

PSD a 5785MHz Ant1


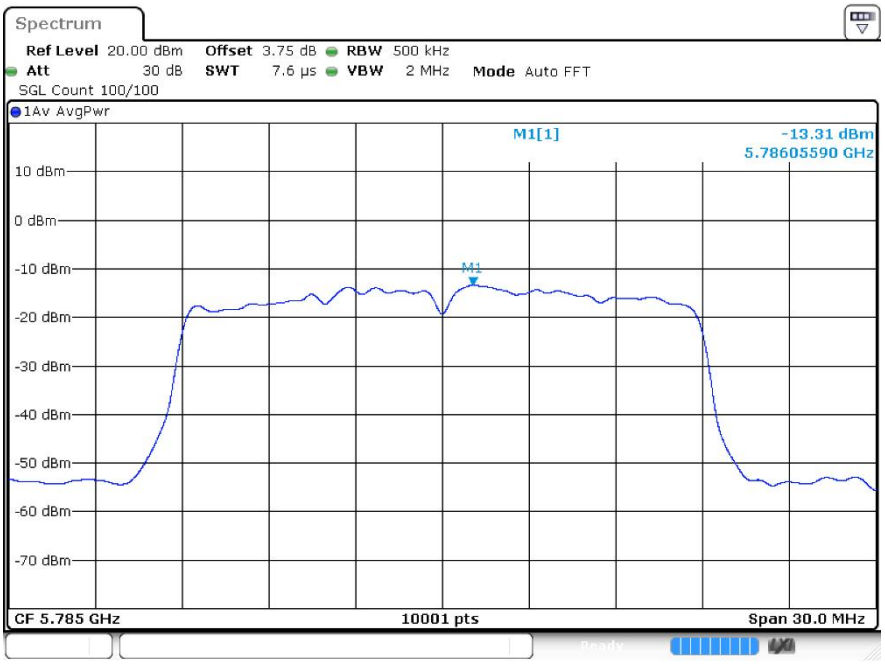
PSD a 5825MHz Ant1



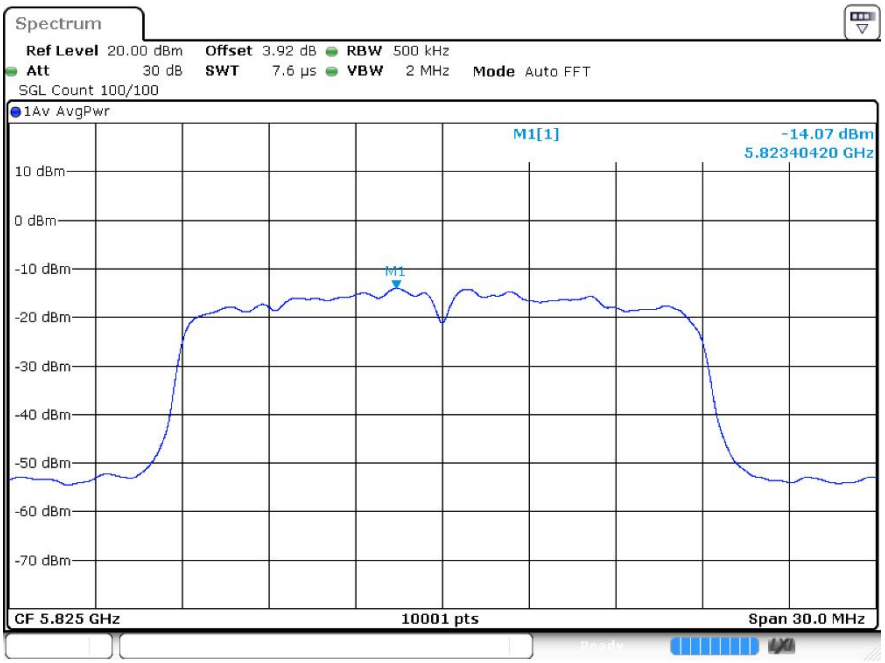
PSD n20 5745MHz Ant1



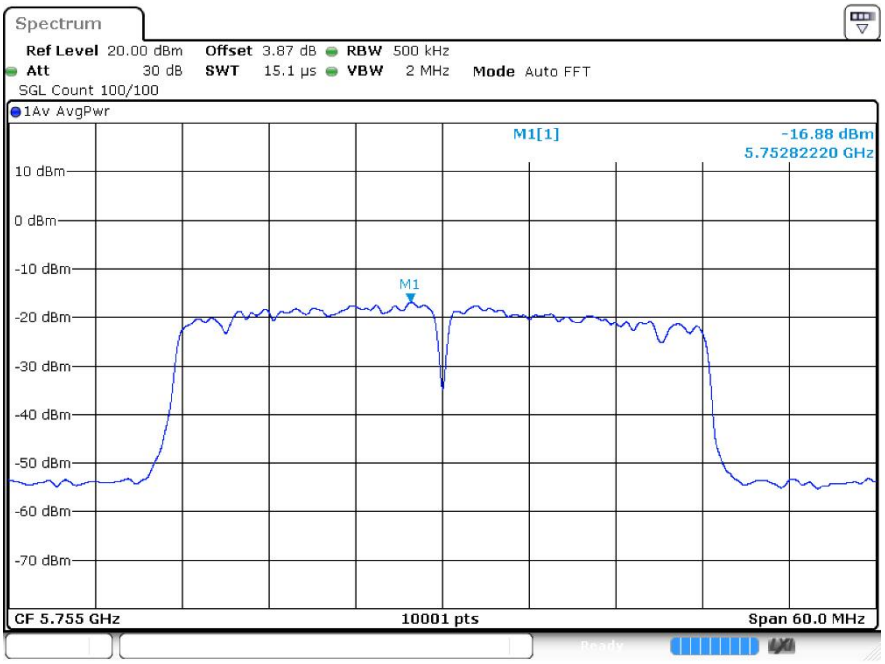
PSD n20 5785MHz Ant1



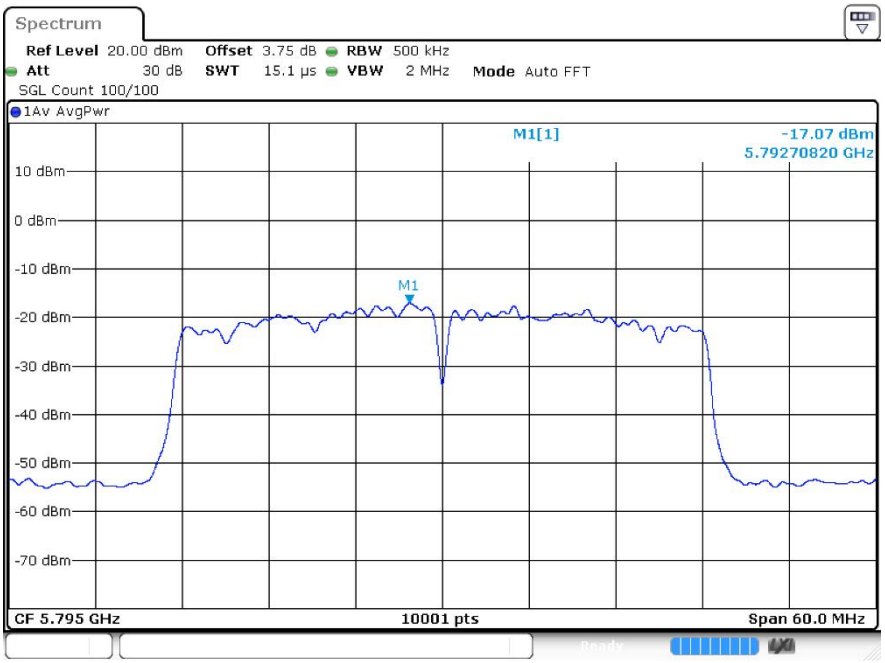
PSD n20 5825MHz Ant1



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
20C 102V	a	5745	Ant1	5744.98	-20000	-3.48	25	Pass
20C 120V	a	5745	Ant1	5744.98	-20000	-3.48	25	Pass
20C 138V	a	5745	Ant1	5744.96	-40000	-6.96	25	Pass
-20C 120V	a	5745	Ant1	5744.98	-20000	-3.48	25	Pass
-10C 120V	a	5745	Ant1	5745	0	0	25	Pass
0C 120V	a	5745	Ant1	5745	0	0	25	Pass
10C 120V	a	5745	Ant1	5745	0	0	25	Pass
30C 120V	a	5745	Ant1	5745	0	0	25	Pass
40C 120V	a	5745	Ant1	5744.98	-20000	-3.48	25	Pass
50C 120V	a	5745	Ant1	5744.98	-20000	-3.48	25	Pass
20C 102V	a	5785	Ant1	5784.98	-20000	-3.46	25	Pass
20C 120V	a	5785	Ant1	5785	0	0	25	Pass
20C 138V	a	5785	Ant1	5785	0	0	25	Pass
-20C 120V	a	5785	Ant1	5784.98	-20000	-3.46	25	Pass
-10C 120V	a	5785	Ant1	5785	0	0	25	Pass
0C 120V	a	5785	Ant1	5785	0	0	25	Pass
10C 120V	a	5785	Ant1	5785	0	0	25	Pass
30C 120V	a	5785	Ant1	5785	0	0	25	Pass
40C 120V	a	5785	Ant1	5785	0	0	25	Pass
50C 120V	a	5785	Ant1	5785.02	20000	3.46	25	Pass
20C 102V	a	5825	Ant1	5825.02	20000	3.43	25	Pass
20C 120V	a	5825	Ant1	5825.02	20000	3.43	25	Pass
20C 138V	a	5825	Ant1	5824.98	-20000	-3.43	25	Pass
-20C 120V	a	5825	Ant1	5825	0	0	25	Pass
-10C 120V	a	5825	Ant1	5825.02	20000	3.43	25	Pass
0C 120V	a	5825	Ant1	5824.98	-20000	-3.43	25	Pass
10C 120V	a	5825	Ant1	5825.02	20000	3.43	25	Pass
30C 120V	a	5825	Ant1	5825.04	40000	6.87	25	Pass
40C 120V	a	5825	Ant1	5824.98	-20000	-3.43	25	Pass
50C 120V	a	5825	Ant1	5825	0	0	25	Pass
20C 102V	n20	5745	Ant1	5744.88	-120000	-20.89	25	Pass
20C 120V	n20	5745	Ant1	5744.98	-20000	-3.48	25	Pass
20C 138V	n20	5745	Ant1	5744.98	-20000	-3.48	25	Pass
-20C 120V	n20	5745	Ant1	5745.02	20000	3.48	25	Pass
-10C 120V	n20	5745	Ant1	5744.98	-20000	-3.48	25	Pass

0C 120V	n20	5745	Ant1	5745	0	0	25	Pass
10C 120V	n20	5745	Ant1	5745	0	0	25	Pass
30C 120V	n20	5745	Ant1	5744.98	-20000	-3.48	25	Pass
40C 120V	n20	5745	Ant1	5744.98	-20000	-3.48	25	Pass
50C 120V	n20	5745	Ant1	5745	0	0	25	Pass
20C 102V	n20	5785	Ant1	5785.08	80000	13.83	25	Pass
20C 120V	n20	5785	Ant1	5785.02	20000	3.46	25	Pass
20C 138V	n20	5785	Ant1	5785	0	0	25	Pass
-20C 120V	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
-10C 120V	n20	5785	Ant1	5785	0	0	25	Pass
0C 120V	n20	5785	Ant1	5785	0	0	25	Pass
10C 120V	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
30C 120V	n20	5785	Ant1	5785	0	0	25	Pass
40C 120V	n20	5785	Ant1	5785.02	20000	3.46	25	Pass
50C 120V	n20	5785	Ant1	5785.04	40000	6.91	25	Pass
20C 102V	n20	5825	Ant1	5825	0	0	25	Pass
20C 120V	n20	5825	Ant1	5825.04	40000	6.87	25	Pass
20C 138V	n20	5825	Ant1	5825.02	20000	3.43	25	Pass
-20C 120V	n20	5825	Ant1	5825.02	20000	3.43	25	Pass
-10C 120V	n20	5825	Ant1	5825	0	0	25	Pass
0C 120V	n20	5825	Ant1	5824.98	-20000	-3.43	25	Pass
10C 120V	n20	5825	Ant1	5824.98	-20000	-3.43	25	Pass
30C 120V	n20	5825	Ant1	5825	0	0	25	Pass
40C 120V	n20	5825	Ant1	5825	0	0	25	Pass
50C 120V	n20	5825	Ant1	5824.98	-20000	-3.43	25	Pass
20C 102V	n40	5755	Ant1	5755	0	0	25	Pass
20C 120V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
20C 138V	n40	5755	Ant1	5755	0	0	25	Pass
-20C 120V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
-10C 120V	n40	5755	Ant1	5755	0	0	25	Pass
0C 120V	n40	5755	Ant1	5755.04	40000	6.95	25	Pass
10C 120V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
30C 120V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
40C 120V	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
50C 120V	n40	5755	Ant1	5755	0	0	25	Pass
20C 102V	n40	5795	Ant1	5795	0	0	25	Pass
20C 120V	n40	5795	Ant1	5795	0	0	25	Pass
20C 138V	n40	5795	Ant1	5795	0	0	25	Pass
-20C 120V	n40	5795	Ant1	5795	0	0	25	Pass
-10C 120V	n40	5795	Ant1	5795	0	0	25	Pass
0C 120V	n40	5795	Ant1	5794.96	-40000	-6.9	25	Pass
10C 120V	n40	5795	Ant1	5795	0	0	25	Pass
30C 120V	n40	5795	Ant1	5795	0	0	25	Pass

40C 120V	n40	5795	Ant1	5795.04	40000	6.9	25	Pass
50C 120V	n40	5795	Ant1	5795	0	0	25	Pass

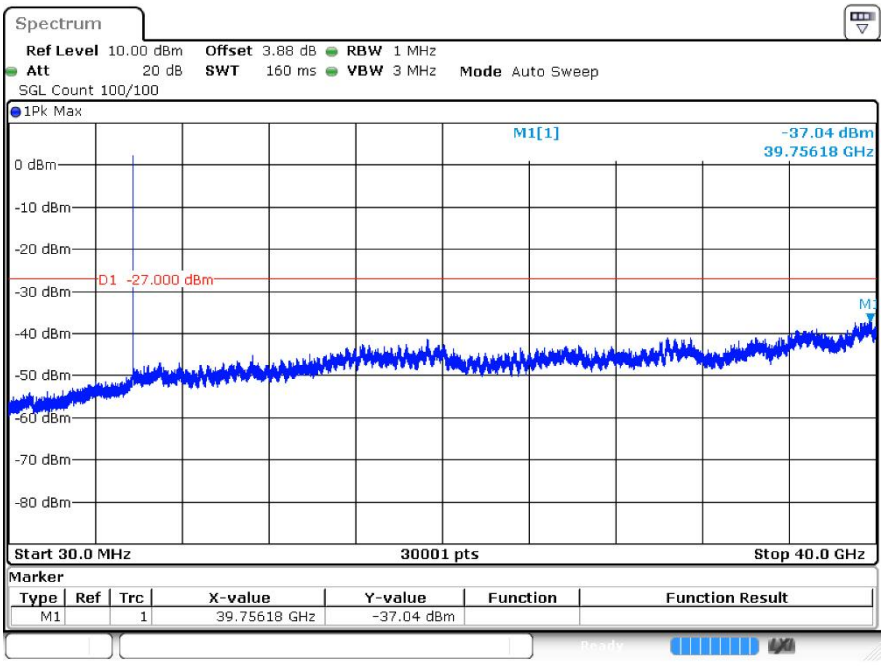
7 Conducted RF Spurious Emission

7.1 Test Result

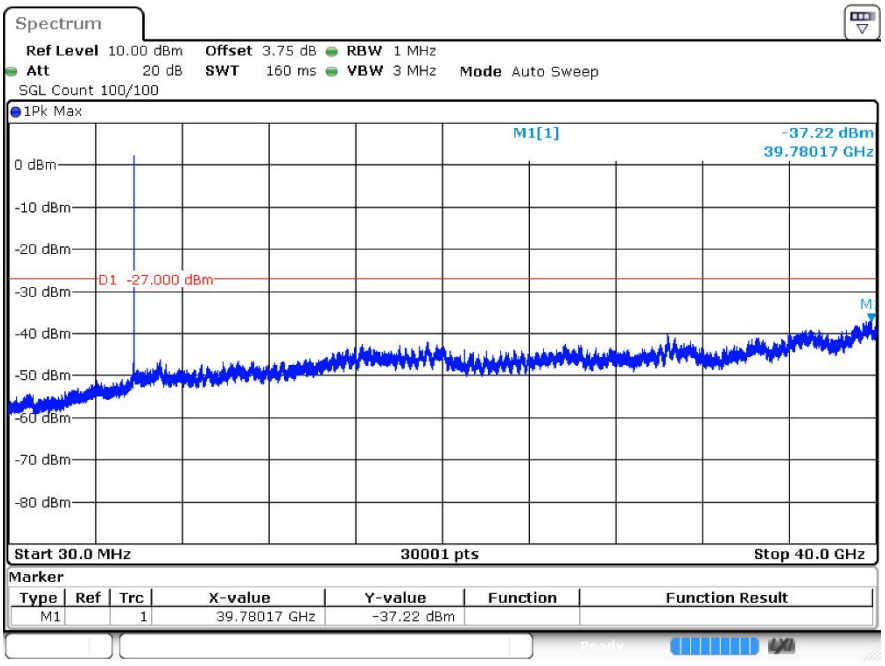
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
a	5745	Ant1	-37.04	-27	Pass
a	5785	Ant1	-37.22	-27	Pass
a	5825	Ant1	-36.82	-27	Pass
n20	5745	Ant1	-36.66	-27	Pass
n20	5785	Ant1	-35.92	-27	Pass
n20	5825	Ant1	-36.7	-27	Pass
n40	5755	Ant1	-36.56	-27	Pass
n40	5795	Ant1	-36.87	-27	Pass

7.2 Test Graphs

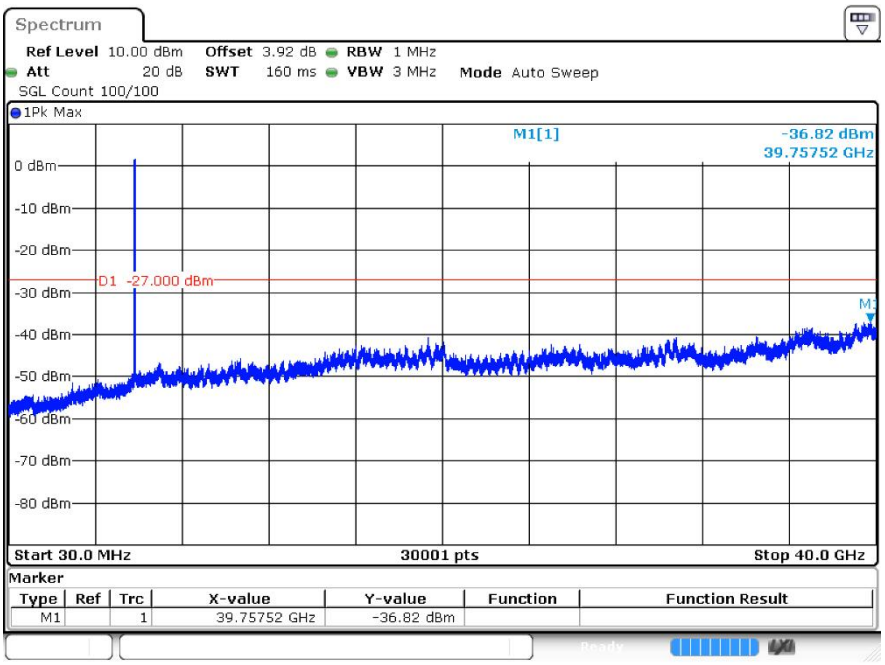
Test Graphs
Tx. Spurious a 5745MHz Ant1 Emission



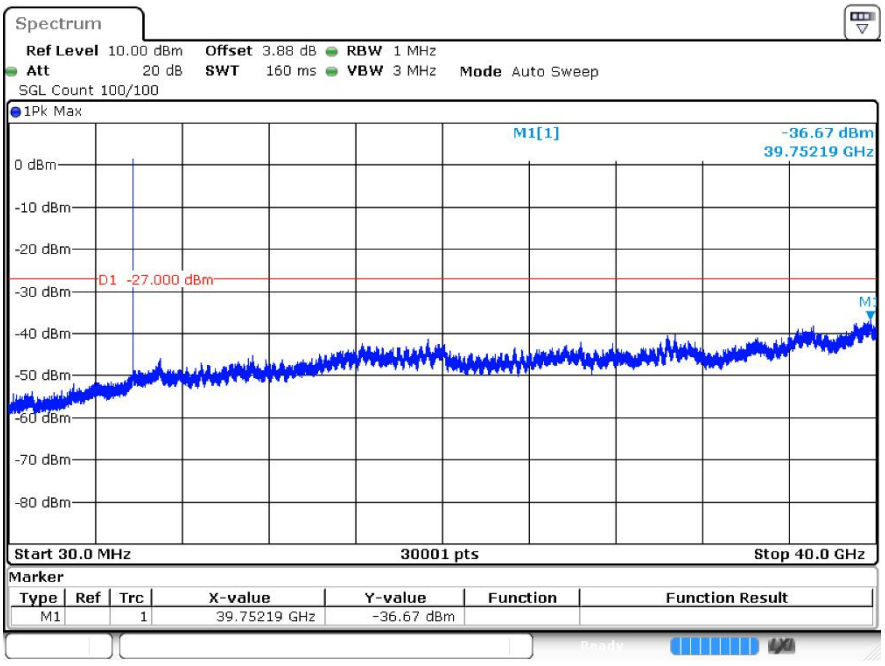
Tx. Spurious a 5785MHz Ant1 Emission



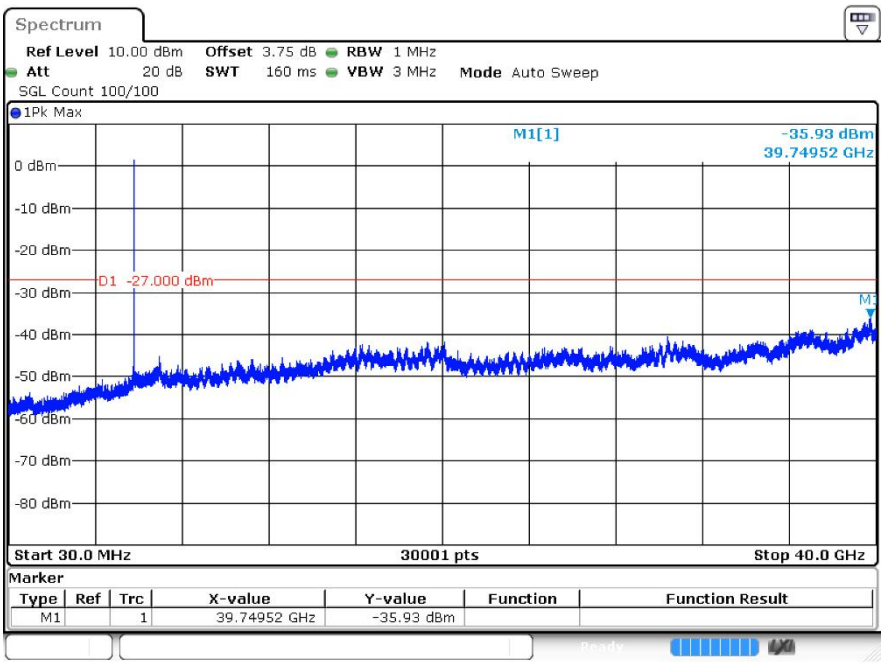
Tx. Spurious a 5825MHz Ant1 Emission



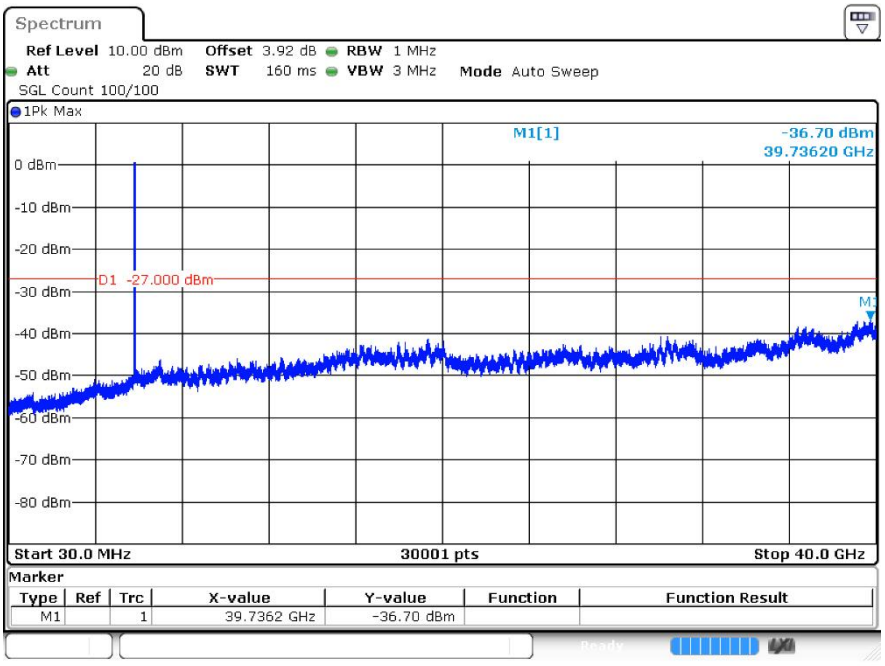
Tx. Spurious n20 5745MHz Ant1 Emission



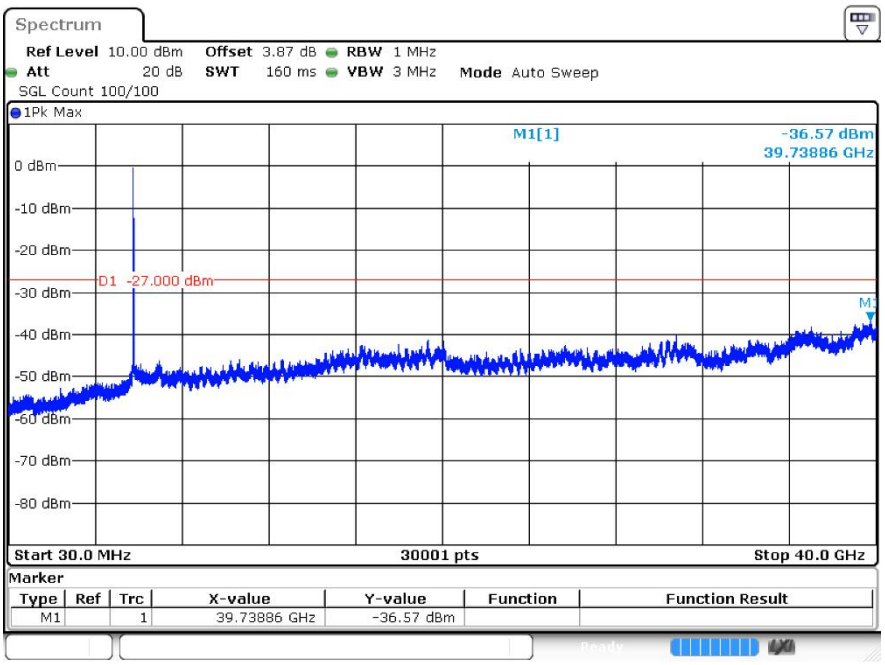
Tx. Spurious n20 5785MHz Ant1 Emission



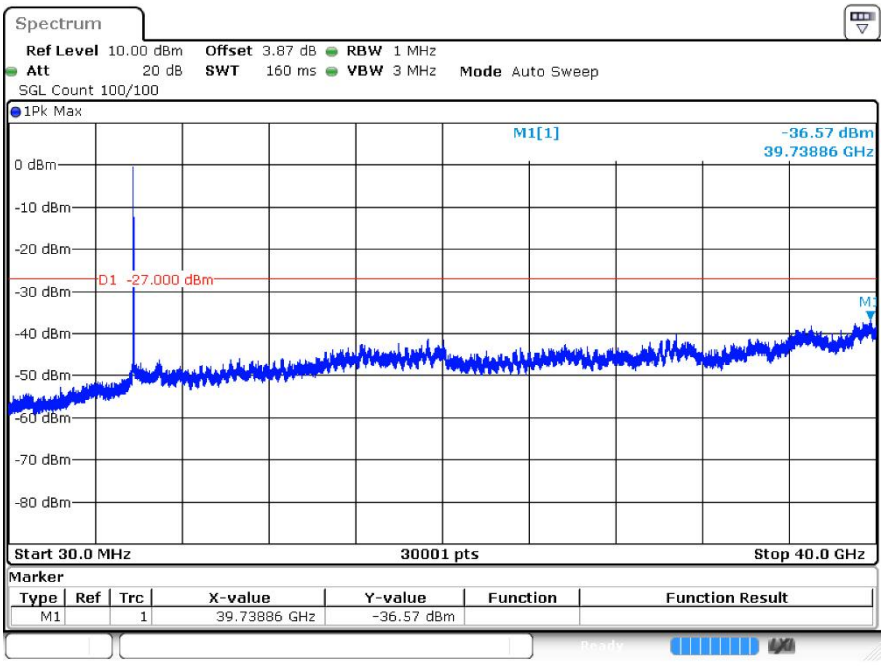
Tx. Spurious n20 5825MHz Ant1 Emission



Tx. Spurious n40 5755MHz Ant1 Emission



Tx. Spurious n40 5795MHz Ant1 Emission



8 Restrict Band

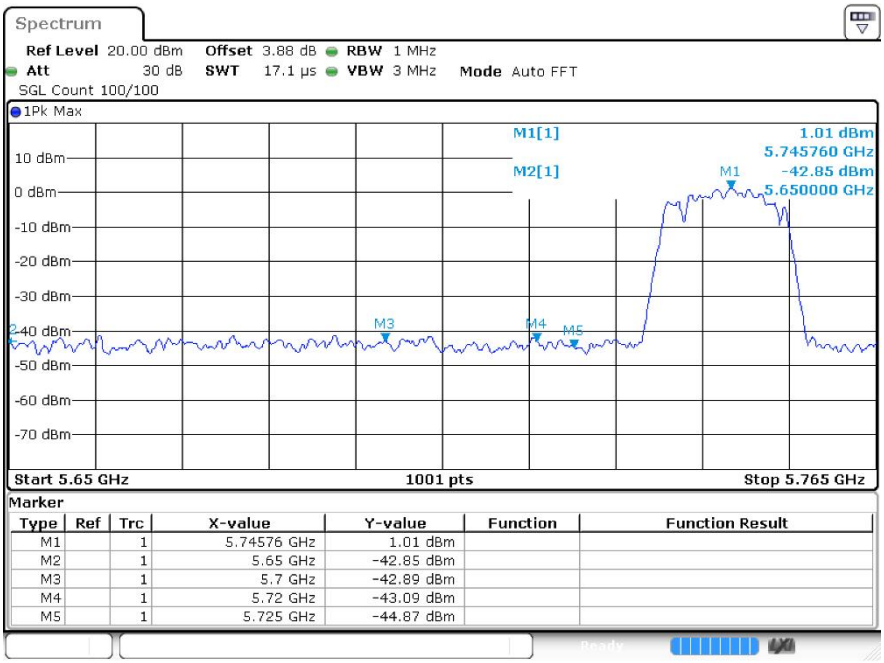
8.1 Test Result

Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor	EIRP Power (dBm)	Detector	Limit (dBm)	Verdict
a	5745	Ant1	5650	-42.85	2.31	-	-40.54	Peak	-27	Pass
a	5745	Ant1	5650	-51.52	2.31	4.48	-44.73	Average	-27	Pass
a	5745	Ant1	5700	-42.89	2.31	-	-40.58	Peak	10	Pass
a	5745	Ant1	5700	-50.97	2.31	4.48	-44.18	Average	10	Pass
a	5745	Ant1	5720	-43.09	2.31	-	-40.78	Peak	15.6	Pass
a	5745	Ant1	5720	-51.61	2.31	4.48	-44.82	Average	15.6	Pass
a	5745	Ant1	5725	-44.87	2.31	-	-42.56	Peak	27	Pass
a	5745	Ant1	5725	-51.04	2.31	4.48	-44.25	Average	27	Pass
a	5825	Ant1	5850	-43.89	2.31	-	-41.58	Peak	27	Pass
a	5825	Ant1	5850	-50.68	2.31	4.48	-43.89	Average	27	Pass
a	5825	Ant1	5855	-42.93	2.31	-	-40.62	Peak	15.6	Pass
a	5825	Ant1	5855	-50.29	2.31	4.48	-43.5	Average	15.6	Pass
a	5825	Ant1	5875	-42.93	2.31	-	-40.62	Peak	10	Pass
a	5825	Ant1	5875	-50.38	2.31	4.48	-43.59	Average	10	Pass
a	5825	Ant1	5925	-43.87	2.31	-	-41.56	Peak	-27	Pass
a	5825	Ant1	5925	-49.9	2.31	4.48	-43.11	Average	-27	Pass
n20	5745	Ant1	5650	-46.15	2.31	-	-43.84	Peak	-27	Pass
n20	5745	Ant1	5650	-50.6	2.31	4.64	-43.65	Average	-27	Pass
n20	5745	Ant1	5700	-45.3	2.31	-	-42.99	Peak	10	Pass
n20	5745	Ant1	5700	-50.88	2.31	4.64	-43.93	Average	10	Pass
n20	5745	Ant1	5720	-42.29	2.31	-	-39.98	Peak	15.6	Pass
n20	5745	Ant1	5720	-51.13	2.31	4.64	-44.18	Average	15.6	Pass
n20	5745	Ant1	5725	-43.72	2.31	-	-41.41	Peak	27	Pass
n20	5745	Ant1	5725	-51.44	2.31	4.64	-44.49	Average	27	Pass
n20	5825	Ant1	5850	-44.81	2.31	-	-42.5	Peak	27	Pass
n20	5825	Ant1	5850	-50.51	2.31	4.68	-43.52	Average	27	Pass
n20	5825	Ant1	5855	-43.09	2.31	-	-40.78	Peak	15.6	Pass
n20	5825	Ant1	5855	-50.94	2.31	4.68	-43.95	Average	15.6	Pass
n20	5825	Ant1	5875	-44.35	2.31	-	-42.04	Peak	10	Pass
n20	5825	Ant1	5875	-50.22	2.31	4.68	-43.23	Average	10	Pass
n20	5825	Ant1	5925	-43.41	2.31	-	-41.1	Peak	-27	Pass
n20	5825	Ant1	5925	-50.67	2.31	4.68	-43.68	Average	-27	Pass
n40	5755	Ant1	5650	-43.88	2.31	-	-43.5	Peak	-27	Pass
n40	5755	Ant1	5650	-51.14	2.31	5.65	-40.63	Average	-27	Pass
n40	5755	Ant1	5700	-45.68	2.31	-	-41.85	Peak	10	Pass

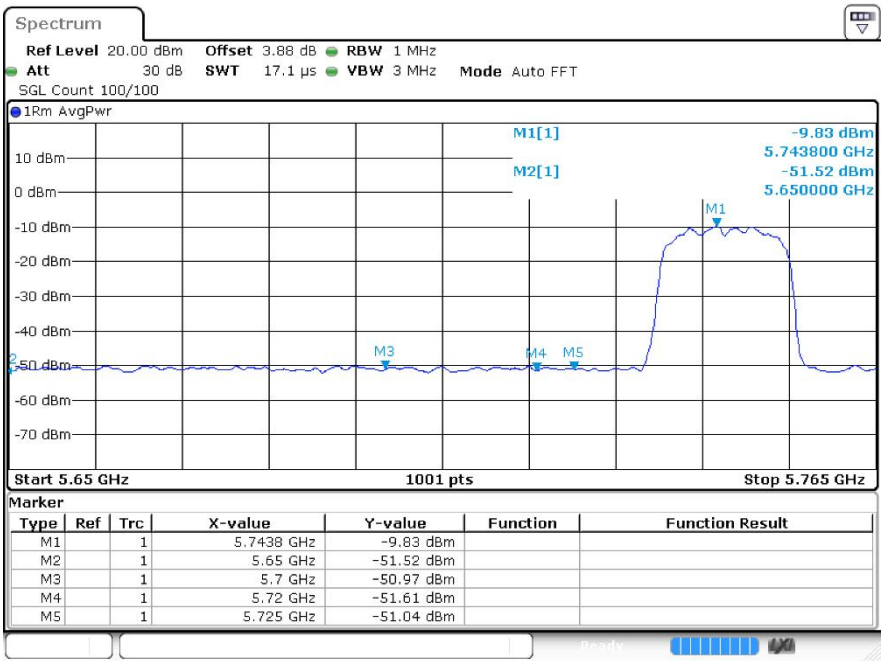
n40	5755	Ant1	5700	-50.56	2.31	5.65	-39.76	Average	10	Pass
n40	5755	Ant1	5720	-44.49	2.31	-	-41.72	Peak	15.6	Pass
n40	5755	Ant1	5720	-51.13	2.31	5.65	-41.63	Average	15.6	Pass
n40	5755	Ant1	5725	-43.64	2.31	-	-42.79	Peak	27	Pass
n40	5755	Ant1	5725	-51.46	2.31	5.65	-39.97	Average	27	Pass
n40	5795	Ant1	5850	-42.94	2.31	-	-43.05	Peak	27	Pass
n40	5795	Ant1	5850	-49.81	2.31	5.65	-40.54	Average	27	Pass
n40	5795	Ant1	5855	-42.07	2.31	-	-44.73	Peak	15.6	Pass
n40	5795	Ant1	5855	-49.68	2.31	5.65	-40.58	Average	15.6	Pass
n40	5795	Ant1	5875	-43.94	2.31	-	-44.18	Peak	10	Pass
n40	5795	Ant1	5875	-50.75	2.31	5.65	-40.78	Average	10	Pass
n40	5795	Ant1	5925	-42.28	2.31	-	-44.82	Peak	-27	Pass
n40	5795	Ant1	5925	-51.01	2.31	5.65	-42.56	Average	-27	Pass

8.2 Test Graphs

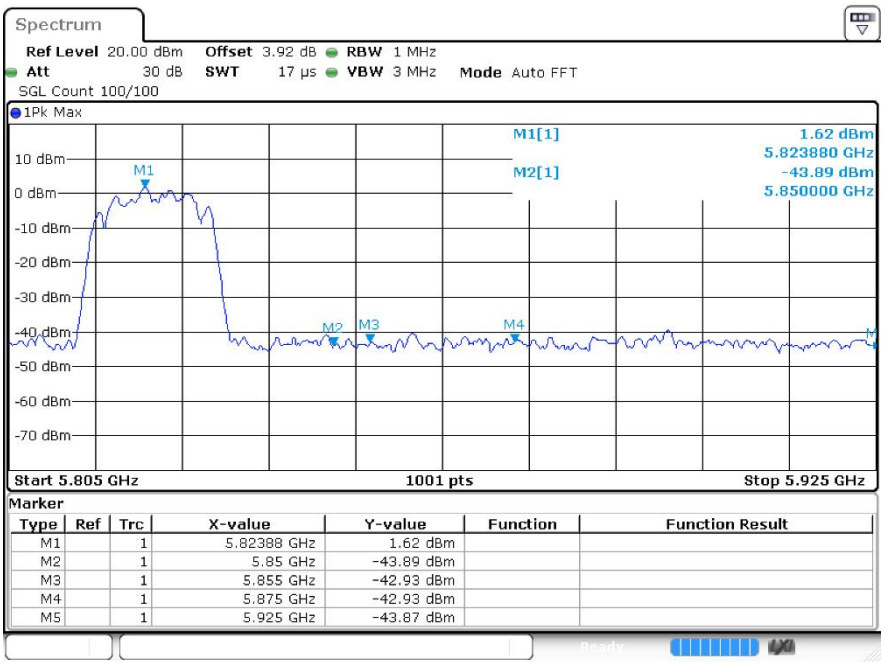
Test Graphs
Restrict Band a 5745MHz Ant1 Peak



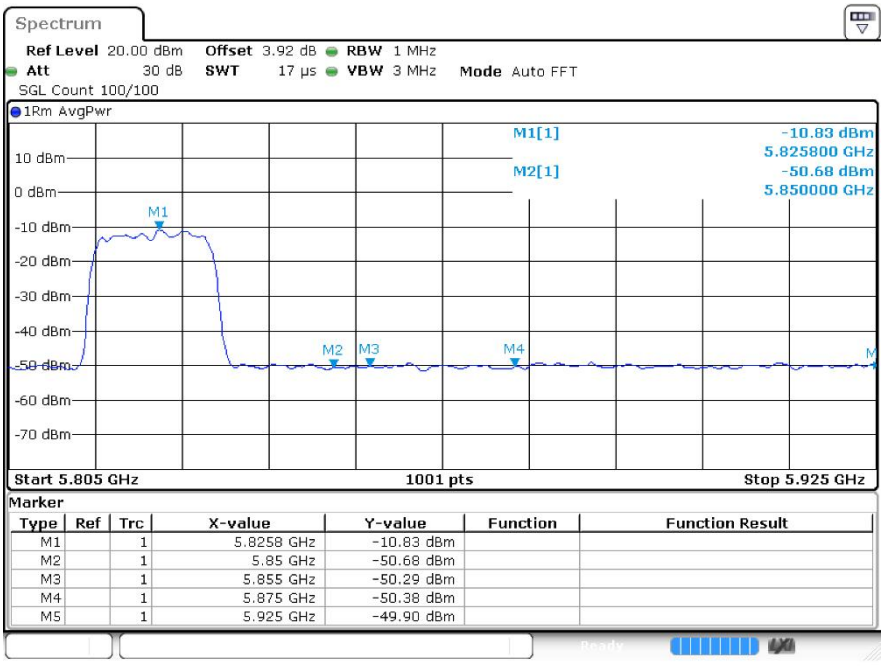
Restrict Band a 5745MHz Ant1 Average



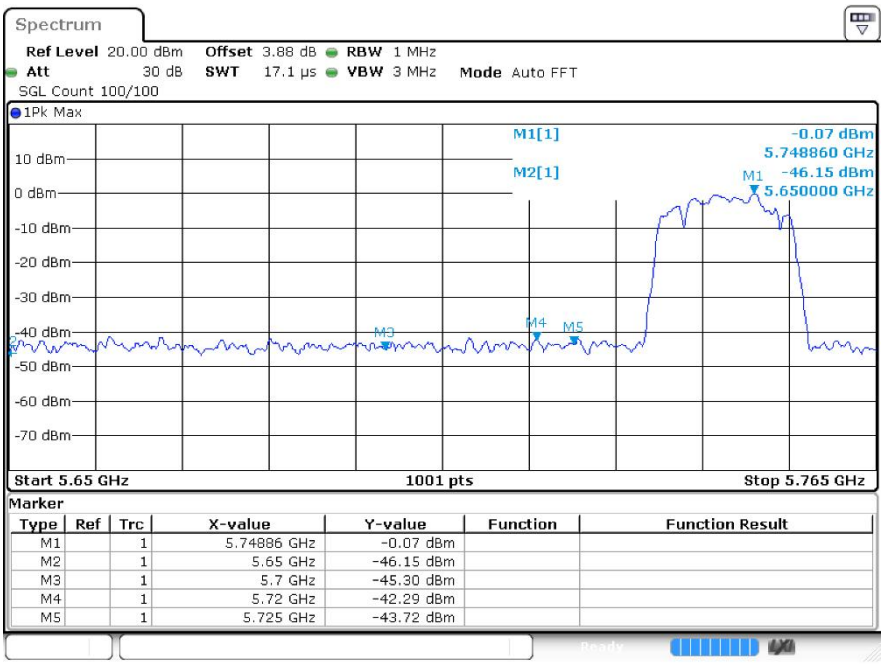
Restrict Band a 5825MHz Ant1 Peak



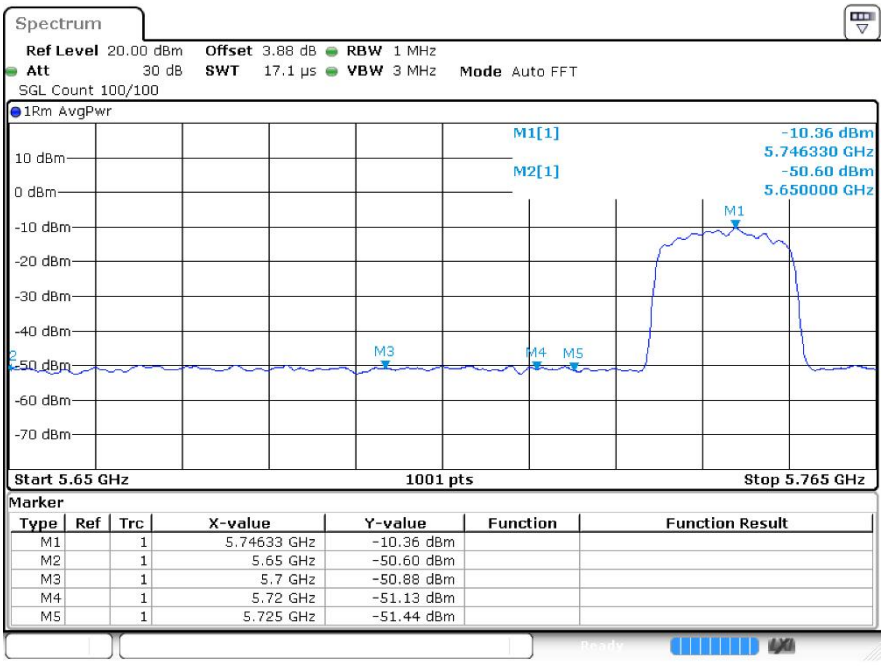
Restrict Band a 5825MHz Ant1 Average



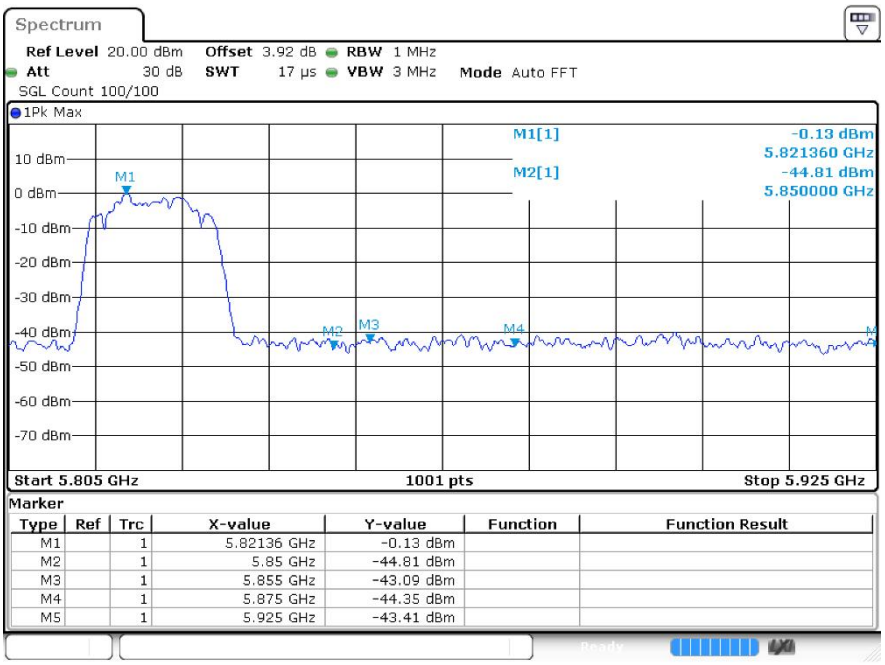
Restrict Band n20 5745MHz Ant1 Peak



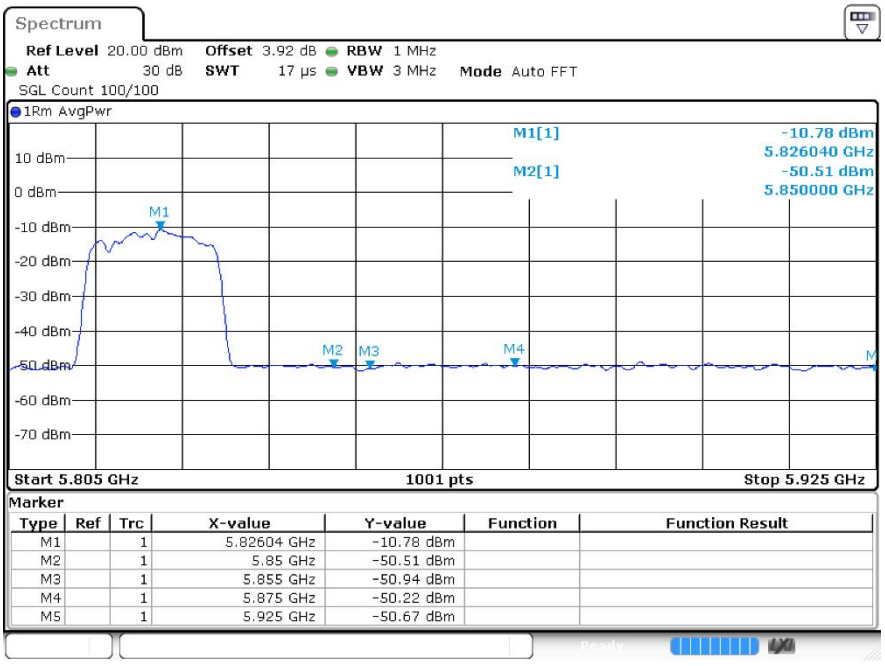
Restrict Band n20 5745MHz Ant1 Average



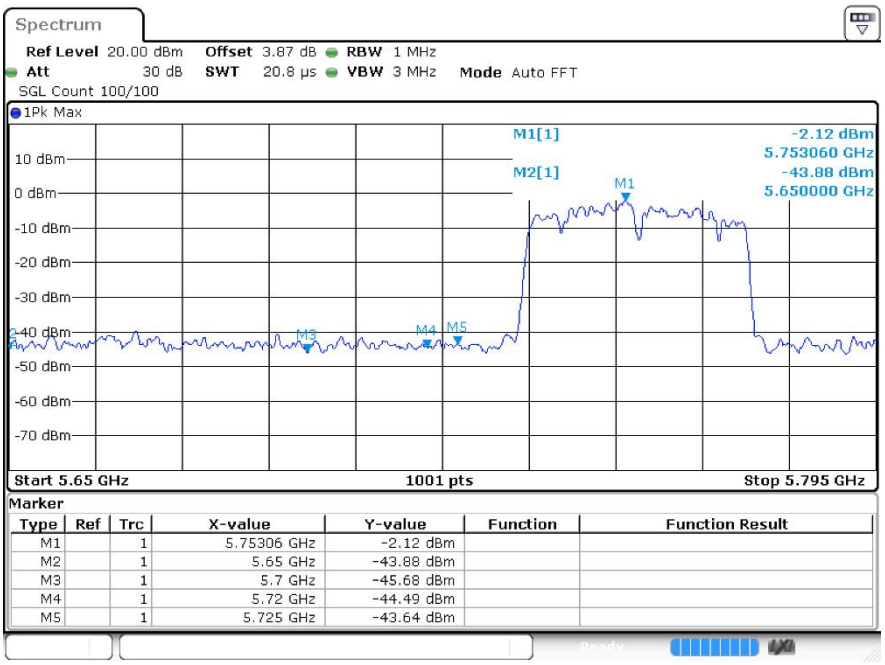
Restrict Band n20 5825MHz Ant1 Peak



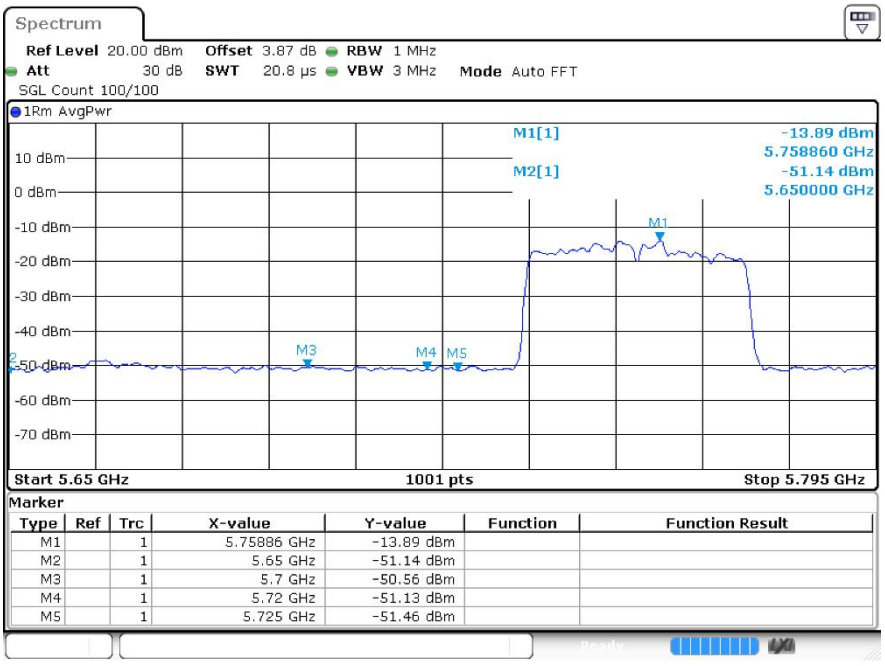
Restrict Band n20 5825MHz Ant1 Average



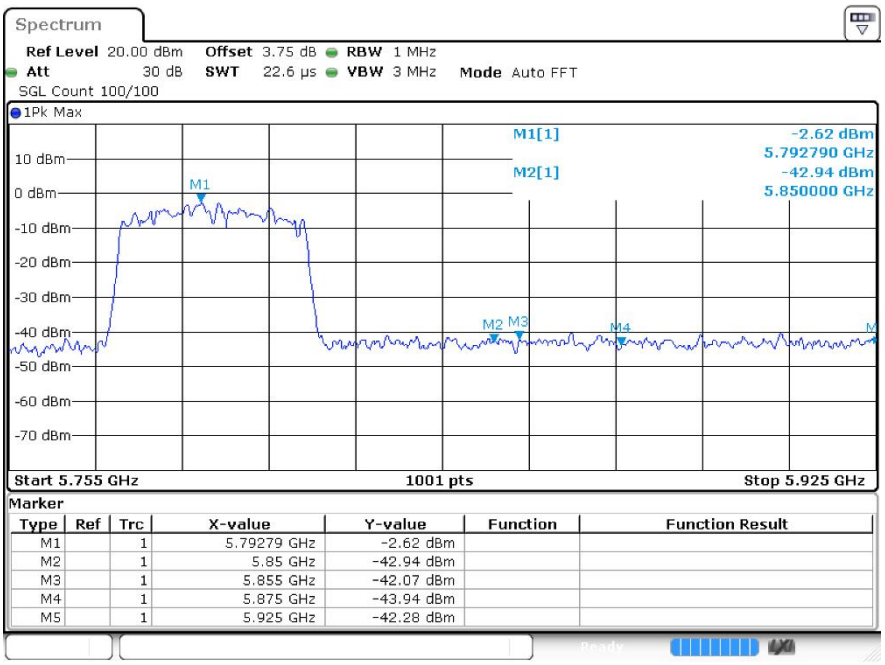
Restrict Band n40 5755MHz Ant1 Peak



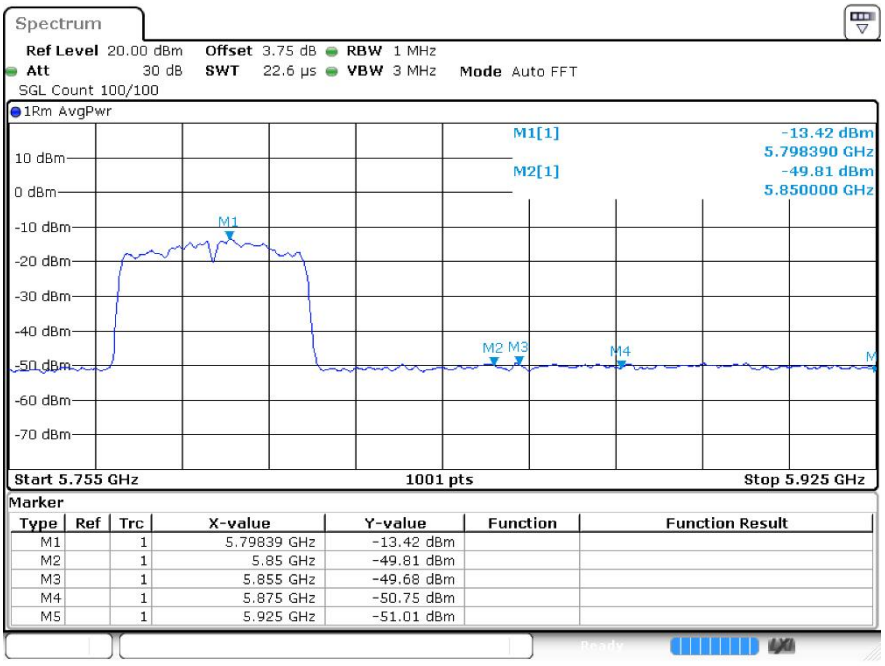
Restrict Band n40 5755MHz Ant1 Average



Restrict Band n40 5795MHz Ant1 Peak



Restrict Band n40 5795MHz Ant1 Average



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