



















11.3. Appendix A3: Min Emission Bandwidth

11.3.1. Test Result

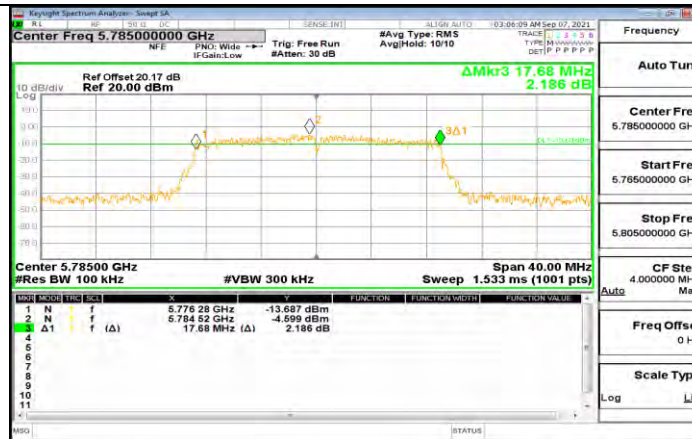
Test Mode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.480	5737.120	5752.600	0.5	PASS
	Ant2	5745	16.400	5736.840	5753.240	0.5	PASS
	Ant1	5785	16.400	5776.840	5793.240	0.5	PASS
	Ant2	5785	16.400	5776.840	5793.240	0.5	PASS
	Ant1	5825	16.360	5816.880	5833.240	0.5	PASS
	Ant2	5825	15.800	5816.840	5832.640	0.5	PASS
11AC20MIMO	Ant1	5745	17.000	5736.640	5753.640	0.5	PASS
	Ant2	5745	17.000	5736.320	5753.320	0.5	PASS
	Ant1	5785	17.400	5776.560	5793.960	0.5	PASS
	Ant2	5785	17.680	5776.280	5793.960	0.5	PASS
	Ant1	5825	17.640	5816.320	5833.960	0.5	PASS
	Ant2	5825	17.680	5816.280	5833.960	0.5	PASS
11AC40MIMO	Ant1	5755	35.440	5737.160	5772.600	0.5	PASS
	Ant2	5755	35.840	5736.920	5772.760	0.5	PASS
	Ant1	5795	36.080	5776.920	5813.000	0.5	PASS
	Ant2	5795	34.800	5777.560	5812.360	0.5	PASS
11AC80MIMO	Ant1	5775	75.520	5737.400	5812.920	0.5	PASS
	Ant2	5775	75.520	5737.400	5812.920	0.5	PASS

11.3.2. Test Graphs

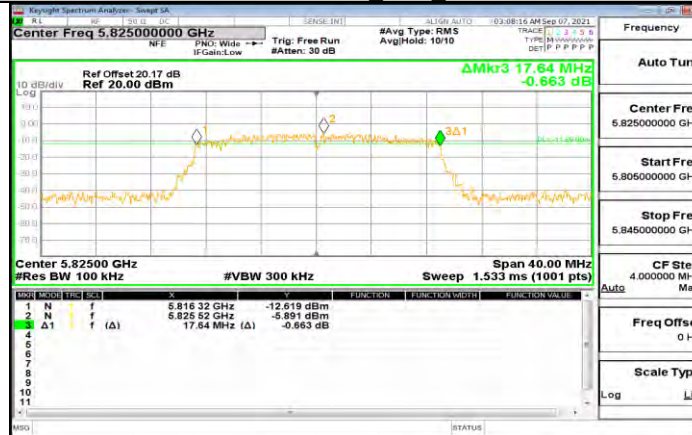




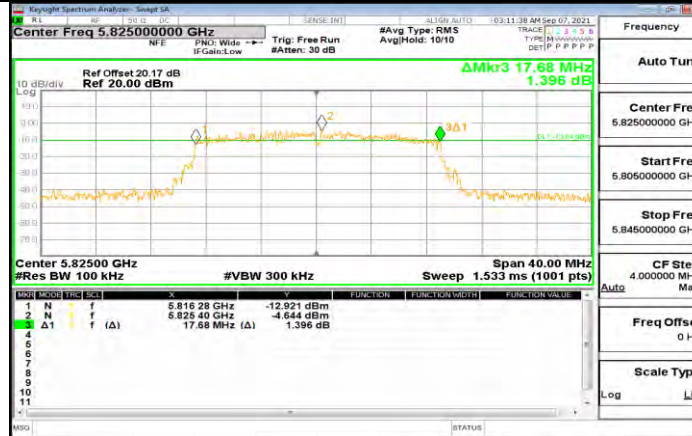




11AC20MIMO Ant2 5785



11AC20MIMO Ant1 5825



11AC20MIMO Ant2 5825





**11.4. Appendix B: Maximum Average Conducted Output Power****11.4.1. Test Result**

Mode	Frequency (MHz)	Average Power (dBm)			Directional gain (dBi)	FCC Limit (dBm)	ISED EIRP (dBm)			ISED Limit (dBm)	
		ANT1	ANT2	Total			ANT1	ANT2	Total		
802.11a 20	5180	13.20	12.97	/	0.00	24.00	17.56	15.98	/	22.21	
	5200	12.93	12.89	/	0.00	24.00	17.29	15.90	/	22.21	
	5240	13.14	12.86	/	0.00	24.00	17.50	15.87	/	22.21	
	5745	11.16	11.20	/	0.00	30.00	/	/	/	30.00	
	5785	10.47	10.98	/	0.00	30.00	/	/	/	30.00	
	5825	9.96	10.43	/	0.00	30.00	/	/	/	30.00	
802.11ac 20M	5180	8.36	9.68	12.08	4.36	24.00	/	/	16.44	22.50	
	5200	8.23	9.89	12.15	4.36	24.00	/	/	16.51	22.50	
	5240	8.36	9.79	12.14	4.36	24.00	/	/	16.50	22.50	
	5745	10.16	10.33	13.26	4.36	30.00	/	/	/	30.00	
	5785	9.62	10.10	12.88	4.36	30.00	/	/	/	30.00	
	5825	9.07	9.58	12.34	4.36	30.00	/	/	/	30.00	
802.11ac 40M	5190	11.01	12.22	14.67	4.36	24.00	/	/	19.03	23.00	
	5230	12.22	12.13	15.19	4.36	24.00	/	/	19.55	23.00	
	5755	10.00	10.43	13.23	4.36	30.00	/	/	/	30.00	
	5795	9.33	10.05	12.72	4.36	30.00	/	/	/	30.00	
802.11ac 80M	5210	12.56	12.55	15.57	4.36	24.00	/	/	19.93	23.00	
	5775	10.19	10.58	13.40	4.36	30.00	/	/	/	30.00	

Note: 1. Conducted Power=Meas. Level+ Correction Factor

2. The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.



11.5. Appendix C: Maximum Power Spectral Density

11.5.1. Test Result

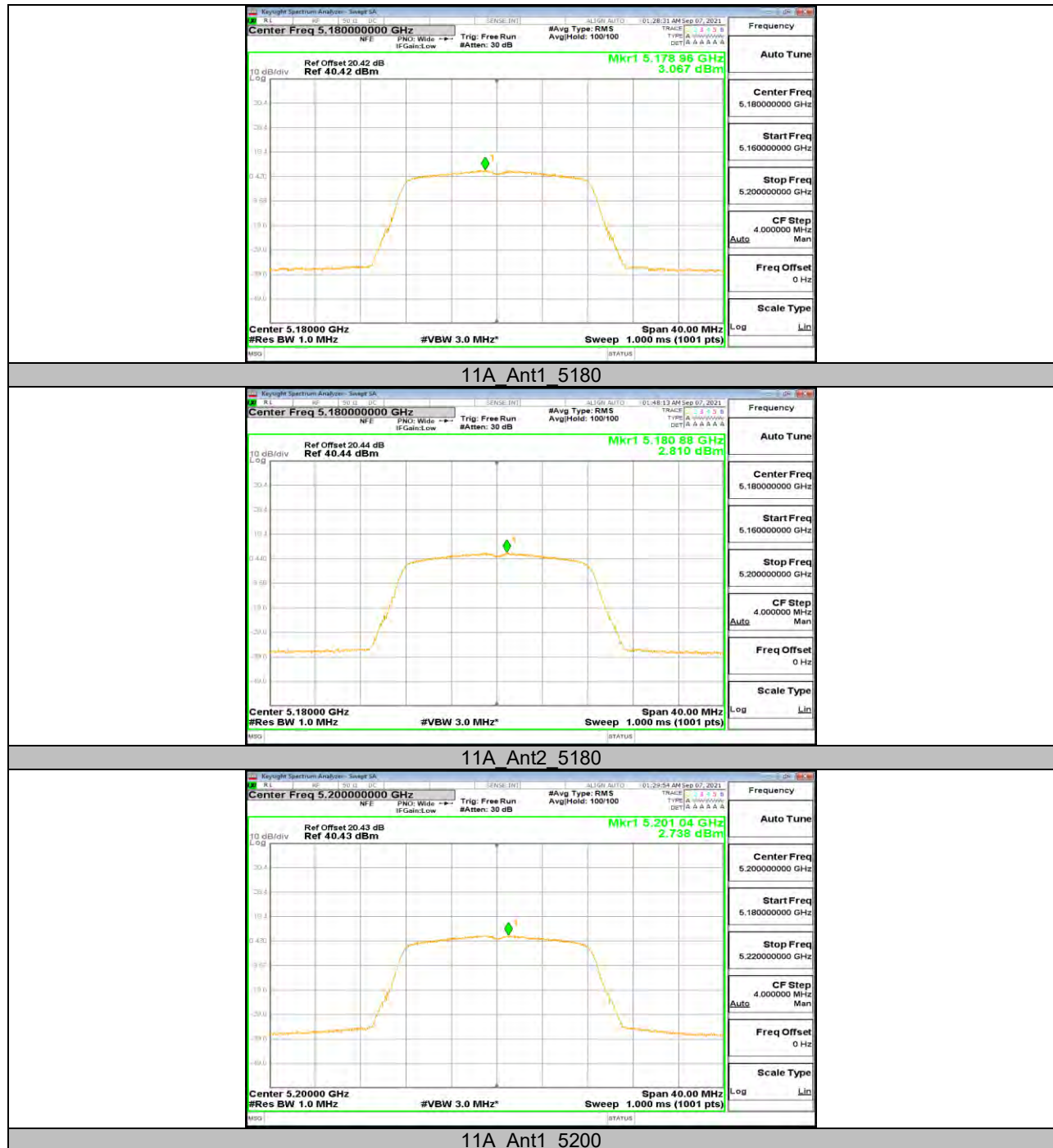
Mode	Frequency (MHz)	PSD 5150-5725MHz (dBm/MHz) 5725-5850MHz (dBm/500kHz)			Directional gain (dBi)	FCC Limit 5150-5725MHz (dBm/MHz) 5725-5850MHz (dBm/500kHz)	PSD EIRP			ISED Limit 5150-5725MHz (dBm/MHz) 5725-5850MHz (dBm/500kHz)
		ANT1	ANT2	Total			ANT1	ANT2	Total	
802.11a 20	5180	3.070	2.810	/	0.00	11.00	7.430	5.820	/	10.00
	5200	2.740	2.710	/	0.00	11.00	7.100	5.720	/	10.00
	5240	2.760	2.780	/	0.00	11.00	7.120	5.790	/	10.00
	5745	-1.700	-1.440	/	0.00	30.00	/	/	/	30.00
	5785	-2.660	-1.810	/	0.00	30.00	/	/	/	30.00
	5825	-2.990	-2.350	/	0.00	30.00	/	/	/	30.00
802.11ac 20M	5180	-1.990	-0.520	1.817	7.37	11.00	/	/	9.188	10.00
	5200	-2.320	-0.640	1.611	7.37	11.00	/	/	8.981	10.00
	5240	-2.060	-0.410	1.853	7.37	11.00	/	/	9.223	10.00
	5745	-2.940	-2.680	0.202	7.37	30.00	/	/	/	30.00
	5785	-3.500	-2.870	- 0.163	7.37	30.00	/	/	/	30.00
	5825	-3.830	-3.560	- 0.683	7.37	30.00	/	/	/	30.00
802.11ac 40M	5190	-2.190	-1.220	1.332	7.37	11.00	/	/	8.703	10.00
	5230	-0.940	-1.110	1.986	7.37	11.00	/	/	9.356	10.00
	5755	-5.810	-5.660	- 2.724	7.37	30.00	/	/	/	30.00
	5795	-6.540	-6.000	- 3.251	7.37	30.00	/	/	/	30.00
802.11ac 80M	5210	-3.250	-3.490	- 0.358	7.37	11.00	/	/	7.012	10.00
	5775	-8.720	-8.070	- 5.373	7.37	30.00	/	/	/	30.00

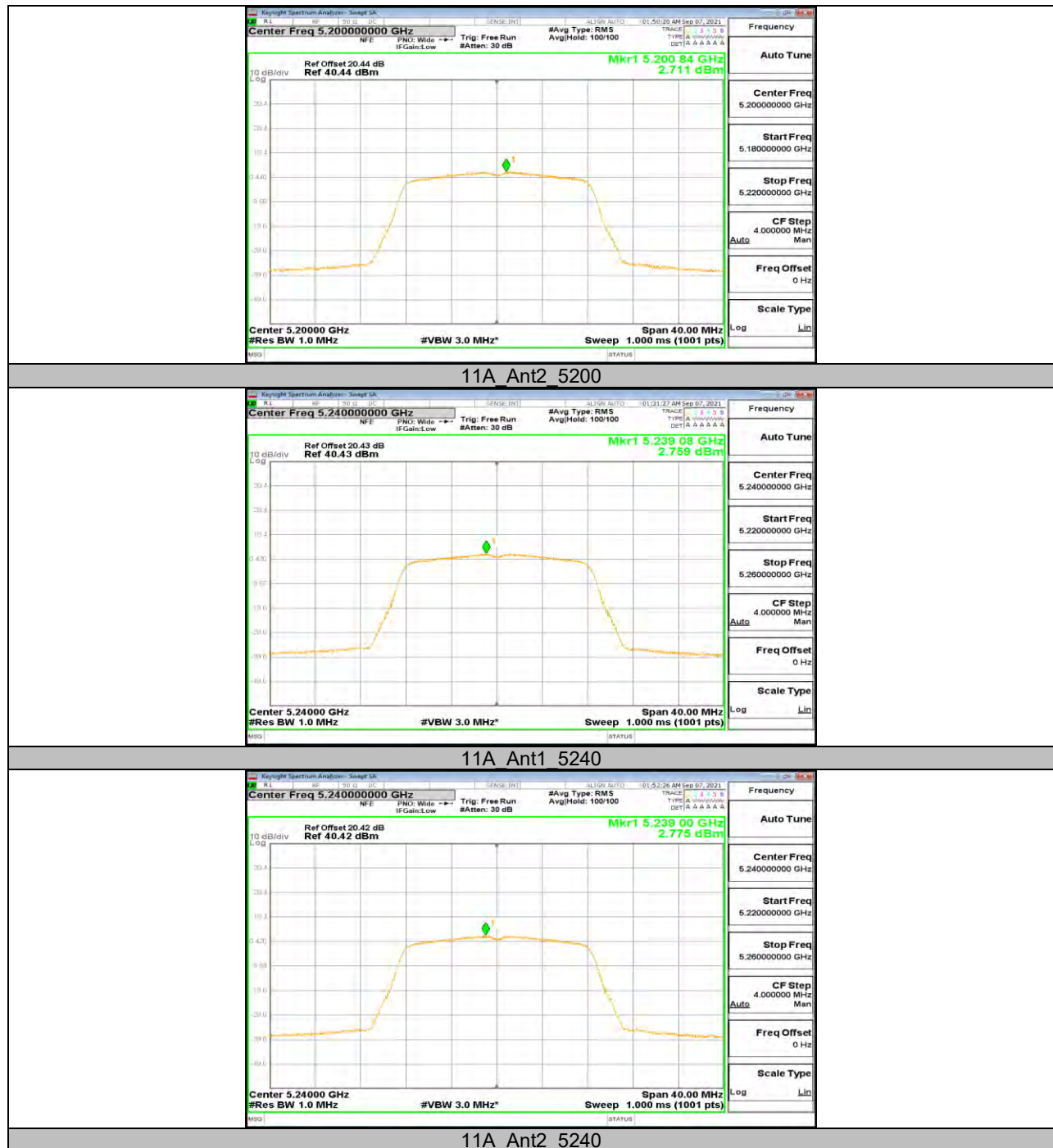
Note: 1. The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

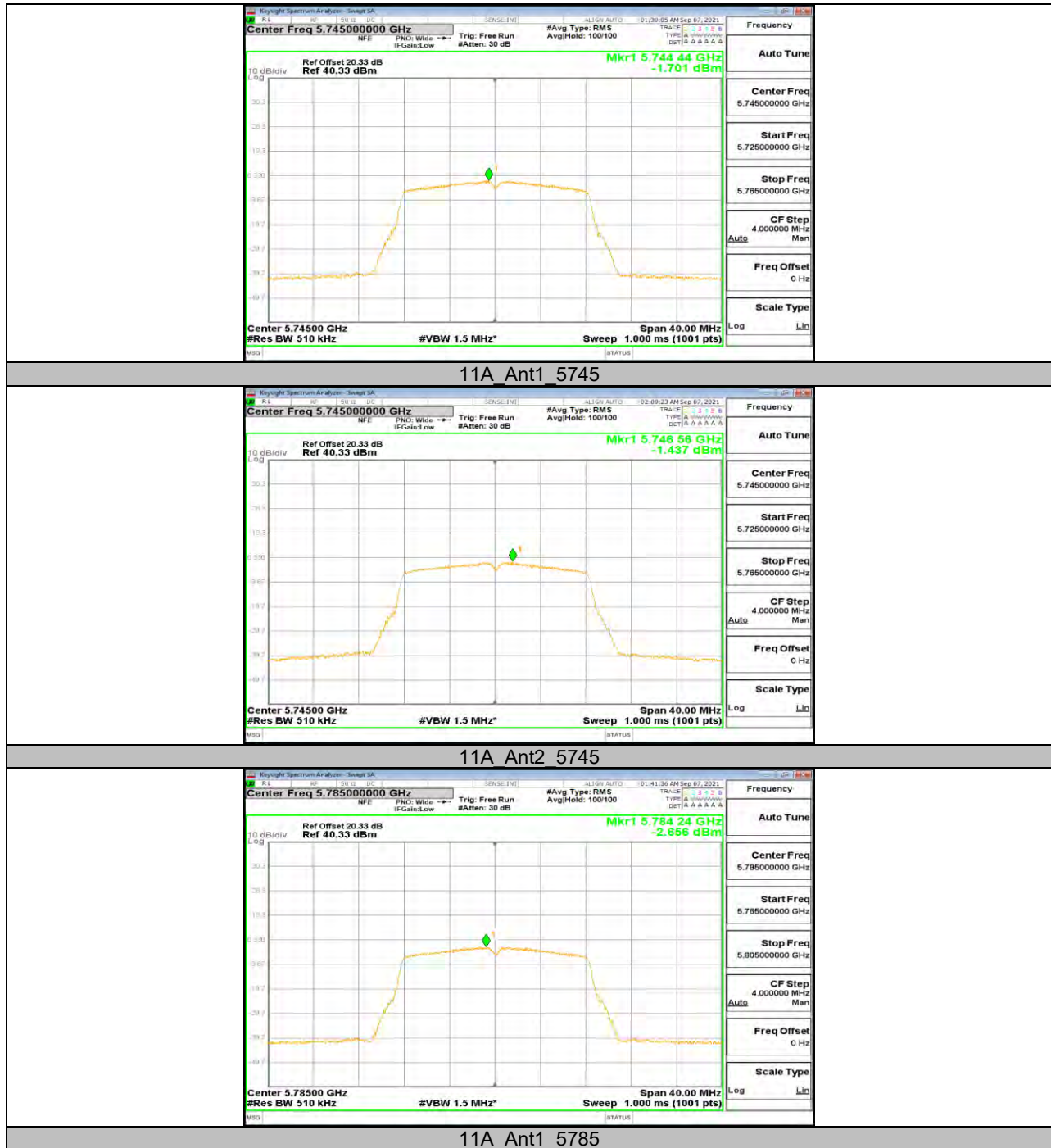
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.

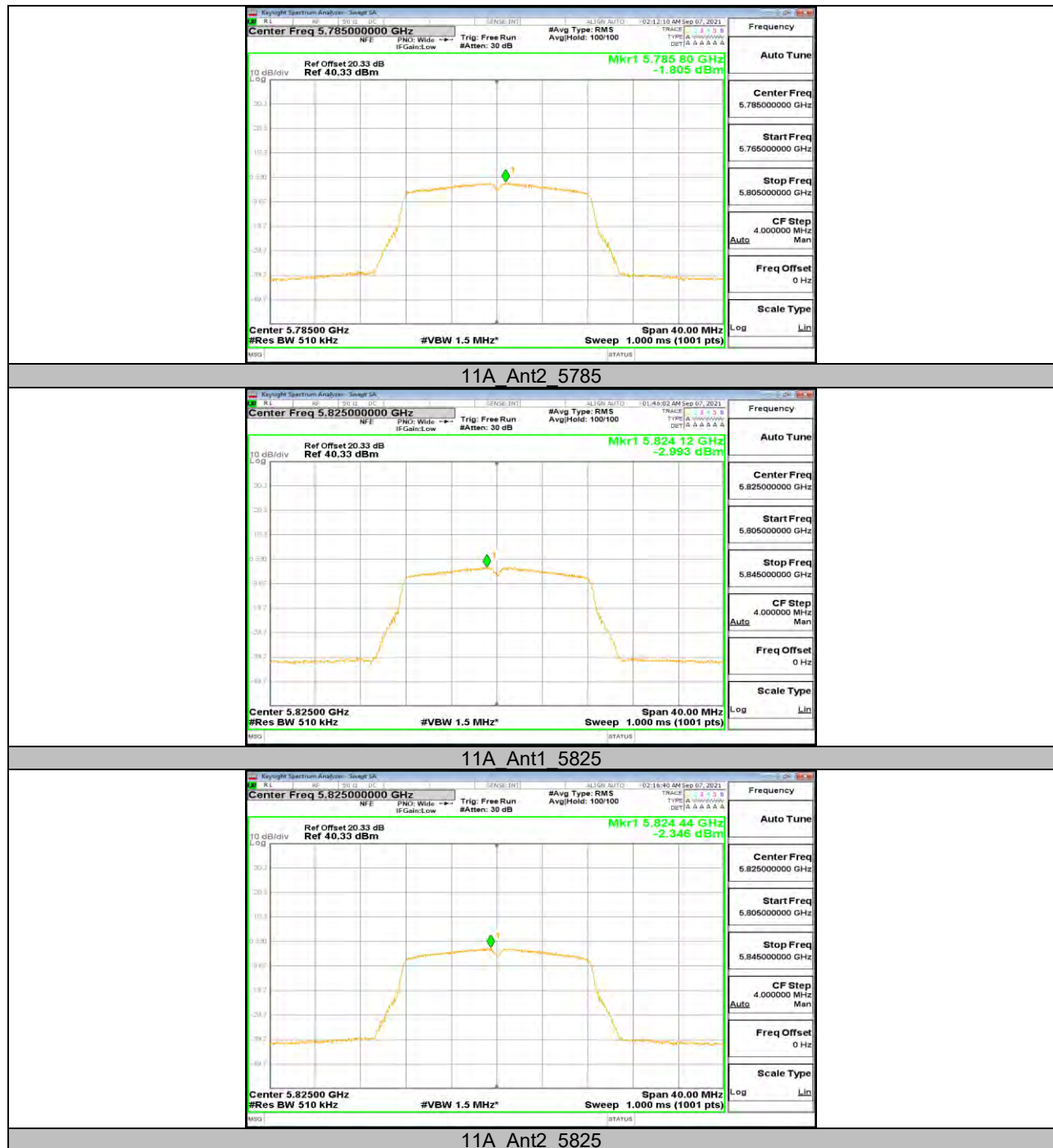


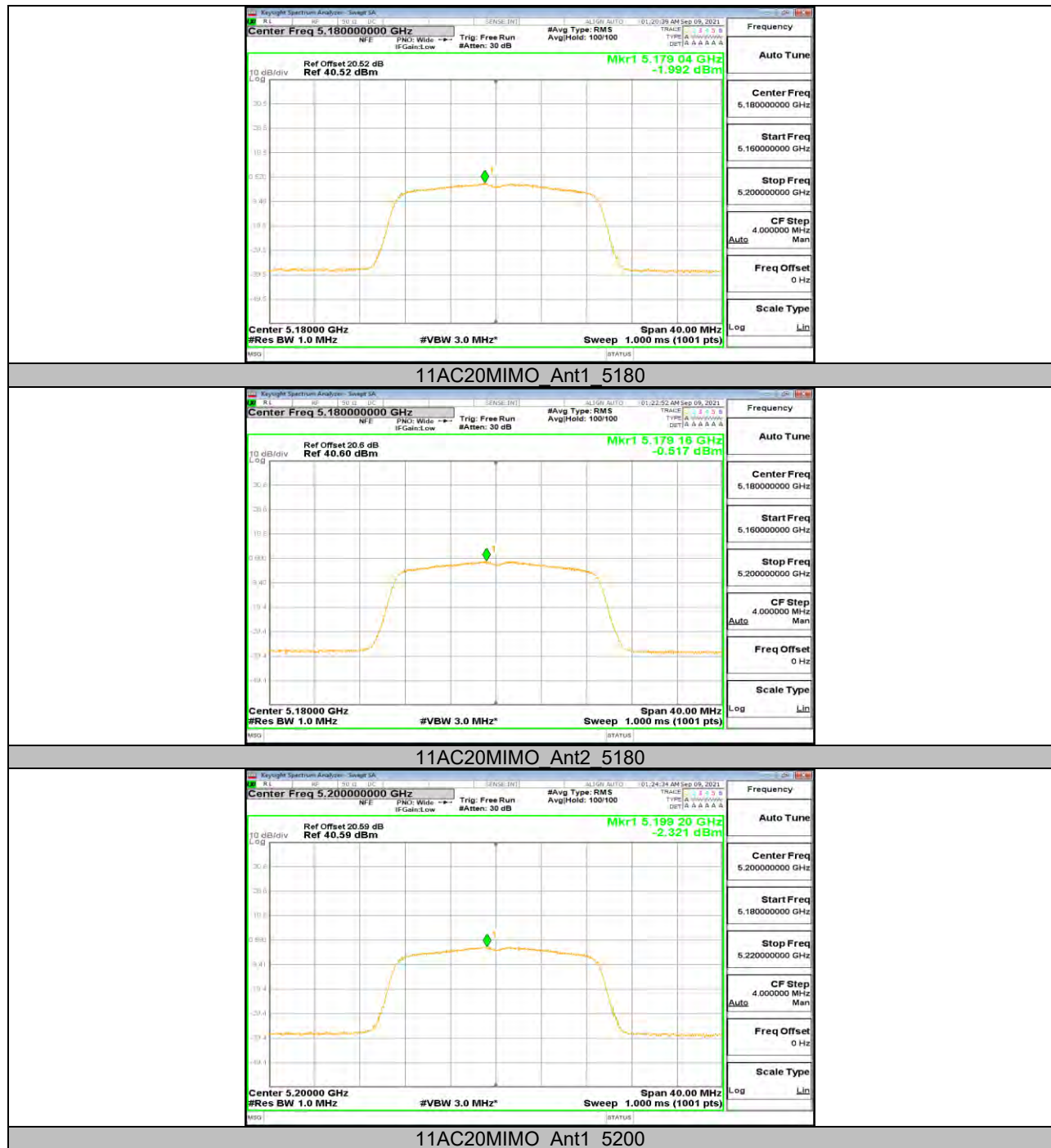
11.5.2. Test Graphs

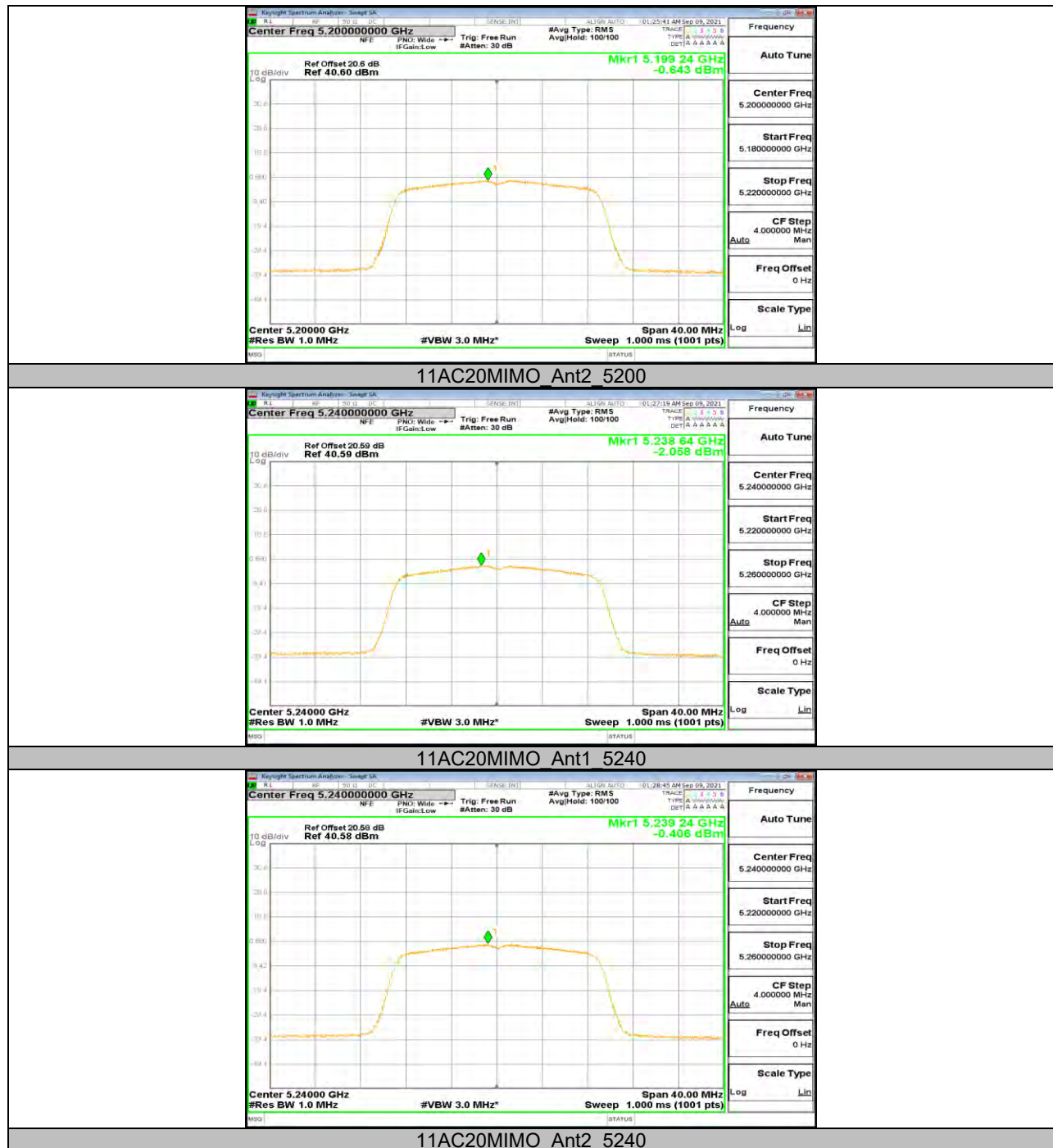


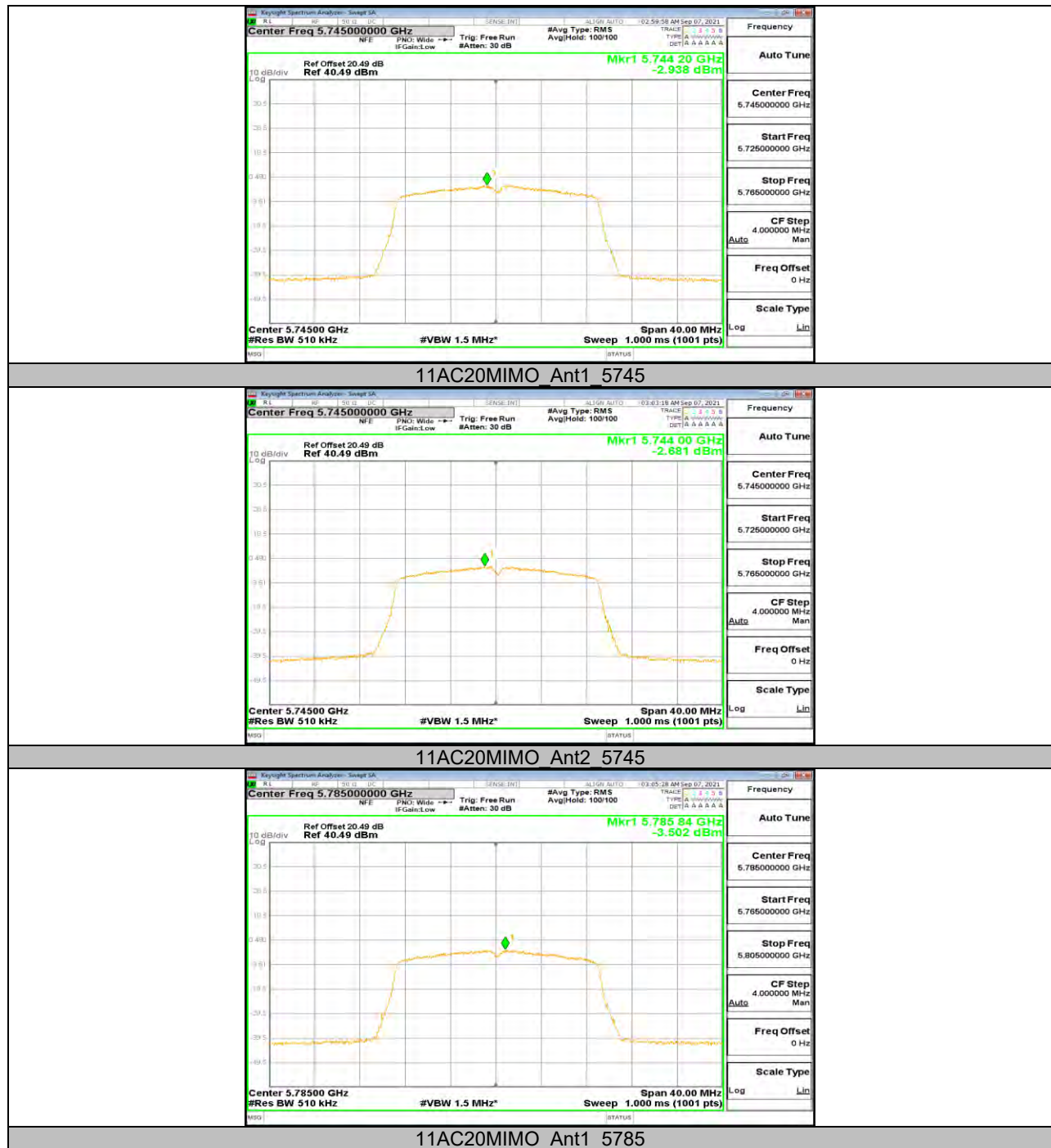


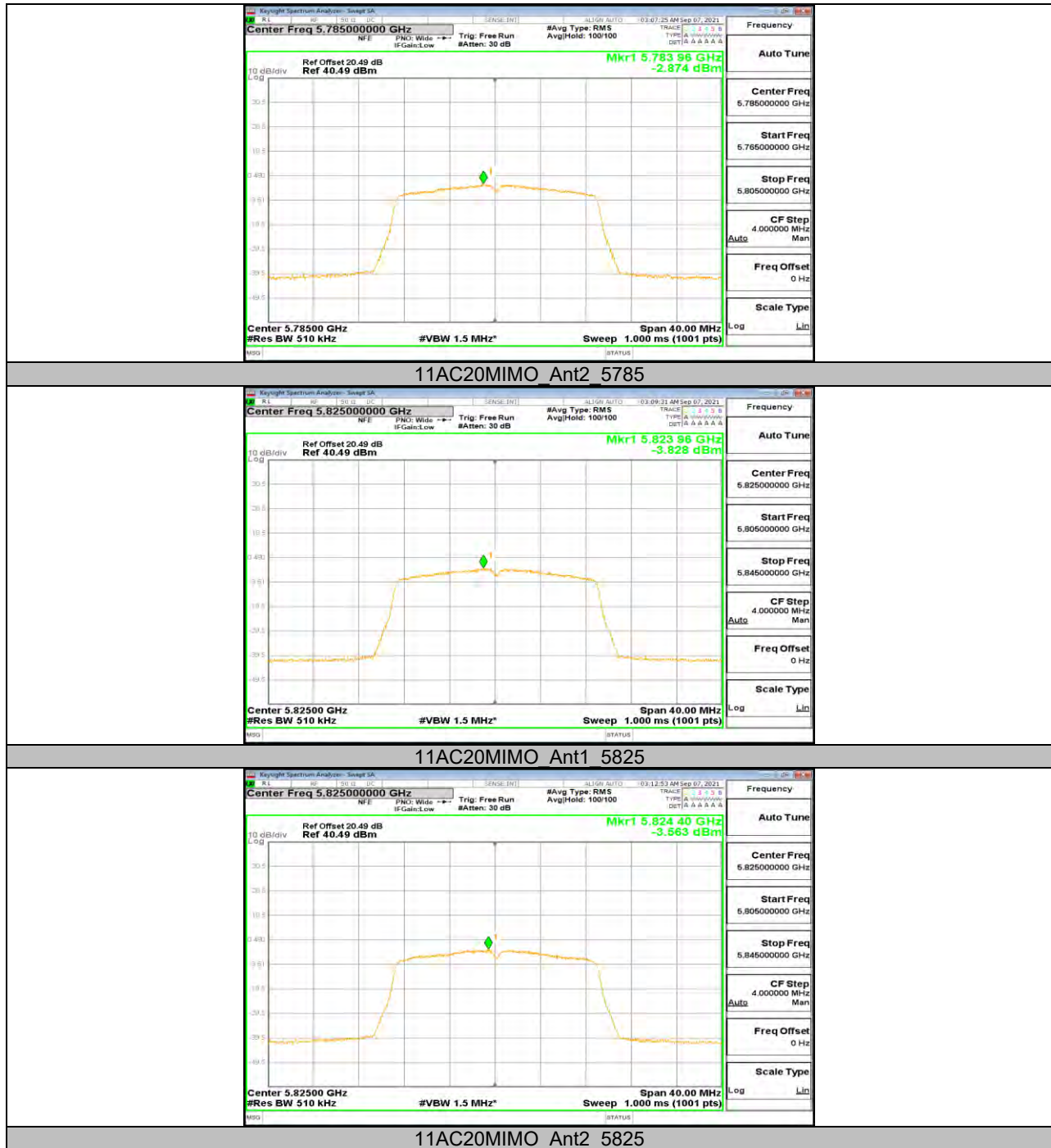


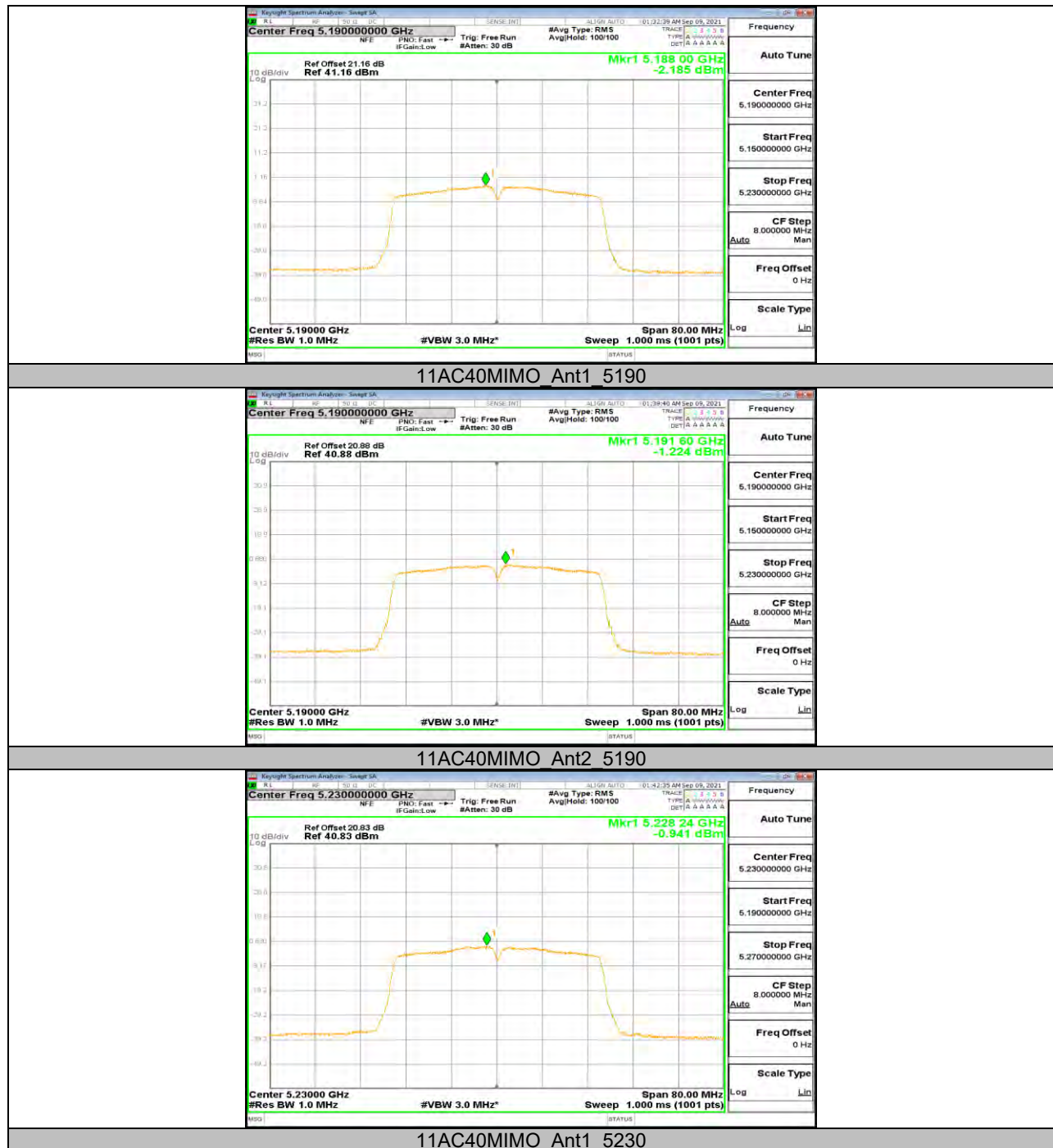






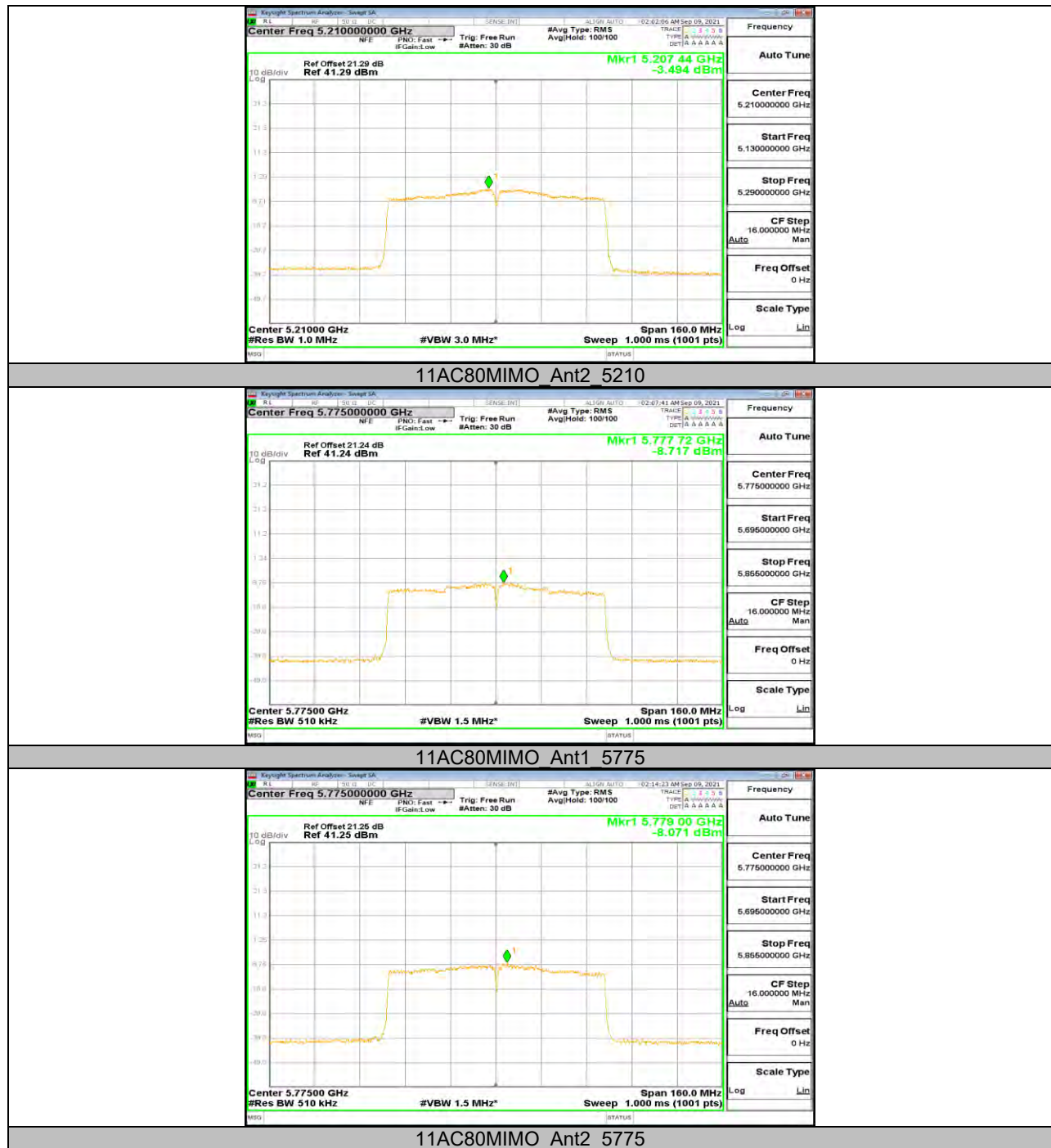












**11.6. Appendix D: Duty Cycle****11.6.1. Test Result**

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
11A	1.39	1.44	0.9653	96.53	0.15	0.72	1
11AC20MIMO	0.68	0.72	0.9444	94.44	0.25	1.47	2
11AC40MIMO	0.36	0.40	0.9000	90.00	0.46	2.78	3
11AC80MIMO	0.19	0.24	0.7917	79.17	1.01	5.26	6

Note:

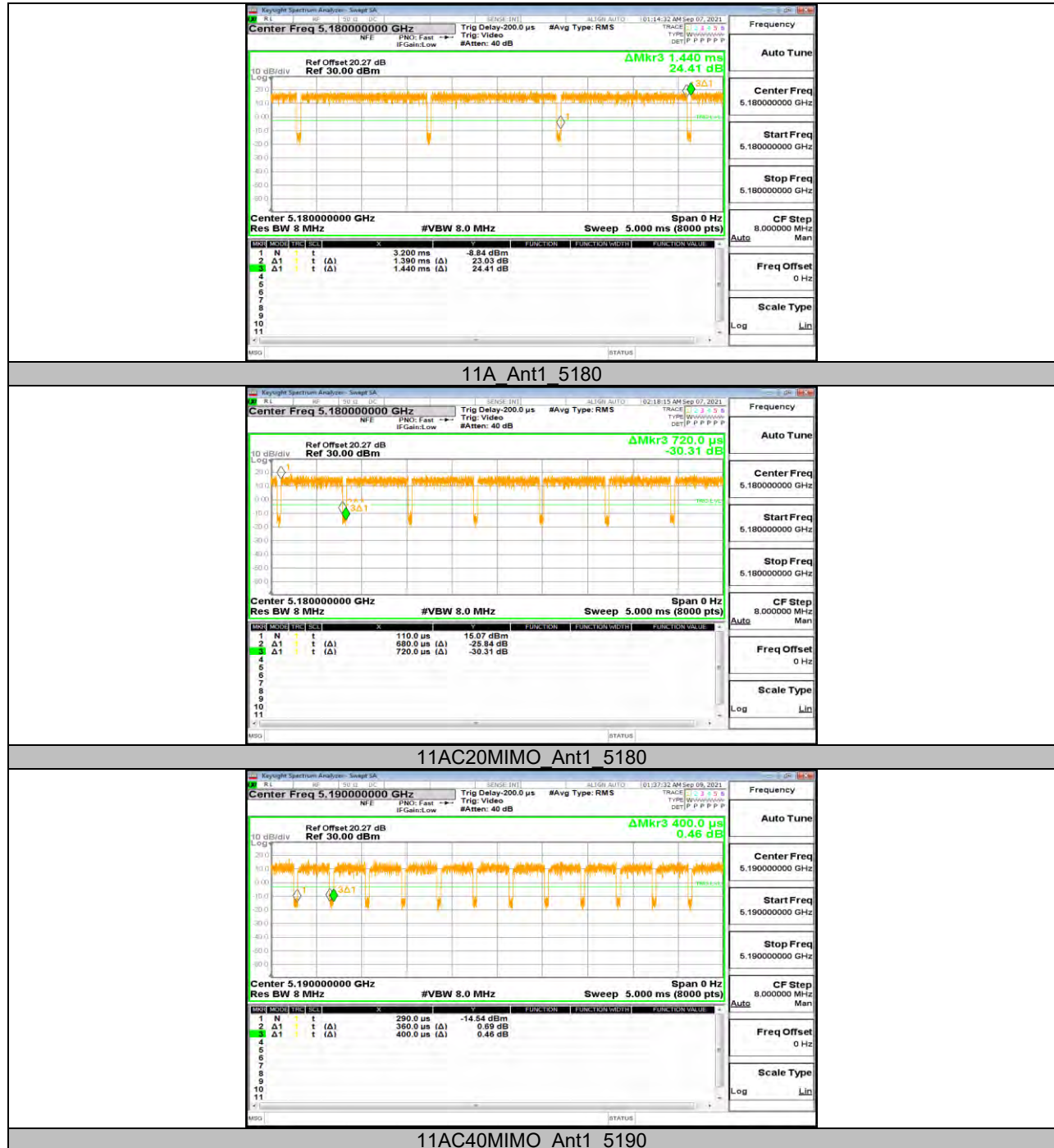
Duty Cycle Correction Factor= $10\log(1/x)$.

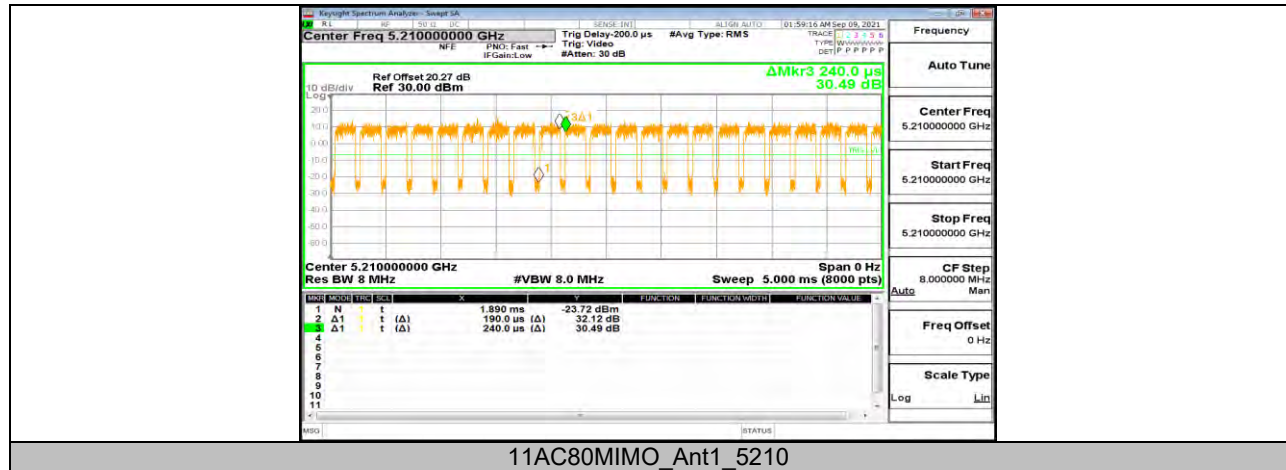
Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer then the next higher value should be used.

11.6.2. Test Graphs





**11.7. Appendix E: Frequency Stability****11.7.1. Test Result**

Frequency Error vs. Voltage									
802.11a 20:5200MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
TN	VL	5199.9947	-1.02	5199.9805	-3.75	5200.0241	4.63	5200.0095	1.82
TN	VN	5200.0156	3.01	5199.9830	-3.27	5199.9827	-3.33	5200.0212	4.08
TN	VH	5199.9932	-1.32	5200.0207	3.98	5200.0068	1.31	5200.0169	3.25
Frequency Error vs. Temperature									
802.11a 20:5200MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
70	VN	5200.0180	3.45	5200.0245	4.70	5200.0241	4.63	5200.0158	3.04
60	VN	5199.9773	-4.36	5199.9950	-0.97	5200.0007	0.13	5200.0168	3.24
50	VN	5199.9834	-3.20	5200.0247	4.75	5199.9895	-2.01	5200.0204	3.92
40	VN	5199.9779	-4.25	5200.0072	1.39	5199.9872	-2.46	5199.9942	-1.11
30	VN	5200.0141	2.71	5200.0164	3.15	5200.0028	0.54	5199.9853	-2.83
20	VN	5199.9766	-4.50	5200.0081	1.55	5199.9998	-0.04	5199.9776	-4.30
10	VN	5200.0173	3.33	5200.0235	4.53	5200.0031	0.60	5200.0130	2.50
0	VN	5199.9795	-3.94	5200.0070	1.34	5199.9819	-3.49	5199.9989	-0.22



Frequency Error vs. Voltage									
802.11a:5825MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
TN	VL	5824.9965	-0.60	5824.9923	-1.33	5824.9836	-2.81	5825.0024	0.42
TN	VN	5824.9911	-1.53	5825.0185	3.17	5824.9893	-1.83	5824.9946	-0.93
TN	VH	5824.9778	-3.80	5825.0075	1.28	5825.0085	1.46	5825.0243	4.16
Frequency Error vs. Temperature									
802.11a:5825MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
70	VN	5824.9807	-3.32	5824.9883	-2.02	5825.0072	1.24	5825.0009	0.16
60	VN	5824.9803	-3.39	5824.9997	-0.05	5824.9770	-3.95	5825.0079	1.36
50	VN	5825.0148	2.55	5825.0102	1.76	5824.9774	-3.88	5824.9809	-3.28
40	VN	5824.9780	-3.78	5825.0065	1.11	5825.0234	4.01	5825.0024	0.42
30	VN	5824.9904	-1.65	5825.0004	0.07	5824.9899	-1.74	5825.0222	3.82
20	VN	5824.9834	-2.85	5824.9977	-0.39	5825.0209	3.59	5825.0200	3.43
10	VN	5824.9945	-0.95	5824.9988	-0.21	5825.0009	0.16	5825.0222	3.82
0	VN	5825.0158	2.72	5824.9978	-0.38	5824.9826	-2.99	5825.0196	3.36

Note: All antennas and modes have been tested, only the worst data was recorded in the report.

END OF REPORT