











**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	15.510	5737.050	5752.560	0.5	PASS
	Ant2	5745	15.360	5737.200	5752.560	0.5	PASS
	Ant1	5785	14.490	5777.410	5791.900	0.5	PASS
	Ant2	5785	15.150	5777.410	5792.560	0.5	PASS
	Ant1	5825	16.380	5816.780	5833.160	0.5	PASS
	Ant2	5825	15.450	5817.440	5832.890	0.5	PASS
11N20MIMO	Ant1	5745	16.410	5736.180	5752.590	0.5	PASS
	Ant2	5745	15.120	5737.410	5752.530	0.5	PASS
	Ant1	5785	13.230	5777.410	5790.640	0.5	PASS
	Ant2	5785	15.720	5776.180	5791.900	0.5	PASS
	Ant1	5825	17.580	5816.180	5833.760	0.5	PASS
	Ant2	5825	15.090	5817.410	5832.500	0.5	PASS
11N40MIMO	Ant1	5755	30.180	5739.880	5770.060	0.5	PASS
	Ant2	5755	35.220	5737.360	5772.580	0.5	PASS
	Ant1	5795	31.440	5781.080	5812.520	0.5	PASS
	Ant2	5795	31.380	5779.880	5811.260	0.5	PASS
11AC80MIMO	Ant1	5775	75.360	5737.320	5812.680	0.5	PASS
	Ant2	5775	75.360	5737.320	5812.680	0.5	PASS

11.3.2. Test Graphs







11N20MIMO Ant1 5745



11N20MIMO Ant2 5745



11N20MIMO Ant1 5785









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	5180	15.20	15.01	/	4.30	24.00	19.50	19.31	/	22.21
	5200	14.97	14.85	/	4.30	24.00	19.27	19.15	/	22.21
	5240	15.09	14.93	/	4.30	24.00	19.39	19.23	/	22.21
	5745	14.87	15.00	/	4.30	30.00	/	/	/	30.00
	5785	15.00	15.08	/	4.30	30.00	/	/	/	30.00
	5825	14.78	14.68	/	4.30	30.00	/	/	/	30.00
802.11n HT20	5180	9.24	8.59	11.94	4.30	24.00	/	/	16.24	22.50
	5200	9.05	8.70	11.89	4.30	24.00	/	/	16.19	22.50
	5240	8.91	8.39	11.67	4.30	24.00	/	/	15.97	22.50
	5745	13.93	13.84	16.90	4.30	30.00	/	/	/	30.00
	5785	13.74	13.64	16.70	4.30	30.00	/	/	/	30.00
	5825	13.47	13.44	16.47	4.30	30.00	/	/	/	30.00
802.11n HT40	5190	12.32	12.10	15.22	4.30	24.00	/	/	19.52	23.00
	5230	12.12	11.97	15.06	4.30	24.00	/	/	19.36	23.00
	5755	14.12	14.15	17.15	4.30	30.00	/	/	/	30.00
	5795	14.04	13.88	16.97	4.30	30.00	/	/	/	30.00
802.11ac VHT80	5210	14.29	14.06	17.19	4.30	24.00	/	/	21.49	23.00
	5775	14.23	14.00	17.13	4.30	30.00	/	/	/	30.00

Note: The Duty Cycle Factor is compensated in the graph.

**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 5150-5725 MHz (dBm/MHz) 5725-5850 MHz (dBm/500kHz)	PSD EIRP			ISED Limit 5150-5725 MHz (dBm/MHz) 5725-5850 MHz (dBm/500kHz)
		ANT1	ANT2	Total			ANT1	ANT2	Total	
802.11a	5180	4.130	4.200	/	4.30	11.00	8.430	8.500	/	10.00
	5200	4.210	3.900	/	4.30	11.00	8.510	8.200	/	10.00
	5240	3.440	3.330	/	4.30	11.00	7.740	7.630	/	10.00
	5745	1.980	1.930	/	4.30	30.00	/	/	/	30.00
	5785	1.920	1.880	/	4.30	30.00	/	/	/	30.00
	5825	1.840	1.680	/	4.30	30.00	/	/	/	30.00
802.11n HT20	5180	- 1.130	-1.740	1.590	7.31	11.00	/	/	8.900	10.00
	5200	- 1.640	-1.560	1.410	7.31	11.00	/	/	8.720	10.00
	5240	- 1.330	-1.680	1.510	7.31	11.00	/	/	8.820	10.00
	5745	0.910	0.750	3.840	7.31	30.00	/	/	/	30.00
	5785	0.830	0.620	3.740	7.31	30.00	/	/	/	30.00
	5825	0.570	0.400	3.500	7.31	30.00	/	/	/	30.00
802.11n HT40	5190	- 0.830	-1.080	2.060	7.31	11.00	/	/	9.370	10.00
	5230	- 1.010	-1.130	1.940	7.31	11.00	/	/	9.250	10.00
	5755	- 1.850	-1.840	1.170	7.31	30.00	/	/	/	30.00
	5795	- 2.130	-1.910	0.990	7.31	30.00	/	/	/	30.00
802.11ac VHT80	5210	- 1.790	-1.880	1.180	7.31	11.00	/	/	8.490	10.00
	5775	- 4.500	-4.550	1.510	7.31	30.00	/	/	/	30.00

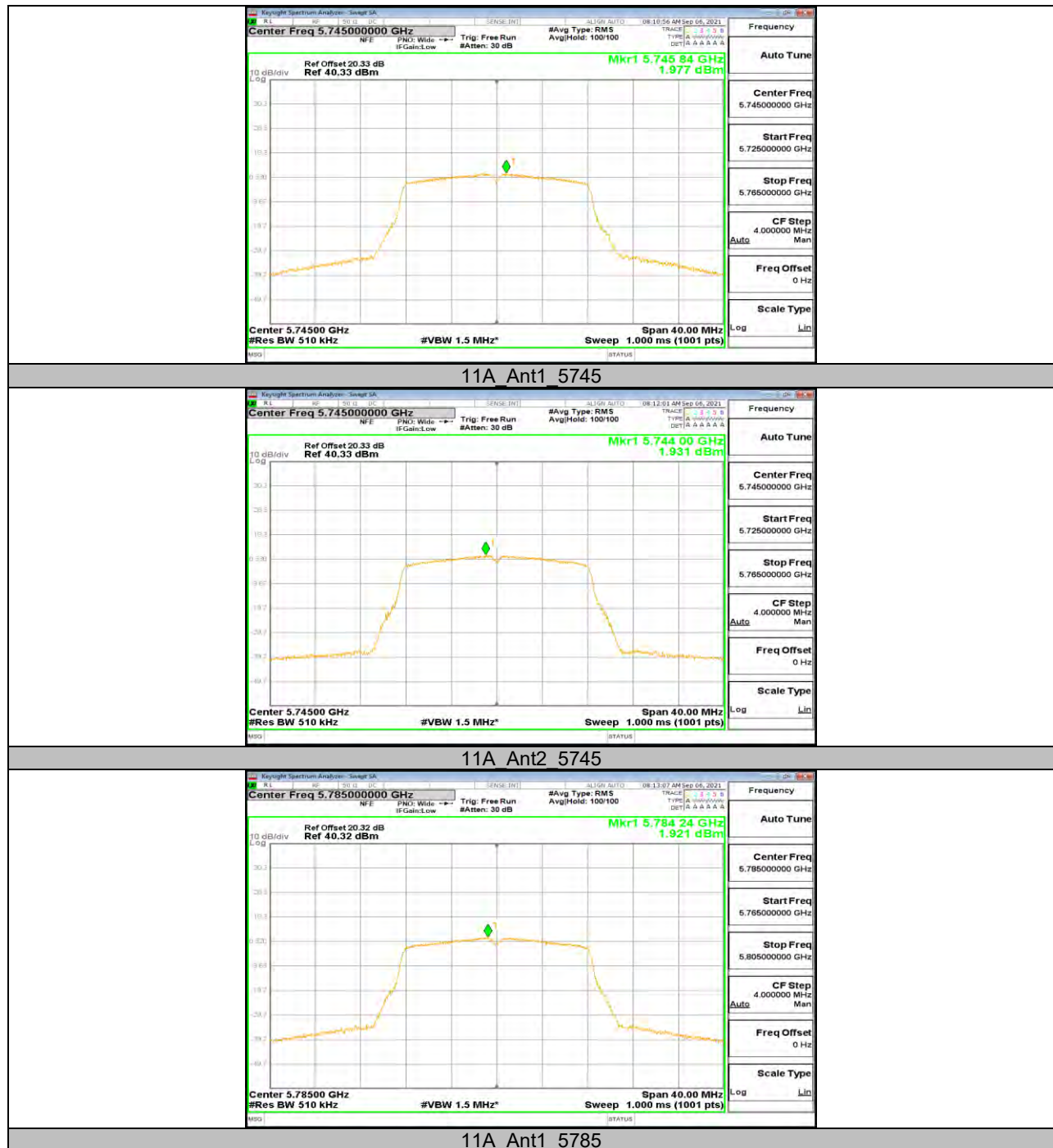
Note : 1. The Result and Limit Unit is dBm/500 kHz in the band 5.725 ~ 5.85 GHz.

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

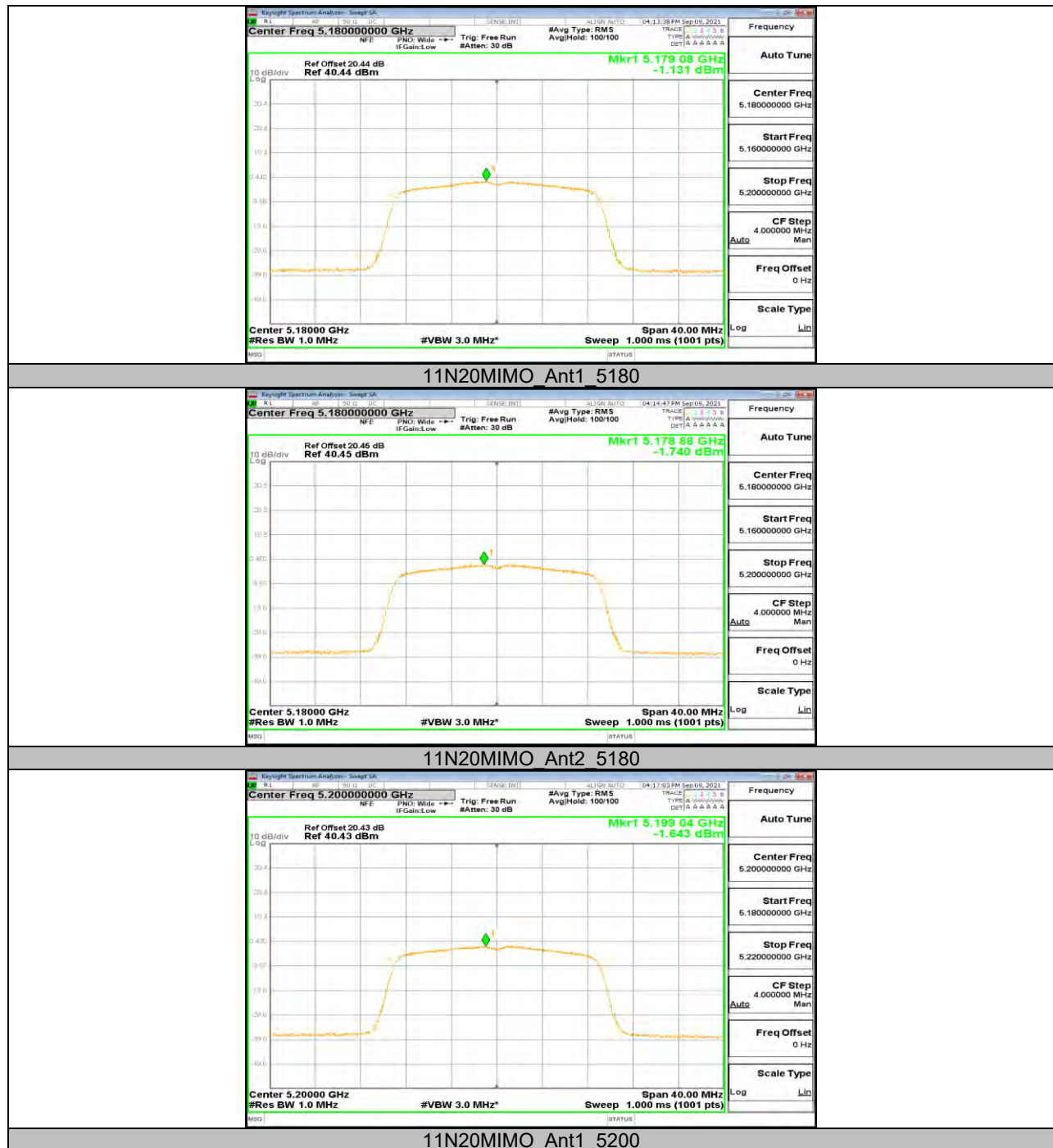
11.5.2. Test Graphs

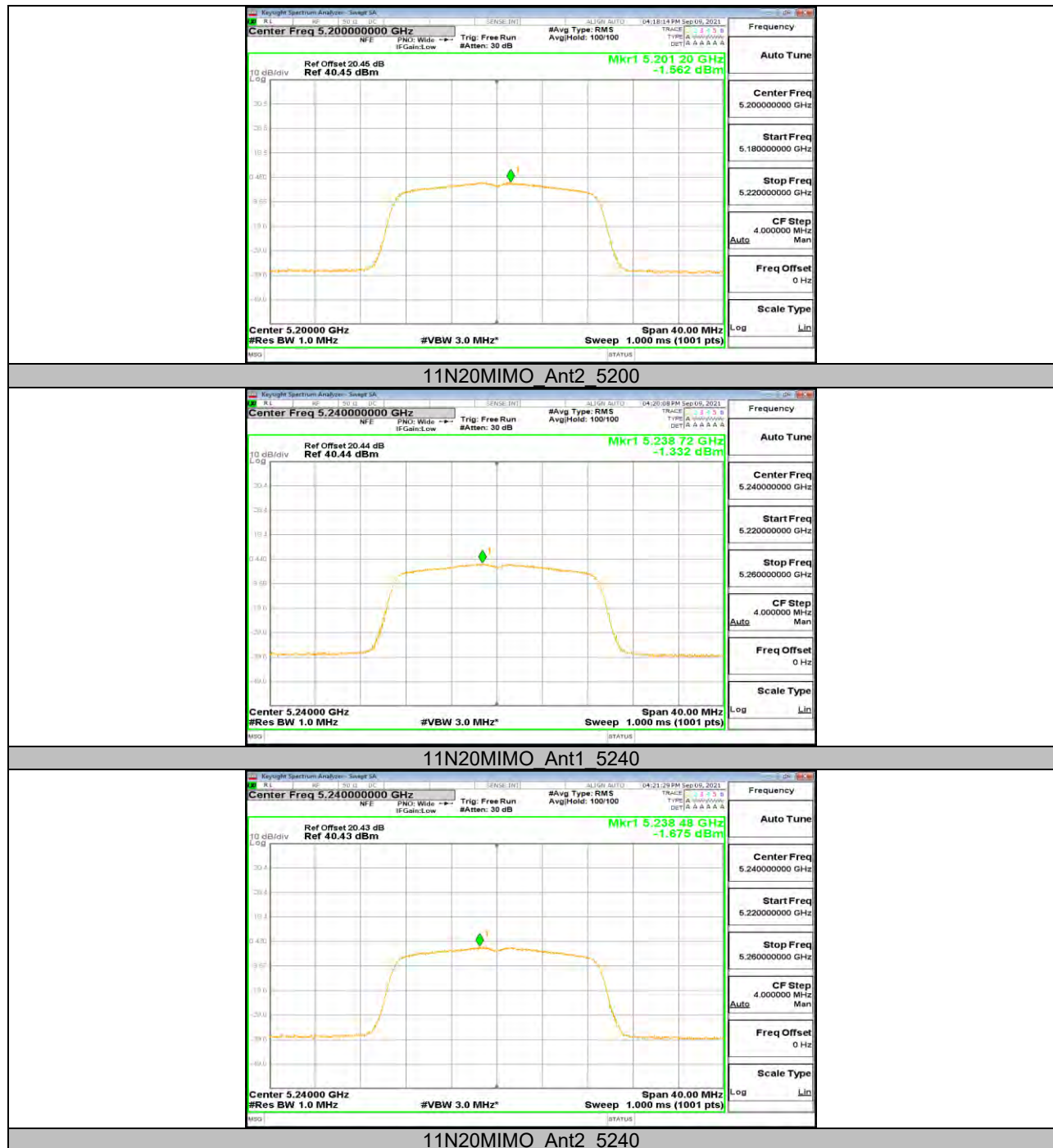


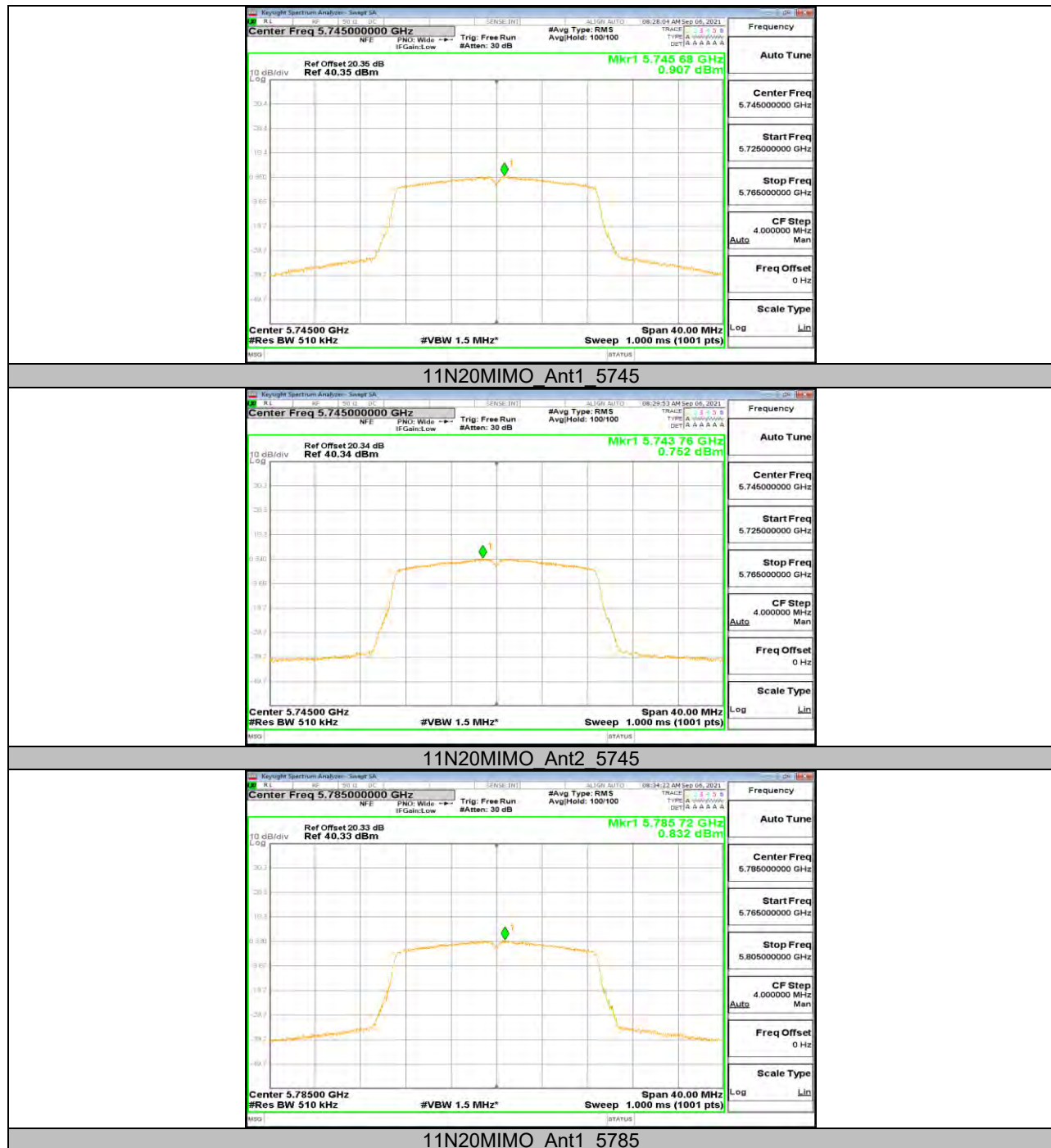


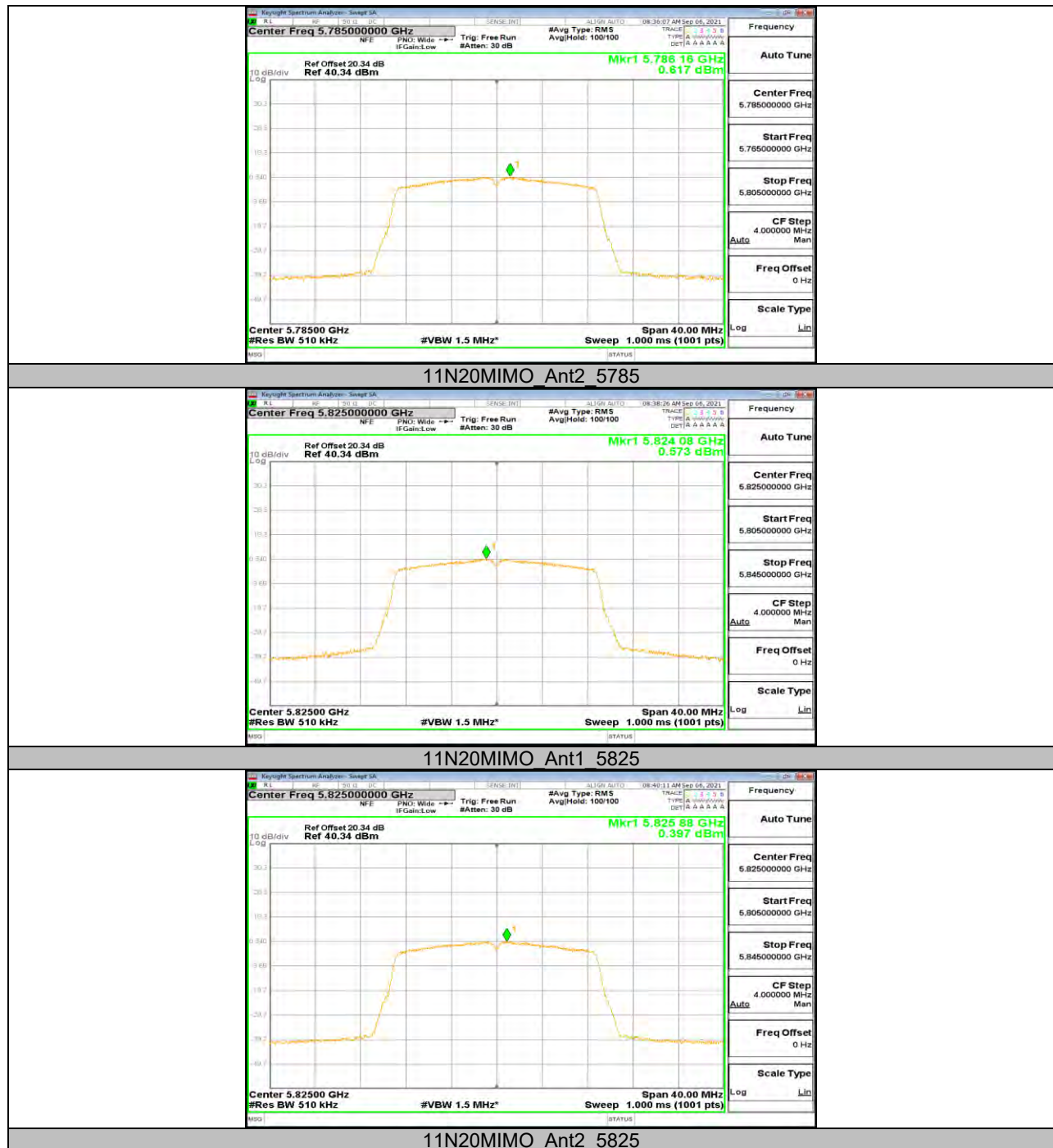


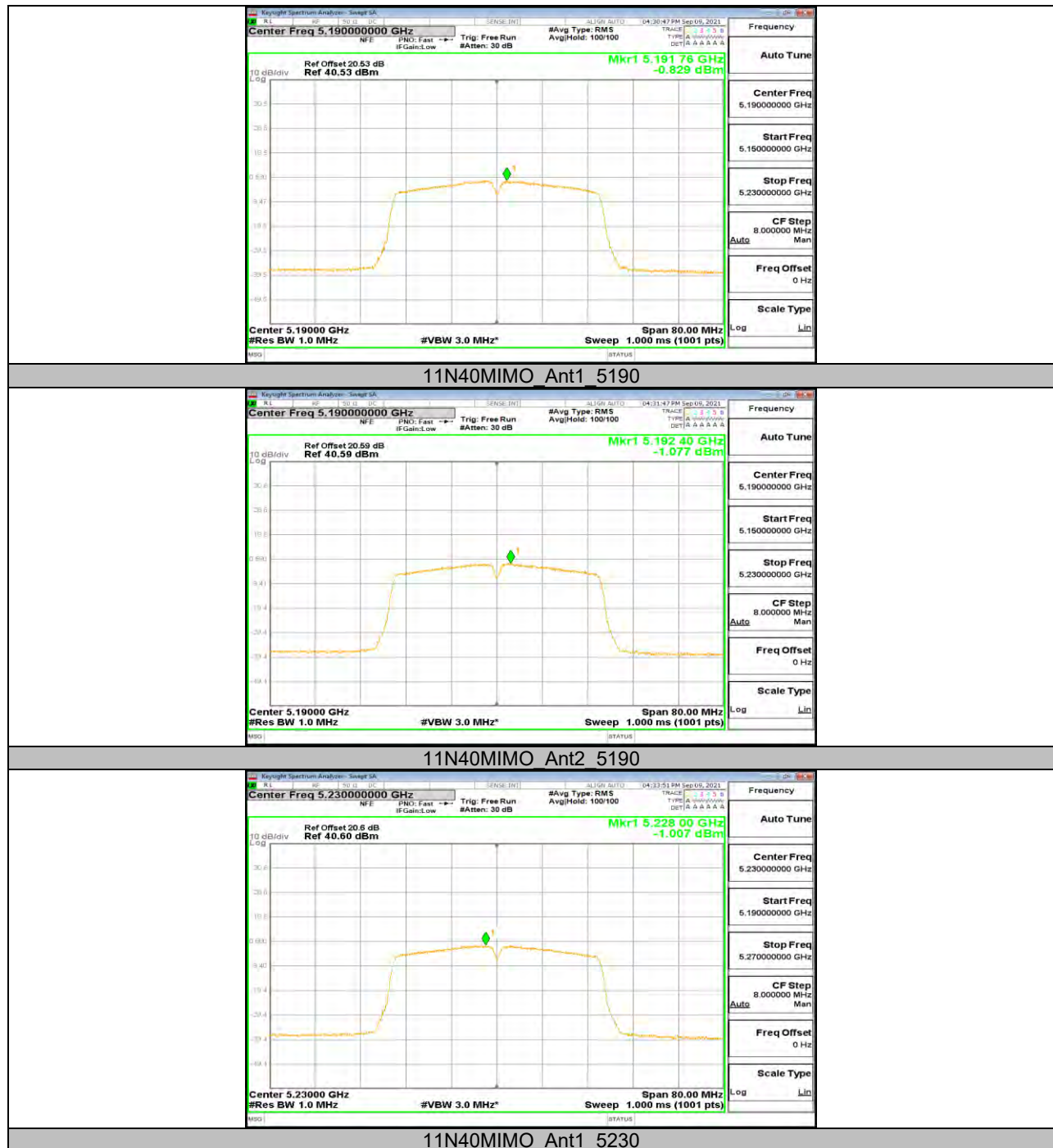


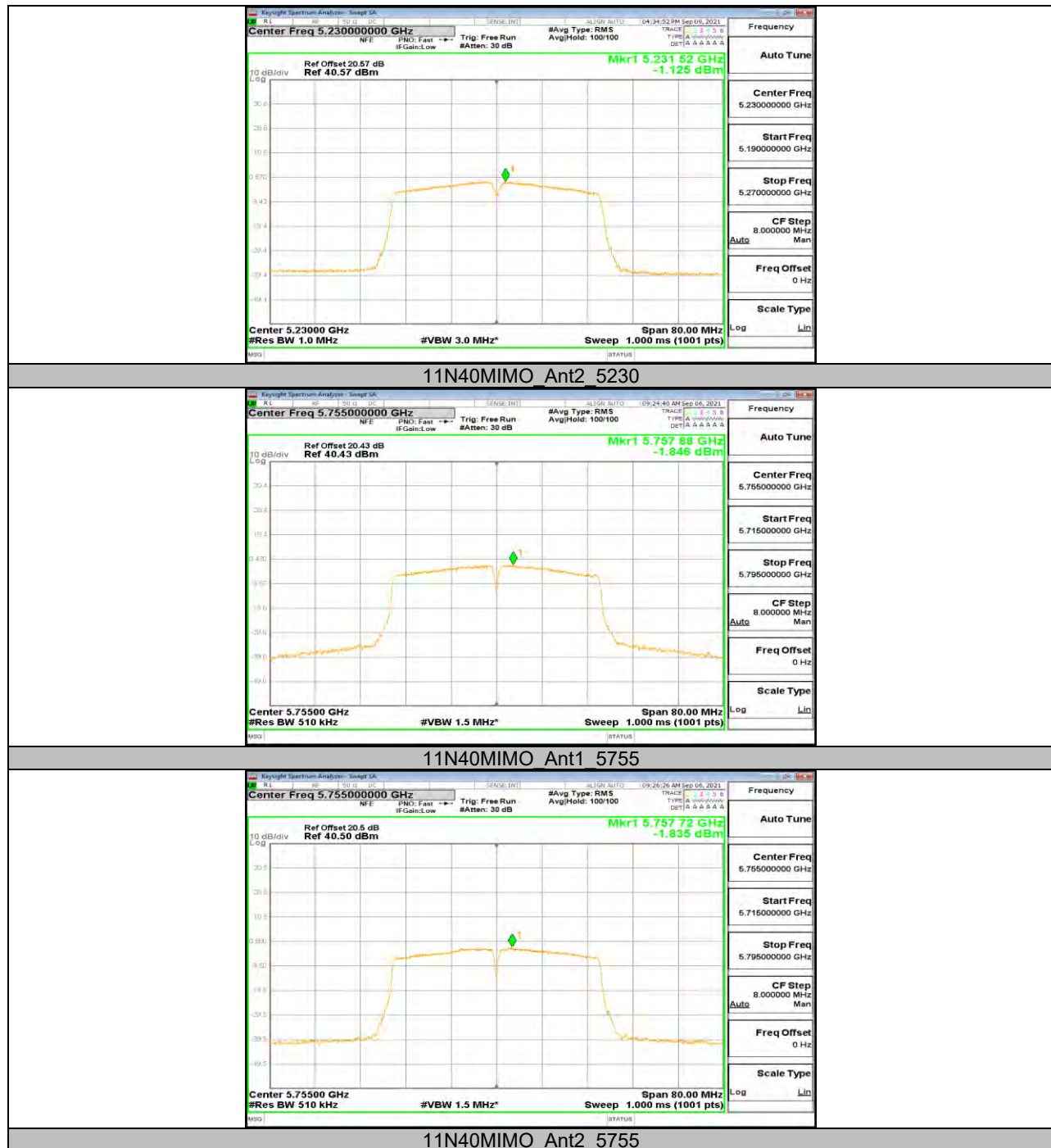


















11.6. Appendix G: Frequency Stability

11.6.1. Test Result

Frequency Error vs. Voltage									
802.11a: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	5200.0219	4.21	5200.0228	4.39	5200.0153	2.95	5199.9832	-3.24
TN	VN	5200.0196	3.76	5200.0033	0.64	5200.0095	1.83	5199.9790	-4.03
TN	VH	5199.9827	-3.33	5199.9798	-3.88	5199.9893	-2.06	5200.0162	3.12
Frequency Error vs. Temperature									
802.11a: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	5199.9791	-4.03	5199.9765	-4.52	5199.9882	-2.26	5200.0062	1.18
60	VN	5200.0009	0.17	5199.9966	-0.65	5199.9822	-3.42	5199.9946	-1.04
50	VN	5200.0028	0.53	5199.9912	-1.69	5199.9864	-2.61	5199.9973	-0.52
40	VN	5199.9903	-1.87	5199.9999	-0.01	5200.0086	1.66	5200.0171	3.30
30	VN	5199.9915	-1.64	5200.0052	1.00	5199.9982	-0.35	5199.9996	-0.07
20	VN	5199.9973	-0.52	5199.9970	-0.58	5199.9777	-4.29	5199.9958	-0.80
10	VN	5200.0108	2.08	5199.9866	-2.59	5200.0065	1.25	5200.0243	4.67
0	VN	5200.0203	3.90	5200.0110	2.11	5200.0049	0.95	5199.9938	-1.19



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	5824.9868	-2.27	5824.9857	-2.45	5824.9941	-1.02	5825.0102	1.76
TN	VN	5825.0049	0.83	5824.9900	-1.71	5824.9823	-3.04	5825.0005	0.09
TN	VH	5824.9966	-0.58	5824.9985	-0.25	5824.9759	-4.13	5824.9753	-4.25
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)
60	VN	5824.9827	-2.96	5824.9960	-0.69	5824.9829	-2.93	5824.9820	-3.09
50	VN	5824.9761	-4.10	5825.0250	4.29	5825.0069	1.18	5824.9805	-3.35
40	VN	5825.0147	2.52	5824.9816	-3.16	5824.9890	-1.90	5825.0143	2.46
30	VN	5824.9934	-1.13	5824.9937	-1.09	5824.9922	-1.34	5825.0178	3.05
20	VN	5824.9753	-4.24	5825.0043	0.74	5824.9876	-2.14	5824.9945	-0.94
10	VN	5825.0155	2.66	5824.9986	-0.24	5825.0227	3.90	5824.9916	-1.44
0	VN	5824.9950	-0.85	5824.9840	-2.75	5825.0130	2.23	5825.0171	2.94

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



11.7. Appendix H: Duty Cycle

11.7.1. 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	1.40	1.44	0.9722	97.22	0.12	0.71	1
11N20 MIMO	1.30	1.35	0.9630	96.30	0.16	0.77	1
11N40 MIMO	0.65	0.69	0.9420	94.20	0.26	1.54	2
11AC80 MIMO	0.18	0.23	0.7826	78.26	1.06	5.56	10

Note:

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

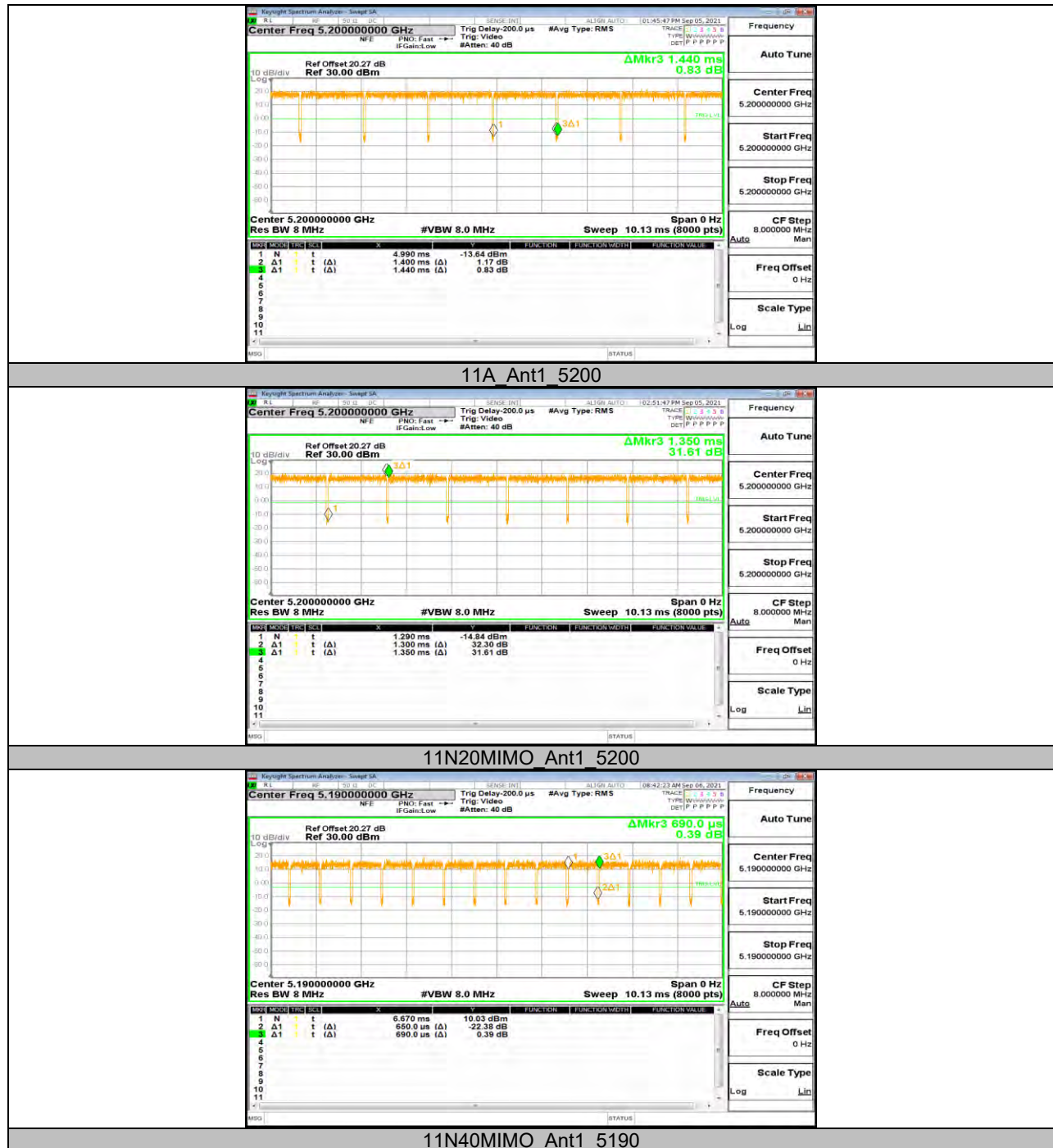
Where: x is Duty Cycle (Linear)

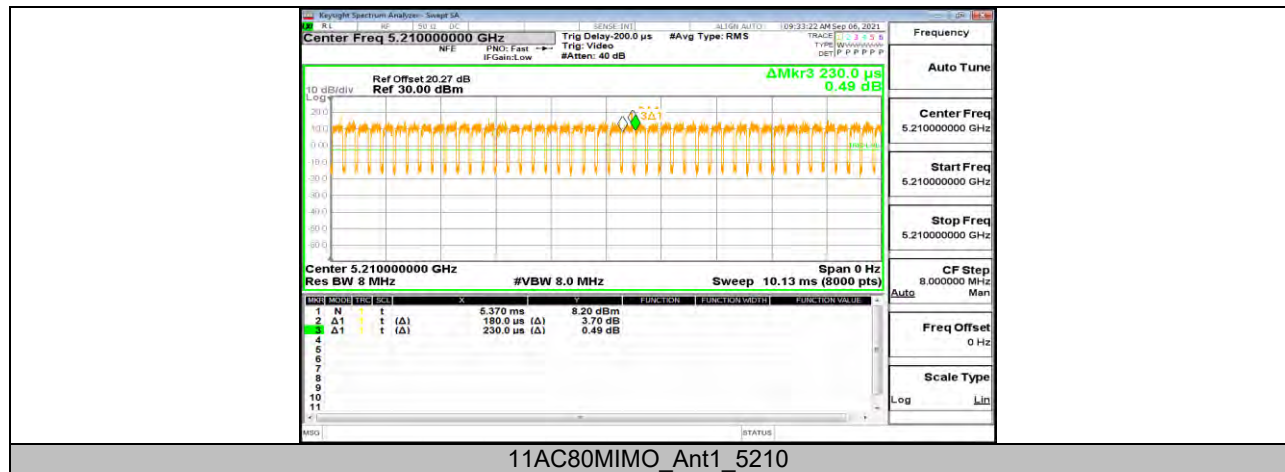
Where: T is On Time

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



11.7.2. Test Graphs





END OF REPORT