

Appendix A: Test Data

Duty cycle						
Mode	Frequency (MHz)	On time (ms)	On+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	2412	8.460	8.470	99.882	0.005	0.010
802.11g	2412	1.405	1.455	96.564	0.152	0.712
802.11n HT20	2412	1.315	1.365	96.337	0.162	0.760
802.11n HT40	2422	0.654	0.705	92.766	0.326	1.529
802.11n VHT20	2412	0.690	0.741	93.117	0.310	1.449
802.11n VHT40	2422	0.356	0.409	86.883	0.611	2.811
802.11ax HE20	2412	0.210	0.264	79.545	0.994	4.762
802.11ax HE40	2422	0.206	0.260	79.231	1.011	4.854

2.4 GHz Band							
Mode	CH	Freq. (MHz)	RF power setting in Test SW				Test SW Version
			Ant-0	Ant-1	Ant-2	Ant-3	
802.11b	1	2412	22.00	22.00	-	-	QA Tool / MT7981 QA 0.0.2.78
802.11b	6	2437	22.00	22.00	-	-	
802.11b	11	2462	23.00	23.00	-	-	
802.11g	1	2412	18.50	18.50	-	-	
802.11g	2	2417	19.00	19.00	-	-	
802.11g	3	2422	19.50	19.50	-	-	
802.11g	6	2437	22.50	22.50	-	-	
802.11g	11	2462	21.00	21.00	-	-	
802.11n HT20	1	2412	18.50	18.50	-	-	
802.11n HT20	2	2417	19.50	19.50	-	-	
802.11n HT20	6	2437	22.50	22.50	-	-	
802.11n HT20	11	2462	19.50	19.50	-	-	
802.11n HT40	3	2422	17.50	17.50	-	-	
802.11n HT40	6	2437	20.00	20.00	-	-	
802.11n HT40	9	2452	18.50	18.50	-	-	
802.11n VHT20	1	2412	18.50	18.50	-	-	
802.11n VHT20	2	2417	19.50	19.50	-	-	
802.11n VHT20	6	2437	22.50	22.50	-	-	
802.11n VHT20	11	2462	19.50	19.50	-	-	
802.11n VHT40	3	2422	17.50	17.50	-	-	
802.11n VHT40	6	2437	20.00	20.00	-	-	
802.11n VHT40	9	2452	18.50	18.50	-	-	
802.11ax HE20	1	2412	18.50	18.50	-	-	
802.11ax HE20	2	2417	19.00	19.00	-	-	
802.11ax HE20	6	2437	22.00	22.00	-	-	
802.11ax HE20	11	2462	19.00	19.00	-	-	
802.11ax HE40	3	2422	17.50	17.50	-	-	
802.11ax HE40	6	2437	19.50	19.50	-	-	
802.11ax HE40	9	2452	18.50	18.50	-	-	

2.4 GHz Band												
Mode	CH	Freq. (MHz)	Avg Conducted Power (dBm)					Conducted Power Limit (dBm)				
			Ant-0	Ant-1	Ant-2	Ant-3	SUM	Ant-0	Ant-1	Ant-2	Ant-3	SUM
802.11b	1	2412	23.03	23.04	-	-	26.04	30.00	30.00	-	-	30.00
802.11b	6	2437	22.84	23.14	-	-	26.00	30.00	30.00	-	-	30.00
802.11b	11	2462	23.68	23.87	-	-	26.78	30.00	30.00	-	-	30.00
802.11g	1	2412	19.11	18.82	-	-	21.98	30.00	30.00	-	-	30.00
802.11g	2	2417	19.49	19.22	-	-	22.37	30.00	30.00	-	-	30.00
802.11g	3	2422	20.08	19.88	-	-	22.99	30.00	30.00	-	-	30.00
802.11g	6	2437	22.43	22.74	-	-	25.60	30.00	30.00	-	-	30.00
802.11g	11	2462	21.61	21.98	-	-	24.81	30.00	30.00	-	-	30.00
802.11n HT20	1	2412	18.05	17.73	-	-	20.91	30.00	30.00	-	-	30.00
802.11n HT20	2	2417	18.95	18.69	-	-	21.83	30.00	30.00	-	-	30.00
802.11n HT20	6	2437	21.56	21.96	-	-	24.78	30.00	30.00	-	-	30.00
802.11n HT20	11	2462	19.06	19.30	-	-	22.19	30.00	30.00	-	-	30.00
802.11n HT40	3	2422	16.75	16.54	-	-	19.65	30.00	30.00	-	-	30.00
802.11n HT40	6	2437	18.86	19.14	-	-	22.01	30.00	30.00	-	-	30.00
802.11n HT40	9	2452	17.49	17.75	-	-	20.63	30.00	30.00	-	-	30.00
802.11n VHT20	1	2412	18.04	17.77	-	-	20.92	30.00	30.00	-	-	30.00
802.11n VHT20	2	2417	19.03	18.71	-	-	21.88	30.00	30.00	-	-	30.00
802.11n VHT20	6	2437	21.62	21.95	-	-	24.80	30.00	30.00	-	-	30.00
802.11n VHT20	11	2462	19.10	19.39	-	-	22.26	30.00	30.00	-	-	30.00
802.11n VHT40	3	2422	16.86	16.55	-	-	19.72	30.00	30.00	-	-	30.00
802.11n VHT40	6	2437	18.91	19.20	-	-	22.07	30.00	30.00	-	-	30.00
802.11n VHT40	9	2452	17.54	17.73	-	-	20.65	30.00	30.00	-	-	30.00
802.11ax HE20	1	2412	18.26	17.96	-	-	21.13	30.00	30.00	-	-	30.00
802.11ax HE20	2	2417	18.70	18.39	-	-	21.56	30.00	30.00	-	-	30.00
802.11ax HE20	6	2437	21.28	21.51	-	-	24.41	30.00	30.00	-	-	30.00
802.11ax HE20	11	2462	18.75	19.04	-	-	21.91	30.00	30.00	-	-	30.00
802.11ax HE40	3	2422	17.05	16.75	-	-	19.91	30.00	30.00	-	-	30.00
802.11ax HE40	6	2437	18.57	18.85	-	-	21.72	30.00	30.00	-	-	30.00
802.11ax HE40	9	2452	17.64	17.87	-	-	20.77	30.00	30.00	-	-	30.00

6 dB Bandwidth						
Mode	Freq. (MHz)	6 dB Bandwidth (kHz)				6 dB Bandwidth Min.Limit (kHz)
		Ant-0	Ant-1	Ant-2	Ant-3	
802.11b	2412	8087	8083	-	-	≥ 500
802.11b	2437	8087	8076	-	-	≥ 500
802.11b	2462	8078	8094	-	-	≥ 500
802.11g	2412	16080	16360	-	-	≥ 500
802.11g	2417	16300	16340	-	-	≥ 500
802.11g	2422	16280	16340	-	-	≥ 500
802.11g	2437	16270	16340	-	-	≥ 500
802.11g	2462	16050	16350	-	-	≥ 500
802.11n VHT20	2412	16930	17610	-	-	≥ 500
802.11n VHT20	2417	17050	17590	-	-	≥ 500
802.11n VHT20	2437	17300	17600	-	-	≥ 500
802.11n VHT20	2462	16660	17580	-	-	≥ 500
802.11n VHT40	2422	35180	35160	-	-	≥ 500
802.11n VHT40	2437	35180	35160	-	-	≥ 500
802.11n VHT40	2452	35170	35160	-	-	≥ 500
802.11ax HE20	2412	18770	18740	-	-	≥ 500
802.11ax HE20	2417	18610	18580	-	-	≥ 500
802.11ax HE20	2437	18610	18770	-	-	≥ 500
802.11ax HE20	2462	18350	19050	-	-	≥ 500
802.11ax HE40	2422	35760	35200	-	-	≥ 500
802.11ax HE40	2437	36320	35160	-	-	≥ 500
802.11ax HE40	2452	36060	35150	-	-	≥ 500

99 % Occupied BW					
Mode	Freq. (MHz)	99 % Occupied BW (MHz)			
		Ant-0	Ant-1	Ant-2	Ant-3
802.11b	2412	12.689	12.608	-	-
802.11b	2437	12.494	12.609	-	-
802.11b	2462	12.612	12.575	-	-
802.11g	2412	17.303	17.029	-	-
802.11g	2417	17.303	17.029	-	-
802.11g	2422	17.291	17.204	-	-
802.11g	2437	20.107	20.207	-	-
802.11g	2462	17.931	18.153	-	-
802.11n VHT20	2412	18.154	18.001	-	-
802.11n VHT20	2417	18.194	18.000	-	-
802.11n VHT20	2437	18.904	18.947	-	-
802.11n VHT20	2462	18.243	18.043	-	-
802.11n VHT40	2422	37.172	36.921	-	-
802.11n VHT40	2437	37.573	37.156	-	-
802.11n VHT40	2452	37.314	36.944	-	-
802.11ax HE20	2412	18.966	18.935	-	-
802.11ax HE20	2417	18.931	18.929	-	-
802.11ax HE20	2437	19.263	19.284	-	-
802.11ax HE20	2462	19.220	19.172	-	-
802.11ax HE40	2422	37.906	37.837	-	-
802.11ax HE40	2437	38.066	38.122	-	-
802.11ax HE40	2452	37.945	37.978	-	-

Maximum Power Spectral Density Measurement											
Mode	Freq. (MHz)	Measurement (dBm/3 kHz)					Max.Limit (dBm/ 3 kHz)				
		Ant-0	Ant-1	Ant-2	Ant-3	SUM	Ant-0	Ant-1	Ant-2	Ant-3	SUM
802.11b	2412	3.40	3.13	-	-	6.28	8.00	8.00	-	-	8.00
802.11b	2437	2.86	2.79	-	-	5.84	8.00	8.00	-	-	8.00
802.11b	2462	3.75	3.88	-	-	6.83	8.00	8.00	-	-	8.00
802.11g	2412	-3.25	-2.56	-	-	0.12	8.00	8.00	-	-	8.00
802.11g	2417	-3.25	-2.56	-	-	0.12	8.00	8.00	-	-	8.00
802.11g	2422	-5.16	-5.11	-	-	-2.12	8.00	8.00	-	-	8.00
802.11g	2437	-0.36	-0.26	-	-	2.70	8.00	8.00	-	-	8.00
802.11g	2462	-0.10	0.59	-	-	3.27	8.00	8.00	-	-	8.00
802.11n VHT20	2412	-5.22	-3.56	-	-	-1.30	8.00	8.00	-	-	8.00
802.11n VHT20	2417	-3.51	-4.53	-	-	-0.98	8.00	8.00	-	-	8.00
802.11n VHT20	2437	-1.86	-1.25	-	-	1.47	8.00	8.00	-	-	8.00
802.11n VHT20	2462	-3.42	-3.35	-	-	-0.37	8.00	8.00	-	-	8.00
802.11n VHT40	2422	-8.39	-9.42	-	-	-5.86	8.00	8.00	-	-	8.00
802.11n VHT40	2437	-6.48	-6.35	-	-	-3.40	8.00	8.00	-	-	8.00
802.11n VHT40	2452	-8.37	-6.76	-	-	-4.48	8.00	8.00	-	-	8.00
802.11ax HE20	2412	-6.58	-5.61	-	-	-3.06	8.00	8.00	-	-	8.00
802.11ax HE20	2417	-6.12	-5.14	-	-	-2.59	8.00	8.00	-	-	8.00
802.11ax HE20	2437	-2.11	-2.62	-	-	0.65	8.00	8.00	-	-	8.00
802.11ax HE20	2462	-6.03	-4.56	-	-	-2.22	8.00	8.00	-	-	8.00
802.11ax HE40	2422	-9.61	-10.56	-	-	-7.05	8.00	8.00	-	-	8.00
802.11ax HE40	2437	-8.42	-8.02	-	-	-5.21	8.00	8.00	-	-	8.00
802.11ax HE40	2452	-9.21	-8.71	-	-	-5.94	8.00	8.00	-	-	8.00

Duty cycle (Beamforming on)						
Mode	Frequency (MHz)	On time (ms)	On+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11n HT20	2412	2.535	2.805	90.374	0.440	0.394
802.11n HT40	2422	2.430	2.720	89.338	0.490	0.412
802.11n VHT20	2412	2.535	2.805	90.374	0.440	0.394
802.11n VHT40	2422	2.450	2.710	90.406	0.438	0.408
802.11ax HE20	2412	3.810	4.185	91.039	0.408	0.262
802.11ax HE40	2422	1.940	2.240	86.607	0.624	0.515

2.4 GHz Band (Beamforming on)							
Mode	CH	Freq. (MHz)	RF power setting in Test SW				Test SW Version
			Ant-0	Ant-1	Ant-2	Ant-3	
802.11n HT20	1	2412	38.00	38.00	-	-	Command
802.11n HT20	2	2417	40.00	40.00	-	-	
802.11n HT20	6	2437	44.00	44.00	-	-	
802.11n HT20	11	2462	38.00	38.00	-	-	
802.11n HT40	3	2422	36.00	36.00	-	-	
802.11n HT40	6	2437	39.00	39.00	-	-	
802.11n HT40	9	2452	36.00	36.00	-	-	
802.11n VHT20	1	2412	39.00	39.00	-	-	
802.11n VHT20	2	2417	39.00	39.00	-	-	
802.11n VHT20	6	2437	44.00	44.00	-	-	
802.11n VHT20	11	2462	38.00	38.00	-	-	
802.11n VHT40	3	2422	36.00	36.00	-	-	
802.11n VHT40	6	2437	39.00	39.00	-	-	
802.11n VHT40	9	2452	36.00	36.00	-	-	
802.11ax HE20	1	2412	36.00	36.00	-	-	
802.11ax HE20	2	2417	35.00	35.00	-	-	
802.11ax HE20	6	2437	41.00	41.00	-	-	
802.11ax HE20	11	2462	36.00	36.00	-	-	
802.11ax HE40	3	2422	36.00	36.00	-	-	
802.11ax HE40	6	2437	36.00	36.00	-	-	
802.11ax HE40	9	2452	34.00	34.00	-	-	

2.4 GHz Band (Beamforming on)												
Mode	CH	Freq. (MHz)	Avg Conducted Power (dBm)					Conducted Power Limit (dBm)				
			Ant-0	Ant-1	Ant-2	Ant-3	SUM	Ant-0	Ant-1	Ant-2	Ant-3	SUM
802.11n HT20	1	2412	17.73	17.61	-	-	20.68	30.00	30.00	-	-	30.00
802.11n HT20	2	2417	18.94	18.59	-	-	21.78	30.00	30.00	-	-	30.00
802.11n HT20	6	2437	21.52	21.78	-	-	24.66	30.00	30.00	-	-	30.00
802.11n HT20	11	2462	18.66	18.96	-	-	21.82	30.00	30.00	-	-	30.00
802.11n HT40	3	2422	16.31	16.06	-	-	19.20	30.00	30.00	-	-	30.00
802.11n HT40	6	2437	18.86	18.92	-	-	21.90	30.00	30.00	-	-	30.00
802.11n HT40	9	2452	17.16	17.29	-	-	20.24	30.00	30.00	-	-	30.00
802.11n VHT20	1	2412	18.00	17.63	-	-	20.83	30.00	30.00	-	-	30.00
802.11n VHT20	2	2417	18.95	18.61	-	-	21.79	30.00	30.00	-	-	30.00
802.11n VHT20	6	2437	21.59	21.80	-	-	24.71	30.00	30.00	-	-	30.00
802.11n VHT20	11	2462	18.70	18.94	-	-	21.83	30.00	30.00	-	-	30.00
802.11n VHT40	3	2422	16.29	16.24	-	-	19.27	30.00	30.00	-	-	30.00
802.11n VHT40	6	2437	18.84	19.00	-	-	21.93	30.00	30.00	-	-	30.00
802.11n VHT40	9	2452	17.19	17.28	-	-	20.24	30.00	30.00	-	-	30.00
802.11ax HE20	1	2412	17.65	17.21	-	-	20.44	30.00	30.00	-	-	30.00
802.11ax HE20	2	2417	17.86	17.38	-	-	20.63	30.00	30.00	-	-	30.00
802.11ax HE20	6	2437	20.34	20.49	-	-	23.42	30.00	30.00	-	-	30.00
802.11ax HE20	11	2462	17.89	18.14	-	-	21.02	30.00	30.00	-	-	30.00
802.11ax HE40	3	2422	16.28	16.01	-	-	19.16	30.00	30.00	-	-	30.00
802.11ax HE40	6	2437	17.87	17.85	-	-	20.87	30.00	30.00	-	-	30.00
802.11ax HE40	9	2452	17.12	17.01	-	-	20.08	30.00	30.00	-	-	30.00