

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	8.440	8.460	99.764	0.010	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	0.653	0.704	92.756	0.327	1.531
802.11n VHT20	2412	1.325	1.375	96.364	0.161	0.755
802.11n VHT40	2422	0.661	0.714	92.577	0.335	1.513
802.11ax HE20	2412	1.040	1.085	95.853	0.184	0.962
802.11ax HE40	2422	0.553	0.604	91.556	0.383	1.808

2.4 GHz Band							
Mode	Channel	Freq. (MHz)	RF power setting in Test SW				Test SW Version
			Ant-0	Ant-1	Ant-2	Ant-3	
802.11b	1	2412	16.50	16.50	-	-	QA UI(MT7981) v0.0.2.78
802.11b	6	2437	15.50	15.50	-	-	
802.11b	11	2462	15.50	15.50	-	-	
802.11g	1	2412	17.50	17.50	-	-	
802.11g	6	2437	19.00	19.00	-	-	
802.11g	11	2462	18.00	18.00	-	-	
802.11n HT20	1	2412	17.50	17.50	-	-	
802.11n HT20	6	2437	20.50	20.50	-	-	
802.11n HT20	11	2462	17.50	17.50	-	-	
802.11n HT40	3	2422	16.50	16.50	-	-	
802.11n HT40	6	2437	19.00	19.00	-	-	
802.11n HT40	9	2452	16.50	16.50	-	-	
802.11n VHT20	1	2412	17.50	17.50	-	-	
802.11n VHT20	6	2437	20.50	20.50	-	-	
802.11n VHT20	11	2462	17.50	17.50	-	-	
802.11n VHT40	3	2422	16.50	16.50	-	-	
802.11n VHT40	6	2437	19.00	19.00	-	-	
802.11n VHT40	9	2452	16.50	16.50	-	-	
802.11ax HE20	1	2412	16.50	16.50	-	-	
802.11ax HE20	2	2412	19.00	19.00	-	-	
802.11ax HE20	6	2437	20.50	20.50	-	-	
802.11ax HE20	10	2462	18.50	18.50	-	-	
802.11ax HE20	11	2462	16.50	16.50	-	-	
802.11ax HE40	3	2422	15.50	15.50	-	-	
802.11ax HE40	6	2437	18.00	18.00	-	-	
802.11ax HE40	9	2452	15.50	15.50	-	-	

2.4 GHz Band													
Mode	CH	Freq. (MHz)	Data Rate	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	1M	19.50	19.66	-	-	22.59	30.00	30.00	-	-	30.00
802.11b	6	2437	1M	18.82	18.66	-	-	21.75	30.00	30.00	-	-	30.00
802.11b	11	2462	1M	18.55	18.65	-	-	21.61	30.00	30.00	-	-	30.00
802.11g	1	2412	6M	18.69	18.68	-	-	21.70	30.00	30.00	-	-	30.00
802.11g	6	2437	6M	20.20	20.21	-	-	23.22	30.00	30.00	-	-	30.00
802.11g	11	2462	6M	19.19	19.23	-	-	22.22	30.00	30.00	-	-	30.00
802.11n HT20	1	2412	13M	17.13	17.11	-	-	20.13	30.00	30.00	-	-	30.00
802.11n HT20	6	2437	13M	20.22	20.17	-	-	23.21	30.00	30.00	-	-	30.00
802.11n HT20	11	2462	13M	17.11	17.09	-	-	20.11	30.00	30.00	-	-	30.00
802.11n HT40	3	2422	27M	16.01	15.97	-	-	19.00	30.00	30.00	-	-	30.00
802.11n HT40	6	2437	27M	18.49	18.44	-	-	21.47	30.00	30.00	-	-	30.00
802.11n HT40	9	2452	27M	15.97	15.92	-	-	18.95	30.00	30.00	-	-	30.00
802.11n VHT20	1	2412	MCS0	17.20	17.17	-	-	20.20	30.00	30.00	-	-	30.00
802.11n VHT20	6	2437	MCS0	20.25	20.19	-	-	23.23	30.00	30.00	-	-	30.00
802.11n VHT20	11	2462	MCS0	17.17	17.15	-	-	20.17	30.00	30.00	-	-	30.00
802.11n VHT40	3	2422	MCS0	16.05	16.02	-	-	19.05	30.00	30.00	-	-	30.00
802.11n VHT40	6	2437	MCS0	18.52	18.48	-	-	21.52	30.00	30.00	-	-	30.00
802.11n VHT40	9	2452	MCS0	15.99	15.96	-	-	18.99	30.00	30.00	-	-	30.00
802.11ax HE20	1	2412	MCS0	16.32	16.25	-	-	19.30	30.00	30.00	-	-	30.00
802.11ax HE20	2	2417	MCS0	18.87	18.80	-	-	21.85	30.00	30.00	-	-	30.00
802.11ax HE20	6	2437	MCS0	20.33	20.31	-	-	23.33	30.00	30.00	-	-	30.00
802.11ax HE20	10	2457	MCS0	18.32	18.27	-	-	21.31	30.00	30.00	-	-	30.00
802.11ax HE20	11	2462	MCS0	16.26	16.21	-	-	19.25	30.00	30.00	-	-	30.00
802.11ax HE40	3	2422	MCS0	15.19	15.15	-	-	18.18	30.00	30.00	-	-	30.00
802.11ax HE40	6	2437	MCS0	17.69	17.65	-	-	20.68	30.00	30.00	-	-	30.00
802.11ax HE40	9	2452	MCS0	15.11	15.09	-	-	18.11	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	8093	8093	-	-	≥ 500
802.11b	2437	8081	8074	-	-	≥ 500
802.11b	2462	8090	8086	-	-	≥ 500
802.11g	2412	16300	16050	-	-	≥ 500
802.11g	2437	16040	16330	-	-	≥ 500
802.11g	2462	16070	16330	-	-	≥ 500
802.11n VHT20	2412	17330	17600	-	-	≥ 500
802.11n VHT20	2437	16900	17580	-	-	≥ 500
802.11n VHT20	2462	16800	17570	-	-	≥ 500
802.11n VHT40	2422	35200	35190	-	-	≥ 500
802.11n VHT40	2437	35210	35180	-	-	≥ 500
802.11n VHT40	2452	35210	35190	-	-	≥ 500
802.11ax HE20	2412	18830	18850	-	-	≥ 500
802.11ax HE20	2417	18510	18740	-	-	≥ 500
802.11ax HE20	2437	18710	18550	-	-	≥ 500
802.11ax HE20	2457	18590	18580	-	-	≥ 500
802.11ax HE20	2462	18520	18730	-	-	≥ 500
802.11ax HE40	2422	36410	35970	-	-	≥ 500
802.11ax HE40	2437	36150	36060	-	-	≥ 500
802.11ax HE40	2452	36540	36270	-	-	≥ 500

99 % Occupied BW					
Mode	Freq. (MHz)	99 % Occupied BW (MHz)			
		Ant-0	Ant-1	Ant-2	Ant-3
802.11b	2412	12.741	12.805	-	-
802.11b	2437	12.764	12.786	-	-
802.11b	2462	12.709	12.823	-	-
802.11g	2412	17.220	17.059	-	-
802.11g	2437	17.176	17.032	-	-
802.11g	2462	17.126	16.964	-	-
802.11n VHT20	2412	18.149	17.961	-	-
802.11n VHT20	2437	18.242	18.138	-	-
802.11n VHT20	2462	18.291	18.110	-	-
802.11n VHT40	2422	37.060	36.949	-	-
802.11n VHT40	2437	37.346	37.016	-	-
802.11n VHT40	2452	37.425	37.052	-	-
802.11ax HE20	2412	18.935	18.973	-	-
802.11ax HE20	2417	18.918	18.923	-	-
802.11ax HE20	2437	19.194	19.166	-	-
802.11ax HE20	2462	19.167	19.221	-	-
802.11ax HE20	2457	19.192	19.164	-	-
802.11ax HE40	2422	37.904	37.873	-	-
802.11ax HE40	2437	38.073	38.050	-	-
802.11ax HE40	2452	38.004	38.015	-	-

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	-0.71	-1.05	-	-	2.13	8.00	8.00	-	-	8.00
802.11b	2437	-2.44	-2.00	-	-	0.80	8.00	8.00	-	-	8.00
802.11b	2462	-1.85	-2.15	-	-	1.01	8.00	8.00	-	-	8.00
802.11g	2412	-4.20	-4.13	-	-	-1.15	8.00	8.00	-	-	8.00
802.11g	2437	-2.72	-2.98	-	-	0.16	8.00	8.00	-	-	8.00
802.11g	2462	-3.88	-3.96	-	-	-0.91	8.00	8.00	-	-	8.00
802.11n VHT20	2412	-6.49	-6.43	-	-	-3.45	8.00	8.00	-	-	8.00
802.11n VHT20	2437	-2.64	-1.92	-	-	0.75	8.00	8.00	-	-	8.00
802.11n VHT20	2462	-6.10	-5.34	-	-	-2.69	8.00	8.00	-	-	8.00
802.11n VHT40	2422	-9.94	-9.26	-	-	-6.58	8.00	8.00	-	-	8.00
802.11n VHT40	2437	-7.94	-7.64	-	-	-4.78	8.00	8.00	-	-	8.00
802.11n VHT40	2452	-10.16	-9.70	-	-	-6.91	8.00	8.00	-	-	8.00
802.11ax HE20	2412	-8.05	-7.16	-	-	-4.57	8.00	8.00	-	-	8.00
802.11ax HE20	2417	-5.51	-5.70	-	-	-2.59	8.00	8.00	-	-	8.00
802.11ax HE20	2437	-4.21	-3.98	-	-	-1.08	8.00	8.00	-	-	8.00
802.11ax HE20	2457	-6.34	-5.34	-	-	-2.80	8.00	8.00	-	-	8.00
802.11ax HE20	2462	-8.31	-7.98	-	-	-5.13	8.00	8.00	-	-	8.00
802.11ax HE40	2422	-10.81	-11.03	-	-	-7.91	8.00	8.00	-	-	8.00
802.11ax HE40	2437	-9.58	-8.88	-	-	-6.21	8.00	8.00	-	-	8.00
802.11ax HE40	2452	-11.40	-10.97	-	-	-8.17	8.00	8.00	-	-	8.00

Beamforming on

Duty cycle						
Mode	Frequency (MHz)	On time (ms)	On+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11n HT20	2412	2.516	2.580	97.514	0.109	0.397
802.11n HT40	2422	2.450	2.510	97.584	0.106	0.408
802.11n VHT20	2412	2.526	2.588	97.619	0.105	0.396
802.11n VHT40	2422	2.442	2.510	97.259	0.121	0.410
802.11ax HE20	2412	3.816	3.885	98.229	0.078	0.010
802.11ax HE40	2422	1.943	2.009	96.715	0.145	0.515

2.4 GHz Band							
Mode	Channel	Freq. (MHz)	RF power setting in Test SW				Test SW Version
			Ant-0	Ant-1	Ant-2	Ant-3	
802.11n HT20	1	2412	34.00	34.00	-	-	QA UI(MT7981) v0.0.2.78
802.11n HT20	6	2437	40.00	40.00	-	-	
802.11n HT20	11	2462	34.00	34.00	-	-	
802.11n HT40	3	2422	33.00	33.00	-	-	
802.11n HT40	6	2437	38.00	38.00	-	-	
802.11n HT40	9	2452	33.00	33.00	-	-	
802.11n VHT20	1	2412	34.00	34.00	-	-	
802.11n VHT20	6	2437	40.00	40.00	-	-	
802.11n VHT20	11	2462	34.00	34.00	-	-	
802.11n VHT40	3	2422	33.00	33.00	-	-	
802.11n VHT40	6	2437	38.00	38.00	-	-	
802.11n VHT40	9	2452	33.00	33.00	-	-	
802.11ax HE20	1	2412	32.00	32.00	-	-	
802.11ax HE20	2	2417	37.00	37.00	-	-	
802.11ax HE20	6	2437	40.00	40.00	-	-	
802.11ax HE20	10	2457	36.00	36.00	-	-	
802.11ax HE20	11	2462	32.00	32.00	-	-	
802.11ax HE40	3	2422	31.00	31.00	-	-	
802.11ax HE40	6	2437	36.00	36.00	-	-	
802.11ax HE40	9	2452	31.00	31.00	-	-	

2.4 GHz Band													
Mode	CH	Freq. (MHz)	Data Rate	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	13M	17.04	16.88	-	-	19.97	30.00	30.00	-	-	30.00
802.11n HT20	6	2437	13M	20.13	19.95	-	-	23.05	30.00	30.00	-	-	30.00
802.11n HT20	11	2462	13M	17.12	16.94	-	-	20.04	30.00	30.00	-	-	30.00
802.11n HT40	3	2422	27M	15.93	15.79	-	-	18.87	30.00	30.00	-	-	30.00
802.11n HT40	6	2437	27M	18.49	18.33	-	-	21.42	30.00	30.00	-	-	30.00
802.11n HT40	9	2452	27M	16.02	15.64	-	-	18.84	30.00	30.00	-	-	30.00
802.11n VHT20	1	2412	MCS0	17.03	16.87	-	-	19.97	30.00	30.00	-	-	30.00
802.11n VHT20	6	2437	MCS0	20.12	19.94	-	-	23.05	30.00	30.00	-	-	30.00
802.11n VHT20	11	2462	MCS0	17.11	16.93	-	-	20.04	30.00	30.00	-	-	30.00
802.11n VHT40	3	2422	MCS0	15.94	15.80	-	-	18.88	30.00	30.00	-	-	30.00
802.11n VHT40	6	2437	MCS0	18.50	18.34	-	-	21.43	30.00	30.00	-	-	30.00
802.11n VHT40	9	2452	MCS0	16.03	15.65	-	-	18.86	30.00	30.00	-	-	30.00
802.11ax HE20	1	2412	MCS0	16.01	15.85	-	-	18.94	30.00	30.00	-	-	30.00
802.11ax HE20	2	2417	MCS0	18.63	18.17	-	-	21.41	30.00	30.00	-	-	30.00
802.11ax HE20	6	2437	MCS0	20.10	19.92	-	-	23.02	30.00	30.00	-	-	30.00
802.11ax HE20	10	2457	MCS0	18.21	17.99	-	-	21.11	30.00	30.00	-	-	30.00
802.11ax HE20	11	2462	MCS0	16.09	15.91	-	-	19.01	30.00	30.00	-	-	30.00
802.11ax HE40	3	2422	MCS0	14.97	14.83	-	-	17.91	30.00	30.00	-	-	30.00
802.11ax HE40	6	2437	MCS0	17.53	17.37	-	-	20.46	30.00	30.00	-	-	30.00
802.11ax HE40	9	2452	MCS0	15.06	14.68	-	-	17.88	30.00	30.00	-	-	30.00