

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)
802.11a	5180	1.376	1.413	97.381	0.115	0.727
802.11n HT20	5180	1.161	1.203	96.509	0.154	0.861
802.11n HT40	5190	0.578	0.624	92.628	0.333	1.730
802.11ac VHT20	5180	1.166	1.203	96.924	0.136	0.858
802.11ac VHT40	5190	0.584	0.630	92.698	0.329	1.712
802.11ac VHT80	5210	0.294	0.342	85.965	0.657	3.401
802.11ax HE20	5180	1.002	1.049	95.520	0.199	0.998
802.11ax HE40	5190	0.528	0.575	91.826	0.370	1.894
802.11ax HE80	5210	0.286	0.333	85.886	0.661	3.497

RF power setting in Test SW							
Mode	CH	Frequency (MHz)	Ant-0	Ant-1	Ant-2	Ant-3	Test SW Version
802.11a	36	5180	13.5	-	-	-	AX Series MP Toolkit_v2.0.41
	40	5200	14	-	-	-	
	48	5240	14.5	-	-	-	
	52	5260	14.5	-	-	-	
	56	5280	14	-	-	-	
	64	5320	14.5	-	-	-	
	100	5500	13	-	-	-	
	112	5560	12.5	-	-	-	
	140	5700	13.5	-	-	-	
	149	5745	11.5	-	-	-	
802.11n HT20	36	5180	14	-	-	-	AX Series MP Toolkit_v2.0.41
	40	5200	14.5	-	-	-	
	48	5240	15	-	-	-	
	52	5260	15	-	-	-	
	56	5280	15	-	-	-	
	64	5320	15	-	-	-	
	100	5500	13	-	-	-	
	112	5560	12.5	-	-	-	
	140	5700	13.5	-	-	-	
	149	5745	12	-	-	-	
802.11n HT40	38	5190	14	-	-	-	AX Series MP Toolkit_v2.0.41
	46	5230	14.5	-	-	-	
	54	5270	14.5	-	-	-	
	62	5310	14.5	-	-	-	
	102	5510	12.5	-	-	-	
	110	5550	12	-	-	-	
	159	5795	11	-	-	-	
802.11ac VHT20	36	5180	14	-	-	-	AX Series MP Toolkit_v2.0.41
	40	5200	14.5	-	-	-	
	48	5240	15	-	-	-	
	52	5260	15	-	-	-	
	56	5280	15	-	-	-	
	64	5320	15	-	-	-	
	100	5500	13	-	-	-	
	112	5560	12.5	-	-	-	
	140	5700	13.5	-	-	-	
	149	5745	12	-	-	-	
802.11ac VHT40	38	5190	14	-	-	-	AX Series MP Toolkit_v2.0.41
	46	5230	14.5	-	-	-	
	54	5270	14.5	-	-	-	
	62	5310	14.5	-	-	-	
	102	5510	12.5	-	-	-	
	110	5550	12	-	-	-	
	159	5795	11	-	-	-	
802.11ac VHT80	42	5210	14	-	-	-	AX Series MP Toolkit_v2.0.41
	58	5290	14.5	-	-	-	
	106	5530	12.5	-	-	-	
	122	5610	13	-	-	-	
	155	5775	11.5	-	-	-	

802.11ax HE20	36	5180	14	-	-	-	AX Series MP Toolkit_v2.0.41
	40	5200	14.5	-	-	-	
	48	5240	15	-	-	-	
	52	5260	15	-	-	-	
	56	5280	15	-	-	-	
	64	5320	15	-	-	-	
	100	5500	13	-	-	-	
	112	5560	12.5	-	-	-	
	140	5700	13.5	-	-	-	
	149	5745	12	-	-	-	
	157	5785	11.5	-	-	-	
802.11ax HE40	165	5825	12	-	-	-	AX Series MP Toolkit_v2.0.41
	38	5190	14	-	-	-	
	46	5230	14.5	-	-	-	
	54	5270	14.5	-	-	-	
	62	5310	14.5	-	-	-	
	102	5510	12.5	-	-	-	
	110	5560	12	-	-	-	
	134	5670	13	-	-	-	
151	5755	11.5	-	-	-		
802.11ax HE80	159	5795	11	-	-	-	AX Series MP Toolkit_v2.0.41
	42	5210	14	-	-	-	
	58	5290	14.5	-	-	-	
	106	5530	12.5	-	-	-	
	122	5610	13	-	-	-	
155	5775	11.5	-	-	-		

Maximum Conducted Output Power Measurement							
Mode	CH	Frequency (MHz)	Average power				Limit
			Ant-0	Ant-1	Ant-2	Ant-3	
			dBm	dBm	dBm	dBm	
802.11a	36	5180	15.44	-	-	-	24.00
	40	5200	15.46	-	-	-	24.00
	48	5240	15.26	-	-	-	24.00
	52	5260	15.28	-	-	-	23.69
	56	5280	15.26	-	-	-	23.69
	64	5320	15.32	-	-	-	23.69
	100	5500	14.40	-	-	-	23.68
	112	5560	14.39	-	-	-	23.68
	140	5700	14.25	-	-	-	23.68
	149	5745	14.25	-	-	-	30.00
	157	5785	14.48	-	-	-	30.00
802.11n HT20	36	5180	15.24	-	-	-	24.00
	40	5200	15.19	-	-	-	24.00
	48	5240	15.25	-	-	-	24.00
	52	5260	15.15	-	-	-	23.88
	56	5280	15.08	-	-	-	23.88
	64	5320	15.20	-	-	-	23.88
	100	5500	14.09	-	-	-	23.88
	112	5560	14.08	-	-	-	23.88
	140	5700	14.11	-	-	-	23.88
	149	5745	14.16	-	-	-	30.00
	157	5785	14.22	-	-	-	30.00
802.11n HT40	38	5190	15.27	-	-	-	24.00
	46	5230	15.23	-	-	-	24.00
	54	5270	15.24	-	-	-	24.00
	62	5310	15.21	-	-	-	24.00
	102	5510	14.18	-	-	-	24.00
	110	5550	14.16	-	-	-	24.00
	134	5670	14.19	-	-	-	24.00
	151	5755	14.24	-	-	-	30.00
	159	5795	14.05	-	-	-	30.00

Mode	CH	Frequency (MHz)	Average power				Limit
			Ant-0	Ant-1	Ant-2	Ant-3	
			dBm	dBm	dBm	dBm	
802.11ac VHT20	36	5180	15.32	-	-	-	24.00
	40	5200	15.26	-	-	-	24.00
	48	5240	15.28	-	-	-	24.00
	52	5260	15.20	-	-	-	23.88
	56	5280	15.13	-	-	-	23.88
	64	5320	15.25	-	-	-	23.88
	100	5500	14.11	-	-	-	23.88
	112	5560	14.14	-	-	-	23.88
	140	5700	14.14	-	-	-	23.88
	149	5745	14.22	-	-	-	30.00
	157	5785	14.30	-	-	-	30.00
	165	5825	14.19	-	-	-	30.00
802.11ac VHT40	38	5190	15.38	-	-	-	24.00
	46	5230	15.29	-	-	-	24.00
	54	5270	15.33	-	-	-	24.00
	62	5310	15.26	-	-	-	24.00
	102	5510	14.25	-	-	-	24.00
	110	5550	14.20	-	-	-	24.00
	134	5670	14.26	-	-	-	24.00
	151	5755	14.27	-	-	-	30.00
	159	5795	14.12	-	-	-	30.00
802.11ac VHT80	42	5210	15.49	-	-	-	24.00
	58	5290	15.49	-	-	-	24.00
	106	5530	14.49	-	-	-	24.00
	122	5610	14.45	-	-	-	24.00
	155	5775	15.49	-	-	-	30.00

Mode	CH	Frequency (MHz)	Average power				Limit
			Ant-0	Ant-1	Ant-2	Ant-3	
			dBm	dBm	dBm	dBm	dBm
802.11ax HE20	36	5180	15.45	-	-	-	24.00
	40	5200	15.38	-	-	-	24.00
	48	5240	15.38	-	-	-	24.00
	52	5260	15.35	-	-	-	24.00
	56	5280	15.18	-	-	-	24.00
	64	5320	15.40	-	-	-	24.00
	100	5500	14.19	-	-	-	24.00
	112	5560	14.22	-	-	-	24.00
	140	5700	14.21	-	-	-	24.00
	149	5745	14.37	-	-	-	30.00
	157	5785	14.43	-	-	-	30.00
	165	5825	14.37	-	-	-	30.00
802.11ax HE40	38	5190	15.48	-	-	-	24.00
	46	5230	15.38	-	-	-	24.00
	54	5270	15.44	-	-	-	24.00
	62	5310	15.35	-	-	-	24.00
	102	5510	14.34	-	-	-	24.00
	110	5550	14.31	-	-	-	24.00
	134	5670	14.35	-	-	-	24.00
	151	5755	14.43	-	-	-	30.00
	159	5795	14.26	-	-	-	30.00
802.11ax HE80	42	5210	15.18	-	-	-	24.00
	58	5290	15.33	-	-	-	24.00
	106	5530	14.48	-	-	-	24.00
	122	5610	14.36	-	-	-	24.00
	155	5775	14.32	-	-	-	30.00

26 dB & 99 % RF Bandwidth Measurement

Mode	CH	Freq. (MHz)	99 % Bandwidth				26 dB Bandwidth			
			Ant-0	Ant-1	Ant-2	Ant-3	Ant-0	Ant-1	Ant-2	Ant-3
			MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz
802.11a	36	5180	16.263	-	-	-	18.580	-	-	-
	40	5200	16.275	-	-	-	18.650	-	-	-
	48	5240	16.272	-	-	-	18.620	-	-	-
	52	5260	16.268	-	-	-	18.560	-	-	-
	56	5280	16.263	-	-	-	18.640	-	-	-
	64	5320	16.271	-	-	-	18.600	-	-	-
	100	5500	16.263	-	-	-	18.620	-	-	-
	112	5560	16.269	-	-	-	18.540	-	-	-
	140	5700	16.266	-	-	-	18.590	-	-	-
802.11ac VHT20	36	5180	17.315	-	-	-	19.540	-	-	-
	40	5200	17.305	-	-	-	19.480	-	-	-
	48	5240	17.304	-	-	-	19.480	-	-	-
	52	5260	17.294	-	-	-	19.420	-	-	-
	56	5280	17.294	-	-	-	19.470	-	-	-
	64	5320	17.308	-	-	-	19.440	-	-	-
	100	5500	17.295	-	-	-	19.420	-	-	-
	112	5560	17.305	-	-	-	19.530	-	-	-
	140	5700	17.303	-	-	-	19.480	-	-	-
802.11ac VHT40	38	5190	35.673	-	-	-	38.860	-	-	-
	46	5230	35.683	-	-	-	38.900	-	-	-
	54	5270	35.661	-	-	-	38.970	-	-	-
	62	5310	35.672	-	-	-	38.920	-	-	-
	102	5510	35.676	-	-	-	38.930	-	-	-
	110	5550	35.676	-	-	-	38.910	-	-	-
	134	5670	35.679	-	-	-	38.910	-	-	-
802.11ac VHT80	42	5210	74.674	-	-	-	79.790	-	-	-
	58	5290	74.608	-	-	-	79.690	-	-	-
	106	5530	74.585	-	-	-	79.720	-	-	-
	122	5610	74.657	-	-	-	79.760	-	-	-

Mode	CH	Freq. (MHz)	99 % Bandwidth				26 dB Bandwidth			
			Ant-0	Ant-1	Ant-2	Ant-3	Ant-0	Ant-1	Ant-2	Ant-3
			MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz
802.11ax HE20	36	5180	18.679	-	-	-	20.300	-	-	-
	40	5200	18.681	-	-	-	20.330	-	-	-
	48	5240	18.683	-	-	-	20.220	-	-	-
	52	5260	18.666	-	-	-	20.330	-	-	-
	56	5280	18.664	-	-	-	20.320	-	-	-
	64	5320	18.692	-	-	-	20.330	-	-	-
	100	5500	18.637	-	-	-	20.280	-	-	-
	112	5560	18.654	-	-	-	20.280	-	-	-
	140	5700	18.634	-	-	-	20.250	-	-	-
802.11ax HE40	38	5190	37.317	-	-	-	40.080	-	-	-
	46	5230	37.305	-	-	-	40.060	-	-	-
	54	5270	37.332	-	-	-	40.110	-	-	-
	62	5310	37.293	-	-	-	40.050	-	-	-
	102	5510	37.302	-	-	-	40.070	-	-	-
	110	5550	37.272	-	-	-	39.990	-	-	-
	134	5670	37.316	-	-	-	40.140	-	-	-
802.11ax HE80	42	5210	76.490	-	-	-	81.210	-	-	-
	58	5290	76.459	-	-	-	81.130	-	-	-
	106	5530	76.398	-	-	-	81.190	-	-	-
	122	5610	76.452	-	-	-	81.210	-	-	-

Band III_6 dB & 99 % RF Bandwidth Measurement

Mode	CH	Freq. (MHz)	99 % Bandwidth				6 dB Bandwidth				6dB Limit
			Ant-0	Ant-1	Ant-2	Ant-3	Ant-0	Ant-1	Ant-2	Ant-3	
			MHz	MHz	MHz	MHz	kHz	kHz	kHz	kHz	kHz
802.11a	149	5745	16.363	-	-	-	15130	-	-	-	≥ 500 kHz
	157	5785	16.358	-	-	-	15120	-	-	-	
	165	5825	16.346	-	-	-	15130	-	-	-	
802.11ac VHT20	149	5745	17.322	-	-	-	15130	-	-	-	
	157	5785	17.328	-	-	-	15130	-	-	-	
	165	5825	17.318	-	-	-	15080	-	-	-	
802.11ac VHT40	151	5755	35.735	-	-	-	35110	-	-	-	
	159	5795	35.734	-	-	-	35120	-	-	-	
802.11ac VHT80	155	5775	74.727	-	-	-	75110	-	-	-	
802.11ax HE20	149	5745	18.619	-	-	-	15130	-	-	-	
	157	5785	18.627	-	-	-	15130	-	-	-	
	165	5825	18.622	-	-	-	15130	-	-	-	
802.11ax HE40	151	5755	37.352	-	-	-	35120	-	-	-	
	159	5795	37.313	-	-	-	35110	-	-	-	
802.11ax HE80	155	5775	76.454	-	-	-	75110	-	-	-	

Power Spectral Density Measurement									
Mode	CH	Frequency (MHz)	Measurement				Duty Factor	Calculated	Limit
			Ant-0	Ant-1	Ant-2	Ant-3		Total	
			dBm/MHz	dBm/MHz	dBm/MHz	dBm/MHz	dB	dBm/MHz	dBm/MHz
802.11a	36	5180	4.740	-	-	-	0.115	4.855	11.000
	40	5200	5.284	-	-	-	0.115	5.400	11.000
	48	5240	5.178	-	-	-	0.115	5.293	11.000
	52	5260	5.304	-	-	-	0.115	5.419	11.000
	56	5280	4.819	-	-	-	0.115	4.934	11.000
	64	5320	5.032	-	-	-	0.115	5.147	11.000
	100	5500	4.902	-	-	-	0.115	5.017	11.000
	112	5560	4.254	-	-	-	0.115	4.369	11.000
140	5700	4.602	-	-	-	0.115	4.717	11.000	
802.11ac VHT20	36	5180	5.275	-	-	-	0.136	5.411	11.000
	40	5200	5.139	-	-	-	0.136	5.275	11.000
	48	5240	5.578	-	-	-	0.136	5.713	11.000
	52	5260	5.555	-	-	-	0.136	5.691	11.000
	56	5280	5.382	-	-	-	0.136	5.518	11.000
	64	5320	5.660	-	-	-	0.136	5.796	11.000
	100	5500	4.792	-	-	-	0.136	4.928	11.000
	112	5560	3.944	-	-	-	0.136	4.079	11.000
140	5700	3.990	-	-	-	0.136	4.125	11.000	
802.11ac VHT40	38	5190	1.897	-	-	-	0.329	2.226	11.000
	46	5230	1.953	-	-	-	0.329	2.282	11.000
	54	5270	2.026	-	-	-	0.329	2.356	11.000
	62	5310	1.571	-	-	-	0.329	1.900	11.000
	102	5510	1.147	-	-	-	0.329	1.477	11.000
	110	5550	0.698	-	-	-	0.329	1.027	11.000
	134	5670	0.134	-	-	-	0.329	0.464	11.000
802.11ac VHT80	42	5210	-1.426	-	-	-	0.657	-0.769	11.000
	58	5290	-1.465	-	-	-	0.657	-0.808	11.000
	106	5530	-2.207	-	-	-	0.657	-1.551	11.000
	122	5610	-2.324	-	-	-	0.657	-1.667	11.000

Note: Power Density = measured result + 10 log (1/duty cycle) + Conversion ratio = measured result + duty factory.

Band	CH	Frequency (MHz)	Measurement				Duty Factor	Calculated	Limit
			Ant-0	Ant-1	Ant-2	Ant-3		Total	
			dBm/MHz	dBm/MHz	dBm/MHz	dBm/MHz	dB	dBm/MHz	dBm/MHz
802.11ax HE20	36	5180	4.651	-	-	-	0.199	4.850	11.000
	40	5200	4.825	-	-	-	0.199	5.024	11.000
	48	5240	4.827	-	-	-	0.199	5.026	11.000
	52	5260	5.134	-	-	-	0.199	5.333	11.000
	56	5280	4.958	-	-	-	0.199	5.157	11.000
	64	5320	5.300	-	-	-	0.199	5.499	11.000
	100	5500	4.201	-	-	-	0.199	4.400	11.000
	112	5560	3.376	-	-	-	0.199	3.575	11.000
140	5700	3.414	-	-	-	0.199	3.613	11.000	
802.11ax HE40	38	5190	1.262	-	-	-	0.370	1.632	11.000
	46	5230	1.970	-	-	-	0.370	2.340	11.000
	54	5270	1.673	-	-	-	0.370	2.043	11.000
	62	5310	1.498	-	-	-	0.370	1.869	11.000
	102	5510	0.992	-	-	-	0.370	1.362	11.000
	110	5550	0.732	-	-	-	0.370	1.102	11.000
	134	5670	0.679	-	-	-	0.370	1.050	11.000
802.11ax HE80	42	5210	-1.680	-	-	-	0.661	-1.019	11.000
	58	5290	-1.432	-	-	-	0.661	-0.771	11.000
	106	5530	-2.496	-	-	-	0.661	-1.835	11.000
	122	5610	-2.601	-	-	-	0.661	-1.940	11.000

Note: Power Density = measured result + 10 log (1/duty cycle) + Conversion ratio = measured result + duty factory.

Band III Power Spectral Density Measurement

Mode	CH	Frequency (MHz)	Measurement								Duty Factor	Limit	PASS/FAIL
			Ant-0		Ant-1		Ant-2		Ant-3				
			dBm/100 kHz	dBm/500 kHz	dBm/100 kHz	dBm/500 kHz	dBm/100 kHz	dBm/500 kHz	dBm/100 kHz	dBm/500 kHz			
802.11a	149	5745	-4.715	2.390	-	-	-	-	-	-	0.115	30.00	PASS
	157	5785	-5.246	1.859	-	-	-	-	-	-	0.115	30.00	PASS
	165	5825	-4.918	2.187	-	-	-	-	-	-	0.115	30.00	PASS
802.11ac VHT20	149	5745	-4.594	2.531	-	-	-	-	-	-	0.136	30.00	PASS
	157	5785	-5.300	1.826	-	-	-	-	-	-	0.136	30.00	PASS
	165	5825	-4.266	2.859	-	-	-	-	-	-	0.136	30.00	PASS
802.11ac VHT40	151	5755	-8.187	-0.868	-	-	-	-	-	-	0.329	30.00	PASS
	159	5795	-8.644	-1.325	-	-	-	-	-	-	0.329	30.00	PASS
802.11ac VHT80	155	5775	-11.435	-3.789	-	-	-	-	-	-	0.657	30.00	PASS
802.11ax HE20	149	5745	-5.462	1.727	-	-	-	-	-	-	0.199	30.00	PASS
	157	5785	-6.246	0.943	-	-	-	-	-	-	0.199	30.00	PASS
	165	5825	-5.944	1.245	-	-	-	-	-	-	0.199	30.00	PASS
802.11ax HE40	151	5755	-9.669	-2.309	-	-	-	-	-	-	0.370	30.00	PASS
	159	5795	-9.886	-2.526	-	-	-	-	-	-	0.370	30.00	PASS
802.11ax HE80	155	5775	-11.807	-4.156	-	-	-	-	-	-	0.661	30.00	PASS

Note: Power Density = measured result + 10 log (1/duty cycle) + Conversion ratio = measured result + duty factory.

Conversion ratio = 10*Log(500 k/100 k)