

Appendix A. Test Data

Duty cycle						
Band	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T Minimun VBW (kHz)
802.11a	5180	1.430	1.630	87.730	0.569	0.699
802.11n HT20	5180	1.330	1.520	87.500	0.580	0.752
802.11n HT40	5190	0.670	1.310	51.145	2.912	1.493

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	15	-	-	15	REALTEK 11n 8723FU USB WLAN NIC
	40	5200	15	-	-	15	
	44	5220	15	-	-	15	
	48	5240	15	-	-	15	
	52	5260	15	-	-	15	
	56	5280	15	-	-	15	
	60	5300	15	-	-	15	
	64	5320	15	-	-	15	
	100	5500	15	-	-	15	
	112	5560	15	-	-	15	
	116	5580	15	-	-	15	
	124	5620	15	-	-	15	
	132	5660	15	-	-	15	
	140	5700	15	-	-	15	
	149	5745	15	-	-	15	
	157	5785	15	-	-	15	
165	5825	15	-	-	15		
802.11n HT20	36	5180	14	-	-	14	REALTEK 11n 8723FU USB WLAN NIC
	40	5200	14	-	-	14	
	44	5220	14	-	-	14	
	48	5240	14	-	-	14	
	52	5260	14	-	-	14	
	56	5280	14	-	-	14	
	60	5300	14	-	-	14	
	64	5320	14	-	-	14	
	100	5500	14	-	-	14	
	112	5560	14	-	-	14	
	116	5580	14	-	-	14	
	124	5620	14	-	-	14	
	132	5660	14	-	-	14	
	140	5700	14	-	-	14	
	149	5745	14	-	-	14	
	157	5785	14	-	-	14	
165	5825	14	-	-	14		
802.11n HT40	38	5190	14	-	-	14	REALTEK 11n 8723FU USB WLAN NIC
	46	5230	14	-	-	14	
	54	5270	14	-	-	14	
	62	5310	14	-	-	14	
	102	5510	14	-	-	14	
	110	5550	14	-	-	14	
	126	5630	14	-	-	14	
	134	5670	14	-	-	14	
	151	5755	14	-	-	14	
159	5795	14	-	-	14		

Maximum Conducted Output Power Measurement									
Band	Date Rate or Sub-test	CH	Frequency (MHz)	Average power					Limit
				Ant-0	Ant-1	Ant-2	Ant-3	Total	
				dBm	dBm	dBm	dBm	dBm	
802.11a	6M	36	5180	15.22	-	-	-	-	24.00
		40	5200	15.18	-	-	-	-	24.00
		44	5220	15.15	-	-	-	-	24.00
		48	5240	15.11	-	-	-	-	24.00
		52	5260	15.45	-	-	-	-	23.74
		56	5280	15.42	-	-	-	-	23.74
		60	5300	15.37	-	-	-	-	23.74
		64	5320	15.33	-	-	-	-	23.74
		100	5500	15.46	-	-	-	-	23.66
		112	5560	15.44	-	-	-	-	23.66
		116	5580	15.41	-	-	-	-	23.66
		124	5620	15.42	-	-	-	-	23.66
		132	5660	15.39	-	-	-	-	23.66
		140	5700	15.35	-	-	-	-	23.66
		149	5745	15.45	-	-	-	-	30.00
		157	5785	15.41	-	-	-	-	30.00
165	5825	15.32	-	-	-	-	30.00		
802.11n HT20	6.5M	36	5180	14.41	-	-	-	-	24.00
		40	5200	14.35	-	-	-	-	24.00
		44	5220	14.32	-	-	-	-	24.00
		48	5240	14.28	-	-	-	-	24.00
		52	5260	14.35	-	-	-	-	23.74
		56	5280	14.30	-	-	-	-	23.74
		60	5300	14.27	-	-	-	-	23.74
		64	5320	14.25	-	-	-	-	23.74
		100	5500	14.43	-	-	-	-	23.66
		112	5560	14.39	-	-	-	-	23.66
		116	5580	14.37	-	-	-	-	23.66
		124	5620	14.34	-	-	-	-	23.66
		132	5660	14.35	-	-	-	-	23.66
		140	5700	14.25	-	-	-	-	23.66
		149	5745	14.37	-	-	-	-	30.00
		157	5785	14.32	-	-	-	-	30.00
165	5825	14.23	-	-	-	-	30.00		
802.11n HT40	13.5M	38	5190	14.37	-	-	-	-	24.00
		46	5230	14.31	-	-	-	-	24.00
		54	5270	14.46	-	-	-	-	23.74
		62	5310	14.35	-	-	-	-	23.74
		102	5510	14.39	-	-	-	-	23.66
		110	5550	14.32	-	-	-	-	23.66
		126	5630	14.28	-	-	-	-	23.66
		134	5670	14.22	-	-	-	-	23.66
		151	5755	14.45	-	-	-	-	30.00
159	5795	14.41	-	-	-	-	30.00		

26 dB & 99 % RF Bandwidth Measurement						
Band	CH	Freq. (MHz)	99 % Bandwidth		26 dB Bandwidth	
			Ant-0	Ant-1	Ant-0	Ant-1
			MHz	MHz	MHz	MHz
802.11a	36	5180	16.449	-	20.170	-
	40	5200	16.462	-	20.520	-
	48	5240	16.466	-	20.130	-
	52	5260	16.438	-	20.080	-
	56	5280	16.499	-	20.750	-
	64	5320	16.458	-	20.540	-
	100	5500	16.447	-	20.470	-
	112	5560	16.455	-	20.190	-
	140	5700	16.414	-	20.520	-
802.11n HT20	36	5180	17.471	-	20.930	-
	40	5200	17.510	-	20.660	-
	48	5240	17.490	-	21.090	-
	52	5260	17.498	-	21.260	-
	56	5280	17.491	-	20.980	-
	64	5320	17.479	-	20.760	-
	100	5500	17.476	-	20.940	-
	112	5560	17.517	-	20.710	-
	140	5700	17.486	-	20.790	-
802.11n HT40	38	5190	35.260	-	38.380	-
	46	5230	35.245	-	38.560	-
	54	5270	35.240	-	38.470	-
	62	5310	35.274	-	38.420	-
	102	5510	35.257	-	38.540	-
	110	5550	35.263	-	38.560	-
	134	5670	35.241	-	38.510	-

Band III_6 dB & 99 % RF Bandwidth Measurement						
Band	CH	Freq. (MHz)	99 % Bandwidth		6 dB Bandwidth	
			Ant-0	Ant-1	Ant-0	Ant-1
			MHz	MHz	kHz	kHz
802.11a	149	5745	16.610	-	15080	-
	157	5785	16.671	-	15030	-
	165	5825	16.653	-	13840	-
802.11n HT20	149	5745	17.643	-	15100	-
	157	5785	17.667	-	15030	-
	165	5825	17.616	-	15080	-
802.11n HT40	151	5755	35.295	-	31310	-
	159	5795	35.273	-	31350	-

Power Spectral Density Measurement									
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
802.11a	36	5180	4.951	-	-	-	0.569	5.520	11.000
	40	5200	4.784	-	-	-	0.569	5.353	11.000
	48	5240	4.541	-	-	-	0.569	5.110	11.000
	52	5260	4.703	-	-	-	0.569	5.272	10.740
	56	5280	4.547	-	-	-	0.569	5.116	10.740
	64	5320	4.478	-	-	-	0.569	5.047	10.740
	100	5500	5.000	-	-	-	0.569	5.569	10.660
	112	5560	5.651	-	-	-	0.569	6.220	10.660
	140	5700	5.789	-	-	-	0.569	6.358	10.660
802.11n HT20	36	5180	3.714	-	-	-	0.580	4.294	11.000
	40	5200	3.927	-	-	-	0.580	4.507	11.000
	48	5240	3.641	-	-	-	0.580	4.221	11.000
	52	5260	3.379	-	-	-	0.580	3.959	10.740
	56	5280	3.398	-	-	-	0.580	3.978	10.740
	64	5320	3.437	-	-	-	0.580	4.017	10.740
	100	5500	3.775	-	-	-	0.580	4.355	10.660
	112	5560	4.179	-	-	-	0.580	4.759	10.660
	140	5700	4.794	-	-	-	0.580	5.374	10.660
802.11n HT40	38	5190	-0.892	-	-	-	2.912	2.020	11.000
	46	5230	-1.240	-	-	-	2.912	1.672	11.000
	54	5270	-1.597	-	-	-	2.912	1.315	10.740
	62	5310	-0.382	-	-	-	2.912	2.530	10.740
	102	5510	-0.909	-	-	-	2.912	2.003	10.660
	110	5550	-0.439	-	-	-	2.912	2.473	10.660
	134	5670	0.196	-	-	-	2.912	3.108	10.660

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

Band III_ Power Spectral Density Measurement							
Band	CH	Frequency (MHz)	Measurement		Calculated	Limit	PASS/FAIL
			Ant-0		Total		
			dBm/100 kHz	dBm/500 kHz	dBm/500 kHz	dBm/500 kHz	
802.11a	149	5745	-3.536	4.022	4.022	30.00	PASS
	157	5785	-3.576	3.982	3.982	30.00	PASS
	165	5825	-3.879	3.679	3.679	30.00	PASS
802.11n HT20	149	5745	-4.810	2.760	2.760	30.00	PASS
	157	5785	-4.752	2.818	2.818	30.00	PASS
	165	5825	-4.967	2.603	2.603	30.00	PASS
802.11n HT40	151	5755	-9.434	0.468	0.468	30.00	PASS
	159	5795	-9.429	0.473	0.473	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)

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Band	Frequency (MHz)	Limit mW/cm ²	Distance	Power	ANT Gain	Numeric Gain	Duty Cycle	Power with Duty cycle	Power Density
			cm	(dBm)				(mW)	mW/cm ²
			[R]	[P]				[P]x[G]	[S]
WLAN 5GHz	5150-5850	1	20	15.46	6.34	4.31	1.00	151.523	0.0301