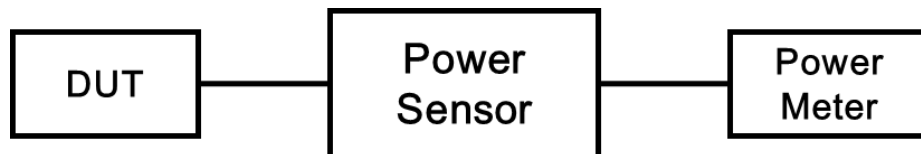


Appendix A - Conducted Power Measurements

WLAN Conducted Power

1. As per FCC OET KDB 248227 D01, conducted output power and SAR testing are not required for 802.11g/n20/n40/ax channels when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is $\leq 1.2\text{W/kg}$.
2. When the reported SAR of the initial test configuration is $> 0.8\text{ W/kg}$, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is $\leq 1.2\text{ W/kg}$ or all required channels are tested.
3. Additional conducted power measurement is required when reported SAR is $> 1.2\text{W/kg}$. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested.
4. The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac/ax) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
5. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is $\leq 1.2\text{ W/Kg}$, SAR is not required for that subsequent test configuration.



Power Measurement Setup

WLAN 2.4 GHz											
Mode	Channel	Frequency (MHz)	Main			Aux			MIMO		
			Peak Power (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)	Peak Power (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)	Peak Power (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11b	1	2412	20.13	17.15	17.25	20.31	17.18	17.25	23.20	20.08	20.20
	6	2437	20.16	17.19	17.25	20.59	17.47	17.50	23.30	20.25	20.30
	11	2462	20.15	17.21	17.25	20.51	17.41	17.50	23.30	20.23	20.30
	12	2467	19.39	16.38	16.50	18.66	15.91	16.00	22.00	19.07	19.20
	13	2472	17.15	14.18	14.25	16.82	13.95	14.00	19.90	16.98	17.10
802.11g	1	2412	20.23	15.21	15.25	20.41	15.20	15.25	23.30	18.12	18.20
	6	2437	21.90	17.19	17.25	22.07	17.34	17.50	24.90	20.18	20.30
	11	2462	20.21	14.92	15.00	20.11	14.97	15.00	23.10	17.86	18.00
	12	2467	17.92	12.39	12.50	17.14	11.92	12.25	20.50	15.08	15.30
	13	2472	0.36	-6.33	-6.25	0.17	-6.35	-6.25	3.20	-3.48	-3.30
802.11n HT20	1	2412	20.44	15.22	15.25	20.42	15.18	15.25	23.40	18.12	18.20
	6	2437	22.08	17.16	17.25	22.25	17.43	17.50	25.10	20.21	20.30
	11	2462	20.35	14.96	15.00	20.32	14.93	15.00	23.30	17.86	18.00
	12	2467	17.83	12.41	12.50	17.56	12.18	12.25	20.70	15.21	15.30
	13	2472	0.25	-6.29	-6.25	0.21	-6.31	-6.25	3.20	-3.48	-3.30
802.11n HT40	3	2422	19.49	13.47	13.50	19.45	13.42	13.50	22.40	16.36	16.50
	6	2437	20.29	14.13	14.25	20.12	14.16	14.25	23.20	17.06	17.20
	9	2452	18.94	12.88	13.00	19.02	12.89	13.00	21.90	15.80	16.00
	10	2457	17.43	9.88	10.00	17.99	9.88	10.25	20.70	12.80	13.10
	11	2462	10.20	1.42	1.50	10.24	2.44	2.50	13.20	4.87	5.00

WLAN 5.2 GHz								
Mode	Channel	Frequency (MHz)	Main		Aux		MIMO	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	36	5180	10.36	10.50	11.48	11.50	13.87	14.00
	40	5200	10.35	10.50	11.46	11.50	13.86	14.00
	44	5220	10.37	10.50	11.38	11.50	13.82	14.00
	48	5240	10.42	10.50	10.36	11.50	13.31	14.00
802.11n HT20	36	5180	10.31	10.50	10.45	11.50	13.30	14.00
	40	5200	10.32	10.50	11.43	11.50	13.82	14.00
	44	5220	10.33	10.50	11.44	11.50	13.84	14.00
	48	5240	10.34	10.50	11.48	11.50	13.86	14.00
802.11n HT40	38	5190	10.49	10.50	11.39	11.50	13.88	14.00
	46	5230	10.42	10.50	11.40	11.50	13.85	14.00
802.11ac VHT20	36	5180	10.31	10.50	11.36	11.50	13.78	14.00
	40	5200	10.30	10.50	11.48	11.50	13.85	14.00
	44	5220	10.29	10.50	11.47	11.50	13.84	14.00
	48	5240	10.37	10.50	11.36	11.50	13.81	14.00
802.11ac VHT40	38	5190	10.45	10.50	11.35	11.50	13.84	14.00
	46	5230	10.42	10.50	11.46	11.50	13.89	14.00
802.11ac VHT80	42	5210	10.28	10.50	11.42	11.50	13.80	14.00

WLAN 5.3 GHz								
Mode	Channel	Frequency (MHz)	Main		Aux		MIMO	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	52	5260	10.39	10.50	11.45	11.50	13.87	14.00
	56	5280	10.33	10.50	11.49	11.50	13.86	14.00
	60	5300	10.29	10.50	11.42	11.50	13.81	14.00
	64	5320	10.37	10.50	11.36	11.50	13.81	14.00
802.11n HT20	52	5260	10.33	10.50	11.46	11.50	13.85	14.00
	56	5280	10.29	10.50	11.33	11.50	13.76	14.00
	60	5300	10.23	10.50	11.32	11.50	13.72	14.00
	64	5320	10.28	10.50	11.49	11.50	13.84	14.00
802.11n HT40	54	5270	10.43	10.50	11.43	11.50	13.87	14.00
	62	5310	10.39	10.50	10.88	11.00	13.56	13.70
802.11ac VHT20	52	5260	10.33	10.50	11.48	11.50	13.86	14.00
	56	5280	10.29	10.50	11.42	11.50	13.81	14.00
	60	5300	10.22	10.50	11.38	11.50	13.75	14.00
	64	5320	10.33	10.50	11.49	11.50	13.86	14.00
802.11ac VHT40	54	5270	10.43	10.50	11.32	11.50	13.81	14.00
	62	5310	10.40	10.50	10.42	11.50	13.33	14.00
802.11ac VHT80	58	5290	10.37	10.50	11.44	11.50	12.85	14.00

WLAN 5.6 GHz								
Mode	Channel	Frequency (MHz)	Main		Aux		MIMO	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	100	5500	10.42	10.50	9.86	10.00	13.06	13.20
	116	5580	10.43	10.50	9.95	10.00	13.11	13.20
	124	5620	10.32	10.50	9.78	10.00	12.97	13.20
	132	5660	10.32	10.50	9.88	10.00	13.02	13.20
	140	5700	10.48	10.50	9.99	10.00	13.16	13.20
	144	5720	10.45	10.50	9.89	10.00	13.09	13.20
802.11n HT20	100	5500	10.31	10.50	9.89	10.00	13.02	13.20
	116	5580	10.46	10.50	9.80	10.00	13.06	13.20
	124	5620	10.32	10.50	9.78	10.00	12.97	13.20
	132	5660	10.49	10.50	9.93	10.00	13.13	13.20
	140	5700	10.43	10.50	9.82	10.00	13.05	13.20
	144	5720	10.32	10.50	9.76	10.00	12.96	13.20
802.11n HT40	102	5510	10.46	10.50	9.99	10.00	13.15	13.20
	110	5550	10.37	10.50	9.96	10.00	13.09	13.20
	126	5630	10.42	10.50	9.96	10.00	13.11	13.20
	134	5670	10.38	10.50	9.82	10.00	13.02	13.20
	142	5710	10.44	10.50	9.93	10.00	13.11	13.20
802.11ac VHT20	100	5500	10.31	10.50	9.92	10.00	13.04	13.20
	116	5580	10.45	10.50	9.88	10.00	13.09	13.20
	124	5620	10.30	10.50	9.78	10.00	12.96	13.20
	132	5660	10.47	10.50	9.79	10.00	13.06	13.20
	140	5700	10.43	10.50	9.82	10.00	13.05	13.20
	144	5720	10.33	10.50	9.82	10.00	13.00	13.20
802.11ac VHT40	102	5510	10.46	10.50	9.99	10.00	13.15	13.20
	110	5550	10.36	10.50	9.96	10.00	13.08	13.20
	126	5630	10.42	10.50	9.96	10.00	13.11	13.20
	134	5670	10.40	10.50	9.83	10.00	13.04	13.20
	142	5710	10.45	10.50	9.98	10.00	13.14	13.20
802.11ac VHT80	106	5530	10.37	10.50	9.95	10.00	13.08	13.20
	122	5610	10.31	10.50	9.87	10.00	13.01	13.20
	138	5690	10.42	10.50	9.96	10.00	13.11	13.20

WLAN 5.8 GHz								
Mode	Channel	Frequency (MHz)	Main		Aux		MIMO	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	149	5745	10.45	10.50	10.46	10.50	13.37	13.50
	157	5785	10.48	10.50	10.49	10.50	13.40	13.50
	165	5825	10.49	10.50	10.42	10.50	13.37	13.50
802.11n HT20	149	5745	10.38	10.50	10.37	10.50	13.29	13.50
	157	5785	10.33	10.50	10.37	10.50	13.27	13.50
	165	5825	10.36	10.50	10.33	10.50	13.26	13.50
802.11n HT40	151	5755	10.37	10.50	10.48	10.50	13.34	13.50
	159	5795	10.34	10.50	10.44	10.50	13.31	13.50
802.11ac VHT20	149	5745	10.39	10.50	10.45	10.50	13.34	13.50
	157	5785	10.37	10.50	10.48	10.50	13.34	13.50
	165	5825	10.38	10.50	10.43	10.50	13.32	13.50
802.11ac VHT40	151	5755	10.35	10.50	10.47	10.50	13.33	13.50
	159	5795	10.34	10.50	10.45	10.50	13.31	13.50
802.11ac VHT80	155	5775	10.48	10.50	10.48	10.50	13.40	13.50

Bluetooth BR / EDR					
Band	Channel	Frequency (MHz)	Main		
			Peak power (dBm)	Average power (dBm)	Tune up Limit (dBm)
Bluetooth BR GFSK	0	2402	10.14	9.46	11.00
	39	2441	10.21	10.14	11.00
	78	2480	10.50	10.46	11.00
Bluetooth EDR $\pi/4$ -DQPSK	0	2402	9.31	7.89	9.00
	39	2441	9.79	8.25	9.00
	78	2480	9.81	8.32	9.00
Bluetooth EDR 8DPSK	0	2402	9.63	8.14	9.00
	39	2441	9.83	8.53	9.00
	78	2480	10.01	8.61	9.00

Bluetooth LE					
Band	Channel	Frequency (MHz)	Main		
			Peak power (dBm)	Average power (dBm)	Tune up Limit (dBm)
Bluetooth LE 1M	0	2402	8.02	7.65	9.00
	39	2440	8.36	7.98	9.00
	78	2480	8.40	8.03	9.00

Bluetooth BR / EDR					
Band	Channel	Frequency (MHz)	Aux		
			Peak power (dBm)	Average power (dBm)	Tune up Limit
Bluetooth BR GFSK	0	2402	10.18	9.55	11.00
	39	2441	10.47	10.25	11.00
	78	2480	10.51	10.47	11.00
Bluetooth EDR $\pi/4$ -DQPSK	0	2402	9.24	7.81	9.00
	39	2441	9.69	8.18	9.00
	78	2480	9.88	8.24	9.00
Bluetooth EDR 8DPSK	0	2402	9.58	8.11	9.00
	39	2441	9.89	8.47	9.00
	78	2480	9.68	8.53	9.00

Bluetooth LE					
Band	Channel	Frequency (MHz)	Aux		
			Peak power (dBm)	Average power (dBm)	Tune up Limit
Bluetooth LE 1M	0	2402	7.94	8.27	9.00
	19	2440	8.24	8.56	9.00
	39	2480	8.27	8.59	9.00