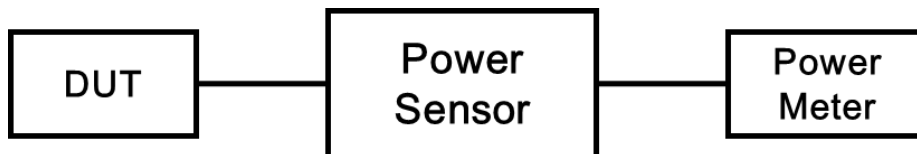


## Appendix A - Conducted Power Measurements

### 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		
			Peak Power (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)	Peak Power (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11b	1	2412	15.60	14.49	15.50	15.56	14.45	15.50
	6	2437	17.22	15.96	17.00	17.06	15.98	17.00
	11	2462	17.31	15.95	17.00	17.43	15.91	17.00
	12	2467	12.30	10.89	12.00	12.35	10.92	12.00
	13	2472	7.66	6.38	7.50	7.92	6.44	7.50
802.11g	1	2412	15.62	14.43	15.50	15.92	14.41	15.50
	6	2437	18.09	16.89	17.50	18.27	16.80	18.00
	11	2462	14.38	12.98	14.00	14.15	12.92	14.00
	12	2467	12.24	10.95	12.00	12.40	10.85	12.00
	13	2472	8.12	6.92	8.00	8.18	6.82	8.00
802.11n HT20	1	2412	13.25	12.10	14.00	14.25	12.04	14.00
	6	2437	18.32	16.88	17.50	18.55	16.82	18.00
	11	2462	13.65	12.41	13.50	13.97	12.36	13.50
	12	2467	12.16	10.84	12.00	12.42	10.79	12.00
	13	2472	7.18	5.89	7.00	7.48	5.84	7.00
802.11n HT40	3	2422	12.85	11.63	13.00	13.34	11.56	13.00
	6	2437	15.13	13.78	15.00	15.20	13.68	15.00
	9	2452	12.90	11.38	12.50	12.61	11.29	12.50
	10	2457	11.93	10.41	11.50	11.95	10.39	11.50
	11	2462	9.15	7.89	9.00	9.22	7.88	9.00
802.11ac VHT20	1	2412	14.09	12.81	14.00	14.50	12.73	14.00
	6	2437	18.26	16.84	17.50	18.57	16.80	18.00
	11	2462	12.98	11.63	13.50	14.04	11.58	13.50
	12	2467	12.07	10.87	12.00	12.15	10.81	12.00
	13	2472	7.37	5.82	7.00	7.27	5.80	7.00
802.11ac VHT40	3	2422	13.24	11.88	13.00	13.29	11.79	13.00
	6	2437	14.98	13.85	15.00	15.12	13.81	15.00
	9	2452	12.68	11.41	12.50	12.66	11.41	12.50
	10	2457	11.55	10.42	11.50	11.97	10.40	11.50
	11	2462	9.15	7.89	9.00	9.42	7.80	9.00

<b>WLAN 5.2 GHz</b>						
Mode	Channel	Frequency (MHz)	Main		Aux	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	36	5180	10.84	11.00	10.82	11.50
	40	5200	10.89	11.00	10.89	11.50
	44	5220	10.91	11.00	10.84	11.50
	48	5240	10.77	11.00	10.75	11.50
802.11n HT20	36	5180	10.83	11.00	10.83	11.50
	40	5200	10.84	11.00	10.81	11.50
	44	5220	10.82	11.00	10.79	11.50
	48	5240	10.77	11.00	10.75	11.50
802.11n HT40	38	5190	10.48	11.00	10.41	11.50
	46	5230	10.98	11.00	10.95	11.50
802.11ac VHT20	36	5180	10.80	11.00	10.74	11.50
	40	5200	10.83	11.00	10.75	11.50
	44	5220	10.85	11.00	10.80	11.50
	48	5240	10.76	11.00	10.68	11.50
802.11ac VHT40	38	5190	10.41	11.00	10.33	11.50
	46	5230	10.82	11.00	10.74	11.50
802.11ac VHT80	42	5210	9.42	11.00	9.39	11.00

<b>WLAN 5.3 GHz</b>						
Mode	Channel	Frequency (MHz)	Main		Aux	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	52	5260	10.85	11.00	10.77	11.50
	56	5280	10.92	11.00	10.82	11.50
	60	5300	10.88	11.00	10.83	11.50
	64	5320	10.79	11.00	10.84	11.50
802.11n HT20	52	5260	10.81	11.00	10.90	11.50
	56	5280	10.92	11.00	10.79	11.50
	60	5300	10.86	11.00	10.88	11.50
	64	5320	10.81	11.00	10.73	11.50
802.11n HT40	54	5270	10.79	11.00	10.93	11.50
	62	5310	10.47	11.00	10.41	11.50
802.11ac VHT20	52	5260	10.85	11.00	10.77	11.50
	56	5280	10.87	11.00	10.90	11.50
	60	5300	10.83	11.00	10.83	11.50
	64	5320	10.83	11.00	0.00	11.50
802.11ac VHT40	54	5270	10.84	11.00	10.87	11.50
	62	5310	10.42	11.00	10.42	11.50
802.11ac VHT80	58	5290	9.44	11.00	9.38	11.00

WLAN 5.6 GHz						
Mode	Channel	Frequency (MHz)	Main		Aux	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	100	5500	8.94	9.00	8.90	10.50
	116	5580	8.83	9.00	8.82	10.50
	124	5620	8.72	9.00	8.67	10.50
	132	5660	8.82	9.00	8.81	10.50
	140	5700	8.76	9.00	8.71	10.50
	144	5720	8.85	9.00	8.88	10.50
802.11n HT20	100	5500	8.84	9.00	8.87	10.50
	116	5580	8.70	9.00	8.64	10.50
	124	5620	8.84	9.00	8.79	10.50
	132	5660	8.75	9.00	8.77	10.50
	140	5700	8.79	9.00	8.88	10.50
	144	5720	8.88	9.00	8.88	10.50
802.11n HT40	102	5510	8.95	9.00	8.83	10.50
	110	5550	8.92	9.00	8.67	10.50
	126	5630	8.72	9.00	8.79	10.50
	134	5670	8.89	9.00	8.73	10.50
	142	5710	8.77	9.00	8.88	10.50
802.11ac VHT20	100	5500	8.87	9.00	8.86	10.50
	116	5580	8.82	9.00	8.69	10.50
	124	5620	8.67	9.00	8.85	10.50
	132	5660	8.88	9.00	8.71	10.50
	140	5700	8.68	9.00	8.91	10.50
	144	5720	8.91	9.00	8.89	10.50
802.11ac VHT40	102	5510	8.90	9.00	8.63	10.50
	110	5550	8.68	9.00	8.80	10.50
	126	5630	8.86	9.00	8.68	10.50
	134	5670	8.70	9.00	8.72	10.50
	142	5710	8.91	9.00	8.84	10.50
802.11ac VHT80	106	5530	8.96	9.00	8.95	10.50
	122	5610	8.91	9.00	8.84	10.50
	138	5690	8.94	9.00	8.89	10.50

<b>WLAN 5.8 GHz</b>						
Mode	Channel	Frequency (MHz)	Main		Aux	
			Average Power (dBm)	Tune-Up Limit (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
802.11a	149	5745	9.89	10.00	9.83	10.00
	157	5785	9.82	10.00	9.75	10.00
	165	5825	9.88	10.00	9.86	10.00
802.11n HT20	149	5745	9.91	10.00	9.85	10.00
	157	5785	9.84	10.00	9.78	10.00
	165	5825	9.79	10.00	9.73	10.00
802.11n HT40	151	5755	9.96	10.00	9.70	10.00
	159	5795	9.98	10.00	9.78	10.00
802.11ac VHT20	149	5745	9.86	10.00	9.77	10.00
	157	5785	9.82	10.00	9.75	10.00
	165	5825	9.85	10.00	9.77	10.00
802.11ac VHT40	151	5755	9.92	10.00	9.88	10.00
	159	5795	9.91	10.00	9.82	10.00
802.11ac VHT80	155	5775	9.97	10.00	9.94	10.00

Bluetooth BR / EDR					
Band	Channel	Frequency (MHz)	Main		
			Peak power (dBm)	Average power (dBm)	Tune up Limit (dBm)
Bluetooth BR GFSK	0	2402	5.06	4.85	6.00
	39	2441	4.67	4.29	6.00
	78	2480	4.40	4.32	6.00
Bluetooth EDR $\pi/4$ -DQPSK	0	2402	4.11	2.16	2.50
	39	2441	3.44	1.48	2.50
	78	2480	3.02	1.06	2.50
Bluetooth EDR 8DPSK	0	2402	4.10	2.15	2.50
	39	2441	3.42	1.46	2.50
	78	2480	2.95	1.02	2.50

Bluetooth LE					
Band	Channel	Frequency (MHz)	Main		
			Peak power (dBm)	Average power (dBm)	Tune up Limit (dBm)
Bluetooth LE 1M	0	2402	6.27	4.52	6.00
	19	2440	5.67	4.28	6.00
	39	2480	5.22	4.25	6.00

Bluetooth BR / EDR					
Band	Channel	Frequency (MHz)	Aux		
			Peak power (dBm)	Average power (dBm)	Tune up Limit
Bluetooth BR GFSK	0	2402	5.23	5.02	6.00
	39	2441	4.55	4.36	6.00
	78	2480	4.43	4.25	6.00
Bluetooth EDR $\pi/4$ -DQPSK	0	2402	4.28	2.29	2.50
	39	2441	3.54	1.56	2.50
	78	2480	3.39	1.43	2.50
Bluetooth EDR 8DPSK	0	2402	4.22	2.28	2.50
	39	2441	3.51	1.53	2.50
	78	2480	3.34	1.42	2.50

Bluetooth LE					
Band	Channel	Frequency (MHz)	Aux		
			Peak power (dBm)	Average power (dBm)	Tune up Limit
Bluetooth LE 1M	0	2402	6.24	4.51	6.00
	19	2440	5.58	4.37	6.00
	39	2480	5.21	4.23	6.00