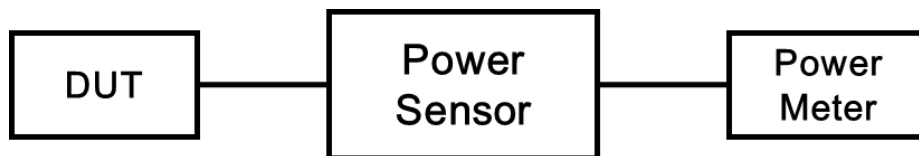


Appendix A - Conducted Power Measurements

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 ,5 GHz and 6 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.
6. For 802.11ax mode, maximum output powers for each RU size were measured to demonstrate that are no higher than other OFDM 802.11 modes.



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	20.42	16.77	17.63	21.91	18.20	19.00	not supported	not supported	not supported
	6	2437	21.19	17.92	19.00	20.67	18.22	19.00	not supported	not supported	not supported
	11	2462	21.16	17.88	19.00	20.58	17.29	18.25	not supported	not supported	not supported
	12	2467	20.88	17.54	18.50	21.00	17.69	18.50	not supported	not supported	not supported
	13	2472	18.91	15.63	16.50	19.32	15.98	17.00	not supported	not supported	not supported
802.11g	1	2412	22.08	16.43	17.50	22.49	16.93	18.00	not supported	not supported	not supported
	6	2437	22.03	17.97	19.00	22.51	17.94	19.00	not supported	not supported	not supported
	11	2462	22.12	15.22	16.25	21.85	16.15	17.25	not supported	not supported	not supported
	12	2467	20.73	12.42	13.50	20.74	12.42	13.50	not supported	not supported	not supported
	13	2472	18.60	10.40	11.50	18.58	10.40	11.50	not supported	not supported	not supported
802.11n HT20	1	2412	22.32	16.32	17.38	23.73	16.90	18.00	26.10	18.24	19.25
	6	2437	22.19	17.99	19.00	22.64	17.93	19.00	25.44	21.59	22.00
	11	2462	22.38	15.24	16.25	22.70	16.16	17.25	25.56	17.65	18.50
	12	2467	20.84	12.47	13.50	20.83	12.41	13.50	23.85	14.04	15.50
	13	2472	18.94	10.48	11.50	18.91	10.44	11.50	21.94	12.36	13.25
802.11n HT40	3	2422	22.07	14.68	15.75	22.57	15.17	16.25	25.34	16.34	17.50
	6	2437	21.68	15.90	17.00	21.96	16.50	17.50	24.84	18.01	19.25
	9	2452	21.79	14.42	15.50	22.01	14.65	15.75	24.92	16.15	17.25
	10	2457	17.59	10.19	11.25	17.56	10.15	11.25	19.66	10.41	11.50
	11	2462	17.40	9.99	11.00	17.82	10.43	11.50	20.12	11.26	12.25
802.11ax HE20	1	2412	23.12	16.44	17.50	23.03	16.92	18.00	26.09	15.17	16.25
	6	2437	22.88	17.97	19.00	22.99	17.98	19.00	25.95	18.16	19.38
	11	2462	23.42	15.24	16.25	24.52	16.23	17.25	27.02	14.94	16.00
	12	2467	21.77	12.46	13.50	23.85	12.49	13.50	25.08	13.18	14.50
	13	2472	19.88	10.46	11.50	19.83	10.45	11.50	22.87	12.05	13.25
802.11ax HE40	3	2422	23.59	14.71	15.75	24.12	15.23	16.25	26.88	13.46	14.75
	6	2437	22.90	15.79	16.88	22.96	16.50	17.50	25.95	15.08	16.25
	9	2452	23.17	14.44	15.50	23.65	14.71	15.75	26.43	13.74	14.75
	10	2457	19.07	10.21	11.25	19.03	10.15	11.25	21.17	10.37	11.50
	11	2462	18.91	9.95	11.00	19.42	10.50	11.50	21.82	10.97	12.25

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	12.99	14.00	12.99	14.00	not supported	not supported
	40	5200	12.96	14.00	12.90	14.00	not supported	not supported
	44	5220	13.00	14.00	13.00	14.00	not supported	not supported
	48	5240	12.90	14.00	12.97	14.00	not supported	not supported
802.11n HT20	36	5180	12.95	14.00	12.90	14.00	15.74	17.00
	40	5200	12.92	14.00	12.97	14.00	15.92	17.00
	44	5220	12.97	14.00	12.94	14.00	15.90	17.00
	48	5240	12.95	14.00	12.92	14.00	15.82	17.00
802.11n HT40	38	5190	12.93	14.00	12.93	14.00	15.71	17.00
	46	5230	12.99	14.00	12.95	14.00	15.89	17.00
802.11ac VHT80	42	5210	12.90	14.00	12.93	14.00	15.86	17.00
802.11ax HE20	36	5180	12.91	14.00	12.96	14.00	15.97	17.00
	40	5200	12.94	14.00	12.95	14.00	15.91	17.00
	44	5220	12.96	14.00	12.98	14.00	15.86	17.00
	48	5240	12.90	14.00	12.97	14.00	15.96	17.00
802.11ax HE40	38	5190	12.91	14.00	12.95	14.00	15.26	16.50
	46	5230	12.92	14.00	12.96	14.00	15.96	17.00
802.11ax HE80	42	5210	12.97	14.00	13.00	14.00	15.74	17.00

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	12.91	14.00	12.92	14.00	not supported	not supported
	56	5280	12.94	14.00	12.91	14.00	not supported	not supported
	60	5300	12.97	14.00	12.96	14.00	not supported	not supported
	64	5320	12.99	14.00	12.98	14.00	not supported	not supported
802.11n HT20	52	5260	12.98	14.00	12.90	14.00	15.81	17.00
	56	5280	12.96	14.00	12.91	14.00	15.75	17.00
	60	5300	12.97	14.00	12.99	14.00	15.98	17.00
	64	5320	12.99	14.00	12.98	14.00	15.94	17.00
802.11n HT40	54	5270	13.00	14.00	12.94	14.00	16.19	17.00
	62	5310	12.98	14.00	12.98	14.00	16.38	17.00
802.11ac VHT80	58	5290	13.17	14.00	13.04	14.00	14.44	15.75
802.11ac VHT160	50	5250	13.18	14.00	13.14	14.00	13.33	13.50
802.11ax HE20	52	5260	12.90	14.00	12.96	14.00	15.81	17.00
	56	5280	12.93	14.00	12.97	14.00	15.85	17.00
	60	5300	12.97	14.00	12.92	14.00	15.76	17.00
	64	5320	12.98	14.00	12.91	14.00	15.75	17.00
802.11ax HE40	54	5270	12.96	14.00	12.93	14.00	15.81	17.00
	62	5310	12.92	14.00	12.95	14.00	14.25	15.50
802.11ax HE80	58	5290	12.99	14.00	12.95	14.00	14.64	15.75
802.11ax HE160	50	5250	12.99	14.00	12.94	14.00	13.16	13.50

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	12.90	14.00	12.92	14.00	not supported	not supported
	116	5580	12.92	14.00	12.94	14.00	not supported	not supported
	124	5620	12.98	14.00	12.92	14.00	not supported	not supported
	132	5660	12.93	14.00	12.90	14.00	not supported	not supported
	140	5700	12.96	14.00	12.91	14.00	not supported	not supported
	144	5720	12.92	14.00	12.91	14.00	not supported	not supported
802.11n HT20	100	5500	12.99	14.00	12.99	14.00	15.73	17.00
	116	5580	12.99	14.00	12.93	14.00	15.90	17.00
	124	5620	12.97	14.00	12.94	14.00	15.74	17.00
	132	5660	12.93	14.00	12.90	14.00	15.90	17.00
	140	5700	12.92	14.00	12.95	14.00	15.89	17.00
	144	5720	12.98	14.00	12.92	14.00	15.91	17.00
802.11n HT40	102	5510	12.91	14.00	12.90	14.00	15.83	17.00
	110	5550	12.97	14.00	13.00	14.00	15.91	17.00
	126	5630	12.91	14.00	12.91	14.00	15.92	17.00
	134	5670	12.96	14.00	12.98	14.00	15.91	17.00
	142	5710	12.93	14.00	13.00	14.00	15.79	17.00
802.11ac VHT80	106	5530	13.13	14.00	13.07	14.00	16.33	16.75
	122	5610	13.09	14.00	12.98	14.00	16.23	17.00
	138	5690	13.23	14.00	13.10	14.00	16.43	17.00
802.11ac VHT160	114	5570	12.98	14.00	13.32	14.00	14.31	15.50
802.11ax HE20	100	5500	12.90	14.00	12.98	14.00	15.76	17.00
	116	5580	12.95	14.00	12.97	14.00	15.73	17.00
	124	5620	12.97	14.00	12.91	14.00	15.76	17.00
	132	5660	12.96	14.00	12.98	14.00	15.78	17.00
	140	5700	12.98	14.00	12.92	14.00	15.73	17.00
	144	5720	12.99	14.00	13.00	14.00	15.78	17.00
802.11ax HE40	102	5510	12.90	14.00	12.91	14.00	15.96	17.00
	110	5550	13.00	14.00	12.92	14.00	15.75	17.00
	126	5630	12.90	14.00	12.90	14.00	15.92	17.00
	134	5670	12.97	14.00	12.99	14.00	15.86	17.00
	142	5710	12.91	14.00	12.99	14.00	15.85	17.00
802.11ax HE80	106	5530	12.90	14.00	12.91	14.00	15.66	16.75
	122	5610	12.99	14.00	12.96	14.00	15.95	17.00
	138	5690	12.93	14.00	12.95	14.00	15.95	17.00
802.11ax HE160	114	5570	12.96	14.00	12.99	14.00	14.22	15.50

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	13.00	14.00	12.95	14.00	not supported	not supported
	157	5785	12.95	14.00	12.98	14.00	not supported	not supported
	165	5825	12.93	14.00	12.97	14.00	not supported	not supported
802.11n HT20	149	5745	13.00	14.00	12.93	14.00	15.86	17.00
	157	5785	12.90	14.00	12.93	14.00	15.87	17.00
	165	5825	12.92	14.00	12.96	14.00	15.77	17.00
802.11n HT40	151	5755	13.04	14.00	13.12	14.00	16.32	17.00
	159	5795	13.06	14.00	13.14	14.00	16.33	17.00
802.11ac VHT80	155	5775	12.97	14.00	13.03	14.00	16.54	17.00
802.11ax HE20	149	5745	12.97	14.00	12.99	14.00	15.84	17.00
	157	5785	12.94	14.00	13.00	14.00	15.79	17.00
	165	5825	12.96	14.00	12.99	14.00	15.74	17.00
802.11ax HE40	151	5755	12.97	14.00	12.97	14.00	15.91	17.00
	159	5795	12.91	14.00	12.92	14.00	15.80	17.00
802.11ax HE80	155	5775	12.98	14.00	12.94	14.00	15.84	17.00

WLAN 5.9 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	169	5845	12.96	14.00	12.96	14.00	not supported	not supported
	173	5865	12.97	14.00	12.91	14.00	not supported	not supported
	177	5885	12.96	14.00	13.00	14.00	not supported	not supported
802.11n HT20	169	5845	12.98	14.00	12.92	14.00	15.84	17.00
	173	5865	12.97	14.00	12.95	14.00	15.83	17.00
	177	5885	12.90	14.00	12.93	14.00	15.86	17.00
802.11n HT40	167	5835	12.94	14.00	12.90	14.00	15.85	17.00
	175	5875	12.94	14.00	13.00	14.00	15.81	17.00
802.11ac VHT80	171	5855	12.94	14.00	12.91	14.00	16.39	17.00
802.11ac VHT160	163	5815	13.22	14.00	13.14	14.00	16.54	17.00
802.11ax HE20	169	5845	12.96	14.00	12.93	14.00	15.79	17.00
	173	5865	12.95	14.00	12.99	14.00	15.83	17.00
	177	5885	12.94	14.00	12.90	14.00	15.87	17.00
802.11ax HE40	167	5835	12.95	14.00	12.95	14.00	15.92	17.00
	175	5875	12.95	14.00	12.99	14.00	15.83	17.00
802.11ax HE80	171	5855	12.93	14.00	12.95	14.00	15.95	17.00
802.11ax HE160	163	5815	12.97	14.00	12.99	14.00	15.87	17.00

WLAN 6.2 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)
802.11ax HE20	1	5955	4.41	5.00	4.59	5.00	4.70	5.00
	45	6175	4.42	5.00	4.57	5.00	4.71	5.00
	93	6415	4.31	5.00	4.52	5.00	4.64	5.00
802.11ax HE40	3	5965	7.43	8.25	7.60	8.25	7.67	8.25
	43	6165	7.32	8.25	7.46	8.25	7.88	8.25
	83	6365	7.43	8.25	7.34	8.25	0.00	0.00
	91	6405	7.39	8.25	7.58	8.25	7.80	8.25
802.11ax HE80	7	5985	9.64	10.75	9.68	10.75	10.45	10.75
	39	6145	9.34	10.75	9.70	10.75	10.12	10.75
	87	6385	9.40	10.75	9.57	10.75	10.24	10.75
802.11ax HE160	15	6025	11.13	12.00	11.03	12.00	12.83	13.50
	47	6185	10.70	12.00	10.89	12.00	12.62	13.50
	79	6345	10.78	12.00	10.92	12.00	12.66	13.50

WLAN 6.5 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)
802.11ax HE20	97	6435	4.48	5.00	4.48	5.00	4.69	5.00
	105	6475	4.31	5.00	4.46	5.00	4.71	5.00
	113	6515	4.35	5.00	4.40	5.00	4.83	5.00
802.11ax HE40	99	6445	7.37	8.25	7.36	8.25	8.05	8.25
	107	6485	7.32	8.25	7.35	8.25	7.77	8.25
802.11ax HE80	103	6465	9.62	10.75	9.58	10.75	10.26	10.75
802.11ax HE80	119	6545	9.52	10.75	9.38	10.75	10.47	10.75
802.11ax HE160	111	6505	10.94	12.00	10.97	12.00	12.66	13.50

WLAN 6.7 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)
802.11ax HE20	117	6535	3.70	4.25	3.64	4.25	3.80	4.25
	149	6695	3.56	4.25	3.58	4.25	3.90	4.25
	181	6855	3.48	4.25	3.57	4.25	3.76	4.25
802.11ax HE40	115	6525	7.37	8.25	7.48	8.25	7.87	8.25
	147	6685	6.67	7.50	6.68	7.50	7.27	7.50
	179	6845	6.39	7.50	6.66	7.50	7.05	7.50
802.11ac VHT80	135	6625	8.65	10.00	8.66	10.00	9.43	10.00
	151	6705	8.76	10.00	8.77	10.00	9.62	10.00
	167	6785	8.84	10.00	8.87	10.00	9.66	10.00
	183	6865	8.75	10.00	8.66	10.00	9.80	10.00
802.11ax HE160	143	6665	10.82	12.00	10.90	12.00	11.93	12.75
	175	6825	10.74	12.00	10.85	12.00	11.85	12.75

WLAN 7.0 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)
802.11ax HE20	185	6875	3.58	4.25	3.59	4.25	3.78	4.25
	209	6995	3.57	4.25	3.60	4.25	3.97	4.25
	233	7115	-1.18	-1.00	-1.21	-1.00	-1.42	-1.00
802.11ax HE40	187	6885	6.60	7.50	6.73	7.50	7.09	7.50
	211	7005	6.67	7.50	6.83	7.50	7.20	7.50
	227	7085	6.55	7.50	6.72	7.50	7.14	7.50
802.11ax HE80	199	6945	8.60	10.00	8.84	10.00	9.85	10.00
	215	7025	8.83	10.00	8.81	10.00	9.62	10.00
802.11ax HE160	207	6985	9.52	10.50	9.88	10.50	12.15	12.75

Bluetooth BR / EDR					
Band	Channel	Frequency (MHz)	Main		
			Peak Power (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
Bluetooth BR GFSK	0	2402	9.97	9.42	11.00
	39	2441	10.13	9.76	11.00
	78	2480	10.15	9.98	11.00
Bluetooth EDR $\pi/4$ -DQPSK	0	2402	9.40	6.69	7.50
	39	2441	9.43	6.81	7.50
	78	2480	9.48	6.72	7.50
Bluetooth EDR 8DPSK	0	2402	9.44	6.68	7.50
	39	2441	9.47	6.80	7.50
	78	2480	9.50	6.70	7.50

Bluetooth LE					
Band	Channel	Frequency (MHz)	Main		
			Peak Power (dBm)	Average Power (dBm)	Tune-Up Limit (dBm)
Bluetooth LE 1M	0	2402	8.89	6.74	7.00
	19	2440	8.67	6.83	7.00
	39	2480	8.64	6.92	7.00
Bluetooth LE 2M	1	2404	7.43	5.28	7.00
	19	2440	7.37	5.26	7.00
	38	2478	7.64	5.48	7.00