

8 CONDUCTED RF OUPUT POWER

8.1	WIFI Output Power
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8.1 WIFI Output Power

8.1.1 WIFI2.4G Output Power

WIFI2.4G-ANT0-Full Power						
2.4G	Mode	Channel	Frequency (MHz)	AV power (dBm)	Tune up (dBm)	SAR Test
	11b	1	2412	18.45	19.00	Yes
		6	2437	18.30	19.00	Yes
		11	2462	18.56	19.00	Yes
	11g	1	2412	19.07	19.50	No
		6	2437	19.32	19.50	No
		11	2462	19.26	19.50	No
	11n20	1	2412	18.06	19.00	No
		6	2437	18.12	19.00	No
		11	2462	18.20	19.00	No
	11n40	3	2422	17.64	18.50	No
		6	2437	17.95	18.50	No
		9	2452	17.91	18.50	No

Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.

- 1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11b/g/n) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, chosen over 802.11n.
- 3) According KDB 247228, 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 ≤ 1.2 W/kg, OFDM SAR test is not required.
Adjusted SAR = $0.052 * (89.13\text{mW}/79.43\text{mW}) = 0.058$ W/Kg, so 2.4G OFDM SAR test is not required.

8.1.2 WIFI5G Output Power

WIFI5G-ANT0-Full Power							
Band	Mode	Channel	Frequency (MHz)	AV power (dBm)	Tune up (dBm)	SAR Test	
5.2G	11a	36	5180	14.53	15.00	No	
		44	5220	13.93	15.00	No	
		48	5240	13.57	15.00	No	
	11n20	36	5180	13.89	15.00	No	
		44	5220	13.75	15.00	No	
		48	5240	13.90	15.00	No	
	11n40	38	5190	13.12	15.00	No	
		46	5230	14.53	15.00	No	
	11ac20	36	5180	14.40	15.00	No	
		44	5220	14.27	15.00	No	
		48	5240	13.44	15.00	No	
	11ac40	38	5190	13.51	15.00	No	
		46	5230	14.00	15.00	No	
	11ac80	42	5210	9.84	10.00	No	
5.3G	11a	52	5260	14.49	15.00	No	
		60	5300	14.48	15.00	No	
		64	5320	14.54	15.00	No	
	11n20	52	5260	13.88	15.00	No	
		60	5300	14.35	15.00	No	
		64	5320	14.42	15.00	No	
	11n40	54	5270	14.85	15.00	No	
		62	5310	14.06	15.00	No	
	11ac20	52	5260	14.58	15.00	No	
		60	5300	14.39	15.00	No	
		64	5320	14.44	15.00	No	
	11ac40	54	5270	15.11	15.50	Yes	
		62	5310	14.70	15.00	Yes	
	11ac80	58	5290	11.87	12.00	No	
5.6G	11a	100	5500	14.78	15.00	No	
		116	5580	14.36	15.00	No	
		140	5700	14.45	15.00	No	
		144	5720	14.45	15.00	No	
	11n20	100	5500	14.35	15.00	No	
		116	5580	14.11	15.00	No	
		140	5700	14.32	15.00	No	
		144	5720	14.34	15.00	No	
	11n40	102	5510	14.30	15.00	No	
		110	5550	14.36	15.00	No	
		134	5670	14.41	15.00	No	
		142	5710	14.65	15.00	No	
	11ac20	100	5500	14.39	15.00	No	
		116	5580	14.14	15.00	No	
		140	5700	14.42	15.00	No	
		102	5510	13.84	15.00	No	
	11ac40	110	5550	14.00	15.00	No	
		134	5670	14.56	15.00	No	
		142	5710	14.35	15.00	No	
		106	5530	10.09	11.00	Yes	
	11ac80	122	5610	14.37	15.00	Yes	
		138	5690	14.19	15.00	Yes	
		149	5745	16.02	16.50	Yes	
	5.8G	11a	157	5785	15.73	16.50	Yes
			165	5825	15.64	16.50	Yes
149			5745	15.70	16.00	No	
11n20		157	5785	15.61	16.00	No	
		165	5825	15.50	16.00	No	
		151	5755	15.91	16.00	No	
11n40		159	5795	15.49	16.00	No	
		149	5745	15.71	16.00	No	
11ac20		157	5785	15.59	16.00	No	
		165	5825	15.70	16.00	No	
		151	5755	15.59	16.00	No	
11ac40		159	5795	15.47	16.00	No	
		11ac80	155	5775	15.48	16.00	No
Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially. 1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR. 2) The largest channel bandwidth configuration is selected among the multiple configurations in a frequency band with the same maximum tune-up output power. 3) When multiple transmission modes (802.11a/n/ac) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n, chosen over 802.11ac.							

8.2 Bluetooth Output Power

Bluetooth-ANT0-Full Power						
Test Mode	Modulation	Channel number	Frequency(MHz)	AV power (dBm)	Tune up (dBm))	SAR Test
BT	DH5	0	2402	10.83	12.00	Yes
		39	2441	11.23	12.00	Yes
		78	2480	10.41	12.00	Yes
	2DH5	0	2402	7.77	9.00	No
		39	2441	8.06	9.00	No
		78	2480	7.88	9.00	No
	3DH5	0	2402	7.75	9.00	No
		39	2441	8.06	9.00	No
		78	2480	7.89	9.00	No
	BLE-1M	0	2402	7.02	9.00	No
		19	2440	7.43	9.00	No
		39	2480	7.62	9.00	No

Note: Since bluetooth BR mode is the maximum output power mode, SAR measurements were performed with test software using DH5 modulation, and SAR measurement is not required for the EDR and LE. When the secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode.

8.3 Bluetooth Duty Cycle

The Bluetooth duty cycle is 76.41% as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation.
Duty Cycle

