

8 CONDUCTED RF OUPUT POWER

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8.1 WIFI Output Power

8.1.1 WIFI2.4G Output Power

Test Mode	Modulation	Channel number	Frequency	AV power (dBm)	Tune-up (dBm)	SAR Test
2.4G	11b	1	2412	12.53	13.00	Yes
		6	2437	12.15	13.00	Yes
		11	2462	12.53	13.00	Yes
	11g	1	2412	12.50	13.00	No
		6	2437	12.00	13.00	No
		11	2462	12.49	13.00	No
	11n-HT20	1	2412	12.36	13.00	No
		6	2437	12.78	13.00	No
		11	2462	11.54	13.00	No
	11n-HT40	3	2422	11.90	13.00	No
		6	2437	12.07	13.00	No
		9	2452	12.80	13.00	No
	11ax-HT20	1	2412	12.47	13.00	No
		6	2437	12.88	13.00	No
		11	2462	12.34	13.00	No
	11ax-HT40	3	2422	11.82	13.00	No
		6	2437	12.05	13.00	No
		9	2452	12.76	13.00	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) 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/ax) 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, and 802.11g chosen over 802.11n, and 802.11n chosen over 802.11ax.
- (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 = $0.699 * (50.12\text{mW}/50.12\text{mW}) = 0.699$ W/Kg, so 2.4G OFDM SAR test is not required.

8.1.2 WIFI5G Output Power

Test Mode	Modulation	Channel	Frequency	AV power (dBm)	Tune-up (dBm)	SAR Test
WIFI 5G Band1	11a	36	5180	7.88	8.50	No
		44	5220	7.85	8.50	No
		48	5240	7.63	8.50	No
	11n20	36	5180	7.62	8.50	No
		44	5220	7.65	8.50	No
		48	5240	7.62	8.50	No
	11n40	38	5190	7.58	8.50	No
		46	5230	8.11	8.50	No
	11ac20	36	5180	7.61	8.50	No
		44	5220	7.65	8.50	No
		48	5240	7.59	8.50	No
	11ac40	38	5190	8.29	8.50	No
		46	5230	8.04	8.50	No
	11ax20	36	5180	7.61	8.50	No
		44	5220	8.22	8.50	No
		48	5240	8.22	8.50	No
	11ax40	38	5190	8.23	8.50	No
		46	5230	8.02	8.50	No
WIFI 5G Band2	11a	52	5260	8.26	8.50	No
		60	5300	8.29	8.50	No
		64	5320	8.28	8.50	No
	11n20	52	5260	8.21	8.50	No
		60	5300	8.06	8.50	No
		64	5320	8.28	8.50	No
	11n40	54	5270	7.75	8.50	Yes
		62	5310	7.79	8.50	Yes
	11ac20	52	5260	8.21	8.50	No
		60	5300	8.25	8.50	No
		64	5320	8.07	8.50	No
	11ac40	54	5270	7.75	8.50	No
		62	5310	7.65	8.50	No
	11ax20	52	5260	8.09	8.50	No
		60	5300	7.84	8.50	No
		64	5320	7.72	8.50	No
	11ax40	54	5270	7.78	8.50	No
		62	5310	7.78	8.50	No
	11a	100	5500	8.72	9.50	No
		116	5580	9.15	9.50	No
		140	5700	8.66	9.50	No
	11n20	100	5500	9.29	9.50	No
		116	5580	8.75	9.50	No
		140	5700	8.67	9.50	No

WIFI 5G Band3	11n40	102	5510	8.72	9.50	Yes
		118	5590	8.71	9.50	Yes
		134	5670	8.98	9.50	Yes
	11ac20	100	5500	8.30	9.50	No
		116	5580	8.63	9.50	No
		140	5700	8.85	9.50	No
	11ac40	102	5510	8.96	9.50	No
		118	5590	9.01	9.50	No
		134	5670	8.88	9.50	No
	11ax20	100	5500	8.53	9.50	No
		116	5580	8.91	9.50	No
		140	5700	7.36	9.50	No
	11ax40	102	5510	8.71	9.50	No
		118	5590	8.59	9.50	No
		134	5670	8.87	9.50	No
WIFI 5G Band4	11a	149	5745	9.11	9.50	No
		157	5785	9.14	9.50	No
		165	5825	8.97	9.50	No
	11n20	149	5745	9.04	9.50	No
		157	5785	9.37	9.50	No
		165	5825	8.90	9.50	No
	11n40	151	5755	8.60	9.50	Yes
		159	5795	9.04	9.50	Yes
	11ac20	149	5745	8.61	9.50	No
		157	5785	9.16	9.50	No
		165	5825	8.56	9.50	No
	11ac40	151	5755	8.63	9.50	No
		159	5795	9.06	9.50	No
	11ax20	149	5745	8.65	9.50	No
		157	5785	9.22	9.50	No
		165	5825	8.57	9.50	No
	11ax40	151	5755	9.30	9.50	No
		159	5795	9.02	9.50	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 among the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11a/n/ac/ax) 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, and 802.11n chosen over 802.11ac .and 802.11n chosen over 802.11ac then 802.11ax.

8.2 Bluetooth

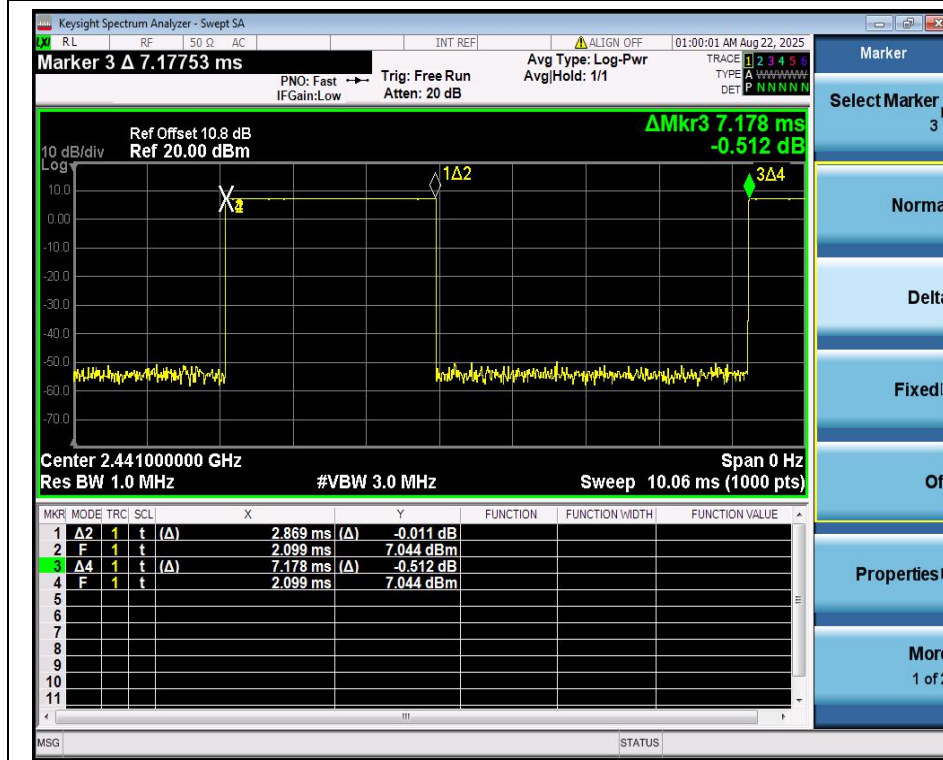
8.2.1 Bluetooth Output Power

Test Mode	Modulation	Channel	Frequency	AV power (dBm)	Tune-up (dBm)	SAR Test
BT	DH5	CH 0	2402	7.09	8.00	Yes
		CH 39	2441	7.05	8.00	Yes
		CH 78	2480	6.85	8.00	Yes
	2DH5	CH 0	2402	2.22	3.00	No
		CH 39	2441	2.13	3.00	No
		CH 78	2480	1.97	3.00	No
	3DH5	CH 0	2402	2.23	3.00	No
		CH 39	2441	2.13	3.00	No
		CH 78	2480	1.99	3.00	No
	BLE1M	CH 0	2402	7.57	8.00	Yes
		CH 19	2440	7.49	8.00	Yes
		CH 39	2480	7.12	8.00	Yes
	BLE2M	CH 1	2404	1.78	3.00	No
		CH 19	2440	1.65	3.00	No
		CH 38	2478	1.22	3.00	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.						

8.2.2 Bluetooth Duty Cycle

The Bluetooth DH5 duty cycle is 39.97% 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



The Bluetooth BLE 1M duty cycle is 61.16% 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

