

## FCC §15.247 (i), §2.1091 – RF Exposure

# FCC ID:2AG9W-DS152F

### Applied procedures / limit

According to FCC §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

Note: f is frequency in MHz

\* = Power density limit is applicable at frequencies greater than 100 MHz

### Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz

\* = Plane-wave equivalent power density

### MPE PREDICTION

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

### TEST RESULTS

## WIFI:

Test Channel	Frequency	Maximum Peak Conducted Output Power (AV)	Maximum Peak Conducted Output Power (AV)
	(MHz)	(dBm)	mW
TX 802.11b Mode			
CH01	2412	13.12	20.512
CH06	2437	13.14	20.606
CH11	2462	13.15	20.654
TX 802.11g Mode			
CH01	2412	11.53	14.223
CH06	2437	11.62	14.521
CH11	2462	11.59	14.421
TX 802.11n(20) Mode			
CH01	2412	11.73	14.894
CH06	2437	11.72	14.859
CH11	2462	11.74	14.928

## BT 3.0

1Mbps			
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)
CH00	2402	4.28	2.679
CH39	2441	4.43	2.773
CH78	2480	4.37	2.735
2Mbps			
CH00	2402	3.67	2.328
CH39	2441	3.86	2.432
CH78	2480	3.86	2.432
3Mbps			
CH00	2402	4.19	2.624
CH39	2441	4.40	2.754
CH78	2480	4.40	2.754

## BT 4.0

Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(PK)
	(MHz)	(dBm)	mW
CH00	2402	-5.31	0.294
CH19	2440	-4.91	0.323
CH39	2480	-5.02	0.315



Mode	Range	Maximum peak output power (dBm)	Output power (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm <sup>2</sup> )	Limit of Power Density (S) (mW/ cm <sup>2</sup> )	Result
802.11b	12~14	14	25.12	1(1.26)	0.0063	1	Pass
802.11g	10~12	12	15.85	1(1.26)	0.0040	1	Pass
802.11n-HT20	10~12	12	15.85	1(1.26)	0.0040	1	Pass
BT	3~5	5	3.16	1(1.26)	0.0008	1	Pass
BLE	-6~-4	-6	0.25	1(1.26)	0.0001	1	Pass