

7. RF Exposure Requirements

7.1 Limit

According to FCC 15.247(e)(i) and FCC 1.1307(b)(1), 2.1091 Systems operating under provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commissions guidelines.

TABLE1—LIMITSFORMAXIMUMPERMISSIBLEEXPOSURE(MPE)

Frequencyrange (MHz)	Electricfield strength (V/m)	Magneticfield strength (A/m)	Powerdensity (mW/cm ²)	Averagingtime (minutes)
(A)LimitsforOccupational/ControlledExposure				
0.3–3.0	614	1.63	*100	6
3.0–30	1842/f	4.89/f	*900/f ²	6
30–300	61.4	0.163	1.0	6
300–1,500 .....	.....	.....	f/300	6
1,500–100,000 .....	.....	.....	5	6
(B)LimitsforGeneralPopulation/UncontrolledExposure				
0.3–1.34	614	1.63	*100	30
1.34–30	824/f	2.19/f	*180/f ²	30
30–300	27.5	0.073	0.2	30
300–1,500 .....	.....	.....	f/1500	30
1,500–100,000 .....	.....	.....	1.0	30

f=frequencyinMHz*=Plane-waveequivalentpowerdensity

7.2 MPE Calculation Method

The MPE was calculated at a given distance to show compliance with the power density limit. The following formula was used to calculate the Power Density:

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

S=Power density (in appropriate units, e.g. mW/cm²)

P=Power input to the antenna

G=Power gain of the antenna relative to an isotropic radiator

R=Distance to the center of radiation of the antenna (e.g. cm)

7.3 Test Result

Mode/Band	Maximum Antenna gain (dBi)	Maximum tune-up Conducted Power (dBm)	Evaluation Distance(cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
2402~2480MHz DH5_2402MHz	3.0	6.75	20	0.0019	1.0

Note: BT and 2.4GHz or 5GHz Wi-Fi can't transmit simultaneously.

Mode/Band	Maximum Antenna gain (dBi)	Maximum tune-up Conducted Power (dBm)	Evaluation Distance(cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
2402~2480MHz CH19_2440MHz	3.0	-1.42	20	0.0003	1.0

Note: BT and 2.4GHz or 5GHz Wi-Fi can't transmit simultaneously.

Mode/Band	Maximum Antenna gain (dBi)	Maximum tune-up Conducted Power (dBm)	Evaluation Distance(cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
2412~2462MHz 802.11g_2437MHz	3.0	22.02	20	0.0632	1.0
2422~2452MHz 802.11n HT40_2437MH	3.0	21.98	20	0.0626	1.0

Note: BT and 2.4GHz or 5GHz Wi-Fi can't transmit simultaneously.

Mode/Band	Maximum Antenna gain (dBi)	Maximum tune-up Conducted Power (dBm)	Evaluation Distance(cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
5.15-5.25 GHz	4.0	15.22	20	0.0166	1.0
5.25-5.35 GHz	4.0	16.09	20	0.0203	1.0
5.47-5.725 GHz	4.0	16.14	20	0.0206	1.0
5.725-5.85 GHz	4.0	15.86	20	0.0193	1.0

Note: BT and 2.4GHz or 5GHz Wi-Fi can't transmit simultaneously.