3.2 Equivalent Isotropic Radiated Power (EIRP)

FCC Rule: 15.247(b)(3)

Bluetooth
EIRP = max. conducted output power + antenna gain
EIRP=8.64 dBm+0.36(tune up)+1.96dBi [antenna gain claimed by manufacturer]=10.96 dBm
=12.4738 mW

Low energy
EIRP = max. conducted output power + antenna gain
EIRP =7.41 dBm+0.59(tune up)+1.96dBi[antenna gain claimed by manufacturer]=9.96 dBm
=9.9083 mW

3.3 Exemption Limits for Routine Evaluation according to 47 CFR FCC Part 2 Subpart J, section 2.1091

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.
The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a “worst case” or conservative prediction.
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 levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20 cm normally can be maintained between the user and the device.

MPE Calculation Method

(A) 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^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
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
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) 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^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
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
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

E = Electric field (V/m) P = output power (W) G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)
The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

mW/cm^2.

Established separation distance is 20 cm.
Operating frequency band: 2402-2480 MHz

EDR mode

The product meets RF exposure requirement.
Because the power density of 0.0025 mW/cm^2 at 2441 MHz is below the power density limit of 1 mW/cm^2.

Low energy 2M

The product meets RF exposure requirement.
Because the power density of 0.002 mW/cm^2 at 2440 MHz is below the power density limit of 1 mW/cm^2.