3.2 Equivalent Isotropic Radiated Power (EIRP)

FCC Rule: 15.247(b)(3)

BLE 1M
EIRP = max. conducted output power + antenna gain
EIRP = -2.21 dBm + 1.5 dBi [antenna gain claimed by manufacturer] = -0.71 dBm = 0.85 mW

BLE 2M
EIRP = max. conducted output power + antenna gain
EIRP = -2.10 dBm + 1.5 dBi [antenna gain claimed by manufacturer] = -0.60 dBm = 0.87 mW

Thread
EIRP = max. conducted output power + antenna gain
EIRP =5.04 dBm + 1.5 dBi [antenna gain claimed by manufacturer] = 6.54 dBm = 4.51 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

Registration number: W6M22112-21453-C-1
FCC ID: SNE-ELS-003

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 mW/m2.

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

BLE 1M
Established separation distance is 20 cm.

Operating frequency band: 2402~2480 MHz
The product meets RF exposure requirement.
Because the power density of 0.0002 mW/cm^2 at 2402MHz is below the power density limit of 1 mW/cm^2.

BLE 2M
Established separation distance is 20 cm.

Operating frequency band: 2402~2480 MHz
The product meets RF exposure requirement.
Because the power density of 0.0002 mW/cm^2 at 2402MHz is below the power density limit of 1 mW/cm^2.

Thread
Established separation distance is 20 cm.

Operating frequency band: 2405~2480 MHz
The product meets RF exposure requirement.
Because the power density of 0.0009 mW/cm^2 at 2440MHz is below the power density limit of 1 mW/cm^2.