3.2 Equivalent Isotropic Radiated Power (EIRP)

FCC Rule: 15.247(b)(3)

BLE 1M
EIRP = max. conducted output power + antenna gain
EIRP = 4.83 dBm + 2.6 dBi [antenna gain claimed by manufacturer] = 7.43 dBm = 5.5335 mW

BLE 2M
EIRP = max. conducted output power + antenna gain
EIRP = 4.92 dBm + 2.6 dBi [antenna gain claimed by manufacturer] = 7.52 dBm = 5.6494 mW

Thread
EIRP = max. conducted output power + antenna gain
EIRP = 8.03 dBm + 2.6 dBi [antenna gain claimed by manufacturer] = 10.63 dBm = 11.5611 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
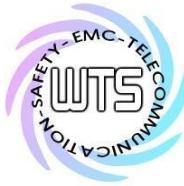
Registration number: W6M22108-21187-C-1
FCC ID: SNE-WLS-002
E = Electric field (V/m) P = output power (W) G = EUT Antenna numeric gain (numeric)
d = Separation distance between radiator and human body (m)
The formula can be changed to mW/m2.

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

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 0.0011 mW/cm^2 at 2440MHz 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 0.0011 mW/cm^2 at 2440MHz 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 0.0023 mW/cm^2 at 2405MHz is below the power density limit of 1 mW/cm^2.