

§1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)**Applicable Standard**

According to FCC §15.319(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 Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (minute) |
|--|-------------------------------|-------------------------------|-------------------------------------|-------------------------|
| Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34-30 | 842/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

MPE Calculation

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

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 (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

| Frequency (MHz) | Antenna Gain | | Tune Up Conducted Power | | Evaluation Distance (cm) | Power Density (mW/cm ²) | MPE Limit (mW/cm ²) |
|---------------------------|--------------|-----------|-------------------------|--------|-----------------------------|--|------------------------------------|
| | (dBi) | (numeric) | (dBm) | (mW) | | | |
| 2402-2480 | 0 | 1 | 0 | 1 | 20 | 0.0002 | 1.0 |
| 1921.536 - 1928.448 | 0 | 1 | 20.3 | 107.15 | 20 | 0.0213 | 1.0 |

Note: 1. the tune up conducted power was declared by the applicant
2. the Bluetooth can transmit at the same time with the DECT function.

Simultaneous transmitting consideration:

$$\text{The ratio} = \text{MPE}_{\text{Bluetooth}}/\text{limit} + \text{MPE}_{\text{DECT}}/\text{limit} = 0.0002 + 0.0213 = 0.0215 < 1.0$$

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant