

Section 15.247(i) – Radio Frequency Hazard Information

As per Section 15.247 (i) Spread spectrum transmitters operating in the 902 – 928 MHz band are required to be operated in a manner that ensures that the public is not exposed to RF energy levels in accordance with CFR 47, Section 1.1307(b)(1).

In accordance with this section, and also Section 2.1091, this device has been defined as a mobile device whereby a distance of 20 cm or greater can normally be maintained between the user and the device antenna.

In accordance with Section 1.1310 a Maximum Permissible Exposure (MPE) limit of 0.601 mW/cm² (902 MHz / 1500) or the General Population / Uncontrolled Exposure has been applied.

The maximum distance from the antenna at which the MPE is met or exceeded is calculated from the equation relating field strength in V/m, transmit power in watts, transmit antenna gain and separation distance in metres:

$$E, \text{ V/m} = (\sqrt{30 * P * G}) / d$$

$$\text{Power density, mW/cm}^2 = E^2/3770 = 0.601$$

$$E \text{ for MPE:} = \sqrt{0.601 * 3770}$$

$$E = \underline{47.6 \text{ V/m}}$$

The maximum radiated power measured was +36.0 dBm or 4 Watts

Therefore:

$$E = \sqrt{30 * P * G} / d$$

$$d = \sqrt{30 * P * G} / E$$

$$d = \sqrt{30 * 4} / 47.6$$

$$d = \underline{0.23 \text{ m or } 23 \text{ cm}}$$

In order to meet the MPE requirement for mobile devices a minimum safe distance of at least 23 cm will be required when the highest gain antenna is applied to the output of this transmitter.

Result: Complies