

Section 15.247(i) – Radio Frequency Hazard Information

As per Section 15.247 (b) (4) 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).

The device when in operation is fixed and a safe distance could be maintained when events are undertaken.

In accordance with Section 1.1310 the Maximum Permissible Exposure (MPE) limits for the General Population / Uncontrolled Exposure of f/1500 have 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:

$$E, \text{ V/m} = (\sqrt{30 * P * G}) / d$$
$$\text{Power density, mW/m}^2 = E^2/3770$$
$$E \text{ for MPE: } (920/1500) = E^2/3770$$
$$E = \sqrt{(920/1500)*3770}$$
$$E = 48.1 \text{ V/m}$$

The highest radiated power has been measured to be 30.8 dBm or 1.2 watts EIRP when operating on 915.500 MHz using the Yagi Antenna

Therefore:

$$E = \sqrt{30 * P * G} / d$$
$$d = \sqrt{30 * P * G} / E$$
$$d = \sqrt{30 * 1.2} / 48.1$$
$$d = 0.86 \text{ m or } 86 \text{ cm}$$

Result: Complies if a minimum safe distance of 86 cm is specified in the set up instructions for this system.

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