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).

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 0.615 mW/cm^2 (f/1500 = 922/1500) has been applied.

Power density, $mW/cm^2 = E^2/3770$
E for MPE: $0.615 = E^2/3770$

$E = \sqrt{0.615*3770}$

E = 48.1 V/m

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.

The highest radiated power has been measured to be +3.3 dBm or 0.0021 watts EIRP.

Therefore:

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

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

$d = \sqrt{(30 * 0.0021) / 48.1}$

d = 0.005 m or 0.5 cm

Result: Complies if a minimum safe distance of 20 cm is specified in the set up instructions for this system.