Section 15.247(i) – Radio Frequency Hazard Information

As per Section 15.247 (b) (4) spread spectrum transmitters operating in the 2400 – 2483.5 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 1 mW/cm2 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, V/m $= (\sqrt{(30 * P * G)}) / d$
Power density, mW/cm2 $= E2/3770$
E for MPE: $1 = E2/3770$
$E = \sqrt{1}*3770$
$E = 61.4$ V/m

The highest conducted power has been measured to be +15.6 dBm or 0.036 watts.

Attached to the transmitter will be a S2406BFNM whip antenna with 1 m of LMR100 cable giving an overall gain 4.47 (6.5 dBi) which is the highest gain of the antennas supplied.

Therefore:
$E = \sqrt{(30 * P * G)} / d$
$d = \sqrt{(30 * P * G)} / E$
$d = \sqrt{(30 * 0.036 * 4.47)} / 61.4$
$d = 0.036$ m or 3.6 cm

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

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