

# EMC Technologies (NZ) Ltd

Test Report No 091216.10

Report date: 14 April 2010

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## 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.

The device contains 2 transmitters that operate at similar power levels.

In accordance with Section 1.1310 the Maximum Permissible Exposure (MPE) limits for the General Population / Uncontrolled Exposure of 1 mW/cm<sup>2</sup> 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:

$$E, \text{ V/m} = (\sqrt{30 * P * G}) / d$$
$$\text{Power density, mW/cm}^2 = E^2/3770$$
$$E \text{ for MPE: } 1 = E^2/3770$$
$$E = \sqrt{1*3770}$$
$$E = 61.4 \text{ V/m}$$

The highest radiated power has been measured to be +18.8 dBm or 0.078 watts EIRP when operating on 2440.000 MHz

Therefore:

$$E = \sqrt{30 * P * G} / d$$
$$d = \sqrt{30 * P * G} / E$$
$$d = \sqrt{30 * 0.08} / 61.4$$
$$d = 0.025 \text{ m or } 2.5 \text{ cm}$$

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