

EMC Technologies (NZ) Ltd

Test Report No 81104.1

Report date: 5 December 2008

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 and calculated to be 1.60 watts EiRP when mats 1, 3 and 5 are transmitting.

Therefore:

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

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

$$d = \sqrt{30 * 1.60} / 48.1$$

$$d = 0.144 \text{ m or } 14 \text{ cm}$$

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