

# EMC Technologies (NZ) Ltd

Test Report No **30545.1**

Report date: 9 June 2003

---

## **Radio Frequency Hazard Information**

As per Section 1.1310 and Section 2.1091 transmitters are required to be operated in a manner that ensures that the public is not exposed to RF energy levels in accordance with OST/OET Bulletin Number 65.

A minimum safe distance between the user / general public and the device has been calculated below.

In accordance with Section 1.1310 the Maximum Permissible Exposure (MPE) power density limit for the General Population / Uncontrolled Exposure of 0.3 mW/m<sup>2</sup> (f/1500 = 450 MHz/1500) has been applied.

The minimum distance from the antenna at which the MPE is met is calculated from the equation relating field strength in V/m, transmit power in watts, transmit antenna gain and separation distance in metres:

$$E, \text{ V/m} = (\sqrt{30 * P * G}) / d$$

$$\text{Power density} = 0.3 \text{ mW/m}^2 = E^2/3770$$

$$E = \sqrt{0.3*3770}$$

$$E = \underline{33.6 \text{ V/m}}$$

The maximum transmitter power = 5 watts.

As this transmitter can be used as a repeater / base the type of antenna that could be used is unknown however for the purposes of this calculation it has been assumed that a whip type of antenna with omni directional coverage and a gain of 1.5 has been used.

$$\begin{aligned} d &= \sqrt{30 * P * G} / E \\ &= \sqrt{30 * 5 * 1.5} / 33.6 \\ &= \underline{0.446 \text{ metres or } 44.6 \text{ cm}} \end{aligned}$$

The above calculations therefore show that this device meets the MPE requirements providing a safe distance of at least 45 cm is provided.

A warning to this affect will need to be inserted in the equipment manual.

**Result:** Complies