

EMC Technologies (NZ) Ltd

Test Report No 41123.1

Report date: 13th December 2004

Radio Frequency Hazard Information

As per Section 1.1310 and Section 2.1091 certification of this transmitters is sought using the Controlled / Occupational exposure limits as detailed in OST/OET Bulletin Number 65 as a power of 25 watts is to be used in a mobile environment where the use of the transmitter will be employment related.

In addition calculations have been made using the General Public/Uncontrolled Exposure limits.

A minimum safe distances have been calculated below.

In accordance with Section 1.1310 the following Maximum Permissible Exposure (MPE) power density limits have been applied:

- Occupational / Controlled Exposure of 1.46 mW/cm²(f/300 = 440 MHz/300)

- General Population / Uncontrolled exposure of 0.29 mW/cm²(f/1500 = 440 MHz/1500)

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, transmitter duty cycle and separation distance in metres:

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

Controlled

$$E = 1.46 \text{ mW/cm}^2 = E^2/3770$$

$$E = \sqrt{1.46 * 3770}$$

$$E = \underline{74.2 \text{ V/m}}$$

Uncontrolled

$$E = 0.29 \text{ mW/cm}^2 = E^2/3770$$

$$E = \sqrt{0.29 * 3770}$$

$$E = \underline{33.1 \text{ V/m}}$$

The rated maximum transmitter power = 25 watts.

Transmitter operated using a quarter wave whip antenna with a gain of 2.15 dBi (1.64).

The transmitter is a push to talk device that would typically be used with a duty cycle of 50% in a 6 minute period or a 30 minute period.

Controlled

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

$$d = \sqrt{30 * 25.0 * 1.64 * 0.5} / 74.2$$

$$d = \underline{0.3342 \text{ metres or } 34 \text{ cm}}$$

Uncontrolled

$$d = \sqrt{30 * 25.0 * 1.64 * 0.5} / 33.1$$

$$d = \underline{0.7492 \text{ metres or } 75 \text{ cm}}$$

Result: Complies

EMC Technologies (NZ) Ltd

STREET ADDRESS - 47 MacKelvie Street, Grey Lynn, Auckland, New Zealand
POSTAL ADDRESS - PO Box 68 307, Newton, Auckland, New Zealand

Telephone: +64 9 360 0862 Fax: +64 9 360 0861
E-mail: aucklab@ihug.co.nz