

EMC Technologies (NZ) Ltd

Test Report No 70418.1

Report date: 08 May 2007

Radio Frequency Hazard Information

As per Section 1.1310 and Section 2.1091 certification of this transmitter 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.

Calculations have been made using the General Public/Uncontrolled Exposure limits.

Minimum safe distances have been calculated below.

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

- Occupational / Controlled Exposure limit will be $1 \text{ mW}/\text{cm}^2$

- General Population / Uncontrolled exposure limit will be $0.2 \text{ mW}/\text{cm}^2$

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

$$E = 1 \text{ mW}/\text{cm}^2 = E^2/3770$$

$$E = \sqrt{1 * 3770}$$

$$E = \underline{61.4 \text{ V/m}}$$

Uncontrolled

$$E = 0.2 \text{ mW}/\text{cm}^2 = E^2/3770$$

$$E = \sqrt{0.2 * 3770}$$

$$E = \underline{27.5 \text{ V/m}}$$

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

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

$$d = \sqrt{(30 * 25.0 * 1.64 * 0.5)} / 61.4$$

$$d = \underline{0.4 \text{ metres or } 40 \text{ cm}}$$

Uncontrolled

$$d = \sqrt{(30 * 25.0 * 1.64 * 0.5)} / 27.5$$

$$d = \underline{0.9 \text{ metres or } 90 \text{ cm}}$$

Result: Complies

EMC Technologies (NZ) Ltd

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