

EMC Technologies (NZ) Ltd

Test Report No 101122.1

Report date: 7 December 2010

Radio Frequency Hazard Information

As per Section 1.1310 mobile 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 0.73 mW/m^2 (1090/1500) has been applied.

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

$$E \text{ for MPE: (1090/1500)} = E^2/3770$$

$$E = \sqrt{(1090/1500)} * 3770$$

$$E = \underline{52.5 \text{ V/m}}$$

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:

The rated maximum power of this transmitter is 200 watts with a duty cycle of 0.1% which gives a mean power of 0.2 watts

In a typically mobile installation this transceiver would be used with a whip $\frac{1}{4}$ wave dipole type of antenna with a gain of 1.64.

$$\begin{aligned} d &= \sqrt{(30 * P * G) / E} \\ &= \sqrt{(30 * 0.2 * 1.64) / 52.5} \\ &= \underline{0.06 \text{ metres or } 6 \text{ cm}} \end{aligned}$$

The above calculations show that this device will meet the MPE requirement for mobile devices providing a safe distance of at least 6 cm is provided.

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

Result: Complies