Exposure of humans to RF fields

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

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

Minimum safe distances have been calculated below.

Power density, mW/m^2 = E^2/3770

- Occupational / Controlled Exposure limit will be 10 mW/m^2 or 60 V/m

- General Population / Uncontrolled exposure limit will be 2 mW/m^2 or 28 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, transmitter duty cycle and separation distance in metres:

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

The rated maximum transmitter power = 250 watts.

Transmitter is typically operated using a quarter wave whip antenna with a typical gain of 2.14 dB (1.64).

A duty cycle of 100% has been assumed for the transmitter.

Controlled	**Uncontrolled**
d = $\sqrt{}$ (30 * P * G*DC) / E	
d = $\sqrt{}$ (30 * 250 * 1.64) / 60	d = $\sqrt{}$ (30 * 250 * 1.64) / 28
d = 1.85 metres	d = 3.96 metres

Result: Complies if the safe distances defined for each environment are applied.