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 Exposure limits.

Minimum safe distances have been calculated below.

Power density, $mW/cm^2 = E^2/3770$

- General Public / Uncontrolled exposure limit will be 0.2 mW/cm^2 or 27.5 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 * DC)) / d

In the band the 216 – 217 MHz a transmitter power (P) of 5 watts was measured on 216.575 MHz

In the band 217 – 220 MHz a transmitter power (P) of 2 watts was measured on 217.575 MHz.

The client has declared a duty (DC) of 100% (1)

General Public / Uncontrolled

216 – 217 MHz band (216.575 MHz) at 5 watts

d = $\sqrt{}$ (30 * 5 * 20 * 1) / 27.5
d = 1.99 metres or 199 cm

217 – 220 MHz (217.575 MHz) at 2 watts

d = $\sqrt{}$ (30 * 2 * 20 * 1) / 27.5
d = 1.26 metres or 126 cm

Result: Complies if the above safe distance is defined in the user manual for this equipment.