

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.

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

- General Public / Uncontrolled exposure limit will be 2 mW/m² 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:

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

The rated maximum transmitter power (P) = 5 watts.

Transmitter is operated using an antenna with a gain (G) of up to 20 (13 dBi).

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

General Public / Uncontrolled

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

$$d = \sqrt{(30 * 5 * 20 * 1) / 28}$$

$$d = 1.95 \text{ metres or } 195 \text{ cm}$$

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