EMC Technologies (NZ) Ltd

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.

In accordance with this section and also Section 2.1091, this device has been classified as a remote device that could possibly be used to transmit data from a mobile vehicle.

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 0.2 mW/m^2 or 27.5 V/m has been applied.

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 upper tolerance of the declared power = 6.9 watts. The nominal power = 5.5 watts.

In a typical mobile installation this transceiver would be used with a whip ¼ wave dipole type of antenna with a gain of 1.64 (2.15 dBi).

$$d = \sqrt{(30 * P * G)} / E$$
$$= \sqrt{(30 * 6.9 * 1.64)} / 27.5$$
$$= \underline{0.66999 \text{ metres or } 67 \text{ cm}}$$

The above calculations therefore show that this device meets the MPE requirement for mobile devices providing a safe distance of at least 67 cm is provided.

However as the client does not supply the antenna further calculations have been made to determine a safe distance if antennas with gains greater than 1.64 are utilised.

If a safe distance of 1 m is utilised an antenna gain of 3.65 (5.6 dBi) can used.

This safe distance will provide added safety to the user and the general public as the manufacturer has no control over what type of antenna can be connected to this device and it is believed that vertical whip antennas with gains greater than 3.65 will not be used.

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

Result: Complies