Maximum permissible emissions (MPE)

As outlined in the "TMAN installation and operation manual" the user is typically located 2-3 meter in front of the TrackMan™ Radar Unit.

The TrackMan™ Radar Unit can easily be re-located, so it is classified as a mobile device.
The transmitting power Ptx is nominal 2 * 14dBm = 17dBm.The transmitting antenna gain Gtx is at maximum direction 15dB.The maximum equivalent isotropic radiated power EIRP of the TMAN consequently:

EIRPmax = $Ptx * Gtx$ = 32dBm (1.6W)

From the EIRP the power density ρ can be calculated using the equation below:

$$\rho = \frac{EIRP}{4*\pi*D^2} \qquad [1]$$

where D is the distance from the transmitting antenna.

Equation [1] assumes that the distance D is large enough to be in the far field of the antenna. In the near field of the antenna, the power density ρ will be less than what is obtained from equation [1]. The far field distance (Rayleigh distance) of the antenna is about 0.45 m

$$(R \gg \frac{2*Dant^2}{\lambda})$$

Using equation [1] with the nominal EIRP of 32dBm at distance greater than 36 cm, the maximum power density is below 0.1mW/cm^2.

At the normal operating distance of 2.5 meter, the maximum power density is 0.002 mW/ cm^2.
The MPE of the TMAN is consequently far under the limit specified in FCC OET bulletin 65 of 5 mW/ cm^2 and 1 mW/cm^2 for both controlled and uncontrolled exposure respectively.