

Maximum Human Exposure Calculation

The equation used for calculating the power density at the surface of a parabolic aperture antenna is as follows:

$$S = 4P/A$$

where: S = maximum power density at the antenna surface
 P = power fed to the antenna
 A = physical area of the aperture antenna

This Application:

$$P = 21.9\text{dBm} = 154.9\text{mW}$$

$$A = \pi * r^2 = \pi * (12.7\text{cm})^2 = 506.7\text{cm}^2$$

$$S = 4(154.9\text{mW})/506.7\text{cm}^2 = \mathbf{1.22\text{mW/cm}^2}$$

Since the surface power density of this product is close to the limit of 1mW/cm^2 , then at 2m separation distance for a fixed installation the product is expected to meet FCC's RF radiation exposure limit for general population.