

Exposure limit according to §90 (i)

The device is classified as mobile.

Limit for power density for general population/uncontrolled exposure is $f/1500$ mW/cm² for 300 – 1500 MHz frequency range:

$$P = 450/1500 = 0.3 \text{ mW/cm}^2$$

The power density P (mW/cm²) = $P_T / 4\pi r^2$

P_T is the transmitted power, which is equal to the peak transmitter output power in 4GFSK modulation mode of 33.67 dBm plus maximum antenna gain (-1.5) dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 33.67 \text{ dBm} + (-1.5) \text{ dBi} = 32.17 \text{ dBm} = 1648.16 \text{ mW}.$$

According to the manufacture's declaration the duty cycle factor for 30min averaging time is 0.00011 hence, the equivalent averaged EIRP is:

$$P_T = 1648.16\text{mW} \times 0.00011 = 0.1812 \text{ mW}.$$

The power density at 20 cm (minimum safe distance, required for mobile devices), calculated as follows:

$$0.1812 \text{ mW} / 4\pi (20 \text{ cm})^2 \approx 0.04 \mu\text{W/cm}^2 < 0.3 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.