

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) = $PT / 4\pi r^2$

PT is the transmitted power, which is equal to the peak transmitter output power in 4GFSK modulation mode of 33.2 dBm plus maximum antenna gain 1 dBi, the maximum equivalent isotropically radiated power EIRP is:

$$P_T = 33.2 \text{ dBm} + 1 \text{ dBi} = 34.2 \text{ dBm} = 2630.26 \text{ mW}.$$

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

$$P_t = 2630.26 \text{ mW} \times 0.00011 = 0.289 \text{ mW}$$

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

$$0.289 \text{ mW} / 4\pi (20 \text{ cm})^2 \approx 0.057 \mu\text{W} / \text{cm}^2 < 0.3 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.