

RF exposure limit according to FCC CFR 47part 1, §1.1307, §1.1310

The transceiver is classified as mobile.

Limit for power density for general population/uncontrolled exposure is $f/1500 \text{ mW/cm}^2$ for 300 – 1500 MHz frequency range

$$\text{iDEN: } P = 851/1500 = \mathbf{0.567 \text{ mW/cm}^2}$$

$$\text{SMR: } P = 929/1500 = \mathbf{0.619 \text{ mW/cm}^2}$$

The transmitter maximum output power in IDEN mode is 74 mW, in SMR mode - 26 mW, total 100 mW (20 dBm).

The maximum antenna gain is 10 dBi (7.85 dBd).

Maximum composite ERP is $20 \text{ dBm} + 7.85 \text{ dBd} = 27.85 \text{ dBm} = 0.61 \text{ W}$,
maximum composite EIRP is $20 \text{ dBm} + 10 \text{ dBi} = 30 \text{ dBm} = 1 \text{ W}$.

The power density $P \text{ (mW/cm}^2) = P_T / 4\pi r^2$, where

P_T is the maximum equivalent isotropically radiated power (EIRP).

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

$$P = 1000 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.2 \text{ mW/cm}^2 < 0.567 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.