

**Environmental evaluation and exposure limit according to FCC CFR 47part 1,  
§1.1307, §1.1310**

Limit for power density for general population/uncontrolled exposure is  $f/1500$  mW/cm<sup>2</sup>  
for 300 – 1500 MHz frequency range:

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

The power density **P (mW/cm<sup>2</sup>)** =  $P_T / 4\pi r^2$ , where  
 $P_T$  is the maximum equivalent isotropically radiated power (EIRP).

To confirm compliance with a safe distance for fixed base station the following calculation was done:

- 1) The peak output power of 43 dBm with 2 dBi antenna gain corresponds to the equivalent isotropically radiated power (EIRP) of

$$43 \text{ dBm} + 2 \text{ dBi} = 45 \text{ dBm, which is equal to } 31622.8 \text{ mW.}$$

- 2) On sites with the 8.5 dBi antenna installation the peak output power of 36.5 dBm is permitted, the EIRP is 45 dBm, which is equal to 31622.8 mW.
- 3) On sites with the 10 dBi antenna installation the peak output power of 35 dBm is permitted, the EIRP is 45 dBm, which is equal to 31622.8 mW.
- 4) The Transmitter duty cycle is 0.25. The average transmission is  $31622.8\text{mW} \times 0.25 = 7905.7\text{mW}$

The minimum safe distance “r”, where RF exposure does not exceed FCC permissible limit, is

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{7905.7 / 0.3 \times 12.56} \approx 45.8 \text{ cm} < 2 \text{ m} .$$

General public cannot be exposed to dangerous RF level.