Calculation: RF-Exposure for TETRA-Transmitter with 5 dBi-Antenna:

Type identification: **Digital Indoor Base Transceiver DIB-500 R4.1**

In accordance to the **CFR Part 47, §1.1310**

S: Limit for power density according to CFR Part 47, §1.1310:
(Limits for General Population / Uncontrolled Exposure)

2.7 W/m^2 (f = 406.000 MHz)

P: 50 W (Single-Carrier with +47 dBm)

G: 5 dBi = 3.16

D: Duty cycle: 100 % = 1

R: Distance in what the Limit of S is reached: 2.25 m

$$S = \frac{P \cdot G \cdot D}{4 \cdot \pi \cdot R^2} \quad \Rightarrow \quad \underline{\underline{S}} = \frac{50W \cdot 3.16 \cdot 1}{4 \cdot \pi \cdot (2{,}25m)^2} \quad = \quad 2.48 \, \underline{\underline{\frac{W}{m^2}}}$$

The value for the “General population / Uncontrolled Exposure” of the power density is below the limit of CFR Part 47, §1.1310.