

Calculation: RF-Exposure for 2.4 GHz transmitter

Type identification:

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

S: Limit for power density according to CFR Part 47, §1.1310:

$$10 \text{ W/m}^2$$

P: 35 mW (averaged over 30 min)

G: 6.0 dBi = 4

D: Duty cycle: 100 % = 1

R: Distance in what the limit of S has to be reached: 0.2 m

$$S = \frac{P \cdot G \cdot D}{4 \cdot \pi \cdot R^2} \Rightarrow \underline{\underline{S}} = \frac{0.035 \text{ W} \cdot 4.0 \cdot 1}{4 \cdot \pi \cdot (0.2 \text{ m})^2} = \underline{\underline{0.29 \frac{\text{W}}{\text{m}^2}}}$$

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

Calculation: RF-Exposure for 5 GHz transmitter

Type identification:

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

S: Limit for power density according to CFR Part 47, §1.1310:

$$10 \text{ W/m}^2$$

P: 12 mW (averaged over 30 min)

G: 8 dBi = 6.31

D: Duty cycle: 100 % = 1

R: Distance in what the limit of S has to be reached: 0.2 m

$$S = \frac{P \cdot G \cdot D}{4 \cdot \pi \cdot R^2} \Rightarrow \underline{\underline{S = \frac{0.012 \text{ W} \cdot 6.31 \cdot 1}{4 \cdot \pi \cdot (0.2 \text{ m})^2} = \underline{\underline{0.15 \frac{\text{W}}{\text{m}^2}}}}}$$

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