

Calculation: RF-Exposure

Worse case calculation (duty cycle = 100%)

Type identification: SR-150 Smart Radio (VHF-version with 6 W output)

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

S: Limit for power density according to CFR Part 47, §1.1310: **0.2 mW/cm² = 2W/m²**

P: maximum conducted rf-power: **6 W**

D: Duty cycle: **100 %**

G: antenna gain: e.g. 10 dBd = 12,15 dBi = 16.41

R: minimum distance to the center of radiation of the antenna (m),

$$S = \frac{P * G}{4 * \pi * R^2} \quad \Rightarrow \quad R_2 = \sqrt{\frac{P * D * G}{4 * \pi * S}} = \sqrt{\frac{6W * 16.41}{4 * \pi * 2 \frac{W}{m^2}}} = 1.98m$$

The transceiver is classified as mobile device therefore the distance between the transmitting antenna and human body shall be at least **1.98 m**

The limit for "General Population/Uncontrolled Exposure" of the power density is $0.2\text{mW/cm}^2 = 2\text{W/m}^2$
acc. to CFR Part 47, §1.1310