

**Repeater, model Speed HPRx450****Exposure limit according to §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.

For 450 MHz the power density is equal to  $450/1500 = 0.3$  mW/cm<sup>2</sup>

For 470 MHz the power density is equal to  $470/1500 = 0.313$  mW/cm<sup>2</sup>

The power density  $P$  (mW/cm<sup>2</sup>) =  $P_T / 4\pi r^2$ , i.e.

$$0.3 \text{ mW/cm}^2 = P_T / 4\pi r^2, \text{ where}$$

$P_T$  is the transmitted power, which is equal to the transmitter output power 16.33 dBm plus maximum antenna gain 3 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 16.33 \text{ dBm} + 3 \text{ dBi} = 19.33 \text{ dBm} = 85.7 \text{ mW}.$$

The minimum safe distance "r", where RF exposure does not exceed FCC permissible limit, is 4.77 cm:

$$r = \sqrt{(P_T / (P \times 4\pi))} = \sqrt{(85.7 / 0.3 \times 4 \times 3.14)} = 4.77 \text{ cm}$$

The public cannot be exposed to dangerous RF level.