

Exposure limit according to §15.247(i)

The stud module is classified as a mobile device.

The FCC limit for power density for general population/uncontrolled exposure is $f/1500$ mW/cm 2 for 300 – 1500 MHz frequency range:

$$P = 915/1500 = 0.61 \text{ mW/cm}^2$$

$$\text{The power density } P \text{ (mW/cm}^2) = P_T / 4\pi r^2$$

P_T is the transmitted power, which is equal to the peak transmitter output power 21.11 dBm plus maximum antenna gain (-5) dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 21.11 \text{ dBm} - 5 \text{ dBi} = 16.11 \text{ dBm} = 41 \text{ mW.}$$

The power density at 20 cm (minimum safe distance, required for mobile devices), calculated as follows:

$$\text{Compliance with FCC limit: } 41 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.008 \text{ mW/cm}^2 \ll 0.61 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.