

FCCID: QQ2-GA900-RSU

Subject: Environmental evaluation and Exposure limit according to FCC CFR 47  
§15.247(b)(5) and §1.1307, §1.1310

Limit for power density for general population /uncontrolled exposure is 0.604 mW/cm<sup>2</sup> (for 907MHz).

The Power density:

$$P \text{ (mW/cm}^2\text{)} = P_T / 4\pi R^2 \quad \text{where}$$

$P_T$  is the maximal transmitted power, which is equal to the transmitter output power 29.85 dBm plus the maximum antenna gain 6.5 dBi, the maximum equivalent isotropically radiated power EIRP is:

$$P_T = 29.85 \text{ dBm} + 6.5 \text{ dBi} = 36.35 \text{ dBm} = 4.315 \text{ W}$$

Hence, according to 15.247(b)(4) the maximum transmitted power should be reduced by: Power Correction factor = (maximum antenna gain dBi - 6 dBi) dB

In our case the transmitted power was reduced by:

$$\text{Power Correction factor} = 6.5 \text{ dBi} - 6 \text{ dBi} = 0.5 \text{ dB}$$

$$P_{T1} = P_T - \text{Power Correction factor} = 29.85 \text{ dBm} - 0.5 \text{ dB} = 29.35 \text{ dBm}$$

$$\text{Corrected } P_T = 29.35 \text{ dBm} + 6.5 \text{ dBi} = 35.85 \text{ dBm} = 3.845 \text{ W}$$

The minimum safe distance "R" where RF exposure does not exceed FCC permitted limit is 17.5 cm.

$$R = \sqrt{(P_T / 0.604 \text{ mW/cm}^2 * 4\pi)} = \sqrt{(3,845 / 7.58)} = 22.5 \text{ cm}$$