

FCCID: QQ2-GA900H

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 0.610 mW/cm<sup>2</sup> (for 915MHz).

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 29.99 dBm plus the maximum antenna gain 12.5 dBi, the maximum equivalent isotropically radiated power EIRP is:

$$P_T = 29.99 \text{ dBm} + 12.5 \text{ dBi} = 42.49 \text{ dBm} = 17.742 \text{ W}$$

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:

$$\text{Power Correction factor} = 12.5 \text{ dBi} - 6 \text{ dBi} = 6.5 \text{ dB}$$

$$P_{T1} = P_T - \text{Power Correction factor} = 29.99 \text{ dBm} - 6.5 \text{ dB} = 23.49 \text{ dBm}$$

$$\text{Corrected } P_T = 23.49 \text{ dBm} + 12.5 \text{ dBi} = 35.99 \text{ dBm} = 3.972 \text{ W}$$

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

$$R = \sqrt{P_T / 0.610 \text{ mW/cm}^2 * 4\pi} = \sqrt{3,972 / 7.66} = 22.8 \text{ cm}$$

**The actual Safety distance shall be Not less than 22.8 cm**