

RF/MPR Exposure Evaluation

Date: October 28, 2014

Model: MICRO-RM2.4

FCC ID: 2ACNQRM2

IC: 12298A-RM2

Exposure Limits

The maximum permissible exposure (MPE) for the general/uncontrolled population at a minimum separation distance of 20 cm = $f_{\text{MHz}} / (1,500 \text{ mW/cm}^2)$

$$\text{MPE} = 2400/1500 = 1.60 \text{ mW/cm}^2$$

Friis Formula

$$P_d = (P_{\text{out}} * G) / (4 * \pi * r^2)$$

Where:

P_d = Power density in mW/cm^2

P_{out} = Output power to antenna in mW

G = Gain of antenna in linear scale

π = Pi = 3.14159

r = Distance between observation point and center of the radiator in cm

Antenna Gain

Antenna gain per Johanson Technology spec sheet for 2450AT42B100 chip antenna

Maximum Gain = 0 dBi (1 in linear scale)

Output Power to Antenna

Measured output peak power = -3.5 dBm (0.677 mW)

Power Density Calculation

$$P_d = (0.677 * 1) / (4 * \pi * 20^2) = 0.00013 \text{ mW/cm}^2 @ r = 20 \text{ cm}$$

The power density at a distance of 20 cm is far below the limit of 1.60 mW/cm^2