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**Mobile Power Density Calculation
for
FCC ID: QTZ-WN1200BG**

The Airespace Access Point (AP) is an IEEE802.11 B/G radio. The access point operates on the 2.4 GHz ISM band. Note that the access point cannot transmit B and G at the same time.

Operating Environment:

The operating environment for the for the radio in all cases is a fixed, uncontrolled environment, however, the devices are classified as being “Mobile”, Therefore the exposure at 20 cm is calculated.

Fixed, Uncontrolled Environment:

The FCC limit for the power density for uncontrolled exposure to RF devices operation at 2.4GHz and 5GHz at a distance of 20 cm is:

1 mW/cm²

Power density is calculated from the following equation

$$\text{Exposure (mW/cm}^2\text{)} = \frac{\text{EIRP (mW)} * \text{Duty Cycle}}{4 * \text{PI} * \text{Radius}^2 \text{ (cm)}}$$

Where:

Radius = 20 cm

Duty Cycle = assumed to be 100% to yield a worst case result.

2.4GHz ISM Band MPE distance Calculation

Using the highest power measured on the 2.4 GHz ISM band.

MAX Pout: 20.4 dBm (109.65 mW) MAX Ant Gain 7.8 dBi (6.02x)
EIRP: 28.2 dBm (660.69 mW EIRP)

Calculating power density at a distance of 20 cm yields:

$$\text{Power Density} = \frac{660.69 * 1}{4 * \text{Pi} * 20^2} \Rightarrow \frac{660.69}{5026.54} \Rightarrow .13144 \text{mW/cm}^2$$

$$\text{Delta} = \text{specification} - \text{result} \\ 1 \text{ mW/cm}^2 - .13144 \text{ mw/cm}^2 = .86856 \text{ mw/cm}^2 \\ = 8.812 \text{ dB}$$