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**Mobile Power Density Calculation
for
FCC ID: QTZAMAP1200AB
Utilizing Internal Antennas**

The Airespace Access Point (AP) is an IEEE802.11 A / B radio. The access point operates on the 2.4 GHz ISM band and the 5GHz UNII band. This exposure calculation assumes both transmitters are transmitting at the same time and that the field strengths are additive.

Operating Environment:

The operating environment 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:

$$1 \text{ mW/cm}^2$$

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: 15.94 dBm (39.26 mW) MAX Ant Gain 7.8 dBi (6.02x)

EIRP: 23.74 dBm (**236.59 mW EIRP**)

5 GHz UNII Band MPE distance Calculation

Using the highest power measured on the 5 GHz UNII / ISM band.

MAX Pout: 18.7 dBm (74.13 mW) MAX Ant Gain 7.4 dBi (5.49x)

EIRP: 26.1 dBm (**407.38mW EIRP**)

Total EIRP: Assuming the worst case, an in-phase addition of the two signals at the peak of the antenna patterns, yields:

$$236.592\text{mW} + 407.38 \text{ mW} = \mathbf{643.97 \text{ mW TOTAL combined EIRP}}$$

Calculating power density at a distance of 20 cm yields

$$\text{Power Density} = \frac{643.97 * 1}{4 * \text{Pi} * 20^2} \Rightarrow \frac{643.97}{5026.54} \Rightarrow \mathbf{.1281 \text{ mw/cm}^2}$$

The following RF Exposure statement will appear near the front of the users / installation manual for the access point radio

RF Exposure Safety**FCC RF Exposure Requirements**

To ensure compliance with FCC RF exposure requirements, this device must be installed in a location such that the antenna of the device that will be greater than 20cm (8 in.) from all persons. Using higher gain antennas and types of antennas not covered under the FCC certification of this product is not allowed.

Installers of the radio and end users of the system must adhere to the installation instructions outlined in this manual.