

# RF Exposure Considerations

**FCC ID: 2AOJL-AP-ONE-S**

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from a device to the body of a user.

The transmitter operation for the Access Point covers the 902.97 to 926.28MHz operating band.

The following FCC Rule Parts and procedures are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices

KDB447498 D01 v06

Mobile and Portable Devices RF Exposure Procedures and Equipment Authorisation Policies

## MPE CALCULATIONS

The MPE calculation used to calculate the safe operating distance for the user is:

$$S = \text{EIRP} / 4 \pi R^2$$

Where:

S = Power density

EIRP = Effective Isotropic Radiated Power (EIRP = P x G)

P = Conducted Transmitter Power

G = Antenna Gain (relative to an isotropic radiator)

R = distance to the centre of radiation of the antenna (safe operating distance)

Values:

Transmitter frequency range = 902.97 to 926.28MHz

P = 7.94mW (+9dBm) max.

G = -11dBi (x0.08)

R = 20cm

## Power Density Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of FCC Rule Part 1.1310 for 2.4GHz

$$S_{\text{req1}} = f/1500 \text{ mW/cm}^2$$

*f = frequency in MHz*

$$\text{ie: } S = 0.60 \text{ mW/cm}^2$$

## Calculation

$$S = 7.94 \times 0.08/4 \pi R^2$$
$$S = 0.635/(12.56 \times 20^2)$$
$$S = 0.635/(5024)$$

$$S < 0.60 \text{ mW/cm}^2$$

## Conclusion

The required 20cm RF exposure limits for General Population/ Uncontrolled Exposure will not be exceeded for the Access Point using antennas having a maximum gain of -11 dBi.

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