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:

$$S = EIRP/4 \, \pi \, R^2$$

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_{req1} = f/1500 mW/cm^2
f = frequency in MHz

ie: S = 0.60 mW/cm^2

Calculation

S = 7.94 x 0.08/4 π R^2
S = 0.635/(12.56 x 20^2)
S = 0.635/(5024)

S <0.60 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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