RF Exposure Analysis

FCC ID: A5FEIA200ZW

Analysis for FCC mobile use

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 following equation applies:

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

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)

Power Density Requirement

From FCC Rule Part 1.1310 Table 1 - Limits for General Population/ Uncontrolled Exposure, S=f/1500 mW/cm^2 for 300 to 1500MHz.

S = 0.6 mW/cm^2 for the EiA200ZW module operating at 908MHz.

P = - 2.0dBm (0.6mW)

G = - 3.0dBi max = x 0.5

EIRP = P x G = 0.3mW

Calculation:

S = EIRP /4 π R^2

S = 0.3/(12.56 x 20^2)

S = 0.3/(5024)

S = 6.0 x 10^{-5} mW/cm^2

Conclusion

This demonstrates the EiA200ZW module meets the requirement of S = 0.6 mW/cm^2 for >20cm module usage.

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