

RF Exposure Analysis

FCC ID: A5FEIA600ZW

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:

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

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)

Power Density Requirement

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

S = 0.6 mW/cm² for the EiA600ZW module operating at 908MHz

P = - 2.0dBm (0.6mW)

G = - 6.0dBi max = x 0.25

EIRP = P x G = 0.15mW

Calculation:

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

$S = 0.15 / (12.56 \times 20^2)$

$S = 0.15 / (5024)$

S = 3.0 x 10⁻⁵ mW/cm²

Conclusion

This demonstrates the EiA600ZW module meets the requirement of $S = 0.6 \text{ mW/cm}^2$ for >20cm module usage.

Signature: 

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