



Paxton Access

MPE Calculation for Wireless Reader Modules

Applicant: Paxton Access Ltd

FCC ID: USEWR01

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 system covers the 2405 – 2475MHz frequency range with an internal antenna providing a maximum transmitter power of +3.6dBm

The equation for the MPE calculation is given in OET Bulletin 65, page 19 as:

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

Where S = Power density

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

R = distance to the centre of radiation of the antenna

Transmitter frequency range = 2405MHz to 2475MHz

Values Output power : +3.6dBm maximum level with internal antenna

ie: PG = 2.29mW

R = 20cm

Calculation

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

$$S = 2.29 / (12.56 \times 20^2)$$

$$S = 0.00046 \text{ mW/cm}^2$$

Requirement

Exposure of From table 1 (b) - Limits for General Population/ Uncontrolled

FCC Rule Part 1.1310

$$S = 1.0 \text{ mW/cm}^2 \text{ for } >1500\text{MHz operation}$$

Conclusion

The MPE value of the system at 20 cm meets the RF exposure limits.