



03/05/2019

RF Exposure and Transmitter Power Considerations for the MAGNI SMARTECH MOTOR

FCC ID: 2AP5WMASMARTMOT1

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 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.

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

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 = 2402 to 2480 MHz

Conducted Power (max.) = 1.81dBm

Antenna Gain = -1dB

EIRPmax = 0.81dBm = 1.2mW

Power Density Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of FCC Rule Part 1.1310 for 2400MHz

S = 1.0 mW/cm²

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MATERASSI SOTTOVUOTO E AFFINI



Calculation:

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

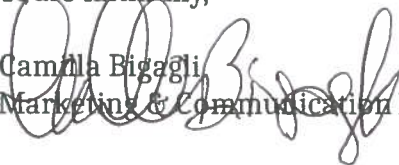
$$S = 1.2 / (12.56 \times 400)$$

$$S = 1.2 / (5024)$$

$$S = 0.00024 \text{ mW/cm}^2 (< 1.0 \text{ mW/cm}^2)$$

This equates to a safe operating distance of 0.31 cm at the power density limit of 1.0 mW/cm²

Yours faithfully,


Camilla Bigagli
Marketing & Communication Manager

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