



**Audio  
Partnership**

Gallery Court  
Hankey Place  
London

SE1 4BB UK

Tel: +44 (0)20 7940 2200

www.audiopartnership.com

## **MPE Calculation for Stream Magic 6 - OET Bulletin 65**

### **FCC ID: YKB651N001**

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 Stream Magic 6 covers the 2.4 GHz WIFI operating band.

The following FCC Rule Parts are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

Part 2.1091(c) – Radiofrequency radiation exposure evaluation: mobile devices

The MPE calculation as given in FCC OET Bulletin 65, page 19 is 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

Transmitter frequency range: 2412 MHz to 2462 MHz

Max. measured conducted transmitter power (802.11b): 17.2 dBm (52.5 mW)

Specified antenna gain: 3 dBi (2.0)



Audio  
Partnership

Gallery Court  
Hankey Place  
London  
SE1 4BB UK

Tel: +44 (0)20 7940 2200  
www.audiopartnership.com

## MPE Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of  
FCC Rule Part 1.1310 for 2412 MHz - 2462 MHz

$$S = 1.0 \text{ mW/cm}^2$$

## Calculation for 20cm safe distance with 3dBi stated antenna gain

Values:

$$P = 52.5 \text{ mW}$$

$$G = 2.0$$

$$R = 20 \text{ cm}$$

$$S = P \times G / 4 \pi R^2$$

$$S = 52.5 \times 2 / (12.56 \times 20^2) \text{ mW/cm}^2$$

$$= 105/5024$$

$$S = 0.021 \text{ mW/cm}^2$$

## Conclusion

The MPE value of the Stream Magic 6 at 20 cm meets the 1.0 mW/cm<sup>2</sup> RF exposure limit.