

## **MPE Calculation / RF Exposure**

Applicant: Medialife Co.,Ltd.

Product: Bluetooth Adapter

Model: SA-A437K

FCC ID : 2AEW8-SA-A437K

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 the device to the body of the user. The equation for the calculation is given in 47 CFR FCC Part 2 Subpart J, section 2.1091 as,

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

**Where**       $S$  = Power density

$EIRP$  = Effective Isotropically Radiated Power

$R$  = distance to the centre of radiation of the antenna

**Values**       $S = 1.0 \text{ mW/cm}^2$  for General population uncontrolled exposure (FCC Part 1.1310 Radiofrequency radiation exposure limits)

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

$PT = -1.69 \text{ dBm (0.68 mW)}$  : measured maximum output power

$G = \text{Antenna gain} = 1.11 \text{ dBi (1.29 in linear terms)}$

$$EIRP = PT \times G$$

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

**Calculation**       $EIRP = 0.68 \times 1.29 = 0.88 \text{ mW}$

$$S = 0.88/12.56 \times (20)^2$$

$$S = 0.88/5024$$

$$S = 1.75 \times 10^{-4} \text{ mW/cm}^2$$

**Conclusion**      This confirms compliance to the required FCC Part 1.1310 Radiofrequency radiation exposure limit of  $1.0 \text{ mW/cm}^2$  at 20 cm operation.