

RF Exposure evaluation

Product Description: Bluetooth Eye Mask, New Bluetooth Eye Mask Black, Bluetooth Leopard Headband, Bluetooth Headband, Bluetooth Knitted, Bluetooth Earmuffs
Model Number: FAAE-170213-01
FCC ID: 2AQGUFAAE17021301

According to 447498 D01 General RF Exposure Guidance v05 The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by: $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

According to the follow transmitter output power (P_t) formula:

$P_t = (E \times d)^2 / (30 \times g_t)$

P_t =transmitter output power in watts

g_t =numeric gain of the transmitting antenna (unitless)

E =electric field strength in V/m

d =measurement distance in meters (m)

According to the formula described above:

$E_{\text{max}} = \underline{93.94 \text{ dBuV/m}} = \underline{0.050 \text{ V/m}}$, $d = 3 \text{ m}$, $g_t = 1$

$P_t = (E \times d)^2 / (30 \times g_t) = (\underline{0.050} \times 3)^2 / (30 \times 1) = \underline{0.00075 \text{ W}} = \underline{0.75 \text{ mW}}$

The result is rounded to one decimal place for comparison

Worse case is as below: [2402MHz **-0.75mW** output power]

$(\underline{0.75 \text{ mW}} / 5 \text{ mm}) * [\sqrt{2.402(\text{GHz})}] = \underline{0.23} < 3.0 \text{ for 1 - g SAR}$

Then SAR evaluation is not required

NOTE: For the maximum power, you can refer FCC test report.