RF Exposure evaluation

Product Description: Bling Helmet
Model Number: MT1
FCC ID: 2AEKFMTX

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 ≤ 50 mm are determined by: [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

  f(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（Pt）formula：

$Pt = (E \times d) \, 2/(30 \times gt)$

Pt=transmitter output power in watts

gt=numeric gain of the transmitting antenna (unitess)

E=electric field strength in V/m

d=measurement distance in meters (m)

According to the formula described above:

For AB1512

Emax=**90.10**dBuv/m=**0.032**V/m, d=3m, g_t=1

$P_t = (E \times d)^2 / (30 \times g_t) = (\mathbf{0.032} \times 3)^2 / (30 \times 1) = \mathbf{0.0003072}W = \mathbf{0.31}mW$

For NRF51822

Emax=**88.37**dBuv/m=**0.026**V/m, d=3m, g_t=1

$P_t = (E \times d)^2 / (30 \times g_t) = (\mathbf{0.026} \times 3)^2 / (30 \times 1) = \mathbf{0.0002028}W = \mathbf{0.20}mW$

Two Bluetooth modules(AB1512+NRF51822) transmit simultaneously

Test separation distance=5mm

Module 1

$(power/5)*(\sqrt{2.402}/7.5) = (0.31/5)*(\sqrt{2.402}/7.5) = 0.013w/Kg$

Module 2

$(power/5)*(\sqrt{2.402}/7.5) = (0.20/5)*(\sqrt{2.402}/7.5) = 0.008w/Kg$

Module 1+Module 2=0.013+0.008=0.021<1.6w/Kg

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

Attestation of Global Compliance