

MPE Evaluation

Applicant: RN Chidakashi Technologies Private Limited

FCC ID: 2AS3S-EMK301

Model: EMK301

MPE Evaluation

RF Exposure Compliance Requirement

Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06 and FCC 1.1310 Radiofrequency radiation exposure limits for General Population/Uncontrolled Exposure

EUT RF Exposure

$$Pd = PG / (4 \pi R^2)$$

Pd = power density in mW/cm²

P = output power to antenna in mW

G = gain of antenna in linear scale

$$\pi = 3.14$$

R = distance between observation point and center of the radiator in cm

Bluetooth (BLE mode):

The Max Output Power is 4.054 dBm in Middle channel (2.440GHz);

Antenna gain: 2.13 dBi, gain of antenna in linear scale: 1.63 dBi.

R=20cm

$$Pd = PG / (4 \pi R^2) = 0.00083 \text{ mW/cm}^2 < 1 \text{ (limits) mW/cm}^2$$

WIFI (2.4GHz):

The Max Output Power is 16.66 dBm in 802.11b mode Middle channel (2.412GHz);

Antenna gain: 2.24 dBi, gain of antenna in linear scale: 1.67 dBi.

R=20cm

$$Pd = PG / (4 \pi R^2) = 0.01545 \text{ mW/cm}^2 < 1 \text{ (limits) mW/cm}^2$$

WIFI (5GHz):

The Max Output Power is 12.631 dBm in 802.11n-HT40 channel (5.310GHz);

Antenna gain: 2.24 dBi, gain of antenna in linear scale: 1.67 dBi.

R=20cm

$$P_d = PG / (4 \pi R^2) = 0.00611 \text{ mW/cm}^2 < 1 \text{ (limits) mW/cm}^2$$

CONCLUSION: Both of the WIFI and BT can transmit simultaneously, the formula of calculated the MPE is: $CPD1 / LPD1 + CPD2 / LPD2 < 1$

CPD = Calculation power density

LPD = Limit of power density

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