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## **RF Exposure Considerations for the 2ALA3-CBM002B**

### **FCC ID: 2ALA3-CBM002B**

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 2ALA3-CBM002B covers the 2.4GHz operating band using LE Bluetooth technology

The following FCC Rule Parts and procedures are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices

KDB447498 D01 v06

Mobile and Portable Devices RF Exposure Procedures and Equipment Authorisation Policies

### **MPE CALCULATIONS**

The MPE calculation used to calculate the safe operating distance for the user is:

$$S = \text{EIRP} / 4 \pi R^2$$

**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 (safe operating distance)

### **For 2.4GHz**

#### **Values:**

Transmitter frequency range = 2400 MHz to 2480 MHz

P = +6dBm (+4dbm) max. (10.0mW)

G = 2.0dBi (x1.58)

R = 20cm

#### **Power Density Requirement**

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of  
FCC Rule Part 1.1310 for 2.4GHz

$$S_{\text{req1}} = 1.0 \text{ mW/cm}^2$$

#### **Calculation:**

$$S = 10 \times 1.58 / 4 \pi R^2$$

$$S = 15.8 / (12.56 \times 20^2)$$

$$S = 15.8 / (5024)$$

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

### **Conclusion**

The required 20cm RF exposure limits for General Population/ Uncontrolled Exposure will not be exceeded for the 2ALA3-CBM002B using antennas having a maximum gain of 2.0 dBi.