

**47 C.F.R. Part 1, Subpart I, Section 1.1310**  
**47 C.F.R. Part 2, Subpart J, Section 2.1091**  
**Maximum Permissible Exposure Calculations**

**For FCC ID: U4A-HCPZB231LFM**

EUT Device Category = General Population/Uncontrolled Exposure

EUT consists of one ISM band radio transmitting over a range of: **2402 MHz to 2480 MHz**

MPE Summary:

According subpart 1.1307 (b)(1) and 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure						
Frequency (MHz)	Range	Electric Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (Minutes)	Time
0.3-1.34	614	1.63		*(100)	30	
1.34-30		824/f	2.19/f	*(180/f <sup>2</sup> )	30	
30-300		27.5	0.073	0.2	30	
300-1500	/	/		f/1500	30	
1500-100,000	/	/		1.0	30	

f = frequency in MHz;

\* = Plane-wave equivalent power density

**Calculated Formulary:**

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

PG = EIRP

MPE and Limit are calculated for this device as follows:

<b>BLE Transceiver</b>					
Freq	Max EIRP (dBm)	Max EIRP (mW)	Power Density at 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Margin (mW)
2402	7.650	5.821	0.001	1.000	0.999
2440	8.830	7.638	0.002	1.000	0.998
2480	9.080	8.091	0.002	1.000	0.998

**Result:** The device meets FCC MPE limit at 20 cm for General Population/Uncontrolled Exposure as specified in 47 CRF §1.1310 and §2.1091.