

**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-YRD540TH2**

EUT Device Category = General Population/Uncontrolled Exposure

EUT consists of one ISM band radio transmitting over a range of: **2405 MHz to 2475 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

Frequency Range (MHz)	Electric Strength (V/m)	Field Magnetic Strength (A/m)	Field Power Density (mW/cm <sup>2</sup> )	Averaging Time (Minutes)
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>802.15.4 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)
2405	11.35	13.6	0.003	1.000	0.997
2440	12.77	18.9	0.004	1.000	9.996
2465	14.85	30.6	0.006	1.000	0.994
2470	12.00	18.5	0.004	1.000	0.996
2475	5.14	3.3	0.001	1.000	0.999

**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.