

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: 2A8EC-NM4I

902 – 928 MHz ISM Band Transceiver

EUT Device Category = General Population/Uncontrolled Exposure

EUT consists of one ISM band radio transmitting operating over a range of:
910.2 MHz to 920 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)	Field	Magnetic Strength (A/m)	Field	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3-1.34	614		1.63		*(100)	30	
1.34-30		824/f		2.19/f	*(180/f ²)	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/cm²)

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

PG = EIRP

MPE and Limit are calculated as follows:

f (MHz)	EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Δ
910.2	199.50	0.040	0.607	0.567
915.0	158.50	0.032	0.610	0.578
920.0	141.30	0.028	0.613	0.585

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.