# FCC §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

## **Applicable Standard**

According to 1.1307 (b)(1), 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.

Report No.: RDG150921002-00A1

Limits for Maximum Permissible Exposure (MPE)

Limits for Occupational/Controlled Exposure									
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time  E ,  H  or S (minutes)					
0.3- 3.0	614	1.63	(100)*	6					
3.0 - 30	1842/f	4.89/f	$(900/f^2)*$	6					
30-300	61.4	0.163	1.0	6					
300-1500	/	/	f/300	6					
1500-100,000	/	/	5	6					

f = frequency in MHz;

# **MPE Calculation**

## Predication of MPE limit at a given distance

 $S = PG/4\pi R^2$ 

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

P = power input to the antenna (in appropriate units, e.g., mW); G = power gain of the antenna in the direction of interest relative to an isotropic radiator

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

FCC Part 22 and 90 Page 7 of 16

<sup>\* =</sup> Plane-wave equivalent power density;

#### **Calculated Data:**

Frequency	Conducted Output Power	Duty Cycle	T Ante	ypical nna Gain	Distance	Power Density	Limit
MHz	mW		dBi	numeric	cm	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>
155	28050	50%	0	1.0	35	0.91	1.0

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Note1: The manufacturer does not specify an antenna to be used with this device , but a typical installation has a gain up to 0dBi.

Note2: The target power is 25W (43.98 dBm)  $\pm 0.5$ dB = 28050mW (44.48dBm)

Radio Exposure Statement:

Using the parameters given in the above calculation, a minimum antenna to person distance of 35 cm is required to meet the limits for occupational/controlled exposure.

Result: Compliance.

FCC Part 22 and 90 Page 8 of 16