

## Maximum Permissible Exposure (MPE) Calculation

Reference document:	<b>47 CFR §15.247(i) &amp; §1.1310</b>	
Test Requirements:	According to §1.1310, the criteria listed in tab. 1 shall be used to evaluate the environmental impact of human exposure to RF radiation as specified in §1.1307(b). For equipment authorization purposes the term co-location refers to simultaneously transmitting (co-transmitting) antennas located within 20cm of each other within a product.	
Limit	1mW/cm <sup>2</sup>	<b>Comply</b>
Calculation Result*:	<b>Power Density = 0.0014 mW/cm<sup>2</sup></b> on a 20cm radius sphere.	

The RF Module is capable of operating in the ranges 902-928 MHz for FHSS application with a maximum conducted power of 14.5211 mW into a single antenna with a -3 dBi Antenna.

The maximum exposure level in this scenario is 0.0014 mW/cm<sup>2</sup> at a distance of 20 cm.

\* Equation (3) given in OET Bulletin 65 is used to estimate the MPE distance.

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

S=power density, in mW/cm<sup>2</sup>

P=power input to the antenna, in mW

G=numeric gain of the antenna,

R= distance to the center of the antenna, in cm

Frequency Band (MHz)	MPE Distance [cm]	Total Output Power per [mW]	Antenna Gain [dBi]	S= Power density [mW/cm <sup>2</sup> ]	Limit [mW/cm <sup>2</sup> ]	Margin [mW/cm <sup>2</sup> ]
902-928	20	14.5211	-3	0.0014	1	0.9986