

Maximum Permissible Exposure (MPE) Calculation

Reference document:	47 CFR §15.247(i) & §1.1310	
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 ²	Comply
Calculation Result*:	Power Density = 0.0007 mW/cm² 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 13.427 mW into a single antenna with a -6 dBi Antenna.

The maximum exposure level in this scenario is 0.0007 mW/cm² 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/cm²
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 ²]	Limit [mW/cm ²]	Margin [mW/cm ²]
902-928	20	13.427	-6	0.0007	1	0.9993