



Maximum Permissible Exposure (MPE) Requirement

Applicant: VPI Engineering
Model Name: Wireless Optical Fiber Seal Transmitter

Job Number / NEX #292897-7

This document was prepared in by Nemko-CCL on behalf of the applicant using data collected during testing and information provided by the applicant. The maximum power density requirements for the General Public (Uncontrolled Environment) listed in FCC Part 1.1310 & 2.1091 was used. The power density is calculated using the following equation.

$$P_d = \frac{P_t G^*}{4\pi r^2}$$

P_d = power density in watts

P_t = transmit power in milliwatts

G = numeric antenna gain

r = distance between body and transmitter in centimeters

* $P_t G$ = EIRP

The calculated power density of the equipment listed in this application is shown below.

Maximum peak output power at antenna input terminal:	-0.56	(dBm)
Maximum peak output power at antenna input terminal:	0.88	(mW)
Antenna gain(maximum):	0.5	(dBi)
Maximum antenna gain:	1.122	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2402	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.601	(mW/cm ²)
Power density at prediction frequency:	0.00020	(mW/cm ²)
Power density at prediction frequency:	0.0020	(W/m ²)
Margin of Compliance:	39.12	(dB)