



Human Exposure to Electromagnetic Fields

This document demonstrates that the Ocean Signal EPIRB1 Emergency Position Indicating Radio Beacon (EPIRB) is in compliance with both US requirements for protection of the general public (uncontrolled) from exposure to electromagnetic fields.

In the US regulation 47CFR chapter 1.1310¹ specifies that in the bands 30 – 300MHz the exposure limit is 0.2mW/cm²;
300 – 1500MHz the exposure limit is (f/1500)mW/cm².

From Test Report no. 14/171 volume 1² the measured EIRP at 406MHz is stated as 15488mW (peak) (*page 95 table F-B-1*)

$$\begin{aligned}\text{Duty Cycle} &= 0.5/50 \\ \therefore \text{Average power} &= 155\text{mW}\end{aligned}$$

Distance at which the power density meets the 0.27mW/cm² limit is given by:

$$\begin{aligned}r &= \sqrt{(155/(4 \times \pi \times 0.27))} \\ r &= 6.8\text{cms} (= 2.7\text{inches})\end{aligned}$$

From Test Report no. 14/507³ the measured PEIRP at 121.5MHz is stated as 27.3mW (*page 119, table 13.1*), with a duty cycle of 99%.

Distance at which the power density meets the 0.2mW/cm² limit is given by

$$\begin{aligned}r &= \sqrt{(27/(4 \times \pi \times 0.2))} \\ r &= 3.3\text{cms} (= 1.3\text{inches})\end{aligned}$$

Therefore the rescueME EPIRB1 meets the requirements for exposure to radiated electromagnetic fields at a worst case distance of 6.8cms from the transmitting antenna in both the USA and Europe.

A handwritten signature in blue ink that reads "D C Sheekey".

David Sheekey
Ocean Signal

15th August 2014

¹ 1.1310 Radiofrequency radiation exposure limits

² Tested by Public Enterprise Testing Center "Omega"

³ Tested by Public Enterprise Testing Center "Omega"