Warranty

Heliognosis’ Electromagnetic Monitors are warranted against defects of materials and workmanship, excluding abuse or misuse, for a period of 1 year from the date of purchase. Heliognosis, at its option, will either repair or replace it with a unit of equivalent quality. Batteries are not included under the warranty.

In order to obtain service under this warranty, the customer must contact Heliognosis or an authorized dealer prior to the end of the warranty period. The customer is responsible for prepaid shipping to Heliognosis or its authorized dealer and must furnish proof of purchase which specifies the date of purchase. Heliognosis will pay return shipping charges within North America only.

This warranty is given by Heliognosis in lieu of any other warranties, express or implied. Heliognosis disclaims any implied warranties of merchantability or fitness for a particular purpose. Heliognosis shall not be liable for loss of use of the monitor or other incidental or consequential damages, expenses or economic loss, or for any claim or claims for such damage, expenses or economic loss.

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Operating instructions:

The EM2 has an on switch in the top left of the unit. See Figure 1. Flipping this switch to the right side will turn on the unit. To extend the battery life, flip the switch back to the left when not in use. The analog meter indicates the strength of the electromagnetic field. Each colored segment indicates 10 times more electromagnetic power than the previous one moving from left to right. Deep blue is the lowest amount of radiation at 0 to .01µW/cm$^2$ and red is the highest at 1 to 40mW/cm$^2$. The range from 10mW/cm$^2$ to 40mW/cm$^2$ is a very intense field. The antenna must be extended when taking measurements. See figure 1.

Specifications:

- Frequency response: 50Hz to 10Ghz with decreased response up to 18Ghz.
- Sensitivity range: 0.005µW/cm$^2$ to 40mW/cm$^2$
- Accuracy: +/- 10% 50Hz to 10Ghz
- Battery life: 9V Duracell, approx 50 hours.
- Temperature range: 0 – 40 degrees C, 32 – 100 degrees F
- Mode of detection: Electric Field

The most accurate readings will be made by placing the unit on a non-metallic surface using the pull out stand (see figure 2). For outdoor use, holding the unit is often more convenient. It is not recommended to take the monitor into EM fields in excess of 40mW/cm$^2$. 

![Figure 1](image1.jpg)  ![Antenna extended](image2.jpg)
Adjustment:

If the red needle of the meter keeps dropping to zero, even with a new battery, it may be necessary to adjust the zero level of the monitor. On the rear of the unit in the top center is a small hole with an adjustment screw below. Using a small cross head screwdriver, turn the screw counter-clockwise to increase the reading on the meter. In the absence of EM, slowly rotate the adjustment screw clockwise until the red needle is between zero and 0.005µW/cm². See Figure 5.

Battery Replacement:

The EM2 is shipped with a 9V battery included. When the battery becomes weak, the meter will begin to lose accuracy. To change the battery, first remove the blue rubber boot by pulling it off the bottom edge of the black internal case. See figure 3.
Flip the black internal case onto its front side and slide the rear battery cover out. Unclip the discharged 9V battery and replace with a new one as shown in Figure 4.

Make sure that the battery is attached with the proper polarity before turning on the unit. Do not use rechargeable batteries unless they provide at least 9 volts or the unit may be inaccurate.

**Taking measurements:**

First, gently pull up on the antenna to extend it to its full length and flip the power switch to on. When the monitor is in a place with low electromagnetic radiation, the needle will usually fluctuate between zero and 0.01µW/cm². Test the unit by bringing the antenna close to a household light switch, a high efficiency fluorescent lamp or a wireless internet box. AC powered devices will often show a low reading until you become very close (such as within 20cm/8”) at which point the readings will increase dramatically. This is because the main emission is from the power line AC which has a short range. Examples of such devices are incandescent light bulbs and household AC wiring. Other devices will begin to show readings at a distance of 3 to 6 ft (1 to 2m). These are devices that emit low frequency RF radiation such as fluorescent lighting, TVs and computer monitors. Mobile phones, cell phones, wireless internet boxes and microwave ovens will emit high frequency RF and are often characterized by rapid pulsing in the readings. Outside the house, high voltage power lines, cell towers and public broadcast towers will often show high readings. In the presence of a strong EM field, the body may act as a resonator. This can cause the readings to increase somewhat when holding the unit. For most accurate readings, place the monitor at the desired distance from the EM source and take a measurement without touching the monitor. Keep the monitor above the ground at least three feet (1m) while taking measurements to eliminate ground absorption. Use caution when approaching strong electromagnetic sources and avoid using the meter in locations where the field is stronger than 40mW/cm².

Examples of typical meter readings:

![EMR Meter](Image)

- **No EM**
- **EM present but still safe**
- **Strong EM, use caution**
- **Potentially dangerous EM**