



USER MANUAL

EMF Meter

Model EMF510



Additional User Manual Translations available

Introduction

Thank you for selecting the Extech EMF510 EMF Meter. This instrument measures electromagnetic field radiation levels near power lines, appliances and industrial devices. Electromagnetic radiation is a ubiquitous type of energy that takes many forms such as radio waves, microwaves, X-rays, and gamma rays. The EMF510 measures radiation from voltage, current, electrical, and magnetic fields. This device is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit our website [www.Extech.com](#) to check for the latest version and translations of this User Manual, Product Updates, Product Registration, and Customer Support.

Features

- Backlit LCD
- Compact, light-weight, easy-to-use, ergonomic design
- Wristlet for easy, one-handed operation

Safety

Please read the entire User Manual and Quick Start before operating this device. Use the meter only as specified and do not attempt to service or open the meter housing. Do not allow children to handle the meter. Please dispose of batteries and meter responsibly and in accordance with all applicable laws and regulations.

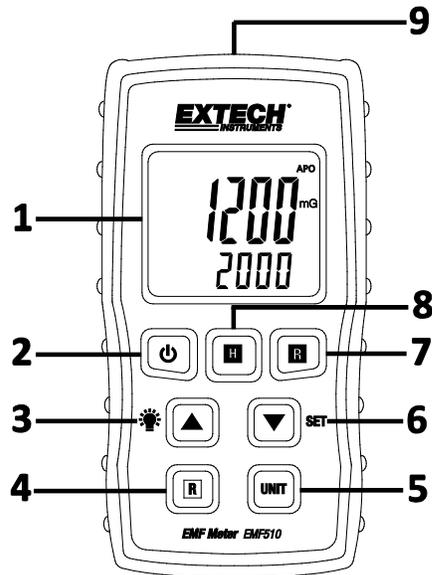


WARNINGS

- Use caution when working in the vicinity of powerful radiation sources.
- Persons with electronic implants (e.g. cardiac pacemakers) should avoid powerful radiation sources.
- Observe all relevant safety regulations.
- Carefully read the operating instructions for equipment generating or conducting electromagnetic energy that will be measured.
- Do not operate near combustible gases or in damp environments.
- Be aware that the field strength in the near vicinity of radiators increases proportionally to the inverse cube of the distance. This means that enormous field strengths can result in the immediate vicinity of small radiation sources (e.g. leaks in waveguides or inductive ovens).
- Field-strength measurement devices can underrate pulsed signals, particularly with radar signals, in which case significant measurement errors can result.
- All field-strength measuring devices have a limited specified frequency range. Fields with spectral components outside of this frequency range are generally incorrectly evaluated and tend to be underrated. Before using field-strength measuring devices be certain that all field components to be measured lie in the specified frequency range of the measuring device.

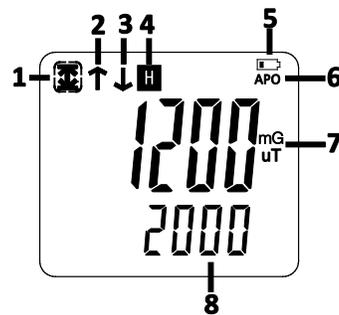
Meter Description

1. LCD Display
2. ON/OFF button
3. Up arrow/Backlight button
4. Range button
5. Unit button
6. Down arrow/SET button
7. MAX/MIN Record button
8. Display Hold button
9. EMF Sensor



LCD Description

1. MAX/MIN Record Icon
2. MAX Display
3. MIN Display
4. Display Hold
5. Low Battery Indicator
6. Auto Power OFF
7. Unit of Measure and EMF Reading
8. Selected EMF Range



Operation

Taking a Measurement

The EMF510 is a single axis meter. To get an indication of all three axes you must take one reading for each plane.

1. Short press the  power button. If the LCD does not switch on, check the batteries located in the rear battery compartment.
2. Press the **UNIT** button to select the desired unit of measure.
3. Press the **R** (range) button to select the desired range.
4. Position the sensor (top of the meter) at different angles toward the source and observe the EMF signals.
5. Record the highest reading obtained from the various positions tested.
6. To power OFF the meter, short press the  button.

Power

Short press the power button to power the meter ON or OFF.

Backlight

The LCD is equipped with backlighting for easier viewing, especially in dimly lit areas. Press the  backlight button to turn the backlight on. The backlight will automatically turn off after several seconds.

Range Button

Short press the **R** (range) button located on the bottom left of the meter (next to the unit button) to toggle between the two available ranges. The lower display will show the selected range.

Unit Button

Short press the **UNIT** button to toggle between micro Tesla and milli Gauss.

Hold Button

Short press the hold (**H**) button to freeze/unfreeze a reading on the display. Hold is not operational while in record mode.

Auto Power OFF (APO)

In order to conserve battery life, the meter will automatically shut off after approximately 10 minutes of inactivity.

To set APO ON or OFF as the default condition:

1. Long press the **SET** button. The lower display will show 'PoFF'.
2. Short press the  or  button to enable APO (YES) or disable APO (NO) as shown in the upper display.
3. Short press the **R** (record) button to save the selection.

4. The meter will return to normal operating mode after approximately 10 seconds.

Note: APO is not operational in record mode.

MAX/MIN Record Function

In this mode, the meter records the maximum and minimum values over time.

1. Press the **R** (record) button to start recording. The  record icon will appear on the display.
2. Press the **R** (record) button again to display the maximum value recorded. The  icon will appear on the display.
3. Press the **R** (record) button again to display the minimum value recorded. The  icon will appear on the display.
4. Press the **H** (hold) button to clear the recorded data. The previous data will be erased and the meter will start recording new data.
5. Long press the **R** (record) button to exit the record mode.

Maintenance

Battery Replacement

1. Power OFF the meter.
2. Remove the flat head screw that secures the battery compartment at the back of the meter.
3. Open the battery compartment and replace the 3 'AAA' 1.5V batteries observing correct polarity. Re-assemble the meter before use

Safety: Please dispose of batteries responsibly; never dispose of batteries in a fire, batteries may explode or leak. If the meter is not to be used for 60 days or more, remove the battery and store separately.



Never dispose of used batteries or rechargeable batteries in household waste. As consumers, users are legally required to take used batteries to appropriate collection sites, the retail store where the batteries were purchased, or wherever batteries are sold.

Disposal: Do not dispose of this instrument in household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment.

Cleaning and Storage

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents.

Specifications

| General | | | |
|-----------------------|--------------------------------------|------------|--------------------------------|
| Display | Backlit LCD 35 x 30mm (1.38 x 1.18") | | |
| Band width | 30 to 300 Hz | | |
| Axis | Single Axis | | |
| Measurements | Electromagnetic field tester (EMF) | | |
| Tripod mount | On back of meter | | |
| Operating Humidity | 80% RH Max | | |
| Operating Temperature | 0 to 50°C (32 to 122°F) | | |
| Over Limit Display | "- - -" | | |
| Power Supply | 3 x 1.5V AAA batteries | | |
| Power Consumption | Approximately 5mA DC | | |
| Weight | 100g (3.5oz) | | |
| Dimensions (HxWxD) | 107x 58x 25mm (4.2 x 2.3 x 1.0 inch) | | |
| EMF | | | |
| Units | Range | Resolution | Accuracy |
| uT | 0.00 to 20.00 | 0.01 | ±(5%rdg + 3dgt) @50 or 60Hz |
| | 20.0 to 200.0 | 0.1 | |
| mG | 0.0 to 200.0 | 0.1 | |
| | 200 to 2000 | 1 | |

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