EXTECH®

Quick Start

Multifield EMF Meter

MODEL EMF450

Quick Start (en)

Introduction

This meter simultaneously measures and displays magnetic field, electrical field, and RF strength, expressed in units of electrical and magnetic field strength and power density.

Safety

- The field strength near radiators increases proportionally to the inverse cube of the distance.
- Field strength meters can underrate pulsed signals, particularly with radar signals.
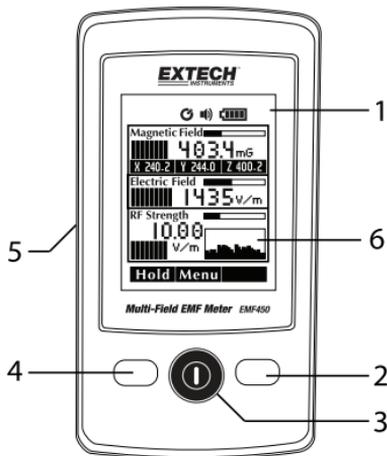- For indoor use; pollution level 2.

⚠️ **CAUTION**

- Use caution near powerful radiation sources.
- Do not operate near combustible gases or in damp environments.

Meter Description

1. 61 mm (2.4 in.) colour TFT display
2. Select & Down button
3. Power & Menu button
4. Hold & Enter button
5. Battery compartment & information chart on back
6. RF historical records (20 groups)

Display Description
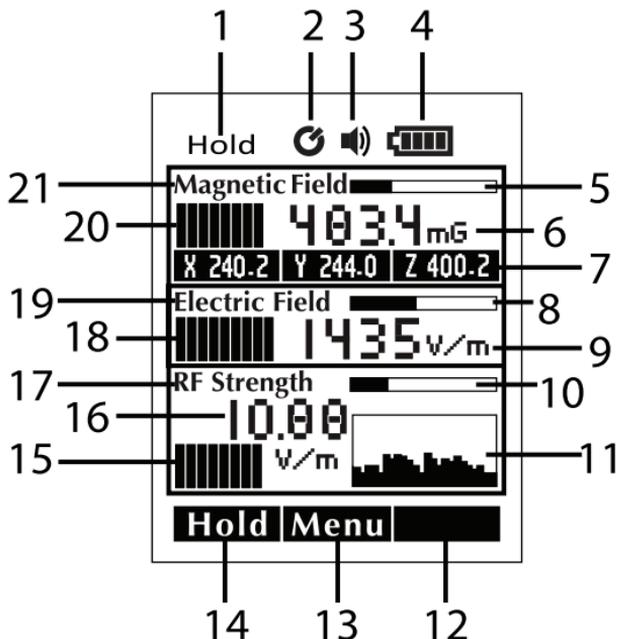
1. Data Hold	12. Select function
2. Auto Power Off (APO)	13. Menu function
3. Audible alert	14. Hold/Enter functions
4. Battery status	15. RF electronic field colour alert
5. Magnetic field bar graph reading	(see next section)
6. Magnetic field digital reading	16. RF strength digital reading
7. Axes (X-Y-Z) values	17. RF strength indication area
8. Electrical field bar graph reading	18. LF electrical field colour alert
9. Electrical field digital reading	19. Electrical field indication area
10. RF strength bar graph reading	20. LF electromagnetic field colour alert
11. RF strength histogram	21. Magnetic field indication area

Colour Alert Chart

| Range/Colour	Magnetic Fields	Electrical Fields	RF Strength
Low (Green)	0 to 10.00 mG	0 to 500 V/m	0 to 0.99 mW/m^2
Medium (Yellow)	10.01 to 100 mG	501 to 1000 V/m	1 to 9.99 mW/m^2
			0.6 to 1.9 V/m
High (Red)	101 to 2000 mG	> 1001 V/m	> 10 mW/m^2
Alarm beeper alert			> 2 V/m

Meter Power

The meter is powered by three 1.5 V AAA batteries (rear compartment). Press the power button to power the meter, press the power button for 3 seconds to switch off. Check the battery display icon for battery status.

Data Hold

Press HOLD to freeze the reading on the display. The HOLD icon will appear. Press HOLD again to exit.

Electric Field Measurements

The meter measures the electric field (electrical power) in the atmosphere. The sensor orientation is printed on the back of the meter and is represented by the arrows in the figure, below. Perform all tests according to the indicated direction of the electric field sensor. Hold the meter at the bottom and at arm's length.
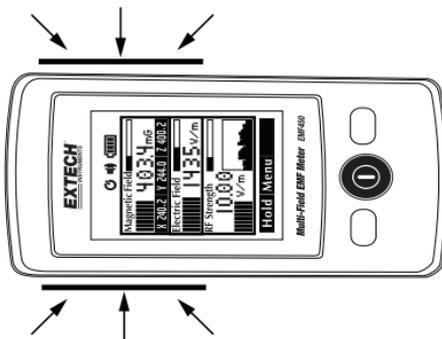
Low Frequency EMF (Magnetic) Measurements

1. Hold the meter steady, at arm's length, and point its face toward the electromagnetic field.
2. The meter displays the electromagnetic readings of individual fields (XYZ) and the aggregated magnetic field. The magnetic and electric fields are also shown on the bar graph.
3. Make several measurements at various locations.
4. The sensor orientation is represented by the arrows in the figure, below

Note: It is common to pick up radiation from other nearby sources. Apart from active sources, components connected to a source may also act as radiators (cables in diathermy equipment, for example).

Note: Metallic objects, within the field, can amplify the field from a distant source.
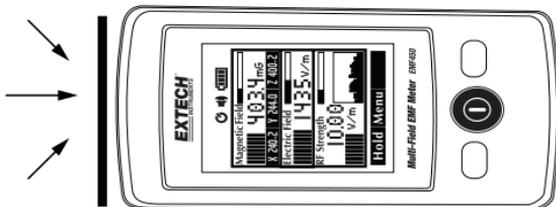
RF Strength

1. Hold the meter steady, at arm's length, and point its face toward the RF field.
2. The RF signal strength will display, with the units of measure as set in the menu.
3. The RF strength display area will also show a histogram and a bar graph indication.

Main Menu

1. Press MENU (center) to open the main menu (shown below).
2. Press SELECT (right) to cycle through the list.
3. Press ENTER (left) to set the selected option.
4. Press SELECT to choose the desired setting.
5. Press ENTER to confirm the setting, the meter will exit the menu unless there are more settings required for the given parameter (SOUND setting, for example); in which case, repeat the steps above.
6. From main menu, shown below, press MENU to exit the menu.

Basic Specifications

For complete instructions, specifications, and safety information please refer to the user manual, available on the Extech website.

LF Magnetc Field range	20 mG, 200 mG, 2000 mG; 2 µT, 20 µT, 200 µT (50/60 Hz)
LF Electric Field sensor	50 V/m to 2000 V/m (50/60 Hz)
RF Strength range	0.02 µW/m² to 554.6 mW/m²
	0.02 µW/cm² to 55.4 µW/cm²
	36.1 mV/m to 14.46 V/m
	0.02 mA/m to 38.35 mA/m
	51 dBm to 16 dBm
	Frequency: 50 MHz to 3.5 GHz
Conversions	1 W/m² = 0.1 mW/cm² = 100 µW/cm²
	1 mW/m² = 0.1 µW/cm²
Meter power	Three (3) 1.5 V AAA batteries
Operating conditions	5 to 40℃ (41 to 104℉); < 80 %RH

CUSTOMER SUPPORT

Customer Support Local Telephone List:

https://support.flir.com/contact

Returns (RMA): **https://customer.flir.com/Home**

Warranty

Teledyne FLIR warrants this Extech brand instrument to be free of defects in parts and workmanship for two years from date of shipment. To view the full warranty text, please visit the Extech website.

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Website
http://www.flir.com

Customer support
http://support.flir.com

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