

GQ EMF-390

GQ EMF-390 Tri-Field Electromagnetic Radiation Detector Instruction Manual

Model: EMF-390

1. INTRODUCTION

The GQ EMF-390 is an advanced multi-function digital EMF meter designed for detecting electromagnetic fields (EMF), electric fields (EF), and radio frequency (RF) radiation. This portable device is suitable for general-purpose testing, detection, and scientific applications, including identifying sources like power lines, Wi-Fi, cell phones, 2G/3G/4G/5G cell towers (low-medium band), microwaves, and smart meters. It features multiple high-sensitivity sensors, a built-in RF spectrum analyzer, and data logging capabilities.



Figure 1: The GQ EMF-390 Tri-Field Electromagnetic Radiation Detector.

2. KEY FEATURES

- Multiple high-sensitivity sensors for detecting power lines, smart meters, cell phones, microwaves, etc.
- Identifies common sources such as power lines, cell towers, microwaves, and static.
- Provides safety suggestions for immediate understanding of the current situation.
- Detects 2G, 3G, 4G, and low-band 5G cell tower signal levels and RF radiation up to 10GHz.
- Built-in RF Spectrum Analyzer and GQ RF Browser for real-time RF monitoring.
- Integrated flash memory for data logging with real-time data and timestamp.
- USB port for communication, external power supply, and charging the internal rechargeable 3.7V battery.
- Open communication protocol for remote data acquisition and system integration.

3. PACKAGE CONTENTS

The GQ EMF-390 package typically includes:

- GQ EMF-390 Main Unit
- USB Cable (for charging and data transfer)
- Rechargeable 3.7V Battery (pre-installed or separate)
- Protective Pouch/Bag
- Quick Start Guide/Informational Card

4. SETUP AND BASIC OPERATION

4.1. Battery Installation and Charging

The EMF-390 uses an easy-to-replace rechargeable battery. Ensure the battery is correctly inserted according to polarity markings. The device can be charged via the included USB cable. While charging, a battery indicator on the top right corner of the screen will blink.

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Video 1: Demonstrates how to replace and recharge the battery of the GQ EMF-390 using the USB cable.

4.2. Power On/Off

To power on the device, press and hold the power button (usually labeled S4) for 3 seconds. The device will display the GQ logo and then enter the default measurement mode. To power off, press and hold the power button again until the device shuts down.

5. OPERATING MODES

The EMF-390 offers several display modes to visualize EMF, EF, and RF data. You can navigate through these modes using the device's buttons.

- **AllInOne Mode:** Displays all three measurements (RF, EF, EMF) simultaneously with a graphical representation.
- **Vertical Mode:** Shows a gauge-like display for EMF, providing a quick visual of current levels.
- **Table Mode:** Presents RF data in a tabular format, showing the top five most powerful signals with their frequencies and power levels. For EMF, it shows signal received at each X, Y, Z sensor.
- **EMF Graphs:** Displays the last 45 seconds of EMF and EF activity as graphs.
- **RF Browser:** Visualizes RF radiation precisely on the screen, showing total power over the entire radio frequency spectrum over time. It can detect 5G signals as fast as 250 nanosecond digital RF pulses.

- **RF Spectrum:** Provides a live view of a specific range in the RF spectrum, showing peaks over time and allowing analysis of specific frequencies.

6. DATA LOGGING AND PC INTERFACE

The EMF-390 has built-in flash memory for data logging, recording real-time data every second with a timestamp. This history data can be downloaded to a PC for further analysis.

6.1. Enabling Data Logging

To enable data logging, access the main menu (usually by pressing the power button), navigate to "Save Data," and ensure the "On/Off" option for data saving is set to "ON." You can also select the memory mode (circular to overwrite old data or stop at 100% to cease recording when full).

6.2. Connecting to a PC and Software

Connect the EMF-390 to your computer using the provided USB cable. The USB cable is used for both charging and transmitting data. Download the free PC software (GQ EMF PRO) from the manufacturer's website (www.gqelectronicsllc.com) to view live data, download historical logs, and manage device settings.

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Video 2: Illustrates the process of transmitting data from the EMF-390 to a PC for real-time monitoring and analysis.

7. TESTING EXAMPLES

7.1. RF Testing: Airport Radar

The EMF-390 can detect RF signals from various sources, including airport surveillance radar operating in the S-Band (2.7-2.9GHz). The RF Browser mode provides a visual representation of the RF density, allowing users to observe signal strength in real-time.

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Video 3: Shows the EMF-390 detecting RF signals from airport radar, demonstrating its capability to measure RF density.

7.2. Bluetooth Device RF Level Testing

Test the RF radiation levels emitted by Bluetooth devices, such as AirPods. The EMF-390 can show the RF power density (mW/m²) and identify the source as "WiFi/Phone" or "Mixed" depending on the signal characteristics. Observe the readings when the device is active versus inactive.

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Video 4: Demonstrates testing RF levels from a Bluetooth device (AirPods) using the GQ EMF-390.

7.3. 5G Signal Testing from Cell Tower

The EMF-390 can measure 5G signal strength from cell towers. Use the RF Browser mode to observe the signal patterns and intensity. The device provides readings in mW/m² and can indicate if the levels are normal, medium, or high.

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Video 5: Illustrates testing 5G signal levels from a cell tower using the EMF-390 RF detector.

7.4. Detecting RF Direction

The EMF-390 can assist in determining the direction of RF sources. By observing the signal strength changes as you move or rotate the device, you can pinpoint the general direction of the strongest RF emissions.

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8. SPECIFICATIONS

Feature	Detail
Model Number	EMF-390
Brand	GQ
Connectivity Technology	USB
Special Feature	Portable
Indoor/Outdoor Usage	Indoor, Outdoor
Compatible Devices	PC
Alert Type	Audio and Motion
Power Source	Battery Powered
Voltage	3.7 Volts
Item Dimensions	5.5 x 3 x 1 inches
GTIN/UPC	723794245302

9. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the device. Avoid using harsh chemicals or abrasive materials.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Battery Care:** For optimal battery life, charge the device regularly and avoid fully discharging it for extended periods.

10. TROUBLESHOOTING

- **Device Not Powering On:** Ensure the battery is charged and correctly inserted. Try connecting the device to a power source via USB.
- **Inaccurate Readings:** Ensure the device is held correctly and not obstructed. Move away from potential interference sources. Calibrate if necessary (refer to full user guide).
- **PC Connection Issues:** Verify the USB cable is securely connected. Ensure the correct drivers and software are installed from the manufacturer's website.
- For more detailed troubleshooting, refer to the full user guide available on the GQ Electronics website.

11. WARRANTY AND SUPPORT

GQ Electronics LLC is committed to providing high-quality products and support. For warranty information, technical assistance, or to download the latest software and user guides, please visit the official GQ Electronics website: www.gqelectronicsllc.com. GQ products are designed, developed, assembled, quality tested, supported, and serviced in Seattle, USA.

