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› Radiomaster GX12 Radio Controller User Manual

RADIOMASTER GX12 ELRS Mode 2

Radiomaster GX12 Radio Controller User Manual

Model: GX12 ELRS Mode 2

1. INTRODUCTION

The Radiomaster GX12 Radio Controller is an advanced radio system designed for remote control applications, integrating ExpressLRS and EdgeTX technologies. It features ExpressLRS Gemini-XROSSBAND (GEM-X) for simultaneous transmission on 2.4GHz and 915MHz, enhancing interference rejection and range. This manual provides essential information for the setup, operation, and maintenance of your GX12 Radio Controller.



Figure 1: Front view of the Radiomaster GX12 Radio Controller.

2. SAFETY INFORMATION

Before operating the Radiomaster GX12 Radio Controller, please read and understand all safety instructions. Failure to do so may result in injury or damage to the product. This device is intended for users aged 18 years and up.

- Always refer to the instruction manual before use.
- Ensure the device is powered off when not in use or during maintenance.
- Keep the device away from water and extreme temperatures.
- Use only approved accessories and replacement parts.

3. WHAT'S IN THE BOX

The Radiomaster GX12 Radio Controller package includes the following items:

- 1 * **GX12 Radio Controller:** The main control unit for your RC models.
- 1 * **Signature Carry Case:** A protective case for transport and storage.
- 1 * **18650 Battery Tray:** For installing user-supplied 18650 batteries.
- 2 * **Replacement Switch Panels:** Modular panels for customizing switch layouts.
- 1 * **Type-C Cable:** For charging, data transfer, and simulator connectivity.
- 1 * **2 Position Switch:** An additional switch for customization.
- 1 * **Momentary Switch:** An additional momentary switch for customization.
- 1 * **Radiomaster Sticker Set:** For personalizing your gear.
- 1 * **Manual:** This instruction manual.
- 1 * **Screen Protector:** To protect the display.
- 4 * **Low Tension Gimbals Springs:** For adjusting gimbal feel.
- 1 * **1.5mm Hex Wrench:** For adjustments and maintenance.

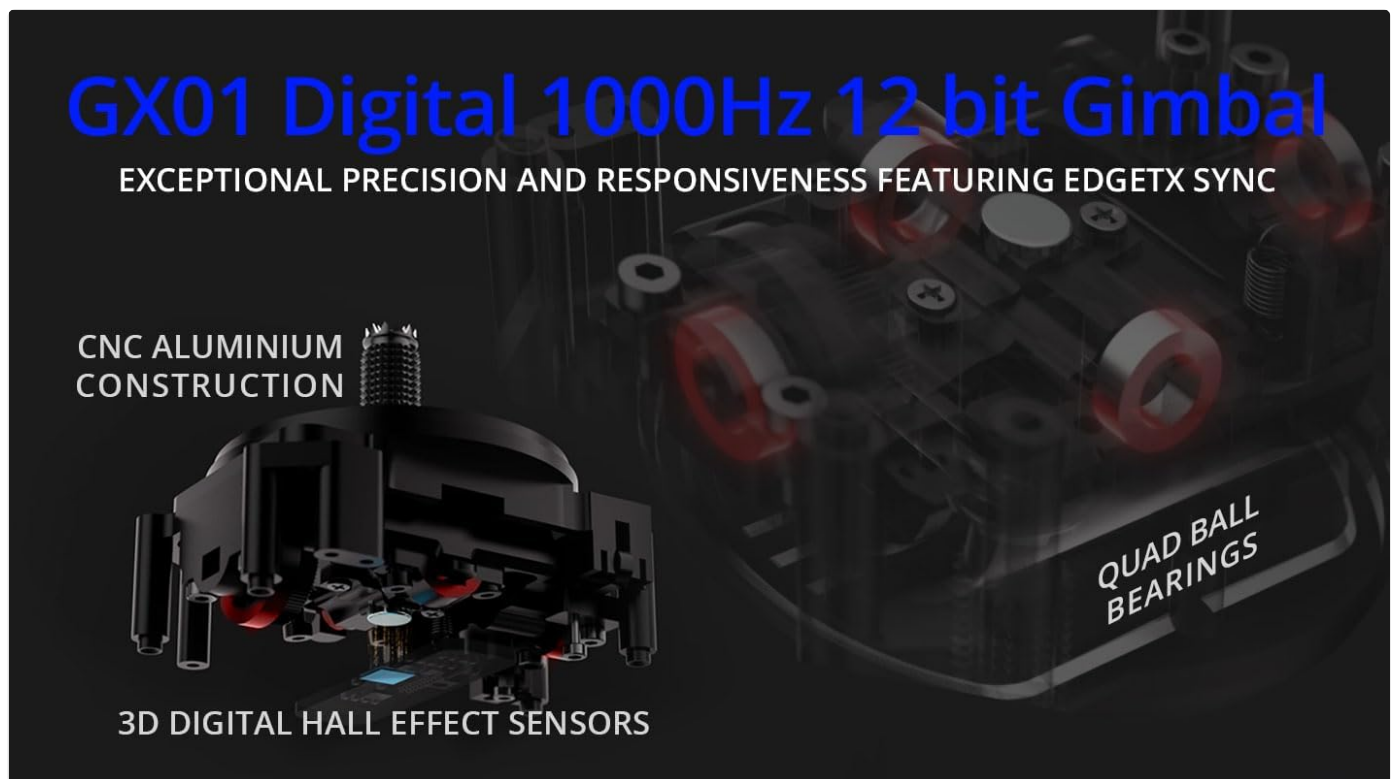


Figure 2: All items included in the Radiomaster GX12 Radio Controller package.

4. SETUP

4.1 Battery Installation

The GX12 Radio Controller uses 18650 batteries (not included). Insert the batteries into the provided 18650 battery tray, observing correct polarity. Then, insert the tray into the battery compartment located at the rear of the controller.



Figure 3: Rear view of the GX12, highlighting the battery compartment.

4.2 Antenna Deployment

The GX12 features integrated folding dual-band antennas. For optimal performance, unfold the antennas to their upright position before operation. These antennas support both 2.4GHz and 900MHz frequencies.



Figure 4: The GX12 with its integrated folding dual-band antennas.

4.3 Gimbal Adjustment

The GX12 is equipped with 1000Hz digital aluminum gimbals for precise control. These gimbals offer exceptional resolution and responsiveness. Users can adjust the tension of the gimbals using the included low tension springs and hex wrench to suit their preference.

Compatible with all ExpressLRS receivers

	2.4 GHz (SX128x)	 RP Series ER Series
	900 MHz (SX127x)	 BR Series
	2.4GHz & 900MHz Gemini Xrossband (Gem-X) (LR1121)	 DBR4

Figure 5: Detailed view of the GX01 Digital 1000Hz 12-bit Gimbal, highlighting its CNC aluminum construction and 3D digital Hall effect sensors.

4.4 Customizing Switch Panels

The GX12 features removable switch panels, allowing for personalized setups. Use the included modular panel system and additional switches (2-position and momentary) to configure the controller to your specific needs.

5. OPERATING INSTRUCTIONS

5.1 Powering On/Off

To power on the GX12, press and hold the power button located on the front panel until the screen illuminates. To power off, press and hold the power button again until the shutdown sequence completes.

5.2 ExpressLRS Gemini-XROSSBAND (GEM-X) Technology

The GX12 is the first radio to feature ExpressLRS Gemini-XROSSBAND (GEM-X), enabling simultaneous transmission on both 2.4GHz and 915MHz. This technology significantly improves interference rejection and signal reliability. Ensure your receiver supports GEM-X for optimal performance.



Figure 6: The GX12 utilizes two third-generation Semtech LR1121 RF Transceivers for 2.4GHz, 900MHz, and Gemini-X operation.

5.3 EdgeTX Integration and Navigation

The GX12 operates on the EdgeTX firmware, providing a flexible and feature-rich user interface. Navigate through menus using the scroll wheels and buttons. The high-contrast OLED screen displays all necessary information clearly.

- **Programmable Buttons:** Utilize the individually programmable 6-position buttons and SA/SD switches for custom functions.
- **RGB Indicators:** Customize the RGB indicators to enhance functionality and visual feedback.

- **Internal Storage:** The 512MB internal flash storage eliminates the need for external TF cards for most operations.
- **USB-C Connectivity:** A single USB-C port simplifies charging, data transfer, and simulator connectivity.



Figure 7: Key features of the GX12, including the high-contrast OLED screen, modular switch panels, 512MB internal flash, SMA ports, and six customizable RGB buttons.

5.4 Receiver Compatibility

The GX12 is designed to be compatible with all current 2.4GHz and 900MHz ExpressLRS receivers, as well as the new generation of Gemini Xrossband (Gem-X) receivers. This ensures broad compatibility with various RC models.



Figure 8: The GX12 is compatible with a wide range of ExpressLRS receivers, including 2.4 GHz (SX128x), 900 MHz (SX127x), and 2.4GHz & 900MHz Gemini Xrossband (LR1121) receivers.

6. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the controller. Avoid using harsh chemicals or abrasive materials.
- **Battery Care:** Store batteries in a cool, dry place. Do not overcharge or over-discharge batteries. Remove batteries if the controller will not be used for an extended period.
- **Firmware Updates:** Periodically check the official Radiomaster website for firmware updates to ensure optimal performance and access to new features. Updates can typically be performed via the USB-C port.
- **Storage:** When not in use, store the GX12 in its signature carry case to protect it from dust, impacts, and environmental factors. Ensure gimbal sticks are folded for compact storage.

7. TROUBLESHOOTING

If you encounter issues with your Radiomaster GX12 Radio Controller, consider the following basic troubleshooting steps:

- **No Power:** Ensure batteries are correctly installed and charged. Check the battery tray connections.
- **No Signal:** Verify that the antennas are fully extended. Ensure the receiver is properly bound to the controller and powered on. Check for any obstructions between the controller and the receiver.
- **Unresponsive Controls:** Calibrate gimbals and switches through the EdgeTX menu. Check for any physical obstructions or damage to the gimbals.
- **Firmware Issues:** If experiencing software-related problems, consider performing a firmware re-flash or update according to official Radiomaster instructions.
- **General Malfunctions:** Power cycle the device. If the issue persists, consult the official Radiomaster support resources or contact customer service.

8. SPECIFICATIONS

Key specifications for the Radiomaster GX12 Radio Controller:

Feature	Detail
Product Dimensions	6 x 5 x 2 inches (152.4 x 127 x 50.8 mm)
Item Weight	2.2 pounds (approx. 998 grams)
ASIN	B0DYDGPQY1
Manufacturer Recommended Age	18 years and up
Gimbals	1000Hz Digital CNC Hall Gimbals
Internal Storage	512MB Flash Memory
Antenna Type	Integrated Folding Dual-Band (2.4GHz & 900MHz)
Connectivity	USB-C (Charging, Data, Simulator)
Firmware	EdgeTX
RF System	ExpressLRS Gemini-XROSSBAND (GEM-X)

DUAL-BAND ANTENNAS

FOLDABLE FOR EASY TRANSPORT AND STORAGE



Figure 9: Dimensions of the Radiomaster GX12 Radio Controller.



Figure 10: The GX12 Radio Controller on a scale, indicating its approximate weight.

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact the manufacturer or the authorized seller from whom you purchased the product. Keep your proof of purchase for warranty claims.

You can also visit the official RADIOMASTER store for additional resources and support:

[Visit the RADIOMASTER Store on Amazon](#)

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question