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Garmin 010-02841-00

Garmin GMR 18 xHD3 18" Radar Dome User Manual

Model: 010-02841-00

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your Garmin GMR 18 xHD3 18" Radar Dome. Please read this manual thoroughly before using the device to ensure proper functionality and safety.

The GMR 18 xHD3 is a powerful 18-inch dome radar designed for marine applications, offering advanced features for superior traffic, obstacle, and weather detection. It is engineered to provide peace of mind on the water with its robust capabilities.



Figure 1.1: Front view of the Garmin GMR 18 xHD3 18" Radar Dome. This image shows the compact white dome with the "GARMIN" logo prominently displayed on its front surface, indicating its brand and sleek design.

2. Key Features

The Garmin GMR 18 xHD3 radar dome incorporates several advanced technologies:

- **4 KW Power Output:** Provides strong signal transmission for effective detection.

- **48 Nautical Mile Max Range:** Allows for long-distance target acquisition.
- **Scan-Averaging Technology:** Filters out sea clutter and interference for clearer target display.
- **Improved Target-Size Processing:** Optimizes on-screen object shapes for better interpretation.
- **Split-Screen Dual-Range Display:** View independent close and long-range radar images simultaneously on compatible chartplotters.
- **Bird Detection:** Specialized mode for identifying bird activity, often indicative of fish.
- **Quiet Dome-Drive Motor:** Ensures silent operation.
- **Faster Scanning:** Antenna rotation speeds up to 60 rpm for quicker target updates.
- **True Echo Trails:** Displays historical trails of moving targets, aiding in collision avoidance.
- **Dynamic Auto Gain:** Automatically adjusts sensitivity for optimal performance in various environments (harbors, near shore, offshore).
- **Radar Overlay:** Integrates radar images onto your chartplotter's map screen (requires appropriate sensors, sold separately).
- **High-Resolution Radar:** Narrow horizontal beamwidth for precise target discrimination at a distance.

3. Setup and Installation

Proper installation is crucial for the optimal performance of your GMR 18 xHD3 radar dome. It is recommended that installation be performed by a qualified marine electronics technician.

3.1 Mounting Location Considerations

- Mount the radar as high as possible to maximize range and minimize blind spots.
- Ensure a clear line of sight around the radar, free from obstructions like masts, antennas, or other equipment.
- Avoid mounting near heat sources or areas with excessive vibration.
- The mounting surface must be flat and strong enough to support the radar's weight (approximately 29.9 pounds).

3.2 Electrical Connections

The GMR 18 xHD3 requires a 32 Volts DC power source. Ensure proper wiring and fuse protection according to marine electrical standards.

- Connect the power cable to a dedicated circuit breaker.
- Connect the network cable to a compatible Garmin Marine Network port on your chartplotter or network expander.
- Ensure all connections are secure and waterproof.

3.3 Initial Power-Up and Configuration

After physical installation and wiring, power on your chartplotter and the radar system. The chartplotter should automatically detect the radar. Follow the on-screen prompts for initial setup, including radar orientation and gain settings.

4. Operating the Radar

Operating the GMR 18 xHD3 is primarily done through your connected Garmin chartplotter. Refer to your chartplotter's manual for specific navigation and menu operations.

4.1 Basic Operation

- **Power On/Off:** The radar powers on with the chartplotter. To put the radar in standby or turn it off, use the radar menu on your chartplotter.

- **Range Selection:** Adjust the radar range to suit your current navigation needs. Use shorter ranges for close-quarters maneuvering and longer ranges for open water.
- **Gain Adjustment:** While Dynamic Auto Gain is available, manual adjustment may be necessary in specific conditions to optimize target visibility and reduce clutter.
- **Sea Clutter (STC):** Reduces clutter caused by waves. Adjust as needed for prevailing sea conditions.
- **Rain Clutter (FTC):** Reduces clutter caused by rain or snow.

4.2 Advanced Features

- **Dual Range:** Activate dual range mode to view two different ranges simultaneously. This is useful for monitoring both immediate surroundings and distant targets.
- **Radar Overlay:** Enable radar overlay on your chart screen for a combined view of radar targets and chart information.
- **MARPA/ARPA (if supported by chartplotter):** Use these features for automatic tracking of targets and calculation of their course and speed, aiding in collision avoidance.
- **Bird Mode:** Select this mode to enhance the detection of birds, which can indicate fishing grounds.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your Garmin GMR 18 xHD3 radar dome.

5.1 Cleaning

- Periodically clean the exterior of the radar dome with a soft, damp cloth and mild soap.
- Avoid using abrasive cleaners, solvents, or high-pressure washers, as these can damage the dome's finish or internal components.
- Rinse with fresh water after cleaning, especially in saltwater environments.

5.2 Inspection

- Regularly inspect the mounting hardware for tightness and corrosion.
- Check all cable connections for signs of wear, corrosion, or damage. Ensure they are securely fastened.
- Inspect the dome for any cracks or physical damage.

5.3 Software Updates

Garmin periodically releases software updates for its devices. Check the Garmin website or use your chartplotter's update features to ensure your radar dome has the latest software for optimal performance and new features.

6. Troubleshooting

This section provides solutions to common issues you might encounter with your GMR 18 xHD3 radar dome.

Problem	Possible Cause	Solution
Radar not detected by chartplotter.	No power to radar.	Check power connections and circuit breaker.
	Network cable disconnected or damaged.	Verify network cable connection and inspect for damage.
	Chartplotter software outdated.	Update chartplotter software.

Problem	Possible Cause	Solution
Poor target detection or excessive clutter.	Incorrect gain or clutter settings. Obstruction in radar's line of sight. Dome surface dirty.	Adjust gain, sea clutter (STC), and rain clutter (FTC) settings. Check for physical obstructions around the radar. Clean the radar dome surface.
Radar image frozen or intermittent.	Loose power or network connection. Software glitch.	Check and secure all cable connections. Restart the chartplotter and radar system. Perform a software update.

If the problem persists after attempting these solutions, contact Garmin customer support or a certified marine electronics technician.

7. Specifications

Attribute	Value
Model Number	010-02841-00
Dimensions (L x W x H)	20 x 20 x 20 inches
Weight	29.9 pounds
Power Output	4 kW
Max Range	48 nautical miles
Input Voltage	32 Volts DC
Antenna Rotation Speed	Up to 60 rpm
Frequency Bands Supported	X-band
Compatible Devices	Garmin Marine Chartplotters and Systems
UPC	753759320744

8. Warranty and Support

8.1 Product Warranty

Garmin products are warranted to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, Garmin will, at its sole option, repair or or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost.
This warranty does not apply to cosmetic damage, consumables, or damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes. It also does not cover damage caused by service performed by anyone who is not an authorized service provider of Garmin.

8.2 Customer Support

For technical support, product registration, or to find authorized service centers, please visit the official Garmin website

or contact Garmin customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.
Garmin Official Website: www.garmin.com

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