GARMIN

Rino® 650N series

owner's manual

Table of Contents

Getting Started

> ⚠ **WARNING**
>
> See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

When using your device the first time, you should complete the following tasks to set up the device and get to know the basic features.

1. Install the battery (page 3).
2. Charge the battery (page 4).
3. Install the VHF antenna (page 4).
4. Acquire satellite signals (page 5).
5. Select a channel (page 6).
6. Calibrate the compass (page 15).
7. Register the device (page 1).

Manual Conventions

All the pages are found on the home screen. Use ← or → to scroll through the pages. The small arrows (>) used in the text indicate that you should select a series of items in order, for example, "Select **Delete** > **Yes**."

Registering Your Device

• Go to http://my.garmin.com.
• Keep the original sales receipt, or a photocopy, in a safe place.

Getting More Information

• Go to www.garmin.com to download the latest manuals.
• Go to http://buy.garmin.com, or contact your Garmin dealer for information about optional accessories and replacement parts.

Keys and Antennas

Item	Name	Description
①	GPS	GPS antenna for satellite signals
②	VHF	VHF antenna for radio.

③	🔴	Hold to turn on or off the device. Select to adjust backlight, volume, squelch level, and to lock or unlock the screen.
④	**PTT**	Hold to talk. **PTT** stands for push-to-talk.
⑤	📡	Select to send out a call tone. If enabled (page 9), the call key sends your position when released. Hold for 3 seconds to send an emergency alert (page 20).

NOTE: Do not push **PTT** when there is no VHF antenna attached.

Battery Information

<div style="background: orange">

⚠ **WARNING**

</div>

This product contains a lithium-ion battery. To prevent the possibility of personal injury or product damage caused by battery exposure to extreme heat, store the device out of direct sunlight.

The device operates on the included lithium-ion battery pack or an optional Alkaline Battery Pack, which uses four AA batteries.

For tips on maximizing battery life and other battery information, see .

Installing the Lithium-ion Battery

1. Align the metal contacts on the battery pack ① with the metal contacts on the back of the device.

2. Press the battery pack into place.
3. Turn the D-ring clockwise.

Charging the Lithium-ion Battery

Before you use the device the first time, charge the battery. The device will not charge when outside the temperature range from 0°C to 45°C (from 32°F to 113°F).

1. Plug the AC charger into a standard wall outlet.
2. Lift weather cap.
3. Plug the small end of the AC charger into the two-pin connector ①.

4. Charge the device completely.

Charging a fully depleted battery takes 6 hours.

Installing the VHF Antenna

NOTE: Do not push **PTT** when there is no VHF antenna attached.

1. Select the proper antenna for the area:

- If you are in Norway, select the antenna with the notches ①.
- If you are in Sweden, select the antenna without notches ②.

2. Screw the antenna into the VHF antenna connector on the top of the device.
3. Hold ① to turn on the device.
4. Select **Setup** > **Radio** > **Frequency Band**.
5. Select **Norway** or **Sweden**.

Acquiring Satellite Signals

It may take 30 to 60 seconds to acquire signals.

1. Go outdoors to an open area.
2. Turn on the device.
3. Wait while the device searches for satellites.

   A question mark flashes while the device determines your location.

The GPS bars indicate satellite strength. When the bars are green, the device has acquired satellite signals.

Turning On the Backlight

The backlight will turn off after a period of inactivity. To change the backlight timeout, see .

• Select ①.
• Touch the screen.

Alerts and messages also activate the

backlight.

Adjusting the Backlight Brightness

The backlight levels vary for the different power sources. For example, the highest backlight setting while running on AA batteries is lower than the highest while running on the lithium-ion battery. This is to extend the AA battery life.

1. While the device is on, select ①.
2. Use **+** and **-** to adjust the brightness level.

Locking the Screen

NOTE: This action does not lock the keys.

1. Select ①.
2. Select **Lock Screen**.

Radio

This product may only be used on specific radio frequencies, which vary depending on the country of use. See the product packaging or go to www.garmin.com for details regarding the radio frequency of this product.

Muting the Radio

1. Select $\textcircled{1}$.
2. Select **Volume**.

Choosing a Channel

NOTICE

The GPS performance may be affected when transmitting on Norway channels 1, 3, 5, and 7.

1. Select **Radio** > **Channel**.
2. Use **+** or **-** to select a channel.

Scanning Channels

You can scan the channels for voice activity.

Select **Radio** > **Scan**.

Setting Up a Scan List

You can pick which channels and codes to scan. Selecting specific channels and codes reduces the scan time and helps prevent missing a transmission.

1. Select **Radio** > ≡ > **Setup Scanlist**.
2. Select a channel to add.
3. Select ✔.

Monitoring for Activity

You can monitor a single channel for any activity, including static and weak voice signals. This is helpful if a signal is going out of range.

Select **Radio** > **Monitor**.

Radio Settings

Select **Setup > Radio**.

- **Send Location**—enables you to send your current location after each transmission (page 9).

- **Allow Polling**—enables polling. Polling allows another Rino user to get your location by sending a poll request.

- **Power Level**—adjusts power level on frequencies.

- **Squelch Tone Mode**:

  - **CTCSS**—Continuous Tone Controlled Squelch System allows you to ignore unwanted calls from persons using the same channel.

  - **DCS**—Digital-Coded Squelch allows you to ignore unwanted calls from persons using the same channel.

- **Wired Headset Type**—allows you to select the type of headset you are using. To purchase accessories, go to http://buy.garmin.com or contact your Garmin dealer.

- **Vox Level**—Voice operated transmission controls the sensitivity level of any Vox accessory.

- **Frequency Band**—sets the device to the frequency band in Norway or Sweden for use in those countries (page 4).

About Contacts

The first time a signal is received from another Rino user, the new contact page appears. From that page, you can show their location on the map, navigate to their location (page 17), or add them to your contacts list.

Adding a New Contact

When a new contact signal is received, the new contact page appears.

Select **OK** to save the contact.

Editing Contacts

1. Select **Contacts**.

2. Select a contact.

3. Select an item.

4. Select ✔.

Viewing Contacts on the Map

1. Select **Contacts**.

2. Select a contact.

3. Select **View Map**.

Notes

NOTE: Notes transmit to all users on your current channel and code.

You can send notes to other Rino users on your current channel and code. You can review previously received notes from your contacts. You can edit and save favorite notes to quickly send them later.

Creating a Note

1. Select **Notes** > **Send Note** > **New Note**.

2. Write the note.

   The maximum character limit is 13.

3. Select ✔.

4. Select an option.

Sending a Favorite Note

1. Select **Notes** > **Send Note**.

2. Select a note to send.

3. Select **Send Note**.

About Peer-to-Peer Positioning

NOTE: Locations may only be sent once every 30 seconds.

You can send your location to another Rino using peer-to-peer positioning. You can also track the movement of other Rino users and navigate to their locations.

Enabling Peer-to-Peer Positioning

Select **Setup** > **Radio** > **Send Location** > **On**.

Sending a Location

Before you can send a location, you must enable peer-to-peer positioning (page 9).

1. Select **Share Wirelessly** > **Send** > **Use Radio**.
2. Select a category.

4. Select an item.
5. Select **Send**.

Radio Page Status Indicators

Message	Description
Activity on channel	A signal is being received, but does not match the current code.
Radio Off	The 2-way radio is turned off.
Ready to transmit	A channel is selected and the device can transmit.
Receiving transmission	The device is receiving a transmission on the selected channel.

Radio Status	Description
Radio --	Radio feature is off.
Radio 1W	Transmit power at 1 watts.
Radio 2W	Transmit power at 2 watts.
Radio 5W	Transmit power at 5 watts.

NOTE: If your device battery is too low, the power level is decreased automatically.

Status Bar	Description
	The radio is on.
	The radio is receiving.
	The radio is transmitting.
	Peer-to-peer is enabled and is ready to transmit the position.
	The radio is muted (page 6).

Waypoints and Tracks

Waypoints

Waypoints are locations you record and store in the device.

Creating a Waypoint

You can save your current location as a waypoint.

Select **Mark Waypoint**.

Finding a Waypoint

1. Select **Where To?** > **Waypoints**.

2. Select a waypoint.

Editing a Waypoint

Before you can edit a waypoint, you must create a waypoint.

1. Select **Waypoint Manager**.

2. Select a waypoint.

3. Select an item to edit.

4. Enter the new information.

5. Select ✔.

Deleting a Waypoint

1. Select **Waypoint Manager**.

2. Select a waypoint.

3. Select **Delete Waypoint**.

Increasing the Accuracy of a Waypoint Location

Waypoint averaging allows you to increase the accuracy of a waypoint location by collecting multiple samples of the waypoint location.

1. Select **Waypoint Averaging**.

2. Select a waypoint.

3. Move to the location.

4. Select **Start**.

5. When the sample confidence status bar reaches 100%, select **Save**.

   For best results, collect four to eight samples for the waypoint, waiting at least 90 minutes between samples.

About Sharing Data

Your device can send or receive data when connected to another compatible device. You can share waypoints, geocaches, routes, and tracks.

Sending and Receiving Data Wirelessly

Before you can share data wirelessly using ANT+™ wireless technology, you must be within 10 feet (3 m) of the compatible Garmin device.

1. Select **Share Wirelessly**.

2. Follow the on-screen instructions.

Tracks

A track is a recording of your path. The track log contains information about points along the recorded path, including time, location, and elevation for each point.

Managing Track Log Recording

1. Select **Setup** > **Tracks** > **Track Log**.

2. Select **Record**, **Do Not Show** or **Record**, **Show On Map**.

   If you select **Record**, **Show On Map**, a line on the map indicates your track.

3. Select **Record Method**.

4. Select an option:

   • To record tracks at a variable rate that creates an optimum representation of your tracks, select **Auto**.

   • To record tracks at a specified distance, select **Distance**.

   • To record tracks at a specified time, select **Time**.

5. Select **Recording Interval**.

6. Select an option to record tracks more or less often.

NOTE: Using the **Most Often** interval provides the most track detail and fills up the device memory quicker.

Viewing the Current Track

The track being recorded is called the current track.

1. Select **Track Manager** > **Current Track**.
2. Select an option:
   - To show the current track on the map, select **View Map**.
   - To show the elevation plot for the current track, select **Elevation Plot**.

Saving the Current Track

1. Select **Track Manager** > **Current Track**.
2. Select what you want to save:
   - Select **Save Track**.
   - Select **Save Portion**, and select a portion.

Clearing the Current Track

Select **Setup** > **Reset** > **Clear Current Track** > **Yes**.

Deleting a Track

1. Select **Track Manager**.
2. Select a track.
3. Select **Delete** > **Yes**.

Navigating a Saved Track

You must record and save a track before you can navigate using it.

1. Select **Track Manager**.
2. Select a saved track.
3. Select **View on Map**.
4. Select **Go**.

Navigation

Navigating to a Destination

You can use the Where To? menu to find a destination to navigate to. Not all Where To? categories are available in all areas and maps.

1. Select **Where To?**.
2. Select an item.
3. Select **Go**.
4. Navigate using the map (page 15) or compass (page 15).

Searching Near a Location

You can use the search feature to find POIs near a point on the map, your current location, or a waypoint. This may require additional maps, see page 42.

1. Select **Where To?** > ◎.

2. Select an item you want to search near.
3. Select **Use**.
4. Navigate using the map (page 15) or compass (page 15).

Starting a TracBack®

You can navigate back to the beginning of a track. This can be helpful when finding your way back to camp or the trail head.

1. Select **Track Manager** > **Current Track** > **View Map**.
2. Select **Tracback**.

   The map page opens with your route marked with a magenta line.

3. Navigate using the map (page 15) or compass (page 15).

Map

▲ represents your location on the map. As you travel, the ▲ moves. When you are navigating to a destination, your route is marked with a magenta line.

To customize the map settings, see page 25. To customize the map dashboard and data fields, see page 22.

Using the Map

You can use the map to navigate an active route.

1. Select **Map**.
2. Follow the magenta line to your destination.

Compass

The device has a 3-axis compass. You can use a bearing pointer or a course pointer to navigate to your destination.

To customize the compass settings, see page 28.

Calibrating the Compass

NOTICE

Calibrate the electronic compass outdoors. Do not stand near objects that influence magnetic fields, such as cars, buildings, or overhead power lines.

You should calibrate the compass after moving long distances, experiencing temperature changes, or changing the batteries.

1. From the compass page, touch and hold the middle of the compass.
2. Follow the on-screen instructions.

Navigating with the Bearing Pointer

When navigating to a destination, the ▲ bearing pointer points to your destination, regardless of the direction you are moving.

1. Begin navigation to a destination (page 14).

2. Select **Compass**.

3. Turn until ▲ points toward the top of the compass, and continue moving in that direction to the destination.

About the Course Pointer

The course pointer is most useful if you are navigating on water or where there are no major obstacles in your path.
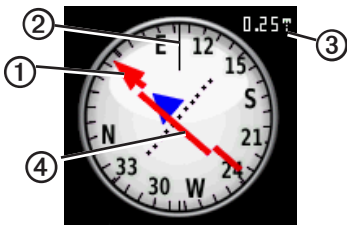
The course pointer ① indicates your relationship to a course line ② leading to the destination. The course line to your destination is based on your original starting point.

As you drift from the intended course to the destination, the course deviation indicator ④ (CDI) provides the indication of drift (right or left) from the course.

The scale ③ refers to the distance between dots on the course deviation indicator.

Navigating with the Course Pointer
Before you can navigate with the course pointer, you must change the pointer setting to **Course (CDI)** (page 28).

1. Begin navigation to a destination (page 14).
2. Select **Compass**.
3. Use the course pointer to navigate to the destination (page 16).

Navigating to a Contact

Before you can navigate to a contact, you must save a contact (page 7).

1. Select **Contacts**.
2. Select a contact.
3. Select **View Map** > **Go**.

Geocaches

Geocaching is a type of treasure hunting, in which geocachers seek hidden treasures using GPS coordinates posted on the Internet by those hiding the geocache.

Downloading Geocaches
1. Connect your device to a computer (page 40).
2. Go to www.OpenCaching.com.
3. If necessary, create an account.
4. Sign in.
5. Follow the on-screen instructions to find and download geocaches to your device.

Navigating to a Geocache
1. Select **Geocaches**.
2. Select **Find a Geocache**.
3. Select a geocache.
4. Select **Go**.

Routes

A route is a sequence of waypoints that leads you to your final destination.

Creating a Route

1. Select **Route Planner** > **Create Route** > **Select First Point**.

2. Select a category.

3. Select the first point in the route.

4. Select **Use** > **Select Next Point**.

5. Repeat steps 2–4 until the route is complete.

   A route must contain at least two points.

6. Select ⬆ to save the route.

Editing the Name of a Route

1. Select **Route Planner**.

2. Select a route.

3. Select **Change Name**.

4. Enter the new name.

5. Select ✔.

Editing a Route

1. Select **Route Planner**.

2. Select a route.

3. Select **Edit Route**.

4. Select a point.

5. Select an option:

   • To view the point on the map, select **Review**.

   • To change the order of the point on the route, select **Move Down** or **Move Up**.

   • To add an additional point on the route, select **Insert**.

     The additional point is inserted before the point you are editing.

   • To remove the point from the route, select **Remove**.

6. Select ▲ to save the route.

Viewing a Route on the Map
1. Select **Route Planner**.
2. Select a route.
3. Select **View Map**.

Deleting a Route
1. Select **Route Planner**.
2. Select a route.
3. Select **Delete Route**.

Viewing the Active Route
1. While navigating a route, select **Active Route**.
2. Select a point in the route to view additional details.

Reversing a Route
1. Select **Route Planner**.
2. Select a route.
3. Select **Reverse Route**.

Using Sight 'N Go
You can point the device at an object in the distance, such as a lighthouse, lock in the direction, and then navigate to the object.

1. From the main menu, select **Sight 'N Go**.
2. Point the device at an object.
3. Select **Lock Direction** > **Set Course**.
4. Use the compass to navigate to the object.

Starting Navigation to a Man Overboard Location
You can save a man overboard (MOB) location, and start navigation back to it.

1. Select **Man Overboard** > **Start**.

   The map page opens with your route marked with a magenta line.

2. Navigate using the map (page 15) or compass (page 15).

Sending an Emergency Alert

⚠ CAUTION

Once initiated, the location of the emergency alert is not updated. Do not move around after you send the call. If you must move, cancel the call, and initiate a new one with your new location.

In case of an emergency, you can send your location to radio users in the area who are using your current channel. Responders can then navigate to the emergency location.

1. Hold 🔊 for 3 seconds.
2. Select **Yes**.

The emergency alert is broadcast once every 30 seconds, until you cancel the call or someone responds.

Navigating to an Emergency Alert

1. When you receive an emergency alert, select **Help** to respond.

   The map page opens with the route to the emergency alert location marked with a magenta line.

2. Navigate using the map (page 15) or compass (page 15).

   As you navigate to the caller, your position updates are sent.

3. Push **PTT** to communicate with the caller.

Stopping Navigation

Select **Where To?** > **Stop Navigation**.

Customizing Your Device

Customizing the Data Fields

You can customize the data fields that appear on the screen. For data field descriptions, see page 44.

1. Select a data field to change.
2. Select a data field data field from the list.

Customizing the Home Screen

You can customize the pages as they appear on your device home screen.

1. Select **Setup** > **Main Menu**.
2. Select an icon you want to edit.
3. Select an option:

- Select a new position for the icon.
- Select 🗑 to delete the icon.

Creating a Custom Profile

You can customize your settings and data fields for a particular activity or trip.

1. Customize the settings as necessary (page 23).
2. Customize the data fields as necessary (page 21).
3. Select **Setup** > **Profiles**.
4. Select **Create New Profile** > **OK**.

Editing a Profile Name

1. Select **Setup** > **Profiles**.
2. Select a profile.
3. Select **Edit Name**.
4. Enter the new name.
5. Select ✔.

Deleting a Profile

1. Select **Setup** > **Profiles**.

2. Select a profile.

3. Select **Delete**.

Customizing Specific Pages

You can customize the data and dashboards of the map, compass, trip computer, and elevation plot.

Enabling the Map Data Fields

By default, the map does not show data fields. You must enable the data fields before you can edit them.

1. Select **Setup** > **Map** > **Data Fields**.

2. Select the number of data fields to display.

Changing the Data Fields

Before you can change the map fields, you must enable them (page 22).

1. Open the page for which you will change the data fields.

2. Select a data field to customize.

3. Select a data field type.

    For data field descriptions, see page 44.

About Dashboards

Each dashboard shows different information about your route or your location.

Customizing Dashboards

1. Open the page for which you want to customize the dashboard.

2. Select an option:

    • For the trip computer and compass, select .

- For the map, select **Setup** > **Map**.

3. Select a dashboard.

System Settings

Select **Setup** > **System**.

- **GPS**—sets the GPS to **Normal, WAAS/EGNOS** (Wide Area Augmentation System/European Geostationary Navigation Overlay Service), or **Demo Mode** (GPS off). For information about WAAS, go to www.garmin.com/aboutGPS/waas.html.

- **Language**—sets the text language on the device.

  NOTE: Changing the text language does not change the language of user-entered data or map data, such as street names.

- **Battery Type**—allows you to select the type of battery you are using.

- **Interface**—sets the format of the serial interface:

  ◦ **Garmin Spanner**—allows you to use the USB port with most NMEA 0183-compliant mapping programs by creating a virtual serial port.

  ◦ **Garmin Serial**—Garmin proprietary format used to provide PVT protocol data.

  ◦ **NMEA In/Out**—provides standard NMEA 0183 output and input.

  ◦ **Text Out**—provides simple ASCII text output of location and velocity information.

◦ **RTCM**—Radio Technical Commission for Maritime Services allows the device to accept DGPS Differential Global Positioning System information from a device supplying RTCM data in an SC-104 format.

Display Settings

Select **Setup** > **Display**.

• **Backlight Timeout**—adjusts the length of time before the backlight turns off.

 NOTE: To adjust the backlight brightness, see page 5.

• **Background Color**—sets the color used on the device screen.

• **Screen Capture**—allows you to take screen captures on the device.

• **Battery Save**—turns the screen off after a period of inactivity to prolong the battery life.

• **Screen Calibration**—page 24.

Calibrating the Touchscreen

The screen does not normally require calibration. However, if the screen does not seem to be responding properly, calibrate the touchscreen.

1. Select **Setup** > **Display** > **Screen Calibration**.
2. Follow the on-screen instructions.

Bluetooth® Settings

Select **Setup** > **Bluetooth**.

• **Audio Output**—selects the type of audio output. **Auto** selects the Bluetooth headset output when one is detected, and uses the internal speaker when a bluetooth headset is not detected.

• **Bluetooth**—turns on and off the Bluetooth technology.

• **Bluetooth Device**—lists the headsets that have been connected to the device. You can select **Add Device** to connect to a new headset.

Setting the Device Tones

You can customize tones for messages, keys, turn warnings, and alarms.

1. Select **Setup** > **Tones**.
2. Select a tone for each audible type.

Map Settings

Select **Setup** > **Map**.

• **Orientation**—adjusts how the map is shown on the page.

  ◦ **North Up**—shows north at the top of the page.

  ◦ **Track Up**—shows your current direction of travel toward the top of the page.

  ◦ **Automotive Mode**—shows an automotive perspective with next-turn information to use while driving.

• **Auto Zoom**—automatically selects the appropriate zoom level for optimal use on your map. When **Off** is selected, you must zoom in or out manually.

• **Data Fields**—page 44.

• **Advanced Map Setup**—sets the zoom levels, the text size, and the detail level of the map.

  ◦ **Zoom Levels**—selects the zoom level for map items.

  ◦ **Text Size**—selects the text size for map items.

- ◦ **Detail**—selects the amount of detail shown on the map. Showing more detail may cause the map to redraw more slowly.

- ◦ **Shaded Relief**—shows detail relief on the map (if available) or turns off shading.

- **Map Information**—allows you to enable or disable the maps currently loaded on the device. To purchase additional maps, see page 42.

Tracks Settings

Select **Setup** > **Tracks**.

- **Track Log**—turns track recording on or off.
- **Record Method**:
  - ◦ **Distance**—allows you to record by entering a specific distance interval.

- ◦ **Time**—allows you to record by entering a specific time.

- ◦ **Auto**—allows you to record the tracks at a variable rate to create an optimum representation of your tracks.

- **Interval**—selects a track log recording rate. Recording points more frequently creates a more-detailed track, but fills the track log faster.

- **Auto Archive**—selects an automatic archive method to organize your tracks. Tracks are saved and cleared automatically based on the user setting.

- **Color**—changes the color of the track line on the map.

Changing the Units of Measure

You can customize units of measure for distance and speed, elevation, depth, temperature, and pressure.

1. Select **Setup** > **Units**.
2. Select a measurement type.
3. Select a unit of measure for the setting.

Time Settings

Select **Setup** > **Time**.

- **Time Format**—allows you to select a 12-hour or a 24-hour display time.
- **Time Zone**—allows you to select the time zone for the device. You can select **Automatic** to set the time zone automatically based on your GPS position.

Position Format Settings

NOTE: Do not change the position format or the map datum coordinate system unless you are using a map or chart that specifies a different position format.

Select **Setup** > **Position Format**.

- **Position Format**—sets the position format in which a given location reading appears.
- **Map Datum**—sets the coordinate system on which the map is structured.
- **Map Spheroid**—shows the coordinate system the device is using. The default coordinate system is WGS 84.

Heading Settings

You can customize the compass settings.

Select **Setup** > **Heading**.

- **Display**—sets the type of directional heading on the compass.
- **North Reference**—sets the north reference of the compass.
- **Go To Line/Pointer**—allows you to select how the course appears.
  - **Bearing** (**Small** or **Large**)—the direction to your destination.
  - **Course** (**CDI**)—your relationship to a course line leading to a destination.
- **Compass**—switches from an electronic compass to a GPS compass when you are traveling at a higher rate of speed for a set period of time (**Auto**), or turns the compass off.

Altimeter Settings

Select **Setup** > **Altimeter**.

- **Auto Calibration**—allows the altimeter to self-calibrate each time you turn the device on.
- **Barometer Mode**
  - **Variable Elevation**—the barometer functions while you are moving.
  - **Fixed Elevation**—the barometer functions while you are stationary.
- **Pressure Trending**
  - **Save When Power On**—records pressure data only when the device is turned on. This can be useful when you are watching for pressure fronts.
  - **Save Always**—records pressure data every 15 minutes, even when the device is turned off.

- **Plot Type**
  - ◦ **Elevation/Time**—records elevation changes over a period of time.
  - ◦ **Elevation/Distance**—records elevation changes over a distance.
  - ◦ **Barometric Pressure**—records barometric pressure over a period of time.
  - ◦ **Ambient Pressure**—records ambient pressure changes over a period of time.
- **Calibrate Altimeter**—page 29.

Calibrating the Barometric Altimeter

You can manually calibrate the barometric altimeter if you know the correct elevation or the correct pressure.

1. Select **Setup** > **Altimeter**.
2. Select **Altimeter Calibration**.

3. Follow the on-screen instructions.

Geocache Settings

Select **Setup** > **Geocaches**.

- **Geocache List**—allows you to display the geocache list by names or codes.
- **Found Geocaches**—allows you to edit the number of geocaches found. This number automatically increases as you log a find.
- **Filter**—filters a geocache list for certain factors, such as level of difficulty.
- **chirp™ Searching**—turns on or off chirp searching. A chirp is a small accessory that you can program and leave in a geocache.
- **Program chirp™**—programs the chirp accessory. See the *chirp Owner's Manual* at www.garmin .com.

Routing Settings

Select **Setup** > **Routing**.

- **Guidance Method**—sets the calculation and guidance method for your routes.
  - **Off Road**—calculates point-to-point routes.
  - **On Road For Time**—calculates on-road routes that require minimal time to drive.
  - **On Road For Distance**—calculates on-road routes that are shorter in distance.
  - **Prompted**—allows you to select a route calculation mode before navigating.
- **Calculates Routes for**—optimizes the routes for the selected transportation method.

- **Lock On Road**—locks the position icon, which represents your position on the map, onto the nearest road.
- **Off Road Transitions**
  - **Auto**—automatically routes you to the next point.
  - **Manual**—allows you to select the next point on the route.
  - **Distance**—routes you to the next point on the route when you are within a specified distance of your current point.
- **Avoidance Setup**—allows you to select the road type you want to avoid.

Marine Map Settings

Select **Setup** > **Marine**.

- **Marine Chart Mode**:

  ◦ **Nautical**—displays various map features in different colors so that the marine POIs are more readable. The nautical chart reflects the drawing scheme of paper charts.

  ◦ **Fishing**—(requires marine maps) displays a detailed view of bottom contours and depth soundings. Simplifies map presentation for optimal use while fishing.

- **Appearance**—allows you to set the appearance of marine navigation aids on the map.

- **Marine Alarm Setup**

  ◦ **Anchor Drag Alarm**—alarm sounds when you exceed a specified drift distance while anchored.

  ◦ **Off Course Alarm**—alarm sounds when you are off course by a specified distance.

  ◦ **Deep Water/Shallow Water**—alarm sounds when you enter water of a specific depth.

Setting up Marine Alarms

1. Select **Setup** > **Marine** > **Marine Alarm Setup**.
2. Select an alarm type.
3. Select **On**.
4. Enter a distance.
5. Select ✔.

Fitness

For more information on optional fitness accessories, see .

Resetting Data

You can reset trip data, delete all waypoints, clear the current track, or restore default values.

1. Select **Setup** > **Reset**.
2. Select an item to reset.

Restoring Default Settings

You can reset all the setup values to the original settings.

Select **Setup** > **Reset** > **Restore Defaults to Factory Settings** > **Yes**.

Tools

Trip Computer

The trip computer displays your current speed, average speed, maximum speed, trip odometer, and other helpful statistics.

To customize the trip computer, see page 22.

Elevation Plot

By default, the elevation plot displays the elevation for an elapsed time. To customize the elevation plot, see page 22.

Viewing the Calendar and Almanacs

You can view device activity for each day, as well as almanac information for the sun and moon information and hunting and fishing.

1. Select an option:
   - To view device activity for specific days, select **Calendar**.
   - To view the sunrise, sunset, moonrise, and moonset information, select **Sun and Moon**.
   - To view the predicted best times for hunting and fishing, select, **Hunt and Fish**.

2. If necessary, use the arrows to view a different month.

3. Select a day.

Calculating the Size of an Area

1. Select **Area Calculation** > **Start**.

2. Walk around the perimeter of the area you want to calculate.

3. Select **Calculate** when finished.

Setting an Alarm

If you are not currently using the device, you can set the device to turn on at a specific time.

1. Select **Alarm Clock**.
2. Select **+** and **-** to set the time.
3. Select **Turn Alarm On**.
4. Select an option.

The alarm sounds at the selected time. If the device is off at the alarm time, the device turns on and sounds the alarm.

Opening the Stopwatch

Select **Stopwatch**.

Viewing Photos

You can view photos you have transferred to the device (page 40).

1. Select **Photo Viewer**.

2. Select ⬆ and ⬇ to view all the photos.
3. Select a photo to see a larger view of it.

Sorting Photos

1. Select **Photo Viewer**.
2. Select 🗖.
3. Select an option.

Viewing the Location of a Photo

1. Select **Photo Viewer**.
2. Select a photo.
3. Select ⓘ.

Deleting a Photo

1. Select **Photo Viewer**.
2. Select a photo.
3. Select 🗑 > **Yes**.

Device Information

Updating the Software

Before you can update the software, you must connect the device to your computer (page 40).

1. Go to www.garmin.com/products /webupdater.
2. Follow the on-screen instructions.

NOTE: Updating the software does not erase any of your data or settings.

Viewing Device Information

You can view the unit ID, software version, and license agreement.

Select **Setup** > **About**.

Specifications

Water resistance	Fully gasketed, high impact plastic alloy, water resistant to IEC 60529 IPX7
Battery type	Lithium-ion battery pack (010-11599-00) or Alkaline battery pack (010-11600-00), which uses four AA batteries (alkaline, NiMH, or lithium)
Battery life of lithium-ion battery pack	2,400 mAh
Battery charging temperature range	From 0°C to 45°C (from 32°F to 113°F)
Operating temperature range	From -20°C to 55°C (from -4°F to 131°F)

About the Batteries

⚠WARNING

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

The temperature rating for the device may exceed the usable range of some batteries. Alkaline batteries can rupture at high temperatures. Alkaline batteries lose a significant amount of their capacity as temperature decreases. Use lithium batteries when operating the device in below-freezing conditions.

Do not use a sharp object to remove batteries.

NOTICE

Contact your local waste disposal department to properly recycle the batteries.

Maximizing Battery Life

You can do various things to increase the battery life.

- Turn the backlight off when not needed.
- Lower the backlight brightness (page 5).
- Decrease the backlight timeout (page 24).
- Enable battery save mode (page 24).

Installing AA Batteries with the Optional Alkaline Battery Pack

Instead of the lithium-ion battery pack, you can use alkaline, NiMH, or lithium batteries, using the optional Alkaline Battery Pack. This is especially handy when you are on the trail and cannot charge the lithium-ion battery pack. Use NiMH or lithium batteries for best results.

1. Turn the D-ring counter-clockwise, and remove the cover.

2. Lift the latch on the cover to separate the battery compartment.

3. Insert four AA batteries, observing polarity.

4. Replace the battery cover, and turn the D-ring clockwise.

5. Select **Setup** > **System** > **Battery Type**.

6. Select **Alkaline**, **Lithium**, or **Rechargeable NiMH**.

Long-Term Storage

When you do not plan to use the device for several months, remove the batteries. Stored data is not lost when batteries are removed.

Caring for the Device

NOTICE

Avoid chemical cleaners and solvents that can damage plastic components.

Never use a hard or sharp object to operate the touchscreen, or damage may result.

Cleaning the Device

1. Dampen a clean cloth with a mild detergent solution.

2. Wipe the device with the damp cloth.

3. Thoroughly dry the device.

Cleaning the Screen

1. Dampen a soft, clean, lint-free cloth with water, isopropyl alcohol, or eyeglass lens cleaner.

2. Wipe the screen with the cloth.

3. Thoroughly dry the screen.

Water Immersion

NOTICE

The device is waterproof to IEC Standard 60529 IPX7. It can withstand immersion in 1 meter of water for 30 minutes. Prolonged submersion can cause damage to the device. After submersion, be certain to wipe dry and air dry the device before using or charging.

Extreme Temperatures

NOTICE

Do not store the device where prolonged exposure to extreme temperatures can occur, because it can cause permanent damage.

Connecting a Bluetooth® Headset

1. Turn on the headset, and enable the Bluetooth component.

   You can refer to the headset documentation for specific instructions about enabling Bluetooth wireless technology.

2. Bring the headset within 30 feet (10 meters) of the device.

3. Select **Setup** > **Bluetooth** > **Bluetooth** > **Enable**.

4. Select **Bluetooth Device** > **Add Device**.

The device begins searching for headsets.

5. Select the headset from the list.

For more information about the Bluetooth settings, see page 24.

Data Management

NOTE: The device is not compatible with Windows® 95, 98, Me, or NT. It is also not compatible with Mac® OS 10.3 and earlier.

File Types

The device supports these file types.

• Files from BaseCamp™ or HomePort™

 Go to www.garmin.com

• GPI custom POI files from the Garmin POI Loader

• JPEG photo files

• GPX geocache files

Installing a microSD™ Card

Memory cards can be used for additional storage. Also, some maps are available preloaded on memory cards. Go to http://buy.garmin.com for more information.

1. Turn the D-ring counter-clockwise, and remove the battery pack.

2. Slide the card holder ① toward the top edge of the device, and lift up, as instructed in the battery compartment.
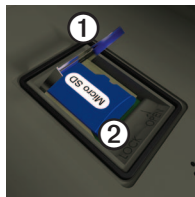
3. Place the microSD card ② in the device with the contacts facing down.

4. Close the card holder.

5. Slide the card holder toward the bottom of the device to lock it.

6. Replace the battery pack, and turn the D-ring clockwise.

Connecting the Device to a Computer

1. Connect the USB cable to a USB port on your computer.

2. Pull up the weather cap from the mini-USB port ①.

3. Plug the small end of the USB cable into the mini-USB port.

Your device and memory card (optional) appear as removable drives in My Computer on Windows computers and as mounted volumes on Mac computers.

Transferring Files to Your Computer

Before you can transfer files, you must connect the device to your computer (page 40).

1. Browse your computer for the file.

2. Select the file.

3. Select **Edit** > **Copy**.

4. Open the "Garmin" or memory card drive/volume.

   TIP: You must put photo files in the Garmin\JPEG folder. You must put geocache files in the Garmin\GPX folder.

5. Select **Edit** > **Paste**.

Deleting Files

NOTICE

If you do not know the purpose of a file, do not delete it. Your device memory contains important system files that should not be deleted. Be especially cautious of folders entitled "Garmin."

NOTICE

Your device memory contains important system files and folders that should not be deleted.

Before you can delete files, you must connect the device to your computer (page 40).

1. Open the "Garmin" drive or volume.
2. If necessary, open a folder or volume.
3. Select the files.

4. Press the **Delete** key on your keyboard.

Disconnecting the USB Cable

1. Complete an action:
   • For Windows computers, click the eject icon 🖳 in your system tray.
   • For Mac computers, drag the volume icon to the Trash 🗑.
2. Disconnect the device from your computer.

Appendix

Additional Maps

You can use additional maps in the device, such as BirdsEye satellite imagery, BlueChart® g2, and City Navigator® detailed maps. Detailed maps may contain additional points of interest, such as restaurants or marine services. For more information, go to http://buy.garmin.com or contact your Garmin dealer.

Optional Accessories

Optional accessories, such as mounts, preloaded map memory cards, fitness accessories, VHF antennas, and replacement parts, are available at http://buy.garmin.com or from your Garmin dealer.

Optional VHF Antennas
The following antennas are compatible with the Rino 650N:

• 010-10931-00 Magnetic Mount Antenna

• 010-10856-30 Extended Range Antenna

• 010-11141-00 Portable Long-Range Antenna

These antennas have all been evaluated for SAR and meet the identified SAR requirements.

Optional Wired Headets
You can use a headset containing a 3.5 mm four-pinout jack with the headset jack on the device.
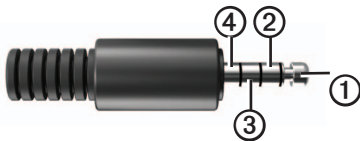
Item	Description
①	Speaker
②	Open
③	Microphone
④	Ground

Optional Fitness Accessories

Before you can use the fitness accessory with your device, you must install the accessory according to the instructions included with the accessory.

You can use optional fitness accessories including a heart rate monitor or a cadence sensor with your device. These accessories use ANT+ wireless technology to send data to the device.

Using Optional Fitness Accessories

1. Bring the device within range (3 m) of the ANT+ accessory.
2. Select **Setup** > **Fitness**.
3. Select **Heart Rate Monitor** or **Bike Cadence Sensor**.
4. Select **Search for New**.
5. Customize your data fields to view the heart rate or cadence data (page 44).

Tips for Pairing ANT+ Accessories with Your Garmin Device

- Verify that the ANT+ accessory is compatible with your Garmin device.
- Before you pair the ANT+ accessory with your Garmin device, move 10 m away from other ANT+ accessories.
- Bring the Garmin device within range (3 m) of the ANT+ accessory.

• After you pair the first time, your Garmin device automatically recognizes the ANT+ accessory each time it is activated. This process occurs automatically when you turn on the Garmin device and only takes a few seconds when the accessories are activated and functioning correctly.

• When paired, your Garmin device only receives data from your accessory, and you can go near other accessories.

Data Field Options

Data Field	Description
Accuracy of GPS	The margin of error for your exact location. For example, your GPS location is accurate to within +/- 12 feet (3.6 m).

Data Field	Description
Ambient Pressure	The uncalibrated environmental pressure.
Ascent - Average	The average vertical distance of ascent.
Ascent - Maximum	The maximum ascent rate in feet/meters per minute.
Ascent - Total	The total elevation distance ascended.
Barometer	The calibrated current pressure.
Battery Level	The remaining battery power.
Bearing	The direction from your current location to a destination.
Cadence (cadence accessory required)	Revolutions of the crank arm or strides per minute.

Data Field	Description
Course	The direction from your starting location to a destination.
Depth	The depth of the water. Requires a connection to a NMEA 0183 depth-capable device to acquire data (page 23).
Descent - Average	The average vertical distance of descent.
Descent - Maximum	The maximum descent rate in feet or meters per minute.
Descent - Total	The total elevation distance descended.
Distance to Destination	The distance to your final destination.
Distance to Next	The remaining distance to the next waypoint on the route.

Data Field	Description
Elevation	The altitude of your current location above or below sea level.
Elevation - Maximum	The highest elevation reached.
Elevation - Minimum	The lowest elevation reached.
ETA at Destination	The estimated time of day you will reach your final destination.
ETA at Next	The estimated time of day you will reach the next waypoint on the route.
Glide Ratio	The ratio of horizontal distance traveled to the change in vertical distance.

Data Field	Description
Glide Ratio to Dest.	The glide ratio required to descend from your current position and elevation to the destination elevation.
GPS Signal Strength	The strength of the GPS signal.
Heading	The direction you are moving.
Heart Rate (heart rate monitor required)	Your heart rate in beats per minute (bpm).
Location (lat/lon)	Displays the current position in the default position format regardless of the selected settings.
Location (selected)	Displays the current position in the selected position format.

Data Field	Description
Odometer	A running tally of distance traveled for all trips.
Off Course	The distance to the left or the right by which you have strayed from the original path of travel.
Pointer	The data field arrow points in the direction of the next waypoint or turn.
Speed	The current rate of speed at which you are moving since last reset.
Speed - Maximum	The maximum speed reached since last reset.
Speed - Moving Avg.	The average speed of the device while moving since last reset.

Data Field	Description
Speed - Overall Avg.	Your average speed since last reset.
Sunrise	The time of sunrise based on your GPS position.
Sunset	The time of sunset based on your GPS position.
Temperature - Water	The temperature of the water. Requires a connection to a NMEA 0183 temperature-capable device to acquire data (page 23).
Time of Day	The current time of day based on your time settings (format, time zone, and daylight saving time).
Time to Destination	The estimated time needed to reach your final destination.

Data Field	Description
Time to Next	The estimated time needed to reach the next waypoint on the route.
To Course	The direction in which you must move to return to the route.
Trip Odometer	A running tally of the distance traveled since the last reset.
Trip Time - Moving	A running tally of time since the last reset.
Trip Time - Stopped	The time spent not moving since the last reset.
Trip Time - Total	A running tally of distance traveled since the last reset.

Data Field	Description
Turn	The angle of difference (in degrees) between the bearing to your destination and your current course. L means turn left. R means turn right.
Velocity Made Good	The speed at which you are closing on a destination along a route.
Vert. Speed to Dest.	The measurement of your rate of ascent or descent to a predetermined altitude.
Vertical Speed	Your rate of altitude gain or loss over time.
Waypoint at Dest.	The last point on a route to your destination.
Waypoint at Next	The next point on your route.

Troubleshooting

Problem	Solution
The screen does not respond. How do I reset the device?	1. Remove the batteries. 2. Reinstall the batteries. **NOTE**: This does not erase any of your data or settings.
I want to reset all the customized settings back to the factory defaults.	Select **Setup** > **Reset** > **Restore Defaults to Factory Settings**.
My device does not acquire satellite signals.	1. Take your device out of parking garages and away from tall buildings and trees. 2. Turn on the device. 3. Remain stationary for several minutes.
My device will not charge.	• Ensure the lithium-ion battery is properly installed (page 4). • Ensure the temperature is between 0°C and 45°C (32°F and 113°F). • Turn down the backlight (page 5).
My battery gauge does not seem accurate.	1. Leave the device on until the battery runs out. 2. Fully charge the battery without interrupting the charge cycle.
The batteries do not last long.	To learn how to maximize the battery life, see page 36.

Problem	Solution
How do I know my device is in USB mass storage mode?	On the device, an image of the device connected to a computer appears. On your computer, you should see a new removable disk drive in My Computer on Windows computers and a mounted volume on Mac computers.
My device is connected to the computer, but it will not go into mass storage mode.	You may have loaded a corrupted file. 1. Disconnect the device from your computer. 2. Turn off the device. 3. Hold ⓞ while you connect the device to your computer. 4. Continue holding ⓞ for 30 seconds or until the device goes into mass storage mode.
I cannot see any new removable drives in my list of drives.	If you have several network drives mapped on your computer, Windows may have trouble assigning drive letters to your Garmin drives. See the help file for your operating system to learn how to assign drive letters.
I need replacement parts or accessories.	Go to http://buy.garmin.com, or contact your Garmin dealer.

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www.garmin.com/support

913-397-8200 1-800-800-1020	0808 238 0000 +44 870 850 1242	1-866-429-9296	43 (0) 3133 3181 0
00 32 2 672 52 54	00 45 4810 5050	00 358 9 6937 9758	00 331 55 69 33 99
0180 5 / 42 76 46 - 880	00 39 02 3669 9699	0800-0233937	815 69 555
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