

Rino[®] 520-530HCx

2-way radio and GPS



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INTRODUCTION

This manual instruction for using the Garmin® Rino® 520HCx or the Rino® 530HCx (**R**adio **I**ntegrated with **N**avigation for the **O**utdoors).



NOTE: The significant differences between the Rino 520HCx and Rino 530HCx features are noted throughout the quick reference guide and the owner's manual. The Rino 530HCx contains all of the features of the Rino 520HCx and a seven channel NOAA weather receiver weather alert, an electronic compass, and barometric pressure altimeter.

Tip and Shortcuts

- To quickly return to the Main Menu from any page, press the **Quit/Page** key twice.
- To extend battery life, turn off the GPS when not using the Rino for navigation. Also, decrease the level of the display's backlight, by quickly pressing and releasing the **Power** key.

Contact Garmin

Contact Garmin if you have any questions while using your unit. Contact Garmin Product Support by phone: (913) 397-8200 or (800) 800-1020, Monday–Friday, 8 AM–5 PM Central Time; or go to www.garmin.com/support/ and click **Product Support**.

Product Registration

Help us better support you by completing our online registration today! Have the serial number of your Rino handy and connect to our Web site: www.garmin.com. Look for the Product Registration link on our Home page through My Garmin.

Use this area to record the serial number (8-digit number located in the battery compartment) in case your Rino is lost, stolen, or needs service. Be sure to keep your original sales receipt in a safe place or attach a photocopy inside the manual.

Serial Number: _____

IMPORTANT: READ THIS INFORMATION BEFORE USING YOUR Rino:

Exposure to Radio Frequency Signals—Your wireless handheld radio is a low power radio transmitter and receiver. When it is on, it receives and also sends out radio frequency (RF) signals. In August 1996, The Federal Communications Commissions (FCC) adopted RF exposure guidelines with safety levels for handheld wireless radios. Those guidelines are consistent with safety standards previously set by both U.S. and international standards bodies: American National Standards Institute (ANSI) IEEE. C95.1-1992; National Council on Radiation Protection and Measurements (NCRP) Report 86; International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1996. Those standards were based on comprehensive and periodic evaluations of the relevant scientific literature. For example, over 130 scientists, engineers, and physicians from universities, government health agencies, and industry reviewed the available body of research to develop the ANSI Standard (C95.1). The design of your radio complies with the FCC guidelines (and those standards).

For body-worn and face-held operation, this radio demonstrates compliance and meets the FCC RF exposure guidelines for uncontrolled exposure (general population) when used with approved accessories supplied with or designed for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

Antenna Care—Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the radio and may violate FCC regulations. **Do not use any radio that has a damaged antenna, because if it comes into contact with your skin, a minor burn can result.**

Electronic Devices—Most modern electronic equipment is shielded from RF signals. However, certain equipment may not be shielded against the RF signals from your wireless radio.

Pacemakers—The Health Industry Manufacturers Association (HIMA) recommends that a minimum separation of six inches (6") be maintained between a handheld wireless radio and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research. Persons with pacemakers should ALWAYS keep the radio more than six inches from their pacemaker when the radio is turned on, should not carry the radio in a breast pocket,

should use the ear opposite the pacemaker to minimize the potential for interference, and should turn the radio off immediately if you have any reason to suspect that interference is taking place.

Hearing Aids—Some digital wireless radios may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

Other Medical Devices—If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from external RF energy. Your physician may be able to assist you in obtaining this information.

Turn your radio OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Vehicles—RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

Posted Facilities—Turn your radio OFF in any facility where posted notices so require.

Commercial Aircraft—Many commercial airlines prohibit the use of FRS/GMRS radios on board. Switch OFF your radio before boarding an aircraft or check the airline rules.

Blasting Areas—To avoid interfering with blasting operations, turn your radio OFF when in a “blasting area” or in areas posted: “Turn off two-way radio.” Obey all signs and instructions.

Potentially Explosive Atmospheres—Turn your radio OFF and do not remove your battery when you are in any area with a potentially explosive atmosphere. Obey all signs and instructions. Sparks from your battery in such areas could cause an explosion or fire resulting in bodily injury or even death.

Areas with a potentially explosive atmosphere are often, but not always clearly marked. They include fueling areas such as gasoline stations, below deck on boats, fuel or chemical transfer or storage facilities; vehicles using liquefied petroleum gas (such as propane or butane); areas where the air contains chemicals or particles, such as grain, dust, or metal powders; and any other area where you would normally be advised to turn off your vehicle engine.

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GETTING STARTED

The Rino 520HCx or 530HCx is a FRS/GMRS radio with a 12 channel GPS receiver. It has integrated radio functionality to provide two-way communications for up to two miles using FRS (Family Radio Service) channels. The Rino also provides 15 high-performance GMRS (General Mobile Radio Service) channels and 8 GMRS repeater channels (US versions only) for communication up to 14 miles.



NOTE: GMRS channels are limited to 2 watts of power when used in Canada. GMRS repeater channels are not approved for use by the Canadian government, so they are disabled on Rino 520HCx and Rino 530HCx units sold in Canada.

The Rino has three user-selectable GMRS power levels: 0.5 W, 2.0 W, and 5.0 W (US versions only). Keep in mind that FRS channels only transmit at 0.5 W. The Rino has a rechargeable lithium-ion battery pack with charger. Fully charge the lithium-ion battery while attached to

the Rino prior to the first use to ensure accurate battery capacity reporting. Follow the charging instructions in the *Rino Quick Reference Guide*.

The unit contains a built-in North American basemap that includes interstate and state highways and exit information. The Rino uses MapSource™ map data software (not included). Using a microSD card, the Rino can display a variety of detailed map data.

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

Using the Rino Keypad

Power key:

Press and hold to turn the unit on/off

Press to adjust contrast and backlighting

Call key:

Press to send out a call tone

Sends position when released (if enabled)

Talk key:

Press and hold to talk

Sends position when released (if enabled)

Page/Quit key:

Press to cycle through main pages

Used to quit or escape menu items

Volume (V) key:

Press to open volume/squelch control

Press and hold to mute/unmute the speaker

Speaker



TFT Display

Enter/Rocker key "Thumb Stick":



Press in to Enter a selection or data

Move up, down, right or left to move through lists, select fields, on-screen buttons, icons, enter data, or move the map panning arrow

Press and hold to open a Shortcuts Menu

Zoom/Map (Z) key:

From the Map page, press to open Zoom control window

From any other page, press to open the Map page and press again to open Zoom control


Press and hold to turn the electronic compass on/off (Rino 530HCx only)

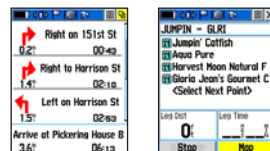
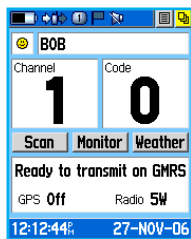
Microphone

Back of the Rino



Main Display Pages

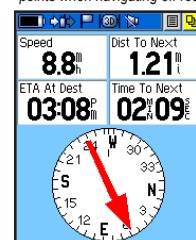
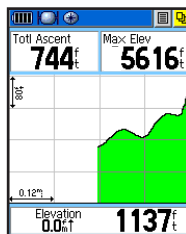
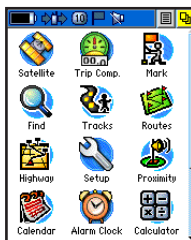
All of the information needed to operate the Rino is found on five default main pages (only four for the Rino 520HCx). Press and release the **Page/Quit** key to cycle through the Radio page, Map page, Active Route page*, Compass page, Altimeter page (Rino 530HCx only), and Main Menu page. Access the Main pages by pressing the on-screen Main page button . Customize the Main page sequence by using the Page Sequence Setup (see [page 51](#)).



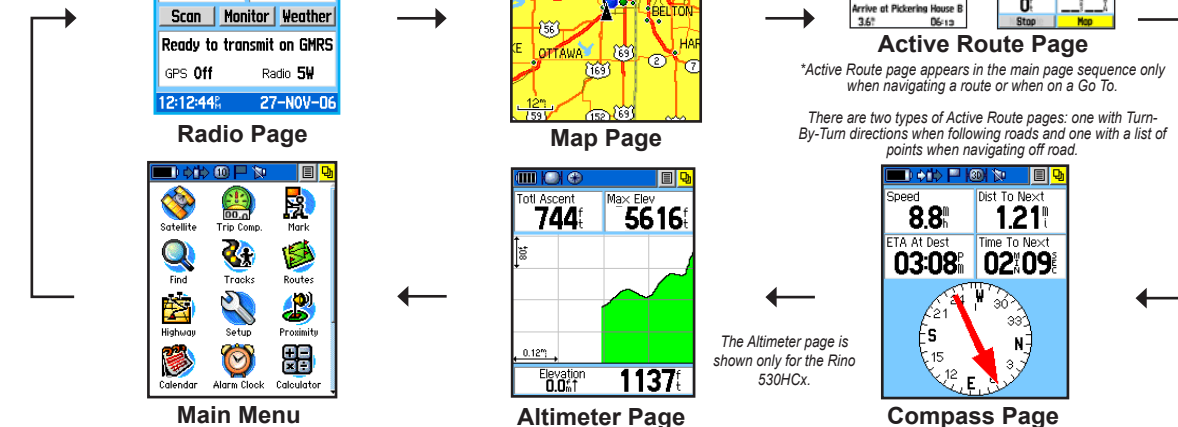
Active Route Page

*Active Route page appears in the main page sequence only when navigating a route or when on a Go To.

There are two types of Active Route pages: one with Turn-By-Turn directions when following roads and one with a list of points when navigating off road.



The Altimeter page is shown only for the Rino 530HCx.

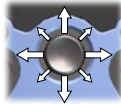


Operating the Rino


For best results, calibrate the compass and altimeter contained in the Rino 530HCx before use. Refer to the “Calibrating the Compass” and “Calibrating the Altimeter” sections.

To use the Rocker:

- Press in to enter selected options and to confirm messages.
- Move up, down, right or left to move through lists, select fields, on-screen buttons and icons, enter data, or move the map panning arrow.
- Press in and hold to open the Shortcuts Menu.




To use the Page Option Menu:

1. Select the **Option Menu** on-screen button  at the top of the display screen, and then press **Enter** to open the menu.
2. Select a menu option and press **Enter**.

3. To close without making a selection, move the **Rocker** to the right.

To close a feature or setting page:

Select the **Close**  button at the top of the page and press **Enter**, or press the **Page/Quit** key.

Shortcuts Menu



The Shortcuts Menu, accessed by holding the Rocker key in, provides quick access to frequently used features and the Lock Keys option.

To lock/unlock the keys:










1. Press **Enter** to access the Shortcuts Menu. Select **Lock Keys**. Only the **Call** and the **Press To Talk** keys are functional.
2. To unlock, press and hold the **Page/Quit** key until “Keylock Disabled” is shown (about 5 seconds).





Status Bar Overview

As you move around any of the Main pages, the page's title briefly appears (3 seconds) and then is replaced by the Status Bar. The Status Bar shows current settings and operational icons and contains the Main page  and page option menu  buttons.

The available icons are:

-  Battery Level
-  Using External Power
-  Receiving Radio Signal
-  Transmitting Radio Signal
-  Radio On
-  Peer-To-Peer On/Location Ready to Send
-  Keylock On
-  Alarm Clock On
-  GPS On, 3D Position Fix

-  Speaker Muted
-  Weather Alert On (Rino 530HCx only)
-  Current Radio Channel

Adjust the backlight level by pressing the **POWER** key and releasing, then tapping the **POWER** key or press the **Rocker** up/down to cycle through the levels of backlight adjustment.

On-screen Messages

When operating the Rino, an on-screen message advises you of an occurrence. In each case, the condition is described and often a remedy provided. Press **Enter** to acknowledge the message and close the window.



On-screen message

Using Detailed Mapping Data

Many of the Rino features require detailed mapping data to be fully operational, so you may want to transfer maps before using the unit. The microSD card (not provided with your unit) can be loaded with detailed maps and mapping data from optional MapSource CDs for a computer. This enhances the versatility of your Rino. With selected MapSource detailed mapping data, you can view listings of nearby restaurants, lodging, shopping centers, attractions and entertainment, and addresses and phone numbers for any listed location.

Map data transfer requires the USB interface cable provided with the unit to transfer MapSource data from a computer to the microSD card in the Rino. Inserting the microSD card in a standard SD card adapter and card reader allows for faster transfer.

To purchase high capacity microSD cards and pre-loaded map data sets from Garmin. Visit the Garmin Web site: www.garmin.com/cartography/ for compatible MapSource products.

Once installed in your Rino, the microSD card is used for storage of mapping data, tracks, and as a mass storage device for other types of data.

A Data Card Information page is available to view statistical data about the microSD card. You can determine how much card space is used for maps, tracks, and for miscellaneous data. You can also view the amount of free space available and the total space currently being used. When purchasing a microSD card for your unit, take into consideration the amount of data you plan to store on the card.



NOTE: Waypoints stored on the microSD card cannot be used by the Rino. Waypoints transferred using MapSource are stored on the unit memory, and are used by the Rino.

Transferring Data to a microSD Card

To install or remove the microSD card:

1. Remove the battery pack from the back of the unit by turning the locking D-Ring and lifting up.
2. Locate the card tray at the center of the battery compartment.
3. If you want to install the card, slide the tray cover forward, then lift up to insert the card in the tray. Be certain the card contacts are facing down.

To transfer map data to the microSD card:

1. Lift the weather cover from the USB port on the upper back of the unit. It is recommended that you use the USB port rather than the serial connection port for faster data transfer.
2. Connect the USB cable provided with the unit to the USB port on your computer and to the mini-USB port on the back of the unit.
3. Follow instructions for selecting and downloading maps provided with the MapSource® map data disk. See [page 60](#).

USB Port - under weather cover

microSD card tray is located beneath the battery on the back of the unit.

Slide the tray cover back to OPEN, then lift to remove or insert the microSD card. Close and slide back to LOCK.



**Detail of microSD card tray
in Battery Compartment**



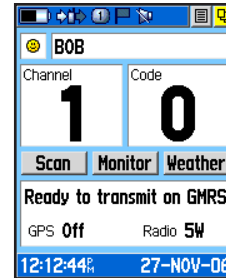
Back of Rino

BASIC OPERATION

Radio Page

The Radio page provides the user interface for FRS (Family Radio Service) and GMRS (General Mobile Radio Service) radio operations. Rinos work with third party FRS/GMRS radios using standard FRS/GMRS frequencies. To take advantage of all of the Rino features, communication with other Rinos is necessary.

The Radio page also provides access to the Weather Radio (available in Rino 530HCx only), which provides a constant update of current weather conditions by receiving NOAA weather broadcasts for your area. The Weather Alert feature further enhances the Weather Radio by automatically notifying you of any weather alerts, even when the Weather Radio is not used and the FRS/GMRS radio is not transmitting or receiving an audio transmission. These features are helpful while outdoors or when planning trips or activities.



Radio Page

Initializing the Rino

When using the unit for the first time or you are more than 600 miles from your last used location, the GPS receiver must be initialized.

To initialize the unit:

Take the Rino outside where there is an unobstructed view of the sky and turn it on to search for satellite signals. A Satellite Signal graph is shown on the Radio page.

Using Name and Symbol Fields

Use the **Name** field to enter a name that appears on other Rino units as you communicate with them. The **Symbol** field lets you choose a face icon from a list to further personalize your identity.

To enter a name:

1. Using the **Rocker**, select the **Name** field. Press **Enter** to activate the field and open the keyboard.
2. Move the **Rocker** up, down, left, or right to select the **Clear** field, then press **Enter** to clear the default **Name**.
3. Enter a new name, using the **Rocker** to move the cursor to select a character (letter, number, or a space). Press **Enter** to select that character.
4. After you enter your new name, select **OK**.

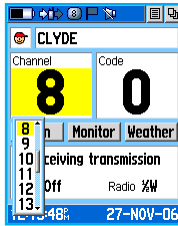
To change the user symbol:

1. Use the **Rocker** to select the face symbol on the left. Press **Enter** to show face icons.
2. Press **Enter** to change the symbol.

Setting the Channel and Code

The Rino has 22 channels (not including GMRS repeater channels) and 38 codes to select from using the Channel and Code fields. Channels 1–7 and 15–22 are GMRS channels, 8–14 are FRS channels, and 15R–22R are GMRS repeater channels (repeater channels are available on US units only and are disabled by default). To communicate with other Rino and FRS/GMRS users, stay on the same channel and code. Garmin Rino units work with third party FRS/GMRS radios, if the other radios are using standard FRS/GMRS frequencies. See the Appendix for a chart of Rino frequencies.

Squelch codes allow you to hear calls from only specific persons. Thirty-eight (38) codes (called Continuous Tone Controlled Squelch System or CTCSS) allow your Rino to ignore unwanted calls from other people using the same channel. Select the same code (number) as selected by the other person(s) with whom you plan to communicate.



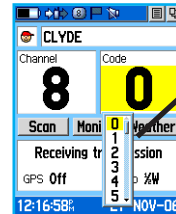
Select from FRS 8–14, GMRS 1–7 & 15–22,
and 15R–22R GMRS repeater channels
(with repeater channels enabled).



NOTE: Codes do not cause your conversation to be private. They only allow you to filter out other users on the same channel, so you only hear the radio(s) you want to hear. Codes on are not a scrambling system! Refer to [page 14](#).

Setting the code to 0 (code off) allows you to hear all activity on the selected channel, but you must be set to the same code as the other person(s) to transmit back. See the “Appendix” for a table listing all of the 38 codes and their frequencies.

As you change channels, the Rino remembers the last channel/code combination used. For example, you can set the unit channel to 5 and code to 21, then change the channel to 8 and code to 2. If you change the channel back to 5, the code changes back to its previous setting of 21.



Channel code list

To change the Channel or Code:

1. Using the **Rocker**, select the **Channel** or **Code** field, and then press **Enter** to show a list of available channels/codes.
2. Move the **Rocker** up or down to scroll through the selections. Because not all the items fit in the window, a slider bar on the right side indicates your current position in the list.
3. Select one of the selections, and press **Enter**.

To adjust the Volume and Squelch Level:

1. Press the Volume Control (**V**) key to open the Volume/Squelch Level Control window.
2. Move the **Rocker** up or down to adjust the volume level.
3. Use the **Rocker** to set the squelch level by moving the slider all the way to the left to unmute the background noise (weak signals that you do not want to hear). Then slowly move it to the right until the background noise stops. The squelch is set.

Scanning and Monitoring

Use the Scan option to scan through the available channels for activity. As the unit scans and detects activity on a channel, it pauses on that channel/code for a few seconds, then continues scanning. If you transmit during that pause, the transmission is on that channel. However, if you transmit when the scan has not paused, the transmission uses the channel set before scanning.

When the Rino is scanning and it receives an incoming signal, the Rino automatically decodes the code used by the incoming signal and uses that code when it transmits back.

Use the Set Scanlist option to pick which channels/codes to scan. Selecting specific channels/codes reduces the scan time and helps prevent missing a transmission. The Scanlist has option menu choices to Scan Current Codes or Scan All Codes. Choosing Scan Current Codes scans only the channel and code combination in memory.

Use the Monitor option to listen to a single channel for all activity on the current channel. Using the Monitor option

temporarily turns off the squelch, allowing you to hear the open channel. If you see an “Activity...” message, there is activity on the selected channel, but the incoming signal is not audible if it does not match the code. Choose “monitor” to hear all the activity on a channel.

To scan or monitor a channel:

1. Select the **Scan** or **Monitor** button. **Scan** starts searching through the available channels.
Monitor opens the channel to listen to any radio transmissions on that channel.
2. To stop using either option, select the button.

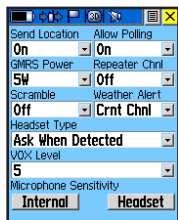
To set up a Scanlist:

1. Open the option menu and select Setup Scanlist.
2. To add or remove a channel from the list, select the channel and press **Enter** to add or remove the check mark in front of the name. Only channels that are checked are scanned.
3. To select all channels or clear all channels, select either the Select All or Clear All.
4. To Scan Current Codes, select the option menu, choose a setting, and press **Enter**.

Radio Page Option Menu

Use the Radio page option menu to customize aspects of your Rino such as setting up the radio, programming call and ring tones, and setting up a scanlist.

Setup Radio



Setup Radio Page

The Setup Radio option opens the Radio Setup page.

- **Send Location**—enables/disables the peer-to-peer positioning feature.
- **Allow Polling**—enables/disables your ability to respond to a polling request from another Rino.
- **GMRS Power**—sets the power level used to transmit GMRS channels (1-7, 15-22 and repeater channels 15R-22R, if applicable) 1/2 watt is used for FRS channels 7-15. If the battery is too low for higher power levels, it decreases the transmit power and sends a message.

- **Scramble**—adds a level of privacy to your conversations. When On, the voice transmission sounds garbled to other non-scrambled radios.



NOTE: When Scramble is set to On, in order for peer-to-peer and Send Location features to work, the receiving radio must have Scramble enabled also.

- **Repeater Channel**—use this option to turn On/Off GMRS repeater channels 15R–22R. GMRS repeater channels are not available in Rino units sold in Canada.
- **Weather Alert**—when Weather Alert is enabled (see Weather Radio section), the receiver is set to look for weather alert tones either only on the current channel or on all channels.
- **Headset Type**—chooses which accessory headset or microphone you are using with the unit, or allows the unit to automatically detect the type. If you use more than one type of headset or microphone, set the unit to “Ask When Detected” before changing accessories.



NOTE: If the headset has a PTT (Push to Talk) button, it must be pressed for the unit to detect the headset.

- **VOX Level**—controls the sensitivity level of any Voice Operated Transmission (VOX) accessory. VOX accessories allow you to use the unit hands-free. A lower VOX setting is recommended for quiet environments whereas a higher VOX setting should be used in noisy environments. Setting the VOX level to 5 is recommended, but it can be necessary to adjust the level to achieve the voice trigger level. You can hear yourself talking in the headset when transmitting successfully using VOX.
- **Microphone Sensitivity**—set the sensitivity of the internal microphone and the sensitivity of a headset microphone. When selected, a sensitivity adjustment slider appears. Adjusting the sensitivity requires the assistance of another radio user to advise of the voice quality received while adjusting the slider.

Setup Tones

- **Call Tone**—when the Call key is pressed, an attention tone is transmitted. Choose from 10 tones.
- **Roger Tone**—when the Talk key is released, a tone is sent to signify the end of the transmission. This option allows you to choose one of four tones, or set the tone to Off.
- **Ring Tone**—when an incoming transmission is received, an attention tone sounds. This option allows you to choose one of 10 tones or set the tone to Off. The Ring tone does not sound again until there has been 45 seconds of radio inactivity.
- **Vibrate**—choose from On or Off to have the unit vibrate when an incoming transmission is received. Once received, the unit does not vibrate again until there has been 45 seconds of radio inactivity. The unit also vibrates at Power On when set to do so.
- **Message Beep**—Choose from 19 options or off to have the unit emit a tone when a message is received.

- **Key Beep**—choose from four tones or off to emit a tone when a key is pressed.
- **Power Beep**—enable or disable the unit on and off tone.
- **Turn Warning (Early)**—choose from 19 tones or off to signal an upcoming turn on a route.
- **Turn Warning (Final)**—Choose from 19 tones or off to signal the final turn on a route.
- **Proximity Alarm Tones**—access by selecting the options menu. (See [page 55](#) for details.)

A “Set Quiet Mode” option is available in the options menu to mute all tones, except proximity alarm tones.

Setup Scanlist

Refer to “Scanning and Monitoring” for complete information about this feature and the options in this page.

Use Weather Radio

Available for the Rino 530HCx only, the Weather Radio provides a constant update of the weather conditions. The Weather Alert feature further enhances the Weather Radio by automatically detecting any weather alert tones if you are not actively transmitting or receiving with the radio.

To access the Weather Radio, select the Weather button and press **Enter** or select the Radio page Option Menu button. Press **Enter** when Use Weather Radio is selected to turn on the weather radio. You can also access the Weather Radio through the Shortcuts Menu.

When the Weather Radio is on, a “Ready To Receive Weather” message appears if no signal is present or the squelch is set too high. A “Receiving Weather” message is shown if weather is being received, if squelch is too low, or monitor is on. The Weather Radio has a separate squelch setting from the FRS/GMRS radio.

Change the Weather Radio channel in the same manner as changing the FRS/GMRS radio channel. There are seven Weather Radio channels (1 through 7) available.

Selecting the “Seek” button increments the radio to the next active weather channel. Selecting the “Monitor” button monitors the selected channel for activity.

Use Weather Alert

When the radio is on, Enable Weather Alert is at the bottom of the option menu. Press **Enter** when Enable Weather Alert is selected to turn it on. You can turn the Weather Radio off and continue radio operations.

When a Weather Alert tone is detected, the Rino automatically turns on the Weather Radio and broadcasts the Weather Alert if you are not actively transmitting or receiving on the radio. The volume changes to 3/4 the maximum when a Weather Alert is broadcast. Select Disable Weather Alert to turn off this feature.

To turn the weather radio off, press **Enter** when **Use FRS/GMRS Radio** is selected. This switches back over to the FRS/GMRS radio operation. Weather Alert is disabled whenever the FRS/GMRS and Weather Radio is off.

Turn Radio/GPS On/Off

Press **Enter** for either of these two options to toggle them from on to off. For example, to turn GPS off, press **Enter** when Turn GPS Off is selected.

Status Window

The Status Window on the bottom half of the Radio page shows current GPS and radio status, and radio actions.

GPS Status

The GPS signal bars indicate the strength of satellite arrays overhead. More bars mean more satellites in view.

Radio Transmission/Reception Status

As the radio transmits and receives, a variety of messages appear and indicate the type and status of the transmission or reception.

Radio Page Status Indicators

The Radio page status bar shows icons and the status window shows both messages and icons to describe current operating conditions, depending on what you are doing. See below for an explanation of messages and icons.

Message

Activity on channel *A signal is being received, but doesn't match the code*

Radio Off *The 2-way radio is turned Off*

Ready to transmit on FRS *FRS channel is selected and you can transmit*

Ready to transmit on GMRS *GMRS channel is selected and you can transmit*

Receiving transmission *You are receiving a transmission on the selected channel*

Ready to receive weather *Set to a weather channel and waiting to receive weather broadcast*

Receiving weather *Receiving a weather broadcast*

Radio Status

Radio 
Radio feature off

Radio 
Transmit power at 1/2 watt

Radio 
Transmit power at 2 watts

Radio 
Transmit power at 5 watts

GPS Status

GPS **Off**
GPS receiver off

GPS 
Acquiring satellites

GPS 
Weakest signal

GPS 
2D GPS location

GPS 
3D GPS location

GPS 
3D GPS location

GPS 
Strongest signal

Status Bar


Radio on


Radio receiving


Radio transmitting


Peer-to-peer on position ready to transmit


GPS on - Position Ready


Weather Alert on

Using the Rino Radio Features

Your Rino provides many features, such as transmitting your location and receiving contact information.

Peer-to-Peer Positioning

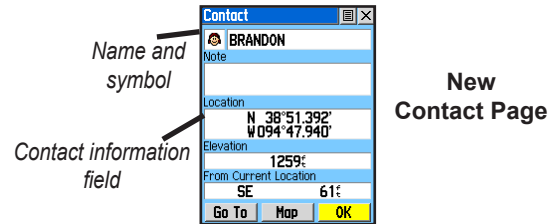
The Rino's most unique feature is being able to send its location to another Rino, which is called Peer-to-Peer positioning. With peer-to-peer positioning enabled (see the "Setup Radio" section) and a GPS position, whenever you press and release either the Call key or the Talk key, the unit automatically sends out its location. This information is available to all other Rino users that are monitoring the same channel and squelch code. You can track the movement of other Rino users and navigate to their location. Locations can only be sent once every 30 seconds due to FCC restrictions.

To transmit your location to other Rino users:

1. Enable **Send Location** (see "Setup Radio").
2. Press and release either the **Talk** or **Call** key. A bright flag on the Status Bar indicates the unit is ready to transmit its position. A dimmed flag indicates the unit is waiting for the 30 second delay.

New Contact Page Overview

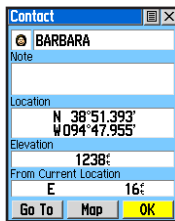
The first time that a signal is received from another Rino user, a New Contact page is shown. From the New Contact page you can show their location on your Map, Go To their location, or select **OK** to add it to the contact list. Press the **Page/Quit** key to disregard the contact.



The Rino can manage up to 50 contacts at any time. Each time you receive a signal from a contact, your map is updated showing the new position. A track log of their movement is created and shows on your map (see the "Track Logs" section). After a contact is established, a "<contact name> Updated" message briefly appears at the bottom of your display each time the contact updates.

All contacts are listed on the Find Contact page and

are also shown in the contact bar on the Map page. Contacts behave like waypoints and count towards the 500 maximum waypoint total. If the contact did not have a GPS location on the last transmission, the last known position appears overlaid by a question mark in the location field. To view the contact details, use the **Rocker** to move to the next data field to add or change information.



Use the **Rocker** to view or edit different contact data.

To accept a new contact:

1. When a new contact is received, the New Contact page automatically appears.
2. Select **OK**. If you do not select **OK**, the contact is not saved.

To review a contact and contact details:

From the Map page, select the selected contact on the Contact Bar and press **Enter**. As you select the contacts on the Contact Bar, the Map page shows its name, direction and distance

To change contact details:

The Elevation, Position, and Note fields can be manually edited.

Sending a Location

Use the Rino to send a specific location to other Rino users. You can send any point found from the Find menu. If the unit needs to wait until 30 seconds elapse since the last position transmission, a “Waiting to send location...” message appears until the Rino is able to transmit. If a location is sent more than once, a number is automatically

added to the end of the name (for example: CAMP, CAMP 1, CAMP 2, etc.).

To send a location:

1. Press and hold **Enter** until the Shortcuts Menu appears.
2. Select **Find**.
3. Select the wanted category and press **Enter**.
4. Depending on which category you choose, select an item to view the Information page.
5. From the information page, open the option menu.
6. Select **Send Location** and press **Enter** again. The unit now sends the point to the other Rino users on your channel/squelch code.

Map Page


The Map page shows your present position and direction of movement using a triangular Position Icon that is shown on the map. As you travel, the map display leaves a “trail” (track log) of your movements.

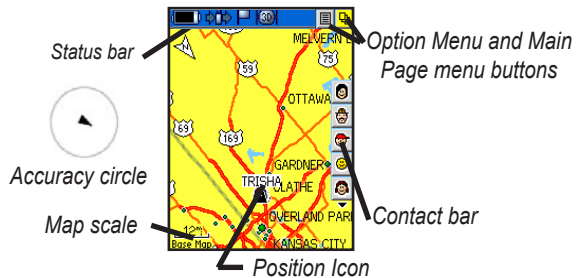
The Map page can show a higher level of detail than the basemap provided with the unit (i.e. residential streets, parks, etc.), if optional Garmin MapSource data is used. When using MapSource data, the word “mapsource” appears below the map scale whenever you zoom in to view map details.

At the top of the page, you can choose to show either the Contact Bar, Data Fields, Guidance Text, or only the Map.

Selecting the contact on the Map page and pressing the Call key polls the contact.

In many instances the map shows an Accuracy Circle surrounding the Position Icon. The Rino uses both map resolution and GPS accuracy in defining your location within the circle.

Use the Pan Map feature (accessed from the Map page option menu), to move a small outline arrow (Map Pointer)  about the page to select and identify map items or to scroll the map and view areas not shown.



To view a Contact from the Map Page:

1. Select the **Contact** icon using the **Rocker**. As you select the contacts on the Contact Bar, the Map page shows its name, direction, and distance.
2. Press **Enter** to view the details of the contact.
3. Press the **Rocker** to the left or right to re-center the map on your current position.

The scale can be changed from 20 feet to 500 miles. A lower zoom scale shows less area but more map detail, while a higher zoom scale shows you a larger area with less map detail. The **Z** (Zoom) key on the front right of the unit and **Rocker** allow you to zoom in and out on the map. Press the **Z** (Zoom) key from any page (other than the Map page) to open the Map page.

To change scales on the Map Page:

1. Press the **Z** (Zoom) key to open the Zoom window.
2. Use the **Rocker** key to change the map scale in order to show more map area with less detail or less map area with more detail.
3. Press and hold up or down on the **Rocker** to zoom the map scale rapidly. Press **Enter** or in any direction to close the Zoom window.

The map scale in the lower left hand side of the display is shown in units of measurement selected in the Units field of the Unit Setup page (accessed through the Main Menu Setup page). If you zoom in too far and the resolution is exceeded, the word, “overzoom” appears.

Map Page Options

Map page options allow a variety of operating and custom features for your Rino. The Map page options are:

- **Pan Map**—moves the Panning Arrow (Map Pointer) about on the map. Refer to the “Using the Pan Map Option” section for complete instructions.
- **Stop Navigation**—stops navigation of a Go To, Route or Track in progress. When you are not navigating to a destination, the Stop Navigation option is “grayed out” and is non-functional.
- **Recalculate**—recalculates the current route.
- **Show... Data Fields**—shows two, three, or four navigation data fields or one or two wide fields, Map Only, and Contacts. Data fields can be programmed to show various data options.
- **Guidance Text**—shows guidance information such as direction to turn at the next intersection. It can be set for Always Show, Never Show, or Show When Navigating.

- **Setup Map**—opens the Setup Map pages, which allow you to tailor the map to your needs such as changing text size, map orientation, and map detail. Refer to the “Setting up the Map” section for complete instructions.
- **Measure Distance**—shows the distance from one point on the map to another.
- **Turn Declutter On**—turns the Declutter feature on to reduce the amount of map details when zoomed out.
- **Restore Defaults**—returns the Map page to the original factory settings.

Using the Pan Map Option

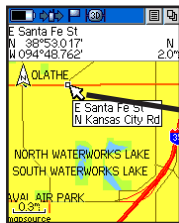
The map panning function is activated from the option menu. Use the **Rocker** to move the map pointer.

Press **Enter** to mark the arrow location or view the map item information page. The option menu allows you to: send the location of that item, project a waypoint from it, save it as a waypoint, set a proximity circle around it, add it to a route, or view the Sun & Moon phase or view Hunt

& Fish information for that location. On-screen buttons at the bottom of the page allow you to Go To the map item, show it on the map or to select **OK** and return to the Map page. Press the **Page/Quit** key to stop panning the map.

To Find an item near the map pointer:

1. Press and hold **Enter** in to open the Shortcuts Menu.
2. Select **Find** to view items. Select the category you want to search (waypoints, contacts, etc.). The Rino then searches for the items nearest the location of the map pointer.



Map page with panning arrow

Programming the Data Fields

Select Show... Data Fields to view from one wide, two, two wide, three, or four optional data fields at the top of the screen that can be programmed to provide a variety of travel and navigation information.

To program a data field:

1. Use the **Rocker** to select the data field and then press in to view the list of data options.
2. Select to select the option and then press **Enter** to change the data field type.

Data Field Options

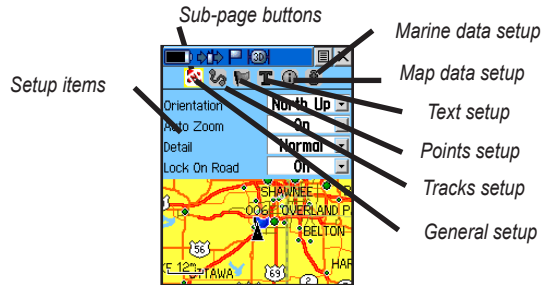
The data field options apply to the Map page data fields and the Trip Computer data fields.

Guidance Text

The Guidance Text option indicates upcoming intersections, points, or direction to navigate. The three options are: Always Show, Never Show, and Show When Navigating.

Setting up the Map

The Setup Map option shows the six Map Setup pages, each accessed by an on-screen button.



To use Map Setup options:

1. Select **Setup Map** from the options menu and then press **Enter** to open the Map Setup page.
2. Press right or left on the **Rocker** to select the selected sub-page button, which shows the options for that sub-page.
3. Press up or down on the **Rocker** to select an item on the list. Press right to return to the sub-page buttons.

4. Use the **Rocker** to select the preferred option and then press it in to activate.

General Setup

- **Orientation**—Track Up or North Up; fixes the top of the map display to the current track heading or to a north heading.
- **Below**—sets the map scale at which Track Up appears. Above that scale the map reverts to North Up.
- **Auto Zoom**—On or Off; automatically scales the map to show both your current location and the next point to which you are navigating.
- **Detail**—Most, More, Normal, Less, or Least; controls how much map detail you see.
- **Lock on Road**—On or Off; available only if MapSource data is loaded. When on, the triangle icon locks to the road that you are traveling.

Tracks Setup

- **Saved Tracks and Track Log**—(Scale options) Off, Auto, or 20 ft–500 miles, sets the maximum scale at which the feature should appear on the screen. Some types of data appear only at certain zoom scales.
- **Track Points**—select the number of track points per track. Up to 10,000 active Track Points allowed.
- **Go To Line**—Bearing to or Course line shown on a Go To route.

Map Points Setup

- **Map Points, User Waypoints, Street Label, and Land Cover**—Off, Auto, or 20 ft–500 miles; sets the maximum scale at which that feature should appear on the screen. Some types of data appear only at specific zoom scales.

Text Setup

- **Map Points, User Waypoints, Street Label, and Land Cover**—None, Small, Medium, or Large; control the size of the text shown.

Map Information Setup

- **Show**—check box; check mark determines if map data is used or not. Option Menu allows you to choose to show all, show none, or show specific MapSource Data.

Marine Setup

- **Marine Colors, Spot Soundings, Light Sectors, and Symbol Set**—Options for categories are On, Off, and Auto.

Measuring Distance

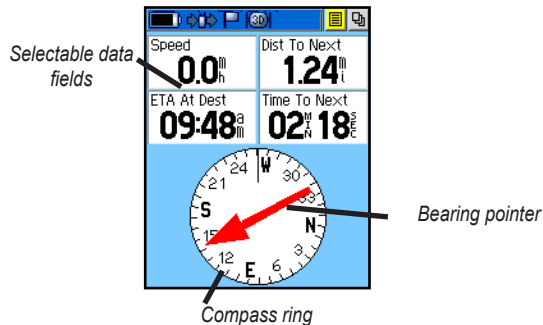
To use the Measure Distance option:

1. Select **Measure Distance** from the option menu and then press **Enter** to show the Panning Arrow. **Ref** appears under the arrow.
2. Use the **Rocker** to move about on the Map page until you reach the point to which you want to measure. A field appears showing the location of the pointer and the direction and distance.
3. To begin measuring from a different point, press **Enter** at the selected location.

Compass Page

Use the Compass page to provide active guidance with a compass ring that shows your course (heading) while you are moving and a bearing pointer to indicate the current direction to your destination (bearing) relative to the course. Data fields at the top of the page provide navigation information.

The Compass Ring functions as a magnetic compass when you are stationary (Rino 530HCx feature only).

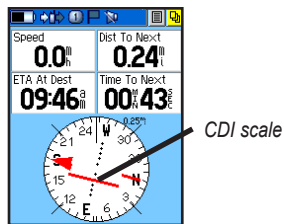


Using the Compass Page

The two main components of the Compass page are the bearing pointer and compass ring. The bearing pointer always points directly to the destination, no matter what your current location might be. The compass ring indicates your heading. While you are navigating a route, the bearing pointer indicates the direction (a bent arrow) of the turn to the next point in the route as well as the direction to the current point.

For example, if the arrow is pointing straight up, you are going directly to your destination. If it points any direction other than up, turn and move towards the direction the arrow is pointing until it points up, and then continue in that direction. If you are using the course pointer option instead and you drift away from the original line of travel to your destination, the course deviation indicator (CDI) provides graphic indication of drift (right or left) and shows the distance off course.

When you are not on an active Go To, track, or route (in other words, not traveling to a recorded destination), the compass ring shows your heading while you are moving, but the data fields at the top of the page do not show any destination related data, such as estimated time of arrival.



Compass page with course pointer and course deviation indicator (CDI) scale active.

To stop navigating:

1. Open the option menu of the Compass, Highway, or Map page.
2. Select **Stop Navigation**.

Compass Page Options

- **Sight ‘N Go**—use the Sight ‘N Go feature to locate a landmark visually and then lock in a magnetic heading to it. (Rino 530HCx feature only.)
- **Stop Navigation/Resume Navigation**—cancels/resumes navigation.
- **Recalculate**—recalculates the active route.
- **Bearing Pointer/Course Pointer**—toggle between bearing (always directed toward your destination) and course (shows amount of correction needed to get back on course.)
- **Show Data Fields**—toggle to show data fields on the display or removing the data fields.
- **Calibrate Compass**—calibrates the electronic compass. Follow the on-screen instructions. (Rino 530HCx feature only.)
- **Restore Defaults**—return options and data field choices to factory designations.

Using Sight 'N Go

Available for the Rino 530HCx only, use this feature to visually locate an object and navigate to it.

To use Sight 'N Go to navigate:

1. Use the **Page/Quit** key to access the Compass page and then use the **Rocker** to access the option menu.
2. Use the **Rocker** to select Sight 'N Go and press in. The compass ring with pointer is in-line with the two sighting marks on the case.
3. Hold the Rino 530HCx at eye level and line up the two sighting marks on the case with a distant object. Press **Enter** to lock direction. The Sighting page opens.
4. Select Set Course to open the Compass page.
OR
5. Select Project Waypoint to open the Project Waypoint page. **Enter** an estimated distance and then select GoTo to navigate to the point using the Map page.

6. Follow routing directions on the Map page or use the compass for bearing or course navigation.

Sighting marks



*Rino 530HCx held level
for Sight 'N Go*

To view your destination as a waypoint, select **Project Waypoint** and press **Enter**. To re-sight the destination, press **Enter** when Re-Sight is selected.

Calibrating the Compass

When you first use the Rino 530HCx, the electronic compass must be calibrated outdoors and away from metal objects. The accuracy of the electronic compass is adversely affected if the unit is held near items that generate magnetic fields. Recalibrate after significant events such as location or temperature changes.

To calibrate the Electronic Compass:

1. From the Compass page, use the **Rocker** to select the Option Menu button and press **Enter**.
2. Select **Calibrate Compass** to view the Calibration page.
3. Press **Enter** to activate the Start button and then follow on-screen directions.



Calibrating the compass: Hold the unit face up and level while slowly rotating it.

- If a “Calibration Failed” message appears, repeat the process.
- When successfully calibrated, a “Calibration Completed” message appears.

To turn the compass on and off:

Press and hold the **Z** (Zoom) key.

Altimeter Page

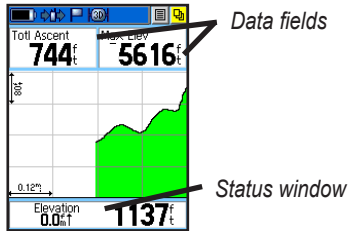
Available for the Rino 530HCx only, use the Altimeter page to view the current elevation, rate of ascent/descent, a profile of elevation changes over distance or time, or a profile of pressure changes over time. Use the Altimeter page’s option menu to select from a variety of display options such as plotting over time, plotting over distance, showing the zoom ranges of measurement, viewing elevation or pressure points, and resetting data displays. There are two data fields to view a variety of current and recorded pressure and elevation related data.



NOTE: To achieve the greatest accuracy, the altimeter should be calibrated. Refer to [page 33](#) for information on calibrating the altimeter.

The Status Window is located at the bottom of the page and shows the current elevation and your current rate of ascent or descent when moving. It also shows the ambient or the barometric pressure.

The Plot or Profile Field is located in the center of the page, configure it to show either elevation or ambient pressure or barometer plots as selected from the Altimeter page option menu.



Altimeter Page Options

- **Plot Over Time/Distance**—plots the changes in elevation over a length of time or over a distance. When Plot Over Distance is selected, Plot over Time is shown in the option menu (and vice versa).
- **View Pressure/Elevation Plot**—shows a record of changes in barometric pressure or elevation for a set period of time.

- **Plot Ambient/Barometer**—changes between plotting ambient pressure* versus time and barometric pressure versus time.
- **Zoom Ranges**—sets the zoom range for elevation, distance, or time.
- **Pan Plot**—scrolls through the collected data plots to view elevation, time of day, and date a specific point was created.
- **Reset...**—clears recorded data from the page to begin recording new data.
- **Calibrate Altimeter**—increases the accuracy of the altimeter. You must know your elevation or pressure to calibrate the altimeter. See [page 33](#).
- **Restore Defaults**—returns to the original factory settings.

* Ambient Pressure is the actual pressure at your location. Barometric Pressure is the ambient pressure measured relative to sea level.

Viewing Pressure/Elevation Plots

Select the View Elevation Plot option, to plot a profile of elevation changes that occur as you navigate over a set distance or period of time. Use View Pressure Plot to view a record of changes in the ambient or the barometric pressure for a set period of time.

To view elevation or pressure plots:

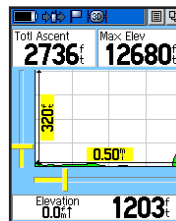
1. Use the **Rocker** to select the preferred option from the option menu and then press in to view the plot.
2. Adjust the time and distance measurement using the Elevation Plot Zoom Ranges feature.
3. To clear the plot and start a new one, you must clear the track log.

Adjusting the Zoom Ranges

Set the zoom ranges for elevation, distance, or time when you use the View Elevation Plot. Change the ranges for the horizontal and vertical scales.

To adjust zoom ranges:

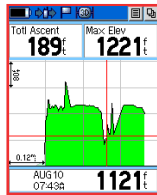
1. Select the type of plot you want to show and use the **Rocker** to select Zoom Ranges from the option menu and press **Enter**.
2. Move the **Rocker** up or down to adjust the vertical distance and left or right to adjust either the time or distance. Press **Enter** to return to the plot.



Zoom range selection

Pan Plot

Use the Pan Plot option to view a single point along an elevation or pressure profile. When the pointer is stopped at a location along the profile, the page shows the elevation, time of day and date the point was created.



Pan Plot Option Page

To use the Pan Plot option:

1. Use the **Rocker** to access the option menu.
2. Select the **View Points** option to view the View Points page and use the **Rocker** to scroll the profile past the pointer in the center of the page.
As the profile moves past the pointer, the status window at the top of the page changes to show the date, time, and altitude for the point indicated.

Calibrating the Altimeter

Because the Rino 530HCx relies on the barometric pressure to determine the elevation and the pressure at any given elevation can fluctuate, calibrate the altimeter to increase its accuracy. You must know the elevation (from a map point or other reliable data) or the pressure (calibrated to sea level) for your current location.

To manually calibrate the altimeter:

1. Use the **Rocker** to access the option menu.
2. Select the **Calibrate Altimeter** option to open the Calibration page.
3. At the message asking “Do You Know The Correct Elevation?” select **Yes** to enter your elevation. When finished, select **OK** to return to the Altimeter page. If you don’t know your current elevation, select **No** to move to the pressure calibration page. At the message asking, “Do You Know The Correct Pressure?” select the on-screen **Yes** button to enter your pressure. When finished, select **OK**.

MAIN MENU

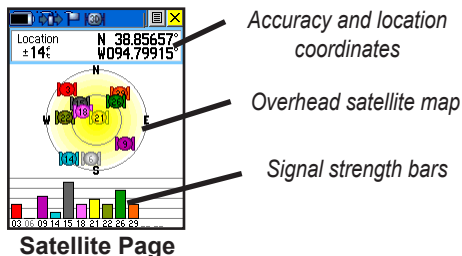
Press the **Page/Quit** key to cycle to the Main Menu or use the **Main Page** button at the top of each main page.

Satellite Page

The Satellite page provides a picture of satellite signal tracking, tells you when the unit is ready for navigation, and shows your location coordinates.

To access the Satellite Page:

1. Press the **Page/Quit** key or the **Main Page** button to open the Main Menu.
2. In the Main Menu, scroll down and select **Satellite**.



Satellite Page

Satellite Strength

At least three satellite signals are needed to determine your location, otherwise the unit shows a “Poor Satellite Reception” message with four options:

- **Use with GPS Off**—select this option if you want to turn GPS off.
- **New Location**—select this option if you have moved more than 600 miles (from where you last used the unit).
- **Restart Search**—select this option if today is not the date provided.
- **Continue Acquiring**—select this option if no other option applies.

Satellite Page Options

- **Use With GPS Off**—use this option when you are indoors or your view of the sky is obstructed to save battery power.

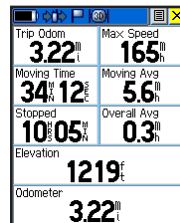
- **Track Up/North Up**—orient the satellite skyview by selecting ‘Track Up’ (direction of travel) or ‘North Up’ (satellite skyview oriented to the north).
- **Display Color Options**—you have two color options for showing the satellite array and signal strength bars, Single or Multicolor.
- **New Location**—if you are more than 600 miles (from where you last used the unit), select the **New Location** and then the **Use Map** options to approximate your location. Once a location fix has been made, this option is grayed out.
- **GPS Elevation**—use to view the elevation at your current location as calculated by the GPS receiver.

To enter a new location:

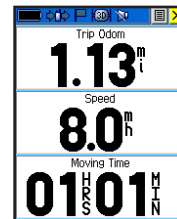
1. Select the option menu at the top of the page and then press **Enter**.
2. Select **New Location** to view choices of Auto or Use Map.

Trip Computer Page

The Trip Computer page shows, by default, eight different types of navigation data. Choose Big Numbers to arrange the page in three large data fields.



*Trip Computer page,
small numbers*



*Trip Computer page,
big numbers*

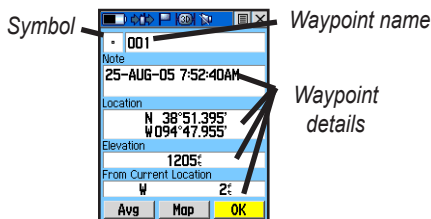
Each data field is selectable and contains one of many data information options. When the data field title is selected, press **Enter** to select a new data field choice.

Trip Computer Page Options

Use the option menu to reset the Trip Computer data when you are ready to start a new trip, choose between Big or Small Numbers, and Restore Defaults.

Mark Waypoint Page

Use the Mark Waypoint page to mark and record your current location as a waypoint. It shows the waypoint, a waypoint symbol, date and time, location coordinates, approximate elevation, and direction and distance from your current location. The Rino can store 500 waypoints.



Mark Waypoint Page

To mark your current location and open the Mark Waypoint Page:

1. Press and hold **Enter** to open the Shortcut Menu.
2. Select **Mark Waypoint** to save your current location as a waypoint.
3. If you do not want to save it as a new waypoint, select the **Close** button and press **Enter** to cancel.

Creating Waypoints

To create a waypoint for a map feature contained in the Find feature:

1. Access the **Find Menu** from the Main Menu and open a categories list to select a map item.
2. Press **Enter** to view the map item information page.
3. Use the **Save** button to save the item as a waypoint.

To create a waypoint using the map panning arrow:

1. With the Pan Map feature active (refer to the Map page section of this manual), move the panning arrow (map pointer) on the map to the location or map item you want to mark, then press **Enter**.
2. Select **Yes** when asked you if you want to save the location as a waypoint.

Averaging a Waypoint

Averaging a waypoint location increases the accuracy of a waypoint at your current location by taking multiple position readings and averaging the results.

To average a waypoint:

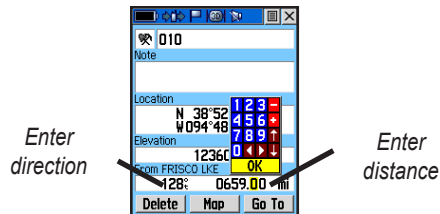
Select **Average Location** from the options list or the **Avg** button on the Mark Waypoint page when marking a new waypoint only.

Projecting a Waypoint

Project a waypoint from any map item to establish a new waypoint on a bearing projected from that item.

To project a waypoint:

1. Select a map item from the Find Menu.
2. Open the option menu and select **Project Waypoint**.
3. Select either the bearing or distance field, then press **Enter** to open the numerical keyboard. Enter the new bearing or distance, then select **OK**.



Project Waypoint Page

To edit a waypoint:

Use the Find Menu to view the waypoint/contact or select it on the Map page and press **Enter**.

To move a waypoint by dragging it:

1. Use the Find Menu to view the Waypoint page for the waypoint you want to move.
2. Select the **Map** button to view the waypoint.
3. With the waypoint selected by the panning arrow, press in and release **Enter**. The word "Move" appears beneath the panning arrow.
4. Use the panning arrow to drag the waypoint to the new location and then press **Enter** to place it.

Find

Use the Find Menu to search for marked locations, cities, and exits included in the Rino basemap. Additional categories appear depending on the optional MapSource compatible detailed maps or BlueChart data loaded in the unit. When you open a Find category, it contains those items near your current location or the pointer (if active).

The options menu for each category contains a submenu of search options: Find By Name, Find Nearest (near your current location), Select Symbol (for location), Change Reference (by moving the pointer to a new location), Nearest Containing (a keyword you enter), and Select Category (for those groups, such as Food or Lodging). Use these options to shorten your search.

To open the Find Menu:

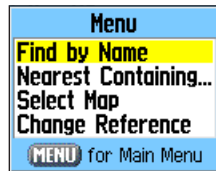
From the Main Menu, select **Find**.

Find By Name

Use the Find By Name option, if you know the name of the location you want to find.

To find a location using Find By Name:

1. From the Find Menu, use the **Rocker** to select the type of item you want to find.
2. Open the options menu and select **Find By Name**.
3. Use the on-screen keypad and enter the name of the location you want to find. When the Find list contains a match, highlight **OK**.
4. Select the item in the Find list. The information page opens, allowing you to save the item as a location, show the item on the map, or automatically create a route to the item (Go To).



Find options menu

Recent Finds

The Recent Finds page contains a list of the last 50 items you have viewed while searching.

To go to a recently found item:

1. From the Find Menu select **Recent Finds**.
2. Select the item you want to open the item's information page.
3. Select **Go To**.

Find Item Information Page Options Menu

The options menu for each information page contains options for using a Find item as a tool for navigation.

To use the Options Menu:

With an information page open for a Find item, open the options menu.

- **Average Waypoint**—waypoints only, see [page 37](#).
- **Poll Location**—see [page 14](#). (Send Location must be enabled.)
- **Send Location**—see [page 14](#).

- **Project Waypoint**—See [page 37](#).
- **Find Near Here**—see below.
- **Change Reference**—See [page 37](#).
- **Set Proximity**—see [page 55](#).
- **Add To Route**—see [page 46](#).
- **View Sun and Moon**—see [page 56](#).
- **View Hunt and Fish**—see [page 56](#).
- **Map Information**—show the detailed map from which the map item originated.

To find an item near another item:

1. From the Main Menu, select **Find**.
2. Select a category on the Find List.
3. Select an item from the list, and open the information page.
4. Open the options menu and select **Find Near Here** to open a list of categories.
5. Select a category to open a list of items near the item.

To find an item from a location on the map:

1. From the Main Menu, select **Find**.
2. Select a location on the Find Menu.
3. Open the options menu and select **Change Reference** to open the Map page.
4. Use the **Rocker** to pan the arrow (pointer) to the map location you want, and press **Enter** to show a list of items near the new map location.

Finding a Waypoint

The Marked Waypoint page contains a list of all saved waypoints. Waypoints are stored in alphanumeric order and are also identified by a symbol assigned from a list of symbol types.

To find a waypoint:

1. From the Main Menu, select **Find**.
2. Select **Marked Waypoints** to open the Waypoint page.
3. Select a waypoint, and press **Enter**.

Finding a Geocache

View the list of geocache locations created using your Rino or downloaded from your computer.

For more information about geocaching, go to my.garmin.com, login and click “Go Geocaching”.

To find a geocache:

1. From the Main Menu, select **Find**.
2. Select **Geocache** to open the Geocache page. You can view either found geocaches or those that have not been found.
3. Select a geocache, and press **Enter** to open the information page.
4. Select Go To to navigate to the geocache location.

When a geocache is found, the unit marks the cache as found, logs an entry into the calendar, and provides an option that, when activated, shows the nearest cache.

Finding a City

Select **Cities** on the Find Menu to find any city listed in the mapping database.

To find a city:

1. From the Find Menu, select **Cities**. The Cities page shows a list of cities near your current location.
2. Select a city from the list to open the information page for the selected city.

Finding an Interstate Exit

Use the Exits on the Find Menu to find an interstate exit.

To find an interstate exit:

1. From the Find Menu, select **Exits**. The Exits page shows a list of interstate exits near your location.
2. Select an exit to open the information page with a list of available services near the exit.
3. Select a service from the list to open the information page for the selected service.

Finding an Address

When using detailed mapping data, use Addresses to find an address. Enter the street number, street name, and city, and the find feature matches that data with addresses in the map database.

To find an address:

1. From the Find Menu, select **Addresses** to open the Addresses Search page.
If your unit has a GPS fix, the **<Enter Region>** field is populated with your current region. You do not have to specify a city in the **<Enter City>** field.
2. Select **<Enter Number>**.
3. Enter the street number using the on-screen keypad. When finished, select **OK**.
4. Select **<Enter Street Name>** to open the street list.
5. Use the on-screen keypad to enter enough of the street name to show a match. When finished, select **OK**.
6. Select the best address match to open the Address Information page.

Intersections

This feature also requires detailed mapping data. Follow the basic steps for finding an address when searching for an intersection.

Searching for a Point of Interest

If you downloaded MapSource detailed mapping, use the **All Points of Interest** category on the Find Menu to locate a nearby restaurant, lodging, landmark, public building, or select a category from the Find Menu.

To find a point of interest:

1. From the Find Menu, select **All Points of Interest** to show a list of all points near you.
2. Press **MENU** to open the options menu where you can select options to narrow your search.
3. Select the item you want from the list, and press **Enter** to open the information page for the item.

POI Loader and Custom Points of Interest

Create your own category for points of interest by using the Garmin POI Loader utility, downloadable from the Garmin Web site:

www.garmin.com/products/poiloader/. Follow the Help instructions to use POI Loader.

Using Go To Navigation

The Go To is the basic function used to create a route to a destination (waypoint, city, or point of interest). Once you have accessed the information page for an item, use the Go To button at the bottom of the page to start, using the Map and Compass pages for guidance.

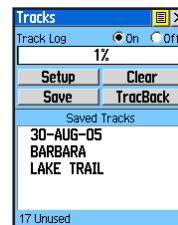
To activate a Go To:

1. Use the Find Menu to access the information page for any preferred destination and use the **Rocker** to select the **Go To** button.
2. Press **Enter** to start navigation. A “Follow Road/ Off Road” prompt appears before the route is calculated if activated in the Routes Setup or you have loaded detailed routable maps.

3. If you select **Follow Road**, a “Calculating Route” message appears with percentage timer to completion. Off Road immediately projects a line to your destination.
4. The Map page is shown where you can observe your movements and a navigation line indicating the path from your current location to your destination.
5. Use the **Page/Quit** key or **Main Menu** button to access one of the other navigation pages, Compass page, Highway page or Active Route page with Turn-By-Turn instructions.

Tracks Page

The Rino draws an electronic bread crumb trail (Track Log) on the Map page as you travel. It contains information about points along its path, including time and position. Save tracks from other Rino users.



Tracks Page

To open the Tracks page:

From the Main Menu, select **Tracks**.

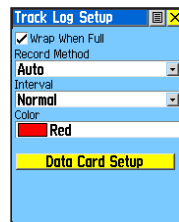
To save and use a Track:

1. Access the **Tracks** page from the Main Menu and select the on-screen **Off** button to pause track logging. When track logging is active, the On button is filled by a dot.

2. Select the **Save** on-screen button and then press **Enter** to view the track log “Do you want to save the entire track?” prompt.
3. If you choose **Yes** the entire track is saved.
4. If you choose **No**, the track is shown on the map along with a panning arrow. You are asked to select a beginning point for the part of the track you want to save. Move the panning arrow to the selected point and then press **Enter**.
5. A prompt then asks you to select the ending point for the saved track. Move the panning arrow to the selected point. Press **Enter** to save the track log and view the Track page. The Track page shows the track name (which can be renamed using the keyboard for data entry), the total distance of the track, track area (if available), a Show on Map option, and on-screen buttons for Delete, Map, OK, and TracBack.

Setting up the Track Log

Set the track recording interval to Distance, Time, or Automatic.



Track Log Setup

To use Track Log Setup options:

1. Select the Tracks page **Setup** button to open the Setup page.
2. Check the **Wrap When Full** option by selecting it and pressing **Enter**. You can select the Record Method and Interval fields to view their options. Interval options change to accommodate the Record Method choices.

To log tracks to the microSD card:

1. With the Track Log setup page shown, select the **Data Card Setup** button, and press **Enter** to open the Data Card setup page.
2. Select the **Log Track to Data Card** option, and then press **Enter** to activate.

This file is a continuous compilation of all track data for that date. As long as enabled, a new file is recorded for each day until the card is filled.

Track logs share card space with MapSource mapping data, so storage space is reduced. Open the **Card Info** option from the option menu to view the amount of card storage space available

3. To read or transfer the .gpx files, connect to your PC and enable the USB Mass Storage feature as explained on [page 54](#). Use Garmin MapSource or another .gpx file-compatible application.
4. To delete these track logs from the microSD card, select individual logs, and then press **Enter**. Use the **Delete All** button to clear the entire list. To avoid data corruption, do not remove the card from the unit while logging tracks.

Using the TracBack Feature

When you are ready to return to where you started, the Rino takes you back by following the track log that you left behind. You can save a total of 20 tracks in the unit memory. When you no longer need a Track Log, press the Clear button to remove it.

To use the TracBack feature:

Select the **TracBack** button and the track is shown on the map and you are prompted to select the point you want to TracBack to.

When the track log memory field reaches 100%, the most recent track points start to overwrite the least recent if the default setting **Wrap When Full** remains selected on the track log setup. To avoid losing track points you want, save the track log when it approaches the 99% mark. The active track log stores up to 10,000 points.

The Saved Track page shows the track and it can also be shown on the Main Map page as you navigate. You can save up to 20 tracks with 500 points per track in the unit. Saved contact tracks count towards this total.

Using Track Profiles

Once you have saved a track, you have an elevation* profile as well. (Rino 530HCx Only)

To view a Track Profile:

1. With the Saved Track page for the track shown, use the option menu to select **Profile**.
2. Press **Enter** to view the Track Profile.
3. At any point on the profile, press Enter to view that point on the map.
4. Open the options menu to use Zoom Ranges and Hide Symbols. To zoom ranges only, press up or down on the **Rocker**.

*Track Elevation Profiles are created from Digital Elevation Models (DEM) maps (MapSource US Topo).

When these types of maps are available, a Use Map Data - Use Track Data option menu appears when you select Profile. Refer to the Garmin Web site:

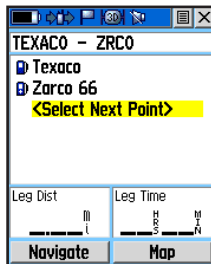
www.garmin.com/cartography/ontheTrail/, for more information about MapSource US Topo maps.

Routes

Use route navigation to create a path to a destination with turn-by-turn directions. The Rino stores 50 routes with up to 250 points each.

To create a route:

1. From the Main Menu, select **Routes**.
2. Use the **Rocker** to select **New** to open the Route page.
3. With the **<Select Next Point>** field selected, press **Enter** to open the Find Menu.
4. Select a route location from one of the Find Menu categories, and open the information page for the selected location, city, exit, point of interest, and so on.
5. Select **Use** to add it to the route.
6. To add more points to the route, repeat steps 3 to 5.
7. Select **Navigate** to begin navigating.



Route Page



Route on the Map Page

Navigating a Route

After you create a route, you can begin navigation immediately or save it to the Saved Routes list.

Routes use existing roadways to calculate a route to your destination. Turns on roadways are added to the Active Route page and are preceded by a guidance message with a graphic of the turn. If there are not enough roads at your location to calculate a route, a message appears.

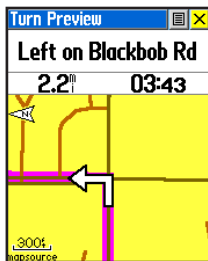
To navigate a saved route:

1. From the Main Menu, select **Routes** to open the Routes page.
2. Select a saved route, and press **Enter** to open the Route page.
3. Select **Navigate**.
4. To stop navigating, open the options menu and select **Stop Navigation**.

Using the Follow Roads option on the Routing Setup page increases the number of turns and shows an Active Route page with a list of turns. If you selected the Off Road option, you can view only the list of points for a route from the Active Route page.

To preview the turns for an active route:

1. On the Routes page, select a saved route to open the page for that route.



Turn Preview Page

2. Select **Navigate** to begin navigation and show the route on the Map page.
3. To view the list of turns on the route, select Active Route from the GPS Applications Menu. To view an individual turn on the list, use the **Rocker** to select it and the Turn Preview page shows the turn and guidance text.

To view all of the turns for an active route:

1. With an active route on the Map page, use the **Main Page** button to open the Active Route page
2. Select any turn on the list and press **Enter** to view the Turn Preview page for that turn.

Editing a Route

To change the name of the route:

1. From the Main Menu, select **Routes** to open the Routes page.
2. Select a saved route.
3. Select the route name field on the Route page.
4. Use the **Rocker** to operate the on-screen keypad and edit the route name.

To review individual route points:

1. Select a saved route.
2. Select a point on the route to open an options menu.
3. Select **Review** to open the information page for that point and select **Delete**, **Map**, or **Go To**.

To delete a route:

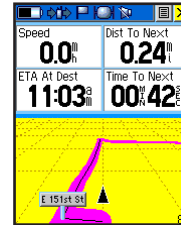
1. Select the route to be deleted, open the options menu, and select **Delete**.
2. To delete all routes, open the Save Routes options menu, and select **Delete All Routes**.

To select the off-road transition for a route:

1. From the Main Menu, select **Routes**.
2. Open the options menu and select **Off Road Transition** to open the Off Route Transition page.
3. Select **Route Leg Transition** to view the list of options.
4. Select the method to use (**Auto**, **Manual**, or **Distance**) when advancing to the next point.

Highway Page

When navigating a route, the Highway page guides you to the destination using data fields and a graphic highway.



Highway Page

The Highway page takes you point by point to your final destination. As you move toward each point on your route, the graphic shows the direction you should move to stay on course to the next point. Use the **Zoom** slider to change the scale settings for zooming in or out.

To navigate using the Highway page:

While navigating, select Highway from the Main Menu, and observe your path of travel displayed on the highway graphic.

Setup Menu

To access Setup Menu:

From the Main Menu, select **Setup**.

System Setup Page

To access the System Setup page:

From the Setup Menu, select **System**.

- **GPS**—choose one of the GPS options other than Normal to significantly save battery power.
- **WAAS**—set Enable or disable WAAS.
- **Battery Type**—set the Battery Type for more accurate battery capacity status when using the optional battery pack for alkaline or NiMH “AA” batteries.
- **External Power Lost**—set the unit to turn off if external power is lost.
- **External Power Connected**—set to power on when connected or to charge the unit only.

Use the option menu to restore defaults, or view the version of unit software and the Unit I.D. number.

Radio Setup Page

See [page 14](#) for detailed instructions.

Display Setup Page

You can choose a display mode, a color scheme for day and for night viewing, adjust the amount of time that the backlighting feature stays on, and set the level of brightness.

To access the Display Setup page:

From the Setup Menu, select **Display**.

- **Display Mode**—set for Auto (changes from day to night mode and back again at dusk and dawn), Day only, or Night only.
- **Color Scheme Selection**—set in Day and Night modes to one of 10 color schemes.
- **Backlighting Timeout**—choose from Stays On or delays of 15 seconds, 30 seconds, one minute, or two minutes.
- **Backlight Intensity Level**—use the slider to adjust the brightness to your preferences.

Tones Setup Page

This setup page allows you to select a unique tone for each of the different tone applications. (See page 14.)

Page Sequence Setup

You can add, remove, or reorder any of the Main pages. The default pages are Radio, Map, Navigation, Altimeter, Trip Computer, and Main Menu.

To move, insert or remove a Main Page:

1. From the Setup Menu, select **Page Seq.**
2. To rearrange a page in the page sequence, select the page and press in. Select **Move**, then move the menu item up or down.
3. To insert a new page, select the page you want to insert it before and press **Enter**. Select **Insert**, then choose a page from the list.

Map Setup

See [page 25](#) for detailed instructions.

Routing Setup

Choose options for route guidance and following roads.

To setup Routing:

From the Setup Menu, select **Routing**.

Geocache Setup

See the Garmin web site for information on geocache locations: my.garmin.com, and click Geocaching.

To setup the Geocache feature:

1. Access the Setup Menu, select **Geocache**.
2. Use the **Rocker** to select the symbol fields if you want to assign other symbols.
3. Select **Yes** or **No** for a calendar entry when a geocache is found.

Marine Alarms Setup

To access the Marine Setup Page:

From the Setup Menu, select **Marine**.

- **Anchor Drag Alarm**—sets an alarm when you exceed a specified drift distance.
- **Off Course Alarm**—sets an alarm to sound.

Time Setup.

To access the Time Setup page:

From the Setup Menu, select **Time**.

- **Time Format**—choose from 12-hour or 24-hour time format.
- **Time Zone**—set to one of the eight US Time Zones, or 24 International Time Zones. Select Other so you can enter the UTC Time Offset.
- **Daylight Saving Time**—On or Off or Auto.

Units Setup

Used by individuals with a working knowledge of map grids and datums.

To access the Units Setup page:

From the Setup Menu, select **Units**.

- **Position Format**—sets the coordinate system in which a location is shown. The default format is latitude and longitude in degrees, minutes, and thousandths of a minute (hddomm.mmm).
- **Map Datum**—sets the description for geographic

location for surveying, mapping, and navigation and is not an actual map built into the unit. The default setting is WGS 84. The unit automatically chooses the best datum based on your chosen format.

- **Distance/Speed**—sets the unit of measurement to show your speed and distance traveled.
- **Elevation (Vert. Speed)**—sets the unit of measurement (Feet (ft/min), Meters (m/min), or Meters (m/sec) to show your rate of ascent.
- **Depth**—select the unit of measurement (Feet, Fathoms, or Meters).
- **Pressure**—sets the unit of measurement (Inches, Millibars, or Hectopascals) to show pressure.

Heading Setup Page

You can select the type of heading modes, North References, or magnetic variation (when set to “User”).

To access the Heading Setup page:

From the Setup Menu, select **Heading**.

- **Display**—choose from Cardinal Letters, Degrees or Mils.
- **North Reference**—choose from True, Magnetic, Grid or User options.

The following features apply to the Rino 530HCx only:

- **Switch to compass heading when below**—enter the selected speed for the Rino 530HCx to switch from using GPS to using the compass for guidance.
- **for more than...**—enter a time limit to switch to the compass. When you travel at the speed entered above for the time entered here, the Rino 530HCx switches from GPS to the compass.

Calibration Setup Page

For the Rino 530HCx only. Refer to [page 29](#) and [page 33](#).

Rino 520HCx and 530HCx Owner's Manual

Altimeter Setup

To setup the Altimeter:

1. From Setup Menu, select **Altimeter**.
2. Select the **Auto Calibration** field to select from on or off. When on, elevation is corrected by GPS.
3. Select the **Barometer Mode** field to specify “Variable Elevation” (used when you are moving) or “Fixed Elevation” (used when stationary.)

Welcome Page Setup

Insert a message when you turn the unit on.

To setup the Welcome Page:

1. From the Setup Menu, select **Welcome Message**.
2. Use the on-screen keyboard to begin entering your message in the **Welcome Message** field.

Interface Setup Page

Choose from different input/output serial data formats.

Use when connecting to external devices.

To access the Interface Setup page:

From the Setup Menu, select **Interface**.

The available interface formats are:

- **Garmin**—the proprietary format used to exchange waypoint, track, and map data with a PC.
- **NMEA In/NMEA Out**—supports the output of standard NMEA 0183 version 3.01 data.
- **Text Out**—uses ASCII text output of location and velocity information without input capabilities.
- **None**—provides no interfacing capabilities.

To select a serial data format:

1. Select the **Serial Data Format** field.
2. Select an option to activate.

To activate USB Mass Storage:

1. Connect the unit to a computer.

2. Select USB Mass Storage and press **Enter**.
3. Double-click on a PC's **My Computer** to observe a new removable disk drive listed.

To view information for the microSD card:

Press the **Menu** key prior to opening the USB Mass Storage page and select “Card Info.”

To transfer files to the microSD card:

1. Double-click the **My Computer** icon on the PC.
2. Browse the PC or Macintosh for the file.
3. For a PC, select the file and select **Edit > Copy**.



NOTE: If you have several network drives mapped to your computer, log on without connecting to the network or click **Start > Settings > Control Panel > Administrative Tools > Computer Management > Storage > Disk Management** and remap a drive letter for the storage device.

4. After data transfer, end the USB cable connection.

Interface Setup Options Menu

The Interface Setup Options Menu contains a Restore Defaults option and an Advanced NMEA Setup option.

Proximity Waypoints

Use this feature to establish waypoints that have alarms.

To use Proximity Waypoints:

1. From the Main Menu, select **Proximity**.
2. Select the **Name** field to view the Find Menu.
3. Select a waypoint from the Waypoints List or from any other group of map points.
4. Select the **Use** button to place the point in the list on the Proximity Waypoints page.
5. Use the **Rocker** to select the Radius field if you want to enter a value different than the default of 1 mile.
6. Select the **Proximity Alarms** check box and press **Enter** to activate the alarm feature.
7. To remove or review a single entry, press **Enter**. To remove all waypoints, select the **Option Menu** button and choose **Remove All**.

To select alarm tones and proximity alarms:

1. Select the **Proximity Alarm Tones** button and select each alarm field to view the list of tones.
2. Select a tone from the list.
3. Place a check in the box at the bottom of the page to activate.



NOTE: Speed Alerts are points obtained from services provided by using POI Loader.

Calendar

To access the Calendar:

From the Main Menu, select **Calendar**.

Alarm Clock

To access the Alarm Clock:

From the Main Menu, select **Alarm Clock**.

Calculator

To access the Calculator:

From the Main Menu, select **Calculator**.

Stopwatch

To access the Stopwatch:

From the Main Menu, select **Stopwatch**.

Sun and Moon

To access the Sun and Moon Page:

From the Main Menu, select **Sun and Moon** to view the Sunrise/Sunset and Moon phases.

Hunt & Fish

To show hunting and fishing predictions for a specified date and location:

1. From the Main Menu, select **Hunt & Fish**. The current date and location appear in the date and location fields.
2. To view the predictions for a different date, select **Date** to open the on-screen keypad.
3. To view the predictions for a location, select the **Location** field to open the New Location options menu.

4. Choose **Use Map** to select a point on the map using the pointer arrow. Press **Enter** to show the table for that location.

Games Menu

The Games Menu contains six games. Some games use GPS as a virtual component during play.

To open the Games Menu:

From the Main Menu, select **Games**.

APPENDIX

Specifications

Physical

- Case:** Fully-gasketed, high-impact plastic alloy, waterproof to IPX7 standards (waterproof to a depth of one meter for 30 minutes)
- Size:** 5.1" H x 2.3" W x 1.8" D; 7.5" H with antenna (13.0 x 5.8 x 4.6 cm; 19 cm with antenna)
- Weight:** Approx. 10.3 ounces (294 g) with Li-Ion battery pack; 6.2 ounces (175g) without battery pack
- Display:** 1.3" x 1.7" (3.3cm x 4.3 cm), 176 x 220 pixels, 256- color transreflective TFT
- Compass:** Accuracy; +/- 5 degrees¹, resolution ; 1 degree
- Altimeter:** Accuracy; +/- 10 feet¹, resolution; 1 foot
- Temperature Range:**
 -4° to 140° F (-20° to 60° C) (operating range)
 32° to 113° F (0° to +45° C) (charging range)

Performance

- GPS Receiver:** WAAS Enabled, Differential-ready, 12 parallel channel
- Acquisition time:**
- | | |
|-------------|------------------------------|
| Hot Start: | Approx. 3 seconds (average) |
| Warm Start: | Approx. 32 seconds (average) |
| Cold Start: | Approx. 39 seconds (average) |
- Update Rate:** 1/second, continuous
- GPS Accuracy:** <10 meters (33 ft) RMS, 95% typical²
- DGPS (WAAS) Accuracy:** <3 meters (10 ft), 95% typical with DGPS corrections³
- Velocity Accuracy:** 0.1 meter/sec steady state
- Dynamics:** Performs to specifications to 6 g's
- Interfaces:** USB for PC interface
- Antenna:** Quad-helix

Radio

Channels: Ch 8–14 FRS,
Ch 1–7, 15–22 GMRS (FCC license req. in
US) WX 1–7 Weather Radio channels

Codes: 1–38

Range: Up to 2 miles on FRS; up to 14 miles on GMRS

Radio Output Power:

FRS 0.5 W; GMRS 2.0 W or 5.0 W (5.0 W - US
only)

Alkaline battery pack, 0.5, 2.0 W

Power

Input: 8.4 V, 2400mAh, rechargeable 2–cell lithium-
ion battery pack

Battery Life:

Li-Ion Pack: Up to 14 hours (GMRS 5 watt TX,
GPS On)⁴

Alkaline Pack: Up to 18 hours (GMRS 2 watt
TX, GPS On)⁴

Recharging Time:

Up to 6 hours for a fully
depleted Li-Ion pack

Specifications are subject to change without notice.

¹ Subject to proper user calibration.

² Subject to accuracy degradation to 100m 2DRMS under the U.S.
DoD-imposed Selective Availability program.

³ With optional Garmin Differential Beacon Receiver Input (such as
Garmin GBR 23).

⁴ 5, 5, 90 Duty Cycle - 5% receive with audio unmuted, 5%
transmit and 90% standby (receive with audio muted)

Standard Accessories

Belt Clip Assy.—Attaches to the back of the unit and clips to belt or waistband.

A/C Adapter and Charger—Provides an auxiliary power source and recharges the lithium-ion battery.

Wrist Strap—Provides a method for carrying the unit.

USB Interface Cable and MapSource Trip and Waypoint Manager CD-ROM—Provides interface to a PC, USB Drivers and mapping data management.

Owner's Manual—Detailed operation reference.

Quick Reference Guide—Overview of unit operation.

Optional Accessories

12-volt Adapter Cable—Provides auxiliary power.

Spare Li-Ion Battery Pack—can replace the included lithium-ion battery pack.

Alkaline Battery Pack—Uses 4 “AA” Alkaline or NiCad batteries.

microSD Card—Storage for mapping data (Available with pre-loaded maps)

Carrying Case—Protects the Rino from dust and damage.

Earbud with PTT (Push To Talk) Mic—Earbud and clip-on mic w/PTT button.

Flexible Ear Receiver—Comfortable earpiece for better hearing ability.

Headset with VOX Boom Mic—Utilizes the Rino's VOX feature.

PC RS-232 Data Cable—Required for transfer of NMEA interface data.

Automotive Mount—Allows you to mount your Rino on most smooth surfaces and automotive windshields.

Bicycle Mount—Allows you to mount your Rino on a handlebar.

To obtain accessories, see your local dealer or visit the Garmin web site at: www.garmin.com.

Transferring MapSource Data

If you have purchased a Garmin MapSource Data program, transfer detailed map data before beginning use. The Rino accepts map data from most MapSource products. For a list of compatible MapSource maps access the Garmin Web site at: www.garmin.com.

You cannot view multiple types of MapSource data in the same location at the same time (one replaces the other if there is an overlap). When you leave a City Navigator area for example, and into the area of a topographic map, the display changes to contour lines. The same is true when moving from a topo map to a City Navigator map. The maps at the top of the hierarchy replaces any other map information unless you select them from the prompt that appears when you move to an area of map overlap. For the list of the of Rino compatible maps access the Garmin Web site at:

www.garmin.com/cartography/#.

Map data transfer requires the use of a computer, a Garmin MapSource Data Disk, and the computer interface cable with USB port connector supplied with this unit. Follow instructions provided with MapSource.

To set up for data transfer:

1. Before attaching the data cable to your computer, install the Trip and Waypoints Manager CD-ROM provided with your unit. It also installs USB drivers specifically needed to communicate with your Rino.
2. Remove the Data Port cover on the back of the unit by lifting up on the protective cover on the back of the unit.
3. Connect the Mini-USB connector on the cable to the computer USB port.
4. Connect the remaining Mini USB connector to the back of the Rino by orienting the connector with the slot on the back of the unit.
5. Turn on the Rino and follow instructions for map data transfer provided with MapSource.Radio Frequency Charts

FRS/GMRS Radio Frequency Chart

Channel Number	Transmit Frequency (MHz)	Receive Frequency (MHz)	Channel Description
1	462.5625	462.5625	GMRS Interstitial 1, FRS 1
2	462.5875	462.5875	GMRS Interstitial 2, FRS 2
3	462.6125	462.6125	GMRS Interstitial 3, FRS 3
4	462.6375	462.6375	GMRS Interstitial 4, FRS 4
5	462.6625	462.6625	GMRS Interstitial 5, FRS 5
6	462.6875	462.6875	GMRS Interstitial 6, FRS 6
7	462.7125	462.7125	GMRS Interstitial 7, FRS 7
8	467.5625	467.5625	FRS-8
9	467.5875	467.5875	FRS-9
10	467.6125	467.6125	FRS-10
11	467.6375	467.6375	FRS-11
12	467.6625	467.6625	FRS-12
13	467.6875	467.6875	FRS-13
14	467.7125	467.7125	FRS-14
15	462.5500	462.5500	GMRS Primary 1
16	462.5750	462.5750	GMRS Primary 2
17	462.6000	462.6000	GMRS Primary 3
18	462.6250	462.6250	GMRS Primary 4
19	462.6500	462.6500	GMRS Primary 5
20	462.6750	462.6750	GMRS Primary 6
21	462.7000	462.7000	GMRS Primary 7
22	462.7250	462.7250	GMRS Primary 8
15R	467.5500	462.5500	GMRS Repeater 1
16R	467.5750	462.5750	GMRS Repeater 2
17R	467.6000	462.6000	GMRS Repeater 3
18R	467.6250	462.6250	GMRS Repeater 4
19R	467.6500	462.6500	GMRS Repeater 5
20R	467.6750	462.6750	GMRS Repeater 6
21R	467.7000	462.7000	GMRS Repeater 7
22R	467.7250	462.7250	GMRS Repeater 8

Weather Radio Frequency Chart

Channel Number	Receive Frequency (MHz)	Channel Description
WX 1	162.550	NOAA 1 (Weather Radio)
WX 2	162.400	NOAA 2 (Weather Radio)
WX 3	162.475	NOAA 3 (Weather Radio)
WX 4	162.425	NOAA 4 (Weather Radio)
WX 5	162.450	NOAA 5 (Weather Radio)
WX 6	162.500	NOAA 6 (Weather Radio)
WX 7	162.525	NOAA 7 (Weather Radio)



NOTE: For use in countries outside of the U.S. or Canada, please check with that government for any restrictions on FRS or GMRS use. If you plan to purchase FRS radios from third party manufacturers be aware that there are Continuous Tone Controlled Squelch System (CTCSS) differences in some radios. Some of the tones on one radio are not available on other radios. Charts showing the different Squelch Codes and manufacturers can be located on the Internet.

CTCSS Frequency Chart

Code Number	Frequency (Hz)	Code Number	Frequency (Hz)
0	199.5	28	173.8
1	67	29	179.9
2	71.9	30	186.2
3	74.4	31	192.8
4	77	32	203.5
5	79.7	33	210.7
6	82.5	34	218.1
7	85.4	35	225.7
8	88.5	36	233.6
9	91.5	37	241.8
10	94.8	38	250.3
11	97.4		
12	100		
13	103.5		
14	107.2		
15	110.9		
16	114.8		
17	118.8		
18	123		
19	127.3		
20	131.8		
21	136.5		
22	141.3		
23	146.2		
24	151.4		
25	156.7		
26	162.2		
27	167.9		

Caring for the Rino

Cleaning the Case

Clean the unit's outer casing (except for the screen) using a cloth dampened with a mild detergent solution and then wipe dry. Avoid chemical cleaners and solvents that can damage plastic components.

Cleaning the Screen

Clean the Rino screen using a soft, clean, lint-free cloth. Use water, isopropyl alcohol, or eyeglass cleaner if needed. If these are used, apply the liquid to a cloth, and then gently wipe the screen with the moistened cloth.

Water Immersion

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

Storage

Do not store the Rino where prolonged exposure to temperature extremes can occur (such as in the trunk of a car) as permanent damage can result. User information, such as waypoints and routes, are retained in the unit's memory without the need for external power.

Long-Term Battery Storage: The charging capacity of all rechargeable batteries decreases over time. The normal decrease in capacity of lithium-ion batteries can be accelerated by exposure to elevated temperatures. Storing a fully charged battery for more than three months at high temperatures can significantly reduce its recharging capacity. Before storage, charge the battery to approximately 50% of capacity and store in a cool dry location where temperatures are not expected to exceed typical household levels. Do not store a fully depleted battery. Fully charge the battery again before using with the Rino.

Interface Information

Interface formats are selected in the Setup Interface page. The input/output lines on your Rino unit can be made RS232 compatible by using the optional mini USB to RS232 PC Interface Cable accessory available from Garmin, in order to interface to a wide range of external devices, including computers, differential beacon receivers, marine autopilots, or a second GPS receiver. Refer to the Garmin web site: www.garmin.com for the RS232 cable accessory ordering information.

The NMEA 0183 version 3.01 interface format is supported by the Rino and enables the unit to drive up to three NMEA devices.

NMEA 0183 Version 3.01 Approved Sentences:

GPGGA, GPGLL, GPGSA, GPGSV, GPRMB, GPRMC, GPRTE, GPVTG, GPWPL, GPBOD

GARMIN Proprietary Sentences:

PGRME (estimated error), PGRMM (datum string), PGRMZ (altitude)

FCC Compliance Information

The Rino 520HCx and 530HCx comply with Part 15 of the FCC regulations and with Canadian RSS-210 and ICES-003 for Class B digital devices. Operation of this device is subject to the following conditions: (1) This device can not cause harmful interference, and (2) this device must accept any interference received, including interference that can cause unwanted operation.

This equipment generates, uses, and can radiate radio frequency energy and can cause harmful interference to radio communications if not installed and used in accordance with the instructions. There is no guarantee that interference does not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet that is on a different circuit than the receiver's circuit.

Consult the dealer or an experienced radio/TV technician for help.

Unauthorized repairs or modifications could result in permanent damage to the equipment and void your warranty and your authority to operate this device.

FCC Licensing Information

The Rino two-way radio operates on General Mobile Radio Service (GMRS) frequencies regulated by the Federal Communications Commission (FCC) in the United States. Operation on the GMRS frequencies is subject to rules as specified in 47 CFR Part 95.

In order to transmit on GMRS frequencies, you are required to obtain a license from the FCC. An individual 18 years of age or older, who is not a representative of a foreign government, is eligible to apply for a GMRS license. To apply for a GMRS license, you need FCC Form 605 (605 Main Form and Schedule F) and FCC Form 159. Download the application forms from the FCC web site at: <http://www.fcc.gov/Forms/>. You can also request them through the FCC forms hotline at 1-800-418-FORM (1-800-418-3676). File Form 605 online at: <http://wireless.fcc.gov/uls/>. A filing fee is associated with this application.

For information on fees, see the FCC fee information web page at: <http://wireless.fcc.gov/feesforms/index.html> or at: <http://wireless.fcc.gov/services/personal/generalmobile/>.

For questions concerning the license application, contact the FCC at 1-888-Call-FCC (1-888-225-5322).

No license is required to operate on GMRS channels in Canada. However, GMRS repeater channels are not approved for use by the Canadian government.

For use in countries outside of the U.S. and Canada, please check with that government for any restrictions of FRS or GMRS use.

Software License Agreement

BY USING THE Rino 520HCx or 530HCx, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE FOLLOWING SOFTWARE LICENSE AGREEMENT. PLEASE READ THIS AGREEMENT CAREFULLY.

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