GARMIN.

Astro[®] and DC[®] 40

draft owner's manual



GPS-enabled dog tracking

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Introduction

↑ WARNING

See the Important Safety and Product Information on page XX for product warnings and other important information.

Setting Up the Device

When using your device the first time, follow the setup instructions in the *Ouick Start Manual*.

- 6 Battery compartment
- microSD card tray under batteries
- 8) VHF antenna
- GPS antenna
- USB port (under weather cap)

Device Overview

- ① 🖰 Power key
- 2 Display
- 3 Keypad
- 4 Belt clip button
- (5) Wrist strap attachment slot



② Battery charging port

Keypad



DOG	Press to view the Dog Tracker page.
MARK	Press to mark your current location.
BACK	Press to cancel data entry or return to the previous menu or page.
MAP	Press to view the map.

MENU	Press to open the menu for the active page. Press twice to open the main menu.
ENT (ENTER)	Press to select options and acknowledge messages.
Rocker	Press to select options and to move the map cursor.
IN	Press to zoom in on the map.
OUT	Press to zoom out on the map.

Battery life Tips go in the appendix?

- To extend battery life of the Astro, turn the unit off when you are not using it, and decrease the level of the display backlight (page 4).
- To extend the DC 40 battery life, turn the unit off when you are not tracking a dog, or decrease the update rate (page 11).

Turning the Astro On

Manual Conventions

Press	Use the keys on the device.
Select	Use the Rocker to select an option or a button, and press ENTER .
Field	The location on a page where data is entered or an option appears. A highlighted field appears yellow.
Scroll bar	A bar that appears on the right side of a list that is too long to fit on the screen. Use the Rocker to scroll through a list. Press IN or OUT to scroll a set of items.
Default	The original factory settings. You can customize the settings, but you can always revert back to the factory settings by selecting Restore Defaults .

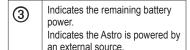
Wizard	An on-screen guide to performing functions that require multiple steps and options.
>	The small arrows indicate that you should select a series of items in order, for example, "Select Delete > Yes ."

Status Bar Icons

The status bar at the top of each Astro page provides status information.



1	Indicates the satellite signal strength.
2	Blinks when the unit detects a signal (for example, a DC 40) on the channel it is receiving.



On-Screen Messages

When an on-screen message appears, you can press **ENTER** to acknowledge the message and close the window.

Messages also indicate temporary conditions, such as "Calculating Route." The message window closes as soon as the process is complete.

Adjusting the Backlight

- 1. Press and quickly release 🖒.
- 2. Use the **Rocker** to adjust the brightness levels.

TIP: You can also press and quickly release to cycle through the brightness levels.

3. Press **ENTER** to select a brightness level and close the menu.

Dog Tracking

This section describes communications between the DC 40 and the Astro, tracking dogs on the map, and adding dogs to the Dog List.

Communicating with the DC 40

The DC 40 that was packaged with your Astro System was linked with the Astro at the factory. If you are using a DC 40 that you ordered separately, follow the instructions for adding a new dog on page 10 to establish communications with the Astro.

Viewing the Dog Status

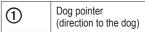
Press **DOG** to view the Dog Tracker page.

NOTE: The DC 40 does not transmit its location to the Astro, and the Astro will not indicate the location of the DC 40, until both units have acquired

satellite signals.

When communicating with the DC 40, the Dog Tracker page indicates the direction of the dog, the distance away from you, and the status of the dog. The Astro can keep track of ten dogs. Use the **Rocker** to scroll through the list of dogs.

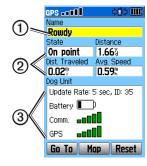




2	Dog status icon
3	Distance to the dog

Viewing Dog Details

From your Dog Tracker page, press ENTER.



1	Dog name
2	Dog status information

3 DC 40 status infomation

Naming the Dog

The Astro assigns a default name such as Dog or Dog 1 to every dog (DC 40) linked to it.

Changing the Name of the Dog

- On the Dog Information page, highlight the Name field and press ENTER.
- 2. Use the **Rocker** and **ENTER** to spell the name of the dog.
- 3. Select **OK** > **ENTER** when you are finished

Using Go To, Map, and Reset

- Select Go To to navigate to your dog.
- Select Map to view the location and movement of your dog.
- Select **Reset** to reset the dog statistics and the track log

(page 34) for that dog.

On the Dog Information page press

On the Dog Information page, press **MENU** to access additional dog information options.

- Stop (or Start) Tracking-stops (or starts) tracking the dog.
- Identify Dog Unit—displays the DC 30 software version on the Astro and causes the DC 30 LEDs to blink rapidly for ten seconds.
- Change Comm. Settings—allows you to assign a new ID number (page 11) to a dog to avoid conflicting signals and/or the rate of reporting (5, 10, or 30 seconds).
- Transfer Dog Unit Track transfers detailed tracks from the DC 40 to a computer (page 71).
- **Delete Dog Unit Track**—deletes the track log for the dog.
- Change Dog Unit Type—allows

- you to identify the dog type so that the appropriate dog status symbols are shown. Choose from Auto, Pointing Dog, Treeing Dog, or Pet.
- **Upgrade Dog Unit**–downloads software updates to the DC 40 (page 70).

Tracking a Dog

Attach the DC 40 with the collar to your dog's neck with the VHF antenna (page 1) pointing up.

Tracking a Dog on the Dog Tracker Page

The Dog Tracker page shows the direction and distance of the dog from the Astro, and the status of the dog.

To view the Dog Tracker page: Press DOG.

The dog you are tracking is identified and the dog pointer indicates its direction from you. The dog pointer is most accurate when you are holding the Astro level and the dog is farther than 30 feet (9.1 meters) away. At less than that distance, a NEAR message appears, and the dog pointer is shortened. When you are close to the dog, the dog pointer may be inaccurate.

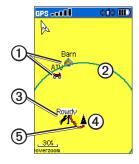
Dog Status Icons

A	Sitting
*	Running
75	On Point
H	Treed
?	Unknown

The Unknown status symbol [?], indicates that the DC 40 has not acquired a satellite signal and that the Astro cannot determine the location of

the dog.

Tracking a Dog on the Map Press MAP.



1	Marked locations on the map
2	Accuracy circle
3	Dog location
4	Your location



Dog track

NOTE: When the Map page is in the Track Up orientation mode, objects on the map appear to rotate around your position. As you move, the entire map reorients in the direction you are facing. To stabilize the objects, set the orientation to North Up (page 53).

For more information about the Map page features and custom settings, refer to page 53.

Dog Tracker Page Options Menu

On the Dog Tracker page, press **MENU**.

- Show Info-opens the Dog Information page for the selected dog.
- Pause (or Resume) All Tracking pauses tracking of all dogs.
- Calibrate Compass—calibrates the

- compass (page 5).
- View Dog List—opens the Dog List to add or remove dogs.
- Small Numbers (or Big Numbers)—changes the size of the dog descriptions on the Dog Tracker page. Press the left or right arrows on the Rocker to scroll through multiple dogs in the Big Numbers mode.

Multiple Dogs

If you purchase additional DC 40 units, you can link them to the Astro using the setup wizard in the Dog List. To link, the Astro must be close enough to the DC 40 to touch it, or you must know the DC 40 ID number.

Adding a New Dog

 On the Dog Tracker page, press MENU > Dog List > <Add New> > ENTER to open the setup wizard. Use the Rocker and ENTER to select and confirm options. By default, the new dog is named "Dog" and an ID number is randomly assigned.

NOTE: The setup wizard may indicate that there is a conflict with the ID number of another dog. To resolve the conflict, follow the instructions in the setup wizard and in "Conflicting Dog Signals."

Conflicting Dog Signals

Each dog you track has its own ID number. If two dogs within range of the Astro have the same ID, the Astro warns you of a conflicting ID signal. It then opens a setup wizard to guide you through the process of resolving the conflict.

If necessary, you can manually assign a new ID number to a dog. When possible, you should allow the Astro to automatically assign IDs.

Resolving the Dog Signal Conflict.

You must assign a new ID number to the dog and change the update rate.

- 1. On the Dog Information page, press MENU > Change Comm. Settings.
- 2. Select an unassigned and nonconflicting ID > **OK**.
- 3. Change the update rate, if desired. Both 10-second and 30-second updates reduce battery drain, but they create a less-detailed dog track and collected statistics.
- 4. Ensure that the Astro is within a few feet of the DC 40.
- 5. Complete the setup wizard instructions

Tips for Successful Tracking

 Use a fully charged DC 40. A fully charged DC 40 operates for approximately 17 hours when using 5-second interval reporting.

• Use line-of-sight radio communication. The Astro and DC 40 use radio signals to communicate. Objects in the path of radio signals degrade the quality of the signals. Keeping an unobstructed line of sight between you and your dog's DC 40 produces the best communication signal. Obstructed radio waves result in a poor signal. To achieve the best line-of-sight conditions, move to the highest elevation point in your area (for example, on the top of a hill).

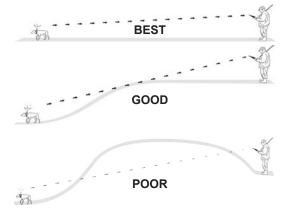
and track logs, and marks your starting location.

Not sure where this should go.

Starting a new hunt?

Start New Hunt-resets dog statistics

Line-of-Sight Radio Communication



Line-of-Sight Radio Communication

Mark Location

Locations are landmarks that you record and store in your Astro.

Marking Your Vehicle Location

From the main menu, select **Start New Hunt** (page 12) while you are near your vehicle to mark the location. After the hunt, you can use your Astro to navigate back to your starting location.

To mark your current location:

- 1. Press **MARK** > **New** to view the Mark Location page.
- Select **OK** to mark the location.

To mark a specific hunting location:

- Press MARK.
- Select a name and hunting-related symbol to describe the location, and press ENTER.

NOTE: The Mark Covey option allows

you to enter the estimated number of birds flushed and the number taken.

- 3. To edit location information, select the appropriate field, and press **ENTER** to open the onscreen keypad. After entering and confirming your changes, select **OK** (on the keypad).
- 4. Select **OK** to mark the location.

To mark a location using the Map page:

- Press MAP. Use the Rocker to move the map pointer to the map item you want to mark as a location.
- 2. Press ENTER. If the map item selected contains no information, a "No map information at this point. Do you want to mark a location here?" message appears. Select Yes.

- 3. To edit location information, select the appropriate field, and press **ENTER** to open the onscreen keypad. After entering and confirming your changes, select **OK** (on the keypad).
- 4 Select **OK** to mark the location

Navigating to a Marked Location

from settings...

Go To Marked Location—provides directions to a location you have marked (page 14).

Editing a Marked Location

- 1 Press MENU > MENU
- 2. Select Advanced > Find > Marked Locations.
- 3. Select the location you want to edit.
- 4. Enter your changes using the onscreen keypad.

Moving a Marked Location on the Map

- 1. Press MENU > MENU.
- 2. Select Advanced > Find > Marked Locations.
- 3. Select the marked location you want to edit
- 4. Select **Map** to show the marked location on the map.
- 5. Press **ENTER** to place a **MOVE** marker next to the marked location.
- Use the Rocker to move the marked location to a new location on the map.
- 7. Press ENTER.

Averaging a Marked Location

You can average a marked location for more accuracy. When averaging, the Astro takes several readings at the same location and uses the average value to provide more accuracy.

To calculate your current average location:

- Press MARK > New > Avg to begin averaging.
- When the Estimated Accuracy field reaches the level of accuracy you want, select Save > OK.

Projecting a Location

You can create a new location by projecting the distance and bearing from a marked location to a new location.

To project a location:

- Press MENU > MENU > Advanced > Find > Marked Locations.
- 2. Select the location > MENU > Project Location.

3. Enter the bearing and distance to the projected location in the appropriate fields at the bottom of the page. To navigate to the location, select **Go To**.

Map

The Astro includes a preloaded basemap that includes cities, interstates, state and county highways, exit information, and lake and river outlines. The standard basemap can be enhanced using MapSource® detailed mapping data as shown below.

Map orientation arrow

Map details from Garmin MapSource
City Navigator®
North America NT

Map scale

Map Page

Press MAP to display the Map page. Use the **Rocker** to move the map pointer away from your current location. As you pan past the edge of the current map display, the screen scrolls to provide continuous map coverage.

Press **IN** and **OUT** to change the map scale. An accuracy circle represents the area containing your current location.

Map Options

Customize the Map page using the Map page Options menu. On the Map page press **MENU**.

• Stop (or Resume) Navigation stops or resumes navigation.

Your current Recalculate-recalculates an automotive route while navigating.

Dog location to Fields—configures up to four data fields at the top of the page (page 18).

• Change Data Fields—changes the type of data displayed in the data fields (page 18).

- Guidance Text—displays useful information on the screen above the map when navigating to a destination.
- **Setup Map**—customizes the map to your preferences (page 53).
- Measure Distance (or Stop Measuring)—measures or stops measuring the distance (page 18) from your location to the map pointer.
- Turn Declutter On (or Off) eliminates or restores the display of items on the map that block road details.
- Restore Defaults—returns map settings to the default settings.

Data Fields

When navigating on the Map page, you can display up to four data fields at the top of the page to provide travel and navigational information.

Showing Data Fields on the Map

- 1. On the map, press MENU > Data Fields
- 2. Select the number of data fields.

Changing the Data Fields

- 1. Press MENU > Change Data Fields.
- 2. Use the **Rocker** to select a field. A list of data field options appears.
- 3. Select an option.

Measuring Distance

You can use the Astro to measure the distance between two points.

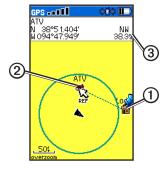
 On the Map page, press MENU > Measure Distance.

An arrow appears on the map at your current location.

Move the arrow to the point you want to measure from and press ENTER.

A push pin marks the beginning point ①.

Move the arrow to another point.
 REF marks the ending point ②.
 The distance between the two points appears ③.



Find Features

Use the Find menu to search for marked locations, cities, and exits included in the Astro basemap. Additional categories appear depending on the optional MapSource-compatible detailed maps or BlueChart g2 data loaded in the unit. When you open a Find category, it contains only those items near your current location or the map pointer (if active).

Finding a Location by Name

- Press MENU > MENU > Advanced > Find.
- 2. Select the type of item you want to find.
- 3. Press MENU > Find by Name.

Menu Find by Name Nearest Containing... Select Map Change Reference MENU for Main Menu

- 4. Enter the name of the location. When the Find list contains a match, select **OK**.
- 5. Select an option:
 - Select **Save** to save the item as a location.
 - Select Map to display the item as a location.
 - Select **Go To** to create a route to the location.

Finding Recently Found Locations

- Press MENU > MENU > Advanced > Find > Recent Finds.
- 2. Select an item.

To find an item near another item:

- On the Information page of a location, press MENU > Find Near Here. The Find menu opens.
- Select a category > ENTER to display a list of items near the location.

To find an item from another location on the map:

- On the Information page of a location, press MENU > Change Reference. The Map page opens.
- Use the Rocker to move the map pointer to the map location you want, and press ENTER to show a list of items near the new map location

To find a marked location:

 Press MENU > MENU > Advanced > Find > Marked Locations. 2 Select a location

To find a geocache:

- Press MENU > MENU > Advanced > Find > Geocache.
- 2. Select a geocache to open the information page.
- 3. Select **Go To** to navigate to the geocache location.

When a geocache is found, the Astro marks the cache as found, logs an entry into the calendar, and shows the nearest cache.

Go to my.garmin.com, log on, and click Go Geocaching for details and how to download geocache locations from the Internet.

To find a city:

Press MENU > MENU >
 Advanced > Find > Cities. A list
 of cities near your current location
 appears.

Select a city from the list.
 OR
 If the city you want is not listed,
 press MENU > select a search
 method.

Finding an Interstate Exit

- Press MENU > MENU >
 Advanced > Find > Exits. A list
 of exits near your current location
 appears.
- Select an exit. The exit description, a list of services near the exit, and the distance and bearing from the exit to the highlighted service are shown
- 3. Select a service from the list > **ENTER** for more information about the service.

Item Information Page Options

The Options menu for each information page contains options for using a Find

item as a tool for navigation.

To use the Options menu:

- 1. On the Information page, press **MENU**
- 2. Select an option > **ENTER**:
 - Average Location—averages your current location (page 15).
 - Project Location—projects the distance and bearing to a new location (page 16).
 - Find Near Here—finds an item near another item (page 21).
 - Change Reference—finds an item from another location on the map (page 21).
 - Set Proximity—programs an alarm to sound when you are within a specified radius of an item (page 42).

- Add To Route—adds the item on the information page to a route (page 38).
- View Sunrise/Sunset—displays Sunrise/Sunset tables for this location (page 51).
- View Hunting Almanac displays Hunting tables for this location (page 51).
- Reposition Here—changes the location of the item to your current location.

Using Optional Detailed Maps

If you have detailed mapping data, you can find locations using addresses or intersections. Select the **All Points of Interest** category to locate a nearby restaurant, lodging, landmark, or other public building.

To find an address or intersection:

- Press MENU > MENU >
 Advanced > Find > Addresses (or Intersections).
 - If your unit has a GPS fix, the **ENTER Region>** field is populated with your current region.
- 2. Select **<ENTER Number>**.
- 3. Enter the street number using the on-screen keypad > **OK** (on the keypad).
- 4. Select **<ENTER Street Name>** to open the street list.
- 5. Use the on-screen keypad to enter the street name > **OK**.
- 6. Select the best address match.

Follow these same basic steps when searching for an intersection.

To find a point of interest:

- Press MENU > MENU >
 Advanced > Find > All Points of
 Interest. A list of points of interest
 near your current location appear.
- 2. Press **MENU** to narrow your search.
- 3. Select the item you want from the list > 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.

GPS Applications

GPS Applications (MENU > MENU > Advanced > GPS Applications) provides options for configuring the following GPS functions:

- Trip Computer (page 25)
- Compass (page 26)
- Altimeter (page 31)
- Tracks (page 34)
- Routes (page 38)
- Highway (page 41)
- Proximity (page 42)
- Turn Preview (page 43)
- Active Route (page 44)
- Satellite (page 44)

Using the Trip Computer

The Trip Computer page provides travel data such as current speed, distance traveled, and other statistics that can be useful when navigating a long distance.

Press MENU > MENU > Advanced > GPS Applications > Trip Computer.

١	Trip Computer	
	Trip Odom 896 4	Ma× Speed 7.4 m
	Moving Time	Moving Avg 1.9h
	Stopped 05 26 3	Overall Avg O. 1M
	1211t Odometer 0.51	

Trip Computer Page

Customizing the Trip Computer

- 1. On the Trip Computer page, press **MENU**.
- 2. Select an option > **ENTER**:

- **Reset**-clears the trip computer.
- **Big Numbers**—displays fewer data fields with larger numbers.
- Change Data Fields—changes the type of data on the trip computer.
- Restore Defaults—restores the data fields to the default settings.

To change the type of data on the trip computer:

- On the Trip Computer page, press MENU > Change Data Fields.
- 2. Use the **Rocker** to select a field.
- Press ENTER > select an option > ENTER.

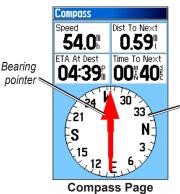
Using the Compass Page

The Compass page guides you to your destination with a compass display and a bearing or course pointer.

It also provides navigation data such

as current speed, distance to the next point on the route, and estimated arrival time.

Press MENU > MENU > Advanced > GPS Applications > Compass.



The compass ring moves to indicate North orientation.

Hold the compass level when navigating to ensure maximum accuracy.

Bearing : destination

Using the Course Pointer or the Bearing Pointer Direction vou

The bearing pointer indicates the are currently direction to your destination, and the course pointer indicates your relationship to a course line leading to the destination

The bearing pointer points to the destination, regardless of the direction you are moving. If the bearing pointer is pointing in your direction of travel, you are traveling directly toward your destination. If the bearing pointer points any other direction, turn toward that direction until the bearing pointer is pointing ahead.



traveling

Bearing Pointer

The course pointer provides an indication of drift (right or left) according to the scale shown at the edge of the compass ring. The scale refers to the distance between dots on the course deviation indicator. The course line to your destination is based on your original starting point.



Move back to the "course line to destination" to compensate for deviation and to get back on course. This is most useful if you are navigating on water or where there are no major obstacles in your path. It

also helps you avoid hazards to either side of the course, such as shoals or submerged rocks.

Changing Compass Settings To change Compass settings:

- 1. On the Compass page, press **MENU**.
- 2. Select an option > **ENTER**:
 - **Sight 'N Go**-allows you to navigate to an object within your sight by pointing the unit at it (page 29).
 - Stop (or Resume) Navigation stops or resumes your current navigation.
 - **Recalculate**—recalculates the path to a destination.
 - Course or Bearing Pointer auto routes between the course pointer and the bearing pointer.

- Data Fields—specifies 2, 3 or 4 data fields that appear on the Compass page.
- Change Data Fields—selects the type of data you want to show in the data fields (page 29).
- Calibrate Compass—opens the Compass Calibration page for calibrating the compass (page 5).
- Restore Defaults—restores compass settings to the default settings.

To change the type of data on the compass:

- On the Compass page, press MENU > Change Data Fields.
- 2. Use the **Rocker** to select a field.
- 3. Press ENTER > select an option > ENTER.

To use Sight 'N Go to navigate:

- On the Compass page, press MENU > Sight 'N Go. The bearing pointer points to the top of the compass.
- 2. Hold the unit at eye level and line up the two sighting marks with a distant object.



3. Press **ENTER** to lock the direction and open the Sighting page.



Sighting Page

 Select Set Course to open the Compass page and navigate to the distant object (select Re-Sight to set course on a different object). OR

Select **Project Location** (page 16).

Calibrating the Compass

NOTICE

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

Calibrate the Astro electronic compass the first time you use it, after long periods of storage, after you install new batteries, or when the unit has been exposed to temperature changes of greater than 20°F (11°C).

You should calibrate the compass after moving long distances, experiencing temperature changes, or changing the batteries.[from 62]

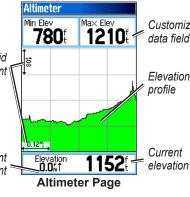
- 1. From the dog tracker page, press **MENU**.
- 2. Select Calibrate Compass > Start.
- 3. Follow the on-screen instructions.



Using the Altimeter Page Range grid

The Altimeter page displays the measurement current elevation, the rate of your ascent or descent, elevation changes over distance or time, or pressure changes over time.

To open the Altimeter page: Rate of ascent Press MENU > MENU > or descent Advanced > GPS Applications > Altimeter.



The field at the bottom of the page shows your current elevation and your rate of ascent (or descent) when moving.

Viewing Points on the Altimeter Plot

Select individual points on an elevation plot or a pressure plot to view the elevation (or pressure) reading, the time of day, and the date when the point was recorded.

To view points on a plot:

On the Altimeter page, press left or right on the **Rocker** to display crosshairs and scroll the crosshairs across the plot.

To view altitude points on the Map page:

 On the Altimeter page, use the Rocker to move the red crosshairs to the point you want to view on the map. Press ENTER. The point is marked by the map pointer with location coordinates, the compass bearing, and the distance from your current location

Changing Altimeter Settings To change altimeter settings:

- 1. On the Altimeter page, press **MENI**
- 2. Select an option > **ENTER**:
 - Plot Over Time (or Plot Over Distance)—plots time or distance against elevation. (This option is available only when you are plotting elevation. Pressure is plotted only against time.)
 - View Elevation Plot (or View Pressure Plot)—selects either an elevation plot or a barometric pressure plot for a set period of time.

- Zoom Ranges—selects zoom ranges for elevation, distance, and time for the View Elevation Plot (page 33).
- Change Data Fields—selects the type of data shown on the Altimeter page (page 31).
- Reset—resets the elevation and maximum elevation data (page 33).
- Calibrate Altimeter—calibrates the altimeter if you know the elevation or pressure at your current location (page 34).
- Restore Defaults—clears recorded altimeter data and begins recording new data.

To set the zoom ranges for the altimeter plot:

1. On the Altimeter page, press MENU > Zoom Ranges. OR

Press up or down on the Rocker.

- Press up or down on the Rocker to set the zoom range on the vertical axis.
- Press left or right on the Rocker to set the zoom range on the horizontal axis.

To change the type of data on the altimeter page:

- On the Altimeter page (page 31), press MENU > Change Data Fields.
- 2. Use the **Rocker** to select a field.
- Press ENTER > select an option > ENTER.

To reset the elevation and maximum elevation fields:

- 1. On the Altimeter page, press **MENU** > **Reset...**.
- 2. Use the **Rocker** and press **ENTER** to place a check mark next to the items you want to reset.

3. Select **Apply** > **OK** to reset the selected options.

Calibrating the Altimeter

- Go to a location where the elevation or barometric pressure is known
- 2. On the Altimeter page, press MENU > Calibrate Altimeter
- 3. Select **Yes** if you know the elevation, select No > Yes if you know the barometric pressure.
- 4 Enter the elevation or barometric pressure > OK.

Using Tracks

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

The percentage of memory used by the

current track log appears at the top of the Tracks page. After you clear the track log, it shows 0%.

To open the Tracks page:

Press MENU > MENU > Advanced > GPS Applications > Tracks

Track Log Setup

✓ Wrap When Full

Record Method





Διιτο Interval Normal Color Transparent

Track Log Setup Page

To clear the track log:

On the Track page, select Clear > Yes

To set up a track log:

On the Track page, select **Setup**.

- Wrap When Full-replaces the oldest data with new data when the track log is full.
- Record Method–Distance
 records track points after a
 specified distance is traveled.
 Time records track points after
 a specified time has elapsed.
 Auto can record more points
 or fewer points. Selecting more
 points creates a more accurate
 track, but fills up the track log
 faster.
- Interval–specifies a distance, a time, or a frequency.
- Color-selects the color of the track. To change the color of a dog's track, use the color option on the Saved Track page.

To save the entire track log:

On the Tracks page, select **Save** > **Yes**. The Saved Track page appears.

Use the Saved Track page to rename the track and view the track distance, the calculated area, and the color for the track on the Map page. You can change the track color and the units for the calculated area. Changing the color of a dog's saved track also changes the dog pointer color on the Dog Tracker page.

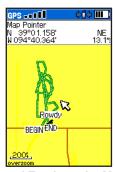


To save a portion of the track log:

- On the Tracks page, select Save > No. The entire track is shown.
- Use the Rocker to move the map pointer to the beginning point and press ENTER.
- 3. Use the **Rocker** to move the map pointer to the ending point and press **ENTER** > **OK**.

To view a track on the map:

On the Tracks page, select **Save** > **Yes** > **Map**. The track appears on the map.



Saved Track on the Map

To calculate the area of a track:

On the Tracks page, press MENU
 > Area Calculation > ENTER to
 start the area calculation. When
 you begin to move, a Stop button
 appears.

- 2. When you are finished, select **Stop**.
- 3. Select the Area field to change the units of measurement.
- 4. Select Save.

Track Profiles

After you save a track, you have a record of the path you traveled and a track altitude profile.

To view a track profile:

 On the Saved Track page, press MENU > Profile.

The beginning and the end of the track are marked by a flag. Press left or right on the **Rocker** to scroll across the track profile.

As you scroll, the elevation for each point appears at the top of the page, and the distance from the Begin point and the End point appear at the bottom.

While scrolling, press ENTER to show the highlighted point on the map.

To set the zoom ranges for the track profile:

- 1. On the Saved Track page, press **MENU** > **Profile**.
- Press up or down on the Rocker to set the zoom range on the vertical axis.
- Press left or right on the Rocker to set the zoom range on the horizontal axis.

Using DEM (Digital Elevation Models) Maps

You can create a track elevation profile, from DEM maps, that includes elevation data. When these types of maps are available, a Use Map Data

- Use Track Data option appears when you select Profile. Refer to the Garmin Web site www.garmin. com/cartography/ontheTrail/ for more

information about MapSource U.S. Topo maps.

Navigating a Saved Track

You can save your track log to use later as a TracBack® that will take you back to the oldest stored track log point.

To use the TracBack feature:

- 1. On the Tracks page or the Saved Tracks page, select **TracBack**.
- Use the Rocker to move the map pointer to the point on the map you want to backtrack to.
- 3. Press ENTER.
- Select Follow Road to navigate back to the selected point using available roadways, or Follow Track to retrace your original path of travel.

To mark a location on a saved track:

- With a saved track shown on the map, move the map pointer to the location on the track that you want to mark
- 2. Press **MARK** to open the Mark Location page.
- To edit location information, select the appropriate field, and press ENTER to open the onscreen keypad. After entering and confirming your changes, select OK (on the keypad).
- 4. Select **OK** to mark the location.

Creating Routes

You can create and store up to 50 routes with up to 250 points each.

To set routing options, see Routing Setup on page 55.

To open the Routes page:

Press MENU > MENU > Advanced > GPS Applications > Routes.

To create and navigate a new route:

- 1. On the Routes page, select New.
- Select the <Select Next Point> field and press ENTER to open the Find menu.
- 3. Select one of the Find menu categories for the first point on the route.
- 4. Select the first point on the route.
- 5 Select Use
- 6. To add more points to the route, repeat steps 2 through 5.
- 7. Select Navigate.





Route Page

Route on the Map Page

To navigate a saved route:

- 1. On the Routes page, select a saved route.
- Select Navigate.
- 3. To stop navigating, press **MENU** > **Stop Navigation**.

Editing a Route

After you create a route, use the Route page to edit the route, change the route name, and review route points.

To change the name of the route:

- On the Routes page, select a saved route.
- 2. Select the route name to open the on-screen keypad.
- 3. After entering your changes, select **OK** (on the keypad).

To review and save individual route points:

- On the Routes page, select a saved route.
- 2. Select a point on the route.
- Select Review to open the information page for that route point.
 - Save—saves the point as a location
 - Map—shows the point on the Map page.
 - Go To-navigates to the point.

To delete a route:

On the Routes page, select a saved route > **Delete**.

To delete all routes:

On the Routes page, press MENU > Delete All Routes

To select the off-road transition for a route:

- 1. On the Routes page, press **MENU**.
- 2. Select Off Road Transition.
- 3. Select the method to use when advancing to the next point.
 - Auto-When you reach your next point, you are automatically routed to the following point.
 - Distance—Enter a radius. When you are within that specified distance to your next point, you are routed to the following point.

 Manual—When routing to your next point, press OUT to begin routing to the following point. Press IN to route to the previous point.

Setting Route Page Options To set route page options for a specific route:

On the Routes page, select a route > MENU

- Remove All—removes all locations from a saved route.
- Reverse Route—reverses the order of the points in the saved route
- Profile—creates a vertical profile of the route when MapSource DEM U.S. Topo map data is used.
- Copy Route—makes a copy of the route.
- **Delete Route**—deletes the route.

- Change Data Fields—selects different values for the two data fields at the bottom of the page.
- Restore Defaults—restores route settings to the default settings.

Using the Highway Page

When navigating a route on roads, the Highway page provides up to four data fields that display travel information.



Highway Page

To open the Highway page while navigating:

Press MENU > MENU > Advanced > GPS Applications > Highway.

Your course is represented by a center line down the middle of the screen. Press **IN** or **OUT** to zoom in or out on the map.

To change Highway settings:

- On the Highway page, press MENU.
- 2. Select an option > **ENTER**.
 - Stop (or Resume) Navigation stops or resumes your current navigation.
 - Recalculate—recalculates the path to a destination.
 - Data Fields—selects 2, 3, or 4 data fields that appear on the Highway page.

- Change Data Fields-selects the type of data you want to show in the data fields.
- Restore Defaults—restores highway settings to the default settings.

Using Proximity Locations

Use the Proximity Locations page to define an alarm radius around a stored location. An alarm sounds when you enter within the designated radius.

To open the Proximity page:

Press MENU > MENU > Advanced > GPS Applications > Proximity.

To add a proximity location:

 On the Proximity page, select an empty line > ENTER to open the Find menu.

- Select one of the Find menu categories to open the information page for the item.
- 3. Select **Use** to add the location to the Proximity page.
- 4. Select **Radius** to enter the value.

To select alarm tones and turn proximity alarms off:

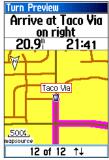
- 1. On the Proximity page, select **Proximity Alarm Tones**.
- 2. Select an alarm field to view the list of tones.
- 3 Select the desired tone > **ENTER**
- 4. Select Proximity Alarms to activate the alarm.

Speed Alerts are obtained by using POI Loader (page 24).

Using Turn Preview

To preview the turns on a map while navigating a route:

- While navigating a route on the Map page, press MENU > MENU
 - > Advanced > GPS Applications
 - > Turn Preview.



Turn Preview Page

 To scroll through all turn previews, press up or down on the Rocker. Press ENTER to view an individual turn.

Using Active Route

To preview a list of the turns status while navigating a route:

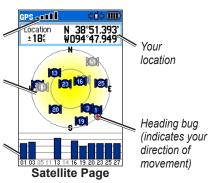
- 1. While navigating a route on the Satellite
 Map page, press MENU > MEND cation
 > Advanced > GPS Applications
 > Active Route
- 2. Select a turn to view an individuatellite turn. signal strength

Using the Satellite Page

The Satellite page shows the receiver status, the satellite locations, the satellite signal strength, and your current location when the unit receives signals from at least three satellites.

To open the Satellite page:

Press MENU > MENU > Advanced > GPS Applications > Satellite.



To change satellite options:

On the Satellite page, press **MENU**

 Use With GPS Off (or On)-turns the GPS receiver off or on.

- Track Up (or North Up) orients North or your current heading at the top of the display.
- Multicolor (or Single Color)—selects whether each satellite appears in a different color or the same color
- New Location—select if you have moved the unit more than 600 miles and you are having trouble locking onto satellite signals.
- GPS Elevation—displays your current elevation

Accessories

The Accessories menu (MENU > MENU > Advanced > Accessories) provides the following applications:

- Calendar (page 46)
- Calculator (page 47)
- Stopwatch (page 47)
- View Sunrise/Sunset (page 51)
- View Hunting Almanac (page 51)
- Games (page 48)

Calendar

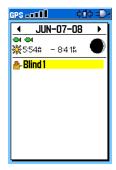
The calendar can record locations on specific days and provide sunrise, sunset, and hunting-almanac information.

Opening the Calendar

Press MENU > MENU > Advanced > Accessories > Calendar. The current week appears.

Adding a Location to the Calendar

1. Use the **Rocker** to select a day.



- 2. Press MENU
- 3. Select Add Point.
- 4. Select one of the categories (page 20).
- Select Use.The location is added to the day.

Deleting Locations from the Calendar

- From the calendar, use the Rocker to select a day.
- 2. Select the location.
- Select Delete.
- 4. Press MENU.
- 5. Select **Remove Points**.
- 6. Select an option.

Viewing Sunrise/Sunset or Hunting Almanac Information

- 1. From the calendar, use the **Rocker** to select a day.
- 2. Press MENU.
- 2. Select View Sunrise/Sunset or View Hunting Almanac.

Calculator

The Astro has a standard calculator and a scientific calculator

Using the Calculators

The device also has two calculator applications.

- Press MENU > MENU > Advanced > Accessories > Calculator.
- 2. Use the **Rocker** and the **ENTER** key to enter calculations.

To use the scientific calculator:

On the Calculator page, press **MENU** > **Scientific**.

Stopwatch

To open the Stopwatch:

Press MENU > MENU > Advanced > Accessories > Stopwatch.

To time a lap by distance or by button press:

On the Stopwatch menu, press MENU > Lap by Distance (or Lap by Button Press).

To set a lap distance value:

- Press MENU to open the Options menu. Select Set Lap Distance.
- Use the Rocker to select the field you want to change. Enter the new value, and press ENTER. When done, select OK.

Sunrise/Sunset

You can view the time of sunrise, sunset, moonrise, and moonset, and current relative positions of the sun and moon.

Customizing the Date or Location

- Press MENU > MENU > View Sunrise/Sunset.
- 2. Select an option:
 - Select Date to change the date.
 The on-screen keypad appears.
 - Select Location to change the location.

 Select Time to view positions of the sun and moon at a different time.

Hunting Almanac

You can view the predicted best times for hunting and fishing for a specific date and location

Customizing the Date or Location

- 1. Press MENU > MENU > View Hunting Almanac.
- 2. Select an option:
 - Select Date to change the date.
 The on-screen keypad appears.
 - Select **Location** to change the location.

Games

The Astro contains six games (Memory Race, Virtual Maze, GekoSmak, Nibbons, Gekoids, and Beast Hunt). Some games use GPS during the game. Most games contain a tutorial.

To open the Games list:

Press MENU > MENU > Advanced > Accessories > Games.

Settings

The Settings menu (MENU > MENU > Advanced > Settings) customizes the operation of your Astro.

System Setup

To open the System page: Press MENU > MENU > Advanced > Settings > System.

- GPS—sets the unit to operate in Normal mode, Battery Saver mode, GPS Off, or Demo Mode
- WAAS/EGNOS—enables or disables WAAS (Wide Area Augmentation System) in the U.S., or EGNOS (European Geostationary Navigation Overlay Service).
- **Battery Type**—selects the battery type (alkaline, NiMH, or lithium).

- External Power Lost—selects whether the Astro stays on or turns off when external power is removed.
- Proximity Alarms—turns all proximity alarms on or off.

To restore system defaults and view system information:

On the System page, press MENU.

- Restore Defaults—restores system settings to the default settings.
- View Card Info-displays the microSD card status.
- Mass Storage Mode-allows you to use the microSD card as a data-storage device
- Software Version—displays the Astro software version, the GPS SW version, and the unit identification number.

NOTE: View Card Info and Mass

Storage Mode are available only when a microSD card is installed.

Dog List Setup

To open the Dog List page:

Press MENU > MENU >

Advanced > Settings > Dog List.

To view the Dog Info page, move the dog on the list, or remove the dog from the list: Select a dog on the list > ENTER.

Dog Alerts Setup

To turn Dog Alerts on or off:

- 1. Press MENU > MENU > Advanced > Settings > Dog Alerts.
- Use the Rocker to select an alert > ENTER > Off (or On).
 - On-Point Alert-indicates that the dog is on-point.

- Treed Alert—indicates that the dog has treed quarry and has confined its own movements to a small area for 60 seconds.
- GPS Lost Alert-indicates that the dog's DC 40 has lost GPS satellite signals.
- Lost Communication
 Alert—the Astro is not receiving the signals from the DC 40.

Display Setup

To configure the Astro screen settings:

Press MENU > MENU > Advanced > Settings > Display.

 Display Mode—sets the display to Day, Night, or Auto mode.
 Select Auto to automatically switch to night mode at sunset and to day mode at sunrise.

- Daytime Color Scheme
 –sets
 the color scheme used in Day
 mode.
- Nighttime Color Scheme-sets the color scheme used in Night mode.
- Backlight Timeout—sets the backlight to time out after a period of time has elapsed (to save battery power) or to stay on.
- Backlight Level-increases or decreases the backlight intensity.

Tones Setup

To select tones:

Press MENU > MENU > Advanced > Settings > Tones.

- 1. Select a tone > **ENTER**.
- 2. Select an option. The tone sounds.
- 3. Press **ENTER** to select the tone.

Main Menu Setup

You can move, delete, or add items to the main menu.

Reordering or Deleting Items on the Main Menu

- From any page, press MENU > MENU > Advanced > Settings > Main Menu.
- 2. Select a menu item.
- 3. Select an option:
 - Select Move and then use the Rocker to move the item.
 - Select **Delete** to remove the item from the list.

Adding an Item to the Main Menu

- From any page, press MENU > MENU > Advanced > Settings > Main Menu.
- Select <Add Page>.

3. Select the item you want to add to the Main Menu.

Map Setup

Use the Map Setup page to customize the Map page (page 17).

To open the Map Setup page:

- 1. Press MENU > MENU > Advanced > Settings > Map.
- Use the Rocker left or right to move from icon to icon when selecting a Map Setup category.

Map Setup – General Page On the Map Setup page, highlight the General icon

- Orientation—orients North or your current heading (Track Up) at the top of the display.
- Below–sets the map scale at which Track Up is used. At scales above the setting, map orientation is set to North Up.

- Auto Zoom-sets the map scale to include the beginning and ending points of a route.
- Detail—selects the degree of map detail.
- Lock On Road—locks the position pointer to the nearest road.

Map Setup – Tracks Page On the Map Setup page (page 53), highlight the Tracks icon.

- Saved Tracks—sets the maximum zoom at which saved tracks are shown.
- Track Log-sets the maximum zoom at which active track logs are shown.
- Track Points—sets the maximum number of track points used to record a track.
- Go To Line—selects either a bearing line or course line (page 27) to navigate a track.

Map Setup - Points Page

On the Map Setup page (page 53), highlight the Points icon. Set the maximum zoom (Auto, Off, or a specific zoom level) at which Map Points, Marked Location, Street Label, and Land Cover appear on the Map page.

Map Setup - Text Page

On the Map Setup page (page 53), highlight the Text icon. Set the text size (None, Small, Medium, or Large) for descriptions of map items on the Map page.

Map Setup – Information Page

On the Map Setup page (page 53), highlight the Information icon. Downloaded detailed maps such as topographic, marine charts, and MapSource maps appear. Use the **Rocker** > **ENTER** to show the detailed map on the map display or turn it off.

Press **MENU** to select options for hiding or showing maps.

Map Setup - Marine Page

On the Map Setup page (page 53), highlight the Marine icon. Use the Map Setup – Marine page to customize settings for marine colors, spot soundings, light sectors, and symbol sets when using downloaded marine charts (MapSource BlueChart g2 marine mapping data).

- Marine Colors—turns marine colors
 On or Off on the Map page.
- Spot Soundings—turns spot soundings that indicate depth measurements On or Off on the Map page.
- Light Sectors—turns navigational light locations Off, Auto (location shown when map pointer passes over), or On.
- Symbol Set—selects the map

symbol set (Auto, GARMIN, NOAA, International).

Routing Setup

To open the Routing Setup page:

Press MENU > MENU > Advanced > Settings > Routing.

To select the guidance method your Astro uses to calculate routes:

On the Routing Setup page, select **Guidance Method**

- Prompted—asks you to select a routing method before the route is calculated
- Follow Road—creates a route that overlays the roads on the map.
- Off Road—creates a direct line from your current location to your destination.

To select the method your Astro uses to calculate road routes:

On the Routing Setup page, select **Follow Road Method**.

- Prompted—asks you to select a follow-road method before the route is calculated.
- Faster Time—calculates routes that are faster to drive but can be longer in distance.
- Shorter Distance—calculates routes that are shorter in distance but can take more time to drive.

To turn the Next Turn Pop-up on or off:

On the Routing Setup page, select **Next Turn Pop-up**.

To select whether the Astro recalculates if you depart from the original route:

On the Routing Setup page, select Follow Road Options (bottom of the page). Select Off Route Recalculation.

- Prompted—asks if you want the Astro to recalculate.
- Automatic—recalculates automatically.
- Off-turns recalculation off.

To select how the Astro calculates a route:

On the Routing Setup page, select Follow Road Options (bottom of the page). Select Calculation Method.

 Quickest Calculation calculates the route the quickest, but it might not produce the best route.

- Quick Calculation—takes more time to calculate but generates a better quality route.
- Better Route—generates an even better quality route but uses a longer calculation time.
- Best Route—generates the best route but takes the longest time to calculate.

To optimize the route for your vehicle type:

- On the Routing Setup page, select Follow Road Options (bottom of the page). Select Calculate Routes for.
- 2. Select your vehicle type.

To avoid certain road types on your route:

 On the Routing Setup page, select Follow Road Options (bottom of the page). 2. In the Avoid field, select the types of roads you want to avoid.

Geocache Setup

Use the Geocache Setup page to find and record geocaches. Go to my.garmin.com, login, and click Go Geocaching for geocaching information and to download geocache locations.

To setup Geocaching:

- Press MENU > MENU > Advanced > Settings > Geocache.
- Select Find or Found. Select a symbol for caches that you are looking for or have found.
- Select Calendar Entry When Found > Yes to make an entry on the calendar (page 46) when a cache is found.

Marine Alarms Setup

To open the Marine Setup page:

Press MENU > MENU > Advanced > Settings > Marine Alarms.

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

Time Setup

To open the Time Setup page:

Press MENU > MENU > Advanced > Settings > Time.

• **Time Format**—sets 12-hour or 24-hour format.

- Time Zone–selects your time zone. Select Other to enter a UTC (Universal Time Coordinate) offset.
- UTC Offset-specifies the offset from UTC (when Time Zone is Other).
- Daylight Saving Time—selects
 Daylight Saving Time (Yes),
 Standard Time (No) or
 automatically change (Auto).

Units Setup

To open the Units Setup page: Press MENU > MENU > Advanced > Settings > Units.

 Position Format–specifies the coordinate system to use for location readings.

- Map Datum—sets the coordinate system in which a given location reading appears.
 Do not change the map datum unless you are using a map or chart that specifies a different position format.
- Distance/Speed—sets the unit of measure for distance and speed readings.
- Elevation (Vert. Speed)—sets the unit of measure for your rate of ascent or descent.
- **Depth**—sets the unit of measure for depth.
- Pressure—sets the unit of measure for gauge and atmospheric pressure readings.

Heading Setup

The Heading Setup page specifies the type of heading display and the type of North reference used to calculate a

heading.

NOTE: Unless you have a good understanding of headings and North referencing, use the default values.

To open the Heading Setup page:

Press MENU > MENU > Advanced > Settings > Heading.

- Display–sets the units used to calculate a heading (Cardinal Letters, Degrees, or Mils).
- North Reference—provides headings based on a true, magnetic, grid, or specific user value.
- Switch to compass heading when below—sets the speed to switch to a compass heading when for more than time is exceeded
- **for more than**—sets the time to switch to a compass heading.

Calibration Setup

Redundancy?

To calibrate the compass:

- 1. Press MENU > MENU > Advanced > Settings > Calibration.
- Select Compass and follow the on-screen instructions. For more details on compass calibration, see page 5.

To calibrate the Altimeter:

Select **Altimeter** and follow the on-screen instructions. For more details on altimeter calibration, see page 34.

Altimeter Setup

Use the Altimeter Setup page to self-calibrate the altimeter each time you turn the unit on, to function as a barometer, or to manually calibrate the altimeter when you have accurate

elevation or pressure data.

To set the altimeter to selfcalibrate each time you turn the Astro on:

- Press MENU > MENU > Advanced > Settings > Altimeter.
- Select Auto Calibration >
 ENTER > On. When On,
 elevation is corrected by the GPS
 receiver.

To set the altimeter to function as a standard barometer:

- Press MENU > MENU > Advanced > Settings > Altimeter.
- 2. Select **Barometer Mode** > **Fixed Elevation** (used when stationary, allowing the altimeter to function as a standard barometer). Trip data is not recorded when in Fixed Elevation mode.

To calibrate the altimeter:

Select **Altimeter**, and follow the on-screen instructions. For more details on altimeter calibration, see page 34.

Appendix

Getting More Information

You can find more information about this product on the Garmin Web site.

- www.garmin.com/products/astro
- www.garmin.com/astro (tutorial)

Registering Your Device

Help us better support you by completing our online registration today.

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

Contacting Garmin Product Support

You can contact Garmin Product Support if you have any questions about this product.

In the USA, go to www.garmin

- .com/support, or contact Garmin USA by phone at (913) 397.8200 or (800) 800.1020.
- In the UK, contact Garmin (Europe) Ltd. by phone at 0808 2380000.
- In Europe, go to www.garmin.com /support and click Contact Support for in-country support information, or contact Garmin (Europe) Ltd. by phone at +44 (0) 870.8501241.

myGarmin

Go to www.my.garmin.com to access the latest services for your Garmin products.

Buying Optional Accessories

Go to http://buy.garmin.com, or contact your Garmin dealer for information about optional accessories, preloaded map data cards, fitness accessories, and replacement parts.

To install the wrist strap:

- 1. Place the small loop of the wrist strap through the slot on the back of the unit.
- 2. Route the strap through the loop and pull the end of the strap.



See page 74 to install or remove the microSD data card in the battery compartment.

Specifications

[table]

Physical

Size: Astro: 2.25 in. W × 6.25 in. H × 1.25 in. D (57 × 159 × 32 mm) DC 40: 1.5 in. W × 1.9 in. H × 3.7 in. D (38 × 48 × 94 mm)

Weight: Astro: 6.5 oz. (185 g) without batteries.
DC 40: 7.5 oz. (213 g) with batteries and antenna and collar.
4.7 oz. (133 g) without collar.

Display: 1.5 in. W × 2.2 in. H (38.1 × 55.9 mm), 256-color, high resolution, transreflective (160 × 240 pixels) with backlighting.

Water resistance: Both the Astro and the DC 40 are water resistant

IEC-529, IPX7

Temperature Range:

Astro:

from -4°F to 158°F (from -20°C to 70°C) DC 40: from -4°F to 140°F (from -20°C to 60°C)

DC 40 charging temperature:

from 32°F to 113°F

(from 0°C to 45°C)

Warning: The temperature rating of the Astro System may exceed the usable range of certain batteries. Certain batteries can rupture at high temperatures.

GPS Performance

Receiver: WAAS enabled

Acquisition Times: average, for a stationary receiver with an open sky view

Warm: 15 seconds
Cold: 45 seconds
AutoLocate: 2

minutes

Update Rate: 1/second, continuous

Antenna: A

Astro: Built-in

quad helix

DC 40: Built-in

patch

Accuracy

GPS: < 33 ft. (10 m) 95%

DGPS: 10–16 ft. (3–5 m) 95%

typical

(WAAS accuracy in North

America)

Velocity: 0.164 ft./sec. (0.05 m/sec)

steady state

Miscellaneous

Compass: Accuracy (when

calibrated); ± 2 degrees, resolution; 1 degree

A course or (who

Altimeter: Accuracy (when

calibrated): ± 10 ft. (3 m) Resolution: 1 ft. (0.3 m) Range: from -2,000 ft. to 30,000 ft. (from -610 to

9144 m)

Interfaces: USB for computer

interface

Data Storage Life: Indefinite; no

memory battery required

Map Storage:

e: microSD card capacity (a small portion

of the card capacity is used for formatting)

Power

Source: Astro: Two 1.5 volt AA batteries, vehicle power adapter,

USB data cable

DC 40: Internal rechargeable lithium-ion battery, vehicle power

adapter, AC charger

Battery Life: Astro: Up to 24 hours (typical use). Alkaline

batteries lose capacity as temperature decreases. Use lithium batteries when operating

in below-freezing conditions.

DC 40: from 17 to 36 hours. Recharging takes approximately 4½ hours

Radio

MURS (Multi-use Radio Service)

Frequency:

151.82 MHz

151.88 MHz

151.94 MHz

154.57 MHz

154.60 MHz

Range: Up to 7 miles (11.2 km) - line of sight

Output power: DC 40: 2 watts

Optional Accessories

To obtain replacements for Astro accessories and for optional accessories, contact your Garmin dealer, Garmin Product Support (page 61), or visit the Garmin Web site at www.garmin.com/products/astro/.

Transferring Data

Before connecting your Astro to a computer, install the USB drivers contained in the MapSource Trip and Waypoint Manager software that came with your Astro. Follow the instructions for installation and operation provided with the software.

Information about USB Drivers

The USB drivers are installed when you install the MapSource Trip and Waypoint Manager software. When you initially connect the Astro to a USB port, your computer might prompt you to locate the destination of the drivers for the device. After the drivers are installed to your computer, your computer detects your Astro each time you connect it to a USB port. Periodically check www.garmin.com for updated drivers.

To connect your Astro to your computer:

- Insert the smaller connector on the USB cable into the USB port on the back of your Astro.
- 2. Connect the other cable end to a USB port on your computer.

Transferring Data to a microSD Card

Some Astro navigation features require detailed mapping data, and you may decide to purchase and transfer detailed maps. A microSD card (not included) can be loaded with detailed maps from optional MapSource disks to enhance your Astro. With detailed MapSource mapping data, you can view listings of nearby restaurants, lodging, shopping centers, and entertainment, and you can retrieve addresses and phone numbers for any listed location. To achieve the best terrain details when hunting, use Garmin U.S. Topo maps.

The amount of data transferable is limited to the capacity of the microSD card.

In order to transfer map data to a microSD card, you must install the Trip and Waypoint Manager software and the USB cable. To transfer other data to the microSD card, use the USB mass storage feature explained on page 68.

To transfer tracks, see page 70.

Purchase microSD cards from an electronics supplier or purchase preloaded MapSource detailed map data cards from your Garmin dealer. Go to

www.garmin.com/cartography/ for compatible MapSource products.

Installing a microSD Card

You can purchase microSD memory cards from an electronics supplier,

or purchase preloaded detailed map data cards from your Garmin dealer MicroSD card cover In addition to map and data storage, the memory cards can be used to store files such as images, cartridges, MicroSD card tray geocaches, routes, waypoints, and custom POIs.

- Remove the battery cover by turning the D-ring 1/4 turn counterclockwise and pulling up.
- 2. Slide up and pull out the metal cover.
- 3. Align the metal contacts, and place the card in the slot



Astro with Batteries Removed

- 4. Push in and slide down the metal cover
- 5. Replace the batteries and the battery cover

Removing a microSD Card

- 1. Slide up and pull out the metal cover.
- 2. Remove the card from the slot.

3. Push in and slide down the metal cover.

To transfer Garmin MapSource map data to the microSD card:

Follow the instructions provided with the MapSource map data disk.

To use the USB mass storage mode:

- Connect the Astro to a computer using the USB cable provided.
- 2. Press MENU > MENU > Advanced > Settings > System > MENU > Mass Storage Mode.
- 3. Observe an **Eject** sicon shown on a Windows® computer system tray or a storage-device icon for the microSD on a Macintosh® computer.
- Double-click on My Computer (Windows computer) to observe a new Removable Disk Drive listed.

NOTE: If you have several network drives mapped to your computer, Windows may experience difficulty assigning a drive letter for your Astro microSD card. Either log on without connecting to the network or, from Windows Explorer, click Tools > Map Network Drive and remap a drive letter for the Astro removable storage device. For more information, refer to the Windows Help system.

If you are using a Macintosh computer, double-click on the icon to view the directory of files.

To view information for the microSD card:

Prior to downloading data to the microSD card, press MENU > View Card Info to view data-card storage information.

To transfer files to the microSD card:

- 1. Browse your computer for the file you want to copy.
- Highlight the file, and select Edit > Copy.
- 3. Open the drive or volume identified with the Astro.
- 4. Select Edit > Paste.

To eject and unplug the USB cable:

- 1. When you are finished transferring files, click the **Eject** icon in your system tray, or drag the volume icon to the **Trash** on Macintosh computers.
- 2. Unplug your Astro from your computer.

Updating Astro software To update software on the Astro:

- Install Garmin MapSource Trip and Waypoint Manager. Follow the instructions for installation and operation provided with the software.
- Connect the Astro to a computer using the USB cable provided. Turn the Astro on.
- Go to www.garmin.com/products/ Astro. Click on Updates & Downloads.
- Follow the instructions for using WebUpdater or click **Download** (located under **Unit Software**) and follow the instructions. (If **Unit Software** is not listed on the Web site, there are no updates.)

NOTE: To avoid data corruption, do not turn the Astro off or the DC 40 off during data transfer.

Updating DC 40 Software

The DC 40 uses your Astro as a wireless transfer device when transferring software updates and detailed dog tracks.

- Install Garmin MapSource Trip and Waypoint Manager. Follow the instructions for installation and operation provided with the software.
- Connect the Astro to a computer using the USB cable provided. Turn the Astro on.
- 3. Turn the DC 40 on and place it within 12 inches of the Astro.
- Go to www.garmin.com/products/ Astro. Click on Updates & Downloads.
- 5. Open the Dog Information page (page 7) on the Astro.
- 6. Press MENU > Upgrade Dog Unit and follow on-screen instructions.

7. Follow the instructions for using WebUpdater or click **Download** (located under **Unit Software**) and follow the instructions. (If **Unit Software** is not listed on the Web site, there are no updates.)

Transferring Tracks from the Astro to MapSource on Your Computer

To transfer tracks:

- Open Garmin MapSource Trip and Waypoint Manager. Select the Tracks tab on the left side of the MapSource page.
- 2. Click **Receive from Device** from the Transfer menu.

Transferring More-Detailed Dog Tracks from a DC 40 to MapSource

The dog tracks saved on your Astro are detailed enough for most users to view the movements of their dog. The DC 40 does, however, store more-

detailed tracks of the dog's movements. These tracks can be transferred to MapSource on your computer using the Astro as a wireless transfer device to a computer.

To transfer dog unit (DC 40) tracks:

- Open Garmin MapSource Trip and Waypoint Manager.
- Connect the Astro to a computer using the USB cable provided. Turn the Astro on.
- 3. Turn the DC 40 on and place it within 12 inches of the Astro.
- 4. Open the Dog Information page on the Astro (page 7).
- Press MENU > Transfer Dog Unit Track > ENTER. Wait until the track data is buffered in to your Astro and "Ready to communicate with PC" appears.

- Go to MapSource, and click the Tracks tab on the left side of the screen.
- 7. Click **Receive from Device** from the Transfer menu in MapSource.
- Check Tracks in the Receive from Device window and click Receive.
- When "The Data was successfully received" appears, click **OK** in MapSource.
- 10. Press **ENTER** on the Astro.

Caring for the Astro System

Cleaning the Case

Clean the outer casing of each unit (except for the Astro screen) using a cloth dampened with a mild detergent solution, and then wipe it dry. Avoid cleaners that may damage the plastic components.

Cleaning the Astro Screen

Clean the Astro screen using a soft, clean, lint-free cloth. Use water, isopropyl alcohol, or eyeglass lens cleaner. Apply the liquid to the cloth, and then gently wipe the screen with the moistened cloth.

Cleaning the Dog Collar

Hand wash the collar using a mild detergent solution, rinse it, and then let it air dry. Avoid chemical cleaners that may damage the material.

Water Immersion

The Astro and DC 40 are waterproof to IEC Standard 60529 IPX7. They can withstand immersion in 1 meter of water for 30 minutes. Prolonged submersion can cause damage to the units. After immersion, be certain to wipe and air dry the units before using or charging.

Storage

Do not store the Astro or DC 40 where prolonged exposure to temperature extremes may occur, because permanent damage may result.

Battery Information

⚠ WARNING

See the *Important Safety and Product Information* on page x for product warnings and other important information. The temperature rating for the device may exceed the usable range of some batteries. Alkaline batteries can rupture at high temperatures. Alkaline batteries lose a significant amount of their capacity as temperature decreases. Use lithium batteries when operating the device in below-freezing conditions.

Replacing the Batteries in the Astro

The Astro operates on two AA alkaline, lithium or NiMH batteries (not included). See page 50 for information on setting the battery type.

- Remove the battery cover by turning the D-ring 1/4 turn counterclockwise and pulling up.
- 2. Insert the batteries, observing polarity.



3. Replace the battery cover.

Selecting the Battery Type

- 1. Press **MENU** twice to open the main menu.
- 2. Select Advanced > Settings > System > Battery Type.
- 2. Select Alkaline, Lithium, or Rechargeable NiMH.

Long-Term Storage

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

Important Product and Safety Information

NOTICE REGARDING LEGAL RESTRICTIONS; SPECIAL NOTICE TO USERS IN CALIFORNIA AND ALASKA:

State law in California prohibits the use of GPS dog collars for the pursuit of

mammals. Alaska law prohibits guides from using GPS devices to assist in the taking of big game animals. This is not intended to be an exhaustive list of applicable laws and ordinances, and Garmin makes no such guarantees or warranties that this list is complete. Check your state and local laws and ordinances to ensure you fully understand any restrictions applicable to this product in your jurisdiction prior to purchase and/or use. Garmin does not assume any responsibility for any fines, penalties, or damages that may be incurred as a result of any state or local law or ordinance relating to use of the product.

DC 40 Battery Warnings

If these guidelines are not followed, the internal lithium-ion battery may experience a shortened life span or may present a risk of damage to the DC 40, fire, chemical burn, electrolyte leak, or injury.

- Contact your local waste department to properly dispose of the unit/battery.
- Do not leave the unit exposed to a heat source or in a high-temperature location, such as in the sun in an unattended vehicle on a hot day. To prevent damage, remove the unit from the vehicle or store it out of direct sunlight, such as in the glove box
- Do not incinerate the DC 40 or the battery.
- When storing the unit for a limited length of time, store within the following temperature range: from -4°F to 104°F (from -20° to 40°C). When storing the unit for an extended time, store within the following temperature range: from 32°F to 77°F (from 0° to 25°C).
- Do not operate the unit outside of the following temperature range:

from -4° to 140°F (from -20° to 60°C).

 Recharge the unit within the following temperature range: from 32°F to 113°F (from 0° to 45°C).

The DC 30 contains a replaceable, rechargeable lithium-ion battery, the following warnings also apply:

- Do not recharge the battery outside of the unit or disassemble the battery.
- Keep the used battery away from children. Do not disassemble, puncture, or damage the battery.
- Replace the battery with a Garmin lithium-ion battery pack. Using another battery presents a risk of fire or explosion. To purchase a replacement battery, see your Garmin dealer or the Garmin Web site (www.garmin.com). Do not leave the DC 30 where a dog may

attempt to chew on it. If the battery cell is punctured, electrolyte can be released that can be harmful to the dog.

Long-Term DC 40 Battery Storage

The normal long-term decrease in the charging capacity of lithiumion batteries can be accelerated by exposure to elevated temperatures. Storing a fully charged battery for more than three months in a location that exposes it to high temperatures (above 70°F or 21°C) can significantly reduce its recharging capacity. Before storage, charge the battery to approximately 50% of capacity and store it in a cool, dry location where temperatures are not expected to exceed typical household levels. Do not store a fully depleted battery because it may not recharge after an extended period of storage. After storage, fully charge the battery again before using the DC 40.

Software License Agreement

BY USING THE Astro SYSTEM, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE FOLLOWING SOFTWARE LICENSE AGREEMENT. PLEASE READ THIS AGREEMENT CAREFULLY.

Garmin grants you a limited license to use the software embedded in this device (the "Software") in binary executable form in the normal operation of the product. Title, ownership rights, and intellectual property rights in and to the Software remain in Garmin.

You acknowledge that the Software is the property of Garmin and is protected under the United States of America copyright laws and international copyright treaties. You further acknowledge that the structure,

organization, and code of the Software are valuable trade secrets of Garmin and that the Software in source code form remains a valuable trade secret of Garmin. You agree not to decompile, disassemble, modify, reverse assemble, reverse engineer, or reduce to human readable form the Software or any part thereof or create any derivative works based on the Software. You agree not to export or re-export the Software to any country in violation of the export control laws of the United States of America.

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and may cause harmful interference to radio communications if not installed and used in accordance with the instructions. However, there is no guarantee that interference will 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 of the following measures:

 Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet that is on a different circuit from the GPS device.
- Consult the dealer or an experienced radio/TV technician for help.

This product does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could result in permanent damage to the equipment, and void your warranty and your authority to operate this device under Part 15 regulations.

Industry Canada Compliance

Category I radiocommunication devices comply with Industry Canada Standard RSS-210. Category II radiocommunication devices comply with Industry Canada Standard RSS- 310.

IMPORTANT WARNINGS: READ THIS INFORMATION BEFORE USING YOUR ASTRO DOG TRACKING SYSTEM:

Exposure to Radio Frequency Signals—Your product 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. Warning: 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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For the latest free software updates (excluding map data) throughout the life of your Garmin products, visit the Garmin Web site at www.garmin.com.



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