

# GEONAV 4 GIPSY

NMEA Connect



## User and Installation Guide

## INTRODUCTION

The GEONAV 4GIPSY NMEA Connect is a handheld chartplotter that displays the boat's current position with respect to an electronic chart.

The unit is equipped with a built-in GPS receiver that can track up to 12 satellites simultaneously and be interfaced with an external GPS, an autopilot, a depth sounder and a DSC/GMDSS device.

The unit can be installed onboard and, at the same time, work as a portable instrument, thanks to rechargeable Li-Ion Polymer batteries. The car navigation functions make the unit a complete car navigator, with turn-by-turn driving functions assisted by voice instructions.

The unit is also equipped with a built-in battery charger that starts operating automatically when the unit is powered. Totally waterproof (IPX7), the unit is equipped with a daylight visible, color TFT display.

Thanks to the GEONAV and a NAVIONICS Platinum™ or Gold™ electronic chart, you will never get lost even in case of fog, bad weather or dark.

The ROUTE function will allow you to plan a trip, MARKERS will allow you to mark points of interest whereas the TRACK function will allow you to record the actual route. Thanks to the unlimited capacity of the new CompactFlash™ cartridges - that can also be used on PCs as personal hard disks - the instrument can store a large amount of route, track and marker data.

NAVIONICS Platinum™ charts provide a detailed coverage of all the most popular boating areas, offer new functions - such as 3D display, satellite photographs, etc. - and can be used in

addition to official paper charts to obtain further information such as the availability of port services, as well as tides and currents data. NAVIONICS Platinum™ or Gold™ electronic charts are available worldwide from authorized NAVIONICS dealers.

**NOTE:** The technical characteristics and functions described in this manual are subject to change as a result of improvements or changes to the product.

## CHARACTERISTICS

### General characteristics

- Portable chart plotter with built-in GPS receiver and antenna
- 12-channel internal GPS supporting WAAS/EGNOS
- Satellite acquisition time:  
Approx. 15 seconds (hot start)  
Approx. 2 minutes (cold start)
- GOTO function (Port, Nearest Service, Marker, Lat/Lon)
- Interface for external GPS receiver or for depth sounder with NMEA 0183 output (optional)
- Interface for autopilot with NMEA 0183 input or for DSC/GMDSS device
- Display of depth and water temperature data (if interfaced with depth sounder)
- Chart rotation
- Screen Amplifier™ function
- Autozoom™ function
- Overzoom™ function
- Easy View™ function
- X-Plain™ function
- 8 marker shapes, 8-character name
- Reverse route function
- Selectable depth units (meters, feet and fathoms)
- Navionics Gold™, Platinum™ and Land&Platinum™ electronic charts
- Road maps assisted by voice instructions with turn-by-turn driving functions
- 16 zoom levels
- Heading vector
- CompactFlash™ cartridge
- Storage of routes, tracks and markers in separate files on CompactFlash™ cartridges
- Built-in world map
- Waterproof (IPX7)
- Weight: 300 g.

### Electrical characteristics

- Input voltage: 5 VDC with external 12/24 VDC power supply protected against reverse polarity and overvoltage.  
5 VDC with 100/240 VAC power supply
- Battery pack: rechargeable, Li-Ion Polymer batteries (3.7 V, 2700 mAh)
- Battery operation: approx. 8 h (with backlight off and unused battery. Battery life may become shorter as batteries wear)
- Built-in battery charger; recharge life: approx. 6 h
- Power consumption: 4 W
- Operating temperature: -10° to +50° C. Humidity 93%
- Storage temperature: -20°C to +70°C. Humidity 93%
- Color LCD, transfective, TFT 3.5", sunlight visible
- Adjustable display backlight
- Backlit keypad
- Pixel resolution: 240 x 320
- ARM9 RISC processor

### Memory characteristics

- Up to 20 waypoints per route
- Up to 500 trackpoints
- Up to 99 markers per group
- Number of routes, tracks and markers: unlimited, depending on the size of the CompactFlash™ utilised

### Interface characteristics

NMEA 0183 standard (Rev. 3.01, 4800 baud, No parity, 8 bit, 1 stop bit).

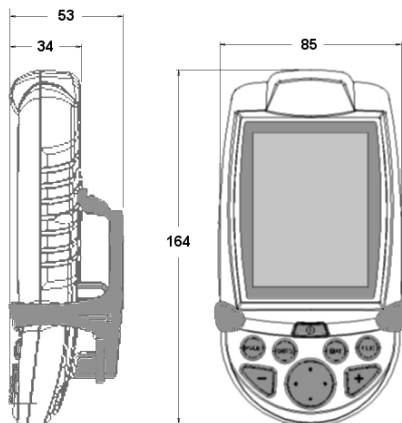
- From external GPS device:  
GLL, VTG, GGA, RMC, GSV, ZDA, RMA, GSA GNS
- From depth sounder:  
DBT, MTW
- To autopilot and/or DSC device:  
APA, APB, XTE, RMB, BWC, GLL, VTG

If received from the built-in or external GPS device, the following messages are transmitted : GGA, RMC et ZDA.

#### Accessories

- Fixed installation bracket
- Adapter for fixed installation bracket
- Bracket for car installation with suction cup
- Adapter for bicycle's handlebar
- Cradle for GEONAV fixing
- Battery charger with lighter plug
- Battery charger speaker with lighter plug
- Battery charger for electric network
- NMEA cable
- Earphone
- Case
- User and Installation Guide

**NOTE:** The accessory set may change according to the different sales packages.  
For further information, please refer to the product catalog and price list.



## INSTALLATION AND PRECAUTIONS

### Precautions

To avoid electromagnetic interference, the GEONAV must be positioned at least 10 centimeters away from magnetic compasses or flux-gate sensors, such as those used on autopilots and remote electronic compasses. The GEONAV is totally waterproof (IPX7) and weatherproof.

It is essential that the slot cover on the unit's rear side is firmly inserted and removed only when the CompactFlash™ needs replacing. Always make sure that, during the replacement operations, the unit is perfectly dry and clean, and that neither water nor dirt enters the cartridge slot.

**NOTE:** Any damage caused by the presence of water inside the unit, due to the lack or incorrect installation of the rear cover, is specifically excluded from the warranty.

### Cleaning

It is recommended that you use a nonalcoholic product to clean the glass, since alcoholic products may damage the glass surface or make it opaque.

### Installation

The GEONAV allows using either the built-in antenna for outdoor installation or an external GPS antenna for indoor use.

**NOTE:** At start-up, the plotter will select the internal GPS by default.

- **Internal GPS:** For the best reception of satellites, mount your unit in an open area or on the car dashboard to allow the built-in antenna to have the best sky visibility. If the instrument is installed so as to allow full horizon visibility, the best performance will be ensured.
- **External GPS:** In case of poor satellite reception, use on a car equipped with shielded windscreen or use in a cabin, the

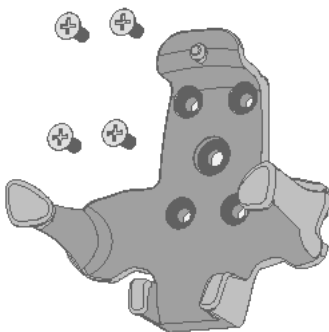
GEONAV can be connected directly to the external GPS receiver supplied as an optional accessory. Through the NMEA cable, the unit can also be connected to any GPS receiver equipped with NMEA 0183 output (See the *Characteristics* section, *Interface characteristics*). To use the data coming from an external GPS receiver, press GOTO, select SETUP, GPS and then the EXT option.

**NOTE:** The optional external GPS receiver with jack works on condition that the unit is powered by the battery charger. The external GPS device or depth sounder connected through the NMEA cable work also when the unit is battery powered.

#### Fixed mounting

The plotter can be mounted on any surface using the mounting bracket provided with the unit (see figure).

Use 4 countersunk head screws (4mm) to fix the bracket to the desired mounting surface. Since the bracket does not allow any left or right rotation, make sure that the unit is properly installed for the best view angle.



#### Returning used electrical and electronic devices in EU countries

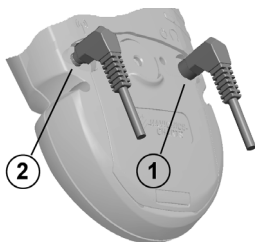
Users of electrical and electronic devices are obligated to collect used devices separately. Electrical (electronic) used devices may not be disposed of together with unsorted household refuse. The separate collection is a condition for reuse, recycling and utilisation of used electrical (electronic) devices, which ensures the protection of resources. Electrical (electronic) used devices from private household can be returned free of charge. To return your used device, please use the country-specific return and collection systems available to you. Electrical (electronic) devices which are marked with one of the symbols shown may not be disposed of with household refuse in accordance with the EU directive.



## CONNECTIONS

### Power supply

The GEONAV can be powered by the built-in battery pack, the electric network adapter, the lighter plug adapter with speaker or the lighter plug adapter.



Install the power supply cable with the jack connector into the plug 1 as shown in the figure, then exert a light pressure until clicking.

When the cable is disconnected, make sure that the connector is protected by the appropriate rubber cap.

### External power supply

To power the unit through the car lighter plug (12/24 VDC), use the appropriate car lighter adapter or the lighter plug adapter with speaker. The figure below shows the battery charger adapter for lighter plug:



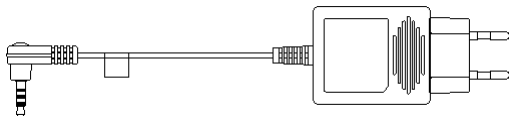
Those adapters have little LEDs that go on if the power supply is correctly provided. If, after inserting the adapter into the lighter plug, the light is off:

- Check that the voltage is available from the lighter plug.
- Open the adapter and check the fuse.

If the fuse is interrupted, replace it with a fuse having the

same electrical characteristics (T2A). The adapter for lighter plug is protected against short-circuit, polarity inversion and overvoltage.

To power or charge the unit through the house electric network (100÷240 VDC), use the appropriate electric network adapter.



**NOTE:** Never cut the cables of the network adapter, battery charger adapter for lighter plug or battery charger speaker for lighter plug to connect the unit directly to the external power supply. Do not use any bypass circuit. Use only the network adapter or lighter plug adapters supplied. Any damage caused by incorrect external power supply or use of non-original or modified components is excluded from the warranty.

### Battery pack

The rechargeable battery pack allows using the GEONAV as a portable unit. The unit can be powered by the batteries only or connected to an external power supply.

When the unit is powered by the power supply cable, the inner batteries are fully recharged, then the inner battery charger is automatically disabled and the batteries disconnected in order to keep their charge.

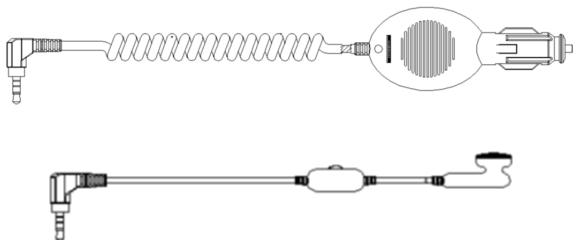
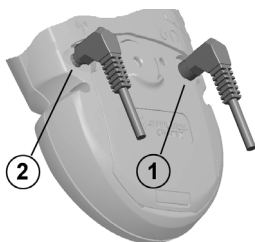
The full charge cycle of a battery set totally discharged requires approximately 6 hours, depending on the battery status, and allows the unit to operate for about 8 hours, provided that the backlight switch off is enabled.

**NOTE:** If, when charging the battery, the unit is turned off, the display will warn the user that the battery charge operation is in progress.

### Audio connections

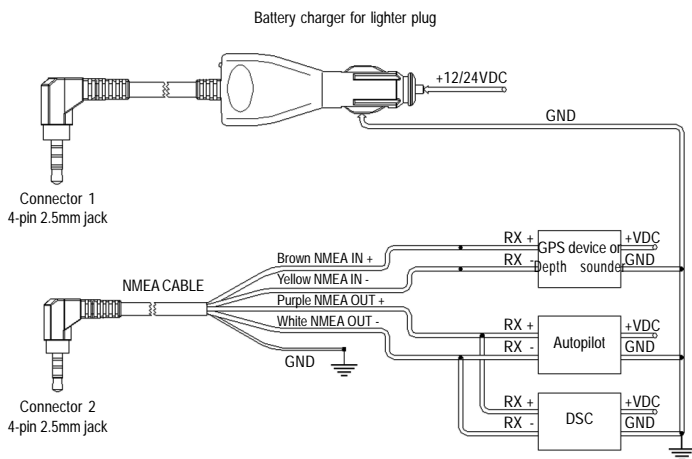
The unit's power supply connector 1 can also be used to connect the earphone or the loudspeaker supplied as an accessory.

Use the battery charger adapter for lighter plug to listen to the car navigator instructions and, at the same time, to charge the inner batteries, or the earphone to listen to the instructions when the unit functions as a handheld unit.



### Connection of the external GPS receiver

The unit can be connected to the supplied external GPS receiver with the connector 2, or to any GPS receiver equipped with NMEA 0183 interface with the suitable NMEA cable (See the *Characteristics* section, *Interface characteristics*).



### Connection of the depth sounder

By means of the connector 2 and the NMEA cable, the unit can also be connected to any depth sounder equipped with an NMEA 0183 output (See the *Characteristics* section, *Interface characteristics*).

**NOTE:** The external GPS receiver and depth sounder cannot be connected to the NMEA input of connector 2 at the same time. Only the connection of one device at a time is allowed.

### Connection of the autopilot and DSC/GDMSS device

By means of the connector 2 and the NMEA cable, the unit can be connected to any autopilot and/or DSC device equipped with NMEA 0183 inputs (See the *Characteristics* section, *Interface characteristics*).

Maximum 2 devices with NMEA 0183 inputs can be connected, at the same time, to the NMEA output of connector 2.

**NOTE:** The data for the DSC devices are available provided that the built-in or external GPS device has a valid fix.

All the devices connected to the GEONAV must have the negative power supply pin (ground) in common.

The jack connection is splashproof. Should seawater seep into the connector, with the unit off, disconnect the jack, wash it with fresh water, and then let it dry.

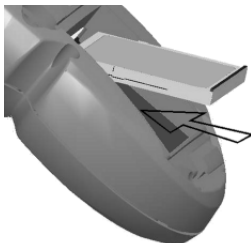
## CARTRIDGE INSTALLATION

### Installing the CompactFlash™

Make sure that the unit is switched off, perfectly dry and disconnected from the battery charger.

Remove the cartridge slot cover located on the unit's rear side.

Insert the cartridge into the appropriate slot, with the label side turned backwards, then lean it against the slot bottom. Push the cartridge towards the connector until it touches the bottom.



Replace the cover and check whether it is perfectly closed, in order to avoid any water infiltration.

**WARNING:** Always use CompactFlash™ cartridges certified by Navionics. The use of non-certified cartridges may result in improper operation of the unit.

The CompactFlash™ cartridges can be used as a mass-storage with any PC computer, so can be the cartridge used by the plotter. However, the plotter needs to find some free space in the cartridge in order to work properly. Prior to use a new cartridge, always make sure that there are at least 2.5MB of free space.

**WARNING:** Be careful when handling the cartridge files by using the PC. Microsoft Windows allows deleting and moving files easily, therefore avoid erasing the files from the directories present in the cartridge. Damaging the files stored in such directories may result in loss of data or improper operation of the unit.



## DIAGNOSTIC

The GEONAV features a diagnostic program to verify its correct performance, once installed, and detect problems that may occur during the use of the unit.

To access the diagnostic program, hold the **ENTER** key pressed, while pressing the **PWR** key.

The GEONAV will switch on and carry out automatically a test of the whole system; as soon as the memory test is completed, the program will allow checking the correct operation of the unit's parts.

Press **ENTER** to run one test or **PAGE** to skip it and pass to the following test.

**WARNING:** The unit's internal memory can be cleared by holding the **CLR** key pressed when switching the unit on. This operation will delete all the settings stored in the GEONAV and restore factory settings. Moreover, the routes, tracks and markers not saved on the CompactFlash™ cartridge will be deleted.

**NOTE:** In case of damaged cartridge or abnormal power spikes, the unit might lock. If necessary, reset the unit by holding the **PWR** key pressed for about 10 seconds.



MARINE NAVIGATION

## **READ THIS WARNING BEFORE USING THE GEONAV**

### **WARNING**

THE ELECTRONIC CHART IS AN AID TO NAVIGATION DESIGNED TO FACILITATE THE USE OF AUTHORIZED GOVERNMENT CHARTS, NOT TO REPLACE THEM. ONLY OFFICIAL GOVERNMENT CHARTS AND NOTICES TO MARINERS CONTAIN ALL INFORMATION NEEDED FOR THE SAFETY OF NAVIGATION AND, AS ALWAYS, THE CAPTAIN IS RESPONSIBLE FOR THEIR PROPER USE.

**The use of the GEONAV implies knowledge and acceptance of this warning by the user.**









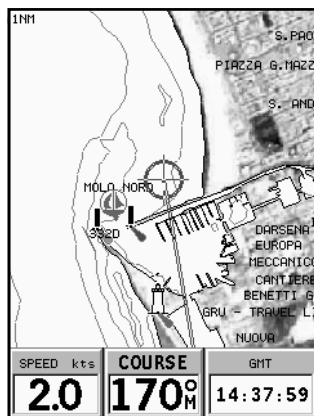


### Displaying aerial / satellite charts

**NOTE:** This function is available only with the NAVIONICS Platinum™ cartridges storing aerial and satellite photographs. The Photo Overlay function suspends the Chart Rotation function.

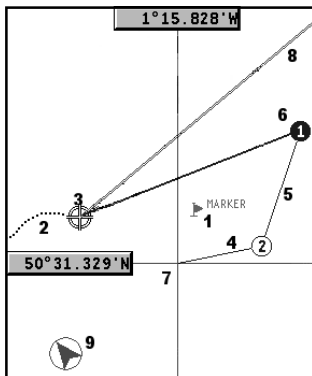
Press **GOTO** to display the menu, select **SETUP**, **PHOTO OVERLAY** and then **LAND** or **FULL**.

From a given zoom level onwards, where available, aerial or satellite photographs will overlay the traditional chart items, only in land areas (**LAND**) or both in land and sea areas (**FULL**).



## GRAPHIC ITEMS

Besides chart data, the GEONAV displays some graphic items useful during navigation. The figure below shows some of these items.

**1 - Marker**

Indicates a point of interest associated with a symbol and a name.

**2 - Track segment**

Recording of the track actually followed by the boat; the track is displayed as a dashed line.

**3 - Boat's position**

Boat's position according to the data received from the GPS receiver.

**4 - Rubber band**

Line joining the last waypoint entered to the manual cursor, or the boat's position to the manual cursor when no waypoint has been entered.

To delete this band, press the **PAGE** key and switch to Navigation mode.

#### **5 - Route leg**

Part of route between two waypoints.

#### **6 - Waypoint**

Waypoints are identified by a circle and a number. The route starting point is marked by the "X" symbol. The target waypoint is identified by a filled circle, whereas the route leg currently followed is identified by a thicker line.

#### **7 - Cursor**

Indicates the position expressed in geographical coordinates (latitude and longitude).

It is displayed when the plotter is in Cursor mode.

#### **8 - Heading vector**

Indicates graphically the boat's current route.

#### **9 - North indicator**

Indicates the north direction when the Chart Rotation function is enabled.

## FUNCTIONAL CHARACTERISTICS

This chapter describes some of the most important functions of the GEONAV, as well as the terms most commonly used in this document.

### Switching on/Switching off the unit

To switch the GEONAV on, keep the PWR key pressed until the unit issues a beep sound to confirm the operation. To switch the GEONAV off, keep the PWR key pressed for more than 1 second.

### Selecting marine or land mode

At start-up, the mode enabled is that active when switching the unit off. To switch from marine navigation to road navigation, make sure that the cartridge storing the desired data (marine or land) has been loaded, then select SETUP, NAVIGATION or MARINE NAVIGATOR.

### Internal or external GPS antenna

To make the installation easy, the GEONAV can use either its own internal GPS receiver or an external receiver, depending on where the unit is to be installed (indoor or outdoor). To select the internal or external GPS, press GOTO to display the menu, select SETUP, then GPS INT/EXT. Press ENTER to confirm the operation.

### Navigation mode (Automatic)

The GEONAV enters the Navigation mode as soon as the internal or external GPS receiver transmits a valid fix. When in Navigation mode, the manual cursor is not displayed. This mode is also called automatic because the unit automatically selects the chart scale and updates the boat's position on the screen.

### Cursor mode (Manual)

When in Cursor mode, the manual cursor is displayed. It is possible to edit a route, insert or delete markers, display navaid

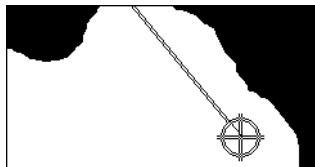




the boat, provided that the boat's speed is greater than 3 knots. This function will be activated only if no waypoint has been previously inserted.



Without screen amplifier



With screen amplifier

### Overzoom

The Overzoom function allows the chart scale to expand anywhere up to 1/4 NM. The Overzoom does not provide any additional chart detail, but improves only the readability of the existing information, thus acting as a magnifying glass. To activate or deactivate the Overzoom function, press GOTO to display the menu bar, then select SETUP, OVERZOOM and ON/OFF.

### Position calibration

All position sensors have intrinsic errors that make the boat's position incorrect (from few meters to several hundred meters) with respect to the background display of the chart. This error is caused by the principle at the root of the satellite-derived position system. The position calibration function allows correcting manually the position error present in all GPS devices, provided that this error is not greater than 2 nautical miles.

To carry out the calibration, press GOTO to display the menu bar and then, by the CURSOR key, select SETUP, CALIBRATION and then ON. A message will prompt the user to move the cursor to the boat's true position, appropriately enlarged by the ZOOM+ key.







The reference distance value for the alarm can also be set. After the alarm is issued, press any key to reset it by using the current ship's position as the new anchor position. To set this function, press GOTO, select SETUP and then ANCHOR ALARM.





The time to reach the last waypoint in the route is calculated by adding the time to reach the target waypoint to the time to cover the distance to the other waypoints at the current speed.

As new waypoints are added, the numbering will increase progressively. In case of an error, waypoints can be deleted by pressing the CLR key (Cursor mode), starting from the last entered.

To go back to Navigation mode, press PAGE.

**NOTE:** The cursor can be moved to the desired position by using the GOTO function as well. See the relevant sections for more details.

## OPERATING MODES

The GEONAV can operate in two different modes, Cursor and Navigation, each giving access to different functions.

### CURSOR MODE

When the GEONAV is in Cursor mode, the crosshair cursor is displayed. The CURSOR key allow browsing through the electronic chart, as well as editing or creating the route. See the *Route* Section for more details. To enter the Cursor mode, press the CURSOR key.

### NAVIGATION MODE

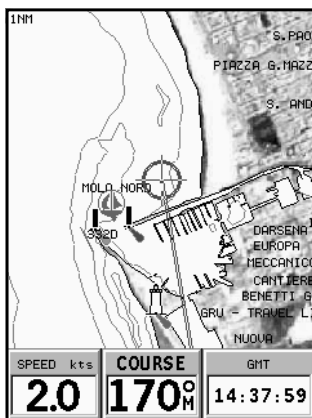
In Navigation mode, the boat's position icon replaces the crosshair cursor and several data windows can be accessed. To enter the Navigation mode, press the PAGE key repeatedly. As the fix is valid, the windows sequence is the following:

**NAVIGATION > DEPTH SOUNDER > TRIP > SATELLITE > INFO > TIDE  
INFO > RUNWAY > 3D**

The Tide Info window is displayed provided that a NAVIONICS cartridge featuring Tides and Currents data is active (see the *Tide Info Window* Section).

## RANGE WINDOW

This window, situated in the top left-hand corner of the screen, shows the chart range (4096 NM to 1/8 NM).





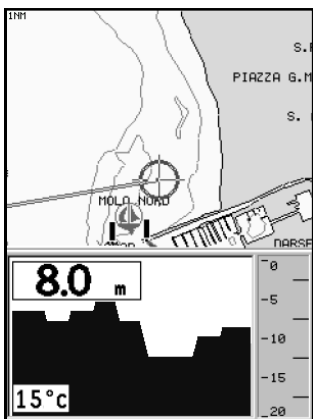
**DEPTH SOUNDER WINDOW**

A depth sensor can be interfaced with the GEONAV via NMEA.

In this case, the GEONAV automatically enables the depth sounder function, displaying a graph of sea depth.

The depth scale, whose unit can be selected from the menu in meters, feet or fathoms, will change automatically to show deeper or shallower water.

In Navigation mode, press PAGE until the depth sounder window appears.



The window will display the following data:

- Water depth
- Depth scale
- Water temperature (if available)

When navigating in waters deeper than sounder access range or if the boat's speed is too high for depth sounding, data acquisition will be interrupted and the number replaced by “—”. To deactivate the depth sounder window, press PAGE.

## TRIP WINDOW

TRIP DATA	
Covered Distance	0.00 <sub>km</sub>
Travel Time	0' 00"
Average Speed	0.0 <sub>km/h</sub>
Maximum Speed	0.0 <sub>km/h</sub>
Total Distance	0.00 <sub>km</sub>
◀CLR▶ = Reset Trip	

The trip window shows the data relating to the route followed and, in particular:

- Average speed
- Time elapsed from departure
- Partial distance covered
- Total distance covered

To reset partial counters before starting a new journey, press CLR.



tion are displayed as soon as three satellites are tracked and a 2D fix (two dimensions) is available.

The altitude value is available only if four satellites are tracked and a 3D fix is obtained.

As soon as a valid fix is available, the GEONAV will automatically switch to Navigation mode and display the boat's position at the best chart range available; the window at the bottom of the screen will indicate the boat's course and speed.

To recall the Satellite window, press the PAGE key repeatedly until it appears.

## INFO WINDOW

This window displays the following information on the boat's current position:

- Geographical coordinates (latitude/longitude)
- The position correction applied to the latitude and longitude (option SETUP, CALIBRATION)
- Magnetic variation value received by the GPS
- Course (COG)
- Speed (SOG)

NOTE: This window is available in Navigation mode only.

SHIP POSITION		
LATITUDE		
45° 15.000N*		
LONGITUDE		
179° 50.000W*		
CALIBRATION		
dLAT	dLONG	
1°15.000N	2°15.000W	
COG	SOG	KM/H
145° <sub>M</sub>	51.0	
MAG. VAR.	15.0W	

















## TRACK

The Track function allows recording the track actually followed by the boat. The Track function can be enabled and disabled several times during navigation.

### Starting a track

To enable the Track function, press the GOTO key to display the menu bar, select TRACK, START and press ENTER to confirm. A small circle on the boat's position will indicate the track starting point.

### Stopping a track

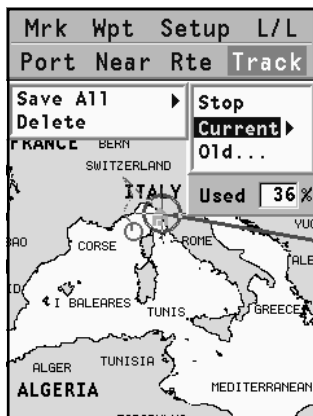
To disable the Track function, press the GOTO key to display the menu bar, select TRACK, STOP and press ENTER to confirm.

### Storing a track in the CompactFlash™

Press the GOTO key to display the menu bar, select TRACK, CURRENT, SAVE ALL and press ENTER to confirm. Use the CURSOR key to change the default file name and press ENTER to confirm the operation.

A message will confirm that the track has been stored correctly. Once stored, the track will disappear from the screen.

Each time a track is stored in the CompactFlash™, the plotter's memory is cleared and the indicator of memory used in the TRACK menu is reset to 0%.



#### Recalling a track from the CompactFlash™

Press the GOTO key to display the menu bar, select TRACK, OLD and press ENTER to open the track catalog.

Select the track desired, then press ENTER to confirm the operation or PAGE to exit.

#### Deleting a track

To delete the track displayed, press the GOTO key to show the main menu, select TRACK, CURRENT, DELETE and press ENTER to confirm.

To delete a track stored in the CompactFlash™, press the GOTO key to show the menu, then select TRACK and OLD. Select the track from the list of the tracks stored in the CompactFlash™, then press CLR to delete it and ENTER to confirm the operation.







If some markers are already present on the chart, when recalling a set of markers from the CompactFlash™, a window will ask to confirm the marker deletion and replacement. Press ENTER to confirm the operation, or PAGE to exit.

#### Deleting markers

To delete the set of markers displayed, press the GOTO key to show the menu, select MARKER, CURRENT, DELETE ALL and press ENTER to confirm.

To delete a single marker among those displayed, press the GOTO key to show the menu, select MARKER, CURRENT and GOTO MARKER. Select the marker desired from the list shown, then press CLR to delete it and ENTER to confirm the operation.

To delete a set of markers stored in the CompactFlash™, press the GOTO key to show the menu, then select MARKER and OLD. By using the CURSOR key, select the set of markers from the list of those stored in the CompactFlash™, then press CLR to delete it and ENTER to confirm the operation.









## SETUP

The Setup menu allows setting the available options.

To access the Setup menu, press GOTO to display the main menu, then select SETUP by using the CURSOR key. The menu items are grouped in six sets. When selecting a set by the CURSOR key, the list of the available options will be displayed. Press ENTER to select one set, then use the CURSOR key to switch from one option to another and edit the setting. To go back to the set list, press PAGE.

### DISPLAY

- Mode (BRIGHT/DAY/NIGHT)  
Selects the colors suitable for the brightness of the environment.
- Safety Depth (OFF/2m/5m/10m/20m)  
Enables the display of the areas corresponding to the depth safety limit.
- Depth Contours (ALL/5m/10m/20m)  
Selects the display of depth contours.
- Photo Overlay (LAND/FULL/OFF)  
Selects the enabling of the overlay of satellite photographs for charts: only on land, everywhere or off, respectively.
- Chart Rotation (ON/OFF)  
Enables/disables the Chart Rotation function.



**NOTE:** The Chart Rotation function is automatically suspended as the Photo Overlay function is enabled.

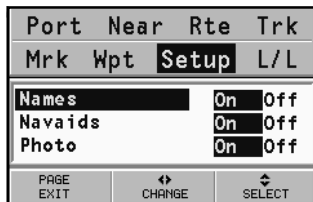
- Set Chart Detail (STD/USER/ALL)  
Selects the chart details to display. It is possible to select

one of the two settings available (STD - equivalent to the standard display setting, as defined by ECS regulations - and ALL, that enables the display of all the items on the chart). The USER option enables/disables the display of the single items.

- Easy View (ON/OFF)  
Enables/disable the Chart Magnification function.
- Overzoom (ON/OFF)  
Enables/disable the Overzoom function.
- Presentation (INTER./U.S.)  
Selects the symbols and colors of chart presentation.
- Own Ship Icon  
Selects the icon that will identify the ship's position on the screen.

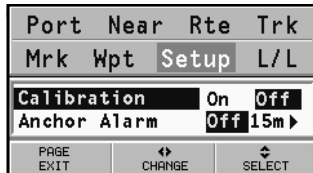
### 3D DISPLAY

- Names (ON/OFF)  
Enables/disables the visualisation of names in the 3D display.
- Nav aids (ON/OFF)  
Enables/disables the visualisation of nav aids in the 3D display.
- Photo (ON/OFF)  
Selects the type of texture for the 3D display, to choose from satellite photograph and simple texture.



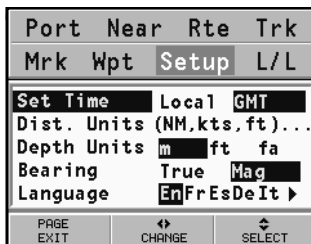
### NAVIGATION

- Calibration (ON/OFF)  
Calibrates the ship's position received by the GPS device.
- Anchor Alarm (OFF/15m/30m/50m)  
Enables/disables the alarm and sets the distance range for the anchor alarm.



## UNITS AND LANGUAGE

- **Set Time (LOCAL/GMT)**  
Enters local time.
- **Distance Units (NAUT/METR/STAT)**  
Selects distance units.
- **Depth Units (M/FT/FA)**  
Selects depth units.
- **Bearing (TRUE/MAG)**  
Sets the magnetic mode for all bearings.
- **Language (EN/FR/ES/DE/DK/IT/SV/NL/SU/NO/GR)**  
Selects the language.



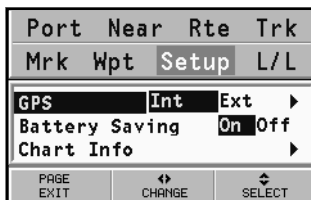
## WINDOWS

- **Selects the auxiliary windows to display.** For every window, a preview image - whose display can be enabled/disabled (ON/OFF) - is available.



## OTHER

- **GPS (INT/EXT/DIFF)**  
Selects the built-in GPS, an external GPS antenna or the built-in GPS with the reception of WAAS/EGNOS differential satellites (if available).
- **Battery Saving (ON/OFF)**  
Sets the automatic switching off time for the backlight and screen, in order to reduce the battery consumption.



- **Chart Info**

By selecting ON, a window will show the catalog of the charts stored in the cartridge. Select one chart by the CURSOR key and press ENTER to display the information associated with the chart (chart number, authority that issued it and date of issue), or PAGE to exit.

### GOTO LAT/LON

Press the **GOTO** key and select **L/L** by the **CURSOR** key. Enter the geographical coordinates desired by using **CURSOR** and confirm the insertion.

The **GEONAV** will move the manual cursor to the position selected, allowing the insertion of a waypoint or a marker.

ROAD NAVIGATION

## READ THIS WARNING BEFORE USING THE GEONAV

### WARNING

THE CAR NAVIGATOR SHOULD BE INSTALLED SO AS NOT TO INTERFERE WITH THE VEHICLE CONTROLS AND/OR SAFETY FEATURES, AND NOT TO OBSTRUCT THE DRIVER'S VIEW. IT SHOULD NOT BE USED BY THE DRIVER, NOR DISTRACT THE DRIVER'S ATTENTION WHEN THE VEHICLE IS IN MOTION.


IT IS RECOMMENDED TO PAY ATTENTION TO ROAD SIGNS: THE INSTRUCTIONS PROVIDED BY THE CAR NAVIGATOR SHOULD BE CONSIDERED AS SUGGESTIONS, NOT AS DRIVING INDICATIONS WHICH COULD RESULT INCORRECT DUE TO INACCURATE MAP DATA OR CHANGES TO ROAD PRACTICABILITY.

**The use of the GEONAV implies knowledge and acceptance, by the user, of this warning and the warnings reported in the manual.**










**NOTE:** This function is available only when using NAVIONICS land cartography cartridges.










## ROAD MAPS











During navigation, the unit displays the map of the area surrounding the vehicle, highlighting the way to follow in order to reach the destination set. The map also shows the surrounding roads, as well as all the point of interest available in the area.

The position of the vehicle is indicated by the symbol  showing the vehicle's heading, whereas the direction to follow is highlighted by an arrow overlapping the road suggested.





The points of interest, that indicate the availability of services such as restaurants, hotels, filling stations, etc., are represented on the road map by the relevant icons. The list of the icons available is reported below.

	Airline Access
	Airport
	Amusement Park
	Beach
	Café/Pub
	Camping
	Car Repair Facility
	Cash Dispenser
	Casino

	Church
	Cinema
	City Center
	City Hall
	College / University
	Convention Center
	Cultural Center
	Dentist
	Doctor

	Embassy		Place of Worship
	Entertainment		Police Station
	Ferry Connection		Post Office
	Ferry Terminal		Railway Station
	Golf Course		Rent-a-Car Facility
	Government Office		Rent-a-Car Parking
	Hospital/Polyclinic		Rest Area
	Hotel or Motel		Restaurant
	Important Tourist Attraction		Restaurant Area
	Institutions		Scenic/Panoramic view
	Library		Shop
	Monument		Shopping Center
	Museum		Sports Center
	Music Center		Stadium
	Nightlife		Swimming Pool
	Open Parking Area		Theatre
	Park/Garden		Tourist Information Office
	Parking Garage		Veterinarian
	Petrol Station		Yacht Basin
	Pharmacy		Zoo

On road maps the centers of cities, towns, villages and resorts are represented by the following icons:

	Capital cities (blue and red)
	Cities (blue and yellow)
	Towns (blue and sky-blue)
	Villages or resorts

## FUNCTIONAL CHARACTERISTICS

This chapter describes some of the most important functions of the GEONAV, as well as the terms most commonly used in this document.

### Switching on/Switching off the unit

To switch the GEONAV on, keep the PWR key pressed until the unit issues a beep sound to confirm the operation. To switch the GEONAV off, keep the PWR key pressed for more than 1 second.

### Selecting the marine or land mode

At start-up, the mode enabled is that active when switching the unit off. To switch from marine navigation to road navigation, make sure that the cartridge storing the desired data (marine or land) has been loaded, then select SETUP, NAVIGATION or MARINE NAVIGATOR.

**NOTE:** If the cartridge currently inserted contains no road maps, as soon as the CAR NAVIGATION option is selected, the unit will automatically turn off after showing a warning message. At the following power on, the unit will start in marine navigation mode.

### Voice instructions

As mentioned in the introductory chapter, in compliance with the safety regulations, the car navigator helps the user to follow the route defined thanks to voice instructions. The power cord includes a speaker with adjustable volume and a jack for the external GPS powered by this cord.

The instructions and information provided by the speaker concern:

- Entrance/exit ramps of highways, bridges, forks, traffic circles and services.
- Automatic recalculation of the route in case of diversion from the planned route.

- Confirmation of arrival at destination.

To repeat the message concerning the following manoeuvre, press the ENTER key. Voice messages are enabled also in Simulation mode.

## GETTING STARTED

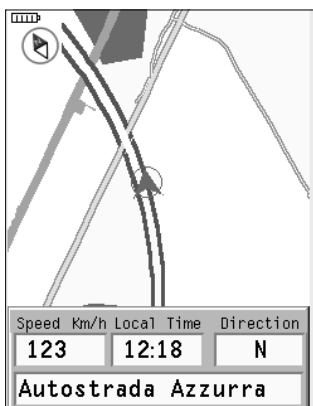
At start-up, the unit displays a welcome message and warning. The warning message reminds the user that the instructions provided by the car navigator should be considered as suggestions, and not as real indications, which could not take into account, for example, changes to road practicability.

Press the **PAGE** key to display the start-up screen, then use the **PAGE** key to scroll the windows available (navigation, trip, satellite and route info), if enabled from the Setup menu.

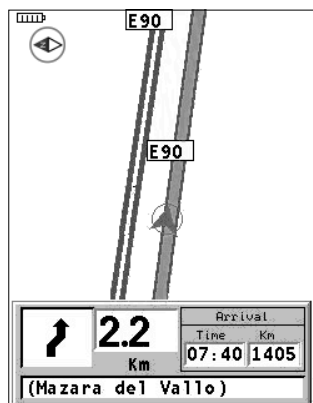
**NAVIGATION WINDOW**

The navigation window is enabled from the Setup menu by means of the **CURS**OR key.

This window is available provided that a position is present and looks differently, depending on whether a destination has been previously set.



Without destination



With destination

**North direction**

A small compass displayed at the upper left-hand corner of the screen, below the battery icon, indicates the current map orientation.

**Chart range**

If the cursor is enabled with the **CURS**OR key, the upper right-hand side of the screen will display the chart range window.

To go back to Navigation mode, press PAGE.



**Battery-shaped icon**

Refer to the *Battery Management* paragraph in the *Marine Navigation* Section.

**TRIP WINDOW**

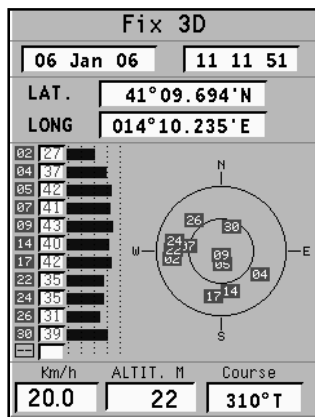
The trip window shows the data relating to the distance covered, time elapsed from departure, average speed and maximum speed reached from the latest reset operation or from the latest destination set.

TRIP DATA	
Distance Covered	<b>153</b> Km
Travel Time	<b>02:40</b> <sup>H</sup> '
Average Speed	<b>52</b> Km/h
Maximum Speed	<b>130</b> Km/h
< CLR > = RESET TRIP DATA	

### SATELLITE WINDOW

The satellite window displays the current configuration of the satellites tracked.

As soon as the unit has tracked at least three satellites, the data relative to position, current date and time are available.



## ROUTE INFO WINDOW

The route info window displays the data relative to departure and arrival, route type, distance and traveling time, as defined according to the speed set in the Setup menu.

Route Info	
<b>From</b>	
Bellona Unnamed Road	
<b>To</b>	
Tivoli Unnamed Road	
Type	Quickest
Distance	Time
<b>180</b> Km	<b>01:33</b> <sup>H</sup> '

## MAIN MENU

The menu bar, displayed at the top of the screen, allows accessing the following options:

**MARKER:** To insert, select, define and delete markers.

**ADDRESSES:** To insert, select, define and delete addresses.

**NEAR:** To display the list of the services available, search for the nearest service, select and define the service.

**SETUP:** To activate/deactivate and edit the unit's operating parameters.

## MARKER

Markers allow identifying points of interest and are stored in the unit's memory.

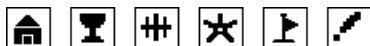
### Inserting a marker

Move the cursor to the position desired, then press the ENTER key. By the CURSOR key, select MARKER from the dialog box and confirm the choice by ENTER. A window will allow defining the marker's symbol and name.

Use the CURSOR key to change the marker's symbol as well as the alphanumeric characters forming the marker's name.



The symbols available are the following:



### Menu marker

Press GOTO, then select the marker desired by CURSOR. After pressing ENTER, a window will allow defining the marker as a Starting point or Destination by means of CURSOR. Confirm the operation by pressing ENTER.

If defined as Destination, the marker will be represented on the map by a symbol for finish, whereas, if defined as a Starting point, it will be represented by a flag.

**NOTE:** If a Starting point and Destination are present, the route will be calculated and highlighted in green on the map.

**Deleting a marker from the list**  
Press **GOTO**, then select a marker from the list by **CURSOR**. Press **CLR** to delete the marker and confirm the operation by pressing **ENTER**.

**Deleting a marker from the screen**  
Move the **CURSOR** key on the marker and, after displaying the page with the marker's symbol and name, press **CLR** to delete it. Confirm the deletion with **ENTER**, or cancel it with **PAGE**.

**Editing a marker on the screen**  
Move the **CURSOR** key on the marker to edit. When the page displaying the marker symbol and name shows, press **ENTER** to modify the icon and description. Press **ENTER** to confirm, or **PAGE** to cancel the operation.



## ADDRESSES

To display the list of the addresses available, press the GOTO key. A window will show the addresses already saved or will give the opportunity of entering a new address. Once confirmed, the addresses will be displayed in the list.

### Entering a new address (without virtual keyboard)

To enter a new address without using the virtual keyboard, select SETUP, KEYBOARD and then disable the keyboard by selecting the OFF option.

By the CURSOR key, enable the “New” option. Always by means of CURSOR, enter only the first letter or more letters forming the name of the place desired.

A list will show the places defined by the letters entered. By using the CURSOR key, search for the place desired and confirm the selection by ENTER.



In the same way described above, in the window that follows, it will be possible to enter the name of a road and, if known, the number, or identify a point of interest by category or by name.

The CATEGORY proposes symbols and provides their meanings. The symbol selected opens the list of the places available and allows their selection. By defining a point of interest as NAME, the list of the possible choices will be shown. To confirm a selection, press ENTER.

After entering the address, define it as Destination, Marker or Starting point in the dialog box. Confirm the operation by ENTER.

**NOTE:** If a Starting point and Destination are present, the route will be calculated and highlighted in green on the map.

**Entering a new address (with virtual keyboard)**

To enter a new address by means of the virtual keyboard, select **SETUP, KEYBOARD** and then enable the keyboard by selecting **ABC** or **QWERTY**, according to the type of keyboard desired.

By the **CURSOR** key, enable the “New” option. Always by means of **CURSOR**, select the letters on the keyboard, one by one, and confirm by **ENTER**.

A list will show the places defined by the letters entered. By using the **CURSOR** key, search for the place desired and confirm the selection by **ENTER**.

In the same way described above, in the window that follows, it will be possible to enter the name of a road and, if known, the number, or identify a point of interest by category or by name.

The **CATEGORY** proposes symbols and provides their meanings. The symbol selected opens the list of the places available and allows their selection. By defining a point of interest as



NAME, the list of the possible choices will be shown. To confirm a selection, press **ENTER**.

After entering the address, define it as Destination, Marker or Starting point in the dialog box. Confirm the operation by **ENTER**.

**NOTE:** If a Starting point and Destination are present, the route will be calculated and highlighted in green on the map.

### Selecting/defining the addresses stored

Besides what has been reported in the previous paragraph, the address menu shows the list of the addresses already entered that can be selected and defined as Destination, Marker or Starting point.

Move the cursor on the address desired and confirm the selection by pressing **ENTER**.

### Deleting an address from the list

By the **CURSOR** key, select the address to delete from the list, press **CLR** and confirm the deletion by **ENTER**.



## NEAR

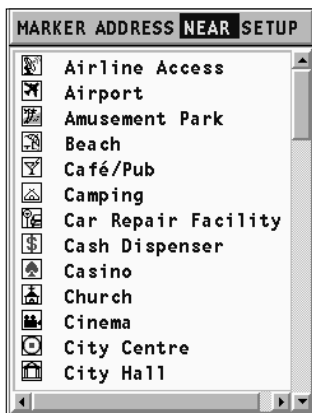
To display the list of the services available and to search for the service nearest your position or cursor's position, select NEAR and press the GOTO key.

### Selecting/defining a service

By means of the CURSOR key, scroll the list of the services available, select the service and press ENTER to confirm the operation. The display will show three icons, the largest one indicating the service nearest the reference position.

When positioning the CURSOR key on each icon, the window situated in the lower side will display the name of the service, its address and the distance from the current position.

Select the icon desired and press ENTER to confirm the operation.



After setting the service desired, define it as Destination, Marker or Starting point in the dialog box. Confirm the operation by ENTER.


## CURSOR

A route can also be defined by means of the cursor only.



In the absence of a valid Fix (GPS position not detected), both the starting point and destination shall be set, as described below.

### Starting point and destination

With the CURSOR key, position the cursor on a point on the screen and press ENTER.

Define the point as a starting point in the dialog box, then confirm by ENTER. A green flag  will be displayed close to the cursor.


Position the cursor on another point and press ENTER. Select the

Destination item in the dialog box and confirm by ENTER. The symbol for finish  will show close to the cursor. The route defined between  the starting point and destination will be calculated and highlighted in green on the map.

In the presence of a valid Fix (GPS position), the point selected by the cursor will be automatically considered as a destination and the route traced starting from the current position.

### Intermediate point (Via point)

With CURSOR, move the cursor on a point on the screen, then press ENTER. Define the point as a Via point and press ENTER.

A numbered circle  will show at the cursor position.



When entering the Via point, the instrument will prompt for confirmation to delete the old route and a new one will be calculated, crossing the new Via point, yet leaving the starting and the destination points unchanged.

No more than 3 Via points can be added to a route.

#### **Editing the starting/destination point**

In order to edit the starting and/or destination point, move the cursor to the new starting/destination point and press ENTER. Define the point as starting or destination and press ENTER. The instrument will prompt for confirmation to delete the old route, and a new one will be calculated, based on the new starting/destination point, yet leaving the Via points unchanged.

#### **Editing a Via point**

Move the cursor on the Via point to delete, select “Delete Via Point” and press ENTER. The Via point will be deleted, and the route calculated based on the starting, the Via and the destination points still present.

In order to change the position of a Via point, move the cursor on the Via point to move, select “Move Via Point” and press ENTER. Move the cursor to



the new position and press ENTER again. The Via point will be moved, and the route will be calculated based on the starting, the new Via and the destination points.

## SETUP

The Setup menu allows setting the available options. To access the Setup menu, press GOTO to display the main menu, then select SETUP by using the CURSOR key.

The menu items are grouped in six sets. When selecting a set by the CURSOR key, the list of the available options will be displayed. Press ENTER to select one set, then use the CURSOR key to switch from one option to another and edit the setting. To go back to the set list, press PAGE.

### MARINE NAVIGATOR

- This option allows switching from road navigation to marine navigation.

### SCREEN

- Mode (DAY/NIGHT)

Selects the colors suitable for the brightness of the environment.

- Chart Rotation (ON/OFF)  
Enables/disables the Chart Rotation function.

- Presentation (EU/U.S.)

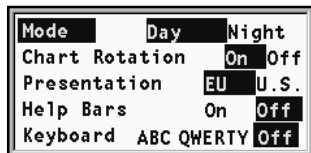
Selects the symbols and colors of chart presentation.

- Help Bars (ON/OFF)

Enables/disables the guide text to the functions.

- Keyboard (ABC/QWERTY/OFF)

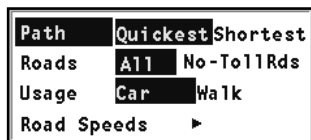
Enables/disables the virtual keyboard for entering the place names.



### NAVIGATION

- Path (QUICKEST/SHORT-EST)

Defines the quickest or shortest way to reach the destination.



- **Roads (ALL/NO TOLL ROADS)**  
Enables all the roads or excludes toll roads.
- **Usage (CAR/WALK)**  
Defines the unit's use (whether on car or on foot)
- **Road Speeds**  
Sets the speed limits according to the road followed.

#### **UNITS AND LANGUAGE**

- **Set Time (LOCAL/GMT)**  
Enters local time.
- **Distance Units (KM/MILES)**  
Selects distance units.
- **Language (EN/FR/ES/DE/DK/IT/SV/NL/SU/NO)**  
Selects the language.

#### **WINDOWS**

- Enables/disables the display of the windows available.

Navigation	On	Off
Trip Window	On	Off
Satellites	On	Off
Route Info	On	Off

#### **OTHER**

- **GPS (INT/EXT)**  
Selects a built-in GPS antenna or an external GPS antenna.
- **Simulation (ON/OFF)**  
Enables/disables the Simulation function (available if a route is present).
- **Battery Saving (ON/OFF)**  
Sets the automatic switching off time for the backlight and screen, in order to reduce the battery consumption.
- **Chart Info**  
Displays the title of the map currently loaded.

GPS	Int	Ext	▶
Simulation	On	Off	
Battery Saving	On	Off	
Chart Info			▶

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Rev. 1.0 - Jan 2008

N1019150